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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-1177; Product Identifier 2015-NM-195-AD; Amendment 39-19139; AD 2017-26-08]

RIN 2120-AA64

Airworthiness Directives; ATR-GIE Avions de Transport Régional Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain ATR-GIE Avions de Transport Régional Model ATR42-500 and ATR72-212A airplanes. This AD requires revising the airplane flight manual (AFM) to provide procedures to the flight crew for operational restrictions affecting in-flight use of the autopilot (AP) or yaw damper (YD) during dual-engine operation. This AD also provides an optional software modification, which would terminate the AFM requirement. This AD was prompted by flight test evaluations that revealed that after engine failure during AP or YD re-engagement, the YD unit commanded the rudder to return to neutral position, leading to inadequate balancing of the asymmetric power. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD becomes effective January 18, 2018.

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of January 18, 2018.

We must receive comments on this AD by February 20, 2018.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this final rule, contact ATR-GIE Avions de Transport Régional, 1, Allée Pierre Nadot, 31712 Blagnac Cedex, France; telephone +33 (0) 5 62 21 62 21; fax +33 (0) 5 62 21 67 18; email [. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW, Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1177.](mailto:aircraft.com)

Examining the AD Docket

You may examine the AD docket on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1177; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Shahram Daneshmandi, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW, Renton, WA 98057-3356; telephone 425-227-1112; fax 425-227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2015-00237R1, dated December 16, 2015 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”) to correct an unsafe condition for certain ATR-GIE Avions de Transport Régional Model ATR42-500 and ATR72-212A airplanes. The MCAI states:

During flight evaluations performed on Flight Synthetic Test Devices of ATR airplanes equipped with New Avionics Suite (also known as ‘Glass Cockpit’), with one Air Data Computer (ADC) or one Attitude and Heading Reference System (AHRS) inoperative, it was found that, after engine failure during autopilot (AP) or Yaw Damper (YD) re-engagement, the YD unit commanded the rudder to return to neutral position leading to inadequate balancing of the asymmetric power.

Subsequent flight tests confirmed the YD unit behavior observed during flight simulator evaluation and identified that a software issue is the root cause of this system reaction.

Additionally, it was identified that the failure of one of the Direct Current (DC) Generators with a concurrent shutdown of the opposite engine leads to loss of the AHRS#2 and ADC#2 and resulting in YD command the rudder into neutral position.

This condition, if not corrected, could result in loss of control of the airplane.

To address this potential unsafe condition EASA issued AD 2015-0230 to introduce operational restrictions affecting in-flight use of AP and/or YD with an inoperative AHRS, or ADC and the relevant dispatch limitations.

Since that [EASA] AD was issued, it was determined that airplanes modified in service by incorporating New Avionics Suite Standard 2 are not affected and that the operation of an airplane with combination of inoperative ADC, AHRS and DC Generator items is allowed. Additional investigation has resulted in prohibiting the use of AP or YD also in case of both engine operative, when an ADC or an AHRS becomes inoperative.

For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2015-0230, which is superseded, and introduces AP or YD operational restrictions applicable for dual engine operation.

This [EASA] AD is considered an interim action and further [EASA] AD action may follow.

This [EASA] AD is revised to specify the Reason leading to AD issuance.

Required actions also include AP or YD operational restrictions applicable for dual engine operation. You may examine the MCAI on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1177.

Related Service Information Under 1 CFR Part 51

Avions de Transport Régional has issued ATR Service Bulletin ATR42-31-0091, Revision 1, dated May 05, 2015; and ATR Service Bulletin ATR72-31-1092, Revision 2, dated March 31, 2015. The service information describes procedures for, among other things, modifying the software for the integrated avionics display (IAD), the core processing module (CPM), the switch module (SWM), and the flight warning main configuration file (FWMCF). These documents are distinct since they apply to different airplane models.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination and Requirements of This AD

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to our bilateral agreement with the State of Design Authority, we have been notified of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all pertinent information and determined the unsafe condition exists and is likely to exist or develop on other products of these same type designs.

