

**BY ORDER OF THE
COMMANDING OFFICER OF
THE 185th VFS**

**185th VFS INSTRUCTION 6
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**SOP 6 – 185TH VFS
COMMS AND BREVITY
MANUAL – Version 1.0**

NOTICE: This publication is available on the [185th web-site](#).

**COMPLIANCE WITH THIS PUBLICATION IS ENCOURAGED FOR ALL
MEMBERS OF THE 185th VFS**

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This manual provides members of the 185th with a single-source, comprehensive, document containing guidance on comms usage and the brevity words most commonly used by the 185th VFS. Regular use and practice of good comms procedures and brevity will allow for the clear, concise and unambiguous passage of directions and information in even very stressful of situations.



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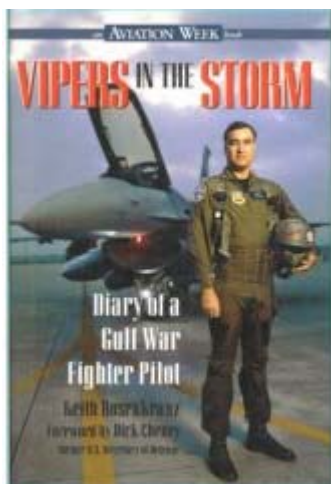
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1.0 BASIC COMMS

1.1 THE IMPORTANCE OF GOOD COMMS



Good comms are fundamental to flying successful missions. We've probably all flown missions where comms were inadequate and we weren't sure what was happening or who was doing what. No doubt most of us have also flown missions where comms were so excessive and undisciplined that the result was just confusion. These poor comms may even have directly contributed to a mission failure or worse the loss of an aircraft.



It has sometimes been said that a Flight Lead can never say too much but in the 185th VFS we would disagree with that. If you've read *Vipers in the Storm* by Keith Rosenkranz or listened to any military comms you will have noticed how brief and concise they are. This, combined with using standard terminology, is the key to effective comms.

Messages which do not use the standard terminology can lead to misunderstanding and confusion. Insufficient informative communication reduces situational awareness. Long drawn out or unnecessary messages waste time and may delay (or even drown out) others communicating important information or instructions. All of this can contribute to mission failure.

Good mission planning and briefing also has a part to play in this. A good understanding by all the flight members of their own and each others' tasks can help to minimise the need for comms in the air and helps to ensure basic errors such as incorrect setup of instruments or avionics are avoided.

Brief and concise comms using the standard terminology are easier to make, easier to understand and easier to fit in with the other tasks required of a fighter pilot, especially when things get busy. If you take the time to learn this skill and use it to fly with the others in your flight, the situational awareness of the flight will improve, your mission performances will improve and your flying will be that much more satisfying.



1.2 GENERAL COMMS GUIDANCE WITHIN A FLIGHT

The Flight Lead is the primary communicator for the formation and unless they brief otherwise, they will make all inquiries to AWACS, calls to other Flight Leads etc. In a 4-ship, the #3 Element Lead will normally back-up the flight lead, especially in building up Situation Awareness (SA) and make other contributions as required.

Anyone flying in the number #2 or #4 slot will not normally be required to speak on comms unless they are responding to a directive call or passing information to increase the Flight's SA, for example if they spot a new contact on the radar or get a spike on the RWR. Normally the only time #2 or #4 will issue a directive call is if there is an immediate threat to an aircraft in the Flight, for example a knock-it off or break call.

Do not have long discussions during the flight, save them for the debrief. As a Flight Lead you won't always be 100% sure what to do, but a quick decision that is only 80% correct and briefed clearly and concisely is always more effective than long discussion and a late or poorly briefed decision.

As a Flight Lead, if anyone member of the flight has better SA then don't be afraid to hand them control of a tactical engagement. For example, if your radar is broken or you're tumbleweed, handing the battle to someone who has good picture is a better Flight Lead decision than holding onto it and just getting in the way.

Remember the old adage, Aviate, Navigate, Communicate. In other words, fly the aircraft first. There is no point in having perfect comms if the aircraft hits the ground because you weren't paying enough attention to your flying.

Know the information contained in this document so you don't get caught out by unfamiliar brevity or not being able to express yourself clearly and concisely. It might be the difference between mission success or mission failure.

1.3 COMMS CADENCE

Pilots should avoid speaking on comms when other radio communications are in-progress (either fellow squadron members or AI transmissions) as important information may be missed if comms are stepped on. That said, on occasion, it may be necessary to cut across someone already speaking with a message of higher priority. In this case a "break-break" should be prefixed to the beginning of the message.

Comms Cadence is used to set priorities for calls made over the radio and is especially useful in a multi-flight broadcast channel environment. The package leader is responsible for setting the comms cadence during planning. The golden rule is:

"If someone is transmitting with a higher priority message than you then stay quiet and wait until they have finished or use text. If someone cuts across you with a higher priority message then stop talking"

Type of Call

Defensive
Delouse
Declare
Raygun
Targeting
Picture
Shots
Formation Manoeuvring
Flight Admin

Priority

Highest



Lowest

1.4 BASIC COMMUNICATION CALLS

1.4.1 Basic Directive and Descriptive Calls

There are two basic types of comm calls, Directive and Descriptive:

- **Directive** (giving instruction)
Begins with the name of the aircraft the call is to.
e.g. #1 "Falcon 12, rejoin"
(call made by #1)
(No need for #1 to say his own callsign in this example because #2 knows he is #1's wingman.)

If it is necessary to clarify who is talking to who, this should be in the format: -
To, from, message.
e.g. #3 "Falcon 13, defensive, mud 5"
(call made by #3) ("mud 5" means SA-5)
- **Descriptive** (giving information)
Begins with the name of the aircraft making the call.
e.g. #1 "Bone 11, Falcon 11, say posit"
(call made to Bone 11 by Falcon 11)

1.4.2 Combining Directive and Descriptive Calls

There will be occasions when you need to combine a directive and descriptive call. The directive part should always be given first as this is what you are telling someone to do.

For example, when directing a manoeuvre to avoid a threat. The format for this should be: -

To, directive, descriptive

e.g. #2 "Falcon 11, break left, SAM, left 7 o'clock"
Directive part
Descriptive part

1.4.3 Responding to Calls

Due to the lack of hand signals within the simulator, **unless otherwise briefed by Lead, pilots must always respond verbally to any directive calls they are given.** This helps the person giving the call to know it has been received. Responses to informative calls are not normally required but can sometimes be appropriate if they add to Situational Awareness.

- Where immediate acknowledgement only is required, it is sufficient to respond with just the formation number: -
e.g. #1 "Falcon 12, rejoin"
#2 "Falcon 12, copy" or even just "Falcon 12"
- Where there is only one friendly flight, it is sufficient to just use the formation number to initiate comms as well: -
e.g. #1 "Two, rejoin"
#2 "Two"
- Where there is an immediate response and the comms are within the same flight, the response does not need to include the flight name and it is sufficient to respond with just the formation number: -
e.g. #1 "Falcon 12, say speed"
#2 "Two, 350 knots"

- Where there is a delay of more than 5 seconds, a callsign must be used in the response
e.g. #1 "Falcon 12, say fuel"
delay.....
#2 "Falcon 12, 4,500 lbs"
- Sometimes a response is appropriate to descriptive calls in order to add to the SA of the Flight
e.g. #1 "One is tally bandit, left, 11 o'clock low, 5 miles"
#2 "Two, tally"
or #2 "Two, no joy"

1.4.4 Group Responses

In a flight of 3 or more the following methodology should be used for group responses.

- When a response from all flight members is required, they should respond in numerical order:-
e.g. #1 "Falcon 1, rejoin"
#2 "Two"
#3 "Three"
#4 "Four"
- If one flight member does not respond, the next flight member should wait 5 seconds then respond:-
e.g. #1 "Falcon 1, say damage"
#2 "Two, no damage"
#3 does not respond so #4 waits 5 seconds
#4 "Four, no damage"

1.5 GROUND OPERATIONS, DEPARTURE AND BASIC FORMATION COMMS

1.5.1 Departure Ground Comms

After getting into the cockpit:

- Flight Lead calls the ramp start:-
e.g. #1 "Falcon1, ramp start"
#2 "Two"
#3 "Three"
#4 "Four"
- Flight checks in when ready to taxi:-
e.g. #1 "Falcon11 ready for taxi"
#2 "Two Same"
#3 "Three Same"
#4 "Four Same"
- After Flight Lead has received clearance from ATC, they will direct the flight to taxi:-
e.g. #1 "Falcon1, taxi Runway 32 via taxiway Charlie"
#2 "Two taxi" (When starting to taxi)
#3 "Three taxi" "
#4 "Four Taxi" "

- During taxi Flight Lead may brief on the departure procedure: -
 - e.g. #1 "Falcon1, element departure, Gate, rotate 180, gear on my call, 10 degree pitch for Angles 20, Buster at 350, left turn for Stp 2, Rejoin box, 3 miles trail"
 - #2 "Two"
 - #3 "Three"
 - #4 "Four"
- After holding short and getting clearance for departure Flight Lead will brief entering the runway, as will other aircraft in Flight.
 - e.g. #1 "Falcon 11, entering active, runway 32, left lane"
 - #2 "Falcon 12, entering active, runway 32, right lane"

1.5.2 Arrival Ground Comms

After landing comms are:

- Flight Lead calls side to exit runway and gives taxi instructions to the parking area: -
 - e.g. #1 "Falcon1, exit active left side, taxi to Control Tower pan via taxiway Alpha"
 - #2 "Two"
 - #3 "Three"
 - #4 "Four"
- Once off the active runway ALL Flight members must call clear: -
 - e.g. #2 "Falcon12 clear active Runway 32"
- Once parked on the pan, Flight members call parked and shutting down: -
 - e.g. #1 "Falcon11, parked and shutting down"

1.5.3 Single-Ship Departures

Comms for Single-Ship Departures (i.e. one aircraft taking off at a time) are as follows:

- #1 calls when airborne: -
 - e.g. #1 "Falcon 11, airborne"
- #2 calls when airborne (followed by #3 and #4): -
 - e.g. #2 "Falcon 12, airborne"
 - #3 "Falcon 13, airborne"
 - #4 "Falcon 14, airborne"
- After taking off, lead should call his position until his wingman/second element are tied (have positive radar contact with him/his wingman) to assist them in joining formation: -
 - e.g. #1 "Falcon 11, heading waypoint 2, 350 knots, 10 degree climb, passing angels 3"
- When the wingman/element get positive radar contact they should call: -
 - e.g. #2 "Falcon 12, tied"
 - #1 "One"

- #3 may get radar contact on #2, while #4 would get radar contact on #3 (his element lead):-
e.g. #4 "Falcon 14, tied"
#3 "Three"

1.5.4 Multi-Ship Departures

Comms for Multi-Ship Departures (i.e. more than one aircraft taking off at the same time) are as follows:

- When #2 is in position for takeoff (brakes on):-
e.g. #2 "Falcon 12, in position holding"
#1 "#1, run em up" (Engines to 80% on both aircraft, holding on brakes)
- #2 checks flight controls and engine instruments OK, then:-
#2 "#2, ready"
#1 "Standby brakes, brakes now" (Both release brakes on "now". Lead goes to mil power or whatever is briefed, #2 to whatever power is needed to stay in position.)
- When airborne at a safe altitude, above 180 knots and having established a positive rate of climb:-
#1 "Standby gear, gear now" (Both raise gear.)

