TACTICAL GUIDE

Bohemia Interactive

CONTENTS

INTRO TO TACTICS, TECHNIQUES, & PROCEDURES FOR ARMA 3 (TTP3)

Welcome!

Greetings, and welcome to the Arma 3 **"Tactics, Techniques, and Procedures Guide"**, developed for Shack Tactical and published in cooperation with Bohemia Interactive. I'd like to take a few minutes to talk about this guide, how it came to be, what's different between it and my prior guides for the Arma series, as well as all sorts of other preamble topics. Please bear with me for a bit – I believe that there are some important things to convey before we dive into the heart of the guide.

Intent

Greetings! My name is Andrew Gluck, though you most likely know me by my online nick of Dslyecxi. I am the founder of the Arma community Shack Tactical, a community which has acted as the inspiration for this guide and each prior guide in the series. Over the course of our nearly eight years of existence, Shack Tactical – commonly shortened to just 'ShackTac' – has attempted to answer the question of how best to approach Arma and how best to harness the potential inherent in the series. Since the original Operation Flashpoint, this series has stood out as an incredibly deep and rewarding simulation, one deserving of the time we've collectively poured into learning, refining, and enjoying.

My tactical guides have been created with the intention of spreading this knowledge beyond the confines of ShackTac, with the hope that the lessons we've learned and the doctrine we've created for ourselves will help to bring better gameplay experiences to anyone else operating in the environments of Arma. Having our guides – which we refer to simply as "the TTP" – has allowed us to acquire a community-wide understanding of military operations within Arma, regardless of whether any given participant had a military background. This has given us fantastic gaming experiences for many years, and it's my hope that this third iteration of our TTPs will help to spread this potential to a broad new Arma 3 playerbase.

You'll note that unlike my prior guides, TTP3 is an official product of Bohemia Interactive, available as part of the Arma 3 Deluxe Edition as well as in print and e-book formats. In addition to those formats, I'd like to thank them for graciously agreeing to allow me to offer a web version of the core of the guide - some 130,000 words - for free. The information contained herein is something every Arma player should have access to free of charge - not locked away in our private forums or as a pay-only product. It is truly commendable, and I thank them for supporting the vision!

This guide is available for all who have the time to read it - it is offered up warmly, with the hope that everyone can take something from it in some capacity. A strong Arma community benefits us all, and if this guide helps facilitate that in any capacity, I will consider it to be a great success!

As always, note that this guide is not "the only way to do it". It is, however, the way that ShackTac does things, and it works exceptionally well for us. Hopefully you can find a use for this guide in your gaming as well!

What's New & Different

With Arma 3, we see the series further enhanced and refined - with a particular focus on the infantry aspects of it. These changes in game mechanics, technology, and other aspect of the simulation environment were the inspiration to take the existing second iteration of my TTP Guide, update it, integrate the lessons we collectively learned in Arma 2 and Operation Arrowhead, and both refine and expand the content to cover Arma 3's possibilities as well.

Since Arma 2's release in 2009, ShackTac has had over four years worth of gaming experiences to learn and grow from. We've seen some incredible changes in the series from that time – from Operation Arrowhead's release, to game-changing modifications like the Advanced Combat Radio Environment mod – and have adapted our own methods accordingly.

If you're familiar with my prior guide, you'll no doubt find plenty of familiar work here, updated to Arma 3 standards and refined to reflect our experiences in the intervening years. One of the biggest changes is the reorganization of our group structure. In 2009 we were platoon strength - in 2013 and beyond, we operate at the company level. Our infantry platoons have been reworked for a variety of reasons, detailed within, while we see a new set of roles emerge with our Company Commander, as well as changes to how our Platoon Commanders operate and how our attachments and crew-served weapons teams are employed.

Arma 3's infantry-centric improvements manifest themselves most strongly in the Basic Infantryman chapter, which goes into detail about the new inventory systems, weapon and gear modularity, stance adjustments, and much more. The enhancements don't stop there - each chapter has been carefully reviewed and refined, with obsolete techniques culled and new ones introduced.

For those who have purchased the full guide, you'll find an additional chapter containing several more advanced concepts - from a guide on Survival, Escape, Resistance, & Evasion, to a role breakdown of Combat Engineers, Paratroopers, and Combat Divers, as well as information on Guerrilla Warfare, Reconnaissance, and how to Fight at Night. I'm very proud of these sections, and I hope those who chip in for a Deluxe guide enjoy reading them as much as I did creating them.

All told, this guide has ended up as about 150,000 words worth of content, with hundreds of pictures and illustrations to further flesh it out. As before, there is no military fluff here. Every topic covered is truly relevant to the series - whether in the vanilla game or in one of countless community modifications or missions.

Reality vs Gaming

Milsim & pitfalls

As before, the point of this guide is to convey material that truly is relevant to Shack Tactical's style of realism-combined-with-fun combat simulation. This is the sort of information that our players use every session to work as a well-oiled and diverse team. We have maintained a very pragmatic outlook on military simulation (milsim) and have taken every measure possible to avoid doing things "because the real military does them" and thus becoming what we call "hardcore milsim".

In our eyes, hardcore milsim is chock-full of "tactical fluff" that is irrelevant to the games at hand. This hardcore milsim typically presents itself though excessive rules, regulations, attempted recreations of full military rank structures far beyond what is relevant in the scope of your average Arma mission, doing things "because the real military does them" regardless of their actual application to the game at hand, and other things that we believe do not have a place in these games.

This guide reflects that mindset as well. One thing that I noticed back before doing my first guide was that military-game guides commonly fell victim to two pitfalls - the first being the recitation of actual military publications, without any attempt to separate the wheat (info relevant to gaming) from the chaff (military or real-world procedures that are irrelevant or not simulated in games). Now, don't get me wrong - there are many things that can be learned from military publications and field manuals, and this guide benefits heavily from being referenced against a number of such manuals. However, this is not a recitation of them word-for-word, as that would be pointless. The information presented here is what is truly relevant to the game, as we have experienced through our years of gaming.

Another thing that must be kept in mind is that the kind of missions most commonly found in games like Arma – in the real world – require a massive amount of planning and preparation by well-trained professional military personnel well before the first shot is ever fired. The goal of groups like ShackTac is to be able to play to the best of our ability without requiring such huge time-sinks in the pre-mission planning. Basically, we want to get the best results we can without having to spend hours in advance planning out each operation. Planning is great, but we strive to keep the initial planning short and sweet - minutes at most - and further develop our plans as we carry out the mission. After all, as the saying goes: "No plan survives first contact".

The second pitfall is that of being "gamey". "Gamey" guides are those that are oriented around giving very precise info about things in a fashion that takes advantage of knowledge that would not exist in reality - for example, a list of tanks, their armor values, and the precise 'damage' values of anti-tank weapons. These "gamey" guides also tend to give tactics that are meant to exploit the game itself. I don't believe in those types of guides, so if that is what you're fond of, my apologies - you won't find it here.

Fun is the Ultimate goal

Finally, it is worth reiterating that we are playing games here. The point is to have fun - in our case, we strive for organized, disciplined fun. We are not trying to pretend that we're in the military - many of us have already been there, done that, or are still there and doing that. We're in ShackTac and playing Arma to have a good time. We're a community of friends, ultimately, and this guide is written in that spirit.

A Technical Note

The online version of this guide was developed with Google Chrome and likely looks the best in it. Also note that there is a sidebar on each page of the guide - simply click the 'Index' bar on the left to expand or collapse it.

With that out of the way - best of luck to all of you as you delve into both this guide and Arma 3 itself!

INTRO TO ARMA 3

What Arma 3 Is

For those of you new to Arma, the basic premise is that it is a military combined-arms simulation with an incredible scope and a second-to-none ability to convey large-scale modern military combat. In addition to that, it is a fantastically configurable and moddable game. It comes with a robust mission editor and scripting language, and tools are available to allow any manner of units, weapons, vehicles, terrains, etc, to be created for the game.

Arma 3 follows in the footsteps of Operation Flashpoint, Arma 1, and Arma 2 to provide the most realistic combined-arms from-the-infantry-up experience around, bar none. It is a military sandbox environment that can be tailored exactly in accordance to what you want from it.

In addition to that, Arma 3 supports a robust set of multiplayer features. It has the capability to handle up to a hundred or more players in a single mission at a time, playing against each other in teams, together against the AI in cooperative scenarios, or any imaginable mix. The mission design possibilities are almost unlimited - if you can think it up, you can probably make it.

Like the other games in the Arma series before it, Arma 3 is the game of choice for my group, Shack Tactical. The experiences we have had in these games for the past many years have been unlike anything else available in gaming, and it continues to pull players back week after week in large quantities into ever-changing and new scenarios. We play the whole range of missions, from serious to not-at-all serious, and all of it is an utter blast. It is our enthusiasm for this sort of group-wide "Build Your Own Adventure" method of content and mission creation that has allowed us to thrive as a private group for so many years.

I hope that anyone who is looking into the multiplayer facet of Arma 3 is able to find a place to play where the vast possibilities of the game can be appreciated with a quality group of players. I also hope that this guide is able to provide the base of knowledge to help players work together throughout the community, if not exactly "by the book," then at least more informed because of it.

ALTIS, THE PRIMARY TERRAIN OF ARMA 3

Forward-Looking

As with the prior guides in this series, the TTP3 is written with a forward-looking mindset, intended to still be applicable years after release. Because of this, there are some references to features and concepts that may not apply to the original release version of Arma 3, but are grounded in reality and commonly encountered in modifications and scripted missions created by the larger community. Any inclusions of such features are based solely on my own personal experiences through nearly eight years of multiplayer and modding in this series, and you can reasonably expect to see everything mentioned in this guide when combining Arma 3 with additional community modifications - one of the biggest strengths of the series. My personal view is that it is better to write about things that you know will be available to a series that continually grows after each release, than to avoid the topics and deprive people of valuable techniques that will serve them well when said functionality appears. I hope you agree!

Moving on...

With the intro bits out of the way, let's go ahead and move into the meat of TTP3!

BASIC INFANTRY SKILLS

The Basic Rifleman

As a rifleman, you are the most fundamental element of our combat power. The proficiency you demonstrate is a key factor in the survival of yourself, your fireteam, your squad, and ultimately the entire platoon. Every person plays a role in the bigger picture, and we are only as strong as our weakest link. Our aim is to make even our weakest link into a skilled player.

To this end, every player must be proficient and familiar with the role of a basic rifleman first and foremost. While you may want to fly planes and helos or drive tanks, it is important that you build upon a strong foundation of basic rifleman skills and are intimately familiar with "life as an Arma 3 infantryman" if you hope to effectively use such vehicles in the future. All vehicles are oriented around supporting the infantry, and the only way you can be truly effective at this is to know what it's like to be an infantryman to begin with.

To help you fulfill your role and contribute to the success of our missions, we'll now cover the "Basic Rifleman Skills & Knowledge". This should give you a solid baseline of knowledge that will keep you alive long enough to learn the finer points through virtual combat experience.

Fireteams

About the Fireteam & Your Role In It

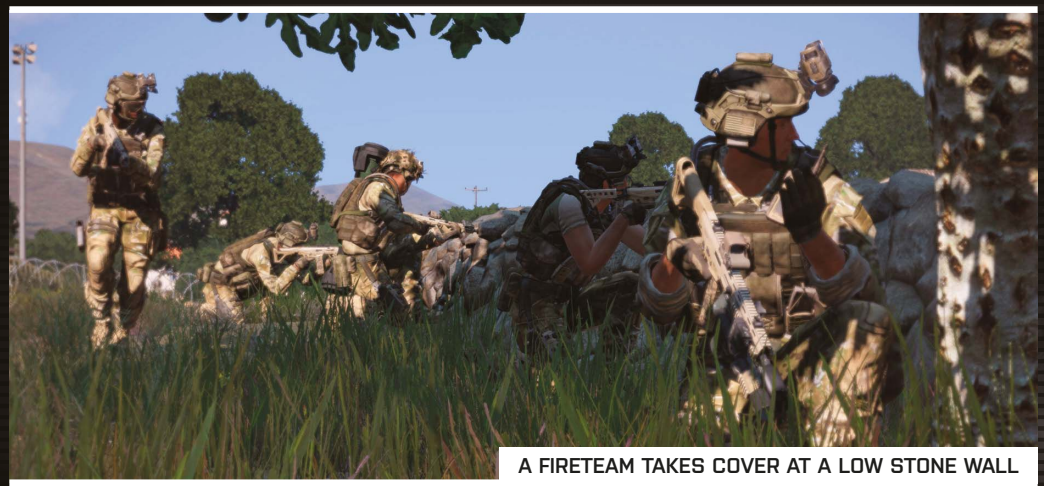
Fireteams are the most fundamental combat elements of our platoon structure. You will learn much more about them (and everything else about our structure) in the "Platoon" section later on - for now, we will cover the basic premise behind them.

Each fireteam consists of six players: a leader and five subordinates. As a new player, you will end up acting as a rifleman in one of the six different fireteams in our standard platoon. As the rifleman, you will be under charge of a more experienced player, acting as the fireteam leader. He, in turn, will be under the command of a squad leader who leads the two fireteams that make up each squad. Likewise, the squad leader will be under the command of the Platoon Commander, who commands the three squads that form the platoon - who is in turn led by the Company Commander, who directs the movements of the platoons.

Working as a Team

The key aspect of our organization is that of closely-knit teams - a rifleman by himself is not nearly as useful as a group of six players working as one cohesive unit. Fireteams look out for their own members as well as those of their fellow fireteams. Fireteams are the tip of the infantry spear.

Note that there are no "set" fireteams in ShackTac, nor should you expect them on most public Arma servers. You will find yourself grouped with different players in different missions, and your comprehension of this guide is what will allow you to all act as a cohesive and combat-effective group, regardless of who exactly is in your fireteam.



A FIRETEAM TAKES COVER AT A LOW STONE WALL

Basic Responsibilities of a Fireteam Member

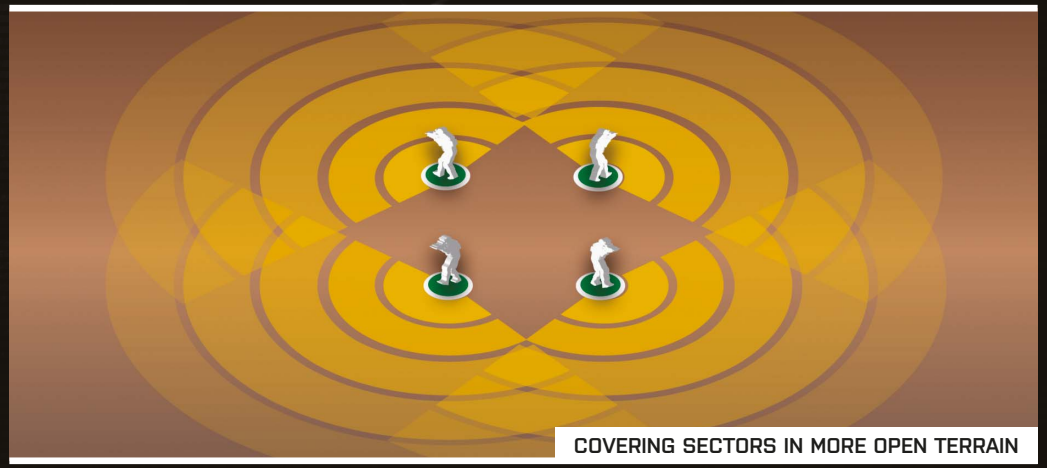
In order to play at the highest possible level of coordination, teamwork, and effectiveness, there are many things that each player must be familiar with. This entire guide is an example of those sorts of topics. The key foundational aspects of this are in the "basic responsibilities" of each fireteam member, and by association, every player in the platoon or company. In order to maintain cohesion and combat effectiveness, every player in our community is expected to abide by these simple ground rules.

As a fireteam member, you must...

- **Know your squad and fireteam.** With our structure, squads are lettered and fireteams numbered. Remember what team and squad you are in, as this allows you to pick out, confirm, and act upon voice orders relevant to you. Make sure you are familiar with your fireteam leader's voice, as well as that of your buddy team member(s). You can find out what group/team you are in via the map screen - the top-right will list your current group.
- **Listen to your team leader and follow their directions.** Fireteam and Squad Leaders are typically the more experienced players. Their role is to try to keep you alive and in the fight, while accomplishing whatever mission the squad may be tasked with. Listen to them and stick with your team.
- **Practice fire discipline and know the Rules Of Engagement, described in detail shortly.** Do not be the one to give away a stealthy approach by accidentally firing your rifle or firing at a target without having been given clearance. Once things heat up, and the element of surprise is lost, you're usually free to shoot at anything that poses a threat. Until then, maintain good fire discipline, in accordance with the instructions of your element leader.
- **Maintain appropriate interval.** Bunching up gets people killed. Keep several meters of distance between yourself and other players at all times. If not, a grenade, rocket, or machinegun is going to have a fun time with you and those you have clustered with.
- **Maintain situational awareness, avoid tunnel vision, and know where friendly forces are.** This all helps to prevent being surprised by enemy contacts, prevents friendly-fire incidents, and gives you an idea of what areas may need more observation based upon how the squad or platoon is oriented. More on this in the "Situational Awareness" section, later.

- **Cover your sector.** 360° security is needed at all times. This means that with a fireteam of six, every person should be observing or covering a different area. Good security means that your team is that much less likely to be surprised by the enemy, and thus is going to survive longer in combat. When halted, ensure that somebody is paying attention to rear security as well. If nobody else is, take it upon yourself to do so - your team will thank you later.

COVERING SECTORS IN THE URBAN ENVIRONMENT



COVERING SECTORS IN MORE OPEN TERRAIN

- **Scan for, spot, and call out enemy contacts.** Do it concisely via voice so that everyone can hear you. When giving the direction of contacts, relative directions (front, left, rear, right) can be used when friendly forces are moving in a known direction and front, rear, right, left are known to everyone. Otherwise, compass directions and degree bearings should be used. More on this in the "Contact Report" section later on.
- **Know your target.** Don't wildly shoot at everything that moves, as that tends to cause friendly fire casualties. If in doubt, don't shoot. Ask someone else in your fireteam to check out the questionable contact. Check the map to see if friendly forces are where you're looking. If you're still unsure, ask the element leader and he can take it up the chain of command if necessary. Once you pull the trigger, there's nothing you can do to bring that round back. **Don't be the one to shoot a friendly through carelessness!**
- **Be concise on comms.** Learn how to speak with brevity on voice channels to avoid cluttering them up when they're most needed.
- **Avoid crossing lines and lanes of fire.** If you need to move past a person, always try to pass behind them. If you ever do need to move in front of someone in a combat situation, ensure that you call them by name and tell them that you're about to cross their line of fire. Obviously common sense will dictate when this is necessary. Crossing in front of someone during general movement towards an objective is not a huge deal and does not merit a call, whereas running in front of someone during a firefight can get you killed and requires coordination with whoever you need to cross in front of.

- **Always work as part of a buddy team.** More info in the "Buddy Team" section next.

All of these topics are covered in more depth throughout this guide, so if you're not 100% sure on any of them, all should be explained by the time you're through with this.

Buddy Teams

The buddy team concept ensures that every person has at least one other person looking out for them at all times. It simply means that you always move with, watch out for, and fight with at least one other person at your side. Buddy teams are standardized in the platoon, though fireteam leads can choose to change the groupings as the situation dictates.

The standard buddy teams are set up as follows: the Fireteam Leader is by himself, while the first two members of the fireteam - typically the Automatic Rifleman and Assistant (known as the AR/AAR pair) - are grouped together. The last three members - either another AR/AAR pair, or three riflemen or riflemen AT - are the second buddy team. The fireteam leader is generally treated as if a member of the AR/AAR buddy team, though the requirements of his leadership often mean that he's having to move between the two buddy teams to check lanes of fire and similar.

The first buddy team - AR/AAR combo - is usually the heavier-hitting of the two, due to them employing the fireteam's automatic rifle. The Fireteam Leader will keep them nearby and assign them positions and sectors of fire as the fighting develops. The second team may or may not have an automatic rifle, and is typically where you as a newer player will find yourself.

Note that if you are using the ShackTac Fireteam HUD, and the Fireteam Leader is using it properly, you will see the buddy teams given color-codes such that they easily stick out on the HUD. More on this later in the Fireteam section.

Your basic responsibilities to your buddy teammate(s) are...

- **Stick with your buddies.** When they move, you should be with them. Together you are far more effective than apart.
- **Communicate with your buddies.** If it's important, let them know. If you're moving, say so, so that they can know to cover you. Good communication keeps everyone working together and aware of each other's status.
- **Cover your buddies.** Cue off of your buddy's movement, sector of observation, and so forth. If they're watching one way, cover the other. If they're going to cross a danger area (such as a street), cover them as they move.

BUDDY TEAM MOVING

- **Maintain accountability of your buddy.** When you change positions, make sure they come with you - leaving a wounded buddy behind in haste is an unpleasant realization to have.
- **Pull your buddy out of the fight if they go down.** If you are incapacitated, you can count on your buddy to come to your aid. Likewise, if your buddy is incapacitated, you know to step forward and do your part to save him, or contribute towards someone else, such as the medic, saving him. This may entail dragging him out of a danger area, carrying him to a medic, using smoke to conceal his position, or simply killing whoever tried to kill him. **Remember that you are no good to him dead** - if the tactical situation does not allow you to immediately help him, your task is to help make the situation more favorable - typically accomplished by killing the enemy, or coordinating with others to help kill or suppress the enemy. If your buddy is hit, a rapid assessment must be made as to whether he is dead or wounded, and whether the situation allows for you to safely pull him to cover. A dead teammate can wait, whereas a wounded one may need immediate attention from a medic and your action may be the deciding factor between life and death. If your buddy goes down, call out to the other fireteam buddy team and get them to cover you while you drag him to safety. Once you've made it to cover, call out to the squad medic and ensure that your buddy is treated. Depending on the tactical situation, you may want to stay to provide security for the medic, or move back to the fireteam and continue fighting.

Living by these guidelines is a key factor of success in battle. Learn them, know them, and be sure to always practice them.

SITUATIONAL AWARENESS

Seriously, it's a big deal

One of the most fundamental combat survival skills is that of situational awareness. This simply means that you are alert to your surrounding environment and can leverage your knowledge of the battlefield's state to make tactical decisions and judgment calls.

Maintaining good situational awareness is key to preventing friendly casualties. Proper situational awareness will allow you to spot the enemy before they spot you, detect an ambush before it is sprung, and notice unusual characteristics of the environment that may betray the presence of mines, booby traps, enemy vehicles, fortifications, and more. **It is the responsibility of every member of the unit to maintain a high state of situational awareness at all times.**

To develop and maintain that situational awareness, heed the following.

Basic Situational Awareness Guidelines

- **Whether you're moving or halted, you should always be scanning for the enemy.** Murphy's Laws of Combat tell you that the moment you let your guard down and stop scanning is the moment the enemy will appear.
- **Cover whatever areas you have been assigned to, or cover whatever area seems to need coverage.** Adapt to the situation as needed, and be able to pick out areas that may be more dangerous, and warrant more observation, than others.
- **When you're halted, take a knee, find cover if possible, and continue to scan.**
- **Stay alert! There is no "safe" time in a combat zone.** If you let your guard down, either you will die from it, or, worse, you will get a teammate killed because of it. Getting yourself shot is one thing, but getting a teammate shot is something else best avoided.
- **Be aware of the risks of "tunnel vision", and avoid falling into that state.** Tunnel vision occurs when a player gets so fixated on a specific target, object, or area that they neglect to stay aware of the "big picture". Remember that for every enemy you see, there are probably three or four (or more) others that you do not. Fixating on a single enemy at the expense of everything else is likely to get you flanked and killed. Stay alert and aware, and you will greatly increase your odds of survival.
- **Check the map frequently to maintain awareness of friendly positions, suspected enemy locations, and more.** The map can be used to mark enemy contacts as well as friendly positions, and some mission types (or mods) allow you to see friendly forces on the map. Ensure that you check it frequently to keep up-to-date on suspected enemy positions, as well as friendly positions.

The rest of this section will detail additional situational awareness considerations, tips, and guidelines that should help give you the best chance of surviving your virtual combat experiences.

What to Stay Aware of, Look and Listen For

There are many things that a player must stay aware of (and be on the lookout for) during the course of a mission. Depending on whether combat is ongoing or not, your may find yourself focusing on different aspects of your situational awareness. In light of that, these guidelines are broken down into general, pre-combat, combat, and post-combat tips.

General Situational Awareness

Keep these in mind at all times, regardless of whether combat is actively occurring or not.

- **Where are friendly forces located?** Knowing this will help you to pick which areas to spend your time observing, and will help to prevent friendly fire. This includes knowing where your own fireteam members are, where your squad's fireteams are, as well as where other squads in the platoon are located.
- **Where is the enemy most likely relative to you?** What are the likely positions they will be occupying? What can you do to minimize your exposure to them?
- **Where is the nearest usable piece of cover or concealment?** This is important to know if you come under fire unexpectedly, or make visual contact with the enemy and must enact a hasty ambush.
- **Where are my teammates watching?** Knowing where friendly units are looking helps you to pick a direction to watch that will complement their observation sectors.

Prior to combat, scan the following...

Pay particular attention to these whenever there is the likely threat of enemy contact. If you paid attention earlier, you should be thinking, "but you said to always expect contact, shouldn't I pay attention to these items at all times?" To which I would say yes, you are correct!

- **Bases of trees.** Tree trunks are the most prolific cover available in the great outdoors, and many enemy ambushes will involve soldiers using trees as cover and concealment.
- **Shrubs and bushes, particularly on the edges.** Shooting through a bush or from within one isn't always that easy. You'll often find people firing around the sides of a bush.
- **Large rocks, boulders, stone fences, and fallen trees.** All of these provide nice hard cover and tend to attract people to them due to their protective attributes. Note that trees knocked down mid-mission will not provide cover, but those that are placed as part of the environment will.
- **Rooftops, especially near any protrusions such as stairwells.** Protruding stairwells, air vents, etc can be used as cover for anyone using a roof as a firing position.
- **The edges of windows.** You'll hopefully spot anyone blatantly standing in a window, so that means that you should focus your attention on scanning the edges to ensure that no one is 'tucked-in' to the window.
- **The edges of walls, buildings, etc.** Hard cover (such as walls and buildings) is of great appeal to an infantryman, and because of that, it should be given appropriate attention.
- **Knocked-down trees, bushes, fences, etc.** If the enemy has vehicles they may accidentally run down trees, bushes, or other obstacles and give away where they've been. The enemy may also knock down trees and then use them as concealment, or to clear fields of fire when in the defense.
- **Prominent structures.** Snipers, machinegunners, and forward observers tend to head into tall structures when they have an opportunity to do so. Being aware of these structures, and scanning them accordingly, will help to avoid nasty surprises.

In combat, look for...

Once contact has been made and fire is being exchanged, start paying attention to these aspects.

- **Muzzle flashes at night, and muzzle smoke during the day.** You may not always see the precise outline of an enemy, but that big puff of smoke and dust in the day or flash of flame at night (or in low light situations) that keeps popping up from the same location over and over again can act as a great indicator to where the enemy is located.
- **Tracers.** Tracers are brilliant neon signs that say "I'm firing from over here!" These are the most visible signs of the enemy, and the easiest to follow back to the shooter's origin. Note that not all weapons will fire tracers, and some weapons will even use special "dim tracers" that can only be seen with nightvision devices.

- **Smoke.** If the enemy fires a heavy weapon such as a rocket propelled grenade (RPG), you'll be able to pick out their position by the large volume of smoke produced by the weapon's backblast. You may also see the enemy using smokescreens to mask their movement. Typically, a cloud of smoke created in such a fashion is a giant "Shoot here!" sign, since it's most likely being used to conceal the enemy's movement. However, keep in mind that the enemy may sometimes employ smoke as a diversion.
- **Dead enemies.** This is particularly useful if contact was made with the enemy by another element, close air support, or artillery. Dead enemy soldiers can give you an idea of where the enemy was, what they were (e.g. special forces, normal troops, etc) and even where they may still be.

After combat, look for...

Whether the enemy has fled or been defeated, or after coming upon the scene of dead enemies, keep an eye out for the following.

- **Stragglers or last-stand enemies.** Just because you think you killed them all, doesn't mean that you killed them all. Stay ever-vigilant and check any area where a lone survivor might try to hide to ambush you and your teammates. Clear the area before you start checking bodies.
- **Incapacitated enemies.** In mods with more robust damage simulation, you may come upon enemies who have been knocked unconscious or have passed out from damage. Never assume that a downed person is dead, always check them to be sure.
- **Watch for satchel charges or other explosives that could have been set on a timer or may be command-detonated.** If you see any, immediately announce it to your element leader and vacate the area. Satchel charges can be hidden in grass and can be very hard to pick out. Keep good interval when clearing enemy bodies to avoid a hidden satchel causing multiple casualties. If possible, avoid sending more than one or two people to check out enemy bodies to begin with.
- **Check what weapon systems have been left behind if the enemy retreated.** If they abandoned valuable weapons like RPGs, anti-aircraft missiles, machineguns, crew-served weapons, etc, they are potentially disorganized and a decision can be made as to whether the fleeing enemies should be pursued.

Listen!

A sharp ear is often as valuable as a sharp eye, and there are several things you will want to listen for at all times such as the sounds of combat, vehicles, movement, and voices.

- **Sounds of combat.** This is the most obvious sign. If you hear firing, figure out what direction it's coming from and alert your teammates if they haven't already noticed it. Occasionally you will run into inexperienced enemy players negligently discharging their firearms (typically because their finger twitched and they weren't observing the "middle mouse safety" rule, detailed later); this can be used to determine where enemies are, even if they're out of direct visual observation. The more experienced you are, the more likely you'll be able to distinguish the different types of rifle fire from a distance.
- **Sounds of vehicles.** Being able to hear a vehicle from a distance, as well as identify the class by the sound it makes (such as being able to distinguish the noise of tracks from wheels, or rotors from jet engines) can help to prevent surprise and maintain initiative.
- **Sounds of movement.** Soldiers make noise as they move around the battlefield, so listen for it. The sound of boots on gravel, uniforms brushing against trees, the thumping and rustling of someone running through underbrush, or anything else that catches the ear. Particularly in dense terrain, this may be the only sign you have that the enemy is there before you run smack into them.
- **Voices.** Know who your teammates are, and know their voices. If you hear someone you don't recognize, it could quite possibly be the enemy. If you know you're in enemy territory, stay particularly alert for any unknown voices, and use any that you hear to help guide you towards the enemy and deal some damage to them. Bear in mind too that the enemy may be crafty and attempt to lure players into an ambush by having one person speak loudly while others wait in ambush.

Identifying Friend or Foe ("IFF")

Being able to visually differentiate between friends and foes is a critical skill to have, one which requires some practice to attain. It is important to be proficient at IFF, as someone who cannot tell the difference between their faction's uniforms and gear, and those of the enemy, is a danger to their entire team.

There are several basic guidelines that can be followed to help prevent friendly fire incidents.

Guidelines to Prevent Friendly Fire

- **Keep your finger off the trigger.** Keeping your "firing"' finger rested on your middle mouse button, instead of the fire button, helps to prevent an accidental and potentially fatal shot at the worst possible time - this is described in a bit more detail later.
- **Think before you pull the trigger and establish positive identification ("PID") before firing.** Use your head before your rifle. If it doesn't feel right, if something seems "off" or amiss, hold fire. If it looks like a friend, has a friendly weapon, isn't shooting at you, but seems like it's in an enemy area, it may be a friend, and you can't risk taking a shot without being sure.
- **If in doubt, don't fire.** Ask a teammate or your team leader to check out a suspected enemy if necessary. People with optics (such as rifle scopes, binoculars, etc) can be great help in identifying potential enemies.
- **Stay alert as to where friendly forces are located,** and communicate your location to others when appropriate.
- **The colors of tracers and the sounds of the weapons being used can help to identify the enemy,** but bear in mind that over the course of a mission friendly forces may acquire enemy weapons and thus it becomes less and less accurate as a mission progresses. Also, intelligent enemies may acquire friendly weapons from casualties and use them in the hopes that they will sow confusion amongst their enemies.

Arma 3 Faction Familiarization

Arma 3 consists of five major factions - NATO, CSAT, AAF, FIA, and civilians. NATO comprises BLUFOR ("good guys"), OPFOR ("bad guys"), AAF is independent, FIA are guerrillas, and civilians are... civilians.

Emblem	Name and Side
	NATO North Atlantic Treaty Organization BLUFOR
	FIA Freedom & Independence Army BLUFOR
	CSAT Canton Protocol Strategic Alliance Treaty OPFOR
	AAF Altis Armed Forces INDEPENDENT
	Altis Civilians CIVILIAN

More information about the factions can be found on the official Arma 3 site, here.

The important aspects of the factions, in our terms, are what they look like. A personnel identification guide and basic vehicle guide follow this section.

Personnel Identification

The following pictures show a variety of unit types for each of the main factions. From left to right, the roles depicted are:

- Rifleman, Vehicle Crewman, Helicopter Pilot, Jet Pilot, Sniper, Diver

It is important that players are familiar with the different uniforms of the various factions - some of them are pretty close to each other, and can easily be confused in the heat of a fight if one isn't very familiar with the distinguishing features.

BLUFOR

OPFOR

Independent

Basic Vehicle Identification

BLUFOR

BLUFOR vehicles are typically identified by their flat dark earth paint - though some aircraft use green or dazzle patterns.

OPFOR

OPFOR vehicles tend to follow the hex-patterned camo theme, with flat tans, reds, and olive colors throughout.

Independent

Independent vehicles use a digital pattern consisting primarily of green and tan, making them stand out distinctly from the other factions.

HOW NOT TO GET SHOT

Basic Movement Techniques

Guidelines for Movement

How an individual moves around the battlefield is the most important aspect of not being shot. Proper movement will keep you alive, whereas sloppy movement tends to result in a lot of unnecessary pain and suffering once the enemy has a chance to contest it. The following guidelines should serve you well if you heed them.

- **Move from cover to cover, or concealment to concealment.** If you're under fire, do so in short rushes. Ensure that you know where you're going next before you start to move from your current position. This helps you avoid getting caught out in the open without a plan.
- **Maintain good interval. Bunching up gets people killed.** Try to keep at least five meters between yourself and any other players whenever possible. Ten meters is even better. Doing this will help to minimize the impact of enemy artillery, grenades, mines, other explosives, and the initial burst of fire from a surprise contact. If you're using the ShackTac Fireteam HUD, a teammate that is too close to you will highlight orange to warn you to maintain your spacing.

CASUALTY PATTERNS FOR MODERATE AND TIGHT (IMPROPER) GROUPING. IDEALLY PEOPLE SHOULD BE SPREAD SUCH THAT ONE EXPLOSION INJURES A SINGLE PERSON AT MOST.

- **Conserve your stamina.** If the situation isn't urgent, avoid sprinting. There is a tendency for players to sprint all over the place, regardless of the tactical situation. Inevitably this ends up getting people killed, since they tend to run into enemies after an extended sprint and thus cannot effectively aim due to the incurred stamina penalties. Everyone should work on reserving their stamina for situations where it is desperately needed, such as an ambush, sniper fire, or any other time when getting out of the danger area takes priority over everything else. Plan for the need to take a rest every so often - jogging can be done for a period of time, but will eventually

fatigue you, while sprinting will rapidly fatigue you, and moving up steep hills compounds their effects further. The more fatigued you are, the more your vision will be distorted, the louder you'll breathe, the less stable your aim will be, and the slower you'll move and do actions like reloading. When given the choice, jog or walk when possible and take "stamina breaks" when the opportunity presents itself. Not only will you live longer, but it'll make it that much easier for your team to maintain decent interval and coverage of each other while moving towards enemy contact.

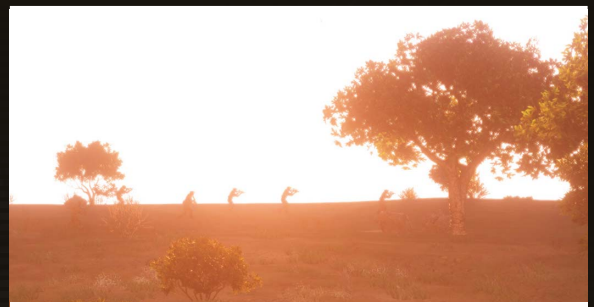
- **Know where to go when contact is made.** If you stay aware of your environment, you should be able to instantly move towards cover or concealment if your team encounters unexpected contact. The last place you want to be standing is the place you are at when contact is made - if it's an ambush, someone is probably either already aiming at you, or trying to get you in their sights. Move with speed and intensity to a better position and then begin aggressively fighting back.
- **Take a knee at halts.** Kneeling or crouching lowers your exposure, which makes it harder for someone to hit you from a distance. Get into the habit of taking a knee any time that you're halted for more than a second or two. If you expect to be stationary for a longer period of time, you may want to go prone, find better cover or concealment, or both.

TAKING A KNEE WHEN HALTED

- **I'm up, they see me, I'm down.** The basic "individual rush" consists of jumping up, sprinting forward a bit, and then diving prone. Throwing in a roll after hitting the deck will help to throw off the enemy's aim, and will be very effective if you're rolling in tall grass or with concealment nearby. When doing a proper individual rush, the enemy will only have a few moments to see you, sight in on you, and attempt to shoot you. The "diving prone" at the end of each rush can also help to confuse the enemy as to whether he shot you or not. Having a fireteam moving via individual rushes presents many short-exposure targets that are difficult to engage, and this method can be very successful at keeping a team alive while still making headway with movement.
- **Move at a pace appropriate to the environment and known or expected threat.** Depending on the situation, you may want to sprint, run, walk, or move at the "tactical pace", which we'll get to in a moment. Walking allows you to keep your weapon up and ready to fire, and allows you to move slowly, deliberately, and with a great deal of caution. Tactical pace is similar to walking, but allows you to move significantly faster while still keeping your weapon up. Depending on the environment and tactical situation, pick the movement speed that balances your ability to maintain situational awareness and react rapidly to threats with your vulnerability as a target. In dense terrain, walking or using the tactical pace is often the answer, while in more open terrain, you may find yourself sprinting from cover to cover instead.

MOVING WITH THE RIFLE IN THE READY POSITION

- **Use shadows for concealment at night, but only when in close proximity to the enemy.** Shadows, combined with very slow and deliberate movement can make it hard to spot someone. However, be warned that this effect relies on two things: one, that the enemy is close enough to you that they see shadows the same place that you see them, and two, that the enemy has shadows enabled on their system. If either of those are not true, shadows won't help you at all. It's a gamble at times, but as long as you assume that the enemy may still see you, you can minimize the risks. Read more about this in the "Fighting at Night" section later. Many communities will enforce standards for shadow usage, and violators can expect to be banned from future participation. If you're looking for good nighttime combat, search for communities that enforce it properly.
- **Don't skyline yourself.** Skylining is silhouetting yourself against the sky. This can happen when walking on the top of a piece of terrain that is higher in elevation than the enemy. If you absolutely must cross a ridge and think the enemy might be looking that way, go prone and try to cross the ridge where vegetation provides some amount of concealment.



THE ENEMY SKYLINING THEMSELVES AT DUSK

Stamina & Load Management

Arma 3 refines stamina into a more significant gameplay factor than in prior games. As in reality, the individual infantryman can only carry so much and still remain capable of sustained action.

Tactically, the stamina changes in Arma 3 help to emphasize the role of terrain and proper combat loads in a battle. Hills and other inclines cause greater fatigue, and fast movement paces like tactical pace and sprinting cannot be maintained indefinitely. Heavy gear is likewise fatiguing to carry, and players must move intelligently with consideration paid to their load and stamina. These changes bring the pace of the battle much closer to realistic levels, and also help to prevent people from attempting to carry an arsenal more appropriate for a game like Doom on their backs.

As you fatigue in Arma 3, you'll find yourself gradually slowing down, with movement and actions such as reloads and stance changes both being influenced by high levels of fatigue. The heavier your gear and pack are, the quicker you'll fatigue. Severe fatigue is indicated by heavy breathing combined with the screen edges pulsing and the whole view blurring periodically. Recovery is brought about by moving more slowly, or stopping entirely. Keep in mind that any movement speed faster than a walk will add fatigue over time - the faster, the quicker it will happen. Moving while prone is particularly fatiguing, as is sprinting.

Dealing with stamina is best done in a few different ways.

Tips on Dealing with Stamina

- **Monitor your encumbrance.** You can see your current encumbrance. level in the inventory screen, at the bottom of the window. Try to keep this such that there's a comfortable gap between your current load and the maximum load. The lighter you are, the less interruption you'll have to deal with from fatigue and resting.
- **Take reasonable combat loads.** A basic fighting load should include around ten magazines, a rifle, first aid kit, and some fragmentation grenades. This leaves you room to pack a bit extra as well without becoming unnecessarily overburdened. For instance, an assistant automatic rifleman will be able to carry additional boxes of ammo for the automatic rifleman, while an anti-tank gunner can carry a launcher.
- **Sprinting everywhere is not the answer.** It is easy to fatigue yourself unnecessarily by trying to sustain a high pace of movement for too great a period of time. Move around at a jog or a walk, and reserve your energy for times when you will badly need it.
- **Take a moment to rest between significant moves, during long sustained tactical movements, or before moving across a danger area.** It only takes a short period of resting (preferably while crouched

or prone) to regain your stamina. Resting briefly at tactically appropriate times ensures that you maintain a reserve of stamina, which will come into great importance when contact is made. Resting also gives you an opportunity to more thoroughly scan your surroundings and increase your situational awareness.

- **Many crew-served teams and other attachments (described on the "Attachments" chapter later) carry gear that is significantly heavier than an average infantry fighting load.** Heavy anti-tank team gunners, anti-air gunners, medium or heavy machinegun teams, and others fall into this category. When acting as one of these roles, you will need to pace yourself. Recognize that carrying hundreds of pounds of gear, to include your helmet, vest, armor plates, ruck, rifle, ammo, frags, and whatever special weapon you may be responsible for (along with its ammo), will slow you down.
- **Spread-load supplies.** Whenever possible, special supplies like mortar rounds, anti-tank rounds, machinegun ammo, etc, should be spread out amongst many people, either within a gun crew, or distributed in general throughout the platoon.

Leaders must also keep in mind the stamina and load aspects of combat and movement in their planning. For instance, having an attacking force end up heavily fatigued before making it into fighting range is to be avoided.

Cover & Concealment

A RIFLEMAN CREEPS AROUND THE CORNER OF A ROCK TO SCAN THE AREA FROM A LOW-PROFILE POSITION

Cover vs Concealment

The first rule of "not being shot" is ensuring that the enemy either cannot see you or cannot hit you, or both.

You will find that one of your primary goals on the battlefield is to locate positions from which you have the most protection from enemy fire or observation yet also are able to put effective fires on the enemy. To do this, you will have to know the difference between cover and concealment and how to best take advantage of both. **You should strive to always be in cover or concealment when combat is occurring.** If the enemy cannot visually locate you, they will not be able to accurately shoot at you. Even if they do know where you are, hard cover can prevent them from effectively engaging you.

Concealment is anything that keeps the enemy from seeing you. Typically this comes in the form of brush, bushes, thin sheet metal or wood, and other materials that are easily penetrated by bullets.

A MACHINEGUNNER POSITIONED IN SOME CONCEALING BUSHES. WHILE THEY WON'T STOP A BULLET, THEY MAY PREVENT THE ENEMY FROM SEEING HIM IN THE FIRST PLACE.

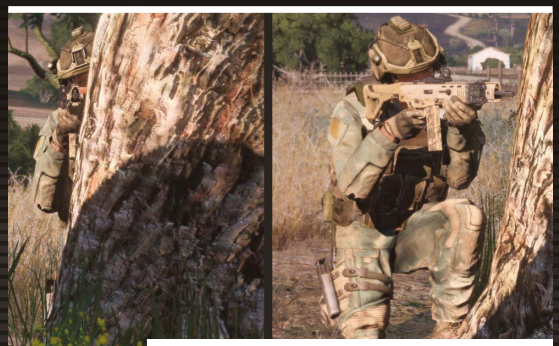
Cover on the other hand is anything that keeps the enemy from hitting you with his fire. Anything solid enough to stop a bullet works, this includes tree trunks, brick walls, vehicle hulks, etc. Bear in mind that cover is only effective relative to what is being fired at you. While a brick wall might protect you from machinegun fire, an RPG or tank HEAT round will make a mess of you in short order.

A RIFLEMAN USES A ROCK OUTCROP AS COVER VIA STANCE ADJUSTMENT

Tucking into Cover & Sight Displacement

One critical thing to remember in Arma is that the view you get from ironsight mode is offset down and to the right of your normal view. If you take this into consideration when utilizing cover, you can expose much less of your body.

While the above illustration uses a tree as the example, the same principle can be applied to any kind of cover - lamp posts, large rocks, vehicles - and can significantly improve your odds of survival.



USING A TREE PROPERLY FOR COVER

Stance Adjustment System

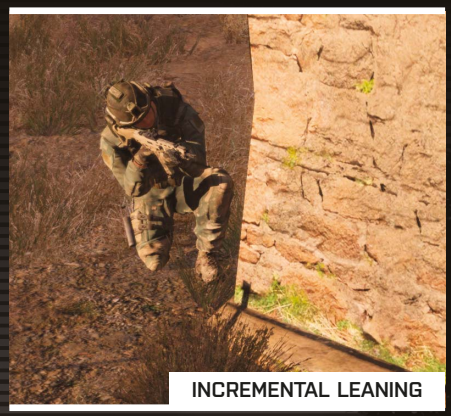
One of the most significant additions for Arma 3's infantry combat is the introduction of a stance adjustment system. The basic standing, crouching, and prone states are fleshed out with high and low adjustment states for each, leading to a total of nine different vertical stances, as well as "step leans" for crouched and standing states, and sideways prone adjusts when prone.

Utilizing the stance options allows for you to match your stance to the cover or concealment available, minimizing your exposure to enemy observation and fire. Try to only peek up as much as necessary to see or shoot. The smaller of a target you present to the enemy, the less likely they'll see you or be able to hit you.

Leaning

Arma 3 has two styles of leans. There's an upper-torso lean, which allows you to shoot around cover while keeping a large amount of your body protected from fire, and there are step-leans which allow your character to shift left or right more fully. Step-leans and upper-torso leaning can be combined for an even greater range of motion as well.

The fact that you can utilize the upper-torso leaning and move at the same time can be quite useful, as it allows you to position yourself exactly how you'd like in the least amount of time possible. Usage of a TrackIR (or rudder pedals) enables you to do an incremental upper-torso lean, which allows you to tailor exactly how much you're leaning at any given time. This can be useful when stealth is a concern, as well as when you want to expose as little of your body as possible to enemy fire.

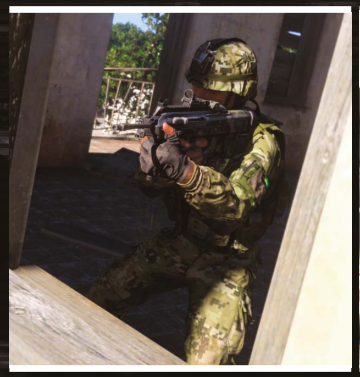


INCREMENTAL LEANING

STEP-LEANING

Remember that peeking in and out from cover will be less effective against human players - if you keep peeking out from the same position, with the same stance, the enemy may predict your pattern and have a bullet waiting for you next time you pop out. Try to alternate your vertical stance when possible, or find another position to fire from if you think they're starting to zero in on you.

Note that a left step-lean will result in your character shifting his rifle from his right shoulder to his left. This can be used to expose less of your body when firing around the left side of an obstacle when standing or crouched.



When prone, adjusting your stance left or right will allow you to lay on your side and scoot back and forth. This gives you an easy way to edge around cover without exposing too much of your body in the process.

Accuracy & Exposure by Stance

The level of accuracy that you are able to achieve with your weapon is based in part upon the stance you take. Standing is the least stable, with crouched being more stable, and prone being the most stable.

You should get in the habit of taking a knee whenever firing at medium or long ranges, and even closer ranges if the situation permits. The benefit of taking a knee is twofold: one, you increase your accuracy, and two, you decrease your profile. The smaller you make yourself, the harder it is for the enemy to hit you.

When it comes to firing on the move, you can do it either when standing or crouched. Standing is the most stable in this case, whereas crouching and moving while trying to aim will tend to tire you out fast and increase your weapon sway due to the lowered stamina. Arma 3's new "tactical pace" movement option allows you to keep your weapon up while moving quickly, while you can use your walk key to move at a slower pace when the situation requires it. Tactical pace allows infantry to assault rapidly towards a location without sacrificing their ability to fire at a moment's notice - though their accuracy is lowered due to the speed of their movement.

ADVANCING IN THE TACTICAL PACE, WEAPON AT THE READY

Firing from Openings

If you're using a window or similar as a firing position, there are a few things to keep in mind.

- **Stay as far inside the room as you can get while still being effective.** You want to try to position yourself so that your muzzle does not extend out to where others can see it. You also want your muzzle flash and muzzle smoke to be inside the room as much as possible.

EXPECTING THE ENEMY TO COME FROM THE DIRECTION HE IS FACING, THIS RIFLEMAN HAS BACKED AWAY FROM THE WINDOW TO PRESENT A SMALLER TARGET TO THE ENEMY AS WELL AS FOCUS MORE SPECIFICALLY ON A GIVEN ARC OF FIRE.

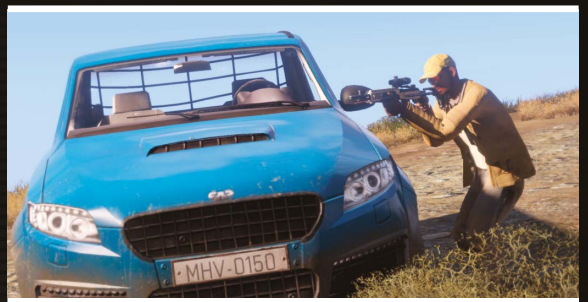
- **Go prone if you need to move around a room.** Excessive movement when standing will only telegraph your position changes to the enemy. This can be catastrophic if a sniper is observing you.

- **Adjust your stance according to how far away you're shooting.** Stay as low as possible, only rising when necessary to engage closer targets or to obtain a different firing angle.
- **Always try to position yourself at and look out from the side of a window opposite of your rifle side, so that only your rifle and part of your body is visible.** Placing yourself on the left side of the window means that, as a right-handed shooter, the majority of your body will be protected by the wall. If you use stance adjust to shoulder your weapon on your left shoulder, you can fire more safely from the right corner of a window.

CRAWLING TO CHANGE POSITIONS BENEATH SHATTERED WINDOWS

Vehicles as Cover

In a pinch, vehicles can be used to provide cover from enemy fire. The effectiveness of this depends largely upon the type of vehicle used. A motorcycle obviously isn't going to do anything for you aside from guarantee that the enemy gets a few laughs after they plug you full of holes, whereas the burned-out hulk of an armored vehicle will shield you from a great many things and potentially allow you to survive a situation that you otherwise wouldn't.



A GUERRILLA TAKES AIM OVER THE ENGINE BLOCK OF A PICKUP TRUCK

When working with infantry, armored vehicles will oftentimes use their bulk to shield infantry forces from small arms fire, and good crews can even use their vehicle to provide moving cover to infantry elements. This is discussed in more detail later in the "Combined Arms" section. For now, here are some basic guidelines you can use when using vehicles as cover.

Guidelines for Using Vehicles as Cover

- **Get as far back as the situation allows.** Arma vehicles have a nasty tendency of exploding or catching fire when heavily damaged, and you don't want this to take you out as well. The further the enemy is from you, the further back you can safely get from the vehicle. If they're close, you may have to tuck in pretty tightly and accept the risks that brings.
- **Urban prone,** the lowest stance adjust, can allow you to more easily see or fire under a vehicle you're taking cover behind. While you won't be able to use your sights easily in this stance, it works very well for putting fire on close enemies in an unexpected fashion. When shooting in such an unusual stance and situation, don't be picky about what you're aiming at - if all you can see is their feet or legs, take the shot. A solid leg hit will reward you with the rest of their body falling into view shortly, ripe for follow-on shots. The sideways stance adjusts when prone can also be used for the same effect.

A VARIATION OF URBAN PRONE BEING USED TO SHOOT UNDER A VEHICLE

THIS RIFLEMAN HAS TAKEN COVER BEHIND THE MRAP'S WHEEL, EXPOSING AS LITTLE OF HIMSELF TO THE ENEMY AS POSSIBLE

- **Wheels act as good cover,** so use them whenever possible. Depending on the elevation of the enemy relative to you, lying anywhere but behind wheels may leave you vulnerable to their fire. Note also that ricochets in Arma 3 can complicate this process. In short, get behind a wheel or consider a hasty move to better cover.
- **If using a manned vehicle (such as light armor) for cover, ensure that you are not so close that sudden vehicle movements will injure or kill you.** Make sure you communicate to the crew that you are nearby, and that they should be cautious when moving.
- **A good armored vehicle crew can use their vehicle to provide moving cover to infantry elements.** This can be useful when approaching an enemy position from a direction that provides little natural cover or concealment. The primary thing to remember in such a situation is that the infantry should avoid bunching up behind the vehicle, as that can result in a number of less-than-desirable results such as "getting pancaked when the vehicle has to back up urgently" and "being blown into kibbles by the vehicle exploding".

Buddy Cover

Desperate times call for desperate measures. If things have really gone to hell, keep in mind that the bodies of the fallen, friend or foe, can provide life-saving protection from enemy fire. If your team has been chewed apart by an ambush and you can't possibly run for cover without getting mowed down, try hunkering down behind a dead body and using it as cover while you return fire on the enemy. It's not pretty, but it can be the difference between winning the fight and joining the dead.

EMPLOYING 'BUDDY COVER' DURING A TOUGH FIGHT

COMBAT MARKSMANSHIP

Every Player A Rifleman First

Every Arma 3 player is a basic rifleman first and foremost. You may plan to fly helicopters, drive tanks, or act as a medic, but at the end of the day you need to know how to proficiently handle the most basic tool of the infantryman: the rifle. There ***will*** come a time when it will be the only thing you have to save your virtual life or the virtual life of a teammate.

Tanks can get disabled, helos can crash, mortar teams can find themselves subject to close attack, ditto with artillery crews - when it's down to the wire and every shot counts, don't be the one to let your teammates down with your shoddy marksmanship.

Rules of Engagement

Rules of Engagement ("ROE") are the guidelines leaders issue to govern the employment of their troops' personal weapons. For our purposes, we have three ROE states and are assumed to be operating under a baseline "universal ROE" state otherwise. One of the specific states, "Weapons Tight", is very rarely used. More commonly you will get either a "Hold" or "Free" state, and common sense is liberally applied to both to ensure ideal results. These are very important to know, as the basic rifleman must know **when** to use their weapon, and not just ***how.***

Note that in some missions, specific buildings, vehicles, or objects may need to be captured intact. In these cases, a leader will issue ROE that accounts for this. For example, he might tell all players to not fire at a given truck, and to carefully control any fire at enemies near that truck.

We'll look at Universal ROE first, then move on to the more specific ROEs afterwards.

Universal Rules of Engagement

The most common concept applicable to Arma ROE is dubbed the 'Universal ROE'. This state is in effect **unless told otherwise**, such as during a special mission briefing or when given a more specific ROE during a mission.

Universal ROE requires a player to understand how the **Proximity**, **Awareness**, and **Danger** of the enemy threat factors into shoot or no-shoot decisions.

- **Proximity** is the distance that an enemy unit is from you. Closer enemies are potentially higher threats, but a close enemy without awareness of you (or other units) does not require immediate engagement.
- **Awareness** is how much information the enemy has about your presence or location. Enemies that are aware of your presence are very high-priority threats, though proximity and danger must be considered as well.
- **Danger** is how much of a threat the enemy is to you or other units. Anti-tank units that are in close proximity and aware of friendly armor are very dangerous and should be engaged promptly. On the other end of the spectrum, an unarmed enemy may be close and aware of friendlies, but unless they have a radio to communicate with their other teammates, they are not a significant danger. However, the presence of a radio and an intent to communicate makes them a potentially dangerous threat.

The guidelines for Universal ROE are as follows:

- **You may always act in the defense of yourself and your teammates.** If the enemy is about to engage a friendly, you do not need to ask permission to fire. Act first, save your life or the life of your teammate, then call in a contact report.
- **You may always return fire when fired upon.** Identify your targets before engaging them, but do not hesitate to engage when the enemy is engaging you.
- **When time permits, ask for clearance to fire before taking action.** This only applies to situations where you and your teammates have the initiative, such as when coming upon enemies that have not yet spotted you. Doing this allows leadership elements to control the initiation of fires more precisely, generally resulting in more effective results. Advance warning also allows other teammates to get better positions before the engagement begins.

Weapons Hold

The first of the more specific Rules of Engagement is "Weapons Hold". When in "Weapons Hold" mode **only engage if there is an imminent threat to you or a fellow team member,** but only continue engaging if necessary. If an element comes under effective enemy fire, they are authorized to return fire in order to achieve fire superiority and suppress or eliminate the enemy. If it is not effective enemy fire, such as what might happen if the enemy attempted "recon by fire", the element is expected to hold fire and wait for their leader to issue further commands.

Weapons Hold is generally used by a team leader to restrict their element's fire in situations where stealth is paramount.

Weapons Tight

Only engage positively identified enemy targets and get clearance from your team leader before firing the initial shots of a contact. This ROE is used when civilian contact is likely. "Positive identification" often comes from the uniform being worn, presence of a weapon, and firing in the direction of friendly forces. Note that "Weapons Tight" is very rarely issued by itself, but is an organic part of the Universal ROE described above.

Weapons Free

"Weapons Free" means that you are free to engage anything that you have reasonable certainty is a hostile target. Weapons Free abides by the Universal Rules of Engagement concepts, with the difference being that it is generally issued once things have really heated up, with less emphasis on calling contacts before engagement, and more emphasis on rapidly engaging any enemy threats as soon as they present themselves and can be effectively engaged.

Weapon Safety

Though it sounds a bit silly, one excellent way to prevent negligent discharges (the act of firing your weapon without intending to) is to keep your "trigger finger" off of the "trigger". In gaming terms, this means that you must simply rest the finger you use to fire on your middle mouse button, as opposed to the firing button - this is done when you are not actively engaged in combat.

The failure to do this in the past has resulted in a variety of easily preventable mishaps, ranging from spoiling an ambush to giving away a stealthy approach, as well as several friendly fire incidents.

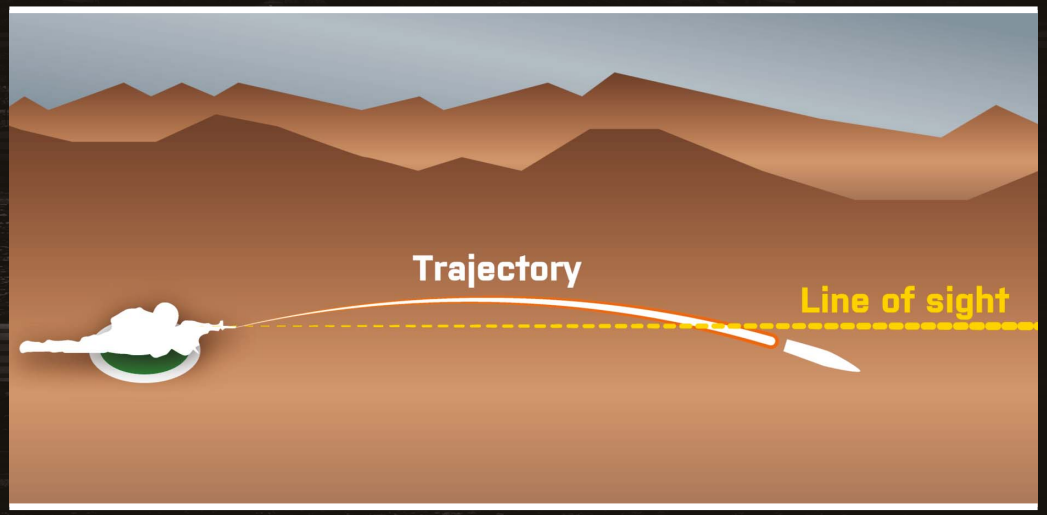
In the event that you need to alt-tab (switch focus away from Arma and to another program temporarily) for whatever reason, hit your Escape key or bring up your in-game map before doing so. When alt-tabbing back into Arma, a mouse click can be interpreted as a shot. Having your Esc menu up, or your map, will prevent this undesired behavior.

Basic Marksmanship

Pulling a trigger - or rather, clicking the mouse button - is easy. Anyone can do it. Anyone can make bang-bang noises and throw bullets downrange haphazardly. The part that matters though - the marksmanship with which those rounds are delivered - takes some knowledge, practice, and skill to hone and maintain. Basic marksmanship is a skill that we encourage all players to practice. The process starts with learning how it all works, which we'll go into now.

Ballistics, Sight Pictures, & Holds

Once fired, a bullet follows a ballistic arc determined by gravity, air resistance, bullet design, etc. Since the muzzle sits below the sights, the weapon's barrel and sights are intentionally at slightly different angles, this in turn causes the bullet to cross the "point of aim" (where the sights are pointing) twice. The first intersection is at close range - less than 50 meters from the weapon, after which the bullet will be slightly above the point-of-aim - while the second intersection happens at what is called the "zero range", which is the range a weapon's sights are calibrated for. After that, the bullet will start to drop below the point of aim. Knowing where to expect the bullet to be at any point along the trajectory helps you to compensate via "offset aiming" for targets that are at ranges other than what your weapon was zeroed for. You can see this basic concept illustrated below.

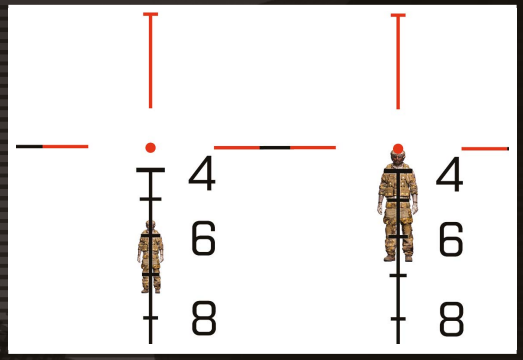


Sight Usage

The term "sight picture" refers to the way the front sight, crosshair, or reflex dot is oriented relative to the target being engaged. The typical sight picture you want to achieve is that of the center-of-mass hold, which is where the sight rests on the upper chest of the enemy, or the center of their visible mass. This is intended to give you the best possible chance of hitting them. If they are further away than you thought, and your bullet drops more than you were expecting, the shot should still land on their body. The same can be said for people who are closer than you realized.

With a good center-of-mass hold, you can expect to reliably hit standing targets out to 300-400 meters. The smaller the target, the more likely that you'll be forced to use the 'offset aiming' technique to score hits. This is simply the process of aiming over your target if you're shooting low, or to the side if the round is landing beside them. Offset aiming is generally required with fixed red dot optics, such as the ACO or Holosight. With ironsights, the sight distance can be adjusted. Pick a range that fits where you expect combat to most likely occur, and make this your "battlesight zero". If you begin engaging targets at longer ranges and need more precision, adjust the sights accordingly.

When working with magnified optics, many will have what is known as a Ballistic Drop Compensator ("BDC"). This is a feature of the reticle that has horizontal hashmarks descending down the central sight line - often with numbers beside them. These numbers correspond to ranges in hundreds of meters. To hit a target at a given range, simply align them with the corresponding hashmark. Most BDCs have horizontal marks that correspond to the width of a human's torso, shoulder-to-shoulder, at the given range - this helps for estimating ranges. In the below illustration, the left sight is aligned with a 600 meter target, while the right one is aligned at 400 meters.



Note that an enemy's rifle or other weapon can potentially block a bullet, and absorb the damage. Also note that some enemies may be wearing body armor - if shooting them in the chest isn't stopping them, transition to head shots or pelvic shots, depending on what is available to aim at. Head shots will immediately kill, while pelvic shots will drop them to the ground, unable to run - at which point additional shots can be delivered for lethal effect.

Finally, remember that when shooting at distant targets whose range may be unknown, it's generally better to aim low and work your way up. Aiming low allows bullet impacts against the terrain to be seen, giving a visual representation of how much you need to adjust your sights or hold-over to correctly engage the target.

AN UPPER-CHEST CENTER-OF-MASS HOLD AT CLOSE RANGE. THIS IS AN IDEAL SHOT, AND WILL RESULT IN A FATALITY - ASSUMING THE ENEMY'S RIFLE DOESN'T BLOCK IT!

Bore Offset

One other thing to remember is that **the origin of the bullet will be from the actual weapon muzzle, and not the center of the screen** as in some games. Because of this, you have to keep in mind that your weapon sights are a few inches above the rifle bore. If you do not take this into account, you will occasionally find instances where you're shooting into the ground (or an obstacle) even though your sights give you the impression that you have a clear line of fire. This becomes more pronounced if you are using the backup sights on a scope. Because of the size of the scope, the backup sights will end up significantly higher above the bore than otherwise, leading to an even larger discrepancy between bore line and sight line.

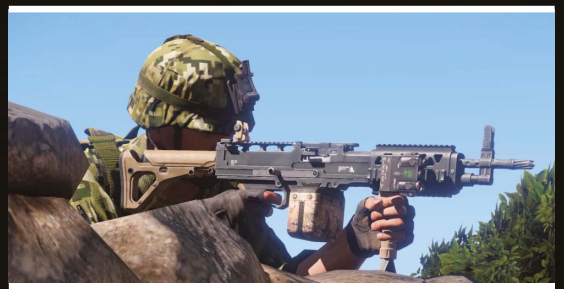
Note that the Arma 3 crosshair will indicate if something is close to the bore by shifting position backwards to reflect where the bullet will strike. This is an easy way to tell if your muzzle is masked by an obstruction.

Elements of a Good Shot

Several things influence the accuracy of your fire in Arma 3. The more elements you have in your favor, the better your accuracy will be.

The specific factors are as follows:

- **Stance.** You will be more accurate the more stable your stance is. You are most accurate when prone, less accurate when crouched, and least accurate when standing. In some unusual stances you may not be able to get a proper sight picture, reducing your capability for aimed fire.
- **Stamina.** If you're exhausted from sprinting all over the place or carrying heavy loads, your sights will drift and jostle around until you've recovered, making accuracy difficult.
- **Breath control.** If you use breath control properly, you'll be able to shoot more accurately than someone who doesn't. Ensure that you have this feature bound to a readily accessible key, as it will come in handy more than a few times during every mission. Holding your breath for too long will cause your stability to degrade, so make sure you only use this when you're just about ready to take your shot.
- **Wounds.** If you've taken damage, particularly to your arms, your ability to hold a rifle stable will be compromised. The only thing you can do to correct this is to find a medic and be healed.
- **Weapon Support.** In some mods you can rest your weapon upon suitable surfaces, such as sandbags, window sills, walls, the hoods of vehicles, and more. This allows you to take a higher stance than prone, without being penalized in accuracy. Bear in mind that supporting your weapon on an object will only work if you stay in that spot while 'deployed'.



SUPPORTING AN MK200 ON A STONE WALL

Moving Target Engagement

Being able to engage a moving target at range and land hits in the first few shots is a skill that takes time to master. The payoff - being able to land shots on enemy that think they're moving too fast to be tracked - is definitely worth the effort invested in mastering the skill. The amount of lead needed to hit a moving target varies with the muzzle velocity of the weapon used, as well as the distance to the target and their movement relative to you.

Bear in mind that targets moving at shallow angles require less lead, while those running directly towards or away from you require no lead.

At ranges out to around 250 meters you typically only need to lead the target by a few body widths, depending on the speed they're moving relative to you. If a target is coming directly towards or away from you, no lead is required. If they're moving at an angle to you, less lead is required. If they're sprinting perpendicular to you, you'll need to use a great deal of lead at extended ranges, and will be best served by massing fire with other friendly units to take the enemy down.

A SHALLOW LEAD ON A SPRINTING ENEMY AT CLOSE RANGE.

When it comes to gunning in a vehicle (such as a helicopter door gunner), remember that you need to **lead targets based upon the direction the vehicle is moving.** If you have to to traverse your weapon to the left to continue to track a target, lead the target to the left. If you have to traverse right to track, lead to the right.

Terminal Ballistics

Terminal ballistics in Arma 3 consist of a few different aspects: Penetration, ricochets, wounding, and, in some mods secondary fragmentation.

First off, Arma 3 models **bullet penetration** based on the caliber and speed that a bullet impacts at. Because of this, you will see heavy machineguns punching through walls easily, while rifles will have lesser penetration - and submachineguns and pistols will be weakest of all. It is important to remember that just because an enemy has ducked behind a wall, they are not necessarily safe. If you have a suitable weapon, you may be able to negate their cover through sheer firepower. Note that if a bullet passes through a structure, it will deal less damage to the structure, due to not having expended all of its energy on it.

Ricochets are another aspect of the terminal ballistics model. When a round strikes something at a suitable angle, it will have a chance of ricocheting away. These ricochets can pose a danger to anyone in their path, though they are generally less lethal than their full-speed counterparts. Note that high-explosive cannon rounds are the exception to this. When they hit, regardless of their speed, they'll explode and do great damage to anything nearby.

Finally **terminal ballistics on human targets** are based on where exactly the person is hit. Leg and arm shots do the least damage, while torso shots do a lot of damage, and most head shots are immediately fatal. Armor can also provide some protection if worn - vests for your torso, helmets for your head.

Note that some mods introduce **secondary fragmentation** into the terminal ballistics model - if a bullet, cannon shell, or rocket hits a solid wall and penetrates it, it can cause fragments of the wall to project out of the far side of the wall in a cone-shaped spray, wounding anyone unfortunate enough to be in the way.

Tracers

Many weapons in Arma 3 fire tracer bullets every few rounds. Tracers are bullets that use an incendiary material to make their flight visible - this helps to adjust fire at distant ranges. There are a few quick things that need to be conveyed about tracers in Arma 3:

- **Weapons can fire what are known as "dim tracers".** These tracers are not visible in daylight, and can only be seen at night with the aid of nightvision goggles. These are excellent to use against enemies that do not have nightvision equipment, but aren't a common thing to find.
- **Most weapons that fire tracers will have a mix of four bullets followed by a single tracer.** So, for every tracer you see, there are four other bullets that you don't.
- **Many weapons will have several tracers in a row at the end of the magazine or belt of ammunition, to indicate that the shooter is about to run out of ammo on that mag or belt.** When you see two or more tracers come out one-after-the-other, that's a good indication that you're about to need to reload.
- **Tracers burn out after a specific distance. It is very important that machinegunners are aware of this fact!**
  - Just because the tracer extinguishes, does not necessarily mean that the bullet impacted the ground at that distance!
  - Tracers can burn out anywhere from 700 to 1000 meters or more from the weapon muzzle.
  - When firing at distant targets, you may need to use an assistant to spot the fall of the rounds (indicated by dust or dirt being kicked up in the impact area), and not simply rely on where the tracers extinguish.

Reloading & Ammo Management

The act of reloading is one that many people don't put a great deal of thought into initially. However, it can easily be the difference between combat effectiveness and outright death. I've assembled various tips and bits of information here in the hopes that the knowledge will help everyone to understand what needs to be kept in mind when reloading.

Reloading Tips & Considerations

- **Always strive to reload behind cover or concealment.** At the very least take a knee to reduce your profile, or go prone if the situation dictates. You can reload and move at the same time, so if there's cover or concealment nearby, go for it.
- **Know when to call out a reload or that you're out of ammo.** There are certain circumstances in which a player will want to verbally call out that they're reloading their weapon. This is done based upon how significant it is. If you are just a rifleman and there's a squad-sized firefight happening, you will not need to call out that you're reloading, because your weapon being down for only a few seconds will not have an influence on the fight. However, if you are providing a great deal of the firepower of a fight and have a weapon that takes a significant amount of time to reload (for instance, as the automatic rifleman for a fireteam that is working on its own, or as something like a Mk-32 gunner) or are a critical element (e.g. anti-tank or crew-served), you will want to give the status of your weapon so that friendly units can react accordingly. Let common sense dictate when or if you verbalize that a reload is imminent or happening.

  When calling out a reload, simply **state your weapon type, what you're doing, and anything your teammates should do to react to it,** i.e. **"Mark-32 reloading, give me some cover".** When the reload is complete, simply state "(weapon type or player name, depending on which you gave earlier) up!".

Types of Reloads

There are two main types of reloads in Arma: The tactical reload, and the dry reload. Knowing the use of each will help you to make the right reload decisions during your fighting. All reloads will result in your character retaining the partial magazine, only empty magazines are discarded.

Note that in some realism mods you do not have a "bullet counter" on your heads-up display ("HUD") to check your magazine. Instead, you'll need to press a special key, which will give you a rough idea of how many rounds are remaining in your current magazine. You can also check the current ammo capacity of a magazine by looking at your inventory, and can load specific magazines via dragging them from your gear to your weapon in the inventory screen.

Tactical Reloads

A tactical reload is a reload done during a lull in the action to replace a partially full magazine with a fresh one. You should check your magazine before doing anything dangerous (e.g. Close-Quarters Battle ("CQB")), assaulting an objective, etc) and do a tactical reload if you have less than a full magazine, or any doubt as to the capacity of your current magazine. The worst sound in combat is hearing a click when you want to hear a bang.

Dry Reloads

The other form of reloading is known as a "dry reload". This is a reload that is done on an empty chamber, meaning the magazine has been completely expended. Dry reloads are completely acceptable in a great many situations, such as when acting as a base-of-fire element in which you're sustaining a heavy rate of fire on a distant target. However, there are certain situations in which a dry reload is to be avoided - namely, close-quarters.

RELOADING AN EMPTY MAGAZINE ON AN ACP C2

Jams & Malfunctions

A jam is a stoppage which results in the weapon not firing a round when the trigger is pulled. This can happen for a variety of reasons, none of which are modeled in any significant capacity in Arma 3, though they can show up in realism mods. A jam is typically arbitrated a bit, either requiring a reload to be initiated to correct it, or an action menu 'Clear Jam' option to be used.

If your weapon jams in a serious situation (ie: in CQB), loudly exclaim "**MISFIRE, MISFIRE!**" or "**JAM, JAM!**" on direct-speaking comms so that your teammates will know to cover you while you correct the stoppage.

Depending on where you are and where the enemy is, you may want to take a knee while clearing a stoppage so that a teammate can fire over your head to cover you.

It should come as some small comfort to know that most weapons are not prone to jamming with any regularity. However, if it happens at a bad time, and a player is not ready to deal with it, it can cost them their virtual life.

Ammo Management

It is important to stay aware of the number of full and partially-full magazines you have at all times. Failure to do this can result in 'going dry' in the middle of a fight without warning, which can easily result in severe bodily harm, death, or even capture.

Retention of Partial Magazines

When doing a tactical reload, the magazine that is taken from the weapon is retained for later usage. When reloading, the character always grabs the magazine with the most rounds in it, leaving the least-full magazines for usage later on. It is important to maintain awareness of the number of partial magazines remaining. You can find this out by looking at your inventory and checking the bar indicator beside partial magazines. A full bar is a full magazine, a half-full one is a half-full magazine, and so on.

To help prevent having a false sense of how many full magazines you have from getting you killed, try to avoid reloading with only a few bullets in a magazine, unless the urgency of the situation demands it. Having a fresh magazine in your inventory is far better than having several quarter-full mags occupying inventory space.

WITH THE INVENTORY INTERFACE, YOU CAN SEE THAT THE LOADED MAGAZINE IS ALMOST EMPTY, WHILE THE TWO MAGAZINES STORED IN THE UNIFORM ARE ONLY PARTIALLY FULL. TIME TO CHECK THE VEST!

There are some mods in which you can actually combine partial magazines to create full ones. While the process can take some time, it's something worth considering during a significant lull in combat - just make sure not everyone is repacking their magazines at the same time!

The "Three Mag" Rule of Thumb

As a general rule of thumb, three magazines are the bare minimum needed for an individual rifleman to fight their way to resupply, or to safely withdraw from a firefight. Once down to only three magazines (of which it is likely that some of them are not fully-loaded), a player should be working towards getting resupply with the help of their team leader.

If your character is sporting a rucksack, the best advice is to maintain a reserve of three or four magazines stowed safely away in your ruck. Use them as an "emergency stash" that you only tap into if the situation is getting desperate. Since your character will not automatically reload from their ruck, this will ensure that even if you shoot through every available magazine in your inventory, you will still have your reserve stashed away and accessible in your rucksack.

Enemy Weapons

In the event that you run completely out of ammo and cannot resupply, enemy weapons can be used in a pinch. The only rule here is that you need to notify your teammates that you're using an enemy weapon: If not, friendly fire can happen very quickly, to your dismay. Try to avoid doing this whenever possible, as it can lead to a lot of confusion, such as slowing friendly reactions and sowing doubt into target identifications. The more elements are involved - particularly supporting elements like aircraft or armor - the more dangerous this becomes.

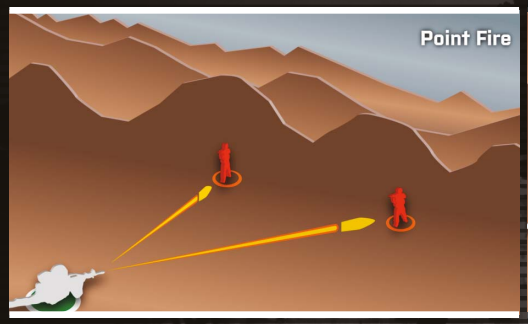
Types of Fire

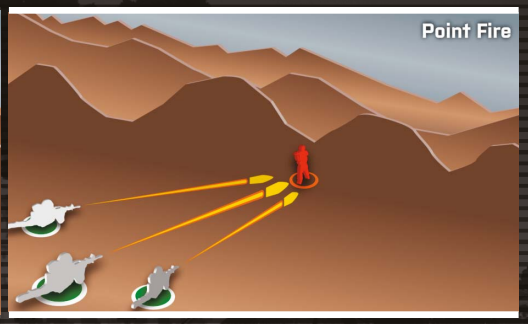
There are several distinct types of fire that can be utilized in Arma 3. We'll cover most of them here so that everyone is familiar with the terminology and the principles behind them. The one that you will hear most frequently as an infantryman is "area fire", but the rest is also useful and good to know.

Point Fire

This is the most basic type of fire. In this, you see the enemy clearly enough to be able to aim at them directly and fire upon them. The effectiveness of point fire depends on the sights, accuracy, and killing power of the weapon being used. Point fire is most effectively delivered at a deliberate pace, with each shot being aimed. The tactical situation may require a more rapid engagement method, however.

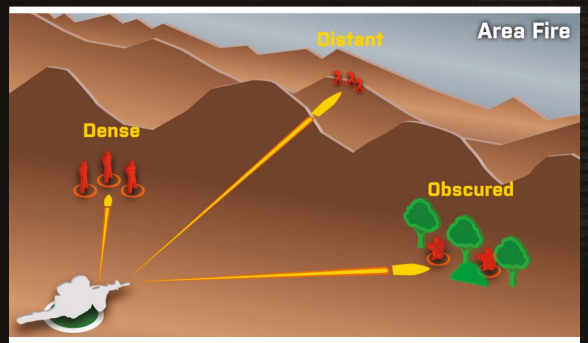
When an element is using point fire, it's typically done against a very visible target or group of targets that can be engaged with precision. An enemy squad ambushed in the open, for instance, would be an example of a situation where element-level point fire would be employed. A soft-skinned vehicle such as a transport truck would be another good example.





Point fire could also be used if a fireteam was trying to suppress and destroy a specific building or bunker, etc.

Area Fire



LEADERS, NOTE THAT AREA FIRE WILL NOT ALWAYS COME NATURALLY FROM AN ELEMENT AND WILL FREQUENTLY HAVE TO BE SPECIFICALLY CALLED FOR, ESPECIALLY WHEN FACING AN OBSCURED TARGET

This technique places a volume of fire on a specific area instead of a specific individual target. It can be used to place fire on enemy units that are obscured, massed, or at such a range that point fire becomes slow and ineffective to use.

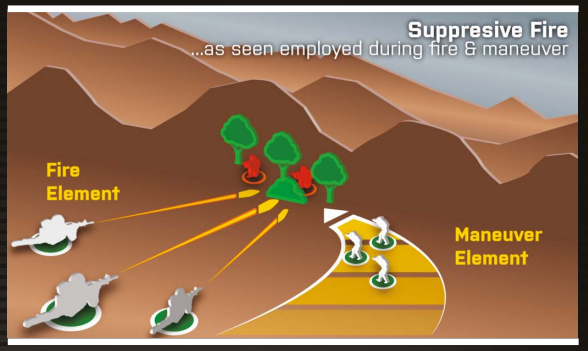
When an element is laying down area fire, each individual shooter aims at **known**, **likely**, or **suspected** locations of enemy soldiers - or at clusters of the enemy, in the case of using it against massed or distant targets - and sprays them with fire. The emphasis is on a concentrated, heavy volume of fire. The more bullets sent towards the enemy, the greater the chance one will hit its mark, and the more likely the enemy will become suppressed by the volume of fire.

Area fire is typically done at a faster pace than point fire, but not quite as fast or high-volume as suppression.

Suppressive Fire

This is the act of putting a high volume of fire on an enemy position to prevent them from being able to return effective fire.

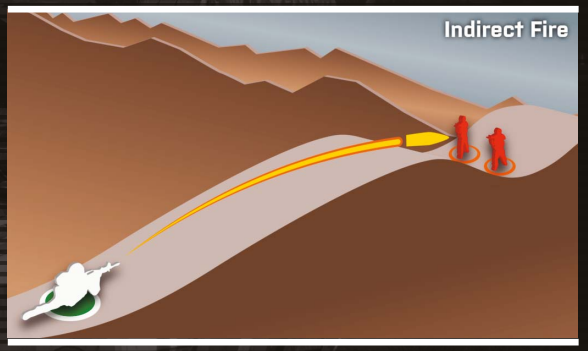
Note that suppression is only effective if you can make the enemy believe that popping up to return fire is going to result in them being hit or killed. You don't have to actually hit them, but you **must** make them think that you can and might if they don't take cover. Suppression can be used to "fix" an enemy force while another element moves around to their flank to catch them in their unprotected or otherwise vulnerable side.



Suppressive fire is typically done at a very rapid rate to begin with, which achieves fire superiority. Once fire superiority has been achieved, the suppressing element can slow the pace of their fire to facilitate ammo management, provided that they aim and pace their shots in a fashion that maintains effective suppression of the enemy.

Indirect Fire ("IDF")

Indirect fire is simply fire that is placed on a target or location that follows a steeply arced trajectory, allowing it to be placed into areas that are out of direct view of the gunner. Indirect fire can be used to cover "dead space" that is out of view of any direct-fire assets (e.g. machineguns, rifles, etc).



At the platoon level, indirect fire typically comes from grenade-launching weapons like the Mk-32 Grenade Machinegun or the 3GL grenade launcher. Mortars and artillery are the big brothers of the 3GL and Mk32 when it comes to indirect fire.

One great aspect of indirect fire is that the enemy has a much harder time returning fire when it is employed from out of sight. That way the source is more difficult to locate, and even after location, the enemy cannot use direct-fire weapons and must rely either on their own indirect assets or movement towards the source of fire.

Recon by Fire

Recon by fire is where shots are placed into an area to try to flush out the enemy or get them to begin firing, thereby giving away their positions. This is used when stealth is no longer a concern. Firing into a wheat field that may be hiding enemy forces is one example of recon by fire.

Recon by fire can be used in a defensive position if one suspects that the enemy is lurking in a given nearby area. Firing into the area may cause them to think that they have been spotted, and in turn begin firing back, exposing their true positions.

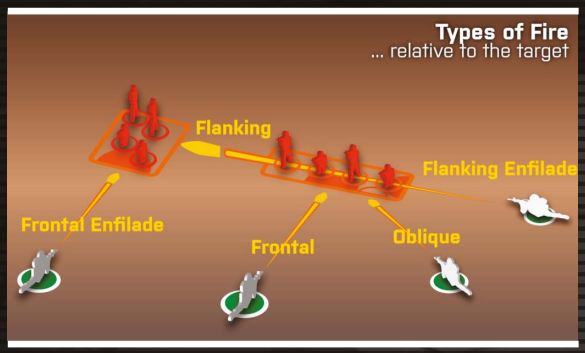
Pursuit by Fire

This is the process of "chasing" a retreating enemy not by physically following them, but rather by firing at them as they withdraw. Pursuit by fire can be used after taking an objective - you want to maintain a hold on the newly-secured area, and thus you 'pursue' any retreating enemies with small-arms fire instead of physically following them.

Types of Fire, Relative to Targets

Illustrated

This diagram should say it all. Just to be safe, though, we'll cover it in more detail:



- **Enfilade** fire is fire that coincides with the long axis of the target.
- **Flanking** fire is hitting a target in the side.
- **Oblique** fire is hitting a target from an angle.
- **Frontal** fire is hitting a target from the front.

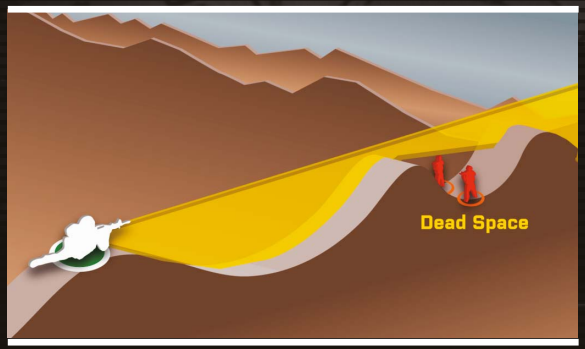
Flanking, oblique, and frontal fire can become enfilade fire simply based upon the orientation of the enemy formation relative to the shooter's position.

Enfilade fire is the most damaging - the gunner only has to make small adjustments to their fire to engage multiple targets, and rounds that miss one enemy may very well hit another one further back in the formation.

Dead Space & Defilade

Dead space is defined as *"an area within the range of a weapon that cannot be covered by fire due to intervening obstacles, the contour of the ground, or the trajectory of the weapon"* (Close Combat Marine Workbook).

The key thing to remember about dead space is that it needs to be covered in some capacity when defending - either by indirect fire (UGL grenadiers, mortars, artillery) or the defense must be situated such that it renders the benefit of the dead space null and void (ie by ensuring that machineguns are covering the exits of a draw).



When on the attack, "dead space" becomes **"defilade"** - meaning that it acts as protection from enemy direct fire and observation.

GEAR & WEAPONS

Gear

Gear Customization

Arma 3 sees the introduction of a modular gear system in which a player can more finely control what he's wearing and using in-game. The gear customization comes in the form of several different pieces of equipment that can be swapped out before or during a mission to tailor a unit to a specific task - including basic uniform, headgear, load bearing gear, armor, backpack, glasses and masks.

Each item carries with it a tactical significance. Uniforms provide concealment and faction identification. Headgear can provide ballistic protection from enemy fire and shrapnel. Vests determine both carrying capacity as well as potential armor protection. Glasses can provide protection as well as enhanced capabilities through heads-up displays. Finally, backpacks give extended carrying capacity.

The ability to change these gear elements during mission opens the possibility for interesting gameplay potential - a downed pilot may choose to remove his flight helmet to make him less visible, while special forces troops may acquire enemy uniforms for the purposes of infiltration in missions that have been designed for such gameplay. Heavy backpacks full of gear can be left at a rally point to unencumber soldiers for an assault, or a medic may provide a medical backpack at a centralized location during a defense to give soldiers easy access to medical supplies.

Let's take a look at a few closing notes about some of the considerations made when choosing different types of gear.

Helmets versus Hats

The obvious distinction between helmets and hats is the protection they provide. Helmets are capable of stopping lower-energy impacts, such as pistol bullets, shrapnel, and rifle rounds at longer ranges. Hats on the other hand give no such protection. However, it's worth noting that camouflage hats can help to break up the silhouette of a shooter and also tend to weigh less. While most soldiers will be better off operating

DIFFERENT HELMETS, A BOONIE HAT, AND TWO BALLCAP HATS (ONE WITH RADIO MIC)

with their helmets on at all times, there are some roles in which ditching a helmet might be the preferred route - such as recon troops behind enemy lines who aren't looking to get into a fight in the first place.

Plate Carriers versus Load Bearing Vests

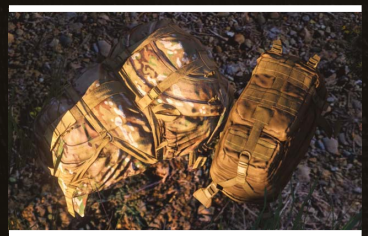
When choosing what to wear in the vest slot, players have two basic options: Load bearing gear, without any armored protection, or plate carriers. Plate carriers are armored vests that can stop pistol bullets, shrapnel, and can absorb several impacts from common rifle rounds before they're penetrated. Plate carriers and other armor systems have pouches on them to store grenades, magazines, first aid kits, and more; while load bearing vests carry the same gear, but without the protection. Plate carriers, like helmets, are heavier items, with load bearing vests being lighter. The same general distinctions can be made with them as with helmets vs hats. Scouting units that are not expecting contact may be able to move faster and more easily by not carrying heavy armor with them, while frontline soldiers will do far better to wear the armor.

NO VEST | ARMOR PLATE CARRIER | BANDOLEER | LOAD BEARING VEST WITHOUT ARMOR

Backpacks

Backpacks (also known as rucksacks) come in a variety of sizes. Depending on the mission, choose the type that fits best. Small assault packs can carry extra ammo, first aid, grenades, and similar, while heavier packs can fit larger items like spare anti-tank rockets, mortar rounds, demolitions, etc.

Backpacks retain whatever is loaded in them when placed on the ground. This allows for a backpack to be placed in a location to act as a common supply point. For example, a backpack full of ammo can be dropped in a building, allowing fireteams to resupply at it as needed. A medical backpack may be dropped at the platoon's aid station, permitting squads to resupply from it during lulls in the action. If a soldier carrying an important set of gear in his backpack is killed, another soldier can drop his own pack, pick up the dead soldier's pack, and retain the important gear easily.



IF YOU'D LIKE TO TAKE A LOOK AT ALL OF THE GEAR AVAILABLE IN ARMA 3, CHECK OUT MY PAPER DOLL GEAR MENU, SHOWN ABOVE.

Inventory System

The Arma 3 inventory system is significantly overhauled compared to prior games, in large part due to the new possibilities brought about by the modular gear components.

There are three primary load-carrying aspects of a character - the basic uniform has a limited capacity, while load bearing gear and vests act as the primary carrier for magazines, grenades, and other necessary gear. Backpacks - small and large - give extended capacity when the uniform and vest carrying capacity is insufficient for the mission at hand.

Each tab - uniform, vest, and backpack - will show the items stored with it. Each of these items is a container, if you drop your rucksack, the items will go with it, and anyone looking at the dropped rucksack will be either able to pick it up or take items from within it.

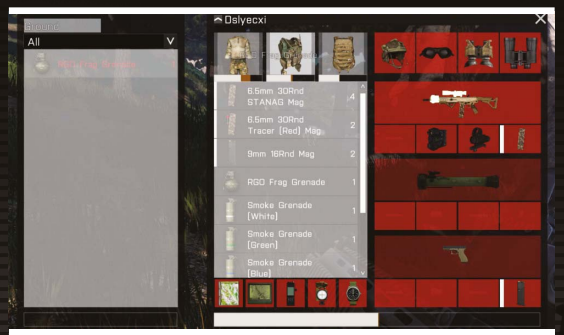
REARMING FROM A DROPPED RUCK

A bar at the bottom of each icon will show the carrying capacity used and available. When dragging an item into an inventory slot, an additional orange bar will indicate how much space the item will take up. Any slot that cannot fit an item will shade red, while capable slots will stay white. Moving an item to the ground or into an opened container (or vehicle) is simply a matter of clicking and dragging the item to the leftmost pane and dropping it there.

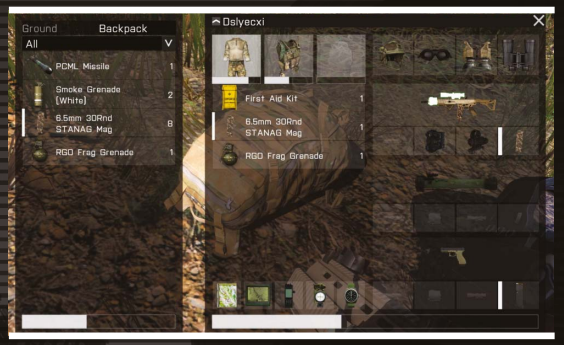
Keep in mind that you can choose where to store an item - either in the uniform, vest, or backpack - and that this choice matters. Aim to keep your essential gear on your uniform and vest, and put extra gear in the backpack. If you need to ditch your backpack in an emergency to move faster, you'll still have the important gear with you.

Special slots exist for each gear item, such as binoculars, nightvision, glasses, compass, radio, map, watch, GPS, etc, while weapons - primary, sidearm, and launcher - each get their own dedicated spaces as well as indicators which show any attachments for said weapons.

At the bottom of the inventory is a bar that shows your total encumbrance - the higher this is, the quicker you'll fatigue when running or doing other strenuous movements. Aim to keep this as low as possible while still retaining the gear you need to conduct your mission.



PICKING A GRENADE OFF OF THE GROUND TO STORE IN A UNIFORM POCKET



Weapons

Arma 3 boasts a huge variety of weapons with a diverse set of characteristics. Being familiar with all of the basic themes of sight types, weapon classes, etc, is critical to being able to employ the weapons effectively in combat. We'll start this section by discussing weapon modularity and the attachment systems, then move on to the different types of weapon sights, and finally look at the different weapon classes available and how they're best used in battle.

Modular Weapons & Attachments

Along with the modular gear possibilities, Arma 3 also introduces modular weapon components to primary, sidearm, and launcher weapons. These take three forms: Muzzle accessories, sights, and rail accessories. Some weapons have all three capabilities, while others are limited by design.

Each weapon has a set of primary sights, typically referred to as "iron sights". These sights are in use when no additional optic or sighting system is installed on the weapon and either fold away or are looked past once an optic is added. For weapons that have rail systems, a rail accessory can be added to them. This

A MK20 WITH DIFFERENT SIGHT ATTACHMENTS

includes infrared lasers as well as tactical flashlights. Finally, the muzzle accessory typically takes the form of a sound suppressor. Keep in mind that they're specific to the caliber of the round being fired; a 9mm suppressor is useless with a 6.5mm rifle.

Each item can be removed or swapped out during a mission, allowing for suppressors to be attached and detached as desired, for lights to be swapped out for lasers, and for sights to be changed if needed.

Weapon Sights

There are a variety of sight types that you'll find or be able to add to your weapons in Arma 3. The most common ones are listed and described below.

Ironsights

While modern infantry are more frequently moving away from ironsights where possible, they represent a fundamental aspect of marksmanship that every shooter should be comfortable and familiar with. Iron sights are simply non-magnified metallic sights that give you a reference on where your bullet will hit at the calibrated - or "zeroed" - range. There's nothing fancy about them at all. The main drawback to ironsights is that they obstruct your view - you cannot easily see impacts that fall below the "front post" of the sight at distances. Ironsights typically allow for sight adjustments out to 1000 meters, though they're most effective at targets closer than 500 meters due to the lack of magnification.

IRONSIGHTS OF AN MX RIFLE

Reflex Optics

Given the choice, a rifleman will generally find himself served better by a reflex optic - such as an ACO or holosight - than ironsights. Their benefits over ironsights are significant - they give clearer visibility of the target area thanks to the clear, large optic view, while the parallax-free aiming point shows precisely where the round will impact at the zeroed distance regardless of where in the sight window it appears. Reflex optics are superb for MOUT and CQB environments, as well as combat out to 400 meters. They can still deliver beyond that, of course, but they're best at or below 400 meters. Note that reflex optics do not offer range adjustments - most are zeroed for 300 meters; further engagements require a hold-over aiming technique.

THE ACO REFLEX SIGHT

Magnified Optics

When it's necessary to reach out and touch someone with violence at range, magnified optics are the way to go. Magnified optics - or "scopes" - span a variety of styles. There are fixed- and adjustable-zoom, with a wide range of magnification intensities. Sniper rifles understandably have very high magnification powers, whereas scopes intended for the rifleman tend to be lower in magnification, or include a range of magnification options. The main drawback of scoped weapons is that they tend to become more difficult to employ in closer battles, such as those found in an urban environment in which units must clear buildings, houses, et cetera. When put at a distance however, they shine quite brightly and are powerful tools. At closer ranges, most magnified optics offer a backup sight - described next - which helps to give them a place even in the close-quarters realm.

Scopes designed for the use of infantrymen typically have Bullet Drop Compensator - or "BDC" - reticles. These mark where the bullet will impact at given distances, making it possible to shoot accurately at long range merely by lining the target with the appropriate range marker.

VIEW THROUGH A FIXED-MAGNIFICATION RCO SCOPE

Backup Sights

Many weapons with magnified optics come with an integrated 'backup' sight that can be used when in close proximity to the enemy. Such backup sights help to give a scoped rifle user more of a fighting chance when things get up close and personal with the enemy. You don't always have the luxury of dictating how far away you'll be fighting from, and these backup sights let you adapt to less-than-ideal circumstances. Note that for most rifles, removing the optic entirely will cause the rifle's backup iron sights to flip up, instead of the backup sights that are part of the optic itself.

Generally speaking, a red-dot optic is a more accurate and usable backup sight than an iron sight.

Finally, note that the placement of backup sights - high above the weapon muzzle - means that your bullets will 'hit low' at closer ranges. When at very close range (less than 25 meters), remember that your bullet will strike several inches lower than you'd expect, so aim accordingly when precision is paramount.

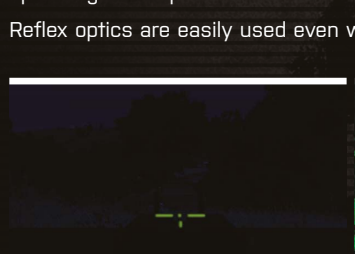
THE RED-DOT OPTIC ON TOP OF A HAMR SCOPE

Optics at Night

Optic usage during periods of low visibility - such as night - can be somewhat different than during daytime.

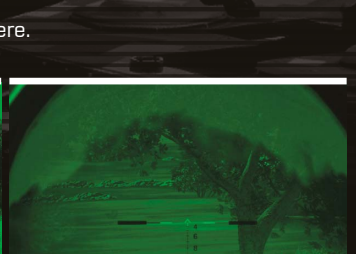
Ironsights can be enhanced by having luminescent markings on them - known as "night sights". In this example, the Mk20's night sights can be seen. The glowing green markers allow easy sight usage even when operating in complete darkness.

Reflex optics are easily used even with nightvision goggles, as seen here.



NIGHT SIGHTS

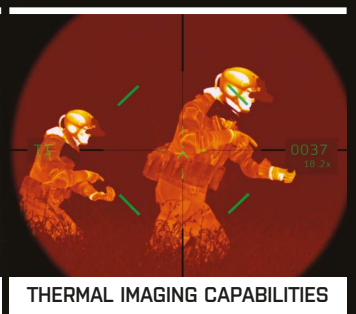
REFLEX OPTICS



LOW-POWERED MAGNIFIED OPTICS

Most low-powered magnified optics, such as the RCO, can be employed with nightvision goggles, as seen below.

