

 <div style="text-align: center;"> <b>適航指令發布單</b>  <b>Airworthiness Directive Issuance Form</b> </div>			
民航局AD編號 AD Number	CAA-2017-10-005	發布日期 Date issued	2017/10/16
適用之航空產品 Applied to (models, serial numbers or part numbers, as applicable)	Airbus A318, A319, A320, A321, A330, A340 seires aeroplanes.		
主旨摘要	Navigation – Traffic Collision Avoidance System Processor – Modification (Software Update) / Replacement		
民航局 CAA  <input type="checkbox"/> 本國產品 Native products  <input type="checkbox"/> 其他個案 Other	設計國民航主關機構 Original Authorities  <input type="checkbox"/> FAA <span style="margin-left: 200px;"><input type="checkbox"/> Germany LBA</span> <input checked="" type="checkbox"/> EASA <span style="margin-left: 180px;"><input type="checkbox"/> CAA-NL</span> <input type="checkbox"/> Brazil <span style="margin-left: 180px;"><input type="checkbox"/> UK CAA</span> <input type="checkbox"/> Transport Canada Civil Aviation <span style="margin-left: 100px;"><input type="checkbox"/> Japan CAB</span> <input type="checkbox"/> DGAC <span style="margin-left: 180px;"><input type="checkbox"/> CAA of Israel</span> <input type="checkbox"/> Other _____		
	設計國AD編號 Original AD number	2017-0196	
	1. 直接採用原AD之內容?(Is the original AD directly adopted?) <input checked="" type="checkbox"/> 是(Yes) <input type="checkbox"/> 否(No) __ a. 生效日期另訂為(Re-specify the effective date as) : _____ b. 執行時限另訂為(Re-specify the compliance time or period as) : _____ 2. 使用人是否需要將AD執行結果向民航局提出報告?(Do Users need to report the status of compliance to the CAA?) <input type="checkbox"/> 是(Yes) <input checked="" type="checkbox"/> 否(No)		
備註 Note	Honeywell International Inc. SB 940-0351-34-0005 [Publication Number D201611000002] original issue dated 20 January 2017. Aeroconseil: Airworthiness Technical Instructions (ATI) No. 0594-01-A-ATI. British Airways: SB BA-320-34-0006 Revision 5, or SBBA-340-34-0001 Revision 3. H4 Aerospace: SB H4ASB009, or SB H4ASB010, or SB H4ASB011, all issue 1. PMV Engineering: SB AVI-00690-SB-S99-R00, or SB AVI-00710-SB-S99-R00. Scandinavian Avionics Design: SB 2107915-SB, approved 12 September 2017.		
註： 1. AD內容後附。 2. 航空器產品使用人得向民航局提出豁免、替代符合方法、執行時限之展延之申請。 3. 如有任何問題，請聯絡交通部民用航空局初始適航科。Tel：(02)2349-6331-3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw  Note： 1. The AD text is enclosed. 2. Exemption, an alternative method of compliance or adjustment of the compliance time may be proposed to the CAA for approval. 3. For further information, please contact Civil Aeronautics Administration on Tel：(02)2349-6331-3, Fax：(02)2545-8464, e-mail：adcaa@mail.caa.gov.tw			



## Airworthiness Directive

**AD No.:** 2017-0196

**Issued:** 05 October 2017

Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) 216/2008 on behalf of the European Union, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation.

This AD is issued in accordance with Regulation (EU) 748/2012, Part 21.A.3B. In accordance with Regulation (EU) 1321/2014 Annex I, Part M.A.301, the continuing airworthiness of an aircraft shall be ensured by accomplishing any applicable ADs. Consequently, no person may operate an aircraft to which an AD applies, except in accordance with the requirements of that AD, unless otherwise specified by the Agency [Regulation (EU) 1321/2014 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [Regulation (EC) 216/2008, Article 14(4) exemption].

### Design Change Approval Holder Names:

AEROCONSEIL, BRITISH AIRWAYS plc,  
 FOKKER SERVICES B.V., H4 AEROSPACE (UK)  
 Ltd, PMV ENGINEERING, and SCANDINAVIAN  
 AVIONICS DESIGN ApS

### Design Change Description:

TCAS 7.1 Upgrade on Airbus aeroplanes

**Effective Date:** 19 October 2017

**EASA STC Number(s):** 10039421, 10045396, 10047157, 10047494, 10047744, 10050434, 10050942, 10051008, 10051519, 10054797 and 10051659.

