

rivets per row. The web rivets should be in rows approximately 5/8 inch apart, with the maximum number of rows which the spacing will permit. All rivets are to be spaced at 5/8 inch on centers.

4-31. FRAMES AT STATION 106.25, 142.57 AND 160.25.

4-32. DESCRIPTION. These frames are made of .040 24ST clad material and are of channel cross section. They extend between the upper and lower longerons and fit inside the longerons at their ends.

4-33. NEGLIGIBLE DAMAGE. See paragraph 4-25.

4-34. DAMAGE REPAIRABLE BY PATCHING. For damage to these frames exceeding negligible damage refer to Figure 4-3. If less than half the cross section is damaged, it is permissible to repair it by using one angle. If one angle is used, two rows of rivets thru the web and one row thru the flange are required.

4-35. DAMAGE REPAIRABLE BY INSERTION. Damage that extends more than six inches should be repaired by insertion. Trim the damaged area and insert a member the same shape, size and gage as the damaged section. Splice each end with a splice as shown in Figure 4-3.

4-36. DAMAGE NECESSITATING REPLACEMENT. Extensive damage should be repaired by the replacement of the part.

4-37. FRAME AT STATION 179.75.

4-38. DESCRIPTION. The baggage compartment ends at this station and the fuselage cross section changes. It is an open section forward and a closed ring at Station 179.75 and aft. The frame consists of an upper and lower part, made of .051 24ST clad and .032 24ST clad respectively. The upper part has the shape of an inverted horseshoe and is of channel cross section. The lower part is essentially a beam with a straight top flange but with the lower flange conforming to the contour of the fuselage skin. Brackets are mounted on the lower frame web, supporting the various control cables that go to the empennage. The fuselage skin is riveted to both parts of this frame by AN470AD4 rivets at approximately 1-1/2 inch spacing.

4-39. NEGLIGIBLE DAMAGE. See paragraph 4-25.

4-40. DAMAGE REPAIRABLE BY PATCHING. Damage exceeding negligible damage is repaired similar to that shown in Figure 4-3. The only difference is that, where the width at the web will permit, more than two rows of rivets must be used, spaced at approximately six rivet diameters, to properly fill the web. If the damage is less than half the cross section, it is permissible to use only one angle. In such cases the width of splicing angle flange which is next to the web must be wide enough for at least one row of rivets beyond the damaged portion of the web for the entire length of the splice. If the damage is located at a lightening hole and extends into the web, a repair similar to Figure 2-5 may be used. Clean out the damage to a smooth shape and cut a reinforcement from a sheet of .051 24ST alclad for the upper part of the frame and .032 24ST alclad for the lower portion. The doubler is cut larger than the cutout, to accommodate rivets with proper edge distance and permit the bending of a 3/4 inch flange. Attach doubler to frame web with AN470AD5 rivets, spaced at approximately 3/4 inch with 3/4 inch between rivet rows, maintaining a 5/16 inch minimum edge distance. Damage to a lightening hole flange, which does not extend more than 4/3 the width of the flange may be re-

paired as shown in Figure B-6.

4-41. FRAMES AT STATIONS 198, 224, 249.5, 273.118 AND 294.1.

4-42. DESCRIPTION. These frames are made of 24ST clad material, and have channel cross sections. They are stiffening rings in the fuselage tail cone riveted to the skin by AN470AD4 rivets at two inch spacing at stations 198, 224 and 249.5 and 1-1/2 inch spacing at stations 273.118 and 294.1.

4-43. NEGLIGIBLE DAMAGE. See paragraph 4-25.

4-44. DAMAGE REPAIRABLE BY PATCHING. Refer to Figure 4-3 for repair of these frames which exceeds that specified as negligible. If less than half the cross section is damaged it may be repaired by using only one angle. In such cases the width of the splicing angle flange that is next to the web should be wide enough for at least one rivet through the undamaged portion of the web over the entire length of the splice.

4-45. BULKHEAD, STATION 311.07.

4-46. DESCRIPTION. At this station the fuselage has tapered to a semi-elliptical shape, 4-1/2 inches across by 18 inches deep, similar to a nose rib with the leading edge at the bottom. It is composed of 24ST alclad sheet. The web is .040 gage flanged aft with an .064 doubler frame, flanged forward, and riveted to the forward face of the web. An elevator control pulley bracket is riveted to the forward face at the top of the web. The rudder hinge brackets are bolted to the aft side of the web at approximately the center of the bulkhead. The steel tail skin plates are bolted to the aft side of the web and doubler, at the bottom of the bulkhead. The vertical stabilizer beam attaches to the upper end of this bulkhead by means of nine AN4 bolts thru the web and doubler. The fuselage skin is riveted to the web and doubler flanges with AN470AD4 rivets.

4-47. NEGLIGIBLE DAMAGE. See paragraph 4-25.

4-48. DAMAGE NECESSITATING REPLACEMENT. Damage exceeding the specified limits of negligible damage should be repaired by replacement of the web or doubler or both.

4-49. WING AFT ATTACHMENT BEAM.

4-50. DESCRIPTION. This beam is a formed channel of .051 24ST clad sheet. It is 5-1/2 inches deep with 1-1/16 inch flanges. There are lightening holes every 5-1/2 inches across the span. It flanges aft and extends across the fuselage just in front of and below the baggage floor at Station 142.57. Two AN5 bolts pass through both flanges, one at each end of the beam, attaching it to the fuselage lower longeron above and to the wing rear spar below.

4-51. NEGLIGIBLE DAMAGE. See paragraph 4-25.

4-52. DAMAGE REPAIRABLE BY PATCHING. Damage to the flanged lightening holes not extending more than 4/3 the width of the flange may be repaired as shown in Figure B-6.

4-53. CROSS BAR AT STATION 147.125.

4-54. DESCRIPTION. This bar is made of a 24S0 tube .064 x 1-1/2 inches, flattened at both ends and heat-treated to 24ST. It extends across the fuselage just aft of the rear seat, and is attached to the upper