TABLE 1—STRUCTURAL REPAIR MANUALS ACCEPTABLE BEFORE THE EFFECTIVE DATE OF THIS AD

Document	Revision	Date
Airbus A330 Structural Repair Manual	60	October 1, 2008.
Airbus A330 Structural Repair Manual	61	January 1, 2009.
Airbus A340–200/–300 Structural Repair Manual	64	October 1, 2008.
Airbus A340–200/–300 Structural Repair Manual	65	January 1, 2009.

(4) As of the effective date of this AD, no person may replace a movable flap track fairing No. 3 on that airplane, unless the replacement fairing has been modified or repaired in accordance with the requirements of this AD.

FAA AD Differences

Note 1: This AD differs from the MCAI and/or service information as follows: The MCAI prohibits replacement of the affected part after modification, but this AD prohibits replacing the affected part as of the effective date of this AD.

Other FAA AD Provisions

(g) The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, International Branch, ANM–116, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Send information to ATTN: Vladimir Ulyanov, Aerospace Engineer, International Branch, ANM–116, Transport Airplane Directorate, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; telephone (425) 227–1138; fax (425) 227–1320. Before using any approved AMOC on any airplane to which the AMOC applies, notify your principal maintenance inspector (PMI) or principal avionics inspector (PAI), as appropriate, or lacking a principal inspector, your local Flight Standards District Office.

(2) *Airworthy Product:* For any requirement in this AD to obtain corrective actions from a manufacturer or other source, use these actions if they are FAA-approved. Corrective actions are considered FAA-approved if they are approved by the State of Design Authority (or their delegated agent). You are required to assure the product is airworthy before it is returned to service.

(3) *Reporting Requirements:* For any reporting requirement in this AD, under the provisions of the Paperwork Reduction Act, the Office of Management and Budget (OMB) has approved the information collection requirements and has assigned OMB Control Number 2120–0056.

Related Information

(h) Refer to MCAI European Aviation Safety Agency Airworthiness Directive 2008–0153, dated August 8, 2008; and Airbus Mandatory Service BulletinsA330–57–3095, Revision 02, and A340–57–4103, Revision 01, both dated April 3, 2008; for related information.

Material Incorporated by Reference

(i) You must use Airbus Mandatory Service Bulletin A330–57–3095, Revision 02, dated April 3, 2008; or Airbus Mandatory Service Bulletin A340–57–4103, Revision 01, dated April 3, 2008; as applicable; to do the actions required by this AD, unless the AD specifies otherwise.

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

(2) For service information identified in this AD, contact Airbus SAS—Airworthiness Office—EAL, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; fax +33 5 61 93 45 80, e-mail *airworthiness.A330–A340@airbus.com; Internet http://www.airbus.com.*

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425–227–1221 or 425–227–1152.

(4) You may also review copies of the 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/code_of_federal_regulations/ibr_locations.html.*

Issued in Renton, Washington, on December 16, 2009.

Stephen P. Boyd,

Acting Manager,

Transport Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2010–487 Filed 1–19–10; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2007–27862; Directorate Identifier 2007–CE–036–AD; Amendment 39–16150; AD 2009–26–11]

RIN 2120–AA64

Airworthiness Directives; Thrush Aircraft, Inc. Model 600 S2D and S2R Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) to supersede AD (AD) 2006–07–15, which applies to Thrush Aircraft, Inc. Model 600 S2D and S2R (S–2R) series airplanes (type certificate previously held by Quality Aerospace, Inc. and Ayres Corporation). AD 2006–07–15 currently requires repetitive inspections of the 1/4-inch and 5/16-inch bolt hole areas on the wing front lower spar caps for fatigue cracking; replacement or repair of any wing front lower spar cap where fatigue cracks are found; and reporting of any fatigue cracks found to the FAA. AD 2006–07–15 also puts the affected airplanes into groups for compliance time and applicability purposes. Since we issued AD 2006–07–15, FAA analysis reveals that inspections are not detecting all existing cracks and shows the incidences of undetected cracks will increase as the airplanes age. Consequently, this AD retains the actions of AD 2006–07–15 and imposes a life limit on the wing front lower spar caps that requires replacement of the wing front lower spar caps when the life limit is reached. This AD also changes the requirements and applicability of the groups discussed above and removes the ultrasonic inspection method. We are issuing this AD to prevent wing front lower spar cap failure caused by undetected fatigue cracks. Such failure could result in loss of a wing in flight.

DATES: This AD becomes effective on February 24, 2010.

On February 24, 2010, the Director of the Federal Register approved the incorporation by reference of Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007, listed in this AD.

As of May 20, 2003 (68 FR 15653), the Director of the Federal Register approved the incorporation by reference of Quality Aerospace, Inc. Custom Kit No. CK–AG–30, dated December 6, 2001, listed in this AD.

As of July 25, 2000 (65 FR 36055), the Director of the Federal Register approved the incorporation by reference of Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996; and Ayres Corporation Custom Kit No. CK–AG–29, dated December 23, 1997, listed in this AD.

ADDRESSES: To get the service information identified in this AD, contact Thrush Aircraft, Inc., 300 Old Pretoria Road, P.O. Box 3149, Albany, Georgia 31706–3149. The service

information is also available on the Internet at *http://www.thrushaircraft.com.*

To view the AD docket, go to U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue, SE., Washington, DC 20590, or on the Internet at *http://www.regulations.gov.* The docket number is FAA–2007–27862; Directorate Identifier 2007–CE–036–AD.

FOR FURTHER INFORMATION CONTACT:

—Cindy Lorenzen, Aerospace Engineer, ACE–115A, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, Georgia 30337; *telephone:* (404) 474–5524; *facsimile:* (404) 474–5606; *e-mail: cindy.lorenzen@faa.gov;* or

—William O. Herderich, Aerospace Engineer, ACE–117A, Atlanta Aircraft Certification Office, 1701 Columbia Avenue, College Park, Georgia 30337; *telephone:* (404) 474–5547; *facsimile:* (404) 474–5606; *e-mail: william.o.herderich@faa.gov.*

SUPPLEMENTARY INFORMATION:

Discussion

On April 27, 2009, we issued a proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) to include an AD that would apply to certain Thrush Aircraft, Inc. Model 600 S2D and S2R (S–2R) series airplanes (type certificate previously held by Quality Aerospace, Inc. and Ayres Corporation). This proposal was published in the **Federal Register** as a notice of proposed rulemaking (NPRM) on May 4, 2009 (74 FR 20431). The NPRM proposed to supersede AD 2006–07–15, Amendment 39–14542 (71 FR 19788, April 17, 2006) with a new AD that would:

- Retain the actions of AD 2006–07–15;
- Add life limits for the wing front lower spar caps;
- Lower the initial and repetitive inspection times for Group 5 airplanes;
- Correct some airplane Group classifications;
- Add an airplane to the Applicability section; and
- Remove the use of ultrasonic inspection methods.

For replacement of the wing front lower spar caps, the initial compliance time for all airplanes will be at least an additional 500 hours time-in-service (TIS) after the effective date of this AD. Calculated from actual flight hour data from 285 S2R series airplanes, 500 hours TIS equates to the average yearly operational time. The compliance schedules should give owner/operators enough time to schedule the replacement of the wing front lower spar caps.

Although not required in this AD, we recommend installing "big butterfly" and lower splice plates, P/N 20211–09 and P/N 20211–11, or Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, since they increase the strength of the wing beyond the minimum safety standards.

Comments

We provided the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and FAA's response to each comment:

Comment Issue No. 1: Extend Compliance Time To Replace the Spar Caps

Marc Fries states that a large portion of the affected airplanes will need to address a spar replacement within a very short period of time, overwhelming a limited number of repair facilities. Mr. Fries also states that most operators have a short "down time" during their season in which to do this type of repair, and many operators will run out of flying hours before a repair facility can do the work or even get the kits from the factory.

Mr. Fries requests an extension of the compliance time because there are a limited number of repair facilities, and the replacement parts may not be available immediately. Mr. Fries also requests to insert into the AD an allowance for an extension of the compliance time while continuing the spar cap inspections.

We do not agree with the commenter. As stated in the NPRM, allowance for the compliance time based on the limited number of repair facilities and the limited availability of replacement parts has already been made. For airplanes that have already exceeded the life limit replacement time for the wing front lower spar caps, the minimum compliance time for those with the highest hours TIS, which are the airplanes with the highest risk of spar cap failure, is 500 hours TIS. Five hundred hours TIS equates to an average year of operation for these airplanes. Airplanes that have exceeded the life limit replacement time, but are not at the highest level of risk, will be allowed an even longer compliance time of 1,000 hours TIS, 1,500 hours TIS, or 2,000 hours TIS based on the current number of hours TIS on the wing front lower spar caps. Airplanes that have not yet reached the life limit replacement time are allowed a minimum of 2,000 hours TIS to comply with the AD. These compliance times result in an average operator having at least one year to comply with the AD; however, most operators will have much longer than one year to replace the wing front lower spar caps. These graduated compliance times should allow enough time for adequate supply of parts and repair facility availability.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 2: Withdraw the AD

Charles Brumley states that the pilot should be allowed to make his own decision whether a new spar cap is needed and requests an alternative to this AD.

Mr. Brumley further states that he believes the AD is unnecessary for the following reasons:

- If the pilot is involved in the maintenance of the airplane, then the pilot can make an informed decision about whether or not to install a new spar cap and whether or not the aircraft is in a condition for safe operation;
- The AD will cause undue economic hardship on the airplane operators and the farms that use aerial application services;
- There have only been a few cracks found, *i.e.,* that there is not enough service history to support issuance of an AD; and
- The large butterfly plates are adequate to ensure safety of the pilot until a spar cap crack is found.