**Foreign AD:** Not applicable

**Supersedure:** None

## ATA 34 – Navigation – Traffic Collision Avoidance System Processor – Modification (Software Update) / Replacement

### Manufacturer(s):

Airbus (formerly Airbus Industrie)

### Applicability:

This AD applies to certain Airbus aeroplanes, identified below, if modified by an EASA Supplemental Type Certificate (STC), as applicable, to have a Honeywell TPA-100B traffic alert and collision avoidance system (TCAS) processor, Part Number (P/N) 940-0351-001, installed:

- (1) A318-111, A318-112, A318-121, A318-122, A319-111, A319-112, A319-113, A319-114, A319-115, A319-131, A319-132, A319-133, A320-211, A320-212, A320-214, A320-215, A320-216, A320-231, A320-232, A320-233, A321-111, A321-112, A321-131, A321-211, A321-212, A321-213, A321-231 and A321-232 aeroplanes, all manufacturer serial numbers (MSN), if modified by Aeroconseil STC 10045396; or by H4 Aerospace STC 10047744, or STC 10047157; or by Scandinavian Avionics Design STC 10051519, or STC 10054797; or by Fokker Services STC 10051008; or by British Airways STC 10039421; or by PMV Engineering STC 10050942.



- (2) A330-201, A330-202, A330-203, A330-223, A330-223F, A330-243, A330-243F, A330-301, A330-302, A330-303, A330-321, A330-322, A330-323, A330-341, A330-342 and A330-343 aeroplanes, all MSN, if modified by Scandinavian Avionics Design STC 10054797.
- (3) A340-211, A340-212, A340-213, A340-311, A340-312, A340-313, A340-541, A340-542, A340-642 and A340-643 aeroplanes, all MSN, if modified by H4 Aerospace STC 10050434; or by Scandinavian Avionics Design STC 10054797; or by British Airways STC 10047494; or by PMV Engineering STC 10051659.

**Reason:**

Since 2012, a number of false TCAS resolution advisories (RA) have been reported by various European Air Navigation Service Providers. EASA has published certification guidance material for collision avoidance systems ([AMC 20-15](#)) which defines a false TCAS RA as an RA that is issued, but the RA condition does not exist. It is possible that more false (or spurious) RA events have occurred, but were not recorded or reported. The known events were mainly occurring on Airbus single-aisle (A320 family) aeroplanes, although several events have also occurred on Airbus A330 aeroplanes. Investigation determined that the false RAs are caused on aeroplanes with a Honeywell TPA-100B TCAS processor installed, P/N 940-0351-001. This was caused by a combination of three factors: (1) hybrid surveillance enabled; (2) processor connected to a hybrid GPS source, without a direct connection to a GPS source; and (3) an encounter with an intruder aeroplane with noisy (jumping) ADS-B Out position.

EASA previously published Safety Information Bulletin (SIB) [2014-33](#) to inform owners and operators of affected aeroplanes about this safety concern. At that time, the false RAs were not considered an unsafe condition. Since the SIB was issued, further events have been reported, involving a third aeroplane.

This condition, if not corrected, could lead to a loss of separation with other aeroplanes, possibly resulting in a mid-air collision.

Prompted by these latest findings, and after review of the available information, EASA reassessed the severity and rate of occurrence of false RAs and has decided that mandatory action must be taken to reduce the rate of occurrence, and the risk of loss of separation with other aeroplanes. Honeywell International Inc. published Service Bulletin (SB) 940-0351-34-0005 [Publication Number D201611000002] to provide instructions for an upgrade, introducing software version 05/01, changing the processor unit to P/N 940-0351-005.

EASA previously issued AD 2017-0091 (later revised) to address the unsafe condition on aeroplanes that had the P/N 940-0351-001 processor installed by Airbus major change or SB. However, part of the fleet had the same P/N installed by STC. The relevant STC approval holders (see section Remarks of this AD for contact details) have been notified and modification instructions (see section Ref. Publications of this AD) can be obtained from those companies.

