B.G.A. TECHNICAL COMMITTEE

TECHNICAL NEWSHEET

TNS 3/4/86

PART 1 (AIRWORTHINESS "AGGRO". Please add to the 1986 Pink Pages)

1.1. Pilatus B4 Service Bulletin 1004 dated July 1985 request actions in request of AIRBRAKE MALFUNCTION

a) Installation of travel stops
b) Inspection for damage to rivets, securing fork ends in airbrake control rods.

(Ref. also BGA TNS/12/85). Copy of SB 1004 available from B.G.A. Office.

1.2. Schempp-Hirth - Cirrus - Speed Brake Rod-end failure. Tech Note 265-8 requiring replacement of 6mm with 8mm threaded components has been omitted from the 1986 B.G.A. Pink Pages. Ref also TNS/3/4/85. Details from Southern Sailplanes (0488-71774).

1.3. Cirrus & Cirrus VTC Extension of Service Time. Tech Note 265-9 date 9/1/86 extends the life to 6000 hrs (subject to the multi-step inspection schedule to be approved by LBA and issued shortly). Flight Manual amends dated Nov. 1985 also apply. Details from Southern Sailplanes. (0488-71774).

1.4. Nimbus 2 & Variants. T/Note 286-22 extends the service life (subsequent to fatigue tests of wing spar sections), to 6000 hrs, subject to multi-step inspection. Details from Southern Sailplanes. (0488-71774).

1.5. Mini-Nimbus H.S.7. and 'B' & 'C' Variants T/Note 328-7 extends service life to 6000 hrs subject to multi-step inspection. Details from Southern Sailplanes.

1.6. Grob 109B - Motor Glider Water collected in Elevator Mass Balance. Extract from GASIL 2/86 has been reported to Grob for action.

1.7. Bellanca 8GCBC Scout Tailplane attachment bolts - nut missing. Extract from GASIL 2/86 is self-explanatory.

1.8. Ventus bT T/Note 825-4 requires Engine operating hours to be logged. CAA Notice No. 35 puts all engines in Private Category operation "on condition". T/Note 825-4 also extends the "Service Life" to 6000 hrs, subsequent to fatigue-testing of wing spar sections. A multi-step inspection is required at 3000 hrs, and thereafter at 1000 hr intervals.

1.9. PA-18 Club Aircraft. Recurring ADs

a) AD 60-10-08 Fuel cock detent, every 100 hrs. (or each time you turn the fuel cock!).

b) AD 68-05-01 Exhaust systems (50 hrs). Clubs who perform their own maintenance checks are reminded that the above ADs must be recorded and signed for by PPL holders holding special CAA dispensation from BGA Office (ADs copied herewith).

1.10 Schweitzer Banner Towing Hooks used for glider towing. A product improvement modification devised by Borders G.C. which introduces a sealed ball-race to reduce the pull-off loads under high cable tension, should be embodied in all such hooks. Details from BGA office.

1.11. ASK 16 - Wheels - "possible breakage and loss of bolts". AD 76-11 and Schleicher T/Note 8, requires action to remedy this defect. (Omitted from BGA Compendium). Extracted from CAA Foreign ADs Vol III.

1.12. D.G. 400. T/Note 826/12 introduces Flight Manual Revisions which are "CAA Mandatory", and include modifications to ignition system, fuel valve, powerplant electrics, and the fuel system to accommodate alcohol in Mogas. (Details from McLean Aviation (0904-83653).

1.13 Blaniks

a) Rudder cables found damaged at pulleys below the floor.

b) Control Rod Ends - threads not in safety. No safety inspection holes are provided. It is therefore necessary to carefully check the number of threads in safety before wire-locking. Reported by Inkpen G.C.

1.14. Tost Glider Hooks It now transpires that Tost make glider tow hooks with both 83 degree and 90 degree internal hook geometry! The latter are normally supplied specifically to Grob and are believed to be installed in most of their types. The 90 degree hook may be the cause of hang-ups on Twin Accros as reported by H.Q. Air Cadets. There are no external markings or part number identifiers. Chiltern Sailplanes (0494-445854) are attempting to unscramble this situation. In the meanwhile hook swapping between different types may create problems?

PART 2 GENERAL MATTERS

2.1. INCLINOMETERS. INOGON LEVEL and ANGLE INDICATORS are available from Airport and Aircraft Equipment Ltd. (0243-775648).

