
AIRWORTHINESS DIRECTIVE

For the reasons set out in the background section, the CASA delegate whose signature appears below revokes Airworthiness Directive (AD) AD/RAD/81 and issues the following AD under subregulation 39.001 (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/81
Amdt 1**

Garmin Mode S Transponders

4/2005

Applicability: Garmin International Inc. GTX 33, GTX 33D, GTX 330 and GTX 330D Mode S transponders.

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

<i>Manufacturer</i>	<i>Model</i>
<i>Aermacchi S.p.A</i>	<i>S.205-18/F, S.205-18/R, S.205-20/R, S.205-22/R, S.208, S.208A, F.260, F.260B, F.260C, F.260D, F.260E, F.260F, S.211A.</i>
<i>Aeronautica Macchi S.p.A</i>	<i>AL 60, AL 60-B, AL 60-F5, AL 60-C5, AM-3.</i>
<i>Aerostar Aircraft Corporation</i>	<i>PA-60-600 (Aerostar 600), PA-60-601 (Aerostar 601), PA-60-601P (Aerostar 601P), PA-60-602P (Aerostar 602P), PA-60-700P (Aerostar 700P), 360, 400.</i>
<i>Alexandria Aircraft, LLC</i>	<i>14-19, 14-19-2, 14-19-3, 14-19-3A, 17-30, 17-31, 17-31TC, 17-30A, 17-31A, 17-31ATC.</i>
<i>Alliance Aircraft Group LLC</i>	<i>15A, 20, H-250, H-295 (USAF U-10D), HT-295, H391 (USAF YL-24), H391B, H-395 (USAF L-28A or U-10B), H-395A, H-700, H-800, HST-550, HST-550A (USAF AU-24A), 500.</i>
<i>American Champion Aircraft Corp</i>	<i>402, 7GCA, 7GCB, 7KC, 7GCBA, 7GCAA, 7GCBC, 7KCAB, 8KCAB, 8GCBC.</i>
<i>Sky International Inc</i>	<i>A-1, A-1A, A-1B, S-1S, S-1T, S-2, S-2A, S-2S, S-2C.</i>

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

<i>B-N Group Ltd</i>	<i>BN-2, BN-2A, BN-2A-2, BN-2A-3, BN-2A-6, BN-2A-8, BN-2A-20, BN-2A-21, BN-2A-26, BN-2A-27, BN-2B-20, BN-2B-21, BN-2A-26, BN-2A-27, BN-2B-20, BN-2B-21, BN-2B-26, BN-2B-27, BN-2T, BN-2T-4R, BN-2A MK.III, BN2A MK.III-2, BN2A MK.111-3.</i>
<i>Bellanca</i>	<i>14-13, 14-13-2. 14-13-3. 14-13-3W.</i>
<i>Bombardier Inc</i>	<i>(Otter) DHC-3, DHC-6-1, DHC-6-100, DHC-6-200, DHC-6-300.</i>
<i>Cessna Aircraft Company</i>	<i>170, 170A, 170B, 172, 172A, 172B, 172C, 172D, 172E, 172F (USAF T-41A), 172G, 172H, (USAF T041A), 172I, 172K, 172L, 172M, 172N, 172P, 172Q, 172R, 172S, 172RG, P172D, R172E (USAF T-41 B) (USAF T-41 C AND D), R172F (USAF T-41 D), R175G, R172H (USAF T-41 D), R172J, R172K, 175, 175A, 175B, 175C, 177, 177A, 177B, 177RG, 180, 180A, 180B, 180C, 180D, 180E, 180F, 180G, 180H, 180J, 180K, 182, 182A, 182B, 182C, 182D, 182E, 182F, 182G, 182H, 182J, 182K, 182L, 182M, 182N, 182P, 182Q, 182R, 182S, 182T, R182, T182, TR182, T182T, 185, 185A, 185B, 185C, 185D, 185E, A185E, A185F, 190, (LC-126A, B, C) 195, 195A, 195B, 210, 210A, 210B, 210C, 210D, 210E, 210F, T210F, 210G, T210G, 210H, T210H, 210J, T210J, 210K, T210K, 210L, T210L, 210M, T210M, 210N, P210N, T210N, 210R, P210R, T210R, 210-5 (205), 210-5A (205A), 206, P206, P206A, P206B, P206C, P206D, P206E, TP206A, TP206B, TP206C, TU206D, TU206E, TU206F, TU206G, 206H, T206H, 207, 207A, T207, T207A, 208, 208A, 208B, 310, 310A (USAF U-3A), 310B, 310C, 310D, 310E (USAF U-3B), 310F, 310G, 310H, E310H, 310I, 310J, 310J-1, E310J, 310K, 310L, 310N, 310P, T310P, 310Q, T310Q, 310R, T310R, 320, 320A, 320B, 320C, 320D, 320E, 320F, 320-1, 335, 340, 340A, 336, 337, 337A (USAF 02B), 337B, T337B, 337C, 337E, T337E, T337C, 337D, T337D, M337B (USAF 02A), 337F, T337F, T337G, 337G, 337H, P337H, T337H, T337H-SP, 401, 401A, 401B, 402, 402A, 402B, 402C, 411, 411A, 414, 414A, 421, 421A, 421B, 421C, 425, 404, 406, 441.</i>

