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| <b>EASA</b>  | <b>AIRWORTHINESS DIRECTIVE</b>   |
|   | <p><b>AD No.: 2006 - 0265</b></p> <p><b>Date: 30 August 2006</b></p>   |
| 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. |  |
| <b>Type Approval Holder's Name:</b>  | <b>Type/Model designations:</b>  |
| Various  | Mode 'C' and Mode 'S' Transponder Systems utilising Gilham code altitude input.  |
| ETSOA Number: Not applicable.  |  |
| Foreign AD: Not applicable.  |  |
| Supersedes: CAA United Kingdom AD 002-12-99 Rev.2 and any corresponding EU Member State ADs that were issued in response to that AD.   |  |
| <b>ATA 34</b>  | <b>Navigation Systems – Mode S and C Transponders – Check</b>  |
| <b>Manufacturers:</b>  | Various  |
| <b>Applicability:</b>  | <p>All aircraft equipped with one or more Mode 'C' or Mode 'S' transponder systems which utilise Gilham code altitude input. This type of equipment is known to be installed on, but not limited to, the following aircraft:</p> <p>BAE Systems 146 series;</p> <p>BAE Systems Jetstream 3100 series; and</p> <p>Boeing 747-200 series.</p>  |
| <b>Reason:</b>   | <p>There have been a number of incidents where incorrect transponder altitude resulted in loss of aircraft separation during ACAS manoeuvres. This directive requires the identification of incorrect transmission of altitude data from transponders which utilise Gilham coded altitude encoders as a sensor input. Where aircraft transponders accept dual Gilham coded altitude encoders, the transponder altitude data comparator must also be checked for correct operation.</p> |
| <b>Effective Date:</b>   | 13 September 2006.   |
| <b>Compliance:</b>   | <p>Within the next 6 months after the effective date of this directive and thereafter at intervals not to exceed 24 months, check the Mode 'C' or Mode 'S' transponder system(s) in accordance with paragraphs (1) through to (9) below, complying with all precautions detailed in the applicable maintenance manuals and correct all adverse findings prior to further flight.</p>   |

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|                    | <p><b>Note 1:</b> For aircraft which have been checked in accordance with CAA United Kingdom AD 002-12-99 Rev.2 or any corresponding EU Member State AD, initial compliance with this directive is required not later than 24 months from the previous check required by those Directives.</p> <p><b>Note 2:</b> Altitude testing may be restricted to the operating envelope of the aircraft.</p> <ol style="list-style-type: none"> <li>(1) Connect an air data test set to the No. 1 and No. 2 (where applicable) Pitot/Static system.</li> <li>(2) In the aircraft flight deck/cockpit, select the No. 1 Mode 'C' or Mode 'S' transponder (as applicable) and select Air Data source No. 1.</li> <li>(3) Select the air data test set to the following altitude reporting values:<br/>1,000 feet;<br/>4,100 feet;<br/>15,700 feet and;<br/>31,000 feet.</li> <li>(4) For each selected altitude, verify that the Mode 'C' or Mode 'S' transponder (as applicable) altitude reporting is within tolerance (<math>\pm 125</math> feet), and record the altitude as follows:<br/>1,000 feet = Actual reading (<math>\pm 125</math> feet)<br/>4,100 feet = Actual reading (<math>\pm 125</math> feet)<br/>15,700 feet = Actual reading (<math>\pm 125</math> feet)<br/>31,000 feet = Actual reading (<math>\pm 125</math> feet)</li> <li>(5) In the aircraft flight deck/cockpit, select Air Data source No. 2 (if applicable) and repeat paragraphs (3) and (4) above.</li> <li>(6) In the aircraft flight deck/cockpit, select the No. 2 Mode 'C' or Mode 'S' transponder (if applicable) and select Air Data source No. 1 and repeat paragraphs (3) and (4) above.</li> <li>(7) In the aircraft flight deck/cockpit, select Air Data source No. 2 (if applicable) and repeat paragraphs (3) and (4) above.</li> <li>(8) Where aircraft have the availability of a third air data source, that provides altitude data to the transponder system, then repeat checks (3) and (4) above, for No. 1 and/or No.2 Mode C or Mode S transponder systems connected to Air Data source No. 3.</li> <li>(9) Confirm by inspection and reference to aircraft and equipment Maintenance Manuals and Wiring Diagrams, that, where dual Air Data sources are used, the transponder altitude data comparator function is enabled. Using appropriate test equipment, demonstrate that the comparator detects altitude data differences between the dual encoders of more than 600 feet.<br/><br/>If the comparator function is not enabled or is unserviceable, rectify before further flight (this requirement is only applicable to aircraft which utilise dual Air Data sources).</li> </ol> <p><b>Note 3:</b> The comparator function is only available when Mode S transponders are installed.</p> |
| Ref. Publications: | None   |
| Remarks:           | <ol style="list-style-type: none"> <li>1. If requested and appropriately substantiated, the responsible EASA manager for the related product has the authority to accept Alternative Methods of Compliance (AMOCs) for this AD.</li> <li>2. This AD was posted as PAD 06-170 for consultation on 07 August</li> </ol>  |

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|  | <p>2006 with a comment period until 21 August 2006. No comments were received during the consultation period.</p> <ol style="list-style-type: none"><li>3. Enquiries regarding this AD should be addressed to the AD Focal Point, Certification Directorate, EASA; E-mail: <a href="mailto:ADs@easa.europa.eu">ADs@easa.europa.eu</a></li><li>4. For any questions concerning the technical content of the requirements in this AD, please contact: Kevin Hallworth, Avionics Specialist. E-Mail: <a href="mailto:kevin.hallworth@easa.europa.eu">kevin.hallworth@easa.europa.eu</a></li></ol> |
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