DIGITAL COMBAT SIMULATOR

DCS: SUPER CARRIER

for DCS World

Operations Guide

EAGLE DYNAMICS

Updated 14 June 2021

DCS SERIES

Contents

LATEST CHANGES

Significant changes to the guide will be noted on this page. Changes may be identified by a black bar next to the new or revised text as shown here in the right margin.

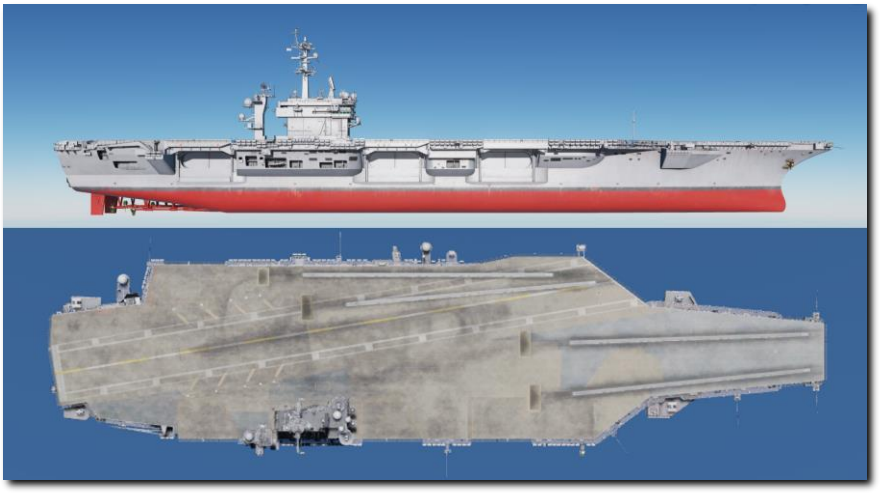
15 Apr 2020 – First edition of the DCS: Supercarrier Operations Guide

THE NIMITZ CLASS AIRCRAFT

US Navy Photo
by MC3 Dylan Lavin

Overview

The Nimitz class aircraft carrier (CVN) is a set of ten nuclear powered aircraft carriers currently in service with the US Navy. The general arrangement of these ships is like the previous Kitty Hawk class with a large 4.5-acre flight deck with an island structure on the starboard side reaching nearly 20 stories tall. The angled deck used for landing is canted approximately 14° to port and is almost 800 feet long. Four high speed aircraft elevators, each more than 4,000 square feet, bring planes to the flight deck from the hangar below.



- Displacement: 72,916 tons light, 96,000 - 102,000 full load.
- Length: 1040 feet along the flight deck (317 meters).
- Beam: 252 feet (76.8 meters).
- Speed: 30+ knots (34.5+ miles per hour).
- Power Plant: Two nuclear reactors, four geared steam turbines, four propellers (thirteen to fifteen years between refueling or 800,000 to 1,000,000 miles).
- Complement: 3,200 regular ship's compliment + 2,480 Air Wing personnel.
- Defense: Four NATO Sea Sparrow, three to four 20mm Vulcan Phalanx CIWS.
- Air Wing (including legacy): 70-80 aircraft including F-14s, F/A-18s, EA-6Bs, E-2Cs, S-3A/Bs, C-2s, SH-60Fs, HH-60Hs.

The DCS: Supercarrier module represents the Theodore Roosevelt subclass of the Nimitz carrier, often referred to as the improved Nimitz class. The hulls available here include:

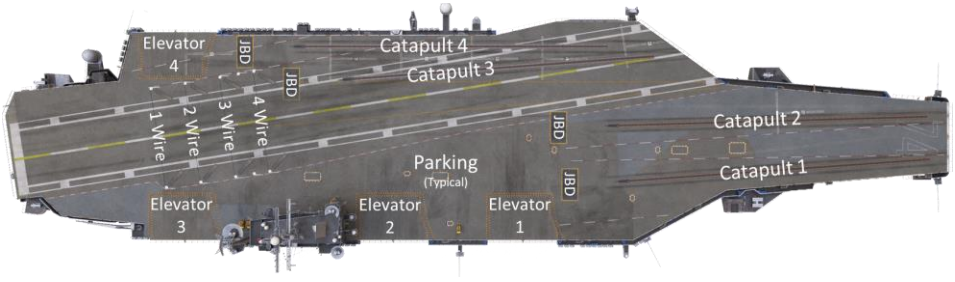
CVN-71 Theodore Roosevelt. (*TR, Big Stick*) Date commissioned: 25 Oct 1986

CVN-72 Abraham Lincoln. (*Abe*) Date commissioned: 11 Nov 1989

CVN-73 George Washington. (*The Spirit of Freedom, GW, G-Dub*) Date commissioned: 04 Jul 1992

Flight Deck Layout and Equipment

The enormous flight deck of a Nimitz class carrier is the core of its offensive capability. During flight operations, it is regarded as one of the most dangerous places in the world to work.



Catapults

Four catapults are available to 'slingshot' aircraft off the deck and into the air. Catapults one and two are located on the bow while catapults three and four are located on the waist. Together, on average these can launch one aircraft every 20 seconds. The launch is initiated by personnel situated in the Integrated Catapult Control Station (ICCS), also called the "bubble". This is a small dome located between catapult 1 and 2 on the bow and left of catapult 4 on the waist.

These are steam powered catapults with two cylinders running the length of each track. A piston on each cylinder connects to a shuttle that extends out of each track. The launching aircraft taxis so the launch bar at its nose wheel connects to the shuttle. At launch, high pressure steam is ported into the cylinders. This forces the shuttle down the track at high speed, launching the aircraft. A water brake slows the shuttle at the end of the run so it can be retracted for the next launch.

Jet Blast Deflectors

These heavy-duty panels are located behind each catapult to deflect high speed exhaust produced by launching aircraft's engines. Hydraulic cylinders raise each panel into place upward at a 45° angle. A seawater cooling system is installed in each to prevent damage from hot engine exhaust. These are retracted when not in use and sit flush with the deck.

Arresting Gear

Four steel arresting cables, also known as cross-deck pendants, span the landing area. The aircraft's tailhook connects to one of these cables on touchdown, hauling the aircraft to a stop in about 300 feet.

The cables are made of braided steel strands with a polyester core for flexibility. Each end is connected to an arresting engine below deck via a purchase cable. The arresting engines are hydro-pneumatic systems that use a ram and fluid within a cylinder to absorb and disperse the energy of the arrestment.

Cables are numbered one through four from back to front. Although there are four cables, the visual approach aids are calibrated so the aircraft will catch the three wire on a well-executed approach. Landing short at the one wire risks a ramp strike at the end of the ship. Landing long at the four wire risks missing the cables altogether, known as a ‘bolter’.

Hangar Bay

The hangar bay is located two decks below the flight deck and spans approximately two-thirds of the total length of the carrier. The bay is divided into three areas separated by massive sliding doors that are intended to limit the damage in the event of a fire or explosion.

The hangar bay is used for aircraft maintenance, as well as spare parts and equipment storage.

Elevators

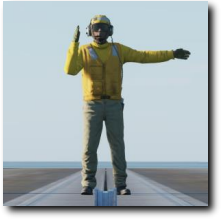
Four large elevators provide for movement of aircraft to and from the hangar bay and flight deck. Each can hold two aircraft or about 150,000 lbs. of equipment.

In addition to the four main elevators, there are several small weapons elevators located around the flight deck.

Flight Deck Personnel

The DCS: Supercarrier module includes deck crew who will direct you into position on the catapults and perform steps necessary to launch your aircraft. Additional crew members may also be placed on deck by mission designers.

All personnel on the flight deck wear colored jerseys that indicate their role.



Yellow Shirts

These include the Plane Directors who will guide you around the deck and into position for launch. All taxi guidance comes from these personnel.

Other yellow shirts include Flight Deck Officers, Arresting Gear Officers, Catapult Officers (Shooters), Catapult Spotters and Aircraft Handling Officers.

Green Shirts

You will encounter these personnel during launch as Catapult and Arresting Gear crews position the holdback bar and ensure proper attachment to the catapult shuttle. Maintenance personnel of various specialties may also be on hand to troubleshoot last minute problems with the aircraft.

Other green shirts include Helicopter Landing Signal Enlisted (LSE), Cargo-handling personnel, Ground support equipment troubleshooters, Hook runners and Photographers mates

Brown Shirts

These include Plane Captains and Line Petty Officers. Aircraft general maintenance and servicing is performed by these personnel. They are responsible for the safe operation of the aircraft in flight and are often referred to as ‘owning’ the aircraft.

Blue Shirts

These personnel position aircraft on the deck when they are not being taxied by the pilot. They include Aircraft handlers (pushers, chockers, chainers, etc.), Tractor Drivers, Messengers and Phone Talkers and Elevator Operators.

Purple Shirts

These are the Fueling personnel who are responsible for safely refueling aircraft and equipment on deck. This is an important job due to the extreme risk fire poses to a crowded flight deck.

Red Shirts

These are the Aviation Ordnancemen who build, test, transport, and load weapons on the aircraft. They also test and maintain the aircraft gun systems, as well as avionics and release equipment used to employ weapons in the air.

Crash and salvage crews and Explosive Ordnance Disposal (EOD) personnel are also red shirts.

White Shirts

You will encounter these personnel during launch as Final Checkers give your aircraft a last-minute look for problems.

The Landing Signal Officers (LSO) are also white shirts. For more on this, see the section on the LSO Station below.

Other white shirts include Safety personnel, Medical personnel, Quality Assurance personnel and Air Transfer Officers (ATO).

Instrument Approach Equipment

The aircraft carrier is a floating airport, complete with all the equipment necessary to conduct instrument approaches. See the section on mission editor features for information on how to set these up in a mission.

Tactical Air Navigation System (TACAN)

The TACAN system provides relative bearing and/or slant range distance to a selected TACAN station (land, ship, or aircraft). TACAN range depends on aircraft altitude Line of Sight (LOS) to the station but can have a maximum range of 200 miles for an airborne station and 390 miles for a surface station. Each TACAN station has a three-letter identifier which is used to identify the beacon.

The ship's TACAN is used primarily for determining its position while on approach or establishing a holding pattern. The TACAN is referred to as "father" while the carrier is referred to as "mother".

Instrument Carrier Landing System (ICLS)

US Navy and Marine Corps carrier-based aircraft are equipped with the AN/SPN-41A Instrument Carrier Landing System (ICLS). This operates much like a traditional ILS system, but it is only operational for US aircraft carriers.

Using the ICLS is a matter of setting up the correct aircraft carrier ICLS channel and following the localizer and glideslope beams to within visual distance of the IFLOLS visual reference at the ship.

The azimuth transmitter is installed at the stern of the ship, slightly below the centerline of the landing area. The elevation transmitter is located above the flight deck, aft of the island.

The ICLS is referred to as "bullseye" to differentiate it from the ACLS.

Automated Carrier Landing System (ACLS)

The AN/SPN-46 ACLS is like the ICLS in that it displays "needles" that provide approach guidance information to the aircrew. But unlike the ICLS, the system is gyro-stabilized to provide accurate glideslope and azimuth data regardless of deck movement in heavy seas. Up to two aircraft may be controlled by the system simultaneously.

The ACLS has three modes for approach:

Mode I. This mode provides for an automatic, hands off approach. Command and error signals are transmitted to the aircraft from the ACLS. The aircraft then translates them into the appropriate control actions to stay on the proper approach path all the way to landing. (**Mode 1a** is a sub-mode where the pilot takes over the approach after visual acquisition of the IFLOLS.)

Mode II. This mode is like a conventional ILS approach. Glideslope and azimuth errors are transmitted to the aircraft and shown on a display. The pilot manually 'flies the needles' to stay on the proper approach path.

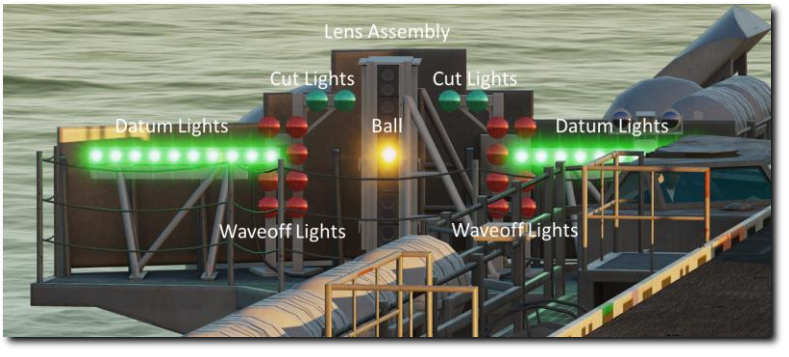
Mode III. This is known as a Carrier Controlled Approach (CCA). No data is transmitted directly to the aircraft. The approach controller provides verbal azimuth and glideslope information to the pilot, who flies the approach manually based on this guidance.

