



Service Bulletin No. 155
FAA DOA EA-4 Approved

Date: July 30, 1976
Subject: Bondline Protection

Serials Affected:	AA1, AA1A's	0001 & Sub.
	AA1B	0001 thru 0641
	AA5's	0001 & Sub.
	AA-5A	0001 thru 0173
		0176 thru 0196
	AA-5B	0001 thru 0309
		0311 thru 0324

Time: Within the next 25 flight hours.

I. GENERAL

In February 1974, Service Letter 74-2 was published to define the inspection and maintenance procedures to insure continued bondline integrity, particularly in those areas most likely to be damaged such as the trailing edge of flaps, ailerons, elevators, trim tabs, and rudders. The information in the Service Letter is essentially the same as that contained in Section 2 of the Service Manuals.

It has been observed, however, that the prescribed inspections and maintenance procedures are not being uniformly applied, and in some cases, they are simply disregarded.

The purpose of this Bulletin is threefold: (1) to once again emphasize the need for thorough inspections (including pilots pre-flight inspection) and conscientious maintenance to preserve the integrity of aircraft bondlines, (2) to provide for an extra measure of protection by the addition of protective rivets at the corners of vulnerable surfaces, and (3) to insure that any bond separations that do exist are repaired in accordance with the applicable Service Manual.

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II. INSTRUCTIONS:

- A. Carefully scan the edges of all joints in a well lighted hangar or outside in daylight to determine the existence of hairline cracks between two layers of bonded metal. Figure 1 shows the appearance of this condition. Identify the location of any cracks with a grease pencil as shown in Figure 1.
- B. Gently tap the bondline with a coin or similar metal object to verify the existence of a bondline separation. Slowly move along the bondline, while tapping, and listen for a change in tone as the suspect area is traversed. A bondline separation will produce a flat or hollow sound when "tapped" directly in the damaged area.
- C. If the results of "B" are questionable, attempt to insert a .004" to .006" feeler gauge into the bondline to verify that a separation exists.
- D. If a bondline separation is verified, order Service Kit - 125 and repair accordingly. After bondline repair, if necessary, is completed or if no separations are found proceed with rework steps listed below.

NOTE

MS20470AD3-* Rivets may be used, if desired, as an alternate to NAS1097AD3-* called out below. If MA20470AD3-* are used, disregard all instructions for countersinking.

MS20426AD-* Rivets shall not be used due to the amount of material removed, in countersinking for flush riveting.

- E. Flap Rework - AA1 0001 and Sub., AA1A 0001 and Sub. and AA1B 0001 - 0579.
 1. Drill .097 - .102 Dia. Hole in outboard and inboard ends of flaps. (See Figure 1). Countersink holes 100° x .148 Dia. Both sides of hole. Care should be used when countersinking, so as not to take out too much material.
 2. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585). Rivet shall be flush both sides.

* Grip length as required.

- F. Flap Rework - AA5 0001 and Sub., AA5A 0001 - 0179 and AA5B 0001 - 0293.
1. Drill .097 - .102 Dia. Hole in outboard and inboard ends of flaps. (See Figure 1). Countersink holes 100° x .148 Dia. both sides of hole: Care should be used when countersinking, so as not to take out too much material.
 2. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585). Rivet shall be flush both sides.
- G. Bondline trailing edge rework - AA1, AA1A and AA1B.
1. On inboard of end of ailerons drill .097 - .102 Dia. Holes (See Figure 2). Countersink hole 100° x .148 Dia. on upper surface skin only. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585).
 2. On inboard and outboard end of elevator trim tab, drill .097 - .102 Dia. Hole (See Figure 2). Countersink holes 100° x .148 Dia. on upper surface skin only. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585).
 3. On top of rudder drill .097 - .102 Dia. Hole (See Figure 2). Countersink hole 100° x .148 on L/H side only. Install NAS1097AD3-3 Rivet wet with zinc chromate primer (MIL-P-8585).
 4. On inboard and outboard end of L/H elevator drill .097 - .102 Dia. Holes (See Figure 2). Countersink holes 100° x .148 Dia. on upper surface skin only. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585).
- H. Bondline trailing edge rework - AA5, AA5A and AA5B.
1. On top of rudder drill .097 - .102 Dia. Hole (See Figure 3). Countersink hole 100° x .148 on L/H side only.
 2. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585).
 3. On inboard and outboard ends of elevator trim tab drill .097 - .102 Dia. Hole (See Figure 3). Countersink holes 100° x .148 Dia. on upper surface skin only. Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585).
 4. On AA-5A and AA-5B elevators drill .097 - .102 Dia. Hole in both elevators in inboard and outboard ends. Countersink holes 100° x .148 Dia. on upper surface skin only. (See Figure 3). Install NAS1097AD3-3 Rivet, wet with zinc chromate primer (MIL-P-8585).

