de HAVILLAND

53-7-1 de Havilland Applies to Model DHC-2 (Beaver) Aircraft, Serial Numbers 1 to 483 Inclusive.

Compliance required as indicated.

There have been instances of the elevator outboard hinge becoming loose in its attachments to the horizontal stabilizer rib. Rivet holes have become enlarged permitting the fitting to "work". The de Havilland Aircraft of Canada, Ltd., in agreement with the Canadian Department of Transport, issued the following mandatory instructions in which the FAA concurs:

Inspection intervals: 50 hours, pending incorporation of the repair scheme described below.

Repair scheme: The repair scheme described herein is not mandatory until a defect appears. (See Fig. 1.)

The following parts are required:

C2-TP-179ND	Hinge plate	2 required	1 each end of T/P.
C2-TP-181ND	Angle	2 required	
CR 162-6-8	Cherry rivet	10 required	
CR 162-6-10	Cherry rivet	12 required	
CR 163-6-8	Cherry rivet	6 required	

Procedure.

1. Remove tailcone.
2. Remove elevator.
3. Locate extreme outboard elevator hinges on tailplane.
4. Drill out 4 rivets retaining hinge plates.

Important: Do not drill out rivet at point A until angle C2-TP-181ND has been riveted. (See Fig. 1.)

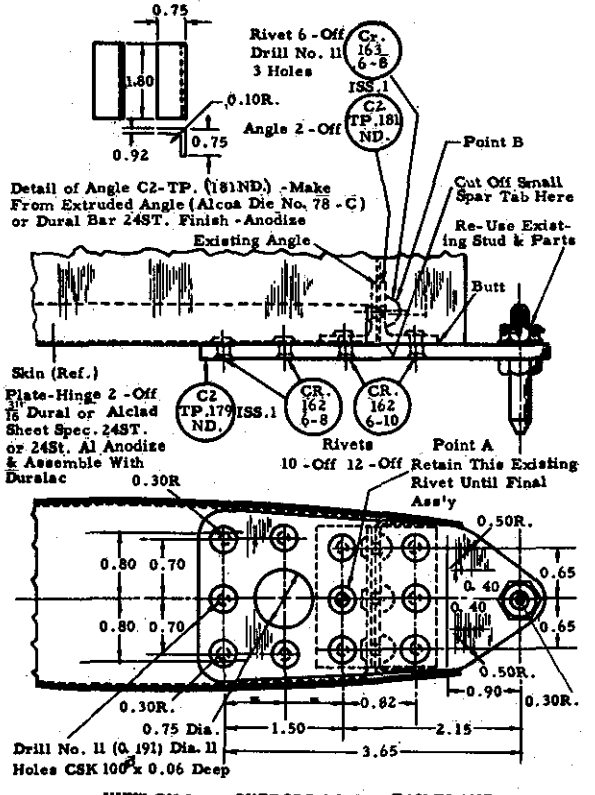
5. Remove small tab at outboard ends of rear spar on tailplane.
6. Drill out 3 rivets at point B securing angle C2-TP-139. (Angle must still remain in position secured by 1 rivet at point A.)
7. Locate new angle C2-TP-181ND on spar rear face and flush with outer skin of end rib.
8. Rivet angles C2-TP-139 and -181ND to spar as shown at point B.
9. Drill out rivet at point A.
10. Make or secure new hinge plate C2-TP-179ND and assemble as shown.
11. Assemble studs to new hinge plates.
12. Replace elevator and tailcone.

(de Havilland Technical News Sheet Series B, No. 60, dated February 10, 1953, Subject "Tailplane—Elevator Outboard Hinge—Mod. 2/901" covers this same subject.)

53-9-2 de Havilland Applies to All Model DHC-2 Beaver Aircraft.

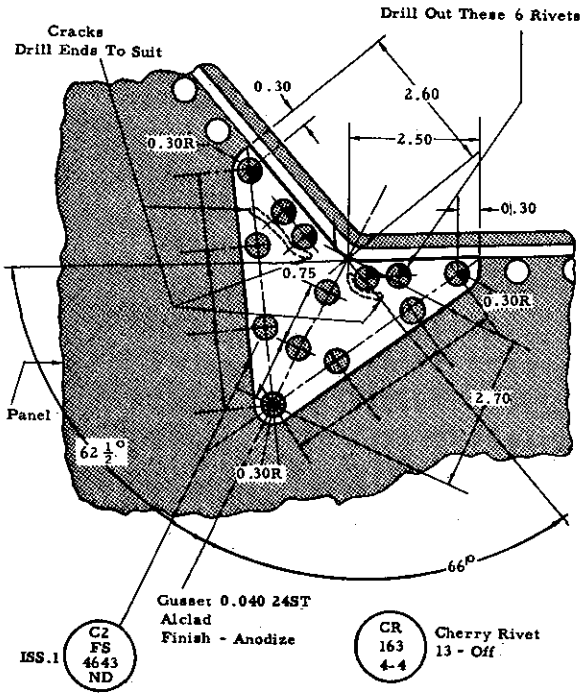
Compliance required as indicated.

Inspect as soon as practical but not later than the next 100-hour flying time and at 100-hour intervals thereafter for skin cracks on the fuselage side panel at front door step. (See Figure 2 for typical cracks and methods of repairing.) Any cracks found should be stop drilled at each end and repaired in accordance with directions in sketch. 100-hour inspection may be discontinued upon incorporation of recommended repair.



VIEW ON L. H. OUTBORD HINGE - TAILPLANE

FIGURE 1



VIEW ON FUSELAGE SIDE PANEL AT FRONT DOOR STEP SHOWING TYPICAL METHOD OF REPAIRING SKIN CRACKS

FIGURE 2

(de Havilland Technical News Sheet, Series B, No. 59—Issue 2, dated January 15, 1953, covers this same subject.)

53–10–2 de Havilland Applies to Model DHC–2 (Beaver) Aircraft, Serial Numbers 1 to 401 Inclusive.

Compliance required as indicated.

After the aircraft has acquired 500 hours of flying time and pending the incorporation of the recommended repair, the wings should be inspected for cracks in lower wing skin at ends of the short stringers at the root end station of the wing leading edges at 50-hour intervals. If no cracks are evident reinforcements should be installed on the bottom surface of the wing as a preventive measure. The FAA concurs in this mandatory action by the Canadian Department of Transport.

(de Havilland Technical News Sheet Series B, No. 59—Issue 2 dated January 15, 1953, available from de Havilland Aircraft of Canada, Ltd., Toronto, Ontario, Canada, covers this same subject and describes method of reinforcement.)

53–11–2 de Havilland Applies to Model DHC–2 (Beaver) Aircraft, Serial Numbers 1 to 445 Inclusive.

Compliance required as indicated.

Cases have been reported of chafing of the engine oil sump by section assemblies. (P/N C2–E–105ND) and (P/N C2–E–107ND) of accessory firewall. An enlarged flange clearance is required to be incorporated as soon as possible but not later than the next 100 hours.

The FAA concurs in this mandatory action by the Canadian Department of Transport.

(de Havilland Technical News Sheet, Series B, No. 64 dated March 23, 1953, available from de Havilland Aircraft of Canada, Ltd., Toronto, Ontario, Canada, covers this same subject and describes method of repair.)

53–12–2 de Havilland Applies to Model DHC–2 (Beaver) Aircraft, Serial Numbers 1 to 451 Inclusive.

Compliance required as indicated.

Cases have been reported of loss of seals in the flap hydraulic hand pump No. 430RDH. To prevent the above condition a modification (No. 2/926) was incorporated on production aircraft and should be incorporated on aircraft in service as soon as possible but not later than the next 100 hours.

The FAA concurs in this mandatory action by the Canadian Department of Transport.

(de Havilland Technical News Sheet, Series B, No. 63 dated March 19, 1953, available from de Havilland Aircraft of Canada, Ltd., Toronto, Ontario, Canada, covers this same subject and describes method of repair.)

53–21–1 de Havilland Applies to All Model DHC–2 (Beaver) Aircraft.

Compliance required as indicated.

Several cases have been reported where mechanics in the field upon assembling DHC–2 wings to fuselage have installed extra washers, packing, etc., to the rear spar wing bolt in order to take out any end play. It should be pointed out that a clearance is purposely provided in this fitting as the rear wing attachment is not designed to take drag loads.

All Beaver aircraft should be inspected as soon as possible but not later than December 1, 1953, to see that no washers, bushings, etc.,

all threaded terminals at turnbuckles should be inspected at the following locations:

Control cable circuit		*Location*	*Number of turnbuckles*
Ailerons	1.	Base of control column.	2
	2.	Outboard wing inspection panels.	4
Elevators	3.	Hatch on underside of rear fuselage.	2
Rudder	4.	Rear fuselage interior.	2

Damaged or defective cables must be replaced.

If any evidence of defects is found, de Havilland will supply replacement cables.

The FAA concurs in this mandatory action by the Canadian Department of Transport.

(de Havilland Technical News Sheet Series B, No. 76 dated June 23, 1954, available from de Havilland Aircraft of Canada, Limited, Postal Station "L," Toronto, Canada, covers this same subject.)

55-20-1 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required prior to original certification or by next airworthiness certificate renewal unless already accomplished.

Attention of operators of the Dove aircraft is drawn to the manufacturer's recommendation for periodic inspection of the alclad engine mount pickup fittings, P/N 4W1137 and 4W1141. Several cases of fitting failures have been reported. Unless this failure is detected at an early stage, the bottom flange of the front false spar may be subjected to excessive loads and may crack as a result. Accordingly, the de Havilland Aircraft Co., in agreement with the British Registration Board, issued the following mandatory modification and information in which the FAA concurs.

1. To prevent fractures and to give increased strength, Modification No. 524 has been devised to change the fittings from aluminum alloy to steel and at the same time to reduce the limits from 0.0009 inch to 0.0003 inch and from 0.0018 inch to 0.0009 inch.

2. Upon incorporation of Modification 524 (and the repair R4W169), the 30-hour periodic inspections specified in TNS CT (104) Numbers 49 and 50 may be discontinued.

(de Havilland Technical News Sheet CT (104) No. 65 dated August 4, 1955, covers this same subject.)

55-25-2 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as indicated.

Cases have occurred recently where cracks have been found in the left-hand front fin attachment brackets, P/N 4FS.1749 (Pre. Dove Model 7, "Individual fin attachment and rudder control pulley bracket"), and P/N 4FS.6781 (Dove Mod. 7, "To introduce single casting for front fin attachments and control pulley brackets"). The cracks generally emanate from the top rivet hole in the left row and pass through the flange.

The de Havilland Service strongly recommends inspection of the fin attachment brackets at an early date with which the FAA concurs and considers mandatory.

Inspect both front fin attachment brackets for cracks, using a magnifying glass after removing the paint, as soon as practical, but not later than the next 25 hours operation unless already accomplished, and thereafter at each check II (approximately 100-hour periods). Access can be made by entering through bulkhead No. 5.

Should any cracks be found, install new front fin attachment and pulley brackets, P/N 4FS.9165 L. H. and 4FS.9166 R. H. (Ref. Dove Modification 903) and secure to bulkhead No. 6 using 2BA bolts and nuts or equivalent in the top six holes. Rivets are used in the other positions.

Repetitive inspection may be discontinued when the new front fin attachment and pulley brackets per Modification 903 are installed.

(de Havilland Technical News Sheet CT (104) No. 112, Issue 2, dated September 1, 1954, covers this same subject.)

55-25-3 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as soon as practical but not later than February 15, 1956, unless already accomplished.

A case has recently occurred where the presence of corrosion at the main earth connection, situated on the fuselage nose decking in the vicinity of nose frame 4, has reduced the efficiency of this earthing point sufficiently to

have been installed in this fitting and if found they should be removed immediately.

In assembling the wing to fuselage, the front spar must be attached and then the rear wing bolt should be installed. It is quite normal that the rear spar wing fitting should not touch either inboard side of the fuselage fitting, but in most cases the wing fitting is almost against the forward side. The gaps in the fittings front and rear should not be packed with washers or spacers.

The FAA concurs in this mandatory action by the Canadian Department of Transport.

(de Havilland Technical News Sheet, Series B, No. 67, dated August 31, 1953, available from de Havilland Aircraft of Canada, Ltd., Toronto, Ontario, Canada, covers this same subject.)

53–23–2 de Havilland Applies to Model DHC–2 (Beaver) Aircraft, Serial Numbers 164 to 407 Inclusive.

Compliance required not later than December 15, 1953.

When filling the fuel tanks, it is possible for spilled fuel to seep down between the fuel tank filler neck recess box and the aircraft's outer skin. This permits gasoline fumes to accumulate in the tank bays beneath the floor and can create a fire hazard. The aircraft should be inspected to ascertain if a satisfactory seal exists between the filler neck recess box (C2–FS–1005ND) and the outer skin (C2–FS–3829ND). If seal is unsatisfactory, fill gap with either "Goodyear Plyabond" or "Minneapolis Mining EC776" metal sealing compounds or equivalent. In the interim, until resealing is accomplished, a "No Smoking" placard should be installed in the cabin. The FAA concurs in this mandatory action by the Canadian Department of Transport.

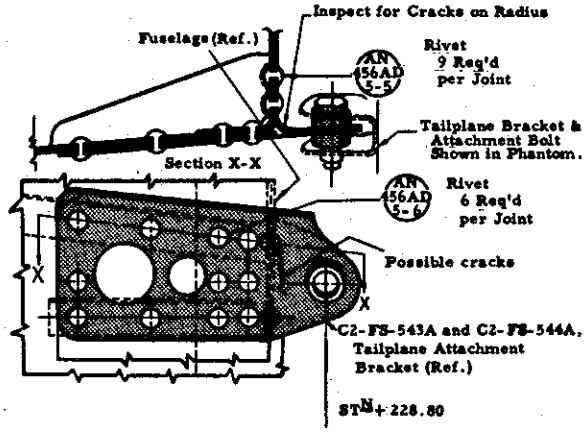
(de Havilland Technical News Sheet No. 68, Series B, dated September 15, 1953, covers this same subject and provides resealing instructions.)

54–11–1 de Havilland Applies to All Model DHC–2 (Beaver) Aircraft, Serial Numbers 1 to 618 Inclusive, with the Exception of the Agricultural Model.

Compliance required as indicated.

Special Inspection — Attachment Brackets Tailplane—Fuselage Joint P/N C2–FS–543A and CS–FS–544A.

Inspect subject brackets for cracks and distorted rivets at the location indicated in Figure 3 and replace the tailplane front attachment ¼-inch diameter bolts P/N NAS 54AN12 at intervals not exceeding 1,000 flying hours.



MODIFICATION TO FUSELAGE
TAILPLANE ATTACHMENT BRACKETS

FIGURE 3

If brackets are defective, replace with new parts. If existing ⅛-inch diameter rivets are distorted, replace with 5/32-inch diameter rivets as outlined in Figure 3.

If the aircraft has exceeded 1,000 flying hours, this inspection should be performed at some convenient opportunity not exceeding 200 hours subsequent to the date of this directive.

The FAA concurs in this mandatory action by the Canadian Department of Transport.

(de Havilland Technical News Sheets, Series B, No. 73 dated March 26, 1954, and Series B, No. 75 dated April 21, 1954, available from de Havilland Aircraft of Canada, Ltd., Toronto, Ontario, Canada, covers this same subject.)

54–15–1 de Havilland Applies to All Model DHC–2 (Beaver) Aircraft, Serial Numbers 1 to 680 Inclusive.

Compliance required by August 30, 1954.

Inspect all rudder, elevator and aileron control cable terminals for damaged threads at the turnbuckle.

Most reported defects have concerned the right-hand threads on turnbuckle terminals but

to be completed by September 30, 1957, with which the FAA concurs.

(de Havilland Service Technical News Sheet CT (104) No. 134, Issue 3, dated February 1, 1957, also covers this.)

57–13–2 de Havilland Applies to All Model DHC–2 Series Beaver Aircraft.

Compliance required as soon as possible but not later than 10 days after the date of this directive and each 50 hours of operation thereafter.

The cabin heater assembly must be inspected as follows:

1. For aircraft cabin heating system using Intensifier Tubes; remove the tubes and perform a close visual inspection on both the intensifier tubes and the exhaust pipe to determine existence of any holes or burned spots that may permit seepage of exhaust gases into the heating system.

2. For aircraft cabin heating system using Heater Jackets; remove jacket and perform close visual inspection on both the heater jacket and the exhaust pipe to determine existence of any holes or burned spots that may permit seepage of exhaust gases into the heating system.

57–20–2 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as indicated.

Cases have been reported of cracked pistons, P/N AHO.19742, installed in Dunlop pneumatic retraction jacks (cylinders) P/N AH.8463 and AC.11130, fitted to the main and nose landing gear assemblies. These cracks appear on the crown of the piston adjacent to the recessed center section and are due to fatigue. Accordingly, a service life of 10,000 landings on these pistons when installed on Dove aircraft has been specified by de Havilland in conjunction with Dunlop and the ARB. Pistons having 10,000 or more landings must be replaced as an interim measure pending introduction of a modification being developed by Dunlop.

The FAA concurs with this action and considers compliance therewith mandatory.

(de Havilland Service TNS Series CT (104) No. 141 dated June 24, 1957, covers this subject.)

58–20–2 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required by January 1, 1959.

In an emergency such as a wheels up landing, the placing of the ground/flight switch in the "Ground" position to minimize fire risk would isolate the fire extinguisher system.

Dove Modification 655 has therefore been introduced which provides an electrical supply to the fire extinguisher circuit from the battery side of the ground/flight switch, even when the switch is in the "Ground" position, thus ensuring that the fire extinguisher system is operative at all times.

The British Air Registration Board considers this mandatory. The FAA concurs with this action and considers compliance therewith mandatory.

(de Havilland TNS CT (104) No. 153 covers the same subject.)

59–1–2 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as follows: Aircraft prior to Serial Number 04463—April 1, 1959; Aircraft Serial Numbers 04463 through 04477—September 30, 1959.

Cases have occurred where the main undercarriage locking levers P/N 4U 139A (Pre Modification 231) and P/N 4U 461A (Post Modifiication 231) have cracked in service.

Dove Modification 868 has therefore been introduced which provides for locking lever assemblies in a material to a revised specification.

On aircraft Pre Modification 231 standard, Dove Modification 187—repositioning the undercarriage warning lamp and microswitches—and Dove Modification 308—improving the operation of the main undercarriage mechanical position indicator—must be embodied at the same time as Modification 868.

The British Air Registration Board considers this mandatory. The FAA concurs with this action and considers compliance therewith mandatory.

(de Havilland TNS CT (104) No. 155 covers the same subject.)

59–5–2 de Havilland Applies to All Model 104 "Dove" Aircraft With Modification PP.173 Embodied.

Compliance required as soon as possible but not later than March 30, 1959.

(1) A case has been reported where faulty readings were obtained from the dipstick used in an oil tank P/N 4LT.475A/1, in which Modification PP.173 was embodied. This would result in low oil content which, on prolonged flights, might give rise to oil starvation with consequent engine seizure.

(2) Within the period stated above, dipsticks must be removed from oil tanks with Modification PP.173 embodied and reworked as follows: (a) Measure along the dipstick a distance of 4.15 inches from the base and file a notch or deep score mark at this point. (This position also falls 0.65-inch above existing one-half mark.) (b) Obliterate the existing one-quarter and one-half marks. (c) Add a stamped arrow pointing to the notch or score mark followed by this marking "6 US gallons minimum accurate reading".

(3) The above rework must be accomplished on spare oil tanks prior to fitment to aircraft.

The British Air Registration Board considers this mandatory. The FAA concurs with this action and considers compliance therewith mandatory.

(de Havilland TNS CT (104) No. 158 Issue 2 covers the same subject.)

59–12–8 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required not later than July 20, 1959.

A case has been reported where a powerplant fire extinguisher spray pipe P/N 4M99ND had been installed without having the spray holes drilled in it.

(1) Spray pipe P/N 4M99ND must be inspected to ascertain whether it has the spray holes drilled in it as follows:

(a) Open the engine cowlings and inspect the spray pipe running from the distributor unit round the blower casing.

(b) If the pipe has not had the spray holes drilled in it remove the pipe and replace with a serviceable item; or

(c) The unserviceable pipe may be rendered serviceable by working to the details shown in de Havilland Technical News Sheet CT (104) No. 163.

(2) The above inspection, and replacement or rework action where necessary, must be accomplished on all spare powerplants and spares stock before installation in aircraft.

The British Air Registration Board considers this mandatory.

(de Havilland TNS CT (104) No. 163 covers the same subject.)

60–12–2 de Havilland Amdt. 157 Part 507 Federal Register May 24, 1960, revised by Amdt. 157a Federal Register October 5, 1960. Applies to Heron Model 114 Aircraft Serial Numbers 14001 Through 14136.

Compliance required as indicated.

During fatigue tests, cracks caused by corrosion and fretting occurred in the wing main lower root joint fitting at an equivalent time in service of 13,000 hours. To preclude the failure of this fitting in service compliance with de Havilland Technical News Sheet CT (114) No. W9 is required by July 15, 1960, for aircraft which have exceeded 12,000 hours time in service. For all other aircraft, compliance required before exceeding 12,000 hours time in service but not later than: December 31, 1960, for Serial Numbers 14001 to 14091 inclusive, that do not have modifications 520 and/or 918 incorporated; December 31, 1961, for Serial Numbers 14001 to 14091, inclusive, that have modifications 520 and/or 918 incorporated, and for Serial Numbers 14092 to 14136, inclusive.

Magnetic particle and dye penetrant methods of inspection may be used in lieu of the crack testing methods called for in de Havilland Technical News Sheet CT (114) No. W9. Other jointing, antifretting and anticorrosive, and sealing compounds, if shown to be equivalent to the commercially designated compounds in de Havilland Technical News Sheet CT (114) No. W9 may be used.

For aircraft incorporating modifications 520 and/or 918 since date of manufacture, compliance time in service begins at the date these modifications were accomplished.

60–12–3 de Havilland Amdt. 168 Part 507 Federal Register June 3, 1960. Applies to All Model 104 "Dove" Aircraft Serial Numbers 04001 Through 04507.

Compliance required as indicated.

During fatigue tests cracks caused by corrosion and fretting occurred in the wing main

the earliest opportunity but not later than September 1, 1956, and thereafter at the repetitive period indicated.

56–17–2 de Havilland Applies to All Model DHC–3 Otter Aircraft.

Compliance required as indicated.

The Canadian Department of Transport has issued the following directive with which the FAA concurs and considers mandatory.

"Any malfunctioning of the flap hydraulic circuit check valve would fail to lock the flaps in any flaps-extended position. When the valve operates properly, the flaps remain stationary when the flap selector lever is moved to the 'up' position and until the flap pump is operated. However, if the valve sticks open for any reason, selecting 'flaps up' results in a rapid flap retraction without use of the pump. Such retraction at high speeds will produce large stick forces and out-of-trim condition which flight tests have shown to be very dangerous when the aeroplane is trimmed for a high flaps-extended speed (full aircraft nose-down trim).

"Therefore, until modifications now under development are incorporated, the following restriction is mandatory:

"(*a*) The flap selector must not be placed in the up position until it is desired to retract the flaps, nor at speeds in excess of the following:

Flap Setting		*Maximum Trim Speed*
Landing	(35°)	65 mph IAS
Takeoff	(30°)	75 mph IAS
Climb	(15°)	85 mph IAS

"The previous '15° climb flap limitation' on the use of flaps is canceled and the special 50-hour inspection of the flap controls, etc., may be discontinued."

Incorporation of de Havilland Modifications 3/731, 3/744 and 3/745 is required by November 1, 1957, as outlined in D. H. Engineering Bulletin Series "O" No. 34, dated January 21, 1957. When these Modifications are incorporated, the operating restrictions in section (*a*) above will no longer be required.

56–19–1 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as indicated below.

A case has occurred in which the mild steel rivet locking the stud, P/N 4CF.607 to the spindle, P/N 4CF.603ND in the aileron differential pulley assembly has sheared, allowing the spindle to unscrew from the stud to such an extent that it, together with the pulley, was on the point of becoming disengaged from the pulley bracket.

To prevent a recurrence of this defect, compliance with Dove Modification No. 765 (installation of a H.T.S. pin for locking stud on aileron differential pulley spindle) is considered mandatory by the British Air Registration Board in which the FAA concurs. Accordingly, unless already accomplished, Modification No. 765 should be embodied on all Dove aircraft as soon as possible, but not later than October 15, 1956.

(Dove Modification 765 is covered in de Havilland Service Technical News Sheet CT (104) No. 114 dated November 1, 1954.)

This supersedes AD 55–2–1.

57–5–2 de Havilland Applies to All Model 104 "Dove" Aircraft Up to and Including Serial Number 04465 Which Have Not Had Dove Mod. 870 Incorporated.

Compliance required as indicated.

Tests and inspections of the wing have revealed the possibility of small spanwise cracks existing in the upper spar boom joints at ribs 10 and 11, and in the lower spar boom joint at ribs 8 and 9. The cracks occur in the vertical flange, between 0.1 and 0.2 inch from the horizontal flange.

1. Where suitable equipment is available, it is recommended that X-ray examinations of the spar joints be made by April 30, 1957, following the recommendations in Technical News Sheet CT (104) No. 134, Issue 3. Unless the booms are X-rayed, they must be considered as having cracks.

2. When X-rayed and no cracks are found, no further action is necessary unless the aircraft is less than 2 years old, in which case a precautionary X-ray examination should be made approximately one year after the first X-ray and repaired if cracks are found.

3. When X-ray results are positive, incorporation of the repair scheme called for in the Technical News Sheet is classified as mandatory by the British Air Registration Board and

cause overheating of the cockpit lighting cables.

The de Havilland Service strongly recommends that the following inspection be carried out at the earliest opportunity in order to ascertain the condition of this connection with which the FAA concurs and considers mandatory.

Method.

1. Examine earth post situated in nose floor, and ascertain if it has a protective coating of blue oil base paint D. T. D. 827. (If it is protected, do not disturb unless it appears to be in a bad condition.)

2. If no protection is evident, dismantle terminal, clean floor surface locally at the terminal with a stiff bristle brush, to ensure removal of any corrosion and to provide good electrical contact between mating faces of terminal assembly. Reassemble terminal, using corrosion washer D. H. S. 439 G in place of lead plated brass washer 4F.781. All other mating surfaces must be clean and free from corrosion. If steel washer shows signs of deterioration, it must be replaced by another one, cadmium plated. Completed assembly must be painted liberally with blue oil base paint D. T. D. 827 to prevent ingress of moisture.

(de Havilland Technical News Sheet CT (104), No. 121, Issue 2, dated July 14, 1955, also covers this same subject.)

56–11–1 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required by May 31, 1956.

As a result of the two accidents caused by pilots feathering the wrong propeller after engine failure, the British Air Registration Board has classified the following as an essesntial modification. The FAA concurs.

The left-hand needle (oil pressure) of the combined oil pressure and temperature gage for the starboard engine could be mistakenly interpreted as applying to the port engine. To minimize the possibility of such confusion either part A or part B of Dove Modification 879 must be incorporated as soon as possible but not later than May 31, 1956:

Part A. To turn the instruments clockwise through 90° and put temporary markings on the instrument bezel.

Part B. To turn the instruments clockwise through 90° and re-mark the dials to give correct presentation or to fit modified instruments with vertical lettering and figures.

(Dove Modification 879 is covered in de Havilland Service Technical News Sheet Series CT (104) No. 132 dated April 13, 1956.)

56–15–4 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as indicated.

Cases have been reported of cracks appearing in the brackets P/N 4FS.401 and 4FS.402 which form part of the main attachment structure of the nose undercarriage leg. The de Havilland Service strongly recommended that these brackets be inspected for cracks.

The FAA concurs and considers compliance with de Havilland Service Technical News Sheet CT (104) No. 124, Issue 2, dated December 20, 1955, mandatory. Unless already accomplished, the recommendations in the TNS should be carried out at the earliest opportunity but not later than August 15, 1956.

56–15–5 de Havilland Applies to All Model 104 "Dove" Aircraft.

Compliance required as indicated.

Cases have been reported of the discovery in service of cracks appearing in aileron, rudder and elevator hinge links and hinge brackets fitted to Dove aircraft.

The de Havilland Service strongly recommends that all these components and their associated fittings be carefully inspected for cracks on all aircraft at the earliest opportunity, and thereafter at every 600 hours or 12 months, whichever is sooner, until further notice. The paint should be removed from the components and after inspection they should be reprotected. The de Havilland Service also strongly recommends that concurrent with the above inspection, the tailplane upper attachment fitting, P/N 4.FS.1935, which is attached to the forward face of bulkhead 7 and through which the tailplane attachment eyebolt spars, be inspected for cracks, particularly in the region of the rivets.

The FAA concurs and considers compliance with de Havilland Service Technical News Sheet CT (104) No. 123, Issue 3, dated November 12, 1956, mandatory. The initial inspection, unless already accomplished, should be at

lower root joint fitting at an equivalent time in service of 13,000 hours. To preclude the failure of this fitting in service, compliance with de Havilland Technical News Sheet CT (104) No. 168 Issue No. 2, is required by July 15, 1960, for aircraft which have exceeded 12,000 hours' time in service. For all other aircraft compliance required before the aircraft exceeds 12,000 hours' time in service but not later than: December 31, 1960, for Serial Numbers 04001 through 04463; December 31, 1961, for Serial Numbers 04464 through 04507.

Magnetic particle and dye penetrant methods of inspection may be used in lieu of the crack testing methods called for in de Havilland Technical News Sheet CT (104) No. 168 Issue No. 2. Other jointing, antifretting and anticorrosive, and sealing compounds, if shown to be equivalent to the commercially designated compounds in de Havilland Technical News Sheet CT (104) No. 168 Issue No. 2, may be used.

61–11–3 de Havilland Amdt. 289 Part 507 Federal Register May 20, 1961. Applies to All Model 104 "Dove" Aircraft.

As a result of fatigue tests by the de Havilland Company, the following modification or replacements must be occomplished:

(1) The wing lower spar boom must incorporate Modification 780 or be replaced at or prior to accumulating 5,000 hours' time in service.

(2) Wings with Modification 780 must be replaced at 15,000 hours' time in service on aircraft Series 1, 1A, 1B, 1BA, 2A, 2B, 2BA, 5, 5A, 5B, 5BA, 6, 6A, 6B, 6BA, and at 12,000 hours' time in service on aircraft Series 7, 7A, 8, 8A.

(3) The fuselage center section lower spar boom must be replaced at or prior to accumulating 2,500 hours' time in service unless Modification 538 is accomplished.

(4) Fuselage center section lower spar boom incorporating Modification 538 and Modification 686 not later than 3,600 hours' time in service after incorporating Modification 538, must be replaced at or prior to accumulating 10,000 hours' time in service.

(5) If the fuselage center section lower spar boom incorporates Modification 779 in lieu of Modification 538, no time limit is imposed.

(de Havilland TNS Series CT (104) No. 119, Issue 7 dated December 19, 1960, covers this subject.)

This supersedes AD 56–21–3.

This directive effective June 20, 1961.

61–11–4 de Havilland Amdt. 290 Part 507 Federal Register May 20, 1961. Applies to All "Dove" Model 104 Aircraft Prior to Serial No. 04503.

Compliance required as indicated.

Due to reports of severe corrosion at the mainplane lower spar booms, the following inspections are required except that any inspection accomplished in accordance with AD 57–1–1 may be utilized in establishing the less frequent inspection intervals permitted in this directive. (Effective October 13, 1961.)

(a) Inspections shall be performed on the upper and lower spar booms from rib No. 1 to the wing tip as follows: (Effective October 13, 1961.)

(1) *Tank Bay Area, Ribs 1 to 5.* Inspection required every six months, the first of such inspections to be made six months after the effective date of this directive or six months after the last inspection with a 10-power glass, whichever date is earlier. If no signs of corrosion are found after two successive inspections, inspect every twelve months thereafter.

(2) *Wheel Well Area Ribs 5 to 7.* Inspection required every month, the first such inspection to be made one month after the effective date of this directive or one month after the last inspection with a 10-power glass, whichever date is earlier. If no signs of corrosion are found after six successive monthly inspections, inspect every six months thereafter. This inspection may be discontinued if surface protection is provided in accordance with de Havilland Dove Modification No. 852 and no indication of corrosion is evident after six months.

(3) *Rib 7 to Wing Tips.* Visual inspection required every six months, the first such inspection to be made six months after the effective date of the directive or six months after the last inspection, whichever date is earlier. (Effective October 13, 1961.) If no corrosion is found after a six-month period, inspect every twelve months thereafter.

(b) Any corrosion that is found must be thoroughly cleaned out prior to further flight.

If the depth and width of the pocket are within the limits specified on de Havilland Drawing No. R.4W.349, the surfaces must be reprotected. If after cleaning out the corrosion pockets the limits of Drawing No. R.4W.349 are exceeded, the spar boom must be replaced prior to further flight.

(de Havilland Technical News Sheet CT (104) No. 125 Issue 5, dated December 19, 1960, covers this subject.)

This supersedes AD 57–1–1.

This directive effective May 20, 1961.

61–18–3 de Havilland Amdt. 329 Part 507 Federal Register September 1, 1961. Applies to All "Dove" Model 104 Aircraft Serial Numbers 04000 through 04482.

Compliance required as indicated.

As a result of recent investigations into wing lower root joint, P/N 4W.271, it has been established that a number of these parts were fitted to aircraft or supplied as spare items with the bore of the hole for the main wing-to-fuselage attachment bolt chromium plated. Tests have shown that hard chrome plating reduces the fatigue life of the part. Therefore, the following inspection shall be accomplished:

(a) Wing lower root joint fittings, P/N 4W.271, with 9,970 or less hours 'time in service must be inspected at or prior to accumulating 10,000 hours' time in service. Remove the lower main wing-to-fuselage attachment bolt and inspect the bore of the bolt hole for chromium plating in accordance with de Havilland Technical News Sheet CT (104) No. 178 Issue 1. Fittings showing evidence of chrome plating must be replaced prior to accumulating 10,000 hours' time in service.

(b) Fittings exceeding 9,970 hours' time in service must be inspected as outlined in paragraph (a) within the next 30 hours' time in service after the effective date of this directive. Fittings showing evidence of chromium plating and having less than 10,000 hours' time in service must be replaced prior to accumulating 10,000 hours' time in service. Fittings showing evidence of chromium plating and having more than 10,000 hours' time in service must be replaced prior to further flight.

(de Havilland Technical News Sheet CT (104) No. 178 Issue 1 dated July 10, 1961, covers this subject.)

This directive effective September 1, 1961.

61–23–3 de Havilland Amdt. 358 Part 507 Federal Register November 2, 1961. Applies to All Heron Model 114 Aircraft Without Modification No. 1454.

Compliance required as indicated.

(a) Cases have occurred of cracking of the wing rear false spar web adjacent to the wing-to-fuselage attachment P/N 14W 253/4. To preclude failure of the spar, an X-ray or visual inspection for cracks must be conducted in accordance with de Havilland Technical News Sheet CT(114) No. W.10 Issue 2, within the next 250 hours' time in service after the effective date of this directive and at each 600 hours' time in service thereafter. If cracks are found, repair in accordance with de Havilland Drawing RD 14W 224, Issue 4, or subsequent, within the time in service given in paragraphs (1), (2), and (3).

(1) Cracks less than ½ inch in length must be repaired at the next wing removal and the inspection in (a) must be made every 600 hours' time in service in the interim between the inspection and the wing removal.

(2) Cracks of ½ inch to 1½ inches in length must be repaired within 300 hours' time in service after the inspection.

(3) Cracks exceeding 1½ inches in length must be repaired within the next 150 hours' time in service after the inspection.

(b) The special inspection in (a) is no longer required when the repair per Drawing RD 14W 224, Issue 4, or subsequent, has been incorporated.

(de Havilland Technical News Sheet CT (114) No. W.10 Issue 2 dated July 24, 1961, covers this subject.)

This directive effective December 4, 1961.

62–14–1 de Havilland Amdt. 453 Part 507 Federal Register June 20, 1962. Applies to All Model D.H. 114 Heron Aircraft.

Compliance required as indicated.

As a result of instances where cracks have occurred in the aileron lever P/N 14WA199, the following inspection shall be accomplished within the next 50 hours' time in service after the effective date of this AD and thereafter at intervals not exceeding 50 hours' time in service and, in addition, prior to further flight if the aileron is removed for any reason.

(a) Visually inspect the aileron lever, P/N 14WA199 for cracks at the lugs for attachment of the connecting rod, in the region of the attaching pins for the mass balance weight tube and at the lower end of the lever counter bore. If evidence of cracks is found, verify using dye penetrant or other FAA approved equivalent inspection method.

(b) Replace cracked aileron levers prior to further flight.

(c) When de Havilland Heron Modification 662, which incorporates a new forged lever P/N 14WA245, is installed, the inspections in (a) are no longer required.

(de Havilland Technical News Sheet Heron (114) No. W3, Issue 2 dated January 1, 1962, covers this subject.)

This directive effective July 20, 1962.

62-14-2 de Havilland Amdt. 454 Part 507 Federal Register June 20, 1962. Applies to All Model D.H. 104 Dove Aircraft.

Compliance required as indicated.

As a result of instances where cracks have occurred in the aileron lever, P/N 4WA315, the following inspection shall be accomplished within the next 50 hours' time in service after the effective date of this AD and thereafter at intervals not exceeding 50 hours' time in service and, in addition, prior to further flight if the aileron is removed for any reason.

(a) Visually inspect the aileron lever, P/N 4WA315 for cracks at the lugs for the attachment of the connecting rod and in the counterbored portion which receives the mass balance arm. If evidence of cracks, is found, verify using dye penetrant or other FAA approved equivalent method.

(b) Replace cracked aileron levers prior to further flight.

(c) When de Havilland Dove Modification 967, which incorporates a forged lever, P/N 4WA491, is installed, the inspections in (a) are no longer required.

(de Havilland Technical News Sheet CT (104) No. 151, Issue 3 dated January 1, 1962, covers this subject.)

This directive effective July 20, 1962.

2. Complete inspection as required by A above is conducted at intervals not to exceed 2,000 hours after the 16,000-hour inspection has been completed.

3. Canceled August 15, 1955.

D. Upon request of the operator, an FAA maintenance inspector, subject to approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator. (Effective August 4, 1961.)

41–47–1 Douglas (Was Service Note 3 of AD–618–3 and Service Note 3 of AD–669–3.) Applies to All DC3 Series Aircraft.

Each time a control surface is overhauled or repaired, the surface should be rebalanced.

(Douglas Service Bulletin No. 207 contains instructions on rebalancing.)

43–12–1 Douglas (Was Service Note 4 of AD–669–3.)

At each periodic inspection, check the elevator hinge brackets and if cracks are present the brackets should be replaced. Due to the possibility of vibration causing fatigue failures, continuous operation of the airplanes in the range of engine speeds between 1,300 and 1,600 r.p.m. should be avoided. A minimum engine speed of 1,700 r.p.m. during cruising flight is recommended.

(Douglas Service Letter dated January 15, 1943, covers this same subject.)

46–11–2 Douglas (Was Mandatory Note 1 of AD–762–7.) Applies to All C–54 Series Aircraft.

To be accomplished not later than July 1, 1948.

The copilot oxygen regulator must be relocated from its position below the autopilot control handle to Station 101 aft of the windshield defroster control plate and knob, in order to eliminate a fire hazard and contamination of the oxygen regulator in the event hydraulic fluid drips on the regulator from the autopilot control valve.

(Douglas Service Bulletin No. C–54–247 dated November 16, 1945, covers this same subject.)

46–11–3 Douglas (Was Mandatory Note 2 of AD–762–7.) Applies Only to All C54–DC (R5D) Airplanes Built at Santa Monica and to All C54A (R5D–1), C54B (R5D–2) and C54D–DC (R5D–3) Airplanes Built at Chicago Up to and Including C54D–DC AAF Serial Number 42–72698, and R5D–3 Navy Serial No. 56519. All Subsequent Airplanes Have Been Reworked Prior to Delivery by the Douglas Co.

To be accomplished not later than next engine change.

Due to the possibility of the landing gear door stud shearing and preventing the landing gear from extending, the old thin stud, Douglas Drawing No. 1167048 should be replaced with the new thick stud, Douglas Drawing No. 1329227. In order to accomplish this change the thin stud should be removed from each landing gear door sleeve assembly, P/N 4167071. The existing stud hole should be drilled to $\frac{.4459}{.4531}$ diameter and tapped ½–20 NF–3 to a depth of ½ inch. The new thick stud, Douglas P/N 1329227 should be installed and locked in place with an 0.063-inch drill rod pin ⅜-inch long pressed through the side of the sleeve assembly end, Drawing No. 2167063.

(Douglas Service Bulletin No. C–54–275 dated January 21, 1946, covers this same subject.)

46–12–2 Douglas (Was Service Note 12 of AD–669–3.) Applies to DC3A Aircraft.

Inspection required immediately and every 100 hours thereafter on all aircraft which have beryllium copper engine mount to firewall attach fittings installed.

Inspect the engine mount to firewall attach fittings, P/N 5–81486–4 (with 4-power magnifying glass min.) in the fillet of the spot face for cracks or flaws in the material. If evidence of defects are found, replace with P/N 1042764. If cracks are not found, inspect every 100 hours until next engine change. P/N 5–81486–4 should be replaced with P/N 1042764 at engine change.

(Douglas Service Bulletin No. 238 covers this same subject.)

DOUGLAS

39-24-1 Douglas (Was Service Note 1 of AD-618-3 and Service Note 1 of AD-669-3). Applies to All DC3 Series Aircraft.

A. Inspection

1. *Attach Angles.* Inspect wing attaching angles, P/N 570602-20 and -21, for cracks between the attaching bolt holes. The inspection should be conducted with at least a 4-power magnifying glass at each periodic inspection not to exceed 450 hours flight time. A more detailed inspection should be made at the time of removal of the wings for the wing doubler inspection specified below. All paint should be removed from the angles at that time to permit examination with a high-power magnifying glass.

2. *Wing Doublers.* Inspect the wing attach angle doublers for cracks along the bent-up flange portion at the wing attachment joint at the following intervals of wing doubler time:

(*a*) On aircraft having less than 8,000 hours doubler flight time; inspect at 8,000 hours, or less, and at intervals not to exceed 4,000 hours thereafter.

(*b*) On aircraft having more than 8,000 hours doubler flight time; where doublers have not been inspected during the last 4,000 hours, such doublers should be inspected immediately and intervals should not exceed 4,000 hours thereafter. Where doublers have been inspected during the last 4,000 hours, inspection should be made at the next 4,000-hour period and at intervals not to exceed 4,000 hours thereafter.

The wings should be completely removed to permit thorough cleaning of the doublers and inspection with a high-power glass. Dy-Chek may be used in lieu of a high-power glass in conducting the inspection.

3. *Center Section Line in Outer Wing Joint.* Inspection and rework should be made in accordance with the procedures outlined in AD 52-22-3.

B. Replacement Required

(Jig fixtures, Douglas Parts A652-5110506-1-1F2 and A652-5110506-1F2 or equivalent, must be used to accomplish the replacement of the following attach angles and doublers.)

1. *Defective Angles.* In case defective angles are found, they must be replaced by angles extruded 99° or the heavier type angles as outlined in Douglas Service Bulletin No. 146, before allowing further operation. In case defective angles are found and they are identified as being angles extruded 99°, they must be replaced by the heavier type angles as outlined in Douglas Service Bulletin No. 146 before allowing further operation.

2. *Doublers.* In case cracked doublers are found at any of the specified inspections, they must be replaced. All lower surface outer panel wing attach angle doublers (P/N 570602-206, -207, -208, and -209) must be replaced at or before 16,000 hours total doubler time. After October 15, 1944, no aircraft will be permitted to continue in operation having 16,000 hours total doubler time except as covered under section C below.

(Douglas Service Bulletin No. 220 dated March 11, 1944, contains information on acceptable methods of accomplishing this rework.)

After replacement of the doubler as described in the paragraph above, it will be satisfactory to add the auxiliary gussets and shims, as shown on Douglas Drawing 570602, change LLL.

3. *Refer to AD 52-22-3.*

C. Outer Wing Heavy Doubler Installation

When the No. 570602-206 and -207 doublers have been replaced with 0.072 material instead of 0.064 material and the 570602-208 and -209 have been replaced with 0.064 material instead of 0.051 material as recommended in Douglas Service Bulletin DC3 No. 220, inspection is required as outlined in paragraph A-2, but they need not be replaced at 16,000 hours provided the following are accomplished:

1. Complete inspection as required by A2 above is conducted at 16,000 hours and no cracks are found.

46–13–4 Douglas (Was Service Note 10 of AD–618–3 and Service Note 11 of AD–669–3.) Applies to All DC3 Models Except Conversions From the C–47 Series.

1. Inspect visually for cracks all landing gear rear brace strut fittings, P/N 230659, that have not been removed and magnetically inspected at last airplane overhaul. This inspection should be accomplished prior to next flight.

2. If crack is less than ⅛-inch long it may be ground or filed out, being careful to remove all marks and scratches, without removing the fitting, until the next overhaul. If cracks are found to be longer than ⅛ inch, the fitting must be removed and repaired in accordance with paragraph 3 below.

3. Cracks in weld area can be repaired by grinding away all existing weld and rewelding. If cracks extend through spacer plate, the spacer plate may be cut back beyond the end of crack, all old weld removed, and a new section of spacer plate lap welded to the remaining portion of the spacer plate and then seam welded to the side plates. Cracks extending through the side plates for a maximum of ¼ inch may be repaired by grinding a "V" on the outside surface of the plate to a minimum of 1/16 inch beyond the end of the crack and welding. The weld must be ground smooth.

4. If fitting is removed, rivets may be replaced with spacers and 3/16-inch AN bolts having a ream fit through the bulkhead and fitting in order to facilitate installation.

5. In order to insure that parts in the airplane continue to remain satisfactory for service, the following inspection procedure should be followed:

(*a*) Visually inspect landing gear rear brace strut fitting at periods not to exceed 1,000 hours.

(*b*) Remove and magnetically inspect rear brace strut fitting at each major overhaul.

(The inspection and repair outlined above are covered by Douglas Service Bulletin No. 233, Section IV.)

The inspections outlined above will not be necessary when the landing gear rear brace strut fitting, P/N 230659, is replaced by the new fitting, P/N 4341810.

(Supplement to Douglas Service Bulletin No. 233, as revised October 24, 1946, covers this same subject.)

46–13–5 Douglas (Was Mandatory Note 10 of AD–618–3 and Mandatory Note 12 of AD–669–3.) Applies to All DC3 Aircraft.

To be accomplished not later than April 1, 1947.

Replace all canvas control boot assemblies either with the new rubber control column boot assemblies of the same part number (No. 5035184–16 and –17), as called for on Douglas Service Bulletin No. 231, or with the following boot assemblies:

(*a*) Thompson Co. (H. I. Thompson Co., 1733 Cordova St., Los Angeles 7, Calif.), No. 11–21001, change B, for Models DC3–C/C–47 and DC–3–D/C117A.

(*b*) Thompson Co. No. 11–21002, change A, for Model DC3.

(*c*) American Airlines Drawing No. CDS–6132.

Pending replacement, the canvas boots should be inspected prior to each flight to determine that the top of the boot is tight around the control assembly and the pocket around the base is eliminated.

46–24–2 Douglas (Was Mandatory Note 3 of AD–762–7.) Applies to C–54 Series Aircraft.

To be accomplished not later than next periodic inspection.

Revise the magneto wires forward of the firewall in accordance with Douglas Service Bulletin No. C–54–283 dated March 19, 1946. This is necessary to prevent burning of the magneto ground wire conduit which will cause the magneto to short out.

46–27–1 Douglas (Was Mandatory Note 5 of AD–762–7.) Applies to C–54 Series Aircraft.

To be accomplished not later than November 1, 1946.

Inspect immediately the spar webs in the wing integral tank area to ascertain if reinforcements have been installed in accordance with Douglas Service Bulletin C–54–205 dated October 1, 1945. If not already installed, reinforcements must be added by November 1, 1946. Pending rework, airplanes which do not have reinforcements may be operated if daily inspection shows there is no leakage. Fuel should be carried in outer wing tanks as cracks may develop that might not be detected.

46-27-2 Douglas (Was Mandatory Note 4 of AD-762-7.) Applies to C-54 and DC-4 Aircraft.

Inspection to be accomplished immediately and at periods not to exceed 35 hours thereafter.

Numerous reports have been received of cracks occurring in the nose wheel brace strut collar, P/N 5102824, in the region where the steering lugs meet the collar body. If cracks are found, repairs should be made as outlined in Douglas Service Bulletin C-54-209S (Supplement) dated May 31, 1946. After repairs have been accomplished, inspection must be continued at intervals not to exceed 35 hours.

Douglas Service Bulletin C-54-209S (Supplement) dated August 12, 1946, contains the information which is included in the supplement dated May 31, 1946. In addition, the later supplement outlines a method for the installation of steel brace rods to the nose wheel brace strut collar. Although the addition of the steel brace rods is not mandatory, it is recommended by the Douglas Co. If the steel brace rod installation has been incorporated in addition to the rework to the nose wheel brace strut collar which is required in the above paragraph, the 35-hour periodic inspections will not be required.

46-39-3 Douglas (Was Service Note 2 of AD-762-7.) Applies to C-54 Series Aircraft.

Pending accomplishment of AD 46-24-2, the magneto wires forward of the firewall must be inspected for chafing each 100 hours of operation.

46-39-4 Douglas (Was Mandatory Note 7 of AD-762-7.) Applies to C-54 Series Aircraft.

To be accomplished not later than November 15, 1946.

Instances of valve freezing, due to ice forming in the detent chamber, have been reported on fuel tank selector and crossfeed valves. To prevent valve freezing, the Parker and Hydro Aire valves must be reworked by filling the detent chamber with Dow Corning compound No. 4 and installing a washer to retain the compound and to act as a water shield.

Douglas Drawings 4331597 and 2331524 cover this same subject.)

46-39-5 Douglas (Was Mandatory Note 6 of AD-762-7.) Applies Only to C-54B and Other C-54 Series Airplanes Having the C-54B Fuel System.

To be accomplished not later than December 1, 1946.

The main fuel line supporting brackets at wing Stations 357, 378, and 399 are subject to vibration failure and are to be replaced with redesigned brackets. In addition, the United Carr clips at wing Station 378 are to be replaced by Adel clips.

(Douglas Service Bulletin No. DC-4-5 covers this same subject.)

46-43-1 Douglas (Was Service Note 13 of AD-669-3 and Service Note 11 of AD-618-3.) Applies Only to DC3C and DC3D Series Airplanes and to DC3 Airplanes Having C-47 Type Outer Wings Installed.

Inspection required at next periodic inspection and at intervals not to exceed 450 hours thereafter.

Inspect the outer wing attach angles for signs of corrosion. This corrosion may be found in the form of blisters on the surface of the angle with small cracks running across the surface of the blister. Cavities often exist under the blisters and if the corrosion has progressed sufficiently, may extend through the angle. This corrosion is intergranular in type and if found, the complete wing attach angle affected must be replaced. Evidence of the corrosion can be found on the outer surfaces of the angles; therefore, the wings need not be removed to complete the inspection. This inspection may be accomplished at the same time as the attach angle inspection required in AD 39-24-1.

(Douglas Service Bulletin No. 243 covers this same subject and gives additional information regarding the causes of this difficulty.)

46-43-2 Douglas (Was Mandatory Note 12 of AD-618-3 and Mandatory Note 13 of AD-669-3.) Applies Only to DC3 Series Aircraft Having the No. 4118923 Magnesium Alloy Casting Rudder Pedal Slide Tube Support.

To be accomplished not later than January 1, 1947.

Install a third AN 3-21 bolt in the existing hole between the two holes now having AN

3–21 bolts in the attachment of the Rudder Pedal Slide Tube Support, No. 4118923 and –1, to its Pedal Assembly (5118929, 5118931, and 5118928). If necessary, to correct misalinement among the three holes, it is permissible to use 24ST or 4130 bushing with 1/32-inch wall thickness. This additional bolt is necessary to insure the 100% margin of safety required on the magnesium casting.

(Douglas Service Bulletin C–47–101 covers this same subject.)

47–2–1 Douglas (Was Mandatory Note 9 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

To be accomplished at next engine change.

Replace present low carbon steel bolts and brass nuts on exhaust collector rings with stainless steel bolts and nuts. This change is necessary in order to eliminate stretching of these bolts, corrosion, and other maintenance problems connected with the present type bolts used in the exhaust collector system.

(Douglas Service Bulletin DC–4 No. 10 covers this same subject.)

47–2–2 Douglas (Was Mandatory Note 10 of AD–762–7.) Applies to All C–54 Series Aircraft and DC–4 Aircraft, Serial Numbers 42904 to 42943, Inclusive; 42948 to 42952, Inclusive; 42982 to 42996, Inclusive; and 43065.

To be accomplished not later than July 1, 1947.

Inspect the clevis shear bolts in the vertical stabilizer forward attach fitting (Station 953), P/N 4106204 and –1, for loose or stretched bolts. In some instances, the lower 3/16-inch bolts, when being checked for tightness, have broken. In order to overcome the difficulty, the stabilizer attaching fittings should be reworked and bolts be replaced with high heat-treated bolts.

(Douglas Service Bulletin DC–4 No. 11, covers this same subject.)

47–2–3 Douglas (Was Mandatory Note 11 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

To be accomplished not later than August 1, 1947.

Because of failures in service of the main 9-inch Douglas aluminum accumulators, it is necessary to replace these accumulators with dual 7½-inch accumulators. Bendix P/N 406920 or Vickers P/N AA 14308B. A single Vickers 10-inch accumulator Model AA–14310 may also be installed in place of the single Douglas accumulator.

(Douglas Service Bulletin DC–4 No. 9, covers this same subject.)

47–2–4 Douglas (Was Mandatory Note 12 of AD–762–7.) Applies to C–54 and DC–4 Aircraft. Revised May 24, 1948.

To be accomplished not later than March 15, 1947.

Relocate engine primer solenoid to prevent fuel leaking into firewall junction box. This change shall be accomplished in accordance with item 25 of Douglas Service Bulletin C–54–266, dated May 17, 1946, or part 2A, item 4; and part 2C, item 12 of Douglas Service Bulletin DC–4 No. 66, dated June 18, 1947.

47–2–5 Douglas (Was Mandatory Note 13 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

To be accomplished not later than next periodic inspection.

Inspect the entire electrical system for evidence of damage due to chafing, heat, or foreign matter; and of loose terminals and connections. Pay particular attention to wiring subjected to heat from voltage regulators; the buss to the main cabin junction box; and any screws projecting into cable ducts. Correct any unsatisfactory conditions.

47–2–6 Douglas (Was Service Note 3 of AD–762–7.) Applies to C–54–DC Series Airplanes Incorporating Brake Pressure Accumulators and All DC–4's up to Serial Number 43065.

Rework the hydraulic hand pump shutoff valve 5241991 by replacing the valve retainer, spring and plunger with a sleeve and new type packings. The existing P/N 5241991 and 4242103 are to be removed and Nos. 2343816–4 and 2343816–6 restamped on the valve assembly and valve body, respectively. Also, change placard at the hand pump shutoff valve control to read "brakes, cowl flaps, nose wheel steering and windshield wiper" in the forward position and "landing gear, wing flaps, and main accumulator" in the rear position.

(Douglas Service Bulletin DC-4 No. 3, covers this same subject.)

47-2-10 Douglas (Was Service Note 14 of AD-669-3.) Applies to All DC3C (C-47 Series) Aircraft and All DC3 Aircraft Having C-47 Elevators Installed.

Reports have been received indicating that the 5115210-5 and 5115210-9 elevator ribs at the inboard and outboard ends of the trim tab cutout were found to be cracked on the left-hand elevator. All reports thus far were on surfaces which incorporated ribs made of 0.020 material. In September 1944, the ribs were increased in gage to 0.040 for new production and so far no difficulties have been reported. It is recommended that all 0.020 ribs be inspected at intervals not to exceed 130 hours. These ribs can be reinforced by the addition of an 0.040 doubler as shown in Figure 1 of Douglas Service Bulletin 244, Section I. After the doubler has been installed, these parts should be inspected at each engine change period. The elevators should be rebalanced after the reinforcing doublers have been installed.

It is also recommended that all surfaces incorporating 0.040 ribs be inspected at each engine change period in order to preclude the possibility of cracks occurring in these heavier ribs.

(Douglas Service Bulletin No. 244, Section I, outlines the recommended doubler installation mentioned above.)

47-6-7 Douglas (Was Service Note 12 of AD-618-3, Supplement 1; Service Note 15 of AD-669-3, Supplement 1.) Applies to All DC3 Series Aircraft.

To be accomplished not later than the next periodic inspection, or in the case of scheduled air carrier aircraft, at the next major inspection.

Check the pull necessary to trip the trigger on the CO_2 fire extinguishing system. If the trigger pull exceeds 50 pounds due to wear of the aluminum conduit covering the fire extinguisher release cable, this conduit must be replaced immediately. This procedure is to be repeated at each specified inspection period until such time as the aluminum cable conduit is replaced by stainless steel conduit.

(Douglas Service Bulletin DC3 No. 246 dated November 22, 1946, covers this same subject.)

47-12-1 Douglas (Was Mandatory Note 14 of AD-762-7.) Applies to All C-54 and R5D Series Airplanes, and the Following DC-4 Airplanes: 42904 to 42943, Inclusive; 42948 to 42952, Inclusive; 42982 to 42996, Inclusive; 43065 to 43069, Inclusive; 43071; 43072; and 43102. DC-4 Production Airplanes Nos. 43070, 43090, and Subsequent Except 43102, as Noted Above, Will be Modified Prior to Delivery.

To be accomplished not later than January 1, 1948.

If the clear-view panel in the windshield is opened in flight when the landing gear and flaps are extended, exhaust fumes enter the cabin. This causes considerable discomfort to passengers and may create a hazard which would affect the safe operation of the airplane. In order to prevent the exhaust fumes from entering the cabin under these conditions, all openings around the control cables and flap buss system at the side of the fuselage must be sealed and and additional means for exhausting main cabin and cockpit ventilating air provided, unless tests made by the operator of the individual airplane show no unsatisfactory condition of carbon monoxide entering cabin with open windows when landing gear down and flaps extended.

(Douglas Service Bulletin No. DC-4, No. 32, covers this same subject.)

47-12-2 Douglas (Was Mandatory Note 15 of AD-762-7.) Applies Only to DC-4 and C-54 Series Airplanes Equipped With Pratt & Whitney R-200-11 Engines.

To be accomplished not later than July 15, 1947.

A considerable number of center main bearing failures have occurred in the R-2000-11 engine. These failures include roller bearing P/N 24966 and plain bearing P/N 97387 and 97387B.

To remedy this unsatisfactory condition as soon as possible, the following shall be accomplished:

Remove from service at the first opportunity, but in no case later than July 15, 1947, all plain type center main bearings of the above

part numbers. Install either the superinspected roller bearing (same part number as above) or incorporate the 2SD13–G or equivalent type main components of the power section crankcase, details of which can be obtained from Pratt & Whitney instructions dated January 15, 1947 and entitled "Power Section Service Fix for R–2000–7 and R–2000–11 Engines". Superinspected roller bearings may be procured through Pratt & Whitney or bearings in stock may become eligible if they are disassembled, inspected, and the inner race magnafluxed.

In cases where operating specifications do not so provide, main oil screen (on right side of rear accessory housing) checks will be accomplished at each routine inspection or at least at every 75 hours of operation to detect failure of bearing. This precautionary inspection must be conducted immediately and also after change to the superinspected roller bearing. However, this precautionary inspection is waived after complete modification has been accomplished to the 2SD13–G or equivalent type components in view of the greatly improved reliability and durability which these components have demonstrated in comparable service.

47–16–1 Douglas (Was Mandatory Note 16 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

To be complied with not later than September 1, 1947.

A. In those aircraft having the ammeter shunts in the positive generator leads, install two circuit breakers or circuit breaker switches in each nacelle junction box and reconnect each ammeter lead through one of these circuit breakers. Any type or variety of 10–ampere circuit break may be used, with the exception of the automatic-reset type.

B. Install a circuit breaker or circuit breaker switch in the main junction box and connect in series with the voltmeter circuit wire PJ–34 at the (d. c.) buss. Any type or variety of 10-ampere circuit breaker may be used, with the exception of the automatic-reset type. The nonoverride variety of circuit breaker is preferable.

C. Install for Heinemann type AM 1614–15–28–2 or equivalent, 15-ampere circuit breaker switches or circuit breakers, at the regulator location, in the leads to the B terminal of the voltage regulators; wires PA–530, PA–531, PA–730, and PA–731. The usual thermal circuit breaker or fuse does not provide sufficient protection to meet the peculiar requirements of a protective device for a generator field circuit application.

Additional information on the foregoing changes are described by Douglas Drawing No. 4350951 entitled "Rework of Generator Field Lead and Volt-Ammeter Lead Circuit Protection". A Douglas Aircraft Service Bulletin on this subject is also being issued.

47–16–2 Douglas (Was Mandatory Note 17 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

To be accomplished not later than June 1, 1947.

In case of leakage of the oil dilution solenoid, fuel may flow down the flexible conduit between the solenoid and the firewall junction box and into the junction box, thus creating a fire hazard. To correct this condition, remove the existing flexible conduit and wire between the solenoid and junction box and install new 18-gage wire. Support wire with AN 755–4–4–8 clamps spaced approximately 10-inches apart.

This change is similar to the removal of the flexible conduit for the primer solenoid as covered in item 25 of Douglas Service Bulletin 266 in accordance with Note 47–2–4.

(Part 2A, item 4 of Douglas Service Bulletin DC–4, No. 66, dated June 18, 1947, covers this same subject.)

47–27–2 Douglas (Was Service Note 4 of AD–762–7.) Applies to All C–54–DC Series and DC–4 Airplanes.

Inspection required at intervals not to exceed 170 hours. (Effective March 21, 1961.)

Open the quick-opening type inspection doors in the bottom of the outer wing and center wing section surfaces forward of the front spar and aft of the center spar. Inspect spar web structure for loose rivets, cracks, or other irregularities. Pay particular attention in the fuel tank areas for evidence of fuel leaks which will indicate cracked spar webs or rivets and seam leaks.

All spar web cracks which are found after accomplishment of AD 46–27–1 (Service Bulletin C–54–205. "Rework—Integral Fuel

Tanks") or cracks that are located in areas to which the Service Bulletin C–54–205 does not apply, should be repaired in accordance with Douglas Drawings No. 5354811, "Service Rework—Station 463, Outer Wing, Center Spar", and No. 3344236, "Repair—Integral Tank Spar Web Crack".

47–27–4 Douglas (Was Mandatory Note 18 of AD–762–7.) Applies to All C–54 and DC–4 Series Airplanes Having Exhaust Collector Rings Made Up of Top Segments P/N 5174842–56 L.H. and 5174529–56 R.H.

To be accomplished not later than the first engine change subsequent to July 15, 1947, but in any event not later than October 15, 1947.

Several reports have been received of cracking failure of the collector ring "Y" outlet assembly due to breathing of the exhaust stack. This induces failure which creates a fire hazard. This type of exhaust collector "Y" is not reinforced with a flange and is shown on page 4, Douglas Service Bulletin No. DC–4 No. 31. To correct this condition weld a scalloped stiffener flange on the exhaust collector aft of the "Y" outlet assembly.

(Douglas Service Bulletin No. DC–4 No. 68 covers this same subject.)

Until this repair is accomplished, inspection for cracks should be made immediately and at periods not to exceed 50 hours of operation.

47–33–1 Douglas (Was Mandatory Note 19 of AD–762–7.) Applies to All DC–4 and C–54 Type Aircraft Except Production DC–4 Aircraft Serial Numbers 42952, 42992, and Subsequent.

The following is to be accomplish to reduce the possibility of wear of the outboard elevator hinge parts: Inspect immediately for wear, proper installation and operation unless already accomplished, and at periods thereafter not to exceed 250 hours flight time, or in the case of Scheduled Air Carrier Operations, at each major inspection closest to 250 hours until the following mandatory rework is accomplished. (This mandatory rework shall be accomplished not later than October 15, 1947.)

(*a*) Each horizontal stabilizer outer hinge bracket P/N 5109899, must be reworked as follows:

(1) Line ream 0.3745–0.3755-inch diameter holes through the two lugs at each hinge point.

(2) Press in 3323406–A–2 bushings, two required, made from $\frac{9}{16}$-inch diameter corrosion resistant steel bar, Spec. AN–QQ–S–771, Comp. FM, Cond. B., or bushing, P/N 1356866, which may be purchased from the airplane manufacturer.

(3) Machine shoulders of bushings on inside of lugs to obtain clearance for bearing in eyebolt of 0.563 inch, plus 0.005 inch and minus 0.001 inch. Minimum thickness of shoulder on each bushing after machining should not be less than 0.020 inch.

(4) Line ream hole 0.3120–0.3140 inch in diameter through bushings after pressing into hinge fitting.

(5) Remove outboard elevator hinge eyebolt assembly, P/N 2110992, and install new assembly, P/N 2328991.

(6) Reinstall elevators using 2357035–15 bolt through bushed hinge bracket and new eyebolt assembly, with 1357162 washer (two required—one under head of bolt and one under nut), AN 310–5 nut and AN 380–2–2 cotter pin.

(*b*) The horizontal stabilizer outer hinge bracket, P/N 5109899, was replaced in later production aircraft and on some aircraft in the field with P/N 3323406. This latter bracket incorporates a $\frac{5}{16}$-inch bolt with eyebolt P/N 2328991, and must be reworked in accordance with parts 1, 2, 3, 4, and 6 of paragraph (*a*).

(Douglas Service Bulletin DC–4, No. 73 dated September 23, 1947, covers this same subject. An earlier issue of this Service Bulletin dated June 12, 1947, called for NAS 55–15 bolts in paragraph (*a*)(6). It is satisfactory to leave the NAS 55–15 bolts installed on airplanes reworked as per the original issue of the Service Bulletin.)

47–33–2 Douglas (Was Mandatory Note 14 of AD–618–3, Supplement 2; and Mandatory Note 15 of AD–669–3, Supplement 2.) Applies to All DC3 Series Aircraft.

To be accomplished not later than the first engine change after September 1, 1947, but in any event not later than December 1, 1947.

In order to preclude cowl flap hydraulic line failures and possible subsequent fires, replace grommets and lines forward of the fire-

wall with AN 833–4 elbows and AN 924–4 nuts, or equivalent, and new fire resistant flexible hose assemblies of proper length.

47–36–1 Douglas (Was Mandatory Note 1 of AD–3L–1.) Applies to A–26B and A–26C Aircraft.

Compliance required prior to November 15, 1947, on all serial numbers.

To reduce the possibility of failure of the wing bulkhead assemblies and subsequent loss of the ailerons:

1. Machine face of boss on fitting assemblies P/N 4154028 and 4154028–1, to 0.335 inch, and ream bore to 0.9007 + 0.0000, −0.0005 inch. (See Figure 1.) Replace bearing AN 209K4A with self-alining bearing, P/N AN 200KS4 and stake in six places each side. Install reworked fitting assemblies, P/N 4154028 and 4154028–1, on original bulkheads as follows:

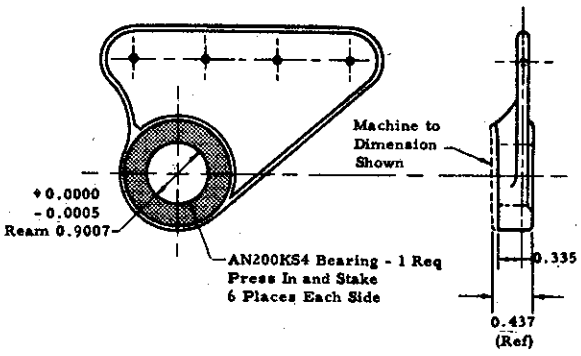


FIGURE 1

(*a*) On installations using two screws, P/N 1029421–416–11, or two bolts, P/N AN 4–6A, and three rivets, enlarge the rivet holes in the fitting and bulkhead to 0.191-inch diameter and countersink the holes in bulkhead 100°. Install fitting using two screws, P/N 1029421–416–11 or NAS 214–11, or two bolts, P/N AN 4–6A, originally installed, two washers, P/N AN 960D416, and two nuts, AN 365–428, in the top and bottom holes, and three screws, P/N S–1029421–10–12, three washers, P/N AN 960D10, and three nuts, P/N AN 365–1032, in the three remaining holes.

(*b*) On installations using four or five screws, P/N S–1029421–10–12, reinstall fitting assemblies with original screws, washers, and nuts.

2. Inspect bulkhead assemblies, P/N 5153663 and 5153663–1, for cracks. If cracks are found, replace bulkhead as follows:

Remove damaged bulkhead by drilling out the attaching rivets. Using damaged bulkhead as a pattern, fabricate a new bulkhead from 0.081-inch 24SO aluminum alloy sheet, condition A, annealed (Spec. No. QQ–A–362 or AN A–13.) After forming new bulkhead, heat-treat in accordance with AN 01–1A–1, section V, then apply one coat of zinc chromate primer.

Hold new bulkhead in place on the airplane and check for proper alinement between the upper and lower surfaces of the wing and wing tip. (Drill holes to match existing holes in the angle, skin, and fitting.) Install bulkhead using rivets, P/N AN 426AD–(O), length and diameter as required.

Install reworked fitting assemblies on new bulkheads as follows:

(*a*) For fitting assemblies which incorporate two ¼-inch bolt holes and three rivet holes, enlarge the rivet holes to 0.191-inch diameter. Drill corresponding holes in bulkhead and countersink 100°. Install fitting assembly using two screws, P/N 1029421–416–11 or NAS214–11, two washers, P/N AN 960D416, two nuts, P/N AN 365–428, three screws, P/N S–1029421–10–12, three washers, P/N AN 960D10, and three nuts, P/N AN 365–1032.

(*b*) For fitting assemblies which incorporate four 0.191-inch diameter holes, drill corresponding holes in new bulkhead and countersink 100°. Install fitting assembly using four screws, P/N S–1029421–10–12, four washers, P/N AN 960D10, and four nuts, P/N AN 365–1032.

Reinstall aileron and check alinement of fitting assembly. Install washers, P/N AN 960D416 or AN 960A416L, or shim stock, as required, to take up the end play between the bearing inner race and bracket assembly, aileron hinge support.

(Army Technical Order 01–40AT–40 covers this same subject.)

47–36–2 Douglas (Was Mandatory Note 2 of AD–3L–1.) Applies to A–26B and A–26C Aircraft.

Compliance required prior to operation in cold weather and not later than next engine overhaul.

To preclude collapse of the oil screen during cold weather starting, replace oil screen assembly No. 51887 with oil screen assembly Nos. 51887M or 107547. P/N 51887 may be reworked to P/N 51887M by incorporating reinforcing spring No. 107542 and adding the letter "M" to the part number.

47–42–1 Douglas (Was Mandatory Note 20 of AD–762–7.) Applies to DC–4 and C–54 Aircraft.

To be accomplished not later than April 1, 1948.

To prevent the possibility of the gust lock control becoming engaged in flight or during taxiing, a latch assembly must be installed to safety the control handle in the gust lock "OFF" position. Early aircraft incorporated a short gust lock control handle. In later aircraft, the control handle design was changed and the length of the handle increased to provide more leverage. On aircraft incorporating the short gust lock control handle, latch assembly, P/N 3356892, must be installed. In aircraft incorporating the new and longer handle, latch assembly, P/N 4356957, must be installed and the gust lock handle link assembly, P/N 4248396, must be reworked by removing and replacing the spring, P/N 2356732 (or 1248420), and plunger, P/N 1248421, with new bolt P/N 1356885.

In addition to the above, the elevator and rudder gust lock in the tail section and the aileron gust lock in the fuselage center section must be reworked by removing shaft, P/N 1165889, and replacing with new piston, P/N 2356840. After completing the rework, care must be exercised in properly rigging the gust lock control system.

(NOTE: Some operators have obtained approval of a gust lock latch of their own design. In such cases, the Douglas designed latch need not be installed, however, the remainder of the rework described above must be accomplished.)

(Douglas Service Bulletin DC–4 No. 79 covers this same subject.)

47–42–2 Douglas (Was Mandatory Note 21 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

To be accomplished as soon as possible but in any case not later than the first engine change after November 15, 1947.

It has been found that on some airplanes certain rework has been accomplished on the fire seal between the accessories section and the nacelle at the upper cowling former at the point where the carburetor airscoop skin rests on top of the firewall. This rework creates a hazardous condition by providing an opening from the accessories section into the nacelle, through the access hole under the nor ram air intake fairing.

Inspect all airplanes to ascertain that a fire seal is provided in this area. If the cowling fire seal has been cut away it must be replaced either with the original type seal or with a new type seal.

(Douglas Service Bulletin DC–4 No. 19 covers a new type fire seal.)

47–42–3 Douglas (Was Mandatory Note 22 of AD–762–7.) Applies to C–54 and DC–4 Aircraft.

All the provisions of items A through O apply to airplanes used for carrying passengers under the provisions of Parts 41, 42 and 61 of the Civil Air Regulations. On these airplanes the changes are to be accomplished not later than November 1, 1948.

Only items A, (12), A (15), C, D, F,J,K (1), K (2), L, M, O (2), O (4), O (5), and O (7) apply to airplanes other than those indicated above. On these airplanes the changes are to be accomplished not later than the first engine change after November 1, 1948.

As a result of investigation of powerplant fires which have occurred in this type aircraft, the following changes are to be accomplished:

A. 1. Seal all cracks and baffles in oil cooler fairing and provide additional drain holes.

2. Rework cowl tail pipe shroud to eliminate all cracks and gaps and seal shroud to cowl panel joint.

3. Seal inner ring corners at oil cooler joints.

4. Reinforce exhaust shroud to prevent damage when used as a step and seal same.

5. Provide accessory compartment vent opening in oil cooler fairing panel.

6. Seal joints between all engine accessory sections cowling panels to prevent leakage of flame into accesory section.

7. Eliminate engine accessory compartment vent opening in the side accessory section cowl panel.

8. Seal pressure transmitter and fire warning switch holes on firewall.

9. Close gap between aft oil cooler fairing and nacelle skin aft of firewall.

10. Rework the hydraulic suction line connecting to the shutoff valve aft of the firewall to prevent failure at fittings due to rigidity of the line.

11. Relocate the hydraulic pressure and automatic pilot lines to move them farther away from the exhaust shroud.

12. Add a check valve in the automatic pilot delivery line behind the firewall.

15. Change the nacelle firewall miscellaneous line connector assembly on the right side of the firewall from dural to steel.

16. Change carburetor air scoop adapter sleeve to provide a tight and flexible connection.

17. Replace exhaust stack nuts with special long-type nuts, extending past stud ends, on exhaust pipe attachments to engine and safety wire the nuts in place.

