

Weather Ship Gauge Manual (V1.33)

This Weather Ship gauge simulates the Weather ships placed in the North Atlantic and Pacific ocean, as well as the land based HF radio beacons used before and during WW2 and some LORAN stations (in this gauge they work as longer ranged HFDF stations).

The Gauge itself is a radio receiver which can receive the NDB signals from the Weather ships and HF radio beacons.

The Weather ships were introduced during WW2 and after the war ICAO (the international civil aviation organisation) made agreements with various countries to put these ships in operation.

Their main task was to make better weather forecasts for trans oceanic flights. They also helped aircraft as navigational aids.

More info can be found here:

http://en.wikipedia.org/wiki/Weather_ship

<http://www.weatherships.co.uk/>

<http://iancoombe.tripod.com/id56.html>

The Weather ships were equipped with NDB radio beacons. Normally they did not transmit continuously, but transmitted for each 15 mins for a 5 min duration starting at H+05 each hour.

The land based HF and LORAN stations transmit continuously.

Their positions can be seen here with a great circle track across the Atlantic from Ireland to New Foundland (Weathership.kmz file for google earth included):



Each Weather ship station is named and has the following coordinates:

Letter	Name	Latitude	Longitude
A	Able/Alpha	N62°00"	W033°00"
B	Baker/Bravo	N56° 30"	W051°00"
C	Charlie	N52° 45"	W035°30"
D	Dog/Delta	N44°00"	W041°00"
E	Easy/Echo	N35°00"	W048°00"
F	Fox	N35°00"	E040°00"
G	George	N46°00"	W029°00"
H	Hotel	N38°00"	W071°00"
I	India	N59°00"	W019°00"
J	Juliet/Juliett	N52° 30"	W020°00"
K	Kilo	N45°00"	W016°00"
L	Lima	N57°00"	W020°00"
M	Mike	N66°00"	E002°00"
N	Nan/November	N30°00"	W140°00"
O	Oboe	N40°00"	W142°00"
P	Peter/Papa	N50°00"	W145°00"
Q	Quebec	N43°00"	W167°00"
R	Romeo	N47°00"	W017°00"
S	Sugar	N48°00"	W162°00"
T	Tango	N29°00"	W135°00"
U	Uncle	N27° 40"	W145°00"
V	Victor	N34°00"	E164°00"
X	Extra	N39°00"	E153°00"

Each HF station has the following coordinates:

Name:	Latitude	Longitude
Prestwick	N55°31"	W004°35"
Shannon	N52°42"	W008°55"
Foynes	N52°37"	W009°06"
Gander	N48°57"	W054°31"
New York	N40°47"	W073°52"
Lisboa	N38°46"	W009°08"
Azores	N38°31"	W028°37"
Bermuda	N32°22"	W064°42"
Alameda	N37°47"	W122°19"
Anchorage	N61°05"	W149°58"
Honolulu	N21°18"	W157°55"
Midway	N28°12"	W177°22"
Wake I.	N19°17"	E166°38"
Guam	N13°29"	E144°48"
Manila	N14°30"	E121°01"
Zygi	N34°44"	E033°20"
Aden	N12°50"	E045°02"
Nairobi	S01°17"	E036°51"
Malta	N35°51"	E014°29"
Bahrain	N26°16"	E050°38"
Baghdad	N33°23"	E049°34"

Each LORAN station has the following coordinates:

Name:	Latitude	Longitude
Skuvanes (Faroes)	N61°27"	W006°49"
Frederiksdal (Greenland)	N59°59"	W044°39"
Battle Harbour (New Foundland)	N52°15"	W055°36"
Bonavista (New Foundland)	N48°42"	W053°05"

The radio gauge Can be tuned to each Station.

A loop antenna can be rotated in order to find the bearing to the station.

The maximum range is somewhere between 200-280 nm for the Weather ships, 450-850 nm for the land based HF stations and 550-880 nm for LORAN stations.

A gauge showing signal strength will indicate when a Weather ship NDB is received.

The signal strength is dependent on aircraft altitude, distance and loop antenna bearing.

The gauge does NOT show distance.

To find the bearing, set the compass card to Your current heading and rotate the loop antenna to where the signal strength peaks – that's Your bearing to the station OR !! MOST IMPORTANT 180° opposite of the station.

This means that You must be aware of which general direction the station is positioned relative to Your own position.