1.5.5 Joining and Leaving the Formation

Whenever joining, rejoining or leaving a formation this information must be communicated:-

- e.g. #2 "Falcon 12, saddled"
#1 "One"
#2 "Falcon 12, stripping right"
#1 "One"

1.5.6 Visual and Blind Calls

Visual

Call to inform that you have visual contact with a friendly aircraft or ground position:-

- e.g. #2 "Falcon 11, Falcon 12, visual"

Blind

Call to report loss of visual on the aircraft you are flying with (normally lead/wingman). When calling "blind", #2 should give his altitude.

- If lead can see #2 and there is no danger of collision, he should order "continue" and give his position: -
 - e.g. #2 "Falcon 12 is blind, angels 8"
 - #1 "Falcon 12 continue, One visual, at your left 8 o'clock, angels 7"
 - #2 "Two"

- If lead cannot see #2 and he is at a different altitude, he should order continue and give his position: -
 - e.g. #2 "Falcon 12 is blind, angels 8"
 - #1 "Falcon 12 continue, one is bullseye 298 for 32, angels 7"
 - #2 "Two"
 - ("continue" means that #2 is safe from collision at angels 8)

- If lead cannot see #2 and he is at the same altitude, he should direct to #2 to a different altitude and give his position: -
 - e.g. #2 "Falcon 12 is blind, angels 7"
 - #1 "Falcon 12, go to angels 8, one is at bullseye 298 for 32, angels 7"
 - #2 "Two"

1.5.7 Manoeuvring the Flight

During formation flying all flight path changes should be communicated by lead beforehand whenever possible. They should also allow time for acknowledgement before actually turning :-

- e.g. #1 "Falcon 11, turning left to waypoint 3, descending to angels 5"
- #2 "Two" (Turn begins)

- e.g. #1 "Falcon 11, increasing to 400 knots"
- #2 "Two" (Speed increased)

1.5.8 Approach and Landing

In good time before landing, the Flight Lead should obtain landing clearance and brief the flight on the landing procedure: -

- e.g. #1 "Falcon 1, overhead break, Runway 32, left circuit"
- #2 "Two"
- #3 "Three"
- #4 "Four"

All members of the flight **must** call on final approach: -

- e.g. #1 "Falcon 11, final, runway 32"

1.6 ADMINISTERING THE FLIGHT

The following calls are administrative functions that could be called during a typical flight.

1.6.1 Position Calls

Position calls can be given in a number of different formats and bullseye is not always the best format: -

- Bullseye

The standard format is degrees then miles (so once you've said "bullseye" there's no need to actually say "degrees" and "miles"):-

e.g. #1 "Falcon 13, say posit"
#3 "Three, bullseye 350 for 23, angels 9" (350 degrees, 23 miles)

- Relative to the requesting aircraft

Convenient if following the same steerpoint paths. Usual used only when visual.

e.g. #1 "Falcon 13, say posit"
#3 "Three, 7 o'clock, 2 miles, angels 9" (#3 is at #1's 7 o'clock)

- Relative to a waypoint

Easily and quickly related to the HSD. Only useful for aircraft in the same flight or from a know reference steerpoint:-

a) If following the waypoint path:-

e.g. #1 "Falcon 13, say posit"
#3 "Three, 10 miles from steerpoint 4, on course, angels 9"

b) If not following the waypoint path, but conveniently positioned from a steerpoint:-

e.g. #1 "Falcon 13, say posit"
#3 "Three, 10 miles south east steerpoint 4, angels 9"

1.6.2 Fence Check

Set cockpit switches as appropriate before passing into and out of combat territory:-

e.g. #1 "Falcon 1, fence check"
#2 "Two"
#3 "Three"
#4 "Four"

1.6.3 Say Fuel

Request for fuel level from flight. Response should be to the nearest hundred pounds:-

e.g. #1 "Falcon 1, say fuel"
#2 "Two, two thousand"
#3 "Three, two thousand five"
#4 "Four, same" (same can be used if with 100lbs of previous call)

1.6.4 Joker

Called when a pre-calculated fuel state for each mission which is higher than Bingo is reached. Preparation for RTB should begin at this point:-

e.g. #2 "Falcon 12, joker"
#1 "One"

1.6.5 Bingo

Called when fuel state means immediate RTB is required. Flight members should inform lead immediately bingo is reached: -

e.g. #2 "Falcon 12, bingo"
#1 "One"

1.6.6 Say Damage

Requested by lead after an engagement: -

e.g. #1 "Falcon 1 flight, say damage"
#2 "Two, radar, ECM, and FLCS bent"
#3 "Three, no damage"
#4 "Four, no damage"

1.7 TYPICAL TACTICAL COMMS

During tactical engagements you are likely to hear the following typical comms:

1.7.1 Raygun Calls

- Used to check whether a **locked up** radar contact is friendly: -

(NOTE : When a raygun call is made, the radar must have the target locked in STT mode to ensure the targets RWR will spike)

e.g. "Raygun, bullseye 350 for 25, angels 12"

- If you hear someone call a buddy spike and you have them locked up the response is: -

e.g. #2 "Falcon 12, buddy spike Angels 12"
#1 "Falcon 11, buddy lock, bullseye 350 for 25, Angles 12"

- If you hear a Raygun call for your position and you ARE being spiked, the response is: -

e.g. "Falcon 12, buddy spike Angels 12"

- If you hear a Raygun call for your position but you are NOT being spiked, the response is: -

e.g. #1 "Falcon 12, Falcon 11, raygun, bullseye 350 for 25, angels 12"
#2 "Falcon 12, naked"

1.7.2 Clock Positions

- When using clock positions, right or left can be added as further clarification: -

e.g. #2 "Falcon 12, Mud AAA, right 2 o'clock"

NOTE: Clock positions are only useful when flights in formation are pointing the same way.

e.g. #2 "Falcon 12, spike, MiG-19, left 9 o'clock"

1.7.3 Tally

A "tally" call confirms you have visual contact with a target, bandit or enemy position: -

- e.g. #2 "Falcon 12, mud AAA, right 2 o'clock"
#1 "One, tally"
- e.g. #2 "Falcon 12, MiG-29, left 10 o'clock, high"
#1 "One, tally 1"
("tally 1" means #1 sees 1 MiG)
- e.g. #2 "Falcon 12, MiG-29s, left 10 o'clock, high"
#1 "One, tally 2"
("tally 2" means #1 sees 2 MiGs)

1.7.4 No Joy

Opposite of "tally". Means you do not have visual contact with a target, bandit or enemy position: -

- e.g. #2 "Falcon 12, MiG-29, left 10 o'clock, high"
#1 "One, no joy"

1.7.5 Tumbleweed

Call informing of major loss of situational awareness and requesting vector to highest threat: -

- e.g. #2 "Falcon 12 tumbleweed"
#1 "One, single bandit group, 10 miles, cold"
("cold" means low aspect, i.e. going away)

1.7.6 Mud

Call informing of a ground threat on RWR: -

- e.g. #2 "Falcon 12, mud AAA, right 2 o'clock"

e.g. #2 "Falcon 12, mud 6, east"

1.7.7 Painted

Call informing of a search radar threat on RWR: -

- e.g. #2 "Falcon 12, painted, MiG-21, right, 3 o'clock"

1.7.8 Spike

Call informing of an aircraft radar lock on RWR: -

- e.g. #2 "Falcon 12, spike, MiG-19, right 3 o'clock"

1.7.9 Calling Enemy Missile Launches

Calls on enemy missile launches (SAMs and A2A) should include the direction: -

e.g. #1 "Falcon 11, SAM launch, west"

e.g. #1 "Falcon 11, SAM launch, left, 8 o'clock"

e.g. #1 "Falcon 11, missile launch, left, 2 o'clock"

1.7.10 In and Off Target (Air-to-Ground)

• When attacking a target: -

e.g. #1 "Falcon 12, in hot"

• Coming off target after releasing ordnance, the call should include the direction: -

e.g. #2 "Falcon 12, off west"

• Coming off without releasing ordnance: -

e.g. #2 "Falcon 12, off dry, west"
("dry" means ordnance was not released)

1.7.11 Say Status

A request for an update on the tactical situation.

• Requested as: -

e.g. #1 "Falcon 12, say status"

Replies could be: -

• If defensive A2G: -

e.g. #2 "Two, defensive, mud 5"

• If engaged defensive A2A: -

e.g. #2 "Two, engaged defensive, MiG-29"
(if #2 does not say "defensive" it is assumed he is offensive)

• If engaged offensive A2A: -

e.g. #2 "Two, engaged, MiG-29"
(the absence of "defensive" means #2 is offensive)

• If acting as a supporting fighter: -

e.g. #2 "Two, supporting, 5 o'clock, high"

1.7.12 Say Weapons

The format for reporting weapons status is: -

- e.g. #1 "Falcon 1 flight, say weapons"
#2 "Two, 1 heater, Dakota and gun"
#3 "Three, 1 radar, 2 heater,
4 clusters and gun"
#4 "Four, 2 heater, 1 ARM,
4 clusters and gun"

("radar" refers to AMRAAM)

("heater" refers to Sidewinder)

(only say "gun" if rounds remaining)

2.0 AIR-TO-AIR COMBAT COMMS

Section 1 of this manual covered a wide variety of basic comms including some tactical usage. Air-to-air engagements require such a specific set of comms skills that Section 2 of this manual is dedicated specifically to this environment. These comms are used for "building the picture" and for controlling the flight during engagements.

Good comms is critical in A2A engagements but channel gets overloaded very quickly. Procedures and good brevity help to minimise comms.

As an example in a 2-ship flight:

- #1 may deal with AWACS
- #2 will fill in the picture if #1 doesn't have tally

For Four Ship flights:

- #1 deals with AWACS
- #3 fills in the picture if #1 doesn't have tally
- #2 & #4 only listen or fill in the picture as required

In GRIND tactics:

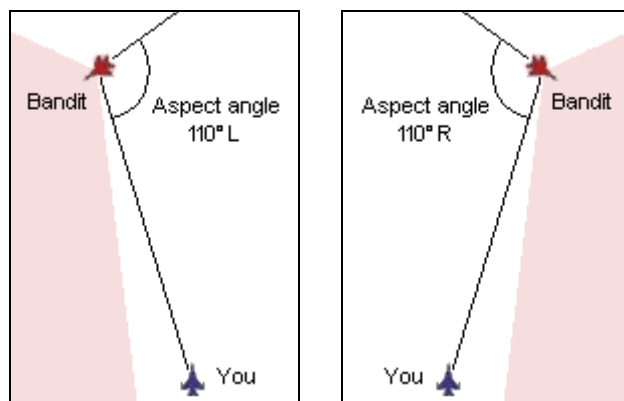
Hot leader or ship speaks with AWACS and provides picture for cold/supporting element or ship (who remain quiet).

