

...NEY AIRCRAFT INC.
KERRVILLE, TEXAS
SERVICE LETTER 20-22

DATE: 3-14-57
SUBJECT: Kit-Retracting Bellcrank Bracket
MODELS AFFECTED: M-20 Serial No. 1002 thru 1126
PARTS LIST: 5101 AN 3-41A (2) AN 365-428 (2)
5101-12 AN 4-41 (1) AN 960-10 (2)
5102 AN 365-1032 (2) AN 960-416 (1)
ENCLOSUREP Notice of Compliance Card. Gear Rigging Instructions
INSTRUCTIONS: Replace P/N 5035 with P/N 5101 in the following manner

1. Raise airplane in accordance with enclosed instructions.
2. Remove belly access panels as shown in figure 1.
3. Remove fairing between stinger and tail cone. Turn trim control wheel to full back position, and insert a wooden block between the fin spar and fuselage bulkhead, to hold the empennage in the up position. Remove clevis pin on the trim control shaft, (point 1, Fig.2), and the two bolts in P/N 7106. Turn trim control wheel to full forward position.
4. Retract gear and remove forward part of P/N 5047 bungee assembly. Extend gear and detach parts as shown in figure 2.
5. Carefully drill out rivets and remove P/N 3044-2 Zee angle at rear of floorboard (refer to figure 3).
6. Remove P/N 5035 by removing three attaching bolts thru spar and two attaching bolts thru inboard side of floor pan.
7. Install only the landing gear bellcranks in the new spar saddle P/N 5101. (The elevator and rudder bellcranks are to be installed only after P/N 3004-2 Zee is riveted in place).
8. Install spar saddle bracket P/N 5101 by inserting end bolts first. Some force may have to be used to align bolt holes since this bracket is necessarily a close fit on the spar. Remove the gear up lock bracket from the floor in order to install the center bolt.
- * 9. Attach spacer bushing P/N 5101-12, and tie rod P/N 5102 (see fig. 3 Sec. A-A). Replace P/N 3044-2 Zee. Install rudder and elevator walking beams, and connect various control tubes. Replace the gear up lock bracket.
10. Carefully check landing gear retraction system rigging in accordance with the enclosed instructions.

* P/N 5101-12 Spacer should be a snug fit between lugs, but should not have to be forced into place. It may be necessary in some cases to adjust this length by filing spacer and /or adding AN 960-416 or AN 960-416L washers.

GEAR RIGGING PROCEDURE

Raise airplane so that main gear clears the ground by lifting one wing at a time and placing a sturdy saw horse (32 inches high) under the wing spar between ribs approximately 26 inches outboard of main gear doors. Two men with their backs against the spar at the outboard end can easily lift the wing. Using a doubled 1 inch diameter rope, make a harness for the propeller and hoist until the nose gear just clears the ground. (See figure 1) This may also be accomplished by pushing down on the horizontal stabilizer spar close inboard and tying the tail down through the tail skid.

2. Rig the gear as follows:

- A. Connect retraction tube (P/N 5087).
- B. Place gear retraction handle in the down and lock position.
- C. Check the gear down over center lock as shown in fig. 2. **THIS IS THE MOST IMPORTANT STEP IN THE GEAR RIGGING PROCEDURE.** The retraction tube (P/N 5086) is adjusted to obtain the proper load on the retraction truss P/N 5031 with the gear in the extended position without regard to its retracted position.

IMPORTANT:

- D. After main gears are rigged the **NOSE GEAR MUST BE CHECKED** in the same manner. The nose gear has two retraction tubes (P/N 5085) which must be adjusted identically if any adjustment is necessary. P/N 5085 is adjusted at the forward end.
- E. If any adjustment is made at the nose gear, the main gears must be rechecked. Each time an adjustment to the retraction tube at any one gear is made, the other two gears must be checked. This is necessary because the retraction tube to the three gears are connected at the retraction handle and the preload in one gear affects the preload in the others.