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

<i>Cirrus Design Corporation</i>	<i>SR20, SR22.</i>
<i>Commander Aircraft Company</i>	<i>112, 112TC, 112B, 112TCA, 114, 114A, 114B, 114TC.</i>
<i>de Havilland Inc</i>	<i>DHC-2 Mk. I, DHC-2 Mk. II, DHC-2 Mk. III.</i>
<i>Dynac Aerospace Corporation</i>	<i>(Volaire) 10, (Volaire) 10A, (Aero Commander) 100, (Aero Commander) 100A, (Aero Commander) 100-180.</i>
<i>Diamond Aircraft Industries</i>	<i>DA-20-A1, DA20-C1, DA 40.</i>
<i>Empresa Brasileira de Aeronautica S.A. Embraer</i>	<i>EMB-110P1, EMB-110PE.</i>
<i>Extra Flugzeugbau Gmbh</i>	<i>EA300, EA300L, EA300S, EA300/200, EA-400.</i>
<i>Fairchild Aircraft Corporation</i>	<i>SA26-T, SA26-AT, SA226-T, SA226-AT, SA226-T(B), SA227-AT, SA227-TT, SA226-TC, SA227-AC (C-26A), SA227-CC, SA227-DC (C-26B).</i>
<i>Global Amphibians, LLC</i>	<i>Colonial C-1, Colonial C-2, Lake LA-4, Lake LA-4A, Lake LA-4P, Lake LA-4-200, Lake Model 250.</i>
<i>Grob-Werke</i>	<i>G115, G115A, G115B, G115C, G115C2, G115D, G115D2, G115EG, G120A.</i>
<i>Lancair Company</i>	<i>LC40-550FG.</i>
<i>LanShe Aerospace, LLC</i>	<i>MAC-125C, MAC-145, MAC-145A, MAC-145B.</i>
<i>Learjet Inc</i>	<i>23.</i>

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

<i>Lockheed Aircraft Corporation</i>	18.
<i>Luscombe Aircraft Corporation</i>	11A, 11E.
<i>Maule Aerospace Technology, Inc</i>	<i>Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4180C, M-4-180S, M-4-180T, M-4-210, M-4-210C, M-4-210S, M-4-210T, M-4-220, M-4-220S, M-4-220T, M-5-180C, M-5-200, M-5-210C, M-5-210TC, M-5-220C, M-5-235C, M-6-180, M-6-235, M-7-235, MX-7-235, MX-7-180, MX-7-420, MXT-7-180, MT-7-235, M-8-235, MX-7-160, MXT-7-160, MX-7-180A, MXT-7-180A, MXT-7-180B, M-7-235B, M-7-235A, M-7-235C, M-7-180C, M-7-260, MT-7-260, M-7-260C, M-7-420AC, MX-7-160C, MX-7-180AC, M-7-420A, MT-7-420.</i>
<i>Mitsubishi Heavy Industries, Ltd</i>	<i>MU-2B-25, MU-2B-35, MU-2B-26, MU-2B-36, MU-2B-26A, MU-2B-36A, MU-2B-40, MU-2B-60, MU-2B, MU-2B-20, MU-2B-20, MU-2B-15.</i>
<i>Mooney Aeroplane Company, Inc</i>	<i>M20, M20A, M20B, M20C, M20D, M20E, M20F, M20G, M20J, M20K, M20L, M20M, M20R, M20S, M22.</i>
<i>Moravan a.s</i>	<i>Z-242L, Z-143L.</i>
<i>Navion Aircraft Company, Ltd</i>	<i>NAVION, Navion (L-17A), Navion (L-17B), Navion (L-17C), Navion B, Navion D, Navion E, Navion F, Navion G, Navion H.</i>

