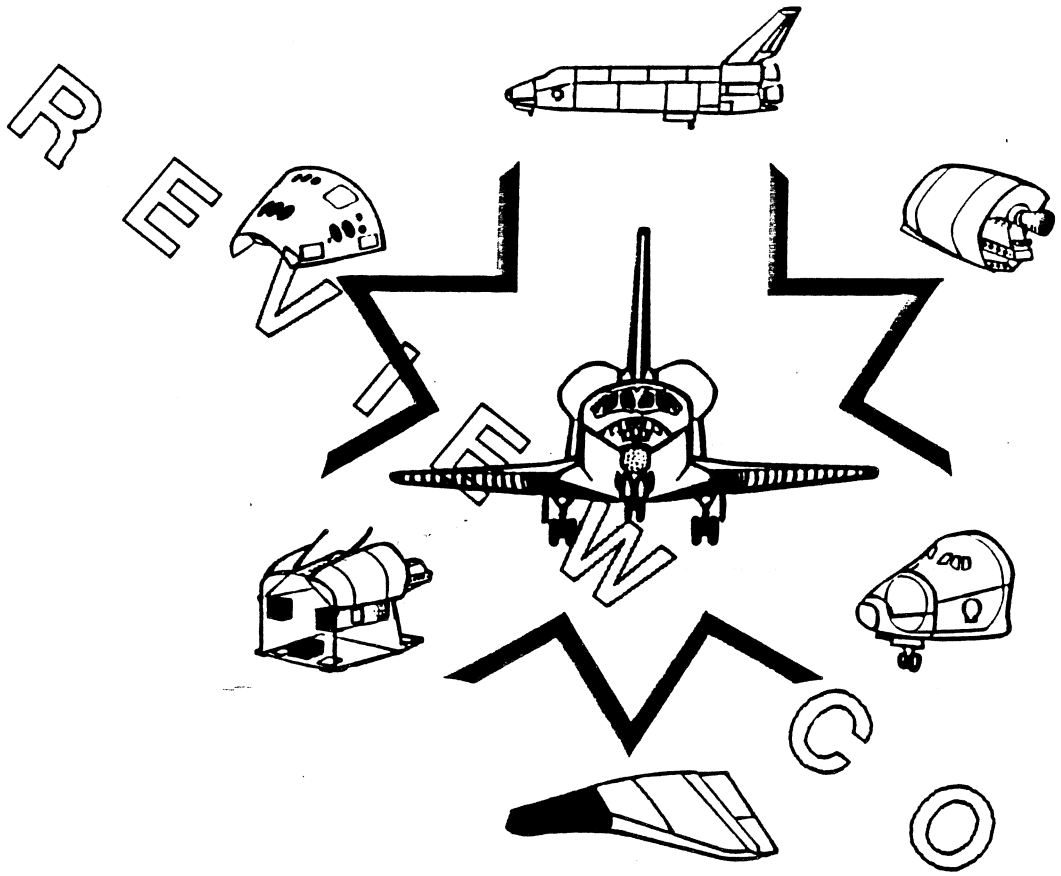
SPC DOCUMENT # LSO-092-039-9060

ORBITER ZONE AND ACCESS LOCATOR

VOL. I ZONE IDENTIFICATION GUIDE



Prepared for

John F. Kennedy Space Center
Shuttle Processing Contractors

by

SPC Operations Analysis (Johnson Controls)

August 1992

ATTENTION

This is the first general release of the Zone Identification Guide. The contents of this release are Volume I of a projected development of an overall Orbiter Zone and Access Locator. A number of supplements are included in the Appendix section of this guide in order to aid the orbiter technician with zone cross referencing, drawing number research, safety subjects, etc. In addition to the zones described in the SSP OMRS, this release also includes subzones. The addition of subzones was coordinated with the requirements of the SPC Orbiter Zone Implementation Group. Their purpose is to add even more precise location of tasks and components. Additional copies or revisions of this document in both the 8 1/2" by 11" format and the pocket guide size will be available through the SPC Technical Data center.

NOTICE TO USERS

This Space Shuttle Orbiter Vehicle Zone and Access Locator is to be used for general information only. This is a reference guide and is not to be used in lieu of official:

-Engineering manuals and drawings
-Work authorization documents
-Requirements documents
-Operations and maintenance instructions
-Test preparation sheets
-Discrepancy and problem reports
-Other official work performance documents

We encourage the recipients of this guide to submit improved or corrected illustrations and/or technical information. This can be provided as redlines to the current pages or as entirely new data on subjects of general interest.

Your feedback and suggestions will be evaluated to further improve the contents of the later versions of this document. Any changes made to contents after the basic release will be reflected in a Revision Log.

Mail comments or suggestions to:

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VOLUME 1, ZONE IDENTIFICATION GUIDE

REVISION LOG

APRIL 1992	PILOT RELEASE	GREEN COVER

First issue of a Zone Identification Guide to supplement the OMRS zone tables and diagrams for the KSC work force.

AUGUST 1992	1ST GENERAL RELEASE	YELLOW COVER

Complete revision of zone guide based on feedback from pilot issue. Also incorporates 276 sub-zones in addition to the 124 OMRS zones per instructions of SPC orbiter zone implementation team.

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ORBITER
ZONE AND ACCESS
LOCATOR

Section 1.0

ORBITER GENERAL

ORBITER
ZONE AND ACCESS
LOCATOR

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1.1 INTRODUCTION

The orbiter vehicle is divided into zones to facilitate maintenance planning, scheduling, and preparation of work authorizing documents (WADs) in support of the vehicle processing, trend analysis and work control. Areas are assigned numerically and designated as zones for the orbiter vehicle. The first three digits of the zone identification are in accordance with NSTS 08171 OMRSD File III V30 and V31 airframe and zonal inspection general requirements and tables. Each major zone is subdivided into submajor zones and zones. Sub-zones more narrowly define the location of maintenance processing tasks and components.

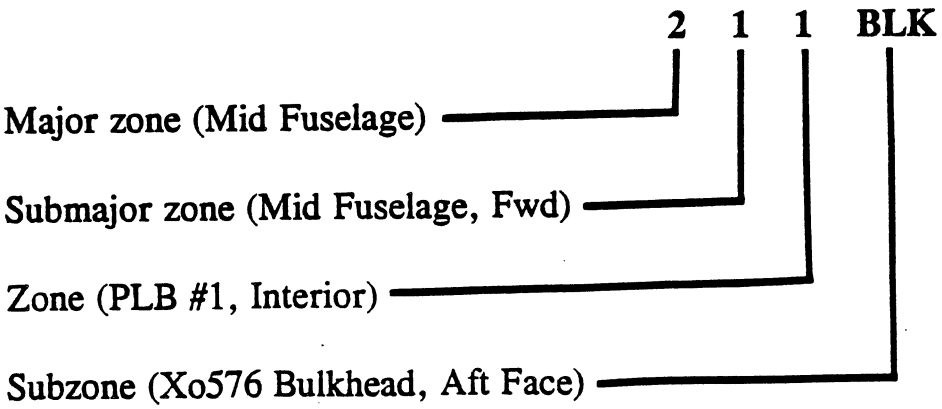
1.2 DEFINITION OF ZONES

The orbiter zonal breakdown is based on logical subdivisions. Whenever possible, zone extremities have been chosen to coincide with natural boundaries of the orbiter airframe, such as fuselage bulkheads and wing spars, or to include a discrete compartment such as the nose gear wheel well. A zone includes all exterior parts of the airframe and systems as well as all structure, equipment and systems installations within the interior of the zone boundaries, unless specifically limited by definition.

Locations and boundaries of orbiter vehicle major zones, submajor zones, zones and sub-zones are described on the following pages. All zones are identified by a three to six digit designator. The last three digits of a six digit designator can be alphabetical or a dash followed by two more numerical characters. Sequence of illustrations and descriptive information generally follows a numerical hierarchy:

- Within major zone 200
  - Submajor zones are 210, 220, 230, etc.
  - Zones are 211BLK, 211-01, 212-01, 243, etc.

- A typical zone number is illustrated in the following example:



DEFINITION OF ZONES 1.2 (cont'd)

Location of specific hardware by station coordinates can be achieved by referencing WADs and technical references listed in the Appendix section.

Major zone numbering designations for the orbiter vehicle are as follows:

100 - Forward Fuselage
200 - Mid Fuselage
300 - Aft Fuselage and Body Flap
400 - Vertical Stabilizer
500 - Propulsion and Reaction Control Systems
600 - Right Wing
700 - Left Wing
800 - Nose Cap, Hatches and Doors
900 - Landing Gear and Landing Gear Doors

Each major zone is subdivided into submajor zones to more precisely define the location of ground processing tasks or orbiter hardware. A submajor zone can be identified by noting if the three digit number ends in zero (e.g. 320). Some areas are only designated to this level. The next level of task/area location is provided by zone. It is indicated by numbers greater than zero in all three positions (e.g. 241 - PLB #13 Interior).

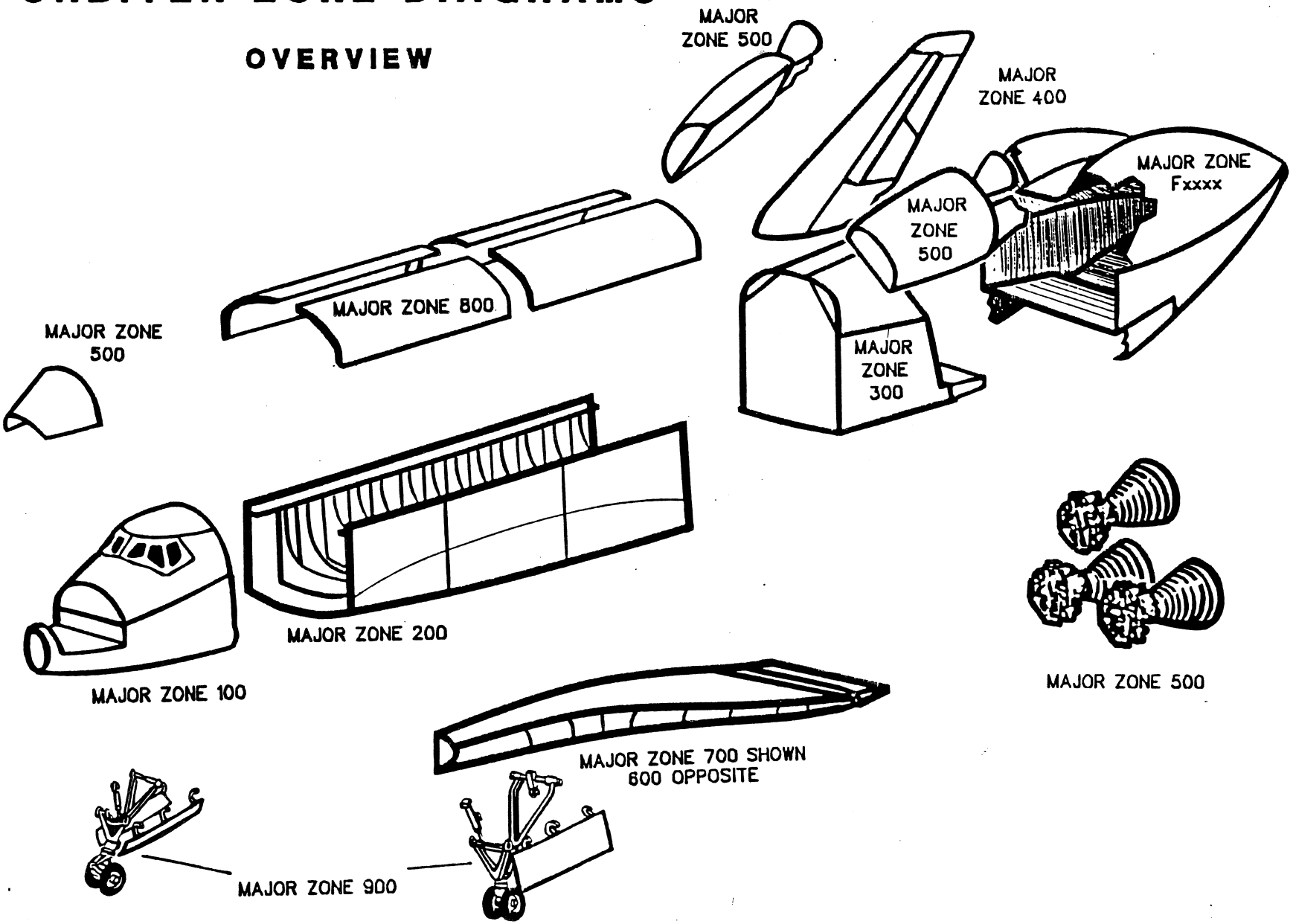
The most detailed level of area designation is the sub-zone. A sub-zone is used to pinpoint work location where additional accuracy is desired beyond the first three numeric characters. Note: The sequence of payload bay internal sub-zone digits were assigned by processing closeout priorities.

Entry of the zone reference for all applications should be carried to the most detailed level possible. Entry of sub-zones is preferred over three digit zone when applicable. Entry of a three digit zone is better than a submajor zone. A major zone should only be used as a last resort. Many applications allow entry of multiple zones, therefore, it is not necessary to revert to submajor zone or major zone to encompass a larger area.

Designators for tailcone zones generally follow a simplified orbiter pattern, except for the prefix "F" and are not detailed below the major zone level.

ORBITER ZONE DIAGRAMS

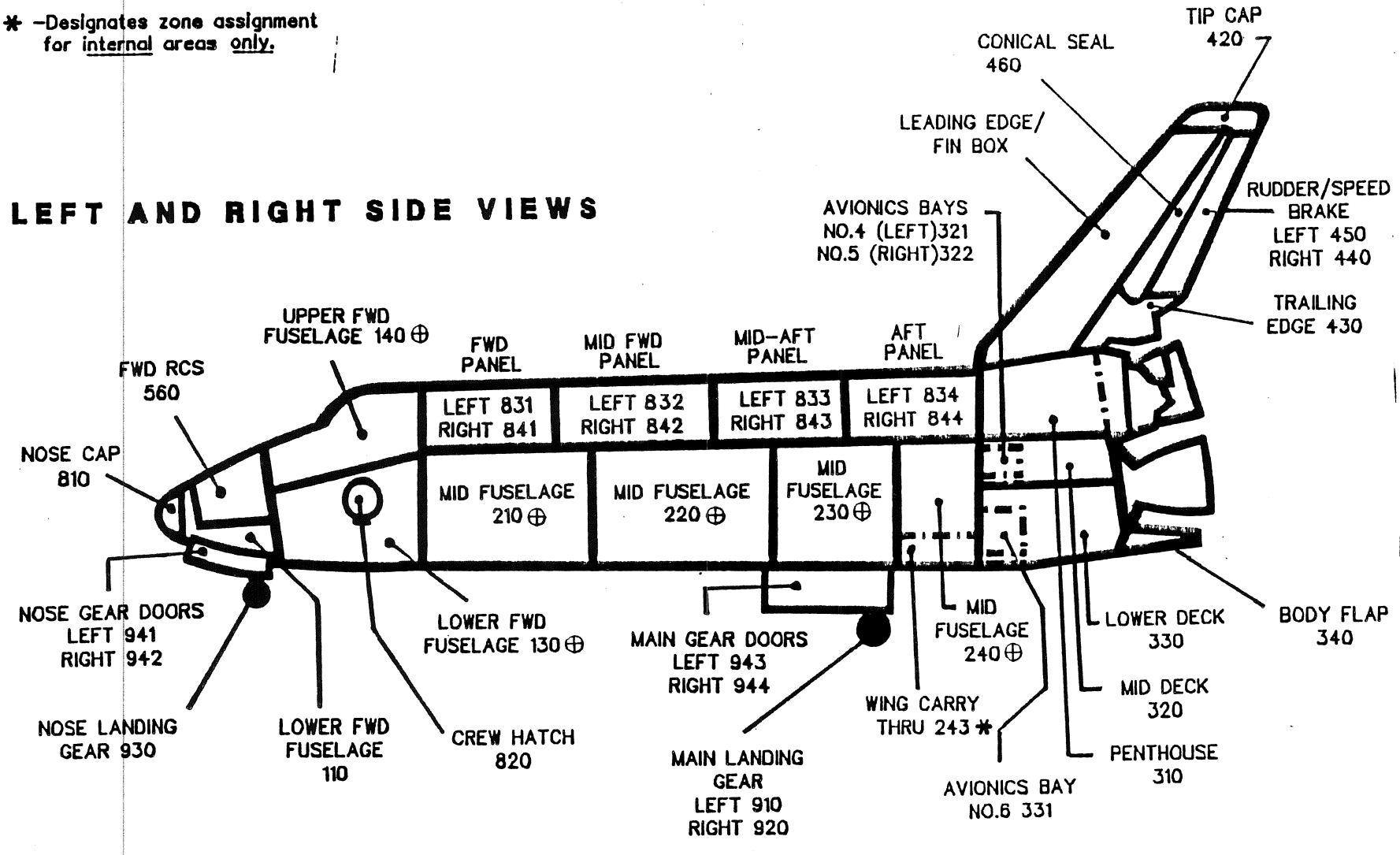
OVERVIEW



⊕ –Designates zone assignment for external areas only.

✱ –Designates zone assignment for internal areas only.

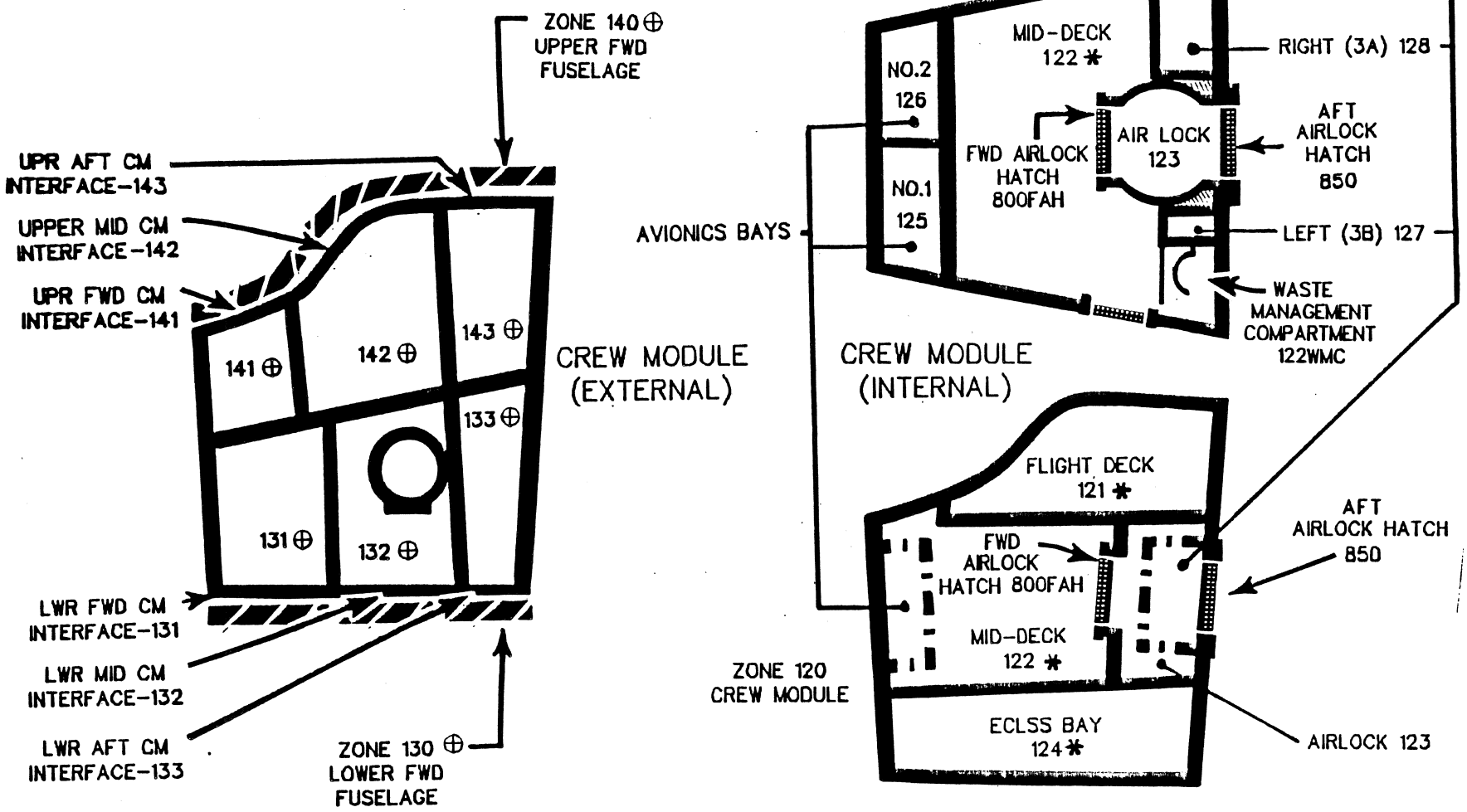
LEFT AND RIGHT SIDE VIEWS



ORBITER ZONE DIAGRAMS

⊕ –Designates zone assignment for external areas only.

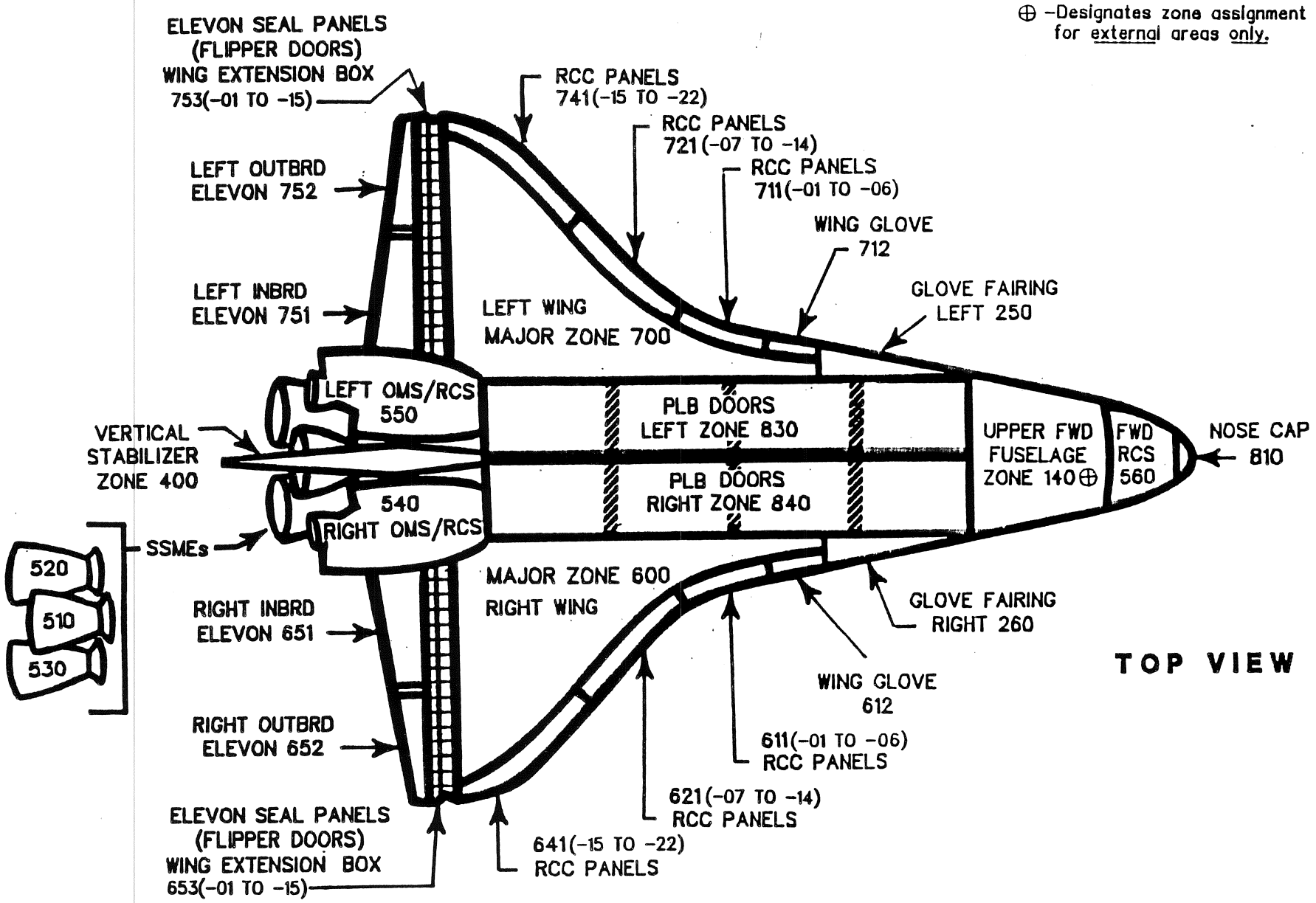
✱ –Designates zone assignment for internal areas only.



ORBITER ZONE DIAGRAMS

CREW MODULE EXTERNAL AND INTERNAL VIEWS

⊕ -Designates zone assignment for external areas only.



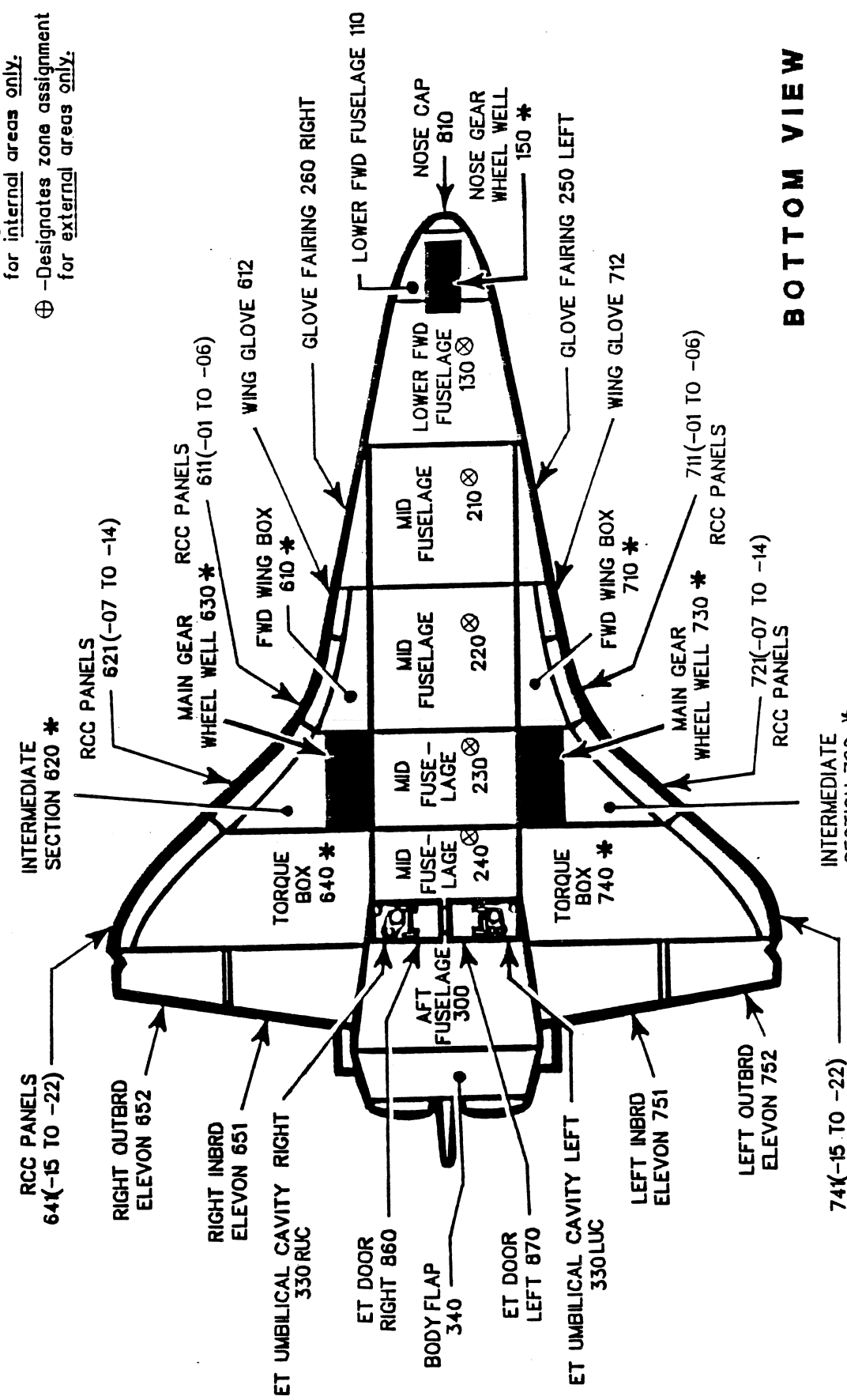
ORBITER ZONE DIAGRAMS

SUBJECT	SECTION	ZONE
ORBITER ZONE OVERVIEW DIAGRAMS	1.3	

NOTE: LANDING GEAR AND ET UMBILICAL DOORS SHOWN IN OPEN POSITION

* -Designates zone assignment for internal areas only.

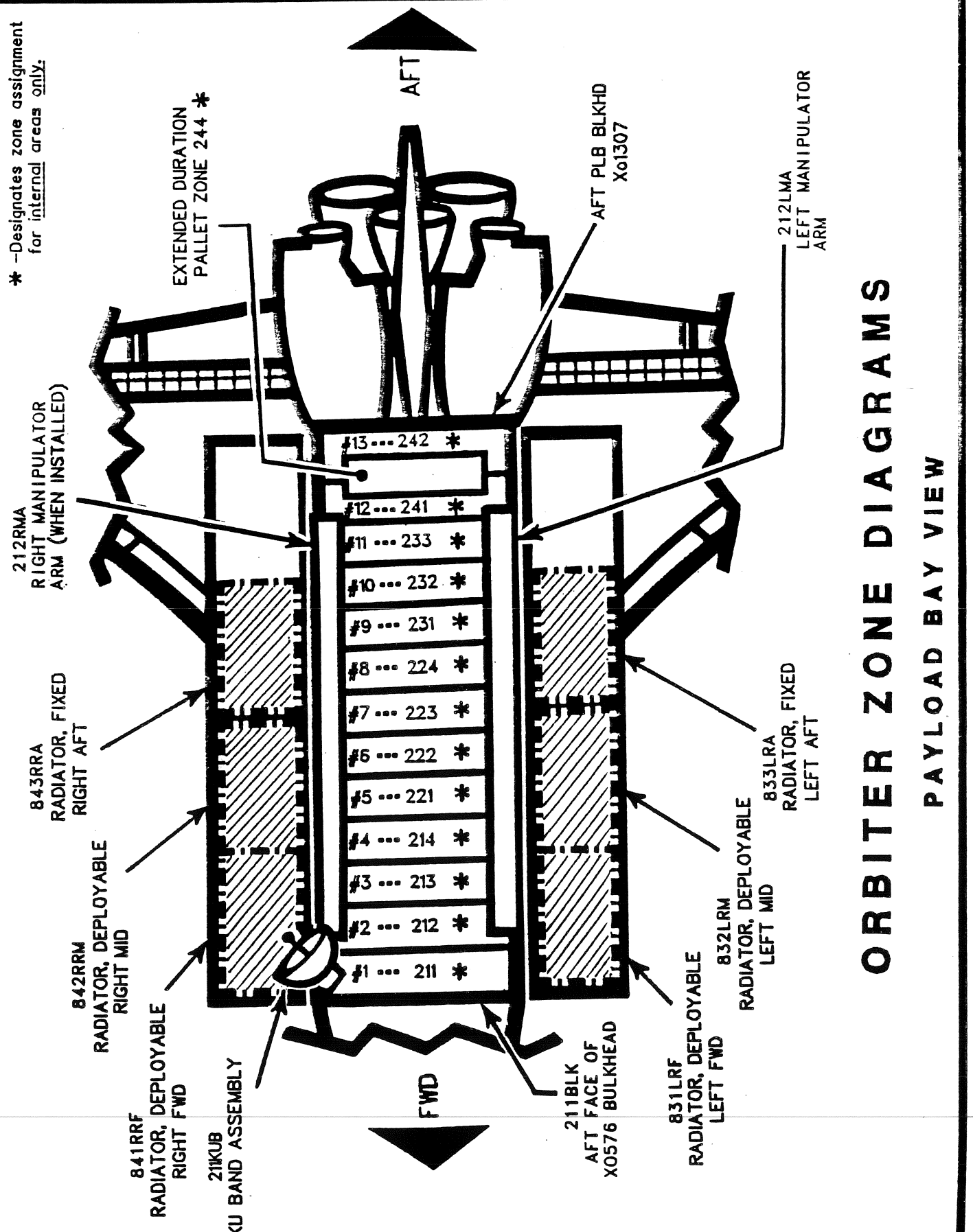
⊕ -Designates zone assignment for external areas only.

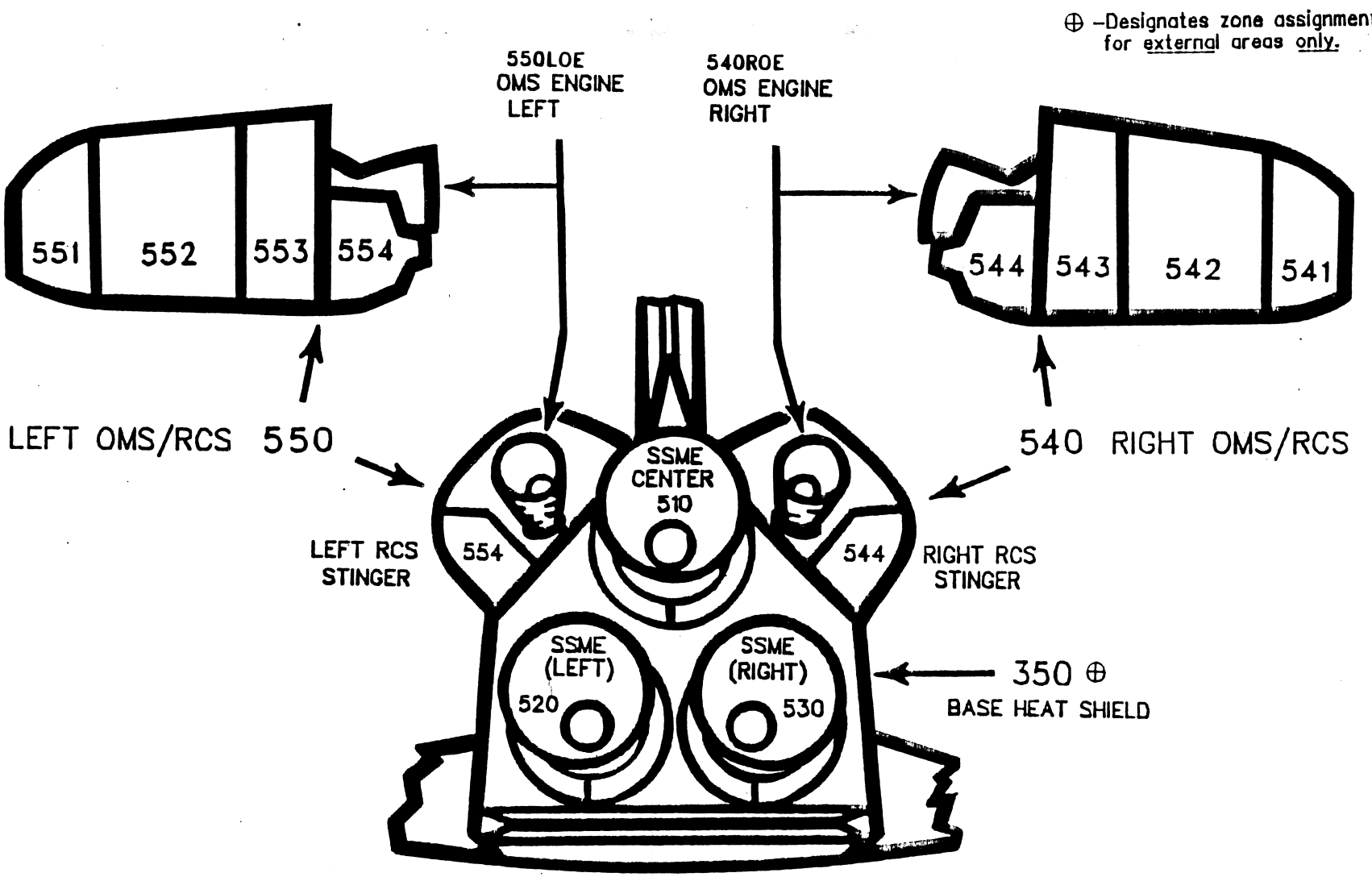


ORBITER ZONE DIAGRAMS

ORBITER ZONE AND ACCESS LOCATOR

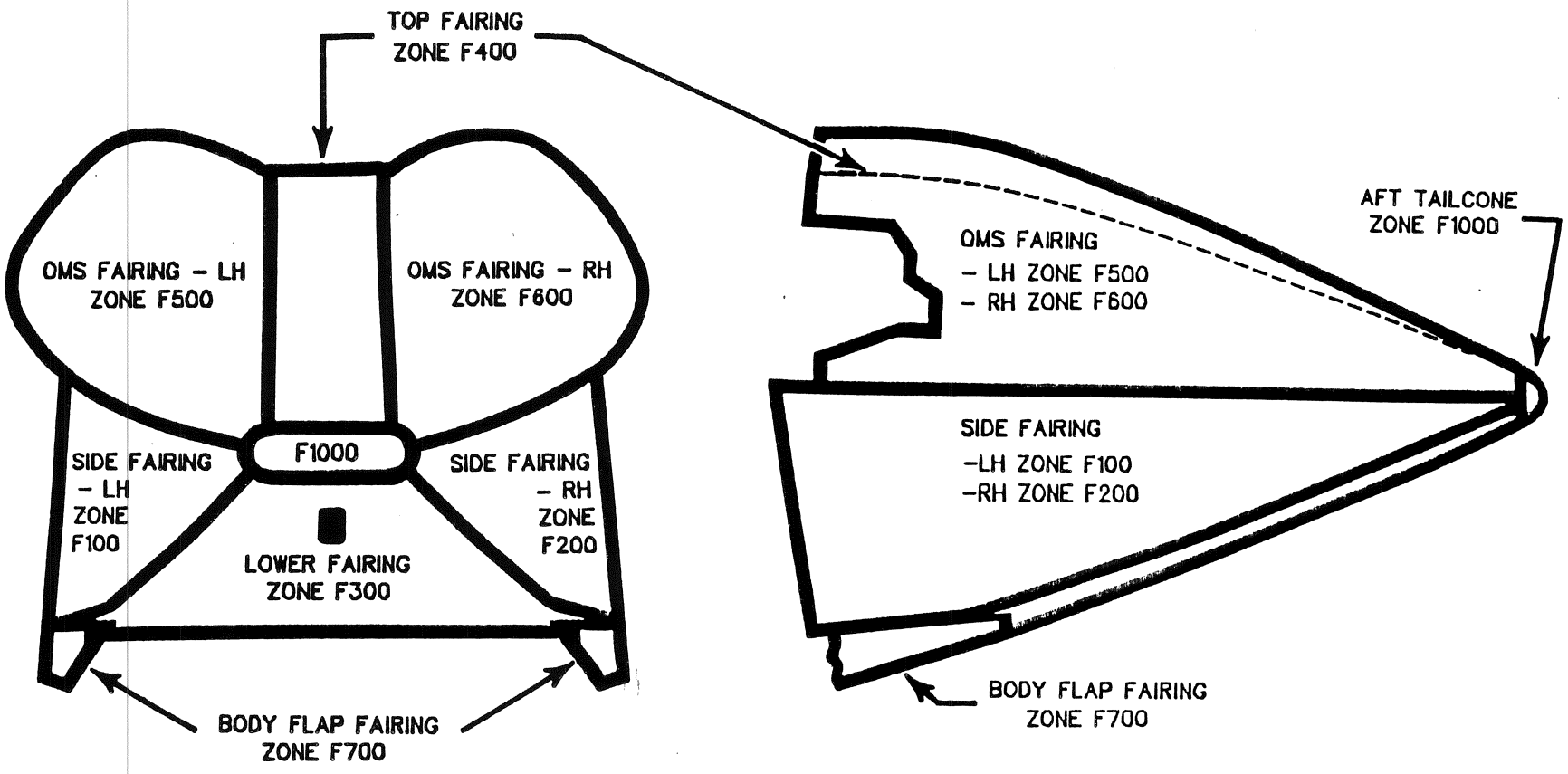
ZONE	SECTION	SUBJECT
	1.3	ORBITER ZONE OVERVIEW DIAGRAMS

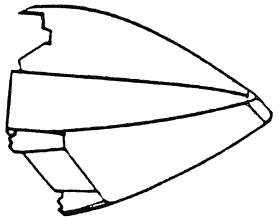




ORBITER ZONE DIAGRAMS

AFT AND OMS POD VIEWS





ORBITER ZONE DIAGRAMS

FERRY FLIGHT TAIL CONE VIEWS

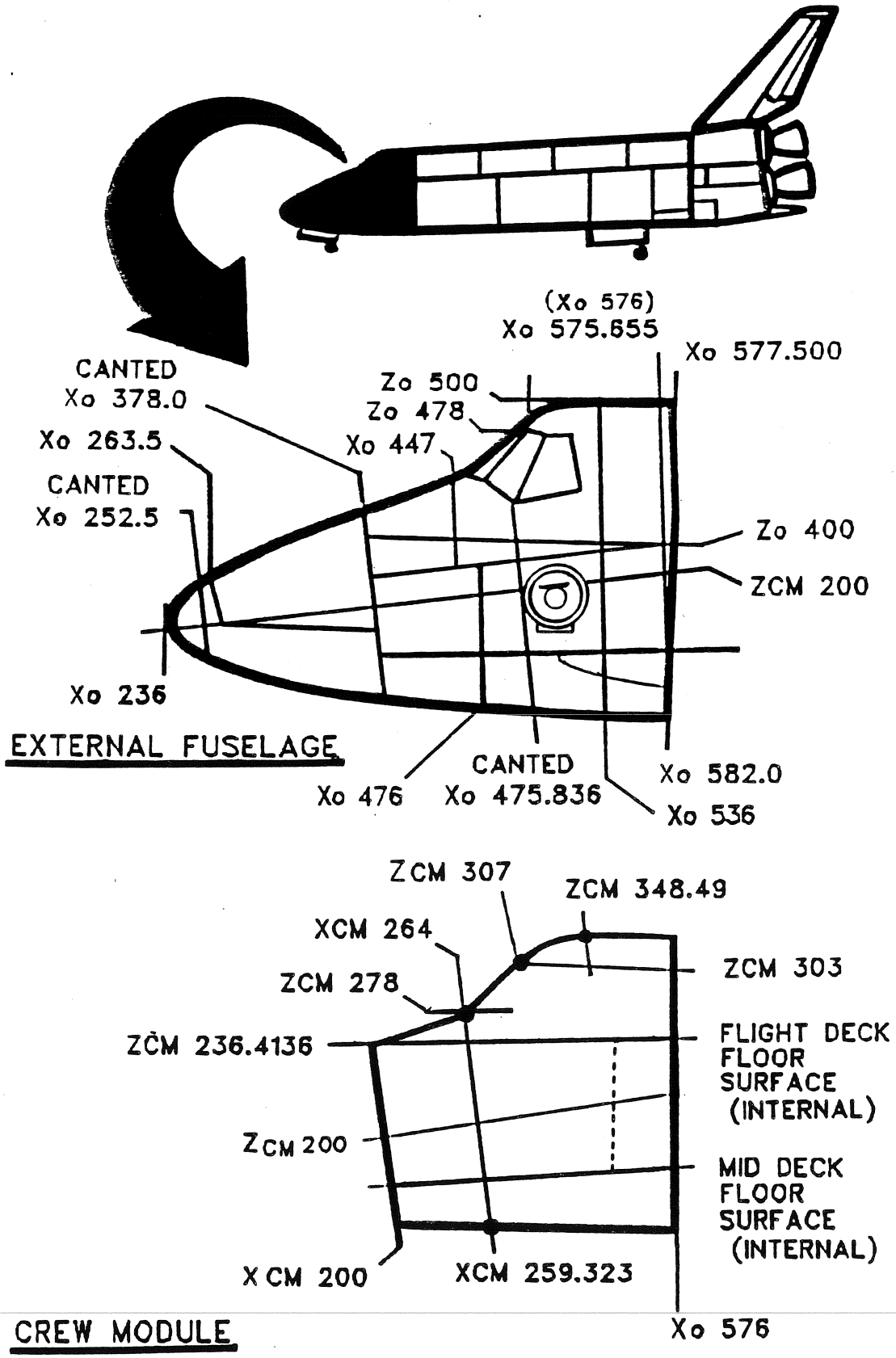
ORBITER
ZONE AND ACCESS
LOCATOR

Section 2.0

ORBITER ZONE ILLUSTRATIONS

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
100	2.1	ORBITER FWD FUSELAGE



SUBJECT	SECTION	ZONE
ORBITER FWD FUSELAGE	2.1	100

The forward fuselage consists of upper and lower fuselages. It houses the crew compartment and supports the forward Reaction Control System module, nose cap and nose landing gear. The forward fuselage is constructed of conventional 2024 aluminum alloy skin-stringer panels, frames and bulkheads. The forward fuselage skin has structural provisions for installing antennas, deployable air data probes and the door eyelet openings for the two star trackers. The forward orbiter/external tank attach fitting is at the Xo378 bulkhead aft of the nosegear wheel well.

The three level crew module is constructed of 2219 aluminum alloy plate with integral stiffening stringers and internal framing welded together to create a pressure-tight vessel. Approximately 300 penetrations in the pressure shell are sealed with plates and fittings. A large removable panel in the aft bulkhead was provided to enable heavy maintenance access to the interior. The crew module or crew compartment is supported within the forward fuselage at only four attach points to minimize the thermal conductivity. The compartment is configured to accommodate a crew of four on the flight deck and three in the middeck.

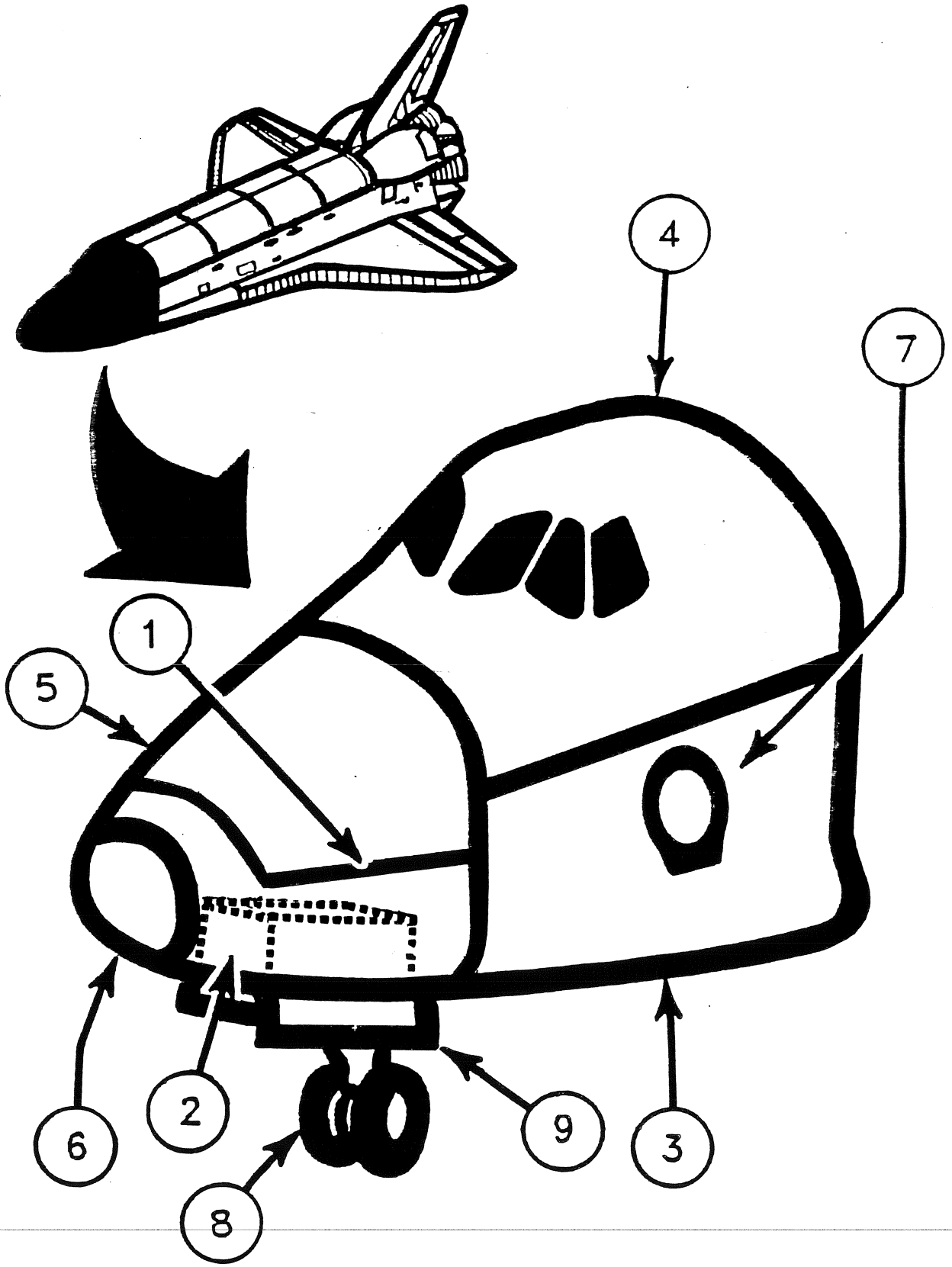
The six windows located at the forward flight deck commander and pilot stations provide forward, left and right viewing. The two overhead windows and two payload-viewing windows at the aft station location on the flight deck provide rendezvous, docking and payload viewing. Each of the forward six windows' outer panes measures 42 inches diagonally, and the center and inner panes measure 35 inches diagonally. The outer panes of the forward six windows are mounted and attached to the crew compartment. The two overhead windows' clear view area is 20 by 20.9 inches. The left-hand overhead window provides the crew members with a secondary emergency egress. On the aft flight deck, each of the two windows for viewing the payload bay are 14.5 by 11 inches. Both panes are attached to the crew compartment.

Directly beneath the flight deck is the middeck. Access to the middeck is through two interdeck openings, which measure 26 by 28 inches. The middeck is the location of the airlock, the waste management compartment and the three avionics bays. The mid deck floor contains removable panels that provide access to the ECLSS equipment bay below. The airlock has an inside diameter of 63 inches and a height of 83 inches, as well as two pressure sealing hatches.

Manufacturers/Contractors

The forward fuselage, crew compartment, airlock and module stowage locker are built by Rockwell's Space Transportation Ssystems Division. The contractor for the windows is Corning Glass Company.

PAGE 16	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
100	2.1.1	FORWARD - OUTER FUSELAGE

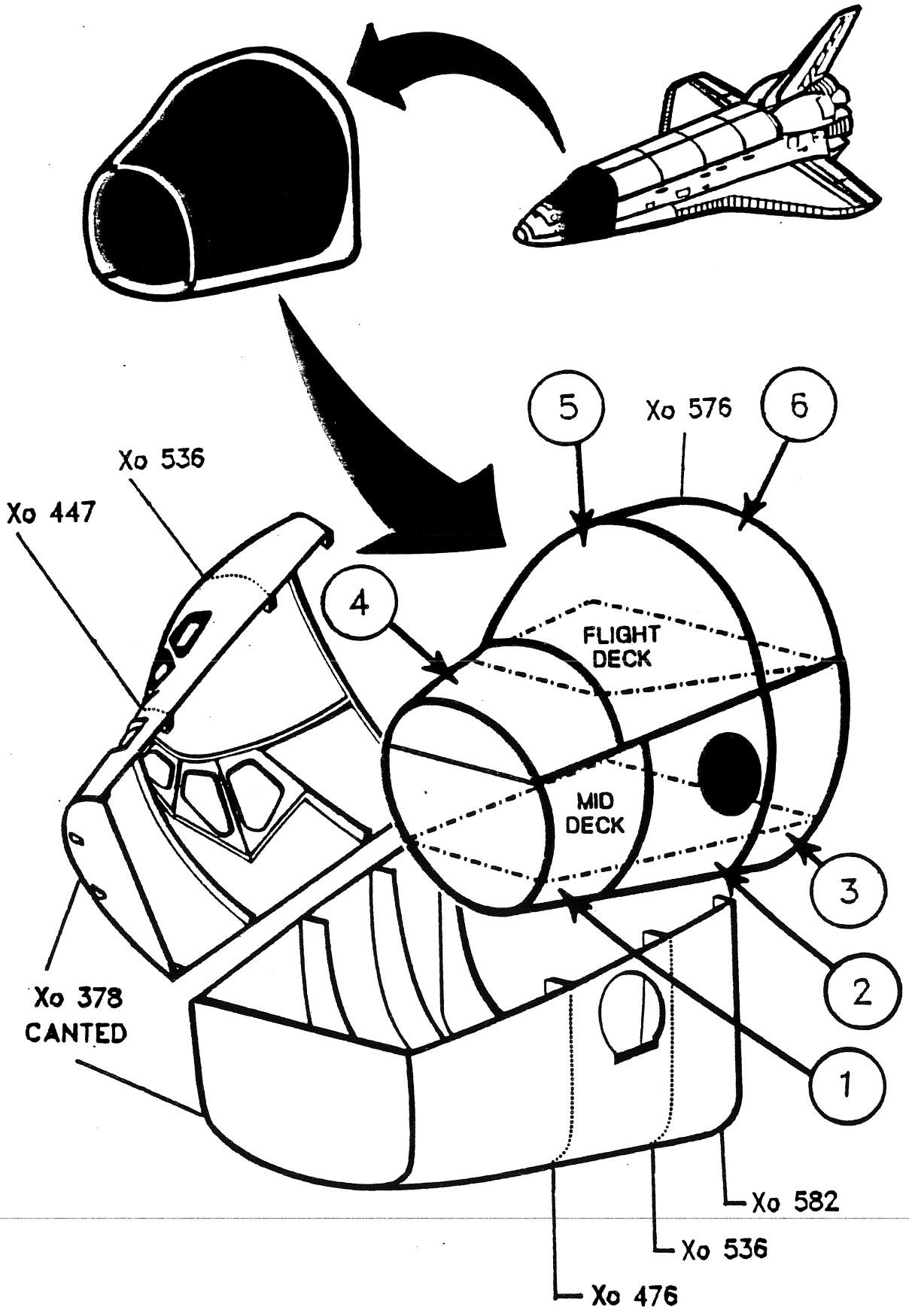


SUBJECT	SECTION	ZONE
FORWARD-OUTER FUSELAGE	2.1.1	100

ILLUS REF.	ZONE	DESCRIPTION
	100	**Fwd Fuselage (Major Zone)**
	100EXT	Fwd Fuselage External (All)
	100INT	Fwd Fuselage Internal (All)
(1)	110	Lower Fwd Fuselage Xo262.5 Canted Frame to Xo378 Canted Blkhd (Below FRCS Module)
(2)	150	Nose Gear Wheel Well (Internal Surfaces Only)
(3)	130	Lower Fwd Fuselage (Belly) Xo378 Canted Blkhd to Sta. Xo582 External Surface Only)
(4)	140	Upper Fwd Fuselage Xo378 Canted Blkhd to Xo582 Canted Frame (External Surface Only)
(5)	560	Fwd Reaction Control System (FRCS) Xo276.9 Canted Blkhd to Xo378 Canted Blkhd Above Sta. Zo335 (Ref. Section 2.5.3)
	810	Nose Cap Fwd of Xo262.5 Canted Frame (Ref. Section 2.8.1)
(7)	820	Crew Hatch (Ref. Section 2.8.1)
(8)	930	Nose Landing Gear (Ref. Section 2.9.1)
(9)	940	Nose Landing Gear Doors (Ref. Section 2.9.1)

PAGE 18	ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
130/140	2.1.2	FWD OUTER FUSELAGE/CREW MODULE INTERFACE

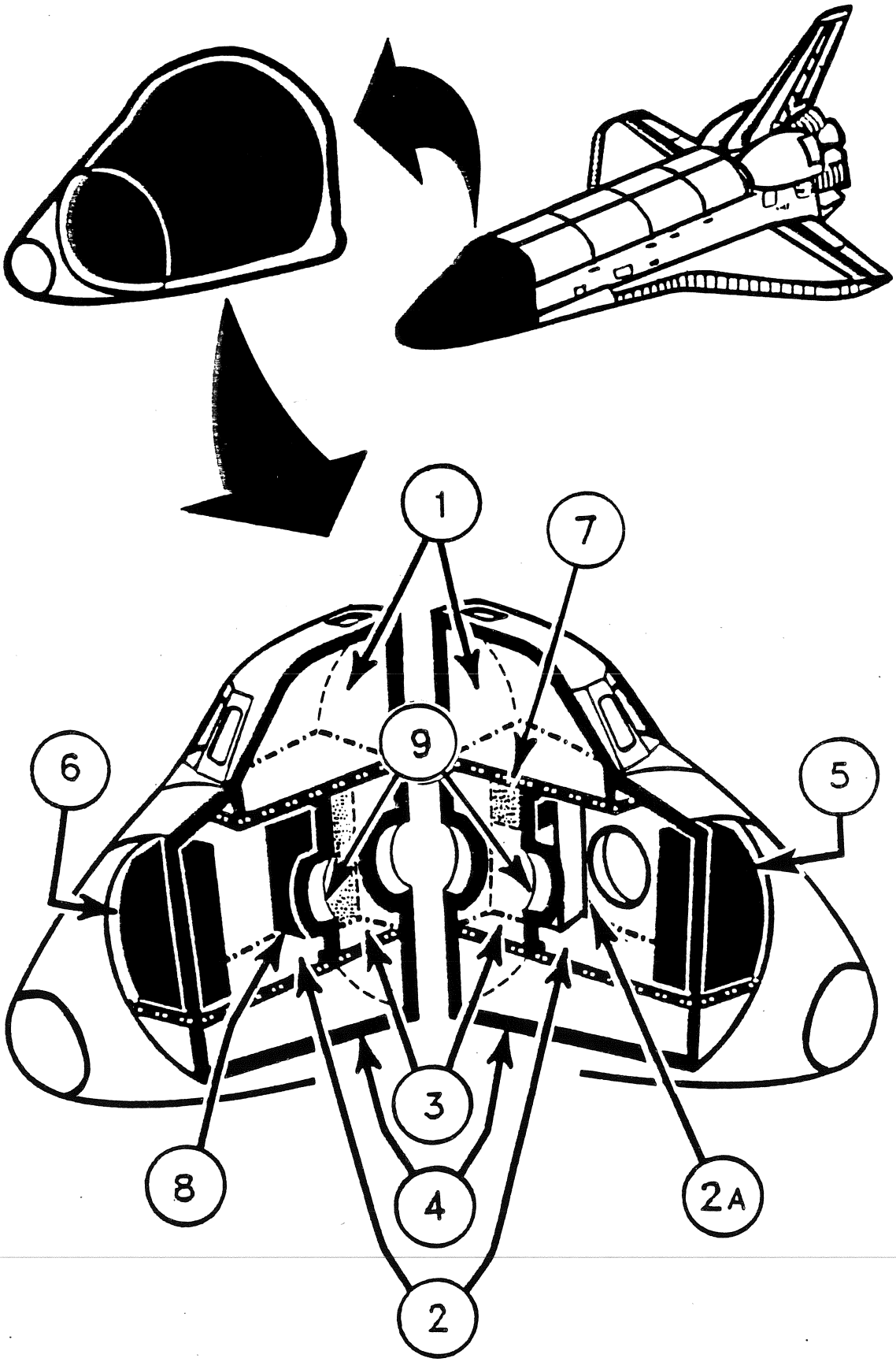


SUBJECT	SECTION	ZONE
FWD OUTER FUSELAGE / CREW MODULE INTERFACE	2.1.2	130/140

ILLUS REF.	ZONE	DESCRIPTION
	120	**Crew Module** Xo380 Canted Blkhd to Xo576 Canted Blkhd
	130	**Lower Fwd Fuselage** (External Surface Outer Fuselage Below Splice Plate)
(1)	131	Lower Fwd Crew Module Interface Xo378 Canted Blkhd to 476 Canted Frame (Interior surfaces of Outer Fuselage and Exterior Surface of CM)
(2)	132	Lower Mid Crew Module Interface Xo476 Canted Frame to 536 Canted Frame (Interior Surfaces of Outer Fuselage and Exterior Surface of CM)
(3)	133	Lower Aft Crew Module Interface Xo536 Canted Frame to Xo576 Bulkhead (Interior Surfaces of Outer Fuselage and Exterior Surface of CM)
	140	**Upper Fwd Fuselage** (External Surface of Outer Fuselage Above Splice Plate)
(4)	141	Upper Fwd Crew Module Interface Xo378 Canted Bulkhead to 447 Canted Frame (Interior Surfaces of Outer Fuselage and Exterior Surface of CM)
(5)	142	Upper Mid Crew Module Interface Xo447 Canted Bulkhead to 576 Canted Frame (Interior Surfaces of Outer Fuselage and Exterior Surface of CM)
(6)	143	Upper Aft Crew Module Interface Xo536 Canted Frame to 576 Bulkhead (Interior Surfaces of Outer Fuselage and Exterior Surface of CM)

Note: Splice plate referred to is that covering the manufacturing break between the upper and lower forward fuselage assemblies.

