UNIVERSAL

46-23-4 Globe (Was Mandatory Note 1 of AD-766-5.) Applies to Models GC-1A, GC-1B Aircraft Serial Numbers 33 to 54 Inclusive, Plus 54, 56, 57, 58, 60, 61, and 64.

Due to an inadvertent error in the manufacture of these airplanes, the following reinforcement of the rivet seam attaching the upper skin of the outer wing panels to the main spar is to be accomplished as follows. In lieu of immediate accomplishment, the maximum weight may be reduced from 1,570 pounds to 1,490 pounds. This may require elimination of the baggage allowance. In any case, the reinforcement outlined below must be accomplished not later than September 1, 1946. After completion of the reinforcement, the placard may be removed and the weight increased to the maximum specified in the Aircraft Specification.

In the length of the seam from 1½-inches to 4¾-inches outboard of the outer panel attachment bolt, the number of rivets should be increased to not less than five. Since the heads of the bolt through the end fitting of the spar cause interference at the originally intended spacing, the rivets may be spaced unequally, but the minimum spacing may not be less than ⅜-inch. In the length of the seam from 4¾-inches to 11½-inches outboard of the outer panel attachment bolt, sufficient rivets should be added to make the spacing approximately ⅜-inch. The added rivets may be either Cherry CR163-4-10 or AN 456-AD4. (Globe Customer Service Maintenance Bulletin No. 1 covers this same subject.)

46-33-2 Globe (Was Mandatory Note 2 of AD-766-5.) Applies to Models GC-1A, GC-1B Aircraft Serial Numbers 3 to 174 Inclusive.

Compliance required prior to October 1, 1946.

Install stiffeners, Globe P/N 11-213-1471-1 R & L, on the flange of the upper bulkhead at fuselage Station 167, with six rivets per stiffener, to prevent the formation of cracks originating at the joggles in the flange outboard of the stabilizer attachment points. Any crack should be stop drilled. If it extends into the web of the bulkhead an 0.040-inch 24ST alclad reinforcing plate extending to the flange should be installed on the web with rivets spaced not more than ¾ inches apart.

(Globe Customer Service Maintenance Bulletin No. 2 covers this same subject.)

46-36-1 *See* Continental Engines.

46-42-1 Globe (Was Mandatory Note 4 of AD-766-5.) Applies to Models GC-1A, GC-1B Aircraft Serial Numbers 3 to 228 Inclusive.

Compliance required prior to December 1, 1946.

Replace the aluminum alloy cabin heater valve assembly with one constructed completely of firewall material equivalent to Globe Valve Assembly, P/N 11-440-3623. This will provide a complete firewall of firewall material.

(Globe Customer Service Maintenance Bulletin No. 4 covers this same subject.)

47-6-1 Globe (Was Service Note 1 of AD 766-5.) Applies to Models GC-1A and GC-1B Aircraft.

To be accomplished prior to April 1, 1947, and upon each 100 hours operation thereafter.

Inspect main landing gear retraction system to determine that adjustments are as follows:

(1) When the side brace is against the down stop the middle joint should be ⅛ inch to ¼ inch above dead center (3/16 inch to 5/16 inch if measured from edges of links in accordance with Globe Customer Service Maintenance Bulletin No. 7).

(2) When the side brace is against the down stop and the down lock plunger is fully extended, covering at least ½ of the adjustment screw head, the clearance between the plunger and the screw head should be from 0.001 inch to 0.005 inch.

(3) When the side brace is against the down stop the limit switch plunger should be depressed approximately 1/32 inch beyond the cut-off point.

(4) The turnbuckle in the emergency extension cable should be adjusted so that on manual extension of the gear both down locks operate before the handcrank has been wound to the full down position. After it has been determined that the turnbuckle adjustment is satisfactory in this respect it should be determined also that with the handcrank wound to the full up position the cable length is sufficient to permit the up limit switches to cut off.

(Globe Customer Service Maintenance Bulletin No. 7 covers this same subject.)

47–6–2 Globe (Was Mandatory Note 5 of AD–766–5.) Applies to Models GC–1A and GC–1B Aircraft Serial Numbers 3 to 408 Inclusive; 1004 to 1319 Inclusive; and 2001 to 2239 Inclusive.

Compliance required prior to April 1, 1947.

