

SECTION VI

ENGINE SECTION

6-1. ENGINE MOUNT.

6-2. DESCRIPTION. (See Figure 6-1.) The engine mount, semimonocoque in construction, is removable from the fuselage and consists of longerons, frames, a bulkhead, a steel cross tube, and alclad sheet covering. The engine is rubber mounted on four fittings, two on the cross tube and two on the bulkhead. The mount is secured to the main fuselage by four attachment fittings, two on the firewall and two on the forward end of the nose wheel beams. The engine nose cowl is bolted to the engine mount and is supported at the top by a channel member extending from the firewall forward. A channel also provides attachment points for the hinged cowl, which is secured by Dzus-Type fasteners at the engine mount upper longerons. The hinged cowl covers the top of the engine. A grill is fitted into the air intake cutout of the nose cowl.

6-3. ACCESS FOR REPAIR. The engine section is accessible through the hinged cowl, and by removing the door in the lower surface under the engine.

6-4. SKIN.

6-5. DESCRIPTION. The arrangement, materials, and gages of the skin panels are shown in Figures 4-2 and 6-1.

6-6. NEGLIGIBLE DAMAGE. Disregard smooth dents and nicks free of cracks and abrasions, and scratches which do not penetrate beyond the alclad coating. Aft of Station 40.5; punctures, deep scratches, cracks, and deep dents which are cleaned up with 1/2 inch diameter holes or smaller and are two inches from adjacent structure are considered negligible damage. The distance of adjacent negligible damage must be at least ten times the diameter of the largest hole. When repairs to negligible damage holes are eventually made, 24ST alclad must be used in accordance with Figure B-4. No holes or punctures are permitted forward of Station 40.5.

WARNING

Doped fabric patches are not permitted for covering of negligible damage holes due to fire hazard.

6-7. DAMAGE REPAIRABLE BY PATCHING. Skin damage which exceeds the specified limits of negligible damage must be repaired. Damage to skin panels may be repaired with the flush patch shown in Figure B-1. Remove damaged area by cutting a circular or rectangular hole; minimum corner radii for rectangular cutouts to be 1/2 inch. Smooth all edges to remove burrs. Flush patch is made from .032 24ST alclad and doubler is .040 24ST alclad. Doubler is fabricated larger than cutout to accommodate rivets to skin with proper edge distance. Fit flush patch to cutout as closely as possible and locate position of doubler to provide equal overlap at all edges of cutout. Attach doubler to skin and flush patch to doubler by riveting with single rows of AN470AD5 rivets. The spacing is permitted to vary between 3/4 inch minimum and one inch

maximum, maintaining a minimum edge distance of 5/16 inch.

6-8. DAMAGE REPAIRABLE BY INSERTION. Skin that is damaged extensively should be repaired by splicing in a new skin from one structural member to the next. The repair should be made to lie along stiffening members, frames, longerons, or bulkheads. Lap seams may be made with a single row of AN470AD5 rivets and the spacing permitted to vary between 3/4 inch minimum and one inch maximum. The above limits on rivet spacing permits the picking of existing rivet holes.

6-9. LONGERONS.

6-10. DESCRIPTION. (See Figure 6-1.) The upper and lower longerons are channel sections. The two upper longerons are made from .051 clad 24ST and the two lower longerons are .040 clad 24ST. Fittings riveted to the aft ends of the longerons provide for attachment to the fuselage.

6-11. NEGLIGIBLE DAMAGE. Bent flanges and smooth dents free of cracks and abrasions, which are bumped back to the longeron's original shape, free of waviness and without cracking or creasing the longerons may be considered negligible damage. Scratches which do not penetrate beyond the alclad coating may be disregarded.

6-12. DAMAGE REPAIRABLE BY PATCHING. Damage to the longerons must be repaired in accordance with the repair data shown in Figures 6-2 and 6-3. Damage to more than 1/2 the cross-sectional area of the longeron is repaired with a complete splice. Trim damaged area smooth, using 1/2 inch corner radii for partial damage. Use a filler in the damaged area at the skin attachment flange. Attach the skin to the splice angle and the filler in the damaged area picking up existing rivet holes. Install repair members with a good fit. Paint all bare metal with at least two coats of zinc chromate primer.

6-13. DAMAGE REPAIRABLE BY INSERTION. Longerons damaged completely for a length exceeding five inches horizontally should be repaired with an insertion, of the same gage, shape and material as the original section and spliced as shown in Figures 6-2 and 6-3. Trim damaged area smooth and burr edges. Prime bare metal with at least two coats of zinc chromate primer.

6-14. DAMAGE NECESSITATING REPLACEMENT. Longerons, which are damaged a large portion of their length should be replaced.

6-15. BULKHEAD AT STATION 40.5. (See Figure 6-1.)

6-16. DESCRIPTION. The bulkhead located at Station 40.5 serves as the engine aft support. It consists of a web which is flanged and riveted to the engine mount skin. The upper edge of the web is riveted to cap members and the caps extend from the upper longerons inboard to the engine support channels. Two engine mount support channels are riveted to the web and extend the depth of the bulkhead, connecting with the fuselage lower attachment fittings.

6-17. WEB NEGLIGIBLE DAMAGE. Disregard smooth dents and nicks free of cracks and abrasions, also scratches which do not penetrate beyond the alclad coating.