	AIRWORTHINESS DIRECTIVE No F-2004-042	Distribution: AB	Issue date: March 31, 2004	Page : 1/4
Direction générale de l'aviation civile France	This Airworthiness Directive is published by the DGAC : <input checked="checked" type="checkbox"/> on behalf of EASA, the Primary Airworthiness Authority for the affected product. <input type="checkbox"/> as the Registration Airworthiness Authority for the affected aircraft..		<i>Translation of « Consigne de Navigabilité » of same number. In case of difficulty, reference should be made to the French issue.</i>	
GSAC publication	<p align="center">No person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive, unless otherwise agreed with the Authority of the State of Registry.</p>			
Corresponding foreign Airworthiness Directive(s): Not applicable		Airworthiness Directive(s) replaced: None		
Person in charge of airworthiness: THALES AVIONICS		Type(s): SYSTEM TCAS II / ACAS II equipment		
Type certificate(s) No. None TCDS No None				
ATA chapter: 34	Subject: TA/RA VSI-TCAS indicator THALES AVIONICS (formerly SEXTANT AVIONIQUE) PN 457400-()			

1. EFFECTIVITY:

This Airworthiness Directive (AD) applies to all TA/RA VSI-TCAS indicator P/N 457400-() * fitted onboard aircraft equipped with TCAS II Change 7 computer (ACAS II).


* except 457400GA1502, 457400GB1502, 457400MA1502, 457400MB1502, 457400ZA1502 and 457400ZB1502 which are not concerned (TCAS I display indicator).

2. REASONS:

THALES AVIONICS 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 TCAS 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/mn with the rest of the scale red. This resolution advisory type was introduced by the TCAS II change 7 logic (DO 185A).

Probability to encounter 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 misbehaviour may lead to an hazardous situation if 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.

This AD doesn't apply to THALES AVIONICS VSI indicator fitted onboard aircraft equipped with TCAS Change 6.04 computer because "maintain - Don't Climb/Don't descent" resolution advisory is not triggered by this TCAS logic.

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3. MANDATORY ACTIONS AND COMPLIANCE TIMES:

3.1. AFM temporary limitation

Within 15 days following the effective date of this AD, modify the AFM of all aircraft, equipped with TCAS II change 7 computer (ACAS II) and TA/RA VSI-TCAS indicator P/N 457400-()* not modified in accordance with 3.2 hereafter, to include the following ACAS II temporary limitation:

Quote

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.

Unquote

Inserting a copy of this AD in the AFM is an acceptable means of complying with this requirement. This AFM temporary limitation must be cancelled as soon as TA/RA VSI-TCAS is modified in accordance with the appropriate SB described in chapter 3.3. here after.

3.2. THALES AVIONICS TA/RA VSI-TCAS indicator modification

Before December 31, /2007, unless already accomplished, modify the software of all TA/RA VSI-TCAS THALES AVIONICS indicator PN 457400-()* installed on aircraft equipped with TCAS Change 7 computer (ACAS II) in order to be in conformity with DO 185A standard for the configuration "don't climb, don't descend, preventive, maintain" (table 2-16 mapping between RA, aural annunciation and Arinc word 270 content).

Note : 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 modification doesn't alter the initial aircraft ACAS II installation airworthiness condition.

3.3. TA/RA VSI-TCAS PN affected and Service Bulletin References

The table hereafter lists the appropriate THALES AVIONICS Service Bulletin permitting to modify the software of TA/RA VSI in accordance with chapter 3.2.

PN affected	PN after modification	THALES AVIONICS SB reference
457400EA0311	457400EA0312	457400-34-083
457400EB0311	457400EB0312	457400-34-083
457400FA0311	457400FA0312	457400-34-083
457400FB0311	457400FB0312	457400-34-083
457400GA0311	457400GA0312	457400-34-083
457400GA0602	457400GA1901	457400-34-083
457400GA0911	457400GA1901	457400-34-083
457400GA1100	457400GA1901	457400-34-083




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PN affected	PN after modification	THALES AVIONICS SB reference
457400GA1311	457400GA1901	457400-34-083
457400GA1312	457400GA1901	457400-34-083
457400GA1900	457400GA1901	457400-34-082
457400GA0011	457400GA0012	457400-34-085
457400GB0011	457400GB0012	457400-34-085
457400GB0911	457400GB1901	457400-34-083
457400GB1100	457400GB1901	457400-34-083
457400GB1311	457400GB1901	457400-34-083
457400GB1312	457400GB1901	457400-34-083
457400GB1900	457400GB1901	457400-34-082
457400GB2000	457400GB1901	457400-34-084
457400GB2100	457400GB2101	457400-34-083
457400HA1900	457400HA1901	457400-34-083
457400JA1900	457400JA1901	457400-34-083
457400KA0602	457400KA1901	457400-34-083
457400KA1311	457400KA1901	457400-34-083
457400KA1900	457400KA1901	457400-34-083
457400KB1311	457400KB1901	457400-34-083
457400KB1900	457400KB1901	457400-34-083
457400LA2000	457400LA1901	457400-34-084
457400MA0602	457400MA1901	457400-34-083
457400MA1311	457400MA1901	457400-34-083
457400MB1311	457400MB1901	457400-34-083
457400PA1900	457400PA1901	457400-34-083
457400PB1900	457400PB1901	457400-34-083
457400RA0711	457400RA0712	457400-34-083
457400RB0711	457400RB0712	457400-34-083
457400SA0711	457400SA0712	457400-34-083
457400TB0811	457400TB0812	457400-34-083
457400TC0811	457400TC0812	457400-34-083
457400UA1311	457400UA1901	457400-34-083
457400UA1900	457400UA1901	457400-34-083
457400UB1311	457400UB1901	457400-34-083
457400UB1900	457400UB1901	457400-34-083
457400WA0811	457400WA0812	457400-34-083
457400WB0811	457400WB0812	457400-34-083
457400ZA1900	457400ZA1901	457400-34-083

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4. REFERENCE PUBLICATIONS:

- THALES Service Bulletin Ref 457400-34-082 at original issue
- THALES Service Bulletin Ref 457400-34-083 at original issue
- THALES Service Bulletin Ref 457400-34-084 at original issue
- THALES Service Bulletin Ref 457400-34-085 at original issue
- Any later revision of these SB's is acceptable.
- THALES Service Information Letter Ref THAV/SIL-1064 Issue 03 dated June 04, 2003.

5. EFFECTIVE DATE:

April 10, 2004.

6. REMARK:

For questions concerning the technical contents of this AD's requirements, contact:

1) For Air Transport Avionics

THALES AVIONICS Air Transport Avionics
105, Avenue du Général Eisenhower - BP1147 - 31036 TOULOUSE CEDEX 1
Attn : Retrofit Manager
tel: +33 5 61 19 76 95
fax: +33 5 61 19 68 20
e-mail: retrofit.ata@thales-avionics.com

2) For Regional and Business Aircraft Avionics

THALES AVIONICS
Regional and Business Aircraft Avionics
105, Avenue du Général Eisenhower - BP1147 - 31036 TOULOUSE CEDEX 1
Attn : Retrofit Manager
tel: +33 5 61 19 69 22
fax: +33 5 61 19 68 20
e-mail: retrofit.ara@thales-avionics.com

7. APPROVAL:

This AD is approved under EASA reference No 2004-3058 dated March 23, 2004.