FAA's Determination of the Effective Date

There are currently no domestic operators of this product. Therefore, we find good cause that notice and opportunity for prior public comment are unnecessary. In addition, for the reason(s) stated above, we find that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2017-1177; Product Identifier 2015-NM-195-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD based on those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this AD.

Costs of Compliance

Currently, there are no affected U.S.-registered airplanes. If an affected airplane is imported and placed on the U.S. Register in the future, we provide the following cost estimates to comply with this AD:

We estimate that it will take about 1 work-hour per product to comply with the basic requirements of this AD. The average labor rate is \$85 per work-hour. Based on these figures, we estimate the cost of this AD will be \$85 per product.

In addition, we estimate that the optional modification will take about 3 work-hours for a cost of \$255 per product.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. “Subtitle VII: Aviation Programs,” describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in “Subtitle VII, Part A, Subpart III, Section 44701: General requirements.” Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and

4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):



FAA
Aviation Safety

AIRWORTHINESS DIRECTIVE

www.faa.gov/aircraft/safety/alerts/
www.gpoaccess.gov/fr/advanced.html

2017-26-08 ATR-GIE Avions de Transport Régional: Amendment 39-19139; Docket No. FAA-2017-1177; Product Identifier 2015-NM-195-AD.

(a) Effective Date

This AD becomes effective January 18, 2018.

(b) Affected ADs

None.

(c) Applicability

This AD applies to ATR-GIE Avions de Transport Régional Model ATR42-500 airplanes, and Model ATR72-212A airplanes; certificated in any category; all manufacturer serial numbers on which ATR-GIE Avions de Transport Régional Modification 5948 (New Avionics Suite installation) has been embodied in production, except those airplanes identified in paragraphs (c)(1) and (c)(2) of this AD.

(1) Airplanes on which ATR-GIE Avions de Transport Régional Mod 6977 (New Avionics Suite Standard 2) has been embodied in production.

(2) Airplanes on which ATR Service Bulletin ATR42-31-0091, or ATR Service Bulletin ATR72-31-1092, has been incorporated.

(d) Subject

Air Transport Association (ATA) of America Code 31, Instruments.

(e) Reason

This AD was prompted by flight evaluations that revealed that after engine failure during autopilot (AP) or yaw damper (YD) re-engagement, the YD unit commanded the rudder to return to neutral position, leading to inadequate balancing of the asymmetric power. We are issuing this AD to provide procedures to the flightcrew for operational restrictions affecting in-flight use of the autopilot (AP) or yaw damper (YD) during dual-engine operation.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Revise the Airplane Flight Manual

Within 30 days after the effective date of this AD, revise the Limitations Section of the applicable ATR-42 and ATR-72 airplane flight manuals (AFMs) to include figure 1 to paragraph (g) of this AD. Amending the AFM of an airplane by inserting a copy of this AD into the applicable

AFM of that airplane is acceptable to comply with the requirements of this paragraph for that airplane.

Figure 1 to paragraph (g) of this AD – AFM Temporary Revision

Do not use AP or YD during flight when one of the following fault messages appears in Amber on the Engine and Warning Display:
 Air Data Computer (ADC) or Attitude and Heading Reference System (AHRS)

(h) Minimum Equipment List (MEL)

(1) Within 30 days after the effective date of this AD, amend the operator's ATR MEL, as applicable, by incorporating the dispatch restrictions listed in figure 2 to paragraph (h)(1) of this AD, and thereafter operate the airplane accordingly.

Figure 2 to paragraph (h)(1) of this AD - Minimum Equipment List (MEL) Amendment

(1) Direct Current (DC) Generator loss				
(1.1) Dispatch conditions				
ATA 24 – ELECTRICAL POWER (Continued)				
ATA CHAPTER	1	2 - REPAIR INTERVAL CATEGORY		
		3 - NUMBER INSTALLED		
		4 - NUMBER REQUIRED FOR DISPATCH		
	ITEM	5 - REMARKS OR CONDITIONS		
DC				
30-1 DC generator channel (generator + related GCU)	A	2	1	* (o) (m) May be inoperative except for ETOPS, provided: (a) The Autopilot and Yaw Damper are deactivated, and (b) TRU is checked operative prior to each departure, and (c) Aircraft does not fly extended overwater routes, and (d) Two engines taxi is performed, and (e) Aircraft does not line up until 6 minutes elapsed after operative generator comes on line, and (f) Operations are limited to two flights

