

IL★2 STURMOVIK

CLIFFS OF DOVER

BLITZ

DESERT WINGS

TOBRUK

Fixed Loop Radio Compass Operation

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Setting up the FLRC controls

Assign keyboard keys or joystick buttons to operate the FLRC

- Go to ingame Controls Options and select the “Keys” tab at the upper left of the page, then select Category: Aircraft.
- Scroll down this assignment page to the bottom where you will find the Primary and Secondary Radio Navigation controls, as well as the Loop Antenna controls. Assign separate keys (or joystick buttons) for each control.

Note: Secondary Radio Navigation Frequency won’t be used at present.



- Click on “Save as” at the bottom right of this Key Assignment page, then click on “Apply”.
- Click on “Back” at the bottom left of this page.
- Click on “Main Menu” to get started!

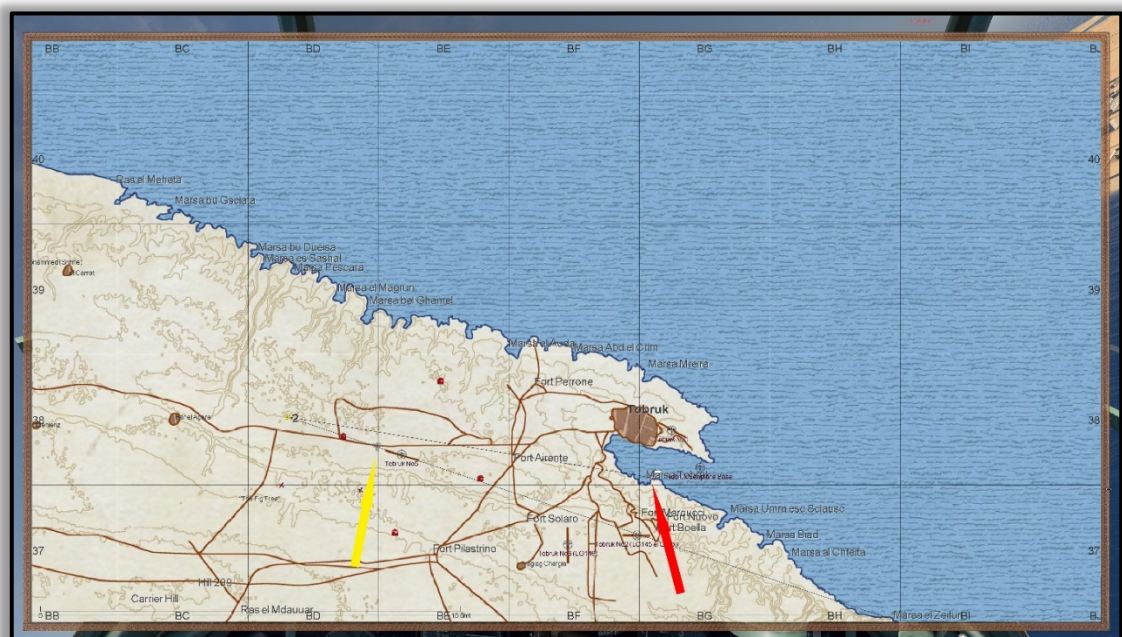
Using the FLRC to get home

Beaufighter

- 1) Spawn into a mission into a Beaufighter
- 2) Be sure to have an Information Window displaying “Secondary Controls” (see Getting Started and Trouble Shooting Guide on how to create Information Windows ingame).
- 3) Using the keyboard controls you just assigned, set your Primary Frequency to the homing beacon* set up for your airfield. (In this case, the Primary Frequency is set to 303 khz)

Note: refer to the Mission Briefing to find the Long Range Beacon locations and their respective frequencies.

- 4) Again, using the keyboard controls you just assigned, set the Loop Antenna to “0”. This orients the loop antenna to pick up the beacon signal directly in front of the aircraft.
 - 5) In our sample mission, our Beaufighter (red arrow) is over Tobruk Bay heading westward to our home base at Tobruk No 5 airfield (yellow arrow).
- The Beaufighter is actually heading about 25 degrees to the right of the correct homeward course.



- 6) The radio compass located in the upper left side of the Beaufighter cockpit panel is tilted over to indicate the aircraft's course must be adjusted left to head directly towards the homing beacon.



- 7) Turning the aircraft slowly to the left will gradually bring the 45-degree arms within the radio compass to line up with the 45-degree reference lines on each side of the centered vertical line. This indicates the aircraft is heading straight toward the homing beacon tower at the airfield.



