

USS ENTERPRISE CVN-65 THE 'BIG E'



By Team SDB

For use with Lockheed Martin's Prepar3D® Simulation Software

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Introduction

The USS Enterprise has the distinction of being both the first nuclear-powered aircraft carrier and the longest aircraft carrier in the world. Launched in 1960 and Commissioned in 1961, it is the oldest vessel still in use in the U.S. Navy Fleet. Known as "Big E", she is due to be decommissioned in 2013 after having served for over 50 years.

Carl Edwards' marketed his rendition of the USS Enterprise for Flight Simulator FS2004 through Alphasim beginning in 2005. It was available for only a couple of years but thanks to Carl's generous offer of the source files to Team SDB Scenery it is now available again.

Previously "Big E" enthusiasts had attempted to port the FS2004 Enterprise over to FSX with limited success or compromised frame rates since it was designed specifically for FS2004. But with the source files in hand and through the expertise of Sylvain Parouty it is now available as a native FSX model designed specifically to take advantage of the newest FSX Acceleration features and to incorporate the changes in the FSX simulator engine.

Team SDB has now successfully tested, adjusted, and repackaged the Enterprise for use as an educational tool with Lockheed Martin's Prepar3D (P3D) simulation software.

List of Features

- Two configurations representing an early 1980s cruise (1982-1983) and a late 1980s cruise (1989-1990) with unique carrier details and carrier/aircraft textures for each
- Empty deck versions of both early 80s and late 80s
- Full Prepar3D carrier operations compatibility
- Optional advanced FLOLS system with settable glide slope and audible LSO
- Optional Advanced launch trigger and realistic launch speed tailored to individual aircraft
- Aircraft servicing vehicles, fire trucks, and deck crew figures with animated "shooter"
- Night operations lighting including sequenced flashing centerline "rabbit" lights
- New and updated static aircraft on deck (A-7 Corsair II, A-6 Intruder, F-14 Tomcat, S-3 Viking, and SH-3 Sea King)
- Sea King plane guard helicopter flying alongside (courtesy of Michael Davies)
- "Adams" Class guided missile destroyer escort (courtesy of Earl Watkins)
- 17 moving carrier tracks (eight locations for each "era" plus bonus Yankee Station)
- Flight files for easy carrier locating

System Requirements

- Windows XP SP2, Windows Vista, or Windows 7
- Lockheed Martin's Prepar3D® Simulation Software
- CPU 2.4Ghz or better
- 2Gb RAM Minimum
- 512 MB DX9 or DX10 Graphics Card or better
- 100 MB hard disk space for download, 250 MB for installation
- DX9 compatible but NOT guaranteed compatible with DX10 Preview



Scenery Activation

To use the AI Boat Traffic schedules you will need to activate them under Addon Scenery.

- 1) Launch Prepar3D.
- 2) On the top menu bar select "World" and then click on "Scenery Library...".
- 3a) On the "Scenery Library" window click on the "Add Area..." button.
Using the "Add Scenery Area" window that comes up Browse to the "`Program Files\Lockheed Martin\Prepar3D\Addon Scenery\Team SDB USS Enterprise_East Coast`" folder. The path will be displayed in the top field. Type "Enterprise East Coast" in the second field and click on the "OK" button.
- 3b) Click on the "Add Area..." button again. Using the "Add Scenery Area" window that comes up Browse to the "`Program Files\Lockheed Martin\Prepar3D\Addon Scenery\Team SDB USS Enterprise_West Coast`" folder. The path will be displayed in the top field. Type "Enterprise West Coast" in the second field and click "OK".
- 4) Click on the "OK" button at the bottom of the "Scenery Library" window.

Note: Under "Options/Settings/Display/Traffic" in Prepar3D, "Ships and Ferries" must be set at least to 10% for the carrier to show.

Scenery Activation in Windows7 64bit

There is an issue with Windows7 Explorer because of its differences to Vista and WinXP. To activate add-on scenery in Prepar3D/Windows 7 follow these steps.

- 1) Go to the "Scenery Library" from the "World" Menu.
- 2) Browse to the folder you want to add (see steps 3a and 3b above) and click 'OK'
- 3) The addon scenery that you have selected will not be added, instead it will advance inside the directory. To add the scenery LEFT click on any blank space inside the folder, and the window should close. You should now see the addon scenery selected in the Scenery Library. Click on the "OK" button.
- 4) Click on the "OK" button at the bottom of the "Scenery Library" page.

Uninstall / De-Activation Procedure:

The Uninstaller program for the Team SDB CVN-65 scenery is located in the root folder of Prepar3D as well as in StartMenu/All Programs/Team SDB Scenery, and will remove all files added during the initial installation. However, you will need to remove all references from the "Scenery Library" manually. To do so:

- 1) Launch Prepar3D.
- 2) On the top menu bar select "World" and then click on "Scenery Library...".
- 3) In the "Available scenery areas" list of sceneries highlight the line "Enterprise_West Coast", click the "Delete Area" button and select "Yes" when asked "Are you sure...".
- 4) Again in the "Areas" list of sceneries highlight the line "Enterprise_East Coast", click the "Delete Area" button, and select "Yes" when asked "Are you sure...".
- 5) Click on the "OK" button at the bottom of "Scenery Library" page.
- 6) Restart Prepar3D to complete the De-Activation process.

Early 80s USS Enterprise





USS Enterprise (CVN-65) History

The world's first nuclear-powered aircraft carrier, and the eighth U.S. Navy ship to bear this historic name, the USS Enterprise is the Navy's most storied warship in history. Like her predecessor of World War II fame, she is nicknamed the "*Big E*". Commissioned on November 25, 1961, the Enterprise was originally designed for a 25-year service life, but due to maintenance and upkeep, Enterprise has served for over 50 years and has been engaged in every major combat operation over the past five decades.

In 1954 Congress authorized the construction of the world's first nuclear-powered aircraft carrier. The giant ship was to be powered by eight nuclear reactors, two for each of its four propeller shafts. This was a daring undertaking, for never before had two nuclear reactors ever been harnessed together.

Three years and nine months after construction began, the Enterprise was ready to be presented to the world as "The First, The Finest" super carrier. The new super carrier's performance exceeded the Navy's most optimistic expectations. The Enterprise broke all previous records for speed when it exceeded 40 miles-per-hour during initial trials.



The ship's first mission was to track and measure the flight of Mercury 'Friendship 7'. Big E's efforts culminated May 5, 1962 when Cmdr. Alan B. Shepard, Jr., became the first American to break the barrier of the Earth's atmosphere and ascend 116.5 miles in the Mercury capsule.

In October 1962, the Enterprise was dispatched to its first international crisis. The "Big E" and other ships in the Second Fleet set up a quarantine of all military equipment under shipment to communist Cuba. The blockade was put in place on October 24, and the first Soviet ship was stopped the next day. On October 28, Soviet leader Krushchev agreed to

dismantle nuclear missiles and bases on Cuba, concluding the Cuban Missile Crisis, the closest the U.S. and USSR have ever come to nuclear war.