However, higher-magnification optics - "sniper scopes" - are generally incompatible with helmet-mounted nightvision devices. Using them requires switching nightvision off, which can make for difficult target identification at night.



HIGHER-MAGNIFICATION OPTICS

THERMAL IMAGING CAPABILITIES

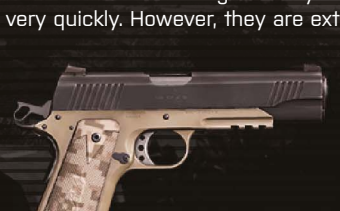
To make up for this deficiency, various different types of night scopes are available. Some have integrated nightvision scopes, while others offer thermal imaging capabilities and advanced features like automatic rangefinding.

While the general infantryman will find his optics working fine (=even when night falls, more specialized roles like designated marksmen or snipers will need to ensure that they've brought an optic that can continue to function even when night has fallen.

Weapon Types

Pistols

Pistols are hand-held weapons that are a intended to be used at short range. The maximum distance you should expect to use one at is about 50 meters. While firing beyond that is possible, the effects of the rounds will diminish significantly. Pistol rounds don't have much punch to begin with, and they lose velocity very quickly. However, they are extremely agile to employ in close quarters fighting.



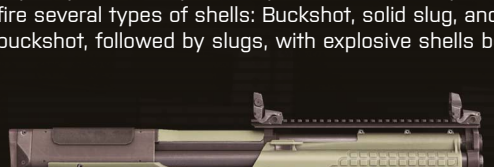
ACP C2

P07

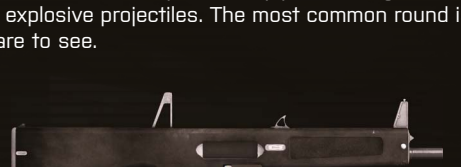
ROOK-40

Shotguns

Shotguns are similar to pistols in their range, but far exceed them in their damage-dealing abilities. Shotguns are exclusively meant for close-quarters engagements. They generally have a very limited magazine capacity, even compared to pistols, but make up for it with how much of a punch they pack. Shotguns can fire several types of shells: Buckshot, solid slug, and even explosive projectiles. The most common round is buckshot, followed by slugs, with explosive shells being rare to see.



BULLDOG



AA-12

Submachineguns

These are the next step up from pistols. Basically imagine a large pistol with a stock, a larger magazine, and that can shoot a bit further, typically with the addition of burst or full-auto modes, combined with very low recoil. Submachineguns generally lose their usefulness at around 100 meters. They are primarily CQB weapons. When equipped with suppressors, they can be very stealthy weapons to employ at night.

STING

VERMIN

Rifles

The mainstay of the infantry is the rifle. These come in a wide variety of styles and calibers, with an equally large variety of sighting systems and attachments. Depending on the type of rifle, you can expect to shoot with accuracy out to ranges of at least 300 meters, and typically out to 500 or 600 meters. They pack a punch that is considerably higher than submachineguns or pistols, and generally carry around 20 to 30 rounds of ammunition in each magazine. Rifles can come in all shapes and sizes, from close-quarters short-barreled rifles (known as "carbines"), up to much larger sniper rifles that can reach out and hit targets at over a thousand meters. This is the primary type of weapon you will utilize in combat.

MX CARBINE, 6.5MM

MK20, 5.56MM

MX RIFLE SPORTING A 4X FIXED-POWER RIFLE COMBAT OPTIC (RCO)

Machineguns

Machineguns are the next step up from the battle rifle. These have larger magazines - typically being belt-fed - and can maintain very high rates of fire. They are larger and heavier than rifles, but make up for it in their sheer lethality. A single machinegun can easily put out as much firepower as several well-equipped riflemen. They play a key role in the suppression of the enemy, allowing the riflemen to maneuver, and come in three main types - light, medium, and heavy. Light machineguns (like the Mk200) tend to fire lighter rifle rounds - such as the 6.5x39mm round used in the MX series of rifles. Medium machineguns use heavier rounds, such as the 7.62x51mm, and heavy machineguns are generally crew-served or vehicle-mounted and sling the upper range of rifle calibers - such as the .50 caliber BMG (12.7x99mm) employed by the Mk30 HMG.

THE MK200, A COMMON LIGHT MACHINEGUN USED BY THE ALTIS ARMED FORCES

MK200

Grenades & Grenade Launchers

Grenades come in a few varieties: Basic fragmentation grenades, smoke grenades, incendiary grenades, and stun grenades such as flashbangs. All are thrown by hand and have a correspondingly short range.

When a grenade needs to have a bit more 'oomph' to its throw distance, grenade launchers are used. Grenade launchers come in two basic forms at the infantry level: Ones that can be attached to a rifle, and those that are standalone. The former is the type that our fireteam leaders have; the latter is what you will see a dedicated grenadier using. Grenade launchers, depending on their type and ammunition, can give the infantry an indirect fire capability out to anywhere from 400 to 800 meters, though the majority are limited to 400. While their explosive power is relatively weak compared to other explosive weapons, they can be quite deadly and useful when employed in a proper manner.

WINDING UP TO THROW A FRAG GRENADE

Anti-Tank & Anti-Aircraft Weapons

Anti-tank weapons round out the typical infantry weapon set. Some, like the light AT-4, are very simple: Aim and shoot. Others have features to enhance your accuracy - the SMAW has a spotting rifle to help your first-round accuracy, for example. Some have sophisticated guidance systems and fire-and-forget technology to allow you to more accurately engage and defeat enemy armor - the PCML or the Javelin, for instance. Anti-tank weapons are generally the only reliable weapons infantry have that can defeat armored targets.

Anti-aircraft weapons are guided missile systems like the Titan, and the older Stinger and Strela guided systems. They generally have a single shot and use infrared sensors to seek out and kill aerial targets, and can be effective against both helicopters and jets, as long as they're employed properly.

PCML

TITAN ANTI-AIRCRAFT MISSILE

Crew-Served Weapons

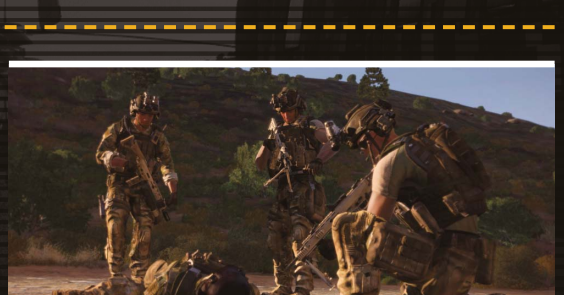
A "crew-served" is a weapon type that requires more than one person to carry it and employ it on the battlefield. For our purposes, this most often refers to the heavy crew-served weapons such as the Mk30 .50cal machinegun, Mk32 20mm grenade machinegun, mortars, or portable missile launcher systems. Such weapons have a main gun component, a tripod, and heavy cases of ammo. Several people must work together to transport them, set them up, and keep them supplied. The benefit is that they have tremendous power compared to "individual" weapons, and are a major force-multiplier when employed correctly. These will be talked about extensively later in the guide.

MK-30 .50 CAL MACHINEGUN ON A TRIPOD MOUNT

COMBAT LIFESAVER

Wound Effects

Knowing how you can be wounded, and what the results of different wounds are, helps a player to recognize the severity of his wounds and react appropriately.



Arma 3

Standard Behavior

By default, Arma 3's wounding system localizes trauma to the injured areas. When you are hit in the arms, you can expect to see decreased aiming stability, whereas leg hits may make it impossible to move at anything other than a slow limping pace.

Wounds are treated by individual first aid kits - "IFAKs", stored within bright yellow wrappers - and can restore your mobility and stability to an extent. These IFAKs can be used when prone or kneeling and can take a few seconds to fully apply, or even longer if the wounds are severe. Medics or combat lifesavers can utilize medical kits to treat heavy damage and do a more complete heal of the treated individual, as well as complete the process more quickly than a less-trained soldier might. Medical vehicles and hospitals will give the greatest healing, though their presence or distance may make them difficult to reach without a casualty evacuation flight or convoy being used.

Additional depth is introduced to the wounding system by mods, with some behaviors as described below.

Modded Behavior

Several wounding systems have been introduced through community-made mods to the previous Arma games - from abstracted systems to full-on medical simulation. We'll briefly discuss some concepts from these mods, with the intent of keeping it generalized enough that this knowledge can be applied to a variety of different wounding simulation models.

Types of Damage in Mods

- **Pain.** Pain is typically introduced as an attribute that degrades combat effectiveness until treated. This may come in the form of additional aiming shake or recoil penalties, uncontrollable sounds of pain, and other undesired effects. Pain can be treated by painkillers - most often abstracted as morphine injections. Morphine and similar treatments are available from combat medics.
- **Bleeding.** Bleeding occurs when significant damage has been taken, such as that from a bullet or shrapnel. Bleeding comes in a variety of intensities, depending on the severity of the wound, and the lighter the bleeding, the longer it will take for it to become crippling or fatal. Bandages are used to treat bleeding, and it may take more than one to fully treat a heavy wound.
- **Incapacitation or unconsciousness.** Shock from a heavy wound can result in a player being knocked down and incapacitated or rendered unconsciousness. Painkillers can be used to help counter this to a degree, while alternate medicines may be necessary to fully revive a player in some mods.
- **Cardiac arrest.** In the event that a player has taken a great deal of damage, or has bled significantly, their heart may stop beating. If this occurs, epinephrine will need to be injected immediately to stimulate their heart and bring them back to the land of the living. Epinephrine is carried in limited quantities by medics. Once a player's heart has stopped, they may have a minute left to live, though it is often shorter. Immediate aid from a medic is critical to their survival. In the event that a medic is further away, the ability to do CPR may be able to fend off death long enough for the medic to arrive with better treatment methods.

Dealing with Your Own Wounds

It is important that players are familiar with what they need to do if they get wounded. Being shot and confused as to what happens next can easily lead to you being shot again, bleeding to death, or generally meeting some kind of unpleasant fate.

If you are shot or injured in combat...

There are two fundamental things that can happen upon taking damage in combat. You will either maintain consciousness, as in Arma 3 by default, or in some mods you may have the possibility of being knocked unconscious or stunned, maybe even resulting in you blinking in and out of consciousness.

If you are conscious...

1. **Do a hasty diagnosis.** Are you still combat effective? If yes, **fight!** Minor wounds can be treated once the immediate threat is dealt with (at which point you can continue on to the next step and beyond). If it's more serious and you cannot fight, proceed to the next step immediately.
2. **Move to cover or concealment.** This will protect or conceal you from fire temporarily, though it will not get you off of the front line.
3. **Do a full diagnosis.** How bad is it? If you're bleeding, try to identify how severe the wound is and how urgently you'll need treatment. Heavy bleeding combined with frequent blackouts will require immediate medical assistance, whereas light bleeding may give you a bit more time to get yourself treated.
4. **If you need a medic, call out that you are wounded over the radio or through directional speaking.** Ensure that you state your name so that the medic knows who to look for. If necessary, mark your position on the map so that the medic can more easily find you. Speaking locationally gives the medic an additional aid, as he can "home in" on your calls and find you easier, especially in difficult terrain. Calling out also lets your buddy team member know that you're in trouble, and allows him to maneuver and fire to support you as you seek aid.

   Your basic voice call should be similar to this:

   > "This is Dslyecxi, I'm hit bad, pulling back for a medic... marking as "dsl medic" on map... (brief pause)... marked."

5. **Coordinate with the medic as necessary.** He may need you to move in a specific direction or meet him halfway.
6. **Use bandages or an IFAK if the situation warrants.** If you are lightly bleeding and have bandages, ensure that you are in cover or concealment and attempt to use them to address your wound. They may or may not work, depending on the severity of it, and it may take a few tries to stop the bleeding. Once you have stopped the bleeding, you'll be stabilized, but the "aim waver" will persist until you can find an actual medic to heal at.
7. **Once you are in good condition, move back to your fireteam and resume combat.** Ensure that your team leader and buddy team member know that you have returned to combat.

APPLYING AN IFAK WHILE TAKING COVER BEHIND A WALL

If you are unconscious or blinking in and out of consciousness...

Once consciousness or movement is regained, a player can move on to the above-listed steps to deal with their wounds, assuming that they haven't been taken care of already by friendly troops or medics. If you're liable to pass out again, make sure to quickly tell someone your location and medical needs: You may only have seconds of consciousness left!

Assessing & Treating Other People

Dealing with your own wounds is only part of the picture. Being able to assess and treat teammates is a key skill to develop, one which allows the platoon to take care of its own wounded and get them the attention they need. We'll start off with the assessment phase, as well as combat lifesaving steps.

Assessment of Wounded & Combat Lifesaving Steps

Whenever a player goes down, anyone near them must make a hasty decision as to how to react to it. The immediate reaction is intended to do two things: First, to suppress or kill the enemy that hit the downed player, and second, to identify the status of the downed player so that a decision about how to deal with them can quickly be made.

There are two possible states that a downed player may be in, with different reactions for each. They are described next.

Wounded In Action ("WIA")

Several degrees of WIA status exist in Arma 3 with mods, corresponding to the severity of the wound, with effects as described above in the "Wound Effects" section. Some of them are non-life-threatening wounds, whereas others can become fatal if left untreated.

Generally however, the non-life-threatening wounds tend to result in a mobile player that can take cover on their own. The more serious wounds will drop someone to the ground and require another player to tend to them to ensure their survival.

If a player goes down, there are three basic ways to try to identify their status as a WIA:

- **Visually.** If you can see them, look at their wounds. If their head is torn open, you can almost always assume that they're killed in action ("KIA") from head trauma. If they're bloody elsewhere, but their head looks reasonably okay, you should assume a WIA status and act accordingly.
- **Audibly.** Assuming that the player is conscious (which is certainly not always the case), you can call to them on direct-speaking to ask if they're okay. If they respond, they're WIA. If they don't respond, **you can't be sure**.
- **Via examination.** In some mods, players can crouch near the wounded and use an "Examine" action menu option to check that person's status. Obviously this should not be done until the downed player's position is secure - either due to the enemy being killed, or him being dragged to safety. The examination will give a brief description of their status, listing whether they're bleeding, in pain, if their heart has stopped but they aren't dead yet, or if they're KIA.

Assuming that the player is WIA, the next step is to secure them. This is most often done by having friendly elements provide suppressing or killing fires at the enemy to cover someone dragging the wounded person into cover or concealment. It's important to use good verbal communication to express intent in this situation - if someone says "Cover me, I'll get him!", this lets other people know that they should focus on providing suppressive fires and not worry about trying to rush out to the rescue themselves. Having multiple people rush out to try to tend to a WIA cuts down on the amount of fire being placed on the enemy, which makes it possible for the enemy to cause even more casualties.

More about the dragging process follows in the "Moving the Wounded" section, below.

PROVIDING COVER WHILE A DOWNED PLAYER IS CHECKED

Once the player is secured, combat lifesaver (CLS) procedures are performed on them. There are three main treatments that can be given, in order of severity:

- **Epinephrine.** If the player's heart has stopped, "epi" can be used to restart it. This requires that the treating player has an epinephrine injector with them - normal infantry do not, but medics do. If the player's heart is stopped and no epi is available, the treating player must immediately call for a medic, and get the medic to the WIA person. Time is critically short and all urgency must be made to keep the WIA from dying.
- **Bandages.** Bleeding comes in several severities. Light bleeding can go untended for short periods, whereas heavier bleeding demands immediate attention. The process of bandaging remains the same for either, however. Almost all players have at least two bandages as part of their personal first aid kits.
- **Morphine.** Morphine is used to deal with pain caused by an injury. It is never a critical treatment, but can be used to help stabilize a player's aim and vision. Morphine syrettes are quickly applied, though only medics start off with them.

After the immediate CLS steps have been administered, or if epinephrine is needed, the medic is brought over (or the player fireman-carried to them) to provide additional stabilization and treatment.

Bear in mind that in a multiple-casualty situation, players must rapidly triage the wounded to prioritize treatment. People needing epinephrine are dealt with first, then those who are bleeding heavily, and so on and so forth.

Killed in Action ("KIA")

It is important to confirm that a player is killed in action. Assuming that someone is dead from a given hit cannot be done - positive confirmation is a necessity, else you risk leaving behind an incapacitated player who could end up being captured.

Like with WIA players, verbal, audible, and examination methods can be used to determine the status of a KIA player. Examination will reveal that "This person is dead", at which point you will receive the ability to "Check dogtag" to confirm who the dead person is.

Once the KIA state has been confirmed, it must be reported to the next-higher leadership element. If you are a fireteam member, you tell your fireteam leader that "So-and-so is dead". Fireteam leaders tell their squad leaders, and so on and so forth, when a lull in the action occurs, and the tactical situation permits it. It is important that the fireteam leaders do not give running casualty reports to the squad leaders unless asked, since the squad leader is busy directing his fireteams in the fight, and casualty reports can generally wait until the immediate danger has subsided. Fireteam leaders are expected to exercise good judgment in this, of course.

Once the KIA has been reported up the chain of command, his buddy and team members will redistribute his gear, ammo, and weapon, ensuring that it is put towards continued use in the fight. In some mods, the KIA's weapon, even if not needed, can be carried along in a rucksack or by "slinging" it. This can prevent the enemy (in team-versus-team missions) from picking up a friendly weapon and using it to confuse friendly forces.

Moving the Wounded

There are often times when a downed player needs to be moved from where he fell in order to facilitate medical treatment or prevent them from being hit again. There are two ways to do this - either via dragging, or via a "fireman's carry". This functionality is introduced through wounding mods for Arma 3.

It is very important to note that the best results are achieved when suppressive fire and smoke concealment are utilized to screen this sort of behavior. While it may not always be possible to put smoke out, a team member should always be available to fire suppression while another team member pulls the wounded to safety.

As a general rule, dragging is used to immediately pull someone into a more secure area. They can either be treated there on the spot, or a transition to a fireman carry mode can be made to quickly transport them elsewhere. The specific pros and cons for the two different options are covered in detail below, but it is essentially:

- **Dragging** is used to immediately move someone from a dangerous area at a moment's notice.
- **Fireman's carry** is used to move someone from a safe position to another position further away, at a faster pace.

Dragging

Pros	Cons
Very rapid to begin - simply start the action and your character will reach down, grab the "drag strap" on the downed person's armor, and you're ready to move them	Final movement speed is significantly slower than a fireman carry
Can fire weapon opposite the direction of movement while moving (typically meaning in the direction that the enemy fire came from)	You end up walking backwards, and thus cannot easily see where you're going without using TrackIR or freelook
Low-profile due to being crouched over	Cannot reload while dragging

DRAGGING A WOUNDED BUDDY OUT OF THE FIGHT

Fireman's Carry

Pros	Cons
■ Movement speed once "hoisted" is about twice as fast as dragging ■ Looking in the direction of movement ■ Can fire weapon in the direction of movement while moving	■ It takes several seconds to hoist a wounded player up into the fireman carry position, leaving both people vulnerable during the process ■ High profile (standing upright while jogging) ■ Must start dragging someone before the option to hoist them into a fireman carry is available ■ Cannot reload while fireman's carrying

RUSHING TO A MEDIC WITH A SEVERELY WOUNDED TEAMMATE IN THE FIREMAN CARRY POSITION

PRISONER HANDLING

Enemy Prisoners of War ("EPWs")

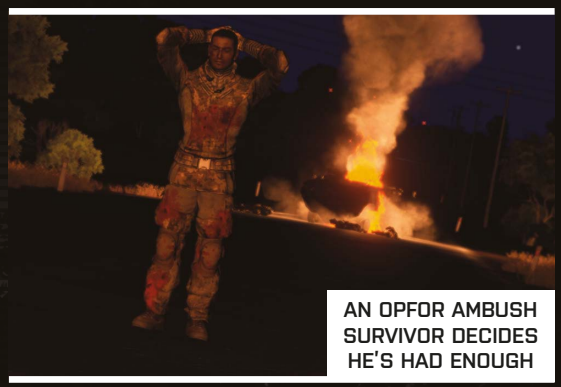
The Prisoner

While it can be rare, there are times in player-vs-player missions where you will have an opportunity to capture one of the enemy. This tends to result from one of the following situations:

- A wounded enemy who cannot defend himself (ie: unconscious)
- Flanking a lone enemy
- A surrendering enemy (always treat this as an ambush and use great caution!)

A captured enemy can provide a number of benefits to the capturing force. Some scenarios even start off with one side having a number of captured enemies in their custody, based on the story of the mission. Knowing how to take and handle prisoners is important for all players to understand in advance of being put in that sort of situation.

Note, too, that there are downsides to capturing a prisoner as well. They tend to slow you down, reduce your situational awareness, and the noise of capturing them can attract nearby enemies. Always use extreme caution when capturing an enemy.



AN OPFOR AMBUSH SURVIVOR DECIDES HE'S HAD ENOUGH

Taking a Prisoner

When the opportunity presents itself, the following guidelines must be followed to prevent a negative outcome, based on whether you are capturing an armed and unaware player, or an armed and incapacitated player.

How to Capture an Armed and Unaware Enemy Player

1. **Ensure that the area is secure, and that you can start the prisoner-capturing process without hostile interruption.** If it is not secure, and does not seem like it will become secure anytime soon, handle the situation in a fashion that makes it unnecessary to capture hostile enemies.
2. **Take a commanding position behind the enemy, preferably utilizing cover and concealment, and place your sights on them.**
3. Using a voice volume appropriate to the tactical situation, **tell the enemy to "Freeze! Don't move!" on direct-speaking comms** while maintaining a sight picture on them.
   - **If the enemy attempts to turn to face you and is armed**, shoot them without hesitation. Action beats reaction - if you're face-to-face with an enemy with a weapon, whoever decides to kill the other first will be the victor. Don't let it come to that.
4. **Immediately dominate the enemy. Direct the enemy to remain facing away from you and tell them that if they turn or look at you, you will shoot them.** If they face towards you, warn them sternly once to face away. If they do not comply, shoot them without hesitation. Forcing them to comply with your orders gives them less of an ability to resist.
5. **Communicate to your team leader that you are capturing an enemy soldier, and where you are.** This allows the team leader to pass it higher if necessary, and start thinking about how to deal with the captive.
6. **Designate your buddy to continue covering the enemy with a rifle.** It is critical to always have one person whose sole purpose is to keep a rifle aimed at the enemy in case they attempt anything funny.
   - **The cover man has authorization to shoot the enemy if they do anything that threatens the life of the capturing player -** they are given the benefit of the doubt at all times.
   - The cover man maintains a position that gives him clear view on the enemy, without being masked by the capturing player.
   - The cover man maintains a safe distance from both the enemy and the capturing player.
   - Any other nearby players act as security during this process, ensuring that nothing interferes from further away.

7. **Direct the enemy to go into their gear menu and drop their weapons and notable pieces of gear.** This includes their rifle, pistol (if they have one), and any grenades they are carrying, as well as their watch, compass, GPS, radio, and map. Have them drop their helmet and vest as well and take off any masks, glasses, or goggles they're wearing. Taking away their navigational and communication abilities will make it harder for them to escape, while removing their productive gear will make them less willing to resist. If unconscious, you can remove their weapons and gear manually, while some mods will give you faster shortcuts for this process via a 'Search & Disarm' feature.
8. **Once the enemy has dropped their weapons, tell them to back up slowly in the direction of your voice.** You never want to go to the enemy when capturing them, instead force them to come to you. This helps to avoid tricks and traps on the part of the enemy, takes them further away from their dropped weapons, and keeps them "in the dark" as to the specifics of how many friendlies are nearby, where they're positioned, etc.
9. **Once the enemy is within reach, tell them to place their hands on their head ("surrender" key) and prepare to search them.** This option is only available in some mods, and allows you to ensure that the enemy is not holding onto any weapons.
10. **Once secured, announce to your team leader that you have successfully captured the enemy, and await further directions from them.** In the meantime, move a safe distance away from the EPW and direct them to keep their hands on their head and continue to face away from you.

How to Capture an Incapacitated Enemy Player

1. **Ensure that the area is secure, and that you can start the prisoner-capturing process without hostile interruption.** If it is not secure, and does not seem like it will become secure anytime soon, handle the situation in a fashion that makes it unnecessary to capture any enemies.
2. **Communicate to your team leader that you are capturing an enemy soldier, and where you are.** This allows the team leader to pass it higher if necessary, and start thinking about how to deal with the captive.
3. **Designate your buddy to cover you.** Even though the enemy is incapacitated, it is important to maintain a high level of security during the capturing process, as you may be busy or distracted by the prisoner and thus unable to react to other threats that appear during capture.
4. **Approach the enemy slowly, scanning around the area as you do.** You are looking for any signs that the incapacitated player is "faking it", any indications of other enemies nearby in ambush positions, satchels, other explosives or traps.
5. **Take a knee at the enemy's side, go into their gear, and retrieve their weapons and helpful gear.** You want to take their rifle, sidearm, and any explosives they have with them, as well as their watch, compass, GPS, radio, and map. Place their gear into your inventory when possible (such as your backpack or on your vest). If not, drop their gear on the ground. If necessary, retrace your steps a few meters and place any enemy gear on the ground away from their position. Also remove their armor - helmet and vest - and any glasses or masks they might have.
6. **Once the enemy has been disarmed, check their medical condition. Provide stabilizing treatment if necessary, but do not administer full medical treatment.** You are only interested in keeping them from outright dying at this point.
7. **Once secured, announce to your team leader that you have successfully captured the enemy, and await further directions from them.** In the meantime, move a safe distance away from the EPW. If they are still incapacitated, simply maintain observation on them and ensure that the cover man continues to cover them. If they recover, direct them to stand, place their hands on their head, and face away from you.

Handling EPWs

Capturing an EPW is only part of the story. Keeping them from fighting back, escaping, or compromising friendly security requires constant vigilance and an understanding of EPW-handling standard operating procedures.

Guidelines for Handling EPWs

- **Always designate a cover man to watch an EPW.**
  - The cover man is to always treat an EPW like they have a stashed pistol or grenade, and will use it the moment the cover man is distracted.
  - The cover man's sole job is to watch and maintain control of the EPW. The EPW is to never be out of his sight.
  - The cover man uses good judgment to determine if the EPW presents a threat, and if so, he takes the EPW down with well-aimed shots. The cover man knows that his judgment will be given the benefit of the doubt and does not hesitate to protect his teammates.
- **Always designate a control man to command an EPW.**
  - The control man is the primary person to give commands to the EPW and is in charge of getting the EPW from place to place. This avoids having multiple people giving conflicting and confusing orders to an EPW, which can get ugly quickly.
  - The cover man can serve as the control man if the tactical situation requires it.
- **Always search and disarm EPWs.** Never assume that they were only armed with a rifle.
- **Always maintain a safe distance from an EPW.** Five to ten meters is typically acceptable.
- **Force EPWs to always use a walking pace** unless explicitly directed otherwise.
- **Let the EPW know that they can speak only when spoken to.** This helps to prevent them from chattering away and giving away friendly positions. If they do not comply, you may be able to knock them out and drag them as need be, if using certain mods.
- **Force EPWs to stand with their hands on their head, facing away from friendly units.** Alternatively, force them to stay prone, facing away from friendly units. A player cannot move when they have their hands on their hand, allowing you to more easily see when they attempt to do something, as their hands will lower.
- **If possible, place EPWs into areas where there is only one exit, and cover that exit with the cover man.** This can take the form of dead-end alleyways, tents, shacks, etc. Ensure that if placed in a room, there are no windows that the EPW could climb out through.
- **EPWs must never be allowed to get in vehicles by themselves.** If it is necessary to transport an EPW in a vehicle, the following must happen:
  - Any weapons, explosives, etc, must be removed from the vehicle.
  - The vehicle driver, once designated, gets in the vehicle in the driver position and does not dismount so long as the EPW is in the vehicle or nearby.
  - The EPW gets in the vehicle such that they are in a position from which the other occupants can clearly see them.
  - The EPW is carefully watched while in transit, to prevent them from attempting to bail out of the vehicle while it's moving. If they bail, anyone who sees it immediately conveys such to the vehicle driver, who immediately halts to allow for infantry to dismount in order to chase or eliminate the EPW.

So, there you have it, how to capture a player. While it will not always be possible or desired, taking a prisoner of a player can result in some really interesting gameplay dynamics, and typically ends up being rather entertaining when all is said and done. Good luck, and don't kevb0 it up too much! Remember, it's all in good fun.

COMMON SKILLS

In addition to everything else listed above, there are some further common skills that players should be proficient in. They are described below.

Grenades

Usage of Grenades

There are a few things to say about the usage of grenades in Arma 3. First off is that, as with all things, practice is very important. Arma 3's grenade throwing improvements vastly help their usability, making them far more viable for all manner of uses. Some additional guidelines follow.

- **Grenades come in a variety of forms - be familiar with their uses.** The main classifications are as follows:
  - **Fragmentation grenades.** These are the type most frequently associated with the word "grenade". They're designed to kill the enemy through blast and shrapnel effects. Most are on a 4-5 second time delay fuse, while occasionally you will get types that detonate on impact.
  - **Flashbangs.** Found in some mods, these grenades are meant to disorient the enemy with a blinding flash of light, and deafening bang. They are primarily employed in house-to-house fighting, and tend to have short fuses - 1.5-2 seconds is typical.
  - **Smoke grenades.** They are not offensive grenades, rather they're used to screen friendly movements, mask enemy positions, etc. More information about the tactical employment of smoke follows in a later page.
- **Use the brevity words "Frag out!" when throwing a grenade.** This lets your teammates know that a frag grenade is being thrown.
- **Use the brevity word "Grenade!" when you see an enemy grenade coming at friendlies.** This lets your teammates know that a hostile grenade is incoming, and they should take cover.
- **Be careful when throwing grenades in an assault.** You must ensure that there are no friendlies in the area you're throwing, and that none will run into it after it has been thrown.

Usage of the Map

Types of Maps

Main Map

The main map is accessed by pressing your "M" key by default. You must have a "map" object in your inventory (most units start with a map), and viewing it will cause your character to take a knee for the duration.

From the map screen you can access the journal, mission briefing, group and gear menus.

GPS

The GPS is an optional piece of gear that may not always be present in a mission, particularly if you're acting as a less-equipped side, such as insurgents or guerrillas. However when it is present, it can be a handy quick-reference tool. It allows a player to get a good glimpse of their immediate surroundings without having to worry about the loading time that can potentially accompany the full-screen map. Note that Arma's GPS does not show enemy positions or friendly positions - just the map itself, a six-digit grid, your current compass heading, and also the current time. When in the full-screen map mode, the GPS will display the current 6-digit map grid.

THE GPS

Other benefits of the GPS come into play with vehicles. Since the zoom level of the GPS map is based upon movement speed, a jet can use the GPS to see a large overview of the terrain when flying at high speed. This is incredibly useful when navigating. The same effect can be taken advantage of in helos as well.

Note that the GPS can be toggled either as a press-and-hold view, or a toggle-on/toggle-off version. Both can be extremely useful in aircraft and should not be overlooked. I recommend binding it so that pressing one key causes the normal version to come up, while pressing both Ctrl and that same key together will make the toggled version show up.

Reading the Map

Right & Up

Reading a map is easy once you know the basics of it. The main thing to remember is that the grids must be read right, and then up. See the following screen for an illustration of how it works. Due to the fact that the map grid is composed entirely of numbers, it's important that you do not transpose them, else you're likely to send someone far, far away from where you needed them to go.

Note that depending on the map zoom, you may see two, three, or even four numbers per horizontal or vertical grid. This reflects the precision of the coordinate. For example, a six-digit grid (3+3) defines a square that is 100 meters on a side. A four-digit grid (2+2) defines a square that is one kilometer on a side. An eight-digit grid is 10 meters on a side, while a ten digit grid is 1 meter on a side.

Depending on the difficulty settings and mods used, you may have a mouse-over tooltip that displays the elevation and six-digit grid of wherever your cursor is. While this is a handy tool, knowing how to read grids correctly is an essential skill to have.

READING A SIX-DIGIT MAP

The Grid Scale & Contour Interval

Arma 3 features a grid scale that dynamically scales based upon how zoomed in or zoomed out you are. This scale shows both a linear distance guide and a contour interval guide. The contour interval means that each contour line represents x-meters of vertical space. Thus, if there are three contour lines of difference between your position and another position, you multiply that number times the contour scale to come up with the amount of vertical difference between the positions.

Points of Elevation & Hill Numbers

Note also that the numbers scattered around the map indicate points of elevation. These occur either at the top of a protrusion (such as a hill) or the bottom of a depression (such as a valley). When communicating map locations over voice chat, numbered hills can be referred to as "Hill 123". Pay attention to whether a specific hill can be seen from zoomed-out view or if someone must zoom-in to the map for it to appear, as this can be confusing to players if not specified. If the terrain you're in is very hilly, ensure you're specific about which one you mean - oftentimes there will be multiple points of elevation with the same altitude.

Marking the Map

The map is extremely useful for planning and coordination purposes. One of our main methods of conveying information to other players is via using "map markers" to indicate points of interest, waypoints, objectives, landing zones, enemy positions, and more.

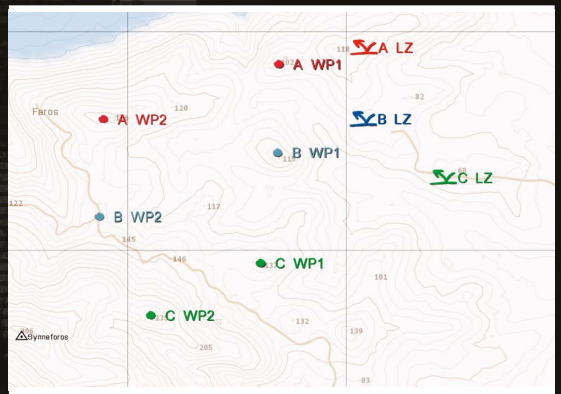
Below are some guidelines for making the most of the map. Heed these and things will go more smoothly for everyone.

How to Mark the Map

- **To place a mark on the map,** double-click. You can enter text by typing, and then Enter will finalize the mark.
- **To change the icon of a map marker,** press up/down arrow until you get to the marker you want to use. This (and coloring the marker) only works until you place it with Enter.
- **To change the color of a map marker,** hold Left Shift and press up/down arrow to cycle through the colors.
- **To delete a mark,** hover over it with the cursor and press Delete.

Tips

- **Map markers are visible to the chat channel you are "tuned" to when placing them.** Ensure that you place markers in **Side**, **Group**, or **Vehicle** chat. Placing them in Global chat will allow the enemy to see them, which is generally considered to be bad for your long-term survival.
- **All map marker text should be written as succinctly as possible** using abbreviations and acronyms. For instance, "aa" is anti-aircraft, "inf" or "ei" is enemy infantry. Alpha Squad becomes "A", waypoint becomes "wp", and so on.
- **Try to use the logical symbols when adding map markers,** as time and the situation permit. See the picture below for sample markers.



A TYPICAL MAP PLAN FOR A PLATOON HELICOPTER INSERTION

- **Adding a time to the mark can be useful in some situations.** When doing so, use the in-game time (which can be seen in the upper-right of the map) so that players in different real-world time zones are not confused by it.

The Compass

How to Read the Compass

The compass is graduated three ways: The first and simplest is via the cardinal North, South, East, and West directions. After that it is graduated in degrees - 0 to 359. This is the inner, larger set of numbers, and should be used when calling out specific target bearings. The final outer set of measurements are known as "Mils", and generally do not have a use aside from communicating with artillery units. In the event that you do ever use mils as a direction call, remember that the numbers need two zeros after them. The "2" marker on the outer ring is actually 200 mils, for example.

THE COMPASS, AS SEEN IN DAYLIGHT AND AT NIGHT

Note also that the Arma compass has illumination on it for better readability at night. Also note that the compass, like other gear items, may or may not be available based on the player loadout in a mission. Also, in Arma 3, the compass can take a moment or two to fully stabilize once it has been turned.

The Watch

There isn't a great deal to say about Arma's watch, and its primary use lies in higher-level planning. For instance, coordinating a large-scale multi-group collaborative session might benefit from using in-game times for certain events to occur at (artillery fire, CAS strikes, and coordinating that with the start of a ground assault).

THE WATCH, AS SEEN IN DAYLIGHT, MOONLIGHT, AND PITCH DARK

The other use of the watch is simply getting a feel for what the in-game time is, which can be useful if it happens to be close to dawn or dusk. Knowing that you have maybe 30 minutes of daylight or darkness can have a significant influence on your overall plan.

One final use of the watch is in missions with limited communication setups. If "direct speaking" rules are enforced, the watch can be a method to synchronize various elements that are operating outside of audible range from one another.

Like the other gear items, watches are inventory items which may or may not exist in the mission, based on the mission designer's intent.

Organization

Structure

Shack Tactical operates at the Company level - meaning, multiple platoons and various attached assets, typically in the 100 to 130 player strength overall. However, the core of the group is the infantry platoon - and as such, we will talk about that unit primarily, then expound on the full Company structure later on.

Breakdown

Once based off of a standard US Marine Corps rifle platoon, the ShackTac platoon has evolved into something a bit different in the years since the release of our TTP2 guide. The short version is that each platoon still consists of 46 players when fully fleshed out, split into four main elements – the platoon headquarters element (four strong) and three rifle squads – Alpha, Bravo, and Charlie. Each squad consists of two fireteams – first and second – and each fireteam is six players total including their fireteam leader. Each squad also contains a squad leader and a medic as their leadership element, giving the full platoon four total medics when you consider the platoon medic, part of the platoon headquarters element.

When using multiple platoons, 2nd Platoon contains Delta, Echo, and Foxtrot squads. In the event that we roll out with three full platoons, 3rd Platoon uses the designations Golf, Hotel, and India squad.

History

Our platoon structure traces its history back to the latter half of 2006, a time in which our group was ever so steadily becoming more cohesive and coordinated in Operation Flashpoint's Wargames League mod. With the increased competence of our players, and the tighter knit community, it was a good time to introduce a standardized structure by which the group could continue to expand and improve.

The key point of our platoon structure is that it was never intended to blindly replicate military organization simply for the sake of doing so. Instead, it ended up being introduced for many of the same reasons that such structures were created many years ago in reality. For the purposes of command and control, as well as the development of standardized team-level tactics, it is necessary to have a group structured in a fairly standardized way that all players (and particularly the leaders) can be familiar with and know how to be a part of, and our platoon structure accomplishes this goal.

Evolution past TTP2

One significant organizational change that has occurred within ShackTac since publishing the TTP2 has been our squad and fireteam structure. You may have noticied earlier, if you were familiar with the TTP2, that our prior structure of a squad having three fireteams of four people, plus a squad leader and a medic, has shifted to two fireteams of six people, with a squad leader and a medic. We made this change for a number of reasons.

For one, **having fewer fireteams in a given mission reduces the leadership burden in our group.** Since we tend to play lengthy sessions of eight or more missions on average, there is a great deal of leadership required throughout. With our new structure, we end up requiring about 30% fewer fireteam leaders per session, which results in less leader fatigue and burnout. When you've been playing as a community for over seven years, this sort of consideration is significant.

At the fireteam level, the addition of two extra players per fireteam not only **increased the firepower of the fireteam**, it also **increased situational awareness,** and **made our fireteams more resilient to casualties**. On the situational awareness side of things, consider that in Arma 3 your player has an approximately 84° field of view by default. Assuming an ideal and improbable situation where every player is looking in a completely different direction, you'll note that you can't even achieve 360° coverage. With six members, you end up with roughly 500° of cumulative field of view coverage, which means that you're much more likely to be able to keep "eyes all around" as well as overlap, for when one member doesn't see something yet another does.

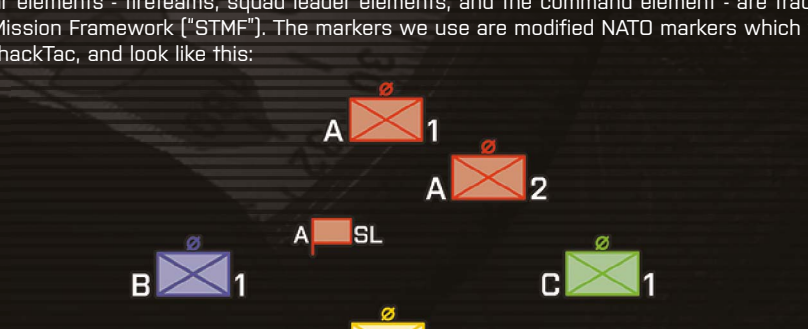
From a combat effectiveness standpoint, a six man fireteam can lose a full third of its strength and only be reduced to the once-standard four man team. This is pretty significant, as losing even a single person in a four man fireteam can be a big deal, while two casualties is crippling. The two extra players bring extra firepower as well, and brought a new aspect of flexibility for our mission designers. Namely, that the two extra team members could be assigned to different or unusual roles as the scenario required. Sometimes this took the form of an extra automatic rifleman and assistant, while other missions saw additional anti-tank assets or special items like stand-alone grenade launchers.

Looking higher up, the change also had ramifications on both our fireteam leaders and the squad leader. For example, fireteam leaders took on more responsibility, being tasked with leading five other players instead of the three from previously. An element of squad leadership also slipped into the fireteam leader's domain, as they were able to use our ShackTac Fireteam HUD color assignment feature to split their teams into distinct and easily-identified elements.

The squad leader's role was improved as well with this change. Instead of having to deal with three distinct teams, the two six man fireteams allowed for a simplification of tactics, and an easier to implement version of certain common tactics like bounding overwatch. Squad formations become easier to manage, taking only a few basic forms – column, line, and echelons – and the squad leader is able to keep their squad fighting, even in the face of heavy casualties thanks to the greater resiliency of his teams. The casualties required to render both fireteams ineffective would take out the entire squad in the process, whereas our old structure made it possible to have effective numbers rendered ineffective by being fractured amongst too many teams.

In-Game Representation

In-game, our elements - fireteams, squad leader elements, and the command element - are tracked via our ShackTac Mission Framework ("STMF"). The markers we use are modified NATO markers which we custom-made for ShackTac, and look like this:



The "box with an X" is a standard infantry NATO marker. The circle with a slash through it is the fireteam marker. If there was a solid dot, it'd be a squad. Two dots, a section, three dots, a platoon. The flag-like marker is a simple command marker. Everything is color-coded by squad, with Alpha being red, Bravo being blue, and Charlie being green. Platoon Headquarters ("PltHQ") is typically orange or yellow.

Succession of Command

The succession of command in a ShackTac platoon is clearly established, allowing every member to know precisely what circumstances would result in them taking command of their element. In a squad, seniority comes from the order of the fireteams. First is senior, second is next in line, and third is last. In a fireteam, the fireteam leader is senior, followed by the automatic rifleman, the assistant automatic rifleman, and finally the rifleman.

In the overall scheme of things, seniority is as follows:

- Company Commander, then Company Executive Officer ("XO")
  - Platoon Commanders (in the order of first, second, third), then Platoon Sergeants
    - Alpha, Bravo, Charlie Squad Leaders
      - Alpha, Bravo, Charlie senior Fireteam Leaders
        - Senior Remaining Fireteam Leader or Member

Note that in the unlikely event that the Company Commander, Company XO, Platoon Commander, Platoon Sergeant, squad leaders, and first-fireteam leaders are all dead, the senior remaining member of the platoon takes command of the remainder. At this point you probably have bigger problems than worrying about who specifically needs to be leading the handful of survivors.

THE FIRETEAM

Fireteam Structure & Leadership

Fireteam Organization & Purpose

In ShackTac's organizational structure, the fireteam is the smallest combat element employed at the platoon level. Two fireteams and a squad leader element make up one squad, resulting in 14 people in total. Three squads and a platoon headquarters element make up the platoon. There are six fireteams per platoon, not counting the squad leader and platoon headquarters elements.

Fireteams are lead by players who are interested in the challenge of acting as a small-unit leader. The fireteam leader is the first major step in the leadership development of a player, and everyone is encouraged to try their hand at this leadership role.

Each fireteam carries a well-rounded assortment of firepower. Generally, this consists of four standard rifles, one rifle with grenade launcher, and one automatic rifle or light machinegun. This gives the fireteam an indirect-fire capability (grenade launcher), a sustained-fire capability (automatic rifle or light machinegun), and volume in point-fire (five rifles).

FIRETEAM WITH ANTI-TANK

The following are the fireteam members, along with their seniority and roles:

- **Fireteam Leader ("FTL")**
  - Senior team member
  - Leads the fireteam
  - Carries a rifle with attached grenade launcher
  - Leads the first buddy team, consisting of himself and the rifleman
- **Automatic Rifleman ("AR")**
  - Second in command of the team
  - Carries and employs the automatic rifle or light machinegun
  - Leads the second buddy team, consisting of himself and the assistant automatic rifleman
- **Assistant Automatic Rifleman ("AAR")**
  - Third in command of the team
  - Carries extra ammo for the automatic rifleman
  - Armed with a rifle
  - Follows and supports the automatic rifleman as his combat buddy
- **Rifleman ("R")**, times three
  - Junior members of the team
  - Armed with rifles
  - Generally have one or two light anti-tank weapons amongst them

The ShackTac Fireteam Heads-Up Display ("HUD")

The ShackTac Fireteam HUD is a modification for Arma 3 designed to improve the situational awareness of everyone in a fireteam, both by giving an indication of where teammates are located, as well as providing an easy-to-reference list of player names. When dealing with a large community such as ours that plays many missions each session with no strict preset assignments, it's important to provide an easy reference for names in order to allow for better communication as well as improved group cohesion.

The rings on the ShackTac HUD represent, from innermost to outermost, 15, 30, and 50 meter intervals. Cardinal directions are indicated by small N, S, E, and W letters on the outside of the HUD - visible only if you have a compass in your inventory. Each team member icon has an arrow to indicate direction, as well as an icon to indicate special roles such as medics, automatic rifleman, fireteam leader, or anti-tank rifleman, Players can also be color-coded by their fireteam leader via the in-game interface to help organize buddy teams. The fireteam leader will always show with a gold icon to their team members, while any team member within three meters of you will temporarily turn red as a reminder to keep good interval.

One powerful feature of the ShackTac Fireteam HUD is the ability to color-code fireteam members, which leaders use to assign buddy teams. Most commonly, the AR and AAR are paired as one team, while the remaining three fireteam members are assigned to another. The fireteam leader typically stays in their own group in order to better control the team.

Color assignments are carried out through the in-game interface – simply select the team members you want to set a color for via the F-keys, located at the top of your keyboard, then use the squad menu to assign a color. Once members are selected, they can be assigned to teams via Ctrl plus F1 to F5, with F1 being red, F2 green, F3 blue, F4 yellow, and F5 white.

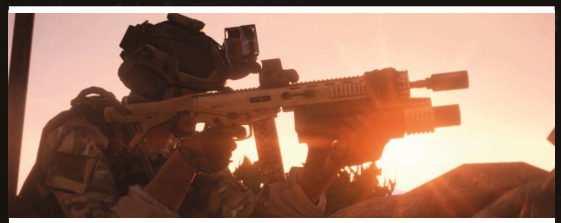
We use standardized colors for our fireteams in order to ensure that communication on the squad radio can be done concisely simply by stating colors, instead of also requiring the usage of fireteam numbers. The first fireteam always consists of a red and green pair of buddy teams, while the second fireteam always has a blue and yellow team.

- 1st Fireteam: **RED** / **GREEN**
- 2nd Fireteam: **BLUE** / **YELLOW**

For more information on the ShackTac Fireteam HUD, check out my site, here.

The Fireteam Leader

The Fireteam Leader's mantra is **"Follow me and do as I do".** They are the most combat-oriented leader position on the battlefield, and leads their fireteam from the front while acting as the example that his team members will follow.



FIRETEAM LEADER WITH AN UNDERBARREL GRENADE LAUNCHER ATTACHED TO HIS RIFLE

Fireteam leaders...

- **Get their orders from their squad leader.** This may include aspects like the formation required, special rules of engagement, sectors of responsibility, order of movement, and so forth.
- **Are tactically proficient and capable of exercising good initiative and sound judgment.** Micromanagement of fireteam leaders should not be required. Once given a task, a FTL should be capable of understanding the intent of the order, and executing it with competence. A FTL should be capable and competent at using their fireteam members to carry out any order given by the squad leader.
- **Work towards accomplishing the squad mission while attempting to minimize loss of life in their fireteam.** They know that mission accomplishment takes priority over "troop welfare". Ideally, the fireteam leader accomplishes that mission without losing any of their fireteam members. With that being said, they do not shy away from dangerous assignments, and are ready to put their fireteam in a difficult situation when there is no better course of action, it contributes significantly towards mission accomplishment, or when ordered by their squad leader.
- **Augment the squad leader's situational awareness by reporting significant observations.** A fireteam leader has a perspective that is generally slightly forward of the squad leader, even if only by a dozen meters. Because of this, it is important that they succinctly and accurately report significant observations back to their squad leader. This includes enemy contacts, terrain considerations, and anything else that may be tactically significant.
- **Talk to their teams and keep them informed.** They are clear and concise when speaking, and ensure that their team members know everything relevant to the successful fulfillment of their mission.
- **Ensure that their fireteam members maintain good interval and situational awareness.** This is accomplished in part by giving simple formations (typically line, wedge, or staggered column) and emphasizing proper sector coverage and security. The FTL must be vigilant and proactive in preventing their team members from becoming target fixated or bunched up.
- **Control and direct the team's fire.** While the fireteam leader can often let his team members engage at will, there will come times when the careful direction of their fire will be critical to success. Engagement of high-priority targets such as snipers, machineguns, and vehicles are examples of when the fireteam leader will need to control and direct the team's fire.
- **Maintain disciplined initiative and momentum.** When the squad commits to a fight, the fireteam leaders are at the cutting edge of the battle. It is often up to them to use initiative based on what they see, and maintain momentum and combat action in accordance with the stated intent of the squad leader or platoon commander. When in doubt, they request additional guidance from the squad leader.
- **Assign and utilize buddy teams.** By having a standard split to work with, each fireteam leader is able to more rapidly and effectively order their subordinates.
- **Designate point men as required.** Having a single man on point can work quite well in many situations. In other situations using an entire fireteam is more ideal. This is a judgment call that needs to be made by the fireteam leader or squad leader, dicated by the situation.
- **Maintain accountability of their team members.** It is up to the fireteam leader to ensure that no team members are left behind. An FTL should do a team check after every engagement, and multiple times during extended fights. Having a team member go down without the FTL knowing about it can be a major issue and must be avoided.
- **Ensure that machinegun and anti-tank assets are retained in the event of team member casualties.** If the fireteam's AR goes down, it's up to the team leader to ensure that the assistant recovers the machinegun. The same is true if the fireteam has any anti-tank capability.
- **Are proficient with their underbarrel grenade launchers ("UGL").** See the following section for more.

Fireteam Leader UGL Employment

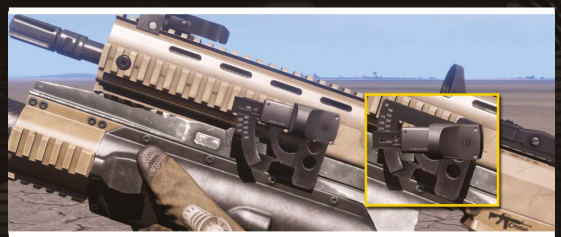
The fireteam leader must be able to use their UGL to carry out a number of tasks, such as firing high-explosive shells at significant enemy positions, screening friendly movement, marking or masking the enemy with smoke shells, or using illumination shells in low light conditions. More esoteric grenade types, such as buckshot or teargas, can also be found from time to time. A team leader is expected to spend time familiarizing themselves with and becoming skilled at the usage of the grenade launcher.

Some general guidelines for UGL employment follow, and these can be used by any grenade launcher-equipped infantryman.

THE 6.5MM MX WITH A 40MM 3GL ATTACHED

Basic Grenadier Guidelines

- **A typical UGL grenade requires up to 35 meters of travel distance before it will arm.** If you land a UGL shot within this distance, the grenade will be a dud. This can come into significance when engaging in MOUT combat, so keep it in mind.



THE QUADRANT SIGHT OF THE 3GL GRENADE LAUNCHER

- **When employing high explosive grenades, a grenadier should focus on high-value targets (e.g. crew-served machineguns, snipers, etc) or clusters of the enemy.** Due to the limited supply of grenades an FTL typically has, it is important to reserve and employ them to inflict maximum damage. Let your team members deal with what they can with their AR and rifles, and employ your UGL grenades to supplement them and cover any gaps in their fires.

SIGHT APPEARANCE FOR 100, 200, 300, AND 400 METER RANGING

- **Ensure that you are able to estimate range properly, and also are aware of what range you are most effective at with your grenades.** First-round accuracy is important - using rounds to "feel out" the range is to be avoided as it wastes precious ammo. Arma 3 introduces animated grenade launcher sights in order to help adjust fire. The MX rifle with the 3GL launcher has a sight that can be set to 100, 200, 300, or 400 meters of range. Once set, the red dot of the sight will correspond to that impact distance, as seen in the below illustrations.

- **Grenades can be used to put fire into dead zones (areas that a defense cannot hit with direct-fire, such as depressions in the terrain) and otherwise provide basic, light indirect fire support.** This is generally imprecise and should be reserved for when the grenadier has a good idea of where the enemy is, how they need to fire to hit them, if the probability of a kill is unusually high, or if it is important to harass the enemy and attempt to disrupt their attack. Alternatively, if the grenadier has an excess of grenades, or a crate full of them, indirect fire can be a useful option.

- **Illumination can be used to great effect at night via aerial flares.** When firing flares, avoid firing them behind the enemy, especially in wooded terrain. This causes the flare light to silhouette them while leaving you and your team clearly illuminated. It is better to either fire the flare between you and the enemy or off to one side of them. Star shells are a variation of flares that are short-lived and provide less illumination. They are primarily used for signaling, though they can work for illumination in a pinch.

- **UGL smoke grenades can be used to great effect for a variety of tasks.** These can include marking targets or friendly positions for close air support assets, obscuring the enemy's line of sight, masking friendly movement, and marking landing zones for helicopters. Individual initiative and good judgment is the key to being successful and timely with smoke grenades. When employing smoke, pay attention to which way the wind is blowing, and aim your smoke grenades such that the wind blows the smoke in a useful direction.

- **Pay attention to what grenade you have loaded, or are loading into the launcher.** The currently loaded grenade type will be indicated in the upper-right in the weapon info section of the HUD. You can change grenade types with your action menu in the event that you need to swap to a different type without firing. When reloading, try to get in the habit of reloading from the action menu or look at the HUD info before each shot. This prevents you from accidentally loading the wrong type of round once you have exhausted the previous type's supply.

Fireteam Member Roles

In addition to the responsibilities of a fireteam member outlined in the initial "Basic Rifleman" section, each fireteam member will have additional responsibilities based upon their role in the team.

Automatic Rifleman (AR)

The automatic rifleman is the fireteam's heavy firepower. They carry an MX SW by default, giving them the ability to throw hundreds of rounds downrange in short order.

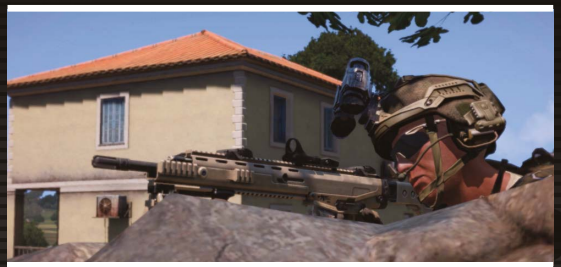
The AR is second in command of the fireteam. In the event that the team leader becomes a casualty, the AR immediately takes charge of the fireteam and communicates their new role to the squad leader.

THE 6.5MM MX SW

The AR is responsible for employing their weapon in a manner that maximizes the killing and suppressive power of it, allowing their teammates to maneuver with the support of their fire.

Automatic Riflemen...

- **Control their fire.** Short bursts tend to be the best way to employ a machinegun. The general guideline is to fire in six to eight round bursts, pausing between bursts to observe the effects of your fire, assess, and then reengage as necessary. With that being said, bear in mind that as contacts appear closer to the team, longer bursts can be used due to the greater chances of hitting closer targets.



AUTOMATIC RIFLEMAN WITH AN MX SW

- **Stay aware of their ammunition state.** This takes two forms: One, **know how many rounds are left in your current belt or box -** make sure not to get caught with only a few left when contact is made - and two, **stay aware of your overall ammo count.** You must ensure that you're carrying as much ammo as feasible, and as you free up space for more ammo, your assistant should be ready to pass you fresh belts or boxes.
- **Take initiative on contact & achieve fire superiority.** Upon receiving enemy fire, each AR knows that it is their responsibility to return as heavy of a volume of fire as possible, with the intent of achieving fire superiority over the attacking forces. The amount of return fire given by each AR is a decisive factor in the ability of his fireteam members to maneuver to advantageous positions, or towards cover or concealment as required.
- **Are comfortable with being employed in the base of fire element.** ARs must be familiar with the concept of acting as part of a 'base of fire' element. This includes being proficient at long-range fire, knowing how to shift fire to account for friendly forces reaching and moving through the objective area, and how to fire controlled, sustained, and effective suppression.
- **Maintain appropriate positioning.** When the fireteam leader does not explicitly dictate otherwise, it's up to the automatic rifleman to maintain a position in the formation appropriate to the terrain, enemy, et cetera. He must constantly be aware of possible firing positions from which he can best employ his AR, and be able to move to them and begin engaging the enemy at a moment's notice.

Assistant Automatic Rifleman

The assistant automatic rifleman, or "AAR", is the right-hand man of the automatic rifleman. They help spread-load the ammunition duties with the AR by carrying additional ammunition for that weapon.

The AAR's role is to stick with the AR and provide support - the two always form a buddy team. The AAR supports the AR in the form of providing security, helping to spot, engage, and adjust fire on targets.

If the automatic rifleman is killed, the assistant will take control of the weapon and become the fireteam's new automatic rifleman. In the event that both the AR and FTL become casualties, the AAR will take control of the team's riflemen and assess the situation. If possible, the AAR will maintain the remaining four members as a distinct fireteam - if unable, such as due to high casualties or confusion, the crippled fireteam may merge with another.

Assistant Automatic Riflemen...

- **Look out for their automatic rifleman combat buddy.** Your role is to protect the AR and help to augment their effectiveness. Do whatever you can to help keep them in the fight. Be especially alert for any enemies attempting to flank them. While the entire fireteam should be concerned with flank security, the AAR should be even more active in scanning for such threats. The AR is a devastating unit when employed properly, with the enemy will recognize and attempt to elimate.
- **Scan for, spot, and call out targets for the AR.** Particularly while the AR is engaging, it's up to the assistant to search for, spot, and communicate the positions of any priority targets.
- **Are proactive in ammo distribution.** Don't wait until the AR asks for a reload, instead be ready to supply a new box of ammo during lulls in combat. Always ensure that the AR is loaded and good to go.
- **Assist in making fire adjustments.** The assistant can often see the results of the AR's fire more clearly than the AR can. If need be, the assistant should be ready to call out fire adjustments to help the AR work their rounds onto target. For instance - "bring it up, you're hitting low", "more left, more right", etc.
- **Never drop the extra automatic rifleman ammo you're carrying because it's "heavy".** The AAR's role is in large part to bring along extra ammunition for their automatic rifleman buddy.
- **Maintain appropriate positioning.** The assistant should generally be within shouting distance of the automatic rifleman, and oftentimes much closer.

A TYPICAL ASSISTANT AUTOMATIC RIFLEMAN, KITTED OUT TO CARRY HIGH-CAPACITY MX SW MAGAZINES IN ADDITION TO HIS RIFLE MAGS

Rifleman

Every member of the platoon is a rifleman first and foremost. In a fireteam, the rifleman is the lowest ranking or newest member of the team. This role is a great way to get new players into the action, without burdening them with additional responsibilities such as those carried by the AR and AAR.

Riflemen...

- **Stick with their buddy teammate(s).** This fundamental low-level teamwork is an essential part of the fireteam, and by association, the squad's effectiveness.
- **Scan for, spot, and call out targets.** Always be alert, always be scanning, and provide security when halted.
- **Maintain appropriate positioning.** The rifleman should generally be within shouting distance of their assigned buddy teammates, and oftentimes much closer.

A RIFLEMAN LISTENS TO A BRIEFING PRE-MISSION

Alternate Fireteam Roles

Fireteam compositions can change to reflect the mission of the platoon in any given scenario. The most common alternate fireteam member role is that of the light anti-tank rifleman, which is described below.

Anti-Tank Rifleman, Light ("LAT")

Fireteams will typically carry light anti-tank weaponry if enemy armor is expected to be present in an area. Generally, this will result in the team's rifleman being given a single-shot light anti-tank weapon like the AT-4 or M72 LAW. The anti-tank rifleman will carry out their normal rifleman duties, and in the event that enemy armor is encountered, they will immediately transition into anti-tank mode and attempt to take it out based upon their team and squad leader's directives.

As their name implies, light anti-tank launchers are an effective weapon for usage against light armor such as armored personnel carriers, while heavier armor such as that found on main battle tanks will require multiple impacts from LAT weaponry to defeat.

AN ANTI-TANK RIFLEMAN PREPARES TO FIRE THEIR AT-4 AT ENEMY LIGHT ARMOR IN THE ALL IN ARMA MOD

Note that if the standard rifleman role is replaced by an anti-tank gunner in the fireteam, the AAR becomes the junior role, followed by the anti-tank gunner, the AR, and finally the FTL. This is to ensure that the junior team member does not have anti-tank responsibilities, as they can be rather significant roles in the missions that need them.

Anti-Tank Riflemen (Light)...

- **Are proficient with their assigned anti-tank weapon and are able to engage enemy armor with confidence out to at least 300 meters.** The more, the merrier - 300m is the bare minimum expected. To attain this proficiency, AT riflemen are expected to spend 'range time' engaging stationary and moving targets at various distances until they are confident in their first-shot abilities.
- **Take only the shots they know they can hit.** Due to it being a single-shot weapon, an AT rifleman cannot afford to miss their shot. When in doubt, if time and the tactical situation allow for it, don't hesitate to pass the AT off to a player who is more proficient if you feel that you cannot be successful with it - preferably *before* combat starts.
- **Aim for the flanks, rear, or top of an armored vehicle.** Armored vehicles tend to have their heaviest armor in the front, with the sides, rear, and top being thinner and more favorable places to hit them. Bear in mind that flank shots will have a chance to induce a "mobility kill" via 'tracking' (destroying the tank tracks) a tank. A tank that has been "mobility killed" is still a threat if the turret is still functional, so ensure that it is fully knocked out with an additional AT shot from another squad member.
- **Take cover once they've fired their anti-tank weapon.** Tank crews tend to react with anger towards being shot at by things that can actually harm them. If firing a hard-launch weapon, the backblast will kick up a dust signature that will allow a tank crew to spot you if you do not take cover or relocate.
- **Know the capabilities and limitations of their weapon and utilize the principle of "volley firing" on targets when in doubt of a one-shot kill.** Light anti-tank weapons have a tendency to not be terribly effective against medium and heavy armor. With this in mind, anti-tank personnel are expected to work towards using "volley firing" to engage difficult targets (either heavy armor or difficult shots). Volley firing is the act of having multiple anti-tank gunners ready to engage a target at the same time. This maximizes the chance to knock out a target - if one gunner misses, the other can adjust and fire a killing shot. Or, for heavy armor like tanks, multiple hits can be delivered in the span of seconds.
- **Are familiar with the backblast danger presented by their weapon, and know how to clear it.** In some mods, anti-tank weapons produce a hazardous backblast when they are fired - typically in the form of a cone extending 60-90° from the rear of the launch tube, and producing damage anywhere from 30-60 meters behind the launcher. The backblast of most anti-tank weapons has the capacity to kill or seriously wound those who are in the danger area, though it falls off over distance significantly. Some weapons are designed to have "soft-launch" capabilities that reduce or remove the backblast hazard, but you're unlikely to find light anti-tank weapons with such a feature.

Where to Aim

As a general rule, armored vehicles have their strongest armor in the front and on the turret, with weaker armor on the sides, and the weakest armor on the top, bottom, and rear of the vehicle. For this reason, it's important to avoid taking shots - particularly with light anti-tank assets like the AT-4 - on the heavy armored parts of vehicles. Taking flank or rear shots is the best course of action, and occasionally you will even find yourself in a position where top or bottom shots become possible.

GOOD ANTI-TANK SHOTS - REAR (L), FLANK (R)

BAD ANTI-TANK SHOTS - FRONTAL (L), FRONTAL OBLIQUE (C), REAR OBLIQUE (R)

Clearing Backblast

To prevent their anti-tank weapon from injuring or even killing friendly troops, an anti-tank rifleman must "clear backblast" before firing their weapon.

1. When preparing to make an anti-tank shot, the gunner quickly scans to their left and right while loudly declaring other players to "Clear backblast!". The gunner's scan is intended to give them visibility on who or what may be behind them, and help them visually verify that the backblast area is clear of friendly personnel.
2. Any team members nearby, upon hearing "Clear backblast!" spoken immediately shift position out of the danger area.
3. Anyone who has cleared the danger area, upon visually scanning it, is expected to declare "Backblast all clear!" to let the gunner know that they are able to safely fire.
4. Upon hearing "Backblast all clear!", or having visually confirmed that the area is clear, the anti-tank gunner confirms their sight picture before loudly declaring "Rocket!" and firing the weapon.

Firing from Enclosures

In some mods, firing anti-tank weapons indoors can be very hazardous to your health. Avoid doing so when possible, as the backblast can kill or seriously injure you due to the restrictions of the structure.

Soft-launch weapons like the Javelin or PCML can be safely fired out of an enclosed space, but RPGs, AT-4s, SMAWs, and other common hard-launch anti-tank weapons cannot.

THE SQUAD

Squad Structure & Leadership

Squad Organization

A rifle squad is formidable force on the battlefield. Consisting of two fireteams of six players, and a squad leader element of two players, this fourteen player unit is able to have a significant impact on the flow of a battle.

STANDARD RIFLE SQUAD, WITH SQUAD LEADER AND MEDIC IN FOREGROUND

Squads consist of an impressive array of firepower, and are just as well-rounded as the fireteams they are composed of. In addition to their ability to inflict significant harm, they also are accompanied by a medic who can tend to any wounds that may be received through the course of a fight. The medic acts as the second man in the two-man squad lead element, providing security for the squad leader when they're not tasked out with tending to wounded squad members.

The order of leadership succession in a squad goes from the squad leader to the first then second team leaders.

Squad Leader ("SL") Responsibilities

The squad leader has similar responsibilities to the fireteam leader, except instead of controlling individual players, they control entire fireteams. They are tasked with leading their squad in accordance with the platoon commander's intent and direction, as well as coordinating laterally with their fellow squads. The squad leader's motto is to **"Lead from the front"**, since they know that they cannot direct their fireteams most efficiently if they cannot observe their movements and combat.

SQUAD LEADER (LEFT) AND SQUAD MEDIC (RIGHT)

Squad leaders...

- **Get their direction from the platoon commander.** They are expected to be able to take a broad goal set by the platoon commander, and turn it into a plan that they can pass down to their fireteam leaders. This includes setting rules of engagement, formations, waypoints, rally points, movement speeds, and any other relevant information.
- **Ensure that their team leaders and squad members know what the plan is.** The "commander's intent" is conveyed to all squad members so that whatever happens, regardless of casualties, everyone knows what the end goal is and can adapt and work towards that with flexibility and responsiveness.
- **Position themselves so that they can best observe their fireteams, and exercise command and control over them.** A squad leader who isn't staying close to their fireteams is quickly rendered ineffective. Squad leaders must always be with their fireteams, positioned where they can make sound and timely tactical judgments, and issue clear and appropriate orders. Typically a squad leader will be just behind the front line, positioned to where they can see as much of their squad as the tactical situation allows for.
- **Dictate squad formations, rules of engagement, and general combat posture, adapting to the situation at hand and the Platoon Commander's guidance.** The squad leader must be ever vigilant regarding the tactical situation and must be able to make timely adjustments to the squad's formation, ROE, posture, and more.
- **Communicate key information across to other squad leaders and up to the platoon commander.** This includes information like casualties incurred, enemy contacts, ammunition status, and other vital pieces of information that maintain the platoon's situational awareness and assist the other squad leaders and platoon commander in their planning.
- **Maintain situational awareness on the platoon's disposition, as well as that of the enemy.** Knowing where friendly forces are is critical to avoiding friendly fire incidents, and knowing where the enemy is gives the squad leader important information to use in making tactical decisions. The squad leader should be actively telling their squad members where friendly forces are, to ensure that the risk of blue-on-blue is minimized.

- **Wield their fireteams as their weapons by directing and controlling their fire, picking out and assigning key targets, and maneuvering the fireteams across the battlefield.** A squad leader who is giving good, timely orders, maneuvering his fireteams through combat and directing their fire, does far more damage to the enemy than one who is preoccupied with his own rifle. A squad leader avoids becoming personally engaged in firefights when possible, instead focusing on designating targets, maintaining awareness of the tactical situation, communicating with higher, maneuvering the teams, directing and controlling their fires, and coordinating the handling of any casualties that occur. The squad leader may use their rifle's tracers to direct fire, or UGL smoke or flare rounds to designate targets or screen movement, but they generally spend more time commanding than they do shooting. This has the additional benefit of making them less likely to draw the attention of the enemy, and helps to prevent tunnel vision from taking effect.
- **Know how to consolidate and reorganize teams when casualties occur.** This includes using group management features in an expedient fashion, as well as consolidating communication channels when required.
- **Keep their squad tied-in with other friendly squads when moving in a platoon formation.** The squad leader must stay aware of how close their squad is to other squads, to ensure that dangerous gaps do not develop in the overall formation. The tighter and more broken the terrain, the more important this becomes.

Squad Roles

Squad Medic

When so many rounds are flying around, someone's bound to get hit sooner or later. Unfortunately, this someone is occasionally a fellow squad member. When it happens, the squad medic is the man to turn to. The squad medic is critically important - they are the key to maintaining the combat effectiveness of the squad when heavy contact has been made.

MEDIC TENDING TO AN INCAPACITATED TEAMMATE

Squad medics...

- **Are concerned first and foremost with the welfare of their squad members.** While a medic carries a rifle, it is nowhere near as powerful as the skill they bring as a healer. Medics leave the fighting to the infantry, instead focusing on patching up the wounded and getting them back into the fight. Medics should only fire their weapon in self-defense, or in the defense of the wounded.
- **Stay slightly removed from the front line.** This gives the medic a view of the bulk of the squad disposition and helps to prevent tunnel vision. By staying off of the front line, the medic is able to maneuver to different fireteams more easily in response to people being wounded, without drawing the same kind of fire as a frontline player.
- **Look out for their squad leader and provide rear and flank security when not acting in a medical capacity.** The squad leader often is preoccupied with commanding fireteams, leaving them less time to watch their own back and flanks. The medic fills this gap whenever not actively helping out wounded players.
- **Are comfortable with using smoke to provide concealment for the wounded.** Medics carry a number of smoke grenades that are intended to be used to conceal wounded players so that someone else can rush out and drag them to safety. Knowing where and when to throw these smoke grenades is a key skill for a medic to develop. A medic must be conscious of masking the wounded person from enemy observation, while at the same time not compromising the visibility of friendly elements.
- **Triage their patients.** A medic must be able to rapidly diagnosis casualties and pick out the ones that need the most urgent attention. Find those who are heavily damaged - such as those that can no longer move at a jogging pace - and prioritize their treatment. People who have been lightly wounded and are in pain can wait - the urgent ones cannot. In more advanced wounding models, various medical treatment options may be available, with more wounding states, such as unconsciousness, cardiac arrest, etc. The triaging of these sorts of near-death casualties always takes precedence over those who are lightly wounded.

THE PLATOON

Platoon Structure & Leadership

Platoon Organization & Purpose

Composed of three squads - **Alpha**, **Bravo**, and **Charlie** for First Platoon, and **Delta**, **Echo**, **Foxtrot** for Second Platoon - as well as a four-man Command Element, platoons are one of the largest exclusively player-controlled units that can be fielded in Arma 3.

SHACKTAC PLATOON, WITH COMMAND ELEMENT ON THE RIGHT SIDE

The platoon headquarters element ("PltHQ") consists of:

- **Platoon Commander ("PltCo").** Takes orders from the Company Commander and leads their platoon in accordance with said orders.

- **Platoon Sergeant ("PltSgt").** The right-hand of the PltCo, fulfilling a wide variety of roles depending on the mission type given.
- **Platoon Medic ("PltMed").** Acts as the senior medic of the platoon. They deal with any casualties that the squad medics cannot handle, and stand ready to reinforce a rifle squad in the event that their medic becomes a casualty.
- **Rifleman.** Tasked with providing security for the PltHQ element.

Platoon Commander Responsibilities

A platoon commander's role can vary significantly depending on whether they're operating as the senior member of a mission, or as one of multiple platoon commanders under the direction of a company commander. In the event that they are the senior member, their role expands to encompass the considerations detailed in the "Company Commander" section - if not, his task is made somewhat easier by the company commander assuming the higher-level aspects of the mission. Regardless, the platoon commander has many responsibilities. They are the final say in all things related to their platoon and are responsible for the conduct of their assigned mission from start to finish. They direct the three main squads of the platoon, as well as any attachments, and use a multitude of skills to accomplish the platoon's mission with the minimal friendly and the maximum enemy casualties.

The platoon commander's motto is **"Life or death, from my commands".** This is intended to remind them of the fact that the virtual lives and, more importantly, ***the gaming enjoyment of every member of their platoon*** is ultimately their responsibility, and that their orders, good or bad, will at some point result in someone (and in bad cases, many!) having to sit out due to virtual death. It is important that the PltCo is able to function as a leader even when things aren't going according to plan and virtual bodies are stacking up. Their cool-headed orders, given in the midst of raging fights, are often the deciding factor between victory and defeat for their platoon, and by association, the company.

The Platoon Commander...

- **Briefs the squad leaders and element leaders and ensures that the plan conveyed to them by the company commander is understood.**
- **Conveys the commander's intent to all of their squad and element leaders.** They insure that their squad and element leaders know why they're doing what they're doing, how they're doing it, and what the desired end state is - both at the platoon and company level. Thus, if necessary, an element leader can make a rapid tactical decision, or assume command of the entire platoon if casualties are taken, all while still acting within the guidance of the intent of the PltCo.
- **Distributes special assets assigned to their platoon by the company commander.** This includes attaching machinegun or antitank teams to squads, assigning vehicles to support squads, and assigning transport vehicles or aircraft to specific squads when available.
- **Supervises the execution of the platoon's mission, issuing new or updated orders as it progresses.** The PltCo stays on top of the tactical situation, and issues appropriate, timely orders as the tactical situation evolves.
- **Position themselves where they can exercise the best command and control of his squads.** In order to guide the fight effectively, it is important that the PltCo is able to see it. To this end, they must constantly judge where they can best accomplish this, and ensure they're able to safely maintain such a position. In the event that the platoon splits into assault and support elements, the PltCo will either go with the assault or stay at the support position - whichever they choose, they ensure that their PltSgt goes with the other.
- **Uses their PltSgt to share the workload.** The PltSgt is there to assist the PltCo wherever possible, and should be used as needed.
- **Avoids micromanagement, trusts in the judgment of their squad leaders, and allows them to develop the fight when possible.** Squad leaders are smart and capable individuals, so the PltCo treats them as such. In turn, squad leaders shine in the fight, it's their job to carry out orders while keeping their men alive. Giving them an opportunity to be creative in how they carry out orders, and trusting their assessment of the situation when given, is an important aspect of being PltCo.
- **Keeps their squads within mutual supporting distance of each other whenever possible.** A PltCo must be capable of making plans in which the platoon does not run off disorganized or attempting to do too much at once. This dilutes the combat power of the platoon and sacrifices the squads' ability to mutually support each other. The PltCo must be able to make judgment calls as to when the platoon should stay tightly focused and mutually-supporting, and when it is necessary to detach a squad (or more) to facilitate mission accomplishment. When in doubt, they consult with the company commander for guidance.
- **Reorganizes the platoon as needed to fulfill the mission.** This can include merging understrength elements into larger elements, or reorganizing the platoon in the event of significant casualties. We use the ShackTac Interact addon to control this.
- **Maintains awareness on the platoon's combat status, casualties, ammo, and other capabilities.** This includes getting ACE (ammo, casualties, equipment) reports after fights. If resupply is needed in the future, he communicates this up to the company commander.

Platoon HQ Roles

Platoon Medic ("PltMed")

The platoon medic is the medic grouped with the platoon headquarters at the start of a mission. The platoon medic has several responsibilities above and beyond what a normal medic has, and is considered to be the platoon's senior medic.

The Platoon Medic...

- **Sets up the Platoon Aid Station ("PAS") when in the defense.** The Platoon Aid Station should be situated in the middle of the platoon's defense, close to equidistant from each squad. The PAS will serve two primary purposes: One, it will allow for the Platoon HQ element to receive medical care furthest away from the fighting. Two, it will allow for all platoon members an alternate place to get medical attention if their Squad Aid Station is compromised or otherwise unusable.
- **Reinforces squads who lose their medic when in the attack, and sometimes in the defense.** This is a call that must be made by the Platoon Commander. In some situations they will detach the PltMed to a different squad, whereas in other situations it may prove safer to keep the PltMed further to the rear and simply bring all casualties from that squad to them or to another squad's medic.
- **Acts as security for the PltHQ element.** This simply means that when they're not doing something medical, they watch the back of the PltCo.

TENDING TO A SEVERELY WOUNDED TEAMMATE

Platoon Sergeant ("PltSgt")

The Platoon Sergeant is an interesting leadership role that can be used for a variety of purposes. Primarily, they are as follows.

- To increase the platoon's efficiency in any mission by spreading the workload between the PltCo and PltSgt
- To help a player learn how to PltCo, or to observe an existing PltCo and help them develop

The Platoon Sergeant...

- **Actively searches for ways that they can assist the PltCo in carrying out the assigned mission and is prepared to carry out any tasks that the PltCo assigns to them.**
- **Position themselves so that their view of the battlefield complements that of the Platoon Commander.** When squads are split up, such as when employing support-by-fire and assault elements, the PltSgt will go with the element that the PltCo is not with. This allows them to report directly to the PltCo via radio and give timely orders to the element they are with, based on their direct observation of the tactical situation they are in.
- **Exercises or assists in the command and control of the following elements when required.** These are of particular importance when the platoon commander is busy directing squads in a fight - the PltSgt's involvement keeps him from being distracted and allows for greater efficiency. While the company headquarters will generally be in control of higher-level mission assets, platoon sergeants have the best eyes in their area of operations and can assist supporting units when operating in their area.
  - **Vehicle or weapons elements.** When vehicle or weapons elements are attached directly to support a platoon, the PltSgt can give them guidance and request support directly through their radio channels.
  - **Close air support.** The PltSgt communicates with the company forward air controller ("FAC") to request air support, marking his targets and ensuring they're understood. In the event that tighter coordination is required, the Company FAC may either move to the platoon's location or may temporarily transfer terminal control over to the PltSgt - at which point the PltSgt is talking directly to the supporting aircraft.
  - **Artillery support.** The PltSgt communicates with the company forward observer ("FO") to direct artillery fires, with the same basic guidance as when requesting close air support, above.
  - **Ammo resupply.** If a logistics element exists, the PltSgt will communicate supply needs up to them. The logistics element will coordinate with the CoyHQ in order to determine when and where any resupply efforts will occur.
  - **Helicopter insertions or extractions.** The PltSgt designates landing zones in their area of operations, gives the transport aircraft final guidance into the landing zones as required, and can help oversee the loading of squads into different lifts.
- **Is prepared to step up and take command of the platoon if required**.

THE COMPANY

Company Structure & Leadership

Company Organization & Purpose

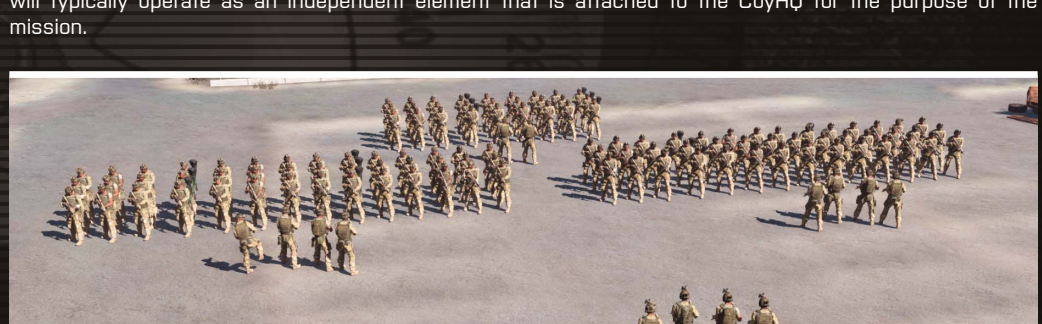
A ShackTac company typically consists of two platoons plus various attachments such as a weapons squad or weapons platoon. It may operate as a mechanized, motorized, airmobile, or armored unit - each having their own specific organizational structures and associated considerations. For the sake of simplicity, we'll talk about a traditional infantry company with attachments.

The company's two platoons are labeled numerically - first and second platoon - and each clocks in at about 40-50 players.

The company headquarters element ("CoyHQ") consists of:

- **Company Commander ("CoyCo").** The final say in all things planning and decision-making. Leads the entire Company in carrying out the assigned mission.
- **Company Executive Officer ("CoyXO").** The right-hand of the company commander, fulfilling a wide variety of roles depending on the mission type given. They typically carry out coordination with any attached units, logistics, or other assets - keeping the CoyCo free to look at the bigger picture.
- **Company Medic ("CoyMed").** Acts as the senior medic of the company. They typically deal with any casualties in the units or attachments operating closest to the CoyHQ, particularly those that may not have their own medics, such as aircrews.
- **Forward Air Controller or Forward Observer.** When either air or artillery are utilized, the fourth member of the company headquarters is responsible for helping to coordinate their employment. When not used in this role, the fourth member is simply a rifleman.

Additional CoyHQ elements may exist on a special basis, such as a logistics or engineer unit, though these will typically operate as an independent element that is attached to the CoyHQ for the purpose of the mission.



TWO INFANTRY PLATOONS AND A WEAPONS PLATOON FORM THIS INFANTRY COMPANY

Company Commander Responsibilities

The company commander's role is similar to that of the platoon commander, except that instead of dealing with squads, they're dealing with platoons. This significantly changes the pace of their leadership – a CoyCo is able to look further ahead in the mission, spend more time on the details, and isn't as front-line as the platoon commanders. The company headquarters element is focused around spreading the workload – if logistics units are available, a representative will be traveling with the company headquarters. If air support is available, a member of the company HQ will act as a forward air controller – or a forward observer if artillery is present. The company executive officer is akin to the platoon sergeant – they may position themselves with one of the platoons while the company commander travels with or near another, or they may spend most of their time coordinating supporting assets.

The company commander is responsible not only for planning the entire operation, but also must work to adapt the plan to situations as they develop as well as efficiently utilize supporting assets to carry out said plan. They look ahead and determines when resupply, reinforcements, and other considerations will factor into things, as well as when and how to conduct larger-scale movements or shifts in objectives.

When operating at platoon strength or lower, the platoon commander takes on the responsibilities detailed for the company commander, while the platoon sergeant takes on the roles of the company executive officer.

The company commander's motto is **"Where next from here?"** - this helps to remind them that they're the most forward-planning element and must continually be evaluating the situation and thinking several steps ahead.

The Company Commander...

- **Plans the mission, briefs the platoon leaders and any special element leaders and ensures that the plan is understood.**
- **Conveys the commander's intent to all of their platoon and element leaders.** Their intent allows for platoon and element leaders to know why they're doing what they're doing, how they're doing it, and what the desired end state is. Thus, if necessary, an element leader can make a rapid tactical decision, or assume command of the entire Company if the CoyHQ become casualties, while acting within the guidance of the intent of the CoyCo.
- **Distributes special assets.** This includes attaching machinegun or antitank teams to platoons, assigning vehicles to platoons, and assigning transport vehicles or aircraft to specific platoons when available.
- **Dictates the Rules Of Engagement (ROE).** Any special considerations are made and conveyed, and the platoons receive updated ROE from the CoyCo when appropriate.
- **Determines how the company communication plan will work.** This is based largely on unit standard operating procedures and will vary based on whether a unit is using Teamspeak, in-game VON, or a radio simulation mod like ACRE. It is the CoyCo's responsibility to establish and communicate the plan to subordinate units. In ShackTac, a CoyCo marks out the radio channels for their side in an empty area of the map that all units can easily reference.
- **Supervises the execution of the mission, issuing new or updated orders as it progresses.** The CoyCo stays on top of the tactical situation and issues appropriate, timely orders as the tactical situation evolves.
- **Position themselves where they can exercise the best command and control of their platoons.** In order to guide the fight effectively, it is important that the CoyCO is able to see it. To this end, they must constantly judge where they can best accomplish this, and ensure they're able to safely maintain such a position. In the event that the platoon splits into assault and support elements, the CoyCO will either go with the assault or stay at the support position - whichever he chooses, he ensures that his CoyXO goes with the other element.
- **Uses their CoyXO to share the workload.** The CoyXO is there to assist the CoyCO wherever possible, and should be used as needed.
- **Avoids micromanagement, trusts in the judgment of their platoon leaders, and allows them to develop the fight when possible.** Platoon commanders have a great deal on their plate - the CoyCO lets them conduct the fight in their area, trusting their judgment to make the best of the situation. While a fight is ongoing, the Company Commander continually asses what they can do to help the platoon commanders - are there assets they can bring to bear in support, and if so, how would they best be employed?
- **Reorganizes the company as needed to fulfill the mission.** This can include merging understrength elements into larger elements, or reorganizing the company in the event of significant casualties.
- **Coordinates with support elements such as arty and CAS, via their Forward Observers and Forward Air Controllers, if available.**
- **Maintains awareness on the company's combat status, casualties, ammo, and other capabilities.** This includes getting ACE (ammo, casualties, equipment) reports from the platoon leaders after fights.
- **Ensures that resupply is conducted as needed.** Resupply can take several forms. They all basically involve a vehicle being loaded with ammo and gear and moved to the platoon's location. If resupply is impossible, the CoyCo makes the decision as to whether friendly forces should acquire enemy weapons (such as when ammo is critically low) or coordinates with all units to redistribute remaining ammunition throughout the platoon. Resupply is detailed further below.

Company HQ Roles

Company Medic

The company medic is the medic who is grouped with the company headquarters at the start of a mission. The company medic has several responsibilities above and beyond what squad or platoon medics have, and is considered to be the senior medic in any given mission.

The Company Medic...

- **Provides medical aid to units not covered by existing medical assets.** This typically comes in the form of aircrews or armored/mechanized crews. The location of the CoyHQ behind the lines of the main combat tend to make it a good location for such crews to drive or land to seek medical aid.
- **Helps to coordinate medical resupply.** The CoyMed keeps in contact with the platoon medics in order to assess when medical resupply may need to be called in.
- **Drives or directs any medical vehicles attached to the company.** In the event that multiple medical vehicles are employed, the CoyMed will be in charge of the element tasked with crewing them. In the absence of medical vehicles, the CoyMed may act as the driver for the CoyCo.

Company Executive Officer

The executive officer is similar to the platoon sergeant - in short, they're a role that is designed to help spread the workload of the Company Commander. More specifically, they are often tasked with coordinating the employment of higher-level assets such as air support or transportation, artillery, and supporting elements like armor or mechanized forces.

The Company Executive Officer...

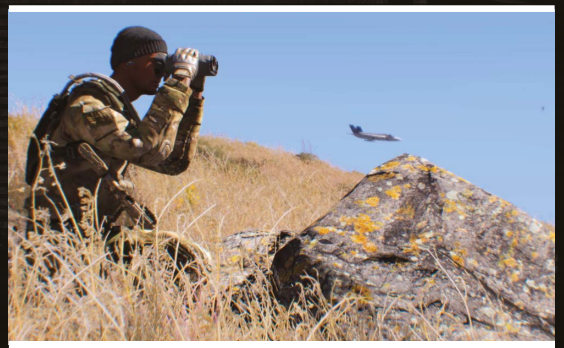
- **Actively searches for ways that they can assist the CoyCo in carrying out the assigned mission and is prepared to carry out any tasks that the CoyCo assigns to him.**

- **Position themselves so that his view of the battlefield complements that of the company commander.** When the mission requires platoons to operate in distinctly different areas, the CoyXO will tend to travel with the platoon that the CoyCO is not with. This allows them to report directly to the CoyCo via radio and give timely orders to the element they are with, based on their direct observation of the tactical situation they are in.
- **Exercises command and control over the following elements when required.** These are of particular importance when the company commander is busy directing other actions - the CoyXO's involvement keeps him from being distracted and allows for greater efficiency.
  - **Vehicle or weapons elements.** The CoyXO stays in close contact with the overall commanders of different elements, helping to direct them around the battlefield in accordance with the CoyCO's plan.
  - **Close air support.** By coordinating with the company's forward air controller and any elements requesting air support, the CoyXO can ensure that timely air support is delivered for the elements that most need it.
  - **Artillery support.** By coordinating up with the company's forward observer as well as talking with the units requesting support, the CoyXO ensures that artillery is prioritized to the units that need it most.
  - **Ammo resupply.** The CoyXO is able to direct the logistics train to establish resupply points in accordance with needs and operational tempo. They notify the CoyCO when such supply points have been established, allowing the CoyCo to direct a mission-wide resupply effort to commence.
  - **Helicopter insertions or extractions.** The CoyXO helps to identify landing zones, split platoons into helo lifts, and otherwise coordinate large-scale helicopter troop movements.
- **Is prepared to step up and take command of the platoon if required**.

Forward Air Controller

The Forward Air Controller ("FAC") is a player who is tasked with coordinating air elements in the support of ground forces and frequently is assigned to the company headquarters element. The FAC is expected to be knowledgeable in the employment of any CAS elements, be they fixed-wing (jets) or rotary-wing (helicopters). The more familiar the FAC is with the aircraft, the better they will be able to direct its employment. The best FACs have extensive experience as a CAS aircraft pilot.

The primary job of the FAC is to locate enemy targets and call in air strikes on them. They act as the "eyes on the ground" for the CAS aircraft and increases the effectiveness of the air support with the information they are able to relay to the aircraft, acting as the liaison between the CoyHQ and any supporting aircraft.



A JTAC LASER DESIGNATES A TARGET FOR AN F-35

It is of great importance that a FAC is used when player-controlled aircraft are operating in a close air support role. Without their support, the CAS aircraft cannot reach the same level of responsiveness and effectiveness.

The forward air controller role is described in greater detail in the *Combined Arms: Close Air Support* section, later.

Forward Observer

The Forward Observer or "FO" is a player who is tasked with coordinating artillery support for the platoon. They are expected to be knowledgeable in all things artillery, from the types of rounds to use, how to call for fire, how to adjust fire, and everything in between.

The forward observer role is described in greater detail in the *Combined Arms: Artillery Support* section, later.

Resupply

Conducting Resupply Operations

Extended battles tend to result in quite a lot of ammo expenditure as well as the potential for casualties. In order to give a unit the endurance to complete a lengthy action, tactical pauses may need to be conducted in order to carry out a resupply and reinforcement operation. Resupplying is either planned in advance to occur at a given point during a mission, or if unplanned, happens because of the collective reports of all subordinate units. A platoon or company commander stays on top of the ammunition status for his overall unit – once it gets low enough, but before it reaches a critical level, he will make a plan for conducting resupply.

Resupply can be carried out in several different ways, depending on the force composition and supporting assets available. The most typical form is that of a logistics train – a collection of vehicles that bring with them ammunition, as well as repairs and additional fuel for any vehicle assets. Logistics are often under the control of an engineer section, operating closely with the platoon or company headquarters to determine when and where they'll set up their resupply points.

COMMON REARM, REFUEL, AND RESUPPLY VEHICLES

Resupply begins with the appropriate units adopting a defensive posture – often in the form of a "go firm" command. Headquarters will determine a resupply site, picking something that is sheltered and defensible, then establish friendly elements in a defensive posture around it. After that, the resupply vehicles will arrive and position themselves centrally. Each squad will resupply in sequence, sending half of their strength at a time to gather ammo, anti-tank weapons, and other supplies from the resupply point. Any vehicles will refuel and rearm in sequence. The goal is to ensure that regardless of who is resupplying at any given time, the bulk of friendly forces are spread out and ready to repel any surprise enemy attacks.

If reinforcements are being delivered, these reinforcements will arrive in the same manner as the resupply vehicles. If arriving as a cohesive squad element, they'll report to the higher headquarters and be given instructions as to where they should position themselves in the overall formation. When arriving piecemeal, reinforcements will report to the PltSgt or company executive officer for assignment to replacement squads.

Resupply via Unmanned Ground Vehicle

The Stomper UGV allows an infantry unit to have resupply brought to them directly, even in rough terrain. These UGVs - directed either by a member of the company headquarters or an attached UGV section - are capable of resupplying a platoon with ammo, medical aid, grenades, and also anti-tank weaponry. Logistics units can even deploy themselves to a fixed site behind the action, then send out Stomper UGVs to ferry necessary supplies up to the front line. This can be very helpful when the tactical or terrain situation prohibits the larger logistics vehicles from getting too close to front-line forces.

Resupply Drops

Note that ground is not the only angle for resupply or reinforcement. In terrain that does not permit easy ground resupply, or when operating over large distances, aerial resupply may be the preferred method. This is similar to ground resupply – the main difference is that ground forces must secure an appropriate landing zone for helicopters to bring troops and gear in via. Aerial resupply can also be conducted via supply drops – either through cargo planes dropping palletized supply crates under parachute, or via helicopters doing the same. The trick with this sort of aerial resupply is for the aircraft to have judged the wind and drop zone correctly – watching a pallet of much-needed ammo drift in the wind and end up landing on another ridgeline across a deep valley is less than desirable.

Aircraft Rearm & Refuel

For aircraft needing additional ammunition or fuel, two options tend to be available. The first is to return to the airbase they initially launched from – often a bit of a trek, but an aircraft can typically find full faculties for rearm, repair, and refuel at major airbases. At other times the ground forces may have established Forward Area Refueling/Rearming Points, known as FARPs. These are intended to be used by helicopters and are generally placed close to the front lines. A resupply train operating in trail of a friendly unit can act as a FARP in a pinch as well. Whatever method is used, aircrew ensure that the ground forces understand how much loiter time they have, giving advance warning before going off-station to rearm or refuel. In particularly heavy fighting, ground units will tend to go firm while their air cover is absent. When multiple air units are available, efforts will be made to ensure that one unit is on-station while the other rearms – never leaving the ground forces without some sort of aerial support.

INDIVIDUAL INITIATIVE

Now that we've covered the roles and responsibilities of everyone in the basic ShackTac Platoon, let's take a moment to talk about individual initiative and how critical it is to foster within players. It is extremely important that all players of the platoon understand that they need to have individual initiative in the game. Micromanagement is to be avoided whenever possible, and this means that there is a good possibility that you'll have to take initiative at your level to do something that may not have been specifically spelled out to you but is clearly in the "commander's intent", whether that commander is a FTL, SL, PltCo, or CoyCo.

Here are a few examples of individual initiative at various levels.

Fireteam Member Individual Initiative

While in infiltrating through enemy territory you suddenly see an enemy infantryman taking aim at another fireteam nearby. You immediately take aim and fire upon the enemy while simultaneously giving a hasty contact report to those around you. Your action neutralizes the enemy and quite possibly saves the life of one or more players in the other fireteam that was about to be hit.

In this example, it is clear that the stealth consideration is secondary to preserving the lives of friendly players. Since the enemy appeared ready to shoot, it was imperative that you took him under fire as soon as possible, without worrying about getting authorization. This is the core of what the Universal Rules of Engagement guidelines are intended to help address.

Fireteam Leader Individual Initiative

As a Fireteam Leader, the Squad Leader tells you to hold up while he waits for another squad to catch up to the platoon. You see that the location that you're presently at is about 20 meters short of having a good perspective on the terrain in front of you, due to a brush line that is obstructing your view. You take initiative and move your fireteam 20 meters forward so that they can observe the terrain past the brush line.

In this example, the commander's intent is clearly to stop and take good defensive positions while waiting for friendly units to get in position. Although he did not specifically tell you where to position your fireteam, it is logical that you should be in the best possible position to cover your assigned sector. Since you only need to move 20 meters to accomplish this, it's an easy decision to make.

Squad Leader Individual Initiative

During heavy fighting, communication is lost with the Platoon HQ section. It is unclear whether they were ambushed. Without hesitation, you announce over the radio that you are taking control of the platoon temporarily. Once assuming command, you order the squads to continue fighting in accordance with what the PltCo's plan was, and change things/react to events as necessary. Once the fighting is over, you try to find out what happened to the PLTHQ section.

In this example, you realize that it is imperative that a clear commander is established as soon as possible due to the heavy fighting. Whether or not the PltCo had his mic crap out, lost his voice connection temporarily, or anything else is secondary to this - the important part is to gain control of the platoon and command it until the fate of the PltCo can be determined.

Other Examples of Individual Initiative

- A medic setting up an aid station during a defense mission without having to ask whether they should, or where they should place it
- An artillery observer plotting fire on various likely targets and having the artillery stand by to fire at his command if necessary

- A mortar crew setting up their position and plotting targets without having to be specifically instructed by the PltCo
- Calling out "Check fire!" or "Cease fire, you're shooting at friendlies!" when you have reason to believe that you are being fired on by friendly forces or that friendly forces are firing on friendlies. To be clear, this is as opposed to just saying "hay guys I think we're being shot at by friendlies". "Check fire!" or "Cease fire, you're shooting at friendlies!" is much more decisive and ceases shooting much faster than anything else.

ATTACHMENTS

Attachments Theory

While a platoon or company of infantry is a dangerous force to fight, it doesn't always carry the best weapon systems available at all times. Units are task-organized to fit their purpose - if the area of operations does not have enemy armor, why carry heavy anti-tank assets? If no aircraft are known to be operating in the area, nor likely to show up even in the most extreme circumstances, why bring anti-air missiles?

Whenever special weapons are needed to fulfill the mission, they come from higher organizational units and are attached to the company or platoon for specific missions. These heavier and more specialized weapons are significant force multipliers, and in this section we will go over the most common attachments you can expect to see, as well as how to best employ them and their particular skill sets.

In addition to these special attachments, we'll also cover some of the units you may find at the squad or platoon level that are outside of the normal squad structures - such as designated marksmen.

Special Company Roles

Designated Marksman

A Designated Marksman is a squad-level unit that is equipped with a special rifle fitted with some sort of magnified optic. Their task is to provide accurate fire and observation on the enemy from ranges beyond what the normal riflemen can achieve. They are the precision shooting asset of a squad.

The important distinction between a Designated Marksman and a true sniper is that the DM is attached to a squad and operates with it, to support the squad, whereas a sniper team operates independently and is a platoon-level asset (or higher), under the direct command of the Platoon Commander. The DM typically engages at medium to long ranges (ie - 300-700m), whereas the sniper team can operate out to ranges in excess of one kilometer.

