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# General Air Operations Glossary

= X51 = WAZZERBOSH

*For DCS: World events and combat*

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# Aviation Systems and Terminology

## AP - Autopilot

A system that aids the flying of the aircraft, usually by maintaining a set altitude or attitude, automatically turning to a given heading, climbing/descending to a set altitude or maintaining certain conditions (e.g. on speed AoA) for landing.

## APU - Auxiliary Power Unit

A small, on-board jet engine used primarily for power generation and not for propulsion

## AoA - Angle of Attack

The angle between the airfoil and the direction of flow of the air. In general, a high angle of attack means the airflow across the aircraft is being strongly deflected, and is a high-drag situation.

## FCS - Flight Control System

A computerized system that aids the flying of the aircraft, usually in terms of stability.

## HMD - Head Mounted Display

A display device mounted to the helmet, which overlays information such as locked targets, pitch ladder, speed, altitude etc.

## HUD - Heads Up Display

A display device at the front of the cockpit which overlays information such as locked targets, pitch ladder, speed, altitude etc.

## INS - Inertial Navigation System

A navigation system that uses sensitive devices such as gyroscopes and accelerometers to predict the position of the aircraft during flight, based off an initial calibration with a given starting point. Unlike GPS or other position measuring systems, the INS does not measure the position of the aircraft while in the air. Instead, it predicts it based off measured movement since the initial calibration. Therefore, they are susceptible to drift from the rotation of the Earth and accumulated errors of the gyroscopic system. Most INS systems allow quick recalibration in the air by having it compare its predicted position with its actual position using a known landmark.

## N1

The RPM of the gas generator section of a jet engine. It is the most common/useful determination of the engine's power setting during flight. Often this RPM is given as a percentage of the maximum.

## Pitot-static system

A series of pressure sensitive instruments that determine the aircraft's airspeed, altitude and mach number.

## RCS - Radar Cross Section

How visible something is to radar. RCS can vary dramatically for different aspects and radar frequencies. A high radar cross section means that the aircraft or object will reflect large amounts of radar radiation back to the receiver.

## TDC - Target Designation Cursor

May be known under a different name, depending on the aircraft. It is the cursor/cross-hair that is slewed on a radar or visual display to designate a target.

# Offensive and Defensive Systems

## ARH - Active Radar Homing

The use of onboard radar to independently guide a missile. ARH missiles are usually fired in an SARH mode, where they are initially guided by the aircraft's radar. At some point along the missile's flight, it will switch to fully active radar homing (aka going "pitbull") where it will guide itself autonomously using the radar in the missile's nose.

## CBU - Cluster Bomb Unit

A unit which contains clusters or "bomblets". Usually used to cover large areas of soft or lightly armored targets.

## Chaff

Strips of metallic material released from an aircraft as a decoy for radar systems. The cloud of metal strips will have a large radar cross section (RCS)

## ECM - Electronic Countermeasures

The use of electronic signals to counter offensive electronic signals. For example, radar jamming.

## ELINT - Electronic Signals Intelligence

The detection and processing of electronic signals to learn about enemy positions or forces. For example, an ELINT pod attached to an aircraft can detect and record radar signals from AWACS, EWR, and SAM systems; identify them and estimate their locations.

## Flare (countermeasures)

Burning flares that are released from an aircraft as a decoy for infrared seeking missiles.

## GBU - Guided Bomb Unit

GBUs can be guided in many ways. Commonly by laser or GPS. Laser GBUs rely on the reflection of an encoded laser beam from the target into the seeker of the GBU. Using control surfaces on the GBU's fuselage, it rides the beam down to the target.

## IFF - Identification Friend or Foe

IFF systems are used to identify friendly or hostile aircraft. Usually, they only really involves the identification of friendly aircraft, as they will return a known signal when interrogated by

the IFF system. Enemy or other aircraft not equipped with an IFF system with the same encoding will not

### IRH - Infrared Homing

The use of infrared seekers to home in on a target. Rear aspect IR missiles home on the hot exhaust of an aircraft and are therefore only effective when the enemy aircraft's aspect allows the seeker to see this exhaust. Conversely, All-aspect IR missiles can achieve a lock on the heat of the aircraft's skin - generated from the engines and air friction.