The USS Enterprise has played a role in almost every major conflict since her commissioning. From the Cuban Missile Crisis, through multiple tours off Yankee Station in the Vietnam conflict, cold war tensions, and culminating with her rapid response on 9/11.

In the Fall of 2001, the Enterprise aborted her transit home from a long deployment after the terrorist attacks in New York City and Washington, D.C., on September 11, 2001, and steamed overnight to the North Arabian Sea. In direct support of Operation "Eduring Freedom", the Enterprise once again took her place in history by becoming one of the first units to respond in a crisis with its awesome striking power. The Enterprise expended more than 800,000 pounds of ordnance during the operation.

Throughout Enterprise's naval career, it has earned many accolades and distinguished itself honorably time and time again. The Enterprise continues to be a shining example to the fleet. During her more than 50 years of service she has set many records and milestones. She became the first nuclear carrier to transit the Suez Canal and the first carrier to operate the F-14 Tomcat fighter aircraft.



At 1,123 ft, she is the longest naval vessel in the world. Her 93,284 long tons displacement ranks her as the 11th-heaviest super carrier, after the 10 carriers of the Nimitz class. Enterprise was meant to be the first of a class of six, but construction costs ballooned and the remaining vessels were never laid down. Powered by eight Westinghouse A2W reactors,

each providing 35,000shp, the hull had to be enlarged to accommodate the size of the reactors, which meant a much larger flight deck. One additional feature that identified Enterprise as unique among carriers was its unusual square island. Because the carrier was nuclear-powered, there was no need for exhaust funnels. Even more so, what made the Enterprise's initial superstructure unique was the then-revolutionary twin-element phased planar array radar system.

She was originally scheduled for decommissioning in 2014 or 2015, depending on the life of her reactors and completion of her replacement. But the National Defense Authorization Act for Fiscal Year 2010 slated the ship's retirement for 2013, when she will have served for 51 consecutive years, the most of any U.S. aircraft carrier. The Enterprise began her 22nd and final deployment, a seven month cruise to the Middle East on March 10, 2012 from Norfolk Naval Station in Virginia. She made her final return home on November 4th, 2012.



Project Reference Sources (Partial List):

- <http://www.enterprise.navy.mil/>
- [http://en.wikipedia.org/wiki/USS_Enterprise_\(CVN-65\)](http://en.wikipedia.org/wiki/USS_Enterprise_(CVN-65))
- <http://navysite.de/cvn/cvn65.html>
- <http://www.uscarriers.net/cvn65history.htm>
- <http://www.hullnumber.com/CVN-65>
- Detail & Scale (Bert Kinsey) - No. 39: USS Enterprise CVN-65
- Warship Profile 15 - USS Enterprise (Cmdr. W. H. Cracknell, USN)
- Osprey Publishing (Tony Holmes) - Seventh Fleet Super Carriers
- Osprey Publishing (Jean-Pierre Montbabet) - Super Carriers
- NAVAIR 00-80T-104 NATOPS Landing Signal Officer Manual
- NAVAIR 00-80T-120 NATOPS CVN Flight/Hangar Deck Manual
- Naval Safety Center - Flight Deck Awareness

Late 80s USS Enterprise





Advanced Versions

Features

The Advanced versions of the Enterprise include additional features developed by Sylvain Parouty. These systems greatly increase the realism of the Prepar3D carrier experience but do require manual editing of certain Prepar3D configuration (.cfg) files.

The Advanced features include:

1. LSO voice on approach and trap
2. Catapult launch triggered using brakes trigger on joystick (rather than the default Shift + Spacebar keystrokes)
3. Reduced (more realistic) catapult launch speed tailored to the individual aircraft (as opposed to the too fast default launch speed).
4. FLOLS with settable glide slope (preset to 3.5 degrees) and new night lighting

Setup

In order to use the Advanced systems (items 1 through 3 above) you must make some minor edits to the "panel.cfg" file for each aircraft that you want to use them with. To use the advanced FLOLS versions of the carriers (item 4 above) you will have to edit the "model.cfg" file of each carrier you wish to use. For the aircraft be sure to also make the edits described in "Appendix C: Adapting Aircraft to Prepar3D Carriers" on page 29.

During installation the required files were added to the "Gauges" folder. To activate them open the "panel.cfg" file in the "Panel" folder of the aircraft using Notepad and add the following lines to the bottom of the first [Vcockpit.xx] section. The gauge numbering is not important as long as they do not duplicate any gauge numbers you already have in that first [Vcockpit.xx] section. To use Nav2 instead, change line 81 to read "TACAN_Nav2".

```
//-----Gauge Carrier Operations-----
gauge81=RFN_CarrierGauge!TACAN_Nav1, 0, 0,
gauge82=RFN_CarrierGauge!CustomCatapult, 0, 0,
gauge83=RFN_CarrierGauge!Approach_Ctrl, 0, 0,
gauge84=DSD_Sound_Gauge!Sound, 0, 0,
//-----
```

The aircraft.cfg file should also be checked to make sure the [Radios] section activates Audio 1, Nav.1 and/or Nav.2. Using Notepad, add or modify the following lines to read:

```
[Radios]
// Radio Type=available, standby frequency, has glide slope
Audio.1 = 1
Com.1 = 1, 0
Nav.1 = 1, 0, 0
Nav.2 = 1, 0, 0
Adf.1 = 0
Transponder.1 = 0
Marker.1 = 0
```

That is all that is required for the aircraft to work. Please read on to configure the ships.

There are folders for four Enterprise models in this package: "model.area80s", "model.area90s", "model.area80s_Empty", and "model.area90s_Empty". In each of these folders are two models -- one using the default Prepar3D FLOLS system and one using the Advanced FLOLS system. The main difference between these two systems is the settable glide slope of the Advanced FLOLS versions and brightness of the FLOLS/deck lighting.

By default the Prepar3D FLOLS system is selected for each carrier version. To change to the Advanced FLOLS system (and back) you only need to edit the "model.cfg" file for each carrier you wish to change and comment out one or the other version.

In the example "model.cfg" file below the "normal=CVN65_Enterprise_FLOLS_80s" (Advanced version) line has been deactivated or "commented out" by added the two slash marks at the beginning of the line. To deactivate the "CVN65_Enterprise_80s" (default version) and use the Advanced version instead simple remove the double slash marks from the "normal=CVN65_Enterprise_FLOLS_80s" line and add them to the other line.

```
[models]
normal=CVN65_Enterprise_80s
// normal=CVN65_Enterprise_FLOLS_80s
```

Then save the file and you are finished. Restart Prepar3D if it is already running.

In Game Usage

Once all of the adjustments have been made you will need to tune your Nav1 (or Nav2 if selected above) radio to the frequency of the carrier based on the following table.