THE 6.5MM MXM DESIGNATED MARKSMAN RIFLE

Basic Designated Marksman Guidelines

- **Act as overwatch whenever possible.** Your optics will give you a better view than the rest of your teammates - take advantage of it. Support the squad by fire from the best position you can find.
- **When your squad is in combat, it is your job to target high-priority enemy combatants (ie machinegunners, team leaders, anti-tank gunners) and eliminate them as quickly as possible.** Once they're down, attack enemies based on the threat they pose. Pay particular attention to longer-ranged targets that the regular infantry may have difficulty engaging successfully.
- **Stay far enough back in any formation that you are able to maneuver at will if the element comes under fire.** Being able to pick the best possible firing position is a much better option than being forced to take the first one you can find nearby.

A DESIGNATED MARKSMAN SCANS THE COUNTRYSIDE FROM THE PRONE

Scout/Sniper & Spotter

The role of a Scout/Sniper team is to both provide battlefield recon and intelligence and deliver precision shots on key enemy personnel. A Scout/Sniper team can be highly effective without ever firing a shot in some situations, whereas other scenarios will see them having a dramatic effect due to their ability to 'lock down' an area with precision shooting.

SPOTTER, KNEELING, AND HIS SNIPER BUDDY

Scout/Sniper Team Organization & Responsibilities

Each Scout/Sniper team consists of two people - a sniper and his spotter. They are typically outfitted in ghillie suits to assist in concealment, and tend to operate at a significant distance from any friendly forces. Their mission is primarily scouting/reconnaissance, though their marksmanship will often be called into play when things heat up. When operating in denser terrain such as urban operations or in theaters where the enemy presence is significant, sniper teams can be augmented with additional members. A common technique is to use two sniper teams, with two or more additional infantry coming along as a security element.

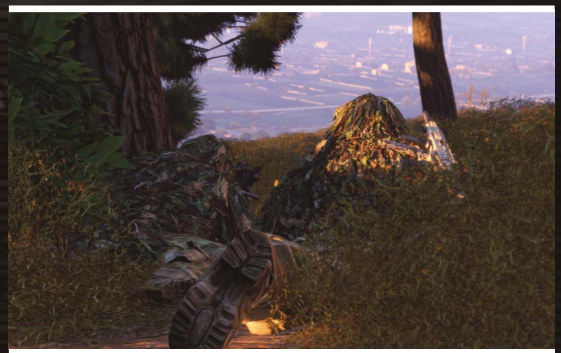
Regardless of the overall size of the team, the basic responsibilities of a sniper and spotter pair are as follows.

- **Sniper**
  - Junior member of the team.
  - Carries and employs the sniper rifle.
  - Engages long-range or precision high-value targets and key enemy personnel.
  - Listens to his spotter's directions.
  - Provides intelligence and reconnaissance to the platoon.
  - Picks the specific 'hide'/shooting position(s) that will be used.
  - Plans the route that the sniper team will use to get to their 'hide' position.
  - Plans the exfiltration route from the 'hide' position.
- **Spotter**
  - Senior member of the team.
  - Equipped with a rifle with grenade launcher as well as binoculars.
  - Provides security for the sniper.
  - Assists the sniper in locating, identifying, prioritizing, and ranging targets, as well as spotting the effects of the sniper's shots.
  - Frequently acts as the point man when moving to or from a position.

Scout/Sniper Guidelines

- **One Shot, One Kill.** In an ideal environment, the sniper strives to fire only one shot from any position that he occupies. A single surprise shot is extremely difficult for the enemy to trace back to the sniper's position, and the morale impact that a surgical elimination of someone has is quite dramatic. If the enemy believes that they will be picked off if they poke their heads up or otherwise leave cover, you will have accomplished the suppression of an entire element with a single well-placed bullet.

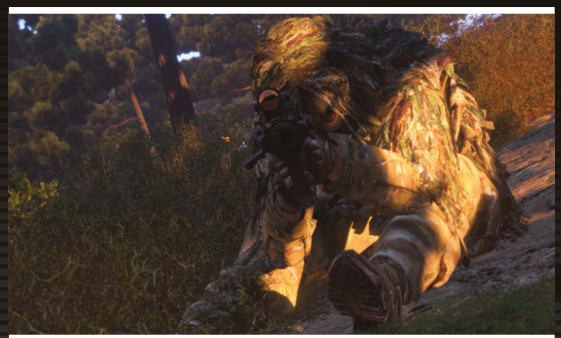
- **Get on the enemy's flank.** The prime place for a sniper to be is off to the side of the enemy. If the enemy is expecting to make contact to their front, they will almost always orient themselves so that they're in cover to their front yet are open on their flanks. Not only does this provide a nice, juicy target to you, but it has the added benefit of being very confusing for them, and typically has them looking in a direction that you are not in - namely, to the front - which naturally means that they are not likely to see any firing signatures from your position (ie muzzle flash, smoke). If you are observing an enemy element from their flank, and friendly forces engage them from the front, you will very likely find yourself faced with a great many prime targets in short order.
- **Be patient.** Move slowly and deliberately into position. You'll be surprised at how safe you will be if you only use a bit of common sense in how you move. Stay low and slow and avoid sudden movements, as they draw the eye. Patience also comes in handy when it comes to shooting - waiting for a perfect shot on a valuable enemy person, like a machinegunner, squad leader, or similar, will pay off in spades in the long term. Wasting your initial shot on some poor FNG isn't going to have nearly the same effect as putting a bullet through the squad leader's head.
- **Target the important people first.** You want to shoot at leaders, enemy snipers/designated marksmen, machinegunners, radiomen, and other high-value targets. One decent way to tell if they're a leader is whether or not they have binoculars - if they do, they're likely someone of some importance. Another way is to observe who a formation is guiding off of. Less-coordinated groups will typically form a "tactical trailing blob" around their leader.
- **Relocate frequently.** Depending on the tempo of the battle, a sniper may or may not be able to relocate between shots. When possible, snipers should move to a new shooting position any time that they can, or any time that they believe their current position has been pinpointed within a reasonable degree of accuracy. One tactic that can be used is to fire from a position, make yourself known, and then relocate to an adjacent position from which you can put fire on your previous location. In this manner you can engage any enemy infantry elements that might have been sent to flank you. As a general rule, always assume that the enemy will locate you significantly before you would think they would locate you. Playing it safe will pay off in survival.

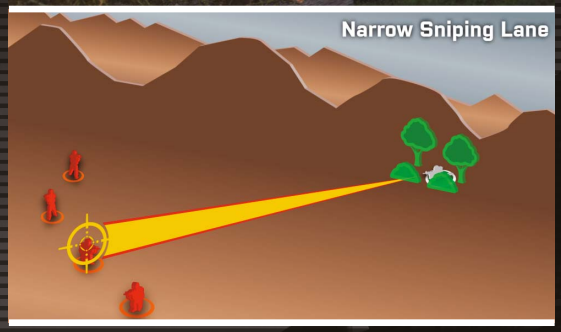


A SNIPER EQUIPPED WITH AN M320 LRR OBSERVES ENEMY MOVEMENTS, WAITING FOR A LEADER TO MAKE HIMSELF KNOWN

- **Shoot from back to front.** If you're on the flanks of the enemy (as you should be), engaging targets that are to the rear of the formation will cause it to take longer for the enemy to figure out that they're taking effective sniper fire. The last person in the formation can topple over from a shot to the head without anyone seeing him, after all, which gives you time to work your way from back-to-front until you've inflicted a number of casualties before they've noticed. Shooting from back-to-front can also make the front people think that someone is firing ineffectively and missing them, causing them to be more bold in their movements.
- **Take advantage of loud noises to mask the sound of your shots.** Firing when the enemy is firing, or when explosions or other loud noises are happening, can make it harder for the enemy to notice the sound of your rifle (particularly if it makes a distinctive noise).
- **Consider what it looks like from the enemy's perspective, and try to shoot at deceptive times**. For instance, if a player is advancing in cover, and then peeks his head around a corner and is shot, the natural assumption to anyone near him is that there was an enemy around the corner. If the reality is that a sniper shot him from the flank or rear, it is very unlikely that the enemy will figure it out before it is too late.

- **The 'sitting' stance** can be used to maintain a high level of stability when grass or obstacles prevent target acquisition in the prone.
- **Narrow lanes of fire can minimize the angles that you can be spotted from.** If you position yourself back from two large bushes and fire through a small gap between them, at a distant slice of ground, you will be far less likely of being spotted. The reverse side is that it will limit the area you can observe and engage targets in. Balancing out just how much of a field of view you need versus how much cover or concealment you need is an art that will take time to perfect.

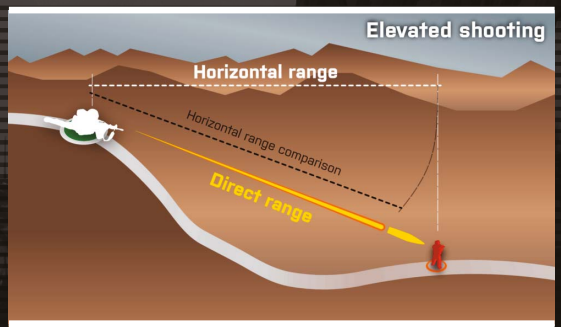




Adjusting for Elevation Differences

When firing up or down at a significant incline towards an enemy target, one must be aware of the fact that their bullets will generally strike higher due to weapon ballistics. In situations like this, a player needs to use the horizontal - or "map range" - of a target to calculate drop, and not the actual straight distance to the target. This is a rough rule of thumb that works acceptably to most shooting distances that Arma3 portrays.

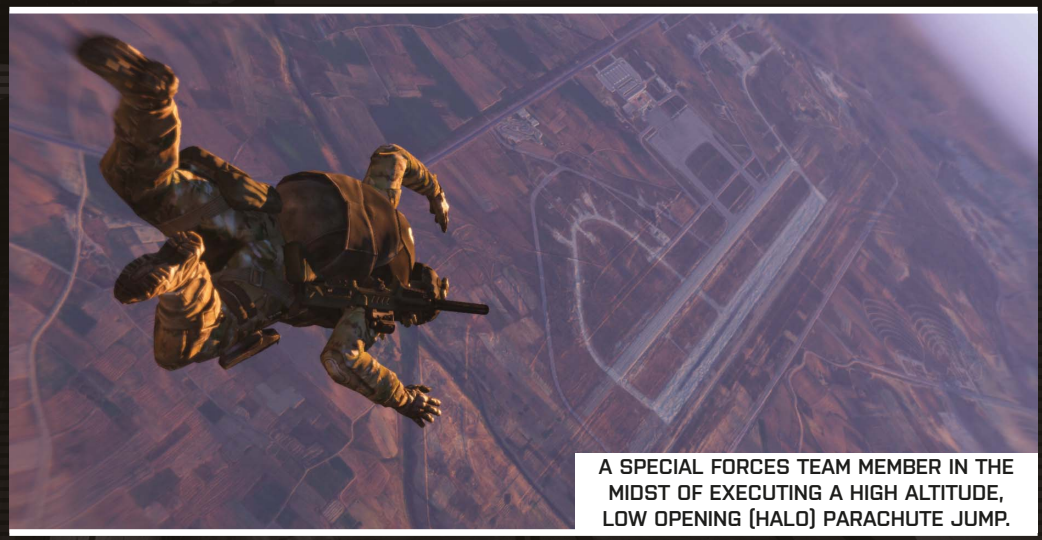
As you see in the below illustration, the direct range to a target when on an incline is further than the horizontal range. If you use the direct range to calculate your hold-over, you will inevitably end up firing over them. When in doubt, if shooting on an incline, aim lower than you normally would at the target.



SPECIAL FORCES

Special Forces

Special Forces soldiers are defined by their high level of training and proficiency, above-average gear, and the fact that they typically get the toughest of assignments requiring the greatest judgment and decision-making skills - not to mention combat capabilities.



A SPECIAL FORCES TEAM MEMBER IN THE MIDST OF EXECUTING A HIGH ALTITUDE, LOW OPENING (HALO) PARACHUTE JUMP.

Special Forces troops are considered to be advanced roles due to them requiring more finesse and skill to play compared to normal infantry, largely because of the fact that they get tough assignments and rarely work in anything larger than a squad-sized element. Special Forces units require patience and levelheadedness to play, particularly when stealth is an element of the mission, as it often is. Unfortunately, it is all too common to see players in take SF roles without a clear comprehension of their intended usage, usually because they're seen as "cool roles" and whatnot. This tends to result in a lot of dead "SF".

Special Forces soldiers are often the ones behind enemy lines calling in close air support or acting as forward observers for artillery. To this end, they often carry a laser designator which can be used to guide in laser-guided bombs. Special Forces are expected to be familiar with how to act as a Forward Air Controller (FAC) and a Forward Observer (FO) - both topics are covered in the "Combined Arms" section of this guide - as well as skilled in reconnaissance tasks.

Basic Special Forces Guidelines

- **Small unit leadership and individual judgment and initiative are key.** Special Forces teams are trusted to make tough decisions when everything is on the line. A team with weak leadership and poor initiative is no better than a sub-par infantry team, and a "sub-par infantry team" doesn't cut it for typical SF assignments.
- **The mission comes first.** Killing a lot of the enemy is meaningless if your primary objective is not accomplished. Being a SF unit often means that you have to spend more time evading and sneaking by the enemy than you do actually directly fighting them. If all you want are firefights and kill counts, Special Forces units are not for you.
- **Stealth is essential.** A small element like an SF team cannot get engaged with a large enemy force if it intends to make it out in one piece. SF teams must be able to pick their fights and evade the enemy when necessary.
- **Be prepared to break contact if engaged.** SF teams can use their demolitions on time-delayed fuses to hold up any pursuing elements of the enemy if need be. When breaking contact, an SF team will alter their direction of movement once out of sight of the enemy so that they cannot easily predict where the team is headed.

- **Be familiar with close air support and forward observer techniques and procedures.** An SF team that cannot call in artillery or air strikes is like a rifleman who doesn't know how to aim his weapon or pull the trigger.
- **Call in the heavy weapons whenever you can.** CAS and artillery are the major force multipliers for SF troops. Nobody gets paid extra because an aircraft went back to base with leftover bombs, or if the artillery unit had some ammo left over at the end of the day. Make them work for their pay.
- **In addition to being very quiet, suppressed weapons do not have visible muzzle flashes.** This makes it much harder for the enemy to locate operators equipped with such weapons in the dark.
- **Silenced weapons (as opposed to suppressed) fire subsonic ammo and thus have neither a muzzle flash or a supersonic bullet signature.** The down side to this is that silenced weapons are extremely weak compared to other weapons. Burst or full-auto is the way to go with these, and close-range is a necessity.

A SPECIAL FORCES TEAM MEMBER, EQUIPPED WITH A SUPPRESSED TRG CARBINE, OBSERVES THE NIGHT LANDSCAPE

CREW-SERVED WEAPONS

The Weapons Squad

Weapon Squad Organization & Leadership

Due to their special nature, crew served weapon teams do not generally fit into the typical platoon organizational structure. Instead, these teams are organized into what is known as a Weapons Squad, complete with a Weapons Squad Leader (WSL) who is the main point of contact for the teams.

The Weapons Squad is almost always split up during a mission to best facilitate the mission commander's plan. Elements - be they machineguns, anti-tank, or otherwise - are pieced out and attached to squads that they will support during the mission. The Weapons Squad maintains a communication channel of their own for overall communication amongst the teams, while the individual teams tend to move onto the same radio net as the squad they're supporting in order to best communicate with them.

Weapons Squad Leader

The Weapons Squad Leader shares some traits in common with a typical squad leader, but drastically differs in many ways due to the nature of how his different squad elements will be pieced out throughout a platoon or company action.

Weapon Squad Leaders...

- **Have a solid understanding of how to employ the teams they're leading.** A Weapons Squad Leader must be able to give advice on how his teams would best be used, acting as the subject matter expert for the mission commander. This includes both offensive and defensive actions - in the defense, the WSL should be able to identify, with the help of his weapons elements, the best locations for placing his assets. In the offense, the WSL should be able to identify where his elements would be most beneficial to the mission commander's stated intent.
- **Supervises his teams as they employ their weapons.** Due to the fragmented nature of his squad's employment, the Weapon SL will generally not be able to personally observe his teams at the same time. Instead, the WSL picks the most significant team to stick with, using his radio and map to stay aware of the other teams. He provides guidance both to his teams as well as the mission commander in order to best employ the specialized weapons his teams carry.
- **Coordinate the higher-level movement of the teams, such as during convoy or aerial operations.** He ensures that his elements are spread across various transport vehicles, such that the loss of a single transport does not take the entire Weapons Squad with it.
- **Dispatches the Weapons Squad Medic to teams that are unable to receive medical support from the elements they're attached to.** In the event that Weapons Squad elements are operating independently, the WSL may assign the medic to tag along with the most valuable team. The Weapons Medic will ensure that any other elements have sufficient medical aid as to provide self-aid in the absence of the medic.
- **Maintain awareness of the ammo states of the different teams** and communicate this to the mission commander in order to facilitate resupply efforts.

Introduction to Crew-Served Weapon Teams

About Crew-Served Weapons

Crew-Served Weapons (CSWs) are heavy machineguns, mortars, grenade machineguns, anti-tank missile systems, and other weapons which require more than one person to carry around, deploy, and operate due to their bulk and weight. These are another form of attachment that can be added to a platoon to give it increased capabilities.

Some crew-served weapons can be carried intact, while heavier ones may need to be broken down into several components for transport - typically carried in specialized rucksacks or carrying rigs once broken down. Such weapons typically break down into three components - the gun itself, the tripod to mount it on, and the ammo. A crew-served team consists of however many people are necessary to move the weapon and ammo or other components around the battlefield. One member of the team acts as the gunner (and carries the gun itself), another acts as the assistant gunner (carrying the tripod and/or ammo), while a third and potentially fourth and fifth haul around additional ammo and act as security for the gun team.

THE MK30 .50CAL HEAVY MACHINEGUN

Crew-served weapons are extremely powerful and can be effective in both the defense and offense when employed correctly. The following guidelines should help to ensure that these powerful weapons are in fact employed correctly.

General CSW Team Organization & Responsibilities

A crew-served weapon team typically consists of a gunner, assistant, and one or more ammo bearers. The exact responsibilities will differ based on the type of weapon it is, but their general responsibilities are as follows. Adapt the relevant guidelines for other teams (ie: medium machinegun, medium or heavy anti-tank, mortars, etc) where appropriate.

- **Gunner / Team Leader**
  - Senior member of the team.
  - Carries the main part of the CSW.
  - Chooses where to employ the CSW and directs the a-gunner to deploy the tripod accordingly.
  - Responsible for relocating the CSW as required, in coordination with higher leadership.
  - Engages targets and listens to his a-gunner's directions.
- **Assistant Gunner**
  - Second in command of the team.
  - Carries the tripod for the CSW (if applicable) as well as some additional ammo.
  - Equipped with binoculars, he acts as a spotter for the gunner.
- **Ammo Man**
  - Junior member of the team
  - Ensures that the CSW is loaded and that ammo is available for reloading.
  - Provides security for the gunner/a-gunner when not actively loading the CSW.

General Guidelines for a Crew-Served Team

- **Stick together**. A heavy weapon without a tripod to put it on is functionally worthless. The gunner & assistant gunner (who carry the weapon & tripod) should stick close together, with the ammo bearer(s) tagging along behind them.
- **Know how to deploy/undeploy rapidly**. The crew-served team is most vulnerable while emplacing the weapon or breaking it down. They may have to deploy or displace under fire or on short notice, so it is imperative that the crew be familiar with the process. The gunner removes the gun from the tripod, the assistant gunner takes the tripod, and the ammo bearers act according to the situation. Ammo bearers either provide cover fire for the gunner/a-gunner (if in contact or under fire) or pick up any spare ammunition at the site of the gun (if the situation allows for it - do not grab the ammo if it means you're going to get shot doing so).
- **The team leader decides on where to emplace the gun, and he coordinates with higher leadership (such as the Weapons Squad Leader or the SL of the squad he's attached to) to get his crew-served teams set up where they can best support the platoon**. He should pick spots from which the weapon can have a good influence on the battlefield without being too exposed to the enemy. Positioning on a prominent, visible terrain feature tends to get crew-served teams wiped out.
- **When deployed, the ammo bearers act as security for the crew-served weapon**. They should "ground" (drop) some ammo for the two-man gunner/assistant gunner team, then move to positions from which they can protect their gun team.

TRIPOD-BASED TOW MISSILE SYSTEM. THE MAIN ADVANTAGE OF THE TOW MISSILE OVER THE JAVELIN IS THAT IT HAS APPROXIMATELY TWO TIMES THE RANGE OF A JAVELIN - ALMOST 4 KILOMETERS. THIS IS BROUGHT INTO ARMA 3 BY THE ALL IN ARMA MOD.

Anti-Aircraft

Anti-Aircraft Team

An anti-air missile team consists of a gunner and assistant gunner. Equipped with a man-portable AA missile system such as the Titan MPRL, and an additional missile, the two must be ready to use their launcher to engage and destroy any enemy air threats that might appear over the battlefield, either fixed-wing (jet) or rotary-winged (helo). Their proficiency and situational awareness can be the difference between life and death for a squad or platoon.

LAUNCHING A TITAN ANTI-AIRCRAFT MISSILE

Basic Anti-Air Missile Gunner Guidelines

- **Fire high-probability shots only.** Try to hit the aircraft when it is flying away, or flying at a shallow oblique angle relative to you. The closer they are (to a reasonable degree), the more likely the missile will be able to hit them before their flare countermeasures can be effective.

- **Seek positions that give good visibility over large areas of terrain, with clear lines of fire into the sky.** An anti-air team sitting at the bottom of a valley is far less effective than one positioned in a concealed ridgeline location. Likewise, a missile team hidden in thick forest isn't in a position to do much should the enemy appear suddenly.
- **Avoid shots against a jet aircraft that is flying perpendicular to you.** You will usually be better off waiting for a rear shot when firing on jets. Close-range flank shots against fast-moving helicopters can also be risky, but generally helos are flying at a speed that allows almost any aspect shot to work on them with equal effectiveness.
- **Be aware of friendly positions.** Shooting down an aircraft and having it land on top of a nearby friendly squad is less than desirable.

GOOD SHOTS: REAR OBLIQUE (L), REAR (R)

GOOD SHOTS: FLANK (L), REAR OBLIQUE (C), REAR (R)

BAD SHOTS: FRONTAL (L), FLANK (R)

POSING BY A TROPHY KILL

Anti-Infantry

Medium Machinegun Team (MMG)

The machinegun rules the realm of infantry. The ability to place sustained accurate fire in high volume on the enemy is capable of inflicting a large number of casualties in short order when properly employed.

Medium machineguns typically fire a 7.62x51mm caliber bullet or larger - significantly more powerful than the infantry's normal rounds. An MMG has a longer range than an automatic rifle, and by default are loaded to fire daylight-visible tracer ammunition every fifth round.

When employed in a base-of-fire or support-by-fire position, or when employed in the defense, MMGs are a powerful asset to any unit.

AN M240 MEDIUM MACHINEGUN IN USE, BROUGHT TO ARMA 3 BY THE ALL IN ARMA MOD

MMG Team Organization & Responsibilities

The MMG team consists of three people - a gunner, assistant gunner, and ammo man. In some situations the team will be reduced to a gunner and a-gunner, in which case the a-gunner gets the responsibilities of the ammo man as well as his own typical responsibilities.

Their responsibilities are as follows.

- **Gunner**
  - Senior member of the team
  - Carries the MMG
  - Picks the location(s) from which the machinegun will be employed
  - Engages targets and listens to his a-gunner's directions
- **Assistant Gunner**
  - Second in command of the team
  - Equipped with binoculars, he acts as a spotter for the gunner
  - Carries some additional ammo for the MMG
  - Gives adjustments to the gunner's fire (up, left, down, right)
  - Scans for and prioritizes targets
- **Ammo Man**
  - Junior member of the team
  - Carries additional ammo for the MMG
  - Provides security for the team

MMG Team Guidelines

The MMG Team uses the same guidelines as the basic fireteam members, with the Gunner using the guidelines for the Automatic Rifleman, the Assistant Gunner using the guidelines for the Assistant Automatic Rifleman, and the Ammo Man also using the Assistant's guidelines.

Heavy Machinegun Team

A heavy machinegun (HMG) is a crew-served weapon, using the same guidance outlined above regarding CSWs. Heavy machineguns give infantry a tremendous range and a powerful punch - the Mk30, for instance, is a .50cal machinegun that is capable of defeating light armored vehicles as well as punching through heavy cover.

HMG teams look for locations from which the superior range of their weapon allows them to damage the enemy with a lesser risk of effective return fire. These teams carefully evaluate the terrain and enemy situation in order to maximize their concealment until the enemy has committed fully into their kill zones, only then opening fire in order to maximize shock and casualties.

The most lethal heavy machinegun on the battlefield is the grenade machinegun - such as the Mk32 or Mk19. These launchers fire 20 or 40mm grenades out to a distance of over two kilometers and are devastating when employed against any enemy element up to and including light armor.

Whatever weapon an HMG team might have, it's important for their crews to remember that their extreme lethality makes them a high-priority target for any special assets. HMG teams must continually assess their position and vulnerability, relocating to alternate positions in order to foil enemy attempts to destroy them.

Arma 3's crew-served HMGs tend to have magnified optics with thermal and nightvision capabilities, as well as laser rangefinding abilities - all of which serve to make them one of the most feared weapons to encounter on the battlefield for infantry.

Indirect-Fire Teams

Mortar Squads

Mortars are a specific type of artillery support that is organic to infantry units due to its ability to be man-carried along with the grunts. Mortars provide integrated indirect fire support to the infantry, with quick response times, the ability to bring fire safely to within close range of friendly forces, good accuracy and range, and solid terminal effects.

The mortar is often called the 'hip pocket artillery of the infantry'. The 60mm mortar is the most man-portable of those available to NATO forces. It can safely be used to drop rounds close to friendly forces (when in the defense, the 60mm can hit targets as close as 70-100 meters away from the gun position). The 60mm mortar is capable of striking almost anything within three and a half kilometers of it. This allows for the mortar team to be well out of enemy direct fire while still supporting an attack via fire. The typical time-of-flight for a mortar round is from 20-40 seconds, so that must be accounted for when planning fires.

We'll talk primarily about the 60mm mortar, as it's the most commonly used mortar for infantry operations. The guidelines, procedures, and responsibilities for an 82mm squad are the same as for a 60mm team.

60mm Mortar Ammo & Fuze Types

A variety of ammunition and fuze types give the 60mm mortar a range of possible applications.

Ammo types can include:

- **High explosive (HE).** Simple explosives that kill via blast and fragmentation effect.
- **White Phosphorous (WP) or smoke.** Used for smoke concealment, marking, or to cause incendiary effects.
- **Illumination (ILLUM).** Parachute flares used to provide illumination in low-light/night conditions.
- **Laser-Guided.** A laser-guided mortar round allows extreme precision to be achieved, though they require someone to be in a position to lase the target - not always an easy thing to ask for.

Fuze options can include:

- **Proximity (PRX).** Causes the round to burst from 1-4 meters above ground.
- **Near-surface Burst (NSB).** Causes the round to burst about a meter above the ground.
- **Impact (IMP).** Causes the round to burst upon impact with the ground.
- **Delay (DLY).** Allows the round to penetrate into the ground somewhat before exploding.

The Artillery Computer

Both mortars and larger artillery pieces share a common system for employment, known simply as the Artillery Computer. This device is used to target the mortar, select round types, and also choose the charge weight (mode) to use when firing.

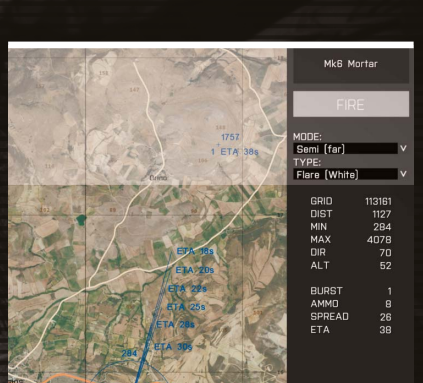
Charge weight is simply the amount of propellant used to fire the shell. More propellant means that a round will fly further and take longer to hit a given area. As you change this, the range indicator will react accordingly - the minimum range will increase, same with the maximum. Note that different charge weights have some overlap with each other - a 'low' charge and a 'medium' charge will be able to hit some of the same areas, with the difference being that the 'medium' charge round will have flown higher and thus will take a bit longer to impact the target.

The interface shows a breakdown of all relevant information, to include the grid, direction, altitude, and distance of your mouse cursor on the map, the minimum and maximum ranges of the given fire mode, how many rounds of ammo remain for the selected ammo type, the anticipated flight time, number of rounds to be fired per shot, and the expected spread of the rounds.

The arty operator clicks on the map to designate where he wants the round to impact. If within the current charge weight's capabilities, an estimated time-to-impact will display. If not, the operator must select a higher charge weight.

When capable of firing, the 'Fire' button will become selectable. Clicking on this will fire the currently loaded round at the currently designated target.

When a round is fired, the computer will trace a line indicating the round's flight, with an estimated flight time remaining. Multiple rounds will each have their own trace. The flight time can be conveyed to those being supported, such that they know how long it will be before the rounds impact. When the first round is five seconds from landing, the mortar team calls "Splash" over the radio, warning the supported troops that the first round is five seconds from impact.



Manual Fire

The mortar's optics can also be used to direct fire when in visual range of the target. Entering the mortar sight mode will display the direct-fire interface. In this mode, a laser rangefinder detects the distance to the center of the crosshair, then displays a firing solution that can be used to dial in the mortar's aim.

60mm Mortar Squad Organization & Responsibilities

Each 60mm mortar squad consists of three players - a gunner, assistant gunner, and ammo man. Depending on the situation, they may or may not have a vehicle transporting additional ammunition for them. When used in the defense, they typically have crates of mortar shells available for their usage.

The responsibilities of the squad members are as follows.

- **Gunner**
  - Senior member of the team.
  - Carries the mortar tube.
  - Chooses the emplacement position of the mortar.
  - Plots targets.
  - Coordinates with higher HQ regarding employment of the mortar.
- **Assistant Gunner**
  - Second in command of the team.
  - Carries the mortar baseplate and tripod assembly.
  - Equipped with binoculars, he acts as a spotter for the gunner when firing on targets within visual range of the mortar.
  - Carries additional mortar shells.
  - Drives the mortar squad vehicle, if assigned.
- **Ammo Man**
  - Junior member of the team.
  - Carries additional ammo for the mortar.
  - Provides security for the team.
  - Guns for the mortar squad vehicle, if assigned and applicable.

Basic Guidelines for the 60mm Mortar Team

A few basic guidelines for mortar teams follow.

- **Mortar teams need to take initiative even more than most other players.** They should set up their mortars without having to specifically be told to, in keeping with the overall commander's intent.
- **The mortar position should be protected from direct-fire weapons as best as possible.** This means situating in the courtyard of a large building, behind a hill, in a depression, or some other place where the natural terrain protects the team from observation or fire.
- **Plot out targets in advance.** Locate likely attack, rally, or observation points for the enemy and ensure that you know the numbers needed to get rounds on those locations quickly.
- **Only use mortars against targets that can potentially be hurt by them.** Don't waste rounds on tanks, but instead concentrate on soft vehicles and infantry.
- **Use the right round if you have multiple types.** Mix them to get a more pronounced effect - for example, a mix of white phosphorous and high-explosive rounds can be quite deadly.
- **The mortar ammo bearer(s) should provide security to the gun team.** This means that they need to be positioned in areas where they can see any potential enemies approaching from any direction, and can warn the gun team in time.
- **If the mortar team must withdraw and cannot take the entire gun with them due to casualties, someone needs to grab the mortar tube itself and carry that away.** This is as close as we can get to "spiking" and destroying the mortar to prevent it from falling into enemy hands.

The 82mm Mortar

The main difference between the 60 and 82mm mortars lies in their terminal effects. The 82mm mortar fires a significantly more powerful shell, causing greater damage upon detonation.

The 82mm mortar is also significantly heavier than the 60mm mortar and requires more effort to transport around the battlefield. They will often end up carried in MRAPs and other vehicles, with minimal 'foot marching' occurring. This is in contrast to the 60mm mortar, which can fairly easily be man-transported over the battlefield.

Other than these differences, the mortar squad and 60mm mortar team are virtually identical. The 82mm Mortar Squad uses the 60mm mortar and Crew-Served Weapon guidance as their baseline.

82MM MORTAR SET UP TO SUPPORT AN INFANTRY ASSAULT

Anti-Armor

Medium Anti-Tank Team

A medium anti-tank (MAT) team is a rocket team that is capable of delivering accurate and deadly direct-fire against tanks, bunkers, buildings, and other suitable hard targets. They are commonly attached to a platoon when assaulting fortified positions or when enemy armored assets are expected. Two example MAT weapons are the SMAW and MAAWS launchers.

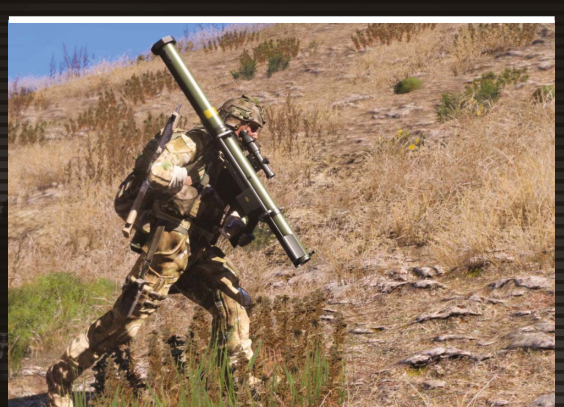
A SMAW BEING EMPLOYED FROM SOLID COVER, BROUGHT INTO ARMA 3 AS PART OF THE ALL IN ARMA MOD

About the MAT Launcher

A medium anti-tank launcher can come in a variety of forms, but they all share the following characteristics:

- **Crew-served.** A MAT launcher is used by at least two players. One is the gunner, the other an assistant gunner that carries additional rockets and assists the gunner in the employment of the weapon. Additional ammo bearers may be assigned as the situation requires.
- **Reloadable.** Unlike the basic light anti-tank launcher, a MAT launcher is reloadable. The gunner himself typically carries two rounds, with the assistant gunner having two or three more, giving them four to five rockets to use before needing resupply.
- **Scoped.** Most MAT weapons you will use will have a magnified optic, allowing for better target discrimination and more precise aiming and post-shot damage assessment.

- **Multiple round types for a variety of roles.** MAT weapons carry a range of rocket types that each have a specific use, allowing a MAT team to pick the best rocket type for the task at hand.
  - **HEDP** - High-Explosive Dual-Purpose. HEDP rounds are effective against light armor, walls, structures, bunkers, etc. They do a significant amount of area damage, and a fair amount of anti-armor damage.
  - **HEAA** - High-Explosive Anti-Armor. HEAA rounds are ideal against medium and heavy armor. They do very little area damage, but a great deal of anti-armor damage.
  - **FTG** - Follow-Through Grenade. The FTG rocket blows a hole in a wall and then projects and explodes an additional charge (the 'grenade') on the far side, causing additional casualties.
  - **NE** - Novel Explosive. Novel Explosives use thermobaric principles to cause extreme blast and pressure damage around their point of detonation. These are very effective against infantry and buildings.

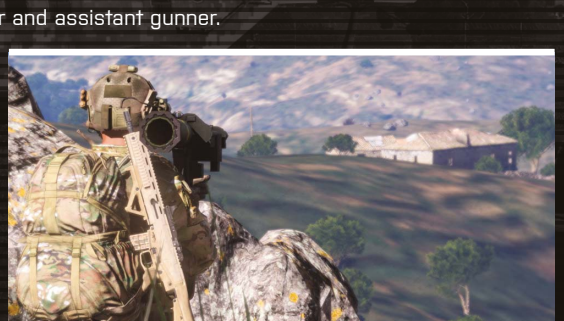


MAT Team Organization & Responsibilities

Each MAT team consists of two people - a gunner and assistant gunner.

Their responsibilities are as follows.

- **Gunner**
  - Senior member of the team.
  - Carries the launcher.
  - Chooses the firing position for the team.
  - Engages targets and listens to his a-gunner's directions.
  - Decides on the best rocket type to use on the given target.
- **Assistant Gunner**
  - Junior member of the team.
  - Equipped with binoculars, he carries additional rockets for the launcher and acts as a spotter for the gunner.
  - Gives adjustments to the gunner's spotting rifle and rocket fire, scans for, and prioritizes enemy armored targets and emplacements.
  - Provides rockets to the gunner when required.

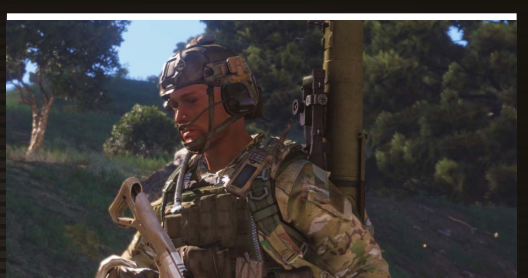


THE SMAW'S HIGH DEGREE OF ACCURACY AND HEAVY PUNCH MAKE IT GREAT FOR HITTING BUILDINGS AND BUNKERS, PART OF THE ALL IN ARMA MOD

MAT Team Tips

- **Know your rocket types.** HEDP rounds do a lot of damage to infantry in a decent blast radius, as well as cause damage to structures, soft vehicles, and light armor. HEAA, by comparison, does much less 'splash' damage but does do a great deal of damage to armored vehicles.
- **When not fighting armor, the launcher's optic can be used to assist the infantry in spotting concealed or distant targets.**
- **Reload in cover.** Fire from different positions each time, as the situation permits. Backblast will give you away most of the time, so ensure that you move away from it after each shot.

A PCML MISSILE TAKES FLIGHT



A MAAWS LAUNCHER, PART OF ALL IN ARMA

Heavy Anti-Tank Team

The heavy anti-tank team (HAT) wields the most deadly anti-tank infantry-carried weapon systems available. When heavy armor is expected, they are great assets to have attached to the platoon. HAT in Arma 3 comes most typically in the form of the Titan launcher or PCML, with Javelin missiles appearing in various modern mods.

About HAT Launchers

While their forms may vary, heavy anti-tank launchers tend to share most or all of the following in common:

- **Fire-and-forget or manually-guided missiles.** If fire-and-forget, once the missile has been launched, the team can immediately take cover. Most fire-and-forget launchers are capable of being carried by one or two people, and once assembled, employed and carried by a single gunner. Heavier tripod-mounted launchers usually require a gunner to track the target from launch until impact. These larger, tripod-mounted launchers tend to make up for this requirement by having exceptionally dangerous terminal effects.
- **Extremely deadly warheads.** HAT missiles generally use advanced armor penetration techniques such as explosively formed projectiles or dual-warhead designs that can not only punch through enemy armor, but also defeat defensive technology like reactive armor. HAT missiles are superb at killing enemy tanks.
- **Long range.** HAT missiles have ranges exceeding one kilometer, often reaching out to two kilometers and even further for larger weapons. MAT, by comparison, tends to have a range of 600 meters or less, while LAT is often restrained to 300 meters for maximum effectiveness.
- **Magnified optic.** Like the MAT launchers, HAT launchers sport high-magnification optics. Unlike MAT launchers, many HAT launchers have further capabilities - such as nightvision and thermal optics. These enhanced capabilities make them usable in more demanding weather and visibility environments, as well as make them superb for target identification and post-launch battle damage assessment.

JAVELIN MISSILE TAKING FLIGHT IN THE ALL IN ARMA MOD

- **Reloadable.** HAT systems are usually reloadable, allowing them to fire as many missiles as can be carried into battle by their teams.

HAT Team Organization & Responsibilities

Each HAT team consists of two people - a gunner and assistant gunner. Additional team members may be required for heavier, tripod-based launchers, or to carry extra ammunition.

Their responsibilities are as follows.

- **Gunner**
  - Senior member of the team.
  - Carries the launcher.
  - Picks the position from which the missile system will be employed.
  - Engages targets and listens to his a-gunner's directions.
  - Exercises good judgment insofar as "What rates being destroyed by my weapon?", and preserves his round(s) when other anti-tank assets are available to deal with lesser armor.
- **Assistant Gunner**
  - Junior member of the team.
  - Equipped with binoculars, he carries an additional missile and acts as a spotter for the gunner.
  - Scans for, identifies, and prioritizes enemy armored targets.
  - Provides an additional missile to the gunner when one has been expended.

A JAVELIN GUNNER SEARCHES OUT TARGETS THROUGH THE POWERFUL OPTICS THANKS TO THE ALL IN ARMA MOD

HAT Team Tips

- **Do not waste your missiles on light armored targets.** LAT and MAT teams can deal with light armor just fine - save the HAT missiles for enemy main battle tanks or other high-priority threats.
- **When not fighting armor, the launcher's magnified optic can be used to assist the infantry in spotting concealed or distant targets.**
- **Reload in cover**. Fire from different positions each time, as the situation permits. Due to the soft launch nature of the missile, your backblast will be hard for the enemy to locate.

COMMUNICATION

Introduction to Communication Concepts

Explanation of Terms

There are several different communication options available to any Arma player. The game comes with a Voice-Over-Net (VON) system which is quite flexible, while community-created mods such as the Advanced Combat Radio Environment (ACRE) mod allow for even more robust communication possibilities. For the sake of making this chapter applicable to everyone, we'll be using more generalized terminology that can be applied to VON, ACRE, and also just normal VOIP programs like Teamspeak. An explanation of terms follows.

- **Command radio/net.** In Teamspeak, this is something like the Channel Commander feature that it has, where only selected people receive certain messages. In ACRE, it's an actual command radio net, while in Arma 3's VON it is replicated by the Commander VON Channel.
- **Direct speaking.** This isn't applicable to Teamspeak. In ACRE, it's the direct-speaking mode, while Arma 3 calls this 'Direct Speaking VON'. This mode allows a player to talk to anyone in their immediate proximity. The ShackTac ACRE Volume Control mod takes this a step further and introduces five different easily-selected voice volumes, from whispering all the way up to shouting, intended to be used in player-vs-player gameplay.
- **Radio.** Catch-all term to indicate any communication that is not direct-speaking.
- **Squad radio/net.** In Teamspeak, this is a channel specific to a squad's members, used only by them. In ACRE, this is a squad radio net dedicated to each squad. Arma 3 VON has no direct equivalent.
- **Fireteam radio/net.** Teamspeak and ACRE do not generally make use of this. For VON, this is the 'Group Speaking' VON channel.
- **Vehicle net.** VON uses the 'vehicle channel' for this, while ACRE utilizes direct speaking, which becomes a vehicle intercom automatically.

Communication, ShackTac-Style

Shack Tactical uses the Advanced Combat Radio Environment (ACRE) mod for Arma 3, which utilizes Teamspeak 3 to provide a robust voice and radio simulation within the game. Thanks to the usage of a standardized company structure, we are able to have a standard set of procedures for our communication. This allows us to reach a level of coordination and teamwork that would be difficult to approach without something as configurable and powerful as ACRE supporting us.

There are a few things that we believe are undeniable truisms regarding communication in ShackTac.

1. Our company must communicate effectively in order to act as a cohesive whole.
2. Having a standard structure reduces confusion and allows for our membership to always understand how communication flows, regardless of mission.
3. It is critical that all members understand when, how, and why they should talk at the various levels available to them, as well as how the different pieces of radio equipment work and are best used.

Basic Expectations Regarding Comms

In light of that, there are some expectations that we have of every player when it comes to our in-game communications. We expect that each player is familiar with:

- Our communication standard operating procedures (SOP)
- What is and isn't appropriate to say on the different communication channels available, and when to use them
- How to practice communication brevity & employ tactical language when speaking
- How to give proper contact reports
- How to report casualties
- How to take command of an element when leadership is lost due to casualties

Being familiar with this section should allow any player to live up to those expectations.

Core Principles of Combat Voice Communications

The core principles of voice communication in a game like Arma 3 are as follows.

- **Brevity.** Brevity is the art of saying a lot with few words. One must always strive to be frugal on the number of words needed to convey a message - there's a lot that needs to be said by many people in a fight, and it's all important. Utilizing brevity allows for all the important things to be communicated as rapidly as possible.
- **Clarity.** In addition to brevity, one must strive to be very clear in their language. This requires the usage of defined tactical language terms, brevity words, a clear and loud voice, and so forth. Enunciation and repetition of critical statements is helpful as well.
- **Confirmation and read-back.** It's important to confirm that you heard orders, so that leaders know that they are being understood. Additionally, it can be helpful to provide a 'read back' of an order to confirm that you fully understand what is being asked of you - this is done by restating what you were ordered to do, so that the person giving the orders can confirm that you heard them correctly.
- **Alerting and identifying.** Alerting is the act of using key words to get the attention of people before you start saying something important. For example, a squad leader might say "Squad, listen up!". Identifying is the act of saying who you are and who you're trying to contact when speaking over a radio. This helps reduce confusion and alerts people that someone is attempting to tell them something. For example, a squad leader saying "Alpha, this is Bravo, be advised, you have enemy infantry on your west flank" is utilizing the alert/identify concept. When things are hectic, it's often a good idea to state your callsign and who you are trying to reach, then allow them to answer you when they're able - for instance: "Alpha, this is Bravo.", then waiting until they say "Bravo, this is Alpha - send it" or "Bravo - send it" before continuing with your full message.
- **Usage of standard operating procedures and tactical language.** Being familiar with the standard formats of SITREPs, CASREPs, contact reports, etc, as well as being familiar with the wide range of brevity words and tactical terms, helps to ensure that communication is easy to understand by all involved participants.

Built-In VON Details and Usage

Arma 3's VON allows for an automatic, logical grouping of units to occur. There are five main channels in VON, each of which can be independently bound to a push-to-talk key. If using VON as your method of choice for in-game communication, all players should at least have "Direct Speaking" bound to a key. Binding "Vehicle Chat" and "Group Chat" is also helpful. There are also two other channels, which will be described after the main ones.

Channel Functionality

Command Chat

Command chat transmits only to people who are group leaders - such as fireteam leaders, squad leaders, etc. Keep in mind that this transmits to all leaders - which can be quite a number of people in large missions.

Side Chat

This acts as a broadcast to all players on the same side. Only platoon-critical messages should be said over Side Chat, since literally every player on that side hears everything spoken on that channel. The Platoon Commander may use this to say important things to all players at once. Think of this as a Platoon Radio Net that everyone can hear.

Vehicle Chat

When using this mode, every player within the vehicle will be able to hear you, regardless of what group they're in. Think of this as the internal vehicle comm system.

Group Chat

This mode allows every player within your group to hear you. Think of this as fireteam-level personal radios.

Direct Speaking

This mode is just like talking without any sort of radio. Your voice comes from your character's location, is directional, and the character even lip-syncs what you're saying. Your voice will be affected by everything that influences in-game sound, so if you run behind a building and try to talk to someone, your voice will be muffled and indistinct. Direct Speaking is excellent for communicating with people around you regardless of what group they may be in. Shouting "Grenade!" over Direct Speaking is one example of how it can be used effectively.

Spoken communication (non-radio)

Usage Examples

Whether done through the built-in VON or something like ACRE, direct speaking is an incredibly useful tool with a wide variety of potential uses. In no particular order, some of the uses are as follows

- **Communicating with people nearby who may or may not be in your squad.** Instead of having to look at someone, figure out what unit they're with, then figure out the appropriate radio channel to talk to them on, you can simply use "direct speaking" and talk to them the same as you would with someone nearby in reality.
- **Calling for a medic, or calling out when wounded.** Due to the locational nature of it, a medic can more easily find you if you are asking for help on direct-speaking. He can simply home in on your voice, as can anyone else who might be able to assist.
- **Coordinating movement.** This can take several forms, such as movement cues ("Moving!") or formation-based commands ("Increase interval").
- **Close quarters battle, such as house clearing.** Hearing a teammate call "Clear!" after going into a room, for example. However, avoid this when operating against enemy players who might hear you.
- **Calling out an emergency reload, or jam.** Anyone nearby will hear you and know to transition to cover you while you correct the emergency.
- **Calling "frag out" when throwing grenades, or "grenade!" when a grenade is thrown your way.** Since your voice is positional, people can tell by the volume (ie - distance) whether the call is relevant to them or not. It warns people around you, but allows people further away to continue to fight without interruption - something that would not be possible via just the radio.

Direct speaking is also a good way to keep random chatter off of the radio nets, leaving them clear for important things.

Procedures & Rules

Identification

Regardless of what communication program you use, it is important to maintain certain radio procedures to keep things running smooth and organized.

Hearing someone say over the command net that there are "Enemy infantry, bearing 210!" is fairly worthless in a high-playercount player game with the platoon spread out over hundreds of meters if not more. Because of this, and other considerations, we use a simple set of radio procedures to keep things running smooth.

If you are communicating across the radio, you initiate each transmission with who you're talking to, followed by your own callsign, wait for an acknowledgment, and then send your message. For example, if Bravo Lead is contacting Command to tell him that they took a casualty in a firefight (post-fight, most likely), the transmission would be as follows:

Bravo SL: "Command, this is Bravo."
Command: ***"Bravo, send it."***
Bravo SL: "Be advised, Bravo took one KIA."
Command: ***"Command copies."***

This simple procedure keeps command chat organized and allows for the various leadership elements to know when they're specifically being talked to. Not waiting for an acknowledgment often results in a repeated message being required, since the receiving unit may have been too busy at the time to listen to the message intended for it. This radio procedure is generally employed during combat situations, where any given element may be engaged or busy. When the action is less intense, it may be abridged as needed - it's up to the leaders to be able to make these decisions themselves.

Element	Marker	Say it as...
Alpha Squad, 1st Fireteam		'Alpha One'
Alpha Squad, 2nd Fireteam		'Alpha Two'
Alpha Squad, Squad Leader		'Alpha Lead'
Platoon Headquarters		'Command'

Brevity

These are some of the most common words & phrases you'll hear used in our gaming. Many of these terms will see further explanation and definition throughout the guide in various places, but these should get you started and familiar with the core concepts. Note that there are additional terms mentioned elsewhere in the guide for more specific situations, but these are the most common ones that everyone must be familiar with.

General

- **Copy/Copies** - Standard acknowledgment. "Bravo, enemy armor headed your way from the north" "Bravo copies"
- **Roger** - This is a simple affirmative acknowledgment. If told to watch to the NW by your fireteam leader, you should sound off with a quick "Roger" to let him know that you heard him and are complying.
- **Wilco** - Short for "will comply". Typically used in conjunction with roger, so that it ends up as "Roger, wilco" which translates into "Understood, and I will comply with the order". For the sake of brevity, only very important commands should be answered with a "Roger, Wilco". "Roger" by itself suffices for most things. *(Note: Technically, "Roger, Wilco" is redundant, but for the purposes of gaming, it's not a big deal)*
- **Stand by** - This acts as either a wait request or a preparatory command. When used as a preparatory command, it is a warning to anyone listening that an important event is about to happen, typically one which other players will need to participate in. For instance, a squad leader might tell his fireteams to hold their fire while an enemy patrol approaches unaware. He would then say "stand by" to indicate that they are about to initiate the ambush (alternatively, he could say "stand by to open fire"). Upon hearing "stand by", all squad members would prepare to engage the enemy. The squad leader would then announce "Open fire!", at which point the squad would ambush the enemy patrol.

  When used as a wait request, it is a way to tell the person asking you a question that you need a few moments to get the answer. If the PltCo asks Bravo squad if they can get eyes on an enemy patrol near them, Bravo SL might answer back with "Command, this is Bravo, stand by..." and then try to accomplish that goal before radioing back with a yes/no.
- **Radio Silence / Break, Break, Break** - Typically used by a Squad Leader or Platoon Commander to tell everyone in their channel to be quiet while command chat occurs. Also can be used to get everyone to shut up so that faint sounds, such as distant vehicles, can more clearly be heard.
- **Be advised** - Used to indicate important information during a radio communication, typically to another leadership element. "Command, be advised, Bravo squad took heavy casualties and is down to one reinforced fireteam"
- **Say again** - The prior message was not understood - say it again. "Alpha, say again your last?"
- **Stepped on** - Used to tell the last transmitting party that they were talked over by another person. "Bravo, say again your last, you were stepped on."

Team Movement & Control

- **On Me** - Command by the element leader to tell his element members to form up on him and follow him. Typically prefaced with the element name, ie "Bravo 2, on me!"
- **Move out / moving / step off / stepping** - Commands used to indicate the beginning of a period of movement.
- **Hold** - Used to control movement. "Hold" is ordered when a unit needs to make a temporary halt. Oftentimes used to maintain cohesion between multiple elements.
- **Go Firm** - Described in detail in the "Tactics" section. The short version is that once "Go Firm" is ordered, all squads consolidate their position, assume a defensive and secure posture, get a count of their numbers, check their ammo situation, and stand by for orders. Occasionally misunderstood and used as a 'hold' command.

Personal Status

- **Up** - General statement to indicate that a player has returned to a ready state. A player can use "Up" to indicate that they have caught up to their team, have successfully reloaded, have received medical aid, et cetera.
- **Set** - Said to indicate that an element is in position. If Bravo 1 is tasked with securing an intersection before Bravo Two crosses, Bravo 2 FTL would say "Bravo One set" once his fireteam was positioned to provide cover. Can be used by buddy team members as well to coordinate low-level movement.

- **Weapon Dry / Empty** - Used to indicate that your weapon is temporarily out of action due to running out of ammo in your current magazine. Only spoken when it's urgent, with the intent being to notify teammates so that they can cover you / your assigned sector while you correct the issue.
- **Misfire / Jammed** - Used to indicate that your weapon has jammed. Same usage as the above - only when it's urgent, so that teammates know to cover/help you.

Fire Control

- **Cease Fire** - Used to cause a temporary lull in the shooting. Cease Fire is used when all enemy are seemingly dead and no further shooting is necessary. Individual players can continue firing at living enemy soldiers at their own discretion, under the assumption that the person giving the order did not see that there were still living enemies.
- **Check Fire** - A "Check Fire" command is given when it's suspected that a friendly unit is being fired upon by friendlies. Cease Fire can be used in that situation as well, as long as the person giving the command makes it clear that friendly units are possibly being engaged by friendly forces, but "Check Fire" specifically is meant as a way to cut off potential friendly fire.
- **Hold Fire** - Distinctly different from "Cease fire", this command is used to maintain stealth. When under a "hold fire" order, players do not engage the enemy until the fireteam or squad leader specifically give the go-ahead, or the enemy spots a friendly and appears to be ready to fire on them.

Warnings

- **Frag Out** - Warning call given when throwing a grenade.
- **Grenade** - Warning call given when an enemy grenade has been thrown at friendlies, a grenade is fumbled, or anything else that poses a close-in grenade threat.
- **Incoming / IDF / Indirect** - Warning calls given when enemy indirect fire (grenade launchers, mortars, artillery, etc) is inbound on friendly positions. IDF is pronounced "Eye dee eff".

Vehicles

- **Mount up / Remount** - Command given to order players to mount into their assigned vehicles. "Remount" is sometimes given after players have temporarily dismounted, such as when providing security at a halt.
- **Dismount** - Players who are not driving or gunning on a vehicle will exit the vehicle on this command.
- **Bail out** - All players in a vehicle will exit the vehicle on this command. This is considered to be an emergency command and is repeated three times to ensure that everyone in the vehicle hears it.

Aircraft

- **Go, go, go!** - Passengers of a helo disembark at this command from their element leader or the aircraft crew. This can also be used when mounting up into a helicopter during an extraction. In that situation, the senior element leader confirms that his troops are loaded and accounted for, then says 'Go, go, go!' to indicate to the helo pilot that he should take off. Finally, it can be used to signal the start of a paradropping sequence from a helicopter or airplane.

REPORTS

Contact Reports

Components of a Contact Report

Contact reports are intended to be a way for any member of the unit to concisely communicate important information about the enemy in a standard way.

Being able to concisely report enemy locations is a critical communication skill to have. The sooner we know about enemy positions, and the faster it is passed to the entire squad, the better our survivability will be and the more effective we will be at reacting to threats.

A contact report consists of several key elements that must be presented in a specific order for it to be effective. They are as follows.

1. Alert

Typically the word '**Contact**!'. This should be the first thing out of your mouth when you spot the enemy. Saying this gives everyone a heads-up that something important is about to be passed over the radio, and that they need to start scanning the area for more enemy as well as think about where they can move for cover and concealment.

2. Orient

This immediately follows your alert. "Orient" is simply a few words to get people looking in the general direction of the enemy.

There are several types of orientation methods available.

- **Relative bearing.** If a direction of movement has been established, relative directions such as "Front", "Left", "Right", "Rear" are great. In a stationary defense, particularly when defending in multiple directions, this is not a usable format.
- **General compass bearing.** Useful at all times, easy to understand. General compass bearings are things like "North", "North-West", et cetera. The ShackTac HUD, if used, can give you an easily indication of your cardinal directions.
- **Specific compass bearing.** Used for high-precision reporting when units are fairly close to each other. This involves reading the exact compass bearing, in degrees. Note that in Arma 3, the compass takes a few moments to stabilize, making this slightly slower than in previous games.
- **Clock bearing.** Clock bearings are never used aside from by single vehicle crews, since a vehicle has a common 12 o'clock that all crew members are familiar with. A vehicle crew can use clock bearings for internal communication if they so desire, though relative bearings tend to be faster overall.

If the target is in range to be a threat, give a rough range immediately - "Contact front, close!" or "Contact west, 100 meters!". This can wait if the target is not a threat, but it must be given one way or the other by the end of the contact report.

3. Describe

What did you see? Was it an enemy patrol, tank, or a little old lady out for a stroll? Say it in as few words as possible while being very clear.

Examples: *"Infantry", "Enemy patrol", "APC", "machinegun nest".*

4. Expound

If the target range was not given in the 'Orient' step, it must be given here. Target range is essential and allows players to react appropriately to the threat's proximity. The range can be given at whatever level of detail time allows for, from "Close!" to "523 meters" and everything in between. **Range is the most important thing to expound on, and must always be given.**

If time and the situation allow for it, give more information. This can include things like:

- **Specific degree bearing to the target**. If you only passed a relative bearing at the start for speed's sake, you can refine it into a specific degree bearing at the end of the contact report.
- **Info about what the target is doing**. Such as *"They're flanking us"* or *"They don't see us"*.
- **Specific positioning of the target**. Such as *"two soldiers on the roof, one in the building, the rest are patrolling around it"*.

For instance, if you spot a patrol that is walking through a patch of woods, step #3 would be *"enemy patrol"*, whereas step #4 would clarify that with *"in the treeline, bearing 325"*.

Note that with contact reports, **getting the key information out for everyone to react to is more important than the ordering of the information.** As long as people know **where to look, what they're looking for, and how far away the contact is,** you will have given a successful report.

Contact Report Examples

When making a contact report over the radio, one must remember that the level of detail used should be proportionate to the amount of time you have to give it and the urgency of the threat. If there is an enemy squad far away that does not see you or pose a threat to you, take the time to clearly describe where it is. If on the other hand there is an enemy squad on the other side of a small rise 50 meters away, and it's heading in the direction of your element, you'll want to be as brief and fast as possible so that everyone has time to react and get prepared for contact.

Bad Contact Reports

Here's an example of a very poor radio transmission of a contact report:

"Uh, guys... I see enemy infantry. Uhh... they're over there, by that tree. No, uhh... the other tree."

(Note that the squad is in a forest at the time of this transmission)

It's pretty clear that this is not the way to do things - too much time is spent waffling around, no significant detail is given, and generally nothing productive has been said aside from the fact that there are enemies "somewhere". No kidding!

Proper Contact Reports

A more proper contact report would be as follows. Note that this is an intra-squad report - reports across squads will be covered later.

Note also that if the squad fireteams are dispersed, it may be necessary to identify yourself prior to sending the contact report. Simply preface it with your callsign *(this is Charlie One)* prior to starting the report, or close with that information *(...from Charlie One's position)*.

"Contact front! Enemy infantry in the open, bearing 210, three hundred meters!"

Once the element leader (squad or fireteam leader) hears the contact report, he will give an engagement command if necessary. Universal Rules of Engagement rules apply here - if it's a dire threat, you can engage without being specifically told to. If it's not a dire threat, or you're operating in explicit stealth mode, wait for orders before engaging.

Here are some examples of engagement commands in response to a contact report:

"Copy, get to cover and stand by to take them out."

"Bravo, hold fire. If you have a suppressed weapon, stand by to engage."

"Squad, engage, they see us!"

Further Examples

ALERT ORIENT DESCRIBE EXPOUND

"Contact left, very close!"

"Contact front, 100 meters, infantry!" In this instance, the proximity of the enemy is more significant and is said first, as part of the orientation, instead of later as part of expounding.

"Contact, 320, enemy squad in the open, 400 meters"

"Contact, 175, BTR-K, 600 meters. From the tallest tree at that bearing, follow the bush line left about 30 meters. It's partially masked by those bushes."

"Contact, 225, dug-in infantry, 300 meters. There's a white-walled building with a red roof - on the right side of that is a brown building. Enemy infantry are in the upper floor of the brown building, I've seen them in several windows."

Notes & Tips on Reporting Contacts

- **If the element leader is giving the contact report, he will give the engagement command at the end of the report if necessary.** Otherwise, the element will wait for the element leader's commands before engaging.
- **Only the Squad Leader is authorized to give an open-fire command if the squad is in stealth mode.**
- **Fireteam Leaders will only give an open-fire command in stealth mode if their fireteam is in imminent danger of being engaged.** By the same token, fireteam members will only open fire if it's necessary to protect themselves or friendly forces from being imminently engaged, per Universal ROE guidelines.
- **When reporting contacts on the platoon net, ensure that brevity is maintained.** The platoon net is typically busy, and multiple squads may need to report contacts in a short span of time.

SITREPs, CASREPs, & ACE Reports

The SITREP

The situation report, or SITREP, is a quick way for a leader to get information on his troops. It is intended to be a very concise and quick way for an entire element to report their status to their leader.

SITREPs can be asked for at the fireteam, squad, platoon, and company level. Calling for a SITREP as a leader is as simple as saying "(element you are asking for), send a sitrep" or "(element you are asking for), report in".

Examples of how this call can be made are as follows.

- *Platoon-level, via platoon radio net:* "Squads, send sitreps."
- *Squad-level, via squad radio net:* "Team leaders, give me a status report."
- *Fireteam-level, via squad radio net:* "Alpha 1, report in."

Sitreps are generally asked for during lulls in the action, at the close of an engagement, or when a higher-level leader asks for them. If a leader wants the status of a specific member or element, he will ask them directly.

When a sitrep is asked for, the elements involved respond in numerical or alphabetical order - for example, squads report in alphabetical order - Alpha, Bravo, Charlie - while fireteams report in in numerical order.

It is important that leaders do not constantly ride their junior leaders regarding sitreps. Waiting for a lull in the action helps to ensure that the need to report in does not compromise the leadership of the junior leader, or distract him from the combat task he's directing.

When being asked for a situation report, a junior leader can reply with "Stand by", "Busy" or a variation thereof to let the senior leader know that he must deal with the situation at hand before he can report in detail.

SITREPs are not intended to be incredibly in-depth, unless necessary. When a leader wants a more detailed report, they typically ask for an ACE report, as described next.

The Ammo, Casualties, & Equipment (ACE) Report

An ACE report is a quick report given to the next-higher element leader regarding your element's status. When giving an ACE report, players only include the important parts.

Elements of an ACE Report

- **Ammo.** If your team is low on ammo, give details on it. This can be in general ("Low on ammo") or more specific ("AR is low on ammo, but we have plenty of rifle ammo").
- **Casualties.** State your dead first, then wounded after that. For example - "Alpha 2, 1 dead, 1 wounded". Alternatively, an element leader can simply reply with how many units are alive under his command (how many are "up"). In the previous example, it would become: "Alpha 2, 3 up, one is wounded".
- **Equipment.** If the team has lost any important equipment, it is noted here. For example, if the automatic rifle has been lost due to a casualty, and the AAR was unable to retrieve it, the team leader states so here. If the anti-tank weapons have been expended, he can state that as well.

When giving an ACE report as an individual, ammo is your personal ammo, casualties is your personal medical state, and equipment refers to any special equipment you were given for the mission.

As a squad leader, ACE reports from your fireteam leaders are compiled to form the sitrep that you give to the platoon commander.

The CASREP

The casualty report, or CASREP, is a quick and focused report that is designed so that a leader can quickly find out how many casualties have been taken. Junior leaders report this information as wounded or killed, in the same format as in the ACE report.

CASREPs are used when a leader only needs to know casualties, and is not concerned with ammo or equipment as described in the ACE report above.

LEADERSHIP

Intro to Leadership

Leadership in Shack Tactical

In-game, leadership is what allows a 46-player platoon (plus attachments) or a 130+ player company to act as one cohesive and combat-effective unit. From the fireteam leader up to the platoon or company commander, the success of every mission hinges upon their collective abilities as leaders. While leadership on the 'wild blue internet' can be an intimidating and oft frustrating thing, we have the good fortune in ShackTac to have a well-established cadre of leaders who are capable of performing at any capacity needed, as well as an excellent collection of players available to carry out the orders of their leaders with skill and enthusiasm.

This section is intended to act as a refresher and reference to those who do lead, as well as introduce the concepts of all levels of leadership to those who are interested in pursuing and advancing to such leadership positions in the future, or refining their current abilities. Years of Operation Flashpoint and Arma, countless hours of discussion, debate, and optimization of our leadership methods, as well as a generous amount of research into the US Marine and US Army leadership methods and discussion between our current and prior-service military members has resulted in this section. Much effort has been invested over the years into finding things that work in a gaming context, sans milsim "fluff".

I hope that anyone with leadership aspirations finds this piece to be helpful in their quest for leadership roles and responsibilities.

Leadership 101

At the most basic level, leadership in Arma is the art of getting multiple people to act in a coordinated fashion towards a common goal. Leaders come with a variety of roles and responsibilities, with each requiring different approaches to how they do things. From the fireteam leader up to the platoon commander, though, they all share some common responsibilities. Those responsibilities are as follows.

Common Responsibilities of a Leader

1. **Survival.** Whenever possible, the leading players should make an effort to preserve themselves. This becomes more important the higher in the chain you are - if you're a Fireteam Leader, you're most expendable, with the Platoon Commander or Company Commander being the least expendable. "Survival" is accomplished by acting in a fashion that will not put you at extraordinary risk or single you out to the enemy. This means that a leader should not be using anti-tank weapons, machineguns, or anything that will place a giant "SHOOT ME" marker over their head for the enemy. Your best weapons are the players you command, and they depend on your levelheadedness to keep them alive throughout a fight. Don't fail them by putting yourself recklessly on the line and being taken out by the enemy.
2. **Know the job of the leader above and below you and be prepared to assume the role of your immediate superior if he becomes a casualty.** Know the role of the leader below you so that you can most effectively command him and his troops. Know the role of the leader above you so that you are able to take his place if he becomes casualty.
3. **Be clear and concise when giving orders.** Being able to give an easy-to-understand order during the heat of virtual combat and getting your teammates to work towards accomplishing it can turn the tide of a battle. Brevity is critical to understanding - everyone in a firefight is going to have to worry about many things at once, and having to concentrate on a long and wordy order from their element leader will cause nothing but trouble.

4. **Decide quickly and act.** You do not always have time to figure out the perfect way to approach things. Being able to decide on a good plan and get it put into play as rapidly as possible is more valuable than spending a large amount of time thinking of the perfect plan and trying to implement it. *"A good plan now is better than a perfect plan later"*. This is especially true when combat is ongoing and every second of delay puts you further behind the curve.
5. **Task by name, especially when bullets are flying.** Saying that "Someone needs to grab that AT" is not a decisive order, and since nobody is singled out specifically, it may be forgotten or ignored in the confusion of battle. It is much better to single out people in your element to do specific tasks - i.e. "Madcows, get the AT off of Awo's corpse" or "Oakley, get on the .50cal for kevb0's MRAP". Call people by name and task them directly and you'll see that things will get done much faster with less ambiguity and confusion.
6. **Avoid micro-management.** Leaders need to let leaders lead - it sounds blindingly obvious, but it has to be said. Orders should be given that allow a subordinate to get them done in the way that they deem to be best. Lower-level leaders require tactical flexibility to get their jobs done - dictating exactly how an element should move and rigidly enforcing it can get people killed. It is better to give guidelines - that you need them to move to a certain place, and that they should try to follow waypoints you set for them - and allow them to adapt to it as they see fit. Obviously there are exceptions to this, but they are just that - exceptions, not the rule. **Micro-management stifles tactical flexibility and lower-level leadership and should be avoided.**

BEING A GOOD COMBAT LEADER SOMETIMES MEANS STEPPING BACK AND **ALLOWING THE MARINES TO DO THEIR JOBS.**

- BATTLE FOR FALLUJAH USMC AAR

7. **Exercise tactical patience.** Tactical patience is defined as "giving a situation enough time to develop and unfold before trying to determine its meaning, significance and how to react to it". There will be times in Arma where the leaders will have to sit back and allow the situation to unfold, without trying to jump in and start giving orders before it is prudent. As an example, just because you see a few infantrymen approaching from one flank does not mean that the bulk of the attack will be coming there, so it would be unwise to shift your defenses before the situation developed further and you could come to a more informed decision.
8. **Exercise disciplined initiative.** Remember the earlier section talking about the importance of individual initiative at all levels? Leaders are no exception - one of the core aspects of our group's leadership mentality is the ability to exercise initiative in a disciplined manner that aligns itself with the higher commander's intent. Leaders are expected to be able to make good decisions on their own when the situation requires it, without having to consult with the higher commander for permission. It is a sign of our trust in our junior leaders and it gives them the freedom to adapt to a rapidly changing situation.

Pen & Paper

One helpful aid for all players, and particularly leaders, is the usage of a pen and paper for note taking. It is highly recommended that all players have note taking gear available while playing in a session.

While features like dynamic unit rosters and the ShackTac HUD can provide easy-access to the names of any elements in a mission, or any players in a specific team, having a pen and paper allows you to take additional notes when the situation requires it. The notepad can be used to write anything special that may need to be referred to later in the mission,

specific rules of engagements, formations, timings for various events, etc. This varies from mission to mission.

Notepads are also great for writing down anything significant that happened in a mission, such as things that could form the basis for 'lessons learned', or those that deserve particular praise in the after-action review of the events.

PREPARING FOR THE MISSION

All in-game leadership is ultimately focused at working towards mission accomplishment. Regardless of what the particular mission may be, there are certain common steps taken to go from the slot-selection screen of Arma, all the way into the actual mission itself, with the end goal being a solid plan that has been briefed to all players and leaders.

This section will cover everything involved in the process, from picking slots to planning and ultimately executing the plan. All players should be familiar with the steps involved, and leaders (or aspiring leaders) should pay extra attention to all that is involved.

The Briefing / Operations Order / 5 Paragraph Order

The Mission Designer as the 'Higher Headquarters'

It is generally understood that the person who developed the mission is acting as the 'Higher Headquarters' during the pre-mission setup phase - be that Company Command at lower playercounts, or Battalion Command at higher playercounts.

What this means is that if the mission commander - be they a Company Commander or Platoon Commander - or other leadership elements have a question that is not covered in the written operations order, the mission designer can act as the higher headquarters and give an answer appropriate to what the 'real' higher HQ would be able to say in such a situation. This is helpful for anything that the leadership needs to know that may have been overlooked or unintentionally unclear in the briefing.

The Briefing Screen

After picking your role, the next pre-mission step is the briefing stage. During this, all players will have access to the in-game map, the briefing, notes, gear loadouts, and will be able to place map markers and text to assist in mission planning.

The mission briefing is designed to give all of the information needed to create a proper plan that can be carried out by the platoon. It is the responsibility of all squad leaders, fireteam leaders, special element leaders, and the mission commander to be familiar with the details of the briefing. Knowing the briefing benefits everyone, as it allows for everyone to be familiar with the 'big picture' of what they are expected to be accomplishing within the mission and helps to unify the entire unit. All players are highly encouraged to read it as well.

SMEAC - The 5 Paragraph Operations Order

Mission briefings generally follow the "Five paragraph order" format - also known as "SMEAC" - condensed to fit in the framework of Arma. In this, information is presented in a standardized fashion, allowing for any player to easily find out what he needs to know about the mission with minimum fuss.

SMEAC breaks down as follows. Bear in mind that it is up to the mission designer to decide what elements are important to be presented in the briefing - the "Keep it simple" rule is employed when writing the actual briefing, while this information is used to help guide that process.

SITUATION

- What is the premise of the mission? Why is your unit where it is, and what's happening around it? What is the "big picture"?
- What kind of forces does your unit have?
- What kind of forces (if any) are supporting you or attached to your unit? This includes close air support, artillery, armor, or any other combined-arms assets.
- What kind of forces and support does the enemy have?
- What is the enemy expected to do?

MISSION

- What is your unit tasked with doing? Who else (if anyone) is involved in the mission?
- When and where does the mission take place? What is the time allowed?
- Why has the mission been given to your unit?
- What is the desired end-state? Basically - what is/are your collective goal(s)?

EXECUTION

- Commander's Intent
- How will the mission be conducted? Scheme of Maneuver, tasks, etc. How will the unit get to the end state?

ADMINISTRATION/LOGISTICS

- Is ammo resupply available?
- Are medevac assets available, such as medical helicopters or ambulance HMMWVs?
- Are there any special rules for dealing with Enemy Prisoners of War (EPWs)?
- Is fire support available? Artillery, naval gunfire, et cetera?
- Is close air support available?

COMMAND/SIGNAL

- Are there any special rules or considerations that must be made for communications? For example - special radio rules or loadouts, smoke or flare colors and meanings, etc. If there are no special rules, this is simply listed as "SOP", for "Standard Operating Procedure".

Sample Operations Order for "Celle Division"

The following is an operations order (OPORD) for a large-scale combined-arms mission. Note that complexity is not necessary to convey the main points of the mission. Keeping a briefing simple, while conveying the important parts, will result in more people reading it and getting more from it than from a similar but overly-complex briefing. Writing a novel in your OPORD is definitely to be avoided. If you want to include background information, put it in a separate section that is optional reading, and ensure that any important information from it is conveyed succinctly in the OPORD.

SITUATION

Recon Company was ambushed by enemy recon teams in the north. They dismounted and destroyed the immediate threats but now only have a few minutes to get into cover and hold out until reinforced by Hammer and Tango companies.

- FRIENDLY FORCES:
  - ShackTac Armored Battalion:
    - 1x Recon Company (dismounted with air lift capabilities).
    - 2x M1A2 Company ("Hammer" and "Tango") with attached M88 and M6 vehicles.
  - Air wing:
    - 2x CH-47, callsign 'Big Bird'
    - 1x AV8B2, callsign 'Pavement'
    - 1x A10, callsign 'Hawg'
    - 2x AH64, callsign 'Ugly'
  - Additional friendly forces are en-route from the south but no ETA is known at this time.
- ENEMY FORCES:
  - Russian Mechanized and helibourne infantry, armor, aircraft. There are more enemy recon teams scattered around which will need clearing out before they can bring in reinforcements.

MISSION

- Defend Celle 2 from determined push from Russian forces.

EXECUTION

- Bn Commander's Intent
  - Air should provide aerial recon of the AO in addition to tasking.
- Movement Plan
  - Recon company should use the Big Birds to redeploy around the AO. All aircraft should avoid going in the marked region to reduce exposure to enemy AA fire.
  - Air should stay grounded until Tank Companies are ready to move.
- Fire Support Plan
  - Battalion has 3x MLRS at Celle airbase (which can be rearmed).
  - 2x AH64D
  - 1x Harrier
  - 1x A-10C
- Tasks
  - Ensure all enemy anti-tank assets are disabled or destroyed.

ADMINISTRATION/LOGISTICS

- Support:
  - Wheeled vehicles:
    - Can have their wheels repaired by action.

- Armored vehicles:
  - Can have their tracks repaired to orange status by action.
  - Any hull/engine damage can not be repaired.
  - Can have tracks and gun/turret repaired fully by M88s.
- Aircraft:
  - Can quickly repair/refuel once landed at the airbase inside the blue circle by action.
  - Can be partially repaired/refueled by action outside of the airbase or by the M88, enough to get back to base at least.
- Resupply:
  - Recon infantry can resupply from the (broken) Warriors at their starting position.

COMMAND/SIGNAL

- ShackTac SOP

Making the Plan

Timeframe available for planning

One of the biggest differences in planning for a game like Arma 3, as compared to doing the same in reality, is the timeframe typically given for the planning process. The way ShackTac plays Arma emphasizes rapid plan development, quick-thinking, and the fact that a good plan now is better than a perfect plan later. In reality, hours, days, or even weeks can be spent drafting up missions, with entire staffs being devoted to the processes involved.

With ShackTac, we aren't interested in spending that sort of time investment. With the quantity of missions we play in a given session, spending "real world" amounts of time in planning them out would result in a month of planning to play a single session, and our operational tempo is much, much higher than that. Not to mention the simple fact that playing is a lot of fun, while overly in-depth orders are a lot of (oftentimes extraneous) work.

When it comes to your average session, we believe that a plan should generally take no more than 20 minutes from start to finish. This means that once you are in-game, the entire process from "reading the briefing" to "getting the 'ready' from every element leader" should typically happen in under 20 minutes. Depending on the complexity of the mission, the type of mission, the leader(s) involved, and a variety of other factors, this can often be ***much*** shorter, and occasionally a bit longer for particularly complex missions.

The breakdown of such a time period is typically as follows, though it can often go much faster depending on the complexity of the mission:

1. Read briefing (2 minutes)
2. Conduct map recon & make initial plan (6 minutes)
3. Issue orders (5 minutes)
4. Questions & comments (2 minutes)
5. Leaders brief subordinates (5-8 minutes)
6. Step off and begin the mission

As you can see, a leader is expected to be able to make a good plan in a fairly compressed timeframe. The proficiency required to make good plans in short timeframes comes from a variety of factors - one of them being a good understanding of the planning process as well as how to give good verbal orders. We'll cover that next and go from there onto various other leadership aspects.

Planning Considerations - METT-TC

When it comes to actually making the plan, one must consider a great many things in order to ensure that the best course of action is taken, with the highest probability of accomplishing the designated mission with the fewest casualties. The military has summarized these considerations into what they call "METT-TC", and it's something that any leader should become familiar with.

METT-TC consists of the following elements - **Mission, Enemy, Terrain & Weather, Troops Available, Time, and Civilians.** Be familiar with METT-TC will help to guide your mental planning process and remind you of all the key things you should be considering in each plan. As time goes on and experience is gained, these will largely become second-nature. While any military acronym such as that is intimidating at first glance, this one in particular is of great value and is worth learning, remembering, and using.

Keep in mind that METT-TC is used constantly, at all levels of the battle, whether one is conscious of it or not. You could sum it up as "the tactical situation" for our purposes - it is everything that you think about when moving around the battlefield, whether under fire or not.

METT-TC is used at the higher level while creating the 5-paragraph order cited above, and once you as a commander received that operations order, you use the same METT-TC process to help develop your own plan of action based off of what you know from the OPORD.

The difference between METT-TC and SMEAC is that **METT-TC is how the situation is perceived to be at a given time (typically the present, or the time when the operation will be conducted).** It is not a plan in and of itself, but rather the elements that are required to be interpreted and used to craft a successful plan. **SMEAC is the plan that comes about because of that, and is based on METT-TC factors as they existed (or were predicted) at a given time during the planning process.**

Once the battle is underway, you (and your subordinates) frequently reevaluate the METT-TC considerations as they change, issuing new orders as appropriate to guide your forces towards success, exploit enemy weaknesses, and generally conduct the battle to its conclusion.

Bear in mind that **you should be looking at METT-TC from the enemy's perspective as well,** to help give you insight into what the enemy might do with the situation as you believe they see it. Being able to "visualize yourself in the enemy's position" can be a powerful tool to use when planning for your own unit's actions.

In Arma 3 terms, the elements of METT-TC break down as follows:

Mission

As in the "5 paragraph order" described above, this deals with what your unit is tasked with accomplishing. The type of mission will determine many aspects of how you craft your plan.

The mission considerations include:

- What do you need to do?
- Why do you need to do it?
- Who is involved?
- Where is it being done?
- When is it being done?

Enemy

Next up we cover the enemy. Understandably, the enemy is a tremendously significant aspect of how you plan a mission. You must consider every tactically relevant aspect of them, such as:

- **Composition.** Force composition is simply what the enemy is made of. Are they strictly infantry, or do they have mechanized support as well? Are there APCs, tanks, or even aircraft?
- **Capabilities.** What kind of threat does the enemy pose with their organic and non-organic assets? Anti-aircraft and anti-tank capabilities? Artillery support? Air support?
- **Number.** How many of "them" are there? A few infantry pose one type of threat, whereas a few "special forces" troops pose a different type, and a few tanks or armored personnel carriers likewise present an entirely different type of threat.
- **Location.** Where are they positioned, if known? If not known, where do you suspect they might be, based on the full METT-TC?
- **Posture.** Defensive? Patrolling? Alert? Attacking? Etc

When put together, these form a partial "threat assessment" for the mission.

Terrain & Weather - "OCOKA"

Terrain and weather comes next. The military mnemonic used to remember the factors used in evaluating terrain is "OCOKA". Like METT-TC, it is another good mnemonic to learn. Also, like METT-TC, you will find yourself using this almost subconsciously with a bit of experience.

OCOKA stands for:

- **O**bservation & Fields of Fire
- **C**over & Concealment
- **O**bstacles
- **K**ey or Decisive Terrain
- **A**venues of Approach.

Basically, these are all of the factors that dictate the suitability of any given piece of terrain, or a given terrain area. These are the elements that describe the difference between a flat, open desert, and a dense, concealing forest. Terrain heavily dictates planning, and thus being familiar with how to judge it becomes important. OCOKA helps you remember all of the elements that will matter in such a judgment.

Let's take a look at what this all means in Arma terms, from the perspective of our forces.

Observation & Fields of Fire

This is the aspect of terrain that determines the effectiveness of friendly fire coming from it, as well as the ability to observe the battlefield. When judging terrain for these aspects, you will want to pay mind of:

- **Areas in which weapon systems could be employed effectively.** The suitability of any given piece of terrain for usage as a support-by-fire position, or to emplace crew-served weapons, etc.
- **Areas where the battlefield can be best observed.** A position may not be suitable for the emplacement of a squad of troops, but if it has a great field of observation, being able to get a forward observer, forward air controller, or recon unit onto it can pay off with timely, accurate, and valuable observation of the battlefield.
- **Danger areas or likely combat areas.** Even if nothing about the enemy is known for certain, a "map recon" can reveal a wealth of information about where the dangerous locations are, where ambushes or enemy forces might be positioned, and more. Being able to identify where friendly forces will be most vulnerable during their movement helps you to proactively account for that with overwatch and other support methods, instead of having to be reactive when the enemy attacks you in a fashion that could have been predicted from the terrain before the battle even started.
- **Defensible terrain.** Defensible terrain can be a great asset for you if you can maneuver your forces onto it. On the other hand, if it looks defensible to you, there is a good chance that the enemy will think the same thing and will either put his own forces on said terrain for the same reasons, or will have a contingency plan in the event that you attempt to utilize the terrain.

Cover & Concealment

The cover and concealment afforded by terrain can be both natural (trees, bushes, broken ground) and man-made (houses, walls, ditches). As learned in the basic rifleman section, cover provides protection from enemy fire, whereas concealment simply prevents observation but has no protective aspects aside from that.

When judging terrain, keep a keen awareness of the fact that elevation differences act as a major source of cover and concealment. Large numbers of troops can move in a protected fashion thanks to the concealing nature of features like valleys, dips in terrain, or by masking themselves with hills and such. When fighting from the military crest of a hill, the ground itself becomes one large piece of cover based on the location of the enemy relative to it.

You can expect the enemy to gravitate towards locations that provide good cover and concealment from your observation and fires. Likewise, when moving, you should attempt to conduct movement in a fashion that maximizes your cover and concealment from them, as well secure fighting positions that give you good cover and concealment relative to the expected enemy threat. Naturally, all of the other factors described must be considered as well.

Obstacles

Obstacles in Arma can take several forms. Terrain itself can be an obstacle - hills that are too steep to traverse by foot or vehicle, for instance, or bodies of water that cannot be forded with the given equipment. Man-made obstacles will also make appearances - the most common are sandbags, concertina wire, and mines. Bridges fit the bill as well, and in urban areas you can expect to see civilian vehicles used to construct hasty roadblocks and attempt to impede, channelize, or otherwise redirect vehicle movement.

Obstacles are intended to prevent you from successfully moving through an area, forcing you in another pre-chosen direction that benefits the enemy, slowing you down to make you vulnerable, or simply delay you.

In some adversarial missions, a defending team will have a number of obstacles and defensive positions that can be placed to help shape the battlefield to their advantage. Crafty and skilled employment of such obstacles can cause significant headaches for the attacking team to try to surmount.

Key or Decisive Terrain

Key or decisive terrain is any terrain that gives some kind of significant advantage to any who control it. This can come in a variety of forms - dominating hills, buildings, an area overlooking a significant bridge or road, etc.

Being able to identify key or decisive terrain allows for a leader to plan how to best deny it to the enemy, or negate the effects of the enemy potentially controlling it as best as possible.

Key terrain often ends up as objectives in a mission.

Avenues of Approach

This is about what it sounds like - routes that can be used to navigate the terrain, in relation to objectives, key terrain, and anything else of significance. It is most typically in relation to the main objective of the mission.

Note that the easiest avenue of approach is not always the best. Coming in from an unexpected or unlikely direction can give your forces a level of tactical surprise that can prove decisive in a fight. On the other hand, there will occasionally be situations in which you are restricted to only one real viable avenue of approach due to a variety of influencing terrain factors. In that situation, one must remember that the only time it matters when the enemy knows what direction you're coming from is when they're able to actually do something about it to stop you. Your job in that situation thus becomes one of leveraging every possible advantage to ensure that they cannot stop you, no matter how obvious your attack avenue is forced to be.

Weather

Weather ultimately means visibility in Arma. There are several things that influence visibility, including:

- Time of day
- Moon phase (if night)
- Cloud cover
- Rain
- Fog

Weather can change over the course of a mission, too - just because it starts off with a clear sky does not mean that it will stay that way. Likewise, if it is near dusk or dawn, visibility conditions can change dramatically over the duration of a mission as it gets darker or brighter due to the setting or rising of the sun. Note too that moonsets and moonrises at night can play a role, particularly on clear skies with full moons.

That's the end of the OCOKA/Weather considerations. Additional information about OCOKA as it applies specifically to attacking and defending follows later in the "Tactics" section. For now, let's continue on with the rest of METT-TC.

Troops & Support Available

This includes all assets available in the mission. Not only are your own troops included, but any special attachments are detailed, as are vehicles that may be supporting you, and artillery or air assets that might be available for addition on-call support. In short, this details everything you have at your disposal to get the mission done, whatever the mission may be.

Time Available

While you will often be free to spend a reasonably unlimited amount of time to accomplish your mission, there will also be occasions when time is a factor and certain tasks must be carried out in specific time constraints. For instance, a night infiltration mission may need to be concluded before sunrise, a patrol may need to be done before sunset, or an ambush may need to be conducted before an enemy convoy has reached a specific town.

Knowing the amount of time available in the mission helps a leader to plan out how rapidly the different phases of the mission must be carried out, which can have a significant impact on the tactics employed.

Civilian Considerations

While many battlefields will be free of civilian presence, it is not uncommon to have to account for civilians in urban engagements. Civilians can be very tricky to deal with - it behooves friendly forces to not harm them, but at the same time, there is always the possibility of insurgents working within their midst. Some civilians may be acting as lookouts for such insurgents as well. It is important to carefully detail rules of engagement when moving into an area where civilians may be present. You want to ensure that players know exactly when they can engage, and when they need to hold fire. A player should never be put in a position where he feels that he is under threat from a hostile civilian yet is unable to take action due to overly restrictive ROEs.

Construct the Plan

After reviewing the operation order and considering METT-TC factors, the Mission Commander has two options. The first is to craft his plan by himself; the second is to ask for input from his squad and special element leaders. Typically a commander will at least ask for input from the special element leaders, as they are proficient at their roles and will have a good perspective on how they can best be employed in the mission.

After receiving feedback (if requested), the commander will begin to work up the plan. The mission assigned, of course, determines much of this. A defensive mission will require the commander to deal with a different set of concerns than an offensive one, and his planning will reflect that.

In general, he will detail the movement routes that the elements will use via marking up the map, establish what squads or elements will be dictating the pace of movement, decide on the rules of engagement, usage of vehicle assets and how they will be distributed amongst the squads, designate recon elements as required, determine rally points or staging areas, as well as any changes to standard operating procedure - such as a non-typical method to use when a given battle situation happens. Generally, standard operating procedure (SOP) are expected to be known by all leaders, and will not be briefed unless considered to be of particular importance to the given mission. For example, a mission which lists artillery as a threat to the platoon may have the PltCo take some extra time to discuss the battle drill they will use to react to the artillery if it engages them.

Depending on the mission type, he will also dictate defensive positions, sectors of responsibility, base-of-fire positions, usage of fire support assets, designate special units to support other units or attach to them, and so on and so forth.

How Far to Plan Ahead

The commander must decide on how far ahead he'll do detailed planning. Since plans have a tendency to "not go according to plan" once bullets start flying, it can be helpful to only plan specifically for the first major part of the mission, then give general guidance for the rest of it. This allows the commander to consider updated METT-TC concerns once the first section of the mission has been successfully completed, and issue new orders based upon what ***actually*** happened, versus what the ***planned*** outcome was. Allowing for flexibility at the lower level tends to result in more "adapting to the situation" and prevents units from carrying out a plan that may not be the best course of action based on the actual vs expected tactical situation.

Key Decision Points

Generally, the commander will attempt to identify key decision points in the mission, and plan his orders around them. For instance - if his unit is attacking, he may decide that a key decision point exists when the unit secures the initial objective. At that point, he knows that he has to direct the positioning of the subordinate units in anticipation of a counter-attack, or to "mop up" any stragglers left on the objective area.

When describing a key decision point in a briefing, the Mission Commander will give the most likely courses of action as options for the subordinate leaders to be aware of - in the above example, these options would be:

1. Get the subordinate units into defensive positions in anticipation of an imminent counter-attack, maintaining security in the event that some hostiles remain in the objective area, and using a single element to clear while the rest of the troops defend
2. Conduct a detailed 'mop up' of any stragglers that may be left in the objective area with all available forces before going defensive.

Giving them as options allows the junior leaders to consider what they will need to do in either eventuality and prepare for it.

Commander's Intent

A "Commander's Intent" is a helpful guideline to give the unit direction during the mission, even in the absence of orders. The idea behind the "Commander's Intent" is that all levels of the unit should be familiar with what the "big picture" of the mission is, and what the desired end state is.

Knowing the "Commander's Intent" gives tactical flexibility to all players, and especially leaders, in the platoon. It allows for tactical decisions to be made even when it is impossible or impractical to get direct orders from the mission command element. This can play a major part in radio-lite missions where communications are severely restricted (by design) and all leaders have to exercise more small-unit initiative and leadership. It also protects against loss of leadership - if a senior leader becomes a casualty or loses comms, the junior leaders still know what they are supposed to be doing and why, and they'll be able to quickly adapt and continue on.

Issuing Orders

Guidelines for issuing verbal orders

Issuing orders verbally - also known as a 'verbal briefing' - requires that the speaker be familiar with a few basic premises.

When issuing verbal orders, a leader must...

- **Announce himself and get the attention of his junior leaders *before* beginning his orders.** As a Mission Commander, you can simply ask for each subordinate leader to identify themselves, then begin your order once each leader has reported in. If you start talking before you know that people are listening, it may force people to play auditory-catch-up, which can lead to missed orders and confusion over what was said. Once in-mission, regardless of leadership level, it can be helpful to use a prep word like "Orders" before issuing any orders. This allows junior leaders who are in the middle of combat to catch that word being spoken and listen up to hear whatever orders are about to be passed.
- **Use clear and unambiguous language.** Vague statements lead to confusion and are open to interpretation. Being specific helps to avoid any issues that might stem from misinterpretation or confusion.
- **Be concise.** When employing clear and precise tactical language, a lot can be said with a few standard words. Lengthy, meandering orders can be difficult to follow and do not have the same focused impact that concise orders do.
- **Set clear, quantifiable goals that junior leaders understand and can work towards.** The more your junior leaders know about what their goals are, and the better they can quantify them, the better they will be able to judge their effectiveness in the scope of the larger mission. Clear goals give them something to work towards and let them know when they've accomplished their task.
- **Strive for elegance through simplicity.** The more complicated a plan becomes, the more chance there is for it to fail. On the other hand, complexity is sometimes required to achieve a difficult objective. A leader must be familiar with the concept of "how much is too much" and be comfortable working within those boundaries.
- **Convey his "Commander's Intent".** "Commander's Intent" is simply what you intend for your unit (Company, Platoon, Squad, etc) to do in the scope of the mission, as described in the above section. This allows for junior leaders to exercise judgment in the mission more easily.
- **Ensure that his orders were understood.** The best way to do this is to ask an element leader to "read back" what their orders were. This way, any misunderstandings between what was said by the leader and what was heard by the junior can be resolved before bullets start flying and it's too late.
- **Allow time and opportunity for questions.** Giving junior players an opportunity to ask questions ensures that they go into the mission knowing everything that they think they need to know, at a level of comprehension acceptable to them.
- **Ask questions if necessary.** By the same token, if in doubt about anything, a leader should not hesitate to ask questions of his subordinates.
- **Solicit the input of the leaders of subordinate elements and special types of units (ie: air crews, recon elements),** as desired. Giving your subordinate leaders an opportunity to chime in regarding the plan, their role in it, et cetera, brings a variety of perspectives to the table and generally results in good feedback and suggestions.

Note that once in-mission, it is often helpful for a leader to find the person he is giving orders to, have them come to his position, and then explain his orders while showing the subordinate the terrain involved. This helps to let the subordinate see the terrain from his leader's point of view, so that he can better achieve the intent of the order. For instance - if the Mission Commander wants to have a unit advance along an aspect of the terrain that is not obvious from a map, but is obvious from where he is standing, this method works very well.

Issuing the Orders - The Command Brief

Once the mission briefing has been received, METT-TC factors have been considered, and a plan has been drafted up, it's time for the orders to be issued to the next junior level of command. Depending on the player count and force structure, this may start at the Battalion Commander, trickle down to the Company Commander, then the Platoon Commanders, then their Squad Leaders, and finally the Fireteam Leaders.

To begin, an accountability check is done to ensure that all leaders are present at whatever location has been chosen for the command briefing - typically the starting location of the highest commanding element in the mission. For the sake of this, we'll assume it's a Company-level mission.

CoyCo: "Do I have my element commanders here?"

Tango Co: "Tango company here."

(Air elements - Ugly, Pavement, Big Bird, and Hawg - check in as well)

CoyCo: "Ok, we're all set. **Orders follow.**"

The next thing a leader must do is provide orientation. This is done to get everyone 'synced up' as to where they are and what they'll be doing. This can be as simple as giving a brief description of where the unit starts off, and what direction the objectives are.

CoyCo:

"As you can see on the map, we're assembled at the southern Celle airfield. Recon Company has been cut off in the north and requires assistance. While we know roughly where they start, we can expect them to be mobile and evading enemy forces shortly after the mission begins."

After orientation, the key parts of the mission briefing are reiterated verbally. This simply consists of the CoyCo rephrasing the operations order into his own words.

CoyCo:

"Our main objective is to form an armored column, head north, and rendezvous with Recon Company in order to extract them safely to friendly lines. Our secondary objective is to destroy any enemy units attempting to push South into our territory."

After reiterating the mission briefing, the Company Commander will detail his "Commander's Intent". This helps to frame the upcoming detailed orders.

CoyCo:

"My intent is to utilize our close air support assets in three ways: One, to locate the recon company, support it, and guide our armor column to it. Two, to provide route reconnaissance and security for the armor column during its movement. Three, to provide forward reconnaissance and advance warning of any enemy air or ground threats attempting to move into the area of operations. Tango Company will conduct a road movement north towards the last known position of recon company, locate them, support them, and secure the area so that they can be airlifted out by Big Bird. From there, we will adopt as necessary to defend against the enemy attacks, using our mobility to redeploy throughout the area of operations in response to enemy movements.

After the commander's intent has been given detailed orders are passed. Each platoon receives it's assignment and any special guidance required. This is the CoyCo's own SMEAC operations order, delivered verbally.

CoyCo:

"Tango company, your objective is to move as rapidly as possible to Recon Company's location in order to support them and facilitate their extraction. Ensure that your elements are exercising strong visual identification before engaging targets - we don't want to shoot up our own guys.

Hawg, you will be supporting Tango Company as it moves north. Tango will have a Forward Air Controller (FAC) that will direct you on targets as needed.

Pavement, you will be blocking enemy air assets to the north, as well as providing recon in that area. Tango or Recon FACs may retask you, but remember that your main role is to defend us against enemy air attack.

Ugly 1 and 2, your initial goal will be to locate Recon Company and convey their location to Tango Company. From there, you will provide support and recon, utilizing your low-level flight to complement the higher-altitude operations of Hawg and Pavement. You will also be tasked with clearing out and providing security for the Big Bird element's landing zones.

Big Bird 1 and 2, you will set yourselves up safely out of harm's way and await Recon Company's calls for extraction. After Ugly or Tango have secured an LZ, you will pick up Recon Company and transport them wherever they need to go.

If there are any questions, ask them. If not, go ahead and brief your elements. Report in when you're ready to roll."

Issuing the Orders - Platoon Brief

Recon Company Commander:

"Recon, we're in a bad situation. The enemy has disabled our vehicles, rendering us foot-mobile. We have support coming from the Celle airbase in the south, but it will take some time to get to us. Enemy forces are likely to be attacking us before they arrive.

Alpha squad, I want you dug in protecting our northern side. Bravo and Charlie will provide flank security, while my headquarters element will be observing south for any signs of our friendly reinforcements.

It is possible that we will need to withdraw further south in response to enemy attacks. If so, Alpha squad will provide heavy fires while Bravo and Charlie withdraw to the next suitable position of cover via bounding overwatch. Once Bravo and Charlie are set, Alpha will fall back to them.

In the event that we see friendly aircraft, our signal method will be to deploy colored smoke on our location. We can expect to be extracted by the Big Bird element once friendlies have located us and secured a landing zone - while you should try to mount your squads into the same aircraft when possible, speed is of the essence - I would rather us be on the ground as short as possible, so if need be, just pull whoever is nearby into your aircraft and we'll leave once we know all of Recon is mounted up.

Remember that the enemy could be attacking from any direction. We are operating under universal ROE - don't be hasty to engage, identify your targets, and coordinate your fires. "

As the orders are completed, the PltCo opens the floor to questions about the plan.