18. Change nuts and bolts used on the four-bolt flanges at the top of the exhaust collector ring to stainless steel.

19. Seal main landing gear door hinges on inboard nacelles.

20. Install means to prevent exhaust nipples from telescoping and pulling out of cylinder exhaust ports, in the event of exhaust port stud failure. (Douglas clamp assembly P/N 4244017 may be used.)

(Douglas Service Bulletin C–54–250 covers the above items respectively. Items 13 and 14 of that Bulletin are not required by this Note.)

B. Rework forward edge of exhaust shroud to eliminate gaps leading into engine accessory section.

(Part I, Douglas Service Bulletin C–54–234, covers this same subject.)

C. Add two fire detectors on forward face of firewall in vicinity of shutoff valve location.

(Douglas Service Bulletin No. C–54–252 covers this same subject.)

D. Relocate engine primer solenoid to prevent fuel from running into electrical junction box on rear face of firewall.

(Item 12, Douglas Service Bulletin DC–4 No. 66, covers this same subject.)

E. Install extended tail pipes on exhaust collectors.

(Douglas Service Bulletin C–54–289 covers this same subject.)

NOTE: Some of the above-mentioned changes were accomplished at the time Army or Navy airplanes were converted for civil certification. However, it will be necessary to check for compliance, in order to insure that items A to E, inclusive, are complied with.

F. Improve the seal at the point where the top of the oil radiator duct fits against the cutout in the bottom of the accessories section diaphragm.

(Part 1 of Douglas Service Bulletin DC–4 No. 49 covers this same subject.)

G. Revise sealing of engine section drain line support adjacent to oil cooler shroud by installing a drain manifold.

(Part B of Douglas Service Bulletin DC–4 No. 66 covers this same subject.)

H. Replace dural oil inlet elbow on oil cooler with new type steel elbow.

(Part F, 9 of Douglas Service Bulletin DC–4 No. 66 covers this same subject.)

I. Improve sealing of engine accessories section diaphragm at the four cutouts for the exhaust collector ring supports.

(Part 2 of Douglas Service Bulletin DC–4 No. 49 covers this same subject.)

J. Replace micarta fairleads with fairleads of fire resistant material for propeller governor and carburetor air preheat control cables on inner ring and for all engine control cables on firewall.

(Douglas Service Bulletin DC–4 No. 55 covers this same subject.)

K. 1. Install seven fire-warning detectors in zone 1, (engine power section) on the cowl flap ring brackets and install separate set of warning lights in the cockpit for each engine.

2. Add an additional fire warning detector in zone 2, (engine accessories section) on top of the oil cooler housing at approximately the center of the section.

(Douglas Service Bulletin DC–4 No. 57 covers the above two items.)

L. Replace open relays in junction box behind firewall with sealed relays and provide a drain for the junction box.

(Douglas Service Bulletin DC–4 No. 61 covers this same subject.)

M. Attach nacelle junction box cover plate on forward face of firewall directly to firewall rather than to the junction box.

(Douglas Service Bulletin DC–4 No. 65 covers this same subject.)

N. Inspect and seal all holes in the inner ring around the carburetor air preheat control and install fire resistant fairlead in retainer.

(Douglas Service Bulletin DC–4 No. 55 covers this same subject in part.)

O. 1. Inspect and rework if necessary, inner ring cutouts for cowl flap actuating bellcranks to provide metal-to-metal contact between inner ring and cowl flap bellcrank bracket on aft side of inner ring. Dimple inner ring to accomplish metal-to-metal contact, or fill gap with washers made from Johns Manville No. 96 wire woven asbestos sheet impregnated with neoprene.

2. Inspect and rework diaphragm, inner ring and firewall for excess holes, gaps and rubber grommets. Close and seal all holes and gaps, and install fireproof grommets or equivalent.

3. Inspect and seal, with Johns Manville No. 96 or equivalent, gaps that may exist where the carburetor airscoop casting passes through the accessory section inner ring.

4. Inspect and seal with Johns Manville No. 96 split seal or equivalent the hole where the engine oil line (from the intermediate rear section to the main oil sump) passes through the plate in the accessory section diaphragm at the bottom of the engine.

5. Inspect and seal with Johns Manville No. 96 or equivalent any gaps that may exist where the plate mentioned in item 4, above, mates with the outer section of the accessory section diaphragm.

6. Inspect and seal gaps existing between the diaphragm and the three engine crank case bosses. The magneto vent lines pass through the gaps around two of these bosses; the manifold pressure takeoff line at right top of engine being the third.

7. Provide a fluid shutoff means at a point behind the firewall in the line leading from the oil tank to the feathering pump on airplanes having the feathering pump located on the engine side of the firewall. This may be accomplished by a shutoff valve tied into the present shutoff valve linkage aft of the firewall, or a flapper type check valve.

NOTE: Items O–1 through O–7 are to be developed and accomplished by the operators affected, since Douglas has not prepared Service Bulletins to cover these changes.

47–42–5 Douglas (Was Mandatory Note 2 of AD–781–1.) Applies to the Following DC–6 Airplanes: AAL Serial Numbers 42854 to 42865, Inclusive; Serial Numbers 42879 and 42880; UAL Serial Numbers 42866 to 42875, Inclusive; and Panagra Serial Numbers 42876 to 42878, Inclusive.

To be accomplished not later than August 1, 1948.

In order to prevent window curtain interference when opening emergency exit doors, remove hook assemblies, 2346313, –500, from curtain track, 5337482, and from the window curtain assemblies, 3343932–512, and replace with new slides, 1335554 and hooks 1345849 on each side of the four forward and the two aft cabin emergency exit door window frames.

(Douglas Service Bulletin DC–6 No. 15 covers this same subject.)

47–42–6 Douglas (Was Mandatory Note 3 of AD–781–1.) Applies to the Following DC–6 Airplanes: AAL Serial Numbers 42854 to 42865, Inclusive; Serial Numbers 42879, 42880 and 42882 to 42891, Inclusive; UAL Serial Numbers 42866 to 42875, Inclusive; and 43000 to 43009, Inclusive; Panagra Numbers 42876 to 42878, Inclusive; NAL Serial Numbers 43055 and 43056; and AAF Number 42881.

To be accomplished not later than August 1, 1948.

In the main cabin, Station 890, stencil "Fire Extinguisher" on forward side of bulkhead 12 inches from the floor at the right-hand edge of the lounge door.

(Douglas Service Bulletin DC–6 No. 18 covers this same subject.)

47–42–7 Douglas (Was Mandatory Note 4 of AD–781–1.) Applies to the Following DC–6 Airplanes: AAL Serial Numbers 42855 to 42858, Inclusive; and UAL Serial Numbers 42866 to 42869, Inclusive.

To be accomplished not later than next engine change.

In order to prevent possible injury to flight crew members, it is necessary to install a spring in the handle operating mechanism of both windshield corner window assemblies. The purpose of the spring is to return the operating mechanism handle to a flush position when released in the open window position. To accomplish this, remove the AN 393–35 pin and the NAS 75–3–007 bushings from the attaching point of 2335660 wedge and the upper end of 4335656 channel on 5243829 windshield corner window assembly. Install 5243829F–4 clips on the inside of each leg of channel. Rework 2335658F–6 link. Install 5243829F–2 spring to clips and eyebolt. Install wedge to upper end of channel. Repeat the foregoing operations for removal and installation of identical parts to 5243829–1 windshield corner window assembly.

(Douglas Service Bulletin DC–6 No. 19 covers this same subject.)

47–42–8 Douglas (Was Mandatory Note 5 of AD–781–1.) Applies to DC–6 Airplane Serial Numbers 42854, 42855, 42857, 42858, 42860 to 42865, Inclusive; 42867, 42869 to 42880, Inclusive; 42882 to 42891, Inclusive; 43000, 43001, 43003 to 43009, Inclusive; 43055 and 43056.

To be accomplished not later than next No. 3 inspection (or not later than next 150 hours for non-air-carrier operations).

Certain cases have been found wherein the 5240452 horizontal stabilizers do not have the rivet pattern specified on Drawings Nos. 5248752 and 5249045. The following specific cases should be inspected and rivets should be added if the numbers are less than the following:

Referring to Drawing 5248752 "Horizontal Stabilizer Rear Spar Assembly", zone 4, directly outboard of Station 63:

1. There should be at least 12 AD5 rivets top and bottom through the web and cap between the –14 and –12 stiffeners, not counting those through the stiffeners.

2. There should be at least 4 AD5 rivets through the –68 doubler, spar web and spar cap.

3. There should be at least 6 AD5 rivets top and bottom between the –12 stiffener and the –68 doubler through web and cap.

With reference to Drawing No. 5249045 "Horizontal Stabilizer Panel and Spar Structure Assembly", zone 3, section L–L, directly inboard of Station 69.5 both top and bottom, the existing rivet pattern of either 1/8 or 5/32 rivets should be continued inboard with AD5 rivets using the present pattern of 3/4 inch O. C. to within 3 1/16 inches from the end of the spar cap. Existing 1/8-inch rivets are satisfactory.

It should be noted that the foregoing inspections and riveting can be accomplished without removing the elevators.

(Douglas Service Letter A–214–529.010/RLT, and attached sketches, dated July 14, 1947, covers the same subject.)

47–42–9 Douglas (Was Mandatory Note 6 of AD–781–1.) Applies to DC–6 Serial Numbers 42854, 42855, 42858 Through 42865, 42869 Through 42880, 42882 Through 42891, 43000 Through 43009, 43055 and 43056.

To be accomplished not later than next No. 3 inspection (or not later than next 150 hours for noncarrier operations).

Certain cases have been found where the aileron hinge plates at wing Stations 421, 485, 585, and 675 were fabricated from overgage stock resulting in an interference fit between the plate and the clevis fitting. The following hinge plates and fittings should be inspected to determine whether or not they conform with the tolerances listed below. If plates are found which exceed the widths noted below, they should be reworked with emery cloth to specified limits and touched up with zinc chromate primer. Fittings which have been installed over an oversize plate should be anodized and carefully inspected before being reinstalled.

Station	*Hinge No.*	*Plate*	*Thickness*	*Fitting*	*Width*
421	1	3320118	0.249	4334619	0.249
			0.237		0.254
485	2	3323460	*0.238	4345756	0.334
			0.243		0.350
585	3	3323461	0.311	4345755	0.311
			0.297		0.316
575	4	3323462	0.249	4345754	0.249
			0.237		0.254

* Thickness of 0.093 angle not included.

Total thickness should not exceed 0.334.

(Douglas Service Letter A–214–529.004/RLT dated July 21, 1947, and attached sketches cover this same subject.)

47–42–10 Douglas (Was Mandatory Note 7 of AD–781–1.) Applies to the Following DC–6 Airplanes: Serials 42854 Through 42887, Inclusive, and Serials 43000, 43001 and 43055.

To be accomplished not later than January 1, 1948.

Some operators have experienced malfunctioning of the DC–6 landing gear antiretract mechanism, thereby preventing retraction of the landing gear. Pending redesign of the antiretract mechanism of the landing gear control valve assembly, P/N 3319922, the antiretract mechanism may be permanently disconnected if desired, however, if connected, it must be revised in accordance with this note.

In order to correct this unsatisfactory condition, which is due to slippage and lost motion in the antiretract cable system, it is necessary to accomplish the following:

1. Remove clamp P/N 1338701 from Arens down-lock control cable assembly, P/N 4334802. Install 21-inch dural tube, P/N 1356157, around lower end of the Arens control cable (the upper end of the tube should be flanged). Install AN 735–7 clamp at lower end of tube. (Prior to installing dural tube push 4-inch (7/16 I. D. x 9/16 inch O. D.) synthetic rubber tube over lower end until it clears sufficiently to allow installation of clamp below it.)

On upper end of dural tube, P/N 1356157, install trunnion, P/N 1356154, which incorporates a bushing, P/N B–162–0688, and clips, P/N 1356156. Attach this assembly to the wheel well cover plate stiffener approximately 21 3/8 inches below upper end of cover plate.

Remove down-lock control cable climp, P/N 1340559, located 4 1/16 inches from Station 114.5 and install new clamp, P/N 1356158, on angle, P/N 5249561–366, 1 1/16 inches from Station 114.5.

(Douglas Drawing 5334338, Change "H" covers this modification.)

2. To correctly adjust the landing gear down-lock mechanism in order to maintain the required load of 100 pounds on the cable number 108 with the oleo fully extended, the oleo should be fully retracted into the shock strut cylinder and then permitted to fully extend, at least 8 to 10 times, checking and maintaining the 100-pound load after each operation.

(Douglas Drawing 7354206, page 28, covers this same subject.)

47–42–11 Douglas (Was Mandatory Note 8 of AD–781–1.) Applies to the Following DC–6 Aircraft: Serial Numbers 42854 to 42894, Inclusive; 43000 to 43012, Inclusive; 43055, 43056, and 43062.

Rework to be accomplished not later than December 15, 1947. (See Note 47–42–19.)

Cracks have been found near the ends of the tail stub extension of the horizontal stabilizer front spar caps, top and bottom, just inboard of the stabilizer joint. In order to prevent cracks from traveling to a point which may impair the airworthiness of the aircraft, the rework described below shall be accomplished. Until such time as the rework is accomplished, inspect the area in question at every No. 2 inspection period according to instructions contained in Douglas Telegram A–214–529, 012/RLT, dated July 25, 1947.

A. Cut a 7/8-inch diameter hole through skin and doubler only, 1 5/16 inches inboard and 2 1/32 inch aft of inboard fitting attaching bolt. Use special tools furnished by Douglas Aircraft Co., being careful not to scratch the spar cap. Strip primer off 7/8-inch diameter area on spar cap and inspect for cracks with high-power lens (40 power). If cracks are found, make a record of the location and extent of crack.

B. Drill 0.250-inch diameter stop hole through spar cap, 1 5/16 inches inboard and 2 1/32 inch aft of inboard fitting attaching bolt and burr, regardless of whether cracks are found. If cracks are found that will extend inboard beyond the location of the stop hole, do not operate airplane until further salvage rework instructions have been obtained. Cover holes in skin and doubler with sheet metal plug and fabric patch cemented in place. (Douglas E. O. No. 5339013 (Salvage E. O. Serial No. 375) describes the rework of installing the stop hole.)

47-42-12 Douglas (Was Mandatory Note 9 of AD-781-1.) Applies to DC-6 Serial Numbers 42866, and 42868 to 42875, Inclusive.

To be accomplished not later than February 1, 1948.

In order to provide adequate fastening of the rubber cushions on the reinforcing strap assembly of the astrodome, the following must be accomplished:

1. Remove the existing rubber strip cushions, P/N 5249604-36, all traces of cement and adhering rubber from reinforcing strap assembly, P/N 5249604-38.

2. Butt cushion assembly P/N 2356419 against pad P/N 5249604-42, locate and drill four No. 40 (0.098) holes through strap P/N 5249604-38 and attach with AN 426-AD-3-5 rivets.

3. Reinstall reinforcing strap assembly P/N 5249604-38, using eight AN 960-D-10L washers and eight AN 365-1032 nuts.

(Douglas Service Bulletin DC-6 No. 45 covers this same subject.)

47-42-13 Douglas (Was Mandatory Note 10 of AD-781-1.) Applies to DC-6 Serial Numbers 42854 to 42896, Inclusive; 43000 to 43018, Inclusive; 43035 to 43042, Inclusive; 43055 to 43057, Inclusive; 43062 to 43064, Inclusive; and 43105.

To be accomplished not later than April 1, 1948.

To prevent the possibility of the gust lock control becoming engaged during flight or in taxiing, a latch control assembly, P/N 4356957, is to be installed to safety the control handle in the gust lock "Off" position. The gust lock link assembly, P/N 4248396, must also be reworked by removing and replacing spring, P/N 2356732, (or 1248420) and plunger, P/N 1248421, with new bolt P/N 1356885.

In addition to the above, the elevator and rudder gust lock in the tail section and the aileron gust lock in the fuselage center section must be reworked by removing shaft, P/N 1165869, and replacing with new piston, P/N 2356840. After completing the rework, care must be exercised in properly rigging the gust lock control system. (Douglas Service Bulletin DC-6 No. 75 covers this same subject.)

47-42-14 Douglas (Was Mandatory Note 11 of AD-781-1.) Applies to DC-6 Serial Numbers 42854 to 42880, Inclusive; 42882 to 42884, Inclusive; 43000 and 43001.

To be accomplished not later than first blower overhaul after January 1, 1948.

To prevent bearing failures in the voltage regulator blowers, replace the bearings formerly packed with lubricant Z815 with new bearings containing lubricant Z801.

(Douglas Service Bulletin DC-6 No. 43 describes the complete rework.)

47-42-16 Douglas (Was Service Note 2 of AD-781-1.) Applies to DC-6 Aircraft.

Remove combustion chamber of surface combustion Model 63A66 thermal anti-icing heaters and Model A63A68 cabin and thermal anti-icing heaters for inspection and pressure test at each 500-hour interval of heater operation. Also carefully inspect downstream end of the combustion chambers at each periodic inspection.

47-42-17 Douglas (Was Service Note 3 of AD-781-1.) Applies to the Following DC-6 Aircraft Serial Numbers: Douglas 43061; AAL 42854 to 42865, Inclusive; 42879 to 42880, Inclusive; 42882 to 42896, Inclusive; and 43035 to 43044, Inclusive; UAL 42866 to 42875, Inclusive; and 43000 to 43024, Inclusive; Panagra 42876 to 42878, Inclusive; National 43055 to 43058, Inclusive; Sabena 43062 to 43064, Inclusive; Braniff 43105, 43106; KLM 43111 to 43112, Inclusive; and AAF 42881.

Inspection required at each 300 hours (or at each 150 hours for non-air-carrier operations).

Inspect the center spar web between Stations 167 and 184 for cracks in the web along the lower row of rivets which attach the spar web to the leg of the upper spar cap. For aircraft with the 10-tank fuel system this inspection can be properly made only by removing the fuel tank inspection opening near the affected area, since the spar web attaches to the forward side of the spar cap leg and small cracks in the web cannot be detected without close examination. If cracks are found during this inspection or, if between the inspections, leaks occur which are caused by cracks in the center spar web between Stations 167 and 184, the spar web

must be reinforced by installing a doubler in accordance with Douglas Drawing 5356664.

When the spar web reinforcement has been incorporated the special inspection required by this Note may be eliminated. All DC–6 aircraft not mentioned above will be reinforced at the factory.

(Douglas Service Bulletin DC–6 No. 29, "Rework Center Spar Web, Stations 167–184, Integral Wing Fuel Tank DC–6 Airplane", covers the same reinforcement as described on Drawing 5356664.)

47–42–19 Douglas (Was Service Note 5 of AD–781–1.) Applies to the Following DC–6 Aircraft: Serial Numbers 42854 to 42894, Inclusive; 43000 to 43012, Inclusive; 43055, 43056, and 43062.

Inspection required at every engine change.

After the stop holes are drilled in the tail stub extension of the horizontal stabilizer front spar caps, as required by AD 47–42–11, inspect *for signs of cracks, or progress of cracks, at* each engine change period. If the aircraft has been modified to incorporate the elevator fifth hinge modification, the inspection period may be extended to every other engine change period, but not to exceed 3,000 hours of airplane operation. If cracks progress beyond the stop hole, operation of the airplane must be discontinued until additional corrective measures have been determined.

47–51–12 Douglas Applies to All Converted C–47 Series Aircraft With Ram Nonram (Hydraulic) Type Carburetor Airscoop.

To be accomplished not later than March 1, 1948.

Compliance with the following items is necessary to preclude carburetor icing:

1. The carburetor alcohol system must be used.

2. The accessory cowling and engine fire seal must maintain not more than ¼-inch clearance of the collector ring.

3. The cable system for operation of the hot air door must be rigged to 30 pounds tension.

(Part B of Douglas Service Bulletin DC–3 No. 251 dated April 15, 1947, covers this same subject. Part A of the same Bulletin is not mandatory, but optional compliance may be accomplished when parts are available.)

47–51–15 Douglas Applies to DC–6 Serial Numbers 42854 Through 42880; 42882 Through 42888; 42890; and 42891; 43000 Through 43003; 43005 Through 43009; 43055; and 43056.

To be accomplished not later than next No. 3 inspection.

In order to prevent malfunctioning of the brakes, the original Raybestos brake lining, P/N 9520535 must be replaced with Goodyear BL–56 lining, P/N 9521091. This new lining is identified with two yellow dots.

(Douglas Service Bulletin DC–6 No. 1 covers this same subject.)

47–51–16 Douglas Applies to DC–6 Serial Numbers 42854 Through 42880, Inclusive; 42882 Through 42891, Inclusive; 43000 Through 43009, Inclusive; 43055; and 43056.

To be accomplished not later than August 1, 1948.

In order to increase the strength of the flap support assembly at wing Station 378 and to replace the temporary rework outlined in Douglas Co. Service Letter of May 12, 1947, which was necessitated by failure of the flap hinge support assembly on an airplane in flight, the following must be accomplished:

(*a*) Remove the two Shafer bearings, P/N AB–4A from flap link assembly, P/N 4325008 and press in new Shafer bearings, P/N AB–5A and stake in place.

(*b*) Remove outboard flap link support assembly, P/N 5107188, and line ream (0.312–0.313) diameter through to permit use of 5/16-inch bolt for attachment of upper end of link assembly, P/N 4325008. Assembly, P/N 5107188 becomes P/N 5107188–500 after rework.

(*c*) Press out old bushing, P/N 1338719, two places in flap hinge bracket assembly, P/N 3320998, and press in new bushings, P/N 1338719–500.

(*d*) After replacing P/N 5107188–500 replace P/N 4325008, using bolts, P/N 2356375–22; washers, P/N 124682–5–12–6 and P/N AN 960–516; nut, P/N AN 310–5 and cotter pin, P/N AN 380–2–3.

(Douglas Service Bulletin DC–6 No. 66 covers this same rework.)

48–1–1 Douglas Applies to C–54 and DC–4 Aircraft.

Because of cracking and failure in the locking groove of Goodyear Model 20DHBM wheels, Assembly No. 530402–M, resulting from the use of the old one-place flange and lock ring, the following must be accomplished:

I. Not later than the next scheduled inspection at which necessary facilities are available, and at each succeeding No. 3 inspection until II is accomplished:

(1) Remove the wheel-retaining flange from all wheels which are used with, or ever have been used with, the one-piece retaining flange P/N 511033 or 530405–M and lock ring P/N 511051–1.

(2) Clean and etch the wheel lock ring groove and carefully inspect to determine if any cracking has started. Remove from service all wheels found to be cracked.

(3) Measure the diameter of the lock ring groove at the locking surface. The nominal diameter is 0.440 inch + 0.002 inch. When the groove has worn to more than 0.500-inch diameter and less than 0.563-inch, remove wheel from service until it has been reworked to provide a true radius in the outer side of the groove and the thrust surface is made parallel to the end of the wheel. This radius should be 0.220 inch + 0.001 inch. Wheels reworked in this manner must be inspected at each 500 hours or the closest major inspection period thereto. Remove from service any wheels in which the groove has worn to a diameter equal to or exceeding 0.563-inch.

II. To be accomplished not later than August 1, 1948.

Remove from service all one-piece flanges and lock rings and replace by two-piece flange P/N 530735–M and studs P/N 511284–6.

(Goodyear Service Bulletin No. 1 covers this same subject.)

48–2–2 Douglas Applies to C–54 and DC–4 Aircraft With Wilcolator Fire Detectors Installed in the Engine Power Section of the Nacelle.

Compliance required by next engine change.

Revise the method of attachment of the A–4981 Wilcolator fire detectors located on the cowl flap support wing in zone 1 by clamping the detector to its mounting plate with a retainer strip of 0.062-thickness low carbon steel sheet, cadmium plated, secured with the same screws which attach the detector to the support box. Failure of the supports is caused by vibration during engine operation.

(Douglas Service Bulletin DC–4 No. 75 covers this same subject.)

48–2–4 Douglas Applies to DC–6 Serial Numbers 42854 Through 42880; 42882 Through 42896; 43000 Through 43017; 43035 Through 43038; 43055; 43056; 43062, and 43063.

Compliance required by the next No. 3 inspection.

To prevent the brake lining from becoming wedged between brake disc and housing, replace the present adjustment pin Goodyear P/N 511940–1 and spring plate Goodyear P/N 512139 by the single piece adjusting pin Goodyear P/N 9510744.

(Douglas Service Bulletin DC–6 No. 90 covers this same subject.)

48–2–5 Douglas Applies to DC–6 Serial Numbers 42854 Through 42880; 42882 Through 42884; 43000 and 43001.

Compliance required by the first engine change after March 1, 1948.

To prevent the hot exhaust burning through the exhaust stack recess sheet on the upper and lower outboard accessory cowling, remove the present shield on the inboard side of the cowling and install a screw fastened exhaust chute of 0.042-thickness corrosion resistant steel sheet on the outboard side of the recess sheet. An air gap must exist between the exhaust chute and the recess sheet to allow a flow of ram air for heat dissipation.

(Douglas Service Bulletin DC–6 No. 30 covers this same subject.)

48–2–6 Douglas Applies to DC–6 Serial Numbers 42854 Through 42896; 43000 Through 43018; 43025; 43055 Through 43057; 43062 Through 43064; and 43105.

Compliance required by March 1, 1948.

As a fire protection measure, close off the dead air space between the upper and lower wing surfaces within the engine nacelle by installing cover plates over the open access hole in the lower surface of the wing in the right and left inboard nacelles between cen-

ter and front spars and between Stations 130 and 167.

(Douglas Service Bulletin DC–6 No. 92 covers this same subject.)

48–3–2 Douglas Applies to All Models C–54–DC and DC–4 Aircraft.

In order to prevent the emergency air brake valve from seizing due to infrequent operation, the following should be conducted:

At intervals not to exceed 1,000 hours, except at the discretion of the CAA Agent, the interval may be increased to coincide with a regular overhaul period, but should in no case exceed 1,700 hours.

Connect a gage to one brake port on each side of the airplane and discharge the air brake cylinder from one of the flight compartment controls. The initial air pressure indications on the gages at the brakes should not be less than 400 p.s.i. Allow 5 minutes for change in pressure due to temperature and again note the air pressure indications on the gages at the brakes. These second observed pressure indications should hold steadily for a period of at least 5 minutes. This will check the functioning of one of the pull mechanisms, the air brake control valve, shuttle valve, lines and fittings. Push in the control to release air pressure on brakes and operate other air brake control to insure that both pull mechanisms are operating properly.

48–5–1 Douglas Applies to All DC3 Aircraft Equipped With Pacific Aviation Oil Shutoff Valves.

Compliance required at first engine change after March 1, 1948, but not later than May 1, 1948.

Replace the present "O" rings in the oil shutoff valves with rings of H222–90 high temperature material or AMS–3228B material. There has been reported leakage attributed to the fact that the material in the "O" rings is not capable of withstanding the operating temperature of the oil.

(Douglas Service Bulletin DC3 No. 256 covers this same subject.)

48–6–5 Douglas Applies to DC–4 and C–54 Aircraft.

Compliance required by November 1, 1948.

To prevent failure of the aileron hinge eyebolts and the rudder trim tab and elevator trim tab hinges and control horns, the following changes must be made:

1. On airplanes having aileron assemblies P/N 5166075, –1, –500, –501, or –503, replace No. 3 hinge eyebolt P/N 1166013 with new eyebolt P/N 1357234. Airplanes having aileron assemblies P/N 5078609, –1, –500, –501, –502, or –503, do not require this hinge replacement.

2. On elevator and rudder trim tabs replace all hinges and control horns with new parts made of steel.

3. Replace the standard AN bolts in elevator trim tab and rudder trim tab hinges and control horns with new special close tolerance high strength bolts using new AN 310 type nuts, AN 960 washers and AN 380 cotter pins.

Inspection should be accomplished in accordance with Note 51–9–2 except in the case of aircraft in which the standard AN rudder and elevator hinge bolts have not been replaced with new close tolerance high strength bolts using new AN 310 type nuts, AN 960 washers and AN 380 cotter pins. In such cases, inspection should be accomplished at intervals not to exceed 1,000 hours.

(Douglas Service Bulletin DC–4 No. 83 covers the above rework.)

48–7–2 Douglas Applies to DC–6 Serial Numbers 42854 Through 42896; 43000 Through 43024; 43035 Through 43064; and 43105 Through 43110.

To be accomplished not later than the first engine change after March 1, 1948, but in any event not later than June 1, 1948.

To prevent failure in the engine supercharger control actuator when shifting from low to high blower and vice versa, it is necessary to provide overtravel in the engine supercharger control linkage by installing a new Geneva-Loc supercharger actuator lever, a new Bendix link-supercharger actuating link and a new four-hole mounting support bracket.

(Douglas Service Bulletin DC–6 No. 127 covers this same subject.)

48–7–3 Douglas Applies to DC–6 Serial Numbers 42854 Through 42896; 43000 Through 43024; 43035 Through 43053; 43055 Through 43064; 43103 Through 43119; 43129 and 43132 (Note: Some of the Above Airplanes May Have Had Part of the Changes Installed Before Delivery From the Factory.)

Compliance required by September 15, 1948.

To provide safer and more satisfactory operation of all the doors, the following reworks must be accomplished:

(1) Install new latch bolts on all emergency exit doors, main passenger door, crew door, heater compartment door, and belly cargo compartment doors, to incorporate a notch which allows slow depressurization before the door can be fully opened in the event the handles are inadvertently turned toward the "OPEN" position while the cabin is pressurized.

(2) Rework the operating and locking mechanisms of the passenger, crew, and emergency exit doors, to increase their strength and prevent malfunctioning.

(3) Install visual inspection plugs in the passsenger, crew, and emergency exit doors to allow individual inspection of each lock bolt to determine if it is properly locked.

(4) Install an assist handle above the main cabin door handle to prevent accidental grabbing of the inside door handle. (NOTE: Even in cases where the door handles have been changed so that the handle points downward when the door is closed and locked, it will still be necessary to install the assist handles.)

48–9–1 Douglas Applies to C–54 and DC–4 Aircraft.

To be accomplished not later than April 15, 1948.

Because of the hazards involved, the transfer of fuel between tanks must be prohibited. The following placard shall be installed in the cockpit in full view of the pilots:

"Fuel cross-feed system not intended for transferring fuel from one tank to another and should not be used for this purpose. When using crossfeed system, turn off tank(s) not in use."

In addition to the placard, the FAA Approved Flight Manual must be revised to incorporate proper fuel system operation procedures in accordance with the above placard. Approved Flight Manual pages may be obtained from the airplane manufacturer.

48–9–2 Douglas Applies to C–54 and DC–4 Aircraft.

To preclude the probability of short circuits occurring in the electrical distribution bus which runs from nacelles number one to four, and which is impracticable to protect by circuit protective devices, the following must be accomplished to assure that this bus will be in a fault-free condition.

I. Inspection required by April 1, 1948, and thereafter at intervals not to exceed 400 hours (or in the case of scheduled air carrier operators at each routine check period.)

Determine that at least ½-inch clearance is maintained between the bus and protuberances likely to "ground" the bus in the nacelle areas. Note particularly this clearance at the engine control pulleys and the pulley guide brackets.

II. Inspection required not later than July 1, 1948, and thereafter at intervals not to exceed 8,000 hours.

In those installations where the large No. 1/0 nacelle-to-bus feeder cables are run in metallic conduit, such cables must be pulled out for inspection. Replace by new cable ANA Spec. ANJC48a or Douglas DES SM–2001, where chafing or mechanical deterioration of the insulation is evident.

(NOTE: Oil-soaked insulation alone is not considered as sufficient cause to require the replacement of this cable.)

III. Not later than June 1, 1948.

Determine that the bus supporting brackets are of approved Douglas Aircraft Co. standard quality and that Adel or equivalent cushioned nongrounding type bus clamps are used for clamping the bus onto the brackets. Any substandard brackets and clamps must be replaced.

(Douglas Service Letter No. A214TS–1245/SRD–530 dated October 10, 1947, covers this same subject.)

48–10–1 Douglas Applies to DC–6 Aircraft.

To be accomplished prior to return to service in class A operation—with cabin supercharging and thermal deicing operative (with the exception of heat windshield deicing) and with cabin heaters inoperative.

Rework must be accomplished in accordance with the following Douglas Co. data:

Service Bulletin DC–6 No. 204A. Procedure for Disconnecting No. 2 and No. 3 Alternate Fuel Cells, dated December 18, 1947, or Service Bulletin DC–6 No. 204B, Fuel Tank Vent System Revision, as revised February 19, 1948.

Service Bulletin DC–6 No. 200, Revised Heater Fuel Pressure Regulator Diaphragms, as revised February 26, 1948.

Service Bulletin DC–6 No. 201, Removal-Heater Fuel Pressure Regulator Static Balance Lines, dated December 6, 1947.

Service Bulletin DC–6 No. 202, Heater Fuel Pump Check Valve—Rework, dated December 9, 1947.

Service Bulletin DC–6 No. 208, Cabin Heater and De-icer Fuel System Revision, as revised February 20, 1948.

Service Bulletin DC–6 No. 226, section I of V, Fire Extinguisher System for Boiler Room, as revised February 19, 1948.

Service Bulletin DC–6 No. 226, section II of V, CO_2 Piping, as revised February 21, 1948.

Service Bulletin DC–6 No. 226, section III of V, Installation Fire Detector Boxes and Conduit, dated February 12, 1948. Except that fire detectors in the under floor cargo compartments are not required since these compartments have been determined to comply with CAR 4b.383(d) requirements for Class "D" compartments when they otherwise comply with this Airworthiness Directive.

Service Bulletin DC–6 No. 226, section IV of V, Electrical Rework, as revised Feb. 26, 1948.

Service Bulletin DC–6 No. 226, section V of V, Sealing of Forward and Aft Baggage Compartment and Inverter Compartment Blower Duct, as revised February 24, 1948.

Service Bulletin DC–6 No. 233, Fuel Overboard Drains for Wing Nose Area, dated January 14, 1948.

Service Bulletin DC–6 No. 247, Drainage Holes and Dams for Fuselage and Wings, as revised February 18, 1948.

Service Bulletin DC–6 No. 252, Heater Exhaust Louver Removal, as revised February 17, 1948.

Service Bulletin DC–6 No. 262, Installation of Combustion Heater Backfire Switches ,dated February 24, 1948.

Superchargers with No. 7357594 stamped on gearbox housing and 5357091 stamped on the impeller housing (scroll) are satisfactory for A operation. These superchargers will be eligible for either A or C operation when reworked and identified as shown in Douglas Service Bulletin DC–6 No. 258.

Service Bulletin DC–6 No. 225, Alcohol Windshield De-icing System, as revised February 24, 1948.

Service Bulletin DC–6 No. 246, Relocation of Manual and Automatic Pressure Relief Valve, as revised February 17, 1948.

Service Bulletin No. 224 canceled October 4, 1961.

Service Bulletin DC–6 No. 217, Installation of Fire Axe, as revised Dec. 23, 1947.

Service Bulletin DC–6 No. 214, Modification of Main Junction Box and Annex, as revised February 16, 1948.

Service Bulletin DC–6 No. 230, Rerouting of Heater Accessory Compartment Power Cables, as revised February 16, 1948.

Service Bulletin DC–6 No. 149, Fuse Protection for Flight Instrument Transformers, dated December 5, 1947.

Service Bulletin DC–6 No. 237, Addition of Fuse on Master Switch for Buffet, as revised February 21, 1948.

Service Bulletin DC–6 No. 248, Conduit Clipping to Combustible Fluid Lines, as revised February 13, 1948, and Addendum dated February 13, 1948.

Service Bulletin DC–6 No. 212, Protective Shield at Forward and Aft Cargo Compartment Lights, as revised January 7, 1948.

Service Bulletin DC–6 No. 206, Rework of Battery Leads to Prevent Shorting, dated December 9, 1947.

Service Bulletin DC–6 No. 218, Addition of Phenolic Sheet Insulation to AC Circuit Breaker Guard Assembly, dated December 17, 1947.

Service Bulletin DC–6 No. 221, Revision of Heater Fire Extinguisher Buttons, dated December 20, 1947.

Service Bulletin DC–6 No. 210, Protection for Outer Wing Booster Pump Lead-In, as revised December 22, 1947.

Service Bulletin DC–6 No. 213, Starter and Generator Power Cable in Wing, as revised December 19, 1947.

Service Bulletin DC–6 No. 242 ,Relocation of Tail Heater Control Can, as revised February 17, 1948.

Service Bulletin DC–6 No. 203, Hand Fire Extinguisher Support Bracket Revision, as revised February 17, 1948.

Service Bulletin DC–6 No. 260, Installation of AAL Type Master Switch Arrangement and Emergency Inverter, as revised February 24, 1948. (This installation not required on aircraft incorporating one set of vacuum operated flight instruments.)

Service Bulletin DC–6 No. 267, Installation Heater Safety Relays, dated February 27, 1948.

Service Bulletin DC–6 No. 205, Rework of DC–6 Fuel Tank and Cell Vent Chambers, as revised February 23, 1948.

Service Bulletin DC–6 No. 207, Guard for Fuel Booster Pump Switches, as revised December 19, 1947.

Service Bulletin DC–6 No. 253, Fireproofing of Wing De-icer Ducts in Nacelles, as revised February 24, 1948.

Service Bulletin DC–6 No. 219, Rework of Whittaker Firewall Shut-Off Valves, dated December 19, 1947.

Service Bulletin DC–6 No. 114, Fuel Flow Transmitter Line Replacement, dated October 29, 1947.

Service Bulletin DC–6 No. 261, Installation of Oil Separator for Vacuum Pump Drain Lines, dated February 25, 1948.

Service Bulletin DC–6 No. 249, Boiler Room Duct Revision, dated February 24, 1948.

