

FIELD SERVICE BULLETIN

Navion



RYAN AERONAUTICAL COMPANY, LINDBERGH FIELD, SAN DIEGO 12, CALIFORNIA

FIELD SERVICE BULLETIN NO. 21
5 August 1954

MANDATORY

TO: ALL NAVION DISTRIBUTORS, DEALERS AND OWNERS

SUBJECT: RELATIVE MOTION BETWEEN FUSELAGE AND WINGS

EFFECTIVITY: ALL NAVION AIRCRAFT (MANDATORY)

ACCOMPLISH: IMMEDIATELY AS DESCRIBED BELOW

1. Routine field inspection of a number of Navions has revealed a looseness existing between the wing assembly and the fuselage. This looseness is most apparent in the form of a relative motion along the chafe strip which runs between the upper wing skin and the fuselage at Station 93.438. It has been noted that this condition is most prevalent in, but not limited to, older Navions and can be readily seen when the wing root fillets have been removed and a sharp FORE AND AFT JIGGLING FORCE is applied by gripping the outboard leading edge of the wing assembly with both hands and vigorously shaking it. If loose, the applied force can be made to develop a motion of the wing mass which is opposite to the motion of the fuselage mass, and the looseness will be definitely seen and felt. This condition requires immediate attention.
2. It is particularly pointed out that the above condition does not exist on all Navions and when these airframes are subjected to the shaking force described above, a normal slight relative motion will occur between the two components which does NOT require immediate attention. In this case the wings and fuselage seem to move as a unit mass and feels "solid" to the person applying the force. Under these conditions the longeron to wing reinforcements, steps k and l only, shall be added not later than the next annual release of the airplane.
3. In cases where the foregoing instructions result in controversy due to difficulty of the inspecting personnel in determining the degree of looseness, the following procedure shall apply.
 - a. Remove two front seats, floor mat and side upholstery to allow access to the two outboard forward wing attachment bolts.
 - b. Remove fuel strainer inspection plate in aft end of nose wheel well to observe two inboard forward wing attachment bolts.
 - c. Remove wing fillets for access to two aft wing attachment bolts.
 - d. Station one man at outboard leading edge of wing to shake the wing as previously described while another man is observing the six bolts attaching wing to fuselage to determine any looseness due to elongated holes in structure.

- e. Where elongated holes are evident proceed as follows.
- f. Ream holes of the four forward wing attachments to receive the next larger size bolts. Remove and replace ONLY one bolt at a time and torque to 140 inch pounds (see Figure 2).
- g. Remove the two AN5-65A aft attachment bolts, spacers, washers, tubes and nuts.
- h. Drill and attach the two .064-24ST alclad strips (see Figure 1), one on each end of the bottom inside flange of frame 142.57 and rivet each strip with four 5/32 inch rivets.
- i. Shorten the two tube spacers to fit within the channel.
- j. Install two AN5-65A bolts with nuts, washers, spacers and tubes. Torque to 140 inch pounds.
- k. Drill top wing skin at fifteen places parallel to longeron on each side of cockpit, and blind rivet the right and left .064-24ST alclad angle in place (see Figures 3, 4, 5 and 6).