2.2. G.R.P. (Aerospace) Basic Courses The Marine Builders Training Trust, Hazel Rd, Woolston, Southampton SO2 7GB (0703-446824) offer 5 day courses at £147.50 (inc VAT), excluding accommodation. The course qualifies for City & Guilds Certificate of skills for GRP Laminators, and includes Health & Safety at Work Act. 1974 requirements.

This course would not qualify for BGA major repair (Senior insepector rating) without subsequent experience of "major" repairs. It should prove to be a valuable "basic" GRP course. Course vacancies may be difficult to obtain in 1986, because of mass bookings by the UK airlines!

2.3. Motor Glider C of A Renewals

Please note the following:

a) Propellers which are not type approved must not be fitted.

b) All Mandatory Directives must be checked.

c) The LAMS (Blue Book) must be included together with d) Expired C of A.

e) BGA Form 267 (Airframe inspection)

f) BGA Form 267M (Engine inspection)

g) BGA Form 267 FT (Flight Test Report)

h) CAA Form AD 202L, accurately compiled, including flying hours since last C of A renewal.

j) Cheque (to the BGA) at the current CAA rate of £29 per 500 kgs (or part thereof) per year of C of A validity (normally 3 years) (plus £43 for the first issue of a C of A).

Since you have 3 years (36 months!) in which to plan your next renewal (and may submit your renewal 62 days before expiry (LAMS page 5/1) please make a special effort to avoid "crisis" renewals at the last moment. Both the BGA and the CAA reserve the right to take a proper time to process your paperwork!

2.4. USA Spares Prices (Airframe & Engines). Mostly because of increased product liability premiums, price increases of 16% have been announced. Engine overhaul (and operating) cost predictions need to be reviewed a.s.a.p.!

2.5. Weak-Link Ratings Clubs are reminded of the B.G.A. Technical Committee recommendation to adopt an additional higher rated weak-link (1600 lbs) for those glider types whose certification (Flight Manual) authorises such a rating.

Insurance Policies - Please read the small print!

The CTO has recently become embroiled in differences of interpretation over the Insurance Cover thought to have been provided to a club in respect of its tugs. Furthermore, there is increasing evidence that some insurers are devoting more time to establishing "loop-holes", more usually described as "technicalities". All clubs should examine their policies, and make their contents known to those who do the flying! If you do not like the small print clauses, then re-negotiate.

R.B. STRATTON,
CHIEF TECHNICAL OFFICER
APRIL 1986

5. PILOTS

P

A paper presented at a Flight Safety Foundation seminar by a United States psychologist says that a typical pilot personality profile shows:

"an irresistable need to establish superiority in terms of intelligence or quickness or being right. A pilot 'one ups', points out mistakes, thinks he's better informed, and has great difficulty in acknowledging when he is wrong. The chances are that he is indeed more intelligent than average, but he presents his ideas in such a way that people think he is a pain in the back even when he is right, perhaps especially when he is right".

