

SERVICE PUBLICATIONS

revision notice



Commander Division
5001 North Rockwell Avenue,
Bethany, Oklahoma 73008

SERVICE LETTER NO. SL-112-46
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	Kit No. 2		
		QTY	QTY	PART NO.	DESCRIPTION
CHANGE:	WAS:	-	1 ea.	44285-1	Elevator Fitting
	NOW:	-	2 ea.	44285-1	Elevator Fitting

Service Letter



Rockwell International

General Aviation Division
5001 North Rockwell Avenue
Bethany, Oklahoma 73008

SERVICE LETTER NO. SL-112-46
14 November 1979

ELEVATOR AND RUDDER HINGE FITTING INSPECTION AND/OR REPLACEMENT

MODELS AFFECTED: MODELS 112 AND 112B, SERIAL NO'S 13000 AND 3 THRU 544 AND MODELS 112TC AND 112TCA, SERIAL NO'S 13001 THRU 13309.

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-112-46 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-112-46	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.

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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 play 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:

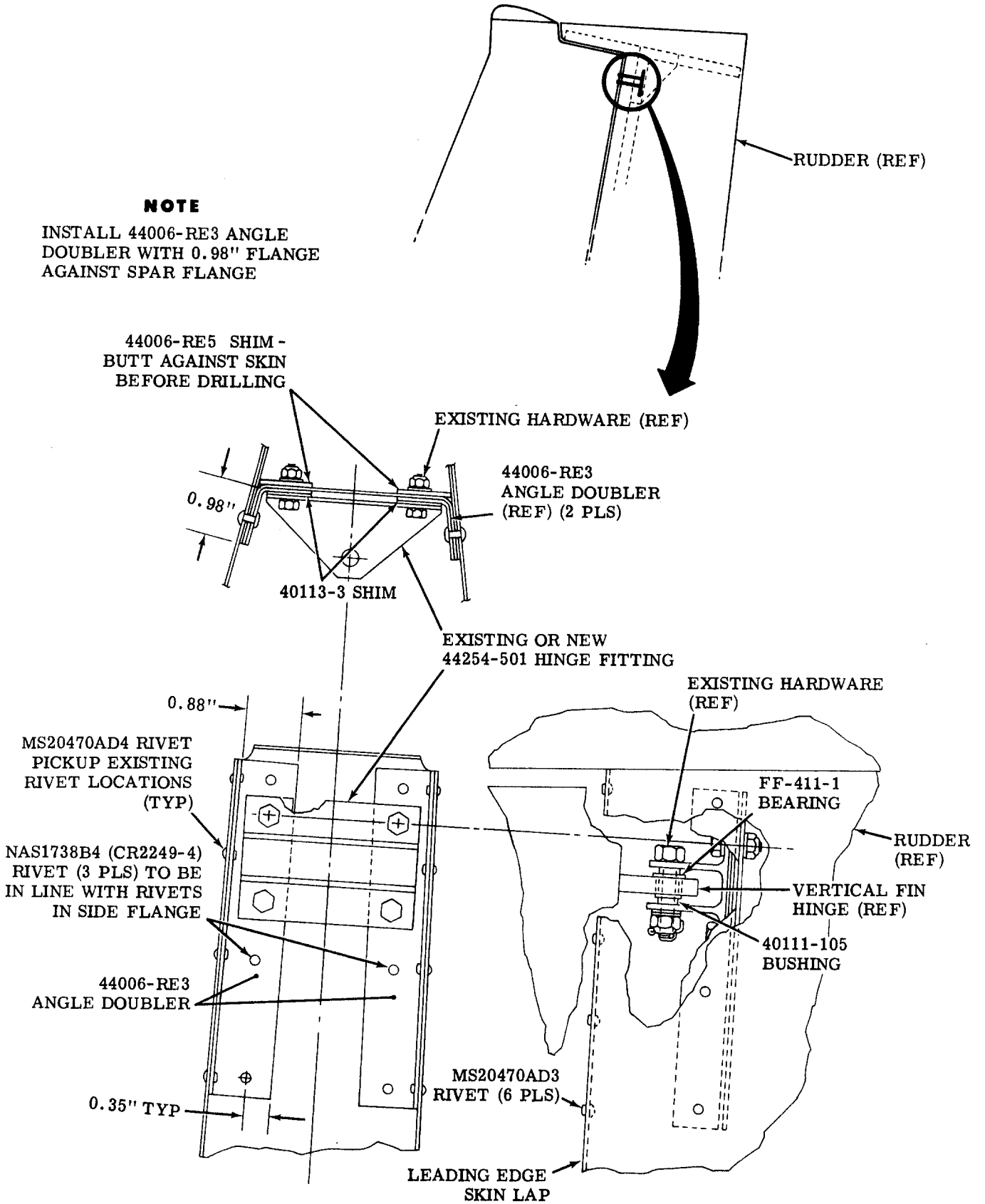


Figure 1.

