

DCS: AV-8B NA by RAZBAM

Mission Editor Waypoint Properties

The Mission Editor in DCS has a table of Waypoint Properties that enables the mission builder to create different scenarios.

RAZBAM has made use of this table to enable more navigation features for the AV-8B NA.

Waypoints Offsets:

Now it is possible to create waypoints offsets from the Mission Builder. The offsets are navigation spots that are not part of the normal flightplan. Usually the offsets are used to select a target zone by using the waypoint as the bomb run IP or Initial Point.

To create a waypoint offset two properties are required:

- **OS_Bearing:** This indicates the direction FROM the waypoint TO the offset point. The value is in Degrees True Heading: 0 to 359.
- **OS_Range:** This indicates the distance FROM the waypoint TO the offset point. The value is in nautical miles and it ranges from 0.0 to 55.0.

If any of these properties is missing the offset will not be created.

Waypoint Type:

Normally a flightplan waypoint is just a navigation target. But with this property you can mark a waypoint as a special type that can be recognized as a glance. Available types are:

- Target Zone.
- Bombing Run Initial Points or IP
- Air-to-Air Refueling Zone.
- Search-And-Rescue Zone.
- Parking Zone: this is a zone where the pilot must remain while waiting for CAS orders.

To define a waypoint type the following property is required: **WP_Type**. The valid values are:

- **TGT:** Target Zone
- **IP:** Initial Point
- **AAR:** Air-to-Air Refueling Zone
- **SAR:** Search-And-Rescue Zone
- **PRK:** Parking Zone

Other Properties

In the future more properties will be made available for the mission builder like Recognized Threats, etc.

How to create a Waypoint Property

1. While in the Mission Editor, select the waypoint where you want to include a special property and then go to the WAYPOINT PROPERTY tab on the Properties window on the right of the map. See Figure 1.

AIRPLANE GROUP

NAME: Alfa

CONDITION: % < > 100

COUNTRY: USA **COMBAT**

TASK: Nothing

UNIT: < > 1 OF < > 1

TYPE: AV-8B N/A

SKILL: Player

PILOT: Player

TAIL #: 16

RADIO: ☒ FREQUENCY: 243 MHz AM

CALLSIGN: Colt 1 1

☐ HIDDEN ON MAP

☐ HIDDEN ON PLANNER

☐ HIDDEN ON MFD ☐ LATE ACTIVATION

Name	Value
WAYPOINT PROPERTIES	

Add

- Click on the ADD button to create a new property. An empty property with a default name will be inserted into the table.
- Click on the default name and overwrite it with one of the properties names available: **OS_Bearing**, **OS_Range** and **WP_Type**. Please be aware that you must write the names EXACTLY as shown, otherwise the property will not be recognized.
- Enter the required value in the VALUE column.

