Beechcraft SERVICE BULLETIN
Published by the Customer Service Division

No. 64-3

Issued: February 5, 1964
Revised: May, 1964

SUBJECT: CHECKING THE STABILATOR FOR PLAY

AIRCRAFT AFFECTED: 23 (M-1 thru M-119).

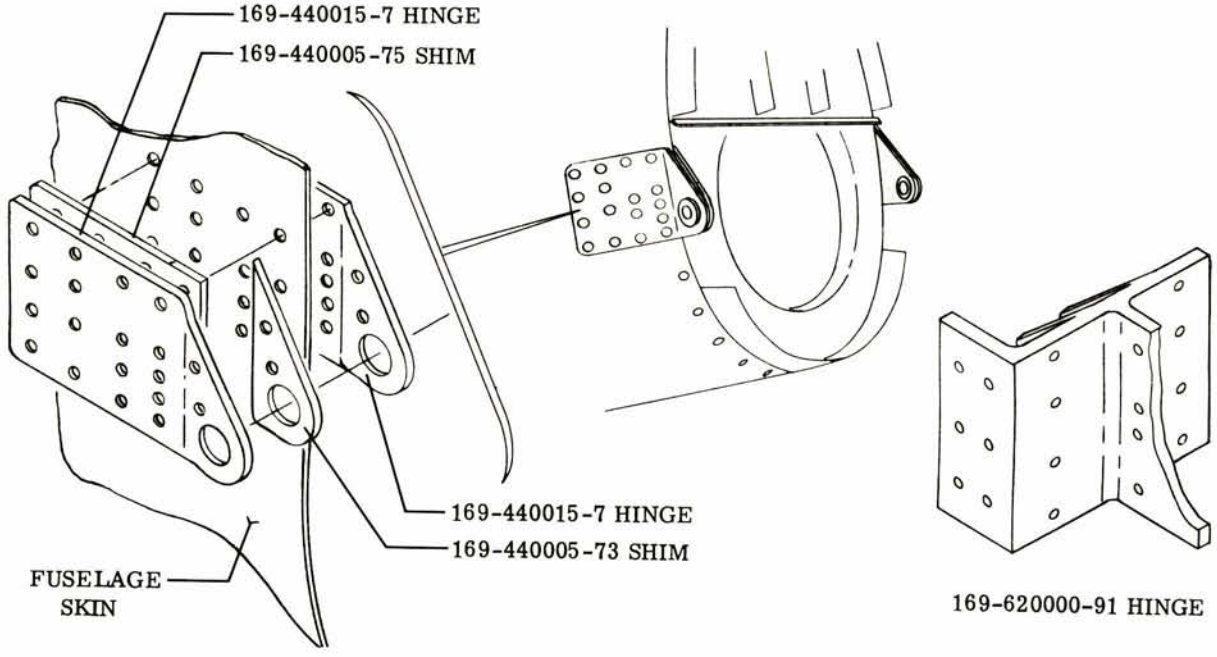
REASON FOR CHANGE: To prevent the occurrence of excessive play in stabilator tips.

ACCOMPLISHMENT: As soon as practicable after receipt of this bulletin.

DESCRIPTION OF CHANGE: On all Musketeers with serials of M-120 and after, improved bearings were installed at the stabilator hinge points and the hinges on the fuselage tail section were strengthened by the addition of heavier hinges with support shims. Heavier extrusions were also installed on the stabilator to lessen the possibility of the bushings enlarging the holes in the extrusion at the hinging point of the stabilator.

Early Musketeers (serials M-1 thru M-119) should be checked for the extent of play at the stabilator tips. Excessive play is an indication of worn bearings or extrusions. If such play is in evidence, the stabilator should then be removed from the airplane, and the distance between the outside diameter of the bolt and the inside diameter of the tail section bearings should be measured with a micrometer. If this distance exceeds .004 inch, the hinges can be modified in one of two different ways. One method of repair is to replace the existing bushings in the stabilator hinge with oversized bushings. The use of oversized bushings to reduce play is possible only if the diameter of the bushing hole in the existing hinge has not worn to a dimension greater than .4050 inch. Another method of repair is to bring the aircraft up to the configuration of current production models by the addition of heavier hinges.

