Federal Aviation Agency

AC NO: AC 20-52

Consolidated reprint:
January 1974 - includes
Change 1

ADVISORY CIRCULAR

MAINTENANCE INSPECTION NOTES FOR

DOUGLAS DC-6/7 SERIES AIRCRAFT

AUGUST 24, 1967

DEPARTMENT OF TRANSPORATION

Federal Aviation Administration

Federal Aviation Agency

ADVISORY CIRCULAR

AC NO:	AC 20-52
	AIRCRAFT
EFFECTIVE:	August 24, 1967

SUBJECT: MAINTENANCE INSPECTION NOTES FOR DOUGLAS DC-6/7 SERIES AIRCRAFT

---

1. PURPOSE. This handbook describes maintenance inspection notes which can be used for the maintenance support of certain structural parts of DC-6/7 series aircraft.

2. DESCRIPTION. Maintenance on the wing, fuselage, and empennage structure is reviewed with a view toward supplementing information currently available.

3. HOW TO GET THIS PUBLICATION.

   a. Order additional copies of this publication from:

      Department of Transportation
      Federal Aviation Administration
      Distribution Unit, HQ-438
      Washington, D.C. 20590

   b. Identify this publication as: Advisory Circular 20-52, Maintenance Inspection Notes for Douglas DC-6/7 Series Aircraft.

R. S. Slift
acting Director
Flight Standards Service

---

1. INTRODUCTION. This advisory circular provides maintenance information which can be used by mechanics, repair agencies, owners and operators in developing maintenance programs, making improvements in existing programs, and conducting inspections and repairs on certain structural parts of Douglas DC-6/7 airplanes. The material is based, in part, upon information made available through discussions with airline personnel who have maintained these types of airplanes for thousands of hours of time in service. The intent of the circular is to impart some of this knowledge to other interested persons so that it is not lost.

2. DESCRIPTION. The circular contains guidance material for performing maintenance on wing, fuselage, and empennage structure. The information has been derived from service experience. It does not comprise a full and complete maintenance program for the subject aircraft but should be considered as supplemental maintenance data. Included in the circular are diagramatic sketches and station identifications of the wing, fuselage, and tail. The material concerns general information on corrosion and fatigue plus specific inspection notes which stress the examination of a particular structural area with suggestions as to the method of inspection. In addition, there is a listing of selected maintenance difficulties which have been reported since 1964.

3. BACKGROUND.

   a. Aircraft Use. The agency has realized that several different types of transport aircraft are being phased out of service by some airlines because of the availability of newer equipment. Such older aircraft are being purchased by other operators who may not be familiar with the scope of required maintenance and the means which have been used to keep the aircraft in a safe condition.

   b. Maintenance "know how". Since maintenance "know how" is not transferred with the aircraft, the new operator generally goes through a learning cycle before he is able to rapidly pinpoint the important/critical problem areas of the aircraft. In this respect, identification of known areas where structural problems have been experienced will help in the preparation of an initial maintenance program by a new operator. It also can serve as a guide to other operators who have not accumulated sufficient service experience to have knowledge of all the problem areas of the aircraft.

4. GENERAL INFORMATION.

   a. Manufacturer's Bulletins. It must be emphasized that the manufacturer has published several service bulletins concerning the inspection, repair, and modification of DC-6/7 aircraft. Service Bulletins 406, 407 (DC-7), 857, and 858 (DC-6) highlight the importance of maintaining structural integrity on high-time aircraft with particular reference to areas known to have experienced crack and corrosion damage. Operators are urged to become conversant with the

manufacturer's recommendations and make certain that responsible maintenance personnel are knowledgeable on the subject.

b. Airworthiness Directive. It is emphasized that the material in this circular does not supersede any of the requirements of airworthiness directives issued under Part 39 of the Federal Aviation Regulations.

5. TYPE OF CONSTRUCTION. The major structural components of the aircraft are the wing group, tail group, and fuselage group. Appendixes 1 thru 5 provide detailed views of these components with station identification numbers.

a. The wing group is composed of left and right-hand outer wing sections and a center wing section. The wing group is a full cantilever-type structure, with channeled ribs, extruded and formed sheet stringers, and heavily built-up spars. Each outer wing section consists of wing tip, an aileron, two aileron trim tabs, and a outer wing panel. The center wing section consists of a left and right-hand wing flap, wing flap vane sections, and a center wing panel. The portion of the center wing section that passes through the fuselage is integrated with the fuselage upon assembly. The center wing section includes the four engine nacelles (two on each side of the fuselage).

b. The tail group is composed of a vertical stabilizer, rudder, rudder trim tab, left and right-hand horizontal stabilizers, left and right-hand elevators, an elevator spring tab for each elevator, and two elevator trim tabs for each elevator. With the exception of the fabric-covered rudder and rudder trim tab, all control surfaces are covered with alclad aluminum alloy skin.

c. The fuselage group is an aluminum alloy, semi-monocoque type structure, constructed of longitudinal stiffeners, transverse frames and bulkhead, and flush-riveted stressed skin. The fuselage is divided into three main sections - the nose section, upper and lower center section, and tail section assemblies.

6. GENERAL INSPECTION TIPS.

A. Visual Inspection. The primary structure of the aircraft is designed to provide resistance to variable forces imposed while in operation by dispensing the forces through a structural pattern of "force flow" to the primary structural members of the wing and fuselage. External indications of failure, such as distorted skin, tilted or sheared rivets, and torn, dented, cracked, or corroded skin are usually obvious. Wrinkled skin, "oil cans", and tilted rivets, adjacent to the obviously failed area often indicate secondary damage caused by transmission of stress from the failed area. Misalignment of doors and panels may indicate distortion of internal structure. Internal structural damage, although not always apparent, may be found by closely examining the exterior surface. For example:

(1) Buckled skin between rivets at the end of a stiffener or stringer could mean that the last attaching rivet has failed, or that the stiffener or stringer is buckled in the area of the skin buckle. When a detailed inspection of the failed area is to be performed, functional parts should be actuated to determine if the failure has caused binding.

(2) Deep diagonal skin buckles, located over a frame, former, or rib could mean the member is distorted. When doubt exists concerning internal condition, the area in question should be opened and carefully inspected.

b. Fatigue Cracks. Examples of some areas in DC-6/7 series aircraft where cracks have been found are shown in Figure 1. Detailed repair instructions are provided in manufacturer's service bulletins and manuals.

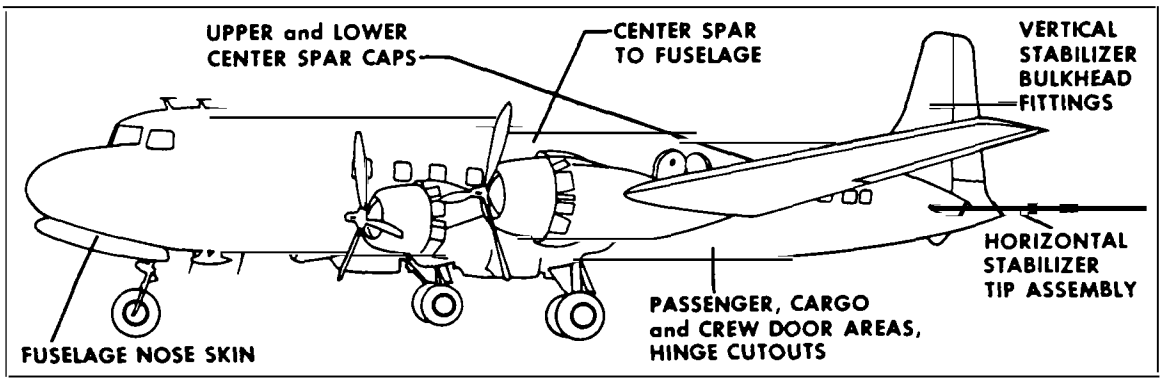


FIGURE 1 - AREAS SUBJECT TO FATIGUE CRACKS

(1) Wing to fuselage attach fittings at center spar.

(2) Horizontal stabilizer and tail stub front spar attach fittings.

(3) Fuselage nose skin plating.

(4) Main crew/cargo entrance door latch plates.

(5) Rear fuselage frame and transverse floor beams.

c. Corrosion Prone Areas. Figure 2 refers to some of the corrosion prone areas in the aircraft. Manufacturer's service bulletins and manuals have been issued to provide detailed repair instructions.

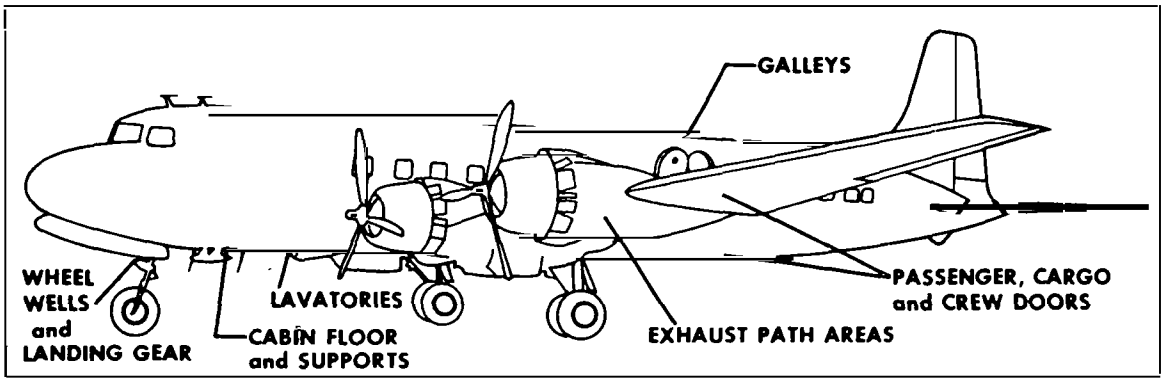


FIGURE 2 - AREAS SUBJECT TO CORROSION DAMAGE

(1) Exhaust path areas.

(2) Battery areas and vents.

(3) Lavatories, galleys, and cabin floors.

(4) Wheel wells and landing gear.

(5) Joints between extruded aluminum sections and laminations.

7. NONDESTRUCTIVE TESTING (NDT).

Simply stated, nondestructive testing is preventative maintenance. This includes utilization of such maintenance tools as X-ray, ultrasonic, magnetic particles, eddy current, and dye penetrant.

a. Maintenance Inspection. NDT permits maintenance inspections without removing components from aircraft or tearing down complex assemblies. Defects in various aircraft systems which would escape detection through normal visual inspection will be identified by NDT.

b. Training Required. Special NDT training is necessary to make sure that the operator is capable of operating the equipment and interpreting the results. Also, many states require that an X-ray operator have an approved certificate for use of X-ray in industrial applications. This is to minimize improper use of X-ray equipment with attendant health hazard.

AIRCRAFT STATION DIAGRAMS

The wing, fuselage, and empennage station diagrams included in this document were developed for the DC-6B aircraft and are used as a general reference only. Several models of each of these aircraft were manufactured and have different station locator numbers based on the particular configuration. Since the defect areas generally apply to all models of both aircraft, the referenced area can be compared with a similar area and locator on the appropriate station diagram for the particular model of aircraft. For example, fuselage station 69 on the DC-6A/B may be station 129 on the DC-6 and 29 on the DC-7C.

TABLE OF CONTENTS

FIGURE A-1. STATION CHARTS

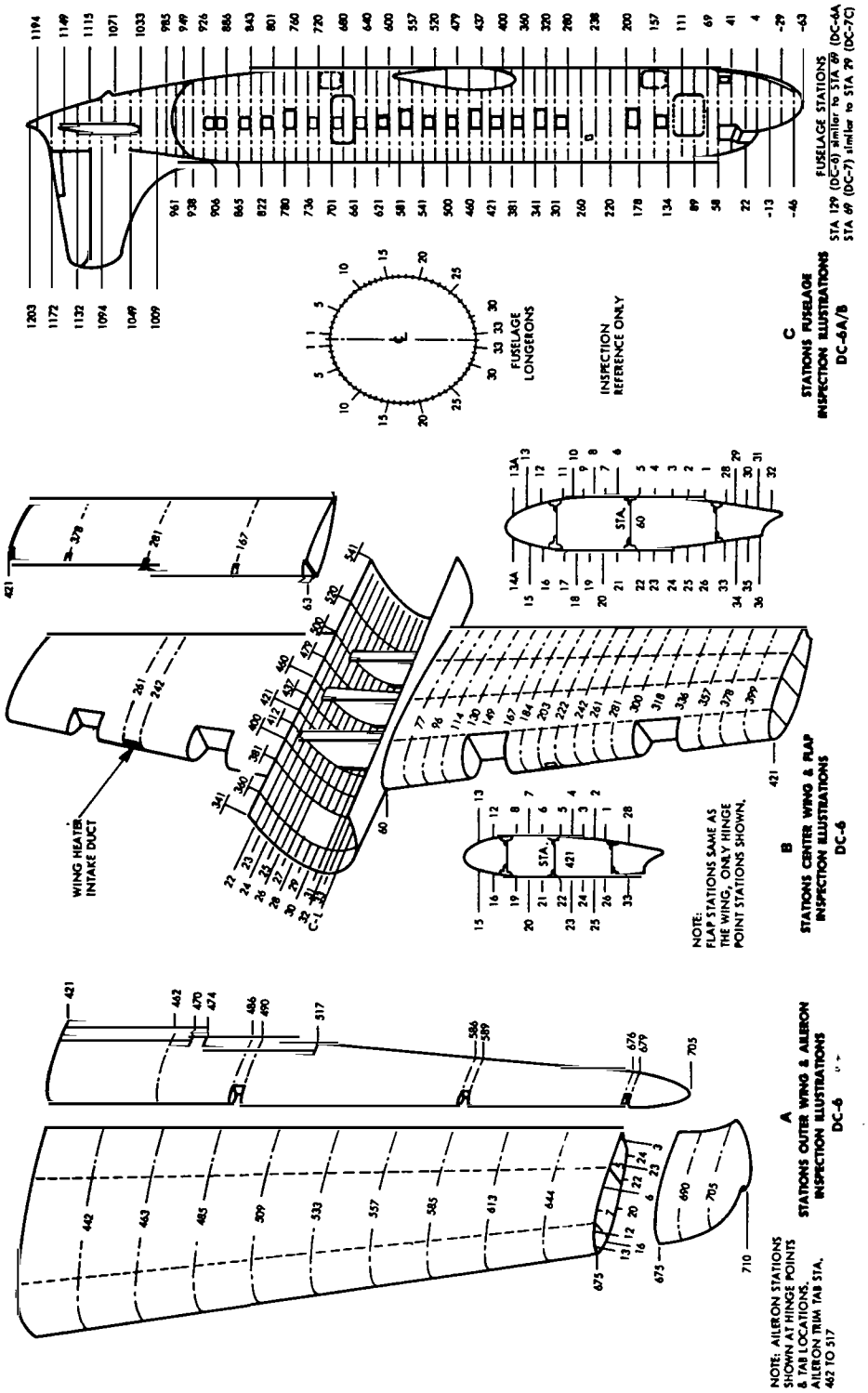
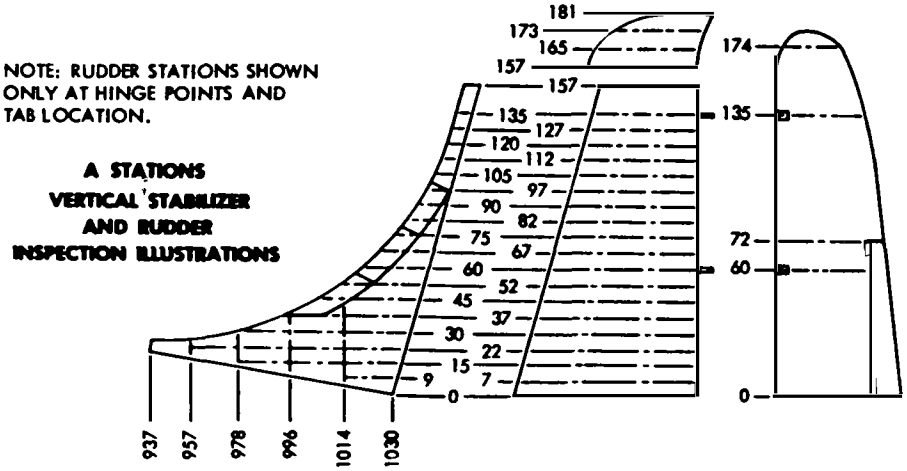


FIGURE A-1
STATION CHARTS (SHEET 1 OF 2)

FIGURE A-2



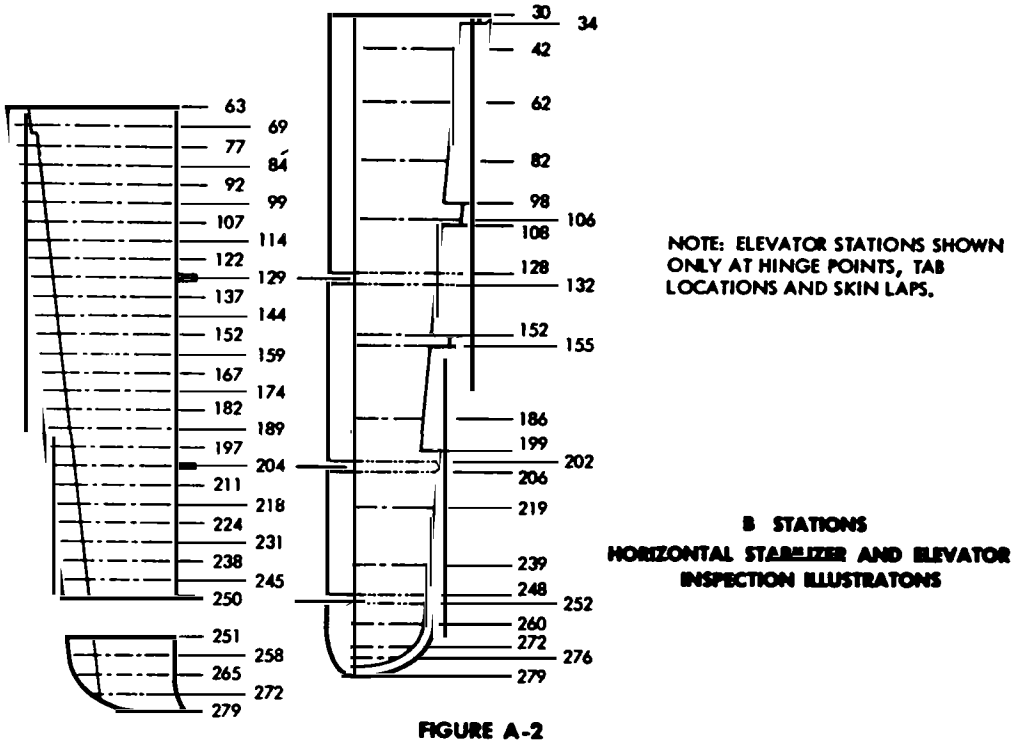


FIGURE A-2

STATION CHARTS (SHEET 2 OF 2)

