NASA Contractor Report 178416, Part 1

SPACE SHUTTLE PHASE B WIND TUNNEL
MODEL AND TEST INFORMATION

VOLUME 3 - LAUNCH CONFIGURATION

J. L. Glynn and D. E. Poucher

CHRYSLER CORPORATION
Military Public Electronic Systems
Michoud Engineering Office
New Orleans, Louisiana

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Langley Research Center
Hampton, Virginia 23665

ABSTRACT

Archived wind tunnel test data are available for flyback booster or other alternate recoverable configurations as well as reusable orbiters studied during initial development (Phase B) of the Space Shuttle. Considerable wind tunnel data was acquired by the competing contractors and the NASA centers for an extensive variety of configurations with an array of wing and body planforms.

All contractor and NASA wind tunnel test data acquired in the Phase B development have been compiled into a database and are available for applying to current winged flyback or recoverable booster aerodynamic studies.

The Space Shuttle Phase B Wind Tunnel Database is structured by vehicle component and configuration type. Basic components include the booster, the orbiter and the launch vehicle.

Booster configuration types include straight and delta wings, canard, cylindrical, retro-glide and twin body.

Orbiter configuration types include straight and delta wings, lifting body, drop tanks and double delta wings.

Launch configuration types include booster and orbiter components in various stacked and tandum combinations.

The digital database consists of 220 files of data containing basic tunnel recorded data. Database structure is documented in a series of reports which include configuration sketches for the various planforms tested.

* TABLE OF CONTENTS

*Pages 440-982 published under separate cover as NASA CR-178416, Part 2.

INDEX OF TABLES

*FIRST CHARACTER - TABLE NUMBER; SECOND CHARACTER - TEST DISCIPLINE; THIRD CHARACTER - VOLUME/COMPONENT

INDEX OF FIGURES

LAUNCH AERODYNAMICS

INDEX OF FIGURES

LAUNCH AERODYNAMICS

INDEX OF FIGURES

LAUNCH AIRLOADS

INDEX OF FIGURES

LAUNCH HEAT TRANSFER

ACRONYMS FOR TEST FACILITIES AND CONTRACTORS

AEDC	-- ARNOLD ENGINEERING DEVELOPMENT CENTER
ARC	-- AMES RESEARCH CENTER
CAL	-- CORNELL AERONAUTICAL LABORATORY
CCSD	-- CHRYSLER CORP. SPACE DIVISION
GAC	-- GRUMMAN AEROSPACE CORPORATION
GD/C	-- GENERAL DYNAMICS/CONVAIR
JPL	-- JET PROPULSION LABORATORY
LaRC	-- LANGLEY RESEARCH CENTER
LMSC	-- LOCKHEED MISSILES AND SPACE COMPANY
LTV	-- LING TEMCO VOUGHT
MAC	-- McDONNELL AIRCRAFT COMPANY
MDAC	-- McDONNELL DOUGLAS AIRCRAFT CORPORATION
MMC	-- MARTIN MARIETTA CORPORATION
MSC	-- MANNED SPACECRAFT CENTER
MSFC	-- MARSHALL SPACE FLIGHT CENTER
NR	-- NORTH AMERICAN ROCKWELL
NRLAD	-- NORTH AMERICAN ROCKWELL CORP., LOS ANGELES DIVISION
NSRDC	-- NAVAL SHIP RESEARCH AND DEVELOPMENT CENTER
TAM	-- TEXAS A&M
TBC	-- THE BOEING COMPANY
UW	-- UNIVERSITY OF WASHINGTON

1.0 INTRODUCTION

1.1 Space Shuttle Development Phases

Development of the Space Transportation System (STS) encompassed the study of a large number of conceptual designs and an extensive wind tunnel testing program. Phases of the development program are identified as:

Phase A - Concept Feasibility Studies - 1969-1970

Phase B - Preliminary Design Studies - 1970-1972

Phase C/D - Design and Development - 1972-1983

During the Phase A and B periods, completely reusable systems were studied including the "flyback" booster. However, due to the large cost of the completely reusable concept, NASA decided at the end of the Phase B period to employ an expendable booster design. Phase C/D design and development was then concentrated on a two-stage, parallel-burn booster system concept.

In the development stage (Phase B) of Space Shuttle design, extensive wind tunnel data were acquired for a variety of alternate configurations. These data were accumulated, converted into standard formats, placed in a data bank and documented. This work was performed by the Chrysler Corporation Military Public Electronic

Systems, Michoud Engineering Office under contract to NASA/MSFC.

Developmental configurations considered for early Space Shuttle studies were extremely varied. These included winged "flyback boosters," "inline" staged launch vehicles and various "parallel staged" orbiter-booster combinations. Wind tunnel models of the various vehicles were tested both in the launch and entry configurations. Aerodynamics, airloads and heat transfer data were collected and compiled from four major contractors and parallel NASA directed studies. Results were documented individually through a series of NASA technical reports, contractor reports and test reports. The digital data and associated descriptive documentation which were archived have been maintained and are available for ongoing applications.

Current advanced launch vehicle studies are focusing on many of the approaches considered during original Space Shuttle studies. Available wind tunnel data for configurations similar to those currently being evaluated can be highly valuable to the preliminary design engineer.

The archived Phase B data is available to the technical community. Extracts of descriptive information and configuration sketches, and digital test data have been compiled and are reported herein to facilitate use of the large data bank for booster, orbiter and launch configurations.

1.2 Chrysler's Test Database and Archive System

Extensive Chrysler involvement in wind tunnel data application on NASA programs prior to the Space Shuttle resulted in development of complex computer systems for automating these processes. These processes included automating the management and database functions in addition to automating the engineering data applications and computer graphics. These combined functions were reflected in the name DATAMAN.

The Chrysler developed Data Management System (DATAMAN) was used to develop design applicable aerodynamic data, generate extensive plots and cross plots, document, and database wind tunnel test data from the Space Shuttle Phase B test program under contract to the NASA/MSFC.

Chrysler initiated the DATAMAN project in early 1970 and continued through both the Phase B and Phase C/D test programs. Extensive management procedures were devised to effectivley identify and track the expected large volumes of data to be generated by a number of contractors, and a variety of Phase B configurations. Hence, a means of conveying descriptive information relative to the configurations and associated data was required.

A four digit report identifier was assigned as initial test inputs were made to the DATAMAN system to track and report activities on individual tests. For the Phase B test program, these identifiers were DMS-DR-1001 through DMS-DR-1278. Thus, approximately 278 sets of test results were processed, documented, and databased.

The assignment of identifiers was sequential and they are,therefore, chronological throughout the Phase B configuration management. Many other identifiers are associated with individual tests such as configuration type, NASA series number, test facility designations and contractor(s) involved.

Each test was documented in a DATAMAN test data report, test data were archived in standard DATAMAN formats, and salient tracking information was compiled. All these were disseminated to NASA technical and program management personnel for technical assessment of the data and managing the overall test program.

1.3 Extracting Phase B Test Database Information

The effort involved extracting and compiling Phase B test data contents and descriptive information from the archived test data bank and documentation file. Digital database files contained a mix of basic tunnel recorded data and calculated analysis data used for graphic displays. These files were reduced to basic tunnel data and structured by configuration tested and contractor. A series of catalog reports were assembled to provide a readily accessible overview of test results available for future space transportation system studies.

These catalog reports are in increasing levels of detail. The first level consists of summary tables and selected sketches. These enable the user to scan for possible applications to his ongoing work.

For a promising or likely candidate configuration, the user can proceed to the second level of detail where all available configuration sketches and test conditions are compiled.

The third level of detail is the digital data files where tunnel recorded data resides.

2.0 COMPILATION OF PHASE B DATABASE ARCHIVE CONTENTS

2.1 Compilation Outline

Results of the Phase B database compilation are contained in the following list.

1) Summary catalog report, DMS-DR-01, containing an overview of database contents and availability.

2) A three volume catalog report, DMS-DB-02, containing configuration sketches and conditions tested. The three volumes correspond to booster, orbiter and launch test configurations.

3) A series of magnetic data tapes containing available digital files. These are also structured by configuration and are described in transmittal documents DMS-TD-01 through 03, corresponding to booster, orbiter and launch test configurations, respectively.

4) A directory database information file formatted for the R-base relational database system.

Documentation of the contents of the database is contained in two reports: DMS-DB-01 and DMS-DB-02.

2.2 Summary Volume

The first document (DMS-DB-01) is a single volume summary report containing planform line drawings of the various configurations tested during the Space Shuttle Phase B program. Tabular information from the directory file is included and is divided by component (booster, orbiter and launch) and by test discipline (aerodynamics, airloads and heat transfer).

2.3 Model and Test Information

The second document (DMS-DB-02) is a three volume report containing extracts from the individual test data reports. All line drawings and collation sheets/run schedules are included. The three volumes correspond to the three component classifications: booster, orbiter and launch, respectively. A series of tabular information from the directory file provide an outline of available test information.

Structure of the tables and sketches is by component and test discipline with sorting by configuration and contractor. Each booster and each orbiter configuration tested are assigned a 2-character code for purposes of grouping and sorting.

These codes are

	Code	General Configuration
Booster -	B1	Canard
	B2	Cylindrical
	B3	Delta Wing
	B4	Straight Wing
	B5	Unique
Orbiter -	01	Delta Body
	02	Delta Wing
	03	Straight Wing
	04	Unique

Launch configurations tested are identified by a combination of the above codes. Test information is also sorted by individual contractors and NASA centers. Acronyms for these contractors and test facilities are presented in the frontispiece.

It should be noted that individual tests may be identified as multiple configurations. For example, booster and orbiter alone data may have been taken along with launch configurations in a single test. The test would appear in the tabular listings for all applicable classifications, but line drawings and run schedules would be included only in the launch section. Cross references are provided in the Index of Figures for this case and also where multiple booster or orbiter configuration codes were involved in the same test.

Directory information displayed in tables 1, 3, 4 and 6 provide information only for the component documented in that individual volume. Tables 2 and 5 display information for all tests and components. An outline of the contents of the three volumes is illustrated in the Index of Tables.

2.4 Digital Database

The digital database also follows the structure of table 1. Database contents represent data as received from the test facility. However, for some tests an additional, calculated, coefficient schedule is included. These additional schedules are mainly a second axis system or extract data from a multi-balance test. Individual datasets within a file are encoded with the configuration code in the header information.

Test data are stored on five magnetic data tapes. These tapes are 9-track, 6250 FPI, ASCII format.

File contents are:

Tape#	Component	#Files	#Datasets	Config. Codes
1	Booster - Aerodynamics	53	4,216	B1-B5
2	Orbiter - Aerodynamics	89	4,500	01+02
3	Orbiter - Aerodynamics	20	1,962	03+04
4	Launch - Aerodynamics	34	4,034	B1-B3
5	Launch - Aerodynamics	19	637	B4+B5
	- Airloads	4	1,182	ALL
	- Heat Transfer	1	21	ALL
	Total	220	16,552	

Specific test locations on the digital database are shown in table 6.

2.5 Directory File

The directory data file was constructed to assist in the categorization of tests and to generate tabular reports.

Information was extracted from existing administrative reports and from individual test data reports. The file was created using the R-base relational database system by Microrim. A description of the table information is as follows:

Table: DMS-DR#
Read Password: NO
Modify Password: NO

Column definitions

#	Name	Type	Length (Characters)	Description
1	DR#	TEXT	4	DATAMAN Report Number
2	CR#	TEXT	8	Contractor Report Number
3	TMX#	TEXT	12	NASA TMX Report Number
4	NSN	TEXT	14	NASA Test Series Number
5	#VOL	TEXT	1	Number of Report Volumes
6	VOL#	TEXT	1	Report Volume Number
7	PUB.DATE	TEXT	13	Report Publication Date
8	LINE#	TEXT	1	Print Key for Tabular Report
9	TESTTYPE	TEXT	15	Test Discipline
10	COMP	TEXT	7	Test Component
11	BCC	TEXT	3	Booster Configuration Code
12	OCC	TEXT	3	Orbiter Configuration Code
13	B-CODE	TEXT	15	Booster Classification
14	B-CONTRA	TEXT	10	Booster Model Contractor
15	O-CODE	TEXT	15	Orbiter Classification
16	O-CONTRA	TEXT	10	Orbiter Model Comtractor
17	FAC	TEXT	5	Test Facility
18	TUN	TEXT	6	Test Wind Tunnel
19	TEST#	TEXT	15	Facility Test Number
20	FAC-TST#	TEXT	26	Facility, Tunnel, Facility Test Number
21	MACH	TEXT	15	Mach Number Range
22	SCALE	TEXT	12	Model Scale
23	DMS-CODE	TEXT	6	Two Character Dataset Identifier
24	B-TYPE	TEXT	23	Booster Configuration Type
25	O-TYPE	TEXT	33	Orbiter Configuration Type
26	CONFIG	TEXT	220	Description of Configurations Tested
27	PURPOSE	TEXT	150	Major Test Purpose
28	TITLE	TEXT	250	Data Report Title
29	PROJ.ENG	TEXT	175	Contractor/NASA Test Engineers
30	DMS-ENG	TEXT	30	DATAMAN Cognizant Engineers
31	COMMENTS	TEXT	150	Directory File Comments/Exceptions

Current number of rows: 488

2.6 Guide to Phase B Database Use

Users of the Chrysler Phase B database have varying levels of detail available for review. A typical application is to investigate similarities between current preliminary configuration designs and configurations tested during Phase B. As an example, current applications may be representative of a winged flyback booster with canards. To research this configuration the user could follow the steps illustrated below:

Step 1 - DMS-DB-01, Summary Report: This report would be reviewed to identify configurations of interest and corresponding configuration types and contractors.

INDEX OF MODEL FIGURES - BOOSTER

		PAGE NUMBER		
Booster Type	Contractor	Aerodynamics	Airloads	Heat Transfer
CANARD	MDAC	A-1-1	B-1-1	C-1-1
	MDAC/MMC	A-1-4		
	MSFC	A-1-5		
	TBC	A-1-6		
CYLINDRICAL	GD/C	A-1-7		
	LMSC	A-1-8		
	MDAC	A		

Step 2 - Table 1, DMS-DB-01, Summary Report: Using the configuration type and contractors identified above, a list of applicable tests is obtained.

Table 1.1.1
Space Shuttle Phase B Wind Tunnel Test
Database Summary

Booster Aerodynamics

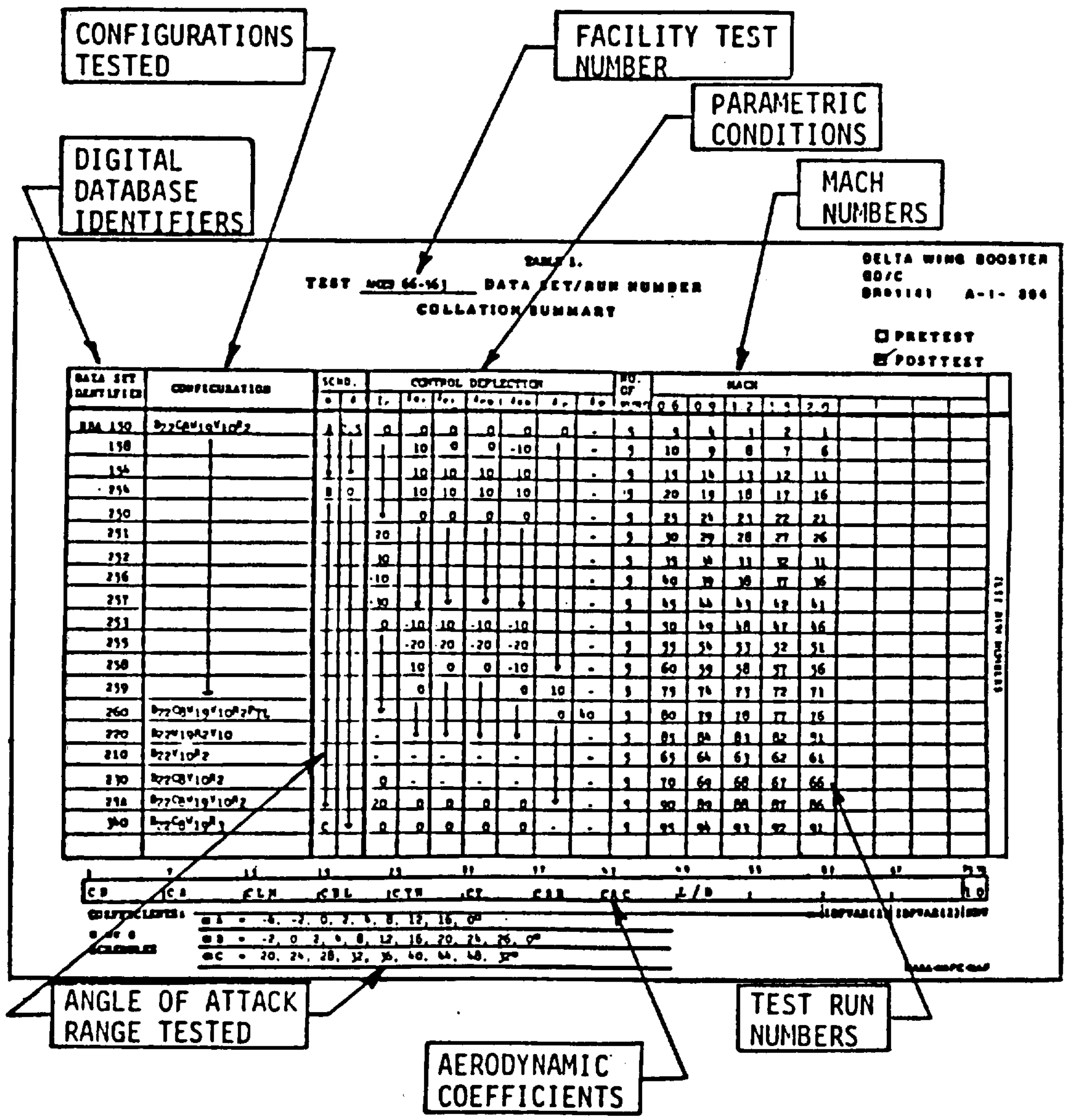
CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
B1	CANARD	MDAC	1035	0.18	MAC	0.01	MDAC SPACE SHUTTLE BOOSTER
B1	CANARD	MDAC	1108	2.0-6.0	AEDC	0.00550	MARTIN BOOSTER
B1	CANARD	MDAC	1139	0.[illegible]	MSFC	0.015	MDAC DELTA CANARD BOOSTER
B1	CANARD	MDAC/MMC	1054	0.[illegible]	MAC	0.03	MDAC/MMC SPACE SHUTTLE BOOSTER
B1	CANARD	MDAC/MMC	1066	0.6-2.0	ARC	0.007	MDC-MMC BSV CONFIG.-16 BOOSTER (SINGLE BODY, CANARD)
B1	CANARD	MDAC/MMC	1077	0.6-0.[illegible]	MAC	0.03	MDAC/MMC SPACE SHUTTLE BOOSTER
B1	CANARD	MDAC/MMC	1080	7.4	ARC	0.007	MDC-MMC BSV BOOSTER SINGLE BODY CANARD
B[illegible]		MDAC/MMC	1116				MMC/MDC SDC BOOSTER

Step 3 - DMS-DB-02, Vol.1, Booster Configuration: Locate the model sketches and test conditions and parameters.

