

TABLE 1.—AFFECTED 1ST STAGE FAN BLADES—Continued

Part number	Serial no.
831021-003	NS8719
831021-003	NS8838
831021-003	NT0169
831021-003	NS9584
831021-003	ND6445
831021-003	ND6834
831021-003	ND7467
831021-003	ND8887
831021-003	ND6520
831021-003	NS8611
831021-003	NS7640
831021-003	NN7037
831021-003	NN7590
831021-003	NN8120
831021-003	NN8573
831021-003	NN9719
831021-003	NS8784
831021-003	TB6B367
831021-003	NN9557
831021-003	NN9710
831021-003	NS8374
831021-003	NS8770
831021-003	NS9022
831021-003	NS8416
831021-003	NS6474
831021-003	ND8912
831021-003	NT0108
831021-003	NS8836
831021-003	NN8310

(1) Check the 1st stage fan blade for a circled, letter I, on the approved marking area of the outboard side of the blade platform. If the blade has this marking, no further action is required.

(2) Remove 1st stage fan blades without a circled, letter I, on the approved marking area of the outboard side of the blade platform, if installed.

(3) Send 1st stage fan blades to a source-substantiation-approved repair station, approved by PW, for inspection of the blade root thickness. You can find information on inspecting the blade root thickness in Engine Manual Section 72-31-02, Inspect-01, and Repair-23.

(g) For 1st stage fan blades that pass the inspection referenced in paragraph (f) of this AD:

(1) Vibropeen the letter I and a circle around that letter, on the approved marking area of the outboard side of the blade platform. You can find information on approved blade marking in the JT9D-7R4 Engine Manual, Section 72-31-02, Typical Repair-13, Mark Repair Codes.

(2) Return the 1st stage fan blades to service.

#### Alternative Methods of Compliance

(h) The Manager, Engine 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.

#### Related Information

(i) None.

Issued in Burlington, Massachusetts, on December 16, 2005.

**Peter A. White,**

*Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.*

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## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 39

**[Docket No. FAA-2005-22358; Directorate Identifier 2005-NE-20-AD; Amendment 39-14431; AD 2005-26-10]**

**RIN 2120-AA64**

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

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

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new 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 "Classic Cast", installed. This AD requires replacing these ECi cylinder assemblies. This AD results from reports of about 30 failures of the subject cylinder assemblies marketed by ECi. We are issuing this AD to prevent loss of engine power due to cracks in the cylinder assemblies and possible engine failure caused by separation of a cylinder head.

**DATES:** This AD becomes effective January 31, 2006.

**ADDRESSES:** You may examine the AD docket on the Internet at <http://dms.dot.gov> or in Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC.

#### **FOR FURTHER INFORMATION CONTACT:**

Peter Hakala, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Fort Worth, TX 76193; telephone (817) 222-5145; fax (817) 222-5785.

**SUPPLEMENTARY INFORMATION:** The FAA proposed to amend 14 CFR part 39 with a proposed AD. The proposed AD applies to certain ECi cylinder assemblies, P/N AEL65102 series, with casting P/N AEL65099, installed on Lycoming Engines models 320, 360, and 540 series, parallel valve reciprocating engines. Parallel valve Lycoming

reciprocating engines are identified by the intake and exhaust valves in a parallel configuration. We published the proposed AD in the **Federal Register** on September 9, 2005 (70 FR 53586). That action proposed to require replacing these ECi cylinder assemblies.

#### **Examining the AD Docket**

You may examine the docket that contains the AD, any comments received, and any final disposition in person at the Docket Management Facility Docket Office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The Docket Office (telephone (800) 647-5227) is located on the plaza level of the Department of Transportation Nassif Building at the street address stated in **ADDRESSES**. Comments will be available in the AD docket shortly after the DMS receives them.

#### **Comments**

We provided the public the opportunity to participate in the development of this AD. We have considered the comments received.

