FAA
Aviation Safety

EMERGENCY AIRWORTHINESS DIRECTIVE

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DATE: December 20, 2010
AD #: 2011-01-53

Emergency airworthiness directive (AD) 2011-01-53 supersedes AD 2011-01-51, issued December 18, 2010, which was sent previously to all known U.S. owners/operators of PIAGGIO AERO INDUSTRIES S.p.A (Piaggio) Model PIAGGIO P-180 airplanes.

Background

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, is considered the State of Design for the Piaggio Model P-180 airplanes. A reported occurrence of the flight controls jamming on Piaggio Model P-180 airplane prompted EASA to issue AD No. 2007-0025, dated February 1, 2007, and the FAA followed with AD 2007-24-15, Amendment 39-15321 (72 FR 67843, December 3, 2007). That AD required correcting the fuselage drain system and ensuring that the drain lines of the environmental unit condenser were not clogged.

Since AD 2007-24-15 became effective, the FAA received information on two additional incidences where Piaggio Model P-180 airplanes had water accumulation in the belly of the fuselage that froze and caused the flight controls to jam. We issued emergency AD 2011-01-51 on December 18, 2010, to require an immediate functional test of the fuselage drain holes and a report of the results to the FAA. It also allows, with noted exceptions, for the return/position of the airplane to a home base, hangar, maintenance facility, etc.

Since AD 2011-01-51 was issued, we were notified that we inadvertently omitted the figure 2 in Appendix 1. This emergency AD retains the actions from AD 2011-01-51, adds figure 2 to Appendix 1, and corrects other minor typographical errors.

The FAA is working with EASA and Piaggio on this unsafe condition. Due to the nature of the immediate safety of flight situation, the FAA is working this AD concurrently with EASA instead of waiting for EASA, as the State of Design, to issue an AD. Thus, this action is considered unilateral AD action.

FAA's Determination

We are issuing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

AD Requirements

This AD requires an immediate functional test of the fuselage drain holes and a report of the results to the FAA. It also allows for the return/position of the airplane to a home base, hangar, maintenance facility, etc.

Interim Action

We consider this AD interim action.

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.

Presentation of the Actual AD

We are issuing this AD under 49 U.S.C. Section 44701 according to the authority delegated to me by the Administrator.

2011-01-53 Piaggio Aero Industries S.p.A (Piaggio): Directorate Identifier 2010-CE-070-AD.

Effective Date

(a) This emergency AD is effective upon receipt.

Affected ADs

(b) This AD supersedes emergency AD 2011-01-51, issued December 18, 2010, which was sent to owners/operators of Piaggio Model P-180 airplanes. AD 2007-24-15, Amendment 39-15321 (72 FR 67843, December 3, 2007) is related to this subject and remains in effect.

Applicability

(c) This AD applies to Piaggio Model P-180 airplanes, all serial numbers, certified in any category.

Subject

(d) Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 53, Fuselage.

Unsafe Condition

(e) This emergency AD was prompted by three incidents of the flight controls jamming on Piaggio Model P-180 airplanes. Water or fluid accumulating and freezing when the aircraft reaches and holds altitudes where the temperature is below the freezing point may cause the flight controls to jam with consequent loss of control.

Compliance

(f) Comply with this AD within the compliance times specified.

Inspection and Corrective Actions

(g) Unless already done in compliance with emergency AD 2011-01-51, before further flight, do the following actions using the instructions in Appendix 1 of this AD.

(1) Remove the central floor panels in the cabin and inspect the fuselage belly; and

(2) Functional test the fuselage drain holes.

Reporting Requirement

(h) Unless already done, within 24 hours after complying with the actions required in paragraph (g) of this AD, fill out the reporting form provided in Appendix 2 of this AD and send to the FAA at one of the addresses (facsimile, email) referenced in the Related Information section, paragraph (l) of this AD.

(i) For the reporting requirement in this AD, a federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to be approximately 5 minutes per response, including the time for reviewing instructions, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to the FAA at: 800 Independence Ave. SW, Washington, DC 20591, Attn: Information Collection Clearance Officer, AES-200.