Service Bulletin DC–6 No. 232, Wing Heater Exhaust Insulation Cover, as revised February 16, 1948.

Service Bulletin DC–6 No. 234, Tail Heater Ground Blower Check Valve Revision, as revised January 23, 1948.

The rework outlined in the data listed above is based upon an airplane which incorporates certain production changes. Therefore, in order to satisfactorily complete the required re-

work, some aircraft* must also be revised in accordance with the following:

Service Bulletin DC-6 No. 62, Rework-Cabin Pressure Control Valve Linkage, dated September 2, 1947.

Service Bulletin DC-6 No. 111, Cabin Heater Fire Extinguisher Bottle, dated October 22, 1947. (Partial accomplishment only is required, which is to include: Support No. 5333704-10, Pipe No. 5332568-518 and attaching parts.)

Service Bulletin DC-6 No. 119, Aft Baggage Compartment Smoke Detector Pick-Up Pipe Revision, dated December 6, 1947. (To be accomplished only if Modification Item 59 has not been accomplished.)

Service Bulletin DC-6 No. 16, installation of Additional Dams and Drain Plug in Fuselage Bottom, dated June 26, 1947.

Service Bulletin DC-6 No. 161, Rear Lounge Hot Air Supply Duct Sound Trap Installation, dated January 30, 1948. (Need not be accomplished on Serial Nos. 42854 through 42891, 43000 through 43009, 43055, and 43061 until Service Bulletin DC-6 No. 59, Improved Aft Lounge Heating, dated September 16, 1947, has been accomplished.)

Service Bulletin DC-6 No. 95, Revision-Ground Blower Duct and Check Valve and Air Duct Connection Improvement, dated October 21, 1947. (Accomplish portion covered by Service Change No. 354 and that portion of Service Change No. 358 which includes cable assemblies 1342327-502 and -504, hook No. 1342315, latch assembly 1342314, AN 960-10L, washers, AN 486-4 clevis, AN 393-11 and -13 pins, AN 380-2-2 cotters and AN 365-428 nuts.)

In addition to the above, the following must also be accomplished on all aircraft:

1. Inspect the wing structure around the fuel tanks in accordance with Douglas Service Letter to all operators dated December 29, 1947 (ref. A214TS-2521/SRD 529.37). Any damage found as a result of the inspection must be satisfactorily repaired.

2. The Airplane Flight Manual for each airplane must be revised to include FAA-approved procedures covering "Fuel Useage," "Fire Fighting" and "Smoke Evacuation from the Cockpit." This information, pages 1 and 2 of Section I, and pages 31 through 65 of Section III, as revised February 26, 1948, for aircraft incorporating Hamilton Standard Propellers, or pages 1 and 2 of Section I, and pages 31 through 71 of Section III, as revised February 26, 1948, for aircraft incorporating Curtiss Propellers, should be obtained from the Douglas Co.

3. Disconnect the cabin heater electrically and block off all fuel lines to this heater.

48-11-1 Douglas Applies to DC-6 Aircraft.

To be accomplished prior to return to service in class B operation—with cabin heating and thermal deicing, including windshield, operative, but with cabin supercharging inoperative.

Rework must be accomplished in accordance with the following Douglas Co. data:

1. Accomplish all rework covered by data listed in Note 48-10-1 for class A operation with the exception of the rework outlined in Service Bulletins No. 258, No. 225 and No. 230. Also accomplish paragraphs 1 and 2 but do not accomplish 3 of Note 48-10-1.

2. Rework in accordance with the following must also be accomplished:

Service Bulletin DC-6 No. 223, Stainless Steel Heater Discharge Ducts and Windshield Anti-Icing Ducts, as revised February 24, 1948.

Service Bulletin DC-6 No. 38, Heater Fire Warning Switch—Installation of, dated October 6, 1947

Service Bulletin DC-6 No. 250, Cabin Heater Shut-Off Control, dated February 19, 1948.

Service Bulletin DC-6 No. 211, Main Cabin Heater Exhaust—Revision of, as revised February 23, 1948.

Service Bulletin DC-6 No. 227, Cabin Heater Scoop Segregation, as revised February 24, 1948.

Service Bulletin DC-6 No. 243, Revise Cabin Heater Ignition Conduit in Boiler Room and Hell-Hole Area, as revised January 26, 1948.

Service Bulletin DC-6 No. 245, Heater and Buffet Power Cable Conduit, as revised February 24, 1948.

The rework outlined in the data listed above is based upon an airplane which incorporates certain production changes. Therefore, in order to satisfactorily complete the rework required, some aircraft* must also be revised in accordance with the following:

Service Bulletin DC-6 No. 40, Heater Exhaust Fire Detector—Replacement of, dated September 3, 1947. (Accomplish partially*).

Service Bulletin DC-6 No. 71, Installation—Oil Trap and Drain, Cabin Heater Combustion Air Duct, dated September 3, 1947. (Accomplish Electrical Phase of Service Bulletin only.)

Service Bulletin DC-6 No. 96, Windshield De-icing Air Discharge Revision, dated December 22, 1947.

Service Bulletin DC-6 No. 141, Improvements in DC-6 Cabin Pressure and Cabin Air Conditioning Systems, dated February 19, 1948.

Service Bulletin DC-6 No. 150, Revision—Cockpit and Windshield Heat Control System and Windshield Air Exhaust, dated December 11, 1947.

*Serial numbers of airplanes affected by this rework are listed on the pertinent Service Bulletin(s). Also, additional information may be obtained from the "Supplement" to "Cross Reference List-Service Changes and Modification Items" which has been prepared and revised by the Douglas Co. as of February 11, 1948.

Service Bulletin DC–6 No. 160, Cabin Air Mixing Valve Actuator, dated February 2, 1948.

Service Bulletin DC–6 No. 179, Ground Blower Electrical Wiring Revision, dated December 29, 1947.

Service Bulletin DC–6 No. 28, Installation of Ammeter and Selector Switch for Functional Check of Pitot and Air Scoop Anti-Icing Heaters, dated August 20, 1947. (Must be accomplished completely except that P/N 3320167-516 nameplate, 1 required, shall be deleted.)

In addition to the above, the following must also be accomplished in all aircraft:

(*a*) Disconnect the superchargers and drain and flush supercharger oil system.

48–11–2 Douglas Applies to DC–6 Aircraft.

To be accomplished prior to return to service in class C operation—with cabin supercharging, cabin heating, and thermal deicing including thermal windshield deicing, in operation.

Rework must be accomplished in accordance with the following Douglas Co. data:

1. Accomplish all rework covered by data listed in Notes 48–10–1 and 48–11–1 for classes A and B operation, including paragraphs 1 and 2 but excluding paragraph 3 of Note 48–10–1, and excluding paragraph (*a*) of Note 48–11–1.

2. Rework in accordance with the following must also be accomplished:

Service Bulletin DC–6 No. 258, Cabin Supercharger Revisions and Bearing Oil Control, dated February 13, 1948. (Also, all superchargers must incorporate low speed drive shaft per Douglas Installation Drawing No. 5350684–C.)

Service Bulletin DC–6 No. 257, Relocation of Cabin Supercharger Oil Cooler, as revised February 18, 1948.

The rework outlined in the data listed above is based upon an airplane which incorporates certain production changes. Therefore, in order to satisfactorily complete the rework required, some aircraft* must be revised in accordance with the following:

Service Bulletin DC–6 No. 13, Installation of an Oil Pressure Warning Switch for each Cabin Supercharger Gear Box, dated August 28, 1947.

48–12–1 Douglas Applies to All C–54 and DC–4 Aircraft As Specified by Civil Air Regulations Amendments 41–3, 42–2, and 61–2.

To be accomplished not later than the dates specified in the above amendments as revised by special Civil Air Regulations Serial Nos. 385, 390, 390A, 390B and any subsequent regulations affecting these compliance dates.

All air carrier aircraft must be modified to comply with the fire prevention requirements as outlined in CAR Amendments 41–3, 42–2, and 61–2. The modifications outlined in the following listed Douglas Service Bulletins and AD 47–42–3 are required for compliance with these amendments. Other modifications shown to be equivalent to those covered by the Service Bulletins will also be acceptable.

Service Bulletin No. 62, Install Smoke Detector in Belly Baggage Compartment; Service Bulletin No. 66, Engine Section Piping and Fitting Revision; Service Bulletin No. 69, Installation of Enclosed Waste Container in Lavatory.

In addition to the above it will be necessary to ascertain that all interior materials and finishes comply with the applicable sections of CAR 4b. Safety Regulation Release 259 outlines acceptable procedures for complying with these particular requirements.

48–12–2 Douglas Applies to All C54–DC Series and the Following DC–4 Airplanes: 42904 Through 42943, 42948 Through 42952, 42982 Through 42996, 43065 Through 43068, 43071, 43072, 43093, 43094, and 43102.

To be accomplished not later than the date established in accordance with the provisions of Special Civil Air Regulation Serial Number SR–329, or any subsequent regulation affecting this compliance date.

As a result of investigation of heater fires, the following changes are to be accomplished in the nose and cabin heater installation:

1. Install steel firewall at Station 260 (cabin forward bulkhead) from ceiling level to top of bulkhead to provide isolation between heater compartment and the space between cabin ceiling and top of fuselage. Also, replace present wood panels under heaters with metal panels. (Douglas Service Bulletin DC–4 No. 47 covers this same subject.)

2. (*a*) Install all heater control components in airtight steel containers.

(*b*) Replace present heater fuel supply pumps with a single electric driven pump attached to No. 2 main fuel tank.

(*c*) Provide shrouds around all heater fuel line fittings in fuselage.

*Serial numbers of airplanes affected by this rework are listed on the pertinent Service Bulletin(s). Also, additional information may be obtained from the "Supplement" to "Cross Reference List-Service Changes and Modification Items" which has been prepared and revised by the Douglas Co. as of February 11, 1948.

(*d*) Install a fire detector and extinguisher system for the nose heater and cabin heaters.

(Douglas Service Bulletins DC–4 Nos. 64 and 64 addendum cover this same subject.)

In some cases, operators have obtained approval from FAA Regional Offices for systems which differ in arrangement and detail from the above provisions. Designs which have been separately approved in this manner are considered to meet the intent of this Note.

This supersedes AD 46–39–2.

48–14–4 Douglas Applies to All C–54 Series Aircraft Prior to Model C–54G.

Compliance required by November 1, 1948.

Because of fire hazard install a tailpipe shroud deflector on each tailpipe shroud assembly to prevent flame from a zone 1 fire entering the engine accessory section through the space existing between the shroud and cowling. AN 3–3A bolts may be substituted for the AN 3C–3A bolts called out in the Service Bulletin.

(Douglas Service Bulletin C–54–289 addendum covers this same subject.)

48–15–3 Douglas Applies to C–54 and DC–4 Aircraft.

Compliance required by November 1, 1948.

Because of service failures of hydraulic pressure regulator valves, the following must be accomplished:

1. (*a*) Modify Douglas hydraulic pressure regulator valve P/N 5104005, P/N 5231848, or P/N 5327293 to the equivalent of Douglas regulator P/N 5332857, or

(*b*) Convert Douglas hydraulic pressure regulator valve P/N 5104005, P/N 5231848, or P/N 5327293 to Douglas regulator P/N 5332857, or

(*c*) Install Douglas hydraulic pressure regulator P/N 5332857, or

(*d*) Install Bendix hydraulic pressure regulator P/N 407484, or

(*e*) Install Air Associates hydraulic pressure regulator valve P/N HC–3600, or

(*f*) Install Vickers hydraulic pressure regulator valve P/N AA–34551, P/N AA–34552, or P/N AA–34585 which must have the letter "C" or subsequent terminating the regulator serial number, i.e., "Serial No. 0000C," "Serial No. 0000D," etc.

2. Install a hydraulic fluid filter with Purolator core in regulators listed in 1, (*a*) through (*d*).

(Douglas Service Bulletin DC–4 No. 22, "Rework of Hydraulic Presssure Regulator Valve" with addendum, "Optional Installation of Hydraulic Pressure Regulators" covers part 1. Douglas Service Bulletin C–54–239, "Installation of Filter in Hydraulic Regulator Operating Line," covers part 2.)

48–17–1 Douglas Applies to All DC3 Series Aircraft As Specified by Civil Air Regulations Amendments 41–3, 41–18, 42–2, 42–8, 61–2, and 61–16.

To be accomplished not later than the dates specified in the above amendments and any subsequent regulations effecting these compliance dates.

All air carrier aircraft must be modified to comply with the fire prevention requirements as outlined in CAR Amendments 41–3, 41–18, 42–2, 42–8, 61–2, and 61–16. The modification outlined in the following listed Douglas Service Bulletins are required for compliance with these amendments. Other modifications shown to be equivalent to those covered by the Service Bulletins will also be acceptable.

DC3 No. 250, "Installation of Fire Detector in Engine Accessory Section and Smoke Detector in Aft Cargo Compartment"; DC3 No. 252, "Rear Baggage Compartment Access Door and Vent"; DC3 No. 258, "Elimination of Holes in Firewall, Addition of Control Cable Seals, Replacement of Dural Plates and Fittings With Steel Plates and Fittings. Replacement of Fluid Carrying Lines Forward of Firewall With Steel or Fire Resistant Flexible Hoses"; DC3 No. 259, "Installation of Shut-off Valves on Lines Carrying Combustible Fluids Into the Engine Accessory Section". (Installation of additional fuel valves listed on Page 2 of this Bulletin is recommended but is not mandatory.)

NOTE: It will be noted that Service Bulletins DC3 No. 258 and No. 259 apply to all DC3C and DC3D (C–47 and C–117) Series airplanes only with P&W R–1803 engines. Since there are various differences in early DC3 powerplant installations with P&W S1C3–G engines and Wright GR–1820 engines, it will be the operator's responsibility to use these two

Bulletins as a guide and develop the fire prevention items for other DC3 Series airplanes accordingly.

In addition to the above, it will be necessary to ascertain that all interior materials and finishes comply with applicable sections of CAR 4b. Safety Regulation Release 259 outlines acceptable procedures for complying with these particular requirements.

48–17–4 Douglas Applies to All DC–4 and C–54 Aircraft Equipped With Pesco Vacuum Pumps and Separators.

To be accomplished not later than the date established in accordance with the provisions of special Civil Air Regulation Serial Number SR–329, or any subsequent regulation affecting this compliance date.

In case of malfunctioning of vacuum pumps or other vacuum pump system components, fire can occur withing the lines and burn through the hose connections into the engine compartment. To prevent such occurrences a hose liner must be installed between the exhaust port vacuum pump fitting and the separator line or a stainless steel flexible hose must be installed between the pump and the separator.

(Douglas Service Bulletin DC–4 No. 85 as revised March 10, 1948, covers this same subject.)

48–19–3 Douglas Applies to DC–6 Serial Numbers 42854 Through 42896; 43000 Through 43024; 43035 Through 43052; 43055 Through 43058; 43061 Through 43064; and 43105 Through 43110.

Compliance required by September 15, 1958.

Due to two failures in flight and to reported excessive looseness in the elevator trim tab operating mechanism, the following must be accomplished:

1. Rework drum, P/N 4344461 into drum, P/N 4357010–4, by boring hole in end of drum 0.8755–0.8745 diameter, 0.188–0.189 deep and concentric within 0.002 full indicator reading, and press in bushing 4357010–2 into hole. Remove nut, P/N 2335472, press in nut, P/N 2357008, in place so that two holes in nut match two holes in drum, P/N 4357010–4, and insert two pins, P/N 1335480, and stake in place. This rework changes jackshaft mechanism assembly, P/N 434460, into P/N 4357010.

2. Rework push-pull tubes, P/N 2344790, into P/N 2357984–2 by cutting off swaged end of tube 1/8 inch so that new tube length is 10 inches. Insert large end of plug, P/N 2357980, into tube 1¾ inches, drill two 0.161 diameter holes (No. 20 drill) and attach plug to tube with two rivets, P/N AN 430 AD5–16. Machine hex end on socket, P/N 2331924, and install in end of the tube opposite to plug, P/N 2357980. Rework end assemblies, P/N 2331925 into end assemblies, P/N 2357983, and install with locknuts, P/N AN 316–5R and washer 1357982.

Reassemble trim tab mechanism and install on aircraft.

(Douglas Service Bulletin DC–6 No. 123 covers this same subject.)

48–22–1 *See* Pratt & Whitney Engines.

48–25–1 Douglas Applies to All C54–DC Series and DC–4 Airplanes Prior to Serial Numbers 43095, Operated in Scheduled and Nonscheduled Air Carrier Passenger Service.

Compliance required by May 1, 1949.

Because of previous fires and the fire hazard which exists in zone 3, it is necessary that the following be accomplished:

1. To increase the effectiveness of the fire warning system in the nacelles, seven fire detector units must be installed in the nacelle (zone 3) aft of the firewall at the following aproximate locations:

(*a*) 1 unit at the top of nacelle approximately 15 inches forward of the front spar.

(*b*) 1 unit at each wing section fireseal.

(*c*) 1 unit at the aft end of the nacelle area under the fuel tank and near the fuel supply lines.

(*d*) 3 units on the aft face of the firewall (one near the top and one at each side.)

These fire detectors should be connected into the existing engine accessory compartment fire detector circuit, and the entire system wired into the circuit of the audible warning system.

(Douglas Service Bulletin DC–4 No. 60 covers this same subject.)

2. Revise the present fire extinguisher system in nose wheel well in order to install two additional 15-pound CO_2 bottles. Provide additional plumbing aft of the firewall in each

nacelle by running a perforated line across the top of the nacelle directly aft of the oil tanks and then diagonally aft and down to a point under the bottom wing skin aft of the front spar, at which point it will cross the nacelle and run diagonally forward and up to the original starting point. The discharge pipes tee into the present ¾ ring O. D. supply pipes for the accessory section. All aluminum CO_2 supply pipes between firewall and front spar and between the inboard and outboard fireseal ribs of each nacelle are to be replaced with steel pipe.

(Douglas Service Bulletin DC–4 No. 67 covers this same subject.)

48–28–2 Douglas Applies to C–54 and DC–4 Aircraft.

To be accomplished not later than April 1, 1949.

As a fire protection measure in order to prevent burn through, replace the present cabin heater combustion ducts with corrosion resistant steel ducts.

(Douglas Service Bulletin DC–4 No. 89 covers this same subject.)

48–44–1 Douglas Applies to All C–54 and DC–4 Series Aircraft.

To be accomplished not later than March 1, 1949.

In order to preclude nose gear retraction malfunction due to particles of disintegrated packing clogging the present upline orifice fitting, it is necessary to install an orifice fitting having a floating pin in the orifice hole and to replace the present packing used on the retracting cylinder with a more satisfactory packing. To accomplish this change:

1. Replace the present upline orifice fitting with a union fitting and rework the existing tee fitting to include an orifice fitting (0.063-inch diameter floating pin in 0.090-inch diameter orifice hole) in the pipe threaded end.

2. (*a*) Replace the existing chevron packing on the nose gear piston assembly with two synthetic chevron packings and two leather chevrons. Install two dural packing rings on each respective end of the piston head.

(*b*) Replace existing packing on the nose gear cylinder end assembly with one dural packing ring, three synthetic chevron packings, and one leather chevron packing.

(*c*) Install two new washers over the end of the cylinder barrel.

(Douglas Service Bulletin DC–4 No. 78 dated May 4, 1948 covers this same subject.)

48–48–2 Douglas Applies to All DC–6 Aircraft Not Equipped With Steel Vacuum Pump Discharge Lines Aft of the Firewall and Chicago Metal Hose Assemblies From the Oil Separator to the Pesco Pump.

To be accomplished as soon as practicable, but not later than May 1, 1949.

In cases of malfunctioning of vacuum pumps or other vacuum pump system components, fire can occur within the lines and burn through the hose connection into the engine compartment. To prevent such occurrences, replace the present Aeroquip Hose P/N 260–10WD–15½, existing between oil separator and Pesco vacuum pump, with a new Chicago Metal Hose Assembly No. 9273–1.

(Douglas Service Bulletin No. 383 covers this same subject.) Also, to prevent fire from entering the zone behind the firewall, replace the dural vacuum pump discharge line, aft of the firewall, with a steel line.

(Douglas Service Bulletin DC–6 No. 401 covers this same subject.)

48–49–3 Douglas Applies to All DC–6 Airplanes.

Compliance required not later than March 1, 1949.

To reduce the probability of a loss of power for electrical circuits considered to be essential in flight, these essential circuits were designed to be connected directly to the master bus. Other less essential circuits are connected to the master bus through a 500-ampere Burndy limiter (fuse).

In an undetermined number of aircraft some of the essential circuits were inadvertently connected to the distribution bus rather than to the master bus.

It is necessary, therefore, that all DC–6 aircraft be inspected and such rewiring as necessary be done to assure that the following circuit protectors are connected to the master bus:

Radio Master (B1–102), Fuel Booster Pumps (B1–63, 97), Inverter Power (B1–111, 116), Propeller Booster (Curtiss Propellers only, F1–28, 29), Propeller Control (Curtiss: B1–141, 142, 143, 144. Hamilton Standard: B1–188,

189, 190, 191), Propeller Synchronizer (B1–145), Governor Control (Hamilton Standard only, B1–192), Generator Control Panel (Eclipse Generator System only, B1–246, 247, 248, 249. Reference Douglas Service Bulletin DC–6 No. 329).

(Douglas Service Letter A214–T.3338/TFW dated October 22, 1948 covers this same subject.)

48–52–1 Douglas Applies to All DC–6 Aircraft.

To be accomplished not later than June 1, 1949.

1. Revise method of connecting power leads to main bus through Burndy limiters.

2. Reroute generator and starter cables in No. 4 nacelle to eliminate possibility of abrasion of power cables.

3. Install stainless steel combusion air intake ducting on all heaters.

4. Revise wing heater exhaust outlets to preclude nacelle fluids contacting exhaust piping.

5. Install expansion turbine oil drain and filling drain.

6. Install ducting from the wing and tail heater combustion air blowers to the outside skin of the nacelles and tail section. Ducting within the nacelles to be of stainless steel.

7. Delete present wing heater 1.4 pounds CO_2 bottles and eject the fuselage nose CO_2 banks to either wing heater. CO_2 to go into the heater deicing and combustion air and into the area surrounding the heaters. Controls for the new system to be grouped with and worked in the same sequence as the tail and cabin heater fire extinguisher system.

(Douglas DC–6 Service Bulletins No. 220, revised February 18, 1948; 270, dated March 8, 1948; 231, revised January 19, 1948; 259, revised March 12, 1948; 255, revised February 26, 1948; 256, revised February 12, 1948; and 272, revised April 8, 1948; cover the above items consecutively.)

49–6–2 Douglas Applies to DC–6 Aircraft.

To be accomplished at every 8,000 hours of total flight time.

Replace the following attachment bolts: (1) fuselage to center wing, (2) outer wing to center wing, (3) vertical stabilizer to fuselage, (4) horizontal stabilizer to fuselage and, (5) engine mount to firewall. The 8,000-hour period may be extended to 16,000 hours when studs 2325933 or 2340697, 2353832, 4329243 and 4333164 are replaced with studs 2361992, 2361993, 4361995 and 4361994, respectively, having letter "R" stamped on thread end and bolts in all other attachments listed are placed with NAS bolts with threads rolled after heat treatment. Bolts and studs removed from the airplane are to be scrapped and are not to be used again.

(Douglas Service Bulletin DC–6 No. 410 contains a list of all studs and bolts affected and their replacements.)

49–27–3 Douglas Applies to All Models C54–DC and DC–4 Series Aircraft.

To be accomplished as indicated below:

1. Prior to 5,000 hours total airplane time, or at next scheduled inspection at which necessary facilities are available, on airplanes with more than 5,000 hours total time, inspect nose gear yoke and fittings, P/N 5087950 and either 5087951 or 5180402 to determine if the ½-inch radius fairs in properly with the journal. All parts having a poor radius condition must be replaced immediately with parts having the correct radius fairing into the journal. This inspection does not have to be repeated if already accomplished.

2. Parts having a good radius must be replaced at each 17,500 hours airplane operation time. If the replacement parts have been shotpeened, as per Douglas Aircraft Co. recommendations, the replacement time may be extended to 30,000 hours airplane operation time.

3. Unused parts having a poor radius may be used, after being reworked according to Douglas Aircraft Co. recommendations.

4. All used nose gear yoke end fittings having not more than 17,500 hours total time may be reinstalled and used for a total time of 30,000 hours if Zyglo inspection reveals no cracks; the radius of the journal is properly reworked to meet the limiting dimensions of Douglas E. C. 1361954 and the part is shotpeened in accordance with Douglas Aircraft Co. standards.

5. At the time of replacement of parts as per item 1, or at the next major aircraft overhaul period, rework bushing, P/N 1087938, to incorporate a ⅛-inch radius on the inside diam-

eter at the flanged end of the bushing. Rework ring, P/N 2103390, by providing a 0.031-inch radius on the inside edges.

(Douglas Service Letters A-214-T.51/WBM dated January 7, 1948; A-214 TS2249/WBM dated November 25, 1947; and A-214-TS-1572/WBM dated October 20, 1947, cover the above.)

This supersedes AD 48-24-2.

49-30-1 *See* Curtiss Propellers.

49-33-1 Douglas Applies to All Model DC-6 Airplanes Eqiupped With Hamilton Standard Model 43D60/6851A-0 Props.

Compliance required not later than September 10, 1949.

As a precautionary measure against fatigue failure, Hamilton Standard Model 43D60/6851A-0 propeller blades may not be operated in excess of 3,500 hours unless the taper-bores have been remachined and reshotpeened by the manufacturer. In addition, any blades of this model which have sustained damage sufficient to change their face or edge alinement shall be withdrawn from service pending final results of manufacturer's test program.

49-38-2 Douglas Applies to All Models C-54 and DC-4 Aircraft.

To be accomplished at every 9,000 hours of total airplane flight time.

In those cases where the pressent bolts have or will have accumulated more than 9,000 hours time prior to the next regular overhaul period, the first replacement time may be extended, at the discretion of the CAA Inspector, to coincide with a regular overhaul period but in no case should the adjustment time exceed 1,500 hours accumulated after January 26, 1948. Thereafter the bolt replacement shall be at the 9,000- or 18,000-hour period, whichever is applicable.

Replace the following bolts: Fuselage to Center Wing Attachment; Outer Wing to Center Wing Attachment; Vertical Stabilizer Attachment to Fuselage Tail, Station 953; Engine Mount to Fire Wall Attachment; Horizontal Stabilizer to Fuselage Tail Assembly Attachment.

The 9,000-hour period may be extended to 18,000 hours when studs 4105725-1 and -2 in outer wing attachment have been replaced with special studs Nos. 4357723-1 and -2 having letter "R" stamped on thread end and bolts in all other attachments listed are replaced with NAS bolts with threads rolled after heat treatment.

The bolt part numbers and the number of bolts required are shown on pages 4 and 5 of the Douglas Service Magazine of August 1947. Bolts removed from the airplane are to be scrapped and are not to be used again.

(Douglas Service Letter No. 66, Supplement No. 2, dated July 18, 1951, covers this same subject relative to wing alinement at Station 421.)

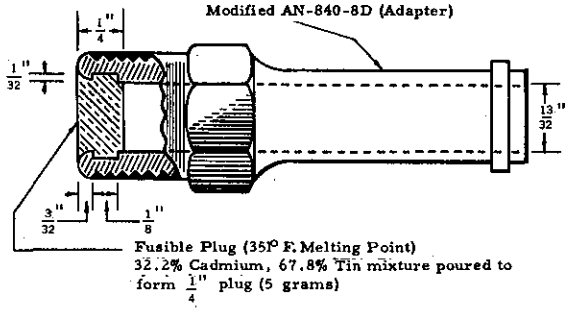
This supersedes AD 48-4-3.

49-46-1 Douglas Applies to All Models DC-4 and DC-6 Aircraft Equipped With Vacuum Systems, Incorporating Oil Separators Other Than the Type Mentioned in Item 2.

To be accomplished not later than April 1, 1950.

To guard against the possibility of excessive air temperatures in the vacuum system discharge line, one of the following modifications must be accomplished to this system:

1. Install a fusible plug in the side of the vacuum pump discharger port at the right angles to the axis of the discharge port boss. Some pumps incorporate a plugged hole in the discharge port which may be enlarged to a 3/8-inch pipe tapped hole to accommodate the fusible plug. This plug should employ an AN 840-8D fitting with a binary eutectic mixture of 67.8 percent tin and 32.2 percent cadmium, which has a melting point of 351° F. Figure 2 describes the design of such a plug. The 3/8-inch fusible plug fitting is intended for pumps such as the Model 3P-211 and 3P-



VACUUM SYSTEM FUSIBLE PLUG
FIGURE 2

485. For smaller pumps such as the 3P–207, and AN 840–6D fitting, incorporating the same modification as shown below, should be used. Incorporation of an overboard drain line clamped to the fusible plug is recommended but is not mandatory.

Brass fittings of the same design as the above dural fittings are acceptable. On installations which do not use an overboard discharge line the possibility exists that the plug may damage other nacelle components if it can hit them upon being out of the adapter as high velocity. Therefore, if no overboard discharge line is provided, the installation must be made in such a manner that the plug will not be directed toward any vulnerable components when it issues from the adapter.

2. Replace the present oil separator with a new oil separator, Genisco No. 40081 or equivalent. The new separator incorporates a pressure relief valve and can be disassembled for cleaning.

(Douglas Service Letter A–129–T–1271/WB–11–Q–4, dated April 1, 1949, covers this same modification.)

50–16–1 Douglas Applies to All Model DC–6 Airplanes Below Serial Number 43149.

Compliance required as soon as possible but in any event not later than January 1, 1951.

1. Conduct electrical and mechanical functional check of propeller reverse mechanism, throttle system.

2. (*a*) Rework fish mouth in the 2345735 throttle latch assembly to assure a more positive lock.

(*b*) Rotate the 2333338 arm-throttle reverse 20° clockwise on the shaft of the 4333339 lock assembly or replace with new 2333338 "F" change parts.

(Douglas General Service Letters DC–6 No. 19, dated November 18, 1949, and DC–6 No. 23, dated January 20, 1950, cover the above two items.)

50–18–2 Douglas Applies to All Model DC–6 Aircraft Equipped With Hamilton Standard 43D60/6841A–0, 6851A–0, and 6873A–0 Propeller Blades and R–2800–83AM4, R–2800–83A or CA Type Engines.

To have been accomplished by April 28, 1950.

A recent propeller blade tip failure of a Hamilton Standard 43D60/6851A–0 propeller on a DC–6 powered with R–2800–CA–15 engines probably resulted from a worn 4½ order engine crankshaft torsional damper P/N 101169. Until further notice or until the engines are known definitely to comply with P&W Service Bulletin No. 1033 dated November 30, 1949, all DC–6 aircraft using Hamilton Standard 6841A–0, 6851A–0 and 6873A–0 blades and R–2800–83AM4 or CA type engines shall be placarded to avoid all operation between 1,800 and 1,975, between 2,025 and 2,175 and between 2,225 and 2,450 r.p.m. Only acceleration and deceleration through placarded ranges shall be permitted. For gross weights above 80,000 pounds, 2,450 r.p.m. is permissible for normal climb. For gross weights below 80,000 pounds, climbing r.p.m. between 2,450 and 2,600 permissible. For gross weights above 80,000 pounds avoid operation above 2,450 r.p.m. except for takeoff and emergencies. For R–2800–83A engine installations, operating restriction presently covered in Aircraft Specification A781, Note 5C (1) applicable and until further notice operation between 1,800 and 1,975 and between 2,025 and 2,175 shall be prohibited.

50–23–2 Douglas Applies to All Model DC–6 Aircraft.

To be accomplished as indicated below:

1. All P/N 5245424 and P/N 5248748 nose gear yoke end fittings which have not been shotpeened in the journal radius prior to original installation or by subsequent rework should be removed for inspection after being in service for a period not to exceed 6,000 hours. Nose gear yoke end fittings which have already accumulated service time in excess of 6,000 hours should be removed for inspection as soon as practical but not later than September 1, 1950. Shotpeening can be distinguished by the dull gray color and coarse surface of the shotpeened area.

2. Fittings removed at the 6,000-hour period may be used for an additional 4,000 hours or a total service life of 10,000 hours if inspected and reworked as follows:

(*a*) Strip anodic surface from part, and subject to Zyglo inspection paying particular attention to the journal radius. If no cracks are found, the radius should be polished to remove all blemishes and then shotpeened. This inspection and shotpeening must be done

by the Douglas Aircraft Co., an agency approved by that company, or by a method that has been substantiated as being equivalent to the procedure recommended by the Douglas Co.

(*b*) Inspect the base radius of the spot faces of the six mounting holes. Parts having zero radius (sharp corner) to 0.031 radius at this point must be reworked to obtain an 0.062 spot face radius. It will be permissible to increase the original spot face diameter of 1⅛ inches to 1¼ inches to obtain the 0.062 radius. Parts having 0.031 or better radius need not be reworked. Parts should be reanodized after completion of all work.

(*c*) Inspect the inside diameter of the 2103390 ring. All sharp edges should be given a 0.031 radius.

(*d*) Inspect the inside diameter of the flanged end of the 2333253 bushing to see that it has a ⅛-inch radius and rework if necessary.

3. Fittings shotpeened at time of original installation may be operated for a maximum service period of 10,000 hours provided they do not have the zero spot face radius at the mounting holes. Parts falling in this category should be removed at the normal gear overhaul period of 8,000 hours for rework of the spot face radius.

4. All fittings should be scrapped after reaching a total service life of 10,000 hours.

(Douglas General Service Letter DC–6 No. 26 dated April 7, 1950, covers the same subject.)

50–43–1 Douglas Applies to All Model DC–6 Aircraft.

To be accomplished on or before the next major inspection where facilities are available and in any event by December 15, 1950, unless already accomplished at last previous tire change, and thereafter at the regular major inspection nearest to 330 hours. This inspection period may be extended to tire replacement periods by the assigned CAA Agent when the airline's service experience indicates that a satisfactory level of safety is being maintained.

Remove the tires from all Goodyear main wheels, Model L20HBMF, wheel assemblies 9540049 and 9540332, and thoroughly inspect by Zyglo or equivalent methods the critical areas of the wheel, such as:

1. Brake drive flange area.
2. Tire bead radius of the fixed flange.
3. Tire bead seat radius of the demountable flange.
4. Radius of the demountable flange step.
5. The flange returning ring groove in the wheel.

If cracks are found in any of the critical areas at one of these inspections, the wheel should be retired from service.

50–46–1 Douglas Applies to All Models DC3 and C–47 Series Aircraft Which Utilize a Standpipe in the Engine Oil Tank for Propeller Feathering Oil Reserve.

Compliance required not later than the first engine change after December 1, 1950.

There have been several cases of inability to feather the propeller due to inadequate feathering oil supply, following loss of engine oil. To correct this condition ascertain the quantity of oil retained in the tank by the propeller feathering standpipe with the airplane in the level flight attitude. If the quantity so retained is less than 1½ gallons, rework the standpipe so that at least this quantity is retained.

Aircraft employing C–47 type oil tanks, Douglas P/N 5110511 with Douglas P/N 1355088 standpipe will be considered satisfactory.

50–52–1 *See* Hamilton Standard Propellers.

51–1–1 Douglas Applies to All DC–6 Aircraft.

To be accomplished as indicated below.

(*a*) All airplanes at each 300 hours of flight time—Inspect for broken studs at the front spar lower and upper fittings at wing joint Station 421. Also inspect lower forward front spar fittings, P/N 4332884 and –1, and upper forward fittings, P/N 4332885 and –1, for cracks in area approximately 2 inches outboard of fitting face.

(*b*) If broken stud is found, replace both studs at spar fittings with parts having threads rolled after heat treat, install bolt with threads rolled after heat treat at center spar, and replace lower fitting P/N 4332884 and –1 and upper fitting P/N 4332885 and –1 with newly designed heavier fittings P/N 4397872 and –1 and P/N 4397873 and –1, respectively. Return of an airplane to service prior to the avail-

ability of the newly designed fittings is permissible by installation of new fittings of the old design (P/N 4332884 and 4332885), providing replacement is made at or before 8,000 hours of service on those parts. Spotface new fittings after installation to aline with adjacent fittings.

If records show previous case of broken parts at front spar fitting, and only corrective action taken was the replacement of studs with threads rolled after heat treat, inspect fittings at each 300 hours of operation until same replacement action outlined above is taken at next engine change period.

(*c*) Continue inspections outlined in (*a*), until following replacement action is accomplished:

1. If not previously incorporated, install studs at the front spar and bolts at the center spar which have threads rolled after heat treat. (See AD 49–6–2.)

2. Replace the lower forward front spar fittings P/N 4332884 and –1 with new heavier P/N 4397872 and –1 and replace the upper forward front spar fitting P/N 4332885 and –1 with new heavier P/N 4397873 and –1 spotfacing fittings after installation.

(*d*) Replacement action outlined in item (*c*) 1 and 2, to be accomplished not later than January 1, 1952.

(Douglas General Service Letter DC–6 No. 61 covers this same subject. Refer to Douglas Service Letter No. 66, Supplement No. 2 dated July 18, 1951, for wing alinement at Station 421.)

51–2–1 Douglas Applies to All Model DC3 Series Aircraft With Ramp Type Main Entrance Doors Hinged at the Bottom.

Compliance required as indicated below.

(1) At next No. 1 inspection or equivalent and at regular intervals not to exceed approximately 100 hours, inspect the main entrance door hinges and locking and warning mechanisms for alinement and/or adjustment until the rework of item (2) is accomplished.

(2) Compliance required by July 1, 1951.