Carrier Version	Nav1 or Nav2 Frequency	Notes*
Early 80s	115.00 MHz	West Coast Locations/ AICarriers
Early 80s Empty Deck	115.50 MHz	Use with AICarriers
Late 80s	116.00 MHz	East Coast Locations/ AICarriers
Late 80s Empty Deck	116.50 MHz	Use with AICarriers

* See "Appendix A: User Positioned Moving Carriers" on page 27 for information on AICarriers

When you tune the Nav radio to the proper frequency and are within 100 miles of the Enterprise a message will appear across the top of the screen (yellow text on a green background) to let you know that you are locked onto the carrier. If you have the RFN Tacan gauge installed (see "Appendix B: Moving Carrier Navigation Aids Suggestion" on page 28) the gauge will provide distance and bearing information for the carrier. Note: Only v3 or better of the RFN Tacan gauge is compatible with the Enterprise package.

As you fly within one mile of the carrier to land you will hear the LSO giving you adjustment advice on approach and information on how well you trapped, or a Wave-Off command.

The Nav frequency and other information (runway angle, glideslope angle, etc.) about the carrier is included in a "carrier.xml" file added to your Gauges folder during installation. The "carrier.xml" file can be edited in Notepad to modify frequencies as well as add/remove ships allowing customization of your choice. The "carrier.xml" file also controls the LSO

audio instructions feature. Full instructions for editing the "carrier.xml" file for your own use are included as comments within the file. If you make changes to customize the "carrier.xml" file be sure to keep a backup copy so your changes are not lost with an update.

The next Advanced version features (numbers 2 and 3 on the list) have to do with catapult launching. But first a note about aircraft carrier landing/launching. Every aircraft to land (be recovered) or launched from an aircraft carrier needs to be set up correctly with [tailhook] and [launch_assistance] sections in the "aircraft.cfg" file. See "Appendix C: Adapting Aircraft to Prepar3D Carriers" on page 29 for more information on setting up the [tailhook] and [launch_assistance] sections.

If you are unfamiliar with the carrier launch sequence see the "Appendix D: Launching / Recovery with Prepar3D Carriers" on page 30 for a description of the launch sequence in Prepar3D. Understanding how it works will be important to understanding the changes provided by the Advanced version.

By default the launch speed of the catapult in Prepar3D is too fast (almost 190 kts coming off the end of the deck) and has a one-size-fits-all approach. Using the Advanced features the launch speed is adjusted automatically based on the aircraft weight, the wind, and the speed value declared in the "Full_flaps_stall_speed" parameter in the [Reference Speeds] section of the "aircraft.cfg" file for the individual aircraft being launched. This makes for a much more realistic launch and allows you to advance the throttle(s) to full power for launch of lighter aircraft. *You must advance the throttle(s) to at least 60% before signaling you are ready.*

Again by default the Prepar3D trigger for launch is the keyboard stroke combination "Shift + Spacebar". This is unrealistic because it takes your (the pilot's) hands off the controls. A better approach included in the Advanced version is to trigger the launch by a short click of the Brakes button on your joystick (usually mapped to the gun firing trigger).

When you trigger the launch in accordance with the steps described in Appendix D and above, the animated "shooter" will look around to make sure everything is ready and will then kneel down followed by pointing forward to signal for the catapult to be fired. Within four seconds your aircraft will be launched. As you launch you will hear the catapult sound.

Trouble Shooting

The Advanced System gauges use Simconnect. So if all settings have been made correctly and things do not work it is possible that your system does not have the required Microsoft Visual C++ 2010 Redistributable Package (x86) installed. This package installs runtime components of Visual C++ Libraries required to run applications developed with Visual C++ on a computer that does not have Visual C++ 2010 installed. Most systems have this runtime package already installed but it is possible it is missing or has been compromised. To download and install the runtime files visit: <http://www.microsoft.com/en-us/download/details.aspx?id=5555> .

The Shooter figure is animated using "skin mesh animation". To allow Prepar3D to "play" the animations make sure you have enabled "Advanced Animations" under Settings. This is found under Options/Settings/General.

**Early 80s and Late 80s
Empty Deck**



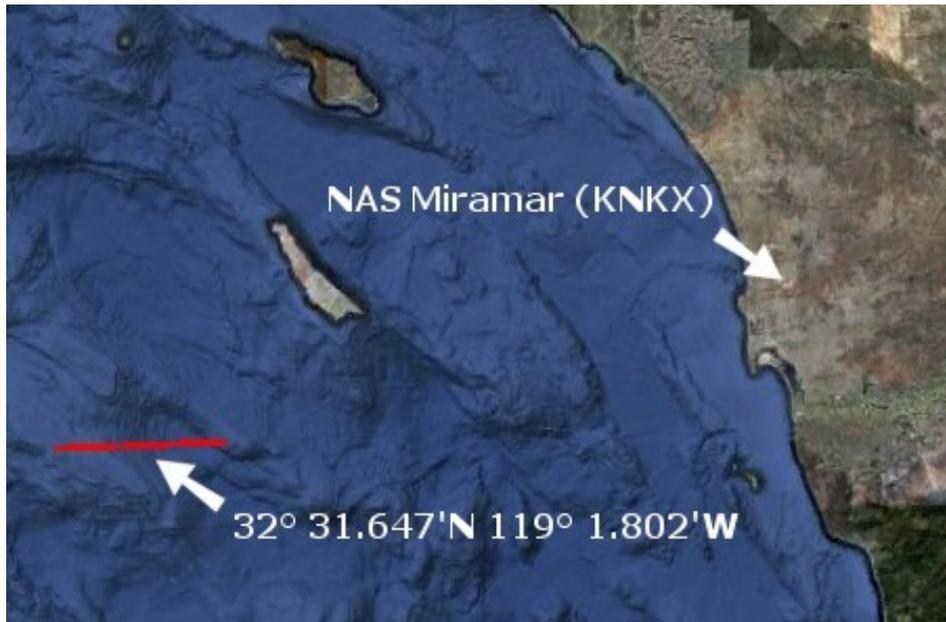
AI Carrier Locations (Early 80s - West Coast Cruise)

San Diego

Supporting airport location: Naval Air Station Miramar (KNKX)

Fly heading 257 for 108 miles after takeoff from Runway 24R.

Coordinates for center of track: $32^{\circ} 31.647'N$ $119^{\circ} 1.802'W$ - Hdg: 87/267



Lemoore

Supporting airport location: Naval Air Station Lemoore (KNLC)

Fly heading 271 for 158 miles after takeoff from Runway 14R.

Coordinates for center of track: $36^{\circ} 19.368'N$ $122^{\circ} 47.397'W$ - Hdg: 88/268



Pacific Northwest

Supporting airport location: Naval Air Station Whidbey (KNUW)

Fly heading 269 for 152 miles after takeoff from Runway 25.