- ON/OFF Switch: Turns the radio On/Off (note avionics power must also be available)
- Clock: Shows UTC time – Red brackets show when the ships transmits
- Frequency window: Shows current tuned frequency
- Freq. Adj: Knob for setting frequency
- Compass gauge: Outer ring is for setting current heading
- Needle: Loop antenna bearing
- HDG ADJ: Knob for setting heading ring (compass card)
- Loop Antenna Bearing: Knob for rotating the loop antenna

Station window: Left/right mouse clicks scrolls through the various station and show their name, Frequency and assigned coordinates.

Map: Will make a flightplan from current position to the station selected in the station Window. The flightpath can be seen on the MAP.

NOTE !!

Any previously loaded flight plan will be erased !! **(INOP on the PMDG DC-6A/B)**

Weather report: Shows received weather report from the tuned station as well as magnetic variation for Your current position.

Note that You must be in range and the station must transmit in order for the weather report to be updated.

LORAN Position: Click on the OFF/On box to toggle LORAN Position on or off.

LORAN Position is the actual position of the ship, which where allowed to drift within 210 square miles from their assigned position (Simulated in this gauge).

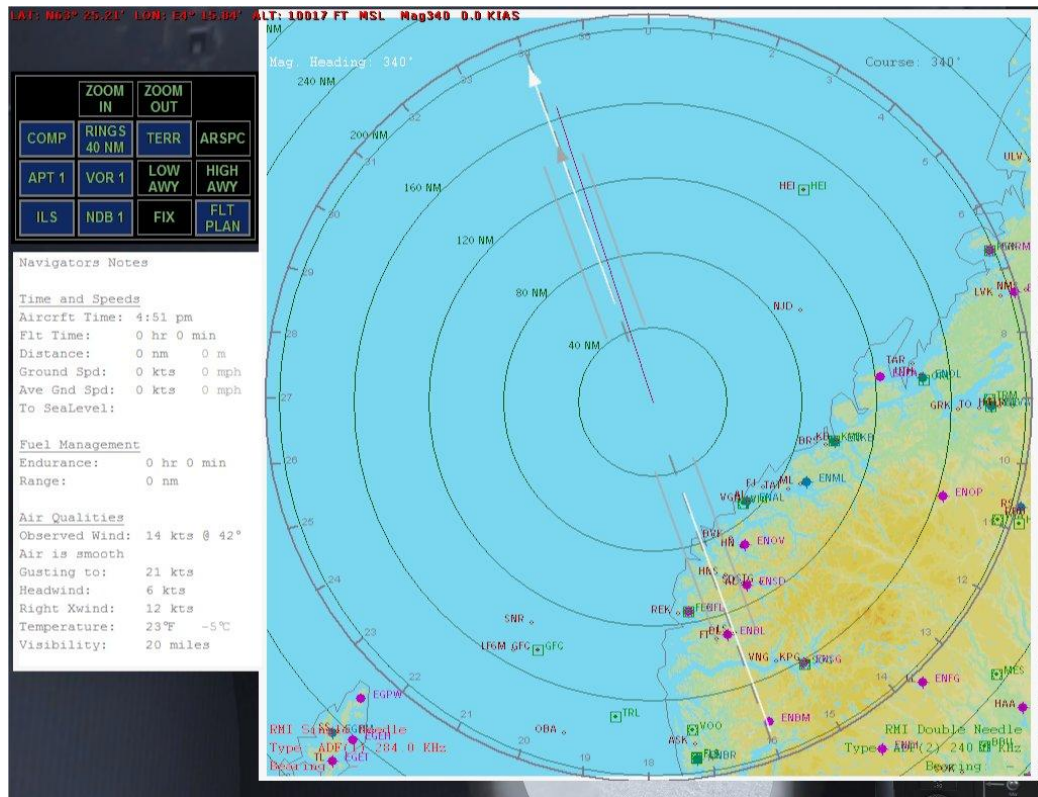
Nav Calc.: Click the Off/On box to toggle navigation calculations on or off.

If on, the desired course can be set in the Box to the right of "Desired Crs".

Groundspeed and Course to steer will be calculated taking the last reported wind data and magnetic variation into account.



Map with flightplan from current position to the tuned station (the line from the center towards 340° at 165 nm) (INOP on the PMDG DC-6A/B):



The “opposite bearing” loop antenna error:

