



COMMENT RESPONSE DOCUMENT
EASA PROPOSED AIRWORTHINESS DIRECTIVE (PAD) No. 08-114
CLOSED FOR COMMENTS ON: 30 October 2008

PARAGRAPH OR SECTION COMMENTED	COMMENT / PROPOSAL	AUTHOR OF THE COMMENT	DATE OF COMMENT	PCM RESPONSE
Applicability	<p>PAD 08-114 is effective for aircraft equipped with certain p/n's of Collins Mode S Transponders TDR-94D in combination with Honeywell AZ800 or AZ810 Air Data Computers, and operating in European mode S airspace. Please be informed that the above combination is a common configuration also on the ATR42/72 aircraft models, not listed in the related PAD section.</p> <p>But the problem of "incorrect transmission of Selected Altitude parameter" affects aircraft with EHS capability ONLY.</p> <p>Air Contractors Limited's ATR fleet (and generally speaking most of the ATR42/72's in their basic configuration) is equipped with the above ATCxpdr/ADC combination (part number 622-9210-007 + part number 7000700-959), but it is "NOT EHS CAPABLE", as [confirmed by] Eurocontrol exemption notification. E.g. the defective parameter is not transmitted and cannot be transmitted.</p> <p>Air Contractors opinion is that the referenced PAD needs to be effective for aircraft with EHS capability (or with "activated" EHS functions) only.</p>	Salvatore Fugazzotto, Air Contractors Limited	13/10/2008	<p>Agreed. This aircraft type will be included in the AD.</p> <p>Not Agreed.</p> <p>See explanation below</p> <p>Aircraft which use the data bus interface between the Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins Transponder could transmit erroneous data irrespective of whether or not the aircraft is Mode S Elementary Surveillance (ELS) or Mode Enhanced Surveillance (EHS) compliant.</p> <p>In the case of the ATR aircraft described, it appears that they do not use the data bus connections between the Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins Transponder. Instead they use a non digital interface (probably Gilham coded altitude).</p>

				Taking into account the comments provided by Air Contractors we will modify the applicability of the AD to include only those aircraft which use the data bus connections.
Applicability	<p>I inform you, at this time, the exemptions delivered to the aircraft "nonfitted EHS", but already conformed to the elementary surveillance (ELS) since 31 March 2007, have no expiry date to EHS. Any new requirement could impose the DAP transmission to those aircrafts in the future would be subject to a minimum notice period of 5 years. At this time, and following information from French DGAC & EUROCONTROL, there is no dead line now validated.</p> <p>So, I would like to know, for those ATR which are not able with MODE-S (EHS) and under exemption, the relevance of this AD: All ATR in AIRLINAIR fleet list are in this exemption.</p> <p>After analyzing and verifying the interpretation with the authorities, it appears that all ATC P/N 622-9210-007 not coupled in a MODE-S (EHS) system has no subject to be modified.</p> <p>It would be possible to, if we refer to §1 to this PAD, to select the P/N 622-9210-007 for a single use MODE-S (ELS) on our A/C which are not MODE-S (EHS).</p> <p>Our position is very clear to this subject, we do not want to perform this ATC upgrade (5504.00 USD per transponder) for a parameter we do not need!</p>	Cedric Boullet, Airlinair	17/10/2008	<p>Not Agreed. There is no 'new' requirement. Mode S ELS aircraft will not be required to provide any additional parameters.</p> <p>We intend to modify the applicability of this AD to include only those aircraft which use the data bus connections between the Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins Transponder since we are aware that some aircraft types are not affected by this problem even though they have the equipment combination installed on their aircraft.</p>
Applicability	<p>EASA PAD 08-114 is applicable to Rockwell Collins Mode S Transponders P/N 622-9210-007 and 622-9210-108 when installed on aircraft equipped with Honeywell AZ800 or AZ810 Air Data Computers. This combination is applicable to ATR 42 and ATR 72 aircraft.</p> <p>The reason for this PAD is due to an incorrect transmission of the Mode S Enhanced Surveillance Selected Altitude Parameter. Therefore, presumably, it does not affect aircraft which only have Elementary Surveillance Mode S installed, which can be in accordance with a Eurocontrol exemption.</p> <p>Consequently, Aer Arann request that EASA issue the associated Airworthiness Directive with a statement in the applicability</p>	Rory Hensey Aer Arann	23/10/2008	<p>Noted.</p> <p>Not Agreed.</p> <p>Aircraft which use the data bus interface between the Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins</p>

