



**2020-26-16 Piper Aircraft, Inc.:** Amendment 39-21371; Docket No. FAA-2018-1046; Product Identifier 2018-CE-049-AD.

**(a) Effective Date**

This airworthiness directive (AD) is effective February 16, 2021.

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to Piper Aircraft, Inc. (Piper) airplanes, certificated in any category, with a model and serial number shown in table 1 to paragraph (c) of this AD, and that meet at least one of the criteria in paragraphs (c)(1), (2), or (3) of this AD.

Note 1 to the introductory text of paragraph (c): An owner/operator with at least a private pilot certificate may do the aircraft maintenance records review to determine the applicability as specified in paragraph (c) of this AD.

- (1) Has accumulated 5,000 or more hours time-in-service (TIS); or
- (2) Has had either main wing spar replaced with a serviceable (more than zero hours TIS) main wing spar; or
- (3) Has missing and/or incomplete maintenance records.

Table 1 to paragraph (c)

<b>Model</b>	<b>Serial Numbers</b>
PA-28-151	All serial numbers
PA-28-161	All serial numbers except 2842006
PA-28-181	All serial numbers
PA-28-235	All serial numbers
PA-28R-180	All serial numbers
PA-28R-200	All serial numbers except 28R-7235151
PA-28R-201	All serial numbers except 2844029, 2844030, 2844081, 2844125, 2844136, 2844147 through 2844151, 28R-7737078, 28R-7737142, 28R-7837108, 28R-7837125, and 28R-7837257
PA-28R-201T	All serial numbers
PA-28RT-201	All serial numbers
PA-28RT-201T	All serial numbers
PA-32-260	All serial numbers
PA-32-300	All serial numbers
PA-32R-300	All serial numbers
PA-32RT-300	All serial numbers except 32R-7985004
PA-32RT-300T	All serial numbers

**(d) Subject**

Joint Aircraft System Component (JASC) Code 5711, Wing Spar.

**(e) Unsafe Condition**

This AD was prompted by a report of a wing separation caused by fatigue cracking in a visually inaccessible area of the main wing lower spar cap. The FAA is issuing this AD to detect and correct fatigue cracks in the lower main wing spar cap bolt holes. The unsafe condition, if not addressed, could result in the wing separating from the fuselage in flight.

**(f) Compliance**

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

**(g) Definitions**

(1) "TIS" has the same meaning as the definition of "time in service" in 14 CFR 1.1.

(2) For purposes of this AD, “factored service hours” refers to the calculated quantity of hours using the formula in paragraph (h)(2) of this AD, which accounts for the usage history of the airplane.

**(h) Review Airplane Maintenance Records and Calculate Factored Service Hours for Each Main Wing Spar**

(1) Within 30 days after the effective date of this AD, review the airplane maintenance records and determine the number of 100-hour inspections completed on the airplane since new and any record of wing spar replacement(s).

(i) For purposes of this review, count any inspection conducted to comply with the 100-hour requirement of 14 CFR 91.409(b) pertaining to carrying persons for hire, such as in-flight training environments, even if the inspection was entered in the maintenance records as an “annual” inspection or as an “annual/100-hour” inspection. If the purpose of an inspection was to comply with § 91.409(b), then it must be counted. To determine the purpose of an inspection, note the repeating intervals between inspections, i.e., less than 10 months between, and typically 90-110 flight hours. An inspection entered as a “100-hour” inspection but done solely for the purpose of meeting the requirement to complete an annual inspection, or those otherwise not required by § 91.409(b), need not be counted. For operators utilizing a progressive inspection program, count the completion of each § 91.409(b) 100-hour interval as one inspection.

(ii) If a main wing spar has been replaced with a new (zero hours TIS) main wing spar, count the number of 100-hour inspections from the time of installation of the new main wing spar.

(iii) If a main wing spar has been replaced with a serviceable main wing spar (more than zero hours TIS) or the airplane maintenance records are missing or incomplete, the wing history cannot be determined. Perform the eddy current inspection as specified in paragraph (i) of this AD.

