

Transponder Notes

Riverland Sport Aviation. Renmark, March 2021

Objective:

When flying in class G or E airspace, the transponder should be **on**, set to **mode C** and **code 1200**, unless you're told a different code by ATC.

This allows other aircraft to see us on their TCAS (Traffic Collision Avoidance System). The Flying Doctor aircraft and anything larger have TCAS, as do aircraft from the training schools. Also, Melbourne Centre will see us on their SSR radar – not that they are usually interested. They will see our position and altitude, but won't know who we are.

How to do that:

After engine start, check the left knob is on STNBY (standby).

If the transponder is off, press the On/Off key. (0 with a 1 in it)

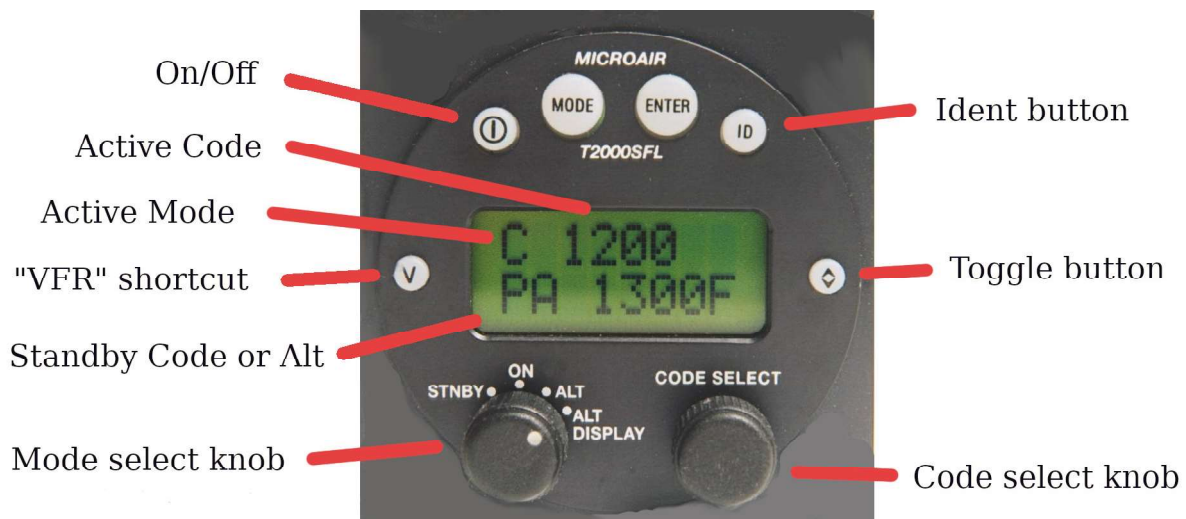
When the transponder is ready, check the MODE is STNBY and the CODE is 1200.

(If necessary, set the MODE with the left knob, and CODE with the V key, then press toggle key.)

Entering the runway before take-off, change the left knob to ALT.

After landing, change the left knob to STNBY.

It's not necessary to turn the transponder power OFF: it will go off with the avionics master, and come back on with it.



The transponder has more functions, but that's enough for local flights near Renmark.

Note: the MODE button is *not* for setting transponder modes. The Mode Select knob does that.

What are these Modes?

Mode A (the "ON" position) means the transponder will reply, allowing the other station to see its position only.

Mode C (the “ALT” or Altitude position) means when it replies, the transponder will also send our altitude. The transponder has its own altimeter for this purpose.

What do the Codes do?

The code tells people who we are. Entering controlled airspace, ATC might assign us an individual code – e.g. “squawk code 3173”.

In class G we aren’t assigned our own code, we share 1200 with all other VFR aircraft. The codes we’re likely to see are:

1200	Civil VFR flights in G or E airspace
2000	Civil IFR flights in Class G airspace
3000	Civil IFR flights in E airspace, civil VFR flights in A, C or D airspace
7600	Radio Communications failure
7700	Mayday

Note: Making code 7700 active is like making a mayday call on area frequency. It rings alarms in Melbourne Centre: they will take this seriously and start a search-and-rescue operation. There are penalties for doing this without reason. Don’t set this unless you want all that attention.

Of course, if you do have a mayday situation or loss of comms, use those codes.

How to set a different code?

If you do need to set a different code, it works like a radio with active/standby frequencies. Start by pressing the toggle key – it will display the standby code. Change the standby code with the right knob: rotate to change the number under the cursor, press to move the cursor to the next digit. When the code you want is in the standby window, press the toggle key to swap it with the active code.

The V key is a shortcut for “VFR”: press V and it sets 1200 on the Standby window. Press toggle and it’s active.

What is “Squawk ident”?

If you’re talking to ATC, they may ask you to “squawk ident”. This lets them know which of all the dots on their radar screen is you.

Don’t press the ID key unless you’re certain it’s you who ATC is asking.

Where does the transponder get its altitude information?

It has a separate altimeter (a “blind encoder” because it has no display) which defaults to a subscale setting of 1013. In case the pilot wants another altitude display, he can set the left knob to “ALT DISPLAY”, and the bottom line of the display will show the transponder’s altitude.

The transponder’s altitude is based on a subscale/QNH setting of 1013. It’s possible to set the subscale to other values with the transponder’s MODE button. The transponder manual has details.

For more information:

The Microair T2000SFL manual is on the club website.

AIP GEN 6.1 outlines the requirements for pilots' operating transponders under VMC in the various classes of airspace.

<https://vfrg.casa.gov.au/general/radar-transponders/transponder-operation/>