

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-2008-0052; Directorate Identifier 2008-NE-01-AD]

RIN 2120-AA64

Airworthiness Directives; Engine Components, Inc. (ECi) Reciprocating Engine Cylinder Assemblies

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede an existing airworthiness directive (AD) for Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, "Parallel Valve" reciprocating engines, with certain Engine Components, Inc. (ECi) cylinder assemblies, part number (P/N) AEL65102 series "Titan," installed. That AD currently requires initial and repetitive visual inspections and compression tests to detect cracks at the head-to-barrel interface, replacement of cylinder assemblies found cracked, and replacement of certain cylinder assemblies at new, reduced times-in-service. This proposed AD would require the same actions, but for an expanded population of cylinder assemblies. This proposed AD results from reports of 10 additional cylinder head separations since issuing AD 2008-19-05, on cylinder serial numbers not listed in that AD. We are proposing this AD to prevent loss of engine power due to cracks at the head-to-barrel interface and possible engine failure caused by separation of a cylinder head, which could result in loss of control of the aircraft.

DATES: We must receive any comments on this proposed AD by September 28, 2009.

ADDRESSES: Use one of the following addresses to comment on this proposed AD:

- **Federal eRulemaking Portal:** Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.

- **Mail:** Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue, SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

- **Hand Delivery:** Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

- **Fax:** (202) 493-2251.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments regarding this proposal. Send your comments to an address listed under **ADDRESSES**. Include "Docket No. FAA-2008-0052; Directorate Identifier 2008-NE-01-AD" in the subject line of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of the proposed AD. We will consider all comments received by the closing date and may amend the proposed AD in light 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 with FAA personnel concerning this proposed AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (65 FR 19477-78).

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the

Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (telephone (800) 647-5527) is the same as the Mail address provided in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

Discussion

The FAA proposes to amend 14 CFR part 39 by superseding AD 2008-19-05, Amendment 39-15672 (73 FR 53105, September 15, 2008). That AD requires initial and repetitive visual inspections and compression tests to detect cracks at the head-to-barrel interface, replacement of cylinder assemblies found cracked, and replacement of certain cylinder assemblies, at new reduced times-in-service. That AD was the result of reports of 45 failures with head separations of ECi cylinder assemblies. That condition, if not corrected, could result in loss of engine power due to cracks at the head-to-barrel interface in the cylinder assemblies and possible engine failure caused by separation of a cylinder head, which could result in loss of control of the aircraft.

Actions Since AD 2008-19-05 Was Issued

Since AD 2008-19-05 was issued, we received reports of 10 additional cylinder head separations, on cylinder serial numbers not listed in that AD. To date, there have been a total of 55 head separations resulting in engine shutdowns and emergency landings in airplanes and helicopters.

FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe condition that is likely to exist or develop on other products of this same type design. For that reason, we are proposing this AD, which would require initial and repetitive visual inspections and compression tests to detect cracks at the head-to-barrel interface, replacement of cylinder assemblies found cracked, and replacement of certain cylinder assemblies, at new reduced times-in-service. The proposed AD would require:

- Determining if Group “A” or Group “B” ECI cylinder assemblies, P/N AEL65102 series “Titan,” with cylinder head P/N AEL85099, are installed on your engine.

- For any Group “A” cylinder assembly, performing initial and repetitive visual inspections and compression tests, and replacement not later than 2,000 operating hours time-in-service (TIS) or within 25 operating hours TIS if the cylinder assembly exceeds 2,000 operating hours TIS on the effective date of the proposed AD.

- For any Group “A” cylinder assembly installed in a helicopter, performing the same initial and repetitive visual inspections and compression tests, but replacement not later than 1,500 operating hours TIS or within 25 operating hours TIS if the cylinder assembly exceeds 1,500 operating hours TIS on the effective date of the proposed AD.

- Expanding the serial numbers affected of Group “B” cylinder assemblies, and performing the same initial visual inspection and compression test, and replacement not later than 350 operating hours TIS or within 25 operating hours TIS if the cylinder assembly exceeds 350 operating hours TIS on the effective date of the proposed AD.

Costs of Compliance

We estimate that this proposed AD would affect 18,000 ECI cylinder assemblies installed in aircraft of U.S. registry. The visual inspection and compression tests would take about 4 work-hours for each engine. An individual cylinder replacement would require \$1,100 for parts and 6 work-hours. Lycoming engines with a set of 4 ECI cylinders would require 12 work-hours for the cylinder replacement. Lycoming engines with a set of 6 ECI cylinders would require 16 work-hours for the cylinder replacement. We estimate 18 percent of the affected population of cylinders would be replaced. We estimate the total cost of the AD to U.S. operators to be \$10,172,000. Our estimate is exclusive of any 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 Findings

We have 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 that the proposed 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. Would not 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 regulatory evaluation of the estimated costs to comply with this proposed AD. See the **ADDRESSES** section for a location to examine the regulatory evaluation.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Under the authority delegated to me by the Administrator, the Federal Aviation Administration 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 removing Amendment 39–15672 (73 FR 53105, September 15, 2008) and by adding a new airworthiness directive to read as follows:

Engine Components, Inc. (ECI): Docket No. FAA–2008–0052; Directorate Identifier 2008–NE–01–AD.