1. For the current model configuration, proceed as follows:
   a. After removing the stabilator in accordance with



the procedures in the Owner's Manual, drill out the rivets securing the existing hinges to the tail section.

b. With a size 21 drill, drill holes in the new hinges (P/N 169-440015-7 and 169-440015-8) and the 169-440005-75 shim to match the rivet pattern in the existing hinges.

c. Rivet the hinges and shim to the tail section with MS20470AD5-8 rivets as shown in the illustration.

d. Using a size 30 drill and taking care to observe the spacing and edge distances as established by standard aircraft repair practices, drill two holes in the hinges and in the 169-440005-73 shim at approximately the location shown in the illustration. Countersink the holes in each hinge so that the attaching rivets will be flush upon installation.

e. Insert the 169-440005-73 shim between each pair of hinges and rivet it in place with two MS20426AD4-10 rivets.

f. Line ream the bearing holes in the hinges and shim to .6250 ± .0005 inch.

g. Press the 4NCC910P bearings in place in each of the hinges.

h. Working on the underside of the stabilator to avoid interfering with the trim tab hinges, remove all the rivets along the trailing edge from the center line of the stabilator to a point approximately 27 inches outboard in each direction.

i. Remove all rivets from the skin within the area formed by a line extending diagonally across the stabilator from the two points established in the preceding step to the inboard end of the leading edge. This will provide adequate access for rework without damage to the skin through bending.

j. Remove the subspar aft of the front spar at the center of the stabilator by drilling out the attaching rivets.

k. Drill out the rivets securing the existing hinges to the front spar and ribs of the stabilator.

l. Enlarge the existing slots where the hinge extrusions were removed from the stabilator spar to a width of .62 inch.

m. After inserting the flanges of each of the new stabilator hinges (P/N 169-620000-91) into the slots, make sure that the hinges are aligned by inserting a rod through both.

n. With the hinges properly aligned, drill holes in the spar with a size 21 drill to match the rivet pattern of the hinge shown in the illustration, taking care to observe the spacing and edge distances as established by standard aircraft repair practices. It should be noted that the row of rivets that fitted into the pilot holes adjacent to each slot is omitted in the installation of the heavier hinges.

o. With the hinges still held securely in alignment, back drill the hinges to match the existing holes in the ribs forward and aft of the front spar.

p. Remove each inboard rib located forward of the front spar on the stabilator, then rivet each hinge to its respective rib with MS20470AD5-8 rivets.

q. Reinstall the ribs with rivets of the same type as those that were removed and of the same or next larger size.

r. Rivet each of the stabilator hinges to the stabilator spar and to the rib aft of the spar with MS20470AD5-8 rivets.

s. Reinstall the subspar aft of the front stabilator spar with rivets of the same type as those that were removed and of the same or next larger size.

t. Rivet the skin that was loosened back in place with rivets of the same type as those that were removed and of the same or next larger size.

u. Press two 169-620000-93 bushings in place in each of the 169-620000-91 hinges.

v. Using one AN960-416L washer under the head of the bolt, one under the nut, and others between the stabilator hinge and either side of the fuselage hinge as required to eliminate side play and assure proper rotation of the bearing, secure the stabilator with NAS1304-17 bolts, and MS20365-428 nuts. Apply a torque of 90 to 110 inch-pounds to each of the attaching bolts.

w. Finish reinstalling and rerigging the stabilator as directed in the Owner's Manual.

2. Repair by installation of oversized bushings. The bushings available for this purpose include the 169-620000-99 bushing, with an outside diameter of .389 inch, and the 169-620000-101 bushing, with an outside diameter of .405 inch. The hinge must be reamed out with a 25/64-inch reamer when the former is installed or with a 13/32-inch reamer when the latter is installed. The choice as to which bushing should be used will depend upon the amount of wear exhibited by the existing hinges.

PART NUMBER	DESCRIPTION	QUANTITY
169-440015-7	Hinge	2
169-440015-8	Hinge	2
169-440005-73	Shim	2
169-440005-75	Shim	2
4NCC910P	Bearing	2
169-620000-91	Hinge	2
169-620000-93	Bushing	4
NAS1304-17	Bolt	2
AN960-416L	Washer	As Required
MS20365-428	Nut	2
MS20470AD5-8	Rivet	62
MS20426AD4-10	Rivet	4
169-620000-99*	Bushing	2
169-620000-101*	Bushing	2

*When repair is accomplished by means of oversized bushings, the selection as to which of these bushings to use is determined by the degree of wear in the existing hinges.