

MOONEY AIRCRAFT, INC.
M-18 SERVICE LETTER NO. 15

DATE: 7-13-59
SUBJECT: General Inspection and Maintenance
MODELS AFFECTED: M-18 All Serial Numbers

INTRODUCTION:

Several cases of wood deterioration have been reported on M-18 aircraft. The most serious damage has occurred in the center section of the wing due to water which probably enters through the cockpit canopy and the wing fuselage joint. In view of this, the following inspection is recommended as soon as practical and at subsequent annual inspections.

INSTRUCTIONS:

- (1) Remove seat, auxiliary fuel tank and belly access panel.
- (2) Inspect ribs, skin, and spars at lower center section and around fuselage fittings.
- (3) Inspect wood in wheel well area.
- (4) Inspect tail cone in area of baggage compartment.
- (5) All belly skin panels (wing and fuselage) between spars, ribs, and stiffeners should have a 1/4" diameter hole in the lowest corner. Add these holes if they do not exist.
- (6) Check and clean all drain holes in wing, fuselage, and empennage.
- (7) Inspect all other open and accessible wood areas on airplane. It is recommended that a water resistant cloth or plastic adhesive tape be applied at the wing to fuselage joint from the wing leading edge to the wing trailing edge, under the metal fairing strip to prevent the entry of water at this point.
- (8) A few reports have been received concerning looseness and/or cracks at the rear-most fuselage bulkhead and attachment blocks on the stabilizer spar. Inspect rear bulkhead for cracks and security of attachment in the area of the stabilizer attachments. Inspect attachment blocks for cracks or looseness at spar.

LANDING GEAR RIGGING

To check the rigging of the landing gear the weight of the aircraft must be removed from the system.

Elevate the aircraft on three suitable saw-horses. Two of which are placed under the wing just outboard of each main gear, between the third and fourth ribs, approximately three feet from the fuselage skin. The saw-horses should be of sufficient length to extend from slightly behind the rear spar to the front spar, and preferably past the leading edge of the wing. This length is desired to minimize damage to flaps and skin on the leading edge should the aircraft accidentally be rolled back or forward on the front spar while elevated on the horses. Should the tail be pushed down too far, a saw-horse extended behind the rear spar would rupture the flap fabric. Should the nose drop, rolling the aircraft onto the leading edge, the end of a saw-horse that did not extend beyond the spar would be pushed thru the leading edge skin. See Sketch A for elevation details.

To step on the wing walk or enter the cockpit while the aircraft is elevated will naturally cause the nose to drop. This is prevented by placing the third saw-horse under the rear bulkhead of the fuselage and weighing down the empannage. Either by tying ballast to the tail bumper or placing it inboard on the stabilizer spar and on top of the fuselage just in front of the fin.

1. INSPECTION:

It has been found absolutely necessary for the over-center locks to be in the over-center position and that considerable force is required to change this position. To check whether lock is over center lay a short straight edge along the top side of the lock as shown in Sketch B.

When the straight edge and link are parallel the lock is over center. The locks are held in this position by the force required to place the retracting lever in the "Gear Down" position. On new airplanes or ones in which new parts are installed the force at the top of the lever with the main gears disconnected from the retracting truss on which the lever is mounted should be 18 to 24 lbs. The force should be 2 lbs. additional with all three gears connected. The nose gear should be checked alone first, on which greater or less force is controlled by adding or removing washers on the forward side of the handle lock down plate as shown in Sketch C.

