Commander®
AIRCRAFT COMPANY

Model 114
Service Letter Index

The following is a numerical list of all active Service Letters.

Those not included are obsolete and will not be reissued.

Number	Subject	Effectivity
SL-114-1A	Cabin Noise Reduction Revision No. 1 (7-19-76)	S/N's 14000 thru 14088.
SL-114-2	Elevator Trim Tab Actuator Seal Installation	S/N's 14000 thru 14058.
SL-114-3	Inspection and/or Modification of Right Exhaust Assembly	S/N's 14000 thru 14095.
SL-114-4	Defroster Valve Cover Replacement	S/N's 14001 thru 14016.
SL-114-6	Anti-Collision Light Resistor Installation	S/N's 14000 thru 14093.
SL-114-7	Fuel Pressure Snubber Installation	S/N's 14000 thru 14092.
SL-114-8	Ignition Switch Bus Bar Removal	S/N's 14000 thru 14299.
SL-114-9	Engine to Airframe Ground Cable Installation	S/N's 14000 thru 14149.
SL-114-10	Lower Vertical fin Rib Inspection and/or Replacement Revision No. 1 (12-14-00)	S/N's 14000 thru 14149.
SL-114-11	Landing Gear Retract Cylinder Retainer and/or Lockwasher Installation	S/N's 14000 thru 14314.
SL-114-12	Flight Control Column Shaft and Shaft Collar Inspection and Modification	S/N's 14000 thru 14306.
SL-114-13	Rudder Trim Control Assembly Inspection and Modification	S/N's 14001 thru 14312 and 14314 thru 14319.
SL-114-14	Manifold Pressure Gauge Modification	S/N's 14000 thru 14312 and 14314.
SL-114-15	Securing Pitot Heater Wires	S/N's 14000 thru 14408.

Model 114 Service Letter Index (Cont)

SL-114-16	Nose Gear Down Springs Inspection and/or Replacement	S/N's 14000 thru 14499.
SL-114-17	Elevator and Rudder Hinge Fitting Inspection and/or Replacement Revision No. 1 (10-27-81)	S/N's 14000 thru 14499
SL-114-18	Wire Bundle Clamp Replacement	S/N's 14001 thru 14394.
SL-114-19	Fuel Totalizer Transducer Installation Improvement Revision No. 1 (1-10-94)	S/N's 14541 thru 14572 with optional Fuel Totalizer Installation, and S/N's 14573 thru 14606
SL-114-20	Vacuum/Dry Air Pumps - Low Service Life	Model 114B
SL-114-21	Hartzell Propeller Inc. Service Letter HC-SL-61-179	Model 114, S/N 14000 thru 14499
SL-114-22	Emergency Gear Extension Valve Cover Orientation Inspection and Attachment Improvement, and Inspection and/or Replacement of Fuel Line	Model 114, 114A, and 114B, S/N 14000 thru 14665, Model 114TC S/N 20001 thru 20026
SL-114-23	Inspection of Control Cable Terminals	Model 114 and 114A

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-1A
(Supersedes Service Letter No SL-114-1, dated 4 June 1976, in its entirety)
18 January 1982

CABIN NOISE REDUCTION

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14088.

NOTE

IF BASIC SERVICE LETTER NO. SL-114-1 HAS BEEN COMPLIED WITH, DISREGARD THIS SERVICE LETTER.

REASON FOR PUBLICATION: REDUCE NOISE LEVEL WITHIN CABIN AREA.

COMPLIANCE: AT OWNERS DISCRETION.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST GULFSTREAM COMMANDER SINGLE ENGINE SERVICE FACILITY.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 APPROVED.

ESTIMATED MAN HOURS: SEVEN (7) HOURS.

PARTS DATA: PARTS REQUIRED TO COMPLY WITH THIS SERVICE LETTER MAY BE PROCURED THROUGH YOUR NEAREST GULFSTREAM COMMANDER SINGLE ENGINE SERVICE FACILITY FOR $189.13. REFERENCE THIS SERVICE LETTER, ARICRAFT MODEL AND FACTORY SERIAL NUMBER WHEN ORDERING SERVICE LETTER NO. SL-114-1A KIT CONSISTING OF THE FOLLOWING:

Price subject to change without notice.

QTY	PARTS NO.	DESCRIPTION	CODE NO.
1 ea.	315007-3	Stiffener	
1 ea.	315007-4	Stiffener	
1 ea.	315007-5	Clip	
1 ea.	315007-6	Clip	
2 ea.	315008-3	Panel	
2 ea.	315008-5	Panel	
2 ea.	315008-7	Panel	
1 ea.	49083-9	Blanket	
1 ea.	49083-11	Blanket	
1 ea.	49083-13	Blanket	
1 ea.	49083-15	Blanket	
1 ea.	49083-17	Blanket	
1 ea.	49083-19	Blanket	
2 ea.	49083-33	Blanket	
2 ea.	49310-25	Blanket	
2 ea.	49310-27	Blanket	
2 ea.	49310-29	Blanket	
1 pt.	EC2216 A/B	Epoxy	2299801
1 ea.		Compliance Card	
1 ea.	Service Letter No. SL-114-1A	Instructions	

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

PART I

1. Remove pilot and copilot seats.
2. Remove left and right scuff plates.
3. Remove left and right lower plastic frames.
4. Remove left and right door jamb moulding as necessary to facilitate removal of forward side panels.
5. Remove ash trays from left and right forward side panels.
6. Remove left and right forward side panels.
7. Remove carpet from forward cabin area.

PART II

1. Sand all areas where noise reduction panels are to be installed with 400 grit sandpaper (see Figures 1 and 2.).
2. Wipe sanded area clean with Stoddard solvent or equivalent.
3. Install 315007-3 and -4 stiffeners and 315007-5 and -6 clips as shown in Figure 2.

NOTE

Bond stiffener to fuselage skin by applying EC2216 A/B epoxy to stiffener before installation.

4. Cut and trim 49083 blankets as required to clear equipment installed on aft side of engine firewall (see Figure 2.).
5. Apply EC1403 adhesive to rubber side of trimmed blankets and attach to firewall.
6. Cut and trim 49310-25 and -27 blankets as required to install above and below stiffeners installed in step 3. above.
7. Apply EC1403 adhesive to trimmed blankets and attach to fuselage skin (see Figure 2.).
8. Install 49310-29 blankets by inserting blanket through airframe lightening holes.
9. Reclean floor area with Stoddard solvent or equivalent.
10. Immediately after cleaning floor area apply 2-part EC2216 A/B Epoxy to cleaned area.
11. Press 315008 panels in place and utilize weights to hold panels against floor surface until epoxy has cured.

NOTE

Allow epoxy to cure for a minimum of 8 hours before installing carpet.

12. Install equipment removed in Part I.
13. Fill out and mail Compliance Card.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: The weight and balance change resulting from this Service Letter installation is as follows:

WEIGHT (LBS)	H-ARM (INCHES)	H-MOMENT (INCH-LBS)
16	76.1	1247

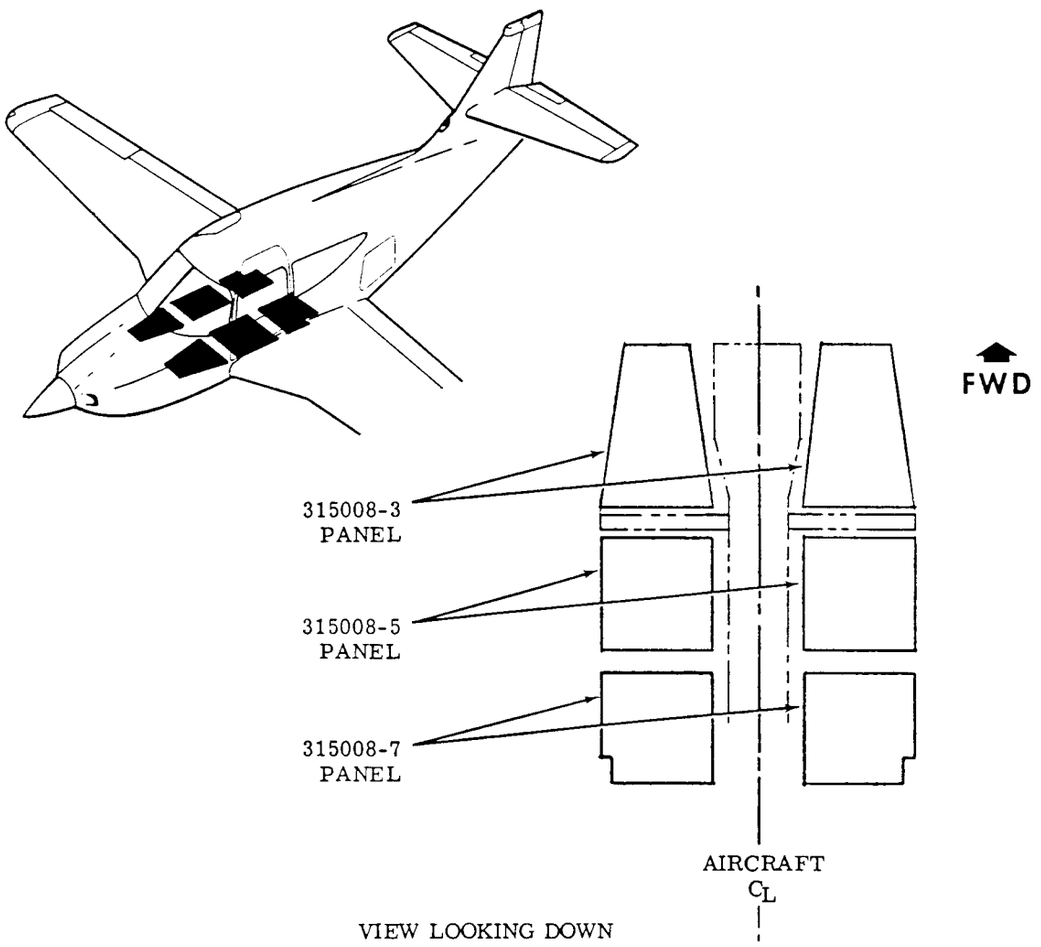


Figure 1.

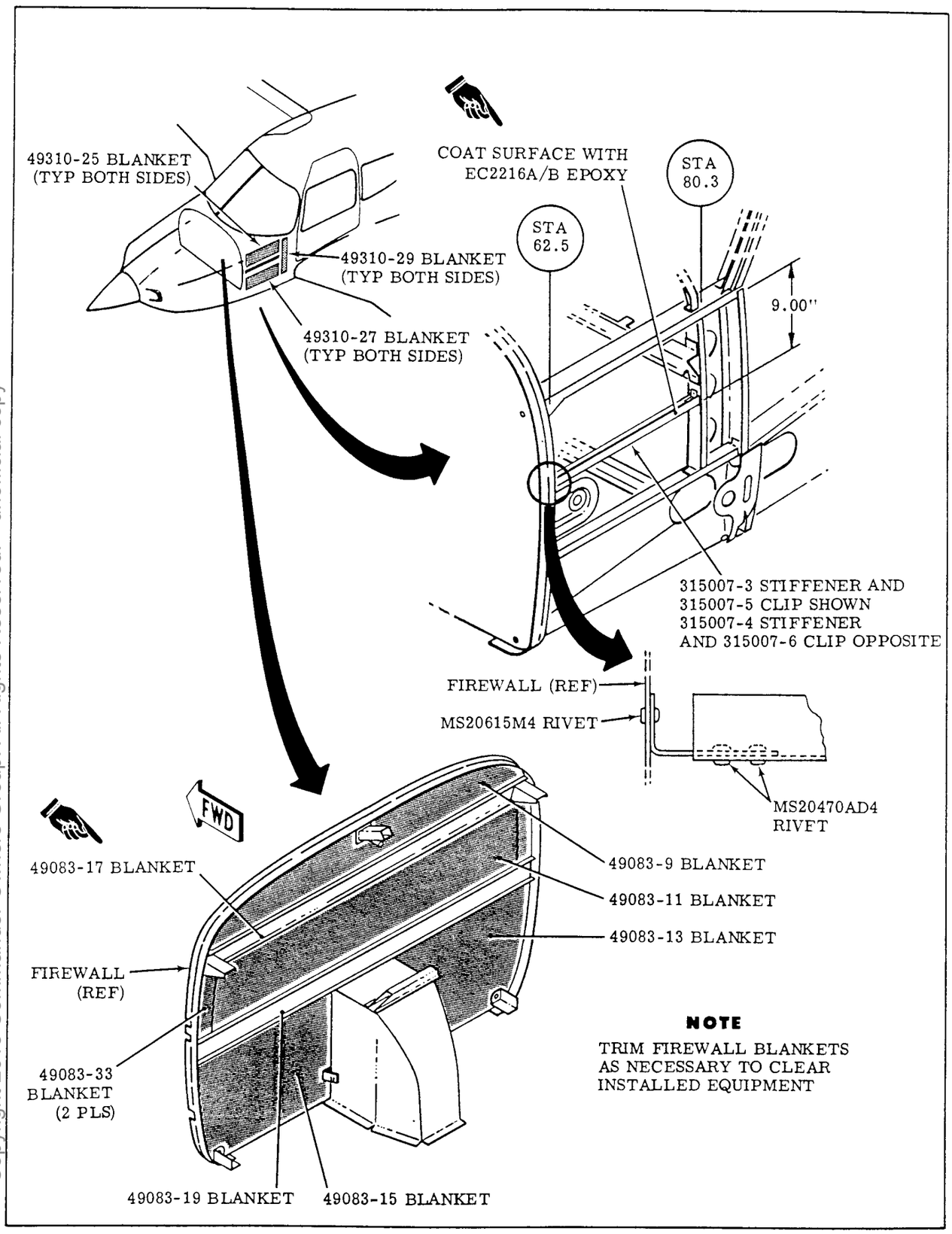


Figure 2.

PUBLICATIONS AFFECTED: NONE.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-1A, dated 18 January 1982, entitled "Cabin Noise Reduction", accomplished _____(date)_____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-2
2 September 1976

ELEVATOR TRIM TAB ACTUATOR SEAL INSTALLATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S. 14000 THRU 14058.

REASON FOR PUBLICATION: PREVENT MOISTURE FROM ENTERING ELEVATOR TRIM TAB ACTUATOR.

COMPLIANCE: DURING NEXT 100-HOUR INSPECTION OR ANNUAL INSPECTION.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER (REFERENCE SERVICE INFORMATION NO. SI-123).

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: TWO (2) HOURS.

PARTS DATA: Parts required to comply with this Service Letter may be purchased as a kit through your nearest Rockwell Commander Distributor for $19.37 (K). Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-2 kit consisting of the following:

QTY	PART NO.	DESCRIPTION	CODE NO.
2 ea.	565003-1	Bracket	
2 ea.	565004-1	Seal Retainer	
4 ea.	AN960PD10L	Washer	1584000
2 ea.	MS21044N3	Nut	2719213
2 ea.	MS27039-1-09	Screw	2759381
2 ea.	S-0310-910R	O-Ring	3707940
1 ea.	Service Letter No. SL-114-2	Instructions	

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Disconnect elevator trim tab push rod assembly from elevator trim tab actuator rod.

2. Remove elevator trim tab actuator access cover from elevator assembly.

NOTE

It may be necessary to remove elevator assembly to perform the following installation.

3. To assure that all moisture is removed from elevator trim tab actuator, apply heat to actuator with a heat gun.

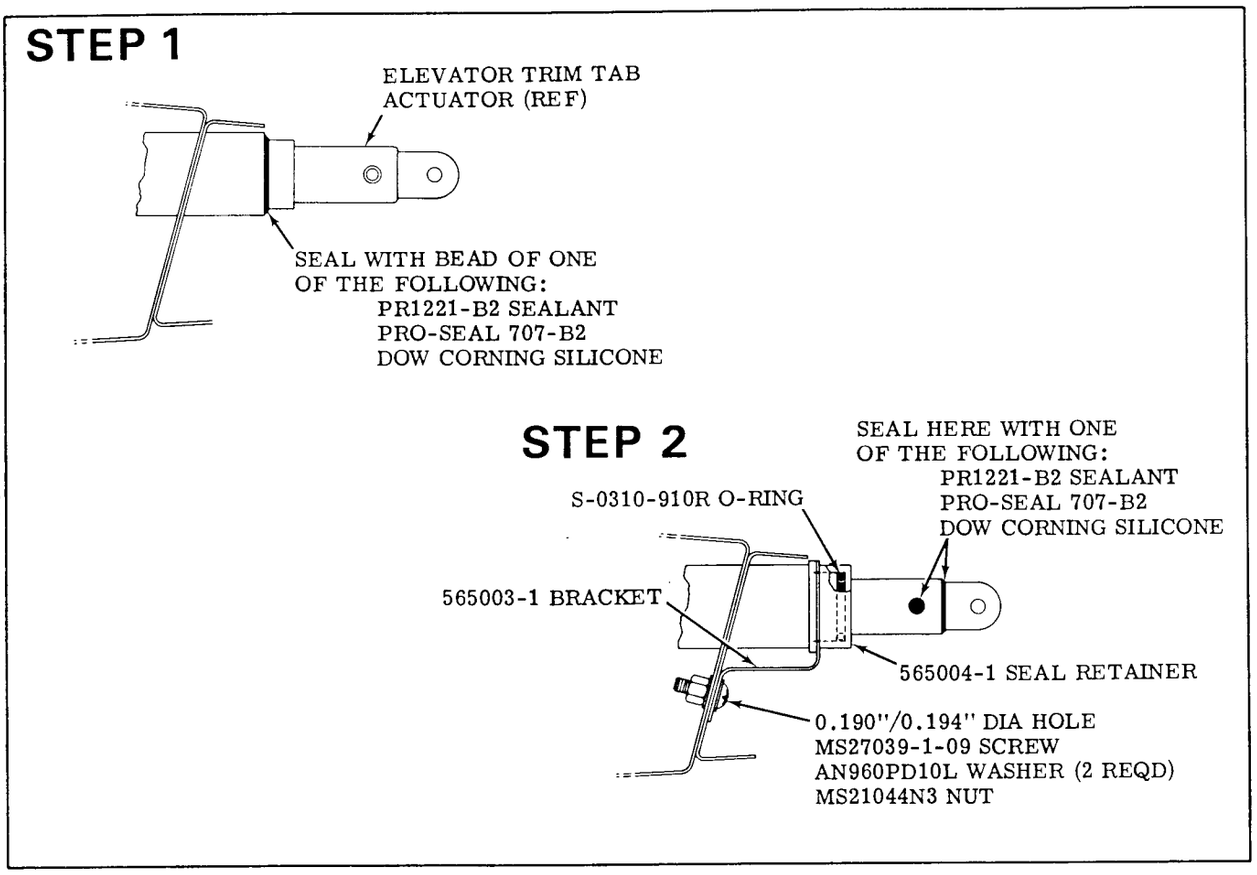


Figure 1.

4. Add a bead of PR1221-B2 sealant, or Pro-Seal 707-B2, or Dow Corning Silicone around elevator trim tab actuator as shown in Figure 1.

5. Install S-0310-910R O-ring, 565004-1 seal retainer and 565003-1 bracket on elevator trim tab actuator, drill a 0.192 (± 0.002) inch diameter hole through bracket and elevator spar and install MS27039-1-09 screw, AN960PD10L washer (2 places) and MS21044N3 nut (see Figure 1.).

6. Cover clevis joint and both ends of roll pin with either PR1221-B2 sealant, Pro-Seal 707-B2 or Dow Corning Silicone (see Figure 1.).

NOTE

Sealant must not come in contact with seal retainer when actuator is fully retracted.

7. Reconnect elevator trim tab push rod assembly to elevator trim tab actuator rod.

8. Reinstall elevator trim tab actuator access cover on elevator assembly.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog change required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-2, dated 2 September 1976, entitled "Elevator Trim Tab Actuator Seal Installation", accomplished _____(date)_____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-4
24 September 1976

DEFROSTER VALVE COVER REPLACEMENT

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14001 THRU 14016.

REASON FOR PUBLICATION: DEFROSTER VALVE COVER ASSEMBLY MAY HAVE A DEFECTIVE WELD. THIS SERVICE LETTER IS BEING ISSUED TO CORRECT THIS SITUATION.

COMPLIANCE: WITHIN NEXT 25-HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER (REFERENCE SERVICE INFORMATION NO. SI-123).

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: ONE (1) HOUR.

PARTS DATA: Parts required to comply with this Service Letter may be purchased as a kit through your nearest Rockwell Commander Distributor for $32.52 (A). Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-4 kit consisting of the following:

NOTE

Price subject to change without notice.

QTY	PART NO.	DESCRIPTION	CODE NO.
1 ea.	48072-501	Cover Assy	
1 ea.	700 (MIL-S-38249,Type I)	Sealant (1/2 pt can)	0045658
1 ea.	Service Letter No. SL-114-4	Instructions	

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Remove upper engine cowling.
2. Disconnect flex ducts from defroster valve cover.
3. Remove and discard existing defroster valve cover assembly (see Figure 1.).
4. Install 48072-501 defroster valve cover assembly using existing hardware and seal around outer perimeter of cover assembly with Coast Pro-Seal 700, MIL-S-38249, Type I (see Figure 1.).
5. Reconnect existing flex ducts to new defroster valve cover assembly using existing clamps.
6. Reinstall upper engine cowling.

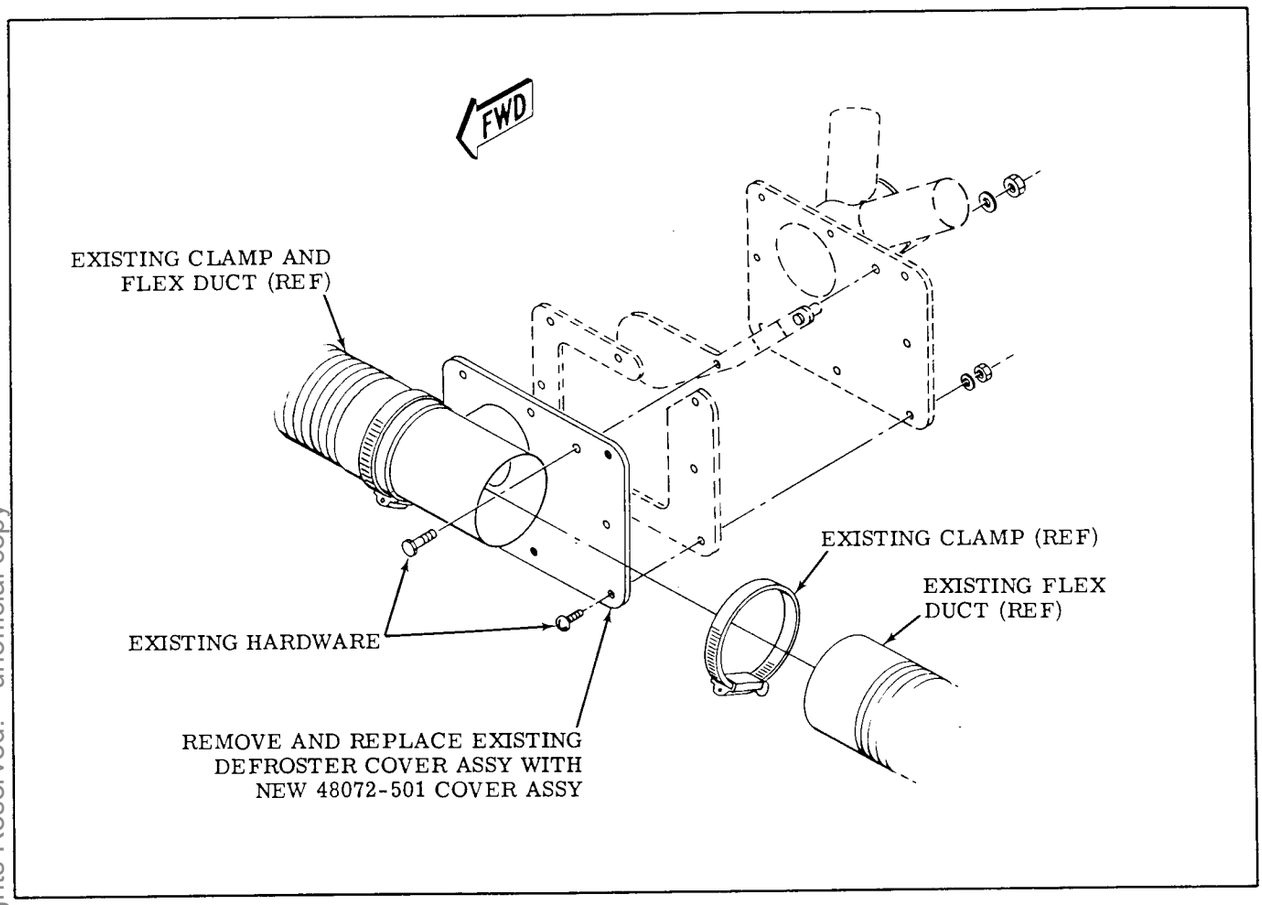


Figure 1.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog change required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-4, dated 24 September, 1976, entitled "Defroster Valve Cover Replacement" accomplished _____(date)_____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-6
4 November 1976

ANTI-COLLISION LIGHT RESISTOR INSTALLATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14093.

NOTE

If airplane has optional lower flashing beacon installed, disregard this Service Letter.

REASON FOR PUBLICATION: POSSIBLE CONTINUOUS ILLUMINATION OF FLASHING BEACON WHEN AIRPLANE IS EQUIPPED WITH ONLY THE VERTICAL STABILIZER BEACON.

COMPLIANCE: DURING NEXT 25-HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER (REFERENCE SERVICE INFORMATION NO. SI-123).

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: ONE (1) HOUR.