Comments Due Date

(a) The Federal Aviation Administration (FAA) must receive comments on this airworthiness directive (AD) action by September 28, 2009.

Affected ADs

(b) This AD supersedes AD 2008–19–05, Amendment 39–15672.

Applicability

(c) If your engine has not been overhauled, or not had any cylinder assemblies replaced since new, no further action is required.

(d) This AD applies to the Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, “Parallel Valve,” reciprocating engines listed in Table 1 of this AD, with ECI cylinder assembly, part number (P/N) AEL65102 series “Titan,” and with cylinder head, P/N AEL85099, installed.

(1) The applicable cylinder assembly serial numbers (SNs) are SN 1138–02 through SN 35171–22, (referred to in this AD as Group “A” cylinder assemblies); and

(2) SN 35239–01 through SN 42179–30 (referred to in this AD as Group “B” cylinder assemblies).

(3) The cylinder assembly P/N is at the crankcase end of the cylinder assembly, and might be difficult to see. As a guide in determining if your cylinder assemblies are affected, all affected cylinder assemblies have cylinder head P/N AEL85099. The cylinder head P/N is at the top of the cylinder head, near the intake and exhaust valve springs, and is easier to locate than the cylinder assembly P/N.

(4) The set of numbers appearing on the cylinder, above and to the left of the SN, in the form of “123456” is not used for determining applicability.

TABLE 1—ENGINE MODELS

Cylinder assembly part number	Installed on engine models
AEL65102–NST04	O–320–A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B2D, B2E, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, E1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H. IO–320–A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B. AEIO–320–D1B, D2B, E1A, E1B, E2A, E2B.

TABLE 1—ENGINE MODELS—Continued

Cylinder assembly part number	Installed on engine models
AEL65102-NST05	AIO-320-A1A, A1B, A2A, A2B, B1B, C1B. LIO-320-B1A. IO-320-C1A, C1B, C1F, F1A. LIO-320-C1A.
AEL65102-NST06	O-320-A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C, (also, an O-320 model with no suffix).
AEL65102-NST07	IO-320-A1A, A2A. IO-320-B1A, B1B. LIO-320-B1A.
AEL65102-NST08	O-320-B1A, B1B, B2A, B2B, B3A, B3B, B3C, C1A, C1B, C2A, C2B, C3A, C3B, C3C, D1A, D1B, D2A, D2B, D2C.
AEL65102-NST10	O-360-A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, B1A, B1B, B2A, B2B, C1A, C1C, C1G, C2A, C2B, C2C, C2D, D1A, D2A, D2B. IO-360-B1A, B1B, B1C. HO-360-A1A, B1A, B1B. HIO-360-B1A, B1B. AEIO-360-B1B.
AEL65102-NST12	O-540-A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1D5, B2A5, B2B5, B2C5, B4A5, B4B5, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5. IO-540-C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5. O-360-A1A, A1AD, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A1P, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A4P, A5AD, B1A, B2C, C1A, C1C, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, C4F, C4P, D2A, F1A6, G1A6. HO-360-C1A. LO-360-A1G6D, A1H6. HIO-360-B1A, B1B, G1A. LTO-360-A1A6D. TO-360-A1A6D. IO-360-B1B, B1BD, B1D, B1E, B1F, B1F6, B1G6, B2E, B2F, B2F6, B4A, E1A, L2A, M1A, M1B. AEIO-360-B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F, B2F6, B4A, H1A, H1B. O-540-A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4C5, G1A5, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D. IO-540-C4B5, C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D, T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D. AEIO-540-D4A5, D4B5, D4C5, D4D5.
AEL65102-NST26	IO-540-J4A5, R1A5. TIO-540-C1A, E1A, G1A, H1A.
AEL65102-NST38	IO-360-F1A. TIO-540-AA1AD, AB1AD, AB1BD, AF1A, AG1A, AK1A, C1A, C1AD, K1AD. LTIO-540-K1AD.
AEL65102-NST43	O-360-J2A. O-540-F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D.
AEL65102-NST44	IO-540-AB1A5, W1A5, W1A5D, W3A5D. O-540-L3C5D.

The Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, "Parallel Valve", reciprocating engines are

installed on, but not limited to, the aircraft listed in the following Table 2:

TABLE 2—ENGINES INSTALLED ON, BUT NOT LIMITED TO

Engine models	Installed on, but not limited to
O-320-A1A	Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Apache (PA-23), Pawnee (PA-25). Doyn Aircraft: Doyn-Cessna (170, 170A, 170B). Mooney Aircraft: Mark (20A). Dinfia: Ranquel (1A-46). Simmering-Graz Pauker: Flamingo (SGP-M-222). Aviamilano: Scricciolo (P-19). Vos Helicopter Co.: Spring Bok.
O-320-A1B	Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Apache (PA-23). Doyn Aircraft: Doyn-Cessna (170, 170A, 170B). S.O.C.A.T.A.: Horizon (Gardan).
O-320-A2A	Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Agriculture (PA-18A "150"), Super Cub (PA-18 "150"), Caribbean (PA-22 "150"), Pawnee (PA-25). Intermountain Mfg. Co.: Call Air Texas (A-5, A-5T). Lake Aircraft: Colonial (C-1). Rawdon Bros.: Rawdon (T-1, T-15, T-15D). Shinn Engineering: Shinn (2150-A).

TABLE 2—ENGINES INSTALLED ON, BUT NOT LIMITED TO—Continued

Engine models	Installed on, but not limited to
	Dinfia: Ranquel (1A-46). Neiva: (1PD-5802). Sud: Gardan-Horizon (GY-80). LaVerda: Falco (F8L Series II, America). Malmo: Vipan (MF1-10). Kingsford Smith: Autocrat (SCRM-153). Aero Commander: 100.
O-320-A2B	Piper Aircraft: Tri-Pacer (PA-22 "150", PA-22S "150"), Cherokee (PA-28 "150"), Super Cub (PA-18 "150"). Champion Aircraft: Challenger (7GCA, 7GCB, 7KC), Citabria (7GCAA, 7GCRC), Agriculture (7GCBA). Beagle: Pup (150). Artic: Interstate S1B2. Robinson: R-22. Varga: Kachina 2150A.
O-320-A2C	Robinson: R-22. Cicare: Cicare AG. Bellanca Aircraft: Citabria 150 (7GCAA), Citabria 150S (7GCBC).
O-320-A2D	Piper Aircraft: Apache (PA-23).
O-320-A3A	Doyn Aircraft: Doyn-Cessna (170, 170A, 170B).
O-320-A3B	Corben-Fettes: Globe Special (Globe GC-1B). Piper Aircraft: Apache (PA-23).
	Doyn Aircraft: Doyn-Cessna (170, 170A, 170B).
O-320-B1A	Teal II: TSC (1A2). Piper Aircraft: Apache (PA-23 "160"). Doyn Aircraft: Doyn-Cessna (170, 170A, 170B).
O-320-B1B	Malmo: Vipan (MF1-10). Piper Aircraft: Apache (PA-23 "160"). Doyn Aircraft: Doyn-Cessna (170, 170A, 170B).
O-320-B2A	Piper Aircraft: Tri-Pacer (PA-22 "160", PA-22S "160").
O-320-B2B	Piper Aircraft: Tri-Pacer (PA-22 "160", PA-22S "160"). Beagle: Airedale (D5-160). Fuji-Heavy Industries: Fuji (F-200). Uirapuru: Aerotec 122.
O-320-B2C	Robinson: R-22.
O-320-B2D	Maule: MX-7-160.
O-320-B2E	Lycon.
O-320-B3A	Piper Aircraft: Apache (PA-23 "160"). Doyn Aircraft: Doyn-Cessna (170, 170A, 170B).
O-320-B3B	Piper Aircraft: Apache (PA-23 "160"). Doyn Aircraft: Doyn-Cessna (170, 170A, 170B).
	Sud: Gardan (GY80-160).
O-320-C1A	Piper Aircraft: Apache (PA-23 "160"). Riley Aircraft: Rayjay (Apache).
O-320-C1B	Piper Aircraft: Apache (PA-23 "160").
O-320-C3A	Piper Aircraft: Apache (PA-23 "160").
O-320-C3B	Piper Aircraft: Apache (PA-23 "160").
O-320-D1A	Sud: Gardan (GY-80). Gyroflug: Speed Cancard. Grob: G115.
O-320-D1F	Slingsby: T67 Firefly.
O-320-D2A	Piper Aircraft: Cherokee (PA-28S "160"). Robin: Major (DR400-140B), Chevalier (DR-360), (R-3140). S.O.C.A.T.A.: Tampico TB9. Slingsby: T67C Firefly. Daetwyler: MD-3-160. Nash Aircraft Ltd.: Petrel. Aviolight: P66D Delta. General Avia: Pinguino.
O-320-D2B	Beech Aircraft: Musketeer (M-23). Piper Aircraft: Cherokee (PA-28 "160").
O-320-D2J	Cessna Aircraft: Skyhawk 172.
O-320-D3G	Piper Aircraft: Warrior II, Cadet (PA-28-161).
O-320-E1A	Grob: G115.
O-320-E1C	M.B.B. (Messerschmitt-Boelkow-Blohm): Monsun (BO-209-B).
O-320-E1F	M.B.B.: Monsun (BO-209-B).
O-320-E2A	Piper Aircraft: Cherokee (PA-28 "140", PA-28 "150"). Robin: Major (DR-340), Sitar, Bagheera (GY-100-135). S.O.C.A.T.A.: Super Rallye (MS-886), Rallye Commodore (MS-892). Siai-Marchetti: (S-202). F.F.A.: Bravo (AS-202/15). Partenavia: Oscar (P66B), Buckner (131 APM). Aeromot: Paulistina P-56.