#### **Request To Extend the Proposed AD Comment Period**

One commenter, a law office representing ECi, requests we extend the proposed AD comment period an additional 90 days. We do not agree. We have worked with ECi for the past four years regarding the safety and airworthiness issues with the affected ECi cylinder assemblies. ECi is very familiar with the problems with these cylinder assemblies. ECi published Service Bulletin No. 05-08, dated September 1, 2005, for the identification and warranty of the affected cylinder assemblies. Evidence of ECi's awareness of the problem is confirmed by the extensive correspondence with the FAA regarding the service difficulties with P/N AEL65102 "Classic Cast" cylinder assemblies. For these reasons, and because of the minimal amount of comments received (two) on the proposed AD, we find it unnecessary to extend the proposed AD comment period.

#### **Request To Allow Cylinder Assembly Removal at Normal Operating Time-Between-Overhaul**

One commenter, ECi, requests that we allow affected cylinder assemblies to be removed at the normal engine operating time-between-overhaul. We do not agree. We have carefully reviewed ECi's request. Both ECi and the FAA participated in the Alloytek Metallurgical Services, Inc. examination and analysis. The examination and

analysis showed that the failure mode of the ECI cylinder assemblies, P/N AEL65102, is most likely due to metal fatigue. The proposed AD required replacing affected cylinder assemblies at no later than 800 operating hours-in-service. The failure data records show that a longer operating time for the affected cylinder assemblies would jeopardize aircraft safety. We have not changed the AD.

**Conclusion**

We have carefully reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting the AD as proposed.

**Costs of Compliance**

There were 9,879 ECI cylinder assemblies produced of the affected design available to the worldwide fleet. ECI reported that about fifteen percent of their cylinder assemblies go to foreign countries. We estimate ten percent of the remaining cylinders were never installed or are already removed from service, leaving 7,557 cylinder assemblies in service in the United States. We estimate that 1,574 Lycoming engines are in the United States with the subject cylinder assemblies installed. We estimate that it will take about two work hours per engine to perform the aircraft inspections of the cylinder assemblies for applicability, and that the average labor rate is \$65 per work hour. From the Lycoming Engines "Removal and Installation Labor Allowance Guidebook", dated May 2000, the complete cylinder replacement for a four cylinder engine takes 12 hours, while the complete cylinder replacement for a six cylinder engine takes 16 hours. Required parts will cost about \$1,000 per cylinder assembly. Based on these figures, we estimate that the total cost of the AD to U.S. operators to be \$9,152,140. ECI indicated that they

might give operators and repair stations credit for returned cylinder assemblies toward the purchase of new ECI cylinder assemblies.

**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 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 DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
- (3) Will 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 summary of the costs to comply with this AD and placed it in the AD Docket. You may get a copy of this summary at the address listed under ADDRESSES.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Safety.

**Adoption of the Amendment**

- Accordingly, under the authority delegated to me by the Administrator, the Federal Aviation Administration amends 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:

**2005-26-10 Engine Components**

**Incorporated (ECi):** Amendment 39-14431. Docket No. FAA-2005-22358; Directorate Identifier. 2005-NE-20-AD.

**Effective Date**

- (a) This airworthiness directive (AD) becomes effective January 31, 2006.

**Affected ADs**

- (b) None.

**Applicability**

- (c) This AD applies to Lycoming Engines (formerly Textron Lycoming) models 320, 360, and 540 series, parallel valve, reciprocating engines specified in Table 1 of this AD, with Engine Components Inc. (ECi) cylinder assemblies, part number (P/N) AEL65102 series "Classic Cast", with casting P/N AEL65099 and serial numbers (SNs) 1 through 9879, installed.