PARTS DATA: Parts required to comply with this Service Letter may be purchased locally or may be purchased as a kit through your nearest Rockwell Commander Distributor for $12.17. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-6 kit consisting of the following:

Price subject to change without notice

QTY	PART NO.	DESCRIPTION
2 ea.	0600E	Ohmite Resistor (100 Watt, 3 Ohm)
2 ea.	AN960D10	Washer
5 ft.	M5086/1-18-9	Wire
2 ea.	MS21044N3	Nut
1 ea.	MS25036-103	Terminal
2 ea.	MS35207-263	Screw
1 ea.	Service Letter No. SL-114-6	Instructions

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Gain access to fuselage frame at Station 205.00 through baggage compartment door.

2. Remove upper and lower center aft bulkhead panels from baggage compartment.

3. Disconnect battery from airplane electrical system.

4. Locate, drill and install 0600E Ohmite resistor (or equivalent 3 Ohm, 100 Watt resistor) on fuselage frame (see Figure 1.).

5. Connect resistors installed in Step 4. to airplane electrical system (see Figure 1.).

6. Reconnect battery to airplane electrical system.

7. Reinstall upper and lower center aft bulkhead panels in baggage compartment.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog and Airplane Maintenance Manual changes required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-6, dated 4 November 1976, entitled "Anti-collision Light Resistor Installation", accomplished ____(date)____.

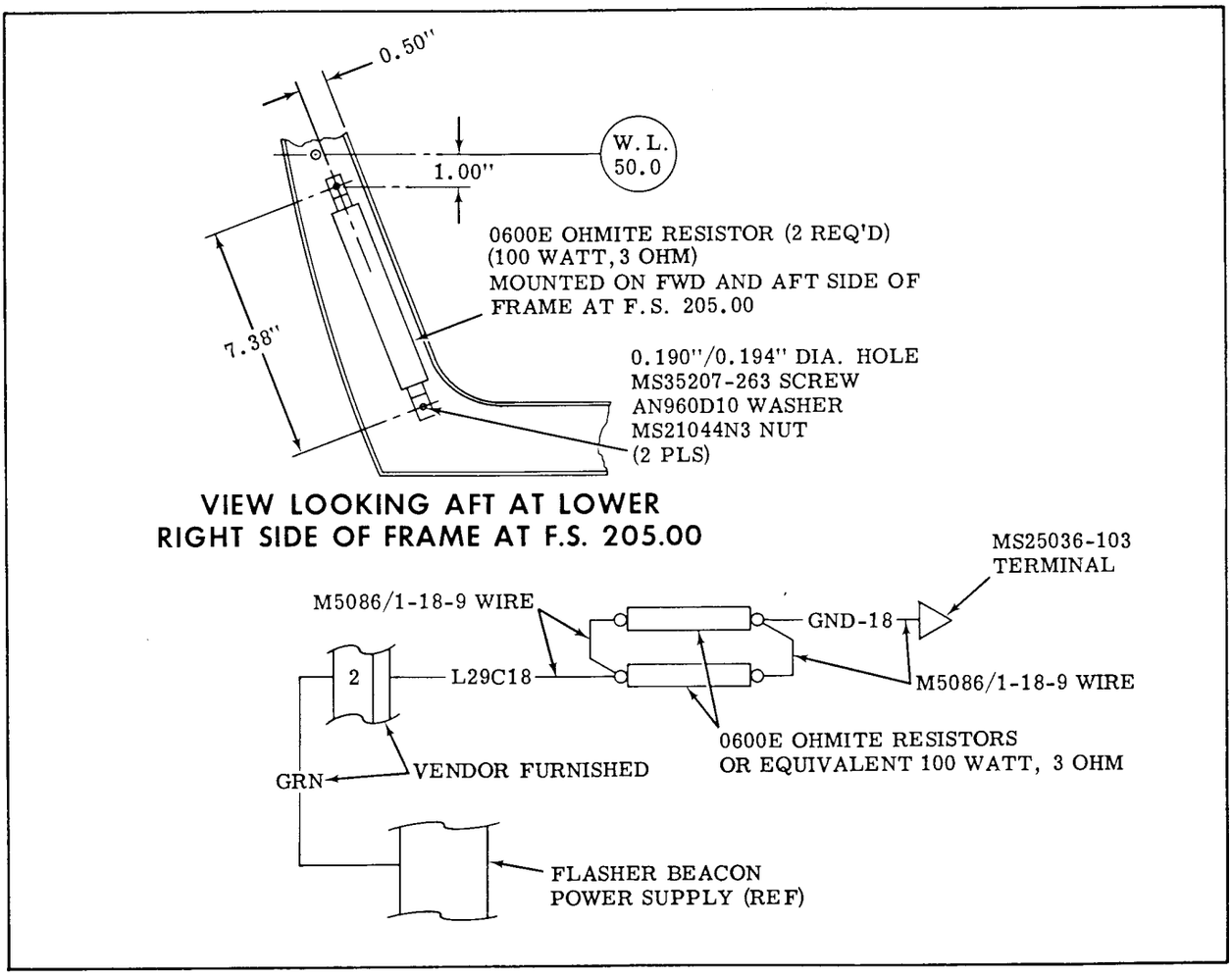


Figure 1.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-7
19 November 1976

FUEL PRESSURE SNUBBER INSTALLATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S. 14000 THRU 14092.

REASON FOR PUBLICATION: PREVENT FLUCTUATION OF FUEL PRESSURE GAGE.

COMPLIANCE: DURING NEXT 100-HOUR INSPECTION OR ANNUAL INSPECTION.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER (REFERENCE SERVICE INFORMATION NO. SI-123).

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: TWO (2) HOURS.

PARTS DATA: Parts required to comply with this Service Letter may be ordered as a kit through your nearest Rockwell Commander Distributor at no charge. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-7 kit consisting of the following:

QTY	PART NO.	DESCRIPTION	CODE NO.
1 ea.	12AHXX	Pressure Snubber	4282990
1 ea.	615049-53	Tube Assy	
1 ea.	Service Letter No. SL-114-7	Instructions	
1 ea.		Compliance Card	

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Remove and discard existing fuel pressure line from engine firewall to fuel pressure gage.
2. Remove existing fitting from pressure port of fuel pressure gage.
3. Apply teflon tape to threads of 12AHXX pressure snubber and install snubber in pressure port of fuel pressure gage (see Figure 1.).
4. Apply teflon tape to threads of existing fitting, removed in step 2., and install fitting and 615049-53 tube assembly (see Figure 1.).
5. Fill out and mail Compliance Card.

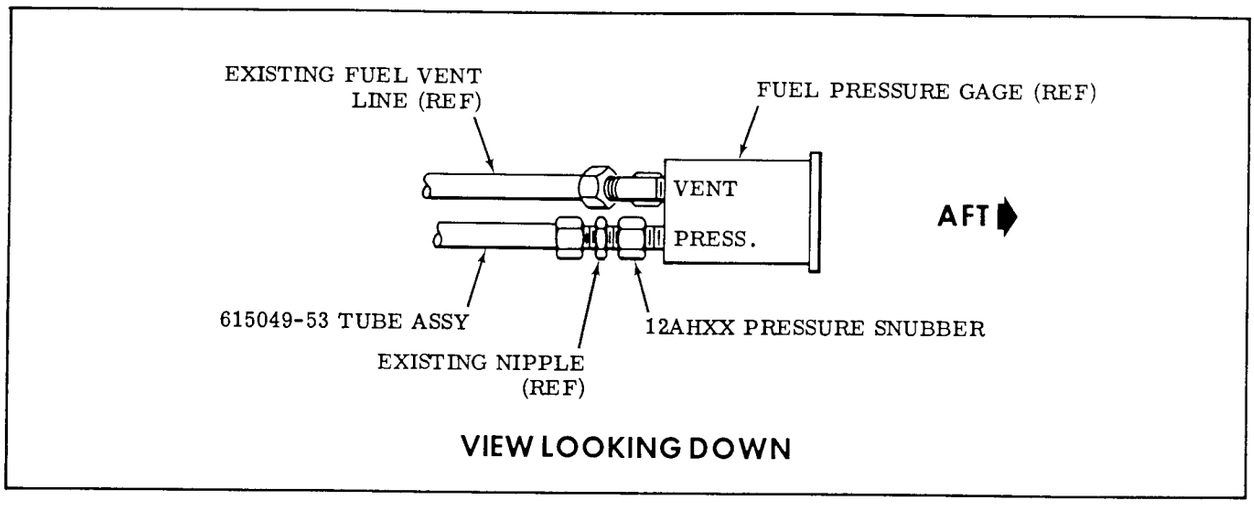


Figure 1.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog changes required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-7, dated 19 November 1976, entitled "Fuel Pressure Snubber Installation", accomplished _____(date)_____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-8
25 February 1977

IGNITION SWITCH BUS BAR REMOVAL

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14299.

REASON FOR PUBLICATION: TO PROVIDE EASIER ENGINE STARTING AND HELP PROLONG SERVICE LIFE OF STARTER.

COMPLIANCE: AT OWNER'S DISCRETION.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER (REFERENCE SERVICE INFORMATION NO. SI-123).

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: ONE (1) HOUR.

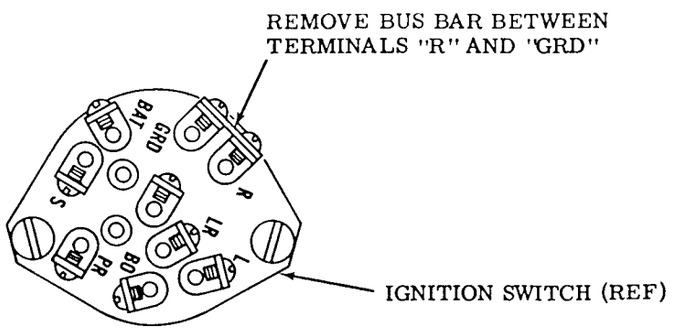
PARTS DATA: NONE.

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Assure that the master switch is in the OFF position.

2. Remove ignition switch bus bar located on ignition switch between terminals R and GRD (see Figure 1.).



VIEW LOOKING AFT

Figure 1.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATIONS AFFECTED: The Airplane Maintenance Manual Change required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-8, dated 25 February 1977, entitled "Ignition Switch Bus Bar Removal", accomplished __(date)__.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-9
29 April 1977

ENGINE TO AIRFRAME GROUND CABLE INSTALLATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S. 14000 THRU 14149.

REASON FOR PUBLICATION: TO PREVENT MAGNETIC COMPASS INTERFERENCE DUE TO IMPROPER/ INSUFFICIENT BONDING OF ENGINE TO AIRFRAME GROUND. THIS HAS BEEN NOTED ON CERTAIN AIRCRAFT BY BEING UNABLE TO ACHIEVE PROPER COMPASS HEADINGS.

COMPLIANCE: WITHIN NEXT 100-HOURS TIME IN SERVICE IF STANDBY COMPASS ERROR CANNOT BE COMPENSATED WITHIN TEN (10) DEGREES.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

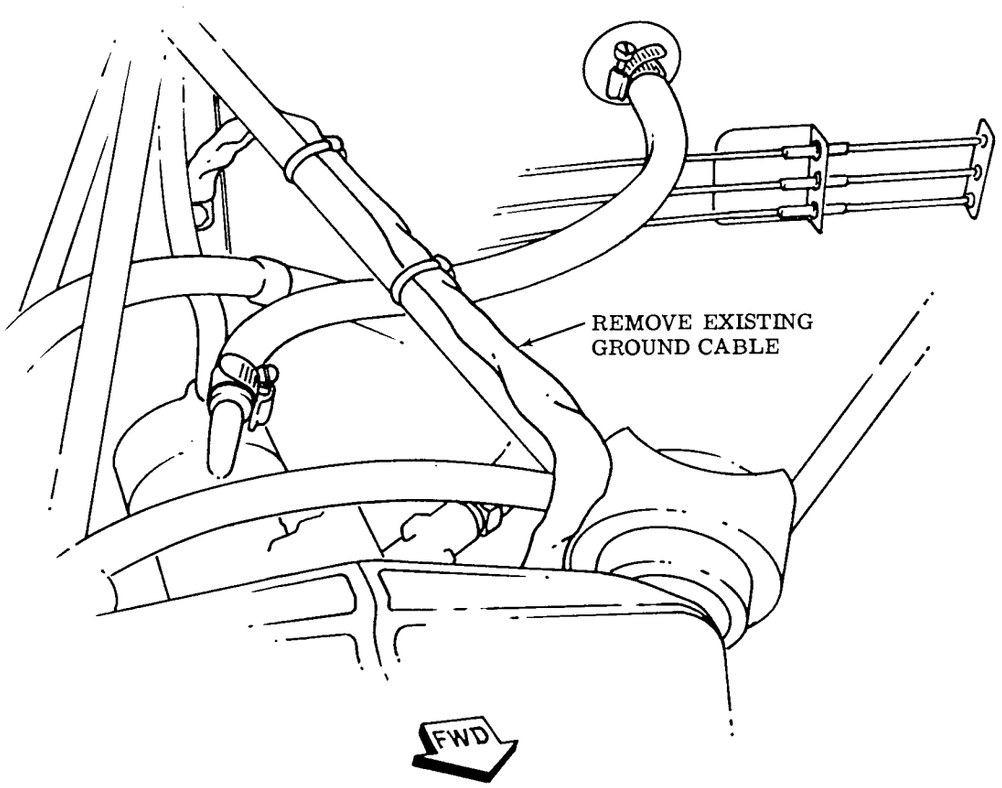
APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: FOUR (4) HOURS.

PARTS DATA: Parts required to comply with this Service Letter may be purchased through your nearest Rockwell Commander Distributor for $22.09. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-9 kit consisting of the following:

Price subject to change without notice

QTY	PART NO.	DESCRIPTION	CODE NO.
1 ea.	43780-5	Clip	
1 ea.	43780-17	Clip	
1 ea.	48030-451	Ground Cable	
	CONSISTING OF:		
	90 in. M5086/2-6-9	Cable	
	1 ea. MS25036-120	Terminal	
	1 ea. MS25036-121	Terminal	
2 ea.	AN3-12A	Bolt	0267000
1 ea.	AN4-5A	Bolt	0505000
3 ea.	AN960D10	Washer	1555000
2 ea.	AN960D416	Washer	1567000
2 ea.	AN960-516	Washer	1537000
2 ea.	MS20074-05-04	Bolt	2706629
3 ea.	MS21044N3	Nut	2719213
1 ea.	MS21044N4	Nut	2719214
3 ea.	MS21919DG4	Clamp	2740000
1 ea.	MS21919H4	Clamp	2747110
3 ea.	MS21919H8	Clamp	2747130
3 ea.	MS21919H10	Clamp	2747240
1 ea.	MS27039-1-08	Screw	2759266
2 ea.	MS35338-45	Lockwasher	2894242
2 ea.	NAS43DD3-45	Spacer	3095000
1 ea.	Service Letter No. SL-114-9	Instructions	



VIEW LOOKING AFT AT TOP OF ENGINE
AND FORWARD SIDE OF FIREWALL

Figure 1.

SPECIAL TOOLS: DEGAUSSING RING.

ACCOMPLISHMENT INSTRUCTIONS:

1. Assure that airplane master switch is in the OFF position.
2. Remove upper engine cowling.
3. Remove lower engine cowling as outlined in the Airplane Maintenance Manual, Section IV.
4. Remove left door scuff plate and door jamb moulding as necessary to facilitate removal of left forward interior side panel.
5. Remove left forward interior side panel.
6. Remove and discard existing engine ground strap (see Figure 1.).
7. Install 43780-17 clip on engine with MS20074-05-04 bolt, AN960-516 washer and MS35338-45 lockwasher (see Figure 2.).

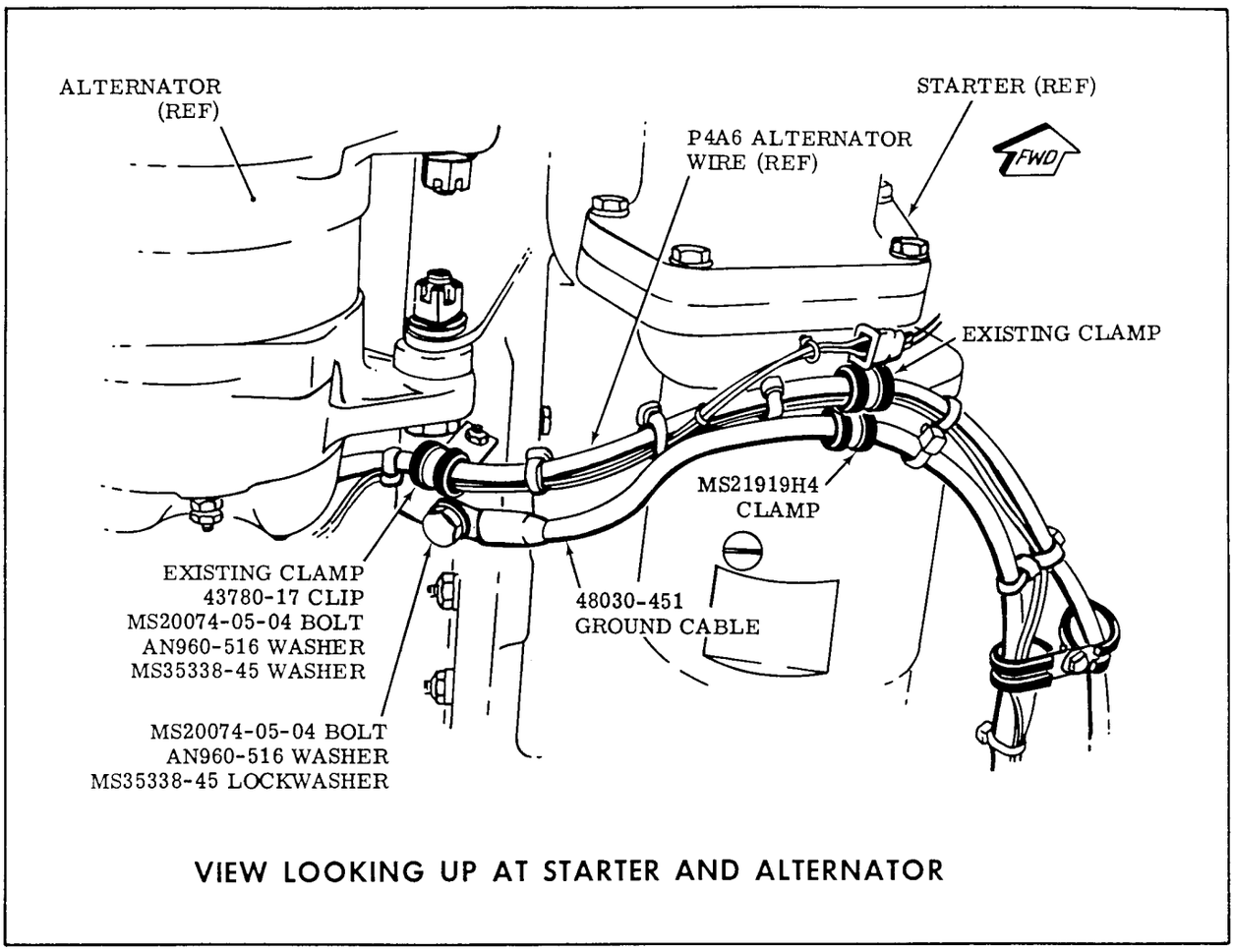


Figure 2.

8. Install 48030-451 ground cable on engine with MS20074-05-04 bolt, AN960-516 washer and MS35338-45 lockwasher and route ground cable aft to firewall with existing P3A6 starter wire, but maintain separation with alternator wire P4A6 in the engine area (see Figures 2., 3. and 4.).

9. Locate, drill and install 43780-5 clip with MS20470AD3 rivet (see Figure 5.).

10. Route 48030-451 ground cable through engine firewall and attach to fuselage frame, at Sta. 80.30, with AN4-5A bolt, AN960D416 washer (2 places) and MS21044N4 nut (see Figure 5.).

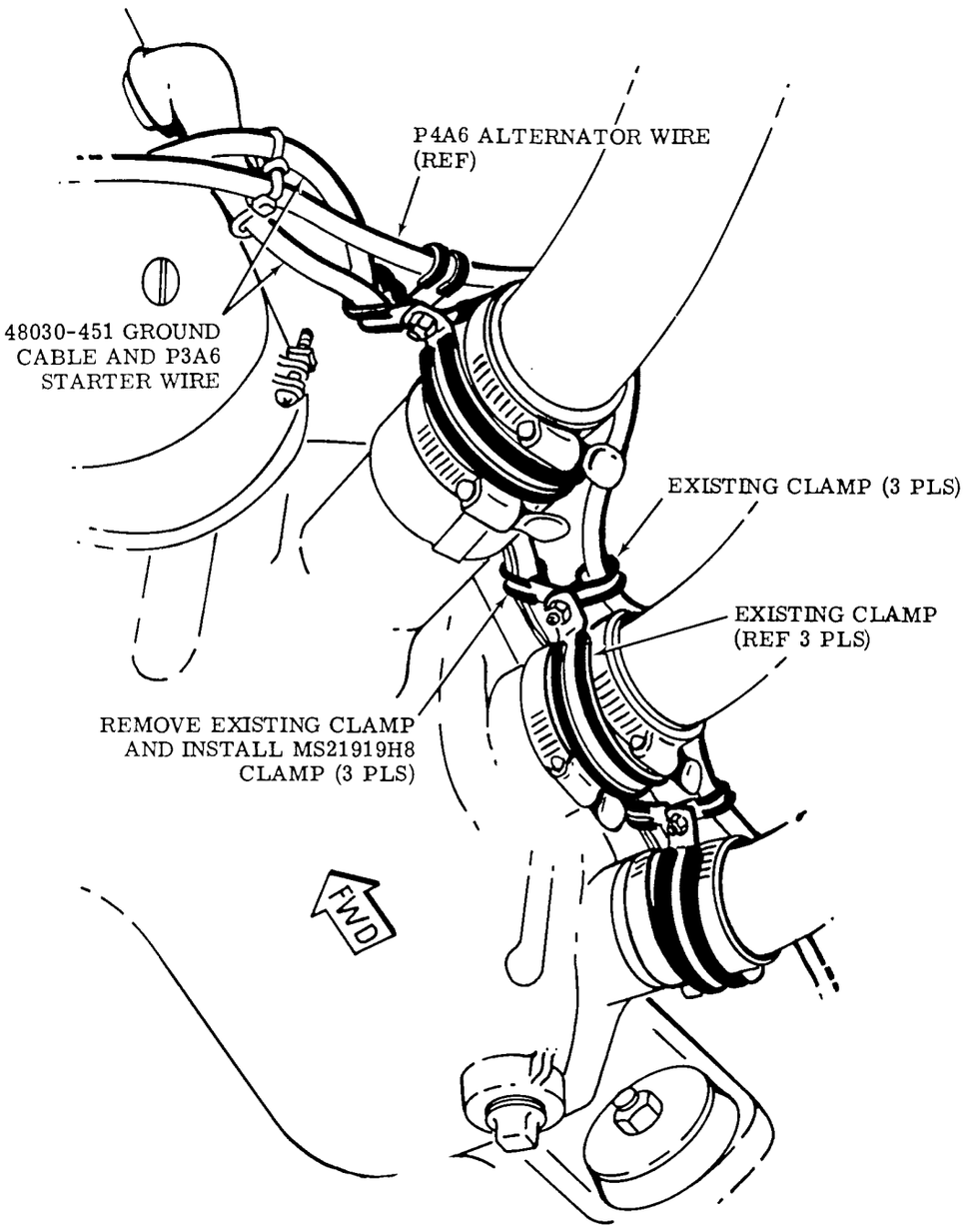
NOTE

Maintain separation between 48030-451 ground cable and P2B6 starter wire in the cabin area.

11. Install MS21919DG4 clamp (3 places) between fuselage Sta. 62.50 and Sta. 80.30 to support ground cable (see Figure 5.).

12. Remove existing clamps in engine compartment and install new MS21919H clamps as shown in Figures 2., 3. and 4.

13. Seal around wires routed through firewall grommet with Proseal 700, MIL-S-38249, Type 1 (or equivalent).



VIEW LOOKING UP AT LEFT SIDE OF ENGINE

Figure 3.

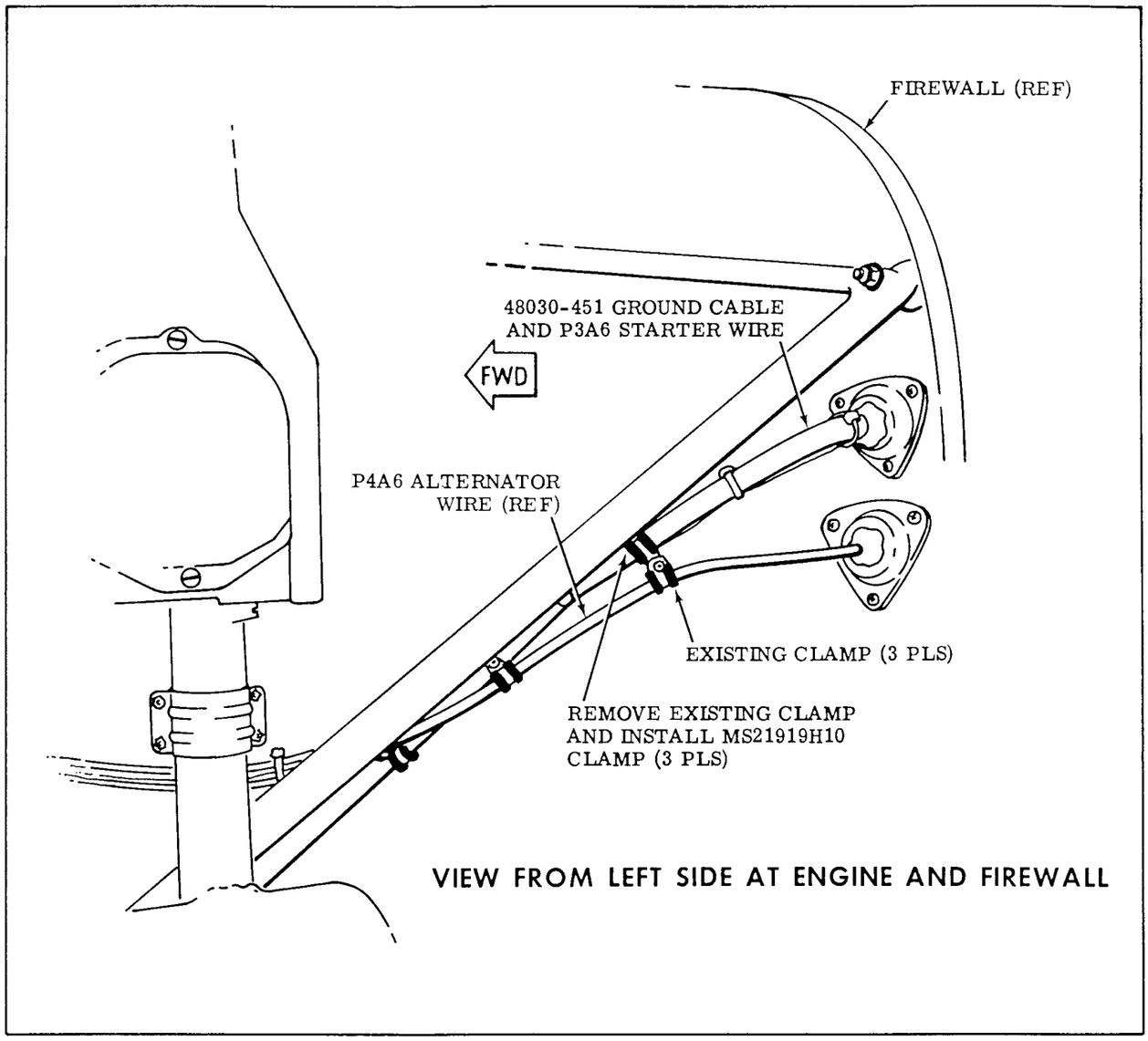


Figure 4.