Recon CO:

"Are there any questions?"

Alpha SL:

"If an enemy vehicle is disabled but still has an operation turret, are we able to use it to defend ourselves?"

Recon CO:

"(Alpha SL playername) brings up a good point. Due to the abundance of friendly support aircraft, we will not be using enemy vehicles in anything other than a last-ditch capacity. If an enemy vehicle is occupied by friendlies, immediately inform me so that I can pass the information up to our close air support and armored elements. Remember, usage of enemy vehicles involves high risks of friendly fire - and with our close air support and tank units, the risk is far greater than normal. Try to avoid this at all costs."

Are there any further questions?

...

If not, brief your squads and let me know when you're ready to move out."

Issuing the Orders - The Squad Brief

Once all questions have been asked and answered, the PltCo will send the squad leaders and element leaders back to their squad/element channels so that they can brief their subordinates.

Alpha Squad Leader:

"Alpha, listen up. I have my fireteam leaders listed as (team leader 1 name) and (team leader 2 name). Is that correct?"

Fireteam Leaders:

"Yes."

"Yep."

Alpha Squad Leader:

"Our orders are as follows. We will be the primary defensive element, oriented north of our starting location. I need everyone with anti-tank to be prepared to use it, and well-dispersed into as good of cover and concealment as you can find. Bravo will be on our left flank, Charlie on our right. Our intent is to hold our position from expected enemy attacks from the north, buying time for friendly air or armor to find us.

In the event that we cannot hold this position, Bravo and Charlie will withdraw south while we provide covering fire. After they are set, we will withdraw to their location and assume a northern defense again.

Remember that enemy can be approaching from all directions. Keep at least one person in each fireteam watching our flanks and rear. We are operating under Universal ROE - particularly when dealing with enemy vehicles, let them get close enough to where you won't miss with your AT - we don't have much of it.

Avoid occupying enemy vehicles except in the most dire of circumstances, and if you do, immediately inform me so that I can pass this up to higher headquarters. Friendly fire from the air and armor is a major consideration for why we should avoid occupying anything other than friendly vehicles.

When Big Bird arrives to extract us, we'll mount in the closest aircraft. I am more concerned with us all getting mounted than I am in us all being in the same aircraft.

Are there any questions?"

Alpha 1 Fireteam Leader:

"How long are we expecting it to take for friendlies to find us?"

Alpha SL:

"That's hard to say. We should expect to see friendly aircraft well in advance of any friendly ground forces. Our main problem will be signaling the aircraft to show them our location - colored smoke will be employed by the platoon headquarters element to try to facilitate that.

Any further questions?

...

Stand by for mission start."

Alpha SL, on command net:

"Command, this is Alpha. We're good to go."

Recon CO, on command net:

"Roger that, stand by."

Final Checks

While element leaders are briefing their elements, the mission commander will give any special guidance to his own element. Once done with that, the mission commander will spend the remaining time going over the plan he created, thinking about the problems that might arise, how to address them, and generally trying to anticipate as much as possible and be ready to adapt and be flexible.

Once all element leaders give the "Ready", the mission begins, and the mission commander's job becomes one of supervision, constant assessment of the tactical situation, and adjustments to the plan in a timely fashion as needed.

Notes on Receiving Orders

Guidelines

WHEN RECEIVING VERBAL ORDERS, A PLAYER MUST...

- **Read the operation order before the briefing begins.** It is crucial that all leaders have read the OPORD before the verbal briefing begins. This gets everyone on the same page and allows for the plan to be communicated more clearly and understood by all involved.
- **Write down anything important that you may need to remember later.** This could be the responsibilities of specific elements, the formations used, what vehicles have been assigned to your element, et cetera.
- **Think of what issues might arise with the orders being given.** Is there anything that you can think of that needs mentioning or clarification?
- **Listen to what the other elements are being told to do and ensure you are familiar with the full plan.** It is extremely rare for anyone to operate in a vacuum where the actions of other friendly forces have no impact on them. Because of this, it is important to be familiar with the full plan - what you are doing, as well as what everyone else is doing.
- **Assume nothing. Ask questions if you are unclear on anything.** It is the responsibility of all players to ask questions that help them to fully grasp what their orders are. Don't hesitate to do so - asking questions before the fighting starts will make you that much more effective once things start heating up. It is very important that you are comfortable with your understanding of what you are being tasked to do.
- **Read back what you understand your orders to be.** A 'read back' is a technique by which a subordinate repeats the plan as he understands it to his leader. Doing this allows both the leader and subordinate to know that they have the same understanding of the plan. If any discrepancies appear, they can be dealt with easily.
- **Avoid distractions.** Being distracted during a verbal briefing is a sure-fire way to misunderstand something or miss out on key information.

TACTICAL DECISION-MAKING

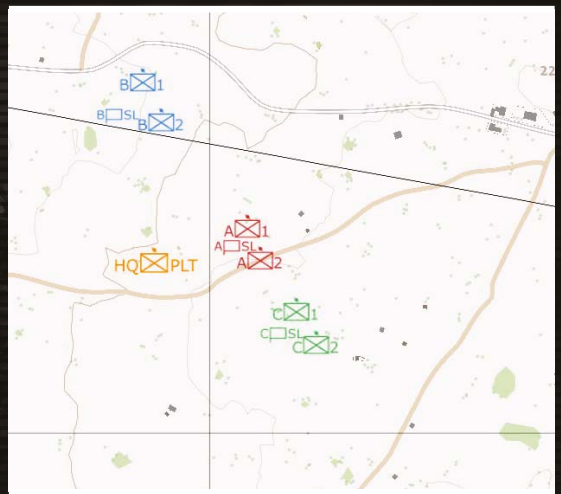
What to Watch For

The job of a leader becomes one of execution, supervision, adaptation, and flexibility once the mission begins. With the operations order as a guideline, each leader ensures that his element's part of the plan is carried out to the best possible degree. Whether a fireteam leader, squad leader, platoon commander, or company commander, every leader shares a set of common responsibilities that scale with their level of leadership.

General & Pre-combat

The first of these responsibilities is simply those things that any leader must be on the watch for throughout the mission. In the pre-combat phases of a mission, leadership is concerned with a variety of things that are intended to maximize the chance for friendly success while at the same time minimizing the possible influence or impact of the enemy.

- **Where is the enemy?** Finding the enemy is always extremely important. If you were in his position, where would you be?
- **Are elements moving according to orders?** If they are not, find out why from the senior member in charge of the given element(s). If their reason is a valid tactical consideration, shift their orders to account for it. If they have no reason and have simply 'goofed', redirect them towards the proper course of action.
- **Are the formation and intervals being employed appropriate to the terrain and enemy threat?** If not, remind the element leaders of the desired formation and interval, and ensure that it is understood and executed. Ensure that you continually evaluate the terrain and take full advantage of what it provides.
- **Are the elements within supporting distance of each other?** Particularly at the higher levels, it is important to ensure that fireteams and squads maintain mutual support when moving, in accordance with the operations order. A squad or fireteam that is off on its own can be cut off, surrounded, and destroyed before the other squads or fireteams can react and move into supporting distance. Maintaining overwatch and mutual support is a key factor of preventing any given element from being 'fixed' and destroyed by the enemy. The terrain will determine how much distance equates to 'supporting distance' - in close terrain it will be much shorter than in more open terrain, and the weapon systems being used will likewise have an impact due to their effective ranges.
- **Are there any gaps or weaknesses that the enemy could exploit? Is security being maintained, especially when moving?** When doing large coordinated movements, it's important to ensure that no gaps form in the movement formation. Leaders should pay attention to the spacing of the elements, the drift that can naturally occur from movement in rough terrain, and adjust accordingly to ensure a solid collective formation.



IN THIS EXAMPLE, A GAP HAS DEVELOPED BETWEEN BRAVO AND ALPHA SQUADS. NOTICING THIS BEFORE IT BECOMES A PROBLEM IS AN IMPORTANT PART OF BEING A LEADER.

- **Are key elements (ie: anti-tank) moving in a position from which they can do their job with short notice?** If important assets are lagging behind the formation or are otherwise out of place, the whole formation will need to slow down to accommodate them. Stumbling onto enemy armor when your AT assets are slogging hundreds of meters behind the main formation is not a situation you want to ever get into.
- **Is a point element being used?** If not, should one be designated? Is recon being properly utilized?
- **Does everyone know what to do when contact is made?** While this will often be a "SOP" reaction-to-contact drill, there will also be times where specific guidance will need to be given about what to do if contact is made in a specific fashion, or in a particular area. For instance, it may be necessary to 'fight through' any contacts due to a variety of METT-TC considerations, versus getting bogged down in a firefight with them. Knowing this, players will be able to conduct a running firefight as their first reaction, instead of having to be specifically ordered to.
- **Are the rules of engagement clear?** If in doubt, restate them to your junior players. While the concepts of 'Universal ROE' will protect you from common mistakes, it never hurts to ensure that everyone is crystal clear on the ROE - better to be safe than sorry.
- **Is the situation as described in the OPORD?** If not, do changes need to be made? Despite best efforts, the operations order may sometimes be incorrect due to faulty intel, a mis-read map, or similar. It is important that leaders are able to identify discrepancies between "what we're supposed to see" and "what we actually see" and react accordingly.

Combat

Once combat has begun, leaders work to get an understanding of the tactical situation so that they can employ their troops most effectively. The higher the leadership level, the less they are concerned with actually fighting, and the more they are looking to find weaknesses in the enemy and exploit them, as well as cover any deficiencies that have developed in their own forces.

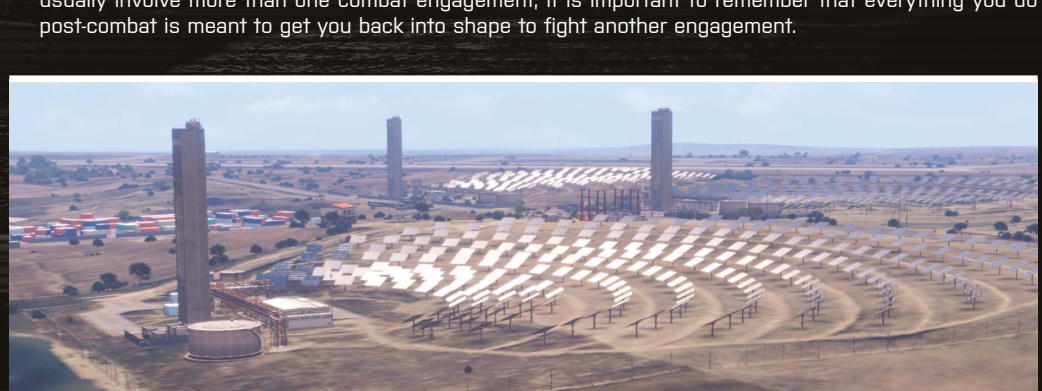
In combat, leaders pay attention to the following aspects. All of these help them to size up the situation, make tactical decisions, and issue orders appropriate to the situation at hand.

- **Where is the enemy?** How many of them are there? What weapons and special assets do they have?
- **Have your troops deployed properly?** Are they taking up good positions? If not, are there better positions nearby that they could fight to? If so, conduct a tactical maneuver towards the new position and continue to fight from there.
- **Has fire superiority been achieved?** Is the enemy being suppressed? Are they fixed by your fires?
- **Are special assets, such as attached teams or vehicles, "in the fight"?**
- **Can any supporting assets be brought to bear?** Artillery and CAS, if available, should be utilized whenever feasible.
- **Considering the initial enemy and friendly situation, can you win the fight from where you are, with the tactics you're currently employing or plan to employ?** Is there a better way, and if so, what would be required to execute it?
- **Are friendly flanks protected and has 360° security been established?** Are troops watching for the enemy's flanking attempts?
- **Are there any vulnerabilities with how the enemy has positioned himself?** Anything that you can exploit to gain a tactical advantage over them? What about the enemy's flanks or rear?
- **What friendly elements can be maneuvered? What elements can support?** Where can a SBF or BOF be positioned, and what options does the terrain give you? Should you flank the enemy? Pincer them? Assault?
- **What is the enemy currently doing, and can you prevent him from being effective?** Are you preventing him already?
- **What is the enemy likely to do? How can you best prevent the enemy from being effective if he does what you think he will do?**
- **How is the fight progressing?** Are casualties being dealt with appropriately? Can you still win the fight? If not, break contact and disengage per "Anatomy of a Firefight" in the "Tactics" chapter of this guide.

Post-Combat

After the fight has been won, leaders work towards consolidating, establishing security, finding out the status of all units, and then getting their troops into shape to fight again if need be. They ask themselves the following questions as soon as the post-combat phase begins, and take whatever action is necessary to correct any issues that may exist.

- **Has security been established?** Nothing should happen until it has been. Security includes checking the enemy to ensure that they're dead or captured, moving to the best positions possible, going firm, and establishing a 360° perimeter security screen around friendly forces.
- **What is the status of friendly forces?** Get situation reports (SITREPs) as well as more detailed ACE reports from all elements as time and the situation allow.
  - **A**mmunition.
    - How much ammo remains? Is it enough to be effective in the current mission?
  - **C**asualties
    - Wounded.
    - Killed.
  - **E**quipment
    - Vehicles & status.
    - Anti-tank capability remaining.
    - Special equipment (ie satchels) remaining.
    - Hostile weapons acquired, what exactly they are, and what teams have them. Ensure that all friendly forces are aware if enemy weapons are being employed by friendlies, as this lessons the chance for friendly fire.
    - Anything lost of significance.
- **Is medical aid needed?** Are medics tending to casualties already, and are they able to tend to the wounded effectively with the gear they have? Has an aid station been established? Is 'medical clustering' being avoided?
- **Does the friendly force need any reorganization?**
  - If leadership casualties were taken, have replacements stepped up and taken charge of their respective elements? If so, what are the names of the new leaders?
  - If KIA's have been sustained, do any elements need to be merged with other ones to bring them back to an effective state? An attrited fireteam of two people is better merged with a healthy fireteam than left by itself, for example.
- **Do key weapons and ammo need to be redistributed?** This will be based largely on the ACE reports received.
  - Have key weapon systems been recovered from any KIAs?
  - Has ammo been collected from any KIAs?
  - If one squad or element has more ammo than another, redistribution of the ammo can be done if the tactical situation allows.
- **What is the next step in the mission, and what needs to be done to prepare for it?** Since missions usually involve more than one combat engagement, it is important to remember that everything you do post-combat is meant to get you back into shape to fight another engagement.



COMMON LEADERSHIP CONCERNS

This section is oriented around dealing with some of the more common concerns that can arise regarding leadership in our platoon.

Stepping Up After Leadership Casualties

One of the simplest realities of combat is that leaders are not invincible. There will be times when a fireteam leader, squad leader, or platoon commander become unexpected casualties. Because of this, it is important that all players know the jobs of those above and below them, and are able to "step up" and take command of a higher level of leadership than they initially started the mission as. The ability to properly "step up" and take charge can often be the difference between victory and defeat in a tough situation. Nobody plans to lose a leader at a key moment, but with a proper understanding of the steps required to deal with this, the negative effects of a loss of leadership can be minimized.

Seniority

Seniority in our platoon is a simple, easy to understand hierarchy, as detailed below from most senior to least. Seniority goes in order - from the Company Commander to the Company Executive Officer, then the 1st Platoon Commander, to the Platoon Sergeant, then Alpha, Bravo, and Charlie squad leaders, and within each squad, the first, second, and third fireteams. In the event that it ever gets passed that, it simply becomes the most senior remaining member of the platoon, regardless of position.

- CoyCo / CoyXO -> PltCo / PltSgt -> ASL/BSL/CSL -> A1/B1/C1 FTLs -> Next senior member

Fireteam Member to Fireteam Leader

Transitioning from a fireteam member to a fireteam leader can be intimidating for those who are new to leadership or otherwise have little experience as a leader. In the end, however, it is not as difficult as it seems - as a fireteam member, you typically always known what your fireteam's plan or role in the squad's mission was. When it's necessary to step up and become the new fireteam leader, follow these actions to conduct the transfer of leadership effectively.

Actions on Taking Command of a Fireteam

1. Announce on comms that you are taking command of your fireteam due to the prior Fireteam Leader being killed. Ensure that both the squad leader and your own team members hear you.
2. You have three main options at this point:
    1. Continue carrying out Squad Leader's last orders if appropriate
    2. Ask for and wait for new orders
    3. Exercise disciplined initiative in accordance with the SL's intent to get your fireteam out of trouble or into a better position to accomplish the assigned mission.

Fireteam Leader to Squad Leader

Transitioning from a fireteam leader to a squad leader is a bit more difficult of a transition. If the squad leader was clear in giving his orders and initial briefing, you should know what the squad's plan and role in the mission was, which helps to smooth the transition. When it's necessary to make the transition from team leader to squad leader, follow these actions.

Actions on Taking Command of a Squad

1. Announce on the squad net that you are taking command of the squad.
2. Issue immediate orders. Depending on the situation, you will take one of two immediate courses of action, as described:
    1. Continue the current squad mission, or transition into a hasty assault, defense, or disengagement if necessary. Sometimes you have to take command 'in stride', such as when in the midst of an assault. You can worry about the nitty-gritty details after you have completed the current mission, or reach a natural pause in the action.

        or...

    2. Seek out and go firm at the nearest suitable cover & concealment. If the situation allows for it, going firm is a great way to get a handle on the squad situation.
3. Report to the platoon commander over comms to tell him that you have taken command of your squad due to the squad leader having been killed.
4. Ask for CASREPs from your squad if you are unclear on the squad's status. The CASREPs will give you an idea of the fighting strength remaining in the squad.
5. Based on the CASREP responses, assess the combat effectiveness of your squad.
6. Give a SITREP to PltCo based on your assessment.
7. Continue previous squad orders unless told otherwise by the PltCo.

Note that when taking squad command, you may or may not want to designate a new fireteam leader for your fireteam. It is generally a matter of personal preference whether this is done, and either way can work.

Squad Leader to Platoon Commander

Moving from a position as a Squad Leader to that of the Platoon Commander is the most difficult transition. Fortunately, it is also a fairly rare one to have to make - good Platoon Commanders don't generally put themselves in positions from which they're likely to become a casualty.

As a squad leader, you were present for the mission briefing, which means that you know what the plan is. You've also been on the command channel listening to all the updated orders and situation reports throughout the mission. This knowledge allows for you to be able to take command and get the squads working towards accomplishing the current mission with the minimum of fuss.

The actions for assuming Platoon Command are as follows.

Actions on Taking Command of the Platoon

1. Announce on comms that you are taking command of the platoon.
2. Issue immediate orders. Depending on the situation, you will typically take one of two immediate courses of action, as described:
    1. Continue the current mission, or transition into a hasty assault, defense, or disengagement if necessary. If in the midst of a coordinated assault or other action where 'wheels are in motion' and things are otherwise seeming to go to plan, continuing with the mission is the best course of action to take.

        or...

    2. Have the platoon 'go firm' at the nearest suitable cover & concealment while you reassess the situation. This is only done when a temporary halt is not detrimental to the overall effort.
3. Tell your squad on your squad net that you have taken PltCo.
4. Assign a new Squad Leader if necessary to replace you and free you up to solely act as PltCo.

5. Ask for CASREPs/SITREPs from squad leaders, if necessary to get a better handle of the situation. Using the CASREPs/SITREPs from your squad leaders, conduct an assessment of the situation.
6. Based on that assessment, issue new orders, continuing the mission in the Commander's Intent as stated in the original briefing.

Encountering Armor Without Anti-Tank Capabilities

As the *"Close Combat Marine Workbook"* states, ***"Without anti-armor at the Platoon level, a Platoon encountering armor is either overrun or retreating".*** This sums up one of the most difficult challengers a leader can face - that of dealing with enemy armor without anti-tank capabilities. There generally aren't any easy ways to deal with this, which makes it all the more difficult for a leader to handle.

Guidelines

- **Stay stealthy if not detected.** If the armor doesn't know you're there, the risk is minimized though not eliminated. If undetected, it is wise to take advantage of that fact and maneuver to the best possible defensive or concealing positions before the armor notices you.
- **If the armor has detected your forces, break contact (using smoke if available) and move immediately into hard cover or good concealment.** The more cluttered and restrictive the terrain is, the better it will be for friendlies.
- **Evaluate what possible anti-tank options you may have available,** as described below.

Without an organic anti-tank capacity at the platoon, squad, or fireteam level, one must be creative to counter enemy armor. Depending on the strength of the enemy armor, these may be more or less successful.

- **"Make-Do" Anti-Armor - UGLs, satchel charges, scrounging for enemy AT.** UGLs work adequately against light armor, though they will require a number of hits to show an effect. Satchel charges can destroy most armor, but they are very difficult to employ if the armor is aware of friendly positions. Scrounging for enemy AT assets can work well, provided that there are enemy casualties within range of friendlies, and that they're carrying their own AT assets.
- **Call in CAS or arty if available.** If they are available to the platoon, both CAS and artillery support can do wonders in countering an armored threat.
- **Break contact, using smoke if spotted, stealth if not.** If there's no other way to deal with the armor, your best bet is to get everyone out of the area as expeditiously as possible, maximizing the use of stealth, smoke, and careful usage of cover & concealment. Alternatively, if you cannot maneuver away, simply keep forces hidden and hope for the best.

Identifying & Dealing with Combat Ineffectiveness

What is "Combat Ineffective" in Arma terms?

In Arma, an element becomes "combat ineffective" if it is no longer able to carry out the specific mission it has been assigned, or the types of tasks typically given to an element of its size. If an element is left in a combat ineffective condition, yet still tasked out with doing things that a 'healthy' element would be more appropriate for, the risk of losing the element entirely becomes a significant danger.

Being able to recognize a "combat ineffective" element and take appropriate steps to salvage it is a critical leader skill to have. The more fierce the fighting, the more important this becomes.

Causes of Combat Ineffectiveness

There are several things that can cause combat ineffectiveness. The main ones are as follows.

- Loss of leadership
- Heavy casualties (KIA, or WIA needing tending)
- Insufficient ammunition or weapons to deal with current threat

Identifying A Combat Ineffective State

As a leader, you can identify combat ineffectiveness by paying attention to some key indicators. The primary ones are as follows. While there are multiple things that can cause each of these issues to occur individually, the combination of several of them typically points to a state of general combat ineffectiveness.

Indications of Combat Ineffectiveness

- **Extremely sluggish or non-existent coordinated movement.** If the element is unable to move in a coordinated fashion, or move in general.
- **Lack of response after giving orders.** If the sub-element leaders are no longer speaking in response to your orders, you have potentially incurred leadership casualties, or the situation has become so demanding that your sub-element leaders do not have time to talk. Neither is good.
- **Lack of response when asking for replacement leaders to step up.** If the sub-element leaders have become casualties, and there is no response when prompting for their subordinates to assume their roles, you are very likely looking at a critical casualty level in the overall element, and the associated lack of combat effectiveness.
- **Lack of firing from units.** High casualties may become obvious by the lack of friendly units firing from a given location. For instance, if you have a squad on a hill that is being attacked, and over time you hear less and less firing coming from that hill even though the enemy is still in prolific numbers, it is reasonable to assume a state of combat ineffectiveness for that squad due to casualty levels.
- **Lack of communication.** If nobody in the element is talking, giving contact reports, orders, etc.
- **Many casualties, including KIA as well as WIA that require aid.** KIAs are always bad, but bear in mind that WIAs can actually do more harm to the short-term effectiveness of a unit, as they require personnel to stop fighting so that they can provide the wounded with medical aid and attention.
- **Unit reduced to fractional strength.** Any time an element becomes attrited to a small fraction of its original strength, a reasonable lack of combat effectiveness can be assumed. While this is not always true, it is a good rule-of-thumb to go by.

How to Deal with Combat Ineffectiveness

Once a combat ineffective state has been determined, it is up to the senior element leader to take actions to preserve the remaining strength of the element as well as place it into a position from which it can have a more significant influence on the course of the battle.

This is generally done by merging the remainder of an element into a parent or sister element, and thus augmenting or replacing casualties in said parent or sister element.

The senior element leader should follow these steps in dealing with combat ineffectiveness via merging with another element.

How to Merge With Another Element

- **Determine which other friendly elements would be suitable to merge into.** This question is typically posed to the next-senior level of leadership - for example, a squad leader would ask the Platoon Commander for direction, while a Fireteam Leader would ask his Squad Leader.
- **Upon being told or deciding on which element to merge with, direct the players under your command to join the appropriate communication channel.** Merging into the right comm channel is critical to reestablishing leadership and smooth communications.
- **Report in to the new element leader and give them a quick status report on the forces that you have just joined to their element.**
- **Unless directed otherwise, attempt to move and link up with the new element at whatever position it currently holds.** METT-TC factors are used to judge the suitability of such movements.
- **Once a link-up has occurred, or when time allows, instruct players to use the ShackTac Interact system to merge from their combat-ineffective elements into their new elements.** Depending on the situation, the leader of the group(s) being merged into may decide to make these arrangements himself, in accordance with his plans for each team and the forces that you have brought him.

Those should be the most typical difficult leadership situations one will find themselves in while playing Arma. Being able to react to them appropriately and without hesitation always helps to minimize their negative effects on the platoon, and familiarity with the steps and situations involved becomes key for all leaders to know and be capable of executing on demand.

LEADERSHIP DEVELOPMENT

The development of a leader is something that takes time. It is a process which must be cultivated by a positive group atmosphere and a willingness and desire on the part of junior leaders to play at a 'higher level'. In Shack Tactical we believe strongly that a player must rise through the ranks - from fireteam member, to fireteam leader, squad leader, and finally, platoon commander - in order to effectively command those in subordinate roles. Too often we have seen examples elsewhere where a player who was not a proficient squad or fireteam leader was put into a platoon-commander-esque position and failed due to not being comfortable with how the lower leadership levels worked in the context of a large mission. We avoid that through our emphasis on leadership development from the ground up.

To help develop leaders, there are a few different methods that can be employed to gain experience, proficiency, and ultimately lead one down the path towards whatever leadership level they are interested in pursuing. Those methods are described below.

Learning by Observation

Learning by example is a great way to get experience as to how leadership is done in any group. For this, you simply need to play and pay attention to your leaders. Listen to how they give orders, how they make decisions, how they maneuver and fight using their unit, how they react to difficult circumstances, and so on. Taking notes helps as well, particularly if you want to transition into "Learning by Discussion" post-session.

Learning by observation is the easiest of all methods to use, and can be employed in every mission with just a bit of extra attention paid towards it.

Learning by Reading

Learning by reading comes in a variety of forms. Most groups will have "After Action Review" forums or topics in which players from a given mission or set of missions can share their experiences, videos, and screen compilations. These can provide a wealth of information for players wondering why a mission went a certain way. In addition to learning from past gaming experiences, you can also look for actual military publications on various topics - to include field manuals, tech manuals, or memoirs and similar. There is a wealth of material available to read and learn from - the only thing that's needed is time, and a desire for self-improvement.

Learning by reading is the easiest way to learn in a solo capacity outside of gaming sessions.

Learning by Discussion

Learning by discussion is one of the most interactive ways to learn leadership values, and analyze past scenarios and what went right or wrong in them. Learning by discussion is done in a variety of fashions - through after-action reviews, through group leadership discussions, through soliciting feedback about your own leadership, or via the mentorship of another player.

Unlike Learning by Observation or Learning by Reading, Learning by Discussion is an active process that requires another participant to involve themselves in the learning process.

The After-Action Review

The after-action review is a process by which players discuss a mission or series of missions post-session, in order to share their experiences and tell their side of the story, see how the mission(s) played out and why things happened the way they did, as well as distill lesson-learned and find ways to improve teamwork and gameplay in the future.

AARs are critical towards learning lessons as a group, as well as showing the variety of experiences that occur in each and every mission. Being able to see how the actions of a seemingly unrelated player impacted your experience in a mission is always rather interesting, and the lessons that can be learned from the group discussions that result can provide great material for players and leaders alike to learn from.

- **After Action Review Goals**
  - **Tell fun and interesting "war stories"**. This is simply the act of telling what happened to you during the mission, what you saw, cool events, etc. "War stories" are conveyed through multiple media types:
    - **Written descriptions of the events as you saw them.** You don't have to be Shakespeare to write a good AAR - just think of what happened, what was neat about it all, and tell your story as best you can.
    - **Screenshots taken during the mission from your point of view.** Fraps works well for taking screenshots, while Picasa is great for creating galleries from them. Both are free, though Fraps requires a license to get the most out of the video feature of it. For screens, though, it's free and simple to use.
    - **Video footage filmed from your point of view during the session.** This can be creatively put together in any number of cool combinations, and every video creator ends up developing his own style of how to convey the action through the editing of his videos.

- **Identify what was supposed to happen in given missions.** What was the original plan, as you understood it? What was your role supposed to be?
- **Identify what actually ended up happening, what the difference between the expected and actual outcomes were, and attempt to figure out and explain why it happened the way it did, based on your observations.** For example, was there a key event that seemed to make the battle shift course unexpectedly?
- **Distill lessons-learned from all of the above points.** The intent with lessons-learned is to discover ways to improve future teamplay and coordination, based on the experiences of the session. This is your chance to tell everyone what you learned from the mission personally, as well as what you think the group could learn from things collectively.
- **Single out and praise those players who you felt did well.** The idea here is to foster positive reinforcement and reward people for doing a good job in-game. Everyone benefits when praise and compliments are given in response to those things that help to make our playerbase such a great group of people to game with. A few kind words from a senior player make a great impression on a junior players and are worth their weight in gold.

- **Tips for an AAR**
  - **For everything negative, say something positive.** It's always important to stress the good things that happened, without shying away from talking about mistakes and times where things didn't go as well as desired. As long as a healthy balance is maintained, positive results will come from the discussion.
  - **Assume good faith.** We're all in it to have fun! If someone says something that seems like it may be a bit harsh, take a step back and recognize that they're attempting to help, even if they may have worded things poorly. Give them the benefit of the doubt and things will generally go more smoothly. If you have a conflict, attempt to resolve it in a private one-on-one capacity first.
  - **Work to foster an atmosphere of mutual trust at all times.** In ShackTac we are lucky to have a playerbase that is as open and honest with each other as we are about our accomplishments as well as mistakes. Continuing to encourage this honesty fosters an atmosphere of trust that further enhances the feedback cycle.

As you can see, the AAR process is a very important one for group evolution, esprit de corps, and more. It is important at all times for leaders and senior players to foster an atmosphere that encourages people to post their thoughts - both positive and negative - in order to maintain a healthy outlook on things. Posting just the positive is deceptive and useless - even the best missions have something that can be improved on. Likewise, being exclusively negative is useless as well - even when things go completely to hell, someone, and usually quite a few someone's, did the best they could and went down fighting. The proper balance is important to maintain.

To close this subsection out, here is a bit from a real-world after-action review by Marines fighting in Fallujah, Iraq, which talks about the after-action review process they used and encouraged during their time in combat.

> *Constructive criticism should be encouraged. Every Marine debriefs each other, telling good and bad observations. The squad leader will also be critiqued by his Marines in an appropriate fashion. The criticism is not meant to undermine the squad leaders' authority. It is to allow the squad leader to instruct the Marines on why he chose to run the squad the way he did. Young Marines will gain knowledge about squad tactics that they may never have figured out if the squad leader did not tell them. It will prepare them for leadership billets. It will also give them confidence in their squad leader because they will trust him and his knowledge.*

Soliciting Feedback

When it comes to soliciting feedback on your own leadership, ensure that you remind the relevant people (subordinates, or leader) that you would like them to give you feedback after the current mission on how they did during it. This cues them to take their own notes so that they can be better equipped to discuss things with you post-session.

Tactical Decision Games

Tactical Decision Games (TDGs) are another interesting way to discuss leadership. In this, you have a leader give you a scenario description, and in a specific timeframe, you must come up with a plan, write the orders for the plan, and send them back to the leader. From that, a discussion can be made as to what the pros/cons of your orders might have been, how you could improve on things, et cetera. This can be an interesting way to get leadership insight in a one-on-one fashion without having to go in-game.

Mentorship

When you want to learn through mentorship, you simply find a player whose opinion you value and ask them about how they do things, what they think about when leading, any tips or tricks they may have, etc. If you've ran into issues with certain aspects of leadership - find out how they do the same things. If you saw them do something interesting in a mission, get into their head and see how their decision-making process worked in that instance. There is a lot you can learn from the other leaders - you just need to seek it out.

Learning by Doing

'Learning by doing' is the most intimidating of all methods of developing leadership abilities, at least when done with live players.

To help lessen the intimidation, players can 'wargame' in singleplayer, via practicing with AI teams (and the help of the "High Command" control interface). They can also solicit the help of other players in doing limited-playercount leadership training - for example, running a single fireteam, or a single squad, can help warm people up towards leadership in a less-intimidating fashion.

Leadership sessions are also held from time to time, allowing the junior players to lead while more senior players play the roles of fireteam members, observing the leadership of the junior players and giving them constructive feedback at the end of each mission.

Finally, 'learning by doing' is facilitated by a group atmosphere that encourages juniors to step up and take command as soon as they feel ready for it, as well as help to cultivate them into someone who will feel ready and capable of leading his fellow players.

PRACTICAL LEADERSHIP IN GAMING

Section authored by ShackTac member Syixxs

The full range of leadership requirements found in the TTP3 can be daunting in sheer scope and depth. All of the information found here is important for anyone interested in leading within the confines of Arma, but can be equally as valid for a leader in any other kind of gaming environment. This relevance becomes the key element when it comes to being a leader in any gaming situation, whether coordinating 130 players in Arma, or a raid of 40 in any one of the MMORPG titles on the market. There are considerations that must be made as someone coordinating a group of gamers across the Internet, rather than simply as virtual soldiers in a simulated battlefield. You must treat yourself as a manager, human resources director, and event coordinator all in one package. You must also remember that the people you are working with are just that

- people. Don't lose perspective on what you're doing simply because of the context. These are people who are looking to have a good time. Gaming is about entertainment, and your primary goal as a leader is to coordinate that entertainment and facilitate the enjoyment of all participants through a streamlined, well directed event.

The Volunteer

If there is one thing that you repeat to yourself, over and over again, while leading any group of people in a gaming environment is that they are volunteers. This isn't voluntary in the sense that all of our current service men and women decide to sign up for military service. This is voluntary in the sense that all of your participants are electing to give up a portion of their personal time to enjoy a game. They are there to have fun, be rewarded for their participation, and gain a real sense of accomplishment through the game. This kind of volunteer participation is far smaller in scope and meaning than more traditional forms. There is little given to, and typically more taken away, from the experience. This means that bad experiences can lose volunteers quickly. It, then, is critical that you remember who you are leading within the game. These are people who expect you to help them have a good time, and there isn't much room for disappointment. If you consistently fail to meet the expectations of your players, they will choose a new leader or simply stop participating.

Playing a game like Arma can easily lead to the trap of "milsim". This is most often seen in the form of military role playing both inside and outside of the game. Milsim situations can often be abrasive for gamers who are looking to have a more realistic gaming experience, or simulation, without actually signing up. Milsim leaders often treat their players in a manner similar to actual military discipline, which is designed to provide harsh consequences for deviating outside of the norm.

This kind of military discipline will only diminish your player base and alienate those players who are simply looking to enjoy themselves and have a good time within the confines of the simulation. You must remember that your players are gamers - not soldiers. Even players who are former service men or women aren't typically interested in meeting a leader who attempts to be their long-lost drill sergeant. In the best case scenario you will be laughable, getting remarks about your abrasive and over-the-top nature outside of the game. In the worst case, you will cause conflicts within your group and drive members away. In many cases, these are often the outstanding members that you lose. Consider many of the comedy videos found on YouTube of gaming leaders screaming tantrums to their players, and exactly how ridiculous they sound. You don't want to be that leader. To avoid this situation, you need to keep control of yourself and know what kinds of players you have in your group. Thankfully, some broad definitions exist to help you get a sense of who you are leading.

The Gamers You Lead

To lead most effectively, you must know who you are leading. The types of gamers found here apply primarily to Arma, but can also be closely linked to other game types as well. For the most part, you will be leading three kinds of gamers: the cooperative, the adversarial, and the experience-seeker. Each type has different quirks and attributes that you must understand and seek to fulfill as you lead them through their gaming experience.

The Cooperative Gamer

The cooperative gamer is a real team-player. These members are most interested in doing anything that involves heavy teamwork, coordination, and betterment through group effort. This is a relatively easy type of gamer to work with because they seek strong teamwork and coordination first, which is also your primary goal as a leader. Cooperative gamers can be very helpful in assisting you with the task of leadership. They make excellent junior leaders, enthusiastic participants, and are typically willing to go beyond standard participation for the good of the group. Keeping a cooperative gamer happy and active is just a matter of striving for strong teamwork, good organization, and effective communication. The suggested organization methods found here in the TTP3 will address much of this for you.

Cooperative gamers become unhappy when teamwork breaks down, communication becomes ineffective or misunderstood, or "lone-wolf" players take advantage of the whole for their own gain. Keep your organization strong and your lone-wolf players to a minimum, and cooperative gamers will be very pleased with you.

The Adversarial Gamer

You might expect that the adversarial gamer is the opposite of cooperative, eschewing team participation and spending most of their time being the lone-wolf that cooperative players loathe. This, however, is not always accurate. The adversarial gamer is typically driven by in-game goals and achievements, preferring to demonstrate their prowess to other members as a form of self-worth. Accomplishments for adversarial gamers are not found simply within group participation, but come from concrete metrics such as score, mission accomplishment, or degree of success. Because demonstrating skill and accomplishment are so important to adversarial gamers, they often want to test their skill against other players. You will often find members like this in competition with one another for score, kill count, mission success, or other measurable criteria.

Keeping the adversarial gamer happy is a matter of allowing them to flex their competitive muscles. Make sure they feel that they are able to participate in a direct and effective way. Allow these players to take the combat heavy or other front line roles to get a strong sense of efficacy in-game. Cooperative players will often happily occupy support roles for adversarial gamers, allowing them to get into the fight. In this way, the two groups compliment one another nicely.

Adversarial gamers begin to become unhappy with situations where they feel that their personal skills are being wasted, or that they are being "cheated" of legitimate results. Try to avoid long dry spells in action content, as the longer these go, the more frustrated adversarial gamers become. From the Arma standpoint, remember that a series of lighter action missions may require that you follow with something much heavier and more direct to capture the interest of your adversarial gamers once again.

The Experience-Seeker

The experience-seekers are often the easiest of your members to please. These players are typically involved to get a sense of "being there". They want to be a part of the spectacle of a platoon charging into a town, or calling in air strikes. These players will often drift from cooperative to adversarial in their current interest, but the experience is always what drives them to participate.

An experience-seeker just wants to have an engrossing time. This means that it's often a good idea to give them something in-depth to do. Being in charge of support assets like artillery or air support does a great job of keeping experience-seekers interested. They get to make the fancy visual fireworks, after all. This not only makes a great scene, but allows them to indulge either their cooperative or adversarial leaning, whatever it may be at the time.

Typically, an experience-seeker will be happy so long as you avoid simple scenarios. Don't play missions oriented toward death matches, or other more "sports-like" activities, and they will be glad to be a part of the group.

The Lone-Wolf

Though not technically one of the three main groups of players, you must pay special attention to the lone-wolf players. Any game that involves leadership of large groups inherently calls for team play. Lone-wolf players avoid team play to go it their own way, doing what they please and indulging whatever sense of accomplishment they are looking for. Lone-wolf players are indicative of a few things: group health, member efficacy, and organization. Specifically, the appearance of lone-wolf players means there is a problem in one, or many, of those areas.

Dissatisfied members are likely to become lone-wolf players, no matter which major group they are typically a part of. If the player stops getting what they are looking for as part of their involvement, they may decide to get that fulfillment themselves by going it alone. This will inevitably anger other members who are still working for the team. It's important to address lone-wolf players quickly and effectively. Either figure out

what needs to be done to get them back into team participation, or determine that they have simply reached the end of their participation and remove them. Strong communication and established relationships with your members will help you address lone-wolves quickly and effectively.

Considerations for Leadership

With an understanding of the type of players you will be leading, you must constantly keep their interests in mind as you conduct your leadership. This goes beyond simply what you are doing from a moment to moment adjustment in a mission. This begins with mission selection. You should keep your mission choices varied and planned in a way that keeps all of your members happy. Large scale, combined arms cooperative missions will certainly please your cooperative and experience-seekers, but your adversarial members might feel that their goals are diminished with the scale.

Break this up for your adversarial members by including well-designed competitive missions with a strong theme. Cooperative members will appreciate the teamwork and coordination, adversarial members will enjoy the competition with other players and the sense of accomplishment, and experience-seekers will enjoy the theme and participation. Keep your mission variety high, and always listen to your members. Know what they are interested in doing to ensure that you pick the right mission at the right time.

In-game, call for members who suit a particular task. If you need someone to bring up support assets at some point, call a known cooperative member by name and ask them to do it. They will feel involved, appreciated, and effective. By the same token, if a special task calls for someone strongly combat-oriented, ask one of your adversarial gamers to take the job. They will get the same sense of accomplishment.

Know Your Community

Obviously, you cannot make the right decision at the right time if you don't know your members. It is critically important that you interact with your members on a regular basis. Get to know who they are and what kind of play they enjoy. This will help you better understand them, communicate more effectively with them, and help them have a far better time. Do not fall prey to the ivory tower mentality. A good leader participates with his community and enjoys the people he games with. If you don't like who you lead, you need to go elsewhere. You will only serve to upset yourself and diminish the enjoyment of your entire community.

Remember that your members are volunteers who have something they want to get from their participation. Military discipline and harsh treatment will alienate your members - not encourage them. Treat your members as people, with genuine consideration for what they want, who they are, and how they feel. Always be considerate, even-handed, and fair. Apply community rules equally, work with your community, and do what your job calls for you to do: make your community a great place to game, and a place where everyone can have a great time doing what they enjoy the most.

BATTLE DRILLS

The idea behind a "battle drill" is that it is a standardized way to react to a common battlefield event. Battle drills ensure that everyone is on the same page of music, so to speak, and allows for a rapid reaction to an event with the minimum of orders needing to be issued. The following battle drills cover the most common combat events to be encountered in Arma, and are the foundations on which additional tactics are built.

Reaction to Contact or Enemy Fire

The most fundamental battle drill is reacting to enemy fire. It forms the basis for many of the other tactics covered in this guide, and these guidelines should be kept in mind when reading about them and applied as necessary. I've broken them down based on leadership level.

If your element comes under fire, follow these basic guidelines, depending on what level of leadership you're at.

Fireteam Member

- **Make a hasty contact report** (ie *"Contact left!"*) while you move to **take up as good of a position as possible** (prioritize cover, only go for concealment if no cover is available) and **scan for signs of the enemy** as you **return fire** in the direction of the enemy. This process is known as **ALERT - COVER - SCAN - ENGAGE,** and one must remember that each step is happening more or less simultaneously with the others.
- **Listen for orders** from the fireteam leader or squad leader. If your element leader is killed, and you are next in command, take command and evaluate the situation as a fireteam leader would (see next section).
- **Continue scanning for, engaging, and communicating the location of known, suspected, and likely enemy positions.** Ten seconds into the firefight, you will likely have a much better feel for what is happening and where the enemy is. Ensure that you continue to communicate this information to your team and squad members. Scan all around - just because the enemy is firing from one particular area does not mean that they aren't already flanking or positioned in other, dramatically different locations as well. Do not fall prey to tunnel vision!
- **Don't be afraid to show disciplined initiative.** Fireteam members are at the cutting edge of the battle. If you see an opportunity or a danger, take the initiative to do or say something about it. This includes seeing or hearing evidence of enemy armor coming. If out in the open, for instance, a fireteam member may announce this to his team and thus get them moving towards better cover instead of staying in place and being caught in an even worse position.
- **If wounded, announce it and make your way to the squad medic if the wound is dire.** If it's a light wound, continue fighting until things calm down.

Fireteam Leader

- **Ensure that your fireteam has positioned itself appropriately, and if not, order them to a covered or concealed position.** If necessary due to bad positioning, deploy smoke and pull your team back to better cover or concealment.
- **Determine the location of the enemy** as precisely as possible and report it to the squad leader.
- **Begin engaging the enemy yourself.** Use your underbarrel grenade launcher against clusters of the enemy and high-value targets and use the rifle against individual soldiers. Stay tactically alert and avoid getting tunnel vision.
- **Direct the fire of your team as needed.** This includes massing fire on specific targets or covering a very specific sector.
- **Be prepared to maneuver in accordance with your squad leader's orders.** Scan the area and consider how and where you might move to gain a tactical advantage over the enemy.

Squad Leader

- **Achieve fire superiority.** If the enemy opens an ambush with an automatic rifle and rifle fire, pour more fire on his position than he is putting on you. The sheer volume of return fire you direct at the enemy may be the deciding factor of the firefight from a psychological standpoint.
- **Ensure that the fireteams are reacting appropriately.** If necessary, order them around to achieve a more effective posture or maximize fires in one direction. If one team is particularly exposed, direct the other teams to increase fire while the exposed team moves to a better position.
- **Report to the platoon commander** and tell him what the situation is when time and the situation permits. This should be brief - "Alpha squad taking heavy fire from our East". Prioritize appropriately - if you need to be communicating with your squad to keep them alive instead of spending time reporting up the chain, do so, and worry about telling the PltCo once things have calmed down a bit.
- **Assess the situation.** Can your squad fight from where you are now? If not, direct your fireteams to new positions, moving via bounding overwatch so that you maintain fire on the enemy at all times. If you can fight from your current position, do so and act as a base-of-fire element for the platoon. If you cannot fight from your position and cannot move to a more favorable one, execute a "Break Contact" drill (as described below).
- **Coordinate with neighboring squads** if possible. If a nearby squad is in position to exploit the enemy's vulnerability, pass your thoughts to them and see if they can do anything about it.
- **Listen for orders** from the platoon commander.
- **Maintain situational awareness.** Stay alert for possible flanking attacks.
- **Ensure that the Squad Medic is taking care of casualties** as they occur.

Breaking Contact/Withdrawing

Breaking contact is the means by which an element disengages from a confrontation with an enemy force in an orderly fashion. Fire & maneuver tactics are used to ensure that a steady volume of fire is put on the enemy location(s) during the withdrawal. This helps to keep the enemy's head down and prevents them from keeping friendly forces decisively engaged.

Breaking contact is basically an assault done in reverse.

Break Contact via Bounding Overwatch

The primary method of breaking contact is via bounding overwatch.

To **execute a "Break Contact via Bounding Overwatch" drill,** the following steps are taken:

- The element leader announces his intent to break contact via bounding overwatch. He designates one or more elements as the "base of fire". This element can be as small as a fireteam or may consist of multiple fireteams or squads when employed at the platoon level.
- The base of fire element takes the best hasty position possible and begins laying fire on the enemy. Oftentimes the base of fire element will be chosen based on already having a good position, making additional movement unnecessary.
- While the base of fire element lays down sustained accurate fire on the enemy, other elements move via rushes to the rear. These elements pick spots of natural or artificial cover or concealment from which they can support the base of fire element when it pulls back. Smoke is deployed to conceal movement when available.
- On the element leader's command, or at their discretion, the base of fire displaces to the rear towards the supporting elements. These supporting elements begin sustained accurate firing on the enemy until the base of fire element has moved past them and established a new position.
- This process is repeated as necessary until friendly forces have successfully disengaged from enemy contact.

Conducting an Ambush

An ambush is defined in the US Army's *"Infantry Platoon and Rifle Squad"* publication as *"...a surprise attack by fire from concealed positions on a moving or temporarily halted enemy unit. It combines the advantages and characteristics of the offense with those of the defense."*

Ambushes are an extremely favorable way to engage the enemy. The combination of surprise and fierce, accurate fire can rip an enemy element to pieces before they have time to react.

Types of Ambushes

There are three main types of ambushes for our purposes - the deliberate one, in which you know that an enemy force is going to be moving through a given area, the hasty one, in which we unexpectedly have an opportunity to ambush an enemy force that has not detected us, and the delaying or guerrilla one, in which we are attempting to strike the enemy, cause casualties and confusion, and they withdraw before they can retaliate.

Deliberate Ambush

These are typically convoy ambushes. You may be tasked in a mission to stake out a slice of terrain and cover roads that an enemy convoy is expected to pass. In such a situation, demolition plays a large part. Mines can be set, as can satchel charges and other explosive devices. A relatively large amount of prep time is given for this, and the results tend to reflect this. Deliberate ambushes are devastating and highly effective. The one big unknown is whether the expected enemy force will be the same composition and size as our mission briefing or intelligence reported. The difference between a troop convoy and a tank convoy, for instance, is huge, and both must be engaged with different tactical considerations.

Hasty Ambush

Hasty ambushes are usually against enemy infantry but can also be against other enemy forces. The decision to conduct a hasty ambush needs to be communicated rapidly, since there usually isn't much time to get positioned and ready to open fire. Fireteam leaders and squad leaders are the most common leaders to give orders for a hasty ambush. Satchel charges and other explosives play a very limited role in these types of ambushes due to the lack of time and ability to position them.

Delaying/Guerrilla Ambush

Delaying or guerrilla ambushes work best against enemy infantry. The purpose of them is to either delay the enemy's pursuit of friendly forces during a withdrawal or sow confusion and death amid their ranks unexpectedly before vanishing. The size of an ambush team of this nature is usually a squad or less.

The goal of a **delaying ambush** is to engage the enemy by fire and cause enough casualties to temporarily halt them. At that point, the team withdraws to another defensive position from which they repeat the ambush if possible.

The goal of a **guerrilla ambush,** on the other hand, is to engage the enemy by fire, cause casualties, and withdraw before the enemy can decisively respond to the ambush team and fix them. The guerrilla ambush team breaks contact, maneuvers to lose any pursuit from the enemy, and then evaluates its next moves.

Both of these ambush teams must be able to engage the enemy, produce the desired effect, and relocate or disengage before enemy support assets such as artillery or close air support can be brought to bear.

AMBUSHING A ZAMAK CONVOY

Key Elements of an Ambush

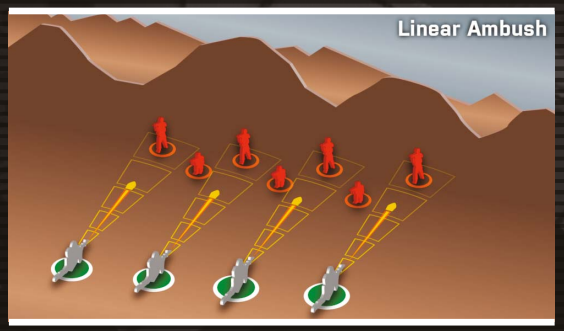
The key elements of any ambush are friendly positioning, location of the kill zone, and proper initiation of fires.

- **Friendly Positioning.** The best ambushes have the friendly forces located in good cover and concealment, firing from an elevated position. This makes it the most difficult for the ambushed enemy to be able to effectively retaliate.
- **Location of the Kill Zone.** The kill zone is the area in which fire is focused at the initiation of the ambush. An ideal kill zone has very little cover or concealment, and no significant terrain features that might cause "dead zones" to exist. A kill zone should be well-covered by friendly lines of fire, and any potential exits from it should be able to be fired at/into without friendly forces shifting positions. Grenadiers should ensure that any "dead space" or obvious cover or concealment can be easily be taken under fire with their grenades and position themselves accordingly.
- **Proper Initiation of Fires.** The signal to start the ambush is usually given verbally by the element leader (ie squad leader). He will give a warning that the ambush is about to begin, so that everyone can sight in on targets and prepare to fire. Once the order is given, all friendlies should begin firing a heavy and accurate volume of fire into the kill zone. Continue firing until all enemies are confirmed dead or the element leader gives a command to shift or cease fire. One special consideration must be made clear for ambushes - **if a friendly accidentally fires before the element leader, the ambush is initiated whether it should have been or not.** All players must immediately open fire in such a situation to try to salvage as much of the surprise and lethality as possible. One must also keep in mind that a player may hastily fire on an enemy who has spotted the ambush group, in which case he may not have time to announce what is happening and must rely on his teammates to immediately begin firing on their targets as well. Because of both of these situations, every member of an ambush team must be ready to initiate fires either at the element leader's verbal command or the sudden firing of any member of the ambush party.

Players must also consider the use of explosives devices like satchel charges and claymore mines. These are usually not practical for a hasty ambush, but a vehicle ambush or deliberate ambush can benefit greatly from their usage. Triggering explosives to start an ambush is very effective, as it adds an extra layer of shock and confusion to the situation for the enemy.

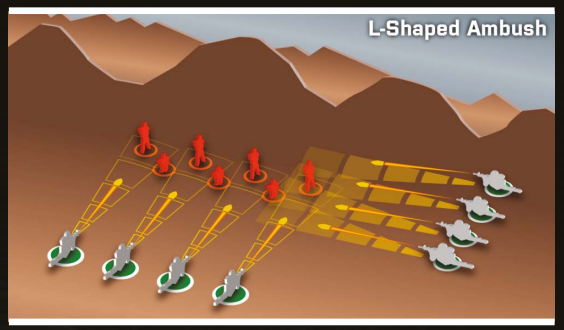
The Linear Ambush

A linear ambush is the most basic type. In it, all ambushing forces are arrayed in a single line. This type of ambush is easy to set up in a hurry and works well in most situations. Many hasty ambushes end up as linear ambushes due to lack of time and mobility to get an L-shaped ambush enacted. Note that the longer the line is, the harder it is for the enemy to find cover or concealment - features that may conceal him from one end of the line may not have an effect due to a member on the other end being able to still see him. Note also that the ambushing team should not be spread so thin that the ambushees are able to assault into the ambush and drive a wedge through the line.



The L-Shaped Ambush

An L-shaped ambush is a bit more complex to pull off, but the extra effort is rewarded by markedly increased effectiveness. An L-shaped ambush requires that one element be positioned at a right-angle to the rest of the ambush. When the ambush is initiated, one of the two elements will find itself firing into the flanks of the enemy, while the other element will be firing into its front. Being hit from two sides like this will rapidly attrit the enemy and make it almost impossible for them to survive. A well-conducted L-shaped ambush is near certain death for those trapped in the kill zone.



L-Shaped ambushes can be done with any composition of forces. Even a single infantryman who is off to the side of the enemy when they come under fire from the front can have a dramatic effect. Initiating fires from the front while a sniper or designated marksman lurks quietly off to the enemy's flank can be highly effective - the enemy will find cover or concealment that protects them from the front, leaving their flanks open to the sniper or designated marksman who can then pick them off at will.

The Convoy/Vehicle Ambush

Vehicle/convoy ambushes are similar to infantry ambushes, with the main difference being that the vehicles are able to exit the kill zone rapidly if nothing is done to stop them, and armored vehicles can quickly turn the tides by attacking into the ambush if they are not rapidly dealt with.

Special Guidelines for a Vehicle/Convoy Ambush

- **When ambushing soft vehicles, shoot for the tires and drivers.** Flat tires make it almost impossible to move with any decent speed. Dead drivers add confusion to the mix, and require that someone get out of the vehicle and then back in as a driver to continue on. Doing that effectively under fire without having your head shot off is difficult at best.
- **Hit the lead vehicle first, then the trail vehicle, then work up and down the rest of the convoy.** Stopping the lead vehicle with fire can cause the rest of the convoy to temporarily halt and compress until the convoy can make the combat decision to drive around the disabled vehicle. Taking out the trailing vehicle can prevent the convoy from reversing out of the kill zone. This is more pronounced the tighter the terrain is. Trying to block in a convoy like this in the open desert may not work well, but in a constricted valley or urban environment it will be more effective.
- **Take out other vehicles in order based on the threat they pose.** If there is armor in the convoy, ensure that it is taken out immediately or else the enemy will likely be able to use it to fight free of the kill zone.
- **When numbers allow for it, "double up" anti-tank gunners on each target.** One AT should fire his weapon at a tank or other piece of armor, with the other AT gunner standing by to take a shot if the first misses.
- **Stay away from knocked-out vehicles.** Secondary explosions in Arma can wipe out infantry with ease. Flames from the wreckage can also cause damage.
- **Decoy devices can be used to halt a convoy in a kill zone.** Placing an abandoned vehicle in the middle of a road can oftentimes cause a convoy to slow down or halt if they suspect that the vehicle is hiding an IED or satchel charge. To take advantage of this precaution, place IEDs or satchel charges further up the road and then place the vehicle in a position such that the convoy will stop upon seeing the vehicle, and upon stopping they will be in the kill radius of the explosives you hid along the road, not to mention that they will also be in the kill zone of friendly infantry positioned to overwatch the explosives.

Reaction to Ambush

An ambush typically is a more coordinated enemy effort than your average "meeting engagement" firefight. The 'kill zone' (where the enemy focuses their fires) is under heavy, concentrated fire, and those within it have to rapidly react to the situation if they hope to survive.

The reaction to an ambush depends on whether it is a 'near' or 'far' ambush. Both will be described below. The guidelines above for a general "Reaction to Contact" should be kept in mind as well.

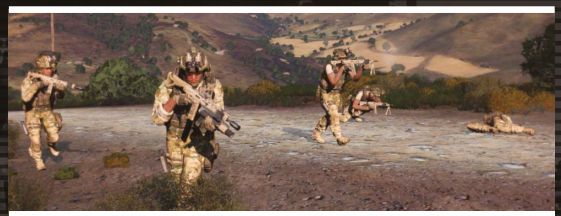
Near Ambush

A 'near ambush' is defined as an ambush occurring with the enemy within grenade-throwing distance.

When an element is subjected to a 'near ambush', the action required varies depending on whether any given player is in the "kill zone" or outside of it. The voice call for a near ambush is simply "Near ambush, [direction], and should be said by the first person to identify it. Due to the confusion caused by a near ambush, the element will likely require a moment to identify the type of ambush. This means that you'll likely hear a "Contact [direction]!" call, followed by "Near ambush!" after a brief pause. Throw grenades if you can't see them; shoot otherwise.

If you are in the kill zone [meaning, the enemy is focusing the bulk of their fire in your area], you must immediately return fire and take up covered or concealed positions. Immediately throw frag grenades or smoke at the enemy and assault their position once the grenades have exploded or the smoke has formed. The speed and violence of your element's reaction to the ambush will be the deciding factor as to how many of you walk away from it.

If you are not in the kill zone, your job becomes one of support. Identify and engage the enemy with as much firepower as you can bring to bear, as quickly as possible. When the "kill zone" element assaults into the ambush, shift or cease fire to avoid friendly fire.



AN ENEMY AMBUSH KNOCKS DOWN THE POINT MAN WHILE THE REST OF THE FIRETEAM MOVES FOR COVER AND RETURNS FIRE

Far Ambush

A 'far ambush', on the other hand, is any ambush in which the enemy is further than 50 meters away. These can take a multitude of forms, and the only positive aspect of them is that the increased distance of the enemy means that friendly forces can potentially maneuver better and the enemy may not be as deadly with their fire from an extended range.

Again, the action of each individual varies depending on their location within or outside of the "kill zone". The voice call for this is "Far ambush, [direction]". In practical usage, this will most likely simply be called as a normal contact report, and it will be up to the element leader to determine whether it's a meeting engagement or an actual deliberate ambush.

If you are in the kill zone, immediately return fire and move to a covered or concealed position. Focus fires on enemy crew-served or high-volume weapons [machineguns] and try to knock them out as quickly as possible. Smoke grenades [both UGL and hand-thrown] can be used in two primary fashions - the first is to place them around the "kill zone" ambushed squad to conceal them from enemy fire. The other use, for the UGL smoke grenades, is to fire them at the enemy location and try to obscure their view of friendly forces.

In a far ambush, the ambushed element does not attempt to assault through the ambush. Instead, they form a base of fire while the elements not in the kill zone maneuver against the ambushing enemy force. Once the maneuvering team begins to assault the enemy ambush team, the base of fire team should shift or cease fire to avoid friendly casualties.

If you are not in the kill zone, your job is to flank and knock out the enemy ambush element. You should move with your element via covered/concealed routes when possible and try to work your way onto a vulnerable enemy flank. Ensure that you notify the base-of-fire element when you begin the close assault on the enemy to avoid friendly-fire.

Reaction to Sniper

If an element receives sniper fire during a mission, the reaction to it will depend upon the assets available, the terrain, and the overall mission.

The effectiveness of a sniper is inversely proportional to how knowledgeable players are in counter-sniper and reaction-to-sniper drills. A 'green' group can find themselves pinned down by one, whereas an experienced group will be able to utilize proper movement techniques, smoke, and organic and non-organic assets to find, fix & suppress, and ultimately kill or bypass the sniper.

The basic things to keep in mind when dealing with snipers are as follows:

Individual Reaction to a Sniper

1. **If a friendly soldier is shot beside you, the first thing you should be thinking about (while moving to make yourself a hard target) is "Where did that shot come from?"**. If you know, immediately move to put some sort of hard cover (preferably) or put some good concealment between you and the enemy sniper. If you don't know, make an educated guess and find cover or concealment, then assess the situation.
2. **If you recognize the distinctive 'crack!' of a sniper rifle or suspect that it is a sniper engaging you, shout "Sniper!" over direct speaking** as you move to cover or concealment.
3. **If you're out in the open, keep moving, and move unpredictably.** Depending on how far away the sniper is, and the type of weapon he is using (ie bolt-action compared to semi-auto), he will probably wait for 'high-probability' shots. This means he wants to catch someone who is stationary or moving directly towards or away from him who is presenting a large profile. Low-probability shots (such as high deflection, limited exposure, or erratic target movement) will typically only be taken when the situation is desperate, the sniper is at close range, or when the sniper has a semi-automatic rifle like the SVD Dragunov.
4. **Once you're in cover, relay the position of enemy snipers or sharpshooters to other friendly forces to help to minimize casualties.** Marking their position on the map is a good way to give friendly units an idea of where they should expect to find the shooter.
5. **Use the heaviest asset available to kill the sniper.** If you have artillery, call it on the suspected sniper position. If you have mortars, set them up somewhere safe and pound the sniper position. If you have any kind of protected armor (ie LAV, AAV, tank, etc), use it to flush out and kill the sniper. Ditto with aircraft. The last resort is infantry working as a cohesive team. Infantry will typically take casualties when hunting down a sniper, so if it can be done any other way, it should be.

Tips for Dealing with Snipers

- **Teamwork kills snipers. Individuals do not.** Remember that you are part of a team, and that that team can help extricate you from situations that you cannot get out of yourself. You will almost never be able to out-shoot a good sniper by yourself. Instead, work with your team to suppress the sniper (if feasible) and then flank them. If you cannot realistically flank or otherwise reach the sniper, adapt your movement techniques to try to minimize the threat posed by him.
- **If you peek, keep it short.** If you must look in the direction of the sniper and expose yourself, do so as carefully as possible. This means that you should utilize leaning, and should only peek out for a very brief period of time - half a second to one second is fairly safe. Because of the range and aiming precision required to make a kill shot, a sniper typically will require a second or two to sight in on an exposed target, compensate for drop, and fire the shot - at which point it may take another second for the bullet to travel the distance. Try to keep in mind that many people have caught a bullet in their forehead because they thought they could peek safely for "just a second longer".

- **Never peek from the same place twice.** Snipers will frequently sight in on the area a person peeked from, and if they pop up from the same spot a second time, the chances of the sniper hitting them increase dramatically. If you have to peek, be unpredictable. Stand up and peek around a wall. Next time, crouch and peek. Peek around different corners. Et cetera. Don't establish a pattern, and make full use of the stance adjustment system. Going into a sideways prone crawl can allow you to look around obstacles while presenting an incredibly small target.
- **Smoke if you've got it.** Proper application of smoke can give you just enough concealment to extricate yourself from a tough situation. Throw smoke in such a way that it conceals the way you're intending to run, and not just the position you're currently at. If you are hiding behind a small obstacle that is giving you cover, you don't need the smoke's concealment on your position, but you ***will*** need it when you run.

- **Use the crack/bang method to locate the sniper.** Thanks to the modeling of supersonic bullet 'crack' and the speed of sound, the real-world "crack/bang" method can be used to locate an enemy sniper. In this, you listen for the crack of the bullet passing, followed by the bang of the muzzle blast. The time interval between these two events gives you an idea of the range of the shooter - if it's a long delay, the shooter is quite far away. If it's a medium delay, they're probably at normal sniping range - say, 500 meters or so. If it's a short delay, they're within that. After hearing the crack of the bullet passing you can also turn yourself so that you pick up what specific direction the muzzle blast comes from.

Reaction to Air Attack

General

Coming under air attack as an infantry force is a serious issue, compounded more so if your unit does not have any organic air defense assets. You must know how to avoid being spotted by an enemy air asset, and if spotted, how to react.

AN OPFOR KAJMAN MAKING A ROCKET ATTACK RUN

- **If you hear the sound of a jet or helicopter coming in the direction of friendly forces, call it out over the radio (*Helo inbound NW!*) to alert other units.**
- **If the aircraft does not know your position and is just scouting, the best course of action is to move the unit into concealment and wait until it has passed.**
- **Minimize movement when the aircraft is near,** as this makes it harder for the crew to spot camouflaged troops.
- **If the aircraft does spot your element, ensure that everyone spreads out and avoids bunching up.** This will minimize the effects of the enemy weapon systems such as FFARs.
- **Assess the terrain and situation and prepare to move.** You will want to head for terrain that will minimize the effects of the aircraft. Move into dense trees/forests, urban terrain, or try to get into a valley or on the reverse slope of a hill to reduce the angles that the aircraft can attack from.

- **Avoid firing on the aircraft with small-arms unless absolutely necessary.** This typically only alerts them to your position and is generally ineffective unless massed against helicopters.

Rotary-Wing (Helos)

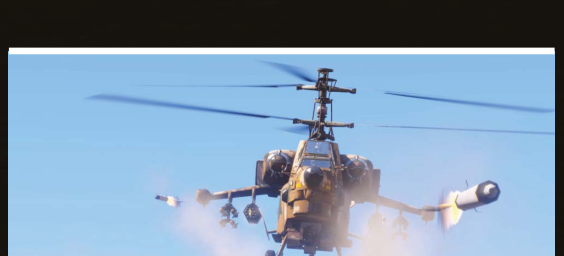
Helicopters are the most dangerous CAS aircraft in most situations. Their ability to loiter over the battlefield and deliver precision anti-tank, cannon, and rocket fire makes them a threat that should never be underestimated.

If helicopters are a known threat, all efforts should be made to avoid detection by them. This is done primarily via intelligent movement routes and techniques which prevent the enemy helo from being able to visually acquire friendly elements. Stay low, stay concealed, and move via concealed routes whenever possible.

If anti-air defense is organic to friendly forces, a sharp eye and ear must be kept for the approach of enemy helicopters. With proper warning, a helo can be brought down by MANPAD missiles before it knows what is happening.

A KAJMAN TAKES AN ANTI-AIR MISSILE TO THE FUSELAGE

If anti-air defense is not available to friendly forces, the best method is to avoid detection entirely. The **only other defenses infantry have is via the massing of fires** from machineguns, rifles, and anti-tank rockets or missiles. Helicopters that are oblivious to infantry presence and believe themselves to be safe will occasionally go low and slow enough to be accurately engaged by anti-tank rockets. If the opportunity presents itself, it should be taken, but ONLY if the anti-tank gunner is >90% positive he will successfully make the shot.



THE UGLY END OF A KAJMAN

Fixed-Wing (Jets)

The main thing to remember when being attacked by jets is that movement perpendicular to the line of attack works best. This is especially true if they are strafing you with cannon fire or attacking with rockets. Another good thing to do is get on the reverse slope of a hill, and whenever the aircraft makes a pass, adjust your position so that you're once again on the far side of the hill relative to it.

The primary weakness of jet attack aircraft is the difficulty they have in picking out infantry at the speeds they fly. Thus, cover and concealment have a pronounced effect against them compared to rotary-wing aircraft. Unfortunately for infantry, jets tend to have extremely powerful weapons with wide areas of effect. The best defense is simply to not draw their wrath in the first place.

Reaction to Artillery Attack/Indirect Fire

There are a few basic tips for how to act when coming under artillery attack or other indirect fire.

- **Stay alert and know what to listen for.** You may be able to hear the artillery unit firing in the distance before the rounds have impacted. This is most likely if you're being fired on by mortars or high-angle

artillery fire. You may even hear the rounds coming in if they're subsonic. Other types of artillery will explode amongst your forces without warning and will likely catch everyone by surprise.

- **Call out "Incoming!" as soon as you suspect that artillery is being fired on your position.** The rule of thumb here is that it's better to be safe than sorry.
- **If you're defending a location and cannot stray far, spread out and take the best cover you can find.** Keep your eyes open for enemy infantry closing in under the cover of the barrage.
- **If you're moving in the wild when the artillery comes in, follow your element leader and listen to his guidance.** He will tell you a direction to run to get out of the impact area. Once clear, regroup with your element and continue on.

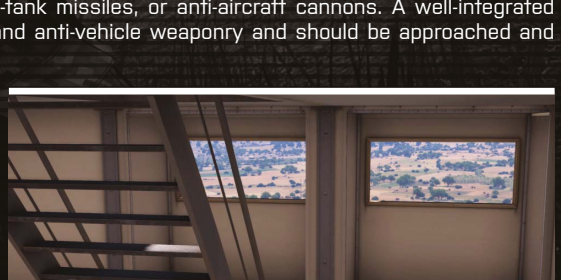
Enemy artillery can be taken out by counter-battery fire or close air support, if available, while mortar positions (which are usually much closer) can sometimes be assaulted and captured by ground attack.

Triangulation can be used to figure out the enemy positions - if two squads are separated by a good distance and can hear the firing artillery, compass bearings can be taken by each unit and then compared to get a fix on the likely location of the artillery.

Bear in mind that artillery units will often use a technique where they fire a barrage, wait, then fire another barrage. The idea is to make the unit being attacked think that the artillery is over, move out from cover, and begin tending to wounded or resuming movement, only to be struck again while exposed.

Knock out a bunker

Bunkers are a means by which a prepared infantry force can more strongly defend a location. Characteristic of a bunker are sturdy walls which provide significant protection from direct and indirect fire - sandbags, reinforced concrete, or similar - as well as apertures from which occupants can fire out. Bunkers are often mutually-supporting, with covered or concealed routes leading from one position to another, with bunkers able to cover each other from close assault, and many are camouflaged to make them difficult to spot in advance of them opening fire. If not properly approached, a single well-placed bunker can wreak havoc on friendly forces. Bear in mind that a bunker may contain more than just light infantry weapons - some conceal heavy machineguns, grenade machineguns, anti-tank missiles, or anti-aircraft cannons. A well-integrated bunker complex will have a mix of anti-infantry and anti-vehicle weaponry and should be approached and attacked with great caution and planning.

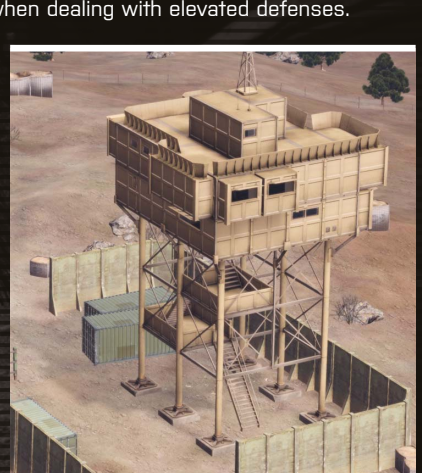


In Altis, bunkers also take the form of elevated modular metal structures intended to act as both observation posts and fighting positions. These come in a variety of forms and sizes, but characteristic amongst them are windows that can be closed to provide greater protection to those inside.

These bunkers can be particularly difficult to defeat due to their elevated nature and strong armor.

Regardless of whether you're dealing with a large tower or smaller earthen bunker, the process for destroying one is as follows.

First, you must restrict the bunker's ability to see, which in turn makes them unable to fire effectively. This can be done through two methods – the first is to mass fires at the bunker's apertures, forcing the occupants to duck or otherwise take cover. When possible, underbarrel grenade launchers or anti-tank rockets can be fired into the apertures, with the hopes that they'll burst off of an interior wall and kill or incapacitate some of the occupants. This method is expensive from an ammo standpoint and not always effective depending on weapons available as well as the range from the bunker. The next, and more effective method, is to employ smoke to mask the bunker's field of view. Smoke can be launched via underbarrel grenade launchers, thrown by hand when at closer ranges, or fired from mortars. Depending on the type of bunker, smoke can either land near the apertures or it may be necessary to fire it inside the bunker itself, such as when dealing with elevated defenses.



Once the bunker's vision is obscured or the occupants are suppressed, troops move towards the flanks of the bunker in order to work around behind it while staying out of the firing arcs. Approaching from the front of the bunker – even when it's smoked or suppressed – is generally discouraged, as smoke can blow away or occupants can become bold unexpectedly. Once troops have closed with the bunker, grenades can be thrown into it. Depending on the size and composition of the bunker, this may or may not be effective. If available, flame units – flamethrowers or napalm projectors, incendiary grenades, etc – can be fired or thrown into the bunker to clear it out. Satchel charges can also be used to attempt to collapse or otherwise destroy the bunker from the exterior - particularly useful when dealing with elevated bunkers that would otherwise require fighting up staircases to clear out.

When all other options have been exhausted, troops must enter into the bunker and engage the occupants in close quarters battle. This sort of combat is incredibly dangerous to the attacking force and must be carefully considered. Whenever possible, attempt to reduce bunkers by external means – throwing in explosives, calling in tanks or other armored support, burning them down, etc.

Keep in mind that a proper defense will employ the concept of mutual support – which is to say that any given bunker will be covered by another bunker in another position. It will often be necessary to smoke multiple bunkers at the same time to negate this advantage, or even assault multiple bunkers simultaneously.

Formations & How to Lead Them

Formation Common Sense 101

Before we jump into things, there are a few words that need to be said about formations.

Formations act as a guide for where people should be to best fit the situation. They are very flexible creatures, and should be adapted as needed to fit the situation. Everyone should be familiar with the basic formations, and leaders in particular must have an understanding of what the strengths and weaknesses of each are.

Players should not get wound up in trying to maintain a 100% textbook-perfect formation position 100% of the time. Adapt to the situation as needed.

For the purposes of illustration, I have chosen to depict formations at squad, platoon, and fireteam level. A small table shows what levels a given formation is suitable for - several are applicable to some levels but not others. Keep in mind that you can mix different formations at different levels - you could have the platoon in a line formation, the squads in column, and the fireteams in wedge. Each level of command has their own formations to set, basically. A PltCo might tell the platoon to get in line formation, and the squad leaders might tell their squads to get in column. Fireteam leaders could then be more specific to their teams if they so desired. It sounds complicated, but with the way the hierarchy breaks down, it's really not difficult to work with.

Formation Notes

Note that in squad formations, the squad leader is positioned so that he can exercise control over the cohesive movements of the entire squad. In a squad, the *leading element* - the first fireteam, unless otherwise noted - is **guiding** the movement. In a fireteam formation, however, the *fireteam leader* is typically leading by example and acting as the guide for his fireteam members to follow. An easy way to remember this is that the squad leader "pushes" his fireteams, while a fireteam leader "pulls" his fireteam members.

Also note that the depicted formations, as well as the relative placements of teams, are **the** standard to follow. The only time these formations will rearrange themselves is when a specific need is identified and communicated by the squad leader or platoon commander.

Establishing Formations

When it comes time to establish a formation, a leader must remember that he must give *relative* offsets. This means that the leader is telling teams where to go, relative to the direction of movement and the leading element.

For example, to describe a standard line formation, a team leader would say:

> "Squad, form line oriented south-west. One leading, two on the right."

This is as opposed to saying something like:

> "Squad, form line. Two is to the north-west of one."

The former is simple and easy, the latter would require players to look at their maps or compass, and has a higher likelihood of being misunderstood. Particularly when the situation is heated, it is important to use orders that are simple and easily understood. Always strive for giving formation offsets in a manner relative to the direction of movement and the leading element, using simple and clear "front, left, right, rear" style language and simple distance offsets for element intervals.

Controlling Formations

Controlling formations is the art of ensuring that teams maintain appropriate intervals and offsets relative to the tactical situation and terrain. Establishing a formation is easy, whereas controlling one throughout the duration of a mission is more difficult. Control is exercised by the overall leader of the formation - either a Fireteam Leader (for fireteams), a Squad Leader (for squads), or the Platoon Commander (for the entire platoon formation).

Responsibilities of the Leader when Controlling Formations

- Ensures that the formation being used is appropriate to the situation and terrain
- Helps to guide elements back into place in the event that they stray too far from the formation without just cause
- Responsible for giving changes in overall direction and spacings
- Uses clear and concise tactical language to control the formation

Note that when controlling a formation's movement, the same relative direction rules apply as when initially establishing one. A formation leader must give corrections relative to the direction of movement and the leading formation element.

For example, if a fireteam was out of formation, a team leader would say something like:

> "Team 2, shift up and left to get on-line with team 1."

These types of clear, simple directions allow for maximum comprehension and rapid reaction to orders.

Responsibilities of a Formation Element

When moving in a formation, each element of the formation has a few standard responsibilities based on whether they're leading or following in the formation.

Responsibilities of the Leading Element

The leading element is typically the 1st Fireteam of a squad, or the Alpha Squad of the platoon, unless otherwise noted. Their responsibilities are as follows.

- Lead the formation in accordance with orders given
- Act as a guide for the other formation elements to maneuver relative to
- Ensure that they do not out-pace the trail formation elements
- Observe to the front, front-left, and front-right as they move
- Provide a point element when necessary

Responsibilities of the Trail Elements

The trail elements are typically the 2nd fireteam of a squad, or the Bravo and Charlie squads of a platoon. Their responsibilities are as follows.

- Maintain appropriate interval and offset from the leading element; prevent gaps from developing
- Communicate with the leading element to let them know if they're going too fast or too slow
- Observe in the direction that they are offset from the lead element. If offset to the left, they watch to the

left and front. If offset to the right, they observe to the right and front. If acting as a rear-security element, they observe to the rear. If there is no dedicated rear-security element, they share responsibility for observation to the rear with the other trail elements.

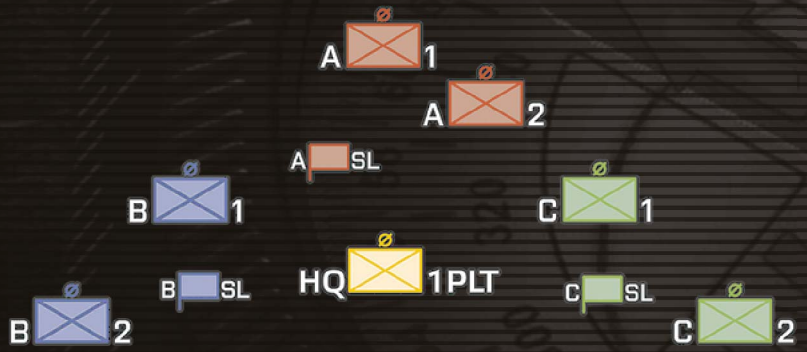
Common Formations

These are the four main formations that you will see used the majority of the time. The common theme is that they are easy to establish, control, and are very flexible.

Wedge

The wedge formation is used for...	
Platoons	Yes
Squads	No
Fireteams	Yes, Default

The wedge formation is a very versatile one that is easy to establish and control. It allows for good all-around observation and security, and can be used in the majority of situations encountered. Fire can be placed in any direction in good quantity, and a shift in formation upon contact is easy to accomplish to suit where the contact came from.



Wedge formations are employed at the platoon and fireteam level, where the number of units make it possible to form. The wedge is not used at the squad level due to there only being two fireteams.

If used at the platoon level, the platoon commander typically trails behind the leading squad, putting himself in the middle of the formation where he can best control things. When used at the fireteam level, the fireteam leader is the tip of the wedge, and the fireteam members guide off of his movements.

The wedge formation is the one most naturally assumed during gameplay, and is also the preferred formation to use at either the platoon or fireteam level when moving through areas where contact could come from any direction.

When not otherwise stated, the default formation for fireteams is the wedge formation.

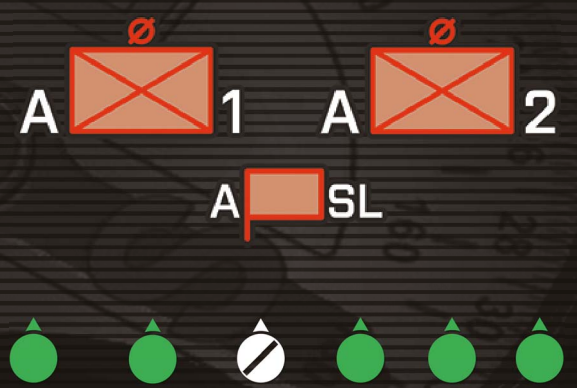
Note that when transitioning a wedge into a line, the 2nd and 3rd elements simply move forward onto the left and right of the leading element, respectively.

KEEPING PROPER INTERVAL WHILE MOVING AS A FIRETEAM IN WEDGE FORMATION

Line

The line formation is used for...	
Platoons	Yes
Squads	Yes
Fireteams	Yes

The line formation is well-suited for advancing towards a known or suspected threat with the maximum number of guns brought to bear, and excels at placing a heavy volume of fire to the formation's front.



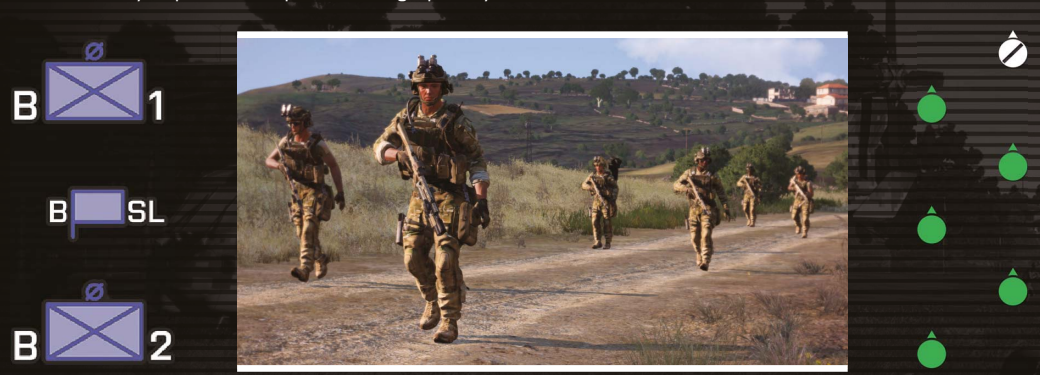
A FIRETEAM ADVANCING ON-LINE UP A HILL

The line formation offers great overlapping fields of observation and heavy fire to the front. It is relatively easy to control, but suffers from being vulnerable to flanking fire. It also does not offer great flank or rear security, and should be employed with that in mind. It is natural for a line formation to 'bow' in the direction of movement slightly, as in the above picture. How tightly to control this is dependent upon the terrain and enemy situation - keeping a perfect line can result in players paying too much attention to their formation, and too little attention towards the threat of enemy contact.

Column (Staggered)

The column formation is used for...	
Platoons	Yes
Squads	Yes
Fireteams	Yes

The column formation is the simplest formation to establish, as it is merely a matter of follow-the-leader. It allows for very rapid movement because of this. This formation is best used during travel when contact is not imminently expected or speed is a high priority.



A column formation has great firepower to the flanks, but is not geared towards contact from the front (which it is vulnerable to). A column can rapidly shift upon contact to a line or other formation where appropriate, giving it good flexibility.

Column formations can be used when traveling through an area where it is not practical to spread out into a line, wedge, or other formation. For instance, travel through a restricted valley might require a column.

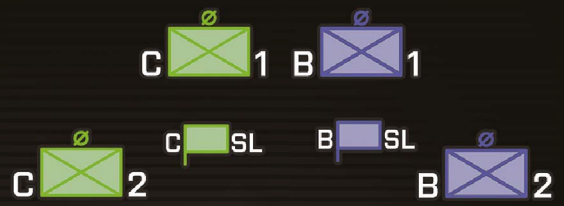
It is important to note that "column" formations should not consist of one-after-the-other perfectly-lined-up troops. Staggering the column so that nobody is directly in line of each other helps to reduce the vulnerability that the formation would otherwise have from the front and rear.

Less Common Formations

Echelons (Left & Right)

The echelon formations are used for...	
Platoons	Yes
Squads	Yes
Fireteams	Yes

Echelon formations can be established when traveling in an area where the threat direction is overwhelmingly likely to be either to the left or the right of the line of travel. These are basically just half-wedge formations, and they focus firepower towards the flank that has been echeloned. Due to the nature of a squad having two fireteams, echelons are the default formation style employed by them.

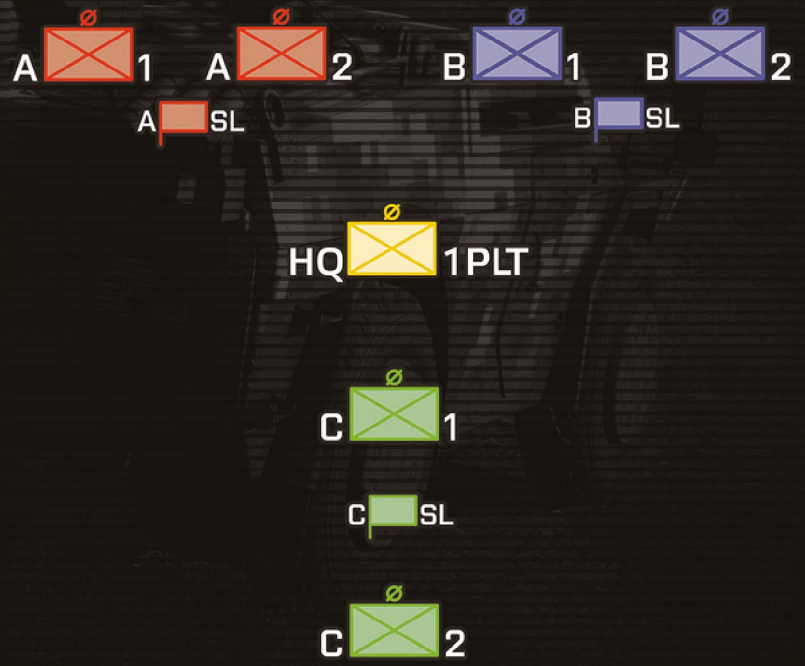


Echelons can be used effectively in a platoon-level wedge movement, with the leading squad being in squad wedge or line, and the two trailing squads being echeloned in the direction they're offset from the lead.

Vee

The vee formation is used for...	
Platoons	Yes
Squads	Yes
Fireteams	Yes

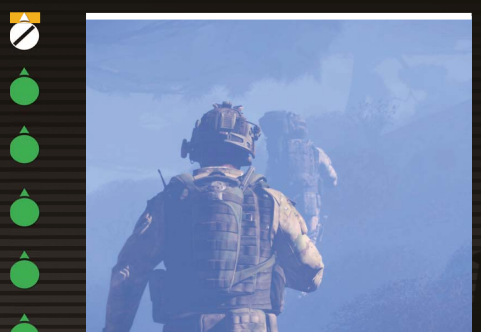
The Vee is a reverse of the Wedge formation, where two elements lead the group, a third acts as trail, and the element leader stays in the center to control the formation and movement. This formation can be good when you know that contact will mostly come from the front but you don't want to commit to a line formation and want to maintain flexibility.



Ranger File

The 'Ranger file' is a simple manner of follow-the-leader, even more basic than the column. When in a 'ranger file', each player lines up after the one in front of him. Ranger files allow for a number of troops to move over the same piece of ground, without deviation from the person in front of them.

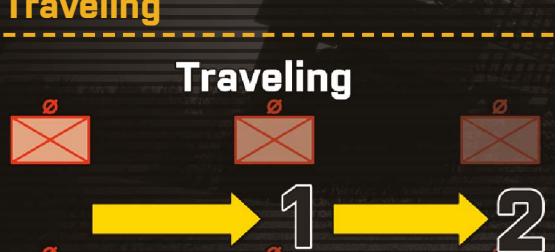
For our purposes, ranger files are primarily used when dealing with antipersonnel minefields, or when operating in extremely limited visibility with or without equally limited communication capabilities. Apart from that, they have little use - for any situation that a ranger file could be established in, a staggered column would typically work better.



TEAM MOVEMENT TECHNIQUES

There are a variety of movement techniques that are applicable to Arma's environment and simulation fidelity. Utilizing the best one for a situation will do a great deal to protect a team and provide security as well as flexibility, and it's important that all players are familiar with the differences between the various types.

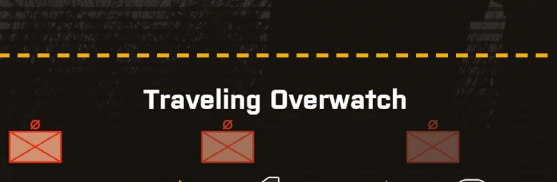
Traveling



Traveling is simply movement from point A to point B without anything fancy. The spacing between elements is typically small to maintain good control over the unit. **Traveling movement is used when enemy contact is unlikely.** Logic tells you that 'traveling' has the least application to our gaming - enemy contact is almost always likely for us, so movement in "traveling" mode is dangerous most of the time.

Traveling Overwatch

Traveling Overwatch is where things start to become more applicable to gaming. **This movement method simply increases the distance between elements.** The extra space allows for more room to maneuver and decreases the density of friendly forces, which in turn increases the security of the unit by making it harder for an enemy to inflict large casualties via a sudden ambush or explosive trap.



When moving via traveling overwatch, particularly as in a squad or platoon line formation, one element is designated as the lead or "guide-on" element. This element controls the rate of movement or speed of advance, with other elements "guiding" off of them. If this element halts, the whole formation halts. If they move, the formation moves. This helps to ensure that the overall group formation does not overrun itself or get far out of formation.

Bounding Overwatch

Bounding Overwatch is the de-facto "Standard Infantry Movement Technique". It is one of the most fundamental combat movement skills practiced and happens to be one of the easiest to employ as well.

The basic principle of bounding overwatch is that one element is always stationary and covering the movement of the other element(s). There are two main techniques available - alternating and successive. The choice of which one will be used depends on the threat level and the speed required. When not explicitly stated, the bounding method is determined by the second team as it begins to bound - if the threat is high, successive bounds will be employed. If not, alternating bounds will occur. Oftentimes it will become a very fluid execution that blends alternating and successive bounds as the situation requires. Being familiar with all aspects and employments of bounding overwatch allows leaders to be tactically knowledgeable enough to carry out such blended, situation-dependent employments.

Bounding Overwatch Guidelines

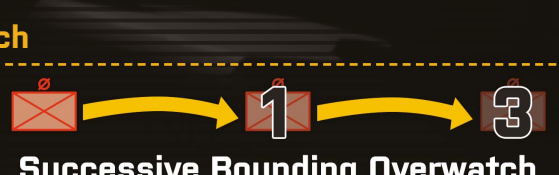
Here are some general guidelines to keep in mind when employing bounding overwatch.

- **Element leaders should ensure that the bounding teams are close enough to where they can support each other with fire.** With this in mind, it would be wise to prevent two infantry elements from be separated by more than 300 meters, as a general guideline.
- **Element leaders should try to get superior ground when providing overwatch.** A commanding view of the terrain increases the effectiveness of an overwatch element a great deal.
- **The size of each bound should be based on the terrain, visibility, proximity of enemy threat, etc.** For instance, bounds across relatively open terrain can be long - both in the interest of getting across as quickly as possible and because the range of the overwatch element is higher due to the open terrain. Urban bounds, on the other hand, are typically short due to the increased density of the area and the desire to maintain security and not overextend any one element.
- **Vehicles (and their inherently longer-range weapons) can have larger intervals between themselves if necessary,** so long as they are never out of effective weapon range of each other.

Next, we'll move on to the two main types of bounding overwatch.

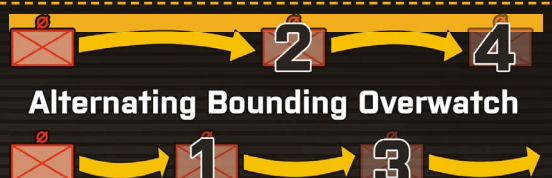
Successive Bounding Overwatch

Successive bounding overwatch is the slower of the two. In it, one team advances, halts, and then the other team advances on-line with them, halts, and the process repeats itself. This provides a high level of security, but with the trade off of taking longer to employ.



Alternating Bounding Overwatch

Alternating bounding overwatch is the fastest of the two, sacrificing some security for additional speed. In this mode, the teams bound past each other before stopping and allowing the other team to pass them.



Final Words & 'Fire & Maneuver'

Bounding overwatch should be used any time that contact is likely or imminent. The security of having an entire element (be it a squad or fireteam) specifically scanning for threats while another element moves is enormously beneficial to the team.

The radio command to initiate bounding overwatch is along these lines:

> Alpha SL: Squad, **prepare to bound!** One first, move when ready."

Note that bounding overwatch changes to **fire and maneuver** once contact has been made. The same basic principles apply as with bounding overwatch, with one team putting down fire while the other team maneuvers to a new position, at which point the moving team takes position and begins firing to cover the advance of the other team.

Crossing a Danger Area

Danger areas are locations at which there's a heightened level of vulnerability for anyone caught within them, and must be treated with due caution. They can be bridges, streams, large open lanes in forested terrain, or even streets in an urban environment. Danger areas are frequently observed by the enemy, and can have snipers, machinegunners, or enemy rifle fireteams ready to deliver fire into them on short notice.

The technique for crossing a danger area is another form of bounding overwatch. The idea is to maintain security and cross in small numbers that will not draw undue attention or fire.

Once you have determined that you are facing a "danger area" and must treat it as such, there are four basic steps to follow.

1. **Set up at least half of your force as a security element.** Ensure that they are spread out sufficiently that they do not stick out to observation. They will be concerned with watching the flanks and rear as well as observing and covering the scout element when it crosses.
2. **Send a scout element (typically fireteam-sized) across first while the other elements cover them.** The scouts will do a limited penetration of the far side of the danger area, check for enemy forces, and then act as security for the rest of the group when they cross.
3. **Once the scouts have given the all-clear, begin crossing remaining elements** one at a time.
4. Once everyone is across, **consolidate and continue on** with the mission.

Note that if the group is under fire and crossing a danger area, smoke should be used extensively, and security for the crossing elements should be provided by suppression fires.

TEAM TACTICS & THEORY

Tactical Definitions

The following definitions cover some of the more significant aspects of the employment of team-level tactics. These are important to understand for the purposes of the remainder of this page's content.

Suppression

Suppression is the act of using fire and the threat of fire to deter enemy fire or action, as well as 'fix' the enemy in one place. As noted elsewhere, **suppression is only effective if the enemy truly believes that they will be shot or killed if they don't take cover from the incoming fire.**

Base-of-Fire Element

A 'base of fire' is a collection of troops, typically with multiple machineguns or automatic rifles, whose job it is to suppress and 'fix' an enemy while another element maneuvers to close with and destroy them. This is also commonly referred to as a 'support' element.

Maneuver Element

A maneuver element, also commonly known as the assault element, is a group of troops that is tasked with flanking or otherwise attacking the enemy under the cover of a base-of-fire element. They close with and destroy the enemy through fire & movement.

Fire & Maneuver

Fire & maneuver is the first part of closing with and ultimately destroying the enemy. To conduct it, a portion of the available force is set up as a 'base of fire' from a suitable position with good observation of likely enemy locations. This base-of-fire element suppresses or kills the enemy with their combined fire, allowing the second element - known as the maneuver element - to close with and destroy the enemy.

Generally, fire & maneuver employs as many machineguns as possible in the base-of-fire element so that a high level of suppression and lethality can be achieved. When available, vehicles and crew-served weapons can be employed in the base-of-fire to heighten the effects of it. Note too that there can be multiple bases-of-fire, with complementary coverage, to make it even harder for the enemy to effectively respond.

Fire & Movement

Fire & movement sounds very similar to fire & maneuver, yet is significantly different from it. Fire & movement is the most fundamental of all team-oriented combat principles, and is where the 'rubber meets the road' so to speak.

Fire & movement happens when a maneuver element is no longer able to advance in the cover of supporting fire from the base-of-fire element. This typically happens in the last hundred or more meters away from an enemy position.

When an element transitions into fire & movement mode, players move up with measured aggressiveness, covering each other as they advance via buddy bounds or individual rushes. Generally, fire & movement happens naturally and is not specifically called for. Once the enemy is shooting back in an effective fashion, or you're within grenade range of them, you should assume that fire & movement has begun.

Going Firm

"Going Firm" is a technique that can be used to control the advances of friendly forces and get a better picture of what the situation is via reports from all friendly units.

When the order to "go firm" is received, squad leaders halt their forward advances and have all their fireteams take up a defensive posture in the best possible positions nearby. The Platoon Commander and Squad Leaders then have a brief discussion as to what happens next, how many casualties have been taken, what formations will be used next, and any other relevant information about the battle that needs to be passed. After this is over, the PltCo cancels the order and all squads resume their movement or change their plans according to PltCo instructions.

Security

Security is the act of ensuring that situational awareness is maintained in 360° around friendly forces, preventing the enemy from surprising friendlies.

Initiative Based Tactics (IBT) & the 'Fallujah AAR'

Initiative Based Tactics (IBT) are something I first read about in an excellent After-Action Review written by Marines who fought in Fallujah, Iraq. I will quote them directly - these are the four rules of IBT:

The Four Rules of Initiative Based Tactics

1. Cover all immediate danger areas.
2. Eliminate all threats.
3. Protect your buddy.
4. **There are no mistakes.** Every Marine feeds off of each other and picks up for the slack for the other. Go with it.

They go on to say:

Every Marine needs to understand and memorize the rules governing IBT. **These rules should not only apply to MOUT, but all small unit infantry engagements.** Rule number four must be pounded into the squad. **There are no mistakes when clearing a structure in combat, only actions that result in situations: situations that Marines must adapt to, improvise, and overcome in a matter of seconds.**

If you're interested, you can read their full AAR here. It is highly recommend reading, as it conveys a unique perspective on how challenging modern MOUT combat is.

There are several other great bits of information included in the AAR that are applicable to Arma as well. Quoting each:

All danger areas while on the move must be covered. Security must be three-dimensional and all around. Each Marine in the stack looks to the Marines to his front, assesses danger areas that are not covered, and then covers one of them. If every Marine does this then all danger areas will be covered.

At all times the squad will move by using IBT and adhere to its principles which will be addressed later. No Marine should make an uncovered move. The squad should move at a pace that is swift, but controlled, exercising "tactical patience."

All Marines must exercise initiative during combat. Squad leaders must design training techniques in order to stress initiative. Marines must be able to look around, assess what his squad or partner is doing, feed off it, and act in order to support them. Initiative based training is paramount.

Knowing the rules of IBT, and being able to employ them in our sessions, is a great way to increase effectiveness at the fireteam and squad level. It all boils down to staying alert, covering your buddies, and using your own initiative to do what is needed in the situation, without having to be explicitly told to.

Integration of Smoke

The proper integration of smoke into a battle is critical to both in the offensive and defensive roles. Smoke is on-demand concealment that allows a force to mask their movements, deceive the enemy, mask the enemy's observation or fire, or signal.