A. Install an inspection window for at least the uppermost main entrance door locking bayonet. The installation to be in a manner to permit visual observation of the bayonets in the locked position so that it can be determined by visual means that the door is properly closed and locked. The bayonets and adjacent structure should also be appropriately marked with a paint stripe to indicate when the bayonets are in the locked position.

B. Provide means to prevent disengagement of bayonets by creeping due to vibration or other loads in flight. A notched bayonet installation similar to that covered in Metropolitan Airparts Service Bulletin No. MAP–1A for their airstairs Model A; or similar to the notched bayonet installation used on the Douglas DC–6 and Super DC3 main entrance doors; or a spring loaded positive over center latching mechanism will be considered to meet this objective.

(3) Compliance required by January 1, 1953.

To reduce the possibility of inadvertent opening of the door in flight install stops to positively limit the lock mechanism travel in accordance with Metropolitan Airparts Service Bulletins No. MAP–4A, MAP–5A, or MAP–6A (for Model A, C, or D Airstair Doors, respectively) or equivalent.

51–5–1 *See* Pratt & Whitney Engines.

51–9–2 Douglas Applies to All Models DC–4 and C54–DC Series Aircraft.

Compliance required as indicated.

A. To be accomplished at intervals not to exceed 2,000 hours of flight time. Torque check all empennage control surface hinge bolts by first making a visual check of the slippage stripe across the nut and the adjacent area for signs of any relative motion and then applying a tightening force to the nut equal to the minimum torque specified in the Douglas Maintenance Manual for the nut and bolt combination. If the nut does not move with the application of this force and the condition of the stripe indicates no previous movement, the assembly may be left intact. When any looseness is found, the assembly should be removed and thoroughly inspected.

B. To be accomplished at each major overhaul period. In addition to the control surface hinge bolts mentioned in part A remove the nuts from all rudder and elevator bracket attaching bolts and rudder and elevator hinge eyebolts. All nuts, bolt or stud threads, and mating surfaces must be cleaned of dirt, grease, oil or dye and thoroughly dried. All parts

should be checked for wear and replaced as necessary. Upon reassembly, all nuts should be torqued to the recommended values specified in the Douglas Maintenance Manual for the particular model airplane. All torqued or retorqued bolts should be identified by a narrow painted line across the nut and adjacent surface so any movement of the nut will be readily discernible. This marking should be done as soon as possible after torquing. Bolt heads should not be torqued or retorqued unless it is impossible to reach the nut because of inaccessibility. If it should be necessary to torque or retorque the bolt head, it should be marked in the same manner as described for the nut.

C. Airline operators with FAA-accepted maintenance inspection programs need only torque check 15 percent of fleet or minimum of two airplanes, whichever is greater, at each 2,000-hour period or in multiples of major inspection closest to 2,000 hours. This period may be increased in 1,000-hour steps until the major aircraft overhaul period is reached provided no defects are found. Thereafter, the torque check shall be accomplished on each aircraft at the aircraft major overhaul period. Where the FAA-accepted maintenance inspection program includes procedures equivalent to this Airworthiness Directive and above deviation, the FAA-accepted maintenance program may be followed in lieu of this Airworthiness Directive.

This supersedes AD 47-27-3.

51-10-1 Douglas Applies to All Model DC-6 Aircraft.

Compliance required at first engine change after receipt of parts but not later than June 1, 1952.

In order to increase the strength of the wing flap operating link assembly at wing Station 281, and to replace the temporary reworks of the present links as outlined in Douglas General Service Letter DC-6 No. 60, the following should be accomplished:

(*a*) Replace wing flap operating link assembly, P/N 4330069, with new heavier link, P/N 4393814.

(*b*) Visually inspect 4330069 links every 60 hours of operation until replacement per item (*a*), is accomplished. If links have been reworked and shotpeened per Douglas General Service Letter DC-6 No. 60, inspect every 500 hours of operation until replacement is made.

(Douglas General Service Letter DC-6 No. 60 covers this same subject.)

52-14-1 Douglas Applies to All DC-6, DC-6A and DC-6B Airplanes With Hamilton Standard Propellers Except as Otherwise Indicated.

Items I and II are to be accomplished by means of a progressive modification program to be submitted to and approved by the FAA. This program shall begin no later than August 1, 1952, and shall be completed no later than August 1, 1953.

I. In order to prevent inadvertent actuation of the propeller reversing solenoid valves, protect the reversing solenoid circuits from all other electrical circuits and protect the reversing solenoid circuits from each other. This is to be accomplished in accordance with attachment A and the following instructions which pertain to some of the specific features to be considered in isolation of the reversing circuits from other circuits. Other features which are not specifically referred to in this list shall be treated in an equivalent manner:

A. Modify the following multiple pin connector assemblies as specified in item 2 of attachment A (See AD 52-13-2 Lockheed for Attachment A):

1. Firewall connector (if the reversing solenoid lead has not already been removed).

2. Connector at the front of the control pedestal.

3. Connector at Hamilton Standard relay box (if used).

B. Modify the following terminal strips as specified in item 1 of Attachment A:

1. Firewall junction box terminal strip (if used).

2. Terminal strip at synchronizer compartment (if used).

3. Terminal strip within propeller control box located behind pilot's seat.

C. Protect the following exposed terminals as specified in item 1(*c*) of Attachment A:

1. Exposed terminals at secondary throttle lock relays located behind pilot's seat.

2. External A_2 and A_3 terminals on "C" relays in propeller control box behind pilot's seat.

D. Hamilton Standard reversing relay box (if used): Reversing solenoid circuit relay contacts, etc., to be shielded from all other circuits which are energized at any time except when reversing is desired. Reversing relay boxes which have separate pin connectors for the reversing solenoid wire and the remaining circuits shall be so installed that it will not be possible inadvertently to interchange any connectors on any two relay boxes.

E. Pressure seal disconnect: Modify in one of the following ways:

1. Bypass the pressure seal by using continuous wiring.

2. Provide a separate connector for the reversing solenoid lead.

3. Pins adjacent to the reversing solenoid pins shall be deactivated or used only in circuits which cannot provide sufficient energy to activate the reversing solenoid or circuits which are energized only when reversing is desired. Also, provide an insulating shield for the reversing solenoid pins on both sides of the pressure seal. The reversing solenoid wire shall be secured to this shield or in some equivalent manner to prevent the wire from falling free in case the terminal pin comes out of the socket.

4. Isolate the solenoid valve lead insert on both sides of the seal by covering both the socket and the wire terminal with insulation which will cover all exposed metal parts when the wire is in place, when the wire terminal has come out of the socket, or when the wire is broken at any point up to the point at which it is secured in the bundle. The nature of the insulation or the provisions for securing it in place must be such that its installation will not be overlooked during maintenance.

F. Reversing solenoid circuit wiring: Modify in accordance with item 4 of attachment A.

G. Other circuit modifications:

1. All airplanes with fuselage numbers below 233 shall be modified to comply with Hamilton Standard Service Bulletin No. 221.

II. Reverse solenoid lock assembly:

A. Comply with Douglas Service Bulletin DC–6, No. 356, dated March 9, 1949, to prevent excessive deflection of lock assembly components.

B. The "Reverse operable" warning device shall be clearly visible when the lock is open just a sufficient amount to permit pulling the throttles into the reverse regime.

III. Maintenance practices (to be instituted not later than August 1, 1952):

A. At each nearest scheduled service to 350 hours:

1. Inspect all points specified in items IB, IC and IE. These inspections may be discontinued if the modifications made to the system are of the type described in item E1 or E2; item 1A or 1B of attachment A and item 2A or 2B of attachment A.

B. At any time that an electrical fault occurs in a circuit which is carried in the same bundles or the same conduits as the reversing solenoid circuit, representative terminal points in the faulty circuit are to be inspected to determine whether any damage may have occurred within the bundles or conduit. If there is evidence of possible damage, all the wiring involved is to be removed and inspected. Damaged wiring is to be replaced as necessary.

C. At each nearest scheduled service to 350 hours, perform an electrical check of the reverse safety switches in the pedestal assembly to assure that the switch is open when the throttles are moved forward out of the reverse position, unless it is shown that failure of any of the reverse safety switches to open will be clearly apparent to the flight crew by reason of improper operation of the propeller control system. Because of the many technical considerations involved, analyses showing that the objective of this revision has been accomplished should be referred to the FAA for engineering evaluation and approval.

D. Conduct the mechanical functional test specified in AD 50–16–1 at each nearest schedule service to 350 hours.

IV. Operating instructions: Comply with item 5 of attachment A.

V. (Note: Propeller governor design changes, which are under development and whose purpose is to provide a high pressure hydraulic circuit bypass to safeguard against inadvertent reversing and ability to feather even when the reversing solenoid is energized, are still under consideration and may be the subject of a future directive.)

52-18-2 Douglas Applies to All Models DC-6, DC-6A and DC-6B Series Aircraft.

To be accomplished as indicated.

I. Inspection.

A. At intervals not to exceed 250 hours for airplanes having in excess of 4,000 flight hours, periodically inspect the forward flange of the lower front spar cap at Station 120½ at left and right hand using dye check inspection method or equivalent. This is the location of the bolt that attaches the inboard nacelle inboard attach angle to the spar cap flange. This bolt must be removed for this inspection. Any crack found must be properly repaired prior to further flight. This inspection shall be continued until the area is reinforced as outlined in item II.

B. At intervals not to exceed 35 flight hours for airplanes having in excess of 4,000 flight hours, perform a visual inspection of the forward flange of the lower front spar cap left hand and right hand at the bolt attachment of the lower inboard nacelle inboard attach angle paying particular attention to the upper and forward exposed area of the flange adjacent to the bolt. The spar area shall be thoroughly cleaned before inspection. Any suspicion of cracking shall be checked using dye check method or equivalent with the bolt removed. Airplanes that have been repaired wherein the cracks have been ground out of the flange and the flange area reinforced in accordance with Douglas Drawing 5482662-A shall also be visually inspected.

C. No special inspection is required on airplanes having a total service time under 4,000 hours.

II. Reinforcement. Aircraft not incorporating the reinforcement during production shall have the spar cap and other reinforcements added in the inboard nacelle area according to Douglas Drawings 5482863 and 5482950. Reinforcement should be accomplished by September 1, 1953, on airplanes having over 4,000 hours flying time by that date. Airplanes with less than 4,000 hours time as of September 1, 1953, should be reinforced prior to accumulation of 4,000 hours flying time. Any airplane incorporating the temporary repair per Douglas Drawing 5482662-A shall have the permanent reinforcement incorporated at the next engine change not to exceed 1,500 hours. High time airplanes and those with repaired flanges should be given priority in accomplishing these reinforcements.

52-20-1 Douglas Applies to Models DC-6, DC-6A, DC-6B Aircraft Below Serial Number 43274.

To be accomplished as soon as practicable, but not later than February 1, 1954.

To reduce the likelihood of electrical fire and the loss of electrical and electronic equipment essential to continue flight, it is necessary to provide adequate overvoltage protection. There are two systems involved, known as the "Eclipse Generator System" and the "General Electric Generator System". The changes required in each of these systems are as follows:

Eclipse. Replace the four B-14 type generator contactors with a high-voltage (120-volt rating) contactors of sufficient capacity to interrupt an overvoltage generator. Overvoltage relays are already installed in the Eclipse system, and these should be retained.

General Electric. Install overvoltage sensing relays and either (1) replace the four generator control relays, G. E. P/N 3GTR-77A102, with a high-voltage (120-volt rating) relay of sufficient capacity to interrupt an overvoltage generator, or (2) rework the G. E. P/N XRP-12 reverses current circuit breakers so as to trip out simultaneously with the generator control relay to provide for necessary additional interruption capacity. Except for the General Electric alternate (2) fix, this same subject is described in Douglas Service Bulletin DC-6 No. 470. The General Electric Co. has service information available for the G. E. system alternate (2) rework.

52-22-3 Douglas Applies to All Models DC3 and C-47 Type Aircraft.

Compliance required as indicated.

The following inspections and rework pertain to the center wing lower skin attach angles and doublers which are covered by parts A3 and B3 revisions of AD 39-24-1 published in Airworthiness Directive issue No. 52-6:

1. All Unreworked Airplanes Over 8,000 Hours.

(*a*) Install witness holes at the front and center spars per Douglas Drawing 5406787, view B and C, within a period not to exceed

1,500 flying hours from effective date of this AD (September 15, 1952), and make visual inspection for cracks in the wing skin through the witness holes, using at least an 8-power glass. Periodic inspection shall be made at intervals not to exceed 1,500 hours thereafter, with wings removed. Any cracks found must be repaired as mentioned in item 1 (*b*) or (*c*).

(*b*) If a crack is found at the first witness hole only, either forward or aft of the spars, make interim repair immediately per Douglas Drawings 3481664 and/or 3481679 for the front and center spar, respectively. Of course, permanent repair per Drawing 5406787 "D" may be made in lieu of the interim repair. See part 2(*b*) for permanent repair instructions applicable to aircraft with interim repairs.

(*c*) If a crack is found at the second or farthest witness hole, either forward or aft of the center spar, or if the crack extends beyond the existing doubler on the front spar, make complete repair immediately per Douglas Drawing 5406787 "D."

(*d*) On airplanes free from cracks, with 16,000 to 36,000 hours total aircraft time, make complete repair per Drawing 5406787 "D," or approved equivalent, at the next major overhaul not to exceed 5,000 hours or a maximum total aircraft time of 38,000 hours, whichever occurs first. On airplanes over 36,000 hours, make complete repair per Drawing 5406787 "D," or approved equivalent within the next 2,000 hours.

2. Reworked Airplanes (per Douglas Dwgs. 3481664 and/or 3481679).

(*a*) Inspect the repaired area with wing removed at periods not to exceed 1,500 hours as mentioned in item 1(*a*), until complete rework per Drawing 5406787 "D" is accomplished. If any new cracks or crack progression is found at a previously installed interim repair, make complete repair per Drawing 5406787 "D," or equivalent prior to next fight.

(*b*) On airplanes with a total aircraft time under 37,500 hours, make complete repair per Drawing 5406787 "D," or approved equivalent, at the next major overhaul period, but not to exceed 5,000 hours from time interim repair is made, or a maximum total airplane time of 38,000 hours, whichever occurs first. On airplanes over 37,500 hours, make complete repair per Drawing 5406787 "D," or equivalent within the next 500 hours.

3. Reworked Airplanes (per Douglas Drawing 5406787).

When the rework shown on Douglas Drawing 5406787, or approved equivalent, has been accomplished, the center wing shall be subject to the same inspection and rework time schedule as established for the outer wing with heavy doublers in AD 39–24–1.

4. All Aircraft.

All aircraft, regardless of time or configuration, shall have a careful external inspection of the center wing angle and skin at intervals presently established by part A.1. of AD 39–24–1 for attach angles.

(Douglas General Service Letter, DC3, No. 1, Supplement No. 1, dated June 17, 1952, covers this same subject.)

This supersedes AD 52–6–1.

52–25–1 Douglas Applies to All Model DC3 Aircraft Equipped With Vacuum Systems.

To be accomplished not later than May 1, 1953.

To guard against the possibility of excessive air temperatures and associated fire hazards in the vacuum system discharge line, one of the following modifications must be accomplished:

1. Install a fusible plug in the side of the vacuum pump discharge port at right angles to the axis of the discharge port boss. Some pumps incorporate a plugged hole in the discharge port which may be enlarged to a ⅜-inch pipe tapped hole to accommodate the fusible plug. This plug should employ an AN 840–8D fitting with a binary eutectic mixture of 67.8 percent tin and 32.2 percent cadmium, which has a melting point of 351° F. A drawing describing the design of such a plug is shown in Figure 2. The ⅜-inch plug fitting is intended for pumps such as the Model 3P–211 and 3P–485. For smaller pumps such as the 3P–207, an AN 840–6D fitting, incorporating the same modification as shown below, should be used. Brass fittings of the same design as the above dural fittings are acceptable. Incorporation of an overboard drain line clamped to the fusible plug is recommended but is not mandatory. On installations which do not use an overboard discharge line the possibility exists that the plug may damage other nacelle

components if it can hit them upon being blown out of the adapter at high velocity. Therefore, if no overboard discharge line is provided, the installation must be made in such a manner that the plug will not be directed toward any vulnerable components when it issues from the adapter, or

2. Employ an oil separator equivalent in principle to the Genisco No. 40081 incorporating a pressure relief valve which can be disassembled for cleaning.

(Douglas Service Letter A-129-T-1271/WB-11-Q-4 dated April 1, 1949, covers this type of modification.)

52-27-2 Douglas Applies to Model DC-6 Aircraft (Fuselage Numbers 1 to 166, Inclusive).

Compliance required as indicated.

The following inspections and rework pertain to the outboard front spar splice plate, Douglas P/N 4325272 at Station 166 in the area of the inboard nacelle. This special inspection does not apply to splice plates that have been reworked by removing the aft attach tab or to new redesigned splice plates or when Douglas Service Bulletin 532 has been accomplished.

1. Inspection.

A. Conduct following inspection as soon as practical but not later than the next 50 hours operation unless already accomplished and continuing thereafter at intervals of regular inspection periods nearest to 500 flying hours from the time of initial inspection until the splice plate is replaced. Using at least an 8-power magnifying glass and/or dye check method or equivalent, make inspections for cracks in the chordwise direction in the area of the milled radius of the aft attach tab of the lower front spar splice plate. Alternate inspection procedures which will provide equivalent safety may be approved. If cracks are found, incorporate the rework of the item 2 before the next scheduled flight.

B. The above inspection must be continued periodically at intervals not to exceed 400 flying hours on all splice plates that have been reworked as per item 2A until the splice plate is replaced. If a crack is found beyond the stop drill hole prior to the replacement period as indicated in item 2C the splice plate must be replaced before the next scheduled flight.

2. Rework.

A. If cracks are found less than 1⅜ inches long, stop drill using a ¼-inch drill and ream with a $^{17}/_{64}$-inch reamer. The drill hole center must be located at a distance of 1⅜ inches from the aft edge of the splice plate in line with the crack.

B. If cracks are found greater than 1⅜ inches long, the splice plate must be replaced before the next flight.

C. Splice plates reworked in accordance with item 2A must be replaced within 1,500 flying hours from time rework is accomplished.

(Douglas Service Letter No. 123, dated May 29, 1952, also covers this same subject.)

52-28-5 Douglas Applies to All Model DC-6 Series Aircraft (Fuselage Numbers 1 to 213 Inclusive).

Compliance required as indicated.

The following inspections and rework pertain to the center wing lower surface access hole structure at Station 149.

1. Inspection.

(*a*) Conduct following inspection as soon as practical but not later than the next 50 hours operation unless already accomplished and continuing thereafter at regular periodic inspection intervals nearest to 500 hours from the time of initial inspection until permanent repair is made as outlined in 2(*b*). Using at least an 8-power magnifying glass and/or dye check method or equivalent, make inspections for cracks in the lower wing skin and doubler at the aft access hole paying particular attention to the corner areas. Alternate inspection procedures which will provide equivalent safety may be approved. If cracks are found, make repairs as indicated in item 2 before the next scheduled flight.

(*b*) Periodic visual inspection must be continued at the most frequently established inspection period between 15 and 35 flying hours for airplanes reworked, as per item 2(*a*) until the rework of item 2(*b*) is accomplished. If a crack is found beyond the stop drill hole prior to the replacement period as indicated in item 2(*c*) make repair as per item 2(*b*) before the next scheduled flight.

2. Repair.

(*a*) If cracks are found in either the lower wing skin or doubler less than 1-inch long, stop drill using a ¼-inch drill or ⅜-inch drill hole if space permits. The combined length of the crack and drill hole should not exceed 1¼ inches in total length.

(*b*) If cracks are found in either the lower wing skin or doubler greater than 1-inch long, or if the cracks extend under the adjacent angle which cannot be visually inspected, incorporate the rework on Douglas Drawing No. 5400661 before the next scheduled flight. In cases where only one corner of the access hole is cracked, Douglas approved interim repair may be used subject to replacement with permanent rework, per Drawing No. 5400661, within a period not to exceed 1,500 hours from time interim repair is made.

(*c*) The rework of item 2(*a*) must be replaced with the rework reinforcement of item 2(*b*) within 3,000 flying hours from time rework of item 2(*a*) is accomplished.

(Douglas Service Letter No. 130, dated July 10, 1952, also covers this same subject.)

53-5-1 *See* Curtiss Propellers.

53-8-2 Douglas Applies to All Model DC-6 Series Aircraft (Fuselage Numbers 1 to 213 Inclusive).

Compliance required as indicated.

The following inspections and rework pertain to the center wing lower skin panel and stringers inboard of Station 60 at both sides of the two access doors (fore and aft). The accomplishment of this change is for repair of details which have failed due to fatigue and to make general reinforcement of the affected area.

1. Inspection.

(*a*) Conduct following inspection as soon as practical but not later than the next 50 hours of operation unless already accomplished and continuing thereafter at periodic intervals nearest to 500 flying hours from the time of initial inspection until permanent rework is accomplished as outlined in items (2) and (3). Using at least an 8-power magnifying glass and/or dye check method or equivalent, make inspection for cracks in the door doubler, bottom wing skin and stringers in the area of Station 52 between the front and center spars. If cracks are found in any of these details, make repairs as indicated in item 2 before next scheduled flight.

(*b*) If no cracks are found in any of the details mentioned in 1(*a*) install preventive reinforcements as outlined in item 3.

2. Repair.

(*a*) If a crack is found in the lower skin panel at Station 52 greater than 2½ inches long or if cracked stringers are found in the area of Station 52, make repair and modify the door doubler spice as per Douglas Drawing 5460214. (Refer to Kit A of Douglas Service Bulletin No. 521.)

NOTE: This repair must be supplemented by reinforcing remaining areas of rework as outlined in part 3 (*c*).

(*b*) If a crack is found in the skin less than 2½ inches long (without stringers being cracked), in the area of Station 52, make repair as per Douglas Drawing 5460328-501. (Refer to Kit F of Douglas Service Bulletin No. 521.)

NOTE: This repair must be supplemented by reinforcing remaining areas of rework as outlined in part 3 (*c*).

(*c*) If a crack is found in the door doubler only in the area of Station 52, repair per Douglas Drawing 5460328-1. (Refer to Kit E of Douglas Service Bulletin No. 521.)

NOTE: This repair must be supplemented by reinforcing remaining areas of rework as outlined in part 3 (*c*).

3. Preventive Reinforcement.

(*a*) If no cracks are found in the area of Station 52 on airplane fuselage Nos. 1-69 install reinforcements to the stringers and door doubler no later than May 1, 1953, as per Drawing 5460275-1 or Douglas Service Bulletin No. 440. (Refer to Kit B of Douglas Service Bulletin No. 521.)

(*b*) If no cracks are found in the area of Station 52 on airplane fuselage Nos. 70-213, install reinforcement to the door doubler as per Drawing 5460275-501 no later than September 1, 1953. (Refer to Kits C and D of Douglas Service Bulletin No. 521.)

(*c*) If cracks are found by inspection and repaired by reinforcements as outlined in part 2 (*a*), (*b*) or (*c*), these repairs must be sup-

plemented by reinforcing the stringers and/or door doublers at all other areas outlined in 3 (*a*) and (*b*). This should be accomplished no later than May 1, 1953, on airplanes having fuselage numbers 1 through 69 and no later than September 1, 1953, or a period not to exceed 1,500 flying hours (whichever occurs first), on airplanes having fuselage numbers 70 to 213 inclusive. Airplanes incorporating local reinforcements shall be given an external inspection at periods not to exceed 35 flying hours in addition to the 500-hour inspection outlined in part 1 (*a*) until the complete rework has been accomplished.

(See Douglas Service Bulletin No. 521 dated May 29, 1952, and Douglas Service Letter No. 128 dated June 27, 1952, for applicable models subject to the above-mentioned reworks.)

This supersedes AD 52-27-1.

53-9-1 *See* Pratt & Whitney Engines.

53-19-1 Douglas Applies to All DC-4 and C54-DC Series Aircraft Utilizing Eclipse-Pioneer Type 901 Generators.

To be accomplished by the next engine overhaul, but not later than April 1, 1954.

In view of the fire hazard existing in the use of the magnesium cooling fan in the Eclipse Type 901 generator in the DC-4 and C-54 Series aircraft installations, the magnesium fan as a unit must be removed and Eclipse-Pioneer spacer P/N 866570 installed in its place.

(Eclipse-Pioneer Service Bulletin No. 505 covers the above subject.)

53-25-1 Douglas Applies to Model DC-6 Series Aircraft as Indicated Below.

Compliance required as indicated.

There have been several instances wherein cracks have been found in the aileron-cross upper pivot end. In order to preclude the occurrences of additional failures of this part, an inspection should be made as described below. The accomplishment of this directive is for inspection and/or replacement of the upper pivot end of the aileron-cross bellcrack tube located in the center wing fuselage section at Station 479.

1. Inspection (Fuselage Nos. 1 through 434).

Following inspection must be conducted:

(A) On all DC-6A and DC-6B aircraft and on all DC-6 aircraft incorporating the DC-6B type dual flying tab installation, as soon as practicable but not later than the next 50 hours of operation, unless the inspection has already been accomplished.

(B) On all DC-6, -6A and -6B aircraft at each airplane overhaul period or after each 2,000 hours of operation, whichever occurs first and after each time the airplane is exposed to high ground gust conditions. This inspection is to be repeated at each 2,000-hour period until parts are replaced as described below. Using at least an 8-power magnifying glass and/or dye penetrant method or equivalent, make inspection for cracks at the shoulder corner radius of the aileron-cross upper pivot end P/N 4359401, that supports the bellcrank bearing. If cracks are found install new parts as indicated in item 2 before next scheduled flight.

2. Rework (Fuselage Nos. 1 through 434).

If cracks are found in the aileron-cross upper pivot end P/N 4339401, the part should be replaced with a new pivot end assembly P/N 4492248 and a new bellcrank arm assembly P/N 4492247 in accordance with the rework procedures outlined in Douglas Service Letter No. 153 Supplement No. 2 dated December 4, 1953. New parts will be installed in production effective on fuselage No. 435 and subsequent.

3. Preventive Installation (DC-6 Series as Indicated).

To eliminate the tendency for the aileron control tabs to flap during high ground gust conditions, a preloaded centering spring mechanism P/N 3405566 may be installed on DC-6 Series aircraft as listed in Douglas Service Letter No. 159 dated May 28, 1953. A new trim tab mechanism will be installed in production effective on fuselage Nos. 420 and subsequent.

4. Operations Information.

During ground operation in high gust conditions with gust locks on, any tendency for the control wheel to move may be resisted by holding the wheel in neutral. Restraint should not be applied by holding wheel against the stops. The FAA-approved Airplane Operating Manual should be revised to include this information.

(Douglas Service Letter No. 153 dated April 28, 1953, also covers this same subject.)

54–1–2 *See* Hamilton Standard Propellers.

54–6–1 Douglas Applies to Models DC–6, DC–6A and DC–6B Series Aircraft.

Compliance required as soon as practicable but not later than July 1, 1954, for DC–6A and DC–6B aircraft, and November 1, 1954, for DC–6 aircraft.

To eliminate possible inadvertent discharge of CO_2 into cabin heater or hydraulic accessories compartment accompanied by operation of cabin master depressurization control (or closing of the control valve on early DC–6 aircraft), when discharging CO_2 into a nacelle, rework the two Kidde ¾-inch stop valves P/N 870003 by replacing spring P/N 201496 with heavier spring P/N 30568. The reworked valve should be reidentified as P/N 871107.

(Douglas General Service Letter No. DC–6 No. 176 revised December 31, 1953, also covers this subject.)

54–23–1 Douglas Applies to All Models DC–6, DC–6A and DC–6B Series Aircraft.

Compliance required as indicated.

As a result of a recent fuselage failure leading to rapid loss of cabin pressure and on the basis of information on other previous structural failures in the same locality, all fuselages in the propeller plane areas must be inspected and/or reworked as follows between stringers 23 to 26 and between Stations 217 and 280 on the left side and Stations 238 and 280 on the right side:

1. (*a*) For aircraft with total service time greater than 10,000 hours the two specified areas shall be subjected to a thorough external inspection at each scheduled daily inspection but not to exceed 40 hours of operation. This inspection shall consist of close visual check for any evidence of skin cracks of any size or cracks in the toilet service panel pan, together with application of hand pressure at numerous points to detect any evidence of structural softness caused from stringer failures or failures of attachments of stringers to frames. For aircraft in which forward toilet has been removed, the service panel pan inspection door shall be readily openable or removable to permit the inspection of that pan.

(*b*) If any skin cracks or evidence of structural softness is found, the airplane shall be flown unpressurized until thorough internal inspection of the area is accomplished and any failures properly repaired.

(*c*) In any event, a thorough internal inspection of the specified areas and repair of all failures shall be accomplished within the next 2,000 hours of operation.

(*d*) Following the first complete internal inspection and/or repairs as necessary, external inspection per item 1 (*a*) shall be continued at intervals not to exceed 500 hours of operation, and complete internal inspection and/or rework shall be accomplished when any evidence of cracks or structural softness are found but in any event at periods not to exceed each 2,000 hours of operation.

2. For aircraft with total time of less than 10,000 hours, the inspections of item 1 (*a*) shall be conducted at periods not to exceed every 200 hours operation time. Action in item 1 (*b*) shall be taken when any evidence of skin cracks or structural softness is found.

3. When rework is made in accordance with Douglas Service Bulletin No. 602 revised September 29, 1955, for the Model DC–6, Service Bulletin No. 602 revised September 22, 1955, for the Model DC–6B and Service Bulletin No. 610 dated October 14, 1955, for the Model DC–6A; or equivalent, the inspections of items 1 and 2 may be discontinued.

54–23–2 Douglas Applies to All Models DC–6 and DC–7 Series Aircraft.

Compliance required as indicated.

The following inspections and/or rework must be accomplished:

1. Inspect the nose gear upper torque link P/N 8488A–46 for cracks at the shoulder recess corner radius, using dye penetrant method, 8-power glass, or equivalent, as soon as practicable but not later than the next 100 hours of operation unless already accomplished. If cracks are found, the part should either be replaced with an undamaged part incorporating at least a 0.312-inch corner radius and a 0.030-inch edge radius at the shoulder recess, or reworked in accordance with Douglas Service Bulletin No. 641 mentioned below. Failure of P/N 8488–46 was initiated by fatigue cracks at the shoulder recess corner radius, probably due to tool or grinding marks. In addition inspect the area of the shoulder recess corner

radius at the lower end of P/N 8488–46 for tool or grinding marks. The affected area should be free of cracks and polished to a 32 micro-inch finish as recommended in Douglas Service Bulletin No. 641. (The part may also be replaced with improved part P/N 8488A–46–1 change "H" or P/N 8488A–46A–1 as specified in Service Bulletin No. 641.)

If no cracks are found, and it is determined that the part already incorporates the radii specified above, no further inspection or replacement is required.

2. If no cracks are found but it is determined that sharp edges exist at the shoulder recess, the part should be periodically inspected at intervals nearest to 300 flying hours until the part is reworked by adding a 0.312-inch corner radius with an 0.030-inch edge radius at the shoulder recess or until the part is replaced with one incorporating the proper radii. When rework is accomplished, a dye penetrant inspection of the reworked area should be made before the part is returned to service, with no further inspections required thereafter. Rework or replacement should be made not later than August 8, 1955.

(Douglas Service Bulletin No. 641 dated October 18, 1955, covers the above.)

55–9–3 Douglas Applies to All DC–6 Series Aircraft Incorporating Hamilton Standard Propellers Prior to Serial No. 473.

To be accomplished as soon as practicable but not later than August 1, 1955.

Loss of manual r.p.m. control can occur as a result of tripping of the fast-acting magnetic circuit breaker before the slow-acting fuse is blown on a faulted branch. Improved circuit protective coordination and resultant reliability in the manual control function should be provided by replacing the "Manual" 10-ampere magnetic circuit breaker with a 5-ampere thermal type breaker, and replacing the four 5-ampere fuses in the synchronizer unit with 2-ampere Slo-Blo fuses.

(Douglas Service Letter DC–6 No. 171 dated November 17, 1953, and Hamilton Standard Service Bulletin No. 283 dated December 21, 1953, covers this same subject.)

55–11–1 Douglas Applies to All DC–6 Aircraft; DC–6A Through Fuselage No. 543; DC–6B Through Fuselage No. 590; DC–7 Through Fuselage No. 566 (Except Fuselage No. 486); and C–18A Airplane Serial Number 42881 (Fuselage No. 29).

Compliance required as indicated.

As a result of recent landing accidents in which the nose landing gear collapsed due to failure at the end fitting of yoke P/N 5488450 on a DC–7 and yoke P/N 524570 on a DC–6, and as a result of fatigue cracks being found on subsequent inspections of DC–6 Series as well as DC–7 aircraft, the following inspections must be accomplished at intervals not to exceed 500 hours of operation and should be included as part of any major inspection necessitated by overweight or hard landing.

1. Remove the bolts from the two upper spotfaced holes in the L. H. and R. H. flanges of the nose gear yoke. P/N 5245790 is used on DC–6 Series aircraft and P/N 5488450 is used on DC–6 Series and DC–7 aircraft.

2. Inspect the bolt holes and radius of the spot face for signs of cracks by means of dye penetrant or equivalent. To obtain good results with dye penetrant inspection, it may be necessary to heat the parts being inspected to 90–100° F. to facilitate the dye to penetrate the cracks. Also inspect the surface at the end of the ½-inch radius where the end flange blends into the cylindrical portion of the yoke.

3. (*a*) If cracks are found the part must be replaced with P/N 5488450–503 or with new parts P/N 5538558 for DC–6 Series and P/N 5538557–1 for DC–7 and DC–7B aircraft.

(*b*) If no cracks are found, and as an interim measure, the old nose gear yoke assemblies P/N 5235790 and 5488450 may be reworked by remachining the spot faces to incorporate a 0.125-inch radius and reworking the ½-inch radius of the yoke, when necessary, in accordance with paragraphs 3 and 4 of DC–6 Service Bulletin No. 607 or DC–7 Service Bulletin No. 56 mentioned below. After remachining, shotpeen the spot face radii, the flange and radius where flange blends into the cylindrical portion of the yoke, then clean and apply protective finish. When parts are reworked, as described above, they should be reinstalled using special large washers in accordance with the pertinent Service Bulletin. The inspections outlined in paragraph 2 must be continued on these reworked parts until

they are replaced with parts listed in paragraph 3(*a*).

4. When cracked or reworked parts have been replaced with new parts mentioned in paragraph 3(*a*) the special inspections required in paragraph 2 may be discontinued.

(Douglas Service Bulletin No. 607 dated July 22, 1955, for DC–6 Series and Service Bulletin No. 56 dated July 22, 1955, for DC–7 cover the above.)

This supersedes AD 55–7–1 and those portions of AD 55–10–1 which cover this same subject.

55–15–3 Douglas and Lockheed Applies to All Douglas DC3 and C–47 Series Aircraft, C–54 and DC–4 Series Aircraft; and All Lockheed 18 Series Aircraft Equipped With Hamilton Standard Propellers Used in Air Carrier Passenger Operations.

Compliance required by first scheduled engine change after November 1, 1955, but not later than November 1, 1956.

To increase fire resistance integrity of the propeller feathering system against damage by a powerplant fire, all flexible hose components of propeller feathering lines forward of the firewall must be replaced with lines and fittings which will meet the current fire resistance requirements. However, if the feathering line in zone 1 includes a section of steel tubing, flexible hose assemblies located forward of the cylinders and connecting to the governor are not affected by this directive.

The following flexible hose assemblies are acceptable for use in this application:

(*a*) Resistoflex SSFR–3800–10 hose assemblies.

(*b*) Aeroquip 680–10S hose assemblies with Aeroquip 304 protective sleeves over end fittings (Aeroquip assembly P/N 304000).

(*c*) Aeroquip 309009 hose assemblies.

(*d*) Aeroquip 309009–8S hose assemblies (where feathering system requires this size).

55–15–4 Douglas Applies to All DC–6 Series Airplanes Below Fuselage No. 487 Equipped With Hamilton Standard Propellers.

Compliance required by first scheduled engine change after November 1, 1955, but not later than November 1, 1956.

To increase the integrity of the propeller feathering system in the event of a powerplant fire, all existing propeller feathering lines located forward of the firewall must be replaced with lines and flexible hose assemblies which will meet current fireproof and fire resistant requirements.

(*a*) Replace the existing flexible hose portion of the feathering line between the union on the forward pipe assembly and the elbow on the inner ring with a new hose assembly Aeroquip P/N 304004–10–17½. Douglas General Service Letter DC–6 No. 206 dated August 26, 1954, covers this subject. Resistoflex SSFR–3800–10 hose assembly and Aeroquip 309009–10S hose assembly are also considered acceptable for this application.

(*b*) The existing flexible hose assembly connecting to the governor is not affected by this directive.

(*c*) Remove the existing short 304 sleeves or flexible metal sleeve from the feathering pump supply line, Aeroquip P/N 304002–16D–12⅜, and install a fireproof cover, Douglas P/N 3500614–1. Douglas General Service Letter DC–6 No. 206 dated August 26, 1954, covers this subject. Aeroquip 601000 hose assembly equipped with Aeroquip 304 full length protective sleeve or Aeroquip 680–16S hose assembly equipped with Aeroquip 304 short sleeves covering the end fittings are also considered acceptable for this application.

55–15–5 Douglas Applies to All DC–7 Aircraft Below Fuselage No. 486 Equipped With Hamilton Standard Propellers.

Compliance required by first scheduled engine change after November 1, 1955, but not later than November 1, 1956.