TABLE 2—ENGINES INSTALLED ON, BUT NOT LIMITED TO—Continued

Engine models	Installed on, but not limited to
O-320-E2C	Pezetel: Koliber 150. Beech Aircraft: Musketeer III (M-23III). M.B.B.: Monsun (BO-209-B).
O-320-E2D	Cessna Aircraft: Cardinal (172-I, 177).
O-320-E2F	M.B.B.: Monsun (BO-209-B), Wassmer Pacific (WA-51).
O-320-E2G	American Aviation Corp.: Traveler.
O-320-E3D	Piper Aircraft: Cherokee (140). Beech Aircraft: Sport.
IO-320-B2A	Piper Aircraft: Twin Comanche (PA-30).
IO-320-B1C	Hi. Shear: Wing.
IO-320-B1D	Ted Smith Aircraft: Aerostar.
IO-320-C1A	Piper Aircraft: Twin Comanche (PA-30 Turbo).
IO-320-D1A	M.B.B.: Monsun (BO-209-C).
IO-320-D1B	M.B.B.: Monsun (BO-209-C).
IO-320-E1A	M.B.B.: Monsun (BO-209-C).
IO-320-E1B	Bellanca Aircraft.
IO-320-E2A	Champion Aircraft: Citabria.
IO-320-E2B	Bellanca Aircraft.
IO-320-F1A	CAAR Engineering: Carr Midget.
LIO-320-B1A	Piper Aircraft: Twin Comanche (PA-39).
LIO-320-C1A	Piper Aircraft: Twin Comanche (PA-39).
AIO-320-B1B	M.B.B.: Monsun (BO-209-C).
AEIO-320-D1B	Slingsby: T67M Firefly.
AEIO-320-D2B	Hindustan Aeronautics Ltd.: HT-2.
AEIO-320-E1A	Bellanca Aircraft. Champion Aircraft.
AEIO-320-E1B	Bellanca Aircraft. Champion Aircraft: Decathlon (8KCAB-CS).
AEIO-320-E2B	Bellanca Aircraft. Champion Aircraft: Decathlon (8KCAB).
O-320-A1A	Riley Aircraft: Riley Twin.
O-360-A1A	Beech Aircraft: Travel Air (95, B-95). Piper Aircraft: Comanche (PA-24). Intermountain Mfg. Co.: Call Air (A-6). Lake Aircraft: Colonial (C-2, LA-4, 4A or 4P). Doyn Aircraft: Doyn-Cessna (170B, 172, 172A, 172B). Mooney Aircraft: Mark "20B" (M-20B). Earl Horton: Pawnee (Piper PA-25). Dinfia: Ranquel (1A-51). Neiva: (1PD-5901). Regente: (N-591). Wassmer: Super 4 (WA-50A), Sancy (WA-40), Baladou (WA-40), Pariou (WA-40). Sud: Gardan (GY-180). Boelkow: (207). Partenavia: Oscar (P-66). Siai-Marchetti: (S-205). Procaer: Picchio (F-15-A). S.A.A.B.: Safir (91-D). Malmo: Vipan (MF-10B). Aero Boero: AB-180. Beagle: Airedale (A-109). DeHavilland: Drover (DHA-3MK3). Kingsford-Smith: Bushmaster (J5-6). Aero Engine Service Ltd.: Victa (R-2).
O-360-A1AD	S.O.C.A.T.A.: Tabago TB-10.
O-360-A1D	Piper Aircraft: Comanche (PA-24). Lake Aircraft: Colonial (LA-4, 4A or 4P). Doyn Aircraft: Doyn-Beech (Beech 95). Mooney Aircraft: Master "21" (M-20E), Mark "20B", "20D", (M20B, M20C), Mooney Statesman (M-20G). Dinfia: Querandi (1A-45). Wassmer: (WA-50). Malmo: Vipan (MF1-10). Cessna Aircraft: Skyhawk. Doyn Aircraft: Doyn-Piper (PA-23 "160").
O-360-A1F6	Cessna Aircraft: Cardinal.
O-360-A1F6D	Cessna Aircraft: Cardinal 177.
O-360-A1G6	Teal III: TSC (1A3).
O-360-A1G6D	Aero Commander.
O-360-A1H6	Beech Aircraft: Duchess 76.
O-360-A1LD	Piper Aircraft: Seminole (PA-44).
O-360-A1P	Wassmer: Europa WA-52.
	Aviat: Husky.

