Proposed Rules

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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2012–0002; Directorate Identifier 2011–NE–42–AD]

RIN 2120–AA64

Airworthiness Directives; Continental Motors, Inc. Reciprocating Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposed airworthiness directive (AD) for certain Airmotive Engineering Corp. (AEC) replacement parts manufacturer approval (PMA) cylinder assemblies marketed by Engine Components International Division (ECi). These cylinder assemblies are used on all Continental Motors, Inc. (CMI) model 520 and 550 reciprocating engines, and on all other CMI engine models approved for the use of model 520 and 550 cylinder assemblies, such as the CMI model 470 when modified by supplemental type certificate (STC). The NPRM proposed to require initial and repetitive inspections, replacement of cracked cylinder assemblies, and replacement of cylinder assemblies at reduced times-in-service. The NPRM also proposed to prohibit the installation of affected cylinder assemblies into any engine. The NPRM was prompted by reports of multiple cylinder head-to-barrel separations and cracked and leaking aluminum cylinder heads. This supplemental NPRM (SNPRM) modifies the schedule for removal of the affected cylinder assemblies, adds that overhauled affected cylinder assemblies be removed within 80 hours, eliminates a reporting requirement, and removes the requirement for initial and repetitive inspections. We are proposing this SNPRM to prevent failure of the cylinder assemblies, which could lead to failure of the engine, in-flight shutdown, and loss of control of the airplane. We are reopening the comment period to allow the public the chance to comment on the proposed changes to the NPRM.

DATES: We must receive comments on this SNPRM by February 23, 2015.

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

- *Federal eRulemaking Portal:* Go to *http://www.regulations.gov*. Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Engine Components International Division, 9503 Middlex Drive, San Antonio, TX 78217; phone: 210–820–8101; Internet: *http://www.eci.aero/pages/tech_svcpubs.aspx*. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781–238–7125.

Examining the AD Docket

You may examine the AD docket on the Internet at *http://www.regulations.gov* by searching for and locating Docket No. FAA–2012–0002; 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 SNPRM, the regulatory evaluation, any comments received, and other information. Given the volume of comments received, we are not identifying the individual commenters within this SNPRM. However, we identify all commenters, other than individuals, in the docket. The street address for the Docket Office (phone: 800–647–5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Jurgen E. Priester, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Fort Worth, TX 76137; phone: 817–222–5190; fax: 817–222–5785; email: *jurgen.e.priester@faa.gov*.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite your review of the commenter list provided in Docket No. FAA–2012–0002. If you submitted a comment to an organization and do not see the name of the organization in the commenter list, please submit your comment directly to us as provided for in this SNPRM. If you submitted as an individual, you will not be listed as a commenter.

We also invite you to review our responses to comments, and to resubmit your comment if you conclude that your comment was not responded to below.

We also invite you to send any written relevant data, views, or arguments about this SNPRM. Send your comments to an address listed under the **ADDRESSES** section. Include ''Docket No. FAA–2012–0002; Directorate Identifier 2011–NE–42–AD'' at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this SNPRM. We will consider all comments received by the closing date and may amend this SNPRM because of those comments.

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

Discussion

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to certain AEC replacement PMA cylinder assemblies marketed by ECi. These assemblies are used on CMI model 520 and 550 reciprocating engines, and all other CMI engine models approved for the use of models 520 and 550 cylinder assemblies such as the CMI model 470 when modified by STC. The NPRM published in the **Federal Register** on August 12, 2013 (78

FR 48828). The NPRM proposed to require initial and repetitive inspections, immediate replacement of cracked cylinder assemblies, and replacement of cylinder assemblies at reduced times-in-service (TIS) since new. The NPRM also proposed to prohibit the installation of affected cylinder assemblies into any engine.

Actions Since Previous NPRM Was Issued

Since the NPRM published on August 12, 2013 (78 FR 48828), we received numerous comments on the proposed rule. We reviewed those comments and considered their impact to safety. Some of those comments included additional failure information that we subsequently incorporated in our updated risk analysis.

