LUFTFARTSDIREKTORATET
Avd. for Luftfartsinspeksjon
FORNEBU-OSLO/Dep.
Tlf.: Oslo (02) 12 13 ..
Adr.: LUFTFAVA
Tlgr.: CIVILAIR OSLO
Telex: 11332 Oslo

LUFTDYKTIGHETSPÅBUD

(LDP)

CONTINENTAL
SAMMENDRAG
1946 - 1970

Med hjemmel i lov om luftfart av 16. desember 1960 § 47, 2. ledd og § 214, Kgl. res av 8. desember 1961, Titra K og Samferdselsdepartementets brev datert 23. mars 1964, fastsetter Luftfartsdirektoratet følgende forskrift.

1/50 INSPEKSJON PÅ CONTINENTAL MOTOR

Modell C 75, C 85 og C 90, serie 12 og 12 F
" C 125 og C 145

Kontroll eller utbytting av generatorkoplingen

På ovenstående modeller av Continental motorer er brukt én av tre forskjellige generatorkoplinger. Den første type kopling har ikke metallkapsel omkring gummiskiven og trenger ekstra kontroll.

Luftfartsdirektoratet pålegger eiere (leiere) av ovenstående motorer å lese Continental Service Bulletin M 49 - 4, datert 15. april 1949, og bestemmer at følgende kontroll skal utføres på motorer som har den første type kopling:

Generatorkoplingen ("Rubber Disc Part No. 22348") skal kontrolleres før neste flyging og senere ved hvert 100 timers ettersyn.

Hvis det blir oppdaget gummiliknende partikler på oljefilteret, skal generatorkoplingen kontrolleres med en gang.

2/59 FORANDRING AV UTLUFTNINGSRØRET FRA VEIVHUSET PÅ CONTINENTAL OG ROLLS ROYCE MOTORER A-50, A-65, C-75, C-85, C-90 OG O-200

På grunn av inntrufne tilfelle av igjenisning av utluftningsrøret fra veivhuset på Continental motorer, som har hatt til følge tap av olje, bestemmer Luftfartsdirektoratet følgende:

Rørbendet på veivhuset skrues 1/4 omdreining, slik at åpningen peker bakover. Nytt rør monteres så det blir liggende over sylinderne og bøyd rett ned bak bakre sylinder. Røret kuttes ca. 5 cm over motorens bunndeksel.

Denne forandring må utføres så snart som mulig hvis den ikke allerede er utført.

Ref.: LVA 3/1959

3/61 NY EKSHAUSTVENTIL FOR CONTINENTAL MOTORER

På Continental motorer skal heretter ekshaustventilene på motorer av typene E 165, E 185, E 225 og O-470 være av type CMC.P/N 626540.

Ved neste heloverhaling eller toppoverhaling - det som kommer først - må ventiltypen kontrolleres og ventiler av typene CMC, P/N 40651, 537884, 538997 og 539449 skiftes ut med CMC P/N 626540. Den riktige type - P/N 626540 - kjennetegnes ved:

1) Delnummeret på oversiden av hodet.
2) Bokstaven H eller en trekant 0,06" (1,5 mm) høy stemplet eller etset på to steder diamentralt motsatt på ventilstammen mellom sporet for ventillåsen og enden av ventilen.

FAA Airworthiness Directive 61-3-2 og Continental Service Bulletin No. M60-1 handler om samme sak.

5/62 VENTILVIPPER I CONTINENTAL MOTORER

Det viser seg at på motorer av typene Continental C-75, C-85, C-90 O-200, C-145 og GO-300 kan underkanten av ventilvippen komme bort i fjærholderen. Følgen kan være at konusene faller ut og ventilen faller inn i sylinderen, slik at man får et motorhavari. Det er meldt om et par slike tilfelle.

Luftfartsdirektoratet bestemmer derfor at klaringen mellom ventilvippen og fjærholderen skal kontrolleres snarest mulig og senest ved neste 25 timers ettersyn. Klaringen skal være minst 0,020 tommer = 0,5 mm. Hvis klaringen er mindre, må det nøye kontrolleres om det er merker etter at de to deler har berørt hverandre. Har de det, må fjærholderen tas av for kontroll, eventuelt utskiftes. Det skal gjøres notat om at klaringen er kontrollert i motorjournalen.

Luftfartsdirektoratet vil ikke fastsette noen periode for gjentakelse av kontrollen, men eierne bør i egen interesse holde klaringen under observasjon, spesielt i forbindelse med at sylindrene er tatt av, ventilklaringer justert og liknende.

Continental Service Bulletin No. M61-11 omtaler samme sak og gir mer detaljerte henvisninger.

2/68 KONTROLL AV LÅSEPLATER FOR KONTRAVEKT-PIN PÅ CONTINENTAL IO-360

CANCELLED

Alle IO-360-A, IO-360-C fra serie nr. 50884 og IO-360-D før serie nr. 55652 berøres av denne kontroll.

På grunn av inntrufne tilfeller av at låseplaten for veivakselens kontravekt-pin's part nr. 628979 slites gjennom toppen av veivakselens kontravekt har Luftfartsdirektoratet bestemt at ny type låseplate med part nr. 633976 monteres ved første overhaling av motoren, eller hvis sylinder nr. 1 eller sylinder nr. 2 er avmontert av andre grunner før den tid. Inntil motoroverhaling eller skifting

av låseplaten må følgende inspeksjon utføres:

1. Demonter vindplugg for timing plassert ved siden av sylinder nr. 2.

2. Roter veivakselen sakte rundt og gjennom timing-hullet, kontroller i området rundt toppen og på begge sider av veivakselens kontravekt.

3. Hvis grad eller antydning til kant observeres er dette en indikasjon på at låseplaten har begynt å slite seg gjennom kontravekten. Ved et slikt tilfelle, demonter sylinder nr. 1 eller sylinder nr. 2 og skift kontravekt og låseplate.

Inspeksjonen skal utføres snarest og ikke senere enn ved første 25-timers ettersyn og deretter ved hver 100 timers ettersyn.

Ny type plate med part nr. 633976 vil hindre denne feil, og videre kontroll er derfor ikke nødvendig.

Cessna Service Letter 67-57, Item nr. 2 og Continental Service Bulletin M67-7 omhandler samme sak.

18/69 UTSKIFTING AV DREV I RETUROLJEPUMPEN PÅ CONTINENTAL TSIO-520

Forandringen gjelder følgende motorer:

TSIO-520-B med S/N. 145001 til og med 145618
TSIO-520-D " " 156001 " " " 156103
TSIO-520-E " " 165001 " " " 165493
pluss 165496 og 165497.

Unntatt fra disse er eventuelle motorer som har starteradapter og lensepumpe med P/N. 635061-A1.

På grunn av forekommende sprekkdannelser i lensepumpens drev, bestemmer Luftfartsdirektoratet at følgende forandring av pumpen skal utføres på de angjeldende motorer ved første 100 timers ettersyn:

1. Pumpen demonteres og drevet P/N. 632597, som har kilespor skiftes ut med nytt drev, P/N. 636251. Kile med P/N. MS. 35756-3 skiftes ut med P/N. 35756-3.

2. Bor et hull med diameter 3/32" i bunn av fordypningen i pumpedekslet midt mellom opplagringssentrene for begge drev. Hullet skal være 5/16" dypt, og det må påses at det treffer den eksisterende oljekanal i dekslet.

3. Nødvendige reservedeler fås etter henvendelse til representanten for Continental ved å oppgi motorens serienummer og gangtid.

4. Pumpen må monteres igjen etter anvisning i Service Bulletin, Rolls-Royce No. T-148 og Continental No. M 69-8, datert 25. september 1969.

Ved heloverhaling av disse motorer skal en av de to nedenfor nevnte forandringer utføres:

A. Monter starteradapter med S/N. 635061-A1, eller

B. Overhal starteradapter og lensepumpen og innmonter følgende nye deler:

   a. Drivaksel P/N. 635335
   b. Lensepumpedrev P/N. 635330 (drivende drev)
   c. Lensepumpedrev P/N. 635334 (drevne drev)
   d. Lensepumpedeksel P/N. 635332.

Ref.: FAA AD 69-18-5 og Service Bulletin, Rolls-Royce No. T-148, CMC No. M69-8, datert 25. september 1969, omhandler samme sak.

Erstattet av 14/20 utg 2 23. des 1974

14/70 KONTROLL OG EVENTUELL FORANDRING AV VISSE TYPER BRENNSTOFFPUMPER FOR INNSPRØYTNINGSSYSTEM

Kontrollen gjelder følgende motorer av type Continental:

IO-360-A, -C og -D
IO-470-C, -D, -E, -F, -H, -K, -L, -M, - N og -S
TSIO-470-B, -C og -D
IO-520-A, -B, -C, -D, -E, -F, -J og -K

Luftfartsdirektoratet bestemmer at det senest ved første 25 timers ettersyn skal undersøkes om brennstoffpumpen for "Fuel Injection"-systemet for nevnte motortyper er av en slik type at det sitter en sekskantet messingplugg nedenfor tilkoblingen av brennstoffledningen til pumpen. I senter av messingpluggen sitter en reguleringsskrue av stål med vanlig skrutrekkerspor.

Hvis pumpen ikke er av nevnte type, trengs ingen videre forholdsregler.

Hvis pumpen er av angitte type, må videre undersøkelser foretas, da det har vist seg at reguleringsskruen kan skru seg ut, med motorstopp som resultat. Skruens stilling i forhold til messingpluggens overflate skal undersøkes og følgende forholdsregler foretas:

A. Hvis toppen av skruen ligger i plan med eller innenfor messingpluggens overflate, skal skruen låses i denne stilling ved hjelp av lim av type Le Pages Epoxy eller Locktite No. 2508. Pluggen og skruehodet må først rengjøres med bensin eller karbontetraklorid. Skruen skal skiftes med modifisert type, som nevnt under punkt B, ved første justering av pumpen, første motoroverhaling eller første overhaling av brennstoffpumpen.

B. Hvis toppen av skruen ligger utenfor messingpluggens overflate skal skruen byttes ut med modifisert type skrue P/N 637766 eller 637767 og "O"-ring P/N AN 123957 før neste flyging. P/N 637766 har 8-32 gjenger og P/N 637767 har 10-32 gjenger.

Ved bytte av skruen til modifisert type, skal følgende fremgangsmåte benyttes:

1. Motoren startes og kjøres opp til full throttle og maksimum RPM. Verdien for RPM og fuel flow eller fuel pressure noteres.

2. Motoren stanses og reguleringsskruen skrus helt inn til den bunner, samtidig som man noterer seg antall omdreininger som er nødvendig.

3. Reguleringsskruen skiftes ut med modifisert type, som skrus helt inn til den bunner, Deretter skrus skruen ut like mange omdreininger som den tidligere skruen måtte skrus inn, ref. pkt. 2.

4. Motoren startes igjen og reguleringsskruen finjusteres, til samme verdier oppnås for RPM og fuel flow eller fuel pressure, som notert under pkt. 1.

5. Til slutt låses reguleringsskruen med låsetråd, enten til det ledige hull i messingpluggen, eller rundt "pressure relief valve" skruen på baksiden av pumpen.

Ref.: FAA AD-No. 70-14-7 og Teledyne Continental Motors Service Bulletin M70-10, revisjon 1, datert 25. juni 1970, omhandler samme sak.

LUFTFARTSDIREKTORATET
Avd. for Luftfartsinspeksjon
Postboks 8168, Oslo Dep., Oslo 1
Tlf. : Oslo (02) 12 13 40
AFTN : ENFBYA
Tlgr. : CIVILAIR OSLO
Telex : 11032 Oslo

LUFTDYKTIGHETSPÅBUD (LDP)

Continental
14/70, utg. 2
23. desember 1974

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsdirektoratet følgende forskrift om luftdyktighet:

KONTROLL OG EVENTUELL FORANDRING AV VISSE TYPER BRENNSTOFFPUMPER FOR INNSPRØYTNINGSSYSTEMET

Påbudet gjelder:

Kontrollen gjelder følgende motorer av type Continental:

IO-360-A, -C og -D
IO-470-C, -D, -E, -F, -H, -K, -L, -M, -N, -S, -J, -U, -V, og -VO
TSIO-470-B, -C og -D
IO-520-A, -B, -C, -D, -E, -F, -J og -K

Påbudet omfatter:

Luftfartsdirektoratet bestemmer at det skal undersøkes om brennstoffpumpen for "Fuel Injection"-systemet for nevnte motortyper er av en slik type at det sitter en sekskantet messingplugg nedenfor tilkoblingen av brennstoffledningen til pumpen. I senter av messingpluggen sitter en reguleringsskrue av stål med vanlig skrutrekkerspor.

Hvis pumpen ikke er av nevnte type, eller dersom reguleringsskruen er fastlåst til messingpluggen (ved hjelp av innvendig "spring circular clips") trengs ingen videre forholdsregler.

Hvis pumpen er av angitte type, må videre undersøkelser foretas, da det har vist seg at reguleringsskruen kan skru seg ut, med motorstopp som resultat. Skruens stilling i forhold til messingpluggens overflate skal undersøkes og følgende forholdsregler foretas:

a) Hvis toppen av skruen ligger i plan med eller innenfor messingpluggens overflate, skal skruen låses i denne stilling ved hjelp av lim av type Le Pages Epoxy eller Locktite No. 2508. Pluggen og skruehodet må først rengjøres med bensin eller karbontetraklorid. Skruen skal skiftes med modifisert type, som nevnt under punkt B, ved første justering av pumpen, første motoroverhaling eller første overhaling av brennstoffpumpen.

b) Hvis toppen av skruen ligger utenfor messingpluggens overflate skal skruen byttes ut med modifisert type skrue P/N 637766 eller 637767 og "O"-ring P/N AN 123957 før neste flyging. P/N 637766 har 8-32 gjenger og P/N 637767 har 10-32 gjenger.

Ved bytte av skruen til modifisert type, skal følgende fremgangsmåte benyttes:

1. Motoren startes og kjøres opp til full throttle og maksimum RPM. Verdien for RPM og fuel flow eller fuel pressure noteres.

2. Motoren stanses og reguleringsskruen skrus helt inn til den bunner samtidig som man noterer seg antall omdreininger som er nødvendig.

3. Reguleringsskruen skiftes ut med modifisert type, som skrues helt inn til den bunner. Deretter skrus skruen ut like mange omdreininger som den tidligere skruen måtte skrus inn, ref. pkt. 2.

4. Motoren startes igjen og reguleringsskruen finjusteres, til samme verdier oppnås for RPM og fuel flow eller fuel pressure, som notert under pkt. 1.

5. Til slutt låses reguleringsskruen med låsetråd, enten til det ledige hull i messingpluggen, eller rundt "pressure relief valve" skruen på baksiden av pumpen.

Tid for utførelse:

Innen 25 flytimer regnet fra 23. desember 1974 dersom ikke allerede utført.

Referanse:

FAA AD-note 70-14-07 og Teledyne Continental Motors Service Bulletin M70-10, Revision 1 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon: Oslo 52 121340
Attn.: [illegible]
Tlgr.: [illegible] OSLO
Telex: [illegible]

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-1

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

10/71 KONTROLL AV PAKNINGEN FOR BENSININNSPRØYTNINGSPUMPEN PÅ CONTINENTAL

De fabrikasjonsnummer - "serial numbers" - som står på navneplaten på motoren, består av det egentlige fabrikasjonsnummer fulgt av årstallet og modellbetegnelsen på motoren, for eksempel S/N 184491-70-A. Nedenfor er det bare fabrikasjonsnumrene som er gitt.

Påbudet gjelder:

TSIO-360-A

Nye: 184001 til og med 184379, 184381 til og med 184393, 184397 til og med 184409, 184411, 184415, 184416, 184418 til og med 184421, 184423 til og med 184425, 184427, 184429 til og med 184431, 184433 til og med 184443, 184445, 184447 til og med 184453, 184455 til og med 184466, 184468, 184469, 184472, 184474, 184475, 184477 til og med 184480, 184482, 184483, 184485, 184490, 184491.

Fabrikkoverhalte: 197001 til og med 197010.

TSIO-520-B

Nye: 145001 til og med 145779, 145781 til og med 145785, 145787 til og med 145790, 145793, 145796, 145798 til og med 145800, 145802, 145806, 145808 til og med 145810, 145812, 145815 til og med 145820, 145823 til og med 145825, 145827 til og med 145829, 145831 til og med 145837, 145840 til og med 145846, 145848 til og med 145875, 145880 og 145881.

Fabrikkoverhalte: 176001 til og med 176105.

TSIO-520-D

Nye: 156001 til og med 156146.

Fabrikkoverhalte: 180001 til og med 180012.

TSIO-520-E

Nye: 165001 til og med 166099, 206001 til og med 206256, 206258 til og med 206270, 206272, 206273, 206275, 206277 til og med 206291, 206293 til og med 206306, 206309, 206310, 206311, 206313 til og med 206315, 206317 til og med 206343, 205345 til og med 205347, 206349 til og med 206359, 205361, 206364 til og med 206369, 206371, 206373 til og med 206376, 206380, 206385, 206388 til og med 206392, 206396 til og med 206399, 206404 til og med 206408, 206413, 206415, 206420, 206426, 206429.

Fabrikkoverhalte: 182001 til og med 182148.

forts.

10/71
forts.

TSIO-520-J

Nye: 208001 til og med 208114, 208116, 208118 til og med 208124, 208126 til og med 208140, 208142 til og med 208157, 208159 til og med 208163, 208165 til og med 208197, 208199 til og med 208203, 208205 til og med 208207, 208209, 208214, 208217, 208230, 208234, 208235, 208238 til og med 208240.

Påbudet omfatter:

For å unngå utpressing av pakning P/N 632647 og bensinlekkasje i overkant mellom dekselet og pumpehuset, "the variable orifice housing", på bensin-innsprøytningspumpen, skal følgende utføres:

1. Foreta en visuell inspeksjon av bensininnsprøytningspumpen i området på toppen av pumpehuset, og kontroller for bensinlekkasje og utpressing av pakning P/N 632647.

   For å gjøre området som skal inspiseres tilgjengelig, skal kjøledekselet innenfor albuen klippes av 3/8" vertikalt, og nedre kant av dekselet bøyes opp.

2. Dersom bensinlekkasje eller skade på pakningen oppdages under pkt. 1, skal pakning P/N 632647 skiftes med pakning P/N 638223 ifølge Teledyne Continental Motors (TCM) Service Bulletin M 70-17 før neste flyging. Ved kontroll for lekkasje skal den elektriske brennstoffpumpen settes på i stilling HIGH, samtidig som blandingshåndtaket står i stilling "Idle Shut Off".

Tid for utførelse:

Innen 25 timers flygetid, regnet fra 10. november 1971, og deretter med 100 timers intervall.

Når pakningen er skiftet ut som angitt i pkt. 2, bortfaller kravet om inspeksjonen angitt i pkt. 1.

Merk! Enkelte fabrikkoverhalte motorer har allerede fått montert pakning P/N 638223. Disse motorene er merket med en stripe hvit maling rundt aneroidboksen.

Kvittering for utførelse av pkt. 2 kan gjøres uten videre tiltak.

Referanser:

FAA AD 71-9-3 med revisjon i 71-11 og Continental Service Bulletin TCM No. M 70-17 (Rolls Royce No. T-184) omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon Oslo 02) 121340
AFTN ENFBYA
Tlg CIVILAIR OSLO
Telex 17011 ldelin

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-2

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

18/71 KONTROLL AV OLJEPUMPEDREV PÅ CONTINENTAL MOTORER

Påbudet gjelder:

1. Continental C-90, O-200, O-300 fabrikert av Rolls-Royce Ltd., England.

2. Samme modeller fabrikert av Teledyne Continental Motors Corp., USA, og som er overhalt eller har oljepumpedrev fabrikert av Rolls-Royce.

Følgende motorer berøres ikke av denne LDP:

C-90 serienr. fra og med 11R021
O-200 " 23R590 til og med 23R600 og serienr. fra og med 23R638
O-300 " fra og med 31R162.

Motorer som ikke har oljepumpedrev P/N 22354/RR eller P/N 23403/RR, der dette kan dokumenteres.

Påbudet omfatter:

Det har forekommet en del tilfelle av unormalt stor slitasje på oljepumpe-drivhjulets firkantete drivtapp. Denne drivtapp overfører driften fra et drev på kamakselen til oljepumpen og videre til uttaket for turteller-indikeringen.

Ved for stor slitasje på tappen, kan man risikere å miste driften til olje-pumpen, med motorstopp og fare for havari som følge av dette. I Sverige har det i den senere tid vært 2 havarier, som har sin årsak i nevnte forhold.

Luftfartsverket bestemmer derfor at følgende forholdsregler skal iakttas:

1. Hvis turtallindikeringen plutselig faller til 0 under flyging, må olje-trykket øyeblikkelig kontrolleres, da bortfallet kan være forårsaket av at oljepumpens drift har opphørt.

2. Det skal utføres en kontroll for å bestemme graden av slitasje på driv-hjulets firkantete drivtapp. Denne kontroll skal utføres med et spesial-verktøy som vist i vedlagte tegning til denne LDP.

   Kontrollen går ut på at man måler dødgangen i overføringen mellom kam-akseldrevet og uttaket for turtellerindikeringen på følgende måte:

2.1 Turtellerslangen kobles fra uttaket på motorens bakkasse og anbringes slik at den er minst mulig til hinder for målingen som skal utføres.

2.2 Propellen dreies slik at sporet i drivakselen for turtelleruttaket peker oppover omtrent vertikalt.

forts.

2.3 Spesialverktøyets viser stikkes inn i turtelleruttaket. Eventuelle grader i drivakselen, som vanskeliggjør denne montering, kan fjernes forsiktig med et 4,1 mm (0,161") bor eller brotsj.

2.4 Verktøyets gradsektor føres ned mellom bakkassen og viseren, slik at spalten i sektoren hviler på viserens aksel, samtidig som sektoren støttes opp mot den ene magneten.

2.5 Ved å rotere viseren fram og tilbake, kan man måle den totale dødgang i overføringen, i antall grader.

Eventuell dødgang mellom viseren og turtellerens drivaksel, som skyldes at tappene på viseren ikke passer helt til sporet i drivakselen, kan trekkes fra den totale dødgang.

2.6 Antall grader dødgang som herved er funnet, skal føres inn i motorjournalen, med henvisning til denne LDP.

2.7 Målingen skal foretas av godkjent verksted eller autorisert flymekaniker med MIII eller MIV sertifikat klasse a.

2.8 Spesialverktøyet, som skal benyttes, er vist i vedlegg til denne LDP, og er tegnet i målestokk 1:1. Derved kan gradsektoren brukes direkte om ønskelig, ved å klippe den ut og lime den på en plate.

2.9 På grunnlag av måleresultatet, skal følgende tiltak gjennomføres:

Målt dødgang	Tillatt gangtid til neste kontroll
6° eller mindre	300 timer
6° til 10°	100 timer
10° til 14°	25 timer
Over 14°	Bytt oljepumpedrev før neste flyging med forsterket drev som angitt under.

Kontrollen skal gjennomføres med intervall som angitt, inntil første overhaling, da oljepumpedrevet skal skiftes, uansett tilstand, og nytt forsterket drev med følgende P/N monteres:

For C-90 og O-200 drev med P/N 22354/RR-H, 22354-N eller 22354-RW.

For O-300 drev med P/N 23403/RR-H, 23403/RR-N eller 23403/RR-RW.

Tid for utførelse:

Innen 25 timers flygetid regnet fra 3. januar 1972.

Referanse:

Rolls-Royce Service Bulletin No. T-200 omhandler samme sak.

forts.

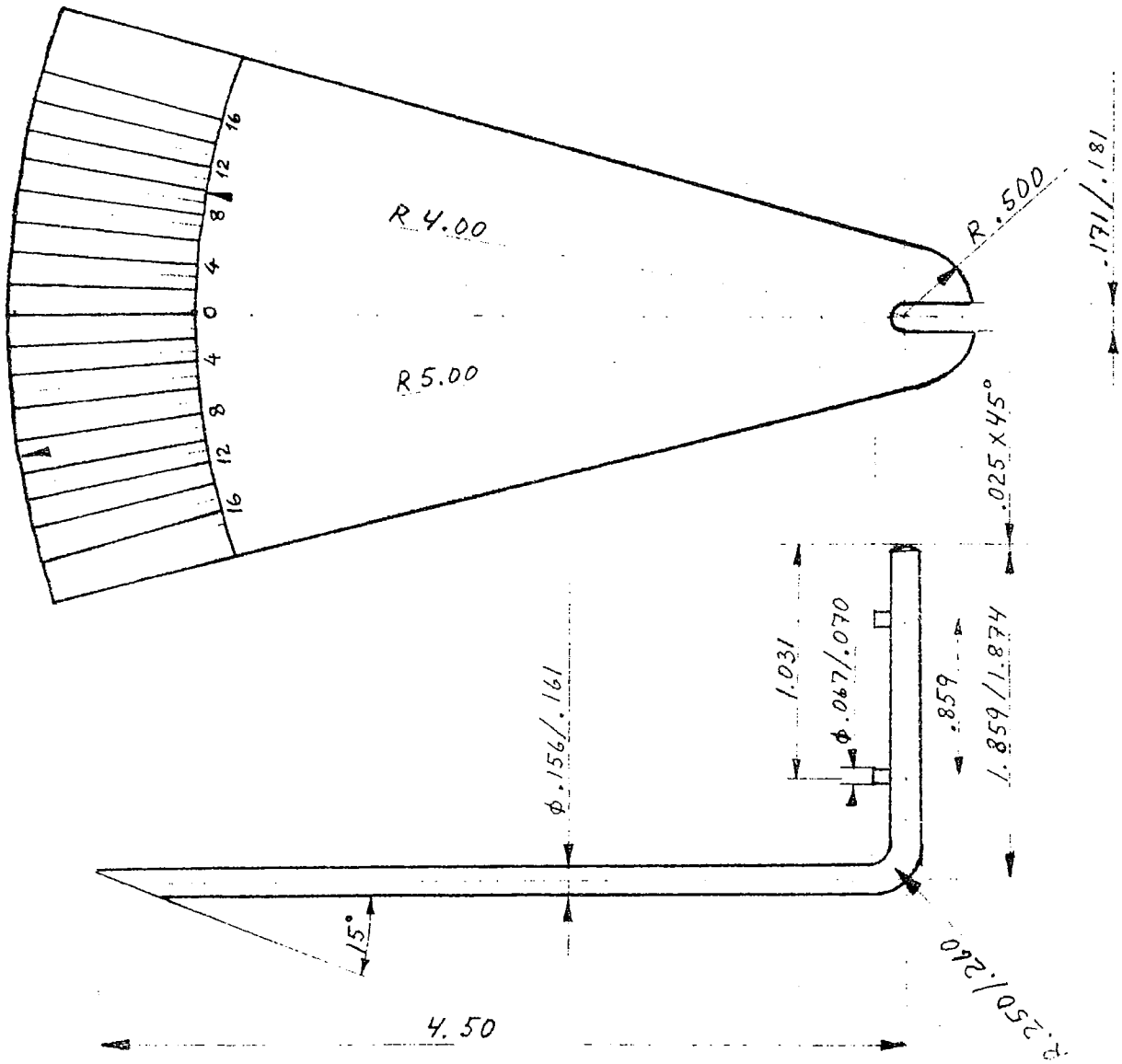
LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon Oslo (02) 121340
AFTN ENFBYA
Tlgr. CIVILAIR OSLO
Telex 17011 ldair n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-3

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

18/71
forts.



BILAG TIL LDP 18/71. Målestokk 1:1

Alle mål angitt i tommer er overført fra Rolls-Royce Service Bulletin No. T-200.
De to pluggene slagloddes på plass.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon: Oslo (02) 121340
AFTN : ENEBYA
Tlgr. : CIVILAIR OSLO
Telex : 17011 ldal n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-4

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

23/72 SPREKKER I "OIL FLITER ADAPTER"

Påbudet gjelder:

Continental motorer av typene IO-346-A, IO-520-B og C, TSIO-520-B, -E og -J, som har Continental oljefilter adapter P/N 631645 med AC OF-9-A oljefilterenhet.

Påbudet omfatter:

Det har vært en del vanskeligheter med lekkasje og sprekker i adapteret for oljefilteret, og Continental innførte i 1969 en ny og forsterket type adapter for å hindre dette. Denne var imidlertid ikke obligatorisk, og det har derfor blitt påbudt forskjellige former for kontroll, og innskjerpet at filteret må monteres omhyggelig og på en spesiell måte. Fra nå gjelder følgende:

1. Filterhuset skal tas av og bunnplaten som ligger mellom filteret og adapteret "base plate" - skal kontrolleres for å se om den er av riktig type. Dette ses ved at sporet for pakningen mot adapteret er rektangulært i stedet for kileformet og at innerkant av sporet dannes av en plate med oppresset kant som er punktsveiset til den egentlige bunnplate. Nummeret på bunnplaten er Teledyne Continental P/N 633750 eller AC P/N 6437508 (Package No. 6436627).

2. Foreta en visuell inspeksjon av adapterets øvre monteringsflate (den flate som filterhuset monteres til) ved å bruke lykt og speil for å kontrollere om det finnes radielle sprekker som går fra ytterkanten av flaten og innover mot sentrum.

   Adaptere som viser tegn til sprekkdannelser, må skiftes ut med et som er feilfritt.

3. Hvis huset tas av for bytte av filterelement, må filterelementet først monteres i filterhuset i samsvar med fabrikantens anvisninger. Deretter monteres filterhuset med påsatt bunnplate på adapteret på følgende måte:

   a. Rengjør alle paknings- og tetningsflater.

   b. Smør den nye pakningen godt på alle sider med motorolje.

   c. Installer filterenheten på adapteret, og trekk senterbolten til for hånd slik at det oppnås en lett tetning.

   d. Kontroller visuelt at pakningen ligger riktig an og tetter helt rundt.

   e. Senterbolten trekkes deretter til med et moment på 15-18 lb. ft. (180-216 lb. in.). Dersom momentnøkkel ikke kan skaffes eller brukes på denne bolten, skal man trekke til 1 3/4 omdreining fra det punkt hvor den lette tetning for hånd var oppnådd, ref. pkt. c.

forts.

f. Deretter festes øvre brakett til filterhuset og sikres med låsetråd.

g. Til slutt skal motoren kjøres i ca. 5 minutter på 1000-2000 rpm. Etter kjøringen foretas en kontroll for oljelekkasje og riktig sammenmontering, ved hjelp av lykt og speil om nødvendig.

Hvis det viser seg å være lekkasje mellom filterhusets topp og senterbolten, skal bolten tas ut og tetningsflaten kontrolleres for sår eller annen synlig skade. Eventuelle skader må utbedres, og installeringen foretas om igjen med ny kopperpakning.

NB! Boltens tiltrekningsmoment må ikke økes ut over det angitte for å tette en lekkasje, da det er sannsynlig at sprekkdannelsene kommer som følge av for hard tiltrekning.

4. Skift ut oljefilter og adapterenhet som har adapter av typen Continental P/N 631645 med ny enhet som omtalt i Rolls Royce Service Bulletin No. T-194, datert 27. august 1971 (Continental Service Bulletin No. M71-19) eller i AC Instruction Sheet 6439067.

Continental har produsert sett med betegnelsene 632399A1 (for IO-346-A og IO-520-B&C) og 637584A1 (for TSIO-520-B, E&J), som blant annet inneholder forsterket adapter med P/N 632881.

Sett for AC-enheter har P/N 6437861 og inneholder adapter med AC P/N 5579663, som må være forsynt med en A (ca. ½ tomme høy) støpt inn. AC-adaptere som bare har bokstaven A eller er merket med A kan ikke brukes.

Tid for utførelse:

Pkt. 1: Innen 25 flytimer regnet fra 4. desember 1972, hvis ikke allerede utført med utgave 1 av denne LDP som underlag.

Pkt. 2: Ved hvert skifte av oljefilter, dette ble påbudt ved KfL nr. 2/Tekn./70.

Pkt. 4: Ikke senere enn første motoroverhaling regnet fra 4. desember 1972.

Merk! Når pkt. 4 er utført, bortfaller kravet under pkt. 2.

Referanser:

FAA AD 72-24-3, Rolls Royce Service Bulletin No. T-087 (Continental Service Bulletin No. M66-6), Rolls Royce Service Bulletin No. T-194 (erstatter T-185),(Continental Service Bulletin No. M71-19 (erstatter M70-16)), og Cessna Service Letter No.ME70-4 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon: Oslo (02) 121340
AFTN : ENFBYA
Tlgr : CIVILAIR OSLO
Telex : 17011 ldal n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-5

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

64/72 INSPEKSJON OG UTSKIFTING AV SYLINDERE

Påbudet gjelder:

Continental motorer av modellene: IO-470-D, IO-470-E, IO-470-F, IO-470-H, IO-470-L, IO-470-M, IO-470-N, IO-470-S, IO-470-U, IO-470-V, TSIO-470-B, TSIO-470-C, TSIO-470-D som ikke har "H" type sylindere (P/N 626820), eller har "H" type sylindere fabrikert før april 1963.

Merk! "H" type sylindre har bokstaven H stemplet i øvre kant av ventilhus-flensen, over ekshaustventilen.

Påbudet omfatter:

Det har forekommet brudd på "ikke "H" type" sylindre og "H" type sylindre fabrikert før april 1963, og for å forhindre fremtidige gjentakelser skal følgende utføres:

1. Inspiser visuelt området rundt sylinderen i overgangen mellom stålsylinderen og aluminiumshodet, for tegn på lekkasje av olje og/eller ekshaustgasser.

   Hvis det oppdages olje/ekshaustlekkasje som skyldes sprekk(er) i sylinderen, må sylinderen skiftes ut før neste flyging.

Merk! Det kan være nødvendig å demontere motordeksel eller atkomstluker, samt å benytte speil og liknende for å kunne utføre denne inspeksjon.

Hvis ikke motoren er ren og fri for olje i områdene som skal inspiseres, må motoren vaskes og deretter kjøres til normale temperaturer og trykk er oppnådd før inspeksjonen foretas.

Det anbefales også at propellen dreies rundt for hånd for å kontrollere at kompresjonen er lik i alle sylindrene og at det ikke er hørbare lekkasjer i sylindrene.

2. Sylindre som ikke er av "H" typen, samt "H" sylindre fabrikert før april 1963 skal skiftes ut med "H" sylindre fabrikert etter april 1963.

   Fabrikasjonsdatoen er stemplet på den maskinerte flaten oppunder lagringspunktene for ventilvippene.

Merk! Man kan gå ut fra at motorer fabrikert i eller etter 1964 ikke er berørt av denne LDP, hvis det ikke har vært foretatt noe sylinderskifte.

På andre motorer, selv om de har "H" type sylindre, må man ta av ventil-huset på hver sylinder for å verifisere sylinderens fabrikasjonsdato.

Tid for utførelse:

Pkt. 1: Innen 20 flytimer regnet fra 22. november 1972, og deretter forts.

64/72
forts.

med et intervall på 20 flytimer.

Pkt. 2: Ved første heloverhaling av motoren etter 22. november 1972, eller ved første toppoverhaling etter 7. mars 1974, det som kommer først.

Merk! Når pkt. 2 er utført, bortfaller kravet under pkt. 1 i denne LDP.

Referanser:

FAA AD 72-20-2 og General Aviation Inspections Aids Summary, August 1971, (side 115), omhandler samme sak.

9/73 INSPEKSJON AV SUPERCHARGERCONTROLLER

Påbudet gjelder:

Continental GTSIO-520-J, GTSIO-520-D, GTSIO-520-H, GTSIO-520-F og GTSIO-520-G motorer med supercharger "controller" P/N: 633388, 633388-3, 633388-5, 633388-7A og 633388-9.

Videre gjelder påbudet kun nye eller heloverhalte "controllers" som er levert (alene eller montert på motor) fra Teledyne Continental Motors etter 15. februar 1972.

Påbudet omfatter:

AiResearch har levert enkelte "Variable absolute pressure controllers" hvor "high-stop" justeringspinnene kan løsne.

Hvis dette skjer, bortfaller hele superchargereffekten og følgende skal derfor utføres:

Inspiser serienr. på controllerens dataplate ved hjelp av et inspeksjonsspeil.

Hvis prefix-bokstavene foran serienummmeret er : BA, BB, BC, BD, BE, BF eller BAR, BBR, BCR, BDR, BER, BGR, BHR, må ny "controller" straks bestilles fra Rolls Royce Motors eller forhandler.

Videre må Luftfartsverket, Avd. for luftfartsinspeksjon kontaktes for eventuell tillatelse til flyging fram til ny "controller" kan monteres.

Tid for utførelse:

Innen 50 flytimer regnet fra 5. mars 1973.

Referanser:

Teledyne Continental Service Bulletin No. M72-23 og Rolls Royce Service Bulletin No. T-227 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon: Oslo (02) 121340
AFTN: ENFBYA
Tlgr: CIVILAIR OSLO
Telex: 17011 ldalin

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-6

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

32/73 KONTROLL AV FORGASSERE I CONTINENTAL O-470 MOTORER

Påbudet gjelder:

Følgende Teledyne Continental motorer:

O-470-J, heloverhalte (remanufactured) motorer med S/N 46949 til og med 47000, 202001 til og med 202060.
O-470-K, heloverhalte (remanufactured) motorer med S/N 49210 til og med 49302.
O-470-L, heloverhalte (remanufactured) motorer med S/N 69352 til og med 69491.
O-470-R, heloverhalte (remanufactured) motorer med S/N 98501 til og med 99000, 212001 til og med 212289 og nye motorer med S/N 451001 til og med 451285.

Påbudet omfatter:

For å forebygge bensinlekkasje ved forgasserens dreneringsplugg skal følgende utføres:

Kontroller at forgasserens dreneringsplugg (carburetor bowl 1/4" drain plug) er tiltrukket med korrekt moment (120-144 in. lbs.). Kontrollen skal utføres med forsiktighet så en ikke får for stort moment på dreneringspluggen.

Undersøk om det forekommer noen form for lekkasje ved dreneringspluggen. Dersom en finner lekkasje skal dreneringspluggen fjernes og undersøkes for eventuell skade i gjengene. Skadete eller ikke tjenlige deler skal byttes ut etter behov.

Etter at denne kontrollen er utført, skal forgasseren merkes med passende maling i form av et gult punkt plassert inntil dreneringspluggen.

Tid for utførelse:

Innen 5 timers gangtid regnet fra 20. juni 1973.

Referanse:

FAA Emergency Airworthiness Directive, datert 25. mai 1973.

54/73 KONTROLL AV LÅSEPLATER FOR KONTRAVEKT-PIN PÅ CONTINENTAL IO-360

Påbudet gjelder:

Alle IO-360-A, IO-360-C før serienr. 50884 og IO-360-D før serienr. 55652, berøres av pkt. 1 i denne LDP. Alle IO-360-A, IO-360-C og IO-360-D, berøres av pkt. 2 i denne LDP.

forts.

54/73
forts.

Påbudet omfatter:

1. På grunn av inntrufne tilfeller av at låseplaten for veivakselens kontravekt-pin's P/N 628979 slites gjennom toppen av veivakselens kontravekt har Luftfartsverket bestemt at ny type låseplate med P/N 633976 monteres ved første overhaling av motoren, eller hvis sylinder nr. 1 eller sylinder nr. 2 er avmontert av andre grunner før den tid.

2. Videre skal følgende inspeksjon utføres:

   a. Demonter blindplugg for timing plassert ved siden av sylinder nr. 2.

   b. Roter veivakselen sakte rundt og gjennom timing-hullet, kontroller i området rundt toppen og på begge sider av veivakselens kontravekt.

   c. Hvis grad eller antydning til kant observeres (se fig. 1) er dette en indikasjon på at låseplaten har begynt å slite seg gjennom kontravekten. Ved et slikt tilfelle, demonter sylinder nr. 1 eller sylinder nr. 2 og skift kontravekt og låseplate.

   Merk! Kontroller spesielt etter metallspon i oljefilteret. Ved feil som nevnt ovenfor vil metallspon kunne finnes.

Inspeksjon med resultat føres hver gang inn i motorjournalen med henvisning til denne LDP.

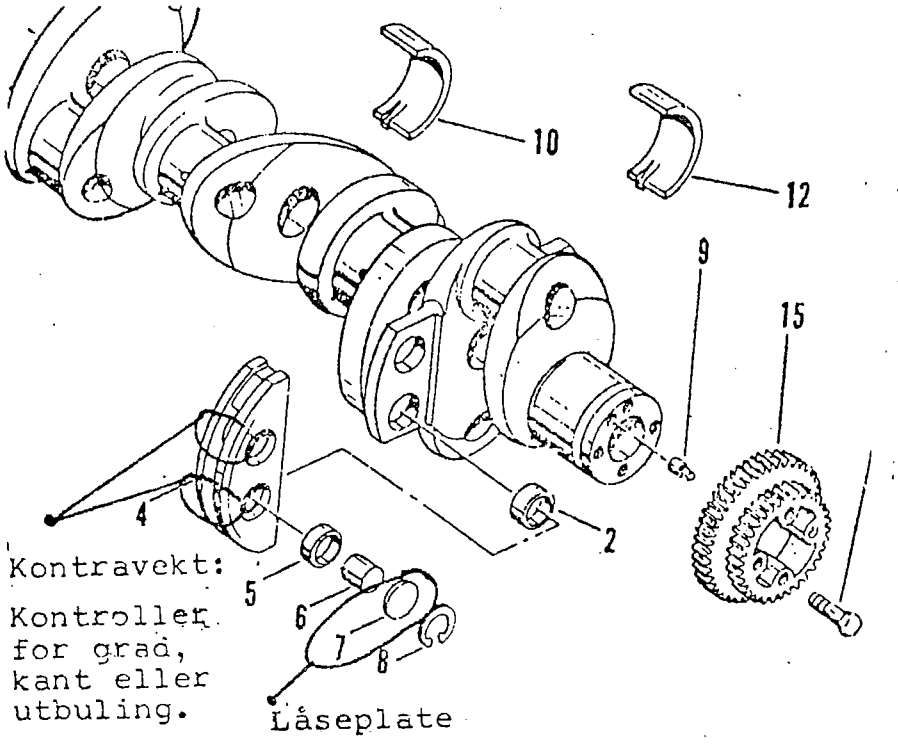
Tid for utførelse:

Pkt. 1: Ved første motoroverhaling, dersom ikke allerede utført.
Pkt. 2: Ved hvert 50 timers ettersyn.

Referanser:

Cessna Service Letter 67-57 item nr. 2 og Continental Service Bulletin M67-7 omhandler samme sak.

Fig. 1.



LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon: Oslo 02 121340
ATTN: ENFEIA
Tlgr: CIVILAIR OSLO
Telex: 17011 dal n

LUFTDYKTIGHETSPÅBUD (LDP)

Motorer
Continental-7

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

57/73 INSPEKSJON AV EKSOSVENTILENS STYRING

Påbudet gjelder:

Rolls Royce modell 0-200-A og 0-300-D motorer, som har en total gangtid på mindre enn 100 flytimer og som har følgende fabrikasjonsnummer:

0-200-A: 24R 126 og lavere
0-300-D: 31R 214 og lavere

Påbudet omfatter:

Da det kan oppstå brudd på eksosventilens vippearm dersom eksosventilens styring ikke er nedpresset til full dybde i sylinderhodet, skal følgende inspeksjon utføres:

1. Demonter ventildeksler og pakninger.

2. Se til at eksosventilen er helt lukket. Plasser så en linjal eller lignende, som har rettlinjet kant, tvers over ventilfjærens toppskive og mål avstanden fra den rettlinjete kanten til ventildekselets monteringsflens.