FIGURE B-1. FUSELAGE MAJOR COMPONENTS

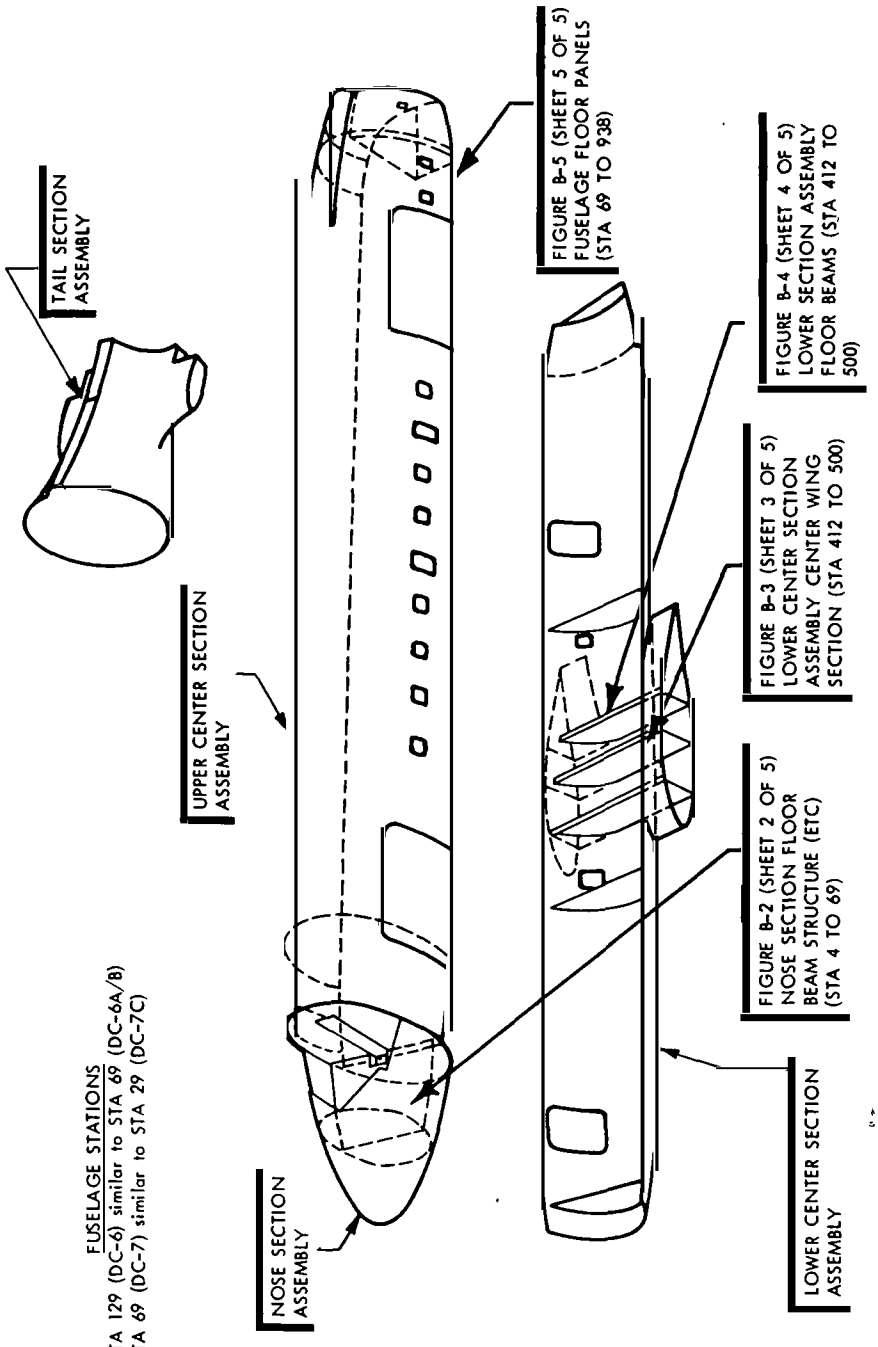


FIGURE B-1
FUSELAGE MAJOR COMPONENTS (SHEET 1 OF 5)
DC-6A/B

FIGURE B-2

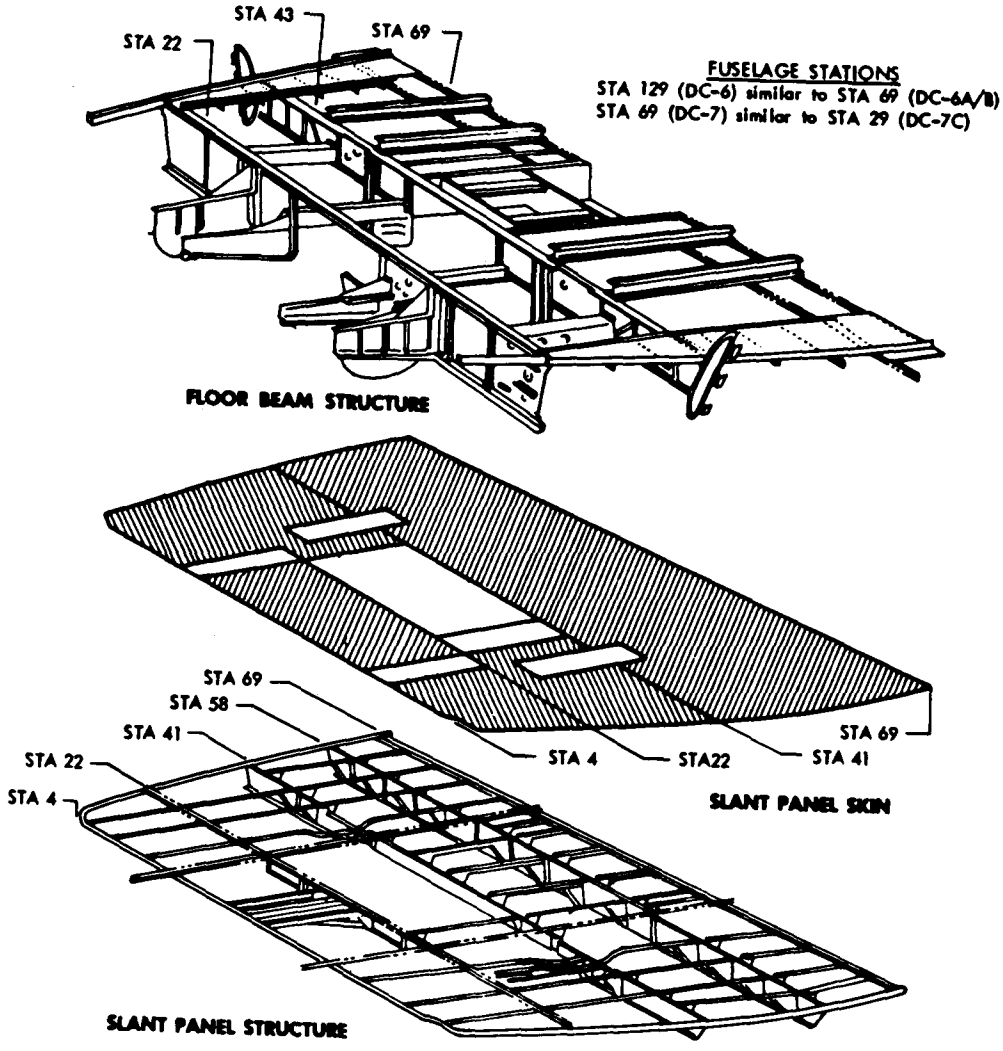
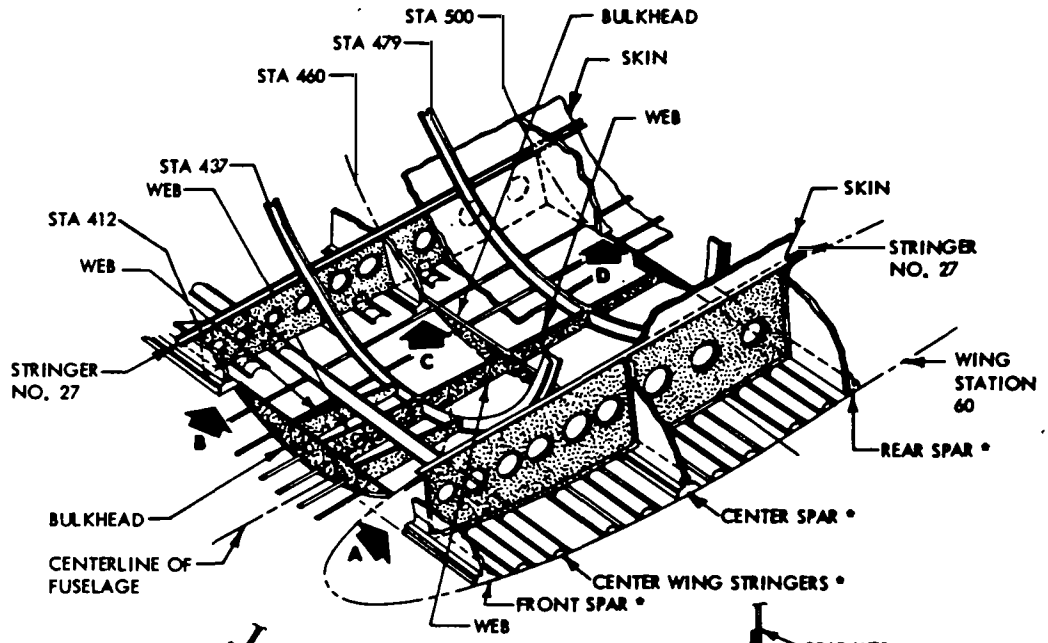
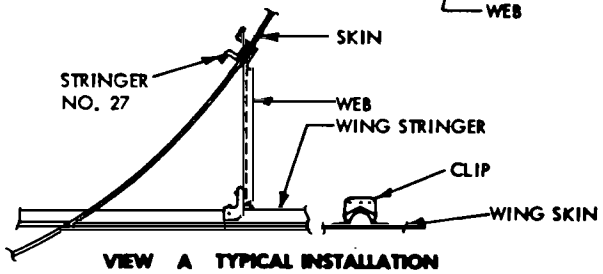


FIGURE B-2

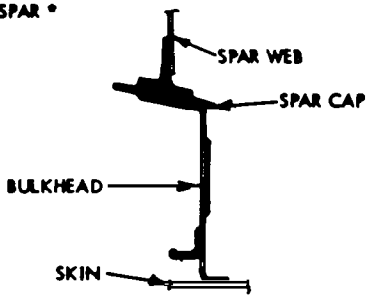
NOSE SECTION ASSEMBLY FLOOR BEAM STRUCTURE, SLANT PANEL STRUCTURE AND SLANT PANEL SKIN (SHEET 2 OF 5)
DC-6A/B

FIGURE B-3

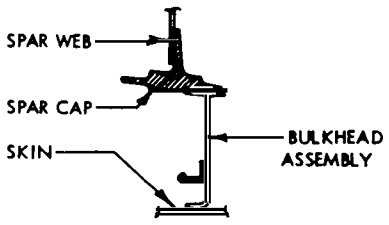




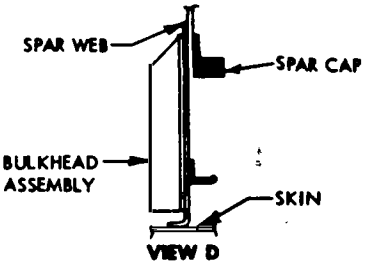
VIEW A TYPICAL INSTALLATION AT WING STRINGER ATTACH POINTS



VIEW B



VIEW C



VIEW D

NOTE:
* CENTER WING STRINGERS AND SPARS HAVE BEEN ELIMINATED WITHIN THE CENTER FUSELAGE SECTION FOR CLARITY.

FUSELAGE STATIONS
STA 129 (DC-6) similar to STA 69 (DC-6A/B)
STA 69 (DC-7) similar to STA 29 (DC-7C)