Smoke Varieties

Smoke comes in four primary varieties.

- **Smoke hand grenades.** These can provide a good amount of smoke for a minute or so and can be thrown several dozen meters. Many infantry units carry these - medics get an extra amount, as do team leaders and squad leaders.
- **Grenade launcher smoke grenades.** Often referred to as 'ground markers', these are not strictly intended to be used for concealment, but can do the job nicely in a pinch. Ground markers, launched from the UGL grenade launcher, can be used to mask the enemy's observation from a distance, as well as to mark targets for air support assets.
- **Vehicle smoke dischargers.** Many vehicles have arrays of smoke dischargers that can produce a massive, near-instantaneous smokescreen in the direction that the vehicle's turret is pointed at.
- **Artillery delivered smoke rounds.** Artillery smoke comes in the form of white phosphorous rounds. Upon bursting, these produce dense clouds of smoke that linger for a considerable period and provide excellent concealment.

Additionally, hand grenade and grenade launcher smoke shells come in a variety of colors. This can be useful for coordinating close air support - one color can be used to mark friendly positions, while another color can be fired at the enemy to mark their position.

Smoke Roles

The main roles of smoke are as follows.

- **Screening movement.** Smoke can be used to reduce the effectiveness of enemy fire when movement across dangerous areas is required. The enemy tends to fire at any smoke that they suspect is being used to screen movement, but due to the reduced or nonexistent visibility it causes, their fire becomes significantly degraded. Screening can involve a wide variety of tactical tasks - it is most typically used to support tactical in-contact movement or the recovering or protection of the wounded.
- **Masking the enemy's fire or observation.** By putting smoke onto the enemy's positions, particularly their bunkers, snipers, or other high-casualty-producing systems, their fire can be greatly degraded or even

eliminated for a period of time. Smoking bunkers in an assault is a key way to gain an advantage over a dug-in enemy and negate the effects of their best defenses.

- **Deception.** When employed smartly, smoke can lead an enemy to believe that hostile forces are maneuvering through a given area even when they aren't. This can cause the enemy to direct fires into the smokescreen, wasting ammo and potentially giving away positions to supporting friendly forces. At the very least it can cause uncertainty and force the enemy to at least consider that the smoke may be a legitimate hostile movement. This can split their attention at a critical moment and maximize the shock and surprise of the true friendly movement or assault.
- **Signaling.** Smoke can be used to signal to air as well as ground forces. For aircraft, it can be used to mark enemy targets, friendly locations, landing zones, et cetera. For ground forces, it can be used in limited-communication situations (such as no radios) to convey pre-arranged signals to distant forces (such as the seizure of an objective).

Ultimately, the proper usage of smoke is important for all players to be familiar with. Employed correctly, it can save a lot of virtual lives. Incorrect employment, on the other hand, can doom many.

ANATOMY OF A FIREFIGHT

What A Firefight Is

A firefight is simply a combat engagement between two opposing forces where fire is exchanged - often between infantry, though vehicles can become involved. Firefights are the building blocks that make up large-scale battles.

The point of our platoon is to seek out and destroy the enemy. To do this, we must engage in combat with them, resulting in a firefight or series of firefights that determines the success or failure of our mission. Having a good understanding of the dynamics of such a fight is important for all players to have, as it allows for the entire platoon to intuitively understand the battlefield situation and adopt to it as necessary to win the fight.

Goals in a Firefight

The US Army used a mnemonic called "The Four F's" to describe the goals that are worked towards in a firefight during and after World War II. In more recent years it has evolved into a slightly different meaning, but I'm of the mind that the WWII-era definition is the most appropriate to the situations we commonly find ourselves involved in during our Arma 3 missions. I'm a fan of the simplicity of it: **Find, Fix, Flank, Finish.** Simple to remember, easy to understand, succinct, and right to the point. *(For those curious, the modern version is Find, Fix, Finish, Follow-Through.)*

These "Four F's" are the foundation of a successful firefight in Arma 3. Let's discuss what each of them means so that we can establish the basic principles that will guide a team towards success in combat.

Find

The most sure-fire way to increase your chances of victory in a firefight is to ensure that your forces locate the enemy before they locate you. Finding the enemy without them knowing about you gives you initiative, and initiative will allow you to fight the enemy on the most favorable of terms, maximizing the shock of your attack, maximizing their casualties and confusion, and minimizing their ability to retaliate effectively.

Finding the enemy can be facilitated through application and understanding of the following techniques. The following aspects are relevant before fighting has started - once the shooting starts, the "React to Contact" battle drill begins, and the final three "F's" start happening.

From an individual standpoint, everyone should heed the "Situational Awareness" section of the Basic Rifleman chapter to ensure that they're doing their part to find the enemy.

The Point Man

Contrary to popular belief, the point man of any formation should not be a completely expendable and inexperienced 'newbie' player. Rather, the point man should be someone who is proficient, alert, and will have a good chance of spotting the enemy (or a potential ambush) before it is too late. A good point man can be the difference between life or death for the parent element.

A point man should try to position himself fifty or more meters ahead of the formation. This buffer allows for the rest of the element to have freedom to maneuver if the point is engaged.

The point man must bear in mind that smart enemies will oftentimes allow him to walk well into an ambush area before they engage the unit following him. It is of critical importance that the point man is ever vigilant and continually scans the area around him. His situational awareness and sharp eye can turn the tide of a fight and even turn the tables on the enemy entirely.

Bear in mind that a point element can be more than just one man. For instance, a platoon moving as an organized body may have an entire fireteam acting as point, with another fireteam on each flank, and the two other squads in the center of the formation.

Recon

The goal of recon is to gather information about the enemy through the proper and skilled application of stealth and observation. Recon assets attempt to find out things like:

- Where the enemy is, along with what weapons they have, vehicle assets, their state of awareness, if they have patrols in the area, etc.
- Where the enemy's defenses are, what they consist of, where the weakest points are.
- What the terrain is like around the enemy location, with regards to the friendly mission. If the intent is to attack the enemy, this means locating good support-by-fire (SBF) positions, assault lanes, et cetera.

Recon elements can come in a variety of forms. The most common recon assets are as follows:

- Fireteam or two tasked with recon duties. This is by far the most common method to recon, as it is organic to the platoon and thus always available. Any fireteam can be tasked out for this, though it is recommended to use more experienced players, as they tend to pick out things that 'greener' players may not.
- Dedicated recon element (such as special forces or a scout/sniper element). When available, an independent recon element like a scout/sniper team can do a tremendously effective job of providing recon and intel on enemy positions. They often will be detached from the main body of the platoon, working their way independently into positions from which they can best support friendly forces.
- Unmanned Aerial Vehicles (UAVs)
- Recon aircraft (ie, helicopters with observation pods)

Good reconnaissance is the most reliable and effective way of finding the enemy. It is critical not only when in the attack, but also while in the defense and in general "movement to contact" situations. The more you

know about the enemy before the firefight starts, the more likely you will be able to maneuver and plan to fight in a way that will maximize your strengths and minimize their ability to resist.

Stealth & Rules of Engagement

Stealth is an important part of finding the enemy before they find you. At the higher level, this means that movement plans should be made that do not put friendly forces in exposed and obvious areas or avenues of approach.

At the individual level, stealth is accomplished by using good tactical movement techniques. Moving from cover to cover or concealment is one aspect of that. Being able to read the terrain and pick covered approaches to the enemy, or their flanks, is another aspect.

The key for stealth to be successful is for every member of the platoon to be deliberate and intelligent in how they move, always bearing in mind that the enemy could be over the next rise, or even in the same woods that are currently being traversed by friendlies. The Platoon Commander and Squad Leaders can only do so much themselves - at the end of the day, every individual rifleman in the platoon has to do their part to maintain overall stealth.

The platoon's ROE, or Rules of Engagement, go hand-in-hand with stealth. There will be times when the enemy is spotted by friendlies without the enemy ever knowing it. If the first person to see the enemy starts blasting away with their rifle, the net effect will be far less than what could happen if the contact was instead communicated up the chain of command and the platoon could be shifted to conduct a hasty ambush or otherwise react in a deliberate and calculated fashion that would stack the odds in friendly favor as much as possible before the first shots are ever fired.

Situational Awareness & Security

Finally, the last major points of finding the enemy involve situational awareness and security. The enemy will not always be where they're thought to be, and even if the bulk of them are, there's always the chance that enemy recon elements or ambush elements will be roaming away from the enemy's known position(s). There's also the possibility that friendly forces and enemy forces will pass each other or come into close proximity of each other unknowingly, in which case proper situational awareness and security may be the only thing to prevent a bloody and unexpected exchange of fire.

Due to all of this, every member of the platoon must maintain a high degree of situational awareness at all times. **Complacency kills -** never let your guard down; never assume that an area is "clear" or "safe".

As was said in the "Basic Infantry Skills" chapter, security and situational awareness are critical to maintain at all times. Everyone must be scanning their sectors diligently. When halted, units must maintain flank and rear security, regardless of whether anyone has explicitly told them to.

When movement is being conducted, a deliberate effort must always be made to maintain rear security. It is far too easy to get lulled into complacency regarding rear security - too often one will think that just because they moved through an area, that they own it. This is **never** true - **the only ground that is ever 'owned' by an infantry unit is the ground they are currently on, and even that can be contested.** Dropping security at the wrong time can result in entire teams being wiped out by skilled and cunning enemy scouts, ambush parties, or vehicle crews.

The One Method To Avoid

The above methods are all proactive ways to find the enemy before they've found you. However, there is one other way that the enemy can be located, though it is not desirable and should be avoided.

This method occurs when the enemy spots you first, and is indicated by hostile fire being directed at friendly forces. If this occurs, finding the enemy simply involves figuring out where they're shooting from, in accordance with the "React to Contact" battle drill. Obviously you will want to avoid this as best as possible, as it tends to force friendlies to react versus

force the enemy to react. However, if it does happen, quickly locating and identifying the enemy positions is critical to being able to move to the next "F", Fix, which follows below.

Fix

After the enemy has been found, and leaders have maneuvered friendly forces to the most advantageous positions possible in the time available, the act of fixing the enemy begins.

Fixing can be achieved through a variety of measures, as described below.

Methods for Fixing the Enemy

- **Fire superiority.** If the enemy cannot effectively shoot back or maneuver due to the amount of fire your forces are putting on them, they become fixed. Support-by-fire and base-of-fire positions are superb for achieving the kind of fire superiority that is necessary to truly fix an enemy force. Artillery and mortar fire can achieve fire superiority quite decisively as well, though they can also completely route an enemy and cause an immediate skip to the final F - finishing them.
- **Dominating positions.** Finding positions which give your forces good views of the enemy allows them to engage the enemy, inflict casualties and confusion, and prevent the enemy from relocating while at the same time lessening their ability to return fire. This all contributes towards fixing them in place. Being able to fix an enemy from a higher position and cut off any ability for them to withdraw from their positions is particularly effective.
- **Pressure.** Fire superiority and a dominating position, applied effectively and sustained over time, establish pressure on the enemy's leaders. Maintaining pressure keeps the enemy on the defensive, reducing their ability to achieve their own goals in the firefight. Pressure applied to the enemy forces their leadership into a stressful situation in which their ability to make decisions is made increasingly difficult due to the actions of the fixing forces.
- **Inflicting casualties.** As enemy casualties mount, their ability to coherently fight and be effective diminishes accordingly. While leadership targets are the best to take out, it is often difficult to pick them out in the midst of a firefight. Shooting any hostiles serves as a fine substitute - while you may not take down leaders, the fewer troops available to the enemy to fight, the more likely the next "F" will help to lead to a successful conclusion of the fight. Inflicting casualties and forcing the enemy to tend to their wounded is a definite way to fix an enemy, though it is best done as a result of the above-listed methods, and not as a means to an end all by itself.

As with suppressive fire in general, the volume has significance, but the more important aspect is in making the enemy think that movement, popping up to shoot, or relocating will result in them being shot. If you cannot make the enemy think this, you haven't truly suppressed them. While they may be "fixed" in to the extent that they can't leave their position, they may be ready to fight any flanking forces regardless. Suppression is a key element of fully fixing the enemy and must be achieved. for the next "F" to have the most chances for success.

Flank

The next part of a firefight occurs when the enemy has been fixed enough that a flanking maneuver can be carried out.

Flanking is a means by which friendly forces maneuver to a known or suspected point of weakness in the enemy position and exploits it via an assault. It is done when the tactical situation - terrain, enemy disposition, friendly manpower, et cetera - favor it. Flanking typically is less costly than outright frontally assaulting the enemy, and forces the enemy to split their fires between a maneuver element and a base-of-fire element, diluting their effectiveness.

Before making the decision to flank, a few things must be checked to ensure the tactical suitability of a flanking maneuver, as described below.

What is required to flank the enemy?

- **Combat effective teams.** Flanking cannot be achieved if heavy casualties have been taken. At minimum one healthy base-of-fire and one healthy assault element must be present for a flank to have a chance for success.
- **Cannot be fixed or suppressed.** If the enemy has fixed or suppressed your elements, flanking will only get your people killed. Moving from a position that is under concentrated and accurate enemy fire is best avoided unless in the most grave of circumstances.
- **Suitable terrain or adequate cover & concealment.** If the terrain does not facilitate a flanking maneuver in some capacity, it makes no sense to conduct one. Trying to flank the enemy over billiard-table flat and open terrain is a surefire way to get friendlies killed. Suitable terrain can take many forms - via vegetation concealment, cover, structures, micro-terrain, and all manner of terrain features that can provide concealed routes to the enemy.
- **Have determined the enemy's position with enough certainty to reasonably judge where their flanks are located.** You can't move onto a flank that you don't know the limits/position of. You can certainly try, of course, but it may end up with the flanking team putting themselves in a tough situation due to not realizing the disposition of the enemy force and becoming caught between different elements' fires.

Carrying out the Flank

Once the decision has been made, a portion of friendly forces are split off to conduct the flank attack. The route used is conveyed to the elements staying behind to provide suppression - known as the base-of-fire element - so that they know to expect friendlies in that area and place any fire there with great caution.

Flanking teams can be as small as a fireteam. If the enemy is properly fixed by the base-of-fire element, it may not take many flank members to roll up on the enemy's flank and chew them apart from an unexpected angle.

Ultimately, the decision for how many people are needed in the flank/assault team is up to the on-scene leaders. It is a balancing act between maintaining proper fixing fires, and having enough people in the assault force to ensure success.

While conducting a flank, the flanking team attempts to do everything in their power to remain undetected by the enemy. They move quickly, with the maximum stealth, and attack with speed, intensity, and violence of action upon working onto the enemy's flank. The shock of their attack, combined with the demoralizing effects of the base-of-fire's suppression, is a killer combination.

Alternate - Flanking to a Better Position Before Assaulting

Note that flanking does not have to result in an immediate close assault on the enemy positions. When the terrain suits it, flanking can simply involve the flank element moving onto favorable (preferably elevated) ground that complements the base-of-fire position. This can in turn make it possible to attrit the enemy significantly before any friendlies ever have to physically assault the enemy position. Inevitably, though, the only way to take ground is to put boots on the ground at it... which is where the final "F" comes into play.

What if a flank is not desired?

In the event that a flank is not the course of action desired, check out the "Assaulting" section, below, in the "Transitioning out of the 'standard' firefight" section.

Finish

Finishing the enemy is the responsibility of the flank team primarily. Once they have closed on the enemy flank and have begun to assault enemy positions, the base-of-fire element is forced to shift fires away from the main objective to prevent hitting their own people. Note that with good coordination, a base-of-fire team can shift fires along an objective to coincide with the advances of the assault team, putting fire onto each position before the assault team gets to it, and then shifting deeper into the enemy positions as the assault teams continue to advance. This is best done when the flanking team is coming in perpendicular to the enemy position, as seen from the base-of-fire position, and when good comms are maintained between both elements.

Finishing the ultimately requires ensuring that absolutely every last enemy combatant in the area is rendered harmless, and that all possible hiding places have been searched and secured.

Finally, the firefight is finished when the enemy has been defeated and friendly forces have regrouped, established security, tended to any casualties received, redistributed special gear, dealt with any prisoners or enemy wounded, and are ready to continue on with their mission.

Transitioning out of the 'standard' firefight

While the "Four F's" describe the typical evolution of a firefight, there are times when a firefight can change into an all-out assault, defense, or withdrawal and break out of the "Four F's" structure. Knowing how, when, and why these transitions can be or should be made, as well as their weaknesses and keys to success, is important to being able to make the tactical decisions required to set them in action.

Assaulting

Assaulting occurs as a result of several events that can happen in a firefight. Some examples follow.

Why a Firefight Can Transition Into an Assault

- **Friendly forces cannot flank, but they can assault directly with a good chance of success.** There are several reasons for why a flank may not be viable - time is one of them, terrain another, cover/concealment availability a third. Whatever the case, sometimes you just have to slam your way straight at the enemy via fire & maneuver tactics.
- **The enemy is completely suppressed and fixed, and vulnerable to an attack from the base-of-fire position.** When this happens, the typical flanking maneuver instead becomes part of a pincer maneuver in which both the base of fire and flanking teams attack simultaneously from different directions. This can be particularly difficult for the enemy to deal with, as they're getting fire ***AND*** maneuver from two directions at the same time.
- **Enemy defenses have crumbled.** If the enemy's defensive abilities have been reduced by fire, having the base-of-fire team assault the enemy can force the remainder of said enemy to split fires between two fronts, which dilutes their ability to defend, further hastening their destruction.
- **The friendly flanking team has stalled and needs pressure relieved from them.** If the flank team cannot progress any further on their own, the base-of-fire team may have to begin their own fire & maneuver tactics to close with the enemy from another direction, which in turn helps to relieve pressure on the flanking team and allow them to continue their own attack.
- **The enemy has called in supporting air or artillery assets.** Sometimes the best defense against enemy air or artillery is to assault into the enemy positions so that their arty or air is rendered ineffective. If they can't drop bombs or shells for fear of hitting their own people, you will have temporarily removed their threat from the battle.

Methods to Conduct an Assault

Assaults are carried out via fire and maneuver or fire and movement, as the tactical situation dictates. Both are described earlier on this page, in the "Tactical Definitions" section.

Weaknesses in Transitioning to an Assault

The primary weakness when transitioning into an all-out assault lies in underestimating the enemy, miscalculating their strength, or otherwise being unaware of some facet of them that can put the assault in jeopardy. This can take multiple forms, such as:

- **Enemy reserve.** If the enemy has kept a force or troops in reserve, they may show up at a critical moment and spoil the assault. For instance, if the base-of-fire team begins to assault, and after committing to the assault an enemy reserve force moves into position and begins engaging the base-of-fire-turned-assault-team, things might turn rather nasty.
- **Enemy reinforcements.** If the enemy has managed to call for reinforcements during the firefight, they may show up unexpectedly from an unexpected direction. This can go wrong in all manner of fashions - use your imagination!
- **Multiple supporting positions.** It is always a possibility that the enemy has several positions from which they can mutually support each other. Just because one has fallen does not mean that there aren't others ready to pour fire onto any attackers. If the flank team is approaching from one direction, they may be masked from the fires of a supporting position covering a different approach. If the base-of-fire team then assaults from a different direction, they may find themselves attacking into an unexpectedly hot area when the supporting positions open fire on them.

Good recon, good security, and sound tactical judgment are the best methods by which to prevent any of these eventualities from impacting an assault.

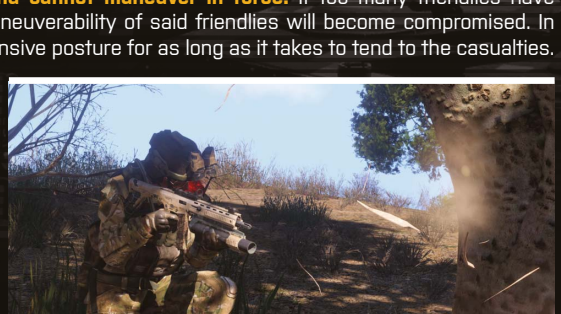
Defending

Transitioning into a defensive posture can occur as a result of several events in a firefight. Some of the reasons are as follows.

Why a Firefight Can Transition Into a Defensive Action

- **Friendlies are in a superior position (cover, concealment, buildings, height advantage) and can potentially fare better by fighting from it, versus moving out to conduct a flank or assault.** If you have a great defensive position and the enemy does not, and your mission gives you the time to do so, you can take advantage of the position and force the enemy to come to you. Careful consideration must be given towards whether the enemy can call in supporting assets (air, armor, artillery) in reaction to friendly units going into a defensive posture.
- **Friendlies have been fixed and cannot conduct a flank attack.** In the event that the enemy has decisively fixed friendly forces during the firefight, the only viable tactic may be to go defensive and try to fight them off that way.
- **Friendlies have taken too many casualties and cannot maneuver in force.** If too many friendlies have become casualties (wounded, primarily), the maneuverability of said friendlies will become compromised. In this case, it may be necessary to assume a defensive posture for as long as it takes to tend to the casualties.

Once the decision has made to go defensive, leaders must communicate the extents of the defensive position, sectors of observation and fire for each element, and ensure that security is established and maintained. All friendly forces assume the best covered and concealed positions they can, orienting towards known enemy positions, likely enemy avenues of approach, and staying very alert for enemy flanking maneuvers.



Note of course that going defensive is not in and of itself a permanent thing. If desired and feasible, a defense can shift back into a normal firefight, an assault, or even a disengagement.

Disengaging

Disengagement is the art of breaking contact from the enemy in a deliberate, organized fashion. Disengagement can occur in reverse - known generally as a 'fighting withdrawal' - or in any other direction, based on the situation at hand. Disengaging with the enemy is ultimately intended to either further mission goals or put friendly forces into a more tactically advantageous position from which they can better deal with enemy forces.

Why a Firefight can turn into a Disengagement

- **Friendlies are not fixed but cannot flank the enemy and cannot finish them.** If it is impossible to flank and finish the enemy, a tactical withdrawal that hopes to draw the enemy in pursuit into a position that is more favorable for friendlies is often a viable tactic. This can also be used to simply break contact with the enemy with no intention of reestablishing it and finishing them off.
- **Friendlies have a need to go into a defensive posture, aren't currently in a good position for it, but have a position nearby that would suit them.** This sort of disengagement is intended to be used for friendly forces to fight to a better position so that a defense can be conducted from there. If the enemy pursues, the firefight transitions into a defensive action.
- **Even a positive outcome for friendlies is not decisive to the overall mission, and momentum must be maintained.** There will be times when getting bogged down fighting one enemy group will be unacceptable and must be avoided. In those cases, disengaging with one enemy group so that the fight can press on will be necessary. In situations like this, it is very important that rear and flank security remains on high alert, as bypassed enemies will tend to attempt to come after friendlies.
- **Enemy forces clearly overmatch friendly forces.** This can happen from overwhelming numbers of enemy troops relative to friendlies, or when the enemy has support assets (vehicles, aircraft) that friendlies cannot counter at the location in which the firefight began. The goal of disengaging from an overmatch situation is to "live to fight another day" or buy time and space to bring heavier assets (such as artillery or close air support) into the fight.

The methods for disengaging are discussed in the Battle Drills chapter of this guide, in the "Break Contact" drill.

The most important aspect of disengaging from the enemy is ensuring that it is done in a deliberate and organized fashion, in which fire is maintained on the enemy throughout the disengagement process, with the intent of suppressing them as well as discouraging their pursuit. Simply trying to run away is apt to end in dismal failure.

ATTACKING

Now that we've covered the basic principles and typical evolution paths of a firefight, let's move on to the general concepts of attacking and defending. To start with, we'll cover attacking.

Principles of Attacking

Sitting back and firing at the enemy can only accomplish so much. To take and hold ground requires that the infantry moves to it and decisively engages and drives out or kills any enemy occupiers. To accomplish this, the assaulting infantry must be covered by friendly troops who are able to put effective fires on the

enemy while they maneuver towards the objective. There is no quote that I've ever found that sums this concept up better than the following one.

FIRE WITHOUT MANEUVER IS INDECISIVE.
MANEUVER WITHOUT FIRE IS FATAL.
- CLOSE COMBAT MARINE WORKBOOK

Or, to put it in other words, you won't decide a battle by sitting back and firing at the enemy. You cannot win by simply rushing at him, either. The two must be combined to get the desired effects - maneuver done under the cover of effective friendly support is the key to a successful assault.

Reconnaissance

Recon is the first phase of any attack. To attack the enemy, one must know where they are - to attack them effectively, one must know where they are ***before*** they know that you're there, with as much detail as possible, so that the knowledge can be leveraged to increase friendly chances for success.

The specific goals of recon were described earlier in the "Find" section of "Anatomy of a Firefight". For further detail, consult the 'Reconnaissance' chapter.

Isolation

The main point of isolating the enemy is that you want to ensure that the enemy is cut off from reinforcements or escape. Isolation should be done to the best degree possible, but due to various combat considerations it may not always be completely feasible to fully isolate an objective.

Isolating an objective can be accomplished in a number of ways. A great deal of it depends upon the forces available, enemy strength, and the terrain being fought in. Proper recon goes a long way towards getting effective isolation established, as it allows you to discover the enemy dispositions before shots have been fired.

Emplace heavier weapons where they can cover likely retreat paths. Plot artillery, if available, to cover likely avenues of escape or potential fall-back positions that the enemy might move to after coming under attack. Priority for artillery goes first to pounding the enemy position directly, so simply plot these as secondary targets and call them if needed.

In general, the attacking force will do the best it can to isolate the enemy position. Remember that leaving a gap that the enemy thinks they can escape from can be a very effective tactic - once pressure has been applied, they may break and run, at which point they can be cut to ribbons due to having already occupied their escape route with friendly elements without them knowing. Be aware that some enemy forces are not interested in falling back - they're there until the bitter end. Knowing whether you're facing off against troops that are not willing to retreat can go a long way towards shaping the planning process.

Preparation

Preparation is basically the act of blowing the hell out of the enemy to the best of your ability before ever starting the assault. "Prepping" the objective is done via all manner of fires and whenever possible focused on high-value targets identified through recon.

Preparation can be done via artillery fire, close air support strikes, or crew-served weapons like the Mk-19. Mortar squads, if available, can be very effective in this role due to their proximity to the infantry they're supporting.

When possible, preparatory fires should be maintained during the assault element's movement. They should shift just before the assault elements arrive at the objective, so that the enemy has little time to recover from the artillery and the shock and confusion effects of it are maximized. We have seen in the past (in OFP as well as Arma and Arma 2) that this is extremely important - one assault of note was broken due to the enemy relaxing their mortar fire for just long enough that the defenders were able to reorganize into a hasty defense and take the assault teams under fire while they were still crossing dangerous ground.

Surprise

There will be times when it will be more important to attack with surprise than to spend time preparing the objective with fire. Attacking suddenly, with violence and speed of action, and with surprise on your side, can be a force multiplier that can outweigh any effects that might otherwise be achieved by preparation of the objective with fires. The call is ultimately up to the commander ordering the assault - typically the Platoon Commander.

Flexibility

In consideration of the combat truism that "No plan survives first contact with the enemy", it's important that an attacking force remains flexible. The situation may develop in any number of unexpected fashions, requiring that all leaders are able to shift gears mid-attack in order to respond to unexpected developments or take advantage of sudden weaknesses in the enemy.

"Semper Gumby", as they say.

OCOKA in the Attack

Aspects to Consider

To conduct a successful attack, it is necessary for leaders to 'read' the terrain and use it to construct a solid attack plan that takes into consideration the important tactical aspects of said terrain. To do this, one utilizes the OCOKA acronym, as described earlier in the "Leadership" section of this guide.

Let's go ahead and take a look at OCOKA and how some of the considerations relate to the conduct of a successful attack.

Observation & Fields of Fire

- **Where can base-of-fire or support-by-fire positions be located?**
  - Hills and elevated positions are generally preferred, but bear in mind that the enemy may be able to predict likely BOF/SBF positions and have them covered by defensive weapons. The most obvious and seemingly favorable positions are not necessarily the best due to their predictability.
- **What units should the support element consist of, based on the terrain, enemy force, friendly deployments, etc?**
  - Sometimes it is as simple as placing a given squad or fireteam in such a position. At other times it may be beneficial to strip the automatic riflemen from several elements and have them consolidate to form a more powerful BOF/SBF.
- **Where are the best places to observe the enemy defenses and dispositions?**
  - Are there any positions that might be suitable for a single person to observe and provide recon from, that otherwise would not be viable to use? Placing an individual scout on an unlikely vantage point can work well if the enemy isn't expecting it.
  - Knowing what the enemy dispositions are like before coming into contact is a major goal that should be striven for in every attack.

- **Where is the best position to observe the assault and coordinate the actions of the assault and support elements?**
  - A leader who can observe the assault and control it - note 'control', and not 'micromanage' - tends to result in a more successful fight.
- **What areas is the enemy likely to be covering with fire? What areas are they most likely to be observing?**
  - Can they be avoided? If not, can the risks be reduced with smoke or more cautious movement methods?

Cover & Concealment

- **What kind of cover and concealment does the enemy have at their positions?**
  - Where are they most likely to be positioned because of their available cover and concealment?
  - Are there enterable buildings in their sector? If so, you can generally expect those to be fortified into strongpoints.
- **What kind of cover and concealment is available around the enemy positions that can be exploited when attacking?**
  - Anything that offers decent concealment can greatly reduce the effectiveness of enemy fire.
  - Micro-terrain - such as shallow depressions, ditches, etc - can provide defilade from enemy observation and fire, allowing attackers to move close to an enemy position without being exposed to fire. They are often covered by enemy indirect assets - however, those indirect assets will typically only fire when enemies are known or suspected to be in the defilade, so if stealth is maintained, they can be very safe ways to approach.
- **How does the available cover and concealment influence tactics like fire & maneuver, and overall command and control?**
  - Dense terrain tends to turn a fight into a series of close-range firefights as different elements become engaged independently, which in turn generally progresses at a slower pace. Casualties can be higher in denser terrain. Urban terrain makes this an even slower and more deadly process.
  - More open terrain tends to allow for the fight to be conducted at the ideal level, with each element supporting other elements in the attack, allowing for a faster battle pace and more maneuver opportunities. Open terrain also maximizes the effects of the support-by-fire/base-of-fire elements, allowing the assaulting teams to be supported for longer, which helps to reduce casualties.

Obstacles

- **Has the enemy fortified their positions with obstacles?**
  - If so, can the obstacles be avoided?
    - If not, what sort of trouble might they cause for the assaulting troops? How can these risks be minimized?
  - Is it possible to breach the obstacles?
    - Satchel charges are great general-purpose breaching tools, assuming that friendly forces have been outfitted with them.
    - Anti-tank weapons can be used to breach some obstacles in a pinch as well from a stand-off location.
  - Where is the enemy likely to be observing and covering the obstacles from?
  - Can smoke be employed to mask any potential enemy supporting forces while the obstacles are being negotiated or reduced?

Key or Decisive Terrain

- **Are there any pieces of terrain, structures, etc, that can be used or seized, which will result in the enemy being significantly hurt by it?**
  - Tall buildings are often key terrain
  - Mission objectives likewise are key terrain
  - Positions that offer good vantage points over the enemy defenses are always key terrain for an attacker
- **Are there any pieces of terrain, structures, etc, that are significant to the point that the enemy is likely to be occupying or protecting them with more troops than elsewhere?**
  - Enterable buildings are often seen as decisive terrain for the enemy to occupy. The more windows and angles from which they can observe from a single building, the more likely it will be integrated into their defensive plans.

Avenues of Approach

- **What are the most concealed approaches to the enemy position?**
  - How many attackers could use any given approach at once?
  - Are there multiple approaches that would allow for several teams to attack along different avenues at the same time?
- **What approaches are the enemy most likely to cover?**
  - Is a feint possible? If the enemy expects an attack to come from an obvious position, making some noise from that position (ie: firing from it with a small distraction force) can occupy them and make them believe that an attack is imminent from an expected location. Note that this effect only lasts for a few minutes - after a bit, they will start to wonder why the full attack isn't happening, and start paying more attention elsewhere.
- **What approaches may not be ideal, yet may be neglected by the defenders?**
  - If they don't expect to be attacked from a specific direction, they may not observe that area very well, or at all.
  - Sometimes being audacious and attacking over an unlikely route can result in shock and surprise on the enemy's part, increasing the likelihood of friendly success.

Bear in mind that those are not the only things one must consider, but are instead the most common considerations. OCOKA is a great mnemonic to learn and use, and the proper consideration of the various elements of it can mean the difference between a successful attack and a defeat.

Elements of an Attack

Moving on, we'll look at the elements involved in the average attack. Attacks have three elements to them when employed at the platoon level or higher - the assault, support, and security elements - while a squad attack only has assault and support elements. Let's take a look at what the responsibilities of each are in further detail.

Assault Element

The assault element is composed of the forces that will be closing with and destroying the enemy by fire and movement. They advance under the covering fire of the support element as far as they can as quickly as possible, then when within effective range of the enemy fire they begin to move via bounds and individual rushes towards and ultimately into the enemy position.

The assault element should try to move through covered and concealed routes as long as possible to maximize the surprise and shock of their attack and minimize the time they're exposed to enemy observation and fire. This is particularly important during single- or double-envelopments (described in the next section).

The assault element **attacks with speed and intensity** and **avoids getting bogged down.** The assault element cannot afford to get stuck out in the open and must be prepared to leave their wounded and dead where they fall and let follow-on forces tend to them, in order to maintain the momentum of their attack.

Support Element

The support element is the one that provides the "base of fire" that covers the advance of the assault element(s). The position occupied by a support team is typically referred to as a "support by fire" position, SBF, or "base of fire" position, BOF.

The key thing for the support element is that it must have the ability to provide a high volume of fire. This is often more dependent on the weapons that it employs, versus the number of personnel in it. Placing extra machineguns in the support element helps to facilitate this volume.

A general rule-of-thumb you'll find referenced in military pubs is that the support element should be 2/3rds of the force, with the assault element comprising the last 1/3rd. We've found through our experiences that this should not be strictly observed - in some situations, it is appropriate, whereas at other times it will be important to have a large assault force so that the objective can be swarmed over with a large force in short order. It's up to the attack planner (typically the platoon commander or a squad leader) to make the call as to how big each element is. When doing a platoon-level attack, the three squads allow for a 2:1 assault/support ratio to be easily achieved, while a squad attack is generally just a matter of assigning each fireteam to a role and going from there.

The support element should be prepared to cease or shift fires once the assault teams have closed on the objective to ensure that they do not have a friendly-fire incident.

Note that crew-served teams are almost always placed in the support element.

Security Element

A security element provides local security for forces during a platoon-level or higher assault. This typically means that they are focused on preventing exterior enemy forces from disrupting the conduct of the assault on an enemy position. The security element is the first line of observation for and defense against any spoiling attacks the enemy may attempt.

Security elements can also be merged in with the support element as part of the base of fire.

Types of Attacks

Now that we know what the different attack elements are, let's take a look at the what the different types of attacks are.

Frontal Attack

Frontal attacks are the most basic of attacks. A frontal attack is done against the weakest position that can be located on an enemy's front, taking advantage of all of the terrain, cover, and concealment that can be found, and creating artificial concealment via artillery fires, smoke, etc when possible.

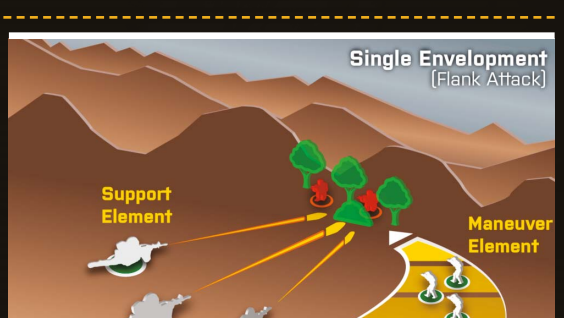
The success of a frontal attack depends entirely upon how effectively the enemy can be suppressed. A combination of well-placed smoke and heavy machinegun fire can turn a suicidal assault into something that actually has a chance of being successful, whereas the lack of such support will leave the assault teams torn to shreds and bleeding their lives out before they've even reached the enemy.

Frontal attacks are usually done because there is neither the time, ability, or practicality of pulling off a more elaborate attack. Frontal attacks can be costly in virtual lives and are best avoided unless the situation can be made to greatly favor the attacking force. This can be done via good support-by-fire (SBF) positions, effective usage of smoke, and good individual movement techniques with suitable cover and concealment on the approach route.

When possible, a frontal attack should be pulled off with as much surprise and/or fire support as can be mustered. Every potential force multiplier must be brought into play to increase the odds of success. Bounding overwatch is essential when making a frontal attack, as it allows one element of the assault force to always be advancing while another is always providing covering fire in addition to the fires provided by the actual support element.

Single Envelopment

The single envelopment is where the base-of-fire element suppresses the enemy while the assault element moves around to a vulnerable flank and attacks.

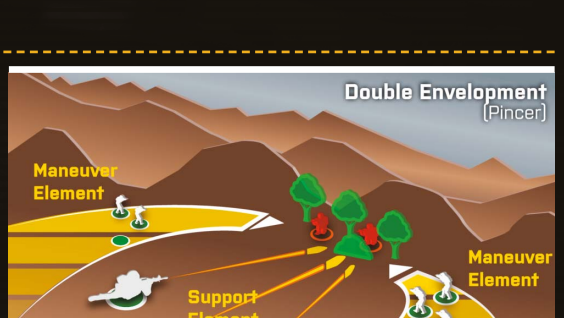


As with any multi-element coordinated attack, the support element (aka base-of-fire) should be prepared to shift or cease fire to avoid inflicting friendly casualties once the assault element is on the objective.

It is important that the assault element attempts to maneuver in a way that masks it from observation for as long as possible. Shock and surprise are large force multipliers and will greatly enhance the effectiveness of any attack.

Double Envelopment

A double envelopment (also known as a 'pincer') attacks both flanks of the enemy at once while hammering the enemy with the support element's fires. This can be a very effective form of attack, as long as the assault elements are aware of the risk of friendly fire and refrain from using indiscriminate ordnance on the objective (for instance, throwing frags in the direction of the opposite assault element is a bad idea).



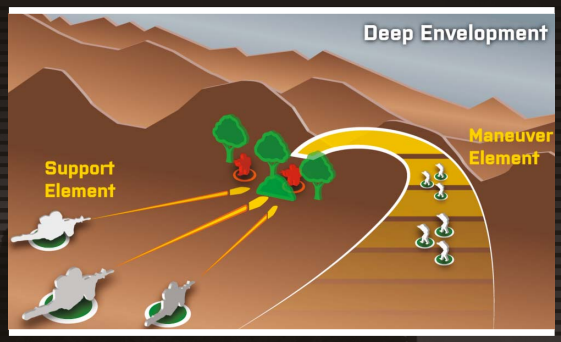
Bear in mind that the timing of the two elements striking the enemy can have a large influence on their reaction. If both flanks are attacked simultaneously, the enemy will be thrown into confusion. If one flank is attacked first, the enemy may shift to defend it, leaving the other flank more vulnerable but increasing the risk to that initial assault element.

Deep Envelopment

A deep envelopment is done when the situation and enemy disposition makes it possible for an element to pass by the enemy's flank security and strike them from behind. This sort of attack effectively splits the enemy's attention between two completely opposite directions.

The main consideration when utilizing this tactic is that careful coordination is maintained between the two primary elements. If this coordination is not established and kept, friendly fire incidents will inevitably occur as the two elements begin to work their ways through opposite sides of the enemy position.

If the numbers are present to support it, the deep envelopment can be one of the most effective attack types. However, if the numbers are not available, it is better to stick to a more shallow envelopment, since the support element can cover the maneuver element more effectively that way, and the two elements are not cut off from each other entirely.



Note also that a deep envelopment is best done by flanking the enemy on only one side. Trying to split the assault element into two elements to send them around opposite sides to link up behind the enemy is asking for trouble.

With that, we close out the attacking section. Next up, defending.

DEFENDING

Principles of Defending

Defending can take many forms. An element may be tasked with protecting something important, such as a building, key road or intersection, vehicle, or high-value personnel. It may also simply need to protect itself while in a static position. A defense can be hasty, with units rapidly taking positions in an unprepared area, or deliberate, in which special defensive obstacles, bunkers, sandbag walls, etc, can be deployed in advance of any attack.

Whatever the case may be, there are several common themes to defending successfully.

Security

A defense will fail utterly if security is not established and maintained at all times. Security comes in the form of ensuring that the defensive positions can observe all around the defensive location and cover all possible avenues of approach.

Security is further enhanced by having personnel in forward observation positions or positioned on high structures from which they can see more clearly around the defensive position.

Positioning

Defenses require that the defending force takes measures to make themselves hard to kill. When given an area to defend, it is up to the leaders as well as individual players to pick positions to fight from that make them hard targets. This is accomplished by taking advantage of every aspect of natural and artificial cover and concealment, as well as deploying obstacles and defensive structures to enhance and otherwise augment the existing terrain.

Every fighting position should be chosen to minimize exposure to enemy observation and fires, while maximizing the lethality of the player fighting from that position.

Many defensive missions will give the defending force some flexibility in where they deploy themselves, making this a very important consideration for leaders. An area as small as 400 meters in diameter may have potential defensive emplacements that range from "Great" to "Utterly dismal", and being able to identify which is which is a critical skill to develop.

Depth

Spreading a defending force thinly over a long frontage, with no reserve and no depth to the defense, is tactically unsound. Defenders must ensure that they have depth to their defense.

This depth allows for a number of things, as follow:

- Forward units can displace to the rear if their original positions become untenable, with their movement being covered by units who are positioned behind the bleeding edge of the front line.
- Ensures that an enemy force will have to work hard to get a penetration of friendly defensive positions. They may overrun the first line only to be mowed down by a second line that can now place fire precisely on the locations where their former teammates had been positioned.
- An enemy that penetrates part of the first line of a defense may find themselves trapped in a pocket, as the flanking positions and second line of defense focus their fires on them from three sides at once.

Mutual support

Mutual support occurs when positions are able to fire in support of other nearby positions. The ultimate goal of mutual support is to make it impossible for the enemy to attack one position in isolation - instead, they will always find themselves engaged by a supporting position, forcing them to attempt to attack both positions at the same time, which dilutes their efforts.

For instance, a frontal attack on one position may run into the flanking fires of a second position. Mutual support makes it very difficult for the enemy to concentrate on a single defensive position, because if they do so, they will be cut to pieces by the supporting positions.

Flexibility

Flexibility is a key part of a successful defense. Particularly when defending large areas, defenders can't hope to mass their defensive power all along the areas that can potentially be attacked.

Flexibility is facilitated by a comprehensive understanding of the defensive position, the dispositions of friendly forces, and the creation of primary as well as secondary and even tertiary fighting positions. In an ideal situation, each defensive position has an alternate position to fight from, as well as "fall-back" positions which are deeper in the defended areas. Flexibility can also be enhanced by detaching a 'reserve' of players that will stay away from the forward defenses and wait to reinforce any area that may later need help.

Flexibility allows a defense to be able to:

- Shift positions and angles of coverage in response to enemy attacks, placing themselves where they need to be to best defeat the enemy. This allows for the defense to fight off an attack from any direction, or from multiple directions at once.
- Fall back to inner perimeters on demand without losing cohesion.
- Prevent the enemy from effectively fixing them in one static position for the duration of a fight.

OCOKA in the Defense

To conduct a successful defense, one must be able to 'read' the terrain and integrate it into the defensive plans. Knowing the terrain allows for a commander to place his defenses in a fashion that will maximize the

natural and artificial aspects of the environment in his favor. An experienced commander should be able to look at a section of terrain and see the positive and negative aspects of defending any given area. It is up to him to pick the best slice of terrain to defend and ensure that all subordinate leaders and units take maximum advantage of all the favorable aspects of said terrain.

When it comes to working with terrain considerations, the "OCOKA" mnemonic is of great significance, as detailed earlier in the "Attacking" section and "Leadership" chapter. Let's take a look at some of the different aspects of OCOKA, and how they relate to the conduct of a defense.

Aspects to Consider

Observation & Fields of Fire

- **Be able to observe approach routes. Place observation posts or scouts to watch the surrounding terrain, flanks, and the rear of the defensive positions.**
  - Knowing in advance that the enemy is trying to flank or is approaching from an unexpected position gives the defenders time to shift their positions or fields of fire if necessary to react to the enemy maneuvers.
  - Observation personnel should have a plan on how to leave their observation post and make it back to friendly lines before the enemy cuts them off.
- **Fields of fire need to interlock and provide mutual support. Creating mutually supporting defensive positions is very important!**
  - Mutual support tends to force the enemy to attack multiple defensive positions at once, thinning out his numbers and preventing him from massing overwhelming combat power on any one point.

Cover & Concealment

- **Use both natural and artificial cover and concealment as much as possible.**
  - A good defense does not reveal all of its secrets once the enemy is able to observe the defended area.
  - Keeping key weapons out of view, via concealment or cover, can allow for surprise to be achieved when the enemy attacks and unexpectedly runs into the fires of such weapons.
  - Concealment may not stop bullets, but if the enemy never realizes that fire is coming from it, it won't need to. Good concealed positions can wreak havoc on enemy attacks, particularly when firing across the flank of the attacking forces.
  - Good cover & concealment helps to lessen the effects of enemy prep fires or base-of-fire elements.
- **Make good use of enterable buildings.**
  - Buildings are generally good protection during an Arma firefight, and ones with multiple floors allow for defenders to get views all around, from multiple heights, with a variety of firing apertures (windows) to use to shoot from and lessen their predictability.
  - When employing buildings, ensure that everyone doesn't simply pile into the same building - multiple buildings, supporting each other, are far more effective.
- **Have methods to move from defensive position to defensive position while making use of cover and concealment throughout the route.**
  - A good defensive layout will allow someone to move from one fighting position to another without ever being seen by the enemy.
  - Being able to fall back to another 'ring' of defense without exposing oneself to enemy fire is likewise important.

Obstacles

- **Sandbags, wire obstacles, and other types of obstacles can be found in many missions, and some even allow for one side to emplace such obstacles and defenses in the "pre-mission" stage of an operation.**
  - It is very important to coordinate the emplacement of these obstacles and defenses with the entire defending team, to ensure that interlocking fields of fire and mutually supporting positions are created.
- **Funnel the enemy via obstacle emplacement.**
  - Use obstacles, mines, and friendly positioning to get the enemy to maneuver and attack in a fashion that fits your defensive plans.
- **Observe obstacles whenever possible.** Observation is done in a manner that allows friendly weapons to engage anyone attempting to move through or breach the obstacles.
  - **Unobserved** obstacles act as restrictions or delays to ***movement.*** They may slow someone down, but that will generally be it.
  - **Observed** obstacles turn areas into kill zones and produce enemy ***casualties.*** The enemy, slowed down by the obstacles, becomes more vulnerable to friendly forces, which can then engage them with all manner of fires while they're attempting to traverse said obstacles.
- **Explosives are another form of obstacle.**
  - The presence of obvious explosives can force attackers to reroute around them or avoid passing through a given area.
  - More subtly hidden explosives can be used to cover other obstacles as well as any gaps that might exist in the defense.
  - When observed, satchel charges are great for causing casualties on an attacking force.
  - Explosives like claymore mines, set with tripwires, can act as unobserved traps - the key point is to ensure that all friendlies are aware of their positions and know not to trigger them accidentally.
  - The detonation of an explosive trap can cause confusion and disarray in the enemy ranks, and generally slow the pace of the enemy's movements as they try to figure out what happened, deal with their casualties, and attempt to prevent it from occurring again.

Key or Decisive Terrain

- **Occupy the key terrain & high ground, or cover it by fire if occupation is not feasible.**
  - Key terrain is any terrain that is likely to have an impact on the enemy's attack or your defense. To use an example from a popular movie, in "We Were Soldiers" a dry riverbed is identified as key terrain and occupied to prevent the enemy from using it to their advantage.
  - High ground, on the other hand, is pretty self-explanatory. High ground is occupied because it places the defenders at a height advantage against the attacking forces, giving them better observation and fields of fire. It is also significantly more difficult to attack up a hill than it is to fend off such an attack from on top of the hill.
  - It is important to note that defenders on high positions should not sit directly on top of the high ground but should instead be on the "military crest", which is basically any position far enough from the topographical crest that they are not silhouetted against the skyline.

Avenues of Approach

- **Identify the likely positions from which the enemy can approach or attack.**
  - Position personnel to observe these approaches and cover them with fire.
  - Plot artillery or mortars, if available, to cover the most likely approaches.

- **Identify likely positions that the enemy will use for support-by-fire or base-of-fire elements and cover them accordingly.**
  - Being able to identify the likely SBF/BOF positions allows for defenders to plan their positions, as well as any deployable defensive assets, more effectively.
  - Having a key weapon system like a medium or heavy machinegun pointing at a likely enemy SBF/BOF position can be decisive if they end up fighting from said position.

So that's OCOKA, as applied to the defense. As with attacking, being aware of all of the different aspects that must be considered can help ensure that a defense goes as well as it possibly can.

Limitations of Defending in Arma 3

There are a few limitations that come into play when discussing defenses in Arma 3. The following real-world considerations are not applicable to Arma 3 at the moment.

Dug-in fighting positions (ie foxholes, trenches, sunken bunkers) do not play much of a factor. Arma does not allow for these kinds of below-ground structures. Berm-based trenches exist, but they are less than ideal as defensive positions due to their rather prominent nature. Above-ground bunkers are slightly better, but they are not a common sight to see. The most common type of defensive position found in Arma involves the use of sandbag bunkers or earthen berms and above-ground trenches. These are particularly effective if you're able to support your weapon on them for increased accuracy, and Arma 3's stance adjustment system allows for defenders to use as much of the cover potential as possible in a given bunker or area.

With that being said, there is still a wide range of possibility present in how one can conduct a defense in Arma.

Types of Defenses

Linear Defense

Linear defenses are exactly what they sound like - friendly forces are arrayed in a line, perpendicular to the expected route the enemy will attack via. Linear defenses are used when the terrain favors such a defense - for instance, if terrain or obstacles such as minefields make it impossible for the enemy to bypass a given piece of terrain. A linear defense allows for friendly forces to mass firepower in one direction, with interlocking fields of fire and exceptional coverage. Linear defenses require that there are security elements posted on each flank, so that any attempts by the enemy to flank friendly positions will be seen and will be able to be reacted to. Linear defenses are also best against infantry, and weakest against any kind of mechanized enemy force which can potentially flank the position more easily than a foot-mobile force. The ideal linear defense is created such that flanking is not a viable tactic for the enemy - minefields are excellent for this, as is terrain that naturally chokepoints.

Perimeter Defense

A perimeter defense can be established in any terrain. It is utilized when the enemy can be expected to attack from a number of directions at once, or when the enemy's attack direction is not known with reasonable certainty in advance.

Perimeter defenses take advantage of any natural concealment or cover in the area. They are typically established in a triangular fashion, though it will differ based upon the size of the force and the terrain. Platoon-sized perimeter defenses are best, as they allow for a larger area to be defended, with one squad per side. Squad-level perimeter defenses are vulnerable to attack and typically end up being more of a rough circular shape than triangular, due to there being a lower number of troops to place in the defense combined with the desire to utilize all cover and concealment to the maximum extent possible.

Perimeter defenses tend to occur when friendly forces are isolated and must defend a specific piece of terrain or are just isolated in general and must defend themselves.

Reverse Slope Defense

A reverse slope defense can be a very effective form of defense if done properly. The basic principle of a reverse slope defense is that terrain is used to isolate the friendly forces from enemy fires and observation, forcing them to close with friendly forces and commit to a close-range fight where they lose many of the advantages they may have otherwise had in normal terrain.

Some benefits of the reverse slope defense are as follows.

- The enemy cannot see friendly positions or dispositions until he crests the hill.
- The enemy cannot use direct-fire weapons against friendly positions unless he crests the hill and exposes himself to fire.
- Cresting the hill cuts an enemy unit off from the support of other enemy units that are still out of view of friendly forces.
- Enemy artillery is difficult to adjust due to it being necessary to get an observer into view of friendly forces to correct the fall of the rounds. The natural rise of the hill (or other high ground) may even prevent certain types of artillery from being able to hit friendly positions at all. This depends largely upon how steep the hill is, as well as the location of enemy artillery. Note that mortar fire will almost certainly still be able to be used in such a situation without hindrance.

There are also a few notable drawbacks that can come into play and must be considered in advance.

- Withdrawal from a reverse-slope defensive position can be extremely difficult. If the enemy establishes itself on the crest, friendly forces will be at a distinct disadvantage when trying to break contact. This is one reason why having a security element on the counter-slope (terrain permitting, this is the upward-sloping terrain behind the defensive position that ends up being another hill) can be so vitally important.
- Friendly forces in the defense cannot see past the crest of the high ground. The effects of this can be lessened with proper usage of observation posts, however.

It is important that a reverse slope defense utilizes observation posts on the far side of the hill or high ground so that they can see the approach of the enemy. These observation posts can simply be a few soldiers with binoculars or scoped weapons, spread out to comprehensively cover all possible approach routes. Such observation posts should be pulled in before the attack hits, or they're apt to be cut to pieces by the enemy.

If a security element is available, and the terrain permits, it can be of great help to have the security element posted on a slope behind the main defense (known as a "counter-slope"). This allows for them to cover the flanks and rear of the main defense and engage any enemy forces that attempt to maneuver to attack in such a fashion.

Defense of a Strongpoint (Urban Environment, Village, etc)

The defense of a strongpoint can carry aspects of the perimeter or linear defense, depending on what the tactical situation is at the point being defended. Considerations for both of those defense types apply, as well as the following points.

- **Dominate the streets.** Streets are prime killing zones, and emplacing machineguns or other heavy weapons to fire down streets can do a great deal to prevent the enemy from establishing a foothold in the engagement area.
- **Dominate all prominent choke points and integrate them into the defensive plan.** For instance, a bridge is an excellent choke point that can be defended in strength to prevent the enemy from successfully crossing it.
- **Establish fall-back positions.** The situation in an urban fight can change rapidly, and it is beneficial that some sort of cohesive plan be in place to allow for friendly units to fall back, establish new positions, and fight from them.
- **Use snipers, machineguns, and any kind of vehicle-mounted weapon systems to cover the most vulnerable defensive areas.**
- **All armor should be supported by at least a fireteam of infantry.** Armor is a massive force-multiplier in the urban defense and needs to be protected at all times.
- **Do not pile too many people into any one building.** Buildings can be demolished, and the Arma damage model for buildings and explosives can cause more casualties to occur in such situations than you would expect.
- **Establish observer positions on tall buildings when possible.** If artillery support is available, they can help to call it in. If not, they can scan for the approach of enemy units. Try not to pick the most obvious buildings for this task - you don't have to be on a large and obvious building to be effective as an observer, and doing so will likely only help to draw enemy fire and get you killed. Placing grenadiers and snipers on two- or three-story structures can also be beneficial.

The Spoiling Attack

The intent of a spoiling attack is to disrupt or "spoil" the plans of the enemy attacking force. This is typically done by the defending force by shifting from their defensive posture into an unexpected attack. If done properly the tactic can achieve an element of surprise which can contribute to the successful disruption or destruction of the enemy attacking force. Spoiling attacks are best done with armor - they can spring from their defensive positions, flank the enemy, strike hard and fast, and then withdraw back into their defensive posture.

Small infantry elements can also be used for this tactic, utilizing harassing fires via guerrilla ambushes. Done effectively, this can create confusion and disarray and lead to a breakdown in the cohesion of the enemy attack.

Spoiling attacks are only feasible if the you have the assets to spare. In many situations it will be too risky to attempt one and potentially lose those forces.

MILITARY OPERATIONS IN URBAN TERRAIN (MOUT)

Tips for the Infantryman in a MOUT Environment

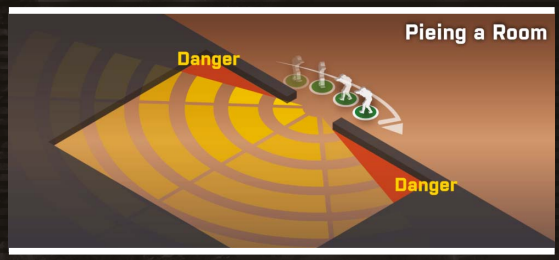
Military operations in urban terrain (MOUT) and close quarters battle (CQB) is easily the most dangerous environment for infantry to operate. Threats can come from above, or appear and disappear in an instant in the urban clutter. The fighting is fast, violent, and confusing. Good communication is needed at all levels to provide timely information as well as avoid friendly fire incidents. MOUT combat at the platoon level must be done at a deliberate, methodical pace, and all elements need to be able to move in a cohesive manner that prevents anyone from getting cut off or lost, and maintains a very high level of situational awareness and defensive cohesion. Arma 3's enhanced controls make MOUT and CQB a far more engaging experience, with the terrain of Altis and its many cities making for great venues for such combat.

There are several tips for the infantrymen operating in these environments.

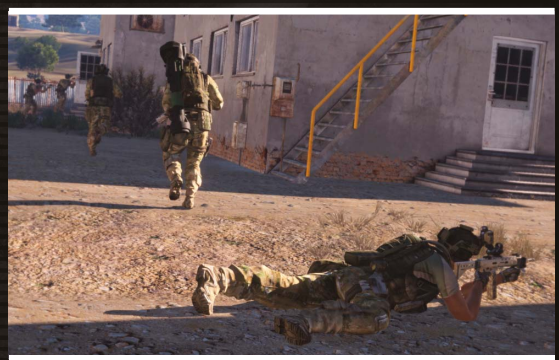
- **Stay aware of the vertical element in a MOUT environment.** Enemies can be on the rooftops, and it requires sharp observation from all players to spot them before they can do harm.
- **Know your sector of observation/cover and be diligent in watching/covering it.** One person letting their guard down for a few seconds can doom many.

MAINTAINING 360 SECURITY BEFORE CLEARING A BUILDING

- **Pie off all danger areas.** Pieing is simply the process of moving carefully and deliberately in a fashion that allows you to see as much of an area as possible before entering it. This has a multitude of uses in all areas of combat, but becomes particularly important in MOUT/CQB with buildings and streets. Pieing a room allows for you to visually clear everything except for a corner or two, which allows you to enter and immediately focus on the danger areas (ie uncleared corners) without having to do a full sweep of the rest of the room at the same time.



- **Stay off of the walls.** Walls act as backdrops for explosive rounds to detonate on, and being too close to them will make it that much easier for an enemy to lob a grenade or rocket your way and take you down. You will constantly face the dilemma of whether being close to a wall will provide protection or put you at extra risk - weigh the options quickly and pick the best one for the scenario.
- **Stay out of the open.** Move from covered position to covered position, and avoid lingering in the open. Streets are natural kill zones in urban areas and are frequently covered by machineguns.



RUSHING ACROSS A GAP WITH COVERAGE

- **Be aware of the danger of ricochets.** Traveling down a narrow alleyway can become even more dangerous when rounds being fired at you start ricocheting off of the ground and walls to wreak even more havoc. Cannon rounds, such as those from an Infantry Fighting Vehicle's (IFV) main gun, are particularly deadly when they begin to ricochet.

Tips for the Infantry Leader in a MOUT Environment

- **Move with deliberation.** In the MOUT fight, haphazard movement, excessively fast speeds, and overextending units easily results in casualties.
- **Smoke is extremely effective in MOUT - use it!** Know how to employ smoke properly, and use it to maximum effect whenever possible. One well-placed smoke grenade can mask an entire street or one side of a building and save lives through screening friendlies or masking the enemy.
- **Machineguns, emplaced properly, can cut an entire street (or more) off from enemy maneuver.** Emplacing your machinegun assets properly can be a huge factor in winning an urban fight.
- **Know how to split up as a fireteam into covering and clearing teams and clear a structure.** These clearing team enters the structure, with one peeling to the left, the other to the right, etc. They secure each room and move methodically throughout the structure until it is cleared, at which point they exit the structure, join up with their other fireteam members, and continue on.
- **Do not commit more than a fireteam to the interior of a structure up to medium size.** Very large buildings should have two fireteams at most, with the third acting as a covering team. Cramming too many people into a building, particularly one that has potentially been booby-trapped, is asking for a catastrophe.

Clearing a Building

Clearing a building is one of the most dangerous tasks a team can be assigned, requiring a team-wide solid understanding of CQB tactics in order to successfully carry it out.

Why to Clear a Building

There are many reasons for why a building may need to be cleared out via infantry. Some of these reasons follow.

- **Must secure the building, but cannot demolish it due to any of the following:**
  - Area is too hot to safely place demolitions
  - No demolitions are available, or cannot spare demo on the building due to operational needs.
  - Collateral damage is a concern
    - ROE Restrictions
    - Civilians inside or nearby
  - Building contains assets that cannot be destroyed, such as intelligence material, prisoners, etc.
- **Building presents a threat to the security of friendly forces and must be cleared to ensure security.**
  - A threat is perceived when enemy combatants are known or suspected to be inside. They could be shooters, spotters, observers/lookouts, or triggermen.
- **Building is identified as key terrain.**
  - It offers a good friendly position if taken
  - Taking it denies an effective defensive position to the enemy
  - It is an objective

Covering & Clearing Teams

In order to effectively clear a building, an element must split itself into two parts - one is the covering team, which provides security outside of the structure. The other is the clearing team, which actually goes into the structure to clear it out room by room. The cover team is typically the fireteam leader and the automatic rifle/assistant pair, while the clearing team consists of the fireteam's riflemen.

The clearing team must know the plan in advance of reaching the structure's entry point. Communications should be quiet and over the radio whenever possible, to avoid telegraphing your intentions to any potential defenders.

The clearing team picks an entry point in advance and from a distance, followed by a cover team laying down smoke concealment or suppressive fires when possible, which is then followed by the clearing team rapidly moving towards and breaching through the entry point.

The **cover team** is responsible for:

- Suppressing the building while the clearing team moves into position
- Suppressing floors that the clearing team is not on
- Communicating with the clearing team to coordinate said suppression
- Preventing any hostile forces from exiting the building

The **clearing team** is responsible for:

- Moving methodically through the structure room-by-room until it is cleared of hostile forces
- Communicating their movements to the cover team so that the cover team can shift fire accordingly

There will be times when players must enter and clear a room or number of rooms due to the tactical situation. In order to pull this off successfully, players should be familiar with the basic room clearing procedures.

Entry & Stack Methods

When it comes to making entry into a room, the members of the clearing team have two options.

Hook - In this, the player moves into the doorway and then immediately hooks to the side that he had been 'stacked up' on. For instance - if the player is on the right side of the doorway, he will enter through the doorway and immediately turn right.

Cross - In this, the player moves through the doorway and continues opposite of the direction he had been 'stacked up'. For instance - if the player is on the right side of the doorway, he will move through the doorway and cross to the left side once inside the room.

There are two ways that a 2-man stack can 'stack up' on a door - one is with both members on the same side of the doorway **("stack").** If this is the case, the first man will state his entry type ("Cross!" or "Hook!"), and the second man will do the opposite, to ensure proper coverage of the room. This type of stack is best used when an open door is present. If the entry type is not stated, the second man simply does the opposite of what the entry man does.

When ordering a stack, the lead man will either say "stack left" or "stack right" - the directions are relative to facing the doorway. "Stack left" will result in the entry team being on the left side of the door.

2-MAN LEFT-SIDE STACK

The other option is to have one player on either side of the doorway **("split stack").** The senior player will state his entry type, and the other player will prepare to do the same type of entry, except from the opposite side of the door. This type of stack is best assumed when a closed door is present - movement across an open doorway for the sake of setting up a 'split stack' should never be done.

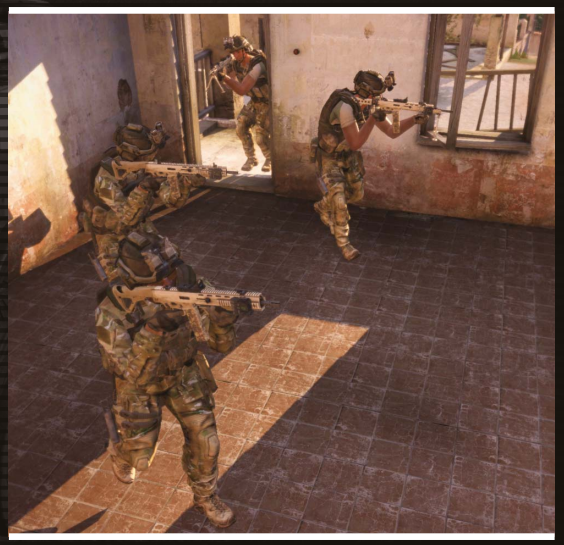
Being fluid in movement and stacking is more important than making everything look by-the-numbers. Taking the time to do a 'pretty stack' outside of a structure can be fatal in an intense urban fight and should generally be avoided when the surrounding area is not firmly in friendly control - instead, focus on being fluid and fast. The entry team should be able to rapidly adapt to the situation at hand with a minimum of communication and spend as little time "at the door" as possible. Flow to the door, through it, and through the structure.

2-MAN SPLIT STACK

Room Clearing Procedures

When the stack is set, the next step is to actually carry out an entry from start to finish. For this, the following steps act as a guideline for how a typical room take down occurs.

1. **Ensure your weapon is on full-automatic and that you have a fresh magazine inserted.**
2. Throw a flashbang or a fragmentation grenade into the room, if available and no friendly or civilian forces are potentially inside. **If a frag or bang has been thrown, the players wait for it to detonate before entering.**
3. Each player enters in sequence, engaging targets to their front as they move through and out of the 'fatal funnel' that is the doorway.
4. After moving through the doorway, each player continues in the direction prescribed by their entry type (hook or cross), clearing from his front to the corner he is moving towards. Players must continue to move into their 'corner' regardless of the amount of enemy fire received - continuing to push to their corner will draw fire towards them, allowing the following members of the stack to successfully enter the room and begin engaging the enemy.
5. After clearing his 'near' corner, he continues moving towards it while pivoting to clear the wall that runs to his 'far' corner.
6. After clearing the far corner, he clears to the center of the room, then clears to the other side of the room, stopping short of where his teammate is.
7. Once the room is deemed clear, each player uses direct speaking to announce "Clear!" to his teammate. If the situation requires, communication may be absent for security's sake. When working against enemy players, staying quiet while clearing a building will prevent the enemy from knowing your status, location, and intent.
8. From here, movement through the structure is careful and deliberate, with rooms being pied off, doorways covered, and each member of the team taking their time to carefully clear their way through.



The entire process, from start to finish, happens in a few seconds at most.

Knowing how to enter rooms properly should prepare you for the most common CQB situations you'll encounter in the game.

Note that if you are using a covering team outside of the building, the clearing team should state loudly that they are "coming out" of the structure before doing so, to ensure that the covering team does not mistakenly engage them.

Demolishing a Building

Why to Demolish a Building

Building demolition is typically a significant decision to make in a mission. Buildings can be anything from houses to factories, bunkers, et cetera. To destroy them requires a lot of explosive power, and the expenditure of that power must be carefully considered. The building must present a threat to friendly forces that is significant enough that destruction of it is the most reasonable course of action.

Some of the considerations that must be made before demolition can be carried out are as follows.

- Collateral damage is not a concern.
- Demolishing the building has no negative impact on mission goals.
- Demolition assets are available (satchels, armor, CAS) and can be employed successfully.
- The building has significant coverage of friendly operational areas and cannot be secured or occupied, making it a security risk.
- Enemies are known or highly suspected to be inside and clearing would likely cause unacceptable friendly casualties.

Preparing to Demolish a Building

When a building has been singled out for demolition, the first step is for friendly units to suppress it, isolate it, and establish security around it. Isolation is the act of ensuring that anyone inside of the building is unable to escape, and anyone outside of it is unable to get in. Suppression helps to prevent anyone inside from engaging friendly forces while the demolition is conducted. Security ensures that the forces working to demolish the building are protected from attacks from any other hostiles in the area.

Isolation, suppression, and security can be achieved via the proper placement of fireteams and their automatic riflemen, attached machinegun teams, or armed vehicles.

Demolition Options Available

When it comes to actually destroying the building, there are several options available, depending on the current mission and assets. We will cover the pros, cons, and recommended minimum safe distances for each of the major options below. Ultimately, the decision of what type of demolition is to be used rests at the senior element leader orchestrating the demolition - typically a squad leader or the platoon commander.

Satchel Charges	
Pros	▪ Very precise and controlled method of demolition. ▪ Can be coordinated and conducted very rapidly. ▪ Can be done with stealth to prevent the enemy from reacting before it is too late.
Cons	▪ Short range. Requires infantry to move to the building and place the demolitions, potentially exposing them to enemy fire. ▪ May require multiple satchel charges to accomplish complete destruction.
Safety Distance	▪ No cover: 30-60m ▪ Hard cover: 15m

Armored Support	
Pros	▪ Very precise and controlled method of demolition. ▪ Can be coordinated and conducted quickly if the armored support is near the infantry. ▪ Armor can both demolish the building and selectively engage targets within it via cannon or machinegun fire. ▪ Can be employed a long distance away from the objective.
Cons	▪ If the armor is not close to friendly infantry, it may take some time to get them on-station, which may warn the enemy as to what is happening. ▪ May take more time to demolish the building piece-by-piece.
Safety Distance	▪ No cover: 200-300m ▪ Hard cover: 150m

MOUT - DEMOLISHING A BUILDING

Close Air Support (CAS)	
Pros	■ Bombs are second-to-none when it comes to building destruction. Nothing says "I want that building gone!" like 2000 pounds of pain dropping through the chimney. Bombs will destroy a building and anyone inside on the first pass, as long as they're delivered correctly, and can cause significant damage to anyone near the building. ■ Can be very precise with laser guidance. ■ Can be called in from a long distance away from the objective.
Cons	■ Destructive power of CAS can result in horrific friendly fire incidents if ground forces do not take the proper precautions, or if the FAC does not control the aircraft approach, ordnance usage, etc, properly. ■ CAS can be slow to respond to a support request. This is in part due to the difficulty that exists in coordinating a strike from a fast-moving, high-flying aircraft against what is a relatively small and precise target, with the possibility of friendly forces in close proximity to it. ■ Non-laser-guided bombs can be imprecise and require an extra degree of careful coordination between the FAC and aircraft to avoid fratricide. Marking the target via smoke or extremely competent visual descriptions is critical, and making a pass with cannons before dropping bombs can be used as an additional control method.
Safety Distance	■ No cover: 200-300m ■ Hard cover: 150m

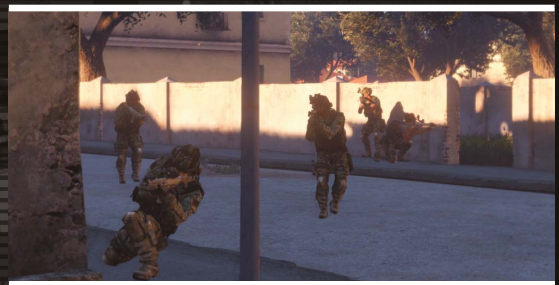
Artillery Support	
Pros	■ Variety of effects types and fuze types. ■ Powerful damage, ability to sustain fire for minutes at a time. ■ Can obliterate the ever-loving shit out of a building and everything around it. ■ Can be called in from a long distance away from the objective.
Cons	■ Calling for artillery and waiting for the rounds to impact can take time. ■ Less precise than other methods. May require adjustment to get rounds on target. ■ Requires an additional amount of stand-off distance to avoid fratricide.
Safety Distance	■ No cover: 350-500m ■ Hard cover: 250m

Crossing Urban Danger Areas

Every team member needs to be familiar with what to do when dealing with danger areas in the urban environment. Due to the chaotic and fast-paced nature of urban combat, there are no strict roles for each fireteam member to take when crossing urban danger areas. Instead, roles are based upon where in the formation a given person is, regardless of their fireteam role.

AN TEAM LEADER RUSHES ACROSS A DANGER AREA AS AN AUTOMATIC RIFLEMAN PROVIDES COVER

When moving up to a street danger area, the first person in the formation will stop at the corner, scan both directions, take a knee, and then say "Set!" via direct-speaking. The second person in the formation will then move up, make his own scan, and decide on how he will move across. When he is ready, he will say "Crossing!" and then rush across the danger area. The remaining members of the fireteam will follow across at intervals of their choosing, based upon whether enemy fire was received and various other considerations. The last to cross will say "Last man!" to let the cover man know that it will be his turn to move next. The last person to cross will be the cover man, who was the first person to have reached the corner.



A SQUAD WORKS THROUGH THE URBAN ENVIRONMENT, COVERING THEIR OWN MOVEMENTS AS THEY GO

Other Urban Tactics

High/Low Corner Stack

When covering corners, if one player kneels while another stands behind them, two pairs of eyes and two rifles can cover the same area, increasing effectiveness. This is commonly known as a "high/low stack" and can be employed naturally whenever the situation allows. Note that the kneeling player must not stand unless he has cleared it with the standing player - else he's likely to stand up into a bullet.

Running the Rabbit

"Running the rabbit" is a cute way to describe the process of having one player dart at full-speed across a dangerous area in an attempt to expose enemy positions by drawing fire, while other players cover him and seek to engage anyone who tries to engage the 'rabbit'. It's a ballsy maneuver and generally isn't the first trick employed, as it's incredibly risky for the 'rabbit' player.

Note that you can also 'run the rabbit' in a CQB fight - when doing this, the first entry man charges deep into the room, drawing the attention and potentially the fire of the enemy, while the rest of the stack enters after him and engages the potentially distracted enemies.

Note too that this tactic, in a CQB employment, does not have a terribly high success rate. Use it with caution. It's much more likely to be successful when employed in a MOUT or outdoors fight where the distances are greater, and the enemy is less likely to be able to effectively engage a moving target.

GROUND VEHICLES

The Role of Vehicles on the Battlefield

The main thing one must remember when taking a vehicle role is that you ultimately are there to support the infantry. It is not your job to run around pell-mell trying to rack up an impressive kill count; instead, you should do everything you can to work with friendly forces so that you can best support the infantry.

This first section will be oriented around giving you an understanding of basic ground vehicles. From there, we'll work up to more advanced concepts like armored vehicles and crew coordination.

General Ground Vehicle Tips

Foot Recon & Ground Guides

When the tactical situation permits it, the commander of a vehicle can dismount from the vehicle to do a 'foot recon'. This is typically done when the vehicle is about to crest some significant terrain feature. Dismounting and checking over the crest 'on foot' allows for the commander to decide on where possible enemy threats might be, locate obvious threats, and choose on where and how to crest the terrain, where his gunner should be aiming when they crest, and so forth.

Ground guides, on the other hand, are infantry who walk in front of a vehicle to guide it through a tricky area. Ground guides can be used to get a vehicle positioned specifically where the infantry need it, to help guide vehicles through a potentially mined area, or to help them navigate through tight or confusing terrain.

Throwing the Weight Around

Depending on their weight and hardiness, vehicles can be used to knock down trees, bushes, walls, and other obstacles in order to clear lanes of fire & observation for themselves or the infantry that they support. Tanks are generally able to knock down anything, whereas trucks and such generally focus on light bushes and light walls to prevent disabling themselves in the process.

Close coordination with the infantry commanders is needed in order to create effective lanes of fire that are integrated into the defensive plans of the supported infantry. Too many trees knocked down, or holes punched in walls, can compromise the ability of the infantry to put up an effective defense.

Keep in mind that in addition to clearing obstacles, vehicles can also be used to create better concealment. A tank may have a hard time finding concealment in an area where the trees have their branches at too high of a level to mask the tank - however, knocking a tree down in the direction of the enemy may suddenly provide concealment. From the enemy's point of view, it will likely just look like a bush and blend in with the natural terrain.

Vehicle Equipment

Vehicle Heads-Up Display (HUD)

Different vehicles may have different capabilities insofar as sensors are concerned, but all share the same basic HUD features.

First is the vehicle radar, which is positioned at the center-top of the screen. The radar is an abstraction of more complex sensor systems and is key to a crew's situational awareness. The radar is centered around the vehicle (represented by an icon(and has two circles with the outer one displaying compass bearings as well as showing a digital compass reading of the current view direction. It's important to remember that this is the direction a given crew member is looking through his optic - be that driver, gunner, or commander - and not necessarily the heading that the vehicle is pointed. The two rings indicate ranges - the first is one kilometer, the second two. The current field of view of the gunner(s) and commander are indicated with cones extending away from the vehicle - these cones will narrow and expand based on that position's current zoom level.

Identified friendly targets will display as **green** dots, while identified enemy targets will show as **red**. Unknown or destroyed vehicles will appear grey.

On the upper-left of the HUD is the vehicle's damage readout. Red means a system is completely disabled, while shades of yellow or orange indicate damaged components. This is broken down into the following categories:

- **HULL.** When fully compromised, the vehicle will be destroyed, taking any embarked crew members with it.
- **ENG.** The vehicle's engine. If disabled, the vehicle will lose mobility.
- **GUN.** If disabled, the main gun will no longer be able to fire.
- **L-TR.** The left track. Disabling one track will disable the vehicle's mobility until repaired.
- **R-TR.** The right track. Same story.
- **TRRT.** The turret. A disabled turret cannot be turned and loses any stabilization features it might have had, though the weapons will still operate. This may make it possible to employ things like the cannon of a tank by turning the vehicle in order to point the disabled turret in the right direction.

Some vehicles have optics which employ automatic laser ranging, in which case the range is displayed in the bottom-center of the view.

Finally, the upper-right section displays the currently active weapon or countermeasure, the ammo remaining in it, and is color-coded to indicate if the weapon is ready to be fired. After firing something that takes time to reload, such as a tank main gun, this HUD element will turn red while a progress bar indicates the reload time remaining. Shortly before reloading fully, this will turn yellow, then white to indicate that the weapon is able to be fired again.

Lock Symbology

Any weapon that can lock onto a target will first have to acquire the target. This is done either by right-clicking over the target, pressing "T" to lock, or "R" to cycle through available targets. When a target is acquired, it will have a green box around it. To lock the target, you must have it within a certain number of degrees of the weapon's orientation (relative to the nose on most aircraft, or the direction the weapon is facing on ground vehicles) - this may vary depending upon the specific weapon.

When a target has been acquired and locked, the box has a circle overlaid on it. At this point any guided weapon can be fired and it will automatically track and (hopefully) destroy said target. Note that when reaching the limits of the lock 'cone', the circle indicator will begin to fade out, letting you know that you're about to lose lock. Note that this applies to aircraft, ground vehicles, and also infantry launchers.

TARGET ACQUIRED, LOCK-ON PROCESS INITIATED

TARGET FULLY LOCKED

Countermeasures

Many vehicles are equipped with smoke dischargers for defensive purposes. These dischargers are most often mounted to the vehicle's turret, allowing the smokescreen to be laid in the direction that the turret is pointed.

The vehicle commander generally has control of the smoke system. He selects it as he would a normal weapon and presses his countermeasures key to deploy the smoke. The canisters will propel away from the vehicle in an arc, quickly deploying a thick white smokescreen after a few moments. This smoke can be used for a variety of purposes to screen friendly forces from enemy observation. This sort of countermeasure smoke is designed to block infrared wavelengths, meaning that it is just as effective against thermal optics as normal vision.

A SLAMMER DEPLOYS SMOKE TO THE FRONT OF THE VEHICLE

Many smoke systems have two or more deployments available before they will need to be reloaded at a supply position.

Bear in mind that smoke, used as a defense against enemy anti-tank assets, is only really useful if the vehicle moves after deploying it. Movement makes it much harder for any manually-guided missile systems to properly track the vehicle as well.

Armaments

Ground vehicles come equipped with a wide variety of armaments. The most common types are described in this section, with the intent being to familiarize all players with the capabilities of the different weapon systems they will see employed from vehicles.

Cannons

Large-bore cannons are the main guns on tanks, or standalone artillery pieces. They are capable of causing great damage to whatever they hit, but have a relatively slow reload time. The M2A1 Slammer has a 120mm smooth-bore cannon which falls under this category.

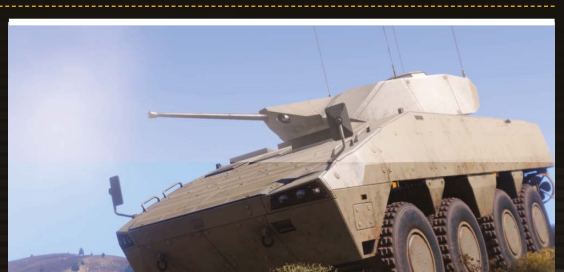
Cannons typically have a range of ammunition types to choose from, such as:

- **High Explosive (HE).** Purely intended to kill light vehicles, cause damage to structures and fortifications, and blow up infantry. These rounds simply explode on impact, using blast damage, fragmentation, and overpressure as their killing effects.
- **Sabot.** Sabot rounds are small, incredibly dense darts of metal that are intended to punch through enemy armor with sheer kinetic force. They are generally ineffective against troops but can be used to great effect against enemy vehicles and armor. They tend to be overkill for anything below a medium armor classification.
- **High Explosive Anti-Tank (HEAT).** Unlike sabot rounds, HEAT rounds rely on chemical means to attempt to defeat armored threats. They have a high-explosive component as well, making them dual-purpose in that they can harm both armored targets as well as infantry and other light targets. HEAT rounds are generally less effective than sabot rounds against modern armor, but handle anything less than that with ease.

- **Anti-Personnel.** The APERS round used by the M2A1 Slammer is an example of an antipersonnel round - imagine a 120mm shotgun and you get the general idea. The defining characteristic of such a round is the ability to more or less annihilate an entire platoon at a given distance in a single shot, assuming they were all exposed at the time. You really do not want to be on the bad end of these.

Autocannons

Autocannons are found on infantry fighting vehicles and other medium armored vehicles.



40MM CANNON ON AN AMV

These smaller-bore cannons (20-40mm) tend to have a rapid firing rate and are capable of using sabot or high-explosive rounds. They are superb at killing infantry and other similarly-classed armored vehicles, but come up at a distinct disadvantage when faced against main battle tanks. Cannons can be used to devastating effect when engaging masked urban targets - putting HE shells into a room, or blasting SABOT rounds through walls that hostiles are hiding behind, are both superb at wrecking an enemy defense.

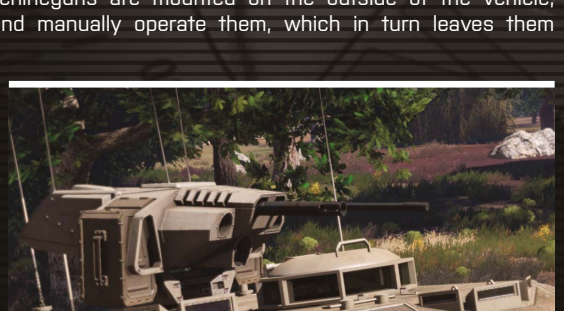
The AMV-7 Marshall is an example of a NATO vehicle with such an autocannon, with the BTR-K being a similar example of an OPFOR vehicle with a similar autocannon.

Machineguns

Every armored vehicle inevitably has at least one machinegun on it. Machineguns can range from medium-caliber like the 7.62mm M240 up to the heavy-caliber .50cal M2 Browning. They are used against soft targets such as trucks or enemy infantry, and can generally carry an obscene amount of ammo due to said ammo being stashed in the vehicle itself. Heavy-caliber machineguns can even be employed successfully against light enemy armored systems, and can also punch through walls that lighter machineguns cannot.

Machineguns come in several types of mounts on armored vehicles:

- **Coaxial.** Coaxial machineguns are sighted to the same place that the main gun is, and are controlled by the vehicle's gunner. Coaxial machineguns are employed to destroy infantry and soft vehicle targets, preserving the main gun ammunition for more significant threats.
- **Crew-operated external mounts.** These machineguns are mounted on the outside of the vehicle, requiring the crew members to 'turn out' and manually operate them, which in turn leaves them vulnerable to enemy small-arms fire.
- **Crew-operated internal mounts.** Some vehicles have internally-operated machineguns that can be employed by passengers of the vehicle. The BTR-K is an example of such a vehicle.
- **Remote weapon station (RWS).** These machineguns or grenade machineguns are mounted externally, yet use a sensor package/control system mounted internally that allows the crew to operate them without having to be exposed to enemy fire. The RWS mount that the commander of the Panther IFV has access to is an example of this type of mount.



THE RWS OF A PANTHER IFV

ATGMs

Anti-Tank Guided Missiles are carried by a number of armored vehicles. These missiles are capable of outright destroying most armored threats and are very dangerous to face off against. ATGMs such as the US TOW give less-than-heavy-armor vehicles a fighting chance against main battle tanks. Most common ground-launched ATGMs require some sort of guidance/tracking of the target from launch time until impact.

ATGMs can also be employed effectively in an anti-bunker/anti-building capacity when the threat of enemy armor is not present.

Grenade Machineguns

The grenade machinegun is exactly what it sounds like. Capable of firing dozens of grenades at a high rate of fire, these are superb weapons to use against enemy infantry, soft vehicles, and light armor. Their effects against heavier vehicles are generally unremarkable - by the time they can do enough damage, the heavier vehicle will have already blown them to scrap.

Grenade machineguns generally have a steeply arced trajectory due to their relatively low velocity, but the terminal effects of the grenades are independent of their velocity and stay lethal out to as far as they can be lobbed.

Turret Types

Arma simulates the degree to which a turret is or is not stabilized. There are two basic types - non-stabilized and stabilized. Stabilized turrets can occasionally come in varieties where only one axis is stabilized, though that is rarer.

Non-Stabilized

A non-stabilized turret does not have any special method to keep the turret pointed in a given direction while the vehicle is moving. Because of this, uneven terrain makes it difficult for the gunner to engage on the move or when the vehicle is turning. Non-stabilized turrets are most effective when the vehicle is at a complete stop and the gunner is able to aim effectively.

Two examples of non-stabilized turrets can be found in the HMMWV and AAV vehicles. Neither is particularly accurate if the gunner is attempting to engage while moving on rough terrain. Utilization of a non-stabilized turret weapon system requires a tighter coordination between the gunner and driver for good effects to be achieved.

Stabilized

Stabilized turrets use special mechanisms to maintain their orientation and direction, within reasonable limits, while the vehicle maneuvers. Because of this, vehicles with stabilized turrets can engage effectively even when driving at high speeds, over rough terrain, or during turns and other vehicle maneuvers.

The M2A1 Slammer is a prime example of a vehicle with a stabilized turret.

Vehicle Damage Model

While not a hardcore simulation-level damage system, the Arma 3 vehicle damage model does have a number of different damage effects that can present themselves based on the location and severity of the damage. This section will describe them.

General

Armored Glass

For vehicles with bullet-resistant glass such as MRAPs, each window will be able to sustain a certain amount of damage before it is compromised and destroyed. Light weapons may take dozens of rounds to finally shatter the window, but heavier weapons like .50cal machineguns can quickly punch through and destroy an armored glass window.

Always remember that the armored glass is there to give you a chance to survive unexpected fire - it is not perpetually impervious to damage!

THE HUNTER MRAP'S FRONT WINDSHIELD IN THE PROCESS OF BEING DESTROYED BY ENEMY FIRE

Non-Catastrophic Kills

Non-catastrophic kill is the result of a vehicle being knocked out without it violently exploding into flames. It is likely that one or more crew members have been killed in the process, and the survivors will likely be wounded. Due to it not always being clear when a vehicle has been knocked out in such a fashion, many gunners will put additional rounds into the vehicle until they get secondary explosions, flame, or some other visual indication that the vehicle is no longer a threat.

Catastrophic Kills

A catastrophic kill happens when the vehicle explodes violently from battle damage. If the crew is inside when this happens, they won't have a chance and will be obliterated in the blast.

Secondaries

A vehicle which has been knocked out, either via a catastrophic or non-catastrophic kill, will likely have secondary explosions if the vehicle burns. Secondary explosions are caused by the vehicle's ammo or fuel exploding, and they can easily take out any nearby dismounted infantry. In addition to this, some mods introduce enhanced cookoffs that further refine the secondary-explosion system. Cookoffs can result in stored rockets igniting and launching, ammo causing turrets to be propelled into the air, or just generally send dangerous shrapnel throughout the area. **ALWAYS STAY CLEAR OF ALL KNOCKED-OUT VEHICLES!**

Fire

Destroyed vehicles that catch fire will cause damage to any players that get close to them. As it says above, stay clear of all knocked-out vehicles. Nothing good can come from getting up close to them.

Wheeled

Flat Tires

Most wheeled vehicles are susceptible to having their tires flattened by enemy fire. This makes the vehicle difficult to control, usually with it tending to turn heavily into the tire(s) that were damaged. Drivers should attempt to keep their vehicle moving for as long as possible and attempt to get out of the kill zone before abandoning the vehicle (if necessary).

AN AMV SITS ON THE ROAD, DISABLED BY AN EXPLOSION THAT TOOK OUT ITS FRONT FOUR WHEELS

Tracked

Tracked vehicles can suffer a number of different types of damage.

Tracking

Tracking is known as a "mobility kill". When a vehicle is tracked, it means that they have lost the use of one (or both) tracks and can no longer move in a controlled fashion. The vehicle becomes a stationary turret - or bunker - for all intents and purposes. The vehicle crewmen should stay put if they can safely do so and fight from within their vehicle. If this is not possible, they need to immediately bail and make their way to friendly infantry positions. Reasons for bailing would include knowing that enemy ATGM or AT teams are able to re-engage them or are likely to be able to strike without possibility of prevention.

Disabled Turret/Gun

A solid hit to an armored vehicle's turret can cause it to lock up and become unresponsive. In this case, the tank may or may not be able to effectively engage the enemy, depending on whether the gun is active and how it is oriented. In most cases a tank which has lost use of its turret needs to get out of the combat zone

and head back to friendly territory for repairs. When the loss of the main armament has been sustained, it is referred to as a "firepower kill".

Basic Vehicle Roles

As a general rule, you should be capable of handling vehicle role responsibilities early in your Arma career. It is important that players are familiar with all of the roles available so that they can operate as a motorized vehicle crewman, or a mechanized one, when the time comes - or gain the basic proficiency to allow them to train up as a heavier vehicle crew in the future.

To that end, let's look at the different vehicle roles available to basic infantry.

Driver

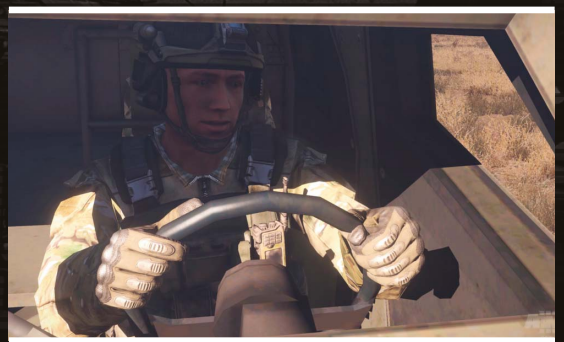
A driver does what it sounds like - drives the vehicle around the battlefield in accordance with his team leader or squad leader's directions.

The driver does not dismount unless he is explicitly told to by his team leader, or when the verbal command *"BAIL OUT, BAIL OUT, BAIL OUT!"* is given by himself or another player.

A summary of the driver's responsibilities follow.

Driver Responsibilities

- **Drives the vehicle according to the directions of his team leader.**
- **Maintains spacing** when moving with other vehicles
- **Knows the overall formation being employed**, also known as the 'order of march', **and his vehicle's place in it.**
- **Stays mounted at all times unless told to dismount directly, or when a "BAIL OUT" command is issued.**
- **Communicates the vehicles' status and issues a "BAIL OUT!" command if necessary.** If the vehicle's tires are blown, he immediately attempts to pull the vehicle into cover or concealment or out of the kill zone before giving the "BAIL OUT!" order. If this is not possible, he immediately halts the vehicle and gives the bail out command.
- **Exercises good navigation techniques** either by listening to his navigator's directions or navigating on his own in the absence of a dedicated navigator.
- **Watches the road for any signs of satchels, mines, IEDs, explosives, etc.** Dangerous explosives will require immediate evasive action - while other members of the crew should be observing as well, the driver is the one who can react most rapidly to avoid them.
- **Stays alert and avoids colliding with other vehicles as well as any unexpected obstacles in his path.**



THE DRIVER POSITION IN A HUNTER MRAP

Navigator

The navigator is often a fireteam leader. He typically sits in the front passenger seat of the vehicle and utilizes his map and view of the terrain to give the driver clear, concise directions on where to go and how to get there.

Navigator Responsibilities

- **Gives the driver clear and concise direction at all times.** This includes describing the route, giving advance warning of any turns that may be needed, etc. The navigator never assumes that the driver knows anything about the route - he always explicitly calls for turns and other maneuvers, and gives plenty of advance warning to the driver - such as telling him that a turn is on the right, 500 meters ahead, and then updating him as the vehicle closes on it.
- **Must be familiar with what the movement plan is from start to finish,** in order to be able to make judgment calls if re-routing becomes necessary.

Gunner

A gunner is tasked with employing the crew-served weapon system of the vehicle, or in the case of many vehicles, the Remote Weapon System (RWS). Due to his elevated position or the use of an RWS sensor, he has better observation of the terrain than the rest of the vehicle and communicates what he sees to help maintain the rest of the vehicle's situational awareness.

A gunner does not dismount the vehicle unless his crew-served weapon is empty, when he is directed to by his team leader, or when the command *"BAIL OUT, BAIL OUT, BAIL OUT!"* is given.

A summary of the gunner's responsibilities follow.

Gunner Responsibilities

- **Employs the vehicles crew-served weapon system or Remote Weapon System.**
- **Maintains a high state of situational awareness and conveys what he sees to the passengers of the vehicle.**
- **Scans a sector appropriate to the position of his vehicle in the overall vehicle formation or convoy**
  - Front vehicles always scan to the front
  - Rear vehicles always scan to the rear
  - All other vehicles watch either left or right, alternating
- **Stays mounted on his weapon until it is empty, he is directed by his team leader to dismount, or the command "BAIL OUT!" is received.**

MANNING THE RWS ON A HUNTER MRAP

Passenger

Passengers of transport vehicles are generally infantry embarked for the purpose of transporting them to a fight. They're interested in getting safely to the fight, and their responsibilities reflect this.

Passenger Responsibilities

- **Scan for and communicate threats.** While they will sometimes not have a good view of their surroundings, they will take advantage of whatever view they do have to maintain situational awareness.
- **Dismount to provide local security.** When required, infantry dismount to provide local security for vehicles. This is generally done during temporary halts en-route to their actual final dismount point.
- **Dismount to fight.** Once at the final dismount point, or as required otherwise, infantry disembark the vehicles, form up into their respective units, and begin the assigned fight. This can include reacting to a convoy ambush as well as any other unexpected fights that might happen before the main objective.

SOLDIERS RIDING IN THE BACK OF A HEMTT TRANSPORT

Basic Vehicle Guidelines

Loading Up

When it comes to embarking troops into a vehicle, the process is straightforward so long as leaders take initiative and command, and subordinates listen for and follow directions.

Element leaders always load up last in vehicles. Their responsibility is to get their team members into the vehicle that has been assigned by their higher leadership. After being designated a vehicle, they will direct their team members to it, supervise their loading, and then load up as the last man. If they need to take the front passenger seat of a vehicle to act as a navigator, they will need to direct the person sitting in that seat to get out, then wait for them to mount up before remounting the vehicle. This is simply due to Arma not allowing you to choose which specific passenger seat you load into.

As a general rule, a fireteam will attempt to occupy the following positions in a vehicle if they're assigned to one.

- **Fireteam Leader -** Navigator
- **Automatic Rifleman -** Passenger. The AR does not take turret gunner, since doing so would mean that the fireteam's automatic rifle would be unused if the rest of the team needed to dismount while the turret gunner remained in his position.
- **Assistant Automatic Rifleman -** Turret gunner or remote weapon systems operator.

- **Riflemen -** Driver, passengers. The best driver is picked from the riflemen. In the absence of willing or capable riflemen drivers, the fireteam leader can become the driver, with another team member acting as navigator.

Halts & Dismounting

Due to the way Arma models vehicles and armor, armored personnel carriers and troop-carrying vehicles tend to be a bit vulnerable to enemy fire. It is a good idea to avoid staying mounted as passengers in them, due to the risk of a single RPG wiping out the entire vehicle, its crew, and the immediate family and close friends of everyone who was embarked on it at the time.

When dismounting, infantry elements should provide 360° security as a standard. They should also try to get at least fifteen meters of clearance from the vehicle to help protect against primary or secondary explosions in the event that it is engaged.

It is a good idea to have "Eject" bound to an easily accessed key combo for emergency dismounts, such as 2x Ctrl+E.

Moving on, let's look at the various other considerations that must be made regarding halts and dismounting from vehicles.

When to dismount?

To help decide on when to dismount, versus when to stay mounted, follow these basic guidelines.

- **If a halt is short duration** (30 seconds or less), mounted troops typically stay in their vehicles. All personnel continue to scan around the vehicle and stay alert to any potential enemy threats.
- **If a halt is longer duration,** mounted troops dismount and provide local security. Team leaders and squad leaders will order the dismount, at which point the "Dismount Drill" procedures are conducted. When it comes time to remount and move out, team leaders and squad leaders will say "Remount", "Mount up", or some variation thereof, which will then be repeated by everyone in earshot over direct-speaking comms. Each team leader will maintain accountability of their men each time they dismount and remount to ensure that nobody is ever left behind.
- **Regardless of the duration of a halt,** the driver and gunner always stay mounted. The only time they will leave the vehicle is if it is disabled or destroyed. The gunner may also dismount if the vehicle gun is out of ammo, so that he can employ his personal weapon.

5 & 25 Scan

A "5 & 25" scan involves scanning the area immediately around you and the vehicle for five meters, then dismounting and scanning for 25 meters in all directions. The idea is to ensure that the vehicle did not stop near a concealed satchel charge, mine, or enemy. The tactical situation will determine how much time you have to spend on this scan. At the very least, upon dismounting, ensure that you do a hasty 360° threat scan. Ensure you check all of the concealment-offering objects - such as bushes, brush, etc - around you as time permits. A well-camouflaged enemy will be extremely difficult to detect.

Note that due to the peculiarities of how Arma models armor and vehicle protection, the "5 & 25" scan often becomes "get out of the vehicle FIRST and scan afterward", instead of the more real-world procedure of scanning the first 5 meters while still mounted. In reality, being mounted in an armored vehicle provides a very large degree of protection. In Arma 3 this can depend heavily on the armor of the vehicle and the potential explosives used, so it can be a judgment call as to whether you'll want to dismount first or not.

Dismount Drill Procedures

The 'dismount drill' is a standard set of procedures that are executed upon dismounting a vehicle. While they can differ somewhat based on the tactical situation (ie: under fire or not), the same concepts apply at all times.

If dismounting under fire...

- **Dismount once the vehicle has come to a halt or is moving slow enough that exiting will not injure you.**
- **Immediately return fire on known or suspected enemy positions while moving to a position that offers cover or concealment.** If no cover or concealment is available, either use the vehicle as cover, or take a lower stance.
- **Begin the "React to Contact" battle drill and follow it until directed otherwise.**
- **If the situation allows, conduct a hasty "5 & 25" scan, as described above.** Ambushers will often try to get vehicles to stop in an area that has been mined or otherwise booby-trapped.