For the reason described above, this AD requires modification or replacement of Honeywell TPA-100B P/N 940-0351-001 TCAS processors. This AD also prohibits installation of those processors on post-mod aeroplanes.



**Required Action(s) and Compliance Time(s):**

Required as indicated, unless accomplished previously:

Note 1: Honeywell TPA-100B TCAS processor P/N 940-0351-001 is hereafter referred to as 'affected processor' in this AD.

**Modification / Replacement:**

- (1) Within 12 months after the effective date of this AD, update the software of the affected processor, or replace the affected processor (see Note 1 of this AD) with a TPA-100B processor P/N 940-0351-005.

Modification of an aeroplane, including P/N change from 940-0351-001 to 940-0351-005, must be accomplished in accordance with approved instructions provided by the applicable design change (STC) approval holder.

Note 2: An affected processor can be modified in-shop to P/N 940-0351-005 standard in accordance with the instructions of Section 3.F of Honeywell SB 940-0351-34-0005.

**Parts Installation:**

- (2) After modification of an aeroplane as required by paragraph (1) of this AD, do not install an affected processor (see Note 1 of this AD) on that aeroplane.

**Ref. Publications:**

Honeywell International Inc. SB 940-0351-34-0005 [Publication Number D201611000002] original issue dated 20 January 2017.

Aeroconseil: Airworthiness Technical Instructions (ATI) No. 0594-01-A-ATI [to be issued]

British Airways: SB BA-320-34-0006 Revision 5, or SB BA-340-34-0001 Revision 3 [to be issued]

H4 Aerospace: SB H4ASB009, or SB H4ASB010, or SB H4ASB011, all issue 1 [to be issued]

PMV Engineering: SB AVI-00690-SB-S99-R00, or SB AVI-00710-SB-S99-R00 [to be issued]

Scandinavian Avionics Design: SB 2107915-SB, approved 12 September 2017.

The use of later approved revisions of these documents is acceptable for compliance with the requirements of this AD.

**Remarks:**

1. If requested and appropriately substantiated, EASA can approve Alternative Methods of Compliance for this AD.
2. This AD was posted on 03 July 2017 as PAD 17-087 and republished on 07 July 2017 as PAD 17-087R1 for consultation until 31 July 2017. No comments were received during the consultation period.



3. Enquiries regarding this AD should be referred to the EASA Safety Information Section, Certification Directorate. E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).
4. For any question concerning the technical content of the requirements in this AD, please contact the STC holder, as applicable, or the processor manufacturer:

Aeroconseil (part of [AKKA Technologies](#)), 3 Rue Dieudonne Costes, B.P. 80075, 31703 Blagnac, France, Telephone +33 5 6720 8807, E-mail: [airworthiness.office@aeroconseil.com](mailto:airworthiness.office@aeroconseil.com).

British Airways plc, Technical Block C, 10th Floor North East Wing TBCXC, P.O. Box 10, London Heathrow Airport, Hounslow, Middlesex, TW6 4JA, United Kingdom, E-mail: [ooa@baplc.onmicrosoft.com](mailto:ooa@baplc.onmicrosoft.com).

Fokker Services B.V., Technical Services Dept., P.O. Box 1357, 2130 EL Hoofddorp, The Netherlands, Telephone +31 88 6280 350, Fax +31 88 6280 111, E-mail: [technicalservices@fokker.com](mailto:technicalservices@fokker.com).

[H4 Aerospace \(UK\) Ltd](#), Blue Court, 39 Queensway, Hemel Hempstead, Hertfordshire HP2 5HE, United Kingdom, Telephone +44 1442 257468, Fax +44 1442 257551, E-mail: [info@h4aerospace.com](mailto:info@h4aerospace.com).

PMV Engineering, 140 Impasse de Lisbonne, 82000 Montauban, France, Telephone +33 (0)5 6303 9580, or [airworthiness.office@pmv-engineering.com](mailto:airworthiness.office@pmv-engineering.com).

Scandinavian Avionics Design ApS, Stratusvej 9, 7190 Billund, Denmark, Telephone +45 7950 8000, Fax +45 7950 8099, E-mail: [msd@scanav.com](mailto:msd@scanav.com).

Honeywell via e-mail: [AeroTechSupport@Honeywell.com](mailto:AeroTechSupport@Honeywell.com).