It is the Flight Leaders responsibility to brief on any requirements such during the mission briefing.

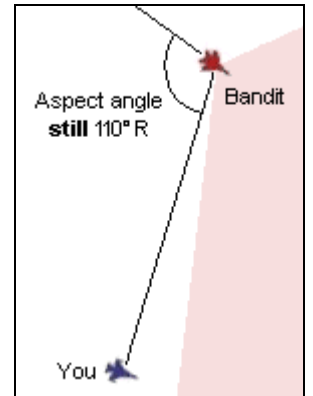
2.1 ASPECT ANGLE

To communicate effectively in air to air combat using the correct terminology, a basic understanding of aspect angle is required.

- Aspect angle is the angle from the bandit's tail to you and is expressed in "degrees left" or "degrees right".
- If the bandit is going left, the aspect angle is designated as left (e.g. 110° left).
- If the bandit is going right, the aspect angle is designated as right (e.g. 110° right).



- **Aspect angle is independent of the direction your own aircraft is pointing.**



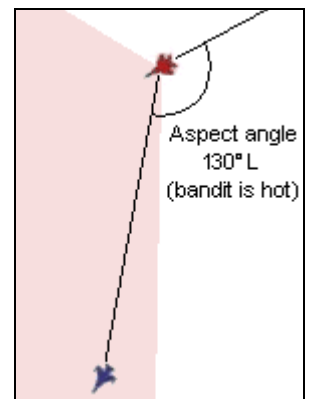
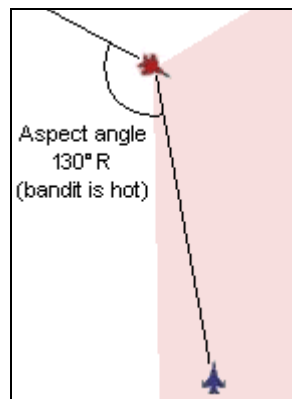
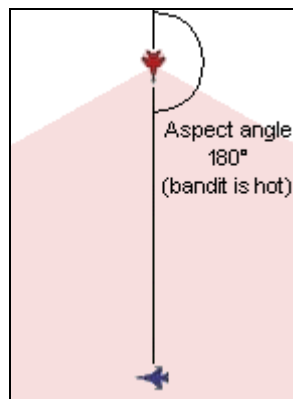
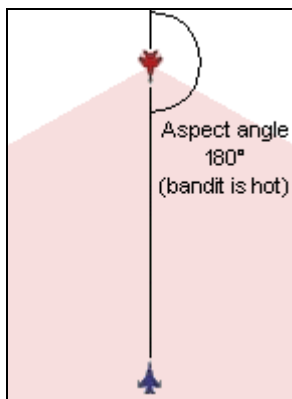
2.2 HOT AND COLD

A simplified way of communication a bandit's aspect angle is to classify it as "hot" or "cold".

2.2.1 Hot

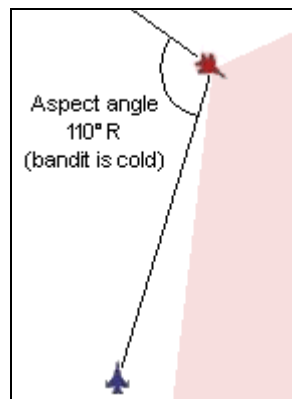
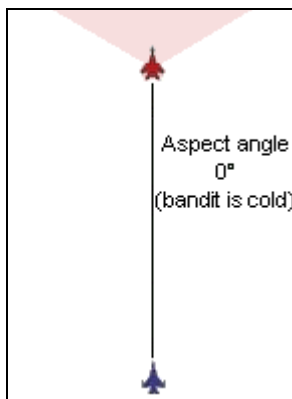
The bandit is hot when you are in his radar beam.

- The radar beam normally extends 60° either side of the bandit's nose, therefore the edges of the radar beam are at aspect angles of 120° left and 120° right.
- So: - Aspect angle **greater than 120°** means the bandit is **hot** (i.e. high aspect)



2.2.2 Cold

- The bandit is cold when you are outside his radar beam.
- So: - Aspect angle **less than 120°** means the bandit is **cold**.



2.3 AIR-TO-AIR CONTACT IDENTIFICATION

When making comms calls about radar contacts the following naming convention should be used:

- "Contact"* does not indicate hostile or friendly.
- "Bogey"* indicates identity unknown
- "Outlaw"* indicates unknown is from a direction or airbase that makes it likely to be hostile.
- "Bandit"* indicates hostile
- "Friendly"* indicates friendly
- "Echo"* indicates contact is a bandit according to NCTR
e.g. #1 "Falcon 11, echo, north group"

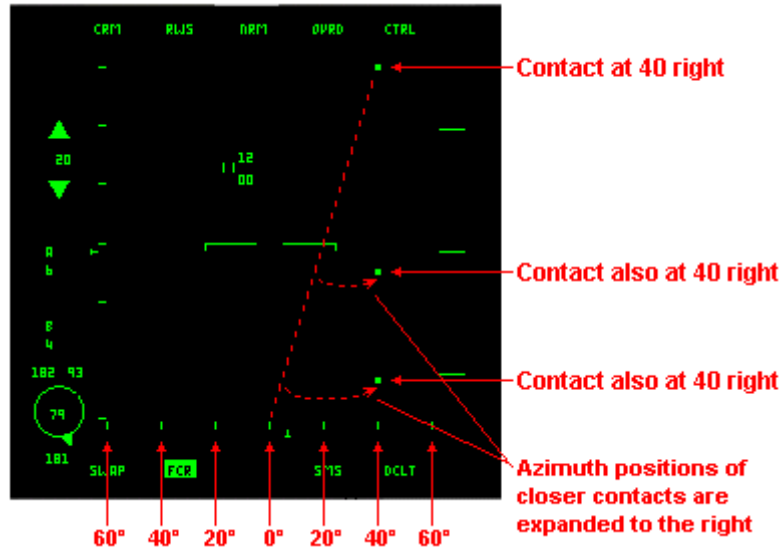
2.4 REPORTING A2A RADAR CONTACTS

Formats for reporting single group radar contacts:-

- Bullseye (Degrees, Miles, Altitude, Aspect) e.g. #2 "Falcon 12, contact, single group, bullseye 320 for 25, angels 12, hot"
- BRAA (Bearing, Range, Altitude, Aspect) e.g. #2 "Falcon 12, contact, single group, BRAA 120 for 25, angels 12, hot"
Bearing relative to you to the nearest 10 degrees.
Should only be used when communicating to others close to you (otherwise the bearing of the contact from them will be different).
("120 for 25" means a bearing of 120 degrees from #2, range 25 miles)
- Off the nose (Degrees, Range, Altitude, Aspect) e.g. #2 "Falcon 12, bandits, single group, 30 right for 20, angels 12, hot"
Uses degrees off a chosen aircraft's nose. Should only be used when in formation with all flight members' noses pointing in the same way.
("30 right for 20" means 30 degrees right of #2's nose, range 20 miles)
e.g. #2 "Falcon 12, bandits, single group, on the nose for 20, angels 12, hot"
("on the nose" means directly in front of #2)

2.5 CORRECTLY INTERPRETING THE RADAR

Remember, when reading bearing off the nose from the radar, it is important to understand that on the F-16 radar the MFD display is expanded sideways as the range decreases.



2.6 RESPONSES TO AIR-TO-AIR CONTACT CALLS

- When an aircraft in the flight reports a contact, the other aircraft should check their radar and confirm whether they see the same: -
 - e.g. #1 "Falcon 11, bandits, single group, 30 right for 20, angels 12, hot"
 - #2 "Two, same"
- If they do NOT see the same, they should say so: -
 - (e.g. #2 may be unable to pick up the contact on radar or may be pointing in a different direction).
 - e.g. #2 "Falcon 11, bandits, single group, 30 right for 20, angels 12, hot"
 - #1 "Two, no picture"
 - (some pilots may use the term no joy)

2.7 FADED CONTACTS

Used to report that you can no longer see a radar contact: -

- e.g. #2 "Falcon 12, faded"
- #1 "One, bandit is 10 left, 25 miles, angels 15, cold" (to assist #2 in regaining lock)
- e.g. #1 "Falcon 11, faded lead bandit, contact trailer"
- #2 "Same"

2.8 LABELLING

- Groups are labelled (usually by the flight lead) to identify them.
- Individual bandits within a group are labelled in the same way.
- They can be labelled in different ways, whichever is most appropriate at the time: -

e.g. For Groups

Lead/Trail Group
 High/Low Group
 Left/Middle/Right Group
 North/South/East/West Group
 First/Second/Third Group, etc.

e.g. For Individual Bandits

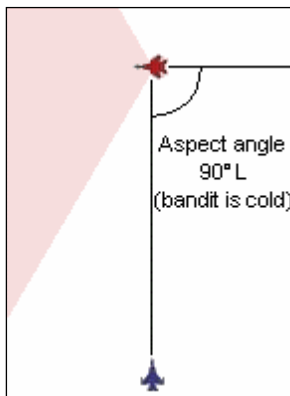
Leader/Trailer
 High/Low Bandit
 Left/Middle/Right Bandit
 North/South/East/West Bandit
 First/Second/Third Bandit, etc.

2.9 BANDIT GEOMETRY COMMS

2.9.1 Beaming

- Beaming describes a situation where a bandit/group manoeuvres to maintain a stable aspect angle of 70° to 110° with respect to our flight.
- The bandit/group is cold when beaming and may fade due to the Doppler notch.
- When we execute this manoeuvre against a bandit/group it is known as notching.
Remember bandits Beam we Notch.

