

# NAVAL OPERATIONS

## 1 Introduction

Particular efforts have been done in BMS to make the naval operations more attractive.  
The key points are:

- Possibility to add naval units directly in the Mission Planner
- Carriers are now acting as real “airbases” with Air Traffic Control (ATC) & TACAN
- AI are able to spawn, taxi, take off, and land on carriers
- Carrier operations have been heavily improved for the Advanced Flight Model (AFM)

## 2 Creating carrier with airbase

### STEP1: Add Task Force

There is a new icon that allows adding naval unit.  
Pick up a carrier in the list.

**Be aware that you can not have two carriers of the same name (i.e. same carrier) in the same mission. This will ruins the ATC code attached to the carrier.**



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## STEP2: Add Squadron

Click on the airbase icon, and click on the carrier icon or on any airbase on the map, Add Squadron page will popup.

You can notice that now your task force is listed as airbase.

Choose your aircraft type and task force as airbase.



You can also directly use the add flight or add package button.

In that case, the task force will be listed in the air base list.



Basically, as soon as the task force is created, everything acts as if the carrier was a land airbase.

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## 3 Flight plan

The carrier is following a predetermined pattern (square).

During a mission flown from a carrier, the flight plan is automatically updated so that the landing waypoint is where the carrier really is.

This is updated in the UI and in flight.



## 4 Setting up ATC & TACANS

The best way to find the correct radio frequencies is to use DTC page with the button “Set Tower”



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**TACAN channels and UHF/VHF for carriers are:**

TCN	UHF	VHF
# VINSON		
010 X	226000	116000
# ROOSEVELT		
011 X	226100	116100
# TRUMAN		
012 X	226200	116200
# WASHINGTON		
013 X	226300	116300
# LINCOLN		
014 X	226400	116400
# STENNIS		
015 X	226500	116500
# IKE		
016 X	226600	116600
# KENNEDY		
017 X	226700	116700
# KITTY HAWK		
018 X	226800	116800
# CONNIE		
020 X	226900	116900
# AMERICA		
021 X	227000	117000
# MIDWAY		
023 X	227100	117100
# INDEPENDANCE		
024 X	227200	117200
# RANGER		
025 X	227300	117400
# SARATOGA		
027 X	227400	117500
# ENTERPRISE		
028 X	227500	117600



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## 5 Taxi & Take Off

You can commit ramp/taxi or take off though it is recommended not to commit to take off. AI are able to taxi now on carrier and will follow taxipoints like on land.



### Taxi Start : notice wings when parked

Only the two front catapults can be used. **The leader is supposed to take the left catapult.**

OFM is not really supported for carrier operations. Use AFM only.

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## Procedure for Catapult

**Step1: Approach at low speed and well aligned with the catapult**



**Step2: Continue aligned and at slow speed until the aircraft enters into catapult and nose is automatically compressed. Once the nose has finished compress and catapult is ready, a red message is displayed on the screen.**



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Catapult ready: notice nose gear compressed and steam

Step3: You can now apply full afterburner in preparation of release



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**Step4: SHF + K will release catapult, notice your nose going up while the nose gear is released which helps the aircraft to take the correct pitch.**



Nose gear compression released

You wingman is catapulted after you, beware of possible collisions though.





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## Procedure for Landing

The approach for landing shall be like a real approach on carrier (means hard slope), accurate landings are now possible with AFM, so you don't need to have a flat approach like with OFM.



Arrestors are properly simulated so you will not catch a cable if you don't touch in the correct arrestor area.

**As an example in the picture below, the hook will miss the cable.**



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After being arrested, the hook is disengaged and you can taxi to parking.

AI are also able to land correctly and will go to the parking areas on the deck



AI catching a cable



Parking area

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## 6 Adding carriers to a campaign / theater (dev note)

### 6.1 Creating objectives associated

The carriers are associated automatically with their corresponding airbase/objective in the database.

The Fuel Amount in the Vehicle Data Details corresponds to the Objective/Airbase CT dedicated in the database.

Each carrier shall be linked with a unique Airbase/objective.