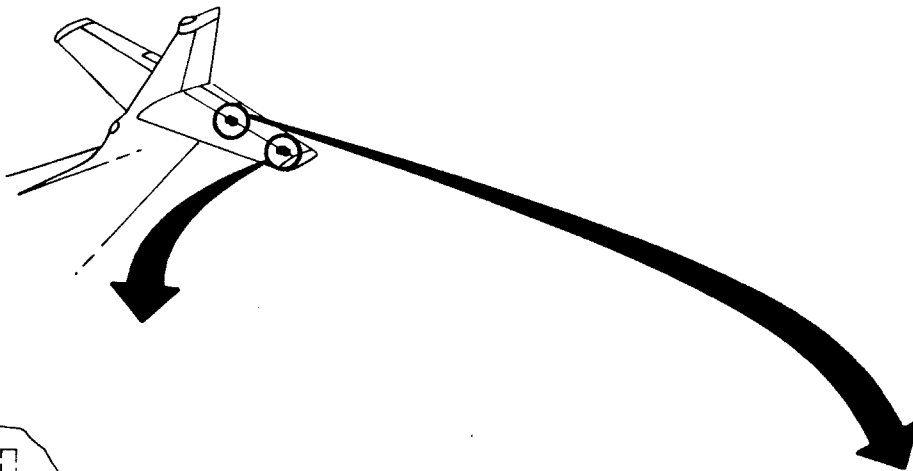
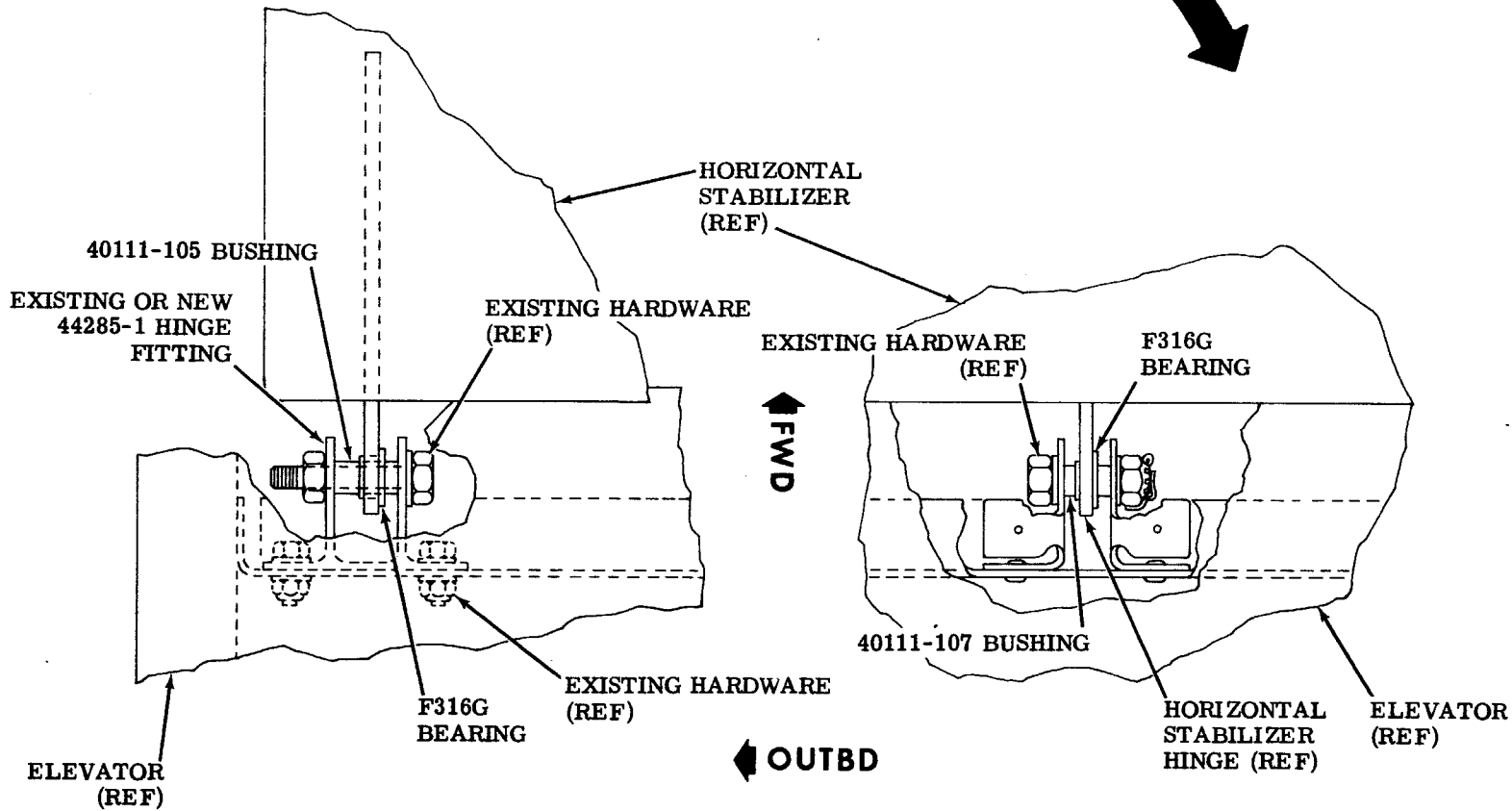


Figure 2.



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- 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-112-46, dated 14 November 1979, entitled "Elevator and Rudder Hinge Fitting Inspection and/or Replacement", accomplished (date) .