FIGURE B-3

LOWER CENTER SECTION ASSEMBLY CENTER WING SECTION STRUCTURE DETAILS (SHEET 3 OF 5)
DC-6A/B

FIGURE B-4

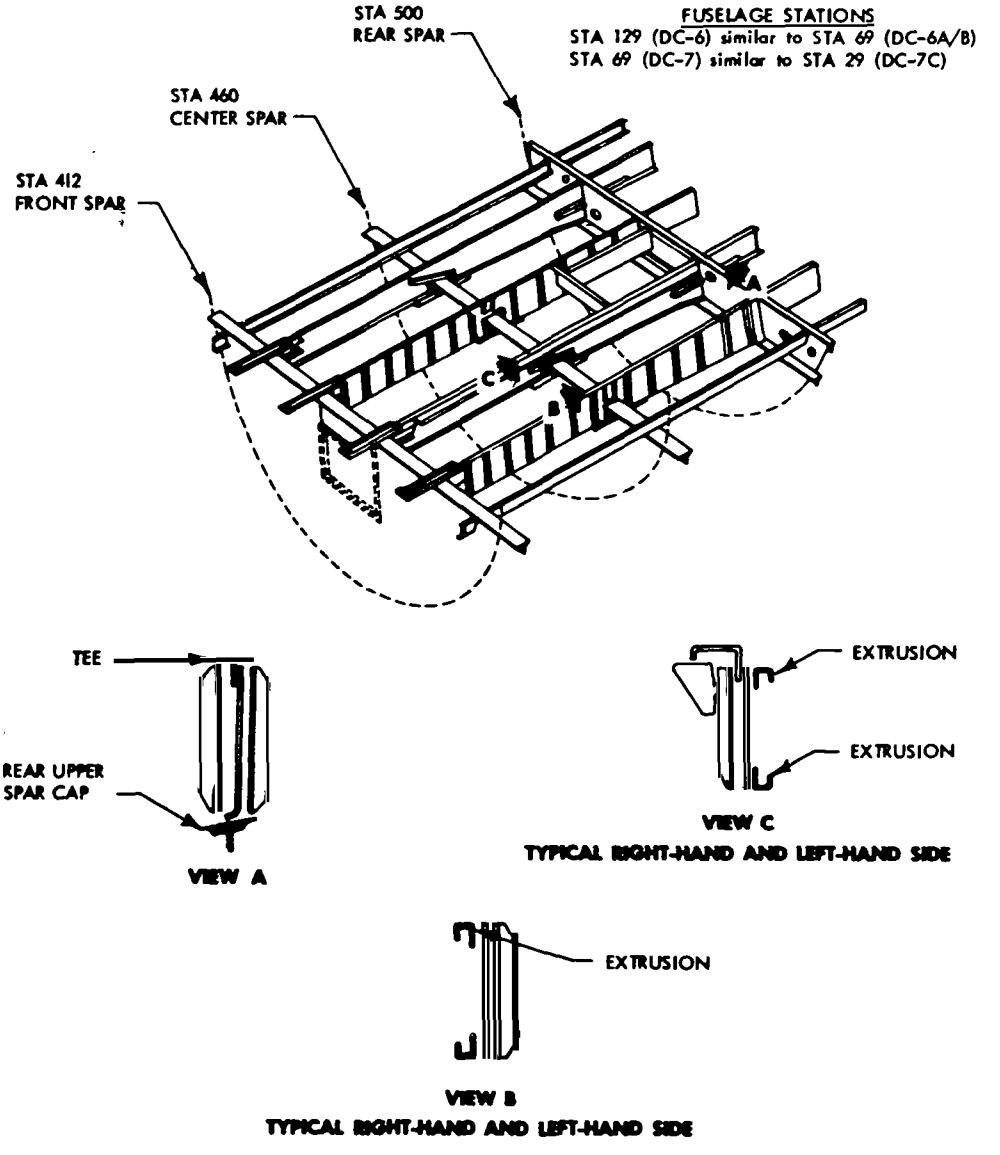


FIGURE B-4

LOWER CENTER SECTION ASSEMBLY FLOOR BEAMS
(STATIONS 412 TO 500) (SHEET 4 OF 5)
DC-6A/B

FIGURE B-5

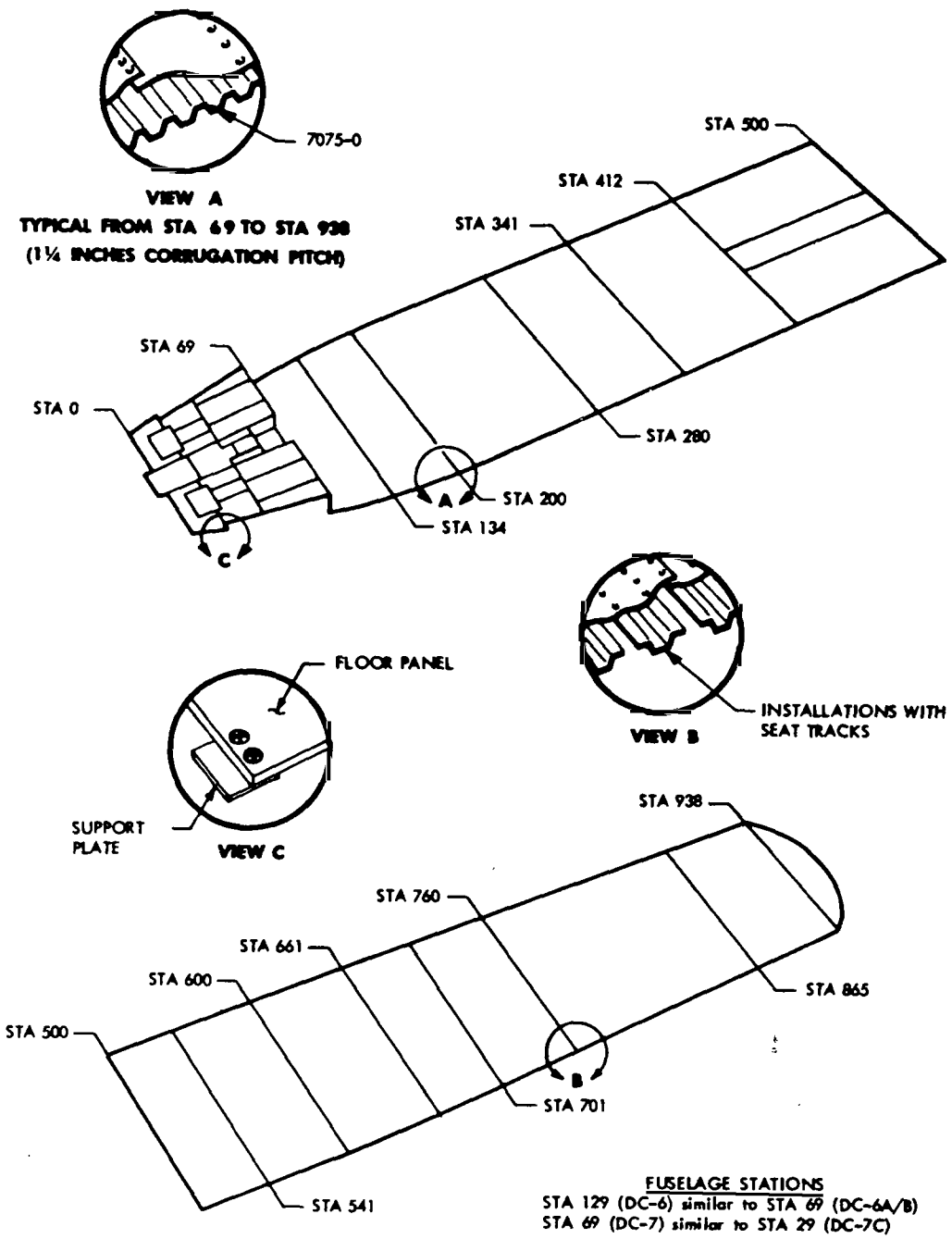


FIGURE B-5

FUSELAGE FLOOR PANELS (SHEET 5 OF 5)
DC-6A/B

FIGURE C-1. CENTER WING SECTION SPARS

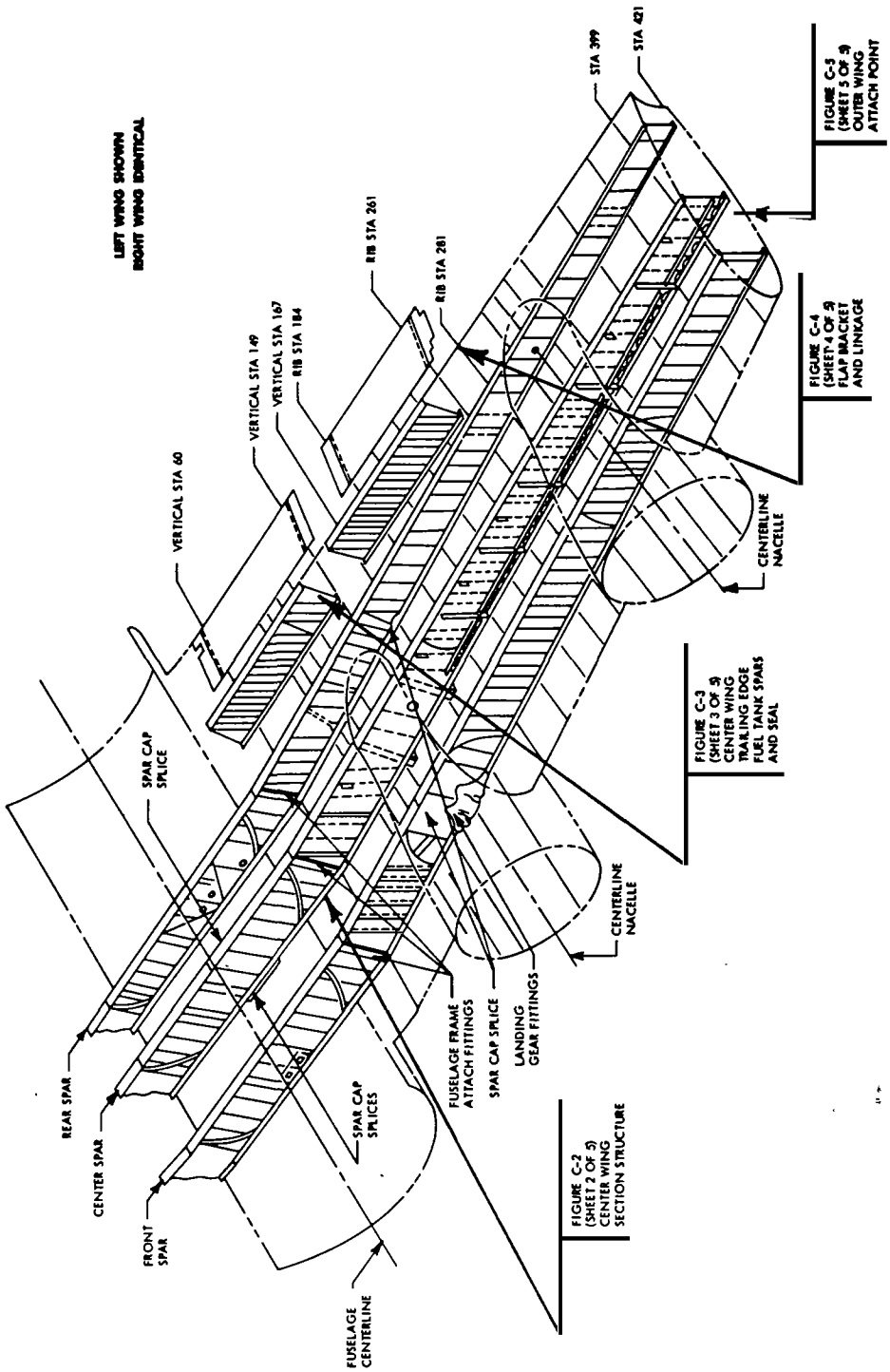


FIGURE C-2. LOWER CENTER SECTION ASSEMBLY CENTER WING SECTION STRUCTURE

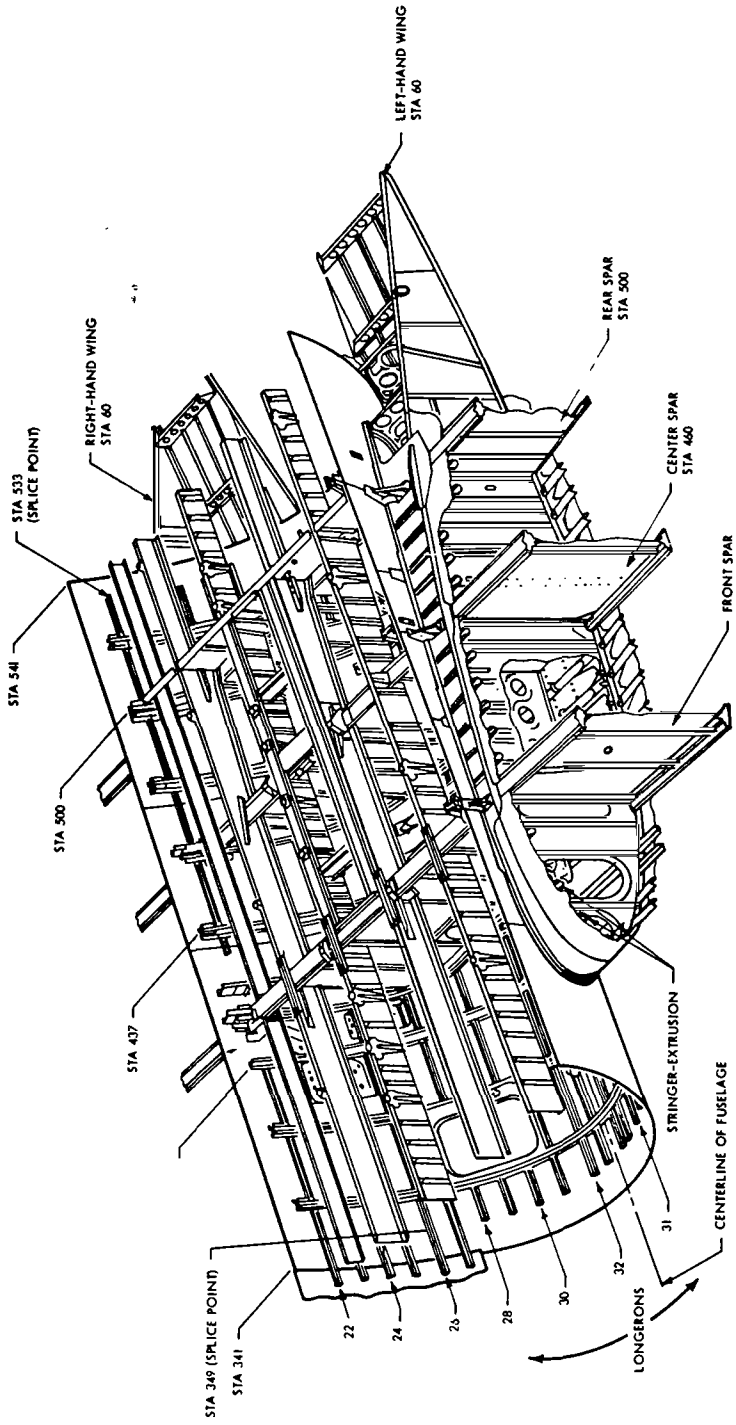
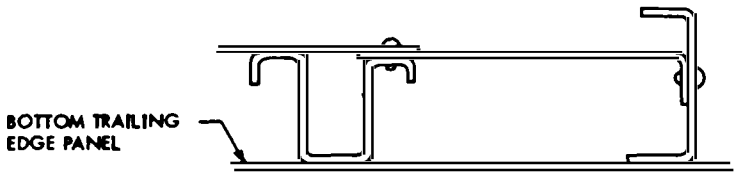


FIGURE C-2
LOWER CENTER SECTION ASSEMBLY CENTER WING
SECTION STRUCTURE (SHEET 2 OF 5)

FIGURE C-4



VIEW A-A
TYPICAL INSTALLATION, CORROSION
RESISTANT SEAL

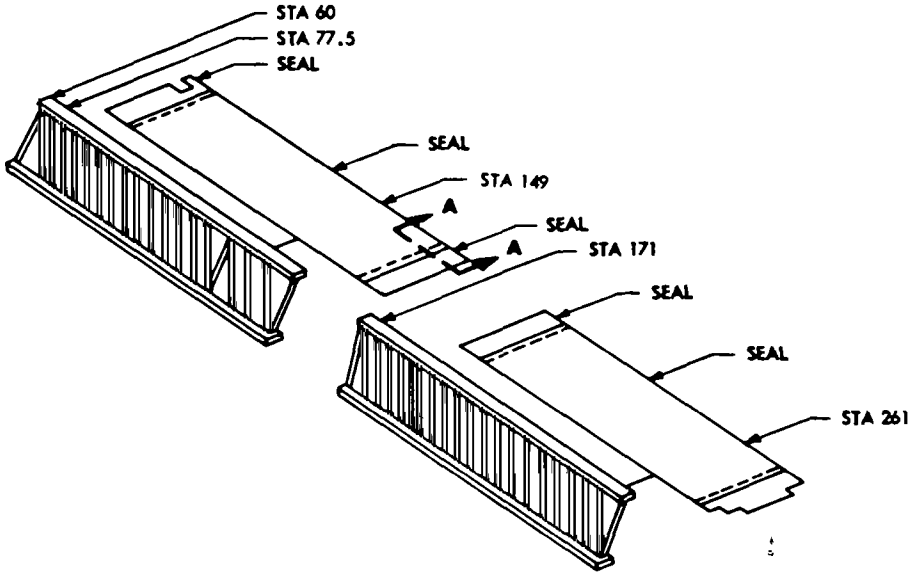


FIGURE C-3
CENTER WING TRAILING EDGE FUEL TANK SPARS AND
CORROSION RESISTANT SEAL (SHEET 3 OF 5)

FIGURE C-4

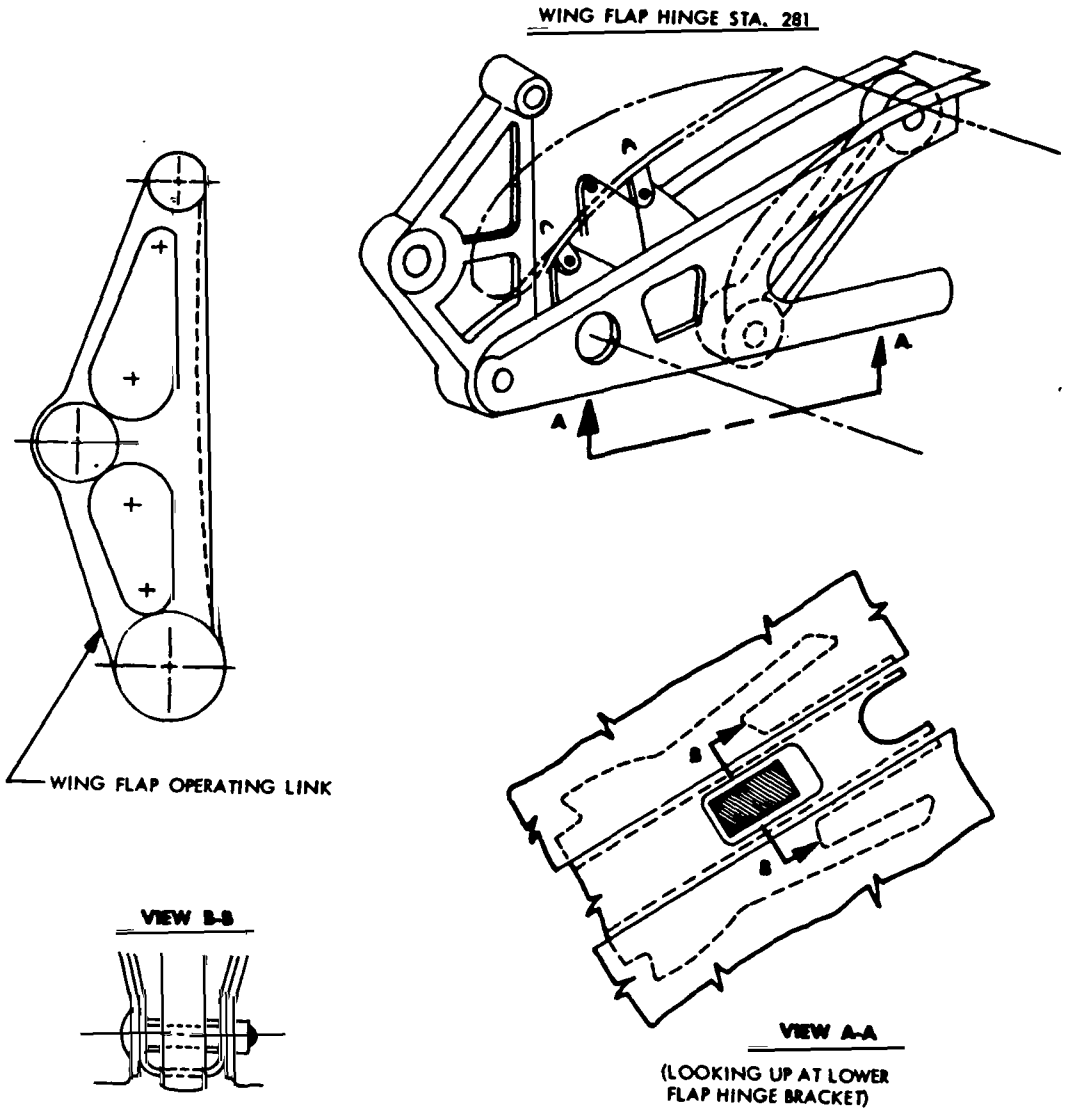
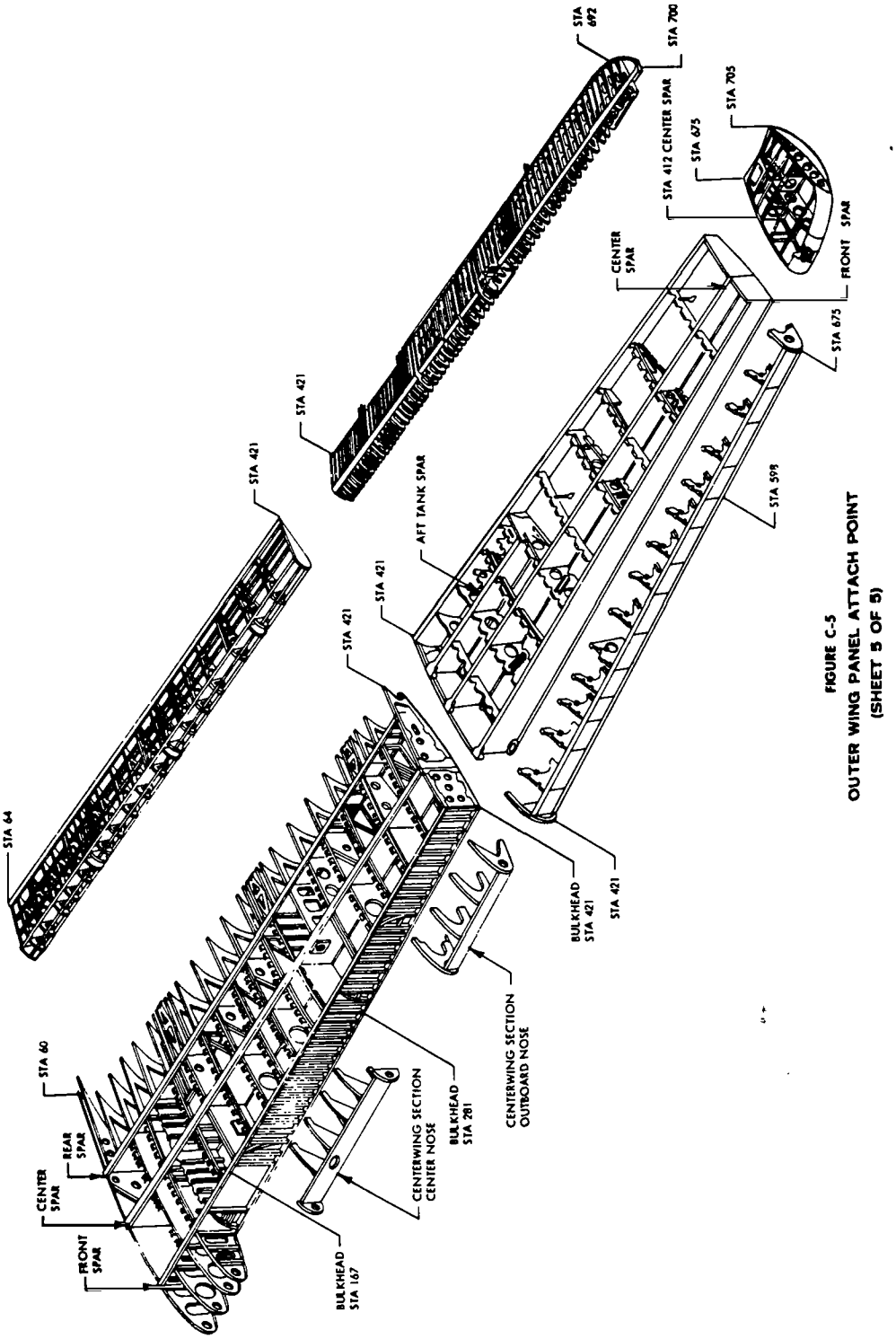


FIGURE C-4

FLAP HINGE BRACKET AND LINKAGE WING STATION 281 (SHEET 4 OF 5)

FIGURE C-5. OUTER WING PANEL ATTACH POINT



FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 4	Skin, framing, pressure bulkhead flanges at the windshield "V"	Cracks	Access for inspection through nose wheel well	Visual Dye Penetrant	(1) This area should receive frequent inspection.
F.S. 18	Slant panel attach points at the traverse beam - cockpit area	Loose fastener cracks/ corrosion	Internal inspection from cockpit area	Visual Magnifying glass	(1) Particular attention should be given to this area. (2) The stiffener angles crack in the attach holes F.S. 18.
F.S. 41 to 58	Fuselage skin under the pilot/copilot window	Numerous cracks	Outside surface (Ref: DSBs 407 & 858)	Visual	(1) Cracks are located along the rivet lines and are difficult to detect.
Production Break F.S. 69	Bulkhead, including the surrounding skin	Cracks, loose fasteners	Remove cockpit sound-proofing paneling	Visual 10-power glass development	(1) Cracks are located in the upper skin/frame areas and the lower frame fittings. (2) Special repairs have been developed for this area.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 4 to 69	Cockpit area - floor boards	Cracks/ Corrosion	Floor removed	Visual	(1) Check for corrugation cracks. (2)*Check floor beams, frames stringers. (NOTE 1)
F.S. 41 to 69	Nosewheel well. Nose gear trunnion	Loose and working fastener cracks	None	Visual	(1) Check for black residue around inner face of fitting and the rivets. (2) Looseness of the trunnion fitting may result in nose gear shimmy.
F.S. 69	Battery box cutouts, skin and lap joints (internal/external)	Cracks/ Corrosion	Internal inspection of the frames and stringers	Visual	(1) Indications of corrosion can be found along edges of the skin lap, rivets along with pitted surfaces, blisters. (2) Frequent cleaning treatment and protection necessary.
F.S. 69	Production joint attach angle	Cracks		Visual	(1) Crack location in metal adjacent and inline with crew door.

NOTE: Refer to Douglas Service Bulletins 407 and 858 for additional information.

NOTE 1. * Close and frequent attention should be given to the under floor cleanliness of the cockpit area.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOL	REMARKS
F.S. 69 to 134	Crew door	Rigging	Critical	Visual	(1) Particular attention should be given to rigging of bayonets and rollers. (2) Improper rigging results in excessive wear, cracks, and pressurization leaks.
F.S. 69 to 134	Front crew door frame, and door hinges	Cracks/ Corrosion	Remove fuselage around door frame	Dye Penetrant Visual	(1) Critical Area - Cracks are located in the aft section, upper section down midway of door. Most critical point is located between stringer Nos. 10 and 11 approximately to 17" from floor line. Also, cracks occur in a lower corner of door sill. Area prone to severe corrosion.
F.S. 69 to 134	Front crew door hinge case	Cracks	None	Visual 10-power glass, Dye Penetrant	(1) Crack location - hinge line. Area should receive close and frequent attention.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 69 to 134	Intercostals below crew door	Cracks/ Corrosion	(Ref: DSBs 407 & 858)	Visual and/or as required	(1) Close and frequent attention should be given to this area.
F.S. 69 to 134	Crew door	Cracks/ wear	None	Visual	(1)*Cracks start in the bayonet cutouts in the door intercostals. (NOTE 1)
F.S. 69 to 134	Crew entrance door jamb	Cracks	Remove lining above door	Visual Dye Penetrant and X-ray	(1) Crack location No. 1 upper forward and No. 2 upper aft latch cutouts. (2) Close and frequent inspections.
F.S. 89 to 100	Stringer No. 31 left and right side-fuselage	Cracks/ Corrosion	(Ref: DSBs 407 & 858)	X-ray and/or as required	(1) Frequent and close attention should be given to this area.
F.S. 101 to 118	Nosewheel well tunnel	Cracks/ Corrosion	Thorough cleaning prior to inspection	Visual	(1) Crack location - aft lower corners.
NOTE:	Typical repair instructions may be found in the manufacturer's manual.				
NOTE 1.*	Rigging of the crew door bayonets and rollers is critical. Improper rigging results in excessive wear, cracks and pressurization leaks.				

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 69 to 400	Fuselage skin, longerons, frames (belly)	Corrosion internal/ external	Access to area through front lower baggage bin	Visual X-ray	(1) Corrosion located inner and outer sides of fuselage skin longerons, frames, and skin laps. (2) White deposits on edges of skin laps, around rivets, blisters in paint, pits are indications. (3) Frequent cleaning and treatment necessary.
F.S. 134 to 179	Cargo door hinge cutouts	Cracks	None	Visual	(1) Crack location - radius of the cutouts and skin panel. (2) Routine inspection necessary.
F.S. 149	Stringers Nos. 28 and 31 and frames	Cracks	Internal/ external (Ref DSBs 407 & 858)	Visual X-ray Dye Penetrant	(1) Cracks 2 to 7 inches found along right side stringer. (2) Cracks are located in bottom row of rivet in the skin cap.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 178 to 260	Fuselage skin lap - longeron No. 26	Corrosion Loose fasteners	(Ref: DSBs 407 & 858)	Visual and/or as required	(1) Located at the skin lap just below the forward water tank service panel. (2) Particular attention should be given to this area.
F.S. 186	Fuselage skin lap - longeron No. 31	Corrosion	None	Visual and/or X-ray	(1) Severe corrosion in this area. (2) Particular attention should be given to this area.
F.S. 178 to 260	Lavatory floor and floor beams	Corrosion	(Ref: DSBs 407 & 858) Critical	Visual	(1) Corrosion located in the floor and floor beams. Heavy especially around the sink area. (NOTE 1) (2) Inspection can be made from the forward lower baggage bins. (3) Popped rivets and paint blisters are external indicators.

NOTE: Particular attention should be given to inspection of magnesium floor beams.