I. **Refinish all models.**

1. All rivets installed in Section E, F, G and H shall be coated with 2 coats of zinc chromate primer (MIL-P-8585) (on both manufactured head and shop head of rivet) prior to touch-up or refinishing of paint.

III. **Weight and Balance**

The effect of this Bulletin, on control surface balance is negligible as long as the above steps are followed.

The over all effect on aircraft weight and balance is negligible.

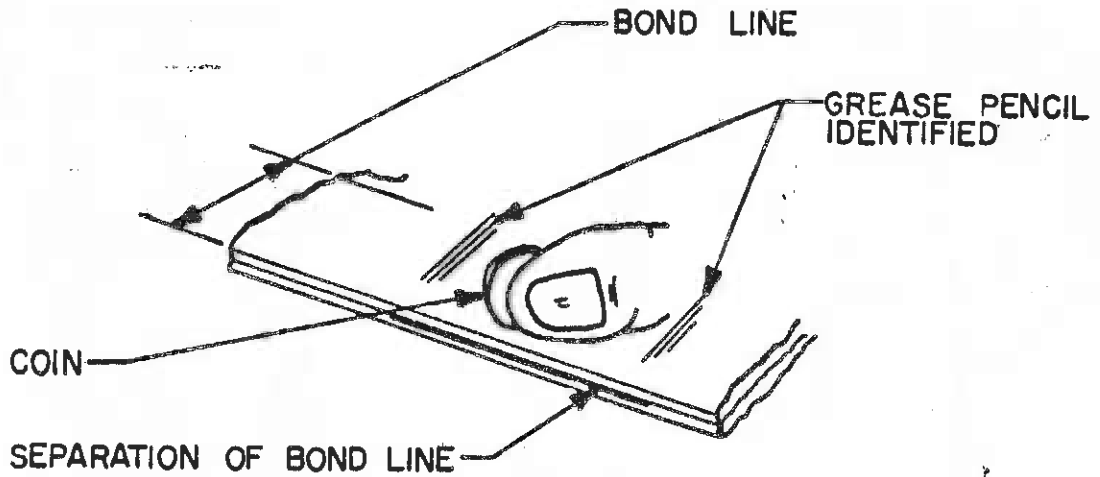
CREDIT ALLOWANCE

A full parts and labor allowance of 2.0 hours at the dealer's prevailing shop rate will be available for each aircraft that is within the warranty period. No parts or labor allowance will be made for aircraft falling beyond the warranty period.

All work must be performed or authorized by a Grumman American Aviation Dealer. A completed Warranty Claim Form No. GAA-740 must be submitted to the factory before October 30, 1976 for credit allowance.

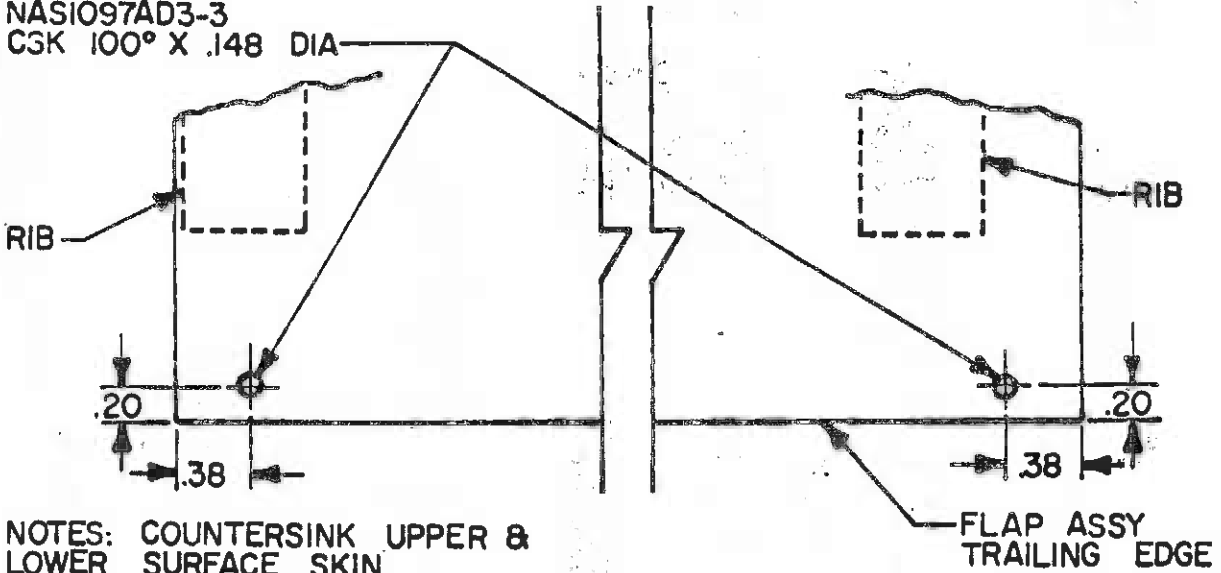
Immediately on completion of work, a Service Reply Card (attached), is to be completed and returned, noting compliance with the requirements of this Service Bulletin No. 155.

