

## Terrain Follow Mode ( TF ) Operation

### DESCRIPTION AND LIMITATIONS

In TF mode the Vertical Speed of the AutoPilot is being controlled by the radio height information provided by the Auto\_TF.gauge.

In this regard, the aircraft is following the elevation profile of the FSX terrain. It is a simulated function and is not as real because the elevation of the terrain is not being delivered by a real radar. Because of this, the aircraft cannot anticipate the elevation profile of the terrain in advance, but detects the CURRENT radar height, and tries to give you the select clearance. However, if the aircraft reacts in the VS function efficient/fast enough, it follows the elevation profile quite accurate.

For the pilot it provides a good impression of a real terrain following situation, but should not be compared to the true TFR function

**Limitations:** As on a real radar and a real terrain follow function, this simulated function has limitations. I guess, even a real tornado will not lift you over a 10 000 ft high mountain if he is on flight level 1000 , with a speed of 500 knts and has the mountain the may be 2 miles in front.

### Flying with this simulated function you should be aware of the following parameters:

1. You can pre-select the flight level above ground to follow by a switch with 3 positions.  
The default flight level to follow the terrain profile is 2000 ft above ground. This is defined as Position 3

The second level is 1000 feet, which is Position 2, and the third level is 500 feet [position 1]

So to recap

<b>Switch Position 1</b>	<b>500 Feet Clearance</b>
<b>Switch Position 2</b>	<b>1000 Feet Clearance</b>
<b>Switch Position 3</b>	<b>2000 Feet Clearance</b>

The info about what you have selected, will be displayed in orange on the HUD.

**TFS 20 is 2000 ft,**  
**TFS 10 is 1000 ft**  
**TFS 5 is 500 ft.**

Default is 2000 ft . The max VS setting is 9900 ft/min.

2. Three AP window displays on the Hud control panel provide you the info about  
**HDG ( 3 )**  
**VS ( 4 ),**  
**ALT ( 5 ).**

You can control this little windows with the mouse wheel. The AP windows are coupled with this windows also.

3. To turn on the TF function, you need to click on the TF button ( 2 ).

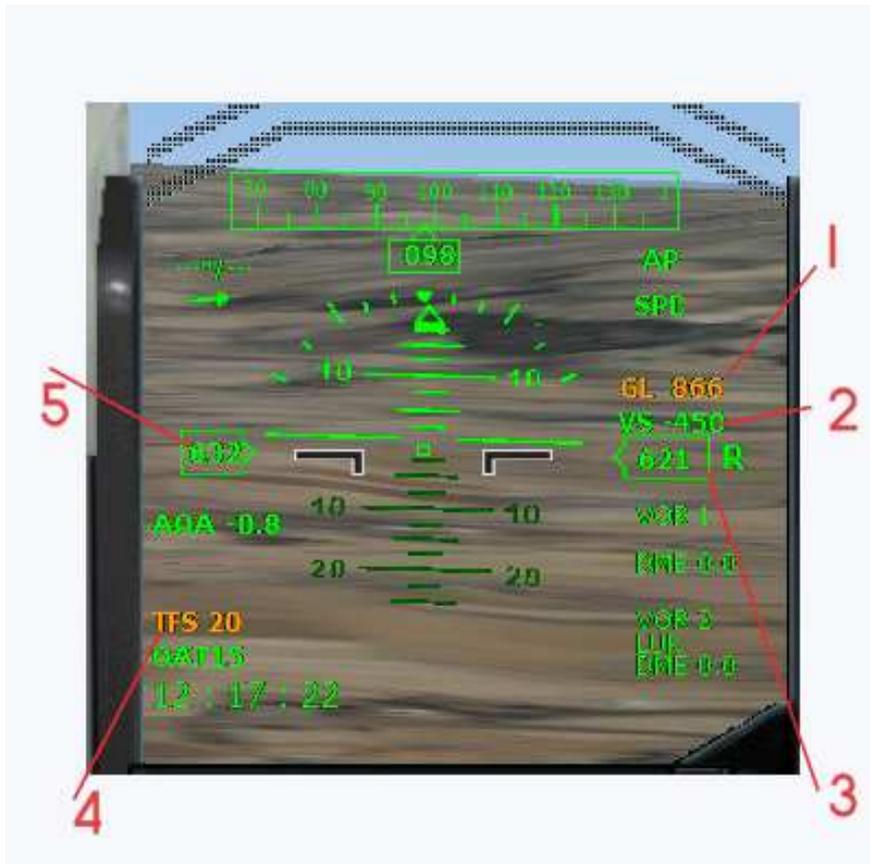
4.



Second additional information is being displayed on the HUD. This is the ground level of the terrain you are currently flying over.  
In the pic below, you can see:

- Current Ground Level [1]**
- Current Vertical Speed [2]**
- Current Altitude in RADAR ALT mode [3]**
- Current TFS mode [4]**
- Current Airspeed [5]**

It is important to know how fast the profile elevation profile changes so you can estimate the pre-selection of the flight level you want to go with.  
Just remember, a real tornado will not manage the terrain differences from high mountain areas like the alps , rocky mountains etc. going from 3000 ft abrupt up to 10 000 so do not expect this one to



### Points to note:

**This TFR is NOT designed as an autopilot. It adjusts the Vertical speed by large amounts. If you try to change altitude by going from 500 to 2000 ft using the TFR it will cause a big climb, and unstability around 2000ft.** So, always manually fly or use the autopilot to get to the desired TFR level, then select TFR.

**To change TFR select, say from 1 to 2 [fl 500 to 1000], first unselect TFR using the button, change selection to TFR number 2, then reselect TFR.** Changing the selection with TFR on, will not change your height

**The TFR works in conjunction with the AUTOPILOT. So, for TFR to actually work, you also need the autopilot ON and ALT HOLD on**

**Have a go at our test flight below**

### **A training flight to learn to fly with a active Terrain Follow Follow Mode.**

- 1 Place your tornado on RWY 06 of EGPH.
- 2 Set your AP to HDG 64, IAS 250, ALT 1200
3. Set flaps to MID, turn the HUD on. Open your MMap display to get additional info about the terrain. On your HUD you will see the GL of 135 .
4. OK, Perform your take off. Turn the AP on select ALT, HDG, and set your Speed to 250 and climb up to 1200 ft..
- 5 when you have reached the 4000 ft, now select TFS 2 ( 1000 ft ). This is position 2 on your rotary switch. Check the display on your HUD. The GL level on your HUD show 0 , because you are at sea level.
- 6 Now push the TF button. You will see now on the AP ALT window the value 1000 and your aircraft descends to 1000 ft. On sea level a easy thing to fly. No elevations around.
- 7 As soon as you reached the 1000 do a turn to the coast. Go with HDG about 180 in order to fly across the land down to London.
- 8 Watch the the changes of the VS, ALT, the GL level on your HUD and relax. Your tornado should go automatically up and down according to the terrain profile of your country.

You may go down to 500 feet. Remember, to do do so, turn off the TF mode, select FTS 1 ( 500 ft) and turn on TF mode again on. The function tries now to hold your tornado 500 feet above the ground.

Now you have mastered this, try with higher mountains, different speeds etc. etc.. But remember, this feature will NOT cope with steep mountain climbs and valleys, just like a normal tornado cannot change Alt that quick

Regards

UKMIL/Dietmar