Following our comment review, we determined that we needed to review how we proposed to address the unsafe condition. So, we formed a multi-directorate/multi-disciplinary team to review the technical basis of the proposed rule, as well as the numerous public comments, and the additional failure information provided by commenters, to the NPRM. This team confirmed that the subject cylinder assemblies are unsafe.

The team's review of the new data provided by commenters supports a lengthier compliance interval. This team therefore recommended several changes to the NPRM, which resulted in this SNPRM.

Comments

We gave the public the opportunity to comment on the NPRM (78 FR 48828, August 12, 2013). The following presents the comments received on the NPRM and the FAA's response to each comment.

Request To Withdraw the NPRM Because ECi Cylinder Assemblies Are Not Unsafe

Many operators, maintenance organizations, and private citizens asked that we withdraw the NPRM (78 FR 48828, August 12, 2013). The commenters claimed that the affected ECi cylinder assemblies have an equivalent, or lower, failure rate than that of cylinder assemblies manufactured by the original equipment manufacturer (OEM). We concluded that these commenters were requesting that we withdraw the NPRM because they believe that the ECi cylinder assemblies are not unsafe.

We disagree. The rate of separation for the affected ECi cylinder assemblies is at least 32 times greater than that of OEM cylinder assemblies over the same period. Although there are approximately four times as many OEM cylinder assemblies in service than ECi cylinder assemblies, the ECi cylinder assemblies suffered more cylinder head separations than OEM cylinder assemblies since 2004. This data is available for review in Docket No. FAA–2012–0002. We did not withdraw the NPRM.

Request To Withdraw the NPRM Because Airplanes Can Operate Safely With a Separated Cylinder Head

Numerous aircraft operators, maintenance organizations, and private citizens commented that we should not issue the AD because airplanes can continue to operate safely even after a cylinder head separation. Several commenters have also stated that airplane engines are designed and certified to safely operate with one failed cylinder. They cited 14 CFR 33.43 in support of their position.

We disagree. The safety consequences represented by a cylinder head separation in flight are significant, and include multiple secondary effects, like fire. We did not withdraw the NPRM.

We also disagree that § 33.43, Vibration Test, supports the commenter's position that airplanes are certified to operate safely after a cylinder head separation. Section 33.43(d), addressing the engine vibration survey of § 33.43(a), requires assessment of crankshaft vibration for an engine that has one cylinder that ''is not firing.'' That paragraph, like the rest of § 33.43, does not discuss cylinder head separation. We did not withdraw the NPRM.

Request To Withdraw the NPRM Because Root Cause of Cylinder Failure Is Unknown

Numerous aircraft operators, maintenance organizations, and private citizens requested that we withdraw the NPRM (78 FR 48828, August 12, 2013) because the FAA failed to identify the root cause(s) of cylinder head separations.

We disagree. The root cause of the cylinder head separation is not the unsafe condition. We have identified the unsafe condition—cylinder head separation. Removal of the cylinder assembly resolves the unsafe condition. We did not withdraw the NPRM.

Request To Withdraw the NPRM Because Pilot Error Is Causing Cylinder Head Separations

Numerous organizations, aircraft operators, and private citizens commented that cylinder head separations involving the ECi cylinder assemblies affected by this NPRM (78 FR 48828, August 12, 2013) were caused by pilot error rather than by design deficiencies of the cylinder assemblies. They therefore requested that we not issue the AD.

We disagree. If pilot error was leading to cylinder head separation, then we would expect to see similar damage in engines with other than ECi cylinder assemblies installed where the pilots exceeded the same limitation(s). However, we do not have any such data. We did not withdraw the NPRM.

Request To Adopt Less Stringent Compliance Requirements

The National Transportation Safety Board (NTSB), other organizations, numerous aircraft operators, and private citizens commented that the compliance requirements in the proposed AD are too severe and that we should adopt less stringent requirements.