TABLE 1.—ENGINE MODELS

Cylinder head part number:	Installed on engine models
AEL65102-NST04 ...	O-320-A1B, A2B, A2C, A2D, A3A, A3B, B2B, B2C, B3B, B3C, C2B, C2C, C3B, C3C, D1A, D1AD, D1B, D1C, D1D, D1F, D2A, D2B, D2C, D2F, D2G, D2H, D2J, D3G, E1A, E1B, E1C, F1F, E1J, E2A, E2B, E2C, E2D, E2E, E2F, E2G, E2H, E3D, E3H IO-320-A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, C1B, D1A, D1AD, D1B, D1C, E1A, E1B, E2A, E2B AEIO-320-D1B, D2A, D2B, E1A, E1B, E2B AIO-320-A1A, A1B, A2A, A2B, B1B, C1B LIO-320-B1A
AEL65102-NST05 ...	O-320-C1A, C1F, F1A LIO-320-C1A
AEL65102-NST06 ...	O-320-A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A, E2C
AEL65102-NST07 ...	O-320-A2A, B1A, B1B
AEL65102-NST08 ...	O-320-C1A, C1B, C2A, C2B, C3A, C2B, C3C
AEL65102-NST10 ...	O-360-A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, C1A, C1C, C1G, C2A, C2B, C2C, C2D, B1A, B1B, B2A, B2B, D1A, D2A, D2B IO-360-B1A, B1B, B1C

TABLE 1.—ENGINE MODELS—Continued

Cylinder head part number:	Installed on engine models
AEL65102—NST12 ...	HO—360—A1A, B1A, B1B HIO—360—B1A, B1B AEIO—360—B1B AEIO—540—A1A, A1A5, A1B5, A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5, B1B5, B1C5, B2C5D, B4A5, B4A5D, D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5 IO—540—C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5, N1A5, N1A5D O—360—A1A, A1AD, A1C, A1D, A1F, A1F6, A1F6D, A1G, A1G6, A1G6D, A1H, A1H6, A1J, A1LD, A2A, A2D, A2F, A2G, A2H, A3A, A3AD, A3D, A4A, A4AD, A4D, A4G, A4J, A4JD, A4K, A4M, A4N, A5AD, B1A, C1A, C1E, C1F, C1G, C2A, C2B, C2C, C2D, C2E, D2A, F1A6, G1A6 TIO—360—A1A6D LTO—360—A1A6D IO—360—A1G6D, A1H6, B1B, B1BD, B1D, B1E, B1F, B1F6, B2E, B2F, B2F6, B4A, E1A, E4A, F1A IHO—360—B1A, B1B AEIO—360—B1B, B1D, B1F, B1F6, B1G6, B2F, B2F6, B4A, H1A O—540—A4D5, B2B5, B2C5, B2C5D, B4B5, B4B5D, E4A5, E4B5, E4B5D, E4C5, G1A5, G1A5D, G2A5, H1A5, H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D IO—540—C4A5, C4B5, C4B5D, C4D5D, D4A5, D4B5, D4C5, N1A5, T4A5, T4A5D, T4B5D, T4C5D, V4A5D AEIO—540—D4A5, D4B5, D4C5 IO—540—J4A5, R1A5 TIO—540—C1A, E1A, G1A, H1A (T)IO—360—F1A TIO—360—AA1AD, AB1AD, C1A, C1AD, AF1A, K1AD LTIO—540—K1AD O—540—J1A5D, J1B5D, J1C5D, J1D5D, J2A5D, J2B5D, J2C5D, J3A5, J3A5D, J3C5D IO—540—L3C5D, W1A5D, W3A5D O—540—L3C5D
AEL65102—NST26 ...	
AEL65102—NST38 ...	
AEL65102—NST43 ...	
AEL65102—NST44 ...	

For information, the subject 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

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) Dinfia: Ranquel (1A—46) Neiva: (1PD—5802) Sud: Gardan-Horizon (GY—80) LaVerda: Falco (F8L Series II, America) Malmo: Vipar (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—22Varga: 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) Corben-Fettes: Globe Special (Globe GC—1B)
O—320—A3B .....	Piper Aircraft: Apache (PA—23) Doyn Aircraft: Doyn-Cessna (170, 170A, 170B)