CAUTION

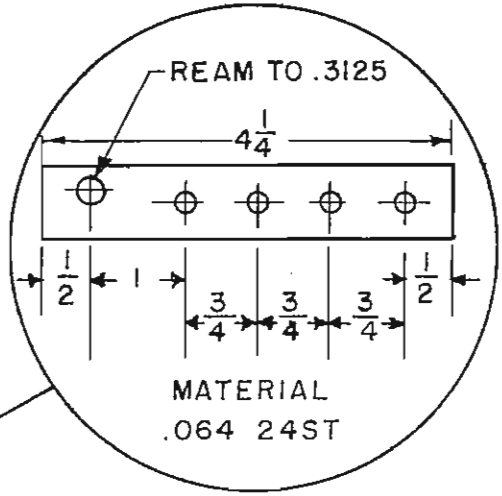
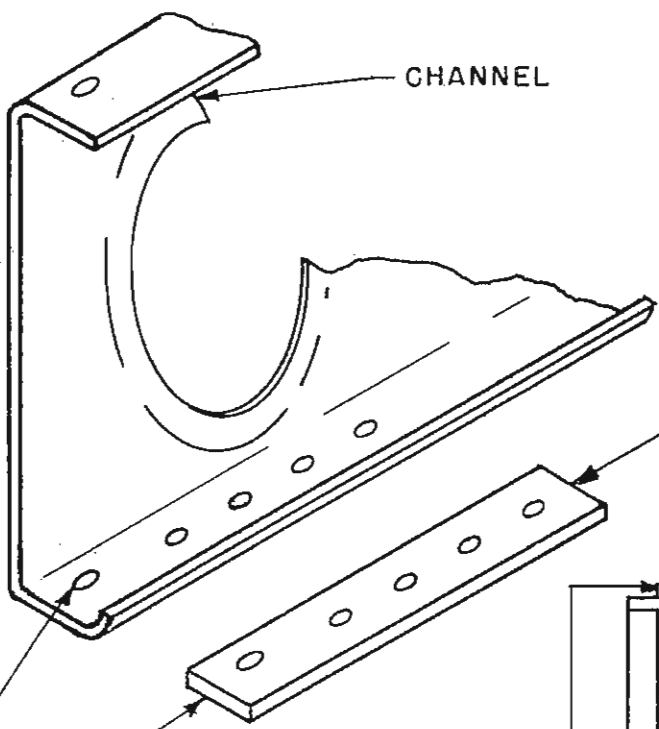
WHEN DRILLING THROUGH TOP WING SKIN
USE EXTREME CAUTION THAT DRILL DOES
NOT GO INTO FUEL TANKS.

- l. Drill eight 3/16 inch holes in fuselage longerons and attach angles with AN3 bolts and AN364 nuts. Add shims between longeron and bathtub fitting on forward bolt if necessary (see Figures 3, 4, 5 and 6).
 - m. Reinstall side upholstery panels, floor mat and seats.
 - n. Attach fuel filter inspection plate and wing tillets.
4. Parts may be locally manufactured from information furnished in this bulletin or procured in kit form at nominal cost from