We infer this as a request for the FAA to withdraw the AD.

We do not agree with the commenter. While the commenter may have maintained his airplane adequately, the formation of fatigue cracks mainly relates to the airplane's design and operation. Replacement of the wing front lower spar caps when they have reached their life limits is currently the only means known to the FAA to address the unsafe condition.

We have extensive crack data that currently shows 176 wings on 123 airplanes had cracks in the wing front lower spar caps. As the incidences of cracking increase, which has occurred in the Thrush airplanes, the chance of an existing crack not being detected during an inspection increases. Airplanes with cracks in the wing front lower spar caps are unable to meet ultimate strength requirements, which could lead to a wing failure. The only known way of mitigating this risk is to replace the wing front lower spar caps.

There are already procedures in place for owner/operators to request an alternative to any AD. Use the alternative method of compliance (AMOC) procedures provided in this AD

to request an AMOC. The request for an AMOC must include any substantiating information, such as stress and fatigue data. The AMOC will be approved if we find it provides an acceptable level of safety.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 3: Adjusted Life Limits Based on Environmental Conditions

Avenger Aircraft and Services (Avenger) states the life limits for the wing front lower spar caps should be adjusted if environmental conditions were not taken into account when determining the life limits. The commenter states that metal fatigue is influenced by environmental conditions.

We do not agree with the commenter's request to adjust the life limits. We did take environmental conditions into consideration during our analysis for determining the life limits. The risk-based analysis used by the FAA used actual reported crack data from in-service airplanes. These in-service data came from airplanes operated in a variety of environments; therefore, the raw data used in the FAA's analysis include the effects caused by environmental conditions.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 4: Adjust Life Limits Based on Crack Sizes

Avenger states that the life limit of the wing front lower spar cap could be much shorter if crack sizes are taken into account during the risk assessment. Avenger also states that this can be particularly significant when some fleet crack sizes may have exceeded the critical size without failing due to the airplane not exceeding limit load at that particular time.

We do not agree with the commenter's request. Although we did not include the crack size in our analysis, we did use a statistical approach and took into account the TIS on the wing front lower spar cap when the crack was found and reported to the FAA. There are other factors in place in the AD to mitigate the risk associated with not using crack size to determine the life limit of the wing front lower spar caps. We determined a life limit for continued operational safety of the S2R fleet and did not propose a life limit as defined in FAA guidance for type certification of newly certificated airplanes. Our analysis of the crack data, which includes allowances for both the statistically significant amount of crack data on the Thrush fleet and the existence of an inspection program for the wing front lower spar caps, yielded the life limits times for the wing front lower spar caps shown in the NPRM.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 5: Remove Magnetic Particle Inspection Method

Avenger states that the flaw size that can be detected by the magnetic particle inspection method is 0.69 inches, which is in excess of the flaw size that would allow the wing front lower spar cap to continue to carry limit load.

Avenger states, therefore, magnetic particle inspections should not be utilized as a valid inspection method and should be removed from the AD.

We do not agree with the commenter. The magnetic particle inspection interval was originally set at 500 hours TIS by AD 2000–11–16 and was based on crack growth analysis provided by Ayres Corporation (Ayres). We accepted Ayres' proposed usage of U.S. Air Force data from Report AFWAL 3–5–852, which showed a reliably detectable crack size (90 percent probability/95 percent confidence) of 0.12 inch when using magnetic particle inspection methods. Using this detectable crack size with a repetitive inspection of 500 hours TIS allowed for at least two inspections to occur after crack initiation and prior to a crack reaching its critical size. As the fleet aged and as more cracks occurred in-service, the risk to the fleet increased. To help mitigate this risk, we doubled the frequency of the inspections required in AD 2006–07–15. In this AD we are requiring inspections every 250 hours TIS, which allows for four chances of detecting a crack based on the data originally used by Ayres. This same 250-hour TIS inspection interval, along with imposing a wing front lower spar cap life limit to further mitigate risk, was included in the proposed AD. The detectable crack size of 0.12 inch used by Ayres is very near the values of detectable size currently suggested for use by the FAA (Ref. Website sponsored by the FAA in conjunction with Iowa State University *http://www.cnde.iastate.edu/faa-casr/engineers/index.html*) of 0.13 to 0.15 inch. With the added conservatism of four inspections to detect cracks before reaching a critical crack size, when two inspections are what is normally required in a more ideal environment, the inspection interval in this AD is well within the current guidelines.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 6: Require Calibration Standards and Level 2 NDT Personnel To Perform Eddy Current Inspections

Avenger states that calibration standards and Level 2 Non-destructive Testing (NDT) personnel are necessary to achieve reliability and repeatability in the inspections. These calibration standards are designed to replicate the structure being inspected with simulated flaws and are used every time as a setup tool by the inspector prior to conducting the on-aircraft inspection. Utilization of these standards is the current practice by all major aircraft manufacturers and should be required for the Thrush inspections in order to ensure a 90 percent probability of detection. In addition, the inspectors should be fully certified Level 2 NDT personnel with bolt hole eddy current qualifications.

We do not agree with the commenter's request that a change is needed to the AD. This AD and the ADs that this AD supersedes allow for eddy current inspection procedures to be approved only through the FAA's Aircraft Certification Office (ACO). The FAA ACO already requires each procedure to have the correct type of calibration standard as this is a basic requirement for ensuring a good inspection. The FAA ACO has not and will not approve an eddy current inspection procedure that does not include a requirement to use only Level 2, or even more qualified Level 3, certified NDT inspectors for these eddy current inspections.

We are not changing the final rule AD action based on this comment.

Comment Issue No. 7: Allow Installing Supplemental Type Certificate (STC) SA03654AT as a Terminating Action in This AD

Avenger states that a solution that was not available at the time the proposed AD was written is now currently on the market. Avenger requests that the following information be included in the AD. This solution is the Avenger STC SA03654AT Avenger Extended Performance Front Spar Enhancement Kit.

STC SA03654AT installs FAA-approved replacement wing front lower spar caps for all airplanes that are the subject of this AD, except for Model S2D airplanes. The replacement spars have a life limit of 40,000 hours TIS with a parts cost of $40,000 and an installation cost of $25,500.

Avenger's FAA STC replacement kit includes the following:

- 2 lower wing front lower spar caps (made from stainless steel, not 4000 series steel);

- 2 front spar web doublers;
- 1 large butterfly plate (redesigned);
- 2 larger splice blocks (redesigned); and
- All associated hardware for installation.

Avenger requests that the AD be amended to include the installation of the Avenger Extended Performance (AXP) kit as a terminating action to this AD.

We agree with the commenter. The replacement wing front lower spar caps and other modification parts that are approved by STC SA03654AT, Installation of Avenger Extended Performance Front Spar Enhancement Kit (new wing front spar lower caps, center splice and doublers), in accordance with Part II of Avenger Master Data List AAS–MDL–08–001, Revision B, dated November 26, 2008, or later FAA-approved revision, are a viable terminating action to this AD. The installation of STC SA03654AT is an alternative to replacing the wing front lower spar caps with Ayres/Thrush wing front lower spar caps.

We will change the final rule AD action to allow installing STC SA03654AT as a terminating action for this AD.

Comment Issue No. 8: Require Reaming Bolt Hole Before Cold Working

Avenger states it is their opinion that the cold working process accomplished as part of the Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996, is not being conducted correctly, and fatigue damage is being introduced and made more critical than if cold working was not accomplished at all. In order to utilize mandrel expansion in a safe manner, the hole in question must first be reamed to remove any corrosion or existing cracks that are too small to be detected. This "insurance cut" is required to remove any anomaly in the hole that may cause an issue during the cold working process.

Avenger requests the AD be amended to explicitly state that prior to mandrel expansion, an insurance ream, capable of cleaning up a .03 inch undetected crack followed by a bolt hole eddy current inspection using a calibration standard, be accomplished prior to the mandrel expansion process.

We do not agree with the commenter. The AD already requires using the cold working procedure found in Ayres Service Bulletin SB–AG–39, dated September 17, 1996. Steps 7 and 8 in the Rework section of this service bulletin require the bolt holes to be reamed before cold working of the holes. These procedures must be accomplished in order to be in compliance with this AD.

We are not changing the final rule AD based on this comment.

Comment Issue No. 9: Require Installing Big Butterfly Plates

Michael Morris and Mr. Brumley state that instead of mandating the replacement of the wing lower spar caps, they would like the FAA to require installing big butterfly plates. In addition to installing the big butterfly plates, Mr. Morris also requests to keep the current inspection intervals for magnetic particle and eddy current inspections, and add a visual inspection every 100 hours TIS.

Mr. Morris states that he believes replacing the spar cap is unnecessary for the following reasons:

- The inspection program will continue to work;
- The economic impact is too great; and
- Some operators do not fly as aggressively as others and should not be penalized for the actions of the other pilots.

We do not agree with the commenters. The "big butterfly" plate does not have enough strength to carry all of the possible flight loads in the event the wing spar cap is severed. This plate cannot be solely relied upon to ensure the safety of the airplane.

