

Washington ARTCC



Military Procedures (USN Focused)

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For Flight Simulation purposes only on the VATSIM Network.

Introduction

The goal of the document is to introduce you, the controller, to the appropriate procedures and phraseology for military procedures. These mostly apply to Naval pilots, but the phraseology is very similar if not the exact same, between the different services.

These procedures are not required in accordance with network policies, and are meant for controllers who wish to utilize procedures for military aircraft.

MARSA is a procedure for military aircraft, and stands for Military Assumes Responsibility for Separation of Aircraft. If Pilots accept MARSA with another aircraft, they must first have the traffic observed (either visually or on their radar) and when approved take all responsibility for their own separation relieving you of keeping them separated. This is equivalent to two VFR aircraft being instructed to maintain visual separation but can apply to military aircraft.

Departure Operations

Wind Information

Whenever military aircraft depart, reading of the wind is required under all circumstances. Unlike commercial aircraft, where wind information is optional under specific instances, it is required at all times.

ROCKET 123, ANDREWS TOWER, RUNWAY 1 LEFT, WIND 0 2 0 AT 1 5, CLEAR FOR TAKEOFF.

Change to Departure

Another thing to keep in mind, certain military aircraft shall be given the instruction "Change to Departure". These aircraft are all single seater aircraft. Think the acronym SHAFT: Submarine Hunter, Helicopters, Attack aircraft, Fighter Aircraft, and Training Aircraft. Each aircraft type in the military realm begin with a letter that stands for the mission of the aircraft. If a letter before the numbers is in "SHAFT", issue the instruction "Change to departure" with the takeoff clearance. This means the aircraft *will not be on your frequency* once on the runway. This is to keep the pilots attention on the departure of the aircraft instead of trying to change frequencies on the radio as there is only one pilot in the aircraft.

BLUE ANGEL 5, ANDREWS TOWER, RUNWAY 1 LEFT, WIND 0 2 0 AT 1 7, CLEAR FOR TAKEOFF, CHANGE TO DEPARTURE.

Failing this, tower controllers should issue, or if possible traffic may conflict, issue the following instructions:

BLUE ANGEL 5, ANDREWS TOWER, RUNWAY 1 LEFT, WIND 0 2 0 AT 1 7, CLEAR FOR TAKEOFF, REMAIN THIS FREQUENCY.

BLUE ANGEL 5, WHEN ABLE, CONTACT DEPARTURE.

Unrestricted Climb Departures

High performance jets may sometimes request an unrestricted departure. This means the aircraft will depart runway heading, and upon reaching a certain speed will execute an almost vertical climb to their destined altitude. This must be coordinated with the appropriate TRACON/RATCF/ARAC/RAPCON controller who shall inform any other affected controllers up to and including the En-route facility. Unrestricted climb instructions are given with takeoff clearance.

**BLUE ANGEL 1, SHERMAN TOWER, RUNWAY 7 RIGHT, WIND CALM, CLEAR FOR TAKEOFF.
UNRESTRICTED CLIMB TO 12,000 APPROVED. CHANGE TO DEPARTURE.**

High Key Departures

High Key Departures are often used to get higher quicker. It's also mainly used to test out engines without getting too far from the field in case they go out. This kind of departure is rare. It is used mainly by jets and training aircraft and *not cargo, patrol or helicopter traffic*.

ANDREWS TOWER, BLUE ANGEL 5, HOLDING SHORT RUNWAY 1 LEFT REQUEST HIGH KEY DEPARTURE.

Because of the type of departure it is, coordination with the departure controller is necessary, though approval is not required from the departure so long as the aircraft remains within tower's airspace until completion of the high key departure.

When an aircraft is executing a high key departure, they shall not be given an instruction to change to departure regardless of type of aircraft and shall remain on tower's frequency within tower's airspace until past the departure end of the runway. A standard "Contact Departure" phraseology is appropriate.