3. Press ventilen helt inn med hjelp av et passende verktøy på vippearmen og mål avstanden fra den rettlinjete kanten til ventildekselets monteringsflens.

4. Subtraher avstanden målt i pkt. 3 i fra avstanden målt i pkt. 2.

5. Dersom differansen er 11,8 mm (0,465") eller mer, er frigangen tilstrekkelig og motoren kan tas i bruk.

6. Dersom differansen er mindre enn 11,8 mm (0,465"), skal ventilfjæren demonteres og ventilens styring presses ned inntil styringens flens ligger an mot anleggsflaten på sylinderhodet.

Tid for utførelse:

Innen første flyging etter mottakelse av denne LDP.

Referanser:

Rolls Royce Service Bulletin No. T-244/1 omhandler samme sak.

73/73 KONTROLL AV BRENNSTOFFPUMPEN I CONTINENTAL O-200

Påbudet gjelder:

Continental modell O-200 fabrikert av Teledyne Continental Motors og Rolls Royce, utstyrt med mekanisk brennstoffpumpe (fabrikat AC) av følgende typer:

T.C.M. P/N	AC P/N
40585	AC 1539867
631391	GP 5656861

Påbudet omfatter:

Det er blitt rapportert en del tilfeller av at returfjæren til pumpearmen ("rocker arm") i den mekaniske brennstoffpumpen har sviktet på grunn av brudd og/eller korrosjon. Returfjæren skal derfor kontrolleres for skade, korrosjon eller slitasje som kan forårsake brudd. Før kontrollen kan utføres, må brennstoffpumpen utmonteres.

Dersom en finner returfjær med defekter skal denne skiftes med ny, P/N AC 1522046, før videre flyging.

For identifikasjon av brennstoffpumpens P/N, se Service Bulletin T-062, som angir motor - brennstoffpumpe kombinasjoner.

Tid for utførelse:

Innen 100 flytimer regnet fra 31. desember 1973 og deretter med et intervall på 100 flytimer.

Referanser:

Svensk LVA nr. 766 og Rolls Royce Service Bulletin no. T-201, datert 18. mars 1972 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18 [illegible] Oslo Lufthavn
Telefon [illegible] 02 121240
[illegible]
[illegible]
[illegible]

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-8

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

43/74 UTSKIFTING AV SYLINDERE PÅ CONTINENTAL 360 MOTORER

Påbudet gjelder:

Teledyne Continental 360 motorer med serienr. som angitt.

IO-360-A:	Serienr. 20080-R og 20084-R
IO-360-C:	Serienr. 350015, 350017, 350021, 60228-R, 60229-R, 900308 og 900352.
IO-360-D:	Serienr. 351048, 351055, 351060, 351075, 351076, 351077, 351080 og 351081
IO-360-H:	Serienr. fra 353124 til og med 353134
TSIO-360-A:	Serienr. 301001 og 301002
TSIO-360-C:	Serienr. 300162 og 300170

Påbudet omfatter:

For å forhindre sylinderbrudd skal fabrikasjonsdatoen på sylindrene i berørte motorer kontrolleres. Fabrikasjonsdatoen finnes innstemplet på den maskinerte flaten under vippearmsdekslene. Sylindre med fabrikasjonsdato 7-73, 8-73, 9-73, 10-73 og 11-73 skal skiftes ut med nye, innen videre flyging.

Tid for utførelse:

Innen 25 flytimer regnet fra 7. oktober 1974, dersom ikke allerede utført.

Referanse:

FAA AD 74-18-07 omhandler samme sak.

[illegible]/75 UTSKIFTING AV TURBOCHARGER "OIL INLET ADAPTER"

Påbudet gjelder:

Teledyne Continental motorer med følgende serienr.:

Modell	Nye motorer	Fabrikkoverhalte motorer (Remanufactured)
TSIO-470-B	alle serienr.	serienr. 100080 og lavere
TSIO-470-C	" "	" 108534 " "
TSIO-470-D	" "	" 138544 " "
TSIO-520-B	serienr. 500018 og lavere	" 176191 " "
TSIO-520-D	" 505001 " "	" 180029 " "
TSIO-520-E	" 502125 " "	" 182395 " "
GTSIO-520-C	" 602001 " "	" 155370 " "
GTSIO-520-D	" 601005 " "	" 219161 " "
GTSIO-520-H	" 600137 " "	" 218046 " "
GTSIO-520-F	" 603028 " "	" 224203 " "

forts.

43/75
forts.

	Flytype	Flyets serienr.
TSIO-520-J	Cessna 414	00489 og lavere
TSIO-520-K	Cessna 340	00318 og lavere

Unntatt fra dette påbud er følgende motorer:

TSIO-520-B: Serienr. 176170, 176185, 176186, 176187
TSIO-520-D: Serienr. 180028
GTSIO-520-H: Serienr. 600119

Berørte motorer er installert i fly av følgende typer:

Cessna modell T-310, 320, 340, 401, 402, 411, 414, 421.
Aero Commander modell 685.
Beech modell V35-TC, V35A-TC, V35B-TC.

Påbudet omfatter:

På grunn av mulighet for oljelekkasje ved turbocharger "oil inlet adapter" i de berørte motorer, skal følgende utføres:

1. Kontroller turbochargerens "oil inlet adapter", som er montert på turbochargerens senterhus, for sprekker og/eller oljelekkasje. Dersom en finner sprekker eller oljelekkasje skal "oil inlet adapter" av aluminium, TCM P/N 640793 eller Cessna P/N 5655204-1, skiftes ut med ny "oil inlet adapter" av stål, som har TCM P/N 640793 eller Cessna P/N 5655204-2.

   Ved utskifting av "oil inlet adapter" til ny type av stål, skal oljefittingen som kobles til "oil inlet adapter" skiftes ut med ny av stål, som angitt nedenfor:

Flytype	Berørte serienr.	Stålfitting
Beech V35-TC	Alle serienr.	AN 816-6
V35A-TC	" "	AN 816-6
V35B-TC	" "	AN 816-6
Cessna 320-D, E	" "	MS 20823-6
320-F	320F0001 til og med 320F-0034	MS 20823-6
401, 402	001 til og med 0155	MS 20823-6

2. Innen tidsfrist som angitt nedenfor skal alle "oil inlet adapters" av aluminium, TCM P/N 628675 eller Cessna P/N 5655204-1 skiftes ut med nye av stål, som har TCM P/N 640793 eller Cessna P/N 5655204-2.

   Kravet om gjentatt kontroll ifølge pkt. 1 bortfaller når denne modifikasjon er utført.

Tid for utførelse:

Pkt. 1: Innen 25 flytimer regnet fra 7. juli 1975, og deretter gjentatt kontroll med et gangtidsintervall på 25 timer.

Pkt. 2: Innen 1. mai 1976.

Referanse:

FAA AD 25-09-13 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18. 1330 Oslo Lufthavn
Telefon: Oslo (02) 121340
AFTN: ENFEYA
Tlgr.: CIVILAIR OSLO
Telex: 17011 ldair n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-9

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

70/75 KOMPRESJONSPRØVE PÅ CONTINENTAL C-90, O-200 OG O-300 MOTORER

Påbudet gjelder:

Teledyne Continental og Rolls Royce Continental C90, O-200 og O-300 motorer.

Påbudet omfatter:

Etter overgangen til bruk av AVGAS 100L flybensin er det rapportert et stigende antall tilfeller av lav sylinderkompresjon på grunn av feil ved innsugingsventilene.

For å kunne oppdage begynnende feil på innsugingsventilene skal det utføres en kompresjonsprøve av motoren ved tidsfrister som angitt nedenfor. Kompresjonsprøven bør utføres i samsvar med den metode som er angitt i Rolls Royce Service Bulletin T-255, eller liknende. Foruten denne prøve kan et eller flere av følgende symptomer tyde på for lav sylinderkompresjon:

1. Startvanskeligheter.

2. Effekttap og langsom reaksjon ved motorpådrag, tilbakeslag i inngassystemet.

3. Ujevn motorgange ("back fire").

Dersom en konstaterer forhold som nevnt ovenfor skal en utføre kompresjonsprøve av motoren innen videre flyging. Om nødvendig skal berørte ventiler skiftes ut med nye.

Luftfartsverket skal underrettes om alle utbedringer som må foretas som følge av denne kontrollen med angivelse av delenes tilstand.

Tid for utførelse:

Innen 50 flytimer regnet fra 10. november 1975 og deretter gjentatt kontroll ved et gangtidsintervall på 50 flytimer.

Referanse:

Rolls Royce Service Bulletin T-306 omhandler samme sak.

28/77 KONTROLL AV MOTORER FOR LAGERSVIKT

Påbudet gjelder:

Teledyne Continental Motors motorer IO-520-D montert i Cessna 185 og 188 med serienr. 18502839 til og med 18503234, 18503236 til og med 18503284, 18503287, 18503291, 18503293, 18802349 til og med 18802887 og 18802893.

forts.

28/77
forts.

Teledyne Continental Motors motorer IO-520-F, TSIO-520-C, TSIO-520-G, TSIO-520-M og TSIO-520-R montert i Cessna U-206, T-206 og T-207 med serienr. U20603021 til og med U20603693, U20603695, U20603696, U20603699, U20603712, 20700315 til og med 20700378.

Teledyne Continental Motors motorer IO-520-L, TSIO-520-H, TSIO-520-R montert i Cessna 210 og T210 med serienr. 21061040 til og med 21061736, 21061738 til og med 21061763, 21061766, 21061771, 21061773, 21061775 til og med 21061777, 21061789.

Teledyne Continental Motors motorer IO-470-L montert i Beech modell 95-B55 med serienr. TC-2003 til og med TC-2053.

Ovenstående motorer kan også være montert i andre flytyper.

Påbudet omfatter:

For å unngå veivakselsvikt skal Continental Aircraft Engine Service Bulletin nr. M77-6 datert 1. februar 1977 eller senere revisjon utføres.

1. Foreta kontroll av turtall som vist i del I i ovennevnte Service Bulletin.

2. Foreta kontroll av oljefilter som vist i del II i ovennevnte Service Bulletin.

Tid for utførelse:

Motorer med total gangtid på mindre enn 100 timer:
Pkt. 1: Innen 10 timers gangtid etter 31. mars 1977 og deretter med 10 timers mellomrom inntil 100 timers gangtid er oppnådd.

Pkt. 2: Innen 10 timers gangtid etter 31. mars 1977 og deretter med 25 timers mellomrom inntil 100 timers gangtid er oppnådd.

Dersom ikke noe unormalt oppdages, kan kontrollen som vist i pkt. 1 og 2 opphøre etter siste kontroll ved 100 timers gangtid.

Motorer med en total gangtid på mer enn 100 timer:

Pkt. 1 og 2: Innen 10 timers gangtid etter 31. mars 1977.

Referanser:

FAA AD 77-05-04, Cessna Service Letter SE77-2 datert 1. februar 1977 og Continental Service Bulletin M77-6 datert 1. februar 1977 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn
Telefon Oslo (02) 12 13 40
AFTN ENFBYE
Tlgr CIVILAIR OSLO
Telex 1[illegible] Idal n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-10b
Erstatter Continental
-10a

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8 desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23 mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

57/77 FORANDRING AV TENNINGEN PÅ O-200 MOTORER

Påbudet gjelder:

Alle Teledyne Continental Motors modeller O-200-A, -B og -C motorer.

Påbudet omfatter:

For å unngå muligheten for at sylinderhodet skal sprekke, skal tenningen justeres og dataplaten forandres som vist i TCM Service Bulletin M77-12.

Tid for utførelse:

Innen 50 timers gangtid etter 15. september 1977.

Referanse:

FAA AD 77-13-03.

R. Ulltang

28-10-81

R. Jacobsen

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon: Oslo (02) 121340
AFTN : ENFBYA
Tlgr. : CIVILAIR OSLO
Telex : 17011 ldal n

LUFTDYKTIGHETSPÅBUD (LDP)

Motorer
Continental-11

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

76/77 KONTROLL FOR SPREKKER I MOTORBLOKKEN

Påbudet gjelder:

Teledyne Continental Motors modeller:

IO-520-A, -B, BA, -C, -D, -E, -F, -J, -K, -L, -M
TSIO-520-B, -C, -D, -E, -G, -H, -J, -K, -L, -N
GTSIO-520-C, -D, -F, -H

og som ikke er merket som på nedenstående tabell.

LDP gjelder heller ikke for motorer med følgende serienr.:

	Ny	TCM, "REBUILT"
IO-520-A	550024 & høyere	112354-R & høyere
-B, -BA	562678 "	122539-R "
-C	561476 "	172903-R "
-D	563853 "	174412-R "
-E	556319 "	215510-R "
-F	564398 "	195707-R "
IO-520-J	558005 & høyere	216505-R & høyere
-K	557306 "	224007-R "
-L	554919 "	220537-R "
-M	565039 "	227309-R "
TSIO-520-B	500457 "	176235-R "
-C	509518 "	178143-R "
-D	505004 "	180043-R "
-E	510125 "	182692-R "
-G	507057 "	216007-R "
-H	506853 "	217031-R "
-J	503582 "	218621-R "
-K	504311 "	224529-R "
-L	508311 "	227611-R "
-N	509516 "	No Rebuilt
GTSIO-520-C	602221 "	155418-R "
-D	601051 "	219249-R "
-F	603112 "	224227-R "
-H	600915 "	218260-R "

Påbudet omfatter:

På grunn av sprekkdannelser i motorblokken skal kontroll utføres som vist i Teledyne Continental Motors Service Bulletin M77-14 eller Rolls-Royce Motors Service Bulletin T-363 datert 1. august 1977 eller senere revisjoner.

forts.

Modell	Høyre halvdel	Venstre halvdel
IO-520 A, D, E, F, J, K, L  or both  and  logo	Aft of #1 Cylinder	Aft of #2 Cylinder
IO-520 B, BA, C, M both  and  logo	Between and Below #1 and #3 Cylinders	Between and Below #4 and #6 Cylinders
TSIO-520 C, G, H  or both  and  logo	Aft of #1 Cylinder	Aft of #2 Cylinder
TSIO-520 B, D, E, J, K, L, N both  and  logo	Between and Below #1 and #3 Cylinders	Between and Below #4 and #6 Cylinders
GTSIO-520 C, D, F, H  or both  and  logo	Aft of #1 Cylinder	FWD of #6 Cylinder

Tid for utførelse:

Innen 50 timers gangtid fra 15. september 1977 og deretter med 100 timers mellomrom. Dersom sprekker blir oppdaget, skal disse behandles som vist i gjeldende Service Bulletin og til tider som oppgitt.

Referanser:

FAA AD 77-13-22 og Rolls-Royce Motors Service Bulletin T-363 datert 1. august 1977 omhandler samme sak.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18 1330 Oslo Lufthavn
Telefon Oslo 02 121340
AFTN ENFBYA
Tlgr CIVILAIR OSLO
Telex 17011 igalin

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer

Continental-12a
Erstatter Continental-12

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

33/78 KONTROLL AV VENSTRE FLEKSIBLE ALBUE PÅ INNGASSYSTEMET

Påbudet gjelder:

Teledyne Continental Motors TSIO-520-J og TSIO-520-N motorer som ikke tidligere har påmontert albuerør TCM delnr. 642590. Påbudet gjelder Cessna modeller 340A og 414 samt 340 modifisert i henhold til STC SA 1881SW eller SA 186NW, men er ikke begrenset til disse.

Påbudet omfatter:

For å unngå at fleksibel albue TCM delnr. 635930 løsner fra inngassrøret på sylinder nr. 2 på venstre motor med fare for motorbortfall, skal følgende utføres:

1) Kontroller TCM delnr. 635930 for brudd eller sprekker særlig i det vridde området. Kontroller for porøsitet i vegger, tegn til lekkasje eller brukne fibre. Dersom slike feil blir funnet, skal delen skiftes ut.

2) Kontroller venstre albue for sikkert feste til inngassmanifoldrøret og "intercooler nipple beads" og at slangeklemmene sitter korrekt festet bak "nipple beads".

3) Kontroller tiltrekking på 30 til 35 tommepund på venstre og høyre fleksible inngassmanifoldklemmer (Cessna delnr. U-94-270-SH) og "intercooler" klemmer (Cessna delnr. U-94-260-SH eller B35A-21P). På fly som benytter TCM klemmer (delnr. 631972) ved disse skjøter, skal det kontrolleres at tiltrekkingen ligger mellom 25 og 30 tommepund. På Riley modifikasjoner som benytter Riley delnr. 631972 klemmer ved disse skjøter, skal momentet være 30 til 35 tommepund.

4) Skift ut inngassrør TCM delnr. 629138 med nytt rør med delnr. 642590. Etter at nytt rør er montert bortfaller kontrollen i pkt. 1,2 og 3.

Tid for utførelse:

Pkt. 1: Innen 25 timers gangtid etter 11. april 1979.

2 og 3: Innen 25 timers gantid etter 11. april 1979.
og deretter med 100 timers mellomrom.

Pkt. 4: Innen 12 måneder etter 11. april 1979.

Referanser:

FAA AD 78-06-01 Amendment 39-3397.

11. april 1979.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd for Luftfartsinspeksjon
Postboks 18, 1330 Oslo Lufthavn
Telefon Oslo 02 121340
AFTN ENFBYA
Tlgr CIVILAIR OSLO
Telex 17011 ldal n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer

Continental-13

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

29/79 KONTROLL AV OLJESYSTEMET

Påbudet gjelder:

Nye motorer

Anmerkning: "thru" leses som til og med og "and" leses som og

Modell	Serienr.
O-470R	466555, 466556, 466561, 466562, 466566 thru 466574
O-470S	464570
O-470U	467230 thru 467237, 467250 thru 467261, 467263 thru 467271, 467273 thru 467313, 467315 thru 467373, 467375, 467377 thru 467397, 467399 thru 467406, 467408 thru 467417, 467419 thru 467448, 467450, 467451, 467453 thru 467464, 467466 thru 467487, 467489 thru 467520, 467523, 467524, 467526 thru 467531, 467533 thru 467539, 467541, 467544 thru 467547, 467550 thru 467558
IO-470F	453049, 453050
IO-470L	465350 thru 465352, 465354, 465355, 465357 thru 465359, 465361 thru 465363, 465370 thru 465378, 465380, 465382, 465385, 465388, 465392, 465393, 465395 thru 465399, 465402, 465406, 465408, 465412, 465414, 465415, 465418 thru 465420, 465431 thru 465433, 465437, 465438, 465440, 465441, 465446, 465449 thru 465459
IO-470N	458085, 458087 thru 458125, 458127
IO-520BA & BB	569432, 569447, 569448, 569451 thru 569456, 569458, 569461, 569463 thru 569468, 569485, 569507, 569512, 569527, 569566 thru 569593, 569609, 569612, 569619, 569622, 569629, 569637 thru 569659, 569675, 569691, 569713, 569720, 569721, 569723, 569724, 569725 thru 569731, 569734
IO-520C & CB	561981, 561990, 561991, 561993, 561998, 571001, 571011, 571015, 571016, 571018, 571025, 571027, 571031, 571033, 571034, 571037, 571041, 571043 thru 571047, 571052, 571065, 571067, 571070, 571071, 571074 thru 571077, 571082, 571089 thru 571093, 571112, 571114, 571123, 571125, 571127 thru 571129, 571133, 57137, 571139 thru 571143, 571149, 571166 thru 571172, 571178, 571180, 571181, 571184, 571185, 571187, 571223 thru 571228

forts. 8. mai 1979

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rette tid og forøvrig om

Motorer
Continental-13
forts.
29/79

Modell	Serienr.
IO-520D	566792 thru 566794, 566812 thru 566819, 566821, 566840, 566852, 566856, 566869, 566873 thru 566877, 566880 thru 566884, 566886 thru 566893, 566895 thru 566899, 566900 thru 566929, 566931, 566933, 566934, 566937, 566939, 566941, 566943 thru 566948, 566952 thru 566958, 566962 thru 566965, 566982 thru 566989, 566991 thru 566999, 572001 thru 572003, 572005 thru 572019, 572022 thru 572024, 572026 thru 572032, 572035 thru 572041, 572043 thru 572055, 572057 thru 572062, 572070, 572077
IO-520E	556389, 556391, 556395, 556396, 556397, 556397, 556407 thru 556441
IO-520F	570043 thru 570046, 570066 thru 570266, 570268 thru 570275, 570277 thru 570281, 570284, 570285, 570290 thru 570292, 570300 thru 570312
IO-520K	557360 thru 557367, 557396, 557371, 557373 thru 557405
IO-520L	567255, 567256, 567264, 567266, 567270 thru 567280, 567282 thru 567293, 567295, 567296, 567299 thru 567312, 567314 thru 567316, 567318, 567320 thru 567325, 567327 thru 567336, 567338, 567339, 567342 thru 567350, 567352 thru 567355, 567359 thru 567363
IO-520M & MB	565506 thru 565509, 565511, 565512, 565514 thru 565529, 565532 thru 565546, 565548 thru 565552, 565554, 565557, 565560 thru 565563, 565565 thru 565587, 565589, 565592, 565593, 565596, 565598 thru 565600, 565602, 565603, 565607 thru 565627, 565629, 565631, 565632, 565634, 565635, 565636 thru 565641, 565649, 565651 thru 565653, 565657, 565658, 565662, 565667, 565668, 565671, 565672, 565678, 565692, 565698
TSIO-520B & BB	500639, 500644,500650, 500651 thru 500654, 500660 thru 500665, 500667 thru 500672, 500674, 500675, 500679, 500680, 500682 thru 500700, 500703, 500704, 500707 thru 500721, 500723 thru 500726, 500728, 500729, 500733 thru 500738, 500740, 500742, 500744, 500747, 500749, 500751, 500752, 500755, 500758 thru 500760, 500771, 500772, 500775, 500776, 500790, 500792, 500794
TSIO-520C	501540, 501541, 501543 thru 501545
TSIO-520D & DB	505009
TSIO-520E & EB	501408 thru 501413, 501421 thru 501427, 501430 thru 501470
TSIO-520H	506865 thru 506868
TSIO-520J & JB	503605, 503607 thru 503611

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for Luftfartsinspeksjon
Postboks 18. 1330 Oslo Lufthavn
Telefon Oslo (02) 12 13 40
AFTN ENFBYA
Tlgr CIVILAIR OSLO
Telex 17011 Idal n

LUFTDYKTIGHETSPÅBUD (LDP)

Motorer

Continental-14

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

forts.

29/79

Modell	Serienr.
TSIO-520K & KB	504314
TSIO-520L & LB	508546, 508549, 508551 thru 508553, 508557, 508559 thru 508573, 508576, 508579, 508580, 508583 thru 508601, 508603 thru 508607, 508609, 508611 thru 508614, 508618 thru 508626, 508628 thru 508630, 508633, 508681 thru 508693, 508695 thru 508697, 508706
TSIO-520M	511379 thru 511408, 511410 thru 511420, 511423 thru 511425, 511426 thru 511438, 511440 thru 511448, 511451 thru 511459, 511461 thru 511463, 511465 thru 511474, 511476 thru 511480, 511482 thru 511484, 511486 thru 511491, 511493, 511495 thru 511497, 511499, 511503 thru 511505, 511507 thru 511521,511523 thru 511532, 511535, 511537 thru 511554, 511589
TSIO-520N & NB	514303, 514313, 514315 thru 514318, 514327, 514330 thru 514332, 514334 thru 514407, 514409 thru 514412, 514414 thru 514418, 514420 thru 514434, 514436 thru 514440, 514442 thru 514464, 514467 thru 514491, 514495 thru 514497, 514499, 514501, 514503 thru 514525, 514529 thru 514531, 514534 thru 514537, 514541 thru 514543, 514547 thru 514550, 514552, 514553, 514555 thru 514558, 514560 thru 514571, 514575 thru 514582, 514584 thru 514591, 514593, 514595, 514597, 514598, 514601 thru 514604, 514606 thru 514609, 514618 thru 514623, 514630 thru 514634, 514640, 514642, 514645, 514650, 514651, 514657, 514658, 514662, 514664, 514665, 514671, 514679, 514681, 514691, 514698, 514701, 514728, 514763, 514766 thru 514768, 514771, 514792 thru 514794, 514797, 514815
TSIO-520P	513028, 513031, 513048 thru 513081, 513083 thru 513125, 513127 thru 513129, 513133 thru 513140, 513142, 513143, 513146, 513150 thru 513161, 513164, 513166, 513168 thru 513177, 513181, 513185, 513190, 513191, 513193 thru 513195
TSIO-520R	512759, 512779, 512790 thru 512811, 512813 thru 512833, 512835 thru 512842, 512844 thru 512909, 512911 thru 512976, 512978 thru 512986, 512988 thru 512991, 512993 thru 512995, 512997, 512998, 517000 thru 517030, 517032 thru 517035, 517037 thru 517043, 517045 thru 517054, 517056 thru 517065, 517067 thru 517074, 517077, 517078, 517080 thru 517082, 517084 thru 517086, 517088 thru 517102, 517104, 517107, 517108, 517109, 517111

forts. 8. mai 1979

Modell	Serienr.
TSIO-520T	515008, 515009, 515014, 515016, 515017, 515022, 515023, 515026, 515027, 515030 thru 515032, 515039 thru 515044, 515046, 515047, 515051, 515053, 515055, 515056
TSIO-520U	515501 thru 515506
TSIO-520VB	516001 thru 516024, 516026 thru 516030, 516033, 516035, 516037, 516039, 516041, 516043 thru 516045, 516050, 516053, 516057, 516060 thru 516064, 516080 thru 516083, 516091, 516114 thru 516117
GTSIO-520C	602228
GTSIO-520H	600993, 600995, 607000, 607002, 607003
GTSIO-520K	605149, 605150, 605152 thru 605154
GTSIO-520L	604797, 604932, 604937, 604938, 604942 thru 604953, 604955 thru 604966, 604968 thru 604975, 604978, 604981 thru 604983, 604985, 604986, 604988, 604989, 604991 thru 604994, 604996 thru 604999, 608000 thru 608002, 608004 thru 608011, 608014, 608018, 608020, 608023 thru 608029, 608034, 608040, 608043 thru 608048, 608050 thru 608053, 608064, 608066
GTSIO-520M	606363, 606366, 606400 thru 606439, 606441, 606443, 606444, 606452 thru 606454, 606456, 606459, 606460, 606475

Fabrikkoverhalte motorer (Rebuilt Engines)

IO-346A	230102R, 230103R
6-285CA	227150R thru 227152R, 227154R thru 227162R, 227173R, 227175R, 227176R
O-470G	70671R thru 70673R
O-470J	202093R, 202094R, 202096R thru 202102R
O-470K	49345R thru 49350R
O-470L	69571R, 69572R, 69575R thru 69584R, 69586R thru 69588R
O-470M	54081R thru 54085R, 54088R thru 54100R
O-470R	226839R, 226858R, 226863R, 226865R, 226868R thru 226907R, 226909R thru 226914R, 226916R thru 226944R, 226946R, 226949R thru 226954R, 226956R, 226958R, 226962R
O-470S	226259R, 226261R thru 226270R, 226272R thru 226281R

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18 1330 Oslo Lufthavn
Telefon Oslo 02 121340
AFTN ENFBYA
Tlgr CIVILAIR OSLO
Telex 17011 ldal n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer

Continental-15

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

forst.

29/79

Modell	Serienr.
O-470U	230351R, 230352R, 230354R
IO-470C	227245R thru 227264R
IO-470D	105517R thru 105523R, 105525R thru 105527R, 105529
IO-470E	88716R thru 88719R
IO-470F	89762R thru 89766R
IO-470H	87327R
IO-470J	89100R thru 89102R
IO-470K	92767R thru 92779R
IO-470L	230033R, 230035R,230038R thru 230069R,230071R thru 230077R, 230079R thru 230082R, 230084R, 230085R, 230088R, 230089R, 230094R, 230095R
IO 470N	96343R thru 96350R, 96352R, 96358R
IO-470S	109282R thru 109287R
IO-470U	118389R, 118390R
IO-470V	170628R thru 170652R, 170654R thru 170665R, 170670R, 170671R.
IO-520A	112401R thru 112427R, 112429R thru 112431R
IO-520BA	122813R, 122819R,122836R thru 122841R,122843R thru 122858R, 122860R thru 122872R, 122926R, 122931R thru 122934R, 122937R thru 122942R, 122944R thru 122953R, 122956R thru 122958R, 122960R, 122962R, 122964R thru 122966R, 122969R, 122973R thru 122975R, 122978R
IO-520C	173250R, 173259R, 173277R, 173282R, 173284R thru 173289R, 173294R, 173297R thru 173354R, 173356R thru 173376R, 173379R thru 173396R,173398R, 173399R,231553R thru 231601R, 231604R, 231606R, 231609R, 231610R, 231612R, 231615R, 231620R

8. mai 1979 forts.

MERK! For at angjeldende flymateriell skal være luftdyktig, må påbudet være utført til rett tid og metode om

Motorer
Continental-15

forts.
29/79

Modell	Serienr.
IO-520D	179564R, 179571R,179577R thru 179583R,179585R thru 179613R, 179615R thru 179628R,179630R thru 179644R,179646R, 179647R, 179651R, 179654R thru 179658R, 179660R, 179664R
IO-520E	215537R
IO-520F	195764R, 195767R, 195768R, 195771R, 195774R, 195779R thru 195797R, 195799R, 195801R, 195802R, 195804R thru 195810R, 195812R thru 195814R, 195818R thru 195829R
IO-520K	224010R, 224011R, 224013R
IO-520L	220560R thru 220580R
IO-520M	227369R thru 227396R, 227398R thru 227404R
TSIO-520B	176277R, 176281R thru 176283R, 176285R thru 176301R, 176303R
TSIO-520C	178168R thru 178175R, 178178R
TSIO-520E	182930R, 182932R,182934R thru 182942R,182944R thru 182998R, 183000R thru 183017R, 183020R thru 183024R, 183026R thru 183051R, 183054R,183056R, 183057R
TSIO-520G	216008R
TSIO-520H	217055R thru 217067R
TSIO-520J	218738R thru 218759R, 218761R, 218762R, 218768R thru 218770R
TSIO-520K	224545R
TSIO-520L	227621R, 227622R, 227624R thru 227626R, 227629R
TSIO-520M	230128R, 230129R
TSIO-520N	228091R thru 228114R, 228117R thru 228120R, 228122R
TSIO-520R	230228R, 230230R thru 230233R
GTSIO-520C	155451R thru 155473R, 155479R
GTSIO-520D	219302R thru 219312R, 219314R, 219315R, 219318R

9. mai 1979
forts.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 8, 1330 Oslo Lufthavn
Telefon: Oslo (02) 12 13 40
AFTN: ENFBYA
Tlgr.: CIVILAIR OSLO
Telex: 17011 lsain

LUFTDYKTIGHETSPÅBUD (LDP)

Motorer
Continental-16

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23 mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

forts.

29/79

Modell	Serienr.
GTSIO-520H	218429R, 218431R thru 218448R, 218450R thru 218465R, 281467R thru 218493R, 218500R, 231351R thru 231386R, 231388R, 231389R, 231397R
GTSIO-520K	226041R thru 226052R
GTSIO-520L	227825R thru 227829R, 227831R thru 227833R, 227858R, 227860R thru 227862R
GTSIO-520M	227914R, 227915R, 227917R thru 227922R, 227924R thru 227929R, 227931R thru 227937R, 227939R, 227940R

Denne LDP gjelder også motorer som har fått skiftet ut oljepumpen eller skruen og/eller stemplet i oljetrykksventilhuset i perioden 1. april 1978 til og med 5. januar 1979.

Påbudet omfatter:

For å unngå mulig tap av oljetrykksindikasjon skal huset for oljetrykksventilen kontrolleres for å se om det er påmalt en gul flekk. Dersom malingsflekken finnes, gjelder ikke denne LDP. I motsatt fall skal trykkventilen tas av og skrue og stempel kontrolleres ved å sammenligne dimmensjonene i figur 1, 2 og 3 med henholdsvis skrue og stempel.

Dersom skrue og stempel stemmer overens med dimmensjoner i figur 2, "Intermediate Design", må delene skiftes ut med deler som stemmer overens med deler i figur 2, "Current Design". Disse fås i TMC Kit 642335A1. Skrue og stempel som stemmer overens med figur 1,"Original Design" kan fortsatt brukes.
Hvor skrue og stempel stemmer overens med figur 1 og 3, skal ventilhuset merkes med en gul malingsflekk.

Tid for utførelse:

Innen 50 timers gangtid etter 8. mai 1979.

Referanser:

FAA AD 79-05-09 Amendment 39-3426.

fort

8. mai 1979

Motorer
Continental- 16
forts.
29/79

ORIGINAL DESIGN

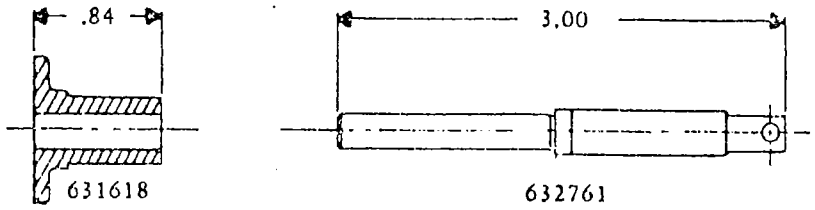


FIGURE 1

INTERMEDIATE DESIGN

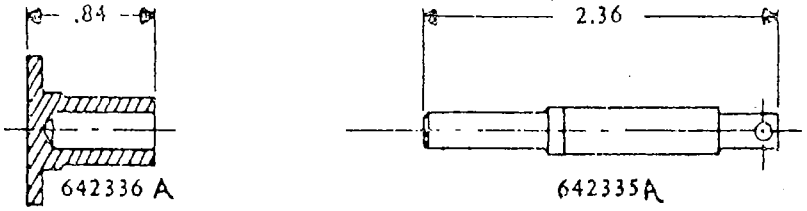


FIGURE 2

CURRENT DESIGN

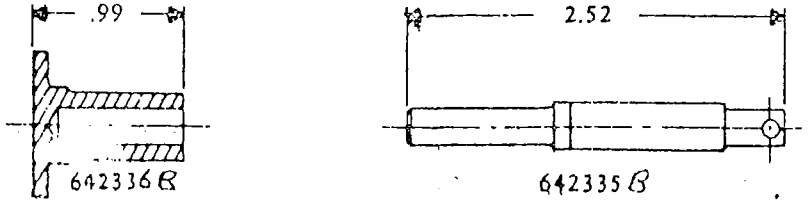


FIGURE 3

R. Ulltang

3. mai 1979

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn

Telefon: Oslo (02) 12 13 40
AFTN : ENFBYE
Tlgr. : CIVILAIR OSLO
Telex : 17011 ldal n

LUFTDYKTIGHETSPÅBUD
(LDP)

Motorer
Continental-17

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

70A/80 KONTROLL AV VEIVAKSEL FOR KORROSJON

Påbudet gjelder:

Rolls-Royce motor modell O-240 og alle nye og luftdyktige veivaksler på lager.

Påbudet omfatter:

1. Pga tilfeller av gravrust i veivakselen som i verste fall kan forårsake brudd, skal Rolls-Royce Service Bulletin no. T-416/1 eller senere revisjoner utføres.
2. Skift ut veivakselen.

Tid for utførelse:

Pkt 1: Før første flyging etter 7.11.1980.

Pkt 2: Innen 31.12.1982.

Referanser:

Rolls-Royce Service Bulletin No T-416/1. CAA AD No. 001-03-82.

106/ 80 MONTERING AV PLATER OVER TETNINGSRING PÅ PROPELLAKSELEN

Påbudet gjelder:

Teledyne Continental motors modeller:
TS10-520-M med følgende serienr.:

511000 til og med 520187
230126 R til og med 230129R
230131 R " " " 230142R
230144 R " " " 230146R

montert på, men ikke begrenset til:
Cessna modeller TU 206G og T 207A

TS10-520-P med serienr. 513000 til og med 513620 og 236401R montert på men ikke begrenset til Cessna modell P 210N.

TS10-520-R med serienr. 512000 til og med 517961, 230226R, 230228R, 230230R til og med 230233R, 230235R til og med 230246R og 230248R montert på, men ikke begrenset til, Cessna modeller T 210M og T 210N.

forts.

25.5.82

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i ved-

106 /80
forts. Påbudet omfatter:

For å forhindre at oljetetningsringen mellom propellakselen og motorblokken forskyver seg, skal plater med delnr. 641361 monteres over tetningsringen som vist i TCM Service Bulletin no. 80-20 datert 12. september 1980 eller senere revisjoner.

Tid for utførelse:

Innen 25 timers gangtid etter 22.12.80.

Refereanser:

FAA AD 80-22-05 Amendment 39-3948

23 /81 TILTAK MOT FORURENSNING AV BENSINPUMPEFILTER

Påbudet gjelder:

Continental A-65, A-75, C75, C85, C90, A-100, C125 og O-200 motorer med vekselstrømsbensinpumper TCM delnr. 40585, 40695 eller 631391 innstallert.

Påbudet omfatter:

For å unngå dårlig bensintilførsel som følge at forurenset filter i bensinpumpen skal Continental Aircraft Engine Service Bulletin no. M81-8 datert 9. februar 1981 eller senere revisjoner utføres.

Tid for utførelse:

Innen de neste 25 timers gangtid etter 6-7-81.

Referanser:

FAA AD 81-07-06 Amendment 39-4071 og Continental Aircraft Engine Service Bulletin no. M81-8 omhandler samme sak.

R. Ulltang

25.5.1982.

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
[illegible] 1330 Oslo Lufthavn
Telefon Oslo (02) 12 [illegible]
AFTN [illegible]
Tlgr CIVIL AIR OSLO
Telex [illegible]

LUFTDYKTIGHETSPÅBUD (LDP)

Motorer
Continental-18a
Erstatter Continental-18

Med hjemmel i lov om luftfart av 16 desember 1960 §§ 214 og 43 jfr. kgl. res av 8 desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23 mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet

46/81 KONTROLL OG UTSKIFTING AV TANNHJUL PÅ OLJEPUMPEN

Påbudet gjelder:

TELEDYNE og ROLLS ROYCE CONTINENTAL MOTORS IO-360 og TSIO-360 motorer som følger:
IO-360-C, -D, -G, H- og -J, alle serinr. TSIO-360-A, -B, C, alle serienr. samt følgende "rebuilt" motorer:

IO-360-A	alle	serienr.	til	og	med	20128 R
IO-360C	"	"	"	"	"	60516 R og 60519 R
IO-360D	"	"	"	"	"	628823R unntatt 628818R og 628821R
IO-360H	"	"	"	"	"	226506R
TSIO-360A	"	"	"	"	"	197085R

Påbudet omfatter:

For å forhindre tap av oljetrykket pga brudd på oljepumpedrevet skal følgende utføres:

1. Ta av henholdsvis dekslet over turtellerdrevet eller turtellerdrevets adapter. Kontroller momentet nødvendig for å løsne mutteren som holder oljepumpens "drive gear" eller turteller drevets "connector". Dersom momentet ligger mellom 200 og 350 pundtommer (inch pounds), skal mutteren tildras til 280-300 pundtommer og dekslene monteres på plass.

2.a) Dersom momentet er mindre enn 200 eller mer enn 350 pundtommer skal pumpens "drive gear" med delnr. 632550, 634010 eller 640926 skiftes ut med luftdyktig del med samme delnr.. Låsekile, Woodruff, delnr. M535756-1 eller 633342-1 skal ikke monteres (ref. TCM Manual Numbers X-30030A og X30031A) eller

b) Foreta magnafluxkontroll av oljepumpens "drive gear" (delnr. som i pkt. 2a) med spesiell oppmerksomhet rettet mot låsekilesporet og gjengepartiet. Skift ut deler som i pkt. 2a dersom kontrollen viser at tannhjulet ("drive gear") har sprekker, skader eller er slitt ut over toleransegrensene. Se pkt. 2a for montering av låsekile.

3. Monter sammen oljepumpen eller turtellerdrevets "connector" som vist i pkt. 1.

Tid for utførelse:

Innen 25 timer gangtid etter 11.1.1982.

Referanser:

FAA AD 81-13-10 R1 Amendment 39-4256.

1.11.82

Motorer
Continental-18a
Erstatter Continental-18

7/82 KONTROLL AV BRENNSTOFFPUMPE

Påbudet gjelder:

Teledyne Continental Motors modeller IO-520, TSIO-520 og GTSIO-520 (untatt GTSIO-520-F og K) nye eller "rebuilt" med motordreven brennstoffpumpe, delnr. I0178XX til og med A0280XX, montert eller skiftet ut i tidsrommet 1. september 1978 til og med 31. juli 1980.

Påbudet omfatter:

For å forhindre mulig brennstofflekkasje med risiko for brann skal følgende utføres:

1. Kontroller pumpen for lekkasje mellom segmentene.

2. Utfør arbeide som vist i Service Bulletin M 80-26 revisjon 1 eller senere revisjoner.

Tid for utførelse:

Pkt. 1: Innen 10 timers gangtid etter 11.1.82 og deretter med 10 timers mellomrom inntil pkt. 2 er utført.

pkt. 2: Innen 50 timers gangtid etter 11.1.82.

Referanser:

FAA AD 81-24-06 Amendment 39-4260 og SB M80-26 revisjon 1. omhandler samme sak.

R Ultang

1.11.82

R. Jacobsen

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn

Telefon : Oslo (02) 59 33 40
AFTN : ENFBYE
Tlgr. : CIVILAIR OSLO
Telex : 77011 ldal n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 19

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

31/85 *UTSKIFTING AV EKSOSVENTILER*

Påbudet gjelder:

Følgende Teledyne Continental motorer:

Modell:	Serienummer:
IO-470-C	242071 t.o.m. 242076
O-470-K	49390 t.o.m. 49394
O-470-L	69640 t.o.m. 69643
O-470-M	54141 og 54142
O-470-R	238170, 238171, 238176 t.o.m. 238197, 238199 t.o.m. 238211, 238213, 238215 t.o.m. 238218, 238223, 238224, 466653 og 466654
O-470-S	226443, 226444, 226446 t.o.m. 226457

samt alle sylindre med delnr. 646680A4 og 646680A5 på lager eller installert på Continental IO-470-C, O-470-G, -K, -L, -M, -R eller -S etter mars 1984.

Påbudet omfatter:

For å unngå slitasje i ventilforinger, urenheter i oljen, ventilskjæring og resulterende motorsvikt, skal følgende utføres:

1. Kontroller delnr. på nedre del av hver sylinderflens. Dersom ingen av disse har delnr. 646680A4 og -A5 er videre tiltak ikke påkrevet, og kvittering for utførelse av denne LDP anføres i motorjournalen.

2. Ta av alle sylindre som har delnr. 646680A4 eller -A5 og skift ut eksosventiler (delnr. 626540) med nye (delnr. 637781).

   Anm.: TCM SB M85-3, datert 4.2.85, inneholder liste over deler (med delnr.) nødvendige for å utføre denne utskiftningen.