NOTE 1: * Typical repairs and modifications may be found in the manufacturer's manual.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 178 to 260	Butt joint - hydraulic compartment	Corrosion	(Ref: DSBs 407 & 858) Critical	Visual	(1)*This condition is due to spillage from the lavatories. (NOTE 1) (2)*Close and frequent inspection should be made in this area.
F.S. 241 to 280	Fuselage skin lap - stringers Nos. 19 through 23	Cracks/ Corrosion crushed frames	Area covered by ice plates (Ref: DSBs 407 & 858)	X-ray Visual	(1) Frequent inspections should be accomplished in this area.
F.S. 261 to 280	Fuselage frames - cargo bin	Crushed fuselage frames/ cracks	Remove baggage bin floor and lining	Visual	(1) None
F.S. 301	Fuselage - skin lap	Corrosion	None	Visual (Ref: DSBs 407 & 858)	(1) Corrosion located in the faying surfaces of the skin lap approximately 17" above the top of the first cabin window. (2) Popped rivets, paint blisters, pitted areas indicators.
NOTE:	Particular attention should be given to inspection of magnesium floor beams.				
NOTE 1:*	Typical repairs and modifications may be found in the manufacturer's manual.				

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 341	Fuselage skin lap along stringer No. 26	Corrosion	None	Visual X-ray	(1) Severe corrosion located in the skin laps.
F.S. 358 to 391	Fuselage skin, longeron frames	Corrosion/ Cracks	None	Visual X-ray	(1) Corrosion located just below the cabin window. (2) Area should receive frequent attention.
F.S. 400 to 417	Fuselage skin	Cracks/ Corrosion	Access through wing fillet inspection plates. Remove fillet for thorough inspection. (Ref: DSBs 407 & 858)	Visual X-ray	(1) Cracks located in skin above the front spar cap and along the floor line. (2) Loose and popped rivets, paint and metal blisters are indicators of this condition.
F.S. 400 to 512	Fuselage skin lap - stringer No. 19	Corrosion	(Ref: DSBs 407 & 858)	Visual X-ray	(1) Corrosion extended over a 2-inch wide strip along stringer No. 19. (2) Corrosion around and under the lower hinge fitting of the forward emergency exit at F.S. 448.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 500	Fuselage skin	Cracks	(Ref: DSB 652)	Visual X-ray Dye Penetrant	(1) Cracks are located in the fastener holes in the fuselage skin at the wing to fuselage attach angle. (2) Cracks also found in fuselage skin above rear spar.
F.S. 448 to 500	Fuselage longitudinal skin lap	Cracks		Visual	(1) Cracks located in the skin lap above the first and second cabin windows right side. (2) Crack length range up to 2" long.
F.S. 280 to 600	Cabin floor structure and supports	Cracks	Inspect all exposed structure. Remove sound-proofing as necessary for access to front and rear spars. (Ref: DSB 4 & 567)	Visual	(1) Place particular emphasis on inspection of fuselage, frames 413, 421, 460, and 500. (2) Ref. to DSB 567 for information concerning floor to frame bracket. (3) Ref. DSB 611 and 651 for inspection of attach "tee" fittings.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 280 to 600	Emergency exit cutouts	Cracks	(Ref: DSBs 407 & 858)	Visual	(1) Cracks are located in the radius of the cutouts. (2) A service bulletin was issued covering this area. (3) Frequent attention should be given to this area.
F.S. 280 to 600	Window frames	Corrosion		Visual	(1) Intergrannular corrosion located in the lower corner of No. 8 window. (2) Popped rivets, blisters in the skin, and paint are indicators. (3) Check for presence of moisture in the insulation material. Ref. DSB 840.

NOTE: Refer to the manufacturer's manual and service bulletins for necessary repairs.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 280 to 600	Lavatory window	Corrosion	(Ref: DSBs 407 & 858)	Visual	(1) Corrosion can found between the fuselage skin and doubler at the lower edge of the cutout. (2) Corrosion can become severe. Particular attention should be given to this area. (3) Evidence of moisture in the insulating material should be checked.
F.S. 500 to 600	Heater compartment, frames, longerons, floor beams	Corrosion/ Cracks	If blankets are installed, check for moisture (Ref: DSB 520)	Visual	(1) Cracks are located in the frames and longerons. (2) Moderate to severe corrosion in the floor beams.
F.S. 500 to 600	Heater exhaust area - longeron 24	Cracks/ Exhaust damage		Visual	(1) Cracks and damage results from high heat exhaust temperatures. (2) Modifications have been developed.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 500 to 600	Emergency exit doors	Cracks	None	Visual	(1) Cracks are located in the intercostal located immediately under the window. Cracks normally start in the angles.
F.S. 661 to 1194	Passenger entrance door frames, skin, floor, and buffet area	Cracks/ Corrosion	(Ref: DSBs 407 & 858) Removal of buffet required for thorough inspection	Visual Dye Penetrant X-ray	(1) Moderate to heavy corrosion in the door sill panel. (2) Corrosion in the buffet floor area can be severe. (3) Frequent and close inspection of these areas recommended.
F.S. 661 to 1194	Passenger entrance door hinge case	Cracks/ Corrosion	(Ref: DSBs 407 & 858)	Visual Dye Penetrant	(1) Cracks are located at the front of the door frame. (2) Fuselage skin cracks at the upper forward corner of the door hinge cutouts and both upper and lower hinges.

NOTE: Refer to the manufacturer's manual for repairs and modifications.

FUSELAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

FUSELAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
F.S. 661 to 1194	Rear pressure bulk-head	Cracks	Chonic	Visual Dye Penetrant X-ray	(1) Cracks are located in the stringers and attach fittings at the pressure bulkhead. (2) Frequent and close attention should be given to this area.
F.S. 661 to 1194	Tail cone area	Corrosion	Light/Medium	Visual	(1) This can be controlled by cleaning treatment and painting. (2) Blisters and flaking of paint are indicators.
F.S. 1030 to 1194	Horizontal stabilizer stub. (center section)	Cracks	None	Visual X-ray	(1) Cracks are located in the skin attach points to the front and rear spar.
F.S. 1030 to 1194	Tail cone area	Corrosion	Light/Medium	Visual	(1) This can be controlled by cleaning treatment and painting. (2) Blisters and flaking of paint are indicators.
F.S. 1030 to 1194	Horizontal stabilizer stub. (center section)	Cracks	None	Visual X-ray	(1) Cracks are located in the skin attach points to the front and rear spar.

EMPENNAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

EMPENNAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
Sta. 70 to 130	Horizontal stabilizer	Loose fasteners (numerous) Cracks	None	Visual Dye Penetrant Magnifying glass	(1) Loose rivets located in the lower skin where it is attached to the front spar.
Sta. 30	Horizontal stabilizer	Cracked attach fitting	Cracks are difficult to locate. Critical	X-ray	(1) Cracks are located in the stabilizer attach castings. (2) Cracks usually start at the upper side of fitting which is covered by skin and progresses spanwise through the boltholes. (3) Particular attention should be given to these fittings since the cracks do not progress from the outside where they could be detected visually or with dye penetrant.

NOTE: X-ray with steel bolts installed will result in blanking out defects in aluminum.

Corrosion is difficult to detect by X-ray if the particles remain intact in the metal.

EMPENNAGE STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

EMPENNAGE STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
Sta. 126, 202, and 252	Elevators	Cracks	None	Visual	(1) Cracks located at the hinge cutouts on the elevator skin.
	Rudder - torque tube	Wear/ Corrosion	None	Visual	(1) Excessive wear and corrosion between the tube and the bearing seats. (2) This can result in in-flight vibration due to looseness in the fits between the tube and bearing seats.
Sta. 937 to 1115	Vertical stabilizers	Cracks	(Ref: DSBs 723 A796, and 796	Visual X-ray Dye Penetrant	(1) Cracks are located in the front fitting of the vertical stabilizer at the fuselage to vertical stabilizer attach point.
Sta. 959 to 986	Vertical stabilizer	Cracks and loose bolts in the stabilizer nose section	(Ref: DSBs 723 A796 and 796)	Visual X-ray Dye Penetrant	(1) Cracks have been found on the lower left side of the vertical stabilizer. (2) Particular attention should be given to the metal cap after lightning strike report for burned areas.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S.-0-60	Front upper spar cap	Cracks	(Ref. DSBs 406 & 857) Internal inspection access door	X-ray, Visual, Magnifying glass Dye Penetrant	(1) Particular attention should be given this area. (2) Crack length range up to 2" long.
W.S. 0-60	Stringers, wing center section	Cracks	Internal inspection access door	X-ray, Visual, or Dye Penetrant	(1) Cracks found along forward side of stringer.
W.S. 0-60	Center spar cap splices	Cracks	Internal inspection access door	X-ray, Visual, or Dye Penetrant	(1)*Frequent and close attention should be given this area. (NOTE 1)
W.S. 32	Front lower spar cap forward tang (extending thru fuselage)	Cracks	Internal inspection access door	Visual, Dye Penetrant or X-ray	(1) Routine inspection necessary.
W.S. 32	Front lower spar cap aft tang (extending thru fuselage)	Cracks	Internal inspection access door	Visual, Dye Penetrant or X-ray	(1) Located at the bulkhead lap to tang (2) Particular attention should be given this area.

NOTE 1. * Cracks have developed exceeding limitations requiring spar replacement. This is a complex operation due to exacting fits, wing angle, and disassembly required.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTION

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 32	Center lower spar cap forward tang (extending thru fuselage)	Cracks	None	Visual, Dye Penetrant, or X-ray	(1) Routine inspection necessary.
W.S. 32	Center lower spar cap aft (extending thru fuselage)	Cracks	Internal inspection access door	Visual, Dye Penetrant, or X-ray	(1) Located at bulkhead lap to tang. (2) This area should receive frequent attention.
W.S. 32	Wing stringers 17 & 26 at intersections with fuselage attach angles	Cracks	Internal inspection access door	Visual or X-ray	(1) Cracks found along forward side of stringer. (2) Cracks located in forward line of rivets in spar cap.
W.S. 55 - 60	Center upper spar cap forward tang	Cracks	None	Visual or X-ray	(1) Cracks located inboard of attach angles. (2) Place particular emphasis on this area.
W.S. 55 - 60	Center lower cap forward tang	Cracks	Internal inspection access doors	Visual or X-ray	(1) Cracks located in tang at skin lap. (2) This area should be frequently inspected.

NOTE: Refer to manufacturer repair manual and service bulletins for repair instructions.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 55-60	Center upper spar cap aft tang	Cracks	None	Visual or X-ray	(1) Cracks located inboard of attach angle. (2) Place special emphasis on inspection of cap at longeron 22.
W.S. 55-60	Center lower spar cap aft tang	Cracks	None	Visual or X-ray	(1) Cracks located in tang at skin lap. (2) Particular attention should be given this area.
W.S. 60	Inboard end of flap top nose section skin	Cracks	Outside surface inspection	Visual, Magnifying glass	(1) Cracks located along rivet lines and difficult to locate.
W.S. 60	Nos. 2 & 3 fuel tank access doors	Cracks and popped rivets	Outside surface inspection	Visual, Magnifying glass	(1) Crack location - radius of cutouts and skin. (2) Routine inspection necessary.
W.S. 60	Upper wing to fuselage attach angles	Cracks	Internal inspection access door	Visual, Dye Penetrant, X-ray	(1) Crack location - cracks in boltholes. (2) Frequent inspections should be accomplished in this area.
NOTE:	Refer to manufacturer	repair manual	and service	bulletins for	repair instructions.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 60	Front lower spar cap aft tang boltholes	Cracks	Internal inspection access door	Visual or X-ray	(1) Crack location - horizontally between tang and spar cap. (2) DSBs A678, 678, and 694 apply.
W.S. 60 -65	Front lower spar cap aft tang	Cracks	Internal inspection access doors	Visual or X-ray	(1) Cracks located at skin lap in tang. (2) Routine inspection necessary.
W.S. 60 -65	Front lower spar cap forward tang	Cracks	Internal inspection access doors	Visual or X-ray	(1) Cracks located horizontally between tang and spar cap. (2) Frequent inspection should be made of this area.
W.S. 67	Wing stringer 22 inboard and outboard of this station	Cracks	Internal inspection access doors	Visual or X-ray	(1) Cracks located forward row of rivets. (2) Close and frequent inspection necessary.
W.S. 67	Wing stringer 23 inboard and outboard of this station	Cracks	Internal inspection access doors	Visual or X-ray	(1) Cracks start in forward row of rivets. (2) DSB issued on this area.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 60	Stringers at splices on lower wing plate	Cracks	Internal inspection access doors	Visual or X-ray	(1) Refer to DSB 561. (2) Cracks start in forward row of rivets.
W.S. 60 - 130	Stringers 17, 18, 19, 20, and 21	Cracks	(Ref: DSBs 406 & 857)	Visual or X-ray	(1) Cracks have been found in both forward and rear rivet holes. (2) Particular attention should be given this area.
W.S. 96	Stringers 18, 19, and 20	Fatigue Cracks	Internal inspection access door	Visual X-ray	(1) Crack location - forward row of rivets. (2) Reference DSB 561.
W.S. 77 - 96	Center spar web inside wing fuel cell cavity	Cracks (Some cases 5" to 6" long)	(Ref: DSBs 406 & 857)	Visual Magnifying glass Dye Penetrant	(1) Cracks located vertically along web stiffener. (2) Full cell liners must be removed for access to this area.
W.S. 133 - 163	Upper and lower spar caps in corner of nacelle spar area	Cracks (fuel stains are telltale signs)	Access between landing gear, drag strut, and main gear strut	Visual Dye Penetrant X-ray	(1) Cracks radiate horizontally from rivet holes. (2) Particular attention should be given this area.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 130 - 167	Top wing skin under nacelle fairing wing	Corrosion/ Cracks	Area susceptible to engine exhaust, gases, and vibration (Ref: DSBs 406 & 857)	Visual	(1) Reference DSB 762. (2) This can be controlled by cleaning treatment and painting. (3) Blisters and flakes of paint are indicators.
W.S. 122	Center lower spar cap aft tang at three boltholes	Cracks	Internal inspection access door	Visual or X-ray	(1) Cracks radiate from boltholes. (2) Routine inspection necessary.
W.S. 171	Center lower spar cap aft tang at three boltholes	Cracks	Internal inspection access door	Visual or X-ray	(1) Cracks radiate horizontally, length of crack up to 3".
W.S. 114.5	Center lower spar caps and wing skin from inboard side of No. 2 nacelle inboard to this W.S.	Cracks	Internal inspection access door	Visual or X-ray	(1) Crack location - forward line of rivets.
W.S. 148	Center lower spar caps and wing skin from outboard side of No. 2 nacelle outboard to this W.S.	Cracks	Internal inspection access door	Visual or X-ray	(1) Crack location - forward and aft row of rivets. (2) Cracks found in skin under spar.

NOTE: Refer to manufacturer's manual and service bulletins for crack repair and corrosion treatment.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 114.5	Center lower spar caps and wing skin from inboard side of No. 3 nacelle inboard to this W.S.	Cracks	Internal inspection access door	Visual or X-ray	(1) Crack length varies up to 2" - 3". (2) Usually located on front line of rivets.
W.S. 148	Center lower spar caps and wing skin from outboard side of No. 3 nacelle outboard of this W.S.	Cracks	Internal inspection access door	Visual or X-ray	(1) Crack location - forward and aft line of rivets. (2) Routine inspection necessary.
W.S. 131	Nos. 2 and 3 nacelle lower wing skin inboard of W.S. 167 outboard W.S. 131	Cracks/ Corrosion	Internal inspection access door	Visual or X-ray	(1) Moderate to severe corrosion. (2) Cracks radiating from rivet holes.
NOTE:	Refer to manufacturer's manual and service bulletins for crack repair and corrosion treatment.				

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 131	Splice or tie plates, landing gear, spar cap, lower front	Cracks	Access thru wheel well	Visual, Dye Penetrant X-ray	(1) Cracks located horizontally in lower cap where plates attach. (2) Routine inspection necessary.
W.S. 131	Center wing lower skin aft of center spar	Cracks and Corrosion	Outside surface inspection	Visual or X-ray	(1) Moderate to heavy corrosion. (2) Frequent and close inspection of this area recommended.
W.S. 131	Aft and of main landing gear door assemblies	Cracks and Corrosion	Outside surface inspection	Visual or X-ray	(1) Moderate to light corrosion. (2) Cracks radiating from aft row of rivets.
W.S. 167 - 282	Lower wing skin	Small cracks and corrosion	(Ref: DSBs 406 & 857)	Visual or X-ray	(1) Corrosion can become severe. (2) Frequently inspect this area.

NOTE: Refer to manufacturer's manual for skin repair and corrosion treatment.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 183	Leading edge rib	Cracks	(Ref: DSBs 406 & 857)	Visual or X-ray	(1) Routine inspection of this area.
W.S. 203 - 282	Stringers caps and crowns	Cracks inside and out, loose rivet	None	X-ray	(1) Cracks located in fastener holes. (2) Crack length up to 2" long.
W.S. 281	Wing skin and large fasteners	Cracks	Outside surface inspection	Visual	(1) Cracks located parallel to ribs. (2) Crack length up to 4" long.
W.S. 281	Stringer tie ends	Corrosion	Access door	Visual	(1) Moderate to heavy corrosion. (2) Frequent inspections of this area.
W.S. 242	Stringer No. 23 inboard/outboard of W.S.	Cracks and loose rivets	Internal inspection access door	Visual or X-ray	(1) Particular attention should be given this area.
NOTE:	Refer to manufacturer's manual and service bulletins for crack repair and corrosion treatment.				

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 242	Leading edge access door plate hinge, aft tang	Corrosion and wear	Internal inspection access door	Visual or X-ray	(1) Corrosion is moderate to severe. (2) Frequent cleaning treatment necessary.
W.S. 130 - 167 300 - 336	Frame of nacelle where attached to skin	Cracks	Access thru inspection opening on nacelles	Visual	(1) Nuisance cracks. (2) Routine inspection necessary.
W.S. 318	Wing skin behind outboard nacelle	Corrosion (small pits)	Outside surface inspection	Visual	(1) Corrosion is severe. (2) Frequent cleaning is necessary.
W.S. 149 - 318	Wing skin under nacelle turtle back	Cracks	Nacelle must be removed to locate cracks	X-ray	(1) Cracks vary in length up to 2". (2) Particular attention should be given this area.
W.S. 318	Supercharger mount frames	Cracks	Access thru inspection door	Visual	(1) Transverse cracks have been reported. (2) This area should be given frequent inspections.

NOTE: Refer to manufacturer's manual and service bulletins for crack repair and corrosion treatment.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 281	Fuel tank sealants	Corrosion	Access door	Visual	(1) Corrosion found on wing skin when sealants removed. (2) Frequent inspections of this area.
W.S. 281	Wing skin	Cracks and fuel leaks	Outside surface inspection	Visual or X-ray	(1) Particular attention should be given this area. Consult manufacturer if repair not in repair manual.
W.S. 281	Upper spar rail	Corrosion	Access thru landing gear well	Visual or X-ray	(1) Corrosion light to moderate. (2) Area should receive frequent attention.
W.S. 281	"Tee" angles	Cracks	Internal inspection access door	Visual or X-ray	(1) None
W.S. 293	Stringer No. 22 aft of center spar inboard/ outboard of W.S.	Cracks and loose rivets	Internal inspection access door	Visual or X-ray	(1) Cracks are usually in forward line of rivets. (2) Routine inspections necessary.
NOTE:	Refer to Douglas Service Bulletins Nos. 406 and 857 for additional information.				

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 293	Stringer No. 23 aft of center spar inboard/outboard of W.S.	Cracks and loose rivets	Internal inspection access door	Visual or X-ray	(1) Crack location - on both forward and aft row of rivets. (2) Check for loose rivets.
W.S. 242	Stringer No. 22 inboard/outboard of W.S.	Cracks and loose rivets	Internal inspection access door	Visual or X-ray	(1) Crack location - aft row of rivets. (2) Length of cracks reported up to 2".
W.S. 300 - 336	Nacelle former flanges (nacelle station 414)	Cracks	Access thru inspection plate	Visual	(1) Crack location - parallel to former. Area should receive close attention.
W.S. 149 - 318	Nacelle to center spar attach gussets (nacelle station 460)	Cracks	Access thru inspection plate	Visual	(1) Cracks start in gussets and parallel to spar cap. (2) Routine inspections necessary.
W.S. 149	Front spar cap forward lower tang at No. 3 inboard and outboard nacelle attach angle bolt-holes	Cracks	Access thru landing gear wheel well	Visual or X-ray	(1) Cracks in tang found up to 4" long.

NOTE: Refer to manufacturer's manual and service bulletins for repair instructions.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 318	Front spar cap forward lower tang at No. 4 inboard and outboard nacelle attach angle bolts	Cracks	Access thru landing gear wheel well	Visual or X-ray	(1) Cracks in tang radiate from rivet line.
W.S. 302 - 312	Center lower spar cap forward tang at fuel sump cutout radius in cap inboard (W.S. 302) and outboard (W.S. 312) end of numbers 1 and 4 alternate tank sumps (bolts removed)	Cracks	Access thru landing gear wheel well	Visual or X-ray	(1) Cracks are located in fastener holes and also in wing skin. (2) Crack length ranges up to 2" long.
W.S. 336	Fasteners inboard of outboard nacelles	Cracks	Outside surface inspection	Visual	(1) Cracks radiate from fastener holes parallel to ribs.
W.S. 339	Center spar upper rail	Cracks	Access thru main landing gear wheel well	Visual X-ray	(1) Cracks are located in the skin attach points. (2) Routine inspection is necessary.
NOTE:	Refer to manufacturer's	repair manual and service	bulletins for	repair instructions.	