	statement "This AD is not applicable to aircraft not equipped with Mode S Enhanced Surveillance", or words to that effect.			Transponder could be affected. This is irrespective of whether or not the aircraft in Mode S Elementary Surveillance (ELS) or Mode Enhanced Surveillance (EHS) compliant.
Required Action(s) and Compliance Time(s)	Previous experience has shown that (1) there is a limited supply of spare Rockwell Collins TDR-94D Mode S Transponders and (2) shop modifications of these Transponders can take a considerable time. This combination of factors would lead to considerable difficulties with procuring and / or modifying all applicable Mode S transponders within the 6 months compliance time of the proposed AD. Can EASA consider issuing the AD associated with PAD 08-114 with a compliance time of greater than 6 months, perhaps 1 year?	Rory Hensey Aer Arann	23/10/2008	Agreed. Compliance time will be extended from 6 months to 12 months.
Applicability	As per Dassault Aviation modifications or SBs, only F900 A and B are affected by the proposed AD (about 20 aircraft have been identified to date). The PAD gives a grace delay of 6 months to install new transponders with P/N -309 or -409. Unfortunately, these P/N are currently not certified for installation on F900 aircraft, so, with no further action, the AD would effectively ground these aircraft at the end of the grace period. Dassault Aviation will of course undertake the certification of a transponder configuration compliant with the AD requirements as soon as possible. However, considering the time required to obtain this certification and the lack of advance notice, may we respectfully request an extension of the compliance delay for this AD? Going from 6 months to 12, or even 9 months would be useful, in order to keep a reasonable grace delay for operator compliance after the certification of the new P/N. On other models, several aircraft may be in this configuration through STC's (for instance several F50 are known to be in this configuration). Dassault recommends these operators to contact their Authorized Service Center or STC holders to develop a new STC allowing the installation of a transponder referenced in the PAD as the solution.	Pierre Georges, Dassault Aviation	28/10/2008	Agreed. Compliance time will be extended from 6 months to 12 months.
General	Dassault Falcon Service, DOA holder EASA21J.104, has developed a STC EASA approved for Falcon 900 with TDR94D 622-9210-008 which could be concerned by the proposed AD (DFS modification n°9517, STC EASA.A.S.02839)	Samuel Pignet, Dassault Falcon Service	29/10/2008	Noted

	<p>We are in contact with Rockwell Collins to get some information for the planned solution in the TDR but we have not had any satisfactory technical answer at equipment level in order to develop the adequate evolution of the STC at aircraft level, please take this lack of solution into account for the potential future planning of the AD, if confirmed.</p> <p>After some investigations, it seems that the mentioned mismatch occurs as long as the knob used to set the Selected Altitude parameter is not manipulated after initialisation of the system. As soon as you move the knob, the mismatch disappears and the Selected Altitude is properly transmitted with a valid value. Would it be possible to consider that the probability for an aircraft to take off with exactly the same Selected Altitude value than it had just before landing can be equal to 0 (zero). Then the crew would necessarily set a new Selected Altitude before departure, which would allow a valid transmission of the parameter. Or [has] Eurocontrol experienced some examples of [erroneous] transmission?</p>			<p>Not Agreed.</p> <p>Crew procedures to alleviate this problem were discussed but none were found to be acceptable.</p>
Applicability	<p>PAD 08-114 describes a condition where an installed Mode-S Transponder is not compatible with an installed Air Data Computer.</p> <p>Such incompatibility may exist in an aircraft installation using any Mode-S Transponder or Air Data Computer compliant with ARINC Specification 429 in combination with any Air Data Computer or Mode-S Transponder compliant with GAMA Standard 429. As the majority of Mode-S Transponders and Air Data Computers comply with ARINC Specification 429, this PAD would more appropriately be directed toward those aircraft installations using Air Data Computers compliant with GAMA Standard 429.</p>	Rockwell Collins	30/10/2008	<p>Not Agreed.</p> <p>The only reported problems concern the combination of Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins Transponder TDR 94.</p>
Reason	<p>The third paragraph in this section discusses the requirement for "a check of the transponder Air/Ground discrete input connections and,.....", which is irrelevant to the subject of this particular PAD.</p> <p>It is suggested this paragraph should instead discuss the requirement for modification or replacement of either the Air Data Computer or the Mode-S Transponder, to ensure compatibility of the 429 Label 102, Bit 11.</p>	Rockwell Collins	30/10/2008	Agreed
Applicability	<p>(1) The part numbers of concerned ADC type AZ800 and AZ810 should be detailed.</p> <p>(2) According to text in § reason, it can be understood that the unsafe condition only exists when the aircraft is operated in mode S EHS airspace but not in mode S ELS. This should appear clearly in § applicability. In addition, the § applicability should precise that</p>	Marion Choudet ATR	31/10/2008	<p>1. Not Agreed. It is understood that all part numbers, associated with the Honeywell AZ800 and AZ810, are affected.</p>