See the applicable aircraft manual for information on system operation and available modes.

Improved Fresnel Lens Optical Landing System (IFLOLS)

This device is mounted on the left side of the carrier to provide the pilot with visual glidepath information during the final phase of the approach. The system displays a bright orange 'ball' that is dynamically stabilized to compensate for ship's pitch, roll and heave motion. The system is normally set for a 3.5° glideslope targeting the 3-wire.

The ball appears aligned between two horizontal datum lights when the pilot is approaching on the optimum glide path. If the ball is above the datum lights the aircraft is above the glidepath. If the ball is below the datum lights, the aircraft is below glidepath.



Lens Assembly. The lens assembly is a vertical box that contains 12 fiber optic light cells. The aircraft's position on the glidepath determines which cell is visible to the pilot. The upper cells are amber in color while the bottom two are red. If a red lens is visible, the aircraft is dangerously low.

Datum Lights. Green datum lights are mounted horizontally to the lens assembly with ten lights on each side. The position of the ball in reference to the datum lights provides the pilot with glideslope information. If the ball is illuminated above or below the datums, the aircraft is high or low respectively.

Cut Lights. Mounted horizontally and centered above the lens box are four green cut lights. The cut lights are used by the LSO to communicate with the aircraft during Zip Lip (no radio) operations. As the aircraft approaches the groove, the LSO will momentarily illuminate the cut lights to indicate a "Roger ball" call. Subsequent illumination of the cut lights indicates a call to add power.

Waveoff Lights. Waveoff lights are mounted vertically on each side of the lens box. These red lights are controlled by the LSO. When they are illuminated, the aircraft must immediately execute a waveoff. The LSO will initiate a waveoff any time the deck is foul (people or equipment in the landing area) or an aircraft is not within safe approach parameters.

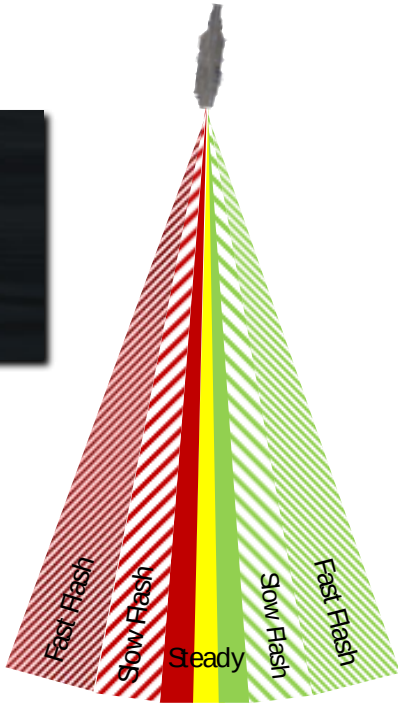
See the LSO Station section for additional information on related displays and controls.

Long-Range Laser Lineup System

The Long-Range Laser Lineup System uses eye-safe, color-coded lasers to provide visual lineup information to approaching aircraft. These low intensity lasers are projected aft of the ship and are visible out to 10 miles at night.

The color of the laser light and rate at which they flash indicate the pilot's position in relation to the angled deck's centerline.

- Steady Amber – within 0.5° of centerline
- Steady Green – 0.5 – 0.7° right of centerline
- Slow Flashing Green – 0.75 – 4.0° right of centerline
- Fast Flashing Green - 4.0 – 6.0° right of centerline
- Steady Red – 0.5 – 0.7° left of centerline
- Slow Flashing Red – 0.75 – 4.0° left of centerline
- Fast Flashing Red - 4.0 – 6.0° left of centerline



Additional Supercarrier Module Assets

The new and upgraded features in the DCS: Supercarrier module focus on the Nimitz Class carriers, but other naval assets have received upgrades or additions with this module. These include the all new Arleigh Burke Class guided missile destroyer (right) and a new model for the Admiral Kuznetsov aircraft carrier (left) that was already included with DCS: World.

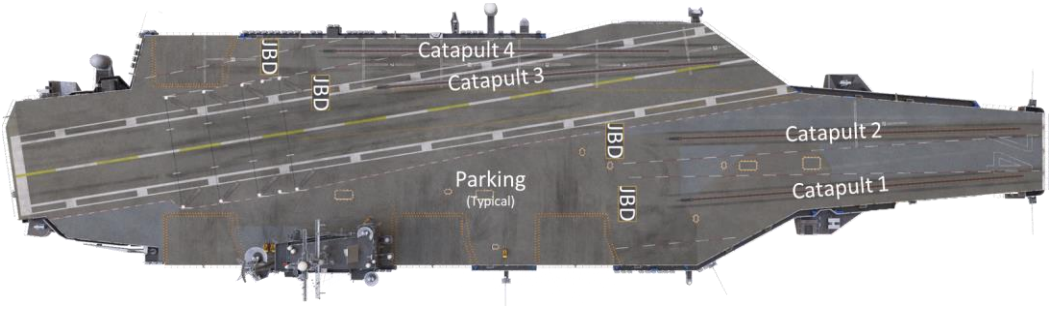
Left to right: Admiral Kuznetsov CV, Nimitz Class CVN, Arleigh Burke Class DDG

LAUNCH OPERATIONS

US Navy Photo
by MC2 Janweb B. Lagazo

Flight Deck Procedures

When you enter the aircraft, the assigned catapult will be displayed at the top right of the screen. Catapults 1 and 2 are on the bow and catapults 3 and 4 are on the waist. Taxi to the directed catapult using small power inputs while using nosewheel steering in high gain.



Once behind the Jet Blast Defector (JBD) of the catapult you will launch from, follow the signals given by the Taxi Director.

Catapult Procedures

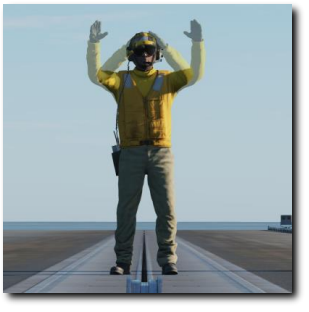
To ensure proper spotting on the catapult, you must follow the signals from the Taxi Director precisely. The normal sequence for catapult operations is as follows:

1. **Unfold wings.** When directed, spread the wings using the applicable aircraft controls.

Unfold Wings

2. **Align with catapult track.** When directed, slowly move forward of the JBD. The Taxi Director will provide signals for left or right turns to align your nosewheel along the catapult track.

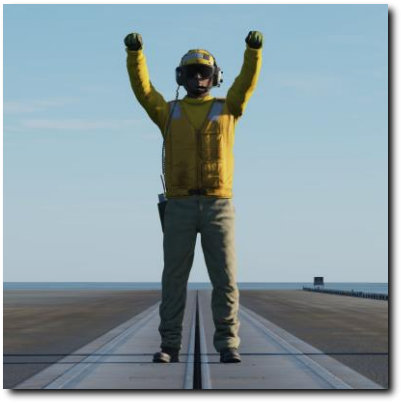
Turn Left



Taxi Forward

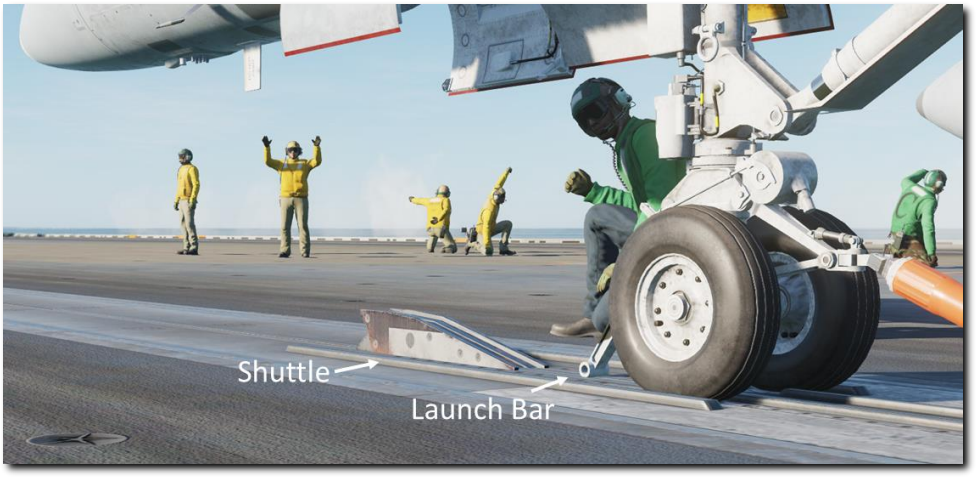
Turn Right

3. **Stop and extend launch bar.** When directed, stop and hold the brakes. Extend the launch bar using applicable aircraft controls.



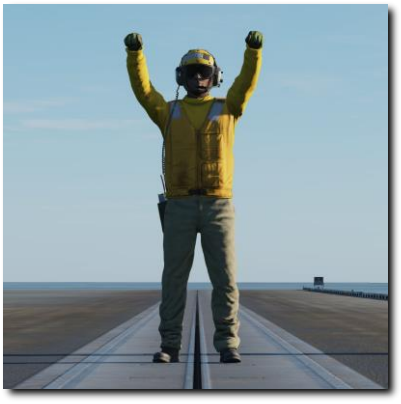
Stop

Extend Launch Bar



4. **Connect to catapult shuttle.** Following the Director's signals, taxi forward slowly to position the launch bar over the shuttle. Significant power, as much as 80-85% RPM, may be required. When the launch bar drops over the shuttle, the aircraft will be stopped as the holdback engages the catapult buffer. Reduce power to idle.

Taxi Forward



Stop

5. **Seat launch bar in shuttle.** When directed, raise the launch bar to seat it in the catapult shuttle. Note that the bar will not fully retract until it is clear of the shuttle after launch.

Raise Launch Bar

6. **Run up engines and perform final checks.** The Director will pass control to the Catapult Officer, who will signal for engine run-up. Check the engine instruments and monitor the caution and warning lights. Wipeout the controls and verify the full throw of the stick and rudder in all directions.

Run Up Engines

7. **Select 'SALUTE' from radio menu.** When ready for launch, give the 'SALUTE' command from the radio menu or keyboard command **[LCtrl+LShift+S]**. The Catapult Officer will make final checks, looking fore and aft, and then touch the deck.

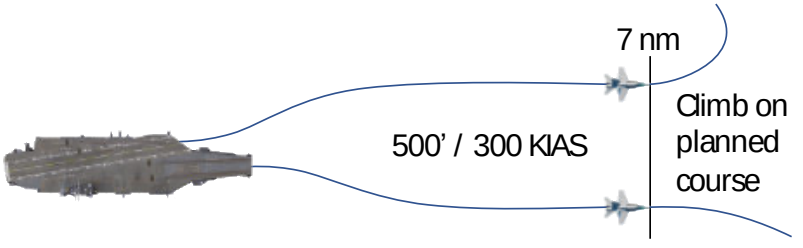
Launch

8. **Launch.** The catapult will fire, and the aircraft will accelerate, reaching end speed in about two seconds. As the aircraft clears the end of the deck, rotate to a nose up attitude and establish a positive rate of climb. Gear and flaps will be raised in accordance with the specific aircraft's procedures.

Case I Departure

Case I departures are flown during the day when weather conditions allow departure under visual flight rules (VFR). The weather minimums are a cloud deck above 3,000 feet and visibility greater than 5 miles.

Once the aircraft clears the catapult and a positive rate of climb is established, execute a clearing turn to stay clear of the ship's path. Climb to 500 feet and fly parallel to the ship's heading, or base recovery course (BRC). Continue straight ahead at 500 feet and 300 KIAS paralleling BRC until 7 miles from the carrier. At that point, climb along the planned route.

