

EASA	AIRWORTHINESS DIRECTIVE
	AD No.: 2009-0200 Date: 08 September 2009 Note: This Airworthiness Directive (AD) is issued by EASA, acting in accordance with Regulation (EC) No 216/2008 on behalf of the European Community, 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 EC 1702/2003, Part 21A.3B. In accordance with EC 2042/2003 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 Airworthiness Directive applies, except in accordance with the requirements of that Airworthiness Directive unless otherwise specified by the Agency [EC 2042/2003 Annex I, Part M.A.303] or agreed with the Authority of the State of Registry [EC 216/2008, Article 14(4) exemption].	
Type Approval Holder's Name : Narco Avionics Inc.	Type/Model designation(s) : AT-150 transponders
ETSO Authorisation Number: LBA 10.930/34 and CAA UK VC00245	
Foreign AD: FAA AD 2004-08-16, dated 16 April 2004.	
Supersedure : None	
ATA 34	Navigation – Mode A/C Transponder – Check / Modification
Manufacturer(s):	Narco Avionics Inc.
Applicability:	Narco Avionics Inc AT-150 Mode-A/C transponders, all Part numbers, all Serial Numbers. These transponders are known to be installed on, but not limited to, aircraft certificated (validated) by EASA under CS 23, and aircraft certificated (validated) by EU Member States or associated countries prior to 28 September 2003 under equivalent National Standards.
Reason:	EASA has received reports of significantly erroneous Mode C altitude replies to Secondary Surveillance Radar (SSR) interrogations from aircraft equipped with Narco Avionics AT-150 Mode A/C Transponders. The defect occurs sporadically and may be apparent only during limited periods of a given flight. The erroneous Mode C replies are derived from the transmission of internal register contents that are corrupted. If the transponder incorrectly interprets a P4 pulse as a P2 Side Lobe Suppression (SLS) pulse, then replies to interrogations will be suppressed. If a Mode A interrogation reply is suppressed by the AT-150 in this way, the reply generator registers can retain the (unsent) Mode A data and new Mode C data is added to it before being transmitting as an erroneous Mode C value following interrogation. Narco Avionics AT-150 Service Bulletins (SB) No.1 and No.6 are technically equivalent and add a resistor and a transistor to the decode circuit that ensures that the transponder can differentiate between a P2 and a P4 interrogation pulse. Narco Avionics SB AT150 No. 6 was previously mandated by FAA AD 2004-08-16 (to address performance issues with Mode S stations and TCAS)

	and if embodied is considered effective. SB AT150 No. 6 was only applicable to a limited range of serial numbers and an equivalent design change should be embodied on later production transponders at manufacture. However during investigation of the erroneous Mode C replies it was evident that some transponders outside of the applicability range of SB No.6 may not have the intended configuration of decoder circuit either. The intention of this AD is therefore to ensure that all AT-150 transponders, irrespective of serial number, have the effective configuration of decoder circuit.
Effective Date:	22 September 2009
Required Action(s) and Compliance Time(s):	Required as indicated, unless accomplished previously: 1. Within 12 months after the effective date of this AD, conduct the tests prescribed in the 'Testing the Modification' section of Narco Avionics SB AT150 No. 6 to ensure that the transponder decoder circuit configuration is to the standard equivalent to post-embodiment of Narco Avionics SB AT150 No. 6. <i>Note: Depending upon the origin of the installation of the resistor and transistor, they may be designated as RSB6 and QSB6 or R508 and Q415.</i> 2. If the test reveals that the transponder decoder circuit configuration is not to the standard equivalent to post-embodiment of Narco Avionics SB AT150 No. 6: 2.1. Modify those units of applicable serial numbers in accordance with the corrective action of Narco Avionics SB AT150 No. 6. 2.2. Contact Narco Avionics Inc. for instructions and corrective actions for units outside of Narco Avionics SB AT150 No. 6 serial number applicability range. 3. After the effective date of this AD, all AT-150 transponders must have decoder circuits confirmed to meet the post SB AT150 No. 6 configuration and operation before re-installation on aircraft. 4. Corrective actions done before the effective date of this AD and in accordance with the instructions of Narco Avionics SB AT150 No. 6 are acceptable for compliance with the requirements of this AD.
Ref. Publications:	Narco Avionics Service Bulletin AT150 No.1, dated 29 July 1977 Narco Avionics Service Bulletin AT150 No. 6, dated 31 January 2003 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 31 July 2009 as PAD 09-095 for consultation until 28 August 2009. No comments were received during the consultation period. 3. Enquiries regarding this AD should be referred to the Airworthiness Directives, Safety Management & Research Section, Certification Directorate, EASA. E-mail ADs@easa.europa.eu 4. For any question concerning the technical content of the requirements in this AD, please contact: Narco Avionics Inc, 270 Commerce Drive, Suite 200, Fort Washington, PA 19034, United States of America, PHONE +1-295-643-2905, FAX (215)-643-0197, Website: www.narco-avionics.com