TABLE 2—ENGINES INSTALLED ON, BUT NOT LIMITED TO—Continued

Engine models	Installed on, but not limited to
O-360-A2A	Center Est Aeronautique: Regente (DR-253). S.O.C.A.T.A.: Rallye Commodore (MS-893). Societe Aeronautique Normande: Mousquetaire (D-140). Boelkow: Klemm (K1-107C). Partenavia: Oscar (P-66). Beagle: Husky (D5-180) (J1-U).
O-360-A2D	Piper Aircraft: Comanche (PA-24), Cherokee "C" (PA-28 "180"). Mooney Aircraft: Master "21" (M-20D), Mark "21" (M-20E).
O-360-A2E	Std. Helicopter.
O-360-A2F	Aero Commander: Lark (100). Cessna Aircraft: Cardinal.
O-360-A2G	Beech Aircraft: Sport.
O-360-A3A	C.A.A.R.P.S.A.N.: (M-23III). Societe Aeronautique Normande: Jodel (D-140C). Robin: Regent (DR400/180), Remorqueur (DR400/180R), R-3170. S.O.C.A.T.A.: Rallye 180GT, Sportavia Sportsman (RS-180). Norman Aeroplance Co.: NAC-1 Freelance. Nash Aircraft Ltd.: Petrel.
O-360-A3AD	S.O.C.A.T.A.: TB-10. Robin: Aiglon (R-1180T).
O-360-A4A	Piper Aircraft: Cherokee "D" (PA-28 "180").
O-360-A4D	Varga: Kachina.
O-360-A4G	Beech Aircraft: Musketeer Custom III.
O-360-A4K	Grumman American: Tiger.
O-360-A4M	Beech Aircraft: Sundowner 180. Piper Aircraft: Archer II (PA-28 "18"). Valmet: PIK-23.
O-360-A4N	Cessna Aircraft: 172 (Optional).
O-360-A4P	Penn Yan: Super Cub Conversion.
O-360-A5AD	C. Itoh and Co.: Fuji FA-200.
O-360-B2C	Seabird Aviation: SB7L.
O-360-C1A	Intermountain Mfg. Co.: Call Air (A-6).
O-360-C1E	Bellanca Aircraft: Scout (8GCBC-CS).
O-360-C1F	Maule: Star Rocket MX-7-180.
O-360-C1G	Christen: Husky (A-1).
O-360-C2B	Hughes Tool Co.: (269A).
O-360-C2D	Hughes Tool Co.: (269A).
O-360-C2E	Hughes Tool Co.: (YHO-2HU) Military. Bellanca Aircraft: Scout (8GCBC FP).
O-360-C4F	Maule: MX-7-180A.
O-360-C4P	Penn Yan: Super Cub Conversion.
O-360-F1A6	Cessna Aircraft: Cutlass RG.
O-360-J2A	Robinson: R22.
IO-360-B1A	Beech Aircraft: Travel-Air (B-95A). Doyn Aircraft: Doyn-Piper (PA-23 "200").
IO-360-B1B	Beech Aircraft: Travel-Air (B-95B). Doyn Aircraft: Doyn-Piper (PA-23 "200"). Fuji: (FA-200).
IO-360-B1D	United Consultants: See-Bee.
IO-360-B1E	Piper Aircraft: Arrow (PA-28 "180R").
IO-360-B1F	Utva: 75.
IO-360-B2E	C.A.A.R.P. C.A.P. (10).
IO-360-B1F6	Great Lakes: Trainer.
IO-360-B1G6	American Blimp: Spector 42.
IO-360-B2F6	Great Lakes: Trainer.
LO-360-A1G6D	Beech Aircraft: Duchess.
LO-360-A1H6	Piper Aircraft: Seminole (PA-44).
IO-360-E1A	T.R. Smith Aircraft: Aerostar.
IO-360-L2A	Cessna Aircraft: Skyhawk C-172.
IO-360-M1A	Diamond Aircraft: DA-40.
IO-360-M1B	Vans Aircraft: RV6, RV7, RV8. Lancair: 360.
AEIO-360-B1F	F.F.A.: Bravo (200). Grob: G115/Sport-Acro.
AEIO-360-B1G6	Great Lakes.
AEIO-360-B2F	Mundry: CAP-10.
AEIO-360-B4A	Pitts: S-1S.
AEIO-360-H1A	Bellanca Aircraft: Super Decathalon (8KCAB-180).
AEIO-360-H1B	American Champion: Super Decathalon.
VO-360-A1A	Brantly Hynes Helicopter: (B-2).
VO-360-A1B	Brantly Hynes Helicopter: (B-2, B2-A). Military (YHO-3BR).
VO-360-B1A	Brantly Hynes Helicopter: (B-2, B2-A).