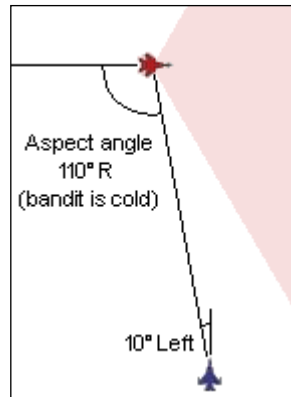
Beaming Left



e.g.
 #1 "Falcon 11, bandits, single group, on the nose for 20, angels 12, beaming left"

#2 "Two, same"

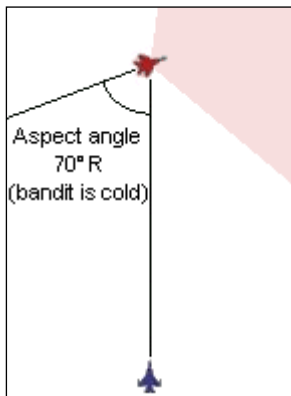
Beaming Right



e.g.
 #1 "Falcon 11, bandits, single group, 10 left for 30, angels 14, beaming right"

#2 "Two, no picture"

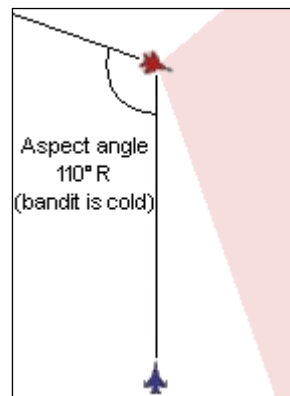
Beaming Right



e.g.
 #1 "Falcon 11, bandits, single group, on the nose for 20, angels 12, beaming right"

#2 "Two, same"

Beaming Right

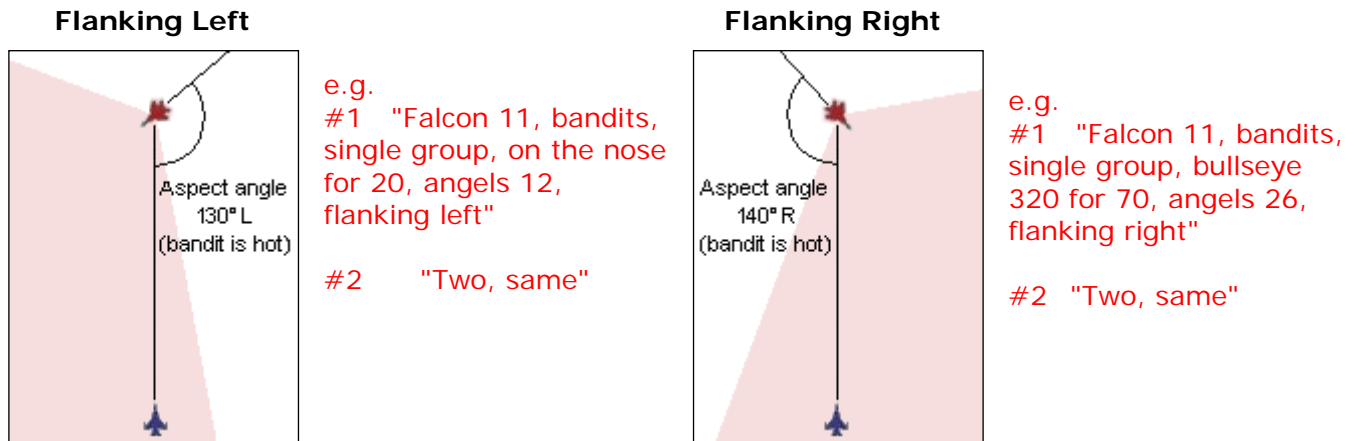


e.g.
 #1 "Falcon 11, bandits, single group, bullseye 325 for 65, angels 14, beaming right"

#2 "Two, no picture"

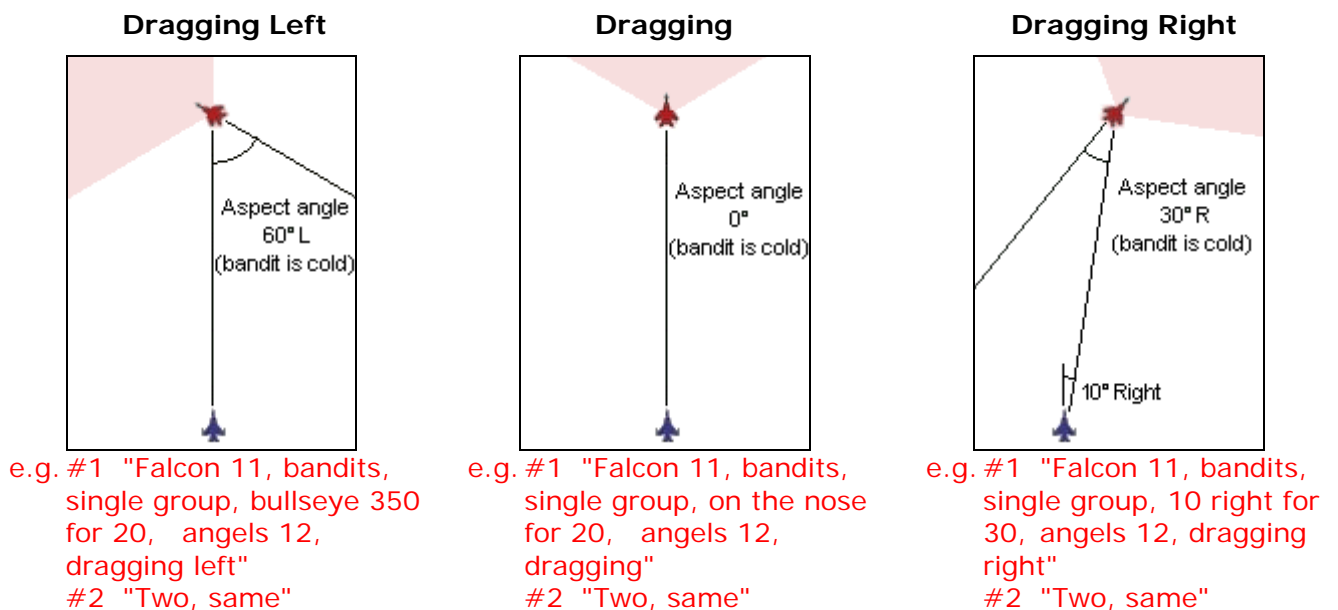
2.9.2 Flanking

- Flanking describes a situation where a bandit/group manoeuvres to maintain a stable aspect angle of 120° to 150° with respect to our flight.
- The bandit/group is hot when flanking.
- When we execute this manoeuvre against a bandit/group it is known as cranking.
Remember bandits Flank we Crank.



2.9.3 Dragging

- Dragging describes a situation where a bandit/group manoeuvres to maintain a stable aspect angle of less than 70° with respect to our flight, with the intention of re-engaging.
- The bandit/group is cold when flanking.
- When we execute this manoeuvre against a bandit/group it is known as pumping.
Remember bandits Drag we Pump.



2.10 OWN FLIGHT GEOMETRY COMMS

2.10.1 Notching

- Notching describes a situation where we manoeuvre to maintain a stable aspect angle of 70° to 110° with respect to a bandit/group/missile.
- We are unable to monitor the bandit on radar when notching but we may fade from their radar due to the Doppler notch.
- When the bandit/group executes this manoeuvre against us it is known as beaming. **Remember bandits Beam we Notch.**

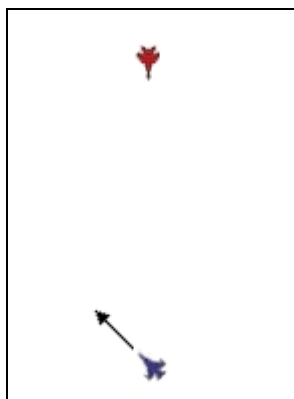
2.10.2 Cranking

- Cranking describes a situation where we manoeuvre to maintain a stable aspect angle of 120° to 150° with respect to the bandit/group.
- We can maintain radar coverage while cranking though it is often at gimbals.
- When the bandit/group executes this manoeuvre against us it is known as flanking. **Remember bandits Flank we Crank.**

2.10.3 Pumping

- Pumping describes a situation where we manoeuvre to maintain a stable aspect angle of less than 70° with respect to the bandit/group, with the intention of re-engaging.
- We cannot monitor the bandit/group on radar when pumping.
- When the bandit/group executes this manoeuvre against us it is known as dragging. **Remember bandits Drag we Pump.**

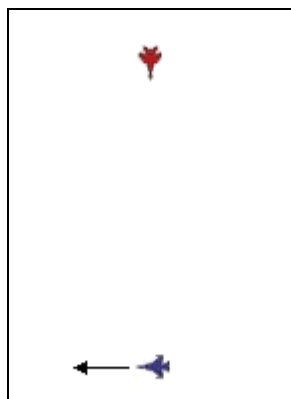
Cranking Left



e.g. #1 "Falcon 11, cranking west"

e.g. #1 "Falcon 11, cranking left"

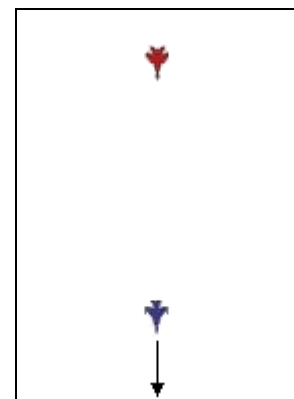
Notching Left



e.g. #1 "Falcon 11, notching west"

e.g. #2 "Falcon 11, notching left"

Pumping



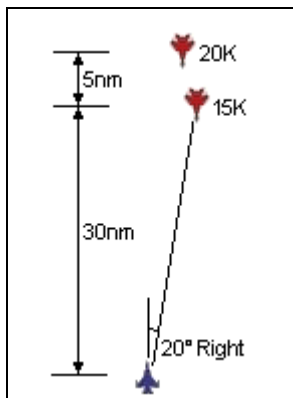
e.g. #1 "Falcon 11, pumping south"

(only use "left/right" if the flight is in formation with all noses pointing the same way)

2.11 BANDIT GROUP(S) GENERAL FORMATION PICTURE COMMS

2.11.1 Range Split

- Two or more groups/contacts on roughly the same bearing and separated primarily in **range** by more than 3 miles.
- If the split is **longer** than it is **wide**, it is a range split.
- The lead group/contact is called first and is used as the reference for the other. The accuracy of distances and bearing are not critical provided they are sufficiently accurate for the picture to be understood.

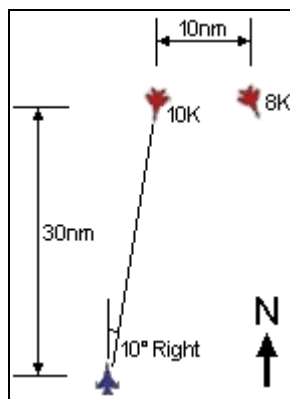
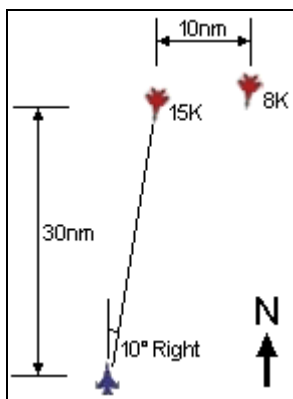


- e.g. #1 "Falcon 11, bandits, 2 groups, range split 5. Lead group 20 right for 30, angels 15, hot. Trail group angels 20, hot."
 #2 "Two, same".
- e.g. #1 "Falcon 11, bandits, 2 groups, range split 5. Lead group bullseye 275 for 35, angels 15, hot. Trail group angels 20, hot."
 #2 "Two, same".

(No need to call the trail group's position because we know it is 5 miles behind the lead group.)