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 421	Stringer No. 26 hat sections and attach fittings	Cracks/ Corrosion	Access thru inspection door	Visual X-ray	(1) Corrosion moderate to heavy. (2) Cleaning and painting will control.
W.S. 336	Wing stringer No. 22 (outboard of this station)	Cracks/ Corrosion	Access thru inspection door	Visual X-ray	(1) Corrosion moderate to heavy. (2) Area should be frequently inspected.
W.S. 336	Wing stringer No. 23 (outboard of this station)	Cracks/ Corrosion	Access thru inspection door	Visual X-ray	(1) Corrosion moderate. (2) Cracks parallel stringer longitudinally.
W.S. 378	Wing stringer No. 22 (inboard and outboard of this station)	Cracks/ Corrosion	Access thru inspection door	Visual X-ray	(1) Corrosion moderate. (2) Cracks range up to 3" long.
W.S. 378	Wing stringer No. 23 (inboard and outboard of this station)	Cracks/ Corrosion	Access thru inspection door	Visual X-ray	(1) Corrosion light to moderate. (2) Frequent inspections necessary.
NOTE:	Refer to manufacturer's	repair manual	and service	bulletins for	repair information.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 399	Wing stringer No. 22 (inboard and outboard of this station)	Cracks/ Corrosion	Access thru inspection door	Visual X-ray	(1) Severe corrosion reported. (2) Cracks are longitudinal, crack length up to 3" long.
W.S. 399	Wing stringer No. 23 (inboard and outboard of this station)	Cracks/ Corrosion	Access thru inspection door	X-ray	(1) Corrosion moderate to heavy. (2) Cracks involve stress corrosion.
W.S. 421	Inboard end of wing and lower and of attach fittings and stringers	Corrosion	Internal inspection access door	Visual	(1) Corrosion light to moderate. (2) Sealant area must be inspected.
W.S. 421	"Tee" clips at end of spars	Cracks	None	Visual X-ray	(1) None
W.S. 435 - 453	Upper wing skin at skin lap at front spar	Cracks	Outside surface inspection	Visual	(1) Cracks parallel rivet row. (2) Routine inspection is necessary.
NOTE:	Refer to manufacturer's	repair manual and service	bulletins for	repair information.	

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 421 - 710	Rib clips (90^{O})	Cracks	Internal inspection access door	Visual	(1) Cracks radiate from fastener holes on stringer and/or rib.
W.S. 421 - 705	Aileron well	Small cracks	Outside surface inspection	Visual	(1) Routine inspection of this area.
W.S. 462 - 517	Aileron trim tab hinge points	Small cracks	Outside surface inspection	Visual	(1) Particular attention should be given this area.
W.S. 485	Aileron bell crank	Cracks	Internal inspection access door	Visual	(1)*Failure have been reported due to wing gust loads on ground. (See Note 1)
W.S. 60 - 710	Wing trailing edge skin, ribs, clips, and stringers	Nuisance cracks	Internal inspection and also on outside surface (Ref: DSBs 406 & 857)	Visual	(1) These areas should receive frequent inspections.
NOTE:	Refer to manufacturer's manuals and service bulletins tor repair and corrosion treatment information.				
NOTE 1.	* Fiber glass trailing edge will develop small cracks in radius at tip. (Maintenance item)				

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATION	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 60 - 470	Wing trailing edge and flap well area	Corrosion	Outside surface inspection	Visual	(1) Corrosion moderate to heavy due to exhaust gases. (2) Frequent and close inspection of these areas recommended. (3) Frequent cleaning and treatment necessary.
W.S. 167 281 334	Wing flap links	Cracks and Misalign-ment	Outside surface inspection	Visual	(1)*Routine inspection of this area desirable. (See Note 1)
W.S. 167	Wing flap support aft boltholes	Oversize hole	Service wear	Visual	(1) Routine inspection of this area.
W.S. 281	Spacer block/flap actuator	Improper clearance	None	Visual	(1) None

NOTE 1. * Misalignment of links will result in cracking the link and attach brackets. Also, it will impose large loads on brackets that are attached to the rear spar structure which can result in cracking in this area.

WING STATIONS - DC-6/7 AIRCRAFT INSPECTIONS

WING STATIONS	DESCRIPTION	INSPECT FOR	COMMENTS	INSPECTION TOOLS	REMARKS
W.S. 63 - 421	Flap trailing edges	Warpage	Outside surface inspection	Visual	(1) Excessive warpage may cause flight control problem. (2) Particular attention should be given this area.
W.S. 63 - 421	Flap structure damage	Cracked ribs, clips skin, and loose rivets	None	Visual	(1) Damage is usually caused during ground operation. (2) This area should receive frequent inspections.

NOTE: Refer to manufacturer's repair manual and service bulletins for detailed repair instructions.

APPENDIX 6.

1. DC-6 AIRCRAFT MAINTENANCE INFORMATION. The following is a listing of significant maintenance difficulties that have been reported by air carriers as mechanical reliability reports from 1964 to 1967. This information may be useful in identifying additional structural inspection areas:

   a. Wings.

      (1) During an overhaul inspection, the main landing gear outer cylinder, P/N 8065H2, was found cracked in the radius area of the outside diameter of the cylinder just below the "Y" arms. Repairs were accomplished in accordance with the manufacturer's instructions. The aircraft total time was 25,000 flight hours. This same condition was found on another aircraft having 31,000 flight hours.

      (2) Cracks were found in the trunnion bore of the left and right front spar main landing gear drag strut fitting. The drag strut fitting was replaced. The aircraft total time was 49,786 flight hours.

      (3) During inspection, the right wing flap strut assembly link support, P/N 5329694, located at W.S. 167 was found cracked at the aft end. The flap support was replaced. Time since the last inspection was 509 hours.

      (4) During landing, the left wing flap was damaged. Investigation revealed that the left outboard hinge bracket assembly, P/N 3365189, was broken. The bracket was replaced.

      (5) A two-inch crack was found in the upper wing skin. The crack was located at W.S. 96, inboard of the No. 3 nacelle in the aft corner of the tank access hole. The aircraft total time was 25,208 hours.

      (6) During inspection, the right and left flap hinge fittings were found cracked in the inboard web at the radius of the hinge hanger cutout at W.S. 167. Hinge fittings, P/N 5492213-13 and -14 were replaced. Aircraft total time was 19,783 hours.

      (7) During a basic service check, the left front spar drag fitting, P/N 5325648, was found to be cracked. The crack ran from the drag strut fitting cutout, inboard and parallel with the front spar, approximately two and one-half inches below the inboard lug. The crack was approximately three inches long. The total time on the aircraft was 30,609 flight hours. The manufacturer has issued rework instructions including repetitive inspections at 100-hour intervals.

(8) A one-inch crack in the lower skin of the right wing was found during a periodic inspection. The crack was located at W.S. 185 and 16 inches behind the center spar. Total flight time on the aircraft was 45,987 flight hours. A repair can be found in the manufacturer's repair manual.

(9) A one-inch chordwise crack was found in the upper inboard attach angle of number one nacelle where it is attached to the front tang of the center spar. Also, a one-inch crack was found in this same angle where it attaches to the aft tang of the center spar. Approved repairs were accomplished. The aircraft total time was 23,749 flight hours.

(10) During a block overhaul, the upper left wing skin was found to be cracked at station 130. The crack was located forward of the center spar tangs. The crack ran diagonally and was two inches long. No other discrepancies were noted in the surrounding structure.

(11) Two chordwise cracks were found in the right wing lower skin at the stringer and fittings located at station 281. Manufacturer has a service bulletin covering the repair in this area. The total time on the aircraft was 18,214 flight hours.

(12) A two-inch crack was detected during a visual inspection in the box beam. The crack was located in the lower side of the right center forward and of the box beam in the aft cargo compartment. The repair for this area can be found in the manufacturer's structural repair manual. The total time on the aircraft was 47,045 flight hours.

(13) A crack was found in the inboard attach angle at the center spar bolt in No. 4 engine nacelle. This was repaired in accordance with the manufacturer's repair manual.

(14) During a visual and dye penetrant inspection, a one-half inch crack was found in the gyro-support bracket. The crack extended from the bracket hole to the edge of the spar at the forward tang of the lower front spar cap at station 4. A repair was made in accordance with the manufacturer's structural repair manual. The total time on the aircraft was 44,155 flight hours.

(15) Stringer No. 18, located at station 300, was found to be cracked. The repair was made in accordance with manufacturer's Service Bulletin No. 561. The total time on the aircraft was 23,725 flight hours.

(16) A three-inch crack was found in the attach angle at the point where the wing is joined to the fuselage aft of the front spar. The repair was accomplished in accordance with an approved repair. The total time on the aircraft was 23,725 flight hours.

(17) During a basic service inspection, the bottom tang of the left wing front spar was found cracked at station 160. The repair was accomplished in accordance with the manufacturer's service bulletin.

(18) A crack was found in the wing attach angle doubler where the wing joins the fuselage at station 400. A repair can be found for this area in the manufacturer's repair manual.

(19) During overhaul, spanwise stringer No. 23 on the lower wing surface was found cracked. The crack ran chordwise in the stringer crown and was located at W. S. 325. The repair was accomplished in accordance with an approved repair method. Total time on the aircraft was 18,164 flight hours.

(20) The right wing lower skin was found to be cracked between the front and rear spars at W.S. 281. This repair was made in accordance with an approved repair method. Total time on the aircraft was 23,725 flight hours.

(21) Cracks were found in the left wing fuel tank access plate doublers 182b and 182c. Manufacturer's Service Bulletin No. 799 covers the repair of this area. Total time on the aircraft was 23,752 flight hours.

(22) During overhaul, the right-hand splice angle, P/N 42435221, on the nosewheel beam forward pressure bulkhead was broken. The attach angle was replaced with a new part. Total time on aircraft was 51,368 flight hours.

(23) The right center spar tang was found cracked at the bolthole outboard of the fuselage skin. Also, the attach angle was cracked at the same bolthole. This crack was approximately one inch in length. Manufacturer's Service Bulletin No. 678 covers the repair of this area. Total time on the aircraft was 48,958 flight hours.

(24) A four-inch crack was detected, by visual inspection, in the radius of the bottom vertical angle of the front spar at station "O". The angle was replaced. Also, a two-inch crack was found in the front spar on the left side of the conduit hole located at station 28. A doubler was installed. Total time on the aircraft was 47,112 flight hours.

(25) A visual inspection revealed that the upper wing skin was heavily corroded in the area just forward of the rear spar at station 167. The section of wing skin was replaced. Total time on the aircraft was 45,73? flight hours.

(26) During inspection, corrosion was noted on the doubler of the left wing trailing edge between stations 300 and 357. A section of wing skin was removed that was 37 1/2 inches long and 10 3/4 inches wide. A repair for this area can be found in the manufacturer's repair manual.

(27) Inspection of the center lower spar cap revealed a crack that progressed fore and aft through the cap and upwards into the spar web approximately three inches. The crack was located in the left wing at W.S. 170 under the No. 2 outboard lower fairing. Aircraft total time was 37,386 flight hours.

(28) During aircraft overhaul, the right main loading gear drag strut to the front spar fitting, P/N 5325648, was found cracked. The crack was located in the inboard brushing bore adjacent to the bore for the large trunnion nut. Aircraft total time was 52,263 flight hours.

b. Fuselage.

(1) Inspection of the fuselage during a block overhaul revealed that the skin was cracked at the emergency exit cutout on the right side of the fuselage at station 557. The operator established an inspection of this area in its maintenance program to preclude further cracks. The total time on the aircraft was 23,749 flight hours.

(2) During a block overhaul, the left ice plate was removed from F.S. 260. A one and one-half inch crack was found that was progressing vertically between stringers Nos. 21 and 22. Also, a one-inch crack was progressing horizontally between stringers Nos. 22 and 23. The total time on the aircraft was 23,749 flight hours.

(3) During a service inspection, cracks were found in the frame to foot fittings doubler at stations 497.5 and 498.5. The repairs were accomplished in accordance with the manufacturer's recommendations.

(4) The fuselage circumferential flange to the left stringer No. 24 was found cracked at station 238L. The affected part of the flange was replaced.

(5) Corrosion was found around cabin windows 2, 3, 5, 7, 8, 9, and 10 on the left side of the fuselage and 4, 7, and 10 on the right side. The areas were cleaned, treated, and the metal replaced as required.

(6) During overhaul, the upper fuselage attach angle was found cracked. Repairs were accomplished in accordance with the manufacturer's manual.

(7) During an airworthiness directive compliance inspection, a transverse crack was found in the frame at F.S. 95. The crack was located just above longeron No. 10. Repairs were made in accordance with the manufacturer's instructions. Aircraft total time was 27,341 flight hours.

(8) During overhaul, the wing skin to fuselage from attachment channel, P/N 5503731-1 and -2, was found cracked. The crack is located at F.S. 413 on the left side and it progressed through the upper inboard horizontal flange and vertical leg of the channel. The channels were replaced. Aircraft total time was 30,143 flight hours.

c. Stabilizers.

(1) During a periodic inspection, a fitting, P/N 4801674, was found cracked. The fitting is located on the right stabilizer at station 60. The combined length of the five short cracks was 6 1/8 inches. The fitting was replaced and continued inspection of this area is planned. The total time on the aircraft was 37,287 flight hours.

(2) During a periodic inspection, the right horizontal stabilizer attach fitting, P/N 4361674-1, was found to be cracked. This fitting is located at station 63 forward and on the top of the front spar. The fitting was replaced and inspection of this area will be continued at the periodic inspection period. The total time on the aircraft was 45,759 flight hours.

(3) The left horizontal stabilizer spar lower forward outboard fitting was found cracked. The fitting was replaced. Total time on the aircraft was 46,369 flight hours.

(4) During a service inspection, corrosion was found on the aft leg of the rear spar attach fitting, P/N 5361821, at the vertical stabilizer stub. The fitting was replaced. Aircraft total time was 35, 071 flight hours.

d. Flight Controls.

(1) A ten-inch tear was found in the right-hand wing flap during a service check. This tear was located at station 415 and the tear was from inside out. The fairing at this station also had 10 rivets pulled loose. A repair was made in accordance with the operator's structural manual. Total time on the aircraft was 46,597 flight hours.

(2) A visual inspection revealed a cracked flap support, P/N 5329659. This was a complete failure of the part. The location of the part is at the right W.S. 167. The flap support assembly was replaced. The total time on the aircraft was 47,418 flight hours.

(3) The right-hand flap hinge was found cracked at the forward outboard corner of the hinge fitting station 281 at the flap link cutout P/N FLA 1055. The flap assembly was replaced.

(4) When the flaps were extended beyond 30 degrees, the aircraft would make a turn to the left. Inspection revealed that the outboard flap linkage, P/N 5534780, was broken on the left wing flap. The link was replaced. Time since overhaul was 1,959 flight hours.

DC-7 AIRCRAFT MAINTENANCE INFORMATION. The following is a listing of significant maintenance difficulties that have been reported by air carriers as mechanical reliability reports from 1964 to 1967. This information may be useful in identifying additional structural inspection areas:

a. Wings.

(1) Corrosion was found on the inner strut of the nose landing gear where it attaches to the fork. This was repaired by replacing the inner strut. Aircraft total time was 24,588 flight hours.

(2) During inspection, a two and one-half inch crack was found in frame P/N 5361581 at W.S. 50 between longeron 9 and 10 due to fatigue. Repairs were made in accordance with the manufacturer's instructions. Aircraft total time was 44,879 flight hours.

(3) A one and one-half inch crack was found in the upper wing skin during a routine inspection. The crack was located approximately two inches inboard of the No. 2 main fuel tank filler cap. Repairs were made in accordance with the manufacturer's instructions.

(4) During wing flap retraction, bolt P/N 2356375 failed in the link assembly P/N 4325008 at W.S. 378. The outboard flap shifted outboard riding on top of the right aileron holding it in the down position. The link assembly and flap were replaced. Aircraft total time was 20,030 flight hours.

(5) During a routine service inspection, a one-inch crack was found in the wing to fuselage attach angle at station 381 on the right wing. Approved repairs were accomplished. Total flight time on the aircraft was 22,621 flight hours.

(6) The left outboard nacelle circumferential at station 400 was found cracked during aircraft overhaul. The crack was located at stringer No. 8 inside of the nacelle. A repair can be found in the manufacturer's repair manual.

(7) The attach angle on the outboard side of number one nacelle found cracked at the leading edge of the wing. Also, the inboard top attach angle was cracked at the bolts on both sides of the center spar. Approved repairs were accomplished.

(8) During overhaul, a crack was found on the outboard side of the No. 2 nacelle. This crack was located in the nacelle circumferential at station 384 in the "j" box area. Approved repairs were made in accordance with the manufacturer's repair manual.

(9) During overhaul, the Nos. 2 and 3 main fuel tank doublers were found cracked at station 203. The manufacturers have a service bulletin covering the repair in this area.

(10) The fuselage attach angle doublers on top of the left and right wings were found cracked during aircraft overhaul. The cracks were located at W.S. 40. This was repaired by replacing the attach angle doublers.

(11) During a routine heavy service inspection, the wing to fuselage attach doubler was found cracked aft of the top forward spar attach fitting. The doubler was replaced. Also, No. 3 top outboard nacelle attach angle was found cracked in the angle radius. The crack was located approximately 12 inches forward of the front spar. A repair was made in accordance with the manufacturer's structural repair manual. The total time on the aircraft was 20,143 flight hours.

(12) Inspection during a heavy service basic check period revealed that the nacelle to wing inboard attach angles in the Nos. 1 and 2 positions were cracked. The No. 1 attach angle contained a one and three-eighths of an inch chordwise crack slightly above the angle bend radius. The No. 2 attach

angle was cracked between the rivets adjacent to the bend radius in a chordwise direction approximately one inch forward of the front spar. Also, it had a one and one-half of an inch crack in the aft end of the angle in the center of the bend radius directly over the rear spar. Both cracks were repaired in accordance with approved manufacturer's drawings. The total time on the aircraft was 19,345 flight hours.

(13) Inspection revealed a three-sixteenth of an inch crack in the right top wing skin at the outboard aft corner of No. 3 alternate tank accessory plate cutout. Also the plate landing was cracked. The repair was accomplished by installing an outside doubler - 90-7075-56, on the skin crack and the accessory door landing was spliced. The total time on the aircraft was 15,597 flight hours.

(14) During a block overhaul, inspection revealed that the left wing skin was cracked from the center spar aft of the access cutout at W.S. 203. The repair was made in accordance with the manufacturer's drawings. A special X-ray inspection of station 203 on the right and left wings of the fleet was conducted. The total time on the aircraft was 29,850 flight hours.

(15) During a special inspection, the following damage was found on the left wing: The upper wing skin was cracked at 16 places at station 167 between the front and center spars. The length of these cracks ranged from one-fourth of an inch to five inches long. Also, the upper wing skin was cracked three-fourths of an inch at station 141 between wing stringers Nos. 6 and 7. In addition, the lower skin was cracked at station 167. This crack was six inches long and was progressing forwardfrom the rear spar. Repairs were accomplished in accordance with the manufacturer's recommendations.

(16) Special inspection of the wings disclosed the following damage: The right upper wing skin was cracked in seven places between the front and center spars at station 167. The length of the cracks ranged from one-eighth of an inch to three and three-eighths inches long. The left upper wing skin was cracked in 16 places between the front and rear spars at station 167. The length of the cracks ranged from one-fourth of an inch to five and three-eighths inches long. The left upper wing skin was cracked at station 133 aft of the center spar. This crack was three-fourths of an inch long. Cracks three-fourths of an inch long were also found in the upper wing skin at station 152 just aft of the center spar. In addition, seven cracks were found just aft of the center spar from station 132 to station 152. These cracks were one-eighth to four and seven-eighths inches long. The repairs were made in accordance with the manufacturer's recommendations.

b. Stabilizers.

(1) A nine-inch crack was detected during a routine inspection in the lower surface of the left stabilizer at station 107. The aft end of the crack was located 12 inches from the rear edge of the stabilizer and its direction of progression was fore and aft through the row of rivets attaching the skin to the rib. The internal structure of the stabilizer was not affected. The repair was made in accordance with the structural repair manual.

c. Hydraulic Systems.

(1) Hydraulic fluid was lost when the flaps were extended during descent. Also, when the landing gear was extended, the pressure dropped to 900 p.s.i. Investigation of the aircraft after landing disclosed that the manual bypass valve was cracked at the fluid port. The valve was replaced.

(2) Hydraulic fluid and pressure were lost during taxiing resulting in the use of the airbrakes. Inspection revealed that the inboard flap actuator on the left wing was leaking.

