



EASA Safety Information Bulletin

SIB No.: 2013-07
Issued: 09 July 2013

Subject: Mode S Transponders – Capability Reporting Anomaly

Ref. Publications: Rockwell Collins Service Information Letter (SIL) 12-1, dated 20 March 2012; Service Bulletin (SB) TDR-94()-34-504 Revision 3, dated 5 April 2007, and SB TDR-94()-34-505 dated 2 September 2008.

Applicability: Rockwell Collins Mode S transponders, identified by type and Part Number (P/N) in the table below, if installed in aircraft which **do not** have ACAS II equipment.

Type	P/N (all serial numbers)
TDR-94	622-9352-007
	622-9352-008
	622-9352-108
TDR-94D	622-9210-007
	622-9210-008
	622-9210-108

Note: In aircraft which have an operational ACAS II installed, these transponders operate correctly with regard to anomalous capability reporting.

The affected transponders are known to be installed on, but not limited to, aircraft certificated under (FAR, JAR, CS) Parts 23, 25, 27 or 29.

Description: Certain Rockwell Collins Mode S Air Traffic Control (ATC) transponders TDR-94 and TDR-94D (see P/Ns in table above) are capable of Elementary and Enhanced Surveillance (ELS and EHS). However, the transponders incorrectly set the Capability (CA) Field (“transponder capability”) to zero when the aircraft is not ACAS II equipped.

Some ATC ground stations use the CA field to determine if the transponder is capable of ELS and/or EHS. Consequently, when an aircraft with an affected TDR-94/94D transponder is

This is information only. Recommendations are not mandatory.

operating in airspace that uses the CA field to determine ELS/EHS capability, ground stations will not interrogate the transponder with the Ground Initiated Comm B (GICB) request. To these ground stations, the transponder will appear as not being capable of ELS/EHS.

If the transponder cannot provide ELS parameters, the aircraft identification (A/C ID) is also not available. This causes problems for the ATC controller because the aircraft cannot be identified or correlated with its flight plan data.

Another problem, resulting from the transponders setting the CA field to zero, relates to the display of false tracks on ground radars. This is particularly noticeable when several aircraft (equipped with affected TDR-94/94D transponders) are in close proximity. The ground radars are unable to confirm the transponder's SI capability and, therefore, cannot apply lockout which results in garbling and the generation of false tracks.

At this time, insufficient information is available to determine whether the safety concern described in this SIB can be considered an unsafe condition that would warrant Airworthiness Directive (AD) action under [EC 748/2012](#), Part 21.A.3B.

Nevertheless, anomalous capability reporting, when such information is used by SSR Mode S ground interrogators, could cause increased workload for the ATC controllers.

Recommendations: EASA recommends that the transponder upgrade, as specified in the referenced SIL, is accomplished at the earliest opportunity. Contact Rockwell Collins to coordinate the incorporation of the appropriate SB, as applicable to the installation.

Please note that the referenced SIL also contains instructions for implementing a wiring interface change, in lieu of a transponder upgrade. Whilst the wiring interface change has the desired effect of correctly setting the CA Field, the transponder Built in Test (BIT) log will contain many TCAS Fail reports after every flight. Operators are advised to discuss with Rockwell Collins before considering this option. Also, EASA are aware that this option will not work for aircraft which operate with a single Gilham coded altitude.

Contacts: For further information contact the Safety Information Section, Executive Directorate, EASA; E-mail: ADs@easa.europa.eu.

For copies of any service publication referenced in this SIB, please contact Rockwell Collins Inc., 400 Collins Road NE, Cedar Rapids, Iowa 52498, United States of America, telephone +1-319-265-5467

Website: www.rockwellcollins.com

Email: response@rockwellcollins.com.

This is information only. Recommendations are not mandatory.