14. Reinstall left forward interior side panel, door jamb moulding and left door scuff plate.

15. Reinstall upper and lower engine cowling as outlined in the Airplane Maintenance Manual, Section IV.

16. Swing the compass, with airplane on a compass rose, as outlined in the Airplane Maintenance Manual, Section VIII, under Magnetic Compass Compensation.

NOTE

Any error less than $\pm$ 10 degrees is acceptable.

17. If compass error is more than $\pm$ 10 degrees, demagnetize engine firewall with a degaussing ring as follows:

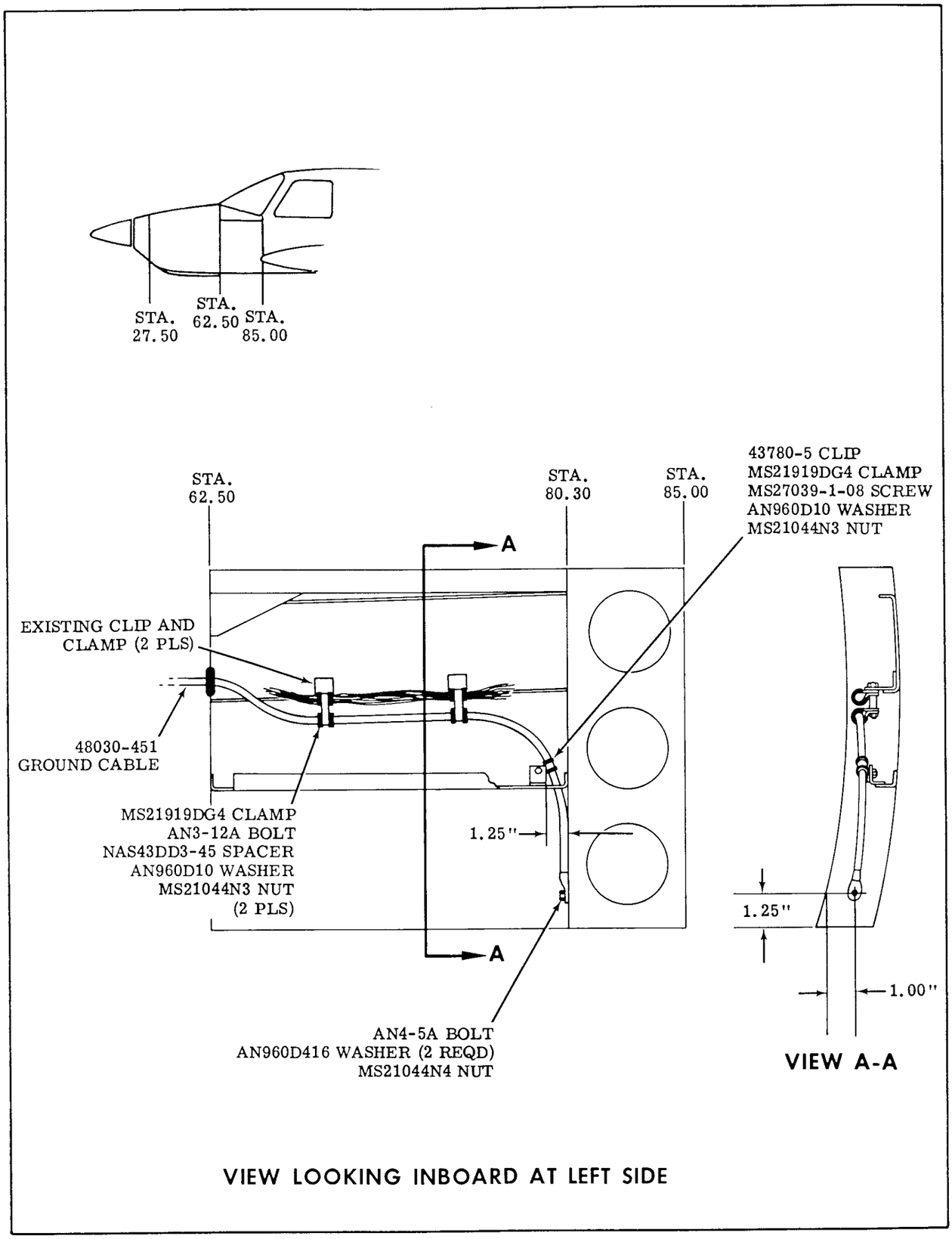


Figure 5.

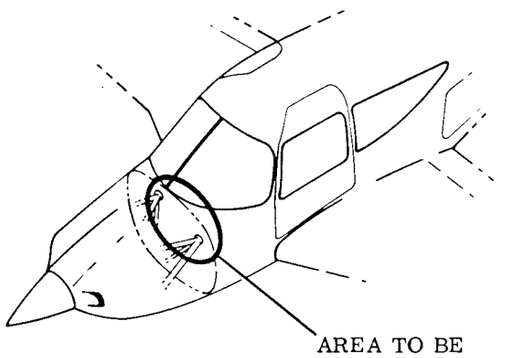
CAUTION

All degaussing must be done by a repair station thoroughly experienced in performing such work.

a. Remove magnetic compass from airplane.

b. Remove upper engine cowling.

c. Place degaussing ring over area shown below. Turn degaussing ring ON, move over area in slow circular motions approximately four (4) times and then move degaussing ring away from airplane structure.



NOTE

Do not turn degaussing ring OFF until well away from airplane structure.

d. Reinstall magnetic compass and upper engine cowling.

e. Repeat step 16. to assure that no compass interference exists.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATICATIONS AFFECTED: The Illustrated Parts Catalog change required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-9, dated 29 April 1977, entitled "Engine to Airframe Ground Cable Installation", accomplished ___(date)_____.

Service Letter Revision

Commander AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SB-114-10
REVISION NO. 1
Date December 14, 2000

LOWER VERTICAL FIN RIB INSPECTION AND/OR REPLACEMENT

REASON FOR PUBLICATION: Cancellation of Commander Aircraft Company Service Letter SL-114-10

Service Letter SL-114-10 is superseded by Commander Aircraft Company Service Bulletin SB-114-12B.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-11
9 August 1977

LANDING GEAR RETRACT CYLINDER RETAINER AND/OR LOCKWASHER INSTALLATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14314.

REASON FOR PUBLICATION: THE RETAINER IS TO PREVENT LOSS OF ATTACHMENT OF THE MAIN LANDING GEAR RETRACT CYLINDER IF BEARING BECOMES LOOSE IN CYLINDER END. THE LOCKWASHER IS TO PREVENT ROTATING OF ROD END NUT ON NOSE LANDING GEAR AND MAIN LANDING GEAR RETRACT CYLINDERS.

COMPLIANCE: WITHIN NEXT TWENTY-FIVE (25) HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DEALER/DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: TWO (2) HOURS.

PARTS DATA: Parts required to comply with this Service Letter may be ordered through your nearest Rockwell Commander Dealer/Distributor at no cost. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-11 kit consisting of the following:

Kit No. 1 - Serial No's 14000 thru 14285.

Kit No. 2 - Serial No's 14286 thru 14314.

Kit No. 1 QTY	Kit No. 2 QTY	PART NO.	DESCRIPTION
2 ea.	-	795003-1	Retainer Washer
1 ea.	1 ea.	MS35333-41	Lockwasher
2 ea.	2 ea.	MS35333-42	Lockwasher
1 ea.	1 ea.		Compliance Card
1 ea.	1 ea.	Service Letter No. SL-114-11	Instructions

SPECIAL TOOLS: AIRPLANE JACKS AND A STAKING TOOL.

ACCOMPLISHMENT INSTRUCTIONS:

1. Jack airplane as outlined in the Airplane Maintenance Manual, Section II.
2. Disconnect nose landing gear retract cylinder at landing gear trunnion.
3. Loosen rod end nut and remove rod end.
4. Install MS35333-41 lockwasher and existing rod end on nose landing gear retract cylinder and run nut and rod end all the way down on threads of retract cylinder (see Figure 1.).
5. Check drag brace assembly at knuckle area to assure that drag brace is resting on stop.

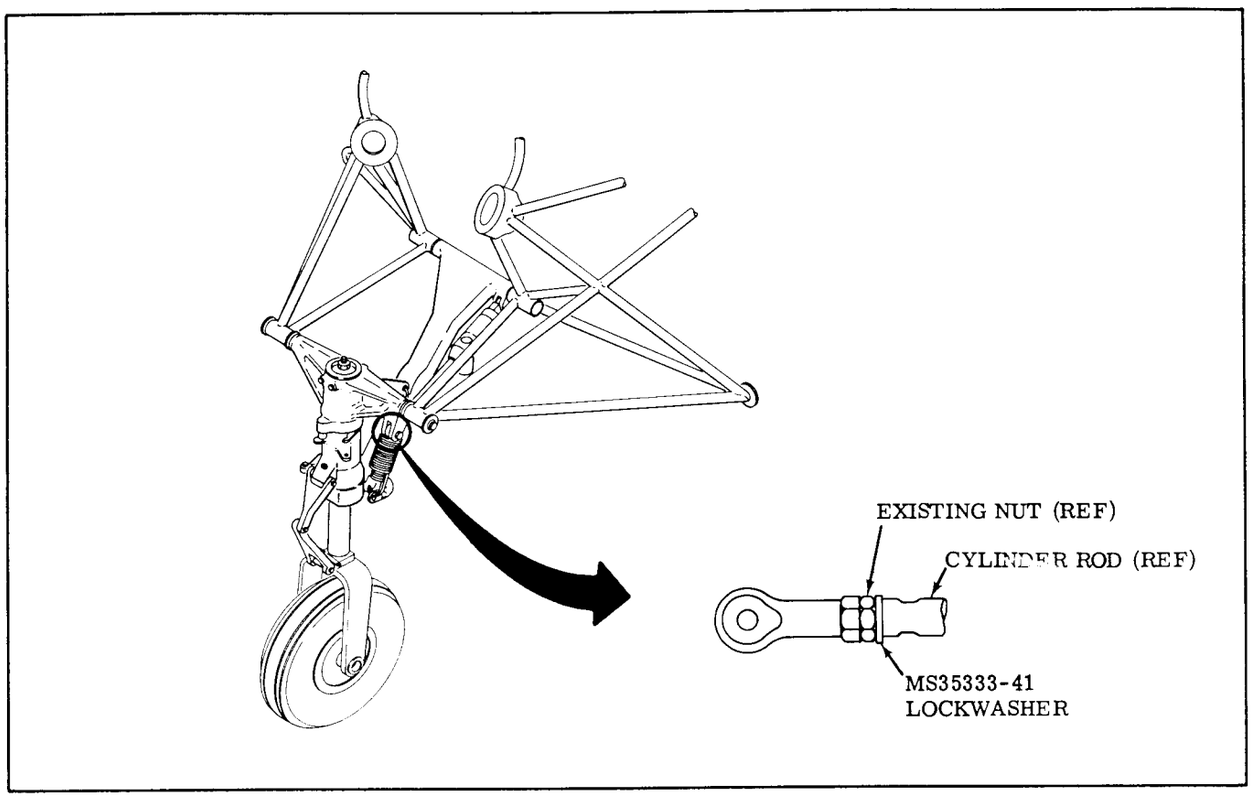


Figure 1.

6. Extend cylinder piston to maximum length and adjust rod end hole to 0.250 (± 0.03) inch past hole in trunnion for cushion. Finger tighten nut against cylinder rod.

7. Realign hole in rod end with hole in trunnion and install existing hardware.

NOTE

The drag stay of the drag brace assembly should be resting on the stop.

8. Collapse nose landing gear as necessary to gain access to rod end nut and torque nut 60 to 85 inch-pounds against cylinder rod and lockwasher while holding cylinder rod securely.

9. Remove bolts attaching the inboard end of the left and right main landing gear retract cylinder to the side brace assemblies.

10. Loosen rod end nut and remove rod end.

11. Install MS35333-42 lockwasher and existing rod end on left and right main landing gear retract cylinder (see Figure 2.).

NOTE

On Serial Numbers 14286 thru 14314, proceed to step 13.

12. On serial numbers 14000 thru 14285, proceed as follows:

    a. Remove bolts attaching outboard end of left and right main landing gear retract cylinders to lug on the landing gear trunnion and remove cylinders.

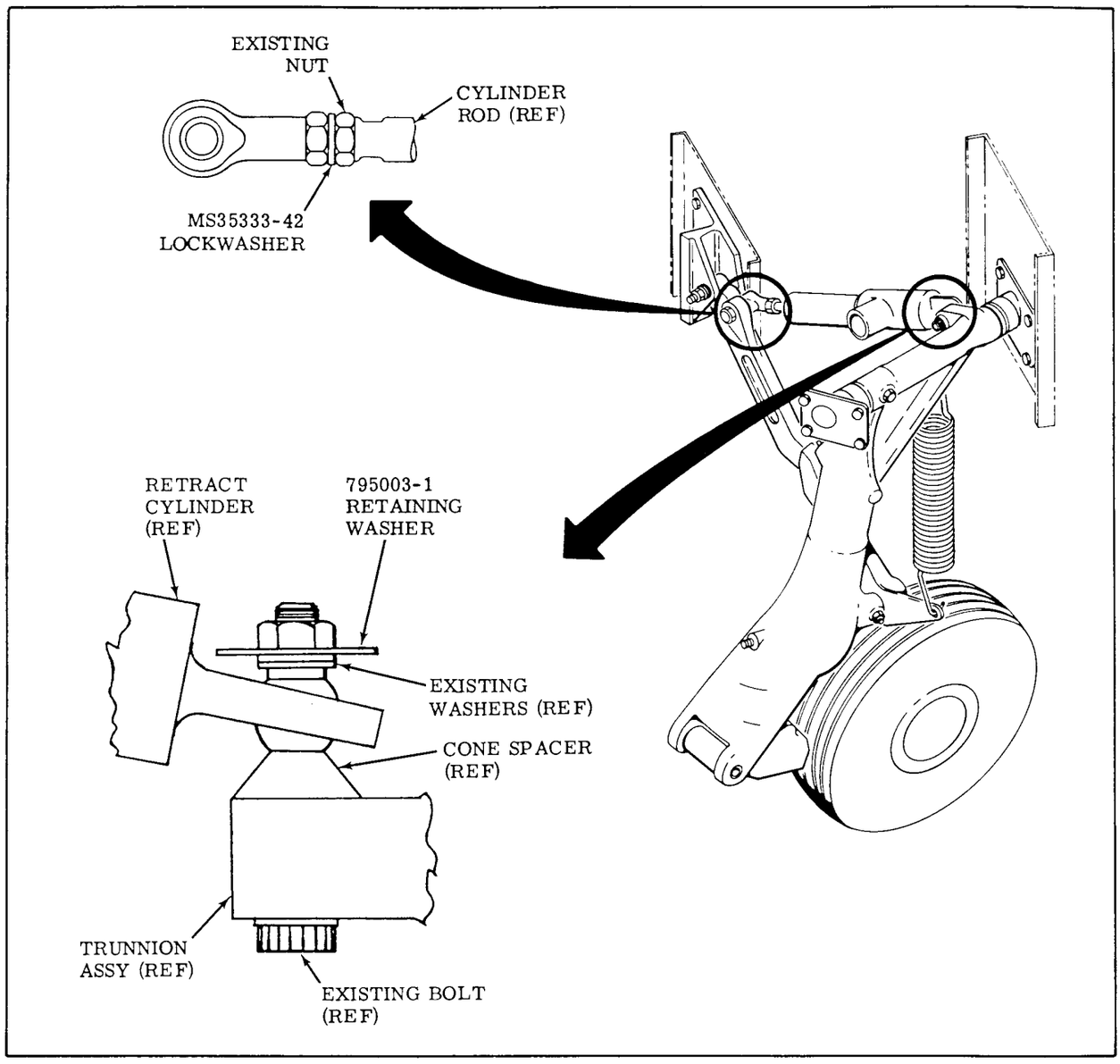


Figure 2.

b. Inspect cylinder end plug bearings to assure that the bearings are properly staked as shown in Figure 3.

NOTE

There should be six (6) stake marks equally spaced on each side of bearing. Staking should deform the metal next to the bearing.

c. If bearings are properly staked, proceed to step 12.e.

d. If bearings are not properly staked, hand stake bearings six (6) equal spaces around bearing (see Figure 3.) using a staking tool that conforms to dimensions shown in Figure 3.

NOTE

Fabricate a block from 1/2-inch phenolic material for backing up bearing when staking (see Figure 3.).

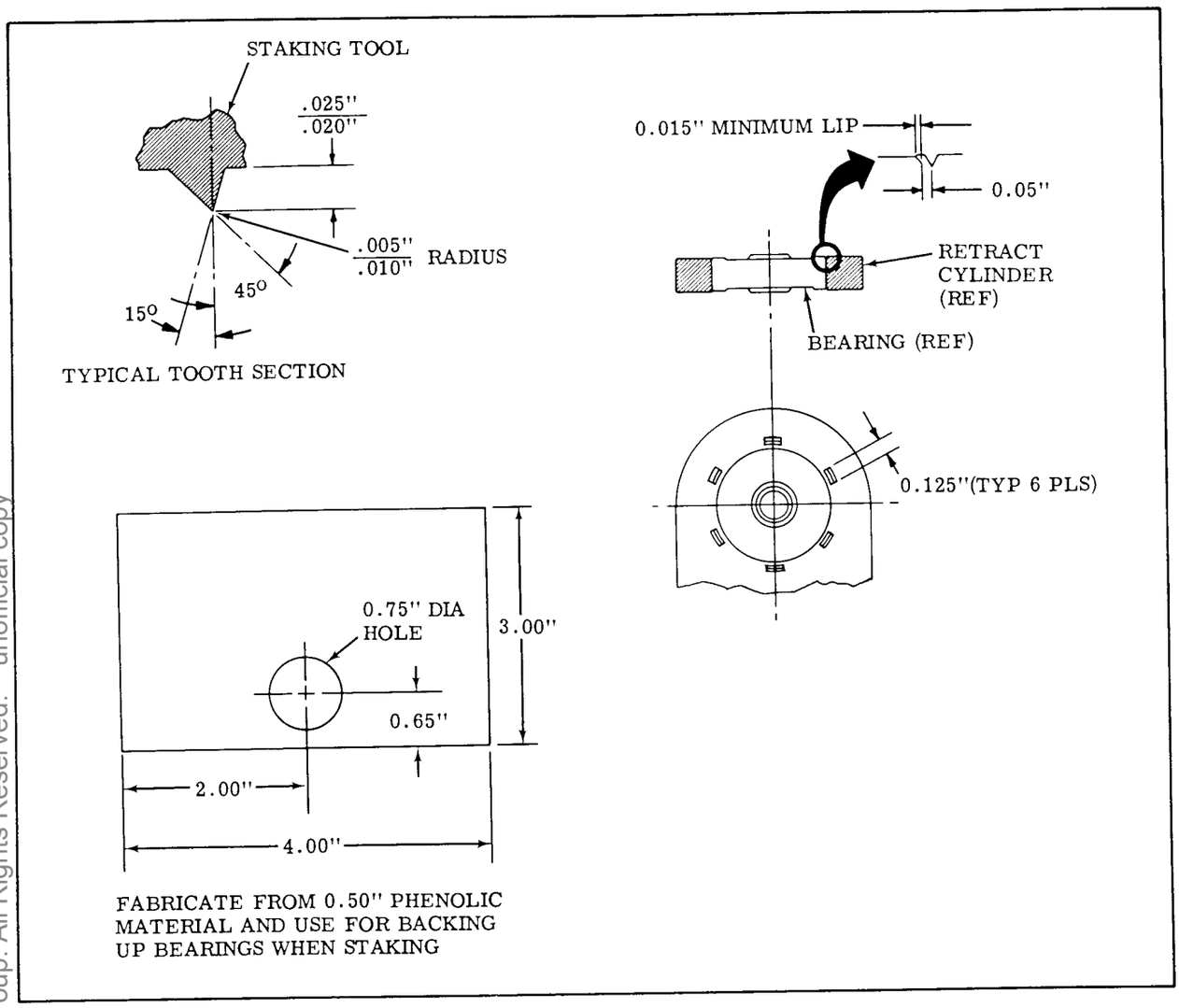


Figure 3.

e. Reconnect the left and right main landing gear retract cylinders to lug on the landing gear trunnions with existing hardware and add 795003-1 retainer washer (see Figure 2.).

f. Proceed to step 13.

13. Run rod end and nut all the way on threads of the main landing gear retract cylinder.

14. Check the main landing gear side brace assembly at knuckle area to assure that the side brace is resting on the stop.

15. Push retract cylinder piston all the way in the cylinder body and adjust rod end hole to 0.30 (± 0.03) inch short of hole in drag brace assembly for cushion. Finger tighten nut against cylinder rod end.

16. Align hole in rod end with hole in drag brace assembly and install existing hardware.

NOTE

The side stay of the side brace assembly should be resting on the stop.

17. Torque rod end nut 95 to 110 inch-pounds against rod end and lockwasher while holding cylinder rod securely.

18. Perform an operational check of the landing gear system as outlined in the Airplane Maintenance Manual, Section VI.

19. Remove jacks from airplane and fill out and mail Compliance Card.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

SPARES AFFECTED: YES

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog changes required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in the airplane maintenance records as follows: Service Letter No. SL-114-11, dated 9 August 1977, entitled "Landing Gear Retract Cylinder Retainer and/or Lockwasher Installation", accomplished _____(date)_____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-12
25 July 1977

FLIGHT CONTROL COLUMN SHAFT & SHAFT COLLAR INSPECTION AND MODIFICATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14306.

REASON FOR PUBLICATION: DURING EXTREME COLD WEATHER THE CONTROL COLUMN SHAFT COLLAR P/N 47355-1 MAY SHRINK IN SIZE. THIS SHRINKAGE CAN INCREASE ELEVATOR CONTROL FORCES BEYOND ACCEPTABLE LIMITS. SLOTTING THE COLLAR WILL ELIMINATE THIS POSSIBILITY.

COMPLIANCE: DURING NEXT 100-HOUR INSPECTION.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DEALER/DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: INSPECTION ONLY - ONE (1) HOUR.

INSPECTION AND REWORK - THREE (3) HOURS.

PARTS DATA: NOT APPLICABLE.

SPECIAL TOOLS: 0.010" FEELER GAUGE, 0.005" STEEL SHIMS AND A HACKSAW.

ACCOMPLISHMENT INSTRUCTIONS:

1. Check left and right control columns for clearance between control column shaft and collar using a feeler gauge. Minimum clearance should be 0.010 inch.

NOTE

Collar is 1.00-inch long.

2. If clearance between control column shaft and collar is 0.010-inch or greater, proceed to RECORD COMPLIANCE.

3. If clearance between control column shaft and collar is less than 0.010-inch, proceed as follows:

   a. Remove retaining ring from control column shaft (see Figure 1.).

   b. Move control column full aft.

   c. Slide control column shaft collar aft away from control column mount.

d. Cut a slit in collar with a hacksaw blade or equivalent cutting tool. Maximum width of cut to be 0.050-inch (see Figure 1.).

CAUTION

Insert a steel shim between collar and control column shaft to protect shaft while collar is being cut.

e. After cut through collar is completed, remove all rough edges from collar and remove shim used to protect control column shaft.

f. Reinstall collar and retainer ring into control column shaft mount.