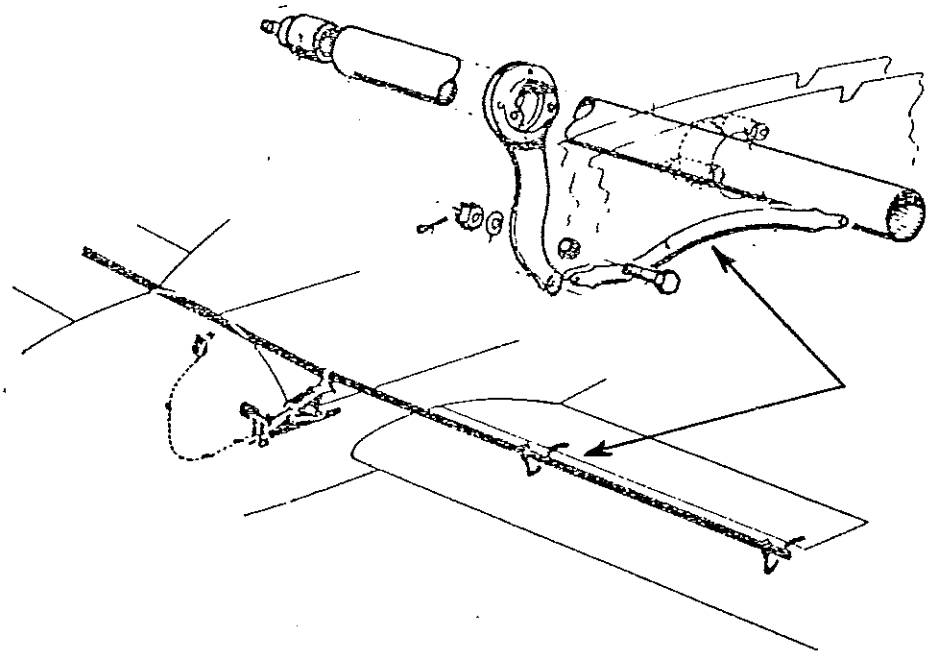
6. ASYMMETRIC FLAP

P/E

Aircraft : Aerospatiale Rallye
Date : May 1985 (received November 1985)

When turning finals the flaps were selected to 30° (full down) but the right-hand flap did not move. Excessive right roll was corrected by full opposite aileron. The flaps were retracted for a flapless landing. The aircraft had been flown earlier in the day without problem and the pre-flight checks had been normal. The aircraft had flown for 1299 hours with 27 since inspection. The pilot is thought to have been a student.

The cause was failure of the pushrod from the flap torque shaft, and may have been caused by people standing on the NO STEP area of the flaps. The operator has now marked the area with larger letters and a black and yellow cross hatch.



CAA Comment:
It would seem to be a good idea for all Rallye aircraft (and others) to be similarly marked. It should be noted that there is no asymmetric flap protection on most general aviation aircraft since most were certificated to US Requirements that did not contain this important feature. Airworthiness Notice No 15 "United Kingdom Certification of Foreign Aircraft of MTWA not Exceeding 5700 kg" para 2.2.1 explains the CAA philosophy on imported light aircraft. The item in GASIL 12/85 to a C172 should also be noted - the pilot had to use reduced power to regain control.

9. MAGNETO PROBLEMS

TNS/3/86 [E]

Aircraft : Cessna F152
Date : October 1985
Engine : Lycoming O-235

SLICK MAGNETOS.

The pilot returned with a rough running engine. The fault was traced to the left-hand magneto, which was replaced, having operated for 1693 hours. About 14 hours later the right-hand magneto had to be replaced after a report of roughness. As the failures appeared to be similar the Slick 4281 magnetos were stripped. The first failure was due to the rotor arm parting from the driving gear and in the second failure the rotor arm had started to tear its way from the plastic driving gear.

On this magneto a timing pin is inserted through the rear of the magneto and through the plastic driving gear prior to fitment to the engine. Care must be taken when rotating the magneto to fit the pin, since it is possible to damage the rotor arm if the magneto is forced.

10. SHIMMY DAMPER BUSH MISSING

[E]

Could APPLY ALL SHIMMY DAMPERS.

Aircraft : Cessna 172
Date : October 1985

The pilot reported severe nose-wheel shimmy. The piston roll pin had sheared, probably because the bush (Part No 0543047-1) was missing from the upper torque link pivot. The missing bush probably initiated lost motion allowing shimmy to damage the damper. The aircraft had flown 1420 hours.

5. WATER COLLECTED

[P/E]

GASIL 2/86

Aircraft : Grob G109B Motor Glider
Date : December 1985

When the pilot was inspecting the aircraft prior to flight he noticed that a large quantity of water had collected between the elevator mass balance and the elevator spar. The upper surface elevator sealing tape was missing. No drain holes are provided. A similar but lesser problem may exist with the aileron mass balance attachment but the dihedral angle will allow most of the water to drain over the inboard end of the aileron.

If the water were to freeze, the effect on control surface balance and flutter characteristics could be considerable.

CAA Comment:
Proper gap sealing and a check for water accumulation before flight should be made. The manufacturer has agreed to include drain holes in future G109B aircraft and will inform owners perhaps under TM 817-20 on how to drill drain holes in the elevator of in-service aircraft.

9. SPECIAL PURPOSE EQUIPMENT ON AIRCRAFT BELOW 2730 kg MTWA (LAMS).

[E]

Whenever any special equipment, such as that used for glider or banner towing is fitted to an aircraft, any necessary maintenance requirements should be incorporated into the LAMS schedule for the aircraft. The next issue of LAMS will include reference to this.

BGA NOTE. TUG TOW HOOKS REQUIRE MAINTENANCE!!

