Level 1 VF Comms

Standard Communication Guidelines for VF squadrons

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The Basics of Comms

"I'm a great believer that any tool that enhances communication has profound effects in terms of how people can learn from each other, and how they can achieve the kind of freedoms that they're interested in."

– Bill Gates

Clear communication skills and a properly defined communication structure are essential components of aerial combat. The ability to communicate effectively with other members of your flight is more important than any weapon attached to your ship. Air battles can be won or lost to communication breakdown. This document will explain the structure used by VVarMachine's VFx squadrons.

This document will be broken up into sections explaining the different parts of the communication structure. The basic parts of that can be summed up with **who**, **what**, **where**, and **when**.

The Parts of great Comms:

- **Who** = Callsigns
- **What** = All of the things
- **Where** = Location location location
- **When** = Sir, Yes sir

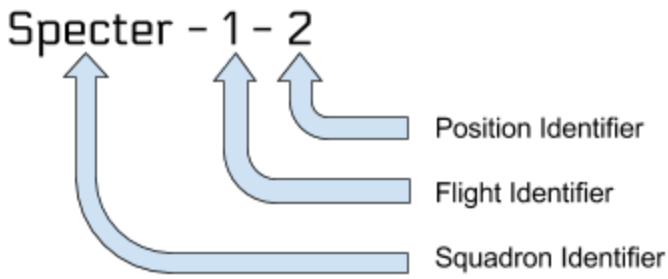
Callsigns

Definition of a Callsign

noun: **callsign**

1. a message, code, or tune that is broadcast by radio to identify the broadcaster or transmitter.

Composition of a Callsign

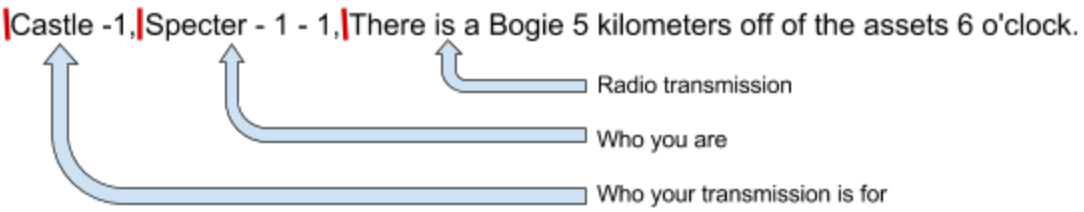


Call signs are designated during mission briefings as you are assigned to a flight. The Squadron identifier is picked from unit permanent call signs from the airframe callsign list. Your flight identifier indicates whether you're in the 1st, 2nd, 3rd, or 4th flight within that Squadron. The position identifier shows the position within the flight – one, two, three, or four.

For more information in regards to position within the flight please see flight formations document

Identify Yourself

When attempting to contact an individual, there is a set structure to ensure that both parties understand the communications, even in saturated radio chatter.



All of the Things

What covers many things when it comes to Aerial combat. The amount of information that a pilot has to deal with during operations can easily overwhelm the most experienced aviators. There are simple ways of breaking the transmissions down to make it clear, even over a saturated comms network.

The word of aerial combat will be broken into three different parts for a better understanding of what "**what**" could be.

- Your target, whether friendly, enemy, or unknown.
- Weapons, whether being fired from your ship or at your flight.
- What you are doing with your ship, and what your ship is doing.

Targets

Properly identifying targets is an essential part of air-to-air combat. When calling targets, some of Star Citizen's systems automatically assign name targets for you such as "Scavenger 12". These call signs can be treated the same as your aircraft call sign to help you and your flight members identify targets. For friendly aircraft, you can use their call signs given in the mission briefing to help your flight identify them. There are a few pieces of brevity to help with target identification when callsign can not be used on a craft – these once again help everyone understand your communication even over saturated radio comms.

Target Identification Brevity

- **Bogey**: An Unidentified craft
- **Bandit**: A hostile craft
- **Chick**: A friendly fighter
- **Asset**: The craft of value in a given area

It is very important to communicate and understand what you are supposed to be doing to a target, or what you have done to the target. Here are a few pieces of brevity to help you communicate with your flight on your actions and help you understand what other flight members may transmit regarding targets:

Target Status Brevity

- **Splash:** Target destroyed (air-to-air) or weapons impact (air-to-ground)
- **Kill:** Directive to commit on target with clearance to fire
- **Committed/Commit**: Fighter intent to engage/intercept
- **Shadow:** Follow indicated target

It's also very important to state whether or not you have visual/sensors contact with your target. Here are some important pieces of brevity to help with clear communications

Target Sighting Brevity

- **No-Joy**: Aircrew does not have visual or sensor contact with the target/bandit
- **Tally**: Sighting of a target/bandit

At times a member of the flight may lose track of their targets or lose all situational awareness. There are a few pieces of brevity to help let the flight know of this.