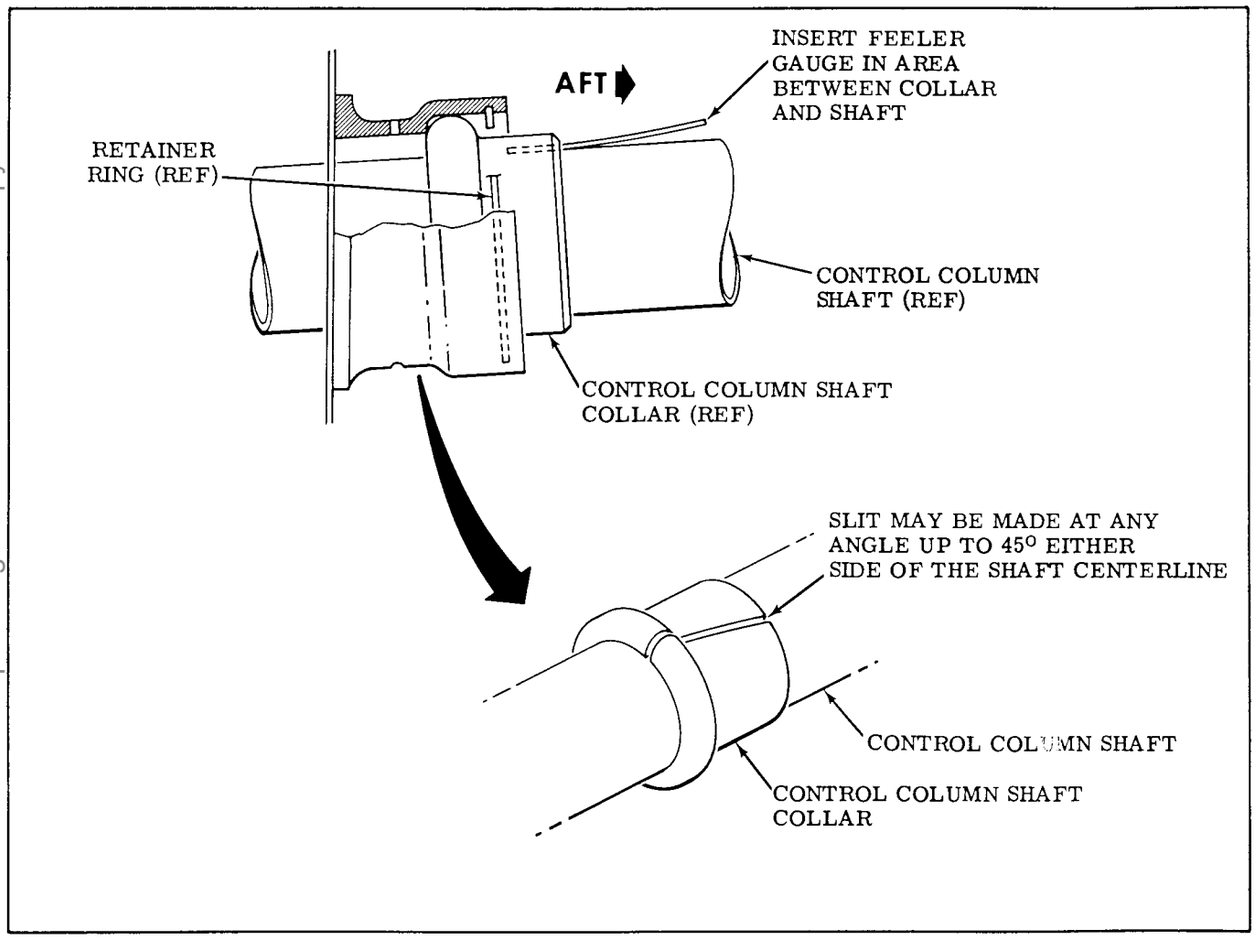


Figure 1.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

PUBLICATIONS AFFECTED: NOT APPLICABLE.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-12, dated 25 July 1977, entitled "Flight Control Column Shaft and Shaft Collar Inspection and Modification" accomplished ____(date)_____ .

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-13
30 September 1977

RUDDER TRIM CONTROL ASSEMBLY INSPECTION AND MODIFICATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14001 THRU 14312 AND 14314 THRU 14319.

REASON FOR PUBLICATION: TO IMPROVE RUDDER TRIM AND PREVENT THE POSSIBLE BOTTOMING OF RUDDER TRIM SPRING AT EXTREME TRIM CONDITION.

COMPLIANCE: WITHIN NEXT 100-HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DEALER/DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: PART I - TWO (2) HOURS.
PART II - THREE (3) HOURS.

PARTS DATA: Parts required to comply with this Service Letter may be ordered through your nearest Rockwell Commander Dealer/Distributor for: Part I, $5.86, Part II, $17.79. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-13 kit consisting of the following:

Price subject to change without notice

PART I QTY	PART II QTY	PART NO.	DESCRIPTION
-	1 ea.	47482-RE1	Fitting
1 ea.	1 ea.	565006-1	Outer Spring
1 ea.	1 ea.	565007-1	Inner Spring
1 ea.	1 ea.	Service Letter No. SL-114-13	Instructions

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

PART I

1. Remove cotter pin from existing nut on rudder trim control assembly shaft and back nut off threads (see Figure 1.).

2. Turn rudder trim control assembly knob counterclockwise until stop is contacted and then turn control knob clockwise exactly six (6) complete turns and clamp a stiff straight edge to pilot's rudder pedals.

NOTE

With a straight edge clamped to the rudder pedals, the rudder trim will be in the neutral position.

3. Check for 0.50 (± 0.03) inch dimension between rudder trim control assembly fitting and side plate (see Figure 1.).

4. If dimension between rudder trim control assembly fitting and side plate exceeds 0.53-inch, remove straight edge from pilot's rudder pedals and proceed to Part II.

5. If dimension between rudder trim control assembly fitting and side plate is 0.50 (± 0.03) inch, remove straight edge from pilot's rudder pedals.

6. Remove rudder trim control assembly knob and nut, loosened in step 1., from shaft.

7. Disconnect forward shaft of rudder trim control assembly from top of pilot's right rudder pedal support assembly.

8. Disconnect rudder trim indicator cable from rudder trim control assembly and remove rudder trim control assembly from airplane.

9. Disassemble rudder trim control assembly and discard existing springs.

CAUTION

When removing roll pin from end fitting, care should be taken because springs are compressed.

10. Install new 565006-1 inner spring and 565007-1 outer spring and reassemble rudder trim control assembly (see Figure 2.).

11. Reinstall rudder trim control assembly in airplane using existing hardware.

12. Reinstall existing washers, nut and cotter pin, removed in step 1., and rudder trim control assembly knob (see Figure 2.).

13. Reconnect rudder trim indicator cable to rudder trim control assembly.

14. Check rudder trim indicator rigging as outlined in the Airplane Maintenance Manual, Section VII.

15. Proceed to RECORD COMPLIANCE.

PART II

1. Remove rudder trim control assembly knob and nut from shaft.

2. Disconnect forward shaft of rudder trim control assembly from top of pilot's right rudder pedal support assembly.

3. Disconnect rudder trim indicator cable from rudder trim control assembly and remove rudder trim control assembly from airplane.

4. Disassemble rudder trim control assembly and discard existing springs.

CAUTION

When removing roll pin from end fitting, care should be taken because springs are compressed.

5. Install new 565006-1 inner spring and 565007-1 outer spring and reassemble rudder trim control assembly (see Figure 2.).

6. Remove and discard existing fitting from rudder trim control assembly bracket (see Figure 2.).

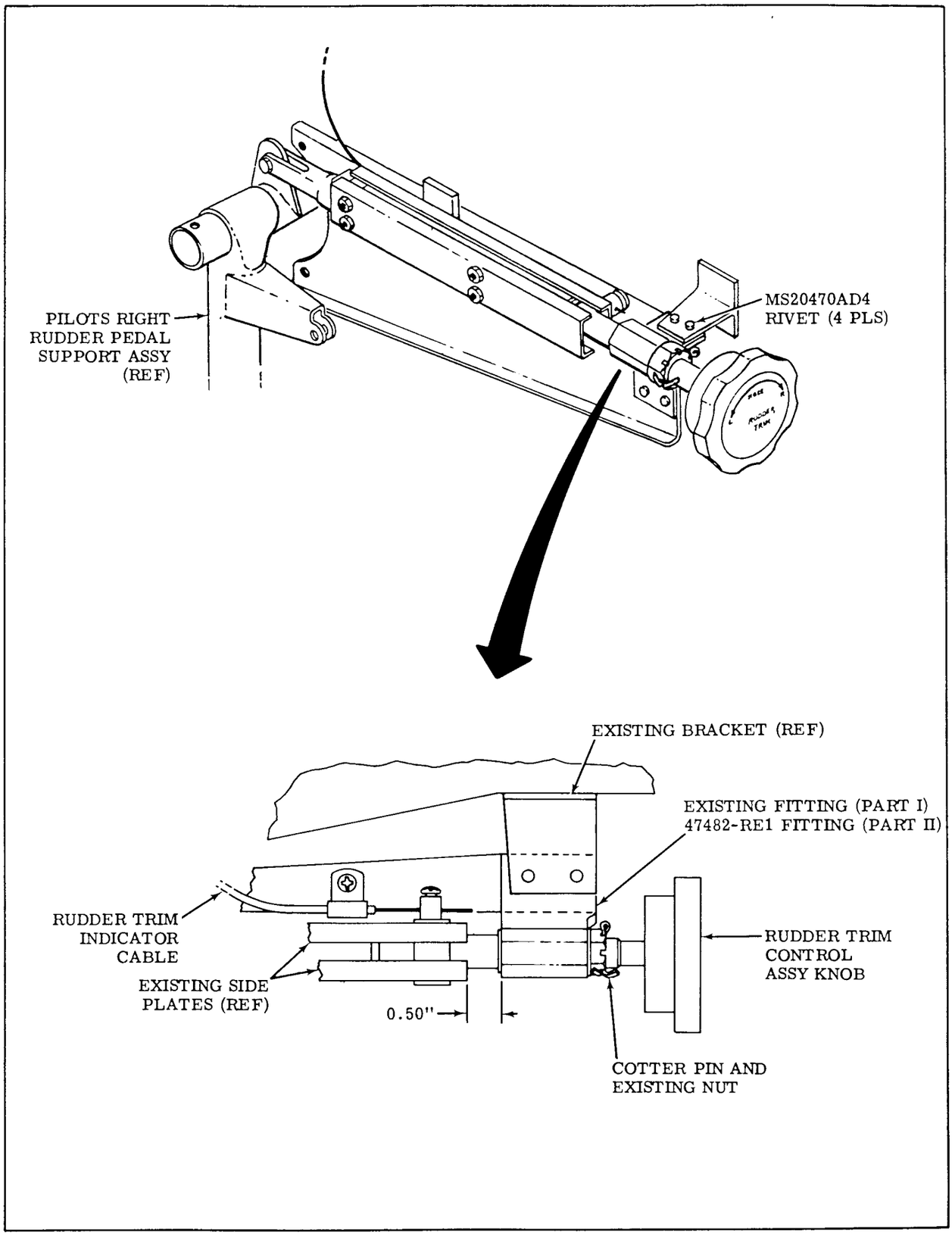


Figure 1.

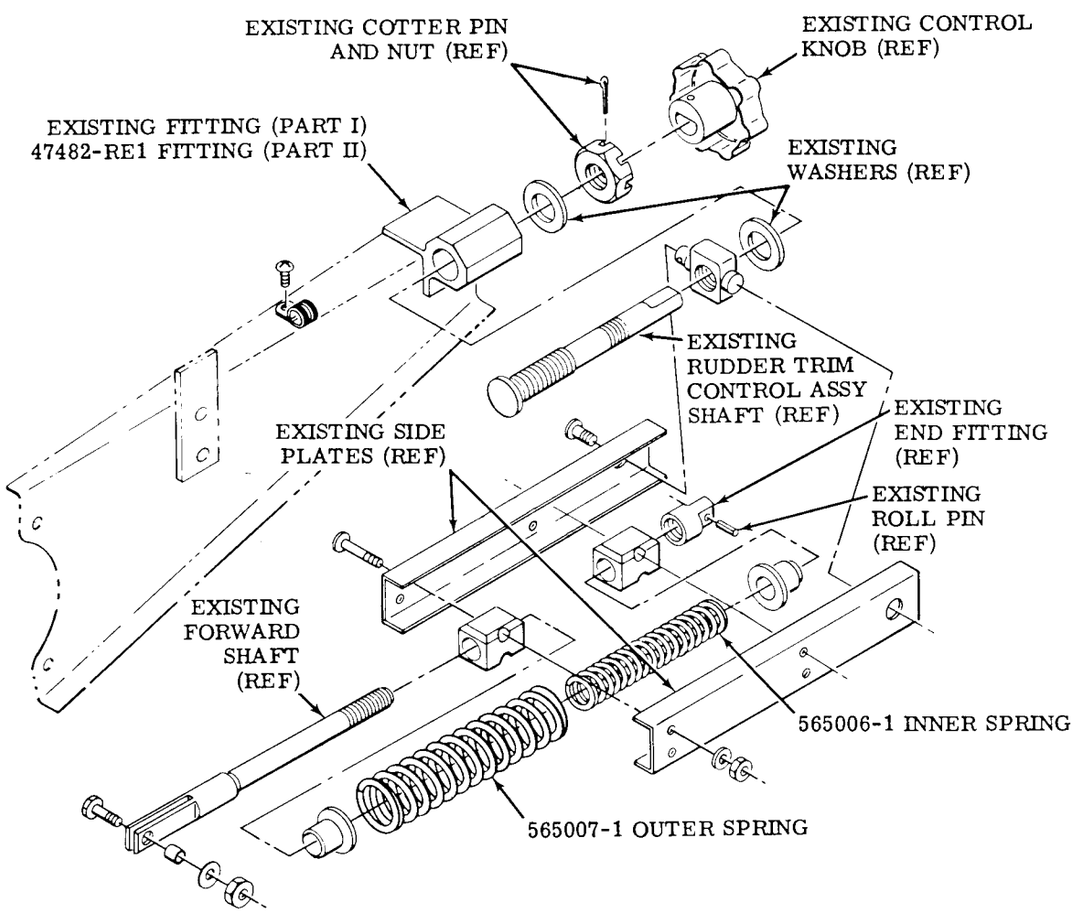


Figure 2.

7. Reconnect rudder trim control assembly forward shaft to top of pilot's right rudder pedal support assembly.

8. Place existing washers and 47482-RE1 fitting on rudder trim control assembly shaft (see Figure 2.).

9. Install existing nut and knob on rudder trim control assembly shaft.

NOTE

Do not run nut on threads until fitting is located and riveted to bracket.

10. Turn rudder trim control assembly knob counterclockwise until stop is contacted and then turn control knob clockwise exactly six (6) complete turns and clamp a stiff straight edge to pilot's rudder pedals.

11. Position 47482-RE1 fitting on rudder trim control assembly shaft to 0.50 ($\pm$ 0.03) inch dimension shown in Figure 1. and clamp fitting to rudder trim control assembly bracket.

12. Drill and install 47482-RE1 fitting on rudder trim control assembly bracket with MS20470AD4 rivets (4 places) (see Figure 1.).

13. Reinstall existing nut and cotter pin on rudder trim control assembly shaft.

14. Reconnect rudder trim indicator cable to rudder trim control assembly.

15. Check rudder trim indicator rigging as outlined in the Airplane Maintenance Manual, Section VII.

16. Proceed to RECORD COMPLIANCE.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

SPARES AFFECTED: NO.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog changes required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-13, dated 30 September 1977, entitled "Rudder Trim Control Assembly Inspection and Modification", Part I accomplished____(date)____, Part II accomplished____(date)____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-14
7 October 1977

MANIFOLD PRESSURE GAUGE MODIFICATION

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14312 AND 14314.

REASON FOR PUBLICATION: TO PROLONG GAUGE LIFE AND PREVENT GAUGE FROM STICKING AND BECOMING SLUGGISH.

COMPLIANCE: WITHIN NEXT 100-HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER DEALER/DISTRIBUTOR OR YOUR ROCKWELL COMMANDER REGIONAL SERVICE MANAGER.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: ONE (1) HOUR.

PARTS DATA: Parts required to comply with Part I of this Service Letter may be purchased through your nearest Rockwell Commander Dealer/Distributor for $10.32. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-14 kit consisting of the following:

Price subject to change without notice

QTY	PART NO.	DESCRIPTION
1 ea.	MS20822-4D-HXX	Pressure Snubber
1 ea.		Compliance Card
1 ea.	Service Letter No. SL-114-14	Instructions

NOTE

No parts are required for Part II.

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

PART I - Model 114, Serial No's 14000 thru 14235.

1. Disconnect manifold pressure tube assembly from existing fitting in manifold pressure gauge port (see Figure 1.).

2. Remove and disconnect existing manifold pressure gauge fitting.

3. Remove and discard Phillips head dampening screw located inside manifold pressure port of manifold pressure gauge.

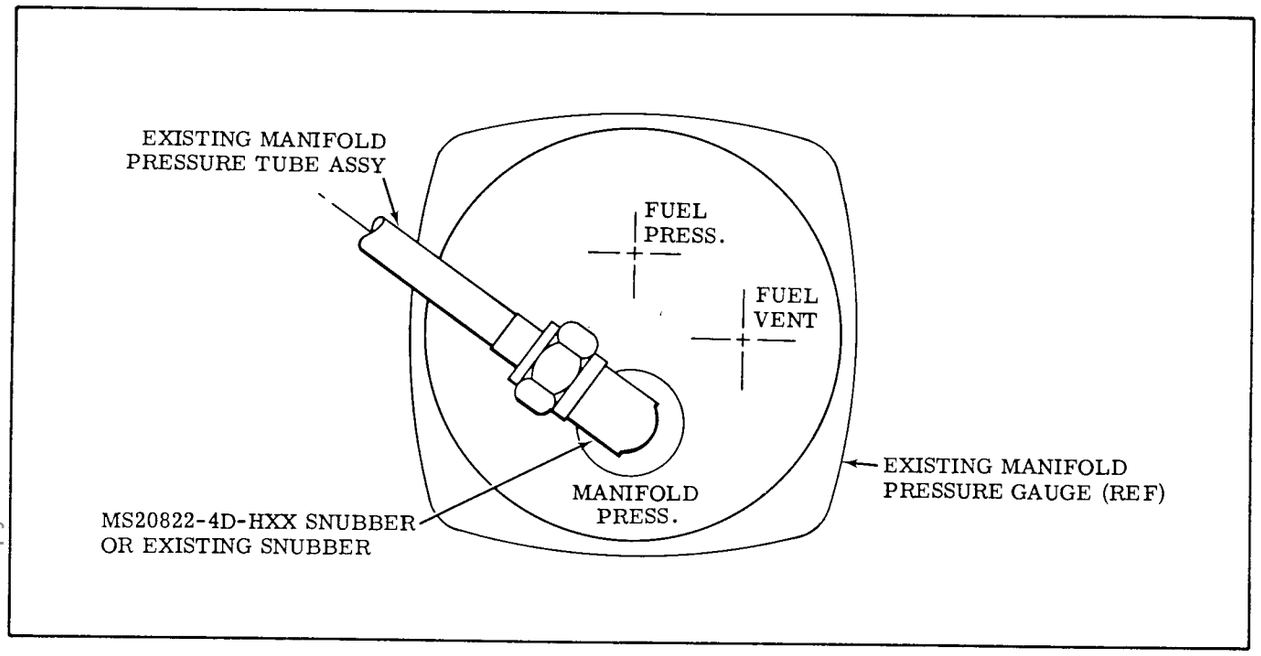


Figure 1.

4. Apply teflon tape (3M No. 547 or equivalent) to threads of MS20822-4D-HXX pressure snubber as follows:

   a. Place end of teflon tape two (2) threads in from end of male pipe threads and hold tape firmly with thumb.

   b. Stretch tape against threads and wind clockwise one (1) lap. Continue to hold tightly against threads until tape has been broken.

NOTE

Do not attempt to tear tape sideways. Snap tape off in same direction used for winding.

5. Install MS20822-4D-HXX pressure snubber in manifold pressure gauge (see Figure 1.).

6. Connect existing manifold pressure tube assembly to pressure snubber (see Figure 1.).

7. Fill out and mail Compliance Card and proceed to RECORD COMPLIANCE.

PART II - Model 114, Serial No's 14236 thru 14312 and 14314.

1. Disconnect manifold pressure tube assembly from existing pressure snubber in manifold pressure gauge port (see Figure 1.).

2. Remove existing pressure snubber from manifold pressure gauge.

3. Remove and discard Phillips head dampening screw (if installed) located inside manifold pressure port of manifold pressure gauge.

4. Apply teflon tape (3M No. 547 or equivalent) to threads of existing pressure snubber, removed in Step 2., as follows:

   a. Place end of teflon tape two (2) threads in from end of male pipe threads and hold tape firmly with thumb.

   b. Stretch tape against threads and wind clockwise one (1) lap. Continue to hold tightly against threads until tape has been broken.

NOTE

Do not attempt to tear tape sideways. Snap tape off in same direction used for winding.

5. Install existing pressure snubber in manifold pressure gauge (see Figure 1.).

6. Reconnect existing manifold pressure tube assembly to existing pressure snubber (see Figure 1.).

7. Fill out and mail Compliance Card.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

SPARES AFFECTED: YES.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog and Airplane Maintenance Manual changes required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-14, dated 7 October 1977, entitled "Manifold Pressure Gauge Modification", Part I accomplished ____(date)____, Part II accomplished____(date)____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-15
30 August 1978

SECURING PITOT HEATER WIRES

MODELS AFFECTED: MODEL 114 SERIAL NO'S 14000 THRU 14408.

REASON FOR PUBLICATION: TO PREVENT POSSIBLE FRAYING OF PITOT HEATER WIRE INSULATION.

COMPLIANCE: DURING NEXT 100-HOUR INSPECTION.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER AUTHORIZED SERVICE FACILITY.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: SECURE HEATER WIRES - THIRTY (30) MINUTES.
MODIFY PITOT HEAD ASSEMBLY - ONE & ONE-HALF (1.5) HOURS.

PARTS DATA: The following material required to comply with this Service Letter may be procured locally:

QTY	PART NO.	DESCRIPTION
1 ea.	RTV-106	Silicone Sealer (6 oz. tube)

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Remove screws attaching pitot head assembly access cover to wing and pull down on pitot head assembly.
2. Check dimension from top of pitot heater(s) to top of pitot head assembly to assure that pitot heater(s) is installed properly in pitot head assembly. Dimension should be 0.375-inch to 0.50-inch (see Figure 1.).
3. If dimension from top of pitot heater(s) to top of pitot head assembly is less than 0.50-inch, proceed to step 5.
4. If dimension from top of pitot heater(s) to top of pitot head assembly is greater than 0.50-inch, remove pitot head assembly from wing and proceed as follows:
   a. Remove pitot heater(s) from pitot head assembly.
   b. Ream 0.1875-inch diameter hole(s) to depth specified in Figure 1.
   c. Inspect pitot heater wires for possible fraying of insulation or bare wires.
   d. If no evidence of frayed insulation or no bare wires exist, proceed to step f.
   e. If evidence of frayed insulation or bare wires exist, repair as necessary and proceed to step f.
   f. Reinstall pitot heater(s) on pitot head assembly, reconnect pitot tube assembly to pitot head assembly and proceed to step 8.

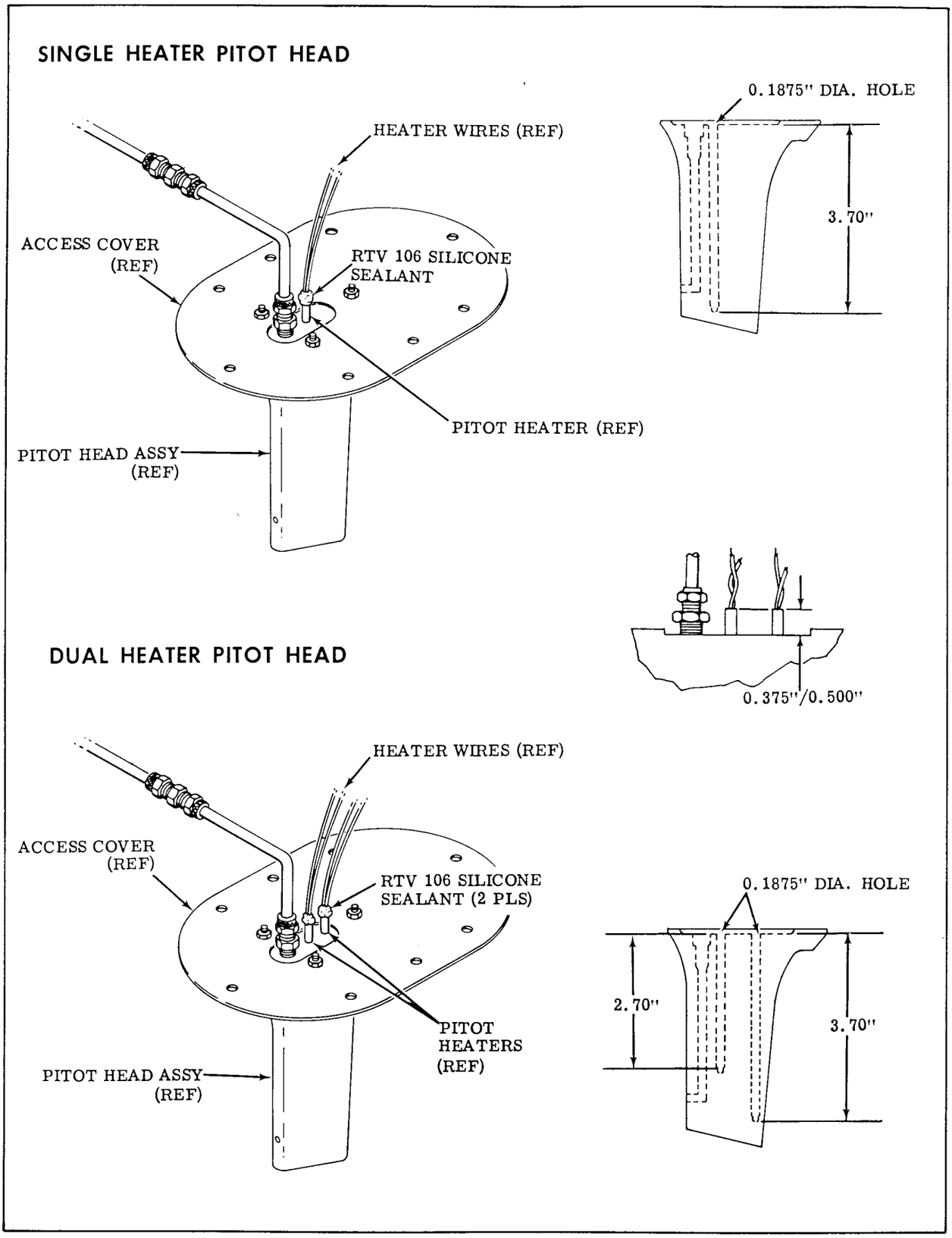


Figure 1.