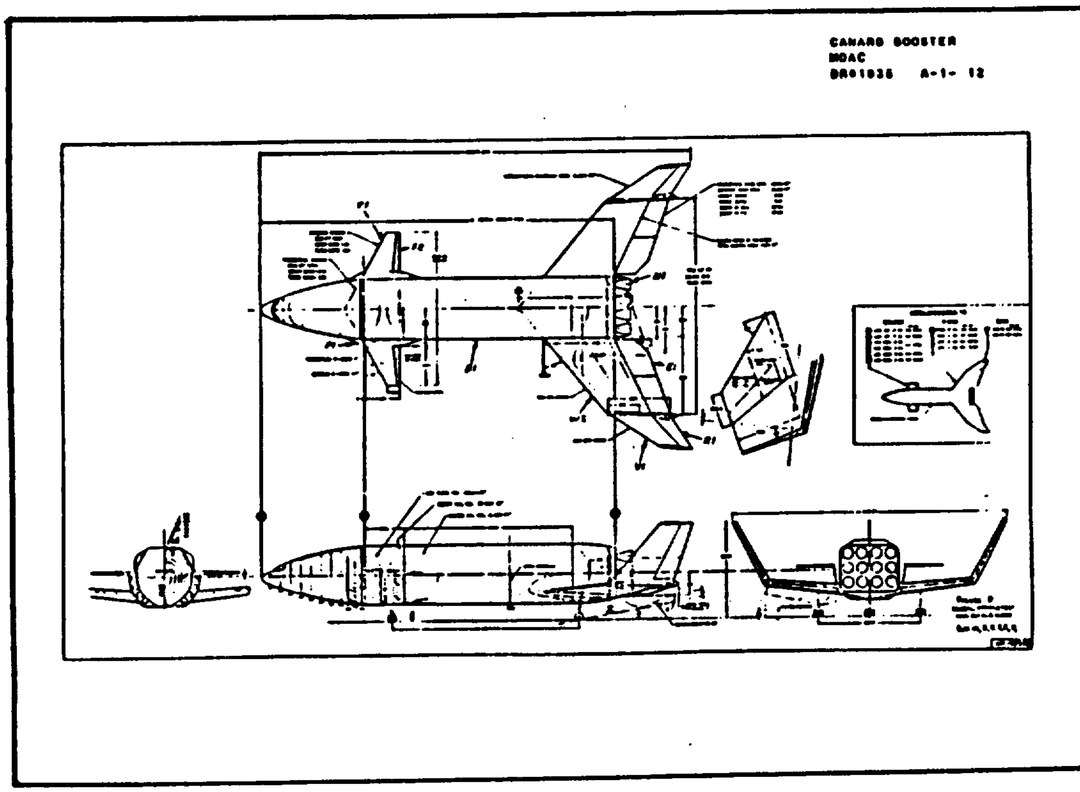
INDEX OF FIGURES
BOOSTER AERODYNAMICS

BOOSTER CONFIG. CODE	BOOSTER CONTRACTOR	DMS-DR #	PAGE NUMBER
B1	MDAC	1035	A-1-1
B1	MDAC	1108	SEE C-1-23
B1	MDAC	1139	A-1-13
B1	MDAC/MMC	1054	A-1-45
B1	MDAC/MMC	1066	A-1-64
B1	MDAC/MMC	1077	A-1-78
B1	MDAC/MMC	1080	A-1-96
	MDAC/MMC	111[illegible]	A-1-[illegible]
	[illegible]/MMC		

Step 4a- <u>Dataset/Run Number Collation Summary</u>: Examine collation sheets to determine test Mach range, angle of attack/sideslip ranges, configurations and control surfaces/parametric conditions.



Step 4b- <u>Configuration Sketches</u>: Examine configuration sketches to obtain model and aerodynamic details such as model dimensions, wing type, canard surfaces, tail surfaces, body shape, etc.



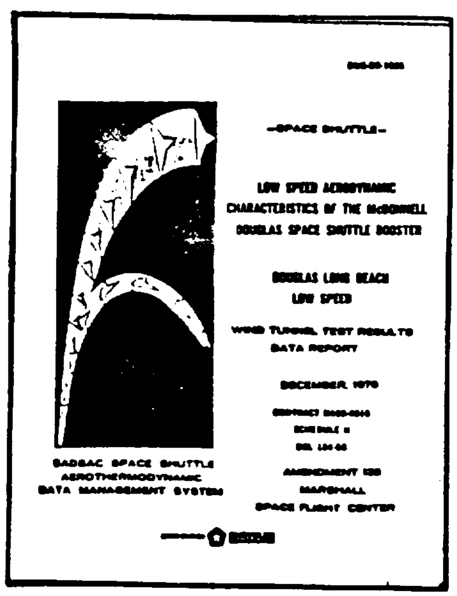
ORIGINAL PAGE IS
OF POOR QUALITY

Step 5 - Table 2, DMS-DB-02, Vol.1: Refer to table to determine publication availability: data report, contractor report or NASA publication.

Table 2
Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DB0	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1001	[illegible]	1	102.150	—	MSFC 14TWT 461	BOOSTER
1002	[illegible]	1	—	62.035	ARC 2.5HWT 78	ORBITER
[illegible]						BOOSTER
1031	[illegible]	1	102.100	—	[illegible] LSWT 632	ORBITER
1035	[illegible]	1	102.101	—	MAC LSWT 1351	BOOSTER
1036	[illegible]	1	—	—	LARC UPWT 167-170,200-222	LAUNCH
			—	—	LARC UPWT 167-170,200-222	BOOSTER

Step 6 - Test Documentation: Refer to test documentation to obtain test procedures, model description and data presentation.


—SPACE SHUTTLE—

LOW SPEED AERODYNAMIC CHARACTERISTICS OF THE McDONNELL DOUGLAS SPACE SHUTTLE BOOSTER

DOUGLAS LONG BEACH
LOW SPEED

WIND TUNNEL TEST RESULTS
DATA REPORT

DECEMBER 1970

AMENDMENT 128
MARSHALL
SPACE FLIGHT CENTER

AEROTHERMODYNAMIC
DATA MANAGEMENT SYSTEM

Step 7 - <u>Digital Database</u>, Table 2 in DMS-DB-01 (Table 6 in DMS-DB-02): the user, after determining applicability, can access the test data from the digital database files for further analysis and application.

TABLE 2.1

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
BOOSTER AERODYNAMICS

FILE #	BCC	B-CONTRA	DR#	2-CHAR. CODE	# D/S's	# RECORDS
1	B1	MDAC	1035	CC	69	967
2			1133	N2	574	8037
3		MDAC/MMC	1054	CE	208	2185
4			1066	AD	86	1033
5			1077	CØ	96	1057

3.0 NOMENCLATURE AND AXIS SYSTEMS

A standard set of nomenclature and axis systems definitions for DATAMAN reports were established during the Phase B test period. They were compiled from inputs from the various contractors and test facilities involved in the test program and are shown on the following pages.

Additions to the standards were required for individual tests due to the many configurations investigated. These additions are documented in the individual test data reports.

Numerous reference dimensions and moment reference center locations were used by the varius contractors for the many configurations tested. Model reference dimensions and moment center locations for each configuration are described in the individual test data reports. This information is also contained in the header block of each dataset on the digital database.

NOMENCLATURE
General

SYMBOL	SADSAC SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_l - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2, psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3, $slugs/ft^3$

Reference & C.G. Definitions

SYMBOL	SADSAC SYMBOL	DEFINITION
A_b		base area; m^2, ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
l_{REF} $\bar{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

NOMENCLATURE (Continued)

Body-Axis System

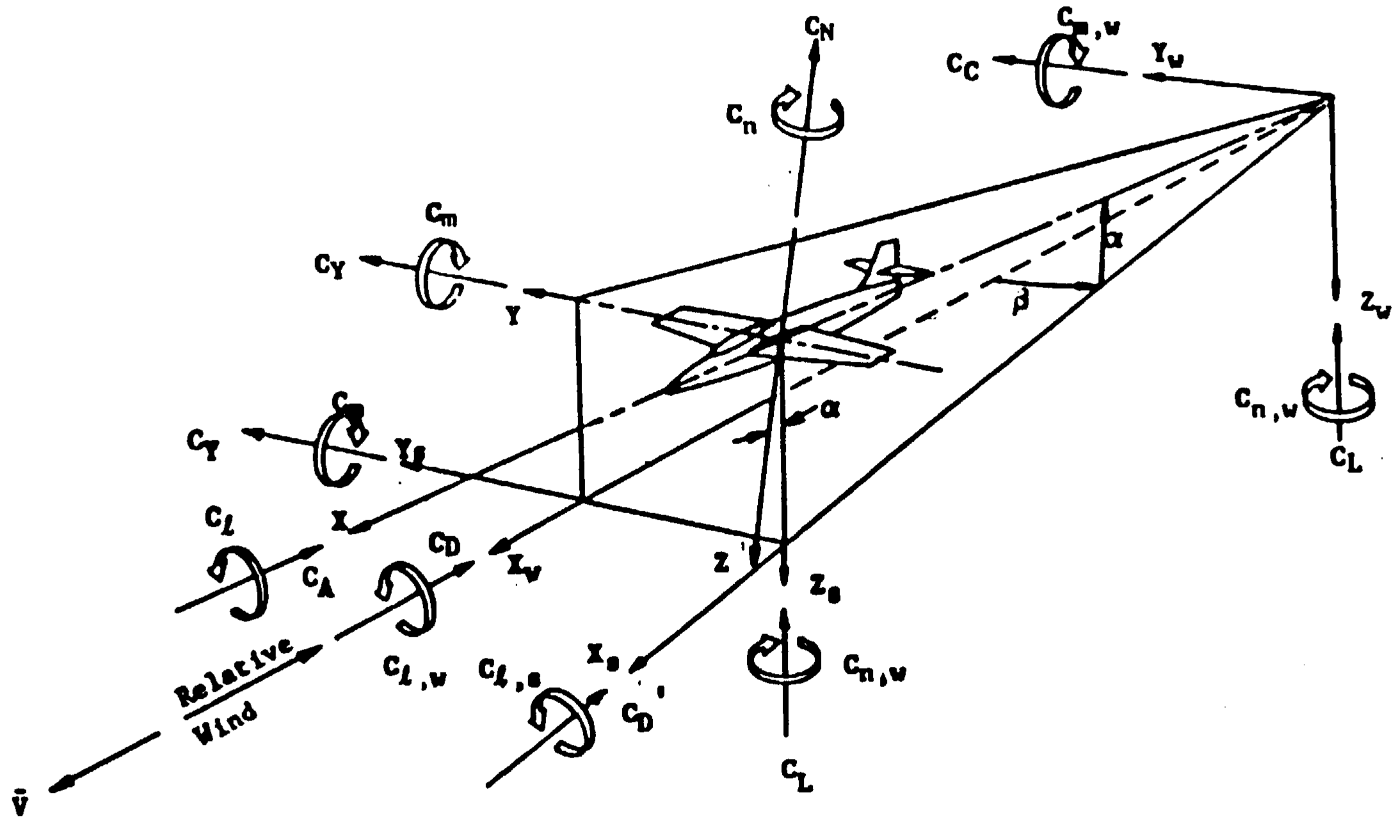
SYMBOL	SADSAC SYMBOL	DEFINITION
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$

Stability-Axis System

SYMBOL	SADSAC SYMBOL	DEFINITION
C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D

Notes:
1. Positive directions of force coefficients moment coefficients, and angles are indicated by arrows.

2. For clarity, origins of wind and stability axes have been displaced from the center of gravity.



Axis systems, showing direction and sense of force and moment coefficients, angle of attack, and sideslip angle

Table 1.1.3

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Aerodynamics

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B1	CANARD	MDAC	02	DELTA WING	MDAC	1065	0.6-2.0	ARC	0.007	MDAC HIGH WING BOOSTER, MDAC LOW CROSS RANGE ORBITER, MDAC LOW WING BOOSTER, MDAC HIGH CROSS RANGE ORBITER
B1	CANARD	MDAC	02	DELTA WING	MDAC	1108	2.0-6.0	AEDC	0.00556	MDAC ORBITER, MARTIN BOOSTER
B1	CANARD	MDAC	02	DELTA WING	MDAC	1118	0.6-2.0	ARC	0.007	DELTA WING ORBITER, BOOSTER WITH CANARD, AFT SWEPT WING, TIP FINS
B1	CANARD	MDAC/MMC	02	DELTA WING	MDAC	1117	2.3-4.6	LARC	0.007	MDAC/MMC HCR DELTA WING ORBITER, MDAC/MMC SBC BOOSTER
B1	CANARD	MDAC/MMC	02	DELTA WING	MDAC	1190	0.25	LARC	0.0032	MDAC/MMC 256-14 BOOSTER, MDAC 0050B ORBITER, NAR/GDC B-15B-1 BOOSTER, NAR 134D ORBITER
B1	CANARD	TBC	02	DELTA WING	GAC	1148	0.6-5.0	MSFC	0.002456	TBC AR1198I-1 BOOSTER WITH GAC G3-A ORBITER, BOEING AR1198I-1 BOOSTER
B1	CANARD	MDAC	03	STRAIGHT WING	MDAC	1065	0.6-2.0	ARC	0.007	MDAC HIGH WING BOOSTER, MDAC LOW CROSS RANGE ORBITER, MDAC LOW WING BOOSTER, MDAC HIGH CROSS RANGE ORBITER
B1	CANARD	MDAC	04	UNIQUE CONFIGS.	MDAC	1099	0.6-2.0	ARC	0.007	MDAC BOOSTER WITH S-IVB SECOND STAGE
B1	CANARD	MDAC	04	UNIQUE CONFIGS.	MDAC	1166	0.6-4.96	MSFC	0.00285	MDAC PARALLEL BURN LAUNCH CONFIGURATION
B2	CYLINDRICAL	GD/C	02	DELTA WING	MSC	1204	0.6-5.0	MSFC	0.003366	GD/C B19B BOOSTER WITH MSC 040A ORBITER, GD/C B19B BOOSTER
B2	CYLINDRICAL	GD/C	02	DELTA WING	MSC	1210	0.9-4.96	MSFC	0.003366	TWIN PRESSURE FED BOOSTER WITH MSC 040A ORBITER, GD/C B-18E-2 BOOSTER, GD/C B-18E-3 BOOSTER
B2	CYLINDRICAL	MDAC	02	DELTA WING	MSC	1230	0.6-4.5	MDAC	0.006	PARALLEL BURN PRESSURE FED AND SRM BOOSTERS, 040A ORBITER
B2	CYLINDRICAL	MSFC	02	DELTA WING	LMSC	1256	0.6-4.96	MSFC	0.0041	PARAMETRIC LAUNCH VEHICLE
B2	CYLINDRICAL	MSFC	02	DELTA WING	LMSC	1272	0.6-4.96	MSFC	0.004	PARAMETRIC LAUNCH CONFIGURATION

Table 1.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Aerodynamics

BOOS CODE	BOOSTER CONFIG I.D	BOOSTER CONTRA	ORB CODE	ORBITER CONFIG I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B2	CYLINDRICAL	MSFC	02	DELTA WING	MSC	1241	0.6-4.0	MSFC	0.006	MSC 040A ORBITER WITH EXTERNAL TANKS
B2	CYLINDRICAL	MSFC	02	DELTA WING	MSC	1249	0.9-2.0	MSFC	0.00336	MSC 040C-2/2-156 PARALLEL BURN LAUNCH CONFIGURATION
B2	CYLINDRICAL	MSFC	02	DELTA WING	MSC	1251	0.6-4.96	MSFC	0.004	PARALLEL BURN SRM ASCENT CONFIGURATION
B2	CYLINDRICAL	MSFC	02	DELTA WING	MSC	1265	2.3-4.62	LARC	0.019	040 ASCENT CONFIGURATION
B2	CYLINDRICAL	MSFC	02	DELTA WING	MSC	1267	0.8-1.4	ARC	0.019	040A LAUNCH CONFIGURATION
B2	CYLINDRICAL	MSFC	02	DELTA WING	MSC	1267	1.6-2.2	ARC	0.019	040A LAUNCH CONFIGURATION
B2	CYLINDRICAL	NR	02	DELTA WING	NR	1185	0.6-4.96	MSFC	0.0044	NR-110C ORBITER
B2	CYLINDRICAL	TBC	02	DELTA WING	MSC	1227	0.6-4.96	MSFC	0.003366	PRESSURE FED BOOSTER WITH MSC 040A ORBITER, PRESSURE FED BOOSTER
B2	CYLINDRICAL	MSFC	04	UNIQUE CONFIGS	GAC	1181	0.6-4.96	MSFC	0.003366	GAC H-33 ORBITER , 3 SEGMENT SOLID BOOSTER
B3	DELTA WING	GD/C	02	DELTA WING	NR	1052	1.1-1.6	GDC	0.0035	GD/C STRAIGHT WING BOOSTER (B8X), GD/C DELTA WING BOOSTER (B-9J), NAR STRAIGHT WING ORBITER (130G), NAR DELTA WING ORBITER (134B)
B3	DELTA WING	GD/C	02	DELTA WING	NR	1127	0.6-2.0	ARC	0.0076	NR DELTA WING ORBITER, GD DELTA WING BOOSTER
B3	DELTA WING	GD/C	02	DELTA WING	NR	1130	0.6-5.0	MSFC	0.0035	NR/GD DELTA WING BOOSTER, NR 134D DELTA WING ORBITER
B3	DELTA WING	GD/C	02	DELTA WING	NR	1190	0.25	LARC	0.0029	MDAC/MMC 256-14 BOOSTER, MDAC 0050B ORBITER, NAR/GDC B-15B-1 BOOSTER, NAR 134D ORBITER
B3	DELTA WING	GD/C	02	DELTA WING	NR	1237	1.6-2.16	LARC	0.0056	GD/C B9U BOOSTER WITH NR 134D ORBITER, GD/C B9U BOOSTER, NR 134D ORBITER