2.11.2 Azimuth Split

- Two or more groups/contacts at roughly the same distance but separated in **bearing** by more than 3 miles.
- If the split is **wider** than it is **long**, it is an azimuth split.
- The first group/contact called is used as the reference for the other.



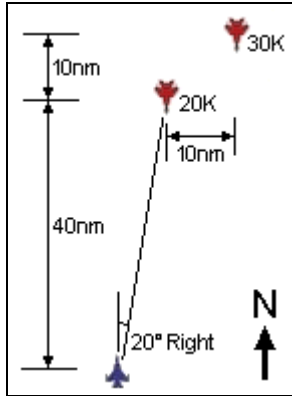
- e.g. #1 "Falcon 11, bandits, 2 groups, azimuth split 10. West group bullseye 185 for 65, angels 15, hot. East group angels 8, hot."
 #2 "Two, same".

- e.g. #1 "Falcon 11, bandits, 2 groups, azimuth split 10. West group 20 right for 30, angles 10, hot. East group angels 8, flanking right"
 #2 "Two, same".

(No need to call the east group's position because we know it is 10 miles east of the west group).

2.11.3 Range and Azimuth Split

- If it is not clear whether the split is range or azimuth, the two can be called together. Deciding which way to call it is not critical provided the picture is understood.
- The nearest group/contact is called first and is used as the reference for the other.

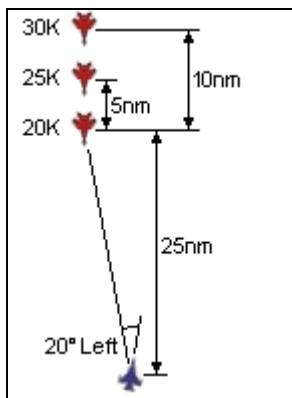


- e.g. #1 "Falcon 11, bandits, 2 groups, range split 10, azimuth 10. Lead group 20 right for 40, angles 20, hot. Right group, angles 30."
 #2 "Two, same".

2.12 BANDIT GROUP(S) SPECIFIC FORMATION PICTURE COMMS

2.12.1 Ladder

- Three or more groups/contacts split by range.
- The lead group/contact is called first and is used as the reference for the others.



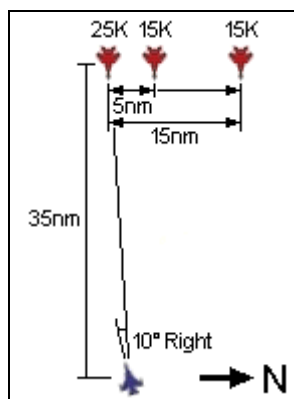
(spacings are examples only)

- e.g. #1 "Falcon 11, bandits, 3 groups, ladder 10. Lead group 20 left for 25, angles 20, hot. Middle group, range split 5, angles 25. Trail group angles 30."
 #2 "Two, same".
 ("ladder 10" means the lead and trail groups are 10 miles apart)
 ("range split 5" means the middle group is 5 miles behind the lead group)
 (no need to give the trail group's position because we know from "ladder 10" that it is 10 miles behind the lead group)

- e.g. #1 "Falcon 11, bandits, 3 groups, ladder 10. Lead group bullseye 260 for 25, angles 20, hot. Second group, range split 5, angles 25. Trail group angles 30."
 #2 "Two, same".

2.12.2 Wall

- Three or more groups/contacts split by azimuth.
- The first group/contact called is used as the reference for the others.



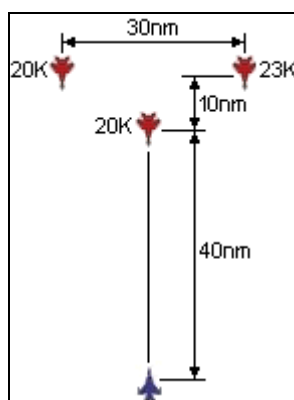
(spacings are examples only)

- e.g. #1 "Falcon 11, bandits, 3 groups, wall 15.
South group 10 right for 35, angles 25, hot.
Middle group, azimuth 5, angels 15.
North group angels 15."
#2 "Two, same".
("wall 15" means the south and north groups are 15 miles apart)
("azimuth 5" means the middle group is 5 miles from the south group)
(no need to give the north group's position because we know from "wall 15" that it is 15 miles north of the south group)

- e.g. #1 "Falcon 11, bandits, 3 groups, ladder 10.
Left group bullseye 260 for 35, angles 25, hot.
Second group, azimuth 5, angels 15.
Right group angels 15."
#2 "Two, same".

2.12.3 Vic

- Three groups/contacts with the centre group/contact closest and the other two azimuth split in trail (opposite of Champagne).
- The centre group/contact is called first and is used as the reference for the range split.



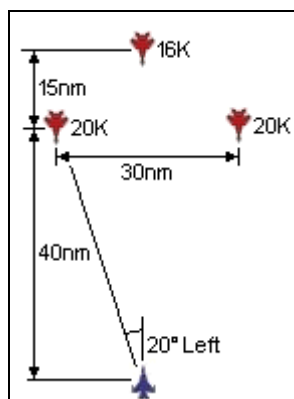
(spacings are examples only)

- e.g. #1 "Falcon 11, bandits, Vic, azimuth 30.
Lead group on the nose for 40, angels 20, hot.
Left group, range split 10, angels 20.
Right group angels 23."
#2 "Two, same".
("Vic" means that the lead group is in the centre)
("azimuth 30" means that the left and right groups are 30 miles apart)
(no need to give the azimuth of the left group from the lead group because we know from "Vic, azimuth 30" that it will be approximately half of 30 miles)
(no need to give the right group's position because we know from "azimuth 30" that it is 30 miles right of the left group)

- e.g. #1 "Falcon 11, bandits, Vic, azimuth 30.
Lead group bullseye 089 for 127, angels 20, hot.
Left group, range split 10, angels 20.
Right group angels 23."
#2 "Two, same".

2.12.4 Champagne

- Three groups/contacts with the two closest groups/contacts azimuth split and the other group/contact in the centre in trail (opposite of Vic).
- The left group is called first and is used as the reference for the range split.



(spacings are examples only)

e.g. #1 "Falcon 11, bandits, champagne, azimuth 30.
Left group 20 left for 40, angels 20, hot.
Right group, angels 20.
Trail group, range split 15, angels 16."

#2 "Two, same".

("champagne" means that the trail group is in the centre)

("azimuth 30" means that the left and right groups are 30 miles apart)

(no need to give the right group's position because we know from "azimuth 30" that it is 30 miles right of the left group)

(no need to give the azimuth of the trail group because we know from "champagne, azimuth 30" that it will be approximately half of 30 miles)

e.g. #1 "Falcon 11, bandits, champagne, azimuth 30.
West group bullseye 024 for 283, angels 20, hot.
East group, angels 20.
Trail group, range split 15, angels 16."

#2 "Two, same".

2.13 TARGETING COMMS

2.13.1 Sorting

Once individual bandits are identifiable within a group (or groups), sorting establishes which bandit each aircraft will target.

- All friendly aircraft in the engagement should know which bandit is targeted by whom.
- Sorting is normally directed by the tactical lead for the engagement (this not always the flight lead).
- What this achieves: -
 - a) Avoids two friendly aircraft firing at the same target and wasting missiles.
 - b) Puts as many bandits as possible on the defensive, which reduces the probability of them firing on you.
- Sorting is NOT an order to fire (the bandits may still be outside weapons range when sorting). You are only cleared to fire when given "Weapons free" by lead or when ordered to fire.

e.g. (if only one group): -

#1 "Falcon 11 is sorted on the leader. Two, sort on the trailer."
(tells #2 that #1 will target the lead bandit and orders #2 to target the trailing bandit)

#2 "Two, sorted, trailer"
(#2 confirms that he has the trailing bandit on radar and that he will target that bandit. By repeating the bandit he is sorted on, #2 lets #1 know that he has understood correctly)

e.g. #1 "Falcon 11 is sorted on the high bandit. Two, sort on the low bandit"

#2 "Two, sorted, low bandit"

- Once sorted, if the bandits change their positions relative to each other (i.e. the lead bandit becomes the trailer) you remain targeted on the same aircraft throughout the engagement unless lead changes the labelling by calling "New picture".

e.g. #1 "Falcon 11 is sorted on the high bandit. Two, sort on the low bandit"
#2 "Two, sorted, low bandit"

e.g. (if more than one group): -

#1 "Falcon 11 is sorted on the leader, east group. Two, sort on the trailer"
(tells #2 that #1 will target the lead bandit and orders #2 to target the trailing bandit in the same group)

#2 "Two, sorted, trailer, east group"

e.g. #1 "Falcon 11 is sorted on the high bandit, lead group. Two, sort on the low bandit"
(tells #2 that #1 will target the high bandit in the lead group, as opposed to the trail group, and orders #2 to target the trailing bandit in the same group, i.e. the lead group)

#2 "Two, sorted, low bandit, lead group"

2.13.2 New Picture

A call (made by engagement lead) to: -

- a) Update the picture.
- b) Change the labelling of groups and/or bandits within groups.
- c) Change sorting.

e.g. #1 "Falcon 11, new picture. Bandits, 2 groups, azimuth split 15. West group 20 right for 30, angles 15, hot. East group angels 10, flanking right"
#2 "Two copy, same".

e.g. #1 "Falcon 11, new picture. One is sorted on the high bandit, north group. Two, sort on the low bandit"
#2 "Two, sorted"

2.13.3 Drop

Command to stop targeting a bandit/group.

e.g. #1 "Falcon 12, drop the north group"
#2 "Two, dropped North group"

2.14 FIRING

2.14.1 Calling Shots

Your missile launch or guns calls should make it clear what you have fired on (not just in Air-to-Air but in Air-to-Ground as well):-

- What this achieves:-
 - a) Lets friendly aircraft know you what you are doing.
 - b) Avoids two friendly aircraft firing at the same target and wasting missiles.

e.g. #2 "Falcon 12, Fox 3 on the lead bandit, angels 12"

e.g. #2 "Falcon 12, Fox 2 on the MiG-21 in a left turn, angels 6"

e.g. #2 "Falcon 12, guns on the MiG-21 in a left turn, angels 6"

e.g. #2 "Falcon 12, Magnum on mud 5 at the target"

e.g. #2 "Falcon 12, Rifle on airfield radar"

2.12.2 Trashed

Your Fox 1 or Fox 3 shot has been beaten.

e.g. #1 "Falcon 11, trashed"

2.12.3 Cheap Shot

You broke radar lock before your Fox 3 went active (countdown changes from "A" to "T" on the HUD when active). When the missile does go active it may not see the bandit, in which case it will miss.

e.g. #1 "Falcon 11, cheap shot"

2.12.4 Maddog

You fired an AIM-120 missile in visual mode (ie without a lock) and it has gone active and started looking for a target off the rails.