Replace the warning placard located at the landing gear emergency extension crank with a revised placard, Globe P/N 11–532–3735, having the added instruction: "Crank back to the full up position before the next retraction of the landing gear". Complete rewinding is necessary to prevent damage to the retraction system.

(Globe Customer Service Maintenance Bulletin No. 6 covers this same subject.)

47–6–3 Globe (Was Mandatory Note 6 of AD–766–5.) Applies to Models GC–1A and GC–1B Aircraft Serial Numbers 314 to 408 Inclusive; 1038 to 1350 Inclusive; and 2011 to 2350 Inclusive.

Compliance required prior to April 1, 1947.

Replace the present collars at the attachment of the elevator cables to the control wheel shafts with redesigned collars, Globe P/N 11–532–1818–2. This is necessary to prevent fouling of the elevator cable links with the control wheel shafts.

(Globe Customer Service Maintenance Bulletin No. 8 covers this same subject.)

47–6–4 Globe (Was Mandatory Note 7 of AD–766–5.) Applies to Models GC–1A and GC–1B Aircraft Serial Numbers 3 to 408 Inclusive; 1004 to 1224 Inclusive; and 2001 to 2324 Inclusive.

Compliance required prior to April 1, 1947.

Replace the AN 960–616 washers under the nuts at the attachment of the main landing gear retraction links to the shock struts with AN 940–616 washers. This is necessary for proper retention of the bushings in the retraction links.

(Globe Customer Service Maintenance Bulletin No. 10 covers this same subject.)

47–6–5 Globe (Was Mandatory Note 8 of AD–766–5.) Applies to Models GC–1A and GC–1B Aircraft Serial Numbers 2 to 408 Inclusive; 1001 to 1216 Inclusive; and 2001 to 2137 Inclusive.

Compliance required prior to April 1, 1947.

Replace the present battery vent plugs of the tubular (deeply inserted) type of the Reading Model R–24L battery with the high non-spill ball seat type vent plugs. Clean and treat that part of the firewall and fuselage which has been subjected to the spill battery acid with a solution of sodium bicarbonate. This is necessary to prevent corrosion due to acid spillage.

(Globe Customer Service Maintenance Bulletin No. 14 covers this same subject.)

47–6–6 Globe (Was Mandatory Note 9 of AD–766–5.) Applies to Models GC–1A and GC–1B Aircraft Serial Numbers 3 to 408 Inclusive; 1001 to 1460 Inclusive; and 2001 to 2329 Inclusive.

Compliance required prior to April 1, 1947.

Cut off the egress end of the engine breather line to terminate the line 1-inch above the grill opening. This will prevent clogging of the line due to formation of ice during cold weather operation or the entry of foreign matter caused by the propeller blast.

(Globe Customer Service Maintenance Bulletin No. 11 covers this same subject.)

47–13–2 Taylorcraft (Was Service Note 1 of AD–696–3.) Applies to Models BC–65, BCS–65, BC12–65, BCS12–65, BC12–D, BCS12–D, BCS12–D1 Aircraft.

Inspection required each 25 hours of engine operation.

This inspection applies only to fuel hose bearing white dash lines and having end fittings marked "CAA, SNA (date)". Examine the two flexible fuel lines to determine whether the hose inner liner has collapsed or failed thus causing a restriction to the flow of fuel.

Particular attention should be given to the hose close to the fittings on the fuel strainer. Defective hose appears soft or spongy when squeezed with the fingers. Any defective hose is to be replaced immediately.

(This information is contained, in part, in Taylorcraft Service Bulletin No. 60 dated June 14, 1946.)

47-16-3 Taylorcraft (Was Mandatory Note 11 of AD-700-1; Mandatory Note 12 of AD-699-1; and Mandatory Note 13 of AD-696-3.) Applies to All Models BC, BF, and BL Series Aircraft.

Compliance required immediately.

Inspect wing strut attachment fittings on lower fuselage longerons for cracks or evidence of poor weld. If cracks or defects are found, the fitting should be replaced or reinforced.

47-25-6 Globe (Was Mandatory Note 10 of AD-766-5.) Applies to Models GC-1A and GC-1B Aircraft Serial Numbers 3 to 157 Inclusive, and Number 159.