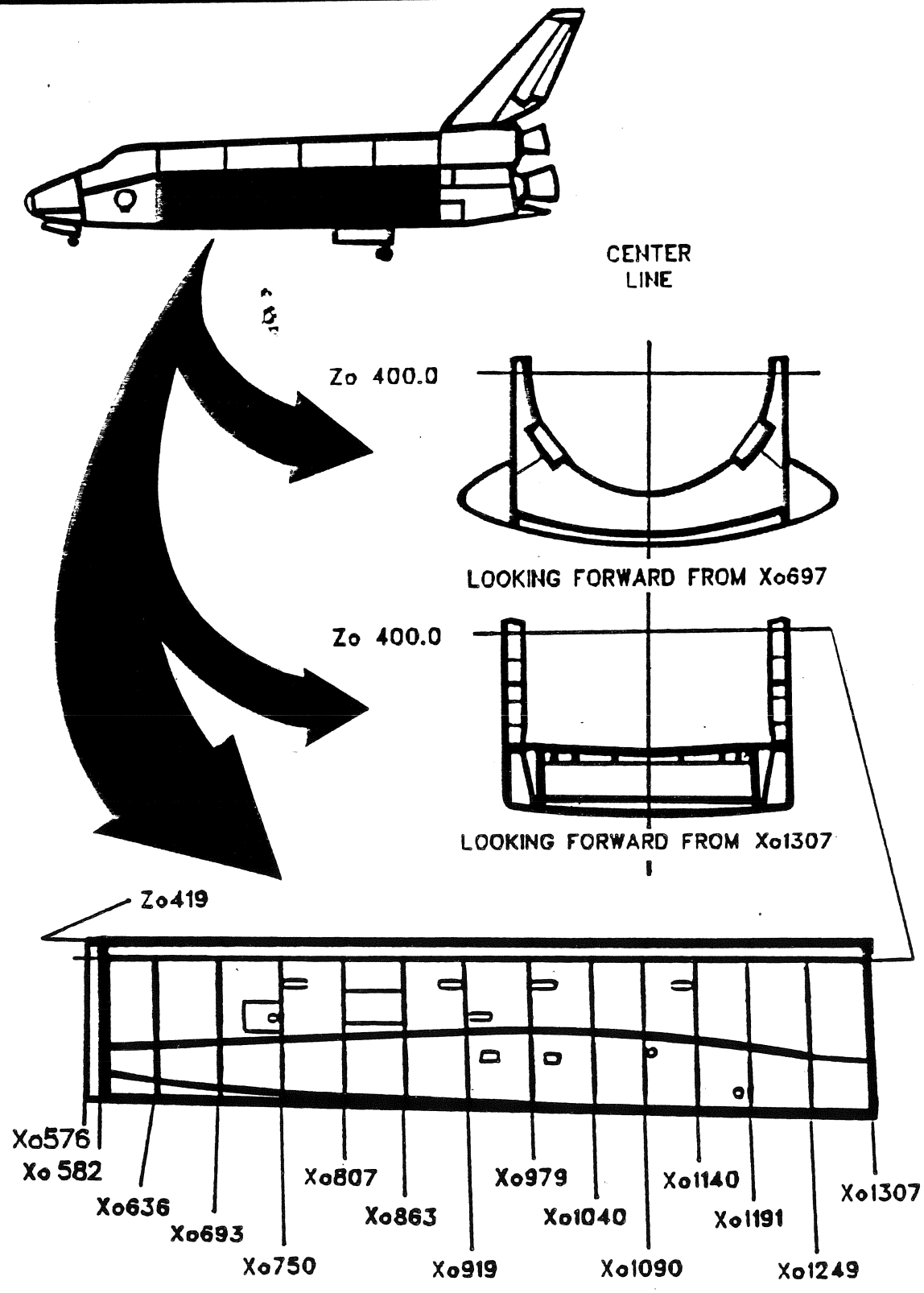
PAGE 20	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
120	2.1.3	CREW MODULE - INTERNAL



SUBJECT	SECTION	ZONE
CREW MODULE INTERNAL	2.1.3	120

ILLUS REF.	ZONE	DESCRIPTION
	120	**Crew Module** Xo380 Canted Blkhd to Xo576 Blkhd
(1)	121	Flight Deck (Above Zo419) Internal Only
(2)	122	Mid Deck (Zo328 to Zo419) Internal Only
(2A)	122WUC	Waste Management Compartment (Internal Only)
(3)	123	Airlock
(4)	124	ECLSS Bay (Below Zo328) Internal Only
(5)	125	Avionics Bay #1
(6)	126	Avionics Bay #2
(7)	127	Avionics Bay #3 (Left 3B)
(8)	128	Avionics Bay #3 (Right 3A)
(9)	800FAH	Forward Airlock Hatch (Ref. Section 2.8.1)

PAGE 22	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
200	2.2	ORBITER MID FUSELAGE



STATION #
COORDINATES

SUBJECT	SECTION	ZONE
ORBITER MID FUSELAGE	2.2	200

The mid fuselage structure interfaces with the forward fuselage, aft fuselage and wings. It supports the payload bay doors, payload tiedown fittings, forward wing glove, and various Orbiter system components. The mid fuselage also supports the two electrical wire trays that contain the wiring between the crew compartment and aft fuselage. The payload by is not pressurized. The payload bay was designed with reinforced skin and longerons interfacing with the bulkheads of the forward and aft fuselages. The mid fuselage is primarily an aluminum structure 60 feet long, 17 feet wide and 13 feet high.

The twelve mainframe assemblies stabilize the mid fuselage structure. These assemblies consist of vertical side elements and horizontal elements. The side elements are machined; whereas the horizontal elements are boron/aluminum tubes with bonded titanium end fittings.

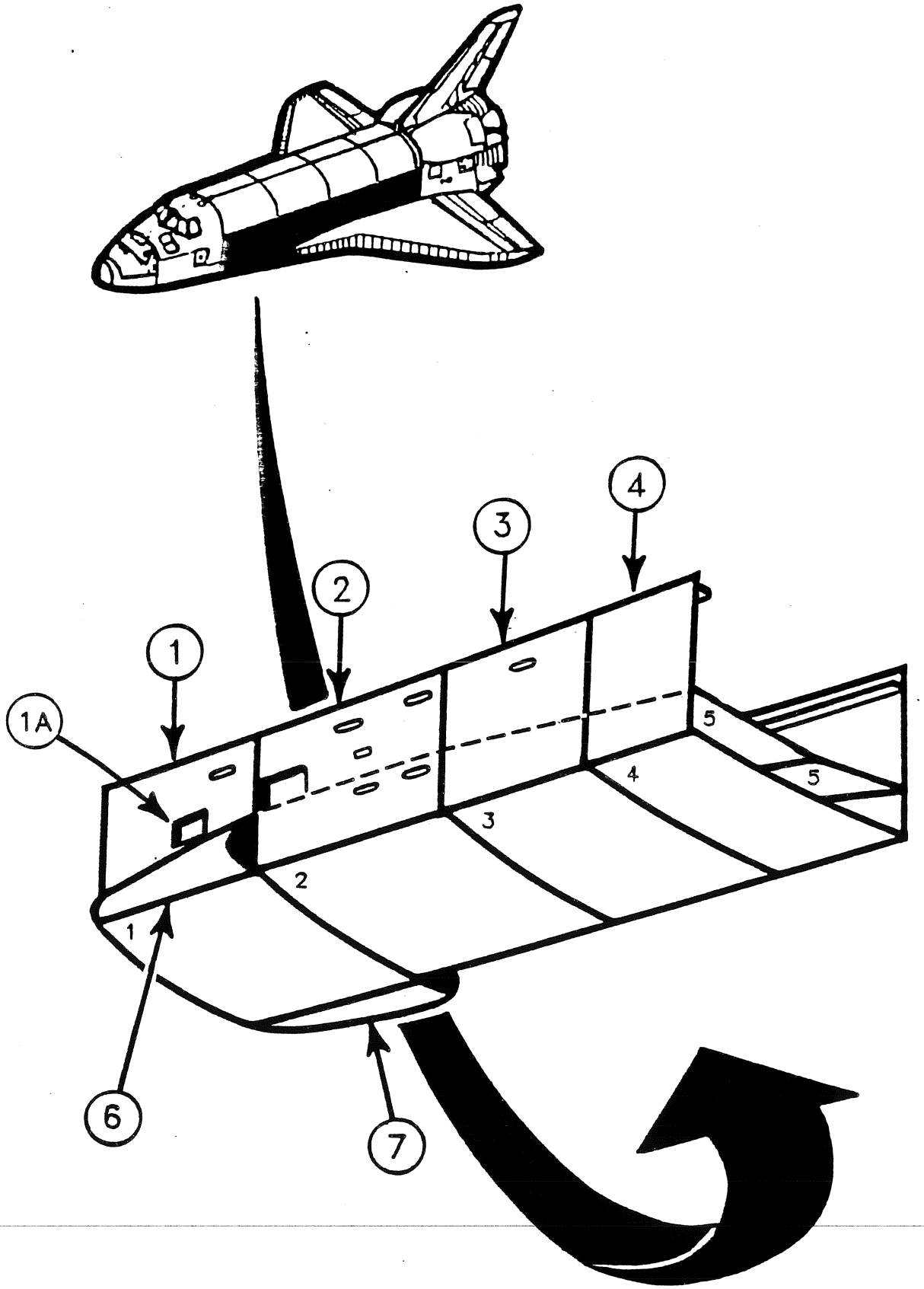
The upper left and right portion of the mid fuselage are sill and door longerons. The sill longeron provides the base support for the payload by manipulator arm (if installed) and its stowage provisions, the KU Band rendezvous antenna, the antenna base support and the payload bay door actuation system.

The payload bay doors are discussed in Section 2.8.

Manufacturers/Contractors

The contractors are: Rockwell's Tulsa Division (payload bay doors), Vought Corporation (radiators), and General Dynamics Corporation and Convair Aerospace Division (mid fuselage).

PAGE 24	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
200	2.2.1	MID FUSELAGE EXTERNAL

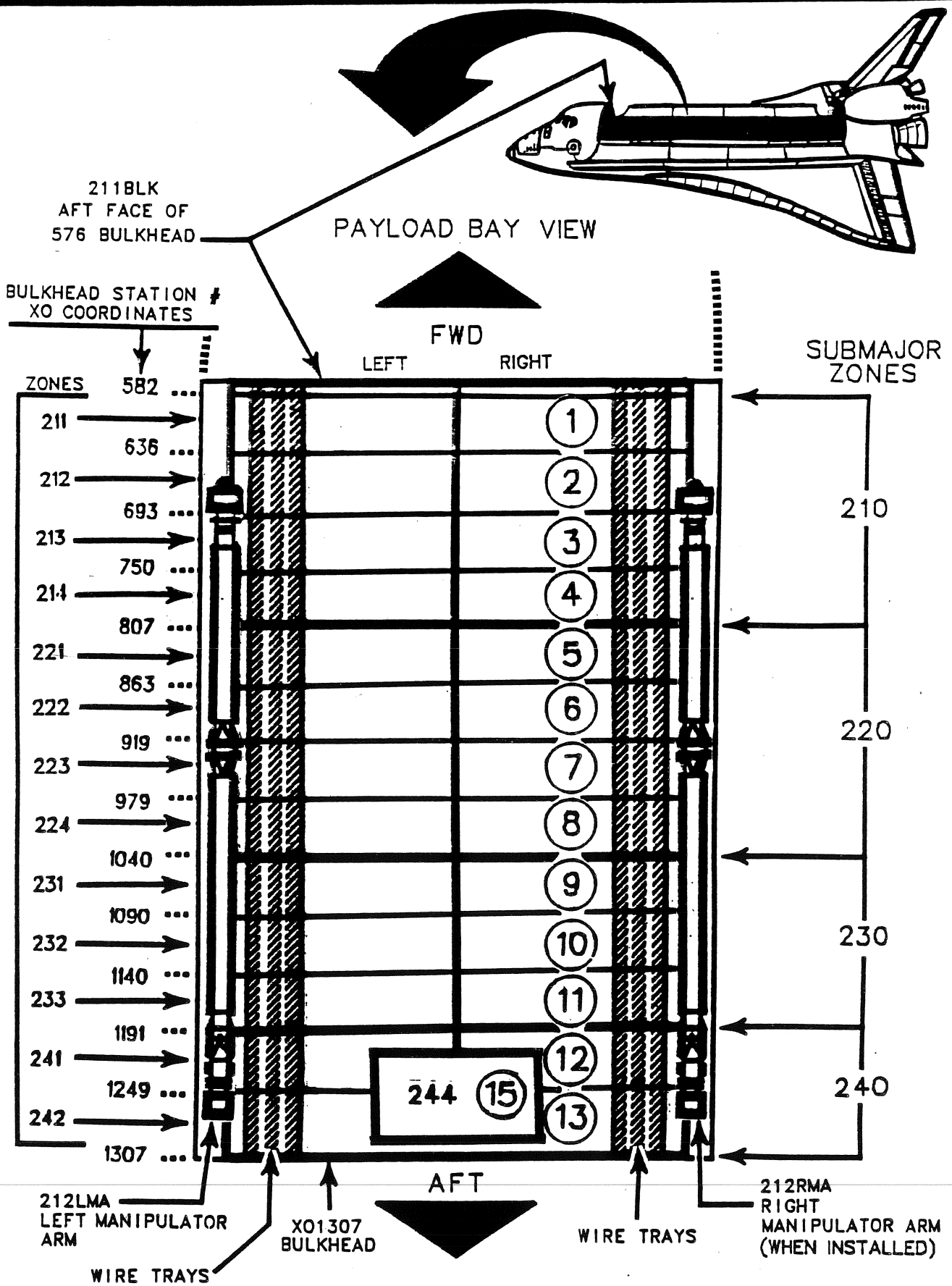


SUBJECT	SECTION	ZONE
MID FUSELAGE EXTERNAL	2.2.1	200

ILLUS REF.	ZONE	DESCRIPTION
	200	**Mid Fuselage (Major Zone)**
	200EXT	Mid fuselage External (Overall)
(1)	210	Mid Fuselage - Fwd PLB #1,2,3 & 4 (Xo582 to Xo807 Not Including Wing Glove Fairings) External Surfaces Only
(1A)	210-44	Payload Bay Maintenance Access (Door 44-00)
(2)	220	Mid Fuselage - Fwd Ctr PLB #5,6,7 & 8 (Xo807 to Xo1040) (External Surfaces Only)
(3)	230	Mid Fuselage - Aft Ctr PLB#9, 10 & 11 (Xo1040 to Xo1191) (External Surfaces Only)
(4)	240	Mid Fuselage - Aft PLB#12 & 13 (Xo1191 to Xo1307) (External Surfaces Only)
(6)	250	Glove Fairing - Left (Xo524 to Xo807)
(7)	260	Glove Fairing - Right (Xo524 to Xo807)

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
200	2.2.2	PAYLOAD BAY INTERNAL OVERVIEW



SUBJECT	SECTION	ZONE
PAYLOAD BAY INTERNAL OVERVIEW	2.2.2	200

ILLUS REF.	ZONE	DESCRIPTION
	210	**Mid Fuselage - Fwd (Ref. Section 2.2.1)** Xo576 to Xo807
	211	**Payload Bay #1** (Includes Aft Face of Xo576 Blkhd to Xo636 Frame) Internal Only
(2)	212	Payload Bay #2 (Xo636 Frame to Xo693 Frame) Internal Only
(3)	213	Payload Bay #3 (Xo693 Frame to Xo750 Frame) Internal Only
(4)	214	Payload Bay #4 (Xo750 Frame to Xo807 Frame) Internal Only
	220	**Mid Fuselage - Fwd Center (Ref. Section 2.2.1)** Xo807 to Xo1040
(5)	221	Payload Bay #5 (Xo807 Frame to Xo1040 Frame) Internal Only
(6)	222	Payload Bay #6 (Xo863 Frame to Xo919 Frame) Internal Only
(7)	223	Payload Bay #7 (Xo919 Frame to Xo979 Frame) Internal Only
(8)	224	Payload Bay #8 (Xo979 Frame to Xo1040 Frame) Internal Only
	230	**Mid Fuselage - Aft Center (Ref. Section 2.2.1)** (Xo1040 to Xo1191)

ZONE	SECTION	SUBJECT
200	2.2.2	PAYLOAD BAY INTERNAL OVERVIEW

ILLUS REF.	ZONE	DESCRIPTION
(9)	231	Payload Bay #9 (Xo1040 Frame to Xo1090 Frame) Internal Only
(10)	232	Payload Bay #10 (Xo1090 Frame to Xo1140 Frame) Internal Only
(11)	233	Payload Bay #11 (Xo1140 Frame to Xo1191 Frame) Internal Only
	240	**Mid-Fuselage - Aft (Ref. Section 2.2.1)** (Xo1191 to Xo1307)
(12)	241	Payload Bay #12 (Xo1191 Frame to Xo1249 Frame) Internal Only
(13)	242	Payload Bay #13 (Xo1249 Frame to, and Including Fwd Face of Xo13097 Blkhd) (Internal to Payload Bay Only)
	243	Wing Carry-Through (Ref. Section 2.2.1)
(14)	244	Extended Duration Pallet

ORBITER
ZONE AND ACCESS
LOCATOR

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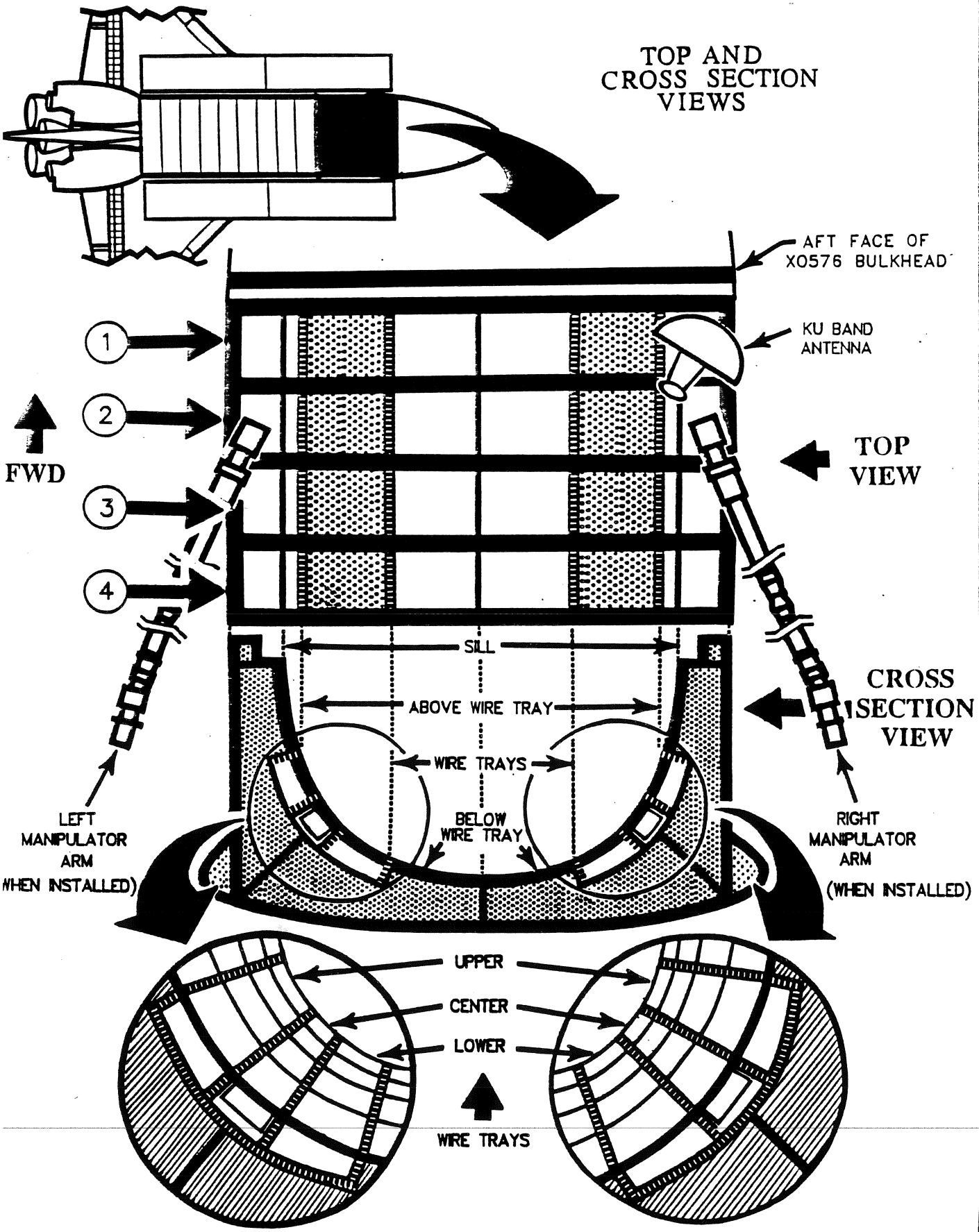
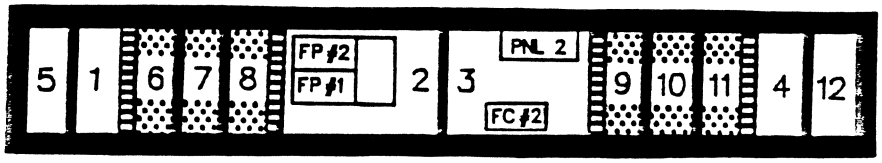
ZONE	SECTION	SUBJECT
210	2.2.2.1 sheet 1 of 4	FWD - MID FUSELAGE PAYLOAD BAY INTERNAL



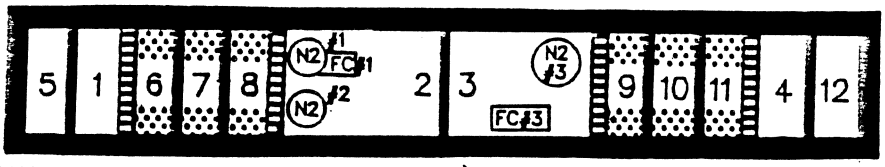
ILLUS REF. | ZONE | DESCRIPTION

(1) 211 Payload Bay #1 (Aft Face of Xo576 Blkhd to Xo636 Frame)



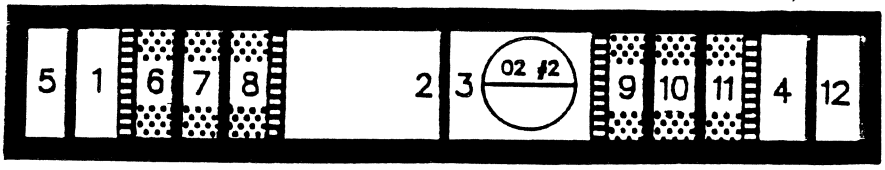
1) 211-01 BAY 1 LEFT ABOVE WIRE TRAY
2) 211-02 BAY 1 LEFT BELOW WIRE TRAY
3) 211-03 BAY 1 RIGHT BELOW WIRE TRAY
4) 211-04 BAY 1 RIGHT ABOVE WIRE TRAY
5) 211-05 BAY 1 LEFT SILL
6) 211-06 BAY 1 LEFT UPPER WIRE TRAY
7) 211-07 BAY 1 LEFT CENTER WIRE TRAY
8) 211-08 BAY 1 LEFT LOWER WIRE TRAY
9) 211-09 BAY 1 RIGHT LOWER WIRE TRAY
10) 211-10 BAY 1 RIGHT CENTER WIRE TRAY
11) 211-11 BAY 1 RIGHT UPPER WIRE TRAY
12) 211-12 BAY 1 RIGHT SILL

(2) 212 Payload Bay #2 (Xo636 Frame to Xo693 Frame)



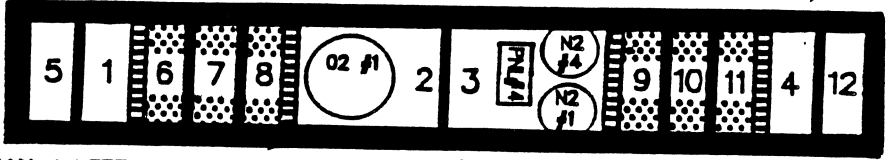
1) 212-01 BAY 2 LEFT ABOVE WIRE TRAY
2) 212-02 BAY 2 LEFT BELOW WIRE TRAY
3) 212-03 BAY 2 RIGHT BELOW WIRE TRAY
4) 212-04 BAY 2 RIGHT ABOVE WIRE TRAY
5) 212-05 BAY 2 LEFT SILL
6) 212-06 BAY 2 LEFT UPPER WIRE TRAY
7) 212-07 BAY 2 LEFT UPPER WIRE TRAY
8) 212-08 BAY 2 LEFT LOWER WIRE TRAY
9) 212-09 BAY 2 RIGHT LOWER WIRE TRAY
10) 212-10 BAY 2 RIGHT CENTER WIRE TRAY
11) 212-11 BAY 2 RIGHT UPPER WIRE TRAY
12) 212-12 BAY 2 RIGHT SILL

(3) 213 Payload Bay #3 (Xo693 Frame to Xo750 Frame)



1) 213-01 BAY 3 LEFT ABOVE WIRE TRAY
2) 213-02 BAY 3 LEFT BELOW WIRE TRAY
3) 213-03 BAY 3 RIGHT BELOW WIRE TRAY
4) 213-04 BAY 3 RIGHT ABOVE WIRE TRAY
5) 213-05 BAY 3 LEFT SILL
6) 213-06 BAY 3 LEFT UPPER WIRE TRAY
7) 213-07 BAY 3 LEFT CENTER WIRE TRAY
8) 213-08 BAY 3 LEFT LOWER WIRE TRAY
9) 213-09 BAY 3 RIGHT LOWER WIRE TRAY
10) 213-10 BAY 3 RIGHT CENTER WIRE TRAY
11) 213-11 BAY 3 RIGHT UPPER WIRE TRAY
12) 213-12 BAY 3 RIGHT SILL

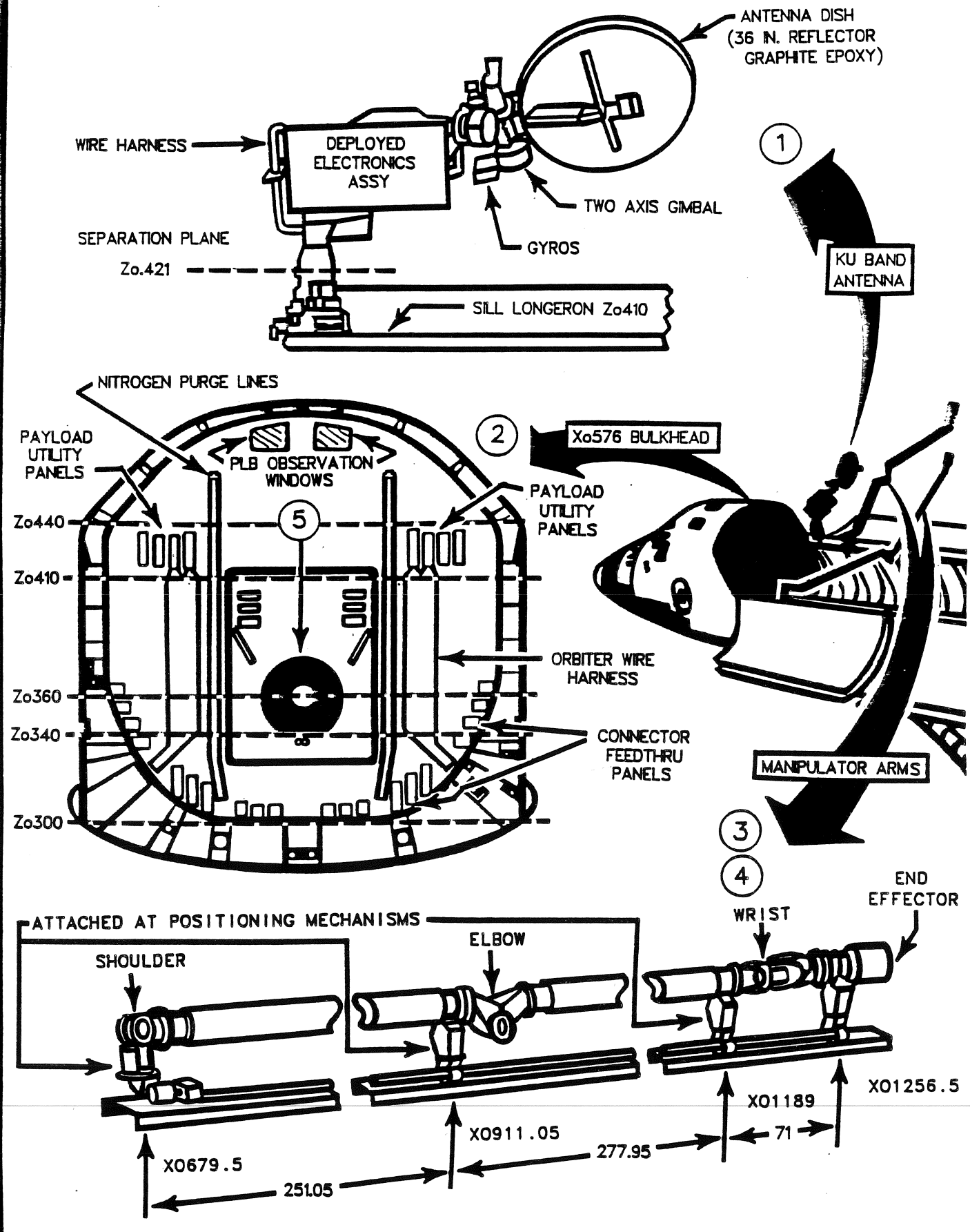
(4) 214 Payload Bay #4 (Xo750 Frame to Xo807 Frame)



1) 214-01 BAY 4 LEFT ABOVE WIRE TRAY
2) 214-02 BAY 4 LEFT BELOW WIRE TRAY
3) 214-03 BAY 4 RIGHT BELOW WIRE TRAY
4) 214-04 BAY 4 RIGHT ABOVE WIRE TRAY
5) 214-05 BAY 4 LEFT SILL
6) 214-06 BAY 4 LEFT UPPER WIRE TRAY
7) 214-07 BAY 4 LEFT CENTER WIRE TRAY
8) 214-08 BAY 4 LEFT LOWER WIRE TRAY
9) 214-09 BAY 4 RIGHT LOWER WIRE TRAY
10) 214-10 BAY 4 RIGHT CENTER WIRE TRAY
11) 214-11 BAY 4 RIGHT UPPER WIRE TRAY
12) 214-12 BAY 4 RIGHT SILL

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
211/212	2.2.2.1 sheet 3 of 4	FWD - MID FUSELAGE PAYLOAD BAY INTERNAL



SUBJECT

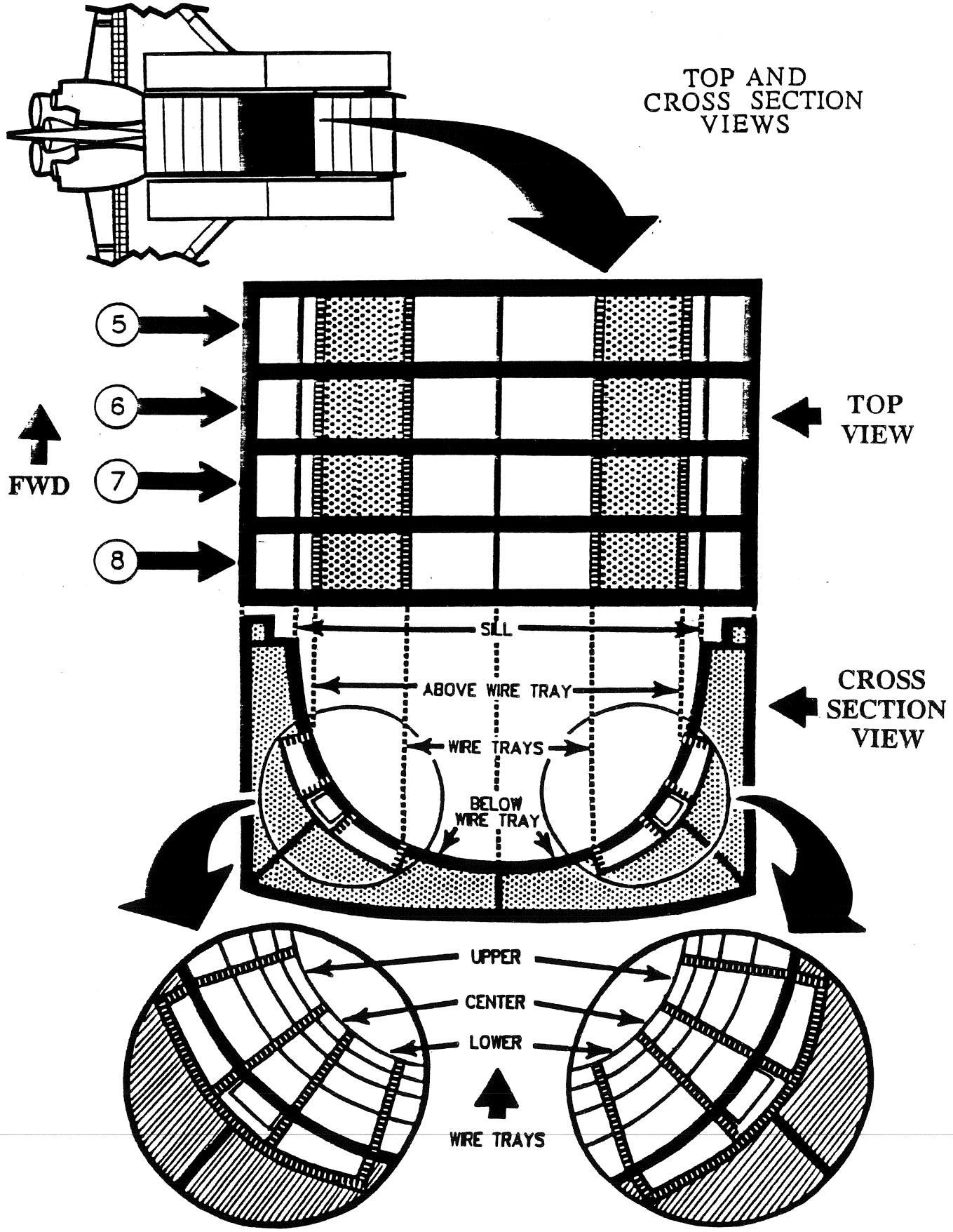
FWD - MID FUSELAGE PAYLOAD BAY INTERNAL

SECTION 2.2.2.1 sheet 4 of 4 | ZONE

ILLUS REF.	ZONE	DESCRIPTION
	211	**Payload Bay #1**
(1)	211KUB	KU Band Antenna Assembly
(2)	211BLK	Xo576 Blkhead, Aft Face
	212	**Payload Bay #2**
(3)	212LMA	Left Manipulator Arm (When Installed)
(4)	212RMA	Right Manipulator Arm (When Installed)
(5)	850	Airlock to PLB Hatch (Ref. Section 2.8.1) (Located in Xo576 Blkhd)

ORBITER ZONE AND ACCESS LOCATOR

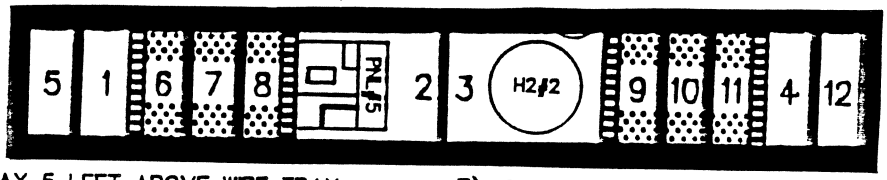
ZONE	SECTION	SUBJECT
220	2.2.2.2	FWD CTR - MID FUSELAGE PAYLOAD BAY INTERNAL



SUBJECT: FWD CTR - MID FUSELAGE PAYLOAD BAY INTERNAL | SECTION 2.2.2.2 | ZONE 220

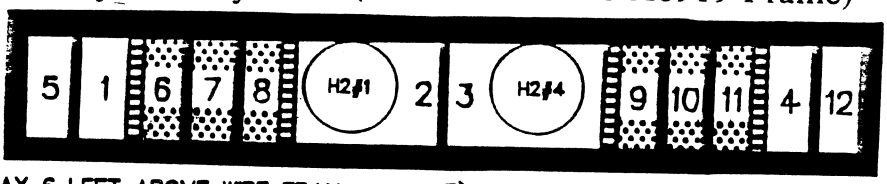
ILLUS REF. | ZONE | DESCRIPTION

(5) **221** Payload Bay #5 (Xo807 Frame to Xo1040 Frame)



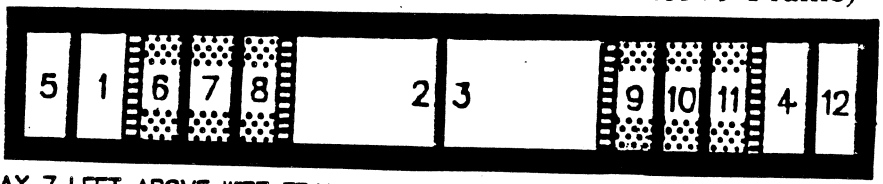
1) 221-01 BAY 5 LEFT ABOVE WIRE TRAY
2) 221-02 BAY 5 LEFT BELOW WIRE TRAY
3) 221-03 BAY 5 RIGHT BELOW WIRE TRAY
4) 221-04 BAY 5 RIGHT ABOVE WIRE TRAY
5) 221-05 BAY 5 LEFT SILL
6) 221-06 BAY 5 LEFT UPPER WIRE TRAY
7) 221-07 BAY 5 LEFT CENTER WIRE TRAY
8) 221-08 BAY 5 LEFT LOWER WIRE TRAY
9) 221-09 BAY 5 RIGHT LOWER WIRE TRAY
10) 221-10 BAY 5 RIGHT CENTER WIRE TRAY
11) 221-11 BAY 5 RIGHT UPPER WIRE TRAY
12) 221-12 BAY 5 RIGHT SILL

(6) **222** Payload Bay #6 (Xo863 Frame to Xo919 Frame)



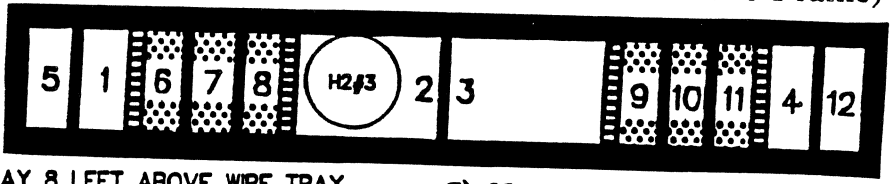
1) 222-01 BAY 6 LEFT ABOVE WIRE TRAY
2) 222-02 BAY 6 LEFT BELOW WIRE TRAY
3) 222-03 BAY 6 RIGHT BELOW WIRE TRAY
4) 222-04 BAY 6 RIGHT ABOVE WIRE TRAY
5) 222-05 BAY 6 LEFT SILL
6) 222-06 BAY 6 LEFT UPPER WIRE TRAY
7) 222-07 BAY 6 LEFT CENTER WIRE TRAY
8) 222-08 BAY 6 LEFT LOWER WIRE TRAY
9) 222-09 BAY 6 RIGHT LOWER WIRE TRAY
10) 222-10 BAY 6 RIGHT CENTER WIRE TRAY
11) 222-11 BAY 6 RIGHT UPPER WIRE TRAY
12) 222-12 BAY 6 RIGHT SILL

(7) **223** Payload Bay #7 (Xo919 Frame to Xo979 Frame)



1) 223-01 BAY 7 LEFT ABOVE WIRE TRAY
2) 223-02 BAY 7 LEFT BELOW WIRE TRAY
3) 223-03 BAY 7 RIGHT BELOW WIRE TRAY
4) 223-04 BAY 7 RIGHT ABOVE WIRE TRAY
5) 223-05 BAY 7 LEFT SILL
6) 223-06 BAY 7 LEFT UPPER WIRE TRAY
7) 223-07 BAY 7 LEFT CENTER WIRE TRAY
8) 223-08 BAY 7 LEFT LOWER WIRE TRAY
9) 223-09 BAY 7 RIGHT LOWER WIRE TRAY
10) 223-10 BAY 7 RIGHT CENTER WIRE TRAY
11) 223-11 BAY 7 RIGHT UPPER WIRE TRAY
12) 223-12 BAY 7 RIGHT SILL

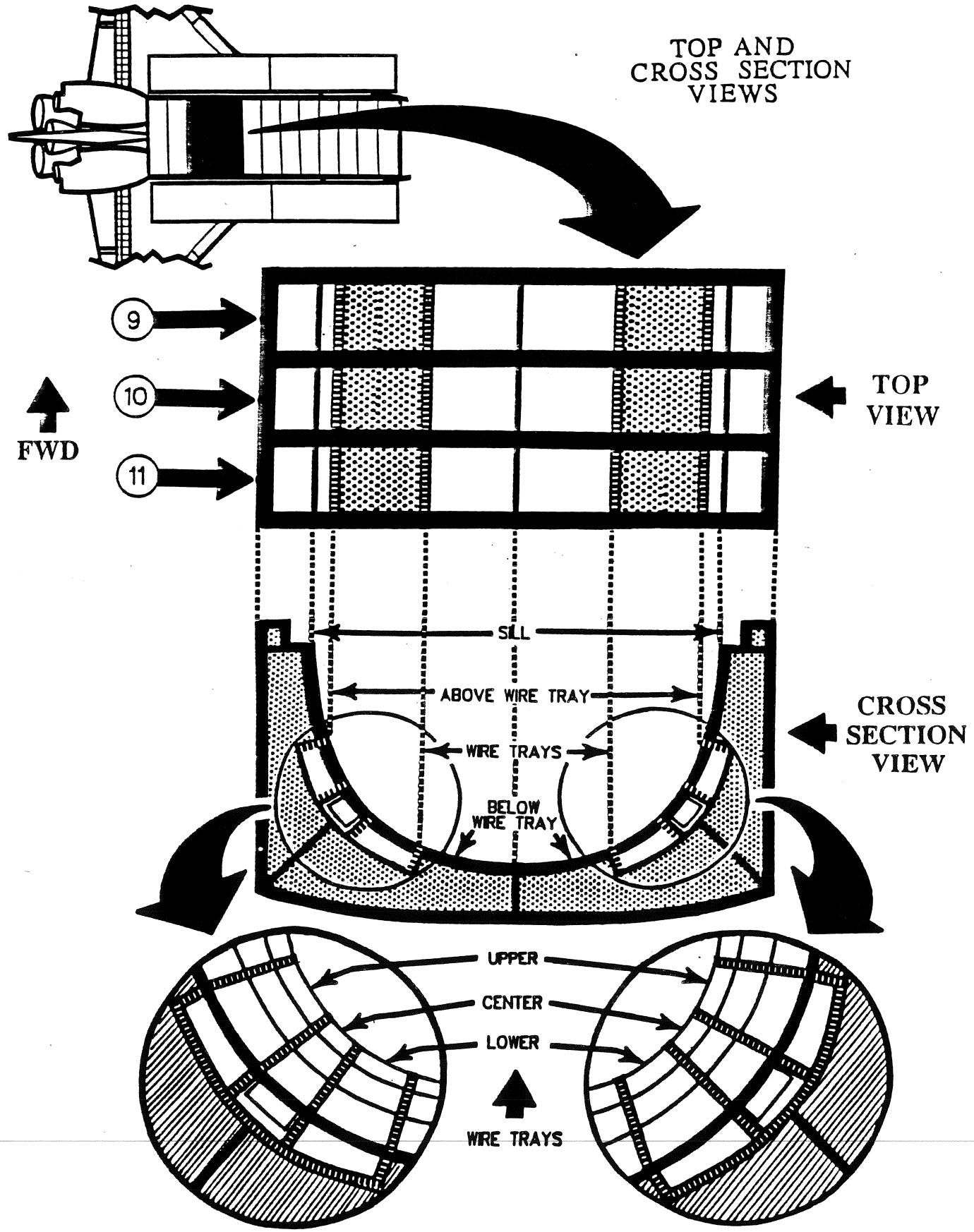
(8) **224** Payload Bay #8 (Xo979 Frame to Xo1040 Frame)



1) 224-01 BAY 8 LEFT ABOVE WIRE TRAY
2) 224-02 BAY 8 LEFT BELOW WIRE TRAY
3) 224-03 BAY 8 RIGHT BELOW WIRE TRAY
4) 224-04 BAY 8 RIGHT ABOVE WIRE TRAY
5) 224-05 BAY 8 LEFT SILL
6) 224-06 BAY 8 LEFT UPPER WIRE TRAY
7) 224-07 BAY 8 LEFT CENTER WIRE TRAY
8) 224-08 BAY 8 LEFT LOWER WIRE TRAY
9) 224-09 BAY 8 RIGHT LOWER WIRE TRAY
10) 224-10 BAY 8 RIGHT CENTER WIRE TRAY
11) 224-11 BAY 8 RIGHT UPPER WIRE TRAY
12) 224-12 BAY RIGHT SILL

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
230	2.2.2.3	AFT CTR - MID FUSELAGE PAYLOAD BAY INTERNAL

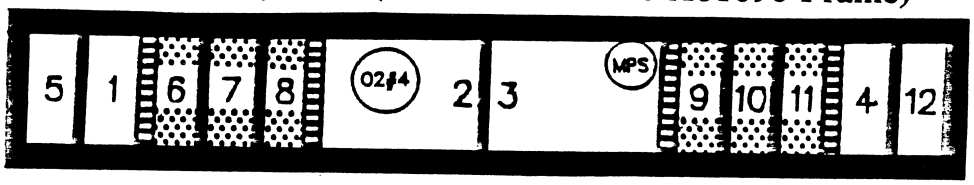


SUBJECT
AFT CTR - MID FUSELAGE PAYLOAD BAY INTERNAL

SECTION 2.2.2.3 | ZONE 230

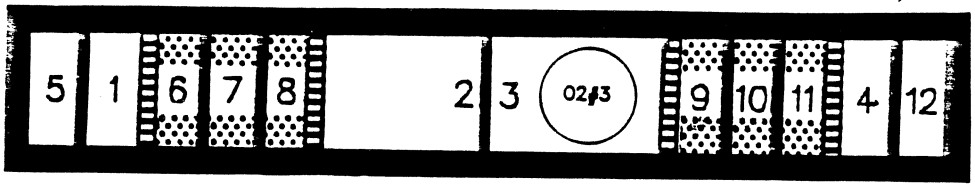
ILLUS REF. | ZONE | DESCRIPTION

(9) 231 Payload Bay #9 (Xo1040 Frame to Xo1090 Frame)



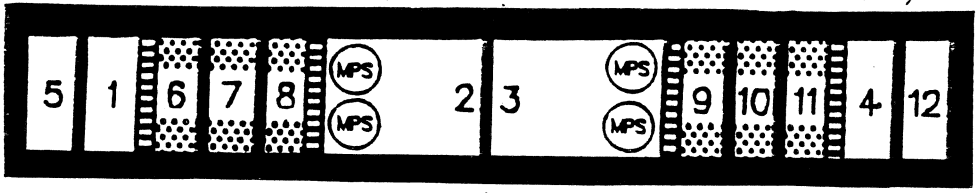
1) 231-01 BAY 9 LEFT ABOVE WIRE TRAY
2) 231-02 BAY 9 LEFT BELOW WIRE TRAY
3) 231-03 BAY 9 RIGHT BELOW WIRE TRAY
4) 231-04 BAY 9 RIGHT ABOVE WIRE TRAY
5) 231-05 BAY 9 LEFT SILL
6) 231-06 BAY 9 LEFT UPPER WIRE TRAY
7) 231-07 BAY 9 LEFT CENTER WIRE TRAY
8) 231-08 BAY 9 LEFT LOWER WIRE TRAY
9) 231-09 BAY 9 RIGHT LOWER WIRE TRAY
10) 231-10 BAY 9 RIGHT CENTER WIRE TRAY
11) 231-11 BAY 9 RIGHT UPPER WIRE TRAY
12) 231-12 BAY 9 RIGHT SILL

(10) 232 Payload Bay #10 (Xo1090 Frame to Xo1140 Frame)



1) 232-01 BAY 10 LEFT ABOVE WIRE TRAY
2) 232-02 BAY 10 LEFT BELOW WIRE TRAY
3) 232-03 BAY 10 RIGHT BELOW WIRE TRAY
4) 232-04 BAY 10 RIGHT ABOVE WIRE TRAY
5) 232-05 BAY 10 LEFT SILL
6) 232-06 BAY 10 LEFT UPPER WIRE TRAY
7) 232-07 BAY 10 LEFT CENTER WIRE TRAY
8) 232-08 BAY 10 LEFT LOWER WIRE TRAY
9) 232-09 BAY 10 RIGHT LOWER WIRE TRAY
10) 232-10 BAY 10 RIGHT CENTER WIRE TRAY
11) 232-11 BAY 10 RIGHT UPPER WIRE TRAY
12) 232-12 BAY 10 RIGHT SILL

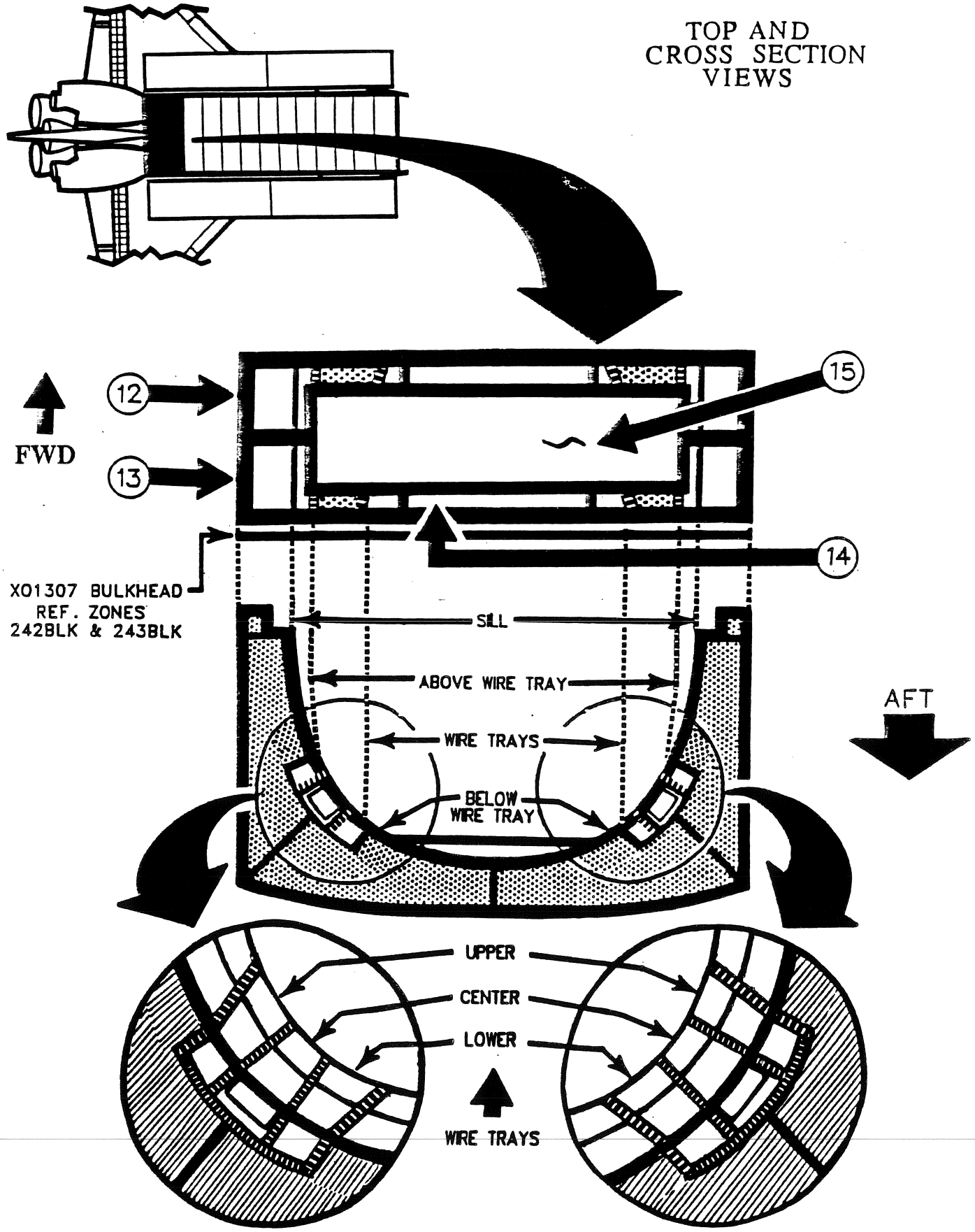
(11) 233 Payload Bay #11 (Xo1140 Frame to Xo1191 Frame)



1) 233-01 BAY 11 LEFT ABOVE WIRE TRAY
2) 233-02 BAY 11 LEFT BELOW WIRE TRAY
3) 233-03 BAY 11 RIGHT BELOW WIRE TRAY
4) 233-04 BAY 11 RIGHT ABOVE WIRE TRAY
5) 233-05 BAY 11 LEFT SILL
6) 233-06 BAY 11 LEFT UPPER WIRE TRAY
7) 233-07 BAY 11 LEFT CENTER WIRE TRAY
8) 233-08 BAY 11 LEFT LOWER WIRE TRAY
9) 233-09 BAY 11 RIGHT LOWER WIRE TRAY
10) 233-10 BAY 11 RIGHT CENTER WIRE TRAY
11) 233-11 BAY 11 RIGHT UPPER WIRE TRAY
12) 233-12 BAY 11 RIGHT SILL

ORBITER ZONE AND ACCESS LOCATOR

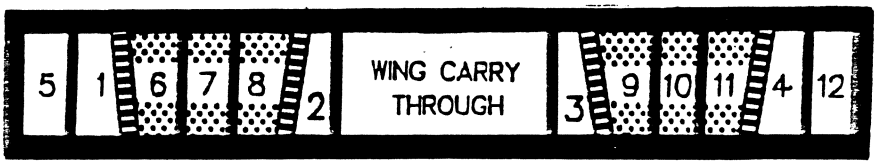
ZONE	SECTION	SUBJECT
240	2.2.2.4 sheet 1 of 4	AFT - MID FUSELAGE PAYLOAD BAY INTERNAL



SUBJECT: AFT - MID FUSELAGE PAYLOAD BAY INTERNAL | SECTION 2.2.2.4 sheet 2 of 4 | ZONE 240

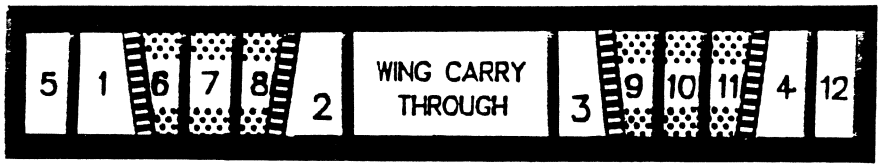
ILLUS REF.	ZONE	DESCRIPTION

(12) 241 Payload Bay #12 (Xo1191 Frame to Xo1249 Frame)



