
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/RAD/79 and issues the following AD under subregulation 39.1 (1) of CASR 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.

Radio Communication and Navigation Equipment

**AD/RAD/79
Amdt 1**

Thales Avionics TA/RA VSI-TCAS Indicator

**6/2004
DM**

Applicability: All Thales Avionics (formerly Sextant Avionique) TA/RA VSI-TCAS indicator with the following part numbers (P/N) installed in conjunction with a TCAS II Change 7 (ACAS II) computer.

457400EA0311	457400GB1312	457400PB1900
457400EB0311	457400GB1900	457400RA0711
457400FA0311	457400GB2000	457400RB0711
457400FB0311	457400GB2100	457400SA0711
457400GA0311	457400HA1900	457400SB0711
457400GA0602	457400JA1900	457400TB0811
457400GA0911	457400KA0602	457400TC0811
457400GA1100	457400KA1311	457400UA1311
457400GA1311	457400KA1900	457400UA1900
457400GA1312	457400KB1311	457400UB1311
457400GA1900	457400KB1900	457400UB1900
457400GA0011	457400LA2000	457400WA0811
457400GB0011	457400MA0602	457400WB0811
457400GB0911	457400MA1311	457400ZA1900
457400GB1100	457400MB1311	
457400GB1311	457400PA1900	

Note 1: This Directive is not applicable to indicators with the following P/N as they are installed in conjunction with TCAS I computers:

457400GA1502	457400MA1502	457400ZA1502
457400GB1502	457400MB1502	457400ZB1502

Requirement: 1. If not previously accomplished in accordance with the original issue of this Directive, amend the Aircraft Flight Manual (AFM) of all aircraft, equipped with an ACAS II computer and a TA/RA VSI-TCAS indicator with a P/N listed in the Applicability Statement not modified in accordance with Requirement 2, to include the following ACAS II temporary limitation:

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“Limitation:

When a "Don't climb-Don't descend-Maintain" Resolution Advisory is triggered, the TA/RA VSI-TCAS may indicate an RA fail message whereas audio annunciation ("Maintain Vertical Speed, Maintain") and traffic display information are correct. In this specific case, the crew should follow the audio annunciation and therefore maintain the vertical speed until the clear of conflict condition has occurred.”

Inserting a copy of this Directive in the AFM is an acceptable means of complying with this Requirement.

2. Modify the software of all TA/RA VSI-TCAS indicators, with a P/N listed in the Applicability Statement, installed on aircraft equipped with an ACAS II computer in accordance with the following Thales Avionics Service Bulletins, as applicable:

457400-34-082
457400-34-083
457400-34-084, and
457400-34-085

Following modification of the affected indicator the temporary limitation may be removed from the AFM.

Note 2: It is the responsibility of the operator to check with the design approval holder of the ACAS II installation that TA/RA VSI-TCAS equipment software modification doesn't alter the initial aircraft ACAS II installation airworthiness condition.

Note 3: DGAC AD F-2004-053 and Thales Avionics Service Information Letter THAV/SIL-1064 Issue 03 dated 4 June 2003 refer.

Compliance: For Requirement 1 - Within 15 days after the effective date of this Amendment.

For Requirement 2 - Remains unchanged as 'Before 31 December 2007'.

This Amendment becomes effective on 21 April 2004.

Background: The TA/RA VSI-TCAS indicator displays an "RA fail" message when a "maintain - Don't Climb/Don't descent" resolution advisory (multi-aircraft encounter configuration) is issued by the ACAS II computer. Normally in this condition, the TA/RA VSI-TCAS indicator should display on the vertical speed scale a green arc of ± 250 ft/min with the rest of the scale red.

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The probability of encountering the operational scenario leading to this resolution advisory is low but this situation, where the aircraft is located between two others, one below and one above, is critical. This incorrect display may lead to a hazardous situation if the wrong interpretation of the required manoeuvre is made by the crew. It should be noted that traffic advisory indication on the TA/RA VSI-TCAS display and aural annunciation ("Maintain Vertical Speed, Maintain") are correct.

The original issue of this Directive initially required the inclusion of a temporary amendment in the AFM followed by modification to the software to correct the display on the TA/RA VSI-TCAS indicator.

This amendment continues the requirements of the original issue adding part number 457400SB0711 to the Applicability Statement.

The original issue of this Directive became effective on 14 April 004.



James Coyne
Delegate of the Civil Aviation Safety Authority

15 April 2004