To increase the integrity of the propeller feathering system in the event of a powerplant fire, all existing propeller feathering lines located forward of the firewall in zone 2 must be replaced with lines and flexible hose assemblies which will meet current fireproof and fire resistant requirements.

(*a*) Install Aeroquip 304 protective sleeves on the propeller feathering line forward of the feathering pump, in accordance with Aeroquip Drawing 304005–10S–46. Resistoflex SSFR–3800–10 hose assembly and Aeroquip 309009–

10S hose assembly are also considered acceptable for this application.

(*b*) Remove the existing short 304 sleeves from the feathering pump supply line between the oil tank and feathering pump and install a fireproof cover, Douglas P/N 3500614–2. Aeroquip 601000 hose assembly equipped with Aeroquip 304 full-length protective sleeve, or Aeroquip 680–16S hose assembly equipped with Aeroquip 304 short sleeves covering the end fittings are also considered acceptable for this application.

(Douglas Service Bulletin DC–7 No. 74 dated July 19, 1955, covers this same subject.)

55–18–2 Douglas Applies to All Model DC–6 Series Aircraft That Are Not Equipped With the New Douglas Type Propeller Reverse Thrust Mechanical Throttle Lockgate.

Compliance required as soon as practicable but not later than January 1, 1957.

1. Because of instances of inadvertent propeller reversing due to malfunctioning of the solenoid operated throttle locks and improper operation of throttles at time of touchdown on landing, a more positive means of preventing inadvertent movement of the throttles into the reverse segment of the throttle quadrant must be installed.

2. This modification consists of the installation of a protective device which will require a separate and distinct motion by the flight crew member accomplishing the reversing, in order to place the throttles in the reverse pitch range. It must also provide safeguards against disarming or unlocking of this protective device when the throttle levers are further forward than idle setting or, if it is possible to unlock at a forward power setting, movement of the throttles toward idle from slow cruise or landing gear warning positions shall reengage the lock prior to reaching the idle position.

3. Douglas Service Bulletin DC–6 No. 557 revised October 15, 1954, covering this modification is an acceptable method of compliance. This bulletin also provides for the continuous operation of the feathering motors during reverse thrust, installs timers to control feathering pump operation during feathering, and deletes the propeller governor pressure cutout switch from the holding circuit. These latter changes, although desirable, are not mandatory.

4. It is possible that some aircraft have already been modified by installation of a protective device which differs in arrangement and detail from the provisions of the Douglas Bulletin. Such alternate designs may be acceptable if the objectives of this directive, as expressed in paragraph 2, have been met. However, because of the many technical considerations involved, all alternate methods of accomplishing this modification should be referred to FAA for engineering evaluation and approval.

55–20–2 Douglas Applies to All Douglas DC–7 Aircraft Serial Numbers 44122 to 44146 Inclusive, 44171 to 44174 Inclusive, 44261 to 44289 Inclusive and 44679 to 44684 Inclusive.

Compliance required as soon as possible but not later than February 1, 1956.

Revising the injection pump timing on the engines creates higher exhaust gas temperatures across the top surface of the wing along the left-hand side of the outboard nacelle. In order to reduce the wing skin temperature, an additional heat shield must be installed between the center and rear spars and replace the aft section of the existing heat shields between the front and center spars adjacent to the upper left side of the outboard nacelle in the exhaust path area.

(Douglas Service Bulletin DC–7 No. 77 dated July 1, 1955, covers this same subject.)

55–26–1 Douglas Applies to A–26 Aircraft Having Rear Fuselage Fuel Tank Installation.

To be accomplished prior to actuation of fuselage fuel tank.

Because of an explosion in the air and loss of aircraft, instructions were issued October 12, 1955, to deactivate the rear fuselage fuel tank on the above aircraft until further notice.

If the following modification, or its equivalent, is accomplished this fuel tank may be reactivated:

1. Provide fume tight closure and sealing of bulkheads at Stations 332 and 369. This should include tight fitting grommets or fairleads around control cables, or other members passing through bulkhead.

2. Remove all electrical equipment and oxygen tanks, if installed, from the tank compartment. Relocate elsewhere in the airplane as required.

3. Provide insulation around any electrical terminals in tank bay.

4. Provide adequate ventilation airscoop on top or side of tank compartment and exit vent on bottom. Provide drain holes in bottom of compartment to assure complete fuel drainage.

5. Ascertain that fuel tank, filler, cap, scupper, drain, and attaching lines and fittings are airworthy.

56–8–1 *See* Curtiss Propellers.

56–13–1 Douglas Applies to All DC–6, DC–6A and DC–6B Aircraft.

Compliance required as indicated.

Numerous instances have been reported on wing skin and stringer 22 cracking aft of the main landing gear fittings at the center spar, Stations 122 and 175, on DC–6 aircraft having high flight time. The following must be accomplished as indicated on all DC–6 Series aircraft having in excess of 10,000 hours total flight time.

1. Accomplish inspection of the wing skin in area aft of the center spar at approximately Stations 122 and 175, especially for cracks emanating from the radii in the skin cutouts, as soon as practicable but not later than next periodic inspection nearest 300 hours. In case complete radii cannot be inspected directly by visual means from underneath the lower wing surface, then a reliable alternate method of inspection must be employed. X-ray may fall into this category. If a skin crack is detected, stringer 22 must also be inspected for cracks. Any skin crack or stringer 22 crack found during the inspection must be repaired prior to further passenger flight.

2. Skin cracks less than ¾ inch in length are to be repaired as outlined on Service Rework Drawing 5593157.

3. Skin cracks in excess of ¾ inch but less than 1½ inches in length are to be repaired as outlined on Service Rework Drawing 5613739.

4. Skin cracks in excess of 1½ inches in length at Station 175 are to be repaired as outlined in Service Rework Drawing 5610926 together with the preventive rework shown on 5593157 and 5610629.

5. Skin cracks in excess of 1½ inches in length at Station 122 will require entire skin replacement between center and rear bottom spar caps, Wing Station 60 to Station 149, together with the preventive rework shown on 5593157 and 5610629.

6. Stringer cracks (in horizontal leg only) are to be repaired as outlined on Service Rework Drawing 5610629. Cracks found in stringer 22 which are more extensive than through one horizontal leg of the stringer will require a complete stringer replacement.

7. All aircraft which do not require repairs are to be reinspected at each periodic inspection period nearest 2,500 hours until preventive repairs per 5593157 and 5610629 are installed.

8. After rework per paragraphs 1 through 6 has been accomplished or preventive rework per Drawings 5593157 and 5610629 is installed, no further special inspection periods are required. Also, further special inspections are not required on DC–6 aircraft upon which Kits A and B of Douglas Service Bulletin DC–6 No. 569 have been incorporated.

Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator.

(Douglas Alert Service Bulletin No. A–673 revised May 8, 1956, covers the above subject.)

This supersedes AD 56–4–3.

Revised July 7, 1962.

56–14–2 Douglas Applies to All DC3 Series Aircraft Operated at Weights in Excess of 25,200 Pounds.

Compliance required as indicated.

It has come to our attention that there are numerous instances wherein DC3 Series aircraft have been approved for operation at landing and takeoff weights in excess of 25,200 pounds, in accordance with pertinent notes of Aircraft Specifications A–618 or A–669, that have main landing gear axle assemblies installed which are structurally unsatisfactory for the higher weights. The two axle assem-

blies involved are DACO P/N 5007396, and P/N 5007162 with P/N 5007390 torque collar.

Therefore, all DC3 Series Aircraft in which either of these assemblies is installed must be operated at weights not to exceed 25,200 pounds for landing or takeoff (25,346 lbs. if deicers are installed) until satisfactory axle assemblies are installed. Note 9 of DC3 Aircraft Specification A–618 and Note 10 of DC3A Aircraft Specification A–669 contain a list of axle assemblies and the maximum weights for which each is structurally satisfactory.

56–18–3 Douglas Applies to All Models A–26B and A–26C Aircraft.

Compliance required prior to September 5, 1956, and each periodic inspection thereafter.

Numberous cases have been discovered of cracks in the nose gear cross beam assembly of certificated A–26 aircraft, developing at the inboard end of the trunnion journal. Accordingly, to reduce the possibility of failure of the wheel cross beam assemblies, the following inspection is required:

(*a*) Remove the nose wheel cross beam assembly, P/N 5280335, or 5280336, or 5123942 or 5123943.

(*b*) Using magnetic particle, dye penetrant or X-ray inspection equipment, inspect the 5-inch outboard portion of the beam and trunnion assembly for cracks, measuring from the trunnion journal inboard and paying particular attention to the area around the trunnion's shoulder and inboard of the welded area of the strap.

(*c*) Cross beam assemblies found cracked during this inspection must be replaced.

(USAF Technical Order 1B–26–519, dated April 9, 1956, covers this same subject.)

56–20–5 Douglas Applies to All DC3 Series, DC–4 and C54–DC Series Aircraft Powered With Pratt & Whitney Military R–2000 and Twin Wasp D Series Engines.

Compliance required not later than December 1, 1956.

To avoid crankshaft bending failures, the following placard must be placed on the instrument panel in a conspicuous place: "Avoid Continuous Operation of the Engines between 2310 and 2510 r.p.m." The tachometers must be marked with a red radial band in the above range.

This supersedes AD 48–3–1, which applied only to DC–4 airplanes.

56–22–1 *See* Hamilton Standard Propellers.

57–3–2 Douglas and Lockheed Applies to Lockheed Constellation Series Airplanes and Douglas DC–7 Series Airplanes With Wright Engines.

Compliance required not later than December 1, 1957.

Under certain cold weather operating conditions it is possible for the fuel inlet strainer and other parts in the engine master control to become clogged with ice as a result of entrained water in the fuel freezing on the screen. This has caused a loss of power on all engines simultaneously.

To relieve strainer icing, a screen having a bypass valve Bendix P/N 366204 should be installed in replacement of the screen not having a bypass valve. Bendix Service Bulletin No. 797 covers this subject. It should be noted that the incorporation of the screen with bypass will not positively prevent power loss from fuel ice; therefore, work is continuing to develop a means to protect other portions of the master control downstream of the inlet strainer. If necessary, a supplement to this note will be published when additional information becomes available.

57–3–3 Douglas and Lockheed Applies to Lockheed Constellation Series and Douglas DC–7 Series Airplanes.

Compliance required by April 1, 1957, for Constellation aircraft and by May 1, 1957, for DC–7 aircraft.

Under certain cold weather operating conditions the perforated paper covering around the Purolator micronic filter elements are subject to accumulation of ice as a result of entrained water crystals in the fuel freezing on this covering. This interferes with proper fuel filtering by causing the fuel to pass through the bypass valve in the filter unit.

To make the micronic filter less susceptible to clogging by ice, the perforated paper covering around the filter element is to be removed. Removal of the perforated cover does not affect the filtering characteristics of the filter element. Filter elements without the paper covering are identified as Purolator P/N 30868–3.

57–16–1 Douglas Applies to All DC–4 and C–54 Series Aircraft.

Compliance required as indicated.

Accidents have occurred due to the collapse of the nose gear shock strut, P/N 8066 and 8066A. Investigation reveals that some failures have occurred in the steel piston tube, P/N 8066–4, as a result of corrosion and repeated loading over an extended period of time, while others have failed from fatigue only. Initial fractures may occur on the outside of the tube adjacent to the top edges of the nose gear fork, P/N 8066A–60, or on the inside of the tube in the vicinity of the top of the internal reinforcing sleeve. Because of this, the following must be accomplished:

1. Inspect as soon as practical but not later than October 1, 1956, unless equivalent inspection conducted within the last landing gear overhaul, all nose gear piston tubes, P/N 8066–4, both on the inside and on the outside diameters, for evidence of fatigue and/or excessive corrosion in the vicinity of the edges of the internal reinforcing ring and spacer tube or liner and in the vicinity of the top edge of the external sleeve, for evidence of cracks.

2. If cracks are found the part must be replaced. (Certain parts can be reworked in accordance with Douglas Service Bulletins. Such parts may be continued in service after rework provided the repetitive inspections limitations contained in the Service Bulletin are adhered to.)

3. Any corrosion found to exist must be removed and the part provided with adequate corrosion protection.

4. Parts found to be satisfactory and not reworked per Douglas Service Bulletins may be continued in service until January 1, 1958, and then must be reworked per Douglas Service Bulletin No. 111.

(Douglas Service Bulletin DC–4 No. 111 dated April 19, 1956, and revised November 6, 1956, covers this same subject, and outlines methods of inspections with the limitations on each as well as permanent rework instructions. Service Bulletin DC–4 No. 111, Addendum No. 1 dated November 6, 1956, covers Operations Limitations on unreworked nose gear struts as well as struts reworked per Service Bulletin DC–4 No. 111, reissued October 3, 1956.)

This supersedes AD 56–12–1.

57–16–2 Douglas Applies to All DC–7 Series Aircraft Prior to Fuselage No. 697.

Compliance required as indicated.

An operator recently experienced a failure in the threaded area of the forward end of the rudder tab push-pull tube P/N 3483231, which resulted in a declared emergency and unscheduled landing due to loss of rudder control. Investigation reveals that tubes reamed to accommodate the end fittings are unsatisfactory. Also, it has been determined that many rudder tab push tube assemblies, P/N's 3593396, 3593396–501, as well as 3483231, have been reamed in order to accommodate the end fittings.

On all aircraft on which the above-mentioned assemblies have 5,000 hours of operation or more an inspection must be conducted within the next 300-hour operation, unless already accomplished, to determine whether the rods have been reamed and for signs of failure of the tube and end fittings. All assemblies found cracked and those reamed in excess of the limits outlined in Douglas Service Bulletin DC–7 No. 181 reissued February 8, 1957, must be replaced. Unless disassembled, X-ray is believed to be the only reliable means of verifying whether the tubes have been reamed in excess of the limits specified by Douglas.

All assemblies not cracked and are not reamed in excess of the limits specified in the Douglas Service Bulletin must be visually reinspected at periods not to exceed 300 hours of operation until they are replaced with new push-pull tube assembly, P/N 3593396, which have been manufactured without resorting to reaming.

(Douglas Service Bulletin DC–7 No. 68, reissued February 8, 1957, describes the modifications required to install P/N 3593396 on those aircraft that presently incorporate P/N 3483231.)

This supersedes AD 56–24–3.

57–16–3 Douglas Applies to All Model DC–7 Series Aircraft Prior to Fuselage No. 697.

Compliance required as indicated.

Numerous cases have been reported wherein fatigue failures have occurred in the elevator control tab pushrod assembly, P/N 4499117. Investiation reveals that tubes reamed to ac-

commodate the end fittings are unsatisfactory. Also, it has been determined that P/N 4499117 as well as other assemblies, P/N's 2357984, 3593467, and 4335618, have been reamed to permit installation of the end fittings.

Unless already accomplished, inspect all the above assemblies within the next 300 hours for fatigue cracks or reaming. Unless disassembled X-ray is believed to be the only reliable means of verifying whether the tubes have been reamed in excess of the limits specified by Douglas.

If cracks are found or reaming exceeds the limits specified in Douglas Service Bulletin DC–7 No. 181 reissued February 8, 1957, the part must be replaced.

All parts reamed within tolerances specified in the Douglas Service Bulletin must be visually reinspected for fatigue cracks at intervals not to exceed 300 hours. When P/N's 4335618 and 4499117 as well as any P/N 3593467, which have been reamed, are replaced with P/N 3593467 now manufactured by controlling the swaging of the tube instead of reaming to permit installation of the end fittings, the repeated inspection may be discontinued.

(Douglas Service Bulletin DC–7 No. 132 revised November 13, 1956, covers the installation of P/N 3593467 and the associated changes required to make the installation on aircraft originally incorporating P/N 4335618 or P/N 4499117.)

This supersedes AD 56–24–4.

58–4–1 Douglas Applies to All DC3 Series Aircraft Which Have an "Airstair" Type Cabin Door Installation.

Compliance required not later than July 1, 1958.

The DC3 Series aircraft passenger entrance door has been altered by modifiers to hinge the door at the bottom and install steps on the inside of the door, which are used for entering or leaving the aircraft when the door is opened. Numerous instances have occurred wherein the door has opened in flight, or a passenger has inadvertently opened the door and, in some cases, with fatal or near fatal results.

In order to overcome this hazard, it is required that means be provided for safeguarding against inadvertent opening of such doors in flight. CAM 4b.356–2 and –4 outlines the FAA policies which should be followed in complying with this directive.

58–5–1 Douglas Applies to Goodyear Outboard Wheel Halves P/N 9531419 Installed on Douglas DC–7C 17.00–20 Main Wheel Assembly P/N 9540934. Affects Wheel Assemblies Manufactured Prior to Serial Number 157–1569 and Also Wheel Halves Serial Numbers 1573, 1574, 1575, 1595, 1596, 1597, 1771, 1833 and 1834.

Compliance required at the first wheel or tire change after May 10, 1958, and at each 100 landings thereafter. If wheel inspection is performed during any portion of the 100-landing interval, no inspection will be required until the next 100 landings thereafter.

As the result of failures of Goodyear wheel half P/N 9531419 and in order to reduce the possibility of recurrence of these failures, the following inspection is required:

Inspect the outboard half P/N 9531419 in accordance with Goodyear Service Letter DC7C–3, dated January 15, 1957, or equivalent (Goodyear Service Letter DC7C–6, dated November 15, 1957, covers this same subject.) The inspections may be adjusted to tire change periods where the individual operators service experience justifies.

58–8–3 Douglas and Lockheed Applies to All Douglas DC3, Lockheed 18, and PV–1 Aircraft Having Bromochloromethane (CB) Fire Extinguisher Systems. (NOTE: Not Applicable to Systems Which Provide Leakproof Enclosures for the Fire Extinguishing Agent Containers.)

Compliance required by October 1, 1958.

Due to the toxicity hazard for crew and passengers existing in these airplanes having Bromochloromethane (CB) fire extinguishing system installed, particularly when the fire extinguishing agent containers are installed in the fuselage, one of the following must be accomplished.

1. The Bromochloromethane (CB) fire extinguisher agent must be replaced with a quantity of Freon 13B1 (Bromo-tri or CF_3Br, equal to 0.8 times the installed weight of Bromochloromethane (CB) and a suitable breathing oxygen supply must be provided for the crew as specified in CAR 4b.651.

2. The Bromochloromethane (CB) fire extinguisher agent must be replaced with a quantity of carbon dioxide (CO_2) equal to 1.25 times the installed quantity of Bromochloromethane (CB) and a suitable breathing oxygen supply must be provided for the crew as specified in CAR 4b.651.

3. The installed Bromochloromethane (CB) system must be shown to comply with the requirements of CAR 4b.371(b) and 4b.484(b)(2).

NOTE: This may be accomplished by enclosing the containers with a similar or equivalent system to that shown on AiResearch Drawings C–4900–77B sheets 1 to 3 inclusive.

58–11–1 Douglas Applies to All DC–6 and DC–7 Series Aircraft as Indicated.

Several instances have been reported wherein cracks have been found or failures have occurred in the nose wheel upper retract link assembly, P/N 5325437. In at least one case, failure resulted in folding of the nose gear when the aircraft stopped, following landing and taxi.

The failures occurred in the forged end fitting, P/N 5328993, caused by a crack starting in the vicinity of the 1/8-inch radius where the fitting is machined to the O.D. of the tube, P/N 2329712. Cracks in the unfailed parts were found in the same location. Failures occurred on two airplanes having a total of 24,000 and 13,800 hours respectively and a crack was reported on one airplane with 7,521 hours. The airplane time is not significant since the interchange of landing gear components at major overhaul may result in the gear components actually having more or less time than the airplanes themselves.

Subsequent to DC–6 Series fuselage No. 435 and DC–7 Series fuselage No. 434, Douglas increased the 1/8-inch radius to 3/4-inch radius. The following must be accomplished on all nose gear upper retract link assemblies, P/N 5325437, delivered by the manufacturer that do not incorporate the larger radius.

1. Inspect the right and left hand forged end fitting with the 1/8-inch radius at the earliest possible opportunity where facilities are available, and in any case, at the inspection period nearest 100 hours. Inspection should preferably be accomplished by magnaflux; however, dye penetrant inspection can be considered satisfactory if parts are uniformly warned to open tight cracks.

2. If cracks are found, parts must be replaced. No rework is considered feasible.

3. Parts which are not cracked should be reworked at the earliest practicable opportunity to increase the 1/8-inch radius to 3/4-inch and polish the area to a 32-micro-inch finish. The reworked area should be protected with zinc chromate primer and aluminized lacquer and the reworked parts properly identified to distinguish them from those manufactured with the 3/4-inch radius.

4. After the initial inspection, all parts must be inspected regularly at the inspection period nearest to 300 hours until rework is accomplished.

5. After rework, inspections at frequent intervals should continue to assure that the rework has removed damaged material and/or incipient cracks.

(Douglas Alert Service Bulletin A–677 for the DC–6 Series and A–139 for the DC–7 Series cover the above subject and describe how to increase the 1/8-inch radius to a 3/4-inch radius.)

58–12–1 Douglas Applies to All DC3 Series Aircraft.

Compliance required whenever the center or outer wing attach angles or doublers, the spar butt plates, or the compression angles on the center wing or the waffle plates on the outer wing are reworked or replaced or when an outer wing panel is substituted for another.

As a result of the inspections required by AD 39–24–1, it has been found that numerous cracks are occurring in the wing attach angles and doublers at a relatively low number of hours of operation after replacement as required by that AD. In the past, many of these failures have been attributed to the type of operations or to the use of inadequate tooling for replacement of the attach angles and doublers. It has now been determined that, in many cases, little or no attention is given to the maintenance of proper tolerances at the attach point between the center and outer wing panels which may be contributing to such failures.

Therefore, prior to replacement of an outer wing panel, the following tolerances must be adhered to:

1. Compression angles attached to the corrugations and stringers and the spar cap butt plates of the center wing must be held in plane with the attach angle to a plus or minus 0.002-inch tolerance.

2. The waffle plates attached to the stringers and the spar cap butt plates of the outer wing must be held in plane with the attach angle to a plus or minus 0.008-inch tolerance.

3. This range will allow a maximum of 0.010-inch interference to a maximum of 0.010-inch clearance between the compression angles and plates, and the butt plates when the wing is installed.

4. It is acceptable to have either interference or clearance; however, the most desirable joint is from flush to an 0.005-inch accumulative interference fit.

This supplements AD 39–24–1.

58–15–1 Douglas Applies to DC–6 and DC–7 Series Aircraft.

Compliance required by September 1, 1958.

Hook assemblies, P/N CSS1000–D, installed in safety belt assemblies, P/N 5610175, have been found to be understrength due to improper heat treat by the vendor.

All DC–6 and DC–7 Series aircraft equipped with these safety belt assemblies that were manufactured during the months of December 1957, January 1958, and February 1958, are affected. These belts can be identified by the manufacturing date (month and year) stamped on the part number tag sewn on the belt (i.e., date manufactured, December 1957, etc.). Belt assemblies manufactured prior to these dates are satisfactory and all future DC–6 and DC–7 aircraft will have safety belts with proper hook assemblies installed.

All hook assemblies that give a Rockwell reading of 36 or above on the "C" scale are satisfactory. Those that show a Rockwell reading below 36 are unsatisfactory and the belt must be replaced.

(Douglas Alert Service Bulletin A–779 for the DC–6 Series and A–321 for the DC–7 Series cover the above subject and describe acceptable inspection and replacement procedures.)

58–23–2 Douglas Applies to All Model DC–6 Series Aircraft Prior to Fuselage Number 221, Except Number 214.

Compliance required as indicated.

Numerous cases have been reported wherein cracks have occurred in the vertical stabilizer front spar fittings, P/N 3344473, at Station 1033 bulkhead. Unless already accomplished, the following inspection must be made on all DC–6 Series airplanes indicated above which have in excess of 10,000 hours total flight time:

1. Within the next 25 hours of flying time, inspect the above fittings for cracks occurring through the stabilizer attachment bolt holes and boss of the fitting and which propagate into either or both longitudinal flanges of the part. Cracks in one leg only should not exceed 3½ inches in length. Cracks in both legs should not exceed 2 inches each. Cracks shall not be less than ¾ inch from the edge of the leg and their length should be measured from the face of the counter bore on the lower side of the stabilizer attach bolt hole.

2. If cracks do not exceed the above limits, the parts may be continued in service for a maximum of 150 hours of flying time before replacement with the new part P/N 3406332, provided they are: (1) Stop drilled using a No. 10 drill and, (2) they are inspected at periods not to exceed 25 hours of flying time.

3. Fittings having cracks in excess of the above limits or cracks which extend across the leg of the fitting, must be replaced with new part, P/N 3406332, prior to next flight.

4. Fittings found to have no cracks at the time of inspection, per 1. must be accorded a repetitive inspection at each block overhaul period or at periods not to exceed 3,500 hours, until new fitting, P/N 3406332, is installed.

(Douglas Alert Service Bulletin No. A–796, dated August 15, 1958, and Service Bulletin No. 796, dated September 2, 1958, cover this same subject.)

59–2–2 Douglas Applies to All DC–7 Series Aircraft.

Compliance required as indicated.

There have been several incidents of the engine cowling moving forward in flight and striking the propeller. This has been caused by incorrect installation of the cowling on its

mountings. In order to prevent incorrect installation of the cowling, more positive means of indexing and alining must be provided. Pending installation of these means, special inspections are established.

(1) Effective at next cowl removal, unless modification per paragraph (2) has already been accomplished, perform a special inspection each time any segment of cowl is removed and replaced to assure that cowl indexing means are in satisfactory condition and that cowling is properly positioned.

(2) Not later than November 1, 1959, install improved supports for indexing and alining the top left and right-hand cowling segments of each of the four powerplants. Douglas Service Bulletin No. 131 dated August 21, 1956, revised February 5, 1958, covers an acceptable means of accomplishing this change.

59–6–2 Douglas Applies to All Model DC–7 Series Aircraft.

Compliance required by first block overhaul after receipt of parts but not later than December 1, 1959.

Several instances have occurred wherein the green indicator light for one of the main landing gear failed to go on when the landing gears were extended. In one case, after landing, it was noted that the left gear downlatch was not fully engaged and the ground lock safety pin could not be installed. Subsequent investigation and laboratory tests revealed that the orifice check valve could malfunction due to contaminants in the hydraulic fluid of sufficient quantity and size (approximately 0.003-inch diameter) and thereby prevent full extension of the gear.

To overcome this difficulty, remove existing orifice check valve assembly, P/N 4498423–503 (Mineral Oil Aircraft), or P/N 4498423–5503 (Skydrol Aircraft), from each main landing gear actuating cylinder and replace with new orifice check valve assembly, P/N 2230565–5–093 (Mineral Oil Aircraft), or P/N 4481262–5–093 (Skydrol Aircraft).

(Douglas Service Bulletin DC–7 No. 353 dated January 30, 1959, covers this same subject.)

59–13–6 Douglas Applies to the Following Aircraft: DC–6A Serial Numbers 43296, 43297, 43817–43819, 43839–43841, 44063, 44064, 44069–44073, 44076, 44257. DC–6B Serial Number 43257–43259, 43261–43276, 43291, 43292, 43298–43300, 43518–43537, 43539–43547, 43549–43555, 43557–43564, 43738–43741, 43743–43746, 43748–43750, 43820–43822, 43824–43826, 43828–43834, 43836, 43837, 43842, 43844–43847, 44056–44062, 44080–44083, 44087–44089, 44102–44113, 44165–44168 and 44251.

Compliance required as indicated.

Several instances of lower front spar cap cracks have been reported. The cracks involved are located at wing Station 30 at the intersection of lower front spar cap aft tang and wing-to-fuselage attach angle. To date no cracks have been found in the lower center spar cap; however, due to the similarity of the structure, it is logical to assume that cracks can occur in this cap as well as in the lower front spar cap. To detect cracking of the lower front and center spar cap tangs at intersection with lower fuselage attach angle, the following must be accomplished on affected aircraft having in excess of 12,000 flying hours.

(a) Inspect lower front spar caps at nearest maintenance inspection period to 200 flight-hours unless similar inspection has been conducted within last 1,250 flying hours.

(b) Inspect lower front and center spar caps at maintenance inspection period nearest to each succeeding 1,250 flying hours.

(1) At first 1,250-hour inspection period, holes in aft tank of front spar lower cap and fuselage attach angle should be enlarged and new attachments installed (KIT "A" of Douglas SB A–821 or equivalent).

(2) At next regularly scheduled overhaul period, holes located in forward tank of front spar lower cap should be enlarged and new attachments installed (KIT "A" of Douglas SB A–821 or equivalent).

(c) In event spar cap cracking is found at the 200-hour initial or 1,250-hour repetitive inspection periods, temporary rework per drawing No. 3645935 (KIT "B"), or equivalent, may be accomplished. With temporary rework installed, inspection must be repeated at the 1,250-hour intervals for a maximum of 3,200 flight-hours at which time permanent rework per drawing No. 5761922 (KIT "C"), or equivalent, must be accomplished.

(d) All aircraft not already reworked per (c) must have permanent rework per drawing No. 5761922 (KIT "C"), or equivalent, accomplished within the next 6,400 flying hours.

(e) After installation of KIT "C", operators may revert to normal repetitive inspection periods not to exceed 3,200 flying hours.

(Douglas Service Bulletin DC–6 No. A–821 dated March 19, 1960, covers this same subject.)

NOTE: This AD is not presently applicable to aircraft Serial Numbers 43548 and 43152 since they are not currently under U.S. registry. However, compliance with this AD will be required at the time application is made for recertification of such aircraft in the U.S.

59–17–3 *See* Hamilton Standard Propellers.

60–2–5 Douglas Amdt. 84 Part 507 Federal Register January 16, 1960. Applies to the Following Aircraft: DC–6 Serial Numbers 42878, 43030 To 43033 Inclusive, 43136, 43148 To 43151 Inclusive, 43212 To 43214 Inclusive, and 43216 To 43218 Inclusive.

Compliance required as indicated.

To detect cracking of the lower front and center spar cap tangs at intersection with lower fuselage attach angle the following must be accomplished on affected DC–6 aircraft having in excess of 16,000 hours service time.

(a) Inspect lower front spar cap at the nearest maintenance inspection period to 200 hours service time unless similar inspection has been conducted within the last 1,250 hours service time.

(b) Inspect lower front and center spar caps at maintenance inspection period nearest to each succeeding 1,250 hours service time.

(1) At the first 1,250-hour inspection period, the holes located in aft tang of front spar lower cap and fuselage attach angle should be enlarged and new attachments installed. (Kit "A" of Douglas SB A–845 or equivalent.)

(2) At next regularly scheduled overhaul period, the holes located in forward tang of front spar lower cap should be enlarged and new attachments installed. (Kit "A" of Douglas SB A–845 or equivalent.)

(c) If spar cap cracks are found, temporary rework per Drawing No. 3645935 (Kit "B"), or permanent rework per Drawing No. 5765079 (Kit "C") or equivalent, must be accomplished. If temporary rework is installed, inspection must be repeated at 1,250-hour intervals for a maximum of 3,200 hours service time, at which time permanent rework per Drawing No. 5765079 (Kit "C"), or equivalent, must be accomplished.

(d) All aircraft must have permanent rework per Drawing No. 5765079 (Kit "C"), or equivalent, accomplished within next 6,400 hours service time.

(e) After installation of permanent rework per Kit "C," or equivalent, operators may revert to normal repetitive inspection periods not to exceed 3,200 hours service time.

(Douglas Service Bulletin DC–6 No. A–845 dated July 31, 1959, covers this same subject.)

60–3–4 *See* Hamilton Standard Propellers.

60–8–3 Douglas Amdt. 133 Part 507 Federal Register April 14, 1960, revised by Amdt. 212 Federal Register October 29, 1960. Applies to DC–8 Series Aircraft Serial Numbers 45281 to 45290 Inclusive, 45408 to 45413 Inclusive, 45422, 45423, 45588 to 45594 Inclusive.

Compliance required as indicated.

(a) Within the next 50 hours' time in service, unless already accomplished, visually inspect the upper and lower wing rib caps, P/N 5615316–1 (left-hand) and –2 (right hand) and P/N 5615317–1 (left hand) and –2 (right hand) respectively, at wing station XRS 139.0 for any evidence of cracks. Use at least a 10-power magnifying glass or equivalent. If any doubt exists, utilize dye penetrant or other inspection methods for verification. Aircraft with cracks are not to be returned to service until the damaged parts are repaired in accordance with (c) or (f) or replaced in accordance with (d).

(b) Parts which show no evidence of cracks shall be reinspected in accordance with (a) at periods not to exceed 200 hours' time in service until the provisions of (e) are accomplished.

(c) Parts which are found to be cracked and which are not replaced per (d) nor permanently repaired per (f) are authorized a reinspection period not to exceed 2,500 hours' time in service, provided:

(1) The crack in the vertical tang does not exceed a length of ten inches and does not terminate closer than 1/16 inch from the heavy section of the part.

(2) A stop hole ¼- to ½-inch diameter is drilled in the extreme end of the crack, or the attachment hole in which the crack terminates is enlarged to ½-inch diameter.

(3) A minimum of twenty bulkhead web to cap lock bolts immediately forward of the rear spar are removed, the gap between the web and cap vertical tang is accurately measured, 7075–T6 shims, tapered as necessary in both directions, are installed to fill the gap, and the original type of bulkhead web to cap attachments are reinstalled.

(4) No fuel or pay load is in the airplane during subsequent jacking operations in which the jack point at the bulkhead in question is utilized.

(d) Parts found to be cracked beyond the limits of (c)(1) must be replaced prior to further flight. The replacement parts are subject to the 200 hour time in service inspection limitation of (b) unless, during installation, the gap measurement and shimming provisions of (c)(3) are accomplished. When properly shimmed during installation, the new parts will not be subject to any further special inspections or subsequent airplane jacking weight limitation.

(e) Parts inspected and found to have no cracks will no longer be subject to special inspections or airplane jacking weight limitation after gap measurement, shimming and reattachment provisions of (c)(3) have been accomplished.

(f) As an alternative to the repair specified in paragraph (c), cracked parts may be repaired per the FAA approved permanent repair recommended by the manufacturer providing crack limitations specified in (c)(1) have not been exceeded and cracks are processed per (c)(2). The special inspections and jacking procedures required by this AD may be discontinued for any part repaired in accordance with this paragraph.

(Douglas DC–8 Service Bulletin 57–7 revised June 30 and July 25, 1960, covers this subject.)

This supersedes AD 60–7–4.

60–13–1 Douglas Amdt. 173 Part 507 Federal Register June 24, 1960. Applies to All DC–8 Series Aircraft.

Compliance required as indicated.

Several cases of fuel dump chute oscillation have occurred during extension and retraction of the chutes. This has caused cracking of the chutes which may create a hazardous condition by allowing fuel impingement on the wing and flap when dumping fuel. Oscillation of dump chutes occurs at speeds in excess of 200 knots indicated airspeed. To prevent possible fuel dump chute cracking, the following action is required.

(a) No later than 10 days following publication of this airworthiness directive in the Federal Register, the maximum speed for fuel dump chute operation and fuel dumping is restricted to not more than 200 knots indicated airspeed and the following placard shall be posted in full view of the pilot:

"Do not exceed 200 KIAS when operating dump chute and dumping fuel."

The limitations section of the FAA approved airplane flight manual is hereby amended to incorporate this limitation.

(b) Not later than the next periodic inspection ascertain that the dump cable control system is properly rigged in accordance with Douglas drawing No. 7651290 BS change.

(c) The 200 knots indicated airspeed restriction may be removed from those aircraft which have been reworked in accordance with Douglas Service Bulletin 28–16, "Fuel—Fuel Dump System and Controls". (Effective January 25, 1961.)

(Douglas telegraphic alert Service Bulletin No. A28–16 covers the above speed limitation.)

60–16–3 Douglas Amdt. 188 Part 507 Federal Register August 6, 1960. Applies to All DC3 Series Aircraft With Geared Rudder Tab Installations Based On Data Approved Prior to the Effective Date of This Airworthiness Directive.

Compliance is required as indicated.

(a) In order to correct rudder force reversal tendencies on existing installations, the following shall be accomplished:

(1) Within two weeks after the effective date of this directive and until the aircraft has been flight tested or modified in accordance with this directive, a placard shall be placed

in the aircraft in full view of the pilot which reads as follows:

"Possible rudder force reversal and/or rudder lock may be experienced in this aircraft if rudder application is not coordinated with lateral control. Avoid yawed flight."

This placard shall be retained in the airplane and complied with until either of the applicable procedures described in (2) have been accomplished.

(2) To remove the placard, either of the following procedures must be accomplished:

(i) *Inspection and Test of the Geared Tab Installation.*

(*a*) Check the rigging of the geared rubber tab installation in accordance with the manufacturer's approved installation data to prove conformity of this installation prior to the required flight test below. The results of the rigging check must be recorded in the aircraft logbook and signed by the individual making the check.

(*b*) Contact the nearest FAA Regional Office and make arrangements through the Flight Test Branch for having the aircraft tested. The results of this flight test must be recorded in the aircraft logbook and signed by the individual conducting the flight test.

(*c*) If the rudder control characteristics in the flight test are found to meet the requirements of Civil ir Regulations, Part 4a, § 4a.758–T (or Civil Air Regulations, Part 4b, Section 4b.157), the placard in paragraph (1) may be removed.

(*d*) If the rudder control characteristics in the flight test are found not to meet the requirements of Civil Air Regulations, Part 4a, Section 4a.758–T (or Civil Air Regulations, Part 4B, Section 4b.157), the placard may not be removed until a corrective design modification has been made, officially inspected and flight tested, and found to comply with the above regulations.