(iv) The actions required by paragraph (h)(1) of this AD may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with this AD in accordance with 14 CFR 43.9(a)(1) through (4), and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417, 121.380, or 135.439.

(2) Before further flight after completing the action in paragraph (h)(1) of this AD, calculate the factored service hours for each main wing spar using the formula in figure 1 to paragraph (h)(2) of this AD. Thereafter, after each annual inspection and 100-hour inspection, recalculate/update the factored service hours for each main wing spar until the main wing spar has accumulated 5,000 or more factored service hours.

N is the number of 100-hour inspections; and T is the total hours TIS of the airplane.

$$(N \times 100) + \frac{[T - (N \times 100)]}{17} = \text{Factored Service Hours}$$

Figure 1 to paragraph (h)(2)

(3) An example of determining factored service hours for an airplane with no 100-hour inspections is as follows: The airplane maintenance records show that the airplane has a total of 12,100 hours TIS, and only annual inspections have been done. None of the annual inspections were

done for purposes of compliance with § 91.409(b). Both main wing spars are original factory installed. In this case, N = 0 and T = 12,100. Use those values in the formula as shown in figure 2 to paragraph (h)(3) of this AD. In the example in figure 2 to paragraph (h)(3) of this AD, the eddy current inspection would not be required because the factored service hours are less than 5,000 hours.

If the number of 100-hour inspections is 0 and the total hours TIS of the airplane is 12,100 hours, then your formula would be:

$$(0 \times 100) + \frac{[12,100 - (0 \times 100)]}{17} = 711 \text{ Factored Service Hours}$$

Figure 2 to paragraph (h)(3)

(4) An example of determining factored service hours for an airplane with both 100-hour and annual inspections is as follows: The airplane was originally flown for personal use, then for training for a period of time, then returned to personal use. The airplane maintenance records show that the airplane has a total of 10,600 hours TIS, and fifty-five 100-hour inspections for purposes of compliance with § 91.409(b) have been done. Both main wing spars are original factory installed. In this case, N = 55 and T = 10,600. Use those values in the formula shown in figure 3 to paragraph (h)(4) of this AD. First, calculate commercial use time by multiplying (N x 100). Next, subtract that time from the total time, and divide that quantity by 17. Add the two quantities to determine total factored service hours. In the example in figure 3 to paragraph (h)(4) of this AD, the eddy current inspection would be required because the factored service hours are more than 5,000 hours.

If the number of 100-hour inspections is 55 and the total hours TIS of the airplane is 10,600 hours, then your formula would be:

$$(55 \times 100) + \frac{[10,600 - (55 \times 100)]}{17} =$$

$$(5,500) + \frac{[10,600 - (5,500)]}{17} =$$

$$(5,500) + 300 = 5,800 \text{ Factored Service Hours}$$

Figure 3 to paragraph (h)(4)

**(i) Eddy Current Inspect**

Within the compliance time specified in either paragraph (i)(1) or (2) of this AD, as applicable, eddy current inspect the inner surface of the two lower outboard bolt holes on the lower main wing spar cap for cracks. If the wing is installed, use steps 1 through 3 or, if the wing is not installed, use

step 3 in the Instructions of Piper Aircraft, Inc. Service Bulletin No. 1345, dated March 27, 2020 (Piper SB No. 1345). Although Piper SB No. 1345 specifies NAS 410 Level II or Level III certification to perform the inspection, this AD allows Level II or Level III qualification standards for inspection personnel using any inspector criteria approved by the FAA.

Note 2 to the introductory text of paragraph (i): Advisory Circular 65-31B contains FAA-approved Level II and Level III qualification standards criteria for inspection personnel doing nondestructive test (NDT) inspections.

(1) Within 100 hours TIS after complying with paragraph (h) of this AD or within 100 hours TIS after a main wing spar accumulates 5,000 factored service hours, whichever occurs later; or

(2) For airplanes with an unknown number of factored service hours on a main wing spar, within the next 100 hours TIS after the effective date of this AD or within 60 days after the effective date of this AD, whichever occurs later.