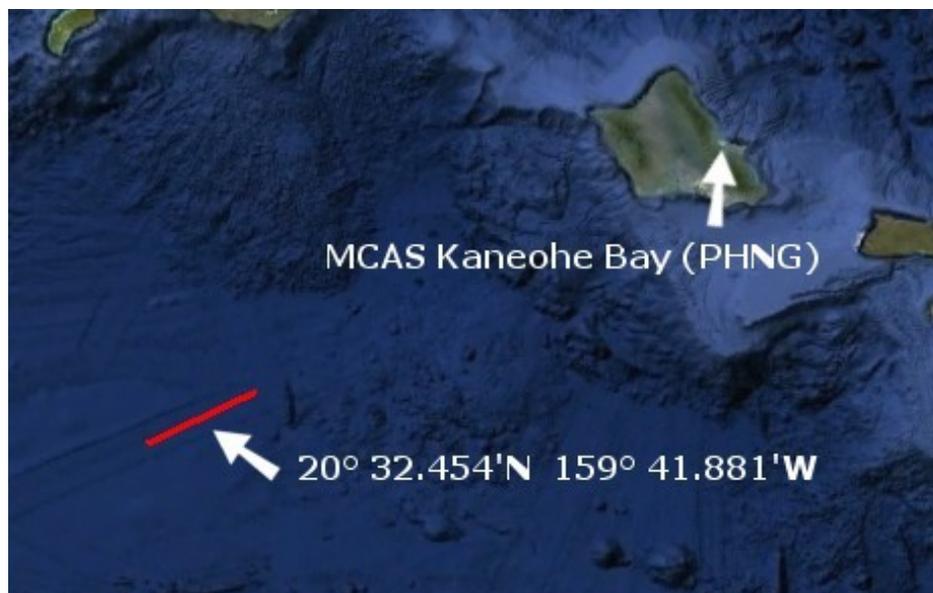
Coordinates for center of track: 48° 16.585'N 125° 58.767'W - Hdg: 88/268

**Hawaii**

Supporting airport location: Marine Corps Air Station Kaneohe Bay (PHNG)

Fly heading 243 for 138 miles after takeoff from Runway 22.

Coordinates for center of track: 20° 32.454'N 159° 41.881'W - Hdg: 64/244

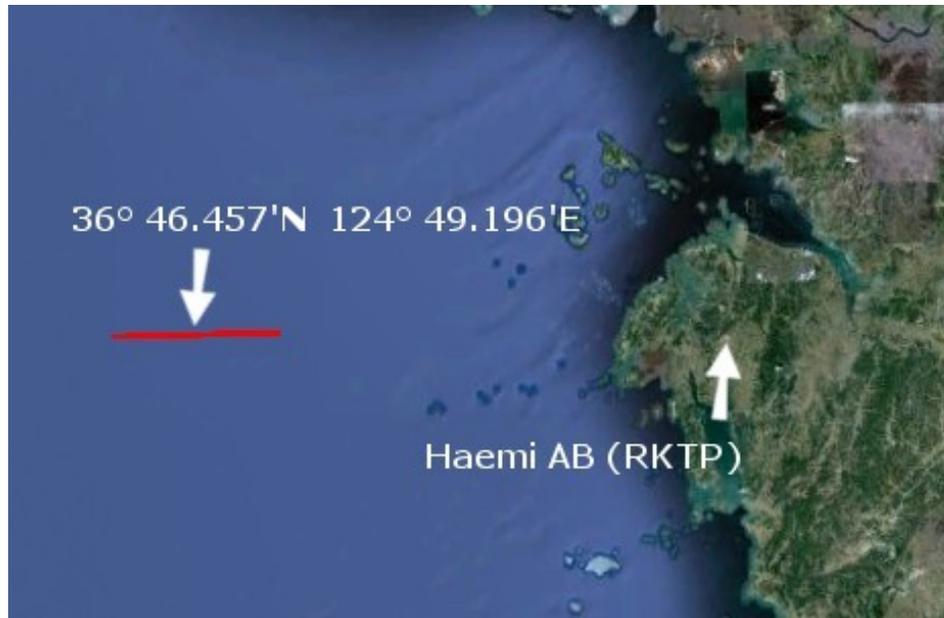


Korea

Supporting airport location: Seosan / Haemi AB (RKTP)

Fly heading 275 for 92 miles after takeoff from Runway 21L.

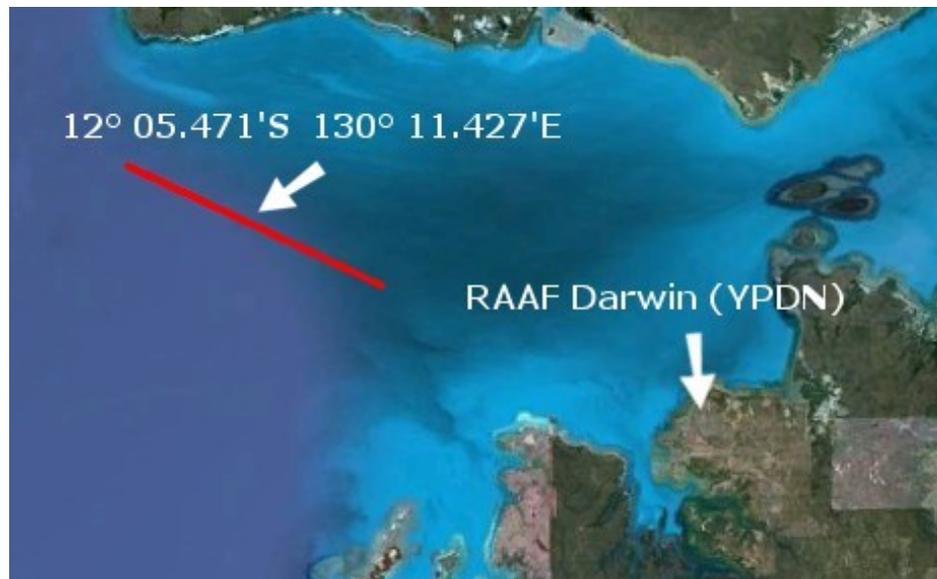
Coordinates for center of track: $36^{\circ} 46.457'N$ $124^{\circ} 49.196'E$ - Hdg: 268/88

**Darwin**

Supporting airport location: RAAF Base Darwin (YPDN)

Fly heading 296 for 40 miles after takeoff from Runway 29.

Coordinates for center of track: $12^{\circ} 05.471'S$ $130^{\circ} 11.427'E$ - Hdg: 115/295



Diego Garcia

Supporting airport location: Diego Garcia (FJDG)

Fly heading 115 for 47 miles after takeoff from Runway 13.