It is vitally important that you call a Maddog as it is just as likely to lock onto a friendly as a hostile.

e.g. #1 "Falcon 11, maddog, Angles 20 heading West"

2.12.5 Pitbull

Tells others your Fox 3 has gone active.

e.g. #1 "Falcon 11, pitbull"

2.15 OTHER AIR-TO-AIR TACTICAL COMMS

2.15.1 Out

Direction in which you are heading as you disengage, normally after engaging a ground target.

e.g. #2 "Cowboy 12, out south"

e.g. #2 "Cowboy 12, naked, out south" ("naked" means #2 has no RWR indications)

2.15.2 Scram

Emergency directive given by lead for the flight to egress quickly in a given direction for defensive or survival reasons.

e.g. #1 "Cowboy 1 flight, bandits north, scram south"

2.15.3 Monitor

Command to watch a bandit/group and report if they change heading or become a threat.

e.g. #1 "Cowboy 12, monitor group bullseye 165 for 35"

2.15.4 Delouse

Where there is a furball of other friendly aircraft and bandits, this is a command to assist by engaging the bandits.

e.g. #1 "Cowboy 12, delouse bullseye 210 for 35"

2.15.5 Reference

An instruction to turn to a new heading: -

- To the flight: -

e.g. #1 "Falcon 1, reference 350"
#2 "Two"
#3 "Three"
#4 "Four"

- To a wingman: -

e.g. #1 "Falcon 12, reference 350"
#2 "Two"

- To the second element: -

e.g. #1 "Falcon 13, reference 320"
#2 "Two"

- To another flight: -

e.g. #1 "Cowboy 11, Falcon 11, reference 065"
#2 "Cowboy 11, copy"

A steerpoint can also be used for a reference call: -

e.g. #1 "Cowboy 11, Falcon 11, reference steerpoint 4"

2.15.6 Gimbals

The bandit is on the edge of your radar screen or close to the vertical limits of radar. You may lose contact/lock. You may also add the direction in which you are gimbals eg left/right/high/low.

e.g. #2 "Cowboy 12, gimbals"

2.15.7 Green Lane

If engaged with bandits, this is a call to tell others the direction in which there are no bandits. So if they need to disengage, that is the way to go. If other friendly aircraft are already in that direction they may be able to engage the treat as you disengage.

e.g. #1 "Cowboy 12, green lane south"

2.15.8 Visual and Tally

Visual - In visual contact with friendly aircraft (or ground position). e.g. #2 "Cowboy 12, visual"
(means #2 can see #1 visually)

Tally -In visual contact with bandit (or enemy ground position). e.g. #2 "Falcon 12, MiG-29, left 10 o'clock, high"
#1 "One, tally 1"
("tally 1" means #1 sees 1 MiG)

If you are supporting during an engagement e.g. #2 "Cowboy 12, visual, tally"
(means #2 can see #1 and the bandit visually)

2.15.9 Tumbleweed

Informs your flight that you have lost all SA and you are requesting a vector to the highest threat. e.g. #1 "Cowboy 11, tumbleweed"
#2 "Cowboy 11, Cowboy 12, bandits, single group, north for 10, cold"

2.15.10 Turning Cold

A call informing that you are turning away from the threat. e.g. #1 "Falcon 11, turning cold"
(also means "I can't see you or the bandits on radar, tell me what's happening if you can")
#2 "#2 copy, bandits north for 20, beaming west"

2.15.11 Turning Hot (or re-committing)

A call informing that you are turning towards the threat area. e.g. #1 "Falcon 11, turning hot"
(also probably means "I don't know what's happening, tell me where the bandits are if you can")
#2 "#2 copy, bandits, single group, bullseye 220 for 20, flanking east"
e.g. #1 "Falcon 11, re-committing"
(means the same as "turning hot")

2.15.12 Check Left/Right

An instruction to change heading by a given number of degrees to the left or right of the current heading: -

- To the flight: -

e.g. #1 "Falcon 1 flight, check left 30"
(e.g. if current heading was 240, the new heading would be 210)
#2 "Two"
#3 "Three"
#4 "Four"

- To a wingman: -

e.g. #1 "Falcon 12, check right 20"
(e.g. if the current heading was 065, the new heading would be 085)
#2 "Two"

3.0 COMMON 185TH BREVITY CODE WORDS LIST

This section contains the common 185th Brevity code words. You should try to learn this list by heart as you will hear or need to use many of these words on a regular basis during your 185th VFS flights.

There is also a brevity trainer available for download from the 185th web-site.

NB: All code words comply with the standard USAF definitions.

Abort(ing)(Ed)	Directive/informative to cease action/attack/event/ mission.
Active	An emitter is radiating.
Anchor(ed)	Orbit about a specific point.
Angels	Altitude in thousands of feet (e.g. angels 23 is 23,000 feet).
Arizona	Out of anti radiation missiles.
Azimuth	Two or more groups primarily separated in bearing.
Bandit	An aircraft identified as hostile. The term does not imply direction or authority to engage.
Beam(ing)	Target stabilized within 70 to 110 degree aspect; generally given with directions: east, west, north, south. See notch.
Bent	System indicated is inoperative.
Bingo	Pre-calculated fuel state which means immediate RTB is required.
Blind	No visual contact with friendly aircraft you are flying with. Opposite of Visual .
Blow Through	Directive/informative call; continue straight ahead at the merge and do not turn with bandits(s).
Bogey	A radar or visual air contact whose identity is unknown.
Box	Groups/contacts/formations in a square or offset square.
BRAA	Target Bearing, Range, Altitude, and Aspect relative to a friendly aircraft.
Bracket	Indicates geometry where friendly aircraft will manoeuvre to a position on opposing sides, either laterally or vertically from the target.
Break (Direction)	Directive to perform an immediate turn in the direction indicated. Assumes a defensive situation.
Brevity	Radio frequency is becoming saturated/degraded or jammed and briefer transmissions must follow.
Buddy Spike	Friendly aircraft air-to-air indication on RWR. To be followed by position/heading/altitude.
Broke Lock	Loss of radar/IR lock-on (advisory).
Buddy Lock	Locked to a known friendly aircraft; normally a response to a SPIKE or BUDDY SPIKE call and accompanied with position/heading/altitude.
Bullseye	An established point from which the position of an object can be referenced.
Buster	Directive call to fly at max continuous speed (ie maximum without afterburner)
Cease Fire	Do not open fire or discontinue firing; complete intercept if weapons are in flight; continue to track.
Champagne	An attack of three distinct groups with two in front and one behind.
Check () Left/Right	Turn () degrees left or right and maintain new heading.
Clean	<ol style="list-style-type: none">1. No radar contacts on aircraft of interest.2. No visible battle damage.3. Aircraft not carrying external stores.
Clear	No enemy aircraft are a threat to your rear (your six is clear).
Cleared Hot	Ordnance release is authorised.
Cold	<ol style="list-style-type: none">1. Attack geometry will result in a pass or roll out behind the target.2. On a leg of the CAP pointed away from the anticipated threats.

	3. Group(s) heading away from friendly aircraft. (Opposite of Hot).
Contact	1. Sensor contact at the stated position.
Continue	2. Acknowledges sighting of a specified reference point. Continue present flight path or present manoeuvre. Does not imply a change in clearance to engage or expend ordnance.
Cover(ing)	Directive/Informative to take on supporting role and allow Shooter to engage the threat.
Crank (Direction)	F-Pole manoeuvre; implies illuminating target at radar gimbal limits.
Dakota	Radio Call Indicating aircraft is out of air-to-ground ordnance.
Declare	Inquiry as to the identification of a specified target(s).
Defensive (Spike/Missile/SAM/Mud/AAA)	Aircraft is in a defensive position and manoeuvring with reference to the threat.
Drag(ing) (Direction)	Target stabilized at 0-60 degrees aspect.
Echelon	Groups/contacts/formation with wingman displaced approximately 45 degrees behind leader's 3/9 line.
Engaged can also include threat type and if (Offensive/Neutral/Defensive)	Manoeuvring with the intent to kill. Implies visual/radar acquisition of target.
Extend (Direction)	Short term manoeuvre to gain energy, distance, or separation; normally with the intent of re-engaging.
Faded	Radar contact lost.
Feet (Wet/Dry)	Flying over water/land.
Fence (In/Out)	Set cockpit switches as appropriate prior to entering/exiting the combat area.
Flank(ing)	Target with a stable aspect of 120 to 150 degrees.
Fox (Number)	Launch of air-to-air weapons: One - semi-active radar-guided missile (eg Sparrow). Two - infrared-guided missile (eg Sidewinder). Three - active radar-guided missile (eg AMRAAM).
Friendly	A positively identified friendly contact.
Gate	Directive/informative to fly as quickly as possible, using maximum power (after-burner).
Group	Radar targets within approximately 3 NM miles of each other.
Guns	An air-to-air or air-to-surface gunshot.
Head-on	Target with an aspect angle of 160 to 180 degrees.
High	Between 25,000 and 40,000 ft MSL.
Home Plate	Home airfield or carrier.
Hook (Left/Right)	Directive to perform an in-place 180 degree turn.
Hot	1. Attack geometry will result in rollout in front of the target. 2. On a leg of the CAP pointing toward the anticipated threats. 3. Group heading towards friendly aircraft; opposite of COLD. 4. Ordnance employment intended or completed.
Hostile	A contact identified as enemy upon which clearance to fire is authorized, in accordance with ROE.
In (Direction)	Informative indicating a turn to a hot aspect relative to a threat/target. Opposite of Out .
Joker	Fuel state above BINGO at which separation/bugout/RTB should begin.
Kansas	Out of AA ordnance
Knock it Off	Directive call to cease air combat maneuvers/attacks/ activities.
Ladder	Three or more groups/contacts in range.
Lead-Trail	Tactical formation of two contacts within a group separated in range or following one another.
Line Abreast	Two contacts within a group side-by-side.
Locked (BRAA/Direction)	Final radar lock-on; sort is not assumed.
Lost Contact	Radar contact lost.
Lost Lock	Loss of radar/IR lock-on (advisory).
Low	Target altitude below 10,000 ft AGL.
Maddog	Visual AIM-120 launch
Magnum	Launch of friendly anti-radiation missile (normally a HARM).
Medium	Target altitude between 10,000 ft AGL and 25,000 ft MSL.