TABLE 2—ENGINES INSTALLED ON, BUT NOT LIMITED TO—Continued

Engine models	Installed on, but not limited to
IVO-360-A1A	Brantly Hynes Helicopter: (B2-B).
HO-360-B1A	Hughes Tool Co.: (269A).
HO-360-B1B	Hughes Tool Co.: (269A).
HO-360-C1A	Schweizer: (300C).
HIO-360-B1A	Hughes Tool Co.: Military (269-A-1), (TH-55A).
HIO-360-B1B	Hughes Tool Co.: (269A).
HIO-360-G1A	Schweizer: (CB).
O-540-A1A	Rhein-Flugzeugbau: (RF-1).
O-540-A1A5	Piper Aircraft: Comanche (PA-24 "180").
	Helio: Military (H-250).
	Yoeman Aviation: (YA-1).
O-540-A1B5	Piper Aircraft: Aztec (PA-23 "250"), Comanche (PA-24 "250").
O-540-A1C5	Piper Aircraft: Comanche (PA-24 "250").
O-540-A1D	Found Bros.: (FBA-2C).
	Dornier: (DO-28-B1).
O-540-A1D5	Piper Aircraft: Aztec (PA-23 "250"), Comanche (PA-24 "250"), Military Aztec (U-11A).
	Dornier: (DO-28).
O-540-A2B	Aero Commander: (500).
	Mid-States Mfg. Co.: Twin Courier (H-500), (U-5).
O-540-A3D5	Piper Aircraft: Navy Aztec (PA-23 "250").
O-540-B1A5	Piper Aircraft: Apache (PA-23 "235").
O-540-B1B5	Piper Aircraft: Comanche (PA-24 "250").
	Doyn Aircraft: Doyn-Piper (PA-24 "250").
O-540-B1D5	Wassmer: (WA-421).
O-540-B2B5	Piper Aircraft: Pawnee (PA-25 "235"), Cherokee (PA-28 "235"), Aztec (PA-23 "235").
	Intermountain Mfg. Co.: Call Air (A-9).
	Rawdon Bros.: Rawdon (T-1).
	S.O.C.A.T.A.: Rallye 235CA.
O-540-B2C5	Piper Aircraft: Pawnee (PA-25 "235").
O-540-B4B5	Piper Aircraft: Cherokee (PA-28 "235").
	Embraer: Corioa (EMB-710).
	S.O.C.A.T.A.: Rallye 235GT, Rallye 235C.
	Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235).
O-540-E4A5	Piper Aircraft: Comanche (PA-24 "260").
	Aviamilano: Flamingo (F-250).
	Siai-Marchetti: (SF-260), (SF-208).
O-540-E4B5	Britten-Norman: (BN-2).
	Piper Aircraft: Cherokee Six (PA-32 "260").
O-540-E4C5	Pilatus Britten-Norman: Islander (BN-2A-26), Islander (BN-2A-27), Islander II (BN-2B-26), Islander (BN-2A-21), Trislander (BN-2A-Mark III-2).
O-540-F1B5	Omega Aircraft: (BS-12D1).
	Robinson: (R-44).
O-540-G1A5	Piper Aircraft: Pawnee (PA-25 "260").
O-540-H1B5D	Aero Boero: 260.
O-540-H2A5	Embraer: Impanema "AG".
	Gippsland: GA-200.
O-540-H2B5D	Aero Boero: 260.
O-540-J1A5D	Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235).
O-540-J3A5	Robin: R-3000/235.
O-540-J3A5D	Piper Aircraft: Dakota (PA-28-236).
O-540-J3C5D	Cessna Aircraft: Skylane RG.
O-540-L3C5D	Cessna Aircraft: TR-182, Turbo Skylane RG.
IO-540-C1B5	Piper Aircraft: Aztec B (PA-23 "250"), Comanche (PA-24 "250").
IO-540-C1C5	Riley Aircraft: Turbo-Rocket.
IO-540-C4B5	Piper Aircraft: Aztec C (PA-23 "250"), Aztec F.
	Wassmer: (WA4-21).
	Avions Pierre Robin: (HR100/250).
	Bellanca Aircraft: Aries T-250.
	Aerofab: Renegade 250.
IO-540-C4D5	S.O.C.A.T.A.: TB-20.
IO-540-C4D5D	S.O.C.A.T.A.: Trinidad TB-20.
IO-540-D4A5	Piper Aircraft: Comanche (PA-24 "260").
	Siai-Marchetti: (SF-260).
IO-540-D4B5	Cerva: (CE-43 Guepard).
IO-540-J4A5	Piper Aircraft: Aztec (PA-23 "250").
IO-540-R1A5	Piper Aircraft: Comanche (PA-24).
IO-540-T4A5D	General Aviation: Model 114.
IO-540-T4B5	Commander: 114B.
IO-540-T4B5D	Rockwell: 114.
IO-540-T4C5D	Lake Aircraft: Seawolf.
IO-540-V4A5	Maule: MT-7-260, M-7-260.
	Aircraft Manufacturing Factory.