We agree that the requirements for removal of the cylinder assemblies can be made less severe. Our updated analysis indicates that our proposed reduced compliance interval with the attendant removal from service of affected cylinder assemblies and lesser impact to operators addresses the unsafe condition and is consistent with our risk guidelines. We revised the compliance paragraphs in this SNPRM by changing the schedule for removal of affected cylinder assemblies to a phased removal schedule for all affected cylinder assemblies based on total time in service since new.

The NTSB also recommended in NTSB Safety Recommendation A–12–7 that we impose a repetitive inspection requirement for certain ECi cylinder assemblies and their removal once they reach the manufacturer's recommended time between overhaul (TBO).

We disagree. Repetitive inspections until TBO as suggested by the commenter, is inconsistent with the serious hazard represented by cylinder assembly failures. Therefore, we are requiring removal of affected cylinder assemblies from service prior to TBO. Also, engine overhaul is not a requirement for all operators. Therefore, tying the proposed recurrent inspection to engine overhaul would not resolve the unsafe condition. We did not change this proposed AD based on this comment.

The NTSB also noted that the proposed rule would affect many more cylinder assemblies than the NTSB had included in its safety recommendation letter A–12–7, dated February 24, 2012, to the FAA. The NTSB commented that the NPRM's proposal to remove Group A cylinder assemblies (S/Ns 1 through

33696) with fewer than 500 hours TIS or more than 1,000 hours TIS within 25 hours does not appear to be supported by existing service information or discussions between the NTSB and the FAA.

We disagree. Based on service failure data and known implementation of design improvements, this proposed AD must apply to cylinder assemblies S/Ns 1 through 61176. We did not change this proposed AD based on this comment.

Request for FAA To Follow Its Own Risk Assessment Policies

Numerous aviation associations, aircraft operators, maintenance organizations, and private citizens commented that the FAA had not followed its own risk assessment policies in issuing the NPRM (78 FR 48828, August 12, 2013).

We disagree. The corrective actions proposed in the NPRM, and as revised by this SNPRM, are consistent with FAA Order 8040.4A, ''Safety Risk Management Policy,'' dated April 30, 2012, and the Monitor Safety/Analyze Data (MSAD) process defined in FAA Order 8110.107A, ''Monitor Safety/ Analyze Data,'' dated October 1, 2012. The requirements of this proposed AD are also consistent with the guidance of Engine & Propeller Directorate memorandum ''Risk Assessment for Reciprocating Engine Airworthiness Directives,'' PS–ANE–100–1999–00006, dated May 24, 1999. We did not change this SNPRM as a result of this comment.

Request To Withdraw the NPRM Because of the Risk of Maintenance Errors

Numerous aircraft operators, maintenance organizations, and private citizens commented that the FAA should withdraw the NPRM (78 FR 48828, August 12, 2013) because the removal and replacement of affected cylinder assemblies before TBO would result in maintenance errors that would adversely affect safety.

We disagree. Our regulatory framework presumes that maintenance will be performed correctly by personnel authorized by the FAA to return aircraft to service in an airworthy condition. Further, we have not observed any negative effects on safety due to removal of these cylinder assemblies during maintenance. Also, cylinder removal and replacement is a maintenance action addressed in engine maintenance manuals. We did not withdraw the NPRM.

Request To Review Repetitive Compression Test and Leak Check

Some aircraft operators commented that they successfully passed the compression test with the piston at top-dead-center, while still finding the cylinders cracked. We interpret the comment to be that the proposed inspection and test was inadequate to detect a cracked cylinder assembly.

We agree. The inspection and test may not detect cracks. Also, we have received field reports of separated cylinders that occurred within the repetitive 50-hour compression test and leak check inspection intervals proposed by the NPRM. We therefore concluded that these tests are not sufficiently reliable and the cost associated with such ongoing tests outweighs the safety benefit. We changed this SNPRM by removing the requirement for repetitive compression and leak inspection tests.