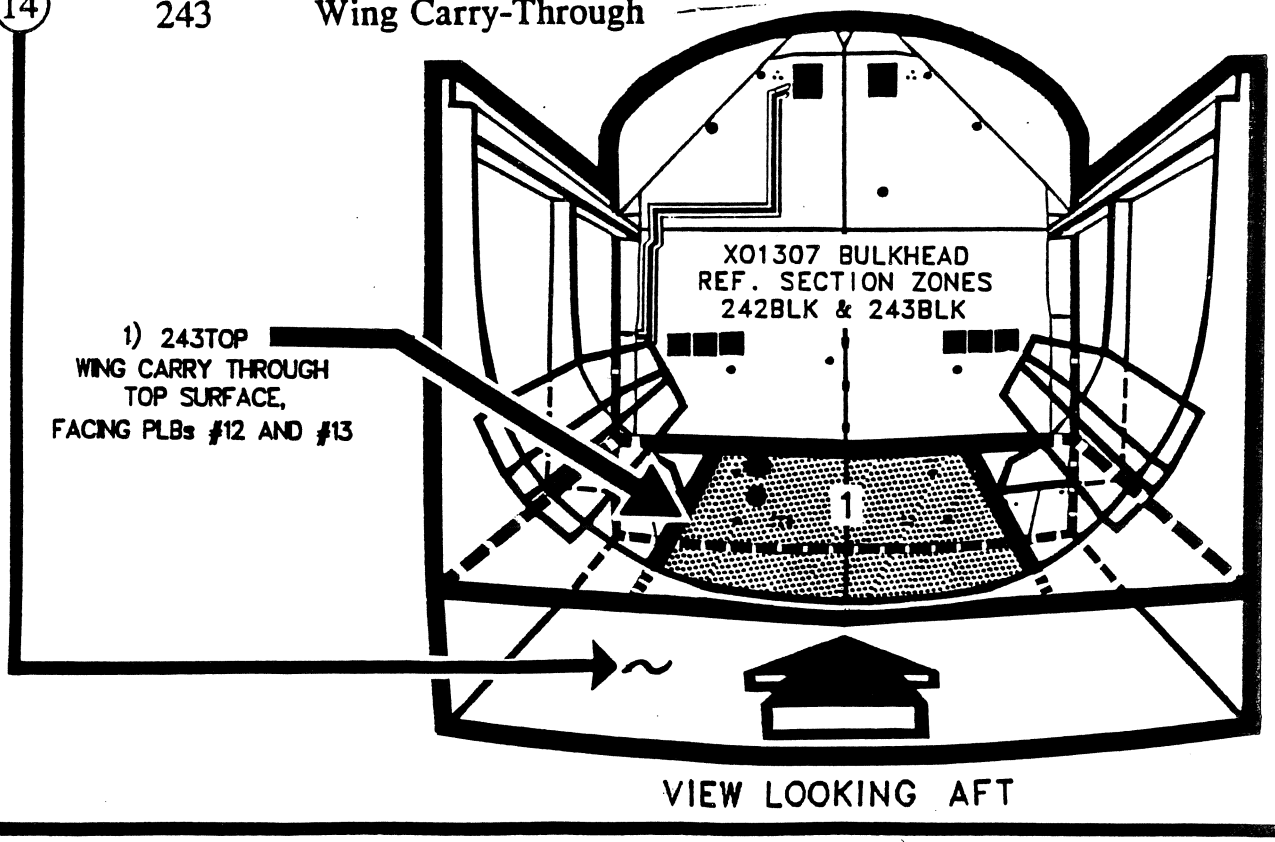
1) 241-01 BAY 12 LEFT ABOVE WIRE TRAY
2) 241-02 BAY 12 LEFT BELOW WIRE TRAY
3) 241-03 BAY 12 RIGHT BELOW WIRE TRAY
4) 241-04 BAY 12 RIGHT ABOVE WIRE TRAY
5) 241-05 BAY 12 LEFT SILL
6) 241-06 BAY 12 LEFT UPPER WIRE TRAY
7) 241-07 BAY 12 LEFT CENTER WIRE TRAY
8) 241-08 BAY 12 LEFT LOWER WIRE TRAY
9) 241-09 BAY 12 RIGHT LOWER WIRE TRAY
10) 241-10 BAY 12 RIGHT CENTER WIRE TRAY
11) 241-11 BAY 12 RIGHT UPPER WIRE TRAY
12) 241-12 BAY 12 RIGHT SILL

(13) 242 Payload Bay #13 (Xo1249 Frame to Fwd Face of Xo1307 Blkhd)



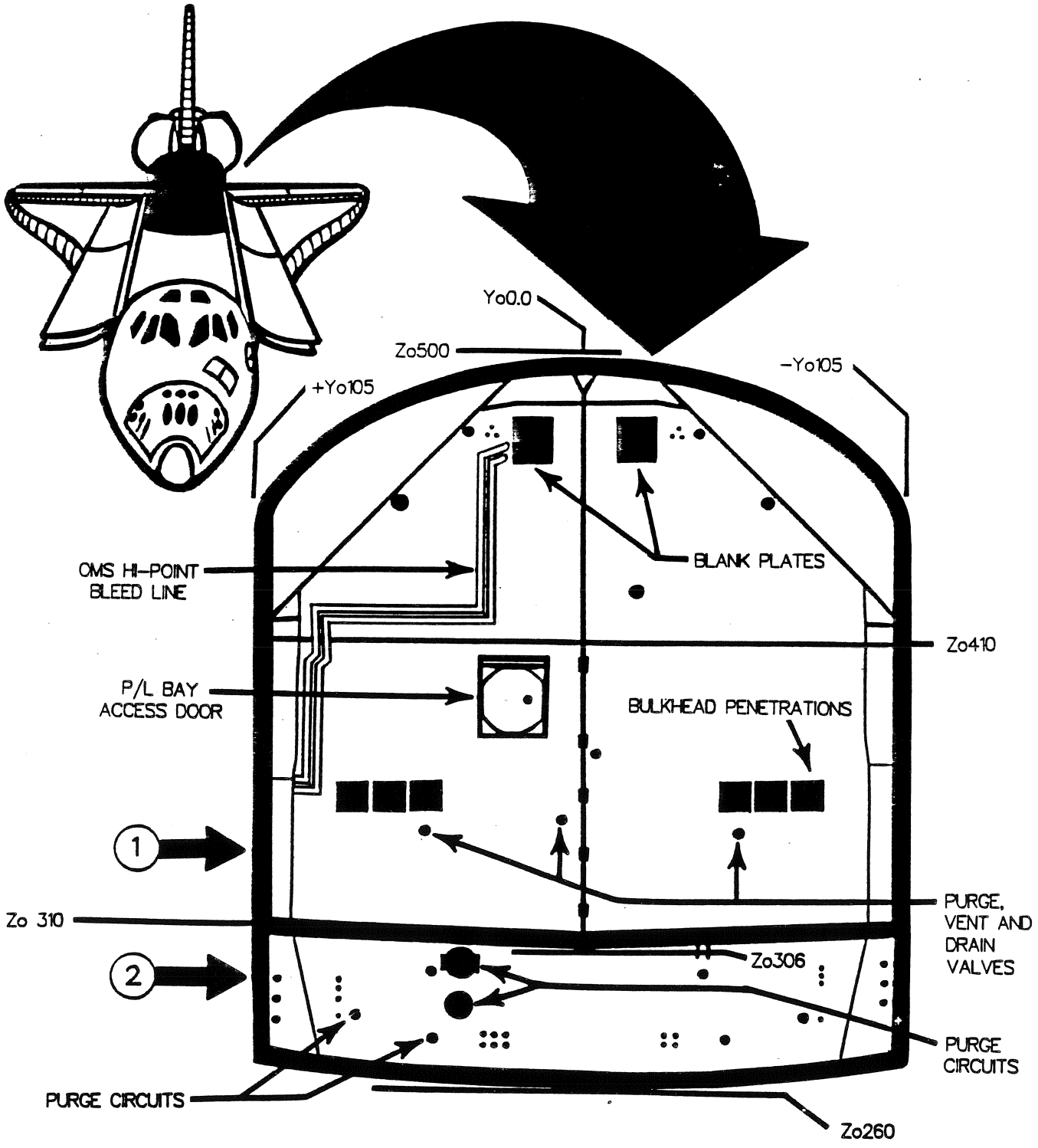
1) 242-01 BAY 13 LEFT ABOVE WIRE TRAY
2) 242-02 BAY 13 LEFT BELOW WIRE TRAY
3) 242-03 BAY 13 RIGHT BELOW WIRE TRAY
4) 242-04 BAY 13 RIGHT ABOVE WIRE TRAY
5) 242-05 BAY 13 LEFT SILL
6) 242-06 BAY 13 LEFT UPPER WIRE TRAY
7) 242-07 BAY 13 LEFT CENTER WIRE TRAY
8) 242-08 BAY 13 LEFT LOWER WIRE TRAY
9) 242-09 BAY 13 RIGHT LOWER WIRE TRAY
10) 242-10 BAY 13 RIGHT CENTER WIRE TRAY
11) 242-11 BAY 13 RIGHT UPPER WIRE TRAY
12) 242-12 BAY 13 RIGHT SILL

(14) 243 Wing Carry-Through



ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
242/243	2.2.2.4 sheet 3 of 4	AFT - MID FUSELAGE PAYLOAD BAY INTERNAL



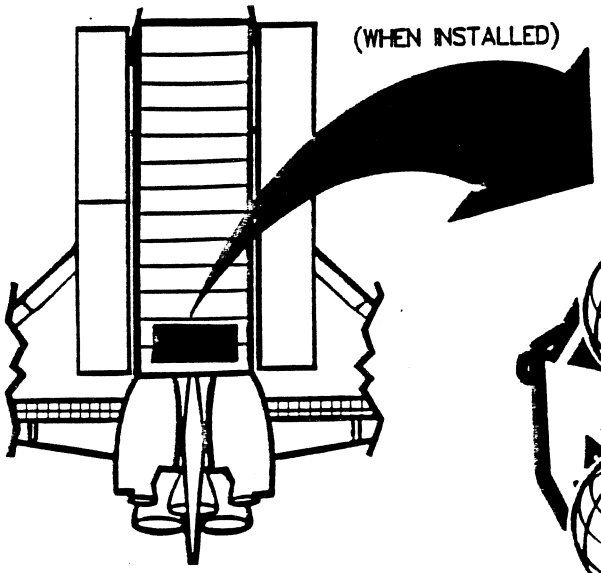
ILLUS REF.	ZONE	DESCRIPTION
1)	242BLK	- Xo1307 Bulkhead Fwd Face, Above Wing Carry Through Shelf
2)	243BLK	- Xo1307 Bulkhead Fwd Face, Below Wing Carry Through Shelf

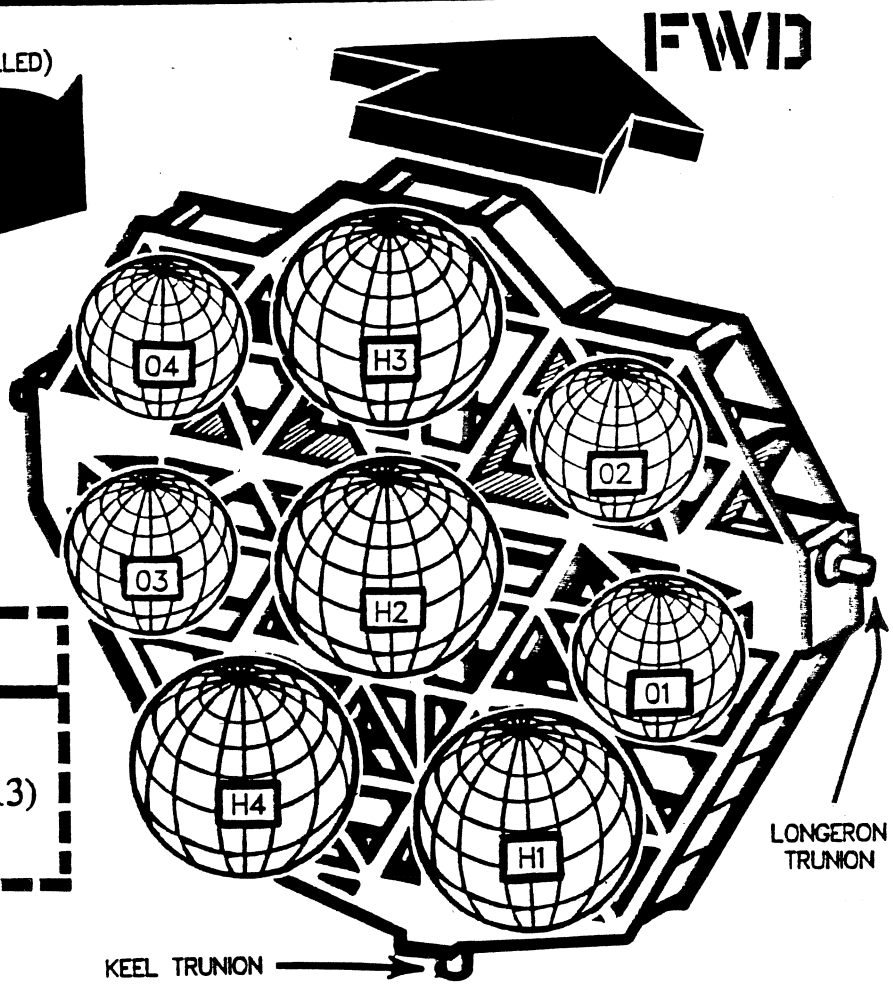
ORBITER ZONE AND ACCESS LOCATOR

SUBJECT
AFT - MID FUSELAGE PAYLOAD BAY INTERNAL

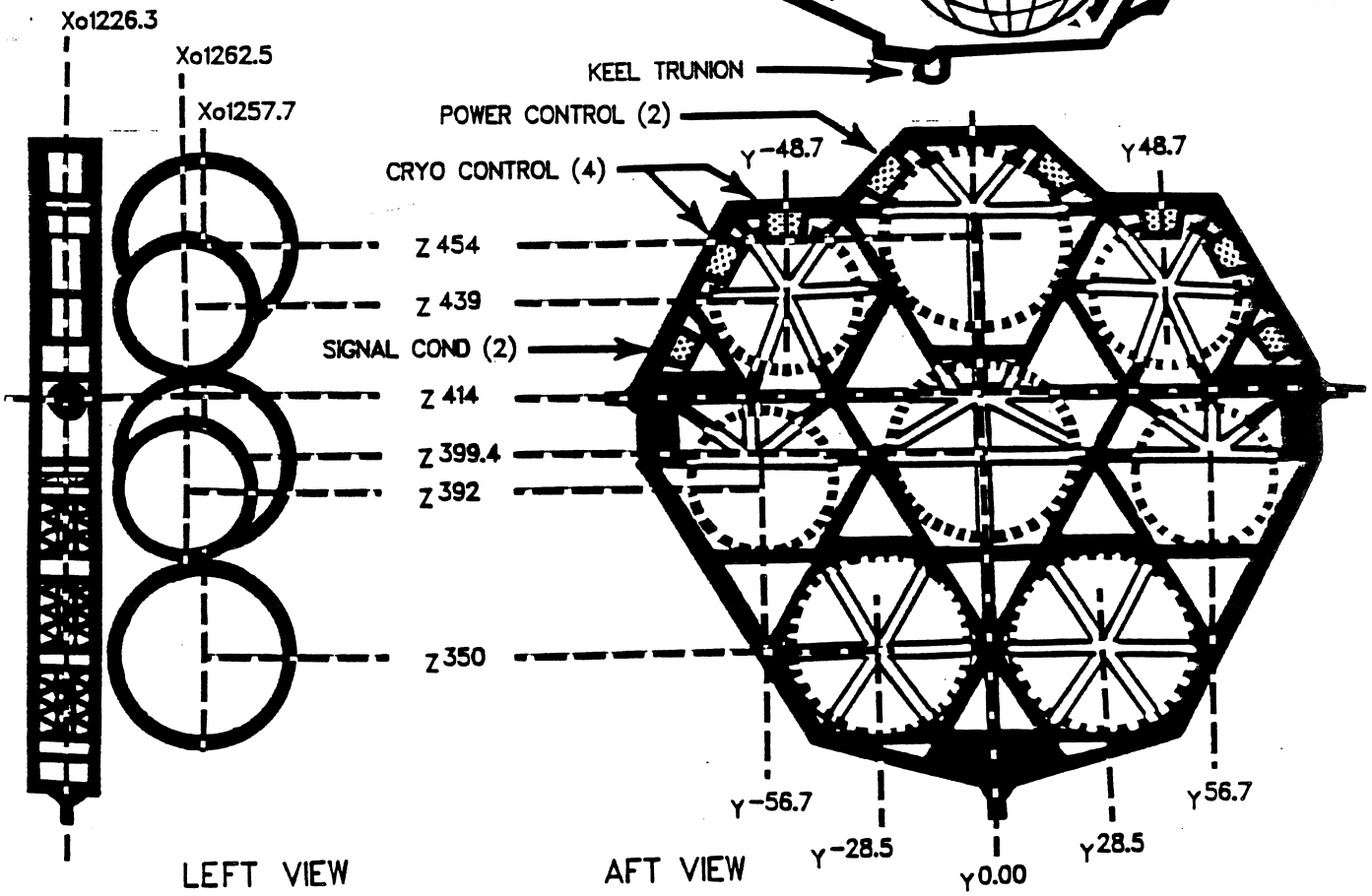
SECTION 2.2.2.4 sheet 4 of 4

ZONE 244



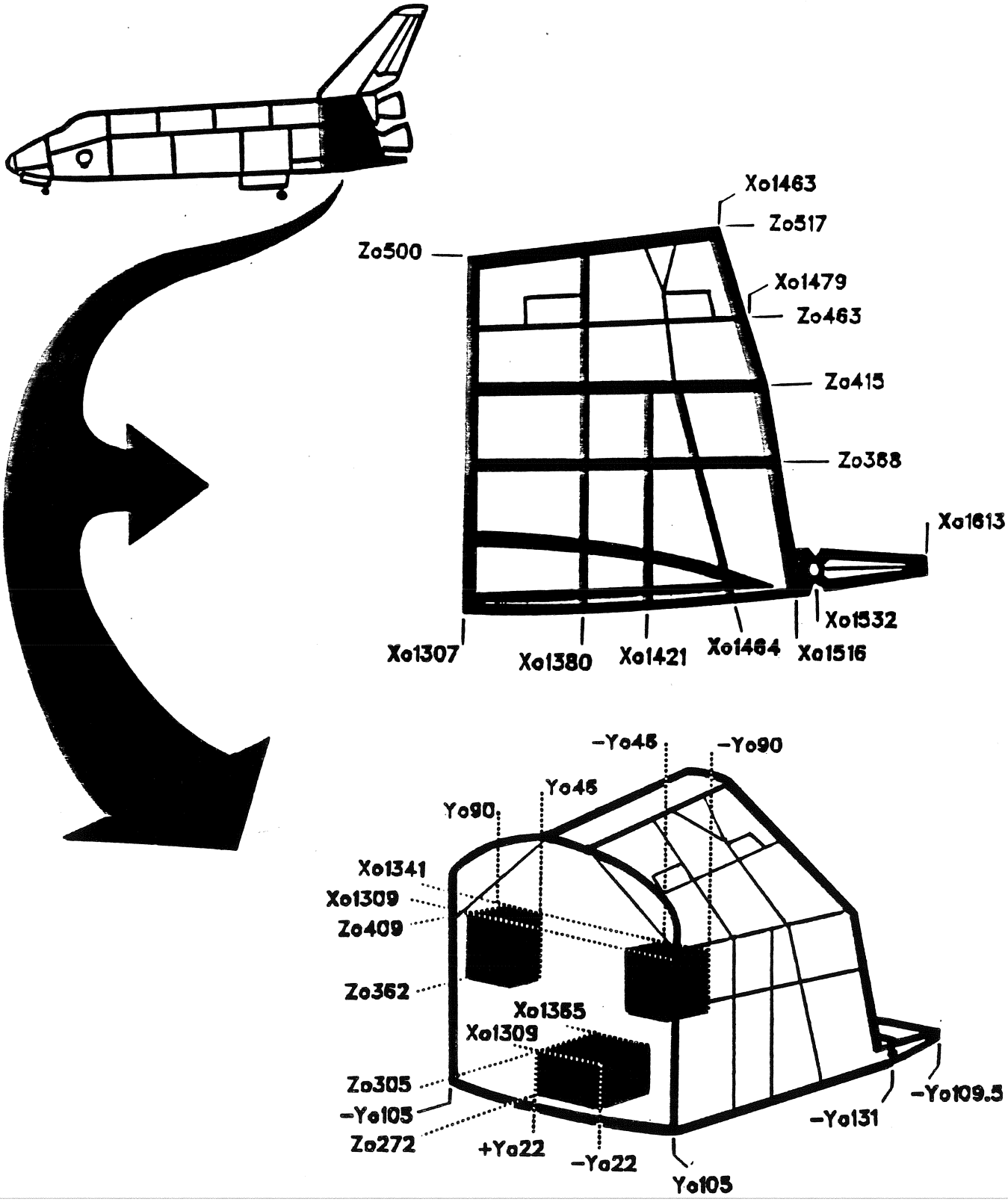


ZONE	DESCRIPTION
244	Extended Duration Pallet (When Installed In PLBs #12 & 13)



ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
300	2.3	ORBITER AFT FUSELAGE AND BODY FLAP



STATION #
COORDINATES

SUBJECT	SECTION	ZONE
ORBITER AFT FUSELAGE AND BODY FLAP	2.3	300

The aft fuselage consists of an outer shell, thrust structure and internal secondary structure. It is approximately 18 feet long, 22 feet wide and 20 feet high. The outer shell of the aft fuselage is constructed of integrally machined aluminum.

The aft fuselage support and interfaces with the left-hand and right-hand aft orbiter maneuvering system/reaction control system pods, the wing aft spar, mid fuselage and external tank. The internal thrust structure supports the three SSMEs. The forward bulkhead closes off the aft fuselage from the mid fuselage and is composed of machined and beaded sheet metal aluminum segments. The upper portion of the bulkhead attaches to the front spar of the vertical tail.

The aft fuselage heat shield and seal provide a closeout of the orbiter aft base area. The aft heat shield consists of a base heat shield of machined aluminum. Attached to the base heat shield are domes of honeycomb construction that support flexible and sliding seal assemblies which are removable. The engine-mounted heat shield is of Inconel honeycomb construction and is removable for access to the main engine power heads.

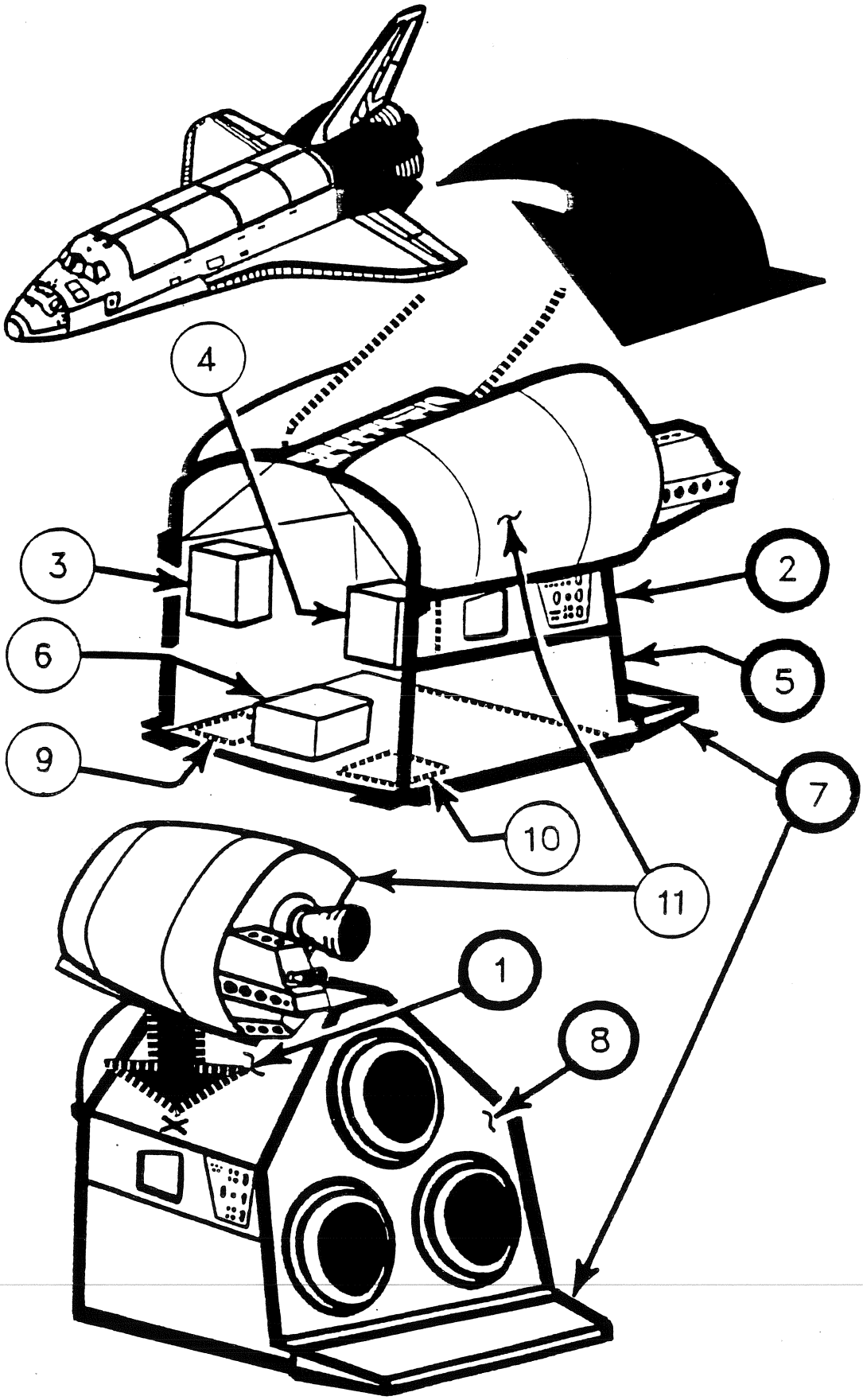
The body flap thermally shields the three SSMEs during entry and provides the orbiter with pitch control trim during atmosphere flight after entry. The body flap is an aluminum structure consisting of ribs, spars, skin panels and a trailing edge assembly. The forward upper skin consists of five removable access panels attached to ribs with quick release fasteners. Two moisture drain lines and one hydraulic fluid drain line penetrate the body flap trailing edge honeycomb core for horizontal and vertical drainage.

Manufacturers/Contractors

The aft fuselage is built by Rockwell's Space Transportation Systems Division and the body flap is built by Rockwell's Columbus, Ohio Division.

ORBITER ZONE AND ACCESS LOCATOR

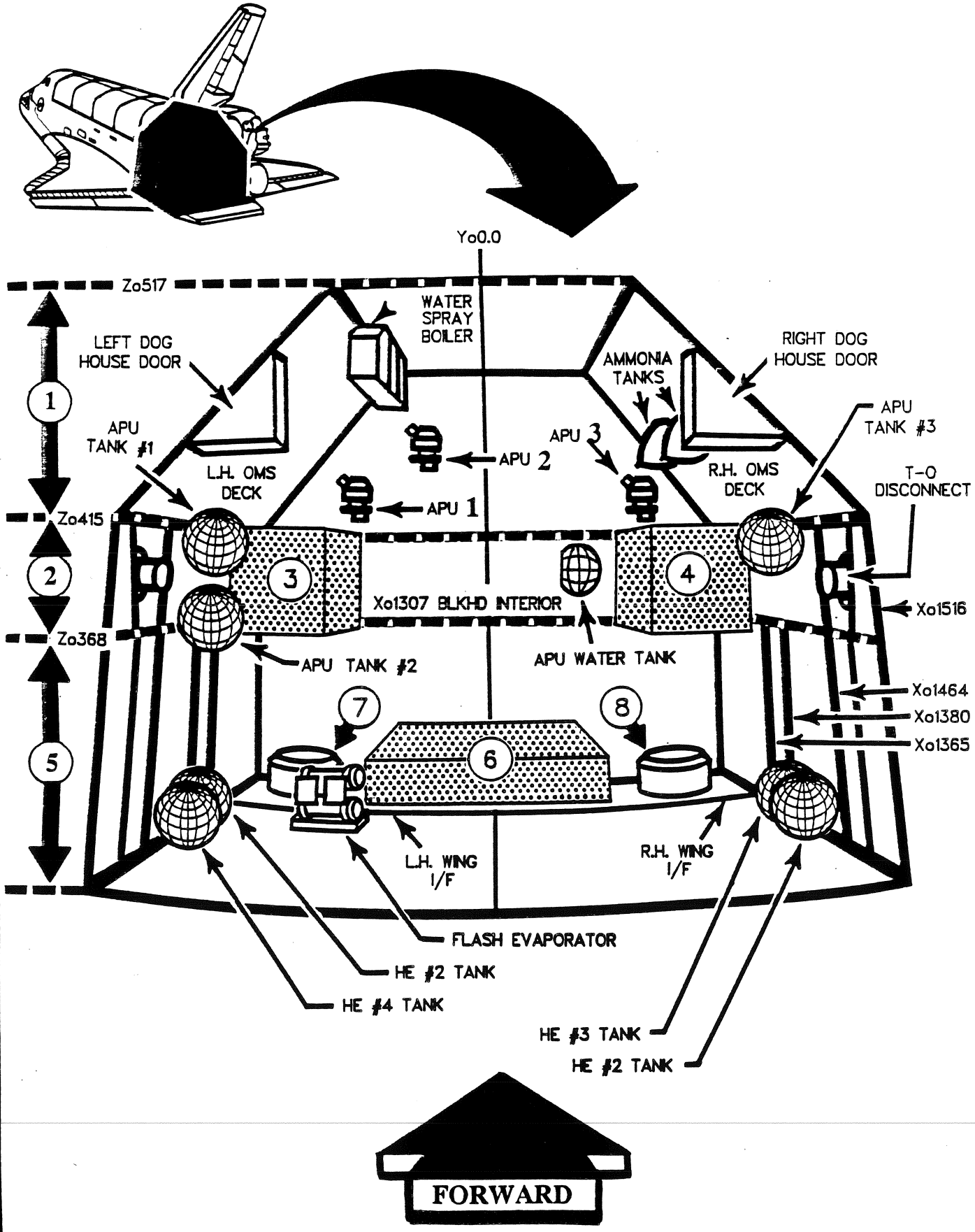
ZONE	SECTION	SUBJECT
300	2.3.1	AFT FUSELAGE



SUBJECT	SECTION	ZONE
AFT FUSELAGE	2.3.1	300

ILLUS REF.	ZONE	DESCRIPTION
	300	**Aft Fuselage (Major Zone)**
	300EXT	Aft Fuselage External (Overall)
	300INT	Aft Fuselage Internal (Overall)
(1)	310	Penthouse Xo1307 to Xo1496, Above Zo415
(2)	320	Mid Deck Xo1307 to Xo1496, Zo368 to Zo415
(3)	321	Avionics Bay #4 (Left)
(4)	322	Avionics Bay #5 (Right)
(5)	330	Lower Deck Xo1307 to Xo1496, Below Zo368
(6)	331	Avionics Bay #6 (Center)
(7)	340	Body Flap Xo1532 to Xo1613
(8)	350	Base Heat Shield (Includes Dome Heat Shields) Aft Face of Xo1496 Blkhd
(9)	330LUC	ET Umbilical Cavity (LH2), Left (Left ET Door, Ref. Section 2.8.3)
(10)	330RUC	ET Umbilical Cavity (LO2), Right (Right ET Door, Ref. Section 2.8.3)
(11)	500	OMS Pods (Ref. Section 2.5.2)

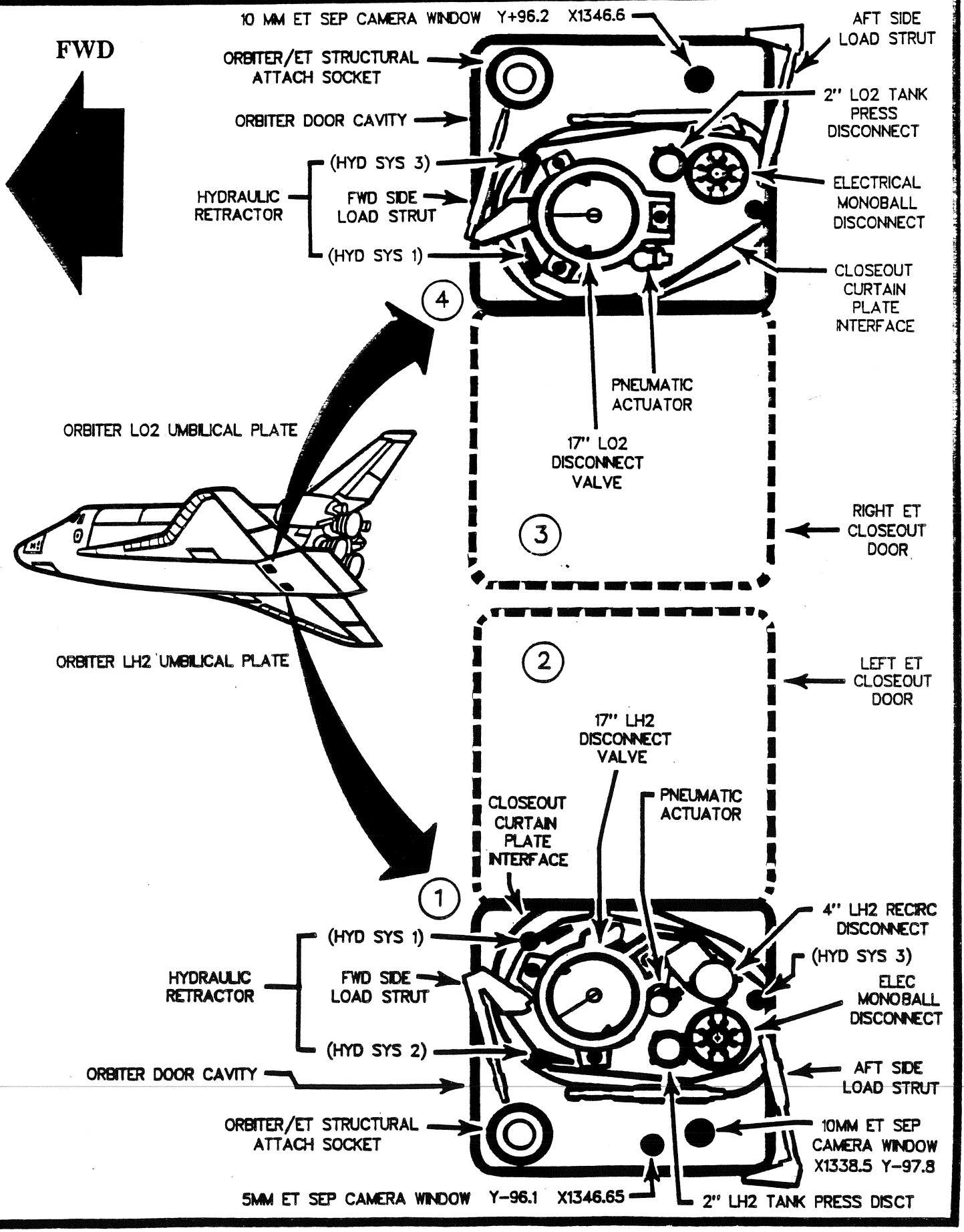
PAGE 46	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 300	SECTION 2.3.1.1	SUBJECT AFT FACE OF Xo 1307 BULKHEAD



SUBJECT: AFT FACE OF Xo 1307 BULKHEAD | SECTION 2.3.1.1 | ZONE

ILLUS REF.	ZONE	DESCRIPTION
	300INT	**Aft Fuselage Internal (Overall)**
(1)	310	Penthouse Xo1307 to Xo1496, Above Zo415
(2)	320	Mid Deck Xo1307 to Xo1496, Zo368 to Zo415
(3)	321	Avionics Bay #4 (Left) Xo1309 to Xo1341, -Yo46 to -Yo90, Zo362 to Zo409
(4)	322	Avionics Bay #5 (Right) Zo1309 to Zo1341, Yo46 to Yo90, Zo362 to Zo409
(5)	330	Lower Deck Xo1307 to Xo1496, Below Zo368
(6)	331	Avionics Bay #6 (Center) Xo1309 to Xo1365, -Yo22 to Yo22, Zo272 to Zo305
(7)	330LUC	ET Umbilical Cavity (LH2), Left
(8)	330RUC	ET Umbilical Cavity (LO2), Right

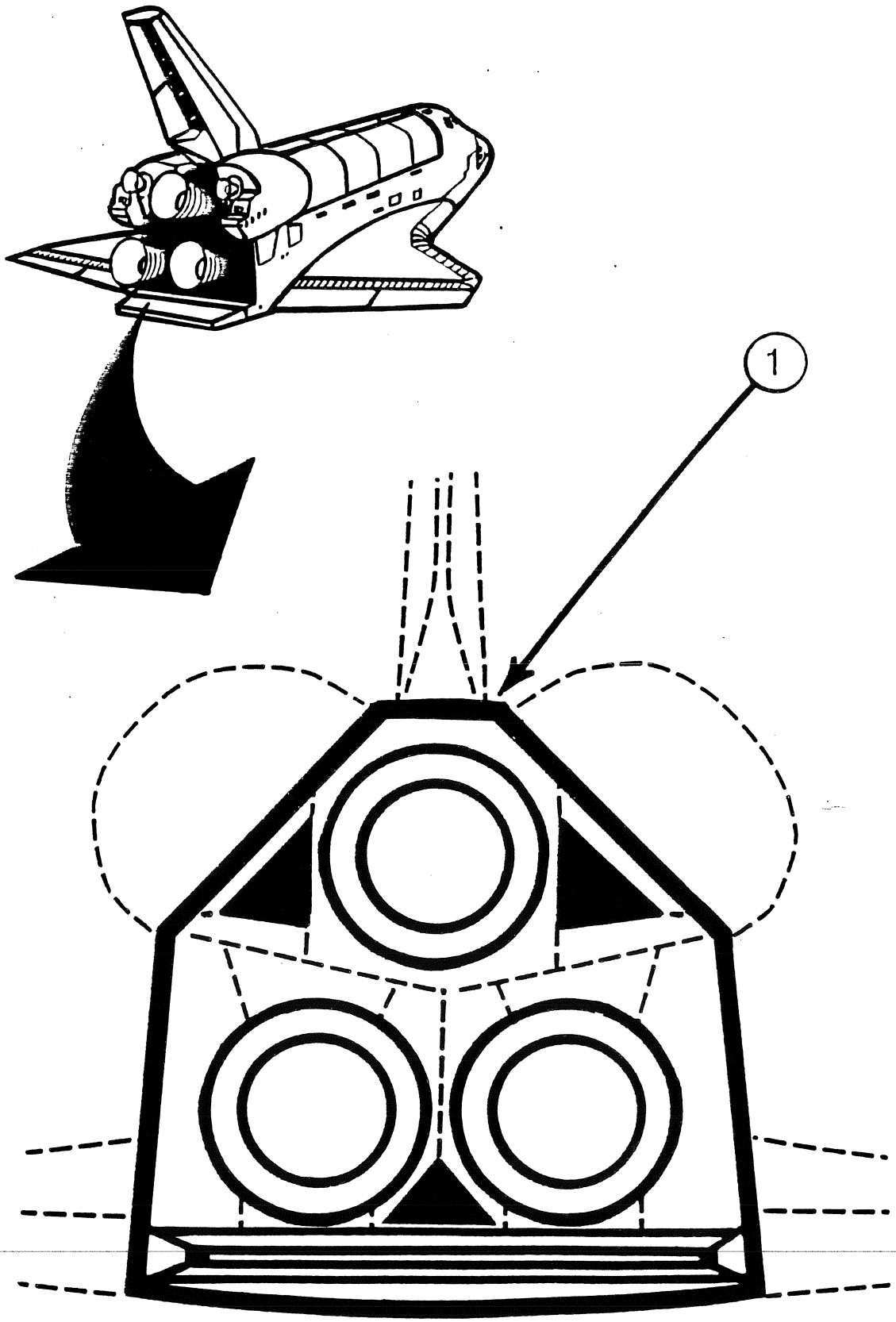
PAGE 48	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 330	SECTION 2.3.1.2	SUBJECT ORBITER/ET UMBILICAL CAVITIES



SUBJECT: ORBITER/ET UMBILICAL CAVITIES | SECTION 2.3.1.2 | ZONE 330

ILLUS REF.	ZONE	DESCRIPTION
	240	**Mid Fuselage - Aft (Ref. Section 2.2.1)** (Xo1191 to Xo1307)
	330EXT	Aft Fuselage External (Ref. Section 2.3.1) (Xo1307 to Xo1516)
(1)	330LUC	ET Umbilical Cavity (LH2), Left
(2)	870	ET Umbilical Door (LH2), Left (Ref. Section 2.8.3)
(3)	860	ET Umbilical Door (LO2), Right (Ref. Section 2.8.3)
(4)	330RUC	ET Umbilical Cavity (LO2), Right

PAGE 50	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
350	2.3.1.3	AFT HEAT SHIELD

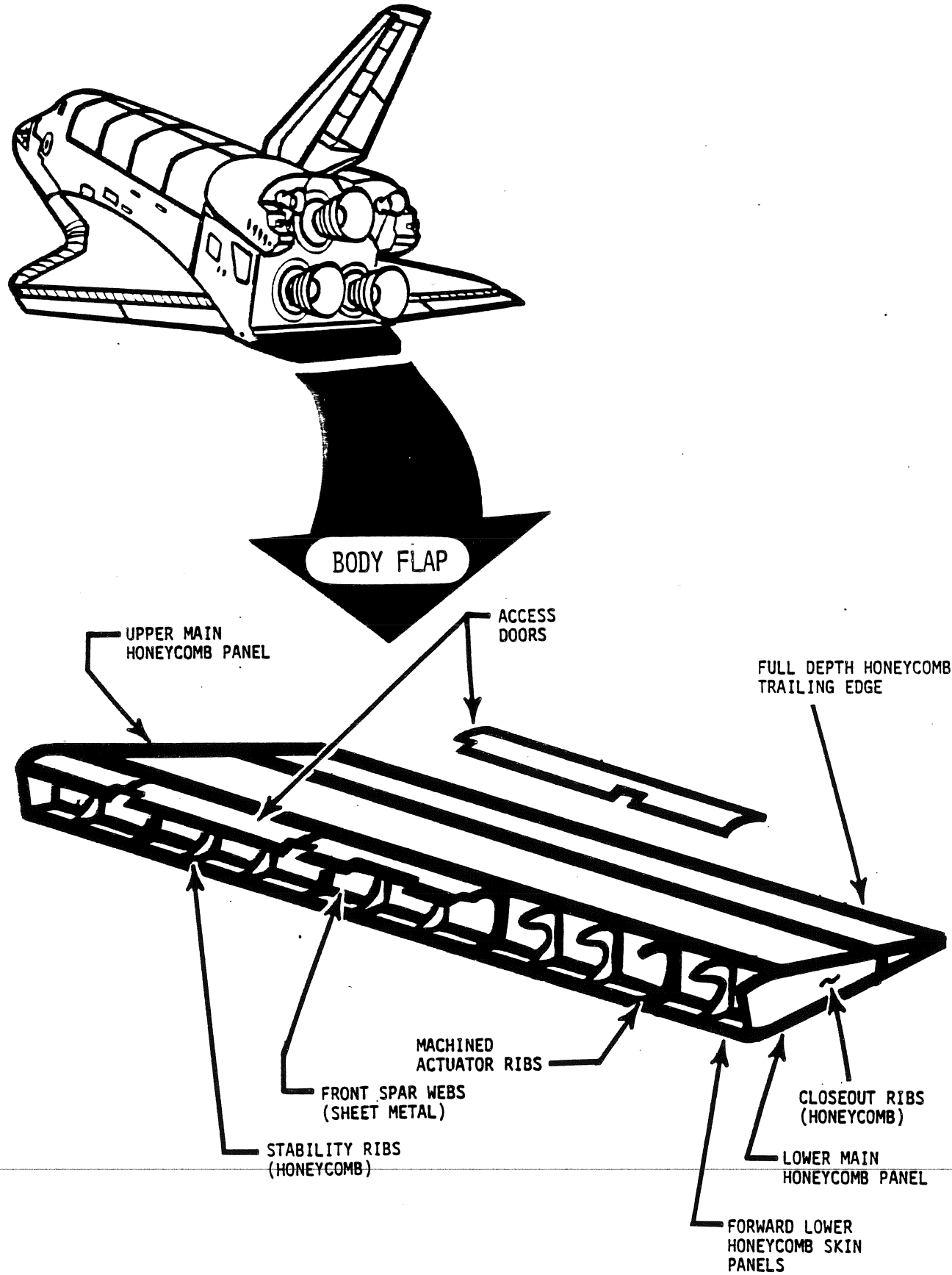


AFT FACE OF Xo 1496 BLKHD

SUBJECT	SECTION	ZONE
AFT HEAT SHIELD	2.3.1.3	350

ILLUS REF.	ZONE	DESCRIPTION
(1)	350	Aft Heat Shield (Aft Face of Xo1496 Bulkhead) Includes Dome Heat Shields

PAGE 52	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
340	2.3.2	BODY FLAP

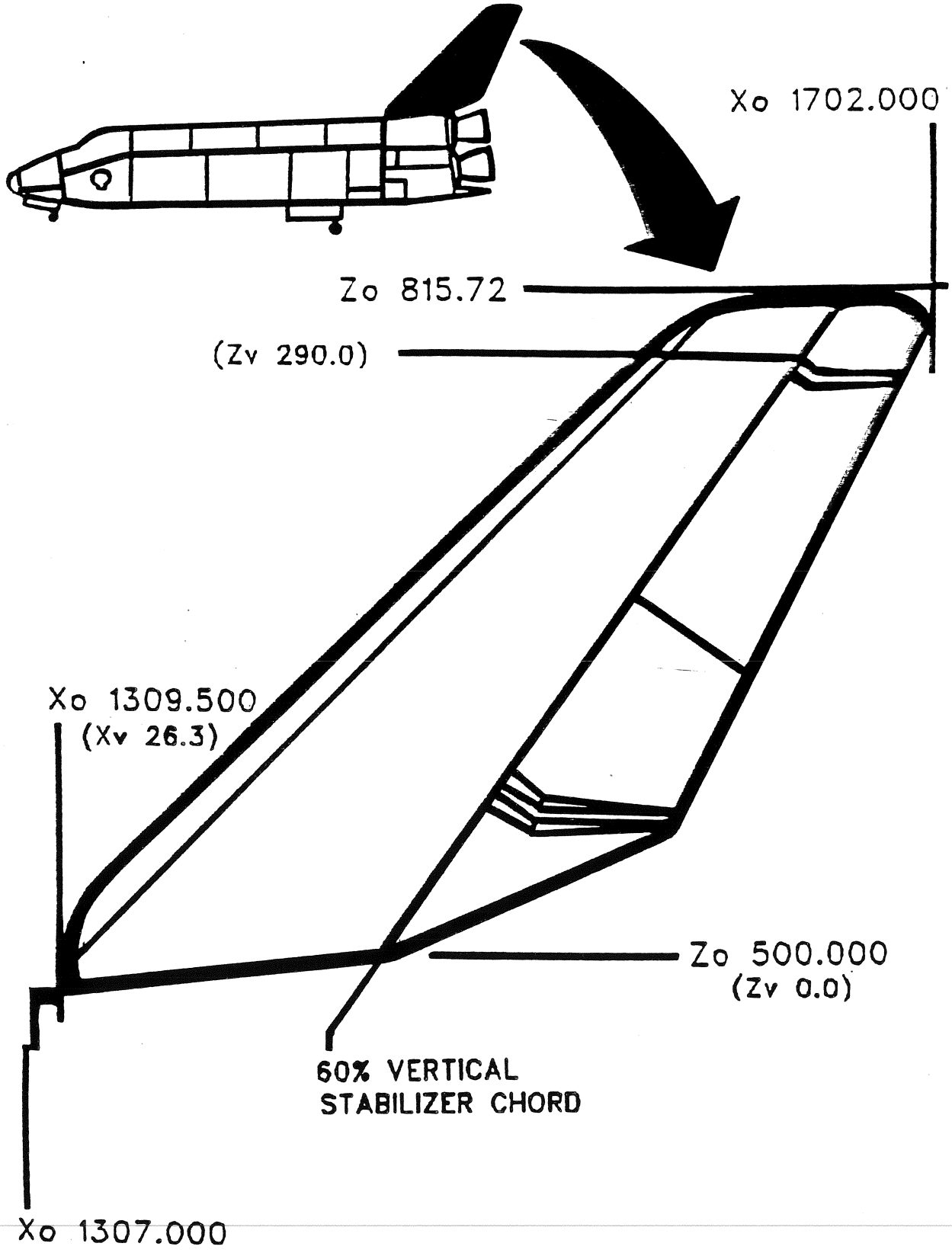


SUBJECT	SECTION	ZONE
BODY FLAP	2.3.2	340

ILLUS REF.	ZONE	DESCRIPTION
	340	Body Flap Xo1532 to Xo1613

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
400	2.4	ORBITER VERTICAL STABILIZER



STATION #
COORDINATES

SUBJECT	SECTION	ZONE
ORBITER VERTICAL STABILIZER	2.4	400

The vertical tail structural fin is made of aluminum. The main torque box is constructed of integral-machined skins and stringers, ribs and two machined spars. The fin is attached by two tension tie bolts at the root of the front spar of the vertical tail to the Xo1307 bulkhead. It is also attached by eight shear bolts at the root of the vertical tail rear spar to the upper structural surface of the aft fuselage.

The rudder/speed brake control surface is made conventional aluminum ribs and spars with aluminum honeycomb skin panels and is attached through a rotating hinge to the vertical tail fin. All-Inconel honey- comb conical seals house the rotary actuators and provide a pressure and thermal seal, that withstands maximum re-entry temperatures.

The lower trailing edge area of the fin, housing the drag chute compartment and the rudder/speed brake power drive unit, is made of aluminum honeycomb skin. The vertical tail structure is designed for a 163 decibel acoustic environment with a maximum temperature of 350 degrees F.

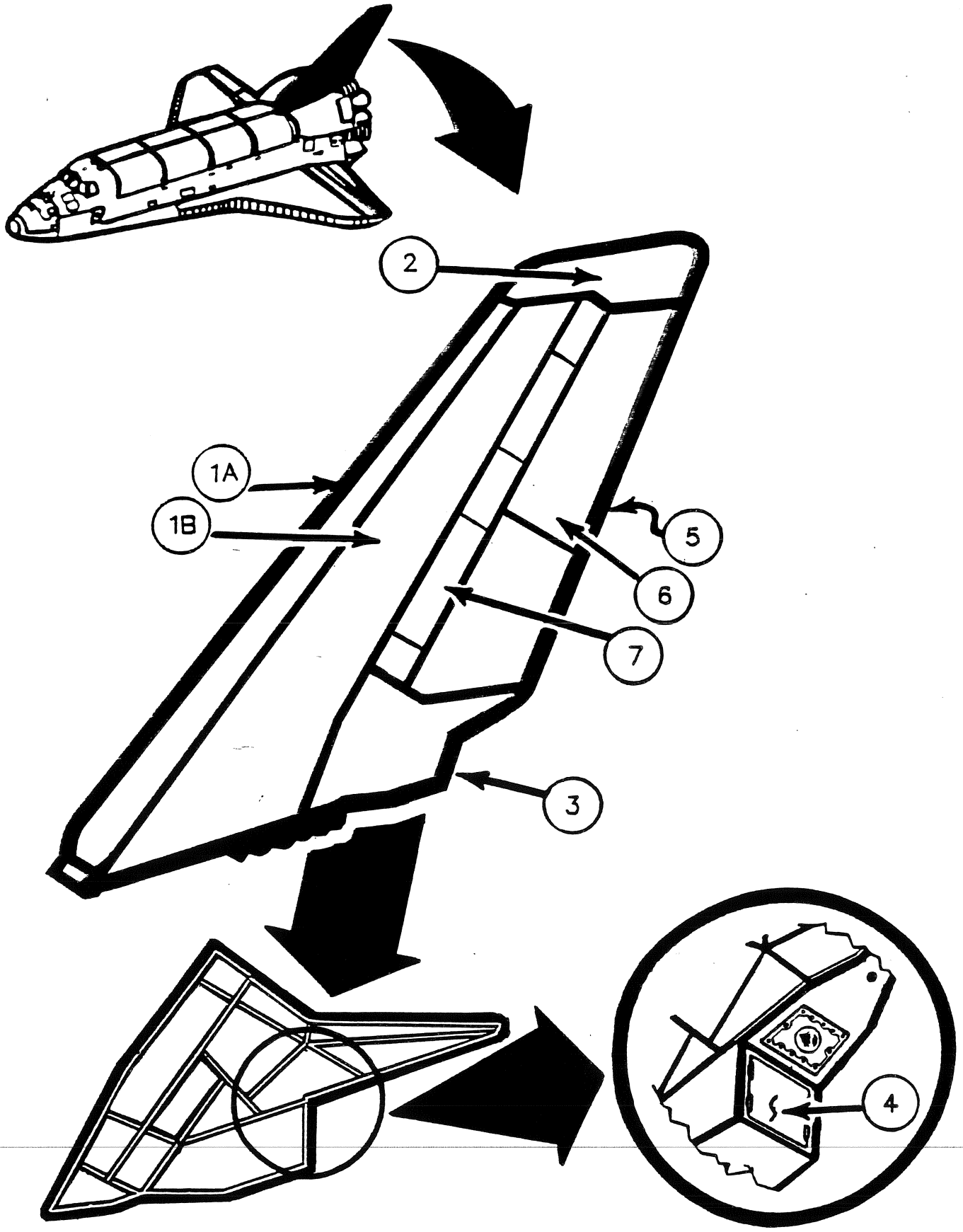
There are numerous access openings in the vertical tail structure. There are 3 sling lifting points on each side of the vertical fin itself. One other access opening covered in the aft fuselage penthouse structure is primarily provided to inspect the vertical stabilizer aft attach points.

Manufacturers/Contractors

Fairchild Republic built the vertical tail and rudder/speed brake.

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
400	2.4.1	VERTICAL STABILIZER



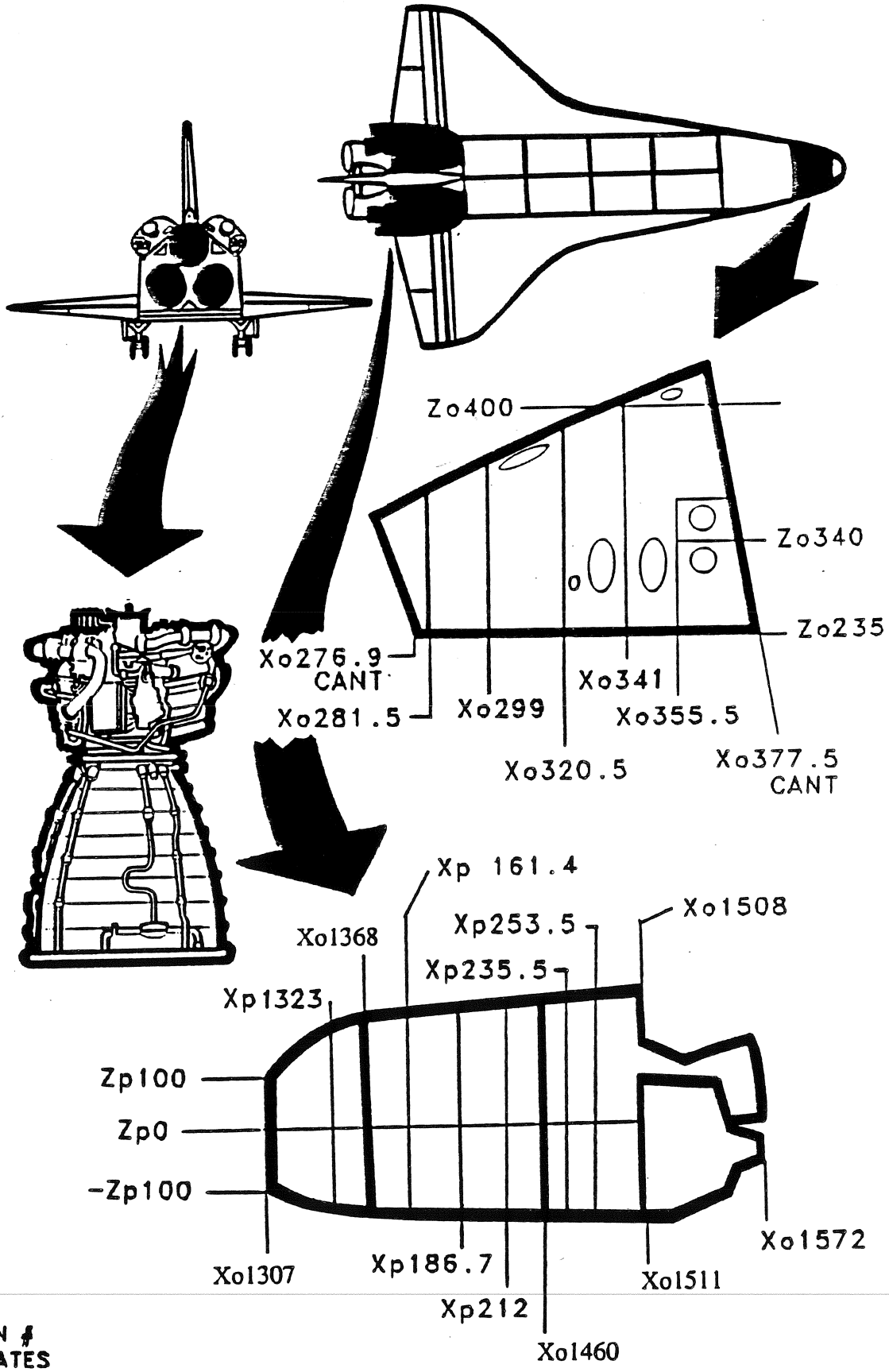
SUBJECT	SECTION	ZONE
VERTICAL STABILIZER	2.4.1	400

ILLUS REF.	ZONE	DESCRIPTION
	400	**Vertical Stabilizer (Major Zone)**
1a	410	Leading Edge
1b	410	Fin Box
2	420	Tip Cap
3	430	Trailing Edge
4	430DCC	Drag Chute Compartment
5	440	Rudder/Speed Brake - Right
6	450	Rudder/Speed Brake - Left
7	460	Conical Seal

Note: The OMRS zone tables and the OMRS zone figures currently conflict as to the accurate designation of 440/450 as either left or right. For this document we have chosen to follow the OMRS figures.

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
500	2.5	ORBITER PROPULSION AND REACTION CONTROL



STATION # COORDINATES

The Space Shuttle Main Engines (SSMEs) are reusable, high performance, liquid propellant rocket engines with variable thrust. The propellant fuel is liquid hydrogen and the oxidizer is liquid oxygen. The propellant is carried in a separate external tank and supplied to the main engines under pressure. The engine can be gimbaled plus or minus 10.5 degrees in both the yaw and pitch axis for thrust vector control by hydraulically powered gimbal actuators.

The main engines can be throttled over a range of 65 to 109 percent of their rated power level in 1 percent increments. A value of 100 percent corresponds to a thrust level of 375,000 pounds at sea level and 470,000 pounds in a vacuum. All three main engines receive the same throttle command automatically from the orbiter general-purpose computers through the engine controllers.

Each engine is designed for 7.5 hours of operation over a life span of 55 starts. Throughout the throttling range, the ratio of the liquid oxygen-liquid hydrogen mixture is 6 to 1. Each nozzle area ratio is 77.5 to 1. The engines are 14 feet long and 7.5 feet in diameter at the nozzle exit.