Even if the spar cap is not completely severed but has a crack that is large enough to see when performing the commenter's proposed 100-hour TIS visual inspection, the remaining strength in the wing spar joint is not enough to carry all of the possible flight loads. As explained in the proposed AD, inspection reliability for any type of inspection method is not 100 percent; therefore, over time the probability of an inspection failing to detect a crack increases and something more needs to be done to ensure the safety of the airplanes.

As shown in the Initial Regulatory Flexibility Analysis section of the proposed AD, the economic impact was extensively studied. While we agree the AD will have a significant economic impact on small businesses, the only known way to ensure the safety of the airplane is to replace the wing front lower spar caps.

We also agree that there are many variables affecting the life limit of the wing front lower spar caps, including the operating weights and operating G loads. Higher weights and higher G loads reduce the life limit of the wing front lower spar caps. The only way to consider giving credit to those who operate at lower weights and lower G loads would be if each individual airplane had recorded data for every flight since the wings were installed showing the weights and G loads. Each individual airplane owner would then need to have fatigue analysis and tests done by a qualified engineer to determine the life limit for that particular set of wings based on that recorded data. The expense of conducting this type of study for each airplane may be higher than the cost of replacement wing front lower spar caps; therefore, it may not be an economically viable alternative.

We are not changing the final rule AD action based on this comment.

Conclusion

We have carefully reviewed the available data and determined that air safety and the public interest require adopting the AD as proposed except for the changes previously discussed and minor editorial corrections. We have determined that these minor corrections:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

Costs of Compliance

We estimate that this AD will affect 808 airplanes in the U.S. registry, including those airplanes affected by AD 2006–07–15.

We estimate the following costs to do each inspection:

Labor cost	Parts cost	Total cost per airplane	Total cost on U.S. operators
3 work-hours × $80 = $240	$525	$765	$618,120

We estimate the following costs to do cold work of bolt holes for the repair that may be required based on the results of the inspection. We have no way of determining the number of airplanes that may need such repair:

Labor cost	Parts cost	Total cost per airplane
1 work-hour × $80 = $80	$100	$180

We estimate the following costs to do any reaming of outer holes to 5/16-inch diameter for the repair that may be required based on the results of the inspection. We have no way of determining the number of airplanes that may need such repair:

Labor cost	Parts cost	Total cost per airplane
1 work-hour × $80 = $80	None	$80

We estimate the following costs to do any drilling and reaming of outer holes and adding three holes to install a Kaplan splice block for the repair that may be required based on the results of the inspection. We have no way of determining the number of airplanes that may need such modification:

Labor cost	Parts cost	Total cost per airplane
65 work-hours × $80 = $5,200	$4,400 for splice block and $600 for hardware	$10,200

We estimate the following costs to do any necessary wing front lower spar cap replacement with the optional Ayres or Thrush part numbers (P/Ns) 20207–1, 20207–2, 20207–11, 20207–12, 20207–13, 20207–14, 20207–15, or 20207–16 that will be required based on the results of the inspection or by the wing front lower spar cap reaching the life limit:

Labor cost per wing front lower spar cap	Parts cost per wing front lower spar cap	Total cost per airplane
200 work-hours × $80 = $16,000	$8,000	Each spar cap replacement = $24,000 Two wing front lower spar caps per airplane = $48,000.

However, the supply of individual wing front lower spar caps (new or used) is very limited.

We estimate the following costs to do the optional installation of Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007. This kit may be used to do any necessary wing front lower spar cap replacements that will be required based on the results of the inspection or that will be required based on reaching the life limit:

Labor cost	Parts cost	Total cost per airplane
300 work-hours × $80 = $24,000	$40,000	$64,000

We estimate the following costs to do the optional installation of Avenger Aircraft and Services STC SA03654AT for Avenger Extended Performance Front Spar Enhancement Kit. This kit may be used to do any necessary wing front lower spar cap replacements that will be required based on the results of the inspection or that will be required based on reaching the life limit:

Labor cost	Parts cost	Total cost per airplane
319 work-hours × $80 = $25,520	$40,000	$65,500

The FAA estimates that 501 airplanes affected by this AD will retire before their wing front lower spar cap life limits are reached.

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 AD.

Final Regulatory Flexibility Analysis

Introduction and Purpose of This Analysis

The Regulatory Flexibility Act of 1980 (Pub. L. 96–354) (RFA) establishes "as a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the businesses, organizations, and governmental jurisdictions subject to regulation." To achieve this principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are seriously considered. The RFA covers a wide-range of small entities, including small businesses, not-for-profit organizations, and small governmental jurisdictions.

Agencies must perform a review to determine whether a rule will have significant economic impact on a substantial number of small entities. If the agency determines that it will, the agency must prepare a regulatory flexibility analysis as described in the RFA.

We determined that this final rule will have a significant economic impact on a substantial number of small entities and, accordingly, as required by section 603(a) of the RFA, we prepared and published an initial regulatory flexibility analysis (IRFA) as part of the NPRM for this final rule (74 FR 20431, May 4, 2009). Section 604 of the RFA also requires an agency to publish a final regulatory flexibility analysis (FRFA) in the **Federal Register** when issuing a final rule. Section 604(a) requires that each FRFA contain:

- A succinct statement of the need for, and objectives of, the final rule;
- A summary of the significant issues raised by the public comments in response to the IRFA, a summary of agency's assessment of such issues, and a statement of any changes made to the proposed final rule resulting from such comments;
- A description of the steps the agency has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statues, including a statement of the factual, policy, and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the final rule considered by the agency that affect the impact on small entities was rejected.
- A description of and an estimate of the number of small entities for which the final rule will apply; and
- A description of the projected reporting, recordkeeping, and other compliance requirements of the final rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record.

Need for, and Objectives of Final Rule

A series of ADs, beginning in 1997 and culminating in AD 2006–07–15 in 2006, addressed the issue of fatigue cracking of the wing front lower spar caps in Thrush Aircraft, Inc. Model 600 S2D and S2R (S–2R) series airplanes (type certificate previously held by Quality Aerospace, Inc. and Ayres Corporation). This type of fatigue cracking, if not addressed, could result in catastrophic wing failure. The original 1997 AD was issued after an accident on an S2R series airplane in which the wing separated from the airplane in flight. Requirements of inspection and possible replacement were changed in 2000 to repetitive inspections and possible replacement. In 2006, the inspection rate was doubled after a completely severed wing front lower spar cap was found on one of the affected airplanes and the FAA noted that it was working with Thrush Aircraft, Inc. to develop a future terminating action. Analysis indicated that an undetected crack had existed during the previous two repetitive inspections of that wing front lower spar cap.

Subsequent FAA analysis has shown that wing front lower spar cap fatigue cracking has increased as the fleet has aged and will continue to increase. Consequently, the incidences of undetected cracks will increase, increasing the probability of catastrophic wing failure. The FAA has concluded that repetitive inspections, as required since the 2000 AD, are insufficient by themselves to ensure the safety of these airplanes and, accordingly, in this final rule the FAA is requiring wing front lower spar cap life limits to address this safety issue.

Summary of Significant Issues Raised by the Public in Response to the IRFA, Summary of FAA's Assessment of Such Issues, Statement of Changes Made to the Final Rule as a Result of Such Issues, Description of the Steps the Agency Has Taken To Minimize a Significant Economic Impact on Small Entities, and Why Other Significant Alternatives to the Final Rule That Affect Small Entities Were Rejected

There were no public comments to the IRFA, but there were public comments to the proposed rule, which have relevance for small and large entities alike.

As noted in the preamble to the final rule, Avenger commented that it has developed a wing front lower spar replacement kit, which was not available when the proposed rule was issued. The FAA has approved their kit for a 40,000-hour TIS life limit. Avenger requested that the FAA approve the installation of its kit as a terminating action to the AD. As noted in the preamble, the FAA agrees with Avenger that installation of its kit is a viable terminating action to this AD. Accordingly, it is an alternative to replacing the wing front lower spar caps with Ayres/Thrush spar caps; and the FAA has incorporated this change in the final rule. This is a significant issue because the Ayres/Thrush kit, although priced slightly lower than the Avenger kit, has a lower life limit (ranging from 5,400 to 28,800 hours TIS.) Many of the affected airplanes with the Ayres/Thrush kit installed will require multiple replacements over their lifetimes and installation of the Ayres/Thrush kit does not eliminate the requirement of repetitive inspections and reporting requirements. Consequently, the estimated cost of the final rule is lower given the availability of the Avenger kit as a terminating action. In the cost analysis for the proposed rule, we estimated the total cost to be $37.1 million. In the final rule, we estimate total cost to be $20.1 million.[1]

As an alternative to replacing the wing front lower spar caps, two commenters suggested that the FAA require installation of "big butterfly" plates. But, as the FAA noted in the preamble, the "big butterfly plate" does not have enough strength to carry all the

[1] Individual replacement of the two original equipment spars is cheaper (for one installation) than installing the Ayres/Thrush kit or the Avenger kit, but as noted in the "Cost of Compliance" section, the supply of these spar caps is very limited. Accordingly, total cost is overestimated, but only slightly, by our assumption that all operators would comply by installing a kit (NPRM: Ayres/Thrush kit, final rule: Avenger kit).

possible flight loads if the wing front lower spar caps were severed. Accordingly, this plate cannot be solely relied upon to ensure the safety of the airplane and is not an acceptable alternative method of compliance to replacing the wing front lower spar caps.

Additionally, one commenter suggested 100-hour TIS visual inspections. As discussed in the preamble, even if the wing front lower spar cap is not completely severed, but has a crack that is large enough to see when performing the 100-hour TIS visual inspection, the remaining strength in the wing spar joint is not enough to carry all possible flight loads. Therefore, the 100-hour TIS visual inspection alone is not a sufficient alternative method of compliance.