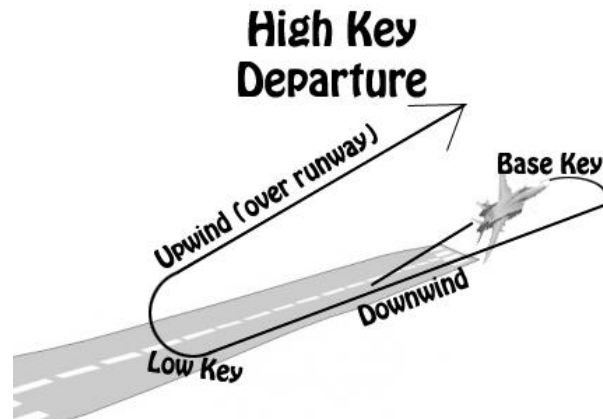
The following is optional, and shall be appended as needed to the end of the takeoff clearance:

- Report [*mid field downwind, low key, the numbers*]
- Remain at or below ___ feet.
- Remain within ___ DME.

The following information is needed:

- Approval for high key departure.
- Direction of traffic (Make ___ closed traffic).

**BLUE ANGEL 5, RUNWAY 1 LEFT, WIND 0 5 0 AT 6, CLEAR FOR TAKEOFF. HIGH KEY DEPARTURE
APPROVED. MAKE LEFT CLOSED TRAFFIC. REPORT LOW KEY.**



Arrival Operations

TACAN Approaches

Some military aircraft will request to do TACAN Approaches. TACANs (Tactical Air Navigation aid) are equivalent to VORs with DME that run on “Channels” instead of frequencies. Without delving too far into TACAN operations, just think of them as VORs. TACANs emit radials just like VORs. Thus, TACAN approaches are handled in exactly the same way as VOR approaches. The only difference is, TACAN approaches usually encompass an arc, whereas a majority of VOR approaches to bigger airfields do not. The easiest way to get an aircraft onto an arc is to send them to a radial inbound that will take them to the Initial Approach Fix on the ARC by radial, and to “join the ___ DME arc”.

Example: Shamrock 12, fly heading 090, intercept the 110 radial inbound to Andrews, join the 13 DME arc. Cleared TACAN runway 3 Approach. Report rolling out on final.

Overhead Break Maneuvers (NOT CARRIER BREAKS)

ALL OVERHEAD MANEUVERS, INCLUDING CARRIER BREAKS, ARE ENTIRELY VISUAL APPROACHES AND REQUIRE VMC AND FIELD IN SIGHT.

Overhead Breaks are very simple types of approaches that require VMC conditions and the field in sight to execute. Many military aircraft will request overhead breaks versus a visual or instrument approach as overheads are much faster to complete.

An aircraft should be sent direct to “the initial” (a point 4-5 nm from the runway) once the field is in sight and at an altitude that will place them roughly 1,000-1,500 feet above ground level with 1,300-1,500 feet AGL preferred (add field elevation and round to nearest hundred feet). Once the aircraft has the field in sight, all you have to do is:

BUCK612, PROCEED DIRECT THE INITIAL RUNWAY 7 RIGHT.

The initial is a point approximately 4-5 nm from the runway. If you're working radar with the tower being staffed, you should switch communications approximately 7-8 miles from the airfield so the aircraft can report the initial to tower. You may optionally request the aircraft to report the initial if providing tower services.

ANDREWS TOWER, BUCK612, INITIAL RUNWAY 7 RIGHT.

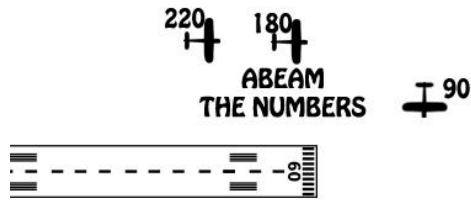
Tower at this point has several options available to them.

- If not direct to the [runway] numbers yet, PROCEED DIRECT NUMBERS RUNWAY _____
- If on upwind course,
 - o REPORT THE NUMBERS RUNWAY ____
 - o REPORT MIDFIELD UPWIND RUNWAY ____
 - o REPORT UPWIND NUMBERS RUNWAY ____
 - o OVER THE NUMBERS, [BREAK INSTRUCTIONS]
 - o AT MIDFIELD, [BREAK INSTRUCTIONS]
 - o OVER UPWIND NUMBERS, [BREAK INSTRUCTIONS]
 - o AT [DISTANCE] MILE(S) UPWIND, [BREAK INSTRUCTION]
- Break instructions:
 - o [LEFT/RIGHT] BREAK APPROVED – This allows the pilot to break at their convenience
 - o BREAK [LEFT/RIGHT] – The pilot must break at that moment, should only be used when required for separation

If you ask them to report a location, you do not need to wait for a report to “reach out” and issue them their break instruction however keep in mind that if you issue a break instruction they should/will disregard the report instruction. If a pilot reports the location you told them, you then would issue a break instruction as indicated above.