	aircraft operated in mode S EHS airspace, but for which an exemption has been granted by NAA, are not concerned by the AD.			2. Not Agreed. To limit the applicability to those aircraft which operate in Mode S EHS airspace would be difficult to control due to the changing environment regarding the use of Mode S EHS parameters by the Air Navigation Service Provider's (ANSP's) . Also, if a Mode ELS compliant aircraft transmits the 'Selected Altitude' parameter (or any other Mode S EHS parameter) it must supply correct data.
Reason	<p>(3) It is indicated that the mismatch between ARINC and GAMA specifications could occur on certain TDR-94 transponders. Is it also true for TDR-94D transponders? As to ATR aircraft, some tests have been performed with a transponder TDR-94D and an ADC AZ810 without any anomaly evidenced on selected altitude transmission.</p> <p>(4) The last sentence is not coherent with the actions mandated by the AD.</p> <p>(7) When reading the reason of SB TDR-94/94D-34-505 there is nothing about compatibility with GAMA label 102G.</p>	Marion Choudet ATR	31/10/2008	<p>3. Agreed. The applicability of this AD will be modified to include only those aircraft which use the data bus connections between the Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins Transponder since we are aware that some aircraft types are not affected by this problem even though they have the equipment combination installed on their aircraft.</p> <p>4. Agreed. The last sentence in the 'Reason' section was inserted erroneously and will be removed.</p> <p>7. The full technical reason regarding compatibility between the ARINC standards was omitted in order to simplify the PAD (AD). The end result of the 'mismatch' between the ARINC and GAMMA specifications, at aircraft level is described.</p>
Effective date	(5) The AD mandates installation of a new P/N on aircraft impacted. Can we consider that the AD is another way to approve a design change on an aircraft, or is it necessary to approve a real design change that will cover the installation of this new P/N, for all TC concerned?	Marion Choudet ATR	31/10/2008	The operator is required to modify or replace the transponder, as detailed in this Airworthiness Directive, in accordance with approved aircraft modification

	As we expect the second proposition is the correct one, it is the only one that ensures traceability and control of aircraft configuration, the effective date of the AD should take into account delay necessary to approve such design change.			instructions
Required Action(s) and Compliance Time(s)	The compliance time of 6 months to modify all aircraft concerned is too short with regards to operators' capacity to retrofit their complete fleet and with regards to COLLINS capacity to provide new transponders or to modify the existing ones.	Marion Choudet ATR	31/10/2008	Agreed. Compliance time will be extended from 6 months to 12 months.
Applicability	<p>Tyrolean Airways is operating a fleet of 12 Dash 8-300 aircraft which are all equipped with Rockwell Collins Mode S Transponders p/n 622-9210-007 and Honeywell air data computers AZ810.</p> <p>EASA PAD No. 08-114 requires to modify existing -007 transponders to -309, in order to provide the necessary GAMA Label 102G "Selected Altitude" in Collins Proline 4 or 21 installations.</p> <p>Since our aircraft are equipped with Collins Proline II this change will have no effect on our current installation.</p> <p>Furthermore our Dash 8-300 fleet is exempted from the Mode S EHS requirements, hence this AD should not be applicable for these aircraft.</p>	Thomas Bürgler Tyrolean Airways	03/11/2008	<p>Agreed.</p> <p>The PAD(AD) will be revised to exclude aircraft where the 'selected altitude' parameter is provided by an equipment other than the Honeywell air data computer, example – Mode Control Panel (MCP) to transponder.</p> <p>Aircraft which use the data bus interface between the Honeywell AZ800 or AZ810 Air Data Computer and the Rockwell Collins Transponder could be affected. This is irrespective of whether or not the aircraft in Mode S Elementary Surveillance (ELS) or Mode Enhanced Surveillance (EHS) compliant.</p> <p>It is suggested that Tyrolean Airways confirm, by reference to wiring diagrams or by using ramp test equipment, that their aircraft are not affected by this PAD.</p>

Applicability	<p>I would like to recommend that EASA confirm with Rockwell Collins the applicability of additional transponder part numbers in this proposed AD which address the mismatch between GAMA and ARINC spec for Label 102.</p> <p>Original PN: 622-9210-007 changed to a 622-9210-207 (SB 504) Original PN: 622-9210-008 changed to a 622-9210-308 (SB 504R3) Original PN: 622-9210-108 changed to a 622-9210-408 (SB 504R3)</p> <p>These new transponder part numbers are utilized on some Gulfstream GIII and GIV for various Eurocontrol Enhanced Mode-S installations.</p> <p>My intention is only to ensure there is no question of compliance for customers operating one of the transponders noted above.</p>	Tim Herndon, Gulfstream Aerospace	04/11/2008	Agreed. Rockwell Collins have confirmed that the additional part numbers also address the mismatch between GAMA and ARINC. These part numbers will be included in the PAD/(AD).
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