Request To Withdraw the NPRM Because of Excessive Cost

Numerous aviation associations, aircraft operators, maintenance organizations, and private citizens commented that the FAA should withdraw the NPRM (78 FR 48828, August 12, 2013) because the cost of compliance is excessive to owners and operators of aircraft with engines that have affected cylinder assemblies.

We disagree. We find that the safety benefits of the proposed rule, as changed by this SNPRM, outweigh its estimated cost. Further, we recalculated the cost of the NPRM (78 FR 48828, August 12, 2013). Our previous estimate was based on 36,000 cylinder assemblies. Based on data available to the FAA, we subsequently reduced the number affected cylinder assemblies to 28,874.

We also determined that a replacement cost based on a pro-rated life of the cylinder assemblies more accurately reflects the true cost of replacing the cylinder assemblies. In the NPRM, we used $1,700 per cylinder assembly for the entire affected cylinder assembly population. We recalculated the total value for loss of the part based on a pro-rated estimate of usage for the cylinder assembly population over their current accumulated time in service. This recalculated loss is $19,867,882 for the entire affected cylinder assembly population.

Finally, since we issued the NPRM, we eliminated those inspections and their associated cost from this SNPRM. For further information on the estimated cost of this AD, please see our Initial Regulatory Flexibility Analysis (IRFA) in the text of this SNPRM. We did not withdraw the NPRM.

Miscellaneous Comments to the NPRM

We received several comments on the rulemaking process, including several who supported the NPRM (78 FR 48828, August 12, 2013) as proposed. Several commenters stated that hundreds of failures of the affected cylinder assemblies had been reported to the FAA and ECi.

We thank the commenters for their participation in the rulemaking process.

Summary of Changes to the NPRM

First, we removed the 50 hour repetitive inspection requirement in the NPRM (78 FR 48828, August 12, 2013). We did so because we determined that the inspection, compression test, and leak check proposed by the NPRM was not effective in detecting cracked cylinders. Based on further review of service information, we determined that a compression test and leak check will not identify a crack until the crack has propagated all the way through the cylinder wall to some detectable location. Therefore, we are relying on the phased removal of the cylinders along with annual or 100-hour inspections already required by other regulations to provide an adequate level of safety.

We eliminated the requirement to report details of all cylinder assemblies removed per the requirements of the AD to the FAA. This information is no longer needed since we will rely on our established reporting channels, *e.g.,* Service Difficulty Reporting (SDR) and Malfunction/Defect (M/D) reports, to report future cylinder head failures.

We reduced the estimated population of affected cylinder assemblies from 36,000 to 28,874.

We used a pro-rated loss of cylinder life which more accurately reflects the cost of replacing the affected cylinder assemblies.

We removed the cost of inspection from this SNPRM since the recurrent visual inspections and compression/ leak tests proposed by the NPRM were ineffective in detecting the unsafe condition.

We changed the compliance paragraphs by removing references to ''Group A'' (serial numbers (S/Ns) between 1 and 33696) and ''Group B'' (S/Ns between 33697 and 61176). We determined that TIS and serial number (S/N) are sufficient to identify and correct the suspect cylinder assembly population.

We modified the compliance schedule for removal of affected cylinder assemblies from 500 or 1,000 operating

hours for all affected cylinder assemblies to a phased removal schedule based on total hours TIS since new. We determined that information submitted by commenters to the proposed rule justified a phased drawdown of the assemblies from service.

Finally, we specified in this SNPRM that overhauled cylinder assemblies should be removed within 80 hours after the effective date of this AD. We concluded that overhauling of the cylinder assembly does not diminish the fatigue damage that has already accumulated in the cylinder head.

FAA's Determination

We are proposing this SNPRM because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above revise the scope of the NPRM (78 FR 48828, August 12, 2013). As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

Proposed Requirements of This SNPRM

This SNPRM would require removal of the affected cylinder assemblies, including overhauled cylinder assemblies, according to a phased removal schedule.