Table 1.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Aerodynamics

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA	ORB CODE	ORBITER CONFIG I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B3	DELTA WING	MMC	02	DELTA WING	MSC	1213	0.6-4.96	MSFC	0.0034	MMC RETRO-GLIDE BOOSTER WITH MSC 040A ORBITER, MMC RETRO-GLIDE BOOSTER
B3	DELTA WING	MSC	02	DELTA WING	MSC	1115	0.6-1.4	LTV	0.008105	MSC 5-13A ORBITER, MSC 5B-13A BOOSTER
B3	DELTA WING	MSC/MDAC	02	DELTA WING	MSC/MDAC	1038	0.6-2.0	ARC	0.08	MSC/MDAC STRAIGHT WING BOOSTER, MSC/MDAC STRAIGHT AND DELTA WING ORBITERS, MSC/MDAC DELTA WING BOOSTER
B3	DELTA WING	TBC	02	DELTA WING	MSC	1183	0.6-4.96	MSFC	0.003366	TBC RS-IC BOOSTER WITH MSC 040A ORBITER, TBC RS-IC BOOSTER
B3	DELTA WING	GD/C	03	STRAIGHT WING	NR	1052	1.1-1.6	GDC	0.0035	GD/C STRAIGHT WING BOOSTER (BBX), GD/C DELTA WING BOOSTER (B-9J), NAR STRAIGHT WING ORBITER (130G), NAR DELTA WING ORBITER (134B)
B3	DELTA WING	MDAC	03	STRAIGHT WING	MSC	1047	10.4	LARC	0.00725	NASA/MSC ORBITER CLOSE TO CLIPPED DELTA WING BOOSTER
B3	DELTA WING	MDAC	03	STRAIGHT WING	MSC	1061	10.4	LARC	NONE	MDAC CLIPPED DELTA WING BOOSTER (PHASE A)
B3	DELTA WING	MSC	03	STRAIGHT WING	MSC	1058	1.81-4.39	LTV	0.008810	MSC DELTA WING BOOSTER, MSC STRAIGHT WING ORBITER (MODEL 5-13A)
B3	DELTA WING	MSC/MDAC	03	STRAIGHT WING	MSC/MDAC	1038	0.6-2.0	ARC	0.08	MSC/MDAC STRAIGHT WING BOOSTER, MSC/MDAC STRAIGHT AND DELTA WING ORBITERS, MSC/MDAC DELTA WING BOOSTER
B3	DELTA WING	GD/C	04	UNIQUE CONFIGS.	NR	1119	0.6-4.96	MSFC	0.0031	EXPENDABLE SECOND STAGE, PAYLOAD AND DELTA WING BOOSTER (B-15B-1), G/D DELTA WING BOOSTER WITH EXPENDABLE SECOND STAGE

Table 1.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Aerodynamics

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC	MODEL SCALE	CONFIGURATIONS TESTED
B3	DELTA WING	GD/C	04	UNIQUE CONFIGS.	NR	1162	0.6-4.96	MSFC	0.0031	NR/GD DELTA WING BOOSTER B-15B-1 WITH REUSABLE NUCLEAR STAGE, NAR/GD REUSABLE NUCLEAR STAGE, NAR/GD B-15B-1 DELTA WING BOOSTER
B3	DELTA WING	TBC	04	DELTA WING	MSC	1183	0.6-4.96	MSFC	0.003366	TBC RS-IC BOOSTER WITH MSC 040A ORBITER, TBC RS-IC BOOSTER
B4	STRAIGHT WING	GD/C	02	DELTA WING	NR	1050	0.6-2.0	ARC	0.0076	NAR/GD STRAIGHT WING BOOSTER WITH NAR/GD STRAIGHT WING AND DELTA WING ORBITERS, NAR/GD STRAIGHT WING BOOSTER
B4	STRAIGHT WING	GD/C	02	DELTA WING	NR	1051	0.6-2.0	MSFC	0.0035	NAR-GD/C STRAIGHT WING BOOSTER (B-8H MODIFIED), NAR-GD/C STRAIGHT WING ORBITER (130G), NAR-GD/C DELTA WING ORBITER (134B)
B4	STRAIGHT WING	GD/C	02	DELTA WING	NR	1052	1.1-1.6	GDC	0.0035	GD/C STRAIGHT WING BOOSTER (B8X), GD/C DELTA WING BOOSTER (B-9J), NAR STRAIGHT WING ORBITER (130G), NAR DELTA WING ORBITER (134B)
B4	STRAIGHT WING	GD/C	02	DELTA WING	NR	1075	0.6-2.0	ARC	0.0076	GD/C B-B11-1 BOOSTER, NAR ORBITER
B4	STRAIGHT WING	MSC/MDAC	02	DELTA WING	MSC/MDAC	1038	0.6-2.0	ARC	0.08	MSC/MDAC STRAIGHT WING BOOSTER, MSC/MDAC STRAIGHT AND DELTA WING ORBITERS, MSC/MDAC DELTA WING BOOSTER
B4	STRAIGHT WING	GD/C	03	STRAIGHT WING	NR	1050	0.6-2.0	ARC	0.0076	NAR/GD STRAIGHT WING BOOSTER WITH NAR/GD STRAIGHT WING AND DELTA WING ORBITERS, NAR/GD STRAIGHT WING BOOSTER
B4	STRAIGHT WING	GD/C	03	STRAIGHT WING	NR	1051	0.6-2.0	MSFC	0.0035	NAR-GD/C STRAIGHT WING BOOSTER (B-8H MODIFIED), NAR-GD/C STRAIGHT WING ORBITER (130G), NAR-GD/C DELTA WING ORBITER (134B)

Table 1.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Aerodynamics

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B4	STRAIGHT WING	GD/C	03	STRAIGHT WING	NR	1052	1.1-1.6	GDC	0.0035	GD/C STRAIGHT WING BOOSTER (B8X), GD/C DELTA WING BOOSTER (B-9J), NAR STRAIGHT WING ORBITER (130G), NAR DELTA WING ORBITER (134B)
B4	STRAIGHT WING	GD/C	03	STRAIGHT WING	NR	1075	0.6-2.0	ARC	0.0076	GD/C B-B11-1 BOOSTER, NAR ORBITER
B4	STRAIGHT WING	MSC	03	STRAIGHT WING	MSC	1042	0.6-1.4	ARC	0.01	MSC 251 REVISION B BASELINE BOOSTER, MSC 251 REVISION B BASELINE ORBITER
B4	STRAIGHT WING	MSC	03	STRAIGHT WING	MSC	1058	1.81-4.39	LTV	0.008811	MSC DELTA WING BOOSTER, MSC STRAIGHT WING ORBITER (MODEL S-13A)
B4	STRAIGHT WING	MSC	03	STRAIGHT WING	MSC	1063	0.6-2.0	ARC	0.008	MSC STRAIGHT WING ORBITER, MSC STRAIGHT WING BOOSTER
B4	STRAIGHT WING	MSC	03	STRAIGHT WING	MSC	1115	0.6-1.4	LTV	0.008105	MSC S-13A ORBITER, MSC SB-13A BOOSTER
B4	STRAIGHT WING	MSC/MDAC	03	STRAIGHT WING	MSC/MDAC	1038	0.6-2.0	ARC	0.08	MSC/MDAC STRAIGHT WING BOOSTER, MSC/MDAC STRAIGHT AND DELTA WING ORBITERS, MSC/MDAC DELTA WING BOOSTER
B4	STRAIGHT WING	TBC	04	UNIQUE CONFIGS.	GAC	1122	0.6-2.0	ARC	0.00667	TBC STRAIGHT WING BOOSTER, GRUMMAN ROS-NB1 DELTA WING ORBITER
B4	STRAIGHT WING	TBC	04	UNIQUE CONFIGS.	GAC	1136	0.6-1.5	ARC	0.00667	GAC ROS-NB2 ORBITER, LIQUID HYDROGEN TANKS, TBC 1202 BOOSTER
B4	STRAIGHT WING	TBC	04	UNIQUE CONFIGS.	GAC	1137	0.6-2.0	ARC	0.00667	GAC ROS-NB2 ORBITER, TANKS, TBC 1202 BOOSTER
B5	UNIQUE CONFIGS.	LMSC	01	DELTA BODY	LMSC	1085	0.6-2.0	ARC	0.01	LOCKHEED STAGE-AND-ONE-HALF
B5	UNIQUE CONFIGS.	LARC	02	DELTA WING	NR	1197	1.5-2.16	LARC	0.0076	LARC LOW FINENESS RATIO BOOSTER WITH NAR 134D ORBITER, NASA LOW FINENESS RATIO BOOSTER

Table 1.1.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Aerodynamics

BOOS CODE	BOOSTER CONFIG I.D	BOOSTER CONTRA	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B5	UNIQUE CONFIGS.	LARC	02	DELTA WING	NR	1198	10.2	LARC	NONE	LARC LOW FINENESS RATIO BOOSTER WITH NAR 134D ORBITER, LARC LOW FINENESS RATIO BOOSTER
B5	UNIQUE CONFIGS.	LARC	02	DELTA WING	NR	1200	0.4-1.2	LARC	0.0076	LOW FINENESS RATIO BOOSTER WITH NAR 134D ORBITER, LOW FINENESS RATIO BOOSTER
B5	UNIQUE CONFIGS.	TBC	02	DELTA WING	NR	1055	0.6-1.96	MSFC	0.003366	NR/GD DELTA WING ORBITER, SATURN V S-IC BOOSTER
B5	UNIQUE CONFIGS.	TBC	02	DELTA WING	NR	1091	0.60-1.96	MSFC	0.003366	S-IC/NR HCR ORBITER
B5	UNIQUE CONFIGS.	TBC	03	STRAIGHT WING	GAC	1044	0.6-1.3	MSFC	0.003366	S-IC BOOSTER WITH GAC C4 ORBITER
B5	UNIQUE CONFIGS.	MMC	04	UNIQUE CONFIGS.	GAC	1188	0.6-4.96	MSFC	0.003366	TITAN T III L BOOSTER, GAC H-33 ORBITER
B5	UNIQUE CONFIGS.	MMC	04	UNIQUE CONFIGS.	MMC	1182	0.6-3.48	MSFC	0.0043	MMC TITAN III L BOOSTER WITH MMC DTO-7 ORBITER, MMC DTO-7 ORBITER
B5	UNIQUE CONFIGS.	TBC	04	UNIQUE CONFIGS.	GAC	1140	0.6-4.96	MSFC	0.0034	S-IC/GRUMMAN G-11 (H3T) DROP TANK ORBITER
B5	UNIQUE CONFIGS.	TBC	04	UNIQUE CONFIGS.	GAC	1187	0.6-4.96	MSFC	0.0034	S-IC BOOSTER WITH GAC H-33 ORBITER, GAC H-33 ORBITER

Table 1.2.3

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Airloads

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1174	2.0-5.0	AEDC	0.00556	MDAC BOOSTER, MDAC ORBITER
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1222	0.6-1.3	AEDC	0.00556	MDAC CANARD BOOSTER AND DELTA WING ORBITER
B2	CYLINDRICAL	MSFC	O2	DELTA WING	LMSC	1255	0.8-1.96	MSFC	0.004	DOUBLE DELTA WING ORBITER IN LAUNCH CONFIGURATION
B2	CYLINDRICAL	MSFC	O2	DELTA WING	MSFC	1259	0.6-4.96	MSFC	0.004	NASA DOUBLE DELTA ORBITER WITH EXTERNAL TANK AND SRB'S, NASA DOUBLE DELTA WING ORBITER
B2	CYLINDRICAL	MSFC	O2	DELTA WING	MSFC	1273	0.6-4.96	MSFC	0.004	DOUBLE DELTA WING ORBITER IN LAUNCH CONFIGURATION
B4	STRAIGHT WING	GD/C	O2	DELTA WING	NR	1129	0.6-2.0	ARC	0.00761	GD/C STRAIGHT WING BOOSTER, GD/C STRAIGHT WING BOOSTER WITH NR DELTA WING ORBITER, GD/C STRAIGHT WING BOOSTER WITH NR STRAIGHT WING ORBITER
B4	STRAIGHT WING	GD/C	O3	STRAIGHT WING	NR	1129	0.6-2.0	ARC	0.00761	GD/C STRAIGHT WING BOOSTER, GD/C STRAIGHT WING BOOSTER WITH NR DELTA WING ORBITER, GD/C STRAIGHT WING BOOSTER WITH NR STRAIGHT WING ORBITER
B4	STRAIGHT WING	TBC	O4	UNIQUE CONFIGS.	GAC	1136	0.6-1.5	ARC	0.00667	GAC ROS-NB2 ORBITER, LIQUID HYDROGEN TANKS, TBC 1202 BOOSTER

Table 1.3.3

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Heat Transfer

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA..	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1170	7.5-13.0	CAL	0.007	MDAC CANARD BOOSTER WITH MDAC DELTA WING ORBITER, MDAC DELTA WING ORBITER, MDAC CANARD BOOSTER
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1238	6.0	LARC	0.0065	MDAC 256-20 BOOSTER, MDAC INTERNAL TANK ORBITER
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1260	10.0	LARC	0.0065	MDAC BOOSTER, MDAC ORBITER
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1262	8.0	AEDC	0.011	MDAC CANARD BOOSTER AND DELTA WING ORBITER
B1	CANARD	MDAC	O2	DELTA WING	MDAC	1263	2.3-3.7	LARC	0.0065	MDAC BOOSTER, MDAC ORBITER
B1	CANARD	MDAC/MMC	O2	DELTA WING	MDAC/MMC	1036	10.0	LARC	0.00325	MDC/MMC PHASE B BASELINE BOOSTER, MDC/MMC PHASE B LOW CROSS RANGE ORBITER, MDC/MMC PHASE B ALTERNATE BOOSTER, MDC/MMC PHASE B HIGH CROSS RANGE ORBITER
B1	CANARD	MDAC/MMC	O2	DELTA WING	MDAC/MMC	1036	8.0	LARC	0.00325	MDC/MMC PHASE B BASELINE BOOSTER, MDC/MMC PHASE B LOW CROSS RANGE ORBITER, MDC/MMC PHASE B ALTERNATE BOOSTER, MDC/MMC PHASE B HIGH CROSS RANGE ORBITER
B1	CANARD	MDAC/MMC	O3	STRAIGHT WING	MDAC/MMC	1036	10.0	LARC	0.00325	MDC/MMC PHASE B BASELINE BOOSTER, MDC/MMC PHASE B LOW CROSS RANGE ORBITER, MDC/MMC PHASE B ALTERNATE BOOSTER, MDC/MMC PHASE B HIGH CROSS RANGE ORBITER
B1	CANARD	MDAC/MMC	O3	STRAIGHT WING	MDAC/MMC	1036	8.0	LARC	0.00325	MDC/MMC PHASE B BASELINE BOOSTER, MDC/MMC PHASE B LOW CROSS RANGE ORBITER, MDC/MMC PHASE B ALTERNATE BOOSTER, MDC/MMC PHASE B HIGH CROSS RANGE ORBITER

Table 1.3.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Heat Transfer

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B2	CYLINDRICAL	GAC	O2	DELTA WING	GAC	1234	8.0	LARC	0.005	GRUMMAN H-33 ORBITER, H-33/HO ORBITER LAUNCH CONFIGURATION
B2	CYLINDRICAL	MSFC	O2	DELTA WING	MSC	1278	8.0	LARC	0.008	MSC 040A ORBITER / HO DROP TANK, 2-156 INCH SRM
B2	CYLINDRICAL	TBC	O2	DELTA WING	GAC	1261	8.0	LARC	0.0033	MSC 040A ORBITER WITH CYLINDRICAL BOOSTER 979-160, CYLINDRICAL BOOSTER 979-160
B2	CYLINDRICAL	TBC	O4	UNIQUE CONFIGS.	GAC	1178	10.3	LARC	0.00667	BOEING 1202 BOOSTER WITH GAC H-3T DELTA WING ORBITER, GAC H-3T DELTA WING ORBITER
B3	DELTA WING	GD/C	O2	DELTA WING	NR	1032	8.0	LARC	0.0035	CONVAIR STRAIGHT WING (B-8B) AND DELTA WING (B-9J) BOOSTERS, NAR STRAIGHT AND DELTA WING ORBITERS, CONVAIR B-95 BOOSTER WITH NAR DELTA WING ORBITER
B3	DELTA WING	GD/C	O2	DELTA WING	NR	1098	2.5-3.7	LARC	0.006	GD/C DELTA WING BOOSTER (B-9J), NAR STRAIGHT WING ORBITER, NAR DELTA WING ORBITER
B3	DELTA WING	GD/C	O2	DELTA WING	NR	1145	7.80-7.95	LARC	0.004	GD/C BOOSTER B-9U WITH NAR ORBITER 161C, GD/C BOOSTER B-15B-2, GD/C BOOSTER B-9U
B3	DELTA WING	GD/C	O2	DELTA WING	NR	1177	8.0	AEDC	0.009	GD/C B-15B-2 BOOSTER, NAR 161B ORBITER
B3	DELTA WING	GD/C	O2	DELTA WING	NR	1264	8.0	AEDC	0.013	NR DELTA WING ORBITER, GD/C BOOSTER
B3	DELTA WING	GD/C	O3	STRAIGHT WING	NR	1032	8.0	LARC	0.0035	CONVAIR STRAIGHT WING (B-8B) AND DELTA WING (B-9J) BOOSTERS, NAR STRAIGHT AND DELTA WING ORBITERS, CONVAIR B-95 BOOSTER WITH NAR DELTA WING ORBITER
B3	DELTA WING	GD/C	O3	STRAIGHT WING	NR	1098	2.5-3.7	LARC	0.006	GD/C DELTA WING BOOSTER (B-9J), NAR STRAIGHT WING ORBITER, NAR DELTA WING ORBITER
B3	DELTA WING	LARC	O3	STRAIGHT WING	MSC	1016	10.0	LARC	0.00667	CLIPPED DELTA WING BOOSTER WITH MSC ORBITER