The objective / airbase can be treated exactly like an airbase on land.

**Vehicle Data Details**

CV63 Kity Hwk

Vcl No: 482 NCTR/Cockpit: Vis Sig: 0 ACD Number: 5 Update Cancel

CT Recd: 2956 Radar Ptr: 110 IR: 0

**Basic Data**

MTOW: 60100 Max Alt: 800 Radar CS: 1

Empty Weight: 0 Min Alt: 0 Engine Noise: 181

**Fuel: 3818** Cruise Alt: 200 Crew: 254

Fuel Rate: 0 Max Speed: 60 Flags: 0x1812

Hit Points: 100 CallSign: 102 Call Slot: 58

**Related Vehicles**

Vehicle	CT ID
CV63 Kity Hwk	2956

**Units with this**

Unit	Unit ID
Carrier Present	572

**Stats**

Target	To Hit	Stren...	Range	Detect
Static	0	28	0	0
Foot	0	0	0	0
Wheeled	0	0	0	0
Tracked	0	0	0	0
Low Air	25	154	12	40
Air	15	0	15	44
Naval	0	0	0	40

Recalculate

**Damage**

From	%
None	0
AP	4
HE	5
Bomb	0
Incendiary	0
Proximity	0
Kinetic	0

**Hardpoints/Weapons**

Type	Name	No	Visible	Rack	Ammunition	WLD...
Weapon	20mm Phalanx	0	no	no	200	-
Weapon	20mm Phalanx	1	no	no	200	-
Weapon	20mm Phalanx	2	no	no	200	-
Weapon	RIM-7	3	no	no	8	-
Weapon	RIM-7	4	no	no	8	-
Weapon	RIM-7	5	no	no	8	-

View Edit Delete Add Weapon Add HP

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**Objective Data Details**

**Carrier KITTY** [View] [Update] [Cancel]

**Basic Data**

CT Recd: 3818 Data: 2 1st Phd pointer: 341

Radar Dist: 70 Icon: 0 Fed Count: 0

Radar Feat: 255 Fed Ptr: 0

**Detection by**

Static: 0 Foot: 0 Wheeled: 0 Tracked: 0 Low Air: 50 Air: 150 Naval: 0 Rail: 0

**Damage by**

None: 0 Kinetic: 0 AP: 0 Water: 0 HE: 0 Chemical: 0 Bomb: 0 Nuclear: 0 Incendiary: 0 Other: 0 Proximity: 0

**Phd-Pointers**

PHD	OCD	Type	PDInd...	PDCo...	Feat1	Feat2	Feat3
PHD 341	751	1	7933	12	255	255	255
PHD 342	751	1	7945	12	255	255	255
PHD 343	751	8	7957	4	255	255	255
PHD 344	751	8	7961	4	255	255	255

The first PHD in the list, type 1 corresponds to the Take off runway with spawn parking points and take off taxi points.

The second PHD in the list, type2 corresponds to the Landing runway with taxi points and parking points.

**Order is mandatory (first is take off, second is landing).**

**Point Header Data Details**

**Carrier KITTY** **341** [Update] [Cancel]

**Basic Data**

Odcd Ptr: 751 Hdg: 360 Sin(Hdg): -7.78829e Pd Count: 12

Chain: 342 Cos(hdg): 1 Pd Ptr: 7933

Tex Id: 360 Rwy No: 0 L/R: 0 Type: 1

Feature 1: 255 Feature 3: 255 Feature 5: 255

Feature 2: 255 Feature 4: 255 Feature 6: 0

**PD Data**

Index	X?	Y?	Type?	Flags
7933	0	811	runway	1
7934	0	298	takeoff	0
7935	0	224	take runway	0
7936	0	60	taxi	0
7937	38	-166	taxi	0
7938	98	-188	small park	0
7939	38	-233	taxi	0

[Add After] [Add Before] [Delete]