Target lost Brevity

- **Furball:** A turning fight involving multiple aircraft where the Flight lead has lose track of all of the bandits and members of the lead's flight. When this is used the flight members must commit their own targets
- **Tumbleweed:** Indicates limited situation awareness; no tally, no visual; a request for information.

Weapons

Clear communications regarding use of weapons and incoming threats of of weapons is essential for the safety and effectiveness of the flight. Informing your flight of what your ship is doing and what is happening to your target is also very important. Failure to inform your flight of weapons release may result in friendly casualties due to missiles switching targets in-flight, or by proximity explosive damage.
The following are a few pieces of brevity that are required when using weapons on your ship:

Weapon Firing Brevity

- **Fox 1**: Simulated/actual launch of CS guided missiles
- **Fox 2**: Simulated/actual launch of IR guided missiles
- **Fox 3**: Simulated/actual launch of EM guided missiles
- **Pickle:** Simulated/actual release of free fall bombs
- **Rifle:** Simulated/actual launch A2G Missiles
- **Guns:** Simulated/actual firing of ships guns
- **Flares:** Simulated/actual launch of ship countermeasures

Additionally, proper use of brevity for incoming threats in the form of weapons is crucial for flight survival. Saying the word three times is an easy way to identify it as an oncoming threat.

Weapon Warnings Brevity

- **SAM SAM SAM**: Surface to air missile launch
- **Missile Missile Missile**: Incoming air to air or ground to air missile.
- **Guns Guns Guns**: Gun fire from hostile craft

At times you may notice a friendly craft in danger of incoming fire from an enemy. There are a few pieces of brevity to help warn your comrade of the incoming threat.

Defensive Warnings Brevity

- **<Callsign> Jink**: Unpredictable maneuvers to negate a gun tracking solution
- **<Callsign> Go Defensive**: Aircraft is in a defensive position and maneuvering with reference to the stated condition. If no condition stated maneuvering is with respect to A/A threat.

Your Ship

It is critical for your flight (especially your Flight Leader) to know about the status of your ship at all times, including any expended weapons, or damaged components. The following will be used as brevity and guidelines for checking in and reporting damage.

Status Brevity

- **What State** = Request for armament/fuel status; reported as follows: Ship state, Ordnance = type and remaining, Gun = bullets remaining
- **Green** = 100 healthy ship (no damage)
- **Red** < ship system >: Identified system inoperative.
- **Bingo**: Pre-briefed fuel state which is needed for recovery using pre-briefed parameters..
- **Winchester** <Ordnance/Gun>: Identified weapon type has no ammo remaining.

At times a battle may grow longer than a few hours and the OC (Operational Commander) may request reinforcements. The following is the check-in procedure for entering a combat area and being handed off to an on-site OC or Air Controller. This process clearly identifies your flight to the OC so that he is able to use your flight to its best ability.

Check-in Protocols

This is < Callsign> **checking in for** <mission type>. **Flight of** <number of craft and type of airframe>, **location, carrying** <number and type of ordnance followed by one and type of weapons>, **Available Time on station** < time in minutes > **What are you orders?**

A full example is below:
"Castle 1, this is Reaper 1-1 checking-in with you. Flight of 4 Aegis Gladius Fighters entering SPK airspace, each carrying 4x S3 CS Missiles, Lasers and Gatlings. 30 mikes time-on-station, standing by for CAP Tasking."

Location Location Location

One of the most important pieces of good communication is being able to clearly identify where your flight is, and where it needs to be. Identifying location in a 3D environment is inherently more complex than finding your house on a 2D map, as threats can come from above or below. Locations through comms can broken down into two parts:

1. Actual (static) locations such as buildings and structures
2. Named and referenced locations in 3D space.

Static Locations

Static locations are actually some of the hardest locations to properly identify over comms. As a Flight Leader of a 4-ship flight, with just your words, you have to direct your flight to look at a particular location. The key to this is being very descriptive and using as little words as possible. For this I will use a picture to demonstrate proper use of adjectives in your communications to direct your flight to location.