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

O-320-B1A	Teal II: TSC (1A2) Piper Aircraft: Apache (PA-23 "160") Doyn Aircraft: Doyn-Cessna (170, 170A, 170B) Malmo: Vipan (MF1-10)
O-320-B1B	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 Avioliight: 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), Bucker (131 APM) Aeromot: Paulistina P-56 Pezetel: Koliber 150
O-320-E2C	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
O-320-H2AD	Cessna Aircraft: Skyhawk 172 Partenavia: P-66C
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)

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

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: Decathalon (8KCAB-CS)
AEIO-320-E2B .....	Bellanca Aircraft Champion Aircraft: Decathalon (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) Bolkow: (207) Partenavia: Oscar (P-66) Siai-Marchetti: (S-205) Procaer: Picchio (F-15-A) S.A.A.B.: Safir (91-D) Malmo: Vipar (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: Vipar (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 Teal III: TSC (1A3)
O-360-A1G6 .....	Aero Commander
O-360-A1G6D .....	Beech Aircraft: Duchess 76
O-360-A1H6 .....	Piper Aircraft: Seminole (PA-44)
O-360-A1LD .....	Wassmer: Europa WA-52
O-360-A1P .....	Aviat: Husky
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) Bolkow: 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: Aiglou (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

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

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-E1A6D .....	Piper Aircraft: Seminole (PA-44 "180")
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
AIO-360-B1B .....	Moravan: Zlin (Z-526-L)
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 Decathlon (8KCAB-180)
AEIO-360-H1B .....	American Champion: Super Decathlon
TO-360-C1A6D .....	Avions Pierre Robin Partenavia Rockwell: 112TC
TO-360-F1A6D .....	Maule: Star Rocket (M-5-210TC)
TIO-360-C1A6D .....	Partenavia: P68C-TC
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)
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 "150") 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)