AIRPLANE GROUP

NAME: Alfa

CONDITION: % < > 100

COUNTRY: USA **COMBAT**

TASK: Nothing

UNIT: < > 1 OF < > 1

TYPE: AV-8B N/A

SKILL: Player

PILOT: Player

TAIL #: 16

RADIO: ☒ FREQUENCY: 243 MHz AM

CALLSIGN: Colt 1 1

☐ HIDDEN ON MAP

☐ HIDDEN ON PLANNER

☐ HIDDEN ON MFD ☐ LATE ACTIVATION

Name	Value	
OS_Bearing	322	
OS_Range	3.533	
WP_Type	IP	

Add

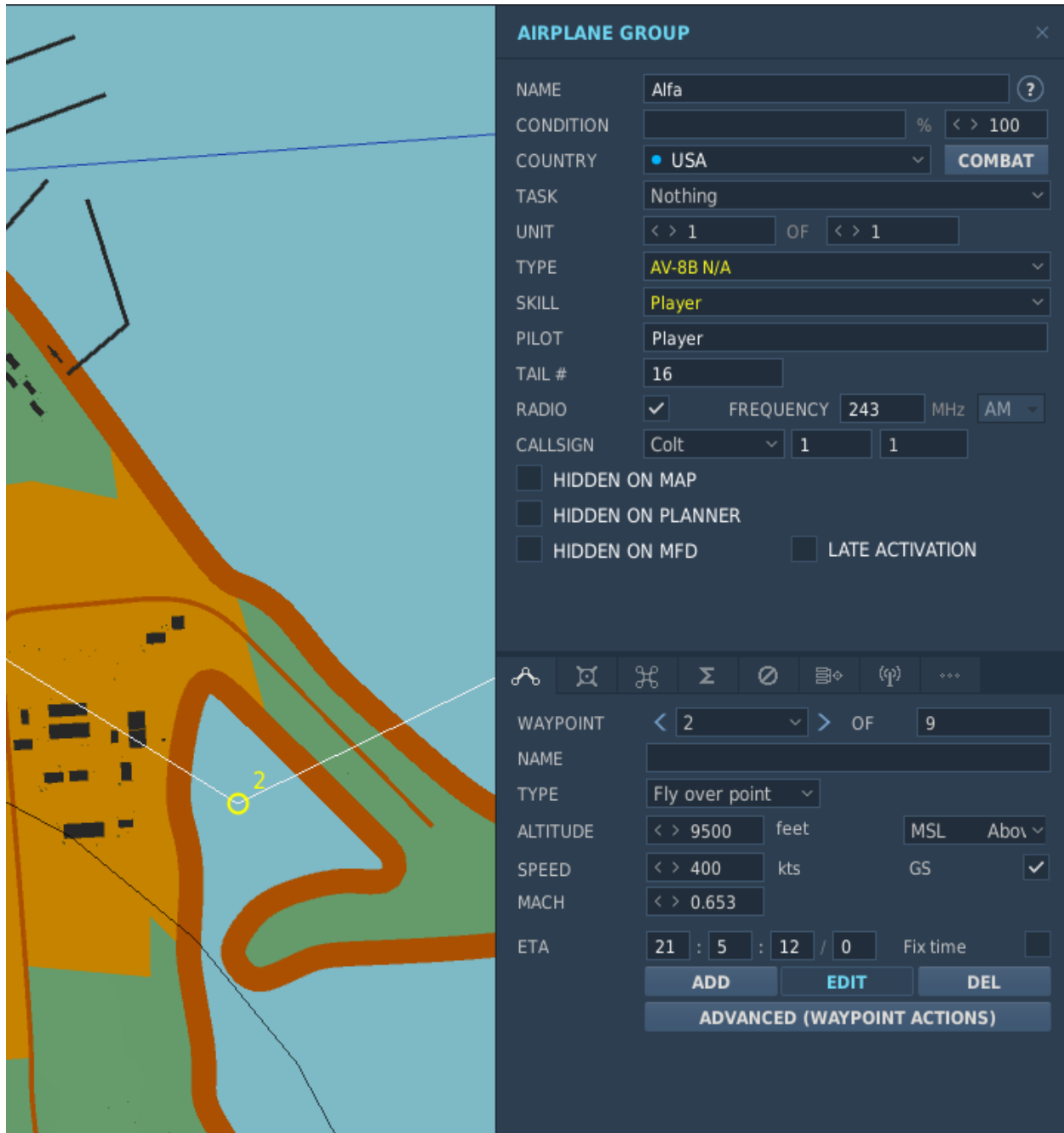
- Save the mission and start it.

When the mission loads, the aircraft's INS will check for these properties and will create the offset for the selected waypoint. Please be aware that only one offset can exist per waypoint. If you insert more than one offset property, only the last values loaded will be used.

Only one waypoint type can be defined for each waypoint. If there are more than one defined, only the last one will be selected.

Default Waypoint Properties

The aircraft INS will also read the default waypoint properties as defined in the mission editor.