(ii) *Replacement with an Approved New or Modified Geared Tab Installation.*

At such time as a "fix" or a new design installation has been developed, officially inspected and flight tested, and found to comply with the regulations, such an FAA approved modification or design may be installed in accordance with the manufacturer's specifications, a rigging and installation check made and recorded in the aircraft logbook by the individual who made the check. No mandatory flight tests will be necessary for such installations and the above-mentioned placard may be removed at this time.

(b) To preclude the installation on other aircraft of geared tabs of the same design which may have rudder force reversal tendencies, the following shall be accomplished prior to each approval:

(1) An official flight test shall be arranged with the nearest FAA Regional Office to determine that the installation complies with the regulations. The results of this flight test, as well as the prior inspection for conformity with approved installation data, must be recorded in the aircraft logbook and signed by the individuals conducting the installation inspection and flight test.

This directive shall become effective 30 days after the date of its publication in the Federal Register.

60–20–2 *See* Hamilton Standard Propellers.

61–4–2 Douglas Amdt. 250 Part 507 Federal Register February 10, 1961. Applies to All DC–6, DC–6A and DC–6B Aircraft; Fuselage Number 1 Up to and Including Fuselage Number 722, Having in Excess of 9,000 Hours' Time in Service.

Compliance required as indicated.

There have been numerous cases reported of spar cap cracking on DC–6 Series aircraft. Cracking usually occurs in spar cap tangs in the area of the Station 60 attachments and progresses chordwise. In addition, service experience has shown that the temporary repair of the above service difficulties per Douglas Rework Drawing 5611387 does not have the service life originally anticipated. As a result of this service experience, the upper and lower, front and center spar caps in the area of wing Station 60, with special attention to the spar cap tangs between wing Stations 55 and 65, must be inspected for cracks as follows:

(a) The upper and lower, front and center spar caps must be inspected within the next 450 hours' time in service unless already accomplished. Aircraft inspected prior to issuance of this AD must also comply with the repetitive inspections rework and/or repairs specified in (b), (c), (d), and (e).

(b) The upper front and center spar caps on all DC–6, DC–6A, and DC–6B aircraft, Fuselage Nos. 1 through 722, must be reinspected at intervals not to exceed 1,600 hours' time in service.

(c) The lower front and center spar caps must be reinspected as follows:

(1) Model DC–6 aircraft, Fuselage Nos. 1 through 172, which have not been reworked in accordance with DC–6 Service Bulletin Nos. 569 and 724, at intervals not to exceed 1,600 hours' time in service.

(2) Model DC–6 aircraft, Fuselage Nos. 1 through 172, which have been reworked in accordance with DC–6 Service Bulletin Nos. 569 and 724, at intervals not to exceed 3,250 hours' time in service.

(3) Model DC–6, DC–6A and DC–6B aircraft, Fuselage Nos. 174 through 722, at intervals not to exceed 3,250 hours' time in service.

(d) If cracks are found, FAA approved permanent rework or temporary repair as recommended by the manufacturer or FAA approved equivalent is required prior to further flight except ferry flight in accordance with the provisions of CAR 1.76. Temporary repairs may be made per Douglas Rework Drawing 5611387, or FAA approved equivalent, providing crack limitations as established on this drawing have not been exceeded.

(e) Aircraft incorporating a temporary repair must be reinspected at intervals not to exceed 750 hours' time in service pending the accomplishment of the FAA approved manufacturer's recommended permanent rework or FAA approved equivalent. Such rework or equivalent must be accomplished within 4,200 hours' time in service after incorporating the temporary repair.

(f) The inspections required by this AD may be discontinued for any area reworked in accordance with FAA approved permanent repair instructions.

(Douglas Alert Service Bulletin A–678 revised June 3, 1960, covers this subject.)

This supersedes AD 60–15–1.

This directive effective March 14, 1961.

61–5–2 Douglas Amdt. 259 Part 507 Federal Register March 3, 1961. Applies to All Models DC–6 Series Prior to Serial Number 44888 and DC–7 Series Up to Serial Number 44872 Having 32,000 or More Hours' Time in Service.

Compliance required as indicated.

Instances have been reported of loss of emergency exit doors during pressurized flight due to failure of the bottom hinge fitting with subsequent failures of the top hinge fitting. To preclude further occurrences, the following shall be accomplished on the emergency exit door hinges:

(a) Unless already accomplished within the last 350 hours' time in service, emergency exit door hinges with less than a 1-inch door skin recess radius shall be inspected for cracks in the radius using dye penetrant, or equivalent, within the next 50 hours' time in service and repeated within each 400 hours' time in service thereafter until hinges are replaced as indicated in (b). If cracks are found, the hinges must be replaced prior to further pressurized flight.

(b) Aircraft with hinges having less than a 1-inch door skin recess radius must have the hinges replaced within the next 2,000 hours' time in service. Parts not replaced at the end of 2,000 hours' time in service can be kept in service an additional 600 hours providing inspections per (a) are made each 200 hours' time in service.

(c) All replacement hinges must have at least a 1-inch door skin recess radius and hinges having a $\frac{3}{32}$-inch radius may not be reworked to the 1-inch radius.

(d) Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator.

(Douglas Service Bulletins DC–6 No. 848; second reissue dated January 4, 1961, and DC–7 No. 393 dated January 3, 1961, cover the above subject.)

This supersedes AD 54–25–1.

This directive effective March 15, 1961.

Revised January 18, 1962.

61–6–3 Douglas Amdt. 264 Part 507 Federal Register March 11, 1961. Applies to All DC–7 and DC–7B Aircraft, Fuselage Numbers 1 to 720 Inclusive, Having in Excess of 8,000 Hours' Time In Service. Effective May 6, 1961.)

Compliance required as indicated.

There have been thirteen (13) reported cases of upper front spar cap cracking on DC–7 Series aircraft. Cracking usually occurs in spar cap tangs in the area of the Station 60 attachments and progresses chordwise. In addition, service experience has shown that the temporary repair of the above difficulty per Douglas Rework Drawing 5611387 does not have the service life originally anticipated. As a result of this service experience, the upper and lower, front and center spar caps in the area of wing Station 60, with special attention to the spar cap tangs between wing Stations 55 and 65, must be visually or radiographically inspected for cracks as follows:

(a) The upper and lower, front and center spar caps must be inspected within the next 450 hours' time in service unless already accomplished. Aircraft inspected prior to issuance of this AD must also comply with the repetitive inspections, rework and/or repairs specified in (b), (c), (d), and (e).

(b) The upper front and center spar caps must be reinspected at intervals not to exceed 1,600 hours' time in service.

(c) The lower front and center spar caps must be reinspected at intervals not to exceed 3,250 hours' time in service.

(d) If cracks are found, FAA approved permanent rework or temporary repair of the spar cap is required prior to further flight except ferry flight in accordance with provisions of CAR 1.76. Temporary repairs may be made per Douglas Rework Drawing 5611387, or FAA approved equivalent, providing crack limitations as established on this drawing have not been exceeded. Douglas DC–7 Service Bulletin No. 167 revised June 3, 1960, contains an FAA approved permanent rework consisting of Kit X plus the appropriate kits from the following list as indicated on Page 4 of the service bulletin: A, B, C, D, E, S, U, H, J, K, L..

(e) Aircraft incorporating a temporary repair must be reinspected at intervals not to exceed 750 hours' time in service pending the accomplishment of an FAA approved permanent rework. Permanent rework must be accomplished within 4,200 hours' time in service after incorporating the temporary repair.

(f) The special inspections specified in this AD are no longer required after an FAA approved permanent rework is accomplished.

(Douglas DC–7 Service Bulletin No. 167 revised June 3, 1960, covers this subject.)

This directive effective April 11, 1961.

61–6–4 Douglas Amdt. 267 Part 507 Federal Register March 18, 1961. Applies to All DC–8 Series Aircraft With 1,200 Or More Hours' Time In Service On Clevis, P/N 2619862, In Rudder Hydraulic System.

Compliance required as indicated.

As a result of several reported instances of failed clevis, P/N 2619862, on the rudder lockout cylinder, the following must be accomplished.

(1) Unless already accomplished within the last 20 hours' time in service, each clevis, P/N 2619862, in service which has not been inspected per (2) must be visually inspected for cracks prior to the next flight. The bolt attaching the clevis to the link to the gripper arm need not be removed for this inspection. "Cracked clevis must be replaced with a new clevis, P/N 2619862 or P/N 2772031 (Kit A of Douglas Service Bulletin 27–100) or FAA approved equivalent, prior to further flight."

(2) Unless already accomplished within the last 140 hours' time in service, each clevis, P/N 2619862, which remains in service following the inspection prescribed in (1) must be inspected with dye penetrant or magnetic particle method or equivalent with the next 20 hours' time in service. The bolt attaching the clevis to the link to the gripper arm must be removed for this inspection. "Cracked clevis must be replaced with a new clevis, P/N 2619862 or P/N 2772031 (Kit A of Douglas Service Bulletin 27–100) or FAA approved equivalent, prior to further flight." Clevis, P/N 2619862, retained in service must be reinspected at intervals not to exceed 160 hours' time in service. After clevis, P/N 2619862, is replaced with a redesigned clevis, P/N 2772031, inspections of replaced parts may then be made at normal inspection periods.

(3) Unless already accomplished, a rudder creep rate check and necessary adjustment of the valve rod must be accomplished within the next 100 hours' time in service. "The adjustment and creep rate check is to be accomplished in accordance with Supplement No. 1 dated February 27, 1961, to Douglas Alert Service Bulletin A27–100. Installation of new connecting rod assembly P/N 4772143–1 is optional (Kit B or Kit C of Douglas Service Bulletin 27–100).

"(4) Within the next 20 hours' time in service, unless already accomplished, install a placard adjacent to the rudder reversion light to read: 'WHEN LIGHT COMES ON SHUT OFF RUDDER HYDRAULIC POWER IMMEDIATELY,' or install warning placard in accordance with Kit D or Kit E of Douglas Service Bulletin 27–100.

"(Supplement No. 1 dated February 27, 1961, to Douglas Alert Service Bulletin A27–100 and Service Bulletin 27–100 dated May 12, 1961, covers this subject.)"

This directive bcomes effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by individual telegrams dated March 3, 1961. (Material enclosed by quotation marks effective August 4, 1961.)

61–6–5 Douglas Amdt. 270 Part 507 Federal Register March 23, 1961. Applies to All DC–8 Series Aircraft.

Compliance required within the next 20 hours' time in service, unless already accomplished in accordance with Douglas Alert Bulletin dated February 24, 1961.

As a result of reported instances of loosened rudder boost piston end assembly locknut, the following must be accomplished.

Refer to DC–8 Overhaul Manual, Chapter 27–19–2, page 18. Visually inspect for loose locknut P/N NAS 509–16 and proper installation and safetying to locknut of lockwasher P/N NAS 513–16. Insure that lockwasher is not installed backwards and that tang on lockwasher is engaged in notch in piston end and that piston has not rotated out of its proper position. If any discrepancies are found, they must be corrected in accordance with the DC–8 Overhaul Manual and Douglas Alert Bulletin dated February 24, 1961, prior to further flight.

This directive becomes effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by individual telegrams dated March 8, 1961.

61–8–1 Douglas Amdt. 273 Part 507 Federal Register April 8, 1961. Applies to All DC–6 and DC–7 Series Airplanes Which Do Not Have Antifuel Transfer Check Valves Installed In The Fuel System.

Compliance required within the next 330 hours' time in service.

(a) Install a placard in the flight compartment in full view of the pilot to read as follows: "Fuel Transfer in Flight Prohibited."

(b) Revise the operations procedures section covering fuel system management in the FAA approved airplane flight manual to incorporate fuel system operation procedures in accordance with the above placard and delete the item which states that check valves are installed. Flight manual revisions must be approved by FAA.

When check valves to prevent transfer of fuel are installed, this AD is no longer applicable.

(Douglas Service Bulletin No. DC–6–294 dated November 19, 1948, revised February 17, 1950, covers an acceptable installation of check valves.)

This directive effective May 9, 1961.

61–11–5 Douglas Amdt. 291 Part 507 Federal Register May 30, 1961. Applies to All Models A–26 (B–26) Series Aircraft.

Compliance required as indicated.

As a result of several reported cases of severe corrosion of the wing structure in the area beneath the wing fuel tanks, the following must be accomplished at the next periodic inspection and every periodic inspection thereafter, until (b) is accomplished:

(a) Remove the center wing fuel tanks and inspect the internal wing structure for corrosion. If corrosion is found, FAA approved repairs and/or replacement of affected parts must be made prior to further flight. Also, inspect the sponge rubber mats under the fuel cells, and if found deteriorated they must be replaced prior to next flight.

(b) When the sponge rubber mats have been replaced with closed cell neoprene sponge mats, or equivalent, and any corrosion damage present is repaired, the special inspection of (a) is no longer required.

This directive effective June 29, 1961.

61-12-1 Douglas Amdt. 293 Part 507 Federal Register June 3, 1961. Applies to All Model DC-8 Series Aircraft.

Compliance required as indicated.

An instance has been reported wherein the left wing flight spoilers extended during takeoff resulting in a left wing heavy condition. The loss of spoiler control was attributed to a sheared rivet in rod assembly P/N 4719278 of the aileron shift mechanism in the left wheel well. To preclude further difficulties with this part which can result in a hazardous condition, the following inspection, operational checks or rework must be accomplished:

(a) Prior to each flight, conduct an operational check of the outboard spoiler control system, observing the pressure drop in the spoiler hydraulic system during the check. During rapid rotation of the aileron control wheel a pressure drop of approximately 200 p.s.i. is normal. If a drop in hydraulic pressure does not occur, inspect the spoiler system for a sheared rivet in rod assembly P/N 4719278 of the spoiler shifting mechanism. If the rivet is not sheared a more thorough examination of the spoiler system should be made to determine and correct the cause of the malfunction since operation of the system should result in some pressure drop. In addition, after any maintenance work on the outboard spoilers or outboard spoiler control system and prior to return of the aircraft to service, the spoiler system should be thoroughly checked to ascertain that the rivet in rod assembly P/N 4719278 is not sheared and that the system operates normally. If sheared, the rivet must be replaced or "Rod Assembly-Lateral Control Spoiler" P/N 4719278-1 and "Spring" P/N 4771197-1B installed per Douglas Drawing No. 5718924 "J" change, or FAA approved equivalent, prior to next flight. Pilots and flight engineers, in addition to authorized maintenance personnel, are authorized to perform the operational check.

(b) The operational check and inspection described in (a) may be discontinued when rework per Douglas Drawing No. 5718924 "J" change, or FAA approved equivalent, is accomplished.

(Douglas Service Bulletin No. A27-104 dated March 27, 1961, covers this subject.)

This directive effective June 9, 1961.

61-12-2 Douglas Amdt. 294 Part 507 Federal Register June 7, 1961. Applies to All Model DC-8 Aircraft powered with P&WA JT3C-6 and JT4A Series Engines.

Compliance required as indicated.

An instance has been reported wherein a takeoff was attempted with elevator gust lock engaged. It was found that the throttle interlock did not provide adequate restriction to limit engine thrust under the prevailing temperature condition. Unless already accomplished, the following modification or FAA approved equivalent, must be accomplished within the next 500 hours' time in service.

Modify the throttle interlock system to provide further restriction of the throttles when elevator gust lock is engaged by installing the following parts or equivalent:

Pushrod—Gust Lock Interlock Pedestal, P/N 3771190.

Adapter—Gust Lock Crank, P/N 4771191.

Arm, Gust Lock Interlock Pedestal, P/N 2772271-1 or -501. (Effective August 26, 1961.)

Per Douglas Drawing No. 5640901 Changes "CI" and "CK"—"Pedestal Assembly—Accessory Controls".

(Douglas Service Bulletin No. A27-99, reissue No. 1, revision No. 2 dated July 19, 1961, also covers this same subject.) (Effective August 26, 1961.)

This directive effective June 7, 1961.

61-19-2 Douglas Amdt. 334.

Superseded by AD 62-20-1.

61-21-2 Douglas Amdt. 350 Part 507 Federal Register October 20, 1961. Applies to All DC-8 Aircraft.

Compliance required within the next 10 hours' time in service.

As an interim safety measure pending development of modifications to the throttle con-

trol system and reversing mechanism the following procedures shall be followed:

Reverse thrust after landing shall not be used until:

(a) The main and nose gear of the aircraft are firmly on the ground,

(b) the blue ejector lights are on steady,

(c) the reverse power lever is positioned to reverse detent, and

(d) the amber reverser lights are on steady.

If the amber reverser lights are on steady, additional symmetrical reverse may be used on the inboard engines and thereafter reverse power may be used on the outboard engines if required.

This directive effective for all persons except those to whom it was made effective immediately by telegram dated October 6, 1961.

61-21-3 Douglas Amdt. 346 Part 507 Federal Register October 13, 1961. Applies to All DC-8 Series Aircraft.

Compliance required within the next 150 hours' time in service after the effective date of this AD.

As a result of recent incidents which have shown the need for effective quantity indication of "reserve" hydraulic fluid in the system reservoir, the following must be accomplished:

Unless already accomplished in accordance with FAA approved technical data, replace or modify in accordance with Douglas Service Bulletin No. DC-8 A29-40 (Reissue No. 1 or later) or FAA approved equivalent, the existing hydraulic quantity gage in the cockpit and the quantity transmitter in the fluid reservoir, to provide a system which will indicate the quantity of reserve hydraulic fluid in the reservoir down to approximately one gallon. The system indication error shall not exceed 10 percent. The dial on the quantity gage shall be marked in a manner which divides the total indicator range into three segments and identifies the three segments, as follows:

Segment	*Reserve Fluid Quantity in Reservoir*
NORMAL	Full (11.5 gal.) to 4.9 gal.
AUX.	4.9 gal. to 1.5 gal.
EMER.	1.5 gal. to approx. 1.0 gal.

The exact quantities in gallons need not be marked on the quality indicator. "EMER." need not be shown provided that this segment is otherwise marked in a manner distinctly different from the other segments.

(Douglas Service Bulletin No. DC-8 A29-40 (Reissue No. 1 or later) pertains to this same subject.)

This directive effective October 13, 1961.

61-21-4 Douglas Amdt. 347 Part 507 Federal Register October 13, 1961. Applies to All DC-8 Aircraft Equipped With JT3C, JT4 and Conway Engine Installations (Models DC-8-11, -12, -31, -32, -33, -41, -42 and -43).

Compliance required as soon as the installation of available parts can be scheduled but not later than the next 600 hours' time in service after October 13, 1961, unless an operator has obtained approval from the Chief, Engineering and Manufacturing Branch, Federal Aviation Agency Western Region for an alternative compliance program. (Effective December 6, 1961.)

As a result of numerous recent failures of the flexible hoses in the discharge lines of the engine-driven hydraulic pumps, unless already accomplished, certain hoses and clamps approved as part of the basic type design must be removed and replaced as follows:

(a) Replace hoses as indicated or with FAA approved equivalents:

Airplane Serial Nos.	*Remove Hose P/N*	*Install Hose P/N*
All DC-8-11 and -12 aircraft (JT3-C engines)	5654402-10-6129	5765665-10-6129
All DC-8-21, -31, -32 and -33 aircraft (JT4 engines) except S/N 45422-45431, 45433 and 45602-45606	5654402-10-6724	5765665-10-6824
45422-45431, 45433 and 45602-45606	618-10-0676	624663-10-0676
All DC-8-41, -42 and -43 aircraft (Conway engines)	5654402-10-5700	5765665-10-5700

(b) Replace clamps, P/N 4365431D21C, as used with hoses removed per (a), with clamps listed in Douglas DC-8 Service Bulletin No. 29-37, Revision No. 4, dated November 6, 1961

(or later issue), or with equivalent FAA-engineering approved clamps. The replacement clamps shall be installed in the manner and positions described in Service Bulletin No. 29–37. (Effective December 6, 1961.)

(Douglas DC–8 Service Bulletin No. 29–37, pertains to this same subject.) (Effective December 6, 1961.)

This directive effective October 13, 1961.

61–23–4 Douglas Amdt. 363 Part 507 Federal Register November 7, 1961. Applies to All Models DC–6, DC–6A, and DC–6B Aircraft Serial No. 42854 Up To and Including Serial No. 44429.

Compliance required as indicated.

Several instances have been reported of spanwise cracks found in the center wing, front spar lower outboard cap. The cracks were approximately 3 inches in length and were located on the aft side of the spar cap body just outboard of the landing gear fitting (Station 163 approximately). Instances have also been reported where cracks have progressed forward into adjacent bolt holes. As a result of the foregoing, the following must be accomplished on the affected area of lower front spar caps having in excess of 15,000 hours' time in service unless the affected area has already been reworked, repaired or replaced as specified in paragraphs (b), (c), or (d).

(a) Within the next 3,000 hours' time in service, accomplish a dye penetrant inspection or equivalent for cracks in the aft tang of the outboard front spar lower cap for a spanwise distance of 5 inches from the inboard end (Station 163 approximately) and rework in accordance with (b), (c), or (d), as required.

(b) If no cracks are detected by the inspection prescribed in (a), the area must be reworked as necessary prior to further flight per Item 4(a) of Section I of Douglas Service Bulletin No. 802, reissued October 21, 1960.

(c) If, during the inspection prescribed in (a), cracks are detected which exceed 3 inches in length along the radius of the aft tang or extend forward beyond the end bolt holes, the spar cap must be replaced prior to further flight except ferry flight in accordance with the provisions of CAR 1.76. When installing a replacement spar cap, the rework specified in Item 4(a) of Section I of Douglas Service Bulletin No. 802 reissued October 21, 1960, or equivalent, must be incorporated.

(d) If, during the inspection prescribed in (a), cracks are detected which do not exceed the limits set forth in (c), replacement of the spar cap is optional. If replaced, the rework instructions specified in (c) must be incorporated. If not replaced, the spar cap must be repaired and inspected per Section II of Douglas Service Bulletin No. 802, reissued October 21, 1960, or equivalent, prior to further flight except ferry flight in accordance with the provisions of CAR 1.76.

(Douglas Service Bulletin No. 802, reissued October 21, 1960, covers the same subject.)

This directive effective December 7, 1961.

61–24–1 Boeing and Douglas Amdt. 369 Part 507 Federal Register November 23, 1961. Applies to all 707/720 Series and DC–8 Series aircraft equipped with Pratt & Whitney Aircraft JT3C–12, JT3D–1, JT3D–1–MC6, JT3D–1–MC7, and JT3D–3 engines.

Compliance required as indicated.

A recent failure of the low compressor turbine shaft resulted in overspeeding and separation of the low compressor turbines. To prevent recurrence of this difficulty, the following action is required on any turbine engine that has been disassembled since last overhaul to the extent of exposing any bearing compartment:

At periods not to exceed 12 hours' time in service, the main oil screen shall be disassembled, inspected and cleaned in accordance with Pratt and Whitney Overhaul Manual. The inspection shall be repeated until the screen is free of contamination for two successive inspections. If contaminants indicative of engine part failure or contaminants in sufficient quantity to plug the oil screen are found during any inspection the engine shall not be operated until the cause of the difficulty has been determined and satisfactorily corrected.

Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief Engineering and Manufacturing Branch, FAA Eastern Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if

the request contains substantiating data to justify the increase for such operator.

(Pratt and Whitney telegram to all turbojet engine operators dated November 9, 1961, covers the same subject.)

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegram dated November 10, 1961.

Revised February 13, 1962, and June 7, 1962.

61–24–2 Douglas Amdt. 370 Part 507 Federal Register November 23, 1961. Applies to All DC–8 Aircraft, Serial Nos. 45252–45289, 45291–45306, 45376–45393, 45408–45413, 45416–45419, 45421–45431, 45433–45437, 45442–45445, 45526, 45565–45570, 45588–45606, 45609–45614, 45616–45628, 45636.

Compliance required within 1,000 hours' time in service after November 23, 1961, but in no event later than February 28, 1962, except as provided in paragraph (e).

As a result of numerous recent incidents associated with hydraulic system failures or malfunctions, the aircraft shall be modified to incorporate the following:

(a) A dual source of hydraulic power for the actuation of all wing spoilers during landing roll, in accordance with Douglas DC–8 Service Bulletin 29–39 or FAA approved equivalent.

(b) Increased brake accumulator capacity, in accordance with Douglas DC–8 Service Bulletin 29–41 or FAA approved equivalent.

(c) A dual source of hydraulic power for the rudder power system, in accordance with Douglas DC–8 Service Bulletin 27–117 or FAA approved equivalent.

(d) A source of power to actuate the nose wheel steering system when the airplane hydraulic system is being operated with the hydraulic system selector handle in the "main gear down lock and flaps" position, and additional hydraulic fluid reserve capacity and related changes in the fluid reservoir quantity indicating system, in accordance with Douglas DC–8 Service Bulletin 32–73 or FAA approved equivalent.

(e) To reduce to acceptable levels the hydraulic system pressure fluctuations induced by the auxiliary hydraulic pump:

(1) By no later than February 28, 1962, bypass the surge damper which may have been installed in accordance with Douglas DC–8 Service Bulletin 29–35. The bypass method shall be in accordance with steps 1 through 6 of Addendum Number 1 to Service Bulletin 29–35 dated February 16, 1962.

(2) As soon as necessary parts are available but in no event later than April 30, 1962, install surge damper in accordance with Douglas Service Bulletin 29–35, Reissue Number 1 dated November 8, 1961, as amended by Addendum Number 1 of Service Bulletin 29–35 dated February 16, 1962.

(f) Dampers to reduce to an acceptable level the surge pressure induced in the hydraulic system when the aileron and rudder power systems are activated, in accordance with Douglas DC–8 Service Bulletin 27–109, revision No. 1 to reissue No. 1 dated November 15, 1961, or later FAA approved version.

(g) The FAA approval of the equivalent methods of compliance with the modifications required by paragraphs (a) through (d) shall be obtained through the Chief, Engineering and Manufacturing Branch, FAA Western Region.

This directive effective November 23, 1961.

Revised March 14, 1962, for all persons except those to whom it was made effective immediately by telegram dated February 21, 1962.

61–24–3 Douglas Amdt. 371 Part 507 Federal Register November 23, 1961. Applies to All DC–8 Aircraft, Serial Nos. 45252–45289, 45291–45306, 45376–45393, 45408–45413, 45416–45419, 45421–45431, 45433–45437, 45442–45445, 45526, 45565–45570, 45588–45606, 45609–45614, 45616–45628, 45636.

Compliance required within 1,000 hours' time in service after the effective date of this AD, but in no event later than February 28, 1962.

To prevent inadvertent application of forward thrust when reverse thrust is desired under emergency conditions, the following modification shall be accomplished:

Incorporate a throttle-thrust brake interlock system which will:

(a) Prevent application of reverse thrust until the reverse buckets are in the reverse thrust position, and

(b) Return a throttle to the detent position should the corresponding buckets move from the reverse thrust position.

The modification shall be accomplished in accordance with technical data approved by the Chief, Engineering and Manufacturing Branch, FAA Western Region.

(Douglas DC–8 Service Bulletin Nos. 78–48, 78–50, 78–51 and 78–52 for DC–8 aircraft equipped with JT3C6, JT3D–1, JT4A and Rolls Royce RCO–12 engines, respectively, pertain to this same subject and describe particular FAA approved means of compliance with this AD.)

When the above modification is accomplished, compliance with the provisions of AD 61–21–2 is no longer required.

This directive effective November 23, 1961.

61–25–3 Douglas Amdt. 375 Part 507 Federal Register December 9, 1961. Applies to All DC–8 Aircraft, Serial Numbers 45252–45289, 45291–45306, 45376–45393, 45408–45413, 45416–45419, 45421–45431, 45433–45437, 45442–45445, 45526, 45565–45570, 45588–45606, 45609–45614, 45616–45622, 45624–45627, 45636.

Compliance required as indicated.

To remove from service certain wing flap inboard actuating cylinders which, because of design characteristics, have failed in service and caused airplane operating difficulties, to remove adverse corrosion from any of the wing flap actuating cylinders, and to incorporate increased protection against corrosion for all flap actuating cylinders, the following shall be accomplished:

(a) Remove all wing flap inboard actuating cylinder assemblies Douglas P/N 3715408–5001 or 3764264–5001 identified as having been manufactured by the Clary Corporation as follows:

(1) Cylinder assemblies with more than 5,000 hours' time in service shall be removed within 375 hours' time in service after the effective date of this AD.

(2) Cylinder assemblies with less than 4,625 hours' time in service shall be removed within 750 hours' time in service after the effective date of the AD.

(3) Cylinder assemblies with total time in service between 4,625 and 5,000 hours shall be removed prior to reaching a total time in service of 5,375 hours.

(b) Replace each cylinder assembly removed per (a), with an assembly which has been inspected for freedom from cracks and for proper heat treatment, modified as necessary and reidentified, all in accordance with the instructions in Paragraph 2, section entitled Kit D and/or Kit C, of Douglas DC–8 Service Bulletin No. 27–118, Revision No. 1 to Reissue No. 1 or later, or with an FAA approved equivalent new part.

(c) All inboard cylinder assemblies (Clary or otherwise) which have been replaced in accordance with (b), shall be identified with a single band of green paint near the aft end of the barrel or with other suitable markings which will permit ready determination that an acceptable cylinder assembly is installed in the airplane.

(d) Within 900 hours' time in service following the effective date of this AD, replace all wing flap actuating cylinder assemblies (6 per airplane) with cylinder assemblies in which the barrels have been inspected for evidence of internal corrosion, cleaned and treated or replaced as necessary, and sealed, all in accordance with the instructions in Paragraph 2, section entitled Kits A, B, C, D, or E, of Douglas DC–8 Service Bulletin No. 27–118, Revision No. 1 to Reissue No. 1 or later, or with FAA approved equivalent new parts. Each of these modified or replacement cylinder assemblies shall be marked with two bands of green paint near the aft end of the barrel, or with other acceptable identifying markings. In those cases where a single band of green paint has been used to identify compliance of inboard cylinder assemblies with the provisions of paragraph (b) and such cylinder assemblies are determined to be eligible for reinstallation in accordance with this paragraph, only one additional band of green paint shall be added.

(Douglas DC–8 Service Bulletin No. 27–118 covers this same subject.)

This directive effective December 9, 1961.

61–26–4 *See* Pratt & Whitney Engines.

62–2–2 Boeing and Douglas Amdt. 385 Part 507 Federal Register January 16, 1962. Applies to All 707/720 Series and DC–8 Series Aircraft Equipped With Pratt and Whitney JT3D–3 Turbofan Engines.

Compliance required as indicated.

(a) For engines previously inspected by the procedure described in paragraph (c), reinspect in accordance with paragraph (c) every 225 hours' time in service thereafter.

(b) For engines not previously inspected by the procedure described in paragraph (c) inspect in accordance with paragraph (c) as follows:

(1) Inspect engines with 200 or more hours' time in service within the next 25 hours' time in service and every 225 hours' time in service thereafter.

(2) Inspect engines with less than 200 hours' time in service by the time 225 hours' time in service have been accumulated and every 225 hours' time in service thereafter.

(c) Due to recent failures of P/N 393504 fourth stage compressor rotor disc, inspect the disc for cracks adjacent to the inside edge of the tie bolt circular rib in the disc web. Such cracks may progress along the inside of the rib and then toward the disc bore through the bore stiffening section.

To accomplish the inspection, remove the front accessory drive support assembly (N1 gearcase) and the front accessory drive main spur gear (N1 gearcase coupling). Using a strong light and borescope or similar optical device, visually inspect the fourth stage compressor rotor disc in the area noted above. If any cracking is found, the engine must be removed for disc replacement prior to further flight.

(d) The requirement for main oil screen inspection per AD 61–24–1 does not apply when the No. 1 bearing compartment is exposed for this disc inspection. (Effective October 12, 1962.)

(Pratt and Whitney Aircraft telegraphic message of December 19, 1961, covers the same subject.)

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegram dated December 22, 1961.

62–2–4 Douglas Amdt. 392 Part 507 Federal Register January 24, 1962. Applies to DC–8 Aircraft Serial Numbers 45252–45289, 45291–45306, 45376–45393, 45408–45413, 45416–45419, 45421–45431, 45433–45437, 45442–45445, 45526, 45565–45570, 45588–45614, 45616–45628 and 45636–45638.

Compliance required as indicated.

To prevent aileron tab lockout mechanism bracket assembly failure, resulting in partial or complete loss of control force to one aileron, the following shall be accomplished:

(a) At periods prescribed in (b), conduct close visual inspection, using low-power magnifing glass or equivalent means, for evidence of cracking of the left and right side aileron tab lockout bracket assemblies, P/N 4643350. The critical areas to be inspected are shown in Douglas Service Bulletin 27–115, Figure 1, Step 3. Any evidence of cracking shall be verified by dye check or equivalent means, with the tab lockout cylinder disconnected from the bracket assembly, within the next 10 hours' time in service following the detection of such evidence of cracking. Any part found to be cracked shall be replaced prior to further flight with an assembly of the same part number which has been inspected in accordance with the provisions of this paragraph and found to be free of cracks or with assembly P/N 3773970–1.

(b) The initial and repetitive inspections of assemblies, P/N 4643350, shall be conducted at the following times:

(1) On assemblies which have accumulated a total time in service of less than 3,000 hours as of the effective date of this AD: Initial inspection within next 350 hours' time in service, but in no event to exceed 3,100 hours' assembly total time in service; repetitive inspections thereafter at intervals not to exceed 350 hours' time in service except that after the assembly total time in service reaches 3,000 hours the repetitive intervals shall not exceed 100 hours' time in service.

(2) On assemblies which have accumulated a total time in service of 3,000 hours or more as of the effective date of this AD: Initial inspection within next 100 hours' time in service; repetitive inspections thereafter at intervals not to exceed 100 hours' time in service.

(c) When assembly, P/N 3773970–1 is installed in place of P/N 4643350, the repetitive inspections may be discontinued.

(d) When assembly P/N 4643350 is replaced with an assembly of the same part number which has been inspected in accordance with (a) and found to be free of cracks, the replacement part shall be reinspected in accordance with the provisions of (b).

(e) Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator.

(Douglas Service Bulletin 27–115, Revision No. 1, dated October 25, 1961, pertains to this same subject.)

This directive effective January 24, 1962.

62–12–4 Douglas Amdt. 439 Part 507 Federal Register May 17, 1962. Applies to All DC–8 Series Aircraft.

Compliance required as indicated.

A number of wing flap actuating cylinder rod-end bearings have cracked and in one case there was complete failure. To preclude failure of the rod-end bearings in cylinders located at wing Stations 98 and 219, accomplish the following:

(a) Assemblies having 4,650 hours' or more time in service as of the effective date of this AD shall be inspected in accordance with (b) within the next 350 hours' time in service after the effective date of this AD and thereafter at intervals not exceeding 350 hours' time in service. Assemblies having less than 4,650 hours' time in service as of the effective date of this AD shall be inspected in accordance with (b) prior to the accumulation of 5,000 hours' time in service and thereafter at intervals not exceeding 350 hours' time in service.

(b) Visually inspect rod-end bearings P/N 4648686 in the area of the bearing case adjacent to the bearing dust shield using at least a 10-power glass, for evidence of cracks. Caution: Do not remove rod-end bearing dust shield or magnetically inspect the rod-ends.

(c) If cracks are found, replace the defective part. If no cracks are found, the 350 hour periodic inspection, specified in (b), shall be continued.

(d) When replacement assemblies P/N 4648686 are used, the inspection prescribed in (b) shall be accomplished prior to the accumulation of 5,000 hours' time in service and thereafter at intervals not exceeding 350 hours' time in service.

(e) When assembly P/N 4648686 is replaced by Douglas P/N 4648686–501 (Shafter P/N YD–200A) or –503 (Shafter P/N YD–200B), or FAA approved equivalent, the inspections called for in this AD may be discontinued.

(f) Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering & Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains sustantiating data to justify the increase for such operator.

(Douglas Service Bulletin No. 27–127 reissue No. 1 dated April 2, 1962, covers this same subject.)

This directive effective May 17, 1962.

62–16–2 Douglas Amdt. 462 Part 507 Federal Register July 12, 1962. Applies to All Model DC–8 Aircraft With Outboard Flap Actuating Cylinder Douglas P/N 3643686. These Cylinders Can Be Identified As Having An Outside Diameter Of 3.810—3.820 Inches At The Forward End Of The Barrel Where The Cylinders Attach To The Wing Flap Crank.

Compliance required as indicated.

(a) On aircraft incorporating flap quadrant stops which limit flap extension to 40° full down, conduct a close visual inspection daily of the forward ¼ inch of length and around the entire periphery of both outboard wing flap actuating cyinder barrels for evidence of cracks or fluid leakage. Conduct inspection with hydraulic pressure on. Investigate hydraulic fluid leakage to determine cause. Barrels showing evidence of cracks shall be replaced prior to further flight.

(b) On aircraft not incorporating 40° full-down quadrant stops, prior to each flight inspect in accordance with (a) until aircraft are modified as follows:

(1) Install a stop on the control pedestal assembly as described on Serial E.O.001 to Douglas Drawing 5640901 which restricts flap extension to 46–48° down travel or, install a new flap position quadrant, flap-detent locating nameplate and flap position placard in accordance with Figure (2) of Douglas DC–8 Service Bulletin No. 27–134 or FAA approved equivalent. (Effective November 3, 1962.)

(2) Rig the flap in accordance with the instructions contained in Addendum No. 1 dated June 12, 1962, to Douglas Alert Bulletin A27–134 or rig the flap in accordance with (d)(3). (Effective November 3, 1962.)

(c) When modifications in accordance with (b) have been accomplished, the preflight inspection required by (b) may be conducted daily.