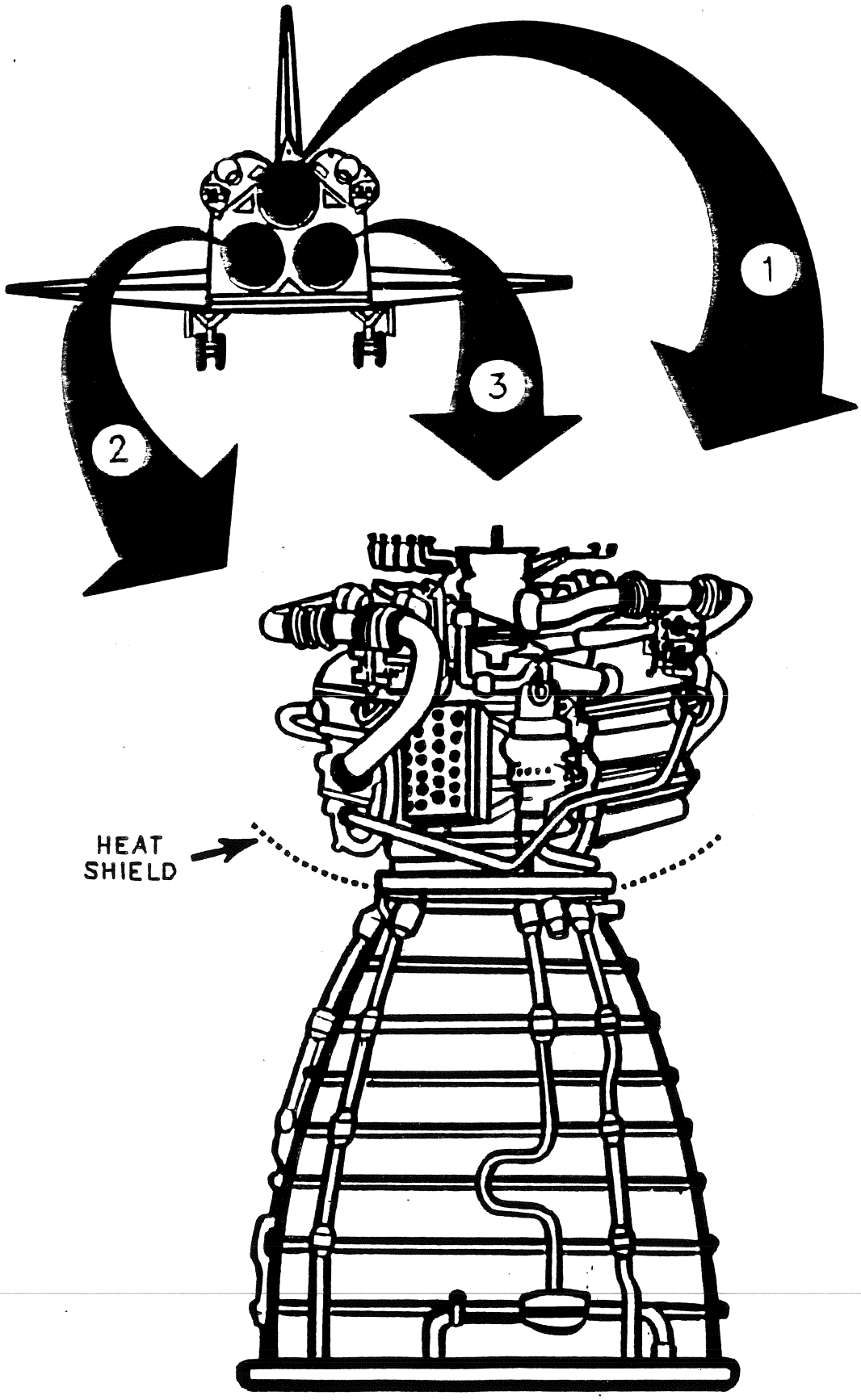
The orbital maneuvering system/reaction control system left and right hand pods are attached to the upper aft fuselage left and right sides. Each pod is fabricated primarily of graphite epoxy composite and aluminum. Each pod is 21.8 feet long and 11.37 feet wide at its aft end and 8.41 feet wide at its forward end. Each pod is attached to the aft fuselage with 11 bolts. The RCS housing, which is attached to the OMS pod structure, contains the RCS thrusters and associated propellant feedlines. Twenty-four doors in the skins provide access to the OMS and RCS components as well as to the attach points.

The forward Reaction Control System (FRCS) module is the third major element of the RCS subsystem. Its systems are similar to those in the two aft pods, but its structure is integrally related to the forward fuselage. It is attached to the fwd fuselage with 16 removable fasteners.

Manufacturers/Contractors

The SSMEs are manufactured by Rocketdyne, the aft OMS/RCS pods are built by McDonnell Douglas. The FRCS module is built by Rockwell.

ZONE	SECTION	SUBJECT
510-530	2.5.1	SPACE SHUTTLE MAIN ENGINES

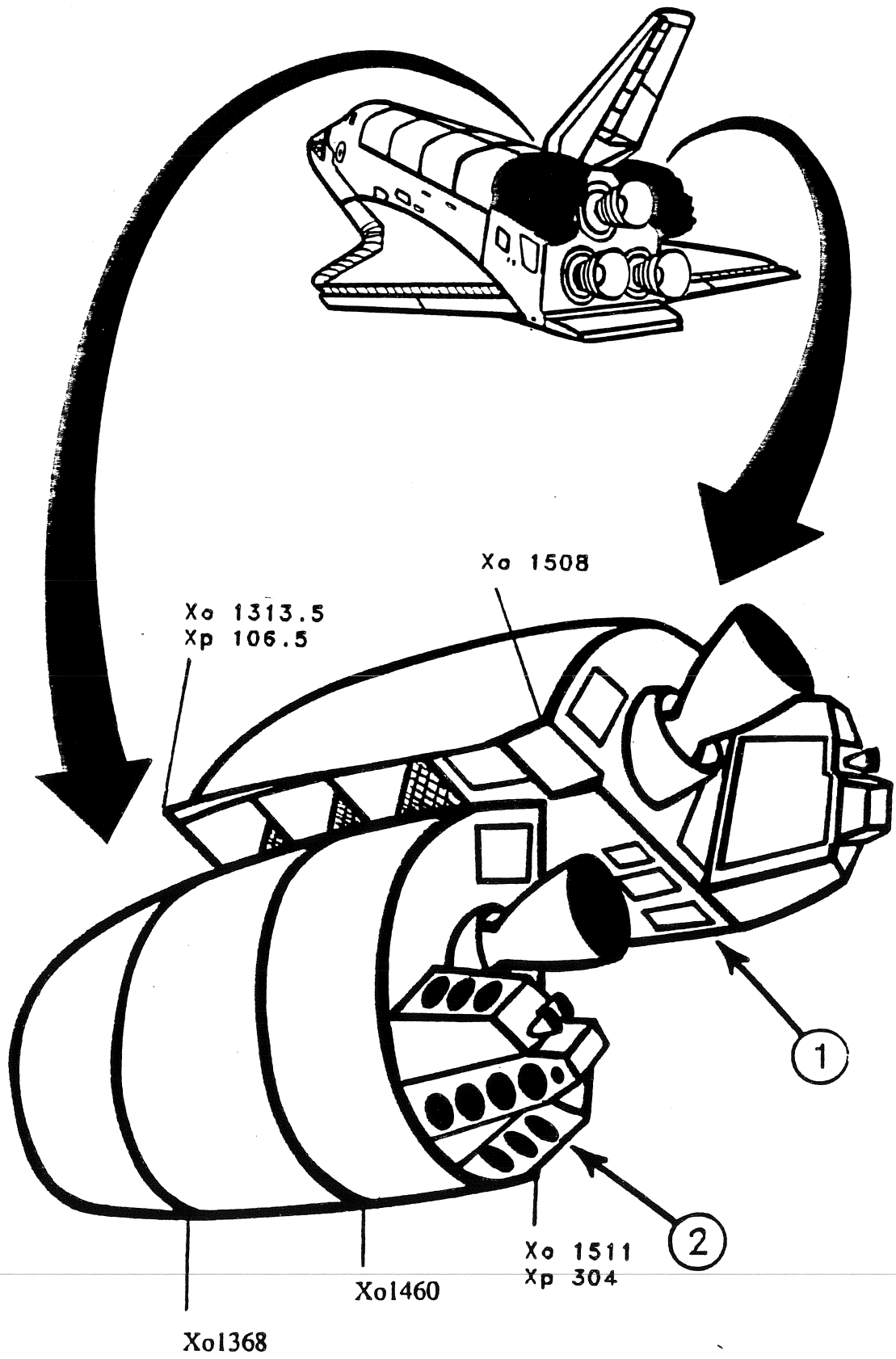


SUBJECT	SECTION	ZONE
SPACE SHUTTLE MAIN ENGINES	2.5.1	500

ILLUS REF.	ZONE	DESCRIPTION
	500	**Propulsion and Reaction Control (Major Zone)**
(1)	510	SSME #1 - Center
(2)	520	SSME #2 - Left
(3)	530	SSME #3 - Right
	350	Aft Heat Shield (Ref. Section 2.3.3)

ORBITER ZONE AND ACCESS LOCATOR

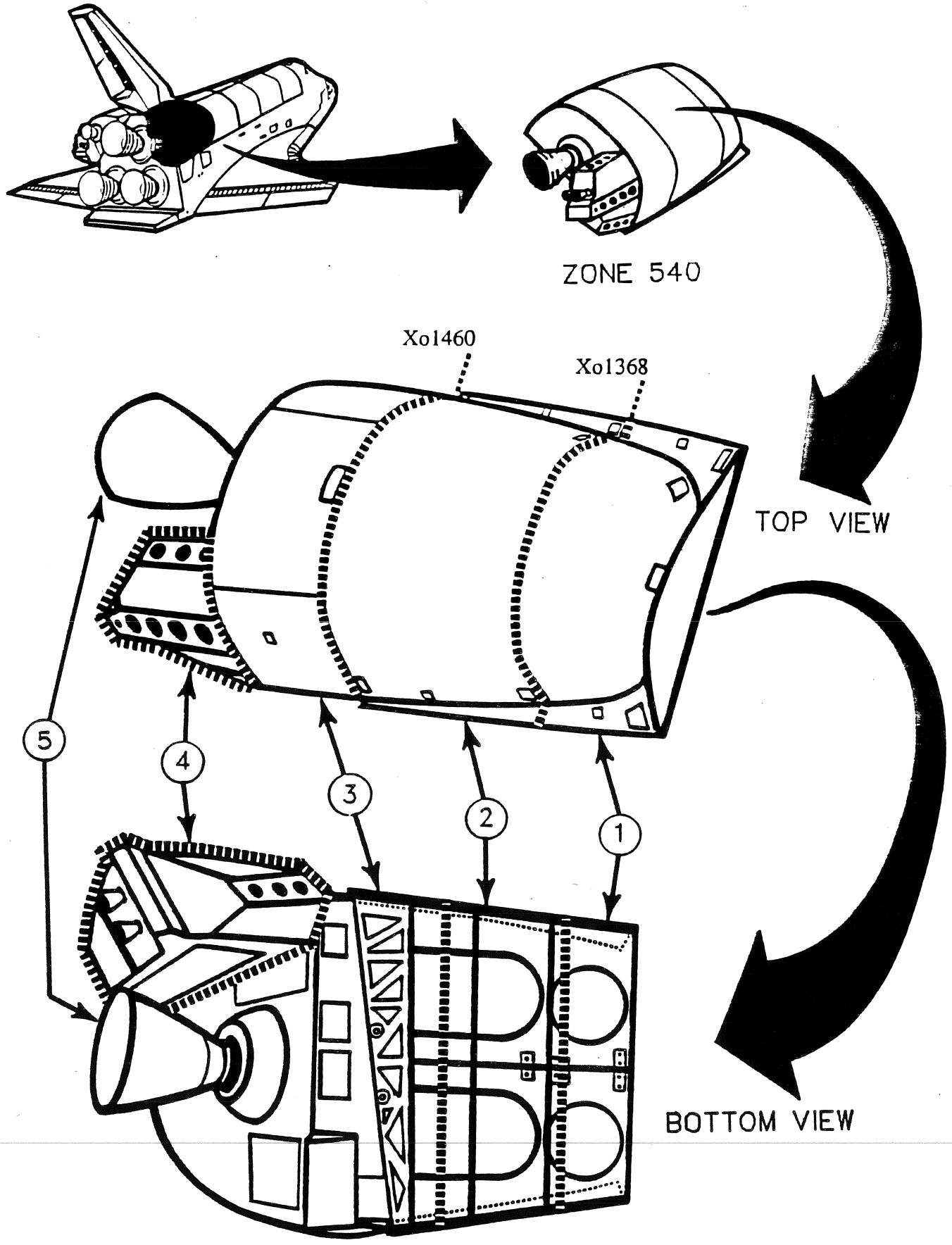
ZONE	SECTION	SUBJECT
540/550	2.5.2	AFT OMS/RCS PODS



SUBJECT	SECTION	ZONE
AFT OMS/RCS PODS	2.5.2	

ILLUS REF.	ZONE	DESCRIPTION
	500	**Propulsion and Reaction Control (Major Zone)**
(1)	540	Aft OMS/RCS Pod - Right
(2)	550	Aft OMS/RCS Pod - Left

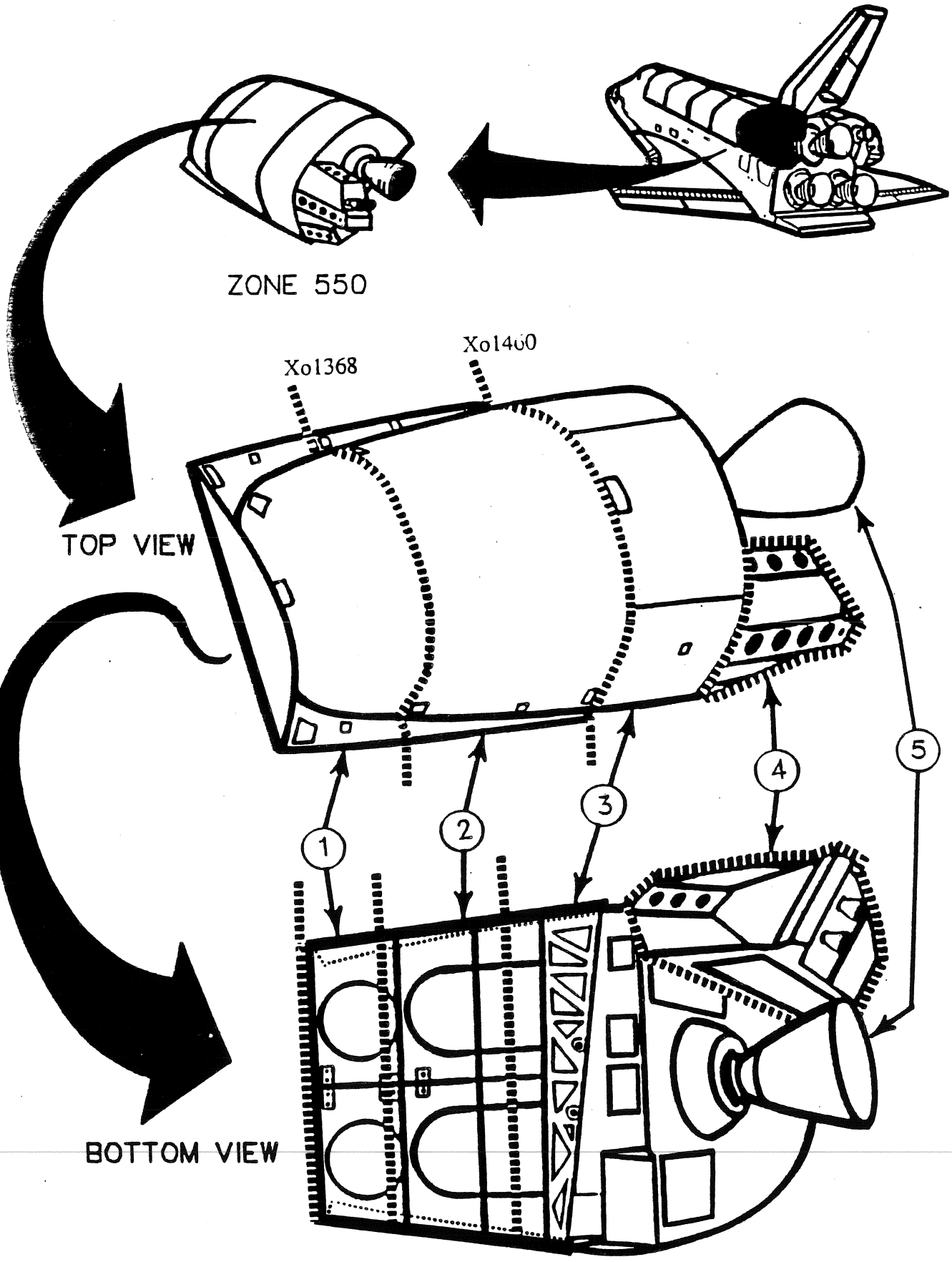
PAGE 64	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 540	SECTION 2.5.2.1	SUBJECT RIGHT OMS/RCS POD



SUBJECT	SECTION	ZONE
RIGHT OMS/RCS POD	2.5.2.1	540

ILLUS REF.	ZONE	DESCRIPTION
	540	**AFt OMS/RCS Pod - Right**
(1)	541	Fwd Section Xo1311 to Xo1368
(2)	542	Mid Section Xo1368 to Xo1460
(3)	543	Aft Section Xo1460 to Xo1511
(4)	544	RCS Section (Stinger) Xo1511 to Xo 1572
(5)	540ROE	Right OMS Engine

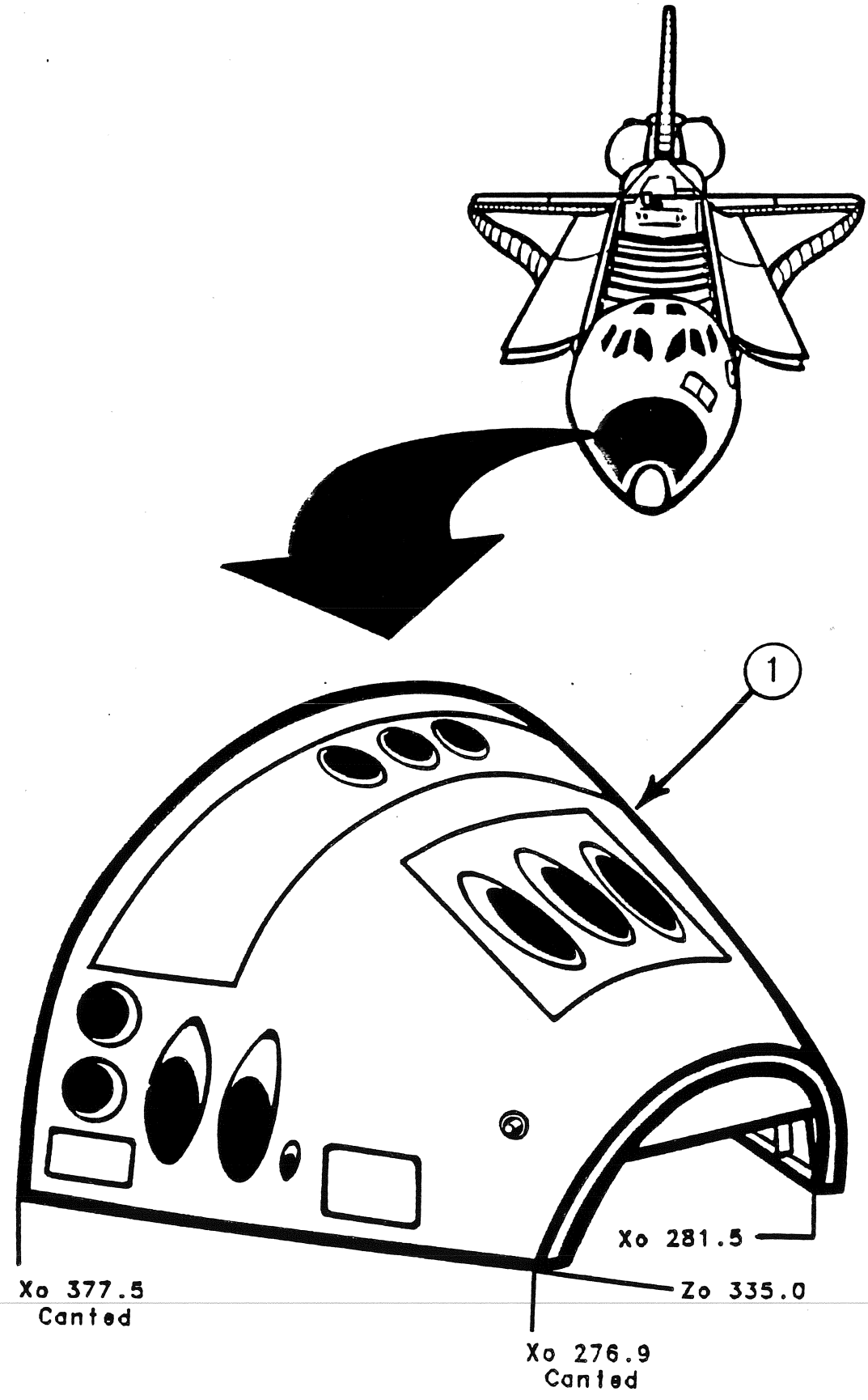
PAGE 66	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
550	2.5.2.2	LEFT OMS/RCS POD



SUBJECT	SECTION	ZONE
LEFT OMS/RCS POD	2.5.2.2	550

ILLUS REF.	ZONE	DESCRIPTION
	550	**Aft OMS/RCS Pod - Left**
(1)	551	Fwd Section Xo1311 to Xo1368
(2)	552	Mid Section Xo1368 to Xo1460
(3)	553	Aft Section Xo1460 to Xo1511
(4)	554	RCS Section (Stinger) Xo1511 to Xo1572
(5)	550LOE	Left OMS Engine

PAGE 68	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
560	2.5.3	FWD REACTION CONTROL SYSTEM MODULE (FRCS)

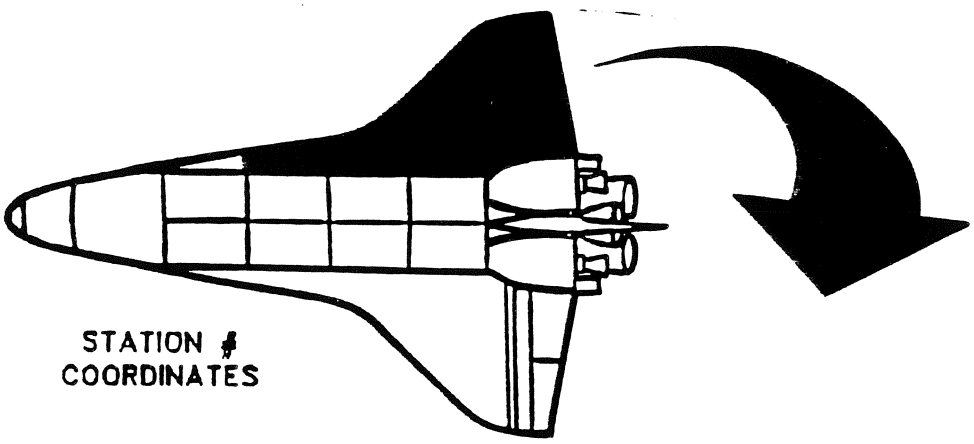


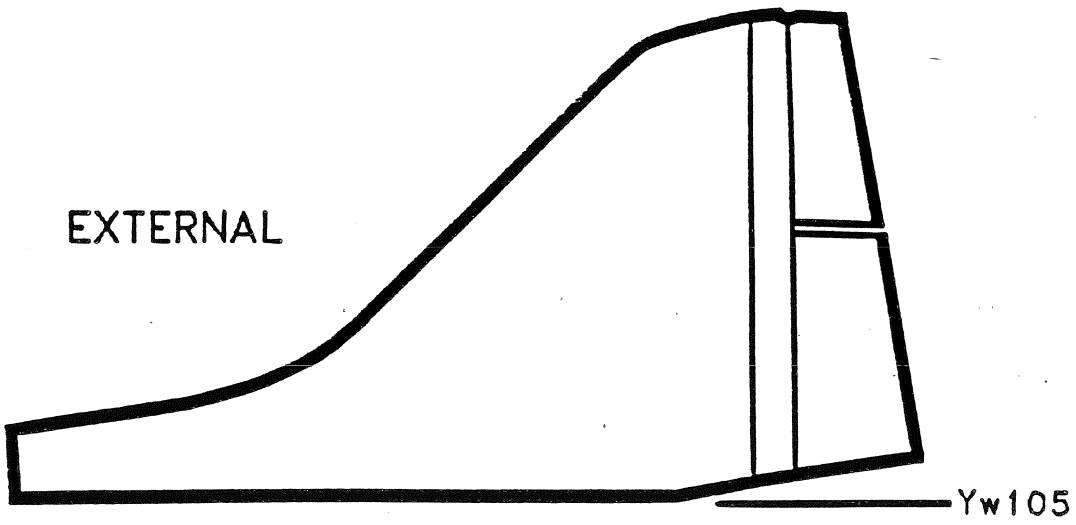
SUBJECT	SECTION	ZONE
FWD REACTION CONTROL SYSTEM MODULE (FRCS)	**2.5.3**	**560**

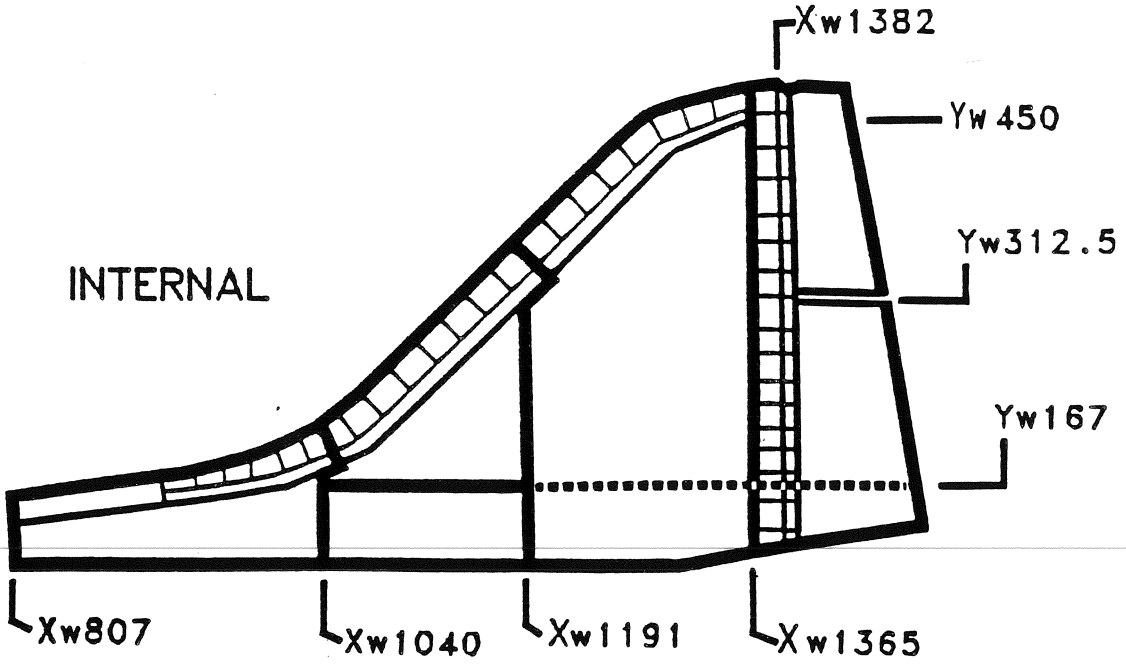
ILLUS REF.	ZONE	DESCRIPTION
	500	**Propulsion and Reaction Control (Major Zone)**
(1)	560	Fwd Reaction Control System Module (FRCS) Xo276.9 Canted Blkhd to Xo378 Canted Blkhd, Above Station Zo335

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
600	2.6	ORBITER RIGHT WING







SUBJECT	SECTION	ZONE
ORBITER RIGHT WING	2.6	600

The wing provides conventional lift and control of the orbiter. The four major spars are constructed of corrugated aluminum. The forward spar provides the attachment for the thermal protection system reusable reinforced carbon-carbon leading edge structure. The rear spar provides the attachment interfaces for the elevons, hinged upper seal panels, and associated hydraulic and electrical system components. The upper and lower wing skin panels are stiffened aluminum. Each wing is approximately 60 feet long at the fuselage intersection and has a maximum thickness of 5 feet.

The forward wing box is a conventional design of aluminum ribs, aluminum tubes and tubular struts. A portion of the lower wing surface skin panel includes the main landing gear door. The main landing gear door is conventional aluminum honeycomb.

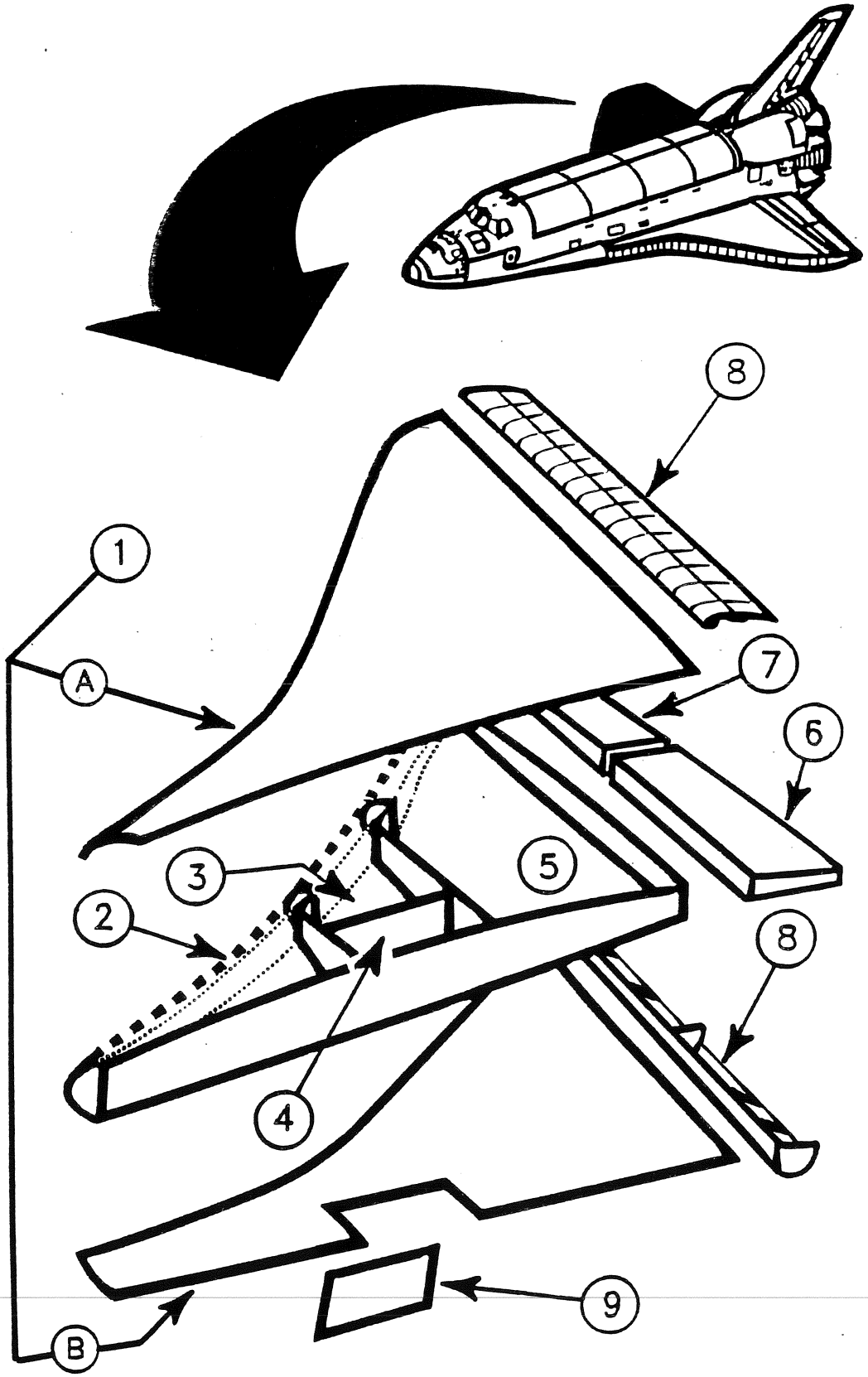
The transitional area on the upper surface between the torque box and the movable elevons consists of a series of hinged panels that provide a closeout of the wing-to-elevon cavity. These panels (flipper doors) are of Inconel honeycomb sandwich construction outboard of wing station Yw312.5 and of titanium honeycomb sandwich construction inboard of wing station Yw312.5.

The upper leading edge of each elevon incorporates titanium rub strips. The rub strips are of titanium honeycomb construction and are not covered with reusable surface insulation. The two piece elevons are conventional aluminum multirib and beam construction with aluminum honeycomb skins.

Manufacturers/Contractors

The wing, elevon and main landing gear door contractor is Grumman Corporation.

PAGE 72	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 600	SECTION 2.6.1	SUBJECT RIGHT WING

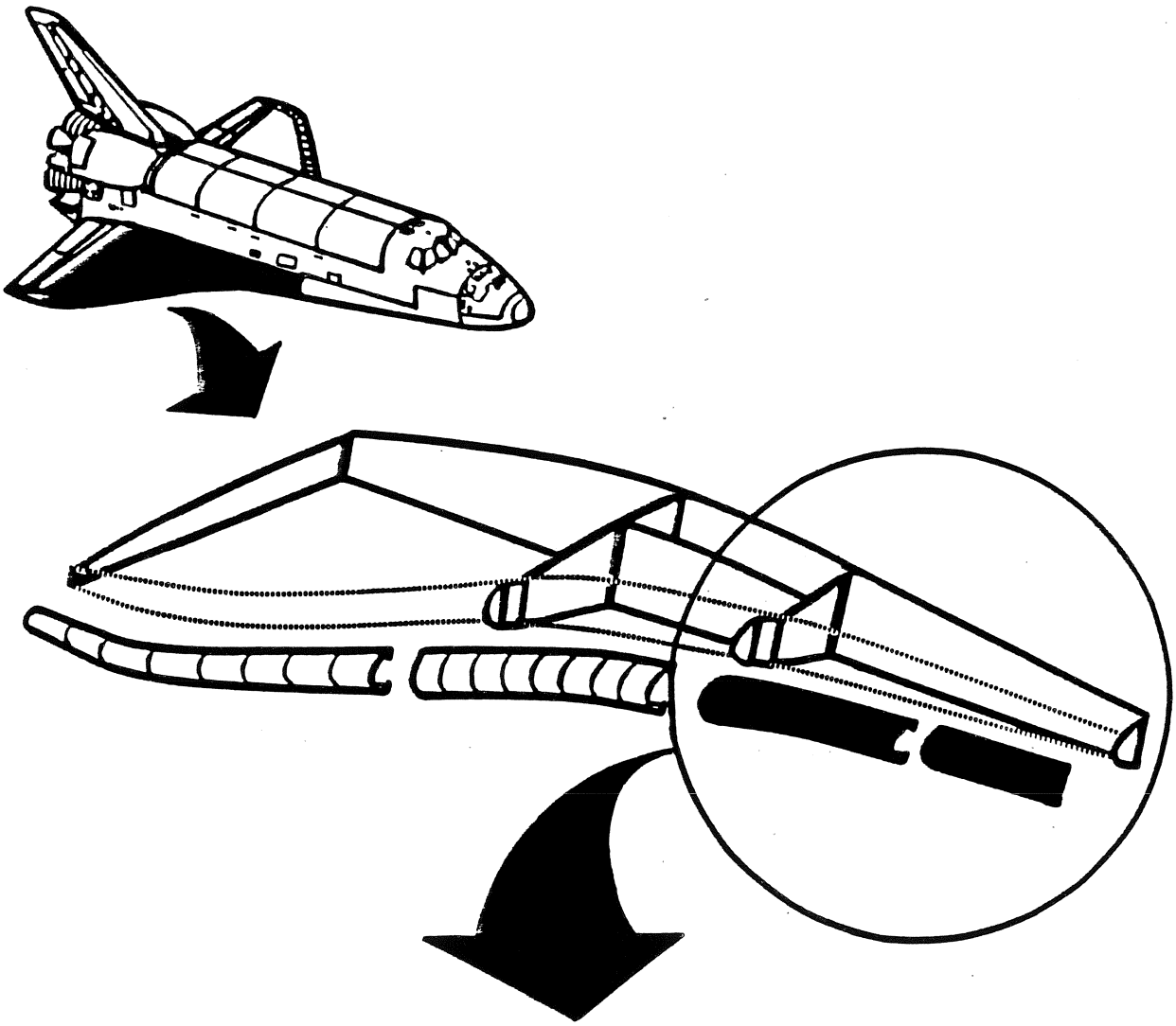


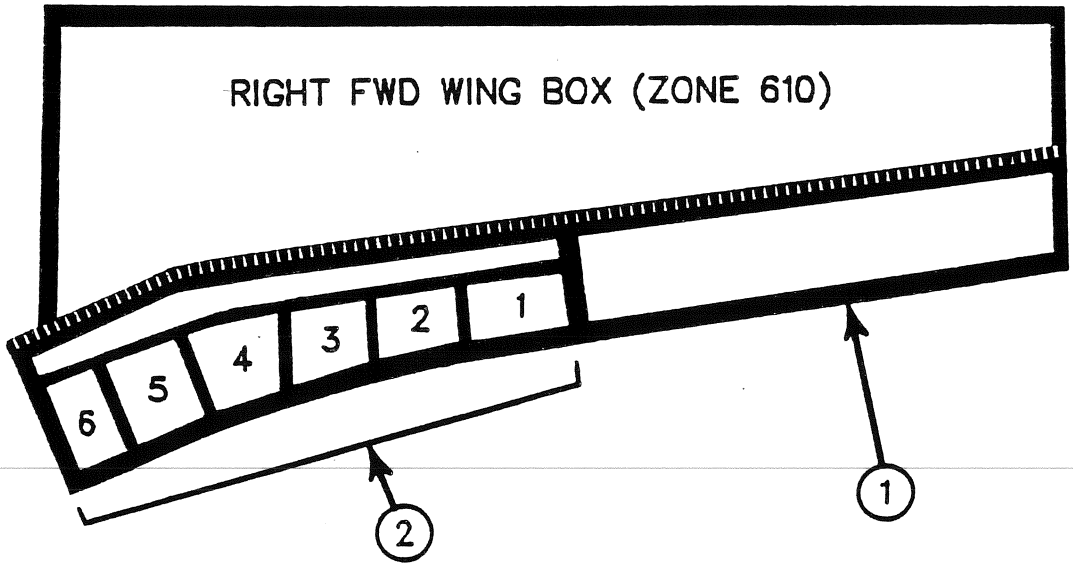
SUBJECT	SECTION	ZONE
RIGHT WING	2.6.1	600

ILLUS REF.	ZONE	DESCRIPTION
	600	**Right Wing (Major Zone)**
1a	600TES	Right Wing Top External Surface (Not Used for Leading Edge RCC Panels, Flipper Doors or Elevons)
1b	600BES	Right Wing Bottom External Surface (Not Used for Leading Edge RCC Panels or Elevons)
2	610	Fwd Wing Box (Leading Edge Spar to Yo105, Xo807 to Xo1036) Internal Only
3	620	Intermediate Section (Leading Edger Spar to Yo172, Xo1036 to Xo1191) Internal Only
4	630	Right Main Gear Wheel Well (Xo1036 to Xo1191, Yo105 to Yo172) Internal Only
5	640	Wing Torque Box (Leading Edge Spar to Yo105, Xo1191 to Xo1365) Internal Only
	650	**Right Elevons and Wing/Elevon Interface**
6	651	Inboard Elevon
7	652	Outboard Elevon
8	653	Wing Extension Box (Includes Flipper Doors)
9	944	Right Main Landing Gear Door (Ref. Section 2.9.1)

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
610	2.6.1.1	FWD WING BOX



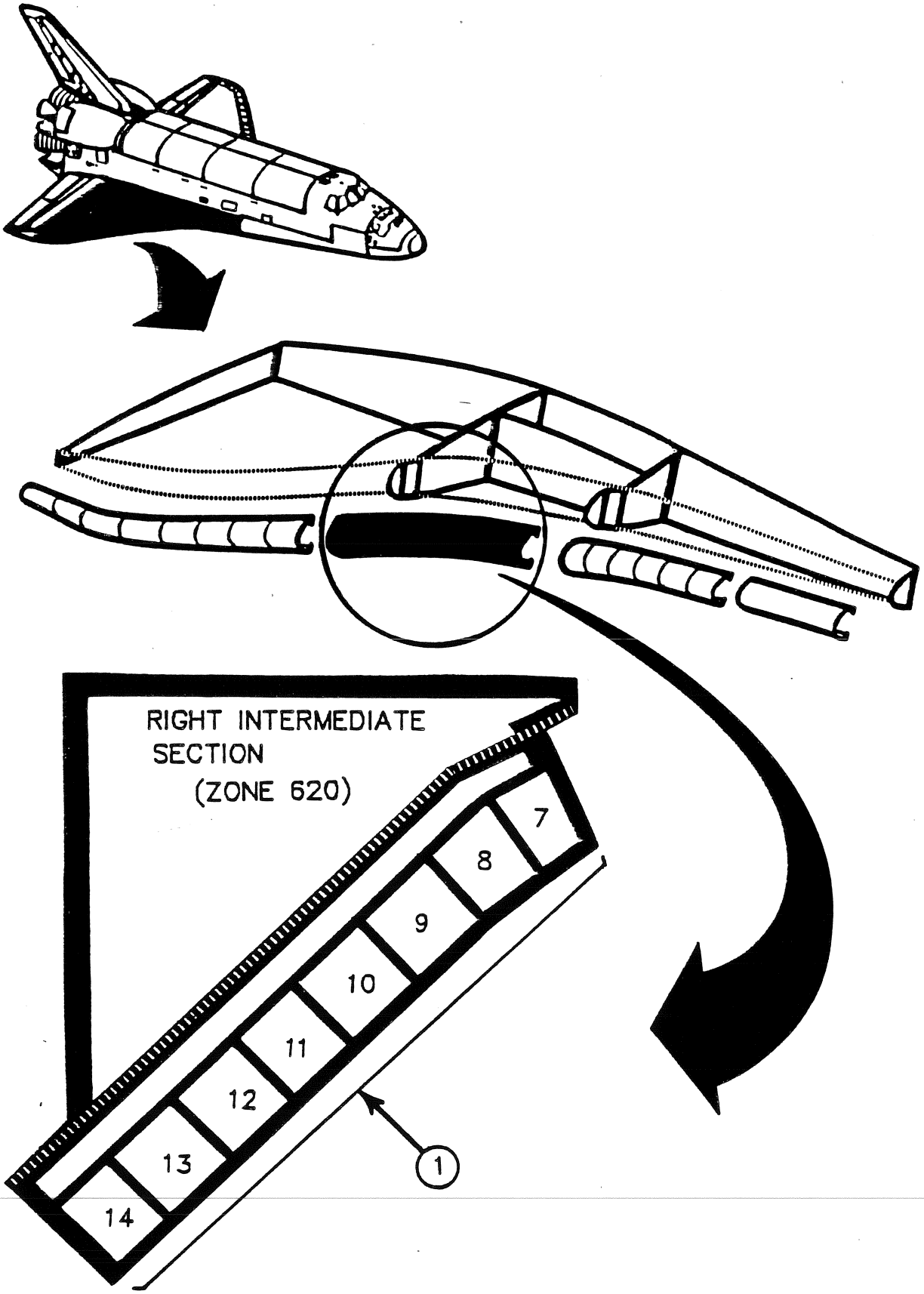


SUBJECT	SECTION	ZONE
FWD WING BOX	2.6.1.1	610

ILLUS REF.	ZONE	DESCRIPTION
	610	**Fwd Wing Box, Right Wing**
(1)	612	Wing Glove (RCC Panel)
(2)	611	Fwd Wing Box Leading Edge RCC Panels
1)	611-01	Right Wing Leading Edge RCC Panel #1
2)	611-02	Right Wing Leading Edge RCC Panel #2
3)	611-03	Right Wing Leading Edge RCC Panel #3
4)	611-04	Right Wing Leading Edge RCC Panel #4
5)	611-05	Right Wing Leading Edge RCC Panel #5
6)	611-06	Right Wing Leading Edge RCC Panel #6

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
620	2.6.1.2	WING INTERMEDIATE SECTION

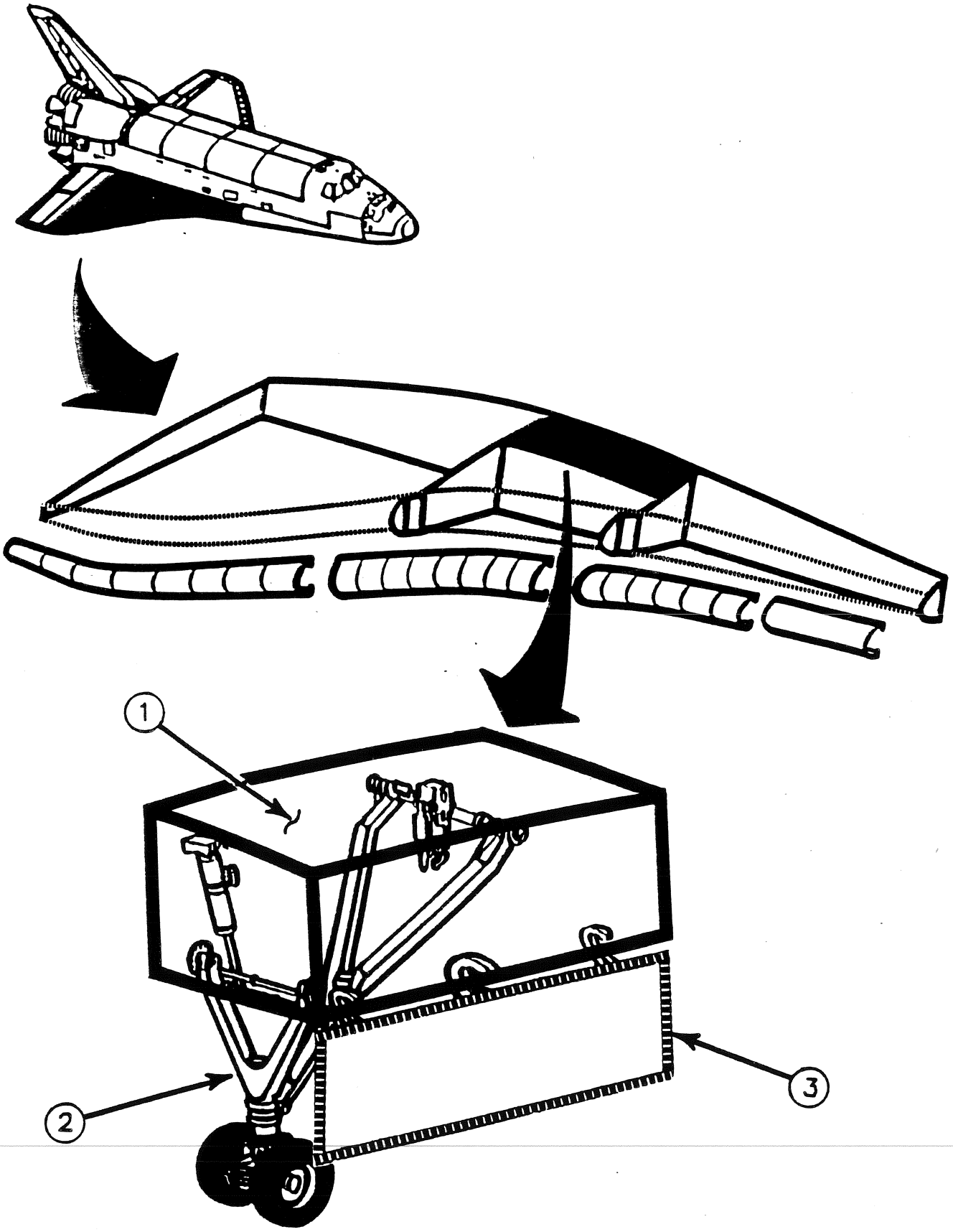


SUBJECT: WING INTERMEDIATE SECTION | SECTION 2.6.1.2 | ZONE 620

ILLUS REF.	ZONE	DESCRIPTION
	620	**Intermediate Section, Right Wing**
(1)	621	Wing Intermediate Section Leading Edge RCC Panels
7)	621-07	Right Wing Leading Edge RCC Panel #7
8)	621-08	Right Wing Leading Edge RCC Panel #8
9)	621-09	Right Wing Leading Edge RCC Panel #9
10)	621-10	Right Wing Leading Edge RCC Panel #10
11)	621-11	Right Wing Leading Edge RCC Panel #11
12)	621-12	Right Wing Leading Edge RCC Panel #12
13)	621-13	Right Wing Leading Edge RCC Panel #13
14)	621-14	Right Wing Leading Edge RCC Panel #14

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
630	2.6.1.3	MAIN GEAR WHEEL WELL

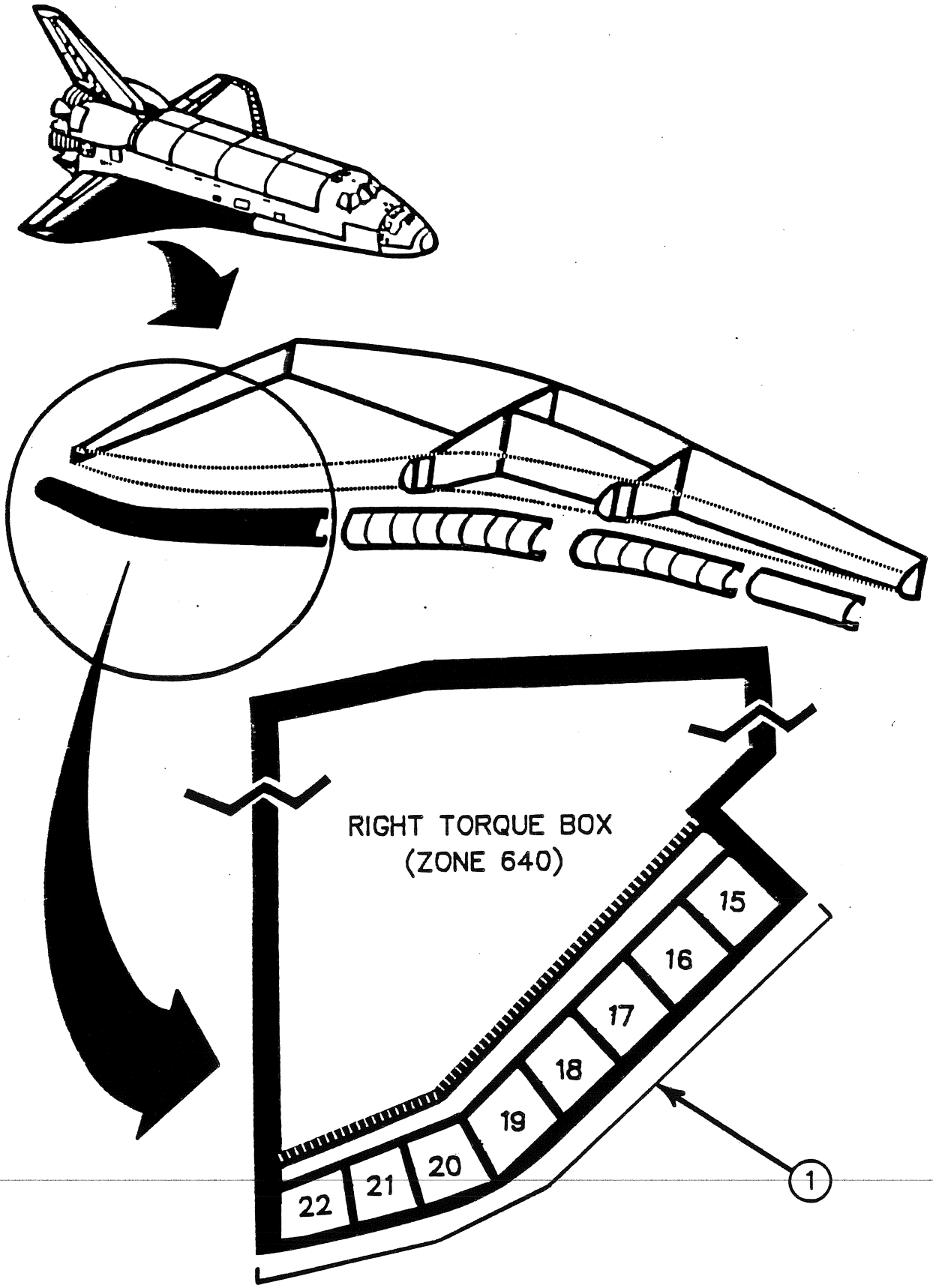


SUBJECT	SECTION	ZONE
MAIN GEAR WHEEL WELL	2.6.1.3	630

ILLUS REF.	ZONE	DESCRIPTION
(1)	630	Right Main Gear Wheel Well Xo1036 to Xo1191, Yo105 to Yo172 (Internal Only)
(2)	920	Right Main Landing Gear (Ref. Section 2.9.1)
(3)	944	Right Main Gear Door (Ref. Section 2.9.1)

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
640	2.6.1.4	WING TORQUE BOX

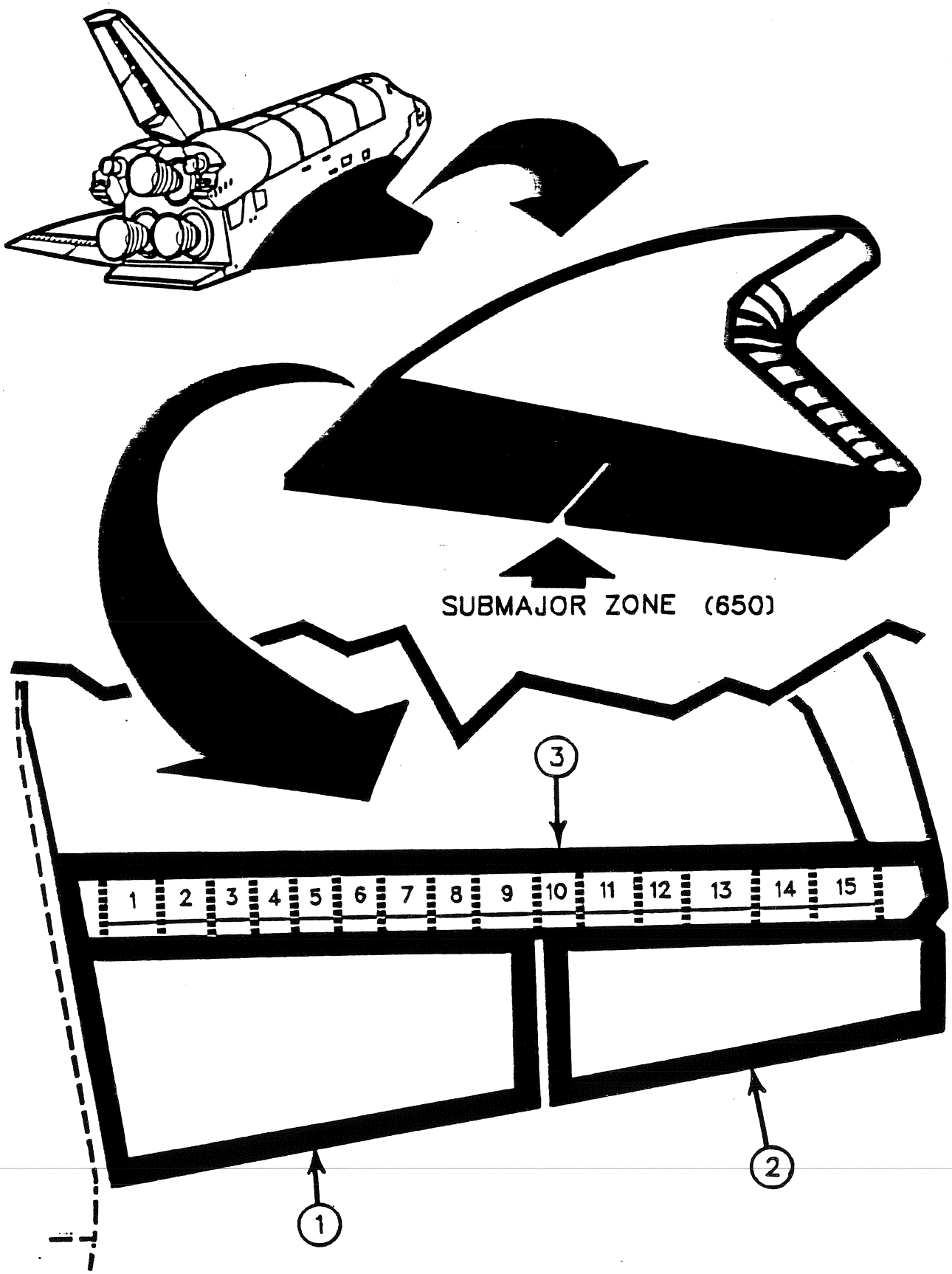


SUBJECT	SECTION	ZONE
WING TORQUE BOX	2.6.1.2	620

ILLUS REF.	ZONE	DESCRIPTION
	640	**Wing Torque Box, Right**
(1)	641	Wing Torque Box Leading Edge RCC Panels
15)	641-15	Right Wing Leading Edge RCC Panel #15
16)	641-16	Right Wing Leading Edge RCC Panel #16
17)	641-17	Right Wing Leading Edge RCC Panel #17
18)	641-18	Right Wing Leading Edge RCC Panel #18
19)	641-19	Right Wing Leading Edge RCC Panel #19
20)	641-20	Right Wing Leading Edge RCC Panel #20
21)	641-21	Right Wing Leading Edge RCC Panel #21
22)	641-22	Right Wing Leading Edge RCC Panel #22

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
650	2.6.1.5 sheet 1 of 4	RIGHT ELEVONS AND WING/ELEVON INTERFACE