AIRPLANE GROUP

NAME: Alfa

CONDITION: % < > 100

COUNTRY: USA **COMBAT**

TASK: Nothing

UNIT: < > 1 OF < > 1

TYPE: AV-8B N/A

SKILL: Player

PILOT: Player

TAIL #: 16

RADIO: ☒ FREQUENCY: 243 MHz AM

CALLSIGN: Colt 1 1

☐ HIDDEN ON MAP

☐ HIDDEN ON PLANNER

☐ HIDDEN ON MFD ☐ LATE ACTIVATION

WAYPOINT: < 2 > OF 9

NAME:

TYPE: Fly over point

ALTITUDE: < > 9500 feet MSL Above

SPEED: < > 400 kts GS ☒

MACH: < > 0.653

ETA: 21 : 5 : 12 / 0 Fix time ☐

ADD EDIT DEL

ADVANCED (WAYPOINT ACTIONS)

These default properties are:

- NAME: If no name has been defined a default one will be created: WNN, where W is for waypoint and NN is the waypoint number. For values below 10 an empty space will be inserted so the default name will be W 1, W 2, etc.
- ALTITUDE: This is the selected flight altitude for the leg to the selected waypoint. All altitudes will be regarded as feet MSL, regardless of ME selection.
- SPEED: Ground Speed in Knots. This is the selected endurance speed for maximizing range. All speeds will be considered Ground Speed in Knots regardless of ME selection.

Once the mission has started the pilot can check all these properties by calling the kneeboard and navigating towards the MISSION ROUTE PLAN page.



This page will detail all the relevant data the pilot needs to prosecute his mission.

The information provided in this page is:

- Total distance to be flown in Nautical Miles.
- Average Ground Speed for the entire flight.
- Estimated Time Enroute for the entire flight.
- Total Fuel Loaded at Flight start.
- Mission Route waypoint count.
- Mission Route Detail (2 lines per waypoint)
 - ❖ Waypoint Number
 - ❖ Waypoint Name / Remarks (Waypoint Type, Offset, etc.)
 - ❖ Heading to Waypoint from last position (Degrees True or Magnetic, depends on INS selection) / Selected Ground Speed in knots for the leg.
 - ❖ Leg Distance in Nautical Miles / Flight Altitude (feet MSL).

- ❖ Remaining Distance to end of flight (NM) / Total Distance flown (NM)
- ❖ Estimated Time Enroute for the Leg / Accumulated Estimated Time Enroute for the flight.

MISSION ROUTE PLAN						
TOTAL DISTANCE: 169.6 NM						
AVG GS: 395 KTS			TOTAL ETE: 00:26:20			
TOTAL FUEL: 6206.0 LBS			WYPT COUNT: 8	PAGE: 1		
WYPT	NAME	HDG	D.LEG	D.RMG	ETE	LEG
	RMKS	GS KTS	ALT	D.TTL	ETE	ACC
01	W 1	220	4.9	164.7	00:00:50	
	---	350	6562	4.9	00:00:50	
02	W 2	115	28.2	136.6	00:04:13	
	---	400	9500	33.1	00:05:04	
03	FORD	057	55.1	81.4	00:08:16	
	IP	400	15000	88.2	00:13:21	
04	W 4	279	38.9	42.5	00:05:50	
	---	400	15000	127.2	00:19:11	
05	W 5	259	24.1	18.4	00:03:37	
	---	400	9000	151.3	00:22:49	
06	W 6	214	6.5	11.9	00:01:06	
	---	350	6967	157.8	00:23:56	
07	CAMELOT	180	6.8	5.1	00:01:21	
	---	297	3500	164.5	00:25:17	
08	ANAPA-VITYAZEVO	215	5.1	0.0	00:01:02	
	---	297	6967	169.6	00:26:20	
GLOSSARY [RWIN]+[SPACE] FOR NEXT PAGE						
ETE: ESTIMATED TIME EN ROUTE						
AAR: AIR-TO-AIR REFUELING ZONE						
TGT: TARGET ZONE						
IP: BOMB RUN INITIAL POINT						
O/S: WAYPOINT HAS OFFSET						

Only 15 waypoints can be shown per page. If the Mission Route has more than 15 then by pressing RWIN + SPACE you will change the page to next. To return to a previous one you must cycle through all the pages.

The AV-8B NA Mission Route Plan is limited to 60 waypoints, so the maximum number of pages available is 4.

NOTES

When classifying a waypoint as an IP, it is recommended that you either create an offset for the waypoint or classify the next waypoint as TGT (Target Zone).