This is an air base that will be used for this demonstration. We will use the scenario that we have to target aircraft taking off from a particular hangar. The problem with this is just the amount of hangers that there are. For this I will give you a bad example of communication followed by a good example.

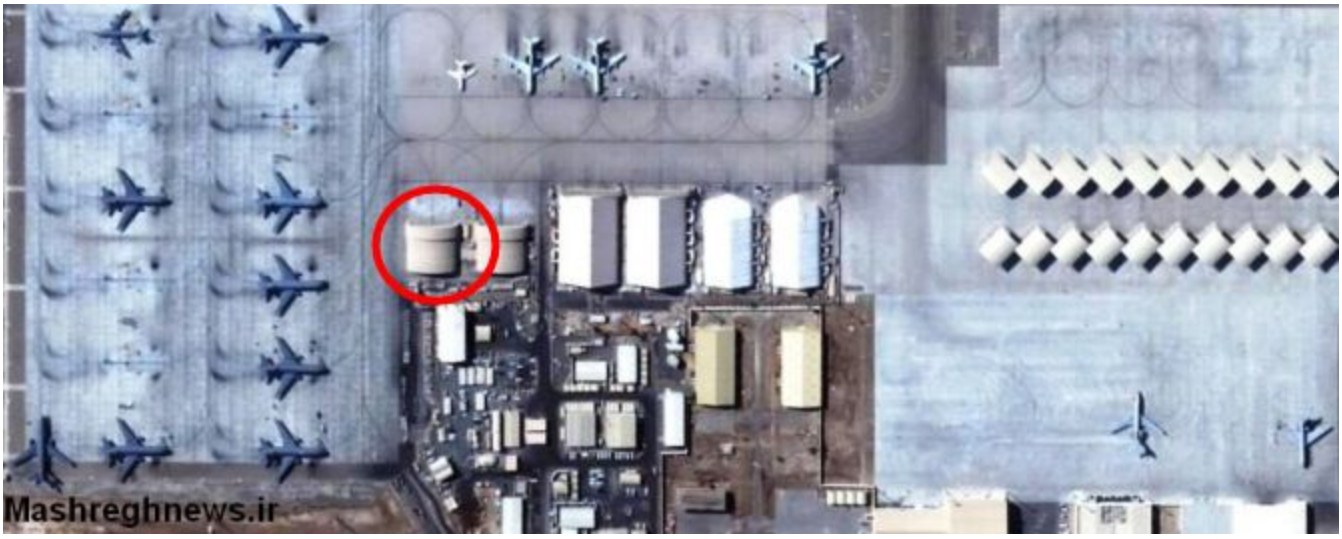
Assume that North is defined as the top of the image.

Bad: *"Specter Flight, the target is in a **tan** hangar."*

Although it gives some description this is a bad communication just due to the number of possibilities that are still left open by this transmission.

Good : *"Specter Flight, The target is in the **left large tan dome** hangar **on the west side of the field**."*

This example we use only a few more descriptive words, but with those words the whole flight can be guided to the location.



As you can see by this picture clear communications can save time ensure and mission success.

Locations in 3D Space

With locations in 3D space you don't always have a reference point that is usable for all aircraft in your flight. The best way to fix this is using your own craft as the reference point. This we will be talking about guidelines four identified locations in space around your craft.