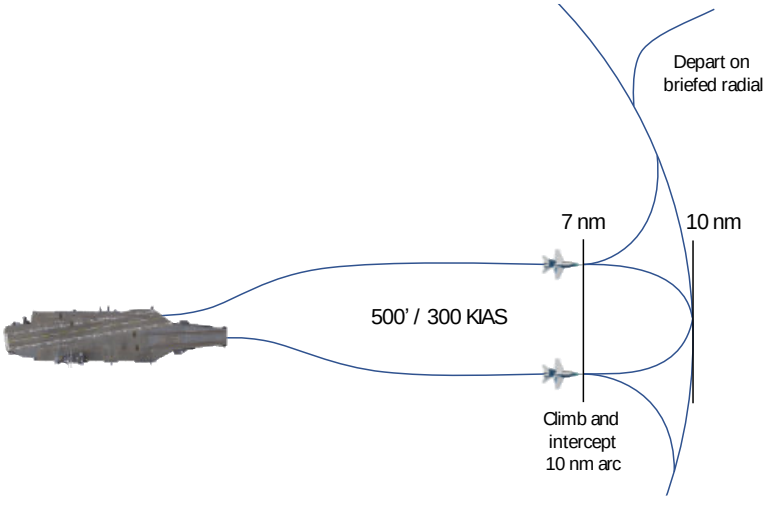


Case II Departure

Case II departures are flown during the day when visual conditions are present at the carrier, but a controlled climb through the clouds is required. The weather minimums are a cloud deck above 1,000 feet and visibility greater than 5 miles.

After the clearing turn, proceed straight ahead at 500 feet and 300 KIAS paralleling the BRC as on Case I. At 7 miles from the carrier, turn to intercept the arc running 10 miles from the carrier, staying below the cloud deck.

Stay on this 10-mile arc until you reach the briefed departure radial. Climb on that course maintaining 300 KIAS until clear of the clouds.

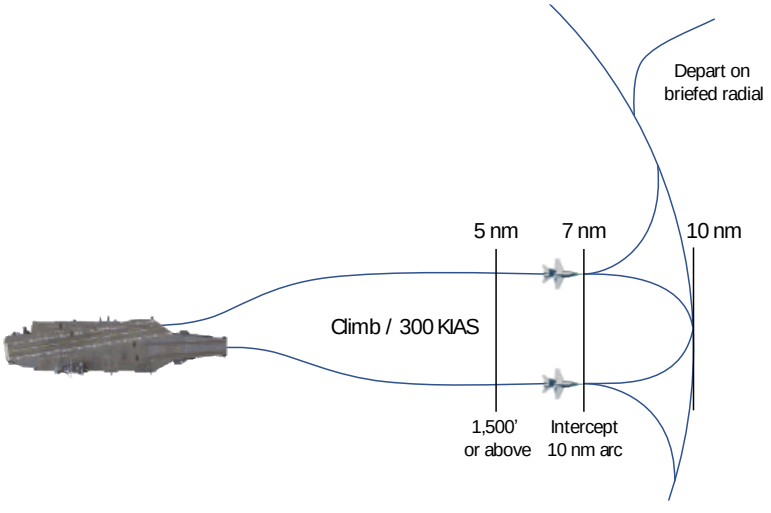


Case III Departure

Case III departures are flown at night and when weather conditions are below the minimums of 1,000 feet cloud deck and 5 miles visibility. A controlled climb is maintained throughout the departure.

The aircraft will launch with a minimum launch interval of 30 seconds between aircraft. Following the launch, climb straight ahead at 300 KIAS, crossing 5 nautical miles from the carrier at 1500 feet AGL or above.

At 7 nm from the carrier, turn to intercept the 10 nm arc. Continue climbing along the arc until you reached the briefed departure radial. Continue to climb on that course until clear of the weather.



RECOVERY OPERATIONS

US Navy Photo
by MC3 Mark J. Rebilas

Overview

The recovery process starts on entry to the Carrier Control Area, or CCA. This is a fifty-mile radius circle around the carrier where standardized procedures are followed to quickly recover large numbers of aircraft with as little communication as possible.

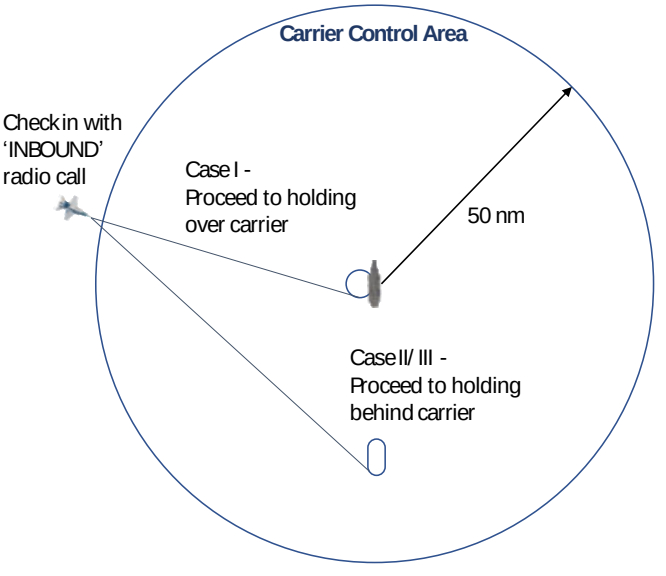
Once inside the CCA, check in on Marshal frequency with call sign, position, altitude, and fuel state. Marshal will provide recovery holding instructions and pass the ship's weather, altimeter setting and ship's heading (BRC).

Three different types of recovery can be expected depending on the current weather conditions:

Case I: This is a daytime visual recovery flown in when the cloud deck is higher than 3,000 feet and visibility is greater than 5 miles. Aircraft proceed to a holding stack over the carrier. Case I recoveries are used to the maximum extent possible.

Case II: Case II recoveries are flown when weather conditions require instrument flight during the descent but allow visual flight near the carrier. Case III procedures are used until the ship is in sight, at which point, Case I procedures will be used. The minimum weather requirements are a 1,000-foot ceiling and 5-mile visibility.

Case III: This instrument recovery is used at night or when the weather is below Case II minimums. Case II and III recoveries are flown from a marshal stack behind the carrier.

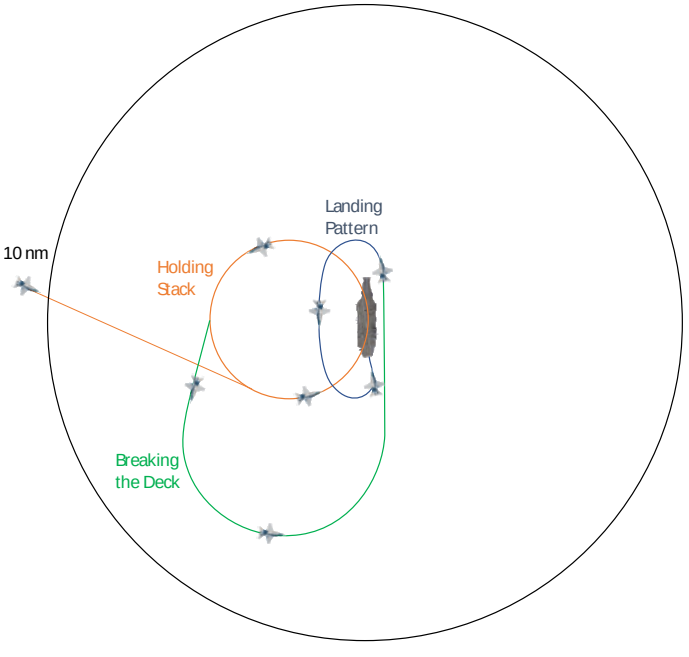


Case I Recovery

Case I recovery begins when you contact the carrier Marshal with an 'INBOUND' radio command. After receiving direction from Marshal, you will set up to enter the holding pattern over the carrier. At 10 miles, you should have the carrier in sight and report 'SEE YOU AT 10' over the radio. The Marshal controller will hand you off to the tower and you will enter the holding stack.

The tower will clear you to leave the holding pattern and commence your landing approach, known as 'breaking the deck'. You will descend from holding and fly by the carrier just outboard on the starboard side at 800 feet. You will give a 'KISS OFF' command to your flight and execute an overhead 'break' to the left and enter the landing pattern.

At ¾ nm behind the ship, you will enter 'the groove' and report in with the Landing Signal Officer (LSO) with a 'BALL' radio call. You will fly the rest of the approach and landing based on visual indications on the IFLOLS ball and verbal instructions given by the LSO.



If all goes well, you will catch one of the arresting wires with your tailhook and taxi to parking. If not, you will either 'waveoff', abort the approach and reenter the landing pattern, or 'bolter', touch down on the deck and reenter the landing pattern.

Let us have a closer look at each phase in sequence.

Marshal

At 50 miles or closer, you should select **'INBOUND'** from the ATC carrier radio menu. Upon doing so, the following message is sent from you to the marshal controller:

"Marshal, [SIDE NUMBER] holding hands with [SIDE NUMBER], marking mom's [BEARING FROM SHIP TO PLAYER] for [RANGE], angels [ALTITUDE], [NUMBER IN FLIGHT], low state [REMAINING FUEL]."

The carrier MARSHAL will respond with:

"[SIDE NUMBER], mother's weather is [VISIBILITY], [CLOUDS], altimeter [PRESSURE]. CASE I recovery expected BRC is [HEADING OF CARRIER]. Report a see me at 10."

You will automatically acknowledge with:

"[SIDE NUMBER]."

See You at 10

After the initial check in with Marshal, proceed directly to the carrier and enter overhead holding at your squadron's holding altitude. Altitudes are assigned in 1,000-foot increments starting at 2,000 feet above the carrier, so your holding altitude could be 2,000 feet, 3,000 feet, 4,000 feet, and so on. Aircraft returning for Case I recoveries must be established at their holding altitudes no later than 10 nautical miles from the carrier.

Once you are within 10 miles and visual contact is established, you should select **'SEE YOU AT 10'** from the ATC carrier radio menu item.

You will send:

"[SIDE NUMBER] see you at 10."

Marshal will respond with:

"[SIDE NUMBER], update state, go tower."

You automatically respond with:

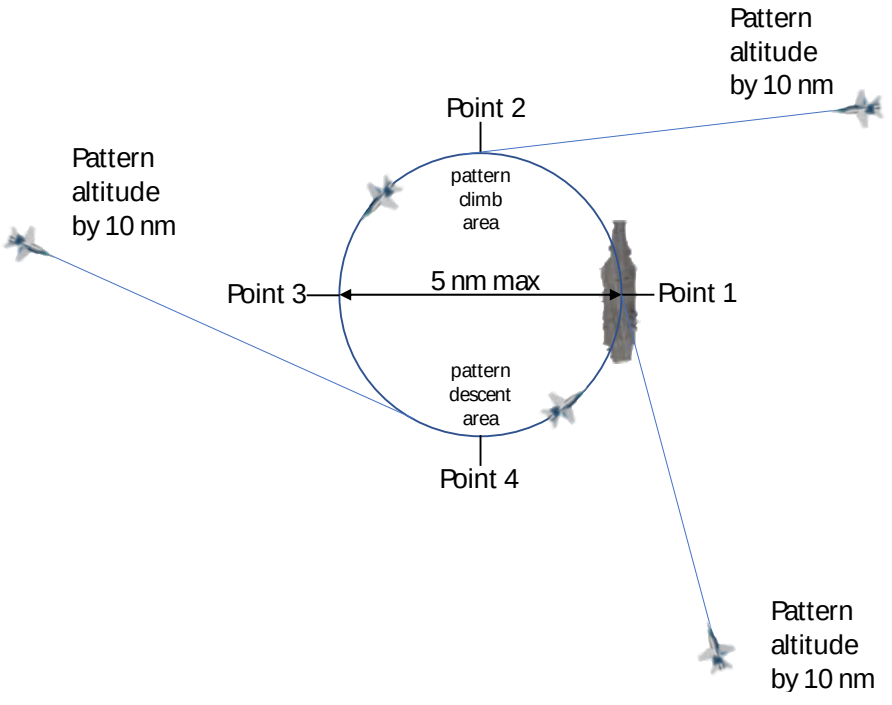
"[SIDE NUMBER], [FUEL REMANING]"

You will then proceed to holding and enter the pattern at the outside of the turn. (See the visual aid below.) The next radio call will happen automatically when you enter the holding pattern and are within 3 miles of the carrier.

Holding Pattern

The overhead holding pattern is a left-hand pattern, with Point 1 located directly overhead the carrier and Points 2, 3 and 4 following in 90° increments. This holding pattern is often referred to as the "stack". All aircraft must remain within 5 nm of the carrier and no lower than 2,000 feet AGL.

Any climbs must be accomplished between points 1 and 3 while any descents must be accomplished between points 3 and 1.



While holding, the flight will remain at max conserve fuel flow unless briefed otherwise.

Aircraft in overhead holding will stagger their intervals to ensure equal spacing from all flights at the same altitude. If there are two total flights, then they should be 180° apart. Three flights should be 120° apart. Four flights will be 90° apart.

You will leave the holding pattern, or 'break the deck' on the 'Charlie' signal from the tower.

