

(This Service Letter is F.A.A. Approved)

DATE: NOVEMBER 17, 1959
 SUBJECT: KIT - EMPENNAGE TO FUSELAGE ATTACHMENTS
 MODELS AFFECTED: M-20 AND M-20A SERIAL NOS. 1002 through 1540
 TIME OF COMPLIANCE:
 PARTS LIST: P/N 3471 Bracket (2)
 AN 4-23A Bolt (4)
 AN 174-13A Bolt (2)
 AN 365-428 Nut (6)
 AN 960-416 Washer (12)
 AN 960-416 L Washer (2)

INTRODUCTION

Although no failures have occurred on the present empennage to fuselage attachment (P/N 3009 with P/N 3449 Plate installed), tests indicate that, in order to eliminate the possibility of future failures, this part must be replaced by P/N 3471. These tests indicate that the margin of safety of P/N 3471 is many times that of P/N 3009. These replacement parts are furnished at no cost to the aircraft owner.

INSTRUCTIONS

1. Remove empennage and side inspection plates just forward of rear bulkhead.
2. Remove P/N 3009 brackets.
3. Install P/N 3471 brackets. (See Figure 1)
4. Before replacing empennage, use a file to remove sharp edges of tail truss attach lugs where they bear against P/N 3471 brackets as shown in Figure 1, detail D. This item has been accomplished at factory for Serial No. 1448 and on.
5. Reinstall empennage. Install AN 174-13A upper attach bolts as shown in Figure 1. Before tightening nuts on these bolts, visually check alignment between the lower tail truss attach point and P/N 7108 trim link. If these parts are misaligned, do not attempt to fully align them, but exert a slight pressure at the lower tail truss attach point in a direction tending to cause alignment. Hold this pressure while tightening upper attach bolt nuts. These nuts must be tight so that brackets bear tightly against tail truss attach lugs in order to minimize empennage free play. See Item 6 before attaching tail truss at bottom point.
6. Due to the fact that P/N 3471 brackets are much stiffer than P/N 3009 brackets, the following must be accomplished. This must be done only after Item 5 has been completed. Before attaching tail truss at bottom point, measure and record misalignment between truss fitting and P/N 7108 trim link. This first measurement between Point 1 and Point 2 is referred to as Dimension A (See Figure 2). The maximum allowable misalignment is 1/32 of an inch. If the misalignment (Dimension A) is more than 1/32 of an inch, DO NOT attempt to mate parts at lower attachment, but do the following: Turn P/N 7108 trim link over at its point of attachment to P/N 7107 and again measure and record misalignment. This second measurement between Point 1 and Point 3 is referred to as Dimension B or C depending on the relationship between parts (See Figures 3 and 4). Be sure to make both measurements on the same side of the airplane and always measure from the outside of trim link to the inner edge (Point 1) of tail truss fitting. If the misalignment (Dimension B or C) is still more than 1/32 of an inch, DO NOT attempt to mate parts, but send a collect telegram to Spare Parts Department, Mooney Aircraft, Inc., Kerrville, Texas, with the following information:

Dimension A is _____. Dimension (B or C whichever applies) is _____.
 Airplane Registration No. _____. Address where parts are to be shipped.

Upon receipt of this wire, Mooney will ship by air a new P/N 7108 with the attach lug offset the correct amount to assure a proper fit. This part will be sent free of charge.

