### 中国民用航空局



# CAAC 适 航 指 令

#### AIRWORTHINESS DIRECTIVE

本指令根据中国民用航空规章《民用航空器适航指令规定》(CCAR-39)颁发,内容涉及飞行安全,是强制性措施。如不按规定完成,有关航空器将不再适航。

编号: CAD2008-MULT-48R1

修正案号: 39-6529

一. 标题: Engine Components 公司(ECi)活塞发动机气缸组件

#### 二. 适用范围:

如果发动机自新没有进行过大修,或者从未更换过气缸组件,则 无需进一步行动。

本适航指令适用于表1中列出的Lycoming公司(原Textron Lycoming)生产的320、360和540系列"并联活门"(Parallel Valve)活塞发动机。这些发动机装有ECi公司件号为(P/N) AEL65102系列"Titan"气缸组件,气缸头件号P/N AEL85099。

- (1) 适用的气缸组件序列号为SN 1138-02到SN 35171-22(本指令中称之为"A"组气缸组件);和
  - (2) SN 35239-01到SN 42179-30(本指令中称之为"B"组气缸组件)。
- (3) 注意气缸组件的件号在靠近曲轴箱的一端,可能不太容易看到。所有受影响的气缸组件的气缸头件号都是P/N AEL85099,这可以作为确定气缸组件是否受影响的参考。气缸头的件号在气缸头的顶端,靠近进、排气活门弹簧,比气缸组件的件号容易确定。
- (4) 注意气缸上在序列号上方左侧形式为"123456"的一串数字,不用于适用性的确定。

### 表1 发动机型号

气缸组件件号	装于发动机的型号
AEL65102-NST04	<b>O-320</b> -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;
	<b>IO-320</b> -A1A, A2A, B1A, B1B, B1C, B1D, B1E, B2A, D1A, D1AD,
	D1B, D1C, E1A, E1B, E2A, E2B; <b>AEIO-320</b> -D1B, D2B, E1A, E1B,
	E2A, E2B; <b>AIO-320</b> -A1A, A1B, A2A, A2B, B1B, C1B;
	LIO-320-B1A
AEL65102-NST05	IO-320-C1A, C1B, C1F, F1A; LIO-320-C1A
AEL65102-NST06	<b>O-320</b> -A1A, A2A, A2B, A2C, A3A, A3B, A3C, E1A, E1B, E2A,
	E2C, (also, an O-320 model with no suffix); IO-320-A1A, A2A
AEL65102-NST07	IO-320- B1A, B1B; LIO-320- B1A
AEL65102-NST08	<b>O-320</b> -B1A, B1B, B2A, B2B, B3A, B3B, B3C, C1A, C1B, C2A,
	C2B, C3A, C3B, C3C, D1A, D1B, D2A, D2B, D2C
AEL65102-NST10	<b>O-360</b> -A1A, A1C, A1D, A2A, A2E, A3A, A3D, A4A, B1A, B1B,
	B2A, B2B, C1A, C1C, C1G, C2A, C2B, C2C, C2D, D1A, D2A,
	D2B; <b>IO-360</b> -B1A, B1B, B1C; <b>HO-360</b> -A1A, B1A, B1B;
	HIO-360-B1A, B1B; AEIO-360-B1B; O-540-A1A, A1A5, A1B5,
	A1C5, A1D, A1D5, A2B, A3D5, A4A5, A4B5, A4C5, A4D5, B1A5,
	B1B5, B1D5, B2A5, B2B5, B2C5, B2C5D, B4A5, B4B5, B4B5D,
	D1A5, E1A, E4A5, E4B5, E4C5, F1A5, F1B5, G1A5, G2A5;
	<b>IO-540</b> -C1B5, C1C5, C2C, C4B5, C4B5D, C4C5, D4A5, D4B5,
	N1A5, N1A5D
AEL65102-NST12	<b>O-360</b> - 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; <b>HO-360</b>
	-C1A; <b>LO-360</b> -A1G6D, A1H6; <b>HIO-360</b> -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; <b>AEIO-360</b> -B1B, B1D, B1E, B1F, B1F6, B1G6, B1H, B2F,
	B2F6, B4A, H1A, H1B; <b>O-540</b> -A4D5, B2B5, B2C5, B2C5D, B4B5,
	B4B5D, E4A5, E4B5, E4B5D, E4C5, G1A5, G1A5D, G2A5, H1A5,
	H1A5D, H1B5, H1B5D, H2A5, H2A5D, H2B5D; <b>IO-540</b> -C4B5,
	C4B5D, C4D5, C4D5D, D4A5, D4B5, D4C5, N1A5, N1A5D,
	T4A5D, T4B5, T4B5D, T4C5D, V4A5, V4A5D; <b>AEIO-540</b> -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; <b>LTIO-540</b> -K1AD
AEL65102-NST43	<b>O-360</b> -J2A; <b>O-540</b> -F1B5, J1A5D, J1B5D, J1C5D, J1D5D, J2A5D,
	J2B5D, J2C5D, J2D5D, J3A5, J3A5D, J3C5D; <b>IO-540</b> -AB1A5,
	W1A5, W1A5D, W3A5D
AEL65102-NST44	<b>O-540</b> -L3C5D