If not under fire...

- **Dismount once the vehicle has come to a halt.**
- **Move away from the vehicle to a position that offers cover or concealment.** If unavailable, take a knee or go prone to reduce your exposure.
- **Conduct a deliberate "5 & 25" scan,** as described above.
- **Scan outward and identify likely threat avenues, key terrain, etc.**
- **Continue scanning the surrounding terrain for enemy threats** until ordered to remount the vehicle or move out with your team leader.

Bear in mind that this same dismount drill can be used when exiting a helo or any other vehicle where you may need to immediately fight or form a perimeter and provide security.

The decision to dismount can be a command from a leader or on your own disciplined initiative. If given as a command, it will be "Dismount, dismount!". Individual initiative is important here, of course. Don't sit in a vehicle getting shot up if you know you should be dismounting to react to the threat on foot!

Do not say "BAIL OUT!" when ordering an infantry dismount! "BAIL OUT" will cause the entire crew to exit the vehicle as well, and should only be used if the vehicle is in imminent threat of being completely destroyed.

Situational Awareness

Everyone in a vehicle must scan their sectors to maintain situational awareness at all times. Vigilance will help to spot enemy ambushers and spoil their element of surprise. The sector a person scans will depend upon where they are placed in the vehicle. For an MRAP, basic sectors are depicted below. 360° coverage is the ultimate goal.

Soft Vehicles

Transport trucks, unarmored HMMWVs, jeeps, motorcycles, etc, fall into the 'soft' vehicle class. These are meant to be used as transportation and will not survive any significant combat. During combat, 'soft' vehicles carry the minimum of crew - a driver and gunner at most. All infantry using them as transportation dismount to fight on foot once contact is made, or whenever it is anticipated as being imminent.

Types of Soft Vehicles

Unarmed

Unarmed soft vehicles fall into two general categories - transport and service. Transport vehicles are concerned with getting troops somewhere, while service vehicles carry fuel, ammo, and provide mechanical support to damaged vehicles. All of these are death traps once bullets start flying.

Armed

Armed soft vehicles are generally vulnerable to enemy attack, yet have a powerful weapon on them that helps to counterbalance that vulnerability. HMMWVs with HMGs, GMGs, ATGMs, and such are the prime examples of this class of vehicle, while guerrilla vehicles like technicals also fit.

Typical Threats

The following threats are the ones most commonly employed against soft vehicles. While there are plenty of other things that can destroy a soft vehicle, these are the most commonly encountered. For more information about additional threat types, read the "Armored Vehicles - Typical Threats" section below, and understand that most of those can also be employed against soft vehicles.

If you take anything away from this, it should be that soft vehicles do not stand up to serious enemy resistance and are best employed in low-intensity conflicts. If you're going into a serious fight, bring a serious armored vehicle.

AN OPFOR SOLDIER BLAZES FULL-AUTO WITH HIS KATIBA

Small-Arms Fire (SAF)

Small arms fire is by far the greatest and most prevalent threat towards 'soft' vehicles in A2. The key characteristics of it, as it relates to 'soft' vehicles, follow.

- Generally massed. Most infantry units will mass fire on soft vehicles to ensure their swift destruction.
- Can puncture the hull of a soft vehicle easily, wounding or killing those inside.
- Can destroy tires and cripple the mobility of a vehicle.

Heavy Machinegun Fire

Heavy machinegun fire typically is encountered in the form of enemy vehicles. Heavy machineguns are more than capable of quickly destroying a soft vehicle. They do everything that small-arms fire does, except multiplied in intensity. They can destroy tires, tear through the vehicle hull and kill anything they hit, destroy the engines, and generally swiss-cheese soft vehicles in short order.

Light Anti-Tank Rockets

Light anti-tank rockets, such as the RPG-7, are deadly threats to soft vehicles. One good hit from an RPG warhead is usually enough to disable a soft vehicle, if not outright destroy it.

AN OPFOR SOLDIER SPORTING AN RPG-42

ARMORED VEHICLES

Types of Armor

For the purposes of Arma 3, the three armored vehicle classes are light, medium, and heavy. These classifications are given based upon two things: The armor of the vehicle and the armament. They differ somewhat from the real-world classifications in some regards, but this convention is done in consideration of the way in which Arma models such vehicles.

Light

For our purposes, light armor has the weakest armor and weakest weapons - nothing more than a .50cal MG and a grenade launcher is typical for this class. Hunter or Panther MRAPs with their HMG and GMGs fit this, while older weapon systems like Strykers, AAVs, uparmored HMMWVs, and M113s fall into the light armor class as well.

Light armor offers effective protection against small-arms fire but generally is vulnerable to anti-tank weapons like RPGs and various types of explosives.

Medium

Medium armor tends to differ mainly by the armaments it has. Medium armor has at least a cannon (typically automatic). The AMV-7 Marshall, Bradley IFV, Stryker MGS (Mobile Gun System) or ATGM (Anti-Tank Guided Missile), and LAV-25 are considered medium armor due to their markedly improved lethality compared to the light armor.

Medium armor provides excellent protection against small-arms fire and some (but not much) protection against infantry-carried anti-tank weapons. Their weapons allow them to wipe the floor with any enemy infantry and some of them are even effective against heavy armor thanks to ATGMs and such.

THE TWO CENTER VEHICLES - A BTR-K AND MARSHALL - ARE MEDIUM ARMOR. FLANKING THEM ARE THE MARID (LEFT) AND PANTHER (RIGHT), EXAMPLES OF LIGHT ARMORED VEHICLES THAT COULD BE MISTAKEN FOR MEDIUM.

Heavy

These are exclusively tanks. The Slammer M2A1 Main Battle Tank is Arma 3's heavy armor for BLUFOR. It has tremendous firepower, great armor, and is pretty much the king of armored vehicle combat in Arma 3. Heavy armor is the infantry's worst nightmare come to menacing life.

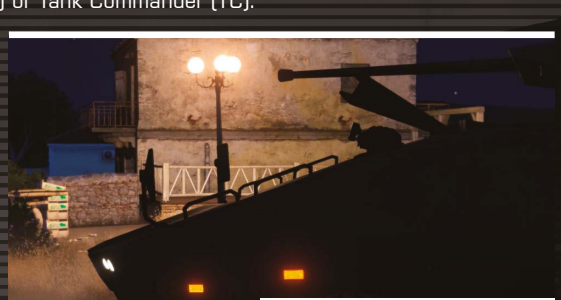
Armored Vehicle Roles

Armored vehicle roles differ somewhat from those of soft vehicles, primarily because they are intended to be aggressively employed in a combat role. The drivers, commanders, and gunners of armored vehicles must be knowledgeable on what that means, and capable of carrying out the following responsibilities with competence.

Driver

The armor driver is typically the junior member of the crew. His basic responsibilities include:

- **Moving the armor in a tactical fashion** from one tactical position to another, at the commander's orders.
- **Locating and positioning the armor in hull-down and other protected positions when possible,** with the assistance of the Vehicle Commander (VC) or Tank Commander (TC).
- **Scanning to the front for mines, satchels, IEDs, and other threats or suspicious objects (such as oddly parked cars)** that may be placed in his path.
- **Listening to the commander or gunner for movement orders.**
- **Staying alert of friendly infantry positions and attempting to avoid them** when tactically sound. The driver should also attempt to communicate his intent to reverse when in tight terrain with infantry nearby (ie: MOUT).

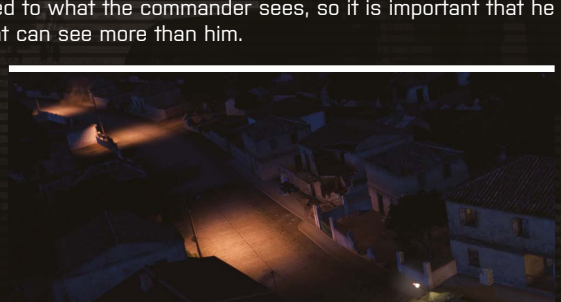


AMV DRIVER TURNED OUT

Gunner

The armor gunner is responsible for employing the bulk of the armor's armaments. His basic responsibilities include:

- **Scanning for the enemy.** A gunner who is not scanning constantly is not doing his job.
- **Calling out contacts as he sees them.** This helps the armor commander prioritize his fires as needed.
- **Listening for and acting on the vehicle commander's orders.** An armor gunner oftentimes has a restricted view of the surroundings compared to what the commander sees, so it is important that he listens for orders and direction from those that can see more than him.
- **Engaging the enemy and communicating what he is doing to the armor commander and driver.** This includes letting the driver know when he is reloading the main gun, so that the armor can go turret-down if possible.
- **Using the correct weapon for any given threat.** The gunner should have the familiarity and judgment to not employ SABOT rounds against enemy infantry, as one example.
- **Covering his sector** and taking cues from other vehicles to know what sectors he should pay the most attention to.

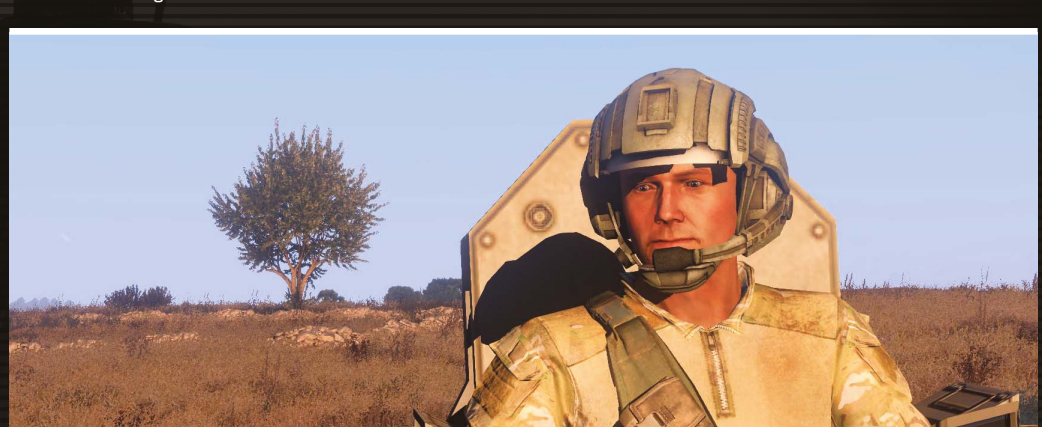


AN AMV GUNNER ENGAGES DOWN A STREET AT NIGHT

Commander

Often referred to as the 'vehicle commander' (VC) or 'tank commander' (TC), the armor commander is the senior member of the crew. He is in charge of his armor, and gives orders to both the gunner and driver in order to carry out whatever mission they have been tasked with. His basic responsibilities include:

- **Directing the movement of his armor.** He does this by giving move waypoints to the driver and giving guidance on how and where the vehicle should be moving.
- **Coordinating with other armored vehicles or other friendly forces.**
- **Scanning for and designating targets for his gunner,** specifying the method of engagement if needed.
- **Employing the commander machinegun for close-in defense of the vehicle,** or fire against light targets at other ranges.



Armor Crew Coordination & Comms

Brevity words

Maneuvering

- **Orient.** Command to get either the vehicle or gunner to align themselves to a specific direction. There are different orientation methods possible, described in the next section.
- **Hull down.** Command to get the tank into a hull down position. More details (such as orientation direction) are given as necessary.
- **Turret down.** Command to retreat the tank into a masked, turret-down position.
- **Jockey left/right.** Command to maneuver the tank into concealment, shift left or right, then pop back up. Described in more detail later.

Engagement

- **Firing.** Gunner alert to let the crew know he is firing his weapons.
- **Long/Over.** Commander or gunner has observed a shot that went over the target. Gunner must adjust lower to hit the target.

- **Short.** Commander or gunner has observed a shot that landed in front of the target. Gunner must adjust up to hit the target.
- **More lead / less lead.** Gunner needs to apply more or less lead to hit the target, based on the fall of his previous round.
- **Hit.** Commander or gunner has observed a shot that hit the target directly.
- **Up.** Main gun is ready to fire. Typically given after a reload.
- **SMOKE, SMOKE.** Emergency command from the driver or gunner to have the commander deploy smoke immediately and have the driver maneuver evasively. Note that if smoke needs to be employed in a non-emergency situation (ie - to screen infantry movements), the command becomes "Deploy smoke" and is spoken with less of an "oh shit!" intensity.

Readiness

- **On target.** Gunner is on-target and ready to fire. Can also use "Tally", an air brevity term.
- **Don't see/Not seen/No vis.** Gunner cannot see the target that has been described to him. Can also use "No joy", an air brevity term.

Orientation

When directing the movement or gunnery of a tank or armored vehicle, several methods of orientation can be employed. They are as follows.

- **Orient.** The command "Orient" informs the gunner or driver to align with the commander's orientation using the vehicle radar. This method is extremely quick and easy for the commander and gunner/driver but will not be as accurate as giving a bearing. Example usages follow.
  - "Gunner, orient." Gunner turns turret to face the direction of the commander turret.
  - "Driver, orient." Driver turns vehicle to face the direction of the commander turret.
  - "Driver, orient on gunner." Driver turns vehicle to face the direction of the gunner's turret.
- **Compass bearing.** Using the digital compass the commander will read of his bearing to allow the gunner/driver to traverse to the same bearing. This method is very accurate and generally the preferred method to use. Example usages follow.
  - "Gunner, orient 235". Gunner will orient to a heading of 235.
  - "Gunner, target, 115, tank." Gunner must traverse to 115 degrees to spot and engage a tank.
  - "Gunner, your sector of fire is from 070 to 165." Gunner will scan an arc stretching from 070 to 165 degrees until directed otherwise.
- **Clock orientation.** When using the clock method, the hull of the vehicle forms the 12 o'clock reference. Note that this method is not terribly accurate and should only be used at close ranges. It can also be used by any crew member (driver, passenger, loader) that spots a target which the turret crew hasn't seen yet.
  - "Driver, friendly truck in trail at our 5 o'clock". Driver becomes aware of the fact that a friendly vehicle is nearby in a given direction. If he needs to back up unexpectedly, he can attempt to avoid maneuvering to the 5 o'clock position in the hopes of avoiding hitting friendlies.
- **Relative direction.** Relative directions are the simplest and most coarse orientations possible - this is simply the act of saying "Left", "Right", "Front-left", et cetera. Relative directions are most commonly used when guiding the driver or shifting fire from a known point. Example usages follow.
  - "Driver, friendly infantry on our left, very close." Driver becomes aware of friendlies nearby, which causes him to be more cautious in his maneuvering.
  - "Gunner, orient right, scan the treeline." Gunner will maintain an orientation to the right of the vehicle as it moves, scanning the designated treeline for enemy targets.
  - "Gunner, from your last shot, shift right one hundred meters and engage that bush line." Gunner will shift his fire to a bush line near where his last shot landed and engage it.

The Tank/Vehicle Commander in Detail

Tank/Vehicle Commanders have a great many responsibilities and things they must stay aware of in order to effectively employ their vehicles and keep their crews alive. The following sections detail some of the more significant aspects of what they are expected to do.

Tips for Tank Commanders

- **Ensure your crew is aware of where likely enemy threats are, and is oriented as best as possible before any contact is made.** Predicting where the enemy is and looking in their general direction is far better than being caught by surprise and having to react to their fire.
- **Prioritize your threat selection and engagement based on the capabilities and imminent danger posed by the enemy.** Enemy armor and ATGM systems are always the highest priority, followed by unguided rocket soldiers, and finally everything else.
- **Once your hull-down tank has been spotted and has received or is likely to receive incoming fire, go turret down and jockey to a new position.** Jockeying is described in further detail a bit later on - it is simply the act of changing positions in a concealed manner so that the tank can pop up in a different location each time it engages the enemy.
- **Avoid moving straight forward from an over watch position or battle position.** Jockeying to a new position or backing away from the position and going around on the low ground are usually better choices.
- **Stay on low ground as much as possible.** Moving on top of of ridge lines and over hilltops will skyline the vehicles.

Directing the Driver

- **You should only move as fast as your gunner can accurately observe and engage targets.** Blitzing through an area will generally result in you taking fire that could have been avoided with a more deliberate movement scheme.
- **Commanders must remember that the driver has restricted field of view.** When referencing landmarks, bear in mind that they must be between 11 and 1 O'clock and at roughly the same elevation for the driver to be able to see them, unless he is turned out. Some tanks, like the Slammer, do not allow a driver to turn out due to the design of the turret.
- **When moving, taking the time to explain the desired position for the tank to end up at as well as the route to use will allow the driver to carry out the movement with minimal supervision.** This may not be possible at all times, but when there is time for it, it can increase situational awareness by allowing the commander to scan for threats instead of focus so much on navigating the driver.
- **While driving in formation with other vehicles, or in close support of friendly infantry, keep in mind that your driver will not be able to see them.** Commanders must guide the driver in such situations.
- **There will be a short delay when ordering the driver to stop, or execute any other command, due to the time it takes for armored vehicles to come to a stop.** Give commands 1-2 second in advance or give commands such as "Driver, advance 10m" or "Driver, advance to the next intersection".

Directing the Gunner

- **As a vehicle commander, you should always be communicating the gunner's area of responsibility.** Using bearings, clock ray or landmark reference are some of the many methods to set your gunners left and right of arc.
- **Set your gunner's rules of engagement and keep them updated as the situation evolves.** "Hold Fire", "Priority Targets Only" or "Fire at Will" are the most common. "Priority Targets Only" will inform the gunner to only engage targets that pose a threat to your vehicle or other friendly forces. It is generally advised to have a gunner set to "Fire at will" to ensure the quickest reaction to threats.
- **Use your gunner's improved optics to observe distant targets.** Your gunner will be able to aim at anything suspicious that you can't identify through the commander periscope and get a clearer ID on it - you simply need to orient him on such suspicious things in the first place.
- **Continually inform your crew of the positions of friendly elements to maintain their situational awareness.** As the vehicle commander, the rounds that come from your vehicle are ultimately your responsibility. Ensure that they're only being sent towards the enemy.
- **Your view through the commander's periscope will be different from the gunner's view through the primary gun sight, due to the commander being elevated somewhat.** Remember this when working with your gunner, as terrain features could block line of sight from one of the view ports for him without necessarily obstructing your view.
- **Keep the gunner's orientation in mind when moving in close terrain or urban areas.** The cannon extends past the side of the vehicle when at the 9 or 3 o'clock and can collide with passing objects. While this will not damage the cannon in Arma 3, it will jar the vehicle and disrupt movement.

Commander Initiated Engagement

A commander initiated engagement (CIE) is similar to the contact report used by infantry, but tailored towards the equipment and requirements of armored vehicle crews.

It is important that the commander is quick, clear and concise when giving a Commander Initiated Engagement. Passing the vital information in a timely matter will ensure the safety of yourself, your vehicle and other friendly elements. To this end, let's take a look at the different components of a CIE.

- **Alert.** Identifying the position "Gunner" is the standard alert; however, the infantry word "Contact" or "Target" is also acceptable. This will alert the gunner a CIE is about to follow.
- **Orient.** There are three common methods to orient the gunner on target. Choosing which method will be determined by the VC's preference and the difficulty for the gunner to find the target. They are the same as those detailed above in the "Orientation" section. In addition to giving the direction, the distance is also give, typically with the assistance of the vehicle's laser rangefinder.
- **Describe.** Quickly describe what exactly the target is - for example, whether it is a tank or an enemy squad in the open. This will confirm for the gunner what his precise target is, which is of particular importance when multiple threats may be present in a given area. Brevity should be exercised in this step as speed is very important in a CIE.

  If the gunner observes the target, which should hopefully be the case, he will verbally state **"On"** to inform the VC he is observing the target. If the gunner cannot find the target the command **"Not seen"** will be used to inform the VC he needs to expound on the CIE to get on target.

  Once the gunner is on target, the commander will finish the CIE by designating the weapon system to be used (Coax, SABOT, HE, etc.) and end with the command "Fire".

  In the interest of saving time, which in turns saves lives in vehicle engagements, the commander can give the weapon system and "Fire when ready" command after step 3. This will inform the gunner to fire as soon as the target is in sight.

Once you have given a CIE and the gunner is engaging the target, begin to scan for other targets. Your gunner will be able to observe the target and finish it, while you should be worried about any other enemy threats that may be around. Ideally, you will spot a new threat and give your follow-on CIE commands just after the gunner has finished destroying the initial threat.

Typical Armor Threats

The following threats are the most common ones encountered by armored vehicles. I have avoided mentioning two other possible threats - cannons and artillery - which can be read about in other sections.

Infantry Anti-Tank Rockets (AT)

Infantry anti-tank rockets are the unguided weapons most commonly found in infantry units to protect them against enemy vehicles and armor. They come in a variety of types, with some being single-shot disposable systems (AT-4, RPG-22, LAW), while others have a reloadable component with a variety of warhead types to select from, like the RPG-42.

Depending on their size and warhead, these can cause significant trouble for most armored vehicles. They will not outright destroy main battle tanks with a single shot as a general rule, but their stronger variants can do that to light and medium armored systems, and massing multiple launchers can greatly enhance their effectiveness.

Due to their unguided nature, AT rockets tend to have a relatively short effective range, particularly when employed against moving or obscured/masked vehicles. A long shot is considered to be beyond 400m, and none of them are capable of reaching a kilometer.

Anti-tank rockets are capable of causing mobility and firepower kills, as well as injuring any personnel embarked in a vehicle. The best way to avoid them is to be vigilant in scanning, utilize proper movement techniques, and be able to think like an enemy AT soldier and predict how they might be employed against you.

Anti-Tank Guided Missiles (ATGM)

ATGM's come in three main types on the ground - infantry carried, such as the PCML or Titan, crew-served, such as the TOW, or crew-served vehicle-mounted. They are also featured on rotary- and fixed-wing aircraft, like the TOW, Hellfire, Skalpel, and Maverick missile systems.

ATGM's are guided missiles with powerful warheads that can wreck armored vehicles with ease. They are incredibly dangerous weapon systems. The only defense against them is doing whatever you can to not be shot at - once they're in the air, nothing short of vehicle armor and active defense systems can save you, and neither is 100% effective. Driving into thick concealment like trees or an urban area is the best option if either are nearby, as there's a chance that the missile might impact a building or tree before it can make it to your vehicle.

BTR-K FIRING A TITAN ATGM

ATGMs such as the BTR-K's Titan can be fired in a wire-guided mode, allowing them to engage low-flying aircraft without needing to acquire a lock first.

Anti-Tank Mines

Anti-tank mines are heavy, powerful mines that can tear the guts out of armored vehicles or destroy their mobility. They are triggered by pressure and magnetic detection, generally - if a heavy enough vehicle drives over them, they detonate, sending a fierce explosion up into what is typically the weakest armor of any vehicle. Mines are place-and-leave weapons that do not require an enemy to be nearby to detonate them.

Depending on where the mine is when it detonates, a vehicle can either be outright destroyed (such as if it detonates directly under the hull) or simply disabled (such as when it detonates under the wheels or tracks).

Anti-tank mines are best avoided through the careful observation of the vehicle crew and any attached infantry.

SEE THE MINE? NO? THIS IS WHY THEY'RE SUCH A DANGER TO TANKS - GOOD EMPLACEMENT MAKES THEM ALMOST IMPOSSIBLE TO SPOT WHILE MOVING. THIS ONE IS PLACED AT A SHARP BEND IN THE ROAD TO MAKE IT HARD TO MANEUVER PAST ONCE IT DISABLES A VEHICLE.

Satchels & Improvised Explosive Devices (IEDs)

Satchel charges are explosive packs that can be used in an anti-tank capability when needed. They are similar to mines in their destructive ability, differing primarily in how they are detonated. A satchel must be either set on time detonation or remotely detonated, and if remote, the triggerman must be within several hundred meters of it to be able to send the signal.

IEDs are similar and can be triggered through a variety of different methods, including infrared, pressure, magnetic, and manual detonation. They can be buried or may be disguised as trash, dead animals, or hidden in vehicles near the side of a road.

By virtue of a manual detonation mode, a satchel charge or IED can lay dormant while lead vehicles pass it, with the triggerman waiting until a vulnerable vehicle gets near it before detonating.

Like mines, these explosives are best avoided through the careful observation of the vehicle crew and any attached infantry.

Tips for Armor

Hull Down

Hull down is the term used to describe when a vehicle (typically a tank) uses the terrain in such a way that only the gun/turret is visible to enemy forces. This provides the enemy with a smaller target, protects the more vulnerable parts of the vehicle from enemy fire, and allows the vehicle to fire more or less unhindered.

The illustration below shows a Slammer MBT in a hull-down position behind a small rise. From this location, the tank had perfect visibility of a major enemy avenue of approach and had a clear line of fire down that approach without having to expose anything more than the turret to enemy return fire.

A SLAMMER UTILIZING A HULL-DOWN POSITION TO COVER AN ENEMY AVENUE OF APPROACH

Hull down positions can be used by any vehicles that have weapon systems atop them - even a light vehicle with a RWS can benefit from a hull-down position.

In the best-case scenario, a tank can utilize a hull-down position when firing, and then retreat back below the cover (i.e. down the slope that provides the 'hull-down' possibility in the first place) to total protection during the reload before popping back into a hull-down position for the next shot. Whenever possible, a tank should not pop back up at the same location it used last - a new one should be picked each time to prevent any enemies from zeroing in on their next exposure point.

Remember that **a hull-down position is relative to the location and distance from the enemy.** The greater the distance of the engagement, the more likely you can get into a hull down position even in a small elevation decrease.

"Turret down" is when the entire tank is hidden behind the terrain or an obstacle.

Turning Out

Unbuttoning is possible in most armored vehicles from the driver or commander position. It simply involves opening and standing in the hatch. This is very useful for keeping a high level of situational awareness and should be used whenever the situation allows for it. The main drawback is that many of the unbuttoned crew members are highly vulnerable to enemy fire due to the high-profile stances they take. However, if you exercise good judgment and only unbutton when it's safe to do so, you should be fine and will definitely benefit from the increase in situational awareness.

Make sure that you have your turn-in/turn-out keys bound to something readily accessible - "stance up" and "stance down" are great for this. Having these keys bound makes it much easier to duck at a moment's notice, and generally increases the ease and usefulness of turning in/out.

Note that in some vehicles a commander may have to turn out to employ a machinegun on the vehicle. For vehicles that require the TC to stand in his hatch to use the machinegun, a careful assessment must be made as to when and where it is safe to do so.

Jockeying

"Jockey left" or "Jockey right" are commands that a vehicle commander can use to have his driver move the vehicle laterally left or right behind cover without exposing the larger and weaker side profile to enemy observation or fire.

Jockeying is accomplished by backing the vehicle up to mask it from frontal fires, then turning left or right and driving a short distance laterally from the previous position. Once a suitable distance has been reached, the vehicle reorients towards the threat and advances up and back into a hull-down position from which it can resume engaging the enemy. This allows a vehicle to continually appear at different locations before firing, making it hard for the enemy to predict where it will appear and thus making it more survivable.

Tank Buddy Cover

Armored vehicles can use their impressive hardiness and engine power in some rather unconventional ways. Foremost among these is the concept of 'buddy cover' as applied to vehicles. A tank or IFV can push an immobilized or destroyed vehicle hulk in front of it, albeit at a reduced speed. This can be used to shove disabled vehicles out of the way, but can also be employed as additional protection against frontal enemy fires. A knocked-out piece of armor pushed along in such a fashion can absorb enemy fire and shelter the pushing vehicle from damage – forcing the enemy to aim more precisely to hit any exposed portions of the pushing vehicle.

A SLAMMER USES A BURNING BTR-K AS MOBILE COVER

AIR VEHICLES

This section is intended to detail all sorts of considerations that every Arma pilot must make during flight. Further sections follow that are specifically oriented towards helicopter and plane pilots and the special considerations they must make.

Minimizing Risk

There are a number of things that can be done to limit the threat of anti-aircraft weapon systems. Several methods of tactical prevention are listed below, broken down by whether they're general methods or more specifically oriented towards gun or missile threats. In addition to that, countermeasure systems are discussed, as are evasive maneuvers.

Tactical Risk Prevention

Tactical prevention is simply the art of using proper aircraft employment and maneuver tactics to minimize the threats posed by enemy air defenses.

Prevention: General

These guidelines can be used to protect you from any anti-aircraft threats, regardless of type.

- **Limit exposure over enemy areas.** The less you're around to be shot at, the less shot you'll get.
- **Mask with terrain.** If they can't see you, they can't hit you.
- **Maintain high speeds.** If they can't lead you effectively, or you're exposed for short periods of time, they probably can't hit you.
- **Use unpredictable flight patterns.** If they can't predict where you'll be due to your maneuvers, they probably can't hit you.
- **Avoid flying directly at/away from enemy infantry.** If you're presenting a target that is moving relative to their perspective, it's much harder for them to hit you.

Prevention: Guns

These guidelines can be used to protect you specifically from anti-aircraft guns

- **Fly at altitude.** The higher you are, the harder it is to lead you.

Prevention: Missiles

These guidelines can be used to protect you specifically from anti-aircraft missile systems.

- **Dump flares when going into an attack run** if you expect a MANPAD threat on the ground.
- **Dump flares when pulling out after an attack run.** The enemy will very likely wait for a rear-aspect shot before engaging - putting flares in the air after an attack run will cause them to have difficulty locking you up, and will confuse any missiles already in flight.

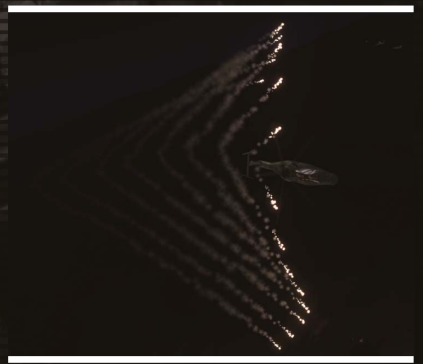
Countermeasure Systems

Aircraft have two main types of countermeasures - flares and chaff. In Arma 3, both are launched at the same time if an aircraft is equipped with them via using the 'countermeasures' key, though some mods may split them into different features that can be toggled independently.

Flares

Flares are burning objects ejected from aircraft to attempt to spoof infrared (heat-seeking) missiles. They typically dispense in a burst that takes a second or two to complete, leaving a dramatic flame and light show behind the aircraft.

- Effective against: Infrared-guided (IR) missiles. The heat of the flares confuses the missile seeker, causing it to chase after a heat source that may not be the aircraft itself. Flares can also prevent the missile from being able to lock onto the aircraft in the first place.
- When to deploy: Whenever you think an IR missile has been launched at you, or when pulling out of an attack run or overflying known enemy positions.



Chaff

Chaff is a packet of thin metallic strips that spread into a cloud upon release and act to confuse radar systems.

- Effective against: Radar-guided missiles. The metallic strips of chaff give false radar reflections, confusing the missile guidance and frequently causing them to seek out invalid targets.
- When to deploy: Once given a launch warning or when you think one is imminent (such as when 'locked up' and hearing a radar warning indicator)

Evasive Maneuvers

There are several standard types of evasive maneuvers available to aircraft pilots, regardless of whether they're flying a jet or a helicopter.

- **Jinking.** This is the act of making sharp, sudden, and unpredictable evasive maneuvers. Jinking makes it difficult to track and lead an aerial target. It is most effective against unguided weapons such as machineguns, cannons, rockets, et cetera.
- **Break turn.** A break turn is a sudden, sharp turn typically of 90 degrees or more. This is often used to attempt to evade a rocket or missile system, or when a heavy machinegun or anti-aircraft artillery piece has engaged the aircraft.
- **Emergency climb/dive.** An emergency climb or dive simply consists of the aircraft gaining or losing altitude rapidly in an attempt to evade a threat.
- **Defensive roll.** Used most frequently by helicopters, a defensive roll involves the helicopter rolling so that the bottom of it is between the threat weapon (typically machineguns) and the helicopter crew. A roll is usually accompanied by pulling the aircraft in the rolled direction, resulting in the aircraft pulling away from the threat.

Classifications of Aircraft Threats

How Threats are Classified

Throughout the course of flying in Arma you will be confronted with a variety of different threat weapons. Each of the main classifications of these threats is described below, via a "Capabilities, Indicators, React" info breakdown. The "CIR" rating is intended to answer the following questions.

Capabilities	Indicators	Reaction
What can the threat weapon do? What is unique about it compared to the other threat weapon types?	What lets you know that one of these weapons is being fired at your aircraft?	What do you do when you take fire from one of these weapons? What are the best evasive maneuvers to use?

Small Arms Fire (SAF)

Small Arms Fire is generally the most common threat to aircraft on the battlefield. While they pose little threat to jet aircraft, they can be a major issue for a helicopter crew that does not exercise proper tactical judgment while flying. Small Arms are anything typically employed by the infantry - light and medium machineguns, rifles, et cetera. Their Capabilities, Indicators, React (CIR) info is as follows.

Capabilities	Indicators	Reaction
Can penetrate unarmored cockpits and passenger compartments Limited effective range. Dangerous at under 300 meters, moderately dangerous at 500m, and markedly less effective beyond that unless massed. Relatively light and 'weak' bullets Not stabilized, difficult to manage recoil to properly engage aircraft Difficult to properly lead aircraft moving at speed Often massed as 'ambush' fire in order to increase effects When sustained or massed, can cause tail rotor failure of fuel leaks	Muzzle flashes and smoke Normal-sized tracers going past the aircraft. Sometimes there will be no tracers at all, just the impact sounds of bullets hitting the aircraft. Visible infantry or no visible vehicles Sounds of bullets hitting vehicle hull, accompanied by light damage	Break turn Jink Raise altitude or lower to mask with terrain

HMGs & Vehicle CSWs, including AAA

Heavy machineguns, crew-served weapons, and anti-aircraft artillery are a common threat. They are similar to SAF in many respects, but pack a heavier punch and have higher accuracy at range. Their CIR info is as follows.

Capabilities	Indicators	Reaction
Stabilized, high accuracy Heavy, damaging bullet. In the case of AAA, this is often an explosive cannon round.	Large tracers Large muzzle flashes and smoke Stable stream of fire Vehicle at origin of fire (if veh CSW) High (HMG) or very high (AAA) damage from hits	Break turn Jink Sharply raise altitude or lower to mask with terrain

A ZSU-39 TIGRIS OPENS FIRE WITH ANTI-AIRCRAFT CANNONS

Anti-Tank

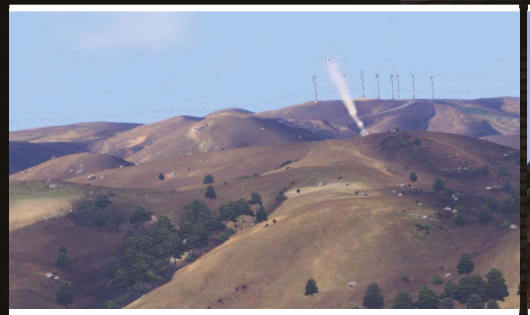
Anti-tank assets are generally used in "target of opportunity" situations against slow & low helicopters. It requires a great deal of skill (or luck) for an AT shooter to take down an aircraft with an unguided rocket, or a great failure on the part of the aircraft crew to allow such a shot to be successful. The CIR info for AT is as follows.

Capabilities	Indicators	Reaction
▪ Very limited range (dangerous at 100-300m, falls off rapidly beyond that) ▪ Difficult to lead moving aircraft with AT ▪ Depending on the power of warhead, severe damage or destruction of aircraft is likely	▪ Backblast dust/smoke ▪ Linear smoke trail ▪ No obvious vehicle having launched it (infantry AT) or ATGM-class vehicle (ie: BRDM ATGM) at launch site	▪ Dump flares. You do not have time to decide whether it's an AT rocket or a guided missile. ▪ Break turn until you are moving perpendicular to the launch site. ▪ At this point you should be able to tell that it is a rocket that was fired, and not a missile. Once this has been confirmed, cease flare dispensing.

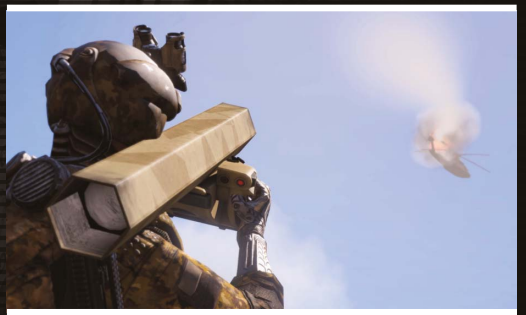
MANPADs, SAMs, & Anti-Aircraft missiles

Missile systems tend to pose the most serious threats to aircraft. Their guidance systems allow them to track even the fastest jets, while their warheads can wreck an aircraft with a good hit.

Capabilities	Indicators	Reaction
▪ Seeking missile(s) ▪ Long range ▪ Difficult to detect (MANPAD) ▪ Difficult to evade - extremely fast and maneuverable ▪ Powerful warhead, can result in severe damage or destruction of aircraft ▪ Oftentimes multiple missiles available	▪ Backblast dust/smoke ▪ Visible smoke trail coming from the ground ▪ Smoke trail is curving/changing direction, indicating a seeking warhead ▪ Radar warning receiver, IR launch indicator	▪ Dump countermeasures (chaff, flares, or both - depends on the vehicle) ▪ Fly perpendicular to missile flight path ('beam' it) ▪ Put terrain between self and missile ▪ Continue dispensing countermeasures until missile is no longer a threat and aircraft is out of engagement envelope of the launcher



SMOKE TRAIL OF AN ANTI-AIR MISSILE AS IT LAUNCHES. BY THE TIME YOU SEE THIS, YOU ONLY HAVE A SPLIT-SECOND TO REACT.



AN OPFOR ANTI-AIRCRAFT GUNNER HITS A GHOSTHAWK WITH A TITAN AA

Damage Model

Planes and helicopters share one common damage aspect, while damage types specific to each category will be described in their respective sections.

Fuel Leaks

Oftentimes an aircraft will receive a fuel leak after being hit by a MANPAD missile or taking sustained machinegun fire. The indicator for this is simply that the fuel level begins to drop. If you take a hit that causes a fuel leak, announce it to the appropriate person (ie the FAC or PltCo) and head back to base if possible. If you can't make it back to base, find some place to set down (if a helo) or eject (if a plane). The Arma 3 helicopters realistically do not have ejection capabilities for their crew - if you want to survive, you'll need to master the art of autorotation, described later.

HELICOPTERS

Intro to Helicopters

Rotary wing aircraft - more commonly known as helicopters - are one of the most interesting types of vehicles to employ in Arma. They have a very unique set of flight characteristics compared to planes, in that they are able to fly in any direction or even simply float in one place if they so desire. Their ability to operate so close to the ground forces makes them excellent close air support forces, while their cargo- and troop-carrying abilities give the ground commanders a way to move infantry around the battlefield to attack from unexpected directions, or transport resupply all over the battlefield to where it is most needed.

Helicopters are extremely flexible aircraft that can be employed in a wide variety of creative and interesting fashions. They are the air asset you are most likely to find yourself working with as an infantryman.

Types of Helicopters

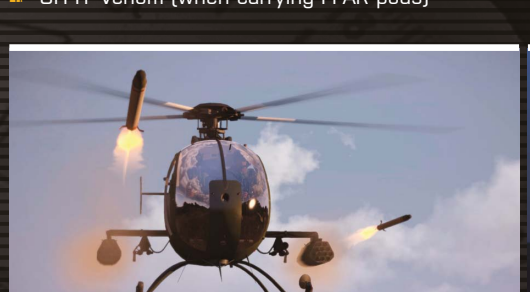
Like with most things, there are a variety of classes for rotary-wing aircraft.

Attack

Attack helos are defined by the amount of firepower they can deliver, as well as how survivable they are. The AH-9 and OH-58 are the lightest, with the Cobra and Blackfoot being above them in the medium category, and the Apache taking the crown as the heaviest attack helo due to its impressive armament and relatively survivable airframe.

Light

- AH-9 Pawnee
- OH-58 Kiowa Warrior
- UH-1Y Venom (when carrying FFAR pods)



AN AH-9 PAWNEE SHOOTING DAR ROCKETS

A BLACKFOOT ON THE ATTACK AT NIGHT

Medium

4. AH-1Z Viper
5. AH-99 Blackfoot

Heavy

- AH-64D Apache

Transport

Transport helos are defined by the amount of personnel or equipment they can move around the battlefield. Thus, an MH-6 is at the bottom of the ladder as the lightest transport helo, while the massive CH-53 Super Stallion is at the top.

Light

- MH-9 Hummingbird
- UH-1Y Venom

THANKS TO AN UPGRADED ENGINE, THE MH-9 HUMMINGBIRD CAN CARRY A PILOT, COPILOT, AND SIX PASSENGERS - FOUR ON THE EXTERNAL BENCHES AND TWO IN THE REAR SEATS.

Medium

- UH-80 Ghosthawk
- CH-46 Sea Knight

THE UH-80 GHOSTHAWK IS CAPABLE OF LIFTING A FULL SQUAD

Heavy

- V-22 Osprey. Note that this aircraft can go from a 'helicopter' mode to a 'fixed wing' mode once it is airborne, increasing its speed considerably.
- CH-53 Super Stallion

OSPREYS, COURTESY OF THE ALL IN ARMA MOD

Helicopter Crew Roles

Most helicopters are multi-crewed. For attack helicopters, this is in the form of a pilot/gunner combination, while transport aircraft typically sport a pilot, copilot, crew-chief, and door gunner. This section will cover the different responsibilities of each of the common helicopter roles.

Pilot

The helo pilot maneuvers the helo tactically in order to accomplish the assigned mission. The specific responsibilities of a helo pilot differ based on whether they are a transport aircraft or an attack helo, and are as follows.

THE UH-80 GHOSTHAWK IS CAPABLE OF LIFTING A FULL SQUAD

Pilot Responsibilities (General)

- **Senior player in the helo.**
- **Flys the helo** and is responsible for the safety of all embarked on it
- **Plans the route** the helo will use into/out of the combat zone
- **Has the final say on LZ selection** and is authorized to change the LZ en-route due to evolving threat assessments, to include threats at the LZ itself.

Pilot Responsibilities (Attack Helo)

- **Responsible for employing unguided rockets (FFARs) or bombs,** if the aircraft has them
- **Communicates with the gunner to maintain the gunner's situational awareness.** This includes notifying the gunner of locations of friendly forces, upcoming maneuvers, and anything else that might assist him.
- **Maintains situational awareness around the aircraft at all times.** The gunner is often focusing on a given target, such as when using the gunsight, and thus it is important that the pilot continue to scan.
- **Maneuvers in a fashion that allows the gunner to effectively engage the enemy.**

- **Maneuvers in response to the gunner's requests.**
- **Gives guidance to the gunner on weapon type to use.**

Gunner

The helo gunner helps to navigate and observe prior to combat, and once in combat, he scans for and engages the enemy while communicating his needs to the pilot. The gunner is also able to take the controls in order to fly the aircraft - this can be done to give the pilot an opportunity to safely mark a new path on his map or otherwise familiarize himself with it, or when the pilot is wounded or killed in the air.

Gunner Responsibilities

- **Junior player in the aircraft**.
- **Assists in navigation**.
- **Scans for and engages the enemy.**
- **Communicates needs to pilot.** If the gunner needs the aircraft oriented in a specific direction, or flying at a given height, et cetera, he communicates this to the pilot so that the pilot can fly the aircraft to best accommodate him.
- **Communicates with ground forces as required,** particularly when the pilot must concentrate on flying and a copilot is not present.
- **Takes control and flys the aircraft if the pilot is killed or incapacitated.**

Gunner/Pilot Intra-aircraft Coordination

Things that need to be communicated are broken down by whether they're communicated by either crewman, by the pilot, or the gunner.

By both:

- **Threats.** It is important that either crewman communicates anything he discovers about the locations of enemy threats as expeditiously as possible. The more of a threat the particular enemy is to an aircraft is, the more important it is that it is communicated promptly. This also includes any spottings of tracers, missile launches, or suspected missile launches.
- **Friendly positions.** Whoever sees friendly positions, either on the map or via visual confirmation, should relay it to the other crewman so that situational awareness is enhanced. This is particularly true for the pilot communicating with the gunner.

6. **Ammo status.** Either crewman will have weapon systems available to them in some aircraft. Whatever the distribution, each crewman needs to communicate how much ammunition they have for their weapons, so that they can plan accordingly to fly back for resupply (if available) and also let the supported infantry know how much more support they can provide before they need to return to base.

By the pilot:

- **Maneuvers.** Particularly when the gunner is employing a turreted cannon, the pilot should talk to him to let him know what significant maneuvers are being employed or are coming up. This helps the gunner to know how much traverse he has left on the turret before running into the limits.
- **Fuel status.** Knowing how much fuel is available is important, as it allows the gunner to prioritize targets based on how much flight time remains until a trip to a resupply area is necessary.
- **Flight worthiness.** If the aircraft is damaged by enemy fire, it is the pilot's responsibility to communicate this to the gunner. This includes tail rotor loss, loss of engine power, etc.

By the gunner:

- **Gunner activity.** The gunner ensures that the pilot knows what he is doing - be it acquiring a target, locking one up, firing, or preparing to fire. This helps the pilot make decisions about how he flys the aircraft.
- **Gunner needs.** If the gunner requires a certain attack heading, or a specific amount of stability during the employment of a weapon, he must communicate this to the pilot so that the pilot can accommodate his needs.

Gunner/Pilot Brevity Words

- **Weapon Employment & Maneuvers**
  - **Steady.** Request from the gunner for the pilot to hold a steady bearing. Typically used when firing at hard or distant targets to provide the most stable gun platform.
  - **Rotate (left, right).** Gunner notification to the pilot that the aircraft needs to turn a specific direction to allow him to employ his weapons.
  - **Popping up/pop up.** Command from the pilot or gunner to indicate that the aircraft is going to, or needs to, rise up to clear an obstruction so that a shot can be taken.

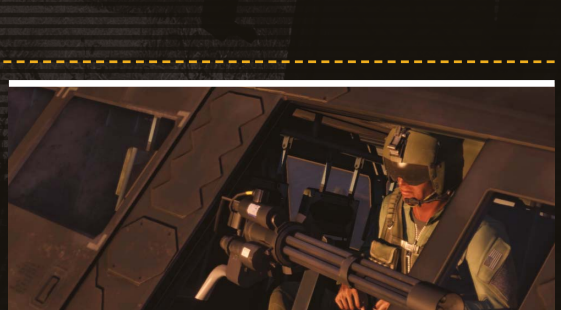
- **Dropping down/drop down.** Command from the pilot or gunner to indicate that the aircraft is going to, or needs to, drop down behind an obstruction. This is typically done after a successful shot has been made.
- **Firing/engaging.** Gunner is engaging with his weaponry. Typically used when guns are being employed.
- **Launched, missile away.** Gunner confirmation that he has fired his missile. Lets the pilot know that he is free to maneuver.
- **Running in.** Pilot notification to the gunner that the aircraft is heading in for an attack run on a known enemy position.
- **Breaking left/right/etc.** Pilot notification to the gunner that a significant bank/turn is being employed in the specified direction.

- **Threats.** Note that threat warnings have a direction attached to them when known.
  - **Missile, missile.** Warning call given when a suspected missile has been launched. This allows the pilot to immediately conduct a 'react to missile launch' drill, as well as notifying the gunner that he should be scanning for the launch origin.
  - **Taking SAF, taking SAF.** Used to indicate that the aircraft is being engaged by small-arms fire, typically used to indicate that maneuvers are needed to evade it. Can be shortened to "SAF, SAF".
  - **Taking heavy, taking heavy.** Used to indicate that the aircraft is being engaged by a heavy weapon such as a crew-served machinegun or vehicle cannon, typically used to indicate that maneuvers are needed to evade it. Can be shortened to "Heavy, heavy".
- **Contacts**
  - **Visual.** Crewman has spotted **friendly** positions.
  - **Blind.** Crewman cannot spot **friendly** positions.
  - **Tally.** Crewman has spotted **hostile** targets.
  - **No joy.** Crewman cannot spot **hostile** targets.
  - **Tracers, (direction).** Used to indicate the direction that enemy tracer fire has been spotted.
  - **Flashes, (direction).** Used to indicate the direction that muzzle flashes are being seen at.
- **Status**
  - **Winchester.** Gunner is out of ammo.
  - **Bingo.** Pilot statement to indicate that the aircraft must immediately return to base in order to make it back before fuel runs out.

Crew Chief

A crew chief is a member of the helicopter crew that, in Arma terms, acts as a door gunner for the duration of the helicopter's employment. Unlike the 'door gunner' role, the crew chief does not disembark from the helicopter except in the event of an emergency (such as being shot down).

The crew chief is responsible for communicating the proximity of obstacles to the pilot when in close terrain and attempting to land. This is done with simple concise verbal commands to the pilot to tell him which way to move the helo to avoid obstacles, such as "Tree on left, move right 10 meters". The door gunner, if embarked, assists with this process, as described in the "Combined Arms" chapter.



CREW CHIEF WATCHING THE TERRAIN DURING FLIGHT, M134 IN THE FORWARD-FACING POSITION

Crew Chief Responsibilities

- **Scan for ground threats & communicate them to the pilot.** The crew chief must be constantly scanning for hostile threats. He watches for:
  - Enemy personnel and vehicles
  - Muzzle smoke
  - Tracers
  - Smoke trails from missiles or rockets
  - Trees, large rocks, and other obstacles when descending into an LZ
- Upon spotting any of these, he immediately informs the pilot. The crew chief can use either clock directions or relative directions (front, left, right, etc) when calling these targets or objects out.
- **Scan for aerial threats, including other friendly aircraft.** Particularly when situated on the side of the helicopter opposite of the pilot, the crew chief needs to keep an eye out for any potential path-crossing of friendly aircraft. In the event that a collision seems likely, the crew chief can instruct the pilot to make an evasive maneuver - such as to break up/down/left/right. The pilot will automatically conduct this maneuver without hesitation.
- **Be proficient with helo door gunnery.** This includes knowing how to correctly lead targets when the helicopter is moving at a variety of airspeeds. As a general guideline, one must lead in the direction that the target is moving relative to the gunner's perspective. If a target is crossing from right to left, he must lead the target by aiming to the left side of the target.
- **Stay alert and aware of where friendly forces are,** to avoid engaging them by mistake.
- **Communicate with ground forces as required,** particularly when the pilot must concentrate on flying

Copilot

The copilot's primary tasks involve observing, navigating, and communicating to help share the workload with the pilot. A copilot can take control of the aircraft from his seat, much like a gunner in an attack helo can do. This is used if the pilot is wounded or killed, or to give the pilot time to spend 'heads down' in his map or similar.

Copilot Responsibilities

- **Navigation.** The copilot is in a perfect position to navigate for the pilot.
- **Observation & observation pod.** Whether equipped specifically with an observation pod or not, the copilot - being in the front of the aircraft - is in a good position to assist with observation. The observation pod obviously amplifies this.
- **Communication.** Due to not being tied up with actually flying the aircraft, the copilot is able to spend time communicating with other aircraft, ground forces, etc.
- **Flying when necessary.** By taking the aircraft's controls, the copilot can give the pilot some free time or react to pilot wounds.

Helo Flight Principles

The art of flying a helicopter is one that takes time to master, typically accomplished with a great deal of offline practice. The following sections will help to familiarize you with the basic helo flight principles, as they apply to Arma 3, so that you know what you should be practicing towards.

Taking Off

Getting a helicopter into the air is a pretty simple process. There are a few things to keep in mind, as described below.

Considerations Before Lifting Off

- **Ensure that everyone who should be on the helo is loaded up and ready to go.** This applies mainly to transport aircraft, of course.
- **Look around and above the aircraft to familiarize yourself with what obstacles are nearby.** Trees, power lines, light posts - anything that can cause a rotor strike must be noted and avoided.
- **Consider other aircraft.** If a multiple helo package is taking off, the aircraft must lift off in a predefined order to avoid colliding on takeoff. If working out of an active area where aircraft are coming and going at regular or random intervals, you must be careful to ensure that your takeoff does not run you into another aircraft working in the area at the same time.
- **Know where you're going, and have a plan on how to get there.** Trying to plot a course while already in the air is not ideal - whenever possible, as time allows, ensure that you've sketched out your route to the landing zone and know what terrain to expect along the way.

Once all of these are considered and checked for, simply apply power to the engines to lift off the deck. You only need to bring the helo a few meters off the deck to "take off" - there is no reason to go higher immediately unless terrain or obstacles force it.

As you move away from the staging area, evaluate the terrain and choose your flight profile accordingly.

Landing

There are two primary aspects involved with landing - the basic procedures of the act itself, and the considerations that must be made when making a combat landing. Both are described below.

Basic Landing Principles

- **Be careful with your vertical speed.** Having a low vertical speed upon landing is very important - the most common way to wreck a helo is to slam it down too hard.
- **You can land safely with 30kph of forward speed, as long as your descent rate is very low.** You can get up to 40-45kph or so if you are careful. Bear in mind that the higher your speed, the easier it is to wreck the engine with too fast of a descent rate.
- **Pick LZs that have fairly level ground and are free of any major obstacles whenever possible,** as this simplifies things.
- **If landing on a slope, land facing up the slope and be careful that you don't slide.** Oftentimes you will be forced to do a hover insertion when slopes are involved.
- **Approach the LZ in a fashion that allows you to see all of the obstacles in the LZ area.** Coming in via a shallow curving flight path can help facilitate this.
- **If landing in a particularly tight LZ, use your door gunner and crew chief to warn you of any obstacles as well as provide guidance on how you should maneuver.** If troops are already on the ground, they can act as guides as well.

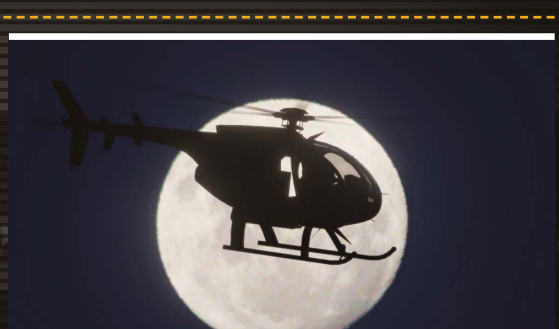
Combat Landing Procedures

1. **Decide on what kind of landing it will be.** Full touchdown, hover, moving, etc.
2. **Minimize enemy threats via the approach route used.** Choose high alt or low alt as necessary, based on expected enemy threats.
3. **Suppress with door gunners if possible.** If the LZ is hot, the door gunner fire can be an effective means of suppressing it long enough to set down and get the troops debarked.
4. **Come in fast and touch down lightly.** A proper combat landing requires a good grasp how to flare a helicopter to rapidly bleed of speed without gaining altitude. Coming in fast is the best counter to enemy small arms fire - it's not easy to lead a moving helo, after all.
5. **Tell your passengers to debark via "GO GO GO".** Once you've touched down safely, or have entered a hover or slow & low state (in the case of a 'hover' or 'moving' insertion), give the "Go, go, go!" command so that the embarked infantry can hear you. They will then begin exiting the aircraft and conduct their mission.
6. **Listen for confirmation from the senior embarked player that all troops have dismounted.** In some aircraft you will be able to look into the passenger compartment to watch the unloading process yourself.
7. **Once given the all-clear, take off and assume your next assigned task.** If feasible, your crew chief can continue suppressing the LZ as you depart.

Altitude Tradeoffs

Flying a helicopter forces the pilot to take calculated risks in order to best accomplish his mission. One of these involves altitude - there is no one-altitude-fits-all solution; depending on the mission, terrain, enemy, et cetera, the risks/rewards of each altitude will vary. It is up to the pilot to be familiar with the tradeoffs involved and be able to make the right decisions when the time comes.

The pros and cons of high and low altitude flight follow.



High Altitude

Pros	Cons
Reduces vulnerability to unguided weapons such as SAF, CSW, HMG, AT, etc	Easier for the enemy to hear the direction you are coming from
Increased observation capability	More visible to the enemy
Eliminates dangers of collisions with terrain, trees, power lines, and other obstacles	Can be engaged by more enemy weapon systems at the same time than otherwise
Higher chance of autorotating successfully due to altitude available	Easier to be engaged by guided missile systems
Enemy has a harder time keeping track of you when they're also engaged with ground forces, as it forces them to look up a lot. Allows you to drop in and surprise them more easily.	
Facilitates steep diving attacks and strafing runs	

Low Altitude

Pros	Cons
▪ Reduced visibility to the enemy ▪ Can mask with terrain, trees, and buildings, which further reduces visibility and muffles sound signature, increasing stealth and surprise ▪ Reduced vulnerability to some types of anti-air missile systems	▪ Much more vulnerable to SAF, CSW, HMG, AT, etc. ▪ Reduces visibility of the battlespace ▪ Introduces the danger of collisions with terrain, trees, power lines, and other obstacles ▪ Less likely to survive an engine failure due to lack of space to properly autorotate ▪ Reduces effectiveness of some attack profiles such as diving attacks and strafing runs

Masking with Terrain & Tactical Helicopter Movement

One important aspect of helicopter survivability lies in using the terrain to maximum advantage. Hills, valleys, forests, buildings - there are countless terrain features that can be used to mask a helicopter from enemy fire and observation. Attack helicopter crews will often stay low and fast, moving from one covered position to another to avoid enemy anti-aircraft artillery and MANPAD or SAM units. When it comes time to engage the enemy or scout out areas, the helicopter can pop up briefly, scan the area or employ weapons against the enemy, and then drop back down behind a terrain feature so that enemy gunners have little time to acquire, lock, and fire upon them.

Bear in mind that when masking with terrain, the helo crew must be aware of what's on the 'near' side of the terrain being used for cover. Taking cover behind a ridge that has an enemy platoon sitting on your side doesn't do you a great deal of good.

Also keep in mind that helicopters are highly susceptible to enemy air defense assets, and are by no means to be thought of as invincible flying machines of death and destruction. Keeping a helicopter alive in a hot environment, particularly a player-vs-player one, requires a great deal of skill, patience, and coordination between the crew members. Rambo helicopters will find themselves shot down in short order almost every single time. People who fly helicopters like they're jets will likewise find themselves being quickly shot down. Helo tactics and jet tactics are two entirely different beasts and must be treated as such.

Nap-Of-Earth (NOE) Flight

The altitude a helo can safely fly at will vary depending upon the terrain. Heavily wooded, rolling terrain allows for helos to fly higher due to the amount of terrain and vegetation that interferes with MANPAD systems (very low exposure times, lots of obstacles for firing a clean shot), whereas desert terrain or other fairly flat terrain can force lower flight altitudes.

Regardless of terrain type, nap-of-earth flight is an important technique to use to avoid enemy observation or engagement. NOE simply means that the helicopter is staying low and following the contours of the ground as it flies, as opposed to simply beelining across the sky without consideration for the terrain below.

A few guidelines for NOE flight follow.

Guidelines for NOE Flight

- **Be vigilant in scanning for obstacles.** The most common obstacles are poles, trees, and powerlines. At night, powerlines in particular become a greater threat due to the 'grain' and reduced clarity of vision brought on by nightvision.
- **Know and consider the diameter of your rotor mast.** If you need to go between two trees, for example, you must be able to visually determine if your rotors can fit through.
- **Only fly as low as you need to.** While flying a few meters off the ground is a good display of skill, oftentimes it puts your passengers at an unnecessary risk. Fly at the altitude that is necessary to accomplish the goal that NOE flight facilitates. NOE flight does not have to be "Hey guys, I just picked a flower off the ground!" altitude at all times.

Attack Helo Attack Types

There are several distinct attack types that can be utilized by helicopters. Each has a time and place where it can be used successfully, and being familiar with the different attack types allows for an aircrew to maximize survivability while fighting according to the enemy threat level.

Slashing

A slashing attack is used when the pilot determines that he can fly over enemy territory without putting himself at unnecessary risk. This is typically when the enemy is known to have no serious anti-air equipment.

A slashing attack is simply a run where the helo flys in, fires ordnance, and then continues in the same direction and passes over or near the target before leaving the area.

Slashing attacks are typically done with FFARs or fixed-forward-firing cannons or guns.

Break-Off

Break-off attacks are used when there is a threat of enemy air defenses beyond or at target.

A break-off attack consists of the pilot lining up for an attack run, firing his ordnance, and then immediately breaking off so that he does not fly over or past the target. The distance at which the helo should break depends on the anticipated threat - bear in mind that the further away you break, the less likely enemy small-arms fire will be able to get you.

Break-off attacks are typically done with rockets.

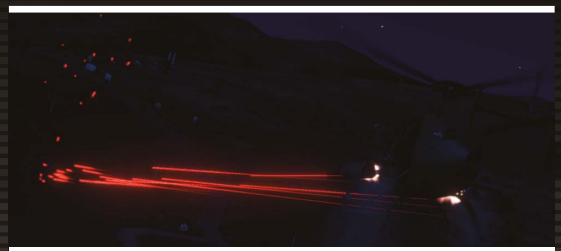
BREAKING TO THE LEFT AFTER FIRING A SALVO OF FFARS AT AN ENEMY POSITION

Stand-Off

Stand-off attacks are used when there is no significant threat of enemy return fire or anti-air defense and cannons or anti-tank guided missiles (ATGMs) need to be employed.

For a stand-off attack, the pilot brings the aircraft to a hover (or slow flight) out of effective small-arms range of the enemy. The gunner then proceeds to employ the aircraft cannon or guided missiles to strike enemy targets. During this, the pilot scans the area around the aircraft for any enemy infantry that may be on the ground.

If the threat of enemy anti-air is completely non-existent, the aircraft should hover at least 500 or more meters above the ground to reduce risk of enemy small-arms fire.



AN AH9 ENGAGES A TARGET AREA WITH MINIGUNS FROM A STAND-OFF POSITION

The aircraft should remain in a hover only as long as is necessary to employ ordnance. Once complete, the pilot should resume normal flight.

Pop-Up

A pop-up attack is a variation of the stand-off attack that is used when enemy anti-air threats are expected.

To employ a pop-up attack, the pilot must first move via a concealed or obscured approach to within effective weapon range of the target. He will then instruct the gunner that they are going to pop-up, and that the gunner needs to stand by with a specific weapon system (typically an ATGM). The helo then rises up just enough to clear the terrain feature, at which point the gunner acquires the target, fires his ordnance and tracks it until it impacts the target (if necessary), and then the pilot rapidly drops the helicopter back behind the cover afforded by the terrain.

When done correctly, pop-up attacks are extremely difficult to defend against.

POPPING UP FROM BEHIND A RIDGE, THIS BLACKFOOT HAS JUST LAUNCHED A ASRAAM AT AN ENEMY ANTI-AIRCRAFT VEHICLE

Transport Helo Insertion Types

Flying troops to a landing zone is only part of the problem. Once there, getting them safely on the ground can be a challenge all by itself. It is important that every helo pilot is familiar with the landing options available to him, and is able to pick the right one to suit the situation at hand.

Touchdown

A touchdown insertion is the most common type, used whenever possible. All that is required is a helicopter-sized patch of relatively level open ground to set down on. This type of landing is also used when extracting troops, for obvious reasons.

Touchdowns ensure that infantry are able to safely dismount without the injury that is possible when conducting hovering insertions.

Hover

Hover insertions have two primary uses. The first is when dropping troops on sloped terrain. In most cases, trying to land on sloped terrain is a recipe for disaster, so dropping your troops off from a hover is a great alternative to crashing and killing everyone.

The other use is any time that enemy return fire is a significant threat. In such a situation you want to minimize the amount of time that you're low, slow, and vulnerable to the enemy. Keeping your skids or wheels off the ground is one great way to accomplish this, as it allows you to more quickly get back into the air if things turn hot.

A safe altitude for dropping troops in a hover is below three meters. Anything more runs the risk of injuring the troops from the fall.

AN MH-9 HUMMINGBIRD INSERTING TROOPS ONTO A HILLSIDE BY HOVERING WITH THE FRONTS OF THE SKIDS TOUCHING THE GROUND

Moving

A moving insertion is a variation of the hover insertion that is done while the helo does not come to a complete standstill. This method is even more secure than the hover insertion, as the pilot is at less risk of being hit in the cockpit by enemy ground fire due to his constantly shifting position.

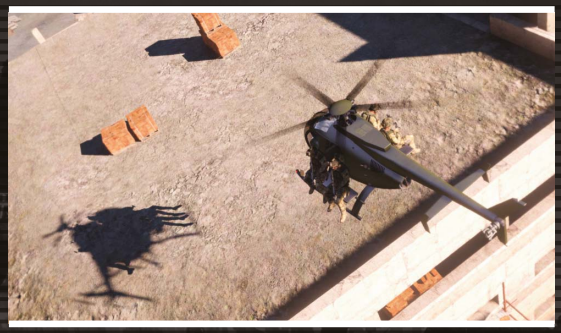
When doing a moving insertion, ensure that the aircraft stays under 30kph and is less than three meters off the deck. These are the thresholds for safe troop drops from a moving helo.

Rooftop

Rooftop insertions can be done either at a hover or by landing on the roof - it's up to the pilot to decide which method suits the situation best.

When doing a rooftop insertion, pay special attention to the rooftops of other nearby structures. If they are occupied, the insertion will likely need to be aborted due to the danger of being shot out of the sky. If the ground around the location is potentially hostile, attempt to land centered on the roof to present the smallest target to those at ground-level. If threats are expected primarily in one direction, land on the side of the roof furthest from that direction.

Bear in mind that the security of a rooftop insertion depends largely upon the surrounding terrain, the surrounding buildings, and the height of the building that is being inserted on relative to both the surround building heights and the surrounding terrain. For instance, trying to drop troops on a low house in hilly terrain that has enemy infantry likely positioned in the hills, or other locations that are higher in elevation than the roof, is a recipe for disaster. On the other hand, dropping a sniper team on a very tall building in relatively flat terrain is much more likely to be successful.



Fastrope

Anyone who has seen ***Blackhawk Down*** should be familiar with the concept of fastroping. While this capability does not exist with any of the default Arma 3 vehicles, it has historically been added shortly after release for each Arma game via a community addon.

Fastroping can be useful for inserting troops into an area where the helo cannot easily land - in Arma terms, this typically means thick forests, steep mountainsides, or sharp ridges. While the altitude of the helo makes it more vulnerable to enemy fire, it also allows for the doorgunners to fire without risk of hitting the disembarking troops.

Very careful consideration must be made as to whether a fastrope insertion is necessary. While they look cool, they are quite dangerous to employ due to the time required as well as the vulnerable altitude of the aircraft required.

Pinnacle

A pinnacle landing is a method by which a helicopter can deploy or pick up troops from terrain that it could not properly land on. This is often seen with large aircraft like CH-47 Chinooks, where the aircraft lowers its ramp and backs up against a slope such that troops can enter or leave it without the helo actually setting fully down. Pinnacle landings require good coordination between the helo's crew chiefs and pilot.

Helicopter Damage Model

Due to the altitude they operate at, helicopters are apt to get shot up. Being familiar with the types of damage that can be sustained can help to prepare a helo crew for what to do when they take heavy fire, allowing them to react appropriately even when the situation is tense and every second counts.

Damage Indicators

Arma 3 utilizes a damage indication HUD element to convey information about the status of various components of the aircraft. This damage indicator is in the upper-left of the HUD and is broken down into five sections - ATRQ, MROT, ENG, HULL, and INST. They start off white - indicating working systems - and shade from yellow to orange to red to indicate damage and, eventually, destruction. The indicators themselves are as follows.

- **ATRQ -** Anti-Torque Rotor. Also known as the tail rotor. Red means the tailrotor is completely destroyed, while shades of yellow and orange indicate reduced capacity. Any damage to the tail rotor will cause the aircraft to turn in the direction of the main rotor's rotation.
- **MROT -** Main Rotor. If this is gone, you should make your peace with whatever higher power you believe in. The main rotor can completely disintegrate if it hits a solid object such as a tree, building, light pole, etc. Once gone, the helicopter simply falls out of the sky.
- **ENG -** Engine. When the engine is destroyed, the aircraft will lose power, requiring an autorotation procedure to be initiated for a chance at landing.
- **HULL -** The integrity of the aircraft's structure. When heavily damaged, the aircraft will explode.
- **INST -** Instruments. Once destroyed, you'll notice that some cockpit instrument panels become shattered, and any electronic HUD element may begin to flicker. Out of all of the damage possibilities, this is typically the least threatening.

Tail Rotor Failure

Bullets impacting the tail rotor, or explosions near it, can damage the tail rotor or outright destroy it. The tail rotor is responsible for counteracting the torque produced by the main rotor in a single-rotor helicopter design - when absent or damaged, the helicopter will rotate in the direction of the main rotor's rotation thanks to this torque effect. Damage or loss of a tail rotor can be a very serious situation for pilots and must be understood in order to survive such an eventuality.

Recovery at Speed

If at high speed and the tail rotor is damaged or destroyed, the helicopter will not visible react. You'll know you're damaged by looking at the damage indicator on the HUD - if you're unsure about the level of damage and are flying with other aircraft, a visual inspection of your tail by another aircraft can be requested. They'll be able to see if the rotor is spinning slowly (damaged) or stopped (destroyed).

At low speed, the helicopter will begin to yaw to one side as the tail rotor blades spin down. There are a few critical moments at the beginning of the process that should be used to get the helo down on the deck as quickly as possible, before the full spin begins. Once the full spin begins, having something like a TrackIR is of great use due to the fact that you'll want to be spending a great amount of concentration on both controlling your flight and scanning the terrain (while spinning heavily) for any safe area that you can set the helo down on.

If using an analog rudder control such as rudder pedals, tail rotor damage can be mitigated somewhat by using opposite rudder relative to the direction of torque. Bear in mind that the torque of the main rotor will reduce when collective is dropped and rise when collective is raised - when you are fully down-collective, the helicopter will no longer spin due to lack of tail rotor, while full up-collective will cause the hardest spinning to occur. Lowering collective prior to touchdown helps to reduce the chances of a fatal spin at low altitude.

Weathervaning & Low-Altitude / Low-Speed Recovery

Alternatively, a helo at low-speed can try to gain speed until the effects of the tail rotor (or lack thereof) are nullified by the higher speed. This is known as the 'weathervane' effect - the aircraft will stabilize into the direction of the airflow, rendering the tail rotor less influential at higher speeds. This will temporarily remove the issue; however, you will still need to set down eventually, and at that point you'll have to fight with the spinning at low speeds. Also bear in mind that a hit that is powerful enough to cause tail rotor failure will also often cause a fuel leak.

In the event that you have tail rotor failure at low speed, the best procedure is to gain altitude to at least 150 meters, then lower collective fully. Lowering the collective reduces the main rotor's torque effect, causing the helicopter to not need anti-torque influence to stay steady - in effect, this makes the damaged or destroyed tail rotor a temporary non-factor. While down collective is held, your aircraft will be descending - as it does, it will stabilize and stop spinning. At this point, pitch forward until you gain enough forward speed to "weathervane". You will end up in controlled forward flight, and the lack of a tail rotor will not affect you until you once again slow down.

MISSING SOMETHING? THIS AH-9'S TAIL ROTOR HAS BEEN COMPLETELY TORN OFF

Reacting to tail rotor failure is something that needs to be practiced in a non-combat situation many times before it becomes second-nature.

Engine failure & Autorotation

The worst thing that can happen to a helo, aside from outright being destroyed, is for it to have an engine failure. Some mods (realistically) do not allow for the pilot/crew to bail out with a parachute, meaning that the only way to survive an engine failure is to get on the ground as quickly as possible without killing yourself and everyone else in the process.

To accomplish a safe landing in a helo that has lost it's engine requires that you be familiar with the concept of autorotation, and are able to carry out the required actions with split-second notice and timing.

Surviving an Engine Failure via Autorotation

1. **When the engine fails, an alarm will sound and the rotors will begin to spin down.** You cannot let them spin down, else you'll crash and burn hard.
2. **Immediately press and hold your "Thrust Down" key to keep the blades spinning and begin a descent, bringing your aircraft nose level at the same time.** If you take too long, the blades will rapidly come to a halt and you'll be headed for a nasty crash. Keeping the nose more or less level is essential - if you pitch too far down, the helicopter will go out of control and crash.
3. **Scan your immediate area for a safe place to land** - due to the lack of warning beforehand, you may be faced with some pretty tough landing spots.
4. **Identify the best landing spot and head for it while keeping your "Thrust Down" key depressed.** You can use slight pitch adjustments to manage your speed - you'll want to slow down to <50kph for landing.
5. **When 30-50 meters above the ground, level your aircraft and press the "Thrust Up" key.** If done right, the last bits of energy stored in the spinning rotors will reduce your downward velocity to something survivable. If timed wrong, you'll stall out too high off the ground and then crash and burn.

Like everything else concerning helos, autorotation is a skill that must be practiced extensively in advance.

Note that due to current flight model limitations, you will be unable to attempt an autorotation if the helicopter is moving at a very high forward speed at the time of engine failure. In such a case, the helo will nose down, become unresponsive, and spread bits and pieces of your body all over the terrain at the site of the crash. At most speeds below the aircraft's maximum, autorotation should be an achievable goal.

FIXED WING

Types of Fixed-Wing Aircraft

Fixed-wing aircraft can be broken into several main groups for the purposes of Arma, though some of them have little relevance to the game and will not be seen with any frequency. The main groups are CAS, Air Superiority, Bomber, and Transport.

Close Air Support

These are the most relevant to the Arma experience. CAS aircraft are specialized at ground attack and are designed to provide excellent close support to infantry.

THE F-35 IS A MULTI-ROLE AIRCRAFT CAPABLE OF ACTING EITHER IN THE CLOSE AIR SUPPORT OR AIR SUPERIORITY ROLE

Air Superiority

You will see these less frequently than pure CAS aircraft. Air superiority fighters can be multi-role, able to hit either ground targets or air targets with effectiveness. They tend to be faster than other aircraft.

THE VTOL (VERTICAL TAKE-OFF/LANDING) F-35 DOING A VERTICAL LANDING POST-MISSION

Bombers

Very rare in the Arma series, though they do show up at some points. Bombers can obliterate large swaths of ground with massive payloads. They fly in, drop their bombs, potentially kill a huge number of the enemy, and are gone. These will rarely be able to provide effective CAS in the way that a dedicated attack aircraft can. However, if you'd like to flatten a small village, they will come in handy!

Transport

Transport aircraft like the C-130 generally show up when employing paratrooper units. They are unarmed and vulnerable but can deliver a large number of airborne soldiers into the action in short order.

A C-192 SAMSON CARGO PLANE

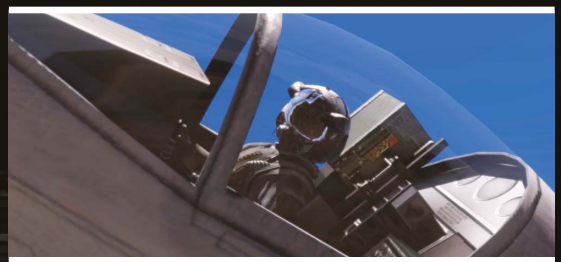
Fixed-Wing Aircraft Crew Roles

Pilot

The fixed-wing pilot is the standard in most of the jet aircraft we will see in Arma. He does everything in his aircraft - navigates, communicates and coordinates with ground forces, employs his weapons in support of ground forces, and so on and so forth.

Copilot

The copilot/gunner of a fixed-wing aircraft deals primarily with weapons employment, navigation, and communication with ground elements. These are fairly rare - only the Su-34 in Arma 2 even had one by default. Basically, he allows the pilot to concentrate fully on flying the craft without interruption.



A F-35 PILOT SCANS THE GROUND AS HE ORBITS

Attack Aircraft Attack Types

Fixed-Wing attack types share some similarities with their rotary-wing counterparts, but due to the speed at which the aircraft moves and the differences of FW flight compared to RW flight, they are distinctly different attack types that must be mastered separately.

Break-Off

A fixed-wing break-off attack is used to avoid flying over a danger area. Because of the speed at which a plane moves, break-off attacks typically are used when firing air-to-ground (AGM) missiles. The aircraft can fire the missile from extended ranges and break well before coming into effective range of the enemy air defenses.

Dive

A diving attack is the preferred method for delivering rockets, laser-guided bombs, cannon fire, and 'dumb' bombs/munitions. This is because the "long axis" of the ordnance delivery becomes shortened when coming in at a dive, and thus ordnance tends to land closer together and human error (ie: timing of a bomb drop) is minimized.

When conducting a dive attack, two methods can be used during the approach. The first is a high-altitude run-in, followed by a dive onto the target and ordnance delivery.

The second method is a low-altitude approach, using terrain to mask the aircraft, before pulling up into a steep climb followed by a dive and ordnance delivery on target. This is known as a "Pop-Up" attack.

Note that when it comes to dive attacks, the steeper the dive is, the more accurate the ordnance delivery will be - to an extent. The

reverse of that is that the steeper the dive is, the faster you are likely to close on the target, and the harder it will be to acquire/align/fire/pull out. Finding a good balance between dive angle, aircraft speed, and other delivery considerations is key to mastering the dive attack.

Note also that the higher that laser-guided bombs can be dropped, the more time they will have to adjust their flight and zero in on the laser designation. With cannon fire, the further away it is initiated, the more 'spread' there will be to the impact area, and the more damaging it will likely become.

Slashing/Strafing

The most basic fixed-wing attack run is a slashing attack or strafing run. In this attack, the aircraft flies in, fires cannons, FFARs, or other munitions and then flies over and past the target.

A F-35 MAKING A CANNON RUN ON ENEMY INFANTRY POSITIONS

Slashing attacks typically are done at a shallow dive or during level flight (depending on the target being attacked, the terrain it is on, etc). The pilot should maneuver his aircraft in an evasive fashion up until the last possible moment, as this gives the enemy less time to settle their sights on his aircraft. Direct attacks against anti-aircraft artillery such as Shilkas are done in an undulating pattern where the attacking aircraft pitches up and down, firing each time his weapons are aligned with the target, with the rest of the time acting to throw the Shilka's aim off.

Fixed Wing Aircraft Damage Model

Exploding into flames

There really isn't much to say about the damage model for fixed-wing aircraft. Aside from fuel leaks, there's not much that happens - typically you're either ok, or you're dead. You may have a small window in which to eject from the aircraft in some situations, though.

CHUTE DEPLOYING AFTER BAILING FROM AN F-35

WORKING AS MECHANIZED/MOTORIZED INFANTRY

The intent of this section is to be oriented around vehicles that are commonly encountered in missions, and oftentimes are crewed by "non-specialized" players (as opposed to more combat-oriented armored vehicles like tanks). These vehicles are typically intended to be used to safely convey troops to a fight and support them the whole way, including participation in the fight as well as everything leading up to and resulting from it.

DISMOUNTS MOVE WITH AN AMV WHILE ON PATROL

We will start off with a rundown on the pros and cons of mechanized and motorized support, as seen from the eyes of the infantry it is tasked with supporting.

Pros & Cons of Mechanized/Motorized Support in Combined Arms Operations

The pros and cons of mechanized/motorized support in the combined arms role are as follows.

Pros

- **General**
  - **Mobility and resulting flexibility.** Mech/motor assets allow an infantry force to move over most types of terrain at a rapid rate. This gives infantry leaders tactical flexibility and allows them to rapidly react to changing situations in a way that a foot-mobile force would not be capable of.
  - **Carry extra gear, ammo, medical supplies, etc.** Vehicles can carry additional supplies that would not be feasible to ruck in as an infantry force. This can prove key for longer duration missions, and can help to prevent anyone from needing to scavenge from the enemy for weapons and ammo.
  - **Great as a base of fire/overwatch.** Thanks to the weapon systems carried, mech and motorized vehicles can work very well as a base of fire element, or as overwatch. Their mobility facilitates this as well, as it allows them to maneuver themselves to provide the best support in light of the ever-changing tactical situation.
  - **Keep infantry fresh for the fight.** In Arma 3, stamina can play a big role in how an attack is conducted. Mechanized and motorized transportation allows an infantry force to arrive at the battle fresh and ready to fight, instead of tired from having to move and assault on foot.
- **Motorized**
  - **Crew-served weapon systems.** These come in a variety of forms - typically medium machineguns, heavy machineguns, grenade machineguns, and anti-tank missile systems. All of them are useful complements to an infantry force, and provide a nice increase of firepower.
  - **Provide some protection to mounted infantry and crew.** While they will not survive any heavy fire, up-armored vehicles can provide basic protection to anyone mounted in them.
- **Mechanized**
  - **Heavier weapon systems.** Mechanized vehicles often carry cannons in addition to machineguns. Some carry grenade machineguns as well, or ATGMs. The cannons in particular are devastating when employed against enemy infantry and lighter vehicles and act as a major force multiplier.

- **Provide protection to mounted infantry and crew.** Though they cannot survive serious fire (tanks, ATGMs, etc), mechanized vehicles typically will give some additional survivability over motorized vehicles to anyone mounted in them.
- **Amphibious abilities.** The AMV-7 provides an amphibious capability to friendly infantry. This can be employed to cross water obstacles such as rivers or lakes, or 'swim in' from a seaborne launch.
- **Breaching.** Due to their sturdy hulls, mechanized vehicles can smash down walls to open up breach points for accompanying infantry.
- **Smoke dischargers.** Mechanized vehicles typically are equipped with smoke dischargers. These can be employed to screen infantry movements as well as mislead the enemy about how an attack is being conducted.
- **Clearing lines of fire.** Mechanized vehicles can be employed to knock down trees, walls, fences, and any other obstructions that may be preventing a good line of fire.

Cons

- **Lose some stealth.** The noise of vehicles operating tends to reduce the ability for a mechanized or motorized force to employ stealthy movement. While this is most significant with the tracked vehicles (such as the Panther), on a quiet day or night, even wheeled vehicles may be heard in advance of their arrival. While this does give up some of the element of surprise, the speed and mobility of the mech/motor forces can be used to make up for it and regain initiative.
- **Catastrophic destruction of a loaded vehicle can cause horrific casualties.** A fully-loaded APC driving over an IED and being destroyed can wipe out an entire squad. It is important to always employ mech and motorized assets with care, ensuring that troops are dismounted when there is any threat that could result in a catastrophic kill of a vehicle.
- **Vulnerable to AT assets (mech).** Enemy ATGMs, AT rocket systems, and other weapon systems can wipe out mechanized vehicles when employed properly.
- **Vulnerable to everything (motor).** Motorized vehicles are more vulnerable than mechanized ones as a general rule, and must be even more vigilant in how they scan for threats, move, etc.

Note that mechanized vehicles share many of the traits of armor, and additional information about their strengths, weaknesses, and employment uses can be learned by reading the armor section later on this page.

CONVOY OPERATIONS

Guidelines for Convoy Operations

Speed is Life, but Cohesion is Important

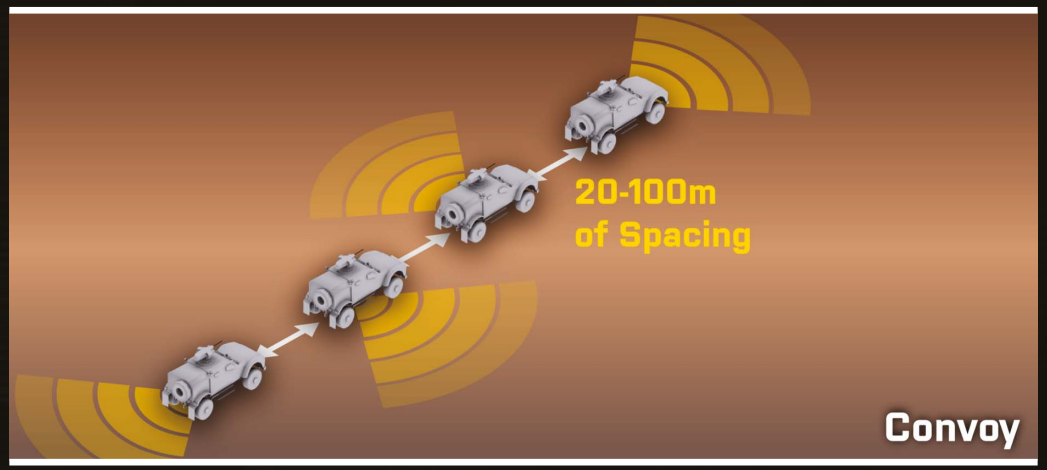
Speed in a convoy tends to result in security. This is due to the fact that speed makes it harder to engage the vehicles with threat weapons such as RPGs, command-detonated explosives, and more. However, one must be careful to balance speed with cohesion - if a convoy is spread out too far, the mutual support of each vehicle's weapons, and the security they bring, is lost. This leaves individual vehicles subject to the massed fires of the enemy, which can cause a lot of trouble in short order.

To maintain convoy cohesion, the first vehicle must be aware of their speed and the proximity of those behind him. The convoy commander and other vehicle drivers can facilitate that situational awareness by communicating with the lead vehicle and other vehicles, giving them guidance on their speed, interval, sectors of observation, and more.

If the lead vehicle needs to unexpectedly brake hard for some reason, the driver will say "BRAKING, BRAKING, BRAKING" loudly over comms to help to prevent the trailing vehicles from piling into him when he brakes.

Interval

Maintaining good interval is a key aspect of multi-vehicle operations. Depending on the terrain, vehicles should keep from 20 to 100 meters of spacing between each other. This helps to lessen the effects of enemy explosives such as satchel charges and IEDs and makes it harder for the enemy to mass fires on multiple vehicles at once.



It is particularly important to maintain good interval when stopping temporarily, taking corners or other types of turns, and halting the convoy.

Route Selection & Actions-On

- **Avoid urban areas whenever possible.** It is far too easy for an enemy force to set up a devastating ambush in an urban area. Routes which pass through heavily wooded or extremely rocky areas are likewise dangerous, but due to the nature of some terrains, they cannot always be avoided. Caution is the prime defense in that case.
- **The convoy must know where to go, and must be planned out in advance with backup courses of action.** If every driver knows the path they're supposed to take, and what the end goal is, they are able to better make tactical decisions and judgment calls in high-stress situations.
- **The convoy must know actions-on.** If the vehicles take contact, the drivers must know what they are supposed to do. In some situations it will be important to maintain high momentum and fight through every ambush or contact with ferociously aggressive action, while others will benefit from a more deliberate approach which involves clearing each contact with the help of dismounted infantry. It is up to the convoy commander to ensure that actions-on are briefed before the convoy starts rolling.

Situational Awareness & Security

- **Gunners must cover appropriate sectors.** The first vehicle in a convoy watches to the front, the last vehicle watches to the rear, and vehicles in between alternate left-right-left so that guns are pointed in all threat directions at all times. It is important that gunners maintain their 360° observation even when contact seems to primarily be coming from a specific direction - if not, it is easy for the enemy to exploit this and maneuver into or fire from unobserved areas while the gunners are distracted elsewhere.
- **Cohesion and security at halts are critical.** Maintaining a cohesive formation and using good security procedures are critical to convoy survivability. If a full halt must be conducted, dismounted infantry must be employed to keep the convoy safe while halted. Cohesion is just as important, as it masses friendly forces and makes it much more difficult for the enemy to endanger the convoy.

Actions on...

Contact - Push Through

If ambushed, our standard procedure is to fight through it while mounted and not stop until we have exited the kill zone. If the enemy begins firing on a convoy, all gunners should immediately bring their weapons to bear and put out a heavy volume of return fire. Even if the gunners cannot see the enemy, they need to be firing in the direction that they are taking fire from. Once an ambush is initiated, the lead vehicle driver needs to be particularly vigilant in his scanning of the road. The odds of an IED or other explosive being placed in the path is extremely high, and it will require split-second timing to avoid such devices.

When an ambush occurs, "push through" is done unless otherwise stated. Leaders can also emphasize this by stating "Push through!" upon making contact.

Contact - Dismount & Assault Through

The alternate method of dealing with contact as a convoy is to assault into the contact. This is done with the verbal command of "Assault through!". When this order is given, troops dismount while vehicle gunners lay heavy fire onto the enemy positions. The dismounts and vehicles then proceed to maneuver towards the enemy and decisively engage and destroy them. When the enemy has been defeated, troops remount and continue on with the mission.

Note that when assaulting through, the infantry and vehicles are still ultimately interested in continuing on the convoy. They have some freedom to maneuver off of the convoy route to take the fight to the enemy, but they do not want to get pulled too far away.

Disabled Vehicle

Most of the types of damage that can result in a disabled vehicle cannot be worked around in Arma 3. Because of this, our standard procedure for a disabled vehicle is for the other vehicles to drive around it, halt in a safe area (out of the kill zone, if it's an ambush), and recover the vehicle crew if they're still alive.

It is up to the crew of the disabled vehicle to get out of their vehicle and fight their way to friendly forces. Stopping more vehicles within an ambush kill zone would only result in casualties and more disabled vehicles.

When a vehicle is disabled, anyone who sees it states "Vehicle down!" on comms to indicate it.

In the event that tow ropes are available, disabled vehicles can be dragged out of a killzone. You will generally need to pacify an area before towing becomes a safe option, though desperate situations can force it to be attempted while still under fire.

It may also be possible to push disabled vehicles with a working one - something worth trying if the situation makes it more dangerous for a crew to disembark than be pushed.

Canalizing Ground

Canalizing ground is any sort of ground in which vehicles are heavily restricted in how they maneuver within it. When this sort of terrain is encountered, infantry are dismounted to move ahead and sweep the area before the convoy is committed to moving through it. It is important to keep the dismounted infantry within range of the supporting fires of the convoy vehicles while conducting this sweep, too.

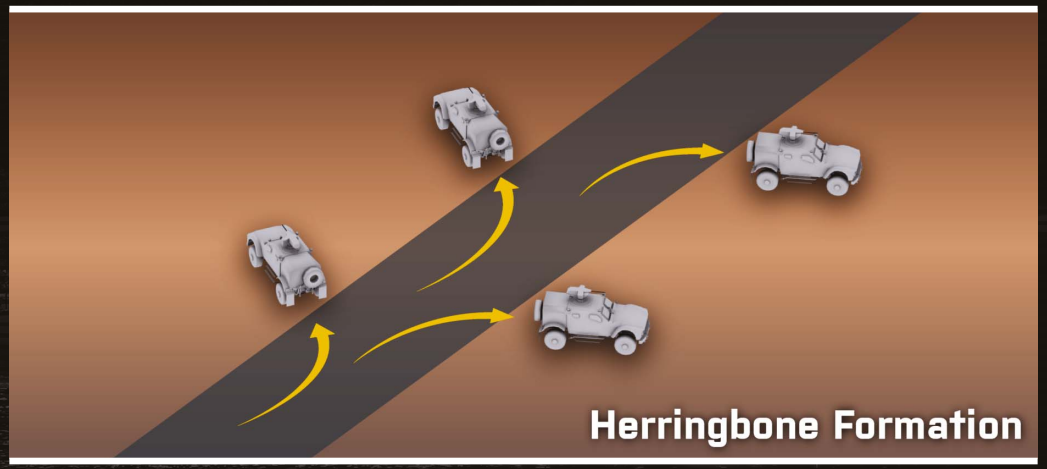
Convoy Halts

When halting a convoy, simply stacking the vehicles up on the road one-after-the-other is not the ideal way to do things. While this can be used for very brief halts, the better choice for reaction-to-contact or longer-duration halts is either the Herringbone formation (preferred, as it's the easiest to do) or the Coil formation.

Note, of course, that infantry should conduct dismount drills and provide local security whenever convoy halts are made, as described previously.

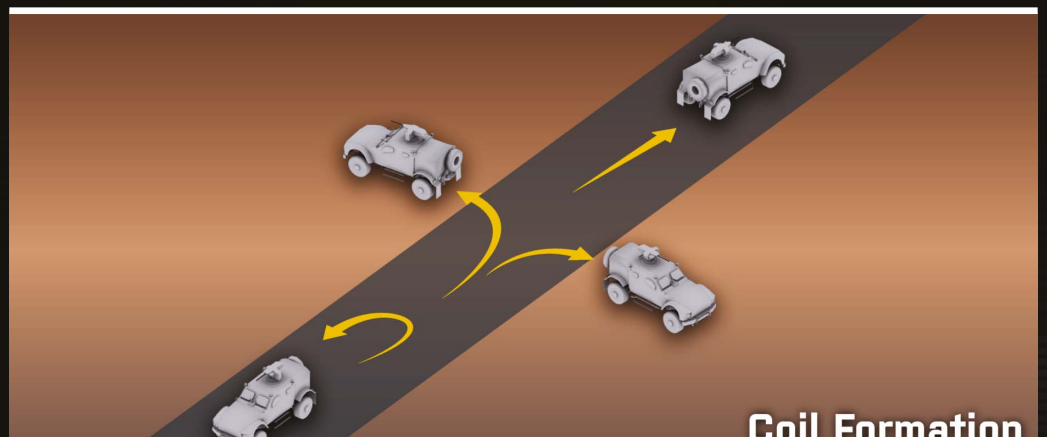
Herringbone Formation

The standard formation to use when halting a convoy is known as the "Herringbone". In this, the vehicles pull off to both sides of the road in an alternating manner - the first vehicle pulls off to the right, second to the left, third to the right, and so on. The vehicles stay angled at about a 45° angle relative to the road. This formation is easy to execute and allows for the convoy to get good security when halted while also spreading the vehicles out a bit more than otherwise. This formation can be used in open terrain as well, in which case the direction of movement becomes the "road" and vehicles move relative to it.



Coil Formation

The other formation that can be used is more geared towards armored vehicles. When executing a "Coil" formation, the lead vehicle stops and faces forward, the second vehicle pulls to the left and faces left (angling his strong frontal armor to the left), the third vehicle pulls to the right and faces right, while the trail vehicle turns around or spins in place so that it is oriented towards the rear. This allows for the vehicles to place their strongest armor in the direction that they're covering and provides excellent 360° security.



WORKING WITH ARMOR

Armored vehicles are powerful force multipliers in the combined arms battle. When properly employed with the support of infantry, the combination is difficult to match.

The most common armored vehicle assets that BLUFOR units will have with them, in increasing order of power, are the IFV-6c Panther, AMV-7 Marshall, and M2A1 Slammer main battle tank. The Panther, built on the same chassis as the Slammer, is medium armor but lightly armed, while the Marshall is medium armor and armaments, and the Slammer is heavy armor. Legacy systems include vehicles like the AAV7, Stryker, LAV-25, Bradley, and M1 Abrams.

Being familiar with and knowing how to work with armor are critical skills for infantry and vehicle crews to have. It starts with knowing what the pros and cons of armored employment are in Arma 3.

Pros & Cons of Armored Vehicles in Combined Arms Operations

The pros and cons of armored vehicles in the combined arms role are as follows.

Pros

- **Powerful weapon systems and optics.** Armored vehicles generally have cannons, machineguns, and sometimes even missile systems. These allow them to knock out strongpoints (bunkers, fortified houses), locate and kill snipers, and protect friendlies against enemy armored threats. They also provide excellent overwatch.
- **Armored & survivable.** Armored vehicles, as their name implies, are capable of taking some punishment. They are generally invulnerable to small-arms fire and require multiple anti-tank rockets to disable or destroy them. Armored vehicles can even be used to screen friendly infantry movement by driving slowly and allowing the infantry to move with them, using the armor as cover.
- **Can coordinate closely with infantry.** When properly employed, armor is integrated with infantry and works alongside them, allowing the two to mutually support each other and increase effectiveness.
- **Fast & responsive.** Armored vehicles can move quickly around the battlefield, allowing them to exploit enemy weaknesses at a moment's notice.
- **Intimidating to enemy infantry.** Unless well-equipped with reliable anti-tank assets, armored vehicles tend to intimidate enemy infantry and cause them to be very defensive and non-confrontational. This is generally due to the infantry not wanting to draw the armor's wrath unnecessarily.
- **Breach capability.** The tough armored hull of an armored vehicle enables it to smash down walls to make unexpected entry points for supporting infantry.
- **Smoke capability.** Armored vehicles are often equipped to deploy large smoke screens on short notice. These can mask friendlies from unexpected and sudden enemy contact, or provide concealment for an assault or similar.

Cons

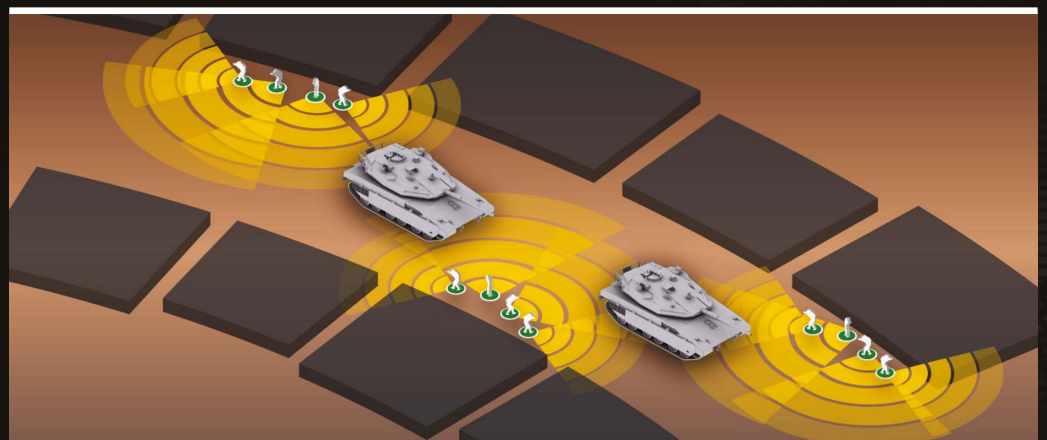
- **Loud, large, and visible.** Armor typically is a loud, visually distinct and noticeable element on the battlefield. Loud engines, tracks, turrets, cannons, and other weapon systems tend to make armored vehicles stick out prominently. It requires a great deal of crew skill to move a vehicle in such a fashion that it stays concealed while still remaining effective in the fight. "Hull down" techniques are key to learn if such employment is to be successful.
- **Limited observation of close threats.** Most armored vehicles have a hard time maintaining awareness of the areas directly around their vehicle. It is possible for their crew members to 'turn out' to see better, but this has the downside of making them vulnerable to enemy small-arms fire.
- **Vulnerable to ATGMs, cannons, and enemy armored vehicles.** Designed for fighting armor specifically, these weapon systems pose a significant threat to friendly armored forces. ATGMs and cannons can wreck an armored vehicle easily, while enemy armored vehicles can carry a wide range of nasty weapon systems that can do the same. The manner in which these systems can be concealed in defensive or ambush positions makes them all the more challenging to counter.
- **Vulnerable in close and urban terrain.** Due to their limited observation aspects, armored vehicles are at a situational awareness disadvantage when operating in close or urban terrain.
- **Extremely vulnerable to enemy air assets.** Attack helicopters and close air support jets pose a serious threat to armored vehicles and can knock them out with ease once located.

Infantry/Armor Coordination

As you can see from the above list, the key to successful infantry/armor integration is mutual support. An armored vehicle without infantry is vulnerable, just as infantry without armored support are vulnerable.

When in close terrain (such as dense woods or urban environments), it is beneficial to have infantry dismounted and moving on all sides of the armor. Infantry should lead the armor in such a situation, to prevent the armor from stumbling into an anti-armor trap or ambush.