If sequencing aircraft, the sequencing information should be given with either the report instruction or shall be given in the break instruction. The break instruction is preferred.

An aircraft in the break will report, unless reached out to or following another aircraft at 4 places. 3 of them are identified in the graphic below with the 4th being on final (straight in). At this point their landing clearance or wave off instruction should be issued. USN utilizes the 220, 180 and 90 or “abeam” while other services use “Abeam” or “parallel” the numbers.



US Navy Reporting Points

Some examples:

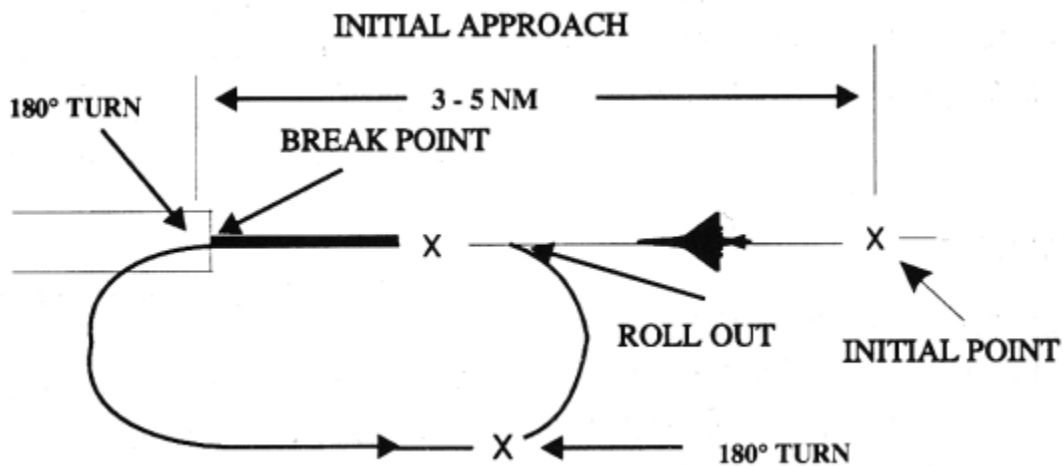
AC> SHERMAN TOWER, BUCK312, INITIAL RUNWAY 7 RIGHT.
 LCL> BUCK312, SHERMAN TOWER, REPORT THE NUMBERS RUNWAY 7 RIGHT. EXPECT TO FOLLOW A T6 ON A 4 MILE GPS FINAL RUNWAY 7 RIGHT.
 AC> TRAFFIC IN SIGHT. REPORT NUMBERS 7 RIGHT. BUCK312.
 AC> SHERMAN TOWER, BUCK312, NUMBERS.
 LCL> BUCK312, RIGHT BREAK APPROVED.
 Acknowledgement verbally or by execution of maneuver is sufficient
 AC> SHERMAN TOWER, BUCK312, 180, 3 DOWN AND LOCKED.
 LCL> BUCK312, RUNWAY 7 RIGHT, WIND CALM, CLEARED TO LAND.
 AC> CLEARED TO LAND 7 RIGHT, BUCK 312.

AC> SHERMAN TOWER, BUCK312, INITIAL RUNWAY 7 RIGHT.
 LCL> BUCK312, SHERMAN TOWER, REPORT THE NUMBERS RUNWAY 7 RIGHT.
 AC> BUCK312.
 LCL> BUCK312, AT THE NUMBERS BREAK RIGHT INSIDE A T6 ON 5 MILE FINAL RUNWAY 7 RIGHT
 AC> BUCK312.
 AC> BUCK312, 220, 3 DOWN AND LOCKED, TRAFFIC IN SIGHT.
 LCL> BUCK312, RUNWAY 7 RIGHT, WIND CALM, CLEARED TO LAND.