16. AERONAUTICAL CHARTS REVISION [P]

The following have been revised and re-issued:-

Southern England	Sheet 16	1/4 Million	Edition 11	Aero Info to 21 Nov 85
South West England	Sheet 15	1/4 Million	Edition 10	Aero Info to 19 Dec 85
Southern England & Wales	Sheet 2171CD	1/2 Million	Edition 11	Aero Info to 5 Dec 85

When you get your new map, don't forget item 11 in this issue, the Bristol Airspace.

17. UNKNOWN DRAIN HOLE BLOCKED IN PITOT-STATIC HEAD [E]

Aircraft : Britten Norman BN2A MK3 Trislander (Applicable to other aircraft)
Date : November 1985

The ASI flickered during cruise, so it was removed, the lines blown through and the pitot heat checked.

On a later flight the ASI went to zero but after being left in the hangar overnight to defrost, it had returned to normal. The lines were reverse blown through with nitrogen as it was then found that the drain hole between the pitot and static sides within the pitot head was blocked. The hole was cleared and the system was then satisfactory. There is no indication of this drain hole in any documentation so the operator is amending his Maintenance Schedule. The pitot is an AVIMO DU 130-24. It is thought water was drawn in and up the pitot line instead of falling through the drain and out of the head. The water fell back to the bottom of the pitot line in the aft end of the pitot head, which is not heated by the pitot heater, where it froze.

CAA Comment:
This pitot head is fitted to several other general aviation and ex-military aircraft of UK and foreign manufacture. The CAA is investigating.

18. HIGH WIND WHILE TAXYING [P]

Aircraft : Cessna 172
Date : April 1985

SIMILAR ACCIDENT TO BEAGLE "HUSKY" TUG.

The aircraft was being taxied from a maintenance area back to the tie-down area. Owing to strong winds the pilot asked for, but was unable to obtain, wing walkers. While taxying, the aircraft was turned on its back causing wing, fuselage and tail damage and shock loading the engine.

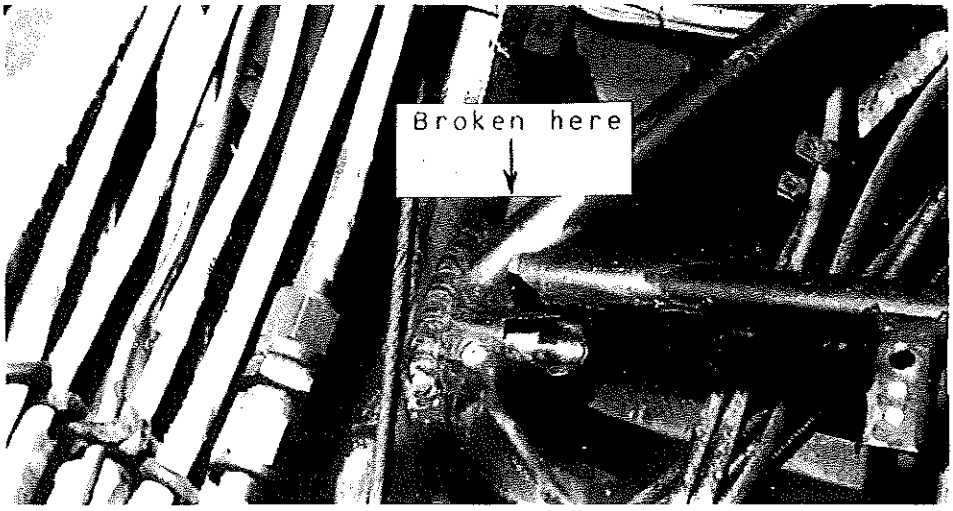
The pilot was the sole occupant and the aircraft had little fuel in it. The pilot had requested a wind check prior to taxying and the tower had stated that it was 45kts. Gusts of up to 56 kts were recorded.

CAA Comment:
Safety Sense Leaflet No 1 "Good Airmanship Guide" reminds pilots in Section 11 on Wind Limits that pilots "should never attempt taxying when crosswinds or gusts exceed 50% of the stall speed unless outside assistance is used". The aircraft stall speed at gross weight is about 54 kts, this reduces by roughly $\sqrt{\frac{\text{new weight}}{\text{gross weight}}}$ x stall speed at gross weight, so with the aircraft about 300 kg below gross weight the stall speed was about 48 kts. Pilots do not have to prove by demonstration that these figures are correct.