Table 1.3.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Launch Heat Transfer

BOOS CODE	BOOSTER CONFIG. I.D.	BOOSTER CONTRA.	ORB CODE	ORBITER CONFIG. I.D.	ORBITER CONTRA.	DMS-DR#	MACH RANGE	FAC.	MODEL SCALE	CONFIGURATIONS TESTED
B4	STRAIGHT WING	GD/C	O2	DELTA WING	NR	1032	8.0	LARC	0.0035	CONVAIR STRAIGHT WING (B-8B) AND DELTA WING (B-9J) BOOSTERS, NAR STRAIGHT AND DELTA WING ORBITERS, CONVAIR B-95 BOOSTER WITH NAR DELTA WING ORBITER
B4	STRAIGHT WING	GD/C	O3	STRAIGHT WING	NR	1032	8.0	LARC	0.0035	CONVAIR STRAIGHT WING (B-8B) AND DELTA WING (B-9J) BOOSTERS, NAR STRAIGHT AND DELTA WING ORBITERS, CONVAIR B-95 BOOSTER WITH NAR DELTA WING ORBITER
B5	UNIQUE CONFIGS.	LMSC	O1	DELTA BODY	LMSC	1143	8.0	LARC	0.0077	LOCKHEED STAGE-AND-ONE-HALF, LMSC DELTA BODY ORBITER

Table 2

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1001	S1002-S1801	1	103,150	--	MSFC 14TWT 451	BOOSTER
1002	S0005	1	--	62,035	ARC 3.5HWT 78	ORBITER
1003	S1802	1	103,152	--	MSFC 14TWT 453	ORBITER
1004	S0011-S0014	1	--	--	LARC 20HT6 6315	ORBITER
1005	S1809	1	103,153	--	GAC 710SWT 280	ORBITER
1006	S1808	1	103,151	--	AEDC HWTC VT0055	BOOSTER
1007	S0016	1	103,154	--	MAC LSWT 223	ORBITER
1008	S0006	1	103,155	--	TAM 710SWT S-VI	ORBITER
1009	S1206	1	--	--	LARC 22HT 7341-7343	ORBITER
1010	S0201	1	103,156	--	NRLAD LSWT 629	ORBITER
1011	S0009	1	--	--	ARC 66SWT 465	ORBITER
1012	S0036	1	--	--	ARC 11TWT 481-1	ORBITER
1013	S1207	1	--	--	LARC LTPT 50	ORBITER
1014	S1807	1	103,157	--	MAC LSWT 132	BOOSTER
1015	S1201	1	--	--	LARC LTPT 47	BOOSTER
1016	H1201	1	--	--	LARC CFHT 50	LAUNCH
1017	S1204	1	--	--	LARC UPWT 886	BOOSTER
1018	S1205	1	--	--	LARC LTPT 49	ORBITER
1019	S1203	1	--	--	LARC UPWT 913	BOOSTER
1020	H0202	1	--	--	LARC CFHT 52	BOOSTER
1021	S1806	1	--	62,066	ARC 66SWT 484	ORBITER
1022	S1208	1	--	--	LARC 710SWT 905	ORBITER
1023	S1202	1	--	--	LARC 20HT6 6329	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1024	H0204	1	--	--	LARC 8VDHT 123-136,180-188	BOOSTER
1025	S0203	1	103,158	--	GDC 4HSWT 291-0	BOOSTER
1026	S0204	1	--	--	ARC 66SWT 503	ORBITER
1027	S0209	1	119,962	--	MSFC 14TWT 468	ORBITER
1028	S0405-S0406	1	--	62,039	ARC 66SWT 514	ORBITER
1029	S0205	1	103,159	--	GDC 18HWT 247-0	BOOSTER
1030	S0202	1	119,963	--	GDC 812SWT 579-0	BOOSTER
1031	S1805	1	--	62,065	ARC 3.5HWT 88	ORBITER
1032	H0205	1	--	--	LARC 8VDHT 137-146,189-205	LAUNCH
1032	H0205	1	--	--	LARC 8VDHT 137-146,189-205	ORBITER
1032	H0205	1	--	--	LARC 8VDHT 137-146,189-205	BOOSTER
1033	S0024	1	103,164	--	TAM 710SWT S-XXIV	BOOSTER
1034	S0232	1	103,160	--	NRLAD LSWT 632	ORBITER
1035	S0404	1	103,161	--	MAC LSWT 1351	BOOSTER
1036	H0401-H0403	1	--	--	LARC 8VDHT 147-179,206-322	LAUNCH
1036	H0401-H0403	1	--	--	LARC 8VDHT 147-179,206-322	BOOSTER
1036	H0401-H0403	1	--	--	LARC CFHT 53	LAUNCH
1036	H0401-H0403	1	--	--	LARC CFHT 53	BOOSTER
1036	H0401-H0403	2	--	--	LARC 8VDHT 147-179,206-322	LAUNCH
1036	H0401-H0403	2	--	--	LARC 8VDHT 147-179,206-322	BOOSTER
1036	H0401-H0403	2	--	--	LARC CFHT 53	LAUNCH
1036	H0401-H0403	2	--	--	LARC CFHT 53	BOOSTER
1037	S0201	1	103,193	--	NRLAD LSWT 630	ORBITER
1038	S0065	1	--	62,069	ARC 66SWT 486	LAUNCH

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1038	S0065	1	--	62,069	ARC 66SWT 486	BOOSTER
1039	S0228	1	103,162	--	GDC 812SWT 580-0	BOOSTER
1040	S0407	1	103,163	--	MAC LSWT 235	ORBITER
1041	S0429	1	103,194	--	MAC LSWT 240	ORBITER
1042	S0041	1	--	--	ARC 66SWT 488	LAUNCH
1043	S0235	1	103,085	--	MSFC 14TWT 471	ORBITER
1044	S1044	1	103,195	--	MSFC 14TWT 470	LAUNCH
1045	S1210	1	--	--	LARC LTPT 50-2	ORBITER
1046	S1401	1	--	--	ARC 66SWT 522	BOOSTER
1047	S1209	1	--	--	LARC CFHT 54	LAUNCH
1048	S1213	1	--	--	LARC 20HT6 6355-6329	ORBITER
1049	S0208.01	1	--	--	LARC LTPT 52	ORBITER
1050	S0206	1	--	62,070	ARC 66SWT 505	LAUNCH
1050	S0206	1	--	62,070	ARC 66SWT 505	BOOSTER
1051	S0217	1	103,196	--	MSFC 14TWT 466	LAUNCH
1051	S0217	1	103,196	--	MSFC 14TWT 466	BOOSTER
1052	S0207	1	103,197	--	GDC 4HSWT 304-0	LAUNCH
1052	S0207	1	103,197	--	GDC 4HSWT 304-0	BOOSTER
1052	S0207	1	103,197	--	GDC 4HSWT 304-0	ORBITER
1053	S1803	1	103,198	--	GAC 710SWT 279	ORBITER
1054	S0410-S0411	1	103,199	--	MAC LSWT 239	BOOSTER
1055	S1006	1	103,200	--	MSFC 14TWT 476	LAUNCH
1056	H0201-H0203	1	--	--	LARC CFHT 51	ORBITER
1056	H0201-H0203	1	--	--	LARC 8VDHT 1-58	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1057	S0018-S0035	1	119,853	--	TAM 710SWT S-18/S-35	ORBITER
1058	S0028	1	119,854	--	LTV HSWT S-28	LAUNCH
1059	S1214	1	--	--	LARC 22HT 7369	ORBITER
1060	S0008	1	119,855	--	TAM 710SWT S-8-1	ORBITER
1061	S1211	1	--	--	LARC CFHT 54	LAUNCH
1062	S0038	1	119,856	--	TAM 710SWT S-38	ORBITER
1063	S0042	1	--	62,072	ARC 66SWT 524	LAUNCH
1064	S0244	1	--	--	LARC LTPT 545	ORBITER
1065	S0414	1	--	--	ARC 66SWT 508	LAUNCH
1065	S0414	2	--	--	ARC 66SWT 508	LAUNCH
1066	S0412	1	--	62,037	ARC 66SWT 504	BOOSTER
1067	S0423	1	119,857	--	MAC LSWT 248	ORBITER
1068	S1402	1	--	--	LARC UPWT 9143	BOOSTER
1069	S1212	1	--	--	LARC UPWT 922	ORBITER
1070	H0214	1	--	--	LARC 8VDHT 703-766	BOOSTER
1071	S0415-S0434	1	--	--	ARC 3.5HWT 111/113	ORBITER
1072	S0413	1	--	--	ARC 3.5HWT 104	ORBITER
1073	S0039	1	119,858	--	TAM 710SWT S-39	ORBITER
1074	S0430	1	119,859	--	MAC LSWT 138	ORBITER
1075	S0219-S0219.01	1	--	--	ARC 66SWT 511	BOOSTER
1075	S0219-S0219.01	1	--	--	ARC 66SWT 511	LAUNCH
1075	S0219-S0219.01	2	--	--	ARC 66SWT 511	BOOSTER
1075	S0219-S0219.01	2	--	--	ARC 66SWT 511	LAUNCH
1076	S0240-S0241	1	119,860	--	MSFC 14TWT 478	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1077	S0419-S0426	1	119,861	--	MAC LSWT 249	BOOSTER
1078	S0214-S0218	1	--	62,044	ARC 66SWT 503/513	ORBITER
1079	S0602	1	119,964	--	UW 812SWT 1021	BOOSTER
1080	S0416	1	--	62,038	ARC 3.5HWT 112	BOOSTER
1081	S0603	1	119,862	--	GAC 710SWT 289	ORBITER
1082	S0204-S0218	1	--	62,045	ARC 66SWT 503/513	ORBITER
1083	S0426	1	--	62,042	ARC 66SWT 527	ORBITER
1084	S0224 01	1	--	--	LARC CFHT 63	ORBITER
1085	S0801	1	--	62,073	ARC 66SWT 542	LAUNCH
1086	S1217	1	--	--	LARC 22HT 7377	ORBITER
1087	S0238	1	--	--	LARC LTPT 59	BOOSTER
1088	S1215	1	--	--	LARC 22HT 7376	ORBITER
1089	S1401-S1402	1	--	--	ARC 66SWT 522	BOOSTER
1089	S1401-S1402	1	--	--	LARC UPWT 9143	BOOSTER
1090	S0408	1	119,965	--	MAC LSWT 237	ORBITER
1091	S1034	1	119,966	--	MSFC 14TWT 485	LAUNCH
1092	S1019	1	119,967	--	AEDC PWT4T TC135	ORBITER
1093	S0231	1	--	--	LARC CFHT 64	BOOSTER
1094	S0428	1	--	62,108	ARC 3.5HWT 125	ORBITER
1095	S0224	1	--	--	LARC 20HT6 6366	ORBITER
1096	S0227	1	--	--	LARC UPWT 951	ORBITER
1097	S1216	1	--	--	LARC 8TPT 574	ORBITER
1098	H0209	1	--	--	LARC UPWT 945	LAUNCH
1098	H0209	1	--	--	LARC UPWT 945	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1098	H0209	1	--	--	LARC UPWT 945	BOOSTER
1099	S0433	1	--	62,059	ARC 66SWT 557	LAUNCH
1100	S0220	1	--	--	LARC LTPT 55	BOOSTER
1101	S1219	1	--	--	LARC UPWT 944/961	ORBITER
1102	S0213	1	119,992	--	MSFC 14TWT 481	BOOSTER
1103	S0802	1	--	--	LARC UPWT 955	ORBITER
1104	S0212	1	--	62,067	ARC 3.5HWT 109A	ORBITER
1104	S0212	2	--	62,068	ARC 3.5HWT 109A	ORBITER
1105	S0225	1	--	--	LARC 8TPT 573	ORBITER
1106	S0221	1	--	--	LARC LTPT 57	ORBITER
1107	S1218	1	--	--	LARC LTPT 58	ORBITER
1108	S1023	1	119,973	--	AEDC SWTA 1163	BOOSTER
1108	S1023	1	119,973	--	AEDC SWTA 1163	ORBITER
1108	S1023	1	119,973	--	AEDC SWTA 1163	LAUNCH
1108	S1023	2	119,972	--	AEDC SWTA 1163	BOOSTER
1108	S1023	2	119,972	--	AEDC SWTA 1163	ORBITER
1108	S1023	2	119,972	--	AEDC SWTA 1163	LAUNCH
1108	S1023	3	119,971	--	AEDC SWTA 1163	BOOSTER
1108	S1023	3	119,971	--	AEDC SWTA 1163	ORBITER
1108	S1023	3	119,971	--	AEDC SWTA 1163	LAUNCH
1108	S1023	4	119,968	--	AEDC SWTA 1163	BOOSTER
1108	S1023	4	119,968	--	AEDC SWTA 1163	ORBITER
1108	S1023	4	119,968	--	AEDC SWTA 1163	LAUNCH
1108	S1023	5	119,969	--	AEDC SWTA 1163	BOOSTER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1108	S1023	5	119,969	--	AEDC SWTA 1163	ORBITER
1108	S1023	5	119,969	--	AEDC SWTA 1163	LAUNCH
1108	S1023	6	119,970	--	AEDC SWTA 1163	BOOSTER
1108	S1023	6	119,970	--	AEDC SWTA 1163	ORBITER
1108	S1023	6	119,970	--	AEDC SWTA 1163	LAUNCH
1108	S1023	7	119,985	--	AEDC SWTA 1163	BOOSTER
1108	S1023	7	119,985	--	AEDC SWTA 1163	ORBITER
1108	S1023	7	119,985	--	AEDC SWTA 1163	LAUNCH
1109	S0237	1	119,974	--	GDC 812SWT 587-0	BOOSTER
1110	S0247	1	119,975	--	GDC 812SWT 587-1	BOOSTER
1111	S0612	1	--	62,115	ARC 66SWT 550	BOOSTER
1112	S0608	1	--	62,060	ARC 66SWT 547	ORBITER
1113	S1222	1	--	--	LARC CFHT 62	ORBITER
1114	S1018	1	119,976	--	MSFC 14TWT 477	ORBITER
1115	S0030	1	119,986	--	LTV HSWT S-30	LAUNCH
1115	S0030	1	119,986	--	LTV HSWT S-30	ORBITER
1115	S0030	1	119,986	--	LTV HSWT S-30	BOOSTER
1116	S0431	1	--	62,049	ARC 66SWT 510	BOOSTER
1117	S0424	1	--	--	LARC UPWT 963	LAUNCH
1117	S0424	1	--	--	LARC UPWT 963	ORBITER
1117	S0424	1	--	--	LARC UPWT 963	BOOSTER
1117	S0424	2	--	--	LARC UPWT 963	LAUNCH
1117	S0424	2	--	--	LARC UPWT 963	ORBITER
1117	S0424	2	--	--	LARC UPWT 963	BOOSTER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1117	S0424	3	--	--	LARC UPWT 963	LAUNCH
1117	S0424	3	--	--	LARC UPWT 963	ORBITER
1117	S0424	3	--	--	LARC UPWT 963	BOOSTER
1118	S0431.01	1	--	--	ARC 66SWT 512	LAUNCH
1118	S0431.01	2	--	--	ARC 66SWT 512	LAUNCH
1119	S0236	1	119,977	--	MSFC 14TWT 489	LAUNCH
1120	S0436	1	119,978	--	MAC LSWT 258	BOOSTER
1121	S0239	1	--	62,048	ARC 66SWT 526	BOOSTER
1122	S0606	1	--	--	ARC 66SWT 546	LAUNCH
1123	S1220	1	--	--	LARC CFHT 61	ORBITER
1124	S0215	1	119,979	--	NRLAD LSWT 633	ORBITER
1125	P1403	1	119,993	--	AEDC PWT16T TF-250	BOOSTER
1126	S0246	1	119,980	--	MSFC 14TWT 484	ORBITER
1127	S0229	1	--	62,063	ARC 66SWT 548	LAUNCH
1128	S0631	1	120,079	--	TBC 84SWT 558	BOOSTER
1129	P0203	1	--	--	ARC 66SWT 509	BOOSTER
1129	P0203	1	--	--	ARC 66SWT 509	ORBITER
1129	P0203	1	--	--	ARC 66SWT 509	LAUNCH
1129	P0203	2	--	--	ARC 66SWT 509	BOOSTER
1129	P0203	2	--	--	ARC 66SWT 509	ORBITER
1129	P0203	2	--	--	ARC 66SWT 509	LAUNCH
1129	P0203	3	--	--	ARC 66SWT 509	BOOSTER
1129	P0203	3	--	--	ARC 66SWT 509	ORBITER
1129	P0203	3	--	--	ARC 66SWT 509	LAUNCH

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1130	S0242-S0242.10	1	119,994	--	MSFC 14TWT 490	BOOSTER
1130	S0242-S0242.10	1	119,994	--	MSFC 14TWT 490	LAUNCH
1130	S0242-S0242.10	2	119,994	--	MSFC 14TWT 490	BOOSTER
1130	S0242-S0242 10	2	119,994	--	MSFC 14TWT 490	LAUNCH
1130	S0242-S0242.10	3	119,994	--	MSFC 14TWT 490	BOOSTER
1130	S0242-S0242.10	3	119,994	--	MSFC 14TWT 490	LAUNCH
1130	S0242-S0242.10	4	119,994	--	MSFC 14TWT 490	BOOSTER
1130	S0242-S0242.10	4	119,994	--	MSFC 14TWT 490	LAUNCH
1131	H0207	1	--	62,078	ARC 3.5HWT 106	ORBITER
1134	H0206	1	--	62,077	ARC 3.5HWT 105	BOOSTER
1136	S1601	1	--	62,062	ARC 66SWT 561	LAUNCH
1136	S1601	1	--	62,062	ARC 66SWT 561	LAUNCH
1137	S0611	1	--	62,061	ARC 66SWT 551	LAUNCH
1138	H0406	1	--	--	LARC 8VDHT 1204-1213	BOOSTER
1139	S1009	1	119,995	--	NSRDC 710TWT 3110	BOOSTER
1139	S1009	2	119,996	--	NSRDC 710TWT 3110	BOOSTER
1139	S1009	3	119,997	--	NSRDC 710TWT 3110	BOOSTER
1139	S1009	4	119,998	--	NSRDC 710TWT 3110	BOOSTER
1140	S1035	1	119,981	--	MSFC 14TWT 491	LAUNCH
1141	S0229.01	1	--	62,118	ARC 66SWT 563	BOOSTER
1142	S0610	1	119,982	--	GAC 710SWT 290	ORBITER
1143	H0801	1	--	--	LARC 8VDHT 1075-1107	LAUNCH
1144	S0245	1	--	--	LARC UPWT 951B	ORBITER
1145	H0213	1	--	--	LARC 8VDHT 1237-1297	LAUNCH