5. Inspect pitot heater wires for possible fraying of insulation and bare wires.

6. If no evidence of frayed insulation or no bare wires exist, proceed to step 8.

7. If evidence of frayed insulation or bare wires exist, repair as necessary and proceed to step 8.

8. Apply RTV-106 silicone sealer on pitot heater wires and on top of pitot heater(s) (see Figure 1.).

9. Reinstall pitot head assembly and access cover on wing.

10. Perform leakage test as outlined in the Airplane Maintenance Manual, Section VIII.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

SPARES AFFECTED: YES.

PUBLICATIONS AFFECTED: The Illustrated Parts Catalog changes required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-15, dated 30 August 1978, entitled "Securing Pitot Heater Wires", accomplished____(date)_____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-16
14 September 1979

NOSE GEAR DOWN SPRINGS INSPECTION AND/OR REPLACEMENT

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14499.

REASON FOR PUBLICATION: TO ASSURE PROPER TENSION OF NOSE GEAR DOWN SPRINGS.

COMPLIANCE: WITHIN NEXT 100-HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER AUTHORIZED SERVICE FACILITY.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: TWO (2) HOURS.

PARTS DATA: Replacement gear down springs, part numbers P227-27 inner spring and P227-28 outer spring, may be procured through your nearest Rockwell Commander Authorized Service Facility.

SPECIAL TOOLS: CALIBRATED SCALE FOR PULL TESTING SPRING TENSION.

ACCOMPLISHMENT INSTRUCTIONS:

1. Jack airplane as outlined in the Airplane Maintenance Manual, Section II.

2. Disconnect lower end of inner and outer gear down springs from the nose landing gear.

3. Using a calibrated scale, check pull tension of nose gear down springs. Tensions should be as follows:

	EXTENDED LENGTH	LOAD
Inner Spring	7.69 inches	24 to 30 pounds
Outer Spring	7.63 inches	23 to 28 pounds

4. If either spring tension load is not within load limits listed in step 3., remove and replace both springs as necessary.

5. If spring tension loads are within load limits listed in step 3., reconnect lower ends of nose gear down springs to nose landing gear.

6. With the nose landing gear extended, assure that nose gear drag brace is overcenter (see Figure 1.) as follows:

   a. Check drag brace assembly at knuckle area to assure that drag brace is resting on the stop.

   b. If the drag brace is not resting on the stop, readjust nose gear actuating cylinder as outlined in the Airplane Maintenance Manual, Section VI.

7. Check operation of landing gear system as outlined in the Airplane Maintenance Manual, Section VI.

8. Remove airplane from jacks.

9. Fill out and mail Compliance Card.

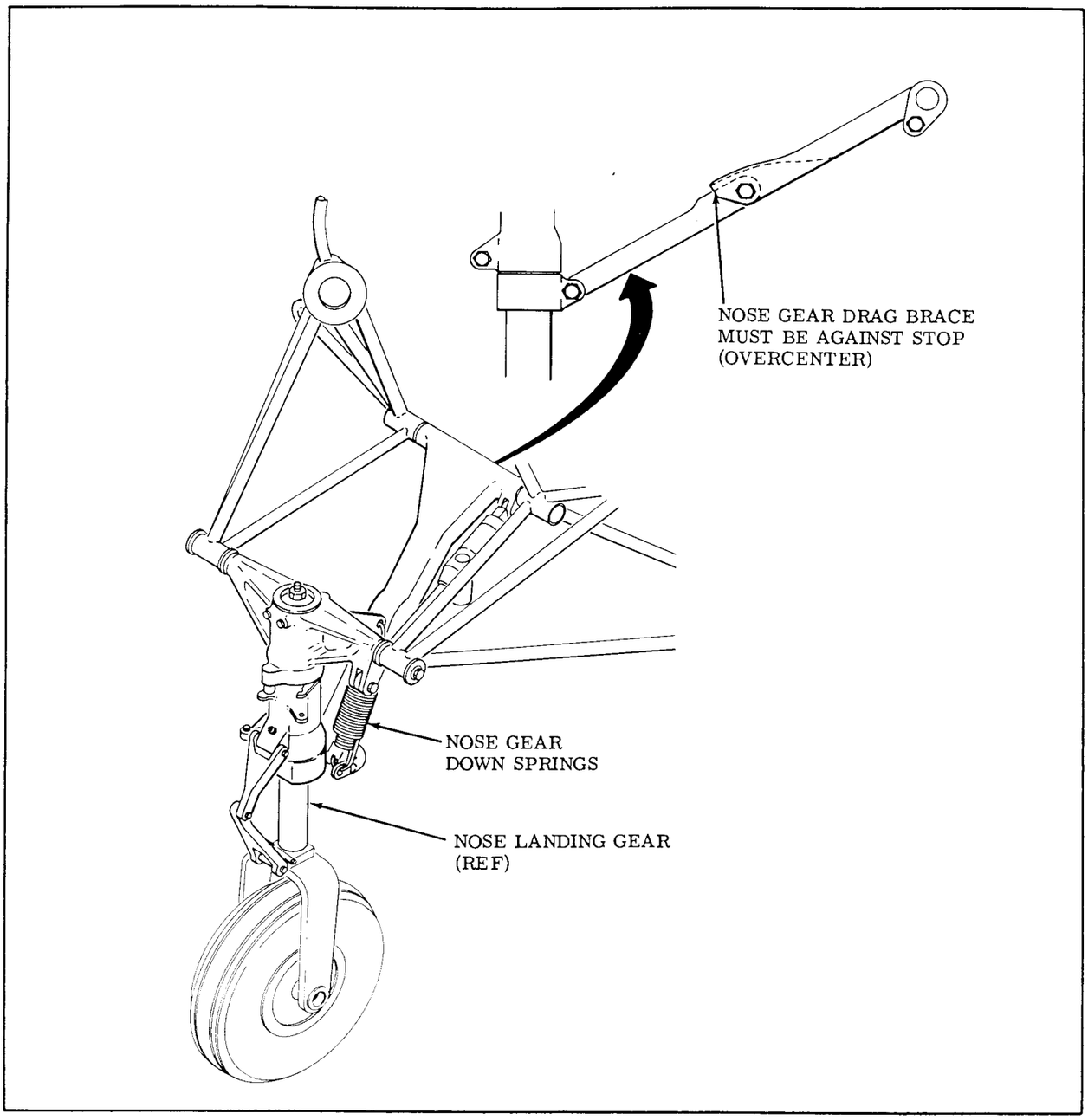


Figure 1.

ELECTRICAL LOAD:	NO CHANGE.
WEIGHT AND BALANCE:	NO CHANGE.
SPARES AFFECTED:	NO.
PUBLICATIONS AFFECTED:	The Airplane Maintenance Manual change required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make an appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-16, dated 14 September 1979, entitled "Nose Gear Down Springs Inspection and/or Replacement", accomplished (date).

Service Letter
Revision Notice

Commander®
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-17
Revision No. 1
27 October 1981

ELEVATOR AND RUDDER HINGE FITTING INSPECTION AND/OR REPLACEMENT

APPROVAL: FAA DOA SW-2 Approved.

Page 1 of 5 - PARTS DATA:

		Kit No. 1 QTY	Kit No. 2 QTY	PART NO.	DESCRIPTION
CHANGE:	WAS:	-	1 ea.	44285-1	Elevator Fitting
	NOW:	-	2 ea.	44285-1	Elevator Fitting

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-17
14 November 1979

ELEVATOR AND RUDDER HINGE FITTING INSPECTION AND/OR REPLACEMENT

MODELS AFFECTED: MODEL 114, SERIAL NO'S 14000 THRU 14499.

REASON FOR PUBLICATION: POSSIBLE ELONGATION OF HOLES IN HINGE FITTINGS AND CRACKS IN RUDDER SPAR.

COMPLIANCE: WITHIN NEXT 100-HOURS TIME IN SERVICE OR NEXT ANNUAL INSPECTION, WHICHEVER OCCURS FIRST.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST ROCKWELL COMMANDER AUTHORIZED SERVICE FACILITY.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 Approved.

ESTIMATED MAN HOURS: REPLACE BUSHINGS AND BEARINGS - FOUR (4) HOURS.

INSTALL DOUBLERS - EIGHT (8) HOURS.

REPLACE FITTINGS - FOUR (4) HOURS.

PARTS DATA: Parts required to comply with this Service Letter may be procured through your nearest Rockwell Commander Authorized Facility for: Kit No. 1 - $65.38; Kit No.2 - $91.10. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-114-17 kit consisting of the following:

Price subject to change without notice

Kit No.1 QTY	Kit No.2 QTY	PART NO.	DESCRIPTION
2 ea.	2 ea.	44006-RE3	Angle Doubler
2 ea.	2 ea.	40113-3	Shim
2 ea.	2 ea.	44006-RE5	Shim
2 ea.	2 ea.	40111-107	Bushing
3 ea.	3 ea.	40111-105	Bushing
1 ea.	1 ea.	FF-411-1	Bearing
4 ea.	4 ea.	F316G x .3125	Bearing
-	1 ea.	44254-501	Rudder Fitting
-	1 ea.	44285-1	Elevator Fitting
1 ea.	1 ea.		Compliance Card
1 ea.	1 ea.	Service Letter No. SL-114-17	Instructions

SPECIAL TOOLS: NONE.

ACCOMPLISHMENT INSTRUCTIONS:

1. Remove cotter pin and loosen nut on upper rudder hinge fitting.

2. Take hold of upper portion of rudder and attempt to move rudder tip forward-to-aft and left-to-right to check for play at upper hinge fitting.

3. Remove rudder assembly as outlined in the Airplane Maintenance Manual, Section VII, and discard existing oilite bushing. Retain other hardware for reinstallation of rudder assembly.

4. Remove tip assembly from rudder.

5. If paly is evident in upper rudder hinge fitting, per step 2., remove and discard existing upper hinge fitting. Retain existing shims and hardware for installation of new hinge fitting.

NOTE

If no play is detected, do not remove upper hinge fitting.

6. Dye penetrant inspect the bend radius of rudder spar, in area of upper hinge fitting, for cracks.

7. If no cracks are found in bend radius of rudder, in area of upper hinge fitting, proceed to step 9.

8. If cracks are found in bend radius of rudder spar, in area of upper hinge fitting, proceed as follows:

   a. Remove upper four (4) rivets, attaching skin to spar, from left and right side of rudder assembly (total of eight (8) rivets).

   b. Remove upper six (6) rivets from rudder assembly leading edge skin lap.

   c. Stop drill all cracks with a No.40 (0.098) diameter drill.

   d. Locate, drill and install 44006-RE3 angle doubler (2 places) on rudder assembly (see Figure 1.).

   e. If existing hinge fitting is to be used, trim 0.06-inch to 0.07-inch from each end of existing hinge fitting.

   f. Install existing or new 44254-501 hinge fitting, 44006-RE5 shim (2 places) and 40113-3 shim (2 places) using existing hardware (see Figure 1.).

NOTE

44006-RE5 shims to be installed butted against skins.

   g. Install MS20470AD3 rivet (6 places) in rudder leading edge skin lap.

   h. Repaint rudder assembly surfaces as necessary.

   i. Proceed to step 10.

9. Install new 44254-501 hinge fitting (if discarded per step 5.) and existing shims using existing hardware.

10. Reinstall tip on rudder assembly.

11. Remove and discard existing oilite bearing from upper vertical fin hinge.

12. Install FF-411-1 bearing in upper vertical fin hinge and ream hole in new bearing to 0.317/0.318-inch (see Figure 1.).

13. Remove cotter pin and loosen nut on left and right elevator outboard hinge fittings.

14. Take hold of elevator tip and attempt to move outboard end of elevator forward-to-aft and up-and-down to check for play at outboard hinge fitting.

15. Remove left and right elevators as outlined in the Airplane Maintenance Manual, Section VII, and discard existing oilite bushings. Retain other hardware for reinstallation of elevators.

16. If no play is evident in outboard hinge fitting, per step 14., proceed to step 18.

17. If play is evident in outboard hinge fitting, per step 14., proceed as follows:

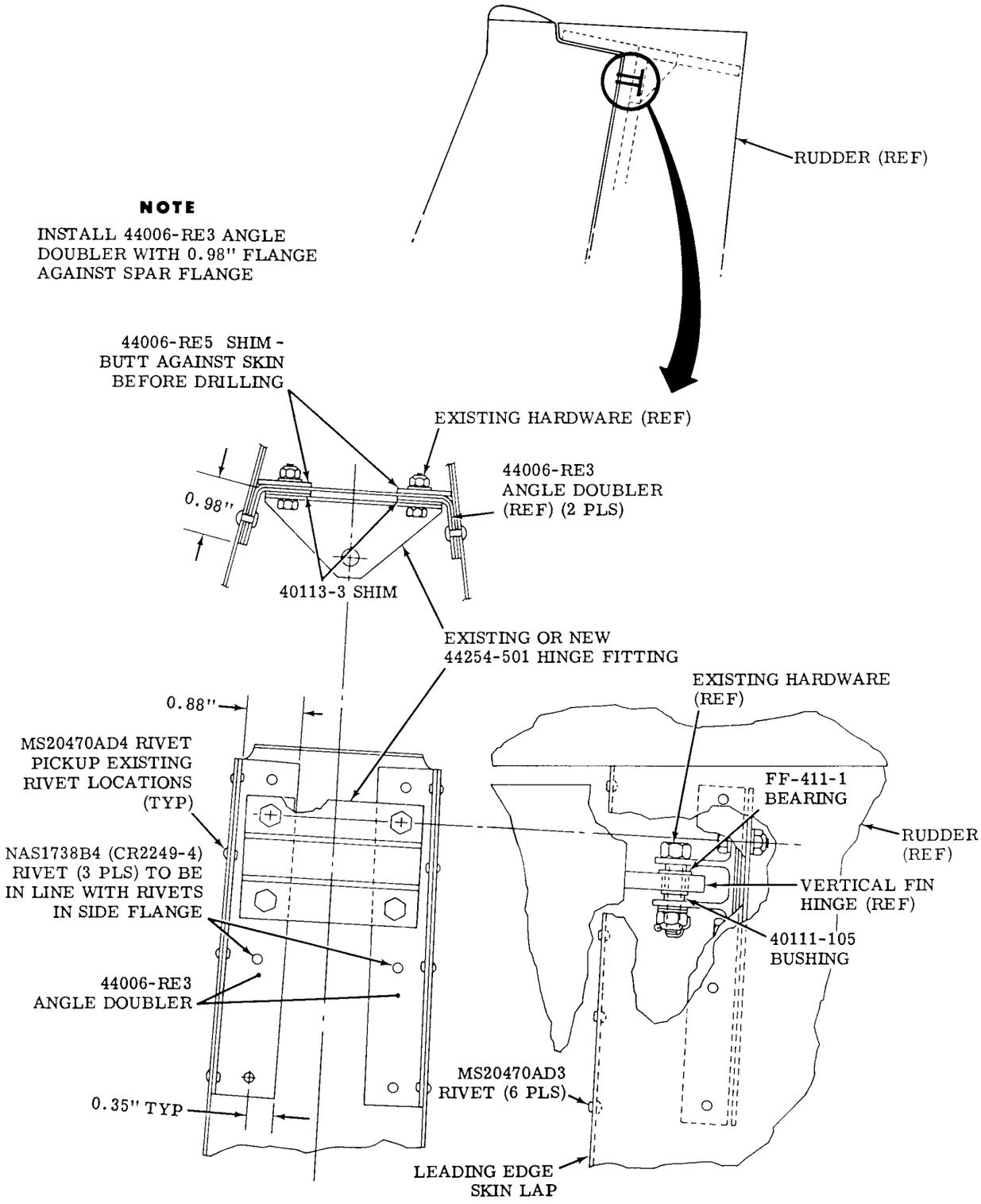


Figure 1.

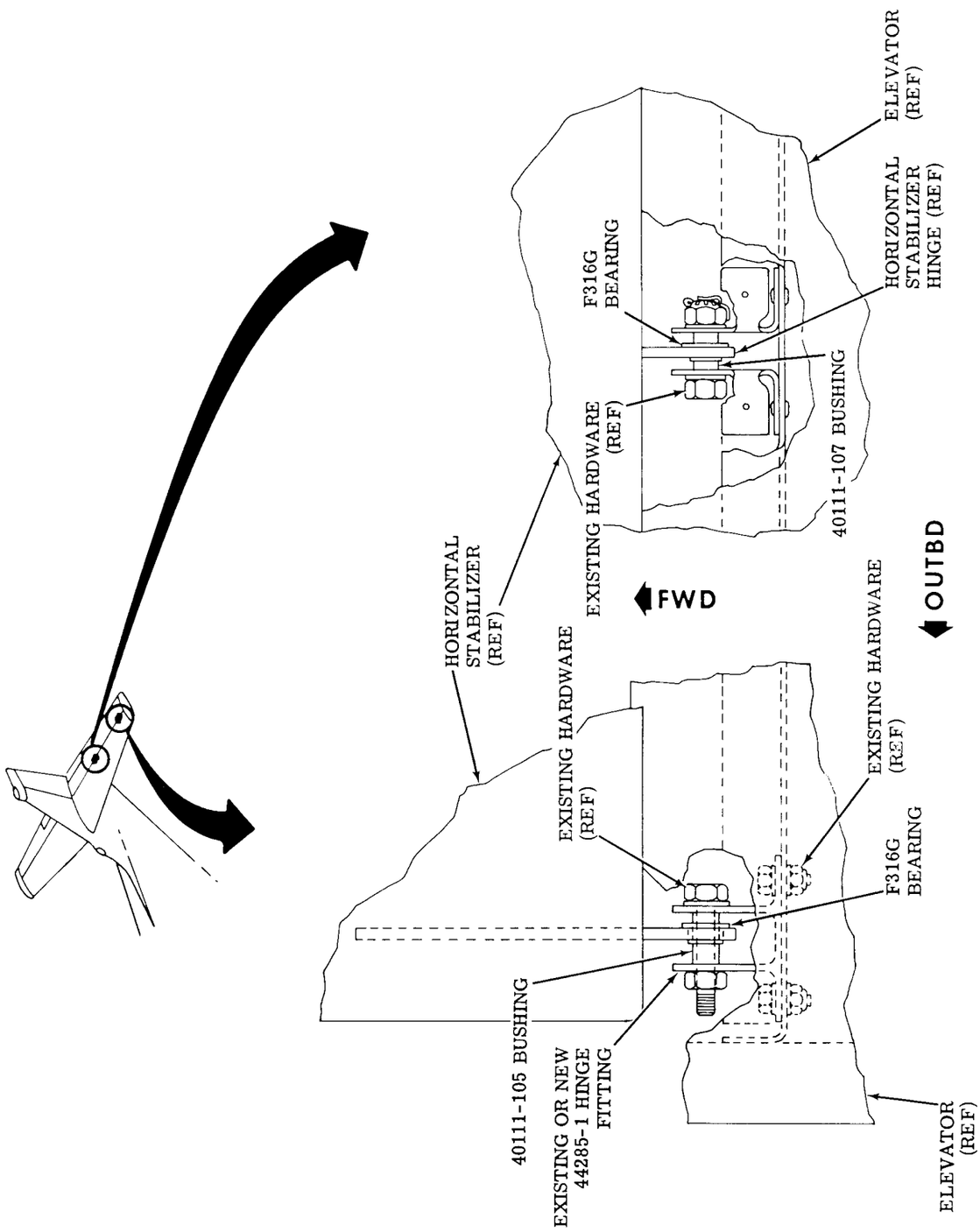


Figure 2.

a. Remove tip from elevator.

b. Remove existing blind rivets and MS20426AD rivets in area of hinge fitting to gain access to hinge fitting attaching nuts.

c. Remove and discard existing hinge fitting.

NOTE

Replace center hinges if holes are elongated.

d. Install new 44285-1 hinge fitting on elevator using existing hardware (see Figure 2.).

e. Attach skin to elevator structure using MS20426AD4 rivets and NAS1738B4 blind rivets.

f. Repaint elevator surfaces as necessary.

g. Reinstall tip on elevator.

18. Remove and discard existing oilite bearings from horizontal stabilizer center and outboard hinges.

19. Install F316G bearing (4 places) on horizontal stabilizer center and outboard hinges and ream hole in bearings to 0.317/0.318-inch (see Figure 2.).

20. Reinstall rudder assembly on airplane as outlined in the Airplane Maintenance Manual, Section VII, using existing hardware and 40111-105 bushing (see Figure 1.).

NOTE

Tighten nuts until hinge fitting contacts bushing and then tighten nut one (1) full slot to align with cotter pin hole in bolt and then install cotter pin.

21. Reinstall left and right elevator assemblies on airplane as outlined in the Airplane Maintenance Manual, Section VII, using existing hardware, 40111-107 bushing (center hinge) and 40111-105 bushing (outboard hinge) (see Figure 2.).

NOTE

Tighten nuts until hinge fitting contacts bushing and then tighten nut one (1) full slot to align with cotter pin hole in bolt and then install cotter pin.

22. Check rigging of elevators and rudder as outlined in the Airplane Maintenance Manual, Section VII.

23. Fill out and mail Compliance Card.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

SPARES AFFECTED: NO.

PUBLICATIONS AFFECTED: The Airplane Maintenance Manual and Illustrated Parts Catalog changes required by this document will be incorporated at the next scheduled change/ revision.

RECORD COMPLIANCE: Make an appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-17, dated 14 November 1979, entitled "Elevator and Rudder Hinge Fitting Inspection and/or Replacement", accomplished____(date)____.

Service Letter

Commander
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-18
26 July 1982

WIRE BUNDLE CLAMP REPLACEMENT

MODELS AFFECTED: MODEL 114, SERIAL NOS. 14001 THRU 14394.

REASON FOR PUBLICATION: TO PREVENT POSSIBLE LOSS OF WIRE BUNDLE CLAMPS RESULTING IN POSSIBLE HANGING UP OF LANDING GEAR.

COMPLIANCE: WITHIN NEXT 100-HOURS TIME IN SERVICE.

NOTE

IF ANY PROBLEMS ARE ENCOUNTERED WHILE COMPLYING WITH THIS SERVICE LETTER, CONTACT YOUR NEAREST GULFSTREAM COMMANDER SINGLE ENGINE SERVICE FACILITY.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P MECHANIC OR EQUIVALENT.

APPROVAL: FAA DOA SW-2 APPROVED.

ESTIMATED MAN HOURS: SIX AND ONE-HALF (6.5) HOURS.

PARTS DATA: PARTS REQUIRED TO COMPLY WITH THIS SERVICE LETTER MAY BE PROCURED THROUGH YOUR NEAREST GULFSTREAM COMMANDER SINGLE ENGINE SERVICE FACILITY FOR $39.39. REFERENCE THIS SERVICE LETTER, AIRCRAFT MODEL AND FACTORY SERIAL NUMBER WHEN ORDERING SERVICE LETTER NO. SL-114-18 KIT CONSISTING OF THE FOLLOWING:

PRICE SUBJECT TO CHANGE WITHOUT NOTICE

QTY	PART NO.	DESCRIPTIION
3 ea.	43780-3	Clip
3 ea.	43780-4	Clip
1 ea.	AN3H3A	Bolt
10 ea.	AN3-4A	Bolt
25 ea.	AN960D10	Washer
10 ea.	MS21044N3	Nut
2 ea.	MS21919DG4	Clamp
16 ea.	MS21919DG5	Clamp
2 ea.	MS21919DG6	Clamp
14 ea.	MS27039-1-11	Screw
14 ea.	MS27130-A25	Rivnut
16 ea.	MS3367-1-9	Tiedown Strap
4 ea.	MS3367-2-9	Tiedown Strap
50 ea.	MS3367-4-9	Tiedown Strap
16 ea.	MS35338-43	Lockwasher
30 ft.	500004-2	Spiral Wrap
1 ea.		Compliance Card
1 ea.	Service Letter No. SL-114-18	Instructions

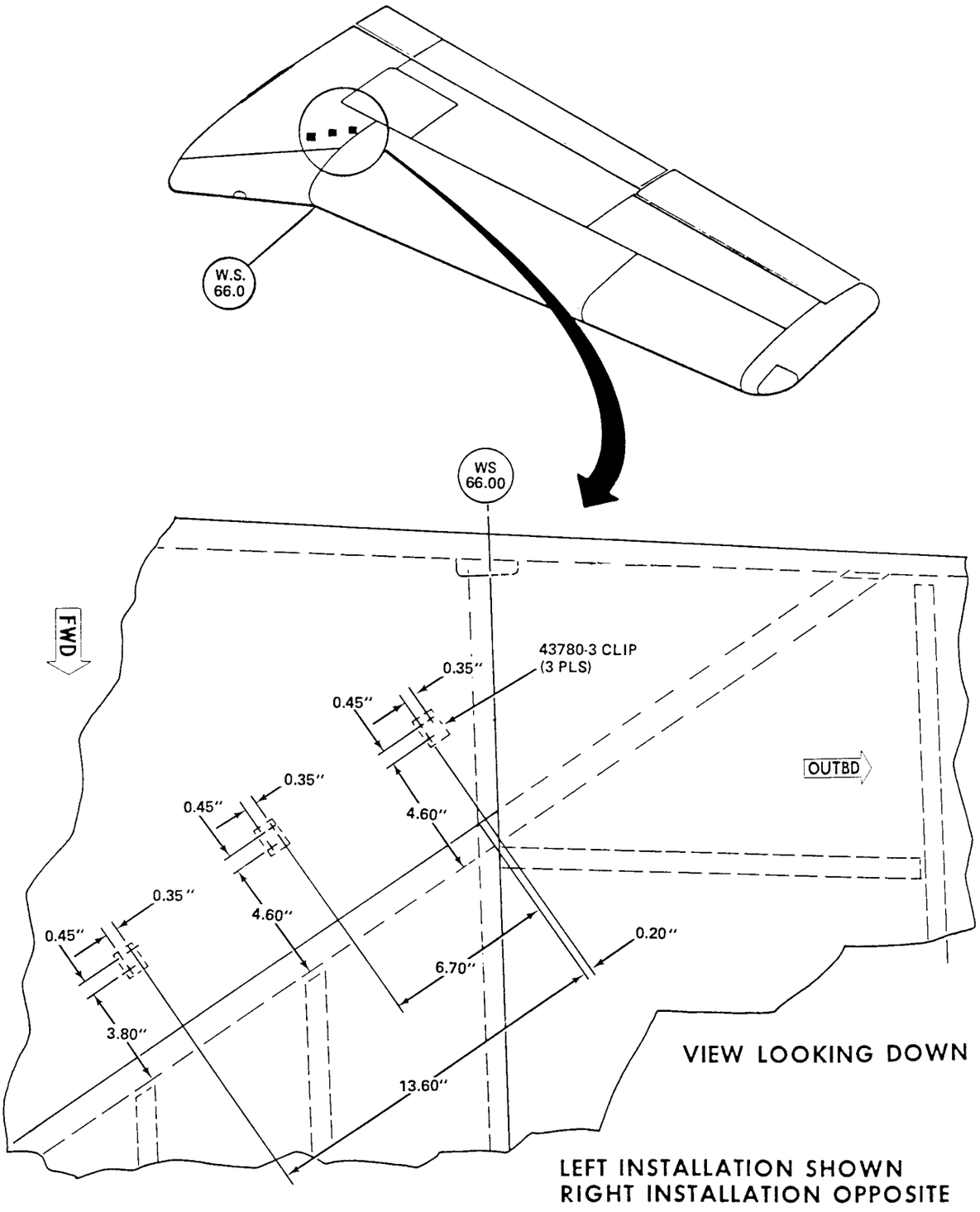


Figure 1

SPECIAL TOOLS: RIVNUT PULLER AND NO. 10-32 UNF-2B TAP.