Compliance required prior to August 1, 1947.

Remove the carburetor flexible air duct, P/N 11-440-3405 and metal air intake scoop, at point of attachment at rear right engine cylinder and outboard connection to the right exhaust heater shroud. Replace with flexible air duct, Globe P/N 11-440-3648, and elbow, Globe P/N 11-440-3729. This is necessary to prevent collapsing of the air duct when the carburetor air heater is used.

(Globe Customer Service Maintenance Bulletin No. 5 covers this same subject.)

47-25-7 Globe (Was Mandatory Note 11 of AD-766-5.) Applies to Models GC-1A and GC-1B Aircraft Serial Numbers 1001 to 1119 Inclusive.

Compliance required prior to August 1, 1947.

If an oil radiator is or has been installed, inspect the forward end of the engine's left oil galley outlet port and remove steel sleeve, Continental P/N 25206, if found to be installed. This is necessary to insure that positive lubrication is being provided the No. 6 cylinder connecting rod bearing.

(Globe Customer Service Maintenance Bulletin No. 13 covers this same subject.)

47-40-2 *See* Continental Engines.

47-50-11 Stinson Applies to 108 Series Aircraft.

Compliance required prior to March 1, 1948.

The front ash trays shall be modified to the self-contained type or a "No Smoking" placard installed.

(Stinson Service Bulletin No. 246 covers a satisfactory method of modifying these ash trays.)

47-50-12 Stinson Applies to Model 108 Series Serial Numbers 1 through 3500.

Compliance required every 100 hours of operation.

Inspection of the stabilizer leading edge attachment to the fuselage should be made for fatigue cracks, after each 100 hours of operation. If fatigue cracks are present, reinforcements to the stabilizer fitting should be added. Inspection may be discontinued after reinforcement is installed.

(Stinson Service Bulletin No. 254 dated September 5, 1947, covers this same subject.)

47-50-13 *See* Universal Propellers.

48-28-1 TEMCO Applies to All Models GC-1A and GC-1B Aircraft.

I. Inspection required at each 20 hours operation until compliance with item II is made.

Cracks are occurring in the last bulkhead (Station 185) of the fuselage at the bottom rudder hinge and stop fitting, and the bulkhead must be inspected for such cracks. If cracks are found, a repair must be made in accordance with item II.

II. Compliance required not later than September 1, 1948.

To preclude the possibility of a structural failure in the rear bulkhead of the fuselage, at the bottom rudder hinge and stop, a steel reinforcement must be made as follows:

1. If cracks are found in the bulkhead drill No. 50 (0.07 diameter) check holes at end of each crack.

2. Fabricate and install a steel reinforcement fitting as defined in TEMCO Drawing 11-213-5074.

The Texas Engineering and Manufacturing Co., Inc., will furnish free of charge the steel reinforcement fitting described in item 2.

(TEMCO Customer Service Maintenance Bulletin No. 26 covers this same subject.)

48-48-1 *See* Freedman Propellers.

48-50-1 *See* Aircooled Motors.

49-16-2 **Stinson** Applies to All Models 108-2 and 108-3 Series Aircraft, Serial Numbers 2250 and Up.

Compliance required at next periodic inspection but not later than July 1, 1949.

To prevent wing fabric loosening along the upper surface of the front and rear spars in the area of the fuel tank causing a spoiler action, remove the fuel tank and inspect the upper surface wing fabric for proper installation, looseness and deterioration. The fabric should be wrapped securely around spar flange ending at spar web. If fabric is not installed in this manner or it is loose, the following shall be accomplished.

1. Resecure fabric to wing structure using at least a 4-inch width of surface tape as reinforcement. Dope to upper wing fabric along spar and wrap securely around spar flange stopping at spar web.

2. Reinstall fuel tanks.

3. Seal 1/8-inch crevice on upped wing surface (between fuel tank and spare) flush with wing contour using perma-plastic sealing compound compatible with doped fabric surface. (3-M Weatherstrip cement manufactured by the Minnesota Mining and Manufacturing Co., or equivalent, is acceptable).

4. All rework should be in accordance with Civil Aeronautics Manual 18.

This supersedes AD 49-6-5.

50-17-2 **Stinson** Applies to All Model 108 Series Aircraft.

Compliance required as indicated.