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

<i>New Piper Aircraft, Inc</i>	PA-12, PA-12S, PA-18, PA-18S, PA-18 "105" (Special), PA-18S "105" (Special), PA-18A, PA-18 "125" (Army L-21A), PA-18S "125," PA-18AS "125," PA-18 "135" (Army L-21B), PA-18A "135," PA-18S "135," PA-18 "150," PA-18A "150," PA-18S "150," PA-18AS "150," PA-19 (Army L-18B), PA-19S, PA-20, PA-20S, PA-20 "115," PA-20S "115," PA-20 "135," PA-20S "135," PA-22, PA-22-108, PA-22-135, PA-22S-135, PA-22-150, PA-22S-150, PA-22-160, PA-22S-160, PA-23, PA-23-160, PA-23-235, PA-23-250, PA-E23-250, PA-24, PA-24-250, PA-24-260, PA-24-400, PA-28-140, PA-28-150, PA-28-151, PA-28-160, PA-28-161, PA-28-180, PA-28-235, PA-28S-160, PA-28R-180, PA-28S-180, PA-28-181, PA-28R-200, PA-28R-201, PA-28R-201T, PA-28RT-201, PA-28RT-201T, PA-28-201T, PA-28-236, PA-30, PA-39, PA-40, PA-31P, PA-31T, PA-31T1, PA-31T2, PA-31T3, PA-31P-350, PA-32-260, PA-32-300, PA-32S-300, PA-32R-300, PA-32RT-300, PA-32RT-300T, PA-32R-301 (SP), PA-32R-301 (HP), PA-32R-301T, PA-32-301, PA-32-301T, PA-34-200, PA-34-200T, PA-34-220T, PA-42, PA-42-720, PA-42-1000, PA-42-720R, PA-44-180, PA-44-180T, PA-46-310P, PA-46-350P, PA-46-500TP.
<i>Ostmecklenburgische Flugzeugbau GmgH</i>	OMF-100-160.
<i>Piaggio Aero Industries S.p.A</i>	P-180.
<i>Pilatus Aircraft Ltd</i>	PILATUS PC-12, PILATUS PC-12/45, PC-6, PC-6-H1, PC-6-H2, PC-6/350, PC-6/350-H1, PC-6/350-H2, PC-6/A, PC-6/A-H1, PA-6/A-H2, PC-6/B-H2, PC-6/B1-H2, PC-6/B2-H2, PC-6/B2-H4, PC-6/C-H2, PC-6/C1-H2, PC-7.
<i>Prop-Jets, Inc</i>	200, 200A, 200B, 200C, 200D, 400.
<i>Panstwowe Zaklady Lotnicze (PZL)</i>	PZL-104 WILGA 80, PZL-104M WILGA 2000, PZL-WARSZAWA, PZL-KOLIBER 150A, PZL-KOLIBER 160A.

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

<i>PZL WSK/Mielec Obrsk</i>	<i>PZL M20 03, PZL M26 01.</i>
<i>Raytheon</i>	<i>35-33, 35-A33, 35-B33, 35-C33, 35-C33A, E33, E33A, E33C, F33, F33A, F33C, G33, H35, J35, K35, M35, N35, P35, S35, V35, V35A, V35B, 36, A36, A36TC, B36TC, 35, A35, B35, C35, D35, E35, F35, G35, 35R, F90, 76, 200, 200C, 200CT, 200T, A200, B200, B200C, B200CT, B200T, 300, 300LW, B300, B300C, 1900, 1900C, 1900D, A100-1 (U-21J), A200 (C-12A), A200 (C-12C), A200C (UC-12B), A200CT (C-12D), A200CT (FWC-12D), A200CT (RC-12D), A200CT (C-12F), A200CT (RC-12G), A200CT (RC-12H), A200CT (RC-12K), A200CT (RC-12P), A200CT (RC-12Q), B200C (C-12F), B200C (UC-12F), B200C (UC-12M), B200C (C-12R), 1900C (C-12J), 65, A65, A65-8200, 65-80, 65-A80, 65-A80-8800, 65-B80, 65-88, 65-A90, 70, B90, C90, C90A, E90, H90, 65-A90-1, 65-A90-2, 65-A90-3, 65-A90-4, 95, B95, B95A, D95A, E95, 95-55, 95-A55, 95-B55, 95-B55A, 95-B55B (T-42A), 95-C55, 95-C55A, D55, D55A, E55, E55A, 56TC, A56TC, 58, 58A, 58P, 58PA, 58TC, 58TCA, 99, 99A, 99A (FACH), A99, A99A, B99, C99, 100, A100 (U-21F), A100A, A100C, B100, 2000, 3000, 390, 19A, B19, M19A, 23, A23, A23A, A23-19, A23-24, B23, C23, A24, A24R, B24R, C24R, 60, A60, B60, 18D, A18A, A18D, S18D, SA18A, SA18D, 3N, 3NM, 3TM, JRB-6, D18C, D18S, E18S, RC-45J (SNB-5P), E18S-9700, G18S, H18, C-45G, TC-45G, C-45H, TC-45H, TC-45J, UC-45J (SNB-5), 50 (L-23A), B50 (L-23B), C50, D50 (L-23E), D50A, D50B, D50C, D50E-5990, E50 (L-23D, RL-23D), F50, G50, H50, J50, 45 (YT-34), A45 (T-34A or B-45), D45 (T-34B).</i>
<i>Rockwell International Corporation</i>	<i>BC-1A, AT-6 (SNJ-2), AT-6A (SNJ-3), AT-6B, AT-6C (SNJ-4), AT-6D (SNJ-5), AT-6F (SNF-6), SNJ-7, T-6G, NOMAD NA-260.</i>
<i>Short Brothers & Harland Ltd</i>	<i>SC-7 Series 2, SC-7 Series 3.</i>
<i>Slingsby Aviation Ltd</i>	<i>T67M260, T67M260-T3A.</i>