Note: This new dispatch condition only supersedes the related current approved master minimum equipment list (MMEL) items, on the basis of which the operator's MEL is established, applicable to ATR 42-500 and ATR 72-212A fitted with ATR Modification 5948, except airplanes modified in accordance with ATR modification 6977, the others dispatch conditions remain valid.

Figure 2 to paragraph (h)(1) of this AD - MEL Amendment continued

(1.2) Associated procedures

Dispatch Deviation Guide

ATA 24 – ELECTRICAL POWER

30-1 DC generator channel (generator + related

GCU) OPERATIONAL PROCEDURES:

- Check of remaining generator feeder integrity:
6 minutes are necessary to establish the temperature difference between the feeders if one line is broken. So aircraft should not line up until 6 minutes elapsed after operative generator comes on line.

- Operational test of TRU (if installed):
Note: During the test, the ACW electrical network must be available (The AC GPU connected or ACW generators running).

Checking are performed only on Main Electrical Panel (left hand panel):

- Switch OFF the pushbutton DC EXTERNAL POWER (if selected ON)
- Switch OFF the pushbuttons DC GEN 1 & 2 (if selected ON)

On Main Electrical Panel; check that the following caution lights are switched ON:

- BATTERY ARROWS
- Both BUS OFF
- INVERTER 2 FAULT
- Both DC BUS OFF
- SHED LEGEND OF DC SVCE/UTLY BUS

Check that the following systems are supplied:

- VHF 1
- FUEL QTY INDICATOR
- FLAPS POSITION INDICATOR

On Main Electrical Panel; press the TRU push-button; then check that:

- The TRU push-button is switched ON
- The TRU ARROW caution light is switched ON
- The BATTERIES ARROWS caution lights are not illuminated
- The UNDV legend of OVRD/UNDV push-button is not illuminated

On Main Electrical Panel, check that the BATTERY AMMETER shows zero load either if BAT selector switch is placed in EMER or MAIN position.

Check that the following systems are still supplied:

- VHF 1
- FUEL QTY INDICATOR
- FLAPS POSITION INDICATOR

On Main Electrical Panel, switch off the TRU push-button; then check that:

- The TRU push-button is not illuminated
- The TRU ARROW caution light is not illuminated
- The BATTERY ARROWS caution lights are switched ON

MAINTENANCE PROCEDURES:

- Pull C/B AFCS/YAW SERVO, secure and tag

Figure 2 to paragraph (h)(1) of this AD - MEL Amendment continued

(2) ADC or AHRS fault

(2.1) Dispatch conditions

ATA 34 – NAVIGATION				
ATA CHAPTER	1	2 - REPAIR INTERVAL CATEGORY		
ITEM		3 - NUMBER INSTALLED		5 - REMARKS OR CONDITIONS
		4 - NUMBER REQUIRED FOR DISPATCH		
- Air Data System				
11-1 Air Data Computer (ADC)	A	2	1	* (o) (m) One ADC may be inoperative provided: (a) The Autopilot and Yaw Damper are deactivated, and (b) TheTLU manual mode is operative (c) The IESI is operative, and (d) All the IOM DC are operative, and (e) The operations are limited to two flights, and (f) For day VMC flight only, and (g) For ETOPS, the ADC#1 must be operative <u>Note:</u> When TLU automatic mode is inoperative Refer to MMEL 27 item 23-2
- Attitude – Heading				
20-1 AHRS	A	2	1	* (m) One may be inoperative, provided: (a) The Autopilot and Yaw Damper are deactivated, and (b) The IESI is operative, and (c) For day VMC flight only, and (d) Operations are limited to two flights, and (e) For ETOPS, AHRS#1 must be operative

This new dispatch condition only supersedes the related current approved MMEL items, on the basis of which the operator's MEL is established, applicable to ATR 42-500 and ATR 72-212A fitted with ATR Modification 5948, except airplanes modified in accordance with ATR modification 6977, the others dispatch conditions remain valid.