(3) After takeoff, all hydraulic pressure and fluid were lost. Inspection revealed that the manual bypass valve, P/N 3408466-1, had failed. The piston, P/N 2243941, failed at the lever attach end at the necked-down section in the 11/32-inch diameter area. The valve was replaced and the system operation was normal.

(4) During taxi after completion of the landing roll, all hydraulic pressure and fluid were lost. Inspection revealed that the right inboard flap cylinder, P/N 3498899-1, was cracked. The flap cylinder was replaced and operation of the system was normal.

d. Landing Gear System.

(1) The landing gear was lowered for landing and the nose gear would not come down. However, after several attempts, it did come down and lock. The aircraft was jacked and on the retraction test, the gear would not move. Upon removal of the control valve, P/N 3480940-1, the "up" port was found to be blocked. Disassembly of the valve revealed that the port was blocked by soft solder. As a result of these findings, the hydraulic manifold was replaced and the system flushed.

e. Flight Controls.

(1) During routine inspection, the right wing flap supports at station 281 and the right and left supports at station 372, P/N 5498283-2 and 5498340 were found to be corroded beyond specified limitations. Corrosion of the supports is considered to have resulted from the aircraft being in storage for seven months. The total time on the aircraft was 20,143 flight hours.

(2) During overhaul, zyglo inspection of the elevator torque tube revealed that the right end attach fitting, P/N 3536439-3, was cracked. The crack was three-eighths of an inch long and extended from outboard through the bolthole. The defective part was replaced.

(3) During a maintenance operation, a flap link assembly, P/N 549334, was found broken at the outboard end of the left flap. The failure occurred in the link-bearing area. The total time on the aircraft was 22,249 flight hours.

f. Fuselage.

(1) The following discrepancies were noted during a routine inspection: The left side of the fuselage skin was cracked in the rivets below the pilot's sliding window at station 41. The length of the cracks ranged from one-half to three-quarters of an inch. Eight cracks that ranged from a half to one and one-half inches in length were found in the skin below the pilot's window at station 22 between stringers Nos. 15 and 22. The fuselage skin was also cracked on the left side at stringer No. 15 and F.S. 58. The length of these cracks was one and one-half inches in length. In addition, cracks one and one-half inches in length, were found on the right side of the fuselage at stations 21 and 22. Repairs to these cracks were made in accordance with the manufacturer's structural repair manual. The total time on the aircraft was 22,621 flight hours.

(2) During a basic check period, the fuselage skin was found to have cracked beyond the stop drill hole at the left forward emergency exit upper hinge. Repairs were accomplished in accordance with the manufacturer's structural repair manual. The total time on the aircraft was 20,143 flight hours.

(3) A two and one-half-inch crack was found in the nose gear well web on the left side at station 58. The repair was accomplished in accordance with the manufacturer's structural repair manual. The total time on the aircraft was 19,904 flight hours.

(4) During the accomplishment of DSB 275, the fuselage former at F.S. 49.6 was found cracked. The crack was located between fuselage stringers Nos. 8 and 9 above the crew entry door. Aircraft total time was 28,225 flight hours.

1. DC-6/-7 STRUCTURAL INSPECTION ITEMS.

a. Emergency Exit Door Hinges.

(1) Location. Fuselage emergency exits (see Figure G-3, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(a) Action. All aircraft with emergency exit door hinges with less than a one-inch (1") door skin recess radius should have the hinges replaced. Applies to all models DC-6 series prior to serial number 44888 and DC-7 series up to serial number 44872 having 32,000 or more hours time in service.

(3) Other Reference Documents.

(a) DC-6 Service Bulletin 848.

(b) DC-7 Service Bulletin 393.

(4) Probable Consequences. Failure of one hinge can cause failure of the second hinge resulting in loss of the emergency exit door.

(5) Recommendations. Periodic inspection of hinges having 1-inch door skin recess radius to assure continued structural integrity.

b. Emergency Exit Door Hinge Cutouts.

(1) Location. Fuselage Emergency Exits (see Figure G-4, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52 Appendix 4, Page 10.

(b) DC-6 Service Bulletin 623.

(c) DC-7 Service Bulletin 79.

(4) Probable Consequences. Extension of fuselage cracks initiating at hinge radius could result in more extensive structural damage.

(5) Recommendations.

(a) Periodic inspections until the preventive rework of Service Bulletin 623 or 79 is incorporated.

(b) Perform subsequent periodic inspections commencing at a later date to insure continued structural integrity after incorporation of Service Bulletin 623 or 79 preventive rework.

c. Crew and Cargo Door Area.

(1) Location. Forward fuselage, right hand side (See Figure G-5, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(a) Action. Periodic inspections of crew door jamb, adjacent skin, longerons, and nose to fuselage attach angles until Service Bulletin 865 has been accomplished.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52 Appendix 4, Pages 3 and 4.

(b) DC-6 Service Bulletins 616, A636, 636, 731, 775, 788, 815, and 865.

(c) DC-7 Service Bulletins 182, A218, 218, 275, 316, and 417.

(4) Probable Consequences. Extensive fuselage cracks in this area may lead to more serious structural damage.

(5) Recommendations.

(a) Periodic inspections should be continued until Service Bulletin 865 or 417 is incorporated.

(b) Periodic inspections should be continued after incorporation of the Service Bulletin 865 or 417 to assure continued structural integrity.

d. Vertical Stabilizer Front Spar-to-Fuselage Attach Fittings.

(1) Location. (See Figure G-6, Appendix 7).

(a) Fuselage Station 1033 (DC-6).

(b) Fuselage Station 1073 (DC-7).

(2) Applies to DC-6 series aircraft.

(a) Action. Applies to all model DC-6 series aircraft prior to fuselage number 221 except 214.

1 If cracked beyond limits specified, the part should be replaced with improved fitting prior to next flight.

2 If original part is not replaced, inspection should be performed every 3500 hours.

3 DC-7 - None.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 4, Page 15.

(b) DC-6 Service Bulletins 796 and A796.

(c) DC-7 Service Bulletin 407.

(4) Probable Consequences. Failure of fitting could result in a serious loss of structural integrity of the vertical stabilizer.

(5) Recommendations. Periodic inspection of original or improved fittings to assure continued structural integrity.

e. Main Entrance Door Area.

(1) Location. Aft fuselage, left hand side (see Figure G-7, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 4, page 12.

(b) DC-6 Service Bulletin 583.

(c) DC-7 Service Bulletins 317 and 400.

(4) Probable Consequences. Extensive cracking in this area could result in more serious structural damage.

(5) Recommendations. Periodic inspections to assure continued structural integrity.

f. Fuselage Frames at Wing Upper Spar Cap Attach Area.

(1) Location. Wing-to-fuselage attach area (see Figure G-8, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 4, page 8.

(b) DC-6 Service Bulletins 611, 640, 652, and 789.

(c) DC-7 Service Bulletins 59 and 346.

(4) Probable Consequences. Continued cracking can result in a significant loss in strength of the wing to fuselage attachment.

(5) Recommendations. Periodic inspections to assure continued structural integrity.

g. Horizontal Stabilizer-to-Tail Stub Front Spar Attach Fittings.

(1) Location. Outboard end of horizontal stabilizer center section (see Figure G-9, Appendix 7).

(2) Applies to DC-6 series aircraft.

(a) Action. Applies to following DC-6 aircraft: serial numbers 42854 to 42894 inclusive, 43000 to 43012 inclusive: 43055, 43056, and 43062.

1 A 0.25 inch diameter stop hole should be drilled through the spar cap tang as crack stopper.

2 Periodic inspection is important when the stop drill hole is incorporated.

3 DC-7 (None).

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 6, Page 5.

(b) DC-6/-7 Advisory Circular 20-52, Appendix 4, Page 14.

(c) DC-6 Service Bulletin 831.

(d) DC-7 Service Bulletin 410.

(4) Probable Consequences. Continued cracking could significantly reduce the strength of the horizontal stabilizer spar joints.

(5) Recommendations. Periodic inspections to assure continued structural integrity.

h. Wing Lower Front and Lower Center Spar Caps at Wing Station 30.

(1) Location. Intersection of lower front and center spar caps and wing-to-fuselage attach angle (see Figure G-10 Appendix 7).

(2) Applies to DC-6 series aircraft.

(a) Action. Applies to the following aircraft: DC-6A serial numbers 43296, 43297, 43817-43819, 43839-43841, 44063, 44064, 44069-44073, 44076, 44257. DC-6B serial numbers 43257-43259, 43261-43276, 43291, 43292, 43298-43300, 43518-43537, 43539-43547, 43549-43555, 43557-43564, 43738-43741, 43743-43746, 43748-43750, 43820-43822, 43824-43826, 43828-43834, 43836, 43837, 43842, 43844-43847, 44056-44062, 44080-44083, 44087-44089, 44102-44113, 44165-44168 and 44251.

1 If cracks are found, temporary or permanent repair should be made.

2 After permanent repair is incorporated, normal repetitive inspection should be made at intervals not to exceed 3,200 hours time in service.

3 DC-7 - None.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 5, Page 1.

(b) DC-6 Service Bulletins A720, 720 and A821.

(4) Probable Consequences. Cracking of spar cap tangs could lead to more serious structural damage.

(5) Recommendations. Periodic inspections of this area to assure continued structural integrity.

i. Wing Front, Center, and Rear Spar Caps at Station 60.

(1) Location. Upper and lower, front, center and rear spar cap tangs at station 60 bend area (see Figure G-11, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(a) Action. Applies to all DC-6, DC-6A and DC-6B aircraft fuselage number 1 up to and including fuselage number 722 having an excess of 9000 hours in service and to all DC-7 and DC-7B aircraft fuselage number 1 up to and including fuselage number 720 having in excess of 8000 hours time in service.

1 Temporary or permanent repair should be made if cracks are found.

2 Periodic inspections should be performed if permanent repair is not incorporated.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 5, Pages 3 and 4.

(b) DC-6 Service Bulletins A678, 678, 694, 763, 824, and 857.

(c) DC-7 Service Bulletins 167 and 406.

(4) Probable Consequences. Chordwise cracks in spar caps could result in failures in adjacent wing skins and stringers, causing a serious loss of structural integrity.

(5) Recommendations. Periodic inspections after incorporation of respective reworks.

j. Lower Front Spar Cap Splice at Main Landing Gear Drag Attach Brace Fitting.

(1) Location. Wing stations 131 and 167 front spar lower cap aft tang and splice plates (see Figure G-12, Appendix 7).

(2) Applies to DC-6 series aircraft.

(a) Action. Applies to all models DC-6, DC-6A and DC-6B aircraft serial number 42854 up to and including serial number 44429.

1 A rework should be performed if cracks exist.

2 Inspection should be made for preloaded flanges.

3 DC-7 - None.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 5, Page 8.

(b) DC-6 Service Bulletins 532, 749, 802, and 862.

(c) DC-7 Service Bulletins 345 and 414.

(4) Probable Consequences. Cracking in this area could reduce load carrying capability front spar splices.

(5) Recommendations. Periodic inspections to assure continued structural integrity.

k. Lower Center Spar Cap Splice at Wing Station 0.

(1) Location. Wing Station 0 (see Figure G-13, Appendix 7).

(2) Applies to DC-6/7 series aircraft.

(3) Other Reference Documents.

(a) DC-6/-7 Advisory Circular 20-52, Appendix 5, Page 1.

(b) DC-6 Service Bulletin 854.

(4) Probable Consequences. Continued cracking of center spar lower cap could result in more extensive structural damage to the wing lower panel.

(5) Recommendations. Periodic inspections to assure continued structural integrity.

FIGURE G-1. DC-6/7 FUSELAGE/EMPENNAGE

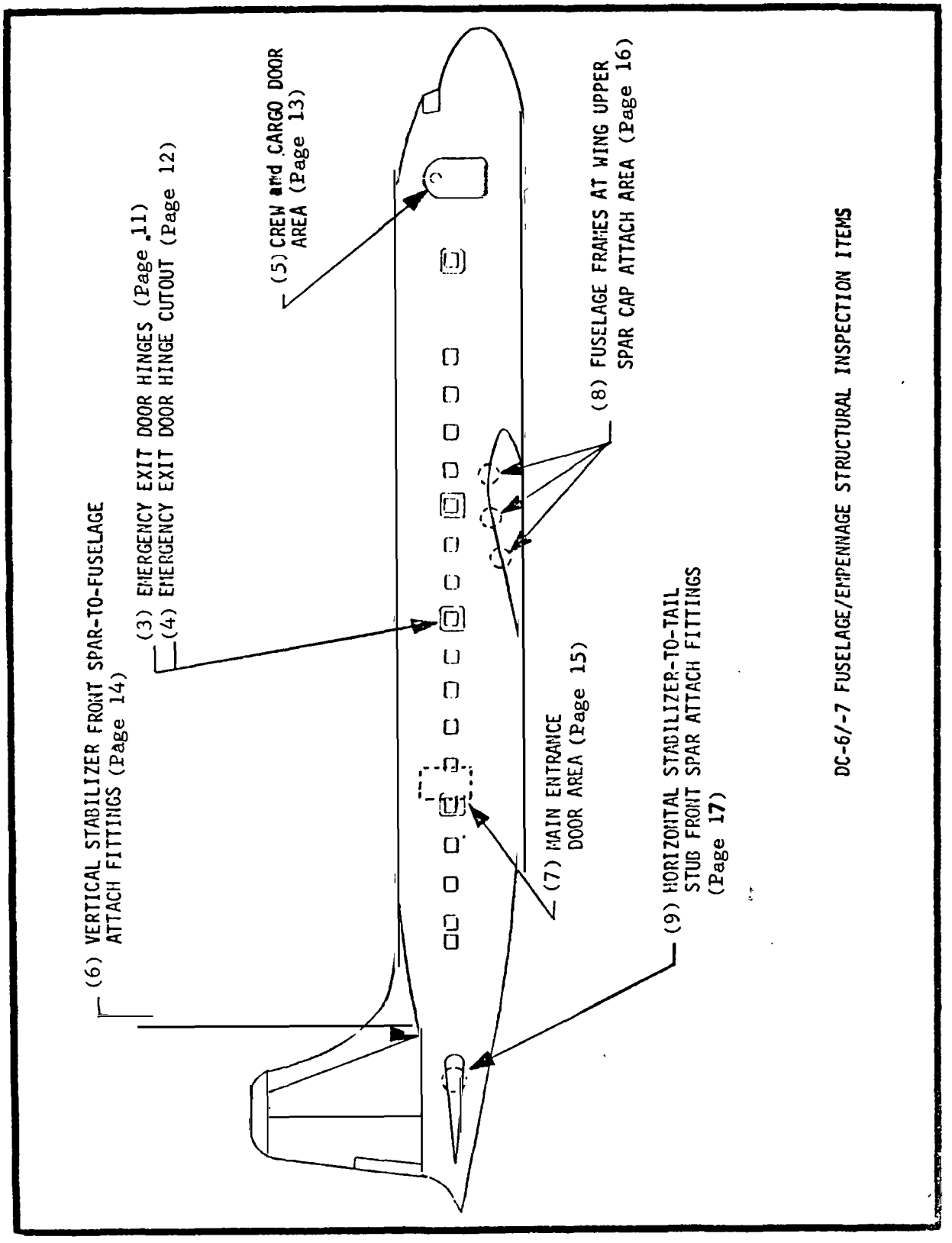


FIGURE G-2. DC-6/7 CENTER WING

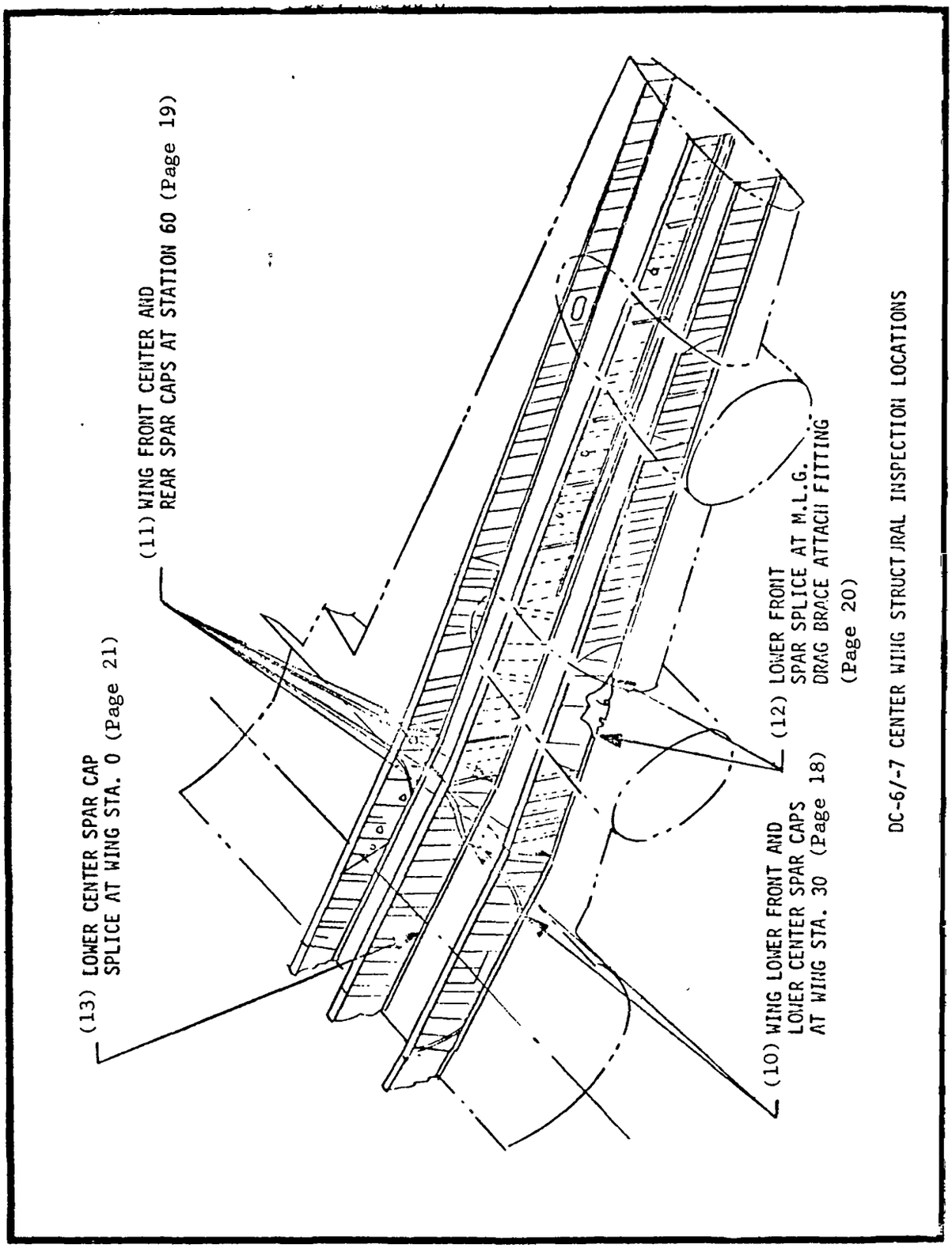
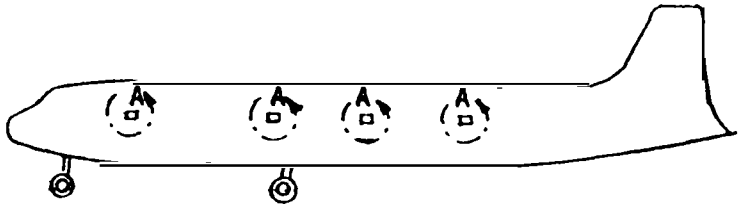
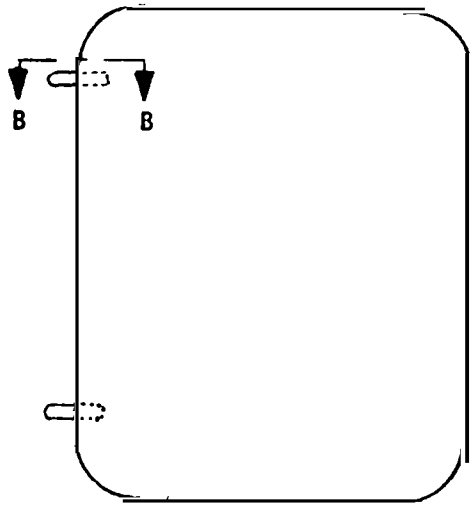
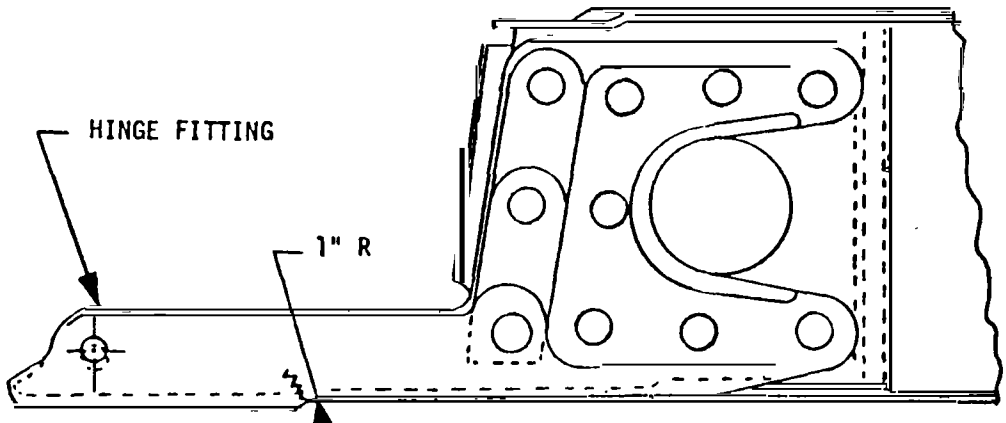