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1145	H0213	1	--	--	LARC 8VDHT 1237-1297	BOOSTER
1146	H0602-H0603	1	--	--	LARC CFHT 66	ORBITER
1147	S1223	1	--	--	LARC V/STOL 007	ORBITER
1148	S0616	1	119,983	--	MSFC 14TWT 492	LAUNCH
1148	S0616	1	119,983	--	MSFC 14TWT 492	BOOSTER
1149	S1224	1	--	--	LARC LTPT 62	ORBITER
1150	S0230	1	--	--	LARC LTPT 64	BOOSTER
1151	S1221	1	--	--	LARC CFHT 68/71	ORBITER
1152	S0223	1	119,999	--	MSFC 14TWT 493	BOOSTER
1153	S1026	1	120,000	--	MSFC 14TWT 494	ORBITER
1154	H0601	1	119,984	--	GAC 36HWT 017	ORBITER
1155	S0248	1	119,987	--	MSFC 14TWT 495	BOOSTER
1156	S0226	1	--	--	LARC CFHT 70	BOOSTER
1157	S1225	1	--	--	LARC LTPT 63	ORBITER
1158	S0605	1	120,002	--	GAC 36HWT 020	BOOSTER
1159	S0604	1	119,988	--	GAC 36HWT 019	ORBITER
1160	S0617	1	120,003	--	MSFC 14TWT 496	BOOSTER
1161	S0607	1	119,989	--	GAC 26TWT 035	ORBITER
1162	S0249	1	120,004	--	MSFC 14TWT 497	BOOSTER
1162	S0249	1	120,004	--	MSFC 14TWT 497	ORBITER
1162	S0249	1	120,004	--	MSFC 14TWT 497	LAUNCH
1163	S0609	1	119,990	--	GAC 15SWT 022	ORBITER
1164	S1010	1	120,005	--	NSRDC 710TWT 3210	BOOSTER
1165	H0211	1	--	--	LARC 8VDHT 823-887	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1166	S1040	1	119,991	--	MSFC 14TWT 501	LAUNCH
1167	S0615	1	120,006	--	GAC 710SWT 292	ORBITER
1168	S1228	1	--	--	LARC LTPT 65	ORBITER
1169	S0803	1	--	--	LARC LTPT 69	ORBITER
1170	H0404	1	120,007	--	CAL 96HST H/T MDAC	LAUNCH
1170	H0404	1	120,007	--	CAL 96HST H/T MDAC	ORBITER
1170	H0404	1	120,007	--	CAL 96HST H/T MDAC	BOOSTER
1171	S0437	1	--	--	LARC 8TPT 595	ORBITER
1171	S0437	1	--	--	LARC 44SPT 438	ORBITER
1172	S1229	1	--	--	LARC LTPT 71	ORBITER
1173	S1227	1	--	--	LARC UPWT 942	ORBITER
1174	P1002	1	120,008	--	AEDC SWTA 1163	LAUNCH
1174	P1002	2	120,061	--	AEDC SWTA 1163	LAUNCH
1174	P1002	3	120,062	--	AEDC SWTA 1163	LAUNCH
1174	P1002	4	120,063	--	AEDC SWTA 1163	LAUNCH
1174	P1002	5	120,064	--	AEDC SWTA 1163	LAUNCH
1174	P1002	6	120,065	--	AEDC SWTA 1163	LAUNCH
1175	S1226	1	--	--	LARC 44SPT 432	ORBITER
1176	S1237	1	--	--	LARC 22HT 7386-7390	ORBITER
1177	H1009	1	120,009	--	AEDC HWTB 1162-1	BOOSTER
1177	H1009	1	120,009	--	AEDC HWTB 1162-1	ORBITER
1177	H1009	1	120,009	--	AEDC HWTB 1162-1	LAUNCH
1177	H1029	2	119,987	--	AEDC HWTB 1162-2	BOOSTER
1177	H1029	2	119,987	--	AEDC HWTB 1162-2	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1177	H1029	2	119,987	--	AEDC HWTB 1162-2	LAUNCH
1177	H1022	3	120,029	--	AEDC HWTB 1162-3	BOOSTER
1177	H1022	3	120,029	--	AEDC HWTB 1162-3	ORBITER
1177	H1022	3	120,029	--	AEDC HWTB 1162-3	LAUNCH
1178	H0603	1	--	--	LARC CFHT 69	LAUNCH
1178	H0603	1	--	--	LARC CFHT 69	ORBITER
1179	H0206	1	--	62,058	ARC 3.5HWT 105	BOOSTER
1180	H0207	1	--	62,057	ARC 3.5HWT 106	ORBITER
1181	S1042	1	120,010	--	MSFC 14TWT 504	LAUNCH
1182	S1044	1	120,011	--	MSFC 14TWT 505	LAUNCH
1182	S1044	1	120,011	--	MSFC 14TWT 505	ORBITER
1183	S0618	1	120,012	--	MSFC 14TWT 506	LAUNCH
1183	S0618	1	120,012	--	MSFC 14TWT 506	BOOSTER
1184	S1236	1	120,013	--	MSFC 14TWT 507	ORBITER
1185	S0050	1	120,014	--	MSFC 14TWT 509	LAUNCH
1185	S0050	1	120,014	--	MSFC 14TWT 509	ORBITER
1186	S0065	1	120,015	--	MSFC 14TWT 510	ORBITER
1187	S1043	1	120,016	--	MSFC 14TWT 502	LAUNCH
1187	S1043	1	120,016	--	MSFC 14TWT 502	ORBITER
1188	S1041	1	120,017	--	MSFC 14TWT 503	LAUNCH
1189	S1230	1	--	--	LARC LTPT 75	ORBITER
1190	S1238	1	--	--	LARC 22HT 7377-79,7380-90	LAUNCH
1190	S1238	1	--	--	LARC 22HT 7377-79,7380-90	BOOSTER
1190	S1238	1	--	--	LARC 22HT 7377-79,7380-90	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel Test Database Listed by Chrysler DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1191	S0619	1	120,018	--	TBC 8TWT 1265	BOOSTER
1192	S1036	1	120,019	--	NSRDC 710TWT 3310	BOOSTER
1193	S1239	1	--	--	LARC LTPT 73	BOOSTER
1194	S1231	1	--	--	LARC CFHT 76	ORBITER
1195	S1232	1	--	--	LARC 8TPT 604	ORBITER
1196	S1233	1	156,979	--	LARC UPWT 964	ORBITER
1197	S1240	1	--	--	LARC UPWT 962	LAUNCH
1197	S1240	1	--	--	LARC UPWT 962	BOOSTER
1198	S1242	1	--	--	LARC CFHT 74	LAUNCH
1198	S1242	1	--	--	LARC CFHT 74	BOOSTER
1199	S1241	1	--	--	LARC 44SPT 430	ORBITER
1200	S1243	1	--	--	LARC 8TPT 605	LAUNCH
1200	S1243	1	--	--	LARC 8TPT 605	BOOSTER
1201	S1026.10	1	120,020	--	MSFC 14TWT 498	ORBITER
1202	S0054	1	--	62,112	ARC 66SWT 605	ORBITER
1203	S1234	1	--	--	LARC 20HT6 6392	ORBITER
1204	S0250	1	120,022	--	MSFC 14TWT 512	LAUNCH
1204	S0250	1	120,022	--	MSFC 14TWT 512	BOOSTER
1205	S0008	1	120,023	--	TAM 710SWT S-8-2	ORBITER
1206	H1008	1	120,024	--	AEDC SWTA 1162-F00	ORBITER
1207	H1009	1	120,025	--	AEDC HWTB 1162-4	BOOSTER
1207	H1009	1	120,025	--	AEDC HWTB 1162-4	ORBITER
1207	H1014	2	120,043	--	AEDC HWTB 1162-12	BOOSTER
1207	H1014	2	120,043	--	AEDC HWTB 1162-12	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1208	S1046	1	120,026	--	MSFC 14TWT 518	BOOSTER
1209	S0621	1	120,027	--	MSFC 14TWT 513	BOOSTER
1210	S0251	1	120,028	--	MSFC 14TWT 514	BOOSTER
1210	S0251	1	120,028	--	MSFC 14TWT 514	LAUNCH
1211	S1235	1	--	--	LARC 22HT 7397	ORBITER
1212	S1037	1	120,030	--	CAL 8TWT 18-063	BOOSTER
1213	S0440	1	120,031	--	MSFC 14TWT 517	LAUNCH
1213	S0440	1	120,031	--	MSFC 14TWT 517	BOOSTER
1214	S0627	1	--	--	LARC 20HT6 6397	BOOSTER
1215	S0051	1	--	--	LARC LTPT 85	ORBITER
1216	S1233	1	--	--	LARC UPWT 964/969	ORBITER
1218	S1244	1	--	--	LARC 22HT 7398	ORBITER
1219	S0056	1	--	--	LARC CFHT 80	ORBITER
1220	S0628	1	--	--	LARC 20HT6 6398	BOOSTER
1221	S0055	1	120,033	--	JPL 20SWT 681	ORBITER
1222	P1001	1	120,034	--	AEDC PWT4T TC174-PC1154	BOOSTER
1222	P1001	1	120,034	--	AEDC PWT4T TC174-PC1154	LAUNCH
1222	P1001	2	120,034	--	AEDC PWT4T TC174-PC1154	BOOSTER
1222	P1001	2	120,034	--	AEDC PWT4T TC174-PC1154	LAUNCH
1223	S0252	1	120,035	--	GDC 812SWT 603-0	BOOSTER
1224	H1030	1	120,036	--	AEDC HWTF 1162-F00	ORBITER
1224	H1031	2	120,045	--	AEDC HWTB 1162-5	ORBITER
1225	P1006	1	120,037	--	AEDC HWTB 1162-5	BOOSTER
1225	P1006	1	120,037	--	AEDC HWTB 1162-5	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1225	P1007	2	120,046	--	AEDC HWTB 1162-7	BOOSTER
1225	P1007	2	120,046	--	AEDC HWTB 1162-7	ORBITER
1225	P1008	3	120,047	--	AEDC HWTB 1162-8	BOOSTER
1225	P1008	3	120,047	--	AEDC HWTB 1162-8	ORBITER
1226	S1047	1	120,038	--	MSFC 14TWT 521	BOOSTER
1227	S0625	1	120,039	--	MSFC 14TWT 523	LAUNCH
1227	S0625	1	120,039	--	MSFC 14TWT 523	BOOSTER
1228	S0622-S0623	1	120,069	--	TBC BTWT 1273	BOOSTER
1228	S0622-S0623	1	120,069	--	TBC B4SWT 553	BOOSTER
1229	S1245	1	--	--	LARC LTPT 72	ORBITER
1230	S0441	1	120,083	--	MDAC 4TWT S-222	BOOSTER
1230	S0441	1	120,083	--	MDAC 4TWT S-222	ORBITER
1230	S0441	1	120,083	--	MDAC 4TWT S-222	LAUNCH
1230	S0441	2	120,084	--	MDAC 4TWT S-222	BOOSTER
1230	S0441	2	120,084	--	MDAC 4TWT S-222	ORBITER
1230	S0441	2	120,084	--	MDAC 4TWT S-222	LAUNCH
1230	S0441	3	120,085	--	MDAC 4TWT S-222	BOOSTER
1230	S0441	3	120,085	--	MDAC 4TWT S-222	ORBITER
1230	S0441	3	120,085	--	MDAC 4TWT S-222	LAUNCH
1230	S0441	4	120,086	--	MDAC 4TWT S-222	BOOSTER
1230	S0441	4	120,086	--	MDAC 4TWT S-222	ORBITER
1230	S0441	4	120,086	--	MDAC 4TWT S-222	LAUNCH
1230	S0441	5	120,087	--	MDAC 4TWT S-222	BOOSTER
1230	S0441	5	120,087	--	MDAC 4TWT S-222	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1230	S0441	5	120,087	--	MDAC 4TWT S-222	LAUNCH
1231	H1028	1	120,048	--	AEDC HWTB 1162-9	ORBITER
1232	S1246	1	--	--	LARC UPWT 968	ORBITER
1232	S1246	1	--	--	LARC LTPT 77	ORBITER
1233	S1247	1	--	--	LARC LTPT 87	ORBITER
1234	H0605	1	--	--	LARC 8VDHT 1948-2000	LAUNCH
1234	H0605	1	--	--	LARC 8VDHT 1948-2000	ORBITER
1235	S1249	1	--	--	LARC UPWT 970	ORBITER
1236	H0216	1	--	--	LARC 6HRNT 489	BOOSTER
1237	S1248	1	--	--	LARC UPWT 966	LAUNCH
1237	S1248	1	--	--	LARC UPWT 966	BOOSTER
1237	S1248	1	--	--	LARC UPWT 966	ORBITER
1238	H1032	1	--	--	LARC 20HT6 6386-6387	LAUNCH
1239	S1250	1	--	--	LARC LTPT 86/88	ORBITER
1240	S1049	1	120,040	--	MSFC 14TWT 524	BOOSTER
1241	S0076	1	120,041	--	MSFC 14TWT 531	LAUNCH
1242	S1048	1	120,042	--	MSFC 14TWT 526	BOOSTER
1243	S0067	1	120,050	--	MSFC 14TWT 528	ORBITER
1244	H0217	1	--	--	LARC 20HT6 1-20	BOOSTER
1245	S1052	1	120,051	--	MSFC 14TWT 529	BOOSTER
1249	S1054	1	120,053	--	MSFC 14TWT 534	LAUNCH
1250	S0066	1	--	62,120	ARC 11TWT 628	ORBITER
1251	S1058	1	120,055	--	MSFC 14TWT 538	LAUNCH
1252	H1601	1	--	62,114	ARC 3.5HWT 131	ORBITER

Table 2 - Continued

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1253	S1059	1	120,056	--	MSFC 14TWT 541	BOOSTER
1254	S1060	1	120,057	--	MSFC 14TWT 542	ORBITER
1255	P1009	1	120,058	--	MSFC 14TWT 543	LAUNCH
1256	S1055	1	120,059	--	MSFC 14TWT 544	LAUNCH
1258	S1251	1	--	--	LARC UPWT 979	ORBITER
1259	P1010	1	120,066	--	MSFC 14TWT 540	LAUNCH
1259	P1010	1	120,066	--	MSFC 14TWT 540	ORBITER
1260	H1033	1	--	--	LARC CFHT 78	LAUNCH
1261	H0606	1	--	--	LARC 8VDHT 2505-2565	LAUNCH
1261	H0606	1	--	--	LARC 8VDHT 2505-2565	BOOSTER
1262	H1011	1	120,067	--	AEDC HWTB 1162-9	BOOSTER
1262	H1011	1	120,067	--	AEDC HWTB 1162-9	ORBITER
1262	H1011	1	120,067	--	AEDC HWTB 1162-9	LAUNCH
1262	H1011	2	120,067	--	AEDC HWTB 1162-9	BOOSTER
1262	H1011	2	120,067	--	AEDC HWTB 1162-9	ORBITER
1262	H1011	2	120,067	--	AEDC HWTB 1162-9	LAUNCH
1263	H1034	1	--	--	LARC UPWT 967	LAUNCH
1264	H1010	1	120,049	--	AEDC HWTB 1162	BOOSTER
1264	H1010	1	120,049	--	AEDC HWTB 1162	ORBITER
1264	H1010	1	120,049	--	AEDC HWTB 1162	LAUNCH
1264	H1015-H1028	2	120,071	--	AEDC HWTB 1162	BOOSTER
1264	H1015-H1028	2	120,071	--	AEDC HWTB 1162	ORBITER
1264	H1015-H1028	2	120,071	--	AEDC HWTB 1162	LAUNCH
1265	S1254	1	--	--	LARC UPWT 981	LAUNCH

Table 2 - Concluded

Space Shuttle Phase B Wind Tunnel
Test Database Listed by Chrysler
DATAMAN Report Number

DMS-DR*	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1266	H0019	1	120,072	--	AEDC HWTB 0288	ORBITER
1267	S0079-S0080	1	--	--	ARC 11TWT 629	LAUNCH
1267	S0079-S0080	1	--	--	ARC 97SWT 629	LAUNCH
1268	S1252	1	--	--	LARC LTPT 103	ORBITER
1270	S1253	1	--	--	LARC 22HT 405	ORBITER
1270	S1253	2	--	--	LARC 22HT 405	ORBITER
1272	S1055.1	1	120,074	--	MSFC 14TWT 544X	LAUNCH
1273	P1011	1	120,075	--	MSFC 14TWT 550	LAUNCH
1274	S1062	1	120,076	--	MSFC 14TWT 551	ORBITER
1275	S0629-S0630	1	120,073	--	TBC BTWT 1282	BOOSTER
1275	S0629-S0630	1	120,073	--	TBC B4SWT 557	BOOSTER
1276	S0629-S0630	1	120,078	--	TBC BTWT 1282	BOOSTER
1276	S0629-S0630	1	120,078	--	TBC B4SWT 557	BOOSTER
1277	S1256	1	--	--	LARC CFHT 85	ORBITER
1278	H1035	1	--	--	LARC 8VDHT 2886-2929	LAUNCH