Armor/infantry coordination in close terrain requires a great deal of communication back-and-forth. Armor need to know where the friendly infantry are, where the enemy is, while infantry need to communicate to the armor where it should move, whether there

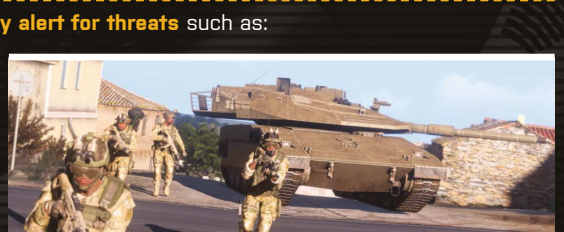


are any friendlies close to the armor (perhaps in its blind spot), where they suspect the enemy to be, and so on and so forth.

Infantry bring the following benefits to armored vehicle crews when employed together.

What Infantry Provide to Armor

- **Dispersed eyes-on-the-ground which can stay alert for threats** such as:
  - Enemy anti-tank threats - AT gunners, cannons, deployed ATGMs
  - Enemy armored vehicles
  - Mines, satchels, and IEDs
- **Ability to spot targets without exposing the armor, and then direct the armor's movement and fires** to kill the targets efficiently.
- **Protection in close terrain.**
- **Guiding movement in close terrain.**

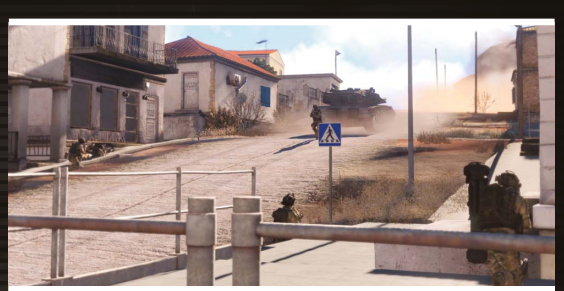


INFANTRY CROSS A STREET AS A SLAMMER COVERS THEM

Guidelines for Infantry when working with Armor

- **Keep a healthy distance from the armor.** Armored vehicles have a hard time seeing infantry close to them. Since you're a squishy infantryman, it's a good idea to keep your distance from the armor. In particular, you want to avoid being behind them unless they are deliberately providing cover for friendly infantry. If not, they are apt to throw into reverse without any warning, which can result in pancaked infantry quite easily.
- **Watch out for overpressure from tank main guns.** In realism mods, the blast overpressure that comes from the main gun being fired can severely injure anyone nearby. Stay clear of tanks when they are likely to be employing the main gun.
- **Screen the tank in close terrain, ensure infantry are moving ahead of it as well.** Infantry should be moving in a fashion that allows them to observe and cover any threat avenues before the tank becomes visible to them. This is intended to spot ATGMs, RPG teams, and other infantry threats so that the armor can be warned, or the infantry can kill them before they have a chance to do anything.

- **Identify and communicate threats to the armor.** Whenever a known or suspected threat is identified, the armor should be informed of it as appropriate. If the threat is high, this typically means that the armor will be told to stop while the infantry clear it out.
- **Identify and communicate any threats to the infantry that the armor can instead handle.** Some threats will exist that will not be a danger to the armor, but may pose a severe threat to infantry. Typically these take the form of enemy infantry concentrations, snipers, machinegun bunkers, and other forces that can hurt infantry yet do not pose a threat to armor. When these are identified, it is the job of the infantry to direct the armor so that the armor can eliminate the threat.
- **Be aware of the armor's breaching abilities, and request them when appropriate.** More info follows in the "Breaching with Armor" section, below.
- **Armor can act as part of the base of fire, freeing up more infantry to participate in an assault.** While you will generally want to keep infantry with the armored base of fire to provide close protection, you won't need as many people in the actual base of fire due to the magnified optics and powerful weapons of the armor being a force multiplier.



A SLAMMER DEMOLISHES A BUILDING AS INFANTRY WAIT BEHIND IT

Guidelines for Armor when working with Infantry

- **Infantry are squishy.** Particularly in close terrain, make an effort to not run over them. They really don't appreciate becoming tread grease.
- **Be mindful of overpressure dangers to the infantry.** When playing realism mods that simulate blast overpressure, don't fire the main gun of a tank when in close proximity of infantry unless absolutely necessary, or if you are positive that supporting infantry are clear of the overpressure danger zone.
- **Let the infantry lead in close terrain.** An anti-armor ambush will wait for vehicles to present themselves before firing. If infantry are leading, they will have an opportunity to spot the hidden ambush elements before the armor comes into view, since the ambushing elements will typically be waiting to fire.
- **If necessary, the armored vehicle commander can dismount to talk directly with the supporting infantry.** Do so in cover, of course. This can be useful for 'terrain familiarization' discussions.

Armor as Overwatch

One of the defining attributes of armor when in support of infantry is the ability for it to stand off from the battle and deliver accurate fires from beyond the effective range of the enemy.

This can be brought to bear with infantry by providing overwatch of infantry elements as they move to contact. An armored vehicle can suppress the objective with machinegun fire, take out fortified positions with cannon fire, and provide immediate accurate fire upon any threats that might emerge to oppose the infantry. This allows for the infantry to rapidly move up to the enemy positions with the minimum of risk.

AN PANTHER PROVIDES OVERWATCH TO THE INFANTRY IT HAD TRANSPORTED INTO BATTLE

Having an armored vehicle many hundreds of meters away from suspected enemy positions also helps to lessen the likelihood of enemy anti-tank gunners being able to engage the armor. This comes most into play with unguided anti-tank rockets like the RPG-42; guided weapons tend to have much longer effective engagement ranges and are not as easily defeated by range.

In short, **armor is much more effective against infantry at a distance than infantry are against armor at a distance.** Take advantage of this at all times, and especially when providing support to dismounted infantry elements.

Breaching with Armor

Breaching a wall with the help of an armored vehicle is a good way to surprise defending enemy forces and give your infantry a fighting chance. Typical enemy defenses focus on natural "choke points" such as a central entry to a compound that is otherwise walled off. Breaching a wall in an unexpected place and attacking through the breach is an excellent way to catch the enemy off guard and destroy them before they can shift their defenses.

General Procedure for Mechanical Breaching

The process for breaching with any armored vehicle is fairly simple.

1. **Assess the situation, decide on a breach location.** Be on the lookout for mines, satchel charges, IEDs, or any other devices that might be in place to protect against the possibility of a breach at the location chosen.
2. **Once the breach point is finalized, the breach vehicle proceeds towards it at full-speed and smashes a hole in it.** When about to impact the obstacle, the breach vehicle fires smoke dischargers if available. This will mask it upon breaching and provide concealment to the infantry.
3. **After creating the hole, the vehicle immediately reverses out of the breach point to clear a way for the infantry.** The reasoning behind having the breach vehicle withdraw after creating the breach versus charging into the unknown is simply that it increases the survivability of said vehicle. While a tank might be able to drive through the breach point, plant itself on the other side, and obliterate everything that opposes it, lighter infantry fighting vehicles will end up being disabled or outright destroyed by things like AT-4s, RPGs, and other light anti-tank weapons. It's a safer bet to simply have the infantry secure the area before bringing light armor in.

4. **Infantry proceed in from either side of the breach and assault through it while the breach vehicle provides overwatch.**

Notes about Ballistic Breaching

Bear in mind that **walls can also be breached with cannon and machinegun fire.** HEAT rounds from tanks will flatten walls, while a box of .50cal bullets will crumple some as well. Note too that **"prepping" a breach point with .50cal rounds from an APC can soften up a wall and make it easier to breach.**

When breaching a wall from a stand-off location via cannon or machinegun fire, the breach vehicle simply ensures that no friendly forces are within a danger radius of the breach point. Once that is confirmed, they direct fire onto the breach until it opens, at which point they shift fire to allow the infantry to storm in.

AN AMV KNOCKING DOWN A WALL VIA 40MM CANNON ROUNDS IN ORDER TO CREATE A NEW ROUTE FOR INFANTRY

WORKING WITH HELICOPTERS

Helicopters provide infantry with both transportation and fire support. They are the most tightly-integrated air asset available to ground troops and act as a major force multiplier. Helicopters are commonly employed in a support role, and all players are expected to be familiar with their employment in the combined arms fight. That familiarity begins with knowing the pros and cons of their combined arms role.

Pros & Cons of Helicopters in Combined Arms Operations

The pros and cons of helicopters in the combined arms role are as follows.

Pros

- **Observation.** Helicopters are great at reconnaissance and security. This is in part due to their relatively low speed and the low altitude that they operate at, combined with observation pods on many of the most common helicopters employed.

- **Insertion/extraction capability.** Helicopters can airlift troops and drop them at will nearly anywhere they want. This allows for great flexibility in planning operations.
- **Orbit capability.** A helicopter can stay "on station" over the ground forces it is supporting with ease, due to the dynamics of helicopter flight as compared to what jets are able to do. A helicopter that is orbiting over friendly forces is available to provide support in the form of machineguns, cannon fire, rockets, ATGMs, or observation, depending on the variant and armaments.
- **Rapid reaction to Close Air Support requests.** Due to the ability to orbit as described previously, a helicopter acting in a CAS role can rapidly react to any support requests made. This reduces the time between a CAS request being made and rounds landing on target. This, in turn, makes it more likely that the CAS will be able to suppress or kill the enemy threat before it can do harm to friendly forces.
- **Precision CAS.** Helicopters can be very precise in their employment of fires, due to speed, altitude, magnified optics, the capability to hover, et cetera.
- **Stealth.** Helicopters can get low to the ground and can hide in terrain in a fashion similar to ground vehicles or even infantry. They can transport troops in a concealed fashion, as well as sneak around in a combat capability, popping up into view only when they're ready to kill something.

Cons

- **More vulnerable to most threat weapons.** Helicopters can be taken down by a wide range of weapon types if they're not carefully employed. They fly low and slow relative to jets, and transport variants can be very vulnerable when flying into or out of a landing zone.
- **Weaker armament than jets.** Helicopters cannot lift as much ordnance as jet aircraft, meaning that they almost never have anything that can pack the same kind of punch as a 500lb or 2000lb bomb from a jet. However, they make up for this with the precision of their fires.
- **Loud.** The enemy will definitely hear helicopters coming in, unless in the midst of a major battle.

Standard Roles & Positions When Working With Helos

When infantry are embarked in helicopters, they end up taking roles that complement those of the standard helo crew. This includes two primary roles - the Navigator and the Door Gunner. Since these roles are only typically used when ferrying troops to combat, it makes sense to use those same troops to man the positions that benefit them.

Navigator

A variety of issues make it beneficial for each helicopter pilot to have a passenger act as a navigator. This typically will take the form of the senior passenger (ie squad leader or fireteam leader) acting as the navigator. The navigator will board the helo first, into the copilot seat. This gives him the ability to see clearly in the direction of flight, as well as use the imaging turret sensors on those aircraft that have them.

A navigator allows the pilot to concentrate on flying without having to try to switch back and forth between his map to try to watch his route, which helps to reduce the risk of 'controlled flight into terrain' (CFIT). The navigator also acts as an additional set of eyes that can scan the terrain for enemy threats, suitable LZs, and more. Navigators do not plot the helicopter's route to the LZ - instead, they help guide the pilot along the route that was chosen during planning, allowing the pilot to focus more fully upon his flight duties.

Navigator Guidelines

Navigators use several verbal techniques to help assist the pilot's flight.

On My Mark - When a navigator gives a pilot a heading, he may precede the heading with "On my mark", which indicates that the pilot does not turn to that heading until the navigator has given the word. For instance:

> Navigator: On my mark, make your heading two seven five.
>
> *(The navigator watches the map and waits for the aircraft to reach a specific point)*
>
> Navigator: Mark, make your heading two seven five.
>
> *(The pilot makes his course correction after hearing the navigator say 'mark')*

Time/Distance to Action - A navigator can assist the pilot by telling him approximately how far he has to go to reach a given waypoint, landing zone, or other important point. Most people seem to be able to estimate distance better than time, and thus it's best to give these heads-up calls in distances instead of seconds. For instance:

> Navigator: Maintain this heading. In one kilometer you will cut due west... 500 meters to turn... Stand by to turn on my mark... Mark, make your heading due west.

Terrain Visualization - A navigator who can accurately tell the pilot what terrain features he will be seeing next, and how to guide himself to the next waypoint with their help, is an invaluable asset. This only requires that the navigator can read the contours of a map with accuracy. For instance:

> Navigator: When we exit this valley there will be a small hill to our front-left. Pass it on the southern side and then prepare to make a hard right turn to the south. The landing zone is a large field in front of a forest that will be visible after your turn, set down as close to the treeline as you can.

Door Gunners

Not to be confused with a "Crew chief", who is part of the helicopter's crew, "door gunners" are instead part of the squads or teams embarked upon the helo. These gunners help to maintain security during flight, and debark with their parent unit once at the LZ. If engaged en route, the door gunner communicates with the crew chief and pilot and assists them in returning fire on enemy contacts.

A DOOR GUNNER, NOTED BY HIS CAMO AND NOT THE FLIGHT SUIT THAT A CREW CHIEF WOULD WEAR, STANDS BY TO MAN THE M134 ON A GHOSTHAWK

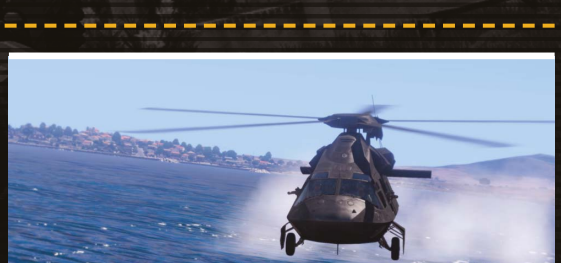
Like the crew chief, the door gunner is also responsible for communicating the proximity of obstacles to the pilot when in close terrain and attempting to land. This can be done with simple concise verbal commands to the pilot to tell him which way to move the helo to avoid obstacles, such as "Tree left, move right 10 meters". Infantry leaders ensure that the most level-headed and competent players end up as door gunners.

Door Gunner Guidelines

- **Scan for threats & communicate them to the pilot.** The gunner must be constantly scanning for hostile threats. He watches for:
  - Enemy personnel and vehicles
  - Muzzle smoke
  - Tracers
  - Smoke trails from missiles or rockets
  - Trees, large rocks, and other obstacles when descending into an LZ
- Upon spotting any of these he immediately informs the pilot. The gunner can use either clock directions or relative directions (ie: front, left, right, etc) when calling these targets or objects out.
- **Be proficient with helo door gunnery.** This includes knowing how to correctly lead targets when the helicopter is moving at a variety of airspeeds. As a general guideline, one must lead in the direction that the target is moving relative to the gunner's perspective. If a target is crossing from right to left, the gunner must lead the target by aiming to the left side of the target.
- **Disembark once the helo has landed at the LZ.** The door gunner, being part of an infantry fireteam and squad, does not stay mounted in the helo. Once at the LZ, he jumps out and rejoins his fireteam.

Airborne Assaults

An airborne assault is simply an assault which uses helicopters to move the infantry into position. Airborne assaults are planned by the highest leadership element in game - usually the Platoon or Company Commander in a cooperative environment.



A GHOSTHAWK EN ROUTE TO AN LZ

Planning the Assault

Landing Zone (LZ) Considerations

The first thing that must be considered for a airborne assault is where the landing zone(s) will be. Things like equipment loadout, force composition, main objectives, etc are typically done on the mission-makers side, so they are not generally planned for at the platoon level. The platoon gets the orders [in the form of a mission operation order] and acts on them.

When choosing a landing zone, the following must be taken into consideration. In short, you use METT-TC and OCOKA, but specific emphasis is made on the following elements of it.

- **Terrain.** What kind of terrain is around the objective? Is it hilly, flat, mountainous, etc? Flat terrain makes LZ selection difficult and generally forces you to land further from the objective. Hilly, rough terrain can allow for a closer LZ to the objective, but makes it harder to find a good LZ to set down at - which increases the usefulness of being able to drop troops without setting the helicopter down.
- **Approaches.** Being able to approach the LZ and never come into visual of the enemy is highly desired. If they cannot see you, they cannot hit you with direct-fire weapons, and you may be able to confuse them as to your precise landing spot. Terrain depressions, hills, and even forests can be used to mask the helo on the approach.
- **Cover/Concealment availability.** Once the troops are on the ground, what kind of cover and concealment will they have? The more the merrier. At the same time, landing in an area with too much hard cover can be tricky for pilots, increasing the risk of damaging the aircraft.
- **Proximity of the enemy.** The closer you try to land to the enemy, the riskier things get. While 'hot' landings can be done, they require the element of surprise to be effective, and benefit greatly from CAS and artillery fires being used to suppress or otherwise occupy the enemy during them.
- **Likelihood of patrols.** The more likely enemy forces will be patrolling far out around the objective, the further the LZ should be, or the more the LZ should be prepped (by artillery or CAS) before the landing occurs.
- **Enemy anti-air capabilities.** If the enemy has MANPAD missiles or Tigris AA vehicles, a masked approach becomes critical. If that is not possible, the LZ must be far enough away from the enemy that there is no reasonable chance of being engaged by the enemy anti-air at or near the landing zone.

After the primary LZs are chosen, a set of alternate LZs should be determined based on the possibility of enemy contact at the main LZs. Alternate LZs should typically be position 500 or more meters further away from the expected enemy positions than the primary LZs, as an additional safety measure.

Coordination

Once the LZ(s) and alternate LZ(s) are decided on (and clearly marked on the map), the next step is to coordinate the overall assault. At this point, the following needs to be hashed out.

- **What squads will be in what helos?** As soon as this is known, the squad leaders will oversee the embarkation of their troops into their assigned helos.
- **What helos will go to what LZs, and in what order will they fly?** Establishing an order of flight is critical if one wants to get to the LZ in any sort of organized fashion.
- **What is the planned route to the LZ?** High/low alt, terrain following, etc. Mapping out the route with map marks is always useful. Note that pilots can use the 'vehicle' channel to place detailed waypoints on the map for their own reference during flight. When time is available to do this, it should always be done, as it greatly reduces the workload on the pilot/navigator and allows them to concentrate more fully on situational awareness.
- **What order will the helos land?** Simultaneously, staggered? Are waves necessary? The pros/cons of each are as follows:
  - **Simultaneous.** A simultaneous landing is when all aircraft hit the LZ within about fifteen seconds of each other. This puts a lot of boots on the ground very rapidly and forces any defending forces to split their fires between multiple helicopters. Simultaneous landings typically cover a decent stretch of ground, which further dilutes the effectiveness of any defensive enemy fire. The number of guns on the helos also helps to suppress the landing zone on the way in, and provides support on the way out.
  - **Staggered.** Staggered landings occur when helicopters hit the LZ one after the other, with 30 seconds to a minute or more between each landing. This allows one squad to get on the ground, establish the security of the LZ, and provide coverage as the next helo comes in. Staggered landings are sometimes forced by the terrain - if there is only a small LZ in a clearing that is suitable for landing, you may not be able to orchestrate a simultaneous landing.
  - **Waves.** Waves occur when the number of helicopters available cannot airlift the entire assault force in one go. The key characteristic of wave landings is that the initial force will be alone on the ground for as long as it takes for the aircraft to return to the staging area, pick up the next wave, and fly them in. If the enemy becomes aware of the fact that waves are being used, they are likely to try to ambush successive waves. It is important to not become predictable in flight path/ingress directions when using waves.

- **What are the responsibilities of the various squads and fireteams upon landing?** Each squad needs to know where to go immediately upon landing so that they clear the LZs as quickly as possible and provide security for the assault force. Security must be given high-priority consideration, as it is critical to the success of getting all friendly infantry onto the ground safely. Each fireteam should know what area of responsibility it has, and the squads should be given clear orders regarding what areas they are responsible for covering at the landing zone.

THE SCENIC ROUTE

Loading Up

Leaders load their troops and get accountability

When it comes time to board the helos, element leaders will direct their teams to the appropriate helos and get everyone loaded up. The element leaders board last, after getting accountability for their troops, and then tell the pilot that all troops are loaded. The squad leaders report to the Platoon Commander when their squads are fully loaded.

How to approach a helo when loading

When boarding helicopters, approach them from the side. This is for two reasons, one of which is modeled by default, and one of which is modeled in some realism mods.

The first reason is because many helicopters have door gunners, and a good practice is to avoid crossing their line of fire. This may not come into play much during boarding at a friendly location, but it will be a large factor of hot extractions and disembarking. Get in the practice of not crossing the gunner's line of fire when embarking or disembarking from a helo.

INFANTRY RUSH TO A GHOSTHAWK THAT JUST LANDED

The second reason, seen in some realism mods, is so that the tail rotor does not turn you into flying chunks of meat. Being off to the right or left of the helo means that the tail rotor would have to move a great deal to strike you, which means you'd likely have enough time to get the hell out of the way before being minced.

Spread loading

It is important to ensure that critical elements such as anti-tank, demolitions, and other mission-essential roles are spread-loaded throughout the different helos. This is done to ensure that the loss of one helo does not cripple the assault. Squad leaders are each in a different helo, and the Platoon Commander (or Company Commander) spreads his PltHQ element out through all of the helos to ensure that the PltCo, PltSgt, and Plt Medic are not all lost if their bird goes down.

Contingency Planning

It is important that the overall assault coordinator clarifies the actions that will be used for any unexpected situation in advance. I will describe the standard procedures for them, which are standard operating procedure (SOP) and thus in effect unless the assault coordinator specifically says otherwise.

Actions On: Downed Helo

One of the most damaging events to an airborne assault, particularly one done at the platoon level, involves a helicopter being shot down before reaching or upon reaching the landing zone. Thanks to the damage model of Arma 3, helicopters can oftentimes land semi-successfully after taking heavy damage. While this will likely result in many wounded and likely several killed in the helo, the chance for people to survive is significant and must be acknowledged. **Just because a helo goes down does not mean that all hands aboard were lost!**

A TIGRIS LANDS A CRITICAL MISSILE HIT ON A GHOSTHAWK. WHEN AN AIRCRAFT IS GOING DOWN IN FLAMES, YOU CAN REASONABLY EXPECT NO SURVIVORS.

The **steps for reacting to a downed helo** start as soon as it looks like an aircraft is going down. These steps are typically carried out by the pilot, navigator, copilot, or door gunner - the roles most likely to have a good visual on things.

1. **Observe the crash.** If the helo goes down in view of others, the speed of the helo upon impacting the ground, as well as whether it landed in trees/on rocks/etc, can give a good rough idea of whether any survivors are likely.
2. **Identify the manner in which the helo was shot down.** It could have been from SAF, HMGs, RPGs, missiles, etc. Knowing what caused the crash helps the other helos to change their tactics accordingly.
3. **Communicate the threat type if known, and that a helo went down.** Identify the helo if known (ie: "Bravo's helo"). Give an idea of whether there are any likely survivors.
4. **If necessary, call out an LZ shift for the troop transports.** For example, "LZs shift 500m west!", spoken so that all aircraft pilots can hear it, to ensure that the landing is not made in an area with unexpectedly heavy enemy activity. All that is needed is a compass direction and a distance, or a verbal description if appropriate to the terrain. This call requires a rapid evaluation of the enemy threat posed as well as sound judgment.
5. **Continue with the landing.** Getting troops on the deck becomes even more important if a helo has been lost - the longer they stay in the air, the more likely it is that another helo will go down.

6. **If CAS is available, it can proceed to do a visual recon of the downed aircraft,** to see if survivors are visible and provide close air support if so.
7. **Once all troops are offloaded, if no CAS is supporting, a transport helo can be dispatched to do a visual recon of the downed helo.** This aircraft can provide support via their defensive machineguns, but the enemy threat may make it impossible to orbit the area. For example, if a Tigris shoots down a helo, there's no reason for another helo to fly into that danger area - they can't help against a threat like that.

SOMETIMES IT WILL BE RATHER OBVIOUS THAT NOBODY WALKED AWAY FROM A CRASH...

Bear in mind that the mission commander will be involved in the decision-making process for a downed helo scenario and will be giving orders as needed. The ultimate goal is to rescue any survivors of the crash, but it will be up to the commander as to how exactly that will be done, given the tactical situation at the time.

Actions On: Heavy LZ Contact

The other "worst case" scenario involves landing in heavy contact, where the helicopters are coming under concentrated and accurate fire before they get on the ground, or are ambushed upon landing.

The threat to the landing force must be rapidly evaluated. If the helos can land safely and offload their troops, and the troops will be in a position to effectively engage the enemy, the landing should continue as planned. If the threat is particularly high or the LZ has been compromised by the positioning of enemy forces, shifting LZs becomes necessary. Announcing an LZ abort or shift of LZs is critical to ensuring that trailing aircraft know not to continue their approaches.

Note that consideration must be paid towards any friendly elements that are already on the ground - if one helo disembarks troops and the second is shot down, the third should make every reasonable attempt to land close enough to support the players already on the ground. If all helos are on the ground and disembarking troops when an ambush is sprung, they may be faced with a tough decision - offload the rest, or abort the drop, hope that the people on the ground can hold out, and drop the rest of the troops close enough that they can move to support their comrades in short order and potentially attack a vulnerable flank or rear of the ambushing forces. Whatever the case, the decision must be made rapidly and announced clearly so that a coordinated response can occur.

Actions On: Emergency Landing

An emergency landing is typically the result of unexpected damage to the aircraft. Fuel leaks or damaged tail rotors can cause this, as can outright engine failure. It can happen anywhere - at the LZ, over random enemy territory, in friendly territory, and even over water.

The **steps for dealing with an emergency landing** are as follows.

1. **Identify the type of emergency and begin immediate actions** to deal with it.
    1. **Fuel leaks** are a problem when they make it impossible to get to the current destination. Fuel leaks are relatively easy to deal with, provided that you have time to fly out of hostile fire before setting down.
    2. **Damaged tail rotors** make landing very tricky. It is best to maintain a high speed to lessen the effect of the tail rotor, get out of enemy territory, and then find a nice, open field to land in.
    3. **Engine loss** is the most serious emergency. Autorotation must be immediately executed for there to be any hope of survival. Autorotation is covered in detail in the helicopter chapter of this guide.
2. **Declare an emergency.** The pilot will communicate on command channel that his aircraft is having a serious problem which requires an emergency landing.
3. **Communicate where you are attempting to land,** so that other helos and the Platoon Commander are aware of where to search for you.
4. **Upon a successful landing, immediately get mounted infantry out and into defensible positions.** Security is the immediate concern. If the landing position allows for the defensive guns of the helo to be employed, use the helo crew to man them.
5. **Communicate with higher** as to where the landing was made, the status of forces on the ground, and anything else relevant.
6. **If wounded are present, establish an aid position** from which any accompanying medical personnel can provide aid.
7. **Make a decision to either guard the crash site and await pickup, or push out to a more defensible area.** Act upon that decision and communicate it to higher.
9. **Continue with the mission** if possible, or await further guidance from the Platoon Commander.

Executing the Assault

Preflight

The final step before lift-off is the pre-flight checklist. This is done by the Air Assault Coordinator to ensure that every relevant step has been completed.

- Pilots have been given their LZs.
- Emergency drills, if different from SOP, have been decided on and briefed to all elements
- Areas of responsibility upon landing have been given at both the platoon (per squad) and squad (per fireteam) levels.
- Rally points have been assigned.
- Elements have embarked as planned.
- Crew chief and door gunner positions are manned.
- Navigators, if required, are positioned appropriately.
- Element leaders have given confirmation and have accounted for their troops.

Conducting the Assault

Once the pre-flight checklist has been mentally and verbally run through (as necessary), the air assault coordinator gives the order and the helos take off to begin the airborne assault.

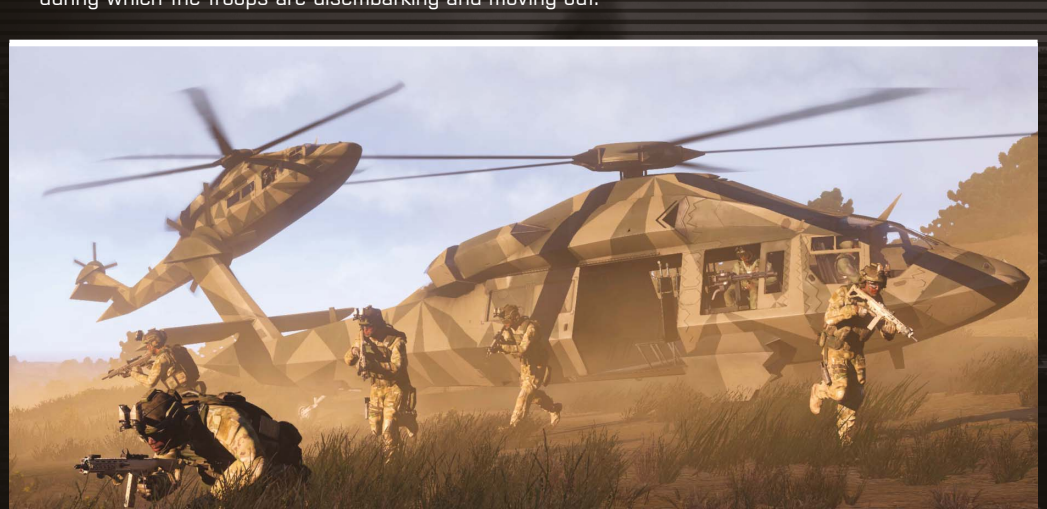
At this point the pilots of the assault elements move via their assigned routes to their respective landing zones, maximizing their use of the terrain to conceal their approach. Depending upon the forces available, an attack or recon helicopter may precede the transport helicopters to the LZs to sweep the area for enemies. Artillery can also be used to "prep" an area or lay smoke to conceal the landing from known or suspected enemy positions.

Having an attack helo orbiting the landing zone during an insertion allows for rapid support should the aircraft take fire near the LZ.

At the Landing Zone

Assuming that none of the above-listed contingencies happen (downed helo, heavy contact, emergency landing), the following steps take place at the landing zone.

1. **The helo comes into range of the LZ and prepares to land.** Speed and altitude drop accordingly. It is important that the pilot's approach is smooth and fast, as it minimizes the amount of time the embarked troops are in a vulnerable position.
2. **The doorgunner and crew chief scan the LZ area and suppress any contacts as necessary.** The helo crew scans vigilantly to ensure that the helo is not about to set down into an ambush. If they see anything suspicious, they immediately report it to the pilot.
3. **Helo touches down at the LZ.**
4. **Pilot announces "Go, go, go!" loudly,** which the senior infantry leader on the helo repeats. It is important to let the pilot make this announcement, since he is the one that knows whether or not the landing is complete. "Jumping the gun" and hopping out too soon can result in rather nasty falls.
5. **Upon hearing "Go, go, go!", all infantry immediately dismount, and the door gunner and crew chief hold fire to avoid hitting any dismounting infantry.** The door gunner dismounts after his fellow infantry are safely out. Note that when disembarking, every player should avoid crossing the door gunners' lines of fire if possible. Even though the door gunner and crew chief are supposed to hold their fire when troops are debarking, there may be times when they have to risk it and fire anyway. Obviously, running in front of something like an M134 can end your day in a real harsh way. To play it safe, players should do their best to avoid crossing the lines of fire of the doorgunner and crew chief. As a door gunner or crew chief, you should exercise a great deal of caution when firing in the five seconds after touchdown during which the troops are disembarking and moving out.



6. **Senior element leader (ie: squad leader) oversees the dismounting process.** He steps away from the aircraft a few paces, takes a knee if possible, and watches the passenger section of the aircraft.
7. **All infantry immediately head to their assigned areas.** A typical squad insertion involves the fireteams spreading out on either side of the landing zone to provide 360° security. Each fireteam moves away from the aircraft, spacing out and orienting outward to defend against any nearby threats. If hard cover and concealment is around, the infantry naturally integrate it into their movement and defensive plans.
8. **When no troops are left on the helo, the senior element leader tells the helo pilot that ground forces are clear of the helo.** The crew chief is also observing the cargo area and will tell the pilot as well - either can be used as the signal for lifting off.
9. **The helo takes off.** Upon hearing that ground forces are clear, the crew chief resumes firing suppression of any enemy forces around the LZ. The pilot then begins his post-insertion mission, which oftentimes is that of aerial reconnaissance and support.

Assuming that everything goes according to plan, an entire platoon can hit an LZ, unload, set up a perimeter, and have their transport aircraft flying out of the LZ area in under a minute.

TROOPS LEAVING A GHOSTHAWK IN THE LZ

Extractions

Getting troops on the ground is only part of the problem. Oftentimes they will need to be extracted as well - sometimes from a clear LZ and sometimes from the midst of a heated firefight.

Helo extractions can take several forms. At the highest level you have a full multi-squad extraction of all friendly elements that requires several helos to achieve. At a lower level you may see an extraction of something like a scout/sniper team, forward observer, or other small element. The main point for the infantry on the ground is to do everything they can to minimize the risk of the helo being shot down when it comes in to make a landing. This requires good choices of landing zones, posting security, good lines of fire and observation, and good communication and coordination with the helo.

Procedure for Calling an Extract

1. **First, give a heads-up to the pilot along with a general area he should start to head for.** This allows the aircraft to be making progress towards the area before the specific LZ has been decided on.
2. **Identify a good extraction area and mark an LZ on the map.** Oftentimes the tactical situation will require you to choose an LZ that is difficult to observe and fire into. Forcing the infantry to run a bit further, provided that it reduces the chance that the helo will be shot down, is an acceptable side effect.
3. **Communicate the LZ position to the extract helo(s).** Use clear and concise language and ensure that you tell the helo about the situation at the LZ - specifically, mention any expected threats, whether the LZ is hot or cold, the terrain, and the intent in choosing it. For example - if you picked an LZ on a specific side of a hill, make sure that the pilot(s) know that you did so because you expect an enemy threat to exist on the other sides of the hill.
4. **Move to and secure the landing zone.** Clear the area of hostiles and think about where enemies could position themselves that would be a threat to the incoming helicopters.
5. **Post security.** Security elements will watch for the enemy and hold them off if necessary. They will be the last to board the helos. Security elements must be confident that their leaders will tell them when to board the helos, so that they can focus on providing security and not being distracted by watching the aircraft come in, land, et cetera. Typically the entire squad will be employed as the security element.

6. **Guide the helo in verbally and visually and deploy smoke if available to help it on final approach.** The senior element leader on the ground will communicate with the pilot to ensure that he is coming to the correct LZ. If operating in visually cluttered terrain, smoke can be deployed to help reduce the amount of time it takes for the pilot to locate the LZ. The senior leader on the ground will talk to the helicopter pilot until he has touched down, giving him feedback on where he is landing, where friendly troops are, where the enemy is expected to be, and correcting him as necessary.
7. **Board rapidly and get out of there.** Once the helo is on the ground, security elements are called in and board the helicopter. The process of boarding must be done very rapidly, with each team leader guiding his teammates to the helicopter as quickly as possible. The last person in should be the overall element leader, who is accountable for his troops. Once they're in, he boards the aircraft and loudly states "We're in, go, go, go!", at which point the helo takes off and the crew chief and door gunner, if available, fire heavy suppression to cover the aircraft as it gains speed and altitude.

WORKING WITH CLOSE AIR SUPPORT

Close air support (CAS) is the use of aircraft to directly support ground forces. It comes in two main forms - that of fixed-wing (jet) support, and rotary-wing (helo) support. Both have their pros and cons, and both are major force multiplies for the infantry. This section will cover the basics of CAS and how it is employed by Shack Tactical.

Pros & Cons of Close Air Support in Combined Arms Operations

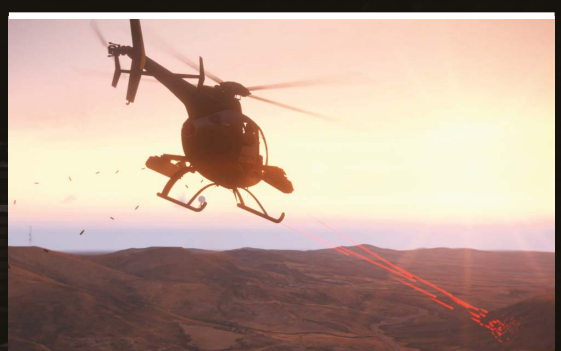
The pros and cons of CAS in the combined arms fight are as follows.

Pros

- **Great effects on target.** CAS assets carry tremendously powerful munitions. When they are delivered accurately, they are capable of destroying anything on the battlefield.
- **Hard to defend against as ground forces.** Unless the enemy has organic or supporting anti-aircraft defenses such as surface-to-air or MANPAD missiles, defending against good CAS pilots is incredibly difficult for them. Combining CAS pressure with ground force pressure is an even more difficult threat for the enemy to try to deal with.
- **Can be very precise when employed properly.** With a good FAC and a good CAS pilot, powerful munitions can be delivered with extreme accuracy. Throw in laser-designation and it becomes even better.

Cons

- **Vulnerable to enemy anti-aircraft defenses, particularly SAMs and MANPADs.** It is often mandatory to destroy any enemy anti-aircraft sites in an area before CAS can operate freely in an area. Some threats - such as MANPADs - are much harder to purge from the battlefield, which forces the CAS aircraft to continually keep an eye out for the threat indicators that such systems present.
- **Can cause significant friendly fire incidents if good air-ground comms are not maintained.** If the FAC cannot properly describe friendly locations to the CAS aircraft, or give good target indicators to guide the CAS aircraft onto the enemy, the risk of friendly fire becomes significant. Considering the power of most CAS munitions, a bad drop can wipe out an entire friendly squad or more in the blink of an eye.
- **Can take time to get them onto the right target.** The more confusing the on-the-ground situation is, the longer it can take to 'talk' a CAS aircraft onto the right enemy target. Rushing this can easily cause a friendly-fire incident, too.
- **Can take time for them to get on-station.** CAS aircraft may not always be able to orbit the battlefield for the duration of a fight, due to fuel or rearming considerations. It is important for the FAC to know the status of each CAS aircraft and the likely delay between calling for a strike and having it occur.
- **Without laser designation for some munitions, effects may be unpredictable.** Laser-designation is by far the best way to get reliable, on-the-mark terminal effects. Without it, depending on the terrain, visibility, and the ground situation, the effects of some munitions - particularly bombs - may not be as predictable as otherwise.

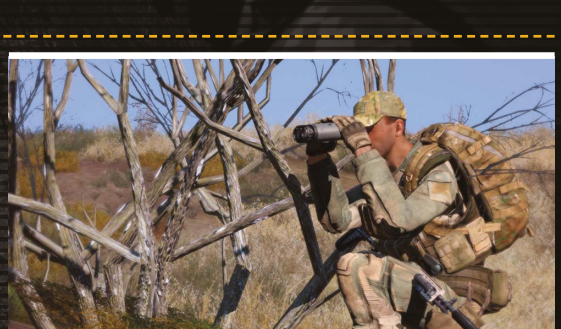


The Forward Air Controller (FAC)

About the FAC

A "**F**orward **A**ir **C**ontroller " or "FAC" is a player who is tasked with coordinating air elements in the support of ground forces. The FAC is expected to be knowledgeable in the employment of any CAS elements, be they fixed-wing (jets) or rotary-wing (helicopters). The more familiar the FAC is with the aircraft, the better he will be able to direct its employment. The best FACs have extensive experience as a CAS aircraft pilot.

The primary job of the FAC is to locate enemy targets and call in air strikes on them. He acts as the 'eyes on the ground' for the CAS aircraft and increases the effectiveness of the air support with the information he is able to relay to the aircraft.



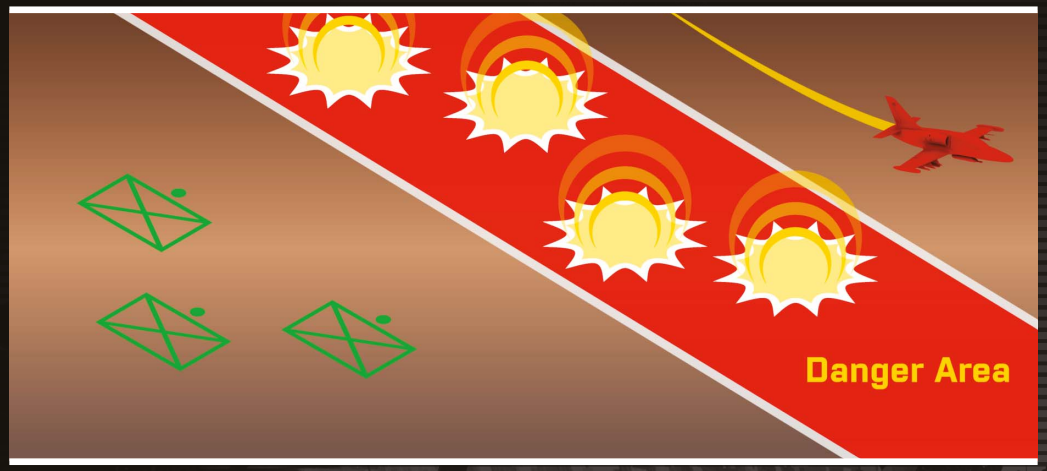
A RECON PLAYER SPOTS FOR CAS FROM A CONCEALED POSITION

It is of great importance that a FAC is used when player-controlled aircraft are operating in a close air support role. Without his support, the CAS aircraft cannot reach the same level of responsiveness and effectiveness.

Considerations for the Forward Air Controller

- **Ensure that friendly forces are clear of the target being attacked.** 300 meters worth of distance is usually sufficient.
- **If the strike is going to land within 300 meters of friendly forces, ensure that you inform the CAS Aircraft of this.** This is known as a "Danger Close" strike and requires extra coordination and finesse to ensure that friendlies are not struck.

- **Ensure that the CAS Aircraft makes his run parallel to friendly positions when employing bombs, rockets, or guns.** This lessens the likelihood for a 'short' round to impact friendly forces and cause casualties.



- **Give the CAS aircraft an approach/egress direction if necessary.** For instance, if you suspect that there are anti-aircraft guns positioned in one direction, give the aircraft an egress direction that will keep them from flying into that danger area.
- **Give a battle damage assessment (BDA) after each run.** This lets the aircraft know the effects of his munitions. Tell the pilot what he hit, how much damage he did, and let him know how accurate his attack was. "Good bombs"/"Good hits"/etc can be used to quickly and concisely tell the pilot that the strike was on-target without having to wait to determine the precise results of the attack (assuming that visibility even allows for precise BDA). An example of a more in-depth BDA is as follows:

AN F-35 RETURNS TO BASE AFTER A SUCCESSFUL RUN

FAC: Hawg, good bombs. One APC knocked out, the other is currently running north by north-west along the canal. Repeat your attack and take out the fleeing APC. Advise you approach from the south south-east if possible

The CAS Request

A standard CAS request is as follows. This can be expanded on or condensed as the situation dictates - this should simply serve as a guideline of what information can be useful and how to present it.

Standard CAS Request Procedures

1. **Establish comms with the aircraft.** This call allows for the CAS aircraft and FAC to establish that CAS is needed and warn the pilot that the full CAS request will follow.

"Hawg, this is _____, requesting immediate CAS"

2. **Describe the target.** The FAC gives a brief description of the target to be attacked. This helps to give the CAS aircraft an idea of what ordnance he will use.

"Target is an enemy infantry squad"

3. **Describe the target location.** The FAC clearly describes where the target is located. Map markers are good to use for this, combined with some kind of visual reference that can be seen from the air.

"They're in a treeline to the west of Bravo's position, 600 meters out. Marked as 'treeline ei 3'."

4. **Define control, time on target, and ordnance to use.** Whether the strike happens ASAP or at a designated time or in response to a specific call, and if necessary, the type of ordnance requested.

"Give me bombs and rockets on that target ASAP."

5. **Elaborate as necessary.** Anything not covered already, as time and the situation allow.

"The treeline runs north-west to south-east, approach from either. Friendlies are located 600 meters east of the treeline in good cover. The enemy is spread throughout that treeline; hit it all over."

An example of how that might be condensed in a gaming environment is as follows:

"Hawg, need immediate CAS on enemy squad at marker 'treeline ei 3' 600m to the west of Bravo. They're all over the treeline, hit it ASAP with whatever you've got."

CAS Terms & Meanings

There are several standardized words and phrases used when communicating with the aircraft. They're broken down below into "Terminal Control" and "General" sections.

Terminal Control

1. **Laser On.** Used by the aircraft pilot to request that the laser designator be switched on. Once it's on, the FAC calls "Copy, laser on" at which point the aircraft attempts to acquire the target.
2. **Laser Off.** Laser designator has been switched off. Aircraft must give a "Laser on" command for the FAC to designate again.
3. **Cleared hot.** This call informs the CASA that they are authorized to release munitions. Typically this will not be used in a gaming environment, but it's something to keep in mind.
4. **Continue dry.** This call is given either by the FAC or the CAS Aircraft. "Continue dry" simply means that the aircraft is going to fly an attack run but not release ordnance. This can be the result of an abort call or when circumstances make it likely that ordnance release at that particular time will be less than desirable. If the FAC tells the CAS aircraft to "Continue dry", the CAS pilot should reply with "Roger, continuing dry" to let the FAC know that he understood the message.
5. **Abort, abort, abort.** CAS Aircraft must break off the attack. Munitions release is not authorized. This can be used, for instance, if the FAC sees that the CASA is about to attack the wrong target, friendly positions, or if other negative circumstances will degrade the strike's effectiveness beyond usefulness.

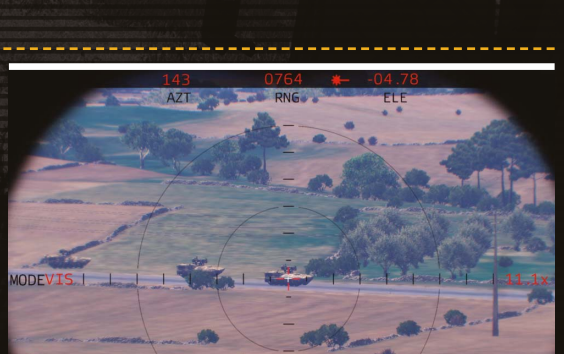
General

- **Bombs away.** Bombs have been dropped. When utilizing laser guidance, this notifies the FAC that the bombs are falling and that laser designation must be maintained until impact. When in a "danger close" situation, this can be used to notify the friendly ground forces to take cover.
- **Visual.** CAS aircraft has spotted friendly positions.
- **Blind.** CAS aircraft cannot spot friendly positions.
- **Tally.** CAS aircraft has spotted hostile targets.
- **No joy.** CAS aircraft cannot spot hostile targets.
- **Winchester.** CAS aircraft is out of munitions.

Target Designation with Lasers

Lasing a target is by far the best method for CAS strikes. There are a few guidelines to keep in mind when utilizing this method.

- **Do not turn on the laser until the CAS aircraft calls for it.** This will typically be when the aircraft is ten seconds out from the target. Turning it on early only increases the chance that the enemy will detect it and attempt to evade.
- **The laser spot is visible to the enemy if they're looking for it.** If necessary, lase something near the target, out of view of the enemy. Once the aircraft acquires the laser and is moments away from dropping their ordnance, shift the laser directly onto the enemy position. This will give them much less time to react in the event that they spot the dot. Ensure that the distance shifted is not so high that it causes trouble for the strike aircraft. The laser dot is hardest to see during the daytime, but can stand out brightly when viewed at night or when under nightvision.



LASING A COLUMN OF BTR-K KAMYSHS

- **Ensure that your laser is splashing on the target, and is not obstructed by something closer to you (ie: a bush, tree, wall, etc).** If you don't see the laser shining on the target in conditions where it should be visible, shift around until you do, or until you're absolutely positive that you are not accidentally lasing your own position.

Target Designation WITHOUT Lasers

CAS without laser designation is a bit trickier. Follow these guidelines.


A "DUMB" BOMB ON THE WAY TO INFLICT SERIOUS PAIN

Guiding with Map Marks

Map markers are as accurate as the player placing them, and with good players, they can be pin-point precise. The main problem with map marks is that it requires the pilot to spend time looking at the map, which can be problematic.

Guiding with Landmarks

Depending on the type of landmark and distance of the target from it, landmarks can be either excellent or merely acceptable guides. The key thing to keep in mind is that the landmark must be something that can be easily seen from the air. The type of air asset (jets naturally are moving much faster than helos) will dictate what type of landmark is suitable. Landmarks can be natural parts of the terrain (ie boulders, a prominent cluster of trees, the bend of a river) or man-made (buildings, destroyed vehicles, smoke columns).

Guiding with Munitions or Smoke

This is the least desirable way to orient aircraft on a target, since it typically alerts the target and gives them a bearing on friendly forces. In a pinch, infantry can utilize smoke (preferably launched via a 3GL or other UGL) or a Mk32 to designate a target for aircraft. Tracers can also be used to designate targets. Guiding a CAS strike with munitions can be very difficult, and should be avoided when possible. Efforts should be made to accomplish the guidance in another fashion before resorting to this, particularly when stealth is a concern.

The CAS Aircraft/Pilot

The CAS Pilot

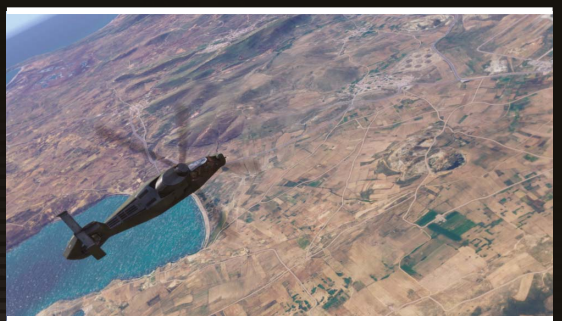
Flying as a CAS pilot is a demanding but ultimately enjoyable role. As a CAS pilot you have the capability to dramatically influence the course of a battle with the timely delivery of your ordnance. Becoming a proficient pilot takes time and is best done offline at first, with simple bombing scenarios and navigational drills to get you up to speed on how best to approach targets, navigate, deliver dumb ordnance, etc. The finesse comes in putting this into play in a live session and being able to communicate with ground elements and safely put bombs on target without friendly casualties. To that end, here are a few CAS tips.

Basic CAS Aircraft Guidelines

- **Ensure that you have your keybinds set up properly in advance.** You will want to bind the following controls at a minimum: Lower/Raise Flaps, Lower/Raise Gear, Eject.
- **TrackIR is a godsend if you plan to fly aircraft (be they jets or helos) with any frequency.** I highly recommend that people interested in flight check it out.

- **Know how to use your flaps.** Flaps provide additional lift and stability to the aircraft when operating at slow speeds. They are extremely valuable for gun or rocket runs in a low-threat environment.
- **Pressing "T"; will lock targets, while "R" will cycle through targets for any ordnance that can acquire a lock (ie LGBs, Hellfires, etc).**
- **When view distances are low and navigation becomes difficult, roads can be followed at low-altitude to get you to a target town.** The benefit of this is that the road will run through the town, which means you will automatically be aligned with the town simply by following the road.
- **When view distances are high enough, flying at altitude while inverted can give you a great view of the terrain below.**
- **Don't rush a drop.** If you can't acquire a laser designator target fast enough to align and drop ordnance properly, make another pass. Rushing tends to cause bombs to be ineffective or cause friendly casualties.
- **Make attack runs parallel to friendly troops whenever possible.** This helps to prevent long or short rounds or bombs from impacting in friendly positions.
- **Dive to increase your accuracy in bomb delivery.** Coming in from higher altitudes and diving towards the target can do a great deal to increase the accuracy of dumb munitions. Even laser-guided bombs can benefit from this tactic. Alternatively, use a pop-up attack method to deliver your ordnance - fly in low, pop up before the target, then dive to attack.

- **Shift-clicking on the map will give you a visual waypoint in your HUD.** This can be used to keep track of friendly positions, associate a map marker to a terrain position, etc.
- **Laser marks can be used to guide you onto a target even if you are out of laser-guided bombs.** Simply switch to the bombs, acquire the laser target, align on it, and make an attack run. When you are within gun range, switch to guns and you should be aligned on where the laser mark was and ready to engage whatever target was being painted by it.



AH-99 BLACKFOOT ON STATION, ORBITING

CAS Munitions

Folding-Fin Aerial Rockets (FFARs)

In Arma, these are a bit more powerful and precise than their real-world counterparts and are quite useful weapons. FFARs give an aircraft a large number of high-explosive warheads which can be fired with good precision at the enemy. They have a moderate blast radius and are very effective against infantry, vehicles, and light armor. These are best employed from rotary-wing aircraft, but still pack a punch when employed from fixed-wing craft. FFARs can be used effectively in any quantity required, from a few rockets fired at a single target to an entire barrage being placed on an area target.

Guided Rockets

The AH-99 Blackfoot is armed with DAGR rockets that can lock onto and guide towards ground targets. These rockets have limited maneuverability and a narrow launch cone - fast-moving ground vehicles or large amounts of correction required will tend to cause them to miss their target.

Anti-Tank Guided Missiles (ATGMs) & Air-to-Ground Missiles (AGMs)

Hellfires and Mavericks fall into this category. They are lock-on, fire-and-forget (in Arma) missiles that are perfect for knocking out tanks and other priority vehicle targets.

The AGM-65 "Maverick" is fired by the A-10 Warthog and will knock out anything on the battlefield with a single hit. TOWs and Hellfires are carried by helicopters, by comparison, and do a slightly lower amount of damage that is generally capable of taking out armored vehicles with a single hit.

'Dumb' Bombs

These come in a variety of sizes, from 500 to 2000 pounds. They are a bit on the difficult side to be accurate with, due to the lack of a CCIP (continuously calculated impact point) feature on the heads-up display - though some realism mods do introduce such functionality. However, if you can get these to land close to a target, you'll probably obliterate it. These are extremely effective in the urban environment, against all types of vehicles, and of course against infantry. Most buildings can be flattened by 'dumb' bombs, killing everything inside of them in the process.

Laser-Guided 'Smart' Bombs

Same as the dumb bombs, except fitted with guidance fins and a laser tracking package that allows them to guide in on a spot of reflected laser energy. With proper employment these are the deadliest CAS munitions around. Landing one of these on-target will obliterate it and everything around it. The only tricky part is practicing good FAC/CASAP coordination to ensure that the right target is lased, and that the delivering aircraft is able to drop the bomb where it's needed.

Cannons

The effectiveness of CAS cannons depends largely upon the type of cannon. The 20mm cannons on the F-35 and Cobra are best at destroying light armor, vehicles, and infantry. Naturally, the Cobra and F-35 are best able to engage infantry with their cannons due to them being rotary-wing aircraft that feature a swiveling cannon. The F-35, on the other hand, is a less-than-ideal platform for its 25mm cannon due to its high speed and the requirement for very high precision and sustained hits to cause damage to heavier targets. A F-35 pilot is much better off using his bombs than trying to score kills with the cannon, though the cannon can be used to good effect against light targets.

On the other side of things, the Apache has a very powerful 30mm cannon that can make short work of most everything on the battlefield. The A-10 Warthog has an even more impressive 30mm cannon that can tear through most tanks like a knife through tinfoil. Both of these aircraft can do an enormous amount of damage with their cannons and should view them as a primary rather than secondary armament.

WORKING WITH ARTILLERY

Artillery is long-range fire support that can act as a massive force-multiplier to the troops it is supporting on the ground. An infantry platoon supported by a battery of 155mm Howitzers has far, far more firepower at its fingertips than a Company (four platoons) of enemy infantry without artillery support.

Pros & Cons of Artillery in the Combined Arms Fight

Pros

- **Powerful terminal effects.** Artillery rounds come in a variety of types and sizes, but the general rule is that they offer powerful blast effects and are effective at putting a great deal of hurt on enemy forces, particularly soft-skinned vehicles, light armor, and infantry. Specialized rounds are also effective at dealing with hardened or armored targets.
- **Can cover areas that cannot be reached or observed by infantry, complementing any infantry defense.** Due to their flight characteristics, artillery can rain down on areas that the infantry may not be able to effectively cover. This can be used, particularly in the defense, to reinforce the overall defense by forcing the enemy to either face the direct fires of the defending infantry, or come under the indirect fires of the supporting artillery.
- **Long reach.** Artillery starts at several kilometers of range, and goes up significantly with each increase in artillery type. They are able to sling rounds all over Altis with relative ease.
- **Can screen with smoke or illuminate the night with flares.** Smoke rounds are available to provide either a defensive or offensive smoke screen in most weather conditions, while flares can be used to illuminate targets and terrain at night.
- **Variety of ammo types and fuze types for maximum effects.** Arty comes with a huge variety of ammunition and fuzing types, described later in this section. Whether working against infantry or armor, there is a fuze and round combination for pretty much every eventuality.
- **Can be directed by a single person without giving their position away.** A forward observer can call in and adjust artillery fire from a concealed location without ever giving themselves away. One good forward observer in a good position, with the support of an artillery battery, can be a major thorn in the enemy's side.

Cons

- **Delay between calling for it and getting effects on the ground.** The time-of-flight of artillery rounds will vary based on whether they are fired as high-angle or low-angle fire (note that mortars are high-angle only), as well as the distance from the target. This delay can be up to a minute just for the time-of-flight. Add onto that the fact that the artillery battery must plot the target, align their guns to it, and load the ammo before ever firing the first shot, and you may have to wait several minutes before the first shot impacts.
- **Requires skilled FO to call effectively.** A bad forward observer can easily call artillery down onto empty ground, or worse, friendly positions.

AN ARTILLERY BATTERY IN THE MIDDLE OF CARRYING OUT A FIRE MISSION

Artillery Realism

There are several aspects of realistic artillery support that are not seen in games with more casual action-based artillery (ie BF2) or mods/scripts that don't model it ballistically (ie the typical "map click" scripts for OFP/Arma). Some of these elements are as follows.

- **It takes time for the artillery crew to dial in the information from the Forward Observer and get their battery ready to fire.** Artillery support can be quick, but it is not instantaneous as in some unrealistic models of it.
- **Artillery rounds fly a ballistic path from the guns to the target.** There are many factors that can influence the accuracy of the rounds, and several measures that the enemy can take to help to lessen their effects. Guns may fire high-angle, low-angle, from close or long range, with any combination of sheafs and such, and all of this combines to dictate how much of an effect any given strike will have on the target. The terrain they are used in, and the terrain at the target, also factors into it.

- **It takes time for the artillery to impact after it has begun firing.** There is a significant amount of "lead" or pre-planning that must be factored into the use of an artillery asset. Finding chokepoints, natural rally points, and other likely enemy routes and pre-planning fires on them can help to make the artillery responsive and able to engage such targets effectively. Waiting until the last second and trying to call in a strike on a moving enemy will be far less effective than planning ahead and anticipating their movements and attack routes.

The Forward Observer

The Forward Observer is the platoon's direct link to artillery support. He is tasked with calling for fire in accordance with the Platoon Commander's direction, adjusting fire, and generally being all things artillery.

The proper use of artillery requires that the person calling it in is knowledgeable on the previously-listed aspects (and more) and is competent as a "Forward Observer". Artillery in the hands of a skilled FO is a huge asset, whereas without that skill the artillery will only end up churning dirt and making loud but ineffective noises.

Forward Observer Tips

- **Get a good perspective.** Calling for accurate fire oftentimes (but not always) requires you to see what you're trying to hit. Adjusting fire requires that you can not only see the impact area, but can also view it from a perspective where you can accurately gauge depth. This usually means that you will need to be at a higher elevation than whatever you're directing fire on.
- **Don't pick an obvious observation point.** There were very few church steeples that survived World War II in western Europe. While such a position gives you a commanding view of the terrain, it also sticks out like a sore thumb and tends to attract all manner of enemy fire, particularly of the high-explosive variety. The use of tall structures must be considered carefully - the benefit is observation, the downside being an obvious target to the enemy.
- **Try to predict where the enemy will go, where they might halt to regroup, and what lanes they'll attack through when in the defense.** Pre-plotting targets in these areas will allow for you to be more responsive with your artillery fire. Establishing reference targets also allows for friendly forces to more easily call for quick-reaction artillery strikes on pre-established locations.
- **Know your round types, fuze types, gun/battery types, sheaf options, and fire options, and take advantage of them.** A good FO will know how best to utilize his artillery assets to maximize their effects on the enemy.
- **Coordinate closely with infantry units at all times.** Pay particular attention to coordination when suppressing the enemy while friendly forces move up to assault. You want to maintain artillery fire on the enemy unit the maneuvering friendly elements are close enough to the objective to assault it immediately after the artillery fire is lifted. Failure to do this can result in heavy casualties for an assault force, as the enemy potentially will be able to recover in time to attempt to repel the assault.
- **Know the different types of artillery and how to employ them effectively.** Mortars, howitzers, and MLRS systems all have distinct characteristics and uses.
- **Know how to adjust fire.** Be familiar with concepts like "Bracketing", firing spot rounds, calling in adjustments to human players, and so on.

Forward Observer & Artillery Terms

Term	Meaning
Shot	This is sent from the firing unit once the first rounds are fired. The FO at that point knows that rounds are on the way. The FO can use this term to communicate to his platoon that a friendly artillery unit has begun firing.
Splash	This is sent from the firing unit five seconds before the first rounds impact. The FO at this point should observe the impact area to watch the effects of the artillery. Adjustments will be called if necessary to get the rounds on target. When Splash is called, all friendly units within "danger close" distance of the target should ensure that they are in good cover in case the rounds are off.
Rounds Complete	Firing unit has fired all rounds for the fire mission. Depending on the number of rounds and the trajectory used, "Rounds Complete" can sometimes come before the first round ever hits.

A SANDSTORM MLRS BATTERY BEGINS A FIRE MISSION AT NIGHT

Artillery Rounds & Fuzing 101

The following table of artillery round types and their effects is taken from the Chain of Command's "Artillery Module" manual for VBS1.

Round Types

Round Type	Description
High Explosive	HE is usually TNT or Composition B, and takes a PD (QUICK), VT, delay or Mechanical Time fuze. Effective against personnel, vehicles, and structures. HE/VT is also effective against stationary armored vehicles. HE/Delay is good for targets under vegetation, and for flipping vehicles.
White Phosphorous (Willy Pete)	Bursts on impact, or in the air (with fuze time). On bursting, the shell spreads burning white phosphorus, for marking, screening, obscuring and incendiary effects. It is useful against vehicles, ammunition, POL and enemy observers.
Illumination	A base-ejecting projectile that expels a burning illuminant and a small projectile. The parachute drifts over the area, and provides illumination for maneuver or adjusting fire (with continuous and coordinated illumination). It can also be used to mark targets.
Smoke	The Artillery Module models improved smoke effects, that is, felt wedges impregnated with WP, which can provide 5-10 minutes of smoke over a large area.
Remote Anti-Armor Mines (RAAMS)	The 155mm howitzer can fire Remote Antiarmor Mines (RAAMS); Part of the Family of Scatterable Mines (FASCAM), RAAMS typically spread over a 400m area, arm shortly after impact, and will trigger when armored vehicles run over them. Arma 3 introduces anti-personnel mines as well, delivered via the Scorcher or similar artillery pieces.
Copperhead	Copperheads are special 155mm projectiles employed by later versions of the M109 series and the M198 howitzer. Approximately thirteen seconds before impact, the Copperhead's laser light sensor becomes active, and it uses fins to guide itself to the laser light source. It fuzes on impact with a shaped charge capable of destroying or disabling armored vehicles. Because of their relatively high cost, low volume (one platoon fires a single Copperhead every thirty seconds), and restrictive employment considerations, Copperheads are best used against enemy command vehicles and centers, and other high-value targets. Copperheads are ideally used in priority fire missions, and the reduced response time they bring.
Improved Conventional Munitions (ICM)	ICM is a base-ejection projectile with a MT fuze and a number of submunitions. APICM grenades saturate the target area with shrapnel, and are highly effective against personnel in the open. DPICM submunitions are capable of penetrating 2cm of armor, and have an antipersonnel effect as well. DPICM is highly effective against personnel in the open and soft vehicles. It is also effective against armor. ICM shells and sheaves assume a target with a 200m-radius. (instead of 100m for HE). ICM should never be fired High Angle. Arma 3 refers to these as 'cluster' shells.
Sense and Destroy Armor (SADARM)	Sense-and-Destroy Armor rounds are third-generation artillery shells carried by 155mm Howitzers. They deploy two sensor-fuzed munitions which parachute over the battlespace, and scan (using radar and infrared) for suitable armor targets. When they find such a target, they fire a penetrator to destroy or disable it. SADARMs are highly effective, and are called as any other round. If they do not find a suitable target, they self-destruct. The observer should ensure that no friendly units are in the area. SADARMs can be used effectively in CANNOT OBSERVE conditions, especially counter-battery fire.

Fuze Types

Term	Meaning
Quick	Fuze quick is a point-detonating fuze, and is used with HE and WP projectiles. Fuze quick is effective against standing and prone personnel, armored and soft-skinned vehicles. Fuze quick is useful for adjusting fire and engaging targets on ridgelines; but it is not recommended against entrenched troops or those on uneven ground.
Delay	A fuze delay functions 0.05 seconds after impact. A fuze delay allows penetration of dense woods and light earthworks.
Time	Fuze time has a mechanical or electronic timing device that functions a set time after being fired. Fuze time, when used with HE and WP, should be adjusted to obtain an effective HOB; then these projectiles are useful against troops and vehicles in open and in trenches, as well as in rough terrain. Because of the variations between fuzes, fuze time should never be used for High Angle fire with these projectiles. Time fuzes are the only fuze used for Base-Ejecting projectiles (e.g., Illumination, ICM, SADARM) and smoke.
VT	VT (Variable Time) fuzes arm approximated 3.5 seconds before anticipated impact. They then use a radio signal to determine the shell's proximity to other objects (especially the ground). When they pass within a set distance of other objects (for example, 8 meters), the fuze functions. HE/VT is effective against all targets that Fuze Time is, except that it is not recommended for targets under canopy, such as those in woods.

HIGH-ANGLE FIRE FROM A SCORCHER BATTERY

GUERRILLA WARFARE

The Guerrilla

A guerrilla fighter is faced with an entirely different prospect for battle compared to a soldier in a regular military force, and because of this, his tactics change significantly to reflect his situation. Guerrillas - sometimes referred to as insurgents - are less-equipped, lower-tech, and generally fewer in number than their regular military counterparts. They do not organize or fight in the same manner as a traditional military force, leading to their organizations being considered "irregular forces". Their actions are based around hit-and-run tactics, sabotage, and small-unit actions focused on points of enemy weakness.

"Guerrilla warfare" is the term applied to this style of fighting, and while it is generally used at a high level to distinguish the combatants in a theater of operations, the same premises can also come into play in the event that a regular military force is cut off from fellow units and stuck behind enemy lines. Even two conventional armies fighting each other can result in these sorts of isolated units being forced to conduct guerrilla warfare as a means of continuing to resist and damage the enemy despite not having access to their side's full range of capabilities.

Being knowledgeable about this form of warfare is essential – knowing how a guerrilla fights helps you to counter them as well as operate efficiently in that role should you find yourself in it.

Principles of Guerrilla Warfare

The most fundamental rules of operating as a guerrilla are as follows.

Choose your targets carefully

Phrased another way, don't bite off more than you can chew. If you're operating as a small band of guerrillas, it's not wise to conduct an operation in an area where the enemy is vastly superior and able to quickly react to your presence. Choose vulnerable targets, ones which are isolated from supporting forces. In the absence of isolation, work towards targets that are located in areas in which you can easily blend in with the local populace after conducting your strike. When surrounded by civilians, the enemy has two basic options – one, to tread carefully and preserve local support, or two, to be indiscriminate in their retaliation and thus erode the support of the locals. Both paths are beneficial to your guerrilla cause, albeit in different ways.

Not only must you choose your targets carefully, it's also essential to pick the right time of day to conduct your attack. Striking at dusk and having a clear operational timeline can allow you to fight while it's still light enough to see, then withdraw under the cover of darkness. Likewise, attacking at dawn may allow you to sneak close to enemy positions before it's light enough for them to see you, then conduct your attack once it's bright enough to be effective. As with all things, careful consideration must be made as to what capabilities the enemy has with regards to nightvision, sensors, and so forth.

Strike hard and fast

The most fundamental guerrilla combat action is that of the ambush – whether that be ambushing a convoy, infantry patrol, or even attacking an enemy outpost by surprise. Ambushes allow your force to pick a place where the enemy is known to be operating, stack the odds in your favor, conduct the ambush, exploit the ambush site, then fade away before the enemy can react by bringing in reinforcements or other support. All guerrilla actions, when properly planned and executed, give the guerrilla force the tactical initiative and element of surprise.

The key to being successful is to have a well-defined plan which can be executed quickly and decisively by a guerrilla force numerically capable and equipped sufficiently to accomplish the mission. It is also greatly beneficial to know what types of enemy units are in the same operational area and might be called in as reinforcements in response to your action. Knowing how far away these potential reinforcements are gives you a means by which to determine how long you have before a withdrawal is necessary.

The primary types of enemy reinforcements you can expect are as follows:

- **Foot-mobile infantry.** A nearby patrol might be redirected in response to your actions – in this case, having scouts and security around the action site can help to give advance warning.
- **Vehicles.** The vehicles can be simple transport trucks on the low end, all the way up to armored fighting vehicles or tanks. Infantry can be expected to accompany these vehicles as a quick reaction force. Knowing the routes into and out of the action site, and the times it takes to travel them, allows for an estimate of their response capabilities. You can expect the vehicles to stop short of your action site, dismount their troops, and then sweep in from there.
- **Airmobile infantry.** An airmobile response is a hard one to deal with, as it is capable of depositing troops anywhere in your area on short notice. The same transports that bring the troops in are also liable to hang around the area acting as scouts and observation platforms, further hindering your ability to move. On the other hand, airmobile responses are fairly easy to plan for, as they tend to originate from major airfields. Knowing the distance you are from the airfield, and the likely timetable required to call in such a quick reaction force, allows you to figure out the safety time margin in the event that an air response is dispatched.
- **Helicopter support.** In addition to flying troops in, the enemy may also – or in lieu of – send in helicopter gunships. These gunships are capable of mass devastation if they catch you in the act and congregated, but can be mitigated by dispersing, presenting unarmed targets by ditching weapons in hidden caches, and by simply not being present when they arrive. Never underestimate the lethality of even a small scout helicopter, as they can harm you in ways that aren't immediately obvious – such as by calling in other forces and directing them to your location. Always remember that a helicopter gunship's powerful optics allow it to observe in great detail from a distance – just because a helicopter is far away does not mean that it isn't watching you or even preparing to engage you.
- **Aircraft support.** When done correctly, you may never even know that an enemy aircraft entered the area. With the ability to fly high and drop precision-guided munitions, the first sign that close air support has been called in may be a glimpse of a bomb smashing down near you. Aircraft are a nightmare to defend against – without some sort of anti-aircraft guided munition like a surface-to-air missile or man-portable air defense (MANPAD) you're effectively at their mercy. The same rules apply as with all aerial support – know how far away the nearest airbase is, how long it generally takes them to react, and hope that there isn't a sortie already in progress that can be retasked earlier than you'd expect.

In addition to sending in manned responses, the enemy may also choose to utilize artillery or unmanned vehicles. Unmanned aerial vehicles (UAVs) can monitor an area for long periods of time in silence, striking unexpectedly and with great precision. Artillery fires can be called in by those you're attacking, nearby infantry, or even responding aircraft. The best protection against all of these is to choose your battles carefully, do what needs to be done, and get out of there before the enemy has a chance to use their best tools.

Don't become fixed or allow the enemy to mass power against you

Knowing the vast array of forces the enemy can retaliate with, and the importance of striking and withdrawing, it should come as no surprise that the last thing you want to allow yourself to do is become fixed by the enemy. Being fixed – which is to say, being unable to move due to enemy action – is the goal that any unit calling for reinforcements or support is hoping to achieve. They want you to become stationary to increase the effectiveness of their aircraft, munitions, artillery, or to give supporting vehicles and infantry a clearer picture of where the 'bad guys' are. Fixing a guerrilla force is the first step towards destroying it – know this, and work hard to prevent it from happening to you.

There are many ways to avoid being fixed. The simplest is to deploy your forces throughout an area, and not simply at one point. Have different sections with different objectives – some sections will act as the primary force (such as an ambushing group), while others will be security. Locate the key terrain in your area of action and either occupy it or be positioned to place fires on it. If you expect a helibourne infantry reaction, survey the terrain and attempt to identify potential landing sites. While you may not be able to defend all of these landing sites, you will at least be mentally prepared to react in the event that the enemy reinforces via one of them.

Finally, remember that the war is more than a single battle. If you aren't winning the fight, and don't see yourself achieving victory before the enemy can call in overwhelming support – withdraw! A timely withdrawal may not feel victorious, but it's far better to preserve your strength and try again another day than to waste your lives on an unwinnable fight.

Work to minimize the power of enemy advantages

Being familiar with the strengths of your enemy is essential, as it gives you the opportunity to plan things to be most heavily in your side's favor. There are two fundamental techniques that can be applied to guerrilla operations against a vastly superior enemy force - both take advantage of weapon precision and capabilities as they relate to casualty avoidance.

The first is referred to as "hugging" the enemy. In this technique, the guerrilla force strives to quickly move into extremely close range of the enemy. The intent is to be so close to the enemy that any assets that would otherwise be employed against the guerrillas - such as air strikes, artillery fire, etc - cannot be employed for fear of hitting friendly forces.

The next method is to operate in areas of civilian population - towns, villages, cities - against a force that is adverse to causing civilian collateral damage. NATO forces tend to have restrictive rules of engagement when civilians are in the area - it is harder for them to call in artillery or airstrikes, and they may even be restricted from using heavier weapons like grenade machineguns. Operating within the civilian populace, striking unexpectedly, and blending back into the populace can be an effective tactic which also greatly frustrates the enemy. Civilians are akin to 'human camouflage' in this context.

Exploit the target site (quickly!)

Once you've successfully neutralized your target site – be that an enemy outpost, patrol, convoy, etc – begin to rapidly exploit the site for anything that might prove useful for your guerrilla force. Search enemy bodies, vehicles, buildings, etc, to locate key items and quickly distribute them to your fellow guerrillas for transport. If you have vehicular transportation, this can be used to carry heavier items away, or large quantities of smaller items.

Some of the sorts of items you should look for include:

- **Intelligence.** This can take many forms – maps, orders, and even the interrogation of wounded enemy personnel can supply you with information that can help to shape future operations. Capturing enemy personnel can be beneficial as well, depending on the combatant parties involved – a captive enemy soldier is a bargaining chip for the future, and can also be used to attempt to lure the enemy into a rescue operation. Captive personnel can also be used as human shields during the exfiltration phase of an operation, so long as they can be easily identified by the enemy (such as by forcing them to walk with their hands up, by removing portions of their uniform, taking their weapon, etc).
- **Weapons.** Try to find weapons that help you to fight the enemy's advantages – for instance, MANPAD missiles, heavy anti-tank weapons, and heavy machineguns all give you a better chance in future battles, or even against the support that might react to your current action. Search for weapon sights, grenade launchers, suppressors – anything that can give you an upper hand. Last but not least, the basic rifles and machineguns of the enemy can prove valuable for future operations, particularly ones where deception is a factor.
- **Ammunition.** You can never have enough ammo – as always, prioritize the types of ammo and other munitions that are hardest for you to otherwise acquire. Grenades, grenade launcher munitions, high-caliber machinegun ammo, anti-tank and anti-personnel mines – these are all valuable finds and should help greatly with future operations.
- **Gear.** Look for technological items – nightvision goggles, sights, binoculars, laser rangefinders and designators, armor systems, etc. Taking enemy uniforms can permit future deception operations.
- **Medical supplies.** Whatever the enemy has for fixing boo-boos and such, take it! Search for medical kits, first aid kits, and any other supplies that might be present.

Remember to spread-load whatever you take away during your site exploitation – it does no good to load one person down with all manner of gear, only to have them become a casualty during the withdrawal phase and take all of that hard-earned gear with them.

Leave Presents

Once you've fully exploited the target site, the bulk of your force should be enacting the withdrawal plan. A few remaining guerrillas should remain on-site to emplace a 'farewell' gift of mines, booby-traps, and other unpleasantries. If there is gear you can't take with you, but don't want the enemy to have – destroy it. Place mines in likely response avenues, within bunkers, at entry points, around enemy KIA, etc. You did damage taking the objective – you can do more when the enemy reaction force arrives, without even needing to stick around to do so.

Have a plan for withdrawal

The withdrawal plan should have been created in advance of your action, such that when the order is given, everyone knows where to go and what to do.

A withdrawal plan ideally has multiple routes, allowing for a larger guerrilla force to split into smaller parties on their way out of the area. This makes it harder for the enemy to stop or harass the withdrawing unit, as they must split their efforts accordingly and can't simply mass fires onto one target.

In the event that enemy air reinforcements are anticipated, and depending on the enemy's rules of engagement, it's possible to withdraw a distance away from the action site, drop all weapons into a hidden cache (to be retrieved at a later date), then proceed back to safety while unarmed. Some nations will prohibit their pilots from firing on unarmed people, even if no one else is in the area and it seems clear that the unarmed personnel are hostiles. Others will be more aggressive about it. Knowing your enemy is very important when considering tactics such as those.

The Safe House

When operating in an urban environment, it's essential to establish "safe houses" which can be used to store weapons, gear, and so forth. Stopping at a safe house to stash your combat gear before moving elsewhere (and thus blending in with the civilian populace) is a great counter to any enemy reinforcement possibilities. Having multiple safe houses throughout a region allows for guerrillas to fight in one area with a given set of gear, drop it off at a safe house, then move to another region, find the local safe house, rearm and reequip there, fight locally, and then drop off the gear again when done. This is a far safer prospect than trying to transport such weaponry on your person or in vehicles, where it would be subject to vehicle checkpoints and inspections.

Be Ever Vigilant

Key to a guerrilla's survival is a mindset of perpetual vigilance. The enemy will be doing everything in their power to find you and your kind. You should never relax or consider yourself to be "safe" – always assume you are being observed. You never know when a UAV, sniper team, helicopter gunship, surveillance camera, or other sensor might be watching you suspiciously, waiting for a reason to put a bullet through your head or a missile at your feet.

Don't act suspicious. Don't draw attention. Be patient, be deliberate, bide your time.

Guerrilla Tactics

Now that we've covered the core tenants of guerrilla operations at the unit level, let's take some time to talk about some additional guerrilla warfare tactics. These are the sorts of low-level tactical considerations and techniques use you can use when fighting against a numerically superior enemy force.

The Importance of Displacement

When the enemy is the numerically superior force, it's only a matter of time before they leverage that against you. Everything you do must be conducted with the overarching theme of avoiding being located, flanked, or fixed in place by the enemy. Your mobility is one of your greatest strengths – do everything you can to take advantage of it. You will generally have one opportunity to truly surprise the enemy, and that will occur when the initial engagement begins. However, it's possible to use surprise afterwards simply by relocating often, being clever, and hitting the enemy when they're weak or not covering a given area.

For example, consider the urban engagement. If the main guerrilla force retreats to the north, causing the enemy to pursue them, you may be able to gain a surprise advantage on the enemy by hiding in their route of pursuit, waiting until they have passed, and engaging them from behind before withdrawing in a different direction.

However you do it, don't stay in one place long enough for the enemy to bring overwhelming power against you. Stay very mobile, displace in advance of the situation becoming critical, and always remember that the longer you can survive, the more you'll be able to hurt the enemy in the end. Don't go out in an early blaze of glory – that's what the enemy wants you to try to do, as it will give them the best chance of destroying you.

Choose the Fight

A guerrilla force generally gets to choose where they'll conduct a battle. At the lower level, do the same when fighting the enemy – choose your fights to put the odds as high in your favor as possible. Decide in advance where you're willing to fight, when you should withdraw, and when you should call it a day. Don't be greedy – it will get you killed!

Baiting

Baiting the enemy is a tactic by which something of value is placed in a location, then overwatched by friendly forces. When the enemy attempts to take the bait, the friendly forces spring an ambush on them. At the lowest tactical level bait can take many forms. A guerrilla marksman engaging an enemy soldier in the open, then waiting for his comrades to attempt to help him, is one classic form of the tactic. Other examples come in the form of shooting down enemy aircraft, disabling enemy vehicles, and otherwise placing a vulnerable enemy unit in a position from which they need to be rescued. When hostages are available, their presence can be used to draw the enemy to an area – the same can be done with enemy soldiers captured during a battle.

Friendly forces can also act as bait in larger traps. A small element of shooters may make enough noise to draw the enemy towards them, while a larger force waits further away, ready to cut off and destroy any enemy forces that attempt to engage the bait element.

Movement

When moving relative to the enemy, avoid moving directly at them or directly away from them. Take paths that make it hard for them to predict where you're going. Avoid drawing attention and attempt to blend in with the local populace as much as possible. When operating in urban areas or where the threat of observation is high, avoid traveling in large groups - it's much easier for the enemy to identify a group of people as a threat. Aside from that, large groups tend to make good targets for powerful weapon systems. The more dispersed you are, the fewer casualties you'll take in the event you're surprised by heavy enemy assets.

Sowing Confusion

One of the greatest ways to increase the effectiveness of any guerrilla strike is to work to maximize confusion in the enemy ranks. This can be done in many ways, such as the following:

- **Aim for leaders and medics whenever possible.** Killing leadership elements will tend to reduce the mobility and responsiveness for a unit, at least until a replacement leader steps up to take control. The higher the leadership element, the more of an effect it can have. Look for units that are using binoculars, not participating in direct combat, or otherwise acting as if they're more responsible for leadership and communication than actual fighting. Medics are easy to spot when they're tending to wounded - at other times, you may be able to identify them by their backpacks. Taking out medics tends to drastically slow down the movement of the enemy, as they no longer are able to tend to their wounds as effectively.
- **Attack from multiple positions simultaneously.** If two guerrilla ambush parties can fire from drastically different directions, the ambushed soldiers are placed in a dilemma as to where they can find effective cover.
- **Use explosives, such as improvised explosive devices (IEDs), to inflict casualties, then target the response elements.** When the enemy goes to help the wounded from the blast, engage them with small arms and machineguns. When available, a second explosive can be hidden near the first - when the enemy congregates to help the wounded from the first blast, the second can be detonated, inflicting even greater damage.
- **Employ mines in likely areas of traffic.** Even a single antipersonnel mine going off is enough to dramatically slow the movement of an enemy force. Mine placement is a matter of predicting likely routes that the enemy will use - if you know they'll be operating in a given area, try to think like the enemy and visualize where they'll walk, where they might set up supporting positions, and so forth.

Fighting Armor

When the enemy has great advantages in vehicles, armor, and so forth, fighting in dense urban terrain is ideal. Lure their tanks and vehicles into urban areas, then strike them with anti-tank weapons from the flanks, rear, and even above. Use roadblocks to direct their movement, then place mines where they're likely

to travel. Strive to knock out a vehicle as quickly as possible - the sooner you can restrict their mobility by forcing them to slow or stop for a damaged vehicle, the easier it will be to finish them off completely. Isolating enemy armor within a city can act as a form of bait, too, causing their higher headquarters to send in elements to reinforce or even rescue them. Urban combat is a defender's dream - particularly when there are civilians in the area, restricting the enemy's ability to use their full combat power against you.

Helicopter Ambushes

Ambushing enemy helicopters is a tactic best employed against lightly armed or transport aircraft. Ambushing an attack helicopter is a tough prospect – the dedicated gunner with his magnified and thermal-sensing optics will likely spot your ambushing forces before they can do any damage, then systematically lay waste to them with his cannons, missiles, and rockets. Likewise, transport aircraft escorted by attack helicopters should be avoided.

In the event that suitable aircraft are operating in your area, the key to a successful ambush begins with the simple act of being patient. Wildly firing at enemy aircraft is a surefire way to warn them that there are ground-to-air threats present – whereas holding fire can fool them otherwise. Fast helicopters flying at altitude are difficult prospects to engage, even when favorable weapons such as heavy machineguns are present.

The first goal of a helicopter ambush is to lull the enemy aircraft into a false sense of security. They need to believe that the area is clear of threats, or that any threats present are unable to effectively engage them. When operating against scout aircraft, guerrillas hope to lure them closer to the ground, moving at slower speeds, as they try to observe the area. For transport aircraft, one potential tactic is to observe where they enter the area from and where they leave. If the routes seem static, a suitably-equipped element can be dispatched to engage them on their next arrival from by or even underneath the route they've been using.

Key to defeating enemy transport efforts is to identify probable landing zones within the operational area and either cover them with fire or place scouts or ambush elements near the most likely sites. Helicopters require a reasonable amount of clear space to land in, lending to a high degree of vulnerability once they're settling down to drop their embarked troops. The final approach phase of a helicopter troop insertion is extremely vulnerable – the aircraft must slow and descend in order to make a safe landing, making it possible to engage with both small arms as well as rockets and similar.

When engaging helicopters, aim for one of the following:

- **Pilots.** If you have a shot on the front of the aircraft, sweep the cockpit with fire. You'll need to kill both the pilot and copilot to send the aircraft out of control – a light machinegun or higher works best for this.
- **Door gunners.** Depending on the weapon they have, door gunners may pose a very serious threat. If you do not have a shot on the pilots, engage the door gunners first, then assess and adjust from there.
- **Engine.** You will generally find the helo's engine located below the main rotor, often slightly to the rear. Destroying the engine will turn the helo into either a lawn ornament or a fiery lawn ornament – either works well for you.
- **Cargo compartment.** Helicopters have thin armor – if any – and spraying the cargo compartment with fire can wound or kill the passengers before they ever have a chance to disembark.

If using an RPG or similar unguided rocket, simply aim for the center of the helicopter's mass – RPGs do tremendous damage and you don't need to be terribly precise with them against helos.

Heavy machineguns are extremely lethal when employed against helicopters, with tremendous range and punch. While HMGs should wait until aircraft are particularly vulnerable before firing, once they've been revealed, they can begin engaging at longer ranges as a deterrent. Helicopters that have identified enemy heavy machinegun positions will be extremely reluctant to move within their effective range, helping to keep the enemy at bay.

When equipped with nothing heavier than RPGs and small arms, effective results can be gained by waiting to engage a helicopter with coordinated massed fire. Sudden massed fire can inflict a great deal of damage on an aircraft before it has a chance to react, potentially wounding or killing the crew and passengers or causing an emergency such as a fuel leak, engine failure, or tail rotor loss. Element leaders coordinate this, either verbally, via the radio, or by a prearranged condition such as all units firing when the leader does.

Once an enemy helicopter has been shot down or disabled, the landing or crash site becomes a rescue or recovery mission for their friends. Stick around only as long as it can work for you – as with all things guerrilla, don't let the enemy bring overwhelming power onto you. When in doubt, bug out.

One particularly devious tactic is to shoot down a transport or supply aircraft with heavy machineguns or similar, eliciting an enemy attack helicopter response, then have an anti-aircraft missile waiting for the attack helicopter when it arrives. This, of course, depends upon the guerrilla force having scrounged up such a missile system – something which is easier said than done.

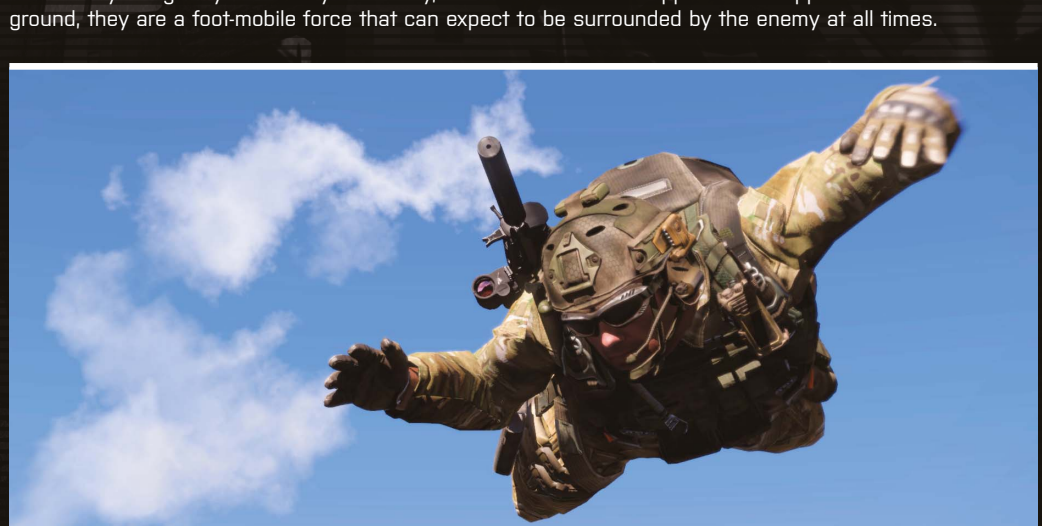
PARATROOPERS

Paratrooper concepts

An Intro to Paratroopers

Paratroopers are a means by which a force can deploy troops into enemy territory via the air, bypassing the front line and any forces arrayed to protect it. A large-scale combat drop operation requires that the enemy air defense be suppressed or neutralized in the air corridor used by the transport aircraft, while special-forces jumps may happen in a manner that works around enemy air defenses and utilizes stealth more than direct action.

Paratroopers are always part of a larger plan – the expectation is that they will be the "first boots on the ground", securing key objectives, terrain, and infrastructure in advance of a ground force fighting its way to them. They bring only what they can carry, or what can be airdropped in to support them. Once on the ground, they are a foot-mobile force that can expect to be surrounded by the enemy at all times.



Paratroopers utilize a great deal of small-unit leadership to assemble into effective combat units after being dropped in their drop zones, take initiative to seize objectives in their area, destroy enemy air defenses, and utilize ambushes, mines, and guerrilla tactics to cause confusion, inflict casualties, and hold onto their objectives until they can be relieved by follow-on forces. They should expect no significant support until those follow-on forces arrive, though at times they may find themselves able to call in artillery or air support to strike high-value targets in the enemy territory.

Acting as a paratrooper in Arma can be a thrilling experience, and when everyone knows what to do in the role, your odds of survival and mission accomplishment are vastly improved.

Parachuting

Types of Parachutes

When it comes to parachuting into combat zones, there are two basic styles of parachutes used. The first is a round, static-line chute – this allows for minimal control during descent, and the deployment of the chute automatically occurs as you leave the aircraft. The second style – typically used by smaller, more highly-trained units – is a ram-air maneuverable parachute that is manually deployed by you after leaving the aircraft.

Both have their uses – when doing a large-scale static drop, the time any given paratrooper spends in the air is minimized, and the benefits of a ram-air parachute aren't so significant. For special forces or other units that may need to land in more precise areas, the ram-air parachute gives them that capability.

Free Fall

For a static-line jumper, the only time they will experience true free fall is if their initial chute does not deploy. In this case, the reserve chute must be immediately triggered – whether there will be time for it to fully deploy depends on the jump altitude. Static-line jumps can happen from altitudes as low as 150 meters, at which point a reserve chute simply won't have time to deploy.

For a non-static-line jump, free fall can begin at a variety of altitudes depending on the mission requirements. The free-fall phase is used to establish terrain orientation, check on the dispersion of other paratroopers in the drop, and close the distance to the altitude at which chute deployment has been decided on. As you fall, keep a close eye on your altimeter so that you know precisely when you should begin your chute deployment. You will find that it's possible to get upwards of 40kph of ground travel speed by diving forward in freefall - this can be used to move closer to your drop zone before you deploy your chute, and your in-air maneuverability also allows you to maintain formation with other jumpers in your unit.

Chute Deployment

As noted earlier a static-line jump handles chute deployment for you. For non-static-line jumps, chute deployment is preplanned to occur at a given altitude. There are two basic varieties – referred to as HALO and HAHO. A HALO drop – High Altitude, Low Opening – has the chute deployed at low altitude to minimize the time spent under canopy. To increase precision, a HALO jumper maneuvers his body during freefall to get as close to the desired landing site as possible before deploying his chute. As a general rule, a HALO drop should begin to deploy chutes no later than 300 meters above ground level – it can take time for the chute to fully deploy. Depending on the anti-air threat, deploying higher may be viable as well.

A HAHO drop, by comparison, has the parachutists deploying their chutes at a much higher altitude. The ram-air parachutes allow for substantial ground to be covered during flight, to the point that the plane initiating the drop can be 30+ miles from the drop zone when the paratroopers exit the aircraft. In a HAHO jump, troopers exit and then deploy their chutes shortly after beginning freefall. One member of the stick becomes the guiding element, with the rest of the unit following them in a rising column formation. This leading member is responsible for navigation to the landing zone.

The Descent

Both styles of insertion give you some degree of control over your descent – with static line "round chutes" having significantly less. Parafoils give you much greater maneuverability during the descent. While in flight, you'll be able to turn, accelerate, decelerate, and flare the chute. This high level of control allows you great flexibility to choose a landing site that works best for you and your team - as long as you're high enough in the air, almost anything you can see can be reached by gliding to it. The Arma 3 parafoil can reach a forward speed of over 50kph, though this brings with it a more rapid descent rate. For maximum glide range, try to stay closer to 15 to 20kph - while you'll be in the air longer, your total ground distance covered will significantly increase.

As you descend, you'll find that wind will disrupt your flight and push you off course. This wind drift must be accounted for and monitored, particularly in low-visibility situations such as night drops. Ensure your team is navigating and adjusting the flight path during the descent, else you're likely to end up a significant distance from where you'd intended.

Terminal Approach

As you descend into the landing zone, you must rapidly assess the ground situation and any obstacles observed. Take care to avoid landing or passing near trees, power lines, or landing in urban areas or close to potentially occupied structures. While scanning for these obstacles, also search for signs of the enemy – bunkers, vehicles, foot patrols, or anything else that might indicate enemy presence. Finally, scan around to see where the rest of your stick is landing – this will be key to linking up with them once on the ground. Once you've determined a good landing site, one which is free of obstacles but also provides some degree of concealment, maneuver your chute towards it and prepare for touchdown.

For parafoils, when it comes to landing, attempt to land facing into the wind. You will need to reduce your descent rate leading to touchdown - if you fly in at high speed, the impact alone can kill you. Instead, try to have a low forward speed, and in the few meters before touchdown, flare back. Done properly, this flaring will allow you to touch lightly to the ground - much more softly than the heavy impact a round chute would give.

Actions on Landing

Upon landing, immediately ditch your chute and harness and move for nearby cover or concealment. If neither is present, assume a low position. Scan around for threats as well as to locate the landing sites of fellow troopers. Check your gear at this point to ensure that everything you'll want access to is readily available, and not packed away in your rucksack.

Rolling up the Stick

After landing and taking up a concealed position, the next step is a technique known as "rolling up the stick". This is the most efficient way to get one jump group reassembled. In this process, the people who jumped first move in the direction of the jump dispersion, while those who jumped last move in the reverse of that. This causes the front and rear of the paratrooper distribution to move towards the center point, resulting in the full stick reassembling in short order. If there are larger-scale assembly areas defined, the next step from here is to establish leadership and make your way to the assembly area. The mission briefing for any paratrooper operation should define how long paratroopers should wait in assembly areas or wait for their stick to assemble – once this time is up, whatever force has managed to reconsolidate is what you have to work with. Once the assembly time is up or the situation makes it a necessity, the assembled paratroopers move out and begin to conduct their mission.

Note that it's entirely possible that you will end up in another unit's drop zone, or may have stragglers end up in your assembly area. If this happens, roll with it – paradrops are a chaotic situation and you need to maintain momentum after landing. If someone doesn't know where their stick is – take them with you and use them as part of your force. It's far better to be working in small teams, accomplishing objectives, than to have some people standing around wondering where their buddies are.

Equipment Bundles

One way in which paratroopers can be supplied with heavier munitions is by rigging pods of gear that can be deployed along with them. These pods are typically deployed at the beginning or end of a stick, and can contain additional anti-tank weaponry, anti-aircraft launchers, mortars, mines, ammo, explosives, and more. If available, once the stick has rolled up, a search should be made for the bundles and any necessary gear should be acquired from them.

Paratrooper Tactics

Securing Key Terrain

The most essential task of any paratrooper force is to find and secure designated objectives. This is accomplished by linking up with fellow paratroopers until a large enough assault force is gathered, then moving to and assaulting the nearest high-priority objective. Speed is of the essence here - the sooner after landing that an assault can be conducted, the less likely it is that the enemy will have had time to reinforce what they perceive to be the most important areas.

Signals

Once on the ground, paratroopers may or may not have access to radio communications – depending on the era, enemy situation, and so forth. In lieu of radio comms, verbal communications, hand- and light-signals, and flares or star shells can be used for signaling and communication.

The most fundamental signal is a challenge/response – in this, a paratrooper calls out a verbal challenge to an unidentified person, who must respond with the response phrase to indicate that they're a friendly element. The most famous of these challenge/response pairs was the Flash/Thunder combination used by airborne units during the Invasion of Normandy in World War 2. It's up to the mission commander to determine what pair of words should comprise the challenge/response, and up to the paratroopers to remember them once on the ground.

As for verbal communications – it's expected that paratroopers will utilize stealth whenever possible, which necessitates them communicating quietly with those near them. Speaking loudly or shouting is to be avoided, as your voice can carry a long distance and alert enemies to your presence.

Hand signals can be used to communicate with known friendlies from a distance – most typically these will take the form of signaling other units when to move or follow, or to indicate that an objective has been secured.

Flares and star shells are employed when the need for communication is more important than the risks of detection that their employment brings. For our purposes, colored flares have special meanings – green flares indicate that any nearby straggling paratroopers should move towards that location to assemble, yellow flares indicate that an objective has been secured, while red flares are a call for assistance by a unit that is in contact with the enemy and unable to gain the upper hand by themselves. Star shells follow the same color code, but last a much shorter time and are somewhat safer to use because of this. White flares carry no special meaning and are simply used for illumination.

Mining Movement Routes

Once the enemy has determined that they're being attacked by a paratrooper unit, reinforcements will be called from the surrounding countryside. In order to delay and disrupt these reinforcements, paratroops will endeavor to mine roads leading into and through the drop zone and objective area. In addition to mining, troopers can also move civilian or military vehicles into the roads, forming roadblocks and ambush points. For more on mining, see the Engineer chapter.

Ambushes & Defensive Actions

Ambushes are essential to stopping, delaying, or disrupting enemy reinforcements. Ambushes should be set at terrain suitable for them, with the troops manning the ambush points being well-supplied with anti-tank weapons and machineguns. Due to the limited supply of heavy weapons in general, ambushes should be economical in their usage of anti-tank weapons – if a target can be destroyed without resorting to an AT weapon, it should be. Troop trucks and other 'soft' vehicles should be engaged with machinegun, rifle, and grenade fire, while only fully-armored vehicles should be struck with AT. Light AT should be saved for APCs and similar, with heavier AT being reserved for tanks and more threatening vehicles.