Breaking the Deck

Once you are within 3 nm of carrier and enough interval exists between you and other landing aircraft, you will automatically send:

> **"[TOWER], [SIDE NUMBER], overhead, angels [ALTITUDE], [NUMBER IN FLGHT], low state [REMAINING FUEL]."**

The tower responds with:

> **"[SIDE NUMBER], Tower, Roger. BRC is [CARRIER HEADING], your signal is Charlie."**

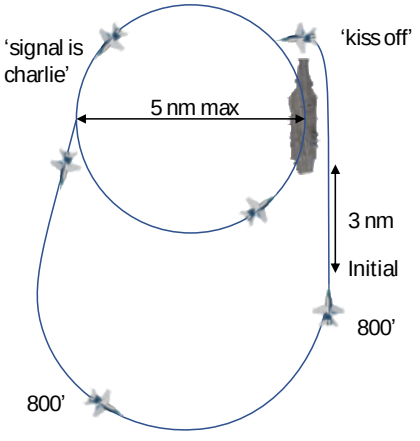
You will auto-respond with:

> **"[SIDE NUMBER]."**

At this point, the next communication will be with the LSO at ¾ mile behind the carrier.

The flight will depart holding from outside point 3 and descend to 800 feet. An arcing turn will be flown to the initial point 3nm astern of the ship. The flight will continue inbound and fly just outboard the starboard side of the

ship at 800 feet, paralleling BRC. The radio command 'KISS OFF' should be given to your flight and the landing pattern should be entered.

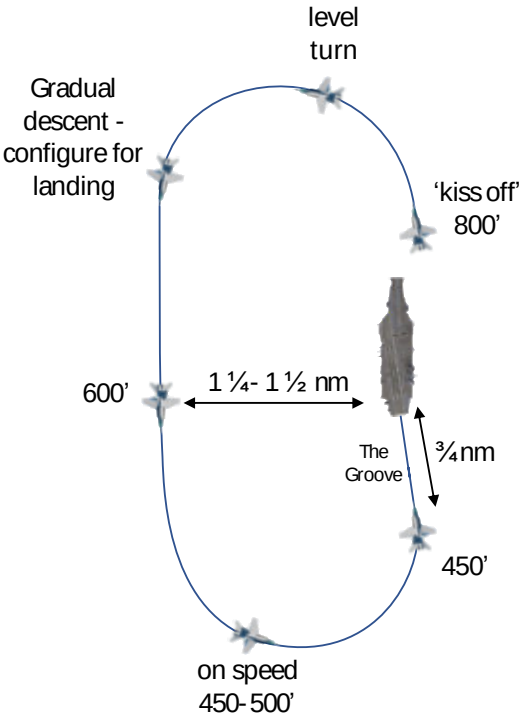


Overhead Break

The landing pattern is entered with the radio command **'KISS OFF'** to your flight followed by a sharp break turn to the left. The members of your flight will continue ahead and execute their own break to enter the pattern behind you. A 15-20 second break interval will correspond to a proper 40-60 second landing interval.

If you are unable to break before 4 nm, you will have to depart and reenter the pattern. To accomplish this, maintain 800 feet until 5 nm from the carrier, then climb to 1,200 feet and execute a left-hand descending arc back to the initial.

Break altitude is 800 feet, and all breaks will be level. When established on downwind, you will descend to pattern altitude of 600 feet, configure for landing and closely monitor the abeam distance. The optimal distance varies from aircraft to aircraft but 1 ¼ to 1 ½ miles generally allows a smooth entry into the next phase called 'the groove'.



In the Groove

You will continue to descend in a left-hand turn, rolling out wings level ¾ nm astern of the ship in line with the angled deck. This phase will be flown based on the state of the IFLOLS ball and verbal directions from the LSO.

Call the Ball

When your aircraft is in the groove (wings level) and you have the ball in sight, you should select **'BALL'** from the ATC carrier radio menu.

You will transmit: **"[SIDE NUMBER] [Ball] [FUEL STATE]"**

The LSO responds with: **"Roger ball"**

The LSO may also make these calls if your aircraft is not configured for landing:

- **"Wave off, gear"** – Your landing gear is not extended.
- **"Wave off, flaps**" – Your flaps are not configured for landing.

Clara

If you do not have the ball in sight, select **'CLARA'** from the ATC menu. The LSO will provide the following calls to get you on glidepath if necessary:

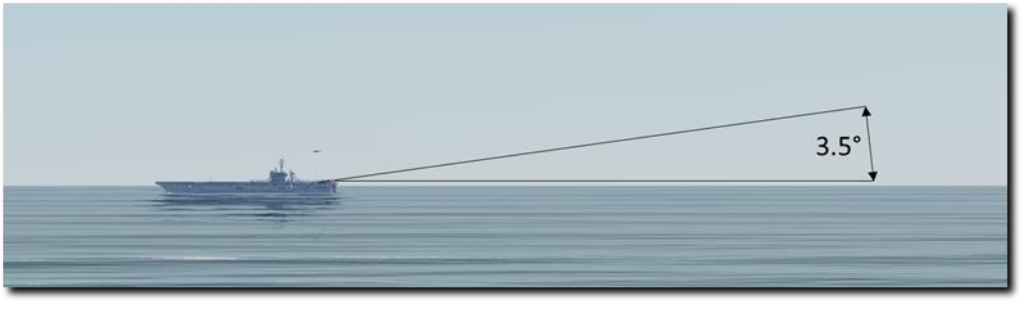
- **"You're high"** – You are far above the glidepath.
- **"You're low, POWER"** – You are far below the glidepath.

If you are still not within glidepath limits at ½ mile astern of the carrier the LSO will transmit **"Wave off, wave off, wave off"**. The IFLOLS waveoff lights will also flash red.

'Clara' may be transmitted automatically in some cases when you greatly exceed glidepath limits. **"Ball"** will be automatically transmitted once you are back within glidepath limits. The LSO will respond with **"Roger ball"**.

Inside ¾ Mile

When inside ¾ mile and the ball call has been made, direction from the LSO is based on your deviation from localizer centerline and 3.6° glidepath.



- No direction = under 1.7° left or right of localizer and less than 1.5° below and less than 2.5° above optimal glidepath
- Off centerline = greater than 1.7° left or right of optimal localizer centerline
- Off glidepath = greater than 1.5° below and greater than 2.5° above optimal glidepath
- Far off centerline = greater than 2.9° left or right of optimal localizer centerline
- Far off glidepath = 2.7° or greater below or 4.9° or greater above optimal glidepath

"You're high" – Aircraft is far above the glidepath.

"You're low, POWER" – Aircraft is far below the glidepath.

"You're lined up left" – Aircraft is far left of centerline.

"You're lined up right" – Aircraft is far right of centerline.

"You're fast" – Angle of attack is too low.

"You're slow" – Angle of attack is too high.

"Easy with the nose" – Aircraft has excessive pitch rate. (>5° per second)

"Easy with your wings" – Aircraft has excessive roll angle. (>20°)

"Easy with it" – Aircraft thrust changes are excessive. (>30% per second)

Inside ½ Mile

As you approach the carrier's stern, direction from the LSO becomes more precise.

"You're high" or **"You're high, bring it down"** or **"You're high, work it down."** – Aircraft is above glideslope more than 3 seconds.

"Power" (normal inflection) – Aircraft is below glideslope more than two seconds or aircraft on glideslope but is descending more than 1 degree per second for 2 seconds. If same call is made 2 seconds later: **"Power"** with more urgent inflection.

"power, Power, POWER" – Aircraft is far below glidepath and sinking rapidly.

"Easy with it" – Greater than 1 degree per second change in glidepath following a "power" call.

"Right for lineup" – Aircraft is left of centerline.

"Come left" – Aircraft is right of centerline.

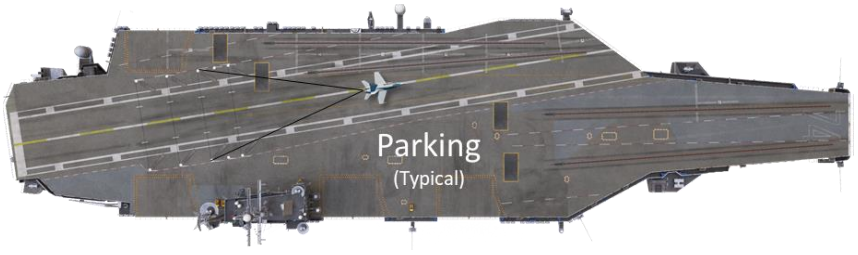
"Wave off, wave off, wave off" – Two or more of the above conditions are true at the same time for a 2 second or more duration or excessive glidepath and localizer deviation for more than 4 seconds.

"Wave off, wave off, wave off, foul deck" – Another aircraft is in the landing area

"Bolter, bolter, bolter" – Aircraft wheels touch and tailhook misses arresting cables.

Landing

Do not anticipate an arrested landing. When the aircraft touches down, advance the power to max and retract the speed brakes in anticipation of a bolter. Maintain max power until the aircraft comes to a complete stop. Then, release the brakes and allow the aircraft to be pulled back. The arresting wire will release from the hook and you will be free to taxi to a parking location.



The LSO will grade each landing and display the results at the top right of your screen. The format is [GRADE]: [MAIN ERRORS], [ERROR LOCATION], [WIRE CAUGHT].

A typical landing grade may look like this:

Transcription: “No grade. Drifted way right in close. Landed a little left in the wires. Caught number 4 wire.”

Grades:

- WO - Waveoff
- OWO - Own Waveoff
- _OK_ - Perfect pass
- OK - Reasonable deviations with good corrections
- (OK) - Fair. Reasonable deviations
- --- - No-grade. Below average but safe pass
- C - Cut. Unsafe, gross deviations inside waveoff window
- B - Bolter

Main errors:

- AFU - All “fouled” up
- DL - Drifted left
- DR - Drifted right
- EG - Eased gun (did not advance throttles to MIL/AB after touchdown)
- F - Fast
- FD - Fouled deck
- H - High
- LL - Landed left
- LO - Low
- LR - Landed right
- LUL - Lined up left
- LUR - Lined up right
- N - Nose
- NERD - Not enough rate of descent
- NSU - Not set up
- P - Power
- SLO – Slow
- TMRD – Too much rate of descent
- W - Wings

- LLWD - Landed left wing down
- LRWD - Landed right wing down
- LNF - Landed nose
- 3PTS - Landed 3 points

Distance marks placed after error:

- BC - Ball call (before first 1/3 of glideslope)
- X - At the start (first 1/3 of glideslope)
- IM - In the middle (middle 1/3 of the glideslope)
- IC - In close (last 1/3 of glideslope)
- AR - At the ramp
- TL - To land (between AR and first wire)
- IW - In the wires
- AW – After wires

Note 1: Parentheses **( )** around any symbol signifies “a little” (e.g., “(F)” means “a little fast”)

Note 2: Underline. For emphasis (e.g., “_H_” means “very high”)

Note 3: A square **[ ]** around any symbol indicates that a signal was not answered (e.g. “[BC]” means no ball call has been made)

Touch and Go & Bolters

The procedures for touch and go landings and bolters are identical. Continue to fly the ball all the way to touchdown. Upon touchdown, simultaneously advance power to max, retract speed brakes, and rotate to optimum AOA for takeoff. Maintain wings level and verify a positive rate of climb.

Once a positive rate of climb is established and your aircraft is forward of the bow, use a shallow right turn to parallel the BRC. Climb to pattern altitude (600 feet) and turn downwind with proper interval with other landing aircraft.

Waveoff

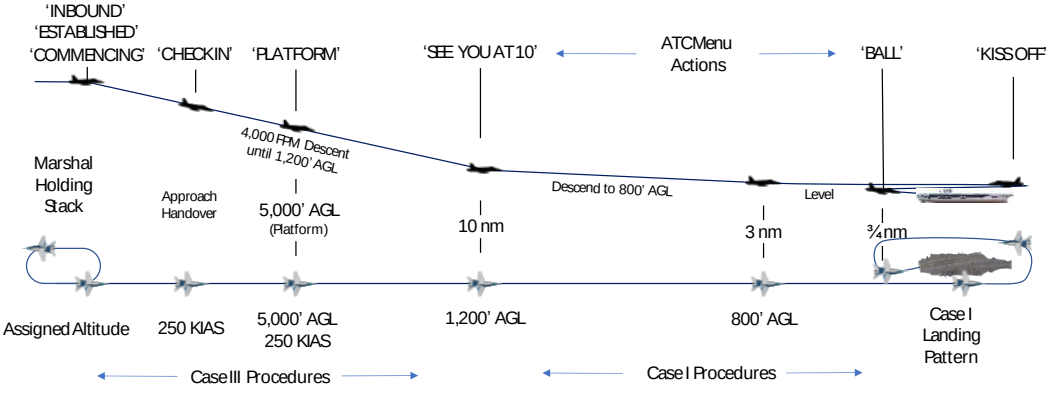
Procedures for a waveoff are the same as touch and go or bolter, except you will depart straight down the angled deck.