3. Kontroller at det ikke finnes metallavleiringer fra ventilstammen i foringen. Dersom slike rester finnes skal disse fjernes med 180 grads smergelpapir (jernoksydert) rundt en 20 cm (8") lang og 6,35 mm (1/4") diameters rundstav. Vær nøye på at bare selve avleiringen fjernes.

forts;

10.8.85

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDP's nummer.

31/85
forts; Etter polering må eksosforingens indre diameter ikke overskride de foreskrevne 0,4405 tommer.

4. Etter utskifting av eksosventiler og evt. polering av foringer merkes sylindrene med nytt delnr. 646680A7 og gis luftdyktighets-attest. Samtidig kvitteres for utførelse av denne LDP i motor-journalen.

Tid for utførelse:

For lagrede sylindre: Før montering på motor

For aktuelle motorer: Innen 10 timers gangtid etter 10.9.85

Referanse:

FAA AD 85-08-02

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn

Telefon : Oslo (02) 59 33 40
Tlgr. : CIVILAIR OSLO
Telex : 77011 idal n

LUFTDYKTIGHETSPÅBUD
(LDP)

MOTORER

CONTINENTAL - 20

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

1/88 UTSKIFTNING AV OLJEFILTER

Påbudet gjelder:

Teledyne Continental; alle typer i følgende motorserier:

IO-360	O-470	IO-520	IO-550
TSIO-360	IO-470	TSIO-520	
	TSIO-470	GTSIO-520	

Påbudet omfatter:

For å unngå tap av motoroljen med påfølgende motorsvikt skal følgende utføres:

1. Kontroller om oljefilter med TCM delnr. 649309 eller 649310 er installert.

   a) Dersom ingen av disse filtre er installert er videre tiltak ikke påkrevet, bortsett fra utførelse av pkt. 2 i denne LDP.

   b) Skift ut filter TCM delnr. 649309 med nytt; delnr. 649923 eller tilsvarende med Parts Manufacturer Approval (PMA).

   c) Skift ut filter TCM delnr. 649310 med nytt; delnr. 649922 eller tilsvarende med Parts Manufacturer Approval (PMA).

2. Kvittér for utførelsen av denne LDP i motorjournalen.

Tid for utførelse:

Innen 10 timers flytid etter 18.2.88, eller ved neste oljeskift; det som kommer først.

Referanse:

FAA EAD 88-03-06

18.2.88

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDP's nummer.

...trykk-Oslo

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn

Telefon : Oslo (02) 59 33 40
Tlgr. : CIVILAIR OSLO
Telex : 77011 idal n

LUFTDYKTIGHETSPÅBUD
(LDP)

MOTORER

CONTINENTAL - 21

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

14/88 KONTROLL AV SYLINDRE

Påbudet gjelder:

Teledyne Continental motorer som har sylindre med følgende delnr.:

643985, 646100, 646101, 646652, 646652CP, 646657, 646657CP, 649162, 649162CP, 649169 og 649169CP; samt alle disse delnr. med alle "A"-"dashnummer" som etterledd. Videre gjelder denne LDP alle overhalte sylindre som opprinnelig hadde ovennevnte delnr.

De aktuelle sylindre er blitt produsert 1.1.85 eller senere og har 485 timers total gangtid eller mindre; og er montert på, men ikke begrenset til, følgende motorer:

NYE MOTORER

MODELL	SERIENR.
GTSIO-520-H	607068 t.o.m. 607070
-K	605164
-L	608669 " 608673
-M	606979 " 606997
-N	610450 " 610462
TSIO-520-BE	528133 " 528242, 528244 t.o.m. 528246, 528252 " 528256, 528259, 528260, 528263, 528270
-CE	530045 " 530127,530131, 530132
-C	501603 " 501610
-EB	510802 " 510809
-G	507066
-H	506883 " 506885
-M	520742 " 520824, 520829 t.o.m. 520835, 520837, 520838
-NB	521585 " 521615
-P	513908 " 513910
-R	522588 " 522602, 522604, 522605
-UB	527063 " 527080
-VB	529014 " 529060
-WB	518895 " 518906
IO-520-BB	578073,578084 t.o.m. 578151, 578155, 578156,578166
-CB	576237 t.o.m. 576272
-D	575717, 575747 t.o.m. 575806
-E	556594 t.o.m. 556603
-F	574844 " 574988
-K	557516 " 557518
-L	577121 " 577147, 577149 t.o.m. 577153
-MB	575043 " 575046
IO-550-B	675125 " 675237, 675239 t.o.m. 675244, 675246 " 675256, 675258 " 675266,

forts; 15.7.88

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDP's nummer.

e.s trykk-Oslo

4/88
forts;

MODELL	SERIENR.
IO-550-B	675273, 675274, 675277, 675278
IO-550-C	676156 t.o.m. 676231, 676233 t.o.m. 676248, 676250 " 676271

OVERHALTE MOTORER

MODELL	SERIENR.
GTSIO-520-C	155546 t.o.m. 155550
-D	219429 " 219435
-H	235236 " 235290, 235293 t.o.m. 235298, 267000 " 267003
-K	226106 " 226110
-L	245882 " 245990, 245992 t.o.m. 246008, 246011 " 246014, 246016 " 246021, 246023, 246024
-M	243217 t.o.m. 243364,243366,243367, 243369 " 243381
-N	241300,265000 t.o.m. 265039, 265041
TSIO-520-AF	245205
-BB	236937 t.o.m. 236951
-B	176485 " 176522
-C	178289 " 178297
-EB	242984 " 242999
-E	183816 " 183939, 183941 t.o.m. 183943, 183947
-G	216022 " 216025
-H	217173 " 217187
-J	218907 " 218924
-K	224583, 224584
-LB	237237 t.o.m. 237241, 237245, 237246
-L	241883 " 241900
-M	230223, 230225, 248601 t.o.m. 248628, 248632 t.o.m. 248638, 248642
-NB	244933 t.o.m. 244999, 266500 , 266503 t.o.m. 266511, 266513 t.o.m. 266517, 266521, 266525
-N	228481 t.o.m. 228509 t.o.m. 228516
-P	236453 " 236467
-R	245645 " 245696
-T	239316 " 239321
-UB	240981 " 241000, 248851 t.o.m. 248854, 248858
-VB	248288 " 248499, 266600 " 266681, 266683 " 266685, 266687, 266689, 266691, 266699 " 266702
-WB	248160 " 248203, 248205 t.o.m. 248217
IO-520-A	112547 " 112569
-BA	241763 " 241800, 249251 t.o.m. 249425, 249427 " 249429, 249433 " 249443, 249445, 249446, 249448 t.o.m. 249453 , 249457
-BB	236000, 236789 , 248500 " 248568, 248572, 248573, 248575
-B	234758
-CB	244047, 244067 t.o.m. 244110, 244112 t.o.m. 244123, 244126, 244127, 244130, 244131
-C	243728, 243766 t.o.m. 243999, 267500, 267505 t.o.m. 267510, 267513 t.o.m. 267516, 267527

forts;
15.7.88

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn

Telefon : Oslo (02) 59 33 40
Tlgr. : CIVILAIR OSLO
Telex : 77011 kdal n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 22

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

14/88

forts:

MODELL	SERIENR.
IO-520-D	175381 t.o.m. 175531, 175534 t.o.m. 175536, 175540 " 175556, 175559, 175560, 175563 175565 " 175567
-E	215674 " 215690
-F	247574, 247577, 247607 t.o.m. 247727, 247731 t.o.m. 247742, 247744, 247746 " 247750, 247752 " 247756, 247762, 247766, 247767
-J	216515
-K	224045, 224046
-L	242834 t.o.m. 242896, 242899
-MB	236383 " 236400, 266000 t.o.m. 266017, 266019
-M	235728 " 235787, 235789 " 235793
IO-550-B	249104 " 249122

Påbudet omfatter:

For å unngå at sylinderhodet løsner, hvilket kan føre til motorsvikt og/eller brann, skal følgende utføres:

I. For sylindre med ovennevnte delnr. som er montert på motorer (inkludert motorer med serienr. som er listet ovenfor):

1. Undersøk delnr. og fabrikasjonsdato for hver sylinder. (Delnummeret er stemplet på sylinderens flens, og måned/år for fabrikasjon er stemplet under av vippearmdekselet på fremsiden av bosset til vippearmakselen)

a. Dersom delnr. og fabrikasjonsdato stemmer overens med det som er angitt ovenfor, skal pkt. 2 t.o.m 7 i denne LDP utføres

b. Dersom delnr. og fabrikasjonsdato ikke stemmer overens med det som er angitt ovenfor, skal kun pkt. 7 i denne LDP utføres. Videre tiltak er vil dermed ikke være påkrevet i.h.t. denne LDP.

2. Undersøk visuelt om det er oljeflekker eller lekkasje mellom første og andre kjøleribbe regnet fra nederst på godset i sylinderhodet. Aktuelt område for direkte drevne motorer er kl. 12 posisjonen på sylinderside 1-3-5 og kl. 6 på 2-4-6'siden. For motorer i GTSIO serien er det aktuelle område kl. 6 posisjonen på sylinderside 1-3-5 og kl. 12 på 2-4-6'siden.

forts;
15.7.88

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDP's nummer

e.s trykk-Oslo

14/88
forts:

3. Foreta trykkprøve på alle sylindrene ved hjelp av en kompresjonstester av differensialtypen. Stempelet skal være så nær nedre dødpunkt (NDP) som mulig for å sikre at stempel og ringer er nedenfor det inspeksjonsområde som er angitt i pkt. 2, men likevel høyt nok til at begge ventilene er lukket og sylinderen holder trykket. Med 80 PSIG (pounds per square inch gauge) trykk i sylinderen kontrolleres så området spesifisert i pkt. 2 for lekkasjer. Bruk såpevann til dette.

4. Dersom tegn til lekkasje oppdages under kontrollene i pkt. 2 og eller 3, skal sylinderen byttes ut før første flyging.

   Anm.: TCM Service Bulletin M86-7 Revisjon 5, datert 15.11.86, understreker at det må utvises særskilt forsiktighet i propellområdet når trykktesten foretas.

5. Dersom det ikke kan påvises tegn til lekkasje skal pkt. 2 og 3 gjentas med faste intervaller.

6. Pkt. 5 i denne LDP kan opphøre dersom et av følgende underpunkt er blitt utført:

   a) Mistenkte sylindre er blitt skiftet ut med luftdyktige enheter som er produsert før januar 1985.

   b) Godkjente byttesylindre med andre delnr. er montert; forutsatt at disse ikke er overhalte sylindre som tidligere hadde ovennevnte delnr.

   c) Sylindre av ny konstruksjon (som vist nedenfor) er blitt montert, og disse har bokstaven "P" stemplet eller gravert på fremsiden av bosset til vippearmakselen ved siden av fabrikasjonsdatoen (Dvs. 5-85P).

MOTORSERIE	NYTT DELNR. PÅ STEMPEL
IO-550	648046
IO-520	648045
TSIO-520 og GTSIO-520	648044

7. Før inn utførelsen av denne LDP i motorjournalen.

II. Slå fast fabrikasjonsdatoen for berørte sylindre på lager. Dersom fabrikantens datostempel viser 1-85 eller senere, kontaktes fabrikanten for innbytte av enheten. Se pkt. 1 i denne LDP for identifikasjon av datostempel.

III. Utfør denne LDP på alle sylindre som er blitt overhalt og/eller gitt annet delnr.

Anm.: TCM Service Bulletin nr. M86-7 Rev. 5, datert 15.11.86, og SB M87-19, datert 17.9.87; omhandler samme sak.

forts;
15.7.88

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 18, 1330 Oslo lufthavn

Telefon : Oslo (02) 59 33 40
Tlgr. : CIVILAIR OSLO
Telex : 77011 ldal n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 23

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

4/88 forts:

Tid for utførelse:

Pkt. 1, 2 og 3; samt III: Innen 5 timers gangtid etter 15.7.88; dersom ikke allerede utført.

Pkt. 5: Innen 5 timers gangtid etter 15.7.88; deretter gjentatte kontroller med 50 timers mellomrom, med siste kontroll ved mellom 440 og 490 timers sylinderoperasjon.

Referanse:

FAA EAD 86-13-04 R3

5/88 LEKKASJE I DRIVSTOFFPUMPE

Påbudet gjelder:

Continental GTSIO-520-N, med Lear Siegler Romec. roterende drivstoffpumpe, delnr. P/N 643367A2.

Påbudet omfatter:

For å unngå lekkasjer i drivstoffpumpen, uregelmessig drivstofftilførsel og/eller motorbrann; skal følgende utføres:

1. Kutt og fjern låsetråden fra de fire festeskruene til "regulator valve cover", delnr. 643367A2.
2. Løsne skruene en hel omdreining.
3. Dra til skruene med 24-27 inch pounds.
4. Lås skruene med .032" låsetråd.

Anm.: Denne LDP skal utføres uavhengig av om nedeforstående Service Bulletiner tidligere er blitt utført:

Lear Siegler Service Bulletin nr. 101SB015, datert 17.12.86
Continental Service Bulletin nr. M87-6

Tid for utførelse:

Før første flyging etter 15.7.88; dersom ikke allerede utført.

forts; 15.7.88

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDP's nummer.

s trykk - Oslo

5/88 forts; Referanse:

FAA AD 87-04-05

6/88 SPREKKER I VEIVAKSEL

Påbudet gjelder:

Continental IO-520 og TSIO 520-seriene

Påbudet omfatter:

For å unngå at veivakselen svikter som følge av tretthetssprekker skjult under materialoverflaten, skal ultralydsundersøkelse foretas i henhold til Continental Service Bulletin M87-5 Revisjon 1, datert 25.5.87, og Crankshaft Ultrasonic Inspection Procedure, Form X30554, datert februar -81.

Anm.: Magnafluxkontroll eller andre kontroller spesifisert i fabrikantens vedlikeholdsunderlag settes ikke tilside av denne LDP.

Tid for utførelse:

Hver gang veivakselen tas ut, eller byttes.

Referanse:

FAA AD 87-23-08

LUFTFARTSVERKET
Postboks 18, 1330 Oslo lufthavn
Telefon: Oslo (02) 59 33 40
AFTN: ENFBYE
Tlgr: CIVILAIR OSLO
Telex: 77011 ldal n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 24

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43 jfr. kgl. res. av 8. desember 1961, litra K og Samferdselsdepartementets bemyndigelse av 23. mars 1964 fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

013A/90 KONTROLL AV OLJEPUMPE

Påbudet gjelder:

Teledyne Continental Motors (TCM):

Modell TSIO-520B, BB, D, DB, E, EB, J, JB, K, KB, N, NB, UB og VB; motorer utstyrt med lenseoljepumpe ("Scavenge Oil Pump") gear, delnummer (P/N) 635334, 639388, 649157 og 649159.

Unntatt påbudet er motorer med serienummer listet i TCM Service Bulletin (SB) M90-6, eller motorer utstyrt med enhver starteradapter med remskive for driving av luftkondisjoneringskompressor.

Påbudet omfatter:

Anm.: TCM Aircraft Engine Service Bulletin No. M90-6, datert 26.2.90, omhandler denne sak.

For å unngå mulig svikt i "Scavenge Oil Pump gears", skal følgende utføres:

1. Demonter pumpen og ta ut drevene. Kontroller om drevtennene har et bormerke ("Drill Point") som vist i figur 1 i den relaterte SB.

1.1 Dersom det fins et slikt merke skal gearene kontrolleres i samsvar med fremgangsmåten beskrevet i ovenfor nevnte SB.

1.2 Dersom det ikke fins et slikt merke, eller at gearene ikke består kontrollen nevt i pkt. 1.1, skal gearene skiftes ut med gear P/N 649157 og/eller P/N 649159 som har slik merking.

Tid for utførelse:

Dersom ikke allerede utført:

Innen 500 flytimer etter 17.08.90.

Referanse:

FAA AD 89-24-01

17.08.90

039/90 GANGTIDSBEGRENSNING FOR STEMPELMOTORER

Påbudet gjelder:

Teledyne Continental Motors (TCM) 520 motorserie installert i Cessna 206 og 207 serie fly som benyttes, eller har vært benyttet, til "løfting" av fallskjermhoppere.

Påbudet omfatter:

For å unngå skadevirkninger på motorer i fly som er godkjent for "løfting" av fallskjermhoppere, gjelder følgende:

Utvidelse av gangtid i henhold til BSL B 3-2 Bilag 12 pkt. 4, tillates ikke lenger for de berørte motorer.

Tid for utførelse:

Denne LDP trer i kraft 11.06.90.

Anm.: Denne LDP kansellerer og opphever LDP 42/89.

Referanse:

LF2N

LUFTFARTSVERKET
Hovedadministrasjonen
Avd. for luftfartsinspeksjon
Postboks 8124 Dep., 0032 Oslo
Telefon : (02) 94 20 00
Telefax : (02) 94 23 91
Tlgr. : CIVILAIR OSLO
Teleks : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL-25

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43, jfr. kgl. res. av 8. desember 1961, litra K, og Samferdselsdepartementets bemyndigelse av 23. mars 1964, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

91-046 UTSKIFTING AV OLJEFILTER

Påbudet gjelder

Teledyne Continental Motors (TCM):

Modell IO-360, L/TSIO-360, IO-346, L/I/O-470, TSIO-470, IO-520, L/TSIO-520, 6-285, IO-550 og GTSIO-520.

Påbudet omfatter:

For å hindre tap av oljetrykk, effekttap eller motorsvikt p.g.a. ødelagt oljefilterelement skal følgende tiltak utføres:

1. Skift ut og kasser alle filtre med Champion P/N CH48108 eller CH48109 og tre-talls datokoder som har tallet "9" som siste siffer eller kodene 3J8, 4J8, 1K8, 2K8, 3K8, 4K8, 2L8, 1M8, 3M8, 1A0 eller 2A0.

Anm.: Datokoden er merket utvendig på siden av filteret.

2. Bytt ut fjernede filtere med Champion filter P/N CH48108 eller CH48109, som har andre koder enn listet ovenfor eller med andre godkjente filter som er egnet for motoren.

Tid for utførelse:

Før første flyging etter 16.12.91.

Referanse:

FAA AD 91-19-03.

16.12.91

92-025 UTFØRELSE AV TELEDYNE CONTINENTAL MOTORS SB No. M92-4 REV. 1

Påbudet gjelder:

Teledyne Continental Motors (TCM):

Modell IO-360, TSIO-360 og LTSIO-360; alle serienummer listet i TCM Service Bulletin (SB) No. M92-4 Rev. 1, datert 05.02.92;

alle IO-360, TSIO-360 og LTSIO-360 som er installert i, men ikke begrenset til Cessna 337, T337 og P337 serien, dessuten alle Cessna 172XP; Mooney M20K; Piper PA34-200T, PA34-220T, PA28R-201T og PA28RT-201T.

Påbudet omfatter:

For å hindre svikt i vippearmens "hold down stud" skal Teledyne Continental Motors (TCM) SB No. M92-4 Rev. 1, datert 05.02.92, utføres.

Anm.: Etter utførelse av TCM SB No. M92-4 Rev 1, datert 05.02.92, skal det med VIBRO-ETCH eller tilsvarende metode markeres med bokstaven "A" ved siden av "cylinder assembly date" på sylinderhodet mellom de to vippearms "pockets".

Tid for utførelse:

Dersom ikke allerede utført:

Før første flyging etter 20.05.92.

Referanse:

FAA AD 92-04-09.

20.05.92

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR OSLO
Teleks : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 26

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43, jfr. kgl. res. av 8. desember 1961, litra K, og Samferdselsdepartementets bemyndigelse av 23. mars 1964, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

93-050 KONTROLL AV VENTILER

Påbudet gjelder:

Teledyne Continental (TCM) motorer i seriene:

O-200, O-300, IO/TSIO/LTSIO-360, O/IO/TSIO-470, IO/TSIO/LTSIO/GTSIO-520 og IO/TSIO/TSIOL-550; som er listet i TCM Service Bulletin nr. 93-12, datert 12.5.93, eller motorer som har sylindre som er kjøpt fra TCM mellom 29.7.92 og 30.3.93.

Påbudet omfatter:

For å hindre motorsvikt som følge av manglende ventil "retainer key", skal følgende tiltak utføres:

1. Alle motorer som har mindre enn 25 flytimer, eller ukjent antall flytimer, siden ny, ombygget eller overhalt av fabrikanten:

   Utfør en visuell kontroll av hver sylinder i samsvar med TCM MSB No. 93-12, datert 12.05.93. og undersøk om begge ventil "retainer keys" er installert på hver ventil og at "roto coil" er korrekt posisjonert.

   Anm.: Visse TCM modeller har ikke inkorporert "roto coil" i ventilsystemet.

1.2 Dersom en ventil "retainer key" mangler, eller en "roto coil", dersom installert, ikke er korrekt posisjonert, skal ventilen repareres eller skiftes ut; det som er nødvendig, i samsvar med TCM Overhaul Manual.

1.3 Dersom ventil "retainer key" er installert og "roto coil" er korrekt posisjonert, kan motoren settes i drift i samsvar med TCM MSB No. 93-12, datert 12.05.93.

2. Alle motorer som har fått installert krombelagte sylindre, eller sylindre som har fått utført annet vedlikeholdsarbeide ved TCM i tidsrommet fra 29.07.92. til 30.03.93, som har mindre enn 25 flytimer siden installasjon av sylinder(e):

   Utfør en visuell kontroll av sylindrene og reparer eller skift ut i samsvar med instrukser gitt under pkt. 1 i denne LDP.

3. Uinstallerte sylindere som har vært til ettersyn ved TCM i tidsrommet fra 29.07.92 til 30.03.93, skal kontrolleres og om nødvendig repareres i samsvar med instrukser gitt under pkt. 1 i denne LDP, før innstallasjon på motor.

4. Motorer som har mer enn 25 flytimer siden ny, ombygget eller overhalt av fabrikanten skal ikke kontrolleres.

Tid for utførelse:

Før første flyging etter 01.06.93.

01.06.93

Referanse:

FAA AD 93-10-02.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR OSLO
Teleks : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 27

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43, jfr. kgl. res. av 8. desember 1961, litra K, og Samferdselsdepartementets bemyndigelse av 23. mars 1964, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

93-051 KONTROLL AV VEIVSTANG

Påbudet gjelder:

Teledyne Continental Motors O-200-A, O-300-A, O-300-C og O-300-D med følgende serienummer:

Ny O-200-A: 256005 t.o.m. 256009, 256011 og 256012.

Ombygd O-200-A:

281313-R, 281316-R, 281319-R t.o.m. 281323-R, 281325-R t.o.m. 281327-R, 281329-R, 281331-R, 281335-R, 281338-R, 281340-R, 281342-R, 281344-R, 281345-R, 281347-R, 281350-R, 281354-R, 281356-R, 281358-R, 281359-R, 281364-R, 281367-R, 281372-R t.o.m. 281375-R, 281385-R, 281389-R, 281394-R, 281398-R, 281405-R, 281407-R, 281409-R, 281410-R, 281416-R, 281419-R t.o.m. 281423-R, 281427-R, 281428-R, 281433-R, 281435-R, 281436-R, 281438-R, 281440-R, 281444-R t.o.m. 281446-R, 281457-R, 281459-R t.o.m. 281461-R, 281463-R, 281464-R, 281472-R, 281476-R, 281479-R, 281494-R, 285002-R og 285005-R.

O-200-A overhalt av fabrikant: 242663-H, 252848-H, 254252-H, 255170-H, 255210-H og 255984-H.

Ombygd O-300-A: 16107D-R og 16108D-R.

Ombygd O-300-C: 230815-R.

Ombygd O-300-D: 25356-R, 25363-R, 25622D-R, 29680-R, 29723-R, 35774-R, 35977-R og 35978-R.

Påbudet omfatter:

Det kan være installert feil type veivstang (type IO-360) i 93 motorer av typen TCM O-200-A, O-300-A, O-300-C og O-300-D. Veivstengene er like lange, men foringen for stempelpinnen i IO-360 veivstangen har en diameter på 1.000" i stedet for 0.923".

For å hindre motorsvikt som følge av at veivstangen ikke er korrekt i forhold til gjeldende motor, skal følgende tiltak utføres:

<u>For motorer som har mindre enn 100 flytimer, eller antall flytimer er ukjent:</u>

1. Når motoren er kald, skal motorcowling avmonteres, magnetene jordes og de øverste tennpluggene fjernes.

2. Utføres på en sylinder om gangen:

2.1 Posisjoner hver sylinder til omtrent 60 grader før øvre dødpunkt.

15.06.93

2.2 En liten messingstang settes ned i pluggåpningen så langt at kontakt med stempelet oppnås.

2.3 Hold messingstangen mot toppen på stempelet og drei propellen frem og tilbake omtrent 30 grader til hver side for å bevege veivakselen.

2.4 Observer messingstangens bevegelser og kontroller at stempelbevegelsen er direkte og synkron med veivstang/veivakselens bevegelser. Med det menes at messingstangen må reagere direkte på bevegelser av veivakselen.

2.5 Når det kontrolleres for synkrone bevegelser mellom stempelet og veivakselen må det ikke være noen hørbare indikasjoner på slark mellom stempelet og veivstangen/veivakselen.

3. Dersom stempelbevegelser ikke er direkte og heller ikke synkront med veivstang/veivakselens bevegelser, eller dersom det finnes synlige eller hørbare indikasjoner på slark mellom stempelet og veivstangen/veivakselen, skal veivstangen byttes ut med korrekt veivstang som gjelder for aktuell motor. Kontroller luftdyktigheten og skift ut andre berørte motordeler dersom nødvendig.

4. Motorer som har 100 flytimer eller mer siden ny, ombygd eller overhalt av fabrikant skal ikke kontrolleres, fordi FAA mener at evt. motorsvikt opptrer før denne gangtid oppnås.

Tid for utførelse:

Før første flyging etter 15.06.93.

Referanse:

FAA Priority Letter AD 93-11-03.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR OSLO
Teleks : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 28

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43, jfr. kgl. res. av 8. desember 1961, litra K, og Samferdselsdepartementets bemyndigelse av 23. mars 1964, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

93-060 KONTROLL AV "OIL PICK-UP TUBE"

Påbudet gjelder:

Teledyne Continental Motors (TCM), følgende ombygde og overhalte motorer i seriene:

O-470, IO-470, IO-520, TSIO-520 og IO-550; som er listet i TCM Service Bulletin (SB) No. M91-10, Rev 1, datert 27.11.91.

Disse motorene er installert i, men ikke begrenset til Cessna, Piper og Beechcraft.

Påbudet omfatter:

For å hindre motorsvikt, som følge av at oppsamlingsrøret til oljepumpen (oil pick-up tube) ikke er korrekt, skal følgende tiltak utføres:

1. Kontroller om korrekt oppsamlingsrør til oljepumpen er installert i motoren i samsvar med TCM SB No. M91-10, Rev 1, datert 27.11.91.

2. Dersom oppsamlingsrøret til oljepumpen ikke er korrekt, skal oljesump og oppsamlingsrør fjernes og erstattes med luftdyktige deler.

Tid for utførelse:

1. Innen 50 flytimer etter 01.09.93.

2. Før videre flyging.

Referanse:

FAA AD 93-08-17.

01.09.93

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR OSLO
Teleks : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 29

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43, jfr. kgl. res. av 8. desember 1961, litra K, og Samferdselsdepartementets bemyndigelse av 23. mars 1964, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

93-077 KONTROLL AV DRIVSTOFFPUMPE

Påbudet gjelder:

Følgende Teledyne Continental motorer:

IO-520B, IO-520BA, IO-520BB, IO-520C, IO-520CB, IO-520M, IO-520-MB, IO-550A, IO-550B, IO-550C, IO-550G, TSIO-520B, TSIO-520BB, TSIO-520D, TSIO-520DB, TSIO-520E, TSIO-520EB, TSIO-520J, TSIO-520JB, TSIO-520K, TSIO-520KB, TSIO-520L, TSIO-520LB, TSIO-520N, TSIO-520NB, TSIO-520UB, TSIO-520VB, TSIO-520WB, TSIO-550B, TSIOL-550A og TSIOL-550B;

med serienummer som er lavere enn de som er listet i TCM Mandatory Service Bulletin (MSB) No. M93-9, Rev. 1, datert 10.03.93, og som er utstyrt med drivstoffpumper med følgende serienummer:

P/N 646210-1, -2, -8, -10, -11; P/N 646212-2, -5, -16, -17; P/N 646758-5, -7, -8, -9; P/N 646765-6 og -7; P/N 646766-1 og -2; P/N 646767-1; P/N 649368-19; eller motorer, utstyrt med drivstoffpumpe uansett serienummer, hvor drivstoffpumpen har vært skiftet ut før 27.09.93 med drivstoffpumpe som har drivaksel P/N 646176 installert.

Påbudet omfatter:

For å hindre at drivstoffpumpens drivaksel løsner og forårsaker tap av motorkraft, skal følgende tiltak utføres:

1. Gjør en visuell inspeksjon av drivstoffpumpen og undersøk hvilken kombinasjon "drive shaft/drive coupling" som er installert. "Drive coupling" byttes ut i samsvar med TMC MSB No. M93-9, Rev. 1, datert 10.03.93, dersom nødvendig.

1.1 Dersom drivstoffpumpens drivaksel, P/N 646176 er installert med "drive coupling" P/N 631263, skal "dive couplig byttes med P/N 653359.

1.2 Dersom drivstoffpumpens drivaksel, P/N 643689 er installert med "drive coupling" P/N 631263 eller 653359, kreves ingen videre tiltak.

1.3 Dersom drivstoffpumpens drivaksel, P/N 646176 er installert med "drive coupling" 653359, kreves ingen videre tiltak.

Tid for utførelse:

Innen 30 flytimer etter 01.11.93.

Referanse:

FAA Emergency AD 93-16-15.

01.11.93

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR OSLO
Teleks : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 30

Med hjemmel i lov om luftfart av 16. desember 1960 §§ 214 og 43, jfr. kgl. res. av 8. desember 1961, litra K, og Samferdselsdepartementets bemyndigelse av 23. mars 1964, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

93-082 FORGASSERENS LUFTINNTAK "HOUSING ASSEMBLY"

Påbudet gjelder:

Følgende Teledyne Continental Motorer:

O-200A med serienr. 256030 t.o.m. 256037,

C85, C90, O-200 og O-240 som har forgasser luftinntak "housing assembly" med følgende serienummer; CE11141, CE11142, 639814, 639815, 641534 og Repair Kit Assemblies P/N 641689, mottatt etter 31.08.91, som ikke er stemplet "CSB 93-13".

Påbudet omfatter:

For å hindre svikt i motoren som følge av en sprukket ventil i forgasserens luftinntak "housing assembly", skal følgende tiltak utføres:

1. Kontroller forgasserens luftinntak "housing assembly" i samsvar med pkt. 2 i TCM Critical Service Bulletin (CSB) Nr. 93-13, datert 12.08.93.

   1.1 Dersom forgasserens luftinntak "housing assembly" imøtekommer de krav som er spesifisert i pkt. 2A i (CSB) Nr. 93-13, datert 12.08.93, er ikke videre tiltak i h.h.t. denne LDP påkrevd.

   1.2 Dersom tilstanden for forgasserens luftinntak "housing assembly" er i samsvar med pkt. 2B i (CSB) Nr. 93-13, datert 12.08.93, skal delen kontrolleres for sprekker i samsvar med pkt. 3 og 4 i forannevnte CSB. Dersom sprekker oppdages skal "housing assembly" byttes ut med luftdyktig del før videre flyging.

2. "Housing assemblies" på lager skal kontrolleres i samsvar med pkt. 1 i denne LDP før de tas i bruk på luftfartøy.

3. Luftdyktige "housing assemblies" defineres som:

   a. "Assembly" mottatt før 31.08.91;
   b. "Assembly" som imøtekommer inspeksjonskriteriene i pkt. 1.1 i denne LDP;
   c. "Assembly" med følgende serienr.:
      - 653661, som erstatter CE11142;
      - 653670, som erstatter 639815;
      - 653675, som erstatter 641534;
      - 653657, som erstatter 641689; eller
   d. "Assembly" P/N 641534, som er merket "CSB 93-13".

   Anm.: "Assemblies", P/N CE11141 og 639814, har ikke blitt erstattet da disse har luftfilter inkludert som korresponderer med "airboxes" P/N CE11142 og 639815.

01.12.93

4. Dersom forgasserens luftinntak "housing assembly" blir byttet ut med luftdyktig del er ikke lenger de repetivive inspeksjonene beskrevet i denne LDP påkrevd.

Tid for utførelse:

1. Innen 5 flytimer etter 01.12.93.

1.2 Inspeksjonsintervaller ikke overstigende 25 flytimer inntil "housing assembly" er skiftet ut.

Referanse:

FAA Emergency AD 93-22-05.

LUFTFARTSVERKET
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL
- 31,32, 33

Med hjemmel om lov om luftfart av 11. juni 1993 kap. IV § 4-1 og kap. XV § 15-4, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

94-043A KONTROLL AV VIPPEARMBOLTENES OPPLAGRING

Påbudet gjelder:

Teledyne Continental Engines and Rolls-Royce,plc:

Teledyne Continental Motors (TCM) :
C75, C85, C90, C125, C145, O-200, O-300 og GO-300.

Rolls-Royce, plc (R-R) :
C90, O-200, og O-300.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopi av FAA AD 95-05-05R1.

Tid for utførelse:

Ved neste utskifting av sylinder eller motoroverhaling.

Referanse:

FAA AD 95-05-05R1.

Gyldighetsdato:

01.03.96.

Bilag til LDP 94-043A

REVISED AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation Administration

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

Revision issued January 1996.

94-05-05 R1 Teledyne Continental Engines and Rolls-Royce, plc: Amendment 39-9490. Docket 92-ANE-32. Revises AD 94-05-05, Amendment 39-8843.

Applicability: Teledyne Continental Motors (TCM) Model C75, C85, C90, C125, C145, O-200, O-300, and GO-300 series and Rolls-Royce, plc (R-R) C90, O-200 and O-300 series reciprocating engines, installed on but not limited to American Champion models 7BCM, 7CCM, 7DC, S7DC, S7CCM, 7EC, S7EC, 7FC, 7JC, and 7ECA; Cessna Models 120, 140, 150, 170, 172, 172A-H, and 175; Luscombe Models 8E, 8F, and T-8F; Maule Models Bee Dee M-4, M-4, M-4C, M-4S, M-4T, M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Piper Models PA-18 and PA-19; Reims Aviation SA Models F172D, E, F, G, H, K; F150G, H, J, K, L, M; FA150K, L; FRA150L; Swift Models GC-1A and GC-1B; Univair (Erco) Models 415-D, E, and G; Univair (Forney) Models F-1 and F-1A; Univair (Alon) Model A-2 and Univair (Mooney) Model M-10 aircraft.

NOTE: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (d) to request approval from the Federal Aviation Administration (FAA). This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any engine from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent engine power loss and engine failure, accomplish the following:

(a) At the next cylinder removal from the engine, or engine overhaul, whichever occurs first, after the effective date of this AD, inspect the cylinder rocker shaft bosses for cracks using one of the following methods, and if cracked replace with a serviceable cylinder:

NOTE: Certain cylinder cracks may be repaired by FAA-approved repair stations specifically rated to do those repairs.

(1) Fluorescent penetrant inspection, as follows:

(i) The penetrant shall be a nontoxic, noncorrosive, highly fluorescent liquid capable of penetrating fine discontinuities and, for aluminum castings, conforming to Aerospace Material Specification (AMS) 3156. If a darkened enclosure is not used for examination, AMS 3157 penetrant shall be used.

(ii) The emulsifier shall be composed of suitable oil or oil-like components together with such additives as are necessary to provide a stable, nontoxic, noncorrosive, oil-miscible, oil-emulsifying solution. Emulsifier shall not be used when AMS 3156 is used.

(iii) The developer shall be a highly absorbent, nonfluorescent and nontoxic powder, capable of being used dry or a similar powder capable of being suspended in water. When the suspension is used, the powder shall be thoroughly mixed with water to a concentration, unless otherwise permitted, of not less than 0.2 lb per gallon and a uniform distribution maintained by mechanical agitation.

(iv) The penetrant, the emulsifier (if used) and the developer shall be checked as often as necessary to maintain proper control. The penetrant shall be discarded if it shows a noticeable loss in penetrating power or marked contamination or when wax begins to form on the sides of the tank and dip basket.

(v) A darkness booth or a similar darkness area with a filtered black light shall be provided. The black light shall be at least equal to that produced by a 100 watt mercury vapor projection spot lamp equipped with a filter to transmit wave lengths of between 3200 and 4000 Angstrom units and absorb substantially all visible light. The intensity of the light at normal working distance shall be as specified by the purchaser but in no case shall be lower than 580 micro-watts per square centimeter as measured with an appropriate black light meter.

(vi) All parts shall be cleaned and dried in such a manner as to leave them free from grease, oil, soaps, alkalis and other substances which would interfere with inspection. Vapor degreasing is generally suitable for this purpose.

(vii) Parts shall be immersed in the penetrant or shall be sprayed or brushed with the penetrant and shall be allowed to remain immersed in the penetrant or to stand for sufficient time to allow satisfactory penetration into all discontinuities. This time shall, unless otherwise specified, not be less than 5 minutes. The time for immersion or standing will depend upon the character and fineness of the discontinuities, the effectiveness of penetration increasing with time. Parts may be resprayed or re-immersed after standing to increase sensitivity and aid in removal of penetrant.

(viii) Parts shall be removed from the penetrant and cleaned thoroughly using a medium which will remove penetrant from the surface of parts; washing with water shall be used when the penetrant is water washable or when an emulsifying agent is applied to surfaces of parts to render the penetrant water washable. When emulsifiers are used, the parts shall be dipped in the emulsifier and removed slowly for draining or shall be sprayed with emulsifier and drained. Unless otherwise specified, the combined dipping and draining time shall be 1 to 5 minutes. When other than water washable penetrants are used, the penetrant shall be removed with a suitable cleaner or a suitable cleaner and lint-free cloths. During cleaning, the parts may be viewed under a suitable black light to ensure removal of the penetrant from the surface of the part. Excessive cleaning which would remove the penetrant from discontinuities shall be avoided.

(ix) When a wet developer is used, the developer shall be applied to the parts, immediately after washing, by immersing the parts in the tank containing the water-suspended powder or by spraying or flowing the suspension onto the parts. The suspension shall be suitably agitated either during or immediately prior to lication to parts. Immersed parts shall be removed from the wet developer; excess developer shall be owed to drain off all parts. Special care shall be taken to remove excess developer from pockets, recesses, holes, threads, and corners so that the developer will not mask indications.

(x) When a dry developer or no developer is used, the parts shall be dried as thoroughly as possible by exposure to clean air. Drying of parts may be accomplished by evaporation at room temperature or by placing the parts in a circulating warm air oven or in the air stream of a hot air dryer. Excessive drying time or part temperatures higher than 80°C (180°F) should be avoided to prevent evaporation of the penetrant.

(xi) When a dry developer is used, the developing powder shall be applied uniformly over the areas of the parts to be inspected by either dusting or powder-box immersion.

(xii) After sufficient time has been allowed to develop indications, parts shall be examined under a black light. Examination shall be made in a darkened enclosure unless AMS 3157 penetrant is used, in which case examination may be made under normal shop lighting but shaded from direct sunlight.

(xiii) When greater sensitivity is desired, the parts may be heated to 65°-85°C (150°-185°F) before immersion in the penetrant and/or before black light examination. To prevent evaporation, preheated parts shall remain fully immersed in the penetrant until cooled.

(xiv) Parts shall be cleaned, as necessary, to remove penetrant and developer.

(xv) Interpretation of the indications revealed by this inspection procedure and final disposition of the parts shall be the responsibility of only qualified personnel having experience with fluorescent penetrant inspection.

(xvi) Parts having discontinuities (cracks) shall be rejected.

(2) Dye penetrant inspection, as follows:

NOTE: Military Specification MIL-I-6866 and American Society of Testing Materials specifications ASTM E1417-93 and E165-9 contain additional information on dye penetrant inspection processes.

(i) **Preparation**: clean and dry all parts in such a manner as to leave the surfaces free from grease, oil, soaps, alkalis, and other substances which would interfere with inspection. Vapor degreasing is generally suitable for this purpose.

(ii) **Penetrant Application Procedure**: after preparation, spray or brush the parts with the penetrant, and allow to stand for not less than 5 minutes. The effectiveness of the penetrant increases if left standing for a longer time, as the penetrant will reach finer discontinuities.

(iii) **Penetrant Cleaning**: clean the parts thoroughly using a medium which will remove penetrant from the surfaces of parts; wash with water when the penetrant is water soluble. When other than water soluble penetrants are used, the penetrant shall be removed with a suitable cleaner. Avoid excessive cleaning which would remove the penetrant from discontinuities.

(iv) **Drying**: dry the parts as thoroughly as possible. Drying of parts may be accomplished by evaporation at room temperature or by placing the parts in a circulating warm air oven or in the air stream of a hot air dryer. Avoid excessive drying time or drying temperatures above 75°C (165°F) to prevent excessive evaporation of the penetrant. If heat is used for drying parts, cool parts to approximately 50°C (120°F) before proceeding to the developing procedure.

(v) **Developing**: apply the developer to the dry parts as lightly and as evenly as possible, using as thin a coating of developer as is possible. A translucent film is adequate. Mix wet developer by tion immediately prior to applying it. After applying the developer, take care that no penetrant indication isturbed or obliterated in subsequent handling.

(vi) **Examination**: examine the developed penetrant indications in accordance with the dye penetrant manufacturer's instructions. Examine parts for indications of discontinuities open to the surface.

(vii) **Final cleaning**: clean the parts following the inspection to remove penetrant and developer.

NOTE 1: **Caution**: because of differences among penetrants, take care to ensure that the final cleaner, the penetrant, the penetrant remover, and the developer are suitable for use with each other.

NOTE 2: **Caution**: all penetrant materials should be kept as free from moisture as possible.

NOTE 3: **Caution**: most penetrants, cleaning agents, and developer suspensions are low flash point material; use caution to prevent fires.

(3) Etching inspection, as follows:

(i) For TCM C75, C85, C90, O-200 and R-R C90 and O-200 series engines, in accordance with paragraph 13-7 of TCM Overhaul Manual Form X-30010, dated January 1984.

(ii) For TCM C125, C145, O-300, GO-300 and R-R O-300 series engines, in accordance with paragraphs 5(b)(1), 5(b)(2), and 5(b)(3) of TCM Overhaul Manual Form X-30013, dated June 1982.

(b) At the next cylinder removal from the engine, or engine overhaul, whichever occurs first, after the effective date of this AD, dimensionally inspect cylinders for looseness of the rocker shaft in accordance with page 22, paragraph 5, and Table IX of TCM Overhaul Manual Form X-30013, dated June 1982, for TCM C125, C145, O-300, GO-300 and R-R O-300 series engines, and the dimensions table in paragraph 13-8 of TCM Overhaul Manual Form X-30010, dated January 1984, for TCM C75, C85, C90, O-200 and R-R C90 and O-200 series engines; as applicable.

(1) Cylinders that do not exhibit dimensional looseness of the rocker shaft beyond the limits specified in the applicable TCM overhaul manual may be returned to service.