(d) The daily or preflight inspections required in (a), (b) and (c) may be discontinued if the following is accomplished:

(1) Conduct initial inspection of both outboard barrel assemblies, P/N 3643686–1, in accordance with steps (1) through (4) of Figure (1) in DC–8 Service Bulletin No. 27–134. Barrels meeting the inspection requirements specified therein, may be continued in service. After this initial inspection, periodically reinspect barrels for cracks in accordance with step (1), mentioned above, at intervals not to exceed 2,500 hours' time in service thereafter. Barrels showing evidence of cracks shall be replaced prior to further flight. (Effective November 3, 1962.)

(2) Accomplish rework outlined in paragraph (b)(1). (Effective November 3, 1962.)

(3) Adjust all flap actuating cylinders and rig the flaps to the pertinent dimensions, flap travel limits and flap travel times specified in paragraph 2, Accomplishment Instructions, Kit C or D, paragraph E of Douglas DC–8 Service Bulletin No. 27–134, or an FAA approved equivalent. (Effective November 3, 1962.)

(e) The magnetic inspection, step (1), specified in (d)(1), may be discontinued:

(1) After the fourth such inspection if the barrels, P/N 3643686–1, meet the inspection requirements of (d)(1), are shot peened in accordance with Figure (1) of Douglas DC–8 Service Bulletin No. 27–134, reidentified as P/N 3643686–501, and further identified with a color code or FAA approved equivalent; or

(2) Upon installation of new shot peened barrels, P/N's 3643686–501 or 3774061–501. (Effective November 3, 1962.)

(f) Upon request of the operator an FAA maintenance inspector, subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator. (Effective November 3, 1962.)

(Douglas DC–8 Service Bulletin No. 27–134 dated July 20, 1962, covers this same subject.) (Effective November 3, 1962.)

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegrams dated June 7, 1962, and June 14, 1962.

62–17–3 Douglas Amdt. 468 Part 507 Federal Register July 28, 1962. Applies to DC–8 Aircraft, Serial Numbers 45253–45289, 45291–45306, 45376–45382, 45384–45393, 45408–45413, 45416–45419, 45421–45431, 45433, 45442–45445, 45526, 45565–45570, 45588–45606, 45609–45614, 45617–45618, 45620–45622, 45624–45627.

Compliance required within 300 hours' time in service after the effective date of this AD.

Investigation has shown that the overwing emergency exits cannot, under all necessary circumstances, be opened from outside the airplane, as required by Civil Air Regulations Sections 4b.362(e)(2) and 4b.362(e)(3). To eliminate this condition, one of the following modifications shall be accomplished with respect to each aft overwing exit which is not deactivated per Note 7 of Type Certificate Data Sheet 4A25 and with respect to each forward overwing exit:

(a) The outboard seat in the row of seats forward of each overwing exit shall be permanently blocked to prevent the seat from being reclined across any portion of the exit

opening. The outboard seat in the row of seats aft of each overwing exit shall be permanently blocked to prevent the seat from being moved forward across any portion of the exit opening.

(b) Each row of seats forward and aft of each overwing exit shall be relocated in an approved manner that will permit the exit door to be readily opened from the outside and removed when the back of the outboard seat in each such row of seats is in any of its possible positions. The seat track or other seat positioning means shall be clearly marked or blocked in a manner which will assure that these rows of seats are continuously retained in this position during service.

(c) Combinations of the modifications specified in (a) and (b) may be used provided that fore and aft outboard seat backs are restricted from being placed in a position which will prevent opening of the exit from the outside.

(d) Rework each overwing exit door assembly, door jamb and lower stop, install a handle on the exterior of each of those door assemblies, and restrict the forward movement of the outboard seat in each row of seats just aft of an overwing exit. This total modification shall be such as to permit the exit door to be readily opened and removed from the outside when the backs of both adjacent outboard seats are in any of their possible positions.

(Douglas DC–8 Service Bulletin No. 52–21 pertains to this same subject and describes an FAA approved means of complying with modification method (d).)

This directive effective August 27, 1962.

62–20–1 Douglas Amdt. 484 Part 507 Federal Register September 18, 1862. Applies to All DC–8 Series Aircraft.

Compliance required as indicated.

As a result of service difficulties with flap actuating cylinder hoses, the following shall be accomplished:

(a) All black hoses bearing Douglas basic P/N 5716378–4 shall be inspected and replaced as follows:

(1) Each hose shall be inspected for any evidence of cracking, splitting, abrasion or other damage to the covering upon the accumulation of 900 hours' time in service since the last inspection or 90 days after the effective date of the AD, whichever occurs first. This inspection shall be repeated at intervals of 900 hours hose time in service or 90 days whichever occurs first, until the hose is replaced. Any hose on which only the covering is found to be cracked or abraded and the hose itself is found to be undamaged must be replaced prior to the next 300 hours' time in service or 30 days, whichever occurs first. Any hose exhibiting damage other than cracked or abraded covering shall be replaced prior to further flight.

(2) Hoses with less than 1,200 hours' time in service on the effective date of this AD shall be removed from service prior to 1,500 hours total time in service on such hoses.

(3) Hoses with 1,200 to 2,250 hours' time in service on the effective date of this AD shall be removed from service within the next 300 hours hose time in service or upon the accumulation of 2,300 hours total hose time in service, whichever occurs first.

(4) Hoses with more than 2,500 hours' time in service on the effective date of this AD shall be removed from service within the next 50 hours hose time in service or prior to 3,500 hours total hose time in service, whichever occurs first.

(b) All hoses bearing Douglas basic P/N S5773937–4 /same length code/, Aeroquip basic P/N 611049–4 /same length code/, or Resistoflex basic P/N R25800–4 /same length code/, shall be replaced as follows:

(1) Hoses with less than 1,400 hours hose time in service on the effective date of this amendment shall be removed from service prior to 1,800 hours total hose time in service. (Effective October 2, 1962.)

(2) Hoses with 1,400 to 2,450 hours hose time in service on the effective date of this amendment shall be removed within the next 400 hours hose time in service or prior to 2,500 hours total hose time in service, whichever occurs fifirst. (Effective October 2, 1962.)

(3) Hoses with more than 2,450 hours hose time in service on the effective date of this amendment shall be removed from service within the next 50 hours hose time in service or prior to 3,500 hours total hose time in service, whichever occurs first. (Effective October 2, 1962.)

(c) When hoses are replaced with new black hoses listed in (a), the replacement hoses shall be inspected and replaced as necessary per (a) (1) and shall be removed from service prior to 1,500 hours total hose time in service. When replaced with new Douglas, Aeroquip, or Resistoflex hoses with part numbers listed in (b), the replacement hoses shall be removed from service prior to 1,800 hours total hose time in service. (Effective October 2, 1962.) When replacements are made with hoses identifiied as Douglas basic P/N S5776432–4 /same length code/, Aeroquip basic P/N 677219–4 /same length code/, Stratoflex basic P/N 3115015–4CR /same length code/, or another hose approved by the Chief, Engineering and Manufacturing Branch, FAA Western Region, the special inspection and/or replacement provisions of this AD will not apply to such replacement hoses.

(d) Green or black flap actuating cylinder hoses dated prior to 1962, are not eligible for installation.

(Douglas DC–8 Service Bulletin No. 27–113 pertains to this same subject.)

This supersedes AD 61–19–2.

This directive effective September 18, 1962.

62–23–3 Douglas Amdt. 500 Part 507 Federal Register October 30, 1962. Applies to DC–8 Aircraft Serial Numbers 45252 to 45289 Inclusive, 45291 to 45306 Inclusive, 45376 to 45393 Inclusive, 45408 to 45413 Inclusive, 45416 to 45431 Inclusive, 45433 to 45437 Inclusive, 45442 to 45445 Inclusive, 45526, 45565 to 45570 Inclusive, 45588 to 45606 Inclusive, 45609 to 45614 Inclusive, 45616 to 45629 Inclusive, 45636, and 45638.

Compliance required as indicated.

To prevent failure of the main landing gear actuating cylinder upper attach bracket accom plish the following:

(a) Within 440 hours' time in service after the effective date of this AD, unless already accomplished, on attach brackets, P/N's 5641950–1, –2, –501 or –502 having 4,000 or more hours' time in service and, prior to the accumulation of 4,440 hours' time in service on brackets having less than 4,000 hours' time in service, conduct a hardness check on the attach bracket following the procedures described in the accomplishment instructions, paragraphs B(4), B(5) and C of Douglas Alert Bulletin No. A32–76, Reissue No. 1, Revision No. 1, dated April 5, 1962, or later, or an FAA approved equivalent.

NOTE: To gain access to the bracket it is necessary to remove the hydraulic lines from the rework area, remove swivel glands as applicable, remove the retract cylinder upper bolt and swing the cylinder down out of the way.

(b) Brackets testing within Rockwell C39.0 (175,000 p.s.i.) and C43.0 (200,000 p.s.i) range are acceptable for further use and may be continued in service provided they are not otherwise defective. These brackets shall be identified by applying a ¼ to ½-inch stripe of Cat-A-Lac, yellow No. 443-3-129 enamel or equivalent on the bracket. The identification stripe should be located in a place on the bracket so that it is clearly visible without having to remove the retract cylinder to observe the stripe.

(c) Brackets testing outside the C39.0 to C43.0 heat-treat range shall be inspected for cracks in the area of the junction of the grease fitting hole and the actuating cylinder attach hole using a dye penetrant or equivalent inspection method. The bushing, Douglas P/N 2641952 must be removed to conduct this inspection.

(1) Any of these brackets found to be free of cracks during inspection, and not otherwise defective, may be continued in service provided the inspection is repeated at intervals not exceeding 350 hours' time in service thereafter.

(2) Replace cracked parts prior to further flight with an appropriate part (Douglas P/N 5641950–1 or –2, 5641950–501 or –502) falling within the C39.0 to C43.0 heat-treat limits and marked with the yellow stripe for identification, with new P/N's 5774066–501 or –502, or with an FAA approved equivalent.

(d) Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator.

(Douglas Alert Service Bulletin No. A32–76, Reissue No. 1, Revision No. 1, dated April 5, 1962. Applies to All Model 30 Aircraft.

This directive effective November 29, 1962.

62–24–4 Douglas Amdt. 504 Part 507 Federal Register November 8, 1962. Applies to All Model DC–8 Aircraft With Midwing Flap Actuating Cylinder Douglas P/N 3643685. These Cylinders Can Be Identified as Having an Outside Diameter of 3.810–3.820 Inches at the Forward End of the Barrel Where the Cylinders Attach to the Wing Flap Crank.

Compliance required as indicated.

(a) On aircraft incorporating flap travel limit stops per paragraphs (a) and (b) of AD 62–16–2, the wing flaps shall be lowered with hydraulic pressure from the auxiliary pump and a close visual inspection of the forward ¼ inch of length and around the entire periphery of both midwing flap actuating cylinder barrels shall be made daily for evidence of cracks or fluid leakage. Barrels exhibiting leakage or evidence of cracks shall be replaced prior to further flight.

(b) On aircraft not incorporating flap travel limit stops per AD 62–16–2, the inspections prescribed by (a) shall be accomplished prior to each flight.

(c) The inspections prescribed by (a) and (b) may be discontinued when the midwing wing flap cylinders P/N 3643685 are inspected and reworked in the manner described in Figure 1 of Douglas DC–8 Service Bulletin No. 27–134 for the outboard wing flap cylinders. Midwing wing flap cylinders inspected and reworked by operators in this manner will be subject to the inspection requirements prescribed for the outboard wing flap cylinders by paragraph 1.D(2) of Service Bulletin 27–134. Cylinders reworked by the operator shall in addition to the identification prescribed by Service Bulletin 27–134, be further identified by a color code or FAA approved equivalent.

(d) Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering and Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator.

(Douglas DC–8 Service Bulletin No. 27–134 covers this same subject.)

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegram dated October 19, 1962.

62–25–2 Douglas Amdt. 510 Part 507 Federal Register November 28, 1962. Applies to All Models DC–6 and DC–7 Series Aircraft.

Compliance required as indicated.

Due to failure of a main gear shock strut cylinder and numerous cases of cracks in the 0.125-inch radii next to the torque link lugs on the cylinders, and on the piston tube axle fittings, the following shall be accomplished:

(a) DC–6 Series aircraft.

(1) With 30,000 or more hours' time in service as of the effective date of this AD shall be inspected and reworked in accordance with paragraphs (c) and (d) within the next 200 hours' time in service after the effective date of this AD, unless already accomplished within the last 100 hours' time in service, and thereafter within each 300 hours' time in service from the last inspection.

(2) With less than 30,000 hours' time in service as of the effective date of this AD shall be inspected and reworked in accordance with paragraphs (c) and (d) prior to the accumulation of 30,200 hours' time in service, and thereafter within each 300 hours' time in service.

(b) DC–7 Series aircraft.

(1) With more than 15,000 hours' time in service as of the effective date of this AD shall be inspected and reworked in accordance with paragraphs (c) and (d) within the next 200 hours' time in service after the effective date of this AD, unless already accomplished within the last 100 hours' time in service, and thereafter within each 300 hours' time in service from the last inspection.

(2) With less than 15,000 hours' time in service as of the effective date of this AD shall be inspected and reworked in accordance with paragraphs (c) and (d) prior to the accumulation of 15,200 hours' time in service, and

thereafter within each 300 hours' time in service.

(c) Inspect, using dye penetrant, or magnetic particle, or FAA approved equivalent, for cracks in the 0.125-inch radii at the edges of the torque link lugs in the main landing gear shock strut cylinder and the piston tube axle fitting.

(d) If cracks are found, they may be removed by reworking the 0.125-inch radius in accordance with the instructions contained in Douglas Service Engineering letter C1–78–M1281/DJW dated April 20, 1962, and sketches 498A and 498B attached thereto. If cracks cannot be removed without exceeding limits specified in the Douglas sketches, the gear must be replaced prior to further flight. Parts that can be reworked, and those in which no cracks are found, must be repainted with zinc chromate primer and aluminized lacquer before they are returned to service.

(e) When the 0.125-inch radii at the edges of the torque link lugs on the strut cylinders and axle fittings have been enlarged to 0.250-inch radii, holding the tolerances described in Douglas Service Engineering letter C1–78–M1281/DJW dated April 20, 1962, and sketches 498A and 498B attached thereto, and the parts are refinished as described in (d), the repetitive inspections required herein may be discontinued.

(f) Upon request of the operator, an FAA maintenance inspector, subject to prior approval of the Chief, Engineering & Manufacturing Branch, FAA Western Region, may adjust the repetitive inspection intervals specified in this AD to permit compliance at an established inspection period of the operator if the request contains substantiating data to justify the increase for such operator.

(Douglas Service Engineering letter C1–78–M1281/DJW dated April 20, 1962, and sketches 498A and 498B attached thereto, cover this same subject.)

This directive effective November 28, 1962.

62–26–1 Douglas Amdt. 517 Part 507 Federal Register December 8, 1962. Applies to All C54–DC Series and DC–4 Aircraft Equipped With Pratt & Whitney Aircraft Twin Wasp Series and R–2000 Series Engines and Hamilton Standard 23E50/6507–0 Propellers.

Compliance required within the next 200 hours' time in service after the effective date of this AD.

Recent resurveys of 23E50/6507–0 propeller blade vibration stresses have shown that vibration stresses in excess of allowable limits for continuous safe operation occur over a wider range of engine operating speeds than was determined by previous surveys. To prevent possible blade failures due to exceeding allowable stress limits within this speed range, the following is required:

(a) Remove the existing placard covering the 1600 to 1700 r.p.m. range and install a new placard in full view of the pilot to read:

"During flight, avoid operation between 1,550 and 1,750 r.p.m. During ground running, avoid operation between 1,550 and 1,800 r.p.m. when the blades are off the low pitch stops."

(b) Mark the tachometers with a red arc over the 1,550 to 1,750 r.p.m. range.

(c) Revise the operating limitations section of the FAA approved Airplane Flight Manual to incorporate the limitations in (a) and (b).

NOTE: The other restricted operating speed range between 2,310 and 2,510 r.p.m. required by AD 56–20–5 still remains in effect. For the purpose of this directive, a single placard reading: "During flight, avoid operation between 1,550 and 1,750 r.p.m. and between 2,310 and 2,510 r.p.m.", in the first sentence, may be installed if desired. Similar wording may be used for the FAA approved Airplane Flight Manual.

This directive effective January 8, 1963.

62–27–4 Douglas Amdt. 520 Part 507 Federal Register December 20, 1962. Applies to DC–8 Standard Leading Edge Aircraft Powered With JT3C, JT4A or Conway Engines.

NOTE: Does not apply to aircraft with extended leading edge and to JT3D powered aircraft with standard leading edge.

Compliance required as indicated.

As a result of failure of the upper inboard spar cap structure of the outboard pylons, accomplish the following:

(a) Unless already accomplished within the last 425 hours' time in service, within the next 25 hours' time in service, inspect upper inboard spar cap structure of the outboard pylon for

evidence of cracks. Gain access to the area to be inspected by removing the pylon leading edge nose cap between Stations YOP 214 and 244 and access doors numbers 110, 113, 411, and 414. Using close visual or dye penetrant methods, inspect the upper inboard cap and adjacent structure for cracks in the area of Station YOP 230 and at the edges of support fitting P/N 3647306–501.

(b) If cracks are found, repair in accordance with Douglas Drawing 5776811 or FAA approved equivalent, prior to further flight.

(c) If no cracks are found the inspections outlined above must be repeated at periods not to exceed 450 hours' time in service from the last inspection.

(d) The repetitive inspections may be discontinued on aircraft repaired in accordance with Douglas Drawing 5776811 and on aircraft modified to incorporate preventive rework accomplished in accordance with FAA engineering approved technical data.

(Douglas DC–8 Alert Service Bulletin A54–33 covers this same subject.)

This directive effective upon publication in the Federal Register for all persons except those to whom it was made effective immediately by telegram dated November 21, 1962.

DOWNER (REPUBLIC AND BELLANCA)

47–21–11 Republic (Was Mandatory Note 1 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 to 174, Inclusive. Compliance required prior to July 1, 1947.

In order to prevent short circuiting of terminal studs on the firewall, remove each stud, enlarge the hole (0.316 drill) and insert a bushing (P/N 17F82080–1).

(Republic Seabee Service Bulletin No. 1, dated December 18, 1946, covers this same subject.)

47–21–12 Republic (Was Mandatory Note 2 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 66 to 239, Inclusive. Compliance required prior to July 1, 1947.

To correct a production error, place "No Smoking" decalcomania in a conspicuous location in the airplane.

(Republic Seabee Service Bulletin No. 3 dated December 31, 1946, covers this same subject.)

47–21–13 Republic (Was Mandatory Note 3 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 to 234, Inclusive. Compliance required prior to July 1, 1947.

Inspect the rivets of the forward end of the elevator control push-pull tube in front of the instrument panel for size, looseness and replacement as necessary. If the installation has been made with four $\frac{5}{32}$-inch diameter rivets, replace with six $\frac{3}{16}$-inch rivets (3 on each side evenly spaced). If four $\frac{3}{16}$-inch diameter rivets are already installed and looseness exists, replace the loose rivets and install two additional $\frac{3}{16}$-inch rivets (one on each side evenly spaced).

(Republic Seabee Service Bulletin No. 6 dated January 16, 1947, covers this same subject.)

47–21–14 Republic (Was Mandatory Note 4 of AD–769–2.) Applies Only to Model RC–3 Aircraft Serial Numbers 5 to 500, Inclusive.

Compliance required at the next 25-hour inspection or by August 1, 1947, whichever occurs first.

To prevent fouling of the lower elevator cable on the elevator balance weight in the tail boom, incorporate Republic SK–17–14052–2 in the lower elevator control cable system. This elevator control cable guide is installed on the cross channel, in the tail boom, with the existing bolts holding the two inboard rudder pulley brackets.

(Republic Service Bulletin No. 14 dated March 31, 1947, covers the same subject.)

47–21–15 Republic (Was Mandatory Note 5 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 488 to 602, Inclusive.

Compliance required as soon as possible, but not later than July 1, 1947.

Inspect the radio filter mounted on left-hand rear engine baffle. Filters in steel boxes 4 inches by 2 inches should be further inspected and reworked or replaced as described below, in order to minimize the possibility of a short circuit. Those filters which are in a smaller box need not be reworked.

1. If the coil is bolted to the box and the condenser is fastened in place with a clamp, the filter is satisfactory. If the coil is bolted to the box but the condenser is glued in place, the filter may be used provided a $1\frac{1}{8}$-inch diameter clamp is added to fasten the condenser in place.

2. Filters in which the coil is not bolted to the box should be replaced by a new filter assembly, Republic P/N SK–17–83053–1.

(Republic RC–3 Seabee Service Bulletin No. 15 dated April 8, 1947, covers this same subject.)

47–21–16 Republic (Was Mandatory Note 6 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 to 250, Inclusive.

To be accomplished not later than the next 25 hours of operation subsequent to July 1, 1947, and in any case not later than September 1, 1947.

In order to provide a fuel strainer drain which is leakproof and airtight:

1. Remove the existing drain cock or plug

from the fuel strainer located near the right hand wing fairing.

2. Install adapter 17P65058–1 in the strainer and install W7600–⅛ drain cock in the end of adapter. Use seal-lube when installing these parts.

(Seabee Service Bulletin No. 7 dated February 5, 1947, covers the same subject.)

47–21–17 Republic (Was Mandatory Note 7 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 to 125, Inclusive.

To be accomplished not later than the next 25 hours of operation subsequent to July 1, 1947, and in any case not later than September 1, 1947.

In order to provide an improved backfire screen, remove existing screen from flexible hot air tube, install new type screen with flush end locating it to prevent interference with the carburetor air duct or the old screen which will be reinstalled. Securely attach new screen to tube.

(Republic Seabee Bulletin No. 2 covers this same subject.)

47–21–18 Republic (Was Mandatory Note 8 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 Through 303, 305 Through 367, 369 Through 398, 400 Through 445, 448 and 449, 451 Through 454, 456 Through 459, 461 Through 466, 469 and 470, 472, 474, 479 and 482.

Compliance required prior to next flight.

Prior to each flight until reinforced support bracket is installed, inspect mixture control support at carburetor air filter housing for evidence of cracking. Support bracket must be installed not later than the next 25 hours of operation after July 1, 1947, and in no case later than August 1, 1947.

(Republic Seabee Service Bulletin No. 11 dated March 10, 1947, covers this same subject.)

47–21–19 Republic (Was Mandatory Note 9 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 to 238, Inclusive.

Compliance required not later than the next 25 hours of operation subsequent to July 1, 1947, but in no case later than September 1, 1947.

Inspect parking brake, battery, mixture and carburetor heat flexible controls for presence of brass ferrule or AN 742D3 clamp on split sleeve at operating end of these controls. If clamp or ferrule is not installed, split metal sleeve can open permitting casing to slide out when control is actuated thus rendering the control ineffective. The above clamp should be installed immediately.

(Seabee Service News No. 10, dated January 13, 1947, covers this subject.)

47–21–20 Republic (Was Mandatory Note 10 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 426 Through 484, Except 446, 447, 452, 455, 460, 468, 471, 473, 475, 480, 481 and 483.

Compliance required not later than the next 25 hours of operation subsequent to July 1, 1947, and in any case not later than September 1, 1947.

In order to prevent excessive loss of oil through oil pressure gage line in case of its failure, install a restrictor fitting at the engine end of that line.

(Seabee Service Bulletin No. 13, dated March 17, 1947, covers this same subject.)

47–21–21 Republic (Was Service Note 1 of AD–769–2.) Applies to Model RC–3 Aircraft Serial Numbers 5 to 236, Inclusive.

Inspection required immediately and periodically as noted below.

Inspect two slots at upper end of each tip float strut (P/N 17W23001) very carefully for cracks. Slots are located inside of wing contour, therefore, struts must be removed from wing at upper attachment for proper inspection. If any cracks are present, strut shall be replaced prior to further operation. All struts without relief holes at ends of slots as recommended by manufacturer shall be inspected for cracks at 50-hour intervals.

(Republic Seabee Service Bulletin No. 12 covers this same subject.)

47–21–22 Republic (Was Service Note 2 of AD–769–2.) Applies to Model RC–3 Aircraft.

Inspection required before next flight and at each subsequent 25 hours of operation.

If no tab type lockwashers are installed, check tightness of engine mounting bolts to torque of 25 foot-pounds on ⅜-inch bolts and 30 foot-pounds on 7/16-inch bolts. If it is found

that loosening has occurred it will be necessary to install tab type lockwashers under all engine mounting bolts. (AMI P/N 15175 for 3/8-inch bolts, AMI P/N 15176 for 7/16-inch bolts.)

If tab type lockwashers have been installed previously and tabs are in place, inspection is required only at the regular 100-hour periods.

(Aircooled Motors Service Bulletin No. 47 pertains to this subject.)

47–21–23 Republic (Was Service Note 3 of AD–769–2.) Applies to Model RC–3 Aircraft with Engine Serial Numbers 23001 to 24083, Inclusive.

Compliance required before the next flight and after 5 hours of operation following each installation of fan.

Inspect the engine cooling fan capscrews for tightness. If tab locks are installed ascertain whether the locks are still in place. If the capscrews or the locks have loosened remove the capscrews, fan and pulley sheave. Clean and inspect parts for wear. Reassamble carefully using P/N 17778 drilled head capscrews with plain washers. Torque to 20 foot-pounds, operate engine up to 1,500 r.p.m. for 5 minutes, retorque and safety with 0.041-inch stainless steel wire. Visually inspect locking wire and capscrews after 5 hours of operation. Reassemble in this manner every time the fan is removed.

Obtain the new capscrews, washers, and wire from your Seabee distributor or the engine manufacturer.

(Franklin Service Bulletin No. 57 dated June 9, 1947, which supersedes Bulletin No. 50 covers this same subject.)

47–47–10 Republic (Was Mandatory Note 13 of AD–769–2.) Applies to Model RC–3 Aircraft.

Compliance required prior to February 1, 1948.

To prevent possible float strut failures during rough water landings, install wing reinforcing angles 17W21028, float strut brace assemblies 17W22013, spacers 17W22011 and lugs 17W22010.

(Republic Service Bulletin No. 19 dated September 9, 1947, covers this same subject.)

47–47–11 Republic (Was Mandatory Note 14 of AD–769–2.) Applies to Model RC–3 Aircraft.

Compliance required as soon as possible but in any event not later than January 15, 1948.

To prevent inadvertent reversal of propeller if propeller reverse control wire fails at control valve attachment, install a spring between the reverse control link and the bracket supporting the reverse control.

(Seabee Service Bulletin No. 21 dated October 14, 1947, covers this subject.)

47–47–12 Republic (Was Mandatory Note 12 of AD–769–2.) Applies to RC–3 Aircraft Serial Numbers 5 Through 1035 Inclusive Except the Following Which Have Been Modified at the Factory: 767, 915, 948, 949, 957, 959 Through 999 Inclusive, 1004 Through 1010 Inclusive, 1014, 1019 Through 1025 Inclusive. Serial 1036 and up Have Been Modified at the Factory Prior to Delivery.

Compliance required not later than December 31, 1947.

To prevent excessive drop-off in engine r.p.m. when carburetor heat is used, anti-swirl vanes, Republic P/N 17P 68014–20 must be installed in the air duct below the carburetor.

(Republic Seabee Service Bulletin No. 18 dated August 26, 1947, covers this same subject.)

47–47–13 Republic (Was Mandatory Note 11 of AD–769–2.) Applies to Model RC–3 Aircraft.

To be accomplished not later than next 100-hour inspection or January 15, 1948.

If the Hartzell propeller hub model on your airplane is HC–12X20–3, determine the counterweight length and position on the hub in order that the hub designation can be amended as necessary in accordance with the following:

(*a*) Plain counterweights 4.650 inches in length—the designation HC–12X20–3 is unchanged.

(*b*) Notched counterweight 4.50 inches in length—add suffix letter "C" to designation so that it reads HC–12X20–3C.

(*c*) Plain counterweight 4.50 inches in length—a 1/8-inch slug must be added to these counterweights and suffix letter "A" added to the hub designation so that it reads HC–

12X20–3A. Any of these hubs on which the slugs have not been added to the counterweights must be removed from service until the counterweight slugs are affixed.

Revise the reverse thrust operation placard as follows:

For airplanes with 6A8–215–B8F engines, Serial Numbers 23001 to 23280, inclusive, and HC12X20–2 propeller:

WARNING—Reversing propeller in flight prohibited. Operate reverse lever in low pitch only. Maximum 1,750 r.p.m. in reverse pitch.

For airplanes with 6A8–215–B8F engines, Serial Numbers 23001 F to 23280 F, inclusive, and 23281 and up and all –B9F engines and

(1) HC–12X20–3 or 3–A propellers:

WARNING—Reversing propeller in flight prohibited. Operate reverse lever in low pitch only. Maximum 2,300 r.p.m. in reverse pitch. Or

(2) HC–12X20–2 or –3C propellers:

WARNING—Reversing propeller in flight prohibited. Operate reverse lever in low pitch only.

47–47–14 Republic (Was Service Note 4 of AD–769–2.) Applies to Model RC–3 Aircraft with Engine Serial Numbers 23001 to 24065 Inclusive.

Compliance required at each 25-hour inspection.

Drain the oil from the engine and inspect the sump oil inlet screen assembly as follows:

Insert a finger through the drain hole in the sump; locate the oil screen and with direct side pressure attempt to move the oil screen horizontally. If appreciable horizontal movement is caused by hard pressure or if the oil screen is not directly over the drain hole, the oil inlet assembly may be cracked and requires replacement. The late type assembly includes a non-floating oil screen. Until this late type float and assembly is installed fill with no more than 11 quarts of oil and mark the filler cap accordingly.

When the late type parts have been incorporated, the above inspection is no longer required and 12 quarts of oil may be placed in the sump and the filler cap should be remarked accordingly.

The above inspection should be made immediately when any unexplained oil pressure drop is apparent.

(Franklin Service Bulletin No. 58 dated June 11, 1947, covers this same subject.)

47–50–13 *See* Universal Propellers.

47–51–8 Republic Applies to All Model RC–3 Airplanes with Steerable Tailwheels.

Compliance required not later than the next 25-hour inspection.

To preclude the possibility of the steerable tailwheel control cable fouling on the tailwheel quadrant arms, install horns $3\frac{9}{16}$ inches long, fabricated from 0.091 aluminum plate, pointing rearward to arms of quadrant assembly No. 17F42093–1. Drill out stop rivet and attach using AN 441–4–5 rivets. Then attach cable clips over horn and arm with AN 24–11 bolts.

(Republic Service Bulletin No. 17, Supplement No. 2, dated October 16, 1947, also covers this same subject.)

48–1–3 Republic Applies to Model RC–3 Aircraft.

Compliance required by February 1, 1948, and at each 25-hour inspection until bushing is installed.

Inspect elevator trim tab for excessive play by holding control rod and measuring vertical movement of trailing edge. If play exceeds $\frac{1}{8}$ inch, ream clevis pin hole in horn and press in a $\frac{1}{4}$ inch O. D. cadmium plated steel bushing. If wear has reduced edge distance below $\frac{5}{32}$ inch, a new horn with steel bushing should be installed.

(Republic Seabee Service Bulletin No. 20 dated October 10, 1947, and Supplement No. 1 thereto dated November 10, 1947, contain detailed information on this subject.)

48–11–4 Republic Applies to Model RC–3 Aircraft.

Compliance required by April 15, 1948.

To provide security for the hydraulic pump handle attachment, the four self-locking nuts now used should be replaced by three AN 310–4 and one AN 310–5 castle nuts and cotters. The fulcrum bolt is already drilled for a cotter. The present clevis bolts may be drilled for the cotter or may be replaced by two AN 24–17 and one AN 24–13 clevis bolts.

(Republic Service Bulletin No. 22 covers this same subject.)

49-3-1 Republic Applies to Model RC-3 Aircraft.

Compliance required by December 1, 1949.

To prevent possible failure of the diaphragms in the two AC fuel pumps on Franklin Model 6A8-215-B8F and -B9F engines and to provide a drain line to carry fuel away from the engine compartment in case of a diaphragm failure replace the fuel pumps with new fuel pumps, AMI P/N 15438 and 15439, and install drain lines. Aircooled Motors, Inc., Kit P/N 15464 contains parts and instructions for making these replacements.

(Franklin Service Bulletin No. 71 covers this same subject.)

This supersedes AD 48-26-2.

49-31-2 Republic Applies to All Model RC-3 Airplanes.

Compliance required not later than October 1, 1949.

In order to eliminate the possibility of engine failures resulting from fuel starvation due to incorrect procedures of checking the fuel tank capacity, the following placard must be installed in the vicinity of the fuel tank filler neck:

"WARNING—Do not check fuel with engine running, or within 5 minutes after shutdown. Always insert stick with calibrated side facing ground."

(Republic Service Bulletin No. 23, dated June 3, 1949, covers the same subject.)

51-16-2 Bellanca Applies to All Model 14-19 Airplanes Serial Numbers 2002 Through 2075.

Compliance required within the next 25 hours of operation, but not later than August 1, 1951.

As the result of a recent failure of the elevator trim tab in flight, the modification of the trim tab attachment to the elevator as shown in Figure 1 should be made.

(Bellanca Service Bulletin No. 2, Model 14-19, covers this same subject.)

53-16-1 Bellanca Applies to All Model 14-19 Series Airplanes.

Compliance required prior to September 15, 1953, and to be repeated at intervals not to exceed 100 hours flight time.

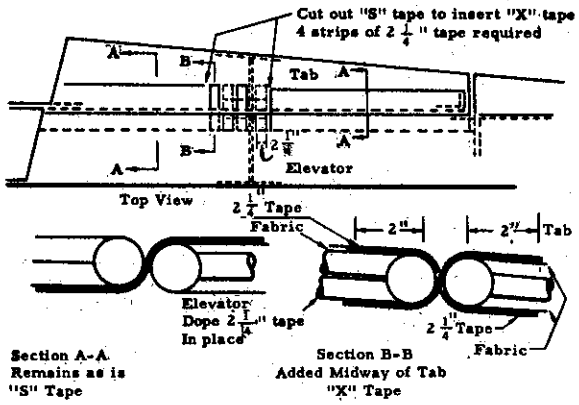


FIGURE 1

Inspect elevator trim tab system for looseness by checking free play of the trim tab. Total free play of the tab trailing edge at the maximum chord should not exceed 0.20 inch. Excessive free play may be due to excessively worn parts and/or looseness in the adjustment of the trim tab system. Excessive free play can usually be removed by accomplishing the following:

Remove retaining pin from trim tab control handle and remove handle. Pull tab control rod as far forward as possible. Add required thickness of shim or washer to take up increased length. Replace handle and pin.

Center fabric hinge should also be inspected for deterioration and replaced if necessary.

(Bellanca Service Bulletin No. 4 covers the same subject.)

53-23-3 Republic Applies to All Model RC-3 Aircraft.

Compliance required within the next 25 hours of operation but not later than December 1, 1953, and thereafter at each 25-hour period of operation or every 6 months, whichever occurs first.

Cases of severe corrosion of the right and left upper and lower lift strut fittings, fuselage wing lift strut fittings and wing lift strut fittings have been reported. Since the strength of these fittings are of primary importance to the safe operation of the airplane, the following inspections shouud be made and corrective action taken.

Fitting 17W22002 is located on the upper end of the lift strut and fitting 17W22003 is located on the lower end of the lift strut. Fitting 17F11013 is located in the fuselage

and is attached to fitting 17W22003. Fitting 17W22004 is located in the wing and is attached to fitting 17W22002.

Inspect thoroughly and test the fitting with a pointed instrument to determine whether corrosion is present. One 1¼-inch diameter inspection hole should be cut in the upper and one in the lower surface of the wing in accordance with Republic Aviation Service Bulletin No. 25, Supplement No. 2, in order to accomplish the inspection of the portion of the fitting 17W22004 which lies inside the wing skin. This inspection will require the aid of a light as well as a sharp-pointed instrument. The holes should be covered with United Carr Fastener Corp. Plug Button No. 51021, Seabee spare parts item No. 1379, or equivalent.

A fitting may appear satisfactory but actually may be corroded under the surface. Such corrosion which may be intergranular in nature may actually result in a much greater loss of strength than would be indicated by the loss of metal from the surface. If the fitting has only slight surface corrosion, the corrosion should be carefully removed and the fitting should be suitably treated against further corrosion. Fittings which have deteriorated beyond slight surface corrosion should be replaced.

(Republic Aviation Service Bulletin No. 25, including Supplements Nos. 1 and 2, covers this same subject in detail.)

This supersedes AD 50–30–1.

56–17–3 *See* Hartzell Propellers.

62–19–1 Bellanca Amdt. 479 Part 507 Federal Register August 29, 1962. Applies to 14–13 Series, (Downer) 14–19, and 14–19–2 Aircraft.

Compliance required as indicated.

As a result of instances of elongation of the control cable attachment bolt hole in the rudder bellcrank, P/N 9817, accomplish the following inspection within the next 25 hours' time in service after the effective date of this airworthiness directive, unless accomplished within the last 75 hours' time in service, and thereafter within each 100 hours' time in service.

Remove the left and right rudder bellcranks, P/N 9817, located at the left and right ends of the rudder torque tube. (This may be accomplished by working from inside the cabin and through the inspection hole in the bottom cabin cowl.) If the control cable attachment bolt hole in the rudder bellcrank is elongated beyond maximum diameter of 0.210 inch, the rudder bellcrank must be replaced with a new rudder bellcrank of the same part number (P/N 9817), or FAA approved equivalent prior to further flight. The new rudder bellcrank must be inspected thereafter within each 100 hours' time in service.

This directive effective September 28, 1962.