Case II Recovery

Case II recovery occurs during daylight hours when conditions may be poor on the approach but adequate for landing under visual flight rules. The cloud ceiling must be above 1,000 feet and visibility more than 5 nm.

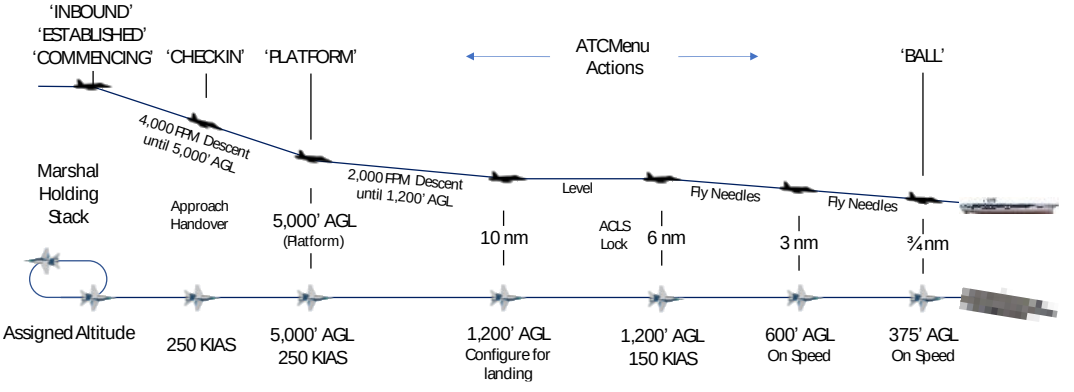
This can be thought of as a combination of Case I and Case III. The Case III procedures are used outside 10 nm and Case I procedures are used inside 10 nm.

For a CASE II recovery, you will radio “see you at 10” when the aircraft is 10 nm from the carrier just as on a Case I recovery. Radio control is transferred from the approach controller to the tower controller. At this point, the pilot performs an overhead break and landing. No Case I holding stack is required.



Case III Recovery

Case III recovery occurs when any cloud celling is below 1,000 feet or when visibility is less than 5 nm regardless of cloud ceiling. All night operations are conducted in Case III.



This approach starts with an 'INBOUND' call to the Marshal who will assign a holding location, holding altitude and an approach time. You will depart the holding stack at that approach time and radio 'COMMENCING' to the Marshal controller.

You will descend and check in with the Approach Controller. Reduce descent rate when passing 5,000 feet and report 'PLATFORM'. Level off at 1,200 feet.

At 10 nm from the carrier, configure for landing. You will reduce speed to pass 6 miles from the carrier at 150 KIAS. You will achieve an ACLS lock if applicable and fly the needles on approach. Expect to reach 600 feet at 3 miles from the carrier, on speed for landing.

At ¾ nm behind the ship, you report in with the Landing Signal Officer (LSO) with a 'BALL' radio call. You will fly the rest of the approach and landing based on visual indications on the IFLOLS ball and verbal instructions given by the LSO.

If all goes well, you will catch one of the arresting wires with your tailhook and taxi to parking. If not, you will either 'waveoff', abort the approach and reenter the landing pattern, or 'bolter', touch down on the deck and reenter the landing pattern.

Let us look more closely at each step.

Marshal

The first step for a Case II or III recovery is having your flight enter a marshal holding stack behind the carrier. At 50 miles or closer, you will select '**INBOUND**' from the ATC carrier radio menu. Upon doing so, the following message will be sent from you:

> **"Marshal, [SIDE NUMBER] holding hands with [FLIGHT MEMBERS], marking mom's [BEARING FROM SHIP TO PLAYER] for [RANGE], angels [ALTITUDE], low state [REMAINING FUEL]."**

Marshal responds with:

"[SIDE NUMBER], [SHIP CALLSIGN] marshal, CASE II/III recovery, CV-1 approach, expected BRC [CARRIER HEADING], altimeter [PRESSURE]. [SIDE NUMBER], marshal mother's [MARSHAL RADIAL BEARING] radial, [DISTANCE] DME, angels [ALTITUDE]. Expected approach time is [TIME]"

If a two-ship checks in during CASE III, the aircraft that intends to land first (and get the lower marshal altitude) should have their side number read first. Marshall will issue instructions to the first side number and after "readback correct" give marshal instructions to the second one.

You will automatically respond with:

"[SIDE NUMBER], marshal on the [RADIAL BEARING], for [RANGE] DME, angels [ALTITUDE]. Expected approach time [TIME]. Approach button is [CHANNEL]."

Marshal will reply:

"[SIDE NUMBER], readback correct."

The distance of the holding stack is calculated as one nautical mile for every 1,000 feet of altitude, plus 15. So, for example, if the aircraft is assigned a marshal stack altitude of 8,000 feet, the distance to the carrier is 23 nautical miles.

Altitude (ft)	**6,000**	**7,000**	**8,000**	**9,000**	**10,000**	**11,000**	**12,000**	**13,000**	**14,000**	**15,000**	**16,000**
Distance (nm)	21	22	23	24	25	26	27	28	29	30	31

Once you are at the directed altitude and within 20 miles of the marshal stack, you will select **'ESTABLISHED'** from the ATC carrier menu.

Upon doing so, the following message will be sent:

"[SIDE NUMBER], established angels [ALTITUDE]. State [FUEL LEVEL]."

Marshal will reply:

"[SIDE NUMBER], roger, state [FUEL LEVEL]."

Aircraft will fly the marshal holding pattern with 6-minute left-hand turns: two minutes turns and one-minute legs. Each flight (maximum of 2 aircraft per flight for Case II and one aircraft for Case III) will hold at offset patterns with 1,000 feet of separation. The lowest flight in the stack will land next.

Each aircraft will generally push to the carrier from the marshal stack at minimum intervals of 60 seconds. This provides at least 1-minute between each landing.

When you reach the assigned push time, you will select **'COMMENCING'** from the ATC carrier menu. The following message will be sent:

"[SIDE NUMBER] commencing, [ALTIMETER], state [FUEL LEVEL]."

Marshal will reply:

"[SIDE NUMBER], radar contact [DME] miles, expected final bearing [DEGREES]."

You will acknowledge with:

"[SIDE NUMBER]."

Once the aircraft leaves the marshal stack, it will descend at 4,000 feet per minute (fpm) at 250 knots until 5,000 feet altitude, at which point the descent rate is reduced to 2,000 fpm. This is maintained until 1,200 feet for CASE II.

For a CASE II recovery, you will auto-radio **"see you at 10"** when the aircraft is 10 nm from the carrier just as on a Case I recovery. Radio control is transferred from the marshal controller to the tower controller. At this point, the pilot performs an overhead break and landing. No holding pattern is required.

Approach

Shortly after leaving the marshal stack, you will be handed off to the Approach controller. Marshal will transmit:

[SIDE NUMBER], switch approach.

You will acknowledge with

[SIDE NUMBER].

At this point, control will be transferred from marshal to approach, and you must check in with the new controller. From the ATC carrier menu, you will select **'CHECK IN'**. Upon doing so, the following message will be sent:

"[SIDE NUMBER], checking in, [DISTANCE TO CARRIER] miles, [FUEL LEVEL]."

Approach replies with:

"[SIDE NUMBER], final bearing [BEARING]."

You acknowledge with:

"[SIDE NUMBER]."

At 5,000 feet AGL you will select **'PLATFORM'** from the ATC carrier menu. You will transmit:

"[SIDE NUMBER], platform."

Approach will acknowledge with:

"[SIDE NUMBER], roger."

When your aircraft intercepts final landing bearing, approach will transmit:

"[SIDE NUMBER] fly bullseye."

You will acknowledge with:

"[SIDE NUMBER]."

'Bullseye' refers to the Instrument Carrier Landing System (ICLS) carrier-based aircraft are equipped with. It functions identically to a land-based ILS system, where you will 'fly the needles', following the azimuth and glidepath guidance provided on the HUD or instruments. See the aircraft manual for the aircraft you are flying for a complete description of system operation.

At 10 nm, you should begin to reduce your speed and at 8 nm, you should configure for landing. At 6 nm, the aircraft should be on-speed.

The Long-Range Laser Lineup System (LRLLS) should be visible on the stern of the carrier. A steady amber light means you are aligned with the angled deck for landing. A green light means you are lined up right and a red light means you are lined up left.

The red and green lights flash at different rates to show how far off centerline you are. Slow flashing means you are slightly off centerline while fast flashing means you are far off centerline.

ACLS Lock

At 6-8 miles the approach controller will report:

"[SIDE NUMBER] final radar contact, [DISTANCE TO CARRIER] miles."

You will acknowledge with:

"[SIDE NUMBER]."

At around 6 nm, aircraft equipped with the Automated Carrier Landing System will acquire ACLS lock. Approach will then ask pilot to "say needles" to check ACLS alignment. Pilot responds by reporting how the aircraft must be flown to be centered. That is, if the aircraft is low and left the pilot responds, "up and right."

At ACLS lock on, the approach controller will transmit:

[SIDE NUMBER], ACLS lock on [DISTANCE TO CARRIER] miles, say needles.

You will reply automatically with:

[SIDE NUMBER], [GLIDEPATH] [LOCALIZER].

This is reference to the position of the ACLS circle on the HUD in relation to the velocity vector on the HUD. For example:

- If ACLS circle is below and to the right of the velocity vector, the message would be: **"305, down and right."**
- If ACLS circle is above and to the left of the velocity vector, the message would be: **"305, up and left."**
- If ACLS circle is level and to the right of the velocity vector, the message would be: **"305, on and right."**
- If ACLS circle is over the velocity vector, the message would be: **"305, on and on."**

Approach will respond with:

"[SIDE NUMBER], Concur, Fly Mode 2."

Approach will advise when you are approaching the final glidepath, usually at 4 miles:

"[SIDE NUMBER], approaching glidepath."

You acknowledge with:

[SIDE NUMBER].

In the Groove

At ¾ nm, the approach controller directs the pilot to "call the ball" with:

"[SIDE NDUMBER], [GLIDEPATH LOCATION], [COURSE LOCATION], ¾ mile, call the ball."

From the ATC carrier menu, you will select **'BALL'**. Upon doing so, the following message will be transmitted:

"[SIDE NUMBER], [AIRCRAFT TYPE] BALL, [FUEL STATE]."

Approach acknowledges:

"Roger ball, [WIND OVER DECK SPEED], [OPTIONAL DIRECTION]."

For example:

- If the wind over the deck speed is 25 knots and the wind direction is coming from greater than 5° to the right of the landing deck angle: **"Roger ball, 25 knots, starboard."**
- If the wind over the deck speed is 25 knots and the wind direction is coming from greater than 5° to the left of the landing deck angle: **"Roger ball, 25 knots, port."**
- If the wind over the deck speed is 25 knots and the wind direction is coming from greater than 3° to the right of the landing deck angle: **"Roger ball, 25 knots, axial."**

This phase will be flown based on the state of the IFLOLS ball and verbal directions from the LSO.

The LSO may make these calls if your aircraft is not configured for landing:

- **"Wave off, gear"** – Your landing gear is not extended.
- **"Wave off, flaps**" – Your flaps are not configured for landing.

Clara

If you do not have the ball in sight, select **'CLARA'** from the ATC menu. The LSO will provide the following calls to get you on glidepath if necessary:

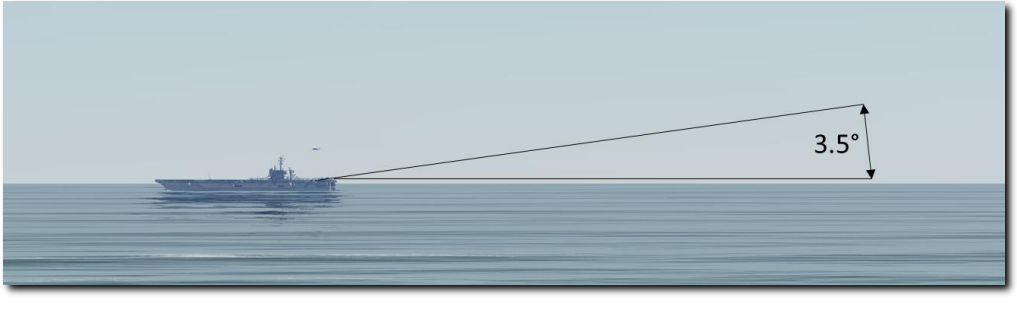
- **"You're high"** – You are far above the glidepath.
- **"You're low, POWER"** – You are far below the glidepath.