Table 3.1.3

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG I.D.	ORBITER CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1038	STRAIGHT WING	STRAIGHT WING	1	AERODYNAMIC CHARACTERISTICS OF THE MSC/MDAC SPACE SHUTTLE LAUNCH CONFIGURATION - ORBITER/BOOSTER INTERFERENCE EFFECTS (M = 0.6 TO 2.0)
1042	STRAIGHT WING	STRAIGHT WING	1	STATIC AERODYNAMIC CHARACTERISTICS OF THE MSC-PROPOSED LAUNCH VEHICLE
1044	UNIQUE CONFIGS.	STRAIGHT WING	1	S-IC BOOSTER/GRUMMAN C4 ORBITER DETERMINATION OF DOWNWASH ON 900 SQ. FT., 30 DEGREE ORIENTED S-IC FINS AND OPTIMUM ORBITER BODY AND AERODYNAMIC SURFACE INCIDENCE ANGLES
1047	DELTA WING	STRAIGHT WING	1	LONGITUDINAL CHARACTERISTICS OF THE NASA-MSC ORBITER IN CLOSE PROXIMITY TO BOOSTER
1050	STRAIGHT WING	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE NAR/GD SPACE SHUTTLE LAUNCH CONFIGURATION ORBITER/BOOSTER INTERFERENCE EFFECTS (M = 0.6 TO 2.0)
1051	STRAIGHT WING	STRAIGHT WING	1	STATIC STABILITY AND CONTROL INVESTIGATION OF THE NAR-GD/C STRAIGHT WING BOOSTER (B-8H MODIFIED) WITH THE STRAIGHT WING ORBITER (130G) OR DELTA WING ORBITER (134B)
1052	DELTA WING	STRAIGHT WING	1	AERODYNAMIC FORCES AND MOMENT ON ORBITER AND BOOSTER DURING SPACE SHUTTLE ABORT SEPARATION
1055	UNIQUE CONFIGS.	DELTA WING	1	DETERMINATION OF STATIC LONGITUDINAL AND LATERAL DIRECTIONAL STABILITY CHARACTERISTICS OF THE NR/GD DELTA WING ORBITER/SATURN V S-IC BOOSTER
1058	STRAIGHT WING	STRAIGHT WING	1	EFFECTS OF ORBITER/BOOSTER PROXIMITY INTERFERENCE ON THE AERODYNAMIC CHARACTERISTICS OF THE 0.0088105-SCALE MSC LAUNCH CONFIGURATION, MSC TEST SERIES S-XXVIII
1061	DELTA WING	STRAIGHT WING	1	LONGITUDINAL CHARACTERISTICS OF THE MDAC CLIPPED-DELTA BOOSTER (PHASE A) IN CLOSE PROXIMITY TO ORBITER
1063	STRAIGHT WING	STRAIGHT WING	1	DETERMINATION OF DRAG, STABILITY AND CONTROL CHARACTERISTICS FOR THE MSC LAUNCH CONFIGURATION (STRAIGHT WING)
1065	CANARD	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE MDAC SPACE SHUTTLE BOOSTERS AND ORBITERS IN LAUNCH CONFIGURATIONS (M = 0.6 TO 2.0)
1065	CANARD	DELTA WING	2	AERODYNAMIC CHARACTERISTICS OF THE MDAC SPACE SHUTTLE BOOSTERS AND ORBITERS IN LAUNCH CONFIGURATIONS (M = 0.6 TO 2.0)
1075	STRAIGHT WING	STRAIGHT WING	1	AERODYNAMIC CHARACTERISTICS OF SPACE SHUTTLE CONFIGURATIONS CONSISTING OF A STRAIGHT WING BOOSTER WITH VEE TAIL AND ORBITERS WITH STRAIGHT AND DELTA WINGS -- ISOLATED BOOSTER

Table 3.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1075	STRAIGHT WING	STRAIGHT WING	2	AERODYNAMIC CHARACTERISTICS OF SPACE SHUTTLE CONFIGURATIONS CONSISTING OF A STRAIGHT WING BOOSTER WITH VEE TAIL AND ORBITERS WITH STRAIGHT AND DELTA WINGS -- COMPOSITE CONFIGURATIONS
1085	UNIQUE CONFIGS.	DELTA BODY	1	STATIC AERODYNAMIC CHARACTERISTICS OF THE LMSC STAGE-AND-ONE-HALF SPACE SHUTTLE CONFIGURATION (M = .60 TO 2.0)
1091	UNIQUE CONFIGS.	DELTA WING	1	STUDY TO DEVELOP A SOLUTION FOR CONFIGURATION INSTABILITY FOR THE 0.003366 SCALE S-IC/NR HCR ORBITER
1099	CANARD	UNIQUE CONFIGS.	1	AERODYNAMIC CHARACTERISTICS AND INTERFERENCE EFFECTS ON THE MDAC COMPLETE ASCENT CONFIGURATION, UPPER STAGE/PAYLOADS, AND BOOSTER
1108	CANARD	DELTA WING	1	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- MACH NUMBER 5 BOOSTER PROXIMITY DATA
1108	CANARD	DELTA WING	2	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- MACH NUMBER 5 ORBITER PROXIMITY DATA
1108	CANARD	DELTA WING	3	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- MACH NUMBER 3 BOOSTER PROXIMITY DATA
1108	CANARD	DELTA WING	4	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- MACH NUMBER 3 ORBITER PROXIMITY DATA
1108	CANARD	DELTA WING	5	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- MACH NUMBER 2 BOOSTER PROXIMITY DATA
1108	CANARD	DELTA WING	6	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- MACH NUMBER 2 ORBITER PROXIMITY DATA
1108	CANARD	DELTA WING	7	INVESTIGATION OF THE MCDONNELL-DOUGLAS ORBITER AND BOOSTER SHUTTLE MODELS IN PROXIMITY AT MACH NUMBERS 2.0 TO 6.0 -- PROXIMITY DATA AT MACH 4 AND 6, INTERFERENCE FREE AND LAUNCH VEHICLE DATA
1115	STRAIGHT WING	STRAIGHT WING	1	EFFECT OF ORBITER/BOOSTER PROXIMITY INTERFERENCES ON THE AERODYNAMIC CHARACTERISTICS OF THE LAUNCH CONFIGURATION DURING SEPARATION OR ABORT MANEUVERS M = 0.6 - 1.38
1117	CANARD	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MDAC/MMC SBC BOOSTER, DELTA WING ORBITER, AND ASCENT CONFIGURATIONS
1117	CANARD	DELTA WING	2	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MDAC/MMC SBC BOOSTER, DELTA WING ORBITER, AND ASCENT CONFIGURATIONS

Table 3.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1117	CANARD	DELTA WING	3	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MDAC/MMC SBC BOOSTER, DELTA WING ORBITER, AND ASCENT CONFIGURATIONS
1118	CANARD	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A SPACE SHUTTLE LAUNCH CONFIGURATION CONSISTING OF A DELTA-WING ORBITER AND A BOOSTER WITH CANARD, AFT SWEPT WING, AND TIP FINS (M = 0.6 TO 2.0)
1118	CANARD	DELTA WING	2	AERODYNAMIC CHARACTERISTICS OF A SPACE SHUTTLE LAUNCH CONFIGURATION CONSISTING OF A DELTA-WING ORBITER AND A BOOSTER WITH CANARD, AFT SWEPT WING, AND TIP FINS (M = 0.6 TO 2.0)
1119	DELTA WING	UNIQUE CONFIGS.	1	STATIC AERODYNAMIC AND CONTROL INVESTIGATION OF AN EXPENDABLE SECOND STAGE WITH PAYLOAD AND WITH DELTA WING BOOSTER (B-15B-1)
1122	STRAIGHT WING	UNIQUE CONFIGS.	1	AERODYNAMIC CHARACTERISTICS OF A DELTA-WING ORBITER AND STRAIGHT-WING BOOSTER SPACE SHUTTLE LAUNCH VEHICLE FOR MACH NUMBERS FROM 0.25 TO 2.0
1127	DELTA WING	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A SPACE SHUTTLE LAUNCH CONFIGURATION CONSISTING OF A DELTA WING ORBITER AND A DELTA WING BOOSTER (M = 0.6 TO 2.0)
1130	DELTA WING	DELTA WING	1	STATIC STABILITY AND CONTROL INVESTIGATION OF NR/GD DELTA WING BOOSTER (B-20) AND DELTA WING ORBITER (134D) -- DELTA WING BOOSTER
1130	DELTA WING	DELTA WING	2	STATIC STABILITY AND CONTROL INVESTIGATION OF NR/GD DELTA WING BOOSTER (B-20) AND DELTA WING ORBITER (134D) -- LAUNCH CONFIGURATION PIGGYBACK BASELINE
1130	DELTA WING	DELTA WING	3	STATIC STABILITY AND CONTROL INVESTIGATION OF NR/GD DELTA WING BOOSTER (B-20) AND DELTA WING ORBITER (134D) -- LAUNCH CONFIGURATIONS PIGGYBACK, BELLY TO BELLY AND INCIDENCE VARIATIONS
1130	DELTA WING	DELTA WING	4	STATIC STABILITY AND CONTROL INVESTIGATION OF NR/GD DELTA WING BOOSTER (B-20) AND DELTA WING ORBITER (134D) -- LAUNCH CONFIGURATIONS COMPONENT DATA BOOSTER, ORBITER BUILD-UP
1136	STRAIGHT WING	UNIQUE CONFIGS.	1	FORCES, MOMENTS AND PRESSURES ON VARIOUS EXTERNAL LIQUID HYDROGEN TANKS MOUNTED ON A BOOSTER/ORBITER MATED LAUNCH CONFIGURATION
1137	STRAIGHT WING	UNIQUE CONFIGS.	1	AERODYNAMIC CHARACTERISTICS OF A SPACE SHUTTLE LAUNCH CONFIGURATION CONSISTING OF A DELTA WING ORBITER WITH EXTERNAL HYDROGEN TANKS AND A STRAIGHT WING BOOSTER (M = 0.6 TO 2.0)
1140	UNIQUE CONFIGS.	UNIQUE CONFIGS.	1	EFFECT OF ORBITER INCIDENCE ANGLE ON THE AERODYNAMIC CHARACTERISTICS OF THE BOEING S-IC BOOSTER/GAC G-11 ORBITER LAUNCH CONFIGURATION (M = 0.6 - 4.96)

Table 3.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG I.D.	ORBITER CONFIG I.D	VOLUME NUMBER	REPORT TITLE
1148	CANARD	DELTA WING	1	AERODYNAMIC STABILITY AND CONTROL CHARACTERISTICS OF A TBC SPACE SHUTTLE BOOSTER AND GAC ORBITER M = 0 6 - 4.96
1162	DELTA WING	UNIQUE CONFIGS	1	A STATIC STABILITY AND CONTROL INVESTIGATION OF THE NR-GD/C DELTA WING BOOSTER (B-15B-1) AND A REUSABLE NUCLEAR STAGE (RNS) M = 0.6 - 4.96
1166	CANARD	UNIQUE CONFIGS	1	DETERMINATION OF THE STATIC STABILITY CHARACTERISTICS OF THE 0.00285-SCALE MDAC PARALLEL BURN LAUNCH CONFIGURATION
1181	CYLINDRICAL	UNIQUE CONFIGS.	1	AERODYNAMIC CHARACTERISTICS OF THE GRUMMAN H-33 ORBITER MATED TO A THREE SEGMENT SOLID PROPELLANT BOOSTER
1182	UNIQUE CONFIGS.	UNIQUE CONFIGS	1	AERODYNAMIC CHARACTERISTICS OF SEVERAL LAUNCH CONFIGURATIONS UTILIZING THE TITAN III L BOOSTER AND MMC DTO-7 ORBITER
1183	DELTA WING	DELTA WING	1	AERODYNAMIC STABILITY AND CONTROL CHARACTERISTICS OF A 0.0036-SCALE BOEING RS-1C/MSC-040A ORBITER AT MACH NUMBERS 0.6 TO 5.0
1185	CYLINDRICAL	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE NORTH AMERICAN ROCKWELL SPACE SHUTTLE DELTA-WING ORBITER (110C) ALONE AND WITH BELLY-MOUNTED EXTERNAL OXYGEN/HYDROGEN TANKS (M = 0.6 TO 5.0)
1187	UNIQUE CONFIGS.	UNIQUE CONFIGS.	1	STATIC AERODYNAMIC CHARACTERISTICS OF THE S-IC BOOSTER/GAC H-33 ORBITER LAUNCH VEHICLE CONFIGURATION
1188	UNIQUE CONFIGS.	UNIQUE CONFIGS	1	AERODYNAMIC CHARACTERISTICS OF THE TITAN T III L (1207-4)/GAC H-33 LAUNCH CONFIGURATION
1190	CANARD	DELTA WING	1	HYPERSONIC STATIC LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF PHASE B ASCENT CONFIGURATIONS
1197	UNIQUE CONFIGS.	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF A LOW FINENESS RATIO BOOSTER WITH DELTA WING ORBITER LAUNCH CONFIGURATION (M = 1.5 TO 2.16)
1198	UNIQUE CONFIGS.	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A LOW-FINENESS-RATIO BOOSTER AND ASCENT CONFIGURATION AT HYPERSONIC SPEED M = 10.23
1200	UNIQUE CONFIGS.	DELTA WING	1	TRANSONIC AERODYNAMIC CHARACTERISTICS OF A LOW FINENESS RATIO BOOSTER AND DELTA WING ORBITER LAUNCH CONFIGURATION (M = 0.4 TO 1.2)
1204	CYLINDRICAL	DELTA WING	1	DETERMINATION OF LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC CHARACTERISTICS OF THE B19B PRESSURE-FED BOOSTER AND THE B19B BOOSTER/040A ORBITER LAUNCH CONFIGURATION

Table 3.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG I.D.	ORBITER CONFIG I.D.	VOLUME NUMBER	REPORT TITLE
1210	CYLINDRICAL	DELTA WING	1	HIGH ANGLE OF ATTACK TRANSITION AND LOW ANGLE OF ATTACK LAUNCH PHASE AERODYNAMIC STABILITY AND CONTROL OF GD/C B-18E-2, B-18E-3 DELTA WING BOOSTER, AND LAUNCH CONFIGURATION OF MSC-040A ORBITER AND TWIN PRESSURE FED BOOSTERS
1213	DELTA WING	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF 0.003367 SCALE MODELS OF THE MMC RETRO-GLIDE BOOSTER ALONE AND MATED WITH THE MSC 040-A ORBITER
1227	CYLINDRICAL	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A COMPOSITE BOOSTER/040A ORBITER LAUNCH CONFIGURATION WITH FIN AND BOOSTER BODY CONFIGURATION EFFECT CONTRIBUTION
1230	CYLINDRICAL	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF VARIOUS MDAC SPACE SHUTTLE ASCENT CONFIGURATIONS WITH PARALLEL BURN PRESSURE FED AND SRM BOOSTERS -- VOLUME I - ASCENT CONFIGURATION WITH HO CENTERLINE TANKS T1 AND T2
1230	CYLINDRICAL	DELTA WING	2	AERODYNAMIC CHARACTERISTICS OF VARIOUS MDAC SPACE SHUTTLE ASCENT CONFIGURATIONS WITH PARALLEL BURN PRESSURE FED AND SRM BOOSTERS -- VOLUME II - ASCENT CONFIGURATION WITH HO CENTERLINE TANK T3
1230	CYLINDRICAL	DELTA WING	3	AERODYNAMIC CHARACTERISTICS OF VARIOUS MDAC SPACE SHUTTLE ASCENT CONFIGURATIONS WITH PARALLEL BURN PRESSURE FED AND SRM BOOSTERS -- VOLUME III - ASCENT CONFIGURATION WITH HO CENTERLINE TANK T4
1230	CYLINDRICAL	DELTA WING	4	AERODYNAMIC CHARACTERISTICS OF VARIOUS MDAC SPACE SHUTTLE ASCENT CONFIGURATIONS WITH PARALLEL BURN PRESSURE FED AND SRM BOOSTERS -- VOLUME IV - ASCENT CONFIGURATION PLUME STUDIES AND CONFIGURATION BUILDUP
1230	CYLINDRICAL	DELTA WING	5	AERODYNAMIC CHARACTERISTICS OF VARIOUS MDAC SPACE SHUTTLE ASCENT CONFIGURATIONS WITH PARALLEL BURN PRESSURE FED AND SRM BOOSTERS -- VOLUME V - ORBITER ALONE, TANKS ALONE, AND BOOSTER ALONE
1237	DELTA WING	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS OF STAGE ARRANGEMENTS AT SUPERSONIC SPEEDS FOR A SPACE SHUTTLE (.0056 SCALE MODEL)
1241	CYLINDRICAL	DELTA WING	1	ABORT STAGING CHARACTERISTICS OF AN EXTERNAL OXYGEN TANK SEPARATING FROM THE SPACE SHUTTLE 040-A ORBITER (.006 SCALE MODEL) AT MACH NUMBERS OF 0.6, 2.0 AND 4.0
1249	CYLINDRICAL	DELTA WING	1	AERODYNAMIC STABILITY AND DRAG CHARACTERISTICS OF A PARALLEL BURN/SRM ASCENT CONFIGURATION AT MACH NUMBERS FROM 0.6 TO 4.96
1251	CYLINDRICAL	DELTA WING	1	AERODYNAMIC STABILITY AND DRAG CHARACTERISTICS OF A PARALLEL BURN/SRM ASCENT CONFIGURATION (M = 0.6 TO 4.96)
1256	CYLINDRICAL	DELTA WING	1	STATIC STABILITY AND CONTROL EFFECTIVENESS OF A PARAMETRIC LAUNCH VEHICLE

Table 3.1.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D	VOLUME NUMBER	REPORT TITLE
1265	CYLINDRICAL	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A SPACE SHUTTLE 040A ORBITER-TANK-SRM COMBINATION AT MACH NUMBERS FROM 2.3 TO 4.62
1267	CYLINDRICAL	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF AN 040A SPACE SHUTTLE LAUNCH CONFIGURATION WITH SIMULATED ROCKET PLUMES AT MACH NUMBERS FROM 0.8 TO 2.2
1267	CYLINDRICAL	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF AN 040A SPACE SHUTTLE LAUNCH CONFIGURATION WITH SIMULATED ROCKET PLUMES AT MACH NUMBERS FROM 0.8 TO 2.2
1272	CYLINDRICAL	DELTA WING	1	PERFORMANCE, STATIC STABILITY AND CONTROL EFFECTIVENESS OF A PARAMETRIC SPACE SHUTTLE LAUNCH VEHICLE