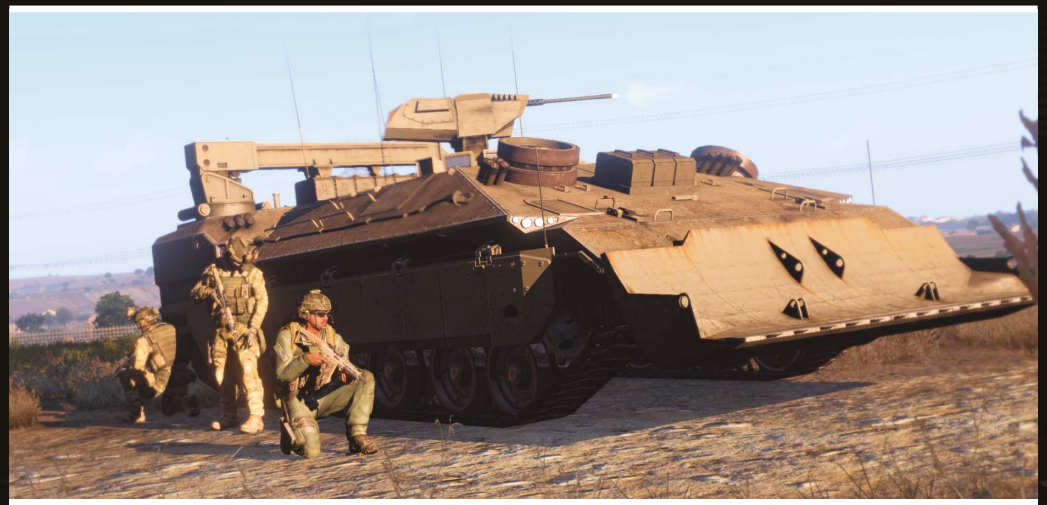
As with guerrilla warfare, if an ambush is conducted and the ambushing troops feel that they're not winning the fight, withdrawal and redeployment to a different area is a wise way to conserve strength. However, this is not always possible – if defending a key objective, it may be necessary to signal for reinforcements and attempt to hold at all costs.

ENGINEERS

The Combat Engineer

Engineers are expected to have a knowledge of a variety of specialized subjects that enhance the capabilities of any units they're assigned to. They're knowledgeable in demolitions, mine-clearing and obstacle breaching, vehicle recovery and repair, as well as how to best emplace and enhance defensive works such as bunkers and berms.

Engineers may not always be available or needed on every mission, but when present, they are a major capabilities enhancement to those they're attached to.



AN ENGINEER WAITS BESIDE A CRV-6E BOBCAT WITH TWO INFANTRYMEN AS THE BOBCAT'S RWS CLEARS OUT HOSTILES

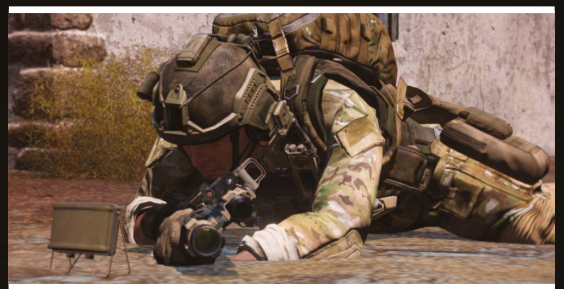
Engineer Gear

Engineers have two special items that allow them enhanced capabilities compared to other units. The first is the toolkit - this heavy item, stored in a rucksack, allows for an engineer to do basic repairs to damaged vehicles as well as defuse mines. The other item is the minesweeper - with it, an engineer is able to more rapidly scan for and detect mines around him. The bulk of these items restricts the cargo capacity of any engineer such equipped - to work around this, an engineer team will be broken down into different specializations, such as:

- **Repair specialist** - an engineer whose focus is towards dealing with disabled or damaged vehicles, he carries a toolkit but no minesweeper and only limited demolition gear.
- **Minesweeper** - an engineer with, you guessed it, a minesweeper. His focus is towards detecting and disarming mines - to do the latter, he also carries the bulky toolkit with him. Minesweepers have limited capacity for carrying demolitions and are typically employed as the point men in a formation operating in an area where mines are suspected to be present.
- **Demolitionist or Explosives Expert** - an engineer whose responsibilities lie in the employment of explosives. In order to carry extra munitions, this engineer forgoes carrying toolkits or minesweepers.

Demolitions & Breaching

A demolition unit can be an engineer, saboteur, or any unit that is carrying something like a claymore mine, satchel charge, or anti-tank mine. They are extremely valuable in the defense and are also the key to enacting brutal and deadly ambushes. In the offense, they are a critical part of cracking enemy obstacles and defenses with their satchel and breaching charges. For our purposes we've centralized the demolition information to this Engineer chapter, though it behooves other specialists to be familiar with demolition as well.



EMPLACING A DIRECTIONAL FRAGMENTATION MINE

Types of Demolition

Demolition comes in several forms, with many different uses. The basic types are as follows.

- **Anti-tank mines.** These heavy mines will wreck the day of any sort of armored vehicle, though their effects may be limited to blowing the tracks off of heavier vehicles. At minimum, anti-tank or anti-vehicle mines will almost certainly cripple or destroy a vehicle's mobility once detonated.
- **Anti-personnel mines**, either pressure or tripwire-initiated, such as the claymore. These can either be directional (like the claymore, which fires a spread of ball-bearings in a specific arc) or non-directional (such as a 'bouncing Betty', which bounds into the air before exploding like a fragmentation grenade).

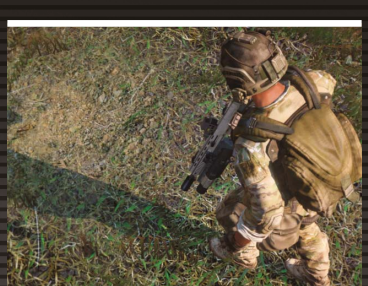
- **Explosive or satchel charges**, either command- or timer-detonated. These heavy packs of explosives can be used for a variety of purposes, to include improvised anti-vehicle weapons, the destruction of walls, knocking down buildings, etc. An Arma 3 explosive charge has a lethal range of over 20 meters, making them incredibly dangerous to infantry caught near their explosives, and requiring extreme caution when employing them in demolition operations. Satchel charges are even more devastating, projecting lethal shrapnel and blast effects out to 70 meters. Below you can see the explosive charge on the left, with the satchel on the right.

- **Breaching charges.** Breaching charges are focused explosives that have a small radius of effect and are capable of knocking holes in walls. These are used to create an unexpected entry point into a compound or similar, and not as an offensive weapon.

Demolition Tips

- **Conceal your explosives.** For mines, try to place them where the road dips so that they cannot be seen before it is too late. If you can't find a dip, place them on the road where a tree shadow overlaps them. This makes them significantly harder to spot. For blast-radius explosives like satchel charges, or directional explosives like claymore mines, you have more freedom in where you position them. Place them alongside roads in brush or tree concealment, or place them in bushes, behind logs, etc. Placing satchel charges inside of buildings that are likely to be investigated or cleared by enemy forces can also work well. Anti-tank and anti-personnel mines will generally be buried when emplaced - whereas items like satchel charges will sit on the surface.

- **Know how the grass concealment feature works, and take advantage of it.** Grass concealment is a method by which areas that are outside of the "grass clutter" range are made to offer visual concealment to simulate the presence of grass. This is accomplished with a semi-porous grass-textured layer that is raised about six to twelve inches off the ground. This layer obscures most everything that is beneath it. It is highly effective at concealing satchel charges and other non-buried explosives and contributes a great deal towards making them difficult to detect.



SEE THE TRIPWIRE? NEITHER DOES HE.

  Minefields constructed in grassy areas are extremely difficult to detect. Lone vehicles will be helpless - the only reliable way to get through a grassy minefield is with engineers using their minesweepers to clear the way. In a pinch, infantry scouts can move ahead of the vehicles to attempt to visually sweep for mines, but it is a much more dangerous technique than using trained engineers with the proper equipment. An untrained scout has a high chance of missing mines, and it only takes one missed mine to destroy a vehicle or kill several infantrymen.

- **Obstacles can be used to guide the enemy into mines or other demolitions.** For instance, placing a wrecked vehicle in the middle of a road may cause the enemy to drive around it due to them thinking it conceals an IED or satchel charge. To take advantage of this, place mines in the grass on either side of the road, so that a detouring vehicle runs into them.

- **Know your detonation options.** There are two methods - command-detonation and time delay. When using command detonation, you must be within a few hundred meters of the device or you will lose the option to set them off. Time delays are set with 30-second increments. You can increase the time to whatever you want, and as long as you are within transmitter range, you will be able to command-detonate if required. Note that satchel charges set for long delays can be used by a small force against a larger one as a diversion.

- **Be creative and try to catch the enemy off-guard with your placement and method of detonation.** If the enemy never sees it or has no reason to expect it, you're far more likely to kill them with your demolitions.

- **When using tripwires, think about how the enemy will move through a given area.** Place the tripwires in areas that are likely to have high foot traffic. Placing proximity-oriented mines in locations where the enemy is likely to take cover (such as a cluster of trees) can be an effective tactic as well. Get inside the enemy's mind and think of what they will do, and place your traps accordingly.

- ***FIRE IN THE HOLE!*** If you're setting off demolitions and friendly forces are near, ensure that you announce it and clear the area ***before*** triggering your explosives. An easy way to do this is to announce what you're going to be blowing up, tell people to get clear, and then repeat "Fire in the hole" three times before triggering the detonation. For example:

> Engineer: I'm blowing the fuel dump, get clear.
>
> *(pauses for a few seconds to visually check that people have cleared the area or listen for confirmation from team leaders that nobody is near the site)*
>
> Engineer: Fire in the hole, fire in the hole, fire in the hole! (triggers the explosives)

If at any point you hear someone shout any variation of "Wait!", "Abort!", "Hold!", or "Oh noooo!", cease the countdown and proceed to once again check that everyone is clear of the danger area.

Mines & Minesweeping

Arma 3 introduces a variety of anti-personnel and anti-vehicle mines with unique characteristics. We'll talk briefly about what you can expect to see - both so that you know how to employ them as well as detect and potentially disarm them.

Anti-Tank Mines

The first of the mines is the basic disc-shaped anti-tank mine. This mine is triggered by the weight of a vehicle driving over it - light vehicles such as civilian cars will not set one off, but heavier vehicles like MRAPs or large trucks will, while tanks, APCs, and IFVs will definitely trigger them.

The anti-tank mine is designed to target the more weakly armored underbelly of a vehicle - either by puncturing into the crew compartment and killing the crew, or via destroying the mobility of the vehicle by destroying wheels or tracks. When emplaced, an anti-tank mine is mostly buried into the ground, leaving only a small amount of it visible to the watchful eye.

Vehicles such as the AMV-7 will tend to be rendered immobile and mostly inoperative by a single mine strike, while hitting two simultaneously will catastrophically destroy the vehicle. Due to focusing their blast upwards, an anti-tank mine poses a smaller danger to infantry than most anti-personnel mines - about six meters lethal range, with a few more meters of wounding potential. Since infantry cannot trigger an AT mine on their own, simply staying a reasonable distance away from vehicles provides sufficient protection range.

Next is the SLAM mine. These mines are smaller than the disc mine and do their damage in a different manner - instead of being below a vehicle and exploding upwards, a SLAM is placed on the side of a road or similar and oriented towards it. When a vehicle passes, the mine detonates, sending an explosively formed projectile that can cut through thick armor. Arma 3's SLAM mines are designed to take out a vehicle's mobility - they'll shred tires and damage tracks, but generally won't prove catastrophic to an armored vehicle like an MRAP or higher. Their range of triggering is short, requiring them to be emplaced directly beside where enemy vehicles are expected to pass. A SLAM mine will trigger against infantry as well, though they are less ideal for this. When triggered, a SLAM's detonation will provide an all-around lethal blast at four meters, while the lethal cone in the direction it's pointed is closer to fourteen meters.

SLAM

Anti-Personnel Mines

Anti-personnel (AP) mines come in a wide variety of types, with different detonation characteristics as well as employment and trigger techniques. While these are designed for usage against infantry, vehicles will trigger them as well. If the vehicle has any armor, an AP mine will be easily defeated - however, soft-skinned vehicles such as civilian cars can find themselves being severely damaged in the blast.

The most basic AP mine is a simple APERS blast mine. These require an infantryman to step directly on them, at which point they explode violently. An AP mine will kill whoever stepped on it, wounding or killing those close by in the process. The lethal range of these is approximately four meters, with wounding possible out to eight meters.

APERS mines can be emplaced with a tripwire as well - often you will find these used in doorways and other locations that canalize infantry movement. The tripwire is visible for those with a sharp eye, though it can be nightmarish to see in dense vegetation or grass. Tripwired mines will detonate in the same manner as their buried counterparts, killing those in the immediate vicinity and doing harm to those nearby. Due to being placed above the ground and spending their blast more efficiently than a buried mine, the tripwire mine has a lethal range of approximately six meters, with about ten meters of wounding potential.

APERS MINE

APERS MINE WITH TRIPWIRE AND EMPLACEMENT STAKE

APERS BOUNDING MINE

CLAYMORE DIRECTIONAL FRAGMENTATION CHARGE

The most devious APERS mine is the bounding mine - these have a proximity detection that will trigger if someone passes within a few meters of them, resulting in the mine bounding into the air to approximately head level before exploding. Bounding mines are extraordinarily dangerous due to their detonation height. This height of burst extends the lethal range to an incredible fourteen meters, with wounds occurring at up to twenty meters.

Claymore mines are a type of directional fragmentation mine that focuses its killing power in the direction it's emplaced. A claymore mine is remotely triggered, and when triggered, will provide a lethal effect up to 30 meters in front of it. The sides and rear of the mine provide negligible effects upon detonation - only the frontal arc is a danger zone. Claymore mines are superb for covering expected routes of enemy advance, and employment of a claymore as the initiation for an ambush can be devastating to the enemy.

Mine Clearing

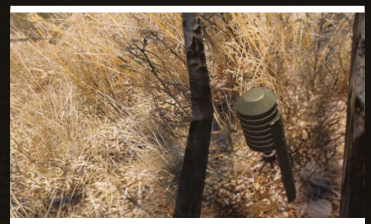
Mine clearing is one of the most nerve-wracking tasks for an engineer. As was discussed in the "Dealing with a Minefield" section, engineers must be supported by friendly forces in order to have a chance of clearing a path through a minefield or similar. The minesweeper tool that engineers have is capable of detecting mines out to about ten meters, and depending on the difficulty setting of Arma, you may get a visual indication when one has been detected and where it is. Without the indicator, you'll need to scan for them visually - a time-consuming process, even more so when in thick grass or otherwise cluttered terrain.

Spacing between engineers is extremely important when mineclearing. If a lane is being created - as described in the 'Dealing with Minefields' section, next - the engineers need to space themselves sufficiently to clear the lane thoroughly, without risking all of them being killed by a mine detonation. Non-engineers stay sufficiently far back as to not be at risk of being caught in a mine blast.

Once you've identified a mine, go prone and slowly crawl towards it to avoid triggering the fusing method. Once at the mine, your toolkit will allow you to defuse it. Once defused, you can place it in your rucksack or leave it there. A defused mine sits atop the ground, visually distinct from an emplaced mine, but you'll have a hard time convincing a tank driver of that. When possible, a trailing engineer should remove defused mines and stash them in a different location while the main minesweeper continues his work. The trailing engineer should place lane markers if available - at night, these can take the form of chemlights. These lane markers give follow-on forces a clear visual guide of where safe passage can be found.

In the event that toolkits are not available for mine clearing, most mines can be defeated by firing at them. It is of course recommended that all friendly units clear out of the area before attempting this technique. Note that most mines are blast-hardened - if you destroy one and cause it to detonate, nearby mines will not detonate because of that (known as "sympathetic detonation"). Grass and other vegetation, as well as the undulation of the terrain, can make it very difficult to spot and hit mines from a distance with gunfire. Generally speaking, grenades and other explosives will be insufficient to destroy mines remotely. The one exception to this is a mine-clearing line charge - something which you may see in an Arma 3 mod. These are rockets with large chains of explosive attached to them that can be fired into a minefield and then detonated, clearing a small path through it. Aside from such line charges, do not assume that your explosives will be effective at clearing out mines.

A STANDARD APERS MINE BLENDING IN WITH ROCKS ON A PATH



TRIPWIRE APERS MINE, HIDDEN NEXT TO BUSH TRUNKS AS CAMOUFLAGE

A BOUNDING APERS MINE CONCEALED IN GRASS

Some examples of buried mines follow for familiarization purposes.

Dealing with Minefields

Large-scale minefields are not frequently encountered in the scope of Arma, but when they are, they can be devastating if not properly approached. The first sign that a minefield has been encountered is typically a vehicle having its track blown off or possibly being outright destroyed, or a sudden explosion blasting down nearby infantry. When this happens, the assessment must be made very rapidly that the threat is from mines and not ATGMs, concealed enemy armor, or enemy grenade launchers. Due to minefields frequently being covered by anti-tank weapons, it may not be a simple matter to identify the threat as mines and not simply attribute their effects to any AT weapons that might begin firing after the initial mine explosion(s).

Once the mine assessment has been made and the element leader calls out that a minefield has been entered, the most likely way to deal with it is for all vehicles or personnel to immediately attempt to back out of the field the way they came. Assuming that the identical paths can be followed backwards, this gets everyone out of any kill zone that might exist that is focused on the mined area. If a vehicle has been disabled by a mine, the crew will abandon it and head out of the minefield on foot. If an infantryman has been wounded, he applies first-aid to himself and waits for an engineer to be brought up to sweep a safe path to him.

If the minefield must be breached, engineers will need to sweep a lane to locate and disable all the mines and allow friendly passage. The engineers should focus on clearing a lane through the minefield that is about one and a half to two times as wide as the vehicles that will be passing through it, or several meters across for the purposes of infantry movement. Trying to clear the entire field takes too many people and too much

time to be practical in most situations. While clearing, follow-on engineers will - if available - place markers on the edges of the cleared lane to help give a visual reference for safe passage.

During the lane clearing operation, all available vehicles and infantry will provide overwatch on the engineers. They will suppress or destroy any threats that emerge. Smoke should be employed to mask the clearing operation when feasible, and the engineers may need to crawl to clear their lane if enemy fire is heavy enough.

Note that if an engineer becomes a casualty due to enemy fire or explosives, a supporting infantryman will move in to pull him out, get him to cover or concealment, and administer first aid or call for a medic. The engineers will ignore their own wounded and dead and leave their evacuation and treatment to the supporting infantry.

Once a lane has been cleared by engineers, a single engineer will act as a "ground guide" that the vehicles will follow through the lane. This acts as a final set of eyes on the ground, scanning for any left over mines, as well as giving the armored vehicles (which may have limited visibility) a clear reference to follow through the safe lane.

DETONATING CLEARING CHARGES IN A MINEFIELD

Engineer Vehicles

Engineers equipped with the proper tools are generally able to fix up a damaged vehicle to some extent. These field repairs can only do so much - at very least, they can usually restore the mobility sufficiently to allow the vehicle to withdraw to a safer area for more extensive repairs. When this proves impossible and a vehicle is just too damaged to move, recovery vehicles can be employed to tow them out of the area and to a proper repair depot.

When not being used for vehicle recovery, engineer vehicles can be employed to knock down trees or push wrecks or other vehicles around. In urban areas, destroyed civilian cars or other vehicles can be pushed to arrange roadblocks and canalizing features, which can then be improved by emplacement of mines. If the enemy has vehicles heavy enough to push through such a roadblock, placing an anti-tank mine or two on the near side will either deter them, force them to attempt mineclearing, or disable them if they don't see the mines in time.

PUSHING A DISABLED MRAP OUT OF THE WAY WITH A CRV-6E BOBCAT

Defensive Works

The Role of Engineers in the Defense

Engineers are often given the ability to deploy obstacles, bunkers, and other defensive structures in the pre-mission phase of a defensive action. The 'Defending' section of this guide goes into detail on the considerations required for a defensive action to succeed, but we'll recap some of the concepts here as they apply specifically to engineers. The form this obstacle deployment takes may vary - in ShackTac, we have an in-house developed 'defensive deployment system' that allows for such things to be implemented in a mission - but the end result is the same: The placement of these items will play a crucial part in the success of your mission.

The two primary types of defenses will be either an isolated location or a linear defense with flanking obstacles such as minefields. Typically you will have a period of preparatory time that abstracts the amount of time it would take to set up a real-world defense, with engineers being given a number of different obstacles and structures that they are responsible for deploying.

In the defense, the overall commander is responsible for establishing the method of defense that will be used, as well as the placement of key structures, fields of fire, sector assignments, and so on. The commander uses the OCOKA mnemonic to determine the best means of defense - taking into consideration the terrain he finds himself in, the weapons available, probable enemy forces, cover/concealment options, and more. As an engineer, you will be reporting to the commander for guidance on where to place obstacles, and will offer your own knowledge of best practices to help guide and implement his vision for the defense.

Defensive Structures

There are two main categories of items that can be placed by engineers in the defense.

The first are defensive structures. These are man-made and are intended to provide positions to defenders to fire from while having cover from enemy fire. Defensive structures include berms and earthworks, bunkers (to include watchtowers), sandbag walls, hesco barriers, and various concrete barriers.

Note that some defensive structures are stronger than others - for instance, a hescoe barrier will tend to absorb more fire before being destroyed, while sandbag walls will not hold up so robustly.

Understanding how a defense works is key to being able to effectively employ defensive structures. Ensure you're familiar with the Defending section of this guide.

Defensive structure tips

- **Ensure your bunkers and other fighting positions mutually support each other.** When the enemy attacks one position, other positions should be able to support them with fire.
- **Think about how the fight might progress.** Plan your defensive structures such that the defense is layered and gives players the ability to withdraw to a complementary position if the first one is about to be overrun or is otherwise rendered ineffective.
- **Work with the mindset of compartmentalization.** If a grenade falls into your defensive structures, will it wipe out a large number of defenders? If so, you need to break the area up with sandbag walls, barriers, and similar.
- **Cooperate with any heavy-weapon teams in order to give them the best possible protection.** Heavy weapons are invaluable in the defense - you'll want to ensure their survival for as long as possible.

Obstacles

The second category is that of obstacles. Obstacles, like defensive structures, take many forms. The unifying factor with obstacles is that they are negative influences on the enemy's maneuver and fire. Obstacles take two primary forms.

Existing Obstacles

These are present in the defended area before the defenders ever arrive. For example:

- Hills
- Buildings, houses, structures, walls, rubble
- Rivers and/or bridges
- Cliffs
- High-contrast terrain differences. For instance, a large, empty clearing in a jungle is seen as a danger area for a maneuvering force, which in turn makes it an obstacle. The reverse of this could be a patch of boulders and rough terrain that would prevent vehicles from passing through it.

The commander will work to integrate existing obstacles into his defensive plan - if you see something he misses, let him know. Some existing or natural obstacles are more influential than others - for instance, deep rivers and steep cliffs can completely block enemy movement. Other obstacles can act as complementary positions and can be reinforced by deployable structures - shoring up a building with sandbag walls and bunkers can turn it into a defensible position.

Reinforcing Obstacles

Man-made, these are the things that the engineers will be deploying at the commander's instruction, with the intent of shaping the battlefield to the best advantage of the defenders. Reinforcing obstacles include:

- **Anti-infantry:** Concertina wire, tanglefoot, berms, flame obstacles, antipersonnel mines
- **Anti-tank:** Hedgehogs, dragon's teeth, antitank mines
- **Expedient:** Vehicle wrecks

Reinforcing obstacles require a good amount of consideration and care in emplacement for them to be truly effective. Hodge-podge deployment of obstacles, without a clear plan of how they will work together to shape the fight, tends towards ineffective results.

Ultimately, obstacles are meant to slow the enemy, disrupt their efforts, channel them into favorable terrain for the defenders, and just generally make things difficult for them. Obstacles are major force-multipliers and help to make a smaller force capable of defending against one significantly larger. Placing a single anti-tank mine on a bridge can be enough to drastically influence the options available to the enemy - a concept known as 'economy of force'. Strive to get the most out of whatever assets you're given to work with. Be creative!

For an obstacle to be maximally effective, it must be observed by defending forces. Without observation of the obstacle or the ability to place fires onto it in some fashion, an obstacle merely acts as a delay to enemy movement. Once observation and fire is placed onto the obstacles, they become dangerous killing grounds that provide an incredible challenge to the attacking force, forcing them to bypass the obstacle (and thus be channelized), breach it (not an easy task when under fire), or die.

Obstacle Tips

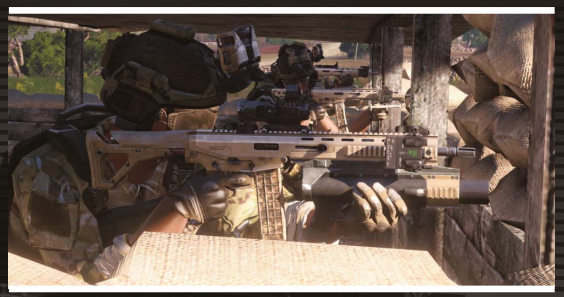
Some general tips for obstacle placement follow.

- **Mines**
  - **Anti-tank mines mixed in with wire obstacles** help to prevent vehicles from rolling over and defeating the wire.
  - **Obvious antipersonnel mines** in wire obstacles help to deter infantry from trying to breach.
  - **Fake mines (such as dropped items that look like they could be mines) can slow and confuse the enemy,** forcing them to treat them as legitimate mines.
- **Surprise obstacles can drastically throw off an enemy plan.** For instance, placing a wire obstacle behind a breachable wall might result in the enemy attempting to breach the wall, only to run into the difficult wire - forcing them to rethink their plan and adapt on the spot.
- **Funnel the enemy into kill zones in order to shape the fight.** When given the choice between completely blocking off an area or leaving a gap for the enemy to take - consider leaving the gap, and ensuring that the enemy who takes that path of least resistance will be punished for it via mines, focused fires, and so forth. Guide the enemy into doing what you want them to do.
- **Try to completely block avenues that are hard to defend or general weaknesses.** Use sturdy obstacles that will not breach easily, and have a plan for what to do if the enemy still attempts to breach them.
- **Set up easily-attained initial footholds as mined/satcheled obstacles.** If the enemy can potentially make it to a set of buildings near your defensive location, placing mines or satchel charges in those obstacles can be a rude surprise for them.
- **Place trip flares in areas that cannot be observed and are likely avenues of approach -** Placing them near cover obstacles (boulders, houses, etc) makes them more likely to be tripped, since players will naturally gravitate towards cover during movement.

- **Ensure wire obstacles and other movement impediments are positioned out of grenade-throwing range from friendly positions.** Stopping the enemy but allowing them to still throw grenades isn't the ideal situation to end up in.

During the Fight

Once a defensive action has begun, engineers use their knowledge of the defensive emplacements and obstacles to help monitor the situation and provide guidance to leadership elements. They typically operate in the areas that they were responsible for helping to construct or fortify, acting as riflemen to complement those assigned to their areas.



RECONNAISSANCE

Intro to Recon

About

Reconnaissance is the process by which a military force discovers more about the area it is operating in, particularly those locations that exist out of the immediate lines of sight of their main forces, be they static or mobile. We'll refer to this as 'recon' for short, with 'scouting' being conceptually similar for our purposes. Conducting recon can occur during all stages of an operation and helps to give field commanders a better understanding of the enemy, terrain, and what options are available to them. Good recon is an essential part of every plan, as well as something that is continually practiced during the mission's execution phase through a variety of different means. Earlier chapters of this guide - such as the Evolution of a Firefight's 'Find' stage, and the Basic Rifleman's Situational Awareness section - covered the basic premises of reconnaissance at the lower level. Here we'll talk in more detail about recon efforts beyond those already detailed.

The results of recon can be conveyed in two primary ways in the context of Arma – the first being an abstraction used as part of the initial mission briefing. In this situation, the mission designer has written information about what higher-level intelligence and recon assets have observed about the enemy area. This sort of recon acts as guidelines for the planning and conduct of the mission – however, it isn't necessarily 100% accurate. Clever mission designers will not tell you the full truth of the situation, but instead tell you what the pre-mission recon believed it saw. Good enemy camouflage, troop movements, reinforcements, and decoys can lead to this information turning out to be less-than-accurate once actually in the mission area.

The next form of recon is the sort that happens during a mission playthrough, conducted primarily by players. At the lowest level, the point element of a larger troop body is the front-line scouting and reconnaissance unit – what he sees is of immediate tactical relevance to his unit and is rapidly conveyed to higher leadership. Stepping back a bit, a more long-term and broader reconnaissance unit comes in the form of dedicated recon troops – special forces, company recon, scout/sniper teams, and similar roles which are heavily oriented towards recon. These troops seek positions from which they can observe the area of operations and convey their sightings to friendly commanders who can in turn use that information to better carry out the mission. Above that come reconnaissance aircraft – typically in the form of recon helicopters, though unmanned aerial vehicles can be employed as well at both a high- and a low-level capacity.

Typical Usage

While an element of reconnaissance is always present in mission briefings and conduct, there are occasions where recon is the entire point of a mission. For instance, a platoon might be tasked with doing a route recon – move from point A to B and see if there's anything in the way. This can happen organically during a mission, or it may be explicitly directed as the overall mission theme.

Some situations will have reconnaissance units operating in an area in advance of friendly forces, relaying what they see to the force commander so that he can adjust his planning as the mission progresses. There are times when a recon mission will be conducted a day in advance of an actual full-scale operation – resulting in only a small recon element participating in the mission, then creating a report of what they found, which will in turn be used by the mission commander to develop his plan for the full-scale op. At other times the recon element may be near a second objective while the rest of the unit secures an initial objective – this helps to keep the game enjoyable for everyone, allowing recon to do their thing while other ground forces have their own task to do. When used in this capacity, recon will generally gather all the information they can about an area, pass it along, then move on to another objective. This keeps recon a step ahead of the ground forces, allowing for a fast operational tempo to be observed.

The most common of all situations is that of active recon around the main body of troops. This is simply recon that is continually in the vicinity of the main ground force and is giving intelligence on the enemy as it relates to friendlies.

Goals

Determine...

A reconnaissance element is attempting to determine the following information about enemy forces:

- **Presence.** This includes scouting suspected enemy locations, but it's not limited to only that. Recon must maintain all-around awareness, looking for enemy approaching from unexpected directions or located in unexpected or well-camouflaged positions.
- **Strength and capabilities.** Spotting infantry is useful information – detecting that they have special weapons such as anti-air missiles or heavy anti-tank weapons is much more valuable, however. Recon must be positioned such that they can ascertain any significant information about the enemy, in as much detail as is relevant to friendly troops. The same detail is required when vehicles are concerned – a piece of "enemy armor" does not tell the same story that more specific identification can bring. There is a large difference between spotting a light armored personnel carrier like a BRDM, compared to spotting an infantry fighting vehicle such as a BTR-K – likewise, a BTR-K and a T100K tank are vastly different threats.
- **Movement and intent.** When enemy forces are found, assessing their intent is a valuable piece of information for any ground commander. A stationary or defensive enemy squad is very different from one which is actively moving towards and seeking to engage friendly forces. Troops that are walking around with their weapons lowered, unaware, tell a story as well – as do those that have taken to heavy concealment and are arrayed in the direction of friendlies.

- **The location of enemy defenses, including minefields, bunkers, crew-served weapons, wire obstacles, and similar.** Attacking a prepared enemy defense is a difficult challenge in which every detail is of the utmost importance. Locating an enemy heavy machinegun emplacement in advance gives the commander an opportunity to plan for it – running into an unexpected HMG, on the other hand, can take a careful plan and tear it apart. Recon units spend a great deal of time precisely recording their findings on the map for ground commanders to study.
- **Any special information about the area.** This includes terrain features that are not necessarily obvious from a map study, the presence or absence of civilians, and anything else that could influence friendly operations in a positive or negative way.

Guide...

In addition to determining the above aspects, recon units are expected to be able to act as guides for the parent unit they're supporting. This primarily means that they're capable of giving navigational guidance to infantry forces. It can also mean that they're well-versed in forward-observer and forward air controller duties and can direct the strikes of each to maximize damage on enemy units beyond the range or vision of the ground element.

Principles

Proper reconnaissance requires a solid understanding of the core principles of reconnaissance operations. Learn these and live by them – they'll go a long way towards getting you out of mission alive.

- **Look but don't be seen.** While this mostly applies to ground forces, even air recon will do well to heed this guidance. A recon element must move covertly through the landscape, with the goal of always seeing the enemy before the enemy can see them. This requirement naturally results in recon elements being small in number, well-camouflaged, and highly skilled at covert movement. Usage of binoculars and other magnified optics allow for recon units to observe enemy locations from reasonably safe distances. Thermal imaging systems are major boons to a recon element's ability to spot enemy targets and defeat visual camouflage.
- **What do I know, and who needs to know it?** Recon units must be able to rapidly assess the significance of what they see and quickly convey it to those who need to know it. While this often is a matter of taking it up to the highest-level command radio net, there are occasions where communicating directly with the element that most needs to know will be necessary. Recon units must be familiar with the overall communication plan in order to most efficiently convey their information.
- **Be prepared to immediately act upon compromise, and have a plan in advance for what you will do and where you will go.** A compromised recon unit is a potential liability – if they are cut off completely, other ground forces will be required to divert from their missions to rescue them. Recon leaders must be prepared to rapidly exfiltrate an area on short notice if they feel that they've been spotted and are in danger. Every position a recon team occupies should have several escape routes, and the entire team should be familiar with what to do on a moment's notice.

- **Patience is important.** Hasty movement or hasty decisions can lead to compromise and the failure of the recon objectives.
- **Pick non-obvious positions to observe from.** The top of the tallest hill in the region may seem like an ideal location to observe from, but a smart recon leader recognizes that the enemy will have identified it as a potential observation site and either positioned his own forces on it, or positioned observes and weapon systems to watch it.

Ground Recon

Mission Types

Ground reconnaissance takes two basic forms – infantry or vehicular. The most common types of missions conducted by ground recon are as follows.

- **Recon patrol.** This can be a mounted or dismounted patrol. The intent is to move through an area to determine enemy presence. When engaged, the recon element typically falls back and conveys information about enemy forces to higher headquarters, who may choose to send in heavier elements to confront the discovered hostiles.
- **Wide area reconnaissance.** In this, a number of different recon elements move through a large area to attempt to locate enemy forces. In effect, it's a number of different recon patrols happening simultaneously to maximize the area covered. Wide area recon can be conducted by dismounted units or through vehicles – ATVs and motorcycles are a common and rapid means for a light force to conduct this sort of recon.
- **Mobile recon.** This is when a moving friendly force – be it infantry or motor/mech – has scouting elements working the flanks and front of the force. Mobile recon is aimed at providing security during movement – they can detect enemy threats in the path of advance, or spot flanking attempts before they become a danger to friendly forces.
- **Advance site recon.** In this, a recon element is inserted into an objective area to scout out and map the locations of enemy positions, special weapons, munitions, buildings, and anything else that might be relevant to an upcoming operation. These sorts of recon missions require the utmost of stealth – being compromised can result in the upcoming operation having to be aborted entirely due to secrecy having been blown.

Equipment Used

Good equipment a key factor in the success of recon elements. Some of the equipment types used are detailed below.

- **Magnified optics.** Binoculars, laser designators, and thermal scopes all help to more clearly and thoroughly scan an area, as well as do so from a safer distance.
- **Recon vehicles.** These take many forms, depending on the terrain and mission. When operating in coastal or river areas, raiding boats can be employed to quietly move recon teams into locations the enemy would not expect them to come from. In other terrains, ATVs, motorcycles, and dune buggies work well for rapidly moving small teams around. Some heavier vehicles may have sensor masts on them, allowing a unit to raise the sensor mast and scan a large area around them through daylight, nightvision, and thermal optics. Dive teams are able to use their Swimmer Delivery Vehicle optics to provide sea-to-shore covert recon as well.
- **Unmanned ground vehicles (UGVs) and unmanned aerial vehicles (UAVs) can be employed at times.** Small UGVs allow recon into areas that might be too dangerous to send a person, while UAVs can give a high-level view of the area around a recon team and allow them to better choose their routes to avoid enemy forces and patrols.
- **Suppressors.** Whenever possible, recon units are equipped with suppressors for their weapons. Suppressors allow for a recon team to defend itself without fully compromising their location to other nearby enemy forces. For maximum effect, a recon team must be proficient in ambush techniques – in the event that they need to defend themselves and remain concealed, all enemy threats must be rapidly dispatched before they have an attempt to return fire and thus make the sorts of noise that the recon unit's suppressors are designed to avoid.

Tactics

- **Dismounted recon forces should be familiar with the Survival, Evade, Resist, and Escape chapter of this guide.** The 'Evade' portion gives guidelines that can be used to good effect when compromised.
- **When wounded, enemy units will leave blood trails for a period of time.** If moving through an area where fighting has happened, look for any trails that might exist – the direction these lead can guide you towards the retreating enemy element.
- **Be very mindful of potential enemy ambushes, mines, and other traps.** An enemy that knows it has been located may choose to leave tripwired mines behind it as it moves.
- **Be patient.** Rushing about will give you away – take your time, move with cover and concealment in mind, and work smarter – not harder.

Helicopter Recon

Mission Types

Helicopter reconnaissance is most often done by the xH-9 class of aircraft. These small helicopters are extremely agile and make for excellent observation platforms. Helicopter recon tends to fall into the following mission types.

- **Finding the enemy.** When the enemy location is not precisely known, helos can fly through an area and attempt to find them. One found, the scout helo can relay this information to friendly forces, allowing them to deploy to engage and destroy the enemy. A scout helo that stays in orbit around an enemy location can help to prevent them from escaping and effectively keep tabs on them until friendly reinforcements arrive.
- **Security.** A scout helo can fly around friendly ground forces, watching for any signs of enemy movement towards them and alerting them as needed.
- **Route Recon.** By flying ahead of the main effort, a recon helo can determine what if any enemy forces might be encountered on it, and help to avoid the ground force being ambushed. If ambushed, a recon helo can very rapidly assess the location as well as size of the ambush force, relaying this information and helping to coordinate action against it.
- **'Hunter' role.** When acting as part of a 'hunter / killer' pair, a recon helo uses its agility and speed to seek out enemy threats, at which point a gunship helicopter can take over and destroy said threats. In the Vietnam war this was known as a 'Pink Team' – the small OH-6 Cayuse scout aircraft were a 'white' team, while the AH-1 Cobras were 'red' teams – the combination becoming 'pink'.

Equipment Used

- **Recon helos.** Small and agile, these helicopters sometimes have powerful sensor systems on them. In the absence of sensors, recon helos search for the enemy visually.
- **Copilots.** A recon helicopter benefits greatly from having a copilot or crew chief onboard – these players can concentrate on plotting out and communicating observed enemy forces to higher headquarters while the pilot can focus fully on scouting and flying the aircraft. Some mods even allow copilots or crew chiefs to throw smoke grenades from the aircraft or use their own personal rifle or machinegun to engage enemies below. Copilots also communicate updates on the friendly situation and locations of friendly forces to the pilot.

AN RH-9 HUMMINGBIRD HIDING IN A PATCH OF TREES WHILE SCANNING AN AREA

Flight Techniques

Due to their small size and light armor, recon helicopters must be at the top of their game to survive their missions.

- **Avoid complacency!** The moment you relax or lower your standards is the moment you'll pay for it.
- **Do not fly lower or slower than is absolutely necessary.** The higher and faster you are, the harder it is for the enemy to hit you. Be familiar with how high you need to be to make it difficult for the enemy to engage you, while still being effective in your recon role.
- **Hovering close to the ground must be avoided at all costs** – the only time you should be at low level is when the terrain and vegetation provides you a great degree of protection or concealment, or you have need to be low-down near friendly forces.
- **When operating in hilly or other terrain where natural or man-made features have varying altitudes, remember to gain altitude when passing over tall obstacles.** Flying at 300 meters of altitude over level ground, then passing over a 250m tall ridge without raising altitude, makes you an easy 50-meter target for anyone on the ridge.
- **Just because you don't see anything, doesn't mean someone isn't watching you and waiting for you to make a mistake.** Fly like you're always under observation by the enemy.
- **When flying near known enemy positions, vary the directions you approach from, the altitude you fly at, and your speed frequently.** Jinking unpredictably will help to prevent the enemy from getting a good lead on you.
- **When passing over objects or terrain features, be extremely vigilant of what might be on the other side.** When possible, attempt to fly around obstacles instead of over them. While there may be nothing on the near side, flying over a hill to find that an enemy anti-aircraft emplacement is right below you is not a pleasant experience.

- **The enemy can 'read' your orbit, be very mindful of this!** If you orbit directly over them in a circular pattern, they'll know they've been spotted. If you orbit directly over a friendly position, the enemy will likely suspect that the center point of your orbit corresponds to your friendly forces and can act accordingly. When you don't want the enemy to know you see them
- **Predictable orbits give the enemy an opportunity to establish an anti-air ambush at some point along your path.** While you may see most of the enemy in the center of your orbit at a safe distance, a small team of the enemy detaching and moving to place themselves directly under your path with a machinegun can be a very rude surprise.
- **Maintain all-around awareness.** Becoming target-fixated can cause you to miss important things around or beneath you.
- **Be paranoid!** If something on the ground seems fishy, it may very well be. The enemy hates being observed – they may go to great lengths to try to lure you into a sense of complacency, or guide you towards an ambush. Don't fall for it!

Unmanned Aerial Vehicles

Unmanned Aerial Vehicles (UAVs) are remotely-operated aircraft used for reconnaissance and strike purposes. These come with sensors – more powerful the larger the UAV is – and relatively long loiter times, again based on how large the UAV is. UAVs allow an aerial view of the terrain and can be used to find and track enemy forces in the area.

Equipment Used

There are two UAV types you will find in Arma 3 – high-level and low-level ones.

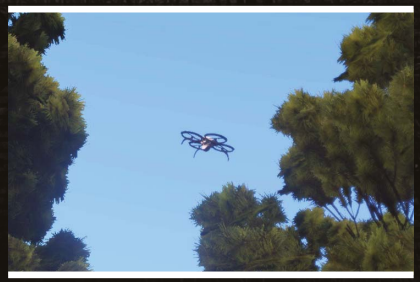
High-Level UAVs

These large aircraft are launched from airfields prior to the conduct of a mission. The MQ4A Greyhawk is an example of this type. Large UAVs can carry payloads of missiles or bombs and typically fly at altitudes that make them invisible to the naked eye. Control of these UAVs is generally done by an operator far from the battlefield, tied in via radio communications to those in the operational area.

THE MQ4A GREYHAWK AT SURVEILLANCE ALTITUDE

Low-Level UAVs

A low-level UAV is a platoon- or company-level organic asset that can be controlled by members of the ground force. These have lower loiter times, weaker sensors, and generally do not carry weapons. These UAVs come in either a plane or helicopter format, with the quad-rotor AR-2 Darter being an example of the latter. Due to their low loiter times, these UAVs are often able to only provide periodic flights, with downtimes in which they must land, have their batteries replaced, and be relaunched. These UAVs are often employed after contact has been made with the enemy, allowing friendly forces to better track enemy movement and maneuver to defeat them.



Mission Types

- **Route recon.** As with helicopter recon, UAVs can be employed to scout out a rout for friendly movement. Unlike with helicopters, a UAV is much less visible and noisy and can generally conduct this mission without being spotted – thus keeping any potential enemy forces unaware that they've been located.
- **Target recon.** Particularly when attacking fixed positions, UAVs can be used to get the lay of the enemy defenses, to include spotting obstacles, weapon emplacements, troop concentrations, and more.
- **Security.** A UAV in the air gives friendly forces 'eye in the sky' security, helping to prevent them from being surprised by enemy encounters. This is of great benefit regardless of whether friendly forces are mobile - such as an infantry platoon or convoy - or static, like at an outpost or similar.
- **Hunter/Killer Patrols.** An infantry unit can use UAVs to scout the areas around them as they move (the UAV being the 'Hunter'), searching for any enemy that might be in the area. When found, the infantry unit moves to, engages, and destroys the discovered enemy (the infantry being the 'Killer' part of the patrol).
- **HVT tracking and observation.** Due to their small signature, UAVs can be used to track high-value targets without detection. This sort of real-time tracking information can be used to set up 'snatch and grab' raids on the HVTs.
- **Counter-contact recon.** When a friendly force makes enemy contact, UAVs can be employed to determine the enemy location, intent, and strength.

Tactics

- **Be communicative with those you're supporting.** While you should not report the movement of every rabbit hopping around the battlefield, you will want to keep ground forces updated about anything that might affect them - be that crowds starting to gather, people moving away from ground forces, people shadowing ground forces, suspicious vehicle movements, etc.
- **Avoid target fixation.** When operating a UAV, the operator must continually scan the area and adjust his zoom levels to keep an awareness on as much of the operational area as possible.
- **Be mindful of your loiter time.** For low-level UAVs, considerations must be made as to when the best time is to launch them. The platoon headquarters element should be consulted on these matters – running out of juice for a UAV right before you desperately need it is to be avoided.
- **When launching a low-level UAV, do not fly it directly from the friendly position towards the enemy.** This telegraphs friendly positions and should be avoided. Instead, fly the UAV at low level in a direction perpendicular to the enemy, then bring it back towards them from the side.
- **Protection of the low-level UAV operator is essential.** Due to his focus on controlling the vehicle, he will be unable to defend or observe his immediate location. While the platoon UAV detachment will be able to assist in security for him, the whole platoon must strive to protect him while he's operating his vehicle.

COMBAT DIVERS

The Combat Diver

A combat diver is a unit that is equipped with gear that allows them to insert covertly via underwater means. In the real world the closest US Forces analogy would be to the Navy SEALs, but for our purposes we won't pretend to be SEALs (there are enough of such pretenders already!) and will instead simply call this role a combat diver.

Combat divers are generally used for two specific types of missions - covert strikes or raids, and reconnaissance. Due to the limitations imposed on them by the bulk of their underwater gear - SCUBA tank or rebreather, fins, wetsuit, etc - they are unable to bring as much 'punch' to the fight as comparable units would if they were inserted via another method.

The combat diver can expect to reach shore with his primary weapon and sidearm, sufficient ammo for a decent fight, and mission-essential gear such as demolitions, micro-UAVs, sensor packages, and so forth. In the event that they are to be employed in a more significant capacity, they are able to bring in extra gear in a water-tight rucksack - to include a change of uniform and load bearing gear or armor - though it reduces their capacity for carrying other types of mission gear and requires time to switch into after landing.

Combat Diver Gear

Due to their aquatic nature, combat diver gear includes some rather specialized items.

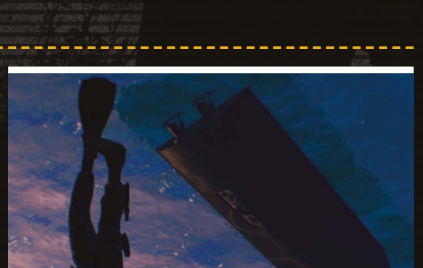
Rebreather

The rebreather is a device that allows for a diver to breathe underwater without giving away their position via expelled air bubbles. The alternative is to use a SCUBA system, which has the downside of releasing streams of bubbles that can potentially betray the presence of a diver once the bubbles burst on the surface. While the Arma 3 rebreather does release some bubbles, these are nearly impossible to detect on the surface. Also note that the rebreather has no cargo-carrying capacity - limiting the diver to what he can carry on his wetsuit or in his rucksack.

Wetsuit, Mask, & Fins

The wetsuit, mask, and fins combine to make a diver more mobile underwater. When put up against someone not so equipped, a diver can outpace and out-endure them.

Swimming without this gear is slow - the slowest movement being about 3kph, with the fastest being about 5kph. When equipped with the full suite, a swimmer can easily maintain 6kph at his slowest rate, while bursts of nearly 13kph can be attained for periods of time.

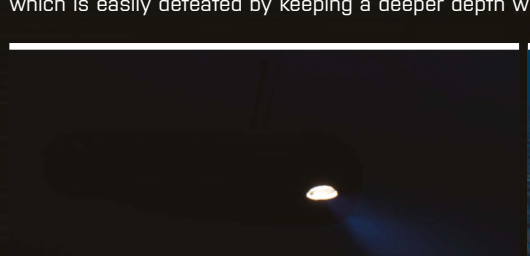


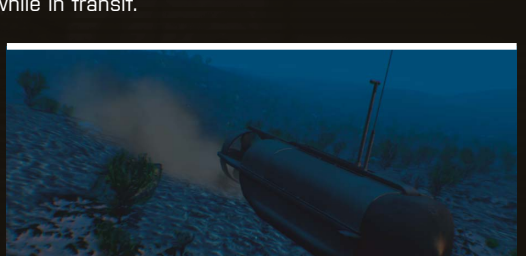
SDV

The SDV - or 'Swimmer Delivery Vehicle' - is a small submersible that allows a diver team to more rapidly move underwater. Seating 4 divers, these can be moved close to shore, anchored, and then the diver team can make the rest of the movement via their typical rebreather & fins method. SDVs additionally have periscope capability, allowing for a diver team to halt some distance from shore and observe the potential landing area in detail and from relative safety.

SDVs are fairly mobile underwater, able to hit a maximum speed of about 18kph forward and 15kph in reverse. When operating at night and deep enough, the SDV has small headlights angled forward and down. These should be avoided whenever possible, as being near the surface on a dark night and turning on your lights can be a rather attention-drawing thing to do.

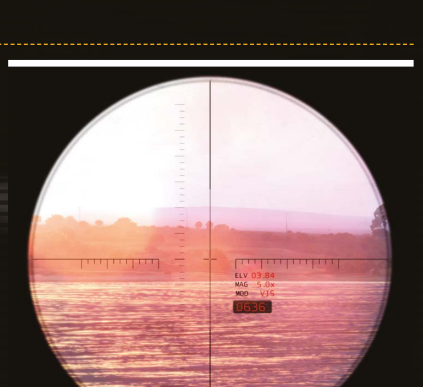
Remember that water is thermal-opaque - enemy thermal systems will be of no use in searching for SDVs. However, nightvision and visual observation can detect them if they're too close to the surface - something which is easily defeated by keeping a deeper depth while in transit.





Periscope

The SDV's periscope is surprisingly capable considering the vessel's size. Fitted with daylight, thermal, and nightvision capabilities, the optic has a zoom range from 5 to 40 power. Not stopping there, it can also use laser ranging and can even designate targets with a laser designator. To employ the periscope requires a front passenger seat - or sensor operator - to view through it. The driver has the ability, through the action menu, to automatically maintain periscope depth - when engaged, the sub will rise just high enough to expose the periscope while keeping the body of the sub safely underwater. The SDV will not create a noticeable wake until over one-third of its body is above the waterline, so there's a good margin of safety present even when using the periscope.



Water-Purposed Weaponry

In the event that a team expects to be facing off against enemy divers, special water-purposed weaponry is available. While the average mission will not require this, these weapons are available for special situations.

The SDAR is the weapon of choice for underwater combat. This 5.56mm rifle can fire two types of ammunition - the first being typical air-oriented projectiles, while the second are dual-purpose rounds that are able to use supercavitation principles to have upwards of a 30 meter underwater range.

SDARs utilize a fixed 30-meter zero, though this is a deceptive term - the bullet crosses the line of sight for the first time at 30m, then continues upward and re-crosses the sight line at somewhere in the 250-350 meter range.

When using SDARs, divers must remember to transition from the underwater ammo to normal ammo before coming ashore.

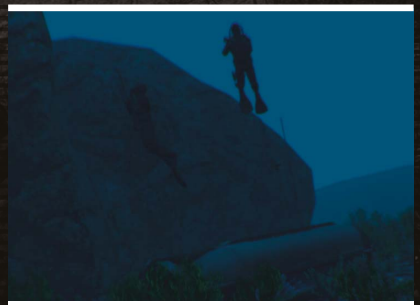
Other Gear Possibilities

Divers are able to bring additional gear on a mission by utilizing a backpack for storage. This permits a diver to bring, amongst other things, a change of clothes or a load carrying or armor system. This can be used for combat purposes - such as when performing a raid that will require shooting - or for stealth purposes, such as recon. A diver who brings civilian apparel and leaves his weapon and gear stashed shore-side may be able to infiltrate an area posing as a civilian, gain the intelligence needed without firing a shot, and slip away completely unnoticed. Along the same lines, usage of a stolen enemy uniform and weapon can get a diver team into areas otherwise inaccessible to them - assuming they don't raise suspicion through their actions.

Insertion Tactics

Insertion Methods

All insertions ultimately end with a swim to shore - the difference between them is the way you get into the water in the first place, and how far that swim needs to be to get you to your landfall site. Longer swims are fatiguing, so a careful balance must be struck between proximity and risks of detection/compromise.



LEAVING AN SDV RESTING ON THE OCEAN FLOOR BEHIND A ROCK FORMATION

SDV

Usage of a Swimmer Delivery Vehicle is one of the fastest infiltration methods possible. While these are often transported into the operation area by a larger submarine, they can also be air-dropped as needed from cargo planes.

Pros	Cons
▪ Fastest underwater transportation method ▪ Sensors allow viewing of LZs from safe distances and with high magnification, plus thermal, NVG, laser ranging, and designation ▪ Good navigation systems ▪ Can get very close to shore undetected ▪ Saves diver stamina	▪ Must 'park' SDV and return to it, which can be difficult in low-light or murky water conditions ▪ Despite the SDVs size, there is no capacity for additional cargo to be carried.

Helocast

Helocasting is an insertion method in which a helicopter flys low and slow over the water, allowing divers to jump into the sea from it.

Pros	Cons
▪ Extremely rapid and flexible deployment ▪ Very hard for the enemy to identify a drop site ▪ The mere presence of a helo does not tell the enemy that a water insertion is being initiated	▪ Depending on environmental conditions and the area of operations, it may be too obvious. Best done at night. ▪ Enemy AA can prevent this possibility entirely

Boat

Using boats as insertion is a fairly straightforward matter being driven to the appropriate place and then simply jumping into the water. It's quick and easy, as well as rather flexible.

Pros	Cons
▪ Usage of civilian boats allows for covert insertions close to enemy shores without arousing suspicion ▪ High mobility to choose an insertion point ▪ Mobile and flexible pickup options should the plan change during execution	▪ Risk of being intercepted by coastal watercraft patrols and 'made' before the insertion can happen ▪ Usage of a boat can put the enemy in an elevated state of awareness even if they don't see the insertion occur

Parachuting into water

The usage of parachutes to deliver a diver team can come in two basic forms - the first with just the divers themselves parachuting, and the second involving an SDV being dropped as well. The SDV method is ideal, as it allows for the divers to quickly move towards shore upon landing, while the lack of an SDV will result in a very long swim in to shore - making it easier for navigational errors or timing errors to occur.

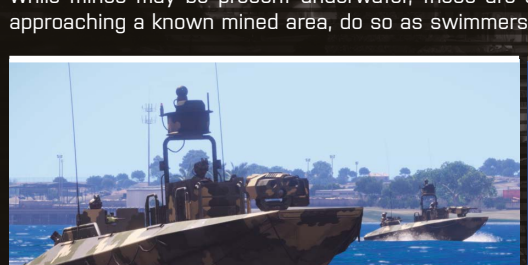
Pros	Cons
HALO + controlled parachutes can make for very quiet insertions	Without an SDV, swim times tend to be long, since you don't want to be drifting in a parachute in easy view of the enemy.
HAHO can be used, but is more difficult	Restricted to low-visibility or night conditions
SDVs can be dropped with the divers, speeding up their transit to shore	Requires alternate extraction methods

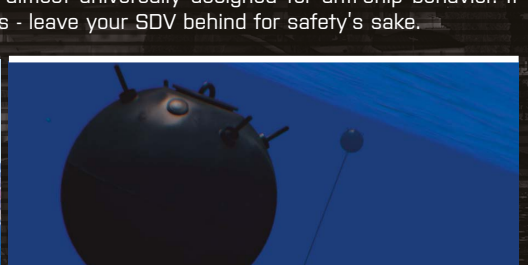
Threats

The threats most relevant to combat swimmers are the ones located on, over, or in the water, or at or near the shore. The main threats come in the forms of sensors and patrols. The enemy will tend to focus their patrols on areas that are vulnerable to seaborne attack, such as harbors and shore-side military installations. Attempting to land at these locations is unwise - a beach patrol may spot you, remote sensor systems may be present (to include thermal and motion-detecting systems), or there may even be vehicle patrols in the area. Anything with a thermal sensor is an incredible danger, as human thermal signatures stand out starkly against water.

At sea, patrol boats may operate close to these installations. These are mostly looking for above-water threats and are easy to avoid. Being spotted by one can still turn deadly, as they may have stocks of anti-swimmer grenades - even one of which can kill an entire dive team.

While mines may be present underwater, these are almost universally designed for anti-ship behavior. If approaching a known mined area, do so as swimmers - leave your SDV behind for safety's sake.





The least likely threat is finding enemy swimmer teams in the area. The odds of encountering another team underwater in low-visibility conditions is remote, but if you do, that's where your SDARs will earn their pay.

Picking the Landfall Site

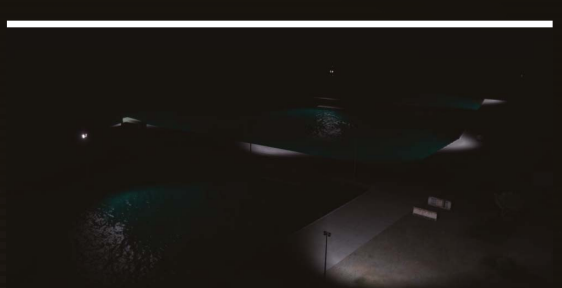
The most dangerous part of a dive team's insertion is the transition from sea to shore, which is why picking a good landing site is absolutely critical. For the sake of commonality with helicopter and paratrooper terminology, we'll refer to this concept as a 'landfall site' in longhand, but shorten it to 'LZ' for an abbreviation.

Considerations for a good Landfall Site (LZ)

The basic considerations for a landfall site are as follows.

- **Sheltered area, hard to observe from the shore** - limiting the range from which it can be observed. (such as a tight cove, or a boulder-strewn narrow patch of beach next to cliffs)
- **Concealment nearby**, cover preferable.
- **Hard to access by the enemy** (rocky terrain, cliffs, etc)
- **Remotely located.** There should be no reason for the enemy to need to patrol there - which is to say, don't pick an LZ near a military installation or harbor.

Another consideration is the number of LZs to use. There are times when the availability of suitable landfall sites is limited, requiring all divers to end up at the same one, while other areas will permit multiple landing sites. When possible, splitting up amongst different sites is preferred - if one is unsuitable or compromised, the other may still work, or at the very least will allow for part of the diver team to support the engaged one from a positive of relative advantage.



HARBORS ARE GENERALLY WELL-LIT - AVOID THEM WHENEVER POSSIBLE.

Approaching Unseen

The main threats to divers all exist above the surface of the water - thus, one of the easiest ways to stay safe during the approach phase is to stay deep. At least 20 meters of depth should be maintained, underwater terrain permitting. If using an SDV, keep the lights off. Move at a speed that allows you to see around you - slamming into mines or running into an enemy dive team unexpectedly are both outcomes to avoid. This is all heavily dictated by the underwater visibility - adapt accordingly.

Actions if Discovered En-Route

If your team is compromised during the approach phase, your actions will depend mostly on the threat encountered. Enemy swimmer teams are the most straightforward to deal with - shoot more accurately than they do, faster than they do, and kill them before they have a chance to kill you.

Above-water threats are more difficult. As on the approach, depth equals safety - bullets cannot penetrate deeply into the water regardless of their size. Anti-swimmer grenades or depth charges are lethal when employed - if you suspect they'll be used against you, change depth and have your team split into groups that all go in different directions.

The mobility of helicopters and boats can be a nuisance - if they have a means of detecting you and tracking you, there's little you can do but attempt to scatter your team and hope that some of you can make it to safety. Being discovered en-route is a terrible situation for a dive team to be in - it almost always requires the cancellation of their mission. In the event that the mission is continued, extreme efforts should be made to choose new, unpredictable LZs, take time to observe these sites from the sea, and expedite the landfall process as much as possible. The best security comes from being able to get out of the water, away from the dangerous shore area, and blend in further inland.

Making Shorefall

While the approach phase can put you in a tough situation if compromised, the shorefall phase is more dangerous by far. Approaching this with caution and deliberate action is essential to making a successful

landing. While your mission briefing likely covered the expected threats in the area, intelligence has been known to miss things - make sure ***you*** don't!

First, the sight must be reconnoitered from the sea. An SDV is invaluable here - the powerful sensors and image capabilities can reveal lurking enemies, sensor systems, and other threats. In the absence of an SDV, divers simply surface from a distance, scan the area, submerge, swim closer, then surface again to check. This is only done by a single diver - the others stay submerged to reduce their visual signature. Depending on the tactical situation, a diver or SDV may stay offshore while the rest of the element makes shorefall, in order to give better observation of the area. This diver uses his radio to communicate with those moving towards shore, allowing them to make the approach more covertly by staying submerged until the last moments. If using SDARs, the dive team will transition to normal magazines once in the final phase of their approach.

Upon reaching water shallow enough to stand in, two divers will stand with weapons readied, staying low in the water. These two are the security element - they'll conduct a careful scan of the area and watch for any signs of threat, covering the other team members as they exit the water. The two security members will maintain good interval - at least 20 meters between each other - giving the rest of the team a corridor between them to make shorefall via.

Once the rest of the team has exited the water and established shore-side security, the water security element follows them inland. At this point, depending on the gear used, the team may change into different uniforms, don armor systems, or otherwise transition from an aquatic to a land role. If it is necessary to leave gear behind, the team will locate the most concealed area to store said gear - preferably in vegetation or sunken terrain that cannot be observed from afar. The last thing you want is to make a stealthy insertion, only to have an enemy shore patrol stumble over swimmer gear and sound the alarm.

At this point, the shore-side mission begins.

Exfiltration

The final phase of the operation involves exfiltrating from the area after conducting your shore-side mission. The key point here is to be extremely cautious when returning to your landing site. If you didn't leave any gear at that site, there may not be a reason to return to it - in that case, pick a suitable location to enter the water from that's at least a few hundred meters away from your shorefall site. If you did leave gear - such as rebreathers - at the site, exercise caution approaching it. Move within visible range of the site, pause, and observe for several minutes. Note anything that has changed since you were last there - no matter how subtle. Scan carefully for concealed enemies. Once you believe it to be clear, move in sections - one should always be providing security as the other moves closer. Once at the site, carefully observe the area around your stored gear. Look for tripwires or mines, as the enemy may choose to simply boobytrap your gear instead of confronting you in a firefight. A clever enemy may do even worse, staying safely hidden until you trigger their mines, at which point they'll ambush you while you're still reeling from the blast.

After safely recovering your gear, two team members will act as security while the others move in small groups into the water - reversing the technique used in the initial landing. When all other divers are underwater, the security element will follow them. If using SDARs, transition to underwater magazines after moving a short distance offshore.

Once underwater, it's a simple matter to head away from shore, towards the assigned pickup point. Be punctual, of course! It's no fun missing your initial pickup time and having to wait for an alternate pickup.

And that's that!

SURVIVAL, EVASION, ESCAPE, & RESISTANCE

Introduction to SERE

Regardless of your role, there may come a time when you find yourself isolated from friendly forces and in the midst of the enemy. This may be the result of being shot down in an aircraft, lost in the dark, or as a sole survivor of a hard-fought battle. Whatever the case may be, knowledge of how to survive, evade, resist, and escape from the enemy is essential towards returning to friendly forces.

For our purposes, we'll talk about what a helicopter air crew should consider if they find themselves in this situation. Adapt as needed for other roles.

The Shootdown

Mayday, mayday...

In the event that your aircraft loses engine power during combat operations or is otherwise forced to make an emergency landing, you should immediately call over the radio to friendly forces that you're declaring an emergency – "Mayday, mayday" – and are having to make a forced landing. As time permits, expound on where your aircraft is, where you're attempting to land, and what forced you down.

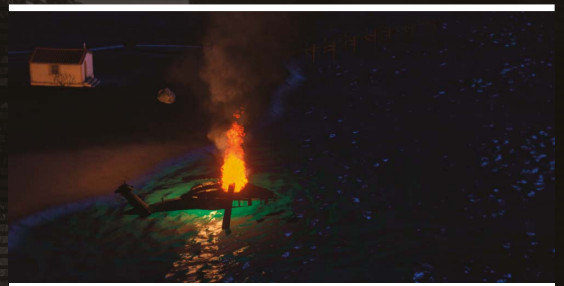
The Landing Site

As this radio message is being sent, scan around the aircraft to evaluate potential landing sites and the proximity of both friendly and enemy forces. The disposition of friendly and enemy forces should be known at this point – at the very least, you should have an idea of where you were engaged from. In the absence of any other knowledge, endeavor to land as far away from the source of fire as possible.

When friendly forces are near, attempt to land by them – this simplifies the situation dramatically. If you're able to successfully land and link up with friendly forces, your job is simply to stick with them until arrangements can be made to extract you and your crew to the rear.

When friendly forces aren't near, and the enemy positions are roughly known, try to land as far away from them as possible.

When neither friendly nor enemy forces are known or near, head for a landing site that gives you concealment and multiple routes of exfiltration. A clearing in the woods is a good example of this type of terrain feature.



TRY TO AVOID LANDING IN LOCATIONS THAT ARE BARREN OF COVER AND CONCEALMENT

Survival

Immediate actions

Upon landing, and assuming that you are not near friendly forces, begin to assess the security of the landing site as well as the health of your crew. Being shot down can happen extraordinarily quickly, and it's possible in the confusion to not realize that your aircraft has not only taken damage, but that crew members have been injured as well. Emergency landings can be rough, too, further complicating injuries. The easiest way to check for injuries is to call it out verbally upon landing – each crew member can assess themselves and respond accordingly, and if one member doesn't respond, it's possible that they've been knocked unconscious or are dead. Check on any unresponsive crew members as soon as possible, as they may need immediate medical aid.

Injuries

If there are injuries, assess whether they can be treated on-site or whether the proximity of enemy forces necessitates movement first. Treat what you can when it's safe to do so, but don't jeopardize the entire crew over one injured member. In the worst case scenario, split the crew and send the uninjured portion away from the crash site while you or an appropriately-trained crewman give first aid to the injured. If the injured is unconscious and unable to be transported, accept that you may be forced to stay with them until enemy forces arrive. In this eventuality, depending on the enemy's known behavior, you may be able to surrender to them in order to get your severely wounded crewman aid. Know your enemy – there are some where surrender will never be accepted. In those situations, make all efforts to carry any wounded with you, and never go down without a fight. Having severely wounded, untreatable casualties is a nightmarish proposition for a downed aircrew – make the best of the situation that you can and try to save as many of your crew as feasible.

Other friendly aircraft

Additionally, consider the proximity or availability of friendly aircraft, including CSAR – Combat Search & Rescue – aircraft. If a CSAR or transport aircraft is on-station, it's possible that they'll be able to rapidly respond to your crash and even land at the site to extract you. If this is the case, assess the terrain for defensive potential and deploy your crew accordingly. Depending on the orientation of your aircraft, mounted weapons may still be usable, lending extra firepower to your defense of the crash site. Communicate with the rescue aircraft to determine whether you should stay at the crash site or move to an alternate location for a pickup.

Last Acts & Transitioning to Evasion

If there is no prospect for pickup, evasion of the enemy will become the priority. Gather any supplies from your aircraft that you might need – signaling devices like smoke grenades, flare guns, and marker panels are highly desired, while medical supplies and ammunition are highly desired as well. Some aircraft have door guns that can be detached and taken with you – consider doing so if you feel that the firepower will outweigh their bulk. Finally, if demolitions are available and enemy can be reasonably expected to reach the crash site before friendlies, consider deploying demolitions to destroy the aircraft. Placing demolitions on a delayed timer can help to give you a head start on evasion and may even result in the aircraft being destroyed while enemy forces are surveying the crash site.

Evasion

Terrain & Options

Evading the enemy is largely defined by the visibility conditions in the area in which you landed. The more cover and concealment, or the less favorable the lighting conditions are, the more chance of success you have.

During the descent, all crew members should have been scanning the terrain in anticipation of needing to conduct an evasion plan. Upon landing, the map should be consulted to help further refine possible options. Ideally, the initial direction of evasion should be in a direction perpendicular to the enemy's expected pursuit path. Attempts should be made to avoid simply running straight away from the enemy forces, as this simplifies their pursuit and allows them to easily predict where you're going as well as ensure that they have someone waiting for you when you get there.

You should consider the terrain and evasion options not only from your perspective, but also from the perspective of the enemy. Going towards the most obvious route may be so predictable by the enemy as not to be worth it. Be creative in how you choose your route, and do your best to make it unpredictable.

Types of Pursuit

Foot pursuit is the easiest method to evade. As the enemy brings more capabilities to the search effort, your options begin to change and become restricted, forcing even greater creativity but also opening up some additional possibilities. While you cannot reasonably expect to fight a truck full of enemy infantry and succeed, it is possible that the further you get from the expected route of escape, the more likely you are to run into civilian or military administrative vehicles that can be hijacked or "repurposed". In the event that you acquire a civilian vehicle, check to see if there are civilian clothes in it as well – changing out of your flight uniform may give you better odds of escape. At the very least, consider removing your flight helmet and placing it into the cargo of the vehicle – a person in a green shirt driving a civilian car looks much more believable as a civilian than a "civilian" wearing a full-fledged aircrew helmet. Bear in mind that you will need to approach friendly forces with caution when driving a civilian vehicle.

Helicopter pursuit is the hardest to contend with – the best option when dealing with helicopters is to pick routes that go through dense terrain such as forests, jungles, or through areas where there are so many bushes, boulders, and other visual 'noise' that a search helo may miss you in the clutter. When search aircraft are nearby, minimize movement – however, bear in mind that the search aircraft's role is intended to slow you down. It's a tricky balancing act to know when to move versus when to stay concealed, and the situation will heavily dictate what you're able to do. Keep in mind that search aircraft equipped with thermal optics are nearly impossible to hide from, short of moving into buildings or extraordinarily thick concealment.

In the event that you're "made" by a thermal-optic-equipped helicopter, consider splitting your crew up and heading in several different directions – the helicopter will only be able to follow one of you, allowing the others a greater escape chance. Speed is essential at this point – you want to disperse as far as possible before the aircraft can call in additional search assets. Make sure that you're able to identify the pursuing aircraft as hostile – the last thing you want to do is try to evade a friendly search helo. If you're found by a friendly aircraft, instructions on what to do can be found in the 'Escape & Extract' section, later.

Danger Areas

Expect that the enemy will attempt to use 'danger areas' – such as fields, roads, and other barren terrain features – as areas in which they can locate you. Whenever possible, avoid crossing danger areas – go around when the situation permits. If you must cross one, thoroughly observe the area from a safe location before crossing, and cross with wide interval.

Staying in place as an option

While movement is the most fundamental means by which to evade the enemy, don't discount the possibility of staying in place. When visibility is poor and pursuit thin, finding a good – but not overtly obvious – hiding spot and allowing the pursuit force to move past you can be an extremely effective way to put the odds further in your favor. If you accomplish this, move diagonally away from the enemy after they've passed – in short, you're attempting to move in the opposite direction from them, without moving at an exact opposite to them. Moving directly away from them in the direction they arrived can potentially result in you running into follow-on forces and should be avoided whenever possible.

In addition to that technique, remember that the enemy is expecting you to be continually moving in an attempt to evade them. With each passing minute the area they have to search for you in grows larger and larger – if you can evade for long enough, they'll end up with an area so large that their search efforts become vastly less effective and may even eventually be called off due to this fact.

Natural Lines of Drift

When moving across terrain, keep in mind the concept of "natural lines of drift". Natural lines of drift are the contours and characteristics of the terrain that people tend to gravitate towards – in short, they're the path of least resistance. Roads, bridges, valley floors, paths – these features should be avoided, as you have a much higher chance of running into enemy forces on them, and they're the most predictable paths to search from the enemy's perspective.

Stay together!

Finally, whenever possible, attempt to stay together during your evasion attempts. Splitting up should only be done under extreme duress – such as the helicopter scenario illustrated earlier.

Resistance

When Evasion Fails

There are times when despite your best efforts at evasion, capture will be inevitable. This can occur for a variety of reasons – for instance, being confronted and cornered by armored vehicles or superior enemy numbers, or after being wounded or knocked out by enemy fire or action. There comes a point where further fighting becomes an exercise in suicide – however, as noted earlier, there are enemy forces where capture simply is not an option for you. When that possibility presents itself, do everything in your power not to be taken alive.

When faced against a more traditional opponent, one which operates more or less in accordance with international military laws of war, surrender is a possibility. The internationally recognized surrender language is to drop your weapon and raise your hands in the air. Before you willfully surrender, make a last radio call for anyone in the area so that they know you've been captured and that your radio is about to be compromised. Expect to be searched by your captors and relieved of anything of value, and particularly anything that can cause damage, as well as your map, compass, GPS, and radio.

Whatever the circumstances of your capture are – whether you woke up to find yourself a captive, or surrendered in the face of impossible odds – know that your struggle does not end there. Hope is not lost merely because the enemy temporarily has the upper hand. You can continue to resist even in your unarmed state – do so!

Resisting

Resistance takes many forms. Once captured, you must continually evaluate your situation, the enemy's situation, and look for opportunities to escape. Do not answer any enemy questions about your mission, friendly forces, other captives, or teammates who managed to successfully evade. Bearing in mind that we're all playing a game, and that no one is truly under duress, a certain degree of cooperative roleplaying is required to make these sorts of scenarios interesting – go with the flow and remember that the goal is to have fun and make for an interesting scenario. If the enemy threatens to execute a teammate to get you to talk – don't be so stubborn as to let this happen! If necessary, give them a tidbit of info. It doesn't necessarily have to be entirely true, either!

When the enemy orders you around in captivity, you can choose to be somewhat stubborn and slow, but ultimately cooperate with them. Don't give them excuses to escalate their violence against you. Your survival depends in part on how they feel about you – the last thing you want to do is become a total nuisance with no apparent redeeming values. In keeping with this, remember that any damage you inflict on them prior to your capture is likely to face retribution – shooting and killing the pursuit party as it closes to capture you tends to put some tension between you and them. While their higher command may want you for questioning, as a bargaining chip, or as a hostage, the small unit leader that actually captures you may opt instead to make you pay for the death of his men.

Escape & Extract

Escape Early

The best time to make your escape attempt is either early in captivity, while still with the initial party that captured you, or when disruptive actions occur during your transport to the rear.

After being captured, the enemy has to figure out what to do with you and how to accomplish that goal. This generally means that you'll need to be transported away from the battlefield – or at least away from where your friends are trying to find you. A smart enemy will designate specific soldiers to guard and transport you, and if he chooses wisely, this will greatly compound the difficulty of escape.

The best you can hope for is that one of two things will happen – one, your captives will be bumbling fools and you'll be able to escape from them simply by making a run for it in a cluttered or dark environment and begin another evasion attempt (if they're bumbling fools, btw, how did they capture you?), or two, some significant disruptive event will occur and give you a window for escape. Disruptive events include vehicle accidents, contact with their enemy (aka your friends), artillery, or anything that could occur which would draw their attention away from you – even if only for a few moments.

When you have your chance – make a break for it! Remember the techniques you used when evading previously. Put obstacles between you and any pursuers and change path frequently to throw off pursuit. If there are vehicles nearby that are unguarded, try to use them to escape. Your first escape attempt is likely the only good one you'll have – depending on the situation, they may no longer be interested in recapturing you and may simply shoot to kill, or they may recapture you and incapacitate you such that further escape attempts are no longer feasible.

Escaping During a Firefight

If a firefight is occurring while you attempt your escape, try to evade perpendicular to the main axis of fire. You don't want to rush from your captors towards the source of the fire – you could be confused for an enemy, or you could find that the other party isn't friendly, either. The situation can be more complex than a good-vs-bad face-off – indigenous people, rebel, insurgent, or resistance groups can be operating in the same area and may or may not be sympathetic to your cause.

Seeking rescue

Once you've successfully escaped, your priority turns towards finding friendly forces and being rescued. There are two ways this can happen – one, you can walk (or drive) yourself all the way back to friendly lines, or two, you can be spotted by aircraft and airlifted out. A smart captor will have taken your radio upon capturing you, reducing you to visual signals alone. When aircraft are overhead and identified as friendly, there are a variety of different visual signals you can attempt – some require special gear, while others work at any time. Make sure you drop your weapon before trying to signal the aircraft, and do not attempt to signal with gunfire or tracers – both are easily misinterpreted as hostile acts and can result in you being obliterated by return fire. In truly desperate situations, firing a series of three tracers straight into the air – well away from aircraft, and with a several-second pause between each shot – can be used as a signal. Exhaust all other options before resorting to this, as it is extraordinarily dangerous to attempt.

If the area seems clear, running out into a clearing can draw the eye of any aerial observers. Waving your arms – via saluting or raising them in the air – can also help, as can running circles in the open. If you have a vehicle, honking the horn may work if the aircraft is reasonably close. When it's dark, flashing the headlights continuously is a great signal. If you have smoke – throw it out and stand near it for identification. Remember that at night, smoke placed near a source of illumination – such as headlights – is much more easily seen from the air.

You will be able to tell that a helicopter has spotted you by changes in the flight behavior. A typical response is to begin circling your position, or quickly passing over you to get a look at your appearance. Do not expect the helicopter to land if it sees that you're armed. If you're unarmed and on foot, move into an open area and place your hands in the air or salute in the direction of the helicopter. Expect it to circle several times to inspect your surroundings, then land to pick you up. If you're in a vehicle and the helicopter has identified and is following you, lead them to a safe area, away from any known enemy, before disembarking.

Extraction Process

Once the helo lands, one of two things will happen. Either you will see the crew call you forward – via shouting or gesturing, at which point you should run to and load into the helo – or they will disembark a crew member to verify your identity and search you for weapons or explosives. If the latter happens, do not resist. Answer the questions from the crewman and tell him anything you know about nearby enemies, other captives, or anything that might help. This technique is used when there is a possibility of the enemy attempting to masquerade as a friendly unit in order to lure a rescue helicopter into an ambush. An alternate possibility is that the aircraft will drop a short-range radio to you during a fly-by, then conduct a conversation through it to verify your identity before setting down to pick you up. This may include asking for a "recovery code word" – a word that would have been designated as such in your initial mission briefing, and can verify your identity when spoken.

Post-Extraction

Once extracted, your job is to tell friendly forces as much about the enemy as you can – where they are, where they took you, who else is still captive or trying to escape, where they might be going, and so on. Give whatever detail you can – you never know what might be the critical information that results in your fellow crew members being rescued.

Finally, relax! You're safe now... right?

FIGHTING AT NIGHT

Intro

In this section we'll cover the concepts, environmental influences, and equipment that comes into play when operating in a nighttime environment.

THE DIFFERENCE BETWEEN NO MOON AND A FULL MOON

The Natural Environment

First, let's look at the environment itself. There are many factors that influence how dark a night will be - which in turn dictates what if anything you might need to use to counter the darkness.

Moon

The moon is the most dramatic natural influence on nighttime visibility - when it's full and high in the sky, you'll find the terrain to be well-lit and visibility to be good even without the use of any special equipment. The moon provides illumination in a similar manner to the sun - except obviously not nearly as bright. Light from the moon will cause shadows on the ground, while the phase of the moon will dictate how much illumination is provided. "New" moons give little, full moons more, while the positioning in the sky plays another part and determines the length and direction of shadows.

THE MOON PHASE, LOCATION IN THE SKY, OR PRESENCE AT ALL, IS A LARGE FACTOR OF NIGHTTIME VISIBILITY

Weather

The weather's influence on visibility is easy to guess - clouds and fog reduce it, rain even more so, while lightning can provide flashes of clarity at unpredictable intervals. Weather trumps the moon, too - if it's cloudy, the light of that full moon will never reach the ground and thus doesn't matter.

Note that the weather can change over the course of a mission - while it may start out nice and clear, a storm front moving in can kill visibility in a remarkably short period of time.

DIFFERENT FOG LEVELS AND OVERCASTS AT NIGHT

Time of Day

It goes without saying that time of day is rather significant - the fact that it's night is what this section is based on, after all - but it's worth knowing that all hours of the night are not equal in visibility. Aside from the presence or position of the moon in the sky - moonrises and moonsets included - there are two periods in which visibility will be different from 'vanilla' night. These periods - nautical twilight and dawn - happen once the sun has set but isn't too far below the horizon. During this time, the sky will still be somewhat bright, followed either by nightfall if it's nautical twilight, or sunrise if it's nautical dawn. A bright sky and dark ground makes for a difficult scene to view - your eyes can't adapt to see the ground properly while the sky is still lit. Skylining is particularly fatal at this time of day, as the skyline is the easiest thing to see and thus what people tend to unconsciously focus most on.

The Man-Made Environment

Artificial Lighting

Found most often near the trappings of civilization, artificial lighting is the only one you are able to directly influence. Streetlights can be shot out, headlights smashed in. If you're willing to make the required amount of noise to do so and have the time for it, artificial light can be dealt with. For those instances where time and noise are a concern, artificial light can be a blessing or a curse, depending on where it is and how it ties into your plan.

When operating in coastal areas, lighthouses become an additional concern. While some are designed to not shine while facing inland during their rotation period, others will continue to shine for each full rotation.

Fighting the Darkness

Personal

Once night has fallen, what's there to do about it? It mostly depends on who you are, as the options available depend primarily on the technology at hand. A few insurgents might not have many options available to them, while a professional and well-funded military force has myriad ways of peeling back the night. Note of course that there's a lot to be said for intentionally limiting gear in order to give a more intense experience - though that's up to mission designers to ultimately dictate.

Tactical Lights

The most readily accessible of all methods is the simple flashlight - or 'tactical white light' if you want to feel High-Speed, Low-Drag (HSLD). While they can be hand-held, the most common usage is to mount them to a rifle or handgun so that they're always oriented in the direction of the muzzle. Flashlights are best used in short 'bursts' - you toggle them on to illuminate something or scan an area, then turn them off once you've seen what you need to see, or a few moments have passed. Such lights are obvious targets in the dark and tend to draw fire - you want to keep them on only as long as necessary, and after turning them off, make sure to move away from that position.

Chemlights

Chemical lights, or "glowsticks", are more of a marking method at night, and less of a means to increase visibility in a given area. You can find these in a number of different colors. Chemlights can be used to mark significant locations, indicate landing zones to helicopters, and provide simple references in the dark.

Grenades

There are a number of incendiary grenades that can find dual usage at night as illumination. Thermite grenades - designed to be used to destroy equipment via extreme heat - can put off a brilliant light display while they burn. White phosphorous grenades can do similar. While neither is intended to work as illumination at night, they can be repurposed to that effect when the situation dictates.

UGL Flares

The underbarrel grenade launchers that team leaders and squad leaders have are a great way to provide illumination at night. These UGLs can load both parachute flare and star shell rounds, projecting them several hundred meters into the air before they activate.

Parachute flares - or just 'flares' - provide a high level of illumination for hundreds of meters around them, burning for a minute or more as they drift in the wind and fall towards the ground. These flares will remain burning for as long as it takes for their fuel to run out - thus, a flare that ignites close to the ground will land and remain burning for a period. Wind will carry these along, with heavy winds whipping them away and influencing the amount of usable illumination time you'll get.

Star shells are a bit different, intended primarily for signaling purposes - though they do provide a bit of light during their brief lives. Star shells will burst into a sparkling display, with their illumination lasting no more than ten seconds. They work as illumination in a pinch but are best saved for signaling between elements out of comm range of each other.

Trip Flares

A defensive measure, trip flares are designed to trigger when infantry or vehicles move through an area, revealing their approach to waiting defenders. There are two basic types of trip flares - ground flares, which burn at ground-level, and aerial flares, which shoot into the sky before illuminating. Trip flares are generally employed in locations that are difficult to observe at night, and are hardest to defeat when they're hidden in dense and cluttered terrain. Most trip flares will provide an audible signal when they trigger, in addition to the brilliant light produced.

SURPRISE, YOU'RE IN A TRIPFLARE-LIT KILLZONE!

Generally speaking, ground flares are employed where defending forces have an ability to see or fire into the area they protect. Aerial flares are chosen when the location is further away, and knowing of the enemy's approach is more important than being able to fire on them. An aerial flare bursting far from the defensive line gives the defenders time to prepare for an assault, as well as slows down the attacking force and makes them proceed with much greater caution.

Nightvision

Ah, nightvision! Is there anything better for wreaking havoc once the sun's gone down? Actually, yes, but we'll get to that later!

Nightvision works via the amplification of ambient light - be it from stars, the moon, or artificial sources. Thus, it works best when the moon is out or the sky is clear - clouds and such tend to degrade the image quality, though it's still preferred to stumbling around in the dark.

Depending on the mod you're playing, your NVGs will either auto-adjust to changing light levels, or you'll need to tweak them yourself. The tweakable method is ideal, as you can dial the image up or down depending on what exactly you're trying to get in clear contrast.

Aside from simply allowing you to see better in the dark, nightvision also opens up the use of infrared gear. The first - infrared lasers, or IR target designators - allow you to aim your weapon effectively even with NVGs on.

Employment of IR lasers is very similar to that of flashlights, in that you don't want to leave them turned on all the time. This is good practice regardless of whether the enemy has nightvision - keeping your lasers turned off helps to 'declutter' what people are seeing. Good laser discipline happens when people only lase to indicate targets, direct people's attention, or are actively employing their weapons.

Lasers can be used in a pinch to indicate targets for aircraft - though it may be hard for an aircraft to spot them above certain altitudes or distances from the beam.

When friendly forces are operating against a lower-tech enemy - meaning, an enemy without their own nightvision capability - another tool becomes available, that of the infrared strobe - or IR strobe. These are small hockey-puck-sized objects that pulse an infrared light. IR strobes can be used to indicate friendly positions - either by being placed on the ground or on top of a structure that friendlies are in, or by wearing them on helmets or similar. These are particularly helpful when operating with helicopter air support - the strobes give a clear indication of where friendly forces are, allowing enemies to be engaged that much more punctually.

One other note worth making is that of weapon sights. While unmagnified sights such as ironsights and red dot optics will work fine through nightvision, magnified ones will not. There are two ways to deal with this - one is to keep your nightvision off when using a scope, the other is to have an actual nightvision-capable scope. The latter isn't always possible, and the former is imperfect. In short - don't expect to be able to use your magnified optics at night to the same effect as in daytime unless you've come equipped to do so.

Finally, remember that the green-white-black spectrum of your nightvision goggles tends to make it harder to distinguish objects, personnel, and so forth than it would be during daylight. Camouflage tends to conceal better when seen through nightvision optics, and it takes longer for a person to thoroughly scan an area when wearing them. This must be kept in mind when planning movement - going through a forest in daylight is a faster affair than doing the same at night under goggles. Of course, having those goggles results in much faster movement than if you were to stumble through the dark without such assistance.

In the real world, not all nightvision is created equally. Expect to see mods for Arma 3 that introduce different levels of quality for different types of nightvision gear - with visibility distance, field of view, and image quality varying greatly between old and new nightvision systems.

Thermal

What's better than nightvision? Thermal vision!

Thermal optics come in a variety of forms. Most commonly you'll find them as part of vehicle optic packages - powerful, high-resolution sensors that can see heat radiating from the environment. Miniaturization of the technology eventually made them viable as weapon optics as well, with the intent to integrate them into nightvision systems for enhanced capability.

NORMAL VISION, NIGHTVISION, WHITE-HOT THERMAL, BLACK-HOT THERMAL

Thermal is an extremely powerful tool - regardless of whether it's day or night. There is no real counter to thermal as an infantryman aside from staying inside of buildings or in thick concealment.

THERMAL REVEALS THINGS THAT EVEN NIGHTVISION DOESN'T FULLY EXPOSE

With that being said, there are a few aspects of thermal worth remembering. One - thermal optics cannot see through glass. In effect, they 'see' the heat of the glass itself - blocking whatever is on the other side from observation. Two, a vehicle will only show up in high-contrast after it has had it's engine running. The heat buildup from the engine, or the friction of the tracks or wheels over the ground, is what causes a high thermal signature. The same is true of weapons - a rifle will appear cold until it has been fired, at which point the barrel and nearby components will begin to glow.

Finally, remember that most thermal optics allow you to reverse the polarity of the image.

GLASS - IN THE FORM OF COMBAT GLASSES - MASKS THE HEAT SIGNATURES OF THE EYES.

This is simply used to help give a different perspective on what you're looking at - it's mainly personal preference as to what you'll use at any given time. Note, too, that thermal optics use different color themes - some are green/black, some are white/black, and others use different shades. When describing the mode you're in, simply state what color is indicating 'hot' objects - for instance, the above image shows white-hot in the middle, black-hot on the right.

Also note that the clothing worn will influence the thermal signature - in this example, long sleeves help to mask and 'soften' the heat generated by the person's arms, while short sleeves lead to a brighter thermal contrast.

Vehicle

Vehicles give you a few more options for fighting the night. Some helicopters have spotlights on them - some of which can be pointed independent of the aircraft's flight. Defensive flares can be used to provide temporary illumination as well, and some aircraft can even drop aerial flares designed to provide greater and longer illumination.

Spotlights also come in ground vehicle form - as well as in stationary mounts. These can be employed in defensive situations to provide security, though their bulbs and lens assemblies can be destroyed with small arms fire.

The most fundamental of all vehicle lights is - you guessed it - their headlights. Headlights are low-tech and easy to employ. One common tactic to use when vehicles are abundant is to place them such that they're point "out", in the direction the enemy will approach from, such that a 'ring of light' exists and must be passed through in order to attack.

When facing enemies with NVGs when your side is not so equipped, placing vehicles such that their headlights are pointing at potential avenues of approach works well.

Coy/Plt-Level

At the higher level, artillery units can be used to provide illumination. Artillery pieces like the 105 and 155mm howitzers are capable of firing illumination rounds that descend under parachute, lighting up large areas of terrain for minutes at a time. At the platoon or company level, 60 and 81mm mortars can fire similar flares - not as bright or long-lasting as the larger artillery pieces, but plenty sufficient to support a platoon or company-level effort.

Environmental

Additional illumination can occur from the destruction of vehicles, buildings, and other structures. The explosion of an anti-tank impact and subsequent destruction of the targeted vehicle can provide brief but brilliant light, followed by significant lingering illumination if the vehicle catches fire. Fuel drums, civilian vehicles, and jerry cans can be used to provide such illumination - simply destroy them and you'll have light for as long as they burn. Placing these kinds of obstacles near expected enemy avenues of movement can put them in a major dilemma when they discover that their stealth movement is now bathed in firelight.

Weapon Usage at Night

Weapon employment at night brings with it hazards beyond what you'd experience in daylight. The muzzle flash of your weapon stands out brilliantly in the dark, allowing enemies to rapidly identify your firing position and return fire. Suppressors are essential to avoid this sort of signature, yet are often unavailable. In the absence of suppressors, be very careful about firing from solid cover whenever you can. If there's no solid cover, change positions after each burst - the enemy will return fire where they last saw the muzzle flashes, and you won't want to be there when the rounds arrive.

In addition to muzzle flash, tracers can be major liabilities at night. If non-tracer magazines are available, try to use them whenever possible. Save tracer magazines for critical situations like designating targets or when your side has such fire superiority that you're unlikely to be singled out for your tracer usage.

Weapons with significant launch signatures - such as anti-tank or anti-aircraft rockets or missiles - will give away your position the instant they're fired. The flash of an AT or AA missile launching can be seen from a great distance at night, and it tends to attract the attention of vehicles that could potentially be harmed by such weaponry. If you fire an AT or AA weapon at night, have a plan for where you can run or displace in the event that something bigger than you starts shooting back. If there's a risk of it, you're better off immediately displacing once your shot has been fired.

Principles of Stealth

While these techniques are aimed at operating in a low-light environment, the general principles can be applied to daylight operations as well by careful players. Remember that all forces are not created equal - while you may find great success through stealth when nightvision and thermal devices are not present, the presence of either of those can dramatically shift the equation. Nightvision still permits stealth to occur, just with more caution in employing it, while the godlike abilities of thermal viewers renders infantry stealth mostly moot. Be very mindful of what kind of enemy you're trying to be sneaky against!

Stick to shadows and minimize movement

The value of shadows should be obvious. When you stop, place yourself in brush and shadows that can distort or mask your shape. At night, people are looking for familiar shapes or outlines, and are able to notice high-contrast as well as easily see movement. Be aware of your backdrop - being in the shadow of a tree will do little if there's a bright white wall behind you from the enemy's perspective, silhouetting you.

Whenever possible, try to look around with just your head - either by using TrackIR, or by holding 'alt' to allow for freelook. A head moving around is a much smaller visual cue than someone swinging a rifle around as they pan their view.

Take your time when moving

You don't want to rush in the dark - it's too easy to miss people and end up getting shot in the back in the process. The same general rules of daytime tactical movement apply to the night - there's just more emphasis on avoiding contrast, staying in shadows, and trying to stop in locations that mask your visibility. Move from one position of concealment to another, observe, wait, listen, then move again when the coast seems clear. Hiding in bushes, trees, and thick brush makes you far more difficult to notice, though the sounds of you moving through such foliage can be heard if people are paying attention.

Strike during 'moments of action'

When you're trying to be stealthy, it doesn't do you much good to be the only one making noise. Taking a shot during a long stretch of silence tends to focus all of the enemy's attention towards you, reducing your lifespan drastically.

Instead, try to operate in a manner that allows you to maintain awareness of the enemy without forcing your hand. When the enemy becomes engaged or when loud environmental events happen, that's the time to make your move. If the enemy takes fire from elsewhere, a single rifle shot from you may easily be lost in the confusion. Don't get greedy - if you miss a shot, you may have to wait for another opportunity. It's a lot like sniping - a single shot is hard to identify, while multiple shots become more and more easy to trace the source of.

Looking is not necessarily seeing

One of the hardest skills to learn, and the most dangerous to employ, is the ability to distinguish the difference between an enemy who is scanning an area, versus one who has actually seen something during their scanning. In dark and dense terrain, when you're utilizing proper cover and concealment, sticking to shadows, and minimizing your movement, it can be tremendously difficult for the enemy to see you - even at very close ranges. It requires a great deal of self-control to be able to sit unmoving while an enemy looks in your direction or scans past you, but it can be the difference between maintaining your stealth and suddenly being thrust into a firefight you may not have wanted, on terms you didn't fully choose yourself.

When the enemy is moving, the situation is even harder for them. If you can blend in with the scenery and position yourself in a fashion that they're less likely to be looking straight at - for instance, on the opposite side of a tree that they're about to run past - you may be surprised at how many enemy can move by you without noticing your presence.

Being able to tell when you've actually been spotted depends on the distance at which you're facing the enemy. The most fundamental give-away is the double-take - if an enemy is scanning an area, sweeping their rifle over it, and suddenly stops and moves back in your direction - you may have been made! It's often very obvious when someone who wasn't necessarily expecting to see anything, suddenly sees something surprising - they'll jerk their aim towards it instinctively. At closer ranges you may even hear them

exclaim something to their teammates. In the event that you're reasonably certain you've been spotted - kill them as fast as you can, so that they can't pass on what they saw. A single gunshot will give you away to a degree, but it's not nearly as bad as having a living enemy able to coordinate with his teammates to surround and destroy you.

Once you've taken the shot, the situation becomes far more dynamic. You'll almost certainly need to reposition, but also keep in mind that the situation - particularly the availability of concealment and cover, and the proximity of the enemy - may make it possible for you to stay hidden even after firing that single lethal shot.

The Psychological Element

Keep in mind the psychological aspects of what you're doing, and how it appears from the enemy's perspective. If a fireteam moves past you without seeing you, any trailing elements will be naturally inclined to believe that the area is clear - else the fireteam would have taken contact, right? Use these assumptions to your advantage!

If you do get in a fight, try to get into the enemy's mind - what will they expect you to do? What do they think you are - a single soldier, or a full fireteam? If you're acting as part of a fireteam, the act of you displacing back through your fireteam members can lure pursuing enemy soldiers into an unexpected killzone.

When you're in the midst of the enemy, don't discount the possibility of confusing them or luring them with voice calls. Asking for a medic, or calling out for a specific element - "Hey, is this Bravo squad?" - can reveal the locations of others, draw critical roles to your location, or otherwise be used to gain awareness of the enemy and inflict more damage once the shooting starts. One particularly devilish tactic is to call out something after firing a shot - "whoops, misfire!" - or when taking fire - "Cease fire, you're shooting at friendlies!". Sowing confusion is a major force multiplier when fighting in the dark in close proximity to the enemy.

Patience

When all is said and done, most of your success at night while utilizing stealth will come from being patient, deliberate, calm, and thinking like the enemy. Rash decisions, panic, and hasty movements are your downfall. When you and your enemy are without nightvision, just remember that the night is as much of a hindrance for them as it is for you - if you wouldn't be able to see something, neither would they. Use this to your advantage as you move about.

IN CLOSING

I hope you've enjoyed your read through the third Tactics, Techniques, and Procedures guide. The writing and revision of this edition was a monstrous and particularly enjoyable effort, and I look forward to seeing how it is applied by various communities as we collectively make our way into the full Arma 3 experience. If you know someone who's interested in this style of gaming but doesn't quite know how to learn the finer points of acting as a virtual soldier, feel free to point them this way!

Credits

- **Bohemia Interactive,** for OFP, Arma, Arma 2, and Arma 3. None of this would amount to anything without the vast possibilities they've provided to us in their games. Thanks particularly for supporting the vision of TTP3 as an official Arma 3 production!
- **The members of Shack Tactical.** Weekend after weekend we continue to grow and evolve as a group through amazing community experiences. This guide, like the prior ones, would never have been possible without having learned so many lessons through our collective gaming experiences. Special thanks go out to the people who helped provide feedback during the development of TTP3. Thanks also to chkilroy, Vherid, and Phil for their assistance in developing the new look of the web version of TTP3.
- **Nou.** The Advanced Combat Radio Environment mod was an essential component of ShackTac growing beyond platoon strength. Your contribution to the Arma community deserves the utmost praise, not just for ACRE but also for the many other features you've contributed time towards developing. Thank you!
- **Everyone who has provided feedback on my site & Youtube content in the past.** Knowing that people enjoy this sort of content is a hugely motivating factor to continue to create it. Thanks for the support!
- **The Wargames League and Advanced Combat Environment mod teams.** Thanks for many years of enhancements to the series!
- **NaturalPoint.** I can't imagine playing in the Arma series without a TrackIR. Many thanks to putting such a great product out there, and getting support within the industry to add it to more and more titles. You guys have introduced a whole new level of immersion into these games for me, and I treasure it greatly.

About the Author

Dslyecxi is a prior-service US Marine with an eye for gaming realism who established Shack Tactical in January of 2006. He has been involved as a consultant to the Arma series since 2006, and chronicles the gaming adventures of his Shack Tactical community on Youtube, as well as maintains a site with more information about him, his views on gaming, Shack Tactical, and a variety of other topics.

Bibliography

The Tactics, Techniques, and Procedures series has drawn inspiration from many publically released military field and reference manuals. Specifically, these include the following works by the US Military.

- US Marine Corps
  - Common Skills Handbook 1B
  - Close Combat Marine Workbook' by Brendan B. McBreen
  - MCRP 3-01A, Rifle Marskmanship
  - FMFM 6-5, Marine Rifle Squad
  - MCWP 3-11.1A, Commander's Tactical Handbook
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  - MCWP 3-35.3, Military Operations in Urbanized Terrain
  - FMFM 1-3B, Sniping
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