GRUMMAN AMERICAN AVIATION CORPORATION



BOND LINE SEPARATION DETECTION METHOD

.097-.102 DIA
 NAS1097AD3-3
 C3K 100° X .148 DIA



NOTES: COUNTERSINK UPPER & LOWER SURFACE SKIN.
 INSTALL ALL RIVETS WET USING ZINC CHROMATE PRIMER MIL-P-8585.
 MS20470AD3- RIVET MAY BE SUBSTITUTED FOR NAS1097AD3-3.

TYPICAL FLAP ASSY REWORK - ALL MODELS
 LH SHOWN - RH OPPOSITE

FIGURE 1

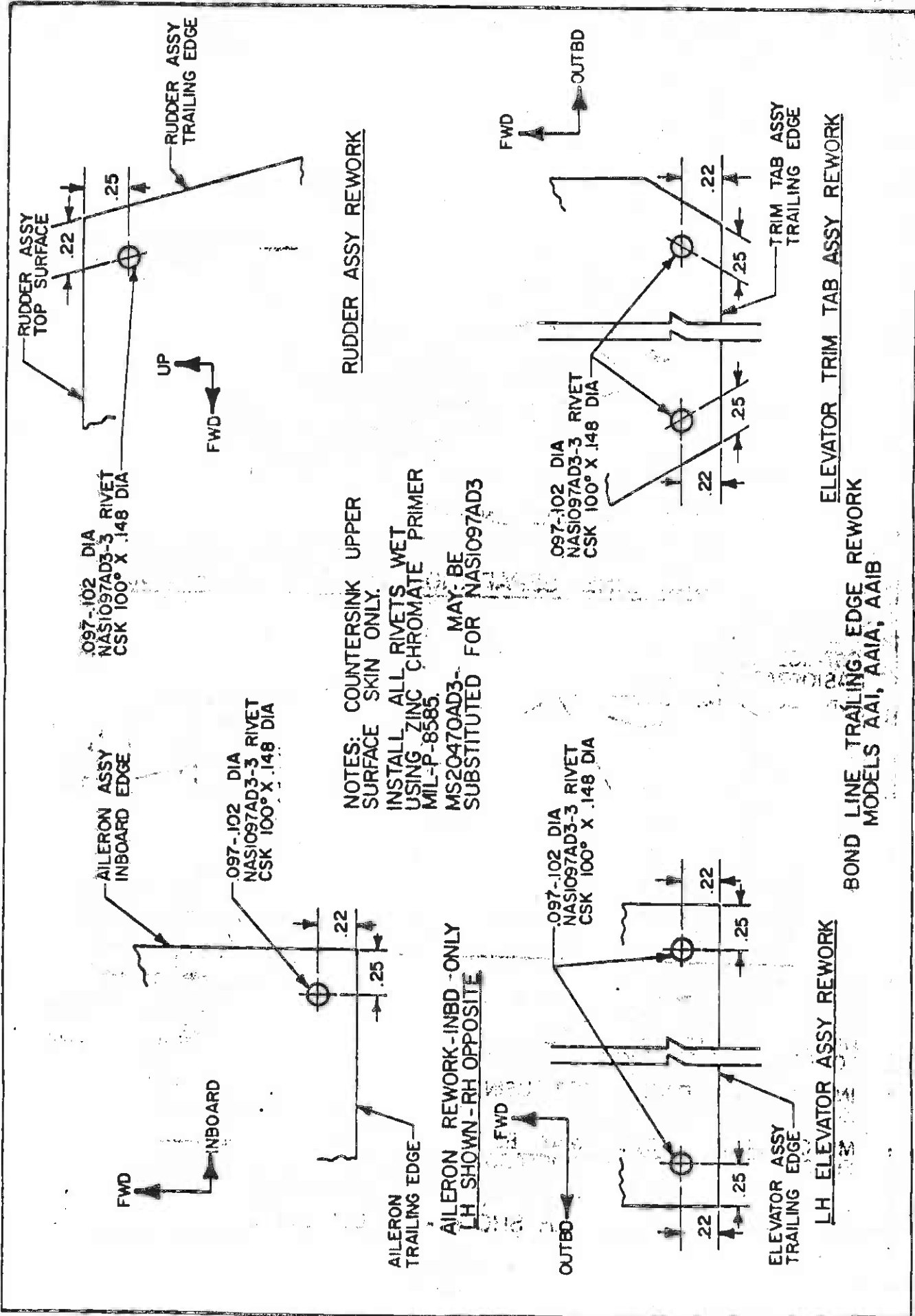


FIGURE 2

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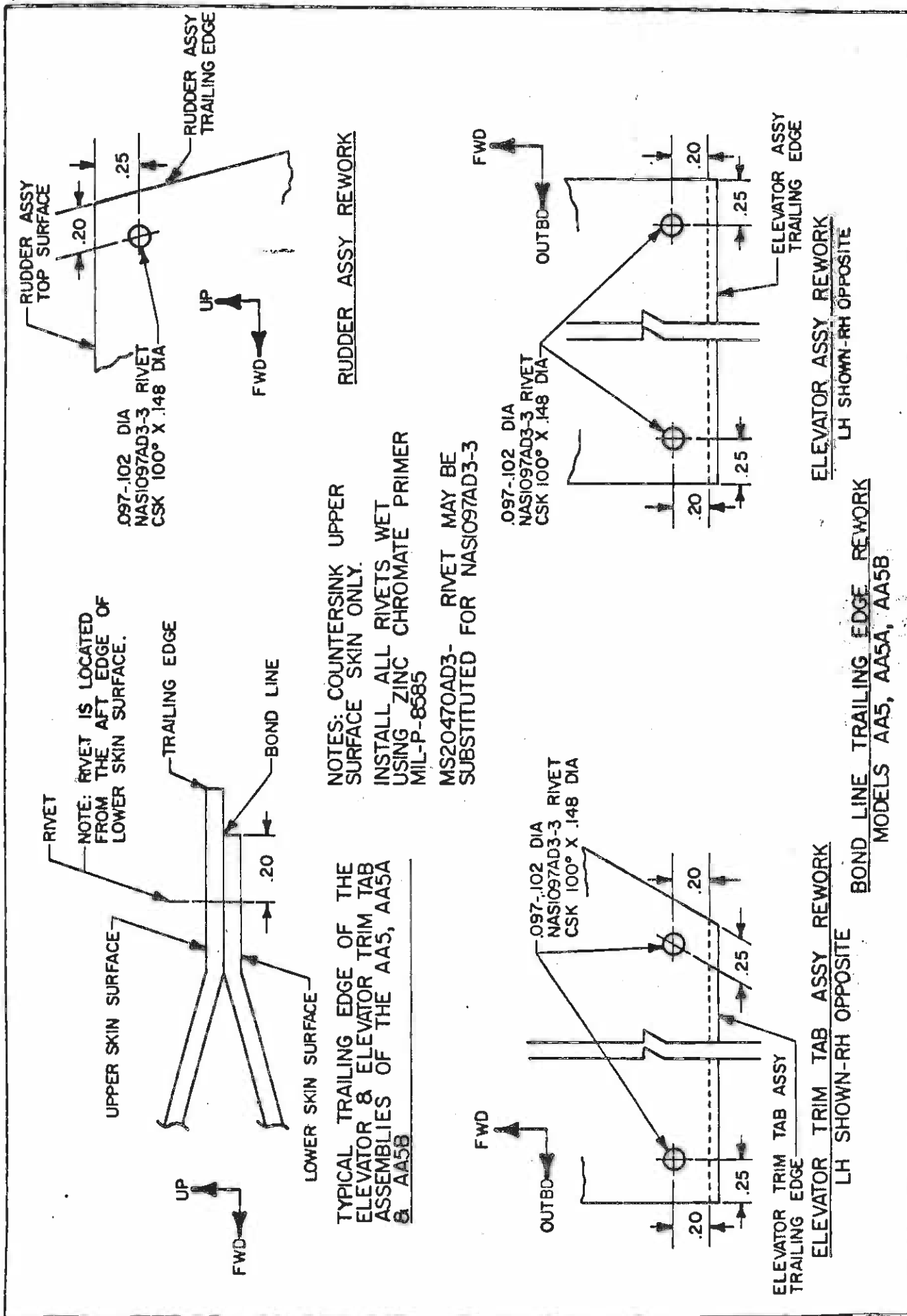


FIGURE 2