Provision to Return to Home Base

(j) For the actions of paragraph (g) of this AD, you may return/position the airplane to a home base, hangar, maintenance facility, etc., provided the following are adhered to:

(1) A water drain hole test is done immediately before the repositioning flight and the airplane passes this test. The instructions for this test are included in Appendix 3 of this AD. If the airplane does not pass this test, then the actions of paragraph (g) of this AD must be done without a repositioning flight, unless a special flight permit is granted;

(2) This repositioning flight does not exceed a total of 5 hours time-in-service; and

(3) Use of autopilot is prohibited.

Alternative Methods of Compliance (AMOCs)

(k)(1) The Manager, Standards Office, Small Airplane Directorate, 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 manager of the Standards Office, send it to the attention of one the people identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your Principal Maintenance Inspector or Principal Avionics Inspector, as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

Related Information

(l) For further information about this AD, contact one of the following:

(1) Sarjapur Nagarajan, Aerospace Engineer, Small Airplane Directorate, FAA, 901 Locust, Kansas City, MO 64106; phone: (816) 329-4145; fax: (816) 329-4090; e-mail: sarjapur.nagarajan@faa.gov.

(2) Peter Rouse, Aerospace Engineer, Small Airplane Directorate, FAA, 901 Locust, Kansas City, MO 64106; phone: (816) 329-4135; fax: (816) 329-4090; e-mail: peter.rouse@faa.gov.

(3) Mike Kiesov, Aerospace Engineer, Small Airplane Directorate, FAA, 901 Locust, Kansas City, MO 64106; phone: (816) 329-4144; fax: (816) 329-4090; e-mail: mike.kiesov@faa.gov.

Appendix 1 to Emergency AD 2011-01-53
Functional Test of the Fuselage Drain Holes

1. Remove the electrical power (Ref. AMM Chapter 24-00-00).
2. Remove the carpet from the aisle in the passenger compartment: The carpet is installed on the aircraft with Velcro; remove it by hand.
3. Remove the aisle floor panels 231 ALF, 231 FLF, 231 MLF, and 231 QLF (Ref. AMM Chapter 06-00-00).
4. Inspect the fuselage belly for presence of fluid or ice. Inspect the lateral bays through the lightening holes.
   a. If fluid is found in the belly, drain it and collect. Take note of the amount of fluid removed from the belly, and in which bay the fluid was trapped.
   b. If ice is found in the belly, thaw it, then drain and collect. Take note of the amount of fluid removed from the belly, and in which bay the ice was trapped.

      NOTE: BEFORE THAWING THE ICE, PUT A SUITABLE CONTAINER BELOW THE EXTERNAL DRAIN HOLES TO COLLECT THE FLUID.
   c. Evaluate the amount of fluid collected:
      i. If water is found only in the bottom of the belly (i.e., undrainable within the keel beams), go to step 6. Step 5 does not need to be accomplished at this time.
      ii. If water is found in excess of item above (4-c-i), do step 5.
5. Add 6.3 mm draining holes as per attached figure 1 (additional drain holes on keel beam webs) connecting the lateral bays to the center ones or, as alternative, apply Piaggio Aero Industries Service Bulletin 80-0291. Then proceed with step 6.
6. Inspect the fuselage belly for presence of dirt/debris. Take note of dirt/debris found and of its location (which bay).
7. Inspect the fuselage belly for signs of previous fluid pooling (waterlines or similar). Take note of any sign found.
8. Inspect the six (6) flapper valves (two near FR 20, FR 32, and FR 36) to verify if they are clogged, stuck to the fuselage skin, or laying against the skin for their entire length.
   a. Clean any clogged flapper valve. Take note of any clogged flapper valve and its position.
   b. Carefully free any stuck flapper valve. Take note of any stuck flapper valve and its position.
   c. If – after cleaning and repositioning – the rubber flap is still laying against the skin for its entire length, cut off the rubber flap. Replace it at the next A check.
9. Inspect the six (6) external drain holes:
   a. Verify if they are clogged. If any drain hole is clogged, clean it.
   b. Check for proper dimension (3.2 mm). Rework to nominal dimension any external drain hole that is found undersized. Protect the reworked drain hole by means of Alodyne. Take note of any drain hole found clogged and/or reworked, and its position.
10. Clean the fuselage belly, removing debris. A vacuum cleaner may be used.
11. If possible, identify clues of potential source of fluid, such as wet carpets, blue lavatory water, etc.