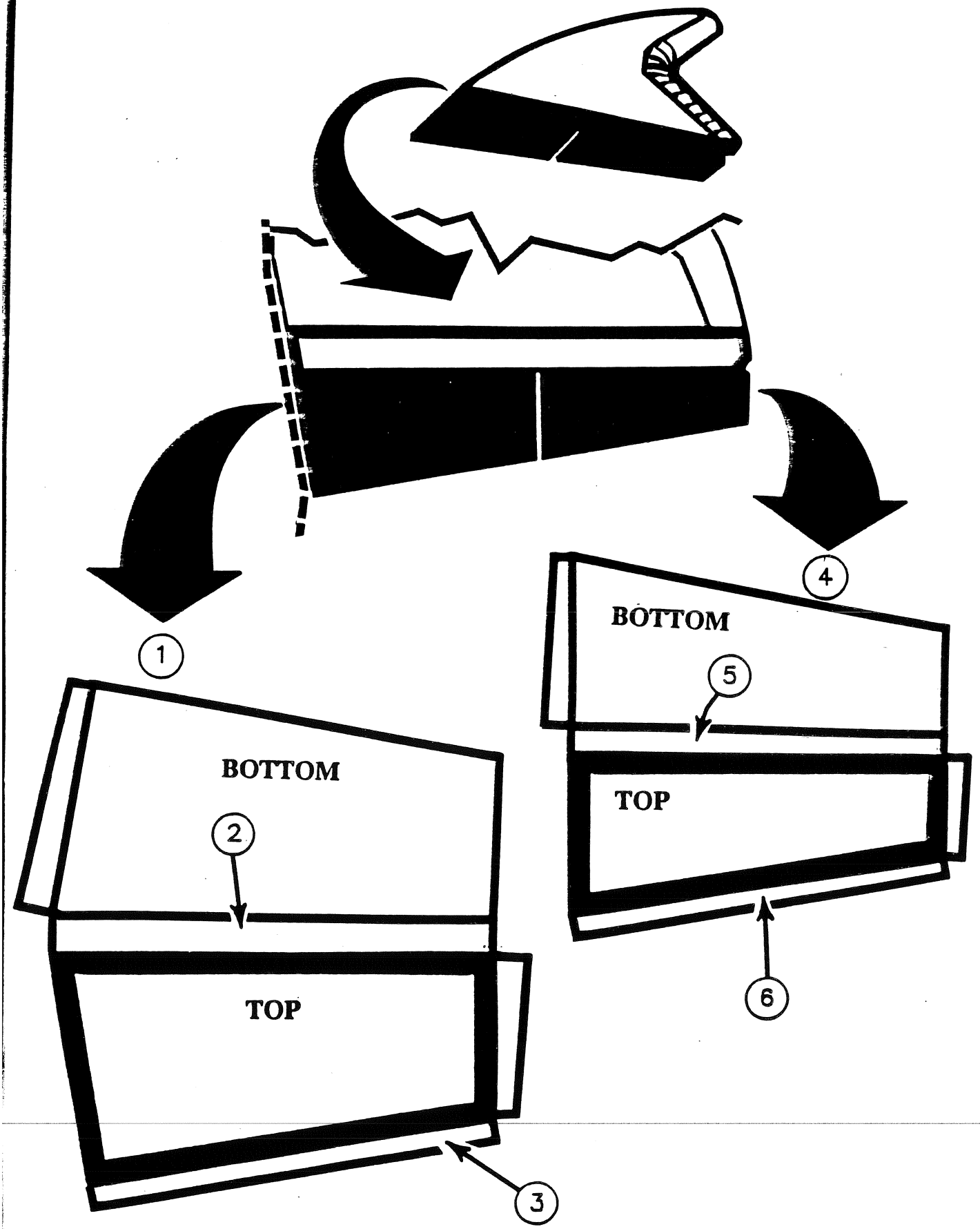
SUBJECT
RIGHT ELEVONS AND WING/ELEVON INTERFACE

SECTION 2.6.1.5 sheet 2 of 4 | ZONE 650

ILLUS REF.	ZONE	DESCRIPTION
	650	**Right Elevons and Wing/Elevon Interface**
(1)	651	Right Inboard Elevon
(2)	652	Right Outboard Elevon
(3)	653	Wing Extension box
1)	653-01	Right Wing/Elevon Flipper Door #1
2)	653-02	Right Wing/Elevon Flipper Door #2
3)	653-03	Right Wing/Elevon Flipper Door #3
4)	653-04	Right Wing/Elevon Flipper Door #4
5)	653-05	Right Wing/Elevon Flipper Door #5
6)	653-06	Right Wing/Elevon Flipper Door #6
7)	653-07	Right Wing/Elevon Flipper Door #7
8)	653-08	Right Wing/Elevon Flipper Door #8
9)	653-09	Right Wing/Elevon Flipper Door #9
10)	653-10	Right Wing/Elevon Flipper Door #10
11)	653-11	Right Wing/Elevon Flipper Door #11
12)	653-12	Right Wing/Elevon Flipper Door #12
13)	653-13	Right Wing/Elevon Flipper Door #13
14)	653-14	Right Wing/Elevon Flipper Door #14
15)	653-15	Right Wing/Elevon Flipper Door #15

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
651/652	2.6.1.5 sheet 3 of 4	RIGHT ELEVONS

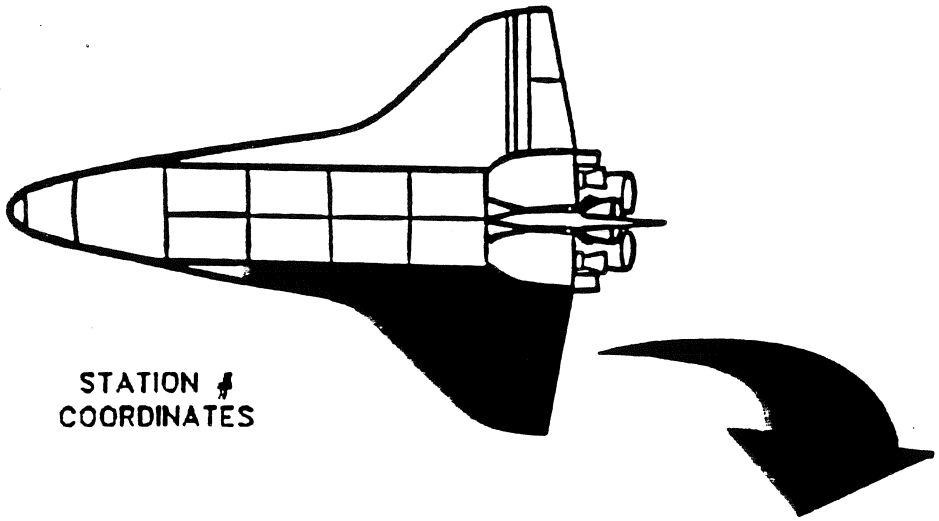


SUBJECT: RIGHT ELEVONS | SECTION 2.6.1.5 sheet 4 of 4 | ZONE 651/652

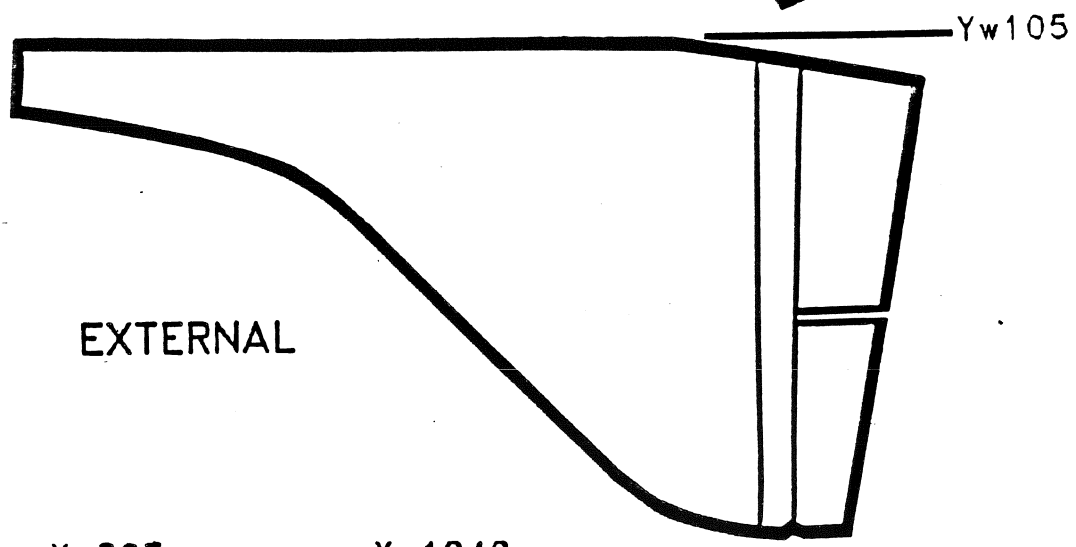
ILLUS REF.	ZONE	DESCRIPTION
1	651	Right Inboard Elevon
2	651RIL	Right Inboard Elevon Leading Edge
3	651RIT	Right Inboard Elevon Trailing Edge
4	652	Right Outboard Elevon
5	652ROL	Right Outboard Elevon Leading Edge
6	652ROT	Right Outboard Elevon Trailing Edge

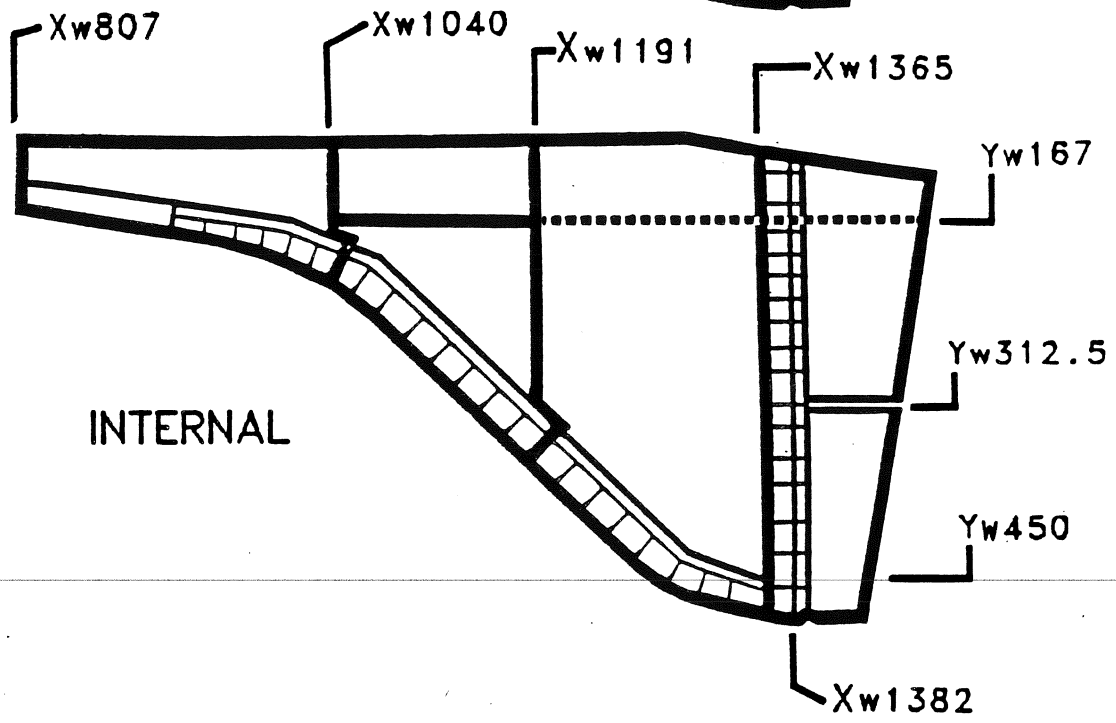
ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
700	2.7	ORBITER LEFT WING



STATION # COORDINATES





SUBJECT	SECTION	ZONE
ORBITER LEFT WING	2.7	700

The wing provides conventional lift and control of the orbiter. The four major spars are constructed of corrugated aluminum. The forward spar provides the attachment for the thermal protection system reusable reinforced carbon-carbon leading edge structure. The rear spar provides the attachment interfaces for the elevons, hinged upper seal panels, and associated hydraulic and electrical system components. The upper and lower wing skin panels are stiffened aluminum. Each wing is approximately 60 feet long at the fuselage intersection and has a maximum thickness of 5 feet.

The forward wing box is a conventional design of aluminum ribs, aluminum tubes and tubular struts. A portion of the lower wing surface skin panel includes the main landing gear door. The main landing gear door is conventional aluminum honeycomb.

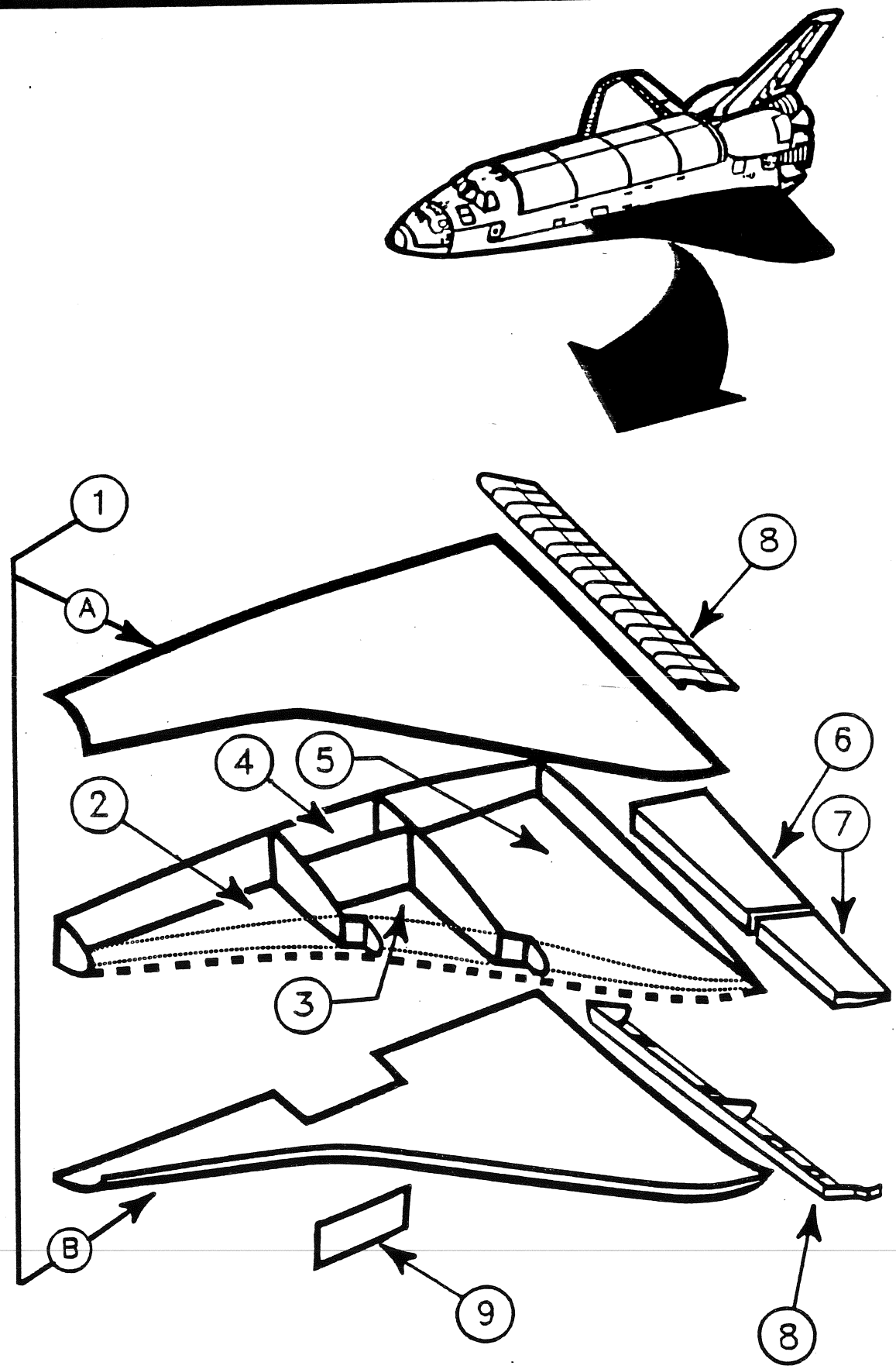
The transitional area on the upper surface between the torque box and the movable elevons consists of a series of hinged panels that provide a closeout of the wing-to-elevon cavity. These panels (flipper doors) are of Inconel honeycomb sandwich construction outboard of wing station Yw312.5 and of titanium honeycomb sandwich construction inboard of wing station Yw312.5.

The upper leading edge of each elevon incorporates titanium rub strips. The rub strips are of titanium honeycomb construction and are not covered with reusable surface insulation. The two piece elevons are conventional aluminum multirib and beam construction with aluminum honeycomb skins.

Manufacturers/Contractors

The wing, elevon and main landing gear door contractor is Grumman Corporation.

PAGE 88	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 700	SECTION 2.7.1	SUBJECT LEFT WING

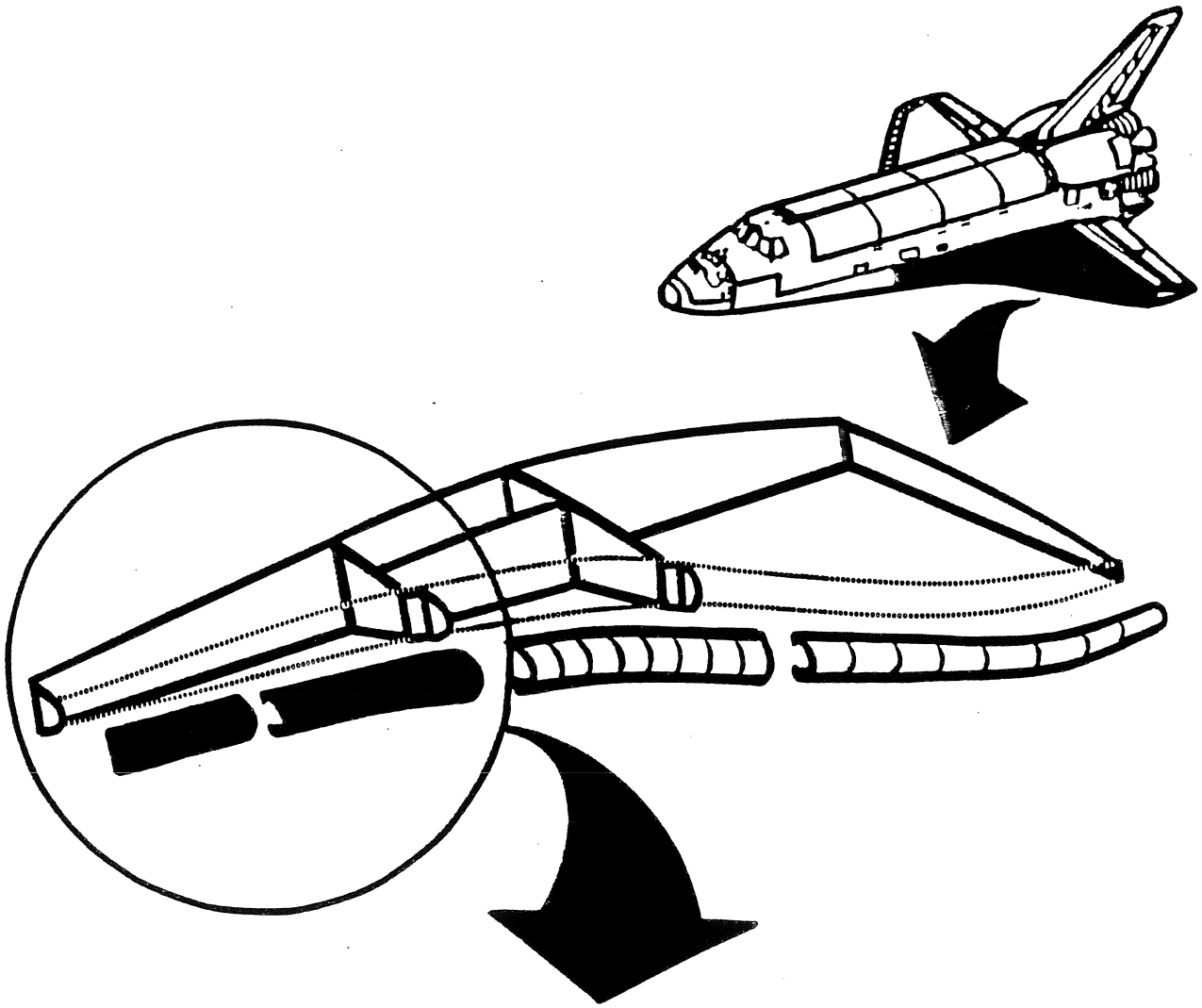


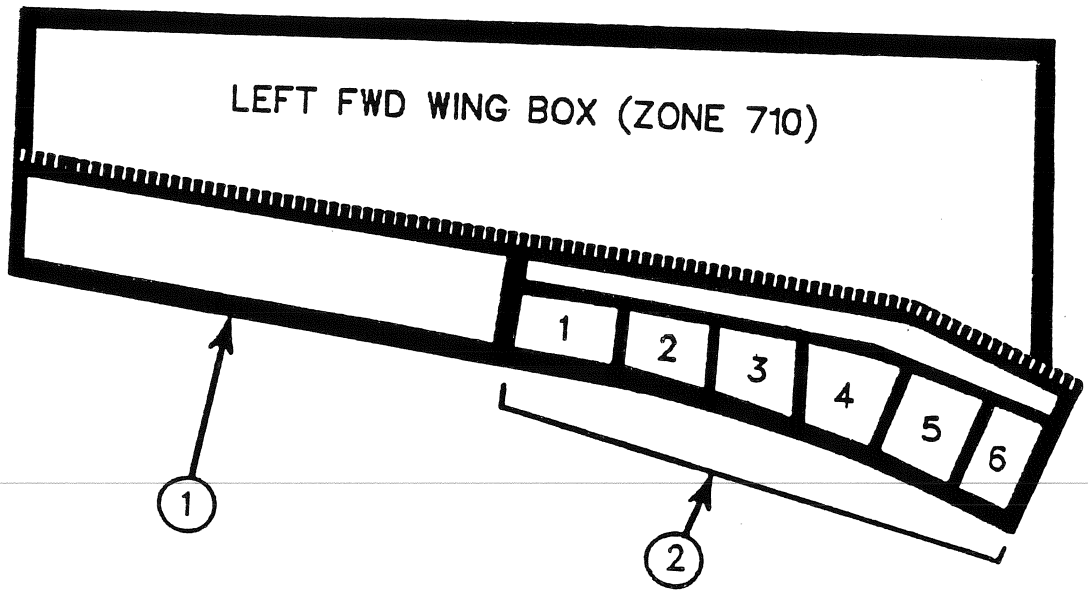
SUBJECT	SECTION	ZONE
LEFT WING	2.7.1	700

ILLUS REF.	ZONE	DESCRIPTION
	700	**Left Wing (Major Zone)**
1a	700TES	Left Wing Top External Surface (Not Used for Leading Edge RCC Panels, Flipper Door or Elevons)
1b	700BES	Left Wing Bottom External Surface (Not Used for Leading Edge RCC Panels or Elevons)
2	710	Forward Wing Box (Leading Edge Spar to Yo-105, Xo807 to Xo1036) Internal Only
3	720	Intermediate Section (Leading Edge Spar to Yo-172, Xo1036 to Xo1191) Internal Only
4	730	Left Main Gear Wheel Well (Xo1036 to Xo1191, Yo-105 to Yo-172) (Internal Only)
5	740	Wing Torque Box (Leading Edge Spar to Yo-105, Xo1191 to Xo1365) Internal Only
	750	**Left Elevons and Wing/Elevon Interface**
6	751	Inboard Elevon
7	752	Inboard Elevon
8	753	Wing Extension Box (Including Flipper Doors)
9	753	Left Main Landing Gear Door (Ref. Section 2.9.1)

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
710	2.7.1.1	FWD WING BOX



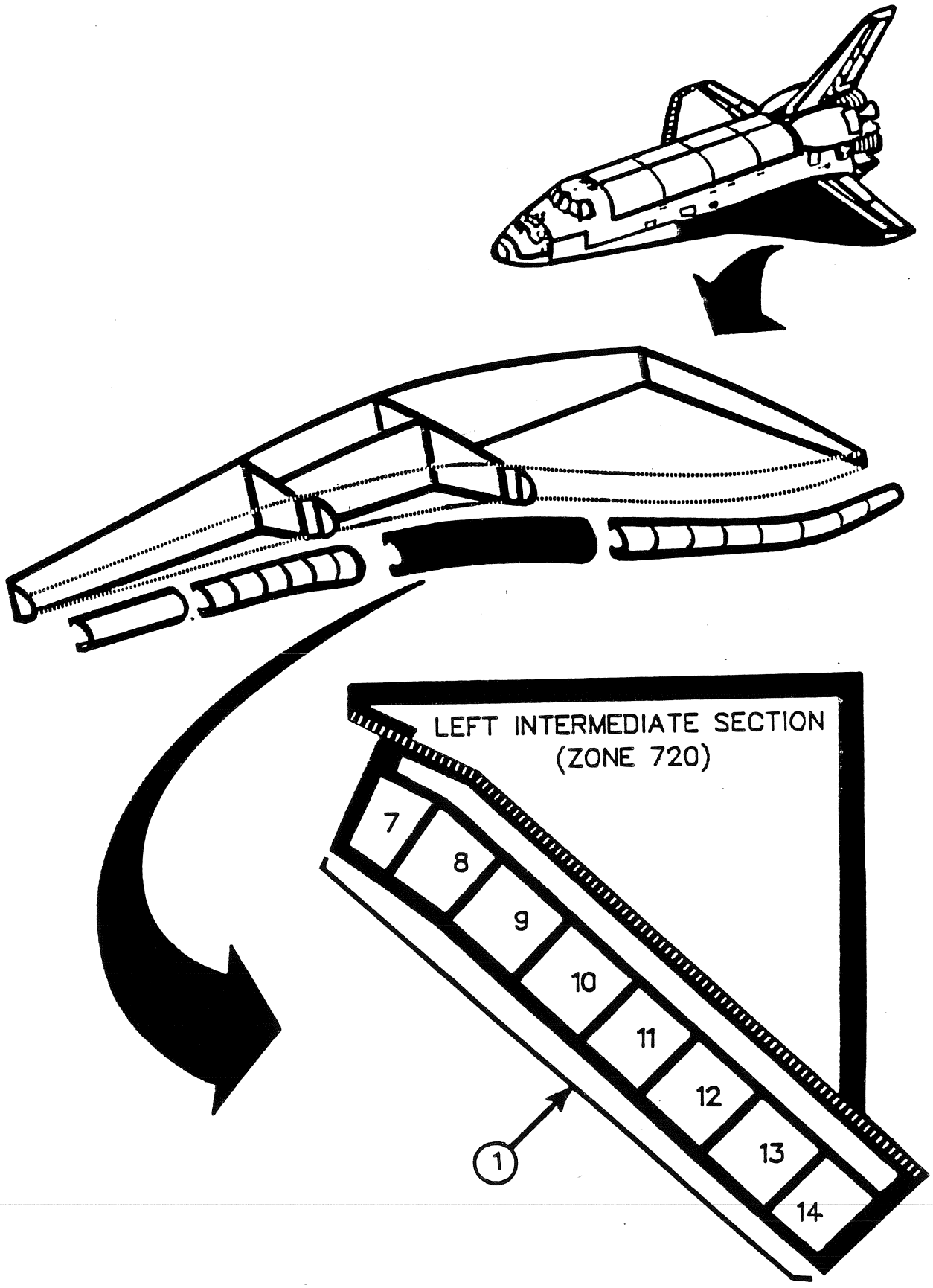


SUBJECT	SECTION	ZONE
FWD WING BOX	2.7.1.1	710

ILLUS REF.	ZONE	DESCRIPTION
	710	**Fwd Wing Box, Left Wing**
(1)	712	Wing Glove (RCC Panel)
(2)	711	Fwd Wing Box Leading Edge RCC Panels
1)	711-01	Left Wing Leading Edge RCC Panel #1
2)	711-02	Left Wing Leading Edge RCC Panel #2
3)	711-03	Left Wing Leading Edge RCC Panel #3
4)	711-04	Left Wing Leading Edge RCC Panel #4
5)	711-05	Left Wing Leading Edge RCC Panel #5
6)	711-06	Left Wing Leading Edge RCC Panel #6

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
720	2.7.1.2	WING INTERMEDIATE SECTION

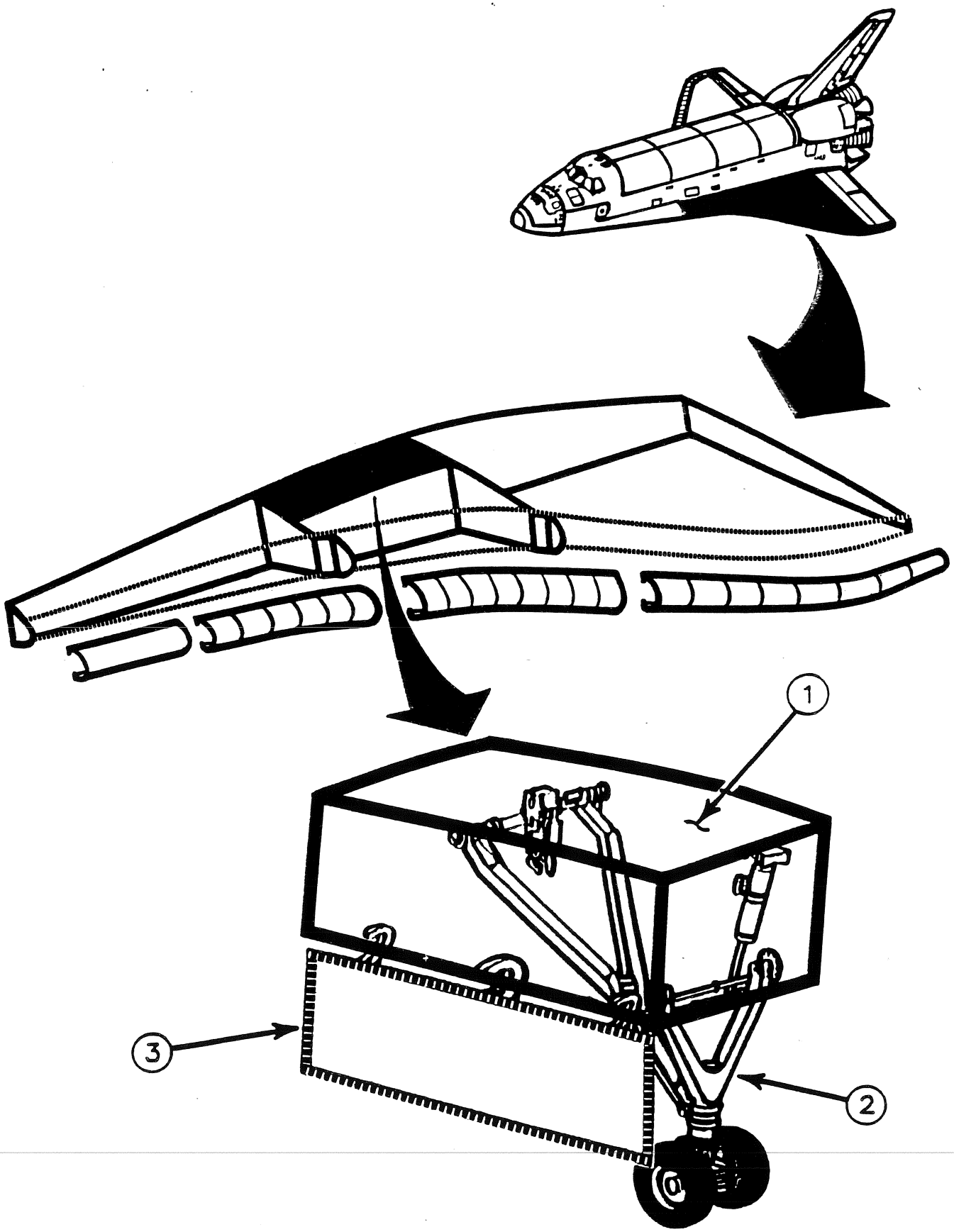


SUBJECT: WING INTERMEDIATE SECTION | SECTION 2.7.1.2 | ZONE 720

ILLUS REF.	ZONE	DESCRIPTION
	720	**Intermediate Section, Left Wing**
(1)	**721**	**Wing Intermediate Section Leading Edge RCC Panels**
7)	721-07	Left Wing Leading Edge RCC Panel #7
8)	721-08	Left Wing Leading Edge RCC Panel #8
9)	721-09	Left Wing Leading Edge RCC Panel #9
10)	721-10	Left Wing Leading Edge RCC Panel #10
11)	721-11	Left Wing Leading Edge RCC Panel #11
12)	721-12	Left Wing Leading Edge RCC Panel #12
13)	721-13	Left Wing Leading Edge RCC Panel #13
14)	721-14	Left Wing Leading Edge RCC Panel #14

ORBITER ZONE AND ACCESS LOCATOR

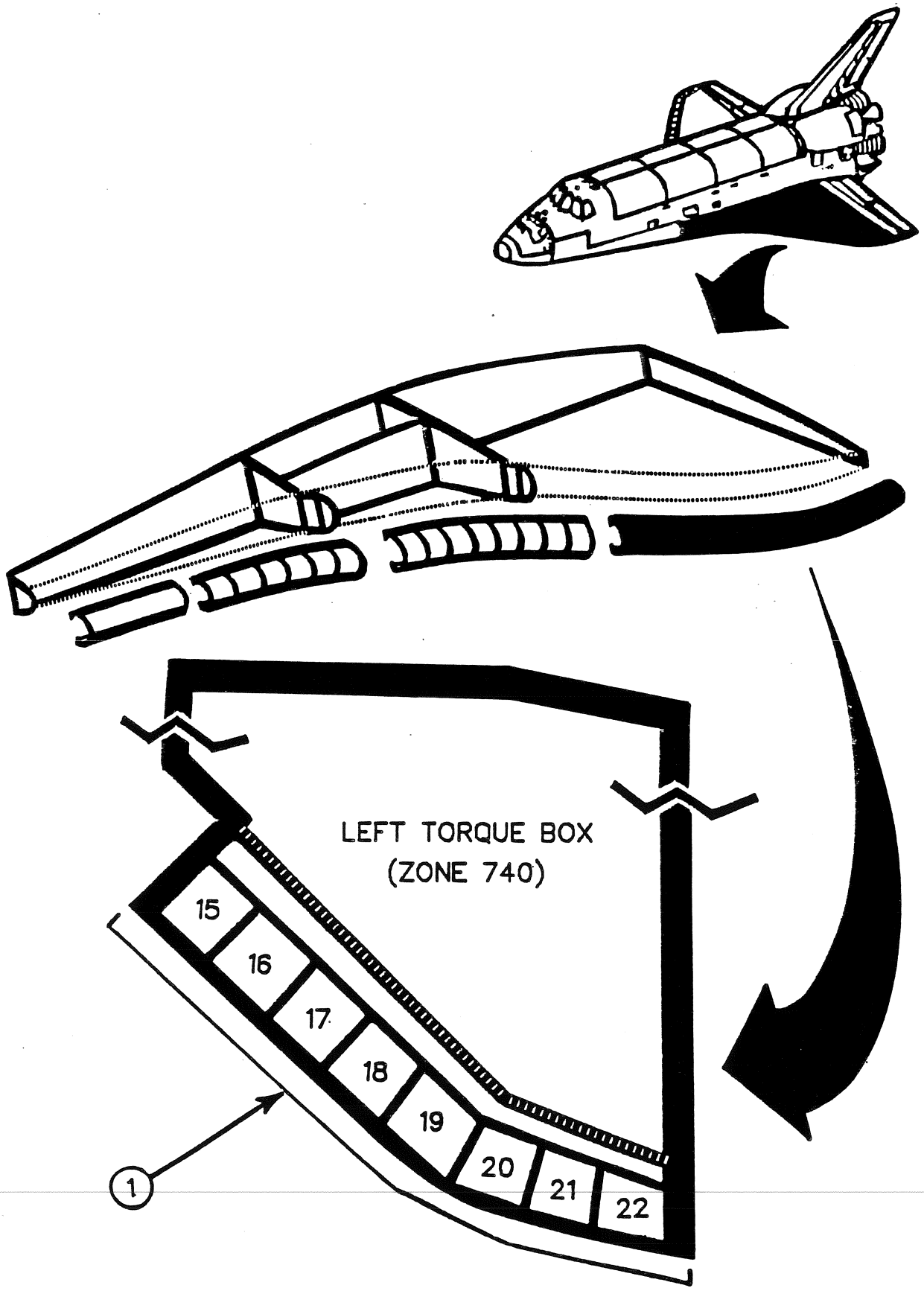
ZONE	SECTION	SUBJECT
730	2.7.1.3	MAIN GEAR WHEEL WELL



SUBJECT	SECTION	ZONE
MAIN GEAR WHEEL WELL	2.7.1.3	730

ILLUS REF.	ZONE	DESCRIPTION
(1)	730	Left Main Gear Wheel Well Xo1036 to Xo1191, Yo-105 to Yo-172 (Internal Only)
(2)	910	Left Main Landing Gear (Ref. Section 2.9.1)
(3)	943	Left Main Gear Door (Ref. Section 2.9.1)

PAGE 96	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
740	2.7.1.4	WING TORQUE BOX

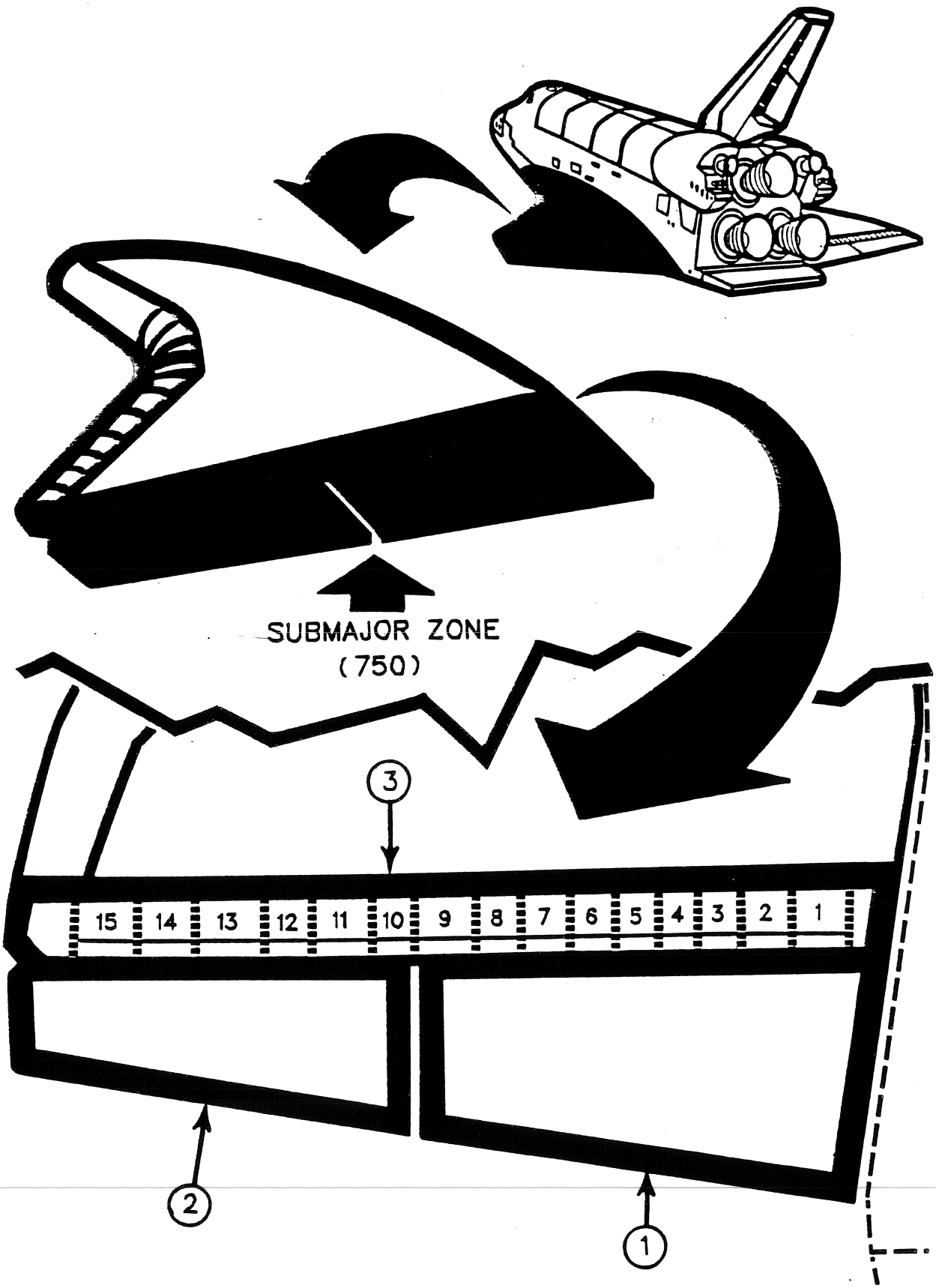


SUBJECT	SECTION	ZONE
WING TORQUE BOX	2.6.1.4	740

ILLUS REF.	ZONE	DESCRIPTION
	740	**Wing Torque Box, Left**
(1)	741	Wing Torque Box Leading Edge RCC Panels
15)	741-15	Left Wing Leading Edge RCC Panel #15
16)	741-16	Left Wing Leading Edge RCC Panel #16
17)	741-17	Left Wing Leading Edge RCC Panel #17
18)	741-18	Left Wing Leading Edge RCC Panel #18
19)	741-19	Left Wing Leading Edge RCC Panel #19
20)	741-20	Left Wing Leading Edge RCC Panel #20
21)	741-21	Left Wing Leading Edge RCC Panel #21
22)	741-22	Left Wing Leading Edge RCC Panel #22

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
750	2.7.1.5 sheet 1 of 4	LEFT ELEVONS AND WING/ELEVON INTERFACE



SUBJECT
LEFT ELEVONS AND WING/ELEVON INTERFACE

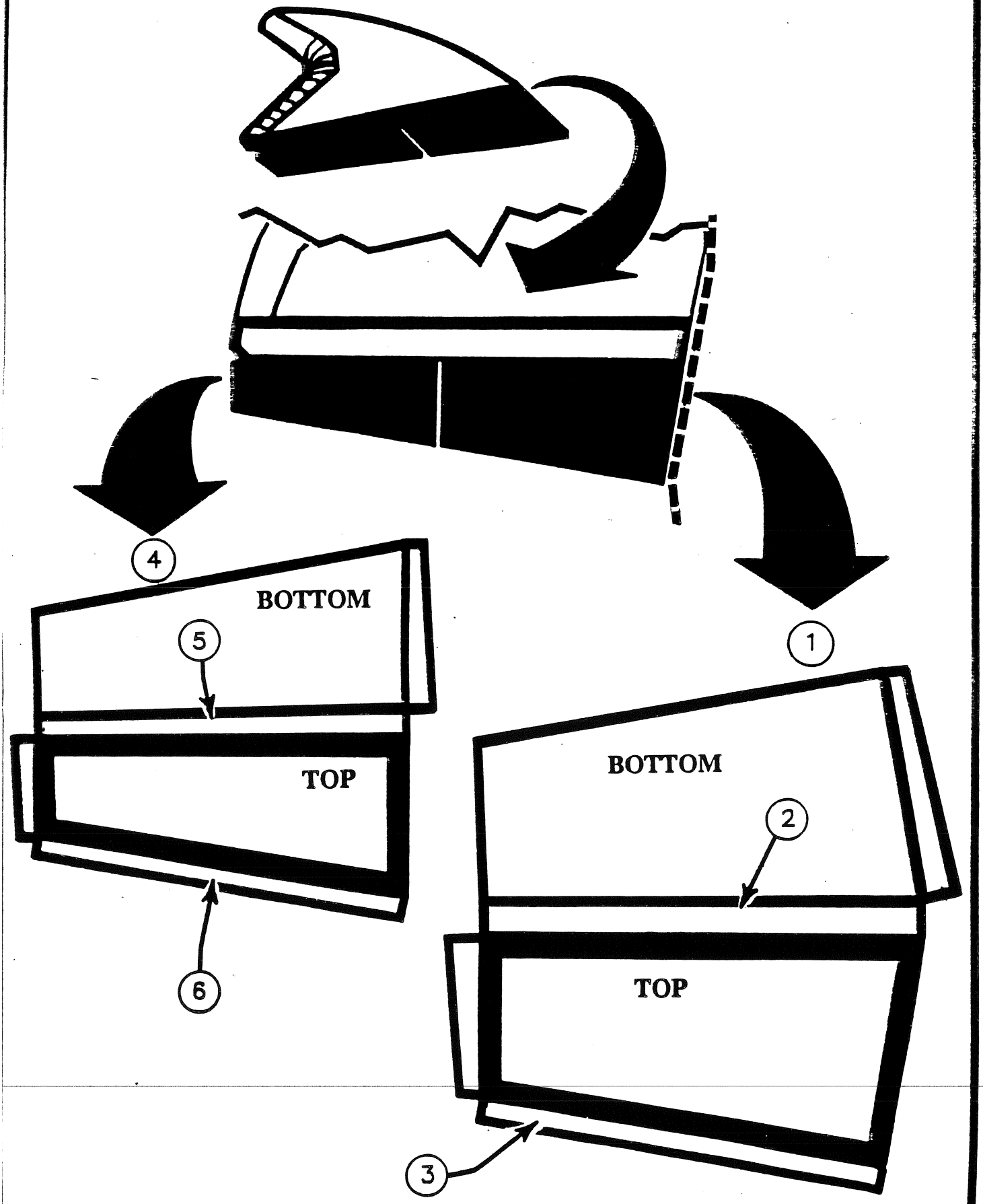
SECTION 2.7.1.5 sheet 2 of 4

ZONE 750

ILLUS REF.	ZONE	DESCRIPTION
	750	**Left Elevons and Wing/Elevon Interface**
(1)	751	Left Inboard Elevon
(2)	752	Left Outboard Elevon
(3)	753	Wing Extension Box
1)	753-01	Left Wing/Elevon Flipper Door #1
2)	753-02	Left Wing/Elevon Flipper Door #2
3)	753-03	Left Wing/Elevon Flipper Door #3
4)	753-04	Left Wing/Elevon Flipper Door #4
5)	753-05	Left Wing/Elevon Flipper Door #5
6)	753-06	Left Wing/Elevon Flipper Door #6
7)	753-07	Left Wing/Elevon Flipper Door #7
8)	753-08	Left Wing/Elevon Flipper Door #8
9)	753-09	Left Wing/Elevon Flipper Door #9
10)	753-10	Left Wing/Elevon Flipper Door #10
11)	753-11	Left Wing/Elevon Flipper Door #11
12)	753-12	Left Wing/Elevon Flipper Door #12
13)	753-13	Left Wing/Elevon Flipper Door #13
14)	753-14	Left Wing/Elevon Flipper Door #14
15)	753-15	Left Wing/Elevon Flipper Door #15

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
751/752	2.7.1.5 sheet 3 of 4	LEFT ELEVONS

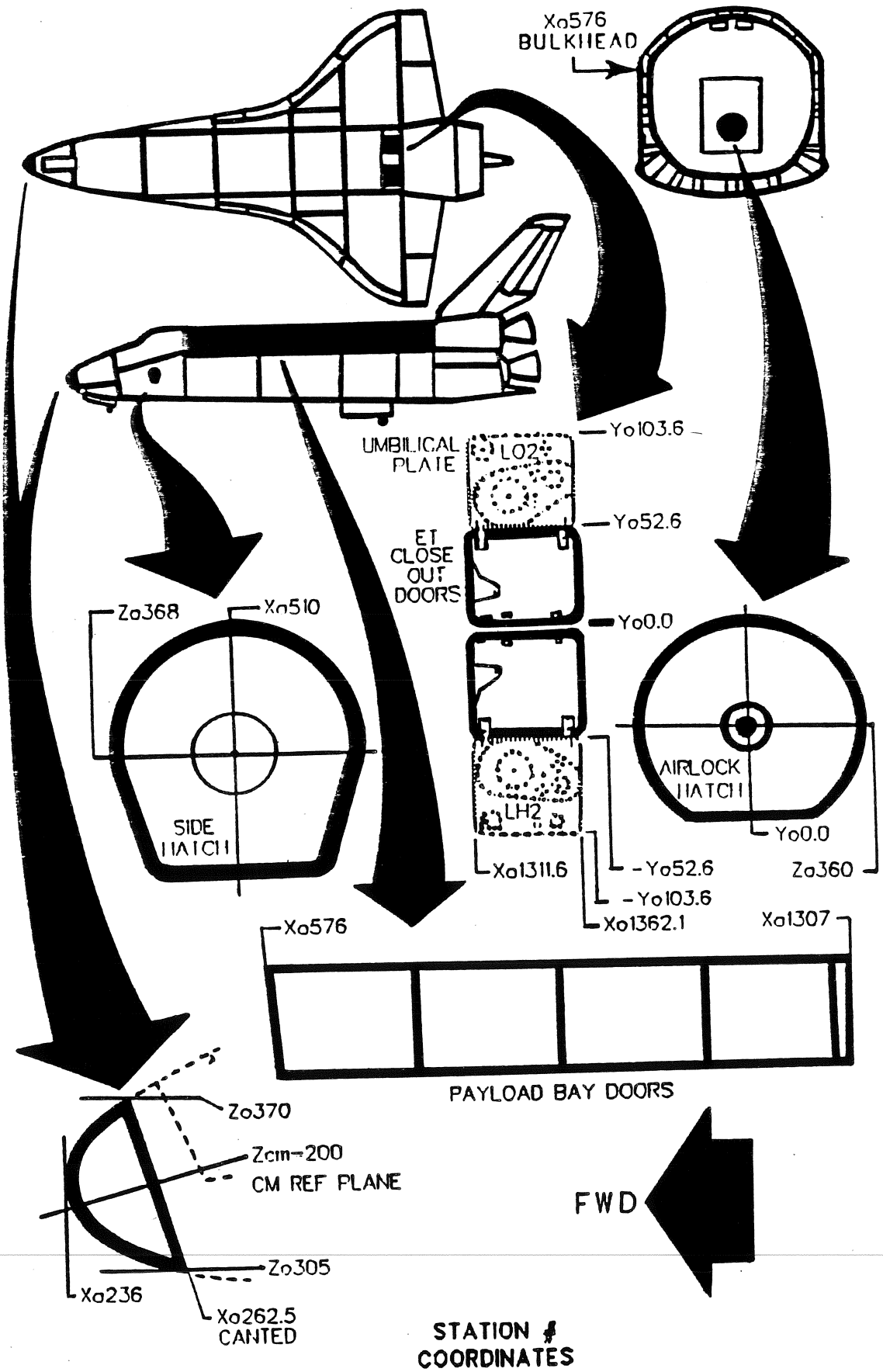


SUBJECT: LEFT ELEVONS | SECTION 2.7.1.5 sheet 4 of 4 | ZONE 751/752

ILLUS REF.	ZONE	DESCRIPTION
1	751	Left Inboard Elevon
2	751LIL	Left Inboard Elevon Leading Edge
3	751LIT	Left Inboard Elevon Trailing Edge
4	752	Left Outboard Elevon
5	752LOL	Left Outboard Elevon Leading Edge
6	752LOT	Left Outboard Elevon Trailing Edge

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
800	2.8	ORBITER NOSECAP, HATCHES AND DOORS



SUBJECT	SECTION	ZONE
ORBITER NOSECAP, HATCHES AND DOORS	2.8	800

The nosecap is constructed of reinforced carbon-carbon and has thermal barriers at the nose cap-structure interface.

The side hatch in the middeck is used for normal crew entrance/exit and may be operated from within the crew cabin middeck or externally. It can be jettisoned for emergencies. It is attached to the crew cabin tunnel by hinges, a torque tube and support fittings. The hatch opens outwardly 90 degrees down with the orbiter horizontal or 90 degrees sideways with the orbiter vertical. It is 40 inches in diameter and has a 10 inch clear-view window in the center of the hatch.

Two hatches are mounted on the airlock. The forward hatch is mounted on the exterior of the airlock (orbiter crew cabin middeck side) and opens into the middeck. The aft hatch is mounted inside the airlock and opens into the airlock. The aft hatch isolates the airlock from the unpressurized payload bay when closed and permits the EVA crew members to exit from the airlock to the payload bay when open.

Each hatch has six interconnected latches and a gearbox/actuator, a 4 inch window, a hinge mechanism and hold-open device. The gearbox with latch mechanisms on each hatch allows the flight crew to open and close the hatch during transfers and EVA operations. The gearbox and the latches are mounted on the low-pressure sides to permit operation from either side of the hatch. Three of the six latches on each hatch are double-acting and have cam surfaces that force the sealing surfaces apart. Positive locks are provided to hold the hatch in both an intermediate and a full-open position.

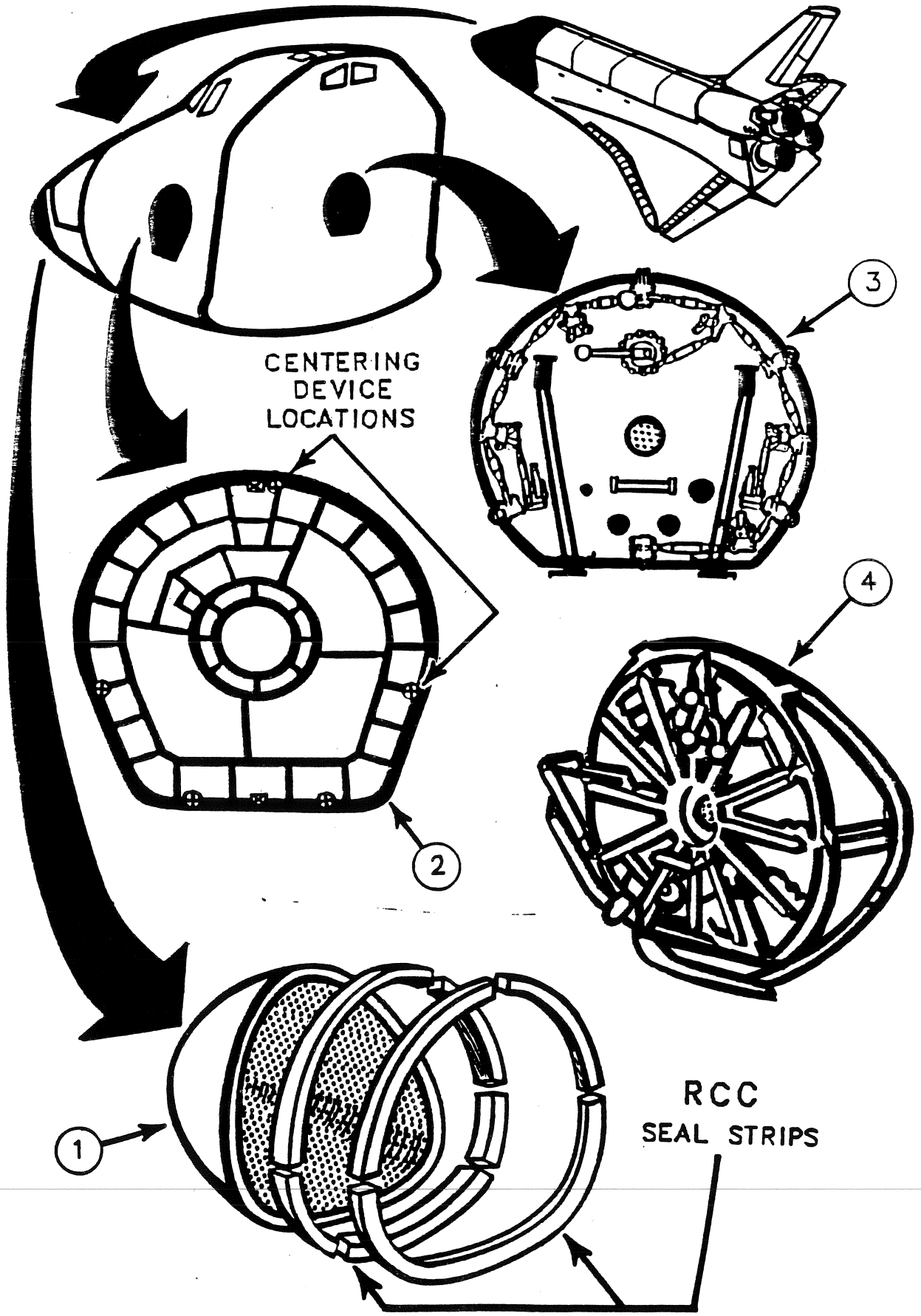
The payload bay doors consist of port and starboard doors hinged at each side of the mid fuselage and latched mechanically at the forward and aft fuselage and at the split-top centerline. The doors are 60 feet long. Each consists of five segments interconnected by expansion joints. The doors are constructed of graphite epoxy composite material. The forward 30 foot sections of both doors incorporate radiators that can be deployed. Fixed radiator panels are installed on the forward end of the aft payload bay doors.

The two external tank umbilicals interface with the orbiter's two aft external tank attach points. The umbilical areas are closed off after external tank separation by two beryllium doors.

Manufacturers/Contractors

The contractors are Rockwell's Tulsa Division (payload bay doors) and Vought Corporation (radiators).