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

O-540-A3D5 .....	Piper Aircraft: Navy Aztec (PA-23 "250")
O-540-B1A5 .....	Piper Aircraft: Apache (PA-23 "235")
O-540-B1B5 .....	Piper Aircraft: Cherokee (PA-24 "250")
O-540-B1D5 .....	Doyn Aircraft: Doyn-Piper (PA-24 "250")
O-540-B2B5 .....	Wassmer: (WA-421)
O-540-B2B5 .....	Piper Aircraft: Pawnee (PA-24 "235"), Cherokee (PA-28 "235"), Aztec (PA-23 "235")
O-540-B2C5 .....	Intermountain Mfg. Co.: Call Air (A-9)
O-540-B4B5 .....	Rawdon Bros.: Rawdon (T-1)
O-540-B4B5 .....	S.O.C.A.T.A.: Rallye 235CA
O-540-B4B5 .....	Piper Aircraft: Pawnee (PA-24 "235")
O-540-B4B5 .....	Piper Aircraft: Cherokee (PA-28 "235")
O-540-E4A5 .....	Embraer: Corioca (EMB-710)
O-540-E4A5 .....	S.O.C.A.T.A.: Rallye 235GT, Rallye 235C
O-540-E4A5 .....	Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235)
O-540-E4B5 .....	Piper Aircraft: Comanche (PA-24 "260")
O-540-E4B5 .....	Aviamilano: Flamingo (F-250)
O-540-E4B5 .....	Siai-Marchetti: (SF-260), (SF-208)
O-540-E4C5 .....	Britten-Norman: (BN-2)
O-540-E4C5 .....	Piper Aircraft: Cherokee Six (PA-32 "260")
O-540-F1B5 .....	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-G1A5 .....	Omega Aircraft: (BS-12D1)
O-540-H1B5D .....	Robinson: (R-44)
O-540-H2A5 .....	Piper Aircraft: Pawnee (PA-25 "260")
O-540-H2B5D .....	Aero Boero: 260
O-540-H2B5D .....	Embraer: Impanema "AG"
O-540-H2B5D .....	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
IO-540-C4D5 .....	Wassmer: (WA4-21)
IO-540-C4D5 .....	Avions Pierre Robin: (HR100/250)
IO-540-C4D5D .....	Bellanca Aircraft: Aries T-250
IO-540-C4D5D .....	Aerofab: Renegade 250
IO-540-D4A5 .....	S.O.C.A.T.A.: TB-20
IO-540-D4A5 .....	S.O.C.A.T.A.: Trinidad TB-20
IO-540-D4B5 .....	Piper Aircraft: Comanche (PA-24 "260")
IO-540-D4B5 .....	Siai-Marchetti: (SF-260)
IO-540-J4A5 .....	Cerva: (CE-43 Guepard)
IO-540-R1A5 .....	Piper Aircraft: Aztec (PA-23 "250")
IO-540-T4A5D .....	Piper Aircraft: Comanche (PA-24)
IO-540-T4B5 .....	General Aviation: Model 114
IO-540-T4B5D .....	Commander: 114B
IO-540-T4C5D .....	Rockwell: 114
IO-540-V4A5 .....	Lake Aircraft: Seawolf
IO-540-V4A5D .....	Maule: MT-7-260, M-7-260
IO-540-W1A5 .....	Aircraft Manufacturing Factory
IO-540-W1A5D .....	Brooklands: Scoutmaster
IO-540-W3A5D .....	Maule: MX-7-235, MT-7-235, M7-235
AEIO-540-D4A5 .....	Maule: Star Rocket (MX-7-235), Super Rocket (M-6-235), Super Std. Rocket (M-7-235)
AEIO-540-D4B5 .....	Schweizer: Power Glider
AEIO-540-D4B5 .....	Christen: Pitts (S-2S), S-2B)
AEIO-540-D4B5 .....	Siai-Marchetti: SF-260
AEIO-540-D4B5 .....	H.A.L.: HPT-32
AEIO-540-D4B5 .....	Slingsby: Firefly T3A
AEIO-540-D4B5 .....	Moravan: Zlin-50L
AEIO-540-D4D5 .....	H.A.L.: HPT-32
TIO-540-C1A .....	Burkhart Grob: Grob G, 115T Aero
TIO-540-K1AD .....	Piper Aircraft: Turbo Aztec (PA-23-250)
TIO-540-AA1AD .....	Piper Aircraft
TIO-540-AB1AD .....	Aerofab Inc.: Turbo Renegade (270)
TIO-540-AB1BD .....	S.O.C.A.T.A.: Trinidad TC TB-21
TIO-540-AF1A .....	Schweizer
TIO-540-AF1B .....	Mooney Aircraft: "TLS" M20M
TIO-540-AG1A .....	Mooney Aircraft: "TLS" M20M
TIO-540-AK1A .....	Commander Aircraft: 114TC
TIO-540-AK1A .....	Cessna Aircraft: Turbo Skylane T182T

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

LTIO-540-K1AD ..... Piper Aircraft

**Unsafe Condition**

(d) This AD results from reports of about 30 failures of the subject cylinder assemblies marketed by ECI. We are issuing this AD to prevent loss of engine power due to cracks in the cylinder assemblies and possible engine failure caused by separation of a cylinder head.

**Compliance**

(e) 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 Not Repaired or Overhauled Since New**

(f) If your engine has not been overhauled or had any major repair since new, no further action is required.

**Engines Overhauled or Repaired Since New**

(g) If your engine was overhauled or repaired since new, do the following:

(1) Determine if ECI cylinder assemblies, P/N AEL65102 series "Classic Cast", with casting P/N AEL65099 and SNs 1 through 9879 are installed on your engine, as follows:

(i) Inspect the engine log books and maintenance records for reference to the subject ECI cylinder assemblies.

(ii) If the engine log books and maintenance records did not record the P/N and SN of the cylinder assemblies, visually inspect the cylinder assemblies and verify the P/N and SN of the cylinder assemblies.

(2) If the cylinder assemblies are not ECI, P/N AEL65102 series "Classic Cast", with casting P/N AEL65099, no further action is required.