TABLE 2—ENGINES INSTALLED ON, BUT NOT LIMITED TO—Continued

Engine models	Installed on, but not limited to
IO-540-V4A5D	Brooklands: Scoutmaster.
IO-540-W1A5	Maule: MX-7-235, MT-7-235, M7-235.
IO-540-W1A5D	Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235).
IO-540-W3A5D	Schweizer: Power Glider.
AEIO-540-D4A5	Christen: Pitts (S-2S), (S-2B).
	Siai-Marchetti: SF-260.
	H.A.L.: HPT-32.
	Slingsby: Firefly T3A.
AEIO-540-D4B5	Moravan: Zlin-50L.
	H.A.L.: HPT-32.
AEIO-540-D4D5	Burkhart Grob: Grob G, 115T Aero.
TIO-540-C1A	Piper Aircraft: Turbo Aztec (PA-23-250).
TIO-540-K1AD	Piper Aircraft.
TIO-540-AA1AD	Aerofab Inc.: Turbo Renegade (270).
TIO-540-AB1AD	S.O.C.A.T.A.: Trinidad TC TB-21.
TIO-540-AB1BD	Schweizer.
TIO-540-AF1A	Mooney Aircraft: "TLS" M20M.
TIO-540-AG1A	Commander Aircraft: 114TC.
TIO-540-AK1A	Cessna Aircraft: Turbo Skylane T182T.
LTIO-540-K1AD	Piper Aircraft.

Unsafe Condition

(e) This AD results from reports of 10 additional cylinder head separations since issuing AD 2008-19-05, on cylinder serial numbers not listed in that AD. We are issuing this AD to prevent loss of engine power due to cracks at the head-to-barrel interface in the cylinder assemblies and possible engine failure caused by separation of a cylinder head, which could result in loss of control of the aircraft.

Compliance

(f) You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

Engines Overhauled or Cylinder Assemblies Replaced Since New

(g) If your engine was overhauled or had a cylinder assembly replaced since new, do the following:

(1) Before further flight, inspect the maintenance records and engine logbook to determine if the overhaul or repair facility used ECi cylinder assemblies, P/N AEL65102, with cylinder head, PN AEL85099, with a SN 1138-02 through SN 35171-22, or a SN 35239-01 through SN 42179-30, installed.

(2) If the cylinder assemblies are not ECi, P/N AEL65102, no further action is required.

(3) If the cylinder assemblies are ECi, P/N AEL65102, and if the SN is not listed in this AD, no further action is required.

(4) If the cylinder assemblies are ECi, P/N AEL65102, and if the SN is listed in this AD, do the following:

Group "A" Cylinder Assemblies

(i) For Group "A" cylinder assemblies:

(A) Perform an initial visual inspection as specified in paragraphs (h) through (i) of this AD, and an initial compression test as specified in paragraphs (j) through (n) of this AD, within the next 10 operating hours time-in-service (TIS), if the cylinder assembly has 350 or more operating hours TIS on the

effective date of this AD, but fewer than 2,000 operating hours TIS.

(B) Perform an initial visual inspection as specified in paragraphs (h) through (i) of this AD, and an initial compression test as specified in paragraphs (j) through (n) of this AD, within the next 10 operating hours TIS, or before exceeding 350 operating hours TIS, whichever occurs later, if the cylinder assembly has fewer than 350 operating hours TIS on the effective date of this AD.

(C) Replace cylinder assemblies installed in helicopter engines within the next 25 operating hours TIS after the effective date of this AD if the cylinder assembly has 1,500 operating hours TIS or more on the effective date of this AD.

(D) Replace cylinder assemblies installed in airplane engines within the next 25 operating hours TIS after the effective date of this AD if the cylinder assembly has 2,000 operating hours TIS or more on the effective date of this AD.

(E) Perform repetitive visual inspections as specified in paragraphs (h) through (i) of this AD, and repetitive compression tests as specified in paragraphs (j) through (n) of this AD, within every 50 operating hours TIS.

(F) Replace cylinder assemblies installed in helicopter engines that pass the visual inspections and compression tests, no later than 1,500 operating hours TIS after the effective date of this AD.

(G) Replace cylinder assemblies installed in airplane engines that pass the visual inspections and compression tests, no later than 2,000 operating hours TIS after the effective date of this AD.

Group "B" Cylinder Assemblies

(ii) For Group "B" cylinder assemblies:

(A) Perform an initial visual inspection as specified in paragraphs (h) through (i) of this AD, and initial compression test as specified in paragraphs (j) through (n) of this AD, within the next 10 operating hours TIS.

(B) Replace the cylinder assembly within the next 25 operating hours TIS after the effective date of this AD if the cylinder

assembly has 350 or more operating hours TIS on the effective date of this AD.

(C) Replace cylinder assemblies that pass the initial visual inspections and compression tests, before exceeding 350 operating hours TIS after the effective date of this AD.

Visual Inspection

(h) Visually inspect each cylinder head around the exhaust valve side for cracks or any signs of black or white residue of combustion leakage from cracks.

(i) Replace cracked cylinder assemblies before further flight.

Cylinder Assembly Compression Test

(j) Perform a standard cylinder differential compression test.