A number of cases have been reported of broken core strands in the rudder cables where they pass over the pulley at fuselage Station 18.75 (first pulley aft of rudded pedals). To preclude failures, the following is therefore required:

1. Within the next 25 hours and at every 100 hours thereafter the followin should be accomplished. Remove the rudder cables from the pulleys, bend the cables in a tighe "U" where they pass over the pulley, being careful that permanent kinks are not formed, and inspect either visually or by touch. Replace all cables showing signs of breakage.

2. The above inspection may be discontinued and the normal inspections resumed if the following is done: Remove the AN 210-3A pulleys at fuselage Station 18.75; modify the pulley brackets and install larger pulleys, P/N 41001-2, and two cable guards, P/N SK253-2, in accordance with detailed instructions in Piper Service Bulletin No. 114 or an equivalent modification.

50-25-1 **Stinson** Applies to All Model 108 Series Aircraft.

Compliance required not later than September 1, 1950.

Reports have been received of fuel seepage into the space between the inner cabin trim and the outer fabric covering of the fuselage. This results in soaking of insulating material in the cabin wall. The source of the fuel can be spillage during filling of tanks, thermal expansion of fuel in full tanks, or tank leakage. This fuel runs to the under surface of the wing, adhering to the lower curved surface of the trailing edge of the wing at the flap well, thence inboard to the fuselage and across the rear window. Since the window seal is often not perfectly tight the fuel may then enter the cabin wall.

To preclude the fire hazard of fuel soaked insulation within the cabin wall due to these causes, a drip strip similar to that shown in Figure 1 should be installed on the underside of each wing. This drip strip will prevent fuel from flowing from the wing to the fuselage.

Piper Service Bulletin No. 115, dated March 31, 1950, covers this same subject.)

50-34-1 *See* Universal Propellers.

50-41-1 **Taylorcraft** Applies to All Model BC Series Aircraft, Serial Numbers 1001 and Up.

Compliance required not later than November 15, 1950.

Reports have been received of interference between the elevator horn bolt and the fin cover plate apparently caused by improper field installation of the cover plate through bolt. Cases are known where the bolt has worn through the cover plate and such interference may result in jamming of the elevator control system. An inspection of the parts should be made and if evidence of interfer-

ence is noted, suitable means of preventing the cover plates from interfering with the elevator horn bolt should be incorporated; a spacer bushing at least ¼ x 0.028 x 1¼ inches installed around the cover plate through bolt is considered satisfactory.

(Taylorcraft, Inc. Service Bulletin 65 covers this same subject.)

50–47–1 *See* Sensenich Propellers.

51–2–2 TEMCO Applies to All Models GC–1A and GC–1B Airplanes Through Serial Number 3760, Except Those Equipped With Hanlon-Wilson Muffs.

Compliance required by February 15, 1951.

To prevent engine malfunctioning due to pieces of asbestos from the carburetor heat muff entering the carburetor, remove all asbestos strips on the right-hand (carburetor heat) muff. After removal of the asbestos, peen the muff collars to provide a tight fit on the exhaust stacks.

This supersedes AD 47–25–8.

51–8–3 TEMCO Applies to Models GC–1A and GC–1B Aircraft—All Serial Numbers.

Compliance required at next periodic inspection but not later than May 1, 1951.

Inspect the horizontal stabilizer front spar attachment to the fuselage bulkhead for looseness. First remove all fairing or interfering items. Support the horizontal stabilizers on the fuselage so that their position cannot change; remove the four AN 3 bolts which attach the front stabilizer spar to the fuselage bulkhead. If there is no deformation or elongation of these bolt holes and if the holes in the stabilizer spar and the fuselage bulkhead are in correct alinement the AN 3 bolts should be reinstalled, torquing them to 25–30 inch-pounds.

If there is deformation or elongation of the attach bolt holes, a repair can be accomplished by reaming these 9/16-inch holes to ¼-inch diameter with the stabilizers firmly blocked in the proper position with the fuselage. The AN 3 bolts, nuts, and washers are to be replaced with AN 4 bolts, nuts, and washers, and they should be torqued to 80–90 inch-pounds in reassembling the stabilizer front spar attachment. The empennage and fairing which were removed for this inspection and repair are then reassembled on the airplane.