Costs of Compliance

We estimate that this proposed AD would affect about 5,000 CMI models IO–520, TSIO–520, IO–550, and IOF–550 reciprocating engines and all other CMI engine models approved for the use of CMI models 520 and 550 cylinder assemblies (such as the CMI model 470 when modified by STC), installed on airplanes of U.S. registry. The average labor rate is $85 per hour. We estimate that about 18 hours would be required to replace all six cylinder assemblies during overhaul maintenance. We estimate the pro-rated value of the cost of replacement of six cylinder assemblies to be about $4,202 per engine. Based on these figures, we estimate the total cost of this proposed AD to U.S. operators to change all ECi cylinder assemblies to be $28,660,000. Our cost estimate is exclusive of possible warranty coverage.

Authority for This Rulemaking

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

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

Regulatory Flexibility Determination

The Regulatory Flexibility Act of 1980 (RFA) establishes ''as a principle of regulatory issuance that agencies shall endeavor, consistent with the objective of the rule and of applicable statutes, to fit regulatory and informational requirements to the scale of the business, organizations, and governmental jurisdictions subject to regulation.'' To achieve that principle, the RFA requires agencies to solicit and consider flexible regulatory proposals and to explain the rationale for their actions. 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 proposed or final rule will have a 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 Act.

This proposed rule would have a significant impact on a substantial number of small entities of part 135 operators and smaller air services businesses.

The U.S. Small Business Administration (SBA) classifies businesses as small based on size standards, typically expressed as number of employees. The FAA identified 609 part 135 operators that meet the SBA definition of a small entity (entities with 1,500 or fewer employees) which would be affected by this proposed rule. Of these 609, the FAA identified 209 small part 135 operators on which the rule would have a significant economic impact. We consider this a substantial number of small entities. In addition, we estimate that more than 2,000 smaller air services businesses would be affected by this proposed rule. This business segment also has a substantial number of small entities. The FAA is unaware of the assets or financial resources of these businesses. The FAA requests comments from these businesses regarding their economic impact.

The FAA estimates the compliance cost from this AD to be the sum of the replacement cost per aircraft, plus the loss of use due to earlier replacement, plus minor paperwork cost. The labor cost to replace all six cylinder assemblies is the average labor rate $85 per hour multiplied by the estimated 18 hours to complete the task.

The FAA believes that a pro-rated value of the replacement cost of the cylinder assemblies is more accurate and reflects on the true cost to replacing the cylinder assemblies. This AD would result in a loss-of-use as some cylinder assemblies would be replaced sooner than current practice. This AD requires removal of the cylinder assemblies at an average of 1,000 hours instead of at the average TBO of 1,700 hours. This means that the allowable life is only 1,000 of the original 1,700 hours, or at 58.82% of the current life. Therefore the life value that is lost equals 0.4118 ($1.0 - 0.5882$). We estimate the pro-rated loss of life value for six cylinder assemblies to be about $4,200 per engine ($1{,}700 \times 6 \times .4118$). The loss-of-use expense implicitly includes the earlier purchase of the replacement cylinder assemblies.

Therefore the AD cost per aircraft equals the labor costs of $1,530 and the loss-of-service cost of $4,202, or about $6,000. Based on the number of aircraft owned by the operators impacted, total compliance costs range between $6 thousand to $525 thousand per small entity encompassing one to eighty-eight aircraft.

To determine whether the compliance cost would be a significant economic impact, we measured the annualized compliance cost relative to the value of the aircraft. The estimated value of their aircraft ranges between $22 thousand to $21 million. Using the preceding information, the FAA estimates that their ratio of annualized cost to asset value is higher than 5 percent for many of these operators. Based on this information the FAA decided that the rule would have a significant economic impact on a substantial number of entities. Therefore, we have performed a regulatory flexibility analysis for these small entities.