The FAA believes there are currently no other available alternative methods of compliance to the final rule that will allow the safety objectives of the final rule to be achieved. The FAA, however, has allowed a generous compliance period that will significantly reduce the economic impact on small and large entities alike. As already noted in the preamble, airplanes that have already exceeded the life limit on their wing front lower spar caps are allowed 500, 1,000, 1,500, or 2,000 hours TIS to comply with the final rule, depending on the current number of accumulated hours TIS. Since the average usage rate for the affected airplanes is about 500 hours TIS per year, these allowances are equivalent, on average, to 1, 2, 3, and 4 years to comply with the final rule. Airplanes that have not yet reached their wing front lower spar cap life limit are allowed a minimum of 2,000 hours TIS or, on average, 4 years to comply with the final rule.

For a complete summary of public comments and the FAA's responses, please *see* the Comments section in the preamble above.

A Description of and an Estimate of the Number of Small Entities for Which the Final Rule Will Apply

This final rule will affect 808 U.S.-registered and -operated Thrush Aircraft, Inc. Model 600S2D and S2R (S–2R) series airplanes. [2] In conducting this analysis, the FAA reviewed data from the FAA Registry to ascertain how many Thrush Aircraft, Inc. were registered and operated by small entities. The FAA Registry indicates that these 808 airplanes are owned by 546 separate entities in agricultural aviation. All but one of these entities are small entities as defined by the Small Business Administration (SBA). Although the FAA Registry does not record financial or business data about the registered owners of aircraft, and such data for these entities are not readily available elsewhere, it appears that most, if not all, of the 546 entities are engaged in crop dusting, spraying, and seeding operations. These activities are classified in North American Industry Classification System (NAICS) industry, NAICS 115112—Soil Preparation, Planting, and Cultivating (including Crop Dusting, Crop Spraying). The concentration of these entities in a single NAICS industry reflects the specialized nature of agricultural airplanes with restricted airworthiness certificates. Furthermore, several of these entities were classified in the Standard Industrial Classification (SIC) equivalent of NAICS 115112 by *http://www.manta.com.* Although a few of these entities may also be engaged in firefighting, which is classified in NAICS 115310—Support Activities for Forestry (including Forest Fire Suppression), the FAA is unable to identify any of these entities as being principally engaged in firefighting. The SBA small business classification for NAICS 115112 is a maximum of $6.5 million in business receipts, and for NAICS 115310 it is a maximum of $16.5 million in business receipts. Only one entity in this sample appears to have business receipts over $6.5 million, and no entity has business receipts in excess of $16.5 million. Using the total number of airplanes owned as a size criterion, the FAA selected a sample of 41 of the largest affected entities and found median sales shown by *http://www.manta.com* to be just $250,000 annually. Firms in agricultural aviation appear to be inherently of small size. Accordingly, the FAA estimates that 545 small entities will be affected by this final rule.

Reporting, Record Keeping, and Other Compliance Requirements

Small entities will incur no new reporting and record-keeping requirements as a result of this final rule. In fact, such requirements, for small and large firms alike, will be greatly reduced since installation of the Avenger kit has been incorporated as an alternative terminating action to this final rule.

This final rule will affect U.S. operators of Thrush Aircraft, Inc. Model 600S2D and S2R (S–2R) series agricultural airplanes airplanes. The affected airplanes were produced by Thrush Aircraft, Inc. predecessor firms over the period 1965–2000. This final rule largely retains the requirements of superseded AD 2006–07–15 to inspect/repair/replace the currently installed Ayres/Thrush wing front lower spar caps. The new requirements set life limits on the Ayres/Thrush wing front lower spar caps and requires replacing of these wing front lower spar caps when the life limits are reached.

Economic Impact on Small Entities

Replacing the wing front lower spar caps is expensive and, consequently, as we show below, the final rule will have a significant economic impact on the substantial number of small firms we identified above.

The total compliance cost (undiscounted) is $65,520 for an affected airplane for which the wing front lower spar caps are replaced before retirement, or zero for an affected airplane that will retire before its compliance date. Individual airplane compliance costs will result in costs to the small entities that own these airplanes and will vary depending on the number of affected airplanes owned by the entity. The ownership table below shows the variation in the number of owners with particular numbers of airplanes. The table shows that almost 75 percent of the 546 individual owners have only one affected airplane, and more than 90 percent of owners have no more than two affected airplanes. The average (mean) number of affected airplanes held is 1.48, while the median number held is just 1.00, so the median airplane cost is equivalent to the median owner cost.

[2] FAA Registry, *http://www.faa.gov/licenses_certificates/aircraft_certification/aircraft_registry/releasable_aircraft_download/.* Data downloaded on 4/14/08.

NUMBER OF THRUSH AIRCRAFT, INC. OWNERS HAVING PARTICULAR NUMBERS OF AFFECTED AIRPLANES

	Number of affected airplanes held by single owner	Number of owners	Cumulative %
	1	406	74.4
	2	86	90.1
	3	26	94.9
	4	13	97.3
	5	7	98.5
	6	2	98.9
	7	2	99.3
	8	1	99.5
	9	2	99.8
	13	1	100.0
Total	.....	546	.....
Mean	1.48	.....	.....
Median	1.00	.....	.....

Source: FAA Registry. Data downloaded on 4/18/08.

In the "Cost of Compliance" section of this final rule, we estimate total cost (undiscounted) to be $20.1 million and the present value cost to be $18.2 million. As noted above, the FAA estimates that 545 of the 546 affected by this final rule are small firms, and, in fact, 99.7 percent of the final rule's estimated cost is attributed to small entities. The following document analyzes the impact of this cost on the substantial number of small firms identified above.

Because the FAA Registry does not collect financial or business data on these entities, and such data are not readily available elsewhere, the FAA also used Census Bureau size distribution data to assess the economic impact on small firms. The FAA used data from the 2002 Census since this is the latest census for which size distribution by business receipts is readily available. These data are available in a special census compilation for the SBA.[3] The FAA used the data for NAICS 115112—Soil Preparation, Planting, and Cultivating (including Crop Dusting, Crop Spraying), but did not use the data for NAICS 115310—Support Activities for Forestry (including Forest Fire Suppression) since, as noted above, a very high percentage of the affected small firms, if not all, meet the classification standard of NAICS 115112. Moreover, the size distribution of NAICS 115310 appears to be similar to that of NAICS 115112. The concentration of the affected airplanes in one NAICS industry, noted above, makes the use of census data feasible and appropriate.

The relevant census data are provided in the table below:

2002 CENSUS DATA FOR NAICS 115112—SOIL PREPARATION, PLANTING, AND CULTIVATING (INCL. CROP DUSTING, CROP SPRAYING)—SMALL SIZE CLASSES

Measure	Total	$0–100 thousand	$100–500 thousand	$500 thousand–1 million	$1–5 million	$5–10 million
Firms	2336	509	992	412	394	29
Percentage of firms	.....	21.8%	42.5%	17.6%	16.9%	1.2%
Upper bound percentile	.....	21.8%	64.3%	81.9%	98.8%	100.0%
Est. Receipts ($000)	$1,531,004	$25,681	$257,447	$286,462	$772,401	$189,013
Receipts/Firm ($)	$655,396	$50,454	$259,523	$695,296	$1,960,409	$6,517,690

Source: "Firms" and "Est. Receipts" from Small Business Administration, Office of Advocacy. *http://www.sba.gov/advo/research/us_rec02.txt.*

The table above shows the number of firms and business receipt data for the five smallest size classes of NAICS 115112 that encompass the size range of the firms affected by this final rule. In the "Percentage of firms" row, for each size class, the FAA calculates that class's number of firms as a percentage of the total number of firms in the five size classes. Cumulating this percentage from the smallest to largest size class establishes the "Upper bound percentile"—the cumulated percentage of firms of business receipt size ranging up to the upper bound of the size class. The final rule's cost for the firms at the upper bound percentiles is then estimated as the corresponding percentiles in the estimated firm-level compliance cost data. In order to assess the economic impact of the final rule, these costs are calculated as a percentage of the census data upper bounds.

For example, the upper bound percentile for the $100–500 thousand size class is 64.3 percent, so we estimate the NAICS 115112 firms at that percentile to have business receipts of $500,000. As shown in the table below, the FAA then determined the estimated compliance cost of firms at the same percentile in the compliance cost data to be $57,584. The FAA assumes these firms are the same, so the percentage cost impact (AD Cost/Firm Size) is 11.5 percent. This procedure assumes the size distribution of the 808 firms affected by the final rule has a

[3] Small Business Administration, Office of Advocacy. *http://www.sba.gov/advo/research/us_rec02.txt.*

distribution similar to the overall distribution of the small firms in NAICS 115112. It also assumes there is a perfect rank correlation between the size of the affected firms and the firms' present value compliance cost. While the latter assumption is certainly not the case, any deviation from such perfect correlation can only increase the impact of the final rule because smaller firms will have larger costs. Accordingly, the FAA's determination that the final rule will have a significant impact on a substantial number of small entities is unaffected.