PAGE 104	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 800	SECTION 2.8.1	SUBJECT FWD FUSELAGE, NOSECAP AND HATCHES

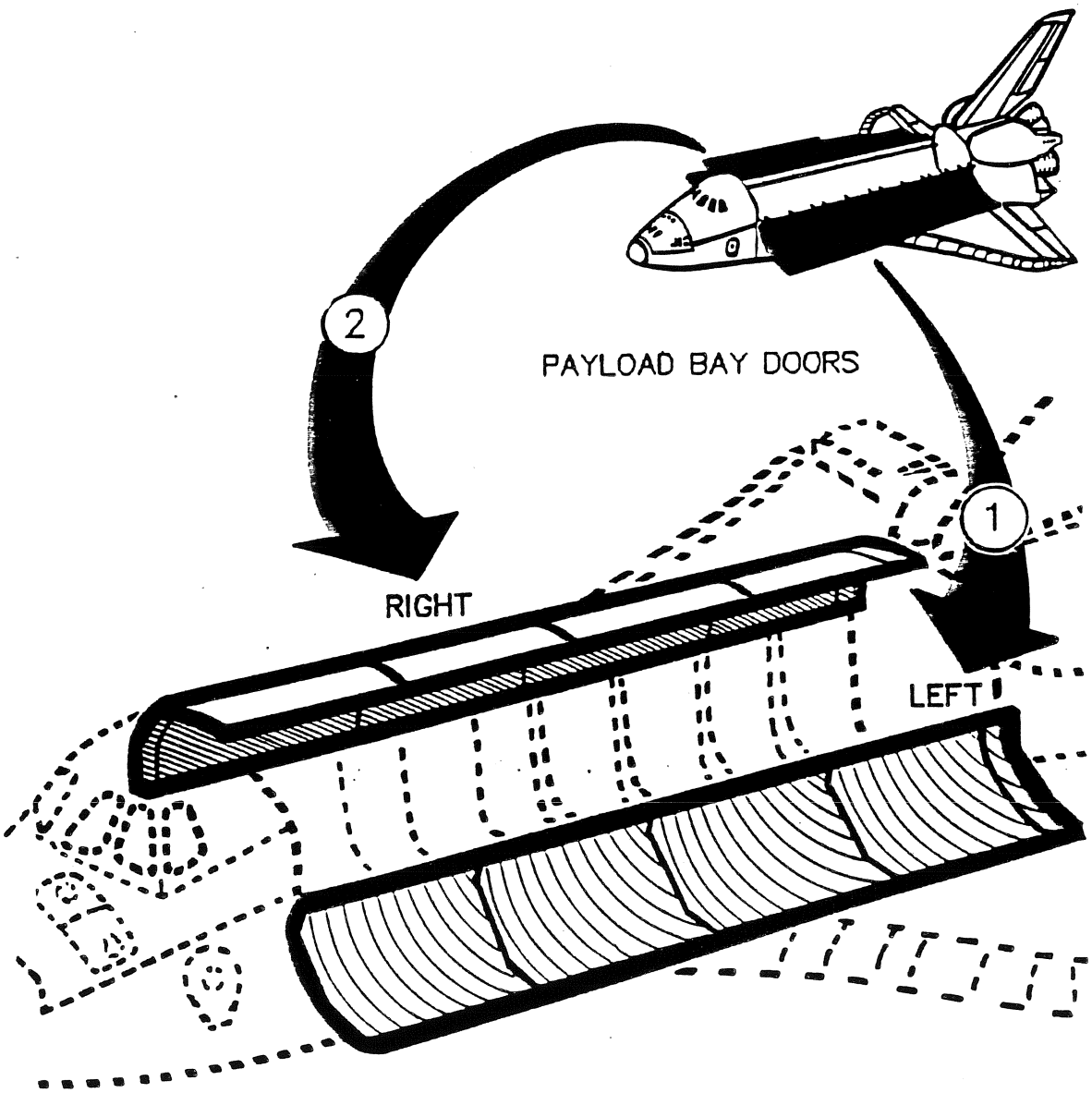


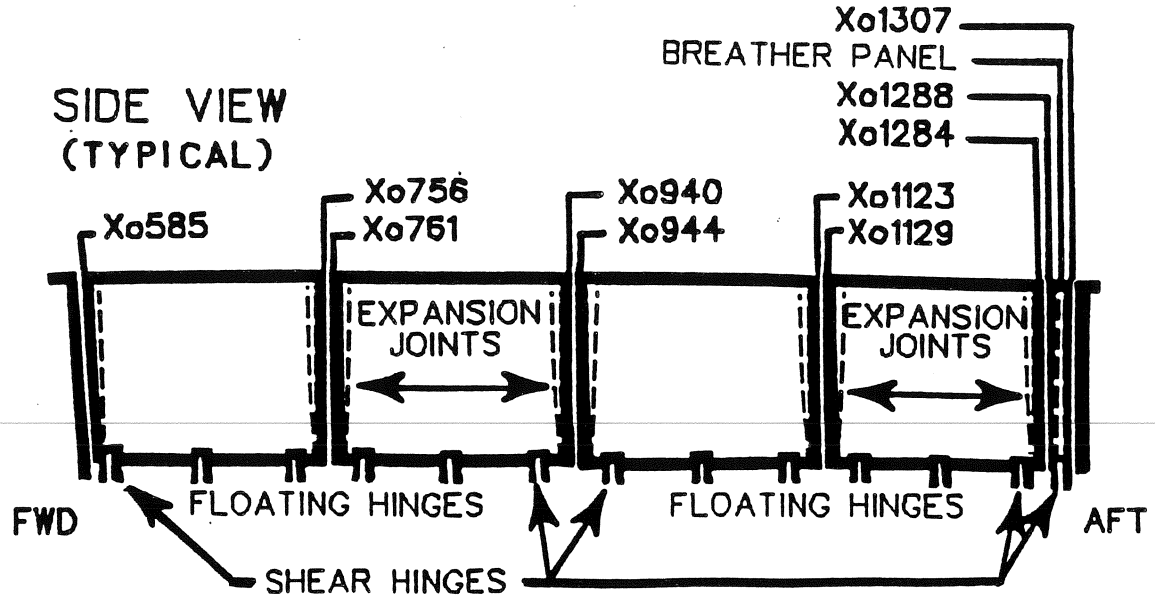
SUBJECT	SECTION	ZONE
FWD FUSELAGE NOSE CAP & HATCHES	2.8.1	800

ILLUS REF.	ZONE	DESCRIPTION
	800	**Nose Cap, Hatches and Doors (Major Zone)**
(1)	810	Nose Cap (RCC Fwd of Xo262.5 Canted Frame)
(2)	820	Crew Hatch Xo487 to Xo534, -Yo101
(3)	850	Airlock to PLB Hatch (Located in Xo576 Bulkhead)
(4)	800FAH	Forward Airlock Hatch

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
830/840	2.8.2	PAYLOAD BAY DOORS

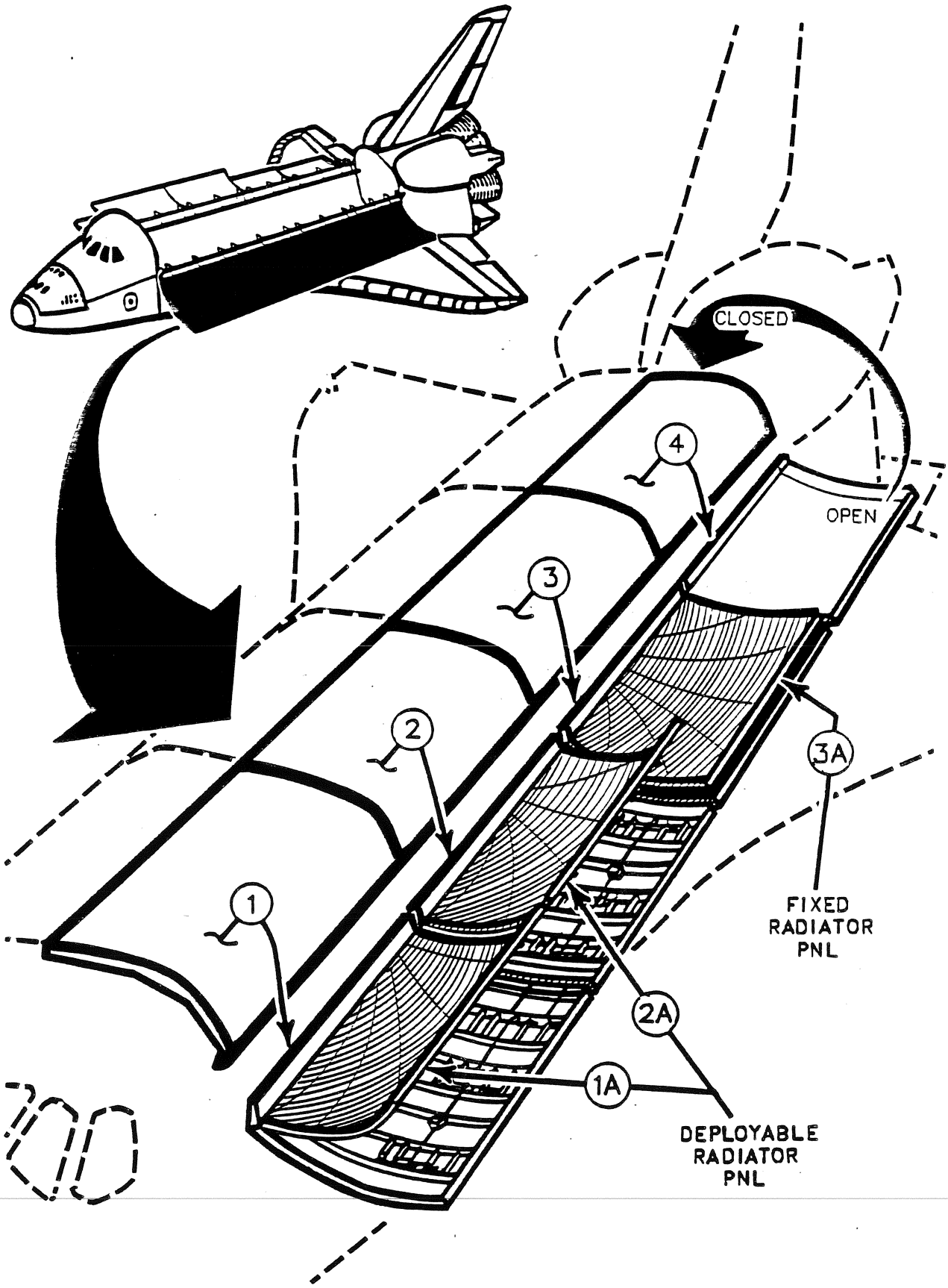




SUBJECT	SECTION	ZONE
PAYLOAD BAY DOORS	2.8.2	830/840

ILLUS REF.	ZONE	DESCRIPTION
(1)	830	Payload Bay Doors - Left (Includes Attached Radiators)
(2)	840	Payload Bay Doors - Right (Includes Attached Radiators)

PAGE 108	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
830	2.8.2.1	LEFT PLBD PANELS

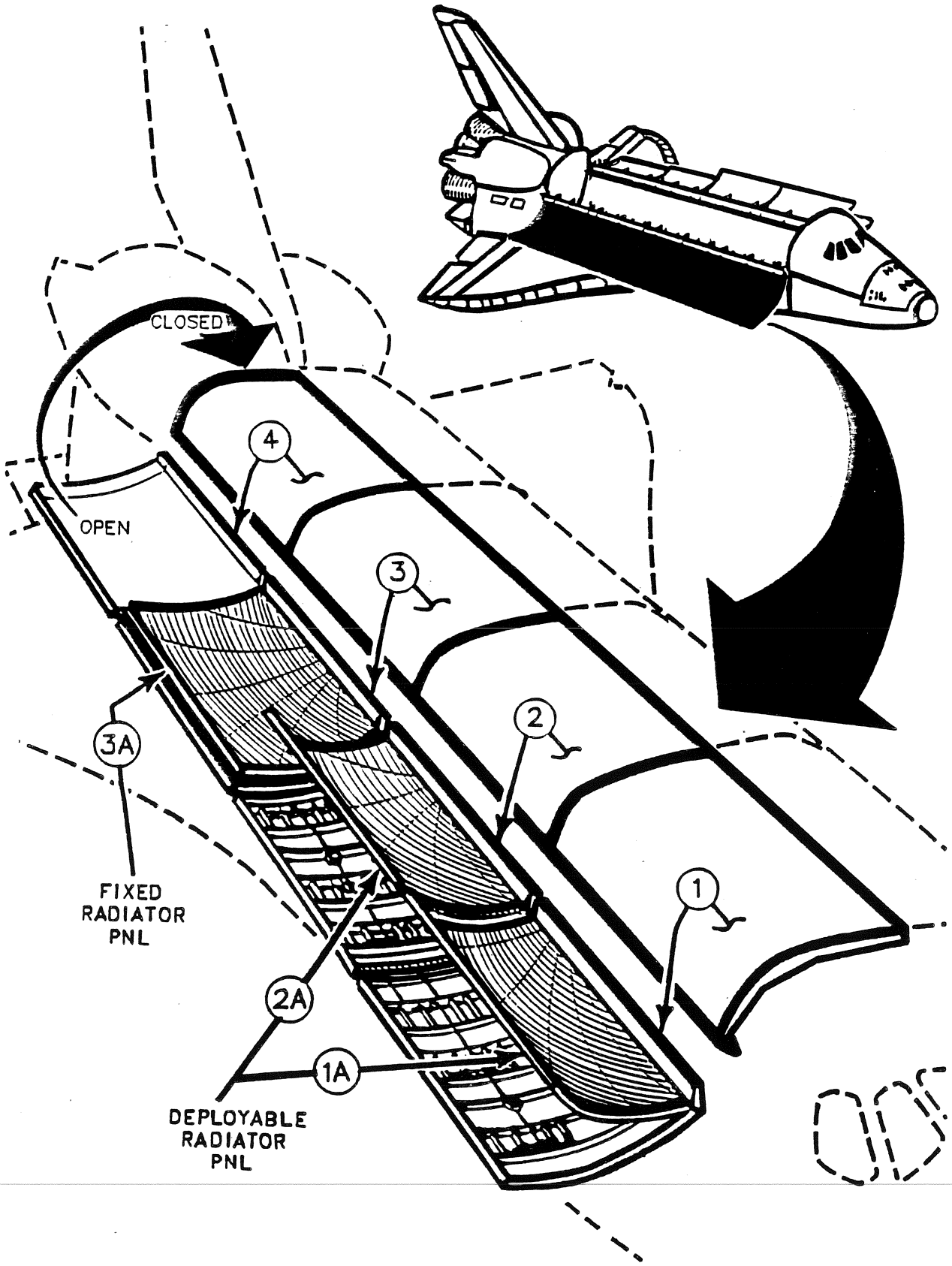


SUBJECT	SECTION	ZONE
LEFT PLBD PANELS	2.8.2.1	830

ILLUS REF.	ZONE	DESCRIPTION
	830	**Payload Bay Door, Left**
(1)	831	PLBD Left - Fwd (Xo574 to Xo758)
(1A)	831LRF	Left Radiator Forward Segment (Deployable)
(2)	832	PLBD Left - Mid Fwd (Xo758 to Xo941)
(2A)	832LRM	Left Radiator Mid Segment (Deployable)
(3)	833	PLBD Left - Mid Aft (Xo941 to Xo1125)
(3A)	833LRA	Left Radiator Aft Segment (Fixed)
(4)	834	PLBD Left - Aft (Xo1125 to Xo1306)

ORBITER ZONE AND ACCESS LOCATOR

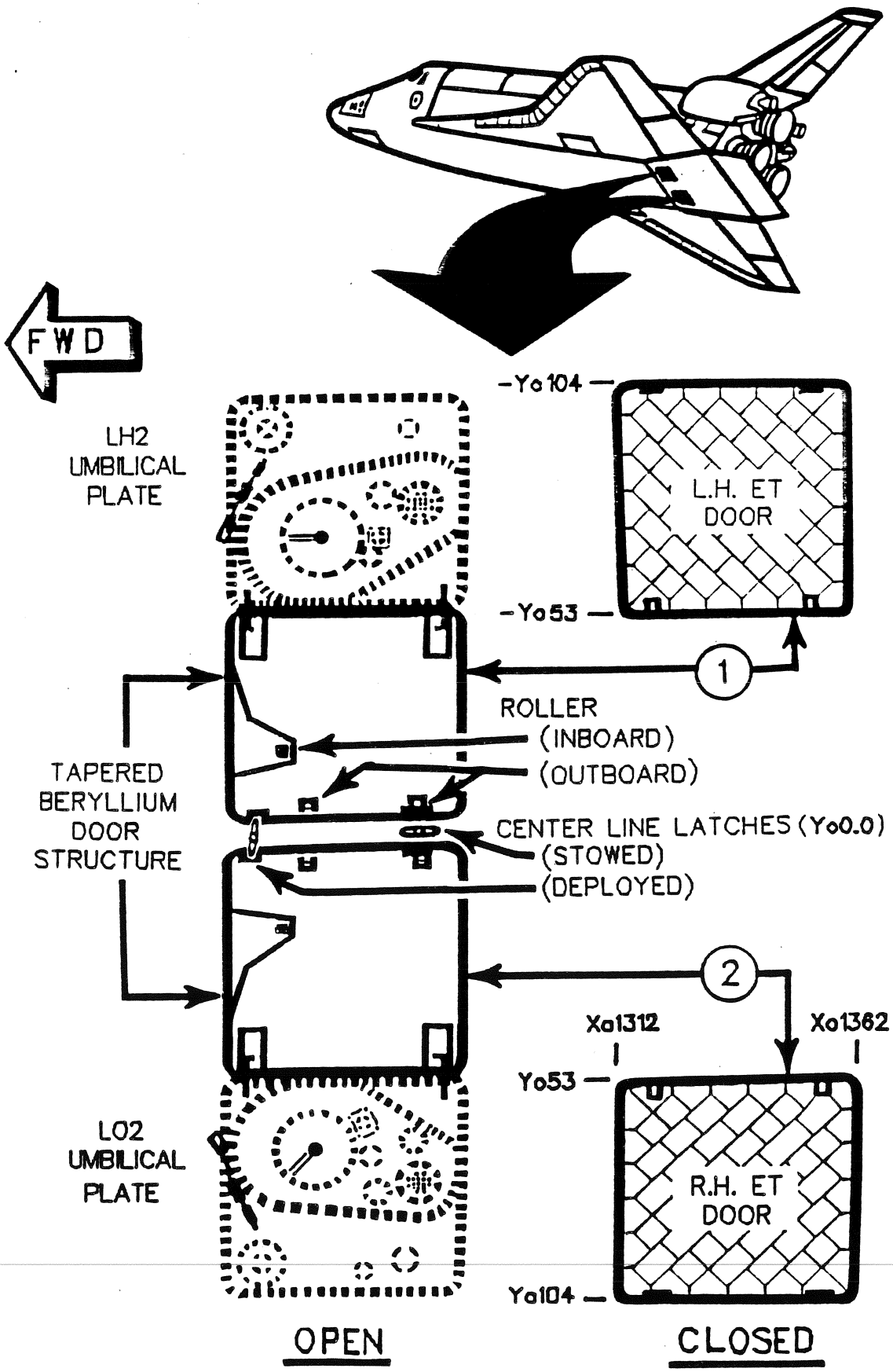
ZONE	SECTION	SUBJECT
840	2.8.2.2	RIGHT PLBD PANELS



SUBJECT	SECTION	ZONE
RIGHT PLBD PANELS	2.8.2.2	840

ILLUS REF.	ZONE	DESCRIPTION
	840	**Payload Bay Door, Right**
(1)	841	PLBD Right - Fwd (Xo574 to xo758)
(1A)	841RRF	Right Radiator Forward Segment (Deployable)
(2)	842	PLBD Right - Mid Fwd (Xo758 to Xo941)
(2A)	842RRM	Right Radiator Mid Segment (Deployable)
(3)	843	PLBD Right - Mid Aft (Xo941 to Xo1125)
(3A)	843RRA	Right Radiator Aft Segment (Fixed)
(4)	844	PLBD Right - Aft (Xo1125 to Xo1306)

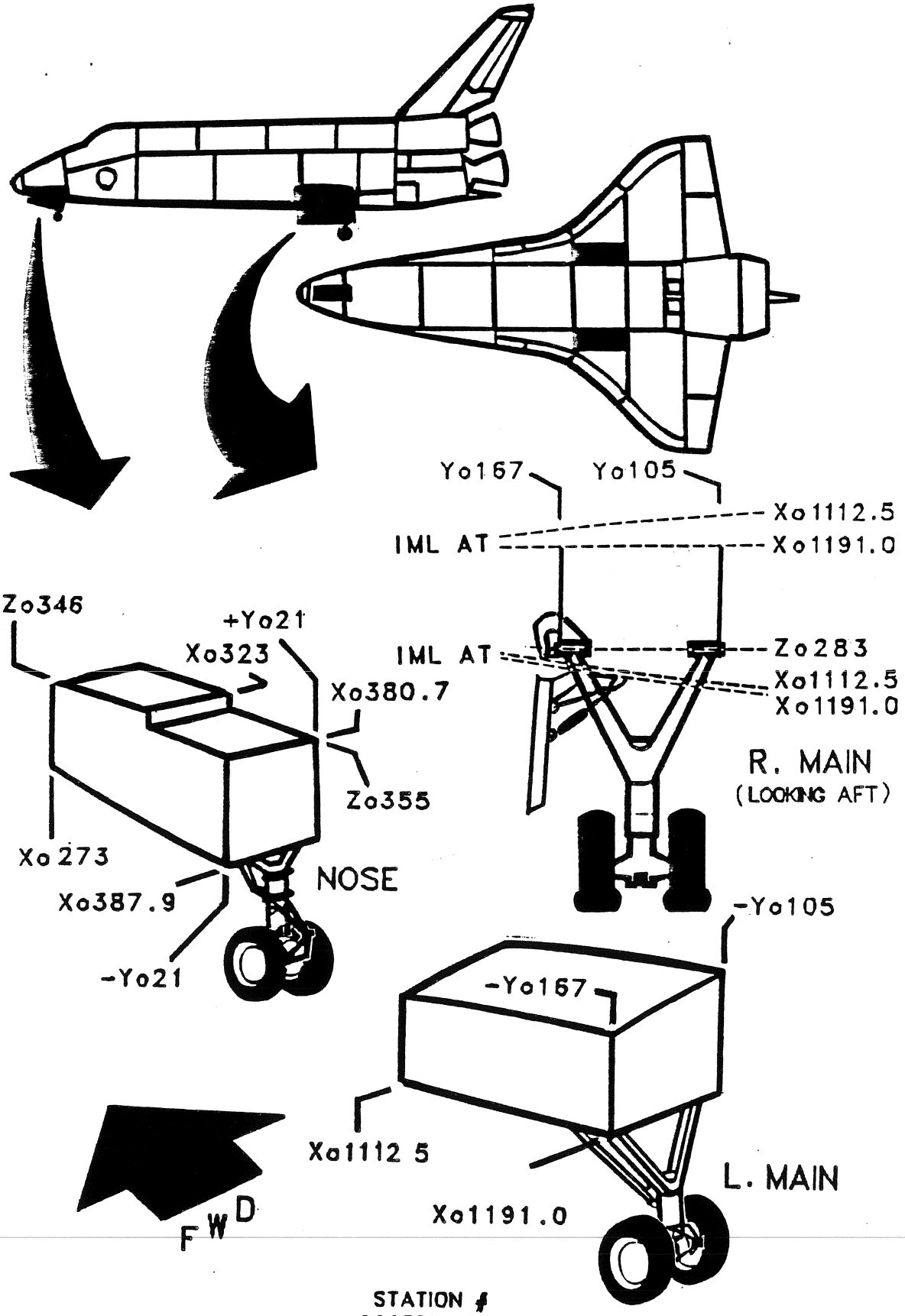
PAGE 112	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 860/890	SECTION 2.8.3	SUBJECT AFT FUSELAGE - ET UMBILICAL DOORS



SUBJECT	SECTION	ZONE
AFT FUSELAGE ET UMBILICAL DOORS	2.8.3	860/870

ILLUS REF.	ZONE	DESCRIPTION
1	870	External Tank Umbilical Door - Left (LH2)
2	860	External Tank Umbilical Door - Right (LO2)
3	330RUC	Right ET Umbilical Cavity (LO2) (Ref. Section 2.3.3)
4	330LUC	Left ET Umbilical Cavity (LH2) (Ref. Section 2.3.3)

PAGE 114	ORBITER ZONE AND ACCESS LOCATOR	
ZONE 900	SECTION 2.9	SUBJECT LANDING GEAR AND LANDING GEAR DOORS



STATION # COORDINATES

The landing gear system on the orbiter is a conventional aircraft tricycle configuration consisting of a nose landing gear and left and right main landing gear. Each landing gear includes a shock strut with two wheel and tire assemblies. Each main landing gear wheel is equipped with a brake assembly and anti-skid protection. An anti-skid system monitors wheel velocity and controls brake torque to prevent wheel lock and tire skidding. The nose landing gear also mounts a hydraulic steering actuator.

The nose landing gear is retracted forward and up into the lower forward fuselage and is enclosed by two doors. The main landing gear also retracts forward and up into the left and right lower wing area, and each is enclosed with a single door. The nose and main landing gear can be retracted only during ground operations. If in-flight hydraulic pressure is not available to release the uplock hook, a pyrotechnic initiator automatically releases the uplock hook on each gear one second after the flight crew has commanded gear down.

Each landing gear shock strut assembly is constructed of high-strength, stress and corrosion-resistant steel alloys, aluminum alloys, stainless steel and aluminum bronze. The shock strut is a pneudraulic shock absorber containing gaseous nitrogen and hydraulic fluid.

Landing gear wheels are made in two halves from forged aluminum and are primed and panted with two coats of urethane paint. The nose landing gear tires are 32 by 8.8 inches and will withstand a burst of pressure of not less than 3.2 times the normal inflation pressure of 300 psi. The inflation agent is gaseous nitrogen. The main landing gear tires are 44.5 by 16 and 21 inches. The normal inflation pressure is 315 psi, and the tires are rated at 225 knots (258 mph).

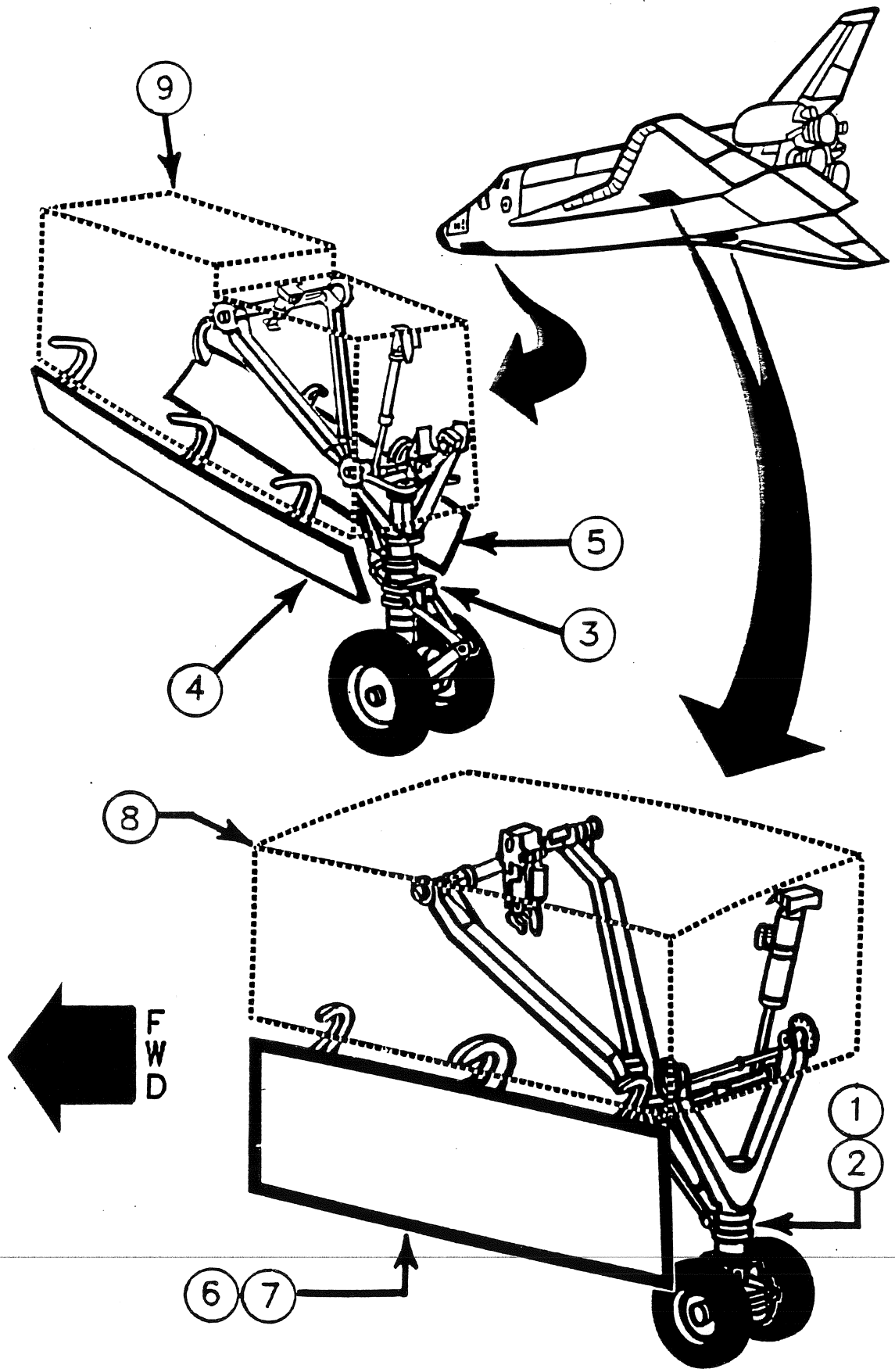
The nose and main landing gear doors are constructed of aluminum alloy honeycomb and are covered on the outside by thermal protective tile.

Manufacturers/Contractors

The contractors for the landing gear are B.F. Goodrich (main and nose landing gear wheel, main landing gear brake assembly and nose/main gear tires); Menasco Manufacturing Co. (main and nose landing gear shock struts and drag brace assembly) and Hydro Aire (main landing gear brake anti-skid system).

ORBITER ZONE AND ACCESS LOCATOR

ZONE	SECTION	SUBJECT
900	2.9.1	MAIN AND NOSE LANDING GEAR AND DOORS



SUBJECT: MAIN AND NOSE LANDING GEAR AND DOORS | SECTION 2.9.1 | ZONE 900

ILLUS REF.	ZONE	DESCRIPTION
	900	**Landing Gear and Landing Gear Doors (Major Zone)**
		Landing Gear
(1)	910	Main Gear - Left
(2)	920	Main Gear - Right
(3)	930	Nose Gear
	940	**Landing Gear Doors**
(4)	941	Nose Gear Door - Left Xo273 to Xo387.9
(5)	942	Nose Gear Door - Right Xo273 to Xo387.9
(6)	943	Main Gear Door - Left xo1040 to Xo1191
(7)	944	Main Gear Door - Right Xo1040 to Xo1191
		Wheel Wells
(8)	630/ 730	Main Gear Wheel Well (Ref. Section 2.6.1 & 2.7.1)
(9)	150	Nose Gear Wheel Well (Ref. Section 2.1.1)

ORBITER
ZONE AND ACCESS
LOCATOR

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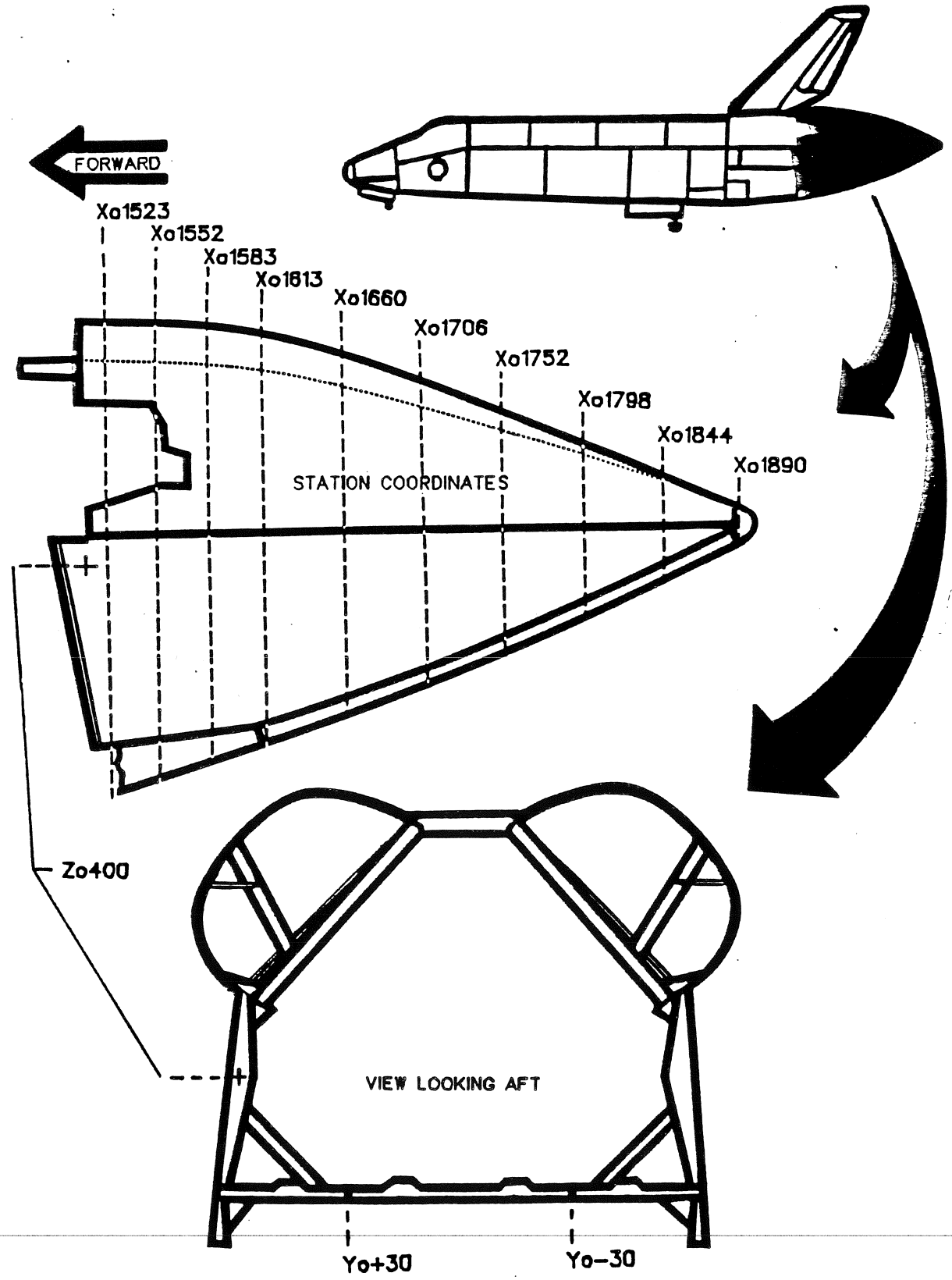
Section 3.0

ORBITER FERRY FLIGHT TAIL CONE

ZONE	SECTION	SUBJECT
Fxxxx	3.1	ORBITER FERRY FLIGHT TAILCONE



ORBITER AFT FAIRING

SUBJECT	SECTION	ZONE
ORBITER FERRY FLIGHT TAILCONE	3.1	Fxxxx

The aft fairing (tail cone) is an aluminum structure used on Orbiter ferry flights to fair the aft end of the vehicle for aerodynamic purposes. It is approximately 33 feet long, 22 feet wide, and 20 feet high. The tail cone assembly breaks down into 6 major and 1 minor component for shipping and storage. The major sections of the tail cone are: left and right side fairings, left and right OMS fairing, top fairing panel, lower fairing panel and aft tail cone fairing.

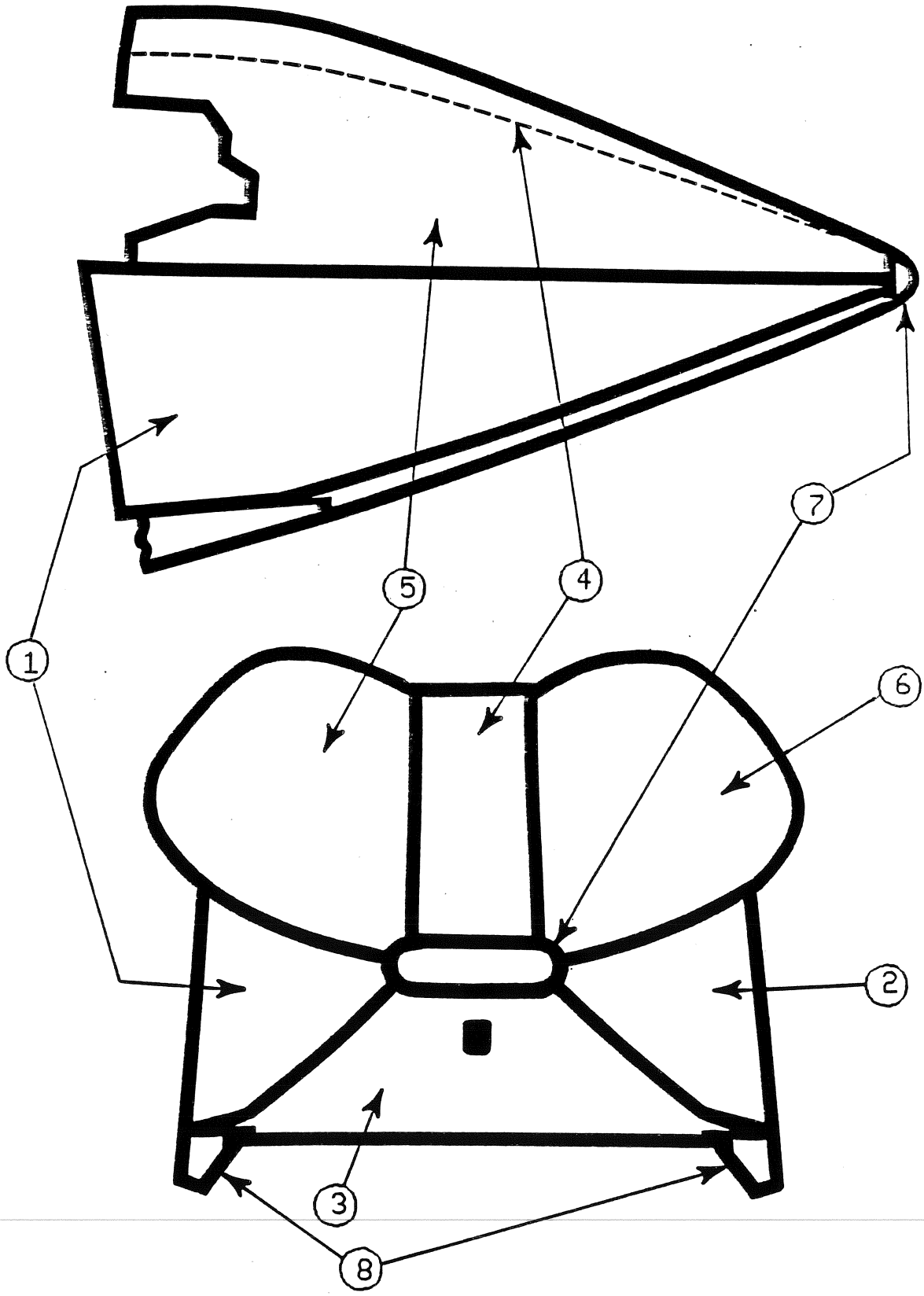
The forward end of the tail cone mates to the aft face of the Orbiter aft fuselage section by fittings bolted to the aft fuselage prior to each use.

The basic structure is of modified monocoque construction with aluminum frames, stringers and skins. Frames are manufactured from 7075 aluminum with skins and stringer of 2024 aluminum.

Manufacturers/Contractors

The tail cone was designed by the Boeing Company, which also manufactured the first tailcone. The second tail cone was built by Aircraft Engineering Co. of Paramount, CA. Rockwell has sustaining engineering responsibility for both tail cones.

ZONE	SECTION	SUBJECT
Fxxxx	3.1.1	ORBITER TAILCONE ZONES



SUBJECT	SECTION	ZONE
ORBITER TAILCONE ZONES	3.1.1	Fxxxx

ILLUS REF.	ZONE	DESCRIPTION
(1)	F100	LH Side Fairing Xo1504 to Xo1890
(2)	F200	RH Side Fairing Xo1504 to Xo1890
(3)	F300	Lower Fairing Xo1523 to Xo1890
(4)	F400	Top Fairing Xo1467 to Xo1890
(5)	F500	LH OMS Fairing Xo1513 to Xo1890
(6)	F600	RH OMS Fairing Xo1513 to Xo1890
(7)	F700	Body Flap Fairing Xo1530 to Xo1613
	F800	Demountable Structural Items Xo1465 to Xo1900
	F900	Demountable Non- Structural Items Xo1465 to Xo1900
(8)	F1000	Aft Tail Cone Fairing Xo1890 to Xo1900

ORBITER
ZONE AND ACCESS
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ORBITER ZONE AND ACCESS LOCATOR

Section 4.0

GLOSSARY OF TERMS AND ACRONYMS

Canted - A large number of orbiter frames and bulkheads are not perpendicular to the orbiter or crew module waterline and therefore their X axis designators have to be chosen from a range of X values along their slope. The value chosen is then followed by the term canted to forewarn the reader.

Major Zone- The highest level of the zone hierarchy. Usually indicated by a three digit number, with the last two being zeros.

Sub Zone - The lowest, most detailed level of the zone hierarchy. Usually a six character designator, the first three being numerical and the remaining characters being alpha or numerical.

Submajor Zone - The second highest level of the zone hierarchy. Usually indicated by a three digit number, with the last digit being a zero.

X_{cm}, Y_{cm}, Z_{cm} - The three axis station numbering system for the crew module assembly.

X_o, Y_o, Z_o - The three axis station numbering system for the overall Space Shuttle orbiter.

X_p, Y_p, Z_p - The three axis station numbering system for the OMS pod assemblies.

X_v, Y_v, Z_v - The three axis station numbering system for the orbiter vertical stabilizer.

X_w, Y_w, Z_w - The three axis station numbering system for the crew module assembly.

Zone - A numerical or alphanumerical designation of a specified volume or surface. A zone normally includes all exterior parts of the airframe and systems as well as all structure, equipment and system installations within the interior of the zone boundaries unless specifically limited by definition.

GLOSSARY OF ACRONYMS

APS	Aft Propulsion System
ASSY	Assembly
ATT	Attach
AV	Avionics
BLKHD	Bulkhead
C/O	Closeout
C/P	Carrier Panel
CM	Crew Module (or C/M)
CTR	Center
DFI	Developmental Flight Instrumentation (Container)
ECLSS	Environmental Control and Life Support System
EDO	Extended Duration Orbiter (Pallet)
ELEC	Electric/Electrical
ET	External Tank
EVA	Extra Vehicular Activity
EXT	External
FLT	Flight
FRCS	Forward Reaction Control System
FTG	Fitting
FUSE	Fuselage (or FUS)
FWD	Forward
GSE	Ground Support Equipment
HYD	Hydraulic
INBRD	Inboard (or INBD)
INSTL	Installation
INSUL	Insulation
INT	Internal
JCWSI	Johnson Controls World Services Inc.
JSC	Johnson Space Center
KSC	Kennedy Space Center
LE	Leading Edge
LH2	Liquid Hydrogen
LH	Left Hand (or L/H)
LO2	Liquid Oxygen
LSO	Lockheed Space Operations (Company)
LWR	Lower
MECH	Mechanical
MFG	Manufacturing
MLG	Main Landing Gear
NSTS	National Space Transportation System

OMRSD	Operations and Maintenance Requirement Specification Document
OMRS	Operations and Maintenance Requirement Specifications
OMS	Orbital Maneuvering System
ORB	Orbiter
OUTBD	Outboard (or OUTBRD)
P/L	Payload
PLBD	Payload Bay Door
PLB	Payload Bay
PNL	Panel
PT	Point
PV & D	Purge Vent and Drain
PWR	Power
RCC	Reinforced Carbon Carbon
RCS	Reaction Control System
REF-DES	Reference Designator
REF	Reference
RH	Right Hand (or R/H)
RI	Rockwell International (Corporation)
RSB	Rudder Speed Brake
SEC	Secondary
SPC	Shuttle Processing Contract
SPEC	Specification
SSME	Space Shuttle Main Engine
SSP	Space Shuttle Program
STA	Station Number
STR	Structure/Structural
SUBS	Subsequent
SUPT	Support
T-O	T (Time) Minus Zero
TCS	Thermal Control System
UPR	Upper
VERT	Vertical
WAD	Work Authorizing Document
WHL	Wheel

ORBITER ZONE AND ACCESS LOCATOR

Section 5.0

REFERENCE APPENDIX

ZONE	SECTION	SUBJECT
	5.1	INDEX

This index cross-references and identifies orbiter zones and access panels. Major zones, submajor zone and zones are listed both numerically by zone number and alphabetically by description. Both these lists indicate the Orbiter Locator section showing the greatest level of detail of each zone listed.

The other supplements in this section give more general engineering drawing information.

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ZONE	DESCRIPTION	SECTION
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100INT	Forward Fuselage Internal (All)	2.1.1
110	Fuselage, Lower Forward	2.1.1
120	Crew Module Interior	2.1.3
121	Crew Module Flight Deck	2.1.3
122	Crew Module Middeck	2.1.3
122WMC	Crew Module Waste Management Compartment	2.1.3
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132	Fuse, LWR FWD/CM I/F (Xo476-Xo536 CANT)	2.1.2
133	Fuse, LWR FWD/CM I/F (Xo536-Xo576 BLKHD)	2.1.2
140	Fuselage, Upper FWD / Crew Mod Interface	2.1.1
141	Fuse, UPR FWD/CM I/F (Xo378-Xo447 CANT)	2.1.2
142	Fuse, UPR FWD/CM I/F (Xo447-Xo536 CANT)	2.1.2
143	Fuse, UPR FWD/CM I/F (Xo536-Xo576 BLKHD)	2.1.2
150	Wheel Well, Nose Landing Gear	2.1.1
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200INT	Mid Fuselage Internal (All)	2.2.2
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211-04	Bay 1 Right Above Wire Tray	2.2.2.1
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211-06	Bay 1 Left Upper Wire Tray	2.2.2.1
211-07	Bay 1 Left Center Wire Tray	2.2.2.1
211-08	Bay 1 Left Lower Wire Tray	2.2.2.1
211-09	Bay 1 Right Lower Wire Tray	2.2.2.1
211-10	Bay 1 Right Center Wire Tray	2.2.2.1

ZONE	DESCRIPTION	SECTION
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211KUB	KU Band Antenna Assembly	2.2.2.1
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212-11	Bay 2 Right Upper Wire Tray	2.2.2.1
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ZONE	DESCRIPTION	SECTION
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214-10	Bay 4 Right Center Wire Tray	2.2.2.1
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221-07	Bay 5 Left Center Wire Tray	2.2.2.2
221-08	Bay 5 Left Lower Wire Tray	2.2.2.2
221-09	Bay 5 Right Lower Wire Tray	2.2.2.2
221-10	Bay 5 Right Center Wire Tray	2.2.2.2
221-11	Bay 5 Right Upper Wire Tray	2.2.2.2
221-12	Bay 5 Right Sill	2.2.2.2
222	Payload Bay #6 (Internal Only)	2.2.2
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222-04	Bay 6 Right Above Wire Tray	2.2.2.2
222-05	Bay 6 Left Sill	2.2.2.2
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222-07	Bay 6 Left Center Wire Tray	2.2.2.2
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223-04	Bay 7 Right Above Wire Tray	2.2.2.2
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223-06	Bay 7 Left Upper Wire Tray	2.2.2.2
223-07	Bay 7 Left Center Wire Tray	2.2.2.2
223-08	Bay 7 Left Lower Wire Tray	2.2.2.2
223-09	Bay 7 Right Lower Wire Tray	2.2.2.2
223-10	Bay 7 Right Center Wire Tray	2.2.2.2

ZONE	DESCRIPTION	SECTION
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231-03	Bay 9 Right Below Wire Tray	2.2.2.3
231-04	Bay 9 Right Above Wire Tray	2.2.2.3
231-05	Bay 9 Left Sill	2.2.2.3
231-06	Bay 9 Left Upper Wire Tray	2.2.2.3
231-07	Bay 9 Left Center Wire Tray	2.2.2.3
231-08	Bay 9 Left Lower Wire Tray	2.2.2.3
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231-11	Bay 9 Right Upper Wire Tray	2.2.2.3
231-12	Bay 9 Right Sill	2.2.2.3
232	Payload Bay #10 (Internal Only)	2.2.2
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232-04	Bay 10 Right Above Wire Tray	2.2.2.3
232-05	Bay 10 Left Sill	2.2.2.3
232-06	Bay 10 Left Upper Wire Tray	2.2.2.3
232-07	Bay 10 Left Center Wire Tray	2.2.2.3
232-08	Bay 10 Left Lower Wire Tray	2.2.2.3
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ZONE	DESCRIPTION	SECTION
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233-08	Bay 11 Left Lower Wire Tray	2.2.2.3
233-09	Bay 11 Right Lower Wire Tray	2.2.2.3
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240	FUSE, MID AFT Xo1191-Xo1307	2.2.1
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ZONE	DESCRIPTION	SECTION
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260	Glove Fairing, Right Mid Fuselage	2.2.1
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300INT	Aft Fuselage Internal (All)	2.3.1
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322	Avionics Bay #5, Aft Fuselage Mid Deck	2.3.1
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430	Trailing Edge, Vertical Stabilizer	2.4.1
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450	Rudder/Speedbrake, Left	2.4.1
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711-01	Left Wing Leading Edge RCC Panel #1	2.7.1.1
711-02	Left Wing Leading Edge RCC Panel #2	2.7.1.1
711-03	Left Wing Leading Edge RCC Panel #3	2.7.1.1
711-04	Left Wing Leading Edge RCC Panel #4	2.7.1.1
711-05	Left Wing Leading Edge RCC Panel #5	2.7.1.1
711-06	Left Wing Leading Edge RCC Panel #6	2.7.1.1
712	Wing Glove, LH	2.7.1.1
720	Wing Intermediate Section, Left	2.7.1
721	RCC Panels #7-14, LH Wing Leading Edge	2.7.1.2
721-07	Left Wing Leading Edge RCC Panel #7	2.7.1.2

ZONE	DESCRIPTION	SECTION
721-08	Left Wing Leading Edge RCC Panel #8	2.7.1.2
721-09	Left Wing Leading Edge RCC Panel #9	2.7.1.2
721-10	Left Wing Leading Edge RCC Panel #10	2.7.1.2
721-11	Left Wing Leading Edge RCC Panel #11	2.7.1.2
721-12	Left Wing Leading Edge RCC Panel #12	2.7.1.2
721-13	Left Wing Leading Edge RCC Panel #13	2.7.1.2
721-14	Left Wing Leading Edge RCC Panel #14	2.7.1.2
730	Wheel Well, Left Main Landing Gear	2.7.1
740	Wing Torque Box, LH	2.7.1
741	RCC Panels #15-22, LH wing Leading Edge	2.7.1.4
741-15	Left Wing Leading Edge RCC Panel #15	2.7.1.4
741-16	Left Wing Leading Edge RCC Panel #16	2.7.1.4
741-17	Left Wing Leading Edge RCC Panel #17	2.7.1.4
741-18	Left Wing Leading Edge RCC Panel #18	2.7.1.4
741-19	Left Wing Leading Edge RCC Panel #19	2.7.1.4
741-20	Left Wing Leading Edge RCC Panel #20	2.7.1.4
741-21	Left Wing Leading Edge RCC Panel #21	2.7.1.4
741-22	Left Wing Leading Edge RCC Panel #22	2.7.1.4
750	Elevons and Wing / Elevon I/F, LH Wing	2.7.1.5
751	Elevon LH Wing, Inboard	2.7.1.5
751LIL	Left Inboard Elevon Leading Edge	2.7.1.5
751LIT	Left Inboard Elevon Trailing Edge	2.7.1.5
752	Elevon, LH Wing, Outboard	2.7.1
752LOL	Left Outboard Elevon Leading Edge	2.7.1.5
752LOT	Left Outboard Elevon Trailing Edge	2.7.1.5
753	Wing Extension Box, LH Wing	2.7.1.5
753-01	Left Wing/Elevon Flipper Door #1	2.7.1.5
753-02	Left Wing/Elevon Flipper Door #2	2.7.1.5
753-03	Left Wing/Elevon Flipper Door #3	2.7.1.5
753-04	Left Wing/Elevon Flipper Door #4	2.7.1.5
753-05	Left Wing/Elevon Flipper Door #5	2.7.1.5
753-06	Left Wing/Elevon Flipper Door #6	2.7.1.5
753-07	Left Wing/Elevon Flipper Door #7	2.7.1.5
753-08	Left Wing/Elevon Flipper Door #8	2.7.1.5
753-09	Left Wing/Elevon Flipper Door #9	2.7.1.5
753-10	Left Wing/Elevon Flipper Door #10	2.7.1.5
753-11	Left Wing/Elevon Flipper Door #11	2.7.1.5
753-12	Left Wing/Elevon Flipper Door #12	2.7.1.5
753-13	Left Wing/Elevon Flipper Door #13	2.7.1.5
753-14	Left Wing/Elevon Flipper Door #14	2.7.1.5
753-15	Left Wing/Elevon Flipper Door #15	2.7.1.5

ZONE	DESCRIPTION	SECTION
800	**Nose Cap, Hatches, and Doors**	**2.8**
800FAH	Airlock Hatch Forward	2.8.1
810	Nose Cap (RCC FWD of Xo262.5)	2.8.1
820	Crew Hatch	2.8.1
830	PLB Doors (Incl. Radiator Panels), LH	2.8.2
831LRF	Left Radiator Forward Segment (Deployable)	2.8.2.1
831PLB	Door Panel #1, LH FWD Section	2.8.2.1
832	PLB Door Panel #2, LH MID FWD Section	2.8.2.1
832LRM	Left Radiator Mid Segment (Deployable)	2.8.2.1
833	PLB Door Panel #3, LH MID AFT Section	2.8.2.1
833LRA	Left Radiator Aft Segment (Fixed)	2.8.2.1
834	PLB Door Panel #4, LH AFT Section	2.8.2.1
840	PLB Doors (Incl. Radiator Panels), RH	2.8.2
841	PLB Door Panel #1, RH Forward Section	2.8.2.2
841RRF	Right Radiator Forward Segment (Deployable)	2.8.2.2
842	PLB Door Panel #2, RH MID FWD Section	2.8.2.2
842RRM	Right Radiator Mid Segment (Deployable)	2.8.2.2
843	PLB Door Panel #3, RH MID AFT Section	2.8.2.2
843RRA	Right Radiator Aft Segment (Fixed)	2.8.2.2
844	PLB Door Panel #4, RH AFT Section	2.8.2.2
850	Airlock to PLB Hatch	2.8.1
860	ET Umbilical Door, RH (LO2)	2.8.3
870	ET Umbilical Door, LH (LH2)	2.8.3
900	**Landing Gear and Landing Gear** Doors	**2.9**
910	Landing Gear, Left Main	2.9.1
920	Landing Gear, Right Main	2.9.1
930	Landing Gear, Nose	2.9.1
940	Landing Gear Doors, Main and Nose	2.9.1
941	Door, Nose Landing Gear, LH	2.9.1
942	Door, Nose Landing Gear, RH	2.9.1
943	Door, Main Landing Gear, LH	2.9.1
944	Door, Main Landing Gear, RH	2.9.1
F100	Tail Cone, LH Side Fairing	3.1.1
F200	Tail Cone, RH Side Fairing	3.1.1
F300	Tail Cone, Lower Fairing	3.1.1
F400	Tail Cone, Top Fairing	3.1.1
F500	Tail Cone, LH OMS Fairing	3.1.1
F600	Tail Cone, RH OMS Fairing	3.1.1

F700	Tail Cone, Body Flap Fairing	3.1.1
F800	Tail Cone, Demountable Struct Items	3.1.1
F900	Tail Cone, Demountable Non-structural Items	3.1.1
F1000	Tail Cone, Aft Fairing	3.1.1

DESCRIPTION	ZONE	SECTION
Aft Fuselage External (All)	300EXT	2.3.1
Aft Fuselage Internal (All)	300INT	2.3.1
Airlock, Crew Module	123	2.1.3
Airlock Hatch, Forward	800FAH	2.8.1
Airlock to PLB Hatch	850	2.8.1
Avionics Bay #1, Crew Module Middeck	125	2.1.3
Avionics Bay #2, Crew Module Middeck	126	2.1.3
Avionics Bay #3A, Crew Module Middeck	128	2.1.3
Avionics Bay #3B, Crew Module Middeck	127	2.1.3
Avionics Bay #5, Aft Fuselage Mid Deck	321	2.3.1
Avionics Bay #5, Aft Fuselage Mid Deck	322	2.3.1
Avionics Bay #6, Aft Fuselage Lwr Deck	331	2.3.1
Base Heat Shield (Aft Face Xo1496 Bulkhead)	350	2.3.1.1
Bay 1 Left Above Wire Tray	211-01	2.2.2.1
Bay 1 Left Below Wire Tray	211-02	2.2.2.1
Bay 1 Left Center Wire Tray	211-07	2.2.2.1
Bay 1 Left Lower Wire Tray	211-08	2.2.2.1
Bay 1 Left Sill	211-05	2.2.2.1
Bay 1 Left Upper Wire Tray	211-06	2.2.2.1
Bay 1 Right Above Wire Tray	211-04	2.2.2.1
Bay 1 Right Below Wire Tray	211-03	2.2.2.1
Bay 1 Right Center Wire Tray	211-10	2.2.2.1
Bay 1 Right Lower Wire Tray	211-09	2.2.2.1
Bay 1 Right Sill	211-12	2.2.2.1
Bay 1 Right Upper Wire Tray	211-11	2.2.2.1
Bay 2 Left Above Wire Tray	212-01	2.2.2.1
Bay 2 Left Below Wire Tray	212-02	2.2.2.1
Bay 2 Left Center Wire Tray	212-07	2.2.2.1
Bay 2 Left Lower Wire Tray	212-08	2.2.2.1
Bay 2 Left Sill	212-05	2.2.2.1
Bay 2 Left Upper Wire Tray	212-06	2.2.2.1
Bay 2 Right Above Wire Tray	212-04	2.2.2.1
Bay 2 Right Below Wire Tray	212-03	2.2.2.1
Bay 2 Right Center Wire Tray	212-10	2.2.2.1
Bay 2 Right Lower Wire Tray	212-09	2.2.2.1
Bay 2 Right Sill	212-12	2.2.2.1
Bay 2 Right Upper Wire Tray	212-11	2.2.2.1
Bay 3 Left Above Wire Tray	213-01	2.2.2.1
Bay 3 Left Below Wire Tray	213-02	2.2.2.1
Bay 3 Left Center Wire Tray	213-07	2.2.2.1
Bay 3 Left Lower Wire Tray	213-08	2.2.2.1

DESCRIPTION	ZONE	SECTION
Bay 3 Left Sill	213-05	2.2.2.1
Bay 3 Left Upper Wire Tray	213-06	2.2.2.1
Bay 3 Right Above Wire Tray	213-04	2.2.2.1
Bay 3 Right Below Wire Tray	213-03	2.2.2.1
Bay 3 Right Center Wire Tray	213-10	2.2.2.1
Bay 3 Right Lower Wire Tray	213-09	2.2.2.1
Bay 3 Right Sill	213-12	2.2.2.1
Bay 3 Right Upper Wire Tray	213-11	2.2.2.1
Bay 4 Left Above Wire Tray	214-01	2.2.2.1
Bay 4 Left Below Wire Tray	214-02	2.2.2.1
Bay 4 Left Center Wire Tray	214-07	2.2.2.1
Bay 4 Left Lower Wire Tray	214-08	2.2.2.1
Bay 4 Left Sill	214-05	2.2.2.1
Bay 4 Left Upper Wire Tray	214-06	2.2.2.1
Bay 4 Right Above Wire Tray	214-04	2.2.2.1
Bay 4 Right Below Wire Tray	214-03	2.2.2.1
Bay 4 Right Center Wire Tray	214-10	2.2.2.1
Bay 4 Right Lower Wire Tray	214-09	2.2.2.1
Bay 4 Right Sill	214-12	2.2.2.1
Bay 4 Right Upper Wire Tray	214-11	2.2.2.1
Bay 5 Left Above Wire Tray	221-01	2.2.2.2
Bay 5 Left Below Wire Tray	221-02	2.2.2.2
Bay 5 Left Center Wire Tray	221-07	2.2.2.2
Bay 5 Left Lower Wire Tray	221-08	2.2.2.2
Bay 5 Left Sill	221-05	2.2.2.2
Bay 5 Left Upper Wire Tray	221-06	2.2.2.2
Bay 5 Right Above Wire Tray	221-04	2.2.2.2
Bay 5 Right Below Wire Tray	221-03	2.2.2.2
Bay 5 Right Center Wire Tray	221-10	2.2.2.2
Bay 5 Right Lower Wire Tray	221-09	2.2.2.2
Bay 5 Right Sill	221-12	2.2.2.2
Bay 5 Right Upper Wire Tray	221-11	2.2.2.2
Bay 6 Left Above Wire Tray	222-01	2.2.2.2
Bay 6 Left Below Wire Tray	222-02	2.2.2.2
Bay 6 Left Center Wire Tray	222-07	2.2.2.2
Bay 6 Left Lower Wire Tray	222-08	2.2.2.2
Bay 6 Left Sill	222-05	2.2.2.2
Bay 6 Left Upper Wire Tray	222-06	2.2.2.2
Bay 6 Right Above Wire Tray	222-04	2.2.2.2
Bay 6 Right Below Wire Tray	222-03	2.2.2.2
Bay 6 Right Center Wire Tray	222-10	2.2.2.2