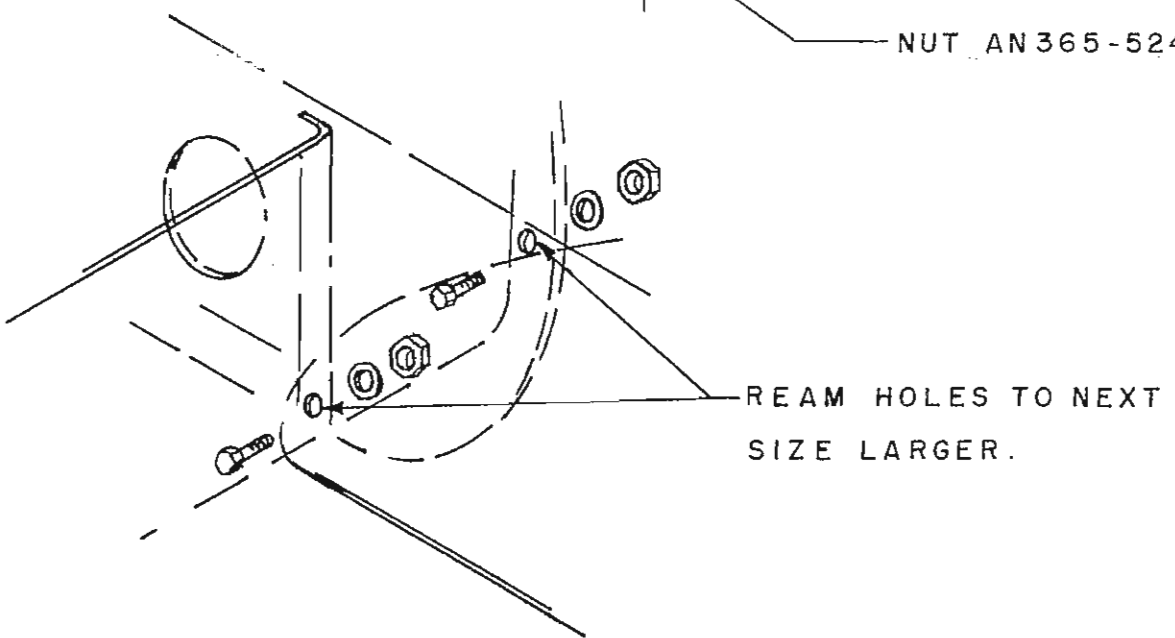
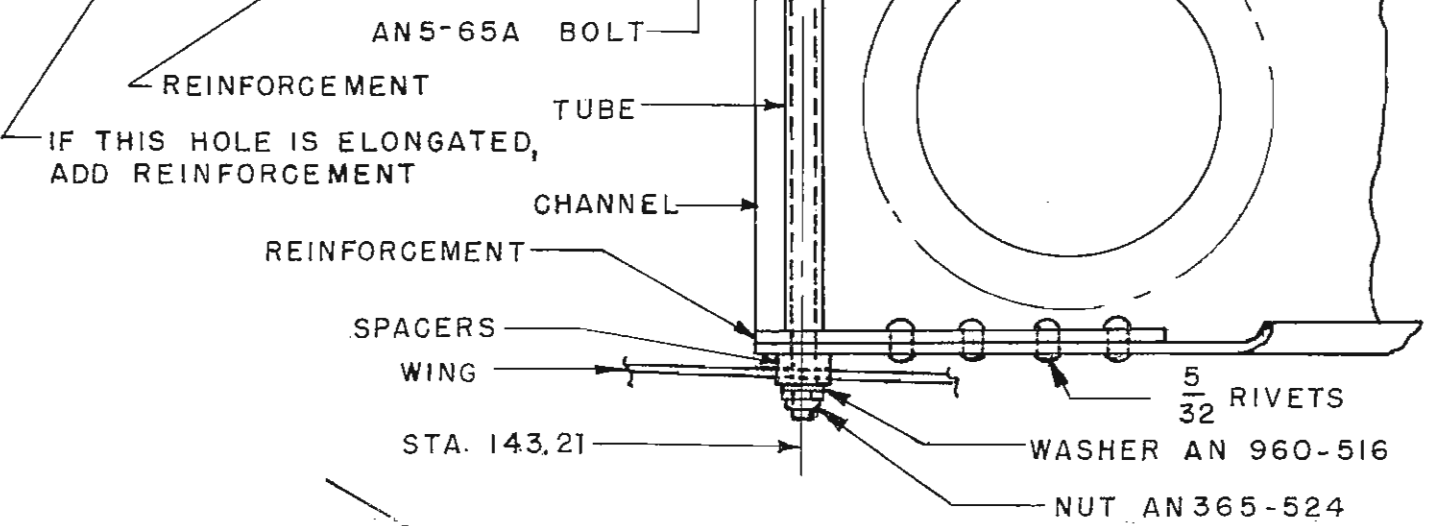
Long Beach Aeromotive, Inc.
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All parts and/or kits will be subject to local C.A.A. inspection and approval.