Coordinates for center of track: 7° 36.083'S 73° 2.256'E - Hdg: 113/293

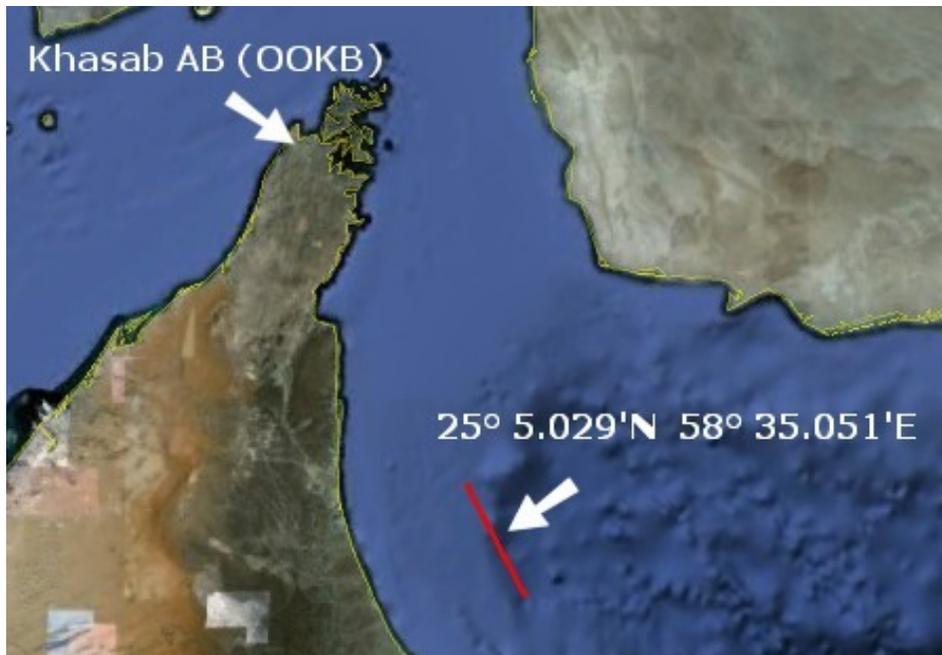


Gulf of Oman

Supporting airport location: Khasab Air Base (OOKB)

Fly heading 154 for 98 miles after takeoff from Runway 01.

Coordinates for center of track: 25° 5.029'N 58° 35.051'E - Hdg: 152/332



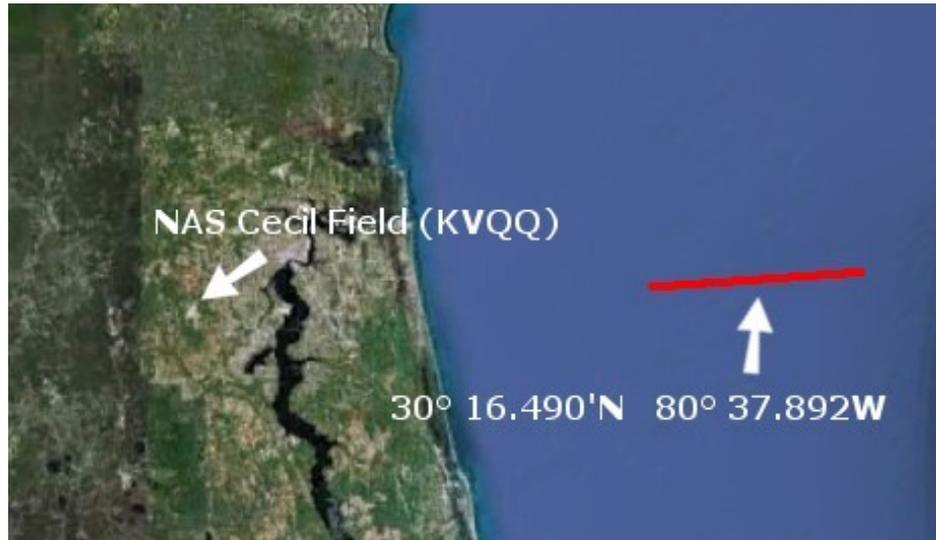
AI Carrier Locations (Late 80s - East Coast Cruise)

Florida

Supporting airport location: Naval Air Station Cecil Field (KVQQ)

Fly heading 86 for 75 miles after takeoff from Runway 9L.

Coordinates for center of track: 30° 16.490'N 80° 37.892'W - Hdg: 267/86



Puerto Rico

Supporting airport location: Roosevelt Roads Naval Station/Ofstie Field (NRR)

Fly heading 46 for 30 miles after takeoff from Runway 7.

Coordinates for center of track: 18° 33.114'N 65° 17.143'W - Hdg: 46/266



Norfolk

Supporting airport location: Naval Air Station Oceana (KNTU)

Fly heading 70 for 35 miles after takeoff on Runway 5R.

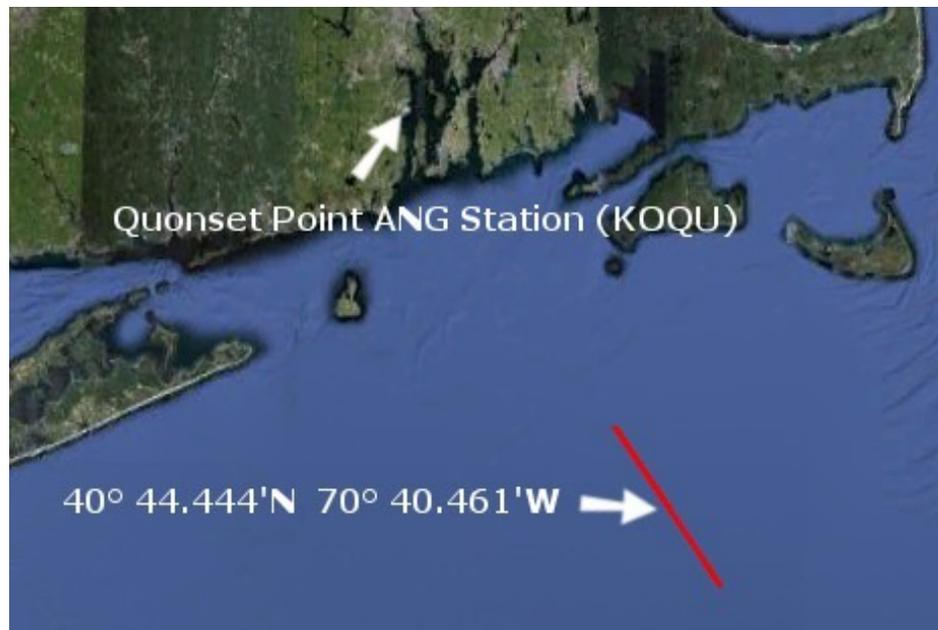
Coordinates for center of track: $36^{\circ} 58.873'N$ $75^{\circ} 25.297'W$ - Hdg: 247/67

**Rhode Island**

Supporting airport location: Quonset Point Air National Guard Station (KOQU)

Fly heading 146 for 70 miles after takeoff from Runway 16.

Coordinates for center of track: $40^{\circ} 44.444'N$ $70^{\circ} 40.461'W$ - Hdg: 146/326



Norway

Supporting airport location: Bodø AFB (ENBO)

Fly heading 257 for 59 miles after takeoff from Runway 25.