#### **(j) Replace the Main Wing Spar**

If a crack is found during an inspection required by paragraph (i) of this AD, before further flight, replace the main wing spar with a new (zero hours TIS) main wing spar or with a serviceable (more than zero hours TIS) main wing spar that has passed the eddy current inspection required by paragraph (i) of this AD.

#### **(k) Install New Bolts**

Before further flight after completing the actions required by paragraph (i) or (j) of this AD, install new bolts by following step 6 of Piper Aircraft, Inc. Service Bulletin No. 1345, dated March 27, 2020.

#### **(l) Report Inspection Results**

Within 30 days after completing an inspection required by paragraph (i) of this AD, using Appendix 1, "Inspection Results Form," of this AD, report the inspection results to the FAA at the Atlanta ACO Branch and to Piper Aircraft. Submit the report to the FAA and Piper using the contact information found on the form in appendix 1 of this AD.

#### **(m) Special Flight Permit**

A special flight permit may only be issued to operate the airplane to a location where the inspection requirement of paragraph (i) of this AD can be performed. This AD prohibits a special flight permit if the inspection reveals a crack in a main wing spar.

#### **(n) Paperwork Reduction Act Burden Statement**

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 currently 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 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

**(o) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Atlanta ACO 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 manager of the certification office, send it to the attention of the person identified in paragraph (p) of this AD.

(2) 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.

**(p) Related Information**

For more information about this AD, contact Dan McCully, Aviation Safety Engineer, Atlanta ACO Branch, FAA, 1701 Columbia Avenue, College Park, Georgia 30337; phone: (404) 474-5548; fax: (404) 474-5605; email: [william.mccully@faa.gov](mailto:william.mccully@faa.gov).

**(q) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference 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 the AD specifies otherwise.

(i) Piper Service Bulletin No. 1345, dated March 27, 2020.

(ii) [Reserved]

(3) For Piper Aircraft, Inc. service information identified in this AD, contact Piper Aircraft, Inc., 2926 Piper Drive, Vero Beach, Florida 32960; phone: (772) 567-4361; website: <https://www.piper.com>.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the FAA, call (816) 329-4148.

(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, email: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

**Appendix 1 to AD 2020-26-16**

**Inspection Results Form**

Email completed form to:  
**9-ASO-ATLCOS-Reporting@faa.gov**  
and  
**customer.service@piper.com**

Or mail to: Federal Aviation Administration  
Atlanta ACO Branch, AIR-7A1  
1701 Columbia Avenue  
College Park, GA 30337  
and  
Piper Certification Office  
2926 Piper Drive  
Vero Beach, FL 32960

SUBJECT line: Docket No. FAA-2018-1046

*Include photos if applicable*

Aircraft Model No.: <b>PA-</b>	Serial Number:
Aircraft Total Hours Time-In-Service (TIS):	Registration Number:
Factored Service Hours Left-Hand (LH) Wing:	Right-Hand (RH) Wing:
(If both wings are factory installed original, these numbers should be the same)	
<b>Inspection Results</b>	
LH Wing Spar Fwd    Accepted <input type="checkbox"/> Rejected <input type="checkbox"/>	RH Wing Spar Fwd    Accepted <input type="checkbox"/> Rejected <input type="checkbox"/>
LH Wing Spar Aft    Accepted <input type="checkbox"/> Rejected <input type="checkbox"/>	RH Wing Spar Aft    Accepted <input type="checkbox"/> Rejected <input type="checkbox"/>
<b>Inspector Comments (observed damage, condition of hole, etc)</b>	

**Inspector Information**

Name (print): \_\_\_\_\_ Signature: \_\_\_\_\_

Certificate No.: \_\_\_\_\_ Date: \_\_\_\_\_

Issued on December 30, 2020.

Gaetano A. Sciortino,  
Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft  
Certification Service.

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