If you are still not within glidepath limits at ½ mile astern of the carrier the LSO will transmit **"Wave off, wave off, wave off"**. The IFLOLS waveoff lights will also flash red.

'Clara' may be transmitted automatically in some cases when you greatly exceed glidepath limits. **"Ball"** will be automatically transmitted once you are back within glidepath limits. The LSO will respond with **"Roger ball"**.

Inside ¾ Mile

When inside ¾ mile and the ball call has been made, direction from the LSO is based on your deviation from localizer centerline and 3.5° glidepath.



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- Off centerline = greater than 1.7° left or right of optimal localizer centerline
- Off glidepath = greater than 1.5° below and greater than 2.5° above optimal glidepath
- Far off centerline = greater than 2.9° left or right of optimal localizer centerline
- Far off glidepath = 2.7° or greater below or 4.9° or greater above optimal glidepath

"You're high" – Aircraft is far above the glidepath.

"You're low, POWER" – Aircraft is far below the glidepath.

"You're lined up left" – Aircraft is far left of centerline.

"You're lined up right" – Aircraft is far right of centerline.

"You're fast" – Angle of attack is too low.

"You're slow" – Angle of attack is too high.

"Easy with the nose" – Aircraft has excessive pitch rate. (>5° per second)

"Easy with your wings" – Aircraft has excessive roll angle. (>20°)

"Easy with it" – Aircraft thrust changes are excessive. (>30% per second)

Inside ½ Mile

As you approach the carrier's stern, direction from the LSO becomes more precise.

"You're high" or **"You're high, bring it down"** or **"You're high, work it down."** – Aircraft is above glideslope more than 3 seconds.

"Power" (normal inflection) – Aircraft is below glideslope more than two seconds or aircraft on glideslope but is descending more than 1 degree per second for 2 seconds. If same call is made 2 seconds later: **"Power"** with more urgent inflection.

"power, Power, POWER" – Aircraft is far below glidepath and sinking rapidly.

"Easy with it" – Greater than 1 degree per second change in glidepath following a "power" call.

"Right for lineup" – Aircraft is left of centerline.

"Come left" – Aircraft is right of centerline.

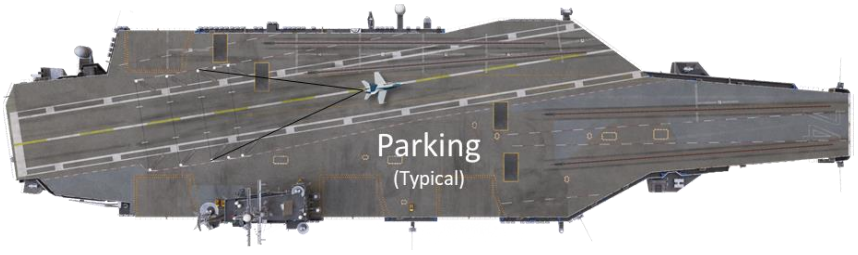
"Wave off, wave off, wave off" – Two or more of the above conditions are true at the same time for a 2 second or more duration or excessive glidepath and localizer deviation for more than 4 seconds.

"Wave off, wave off, wave off, foul deck" – Another aircraft is in the landing area

"Bolter, bolter, bolter" – Aircraft wheels touch and tailhook misses arresting cables.

Landing

Do not anticipate an arrested landing. When the aircraft touches down, advance the power to max and retract the speed brakes in anticipation of a bolter. Maintain max power until the aircraft comes to a complete stop. Then, release the brakes and allow the aircraft to be pulled back. The arresting wire will release from the hook and you will be free to taxi to a parking location.



The LSO will grade each landing and display the results at the top right of your screen. The format is [GRADE]: [MAIN ERRORS], [ERROR LOCATION], [WIRE CAUGHT].

A typical landing grade may look like this:

Transcription: “No grade. Drifted way right in close. Landed a little left in the wires. Caught number 4 wire.”

Grades:

- WO - Waveoff
- OWO - Own Waveoff
- _OK_ - Perfect pass
- OK - Reasonable deviations with good corrections
- (OK) - Fair. Reasonable deviations
- --- - No-grade. Below average but safe pass
- C - Cut. Unsafe, gross deviations inside waveoff window
- B - Bolter

Main errors:

- AFU - All “fouled” up
- DL - Drifted left
- DR - Drifted right
- EG - Eased gun (did not advance throttles to MIL/AB after touchdown)
- F - Fast
- FD - Fouled deck
- H - High
- LL - Landed left
- LO - Low
- LR - Landed right
- LUL - Lined up left
- LUR - Lined up right
- N - Nose
- NERD - Not enough rate of descent
- NSU - Not set up
- P - Power
- SLO – Slow
- TMRD – Too much rate of descent
- W - Wings

- LLWD - Landed left wing down
- LRWD - Landed right wing down
- LNF - Landed nose
- 3PTS - Landed 3 points

Distance marks placed after error:

- BC - Ball call (before first 1/3 of glideslope)
- X - At the start (first 1/3 of glideslope)
- IM - In the middle (middle 1/3 of the glideslope)
- IC - In close (last 1/3 of glideslope)
- AR - At the ramp
- TL - To land (between AR and first wire)
- IW - In the wires
- AW – After wires

Note 1: Parentheses **( )** around any symbol signifies “a little” (e.g., “(F)” means “a little fast”)

Note 2: Underline. For emphasis (e.g., “_H_” means “very high”)

Note 3: A square **[ ]** around any symbol indicates that a signal was not answered (e.g. “[BC]” means no ball call has been made)

Waveoff or Bolter

In the event of a waveoff or bolter, climb to 1,200 feet at 150 kts and raise the gear to save fuel, leaving flaps down. When instructed by approach, turn downwind. Perform the landing checks on downwind and notify approach with fuel state when abeam the ship. Expect a turn back to final 4-8 NM past abeam for another approach, lowering the landing gear as you start this turn to final.

LANDING SIGNAL OFFICER (LSO)

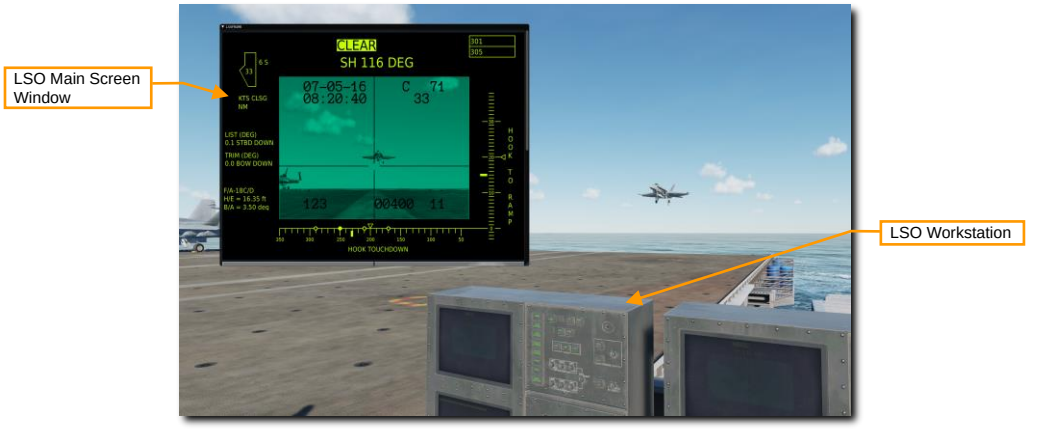
US Navy Photo
by MC3 Paolo Bayas

Overview

The DCS: Supercarrier module includes a fully functional Landing Signal Officer (LSO) station for directing players in a multiplayer setting or observing aircraft in a single player setting.

You may enter the LSO station with keyboard command **[LAlt+F9]**.

You will be transported to the LSO position with the LSO workstation console in front of you. A separate Pilot's Landing Aid Television (PLAT) Camera view will be opened in a separate window. This will be referred to here as the LSO Main Screen Window.



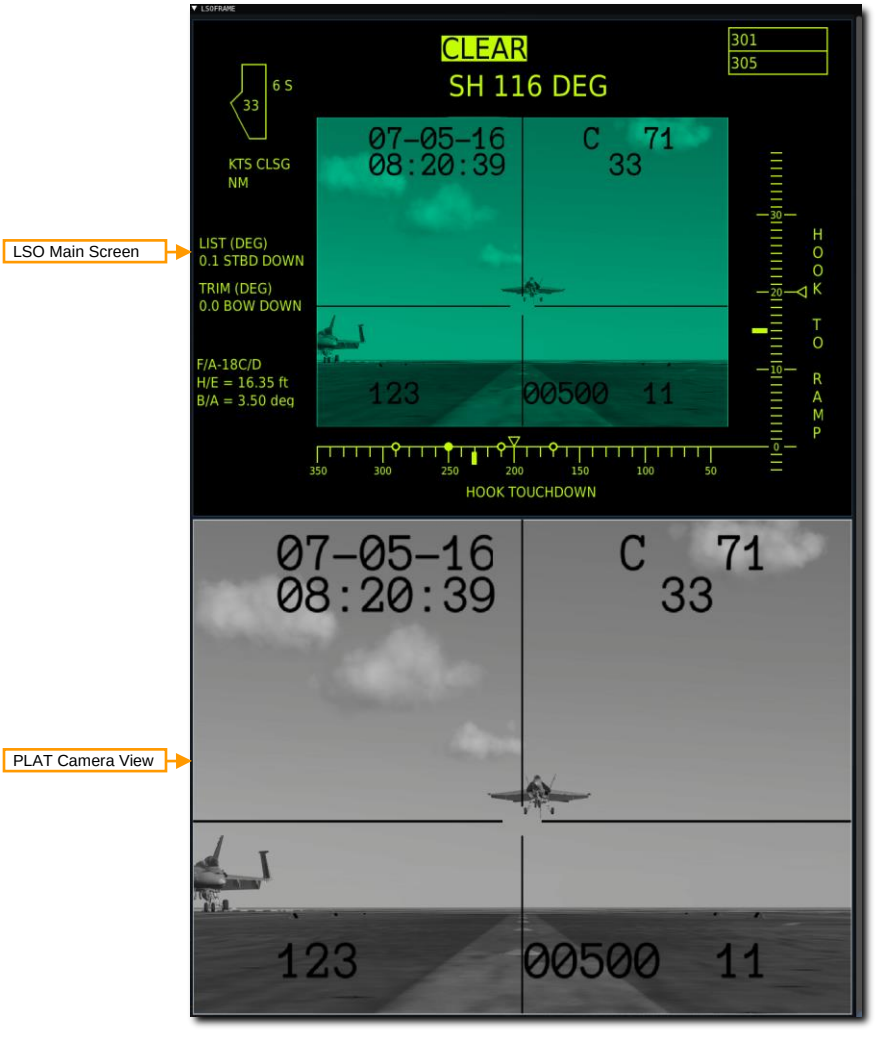
You may look around using standard DCS view controls. Use keyboard command **[LAlt +C]** to enable the mouse cursor and interact with the LSO Main Screen window.

LSO Main Screen Window

The LSO Main Screen window shows a live view from the PLAT camera surrounded by additional information on ship and aircraft status. You may open and close the window by clicking the top left. You may also reposition the window by clicking and dragging it to a new location.

The view may be scrolled up and down using your mouse wheel or by clicking and dragging the bar at the right side. The full LSO Main Screen is displayed at the top and a PLAT Camera view is displayed at the bottom.

This information is also available on the physical LSO consoles.



LSO Main Screen Display

The Main screen display shows information used to calibrate the IFLOLS optical landing system for the aircraft on approach. The data displayed here ensures the glidepath information presented to the pilot is accurate.

The PLAT camera view is also shown in the center of the display. Details on this will be shown in the next section.

Ship Symbol. In the center of the ship symbol is the wind over deck speed in knots. If the axial wind is from the left, P will be displayed to the left of the symbol it will indicate the wind speed and P (port). If the axial wind is from the right, S will be displayed to the right of the symbol and it will indicate wind speed and S (starboard). If there is less than 1 knot axial, this is not displayed.

ACLS Closure. If the active aircraft is using ACLS to land, this will display the closure of the aircraft to the ship in knots.