13. TAILPLANE ATTACHMENT BOLTS (TuG) GASIL 2/86. TNS 3/4/86 P/E

Aircraft : Bellanca 8GCBC Scout
Date : December 1985

During his pre-flight inspection the pilot noticed that the nut and part of the bolt were missing from the forward right-hand tailplane attachment. The AN3-13A bolt on the left-hand side was very worn below the head and at the top of the threads, such that the bolt sheared during removal. The 1979 built aircraft had flown 1858 hours.



CAA Comment:
All operators should check for this potentially serious problem.

14. WAKE TURBULENCE P

Aircraft : Piper PA610 Aerostar (Foreign Registered) (Applies generally)
Date : August 1985

The pilot waited about one and a half minutes after the departure of a Boeing 727 before starting his take-off from Denver International airport. He lifted off prior to the lift-off point of the Boeing and maintained a climbout speed of 120kts.

Shortly after lift-off the aircraft began to roll to the right and became almost inverted before the pilot could get the wings level.

The aircraft then began to descend, crashed and came to rest on the runway, and was destroyed by the post-impact fire. The occupant was seriously injured and three others had minor injuries. There was no evidence of structural, flight control or engine failure prior to impact.

CAA Comment:
AIC 81/81 and GASIL 10/82 deal with wake turbulence. The UK interval between B727 and an Aerostar should be three minutes.

15. SPECTACLES TO CORRECT VISION P

Pilots who need to use spectacles to reach the required standards of distant vision must have two pairs. Pilots should give this careful thought as it is unwise to keep the two pairs together since they could both be subject to the same hazards e.g. breakage or bag-snatching. Just suppose you are abroad and you lose or break both pairs, what then? You are stuck. Pilots should consider leaving one pair in a safe place when on a trip of this sort.

PA-18 Cubs. Recurring A.D's.

60-10-08 PIPER: Amdt. 149 Part 507 Federal Register May 13, 1960. Applies to All PA-22, PA-20, PA-18 Airplanes Equipped With Two Wing Tanks.

Compliance required prior to July 15, 1960, and every 100 hours' time in service thereafter.

Several accidents have occurred involving engine fuel starvation attributed to a lack of detent action in the fuel selector valve (P/N 11383), causing the pilot to position the selector improperly.

If the detent pin in the valve shaft is improperly centered or if the spring retaining washer is installed upside down, the pin will not engage the slotted detent washer. Therefore, the fuel selector valve in the above listed models must be thoroughly cycled to determine whether or not detent engagement is positive. There should be four distinct detents in one complete cycle. If detent engagement is not positive, the valve must be replaced prior to further flight.

Also, determine if the position of the fuel valve handle at detent engagement coincides with the proper markings on the indicator plate. If the handle does not coincide with the markings, the plate must be repositioned accordingly. (Piper Service Bulletin No. 141 covers this subject.)

Piper PA-18 Cubs - Exhaust Inspection. 50HRS.

68-05-01 PIPER: Amdt. 39-726. Applies to Piper J3, J4, J5, PA-11, PA-12, PA-14, PA-15, PA-16, PA-17, PA-18, PA-19, PA-20, PA-22, and PA-24 type airplanes, except PA-24-400 and PA-24-260 aircraft serial numbers 24-4783, 24-4804 and subsequent.

Compliance required as indicated.

(a) For all airplanes except Models J3, J4, J5, PA-11 and those referenced in paragraphs (i) and (j), which have exhaust mufflers with 950 or more hours time in service on the effective date of this AD, comply with paragraph (e) within the next 50 hours time in service and thereafter at intervals not to exceed 50 hours time in service from the last inspection.

(b) For all airplanes except Models J3, J4, J5, PA-11 and those referenced in paragraphs (i) and (j), which have exhaust mufflers with less than 950 hours time in service on the effective date of this AD, comply with paragraph (e) within the next 50 hours time in service, and thereafter at intervals not to exceed 100 hours time in service from the last inspection. After the exhaust muffler has accumulated 950 hours time in service, comply with the inspection requirements of paragraph (a).

(c) For all Models J3, J4, J5, and PA-11 airplanes which have exhaust mufflers with 950 or more hours' time in service on the effective date of this AD, comply with paragraph (e) within the next 50 hours' time in service and thereafter at intervals not to exceed 50 hours time in service from the last inspection.