(2) For cylinders that exhibit dimensional looseness of the rocker shaft, beyond the limits specified in the applicable TCM overhaul manual, accomplish the following:

(i) Replace with a serviceable cylinder; or

(ii) Install bushings in accordance with the instructions on page 27 of TCM Overhaul Manual, Form X-30013, dated June 1982, for TCM C125, C145, O-300, GO-300 and R-R O-300 series engines; or the instructions on page 85 of TCM Overhaul Manual Form X-30010, dated January 1984, for TCM models C75, C85, C90, O-200 and RR C90 and O-200 series engines, as applicable.

(iii) After repairing a cylinder perform an additional inspection of the cylinder rocker shaft bosses for cracks using fluorescent penetrant, dye penetrant, or etching methods, and replace, if necessary, with a serviceable cylinder.

(c) Thereafter, at each subsequent cylinder or engine overhaul, reinspect cylinder rocker bosses and rocker shafts in accordance with paragraphs (a) and (b) of this AD.

(d) An alternative method of compliance or adjustment of the initial compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

NOTE: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta Aircraft Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(f) This amendment becomes effective on February 13, 1996.

FOR FURTHER INFORMATION CONTACT:

Jerry Robinette, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, GA, 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL -34

Med hjemmel om lov om luftfart av 11. juni 1993 kap. IV § 4-1 og kap. XV § 15-4, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

94-044 KONTROLL/UTSKIFTING AV MOTORBUKKENS MONTERINGSBRAKETTER

Påbudet gjelder:

Følgende Teledyne Continental motorer (TCM):

Modell:	Serienummer:
IO-346A & IO-346B	Alle
IO-520C & IO-520CB	Alle
IO-550C	Alle

Overhalte motorer, «rebuilt»:

IO-520C	T.o.m 287051-R
IO-520CB	T.o.m 282226-R
IO-550C	271742-R

Motorer overhalt av fabrikanten:

IO-520C, IO-520CB og IO-550C	Alle med byggedato før 06.08.92

Påbudet omfatter:

For å hindre at motoren separerer fra luftfartøyet p.g.a. sprekker i motorbukkens monteringsbraketter, skal følgende tiltak utføres:

1. Kontroller nedre venstre monteringsbrakett (P/N 630695) for sprekker ved hjelp av dye penetrant som beskrevet nedenfor og i samsvar med TCM Service Bulletin nr. M92-13, datert 04.09.92.

   Dye penetrant:

   1.1 Alle deler som skal kontrolleres skal rengjøres og tørkes på en slik måte at delene er rene for fett, olje, såpe, alkalier eller andre elementer som kan påvirke resultatet av kontrollen. Dampavfetting er vanligvis tilstrekkelig rengjøring. 01.08.94

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

1.2 Spray eller børst delene som skal kontrolleres med penetrant og la dette sta i minst 5 minutter. Penetrantens effektivitet øker med tiden, da den når finere uregelmessigheter.

1.3 Delene skal rengjøres nøye for penetrant ved å bruke et medium som fjerner penetrant fra delenes overflate. Rengjøring med vann skal benyttes når penetranten er løselig i vann. Når annet enn vannløselig penetrant er benyttet skal penetranten fjernes med et passende rensemiddel. Pass på at penetranten ikke fjernes fra overflateuregelmessighetene.

1.4 Delene skal tørkes så grundig som mulig i ren luft. Lufttørking av deler kan foregå ved romtemperatur, ved å plassere delene i en varmluftsovn, eller i luftstrømmen til en føhner. Temperaturen bør ikke overstige 75°C, da høyere temperaturer kan forårsake fordampning av penetranten. Dersom delene tørkes i varm luft, skal disse kjøles ned til ca. 50°C før fremkallingsprosedyren påbegynnes.

1.5 Påfør fremkalling på de tørre delene så lett og grundig som mulig, ved å benytte et tynt lag med fremkaller. En gjennomskinnelig film er tilstrekkelig. Rist eller bland fremkalleren godt rett før påføring. Kontrollér at ingen penetrant indikasjoner er ødelagt eller utslettet etter at fremkalleren er påført.

1.6 Kontroller penetrant indikasjonene som er utviklet, i samsvar med penetrant fabrikantens instruksjoner. Kontroller delene for indikasjoner på uregelmessigheter som er åpne mot overflaten.

1.7 Rengjør delene for penetrant og fremkaller etter ovennevnte kontroll.

Anm.: Military Specification MIL-I-6866 og American Society of Testing Materials spesifications ASTM E1417-93 og E165-9 gir tilleggsinformasjon om dye penetrant kontroller.

Anm.: Kontroller at rensemiddel, penetranten, penetrantfjerner og fremkallingsmiddelet er forenelig og kan brukes sammen, da det finnes flere penetranter som har forskjellige egenskaper.

Anm.: Alt penetrantmateriale skal oppbevares tørt og fritt for fukt.

Anm.: De fleste typer penetrant, rensemiddel og fremkallingsmiddel har lavt flammepunkt og er svært brannfarlig!

1.1.1 Dersom ingen sprekker oppdages, gjenta punktene under pkt. 1 i denne LDP hver 500 flytimer.

1.1.2 Dersom sprekker oppdages, skal både nedre venstre monteringsbrakett (P/N 630695) samt nedre høyre 01.08.94

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL -35

Med hjemmel om lov om luftfart av 11. juni 1993 kap. IV § 4-1 og kap. XV § 15-4, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

monteringsbrakett, (P/N 630694) skiftes ut, før videre flyging, med monteringsbraketter av forbedret konstruksjon, P/N 653306 respektive P/N 653305.

2. For alle motorer: skift ut nedre venstre monteringsbrakett (P/N 630695) og nedre høyre monteringsbrakett, (P/N 630694), med monteringsbraketter av forbedret konstruksjon, P/N 653306 respektive P/N 653305.

3. Dersom monteringsbrakettene er skiftet ut i samsvar med pkt. 2 i denne LDP, er ikke videre tiltak påkrevet i henhold til denne LDP.

Tid for utførelse:

1. For motorer hvor monteringsbrakettene har gjennomgått minst en overhalingssyklus, eller hvor motoren har oppnådd 2500 flytimer eller mer:

   Innen 50 flytimer, etter 01.08.94, deretter gjentatte kontroller hver 500 flytime inntil monteringsbrakettene er utskiftet.

2. Ved neste motorutskifting/demontering etter 01.08.94.

Referanse:

FAA AD 94-09-07.

01.08.94

LUFTDYKTIGHETSPÅBUD

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 36

Med hjemmel om lov om luftfart av 11. juni 1993 kap. IV § 4-1 og kap. XV § 15-4, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

95-025 KONTROLL/UTSKIFTING AV MOTORBUKKENS MONTERINGSBRAKETTER

Påbudet gjelder:

Teledyne Continental Motors, modell og serienummer som listet i vedlagte kopi av FAA AD 95-03-14.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopi av FAA AD 95-03-14.

Anm.: Denne LDP erstatter og opphever LDP 94-044.

Tid for utførelse:

Til de tider og intervaller som beskrevet i vedlagte kopi av FAA AD 95-03-14, med virkning fra denne LDP's gyldighetsdato.

Referanse:

FAA AD 95-03-14.

Gyldighetsdato:

01.04.95.

BILAG TIL LOP 95-025

AIRWORTHINESS DIRECTIVE

FLIGHT STANDARDS SERVICE
REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
**Federal Aviation
Administration**

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

95-03-14 Teledyne Continental Motors: Amendment 39-9150. Docket 94-ANE-57. Supersedes AD 94-09-07, Amendment 39-8896.

Applicability: Teledyne Continental Motors (TCM) engine models IO-346A, IO-346B, IO-520C, IO-520CB, and IO-550C; rebuilt engine model IO-520C with serial numbers (S/N) 287051-R and lower; rebuilt engine model IO-520CB with S/N 282226-R and lower; rebuilt engine model IO-550C with S/N 271742-R and lower; and all factory overhauled IO-520C, IO-520CB, and IO-550C engines with a build date prior to August 6, 1992. These engines are installed on but not limited to Beech model A23, A23A, 95-C55, 95-C55A, D55, D55A, E55, E55A, 58, and 58A airplanes.

Compliance: Required as indicated, unless accomplished previously.

To prevent engine separation from the aircraft due to cracks in the engine mount brackets, accomplish the following:

(a) For engines with engine mount brackets that have completed at least one engine overhaul or rebuild cycle, or have accumulated 2,500 or more hours time in service (TIS) on the effective date of this airworthiness directive (AD), inspect the lower left engine mount bracket, Part Number (P/N) 630695 or Casting Number (C/N) 630724, for cracks using the dye penetrant techniques specified in this paragraph and in accordance with TCM Mandatory Service Bulletin (MSB) No. MSB94-9, dated October 21, 1994, within the next 50 hours TIS after the effective date of this AD.

NOTE 1: TCM MSB No. MSB94-9, dated October 21, 1994, differs from TCM MSB No. M92-13, dated September 4, 1992, which was referenced in AD 94-09-07, only in clarification of part identification by utilizing a cross reference table for P/N and C/N.

NOTE 2: The P/N is ink stamped on the part and may not be visible. The engine mount bracket can be identified by the C/N which is cast in the engine mount bracket.

(1) Perform the dye penetrant inspection as follows:

NOTE: Military Specification MIL-I-6866 and American Society of Testing Materials specifications ASTM E1417-93 and E165-9 contain additional information on dye penetrant inspection processes.

(i) **Preparation**: clean and dry all parts in such a manner as to leave the surfaces free from grease, oil, soaps, alkalies, and other substances which would interfere with inspection. Vapor degreasing is generally suitable for this purpose.

(ii) **Penetrant Application Procedure**: after preparation, spray or brush the parts with the penetrant, and allow to stand for not less than 5 minutes. The effectiveness of the penetrant increases if left standing for a longer time, as the penetrant will reach finer discontinuities.

(iii) **Penetrant Cleaning**: clean the parts thoroughly using a medium which will remove penetrant from the surfaces of parts; wash with water when the penetrant is water soluble. When other than water soluble penetrants are used, the penetrant shall be removed with a suitable cleaner. Avoid excessive cleaning which would remove the penetrant from discontinuities.

(iv) **Drying**: dry the parts as thoroughly as possible. Drying of parts may be accomplished by evaporation at room temperature or by placing the parts in a circulating warm air oven or in the air stream of a hot air dryer. Avoid excessive drying time or drying temperatures above 75°C (165°F) to prevent excessive evaporation of the penetrant. If heat is used for drying parts, cool parts to approximately 50°C (120°F) before proceeding to the developing procedure.

(v) **Developing**: apply the developer to the dry parts as lightly and as evenly as possible, using as thin a coating of developer as is possible. A translucent film is adequate. Mix wet developer by agitation immediately prior to applying it. After applying the developer, take care that no penetrant indication is disturbed or obliterated in subsequent handling.

(vi) **Examination**: examine the developed penetrant indications in accordance with the dye penetrant manufacturer's instructions. Examine parts for indications of discontinuities open to the surface.

(vii) **Final cleaning**: clean the parts following the inspection to remove penetrant and developer.

BILAG TIL LDP 95-025

NOTE 1: **Caution:** because of differences among penetrants, take care to ensure that the final cleaner, the penetrant, the penetrant remover, and the developer are suitable for use with each other.
NOTE 2: **Caution:** all penetrant materials should be kept as free from moisture as possible.
NOTE 3: **Caution:** most penetrants, cleaning agents, and developer suspensions are low flash point material; use caution to prevent fires.

(2) If no crack is detected, inspect in accordance with paragraph (a) of this AD at intervals not to exceed 500 hours TIS since the last inspection.

(3) If a crack is detected, prior to further flight replace both the lower left engine mount bracket, P/N 630695 or C/N 630724, and lower right engine mount bracket, P/N 630694 or C/N 630723, with improved design engine mount brackets, P/N 653306 or C/N 653299, and P/N 653305 or C/N 653298, respectively.

(b) For all engines, replace both the lower left engine mount bracket, P/N 630695 or C/N 630724, and lower right engine mount bracket, P/N 630694 or C/N 630723, with improved design engine mount brackets, P/N 653306 or C/N 653299, and P/N 653305 or C/N 653298, respectively, at the next engine removal after the effective date of this AD.

(c) Installation of the improved design engine mount brackets, P/N 653306 or C/N 653299, and P/N 653305 or C/N 653298, constitutes terminating action to the inspection requirements of this AD.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.
NOTE: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection may be performed.

(f) The inspections and replacement shall be done in accordance with the following service document:

Document No.	**Pages**	**Date**
TCM MSB No. MSB94-9	1-2	October 21, 1994

Total pages: 2.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (334) 438-3411. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on March 13, 1995.

FOR FURTHER INFORMATION CONTACT:
Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Ave., Suite 2-160, College Park, GA 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

BLANK

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 37

Med hjemmel om lov om luftfart av 11. juni 1993 kap. IV § 4-1 og kap. XV § 15-4, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

95-030 KONTROLL AV VENTILER

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA AD 95-08-10.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopi av FAA AD 95-08-10.

Tid for utførelse:

Før første flyging.

Referanse:

FAA AD 95-08-10.

Gyldighetsdato:

05.05.95.

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

Bilag til LDP 95-030

PRIORITY LETTER AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

DATE: April 6, 1995
95-08-10

This priority letter Airworthiness Directive (AD) is prompted by three reported cases of check valve failures, two of which resulted in complete loss of engine power. The FAA became aware of this situation on March 20, 1995. The three reported failures were caused by incorrectly assembled turbocharger oil outlet check valves, resulting in an improperly expanded rivet which held the check valve flapper assembly together as one unit. The improperly expanded rivet allowed the rivet, washer, retainer, and seal components to separate and shift within the check valve unit.

One reported case showed that a part of the flapper assembly blocked the oil flow to the scavenge pump, and resulted in engine failure. Another reported case showed that the scavenge pump was disabled when one part of the flapper assembly shifted through the unit, again resulting in engine failure. These failures occurred early in the life of the engine, ranging from one hour to 40 hours.

The incorrectly assembled check valves were manufactured between August 1, 1994 through March 20, 1995. Accordingly, all have date code ink stamps of either A3Q94, A4Q94, and A1Q95, indicating they were manufactured either during the third quarter of 1994, the fourth quarter of 1994, or the first quarter of 1995. Since an incorrectly assembled check valve can not be visually identified other than by this date code, this AD must consider all check valves with these date codes as suspect, and require their removal prior to further flight. This condition, if not corrected, could result in damage to the oil scavenge pump, internal engine damage and subsequent loss of complete engine power.

The FAA has reviewed and approved the technical contents of Teledyne Continental Motors (TCM) Critical Service Bulletin (CSB) 95-1, Revision A, dated April 5, 1995.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD requires removal prior to further flight, of suspect turbocharger oil outlet check valves. The actions are required to be accomplished in accordance with the service bulletin described previously.

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958) pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this priority letter.

95-08-10 Teledyne Continental Motors: Priority Letter issued on April 6, 1995. Docket No. 95-ANE-18.

Applicability: Teledyne Continental Motors (TCM) engine model TSIO-360 E, EB, F, FB, G, GB, KB, LB, MB, and model LTSIO-360 E, EB, and KB reciprocating engines with turbocharger oil outlet check valve, TCM part number (P/N) 641068, shipped directly or indirectly from the manufacturer on or after August 1, 1994. These check valves are installed **on but not limited to** the following serial numbered engines:

New engine model TSIO-360-FB, serial number (S/N) 318019;

new engine model TSIO-360-KB, S/N 320223, 320229, 320233, through 320235, 320239, 320242 through 320250, 320254 through 320259, 320261, 320262, 320264, 320266, 320292, 320293;

new engine model LTSIO-360-KB, S/N 319226, 319232, 319235 through 319237, 319241, 319244 through 319246, 319248 through 319253, 319257, 319258, 319260 through 319268, 319270, 319271, 319273, 319297, 319322;

rebuilt engine model TSIO-360-E, S/N 225140-R;

rebuilt engine model TSIO-360-EB, S/N 265937-R, 265938-R, 265942-R through 265944-R, 265946-R through 265968-R, 265970-R through 265973-R, 265975-R, 265977-R through 265982-R;

PRIORITY LETTER AIRWORTHINESS DIRECTIVE

rebuilt engine model LTSIO-360-E, S/N 225648-R;

rebuilt engine model LTSIO-360-EB, S/N 266471-R, 266480-R, 266482-R 266486-R, 266487-R, 266489-R through 266495-R, 266497-R through 266499-R, 807251-R through 807254-R, 807256-R through 807259-R, 807261-R through 807265-R, 807267-R, 807268-R, 807271-R through 807275-R, 807276-R;

rebuilt engine model TSIO-360-F, S/N 232814-R through 232817-R;

rebuilt engine model TSIO-360-FB, S/N 281183-R, 281187-R, 281189-R, 281190-R, 281193-R through 281197-R, 281199-R, 299501-R through 299523-R, 299525-R through 299528-R, 299532-R;

rebuilt engine model TSIO-360-KB, S/N 268192-R, 268195-R through 268201-R, 268205-R through 268207-R;

rebuilt engine model LTSIO-360-KB, S/N 268428-R, 268430-R, 268431-R, 268433-R, 268434-R, 268436-R, 268437-R, 268440-R through 268445-R;

rebuilt engine model TSIO-360-LB, S/N 247257-R, 247259-R, 247260-R, 247262-R, 247267-R through 247271-R, 247273-R through 247275-R; and

rebuilt engine model TSIO-360-MB, S/N 279245-R through 279247-R, 279249-R, 279250-R.

These engines are installed on but not limited to: Mooney model M20K, Piper models PA28-201T, PA28R-201T, PA28RT-201T, PA34-200T and PA34-220T.

NOTE: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (e) to request approval from the FAA. This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any engine from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent engine failure due to incorrectly assembled turbocharger oil outlet check valve, which could result in complete engine failure, accomplish the following:

(a) Prior to further flight, determine if the turbocharger oil outlet check valve has been installed or repaired on or after August 1, 1994. This AD is not applicable to engines that did not have the turbocharger oil outlet check valve installed or repaired on or after August 1, 1994.

(b) Prior to further flight, inspect the turbocharger oil outlet check valve, TCM P/N 641068, in accordance with section B of Teledyne Continental Motors (TCM) Critical Service Bulletin (CSB) 95-1, Revision A, dated April 5, 1995, and replace any check valve with an ink stamped date code of A3Q94, A4Q94 or A1Q95, or with no readable date code, with a serviceable check valve as defined in paragraph (c) of this AD.

(c) For the purpose of this AD, serviceable turbocharger oil outlet check valve is defined as one with a date stamp code indicating that it was manufactured before July 1, 1994, i.e., A2Q94, or earlier, or that it was manufactured after March 31, 1995, i.e., A2Q95, or later.

(d) Install replacement valve in the turbocharger oil outlet line with the flow arrow on the valve body pointing in the direction of oil flow toward the scavenge pump in accordance with section B of TCM CSB 95-1, Revision A, dated April 5, 1995.

(e) An alternative method of compliance that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

NOTE: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Engine Certification Office.

(f) Special flight permits may not be issued.

(g) Copies of the applicable service information may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, Alabama, 36601, telephone (334) 438-3411, fax (334) 432-2922.

(h) Priority Letter AD 95-08-10, issued April 6, 1995, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: Jerry Robinette, Aerospace Engineer, Atlanta Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Avenue, Suite 2-160, College Park, GA, 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL -38

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

96-064 FORANDRING AV TENNINGEN PÅ O-200 MOTORER

Påbudet gjelder:

Alle Teledyne Continental Motors modeller O-200A og O-200B samt Rolls-Royce modeller O-200A, O-200B og O-200C.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopi av FAA AD 96-12-06.

Anm.: Denne LDP erstatter og opphever LDP 57/77.

Tid for utførelse:

Innen 50 timers gangtid etter 18.08.96.

Referanse:

FAA AD 96-12-06.

Gyldighetsdato:

01.08.96.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

Bilag til LDP 96-064

U.S. Department
of Transportation
Federal Aviation Administration

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

96-12-06 Teledyne Continental Motors and Rolls-Royce, plc.: Amendment 39-9648. Docket 94-ANE-53. Supersedes AD 77-13-03, Amendment 39-2925 and AD 78-19-02, Amendment 39-3301.

Applicability: Teledyne Continental Motors (TCM) Model O-200A and O-200B and Rolls-Royce, plc. Model O-200A, O-200B, and O-200C reciprocating engines. These engines are installed on but not limited to American Champion Models 7ECA and 402; Cessna Model 150, 150A through 150M, A150K through A150M; Reims Models F-150G through F-150M, FA-150K and FA-150L; and Taylorcraft Model F19 aircraft.

NOTE: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must use the authority provided in paragraph (g) to request approval from the Federal Aviation Administration (FAA). This approval may address either no action, if the current configuration eliminates the unsafe condition, or different actions necessary to address the unsafe condition described in this AD. Such a request should include an assessment of the effect of the changed configuration on the unsafe condition addressed by this AD. In no case does the presence of any modification, alteration, or repair remove any engine from the applicability of this AD.

Compliance: Required as indicated, unless accomplished previously.

To prevent possible cylinder cracking with subsequent loss of engine power, accomplish the following:

(a) For engines that have one or more cylinders with part numbers (P/N) lower than 641917, within the next 50 hours time in service (TIS) after the effective date of this AD, reset the engine timing to 24° (+1°, -1°) Before Top Center (BTC) on both magnetos in accordance with the magneto to engine timing procedure for direct drive engines in TCM Service Bulletin (SB) No. SB94-8, dated September 14, 1994.

(b) For engines that have all four cylinders with P/N 641917 or higher, the engine timing may be reset to 28° (+ 1°, -1°) BTC on both magnetos in accordance with the magneto engine timing procedure for direct drive engines in TCM SB No. SB94-8, dated September 14, 1994.

(c) Subsequent installation of cylinders must be of the P/N listed in paragraph (b) of this AD to retain the 28° BTC timing.

NOTE: The P/N is stamped on the cylinder barrel flange.

(d) This AD supersedes AD 77-13-03 and AD 78-19-02.

(e) When paragraph (a) is accomplished, restamp the engine data plate to indicate magneto timing of 24° BTC.

(f) When paragraph (b) is accomplished, restamp the engine data plate to indicate magneto timing of 28° BTC.

(g) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. The request should be forwarded through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

NOTE: Information concerning the existence of approved alternative methods of compliance with this AD, if any, may be obtained from the Atlanta Aircraft Certification Office.

(h) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(i) The actions required by this AD shall be done in accordance with the following service bulletin:

Document No.	**Pages**	**Date**
TCM SB No. SB94-8	1-6	September 14, 1994

Total pages: 6.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (334) 438-3411. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(j) This amendment becomes effective on July 18, 1996.

FOR FURTHER INFORMATION CONTACT: Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Ave., Suite 2-160, College Park, GA 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 39

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

97-057 SLITASJE PÅ STEMPELPINNEPLUGGER

Påbudet gjelder:

Teledyne Continental motorer og sylindre som angitt i FAA Priority Letter AD 97-15-01 og Teledyne Critical Service Bulletin CSB97-10.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA Priority Letter AD 97-15-01 og Teledyne Critical Service Bulletin CSB97-10.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA Priority Letter AD 97-15-01 og Teledyne Critical Service Bulletin CSB97-10.

Referanse:

FAA Priority Letter AD 97-15-01
Teledyne Critical Service Bulletin CSB97-10.

Gyldighetsdato:

1997-07-25

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

////PART 1 OF 9////

THIS PRIORITY LETTER AIRWORTHINESS DIRECTIVE (AD) IS PROMPTED BY A REPORT FROM TELEDYNE CONTINENTAL MOTORS (TCM) OF AN ENGINE EQUIPPED WITH FACTORY NEW CYLINDERS WITH APPROXIMATLEY 28 HOURS TIME IN SERVICE (TIS) THAT WAS DISCOVERED TO HAVE HIGH ALUMINUM PARTICULATES DURING AN OIL ANALYSIS. FURTHER INVESTIGATION REVEALED THE PISTON PIN PLUG WAS EXPERIENCING INCREASED WEAR, WHICH WAS, IN TURN, TRACED TO THE ROUGHNESS OF THE CYLINDER BORE. A STOCK SWEEP AT THE FACTORY REVEALED 10 ADDITIONAL CYLINDERS WITH THIS CONDITION. THE CYLINDER BORE SURFACE FINISH ON SOME CYLINDERS IS ROUGHER THAN SPECIFIED. THIS CONDITION WAS CAUSED DURING A MANGANESE PHOSPHATE COATING PROCESS ON THE CYLINDER BARREL BORE. THE CYLINDERS ARE EXPOSED TO THE PHOSPHATE PROCESS IN BATCHES OF 10 CYLINDERS. THE MANGANESE PHOSPHATE COATING PROVIDES RESISTANCE TO CORROSION DURING THE FIRST HOURS OF OPERATION. THE PROBLEM OCCURRED BECAUSE OF EXTENDED EXPOSURE OF THE CYLINDER BORE TO THE MAGANESE PHOSPHATE TREATMENT WHICH RESULTS IN THE SURFACE FINISH BEING ROUGHER THAN SPECIFIED, ALTHOUGH THE PISTON PIN PLUG WILL WEAR FIRST? IT WILL, IN TURN, WEAR A GROOVE IN THE CYLINDER WALL WHICH WILL CAUSE MASSIVE
////END PART 1////

////PART 2 OF 9////

OIL CONSUMPTION IN THE NEAR FUTURE. THIS WILL RESULT IN ACCELERATED PISTON PIN PLUG WEAR, AS THE PISTON PIN PLUG IS MADE OF ALUMINIUM WHILE THE CYLINDER BARREL IS MADE OF NITRIDED STEEL. THE FAA HAS DETERMINED THAT ONE SIDE OF THE PISTON PIN COULD DISCONNECT FROM THE PISTON IF THE WEAR OF THE PIN PLUG BECOMES EXCESSIVE. THIS CONDITION, IF NOT CORRECTED, CAN RESULT IN EXTREME SIDE LOADING OF THE PISTON, AND CONSEQUENT FAILURE OF THE PISTON AND ENGINE.

THE FAA HAS REVIEWED AND APPROVED THE TECHNICIAL CONTENTS OF TCM CRITICAL SERVICE BULLETIN (CSB) NO. CSB97-10, DATED JUNE 19, 1997, THAT PROVIDES A LIST OF SERIAL NUMBERS (S/NS) OF NES AND REBUILT MODEL O-470 AND IO-470 ENGINES WITH AFFECTED CYLINDERS INSTALLED, AND A LIST OF CYLINDERS WITH PART NUMBER AND PUCHASE DATE THAT MAY BE INSTALLED ON E-165, E-185, E-225, O-470 AND IO-470 SERIES ENGINES, REGARDLESS OF SERIAL NUMBER. THIS CSB DESCRIBES PROCEDURES FOR REMOVAL AND SHIPMENT TO THE FACTORY OF AFFECTED CYLINDERS, AND PROCEDURES FOR REASSEMBLY WITH SERVICEABLE PARTS.

SINCE AN UNSAFE CONDITION HAS BEEN IDENTIFIED THAT IS LIKELY TO EXIST OR DEVELOP ON OTHER ENGINES OF THIS SAME TYPE DESIGN, THIS AD
////END PART 2////

////PART 3 OF 9////

REQUIRES, WITHIN 10 HOURS TIS AFTER RECEIPT OF THIS PRIORITY LETTER AD, FOR NEW AND REBUILT TCM O-470 AND IO-470 SERIES ENGIENS LISTED BY S/N IN THE CSB, REMOVAL FROM SERVICE OF AFFECTED CYLINDERS, AND REASSEMBLY WITH SERVICEABLE PARTS. FOR ALL OTHER ENGINES LISTED IN THE APPLICABILITY PARAGRAPH, THIS AD REQUIRES DETERMINING FROM ENGINE LOG BOOKS OR MAINTENANCE RECORDS IF A POSSIBLY DEFECTIVE CYLINDER HAS BEEN PURCHASED AND INSTALLED IN THE TIME FRAMES SHOWN IN THE CSB, AND, IF SO, REMOVAL FROM SERVICE, AND REASSEMBLY OF THE ENGINE WITH SERVICEABLE PARTS. CYLINDERS MARKED WITH //M// OR //P// HAVE A SURFACE FINISH THAT HAS BEEN FOUND TO BE WITHIN SPECIFICATION, AND THEREFORE ARE NOT AFFECTED BY THIS AD. THE ACTIONS ARE REQUIRED TO BE ACCOMPLISHED IN ACCORDANCE WITH THE CSB DESCRIBED PREVIOUSLY.

THIS RULE IS ISSUED UNDER 49 U.S.C. SECTION 44701 (FORMELY SECTION 601 OF THE FEDERAL AVIAITON ACT OF 1958) PURSUANT TO THE AUTHORITY DELEGATED TO ME BY THE ADMINISTRATOR, AND IS EFFECTIVE IMMEDIATELY UPON RECEIPT OF THIS PRIORITY LETTER.
////END PART 3////

////PART 4 OF 9////
97-15-01 TELEDYNE CONTINENTAL MOTORS: PRIORITY LETTER ISSUED ON JULY 17, 1997. DOCKET NO. 97-ANE-34-AD.
APPLICABILITY: TELEDYNE CONTINENTAL MOTORS (TCM) NEW AND REBUILT MODEL O-470 AND IO-470 SERIES ENGIENS WITH SERIAL NUMBERS (S/NS) LISTED IN TABLE 1 OF TCM CRITICAL SERVICE BULLETIN (CSB) NO. CSB97-10, DATED JUNE 19, 1997, AND TCM MODEL E-165, E-185, E-225, O-470 AND IO-470 SERIES ENGINES, REGARDLESS OF S/N, WHICH HAVE CYLINDER(S) WITH PART NUMBER AND PURCHASE DATE AS SHOWN IN TABLE 2 OF TCM CSB NO. CSB97-10, DATED JUNE 19, 1997. THESE ENGINES ARE INSTALLED ON BUT NOT LIMITED TO THE FOLLOWING AIRCRAFT: BELLANCA MODELS 14-19-2 AND 14-19-3 CESSNA MODELS 180, 180A THROUGH K, 182, 182A THROUGH R, 185, 185A THROUGH E, 188, 188A, 188B, 210, 210A THROUGH C, 201-5 (205, 210-5A (205A), 305A, 305C, 305D, 305F, 310, 310A THROUGH Q, E310H, E310J, 310J-1 FRONTIER-AEROSPACE, INC. (FLETCHER) MODELS FU-24 AND FU-24A LUSCOMBE AIRCRAFT CORPORATION MODEL 11A NAVION MODELS NAVION, NAVION A, AND NAVION D THROUGH G PROP-JETS, INC. MODELS 200, 200A THROUGH C RAYTHEON (FORMERLY BEECH) MODELS 35, A35 THROUGH P35, 35R, 35-33, 35-A355, 35-B33, 35-C33, E33, F33, 45 (YT-34), A45 (T-34A, B-45), D45(T-34B), 95-55, ////END PART 4////

////PART 5 OF 9////
95-55A, 95-B55, 95-B55A AND 95-B55B REIMS MODELS F182P AND F182Q AND TWIN COMMANDER AIRCRAFT, INC. MODEL 500-A.
NOTE 1: THIS AIRWORTHINESS DIRECTIVE (AD) APPLIES TO EACH ENGINE IDENTIFIED IN THE PRECEDING APPLICABILITY PROVISION, REGARDLESS OF WHETHER IT HAS BEEN MODIFIED, ALTERED, OR REPAIRED IN THE AREA SUBJECT TO THE REQUIREMENTS OF THIS AD. FOR ENGINES THAT HAVE BEEN MODIFIED, ALTERED, OR REPAIRED SO THAT THE PERFORMANCE OF THIS REQUIREMENTS OF THIS AD, IS AFFECTED, THE OWNER/OPERATOR MUST REQUEST APPROVAL FOR AN ALTERNATIVE METHOD OF COMPLIANCE IN ACCORDANCE WITH PARAGRAPH (C) OF THIS AD. THE REQUEST SHOULD INCLUDE AN ASSESSMENT OF THE EFFECT OF THE MODIFICATIUON ALTERATION, OR REPAIR ON THE UNSAFE CONDITION ADDRESSED BY THIS AD AND, IF THE UNSAFE CONDITION HAS NOT BEEN ELIMINATED, THE REQUEST SHOULD INCLUDE SPECIFIC PROPOSED ACTIONS TO ADDRESS IT.
COMPLIANCE: REQUIRED AS INDICATED, UNLESS ACCOMPLISHED PREVIOUSLY.
TO PREVENT EXTREME SIDE LOADING OF THE PISTON, AND CONSEQUENT FAILURE OF THE PISTON AND ENGILNE, ACCOMPLISH THE FOLLOWING:
////END PART 5////

CHECK
TEXT
NEW ENDING ADDED EHAM

////PART 6 OF 9////
(A) FOR THE TCM O-470 AND IO-470 SERIES ENGINES LISTED BY S/N IN TABLE 1 OF TCM CSB NO. CSB97-10 DATED JUNE 19, 1997, WITHIN 10 HOURS TIME IN SERVICE (TIS) AFTER RECEIPT OF THIS PRIORITY LETTER AD, ACCOMPLISH THE FOLLOWING:

(1) REMOVE FROM SERVICE THE CYLINDERS, SIX EACH, AND THE PISTON PINS, SIX EACH, IN ACCORDANCE WITH THE INSPECTION INSTRUCTIONS, PART 2A, AND APPENDIX A OF TCM CSB NO. CSB97-10, DATED JUNE 19, 1997.

(2) OBTAIN SERVICEABLE REPLACEMENT PARTS AND REASSEMBLE THE ENGINE IN ACCORDANCE WITH THE INSPECTION INSTRUCTIONS, PART 2B, OF TCM CSB NO. CSB97-10, DATED JUNE 19, 1997.

(B) FOR THE E-165, E-185, E-225, SERIES ENGINES AND THOSE O-470 AND IO-470 SERIES ENGINES NOT LISTED BY S/N IN TABLE 1 OF TCM CSB NO. CSB97-10 DATED JUNE 19, 1997, WITHIN 10 HOURS TIS AFTER RECEIPT OF THIS PRIORITY LETTER AD, ACCOMPLISH THE FOLLOWING:

(1) DETERMINE FROM ENGINE LOG BOOKS OR MAINTENANCE RECORDS IF A CYLINDER HAS BEEN REPLACED WITH A CYLINDER PURCHASED IN THE TIME FRAMS SHOWN IN TABLE 2 OF TCM CSB NO. CSB97-10, DATED
////END PART 6////

////PART 7 OF 9////
JUNE 19, 1997.

(2) IF A CYLINDER WAS NOT REPLACED WITH A CYLINDER PURCHASED DURING THOSE TIME FRAMES LISTED IN THE CSB, OR IF A CYLINDER IS IDENTIFIED WITH THE LETTER ?M? OR ?P? STEEL STAMPED AFTER THE CYLINDER POSITION NUMBER, AS CYLINDERS MARKED WITH ?M? OR ?P? HAVE A SURFACE FINISH THAT HAS BEEN FOUND TO BE WITHIN SPECIFICATION, NO FURTHER ACTION IS REQUIRED. THE CYLINDER POSITION NUMBER IS LOCATED AT THE 12 O'CLOCK POSITION ON THE CYLINDER MOUNTING FLANGE.

(3) IF A CYLINDER HAS BEEN REPLACED WITH A CYLINDER PURCHASED DURING THOSE TIME FRAMES LISTED IN THE CSB, REMOVE FROM SERVICE THE AFFECTED CYLINDERS AND PISTON PINS IN ACCORDANCE WITH THE INSPECTON INSTRUCTIONS, PART 2A, AND APPENDIX A OF TCM CSB NO. CSB97-10, DATED JUNE 19, 1997.

(4) OBTAIN SERVICEABLE REPLACEMENT PARTS AND REASSEMBLE THE ENGINE IN ACCORDANCE WITH THE INSPECTION INSTRUCTION, PART 2B, OF TCM CSB NO. CSB97-10, DATED JUNE 19, 1997.

(C) AN ALTERNATIVE METHOD OF COMPLIANCE OR ADJUSTEMENT OF THE
////END PART 7////

CHECK
TEXT
NEW ENDING ADDED EHAM

////PART 8 OF 9////
COMPLIANCE TIME THAT PROVIDES AN ACCEPTABLE LEVEL OF SAFETY MAY BE USED IF APPROVED BY THE MANAGER, ATLANTA AIRCRAFT CERTIFICATION OFFICE. OPERATORS SHALL SUBMIT THEIR REQUESTS THROUGH AN APPROPRIATE FAA MAINTANCE INSPECTOR, WHO MAY ADD COMMENTS AND THEN SEND IT TO THE MANAGER, ATLANTA AIRCRAFT CERTIFICATION OFFICE.

NOTE 2: INFORMATION CONCERNING THE EXISTENCE OF APPROVED ALTERNATIVE METHODS OF COMPLIANCE WITH THIS AIRWORTHINESS DIRECTIVE, IF ANY MAY BE OBTAINED FROM THE ATLANTA AIRCRAFT CERTIFICATION OFFICE.

(D) SPECIAL FLIGHT PERMITS MAY BE ISSUED IN ACCORDANCE WITH SECTIONS 21.197 AND 21.199 OF THE FEDERAL AVIATION REGULATIONS (14 CFR 21.197 AND 21.199) TO OPERATE THE AIRCRAFT TO A LOCATION WHERE THE REQUIREMENTS OF THIS AD CAN BE ACCOMPLISHED.

(E) COPIES OF THE APPLICABLE SERVICE INFORMATION MAY BE OBTAINED FROM TELEDYNE CONTINENTAL MOTORS, P.O. BOX 90, MOBILE, AL 36601? TELEPHONE (334) 438-3411. THIS INFORMATION MAY BE EXAMINED AT THE FAA, NEW ENGLAND REGION, OFFICE OF THE ASSISTANCE CHIEF COUNSEL, 12 NEW ENGLAND EXECUTIVE PARK, BURLINGTON, MA.
////END PART 8////

CHECK
TEXT
NEW ENDING ADDED EHAM

////PART 9 OF 9////
(F) PRIORITY LETTER AD 97-15-01, ISSUED JULY 17, 1997, BECOMES EFFECTIVE UPON RECEIPT.

FOR FURTHER INFORMATION CONTACT: JERRY ROBINETTE, AEROSPACE ENGINEER, ATLANTA AIRCRAFT CERTIFICATION OFFICE, FAA, SMALL AIRPLANE DIRECTORATE, CAMPUS BUILDING, 1701 COLUMBIA AVE., SUITE 2-160, COLLEGE PARK, GA 30337-2748? TELEPHONE (404) 305-7371, FAX (404) 305-7348.
////END PART 9////

TELEDYNE CONTINENTAL® AIRCRAFT ENGINE

CRITICAL SERVICE BULLETIN

Compliance Necessary To Maintain Safety

CATEGORY 2

CSB97-10

FAA APPROVED

SUBJECT: **PISTON PIN PLUG WEAR.**

PURPOSE: To notify owners, operators and maintenance facilities of the possibility of abnormal wear to the aluminum piston pin plug when installed in certain manganese phosphated cylinders.

COMPLIANCE: Within the next ten (10) hours of operation from the date of issuance of this bulletin, inspect each affected IO-240, IO-360, TSIO-360, LTSIO-360, IO-520, TSIO-520, LTSIO-520, GTSIO-520, IO-550, TSIO-550 and TSIOL-550 series engine and cylinder in accordance with PART 1 of this bulletin. If elected, an optional method of compliance may be performed in accordance with PART 2 of this bulletin.

ALL AFFECTED E-SERIES, O-470 AND IO-470 ENGINES AND CYLINDERS MUST BE INSPECTED AS SOON AS POSSIBLE (BUT NO LATER THAN THE NEXT 10 HOURS OF OPERATION) IN ACCORDANCE WITH PART 2 OF THIS BULLETIN.

MODELS AFFECTED: Refer to Table 1 and Table 2 of this bulletin.

GENERAL INFORMATION

In August, 1996 Teledyne Continental Motors (TCM) began using a manganese phosphate coating on the cylinder bore of certain cylinders to provide resistance to corrosion during the first hours of operation.

Inspection of a piston pin removed from one of these coated cylinders has exhibited accelerated wear of the aluminum piston pin plug. This wear has been attributed to a bore surface that was rougher than that specified for the cylinder bore believed to be due to extended exposure to the manganese phosphate treatment. TCM believes only a small number of manganese phosphate coated cylinders would cause accelerated piston pin plug wear.

To insure that piston pin plugs utilized in coated cylinders are not experiencing accelerated wear, perform the inspection detailed in PART 1 or PART 2.

INSPECTION INSTRUCTIONS

PART 1 - PROGRESSIVE INSPECTION

1. Inspect the part number on the side of the cylinder base flange to determine if cylinder inspection is required. Reference Table 2.

NOTE: All factory new IO-550-B, IO-550-C and TSIO-520-UB engines provided in the new serial number listing of Table 1 must be inspected in accordance with Part 1 or Part 2 of this bulletin, regardless of cylinder part number.

2. If oil analysis has been performed prior to the date of this service bulletin, review the analysis report(s) for findings of high or abnormal amounts of aluminum.

3. If possible, review inspection results of previous oil filter element or screen examinations for content of fine aluminum material.

4. If high or abnormal amounts of aluminum were noted in the oil analysis or fine aluminum material was present in the oil filter element or screen, comply with PART 2 of this bulletin.

5. For all affected engines or cylinders listed in Table 1 or Table 2 regardless of previous history, the progressive inspection sequence below must be conducted. This includes a special oil analysis program. TCM will provide three (3) oil analysis kits and analyses at no charge. Contact TCM at 1-334-438-3411 ext. 81 to arrange immediate shipment of these kits. Please be prepared to provide the following information:

   - ENGINE MODEL AND SERIAL NUMBER.
   - TOTAL CYLINDER HOURS.
   - OWNER'S NAME, ADDRESS, PHONE NUMBER.
   - "SHIP TO" ADDRESS FOR OIL ANALYSIS KITS.

   a. After operation of the engine and while the engine oil is hot, drain oil and take an oil sample in accordance with the instructions contained in the oil analysis kit. Mail sample for analysis.

   b. Remove oil filter or screen. For oil filters, cut open the filter canister and remove the filter element. Allow the excess oil to drain from the filter element or screen and examine it for debris. Unless the amount of debris contained in the filter element or screen is more than typical for the total hours, reinstall and tighten the screen or new oil filter to the specified torque value and service the engine with the approved type, grade and quantity of oil. Record the findings of filter or screen inspection.

   c. Perform a borescope inspection of each affected cylinder paying particular attention to the 3 o'clock and 9 o'clock positions in the bore for signs of excessive piston pin plug contact. Reference Figures 1, 2, 3 and 4. Record inspection results for each cylinder.

6. Two additional oil analysis samples, oil filter examinations and borescope inspections must be performed at intervals of 25 and 50 hours after the initial inspection if results reveal no abnormalities.

7. Record results of each oil analysis, filter/screen examination and borescope inspection in the engine log book.

8. If any abnormal oil analysis trends, borescope inspections or oil filter/screen examinations are discovered, inspection in accordance with PART 2 will be required.

9. If upon completion of the three (3) inspections no abnormalities have been noted, compliance with the requirements of this bulletin is satisfied. Make a log book entry as to compliance with service bulletin CSB97-10.