Coordinates for center of track: 67° 03.604'N 1° 11.554'E - Hdg: 76/256

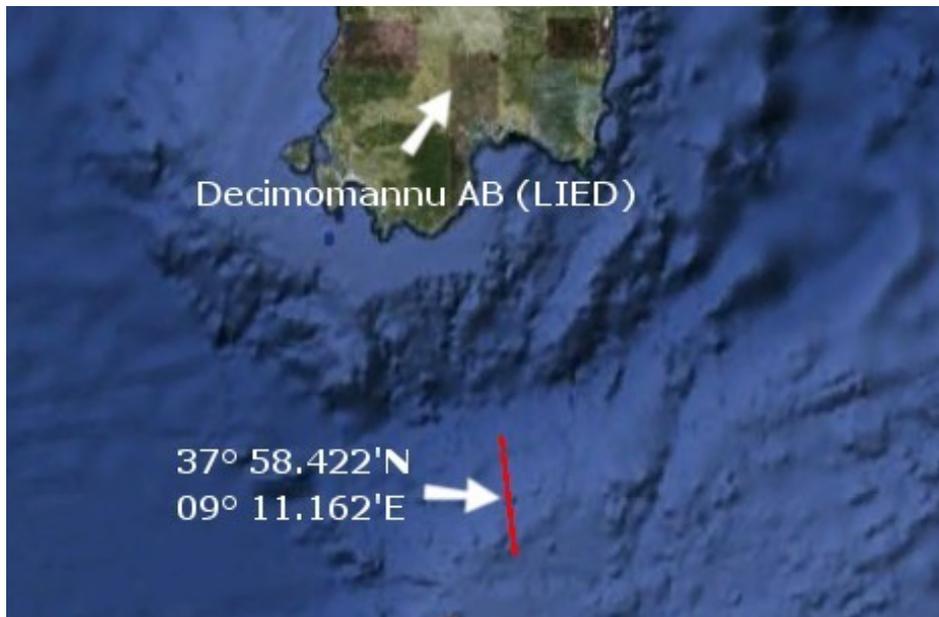


Sardinia

Supporting airport location: Decimomannu Air Base (LIED)

Fly heading 173 for 95 miles after takeoff from Runway 17L.

Coordinates for center of track: 37° 58.422'N 09° 11.162'E - Hdg:173/353



Adriatic

Supporting airport location: Amendola/Foggia (LIBA)

Fly heading 76 for 90 miles after takeoff from Runway 11.

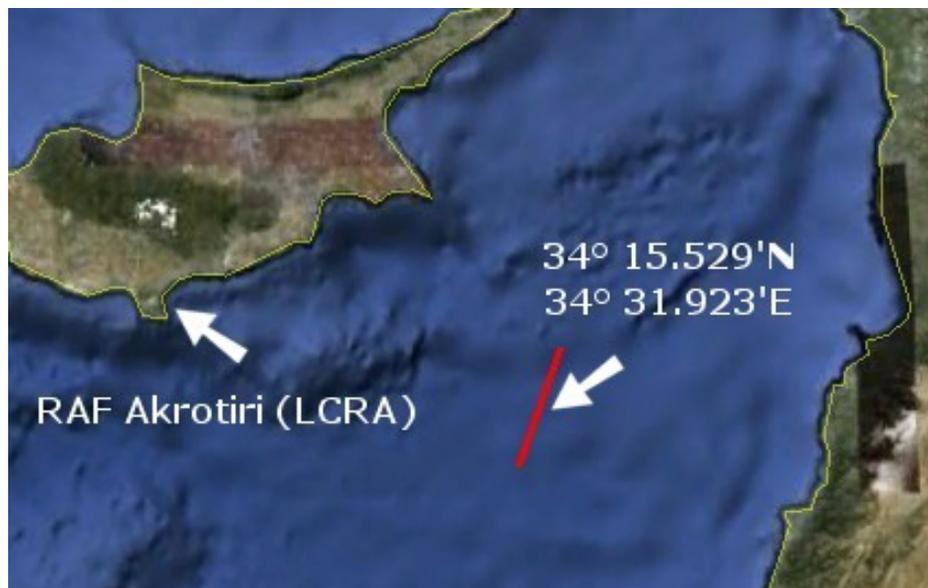
Coordinates for center of track: $41^{\circ} 50.137'N$ $17^{\circ} 24.168'E$ - Hdg: 128/308

**Lebanon**

Supporting airport location: Royal Air Force Station Akrotiri (LCRA)

Fly heading 104 for 89 miles after takeoff from Runway 10.

Coordinates for center of track: $34^{\circ} 15.529'N$ $34^{\circ} 31.923'E$ - Hdg: 20/200



AI Carrier Bonus Location

Yankee Station

Supporting airport location: Da Nang Air Base (VVDN)

Fly heading 10 for 103 miles after takeoff from Runway 35R.

Coordinates for center of track: 17° 29.119'N 108° 29.648'E - Hdg: 125/305



The flight for this AI Boat Traffic file uses the "Early 80's Empty" version of the Enterprise so that you can fly 1960s - 1970s era aircraft to and from the carrier without visually conflicting with the aircraft and schemes of the early or late 1980s.



AI Carrier Saved Flights

Saved Flight files are included for all 17 of the Carrier locations (eight each for the early 1980s and late 1980s versions and the bonus Yankee Station). The files are not installed during the initial Enterprise installation.

To install the files navigate in Explorer to the "\Program Files\Lockheed Martin\Prepar3D\3rd Party\Team SDB\Enterprise" folder and run the "CVN 65 Flights.exe" application. The files will be installed to the "Prepar3D Files" folder in your Documents folder. For WinXP this is located at: "C:\Documents and Settings\user name\My Documents\Prepar3D Files". For Vista and Win7 the destination folder is: "C:\Users\user name\Prepar3D Files".

Select a flight by selecting "Flights" on the top menu bar in Prepar3D and then click on "Load...". On the "Load Flight" window click "My Saved Flights" and then select a flight from the expanded list. Highlight the selected flight and hit the Enter key. The flights are named as "CVN-65" and the location. For example, "CVN-65 Hawaii".