Figure 2 to paragraph (h)(1) of this AD - MEL Amendment continued

(2.2) Associated procedures

Dispatch Deviation Guide
ATA 34 – NAVIGATION
<p>11-1 ADC</p> <p>OPERATIONAL PROCEDURES:</p> <p>ADC switching must be set to valid ADC</p> <p>TLU manual mode check:</p> <ul style="list-style-type: none"> ➤ Select HI SPD and check alert is generated after 25 seconds: MC, SC, FLT CTL TLU on FWS and TLU FAULT light ➤ Check rudder travel is limited ➤ Select AUTO and check alert stops after 15 seconds ➤ Check rudder travel is not limited <p>MAINTENANCE PROCEDURES:</p> <p style="padding-left: 40px;">- Pull C/B AFCS/YAW SERVO, secure and tag</p> <p>20-1 AHRS</p> <p>OPERATIONAL PROCEDURES:</p> <p>None for this chapter</p> <p>MAINTENANCE PROCEDURES:</p> <p style="padding-left: 40px;">- Pull C/B AFCS/YAW SERVO, secure and tag.</p>

(2) Amending the operator's ATR MEL, as applicable, of an airplane by inserting a copy of this AD, or incorporating a later MMEL revision which includes the same dispatch restrictions as specified in figure 2 to paragraph (h)(1) of this AD is acceptable for compliance with the requirements of paragraph (h)(1) of this AD for that airplane.

(3) As of the effective date of this AD: If any of the systems identified in paragraph (h)(3)(i), (h)(3)(ii), and (h)(3)(iii) of this AD are inoperative, an airplane may be operated as specified in the MMEL, provided that the MEL of that airplane has been amended to be consistent with the MEL restrictions specified in figure 2 of this AD.

- (i) One of two ADCs.
- (ii) One of two AHRs.
- (iii) One of two DC generators.

(i) Optional Software Modification

Installation of new avionics suite standard 2 software on an airplane, in accordance with the Accomplishment Instructions of ATR Service Bulletin ATR42-31-0091, Revision 1, dated May 05, 2015, or ATR Service Bulletin ATR72-31-1092, Revision 2, dated March 31, 2015, as applicable, terminates the AFM and MEL revisions required by paragraphs (g) and (h) of this AD, for that airplane.

(j) Credit for Previous Actions

This paragraph provides credit for actions required by paragraph (i) of this AD, if those actions were performed before the effective date of this AD using ATR Service Bulletin ATR42-31-0091, dated December 17, 2014; or ATR Service Bulletin ATR72-31-1092, dated October 7, 2014, or Revision 1, dated December 9, 2014, as applicable.

(k) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Section, Transport Standards Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Section, send it to the attention of the person identified in paragraph (l)(2) of this AD. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) Contacting the Manufacturer: For any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or EASA; or ATR-GIE Avions de Transport Régional's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(l) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA AD 2015-00237R1, dated December 16, 2015, for related information. You may examine the MCAI on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2017-1177.

(2) For more information about this AD, contact Shahram Daneshmandi, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW, Renton, WA 98057-3356; telephone 425-227-1112; fax 425-227-1149.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (m)(3) and (m)(4) of this AD.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) ATR Service Bulletin ATR42-31-0091, Revision 1, dated May 05, 2015.

(ii) ATR Service Bulletin ATR72-31-1092, Revision 2, dated March 31, 2015.

(3) For service information identified in this AD, contact ATR-GIE Avions de Transport Régional, 1, Allée Pierre Nadot, 31712 Blagnac Cedex, France; telephone +33 (0) 5 62 21 62 21; fax +33 (0) 5 62 21 67 18; email [.](mailto:aircraft.com)

(4) You may view this service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW, Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on December 20, 2017.
Michael Kaszycki,
Acting Director, System Oversight Division,
Aircraft Certification Service.