Lycoming公司(原Textron Lycoming)生产的320、360和540系列"并联活门"活塞发动机装于但不限于表2中所列的飞机:

表2 发动机装于但不限于

发动机型号	装于但不限于
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: 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); Corben-Fettes:
	Globe Special (Globe GC-1B)
O-320-A3B	Piper Aircraft: Apache (PA-23); Doyn Aircraft: Doyn-Cessna (170,
	170A, 170B); Teal II: TSC (1A2)
O-320-B1A	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; 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), 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
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	Hundustan 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: 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; 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 Aeroplace 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; Beech Aircraft: Sundowner 180
O-360-A4M	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)
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: Corioca
	(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
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

#### 三. 参考文件:

1. FAA AD No. 2009-26-12, 39-16151.

#### 四. 原因、措施和规定

本指令源于自颁发CAD2008-MULT-48(FAA AD No. 2008-19-05)以来10起气缸组件气缸头分离的报告,气缸的序列号没有在该指令中列出。颁发本指令是为了防止气缸组件在气缸头和气缸桶交界处的裂纹导致功率损失,避免由气缸头分离造成发动机失效,该失效可能引起飞机失控。

除非事先已经完成,否则必须在规定的时间内完成本适航指令的要求:

#### 1. 自新曾经大修过或更换过气缸组件的发动机

如果发动机自新曾经进行过大修或更换过气缸组件,则完成以下 工作:

- (1) 在下次飞行之前,检查维修记录和发动机履历本,以确定修理厂是否使用了ECi的气缸组件,件号为P/N AEL65102,气缸头件号P/N AEL85099,序列号为SN 1138-02到SN 35171-22或SN 35239-01到SN 42179-30。
- (2) 如果气缸组件不是ECi的,件号为P/N AEL65102,无需进一步行动。
- (3) 如果气缸组件是ECi的,件号为P/N AEL65102,但序列号不在本指令所列的范围内,无需进一步行动。
- (4) 如果气缸组件是ECi的,件号为P/N AEL65102,而且序列号在本指令所列的范围内,完成以下工作:
  - (i) "A"组气缸组件, 序列号SN 1138-02到SN 35171-22:
- (A) 如果在本指令生效之日,气缸组件已经有350运行小时(服役时间)(TIS)或以上,但不到2000运行小时(TIS),则在10运行小

时(TIS)之内,按照本指令第2段和第3段的规定进行初始目视检查和初始加压测试。

- (B) 如果在本指令生效之日,气缸组件不到350运行小时(TIS),则在10运行小时(TIS)之内,或在超出350运行小时(TIS)之前,以先到为准,按照本指令第2段和第3段的规定进行初始目视检查和初始加压测试。
- (C) 装在直升机发动机上的气缸组件,如果在本指令生效之日已经有1500运行小时(TIS)或以上,则在本指令生效后下一个25运行小时(TIS)之内更换气缸组件。
- (D) 装在固定翼飞机发动机上的气缸组件,如果在本指令生效之目已经有2000运行小时(TIS)或以上,则在本指令生效后下一个25运行小时(TIS)之内更换气缸组件。
- (E) 每50运行小时(TIS)按照本指令第2段和第3段的规定进行重复目视检查和加压测试。
- (F) 装在直升机发动机上的气缸组件,如果通过了目视检查和加压测试,则在本指令生效后1500运行小时(TIS)之内进行更换。
- (G) 装在固定翼飞机发动机上的气缸组件,如果通过了目视检查和加压测试,则在本指令生效后2000运行小时(TIS)之内进行更换。
  - (ii) "B"组气缸组件, SN 35239-01到SN 42179-30:
- (A) 在10运行小时(TIS)之内,按照本指令第2段和第3段的规定进行初始目视检查和初始加压测试。
- (B) 如果在本指令生效之日,气缸组件已经有350运行小时(TIS)或以上,则在本指令生效后下一个25运行小时(TIS)之内更换气缸组件。
- (C) 本指令生效后,在超过350运行小时(TIS)之前,更换已通过目视检查和加压测试的气缸组件。

### 2. 目视检查

- (1) 目视检查每个气缸的排气活门一侧,看是否有裂纹或任何黑色或白色燃烧残余物从裂纹渗出的痕迹。
  - (2) 在下次飞行之前更换出现裂纹的气缸组件。

### 3. 气缸组件加压测试

(1) 进行标准气缸压差测试。

- (2) 加压测试期间,如果气缸压力表读数低于70psi,则在气缸头和气缸桶交界处附近涂上肥皂水。
  - (3) 如果发现气泡,则在下次飞行之前更换气缸组件。
- (4) 对于"A"组气缸组件,如果是因为进、排气活门或活塞环泄漏导致压力表读数低,则在下次飞行之前修理或更换发动机气缸组件。

#### 4. 禁止安装受本指令影响的"B"组ECi气缸组件

自本指令生效之日起,不要在发动机上安装"B"组ECi的气缸组件,件号为P/N AEL65102,也不要试图修理或再次使用这些气缸组件。

完成本指令可采取能保证安全的替代方法或调整完成时间,但必须得到适航当局的批准。

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