

FIELD SERVICE BULLETIN

Navion



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

FIELD SERVICE BULLETIN NO. 22
15 NOVEMBER 1954

MANDATORY

TO: ALL NAVION DISTRIBUTORS, DEALERS AND OWNERS

SUBJECT: INSPECTION AND/OR REPAIR OF CRACKS IN FUSELAGE
FRAME 143-31004-16 AT STATION 294. 1

EFFECTIVITY: ALL NAVION AIRCRAFT (MANDATORY)

ACCOMPLISH: ON OR BEFORE 15 JANUARY 1955

1. Inspection of some Navion aircraft has revealed that cracks may exist in fuselage frame 143-31004-16 at Station 294. 1 inboard from the top stringer cutouts at W. L. 21. 00. Immediate inspection of the area must be made by removing the inspection plate on the left side of the fuselage beneath the horizontal stabilizer, looking forward to view the aft side of frame at points in question. If no crack is visible, perform a thorough inspection of the frame at each 100 hour inspection thereafter.
2. If a crack is visible at either side of the frame, determine if it has extended beyond the critical rivet (see Figure 1) if so, it is necessary to apply paragraph 3, otherwise proceed as follows immediately.
 - a. Remove stabilizer for access to bulkhead.
 - b. When crack extends to the critical rivet, remove the rivet and relocate nearby or if cracks does not extend as far as the critical rivet, stop-drill end of crack.
 - c. Install gussett patch of .125 24 ST Alclad to R and L outer surfaces of fuselage skin by removing existing rivets in frame and stringers and installing patch. (see Figure 2)
 - d. Reinstall stabilizer.
 - e. Check cracked area at each 100 hour inspection to determine if crack has extended beyond critical rivet. If so it will be necessary to apply paragraph 3.
3. If crack on either side of frame has extended beyond the critical rivet, install new frame

immediately according to the following steps.

- a. Remove stabilizer.
- b. Remove cracked frame by removing top fuselage skin section and rivets securing shelf and skin to frame.
- c. Carefully strip off angles and doublers from old frame and attach to new frame.

NOTE

Do not notch new frame to receive top stringers.

- d. Cut top stringers forward and aft of frame location (see Figure 3).

CAUTION

Do not damage fuselage skin when cutting stringers.

- e. Install new frame in fuselage and attach skin. Where rivets do not properly fill holes use next larger size rivet.
- f. Secure top stringers forward of frame by adding angle brackets of .040 24st Alclad using AD-4 rivets (see Figures 3 and 4).
- g. Install gusset patches of .125 24ST Alclad as indicated in step c, paragraph 2.

NOTE

An equivalent frame repair that will provide a continuous bulkhead flange, installed in accordance with the general requirements of C.A.M. 18, with notched stringers as shown in Figures 3 and 4, and gusset patch installed in accordance with Figure 2 will be accepted as an alternate for a new frame. All alternate repairs must be submitted to C.A.A. Airframe Engineering office for approval prior to installation.

- h. Reinstall stabilizer
4. It is understood that C.A.A. is issuing an Airworthiness Directive covering this subject.