AC> SHERMAN TOWER, BUCK312, INITIAL RUNWAY 7 RIGHT.
 LCL> BUCK312, SHERMAN TOWER, REPORT UPWIND NUMBERS RUNWAY 7 RIGHT.
 AC> BUCK312.
 AC> BUCK312, UPWIND NUMBERS.
 LCL> BUCK312, RIGHT BREAK APPROVED.
 LCL> BUCK312, EXTEND TO FOLLOW THE T45 ON SHORT FINAL RUNWAY 7 RIGHT.
 AC> WILCO, 312.
 T45 has landed separation anticipated
 LCL> BUCK312, RUNWAY 7 RIGHT, WIND CALM, CLEARED TO LAND.

What should you expect from an aircraft doing a break? Generally, the aircraft will hold the last assigned altitude until on the downwind leg of a break. They will fly from the initial to the runway up to 250 KIAS. At their break point, they'll enter a downwind based on the break instructions received while descending to roughly 800 feet AGL while slowing to drop their gear and flaps. By 1 mile past the

approach end, they will be at their approach speed and turn to final like a standard closed traffic pattern.



CARRIER BREAK

Carrier breaks are very similar to overhead breaks, except the aircraft descends to 500 feet AGL at the initial and maintains that until on final. With the break instruction, the only change is **RIGHT CARRIER** break approved. All other phraseology is the same as a standard Overhead Break.

TRACON/RATCF/ARAC/RAPCON controllers shall descend an aircraft to MVA or 1,500 feet AGL, whichever is lower, and instruct the aircraft to cross the initial descending to 500 feet AGL.

PROCEED DIRECT THE INITIAL RUNWAY 7 RIGHT. CROSSING THE INITIAL DESCEND TO 500 FEET AGL.

CARRIER BREAKS MUST BE COORDINATED WITH AND APPROVED BY THE TOWER CAB UNLESS PRIOR COORDINATION OR AN LOA EXISTS THAT ALLOWS FOR NON-VERBAL COORDINATION VIA SCRATCHPAD FOR CARRIER BREAKS.

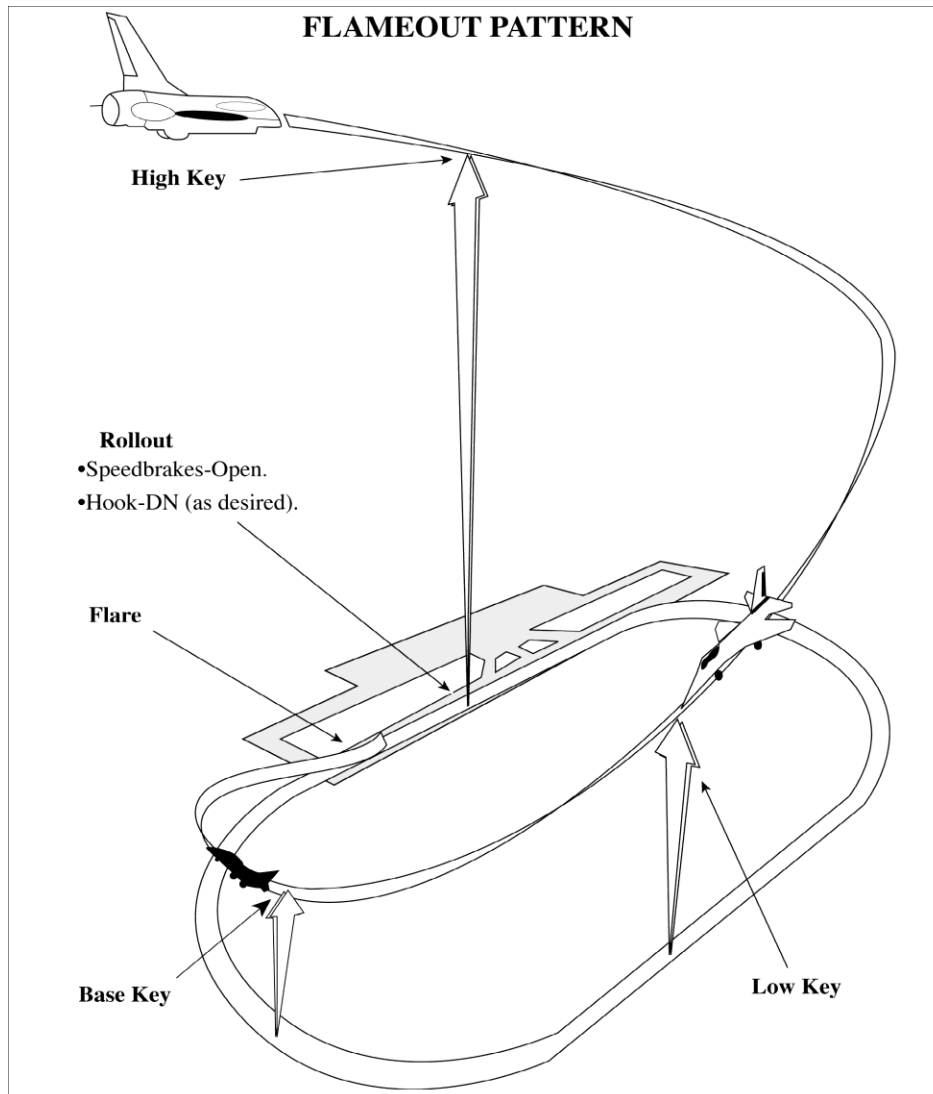
FLAME OUT/SIMULATED FLAME OUT APPROACHES