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

<i>SOCATA-Group Aerospatiale</i>	<i>TB9, TB10, TB20, TB21, TB200, TBM 700, M.S. 760, M.S. 760 A, M.S. 760 B, Rallye 100S, Rallye 150ST, Rallye 150T, Rallye 235E, Rallye 235C, MS 880B, MS 885, MS 894A, MS 893A, MS 892A-150, MS 892E-150, MS 893E, MS 894E, GA-7.</i>
<i>Tiger Aircraft LLC</i>	<i>AA-1, AA-1A, AA-1B, AA-1C, AA-5, AA-5A, AA-5B, AG-5B.</i>
<i>Twin Commander Aircraft Corporation</i>	<i>500, 500-A, 500-B, 500-U, 500-S, 520, 560, 560-A, 560-E, 560F, 680, 680E, 680F, 680FL, 680FL(P), 680T, 680V, 680W, 681, 685, 690, 690A, 690B, 690C, 690D, 695, 695A, 695B, 720, 700.</i>
<i>Univair Aircraft Corporation</i>	<i>108, 108-1, 108-2, 108-3, 108-5.</i>
<i>Vulcanair S.p.A</i>	<i>P68, P68B, P68C, P68C-TC, P68 "Observer," P68 "Observer 2," P68TC "Observer," AP68TP300 "Spartacus," AP68TP 600 "Viator".</i>
<i>Zenair Ltd</i>	<i>CH2000.</i>

Requirement: Transponders with software version 3.00, 3.01, 3.02, 3.04 or 3.05 install software upgrade to at least version 3.06 in accordance with Garmin Mandatory Software Service Bulletin No. 0409 dated 19 July 2004.

Transponders with software version 3.03 already installed require no further action.

Note 2: Version 3.03 is no longer available from Garmin.

Note 3: FAA AD 2005-01-19 Amdt 39-13944 refers.

Compliance: Before 30 September 2005.

This Amendment becomes effective on 14 April 2005.

Background: The original issue of this Directive required the installation of GTX 330/330D Software Upgrade Version 3.03, 3.04 or 3.05. This was the result of observations that the GTX 330 and GTX 330D may detect, from other aircraft, the S1 (suppression) interrogating pulse below the Minimum Trigger Level (MTL) and, in some circumstances, not reply. The GTX 330/330D should still reply even if it detects S1 interrogating pulses below the MTL.

Radio Communication and Navigation Equipment

AD/RAD/81 Amdt 1 (continued)

This Amendment increases applicability to include GTX 33 and GTX 33D transponders and requires transponders to have software version 3.06 installed (transponders with version 3.03 are not affected). The Amendment resulted from advice to the FAA from Garmin that software versions 3.04 and 3.05 inadvertently removed the correction to not suppress the S1 below the MTL and is issued to prevent interrogating aircraft from possibly receiving inaccurate replies due to suppression from aircraft equipped with the GTX 33/33D330/330D Mode S Transponders when the pulses are below the MTL. The inaccurate replies could result in reduced vertical separation or unsafe TCAS resolution advisories.

The original issue of this Directive became effective on 5 August 2004.



James Coyne
Delegate of the Civil Aviation Safety Authority

2 March 2005