ECONOMIC IMPACT OF AD ON SMALL FIRMS

AD cost to firm	Firm percentile	Estimated firm size (Census Bureau's receipts upper bound)	AD cost/firm size	Cumulative number of firms
$0	21.8 percentile	$100,000	0.0%	119.2
$57,584	64.3 percentile	$500,000	11.5%	351.5
$63,220	81.9 percentile	$1,000,000	6.3%	447.9
$203,502	98.8 percentile	$5,000,000	4.1%	540.2

The table above shows a zero-cost impact on a firm at the 21.8 percentile. This result reflects the estimate in the FRFA cost analysis (*see* docket) that more than 500 older airplanes will retire before their wing front lower spar cap life limits are reached. As already mentioned, the AD cost for a firm at the 64.3 percentile is $61,754, which as a percentage of estimated firm size (size class upper bound) is 11.5 percent of annual business receipts. This impact declines to 6.3 percent for a firm at the 81.9 percentile and to 4.1 percent for a firm at the 98.8 percentile. The overall pattern is zero impact for the smallest of the small firms owners of the oldest airplanes, but a highly positive impact for the medium-sized small firms. In percentage terms, this impact falls for the largest small firms, but remains at a substantial level. While the FAA can make no definitive inference on the impact of the final rule on firms between the 21.8 and 64.3 percentiles, the FAA notes the cost varies from 6.3 percent up to 11.5 percent of annual business receipts for 96 firms between the 81.9 and 64.3 percentiles and from 4.1 percent to 6.3 percent of annual business receipts for 92 firms between the 98.8 and 81.9 percentiles. These estimated percentage impacts are substantial. Therefore, the FAA concludes that this final rule will have a significant impact on a substantial number of small entities.

International Trade Impact Analysis

The Trade Agreement Act of 1979 prohibits Federal agencies from establishing any standards or engaging in related activities that create unnecessary obstacles to the foreign commerce of the United States. The statute does not consider legitimate domestic objectives, such as safety, as unnecessary. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. The FAA is issuing this final rule because of a known safety problem. Therefore, this final rule AD action applies only to U.S. registered airplanes and is not considered an unnecessary obstacle to international trade.

Unfunded Mandates Reform Act Assessment

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4) requires each Federal agency to prepare a written statement assessing the effects of any Federal mandate in a proposed or final agency rule that may result in an expenditure of $100 million or more (adjusted annually for inflation with the base year 1995) in any one year by State, local, and Tribal governments in the aggregate, or by the private sector. The Act deems such a mandate to be a "significant regulatory action." The FAA currently uses an inflation-adjusted value of $136.1 million. This rule does not contain such a mandate.

Regulatory Findings

We have 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); and

3. Will have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a summary of the costs to comply with this AD (and other information as included in the Regulatory Evaluation) and placed it in the AD Docket. You may get a copy of this summary by sending a request to us at the address listed under **ADDRESSES**. Include "Docket No. FAA–2007–27862; Directorate Identifier 2007–CE–036–AD" in your request.

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 Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (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 removing Airworthiness Directive (AD) 2006–07–15, Amendment 39–14542 (71 FR 16691, April 4, 2006), and adding the following new AD:

2009–26–11 Thrush Aircraft, Inc. (Type Certificate Previously Held by Quality Aerospace, Inc. and Ayres Corporation): Amendment 39–16150; Docket No. FAA–2007–27862; Directorate Identifier 2007–CE–036–AD.

Effective Date

(a) This AD becomes effective on February 24, 2010.

Affected ADs

(b) The following lists a history of the ADs affected by this AD action:

(1) This AD supersedes AD 2006–07–15, Amendment 39–14542;

(2) AD 2006–07–15 superseded AD 2003–07–01, Amendment 39–13097;

(3) AD 2003–07–01 superseded AD 2000–11–16, Amendment 39–11764;

(4) AD 2000–11–16 superseded AD 97–17–03, Amendment 39–10195; and

(5) AD 97–17–03 superseded AD 97–13–11, Amendment 39–10071.

Applicability

(c) This AD affects the following airplane models and serial numbers (S/Ns) in Table 1 that are certificated in any category when wing front lower spar cap part numbers (P/Ns) 20207–1, 20207–2, 20207–11, 20207–12, 20207–13, 20207–14, 20207–15, or 20207–16 are installed. This AD applies to the S/Ns in Table 1 with or without a "DC" suffix. This AD does not affect airplanes with any other wing front lower spar cap part number, *e.g.* Thrush P/N 22507 (any dash number) or Supplemental Type Certificate (STC) SA03654AT parts. The table also identifies the group that each airplane belongs in when determining inspection compliance times and life limit times for the parts:

TABLE 1—APPLICABILITY AND AIRPLANE GROUPS

Model	S/Ns	Group
(1) S–2R	5000R through 5100R, except 5010R, 5031R, 5038R, 5047R, and 5085R	1
(2) S2R–G1	G1–101 through G1–106	1
(3) S2R–R1820	R1820–001 through R1820–035	1
(4) S2R–T15	T15–001 through T15–033 (also *see* paragraph (d) of this AD)	1
(5) S2R–T34	6000R through 6049R, T34–001 through T34–143, T34–145, T34–171, T34-180, and T34–181 (also *see* paragraph (e) of this AD)	1
(6) S2R–G10	G10–101 through G10–138, G10–140, and G10–141	2
(7) S2R–G5	G5–101 through G5–105	2
(8) S2R–G6	G6–101 through G6–147	2
(9) S2RHG–T65	T65–002 through T65–018	2
(10) S2R–R1820	R1820–036	2
(11) S2R–T34	T34–144, T34–146 through T34–170, T34–172 through T34–179, and T34–189 through T34–234 (also *see* paragraph (e) of this AD).	2
(12) S2R–T45	T45–001 through T45–014	2
(13) S2R–T65	T65–001 through T65–018	2
(14) 600 S2D	All serial numbers beginning with 600–1311D	3
(15) S–2R	1380R, 1416R through 2592R, 3000R, and 3002R	3
(16) S2R–R1340	R1340–001 through R1340–035	3
(17) S2R–R3S	R3S–001 through R3S–011	3
(18) S2R–T11	T11–001 through T11–005	3
(19) S2R–G1	G1–107 through G1–115	5
(20) S2R–G10	G10–139, G10–142 through G10–165	5
(21) S2R–G6	G6–148 through G6–155	5
(22) S2RHG–T34	T34HG–102	5
(23) S2R–T15	T15–034 through T15–040 (also *see* paragraph (d) of this AD)	5
(24) S2R–T34	T34–236 through T34–270 (also *see* paragraph (e) of this AD)	5
(25) S2R–T45	T45–015	5
(26) S–2R	5010R, 5031R, 5038R, 5047R, and 5085R	6

(d) The S/Ns of Model S2R–T15 airplanes could incorporate T15-xxx and T27-xxx (xxx is the variable for any of the S/Ns beginning with T15- and T27-). This AD applies to both of these S/N designations as they are both Model S2R–T15 airplanes.

(e) The S/Ns of Model S2R–T34 airplanes could incorporate T34-xxx, T36-xxx, T41-xxx, or T42-xxx (xxx is the variable for any of the S/Ns beginning with T34-, T36-, T41-, and T42-). This AD applies to all of these S/N designations as they are all Model S2R–T34 airplanes.

(f) Any Group 3 airplane that has been modified with a hopper of a capacity more than 410 gallons, a piston engine greater than 600 horsepower, or a gas turbine engine greater than 600 horsepower, is a Group 1 airplane for the purposes of this AD. Inspect the airplane at the Group 1 compliance time specified in this AD. Replace the wing front lower spar caps in accordance with the formulas given in paragraph (k) of this AD.

(g) Group 6 airplanes were originally manufactured with higher horsepower radial engines, but were converted to lower horsepower radial engines. They are now configured identically to Group 3 airplanes.

Unsafe Condition

(h) This AD is the result of the analysis of data from 117 wing front lower spar cap fatigue cracks found on similar design Model 600 S2D and S2R (S–2R) series airplanes and the FAA's determination that the replacement of high time wing front lower spar caps is necessary to address the unsafe condition for certain airplanes. Since we issued AD 2006–07–15, analysis reveals that inspections are not detecting all existing cracks, and incidences of undetected cracks are increasing. This AD retains the actions of AD 2006–07–15 and imposes a life limit on the wing front lower spar caps that requires you to replace the wing front lower spar caps when the life limit is reached. This AD also changes the requirements and applicability of the groups discussed above and removes the ultrasonic inspection method. We are issuing this AD to prevent wing front lower spar cap failure caused by undetected fatigue cracks. Such failure could result in loss of a wing.

Compliance

(i) To address the problem, do the following, unless already done:

(1) If you have already done an inspection required by AD 2006–07–15, within the next 30 days after February 24, 2010 (the effective date of this AD), identify the number of hours time-in-service (TIS) since your last inspection required by AD 2006–07–15. You will need this to establish the inspection interval for the next inspection required by this AD.

(2) Inspect the two outboard bolt hole areas (whether 1/4-inch and 5/16-inch diameter bolt holes or both 5/16-inch diameter bolt holes) on each wing front lower spar cap for fatigue cracking using magnetic particle or eddy current procedures. If Kaplan splice blocks, P/N 22515–1/–3 or P/N 88–251, are installed following Quality Aerospace, Inc. Custom Kit No. CK–AG–30, dated December 6, 2001, inspect the three outboard bolt hole areas on each wing front lower spar cap for fatigue cracking using magnetic particle or eddy current procedures. Use the compliance times listed in paragraph (i)(3) of this AD for the initial inspection and the compliance time listed in paragraphs (i)(5), (i)(6), or (i)(7) of this AD for the repetitive inspections. The cracks may emanate from the bolt hole on the face of the wing front lower spar cap or they may occur in the shaft of the hole. Inspect both of those areas.