Merge(d)	1. Information that friendlies and targets have arrived in the same visual area. 2. Call indicating radar returns have come together.
Mud (Type/Direction)	Indicates RWR ground threat displayed (followed by type and clock position).
Music (on/off)	Electronic radar jamming (on/off). See also Strangled .
Naked	No RWR indications.
New Picture	Used when picture has changed. Supersedes all previous calls and re-establishes picture for all players.
No Factor	Not a threat.
No Joy	Aircrew does not have visual contact with the target/bandit/landmark. Opposite of tally .
Notch(ing) (Direction)	Defensive manoeuvre to place threat radar/missile on the beam.
Off (Direction)	Informative call indicating attack is terminated and manoeuvring to the indicated direction.
On Station	Informative unit/aircraft has reached assigned station.
Out (Direction)	Informative indicating a turn to a cold aspect relative to the threat. Opposite of In .
Outlaw	A suspected hostile aircraft.
Painted	To be illuminated by a search radar.
Picture	Tactical situation update.
Pince/Pincer	Threat manoeuvring for a bracket attack
Pitbull	Informative, AIM-120 is at active (self-homing) range.
Posit	Request for position; response in terms of a landmark, waypoint, or a common reference point (bullseye).
Press	Directive to continue the attack; mutual support will be maintained by caller.
Pump	A briefed manoeuvre to low aspect to stop closure on the threat with the intent to re-engage.
Pushing (Group Description)	1. Departing designated point. 2. Informative that said group(s) have turned cold and will continue to be monitored. (Group description).
Raygun (should usually include a bullseye and Angles)	Request for an ID on an unknown aircraft. An immediate Buddy Spike reply from a friendly (Position/Heading/ Altitude) aircraft meeting these parameters should be given to prevent a Bittersweet (fratricide) incident.
Reference (Direction)	Directive to assume stated heading.
Rifle	Air-to-surface missile launch.
RTB	Return to base.
Saddled	Informative from wingman/element indicating the return to briefed formation position.
SAM (Direction)	Visual acquisition of a SAM or SAM launch should include position (normally clock).
Shackle	A single crossing of flight paths to adjust/regain formation.
Shooter	Aircraft designated to employ ordnance.
Slow	Target with a ground speed of 300 knots or less.
Snap (Direction)	An immediate vector to the group described.
Sort	Directive to assign responsibility; criteria can be met visually, electronically (radar) or both.
Sorted	Sort responsibility has been met.
Spike	Indication of an aircraft radar lock on RWR. . Include bearing/clock position and threat type, if known.
Splash	1. (A/A) Target destroyed. 2. (A/G) Weapons impact.
Split	An informative call that a flight member is leaving formation to engage a threat; visual may not be maintained.
Status	Request for tactical situation.
Strip	Individual fighter/section is leaving the formation to pursue separate attacks.
Stripped	Informative call from wingman/element indicating out of briefed formation/position.

Switch(ed)	Indicates an attacker is changing/has changed from one aircraft to another.
Tally	Sighting of a target, bandit, bogey, or enemy position; opposite of No Joy .
Target ()	Directive to assign group responsibility to aircraft in a flight.
Targeted ()	Group responsibility has been met.
Throttles	Reduction in power to decrease IR signature.
Tied	In radar contact with friendly aircraft or element.
Trail(er)	The last aircraft within a group(s).
Trashed	Informative call that missile has been defeated.
Trespass (Position)	The flight is entering a threat ring of an AA system at the stated location.
Tumbleweed	Indicates limited situational awareness; assumes No Joy and Blind . Call is a request for picture.
Unable	Cannot comply as requested/directed.
Very High	Above 40,000 ft MSL.
Vic	Three groups, contacts, or formations with the single closest in range and two contacts, azimuth split, in trail.
Visual	In visual contact with friendly aircraft or ground position, opposite of Blind .
Wall	Three or more groups or contacts primarily split in azimuth
Weapons ()	Fire only— Free at targets not identified as friendly in accordance with current ROE. Tight at targets positively identified as hostile in accordance with current ROE. Hold/Safe in self-defence or in response to a formal order.
Weeds	Indicates that aircraft are operating close to the surface.
What Luck	Request for results of missions or tasks.
What State ()	Report amount of fuel and missiles remaining. Ammunition and oxygen are reported only when specifically requested or critical. (#) Active = number of active radar missiles remaining (#) Radar = number of semi-active radar missiles remaining. (#) Heat = number of IR missiles remaining. (#) Fuel = pounds of fuel or time remaining.
Winchester	No ordnance remaining.

4.0 DETAILED 185TH BREVIDY CODE WORDS LIST

The detailed code word list is supplied for the connoisseurs of brevity among you. If you learn the majority of word in this list and when to use them you will be well on your way to mastering effective comms.

Abort(Ing)(Ed)	Directive/informative to cease action/attack/event/mission.
Action	Directive to initiate a briefed attack sequence or manoeuvre.
Active	An emitter is radiating.
Add()	Directive call to add a specific (system) to search responsibility.
Alarm	Directive/informative indicating the termination of EMCON procedures.
Alpha Check	Request for/confirmation of bearing and range to described point.
Anchor(ed)	Orbit about a specific point.
Angels	Altitude in thousands of feet (e.g. angels 23 is 23,000 feet).
Arizona	No ARM ordnance remaining.
As Fraggd	Unit or element will be performing exactly as stated by the air tasking order.
Azimuth	Two or more groups primarily separated in bearing.
Bandit	An aircraft identified as hostile. The term does not imply direction or authority to engage.
Base (Number)	Reference number used to indicate such information as headings, altitude, fuels, etc.
Beam(ing)	Target stabilized within 70 to 110 degree aspect; generally given with directions: east, west, north, south.
Bent	System indicated is inoperative.
Bingo	Pre-calculated fuel state which means immediate RTB is required.
Bird	Friendly surface-to-air missile (SAM).
Bittersweet	Notification of possible blue-on-blue incident.
Blank	A SEAD aircraft does not detect any emitters of interest.
Blind	No visual contact with friendly aircraft you are flying with. Opposite of Visual .
Blow Through	Directive/informative call; continue straight ahead at the merge and do not turn with bandits(s).
Bogey	A radar or visual air contact whose identity is unknown.
Bogey Dope	Request for target information as briefed/available.
Box	Groups/contacts/formations in a square or offset square.
BRAA	Target bearing, range, altitude, and aspect, relative to a friendly aircraft.
Bracket	Indicates geometry where friendly aircraft will manoeuvre to a position on opposing sides, either laterally or vertically from the target.
Break (Direction)	Directive to perform an immediate turn in the direction indicated. Assumes a defensive situation.
Brevity	Radio frequency is becoming saturated/degraded or jammed and briefer transmissions must follow.
Broke Lock	Loss of radar/IR lock-on (advisory).
Buddy Spike	Friendly aircraft air-to-air indication on RWR. To be followed by position/heading/altitude.
Bugout (Direction)	Separation from that particular engagement/attack/operation; no intent to reengage/return.
Bullseye	An established point from which the position of an object can be referenced.
Buster	Directive call to fly at max continuous speed (ie maximum without afterburner).
Cap/Capping (Location)	1. Directive call to establish an orbit at a specified location. 2. An orbit at a specified location.
Captured	Aircrew has identified and is able to track a specified A/G target with an on-board sensor.
Cease Fire	Do not open fire or discontinue firing; complete intercept if weapons are in flight; continue to track.
Champagne Check () Left/Right	An attack of three distinct groups with two in front and one behind. Turn () degrees left or right and maintain new heading.

Clean	1. No radar contacts on aircraft of interest. 2. No visible battle damage. 3. Aircraft not carrying external stores
Clear	No enemy aircraft are a threat to your rear (your six is clear).
Cleared	Requested action is authorised (no engaged/support roles are assumed).
Cleared Hot	Ordnance release is authorised.
Closing	Decreasing in range.
Cold	1. Attack geometry will result in a pass or roll out behind the target. 2. On a leg of the CAP pointed away from the anticipated threats. 3. Group(s) heading away from friendly aircraft. (Opposite of Hot).
Comeoff (Left/Right/Low/High)	Directive to manoeuvre to either regain mutual support or to de-conflict flight paths for an exchange of engaged and supporting roles. Implies both Visual and Tally .
Commit(ed)	Fighter intent to engage/intercept; controller continues to provide information.
Cons/Conning	Threat/bogey aircraft leaving contrails.
Contact	1. Sensor contact at the stated position. 2. Acknowledges sighting of a specified reference point.
Continue	Continue present manoeuvre, does not imply clearance to engage or expend ordnance.
Continue Dry	Ordnance release not authorized.
Cover(ing)	Directive/Informative to take on supporting role and allow Shooter to engage the threat.
Crank (Direction)	F-Pole manoeuvre; implies illuminating target at radar gimbal limits.
Cutoff	Request for, or directive to, intercept using cutoff geometry.
Dakota	Radio Call Indicating aircraft is out of air-to-ground ordnance.
Data (Object/Position)	Standby for message concerning (object) at stated location.
Declare	Inquiry as to the identification of a specified track(s), target(s), or correlated group.
Defensive (Spike/Missile/SAM/Mud/AAA)	Aircraft is in a defensive position and manoeuvring with reference to the stated threat.
De-Louse	Directive to detect and identify unknown aircraft trailing friendly aircraft.
Deploy	Directive to manoeuvre to briefed positioning.
Divert	Proceed to alternate mission/base.
Drag(ing) (Direction)	Target stabilized at 0-60 degrees aspect.
Drop(ing)	1. Directive/informative to stop monitoring a specified emitter/target and resume search responsibilities. 2. Remove the emitter/target from tactical picture/track stores.
Echelon	Groups/contacts/formation with wingman displaced approximately 45 degrees behind leader's 3/9 line.
Engaged can also include threat type and if (Offensive/Neutral/Defensive)	Manoeuvring with the intent to kill. Implies visual/radar acquisition of target.
Estimate	Provides estimate of the size, range, height, or other parameter of a contact; implies degradation.
Extend (Direction)	Short term manoeuvre to gain energy, distance, or separation; normally with the intent of re-engaging.
Eyeball ()	1. Fighter with primary visual identification responsibility. 2. EO/IR/NVD acquisition of an aircraft. Normally followed by () number of aircraft observed.
Faded	Radar contact lost.
Fast	Target speed is estimated to be 600 knots/mach 1 or greater.
Feet (Wet/Dry)	Flying over water/land.
Fence (In/Out)	Set cockpit switches as appropriate prior to entering/exiting the combat area.
Flank(ing)	Target with a stable aspect of 120 to 150 degrees.
Float	Directive/informative to expand formation laterally within visual limits to maintain a radar contact or prepare for a defensive response.