FIGURE G-3. EMERGENCY EXIT DOOR HINGES



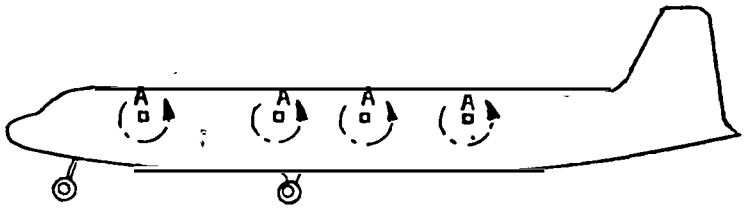


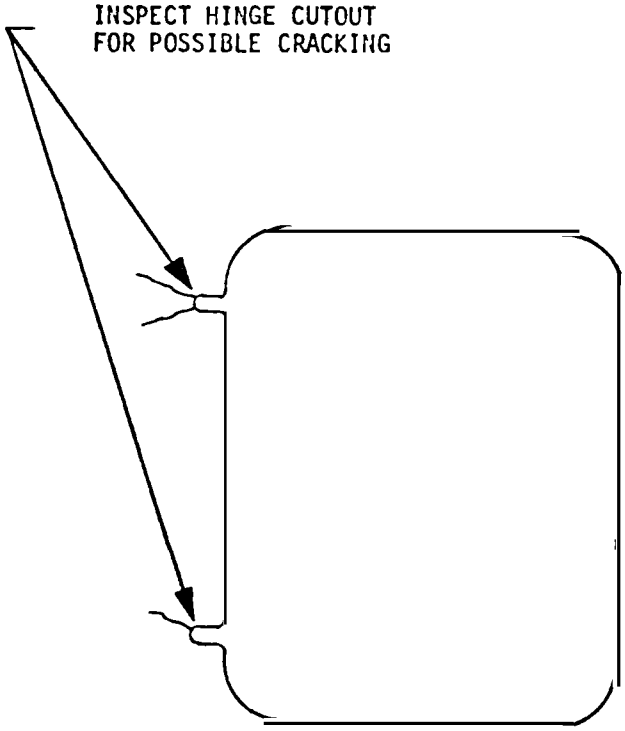
VIEW A
EMERGENCY EXIT DOOR



VIEW B-B

FIGURE G-4. EMERGENCY EXIT HINGE CUTOUTS





VIEW A EMERGENCY EXIT DOOR

FIGURE G-5. CREW AND CARGO DOOR AREA

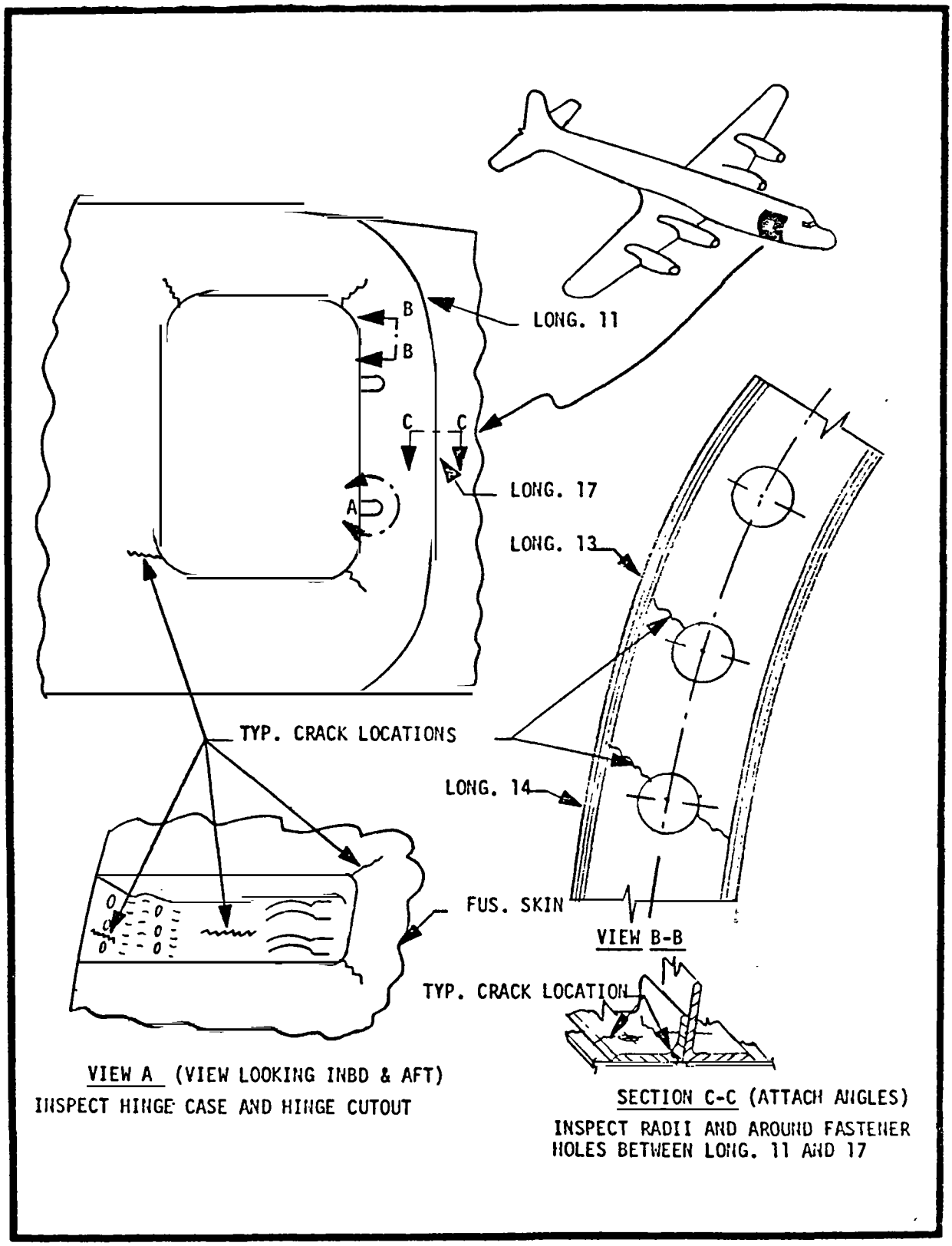


FIGURE G-6. VERTICAL STABILIZER FRONT SPAR TO FUSELAGE ATTACH FITTINGS

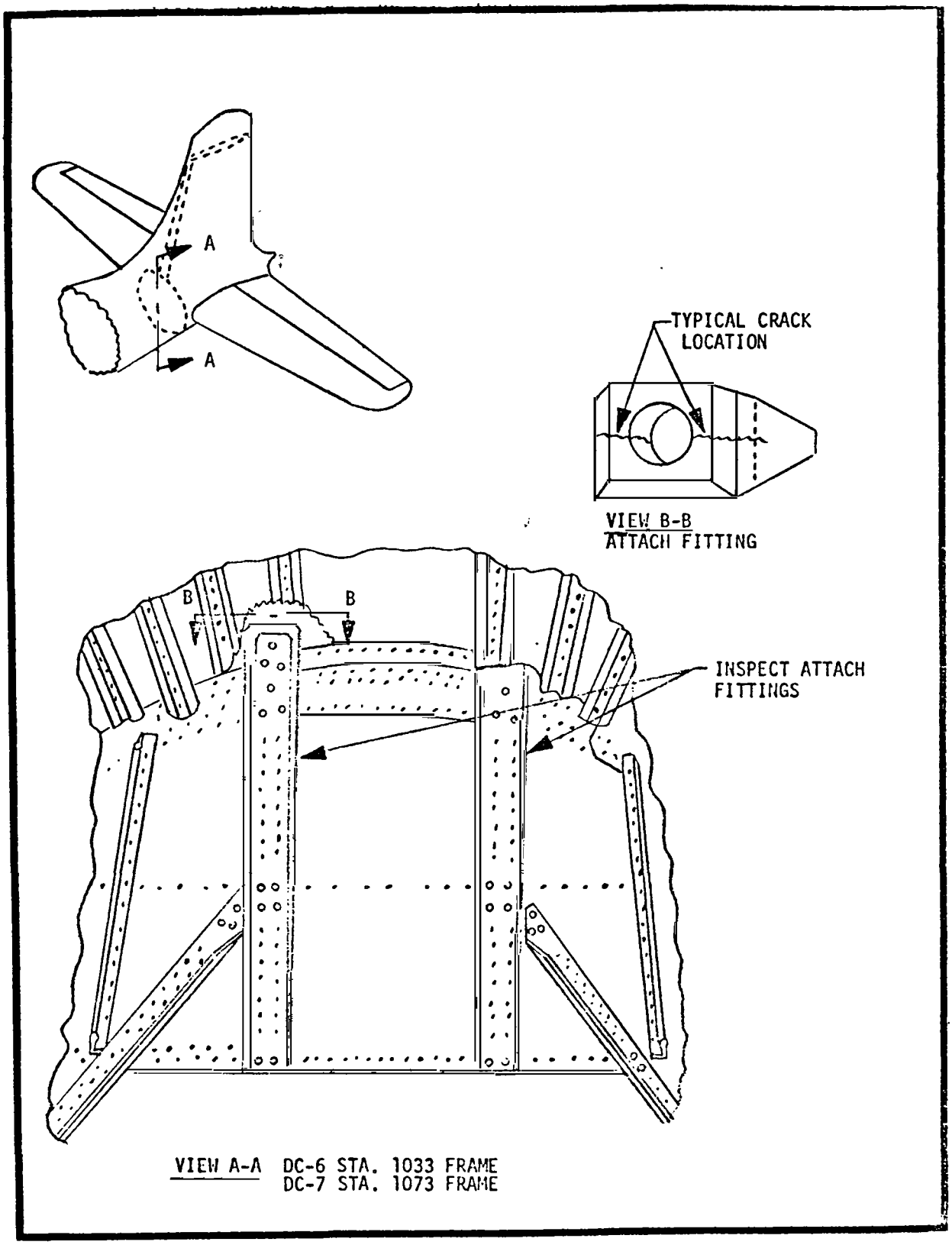


FIGURE G-7. MAIN ENTRANCE DOOR AREA

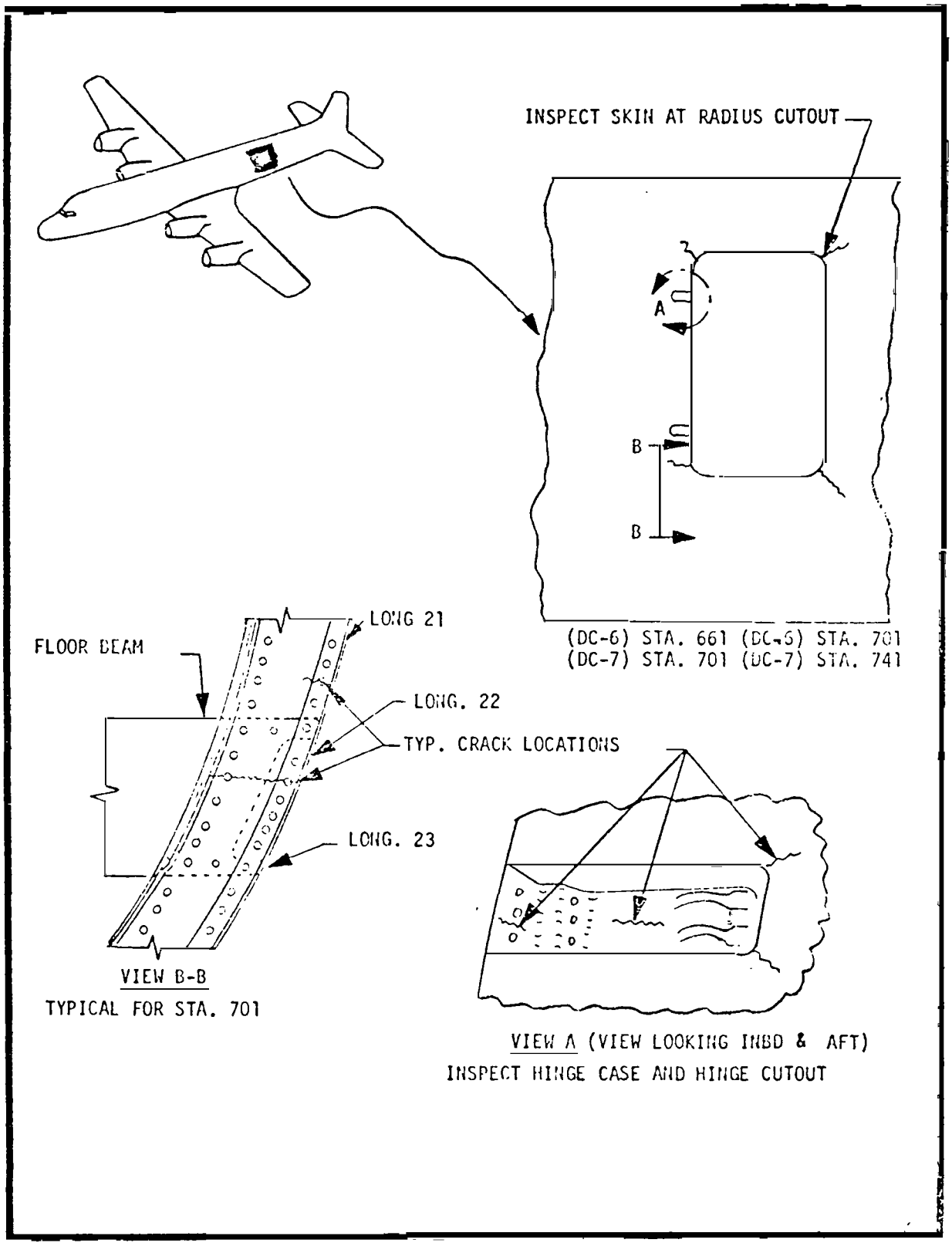


FIGURE G-8. FUSELAGE FRAMES AT WING UPPER SPAR CAP ATTACH AREA

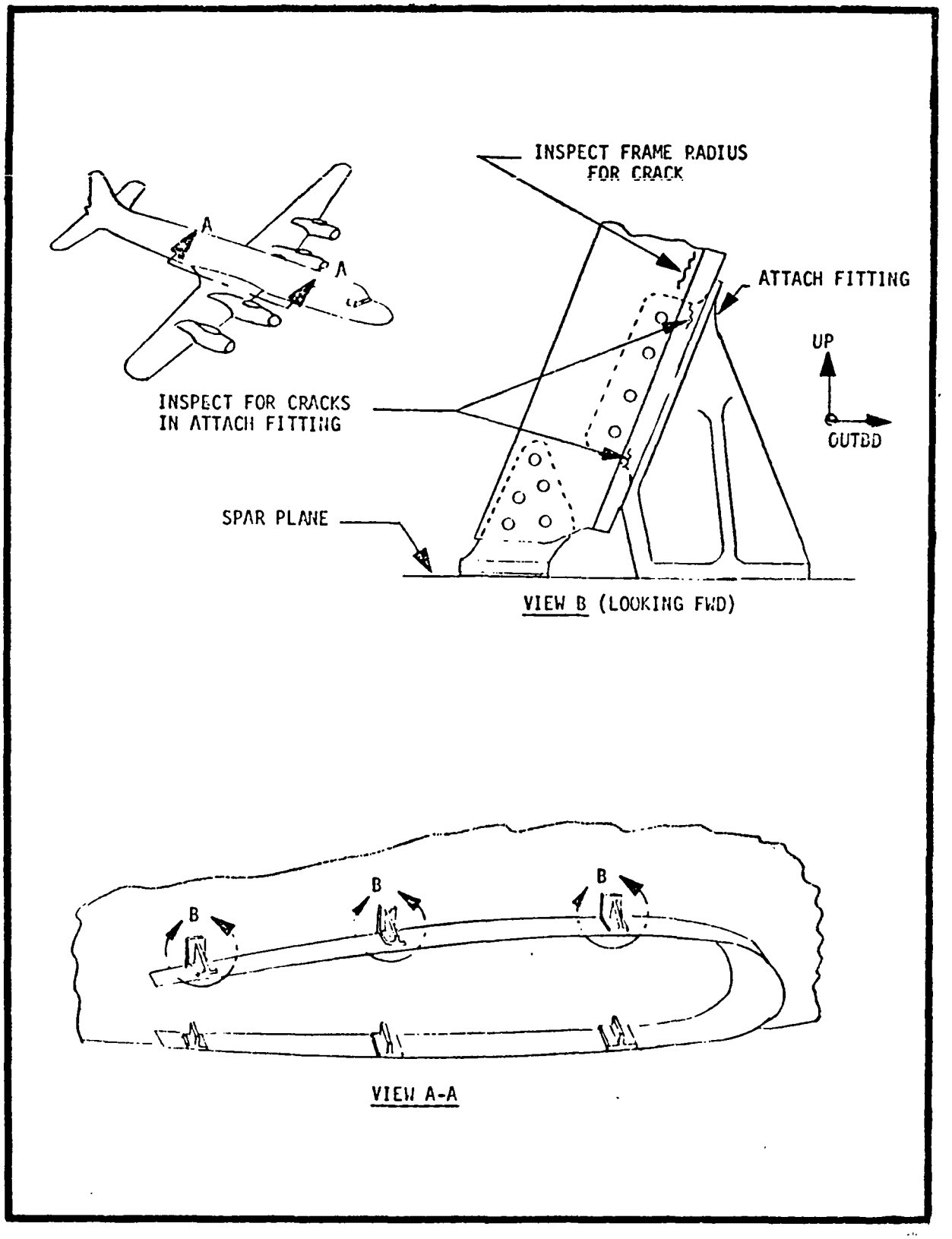


FIGURE G-9. HORIZONTAL STABILIZER-TO-TAIL STUB FRONT SPAR ATTACH FITTING

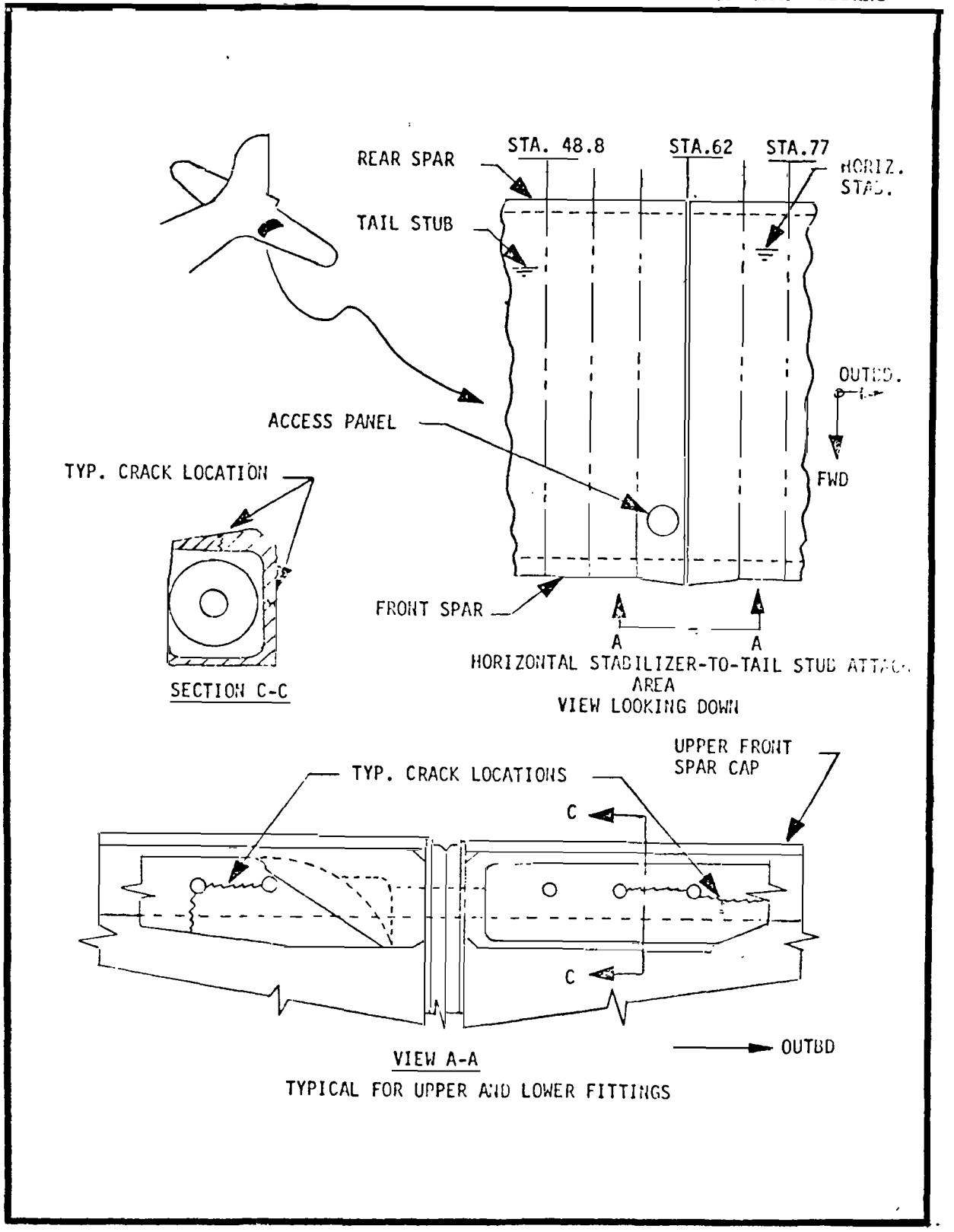


FIGURE G-10. WING LOWER FRONT AND LOWER CENTER SPAR CAPS AT WING STATION 30