(k) During the compression test, if the cylinder pressure gauge reads below 70 pounds-per-square-inch, apply a water and soap solution to the side of the leaking cylinder, near the head-to-barrel interface.

(l) Replace the cylinder assembly before further flight if air leakage and bubbles are observed on the side of the cylinder assembly, near the head-to-barrel interface.

(m) Repair or replace the engine cylinder assembly before further flight if the cause of the low gauge reading in paragraph (l) of this AD is from leaking intake or exhaust valves, or from leaking piston rings.

Prohibition of ECi Cylinder Assemblies Affected by This AD

(n) After the effective date of this AD, do not install any ECi cylinder assembly, P/N AEL65102, with cylinder head, P/N AEL85099, with SN 1138-02 through SN 35171-22, or SN 35239-01 through SN 42179-30, onto any engine, and do not attempt to repair or reuse these ECi cylinder assemblies.

Alternative Methods of Compliance

(o) The Manager, Special Certification Office, has the authority to approve alternative methods of compliance for this

AD if requested using the procedures found in 14 CFR 39.19.

Special Flight Permits

(p) Under 14 CFR part 39.23, we will not approve special flight permits for this AD for engines that have failed the visual inspection or the cylinder assembly compression test required by this AD.

Related Information

(q) Contact Peter W. Hakala, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Fort Worth, TX 76193; e-mail: peter.w.hakala@faa.gov; telephone (817) 222-5145; fax (817) 222-5785, for more information about this AD.

Issued in Burlington, Massachusetts, on July 21, 2009.

Peter A. White,

Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. E9-18118 Filed 7-29-09; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2009-0658; Directorate Identifier 2009-NM-058-AD]

RIN 2120-AA64

Airworthiness Directives; McDonnell Douglas Model DC-9-14, DC-9-15, and DC-9-15F Airplanes; and McDonnell Douglas Model DC-9-20, DC-9-30, DC-9-40, and DC-9-50 Series Airplanes

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

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to supersede an existing airworthiness directive (AD) that applies to all McDonnell Douglas Model DC-9-14, DC-9-15, and DC-9-15F airplanes; and McDonnell Douglas Model DC-9-20, DC-9-30, DC-9-40, and DC-9-50 series airplanes. The existing AD currently requires repetitive inspections for cracks of the main landing gear (MLG) shock strut cylinder, and related investigative and corrective actions if necessary. This proposed AD would add more work on airplanes that have main landing gear shock struts with certain identified part numbers. This proposed AD results from two reports of a collapsed MLG and a report of cracks in two MLG cylinders. We are proposing this AD to detect and correct fatigue cracks in the shock strut cylinder of the MLG, which

could result in a collapsed MLG during takeoff or landing, and possible reduced structural integrity of the airplane.

DATES: We must receive comments on this proposed AD by September 14, 2009.

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.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, 3855 Lakewood Boulevard, MC D800-0019, Long Beach, California 90846-0001; telephone 206-544-5000, extension 2; fax 206-766-5683; e-mail dse.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced 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.

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 proposed 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:

Wahib Mina, ANM-120L, FAA, Los Angeles Aircraft Certification Office, 3960 Paramount Boulevard, Lakewood, California 90712-4137; telephone (562) 627-5324; fax (562) 627-5210.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about

this proposed AD. Send your comments to an address listed under the **ADDRESSES** section. Include "Docket No. FAA-2009-0658; Directorate Identifier 2009-NM-058-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD 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 proposed AD.

Discussion

On September 7, 2005, we issued AD 2005-19-08, amendment 39-14273 (70 FR 54616, September 16, 2005), for all McDonnell Douglas Model DC-9-14, DC-9-15, and DC-9-15F airplanes; and McDonnell Douglas Model DC-9-20, DC-9-30, DC-9-40, and DC-9-50 series airplanes. That AD requires repetitive inspections for cracks of the main landing gear (MLG) shock strut cylinder, and related investigative and corrective actions if necessary. That AD resulted from two reports of a collapsed MLG and a report of cracks in two MLG cylinders. We issued that AD to detect and correct fatigue cracks in the shock strut cylinder of the MLG, which could result in a collapsed MLG during takeoff or landing, and possible reduced structural integrity of the airplane.

Actions Since Existing AD Was Issued

Since we issued AD 2005-19-08, the manufacturer revised the service information referenced in that AD, *i.e.*, Boeing Alert Service Bulletin DC9-32A350, Revision 1, dated August 3, 2005, to add more work on airplanes that have shock struts with part numbers 5924400-505 and 5924400-506.

Relevant Service Information

We have reviewed Boeing Alert Service Bulletin DC9-32A350, Revision 2, dated March 20, 2009, which specifies that shock struts having part numbers 5924400-505 and 5924400-506 must be included with those struts that require repetitive non-destructive testing inspections. The remaining actions are otherwise unchanged.

FAA's Determination and Requirements of the Proposed AD

We have evaluated all pertinent information and identified an unsafe