Fox (Number)	Launch of air-to-air weapons: One - semi-active radar-guided missile (eg Sparrow). Two - infrared-guided missile (eg Sidewinder). Three - active radar-guided missile (eg AMRAAM).
Friendly	A positively identified friendly contact.
Furball	A turning fight involving multiple aircraft with known Bandits and Friendlies mixed.
Gate	Directive/informative to fly as quickly as possible, using maximum power (after-burner).
Gimbal (Direction)	Radar target is approaching azimuth or elevation limits.
Goggle/Degoggle	Directive/informative to put on/take off NVD's.
Gorilla	Large force of indeterminate numbers and formation.
Grandslam	All Hostile aircraft of a designated track (or against which a mission was tasked) are shot down.
Green (Direction)	Direction determined to be clearest of enemy air-to-air activity.
Group	Radar targets within approximately 3 NM of each other.
Guns	An air-to-air or air-to-surface gunshot.
Hard (Direction)	High-G, energy sustaining turn.
Head-on	Target with an aspect angle of 160 to 180 degrees.
Heads Up	Alert of an activity of interest.
Heavy	A group or package known to contain three or more entities.
High	Between 25,000 and 40,000 ft MSL.
Hit(s)	1. (A/A) Momentary radar return(s) in search. (Indicates approximate altitude information from fighter.) 2. (A/G) Weapons impact within lethal distance.
Holding Hands	Aircraft in visual formation.
Hold Fire	An emergency fire control order used to stop firing on a designated target, to include destruction of any missiles in flight (where possible).
Home Plate	Home airfield or carrier.
Hook (Left/Right)	Directive to perform an in-place 180 degree turn.
Hostile	A contact identified as enemy upon which clearance to fire is authorized, in accordance with ROE.
Hot	1. Attack geometry will result in roll out in front of the target. 2. On a leg of the CAP pointing toward the anticipated threats. 3. Group heading towards friendly aircraft. 4. Ordnance employment intended. (Opposite of Cold).
ID	1. Directive to identify the target. 2. ID accomplished, followed by type.
In (Direction)	Informative indicating a turn to a hot aspect relative to a threat/target. Opposite of Out .
Joker	Fuel state above Bingo at which separation/bugout/RTB should begin.
Judy	Aircrew has radar/visual contact on the correct target, has taken control of the intercept and only requires situation awareness information. Controller will minimize radio transmissions.
Kansas	Radio call indicating aircraft is out of air-to-air ordnance.
Kill	1. Clearance to fire. 2. In training, a fighter call to indicate kill criteria have been fulfilled.
Knock it Off	Directive to cease air combat manoeuvres/attacks/activities.
Ladder	Three or more groups/contacts, in range.
Laser On	Directive to start laser designation.
Lead-Trail	Tactical formation of two contacts within a group separated in range or following one another.
Line Abreast	Two contacts within a group side-by-side.
Lights On/Off	Directive to turn on/off exterior lights.
Locked (BRAA/Direction)	Final radar lock-on; sort is not assumed.
Lost Contact	Radar contact lost.
Lost Lock	Loss of radar/IR lock-on (advisory).
Low	Target altitude below 10,000 ft AGL.
Magnum	Launch of friendly anti-radiation missile.
Maddog	Visual AIM-120 launch

Mapping	Multi-function radar in an A/G mode.
Marking	Friendly aircraft leaving contrails.
Marshal(ing)	Establish(ed) at a specific point.
Medium	Target altitude between 10,000 ft AGL and 25,000 ft MSL
Merge(d)	1. Information that friendlies and targets have arrived in the same visual arena. 2. Call indicating radar returns have come together.
Monitor	Maintain radar awareness on or assume responsibility for specified group.
Mover	A moving ground target.
Mud (Type/Direction)	Indicates RWR ground threat displayed (followed by type and clock position).
Music (on/off)	Electronic radar jamming (on/off). See also Strangle .
Nails	RWR indication of AI radar in search. Add clock position/azimuth, if known.
Naked	No RWR indications.
Nevada	Radio call indicating that the aircraft is out of Maverick missiles.
New Picture	Used when tactical picture has changed. Supersedes all previous calls and re-establishes picture for all.
No Factor	Not a threat.
No Joy	Aircrew does not have visual contact with the target/bandit/landmark. Opposite of Tally.
Notch(ing) (Direction)	Defensive manoeuvre to place threat radar/missile on the beam.
Off (Direction)	Informative call indicating attack is terminated and manoeuvring to the indicated direction.
Offset (Direction)	Informative call indicating manoeuvre in a specified direction with reference to the target.
On Station	Informative unit/aircraft has reached assigned station.
Opening	Increasing in range.
Out (Direction)	Informative indicating a turn to a cold aspect relative to the threat. Opposite of In .
Outlaw	A suspected hostile aircraft.
Package	Collection of groups/contacts/formations.
Padlocked	Informative call indicating aircrew cannot take eyes off an aircraft or surface position without risk of losing Tally/Visual .
Painted	To be illuminated by a search radar.
Picture	Tactical situation update.
Pince/Pincer	Threat manoeuvring for a bracket attack.
Pitbull	Informative, AIM-120 is at active (self-homing) range.
Playtime	Amount of time aircraft can remain on station.
Pop	1. Starting climb for air-to-surface attack. 2. Max performance climb out of low altitude structure
Popeye	Flying in clouds or area of reduced visibility.
Popup	Informative call of a contact that has suddenly appeared inside of threat range.
Posit	Request for position; response in terms of a landmark, waypoint, or a common reference point (bullseye).
Post Attack (Direction)	Directive transmission to indicate desired direction after completion of intercept/engagement.
Post Hole	Rapid descending spiral.
Press	Directive to continue the attack; mutual support will be maintained by caller.
Pump	A briefed manoeuvre to low aspect to stop closure on the threat with the intent to re-engage.
Pure	Informative indicating pure pursuit is being used or directive to go pure pursuit.
Pushing (Group description)	1. Departing designated point. 2. Informative that said group(s) have turned cold and will continue to be monitored.
Raygun (Bullseye and Angels)	Request for an ID on an unknown aircraft. An immediate Buddy Spike reply from a friendly (Position/Heading/Altitude) aircraft meeting these parameters should be given to prevent a Bittersweet incident.
Reference (Direction)	Directive to assume stated heading.

Reset	Proceed to a pre-briefed position or area of operation.
Resume	Resume last formation/station/mission ordered.
Retrograde	Directive to withdraw from present position in response to a threat.
Rifle	Air-to-Surface missile launch.
Ripple	Two or more munitions released or fired in close succession.
Rolox (+/- Time)	Timeline adjustment in minutes from planned mission execution time. (Plus is later; minus is earlier).
RTB	Return to base.
Saddled	Informative from wingman/element indicating the return to briefed formation position.
SAM (Direction)	Visual acquisition of a SAM or SAM launch, should include position.
Sandwiched	A situation where an aircraft/element is positioned between opposing aircraft/elements.
Saunter	Fly at best endurance.
Scram (Direction)	Emergency directive to egress for defensive or survival reasons.
Scramble	Takeoff as quickly as possible.
Separate	Leave a specific engagement; may or may not re-enter.
Shackle	A single crossing of flight paths to adjust/regain formation.
Shadow	Follow indicated target.
Shift	Directive to shift laser illumination.
Shooter	Aircraft designated to employ ordnance.
Shotgun	Pre-briefed weapons state at which separation/bugout should begin.
Skate	Informative/directive to execute launch and leave tactics.
Skip It	Veto of fighter commit, usually followed with further directions.
Skosh	Aircraft is out of/or unable to employ active radar missiles.
Skunk	A maritime surface contact whose identity is unknown
Slide	Directive call to continue mission while extending range from target in response to threat.
Slow	Target with a ground speed of 300 knots or less.
Smash	Directive to turn on/off anti-collision lights.
Smoke	Smoke marker used to mark a position.
Snap (Direction)	An immediate vector to the group described.
Sniper	Directive for an aircraft to employ a HARM against a specified threat at the specified location.
Snooze	Directive/informative indicating initiation of EMCON procedures.
Sort	Directive to assign responsibility within a group; criteria can be met visually, by radar or both.
Sorted	Sort responsibility has been met.
Sour	1. Equipment indicated is operating inefficiently. 2. Invalid response to an administrative IFF check. (Opposite of Sweet)
Spike	Indication of an aircraft radar lock on RWR. . Include bearing/clock position and threat type, if known.
Spitter (Direction)	An aircraft that has departed from the engagement or departs engaged fighters targeting responsibility.
Splash	1. (A/A) Target destroyed. 2. (A/G) Weapons impact.
Split	Informative call that flight member is leaving formation to engage a threat; visual may not be maintained.
Spot	Acquisition of laser designation.
Stack	Two or more groups/contacts/formations with a high/low altitude separation in relation to each other.
Status	Request for tactical situation.
Steer	Set magnetic heading indicated.
Stern	Request for, or directive to, intercept using stern geometry.
Stinger	Within a group, a formation of three or more aircraft with a single aircraft in trail.
Stranger	Unidentified traffic that is not associated with the action in progress.
Strangle ()	Turn off equipment indicated.
Strip	Individual fighter/section is leaving the formation to pursue separate attacks.

Stripped	Informative call from wingman/element indicating out of briefed formation/position.
Strobe	Radar indications of jamming.
Sweet	1. Equipment indicated is operating efficiently. 2. Valid response to an administrative IFF check. (Opposite of Sour)
Switch(ed)	Indicates an attacker is changing from one aircraft to another.
Tag (System W/Position)	Known identification of a specific (system) at the stated location.
Tally	Sighting of a target, bandit, bogey, or enemy position; opposite of No Joy .
Target ()	Directive to assign group responsibility to aircraft in a flight.
Targeted ()	Group responsibility has been met.
Terminate	1. Stop laser illumination of a target. 2. Cease local engagement without affecting the overall exercise.
Threat (Direction)	Untargeted Hostile/Bandit/ Bogey within threat range/aspect of a friendly.
Throttles	Reduction in power to decrease IR signature.
Tied	In radar contact with friendly aircraft or element.
Tiger	Enough fuel and ordnance to accept a commit.
Tracking	1. Stabilized gun solution. 2. Continuous illumination of a target. 3. Contact heading.
Trail(er)	The last aircraft within a group(s).
Trashed	Informative call that missile has been defeated.
Trespass (Position)	The flight is entering a threat ring of an AA system at the stated location.
Tumbleweed	Indicates limited situational awareness; assumes No Joy and Blind . Is a request for picture.
Unable	Cannot comply as requested/directed.
Very High	Above 40,000 ft MSL.
Vic	Three groups/contacts with the single closest in range and two contacts, azimuth split, in trail.
Visual	In visual contact with friendly aircraft or ground position, opposite of Blind .
Wall	Three or more groups or contacts primarily split in azimuth
Warning (Colour)	Hostile attack is: Red imminent or in progress. Yellow probable. White improbable (all clear).
Weapons ()	Fire only: Free at targets not identified as friendly in accordance with current ROE. Tight at targets positively identified as hostile in accordance with current ROE. Hold/Safe in self-defence or in response to a formal order.
Weeds	Indicates that aircraft are operating close to the surface.
What Luck	Request for results of missions or tasks.
What State	Report amount of fuel and missiles remaining. Ammunition and oxygen are reported only when specifically requested or critical. (#) Active = number of active radar missiles remaining (#) Radar = number of semi-active radar missiles remaining. (#) Heat = number of IR missiles remaining. (#) Fuel = pounds of fuel or time remaining.
Winchester	No ordnance remaining.
Words	Directive regarding further information or directives pertinent to mission.
Working	1. A SEAD aircraft is gathering information on a designated emitter. Generally followed by signal type (SAM/AAA/EW), bearing, and range, if able. 2. Aircraft obtaining ID on a specific aircraft/group necessary for BVR employment.
Yardstick	Directive to use A/A TACAN for ranging.