If the AN 3 attachment bolts are retained, this inspection should be repeated at each periodic or annual inspection. If the AN 4 attachment bolts are installed, only the normal inspections of this attachment need be made.

51–9–3 Taylorcraft Applies to All BC Series Aircraft Below Serial Number 13001 Incorporating a Pushpull Type Fuel Shutoff Control.

Compliance required not later than June 1, 1951.

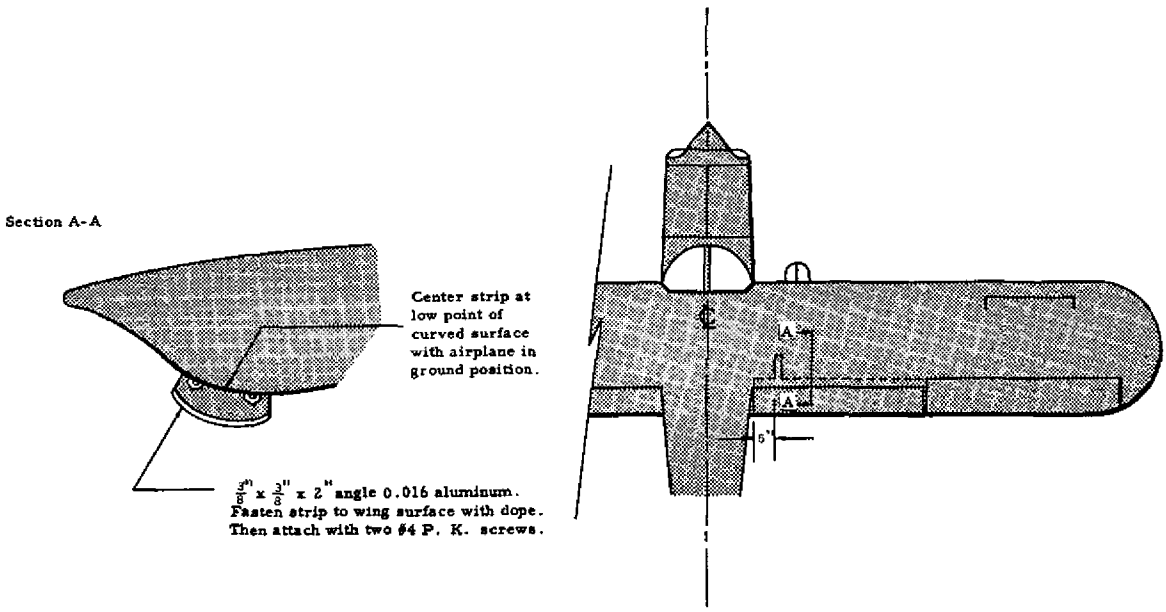

FIGURE 1

To prevent accidental operation of the fuel shutoff valve during flight, a safety device must be installed on this control. The device is to prevent inadvertent operation of the fuel shutoff valve by requiring a definite and positive movement by the pilot before the control can be operated. Taylorcraft P/N B12–947–3 or equivalent is considered satisfactory. P/N B12–947 which was previously installed in some Taylorcraft airplanes must be replaced by this improved part.

(Taylorcraft Service Bulletin No. 66 dated December 6, 1950, covers this same subject.)

This supersedes AD 47–13–1.

51–10–5 TEMCO Applies to Models GC–1A and GC–1B Aircraft, Serial Numbers 3711 and Below.

Compliance required at next periodic inspection but not later than May 1, 1951.

(This Airworthiness Directive supplements AD 48–28–1.)

The two most forward AN 3–4 bolts in each flange of reinforcement P/N 11–213–5074 (4 bolts in all), installed to comply with AD 48–28–1, interfere with the tailwheel shock strut cylinder at the upper extreme of its travel. The tailwheel shock strut should be removed from the airplane and the shock strut and the tailwheel support channel, P/N 11–212–1484, carefully inspected for damage. Any damaged part should be replaced or repaired.

Reexamination of this reinforcement P/N 11–213–5074, shows that the two forward AN 3–4 bolts in each flange (4 bolts in all), are not necessary to achieve the required strength. Therefore, remove these bolts, leaving the two most rear AN 3–4 bolts in each flange of the reinforcement (4 bolts in all). The flanges of the P/N 11–213–5074 reinforcement may be cut off along a line located ⅜-inch forward of the centerline of the two rear 3/16-inch bolt holes in each flange, if necessary to accommodate a pair of the tailwheel shock strut support channel. Reinstall the tailwheel shock strut.