Ship List and Trim. The top indication displays the real time list (roll) of the ship in degrees. Right of the X.X value, it will display either STBD UP or STBD DOWN (starboard up and down). Trim works the same except the real time trim (pitch) of the ship is displayed.

Aircraft Type. The aircraft next for landing is listed here. The **H/E** (hook to eye) distance is the number of feet above the tailhook the pilot's eyes are. This is used to calibrate the IFLOLS ball to be accurate for each aircraft type. The **B/A** (basic angle) is the glidepath angle the crosshairs in the camera display are aligned to.

Deck Status. If there is an aircraft or deck crew in the landing area, this will show FOUL. If the area is clear, it will display CLEAR.

Ship Heading. This shows the ships magnetic heading which is the same as the Base Recovery Course (BRC) value in degrees.

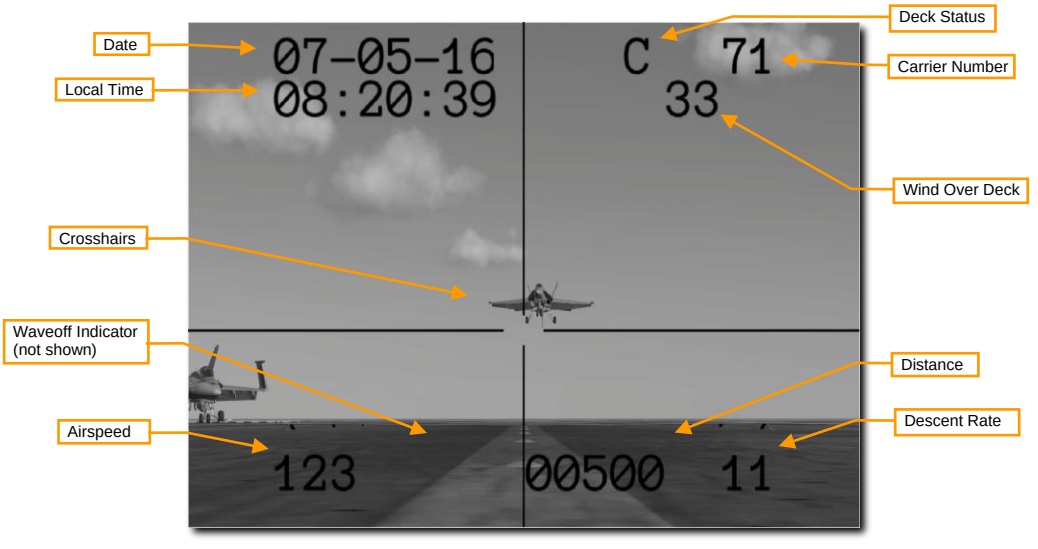
Landing Queue. The next three aircraft in queue to land are listed here, with the next aircraft to land in the top box. Each aircraft is listed by side number.

Hook Touch Down. This indicates the distance from the stern of the ship at which the IFLOLS landing system directs the pilot to fly such that the hook will strike the indicated location. For a 3-wire, it should be 230 feet. The four dots indicate the four arresting wires. The selected wire to capture is solid. The thick tick mark indicates the exact, desired hook touch down point and the caret above is the dynamic point based on pitch up and down. As the ship's bow moves up and down, so will this caret.

Hook to Ramp. This vertical scale illustrates the desired height the bottom of the arresting hook should be when it crosses over the stern of the ship. For a 3-wire, it should be 14.1 feet. The thick tick mark indicates the desired hook over ramp height and the caret is the dynamic indication of hook to ramp based on the ship pitching up and down.

PLAT Camera View

The center of the window shows the view from the PLAT camera. The camera is mounted on the deck and angled up at 3° along the aircraft landing glideslope to the arrestor wires. Information is superimposed over the image to aid in LSO duties.



Date. The current date.

Local Time. The current local time.

Crosshairs. These show the proper glideslope and azimuth for arriving aircraft.

Waveoff Indicator. A flashing 'W' for waveoff will be shown when if the deck is not clear or other conditions for a waveoff are met.

Airspeed. True airspeed in knots is displayed if the aircraft is ACLS equipped. Otherwise, all zeros are displayed.

Deck Status. This is the readiness state of the landing area. A 'C' means the deck clear and the aircraft on approach may land safely. A flashing 'F' means the deck is foul and the aircraft's landing zone is obstructed.

Carrier Number. This is the hull number of the carrier, in this case CVN 71.

Wind Over Deck. This is the wind over deck in knots, accounting for both wind speed and ship speed.

Distance: The distance between the carrier and the aircraft is displayed in feet if the aircraft is ACLS equipped. Otherwise, all zeros are displayed.

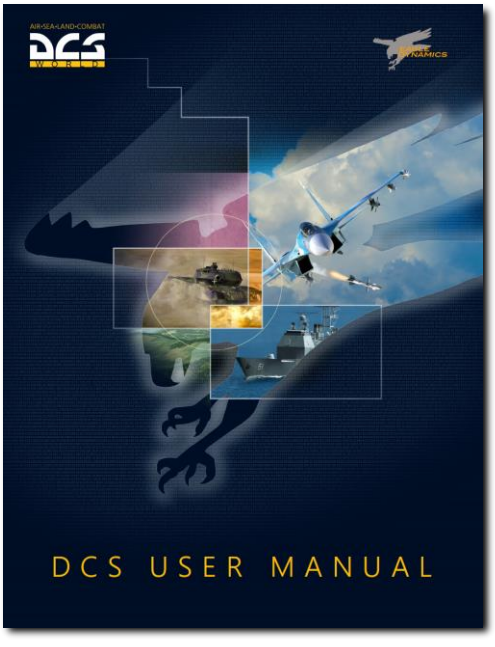
Descent Rate: The rate of descent in feet per second is displayed if the aircraft is ACLS equipped. Otherwise, all zeros are displayed.

MISSION EDITOR FEATURES

US Navy Photo
by MC3 Jon Hyde

Overview

The DCS: Supercarrier module uses the standard mission editor interface. A complete explanation may be found in the **DCS: World User Manual** located in your DCS World/Docs folder. That should be your first stop when learning to set up missions using these assets.

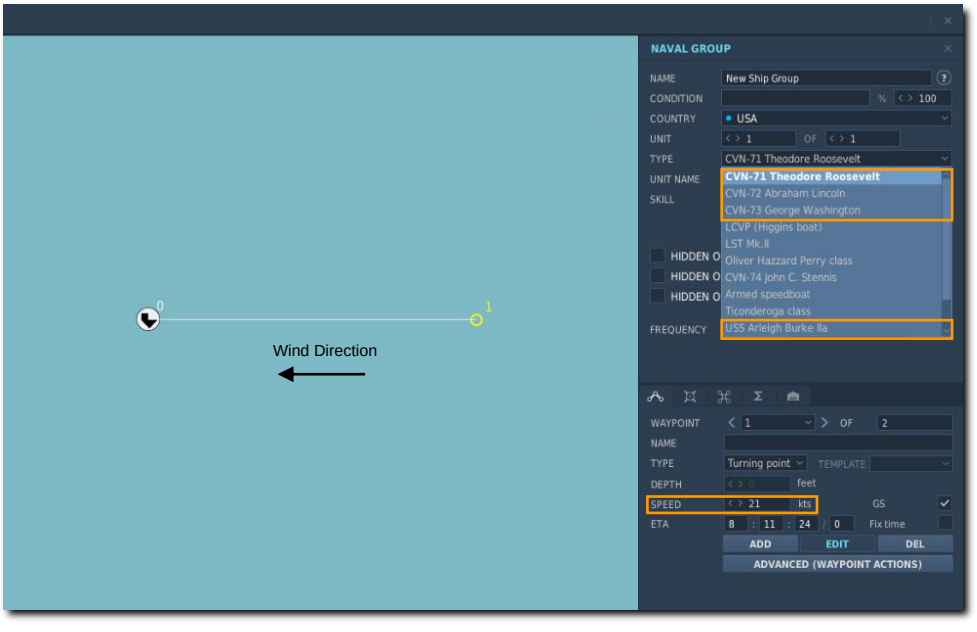


In this section, we will briefly highlight some key features it is important to understand when setting up a mission with the Supercarrier.

Ship Selection and Placement

The new ship assets included with the Supercarrier module appear in the TYPE dropdown list. The new Nimitz Class carriers and Arleigh Burke destroyer are available when the COUNTRY is set to USA. The Admiral Kuznetsov carrier is available with the COUNTRY set to Russia.

Note that the CVN-70 Carl Vinson and CVN-74 John C. Stennis are the original carrier assets included with DCS: World. They are still available for users who do not own the Supercarrier module.



It is best to face the carrier into the wind on launch and recovery to eliminate crosswind and reduce the airspeed required to keep aircraft airborne. The carrier's speed should be set so that the wind over deck (ship speed plus wind speed) is near 30 knots.

It is important to remember the ship's course in the mission editor is its true heading while Base Recovery Course (BRC) used in carrier operations is magnetic heading. To get the BRC, add or subtract the magnetic variation for the map being used or simply note the BRC shown at the LSO station in the mission.

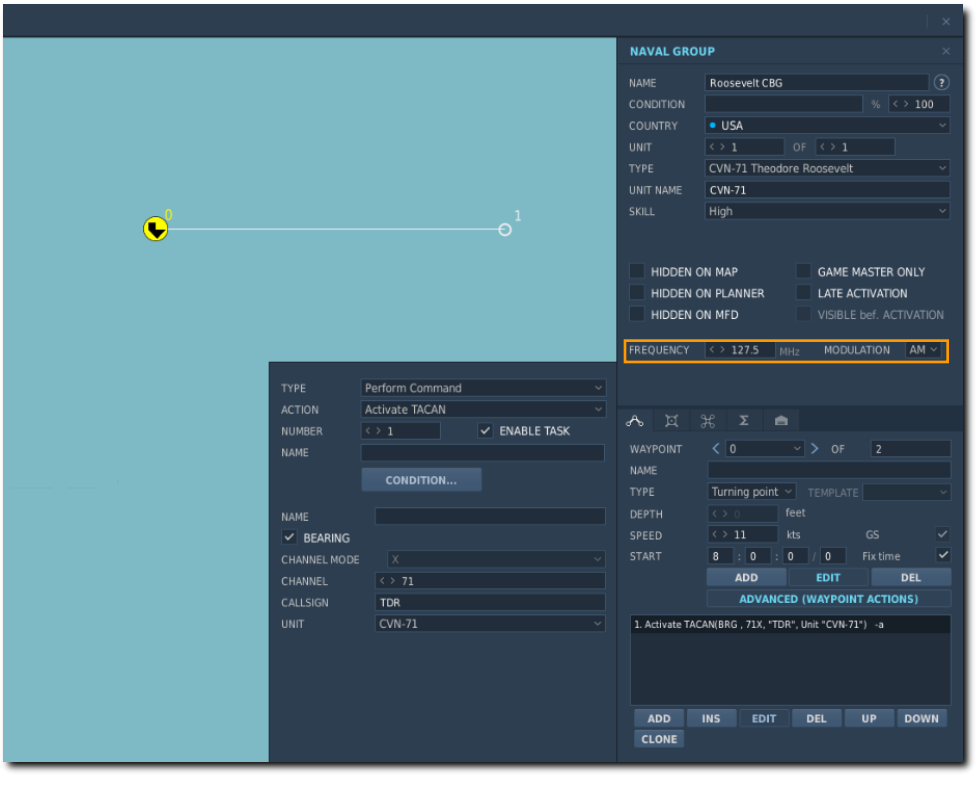
Communications and Navigation Equipment

The radio frequency and NAVAID channels are all set in the mission editor. See the first section of this guide for a description of each system. See the specific aircraft manual for exact system operation in the air and any restrictions that may apply while setting them up on the carrier.

Radio Frequency

The ship's ATC radio frequency and modulation are set by typing in the desired frequency or selecting the desired modulation (AM/FM) from the dropdown menu.

All radio functions for the carrier (i.e. Marshal, Approach, Tower, and LSO) will use this single frequency. The channel presets for the aircraft used in the mission should be set to match.