ACCOMPLISHMENT INSTRUCTIONS:

CAUTION

Care should be taken to prevent damage to electrical wiring while performing this modifiction.

1. Remove and discard all stick-on type wire bundle clamps from left and right main landing gear wheel wells. Clean and remove all adhesive and foam residue carefully.

2. Remove and discard all tiedown straps securing electrical wiring in main landing gear wheel wells.

3. Remove any existing spiral wrap from electrical wiring in main landing gear wheel well area. Check wiring for cut or damaged wires and repair or replace as necessary.

4. Locate, drill and install 43780-3 clip (3 places) on lower side of wing skin in left wheel well using MS20426AD3 rivets. Rivet heads are to be on top of wing skin (refer to Figure 1).

5. Locate, drill and install 43780-4 clip (3 places) on lower side of wing skin in right wheel well using MS20426AD3 rivets. Rivet heads are to be on top of wing skin (refer to Figure 1).

6. Locate and drill 0.252 ($\pm$0.002) inch diameter hole (7 places) in left and right wheel well area for installation of MS27130-A25 rivnuts (refer to Figure 2).

7. Deburr all holes, prime area around holes with zinc chromate primer and install MS27130-A25 rivnuts (refer to Figure 2).

8. Locate and drill a 0.159-inch (No. 21) diameter hole, 0.63-inch deep, in right main landing gear trunnion. Tap 10-32 UNF-2B threads in hole by 0.50-inch deep (refer to Figure 3).

9. Check left and right main gears for location of down lock switch.

10. If down lock switch is located on upper end of drag brace assembly, proceed to step 12. (refer to Figure 4).

11. If down lock switch is located midway down on drag brace assembly, proceed as follows (refer to Figure 5):

    a. Locate and drill a 0.194-inch diameter hole in wing station 47.30 rib (if necessary).

    b. Separate down lock switch cable from other cables at wing station 47.30.

    c. Assure that down lock switch cable is clean and then wrap cable with 500004-2 spiral wrap.

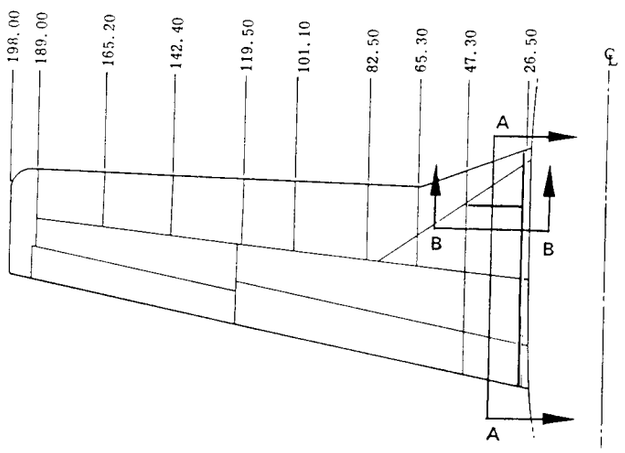
    d. Reroute down lock switch cable aft along rib at wing station 47.30 to landing gear cylinder hose. Secure cable to station 47.30 rib using MS21919DG5 clamp (2 places), AN3-4A bolt (2 places), AN960D10 washer (2 places) and MS21044N3 nut (2 places).

    e. Secure downlock switch cable to landing gear cylinder hose using MS3367-1-9 tiedown strap and then continue routing cable down along top of drag brace assembly to down lock switch. Secure cable to top of drag brace assembly using MS3367-1-9 tiedown strap (2 places).

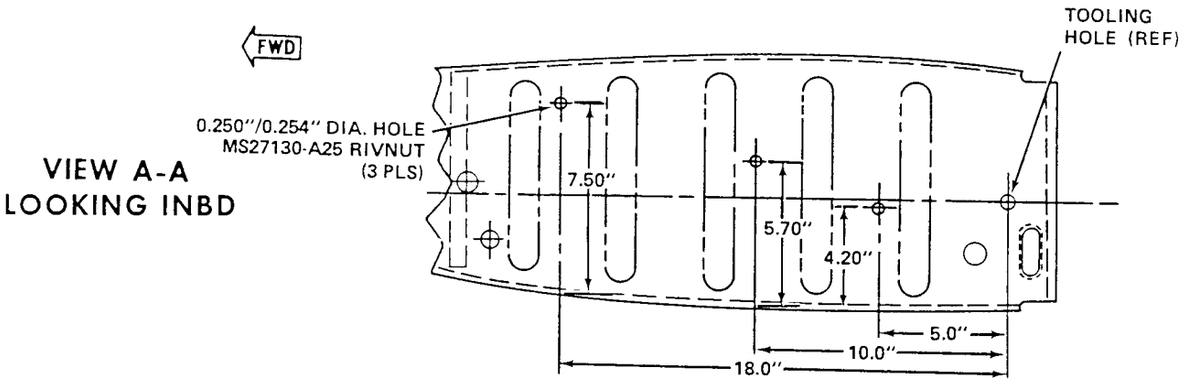
NOTE

Allow sufficient slack in cable, at down lock switch, to assure proper movement of gear.

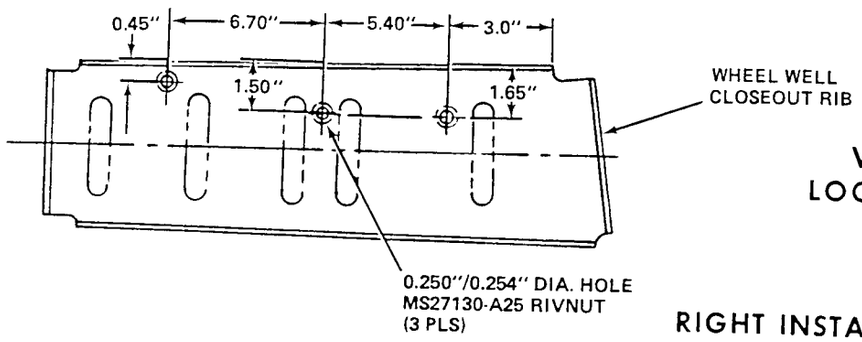
    f. Proceed to step 12.



STATION DIAGRAM



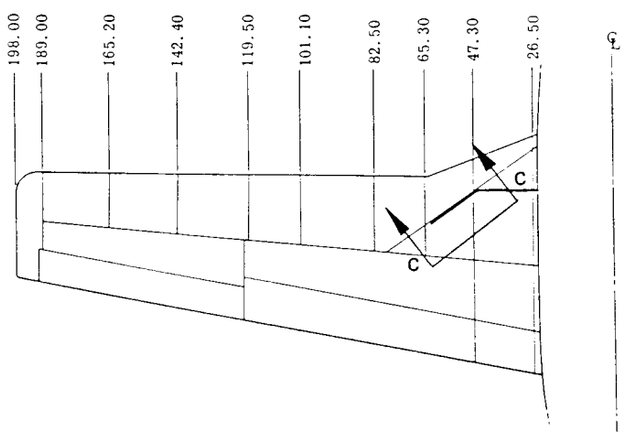
VIEW A-A
LOOKING INBD



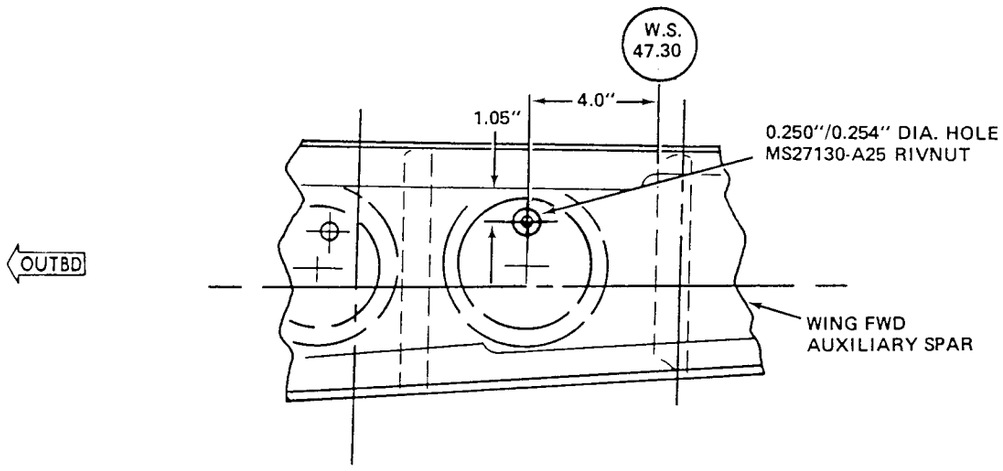
VIEW B-B
LOOKING FWD

RIGHT INSTALLATION SHOWN
LEFT INSTALLATION OPPOSITE

Figure 2. (Sheet 1 of 2)



STATION DIAGRAM



VIEW C-C
LOOKING FWD

LEFT INSTALLATION SHOWN
RIGHT INSTALLATION OPPOSITE

Figure 2. (Sheet 2 of 2)

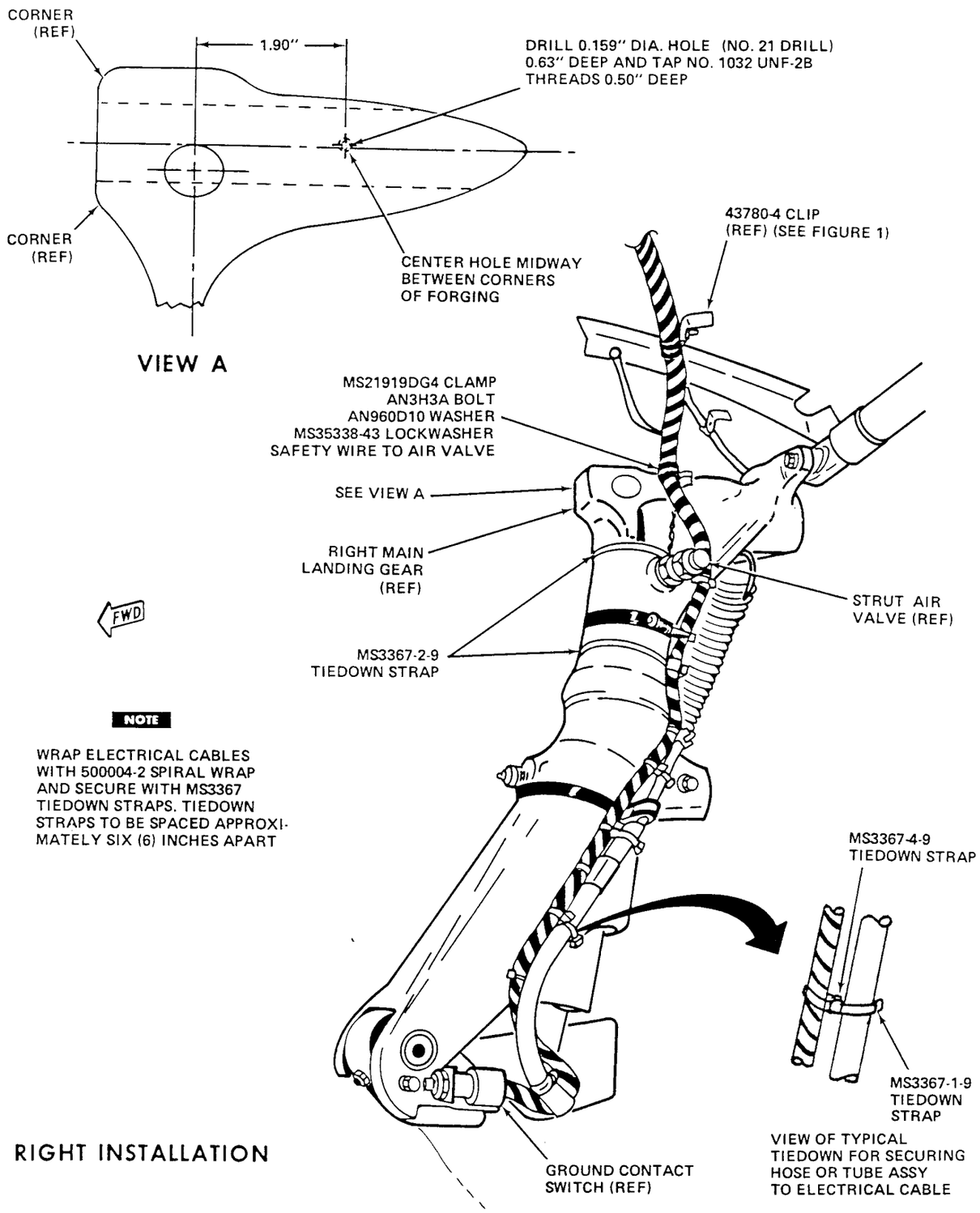
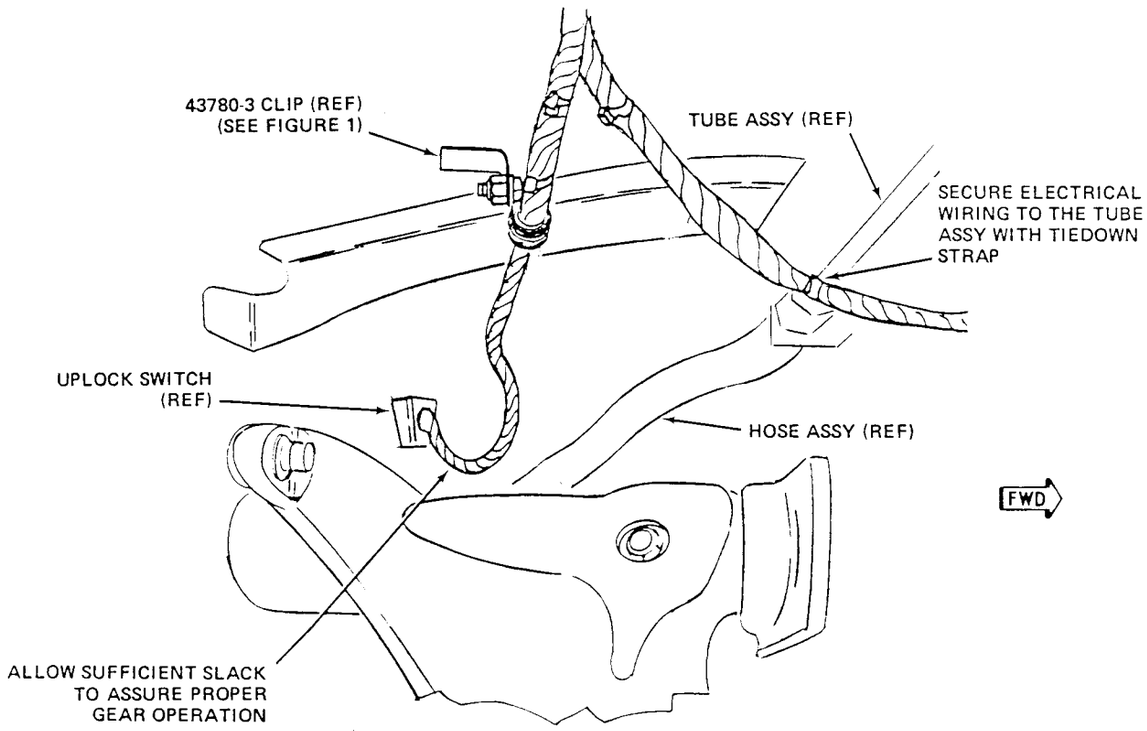


Figure 3. (Sheet 1 of 2)

NOTE

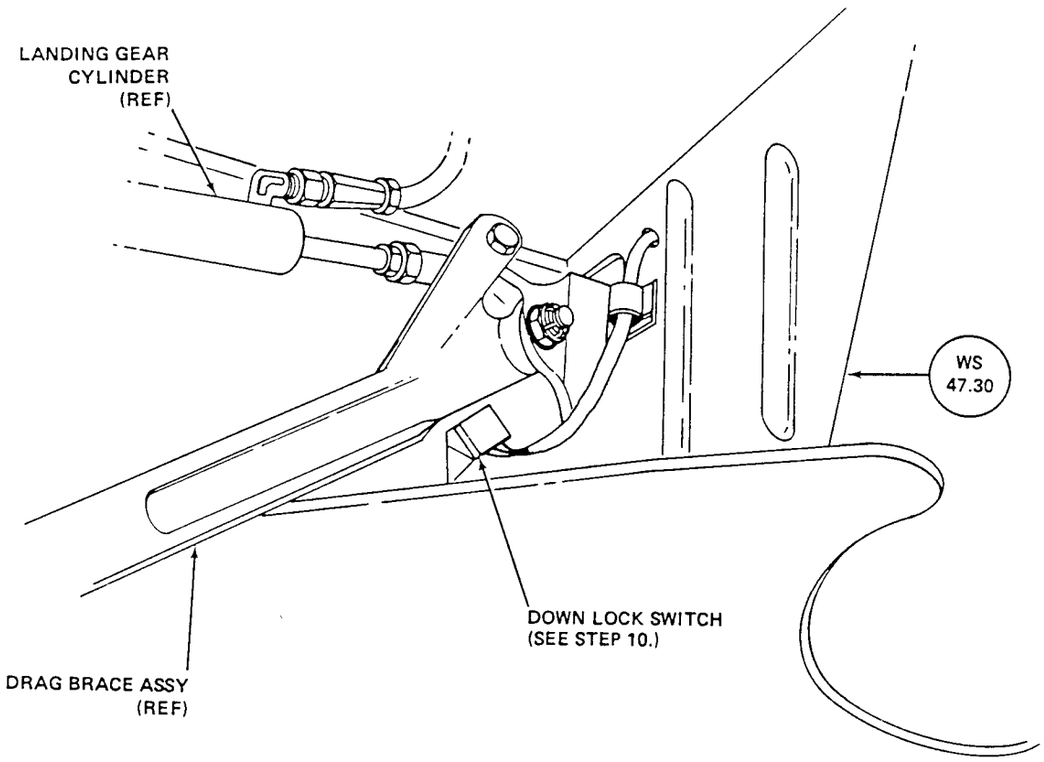
WRAP ELECTRICAL CABLES WITH 500004-2 SPIRAL WRAP AND SECURE WITH MS3367 TIEDOWN STRAPS. TIEDOWN STRAPS TO BE SPACED APPROXIMATELY SIX (6) INCHES APART.



VIEW LOOKING OUTBD
AT LEFT GEAR

Figure 3. (Sheet 2 of 2)

RIGHT INSTALLATION SHOWN
LEFT INSTALLATION OPPOSITE



VIEW LOOKING UP AND AFT
AT RIGHT WHEEL WELL

Figure 4.

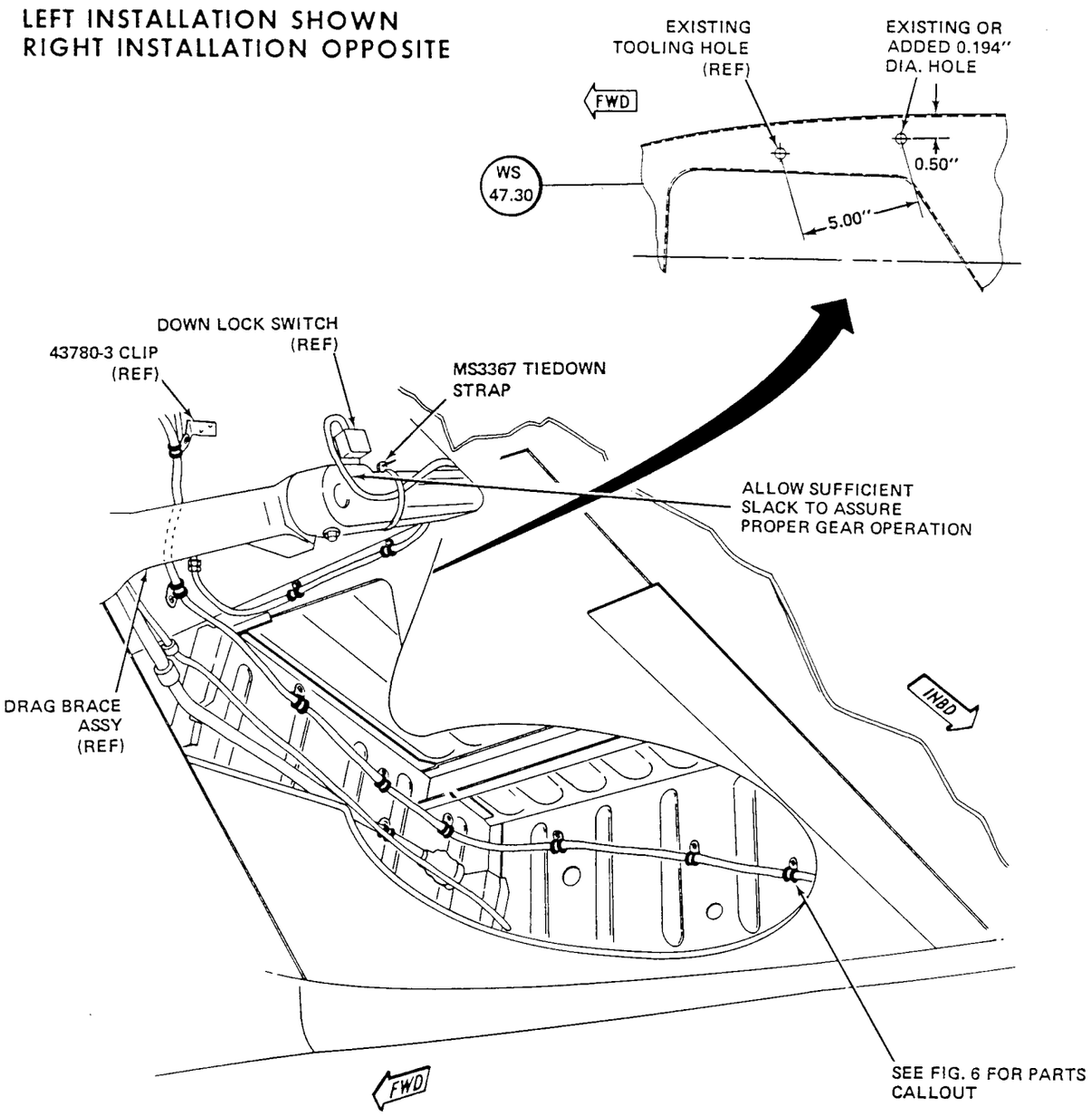
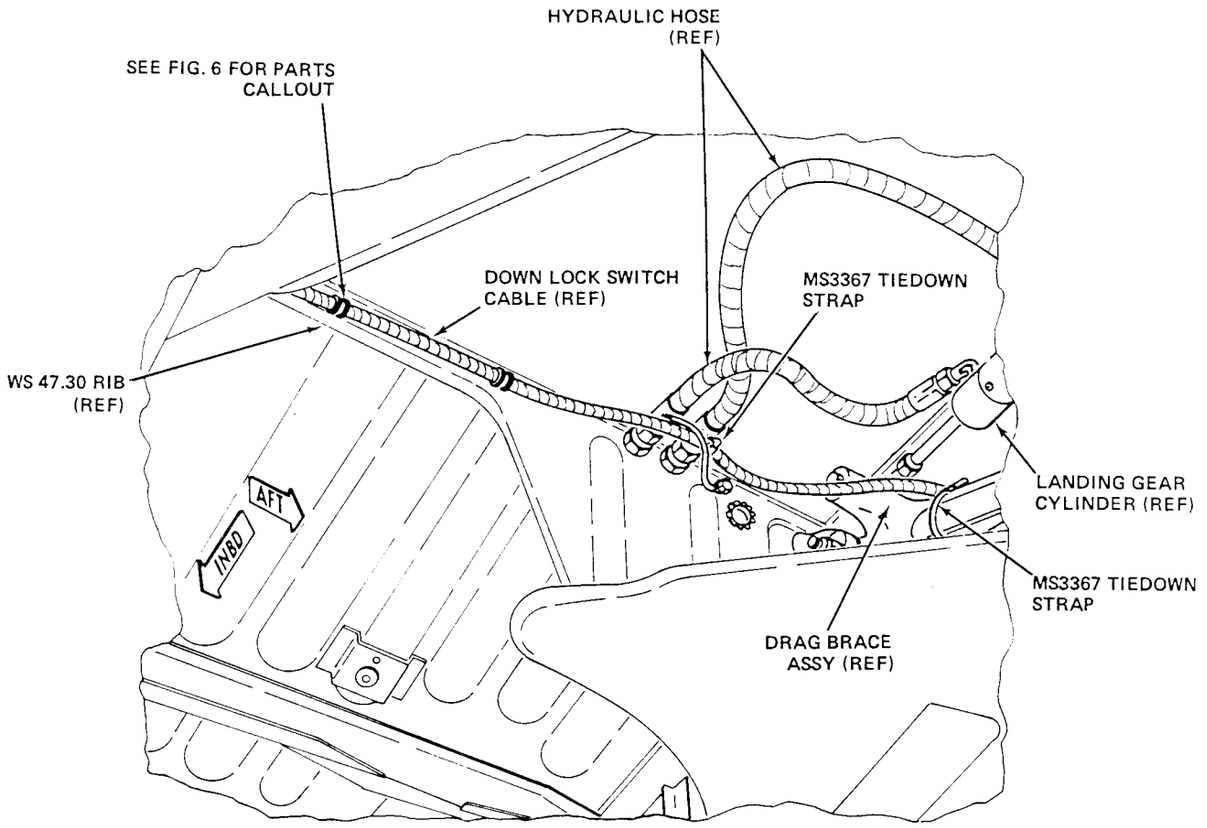