7. Please complete and return the enclosed compliance card.

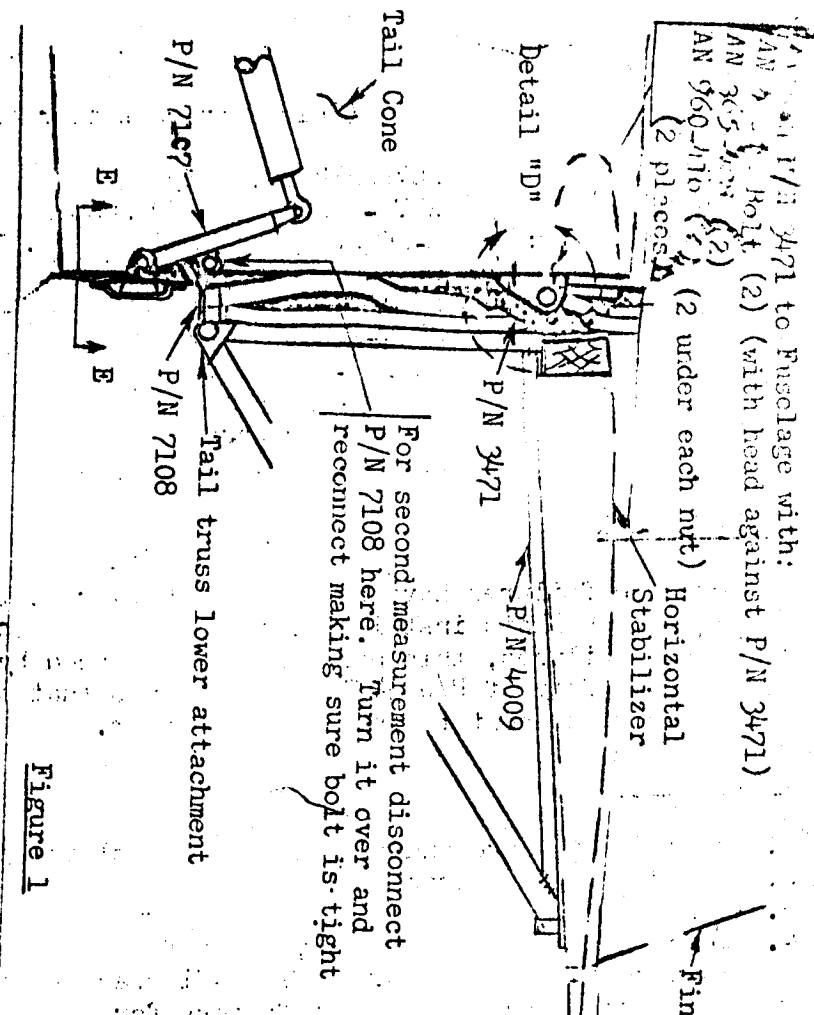
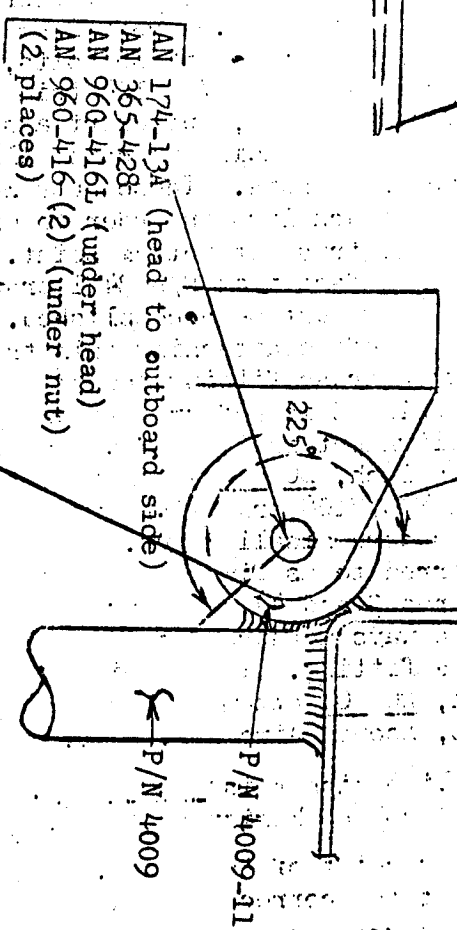


Figure 1

In this area
Chamfer outside edge both sides
of 4009-11. This chamfer should
be 45° x 1/64 Max.



Detail "D"

First Measurement for misalignment of P/N 7108 & tail truss lower attach fitting.

Second measurement for misalignment of P/N 7108 & tail truss lower attach fitting, made after P/N 7108 is turned. If relationship between parts is as shown in Figure 3 then second measurement is called Dimension B, and if as shown in Figure 4 measurement is called Dimension C.

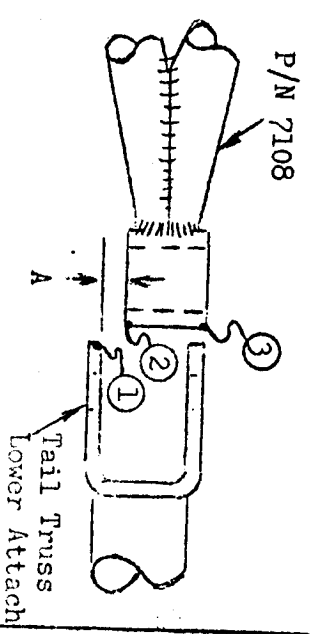


Figure 2
View A-E

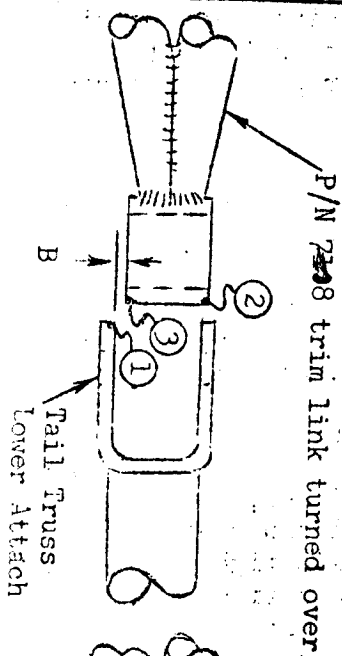


Figure 3
View B-E

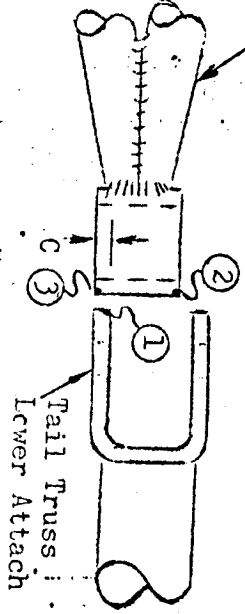


Figure 4
View C-E