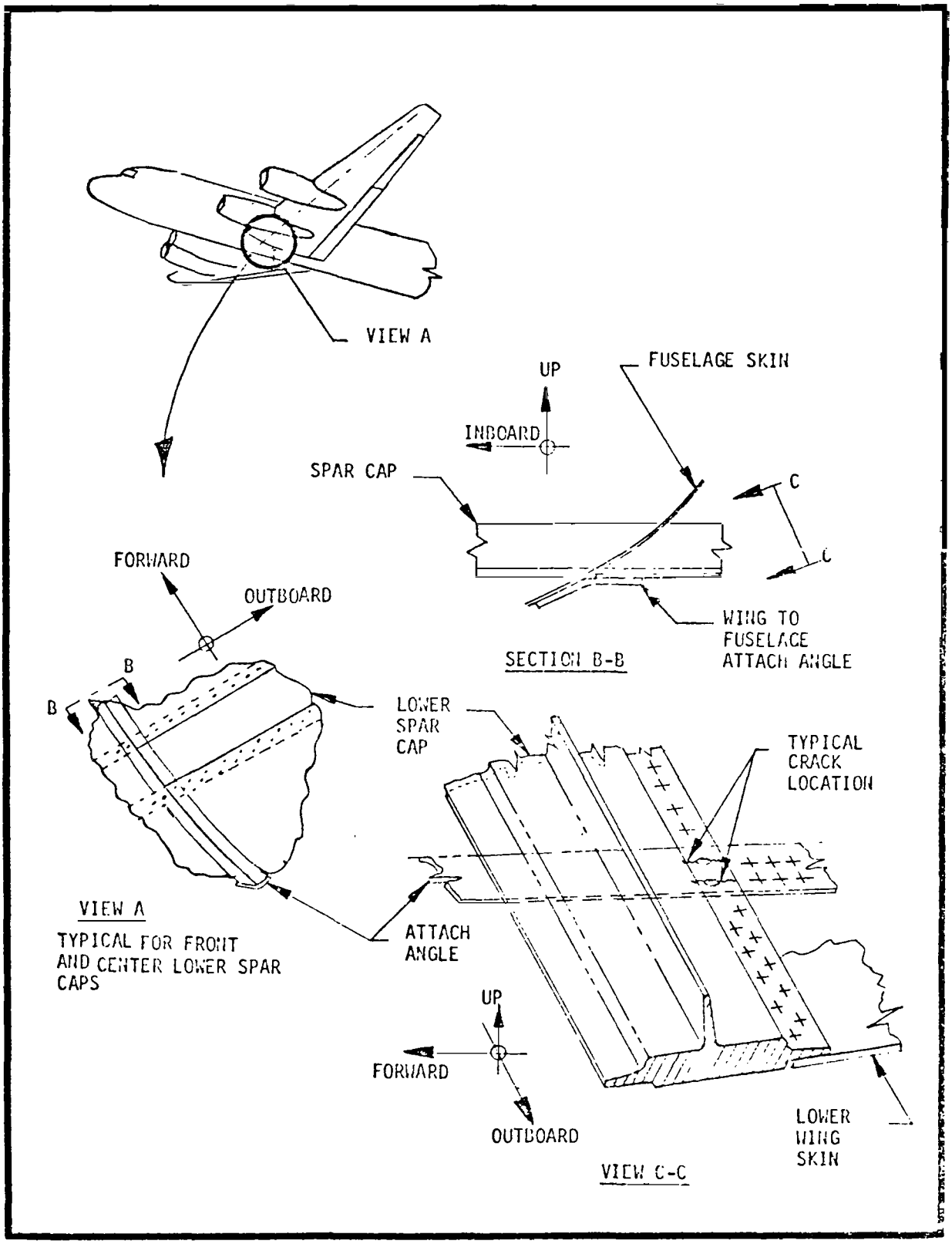


FIGURE G-11. WING FRONT, CENTER, AND REAR SPAR CAPS AT STATION 60

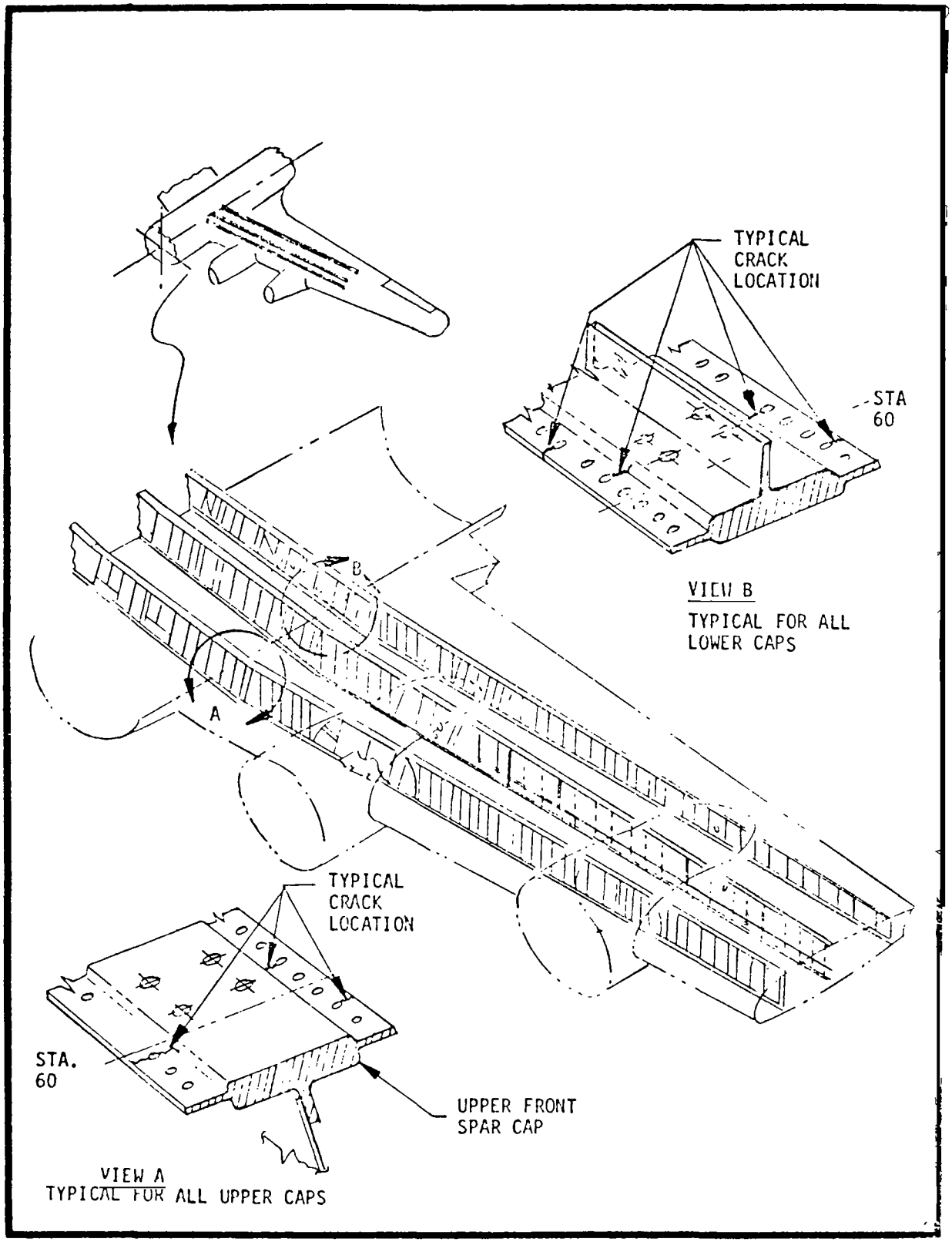
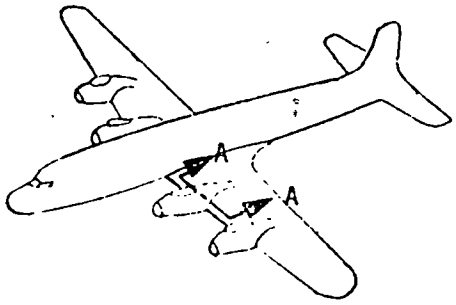
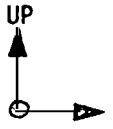
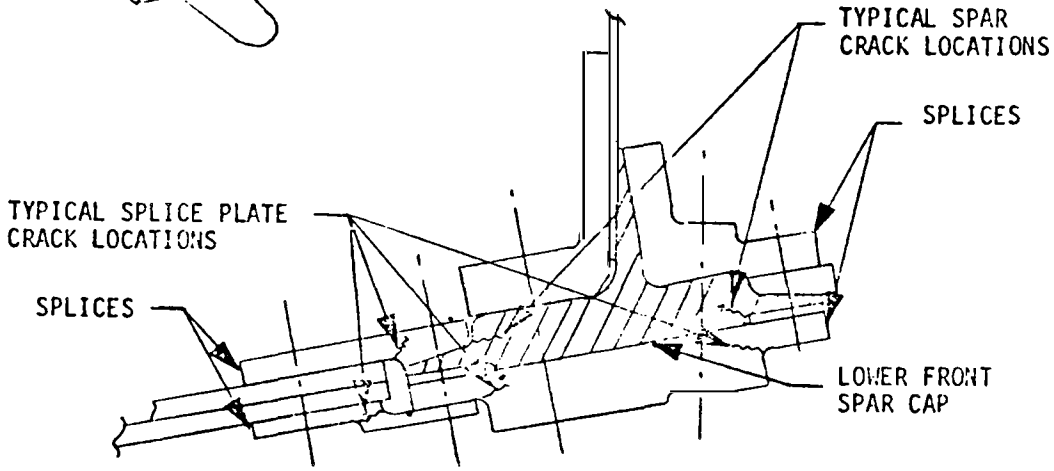


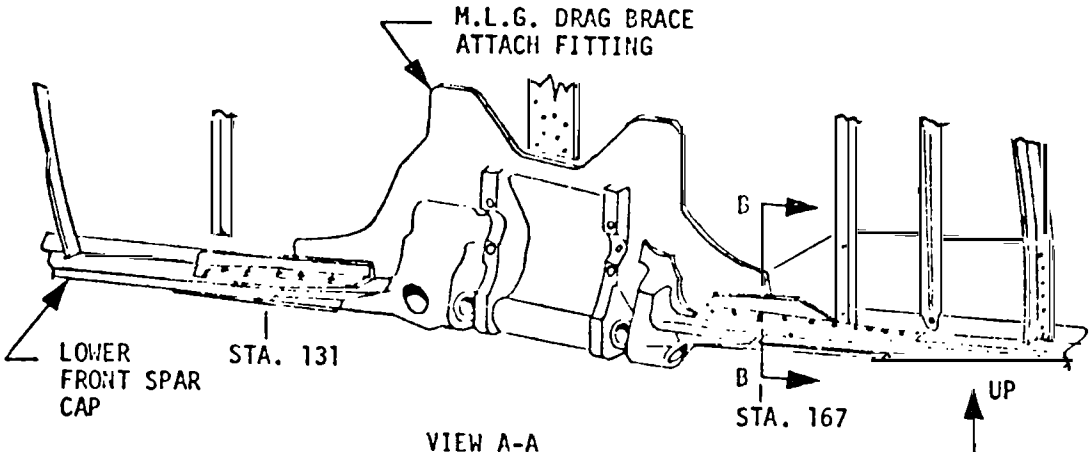
FIGURE G-12. LOWER FRONT SPAR CAP SPLICE AT M.L.G. DRAG BRACE ATTACH FITTING





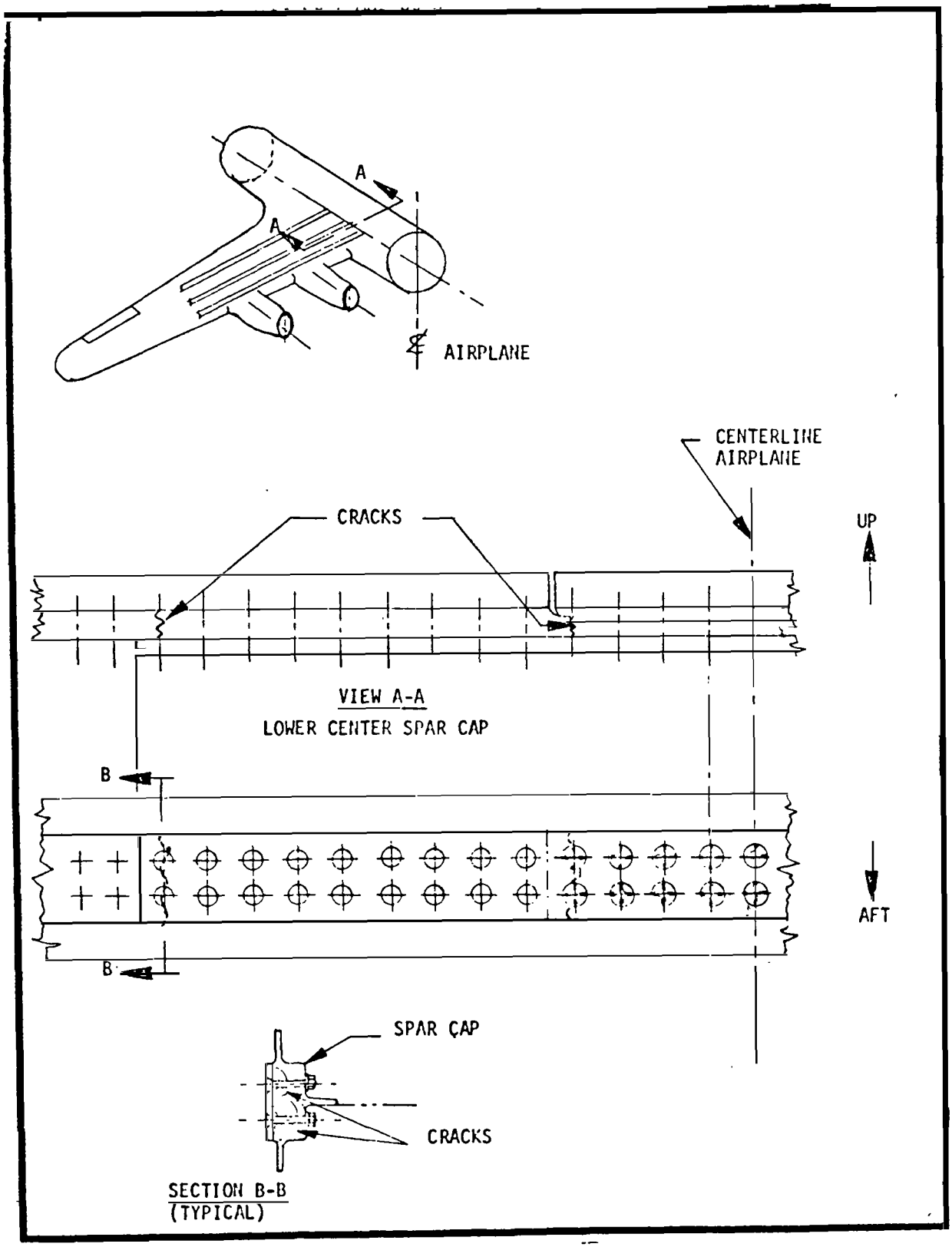


SECTION B-B (LOOKING OUTBOARD)
TYPICAL AT STA. 131



VIEW A-A
LOWER FRONT SPAR CAP AT
M.L.G. DRAG BRACE ATTACH FITTING

FIGURE G-13. LOWER CENTER SPAR CAP SPLICE AT STATION 0



☆ U S GOVERNMENT PRINTING OFFICE 1979 -627-473/1838

FIGURE B-2

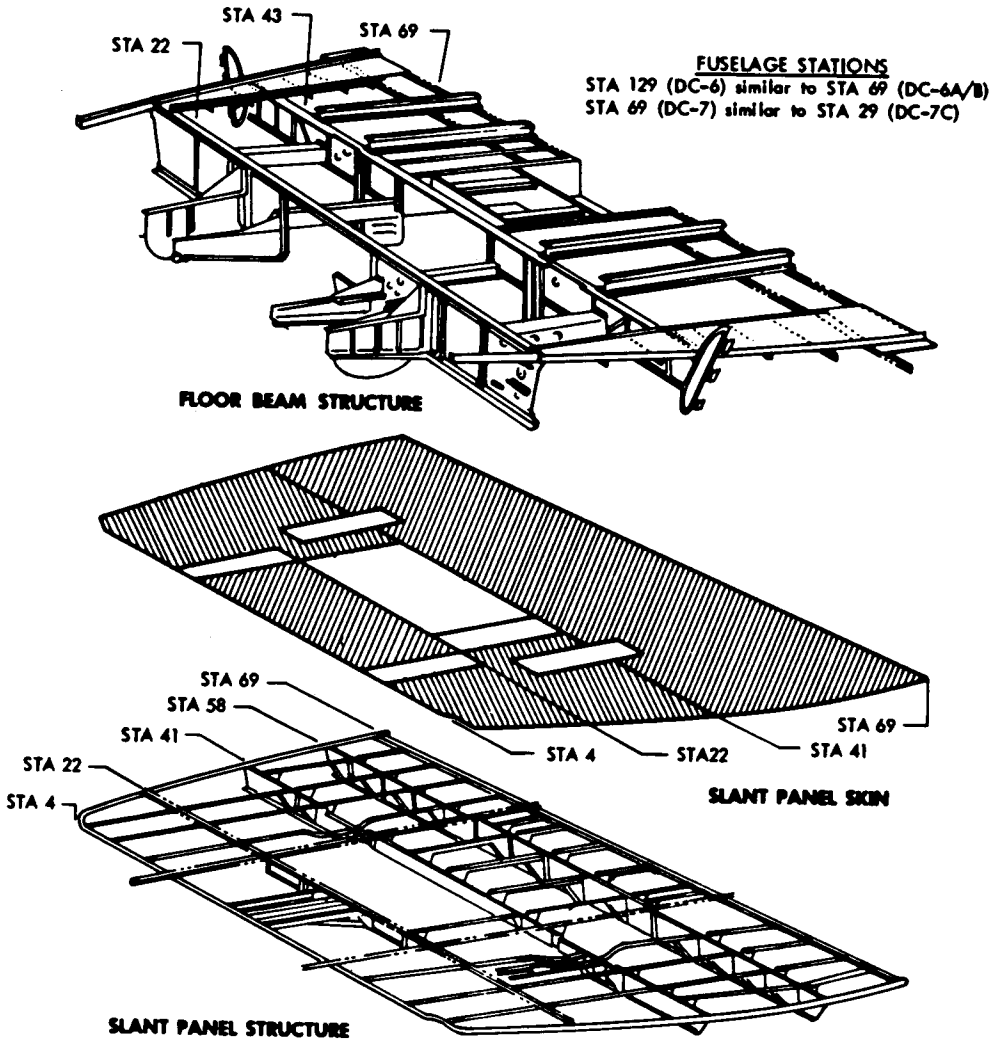


FIGURE B-2

NOSE SECTION ASSEMBLY FLOOR BEAM STRUCTURE, SLANT PANEL STRUCTURE AND SLANT PANEL SKIN (SHEET 2 OF 5)
DC-6A/B