Figure 5. (Sheet 1 of 2)



VIEW LOOKING UP
AT LEFT WHEEL WELL

Figure 5. (Sheet 2 of 2)

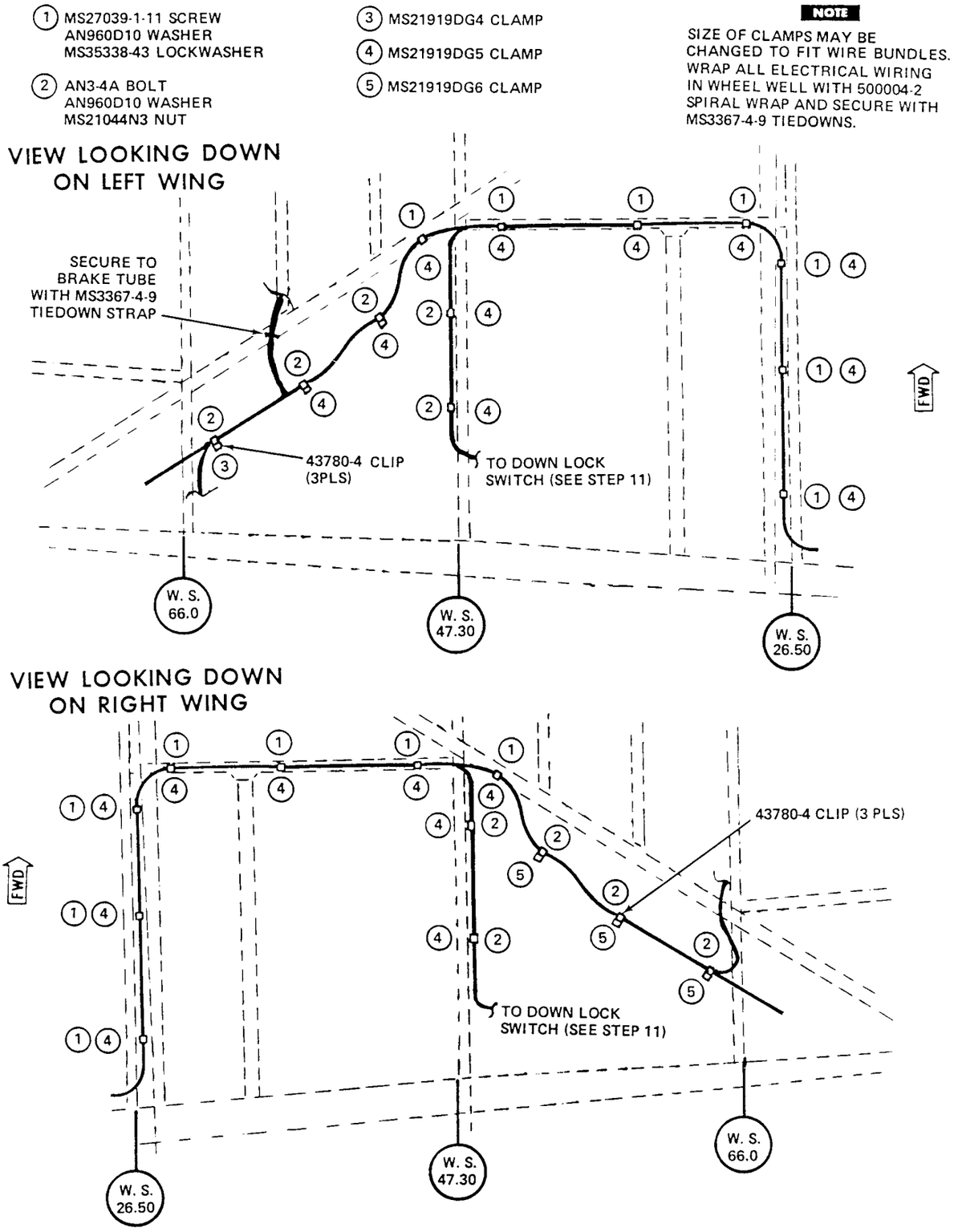


Figure 6

12. Assure that electrical cables in main landing gear wheel well are cleaned prior to wrapping with spiral wrap.

13. Wrap electrical cables with 500004-2 spiral wrap and secure cables using MS21919DG clamps and MS3367 tiedown straps. Tiedown straps should be spaced approximately six (6) inches apart (refer to Figure 6).

14. Jack airplane as outlined in Section II of the Airplane Maintenance Manual.

15. Retract and extend main landing gear to assure that no interference exists between electrical cables and landing gear.

16. Touchup paint as necessary.

17. Remove jacks from airplane.

18. Fill out and mail Compliance Card.

ELECTRICAL LOAD: NO CHANGE.

WEIGHT AND BALANCE: NO CHANGE.

SPARES AFFECTED: NO.

PUBLICATIONS AFFECTED: NONE.

RECORD COMPLIANCE: Make an appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-18, dated 26 July 1982, entitled "Wire Bundle Clamp Replacement", accomplished _____(date)_____.

Service Letter
Revision Notice

Commander®
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-19
REVISION NO. 1
Release Date January 10, 1994

FUEL TOTALIZER TRANSDUCER INSTALLATION IMPROVEMENT

Change all reference of an MS33656-6 Nipple to an LW16562 Nipple.

Service Letter

Commander®
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-19
Date December 23, 1993

FUEL TOTALIZER TRANSDUCER INSTALLATION IMPROVEMENT

MODELS AFFECTED: Model 114B, Serial Numbers 14541 thru 14572 with optional Fuel Totalizer Installation, and Serial Numbers 14573 thru 14606.

REASON FOR PUBLICATION: To prevent possible low indicated fuel pressure readings, reduce vibration, and improve transducer functional life.

COMPLIANCE: Commander Aircraft Co. recommends this modification be made to improve the accuracy and service life of the fuel flow/totalizer indicating systems. Commander Aircraft Co. will reimburse for parts and labor for a period of 180 days from the release date of this service letter.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P Mechanic or equivalent

APPROVAL: Engineering design aspects are FAA approved.

ESTIMATED MAN HOURS: Part I - 1.25 Hours
Part II - 1.75 Hours

PARTS DATA: Parts required to comply with this Service Letter may be obtained as a kit through Commander Aircraft Co. These kits will be supplied free of charge by Commander Aircraft Co. for a period of 180 days from the release date of this service letter. Reference this Service Letter, Aircraft model and serial number when ordering Service Letter SL-114-19 kit consisting of the following:

KIT NO.	AIRPLANE EFFECTIVITY
-1	SERIAL NUMBER 14541 thru 14580
-2	SERIAL NUMBER 14581 thru 14606

Kit -1 QTY	Kit -2 QTY	PART NUMBER	DESCRIPTION
1 ea	1 ea	46099-339	Fuel Tube Assembly
1 ea	1 ea	46099-337	Fuel Tube Assembly
1 ea	1 ea	MS33656-6	Nipple
1 ea	-----	615049-73	Fuel Hose Assembly
1 ea	-----	AN815-6	Union
1 ea	1 ea	Service Letter SL-114-19	Instructions

SPECIAL TOOLS REQUIRED: None

ACCOMPLISHMENT INSTRUCTIONS:

PART I: Removing the existing Fuel Flow Transducer Installation

1. Remove upper cowling per Commander 114B Maintenance Manual, Section 4.

Serial Number 14541 thru 14580

NOTE

The Fuel Flow Transducer is located between the outlet side of the **Electric** Fuel Pump and the inlet side of the **Engine Driven** Fuel Pump.

2. Disconnect the Fuel Flow Transducer plug from the wiring bundle.
3. Separate the Fuel Flow Transducer from the existing Fuel Hose Assemblies leaving the two AN816-6 fittings attached to the Fuel Flow Transducer.
4. Disconnect the existing Fuel Hose Assembly from the outlet side of the **Electric** Fuel Pump (See Figure 1).
5. Attach one end of the 615049-73 Fuel Hose Assembly to the outlet side of the **Electric** Fuel Pump. Use the supplied AN815-6 Union to join the other end of the 615049-73 Fuel Hose Assembly and the free end of the existing hose assembly that is attached to the inlet side of the **Engine Driven** Fuel Pump. Torque all fittings between 100 in.lbs and 200 in.lbs.
6. Detach the existing Tube Assembly from the existing 90° Elbow attached to the outlet side of the **Engine Driven** Fuel Pump then detach the Tube Assembly from the existing LW16562 Nipple attached to the inlet side of the Fuel Servo (See Figure 1). The LW16562 Nipple remains attached to the Fuel Servo. Remove the 90° Elbow from the outlet side of the **Engine Driven** Fuel Pump.
7. Proceed to Part II.

Serial Number 14581 thru 14606

NOTE

The Fuel Flow Transducer is located between the outlet side of the **Engine Driven** Fuel Pump and the inlet side of the Fuel Servo.

2. Disconnect the Fuel Flow Transducer plug from the wiring bundle.
4. Remove the two existing clamps and their attaching hardware that attach the Fuel Flow Transducer to the Engine Mount.
3. Detach the existing Fuel Hose Assembly from the 90° Elbow attached to the outlet side of the **Engine Driven** Fuel Pump (See Figure 2).
4. Detach the existing tube assembly that is attached to the existing LW16562 Nipple. Leave the LW16562 Nipple attached to the inlet side of the Fuel Servo. (See Figure 2).
5. Remove the existing 90° Fitting from the outlet side of the **Engine Driven** Fuel Pump.

6. Separate the Fuel Flow Transducer from the previously removed Fuel Hose Assemblies leaving the two AN816-6 fittings attached to the Fuel Flow Transducer.
7. Proceed to Part II.

PART II: Installing the new Fuel Flow Transducer Installation

SERIAL NUMBER 14541 thru 14606

NOTE

DO NOT use teflon tape in this installation.
Torque all fittings between 100 in.lbs and 200 in.lbs.

1. Attach the MS33656-6 Nipple to the outlet side of the **Engine Driven** Fuel Pump.
2. Attach the short end of the 46099-339 Tube Assembly to the inlet side of the Fuel Flow Transducer (See Figure 3).
3. Attach one end of the 46099-337 Tube Assembly to the outlet side of the Fuel Flow Transducer (See Figure 3).
4. Attach the long end of the 46099-339 Tube Assembly to the MS33656-6 Nipple attached to the outlet side of the **Engine Driven** Fuel Pump (See Figure 3).
5. Attach the other end of the 46099-337 Tube Assembly to the existing LW16562 Nipple attached to the inlet side of the Fuel Servo (See Figure 3).

NOTE

The Fuel Flow Transducer must be installed so that the wires are pointing straight up and the flat top of the transducer is parallel to the aircraft longitudinal axis.

6. Reroute the Fuel Flow Transducer portion of the wiring bundle maintaining a minimum .50 inch separation between the wires and any fuel lines and secure with tywraps. Reconnect the Fuel Flow Transducer plug to the wiring bundle.
7. Replace upper cowl per Commander 114B Maintenance Manual, Section 4.
8. Perform an engine operational check per Commander 114B Maintenance Manual, Section 2.

ELECTRICAL LOAD: No Change

WEIGHT AND BALANCE: No Change

PUBLICATIONS AFFECTED: None

RECORD COMPLIANCE: Make appropriate entry in the airplane maintenance records as follows:

Service Letter No. SL-114-19 dated December 23, 1993 entitled "Fuel Totalizer Transducer Installation Improvement", accomplished _____(date)_____. Fill out and return the Compliance Card to Commander Aircraft Co.

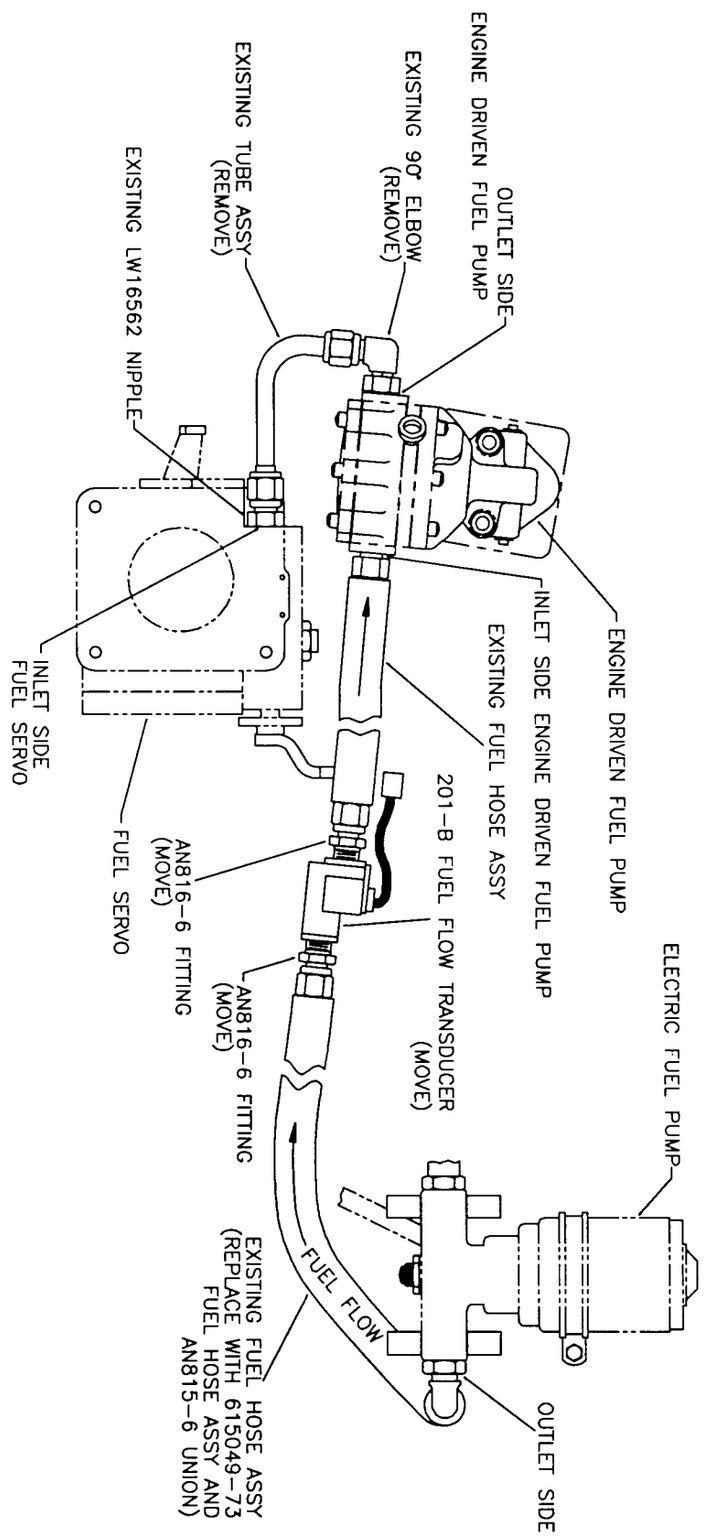


Figure 1
Fuel Flow Totalizer Transducer Installation S/N 14541 thru 14580 (Use Kit -1)

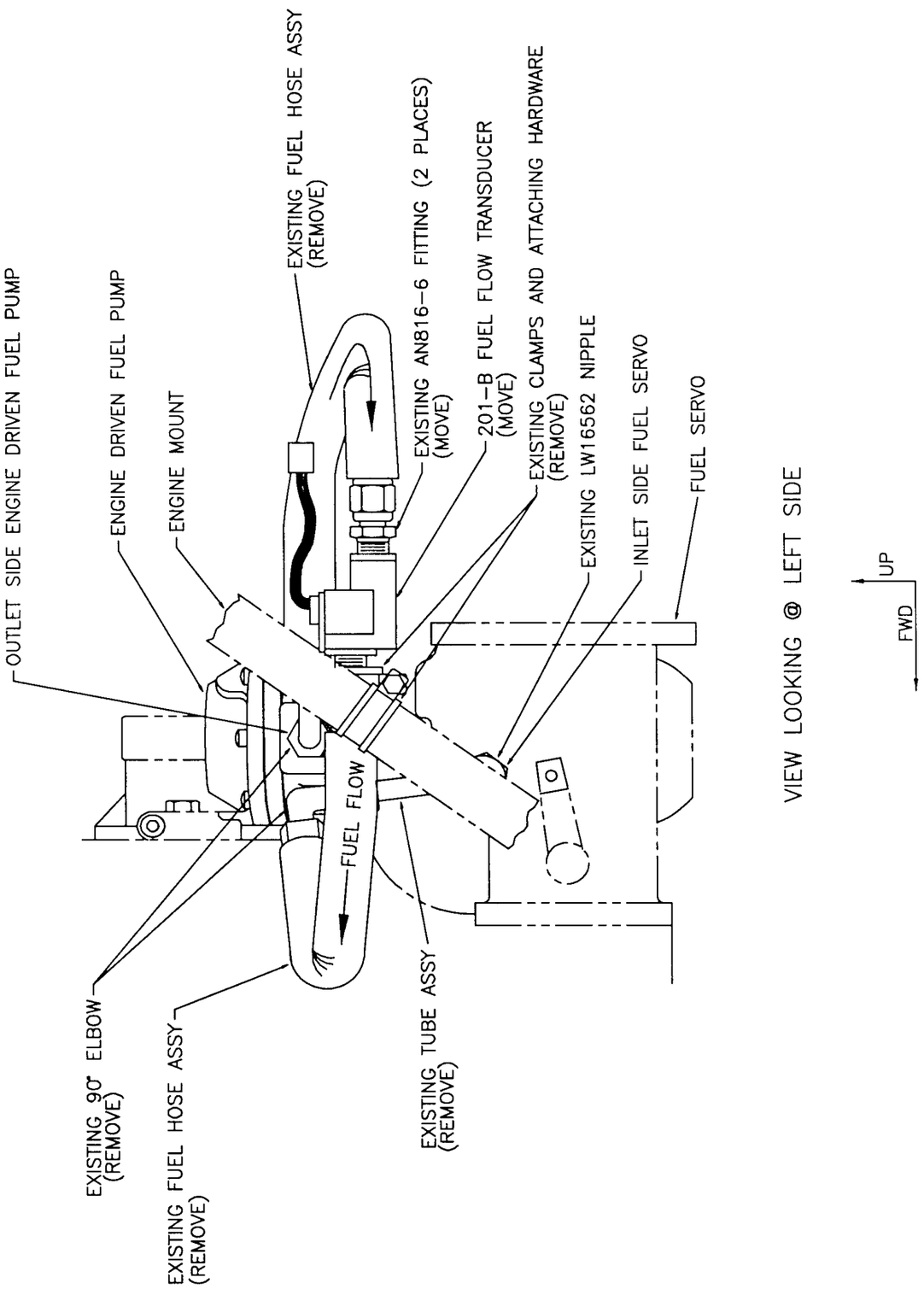


Figure 2
Fuel Flow Totalizer Transducer Installation S/N 14581 thru 14606 (Use Kit -2)

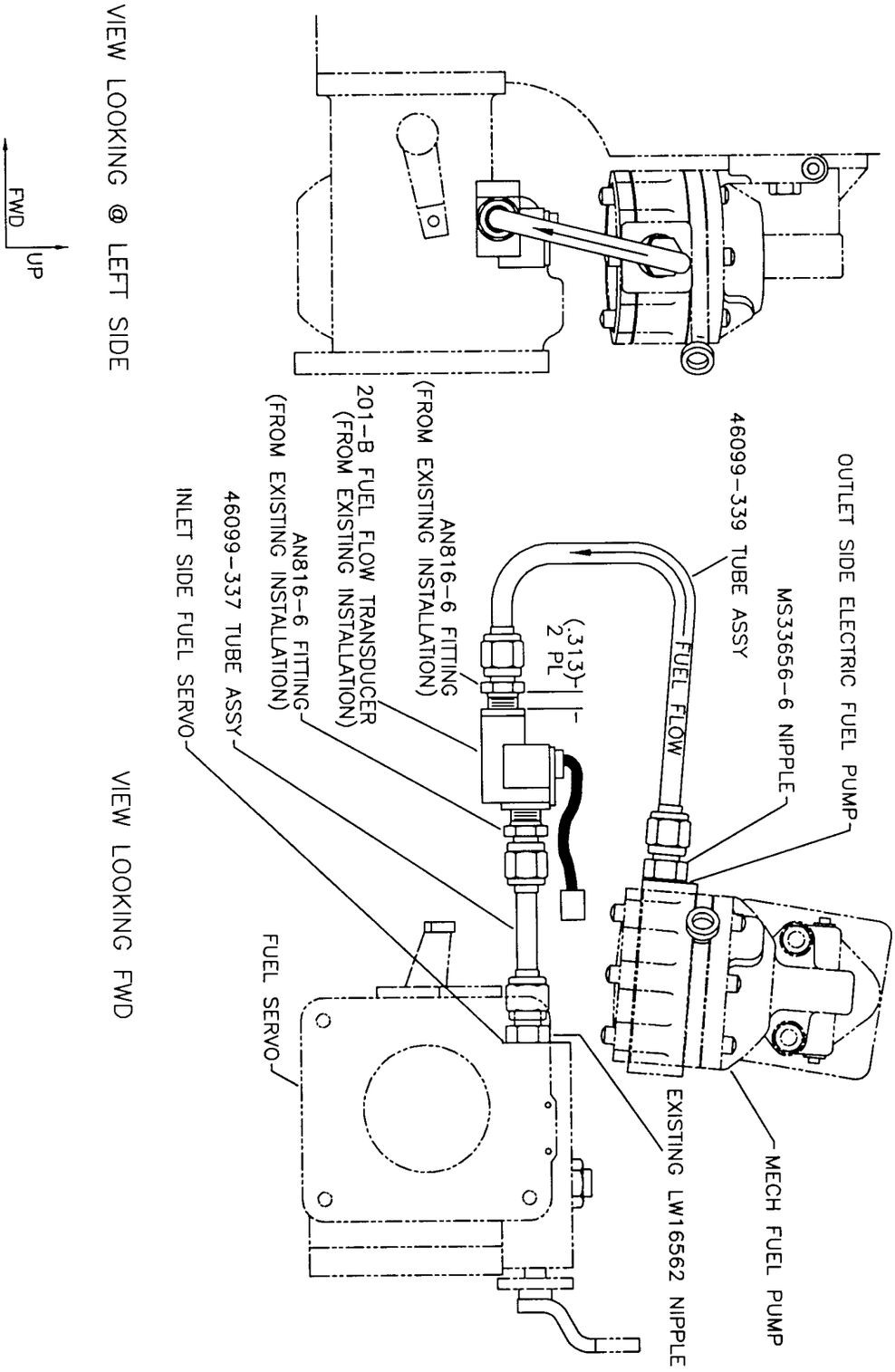


Figure 3
New Fuel Flow Totalizer Transducer Installation

Service Letter

Commander®
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-20
Date August 4, 1994

VACUUM/DRY AIR PUMPS - LOW SERVICE LIFE

MODELS AFFECTED: Model 114B

REASON FOR PUBLICATION: To prevent low service life of vacuum/dry air pumps.

COMPLIANCE: Commander Aircraft Company strongly recommends that the procedures found in the accomplishment instructions section of this service letter be followed.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P Mechanic or equivalent or Aircraft Owner

APPROVAL: Engineering design aspects are FAA approved.

ESTIMATED MAN HOURS: N/A

PARTS DATA: N/A

SPECIAL TOOLS REQUIRED: None

ACCOMPLISHMENT INSTRUCTIONS:

Operational experience has shown that a low service life is being obtained for the lower of the two engine driven dry air pumps by certain operators. This pump is mounted on the engine accessory drive housing and oil contamination of the air pump, particularly through its drive coupling, is possible when changing the oil filter on the Lycoming IO-540-T4B5 engine. Loosening the oil filter could result in a quantity of residual oil running down the accessory drive housing onto the air pump mounting flange. Additional oil may also spill out of the filter when it is tilted for removal from its location above the air pump. Oil in the vicinity of the air pump drive couplings can result in oil saturating the pump drive shaft bearings and ultimate ingestion into the pump. There is no physical seal between the coupling shaft and the air pump. The air bleed seal is only effective when the pump is operating. Contamination of the carbon parts of the dry air pump, by oil or any other liquid, should be avoided as it will cause excessive heat, high wear, and/or sticking vanes, all of which will reduce the service life of the pump.

To prevent this from happening:

1. At all times when work is being carried out on the aircraft engine, whether it is installed on the aircraft or on a servicing stand, care must be taken to avoid contamination by oil or other liquids in the areas of the accessory drive housing where the air pumps are mounted.