(i) If using the magnetic particle method, inspect using the "Inspection" portion of the "Accomplishment Instructions" and "Lower Splice Fitting Removal and Installation Instructions" in Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996. Do the inspection following FAA Advisory Circular (AC) 43.13–1B, Chapter 5, Section 4, Magnetic Particle Inspection, using the wet particle method. You may obtain a copy of AC 43.13–1B at *http://www.faa.gov/regulations_policies/. Caution:* Firmly support the wings during the inspection to prevent movement of the wing front lower spar caps when the splice blocks are removed. This will allow easier realignment of the splice block holes and the holes in the wing front lower spar cap for bolt insertion and prevent damage to the bolt hole. Damage to the bolt hole inner surface or edge of the bolt hole can cause cracks to begin prematurely.

(ii) The inspection must be done by or supervised by a Level 2 or Level 3 inspector certified following the guidelines in FAA AC 65–31A. You may obtain a copy of AC 65–31A at *http://www.faa.gov/regulations_policies/.*

(iii) If using eddy current methods, a procedure must be sent to the FAA, Atlanta Aircraft Certification Office (ACO), for approval before doing the inspection. Send your proposed procedure to the FAA, Atlanta ACO, *Attn:* Cindy Lorenzen, 1701 Columbia Avenue, College Park, Georgia 30337. You are not required to remove the splice block for the eddy current inspections, unless corrosion is visible. Eddy current inspection procedures previously approved under AD 2006–07–15, AD 2003–07–01, AD 2000–11–16, AD 97–13–11, and/or AD 97–17–03 remain valid for this AD.

(iv) If you change the inspection method used (magnetic particle or eddy current), the TIS intervals for repetitive inspections are based on the method used for the last inspection.

(3) If airplanes have not yet reached the threshold for the initial inspection required in AD 2006–07–15, initially inspect following the wing front lower spar cap hours total TIS schedule below or within the next 50 hours TIS after February 24, 2010 (the effective date of this AD), whichever occurs later:

TABLE 2—INITIAL INSPECTION TIMES

Airplane group	Initially inspect upon accumulating the following hours total TIS on the wing front lower spar cap
(i) Group 1	2,000 hours TIS.
(ii) Group 2	1,400 hours TIS.
(iii) Group 3	6,400 hours TIS.
(iv) Group 5	1,000 hours TIS.
(v) Group 6	(A) S/N 5010R: 5,530 hours TIS. (B) S/N 5038R: 5,900 hours TIS. (C) S/N 5031R: 6,400 hours TIS. (D) S/N 5047R: 6,400 hours TIS. (E) S/N 5085R: 6,290 hours TIS.
(vi) Any airplane with the entire Custom Kit CK–AG–41 installed	2,000 hours TIS.

(4) Airplanes in all groups must meet the following conditions before doing the repetitive inspections required in paragraphs (i)(5), (i)(6), or (i)(7) of this AD:

(i) No cracks have been found previously on wing front lower spar cap; or

(ii) Small cracks have been repaired through cold work (or done as an option if never cracked) following Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996; or

(iii) Small cracks have been repaired by reaming the ¼-inch bolt hole to 5/16 inches diameter (or done as an option if never cracked) following Ayres Corporation Custom Kit No. CK–AG–29, Part I, dated December 23, 1997; or

(iv) Small cracks have been repaired through previous alternative methods of compliance (AMOC); or

(v) Small cracks have been repaired by installing Kaplan splice blocks, P/N 22515–1/–3 or P/N 88–251 (or done as an option if never cracked) following Quality Aerospace, Inc. Custom Kit No. CK–AG–30, dated December 6, 2001.

(5) Repetitively inspect Groups 1, 2, 3, and 6 airplanes that do not have "big butterfly" plates and lower splice plates, P/Ns 20211–09 and 20211–11, installed following Ayres Corporation Custom Kit No. CK–AG–29, Part II, dated December 23, 1997; or that do not have "big butterfly" plates and lower splice plates, P/Ns 94418–5 and 94418–7 or P/Ns 94418–13 and 94418–15, installed following Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007; and meet the conditions in paragraph (i)(4) of this AD. Follow the wing front lower spar cap hours TIS compliance schedule below:

TABLE 3—REPETITIVE INSPECTION TIMES FOR AIRPLANE GROUPS 1, 2, 3, AND 6 WITHOUT "BIG BUTTERFLY" PLATES AND LOWER SPLICE PLATES

When airplanes accumulate the following hours TIS on the wing front lower spar cap since the last inspection required in AD 2006-07-15,	Inspect within the following hours TIS after the effective date of this AD,	Inspect thereafter at intervals not to exceed . . .
(i) *Magnetic Particle inspection:*		250 hours TIS.
(A) 350 or more hours TIS	(A) 50 hours TIS.	
(B) 175 through 349 hours TIS	(B) 75 hours TIS.	
(C) Less than 175 hours TIS	(C) upon accumulating 250 hours TIS.	
(ii) *Eddy Current inspection:*		350 hours TIS.
(A) 500 or more hours TIS	(A) 50 hours TIS.	
(B) 275 through 499 hours TIS	(B) 75 hours TIS.	
(C) Less than 275 hours TIS	(C) upon accumulating 350 hours TIS.	

(6) Repetitively inspect Groups 1, 2, 3, 5, and 6 airplanes that have "big butterfly" plates and lower splice plates, P/Ns 20211–09 and 20211–11, installed following Ayres Corporation Custom Kit No. CK–AG–29, Part II, dated December 23, 1997; or that have "big butterfly" plates and lower splice plates, P/Ns 94418–5 and 94418–7, or P/Ns 94418–13 and 94418–15, installed following Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007; and meet the conditions in paragraph (i)(4) of this AD. Follow the wing front lower spar cap hours TIS compliance schedule below:

TABLE 4—REPETITIVE INSPECTIONS TIMES FOR AIRPLANE GROUPS 1, 2, 3, 5, AND 6 WITH "BIG BUTTERFLY" PLATES AND LOWER SPLICE PLATES

When airplanes accumulate the following hours TIS on the wing front lower spar cap since the last inspection required in AD 2006-07-15,	Inspect within the following hours TIS after the effective date of this AD,	Inspect thereafter at intervals not to exceed . . .
(i) *Magnetic particle inspection:*		450 hours TIS.
(A) 650 or more hours TIS	(A) 50 hours TIS.	
(B) 375 through 649 hours TIS	(B) 75 hours TIS.	
(C) Less than 375 hours TIS	(C) upon accumulating 450 hours TIS.	
(ii) *Eddy Current inspection:*		625 hours TIS.
(A) 900 or more hours TIS	(A) 50 hours TIS.	
(B) 550 through 899 hours TIS	(B) 75 hours TIS.	
(C) Less than 550 hours TIS	(C) upon accumulating 625 hours TIS.	

Note 1: Group 5 airplanes had P/Ns 20211–09 and 20211–11 installed at the factory.

(7) Repetitively inspect airplanes that incorporate Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007, in its entirety that meet the conditions in paragraph (i)(4) of this AD. Follow the wing front lower spar cap hours TIS compliance schedule below:

TABLE 5—REPETITIVE INSPECTION TIMES FOR AIRPLANES WITH THRUSH AIRCRAFT, INC. CUSTOM KIT NO. CK–AG–41, REVISION A, INCORPORATED IN ITS ENTIRETY

When using the following inspection methods,	Repetitively inspect at intervals not to exceed . . .
(i) Magnetic particle inspection	900 hours TIS.
(ii) Eddy current inspection	1,250 hours TIS.

(j) Initially replace the wing front lower spar caps, P/Ns 20207–1, 20207–2, 20207–11, 20207–12, 20207–13, 20207–14, 20207–15, or 20207–16, at the times specified in Table 6 of this AD. Repetitively replace thereafter at the life limit times specified in Table 7 of this AD. Do the replacements as specified in paragraph (l)(4) of this AD.

TABLE 6—INITIAL COMPLIANCE TIME FOR WING FRONT LOWER SPAR CAP REPLACEMENT

Total hours TIS on the wing front lower spar cap	Replace the wing front lower spar cap upon accumulating the following hours TIS on the spar cap after the effective date of this AD
(i) Group 1 with a radial engine and more than 15,000 hours TIS	500 hours.
(ii) Group 1 with a radial engine and 12,000 to 15,000 hours TIS	1,000 hours.
(iii) Group 1 with a radial engine and 9,000 to 11,999 hours TIS	1,500 hours.
(iv) Group 1 with a radial engine and 7,400 to 8,999 hours TIS	2,000 hours.
(v) Group 1 with a radial engine and less than 7,400 hours TIS	Use Table 7(xxii).
(vi) Group 1 with a turbine engine and more than 14,000 hours TIS	500 hours.
(vii) Group 1 with a turbine engine and 11,000 to 14,000 hours TIS	1,000 hours.
(viii) Group 1 with a turbine engine and 8,000 to 10,999 hours TIS	1,500 hours.
(ix) Group 1 with a turbine engine and 4,200 to 7,999 hours TIS	2,000 hours.
(x) Group 1 with a turbine engine and less than 4,200 hours TIS	Use Table 7(xxiii).
(xi) Group 2 with more than 9,000 hours TIS	500 hours.
(xii) Group 2 with 6,000 to 9,000 hours TIS	1,000 hours.
(xiii) Group 2 with 3,900 hours to 5,999 hours TIS	1,500 hours.
(xiv) Group 2 with less than 3,900 hours TIS	Use Table 7(xxiv).
(xv) Group 3 and 6 with more than 28,800 hours TIS	500 hours.
(xvi) Group 3 and 6 with 27,800 to 28,799 hours TIS	1,000 hours.
(xvii) Group 3 and 6 with less than 27,800 hours TIS	Use Table 7(xxv).
(xviii) Group 5 with more than 8,000 hours TIS	500 hours.
(xix) Group 5 with 5,000 to 7,999 hours TIS	1,000 hours.
(xx) Group 5 with 2,400 to 4,999 hours TIS	1,500 hours.
(xxi) Group 5 with less than 2,400 hours TIS	Use Table 7(xxvi).