- 8) Congratulations! You're home!

Using the Loop Antenna to determine your course home

- 1) This is very straightforward to use. Knowing that when the Loop Antenna is set to 0 degrees, you can rotate the Loop Antenna to the left (negative direction) or to the right (positive direction).
- 2) First, trim the aircraft to fly a steady course, then note your heading on the compass.
- 3) Set the Loop Antenna to 0 degrees (ie so it's pointing in the same direction as your aircraft).
- 4) Rotate the Loop Antenna to the left or right as indicated on the radio compass. If the instrument's arms are canted to the right, rotate the Loop Antenna to the left (negative readings). Vice versa if the radio compass arms are canted to the left – turn the Loop Antenna to the right.
- 5) As you turn the Loop Antenna, carefully watch the radio compass in the correct direction until the arms move and align themselves with the 45-degree reference lines.
- 6) Note the degrees of deflection that the Loop Antenna had to be turned to align the radio compass arms.
- 7) If negative, subtract the number of degrees from your course heading. This will be the course to follow to get you back to your airfield. Vice versa if the Loop Antenna reading is positive; add those positive degrees to your present course heading. That will likewise be your new course to get you home.
- 8) This is especially useful if flying on instruments at night or through cloud and you wish to avoid excessive course change manoeuvres with possible disorientation occurring.

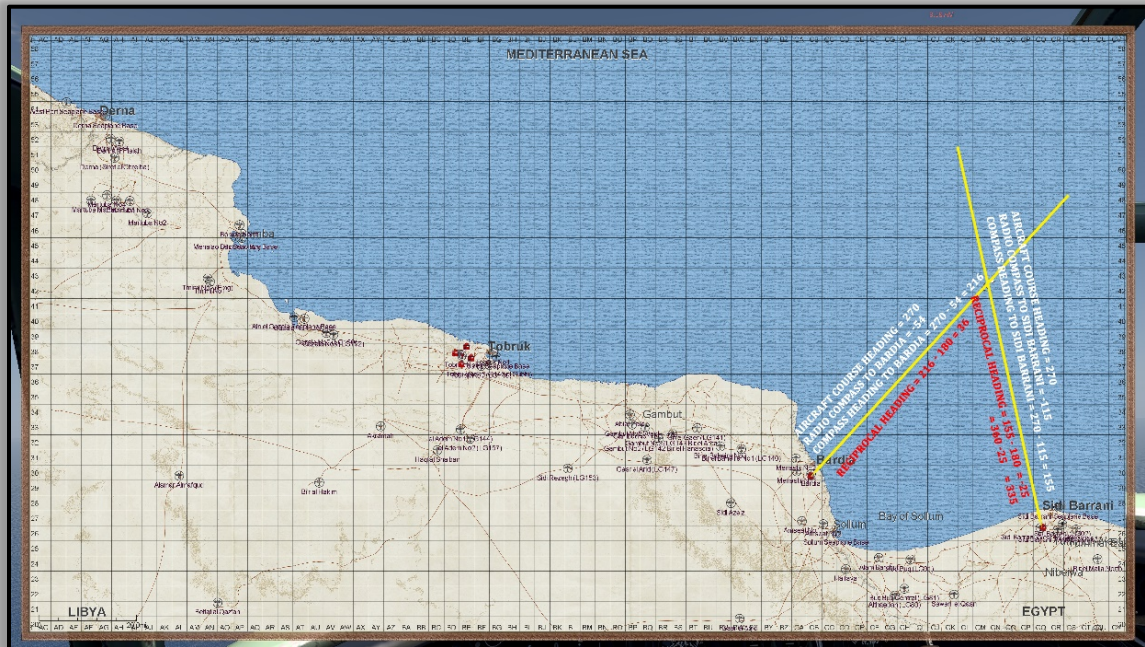
Ascertaining one's location and plotting to target

Radio compass work enables far more than simply getting home. It can also be used to determine with great accuracy one's location even with no landmarks in sight (open water, trackless desert, night flying, cloud base, etc). Once your precise location is determined, then it is easy to plot a heading to the target.