PART 2 - CYLINDER REMOVAL, INSPECTION AND REASSEMBLY.

This inspection method will require the removal of each affected cylinder for inspection of the cylinder bore surface finish and piston pin length by TCM.

NOTE: This is the required inspection method for affected E-Series and 470 series engines and cylinders listed in Table 1 and Table 2.

1. Cylinder Removal and Shipping Instructions.

   a. Remove the cylinder in accordance with the applicable TCM Overhaul Manual.

b. Record and tag each cylinder and piston pin with the following information:

- Aircraft Registration Number.
- Engine Model.
- Engine Serial Number.
- Total Cylinder Hours.
- Cylinder Part Number.
- Cylinder Position, (#1, #2, etc.).

c. Carefully preserve and package each cylinder and piston pin separately in a manner that will avoid shipping damage. Ship to TCM in accordance with Appendix A for inspection.

NOTE: International customers must contact TCM at 1-334-438-3411 for special instructions.

2. Reassembly Instructions.

a. Reassemble all parts in accordance with the applicable TCM Overhaul Manual. Torque all hardware in accordance with the latest revision of TCM Service Bulletin SB96-7.

WARRANTY

The action required to comply with this bulletin is covered by the Gold Medallion Warranty or Service Parts Warranty, subject to its terms and conditions.

TABLE 1 - AFFECTED NEW AND REBUILT ENGINES

ENGINE MODEL	NEW ENGINE - SERIAL NUMBER
IO-240-B	806823, 806829, 806831, 806929, 806930.
TSIO-360-JB	313036, 313037.
TSIO-360-MB	317272 thru 317275.
O-470-R	466727.
IO-470-N	458162 thru 458171.
IO-520-BB	580053 thru 580055, 580057, 580058.
IO-520-CB	576319, 576320.
IO-520-D	575926 thru 575928.
IO-520-F	579240.
IO-550-B **See Note 1.**	682287 thru 682304, 682361 thru 682364, 682537, 682608 thru 682634, 682769, 682770, 682787 thru 682797, 682952, 682953, 913001, 913008.
IO-550-C **See Note 1.**	676987, 676989 thru 676998, 683102 thru 683107, 683171, 683172, 683263, 683272, 683346 thru 683350, 683401 thru 683419, 683532 thru 683535, 683545, 683550 thru 683557, 683696, 683697.
IO-550-F	679516, 679517.
IO-550-G	679271 thru 679278, 679281, 679283, 679293.
TSIO-520-CE	530166.
TSIO-520-M	532068 thru 532073.
TSIO-520-R	522690 thru 522693.
TSIO-520-UB **See Note 1.**	527249 thru 527252, 527297, 527299 thru 527303, 527329, 527330.

ENGINE MODEL	NEW ENGINE - SERIAL NUMBER
TSIO-520-VB	529108, 529109.
GTSIO-520-M	613077 thru 613079.
TSIO-550-C	802557 thru 802560, 802562 thru 802564.
TSIO-550-E	803037.
TSIOL-550-A	800637.
Note 1 - These engines must comply with this service bulletin regardless of cylinder part number.	

ENGINE MODEL	REBUILT ENGINE - SERIAL NUMBER
IO-360-A	020138-R.
IO-360-C	060664-R.
IO-360-D	063014-R.
IO-360-DB	808775-R thru 808778-R.
IO-360-G	244596-R, 244597-R.
IO-360-JB	292505-R.
IO-360-K	240138-R.
IO-360-KB	288686-R thru 288688-R, 288690-R thru 288693-R.
TSIO-360-CB	236238-R, 236239-R.
TSIO-360-E	225150-R.
TSIO-360-EB	809124-R, 809126-R, 809128-R thru 809132-R.
TSIO-360-FB	299630-R thru 299638-R.
TSIO-360-KB	811281-R, 811282-R.
TSIO-360-LB	247327-R.
TSIO-360-MB	279280-R, 279281-R.
LTSIO-360-EB	807408-R, 807410-R thru 807418-R, 807422-R.
LTSIO-360-KB	812012-R, 812013-R.
O-470-G	070702-R.
O-470-J	202205-R, 202206-R.
O-470-K	049485-R, 049487-R thru 049490-R.
O-470-L	069866-R thru 069872-R.
O-470-R	811818-R thru 811857-R, 811859-R, 811861-R, 811862-R.
O-470-S	269420-R, 269422-R thru 269428-R

ENGINE MODEL	REBUILT ENGINE - SERIAL NUMBER
O-470-U	809972-R, 809974-R thru 809983-R, 809985-R thru 809990-R, 809992-R, 809993-R, 809995-R thru 810000-R, 813254-R, 813255-R, 813257-R, 813259-R, 813262-R, 813264-R.
IO-470-C	295543-R.
IO-470-D	105635-R.
IO-470-E	088761-R.
IO-470-F	089905-R, 089906-R.
IO-470-K	092982-R, 092984-R.
IO-470-L	297703-R thru 297717-R, 297720-R thru 297723-R, 297728-R thru 297730-R, 297732-R, 297733-R.
IO-470-N	096683-R, 096685-R thru 096689-R.
IO-470-S	109376-R.
IO-470-V	171171-R thru 171178-R.
IO-520-A	112795-R thru 112801-R.
IO-520-B	234778-R thru 234781-R.
IO-520-BA	807193-R, 807194-R, 807196-R thru 807199-R, 807201-R thru 807207-R, 807209-R thru 807234-R, 807236-R.
IO-520-BB	809694-R, 809695-R, 809701-R, 809703-R, 809704-R, 809706-R, 809707-R, 809709-R, 809710-R, 809713-R thru 809727-R, 809729-R thru 809738-R 809741-R, 809742-R, 809744-R thru 809746-R, 809748-R thru 809750-R.
IO-520-C	810845-R thru 810851-R, 810853-R thru 810878-R, 810881-R thru 810885-R, 810888-R thru 810895-R, 810897-R thru 810900-R.
IO-520-CB	298839-R thru 298854-R, 298856-R thru 298867-R, 298869-R thru 298885-R, 298888-R, 298889-R.
IO-520-D	293491-R thru 293500-R, 812751-R thru 812763-R, 812765-R thru 812771-R, 812773-R thru 812780-R, 812782-R, 812783-R, 812785-R thru 812788-R, 812791-R thru 812795-R, 812797-R thru 812811-R.
IO-520-E	215870-R thru 215888-R.
IO-520-F	812255-R, 812278-R, 812279-R, 812293-R, 812295-R, thru 812297-R, 812299-R thru 812311-R, 812313-R thru 812327-R, 812329-R thru 812332-R, 812334-R thru 812337-R, 812339-R, 812340-R, 812342-R thru 812345-R, 812347-R thru 812354-R, 812356-R thru 812371-R, 812373-R, 812376-R, 812377-R, 812379-R thru 812385-R, 812388-R thru 812391-R.
IO-520-J	216529-R.
IO-520-K	224118-R thru 224122-R.
IO-520-L	294769-R, 294770-R, 294772-R thru 294777-R, 294779-R thru 294799-R,

ENGINE MODEL	REBUILT ENGINE - SERIAL NUMBER
	294801-R, 294802-R, 294804-R, 294805-R, 294809-R.
IO-520-M	811535-R thru 811540-R, 811544-R thru 811554-R, 811556-R thru 811558-R, 811560-R thru 811562-R, 811565-R thru 811567-R.
IO-520-MB	277607-R, 277612-R, 277614-R, 277615-R, 277618-R thru 277620-R, 277623-R thru 277640-R, 277643-R, 277644-R.
IO-550-A	280446-R thru 280453-R, 280455-R, 280458-R thru 280461-R.
IO-550-B	296928-R, 296939-R thru 296967-R, 296969-R thru 296971-R, 296975-R.
IO-550-C	810363-R thru 810404-R, 810406-R, 810408-R.
IO-550-D	284242-R thru 284244-R, 284246-R thru 284256-R.
IO-550-E	283360-R, 283364-R thru 283373-R.
IO-550-F	284787-R, 284790-R thru 284804-R.
IO-550-L	289113-R thru 289121-R.
TSIO-520-AE	246153-R thru 246155-R.
TSIO-520-AF	245240-R.
TSIO-520-B	176711-R, 176714-R thru 176726-R, 176730-R.
TSIO-520-C	178506-R thru 178510-R.
TSIO-520-CE	268568-R, 268569-R, 268570-R.
TSIO-520-E	812506-R thru 812513-R, 812515-R thru 812521-R, 812524-R, 812525-R, 812528-R, 812529-R.
TSIO-520-EB	271449-R thru 271452-R, 271455-R thru 271469-R, 271472-R thru 271474-R.
TSIO-520-G	216050-R.
TSIO-520-H	217380-R thru 217382-R, 217384-R thru 217387-R.
TSIO-520-J	218983-R, 218984-R.
TSIO-520-JB	237183-R, 237184-R.
TSIO-520-LB	237295-R, 237296-R.
TSIO-520-M	291823-R thru 291850-R, 291852-R thru 291857-R, 291861-R thru 291863-R, 291865-R, 291868-R, 291869-R.
TSIO-520-NB	290966-R, 290967-R, 290969-R thru 290974-R, 290978-R, 290979-R, 290981-R thru 290989-R, 290992-R, 290993-R, 290995-R, 290996-R, 290998-R, 290999-R, 813501-R.
TSIO-520-P	278774-R, 278776-R thru 278781-R, 278785-R thru 278790-R.
TSIO-520-R	293845-R thru 293847-R, 293849-R thru 293861-R, 293863-R thru 293869-R, 293872-R thru 293875-R, 293877-R.
TSIO-520-T	239436-R thru 239445-R.

ENGINE MODEL	REBUILT ENGINE - SERIAL NUMBER
TSIO-520-UB	809316-R, 809317-R.
TSIO-520-VB	811061-R, 811065-R, 811067-R thru 811073-R, 811075-R, 811076-R, 811079-R thru 811083-R, 811085-R, 811087-R thru 811095-R, 811097-R thru 811104-R, 811107-R thru 811111-R, 811114-R, 811116-R.
TSIO-520-WB	274376-R, 274379-R thru 274393-R, 274395-R, 274396-R, 274398-R.
LTSIO-520-AE	246654-R.
GTSIO-520-H	267443-R thru 267449-R, 267451-R, 267454-R.
GTSIO-520-L	292234-R thru 292239-R, 292241-R, 292243-R thru 292246-R, 292248-R thru 292257-R, 292259-R, 292260-R, 292262-R, 292264-R thru 292270-R.
GTSIO-520-M	810560-R thru 810562-R, 810564-R thru 810570-R, 810573-R thru 810576-R, 810579-R, 810580-R, 810582-R thru 810587-R.
GTSIO-520-N	808289-R, 808292-R, 808293-R, 808295-R, 808296-R.
TSIO-550-C	802557-R thru 802560-R, 802562-R thru 802564-R.
TSIOL-550-A	800636-R thru 800638-R, 800642-R.

TABLE 2 - AFFECTED CYLINDERS

The following table contains cylinder part numbers affected by this bulletin and the engine models on which they are utilized. Any 240, 360, 520 or 550 cylinder identified with the affected part number that was shipped from TCM within the dates listed must be inspected in accordance with the instructions set forth in PART 1 or PART 2 of this bulletin. All E-Series and 470 series cylinders identified below must be inspected in accordance with PART 2 of this bulletin

NOTE: Cylinders that are identified with the letter "M" or "P" steel stamped after the cylinder position number are not affected by this bulletin. The cylinder position number is located at the 12 o'clock position on the cylinder mounting flange.

TABLE 2 - AFFECTED CYLINDERS

ENGINE MODEL	AFFECTED DATES	(1) Affected Cylinder P/N
All IO-240, IO-360-ES, TSIO-360-MB	4-7-97 to 6-9-97	654702
All IO-360, TSIO-360 & LTSIO-360	4-7-97 to 6-9-97	654701
All E-Series	3-13-97 to 6-9-97	654761
O-470-A, E & J, IO-470-J & K	2-20-97 to 6-9-97	654657
O-470-G, GCI, K, L, M, R & S, IO-470-C	3-7-97 to 6-9-97	654649

ENGINE MODEL	AFFECTED DATES	(1) Affected Cylinder P/N
O-470-U, IO-470-D, E, F, H, L, M, N, S, U, V & VO	3-7-97 to 6-9-97	654650
All IO-520, TSIO-520-AF, CE & UB, IO-550-A, B & C	1-7-97 to 6-9-97	654651
IO-550-D, E, F & L	2-18-97 to 6-9-97	654653
TSIO-520-B, BB, C, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, R, T, VB, WB	1-15-97 to 6-9-97	654652
IO-550-G, TSIO-520-BE, GTSIO-520-F & K	2-12-97 to 6-9-97	654656
TSIO-520-AE, LTSIO-520-AE	3-6-97 to 6-9-97	654658
TSIO-550-A, B, C, E	3-13-97 to 6-9-97	654659
TSIOL-550-A, B	3-13-97 to 6-9-97	654648
GTSIO-520-C, D, H	2-12-97 to 6-9-97	654655
GTSIO-520-L, M, N	1-21-97 to 6-9-97	654654
(1) This will include all suffixes of these numbers; i.e. 654651A5.		

Appendix A - Instructions For Returning Removed Cylinders For Inspection.

Contact the TCM Customer Service Desk at (334) 438-3411, Ext. 81, for packing material and shipping labels. Please be prepared to provide the following information.

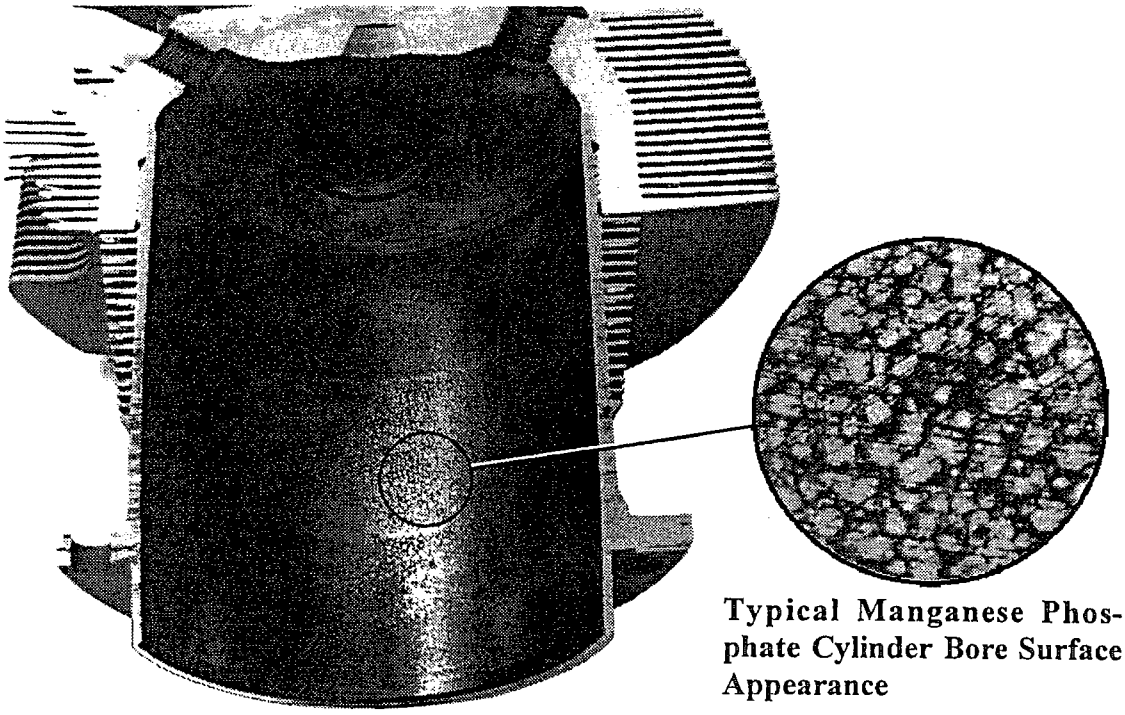
Engine Model and Serial Number
Shipping Address

1. Using the shipping labels provided;
   a. Complete a Return Tag for each cylinder and attach to the cylinder.
   b. Complete a Return Tag for each piston pin and attach to the piston pin.
   c. Complete a shipping label for each cylinder and attach to the outside of the box.
   d. Complete a return shipping label for each cylinder and place inside the box. (This label will be used for returning the cylinder to you.)

2. Ship all packages to TCM as follows.
   a. Ship via Emery 2nd Day Air, Inbound Collect.
      On the Airbill, reference:

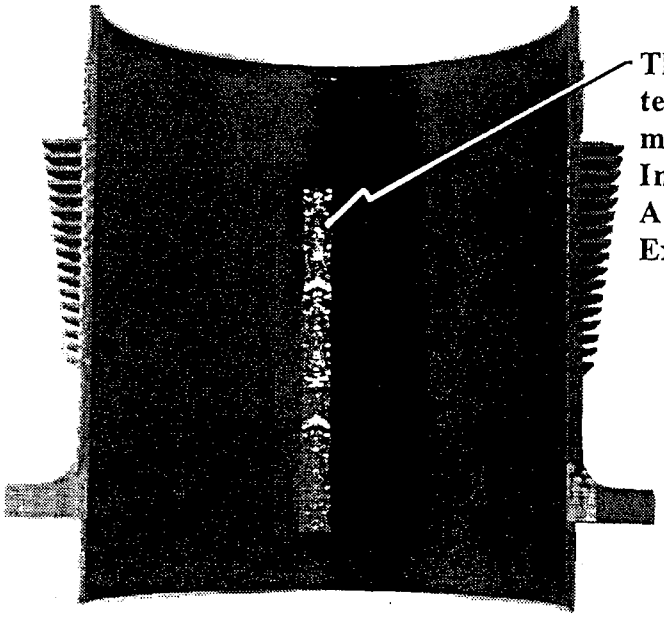
   Account #545519019
   Consignee Reference #75970400

   Ship To: Teledyne Continental Motors
   2000 Ninth Street
   Mobile, AL 36615
   Attn. Cylinder Inspection Program



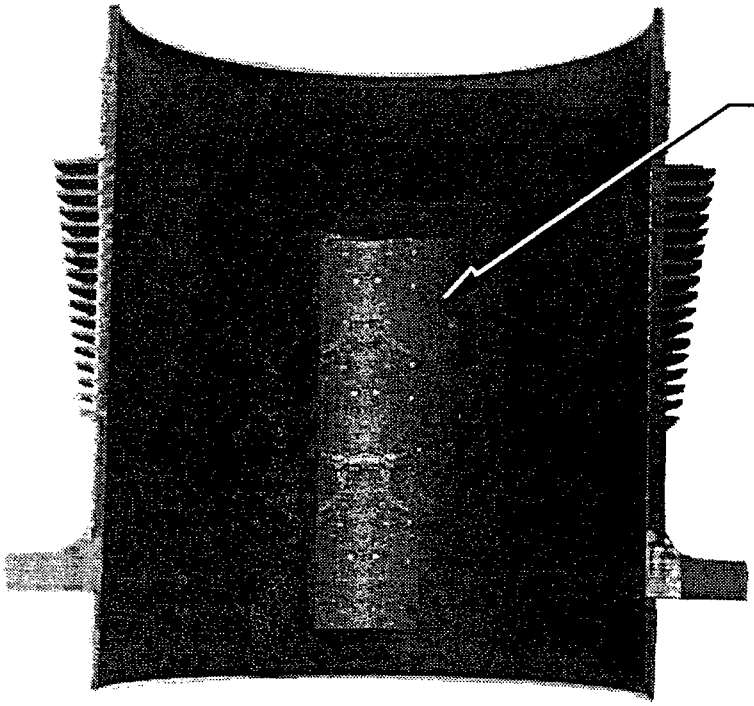
Typical Manganese Phosphate Cylinder Bore Surface Appearance

Figure 1.



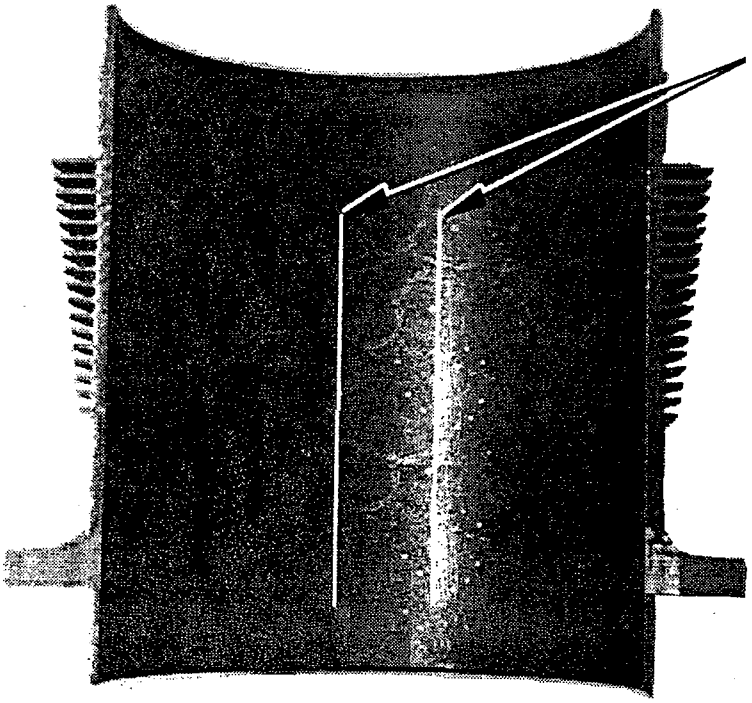
This Type Of Narrow Wear Pattern Is Normal. Cylinder Removal Is Not Required Unless Indicated By Results Of Oil Analysis Or Oil Filter/Screen Examination.

Figure 2.



Any Cylinder Bore That Exhibits This Type Of Wide Wear Pattern Must Be Removed For Inspection.

Figure 3.



Any Cylinder Bore That Exhibits These Distinct Vertical Wear Signatures At The 3 O'clock Position Or 9 O'clock Position Must Be Replaced.

Figure 4.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 40

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

97-082 SLITASJE PÅ STEMPELPINNEPLUGGER

Påbudet gjelder:

Teledyne Continental motorer og sylindre som angitt i FAA AD 97-21-02 og TCM Critical Service Bulletin No CSB97-10A, datert 1997-07-15.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 97-21-02 og Teledyne Critical Service Bulletin CSB97-10A.

Anm.: Denne LDP erstatter og opphever LDP 97-057.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 97-21-02 og Teledyne Critical Service Bulletin CSB97-10A.

Referanse:

FAA AD 97-21-02.
Teledyne Critical Service Bulletin CSB97-10A.

Gyldighetsdato:

1997-12-01.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

97-21-02 Teledyne Continental Motors: Amendment 39-10155. Docket No. 97-ANE-39-AD. Supersedes Priority Letter AD 97-15-01, issued July 17, 1997.

Applicability: Teledyne Continental Motors (TCM) new and rebuilt Model O-470 and IO-470 series reciprocating engines with serial numbers (S/Ns) listed in Table 1 of TCM Critical Service Bulletin (CSB) No. CSB97-10A, dated July 15, 1997; and TCM Model E-165, E-185, E-225, O-470 and IO-470 series reciprocating engines, regardless of S/N, which have cylinder(s) with part number and purchase date as shown in Table 2 of TCM CSB No. CSB97-10A, dated July 15, 1997. These engines are installed on but not limited to the following aircraft: Bellanca Models 14-19-2 and 14-19-3; Cessna Models 180, 180A through K, 182, 182A through R, 185, 185A through E, 188, 188A, 188B, 210, 210A through C, 210-5 (205), 210-5A (205A), 305A, 305C, 305D, 305F, 310, 310A through Q, E310H, E310J, 310J-1; Frontier-Aerospace, Inc. (Fletcher) Models FU-24 and FU-24A; Luscombe Aircraft Corporation Model 11A; Navion models Navion, Navion A, and Navion D through G; Prop-Jets, Inc. Models 200, 200A through C; Raytheon (formerly Beech) Models 35, A35 through P35, 35R, 35-33, 35-A355, 35-B33, 35-C33, E33, F33, 45 (YT-34), A45 (T-34A, B-45), D45 (T-34B), 95-55, 95-55A, 95-B55, 95-B55A and 95-B55B; Reims models F182P and F182Q; and Twin Commander Aircraft, Inc. Model 500-A.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent extreme side loading of the piston, and consequent failure of the piston and engine, accomplish the following:

(a) Operators that have removed affected cylinders in accordance with priority letter AD 97-15-01 and TCM CSB No. CSB97-10, dated June 19, 1997, are in compliance with this AD and no further action is required

(b) For the TCM O-470 and IO-470 series engines listed by S/N in Table 1 of TCM CSB No CSB97-10A, dated July 15, 1997, within 10 hours time in service (TIS) after the effective date of this AD, accomplish the following:

(1) Remove from service the cylinders, six each, and the piston pins, six each, in accordance with the Inspection Instructions, Part 2-1(a), of TCM CSB No. CSB97-10A, dated July 15, 1997.

(2) Obtain serviceable replacement parts and reassemble the engine in accordance with the Inspection Instructions, Part 2-2, of TCM CSB No. CSB97-10A, dated July 15, 1997.

(c) For the E-165, E-185, E-225, series engines and those O-470 and IO-470 series engines not listed by S/N in Table 1 of TCM CSB No. CSB97-10A dated July 15, 1997, within 10 hours TIS after the effective date of this AD, accomplish the following:

(1) Determine from engine log books or maintenance records if a cylinder has been replaced with a cylinder purchased in the time frames shown in Table 2 of TCM CSB No. CSB97-10A, dated July 15, 1997.

(2) If a cylinder was **not** replaced with a cylinder purchased during those time frames listed in the CSB, or if a cylinder is identified with the letter "M" or "P" steel stamped after the cylinder position number, as cylinders marked with "M" or "P" have a surface finish that has been found to be within specification, no further action is required. The cylinder position number is located at the 12 o'clock position on the cylinder mounting flange.

(3) If a cylinder **has** been replaced with a cylinder purchased during those time frames listed in the CSB, remove from service the affected cylinders and piston pins in accordance with the Inspection Instructions, Part 2-1(a) of TCM CSB No. CSB97-10A, dated July 15, 1997.

(4) Obtain serviceable replacement parts and reassemble the engine in accordance with the Inspection Instructions, Part 2-2, of TCM CSB No. CSB97-10A, dated July 15, 1997.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(f) The actions required by this AD shall be done in accordance with the following TCM CSB:

Document No.	**Pages**	**Date**
CSB97-10A	1-11	July 15, 1997

Total pages: 11.

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, PO Box 90, Mobile, AL 36601; **telephone toll free (888) 826-5874**. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment supersedes priority letter AD 97-15-01, issued July 17, 1997.

(h) This amendment becomes effective on October 27, 1997.

FOR FURTHER INFORMATION CONTACT:

Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, 1895 Phoenix Boulevard, One Crown Center, Suite 450, Atlanta, GA 30349; telephone (770) 703-6096, fax (770) 703-6097.

BLANK

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 41

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

98-006 UTSKIFTING AV «EXHAUST ROLLER ROCKER ARM»

Påbudet gjelder:

Teledyne Continental, modeller som er listet i vedlagte kopi av FAA Priority letter AD 98-01-08.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA Priority letter AD 98-01-08.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA Priority letter AD 98-01-08.

Referanse:

FAA Priority letter AD 98-01-08.

Gyldighetsdato:

1998-01-16.

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

PRIORITY LETTER AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

DATE: December 23, 1997
98-01-08

This priority letter Airworthiness Directive (AD) is applicable to Teledyne Continental Motors (TCM) IO-520 series, TSIO-520 series, O-470 series, and IO-550 series reciprocating engines, with Performance Engineering exhaust roller rocker arms, Part Number (P/N) PE92E, installed, in accordance with Supplemental Type Certificate (STC) SE8594SW. This AD is prompted by reports of broken exhaust roller rocker arms. The investigation revealed that these exhaust roller rocker arms had failed due to oil galleries drilled off center during manufacturing, too close to the outside edge. In addition, tests disclosed that the compositional requirements of the exhaust roller rocker arms did not meet hardness specifications. This condition, if not corrected, could result in exhaust roller rocker arm failure, which can result in bent push rods, ruptured rocker arm covers, loss of engine oil, engine power loss and roughness, and possible engine failure.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD requires, within 25 hours time in service (TIS) after receipt of this priority letter AD, removal from service of all affected exhaust roller rocker arms. The correct location of the oil gallery holes cannot be visually determined, so the FAA has determined that all affected parts must be removed from service. The STC owner is no longer in business producing new parts, therefore all replacement parts must be from TCM.

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958) pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this priority letter.

98-01-08 Teledyne Continental Motors with STC SE8594SW: Priority Letter issued on December 23, 1997. Docket No. 97-ANE-48-AD.

Applicability: Teledyne Continental Motors (TCM) IO-520-A, -B, -BA, -C, -CB, -D, -E, -F, -K, -L, -M, -MB, -J; TSIO-520-A, -B, -D, -E, -F, -G, -H, -J, -K, -L, -M, -N, -P, -R, -T, -U, -UB, -AF, -CE, -VB, -WB, -NB, -LB, -KB, -JB, -EB, -DB, -BB; O-470-B, -G, -E, -L, -M, -P, -R, -S, -U; IO-470-C, -D, -E, -F, -G, -H, -L, -M, -N, -P, -R, -S, -U, -V; and IO-550-B, -C, and -G series reciprocating engines, with Performance Engineering exhaust roller rocker arms, Part Number (P/N) PE92E, installed, in accordance with Supplemental Type Certificate (STC) SE8594SW. These engines are installed on but not limited to Cessna 180, 182, 185, 206, 207, 210, 310, 335, 340, 401, 402, 414; Raytheon (Beech) 33, 35, 36, 55, 58; Bellanca 17-30; New Piper PA-46; Fletcher FU-24A aircraft.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (b) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent exhaust roller rocker arm failure, which can result in bent push rods, ruptured rocker arm covers, loss of engine oil, engine power loss and roughness, and possible engine failure, accomplish the following:

(a) Within 25 hours time in service after the effective date of this AD, remove from service all Performance Engineering exhaust roller rocker arms, P/N PE92E, and replace with serviceable parts, as follows:

(1) For IO-520, TSIO-520, O-470, IO-470, and all IO-550 series engines except the IO-550-G, replace with serviceable TCM exhaust roller rocker arms, P/N 652130.

(2) For IO-550-G series engines, replace with serviceable TCM exhaust roller rocker arms, P/N 652966.

(b) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Special Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Special Certification Office.

PRIORITY LETTER AIRWORTHINESS DIRECTIVE

Note 2: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Special Certification Office.

(c) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(d) Priority Letter AD 98-01-08, issued December 23, 1997, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: Richard D. Karanian, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Ft. Worth, TX 76137-4298; telephone (817) 222-5195, fax (817) 222-5785.

BLANK

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 42

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

98-017 SPREKKONTROLL AV VEIVAKSEL

Påbudet gjelder:

Teledyne Continental Motors and Rolls-Royce, plc, modeller som er listet i vedlagte kopi av FAA AD 97-26-17.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 97-26-17.

Anm.: Denne LDP erstatter og opphever LDP 6/88.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 97-26-17.

Referanse:

FAA AD 97-26-17.

Gyldighetsdato:

1998-02-01.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Federal Aviation Regulations, Part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference FAR Subpart 39.3).

97-26-17 Teledyne Continental Motors and Rolls-Royce, plc: Amendment 39-10260. Docket 93-ANE-08. Supersedes AD 87-23-08, Amendment 39-5735.

Applicability: Teledyne Continental Motors (TCM) IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 series reciprocating engines built on or prior to December 31, 1980; rebuilt TCM IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 series reciprocating engines with serial numbers lower than those listed in TCM Critical Service Bulletin (SB) No. CSB96-8, dated June 25, 1996; TCM factory overhauled IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 series reciprocating engines with serial number of 901203H and lower; and Rolls-Royce, plc IO-360 and TSIO-360 series reciprocating engines with any serial number. These engines are installed on but not limited to the following aircraft: Raytheon (formerly Beech) models 95-C55, 95-C55A, D55, D55A, E55, E55A, 58, 58A, 58P, 58PA, 58TC, 58TCA, S35, V35, V35A, V35B, E33A, E33C, 35-C33A, 36, A36, F33A, F33C and A36TC; Bellanca model 17-30A; Cessna models 172XP, A185, A188, T188C, 206, T206, 207, T207, 210, T210, P210, 310R, T310P, T310Q, T310R, 320D, 320E, 320F, 336, 337, T337, P337, 340, 401, 402, 414 and T41B/C; Colemill conversion of Commander 500A; Goodyear Airship Blimp 22; Maule Model M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Mooney model M20-K; Navion model H; Pierre Robin HR 100; The New Piper Aircraft, Inc. (formerly Piper Aircraft Company) models PA28-201T, PA28R-201T, PA28RT-201T, PA34-200T and PA34-220T; Prinair DeHavilland Heron; Reims models FR172, F337 and FT337; and Swift Museum Foundation, Inc. models GC-1A and GC-1B equipped with the IO-360 engine.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent crankshaft failure and subsequent engine failure, accomplish the following:

(a) At the next engine overhaul, or whenever the crankshaft is next removed from the engine, after the effective date of this AD, whichever occurs first, determine if the crankshaft was manufactured using the airmelt or vacuum arc remelt (VAR) process in accordance with the identification procedure described in TCM Critical SB No. CSB96-8, dated June 25, 1996. If the crankshaft was manufactured using the airmelt process or if the manufacturing process is unknown, remove the crankshaft from service and replace with a serviceable crankshaft manufactured using the VAR process.

(b) For all TCM IO-360, LTSIO-360, TSIO-360, IO-520, LIO-520, LTSIO-520 and TSIO-520 and Rolls-Royce, plc IO-360 and TSIO-360 engine models that have VAR crankshafts installed, regardless of serial number; at the next and every subsequent crankshaft removal from the engine case or installation of a replacement crankshaft, prior to crankshaft installation in the engine, conduct an ultrasonic inspection of the crankshaft in accordance with the procedures specified in TCM Mandatory SB No. MSB96-10, dated August 15, 1996, and, if necessary, replace with a serviceable part.

Note 2: Accomplishment of the ultrasonic inspection required by this AD does not fulfill any requirements for magnetic particle inspection or any other inspections specified in TCM or Rolls-Royce, plc overhaul manuals.

(c) The ultrasonic inspection of the crankshaft must be performed by a non-destructive test (NDT) ultrasonic (UT) Level II inspector who is qualified under the guidelines established by the American Society of Nondestructive Testing or MIL-STD-410 or FAA-approved equivalent, or must be trained by TCM personnel or their designated representative on how to accomplish and conduct this inspection procedure. The person approving the engine for return to service is required to verify that the UT inspection was accomplished in accordance with the requirements of this paragraph.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. Operators shall submit their requests through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(f) The actions required by this AD shall be done in accordance with the following TCM service documents:

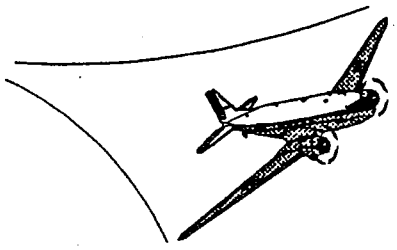
Document No.	**Pages**	**Date**
CSB96-8	1-6	June 25, 1996
Total pages: 6.		
MSB96-10	1-3	August 15, 1996
Total pages: 3.		

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, P.O. Box 90, Mobile, AL 36601; telephone (334) 438-3411. Copies may be inspected at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

(g) This amendment becomes effective on January 23, 1998.

FOR FURTHER INFORMATION CONTACT:
Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, Campus Building, 1701 Columbia Ave., Suite 2-160, College Park, GA 30337-2748; telephone (404) 305-7371, fax (404) 305-7348.

SPECIAL AIRWORTHINESS INFORMATION BULLETIN



U.S. Department
of Transportation
Federal Aviation
Administration

AIRCRAFT CERTIFICATION SERVICE
800 INDEPENDENCE AVENUE, S.W.
WASHINGTON, DC 20591

No. ACE-98-21
December 31, 1997

Published by: FAA, AFS-610, P.O. Box 26460, Oklahoma City, OK 73125

Introduction

The purpose of this Special Airworthiness Information Bulletin (SAIB) is to alert owners/operators of Teledyne Continental Motors (TCM) models C-75, C-85, C-90 (except C-90-8F and C-90-8FJ), O-200, IO-240 series and Rolls-Royce, plc (RR) Models C-90 (except C-90-8F and C-90-8FJ), O-200, O-240 series reciprocating engines of the distribution of unapproved magneto drive gears. These magneto drive gears were distributed and/or manufactured by Fresno Airparts Company (formerly Fresno Airmotive Company) and were found to have deficient material properties. Fresno Airparts Company was not authorized by the Federal Aviation Administration (FAA) to manufacture these parts. This information is valuable to anyone who operates one of the above listed engines because of the possibility of magneto drive gear failure which could result in engine failure and possible forced landing.

These engines are installed on, but not limited to:

American Champion Models 7AC, 7BCM, 7CCM, 7DC, S7DC, S7CCM, 7EC, S7EC, 7FC, 7JC, 7GCA and 402;
Cessna Models 120, 140, 150, 150A through 150M, A150K through A150M;
Luscombe Models 8E, 8F, and T-8F;
The New Piper Models PA-18 and PA-19;
Reims Models F150G through F150M, FA150K, FA150L, FRA150L, and FRA150M;
Taylorcraft Models 19 and F19;
Univair (Erco) Models 415-D, 415-E and 415-G;
Univair (Forney) Models F-1 and F-1A;
Univair (Alon) Model A-2 and Univair (Mooney) Model M-10 aircraft.

This information is advisory in nature and not mandated by regulation.

Background

A report of a failure of a magneto drive gear distributed and/or manufactured by Fresno Airparts Company was received by the FAA. The reported failure occurred in under 100 hours time-in-service since installation of the magneto gear. An analysis was conducted on 12 additional gears which were found to not comply with type design. An investigation was conducted by the FAA and the Department of Transportation Inspector General's Office and revealed that the magneto drive gears were distributed by Fresno Airparts Company (formerly Fresno Airmotive Company) and other repair stations, distributors, or persons listed in Note 1 of this SAIB. The magneto drive gears were manufactured from improper materials, not heat treated or not heat treated properly, and do not conform to the dimensional tolerances of approved gears. These findings led the FAA to conduct a Suspected Unapproved Parts (SUPS) inquiry. The improperly manufactured magneto drive gears have a part number (P/N) 36066 ink stamped on them and were typically shipped in a plastic bag which was placed inside a brown box usually marked only with the P/N. The suspect magneto gear drives are not ones produced by a manufacturer holding a parts manufacturing authority (PMA), which will have a P/N

ndicating the PMA, or ones produced by the original equipment manufacturer (OEM), which are shipped in boxes marked with the OEM's logo. Improperly manufactured magneto gear drives were distributed by Fresno Airparts Company (formerly Fresno Airmotive Company) to many repair stations, distributors, and other persons. The FAA has secured a list of persons to whom Fresno Airparts Company (formerly Fresno Airmotive Company) distributed suspect magneto drive gears. The list appears in Note 1.

There are approximately 36,000 engines installed on aircraft of U.S. registry on which the suspect magneto gear drives are eligible for installation. The FAA has determined that these parts did not begin to be distributed before December 1993. All magneto drive gears installed from December 1993 to the present must, therefore, be considered suspect. There is no visual test to distinguish an improperly manufactured magneto drive gear bearing P/N 36066 from a properly manufactured magneto drive gear with that same P/N. This condition, if not corrected, could result in magneto drive gear failure due to being improperly manufactured, which could result in an engine failure and possible forced landing.

NOTE 1: This list may be used to assist in determining whether P/N 36066 may have been purchased from Fresno Airparts Company. These listed entities may have resold parts to others. Invoices indicate that improperly manufactured magneto drive gears were purchased from Fresno Airparts Company (formerly Fresno Airmotive Company) by the following from December 1993 to December 1997:

Aero Maintenance, Vancouver, WA;
Aero Pacific, Oceanside, CA;
Aero Tech, San Jose, CA;
Aerospares, Mississauga, Ontario;
Aerotech, Karup, Denmark;
Aerstone Supplies, LTD, Oxon, UK;
Air Support Int., Inc., Marshfield, MO;
Air West Aircraft Engines, San Carlos, CA;
Alta Aircraft Maintenance, W. Jordan, UT;
Athens Air, Athens, TN;
Aviation Buyers Group, Inc., Salt Lake City, UT;
B & K Aircraft Salvage, Mandan, ND;
Bob Bailey, Ruston, LA;
Barkhorn Precision Engines, Vista, CA;
Bela's Aircraft, Dallas, TX;
Black Hills Aero, Spearfish, SD;
David Branson, Tucson, AZ;
Bruce Machines, Lakeville, CT;
C3D Aviation, Waller, TX;
Central Air Parts, Inc., Staunton, IL;
Central Illinois Aviation, New Berlin, IL;
William Christensen, Taylors, SC;
Chuck's Aircraft, San Carlos, CA;
Chris Clew, Murfreesboro, TN;
Bill Collins, Gould, AR;
Coastal Aircraft, Juneau, AK;
Cooper Aviation, Fowlerville, MI;
Corporate Aircraft Salvage Pty, Ltd.,
Jandakot, Perth Western Australia;
Corporate Aircraft Service, Jandakot,
Western Australia;
Costa Flying Service, Painted Post, NY;
Crotts Aircraft Service, Dodge City, KS;
D + D Aircraft, Fresno, CA;
DD + D Inc., Grady, AR;
Delta Aviation, Stillwater, OK;
DeMars Aero, Fort Collins, CO;
Don George Aircraft, Orlando, FL;
Dream Machine, Jonesboro, GA;
E.A.A. Maintenance, Oshkosh, WI;
El Reno Aviation, Inc., El Reno, OK;
Engine Components N.W., Aurora, OR;
Estergard Aviation, Chandler, AZ;
Tyrone Ewig, Iron Mountain, MI;
Gibson Aviation, El Reno, OK;
Glen Beard Airspares, Jandakot Airport
Western Australia;
Glen's Aircraft Repair, Palmyra, WI;
Gunter Goggelmann, Dallas, TX;
Gold Coast Aviation, Salinas, CA;
Golden Horn Aviation, Sebastin, FL;
Gran-Aire, Inc., Milwaukee, WI;
Hetrick Aircraft, Lawrence, KS;
Art Heunemann, Garland, TX;
Hortman Aviation, Philadelphia, PA;
J's Aircraft Engine + Parts Inc., Dallas, TX;
Kaylor Engines, Ocala, FL;
Kay Air, Indianapolis, IN;
Kline Aviation, Brooklyn, MI;
Lake Aero Repair, Lakeville, MN;
Robert Larson, Medina, OH;
Leading Edge Aviation, Searcy, AR;
John Linke, Omaha, NE;
Lycoming Air Services, Montoursville, PA;
Lycon Rebuilding Company, Visalia, CA;
Lycon, Inc., Mesa, AZ;

Lynn's Aircraft, El Monte, CA;
Lynn's Aircraft Engines, El Monte, CA;
Edwin Macauley, Medford, OR;
Mad Par Aviation, Hillsboro, OR;
Mad River Airport, Urbana, OH;
Mainland Machine, San Luis Obispo, CA;
Richard Maresh, Syracuse, IN;
Steve Markham, Odiham, Hampshire, England;
Mattituck Aviation Corporation, Mattituck, NY;
Menasco Air, Sonoma, CA;
Mertz Aero, West Chester, PA;
Mid Valley Aviation, Los Banos, CA;
Monticello Aviation, Inc., Monticello, CA;
National Aviation Supply, Seattle, WA;
Nick Carter Aviation, Elizabethton, TN;
North Central Aviation, Linton, ND;
Northern Skies Aviation, Laurel, MT;
O Kanogan Aero Engine, Kelowna, BC, Canada;
Ormond Beach Aviation, Inc., Ormond Beach, FL;
Owatonna Airport, Inc., Owatonna, MN;
Pacific Continental Engines, Van Nuys, CA;
Pete Mason Banner Towing, Santa Paula, CA;
Craig Pickren, Heber Springs, AR;
Progress Photo, Norfolk, VA;
Q.G. Aviation, Fort Collins, CO;
Regional Air Inc., Lawton, KS;
Reimers Aircraft, Anchorage, AK;
Reliant Aviation, Albany, OR;
Carew Rice, Seabrook, SC,
Riley Aviation, Coldwater, MI;
Rocky Mountain Air Service, Nampa, ID;
Ron's Repair, Lopey Island, WA;
Ross Repair, Cambridge, MD;
Sanders Aircraft, Chino, CA;
Savage Magneto, Oakland, CA;
Scott Vally Aviation, Greenview, CA;
Jim Skilling, Groveland, CA;
Sky Dancer Aviation, Lincoln, CA;
Sky Haven Enterprises, Rochester, NH;
Kraig Smyth, Fairbanks, AK;
Snohomish Flying Service, Snohomish, WA;
Ken Snyder, Savage, MN;
South East Airmotive Corporation, Charlotte, NC;
Spana Flight, Puyallup, WA;
Standard Aircraft, Belmont, NC;
Stanton Kline Moss, Gilroy, CA;
Vivian Starr, Plymouth, MN;
Stauffer Aero, Calgary, Alberta, Canada;
Steve's Aircraft Repair, Chester, MT;
Sussex Aero Maintenance, Georgetown, DE;
Tears Aviation, McKinney, TX;
Kirk Tegeriehner, Indianapolis, IN;
Twin Oaks Aviation, Hillsboro, OR;
Vermont Flying Service, Barre, VT;
Victor Aviation, Palo Alto, CA;
West Fargo Aviation, West Fargo, ND;
Jack White, Orangevale, CA;
White Wing Aircraft Engines, Inc., Junction, TX;
Nancy Zawistowski, North Reading, MA.