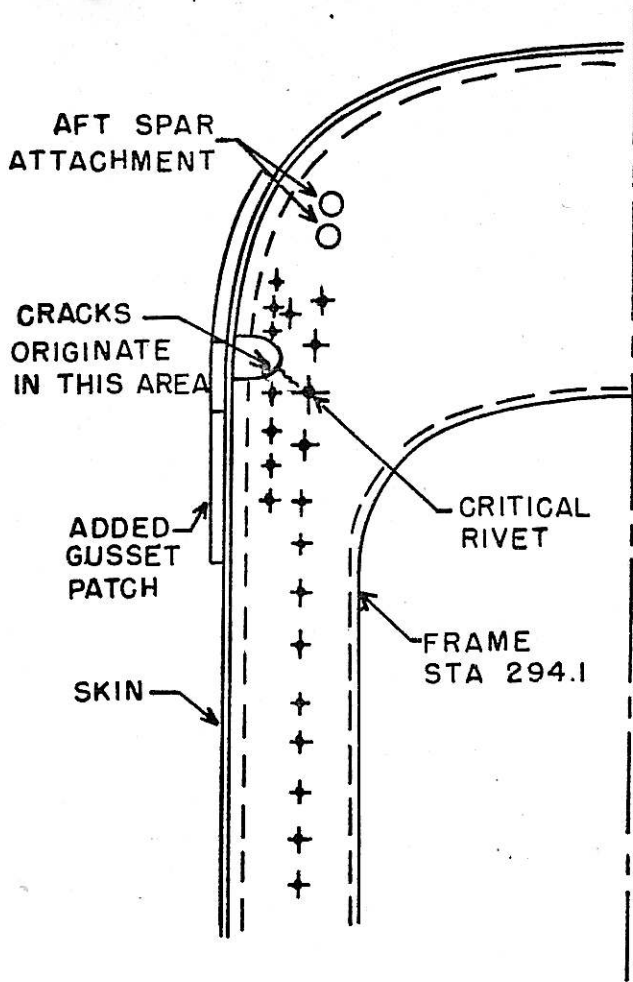


FIG. 1
LOOKING FWD

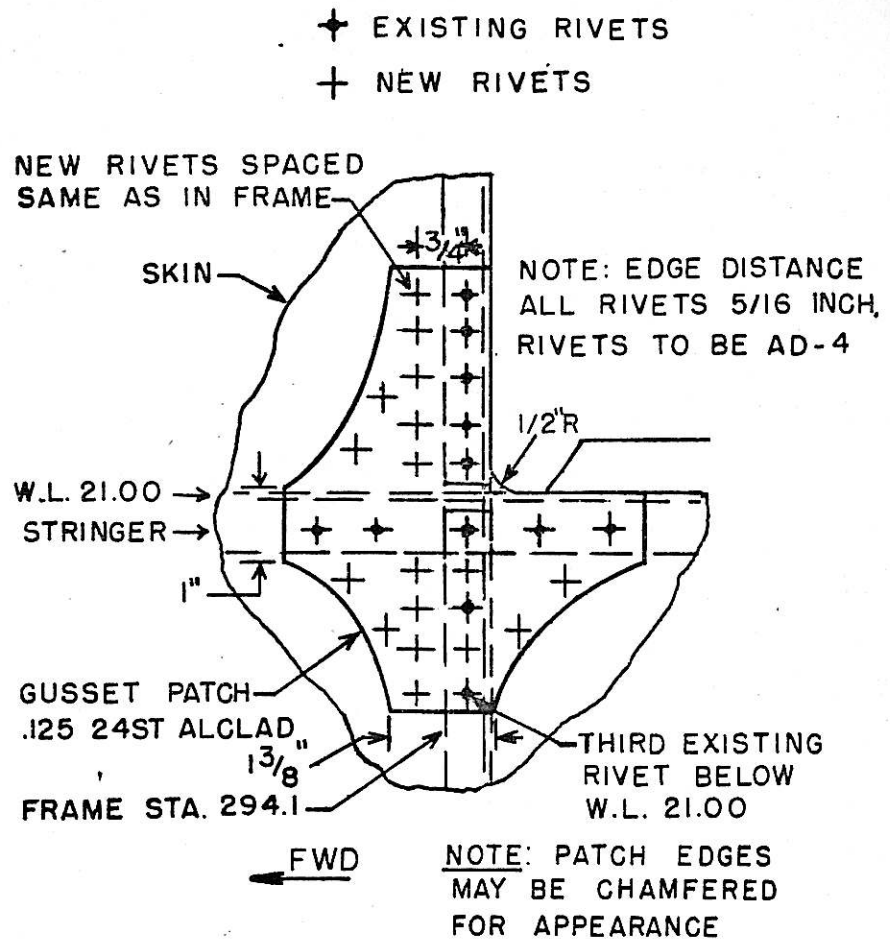


FIG. 2
LOOKING INBOARD

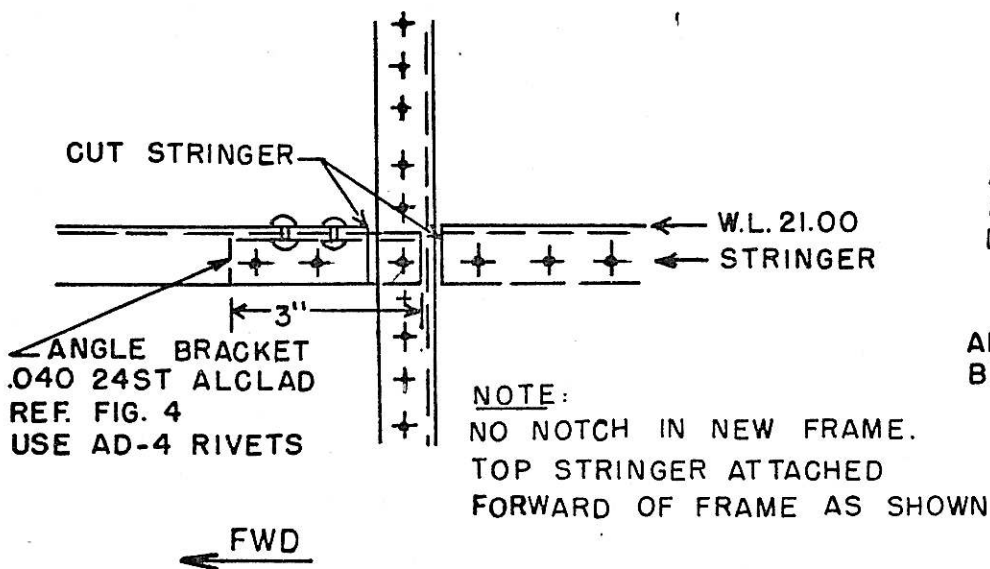


FIG. 3
LOOKING INBOARD
(SKIN REMOVED)

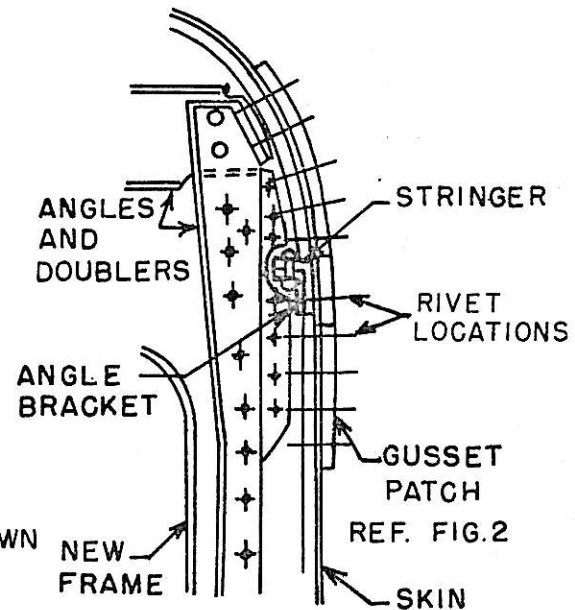


FIG. 4
LOOKING AFT