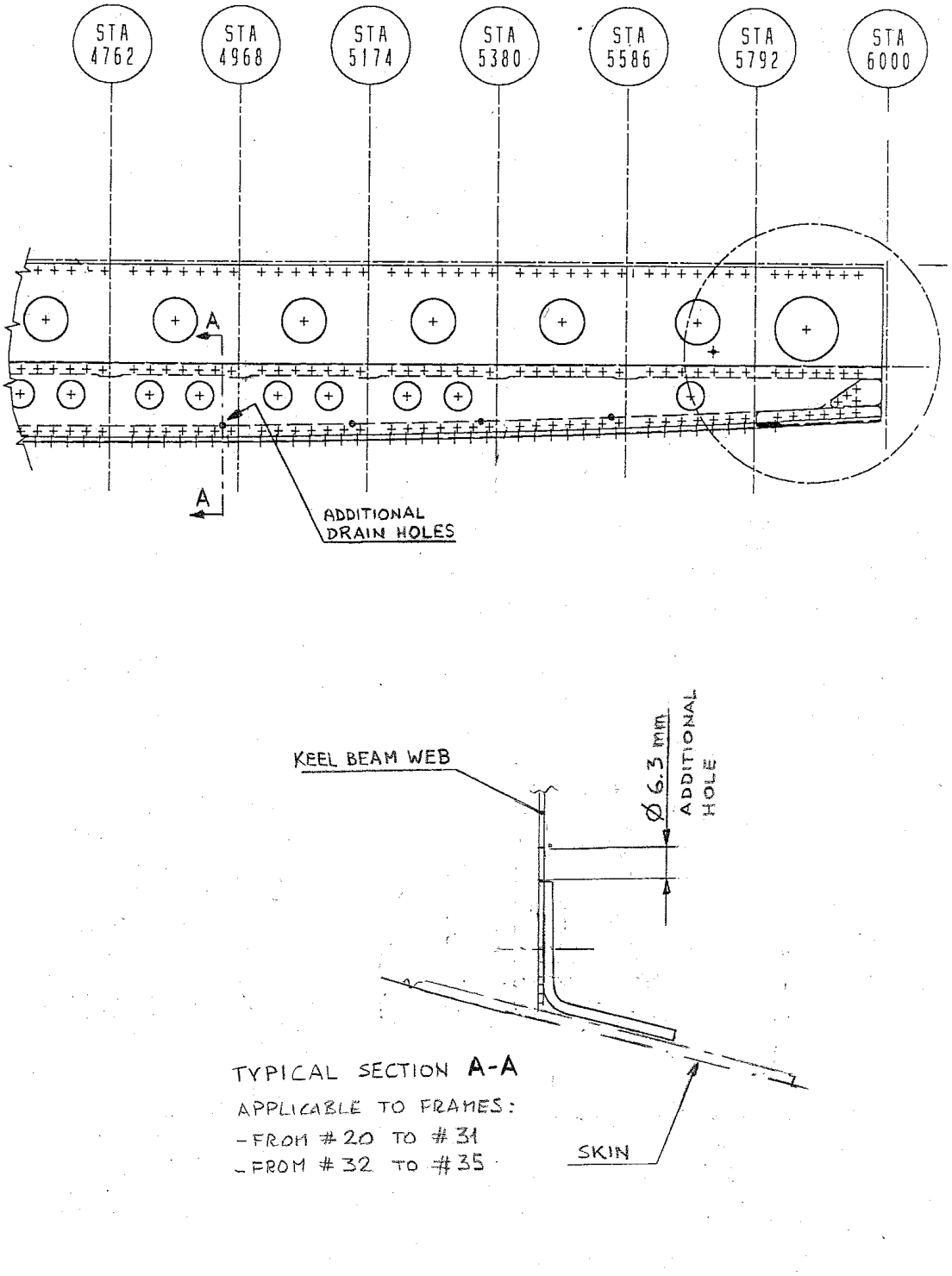

Figure 1. Additional drain holes on keel beam webs

Appendix 1 to Emergency AD 2011-01-53 (Continued)
Functional Test of the Fuselage Drain Holes