Recommendation

Based on the currently available information, the FAA is only recommending the following actions. However, the FAA will continue this investigation and additional actions, such as issuance of an Airworthiness Directive which may be found to be warranted based upon analysis of new information.

The FAA is recommending the following:

(a) If no work was performed on the magneto drive gears during the time period December 1993 through December 1997, no further action is required.

NOTE 2: A check of engine maintenance records or engine log books for the time period December 1993 to December 1997 may help determine if any work was accomplished on the magneto drive gears (invoices may be necessary to determine exactly what work was completed and what parts replaced).

(b) If work was performed on the magneto drive gears during the time period December 1993 through December 1997, accomplish the following:

(1) Remove from service all magneto drive gears distributed by Fresno Airparts Company (formerly Fresno Airmotive Company), and replace with serviceable parts. (See Note 1.)

NOTE 3: The suspect parts have an ink stamped P/N 36066 and were usually shipped in a plastic bag, which, in turn, was placed in a brown box and usually marked only with the P/N.

(2) If the origin of the magneto drive gear installed cannot be determined, remove the magnetos in accordance with the appropriate maintenance manual, then remove the magneto drive gear from the magneto, and either:

(i) Remove the magneto drive gear from service, and replace with a serviceable part; or

(ii) Perform the following Rockwell hardness test on the gear. Test in a minimum of two of the following three locations; on the back of the gear, on a gear tooth end, or on the central boss. The type design specifies a Rockwell C scale value of 38 - 42. Any gear that does not meet this specification must be removed from service and replaced with a serviceable part.

(c) A serviceable part may be defined as a new or used magneto drive gear which successfully passes the Rockwell hardness test specified above or was not distributed from Fresno Airparts Company (formerly Fresno Airmotive Company). (See Note 1.)

(d) Operators are requested to report any occurrences of magneto failures, engine failure or aircraft incidents that were found to be due to failure of the magneto gear.

For Further Information Contact

Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, 1895 Phoenix Boulevard, One Crown Center, Suite 450, Atlanta, GA 30349;
telephone (770) 703-6096, fax (770) 703-6097.

BLANK

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 43

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

98-089 KONTROLL/UTSKIFTING AV STEMPELSTANG

Påbudet gjelder:

Teledyne Continental Motors With Superior Air Parts, Inc, stempelstenger installert i de modeller som er listet i vedlagte kopi av FAA AD 98-19-02.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 98-19-02.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 98-19-02.

Referanse:

FAA AD 98-19-02.

Gyldighetsdato:

1998-11-01.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation Administration

98-19-02 Teledyne Continental Motors With Superior Air Parts, Inc. PMA Piston Pins, Part Number (P/N) SA629690: Amendment 39-10745 Docket 97-ANE-37.

Applicability: Superior Air Parts, Inc., Parts Manufacturer Approval (PMA) piston pins, Part Number (P/N) SA629690, shipped from Superior Air Parts, Inc., from August 1, 1994, through June 20, 1996, installed in Teledyne Continental Motors IO-360-A, -AB, -C, -CB, -D, -DB, -G, -GB, -H, -HB, -J, -JB, -K, -KB; LTSIO-360-E, -EB, -KB; TSIO-360-A, -AB, -B, -C, -CB, -D, -DB, -E, -F, -FB, -GB, -H, -HB, -JB, -KB, -LB, -MB series reciprocating engines which were overhauled or had cylinder head maintenance performed by a repair facility other than Teledyne Continental Motors after August 1, 1994. These engines are installed on but not limited to the following aircraft: Cessna 172XP, 336, 337, T337, P337, and T-41B/C (military); Maule M-4-210, M-4-210C, M-4-210S, M-4-210T, and M-5-210C; Swift Museum Foundation, Inc. GC-1A, GC-1B, New Piper Inc. PA-28-201T, PA-28R-201T, PA-28RT-201T, PA-34-200T, and PA-34-220T; Reims FR172, F337, and FT337; Goodyear Airship Blimp 22; Mooney M20-K; and Pierre Robin HR100.

Note 1: Shipping records, engine logbooks, work orders, and parts invoices checks may allow an owner or operator to determine if this AD applies.

Note 2: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent a piston pin failure from causing secondary engine damage that results in loss of oil or total power failure, and from causing jamming of the engine crankshaft resulting in a catastrophic engine failure, accomplish the following:

(a) If an engine has not had a piston pin installed after August 1, 1994, or if an engine has had a piston pin installed after August 1, 1994, but it was installed by Teledyne Continental Motors, then no action is required.

(b) For engines that had a piston pin installed after August 1, 1994, by an entity other than Teledyne Continental Motors, within 25 hours time in service (TIS) after the effective date of this AD, referring to Superior Air Parts, Inc. Mandatory Service Bulletin (SB) No. 96-001, dated August 5, 1996, determine if a suspect Superior Air Parts, Inc. PMA piston pin, P/N SA629690, could have been installed. If unable to verify that a suspect piston pin was not installed using a records check, disassemble the engine in accordance with the applicable Maintenance Manual or Overhaul Manual, visually inspect or verify for suspect piston pins, and accomplish the following:

(1) If it is determined that suspect Superior Air Parts, Inc. PMA piston pins, P/N SA629690, could have been installed, remove from service defective piston pins and replace with serviceable piston pins.

(2) If it is determined that suspect Superior Air Parts, Inc. PMA piston pins, P/N SA629690, could not have been installed, no further action is required.

(c) For the purpose of this AD, a serviceable piston pin is any piston pin approved for the application that has been verified not to be a Superior Air Parts, Inc. PMA piston pin, P/N SA629690, shipped from Superior Air Parts, Inc., from August 1, 1994, through June 20, 1996. Installation of a Superior Air Parts Inc. PMA piston pin, P/N SA629690, that can not be verified to be outside of the suspect shipping period range, is prohibited after the effective date of this AD.

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Special Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Special Certification Office.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Special Certification Office.

(e) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the inspection may be performed.

(f) The actions required by this AD shall be done referring to the following Superior Air Parts, Inc. Mandatory Service Bulletin:

Document No	Pages	Revision	Date
96-001	4	Original	August 5, 1996

Total Pages: 4

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of Superior Air Parts, Inc. Mandatory Service Bulletin No. 96-001 may be obtained from Superior Air Parts, Inc., 14280 Gillis Road, Dallas, TX. 75244; telephone (800) 400-5949, fax (800) 238-8471. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

(g) This amendment becomes effective on November 9, 1998.

FOR FURTHER INFORMATION CONTACT: Paul Madej, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, 2601 Meacham Blvd., Ft. Worth, TX 76137-4298; telephone (817) 222-4635, fax (817) 222-5785.

BLANK

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 44

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

99-040 SPREKKONTROLL AV VEIVAKSEL

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA Priority Letter AD 99-09-17.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA Priority Letter AD 99-09-17.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA Priority Letter AD 99-09-17.

Referanse:

FAA Priority Letter AD 99-09-17.

Gyldighetsdato:

1999-05-12.

PRIORITY LETTER AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation
Administration

DATE: April 22, 1999
99-09-17

The Federal Aviation Administration (FAA) has received reports of crankshaft failures on Teledyne Continental Motors (TCM) O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550, and TSIOL-550 series reciprocating engines. Since December 1998, the FAA obtained information regarding 7 crankshaft failures. The investigation revealed that the crankshafts failed due to cracks through the No. 2 or No. 5 cheeks. Analysis indicated that the crankshaft failures occurred early in the life of a new crankshaft, from 80 to 175 hours time-in-service (TIS). In addition, one crankshaft was found which had not failed but which had a crack initiation. TCM has advised the FAA that all of the fractures were due to a discrepancy in the counterweight bushing installation process, involving a tool which can damage the nitride surface of the cheek sufficient to create a crack which will propagate through the nitride layer. Such a crack will always result in failure of the crankshaft. All of the fractures have been grouped around certain manufacturing dates between January 1998 and December 1998, inclusive. Review of the manufacturing processes, basic metallurgy, nitride characteristics, dimensional characteristics, and supplier practices have not identified any other contributing causes. This condition, if not corrected, could result in crankshaft failure due to No. 2 and No. 5 cheek cracks, which could result in total engine power loss, in-flight engine failure, and possible forced landing.

The FAA has reviewed and approved the technical contents of TCM Critical Service Bulletin (CSB) 99-3, dated April 19, 1999, that lists serial numbers (S/Ns) of affected engines that were manufactured between January 1998 and December 1998, inclusive. This CSB also describes procedures for visual and ultrasonic (UT) inspections of specific areas of the No. 2 and No. 5 crankshaft cheeks. All inspections must be performed by TCM representatives, since it is a new procedure that only TCM-trained personnel are currently authorized to perform.

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this priority letter airworthiness directive (AD) requires a one-time visual and UT inspection of the No. 2 and No. 5 crankshaft cheeks for cracks. All crankshaft cheeks found cracked must be replaced with a serviceable crankshaft prior to further flight. There are approximately 80,000 TCM O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550 and TSIOL-550 series reciprocating engines in the worldwide fleet, with approximately 68,000 in the U.S. fleet. 3,200 crankshafts were manufactured during the affected time period. Engines that were not manufactured, rebuilt, or overhauled, or that did not have a crankshaft installed in the field during that time period are not affected by this priority letter AD, which can be verified through log books or other maintenance records. Engines that may have an affected crankshaft installed must be checked for engine S/Ns listed in TCM CSB 99-3, dated April 19, 1999, and must be inspected for the S/Ns of field-installed new crankshafts manufactured between January 1, 1998, and December 31, 1998, inclusive. The actions are required to be accomplished in accordance with the CSB described previously.

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958) pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this priority letter.

99-09-17 TELEDYNE CONTINENTAL MOTORS: Priority Letter issued on April 22, 1999. Docket No. 99-NE-28-AD.

Applicability: Teledyne Continental Motors (TCM) O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550 and TSIOL-550 series new and rebuilt reciprocating engines, manufactured between January 1, 1998, and December 31, 1998, inclusive, listed by serial number (S/N) in TCM Critical Service Bulletin (CSB) 99-3, dated April 19, 1999, and any other engine from the above series that has had a new crankshaft installed that was manufactured between January 1, 1998, and December 31, 1998, inclusive.

Note 1: Engine S/Ns can be found in log books or other maintenance records. For those engines that were overhauled in the field with factory new crankshafts, crankshaft S/Ns should be shown in work orders, log books, or other maintenance records.

Note 2: This Priority Letter Airworthiness Directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the

requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (e) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent crankshaft failure due to No. 2 and No. 5 cheek cracks, which could result in total engine power loss, in-flight engine failure, and possible forced landing, accomplish the following:

(a) For those engines listed by S/N on pages 3 through 12 of TCM CSB 99-3 dated April 19, 1999, with 300 hours or less time-in-service (TIS) upon receipt of this priority letter AD, perform the crankshaft visual and ultrasonic (UT) inspections within 10 hours TIS after receipt of this priority letter AD, in accordance with sections A and B of TCM CSB 99-3, dated April 19, 1999. These inspections must be performed by TCM representatives.

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same part number (P/N) prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(b) For those engines listed by S/N on pages 3 through 12 of TCM CSB 99-3, dated April 19, 1999, with more than 300 hours TIS upon receipt of this priority letter AD, perform the crankshaft visual and UT inspections at the next maintenance event, or within 50 hours TIS after receipt of this priority letter AD, whichever occurs first, in accordance with sections A and B of TCM CSB 99-3, dated April 19, 1999. These inspections must be performed by TCM representatives.

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same P/N prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(c) For any other engine with a crankshaft installed that was manufactured between January 1, 1998, and December 31, 1998, with 300 hours or less TIS upon receipt of this priority letter AD, perform the crankshaft visual and UT inspections within 10 hours TIS after receipt of this priority letter AD, in accordance with sections A and B of TCM CSB 99-3, dated April 19, 1999. These inspections must be performed by TCM representatives.

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same P/N prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(d) For any other engine with a crankshaft installed that was manufactured between January 1, 1998, and December 31, 1998, with more than 300 hours TIS upon receipt of this priority letter AD, perform the crankshaft visual and UT inspections at the next maintenance event, or within 50 hours TIS after receipt of this priority letter AD, whichever occurs first, in accordance with sections A and B of TCM CSB 99-3, dated April 19, 1999. These inspections must be performed by TCM representatives.

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same P/N prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

Note 3: Engines and crankshafts that are the subject of this priority letter AD were manufactured between January 1, 1998, and December 31, 1998, inclusive. Purchase and delivery dates of engines/crankshafts produced in December 1998 could have been in the January/February 1999 time frame and are therefore affected by this AD. Likewise, engines/crankshafts purchased/delivered in January/February 1998 could have been December 1997 production and are not affected by this AD. Use the S/N of the engine or crankshaft to determine applicability: engine S/Ns are listed in TCM CSB 99-3, dated April 19, 1999, while the crankshafts, not listed by S/N, were manufactured during 1998. See Note 4 for information on identifying crankshafts.

Note 4: The following information is provided to avoid confusion in crankshaft S/N interpretation. A typical crankshaft S/N could be C229805N. The first letter is the month of manufacture beginning with A – January and ending with L – December; therefore, C is March. The next two digits are the day of the month; in this example, the 22nd. The next two digits are the year; in this example 1998. The final two digits are the sequential number of the crankshaft for a given day; in the example, this was the 5th crankshaft produced that day. The final letter, "N", identifies this as a crankshaft S/N. Therefore, for this example: we have the 5th crankshaft produced on March 22, 1998. For all practical purposes, you only need look for the year, i.e. 98 (fourth and fifth positions in the S/N sequence) because that will determine AD effectivity. The crankshaft S/N is stamped on the edge of the propeller flange.

Note 5: The engine S/Ns listed in TCM CSB 99-3 contain only the numerical portion of the S/N. Rebuilt engines will have the letter "R" at the end of the six digit numerical portion while new engines use only the six digit numerical sequence.

(e) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta Aircraft Certification Office.

Note 6: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta Aircraft Certification Office.

(f) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

(g) Copies of the applicable service information may be obtained from Teledyne Continental Motors, PO Box 90, Mobile, AL 36601; telephone toll free (888) 826-5874. This information may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

(h) Priority Letter AD 99-09-17, issued April 22, 1999, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT:

Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; telephone (770) 703-6096, fax (770) 703-6097.

LUFTFARTSVERKET
Hovedadministrasjonen
Luftfartsinspeksjonen
Postboks 8124 Dep., 0032 Oslo
Telefon : 22 94 20 00
Telefax : 22 94 23 91
Tlgr. : CIVILAIR
Telex : 71032 enfb n

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 45

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

99-083 SPREKKONTROLL AV VEIVAKSEL

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA AD 99-19-01.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 99-19-01.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 99-19-01.

Referanse:

FAA AD 99-19-01.

Gyldighetsdato:

1999-10-13.

AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation Administration

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

99-19-01 TELEDYNE CONTINENTAL MOTORS: Amendment 39-11290. Docket No. 99-NE-28-AD. Supersedes AD 99-09-17. Issued August 30, 1999.

Applicability: Teledyne Continental Motors (TCM) O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550, TSIOL-550, series new and rebuilt engines manufactured between January 1, 1998, and December 31, 1998, listed by serial number (S/N) in TCM Mandatory Service Bulletin (MSB) 99-3C, dated July 27, 1999. Also, GTSIO-520 series engines, listed by S/N in TCM Critical Service Bulletin (CSB) 99-6A dated July 21, 1999. This airworthiness directive (AD) is also applicable to any other TCM O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550, TSIOL-550, and GTSIO-520 series engines that were overhauled by facilities other than TCM, and that have had replacement crankshafts installed that were sold individually by TCM and were manufactured or rebuilt between January 1, 1998, and December 31, 1998.

Note 1: Engine S/Ns can be found in logbooks or other maintenance records. For those engines that were overhauled in the field with factory new crankshafts, crankshaft S/Ns should be shown in work orders, log books or other maintenance records.

Note 2: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (f) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent crankshaft failure due to crankshaft cheek cracks, which could result in total engine power loss, in-flight engine failure, and possible forced landing, accomplish the following:

(a) For those engines listed by S/N on pages 3 through 12 of TCM MSB 99-3C, dated July 27, 1999, or on pages 2 and 3 of TCM CSB 99-6A, dated July 21, 1999, with 500 hours or less time-in-service (TIS) on the effective date of this AD, perform visual and ultrasonic (UT) inspections of the crankshaft for cracks within 10 hours TIS after the effective date of this AD, in accordance with sections A and B of TCM 99-3C, dated July 27, 1999, or for the GTSIO-520 series engines, in accordance with sections A and B of TCM CSB 99-6A dated July 21, 1999. These inspections must be performed by TCM representatives. Disposition the crankshaft as follows:

Note 3: The engines and crankshafts that are the subject of this AD were manufactured or rebuilt by TCM during 1998. The dates that engines and crankshafts were delivered, however, may not coincide with their dates of manufacture. For the engines identified in paragraphs (a) and (b) of this AD, TCM has already determined which engines have either a new or rebuilt suspect crankshaft installed, and identified those engines by engine S/N. Only for those engines identified in paragraphs (c) and (d) of this AD does crankshaft serial number play a role in determining the need for visual and UT inspections.

Note 4: The engine S/Ns listed in TCM MSB 99-3C and TCM CSB 99-6A contain only the numerical portion of the S/N. Rebuilt engines will have the letter "R" at the end of the six digit numerical portion. This letter "R" should be disregarded and only the six digit numerical sequence should be used for determination of applicability. Only TCM is authorized to rebuild TCM engines and they have not approved any other agency to perform that function.

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same part number (P/N) prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(3) If inspections have been previously accomplished in accordance with earlier revision levels of TCM MSB 99-3 (previously CSB 99-3) or CSB 99-6, no further action is required.

(b) For those engines listed by S/N on pages 3 through 12 of MSB 99-3C, dated July 27, 1999, or on pages 2 and 3 of TCM CSB 99-6A dated July 21, 1999, with more than 500 hours TIS on the effective date of this AD, perform visual and UT inspections of the crankshaft for cracks at the next maintenance event, or within 50 hours TIS after the effective

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 96
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 46

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartsverket følgende forskrift om luftdyktighet.

2000-038 KONTROLL/UTSKIFTING AV VEIVAKSEL

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA AD 2000-08-51.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2000-08-51.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 2000-08-51.

Referanse:

FAA AD 2000-08-51.

Gyldighetsdato:

2000-05-10.

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

EMERGENCY AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation Administration

AD's are posted on the internet at http://av-info.faa.gov

DATE: **April 28, 2000**
2000-08-51

The Federal Aviation Administration (FAA) has received reports of crankshaft failures on Teledyne Continental Motors (TCM) IO-360, TSIO-360, LTSIO-360, O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550, and TSIOL 550 series reciprocating engines. On November 24, 1999, the FAA was notified of a crankshaft failure on a TCM engine. Since that time, the FAA has obtained information regarding 11 crankshaft failures. The investigation revealed that the crankshafts failed due to subsurface defects in the number one crankshaft connecting rod journal. The FAA has determined that all of the defects were due to unique material composition characteristics combined with process control variations that occurred during the material melt process. This occurred during several discrete periods, i.e. certain lots, of steel production or forming operations. Specification material evaluation techniques were inadequate to detect these anomalies, and therefore the defects were not revealed during manufacture. The specification material evaluation techniques have been improved to preclude a reoccurrence of this condition. Crankshafts with this type of subsurface defect will always result in failure. All of the fractures have been grouped around certain manufacturing dates between April 1, 1998, and March 31, 2000, inclusive. This condition, if not corrected, could result in crankshaft connecting rod journal fracture, which could result in total engine power loss, in-flight engine failure and possible forced landing.

Manufacturer's Service Information

The FAA has reviewed and approved the technical contents of TCM Mandatory Service Bulletin (MSB) 00-5A, dated April 28, 2000. MSB 00-5A lists serial numbers (SN's) of affected engines and suspect crankshafts that were manufactured between April 1, 1998, and March 31, 2000, inclusive. The MSB also describes procedures for removing a core sample of material from the propeller mounting flange of the crankshaft and for cleaning, chamfering, dye checking, and painting the core sample holes.

Requirements of this AD

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this Airworthiness Directive (AD) requires removing a core sample of material from the propeller mounting flange and sending the core sample to TCM for evaluation. TCM has informed the FAA that it intends to maintain a 24 to 48 hour turn-around time for notification of the crankshaft airworthiness. All crankshafts that are found to be unserviceable must be replaced with a serviceable crankshaft prior to further flight. There are approximately 50,000 TCM IO-360, TSIO-360, LTSIO-360, O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550 and TSIOL-550 series reciprocating engines in the worldwide fleet. One thousand thirty-two crankshafts were manufactured during the affected time period. Engines that were not manufactured, rebuilt, or overhauled, or that did not have a crankshaft installed in the field during that time period are not affected by this AD. Applicability can be verified through log books or other maintenance records. Engines that may have an affected crankshaft installed must be checked for engine SN listed in TCM MSB 00-5A, dated April 28, 2000, and must be inspected for the SN's of field-installed new crankshafts manufactured between April 1, 1998, and March 31, 2000, inclusive. The actions are required to be accomplished in accordance with the MSB described previously.

This emergency AD is issued under the Federal Aviation Act of 1958 as amended and codified in Title 14 of the United States Code, pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt.

2000-08-51 TELEDYNE CONTINENTAL MOTORS: Docket No. 2000-NE-16-AD.

Applicability: This Airworthiness Directive (AD) is applicable to Teledyne Continental Motors (TCM) IO-360, TSIO-360, LTSIO-360, O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550 and TSIOL-550 series engines that were assembled, rebuilt, or overhauled using a crankshaft that was manufactured between April 1, 1998, and March 31, 2000, listed by engine and crankshaft serial number (SN) in TCM Mandatory Service Bulletin (MSB) 00-5A, dated April 28, 2000.

NOTE 1: The engines and crankshafts that are the subject of this AD were manufactured by TCM from April 1, 1998 through March 31, 2000. However the dates that the engines and crankshafts were delivered may not coincide with their dates of manufacture. For crankshafts identified in paragraph (a) of this AD, TCM has already determined which engines have a new suspect crankshaft installed and have identified those engines by engine SN. The crankshaft SN is only used to determine the need for taking a core sample for those crankshafts identified in paragraph (a) and (b) of this AD.

NOTE 2: The engine SN can be found in logbooks or other maintenance records. For those engines that were overhauled in the field with factory new crankshafts, the crankshaft SN should be shown in work orders, log books or other maintenance records. If the engine was assembled new, rebuilt, or overhauled on or before March 31, 1998, or on or after April 1, 2000, no action is required.

NOTE 3: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Compliance with the following instructions is required within the next 10 hours time-in-service from the receipt of this Emergency AD, unless already accomplished.

To prevent crankshaft failure due to crankshaft connecting rod journal fracture, which could result in total engine power loss, in-flight engine failure and possible forced landing, do the following:

NOTE 4: TCM supplies an instructional video in the tool kit for MSB 00-5A. It is recommended that the technician views and understands "Instructional Video for Compliance with Teledyne Continental Motors Mandatory Service Bulletin MSB 00-5A" before performing these procedures.

Crankshaft Material Inspection

(a) For those engines and crankshafts listed by SN in TCM MSB 00-5A, dated April 28, 2000, perform the crankshaft material inspection (crankshaft propeller flange core sample) as follows:

NOTE 5: The engine SN's listed in TCM MSB 00-5A contain only the numerical portion of the SN. Engines that have been rebuilt by TCM will have a letter "R" at the end of the six digit numerical portion. Disregard the letter "R."

(1) Perform the crankshaft material inspection (crankshaft propeller flange core sample) in accordance with sections A through J of TCM MSB 00-5A, dated April 28, 2000, as follows:

(i) Use the specialized tools and equipment provided by TCM as listed in section A of TCM MSB 00-5A, dated April 28, 2000.

(ii) You may use each rotobroach bit to obtain up to six core samples. Replace the rotobroach after the sixth core sample, or before if the rotobroach does not cut with the maximum torque applied.

(iii) Maintain a record of each core sample obtained with each rotobroach bit used. Contact TCM to obtain additional rotobroach bits.

(iv) Do not exceed the torque limits specified in TCM MSB 00-5A, dated April 28, 2000, when obtaining the core sample.

(2) After obtaining the core sample, disposition the crankshaft as follows:

(i) If TCM notifies you that the crankshaft is not serviceable, replace the crankshaft with a serviceable crankshaft of the same part number prior to further flight.

(ii) If TCM notifies you that the crankshaft is serviceable, the propeller assembly may be reinstalled.

Installation of Crankshafts

(b) After the effective date of this AD, installation of a crankshaft with a SN that is listed in MSB 00-5A, dated April 28, 2000, is prohibited, unless core samples have been taken and TCM approval for return to service has been received.

(c) Crankshaft material inspections (crankshaft propeller flange core samples) performed in accordance with TCM MSB 00-5, dated April 14, 2000, comply with this AD and must not be repeated.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office (ACO). Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

NOTE 6: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta ACO.

(e) Copies of the applicable service information may be obtained from Teledyne Continental Motors, PO Box 90, Mobile, AL 36601; telephone toll free 1-888-200-7565, or on the TCM internet site "www.tcmlink.com." This information may also be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington. MA 01803.

(f) **Emergency AD 2000-08-51, issued April 28, 2000, becomes effective upon receipt.**

FOR FURTHER INFORMATION CONTACT:

Jerry Robinette, Senior Engineer, Propulsion, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450. Atlanta, GA 30349; telephone (770) 703-6096, fax (770) 703-6097.

Issued in Burlington. Massachusetts on April 28, 2000.

David A. Downey, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

date of this AD, whichever comes first, in accordance with sections A and B of TCM MSB 99-3C, dated July 27, 1999, or for the GTSIO-520 series engines, in accordance with sections A and B of TCM CSB 99-6A, dated July 21, 1999. These inspections must be performed by TCM representatives. Disposition the crankshaft as follows:

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same P/N prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(3) If inspections have been previously accomplished in accordance with earlier revision levels of TCM MSB 99-3 (previously CSB 99-3) or CSB 99-6, no further action is required.

(c) For any other engine that was overhauled at a facility other than TCM, and that has a crankshaft installed that was manufactured or rebuilt between January 1, 1998, and December 31, 1998, with 500 hours or less TIS on the effective date of this AD, perform visual and UT inspections of the crankshaft for cracks within 10 hours TIS after the effective date of this AD, in accordance with sections A and B of TCM MSB 99-3C, dated July 27, 1999, or for the GTSIO-520 series engines, in accordance with sections A and B of TCM CSB 99-6A, dated July 21, 1999. These inspections must be performed by TCM representatives. Disposition the crankshaft as follows:

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same P/N prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(3) If inspections have been previously accomplished in accordance with earlier revision levels of TCM MSB 99-3 (previously CSB 99-3) or CSB 99-6, no further action is required.

Note 5: The crankshaft manufacture date may be determined from the crankshaft serial number, which consists of eight characters, arranged as follows:

Position:	1	2,3	4,5	6,7	8
Content:	Letter A – L, representing month of manufacture	Day of month manufactured	Year of manufacture	Sequence number of crankshaft manufactured on that day	Always "N"
Example:	C	22	98	05	N

The example crankshaft, with a serial number of "C229805N", indicates a date of manufacture of March 22, 1998.

(d) For any other engine that was overhauled at a facility other than TCM, and that has a crankshaft installed that was manufactured or rebuilt between January 1, 1998, and December 31, 1998, with more than 500 hours TIS on the effective date of this AD, perform visual and UT inspections of the crankshaft for cracks at the next maintenance event, or within 50 hours TIS after the effective date of this AD, whichever comes first, in accordance with sections A and B of TCM MSB 99-3C, dated July 27, 1999, or for the GTSIO-520 series engines, in accordance with sections A and B of TCM CSB 99-6A dated July 21, 1999. These inspections must be performed by TCM representatives. Disposition the crankshaft as follows:

(1) If a crack is found, replace the crankshaft with a serviceable crankshaft of the same P/N prior to further flight.

(2) If no crack is found, reassemble the engine and return it to service.

(3) If inspections have been previously accomplished in accordance with earlier revision levels of TCM MSB 99-3 (previously CSB 99-3) or CSB 99-6, no further action is required.

(e) After the effective date of this AD, installation of a crankshaft that was manufactured or rebuilt between January 1, 1998, and December 31, 1998, is prohibited, unless it has been inspected and reidentified in accordance with section C of TCM MSB 99-3C, dated July 27, 1999, or, for the GTSIO-520 series engines, in accordance with section C of TCM CSB 99-6A, dated July 21, 1999. These inspections must be performed by TCM.

(f) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office (ACO). Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

Note 6: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta ACO.

(g) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the inspection requirements of this AD can be accomplished.

(h) The actions required by this AD shall be accomplished in accordance with the following TCM SB's:

Document No.	Page	Date
MSB 99-3C	1-26	July 27, 1999
Total pages: 26.		
CSB 99-6A	1-13	July 21, 1999
Total pages: 13.		

This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, PO Box 90, Mobile, AL 36601; telephone toll free (888) 200-7565. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

(i) This amendment supersedes priority letter AD 99-09-17, issued April 22, 1999.

(j) This amendment becomes effective on September 30, 1999.

FOR FURTHER INFORMATION CONTACT:

Jerry Robinette, Aerospace Engineer, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; telephone (770) 703-6096, fax (770) 703-6097.

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 96
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 47

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2000-045 KONTROLL/UTSKIFTING AV MAGNET

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA AD 2000-11-51.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2000-11-51.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 2000-11-51, med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2000-11-51.

Gyldighetsdato:

2000-06-16.

EMERGENCY AIRWORTHINESS DIRECTIVE

REGULATORY SUPPORT DIVISION
P.O. BOX 26460
OKLAHOMA CITY, OKLAHOMA 73125-0460

U.S. Department
of Transportation
Federal Aviation Administration

ADs are posted on the internet at http://av-info.faa.gov

DATE: June 7, 2000
2000-11-51

Emergency distribution is required.

Send to all U.S. owners and operators of Teledyne Continental Motors O-300, IO-360, TSIO-360, and LTSIO-520-AE series reciprocating engines.

The Federal Aviation Administration (FAA) has received reports of engine failures on certain Teledyne Continental Motors (TCM) reciprocating engines. On April 26, 2000, the FAA was notified of an in-flight engine failure in a Cirrus SR20 airplane with a TCM IO-360 engine. The FAA has also received two reports of engine failures on the ground. The FAA has determined that the migration of the magneto impulse coupling stop pin out of the magneto frame and into the gear train of the engine caused damage to the gear train and, ultimately, engine failure. The specific cause for the migration of the impulse coupling stop pin is still undetermined, but data indicate that it is due to a manufacturing problem that is limited to a specific range of magneto models and serial numbers that were produced during the months of November 1999 and December 1999. This condition, if not corrected, could result in engine failure and subsequent loss of control of the airplane.

Manufacturer's Service Information

The FAA has reviewed and approved the technical contents of TCM Mandatory Service Bulletin (MSB) 00-6, dated May 3, 2000. MSB 00-6 provides cross-referenced part numbers (PN's) for Unison magneto model 6314 (TCM PN 653271) and model 6324 (TCM PN 653292). The MSB does not provide a cross-reference P/N for the model 6364 magneto.

Requirements of This AD

Since an unsafe condition has been identified that is likely to exist or develop on other engines of this same type design, this AD requires, within 10 flight hours after receipt of this AD, replacement of the magneto if it falls within the specified serial number range; and, if it is replaced, an inspection of the magneto to verify that the stop pin is still in place; and, if the stop pin is not in place, an inspection of the engine gear train.

This rule is issued under 49 U.S.C. Section 44701 (formerly section 601 of the Federal Aviation Act of 1958) pursuant to the authority delegated to me by the Administrator, and is effective immediately upon receipt of this emergency AD.

2000-11-51 Teledyne Continental Motors: Docket No. 2000-NE-19-AD

Applicability: This Airworthiness Directive (AD) is applicable to Teledyne Continental Motors (TCM) O-300 series, IO-360 series, TSIO-360 series, and LTSIO-520-AE reciprocating engines with Unison Industries (Slick) Magnetos, models 6314, 6324, and 6364, with magneto serial numbers of 99110001 through 99129999 inclusive.

Note 1: The magneto serial number (SN) can be found in logbooks or other maintenance records. If the magneto was installed, or if the engine was assembled new, rebuilt, or overhauled before October 31, 1999, it is likely that a suspect magneto is not installed on the engine.

Note 2: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD.

The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Compliance with the following instructions is required within 10 flight hours after the receipt of this Emergency AD, unless they have already been completed.

To prevent engine failure and loss of control of the airplane due to migration of the magneto impulse coupling stop pin out of the magneto frame and into the gear train of the engine, do the following:

Replacement of Magneto

(a) Replace any magneto that has an SN of 99110001 through 99129999, inclusive, with a magneto that does not have a serial number in that range.

(b) Inspect each removed magneto to verify that the impulse coupling stop pin is present. If the pin is missing, do the following:

(1) For 0-300, IO-360, TSIO-360 and TSIO-360 engines, do the following:

(i) Remove magnetos, alternator or generator, and starter adapter from the accessory case.

(ii) Remove the accessory case from the crankcase and oil sump.

(iii) Visually inspect the entire engine gear train for damaged or broken gears and gear teeth.

(iv) Inspect visible portions of the engine crankcase and accessory case for damage due to the stop pin becoming lodged between the engine gear train and the crankcase or accessory case.

(v) If the accessory case is damaged, repair or replace the accessory case.

(vi) If the engine crankcase is damaged, disassemble the engine, and repair or replace the crankcase.

(vii) Inspect the oil pump drive gear teeth and inner cam gear teeth for damage. Replace any engine drive train component that has been damaged.

(viii) Replace any damaged gear, and magnaflux the mating gears using the applicable engine overhaul manual.

(2) For LTSIO-520-AE series engines, do the following:

(i) Remove the starter adapter, fuel pump, vacuum pumps, accessory drive pads, and both magnetos.

(ii) Visually inspect the entire engine gear train for damaged or broken gears and gear teeth.

(iii) If any damage has occurred, remove the engine from the airplane, disassemble the engine, and inspect it for damage. If any damage is found, repair as necessary.

(iv) Replace any damaged gear, and magnaflux the mating gears using the applicable engine overhaul manual.

(v) Inspect the interior portions of the engine crankcase for damage due to the stop pin becoming lodged between the gear train and the crankcase. If the crankcase is damaged,

repair or replace the crankcase.

(c) After receiving this AD, do not install any Unison Industries magnetos, model 6314, 6324, or 6364 that have a SN of 99110001 through 99129999 inclusive, on any engine.

Note 3: Copies of the applicable service information may be obtained from Teledyne Continental Motors, PO Box 90, Mobile, AL 36601; telephone toll free 1-888-200-7565, or on the TCM internet site "www.tcmlink.com."

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Chicago Aircraft Certification Office (CHIACO). Operators shall submit their requests through an appropriate FAA Maintenance Inspector, who may add comments and then send it to the Manager, CHIACO.

Note 4: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the CHIACO.

(e) Emergency AD 2000-11-51, issued June 7, 2000, becomes effective upon receipt.

FOR FURTHER INFORMATION CONTACT: Michael Downs, Aerospace Engineer, Chicago Aircraft Certification Office, FAA, 2300 East Devon Avenue, Des Plaines, IL, 60018; telephone (847) 294-7870, fax (847) 294-7834.

Issued in Burlington, Massachusetts on June 7, 2000.
David A. Downey, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 96
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD

MOTORER

CONTINENTAL - 48

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2000-078 KONTROLL/UTSKIFTING AV VEIVAKSEL

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA AD 2000-23-21.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2000-23-21.

Anm.: Denne LDP erstatter og opphever LDP 2000-038.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 2000-23-21, med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2000-23-21.

Gyldighetsdato:

2000-12-15.

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
Federal Aviation
Administration

We post ADs on the internet at "av-info.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2000-23-21 Teledyne Continental Motors: Amendment 39-11994. Docket 2000-NE-16-AD. Supersedes Emergency AD 2000-08-51. Docket 2000-NE-16-AD.

Applicability

This Airworthiness Directive (AD) is applicable to Teledyne Continental Motors (TCM) IO-360, TSIO-360, LTSIO-360, O-470, IO-470, TSIO-470, IO-520, TSIO-520, LTSIO-520, IO-550, TSIO-550 and TSIOL-550 series reciprocating engines that were assembled, rebuilt, or overhauled using a crankshaft that was manufactured between April 1, 1998, and March 31, 2000, listed by engine and crankshaft serial number (SN) in TCM Mandatory Service Bulletin (MSB) 00-5C, dated October 10, 2000.

Note 1: The engines and crankshafts that are the subject of this AD were manufactured by TCM from April 1, 1998 through March 31, 2000. However the dates that the engines and crankshafts were delivered may not coincide with their dates of manufacture. For crankshafts identified in paragraph (a) of this AD, TCM has already determined which engines have a new suspect crankshaft installed and have identified those engines by engine SN. The crankshaft SN is only used to determine the need for taking a core sample for those crankshafts identified in paragraph (a) and (b) of this AD. The engine SN can be found in logbooks or other maintenance records. For those engines that were overhauled in the field with factory new crankshafts, the crankshaft SN should be shown in work orders, log books or other maintenance records. If the engine was assembled new, rebuilt, or overhauled on or before March 31, 1998, or on or after April 1, 2000, no action is required.

Note 2: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance

Compliance with the requirements of this AD is required within the next 10 hours time-in-service from the effective date of this AD, unless already done.

To prevent crankshaft connecting rod journal fracture, which could result in total engine power loss, in-flight engine failure and possible forced landing, do the following:

Note 3: TCM supplies an instructional video in the tool kit for MSB 00-5C. It is recommended that the technician views and understands "Instructional Video for Compliance with Teledyne Continental Motors Mandatory Service Bulletin MSB 00-5C" before performing these procedures.

Crankshaft Material Inspection

(a) For those engines and crankshafts listed by SN in TCM MSB 00-5C, dated October 10, 2000, do the crankshaft material inspection (crankshaft propeller flange core sample) as follows:

Note 4: The engine SN's listed in TCM MSB 00-5C contain only the numerical portion of the SN. Engines that have been rebuilt by TCM will have a letter "R" at the end of the six digit numerical portion. Disregard the letter "R."

(1) Do the crankshaft material inspection (crankshaft propeller flange core sample) in accordance with sections A through J of TCM MSB 00-5C, dated October 10, 2000, as follows:

(i) Use the specialized tools and equipment provided by TCM as listed in section A of TCM MSB 00-5C, dated October 10, 2000.

(ii) You may use each rotobroach bit to obtain up to six core samples. Replace the rotobroach after the sixth core sample, or before if the rotobroach does not cut with the maximum torque applied.

(iii) Maintain a record of each core sample obtained with each rotobroach bit used. Contact TCM to obtain additional rotobroach bits.

(iv) Do not exceed the torque limits specified in TCM MSB 00-5C, dated October 10, 2000, when obtaining the core sample.

(2) After obtaining the results of the core sample evaluation, disposition the crankshaft as follows:

(i) If TCM notifies you that the crankshaft is not serviceable, replace the crankshaft with a serviceable crankshaft of the same part number before further flight.

(ii) If TCM notifies you that the crankshaft is serviceable, the propeller assembly may be reinstalled.

Installation of Crankshafts

(b) After the effective date of this AD, do not install a crankshaft with a SN that is listed in MSB 00-5C, dated October 10, 2000, unless core samples have been taken and TCM has approved it for return to service.

(c) Crankshaft material inspections (crankshaft propeller flange core samples) that were done using TCM MSB 00-5, dated April 14, 2000; MSB 00-5A, dated April 28, 2000; or MSB 00-5B, dated May 25, 2000, comply with this AD and must not be repeated.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Atlanta Aircraft Certification Office (ACO). Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Atlanta ACO.

Note 5: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Atlanta ACO.

Incorporation by Reference Material

(e) The actions required by this AD shall be performed in accordance with Teledyne Continental Motors MSB 00-5C, dated October 10, 2000. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Teledyne Continental Motors, PO Box 90, Mobile, AL 36601; telephone toll free

1-888-200-7565, or on the TCM internet site "www.tcmlink.com". Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

Effective Date of This AD

(f) This amendment becomes effective on December 12, 2000.

FOR FURTHER INFORMATION CONTACT: Jerry Robinette, Senior Engineer, Propulsion, Atlanta Aircraft Certification Office, FAA, Small Airplane Directorate, One Crown Center, 1895 Phoenix Blvd., Suite 450, Atlanta, GA 30349; telephone: (770) 703-6096, fax: (770) 703-6097.

Issued in Burlington, Massachusetts, on November 13, 2000.
David A. Downey, Assistant Manager, Engine and Propeller Directorate, Aircraft Certification Service.

