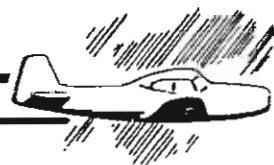


# FIELD SERVICE BULLETIN



# Navion



NORTH AMERICAN AVIATION, INC • MUNICIPAL AIRPORT • LOS ANGELES 45, CALIF.

BULLETIN NO. 33  
JULY 2, 1947

MANDATORY

TO: All Navion Owners

SUBJECT: ELEVATOR LEADING EDGE RIB INSTALLATION

It has been noted in a few cases that the elevator leading edge fairing has developed longitudinal cracks. All elevators will be modified by incorporation of leading edge ribs. Elevators which have skin cracks will be replaced with modified elevators.

#### AIRPLANES AFFECTED:

NAV-4-2 through NAV-4-1025. This change will be accomplished at the factory on NAV-4-1026 and subsequent.

#### INSPECTION INSTRUCTION:

The elevators should immediately be inspected and if not cracked, should have rework accomplished at earliest possible date. The cracks usually first appear in the lower left hand elevator skin at the hinge cut-outs. Inspect top and bottom skins of both elevators forward of and parallel to the line of rivets which attach the skin to the front beam.

#### INSTALLATION INSTRUCTIONS:

A. Elevators that are not cracked will be reworked as follows:

1. Remove elevator tips.
2. Remove the three elevator torque tube connecting bolts and the six hinge bolts.
3. Disconnect the trim tab cables at the trim tabs.
4. Remove the two AN3 bolts passing horizontally through the micarta blocks on the elevator beam. (This will allow the elevators to be removed without altering the trim tab rigging.)

5. Remove elevators and form leading edge skin by hand so that forward edge of the skins gap approximately  $1/4$  inch.

6. If the leading edge skins gap at the forward edge more than  $1/4$  inch, they should be formed by hand so the gap is  $1/4$  inch or less.

7. Lay out the elevator leading edge for rib installation using following dimensions. See Figure 1.

(a) 145-22001-34 rib located  $6 \frac{1}{4}$  inches from inboard end of elevator skin.

(b) 145-22001-35 rib located  $2 \frac{7}{8}$  inches inboard from center hinge bracket.

(c) 145-22001-36 rib located  $1 \frac{7}{8}$  inches outboard from center hinge bracket.

(d) 145-22001-37 rib located 2 inches inboard of outboard hinge bracket.

NOTE: Dimensions may be varied to allow the ribs to pick up existing skin rivets.

8. Drill out skin to spar rivets on top and bottom skins at each rib location with a #40 (.098) drill.

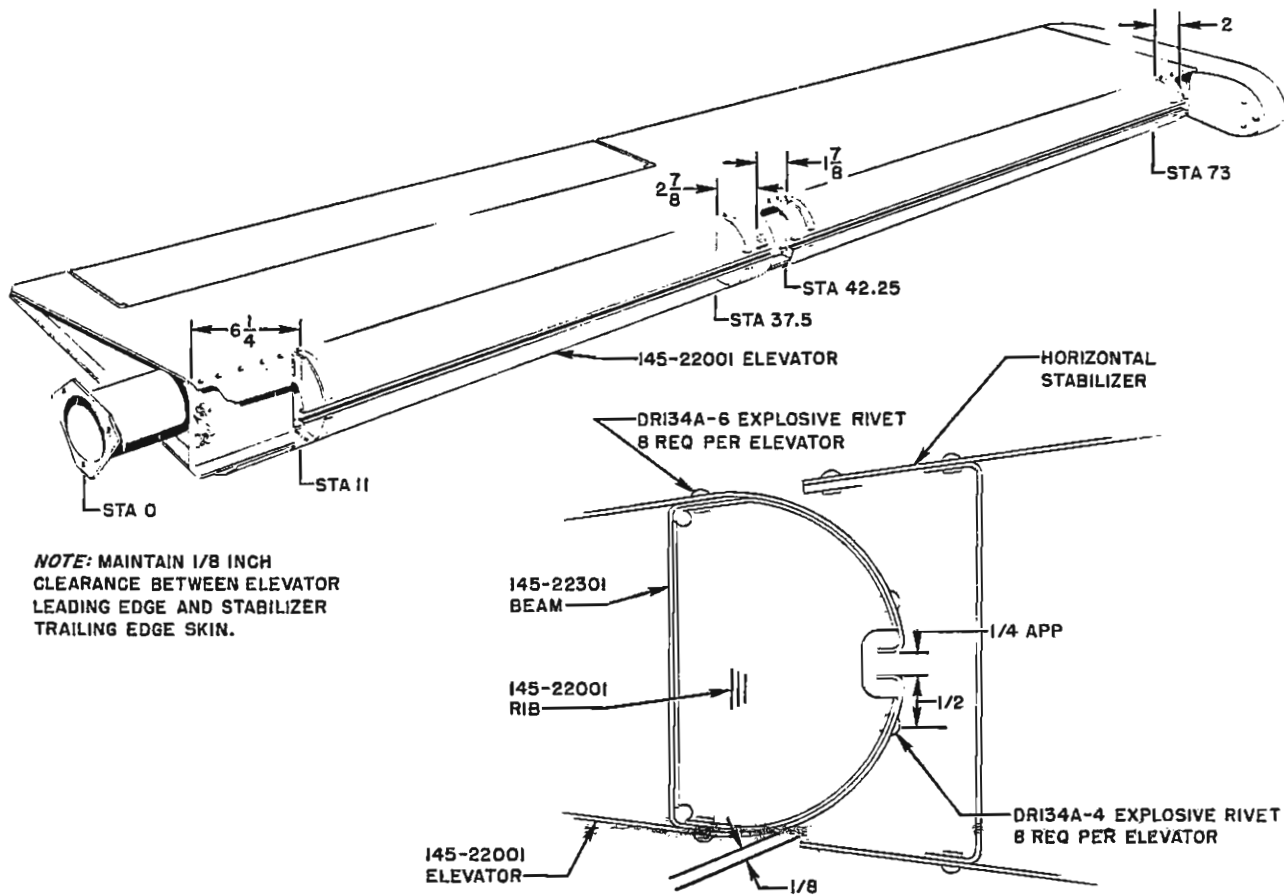
9. Position new ribs in the leading edge and drill #29 (.136) holes through elevator skin and rib flanges. Install skin fasteners.