Table 3.2.3

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Airloads

DMS-DR#	BOOSTER CONFIG I D	ORBITER CONFIG I D	VOLUME NUMBER	REPORT TITLE
1129	STRAIGHT WING	DELTA WING	1	PRESSURE TESTS OF MODELS OF A STRAIGHT-WING ORBITER, DELTA-WING ORBITER, AND A STRAIGHT-WING BOOSTER (MACH NUMBER 0.6 TO 2.2) -- STRAIGHT-WING BOOSTER
1129	STRAIGHT WING	DELTA WING	2	PRESSURE TESTS OF MODELS OF A STRAIGHT-WING ORBITER, DELTA-WING ORBITER, AND A STRAIGHT-WING BOOSTER (MACH NUMBER 0.6 TO 2.2) -- DELTA-WING ORBITER
1129	STRAIGHT WING	DELTA WING	3	PRESSURE TESTS OF MODELS OF A STRAIGHT-WING ORBITER, DELTA-WING ORBITER, AND A STRAIGHT-WING BOOSTER (MACH NUMBER 0.6 TO 2.2) -- STRAIGHT-WING ORBITER
1136	STRAIGHT WING	UNIQUE CONFIGS	1	FORCES, MOMENTS AND PRESSURES ON VARIOUS EXTERNAL LIQUID HYDROGEN TANKS MOUNTED ON A BOOSTER/ORBITER MATED LAUNCH CONFIGURATION
1174	CANARD	DELTA WING	1	SPACE SHUTTLE ABORT SEPARATION PRESSURE INVESTIGATION -- BOOSTER DATA AT MACH 5
1174	CANARD	DELTA WING	2	SPACE SHUTTLE ABORT SEPARATION PRESSURE INVESTIGATION -- ORBITER DATA AT MACH 5
1174	CANARD	DELTA WING	3	SPACE SHUTTLE ABORT SEPARATION PRESSURE INVESTIGATION -- BOOSTER DATA AT MACH 3
1174	CANARD	DELTA WING	4	SPACE SHUTTLE ABORT SEPARATION PRESSURE INVESTIGATION -- ORBITER DATA AT MACH 3
1174	CANARD	DELTA WING	5	SPACE SHUTTLE ABORT SEPARATION PRESSURE INVESTIGATION -- BOOSTER DATA AT MACH 2
1174	CANARD	DELTA WING	6	SPACE SHUTTLE ABORT SEPARATION PRESSURE INVESTIGATION -- ORBITER DATA AT MACH 2
1222	CANARD	DELTA WING	1	PRESSURE INVESTIGATION OF A SPACE SHUTTLE LAUNCH CONFIGURATION CONSISTING OF A DELTA-WING ORBITER AND A SWEPT-WING BOOSTER WITH CANARD AND TIP FINS (M = 0.6 TO 1.3)
1222	CANARD	DELTA WING	2	PRESSURE INVESTIGATION OF A SPACE SHUTTLE LAUNCH CONFIGURATION CONSISTING OF A DELTA-WING ORBITER AND A SWEPT-WING BOOSTER WITH CANARD AND TIP FINS (M = 0.6 TO 1.3)
1255	CYLINDRICAL	DELTA WING	1	AN INVESTIGATION OF THE LOAD DISTRIBUTION OVER THE SRB AND EXTERNAL TANK OF A 0.004 SCALE MODEL OF THE 049 SPACE SHUTTLE LAUNCH CONFIGURATION
1259	CYLINDRICAL	DELTA WING	1	PRELIMINARY PRESSURE DISTRIBUTIONS ON THE 049 ORBITER, ORBITER IN PRESENCE OF H/O TANK AND ORBITER IN LAUNCH CONFIGURATION

Table 3.2.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Airloads

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1273	CYLINDRICAL	DELTA WING	1	STATIC SURFACE PRESSURES OF THE 0.004 SCALE 049 ORBITER IN THE LAUNCH CONFIGURATION

Table 3.3.3

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Heat Transfer

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1016	DELTA WING	STRAIGHT WING	1	INTERFERENCE FLOW FIELD HEAT TRANSFER CHARACTERISTICS OF THE COMBINED DELTA WING BOOSTER AND MSC ORBITER
1032	STRAIGHT WING	STRAIGHT WING	1	CONVAIR STRAIGHT WING (B-8B) AND DELTA WING (B-9J) BOOSTERS WITH NAR STRAIGHT WING AND DELTA WING ORBITERS -- INTERFERENCE HEAT TRANSFER TO SPACE SHUTTLE VEHICLE SURFACES IN CLOSE PROXIMITY AT HYPERSONIC VELOCITY
1036	CANARD	DELTA WING	1	THERMAL MAPPING INVESTIGATION MDAC/MMC PHASE B SPACE SHUTTLE VEHICLES
1036	CANARD	DELTA WING	1	THERMAL MAPPING INVESTIGATION MDAC/MMC PHASE B SPACE SHUTTLE VEHICLES
1036	CANARD	DELTA WING	2	THERMAL MAPPING INVESTIGATION MDAC/MMC PHASE B SPACE SHUTTLE VEHICLES -- CONTOUR TRACINGS
1036	CANARD	DELTA WING	2	THERMAL MAPPING INVESTIGATION MDAC/MMC PHASE B SPACE SHUTTLE VEHICLES -- CONTOUR TRACINGS
1098	DELTA WING	STRAIGHT WING	1	HEAT TRANSFER RESULTS ON SPACE SHUTTLE PHASE B LAUNCH CONFIGURATION AT MACH NUMBERS OF 2.5 AND 3.7
1143	UNIQUE CONFIGS.	DELTA BODY	1	HEAT TRANSFER TESTS OF THE LMSC DELTA-BODY ORBITER AND STAGE-AND-ONE-HALF ASCENT CONFIGURATION
1145	DELTA WING	DELTA WING	1	HEAT TRANSFER TEST TO DETERMINE THERMAL PROTECTION SYSTEM DESIGN REQUIREMENTS FOR BOOSTERS B-9U, B-15B-2, AND BOOSTER/ORBITER B-9U/161C
1170	CANARD	DELTA WING	1	AERODYNAMIC HEATING TESTS OF THE MDAC DELTA WING ORBITER AND CANARD BOOSTER
1177	DELTA WING	DELTA WING	1	HEAT TRANSFER RATE MEASUREMENTS ON CONVAIR BOOSTER (B-15B-2) AND NORTH AMERICAN ROCKWELL ORBITER (161B) AT NOMINAL MACH NUMBER OF 8
1177	DELTA WING	DELTA WING	2	HEAT TRANSFER RATE MEASUREMENTS ON CONVAIR BOOSTER (B-15B-2) AT NOMINAL MACH NUMBER OF 8
1177	DELTA WING	DELTA WING	3	HEAT TRANSFER RATE MEASUREMENTS ON NORTH AMERICAN ROCKWELL ORBITER (161B) AT NOMINAL MACH NUMBER OF 8
1178	CYLINDRICAL	UNIQUE CONFIGS.	1	DETERMINATION OF REENTRY HEAT TRANSFER TO ORBITER SURFACES AND INTERFERENCE HEATING DURING LAMINAR PORTION OF LAUNCH, BOOST, AND HIGH-ALTITUDE ABORT REENTRY FOR THE GAC H-3T DELTA-WING ORBITER WITH EXTERNAL TANKS AND BOEING 1202 BOOSTER
1234	CYLINDRICAL	DELTA WING	1	HEAT TRANSFER STUDY OF THE GRUMMAN H-33/HO ORBITER

Table 3.3.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Chrysler DATAMAN Report Titles

Launch Heat Transfer

DMS-DR#	BOOSTER CONFIG I D	ORBITER CONFIG I D	VOLUME NUMBER	REPORT TITLE
1238	CANARD	DELTA WING	1	ASCENT SHOCK IMPINGEMENT HEATING ON A MDAC SHUTTLE CONFIGURATION, M = 6.0
1260	CANARD	DELTA WING	1	ASCENT SHOCK IMPINGEMENT HEATING ON A MDAC SHUTTLE CONFIGURATION, M = 10
1261	CYLINDRICAL	DELTA WING	1	AN EVALUATION OF ORBITER INDUCED INTERFERENCE HEATING ON THE BOOSTER, ORBITER TANK, AND INTERSTAGE FAIRINGS FOR BOTH LOW AND HIGH-ALPHA RE-ENTRY
1262	CANARD	DELTA WING	1	HEAT TRANSFER TESTS OF THE MCDONNELL-DOUGLAS DELTA WING ORBITER MATED WITH -17A BOOSTER AT MACH NUMBER 8
1262	CANARD	DELTA WING	2	HEAT TRANSFER TESTS OF THE MCDONNELL-DOUGLAS DELTA WING ORBITER AND THE -17A BOOSTER (NOT MATED) AT MACH NUMBER 8
1263	CANARD	DELTA WING	1	ASCENT SHOCK IMPINGEMENT HEATING ON A MDAC SHUTTLE CONFIGURATION, M = 2.3 AND 3 7
1264	DELTA WING	DELTA WING	1	ASCENT HEAT TRANSFER RATE DISTRIBUTION ON THE NR DELTA WING ORBITER AND THE GD/C BOOSTER AT MACH NUMBER OF 8 (MATED)
1264	DELTA WING	DELTA WING	2	ASCENT HEAT TRANSFER RATE DISTRIBUTION ON THE NR DELTA WING ORBITER AND THE GD/C BOOSTER AT MACH NUMBER OF 8 (NOT MATED)
1278	CYLINDRICAL	DELTA WING	1	SHOCK IMPINGEMENT HEATING ON THE MSC 040A-2/156-INCH SRM SPACE SHUTTLE LAUNCH CONFIGURATION, M = 8.0

Table 4.1.3

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1038	STRAIGHT WING	STRAIGHT WING	ARC 66SWT 486	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	WING CONFIGURATION AND INTERFERENCE EFFECTS, LAUNCH CONFIGURATION
1038	STRAIGHT WING	DELTA WING	ARC 66SWT 486	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	WING CONFIGURATION AND INTERFERENCE EFFECTS, LAUNCH CONFIGURATION
1038	DELTA WING	STRAIGHT WING	ARC 66SWT 486	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	WING CONFIGURATION AND INTERFERENCE EFFECTS, LAUNCH CONFIGURATION
1038	DELTA WING	DELTA WING	ARC 66SWT 486	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	WING CONFIGURATION AND INTERFERENCE EFFECTS, LAUNCH CONFIGURATION
1042	STRAIGHT WING	STRAIGHT WING	ARC 66SWT 488	R. C. ROBINSON, P. R. WILCOX /ARC	INTERFERENCE EFFECTS AND UNSTEADY LOADS INVESTIGATION
1044	UNIQUE CONFIGS.	STRAIGHT WING	MSFC 14TWT 470	L. C. SHROUT, M. Y. OIYE, R. M. MILLER /TBC	DOWNWASH ON 900 SQ. FT. 30 DEG. ORIENTED FINS AND OPTIMUM BOOSTER BODY AND AERO SURFACE INCIDENCE
1047	DELTA WING	STRAIGHT WING	LARC CFHT 54	P. T. BERNOT /LARC	CLOSE-PROXIMITY EFFECTS
1050	STRAIGHT WING	DELTA WING	ARC 66SWT 505	J. J. BROWNSON /ARC - L. CLARKE /NR	INTERFERENCE EFFECTS, POSITION AND INCIDENCE ANGLE
1050	STRAIGHT WING	STRAIGHT WING	ARC 66SWT 505	J. J. BROWNSON /ARC - L. CLARKE /NR	INTERFERENCE EFFECTS, POSITION AND INCIDENCE ANGLE
1051	STRAIGHT WING	STRAIGHT WING	MSFC 14TWT 466	E. C. ALLEN, J. F. HARDESTY /NR - F. W. EDER /GD/C	STATIC STABILITY AND CONTROL ABILITY
1051	STRAIGHT WING	DELTA WING	MSFC 14TWT 466	E. C. ALLEN, J. F. HARDESTY /NR - F. W. EDER /GD/C	STATIC STABILITY AND CONTROL ABILITY
1052	DELTA WING	STRAIGHT WING	GDC 4HSWT 304-0	J. M. DEBEVOISE /GD/C	ABORT SEPARATION EFFECTS
1052	DELTA WING	DELTA WING	GDC 4HSWT 304-0	J. M. DEBEVOISE /GD/C	ABORT SEPARATION EFFECTS
1052	STRAIGHT WING	STRAIGHT WING	GDC 4HSWT 304-0	J. M. DEBEVOISE /GD/C	ABORT SEPARATION EFFECTS

Table 4.1.3 - Continued
Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D	ORBITER CONFIG. I.D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1052	STRAIGHT WING	DELTA WING	GDC 4HSWT 304-0	J. M. DEBEVOISE /GD/C	ABORT SEPARATION EFFECTS
1055	UNIQUE CONFIGS	DELTA WING	MSFC 14TWT 476	C. H. MUHLHAUSER /MSFC	STATIC STABILITY CHARACTERISTICS, INCIDENCE ANGLE OPTIMIZATION
1058	STRAIGHT WING	STRAIGHT WING	LTV HSWT S-28	P. O. ROMERE, IVY H. FOSSLER /MSC	PROXIMITY INTERFERENCE EFFECTS
1058	DELTA WING	STRAIGHT WING	LTV HSWT S-28	P. O. ROMERE, IVY H. FOSSLER /MSC	PROXIMITY INTERFERENCE EFFECTS
1061	DELTA WING	STRAIGHT WING	LARC CFHT 54	P. T. BERNOT /LARC	LONGITUDINAL CHARACTERISTICS OF BOOSTER IN CLOSE PROXIMITY TO ORBITER, POSITION AND GAP EFFECTS
1063	STRAIGHT WING	STRAIGHT WING	ARC 66SWT 524	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	DRAG, STABILITY AND CONTROL CHARACTERISTICS, CONFIGURATION
1065	CANARD	DELTA WING	ARC 66SWT 508	J. J. BROWNSON /ARC - T. W. JARRETT /MDAC	AERODYNAMIC CHARACTERISTICS, LAUNCH CONFIGURATION
1065	CANARD	STRAIGHT WING	ARC 66SWT 508	J. J. BROWNSON /ARC - T. W. JARRETT /MDAC	AERODYNAMIC CHARACTERISTICS, LAUNCH CONFIGURATION
1075	STRAIGHT WING	STRAIGHT WING	ARC 66SWT 511	J. J. BROWNSON /ARC	TRANSITION CHARACTERISTICS
1075	STRAIGHT WING	DELTA WING	ARC 66SWT 511	J. J. BROWNSON /ARC	TRANSITION CHARACTERISTICS
1085	UNIQUE CONFIGS.	DELTA BODY	ARC 66SWT 542	J. J. BROWNSON /ARC - F. VELLIGAN, H. O. SVENDSEN /LMSC	SUBSONIC TO SUPERSONIC AERO CHARACTERISTICS
1091	UNIQUE CONFIGS.	DELTA WING	MSFC 14TWT 485	L. WATTS /TBC	STABILITY INVESTIGATION, GEOMETRY AND REYNOLDS NUMBER VARIATION
1099	CANARD	UNIQUE CONFIGS.	ARC 66SWT 557	J. J. BROWNSON /ARC - D. BELL /MDAC-W	AERO CHARACTERISTICS AND INTERFERENCE EFFECTS
1108	CANARD	DELTA WING	AEDC SWTA 1163	L. L. TRIMMER, R. H. BURT /ARO - D. A. LOVE, J. M. RAMPY /LMSC - J. P. DECKER /LARC - K. L. BLACKWELL /MSFC	SEPARATION AERODYNAMICS

Table 4.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1115	STRAIGHT WING	STRAIGHT WING	LTV HSWT S-30	P. R. ROMERE, I. H. FOSSLER /MSC	AERO CHARACTERISTICS DURING SEPARATION OR ABORT
1115	DELTA WING	DELTA WING	LTV HSWT S-30	P. R. ROMERE, I. H. FOSSLER /MSC	AERO CHARACTERISTICS DURING SEPARATION OR ABORT
1117	CANARD	DELTA WING	LARC UPWT 963	E. B. GRAVES /LARC - G. HOLLE /MMC	AERODYNAMIC CHARACTERISTICS, INTERFERENCE EFFECTS
1118	CANARD	DELTA WING	ARC 66SWT 512	T. W. JARRETT, T. L. JENSEN /MDAC - J. J. BROWNSON /ARC	INTERFERENCE EFFECTS
1119	DELTA WING	UNIQUE CONFIGS.	MSFC 14TWT 489	E. C. ALLEN /NR - F. W. EDER /GD/C	STATIC AERODYNAMIC STABILITY AND CONTROL CHARACTERISTICS
1122	STRAIGHT WING	UNIQUE CONFIGS.	ARC 66SWT 546	J. A. MELLENTHIN /ARC - M. QUAN, F. TESSITORE /GAC	BASIC AERO FORCE DATA
1127	DELTA WING	DELTA WING	ARC 66SWT 548	J. J. BROWNSON /ARC - H. DRESER /NR	AERODYNAMIC CHARACTERISTICS OF LAUNCH CONFIGURATION, INTERFERENCE EFFECTS
1130	DELTA WING	DELTA WING	MSFC 14TWT 490	E. C. ALLEN /NR - F. W. EDER /GD/C	STATIC STABILITY AND CONTROL INVESTIGATION
1136	STRAIGHT WING	UNIQUE CONFIGS.	ARC 66SWT 561	J. BROWNSON /ARC - F. TESSITORE, M. QUAN /GAC	FORCES, MOMENTS AND PRESSURES ON VARIOUS TANK CONFIGURATIONS
1137	STRAIGHT WING	UNIQUE CONFIGS.	ARC 66SWT 551	J. J. BROWNSON /ARC - F. T. TESSITORE, M. QUAN /GAC	AERODYNAMIC CHARACTERISTICS, CONFIGURATIONS WITH TANKS
1140	UNIQUE CONFIGS.	UNIQUE CONFIGS.	MSFC 14TWT 491	L. WATTS /TBC	OPTIMUM INCIDENCE ANGLE AND CORRESPONDING AERODYNAMIC CHARACTERISTICS
1148	CANARD	DELTA WING	MSFC 14TWT 492	J. JOHNSON, L. L. WATTS /TBC	STABILITY AND CONTROL CHARACTERISTICS
1162	DELTA WING	UNIQUE CONFIGS.	MSFC 14TWT 497	E. C. ALLEN /NR	AERODYNAMIC FORCE AND MOMENT DATA, CONTROL EFFECTIVENESS
1166	CANARD	UNIQUE CONFIGS.	MSFC 14TWT 501	K. L. BLACKWELL, D. G. LANE /MSFC	EVALUATION OF PERFORMANCE AS IN MDC E0376