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 95
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 49

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2002-059 KONTROLL/UTSKIFTING AV MAGNET

Påbudet gjelder:

Teledyne Continental Motors, alle modeller som er listet i vedlagte kopi av FAA AD 2002-13-04.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2002-13-04.

Anm.: Denne LDP erstatter og opphever LDP 2000-045.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopier av FAA AD 2002-13-04, med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2002-13-04.

Gyldighetsdato:

2002-07-19.

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
Federal Aviation
Administration

We post ADs on the internet at "www.airweb.faa.gov/rgl"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2002-13-04 Teledyne Continental Motors: Amendment 39-12792. Docket No. 2000-NE-19-AD.

Applicability

This airworthiness directive (AD) is applicable to Teledyne Continental Motors (TCM) C-125, C145, O-300, IO-360, TSIO-360, and LTSIO-520-AE series reciprocating engines with Unison Industries (Slick) Magnetos, models 6314, 6324, and 6364, with magneto serial numbers of 99110001 through 9912999 inclusive. These engines are used on, but not limited to Cessna 170, 170A, 170B, 172, 172A through 172H, 172XP, 336, 337, and T303, Beagle B242-C, Cirrus SR20 and SR22, Globe Swift GC-1A and GC-1B, Maule M4, Piper PA-28R-201T and PA-34, and Reims (Cessna) FA172, F337, and FR172.

Note 1: The magneto serial number (SN) can be found in logbooks or other maintenance records. If the magneto was installed, or if the engine was assembled new, rebuilt, or overhauled before October 31, 1999, it is likely that a suspect magneto is not installed on the engine.

Note 2: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (d) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance

Compliance with this AD is required within 10 flight hours after the effective date of this AD, unless already done.

To prevent engine failure and loss of control of the airplane due to migration of the magneto impulse coupling stop pin out of the magneto frame and into the gear train of the engine, do the following:

Replacement of Magneto

(a) Replace any magneto that has a SN of 99110001 through 99129999, inclusive, with a magneto that does not have a serial number in that range.

Inspections

(b) Inspect each removed magneto to verify that the impulse coupling stop pin is present. If the pin is missing, do the following:

(1) For C-125, C145, O-300, IO-360, and TSIO-360 series engines, do the following:

(i) Remove magnetos, alternator or generator, and starter adapter from the accessory case.

(ii) Remove the accessory case from the crankcase and oil sump.

(iii) Visually inspect the entire engine gear train for damaged or broken gears and gear teeth.

(iv) Inspect visible portions of the engine crankcase and accessory case for damage due to the stop pin becoming lodged between the engine gear train and the crankcase or accessory case.

(v) If the accessory case is damaged, repair or replace the accessory case.

(vi) If the engine crankcase is damaged, disassemble the engine, and repair or replace the crankcase.

(vii) Inspect the oil pump drive gear teeth and inner cam gear teeth for damage. Replace any engine drive train component that has been damaged.

(viii) Replace any damaged gear, and magnaflux the mating gears using the applicable engine overhaul manual.

(2) For LTSIO-520-AE series engines, do the following:

(i) Remove the starter adapter, fuel pump, vacuum pumps, accessory drive pads, and both magnetos.

(ii) Visually inspect the entire engine gear train for damaged or broken gears and gear teeth.

(iii) If any damage has occurred, remove the engine from the airplane, disassemble the engine, and inspect it for damage. If any damage is found, repair as necessary.

(iv) Replace any damaged gear, and magnaflux the mating gears using the applicable engine overhaul manual.

(v) Inspect the interior portions of the engine crankcase for damage due to the stop pin becoming lodged between the gear train and the crankcase. If the crankcase is damaged, repair or replace the crankcase.

(c) After the effective date of this AD, do not install any Unison Industries magnetos, model 6314, 6324, or 6364 that have a SN of 99110001 through 99129999 inclusive, on any engine.

Note 3: A cross-reference for part numbers (P/N's) for Unison magneto model 6314 (TCM P/N 653271), model 6324 (TCM P/N 653292), and model 6364 (TCM P/N 649696) can be found in TCM Mandatory Service Bulletin 00-6A, dated June 8, 2000.

Alternative Methods of Compliance

(d) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Chicago Aircraft Certification Office (CHIACO). Operators must submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, CHIACO.

Note 4: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the CHIACO.

Special Flight Permits

(e) Special flight permits may be issued in accordance with Secs. 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be done.

Effective Date

(f) This amendment becomes effective July 12, 2002.

Issued in Burlington, Massachusetts, on June 17, 2002.
Jay J. Pardee,
Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. 02-16174 Filed 6-26-02; 8:45 am]
BILLING CODE 4910-13-P

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 95
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD

MOTORER

CONTINENTAL - 50

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2005-057 INSPEKSJONER AV "STARTER ADAPTER ASSEMBLY AND CRANKSHAFT GEAR"

Påbudet gjelder:

Teledyne Continental Motors, motorer i GTSIO-520 serien som beskrevet i FAA AD 2005-20-04.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2005-20-04.

Tid for utførelse:

Til de tider og intervaller som er beskrevet i vedlagte kopi av FAA AD 2005-20-04, med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2005-20-04.

Gyldighetsdato:

2005-11-01.

Kansellert
2007-03-02

MERK! For at angjeldende flymateriell skal være luftdyktig må påbudet være utført til rett tid og notat om utførelsen ført inn i vedkommende journal med henvisning til denne LDPs nummer.

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
Federal Aviation
Administration

We post ADs on the internet at www.faa.gov/aircraft/safety/alerts/

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2005-20-04 Teledyne Continental Motors: Amendment 39-14297. Docket No. FAA-2005-20850; Directorate Identifier 2005-NE-05–AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective November 1, 2005.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Teledyne Continental Motors (TCM) GTSIO-520 series reciprocating engines. These engines are installed on, but not limited to, Twin Commander (formerly Aero Commander) model 685, Cessna model 404, 411 series, and 421 series, British Aerospace, Aircraft Group, Scottish Division model B.206 series 2 and Aeronautica Macchi, model AM-3 airplanes.

Unsafe Condition

(d) This AD results from six service difficulty reports and one fatal accident report received related to failed starter adapter assemblies. We are issuing this AD to prevent failure of the starter adapter assembly and or crankshaft gear, resulting in failure of the engine and possible forced landing.

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.

Starter Adapter Shaft Gear Needle Bearing Replacement

(f) If, during an inspection required by paragraph (g), (h), (i), or (j) of this AD, you find needle bearing, part number (P/N) 537721, installed in the crankcase, replace it with bushing, P/N 654472, before reassembling components. Use the bushing installation procedure specified in Part 4 of TCM Mandatory Service Bulletin (MSB) No. MSB94-4F, dated July 5, 2005.

Unscheduled Inspections for Rough-Running Engines

(g) For any engine that experiences rough running conditions regardless of time-in-service (TIS), do the following:

(1) Before further flight, perform the inspection procedures specified in Part 1 and Part 3 of TCM MSB No. MSB94-4F, dated July 5, 2005, and replace components as necessary.

(2) An engine is considered rough-running if there is a sudden increase in the perceived vibration levels that cannot be cleared by adjustment of the engine controls; particularly the fuel mixture setting. Information on a rough running engines can be found in the aircraft manufacturer's Airplane Flight Manual, Pilot's Operating Handbook, or Aircraft Owners Manual.

100-Hour and Annual Inspections

(h) For any engine, at the next 100-hour or annual inspection, whichever occurs first, do the following:

(1) Perform the inspection procedures specified in Part 2 of TCM MSB No. MSB94-4F, dated July 5, 2005, and replace components as necessary.

(2) Thereafter, at each 100-hour inspection, (plus or minus 10 hours), and annual inspection, perform repetitive inspections and component replacements as specified in paragraph (h)(1) of this AD.

Starter Adapters With 400 Hours or More Time-In-Service (TIS) or Unknown TIS

(i) For any starter adapter with 400 hours or more TIS or unknown TIS on the effective date of this AD, do the following:

(1) Within 25 hours TIS, perform the inspection procedures specified in Part 3 of TCM MSB No. MSB94-4F, dated July 5, 2005, and replace components as necessary.

(2) Thereafter, at 400-hour TIS intervals, (plus or minus 10 hours), perform repetitive inspections and component replacements specified in Part 3 of TCM MSB No. MSB94-4F, dated July 5, 2005, and replace components as necessary.

Starter Adapters With Fewer Than 400 Hours TIS

(j) For any starter adapter with fewer than 400 hours TIS on the effective date of this AD, do the following:

(1) Upon accumulation of 400 hours TIS, (plus or minus 10 hours), perform the inspection procedures specified in Part 3 of TCM MSB No. MSB94-4F, dated July 5, 2005, and replace components as necessary.

(2) Thereafter, at 400-hour TIS intervals, (plus or minus 10 hours), perform repetitive inspections and component replacements, as specified in Part 3 of TCM MSB No. MSB94-4F, dated July 5, 2005, and replace components as necessary.

Installation of TCM Service Kit, EQ6642R

(k) At the next engine overhaul or starter adapter replacement after the effective date of this AD, whichever occurs first, do the following:

(1) Install TCM service kit, P/N EQ6642R. Use the service kit installation procedures specified in Part 5 of TCM MSB No. MSB94-4F, dated July 5, 2005.

(2) Continue performing the inspections and component replacements specified in paragraphs (g), (h), and (i) of this AD.

Prohibition of Special Flight Permits for Rough-Running Engines

(l) Special flight permits are prohibited for rough-running engines described in paragraph (g)(2) of this AD.

Alternative Methods of Compliance

(m) The Manager, Atlanta Aircraft 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

(n) European Aviation Safety Agency AD 2004-0006, dated December 15, 2004, also addresses the subject of this AD.

Material Incorporated by Reference

(o) You must use Teledyne Continental Motors Mandatory Service Bulletin No. MSB94-4F, dated July 5, 2005, to perform the actions required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Teledyne Continental Motors, Inc., PO Box 90, Mobile, AL 36601; telephone (251) 438-3411 for a copy of this service information. For the Teledyne Continental Motors Web site: Go to *http://www.TCMLINK.com.* You may review copies at the Docket Management Facility; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-401, Washington, DC 20590-0001, on the Internet at *http://dms.dot.gov*, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: *http://www.archives.gov/federal-register/cfr/ibr-locations.html.*

Issued in Burlington, Massachusetts, on September 20, 2005.
Francis A. Favara,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. 05-19149 Filed 9-26-05; 8:45 am]
BILLING CODE 4910-13-P

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 95
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 51

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2007-030 **"CYLINDER ASSEMBLY SEPARATION - CYLINDER ASSEMBLIES PRODUCED BY SUPERIOR AIR PARTS"**

Påbudet gjelder:

Teledyne Continental Motors, alle motorer som nærmere beskrevet i FAA AD 2007-04-19 og med Superior Air Parts "Cast Cylinder Assemblies" som beskrevet i samme AD.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2007-04-19.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopi av FAA AD 2007-04-19, med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2007-04-19.

Gyldighetsdato:

2007-05-02.

2007-04-19 Superior Air Parts, Inc.: Amendment 39-14951. Docket No. FAA-2006-25948; Directorate Identifier 2006-NE-32-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective March 12, 2007.

Affected ADs

(b) None.

Applicability

(c) This AD applies to Superior Air Parts, Inc. (SAP), cast cylinder assemblies, part numbers (P/Ns): SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, SA55000-A20P installed in Teledyne Continental Motors (TCM) 470, 520, and 550 series reciprocating engines. These P/N cylinder assemblies may be installed in the TCM engine models listed in the following Table 1.

Table 1 – Affected Teledyne Continental Engine Models

Engine Model	
O-470	-G, -K, -L, -M, -P, -R, -S, -U
IO-470	-C, -D, -E, -F, -G, -H, -L, -M, -N, -P, -R, -S, -U, -V
IO-520	-A, B, BA, C, CB, D, E, F, J, K, L, M, BB, MB
TSIO-520	-AF, B, BB, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, -R, T, UB, VB, WB
IO-550	-A, B, C, D, E, F, L

These engine models are installed in, but not limited to, the aircraft models listed in the following Table 2:

Table 2 – Teledyne Continental Motors-related Aircraft Models

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-470-C	Beechcraft	J, K, M35
IO-470-C	Navion	Navion
IO-470-D	Cessna	310 G & H
IO-470-D	Rockwell	200 A, B, & C
IO-470-E	Cessna	210 & A
IO-470-F	Bellanca	14-19-3
IO-470-F	Cessna	185
IO-470-H	Navion	Range Master
IO-470-L	Beechcraft	B55 Baron
IO-470-M	Gulfstream	500 A
IO-470-N	Beechcraft	N & P
IO-470-N	Beechcraft	G33
IO-470-S	Cessna	210 B & C
IO-470-S	Cessna	205
IO-470-U	Cessna	310 I & J
IO-470-V/VO	Cessna	310K, L, N, P & Q
IO-520-A	Cessna	210 D, E, F, G, & H
IO-520-A	Cessna	206
IO-520-A	Cessna	P206
IO-520-A	Rockwell	200 D
IO-520-B	Beechcraft	36 Bonanza
IO-520-B	Beechcraft	A36
IO-520-B	Navion	Range Master
IO-520-BA	Beechcraft	A36
IO-520-BA	Beechcraft	S & V35, V35A, V35B
IO-520-BA	Beechcraft	C33 A
IO-520-BA	Beechcraft	E33 A & C
IO-520-BA	Beechcraft	F33 A & C
IO-520-BA	Navion	Range Master
IO-520-BB	Beechcraft	A36
IO-520-BB	Beechcraft	V35B
IO-520-BB	Beechcraft	F33 A

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-520-C & CB	Beechcraft	C55 - E55 Baron
IO-520-D	Bellanca	17-30 Viking
IO-520-D	Cessna	A188-300 AG Truck
IO-520-D	Cessna	185
IO-520-E	(Cessna 310)	Exec 600
IO-520-E	(Beech Baron)	Pres 600
IO-520-F	Cessna	207
IO-520-F	Cessna	U206
IO-520-K	Bellanca	17-30A
IO-520-L	Cessna	210 K, L, M, N & R
IO-520-L	Cessna	210N II
IO-520-L	Cessna	210R
IO-520-M	Cessna	310R
IO-520-MB	Cessna	310R
IO-550-A	Cessna	310 Conversion
IO-550-B	Beechcraft	A36
IO-550-B	(Beech Bonanza)	Foxstar
IO-550-C	Beechcraft	58 Baron
IO-550-D	Cessna	185/188 Conversion
IO-550-E	Cessna	310 Conversion
IO550-F	Cessna	206/207 Conversion
IO-550-L	Cessna	210 Conversion
O-470-M	Cessna	310
O-470-G	Beechcraft	H35
O-470-K	Bellanca	14-19-2
O-470-K	Cessna	180 (230 HP)
O-470-L	Cessna	182
O-470-L	Cessna	180D
O-470-M	Cessna	310 B
O-470-P	Navion	Navion
O-470-R	Cessna	188-230
O-470-R	Cessna	182

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-470-R	Cessna	180 E-J
O-470-S	Cessna	182
O-470-U	Cessna	182
O-470-U	Cessna	180 K
TSIO-520-AF	Cessna	P210N II
TSIO-520-B	Cessna	320D, E & F
TSIO-520-B	Cessna	T310-Q & R
TSIO-520-BB	Cessna	T310R
TSIO-520-BE	Piper	PA-46-310 Malibu
TSIO-520-C	Cessna	T210 F, G, & H
TSIO-520-C	Cessna	TU206
TSIO-520-C	Cessna	TP206
TSIO-520-C&CB	Beechcraft	58 Baron
TSIO-520-CE	Cessna	T210R
TSIO-520-CF	Cessna	P210R
TSIO-520-D	Beechcraft	V35, V35A, V35B-TC
TSIO-520-E	Cessna	402, A & B
TSIO-520-E	Cessna	401, A & B
TSIO-520-EB	Cessna	335
TSIO-520-G	Cessna	T207
TSIO-520-H	Cessna	T210 J, K & L
TSIO-520-J	Cessna	210 J
TSIO-520-J	Cessna	414
TSIO-520-J	Riley Conversions	340 Super Riley
TSIO-520-L&LB	Beechcraft	58P Baron
TSIO-520-L&LB	Beechcraft	58TC Baron
TSIO-520-M	Cessna	T207
TSIO-520-M	Cessna	TU206
TSIO-520-N	Cessna	414-II Chancellor
TSIO-520-N	Cessna	340
TSIO-520-NB	Cessna	414-II
TSIO-520-NB	Cessna	340

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
TSIO-520-P	Cessna	P210N
TSIO-520-R	Cessna	T210 M
TSIO-520-R	Cessna	T210N II
TSIO-520-T	Cessna	T188C AG Husky
TSIO-520-UB	Beechcraft	A36TC Bonanza
TSIO-520-UB	Beechcraft	B36TC
TSIO-520-VB	Cessna	402 C
TSIO-520-WB	Beechcraft	58P Baron
TSIO-520-WB	Beechcraft	58TC Baron

This AD also applies to SAP, cast cylinder assemblies, P/Ns SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, and SL36006W-A21P installed in Lycoming Engines (LE) 320, 360, and 540 series reciprocating engines and Avco Lycoming 540 series reciprocating engines. These P/N cylinder assemblies may be installed in the LE and AL engine models listed in the following Table 3.

Table 3 – Affected Lycoming Engines and Avco Lycoming Engine Models

Engine Model	
O-320	-A, -B, -C, -D, -E, H
IO-320	-B, -D, -E
LIO-320	-B
AIO-320	-A, -B, -C
AEIO-320	-D, -E
O-360	-A, -B, -C, -D, -F, -G, -J
IO-360	-B, -L, -M
LO-360	-A
AEIO-360	-B, -H
HO-360	-C
HIO-360	-B
O-540	-A, -B, -E, -F, -G, -H, -J
IO-540	-A, -C, -D, -N, -T, -V, -W
AEIO-540	-D

These engine models are installed in, but not limited to, the aircraft models listed in the following Table 4:

Table 4 –Lycoming Engines and Avco Lycoming-related Aircraft Models

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-A	Mooney Aircraft	Mark 20A
O-320-A1A	Piper Aircraft	PA-23-150 Apache
O-320-A1A	Piper Aircraft	PA-22-150 Tri-Pacer
O-320-A1A	Piper Aircraft	PA-22S-150 Tri-Pacer
O-320-A1A	Piper Aircraft	PA-25 Pawnee
O-320-A1A	Doyne Aircraft	Doyn-Cessna 170,170A,170B
O-320-A1A	Dinfia	Ranquel 1A-46
O-320-A1A	Simmering-Graz Pauker	Flamingo SGP-M-222
O-320-A1A	Aviamilano	Scricciolo P-19
O-320-A1A	Vos Helicopter Co.	Spring Bok
O-320-A1A	Mooney Aircraft	Mark 20A
O-320-A1B	Piper Aircraft	PA-22-150 Tri-Pacer
O-320-A1B	Piper Aircraft	PA-22S-150 Tri-Pacer
O-320-A1B	Piper Aircraft	PA-23 Apache
O-320-A1B	Doyne Aircraft	Doyn-Cessna 170,170A,170B
O-320-A1B	S.O.C.A.T.A	Horizon (Gardan)
O-320-A2A	Piper Aircraft	PA-22-150
O-320-A2A	Piper Aircraft	PA-22S-150
O-320-A2A	Piper Aircraft	Agriculture PA-18A-150
O-320-A2A	Piper Aircraft	Super Cub PA-18-150
O-320-A2A	Piper Aircraft	Caribbean PA-22-150
O-320-A2A	Piper Aircraft	PA-25 Pawnee
O-320-A2A	Lake Aircraft	Colonial C1
O-320-A2A	Intermountain Mfg. Co.	Call Air Texas A-5, A-5T
O-320-A2A	Rawdon Bros.	Rawdon T-1, T-15, T-15D
O-320-A2A	Shinn Engineering	Shinn 2150-A
O-320-A2A	Dinfia	Ranquel 1A-46
O-320-A2A	Neiva	1PD-5802
O-320-A2A	Sud	Gardan-Horizon (GY-80)
O-320-A2A	La Verda	Falco F8L Series II, America
O-320-A2A	Malmo	Vipan MF1-10
O-320-A2A	Kingsford Smith	Autocrat SCRM-153

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-A2B	Aero Commander	100
O-320-A2B	Piper Aircraft	PA-22-150
O-320-A2B	Piper Aircraft	PA-22S-150
O-320-A2B	Piper Aircraft	Cherokee PA-28-150
O-320-A2B	Piper Aircraft	Super Cub PA-18-150
O-320-A2B	Champion Aircraft	Challenger 7GCA, 7GCB, 7KC
O-320-A2B	Champion Aircraft	Citabria 7GCAA, 7GCRC
O-320-A2B	Champion Aircraft	Agriculture 7GCBA
O-320-A2B	Beagle	Pup 150
O-320-A2B	Arctic	Interstate S1B2
O-320-A2B	Robinson Helicopters	R-22
O-320-A2C	Robinson Helicopters	R-22
O-320-A2C	Varga	Kachina 2150a
O-320-A2C	Cicare	Cicare AG
O-320-A2D	Bellanca Aircraft	Citabria 150 (7GCAA)
O-320-A2D	Bellanca Aircraft	Citabria 150S (7GCBC)
O-320-A2D	Bellanca	Citabria 150S (7G(.HU)
O-320-A2F	Cessna Aircraft	177A
O-320-A3A	Piper Aircraft	Apache PA-23
O-320-A3A	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-A3A	Corben-Fettes	Globe Special (Globe GC-1B)
O-320-A3B	Piper Aircraft	Apache PA-23
O-320-A3B	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-A3B	Teal II	TSC 1A2
O-320-B1A	Piper Aircraft	Apache PA-23-160
O-320-B1A	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B1A	Malmo	Vipan MF1-10
O-320-B1B	Piper Aircraft	Apache PA-23-160
O-320-B1B	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B2A	Piper Aircraft	PA-22-160
O-320-B2A	Piper Aircraft	PA-22S-160
O-320-B2B	Piper Aircraft	PA-22-160
O-320-B2B	Piper Aircraft	PA-22S-160

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-B2B	Beagle	Airedale D5-160
O-320-B2B	Fuji-Heavy Industries	Fuji F-200
O-320-B2B	Uirapuru	Aerotec 122
O-320-B2C	Robinson Helicopters	R22-HP, Alpha, Beta
O-320-B2D	Maule	MX-7-160
O-320-B2E	Lycon	
O-320-B3A	Piper Aircraft	Apache PA-23-160
O-320-B3A	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B3B	Piper Aircraft	PA-23-160 Apache
O-320-B3B	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B3B	Sud	Gardan (GY8O-160)
O-320-C1A	Piper Aircraft	Apache PA-23-160
O-320-C1A	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 (GY80)
O-320-D1A	Gyroflug	Speed Cancard
O-320-D1A	Grob	G115
O-320-D1D	Gulfstream	GA-7
O-320-D1F	Slingsby	T67 Firefly
O-320-D2A	Piper Aircraft	Cherokee PA-28S-160
O-320-D2A	Robin	Major DR400-140B
O-320-D2A	Robin	Chevalier DR-360, R-3140
O-320-D2A	S.0.C.A.T.A.	Tampico TB9
O-320-D2A	Slingsby	T67C Firefly
O-320-D2A	Daetwyler	MD-3-160
O-320-D2A	Nash Aircraft Ltd.	Petrel
O-320-D2A	Aviolight	P66D Delta
O-320-D2A	General Avia	Pinguino
O-320-D2B	Beechcraft	Musketeer A23
O-320-D2B	Piper Aircraft	Cherokee PA-28-160
O-320-D2J	Cessna	Skyhawk 172 P

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-D3G	Piper Aircraft	Cadet PA-28-161
O-320-D3G	Piper Aircraft	Warrior II
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
O-320-E2A	Piper Aircraft	Cherokee PA-28-150
O-320-E2A	Robin	Major (DR-340)
O-320-E2A	Robin	Sitar
O-320-E2A	Robin	Bagheera (GY-100-135)
O-320-E2A	S.O.C.A.T.A.	Super Rallye (MS-886)
O-320-E2A	S.O.C.A.T.A.	Rallye Commodore (MS-892)
O-320-E2A	Siai-Marchetti	S-202
O-320-E2A	F.F.A.	Bravo (AS-202/15)
O-320-E2A	Partenavia	Oscar (P66B)
O-320-E2A	Partenavia	Bucker (131 APM)
O-320-E2A	Aeromot	Paulistina P-56
O-320-E2A	Pezetel	Koliber 150
O-320-E2C	Beechcraft	Musketeer (B19)
O-320-E2C	Beechcraft	Musketeer III (M-23111)
O-320-E2C	M.B.B.	Monsun (BO-209-B)
O-320-E2D	Beechcraft	B19 Sport
O-320-E2D	Cessna	177
O-320-E2D	Cessna	172 I – M
O-320-E2D	Piper Aircraft	PA-28-151
O-320-E2D	Piper Aircraft	PA-28-140
O-320-E2D	Cessna	Cardinal (172.1, 177)
O-320-E2F	M.B.B.	Monsun (BO-209-B)
O-320-E2F	M.B.B.	Wassmer Pacific (WA-5 1)
O-320-E2G	Gulfstream	AA5 Traveler
O-320-E2G	Gulfstream	AA5A Cheetah
O-320-E3D	Beechcraft	B19 Sport

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-E3D	Piper Aircraft	Cherokee (140)
O-320-H2AD	Cessna	Skyhawk 172 N
O-320-H2AD	Partenavia	P-66C
O-320A2C	Varga	Kachina 2150
IO-320-B2A	Piper Aircraft	Twin Comanche (PA-30)
IO-320-B1C	Hi	
IO-320-B1C	Shear	
IO-320-B1C	Wing	
IO-320-B1D	Ted Smith Aircraft	Aerostar
IO-320-D1A	M.B.B.	Monsun (BO-209-C)
IO-320-D1B	M.B.B.	Monsun (BO-209-C)
IO-320-E1A	Champion	KCAB
IO-320-E1A	M.B.B.	Monsun (BO-209-C)
IO-320-E1B	Bellanca Aircraft	
IO-320-E2A	Champion	7 KCAB
IO-320-E2A	Champion Aircraft	Citabria
IO-320-E2B	Bellanca Aircraft	
IO/LIO-320-B1A	Piper Aircraft	PA-30 Comanche (2)
IO/LIO-320-B1A	Piper Aircraft	Twin Comanche (PA-39)
AIO-320-B1 B	M.B.B.	Monsun (BO-209-C)
AEIO-320-D1B	Slingsby	T67M Firefly
AEIO-320-D2B	Hundustan Aeronautlcs Ltd.	HT-2
AEIO-320-E1A	Bellanca Aircraft	
AEIO-320-E1A	Champion Aircraft	
AEIO-320-EIB	Bellanca Aircraft	
AEIO-320-EIB	Champion Aircraft	Decathalon (8KCAB-CS)
AEIO-320-E2B	Bellanca Aircraft	
AEIO-320-E2B	Champion Aircraft	Decathalon (8KCAB)
O-320-A1A	Riley Aircraft	Riley Twin
O-360-A1A	Beechcraft	Travel Air (95, B-95)
O-360-A1A	Piper Aircraft	Comanche (PA-24)
O-360-A1A	Intermountain Mfg. Co.	Call Air (A-6)

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A1A	Lake Aircraft	Colonial (C-2, LA-4, 4A or 4P)
O-360-A1A	Doyn Aircraft	Doyn-Cessna (170B, 172, 172A, 172B)
O-360-A1A	Mooney Aircraft	Mark "20B" (M-20B)
O-360-A1A	Earl Horton	Pawnee (Piper PA-25)
O-360-A1A	Dinfia	Ranquel (IA-51)
O-360-A1A	Neiva	(IPD-5901)
O-360-A1A	Regente	(N-591)
O-360-A1A	Wassmer	Super 4 (WA-50A)
O-360-A1A	Wassmer	Sancy (WA-40)
O-360-A1A	Wassmer	Baladou (WA-40)
O-360-A1A	Wassmer	Pariou (WA-40)
O-360-A1A	Sud	Gardan (GY-180)
O-360-A1A	Bolkow	(207)
O-360-A1A	Partenavia	Oscar (P-66)
O-360-A1A	Siai-Marchetti	(S-205)
O-360-A1A	Procaer	Picchio (F-15-A)
O-360-A1A	S.A.A.B.	Safir (91-D)
O-360-A1A	Malmo	Vipan (MF-1OB)
O-360-A1A	Aero Boero	AB-180
O-360-A1A	Beagle	Airedale (A-109)
O-360-A1A	DeHavilland	Drover (DHA-3MK3)
O-360-A1A	Kingsford-Smith	Bushmaster (J5-6)
O-360-A1A	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)
O-360-A1D	Lake Aircraft	Colonial (LA-4, 4A or 4P)
O-360-A1D	Doyn Aircraft	Doyn-Beech (Beech 95)
O-360-A1D	Mooney Aircraft	Master 21 (M-20E)
O-360-A1D	Mooney Aircraft	Mark 20B, 20D, (M2OB, M2OC)
O-360-A1D	Mooney Aircraft	Mooney Statesman (M-20G)
O-360-A1D	Dinfia	Querandi (IA-45)
O-360-A1D	Wassmer	(WA-50)

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A1D	Malmo	Vipan (MFI-10)
O-360-A1D	Cessna Aircraft	Skyhawk
O-360-A1D	Doyn Aircraft	Doyn-Piper PA-23-160
O-360-AIF6	Cessna Aircraft	Cardinal
O-360-AIF6D	Cessna Aircraft	Cardinal 177
O-360-AIF6D	Teal III	TSC (1A3)
O-360-A1G6	Aero Commander	
O-360-A1G6D	Beech Aircraft	Duchess 76
O-360-AIH6	Piper Aircraft	Seminole (PA-44)
O-360-Al LD	Wassmer	Europa WA-52
O-360-AIP	Aviat	
O-360-AIP	Husky	
O-360-A2A	Center Est Aeronautique	Regente (DR-253)
O-360-A2A	S.O.C.A.T.A.	Rallye Commodore (MS-893)
O-360-A2A	Societe Aeronautique Normande	Mousquetaire (D-140)
O-360-A2A	Bolkow	Klemm (Kl -1 07C)
O-360-A2A	Partenavia	Oscar (P-66)
O-360-A2A	Beagle	Husky (D5-180) (J1-U)
O-360-A2D	Piper Aircraft	Comanche PA-24
O-360-A2D	Piper Aircraft	Cherokee C PA-28-180
O-360-A2D	Mooney Aircraft	Master 21 (M-20D)
O-360-A2D	Mooney Aircraft	Mark 21 (M-20E)
O-360-A2E	Std. Helicopter	
O-360-A2F	Aero Commander	Lark(100)
O-360-A2F	Cessna Aircraft	Cardinal
O-360-A2G	Beech Aircraft	Sport
O-360-A3A	C.A.A.R.P.S.A.N.	(M-23111)
O-360-A3A	Societe Aeronautique Normande	Jodel (D-140C)
O-360-A3A	Robin	Regent (DR400/180)
O-360-A3A	Robin	Remorqueur (DR400/180R)
O-360-A3A	Robin	R-3170
O-360-A3A	S.O.C.A.T.A.	Rallye 18OGT

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A3A	S.O.C.A.T.A.	Sportavia Sportsman (RS-180)
O-360-A3A	Norman Aerospace Co.	NAC-1 Freelance
O-360-A3A	Nash Aircraft Ltd.	Petre
O-360-A3AD	S.O.C.A.T.A.	TB-10
O-360-A3AD	Robin	Aiglon (R-1 180T)
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-A4K	Beech Aircraft	Sundowner 180
O-360-A4M	Piper Aircraft	Archer II PA-28-18
O-360-A4M	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-CIE	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
O-360-C2E	Bellanca Aircraft	Scout 8GCBC FP
O-360-C4F	Maule	MX-7-180A
O-360-C4P	Penn Van	Super Cub Conversion
O-360-F1A6	Cessna Aircraft	Cutlass RG
O-360-J2A	Robinson	R22
IO-360-B1A	Beech Aircraft	Travel-Air (B-95A)
IO-360-B1A	Doyn Aircraft	Doyn-Piper PA-23-200
IO-360-B1B	Beech Aircraft	Travel-Air (B-95B)
IO-360-B1B	Doyn Aircraft	Doyn-Piper PA-23-200
IO-360-B1B	Fuji	FA-200

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-360-B1D	United Consultants	See-Bee
IO-360-BIE	Piper Aircraft	Arrow PA-28-180R
IO-360-BIF	Utva	75
IO-360-B2E	C.A.A.R.P.	C.A.P. (10)
IO-360-BIF6	Great Lakes	Trainer
IO-360-B1G6	American Blimp	Spector 42
IO-360-B2F6	Great Lakes	Trainer
LO-360-A1 G6D	Beech Aircraft	Duchess
LO-360-A1H6	Piper Aircraft	Seminole (PA-44)
IO-360-EIA	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
IO-360-M1B	Lancair	360
AIO-360-B1B	Moravan	Zim (Z-526-L)
AEIO-360-B1G6	Great Lakes	
AEIO-360-B2F	Mundry	CAP-10
AEIO-360-B4A	Pitts	S-1S
AEIO-360-HIA	Bellanca Aircraft	Super Decathalon (8KCAB-180)
AEIO-360-HIB	American Champion	Super Decathalon
HO-360-B1A	Hughes Tool Co.	269A
HO-360-B1B	Hughes Tool Co.	269A
HO-360-C1A	Schweizer	300C
HIO-360-A1A	Hughes Tool Co.	300
H1O-360-A1B	Silvercraft	
HIO-360-B1A	Hughes Tool Co.	Military 269-A-1
HlO-360-BIB	Hughes Tool Co.	269A
HIO-360-D1A	Hughes Tool Co.	269C, 300C
HIO-360-D1A	Schweizer	300C
HIO-360-E1AD	Enstrom Helicopter	F28C
HIO-360-E1BD	Enstrom Helicopter	F28C
HIO-360-F1AD	Enstrom Helicopter	Faicon F28F
HIO-360-F1AD	Enstrom Helicopter	Shark 280FX

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
HIO-360-F1AD	Enstrom Helicopter	Sentine F28F-P
HIO-360-G1A	Schweizer	CB
LHIO-360-C1A	Silvercraft	SH-4 Helicopter
LHIO-360-C1B	Silvercraft	SH-3 Helicopter
O-540-AIA	Rhein-Flugzeugbau	RF-1
O-540-AIA5	Piper Aircraft	Comanche PA-24-150
O-540-AIA5	Helio	Military H-250
O-540-AIA5	Yoeman Aviation	YA-1
O-540-A1B5	Piper Aircraft	Aztec PA-23-250
O-540-A1B5	Piper Aircraft	Comanche PA-24-250
O-540-AIC5	Piper Aircraft	Comanche PA-24-250
O-540-A1D	Found Bros.	FBA-2C
O-540-A1D	Dornier	DO-28-B1
O-540-AID5	Piper Aircraft	Aztec PA-23 -250
O-540-AID5	Piper Aircraft	Comanche PA-24-250
O-540-AID5	Piper Aircraft	Military Aztec U-1 1A
O-540-AID5	Dornier	DO-28
O-540-A2B	Aero Commander	500
O-540-A2B	Mld-States Mfg. Co.	Twin Courier 11-500, U-5
O-540-A3D5	Piper Aircraft	Navy Aztec PA-23-250
O-540-B1A5	Piper Aircraft	Apache PA-23-235
O-540-BIB5	Piper Aircraft	Cherokee PA-24-250
O-540-BIB5	Doyn Aircraft	Doyn-Piper PA-24-250
O-540-BID5	Wassmer	WA-421
O-540-B2B5	Piper Aircraft	Pawnee PA-24-235
O-540-B2B5	Piper Aircraft	Cherokee PA-28-235
O-540-B2B5	Piper Aircraft	Aztec PA-23-235
O-540-B2B5	Intermountain Mfg. Co.	Call Air A-9
O-540-B2B5	Rawdon Bros.	Rawdon T-l
O-540-B2B5	S.O.C.A.T.A.	Rallye 235CA
O-540-B2C5	Piper Aircraft	Pawnee PA-24-235
O-540-B4B5	Piper Aircraft	Cherokee PA-28-235
O-540-B4B5	Embraer	Corioca EMB-710

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-540-B4B5	S.O.C.A.T.A.	Rallye 235GT
O-540-B4B5	S.O.C.A.T.A.	Rallye 235C
O-540-B4B5	Maule	Star Racket MX-7-235
O-540-B4B5	Maule	Super Rocket M-6-235
O-540-B4B5	Maule	Super Std. Racket M-7-235
O-540-E4A5	Piper Aircraft	Comanche PA-24-260
O-540-E4A5	Aviamilano	Flamingo F-250
O-540-E4A5	Siai-Marcbetti	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
O-540-E4C5	Pilatus Britten-Norman	Islander BN-2A-27
O-540-E4C5	Pilatus Britten-Norman	Islander II BN-2B-26
O-540-E4C5	Pilatus Britten-Norman	Islander BN-2A-2 1
O-540-E4C5	Pilatus Britten-Norman	Trislander BN-2A-Mark 111-2
O-540-F1B5	Omega Aircraft	BS-12D1
O-540-F1B5	Robinson	R-44
O-540-G1A5	Piper Aircraft	Pawnee PA-25-260
O-540-H1B5D	Aero Boero	260
O-540-H2A5	Embraer	Impanema "AG"
O-540-H2A5	Gippsland	GA-200
O-540-H2B5D	Aero Boero	260
O-540-J1A5D	Maule	Star Rocket MX-7-235
O-540-J1A5D	Maule	Super Rocket M-6-235
O-540-J1A5D	Maule	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
IO-540-A1A5	Doyn Aircraft	Doyn-Piper PA-23-250
IO-540-A1A5	Riley Aircraft	Rocket-Cessna 310
IO-540-A1A5	Dornier	DO-8-B 1
IO-540-A1A5	Siai-Marchetti	
IO-540-C1B5	Piper Aircraft	Aztec B PA-23-250

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-540-C1B5	Piper Aircraft	Comanche PA-24-250
IO-540-C1C5	Riley Aircraft	Turbo-Rocket
IO-540-C4B5	Piper Aircraft	Aztec C PA-23-250
IO-540-C4B5	Piper Aircraft	Aztec F
IO-540-C4B5	Wassmer	WA4-2 1
IO-540-C4B5	Avions Pierre Robin	HR 100/250
IO-540-C4B5	Bellanca Aircraft	Aries T-250
IO-540-C4B5	Aerofab	Renegade 250
IO-540-C4D5	S.O.C.A.T.A.	TB-20
IO-540-C4DSD	S.O.C.A.T.A.	Trinidad TB-20
IO-540-D4A5	Piper Aircraft	Comanche PA-24-260
IO-540-D4A5	Siai-Marchetti	SF-260
IO-540-D4B5	Cerva	CE-43 Guepard
IO-540-E1A5	Aero Commander	500-E
IO-540-EIB5	Aero Commander	500-U
IO-540-EIB5	Shrike	500-S
IO-540-EIB5	Poeschel	P-300
IO-540-GIA5	Doyn Aircraft	Doyn-Piper PA-23-250
IO-540-GIA5	Riley Aircraft	Turbo-Aztec
IO-540-GIA5	DeHavilland	Heron Conversion
IO-540-GIB5	T.R. Smith Aircraft	Aerostar 600
IO-540-GIB5	Found Bros.	Centennial 100
IO-540-G1C5	Intermountain Mfg. Co.	Call Air 1AR821
IO-540-G1DS	Intermountain Mfg. Co.	IAR-822, IAR-826, IAR-823
IO-540-G1F5	Bellanca Aircraft	
IO-540-N lA5	Piper Aircraft	Comanche 260
IO-540-T4A5D	General Aviation	Model 114
IO-540-T4B5	Commander	1 14B
IO-540-T4B5D	Rockwell	114
IO-540-T4C5D	Lake Aircraft	Seawolf
IO-540-WIA5	Maule	MX-7-235, MT-7-235, M7235
IO-540-W1A5D	Maule	Star Rocket MX-7-235
IO-540-W1A5D	Maule	Super Rocket M-6-235

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-540-W1A5D	Maule	Super Std. Rocket M-7-235
IO-540-W3A5D	Schweizer	Power Glider
IO-540-AB1A5	Cessna Aircraft	Skylane C-182
AEIO-540-D4A5	Christen	Pitts S-2S, S-2B
AEIO-540-D4A5	Siai-Marchetti	SF-260
AEIO-540-D4A5	H.A.L.	HPT-32
AEIO-540-D4A5	Slingsby	Firefly T3A
AEIO-540-D4B5	Moravan	Zlin-50L
AEIO-540-D4B5	H.A.L.	HPT-32
AEIO-540-D4D5	Burkhart Grob	Grob G, 1 15T Aero

These engine models are known to be installed in the aircraft models listed in the following Table 5:

Table 5 – Superior Air Parts, Inc. -related Aircraft Models

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A3A2	American Champion	7GCBC & 7GCAA

Unsafe Condition

(d) This AD results from the discovery of nine separated SAP cylinder assemblies installed in TCM 470, 520, and 550 series reciprocating engines and one separated SAP cylinder assembly installed in LE 320, 360, and 540 series reciprocating engines. We are issuing this AD to prevent cylinder separation that can lead to engine failure, a possible engine compartment fire, and damage to the airplane.

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.

Determining Which Cast Cylinder Assemblies Are Installed

(f) If aircraft engine records do not list the P/N of the cylinder installed during engine overhaul or repair, visually inspect the cylinders. The affected SAP cylinder head flanges are marked: SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, or SA55000-A20P or SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, or SL36006W-A21P.

Cylinder Assembly Removal

(g) Remove all cylinder assemblies with a serial number of 47LE053559 through 47LF053643, or 47SE054212 through 47SF054251, or 52D0531708 through 52H0532197, or 55E05223 through 55G05289, or 32WE059006 through 32WF059067, or 32WHE05379 through 32WHE05392, or 326WF055517 through 326WF055532, or 36TWF05430 through 36TWG05453, or 36WF058058 through 36WJ058182, or 366WE056944 through 366WL058131 no later than 150 hours total time-in-service (TIS) to preclude cylinder head fatigue failure and separation at the head-to-barrel threaded interface.

(h) For cylinder assemblies with more than 150 hours total TIS on the effective date of this AD, a 10 hour TIS extension is permitted for the purpose of flying the aircraft to a location where maintenance action can be done to meet the requirements of this AD.

(i) After the effective date of this AD, do not install any cylinder assemblies with P/Ns SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, or SA55000-A20P,or SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, or SL36006W-A21P, with a serial number of 47LE053559 through 47LF053643, or 47SE054212 through 47SF054251, or 52D0531708 through 52H0532197, or 55E05223 through 55G05289, or 32WE059006 through 32WF059067, or 32WHE05379 through 32WHE05392, or 326WF055517 through 326WF055532, or 36TWF05430 through 36TWG05453, or 36WF058058 through 36WJ058182, or 366WE056944 through 366WL058131 into any engine.

Alternative Methods of Compliance

(j) The Manager, Special Certification Office, FAA, Rotorcraft Directorate, 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

(k) For aircraft with engines that have between 140 hours and 150 hours TIS only, special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be done. Special flight permits may not be issued for aircraft that have utilized the provisions of paragraph (h) of this AD.