West Coast Saved Flights	Flight Name	Carrier Location At Start	Aircraft/Carrier Heading
	San Diego	N 32° 30.65' W118° 45.28'	257° M
	Lemoore	N 36° 19.97' W122° 33.28'	254° M
	Pacific NW	N 48° 16.11' W125° 42.29'	248° M
	Hawaii	N 20° 37.85' W159° 30.51'	237° M
	Korea	N 36° 48.43' E125° 01.95'	276° M
	Darwin	S 12° 10.93' E130° 23.82'	291° M
	Diego Garcia	S 07° 40.94' E73° 12.64'	302° M
	Oman	N 25° 01.83' E56° 50.83'	151° M
Yankee Station	N 32° 30.65' W118° 45.28'	257° M	

East Coast Saved Flights	Flight Name	Carrier Location At Start	Aircraft/Carrier Heading
	Florida	N30° 15.99' W80° 51.73'	94° M
	Puerto Rico	N18° 25.44' W65° 27.01'	60° M
	Norfolk	N36° 54.85' W75° 39.75'	79° M
	Rhode Island	N40° 54.13' W70° 48.10'	161° M
	Norway	N67° 06.91' E12° 41'36'	251° M
	Sardinia	N38° 19.41' E09° 09.80'	173° M
	Adriatic	N41° 42.97' E17° 37.02'	308° M
Lebanon	N34° 04.16' E34° 26.11'	16° M	

The flights load with the "IRIS T-6A Texan II SP2" (included in Prepar3D since v1.4) as the startup aircraft. See "Appendix C: Adapting Aircraft to Prepar3D Carriers" on page 30 for notes on making this aircraft carrier compatible. If you no longer have this aircraft installed you will see an "Aircraft Initialization Error" warning message. To change the startup aircraft for the flight to be something different simply load your favorite Navy aircraft and

resave the flight. Your aircraft will start in the air about 10 miles astern of the moving carrier and escort. Your fuel level will be 25% internal fuel. The radio will be tuned to the carrier (early 80s - 115.00 MHz, late 80s - 116.00 MHz) for use with the Advanced features (see pages 11-13) and the RFN Tacan gauge described in "Appendix B: Moving Carrier Navigation Aids Suggestion" on page 29. From here you can begin your descent for a flyover and then come around to fly the pattern and land on the carrier. The carrier should be visible but if not, try restarting the flight.

The carrier tracks consist of a 25 nautical mile straight line run in one direction followed by a tight turn and a 25 nautical mile run in the opposite direction. The carrier locations on pages 15 - 22 provide coordinates for the center of the track as well as the direction of travel of the moving carrier. Saved Fights use "Sim Time" rather than "System Time".

The flights start near the beginning of the track with the ship steaming away. You should have about 55 minutes flying time (although you may not have 55 minutes of fuel on board) before the ship reaches the end of the track and reverses.

At the end of each leg the carrier will make an un-prototypical 180-degree turn to start down the leg in the opposite direction. This method was decided upon rather than trying to maneuver the formation components -- carrier, plane guard helicopter, and destroyer escort. Do not try to land on the carrier when it is making the turn. If the carrier begins to turn it is at the end of the track. Give it a few minutes to straighten out before attempting to land.



Credits:

Sylvain Parouty - Sharing his expertise, bringing the Alphasim Enterprise and her aircraft into FSX, being extremely patient, and so much more...

Michael Dews - AI Ship Traffic, Flights, and beta testing

Frank Safranek - Aircraft Textures, User Manual, and beta testing

Cmdr. Bill Mackay, USN (Ret) - Naval Operations Consultant and beta testing

Michael Davies - Original SH-3 Sea King and A-7E Corsair II used for static models

Senior Chief Earl Watkins, USN (Ret) - "Adams" Class guided missile destroyer escort

Carl Edwards - Original designer of the Alphasim CVN-65 "Big E" package

Additional beta testers: Philip Chandler, Benoit Dubé, Mitch London, Bruce Martin and Russel Smith

Technical Support

A forum area for Technical support has generously been provided by David Bushell for Team SDB use via the support forum at "<http://www.glowingheat.co.uk>". Click in the "Forum" link and then scroll down to the Team SDB section. Please search and review any previous questions as your issue may have already been addressed. If so please add your comments to the existing thread.

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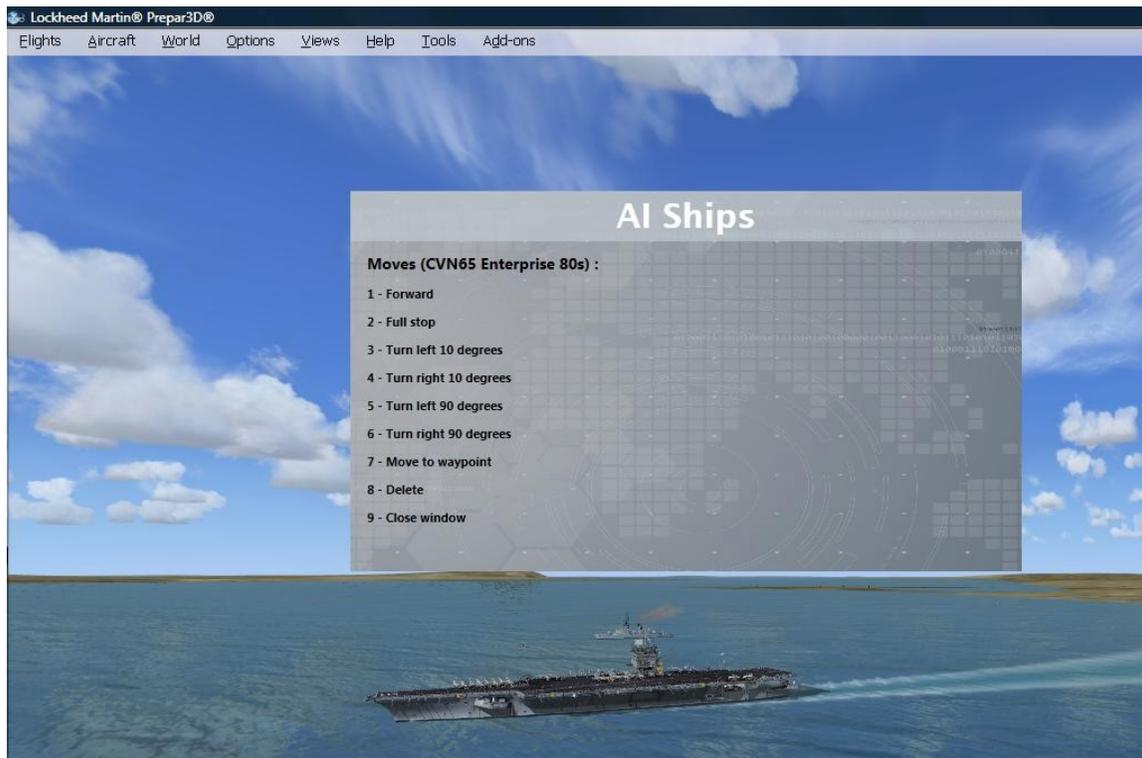
Appendix A: User Positioned Moving Carriers

In addition to the 17 pre-defined racetrack courses included, you can place the moving Enterprise wherever you like by using the "AICarriers" add-on module by Lamont Clark. Information regarding AICarriers and the download file is available from Lamont Clark's website at <http://lc0277.gratisim.fr/software.html>

AICarriers was designed for Microsoft Flight Simulator X/Acceleration but will work with Prepar3D as well. If you have FSX and AICarriers already installed simply copy the EXE.XML file found in the "\\Documents and Settings\[username]\Application Data\Microsoft\FSX\" folder to the "\\Documents and Settings\[username]\Application Data\Lockheed Martin\Prepar3D\" folder. If not, read the AI Carriers manual install notes and include the <Path>...\AICarriers\aicarriers.exe</Path> information.