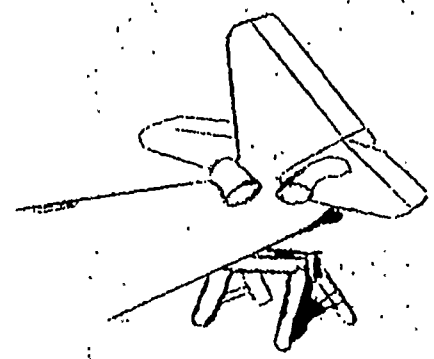
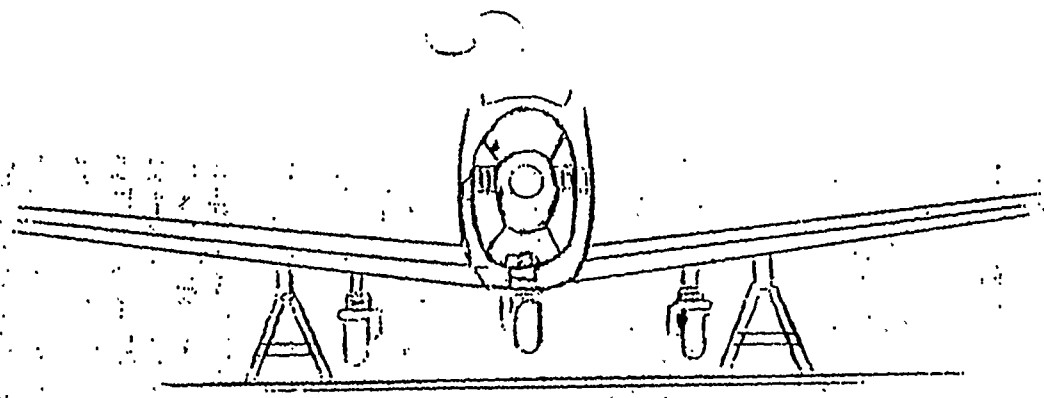
When checking the main gears a greater force is obtained by lengthening and less force by shortening the push-pull tubes operating these gears. This is done by adjusting the end fittings in the push-pull tubes at the nose gear retracting truss.

2. RIGGING

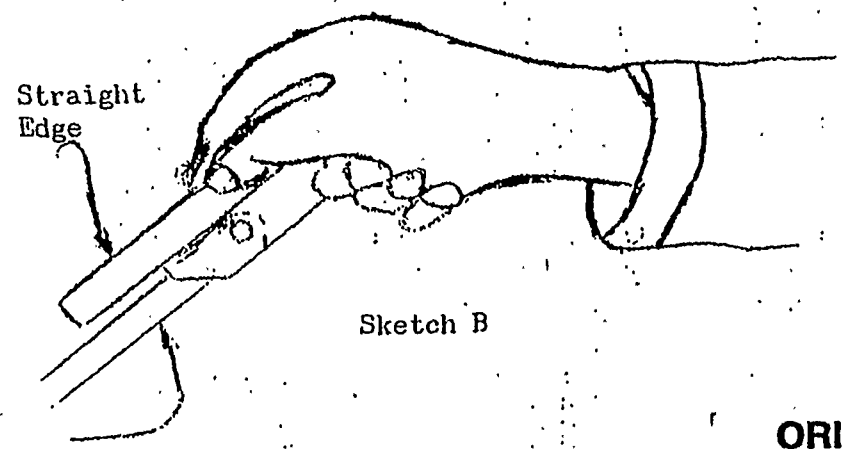
With all gears down and main gears disconnected from retracting truss, position lock down plate with washers as described before to obtain recommended force to push retracting handle into the lock down plate, making sure that nose gear is securely locked.

Hook-up main gear linkage, adjusting so that proper force is obtained and making sure that main gears are securely locked. Whether the gears completely retract or not, precedence should be given to the gears locking down properly.

ORIGINAL
As Received By
ATP



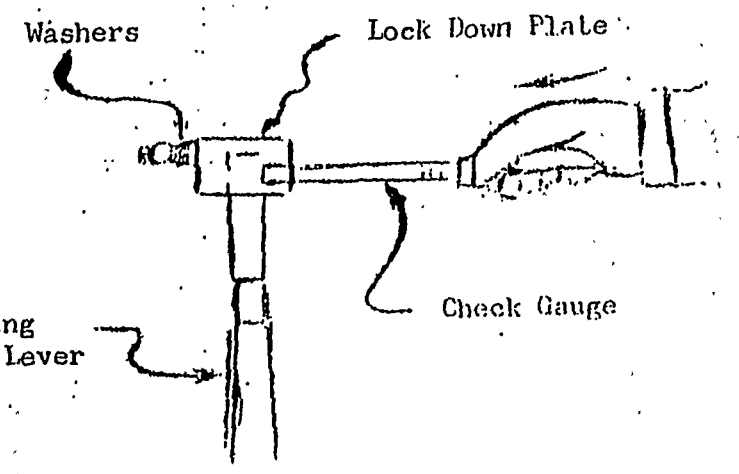
Sketch A



Straight Edge

Sketch B

Link



Washers

Lock Down Plate

Retracting Handle or Lever

Check Gauge

Sketch C

**ORIGINAL
As Received By
ATP**