### RWR - Radar Warning Receiver

A passive device that receives radar radiation from surrounding emitters. Depending on the era, RWRs may be able to classify what is emitting the radiation, display their heading from the aircraft, whether is seeking or tracking, and its threat level.

### SARH - Semi Active Radar Homing

A homing seeker that uses the aircraft's radar for guidance. The aircraft paints the target with its radar, and the missile homes in on the reflection and/or receives homing instructions via radio link with the aircraft.

# Aviation and Navigation

## ATC - Air Traffic Control

Controls air traffic at an airfield, FARP, etc. Encompasses ground, departure, inbound traffic controllers and etc, although these operations usually have dedicated controllers.

## IFR - Instrument Flight Rules

Bad visibility due to weather or time of day which necessitates instrument flying. E.g, cockpit instruments and external guidance such as VOR and ILS.

## ILS - Instrument Landing System

A radio beam which is emitted along the direction of the runway which allows an aircraft to find and follow the glideslope

## IMC - Instrument Meteorological Conditions

A state of meteorological conditions which required IFR to be followed.

## MSL - Mean Sea Level

The average level of one or more of Earth's bodies of water.

## NOTAM - Notice to Airmen

Publically available notices to airmen which describe and warn of various hazards that may be encountered when flying in certain areas.

## QFE - Atmospheric pressure at airfield level

The QFE for a departure or arrival airfield is useful to know, so that the aircraft's altimeter can be calibrated to it.

## QNE - Standard Pressure

Conversely to QFE, QNE tells you what the altimeter should read on the ground at the airfield, when the altimeter is calibrated to zero altitude = standard barometric pressure (1013.2 hPa).

## QNH - Atmospheric pressure at Mean Sea Level

When an altimeter is calibrated to QNH, it will read altitude above mean sea level.

## TACAN - Tactical Air Navigation

A radio beacon used by NATO that allows directional and distance finding.

## UHF – Ultra High Frequency

Radio frequencies between 300 and 3000Mhz

## VFR - Visual Flight Rules

VFR can be followed when the weather and visibility conditions are above the “VFR weather minima”. In general, when the pilot can see where they are going in the aircraft and can take off, navigate and land visually.

## VHF – Very High frequency (30 – 300Mhz)

Radio frequencies between 30 and 300Mhz

## VMC - Visual Meteorological Conditions

Meteorological conditions in which following VFR is permitted.

## VOR - VHF Omnidirectional Ranging

An omnidirectional radio beacon, often situated at airfields. It uses an omnidirectional transmitter coupled with a spinning directional transmitter that allows receiving aircraft to determine their bearing from the VOR beacon. Receiving multiple VOR beacons allows some aircraft to also determine their geographical position.

# Air Operations Communication

## Air Intercept

Refers to aircraft intercepting and/or engaging other aircraft

## Air Interdiction

Refers to aircraft engaging ground targets.

## AO - Area of Operations

A geographical area in which relevant operations are being conducted.

## AWACS - Airborne Early Warning and Control

Aircraft equipped with air intercept radar systems and controllers. Is used to control and inform air interceptions and operations.

## BARCAP - Barrier Combat Air Control

Combat air patrol aircraft which are forward operating and deployed in a way that is designed to hold back enemy aircraft from a certain position. Is

## Bullseye

A specified set of coordinates that are common to all forces in the area. It allows the relaying of general information that is useful for all forces. For example, the position of enemy aircraft from bullseye.

## CAP - Combat Air Patrol

Air intercept fighters deployed in a manner that allows them to patrol and protect an area from enemy aircraft

## CAS - Close Air Support

CAS is the attacking of ground targets to support nearby friendly ground units.

## DEAD - Destruction of Enemy Air Defense

Missions to destroy enemy air defense placements. See also: SEAD

## EWR - Early Warning Radar

A ground based radar system to detect enemy aircraft

## GCI - Ground Controlled Interception

A ground based operator that controls and informs air interception operations using ground based detection systems (eg. EWRs)

## HAVCAP - High Asset Value Combat Air Patrol

Combat air patrol deployed to protect a high value asset from enemy aircraft.

## IP - Initial Point

A geographical point that can represent several things, for example, the last known position of a target, or a point at which a ground attack aircraft is in full control of the approach and attack onto a target.