Initial Regulatory Flexibility Analysis

Under Section 603(b) of the RFA, the initial analysis must address:

(1) Description of reasons the agency is considering the action;

(2) Statement of the legal basis and objectives for the proposed rule;

(3) Description of the record keeping and other compliance requirements of the proposed rule;

(4) All federal rules that may duplicate, overlap, or conflict with the proposed rule;

(5) Description and an estimated number of small entities to which the proposed rule will apply; and

(6) Describe alternatives considered.

Description of Reasons the Agency is Considering the Action

This proposed AD was prompted by failure reports of multiple cylinder head-to-barrel separations and cracked and leaking aluminum cylinder heads. This AD would apply to certain Airmotive Engineering Corp. replacement PMA cylinder assemblies marketed by ECi, used on CMI model 520 and 550 reciprocating engines, and all other engine models approved for the use of CMI models 520 and 550 cylinder assemblies, such as the CMI model 470 when modified by STC.

Description and an Estimated Number of Small Entities to Which the Proposed Rule Would Apply

We estimate that this proposed AD would affect about 5,000 Continental Motors, Inc. models IO–520, TSIO–520, IO–550, and IOF–550 reciprocating engines and all other engine models approved for the use of CMI models 520 and 550 cylinder assemblies (such as the CMI model 470 when modified by STC), installed on airplanes of U.S. registry.

The FAA will affect 609 part 135 operators and more than 2,000 air service businesses for which the rule will have an economic impact. The affected entities fly fixed wing aircraft; employ less than 1,500 employees; and conduct a variety of air services such as fly passengers and cargo for hire. We estimate that the small part 135 operators have assets valued between $22 thousand to $21 million (range of 1 to 88 aircraft).

Description of the Recordkeeping and Other Compliance Requirements of the Proposed Rule

Public reporting for this collection of information is estimated to be approximately 5 minutes per response at an hourly wage rate of $85 per hour, including the time for reviewing instructions, completing and reviewing the collection of information. The paperwork cost for them is between $7 and $616.

All Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rule

The FAA is unaware of any Federal rules that duplicate, overlap, or conflict with this rule.

Description of Alternatives Considered

The FAA received comments concerning this AD. Some commenters requested withdrawal of this NPRM because of excessive cost with only negligible safety gains. In response to comments about problems with repetitive compression/soap test, the FAA agrees that these tests are not reliable and the costs associated with such ongoing tests outweigh the safety benefit. This SNPRM has removed the requirement for repetitive compression/soap inspection tests. We also considered these following alternatives:

(1) Do nothing—This option is not acceptable due to the number of failures of ECi cylinder assemblies and the consequences of the failures.

(2) Periodic inspections only (no forced removals)—Though the NTSB recommends this option, the service history has shown that such inspections may not reliably detect existing cracks and the rate of crack growth to separation is unknown and variable.

(3) Forced removal with periodic inspections—As stated above, such periodic inspections may not reliably detect cracks and the rate of crack growth to separation is unknown and variable.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would 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 this proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

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

List of Subjects in 14 CFR Part 39

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

The Proposed Amendment

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

PART 39—AIRWORTHINESS DIRECTIVES

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

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

§ 39.13 [Amended]

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

Continental Motors, Inc. (formerly Teledyne Continental Motors, Inc., formerly Continental): Docket No. FAA–2012–0002; Directorate Identifier 2011–NE–42–AD.

(a) Comments Due Date

We must receive comments by February 23, 2015.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Continental Motors, Inc. (CMI) model 520 and 550 reciprocating engines, and to all other CMI engine models approved for the use of model 520 and 550 cylinder assemblies such as the CMI model 470 when modified by supplemental type certificate (STC), with Airmotive Engineering Corp. replacement parts manufacturer approval (PMA) cylinder assemblies, marketed by Engine Components International Division (hereinafter referred to as ECi), part number (P/N) AEC631397, with ECi Class 71 or Class 76, serial number (S/N) 1 through S/N 61176, installed.