These are fun approaches to fly, but are complicated. Once they begin, they should not be stopped, extended, held, or otherwise delayed from completing the approach due to the nature of the approach. They are very similar in nature to an overhead break with one exception; the aircraft needs to be at a high altitude.

A flameout means that an aircraft's engine has stopped working. In a simulated flame out, the engine is placed in an idle status. Thus, aircraft need to proceed to the initial at a much higher altitude. Jet fighter aircraft shall be placed between 6,500 and 10,000 feet above ground level. Due to their weight, they drop quickly and need to be able to use their AOA and descent rate to keep their aircraft moving forward and through the approach.

The points of an overhead flameout have different names: **HIGH KEY, LOW KEY, BASE KEY.**

Continued on next page.



High key above the numbers for their destined runway. By Low key, wheels will be lowered or in the process of being lowered, and flaps placed down.

Phraseology is similar to overhead breaks, except instead of RIGHT BREAK APPROVED, tower will instruct the aircraft "MAKE [LEFT/RIGHT] CLOSED TRAFFIC". A reporting point may be issued, titled High Key, Low Key or Base Key. An aircraft on Base Key shall be issued a landing clearance.

For reference, a High Key Departure is this approach in reverse with engines on full.

SUA Operations

SUA, or Special Use Airspace, is airspace designated for other activities by the DoD and FAA. These areas include: Warning Areas (designated by "W"), Alert Areas (designated by "A"), Restricted Areas

(designated by “R”), Prohibited Areas (designated as “P”), Temporary Flight Restriction (TFR, issued by NOTAM), and Military Training Routes (IFR designated by “IR”, VFR designed by “VR”).

Prohibited Airspace is airspace in which flight operations are prohibited with obvious exceptions for military and law enforcement aircraft. These areas exist over major areas including the Capital and the White House. Only military aircraft are permitted within these designated airspaces.

Restricted Airspace, while not fully prohibitive, includes restrictions to activities of aircraft wishing to transition through this airspace. The controlling agency is solely responsible for what may or may not penetrate this airspace and prior coordination is required. VFR aircraft not receiving flight following are to avoid these areas or request to transition through.

If an IFR aircraft shall receive instructions to remain clear of all active airspace (vertically or horizontally) if control is kept with ZDC.

Alert Areas, are areas of high levels of pilot training or other unusual types of aerial activity. Pilots entering these areas should exercise extreme caution.

Warning Areas is airspace extending from three nautical miles outward from the coastline of the US and may include domestic and/or international waters. These areas are meant for military use and exist to warn non-participating pilots that hazardous conditions may exist. Aircraft shall not be vectored away from this airspace, but if on frequency be given the appropriate traffic information. IFR aircraft shall be placed at an altitude outside of the ALTRV (Altitude Reservation) unless participating in the event, or the controlling agency ensures separation.

MOA is essentially a warning area over land. Non-participating aircraft may penetrate this airspace, but extreme caution should be maintained. IFR aircraft should be informed they are about to penetrate active MOA airspace and be descended/climbed above this airspace or turned to avoid it unless ATC can provide IFR separation.

