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## AIRWORTHINESS DIRECTIVE

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For the reasons set out in the background section, the CASA delegate whose signature appears below issues the following Airworthiness Directive (AD) under subregulation 39.1 (1) of CAR 1998. The AD requires that the action set out in the requirement section (being action that the delegate considers necessary to correct the unsafe condition) be taken in relation to the aircraft or aeronautical product mentioned in the applicability section: (a) in the circumstances mentioned in the requirement section; and (b) in accordance with the instructions set out in the requirement section; and (c) at the time mentioned in the compliance section.

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### Radio Communication and Navigation Equipment

**AD/RAD/75**

**TDR-94/TDR-94D Transponders**

**5/2002**

**Applicability:** Rockwell Collins TDR-94 Mode S transponders (Collins part number (CPN) 622-9352-004) and TDR-94D Mode S transponders (CPN 622-9210-004).

*Note 1: These transponders may be installed on, but not limited to, the following series of aeroplanes:*

*Aerospatiale ATR42;  
deHavilland DHC-7 and DHC-8; and  
Short Brothers Models SD3-60 and SD3-60 SHERPA.*

**Requirement:** 1. Determine whether the altitude information from any TDR-94 Mode S transponder (CPN 622-9352-004) or TDR-94D Mode S transponder (CPN 622-9210-004) is derived from a digital air data source or a Gillham (grey code) encoded source. This may be accomplished as specified in Rockwell Collins Service Bulletin (SB) No. 17 (TDR-94/94D-34-17), dated 8 February 1999, SB 17, Revision 1, dated 15 May 2000, or SB 20 (TDR-94/94D-34-20), Revision 1, dated 2 May 2001. Collins Product Information Letter No. 71, dated January 1999, references Service Bulletin 17, dated 8 February 1999.

If the altitude information from all affected transponders is derived from a digital air data source, this Directive requires no further action.

2. If the altitude information is derived from a Gillham (grey code) encoded source, modify the unit to prevent erroneous altitude reporting. The modification encompasses converting the TDR-94 transponder from Collins part number (CPN) 622-9352-004 to CPN 622-9352-005 or converting CPN 622-9352-004/005 to CPN 622-9352-006; and converting the TDR 94D transponder from CPN 622-9210-004 to CPN 622-9210-005 or converting CPN 622-9210-004/005 to CPN 622-9210-006.

Modifications are to be accomplished in accordance with either SB 17 (TDR-94/94D-34-17), SB17 Revision 1 or SB 20 (TDR-94/94D-34-20), Revision 1.

3. TDR-94 Mode S transponder (CPN 622-9352-004) or TDR-94D Mode S transponder (CPN 622-9210-004) may not be installed on any aeroplane if the altitude information is derived from a Gillham (grey code) encoded source, unless the transponder is modified in accordance with Requirement 2.

## Radio Communication and Navigation Equipment

AD/RAD/75 (Continued)

*Note 2: FAA AD 2002-06-06 Amdt 39-12683 refers.*

Compliance: For Requirement 1 - Before 16 August 2002.

For Requirement 2 - At the next biennial transponder check required by AD/RAD/47 Amdt 1 that occurs after 16 August 2002, or before 16 February 2003, whichever occurs first.

For Requirement 3 - As of the effective date of this Directive.

This Airworthiness Directive becomes effective on 16 May 2002.

Background: The United States Federal Aviation Administration have advised that erroneous altitude resolutions could occur when the affected transponders are utilized in areas with other aeroplanes equipped with certain aircraft collision avoidance system (ACAS) or traffic alert and collision avoidance system (TCAS) configurations.

This Directive requires modification of the transponders to prevent erroneous altitude reporting. These actions are intended to prevent the erroneous altitude resolutions from causing a reduction in the intended ACAS or TCAS Change 7 separation margins. Such a condition could result in air traffic control or the pilot making flight decisions that put the airplane in unsafe flight conditions.



Eugene Paul Holzapfel  
Delegate of the Civil Aviation Safety Authority

28 March 2002