DESCRIPTION	ZONE	SECTION
Bay 6 Right Lower Wire Tray	222-09	2.2.2.2
Bay 6 Right Sill	222-12	2.2.2.2
Bay 6 Right Upper Wire Tray	222-11	2.2.2.2
Bay 7 Left Above Wire Tray	223-01	2.2.2.2
Bay 7 Left Below Wire Tray	223-02	2.2.2.2
Bay 7 Left Center Wire Tray	223-07	2.2.2.2
Bay 7 Left Lower Wire Tray	223-08	2.2.2.2
Bay 7 Left Sill	223-05	2.2.2.2
Bay 7 Left Upper Wire Tray	223-06	2.2.2.2
Bay 7 Right Above Wire Tray	223-04	2.2.2.2
Bay 7 Right Below Wire Tray	223-03	2.2.2.2
Bay 7 Right Center Wire Tray	223-10	2.2.2.2
Bay 7 Right Lower Wire Tray	223-09	2.2.2.2
Bay 7 Right Sill	223-12	2.2.2.2
Bay 7 Right Upper Wire Tray	223-11	2.2.2.2
Bay 8 Left Above Wire Tray	224-01	2.2.2.2
Bay 8 Left Below Wire Tray	224-02	2.2.2.2
Bay 8 Left Center Wire Tray	224-07	2.2.2.2
Bay 8 Left Lower Wire Tray	224-08	2.2.2.2
Bay 8 Left Sill	224-05	2.2.2.2
Bay 8 Left Upper Wire Tray	224	2.2.2.2
Bay 8 Right Above Wire Tray	224-04	2.2.2.2
Bay 8 Right Below Wire Tray	224-03	2.2.2.2
Bay 8 Right Center Wire Tray	224-10	2.2.2.2
Bay 8 Right Lower Wire Tray	224-09	2.2.2.2
Bay 8 Right Sill	224-12	2.2.2.2
Bay 8 Right Upper Wire Tray	224-11	2.2.2.2
Bay 9 Left Above Wire Tray	231-01	2.2.2.3
Bay 9 Left Below Wire Tray	231-02	2.2.2.3
Bay 9 Left Center Wire Tray	231-07	2.2.2.3
Bay 9 Left Lower Wire Tray	231-08	2.2.2.3
Bay 9 Left Sill	231-05	2.2.2.3
Bay 9 Left Upper Wire Tray	231-06	2.2.2.3
Bay 9 Right Above Wire Tray	231-04	2.2.2.3
Bay 9 Right Below Wire Tray	231-03	2.2.2.3
Bay 9 Right Center Wire Tray	231-10	2.2.2.3
Bay 9 Right Lower Wire Tray	231-09	2.2.2.3
Bay 9 Right Sill	231-12	2.2.2.3
Bay 9 Right Upper Wire Tray	231-11	2.2.2.3
Bay 10 Left Above Wire Tray	232-01	2.2.2.3
Bay 10 Left Below Wire Tray	232-02	2.2.2.3

DESCRIPTION	ZONE	SECTION
Bay 10 Left Center Wire Tray	232-07	2.2.2.3
Bay 10 Left Lower Wire Tray	232-08	2.2.2.3
Bay 10 Left Sill	232-05	2.2.2.3
Bay 10 Left Upper Wire Tray	232-06	2.2.2.3
Bay 10 Right Above Wire Tray	232-04	2.2.2.3
Bay 10 Right Below Wire Tray	232-03	2.2.2.3
Bay 10 Right Center Wire Tray	232-10	2.2.2.3
Bay 10 Right Lower Wire Tray	232-09	2.2.2.3
Bay 10 Right Sill	232-12	2.2.2.3
Bay 10 Right Upper Wire Tray	232-11	2.2.2.3
Bay 11 Left Above Wire Tray	233-01	2.2.2.3
Bay 11 Left Below Wire Tray	233-02	2.2.2.3
Bay 11 Left Center Wire Tray	233-07	2.2.2.3
Bay 11 Left Lower Wire Tray	233-08	2.2.2.3
Bay 11 Left Sill	233-05	2.2.2.3
Bay 11 Left Upper Wire Tray	233-06	2.2.2.3
Bay 11 Right Above Wire Tray	233-04	2.2.2.3
Bay 11 Right Below Wire Tray	233-03	2.2.2.3
Bay 11 Right Center Wire Tray	233-10	2.2.2.3
Bay 11 Right Lower Wire Tray	233-09	2.2.2.3
Bay 11 Right Sill	233-12	2.2.2.3
Bay 11 Right Upper Wire Tray	233-11	2.2.2.3
Bay 12 Left Above Wire Tray	241-01	2.2.2.4
Bay 12 Left Below Wire Tray	241-02	2.2.2.4
Bay 12 Left Center Wire Tray	241-07	2.2.2.4
Bay 12 Left Lower Wire Tray	241-08	2.2.2.4
Bay 12 Left Sill	241-05	2.2.2.4
Bay 12 Left Upper Wire Tray	241-06	2.2.2.4
Bay 12 Right Above Wire Tray	241-04	2.2.2.4
Bay 12 Right Below Wire Tray	241-03	2.2.2.4
Bay 12 Right Center Wire Tray	241-10	2.2.2.4
Bay 12 Right Lower Wire Tray	241-09	2.2.2.4
Bay 12 Right Sill	241-12	2.2.2.4
Bay 12 Right Upper Wire Tray	241-11	2.2.2.4
Bay 13 Left Above Wire Tray	242-01	2.2.2.4
Bay 13 Left Below Wire Tray	242-02	2.2.2.4
Bay 13 Left Center Wire Tray	242-07	2.2.2.4
Bay 13 Left Lower Wire Tray	242-08	2.2.2.4
Bay 13 Left Sill	242-05	2.2.2.4
Bay 13 Left Upper Wire Tray	242-06	2.2.2.4
Bay 13 Right Above Wire Tray	242-04	2.2.2.4

DESCRIPTION	ZONE	SECTION
Bay 13 Right Below Wire Tray	242-03	2.2.2.4
Bay 13 Right Center Wire Tray	242-10	2.2.2.4
Bay 13 Right Lower Wire Tray	242-09	2.2.2.4
Bay 13 Right Sill	242-12	2.2.2.4
Bay 13 Right Upper Wire Tray	242-11	2.2.2.4
Body Flap	340	2.3.2
Blkhead Fwd Face Xo1307, Above Shelf	242BLK	2.2.2.4
Bulkhead Fwd Face Xo1307, Below Shelf	243BLK	2.2.2.4
Bulkhead, Aft Face Xo576	211BLK	2.2.2.1
Conical Seal, Vertical Stabilizer	460	2.4.1
Crew Hatch	820	2.8.1
Crew Module ECLSS Bay	124	2.1.3
Crew Module Flight Deck	121	2.1.3
Crew Module Interior	120	2.1.3
Crew Module Middeck	122	2.1.3
Crew Module Waste Management Compartment	122WMC	2.1.3
Door Panel #1, LH FWD Section	831PLB	2.8.2.1
Door, Main Landing Gear, LH	943	2.9.1
Door, Main Landing Gear, RH	944	2.9.1
Door, Nose Landing Gear, LH	941	2.9.1
Door, Nose Landing Gear, RH	942	2.9.1
Drag Chute Compartment, Vertical Stabilizer	430DCC	2.4.1
Elevon Inboard, RH Wing	651	2.6.1.5
Elevon Leading Edge, Left Inboard	751LIL	2.7.1.5
Elevon Leading Edge, Left Outboard	752LOL	2.7.1.5
Elevon Leading Edge, Right Inboard	651RIL	2.6.1.5
Elevon Leading Edge, Right Outboard	652ROL	2.6.1.5
Elevon LH Wing, Inboard	751	2.7.1.5
Elevon Outboard, LH Wing	752	2.7.1.5
Elevon Outboard, RH Wing	652	2.6.1.5
Elevon Trailing Edge, Left Inboard	751LIT	2.7.1.5
Elevon Trailing Edge, Left Outboard	752LOT	2.7.1.5
Elevon Trailing Edge, Right Inboard	651RIT	2.6.1.5
Elevon Trailing Edge, Right Outboard	652ROT	2.6.1.5
Elevons and Wing / Elevon I/F, LH Wing	750	2.7.1.5
Elevons and Wing / Elevon I/F, RH Wing	650	2.6.1
ET Umbilical Cavity, Left (LH2)	330LUC	2.3.1.2
ET Umbilical Cavity, Right (LO2)	330RUC	2.3.1.2
ET Umbilical Door, LH (LH2)	870	2.8.3
ET Umbilical Door, RH (LO2)	860	2.8.3
Extended Duration Pallet	244	2.2.2

DESCRIPTION	ZONE	SECTION
Forward Fuselage External (All)	100EXT	2.1.1
Forward Fuselage Internal (All)	100INT	2.1.1
Forward Reaction Control Module (FRCS)	560	2.5.3
Fuse, LWR FWD/CM I/F (Xo378-Xo476 CANT)	131	2.1.2
Fuse, LWR FWD/CM I/F (Xo476-Xo536 CANT)	132	2.1.2
Fuse, LWR FWD/CM I/F (Xo536-Xo576 BLKHD)	133	2.1.2
Fuse, MID AFT CTR Xo1040-Xo1191	230	2.2.1
Fuse, MID AFT Xo1191-Xo1307	240	2.2.1
Fuse, MID FWD CTR Xo807-Xo1040	220	2.2.1
Fuse, MID FWD Xo576 to Xo807	210	2.2.1
Fuse, UPR FWD/CM I/F (Xo378-Xo447 CANT)	141	2.1.2
Fuse, UPR FWD/CM I/F (Xo447-Xo536 CANT)	142	2.1.2
Fuse, UPR FWD/CM I/F (Xo536-Xo576 BLKHD)	143	2.1.2
Fuselage, Lower Forward	110	2.1.1
Fuselage, Lower Fwd / Crew Mod Interface	130	2.1.1
Fuselage, Orbiter Aft	300	2.3
Fuselage, Orbiter Forward	100	2.1
Fuselage, Orbiter Midbody	200	2.2
Fuselage, Upper FWD / Crew Mod Interface	140	2.1.1
Fwd Wing Box, Left	710	2.7.1
Fwd Wing Box, Right	610	2.6.1
Glove Fairing, Left Mid Fuselage	250	2.2.1
Glove Fairing, Right Mid Fuselage	260	2.2.1
KU Band Antenna Assembly	211KUB	2.2.2.1
Landing Gear and Landing Gear Doors	900	2.9
Landing Gear Doors, Main and Nose	940	2.9.1
Landing Gear, Left Main	910	2.9.1
Landing Gear, Nose	930	2.9.1
Landing Gear, Right Main	920	2.9.1
Left Radiator Aft Segment (Fixed)	833LRA	2.8.2.1
Left Radiator Forward Segment (Deployable)	831LRF	2.8.2.1
Left Radiator Mid Segment (Deployable)	832LRM	2.8.2.1
Left Wing Bottom External Surface	700BES	2.7.1
Left Wing Leading Edge RCC Panel #1	711-01	2.7.1.1
Left Wing Leading Edge RCC Panel #2	711-02	2.7.1.1
Left Wing Leading Edge RCC Panel #3	711-03	2.7.1.1
Left Wing Leading Edge RCC Panel #4	711-04	2.7.1.1
Left Wing Leading Edge RCC Panel #5	711-05	2.7.1.1
Left Wing Leading Edge RCC Panel #6	711-06	2.7.1.1
Left Wing Leading Edge RCC Panel #7	721-07	2.7.1.2
Left Wing Leading Edge RCC Panel #8	721-08	2.7.1.2

DESCRIPTION	ZONE	SECTION
Left Wing Leading Edge RCC Panel #9	721-09	2.7.1.2
Left Wing Leading Edge RCC Panel #10	721-10	2.7.1.2
Left Wing Leading Edge RCC Panel #11	721-11	2.7.1.2
Left Wing Leading Edge RCC Panel #12	721-12	2.7.1.2
Left Wing Leading Edge RCC Panel #13	721-13	2.7.1.2
Left Wing Leading Edge RCC Panel #14	721-14	2.7.1.2
Left Wing Leading Edge RCC Panel #15	741-15	2.7.1.4
Left Wing Leading Edge RCC Panel #16	741-16	2.7.1.4
Left Wing Leading Edge RCC Panel #17	741-17	2.7.1.4
Left Wing Leading Edge RCC Panel #18	741-18	2.7.1.4
Left Wing Leading Edge RCC Panel #19	741-19	2.7.1.4
Left Wing Leading Edge RCC Panel #20	741-20	2.7.1.4
Left Wing Leading Edge RCC Panel #21	741-21	2.7.1.4
Left Wing Leading Edge RCC Panel #22	741-22	2.7.1.4
Left Wing Top External Surface	700TES	2.7.1
Left Wing/Elevon Flipper Door #1	753-01	2.7.1.5
Left Wing/Elevon Flipper Door #2	753-02	2.7.1.5
Left Wing/Elevon Flipper Door #3	753-03	2.7.1.5
Leading Edge/Fin Box, Vertical Stabilizer	410	2.4.1
Left Wing/Elevon Flipper Door #4	753-04	2.7.1.5
Left Wing/Elevon Flipper Door #5	753-05	2.7.1.5
Left Wing/Elevon Flipper Door #6	753-06	2.7.1.5
Left Wing/Elevon Flipper Door #7	753-07	2.7.1.5
Left Wing/Elevon Flipper Door #8	753-08	2.7.1.5
Left Wing/Elevon Flipper Door #9	753-09	2.7.1.5
Left Wing/Elevon Flipper Door #10	753-10	2.7.1.5
Left Wing/Elevon Flipper Door #11	753-11	2.7.1.5
Left Wing/Elevon Flipper Door #12	753-12	2.7.1.5
Left Wing/Elevon Flipper Door #13	753-13	2.7.1.5
Left Wing/Elevon Flipper Door #14	753-14	2.7.1.5
Left Wing/Elevon Flipper Door #15	753-15	2.7.1.5
Lower Deck, Aft Fuselage	330	2.3.1
Manipulator Arm, Left	212LMA	2.2.2.1
Manipulator Arm , Right (when installed)	212RMA	2.2.2.1
Mid Deck, Aft Fuselage	320	2.3.1
Mid Fuselage External (All)	200EXT	2.2.1
Mid Fuselage Internal (All)	200INT	2.2.2
Mid Fuselage Maintenance Access Door	210-44	2.2.1
Nose Cap (RCC FWD of Xo262.5)	810	2.8.1
Nose Cap, Hatches, and Doors - Orbiter	800	2.8
OMS Engine, Left	550LOE	2.5.2.2

DESCRIPTION	ZONE	SECTION
OMS Engine, Right	540ROE	2.5.2.1
OMS Pod AFT Section, Left	553	2.5.2.2
OMS Pod AFT Section, Right	543	2.5.2.1
OMS Pod FWD Section, Left	551	2.5.2.2
OMS Pod FWD Section, Right	541	2.5.2.1
OMS Pod MID Section, Left	552	2.5.2.2
OMS Pod MID Section, Right	542	2.5.2.1
OMS Pod RCS Section (Stinger), Right	544	2.5.2.1
OMS Pod RCS Section (Stinger), Left	554	2.5.2.2
OMS Pod, Left	550	2.5.2
OMS Pod, Right	540	2.5.2
Payload Bay #1 (Internal Only)	211	2.2.2
Payload Bay #2	212	2.2.2
Payload Bay #3 (Internal Only)	213	2.2.2
Payload Bay #4 (Internal Only)	214	2.2.2
Payload Bay #5 (Internal Only)	221	2.2.2
Payload Bay #6 (Internal Only)	222	2.2.2
Payload Bay #7 (Internal Only)	223	2.2.2
Payload Bay #8 (Internal Only)	224	2.2.2
Payload Bay #9 (Internal Only)	231	2.2.2
Payload Bay #10 (Internal Only)	232	2.2.2
Payload Bay #11 (Internal Only)	233	2.2.2
Payload Bay #12 (Internal Only)	241	2.2.2
Payload Bay #13 (Internal Only)	242	2.2.2
Penthouse, Aft Fuselage	310	2.3.1
PLB Door Panel #1, RH Forward Section	841	2.8.2.2
PLB Door Panel #2, LH MID FWD Section	832	2.8.2.1
PLB Door Panel #2, RH MID FWD Section	842	2.8.2.2
PLB Door Panel #3, LH MID AFT Section	833	2.8.2.1
PLB Door Panel #3, RH MID AFT Section	843	2.8.2.2
PLB Door Panel #4, LH AFT Section	834	2.8.2.1
PLB Door Panel #4, RH AFT Section	844	2.8.2.2
PLB Doors (Incl. Radiator Panels), LH	830	2.8.2
PLB Doors (Incl. Radiator Panels), RH	840	2.8.2
Propulsion and Reaction Control Systems	500	2.5
RCC Panels #1-6, LH Leading Edge	711	2.7.1.1
RCC Panels #1-6, RH Wing Leading Edge	611	2.6.1.1
RCC Panels #7-14, LH Wing Leading Edge	721	2.7.1.2
RCC Panels #7-14, RH Wing Leading Edge	621	2.6.1.2
RCC Panels #15-22, LH wing Leading Edge	741	2.7.1.4
RCC Panels #15-22, RH Wing Leading Edge	641	2.6.1.4

DESCRIPTION	ZONE	SECTION
Right Wing Bottom External Surface	600BES	2.6.1
Right Wing Leading Edge RCC Panel #1	611-01	2.6.1.1
Right Wing Leading Edge RCC Panel #3	611-03	2.6.1.1
Right Wing Leading Edge RCC Panel #4	611-04	2.6.1.1
Right Wing Leading Edge RCC Panel #5	611-05	2.6.1.1
Right Wing Leading Edge RCC Panel #6	611-06	2.6.1.1
Right Wing Leading Edge RCC Panel #7	621-07	2.6.1.2
Right Wing Leading Edge RCC Panel #8	621-08	2.6.1.2
Right Wing Leading Edge RCC Panel #9	621-09	2.6.1.2
Right Wing Leading Edge RCC Panel #10	621-10	2.6.1.2
Right Wing Leading Edge RCC Panel #11	621-11	2.6.1.2
Right Wing Leading Edge RCC Panel #12	621-12	2.6.1.2
Right Wing Leading Edge RCC Panel #13	621-13	2.6.1.2
Right Wing Leading Edge RCC Panel #14	621-14	2.6.1.2
Right Wing Leading Edge RCC Panel #15	641-15	2.6.1.4
Right Wing Leading Edge RCC Panel #16	641-16	2.6.1.4
Right Wing Leading Edge RCC Panel #17	641-17	2.6.1.4
Right Wing Leading Edge RCC Panel #18	641-18	2.6.1.4
Right Wing Leading Edge RCC Panel #19	641-19	2.6.1.4
Right Wing Leading Edge RCC Panel #20	641-20	2.6.1.4
Right Wing Leading Edge RCC Panel #21	641-21	2.6.1.4
Right Wing Leading Edge RCC Panel #22	641-22	2.6.1.4
Right Wing Leading Edge RCC Panel #2	611-02	2.6.1.1
Right Wing Top External Surface	600TES	2.6.1
Right Wing/Elevon Flipper Door #1	653-01	2.6.1.5
Right Wing/Elevon Flipper Door #2	653-02	2.6.1.5
Right Wing/Elevon Flipper Door #3	653-03	2.6.1.5
Right Wing/Elevon Flipper Door #4	653-04	2.6.1.5
Right Wing/Elevon Flipper Door #5	653-05	2.6.1.5
Right Wing/Elevon Flipper Door #6	653-06	2.6.1.5
Right Wing/Elevon Flipper Door #7	653-07	2.6.1.5
Right Wing/Elevon Flipper Door #8	653-08	2.6.1.5
Right Wing/Elevon Flipper Door #9	653-09	2.6.1.5
Right Wing/Elevon Flipper Door #10	653-10	2.6.1.5
Right Wing/Elevon Flipper Door #11	653-11	2.6.1.5
Right Wing/Elevon Flipper Door #12	653-12	2.6.1.5
Right Wing/Elevon Flipper Door #13	653-13	2.6.1.5
Right Wing/Elevon Flipper Door #14	653-14	2.6.1.5
Right Wing/Elevon Flipper Door #15	653-15	2.6.1.5
Right Radiator Aft Segment (Fixed)	843RRA	2.8.2.2
Right Radiator Forward Segment (Deployable)	841RRF	2.8.2.2

DESCRIPTION	ZONE	SECTION
Right Radiator Mid Segment (Deployable)	842RRM	2.8.2.2
Rudder/Speedbrake	440	2.4.1
Rudder/Speedbrake	450	2.4.1
SSME #1 (Center)	510	2.5.1
SSME #2 (Left)	520	2.5.1
SSME #3 (Right)	530	2.5.1
Tail Cone, Aft Fairing	F1000	3.1.1
Tail Cone, Body Flap Fairing	F700	3.1.1
Tail Cone, Demountable Non-structural Items	F900	3.1.1
Tail Cone, Demountable Struct Items	F800	3.1.1
Tail Cone, LH OMS Fairing	F500	3.1.1
Tail Cone, LH Side Fairing	F100	3.1.1
Tail Cone, Lower Fairing	F300	3.1.1
Tail Cone, RH OMS Fairing	F600	3.1.1
Tail Cone, RH Side Fairing	F200	3.1.1
Tail Cone, Top Fairing	F400	3.1.1
Tip Cap, Vertical Stabilizer	420	2.4.1
Torque Box, Right Wing	640	2.6.1
Trailing Edge, Vertical Stabilizer	430	2.4.1
Vertical Stabilizer, Orbiter	400	2.4
Wheel Well, Left Main Landing Gear	730	2.7.1
Wheel Well, Nose Landing Gear	150	2.1.1
Wheel Well, Right Main Landing Gear	630	2.6.1
Wing Carry Through Top Surface	243TOP	2.2.2.4
Wing Carry-Through, Below PLB #12,13	243	2.2.1
Wing Extension Box, LH Wing	753	2.7.1.5
Wing Extension Box, Right	653	2.6.1.5
Wing Glove, LH	712	2.7.1.1
Wing Glove, RH Leading Edge	612	2.6.1.1
Wing Intermediate Section, Left	720	2.7.1
Wing Intermediate Section, Right	620	2.6.1
Wing Torque Box, LH	740	2.7.1
Wing, Orbiter Left	700	2.7
Wing, Orbiter Right	600	2.6

ORBITER
ZONE AND ACCESS
LOCATOR

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SUBJECT

REF-DES CROSS REFERENCE TO ZONES

SECTION 5.1.3

ZONE

The Rockwell (RIC) Orbiter area numerical codes identify RIC drawings to an Orbiter area location. This area code has been cross-referenced to the Orbiter structure zone in the chart below to assist in zone or multi-zone identity of PR, DR, and TPS A/B paper from the drawing numbers, part numbers and wire numbers referenced on the WADs.

Rockwell Orbiter Configuration Control utilizes the REF-DES subsystem and area. The OMRSD and OMI Section 1.8 also reference to REF-DES.

ORBITER AREA REF-DES CODES	ZONE
10 - Upper Fwd Fuselage	140
20 - Lower Fwd Fuselage	130
21 - Fwd Wheel Well	110
22 - Fwd RCS Module	560
30 - Crew Module Flight Deck	121
31 - Left Side Consoles	121
32 - Right Side Consoles	121
33 - Overhead Panels	121
34 - Fwd Main Display Console	121
35 - Center Console	121
36 - Aft Station	121
40 - Mid Fuselage	200 (210-244)
41 - Left Payload Bay Door	830 (831-834)
42 - Right Payload Bay Door	840 (841-844)
47 - Mid DFR Container 3	Not Installed
48 - Mid DFI Container 2	Not Installed
49 - Mid DFI Container 1	Not Installed
50 - Aft Fuselage	300 (310-350)
51 - Left OMS/PCS Pod	550 (551-554)
52 - Right OMS/PCS Pod	540 (541-544)
54 - Aft Avionics Bay 4	321
55 - Aft Avionics Bay 5	322
56 - Aft Avionics Bay 6	331
60 - Right Wing	600 (610-653)
62 - Right Main Wheel Well	630
65 - Left Wing	700 (710-753)
67 - Left Main Wheel Well	730
70 - Vertical Stabilizer	400 (410-460)
80 - Crew Module Mid Deck	122
81 - Fwd Avionics Bay 1	125

ORBITER AREA REF-DES CODES (CONT.)	ZONE
82 - Fwd Avionics Bay 2	126
83 - Fwd Avionics Bay 3A	128
84 - Airlock	123
85 - Fwd Avionics Bay 3B	127
89 - Fwd DFI Container	Not Installed
90 - Crew Module Equipment Bay	124

EXAMPLES

Constraint Identity Using Rockwell International Numbers
(REF-DES = "Area" V "subsys")

TYPICAL REF-DES	ORBITER AREA	PERTINENT SUBSYSTEM
90 V 74	CM EQUIPT BAY	COMMUNICATIONS
81 V 52	FWD AV BAY #1	BRAKE CONTROL
V617-54	UNDEFINED	PL RETENTION
V070-58	UNDEFINED	HYDRAULIC
M072-64	UNDEFINED	AIRLOCK

SUBJECT: ORBITER STRUCTURES DRAWING LIST | SECTION 5.1.4 | ZONE

This appendix section is organized into major orbiter areas/zones. This section is a direct extraction of material from the SPC "Orbiter Structures Drawing Reference Handbook." Some reformatting and zone references were added for clarity.

Notation is made adjacent to the drawing number to indicate effectivity, with (2) = OV-102 and (3 ON) = OV-103 and subs. Unless otherwise noted, drawing numbers are effective for OV-102, 103, 104 and 105. Also, non-RI/Downey vendor names and codes (FSCM #) on major subassemblies are shown.

FORWARD FUSELAGE - MAJOR ZONE 100

Lwr FWD Fus STR Assy	V070-320101/002
Upr FWD Fus STR Assy	V070-310002
Upr/Lwr FWD Fus Mate	V070-310001
Lwr FWD/MID Fus Mate	V070-321003
FWD/MID Fus Mate	V070-320001
Xo=582 Frame	V070-320301
Xo=582 Blkhd Supports	V070-337150
FWD Hoist Pt Ftg	V070-321003
FWD Fus Assy/Sec STR Instl	V070-320004
Nosecap Assy	V070-399251
Nosecap Instl	V070-399252
Chin Panel Assy	V070-399449
Chin Panel Instl	V070-399436
Nose Landing Gear	
Doors	V070-510602/3
Door Instl	V070-510601
Wheel Well Tape	V070-361200
Hinge Boot Instl	V070-326143 (3 0N)
Star Tracker Door Assy	
Lower FWD	V070-311022
Upper FWD	V070-311023

CREW MODULE - PART OF MAJOR ZONE 100

C/M to Fus Mate Instl	V070-330003/321001
C/M STR Assy	V070-331002
Xo=576 C/M AFT Blkhd	V070-332821
Flt Deck Panels	
R/H Console	V070-333431
L/H Console	V070-333331
Center Console	V070-333290
On-Orbit Console	V070-333702
Blkhd Closeout Instl	V070-333700
Overhead C/O Instl	V070-333500
Mid Deck Floor	V070-332701 (2) V070-035/49 (3 ON)
C/M Locker Instl	V070-336600
Mid Deck Closeout Panels	
L/H	V070-337401
R/H	V070-337402
Ceiling	V070-337801
Half-Moon Panel Instl	
Av Bay 1,2	V070-334105 (2), 338500 (3 ON)
Av Bay 3A	V070-334347 (2), 338542 (3 ON)
Avionics Bay STR	V070-660007
Hygiene Compartment	
Potty Door Instl	V070-334961
WCS Sidewall Panels	V070-337978
C/M Windows Instl	V070-331101
Windows #9 & 10 Assy	V070-331701
Thermal Windows Assy	
#1, 2, 5, 6	V070-390006
#3, 4	V070-390004
#7, 8	V070-390008
#11 (hatch)	V070-390045
Airlock STR Assy	V075-332402
Airlock Supt & Fairings	V075-333011

MID FUSELAGE - MAJOR ZONE 200 (GD/Convair-14170)

MID Fus/AFT Fus Mate			V070-341003	
Frame/Stub Frame Instl			70W0001	
Frames:				
	Xo=609	70W2300	Xo=949	70W2306
	Xo=636	70W2100	Xo=968	70W2315
	Xo=664	70W2301	Xo=979	70W2106
	Xo=693	70W2101	Xo=1009	70W2307
	Xo=717	70W2302	Xo=1040	70W2001
	Xo=739	70W2313	Xo=1063	70W2308
	Xo=750	70W2102	Xo=1090	70W2107
	Xo=778	70W2303	Xo=1115	70W2309
	Xo=807	70W2103	Xo=1140	70W2108
	Xo=835	70W2304	Xo=1165	70W2310
	Xo=849	70W2314	Xo=1191	70W2002
	Xo=863	70W2104	Xo=1220	70W2311
	Xo=891	70W2305	Xo=1249	70W2003
	Xo=919	70W2105	Xo=1278	70W2312
Stabilizer Strut Instl				
	Upper (Above Wire Tr)		70W2500/1	
	Lower (Behind Wire Tr)		70W2502/3	
	Yo=0		70W2506/7	
	Yo=40		70W2504/5	
Wing Carry Thru Box				
	Yo=52.50 Rib Instl		70W2602	
	Yo=78.75 Rib Instl		70W2603	
	Bottom Panel Instl		70W3211	
	Upper Panel Instl		70W3300	
Wing Carry Thru Struts (Xo=1191 to 1307)				
	Yo=26.25		70W2601	
	Yo=52.50		70W2602	
	Yo=78.75		70W2603	
Sill Longeron Instl			70C3800 (2), 70E3801 (3 ON)	
Lower Longeron Instl			70W3600,70C2715	
Cargo Attach Pts, Upper			M072-340019	
Side Panels			70W3101/03/13/15/17/29, 70C3125/71	

ZONE	SECTION	SUBJECT
	5.1.4	ORBITER STRUCTURES DRAWING LIST

Floor (Skin) Panels	70E3201 (3 ON), 70E3210/12, 70W3505	
Floor (Skin) Stringers	LH#9 to RH#9	LH&RH #10 to 25
Xo=582 to 919	70W3202	70W3204
Xo=919 to 1191	70W3206	70W3208
Xo=1191 to 1307	70W3210	70W3212
Torsional Restraint Instl	V070-346092	
Bay Liner Retainers	V070-367150/200/250/300/350	
EVA Handholds	V070-650770	
Fuel Cell Mounts	V070-454244	
Elec Support Instl	70C2864/5 (2), 70E2864/5 (3 ON)	
Wire Tray Instl	V070-340350	
Midbody Paint/Tape	V070-362001	
GSE Hard Point Instl	70C6500	
Door 45 Umbilical	V539-340008	

WINGS AND ELEVONS - MAJOR ZONES 600/700
(Grumman-26512)

Wing Top Assy Frame Callouts	B91B10001	
Wing STR Assy	V070-100004	
Wing to Fus STR Mate	V070-101003	
Wing Glove Instl	B91B60001	
Wing Glove Fairing Assy	70W5052	
Wing Strut Rework (6.0)	B91B15100	
MLG Doors Instl	B91B50001	
MLG Whl Well Tape Instl	V070-165000	
	OV-102	OV-103 ON
Wing LE,Spar Assy Xo=1009 to 1365	B91B10032	B91B12226
Wing LE, Panel Instl		
Xo=1009 to 1071	B91B10035	B91B12202
Xo=1071 to 1191	B91B10036	B91B12208
Xo=1191 to 1302	B91B10037	B91B12216
Xo=1302 to 1365	B91B10038	B91B12222

SUBJECT: ORBITER STRUCTURES DRAWING LIST | SECTION 5.1.4 | ZONE

Wing Ribs/Strut Instl

MAIN WING		WING GLOVE	
Yw=113	B91B10060	Xw=807	B91B60027
Yw=123	B91B10061	Xw=835	B91B60030
Yw=147	B91B10062	Xw=863	B91B60026
Yw=167	B91B10075	Xw=891	B91B60031
Yw=198	B91B10050	Xw=919	B91B60025
Yw=226	B91B10054	Xw=949	B91B60023
Yw=254	B91B10055	Xw=979	B91B60024
Yw=282	B91B10065	Xw=100	9B91B60032
Yw=312	B91B10066		
Yw=342	B91B10081		
Yw=372	B91B10082		
Yw=402	B91B10083		
Yw=435	B91B11120		

Wingtip Instl	V070-198600
Wingstub Instl	V070-198400
RCC Panel/Tee Instl	V070-199850 (2), 199849 (3 ON)
Spar Fitting Instl	V070-199900
Upper Trailing Edge Seal Instl	
Inbd	V070-198150
Outbd	V070-198751
Elevon Cove Seal Instl	
Wing/Elevon Seal	V070-198000
Primary Seal	
Inbd	V070-198300
Outbd	V070-198500
Secondary Seal	
Inbd	V070-198050
Outboard	V070-198850
Flipper Doors	
Seal Panel Instl	V070-146100
Door #9-14	V070-146101
Door #15	V070-146102
Upper Seal Instl	
Inbd Elevon	V070-198100
Outbd Elevon	V070-198701
Elevon Rub Panels	
Inbd (1-9)	V070-198001/002
Outbd (10-16)	V070-198800/801

Blade Seal	
Door #1	V070-198200
Door #8,9	V070-198400
Elevon Assy	
Inboard	B91B20001
Upper Skin	B91B20005 (2), 20128 (3 ON)
Lower Skin	B91B20006
Outboard	B91B30001
Upper Skin	B91B30004
Lower Skin	B91B30005

PAYLOAD BAY DOORS - PART OF MAJOR ZONE 800 (RI/Tulsa-18441)

PLBD Assy

	102	103	104	105
L/H: T01P31001-	041	131	061	061
R/H: T01P31001-	051	141	071	071

PLBD Top Assy	T01P31001
Door 1 Xo576	TO1P31003 (2,4 ON)
	T01R33003 (3)
Door 2 Xo758	TO1P31004
Door 3 Xo941	TO1P31007
Door 4 Xo1125	TO1P31008 (2,4 ON)
	T01R33008 (3)
Door 5 Xo1285	TO1P31009 (2,4 ON)
	T01R33009 (3)
PLBD STR Mate Instl	V070-370003
Hinge Cover Instl	
#1 to 6	V070-394710
#7 to 10	V070-394738
PLBD Bulb Seals	V070-398500/20
Drive Rod Seals	VR70-341168
Dogbone Grounding Clips	V070-398582
PLBD Paint/Tape	V070-364002

RADIATORS (LTV/Vought-80378)

Radiator Assy (Procurement Spec)		
L/HR/H		
#1	MC203-0002-	0032 0012
#2	MC203-0002-	0039 0019
#3	MC203-0002-	0041 0022
#4	MC203-0002-	0048 0028
Radiator Instl		
Panels #1,2,3	V070-634530	
Panel #4	M072-634540	

AFT FUSELAGE - MAJOR ZONE 300

AFT Top Assy	V070-350002
AFT STR Instl	V070-350013 (2), 854336 (3 ON)
Fwd STR Assy	V070-350014
Lower Frame Assy	V070-350016 (2), 857016 (3 ON)
Upper Assy	V070-350017 (2), 853500 (3 ON)
Shell Assy	V070-350018 (2), 857018 (3 ON)
Lwr Panel Assy (Floor)	V070-355012 (2), 855312 (3 ON)
Secondary Supt Instl	V070-350030/40/50/70
L/H Sidewall	V070-350032/4/6/8 (2)
	V070-857034/36/38 (3 ON)
R/H Sidewall	V070-350033/5/7/9 (2)
	V070-857035/37/39 (3 ON)
Upr Blkhd, Fwd Side	V070-360043 (2), 856019 (3 ON)
Upr Blkhd, Aft Side	V070-350027/8/9 (2)
	V070-856041 to 49 (3 ON)
Mid Blkhd, Fwd Side	V070-350057 (2), 856018 (3 ON)
Mid Blkhd, Aft Side	V070-350051 to 54 (2)
	V070-856014/5/6/7 (3 ON)
Lwr Blkhd	V070-351031

ZONE	SECTION	SUBJECT
	5.1.4	ORBITER STRUCTURES DRAWING LIST

Xo=1307 Bulkhead	
Upr Assy	V070-350203 (2), 856020 (3 ON)
Mid Assy	V070-350204 (2), 856001 (3 ON)
Lwr Assy	V070-350217
Mid to Lwr Splice	V070-350061 (2), 856004 (3 ON)
Mid to Upr Splice	V070-350062 (2), 856003 (3 ON)
Aft Hoist Point Fitting	V070-395065/102
Thrust STR	V070-350019
Upper Thrust Shelf	V070-351395
Lower Thrust Shelf	V070-351394
ET Door	V070-352550
ET Door Instl	V070-565000
ET Fitting Instl	V070-355012 (2), V070-855312 (3 ON)
Salad Bowls	
Instl	V070-565250
Assy	V070-351614 (2), 855059 (3 ON)
T-O Umbilical Pnl Instl	V070-354009 (2), 854330 (3 ON)
50-01, 50-02 Doors	V070-358104 (2), 358002 (3 ON)
Av Bay Assy	
Bay 4	V070-356704
Bay 5	V070-356705
Bay 6	V070-354523
Av Bay Instl	V070-350040
Av Bay Covers	V070-356735
OMS Pod Deck	V070-353311
Support Instl	
R/H Sidewall	V070-353604 (2), 857037 (3 ON)
L/H Sidewall	V070-353603 (2), 857038 (3 ON)
Pod Deck	V070-353601
Base Heat Shield	
Lwr AFT Shell Assy	V070-350023 (2), 854317 (3 0N)
Upr AFT Shell Assy	V070-350022
Dome Heat Shield	
Assy	V070-351901/2/3
Instl	V070-351900 (2), 852702 (3 ON)
Dome/Base Heat Shield Nutplates (Incl. T/C Attach)	
Engine #1	V070-350022
Engine #2	V070-350023 (2), 854317 (3 ON)
Engine #3	V070-350023 (2), 854317 (3 ON)

Fuselage Stub	V070-395017
Tailcone Att. Fittings	V074-350100/1

BODY FLAP
(RI/Columbus-89372)

Body Flap STR Assy	8780-100003/203
Body Flap Instl	
Actuator to STR	V070-575001
Actuator to Flap	V070-575005
Body Flap Seal Instl	V070-399100
Ribs & Spher. Bearings	8780-100029

VERTICAL STABILIZER - MAJOR ZONE 400
(Fairchild-77751)

Top STR Assy	170D400000
Vert Stab/Fus Mate	V070-200003
Vert Fin Assy	170D420000
Skin Panels	170D420401/2
RSB Panel Instl	170D421000/441000
RSB Panel Assy (#1-4)	170D411100/200/300/400 (2) 170D441100/200/300/400 (3 ON)
Conical Seal Instl	
Panels 1-5	170D432100
Thermal Seal Instl	V070-298002 (2), 298004 (3 ON)
Drag Chute STR	V070-220001/2
Drag Chute C/P Instl	V070-291382

OMS PODS (MDAC-76301) AND FRCS MODULE - MAJOR ZONE 500

OMS PODS

OMS Pod STR Assy	73A310000, 73A320000
OMS Pod Instl	V070-359003/73A000015

Stinger STR Assy	73A320000
Attach Pt. Access Doors	73A310192/248/264/266
OMS Engine Cover Assy	73A310084
Y-Web Door (59-47/48)	73A310141
Y-Web C/P's (&Insul)	V070-396377
Conical Washers	73R000058/59/60
Stinger Door (59-49/53)	73A320102
C/P Interface Retrofit	73R000056 (2 ONLY)
Bulb Seal Instl	73A310167
1307 Blkhd Seal Instl	V070-353500

FRCS MODULE

FRCS STR Assy	V070-316002/004/020
FRCS Seal Instl	V070-316148
FRCS Mate Instl	V070-316001/003
Skin/Nutplate Instl	V070-316251
Insul Instl(Perim. C/Ps)	V070-391028
28-00/01 Door Instl	V070-316264

COMMON SPECIFICATIONS AND MISC. DRAWINGS

ROCKWELL SPECIFICATIONS

MAO501-1027	Index of RI Process Specifications
MAO101-301	Threaded & Collared Fasteners
MAO101-302	Conventional Rivets & Blind Fasteners
MAO101-303	Key Inserts, Studs & Insert Panel Fasteners
MAO101-304	Thin-Walled Screw Thread Inserts (Rosan)
MAO101-308	Captive Fasteners
MAO601-301,MD121-0004 & MD121-0005	Blind Rivets (Huck)
MA0104-301	Applied Markings (id's)
MAO106-301	Bonding w/ Epoxy Adhesives
MAO106-303	Applied Room Temp-Cured Silicone Sealing
MAO106-305	Bonding Assy's w/RT-Curing Epoxy Adhesives
MAO106-333	Thread Lockers (Loc-Tite)
MAO106-336	Bonding w/ Two-Part Epoxy Adhesives
MAO106-347	Bonding w/ Heat-Resist, Room Temp-Curing Epoxy Adhesive

SUBJECT: ORBITER STRUCTURES DRAWING LIST | SECTION 5.1.4 | ZONE

MAO110-301	Product Cleanliness
MAO110-302	Cleaned Surfaces of Metallic Materials
MAO110-305	Bonding Assy's w/ RT-Curing Epoxy Adhesives
MAO608-301	Corrosion Control & Finish Requirements
MTO501-504	Penetrant Inspection Requirements (Dye Pen)
MBO120-008	Adhesive, RT-Curing, -250 F to 500 F
MBO120-037	Adhesive, RT-Curing, Struct, -250 F to 500 F
MBO120-048	Adhesive, Tape, Cryogenic, Heat Resistant
MBO120-053	Adhesive, Film, Structural, High Peel
MBO120-079	Adhesive, Epoxy Polyamide
MBO130-119	Silicone Rubber (RTV), Low Temp Resistant Room Temp-Curing

ORBITER MAKE-WORK EO DRAWINGS

	OV-102	OV-103	OV-104	OV-105
Midbody	V070- 340007	340008	340009	340010
Wing	V070- 100007	100008	100009	100010
PLB Doors	V070- 370006	370008	370009	370010
Vert. Tail	V070- 200006	200008	200009	200010
Body Flap	V070- 357006	857108	857109	857110

OMS PODS

LP01	V070-430007	RP01	V070-430008
LP03	V070-430009	RP03	V070-430010
LP04	V070-430011	RP04	V070-430012
LP05	V070-430013	RP05	V070-430014

MISCELLANEOUS DRAWINGS AND TECHNICAL REQUIREMENTS

Orbiter Markings	V070-000008
Orbiter External Moldline (Door/Panel Ref. #s)	VC70-000004

Window Panes	MC332-0006
RCC Subsystem	MC621-0007
Wing Subsystem	MC621-0005
PLBD Subsystem	MC621-0039

	OV-102	OV-103	OV-104	OV-105
L/H	0063	0069	0071	0073
R/H	0064	0070	0072	0074

Radiator Subsystem — MC203-0002

Pnl	L/H	R/H
#1	0032	0012
#2	0039	0019
#3	0041	0022
#4	0048	0028

Vertical Tail Subsystem	MC621-0004
OMS Pods Subsystem	MC621-0059
Body Flap System	MC621-0061

ORBITER
ZONE AND ACCESS
LOCATOR

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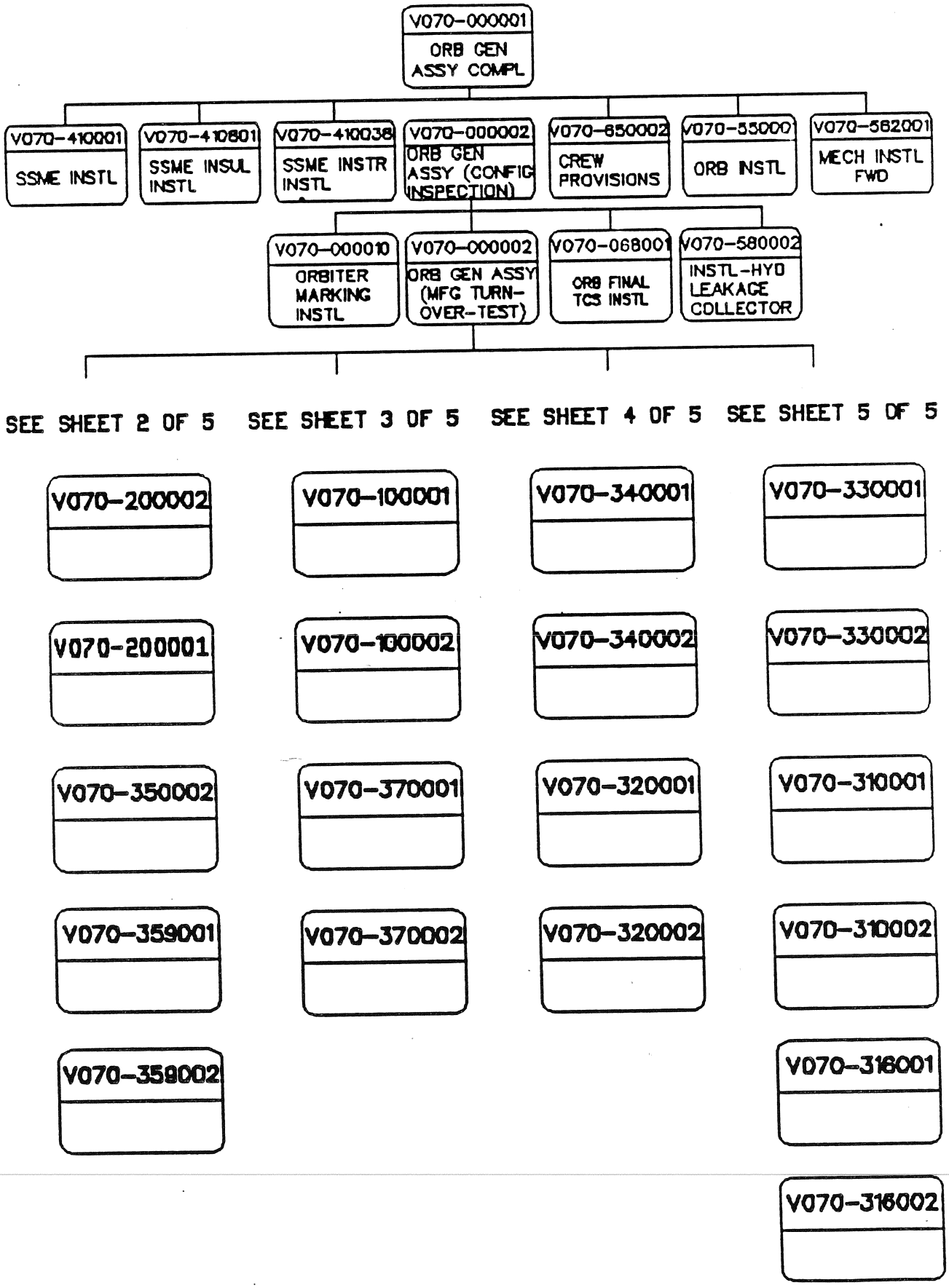
V070-000001
ORB GEN ASSY COMPL
V070-410001
SSME INSTL
V070-410801
SSME INSUL INSTL
V070-410038
SSME INSTR INSTL
V070-000002
ORB GEN ASSY (CONFIG INSPECTION)
V070-650002
CREW PROVISIONS
V070-55000
ORB INSTL
V070-562001
MECH INSTL FWD
V070-000010
ORBITER MARKING INSTL
V070-000002
ORB GEN ASSY (MFG TURN-OVER-TEST)
V070-068001
ORB FINAL TCS INSTL
V070-580002
INSTL-HYD LEAKAGE COLLECTOR
SEE SHEET 2 OF 5
SEE SHEET 3 OF 5
SEE SHEET 4 OF 5
SEE SHEET 5 OF 5
V070-200002
V070-200001
V070-350002
V070-359001
V070-359002
V070-100001
V070-100002
V070-370001
V070-370002
V070-340001
V070-340002
V070-320001
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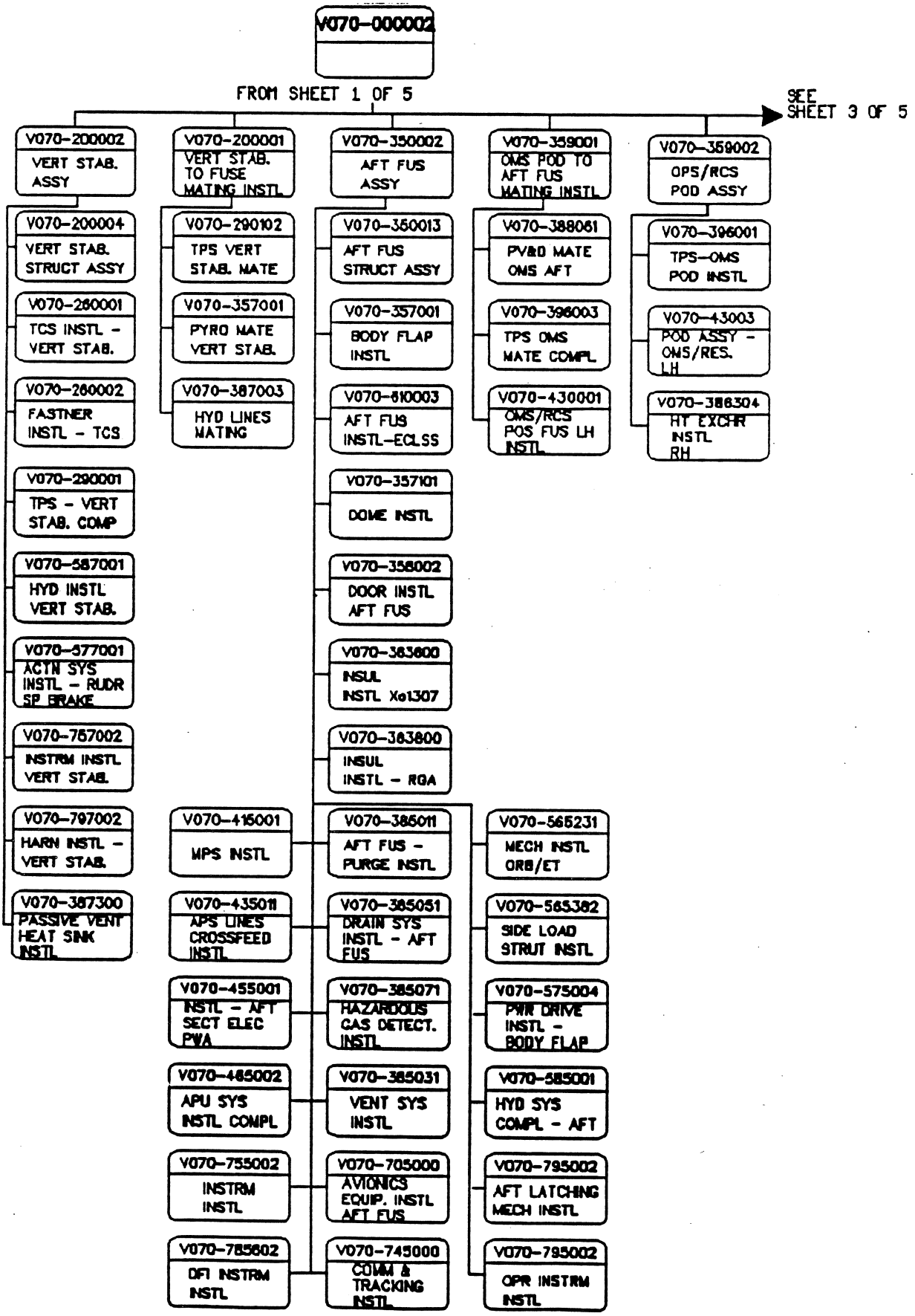
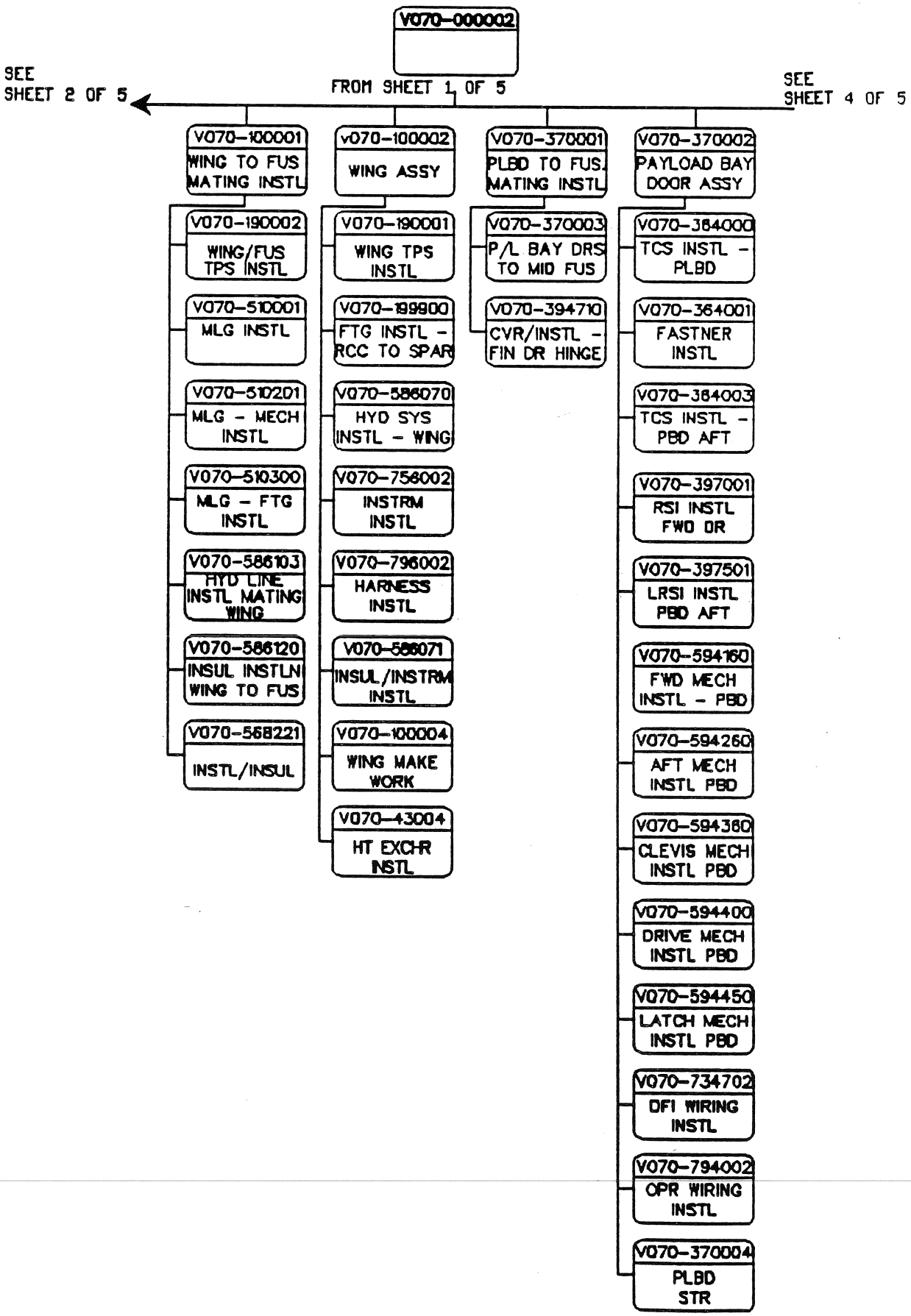
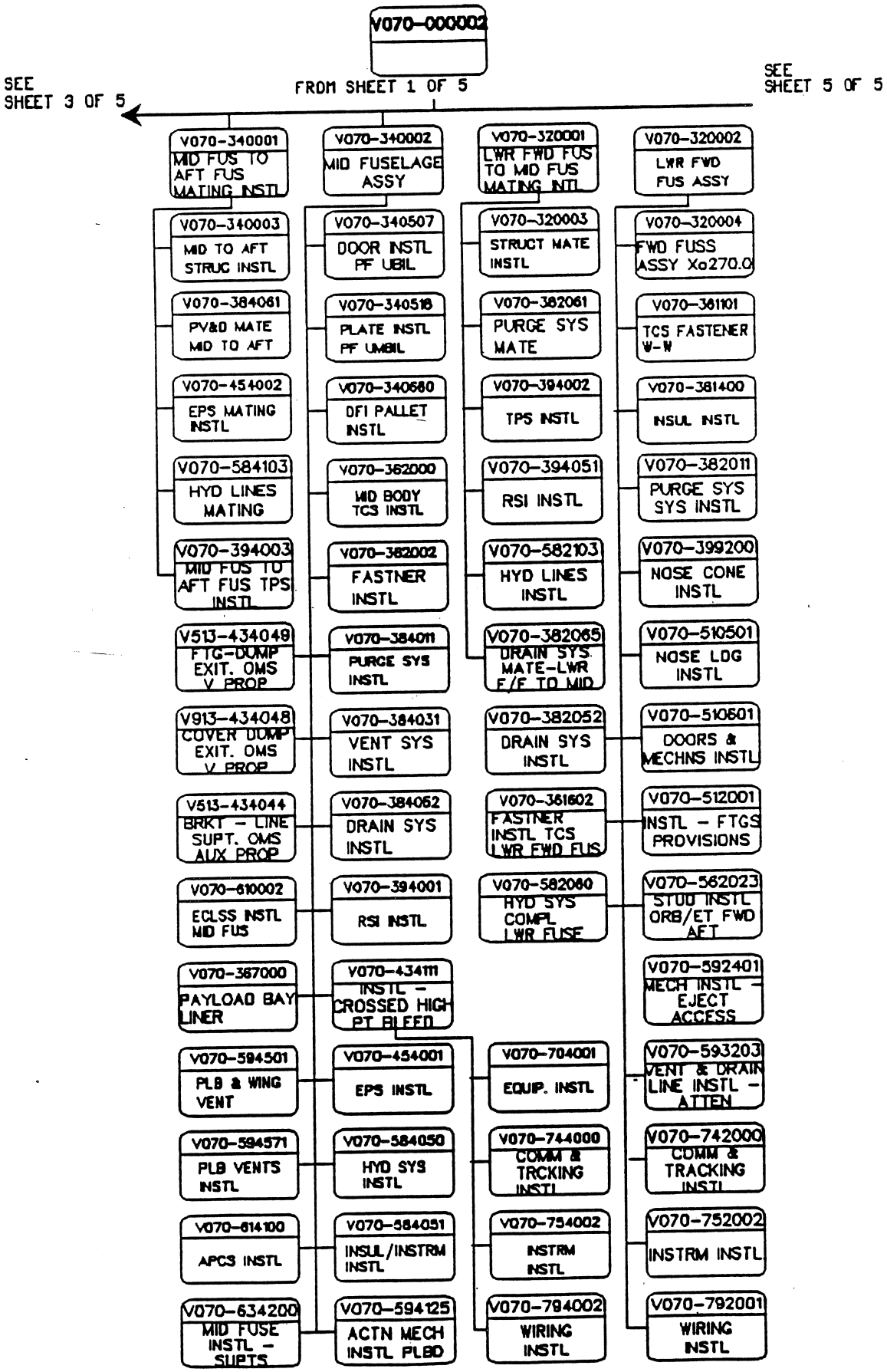
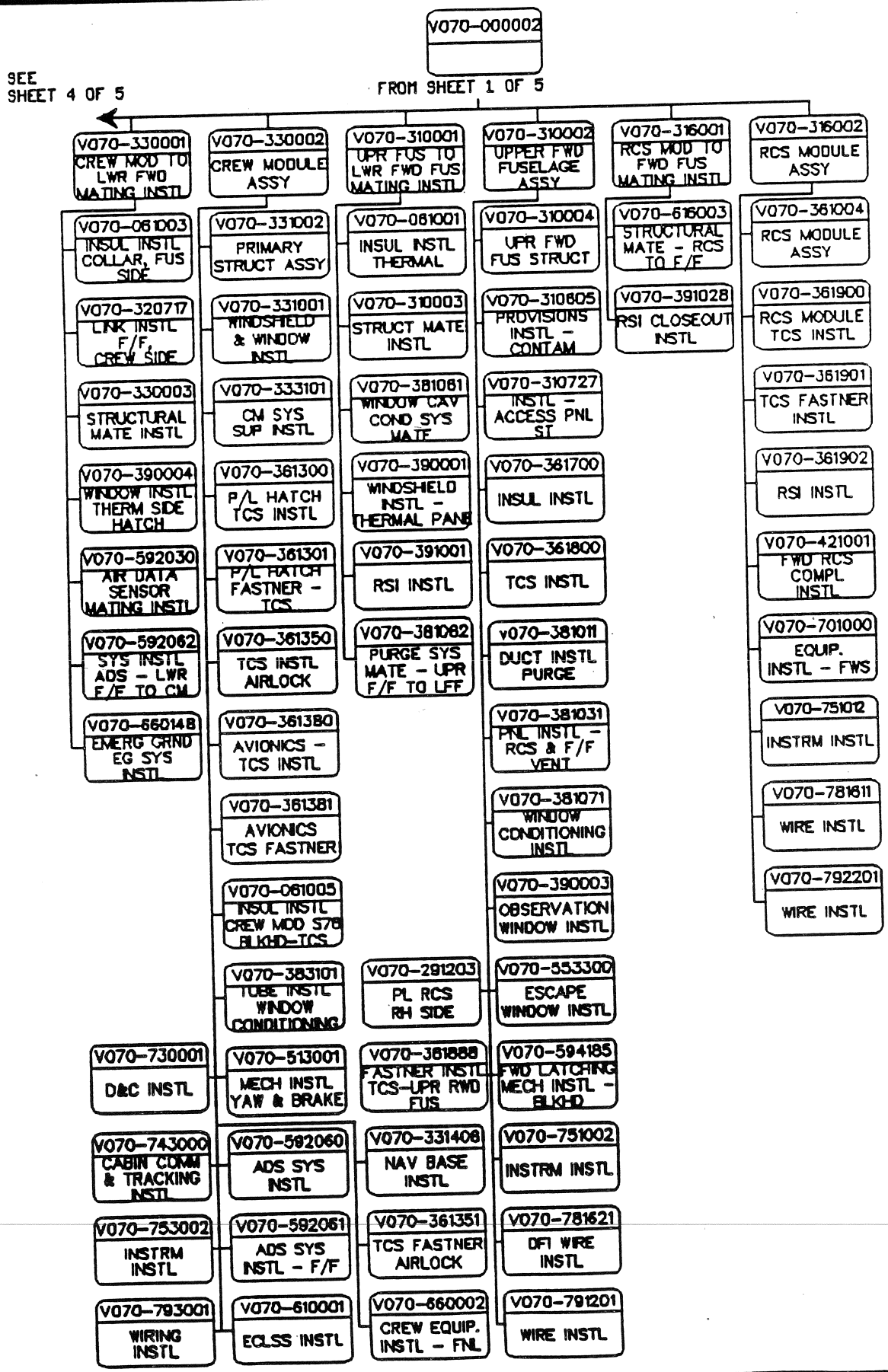
V070-310001
V070-310002
V070-316001
V070-316002