(d) Unsafe Condition

This AD was prompted by multiple failure reports of cylinder head-to-barrel separations and cracked and leaking aluminum cylinder heads. We are issuing this AD to prevent failure of the cylinder assemblies, which could lead to failure of the engine, in-flight shutdown, and loss of control of the airplane.

(e) Compliance

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

(1) Review the engine maintenance records to determine if any affected cylinder assemblies are installed.

(2) If you cannot determine based on review of engine maintenance records if any affected cylinder assemblies are installed, comply with paragraph (e)(4) of this AD.

(3) If you do not have any of the affected ECi cylinder assemblies installed on your engine, no further action is required.

(4) Cylinder Identification and Serial Number Location

(i) Check the cylinder assembly P/N and Class number. The ECi cylinder assembly, P/N AEC631397, Class 71 or Class 76, is stamped on the bottom flange of the cylinder barrel. Guidance on the P/N and Class number description and location can be found in ECi Service Instruction No. 99–8–1, Revision 9, dated February 23, 2009.

(ii) If you cannot see the cylinder assembly P/N when the cylinder assembly is installed on the engine, you may use the following alternative method of identification:

(A) Remove the cylinder assembly rocker box cover.

(B) Find the letters ECi, cast into the cylinder head between the valve stems.

(C) Check the cylinder head casting P/N. Affected cylinder assemblies have the cylinder head casting P/N, AEC65385, cast into the cylinder head between the valve stems.

(D) Find the cylinder assembly S/N as specified in paragraph (e)(4)(iii) or (e)(4)(iv) of this AD, as applicable.

(iii) For ECi cylinder assemblies, P/N AEC631397, manufactured through 2008, find the cylinder assembly S/N stamped on the intake port boss two inches down from the top edge of the head.

(iv) For ECi cylinder assemblies, P/N AEC631397, manufactured on or after January 1, 2009, find the cylinder assembly S/N stamped just below the top edge of the head on the exhaust port side.

(5) Removal From Service

(i) For any affected cylinder assembly with 680 or fewer operating hours time-in-service (TIS) since new on the effective date of this AD, remove the cylinder assembly from service before reaching 1,000 operating hours TIS since new.

(ii) For any affected cylinder assembly with more than 680 operating hours TIS since new and 1,000 or fewer operating hours TIS since new on the effective date of this AD, remove the cylinder assembly from service within the next 320 operating hours TIS or within 1,160 operating hours TIS since new, whichever occurs first.

(iii) For any affected cylinder assembly with more than 1,000 operating hours TIS since new on the effective date of this AD, remove the cylinder assembly from service within the next 160 operating hours or at next engine overhaul, whichever occurs first.

(iv) For any affected cylinder assembly that has been overhauled, remove the cylinder assembly from service within the next 80 operating hours TIS after the effective date of this AD.

(f) Installation Prohibitions

After the effective date of this AD:

(1) Do not repair, or reinstall onto any engine, any cylinder assembly removed per this AD.

(2) Do not install any affected ECi cylinder assembly that has been overhauled, into any engine.

(3) Do not install any engine that has one or more affected overhauled ECi cylinder assemblies, onto any aircraft.

(4) Do not return to service any aircraft that has an engine installed with an ECi cylinder assembly subject to this AD, if the cylinder assembly has 1,000 or more operating hours TIS.

(g) Alternative Methods of Compliance (AMOCs)

The Manager, Special Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(h) Related Information

(1) For more information about this AD, contact Jurgen E. Priester, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Fort Worth, TX 76193; phone: 817–222–5190; fax: 817–222–5785; email: *jurgen.e.priester@faa.gov.*

(2) For ECi Service Instruction No. 99–8–1, Revision 9, dated February 23, 2009, which is not incorporated by reference in this AD, contact Engine Components International Division, 9503 Middlex Drive, San Antonio, TX 78217; phone: 210–820–8101; Internet: *http://www.eci.aero/pages/tech_svcpubs.aspx.*

(3) You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781–238–7125.

Issued in Burlington, Massachusetts, on December 23, 2014.

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