5. It is understood that C.A.A. is issuing an Airworthiness Directive covering this subject.



AFT WING ATTACHMENT FIG. 1



FORWARD WING ATTACHMENT FIG. 2

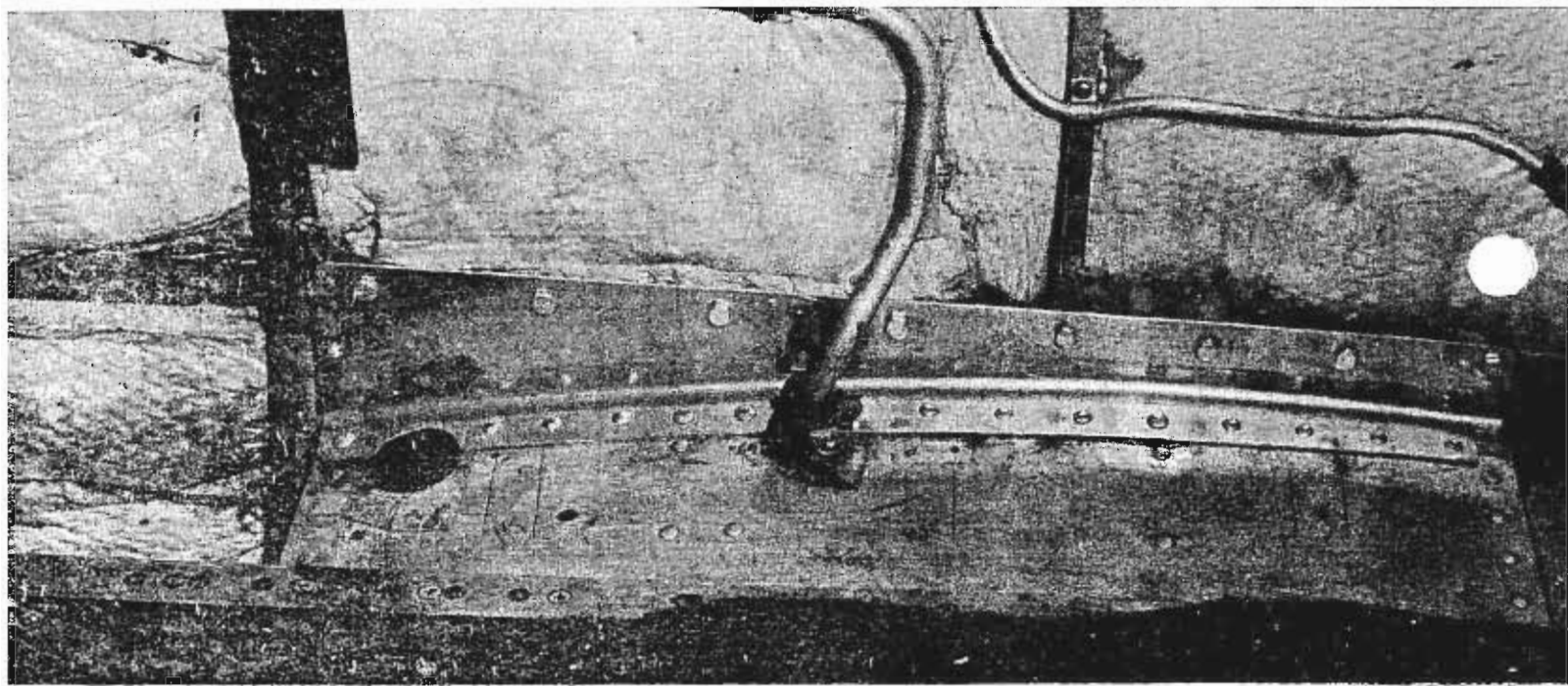
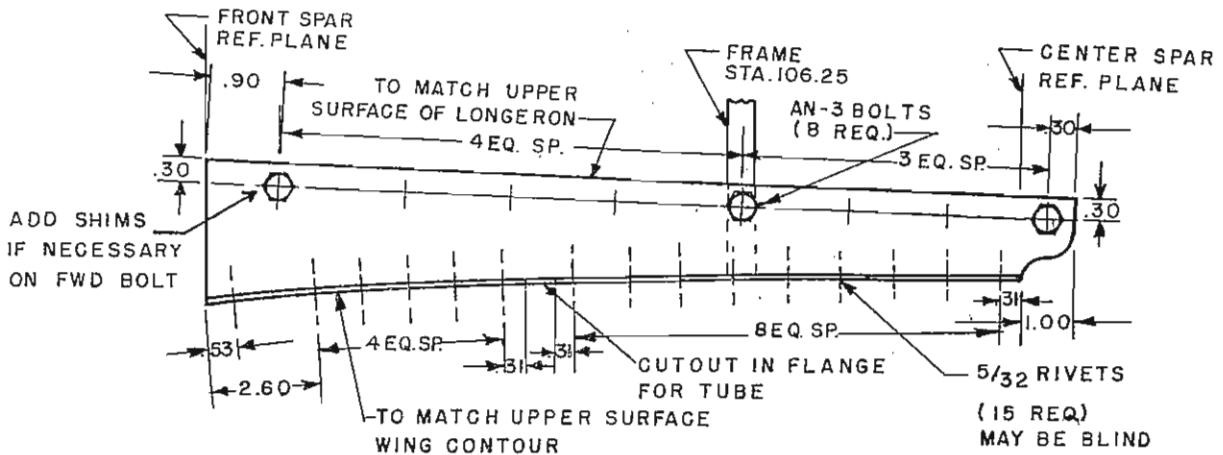
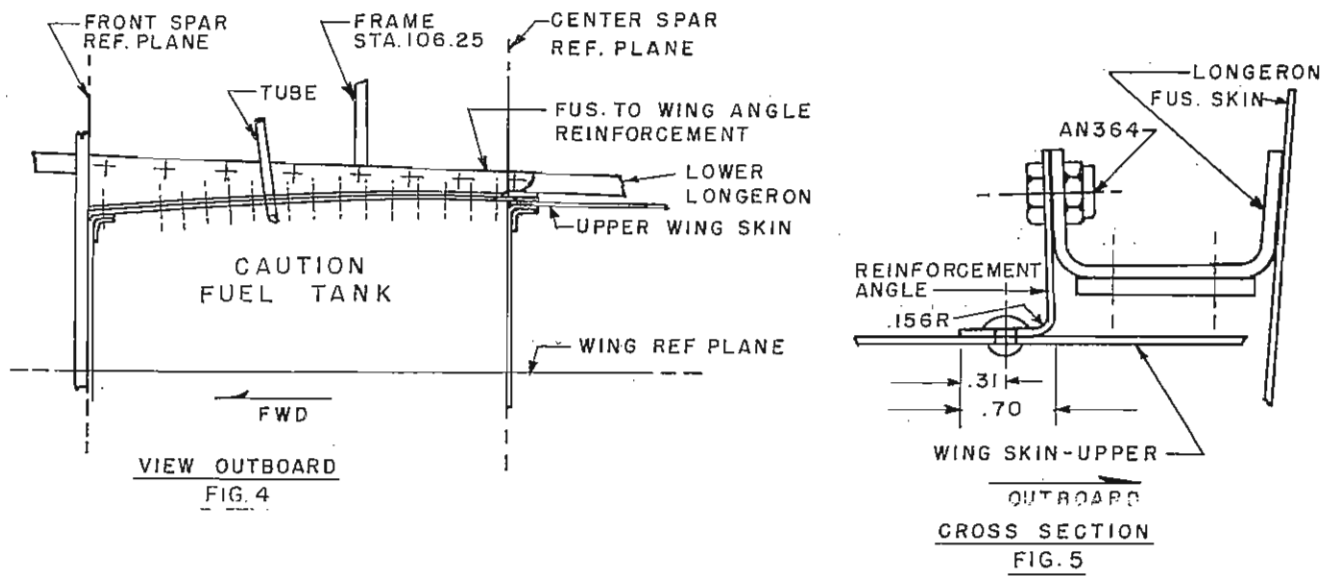


FIG. 3



MATERIAL: .064 24S-T4 SHEET ALGLAD

FIG. 6