V070-000002
FROM SHEET 1 OF 5
SEE SHEET 3 OF 5
V070-200002 VERT STAB. ASSY
V070-200004 VERT STAB. STRUCT ASSY
V070-260001 TCS INSTL - VERT STAB.
V070-260002 FASTNER INSTL - TCS
V070-290001 TPS - VERT STAB. COMP
V070-587001 HYD INSTL VERT STAB.
V070-577001 ACTN SYS INSTL - RUDR SP BRAKE
V070-767002 INSTRM INSTL VERT STAB.
V070-797002 HARN INSTL - VERT STAB.
V070-387300 PASSIVE VENT HEAT SINK INSTL
V070-200001 VERT STAB. TO FUSE MATING INSTL
V070-290102 TPS VERT STAB. MATE
V070-357001 PYRO MATE VERT STAB.
V070-387003 HYD LINES MATING
V070-350002 AFT FUS ASSY
V070-350013 AFT FUS STRUCT ASSY
V070-357001 BODY FLAP INSTL
V070-610003 AFT FUS INSTL-ECLSS
V070-357101 DOME INSTL
V070-358002 DOOR INSTL AFT FUS
V070-383600 INSUL INSTL Xo1307
V070-383800 INSUL INSTL - RGA
V070-359001 OMS POD TO AFT FUS MATING INSTL
V070-388061 PV&D MATE OMS AFT
V070-396003 TPS OMS MATE COMPL
V070-430001 OMS/RCS POS FUS LH INSTL
V070-359002 OPS/RCS POD ASSY
V070-396001 TPS-OMS POD INSTL
V070-43003 POD ASSY - OMS/RES. LH
V070-388304 HT EXCHR INSTL RH
V070-415001 MPS INSTL
V070-435011 APS LINES CROSSFEED INSTL
V070-455001 INSTL - AFT SECT ELEC PWA
V070-485002 APU SYS INSTL COMPL
V070-755002 INSTRM INSTL
V070-785602 DFI INSTRM INSTL
V070-385011 AFT FUS - PURGE INSTL
V070-385051 DRAIN SYS INSTL - AFT FUS
V070-385071 HAZARDOUS GAS DETECT. INSTL
V070-385031 VENT SYS INSTL
V070-705000 AVIONICS EQUIP. INSTL AFT FUS
V070-745000 COMM & TRACKING INSTL
V070-565231 MECH INSTL ORB/ET
V070-565382 SIDE LOAD STRUT INSTL
V070-575004 PWR DRIVE INSTL - BODY FLAP
V070-585001 HYD SYS COMPL - AFT
V070-795002 AFT LATCHING MECH INSTL
V070-795002 OPR INSTRM INSTL


V070-000002
FROM SHEET 1 OF 5
SEE SHEET 2 OF 5
SEE SHEET 4 OF 5
V070-100001
WING TO FUS MATING INSTL
V070-190002
WING/FUS TPS INSTL
V070-510001
MLG INSTL
V070-510201
MLG - MECH INSTL
V070-510300
MLG - FTG INSTL
V070-586103
HYD LINE INSTL MATING WING
V070-586120
INSUL INSTLN WING TO FUS
V070-568221
INSTL/INSUL
V070-100002
WING ASSY
V070-190001
WING TPS INSTL
V070-199900
FTG INSTL - RCC TO SPAR
V070-586070
HYD SYS INSTL - WING
V070-756002
INSTRM INSTL
V070-796002
HARNESS INSTL
V070-586071
INSUL/INSTRM INSTL
V070-100004
WING MAKE WORK
V070-43004
HT EXCHR INSTL
V070-370001
PLBD TO FUS MATING INSTL
V070-370003
P/L BAY DRS TO MID FUS
V070-394710
CVR/INSTL - FIN DR HINGE
V070-370002
PAYLOAD BAY DOOR ASSY
V070-364000
TCS INSTL - PLBD
V070-364001
FASTNER INSTL
V070-364003
TCS INSTL - PBD AFT
V070-397001
RSI INSTL FWD DR
V070-397501
LRSI INSTL PBD AFT
V070-594160
FWD MECH INSTL - PBD
V070-594260
AFT MECH INSTL PBD
V070-594360
CLEVIS MECH INSTL PBD
V070-594400
DRIVE MECH INSTL PBD
V070-594450
LATCH MECH INSTL PBD
V070-734702
DFI WIRING INSTL
V070-794002
OPR WIRING INSTL
V070-370004
PLBD STR


V070-000002
SEE SHEET 3 OF 5
FROM SHEET 1 OF 5
SEE SHEET 5 OF 5
V070-340001 MID FUS TO AFT FUS MATING INSTL
V070-340002 MID FUSELAGE ASSY
V070-320001 LWR FWD FUS TO MID FUS MATING INTL
V070-320002 LWR FWD FUS ASSY
V070-340003 MID TO AFT STRUC INSTL
V070-340507 DOOR INSTL PF UBIL
V070-320003 STRUCT MATE INSTL
V070-320004 FWD FUSS ASSY Xo270.0
V070-384061 PV&D MATE MID TO AFT
V070-340518 PLATE INSTL PF UMBIL
V070-382061 PURGE SYS MATE
V070-361101 TCS FASTENER W-W
V070-454002 EPS MATING INSTL
V070-340680 DFI PALLET INSTL
V070-394002 TPS INSTL
V070-381400 INSUL INSTL
V070-584103 HYD LINES MATING
V070-382000 MID BODY TCS INSTL
V070-394051 RSI INSTL
V070-382011 PURGE SYS SYS INSTL
V070-394003 MID FUS TO AFT FUS TPS INSTL
V070-382002 FASTNER INSTL
V070-582103 HYD LINES INSTL
V070-399200 NOSE CONE INSTL
V513-434049 FTG-DUMP EXIT. OMS V PROP
V070-384011 PURGE SYS INSTL
V070-382065 DRAIN SYS MATE-LWR F/F TO MID
V070-510501 NOSE LDG INSTL
V913-434048 COVER DUMP EXIT. OMS V PROP
V070-384031 VENT SYS INSTL
V070-382052 DRAIN SYS INSTL
V070-510601 DOORS & MECHNS INSTL
V513-434044 BRKT - LINE SUPT. OMS AUX PROP
V070-384062 DRAIN SYS INSTL
V070-361602 FASTNER INSTL TCS LWR FWD FUS
V070-512001 INSTL - FTGS PROVISIONS
V070-610002 ECLSS INSTL MID FUS
V070-394001 RSI INSTL
V070-582060 HYD SYS COMPL LWR FUSE
V070-562023 STUD INSTL ORB/ET FWD AFT
V070-367000 PAYLOAD BAY LINER
V070-434111 INSTL - CROSSED HIGH PT BLEED
V070-592401 MECH INSTL - EJECT ACCESS
V070-594501 PLB & WING VENT
V070-454001 EPS INSTL
V070-704001 EQUIP. INSTL
V070-593203 VENT & DRAIN LINE INSTL - ATTEN
V070-594571 PLB VENTS INSTL
V070-584050 HYD SYS INSTL
V070-744000 COMM & TRCKING INSTL
V070-742000 COMM & TRACKING INSTL
V070-614100 APCS INSTL
V070-584051 INSUL/INSTRM INSTL
V070-754002 INSTRM INSTL
V070-752002 INSTRM INSTL
V070-634200 MID FUSE INSTL - SUPTS
V070-594125 ACTN MECH INSTL PLBD
V070-794002 WIRING INSTL
V070-792001 WIRING INSTL


V070-000002
SEE SHEET 4 OF 5
FROM SHEET 1 OF 5
V070-330001 CREW MOD TO LWR FWD MATING INSTL
V070-330002 CREW MODULE ASSY
V070-310001 UPR FUS TO LWR FWD FUS MATING INSTL
V070-310002 UPPER FWD FUSELAGE ASSY
V070-316001 RCS MOD TO FWD FUS MATING INSTL
V070-316002 RCS MODULE ASSY
V070-061003 INSUL INSTL COLLAR, FUS SIDE
V070-320717 LINK INSTL F/F, CREW SIDE
V070-330003 STRUCTURAL MATE INSTL
V070-390004 WINDOW INSTL THERM SIDE HATCH
V070-592030 AIR DATA SENSOR MATING INSTL
V070-592062 SYS INSTL ADS - LWR F/F TO CM
V070-660148 EMERG GRND EG SYS INSTL
V070-331002 PRIMARY STRUCT ASSY
V070-331001 WINDSHIELD & WINDOW INSTL
V070-333101 CM SYS SUP INSTL
V070-361300 P/L HATCH TCS INSTL
V070-361301 P/L HATCH FASTNER - TCS
V070-361350 TCS INSTL AIRLOCK
V070-361380 AVIONICS - TCS INSTL
V070-361381 AVIONICS TCS FASTNER
V070-061005 INSUL INSTL CREW MOD S78 BLKHD-TCS
V070-383101 TUBE INSTL WINDOW CONDITIONING
V070-730001 D&C INSTL
V070-513001 MECH INSTL YAW & BRAKE
V070-743000 CABIN COMM & TRACKING INSTL
V070-592060 ADS SYS INSTL
V070-753002 INSTRM INSTL
V070-592061 ADS SYS INSTL - F/F
V070-793001 WIRING INSTL
V070-610001 ECLSS INSTL
V070-061001 INSUL INSTL THERMAL
V070-310003 STRUCT MATE INSTL
V070-381061 WINDOW CAV COND SYS MATE
V070-390001 WINDSHIELD INSTL - THERMAL PANE
V070-391001 RSI INSTL
V070-381062 PURGE SYS MATE - UPR F/F TO LFF
V070-291203 PL RCS RH SIDE
V070-381888 FASTNER INSTL TCS-UPR RWD FUS
V070-331408 NAV BASE INSTL
V070-361351 TCS FASTNER AIRLOCK
V070-660002 CREW EQUIP. INSTL - FNL
V070-310004 UPR FWD FUS STRUCT
V070-310605 PROVISIONS INSTL - CONTAM
V070-310727 INSTL - ACCESS PNL SI
V070-361700 INSUL INSTL
V070-361800 TCS INSTL
V070-381011 DUCT INSTL PURGE
V070-381031 PNL INSTL - RCS & F/F VENT
V070-381071 WINDOW CONDITIONING INSTL
V070-390003 OBSERVATION WINDOW INSTL
V070-553300 ESCAPE WINDOW INSTL
V070-594185 FWD LATCHING MECH INSTL - BLKHD
V070-751002 INSTRM INSTL
V070-781621 DFI WIRE INSTL
V070-791201 WIRE INSTL
V070-616003 STRUCTURAL MATE - RCS TO F/F
V070-391028 RSI CLOSEOUT INSTL
V070-361004 RCS MODULE ASSY
V070-361900 RCS MODULE TCS INSTL
V070-361901 TCS FASTNER INSTL
V070-361902 RSI INSTL
V070-421001 FWD RCS COMPL INSTL
V070-701000 EQUIP. INSTL - FWS
V070-751012 INSTRM INSTL
V070-781611 WIRE INSTL
V070-792201 WIRE INSTL

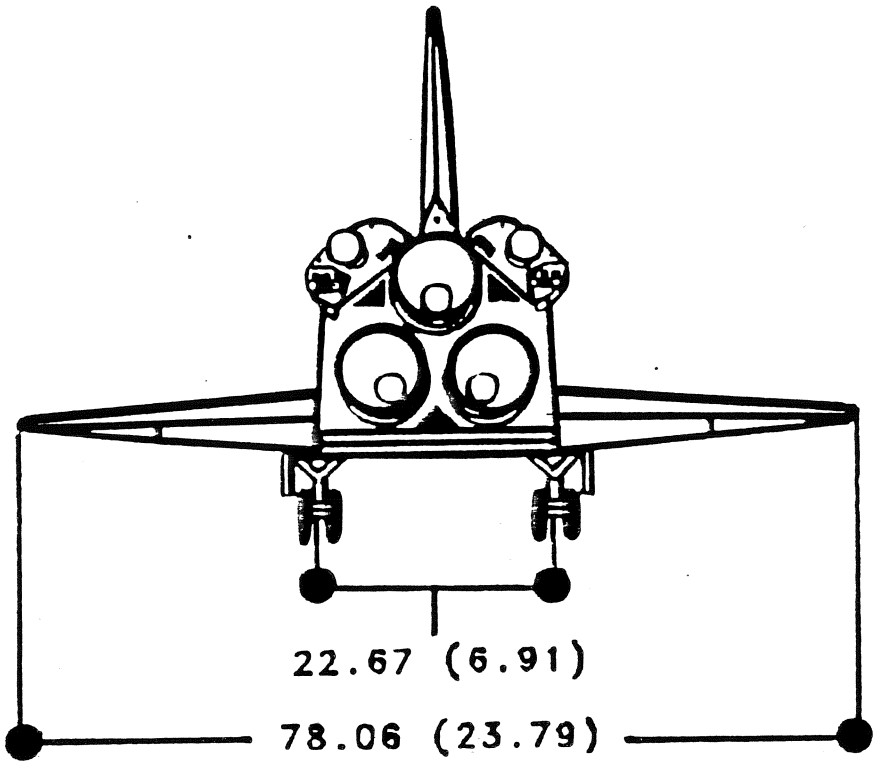
REFERENCE DOCUMENTS

Drawing VC70-000004 Access Penetrations
Drawing VC72-000003 Access Penetrations
JSC-08934 (Vol IV), Orbiter Landing Emergency Rescue
JSC-11174, Space Shuttle System Handbook
Orbiter Structure Drawing Reference Handbook (Revision A)
NSTS 08171 NSTS Subsystem Codes
NSTS 08171 OMRSD File I, Introduction
NSTS 08171 OMRSD File III, V30 Airframe Inspections
NSTS 08171 OMRSD File III, V31 Zonal Inspections
SOD 79-0215 (RI) Manufacturing Flow and Build Plan
LR 5338 Extended Duration Pallet Certification Test

REFERENCE ILLUSTRATIONS (SECTIONAL LIST OF CONTENTS)

SECTION	SUBJECT	PAGE
5.2.1	Orbiter dimensions and statistics	B-2
5.2.2	Orbiter station numbers and reference planes	B-4
5.2.3	Orbiter danger areas	B-10

B-2	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION 5.2.1	SUBJECT ORBITER DIMENSIONS AND STATISTICS



DIMENSIONS & WEIGHT	FEET/(LBS)	METERS/(KG)
WING SPAN	78.06	23.79
LENGTH	122.17	37.24
HEIGHT	56.58	17.25
TREAD WIDTH	22.67	6.91
GROSS TAKEOFF WEIGHT	VARIABLE	
GROSS LANDING WEIGHT	VARIABLE	
DRY WEIGHT (APPROX)	(165,000)	(74,844)

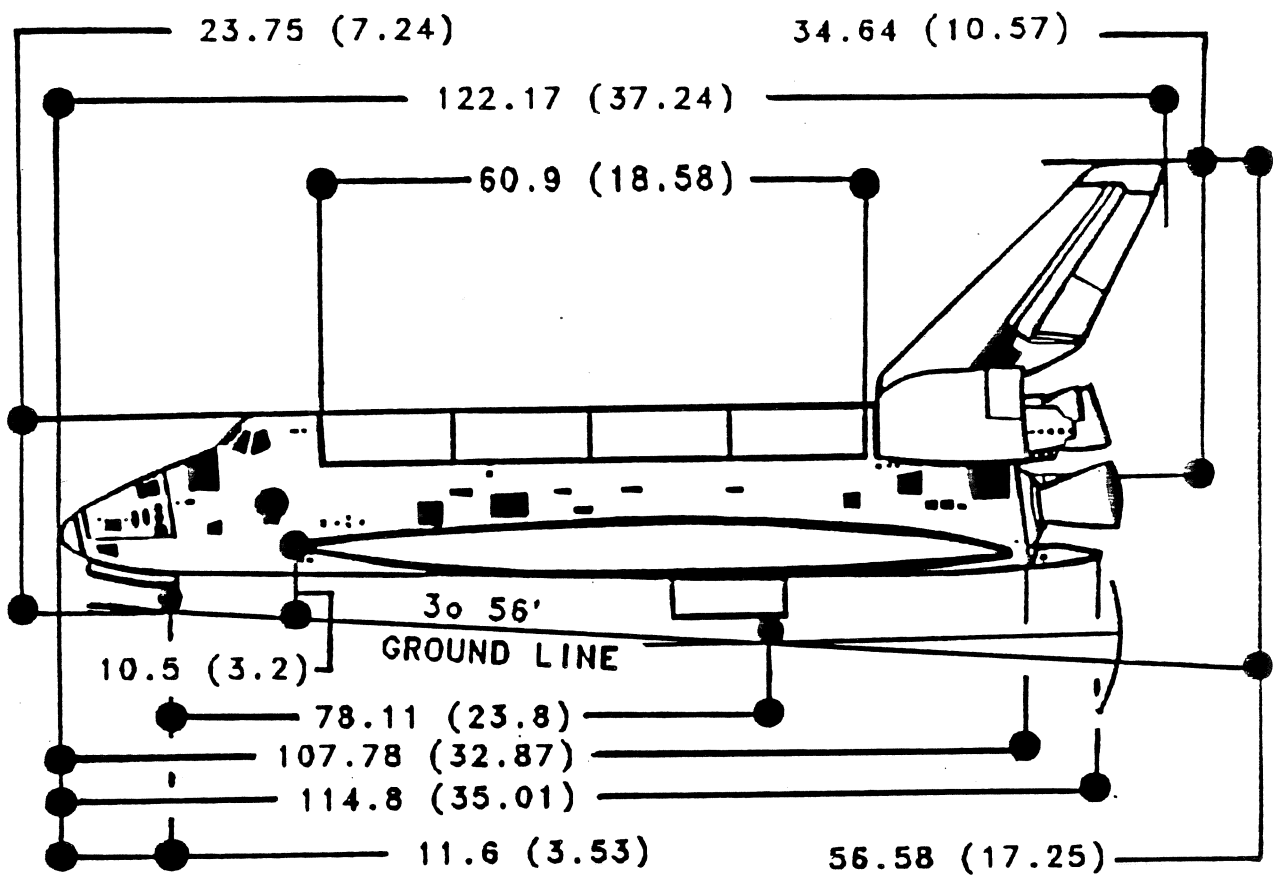
MINIMUM GROUND CLEARANCES

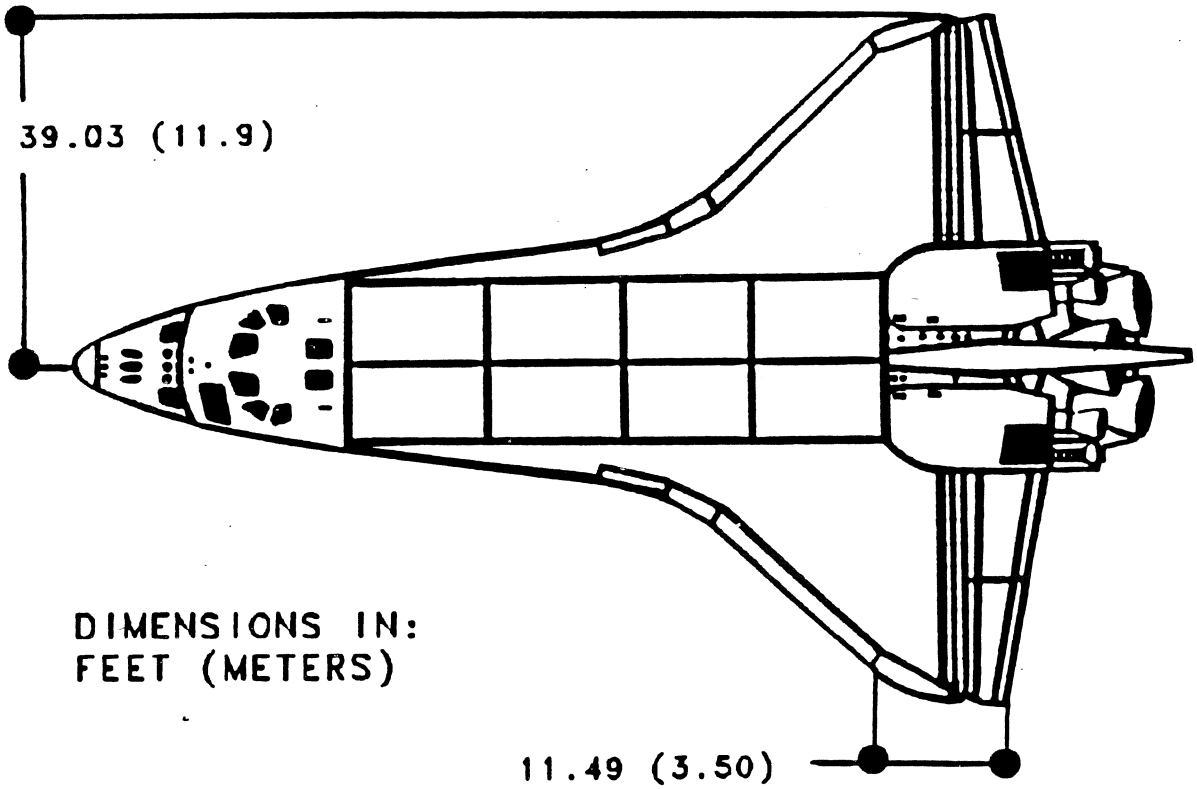
BODY FLAP (AFT END)	12.07	3.68
MAIN GEAR (DOOR)	2.85	0.87
NOSE GEAR (DOOR)	2.95	0.90
WING TIP	11.92	3.63

ORBITER ZONE AND ACCESS LOCATOR

B-3

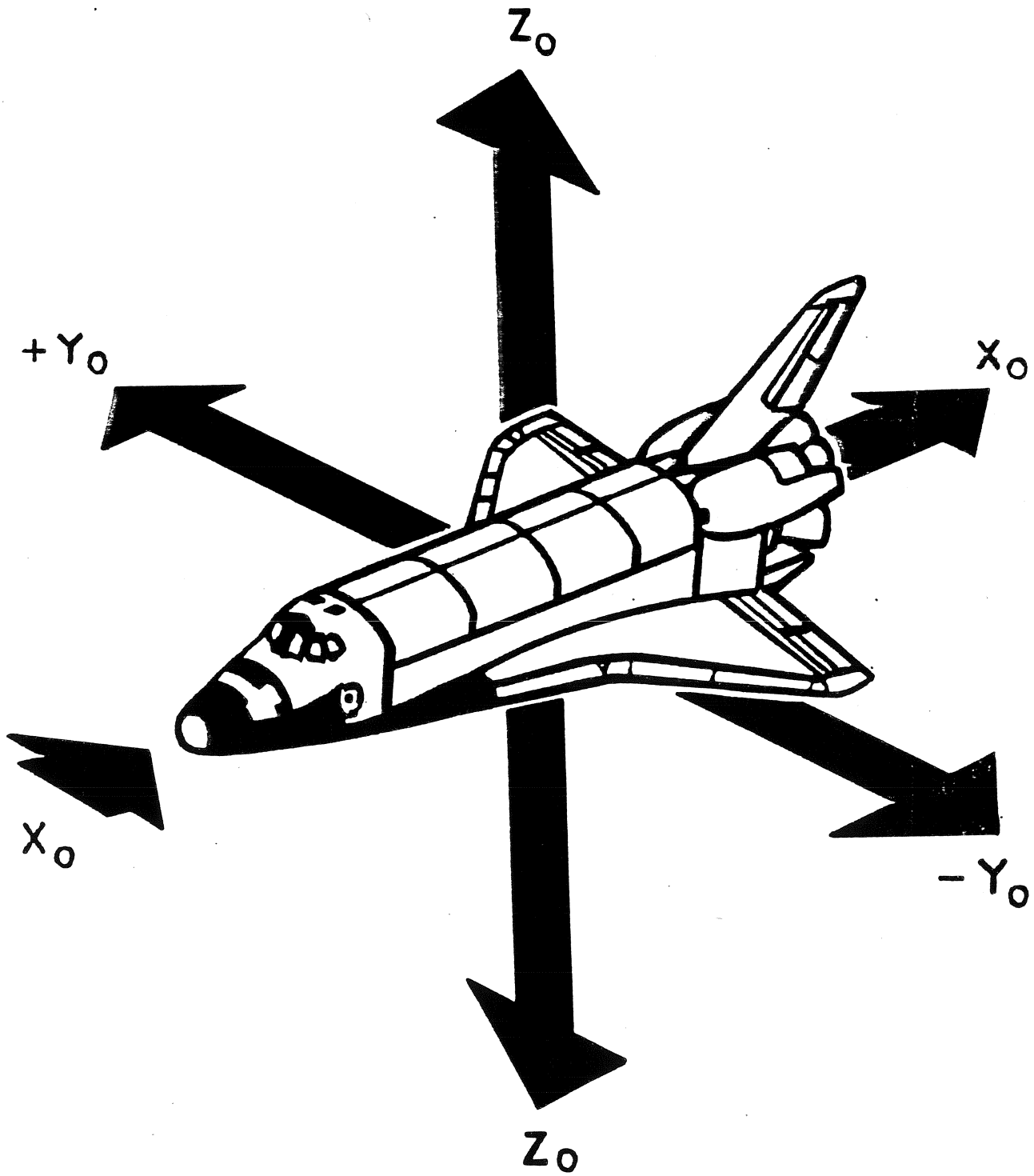
SUBJECT	SECTION	ZONE
ORBITER DIMENSIONS AND STATISTICS	5.2.1	





DIMENSIONS IN:
FEET (METERS)

B-4	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION 5.2.2	SUBJECT ORBITER STATION NUMBERS AND REFERENCE PLANES

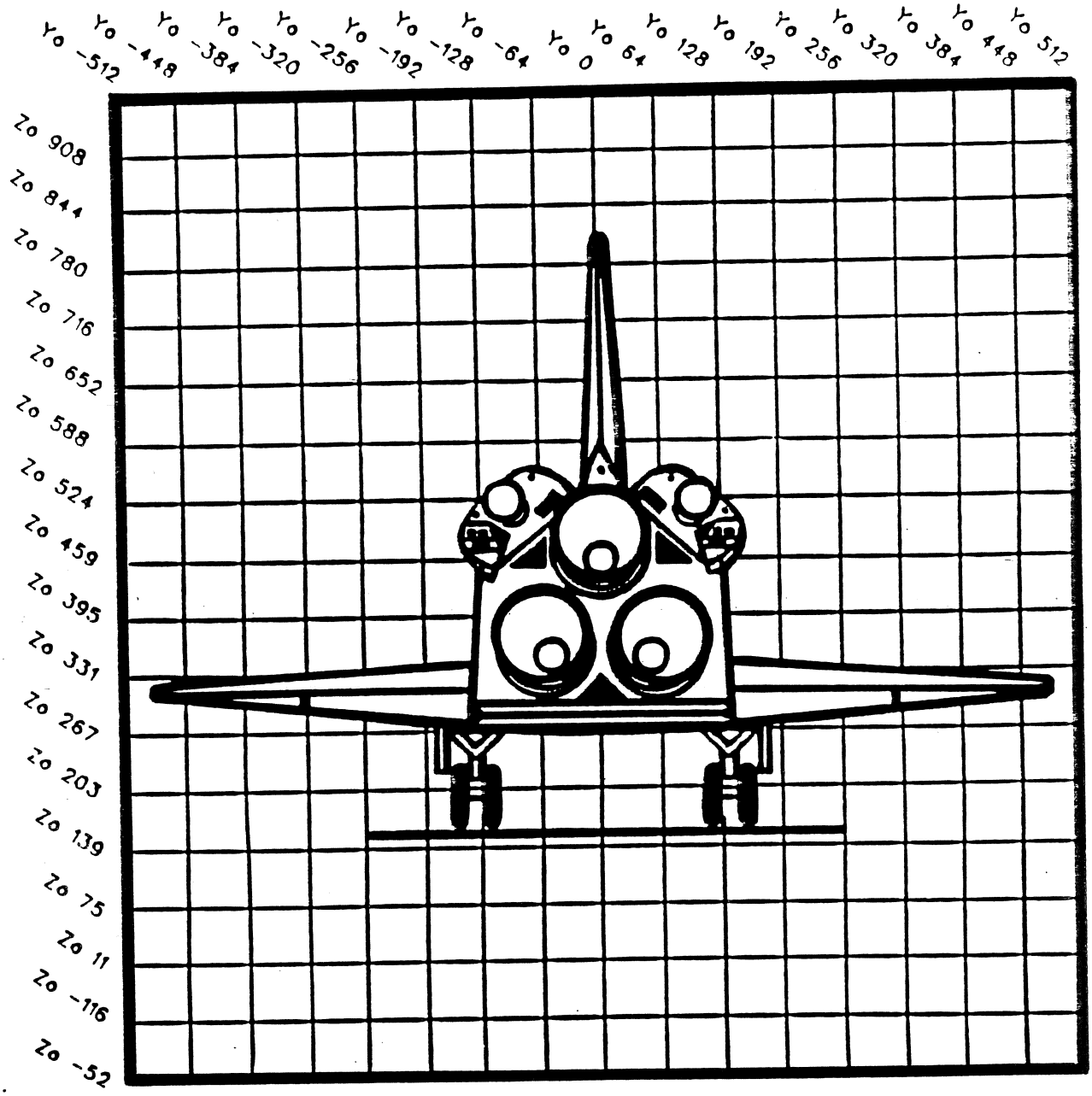


PLANE ORIENTATION

ORBITER ZONE AND ACCESS LOCATOR

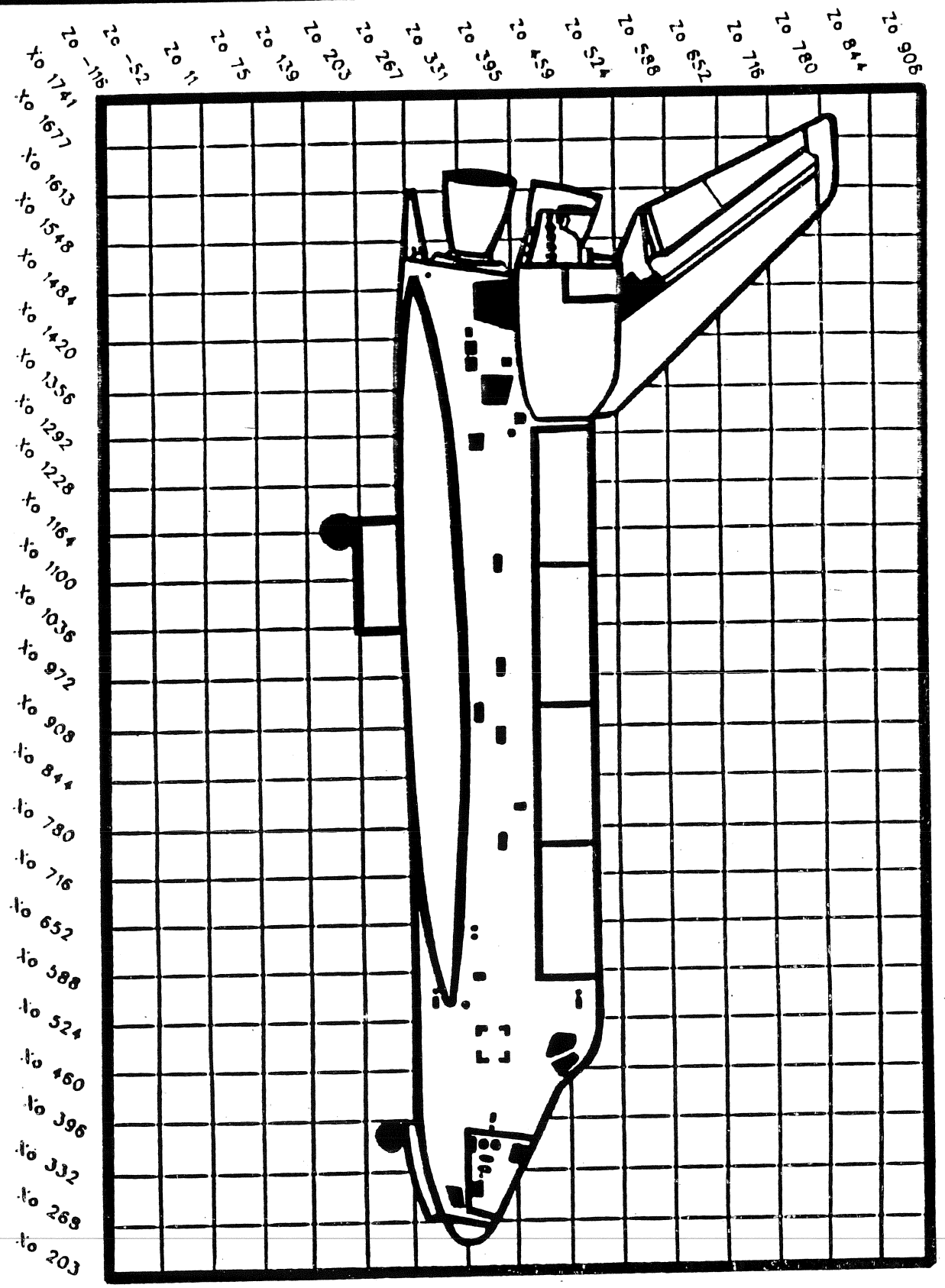
B-5

SUBJECT	SECTION	ZONE
ORBITER STATION NUMBERS AND REFERENCE PLANES	5.2.2	



CENTERLINE
AFT

B-6	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
	5.2.2	ORBITER STATION NUMBERS AND REFERENCE PLANES



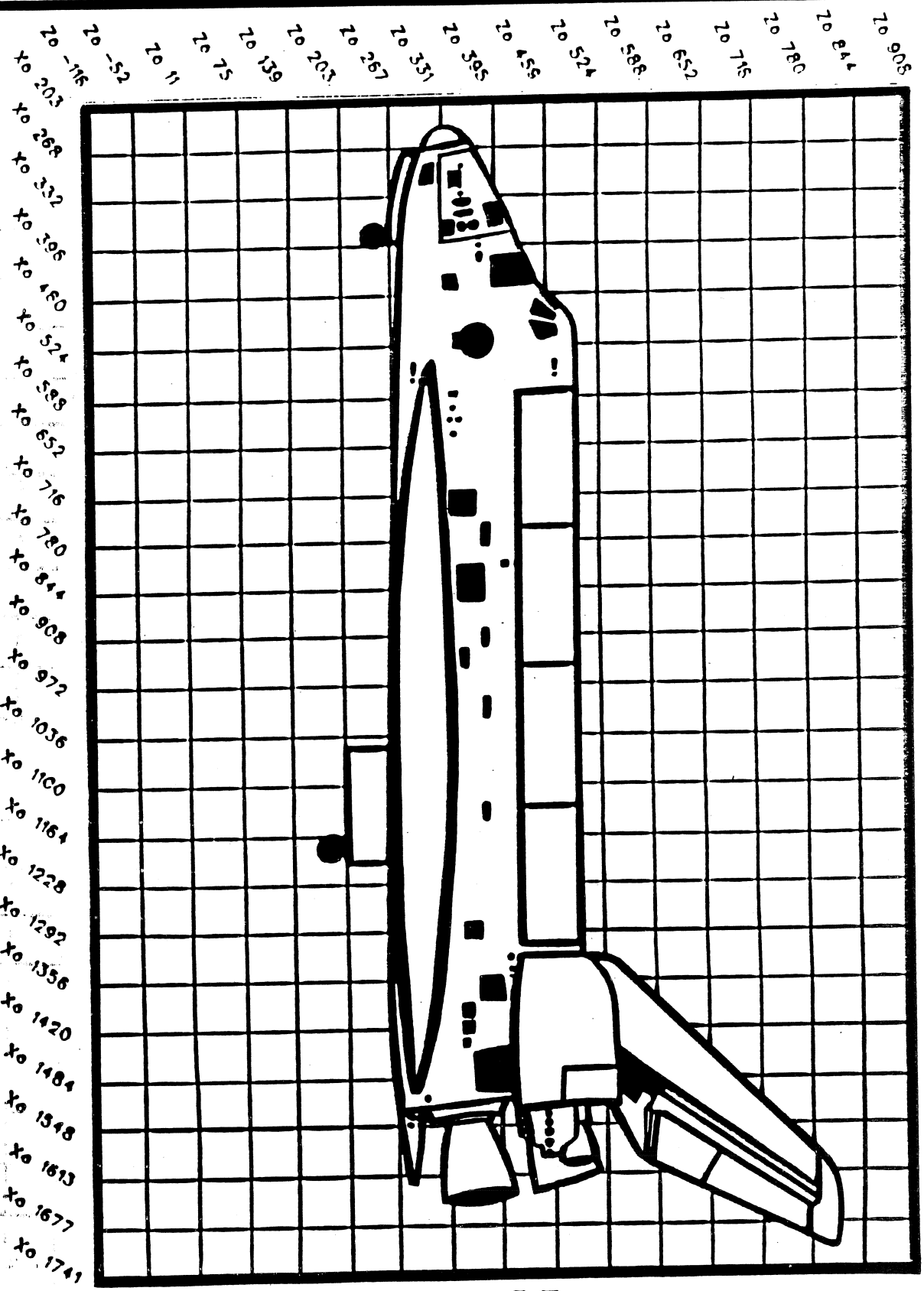
RIGHT SIDE

— STBD —

ORBITER ZONE AND ACCESS LOCATOR

B-7

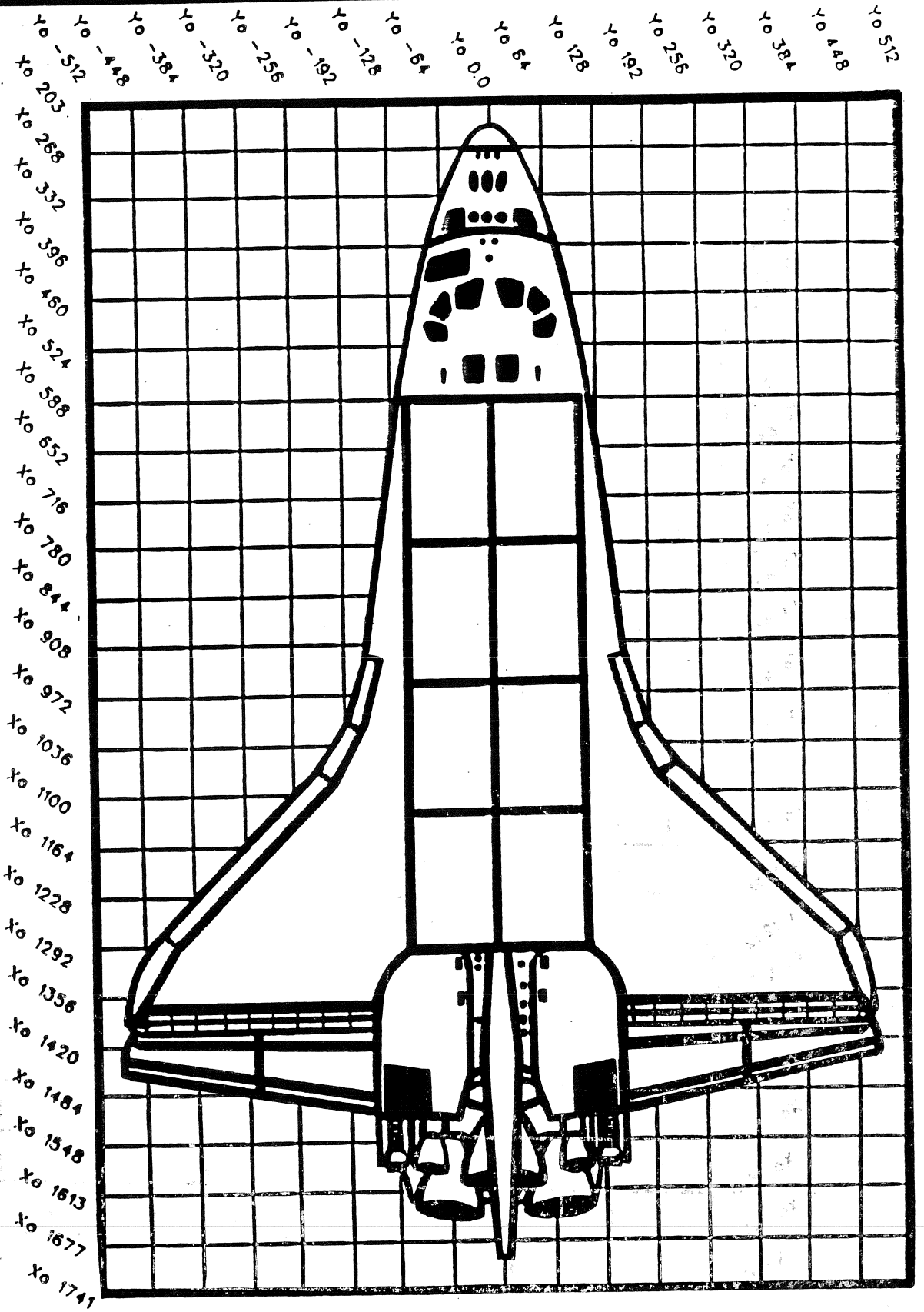
SUBJECT	SECTION	ZONE
ORBITER STATION NUMBERS AND REFERENCE PLANES	5.2.2	



LEFT SIDE

- PORT -

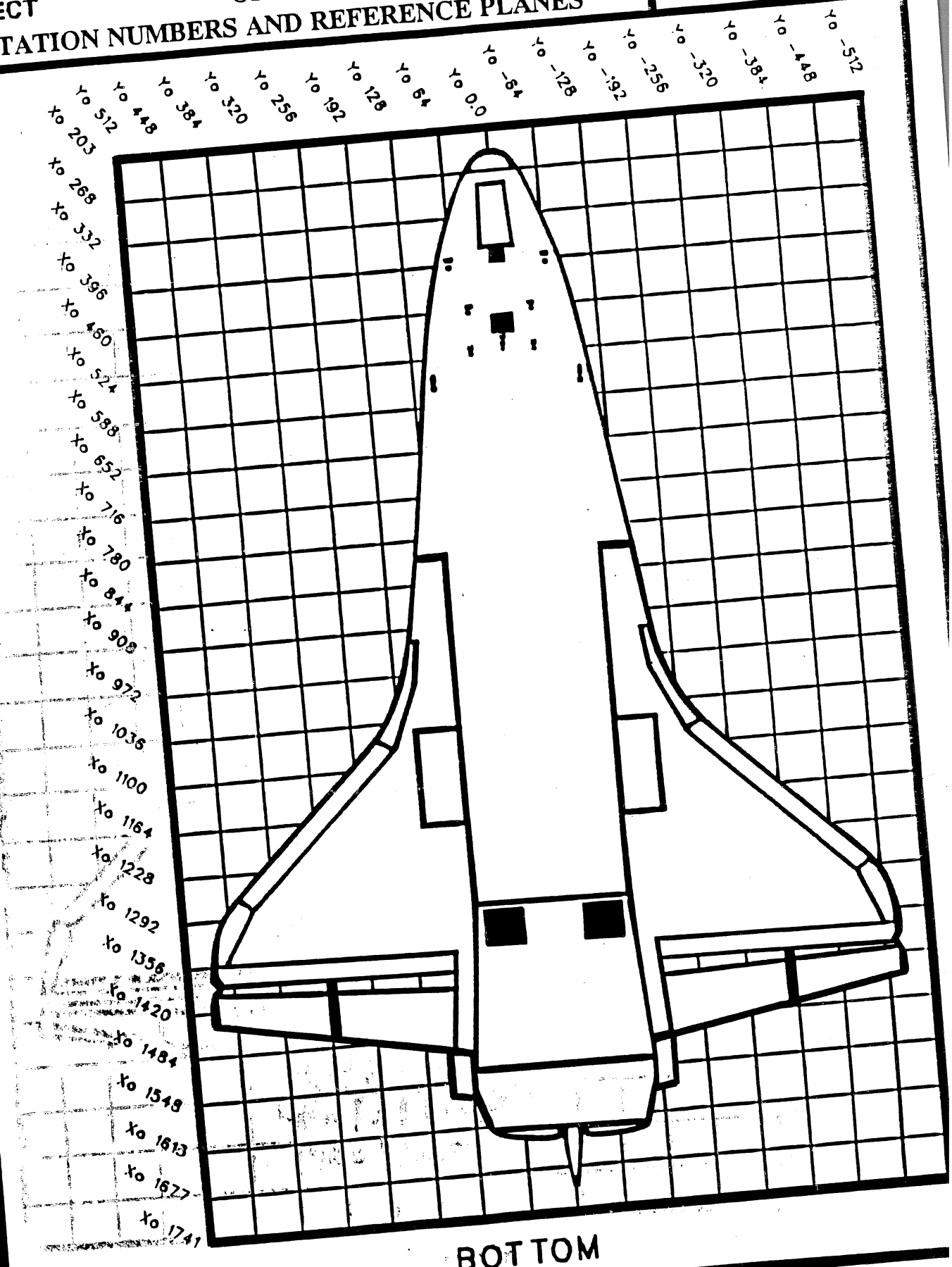
B-8	ORBITER ZONE AND ACCESS LOCATOR	
ZONE	SECTION	SUBJECT
	5.2.2	ORBITER STATION NUMBERS AND REFERENCE PLANES

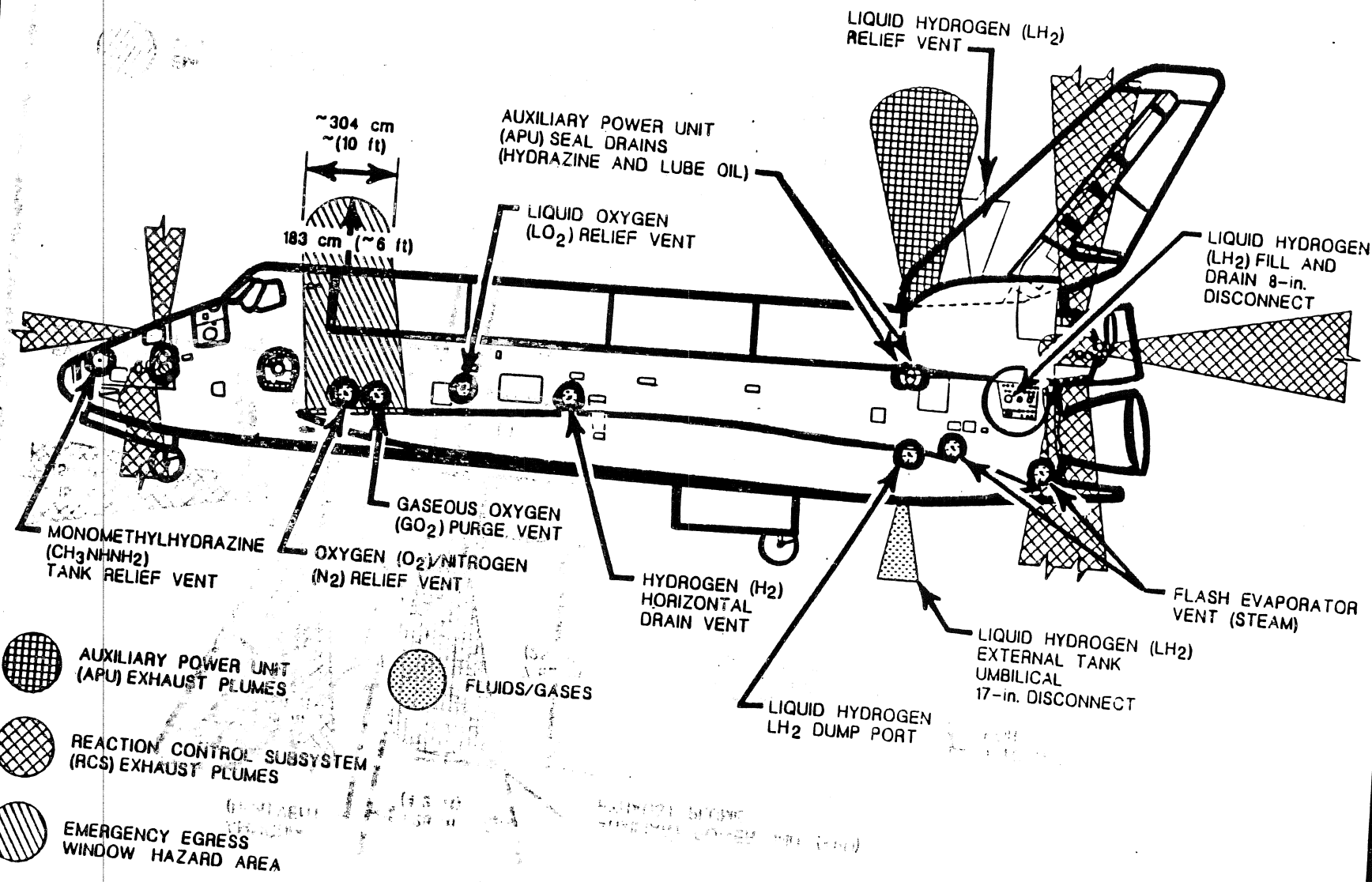


TOP

ORBITER ZONE AND ACCESS LOCATOR

SUBJECT	SECTION	ZONE
ORBITER STATION NUMBERS AND REFERENCE PLANES	5.2.2	




~304 cm
~(10 ft)
183 cm (~6 ft)
LIQUID HYDROGEN (LH_2) RELIEF VENT
AUXILIARY POWER UNIT (APU) SEAL DRAINS (HYDRAZINE AND LUBE OIL)
LIQUID OXYGEN (LO_2) RELIEF VENT
LIQUID HYDROGEN (LH_2) FILL AND DRAIN 8-in. DISCONNECT
GASEOUS OXYGEN (GO_2) PURGE VENT
MONOMETHYLHYDRAZINE (CH_3NHNH_2) TANK RELIEF VENT
OXYGEN (O_2)/NITROGEN (N_2) RELIEF VENT
HYDROGEN (H_2) HORIZONTAL DRAIN VENT
FLASH EVAPORATOR VENT (STEAM)
LIQUID HYDROGEN (LH_2) EXTERNAL TANK UMBILICAL 17-in. DISCONNECT
LIQUID HYDROGEN LH_2 DUMP PORT
AUXILIARY POWER UNIT (APU) EXHAUST PLUMES
FLUIDS/GASES
REACTION CONTROL SUBSYSTEM (RCS) EXHAUST PLUMES
EMERGENCY EGRESS WINDOW HAZARD AREA

ORBITER ZONE AND ACCESS LOCATOR

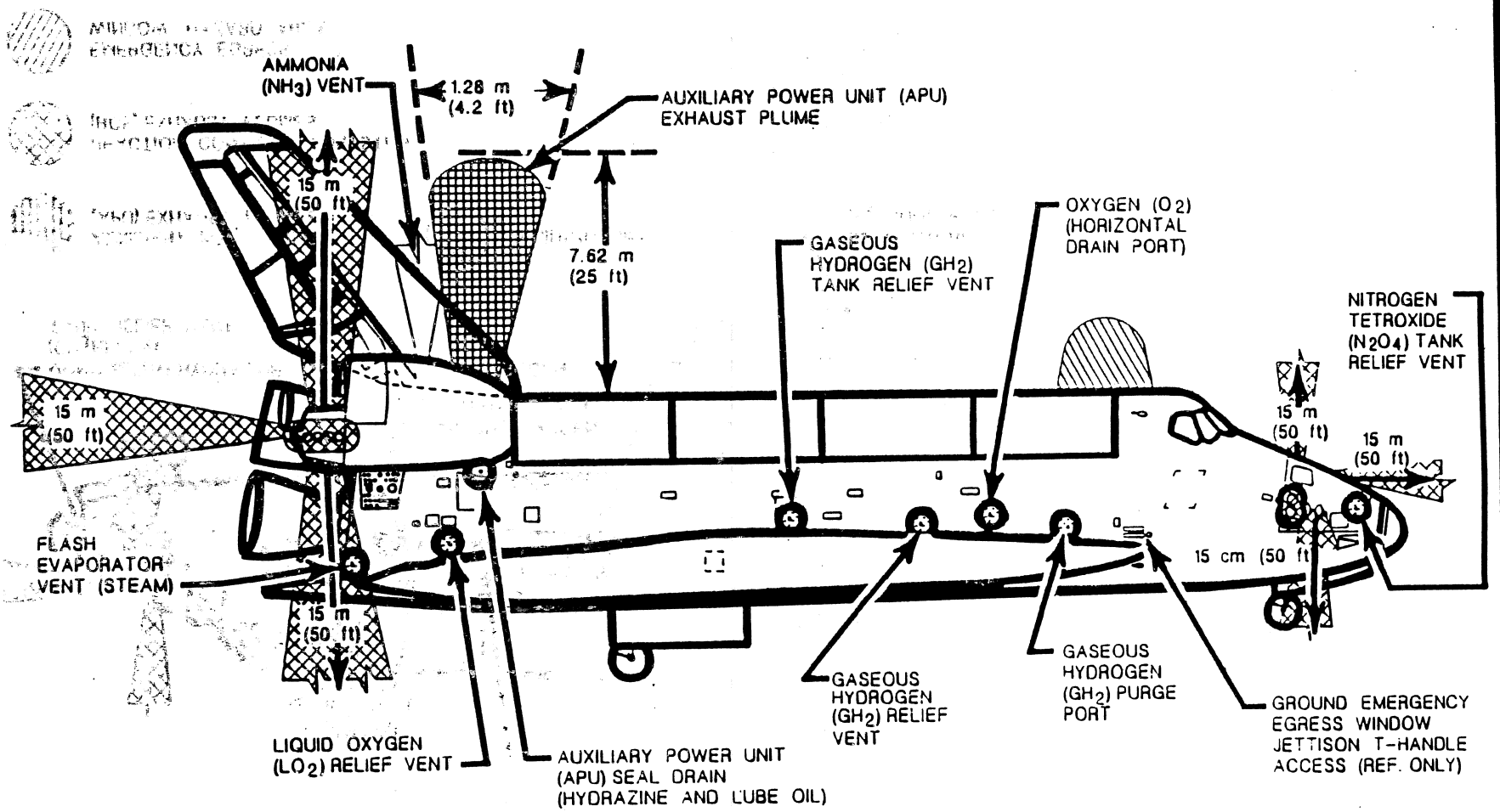
SUBJECT

ORBITER DANGER AREAS

SECTION 5.2.3

ZONE

B-11



EMERGENCY EGRESS WINDOW HAZARD AREA

AUXILIARY POWER UNIT (APU) EXHAUST PLUMES

FLUIDS/GASES

REACTION CONTROL SUBSYSTEM (RCS) EXHAUST PLUMES

NOTES AND NUMBERS

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ORBITER
ZONE AND ACCESS
LOCATOR

A Product of

SPC OPERATIONS ANALYSIS

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JOHNSON CONTROLS