TABLE 7—WING FRONT LOWER SPAR CAP LIFE LIMITS

Airplane group	Replace wing front lower spar cap upon the accumulation of the following hours TIS on the spar cap:
(xxii) Group 1 with a radial engine	9,400 hours TIS.

TABLE 7—WING FRONT LOWER SPAR CAP LIFE LIMITS—Continued

Airplane group	Replace wing front lower spar cap upon the accumulation of the following hours TIS on the spar cap:
(xxiii) Group 1 with a turbine engine	6,200 hours TIS.
(xxiv) Group 2	5,400 hours TIS.
(xxv) Groups 3 and 6	28,800 hours TIS.
(xxvi) Group 5	3,900 hours TIS with original wing front lower spar cap P/N 20207–11 or P/N 20207–12. 5,400 hours TIS after original wing front lower spar cap has been replaced with any P/N 20207-xx wing front lower spar cap.

Note 2: There is evidence of sharp, uneven edges on the spar cap bolt holes that resulted from the manufacturing process in Group 5 airplanes. Once the original wing front lower spar caps are replaced, the life limit increases.

(k) As previously stated in paragraph (f) of this AD, any Group 3 airplane that has been modified with a hopper of a capacity more than 410 gallons, a piston engine greater than 600 horsepower, or a gas turbine engine greater than 600 horsepower, is a Group 1 airplane for the purposes of this AD. Replace the wing front lower spar caps using the following formulas.

(1) For airplanes that were originally Group 3 airplanes and later modified by installing a piston engine of greater than 600 horsepower and/or a hopper capacity of greater than 410 gallons, calculate the equivalent Group 1 hours TIS on each spar cap as follows:

$$\text{(i) Usage factor} = \frac{\text{Total hrs. on cap pre-mod.}}{28{,}800} + \frac{\text{Additional hrs. on cap post-mod.}}{9{,}400}$$

(ii) Equivalent Group 1 hours TIS = 9,400 × Usage Factor

(2) For airplanes that were originally Group 3 airplanes and later modified by installing a turbine engine of greater than 600 horsepower, with or without installing a hopper with greater than 410 gallon capacity, calculate the equivalent Group 1 hours TIS on each spar cap as follows:

$$\text{(i) Usage factor} = \frac{\text{Total hrs. on cap pre-mod.}}{28{,}800} + \frac{\text{Additional hrs. on cap post-mod.}}{6{,}200}$$

(ii) Equivalent Group 1 hours TIS = 6,200 × Usage Factor

(3) When the equivalent Group 1 hours TIS on the wing front lower spar cap equals the life limit of 9,400 hours TIS if a radial piston engine is installed or reaches 6,200 hours TIS if a turbine engine is installed, the wing front lower spar cap must be replaced. Use Table 6 if over the life limit.

(4) *See* the appendix to this AD for examples of how to calculate the applicable life limit.

(l) If any cracks are found during any inspection required by this AD, you must repair the cracks or replace the wing front lower spar cap before further flight.

(1) Use the cold work process to ream out small cracks as defined in Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996, and deburr the bolt hole edges with the splice blocks removed after cold work is performed; or

(2) If the crack is found in a ¼-inch bolt hole, ream the ¼-inch bolt hole to 5/16 inches diameter as defined in Part I of Ayres Corporation Custom Kit No. CK–AG–29, dated December 23, 1997; or

(3) Install Kaplan splice blocks, P/N 22515–1/3 or P/N 88–251, following Quality Aerospace, Inc. Custom Kit No. CK–AG–30, dated December 6, 2001; or

(4) Replace the affected wing front lower spar cap following an FAA-approved procedure. Contact the FAA at the address in paragraph (t) of this AD to obtain an FAA-approved replacement procedure unless previously provided by the manufacturer at delivery of the airplanes. An alternative to replacing just the affected wing front lower spar cap is to replace both wing front lower spar caps and the surrounding structure following Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007. Another alternative to replacing just the affected wing front lower spar cap is to replace both wing front lower spar caps and the surrounding structure following Avenger Aircraft and Services FAA STC SA03654AT for Avenger Extended Performance Front Spar Enhancement Kit. You may obtain a copy of FAA STC SA03654AT at *http://www.faa.gov/aircraft/air_cert/design_approvals/stc/*. If you chose to install Thrush Custom Kit No. CK–AG–41, the FAA recommends installing Custom Kit No. CK–AG–41, Revision A, in its entirety although this is not mandatory. The additional structure provided in Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007, will provide a greater level of safety than the minimum acceptable level of safety provided by replacing just the wing front lower spar cap. If choosing to install the Avenger FAA STC kit, it is mandatory to install the entire FAA STC kit.

(m) If a crack is found, the reaming associated with the cold work process may remove a crack if it is small enough. Some aircraft owners/operators were issued AMOCs with AD 97–17–03 to ream the ¼-inch bolt hole to 5/16 inches diameter to remove small cracks. Ayres Corporation Custom Kit No. CK–AG–29, Part I, dated December 23, 1997, also provides procedures to ream the ¼-inch bolt hole to 5/16 inches diameter, which may remove a small crack. Resizing the holes to the required size to install a Kaplan splice block may also remove small cracks. If you use any of these methods to remove cracks and the airplane is re-inspected before further flight and no cracks are found, you may continue to follow the repetitive inspection intervals for your airplane listed in paragraphs (i)(5), (i)(6), or (i)(7) of this AD.

(n) For all inspection methods (magnetic particle or eddy current), hours TIS for initial and repetitive inspection intervals and wing front lower spar cap life limit start over when

the wing front lower spar cap is replaced with a new P/N 20207–1, 20207–2, 20207–11, 20207–12, 20207–13, 20207–14, 20207–15, or 20207–16. These wing front lower spar caps must be inspected as specified in paragraphs (i)(3), (i)(5), (i)(6), and (i)(7) of this AD.

(1) If the wings or wing front lower spar caps were replaced with new or used wings or wing front lower spar caps during the life of the airplane and the logbook records positively show the hours TIS of the replacement wings or wing front lower spar caps, then initially inspect at applicable times specified in paragraph (i)(3) of this AD. Repetitively inspect thereafter at intervals specified paragraphs (i)(5), (i)(6), or (i)(7) of this AD. Replace the wing front lower spar caps upon reaching the life limit specified in Table 7 of this AD.

(2) If the wings or wing front lower spar caps were replaced with new or used wings or wing front lower spar caps during the life of the airplane and logbook records do not positively show the hours TIS of the replacement wings or wing front lower spar caps, then inspect within 50 hours TIS after February 24, 2010 (the effective date of this AD), unless already done. Repetitively inspect thereafter at intervals specified in paragraphs (i)(5), (i)(6), or (i)(7) of this AD. Replace the wing front lower spar caps within 500 hours TIS after February 24, 2010 (the effective date of this AD).

(3) If both wing front lower spar caps are replaced by installing the entire Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007, then initially inspect at 2,000 hours TIS as shown in paragraph (i)(3) of this AD. Repetitively inspect thereafter at intervals specified in paragraph (i)(7) of this AD. Replace the wing front lower spar caps at times specified in paragraph (i)(8) of this AD.

(o) Any wing front lower spar cap that is removed and is at or beyond the replacement time specified in this AD must be disposed of following the procedures in 14 CFR Part 43.10.

(p) Replacement times start over when the wing front lower spar cap is replaced with a new P/N 20207–1, 20207–2, 20207–11, 20207–12, 20207–13, 20207–14, 20207–15, or 20207–16. These wing front lower spar caps are now life-limited parts and must be replaced upon the accumulation of the hours TIS specified in Table 7 of this AD.

(q) Report any cracks you find within 10 days after the cracks are found or within 10 days after February 24, 2010 (the effective date of this AD), whichever occurs later. Send your report to Cindy Lorenzen, Aerospace Engineer, ACE–115A, Atlanta ACO, 1701 Columbia Avenue, College Park, Georgia 30337; telephone: (404) 474–5524; facsimile: (404) 474–5606; e-mail: *cindy.lorenzen@faa.gov.* The Office of Management and Budget (OMB) approved the information collection requirements contained in this regulation under the provisions of the Paperwork Reduction Act and assigned OMB Control Number 2120–0056. Include in your report the following information:

(1) Aircraft model and serial number;

(2) Engine model;

(3) Aircraft hours TIS;

(4) Left and right wing front lower spar cap hours TIS;

(5) Hours TIS on the spar cap since last inspection;

(6) Crack location and size;

(7) Procedure (magnetic particle, ultrasonic, or eddy current) used for the last inspection;

(8) Description of any previous modifications and hours TIS when the modification was done, such as engine model change, installation of winglets, hopper capacity increase, cold working procedure done on bolt holes, installation of butterfly plates, or installation of Thrush Aircraft, Inc. Custom Kit No. CK–AG–41.

