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## Mode 3A/C Transponders - How do we fly in a Mode S world?

As most of us are becoming aware Mode S is here – yes here in Australia!!!  
Mode S has already been rolled out in Melbourne and the Coolangatta.  
Brisbane, Perth, Adelaide Sydney, Cairns and Canberra will follow.

The carriage of Mode S equipment is not mandatory for aircraft in Australia.

- **Below are the definitions of the modes:-**

### ***Mode 3A/C Transponder:-***

When a transponder receives a radar signal it sends back a transponder's squawk code (aircraft identification code). This is referred to as Mode 3A or more commonly Mode A.

A transponder code can be paired with pressure altitude information, which is called Mode C.  
Mode 3A and C are used to help air traffic controllers to identify the aircraft and to maintain separation.

In short Mode 3A/C Transponders supply Air Traffic Control (ATC) and TCAS systems with:-

- \* Position
- \* Altitude
- \* Identity

### ***Mode S Transponder Definition:-***

Mode S (Selective) is designed to help avoiding overinterrogation of the transponder (having many radars in busy areas) and to allow automatic collision avoidance. Mode S gives the ability to interrogate a single aircraft at a time. Mode S transponders also reply to Mode A/C interrogations.

The Mode S transponder broadcasts:-

- \* aircraft call sign
- \* ICAO 24 bit address (unique address)
- \* location information (includes level and speed)
- \* other air traffic communications

- **So how does all this affect an aircraft fitted with a Mode 3A/C Transponder?**

It doesn't!!

However, anomalies have been identified by Air Services and CASA in some older (Mode A/C) SSR equipment that transverse through Mode S radar zones!

This means that some older transponders are exhibiting uncommanded Mode A codes.  
Recommendation by CASA is to get your transponder serviced at the earliest opportunity. You can view the Air Worthiness Bulletin on the CASA website: CASA AWB 34-013.

**Microair** has developed the **T2000SFL Rev 7 Transponder** to combat these issues. If you do not have a Rev 7 we would recommend you contact us about available upgrades. [repair@microair.com.au](mailto:repair@microair.com.au)