(3) If any cylinder assembly is an ECI P/N AEL65102 series "Classic Cast", with casting P/N AEL65099 and a SN 1 through 9879, do the following:

(i) If the cylinder assembly has fewer than 800 operating hours-in-service (HIS) on the effective date of this AD, replace the cylinder assembly at no later than 800 operating HIS. No action is required until the operating HIS reaches 800 hours.

(ii) If the cylinder assembly has 800 operating HIS or more on the effective date of this AD, replace the cylinder assembly within 60 operating HIS after the effective date of this AD.

**Definition of a Replacement Cylinder Assembly**

(h) For the purpose of this AD, a replacement cylinder assembly is defined as follows:

(1) A serviceable cylinder assembly made by Lycoming Engines.

(2) A serviceable FAA-approved, Parts Manufacturer Approval cylinder assembly from another manufacturer.

(3) A serviceable ECI cylinder assembly, P/N AEL65102 series, "Titan", with casting P/N AEL85009.

(4) A serviceable ECI cylinder assembly, P/N AEL65102 series, with casting P/N AEL65099, that has a SN 9880 or higher.

**Prohibition of Cylinder Assemblies, P/N AEL65102 Series "Classic Cast", With Casting P/N AEL65099 and SNs 1 Through 9879**

(i) After the effective date of this AD, do not install any ECI cylinder assembly, P/N AEL65102, with casting P/N AEL65099 that has a SN 1 through 9879, onto any engine.

**Alternative Methods of Compliance**

(j) 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.

**Related Information**

(k) ECI Service Bulletin No. 05-08, dated September 1, 2005, pertains to the subject of this AD.

Issued in Burlington, Massachusetts, on December 19, 2005.

**Peter A. White,**

*Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.*

[FR Doc. 05-24449 Filed 12-23-05; 8:45 am]

**BILLING CODE 4910-13-P**

**DEPARTMENT OF TRANSPORTATION****Federal Aviation Administration****14 CFR Part 97**

[Docket No. 30472; Amdt. No. 3147]

**Standard Instrument Approach Procedures; Miscellaneous Amendments**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** This amendment amends Standard Instrument Approach Procedures (SIAPs) for operations at certain airports. These regulatory actions are needed because of changes occurring in the National Airspace System, such as the commissioning of new navigational facilities, addition of new obstacles, or changes in air traffic requirements. These changes are designed to provide safe and efficient use of the navigable airspace and to promote safe flight operations under instrument flight rules at the affected airports.

**DATES:** This rule is effective December 27, 2005. The compliance date for each

SIAP is specified in the amendatory provisions.

The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of December 27, 2005.

**ADDRESSES:** Availability of matter incorporated by reference in the amendment is as follows:

*For Examination—*

1. FAA Rules Docket, FAA Headquarters Building, 800 Independence Ave., SW., Washington, DC 20591;

2. The FAA Regional Office of the region in which affected airport is located; or

3. The National Flight Procedures Office, 6500 South MacArthur Blvd., Oklahoma City, OK 73169 or,

4. 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](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

*For Purchase—*Individual SIAP copies may be obtained from:

1. FAA Public Inquiry Center (APA-200), FAA Headquarters Building, 800 Independence Avenue, SW., Washington, DC 20591; or

2. The FAA Regional Office of the region in which the affected airport is located.

*By Subscription—*Copies of all SIAPs, mailed once every 2 weeks, are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

**FOR FURTHER INFORMATION CONTACT:**

Donald P. Pate, Flight Procedure Standards Branch (AFS-420), Flight Technologies and Programs Division, Flight Standards Service, Federal Aviation Administration, Mike Monroney Aeronautical Center, 6500 South MacArthur Blvd., Oklahoma City, OK 73169 (Mail Address: P.O. Box 25082 Oklahoma City, OK 73125) telephone: (405) 954-4164.

**SUPPLEMENTARY INFORMATION:** This amendment to Title 14, Code of Federal Regulations, Part 97 (14 CFR part 97) amends Standard Instrument Approach Procedures (SIAPs). The complete regulatory description of each SIAP is contained in the appropriate FAA Form 8260, as modified by the the National Flight Data Center (FDC)/Permanent