

SERVICE LETTER NO. 74-2

DATE: FEBRUARY 6, 1974
SUBJECT: BONDLINE INSPECTION PROCEDURES
SERIALS AFFECTED: ALL AIRCRAFT
TIME OF COMPLIANCE: AT EACH SCHEDULED INSPECTION

I. GENERAL

Grumman American Aviation aircraft are manufactured using the most modern assembly techniques in the industry. Major airframe assemblies utilize a high degree of metal to metal bonded construction. This solid type of construction provides higher strength to weight ratios, longer fatigue life, smoother surfaces, etc., than conventional types of construction. All bonded assemblies are manufactured to the highest quality standards. To maintain this high level of integrity throughout the life of the aircraft, good maintenance procedures are required.

The purpose of this Service Letter is to provide information on the simple procedures required for good field inspection of bondlines during normal maintenance inspection.

II. TYPICAL TYPES OF BONDLINE DAMAGE

A. Physical Damage

The most common type of bondline damage is physical damage along the trailing edges of the flaps, ailerons, elevators and rudder. This is caused by persons stepping on the inboard trailing edges of the flaps and general "hangar rash" on the other control surfaces. This type of damage is usually readily visible in the form of joint separation.

B. Corrosion Damage

A less common type of bondline damage is damage caused by metal corrosion. This type of damage is usually restricted to edges of unfilleted bondlines, such as found on the rear spar to skin joints on the trailing edges of wings and stabilizers, particularly if these edges are not well protected by paint. This type of damage is more likely in tropical and subtropical climates, particularly where an aircraft is located close to the coast.

III. MOST COMMONLY DAMAGED AREAS

- A. Areas which should be given particular attention include: flanges of wing and stabilizer rear spars, trailing edges of control surfaces the side lap joint between the tail cone and forward cabin section, the joint between the tailcone top and side skin, and the aft tailcone bulkhead joints.
- B. Inside edges and internal joints which have an undisturbed bondline fillet are generally not affected.

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