12. Test the valves and drain holes as described:
    a. Place an adequate amount of water in each bay between FR 19 and FR 36 (See figure 2) to verify that the water is conveyed in the central bays and that it is drained. Use at least ½ gallon (approximately 2 liters).

    NOTE: TAKE CARE NOT TO COME IN CONTACT WITH ELECTRICAL CONNECTORS WHILE POURING WATER.

    b. A steady stream of water should be observed coming from the external drain holes. If not, the flapper valve does not drain properly. Cut off the rubber flap and replace the flapper valve at next A check. Take note of any cut rubber flap and its position.
13. Dry the fuselage belly.
14. Install the aisle floor panels 231ALF, 231 FLF, 231 MLF, and 231 QLF (Ref. AMM Chapter 06-00-00).
15. Re-install the carpet:
    a. Make sure that the floor is clean and free of objects.
    b. Make sure that the Velcro is well fixed and cleaned.
    c. Put the carpet in position on the floor and fix it with the Velcro.
16. Collect information on total time flown in the last 6 months. Specify if the aircraft was exposed to heavy rain conditions while parked or during flights.
17. Make an appropriate entry in the airplane logbook to show compliance with this emergency AD.

Appendix 1 to Emergency AD 2011-01-53 (Continued)
Functional Test of the Fuselage Drain Holes