NOTE: Ribs have consecutive dash numbers and must be installed at specified stations. All rib flanges face the hinge cutouts. Elevator skin must follow contour of rib when drilling and riveting, to maintain approximately  $1/4$  inch gap at forward edge.

10. Install DR134A-6 explosive rivets at the beam and DR134A-4 rivets forward of the beam.

11. Reinstall elevators on airplane.

NOTE: The  $1/8$  inch clearance between the stabilizer trailing edge and elevator leading edge must be maintained. If rib rivets hit the horizontal stabilizer trailing edge rub strip, when elevators are operated, file a small groove in rub strip to clear the rivet head.



SERVICE BULLETIN NO. 33  
JULY 2, 1947

B. Cracked elevators will be replaced with modified elevators at no expense to the NAVion owners.

1. Elevators with cracked skins will be removed as per operations 1 to 4 in Section A.
2. Install modified elevators and check rigging.

Compliance with this Bulletin must be entered in your airplane log.

To receive credit for cracked elevators, they must be shipped as Item 30 with tabs and tips attached, to North American Aviation, Attention: NAVion Spares Receiving.

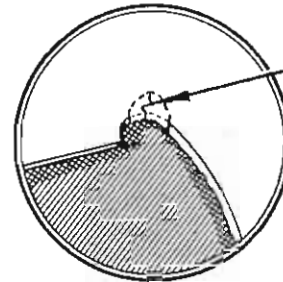
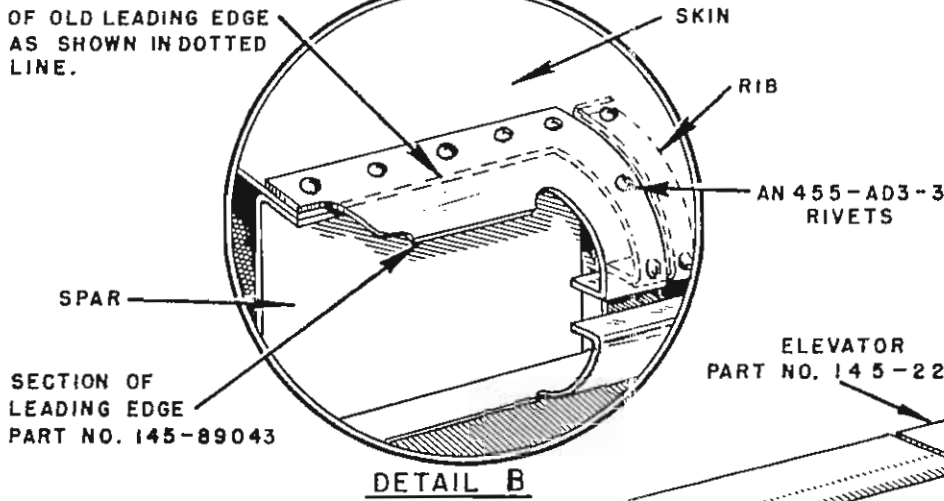
Warranty Adjustments for operations listed in Section A will be based on a Standard Time Allowance of 4.6 hours. Warranty Adjustments for operations listed in Section B will be based on a Standard Time Allowance of 2.8 hours. Warranty Adjustments for replacing one cracked elevator and modifying one elevator will be based on a Standard Time Allowance of 3.7 hours.