51–11–4 TEMCO Applies to Models GC–1A and GC–1B and Includes All Serial Numbers.

Compliance required as indicated.

A. At each 100-hour or annual inspection, all bushings in all landing gear pivot points should be inspected for wear that would allow fore and aft travel of the main landing gear. The total fore and aft travel of the wheels, measured at the center of the axle, due to the cumulative slack in the worn bushing, should not be more than ⅜-inch. This check should be made with the hydraulic pressure relieved on the system and with the landing gear in two positions:

(1) Unlocked and in an intermediate position near to, but not in, the full down position; and

(2) With the landing gear just entering the wheelwell. If the total fore and aft travel of the wheel of either landing gear is more than ⅜-inch in either position, the landing gear assembly must be repaired as necessary to reduce this travel to less than ⅜-inch.

B. At the next 100-hour or annual inspection, whichever occurs first, unless already accomplished, install spacer emergency landing gear pull down system to prevent inadvertent unthreading of drive screw.

(TEMCO Service Bulletin No. 28 covered this same subject.)

C. At each 100-hour or annual inspection, the emergency extension system should be inspected for proper adjustment in accordance with paragraphs 8, 9 and 12 of TEMCO Service Bulletin No. 28.

54–2–2 *See* Federal Equipment.

56–16–4 Universal (Globe) Applies to Models GC–1A and GC–1B Aircraft.

To be accomplished as soon as possible but not later than September 15, 1956.

It has been reported that the landing gear was replaced with an E. L. I. type gear (air-oil) on a Globe Model GC–1B airplane with a serial number higher than 196. A subsequent failure of one of the aluminum alloy torque knees resulted in the loss of the left landing gear and damage to the airplane. It is probable that the Adel aluminum alloy knee was substituted for the regular P/N 64A40 forged steel knee. The Adel aluminum alloy knee is not a suitable replaceemnt on the E. L. I. gear assembly, since it does not provide for the extension stop, P/N 64A31.

To preclude similar occurrences, all aircraft not equipped with Adel main landing gear

struts must replace the aluminum alloy torque knees with forged steel knees.

1. On aircraft equipped with Adel struts, the Adel forged aluminum torque knee assembly is satisfactory and may be retained.

2. Forged steel knees, E. L. I. P/N 64A40 are suitable as replaceemnts on all types of landing gear units.

This supersedes AD 46–33–1.

58–10–3 Universal Applies to All Models GC–1A and GC–1B Aircraft With Adel Precision Products Corporation Landing Gears With Forged Aluminum Torque Knees.

(This AD is issued to clarify, add a 100-hour periodic inspection, and supersede AD 57–13–7.)

Compliance required as indicated.

Failures have been reported of the stop ring brazed to the inner piston strut. Failures resulted in the piston sliding out of the strut and the torque knees assuming a straight position. This overextension of the strut precludes gear retraction into the wheel well.

1. Within the next 100 hours of operation, unless already accomplished, a suitable external stop or some other equivalent means should be provided which will function as a safety measure in case of failure of the internal stop ring.

At the time of installation of the external stop, or within the next 100 hours of operation if not already accomplished, the Adel strut assembly stop ring is to be examined for condition and rejected if the stop ring is loose or shows signs of separation at the braze. After reassembly, the external stop must be installed so that there exists a clearance of $\frac{1}{32}$ to $\frac{1}{8}$ inch between the face of the stop and side of the strut cylinder with the gear fully extended. In the event there is insufficient clearance, the external stop must be reworked until the proper clearance is obtained.

2. At each subsequent 100 hours of operation, the clearance is to be rechecked with the strut fully extended. If there is no clearance between the external safety stop and the strut cylinder, it will be necessary to disassemble the strut and examine the internal stop ring for indications of failure. If failure of the stop ring is apparent, the inner cylinder assembly, Adel P/N 16084, must be replaced or suitably reworked.

(Universal Aircraft Industries Customer Service Maintenance Bulletin No. 34 with Revision No. 1 covers this same subject.)

This supersedes AD 57–13–7.