Related Information

(l) Superior Air Parts, Inc. Mandatory Service Bulletin B06-01, Rev. E, dated January 24, 2007, contains information related to the subject of this AD.

(m) Contact Jurgen Priester, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, Southwest Regional Headquarters, 2601 Meacham Blvd., Fort Worth, Texas 76137; e-mail: jurgen.priester@faa.gov; telephone (817) 222-5159; fax (817) 222-5785 for more information about this AD.

Material Incorporated by Reference

(n) None.

Issued in Burlington, Massachusetts, on February 13, 2007.

Peter A. White,Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. E7-2985 Filed 2-22-07; 8:45 am]

Luftfartstilsynet
Postboks 243, NO-8001 Bodø
Besøksadresse:
Bodø Lufthavn, Bodø
Telefon : 75585000
Telefax : 75585005
e-post: postmottak@caa.no

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 51

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2007-030A "CYLINDER ASSEMBLY SEPARATION - CYLINDER ASSEMBLIES PRODUCED BY SUPERIOR AIR PARTS"

Påbudet gjelder:

Teledyne Continental Motors, alle motorer som nærmere beskrevet i FAA AD 2007-04-19R1, og med Superior Air Parts "Cast Cylinder Assemblies" som beskrevet i samme AD.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2007-04-19R1.

Tid for utførelse:

Til de tider som er beskrevet i vedlagte kopi av FAA AD 2007-04-19R1 med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2007-04-19R1.

Gyldighetsdato:

2007-10-24.

2007-04-19R1 Superior Air Parts, Inc.: Amendment 39-15005. Docket No. FAA-2006-25948; Directorate Identifier 2006-NE-32-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective May 7, 2007.

Affected ADs

(b) This AD revises AD 2007-04-19.

Applicability

(c) This AD applies to Superior Air Parts, Inc. (SAP), cylinder assemblies, manufactured between April 2005 and November 2005, part numbers (P/Ns): SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, and SA55000-A20P, installed in Teledyne Continental Motors (TCM) 470, 520, and 550 series reciprocating engines. These P/N cylinder assemblies may be installed in the TCM engine models listed in the following Table 1.

Table 1 – Affected Teledyne Continental Engine Models

Engine Model	
O-470	-G, -K, -L, -M, -P, -R, -S, -U
IO-470	-C, -D, -E, -F, -G, -H, -L, -M, -N, -P, -R, -S, -U, -V
IO-520	- A, B, BA, C, CB, D, E, F, J, K, L, M, BB, MB
TSIO-520	- AF, B, BB, C, CE, D, DB, E, EB, G, H, J, JB, K, KB, L, LB, M, N, NB, P, R, T, UB, VB, WB
IO-550	- A, B, C, D, E, F, L

These engine models are installed in, but not limited to, the aircraft models listed in the following Table 2:

Table 2 – Teledyne Continental Motors-related Aircraft Models

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-470-C	Beechcraft	J, K, M35
IO-470-D	Cessna	310 G & H
IO-470-D	Rockwell	200 A, B, & C
IO-470-E	Cessna	210 & A
IO-470-F	Bellanca	14-19-3
IO-470-F	Cessna	185
IO-470-H	Sierra Hotel Aero, Inc. (Navion)	Navion F &G (Rangemaster)
IO-470-L	Beechcraft	B55 Baron
IO-470-M	Gulfstream	500 A
IO-470-N	Beechcraft	N & P
IO-470-N	Beechcraft	G33
IO-470-S	Cessna	210 B & C
IO-470-S	Cessna	205
IO-470-U	Cessna	310 I & J
IO-470-V/VO	Cessna	310K, L, N, P & Q
IO-520-A	Cessna	210 D, E, F, G, & H
IO-520-A	Cessna	206
IO-520-A	Cessna	P206
IO-520-A	Rockwell	200 D
IO-520-B	Beechcraft	36 Bonanza
IO-520-B	Beechcraft	A36
IO-520-B	Sierra Hotel Aero, Inc. (Navion)	Navion H
IO-520-BA	Beechcraft	A36
IO-520-BA	Beechcraft	S & V35, V35A, V35B
IO-520-BA	Beechcraft	C33 A
IO-520-BA	Beechcraft	E33 A & C
IO-520-BA	Beechcraft	F33 A & C
IO-520-BA	Sierra Hotel Aero, Inc.	Navion G (Rangemaster)
IO-520-BA	Sierra Hotel Aero, Inc.	Navion H
IO-520-BB	Beechcraft	A36

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-520-BB	Beechcraft	V35B
IO-520-BB	Beechcraft	F33 A
IO-520-C & CB	Beechcraft	C55 - E55 Baron
IO-520-D	Bellanca	17-30 Viking
IO-520-D	Cessna	A188-300 AG Truck
IO-520-D	Cessna	185
IO-520-E	(Cessna 310)	Exec 600
IO-520-E	(Beech Baron)	Pres 600
IO-520-F	Cessna	207
IO-520-F	Cessna	U206
IO-520-K	Bellanca	17-30A
IO-520-L	Cessna	210 K, L, M, N & R
IO-520-L	Cessna	210N II
IO-520-L	Cessna	210R
IO-520-M	Cessna	310R
IO-520-MB	Cessna	310R
IO-550-A	Cessna	310 Conversion
IO-550-B	Beechcraft	A36
IO-550-B	(Beech Bonanza)	Foxstar
IO-550-C	Beechcraft	58 Baron
IO-550-D	Cessna	185/188 Conversion
IO-550-E	Cessna	310 Conversion
IO550-F	Cessna	206/207 Conversion
IO-550-L	Cessna	210 Conversion
O-470-M	Cessna	310
O-470-G	Beechcraft	H35
O-470-K	Bellanca	14-19-2
O-470-K	Cessna	180 (230 HP)
O-470-L	Cessna	182
O-470-L	Cessna	180D
O-470-M	Cessna	310 B
O-470-P	Sierra Hotel Aero, Inc. (Navion)	Navion

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-470-R	Cessna	188-230
O-470-R	Cessna	182
O-470-R	Cessna	180 E-J
O-470-S	Cessna	182
O-470-U	Cessna	182
O-470-U	Cessna	180 K
TSIO-520-AF	Cessna	P210N II
TSIO-520-B	Cessna	320D, E & F
TSIO-520-B	Cessna	T310-Q & R
TSIO-520-BB	Cessna	T310R
TSIO-520-BE	Piper	PA-46-310 Malibu
TSIO-520-C	Cessna	T210 F, G, & H
TSIO-520-C	Cessna	TU206
TSIO-520-C	Cessna	TP206
TSIO-520-C&CB	Beechcraft	58 Baron
TSIO-520-CE	Cessna	T210R
TSIO-520-CF	Cessna	P210R
TSIO-520-D	Beechcraft	V35, V35A, V35B-TC
TSIO-520-E	Cessna	402, A & B
TSIO-520-E	Cessna	401, A & B
TSIO-520-EB	Cessna	335
TSIO-520-G	Cessna	T207
TSIO-520-H	Cessna	T210 J, K & L
TSIO-520-J	Cessna	210 J
TSIO-520-J	Cessna	414
TSIO-520-J	Riley Conversions	340 Super Riley
TSIO-520-L&LB	Beechcraft	58P Baron
TSIO-520-L&LB	Beechcraft	58TC Baron
TSIO-520-M	Cessna	T207
TSIO-520-M	Cessna	TU206
TSIO-520-N	Cessna	414-II Chancellor
TSIO-520-N	Cessna	340

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
TSIO-520-NB	Cessna	414-II
TSIO-520-NB	Cessna	340
TSIO-520-P	Cessna	P210N
TSIO-520-R	Cessna	T210 M
TSIO-520-R	Cessna	T210N II
TSIO-520-T	Cessna	T188C AG Husky
TSIO-520-UB	Beechcraft	A36TC Bonanza
TSIO-520-UB	Beechcraft	B36TC
TSIO-520-VB	Cessna	402 C
TSIO-520-WB	Beechcraft	58P Baron
TSIO-520-WB	Beechcraft	58TC Baron

This AD also applies to SAP, cast cylinder assemblies, P/Ns SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, and SL36006W-A21P, installed in Lycoming Engines (LE) 320, 360, and 540 series reciprocating engines and Avco Lycoming 540 series reciprocating engines. These P/N cylinder assemblies may be installed in the LE and AL engine models listed in the following Table 3.

Table 3 – Affected Lycoming Engines and Avco Lycoming Engine Models

Engine Model	
O-320	-A, -B, -C, -D, -E, H
IO-320	-B, -D, -E
LIO-320	-B
AIO-320	-A, -B, -C
AEIO-320	-D, -E
O-360	-A, -B, -C, -D, -F, -G, -J
IO-360	- B, -L, -M
LO-360	-A
AEIO-360	-B, -H
HO-360	-C
HIO-360	-B
O-540	-A, -B, -E, -F, -G, -H, -J
IO-540	-A, -C, -D, -N, -T, -V, -W
AEIO-540	-D

These engine models are installed in, but not limited to, the aircraft models listed in the following Table 4:

Table 4 –Lycoming Engines and Avco Lycoming-related Aircraft Models

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-A	Mooney Aircraft	Mark 20A
O-320-A1A	Piper Aircraft	PA-23-150 Apache
O-320-A1A	Piper Aircraft	PA-22-150 Tri-Pacer
O-320-A1A	Piper Aircraft	PA-22S-150 Tri-Pacer
O-320-A1A	Piper Aircraft	PA-25 Pawnee
O-320-A1A	Doyne Aircraft	Doyn-Cessna 170,170A,170B
O-320-A1A	Dinfia	Ranquel 1A-46
O-320-A1A	Simmering-Graz Pauker	Flamingo SGP-M-222
O-320-A1A	Aviamilano	Scricciolo P-19
O-320-A1A	Vos Helicopter Co.	Spring Bok
O-320-A1A	Mooney Aircraft	Mark 20A
O-320-A1B	Piper Aircraft	PA-22-150 Tri-Pacer
O-320-A1B	Piper Aircraft	PA-22S-150 Tri-Pacer
O-320-A1B	Piper Aircraft	PA-23 Apache
O-320-A1B	Doyne Aircraft	Doyn-Cessna 170,170A,170B
O-320-A1B	S.O.C.A.T.A	Horizon (Gardan)
O-320-A2A	Piper Aircraft	PA-22-150
O-320-A2A	Piper Aircraft	PA-22S-150
O-320-A2A	Piper Aircraft	Agriculture PA-18A-150
O-320-A2A	Piper Aircraft	Super Cub PA-18-150
O-320-A2A	Piper Aircraft	Caribbean PA-22-150
O-320-A2A	Piper Aircraft	PA-25 Pawnee
O-320-A2A	Lake Aircraft	Colonial C1
O-320-A2A	Intermountain Mfg. Co.	Call Air Texas A-5, A-5T
O-320-A2A	Rawdon Bros.	Rawdon T-1, T-15, T-15D
O-320-A2A	Shinn Engineering	Shinn 2150-A
O-320-A2A	Dinfia	Ranquel 1A-46
O-320-A2A	Neiva	1PD-5802
O-320-A2A	Sud	Gardan-Horizon (GY-80)
O-320-A2A	La Verda	Falco F8L Series II, America

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-A2A	Malmo	Vipan MF1-10
O-320-A2A	Kingsford Smith	Autocrat SCRM-153
O-320-A2B	Aero Commander	100
O-320-A2B	Piper Aircraft	PA-22-150
O-320-A2B	Piper Aircraft	PA-22S-150
O-320-A2B	Piper Aircraft	Cherokee PA-28-150
O-320-A2B	Piper Aircraft	Super Cub PA-18-150
O-320-A2B	Champion Aircraft	Challenger 7GCA, 7GCB, 7KC
O-320-A2B	Champion Aircraft	Citabria 7GCAA, 7GCRC
O-320-A2B	Champion Aircraft	Agriculture 7GCBA
O-320-A2B	Beagle	Pup 150
O-320-A2B	Arctic	Interstate S1B2
O-320-A2B	Robinson Helicopters	R-22
O-320-A2C	Robinson Helicopters	R-22
O-320-A2C	Varga	Kachina 2150a
O-320-A2C	Cicare	Cicare AG
O-320-A2D	Bellanca Aircraft	Citabria 150 (7GCAA)
O-320-A2D	Bellanca Aircraft	Citabria 150S (7GCBC)
O-320-A2D	Bellanca	Citabria 150S (7G(.HU)
O-320-A2F	Cessna Aircraft	177A
O-320-A3A	Piper Aircraft	Apache PA-23
O-320-A3A	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-A3A	Corben-Fettes	Globe Special (Globe GC-1B)
O-320-A3B	Piper Aircraft	Apache PA-23
O-320-A3B	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-A3B	Teal II	TSC 1A2
O-320-B1A	Piper Aircraft	Apache PA-23-160
O-320-B1A	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B1A	Malmo	Vipan MF1-10
O-320-B1B	Piper Aircraft	Apache PA-23-160
O-320-B1B	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B2A	Piper Aircraft	PA-22-160
O-320-B2A	Piper Aircraft	PA-22S-160

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-B2B	Piper Aircraft	PA-22-160
O-320-B2B	Piper Aircraft	PA-22S-160
O-320-B2B	Beagle	Airedale D5-160
O-320-B2B	Fuji-Heavy Industries	Fuji F-200
O-320-B2B	Uirapuru	Aerotec 122
O-320-B2C	Robinson Helicopters	R22-HP, Alpha, Beta
O-320-B2D	Maule	MX-7-160
O-320-B2E	Lycon	
O-320-B3A	Piper Aircraft	Apache PA-23-160
O-320-B3A	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B3B	Piper Aircraft	PA-23-160 Apache
O-320-B3B	Doyn Aircraft	Doyn-Cessna 170, 170A, 170B
O-320-B3B	Sud	Gardan (GY8O-160)
O-320-C1A	Piper Aircraft	Apache PA-23-160
O-320-C1A	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 (GY80)
O-320-D1A	Gyroflug	Speed Cancard
O-320-D1A	Grob	G115
O-320-D1D	Gulfstream	GA-7
O-320-D1F	Slingsby	T67 Firefly
O-320-D2A	Piper Aircraft	Cherokee PA-28S-160
O-320-D2A	Robin	Major DR400-140B
O-320-D2A	Robin	Chevalier DR-360, R-3140
O-320-D2A	S.0.C.A.T.A.	Tampico TB9
O-320-D2A	Slingsby	T67C Firefly
O-320-D2A	Daetwyler	MD-3-160
O-320-D2A	Nash Aircraft Ltd.	Petrel
O-320-D2A	Aviolight	P66D Delta
O-320-D2A	General Avia	Pinguino
O-320-D2B	Beechcraft	Musketeer A23

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-D2B	Piper Aircraft	Cherokee PA-28-160
O-320-D2J	Cessna	Skyhawk 172 P
O-320-D3G	Piper Aircraft	Cadet PA-28-161
O-320-D3G	Piper Aircraft	Warrior II
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
O-320-E2A	Piper Aircraft	Cherokee PA-28-150
O-320-E2A	Robin	Major (DR-340)
O-320-E2A	Robin	Sitar
O-320-E2A	Robin	Bagheera (GY-100-135)
O-320-E2A	S.O.C.A.T.A.	Super Rallye (MS-886)
O-320-E2A	S.O.C.A.T.A.	Rallye Commodore (MS-892)
O-320-E2A	Siai-Marchetti	S-202
O-320-E2A	F.F.A.	Bravo (AS-202/15)
O-320-E2A	Partenavia	Oscar (P66B)
O-320-E2A	Partenavia	Bucker (131 APM)
O-320-E2A	Aeromot	Paulistina P-56
O-320-E2A	Pezetel	Koliber 150
O-320-E2C	Beechcraft	Musketeer (B19)
O-320-E2C	Beechcraft	Musketeer III (M-23111)
O-320-E2C	M.B.B.	Monsun (BO-209-B)
O-320-E2D	Beechcraft	B19 Sport
O-320-E2D	Cessna	177
O-320-E2D	Cessna	172 I – M
O-320-E2D	Piper Aircraft	PA-28-151
O-320-E2D	Piper Aircraft	PA-28-140
O-320-E2D	Cessna	Cardinal (172.1, 177)
O-320-E2F	M.B.B.	Monsun (BO-209-B)
O-320-E2F	M.B.B.	Wassmer Pacific (WA-5 1)
O-320-E2G	Gulfstream	AA5 Traveler

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-320-E2G	Gulfstream	AA5A Cheetah
O-320-E3D	Beechcraft	B19 Sport
O-320-E3D	Piper Aircraft	Cherokee (140)
O-320-H2AD	Cessna	Skyhawk 172 N
O-320-H2AD	Partenavia	P-66C
O-320A2C	Varga	Kachina 2150
IO-320-B2A	Piper Aircraft	Twin Comanche (PA-30)
IO-320-B1C	Hi	
IO-320-B1C	Shear	
IO-320-B1C	Wing	
IO-320-B1D	Ted Smith Aircraft	Aerostar
IO-320-D1A	M.B.B.	Monsun (BO-209-C)
IO-320-D1B	M.B.B.	Monsun (BO-209-C)
IO-320-E1A	Champion	KCAB
IO-320-E1A	M.B.B.	Monsun (BO-209-C)
IO-320-E1B	Bellanca Aircraft	
IO-320-E2A	Champion	7 KCAB
IO-320-E2A	Champion Aircraft	Citabria
IO-320-E2B	Bellanca Aircraft	
IO/LIO-320-B1A	Piper Aircraft	PA-30 Comanche (2)
IO/LIO-320-B1A	Piper Aircraft	Twin Comanche (PA-39)
AIO-320-Bl B	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	
AEIO-320-E1A	Champion Aircraft	
AEIO-320-EIB	Bellanca Aircraft	
AEIO-320-EIB	Champion Aircraft	Decathalon (8KCAB-CS)
AEIO-320-E2B	Bellanca Aircraft	
AEIO-320-E2B	Champion Aircraft	Decathalon (8KCAB)
O-320-A1A	Riley Aircraft	Riley Twin
O-360-A1A	Beechcraft	Travel Air (95, B-95)

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A1A	Piper Aircraft	Comanche (PA-24)
O-360-A1A	Intermountain Mfg. Co.	Call Air (A-6)
O-360-A1A	Lake Aircraft	Colonial (C-2, LA-4, 4A or 4P)
O-360-A1A	Doyn Aircraft	Doyn-Cessna (170B, 172, 172A, 172B)
O-360-A1A	Mooney Aircraft	Mark "20B" (M-20B)
O-360-A1A	Earl Horton	Pawnee (Piper PA-25)
O-360-A1A	Dinfia	Ranquel (IA-51)
O-360-A1A	Neiva	(IPD-5901)
O-360-A1A	Regente	(N-591)
O-360-A1A	Wassmer	Super 4 (WA-50A)
O-360-A1A	Wassmer	Sancy (WA-40)
O-360-A1A	Wassmer	Baladou (WA-40)
O-360-A1A	Wassmer	Pariou (WA-40)
O-360-A1A	Sud	Gardan (GY-180)
O-360-A1A	Bolkow	(207)
O-360-A1A	Partenavia	Oscar (P-66)
O-360-A1A	Siai-Marchetti	(S-205)
O-360-A1A	Procaer	Picchio (F-15-A)
O-360-A1A	S.A.A.B.	Safir (91-D)
O-360-A1A	Malmo	Vipan (MF-1OB)
O-360-A1A	Aero Boero	AB-180
O-360-A1A	Beagle	Airedale (A-109)
O-360-A1A	DeHavilland	Drover (DHA-3MK3)
O-360-A1A	Kingsford-Smith	Bushmaster (J5-6)
O-360-A1A	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)
O-360-A1D	Lake Aircraft	Colonial (LA-4, 4A or 4P)
O-360-A1D	Doyn Aircraft	Doyn-Beech (Beech 95)
O-360-A1D	Mooney Aircraft	Master 21 (M-20E)
O-360-A1D	Mooney Aircraft	Mark 20B, 20D, (M2OB, M2OC)
O-360-A1D	Mooney Aircraft	Mooney Statesman (M-20G)

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A1D	Dinfia	Querandi (IA-45)
O-360-A1D	Wassmer	(WA-50)
O-360-A1D	Malmo	Vipan (MFI-10)
O-360-A1D	Cessna Aircraft	Skyhawk
O-360-A1D	Doyn Aircraft	Doyn-Piper PA-23-160
O-360-AIF6	Cessna Aircraft	Cardinal
O-360-AIF6D	Cessna Aircraft	Cardinal 177
O-360-AIF6D	Teal III	TSC (1A3)
O-360-A1G6	Aero Commander	
O-360-A1G6D	Beech Aircraft	Duchess 76
O-360-AIH6	Piper Aircraft	Seminole (PA-44)
O-360-Al LD	Wassmer	Europa WA-52
O-360-AIP	Aviat	
O-360-AIP	Husky	
O-360-A2A	Center Est Aeronautique	Regente (DR-253)
O-360-A2A	S.O.C.A.T.A.	Rallye Commodore (MS-893)
O-360-A2A	Societe Aeronautique Normande	Mousquetaire (D-140)
O-360-A2A	Bolkow	Klemm (Kl -1 07C)
O-360-A2A	Partenavia	Oscar (P-66)
O-360-A2A	Beagle	Husky (D5-180) (J1-U)
O-360-A2D	Piper Aircraft	Comanche PA-24
O-360-A2D	Piper Aircraft	Cherokee C PA-28-180
O-360-A2D	Mooney Aircraft	Master 21 (M-20D)
O-360-A2D	Mooney Aircraft	Mark 21 (M-20E)
O-360-A2E	Std. Helicopter	
O-360-A2F	Aero Commander	Lark(100)
O-360-A2F	Cessna Aircraft	Cardinal
O-360-A2G	Beech Aircraft	Sport
O-360-A3A	C.A.A.R.P.S.A.N.	(M-23111)
O-360-A3A	Societe Aeronautique Normande	Jodel (D-140C)
O-360-A3A	Robin	Regent (DR400/180)
O-360-A3A	Robin	Remorqueur (DR400/180R)

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A3A	Robin	R-3170
O-360-A3A	S.O.C.A.T.A.	Rallye 180GT
O-360-A3A	S.O.C.A.T.A.	Sportavia Sportsman (RS-180)
O-360-A3A	Norman Aerospace Co.	NAC-1 Freelance
O-360-A3A	Nash Aircraft Ltd.	Petre
O-360-A3AD	S.O.C.A.T.A.	TB-l0
O-360-A3AD	Robin	Aiglon (R-l 180T)
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-A4K	Beech Aircraft	Sundowner 180
O-360-A4M	Piper Aircraft	Archer II PA-28-18
O-360-A4M	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-CIE	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
O-360-C2E	Bellanca Aircraft	Scout 8GCBC FP
O-360-C4F	Maule	MX-7-180A
O-360-C4P	Penn Van	Super Cub Conversion
O-360-F1A6	Cessna Aircraft	Cutlass RG
O-360-J2A	Robinson	R22
IO-360-B1A	Beech Aircraft	Travel-Air (B-95A)
IO-360-B1A	Doyn Aircraft	Doyn-Piper PA-23-200
IO-360-B1B	Beech Aircraft	Travel-Air (B-95B)

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-360-B1B	Doyn Aircraft	Doyn-Piper PA-23-200
IO-360-B1B	Fuji	FA-200
IO-360-B1D	United Consultants	See-Bee
IO-360-BIE	Piper Aircraft	Arrow PA-28-180R
IO-360-BIF	Utva	75
IO-360-B2E	C.A.A.R.P.	C.A.P. (10)
IO-360-BIF6	Great Lakes	Trainer
IO-360-B1G6	American Blimp	Spector 42
IO-360-B2F6	Great Lakes	Trainer
LO-360-A1 G6D	Beech Aircraft	Duchess
LO-360-A1H6	Piper Aircraft	Seminole (PA-44)
IO-360-EIA	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
IO-360-M1B	Lancair	360
AIO-360-B1B	Moravan	Zim (Z-526-L)
AEIO-360-B1G6	Great Lakes	
AEIO-360-B2F	Mundry	CAP-10
AEIO-360-B4A	Pitts	S-1S
AEIO-360-HIA	Bellanca Aircraft	Super Decathalon (8KCAB-180)
AEIO-360-HIB	American Champion	Super Decathalon
HO-360-B1A	Hughes Tool Co.	269A
HO-360-B1B	Hughes Tool Co.	269A
HO-360-C1A	Schweizer	300C
HIO-360-A1A	Hughes Tool Co.	300
H1O-360-A1B	Silvercraft	
HIO-360-B1A	Hughes Tool Co.	Military 269-A-1
HlO-360-BIB	Hughes Tool Co.	269A
HIO-360-D1A	Hughes Tool Co.	269C, 300C
HIO-360-D1A	Schweizer	300C
HIO-360-E1AD	Enstrom Helicopter	F28C
HIO-360-E1BD	Enstrom Helicopter	F28C

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
HIO-360-F1AD	Enstrom Helicopter	Faicon F28F
HIO-360-F1AD	Enstrom Helicopter	Shark 280FX
HIO-360-F1AD	Enstrom Helicopter	Sentine F28F-P
HIO-360-G1A	Schweizer	CB
LHIO-360-C1A	Silvercraft	SH-4 Helicopter
LHIO-360-C1B	Silvercraft	SH-3 Helicopter
O-540-AIA	Rhein-Flugzeugbau	RF-1
O-540-AIA5	Piper Aircraft	Comanche PA-24-150
O-540-AIA5	Helio	Military H-250
O-540-AIA5	Yoeman Aviation	YA-1
O-540-A1B5	Piper Aircraft	Aztec PA-23-250
O-540-A1B5	Piper Aircraft	Comanche PA-24-250
O-540-AIC5	Piper Aircraft	Comanche PA-24-250
O-540-A1D	Found Bros.	FBA-2C
O-540-A1D	Dornier	DO-28-B1
O-540-AID5	Piper Aircraft	Aztec PA-23 -250
O-540-AID5	Piper Aircraft	Comanche PA-24-250
O-540-AID5	Piper Aircraft	Military Aztec U-1 1A
O-540-AID5	Dornier	DO-28
O-540-A2B	Aero Commander	500
O-540-A2B	Mld-States Mfg. Co.	Twin Courier 11-500, U-5
O-540-A3D5	Piper Aircraft	Navy Aztec PA-23-250
O-540-B1A5	Piper Aircraft	Apache PA-23-235
O-540-BIB5	Piper Aircraft	Cherokee PA-24-250
O-540-BIB5	Doyn Aircraft	Doyn-Piper PA-24-250
O-540-BID5	Wassmer	WA-421
O-540-B2B5	Piper Aircraft	Pawnee PA-24-235
O-540-B2B5	Piper Aircraft	Cherokee PA-28-235
O-540-B2B5	Piper Aircraft	Aztec PA-23-235
O-540-B2B5	Intermountain Mfg. Co.	Call Air A-9
O-540-B2B5	Rawdon Bros.	Rawdon T-l
O-540-B2B5	S.O.C.A.T.A.	Rallye 235CA
O-540-B2C5	Piper Aircraft	Pawnee PA-24-235

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-540-B4B5	Piper Aircraft	Cherokee PA-28-235
O-540-B4B5	Embraer	Corioca EMB-710
O-540-B4B5	S.O.C.A.T.A.	RalIye 235GT
O-540-B4B5	S.O.C.A.T.A.	Rallye 235C
O-540-B4B5	Maule	Star Racket MX-7-235
O-540-B4B5	Maule	Super Rocket M-6-235
O-540-B4B5	Maule	Super Std. Racket M-7-235
O-540-E4A5	Piper Aircraft	Comanche PA-24-260
O-540-E4A5	Aviamilano	Flamingo F-250
O-540-E4A5	Siai-Marcbetti	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
O-540-E4C5	Pilatus Britten-Norman	Islander BN-2A-27
O-540-E4C5	Pilatus Britten-Norman	Islander II BN-2B-26
O-540-E4C5	Pilatus Britten-Norman	Islander BN-2A-2 1
O-540-E4C5	Pilatus Britten-Norman	Trislander BN-2A-Mark 111-2
O-540-F1B5	Omega Aircraft	BS-12D1
O-540-F1B5	Robinson	R-44
O-540-G1A5	Piper Aircraft	Pawnee PA-25-260
O-540-H1B5D	Aero Boero	260
O-540-H2A5	Embraer	Impanema "AG"
O-540-H2A5	Gippsland	GA-200
O-540-H2B5D	Aero Boero	260
O-540-J1A5D	Maule	Star Rocket MX-7-235
O-540-J1A5D	Maule	Super Rocket M-6-235
O-540-J1A5D	Maule	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
IO-540-A1A5	Doyn Aircraft	Doyn-Piper PA-23-250
IO-540-A1A5	Riley Aircraft	Rocket-Cessna 310
IO-540-A1A5	Dornier	DO-8-B 1

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-540-A1A5	Siai-Marchetti	
IO-540-C1B5	Piper Aircraft	Aztec B PA-23-250
IO-540-C1B5	Piper Aircraft	Comanche PA-24-250
IO-540-C1C5	Riley Aircraft	Turbo-Rocket
IO-540-C4B5	Piper Aircraft	Aztec C PA-23-250
IO-540-C4B5	Piper Aircraft	Aztec F
IO-540-C4B5	Wassmer	WA4-2 1
IO-540-C4B5	Avions Pierre Robin	HR 100/250
IO-540-C4B5	Bellanca Aircraft	Aries T-250
IO-540-C4B5	Aerofab	Renegade 250
IO-540-C4D5	S.O.C.A.T.A.	TB-20
IO-540-C4DSD	S.O.C.A.T.A.	Trinidad TB-20
IO-540-D4A5	Piper Aircraft	Comanche PA-24-260
IO-540-D4A5	Siai-Marchetti	SF-260
IO-540-D4B5	Cerva	CE-43 Guepard
IO-540-E1A5	Aero Commander	500-E
IO-540-EIB5	Aero Commander	500-U
IO-540-EIB5	Shrike	500-S
IO-540-EIB5	Poeschel	P-300
IO-540-GIA5	Doyn Aircraft	Doyn-Piper PA-23-250
IO-540-GIA5	Riley Aircraft	Turbo-Aztec
IO-540-GIA5	DeHavilland	Heron Conversion
IO-540-GIB5	T.R. Smith Aircraft	Aerostar 600
IO-540-GIB5	Found Bros.	Centennial 100
IO-540-G1C5	Intermountain Mfg. Co.	Call Air 1AR821
IO-540-G1DS	Intermountain Mfg. Co.	IAR-822, IAR-826, IAR-823
IO-540-G1F5	Bellanca Aircraft	
IO-540-N lA5	Piper Aircraft	Comanche 260
IO-540-T4A5D	General Aviation	Model 114
IO-540-T4B5	Commander	1 14B
IO-540-T4B5D	Rockwell	114
IO-540-T4C5D	Lake Aircraft	Seawolf
IO-540-WIA5	Maule	MX-7-235, MT-7-235, M7235

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
IO-540-W1A5D	Maule	Star Rocket MX-7-235
IO-540-W1A5D	Maule	Super Rocket M-6-235
IO-540-W1A5D	Maule	Super Std. Rocket M-7-235
IO-540-W3A5D	Schweizer	Power Glider
IO-540-AB1A5	Cessna Aircraft	Skylane C-182
AEIO-540-D4A5	Christen	Pitts S-2S, S-2B
AEIO-540-D4A5	Siai-Marchetti	SF-260
AEIO-540-D4A5	H.A.L.	HPT-32
AEIO-540-D4A5	Slingsby	Firefly T3A
AEIO-540-D4B5	Moravan	Zlin-50L
AEIO-540-D4B5	H.A.L.	HPT-32
AEIO-540-D4D5	Burkhart Grob	Grob G, 1 15T Aero

These engine models are known to be installed in the aircraft models listed in the following Table 5:

Table 5 – Superior Air Parts, Inc. -related Aircraft Models

Engine Model	Aircraft Manufacturer	Aircraft Model Designation
O-360-A3A2	American Champion	7GCBC & 7GCAA

Unsafe Condition

(d) This AD results from comments from the Public on the existing AD. We are issuing this AD to prevent cylinder separation that can lead to engine failure, a possible engine compartment fire, and damage to the airplane.

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.

Determining Which Cylinder Assemblies Are Installed

(f) If aircraft engine records do not list the P/N of the cylinder installed during engine overhaul or repair, visually inspect the cylinders. The affected SAP cylinder head barrel flanges are marked: SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, or SA55000-A20P or SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, or SL36006W-A21P.

Cylinder Assembly Removal

(g) Remove all cylinder assemblies with a serial number of 47LE053559 through 47LF053643, or 47SE054212 through 47SF054251, or 52D0531708 through 52H0532197, or 55E05223 through 55G05289, or 32WE059006 through 32WF059067, or 32WHE05379 through 32WHE05392, or 326WF055517 through 326WF055532, or 36TWF05430 through 36TWG05453, or 36WF058058 through 36WG058124, or 366WE056944 through 366WF057061, or 366WF057150 through 366WF057232, or 366WF057259 through 366WG057534, or 366WG057556, 366WG057569, 366WG057598, 366WG057616, 366WG057621, 366WG057624, or 366WJ057770 through 366WJ057776, or 366WL058131 no later than 150 hours total time-in-service (TIS) to preclude cylinder head fatigue failure and separation at the head-to-barrel threaded interface.

(h) For cylinder assemblies with more than 150 hours total TIS on the effective date of this AD, a 10 hour TIS extension is permitted for the purpose of flying the aircraft to a location where maintenance action can be done to meet the requirements of this AD.

(i) After the effective date of this AD, do not install any cylinder assemblies with P/Ns SA47000L-A1, SA47000L-A20P, SA47000S-A1, SA47000S-A20P, SA47000S-A21P, SA52000-A1, SA52000-A20P, SA52000-A21P, SA52000-A22P, SA52000-A23P, SA55000-A1, or SA55000-A20P,or SL32000W-A1, SL32000W-A20P, SL32000W-A21P, SL32000WH-A1, SL32000WH-A20P, SL32006W-A1, SL32006W-A20P, SL32006W-A21P, SL36000TW-A1, SL36000TW-A20P, SL36000TW-A21P, SL36000TW-A22P, SL36000W-A1, SL36000W-A20P, SL36000W-A21P, SL36006W-A1, SL36006W-A20P, or SL36006W-A21P with a serial number of 47LE053559 through 47LF053643, or 47SE054212 through 47SF054251, or 52D0531708 through 52H0532197, or 55E05223 through 55G05289, or 32WE059006 through 32WF059067, or 32WHE05379 through 32WHE05392, or 326WF055517 through 326WF055532, or 36TWF05430 through 36TWG05453, or 36WF058058 through 36WG058124, or 366WE056944 through 366WF057061, or 366WF057150 through 366WF057232, or 366WF057259 through 366WG057534, or 366WG057556, 366WG057569, 366WG057598, 366WG057616, 366WG057621, 366WG057624, or 366WJ057770 through 366WJ057776, or 366WL058131 into any engine.

Alternative Methods of Compliance

(j) The Manager, Special Certification Office, FAA, Rotorcraft Directorate, 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

(k) For aircraft with engines that have between 140 hours and 150 hours TIS only, special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be done. Special flight permits may not be issued for aircraft that have utilized the provisions of paragraph (h) of this AD.

Related Information

(l) Superior Air Parts, Inc. Mandatory Service Bulletin B06-01, Rev. E, dated January 24, 2007, contains information related to the subject of this AD.

(m) Contact Jurgen Priester, Aerospace Engineer, Special Certification Office, FAA, Rotorcraft Directorate, Southwest Regional Headquarters, 2601 Meacham Blvd., Fort Worth, Texas 76137; e-mail: Jurgen.E.Priester@faa.gov; telephone (817) 222-5159; fax (817) 222-5785 for more information about this AD.

Material Incorporated by Reference

(n) None.

Issued in Burlington, Massachusetts, on March 23, 2007.
Peter A. White,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. E7-5915 Filed 3-30-07; 8:45 am]

BLANK

LUFTFARTSTILSYNET
1. TILSYNSAVDELING
Postboks 8050 Dep., 0031Oslo
Besøksadresse:
Rådusgata 2, Oslo
Telefon : 23 31 78 00
Telefax : 23 31 79 95
E-post: Postmottak@caa.dep.no

LUFTDYKTIGHETSPÅBUD (LDP)

MOTORER

CONTINENTAL - 52

Med hjemmel i lov av 11. juni 1993 nr. 101 om luftfart, kap. XV § 15-4 jf. kap. IV § 4-1 og Samferdselsdepartementets bemyndigelse av 25. mars 1994, fastsetter Luftfartstilsynet følgende forskrift om luftdyktighet.

2007-032 **" FAILURE OF STARTER ADAPTER ASSEMBLY AND CRANCKSHAFT GEAR"**

Påbudet gjelder:

Teledyne Continental Motors, motorer i GTSIO-520 serien som beskrevet i FAA AD 2007-05-15.

Påbudet omfatter:

Utfør tiltak som beskrevet i vedlagte kopier av FAA AD 2007-05-15.

Anm. Denne LDP erstatter LDP 2005-057 som var basert på FAA AD 2005-20-04.

Tid for utførelse:

Til de tider og intervaller som er beskrevet i vedlagte kopi av FAA AD 2007-05-15, med virkning fra denne LDPs gyldighetsdato.

Referanse:

FAA AD 2007-05-15.

Gyldighetsdato:

2007-05-02.

2007-05-15 Teledyne Continental Motors: Amendment 39-14976. Docket No. FAA-2005-20850; Directorate Identifier 2005-NE-05-AD.

Effective Date

(a) This airworthiness directive (AD) becomes effective April 16, 2007.

Affected ADs

(b) This AD supersedes AD 2005-20-04, Amendment 39-14297.

Applicability

(c) This AD applies to Teledyne Continental Motors (TCM) GTSIO-520 series reciprocating engines. These engines are installed on, but not limited to, Twin Commander (formerly Aero Commander) model 685, Cessna model 404, 411 series, and 421 series, British Aerospace, Aircraft Group, Scottish Division model B.206 series 2 and Aeronautica Macchi model AM-3 airplanes.

Unsafe Condition

(d) This AD results from an error discovered in AD 2005-20-04. We are issuing this AD to prevent failure of the starter adapter assembly and or crankshaft gear, resulting in failure of the engine and possible forced landing.

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.

Starter Adapter Shaft Gear Needle Bearing Replacement

(f) If, during an inspection required by paragraph (g), (h), (i), or (j) of this AD, you find needle bearing, part number (P/N) 537721, installed in the crankcase, replace it with a serviceable bushing, P/N 654472 or equivalent FAA approved bearing, before reassembling components. Use the bushing installation procedure specified in Part 4 of TCM Mandatory Service Bulletin (MSB) No. MSB94-4G, dated October 31, 2005.

Unscheduled Inspections for Rough-Running Engines

(g) For any engine that experiences rough running conditions regardless of time-in-service (TIS), do the following:

(1) Before further flight, perform the inspection procedures specified in Part 1 and Part 3 of TCM MSB No. MSB94-4G, dated October 31, 2005, and replace components as necessary.

(2) An engine is considered rough-running if there is a sudden increase in the perceived vibration levels that cannot be cleared by adjustment of the engine controls; particularly the fuel mixture setting. Information on rough running engines can be found in the aircraft manufacturer's Airplane Flight Manual, Pilot's Operating Handbook, or Aircraft Owners Manual.

100-Hour and Annual Inspections

(h) For any engine that has been inspected using paragraph (h) of AD 2005-20-04 and the 100-hour inspection procedures or 100 hour TIS intervals or annual inspection procedures, continue the inspections as follows:

(1) Perform the inspection procedures specified in Part 2 of TCM MSB No. MSB94-4G, dated October 31, 2005 and replace components as necessary at each 100 hour TIS interval (plus or minus 10 hours TIS) or annual inspection, whichever occurs first.

(2) Thereafter, at each 100 hour TIS interval (plus or minus 10 hours TIS) perform repetitive inspections and component replacements as specified in paragraph (h)(1) of this AD.

(3) If the inspection is performed at more than 100 hour intervals, subtract the additional hours from the next scheduled 100 hour inspection.

(i) For any engine that has not been inspected using paragraph (h) of AD 2005-20-04, within 25 hours TIS or at the annual inspection, whichever occurs first, do the following:

(1) Perform the inspection procedures specified in Part 2 of TCM MSB No. MSB94-4G, dated October 31, 2005 and replace components as necessary.

(2) Thereafter, at each 100-hour TIS interval (plus or minus 10 hours TIS) perform repetitive inspections and component replacements as specified in paragraph (i)(1) of this AD.

(3) If the inspection is performed at more than 100 hour intervals, subtract the additional hours from the next scheduled 100 hour inspection.

Starter Adapters With 400 Hours or More Time-In-Service (TIS) or Unknown TIS

(j) For any starter adapter with 400 hours or more TIS or unknown TIS on the effective date of this AD, do the following:

(1) Within 25 hours TIS, perform the inspection procedures specified in Part 3 of TCM MSB No. MSB94-4G, dated October 31, 2005, and replace components as necessary.

(2) Thereafter, at 400-hour TIS intervals, (plus or minus 10 hours TIS), perform repetitive inspections and component replacements specified in Part 3 of TCM MSB No. MSB94-4G, dated October 31, 2005, and replace components as necessary.

Starter Adapters With Fewer Than 400 Hours TIS

(k) For any starter adapter with fewer than 400 hours TIS on the effective date of this AD, do the following:

(1) Upon accumulation of 400 hours TIS, (plus or minus 10 hours TIS), perform the inspection procedures specified in Part 3 of TCM MSB No. MSB94-4G, dated October 31, 2005, and replace components as necessary.

(2) Thereafter, at 400-hour TIS intervals, (plus or minus 10 hours TIS), perform repetitive inspections and component replacements, as specified in Part 3 of TCM MSB No. MSB94-4G, dated October 31, 2005, and replace components as necessary.

Installation of TCM Service Kit, EQ6642 or EQ6642R

(l) At the next engine overhaul or starter adapter replacement after the effective date of this AD, whichever occurs first, do the following:

(1) Install TCM service kit, P/N EQ6642 (new) or EQ6642R (rebuilt). Use the service kit installation procedures specified in Part 5 of TCM MSB No. MSB94-4G, dated October 31, 2005.

(2) Continue performing the inspections and component replacements specified in paragraphs (g), (h), (i), (j) and (k) of this AD.

Prohibition of Special Flight Permits for Rough-Running Engines

(m) Special flight permits are prohibited for rough-running engines described in paragraph (g)(2) of this AD.

Alternative Methods of Compliance (AMOCs)

(n) The Manager, Atlanta Aircraft Certification Office, FAA, 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

(o) None.

Material Incorporated by Reference

(p) You must use TCM MSB No. MSB94-4G, dated October 31, 2005, to perform the actions required by this AD. The Director of the Federal Register approved the incorporation by reference of this service bulletin in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Contact Teledyne Continental Motors, Inc., PO Box 90, Mobile, AL 36601; telephone (251) 438-3411 for a copy of this service information. For the Teledyne Continental Motors Web site: Go to http://www.TCMLINK.com. You may review copies at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued in Burlington, Massachusetts, on February 26, 2007.
Peter A. White,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
[FR Doc. E7-3832 Filed 3-9-07; 8:45 am]

BILLING CODE 4910-13-P