(r) Installation of the replacement wing front lower spar caps and other modification parts that are approved by FAA STC SA03654AT, Installation of Avenger Extended Performance Front Spar Enhancement Kit (new wing front spar lower caps, center splice and doublers), in accordance with Part II of Avenger Master Data List AAS–MDL–08–001, Revision B, dated November 26, 2008, terminates the actions required by this AD. The installation of FAA STC SA03654AT is an alternative to replacing the wing front lower spar caps with Ayres/Thrush wing front lower spar caps.

Special Flight Permits

(s) Under 14 CFR part 39.23, we are limiting the special flight permits for this AD by the following conditions:

(1) The hopper is empty;

(2) Vne is reduced to 126 miles per hour (109 knots) indicated airspeed (IAS); and

(3) Flight into known turbulence is prohibited.

Alternative Methods of Compliance (AMOCs)

(t) The Manager, Atlanta Aircraft Certification Office, (ACO) FAA, ATTN: Cindy Lorenzen, Aerospace Engineer, ACE–115A, Atlanta ACO, 1701 Columbia Avenue, College Park, Georgia 30337; *telephone:* (404) 474–5524; *facsimile:* (404) 474–5606; *e-mail: cindy.lorenzen@faa.gov;* or William O. Herderich, Aerospace Engineer, ACE–117A, Atlanta ACO, 1701 Columbia Avenue, College Park, Georgia 30337; *telephone:* (404) 474–5547; *facsimile:* (404) 474–5606; *e-mail: william.o.herderich@faa.gov,* has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. Before using any approved AMOC on any airplane to which the AMOC applies, notify your appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, your local FSDO.

(u) AMOCs approved for AD 2006–07–15, AD 2003–07–01, AD 2000–11–16, AD 97–13–11, and/or AD 97–17–03 are approved as AMOCs for this AD except for those pertaining to ultrasonic inspection methods.

Material Incorporated by Reference

(v) You must use Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996; Ayres Corporation Custom Kit No. CK–AG–29, dated December 23, 1997; Quality Aerospace, Inc. Custom Kit No. CK–AG–30, dated December 6, 2001; Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007; and Part II of Avenger Master Data List AAS–MDL–08–001, Revision B, dated November 26, 2008, to do the actions required by this AD, unless the AD specifies otherwise.

(1) The Director of the Federal Register approved the incorporation by reference of Thrush Aircraft, Inc. Custom Kit No. CK–AG–41, Revision A, dated March 8, 2007, and Part II of Avenger Master Data List AAS–MDL–08–001, Revision B, dated November 26, 2008, under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) On May 20, 2003 (68 FR 15653), the Director of the Federal Register approved the incorporation by reference of Quality Aerospace, Inc. Custom Kit No. CK–AG–30, dated December 6, 2001.

(3) On July 25, 2000 (65 FR 36055), the Director of the Federal Register approved the incorporation by reference of Ayres Corporation Service Bulletin No. SB–AG–39, dated September 17, 1996; and Ayres Corporation Custom Kit No. CK–AG–29, dated December 23, 1997.

(4) For service information identified in this AD, contact Thrush Aircraft, Inc., 300 Old Pretoria Road, P.O. Box 3149, Albany, Georgia 31706–3149, Internet: *http://www.thrushaircraft.com.* To obtain information about Avenger Master Data List AAS–MDL–08–001 and the optional installation of FAA STC SA03654AT, contact Avenger Aircraft and Services, 103 N. Main Street, Suite 106, Greenville, South Carolina 29601, *Internet: http://www.avengeraircraft.com.*

(5) You may review copies of the service information incorporated by reference for this AD at the FAA, Central Region, Office of the Regional Counsel, 901 Locust, Kansas City, Missouri 64106. For information on the availability of this material at the Central Region, call (816) 329–3768.

(6) You may also review copies of the service information incorporated by reference for this AD 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/code_of_federal_regulations/ibr_locations.html.*

Appendix to AD 2009–26–11

The following are examples of calculating equivalent Group 1 hours.

Example 1: S/N xxx was originally a Group 3 airplane; later it was modified with a Wright R–1820–71, 1200 horsepower, radial engine when the wing front lower spar caps had 15,700 hours TIS on them. The wing front lower spar caps have accumulated an additional 8,200 hours since the engine conversion for a total of 23,900 hours TIS on the wing front lower spar caps.

Usage Factor = 15,700 hours/28,800 + 8,200 hours/9,400 = 1.417

Equivalent Group 1 hours = 9,400 × 1.417 = 13,320 hours.

The wing front lower spar caps will need to be replaced within the next 1,000 hours TIS after the effective date of this AD as determined by Table 6 for a Group 1 airplane

with a radial engine with between 12,000 and 15,000 hours TIS.

Example 2: S/N yyy was originally a Group 3 airplane; later it was modified with a PT6A–34, 750 horsepower, turbine engine when the wing front lower spar caps had 5,300 hours TIS on them. The wing front lower spar caps now have 7,700 hours TIS.

Usage Factor = 5,300 hours/28,800 + (7,700 − 5,300)/6,200 = 0.571

Equivalent Group 1 hours = 6,200 × 0.571 = 3,540 hours.

The wing front lower spar caps will need to be replaced at 6,200 equivalent Group 1 total hours TIS, which is within the next 2,660 hours TIS (6,200 − 3,540 = 2,660).

Issued in Kansas City, Missouri, on January 8, 2010.

Margaret Kline,

Acting Manager, Small Airplane Directorate, Aircraft Certification Service.

[FR Doc. 2010–594 Filed 1–19–10; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2010–0029; Directorate Identifier 2009–NM–262–AD; Amendment 39–16179; AD 2009–21–10 R1]

RIN 2120–AA64

Airworthiness Directives; AVOX Systems and B/E Aerospace Oxygen Cylinder Assemblies, as Installed on Various Transport Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule; request for comments.

SUMMARY: The FAA is revising an existing airworthiness directive (AD), which applies to certain AVOX Systems and B/E Aerospace oxygen cylinder assemblies, as installed on various transport airplanes. That AD currently requires removing certain oxygen cylinder assemblies from the airplane. This AD removes certain oxygen cylinder part numbers from the applicability. This AD was prompted by the reported rupture of a high-pressure gaseous oxygen cylinder, which had insufficient strength characteristics due to improper heat treatment. We are issuing this AD to prevent an oxygen cylinder from rupturing, which, depending on the location, could result in structural damage and rapid decompression of the airplane, damage to adjacent essential flight equipment, deprivation of the necessary oxygen supply for the flightcrew, and injury to cabin occupants or maintenance or other support personnel.

DATES: This AD is effective February 4, 2010.

We must receive any comments on this AD by March 8, 2010.

ADDRESSES: You may send comments 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 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov*; or in person at the Docket Management Facility 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 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: Nicholas Wilson, Aerospace Engineer, Cabin Safety and Environmental Systems Branch, ANM–150S, Seattle Aircraft Certification Office, FAA, 1601 Lind Avenue, SW., Renton, Washington 98057–3356; telephone (425) 917–6476; fax (425) 917–6590.

SUPPLEMENTARY INFORMATION:

Discussion

On November 25, 2009, we issued AD 2009–21–10, amendment 39–16049 (74 FR 63063, December 2, 2009). That AD applies to certain AVOX Systems and B/E Aerospace oxygen cylinder assemblies, as installed on various transport airplanes. That AD requires removing certain oxygen cylinder assemblies from the airplane. That AD was prompted by the reported rupture of a high-pressure gaseous oxygen cylinder, which had insufficient strength characteristics due to improper heat treatment. The actions specified in that AD are intended to prevent an oxygen cylinder from rupturing, which, depending on the location, could result in structural damage and rapid decompression of the airplane, damage to adjacent essential flight equipment, deprivation of the necessary oxygen supply for the flightcrew, and injury to cabin occupants or maintenance or other support personnel.

Actions Since AD Was Issued

Since we issued AD 2009–21–10, we have been notified that its applicability (in paragraph (c)) erroneously includes oxygen cylinder assemblies having part numbers B43570–3 and B43570–5. Those oxygen cylinder assemblies are manufactured from composite material, instead of steel, and the erroneous part numbers do not correspond to any serial numbers listed in the AD. Composite oxygen tanks are not subject to the identified unsafe condition. These part numbers have been removed from Table 1 of this AD.

We have also been notified that serial numbers K617383 through K617423 inclusive and K757064 through K757066 inclusive have been withdrawn from service. These serial numbers have been removed from Table 3 of this AD.

FAA's Determination and Requirements of This AD

Certain affected airplanes have been approved by the aviation authorities of other countries, and are approved for operation in the United States.

The unsafe condition described previously is likely to exist or develop in other products of these same type designs. For this reason, we are issuing this AD to revise AD 2009–21–10. This new AD retains the requirements of the existing AD, but removes part numbers B43570–3 and B43570–5 from the applicability of this AD, and removes certain serial numbers from Table 3 of this AD.

Additional Change to AD

We have revised this AD to identify the legal name of certain manufacturers as published in the most recent type certificate data sheet for the affected airplane models.

FAA's Justification and Determination of the Effective Date

This AD addresses the consequences of the potential rupture of certain oxygen cylinder assemblies. Because of our requirement to promote safe flight of civil aircraft and thus the critical need to ensure the proper functioning of the oxygen cylinders and the short compliance time involved with this action, this AD must be issued immediately.

Because an unsafe condition exists that requires the immediate adoption of