**Point Header Data Details**

**Carrier KITTY** **342** [Update] [Cancel]

**Basic Data**

Odcd Ptr: 751 Hdg: 170 Sin(Hdg): 0.173649 Pd Count: 12

Chain: 343 Cos(hdg): -0.984808 Pd Ptr: 7945

Tex Id: 170 Rwy No: 1 L/R: 0 Type: 1

Feature 1: 255 Feature 3: 255 Feature 5: 255

Feature 2: 255 Feature 4: 255 Feature 6: 0

**PD Data**

Index	X?	Y?	Type?	Flags
7945	-39	-100	runway	1
7946	-54	-7	takeoff	0
7947	-55	-5	take runway	0
7948	-116	208	taxi	0
7949	-27	230	taxi	0
7950	100	215	small park	0
7951	40	164	taxi	0

[Add After] [Add Before] [Delete]

**Note that the runway for take off shall be oriented 360 while the runway for landing shall be oriented 170 (or 180 if you want to use a vintage carrier).**



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**Point Header Data Details**

Carrier KITTY      344      [Update]      [Cancel]

Basic Data

Ocd Ptr 751    Hdg 170    Sin(Hdg) 0.173649    Pd Count 4

Chain 0      Cos(hdg) -0.984808    Pd Ptr 7961

Tex Id 170    Rwy No 1    L/R 0    Type 8

Feature 1 255    Feature 3 255    Feature 5 255

Feature 2 255    Feature 4 255    Feature 6 0

PD Data

Index	X?	Y?	Type?	Flags?
7961	-82	-236	runwayDim	1
7962	23	-213	runwayDim	0
7963	48	-376	runwayDim	0
7964	-50	-400	runwayDim	2

[Add After]    [Add Before]    [Delete]

The two following PHD in the list, type 8 corresponds to the definition of the dimensions of the take off area and landing areas.

For the take off area dimensions, you need to place the bottom edge center of your rectangle in between the two catapults. And both side edges of the rectangle shall be at 10ft to 15 ft from each side of the catapults. We recommend you take the existing models as example.

Landing area definition is self explanatory.

**We recommend the use of BMS Editor to create or move those PHD / PT. If you really need to change those data, we recommend to create a **temporary feature** (namely the CT of the carrier in itself) attached to your objective, so in BMS editor you will be able to visualize the PT and Runway dimensions on your carrier.**

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## 6.2 Placing objectives in the campaign

For each carrier that you want to use in a campaign of a theater, you need to define the associated objective. (use Tacedit). Use the correct Ocd Id (CT + 100), so in our exemple **3818 + 100**). Use correct Id and CampId and **place the objective at X = 0 and Y =0**.

Those objectives will never be displayed on the map but will be automatically associated to the carriers when needed. If you dont create those objectives in the tac\_new.tac or campaigns files (save#.cam), the carrier code will not work.

Use default KTO BMS te\_new.tac as basic example.

The TACAN and UHF/VHF stations are linked with the CampId number.

e.g.

#KITTY HAWK

**3693** 0 8 X 32766 100 1 226800 116800 0 0 0 0

**Objective Dump**

ID: 2676 Camp Id: 3693 Name: Carrier9 OK

X: 0 Longitude: 33:00:00 TName: Carrier9 Cancel

Y: 0 Latitude: 123:00:00 Parent Id: 0 0 Delete

Type Info

Ocd Id: 3918 Owner: U.S. Fuel: 0

Type: [dropdown] Supply: 0

SubType: [dropdown] Control: U.S. Priority: 0

Losses: 0

Edit Radar

Spot Time: 0:0:00.0000 Normal Damage

Spotted: 0 Repair Destroy

Links: Add Del Del all Features: [text box]

Flags

Obj Flags: 0x0

Base Flags: 0x0

☐ Ambush ☐ Commando

☐ Artillery ☐ Mountain

☐ Fixed ☐ Frontline

☐ Flat ☐ 2nd line

☐ Radar ☐ 3rd line

☐ Beach ☐ Sam

☐ Manual ☐ NTCR

☐ Needs Repair ☐ GCI

☐ Border

Name	Node	Static	Foot	Whee...	Track...	Low Air	Air	Naval	Rail