## JTAC - Joint Terminal Attack Controller

A unit that directs and controls the interdiction of strike of a target at the terminal phase, e.g, illuminating the target with a guidance laser, marking an enemy position with an IR laser or smoke, and giving relevant information to the ground attack aircraft for their attack approach.

## QRA - Quick Reaction Alert

QRA flights and aircraft are stationed at airfields and tasked with quick alert and interception of threats. They are maintained in a state of combat readiness to ensure a quick reaction time to detected threats.

## SEAD - Suppression of Enemy Air Defense

Unlike DEAD, SEAD does not require the enemy air defense to be destroyed, but only to be suppressed during operations in the area. For example, the enemy's air defense radars can be attacked with radar homing missiles. In response, the enemy may shut down these radars so that they cannot be attacked in this manner. While turned off, they cannot attack back and the SEAD is successful.

# Strategic and Briefing Phraseology

## EMLCOA - Enemy Most Likely Course Of Action

The predicted response or actions of the enemy. It is useful to determine the EMLCOA for general operations planning.

## EMDCOA - Enemy Most Dangerous Course of Action

The enemy action that will best lead to success for them. It is useful to determine the EMDCOA in order to plan contingencies and possible responses in advance.

## SOPs - Standard Operating Procedures

The general rules for how something is executed and performed. Should be followed unless overruled, such as in the SPINs

## SPINs - Special Instructions

Instructions and procedures unique to the current tasks or which differ from the SOPs due to circumstances

# Brevity Codewords

## Angels

Referring to the aspect of another aircraft relative to you.

Hot: Flying towards you

Cold: Flying away from you

Flanking: Heading perpendicular to you

## Bandit

A confirmed enemy aircraft. If the aircraft is unknown, the correct term is "Bogey"

## Bingo

Minimum fuel level to safely return to friendly airfield/carrier

## Bittersweet

Blue on blue. Friendly aircraft being fired upon by another friendly

## Bogey

An aircraft that has not yet been identified as friend or foe

## Bogey Dope

Requesting position and aspect information of a target. A "Bogey Dope" is usually requested to an AWACS or ground radar network. (See also: BRA)

## BRA(A)

Bearing, range, altitude. May also include aspect (BRAA). Often precedes an intercept instruction from AWACS/GCI. E.g: *BRAA 250 for 30, angels 3, hot*

## Cloak

Turn off exterior lights

## Faded

Contact is no longer visible on radar. Can be either due to destruction of the target, or that the aspect and position of the target means it is not currently visible for the radar.

## Feet Dry

Over land. E.g "Enemy is feet dry." Or "I am feet dry"

## Feet Wet

As above but for over water

## Fence In/Out

Set up for combat. E.g. Turn on master arm, weapons selected, exterior lights off...

## Firewall

Go full throttle (see also, and not to be confused with: Military/Mil Power)

## Fox

Firing a missile. Precedes a number that designates the type of missile being fired, E.g. "Fox 1", "Fox 2", or "Fox 3").

## Mad Dog

Called when a fully active radar (fox 3) missile is launched with its seeker turned on. Will track and intercept the first radar contact it finds

## Magnum

Called when an anti-radiation missile is launched (a missile that homes in on radars)

## Merge

When two aircraft "meet". Literally the merging of two tracks on the intercept controllers radar display.

## Military/Mil Power

100% throttle, without engaging afterburner

## Mud Spike

Being locked by a ground radar

## Music

Radar jamming signals. E.g. "enemy has music on" (enemy is jamming your radar). "Music on" (declaring you are turning on your radar jammer)

## Nails

Declaring that you are picking up the search signal of an enemy radar, but it has not locked you.

## Naked

Target is not showing up on your RWR

## Padlocked

Declaring that you cannot take eyes off the target, or you will lose visual on them

## Pickle

Bomb release

## Pitbull

Missile has gone fully active (turned on its on-board radar)

## Raygun

Declaring that you have locked up an unknown target. If a friendly sees that you have locked them, they will respond with "buddyspike", letting them know they have locked a friendly

## Rifle

Air to ground missile launch

## Shack

Enemy ground unit is hit

## Spike

RWR is showing a radar lock. (Mud Spike refers specifically to a radar lock from a ground unit)

## Splash

Enemy air target is hit

## Trashed

Missile defeated and is no longer a threat. (Lost lock, lost energy or defeated by countermeasures)

## Winchester

Out of guided air to air payload