The Clock

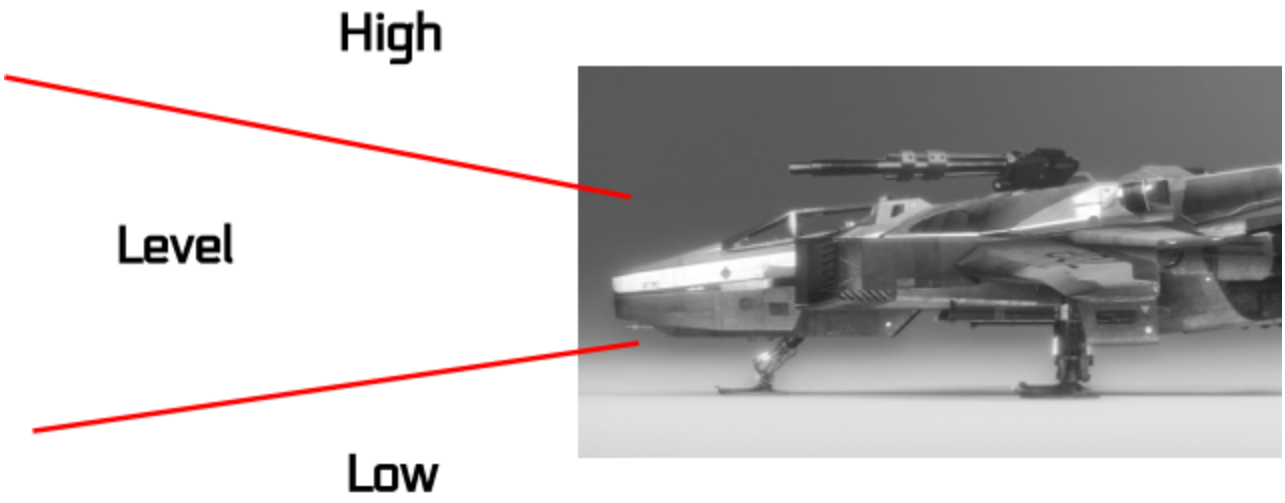
As you may have heard in many movies or experienced yourself to other games, the “clock” is an important tool to properly identify locations around your craft.

The clock around this craft is the perfect tool for identifying Direction around your craft. An important thing to keep in mind that 12 o'clock is always off of the nose of the aircraft this is important to keep in mind if you are in a turret of a craft as if you are looking behind the ship as it's moving you are facing 6 o'clock and must call Target from that direction as 6 o'clock.

Up or Down

Well the clock is great for identifying Directions of anything level to your craft we still need one more bit of information to help ensure proper communication as you identify location.

The next image a few tools for identifying spaces above and below your ship using these two tools together you can give accurate locations around 3D space using your ship as the reference point.



Example:

"Castle 1, Specter 1-1, we have 2 bogies off my 2 o'clock low, request permission to shadow them."

As you can see, using your own ship as a reference point is a very helpful tool for identifying locations in 3D space. Keep in mind that you can also use your friendly crafts as a reference point as well for example:

"Specter-1-3 Go Defensive you have a bandit on your 6 o'clock."

Sir, Yes Sir

Time is one of the harder things to properly state over communications. Communication in regards to time is just as important as location to ensure mission completion and safety for all your friendly craft. Even your responses to a flight lead can indicate time. In this section we will discuss two parts of communication that affect time

ETA

ETA or **Estimated Time of Arrival** is one of the communication transmission that is often the biggest impactor to how a mission can go from good to bad. A very common mistake in stating and ETA is the fact that often it is underestimated. Important tool to you in stating an ETA is the speed of your ship. As you fly you will notice the maximum speed of what your ship can travel. With just a tiny bit of math you can give very accurate ETA to any commander or Ally requesting assistance.

How to calculate time: **Super Hornets top speed is 540 meter per second**

Knowing this we know we can travel 32.4 kilometers in a minute. If the target is 200 kilometers away it should only take us about 6 minutes and 15 seconds.

Why that is important?

If you inform your Ally that you will be there in 3 minutes he will have three minutes of extra waiting on your arrival. Just as with location, it is very important to give the most detailed ETA whenever possible. In air-to-air combat, seconds do matter. Using the same time estimates we know that if a battle is 20 kilometers away from your flight you can enter that battle in less than a minute if need be.

Here is a helpful tool with converting your speed to time.
https://www.convert-me.com/en/convert/speed/m_sec.html?u=m%2Fsec&v=

Time and Your Responses

In combat, exact time maybe hard to maintain due to saturated communication channels. There are pieces of brevity to help you with stating your time. These pieces of brevity can be used to respond to orders given to you in combat.

Response Brevity

- **Roger**: Indicates aircrew understands the radio transmission; does not indicate compliance or reaction.
- **Wilco**: Indicates aircrew understands the radio transmission and will now give compliance or reaction to order
- **Copy**: Indicates aircrew understands the radio transmission given is response to non order transmissions.

The importance of these pieces are to help your flight leads understand whether or not it is possible for you to carry out a task at a given time.

Conclusion

With the use of this document you will have a better understand how the state who what where and when over comms properly to ensure mission completion and safety for you and all of your comrades. Good luck and I'll see you in the air.

Outline of Brevity in this Document

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Change Log

Ver.	Change By	Description of Change
1	War_Hog	1st release
1.1	EchOWhiskey	1st release touch up
1.2	EchOWhiskeY	2nd Revision and Final Editing for Publish