2. Protection can be assured by fitting a suitable temporary protective covering around the air pump drive coupling areas between the pump mounting flanges and the pump housings. The protective

covering must provide a positive seal against ingress of oil, solvents, or other liquids.

3. These recommendations should be observed when washing or cleaning the engines with oils or detergents, or carrying out any other servicing that requires the use of liquids.

4. Ensure all protective coverings are removed and the area is left clean after the work has been completed and before returning the aircraft to service.

ELECTRICAL LOAD: No Change

WEIGHT AND BALANCE: No Change

SPARES AFFECTED: No Change

PUBLICATIONS AFFECTED: The Commander 114B Maintenance Manual will be amended as necessary by normal revision action at a future date.

COMPLIANCE SECTION: Make an appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-20, dated August 4, 1994, entitled "Vacuum/Dry Air Pumps - Low Service Life", accomplished ___date____. Retain this Service Letter with the airplane maintenance records.

Service Letter

Commander®
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd St.
Bethany, OK 73008

SERVICE LETTER NO. SL-114-21
Date March 1, 1998

HARTZELL PROPELLER INC.
SERVICE LETTER HC-SL-61-179

MODELS AFFECTED: Models 114, S/N 14000 thru 14499

REASON FOR PUBLICATION: To provide information regarding propeller spinner bulkhead modifications on aircraft receiving new Hartzell propeller hubs.

COMPLIANCE: At owners descretion.

BY WHOM WORK WILL BE ACCOMPLISHED: See Hartzell Propeller Inc. Service Letter HC-SL-61-179

APPROVAL: Engineering design aspects for the aircraft listed above are FAA approved.

ESTIMATED MAN HOURS: See Hartzell Propeller Inc. Service Letter HC-SL-61-179

PARTS DATA: See Hartzell Propeller Inc. Service Letter HC-SL-61-179

SPECIAL TOOLS REQUIRED: None

ACCOMPLISHMENT INSTRUCTIONS:

It is acceptable to modify the Commander Aircraft Co. Aft Propeller Bulkhead Assy (P/N 46390-7) per the attached Hartzell Propeller Inc. Service Letter, HC-SL-61-179.

ELECTRICAL LOAD: No Change

WEIGHT AND BALANCE: No Change

SPARES AFFECTED: No Change

PUBLICATIONS AFFECTED: None

COMPLIANCE SECTION: Make an appropriate entry in airplane maintenance records as follows: Harzell Propeller Inc. Service Letter HC-SL-61-179, dated April 7, 1997, accomplished ___date___. Retain this Service Letter with the airplane maintenance records.

HARTZELL PROPELLER INC.

SERVICE LETTER

Propellers

Introduction of New Hub Design and Spinner Bulkhead Modification

1. Planning Information

   A. Effectivity

   Hartzell two bladed compact propellers series HC-( )2Y( )-( ), with the following hub part numbers:

D-1171	D-2201	D-2201R	D-2201-1	D-2201-2
D-2201-2R	D-2201-3	D-2201-4	D-2201-4R	D-2201-5
D-2201-6	D-2201-6R	D-2201-7	D-2201-8	D-2201-8R
D-2201-9	D-2201-10R	D-2201-11	D-2201-12	D-2201-13
D-2201-14	D-2201-15	D-2201-16	D-2201-16R	D-2201-17
D-2201-17R	D-2201-18	D-2201-19	D-2201-20	D-2201-21
D-2201-22	D-2201-23	D-2201-24	D-2201-25	D-2477
D-2477R	D-2477-1	D-2477-2	D-2477-2R	D-2477-3
D-2483	D-2483-1	D-2484	D-2484-1	D-2484-2
D-2484-3	C-3230	C-3230-1	C-3230-3	D-3230-4
D-3230-5	D-3230-6	D-4214	D-4214-1	D-4214-2
D-4214-3	D-4214-3R	D-4214-4	D-4214-4R	D-4214-5
D-4214-5R	D-4214-6	D-4214-6R	D-4214-7	D-4278

   Hartzell manufactured spinner assemblies with the following part numbers:

836-52	836-60	835-23	835-24	835-42
835-44	835-50L	A-2295	A-2297	A-2298-2
A-2298-3P	A-3284-1	A-4203	A-3293	C-2285-2
C-2285-2L	C-2285-2LP	C-2285-2P	C-2285-3	C-2285-3L
C-2285-3P	C-2285-5	C-2285-6	C-5413P	C-3245
C-3245-1	C-3533	C-3533-1	C-3568	C-4565
D-4826LP	D-4826P	D-4532-2	D-4810	D-4832L
D-5257	D-5749	D-5749L	D-5749-1	D-5749-1L

   B. Reason

   Hartzell Propeller has begun production of an improved two bladed compact propeller hub. The new style hub will incorporate a modification designed to improve the reliability of the fillet area of the hub. New style hubs have considerable material added to the forging in the blade retention area. Begining in April 1997, old style hubs will no longer be manufactured.

   This change necessitates modification of spinner bulkheads to provide clearance when replacing an old style hub with a new style hub. Previously manufactured bulkheads for the spinner assemblies listed in the effectivity will need to be modified to properly fit the new style compact hub. Bulkhead modifications are only necessary when installing a new style hub.

HARTZELL PROPELLER INC.

SERVICE LETTER

Propellers

Introduction of New Hub Design and Spinner Bulkhead Modification

C. Description

This Service Letter introduces an improved two way compact propeller hub.

This Service Letter provides instructions for spinner bulkhead modification to accommodate the new style propeller hub.

D. Approval

FAA approval has been obtained on technical data in this publication that affects type design.

E. Manpower

Spinner Bulkhead Modification 3.0 man-hours

F. Weight and Balance

Incorporation of this Service Letter will add approximately 0.5 lbs (0.23 kg) to the weight of each propeller.

G. References

Hartzell Manual 113( ), Compact Constant Speed Propeller
Hartzell Manual 115( ), Propeller Owner's Manual & Log Book
Hartzell Manual 117( ), Compact Constant Speed Feathering Propeller
Hartzell Manual 202( ), Standard Practices

H. Other Publications Affected

Hartzell Manual 113( ), Compact Constant Speed Propeller
Hartzell Manual 115( ), Propeller Owner's Manual & Log Book
Hartzell Manual 117( ), Compact Constant Speed Feathering Propeller
Hartzell Manual 127( ), Spinner Manual

Propellers

Introduction of New Hub Design and Spinner Bulkhead Modification

2. Material Information

A. Material Introduced for New Style Propeller Hubs.

NOTE: New style hubs are identifiable by the suffix letter "B" at the end of the hub serial number and the propeller serial number. They also visibly different from previous hubs due to material added to the forging in the blade retention area.

Hub Replacement		Hub Replacement	
D-1171	Replaced by D-6561-2	D-2201-24	Replaced by D-6530-10
D-2201	Replaced by D-6530-1	D-2201-25	Replaced by D-6530-11
D-2201R	Replaced by D-6530-1R	D-2477R	Replaced by D-6565-1R
D-2201-1	Replaced by D-6531-1	D-2477-1	Replaced by D-6564-1
D-2201-2	Replaced by D-6522-1	D-2477-2	Replaced by D-6565-1
D-2201-2R	Replaced by D-6522-1R	D-2477-2R	Replaced by D-6565-1R
D-2201-3	Replaced by D-6529-1	D-2477-3	Replaced by D-6564-1
D-2201-4	Replaced by D-6530-2	D-2483	Replaced by D-6563-1
D-2201-4R	Replaced by D-6530-2R	D-2483-1	Replaced by D-6562-1
D-2201-5	Replaced by D-6531-2	D-2484	Replaced by D-6553-1
D-2201-6	Replaced by D-6522-2	D-2484-1	Replaced by D-6553-2
D-2201-6R	Replaced by D-6522-2R	D-2484-2	Replaced by D-6552-2
D-2201-7	Replaced by D-6529-2	D-2484-3	Replaced by D-6552-1
D-2201-8	Replaced by D-6530-3	C-3230	Replaced by D-6560-1
D-2201-8R	Replaced by D-6530-3R	C-3230-1	Replaced by D-6560-2
D-2201-9	Replaced by D-6531-3	C-3230-3	Replaced by D-6559-1
D-2201-10R	Replaced by D-6530-4R	C-3230-4	Replaced by D-6559-2
D-2201-11	Replaced by D-6531-4	C-3230-5	Replaced by D-6559-3
D-2201-12	Replaced by D-6522-3	C-3230-6	Replaced by D-6560-3
D-2201-13	Replaced by D-6529-4	D-4214	Replaced by D-6557-2
D-2201-14	Replaced by D-6522-4	D-4214-1	Replaced by D-6554-2
D-2201-15	Replaced by D-6529-3	D-4214-2	Replaced by D-6554-1
D-2201-16	Replaced by D-6522-1	D-4214-3	Replaced by D-6555-1
D-2201-16R	Replaced by D-6522-1R	D-4214-3R	Replaced by D-6555-1R
D-2201-17	Replaced by D-6529-1	D-4214-4	Replaced by D-6555-2
D-2201-17R	Replaced by D-6529-1R	D-4214-4R	Replaced by D-6555-2R
D-2201-18	Replaced by D-6530-5	D-4214-5	Replaced by D-6558-2
D-2201-19	Replaced by D-6531-5	D-4214-5R	Replaced by D-6558-2R
D-2201-20	Replaced by D-6530-6	D-4214-6	Replaced by D-6558-1
D-2201-21	Replaced by D-6530-7	D-4214-6R	Replaced by D-6558-1R
D-2201-22	Replaced by D-6530-8	D-4214-7	Replaced by D-6557-1
D-2201-23	Replaced by D-6530-9	D-4278	Replaced by D-6561-1

2. A. (Continued)

Bulkhead Replacement			Bulkhead Replacement		
C-2283	Replaced by	C-2283-7	C-2472-1	Replaced by	C-2472-4
C-2283-1	Replaced by	C-2283-8	C-2472-2	Replaced by	C-2472-5
C-2283-2	Replaced by	C-2283-9	C-3228	Replaced by	C-3228-1
C-2283-3	Replaced by	C-2283-10	C-3283-1	Replaced by	C-3283-4
C-2283-4	Replaced by	C-2283-11	C-3283-2	Replaced by	C-3283-5
C-2283-5	Replaced by	C-2283-12	C-3295	Replaced by	C-3295-1
C-2283-6	Replaced by	C-2283-13	C-3534	Replaced by	C-3534-2
C-2294	Replaced by	C-2294-5	C-3534-1	Replaced by	C-3534-3
C-2294-2	Replaced by	C-2294-7	C-3569	Replaced by	C-3569-1
C-2294-3	Replaced by	C-2294-8	C-4567	Replaced by	C-4567-1
C-2299	Replaced by	C-2299-3	D-4534	Replaced by	D-4534-1
C-2299-1	Replaced by	C-2299-4	D-4812	Replaced by	D-4812-1
C-2299-2	Replaced by	C-2299-5	D-4825	Replaced by	D-4825-1
C-2469	Replaced by	C-2469-2	D-4834L	Replaced by	D-4834-1L
C-2469-1	Replaced by	C-2469-3	D-5258	Replaced by	D-5258-1
C-2469-1L	Replaced by	C-2469-3L	D-5751	Replaced by	D-5751-2
C-2472	Replaced by	C-2472-3	D-5751-1L	Replaced by	D-5751-3L

NOTE: Newly purchased spinner assemblies will include a modified bulkhead for use with a new style or old style propeller hub.

3. Accomplishment Instructions

NOTE: Propeller hub changes may only be performed by a licensed propeller repair facility. Spinner Bulkhead modifications may be performed by a certificated mechanic.

A. Install new style propeller hub in accordance with the appropriate maintenance manual.

3. (Continued)

B. Installation of an old style spinner bulkhead on a new style hub will require bulkhead modification, except for spinner bulkheads mounted to starter ring gears, which are not affected by these instructions. Modification may be done in accordance with the procedures given below. A list of affected spinner bulkhead P/N's is given for each procedure. Operators with non-Hartzell spinners should consult the appropriate type certificate holder for modification instructions.

The procedures given in Procedure A are for spinner bulkheads that already have reinforcing brackets installed from the factory. The modification will remove material from the bulkhead and brackets to allow clearance for new style hubs.

The procedures given in Procedure B are for bulkheads which do not have reinforcing brackets installed at the factory. Brackets must be installed on these bulkheads before material is removed to provide additional structural support.

(1) Procedure A

All two bladed compact spinner bulkhead P/N's listed below:

C-2283-1	C-2283-2	C-2283-2P	C-2283-4	C-2283-5	C-2283-6
C-2294	C-2294-2	C-2294-3P	C-2299-1	C-2299-2P	C-2469
C-2469-1	C-2469-1L	C-2472-1	C-2472-2	C-3228	C-3283-1
C-3283-2	C-3295	C-3534	C-3534-1	C-3569	C-4567
D-4534	D-4812	D-4825	D-5258	D-5751	D-5751-1
D-5751-1L					

NOTE: For best results, remove material using a milling machine.

(a) Remove material from bulkhead to provide clearance for new style hub.

Make cutouts in accordance with the dimensions given in figure 1.

1 Fabricate a template to match the broken lines in figure 2.

CAUTION: CHECK DIMENSIONS OF TEMPLATE BEFORE CUTTING BULKHEAD.

2 Align holes in template over the mounting holes on the bulkhead. Use hub bolts or a suitable alternate to hold the template in place on the bulkhead.

3. B. 1. a. (Continued)

3 Mark the areas to be removed.

4 Remove material using a mill, nibbler, grinder, or other appropriate tooling.

5 Remove all burrs and rough edges.

6 Inspect cutout for proper dimensions. Bulkhead must be retired from service if dimensions are exceeded.

7 Apply zinc-chromate primer to exposed edge of steel reinforcing brackets.

8 Vibra etch a "B" after the serial number on the bulkhead.

9 Install spinner bulkhead to propeller hub.

(2) Procedure B

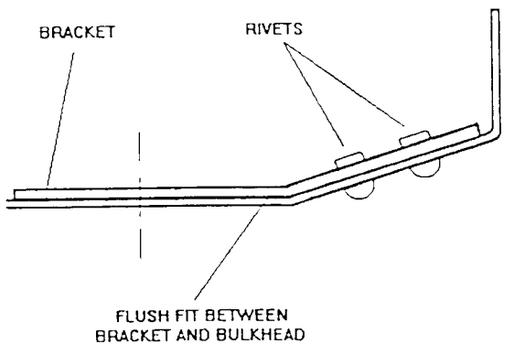
Two way compact spinner bulkhead P/N's listed below:

C-2472

NOTE: Bulkhead reinforcing bracket P/N A-3263-3 (qty 4 per bulkhead) required to accomplish this procedure.

(a) Install reinforcing brackets on bulkhead.

NOTE: It is critical that reinforcing brackets be installed flush with the contour of the bulkhead. It may be necessary to bend brackets slightly for proper fit. (See figure below)



3. B. 2. a. (Continued)

1 Ream hub bolt mounting hole in bracket to 0.404 - 0.413 inches (10.26 - 10.49 mm).

2 Ream bracket rivet holes (4 per bracket) using a #30 twist drill. Deburr all holes.

NOTE: Cured structural adhesive may prevent bracket from laying flush on the bulkhead. Remove excess adhesive using 120 grit sandpaper.

3 Place a reinforcing bracket on engine side of spinner bulkhead. Align mounting holes and clamp the bracket in place, ensuring that bracket is flush with the bulkhead surface.

4 Using a #30 twist drill, drill rivet holes (4 per bracket) through the bulkhead, using the rivet holes in the bracket as a template. Deburr all holes.

NOTE: Relocate, or record in the log book any bulkhead part number that may be covered by a reinforcing bracket.

5 Install bracket using AN 470 AD 4-7(MS20470AD4-7) rivets. Rivet in accordance with aircraft standard practices.

6 Complete steps 1 - 4 for remaining brackets.

NOTE: Installation of bulkhead reinforcing brackets will not require a longer hub mounting bolt.

(b) Comply with the steps outlined in Procedure A.

For Hartzell service literature and revisions, contact:

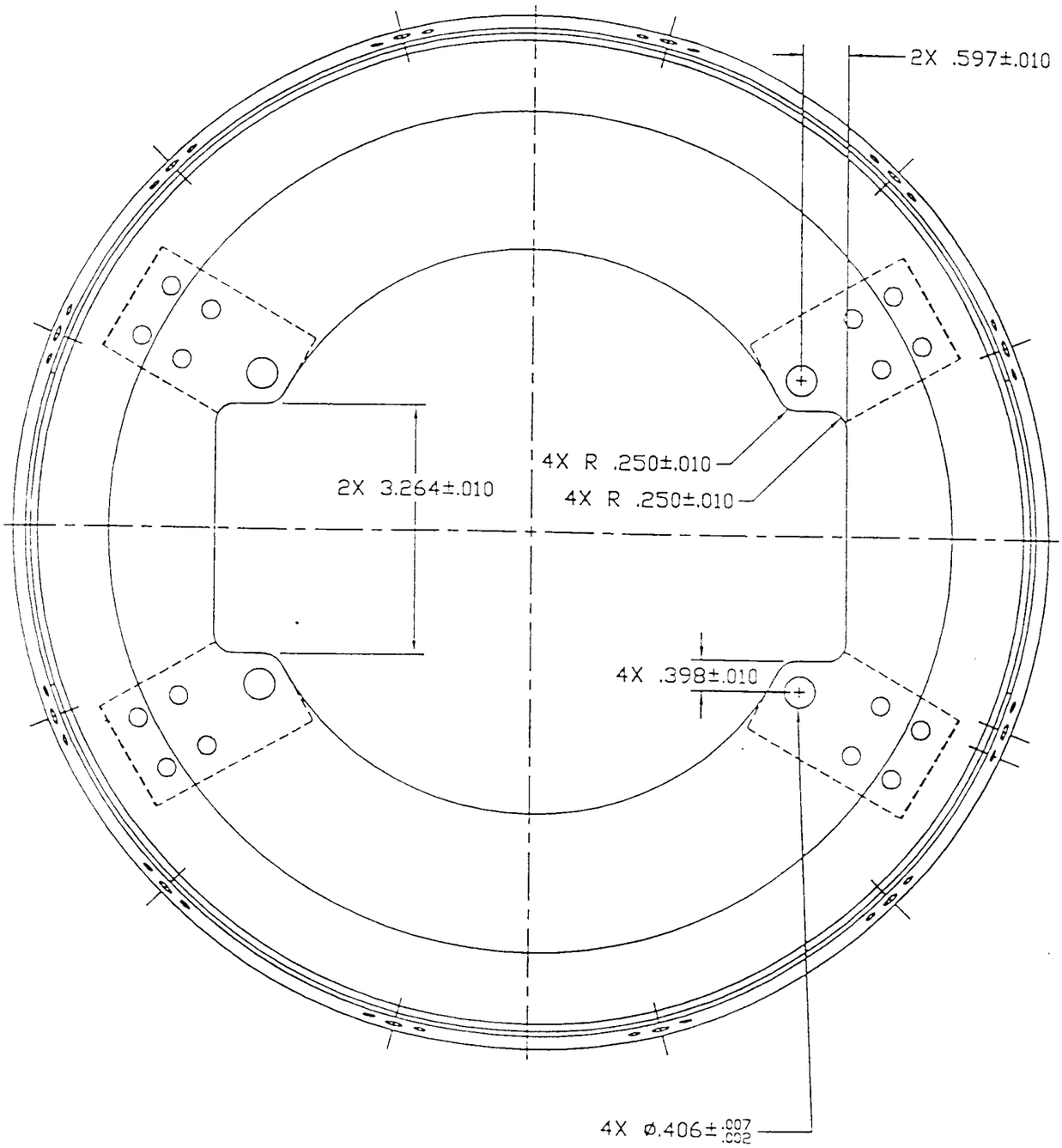
Hartzell Propeller Inc.
Product Support Department
One Propeller Place
Piqua, Ohio 45356 U.S.A

Telephone: 937.778.4200
Fax: 937.778.4321

SERVICE LETTER

Propellers
Introduction of New Hub Design and Spinner Bulkhead Modification

Figure 1

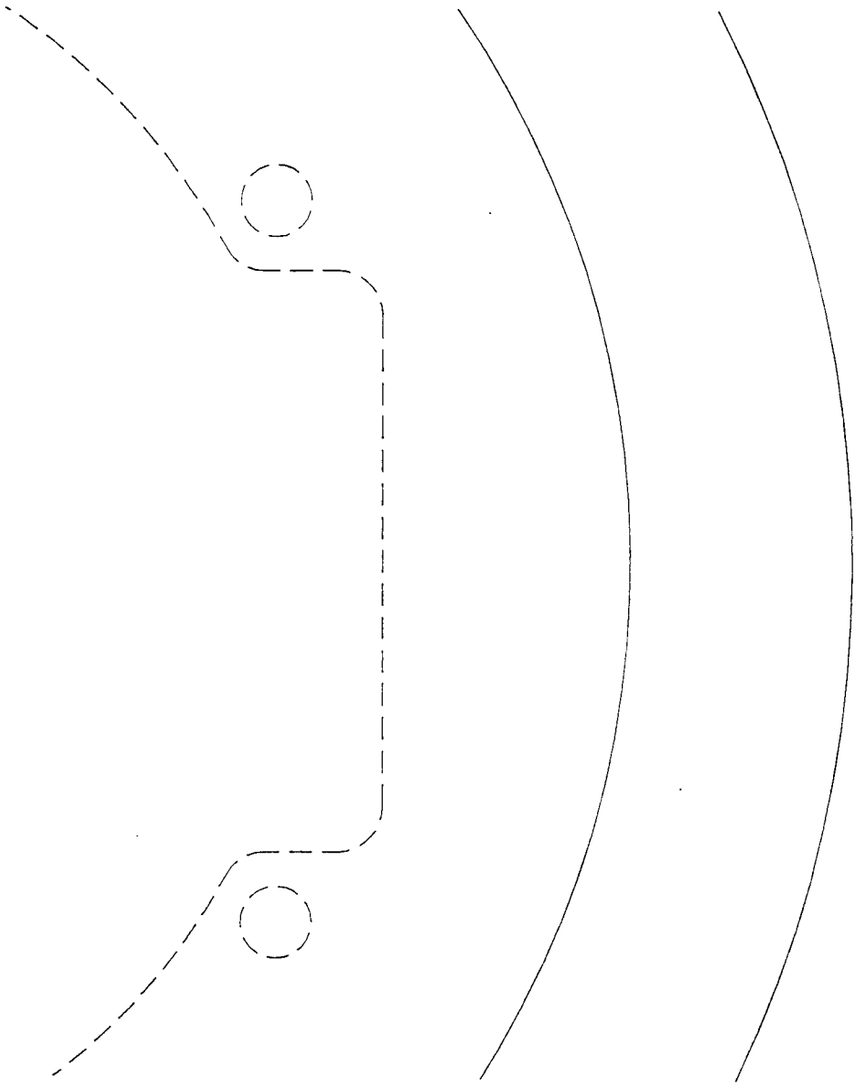


SERVICE LETTER

Propellers

Introduction of New Hub Design and
Spinner Bulkhead Modification

Figure 2



Service Letter

Commander®
AIRCRAFT COMPANY
Wiley Post Airport
7200 N.W. 63rd
Bethany, OK 73008

SERVICE LETTER NO. SL-114-23
Date July 31, 2001

INSPECTION OF CONTROL CABLE TERMINALS

MODELS AFFECTED: Models 114 and 114A

REASON FOR PUBLICATION: To inform operators of the possibility of primary flight control cable terminals cracking, initiated by surface corrosion, on cables that have 15 years time in service.

COMPLIANCE: Commander Aircraft Company strongly recommends that the procedures found in the Accomplishment Instructions section of this service letter be followed within the next 100 hours time in service or at the next annual inspection, whichever occurs first, and at every annual inspection thereafter on any primary flight control cable that has 15 years time in service or longer.

If a primary flight control cable is replaced, the inspection procedure described in Part I of the Accomplishment Instructions of this Service Letter is not required on that cable until it has 15 years time in service.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P Mechanic or equivalent

APPROVAL: Engineering design aspects are FAA approved.

ESTIMATED MAN HOURS: Part I - 4 hours
Part II - 3 hours for each cable

PARTS DATA: Replacement cables for Part II can be purchased from Commander Aircraft Company.

SPECIAL TOOLS REQUIRED: 10X Magnifier

ACCOMPLISHMENT INSTRUCTIONS:

Part I - Inspect all MS21260 Terminals installed on primary flight control cables for corrosion or cracking

1. Remove safety wire or lockpin clips prior to inspection.
2. Using a 10X magnifier, visually inspect the shaft area of the threaded end of the terminal, close to the wrench flats and the swaged end of the terminal for evidence of stress corrosion pits or cracking.
3. If no evidence of stress corrosion pits or cracking is found, verify cable tension is correct and safety the terminal/turnbuckle barrel per the appropriate maintenance manual. Proceed to the Compliance Section of this Service Letter.
4. If evidence of stress corrosion pits or cracking is found, Proceed to Part II of the Accomplishment Instructions of this Service Letter.

ACCOMPLISHMENT INSTRUCTIONS (con't):

Part II - Replacement of cable assembly

1. Remove and replace, per the appropriate maintenance manual, any cable assembly found to have evidence of stress corrosion pits or cracking.
2. Once a cable assembly has been replaced, the inspection procedure described in Part I of this Service Letter is not required on that cable until it has 15 years time in service.
3. Proceed to the Compliance Section of this Service Letter.

ELECTRICAL LOAD: No Change

WEIGHT AND BALANCE: No Change

SPARES AFFECTED: No Change

PUBLICATIONS AFFECTED: The appropriate Maintenance Manuals will be amended as necessary by normal revision action at a future date.

COMPLIANCE SECTION: Make an appropriate entry in airplane maintenance records as follows: Service Letter No. SL-114-23, dated July 31, 2001, entitled "Inspection of Control Cable Terminals", accomplished ___date___. Retain this Service Letter with the airplane maintenance records.