For accomplishment of this Bulletin, contact your NAVion dealer.

If you have sold your NAVion, please forward this Bulletin to the new owner.

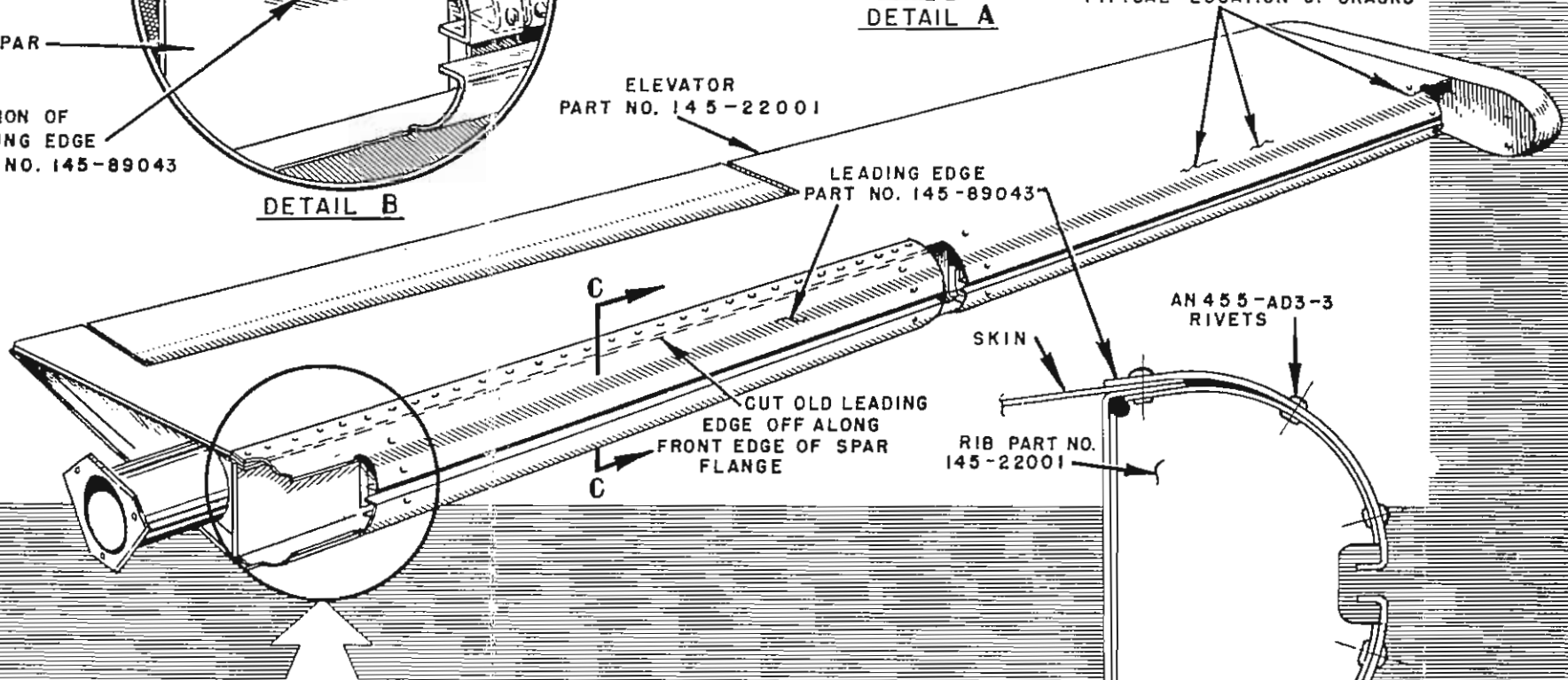
JOHN W. CASEY  
FIELD SERVICE MANAGER

TRIM AWAY CRACK AREA OF OLD LEADING EDGE AS SHOWN IN DOTTED LINE.



IF CRACK IS LESS THAN  $\frac{5}{8}$  IN LENGTH AND/OR DOES NOT EXTEND BEYOND THE LEADING EDGE OF THE SPAR FLANGE, TRIM OUT AS SHOWN IN DOTTED LINE, OTHERWISE MAKE REPAIR AS SHOWN IN DETAIL B.

TYPICAL LOCATION OF CRACKS



SEE DETAIL A AND B

ELEVATOR LEADING EDGE REPAIR  
FIGURE 1