(d) For all Models J3, J4, J5, and PA-11 airplanes which have exhaust mufflers with less than 950 hours' time in service on the effective date of this AD, comply with paragraph (e) prior to the accumulation of 1000 hours' time in service and thereafter at intervals not to exceed 50 hours' time in service.

(e) Inspect in accordance with paragraph (f), and paragraph (g) if applicable, the engine exhaust muffler and shroud assembly (including the internal baffle tube and tail pipe), carburetor heat shroud and air duct, support braces, clamps and brackets, exhaust stacks and manifolds. Do not alter those mufflers incorporating an internal baffle tube to remove the tube without prior FAA approval.

(Piper Service Letter No. 324B describes the critical areas.)

(f) Remove muffler assembly, disconnect air ducts, stacks, and shrouds as necessary, and visually inspect exterior and interior surfaces with a probe light and mirror for signs of cracks, corrosion, burn-throughs, heat damage, collapsed stack, or weld separations. For carburetor type engines, special attention should

be given to the exhaust stack under the carburetor heat shroud. Except during the initial inspection, the muffler need not be removed from the airplane, provided visual inspection with probe light and mirror is made through the muffler tail pipe outlet and one end of the muffler at the stack connection.

(g) If the inspection specified in paragraph (f) shows that the exhaust stacks and internal baffle tube are in good condition, but there are areas inside the muffler which cannot be adequately inspected with a probe light and mirror, accomplish one of the following:

(1) Accomplish a submerged pressure check of the muffler and exhaust stack at 10 psi air pressure.

(2) Conduct a ground test using a carbon monoxide indicator by heading the airplane into the wind, warming the engine on the ground, advancing the throttle to full static r.p.m. with cabin heat valves open, and taking readings of the heated airstream inside the cabin at each outlet (including rear seat heat outlet, if nstalled). Appropriate sampling procedures applicable to the particular indicator st be followed. If carbon monoxide concentration exceeds .005 percent or if a gerous reading is obtained on an indicator not calibrated in percentages, inspect accordance with (f), and perform a submerged pressure check of the muffler and aust stack at 10 psi air pressure before further flight.

(3) Close and secure cabin heat valves at the firewall until a complete ffler inspection in accordance with paragraph (f) is accomplished.

(h) Replace or repair parts found to have the defects listed in paragraph (f) efore further flight, and thereafter comply with the inspection requirements of paragraph (b) or (d), whichever is applicable. Make welding repairs in accordance with Advisory Circular AC 43.13-1 or an FAA-approved equivalent. Pressure-check mufflers and stacks that are repair-welded before reinstallation. (Care should be exercised when reinstalling the exhaust system components to prevent distortion or preloading of parts.)

(i) The repetitive inspection of paragraph (a) and (b) may be discontinued when hollow muffler P/N 24506 or P/N 26385 is installed on Model PA-24 aircraft; and on Model PA-24-250 aircraft when installed in combination with muffler support Kit. No. 756775 (Service Letter No. 412A) or Kit No. 757058 (Service Letter No. 481) as applicable, or an equivalent modification approved by the Chief, Engineering and Manufacturing Branch, FAA, Eastern Region.

(j) For applicable PA-24-260 airplanes, the repetitive inspections of paragraph (b) must be accomplished at 50 hour intervals in lieu of 100 hour intervals until a barrier device is installed in each muffler in accordance with Piper Service Letter No. 518 or an equivalent modification approved by the Chief, Engineering and Manufacturing Branch, FAA, Eastern Region. Upon installation of the barrier devices, the repetitive inspections of paragraph (a) and (b) may be discontinued. (Piper Service Letters Nos. 324B, 324C, 412A, 481 and 518 cover this same subject.)

Effective March 31, 1968.

Revised March 5, 1969.

68-07-04 PIPER AIRCRAFT: Amdt. 39-576 as amended by Amendment 39-1324 is further amended by Amendment 39-1426. Applies to Piper PA-23-250 airplanes Serial Nos. 27-2505 and up having engine mount part number 31215.

Compliance required as indicated.

a. With airplanes having engine mount date stamped prior to 26 May 1965, within the next 50 hours in service after the effective date of this AD unless already accomplished within the last 50 hours in service and thereafter at intervals not to exceed 100 hours in service from the last inspection visually inspect the mount for cracks in the following areas:

(i) The lower forward lateral tube