Military Training Routes (MTRs) are routes established below 10,000 feet MSL for operations at speeds in excess of 250 KIAS for purposes of training. Some routes may go above 10,000 feet MSL where needed for route continuity.

- IR Routes – Operations on these routes are conducted in accordance with IFR regardless of weather conditions
- VR Routes – Operations on these routes are conducted in accordance with VFR except flight visibility shall be 5 miles or more; and flights shall not be conducted below a ceiling of less than 3,000 feet AGL

Routes with no segment above 1,500 feet AGL are identified by 4 numbers. Routes with one or more segments above 1,500 feet AGL are identified by 3.

The phraseology to enter each airspace is similar for participating aircraft:

ENTERING (AIRSPACE), CLEARED OPERATIONAL. MAINTAIN BLOCK (ALTITUDE) THROUGH (ALTITUDE).

For example, an aircraft requesting W-453A and W-453B with an ALTRV of 7000 through 40,000 issue:

ENTERING WHISKEY 4 5 3 Alpha and Bravo, cleared operational. Maintain block 7,000 through Flight Level 4 0 0.

If read back but not ready to terminate radar, issue read back correct.

When ready to terminate radar services for participating aircraft, issue:

RADAR SERVICES TERMINATED. MAINTAIN VFR. [SQUAWK ___ if necessary] ADVISE THIS FREQUENCY UPON EXITING [or 5 MINUTES PRIOR TO RTB (return to base), whichever you prefer] WITH INTENTIONS. FREQUENCY CHANGE APPROVED.

Aircraft entering the airspace after it is already active shall be asked if they can accept MARSA (Military Assumes Responsibility for Separation of Aircraft) with any other aircraft in there.

CAN YOU ACCEPT MARSA WITH (CALLSIGN) AND (CALLSIGN) WORKING IN (AIRSPACE) FROM (ALTITUDE BLOCK THROUGH BLOCK)

Example:

Blue Angel 1, can you accept MARSA with Blue Angel 2 and Blue Angel 3 working in Whiskey 4 5 3 Alpha and Bravo from 7,000 through FL 4 0 0?

If they say affirmative, then proceed as normal. If unable, they are to receive an altitude reservation above or below the other participating aircraft.

Aircraft reporting exiting or prior to RTB shall be re-radar identified using primary or secondary radar identification methods before proceeding with any other instruction.

Aircraft departing any SUA, whether they were IFR into or not will need IFR clearances to their next destination if they are going IFR to their next destination. These are done the exact same as other airborne IFR clearances.

BLUE ANGEL 1, CLEARED TO ANDREWS AIRFORCE BASE VIA RADAR VECTORS FLAT ROCK VORTAC THAN AS FILED. MAINTAIN FL330. TURN RIGHT HEADING 350, PROCEED DIRECT FLAT ROCK WHEN ABLE.

Aircraft departing any SUA VFR shall be instructed maintain VFR and radar services not terminated until the aircraft has fully cleared any active SUA airspace.

Navy Terms used by vUSN

Some terms you may hear from vUSN pilots are:

ANGELS – meaning thousands of feet. If they call in saying Angels 4, they're saying 4,000. Angels 4.5 is 4,500 feet.

BINGO – Proceed direct to specified field. Bearing, distance and destination shall be provided. Used for minimum fuel situations. IE, Bingo, bearing 350, 100, Andrews Air Force Base.

BRC – Base Recovery Course – Ship or runway's magnetic heading during flight operations.

CATCC – Carrier Air Traffic Control Center

CCA – Carrier Control Area – Includes 50nm around the ship and controlled by Marshal. Aircraft contacting Marshal shall identify it by the name of the ship and "Center". IE, "Warhawk Center".

CCZ – Carrier Control Zone – When VMC, this is an area 5nm around a ship and controlled by the airboss. Airboss is not ATC. Airboss takes aircraft and places them in the overhead break, separation being done by Marshall and Approach controllers in CATCC before going to Airboss.

CLEAN UP – Gear and flaps are raised to flight status.

DELTA – Orbit overhead. Continuous 360 degree circles.

DIRTY UP – Gear and flaps are lowered.

KILO – Pilot is reporting in mission readiness status

POPEYE – Pilot is in IMC

SWEET LOCK AND COMMS – Pilot receiving ship's TACAN signals and/or visual sighting of the ship and has communication with Marshal or Airboss.