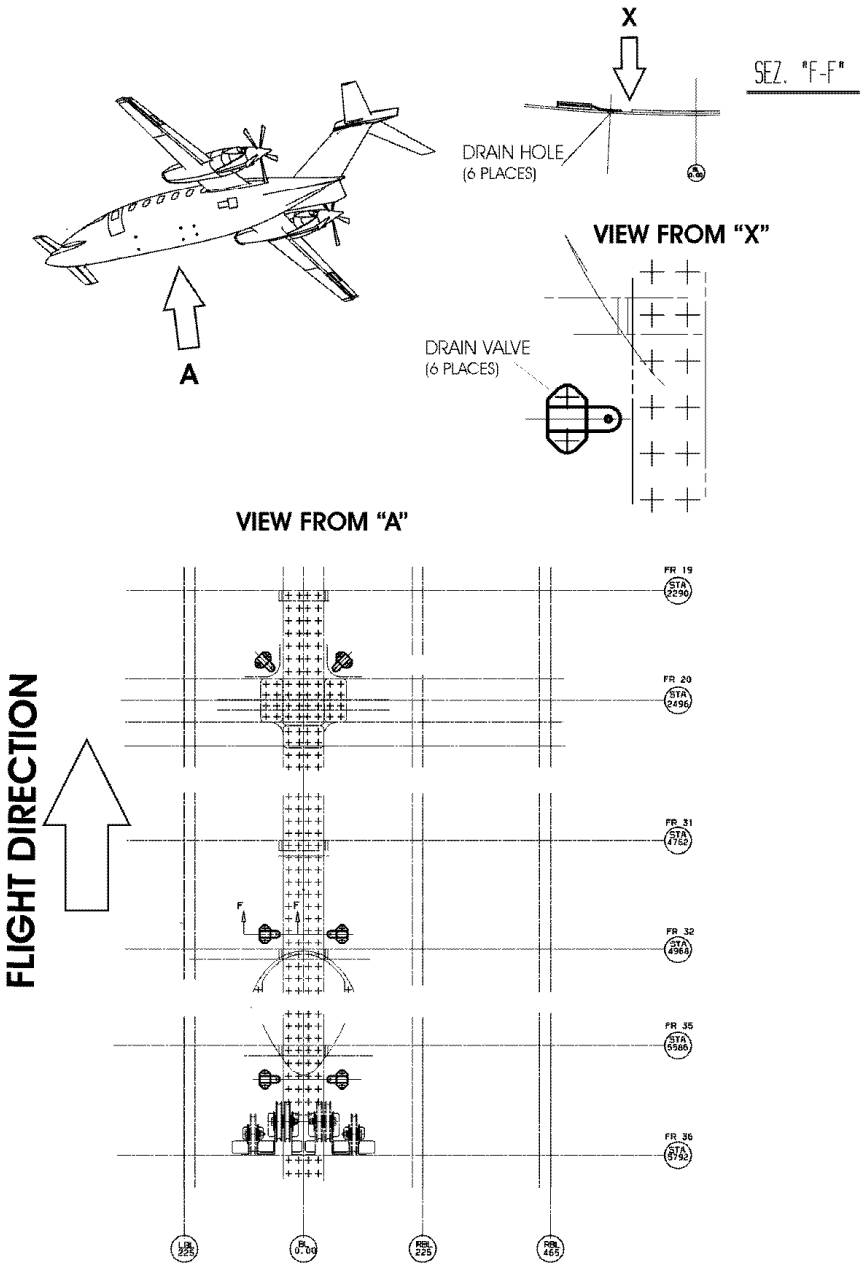

Figure 2. Fuselage Drain Holes

Appendix 2 to Emergency AD 2011-01-53
Reporting Form

A/C S/N:	A/C Flight Hours:	A/C Registration:
Step 4a – water collected in the belly [YES] [NO]	If YES, specify amount and location:	
Step 4b – ice collected in the belly [YES] [NO]	If YES, specify amount and location:	
Step 5 – added drain holes [YES] [NO]	If YES, specify work performed:	
Step 6 – debris / dirt in the belly [YES] [NO]	If YES, specify amount and location:	
Step 7 – signs of previous fluid pooling [YES] [NO]	If YES, specify amount and location:	
Step 8 – flapper valves inspection	Specify, if any, which flapper valve was found clogged or stuck and, if any, which rubber flap was cut off.	
Step 9 – drain holes inspection	Specify, if any, which drain hole was found clogged. Specify, if any, which drain hole was found undersized.	
Step 11 – clues of potential source of fluid.		
Step 12 – drain test	Specify, if any, which flapper valve does not have a steady stream of water.	
Step 16 – Total time flown in the last 6 months. Specify if the aircraft was exposed to heavy rain conditions while parked or during flights.		

Appendix 2 to Emergency AD 2011-01-53 (Continued)
Reporting Form

Date:	Accomplished by:
Signature	

Send report to one of the following:

- Sarjapur Nagarajan, Aerospace Engineer, Small Airplane Directorate, FAA, 901 Locust, Kansas City, MO 64106; phone: (816) 329-4145; fax: (816) 329-4090; e-mail: sarjapur.nagarajan@faa.gov.
- Peter Rouse, Aerospace Engineer, Small Airplane Directorate, FAA, 901 Locust, Kansas City, MO 64106; phone: (816) 329-4135; fax: (816) 329-4090; e-mail: peter.rouse@faa.gov.
- Mike Kiesov, Aerospace Engineer, Small Airplane Directorate, FAA, 901 Locust, Kansas City, MO 64106; phone: (816) 329-4144; fax: (816) 329-4090; e-mail: mike.kiesov@faa.gov.

Appendix 3
Water Drain Hole Test

1. Put a container under the fuselage external drain holes.
2. Insert a plastic or wooden stick (or similar tool), minimum length 3 inches (7.5 cm), diameter 0.1 inch (2.5 mm) in each of the 6 fuselage external drain holes.
3. Verify the stick may enter freely in the drain hole.
4. If the stick does not enter freely, repositioning flight is not allowed.
5. If more than 1 cup (250 ml) of water is drained from 2 drain holes at each station while inserting the stick, repositioning flight is not allowed.

Issued in Kansas City, Missouri, on December 20, 2010.

Earl Lawrence,
Manager, Small Airplane Directorate,
Aircraft Certification Service.