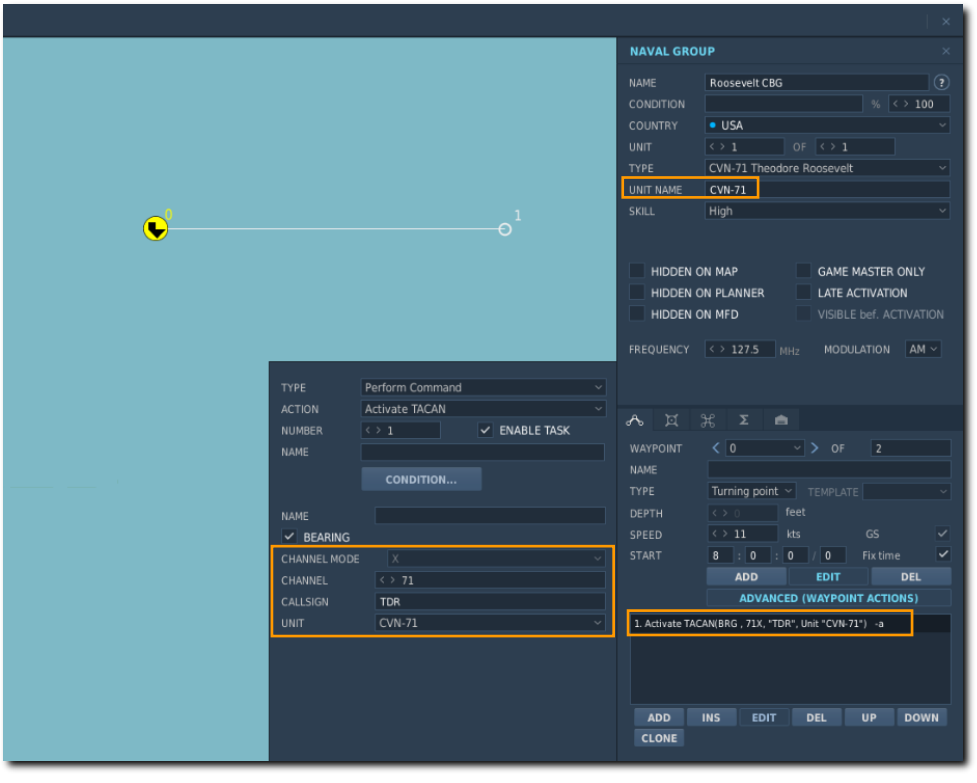


TACAN Channel

The carrier's TACAN beacon must be activated by adding an advanced waypoint action. This is usually set at waypoint 0, the ship's starting location.

In this example, TACAN channel and band 71X is used. The callsign is set to TDR. A morse code signal will be audible keying out those letters for identification. This identifier will also be shown on the aircraft's displays where applicable.

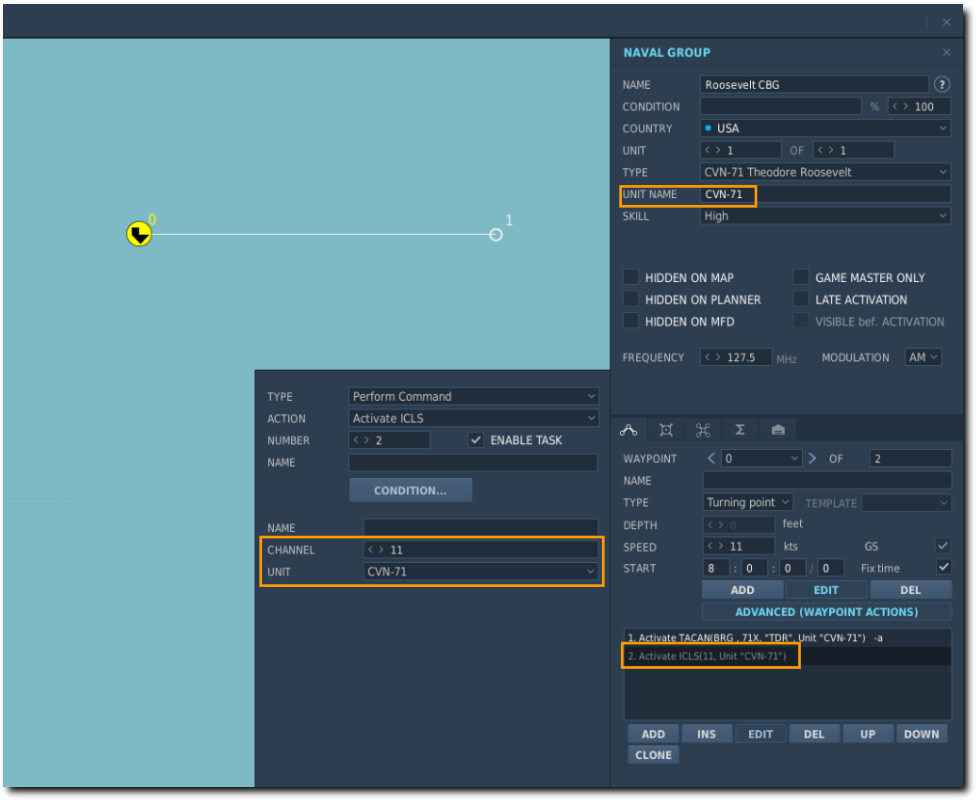
You must also select the unit within the group the TACAN signal will originate from. This should always be the carrier. Note that the carrier's unit name was changed to CVN-71 to make it easier to identify in the list.



ICLS Channel

The carrier's ICLS channel is set by adding an advanced waypoint action in the same way as TACAN.

In this example, channel 11 will be used. Compatible aircraft will receive ICLS guidance on that channel. The originating unit is selected as CVN-71.


NAVAL GROUP
NAME
Roosevelt CBG
CONDITION
COUNTRY
USA
UNIT
TYPE
CVN-71 Theodore Roosevelt
UNIT NAME
CVN-71
SKILL
High
HIDDEN ON MAP
HIDDEN ON PLANNER
HIDDEN ON MFD
GAME MASTER ONLY
LATE ACTIVATION
VISIBLE bef. ACTIVATION
FREQUENCY
127.5
MHz
MODULATION
AM
TYPE
Perform Command
ACTION
Activate ICLS
NUMBER
2
ENABLE TASK
NAME
CONDITION...
NAME
CHANNEL
11
UNIT
CVN-71
WAYPOINT
OF
NAME
TYPE
Turning point
TEMPLATE
DEPTH
feet
SPEED
kts
GS
START
Fix time
ADD
EDIT
DEL
ADVANCED (WAYPOINT ACTIONS)
1. Activate TACAN(BRG , 71X, "TDR", Unit "CVN-71") -a
2. Activate ICLS(11, Unit "CVN-71")
ADD
INS
EDIT
DEL
UP
DOWN
CLONE

AI Aircraft Parking and Taxi Logic

When an AI aircraft starts or lands on a Supercarrier, there are one of 16 potential parking locations it can start from or be routed to after landing:

- One on the stern, most aft of elevator 3
- One on the stern, center aft of elevator 3
- One on the stern, next elevator 3
- Two on elevator 3
- Four in front of elevator 1 and 2
- One between elevator 1 and 2
- Two on elevator 1
- Two on elevator 2
- Two on elevator 4

When an aircraft lands, it requests a taxi route to exit the landing area (the box). Deck control will search (by priority order listed above) to locate an open parking location and provide a taxi route to it. What does deck control for routing an aircraft mean? First, it determines a free location based on the maximum number of open parking locations. For example: if the parking spot aft of the island is occupied, the next parking lot in priority order would be selected. Next, deck control will check that the chosen parking location is suitable for the landing aircraft type and that there are no taxi route obstructions like other “live” aircraft and static objects. Once these are satisfied, the landing aircraft is routed to the open, unobstructed parking location.

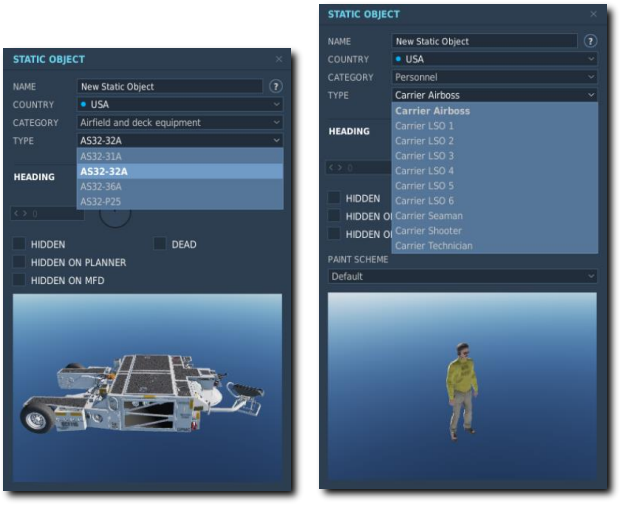
Because of this, it is very important that mission creators do not place static objects on the deck that occupy or block the routes to and from the parking locations. Doing this can greatly reduce the number of available parking locations. If, however, a mission is constructed the prohibits landing aircraft from reaching a parking location, the aircraft will be automatically removed from the game.

In a multiplayer mission, starting locations are automatically assigned to the 16 locations based on the order in which a client joins the mission.

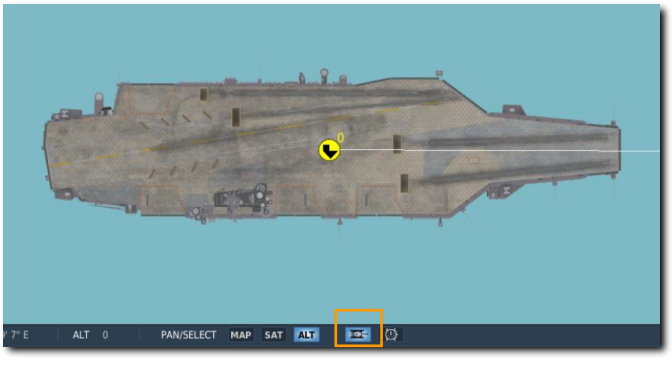
Static Object Placement

Several new static objects are included with the Supercarrier module that allow you to add more life to the carrier deck, above and beyond the launch crews that are already present by default.

The new static objects are available under the headings ‘Airfield and Deck Equipment’ and ‘Personnel’. Of course, all aircraft and other static objects included with DCS: World are compatible and may be used.



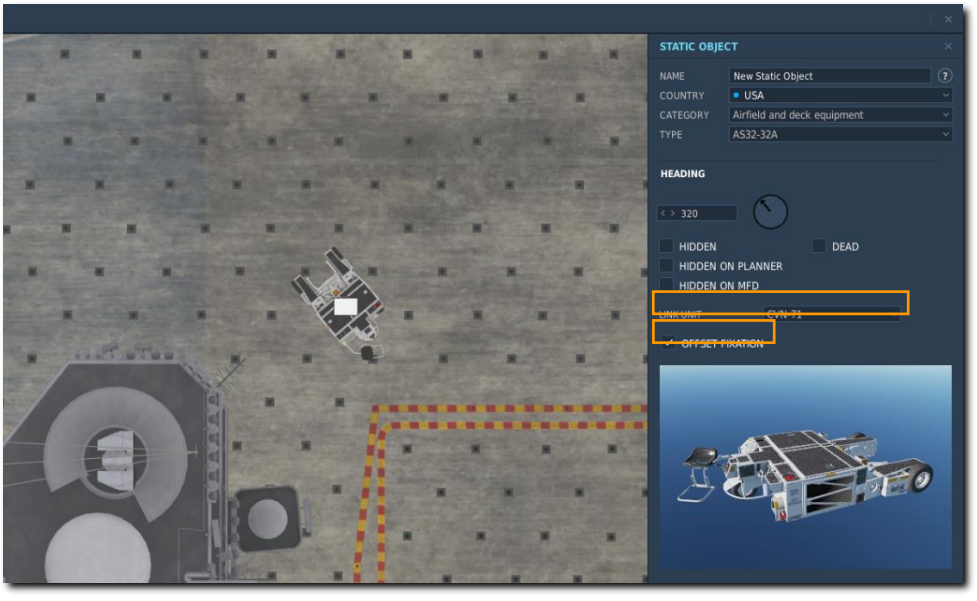
Before starting, you should depress the unit icon at the bottom of the mission editor screen. Enabling this option will show the shape of the shape of all objects in the mission editor viewer. This allows placement of objects with much more precision. Then, zoom in so the carrier deck is visible.



When an object is placed on the deck, it must be linked to the carrier. Select the carrier from the LINK UNIT dropdown and check the OFFSET FIXATION box.

Once these are set, the static object will be linked to the carrier and remain in position as it moves.

You may find it helpful to add additional objects by copying and pasting an object that is already linked to the carrier, so you do not have to perform this step every time. You may do this by selecting the object, **[Ctrl+C]** to copy, then **[Ctrl+V]** to paste.



It is important not to place static objects in locations they may interfere with flight operations so test your mission thoroughly to find any problems.

Good hunting!

The Eagle Dynamics SA team

US Navy Photo
by MC3 Erick A. Parsons