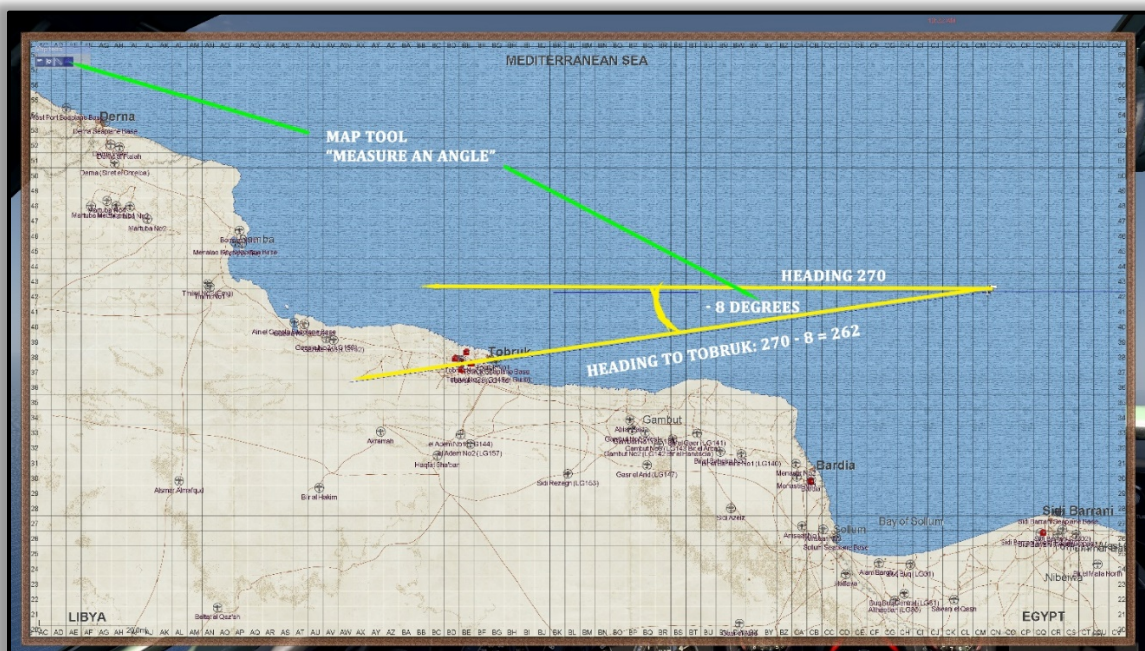
Here's an example. Your Wellington bomber is far out to sea on a course of 270 degrees. Your target is Tobruk harbour. To verify that you are on course to target, it is first necessary to determine your precise location.



There are two radio beacons at Bardia and Sidi Barrani airfields. The first step is to use the radio compass to determine each beacon's deflection relative to your aircraft. Simply add those deflection headings to your current aircraft's course heading (270 degrees) which will give you the course heading you would need to fly to each. Draw a line to each, then use the reciprocal headings to show your location on the map where the two reciprocal lines intersect.



It is then just a matter of determining the course heading to the target (Tobruk harbour) from your now-established location out at sea. Once you have determined your physical location on the map, use the ingame Map Tools/"Measuring an angle" to plot your new heading to your target: Tobruk Harbour.



Ranging to target

Not only can the Fixed Loop Radio Compass be used to ascertain your aircraft's position, it can also be useful in determining your distance from your target. A good example is illustrated in the map below. Your aircraft takes off from the airfield at Sidi Barrani (top right of the map) and heads on a course of 252 degrees (blue line) to the target: the enemy stronghold at Giarabub, approximately 70 miles from your airfield.

Tune the FLRC to 308 khz (the long range radio beacon at Fort Maddalena to the south west). Set the radio compass to -23 degrees. As you cross the point where the green line (pointing to Fort Maddalena) intersects the blue line (your aircraft's position on a course heading of 252 degrees), the radio compass will gradually center as you are exactly 60 miles away from target. As you continue on course, the radio compass will gradually deflect away from dead center, so reset the radio compass to -32 degrees. As you approach the second green line's intersection with your course heading (blue line), the radio compass will again begin to center. At dead center you will know that you are now exactly 40 miles to target. Once again, reset your radio compass – this time to -50 degrees. As the radio compass once more begins to center, this would be a good time to open your bomb bay doors as you are now approaching the 20 miles to target zone.

Once you have successfully bombed your target, tune the FLRC to 306 khz. Adjust your course to center the radio compass (approximately 72 degrees) to get home. You can then use the same technique to determine how far to go to reach your home airfield of Sidi Barrani.