A configuration file has been provided to add the Enterprise versions to the selection list in AICarriers. To install the configuration file navigate in Explorer to the "\\Program Files\Lockheed Martin\Prepar3D\SimObjects\Boats\CVN65_Enterprise\AICarriers\conf.d\" folder. Copy the "CVN65_Enterprise.cfg" file to the "conf.d" folder of the AICarrier installation folder (default location: C:\Program Files\AICarriers).

Once the configuration file has been added start Prepar3D and use the drop down "Add-ons -> AI Ships" menu in the titlebar. From the menu that appears (see below) you can select to add the CVN-65 Enterprise carrier. The carrier, the Sea King "Plane Guard" helicopter, and a "Plane Guard" destroyer (the USS Robinson guided missile destroyer) will be placed where you designate using the menu in AICarrier. The optional "Empty Deck" versions will also be listed. These do not include the Plane Guard destroyer or the Sea King.



Appendix B: Moving Carrier Navigation Aids Suggestion

Locating and landing on a moving AI carrier is a bit different from doing so on a static one because all navigation aids attached to the carrier are missing. But there is a solution to this by using a Tacan gauge developed for the Royal French Navy (RFN) by Sylvain Parouty.

Similar to the Advanced Version Features and Setup described on page 11 this gauge can be added to any Prepar3D compatible aircraft of your choice. Once installed, the gauge will scan for any AI object within a 100 mile range that is defined in the "carrier.xml" file added to the Gauges folder during installation. Based on the frequency assigned to Nav1 or Nav2 the gauge will show the direction and distance away of a particular carrier. As your aircraft gets closer to the carrier you can switch from Tacan mode to ILS mode.

In the image below Nav1 is tuned to 115.00 MHz to lock on to the Early 80's Enterprise and the gauge, in Tacan mode, indicates the ship is in front and slightly left of center of the aircraft and is 0.2 miles away. The radio stack is from the Virtavia A-6E Intruder.



As discussed in the gauge documentation the "carrier.xml" file includes a list of carriers and parameters for the gauge to use. The file is editable and well commented so you can add additional carriers. A "carrier.xml" with Enterprise entries is included in this package.

Please note: If you have not already used the RFN Tacan gauge be sure to only install the most recent version (v3 or newer) downloadable from the RFN website. The Enterprise is only compatible with v3 or newer and not with the previous versions.

You can download this freeware gauge from Sylvain Parouty here:
<http://royalefrenchnavy.perso.sfr.fr/RFN-Creations.htm>

Appendix C: Adapting Aircraft to Prepar3D Carriers

Some aircraft have Launch Assistance and Tailhook features hard coded into the model (.mdl) file. An example of this is the F/A-18 included in the FSX/Acceleration package. Adapting other aircraft for use with the Big E carrier without these features hard coded in requires editing the "aircraft.cfg" file of the individual aircraft using Notepad to add the necessary [launch assistance] and [tailhook] sections. This method works on all aircraft.

The coordinates are defined in longitudinal, lateral, and vertical feet from the datum reference point of the aircraft model (not always the same as the real aircraft). For a quick test, you can copy the coordinates of the nose gear in the [contact_points] section of the "aircraft.cfg" file since they are defined the same way. The following examples were determined for the "IRIS T-6A Texan II SP2" (pictured below) included in Prepar3D:

```
[launch_assistance]
launch_bar_pivot= 6.63, 0.0, -4.0
launch_bar_lug= 8.13, 0.0, -4.36

[tailhook]
tailhook_length= 4
tailhook_position= -12.0, 0, -0.8
cable_force_adjust= 1
```

For more information please consult Lamont Clark's website:

http://lc0277.gratisim.fr/Adapting_SX_aircrafts_to_acceleration_carriers.html

Also see Henk ("*hschuit*") Schuitemaker's [launch assistance] coordinate formula:

<http://www.sim-outhouse.com/sohforums/showthread.php?&p=499287>



Appendix D: Launching / Recovery with Prepar3D Carriers

It is not the intent of this User Manual to provide all answers about launching and recovery from carriers in Prepar3D, but this final section will at least get you started.

Now that you have everything installed (see the previous page for information on Adapting Aircraft to Prepar3D Carriers), and you are on the carrier with your selected aircraft, you are ready to launch.

1. **Taxi to the catapult location.** Ensure that your nosewheel is close to the catapult shuttle. This will not be exact for all aircraft but with a little trial and error you will know where to position your aircraft for this first step. (For tactical night operations or darkened ship conditions, because there are no Plane Directors to guide you to the catapults, a small red light has been located at the aft end of the catapult to assist in locating the shuttle.)
Unfold the wings (Ctrl-Shift + W) if necessary and apply slats/flaps for Takeoff.
2. If your aircraft is so equipped, lower the animated **Launch Bar** using **Shift + U**.
3. Arm the **Takeoff Assist** using **Shift + I**. This step does several things:
 - a. First, you may see the aircraft move automatically to position itself with the catapult.
 - b. Second the jet blast deflector behind the aircraft will move to the raised position.
 - c. And third, a red "Holdback Bar" message (indicating successful hookup) will appear in the lower left corner of the screen.
4. Apply **Full Power** (Full Afterburner) for takeoff using throttles and/or the **[F4]** key.
5. Apply the **Catapult Launch** (Trigger) using **Shift + Spacebar**. The animated Catapult Officer (Shooter) will signal that everything is ready to go and you will be launched. The jet blast deflector behind you will lower for the next aircraft to taxi into position.

***Note:** In order to have all the animations showing, verify that the 'Enhanced Animations' option is selected in your Prepar3D Settings.*

Landing or Recovery on a carrier is just as easy. The default Team SDB Enterprise uses the Fresnel Lens Optical Landing System (FLOLS) included in Prepar3D. This system uses a 4-degree glide slope rather than the 3.5-degree glide slope normally used on US Navy aircraft carriers. So if you feel you are lined up but too high during approach, you are. Slow down to lose altitude and see where you need to position the yellow "ball" with reference to the green reference light bars and use that position. Or for a more accurate experience install the Advanced User version described on page 11 of this manual to use the adjustable FLOLS.

Just remember to follow your checklist and lower the landing gear and flaps before landing.

1. **Extend the Tailhook** on approach using **Shift + Q**. Go to full power as you go over the wires in case you "Bolter" -- miss the wires and have to go around. After you successfully land and catch a wire, throttle back and raise the tailhook using Shift + Q.
2. Parking is always tight on deck so if the aircraft is equipped with **folding wings** you should fold them using **Ctrl-Shift + W** whenever you are not in launch position to avoid hitting other aircraft while taxiing.