Table 4.1.3 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1181	CYLINDRICAL	UNIQUE CONFIGS.	MSFC 14TWT 504	F. SIMS, R. OLIVE /MSFC	AERODYNAMIC CHARACTERISTICS OF CONFIGURATION
1182	UNIQUE CONFIGS.	UNIQUE CONFIGS.	MSFC 14TWT 505	D. J. MICHNA /MMC	ASCENT AND REENTRY AERODYNAMIC DATA
1183	DELTA WING	DELTA WING	MSFC 14TWT 506	L. L. WATTS, R. AINSWORTH, S. VANDERLEEST /TBC	REENTRY AND TRANSITIONAL GLIDE AERODYNAMIC DATA
1183	DELTA WING	DELTA WING	MSFC 14TWT 506	L. L. WATTS, R. AINSWORTH, S. VANDERLEEST /TBC	REENTRY AND TRANSITIONAL GLIDE AERODYNAMIC DATA
1185	CYLINDRICAL	DELTA WING	MSFC 14TWT 509	E. C. ALLEN /NR	AERODYNAMIC FORCE AND MOMENT DATA, ORBITER ALONE AND WITH EXTERNAL TANKS
1187	UNIQUE CONFIGS.	UNIQUE CONFIGS.	MSFC 14TWT 502	J. F. SIMS /MSFC - R. W. AINSWORTH /TBC	AERODYNAMIC CHARACTERISTICS
1188	UNIQUE CONFIGS.	UNIQUE CONFIGS.	MSFC 14TWT 503	J. F. SIMS /MSFC	STATIC STABILITY AND DRAG DATA
1190	CANARD	DELTA WING	LARC 22HT 7377-79,7380-90	J. P. ARRINGTON /LARC	STATIC AERODYNAMIC CHARACTERISTICS, ASCENT INTERFERENCE EFFECTS
1190	DELTA WING	DELTA WING	LARC 22HT 7377-79,7380-90	J. P. ARRINGTON /LARC	STATIC AERODYNAMIC CHARACTERISTICS, ASCENT INTERFERENCE EFFECTS
1197	UNIQUE CONFIGS.	DELTA WING	LARC UPWT 962	D. C. FREEMAN, W. A. CORLETT /LARC	SUPERSONIC AERODYNAMIC CHARACTERISTICS
1198	UNIQUE CONFIGS.	DELTA WING	LARC CFHT 74	P. T. BERNOT /LARC	HYPERSONIC AERODYNAMIC CHARACTERISTICS, COMPONENT BREAKDOWN DATA
1200	UNIQUE CONFIGS.	DELTA WING	LARC 8TPT 605	D. C. FREEMAN /LARC	LONGITUDINAL AND LATERAL-DIRECTIONAL FORCE DATA
1204	CYLINDRICAL	DELTA WING	MSFC 14TWT 512	R. F. MCGINNIS, F. W. EDER /GD/C	LONGITUDINAL AND LATERAL DIRECTIONAL CHARACTERISTICS
1210	CYLINDRICAL	DELTA WING	MSFC 14TWT 514	J. M. DEBEVOISE, R. F. MCGINNIS /GD/C	LAUNCH-PHASE STABILITY AND CONTROL

Table 4.1.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Aerodynamics

DMS-DR#	BOOSTER CONFIG I D	ORBITER CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1213	DELTA WING	DELTA WING	MSFC 14TWT 517	D J MICHNA, D ALLAYAUD /MMC	LAUNCH CONFIGURATION AND BOOSTER REENTRY CONFIGURATION STABILITY AND CONTROL DATA
1227	CYLINDRICAL	DELTA WING	MSFC 14TWT 523	R. W. AINSWORTH, J. C. JOHNSON, L. L. WATTS /TBC	FIN CONFIGURATION AND BODY CONFIGURATION EFFECTS
1230	CYLINDRICAL	DELTA WING	MDAC 4TWT S-222	T. W. JARRETT /MDAC	AERODYNAMIC CHARACTERISTICS, INDIVIDUAL CONTRIBUTIONS DURING ASCENT, AND RELATIVE ORBITER AND BOOSTER POSITION INTERFERENCE EFFECTS
1237	DELTA WING	DELTA WING	LARC UPWT 966	W. I. SCALLION, R. H. FOURNIER /LARC	FORCES AND MOMENTS, INTERFERENCE EFFECTS, COMPONENT EFFECTS
1241	CYLINDRICAL	DELTA WING	MSFC 14TWT 531	I. FOSSLER /MSC - P. COLE /NSI	NORMAL FORCE, PITCHING MOMENT AND AXIAL FORCE COMPONENTS FOR VARIOUS TANK POSITION, INCIDENCE ANGLE
1249	CYLINDRICAL	DELTA WING	MSFC 14TWT 534	J. F. SIMS /MSFC - T. HAMILTON /NSI	PERFORMANCE AND STABILITY CHARACTERISTICS, CONFIGURATION BUILD-UP, VARIATIONS EFFECTS
1251	CYLINDRICAL	DELTA WING	MSFC 14TWT 538	F. SIMS /MSFC	PERFORMANCE AND STABILITY CHARACTERISTICS, EFFECTS OF COMPONENT VARIATION
1256	CYLINDRICAL	DELTA WING	MSFC 14TWT 544	R. ELLIS, M. GAMBLE /LMSC	STATIC AERODYNAMIC CHARACTERISTICS
1265	CYLINDRICAL	DELTA WING	LARC UPWT 981	W. I. SCALLION, E. B. GRAVES /LARC	ASCENT CONFIGURATION PERFORMANCE AND LATERAL CONTROL CHARACTERISTICS
1267	CYLINDRICAL	DELTA WING	ARC 11TWT 629	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	EFFECT OF PLUME ON AERO CHARACTERISTICS
1267	CYLINDRICAL	DELTA WING	ARC 97SWT 629	J. J. BROWNSON /ARC - A. M. WHITNAH /MSC	EFFECT OF PLUME ON AERO CHARACTERISTICS
1272	CYLINDRICAL	DELTA WING	MSFC 14TWT 544X	R. E. BUCHHOLZ, M. GAMBLE /LMSC	STATIC STABILITY AND CONTROL EFFECTIVENESS

Table 4.2.3

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Airloads

DMS-DR#	BOOSTER CONFIG. I.D.	ORBITER CONFIG. I.D.	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1129	STRAIGHT WING	DELTA WING	ARC 66SWT 509	J. A. MELLENTHIN /ARC - B. W. CAMERON, C. R. LEEF /NR	PRESSURE DATA PERTINENT TO AERODYNAMIC LOADING CHARACTERISTICS
1129	STRAIGHT WING	STRAIGHT WING	ARC 66SWT 509	J. A. MELLENTHIN /ARC - B. W CAMERON, C. R. LEEF /NR	PRESSURE DATA PERTINENT TO AERODYNAMIC LOADING CHARACTERISTICS
1136	STRAIGHT WING	UNIQUE CONFIGS.	ARC 66SWT 561	J. BROWNSON /ARC - F TESSITORE, M. QUAN /GAC	FORCES, MOMENTS AND PRESSURES ON VARIOUS TANK CONFIGURATIONS
1174	CANARD	DELTA WING	AEDC SWTA 1163	L. L. TRIMMER, W. T. STRIKE /ARO - D. A. LOVE /LMSC - J. M. RAMPY /NSI - J. P. DECKER /LARC - K. L. BLACKWELL /MSFC	SEPARATION TEST
1222	CANARD	DELTA WING	AEDC PWT4T TC174-PC1154	J. M. RAMPY /NSI - K. L. BLACKWELL /MSFC - G. R. GOMILLION /ARO	LAUNCH CONFIGURATION PRESSURE DATA AT TRANSONIC SPEEDS
1255	CYLINDRICAL	DELTA WING	MSFC 14TWT 543	R. LOTT /LMSC	PRESSURE DISTRIBUTION ON H-O TANK AND SRM
1259	CYLINDRICAL	DELTA WING	MSFC 14TWT 540	J. F. SIMS /MSFC - J. T. HAMILTON, J. M. RAMPY /NSI	PRESSURE DISTRIBUTIONS
1273	CYLINDRICAL	DELTA WING	MSFC 14TWT 550	R. E. BUCHHOLZ, M. GAMBLE /LMSC-HREC	PRESSURE DISTRIBUTIONS

Table 4.3.3

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Heat Transfer

DMS-DR#	BOOSTER CONFIG. I.D	ORBITER CONFIG. I.D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1016	DELTA WING	STRAIGHT WING	LARC CFHT 50	D. H. CRAWFORD /LARC	HEATING EFFECTS DUE TO RELATIVE POSITIONS OF BOOSTER/ORBITER
1032	STRAIGHT WING	STRAIGHT WING	LARC 8VDHT 137-146,189-205	W. R. GINSKY /GD/C - R. RAPARELLI /NR	EVALUATION OF INTERFERENCE HEATING RATES
1032	STRAIGHT WING	DELTA WING	LARC 8VDHT 137-146,189-205	W. R. GINSKY /GD/C - R. RAPARELLI /NR	EVALUATION OF INTERFERENCE HEATING RATES
1032	DELTA WING	DELTA WING	LARC 8VDHT 137-146,189-205	W. R. GINSKY /GD/C - R. RAPARELLI /NR	EVALUATION OF INTERFERENCE HEATING RATES
1032	DELTA WING	STRAIGHT WING	LARC 8VDHT 137-146,189-205	W. R. GINSKY /GD/C - R. RAPARELLI /NR	EVALUATION OF INTERFERENCE HEATING RATES
1036	CANARD	DELTA WING	LARC 8VDHT 147-179,206-322	P. L. CLICK, D. SCHMITT /MMC	THERMAL MAPPING
1036	CANARD	STRAIGHT WING	LARC 8VDHT 147-179,206-322	P. L. CLICK, D. SCHMITT /MMC	THERMAL MAPPING
1036	CANARD	DELTA WING	LARC CFHT 53	P. L. CLICK, D. SCHMITT /MMC	THERMAL MAPPING
1036	CANARD	STRAIGHT WING	LARC CFHT 53	P. L. CLICK, D. SCHMITT /MMC	THERMAL MAPPING
1098	DELTA WING	STRAIGHT WING	LARC UPWT 945	R. L. STALLINGS /LARC - A. M. ROBERGE /GD/C - H. GOROWITZ /NR	ASCENT HEAT TRANSFER DISTRIBUTIONS, INTERFERENCE HEATING INFORMATION
1098	DELTA WING	DELTA WING	LARC UPWT 945	R. L. STALLINGS /LARC - A. M. ROBERGE /GD/C - H. GOROWITZ /NR	ASCENT HEAT TRANSFER DISTRIBUTIONS, INTERFERENCE HEATING INFORMATION
1143	UNIQUE CONFIGS	DELTA BODY	LARC 8VDHT 1075-1107	H. D. SCHULTZ, K. W. MCGEE /LMSC	HEAT TRANSFER TEST
1145	DELTA WING	DELTA WING	LARC 8VDHT 1237-1297	R. O. DOUGHTY, R. C. ERICKSON /GD/C	THERMAL PROTECTION SYSTEM REQUIREMENTS

Table 4.3.3 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Launch Heat Transfer

DMS-DR#	BOOSTER CONFIG I.D	ORBITER CONFIG I.D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1170	CANARD	DELTA WING	CAL 96HST H/T MDAC	T. L. ANDRESEN /MDAC-E	THERMAL ENVIRONMENT DATA FOR THERMAL PROTECTION SYSTEM DESIGN
1177	DELTA WING	DELTA WING	AEDC HWTB 1162-1	J. D. WARMBROD /MSFC - W. R. MARTINDALE, R. K. MATTHEWS /ARO	ASCENT AND REENTRY HEATING DATA
1178	CYLINDRICAL	UNIQUE CONFIGS	LARC CFHT 69	A. D'ERRICO, C. SONITSCH /GAC	INTERFERENCE HEATING DURING LAUNCH, HEATING DURING REENTRY AND HIGH ALTITUDE ABORT REENTRY
1234	CYLINDRICAL	DELTA WING	LARC 8VDHT 1948-2000	C. OSONITSCH, A. D'ERRICO /GAC - T. CREEL /LARC	HEAT TRANSFER, INTERFERENCE LAUNCH CONFIGURATION LAMINAR DATA, RE-ENTRY TURBULENT FLIGHT DATA
1238	CANARD	DELTA WING	LARC 20HT6 6386-6387	J. D. WARMBROD /MSFC - J. Y. PARKER /NSI - J. E. REARDON /REMTECH	ASCENT SHOCK IMPINGEMENT HEATING INVESTIGATION
1260	CANARD	DELTA WING	LARC CFHT 78	H. D. CRAWFORD /LARC - J. D. WARMBROD /MSFC - J. E. REARDON / REMTECH - J. Y. PARKER /NSI	HEATING CHARACTERISTICS DURING ASCENT
1261	CYLINDRICAL	DELTA WING	LARC 8VDHT 2505-2565	J. HOUSER, A. PERLBACHS /TBC - L. E. CLARK /LARC	INTERFERENCE HEATING, RE-ENTRY HEATING
1262	CANARD	DELTA WING	AEDC HWTB 1162-9	R. K. MATTHEWS, W. R. MARTINDALE /ARO - J. D. WARMBROD /MSFC	INTERFERENCE HEATING DATA
1263	CANARD	DELTA WING	LARC UPWT 967	J. D. WARMBROD /MSFC - J. Y. PARKER /NSI - J. REARDON /REMTECH	PLOTTED AND TABULATED HEAT TRANSFER DATA
1264	DELTA WING	DELTA WING	AEDC HWTB 1162	R. K. MATTHEWS, W. R. MARTINDALE /ARO - J. D. WARMBROD /MSFC	INTERFERENCE HEATING DATA
1278	CYLINDRICAL	DELTA WING	LARC 8VDHT 2886-2929	J. Y. PARKER /REMTECH - J. D. WARMBROD /MSFC - C. B. JOHNSON /LARC	SHOCK IMPINGEMENT HEATING AT M = 8

Table 5

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
AEDC	HWTB	0288	ORBITER	HEAT-TRANSFER	1266	07/72	N/A
AEDC	HWTB	1162	ORBITER	HEAT-TRANSFER	1264	07/72	N/A
AEDC	HWTB	1162	LAUNCH	HEAT-TRANSFER	1264	07/72	N/A
AEDC	HWTB	1162	BOOSTER	HEAT-TRANSFER	1264	07/72	N/A
AEDC	HWTB	1162-1	ORBITER	HEAT-TRANSFER	1177	11/71	N/A
AEDC	HWTB	1162-1	LAUNCH	HEAT-TRANSFER	1177	11/71	N/A
AEDC	HWTB	1162-1	BOOSTER	HEAT-TRANSFER	1177	11/71	N/A
AEDC	HWTB	1162-4	BOOSTER	HEAT-TRANSFER	1207	08/72 REV. 01	N/A
AEDC	HWTB	1162-4	ORBITER	HEAT-TRANSFER	1207	08/72 REV. 01	N/A
AEDC	HWTB	1162-5	ORBITER	AIRLOADS	1225	01/72	N/A
AEDC	HWTB	1162-5	BOOSTER	AIRLOADS	1225	01/72	N/A
AEDC	HWTB	1162-9	ORBITER	HEAT-TRANSFER	1231	04/72	N/A
AEDC	HWTB	1162-9	ORBITER	HEAT-TRANSFER	1262	06/72	N/A
AEDC	HWTB	1162-9	LAUNCH	HEAT-TRANSFER	1262	06/72	N/A
AEDC	HWTB	1162-9	BOOSTER	HEAT-TRANSFER	1262	06/72	N/A
AEDC	HWTC	[illegible]10055	BOOSTER	AERODYNAMICS	1006	07/70	T4
AEDC	HWTF	1162-F00	ORBITER	HEAT-TRANSFER	1224	04/72	N/A
AEDC	PWT16T	TF-250	BOOSTER	AIRLOADS	1125	10/71	T7
AEDC	PWT4T	TC135	ORBITER	AERODYNAMICS	1092	07/71	RT
AEDC	PWT4T	TC174-PC1154	LAUNCH	AIRLOADS	1222	02/73	TC
AEDC	PWT4T	TC174-PC1154	BOOSTER	AIRLOADS	1222	02/73	TC
AEDC	SWTA	1162-F00	ORBITER	HEAT-TRANSFER	1206	05/72	N/A

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB DATE	DATASET CODE
AEDC	SWTA	1163	LAUNCH	AERODYNAMICS	1108	07/71	T8
AEDC	SWTA	1163	LAUNCH	AIRLOADS	1174	06/72	T8
AEDC	SWTA	1163	BOOSTER	AERODYNAMICS	1108	07/71	T8
AEDC	SWTA	1163	ORBITER	AERODYNAMICS	1108	07/71	T8
ARC	11TWT	481-[illegible]	ORBITER	AERODYNAMICS	1012	09/70	A5
ARC	11TWT	628	ORBITER	AERODYNAMICS	1250	04/72	BF
ARC	11TWT	[illegible]	LAUNCH	AERODYNAMICS	1267	09/72	BG
ARC	3.5HWT	104	ORBITER	AERODYNAMICS	1072	03/71	AJ
ARC	3.5HWT	105	BOOSTER	HEAT-TRANSFER	1179	10/71	N/A
ARC	3.5HWT	105	BOOSTER	HEAT-TRANSFER	1134	01/72	DO
ARC	3.5HWT	106	ORBITER	HEAT-TRANSFER	1131	01/72	CO
ARC	3.5HWT	106	ORBITER	HEAT-TRANSFER	1180	10/71	N/A
ARC	3.5HWT	109A	ORBITER	AERODYNAMICS	1104	08/71	AK
ARC	3.5HWT	111/113	ORBITER	AERODYNAMICS	1071	03/71	AH
ARC	3.5HWT	112	BOOSTER	AERODYNAMICS	1080	04/71	AL
ARC	3.5HWT	125	ORBITER	AERODYNAMICS	1094	01/72	AX
ARC	3.5HWT	1[illegible]	ORBITER	HEAT-TRANSFER	1252	04/72	N/A
ARC	3.5HWT	78	ORBITER	AERODYNAMICS	1002	06/70	A6
ARC	3.5HWT	93	ORBITER	AERODYNAMICS	1031	11/70	A4
ARC	66SWT	465	ORBITER	AERODYNAMICS	1011	09/70	A7
ARC	66SWT	484	ORBITER	AERODYNAMICS	1021	10/70	A3
ARC	66SWT	486	BOOSTER	AERODYNAMICS	1038	09/72 REV. 01	AA
ARC	66SWT	486	LAUNCH	AERODYNAMICS	1038	09/72 REV. 01	AA

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB DATE	DATASET CODE
ARC	66SWT	488	LAUNCH	AERODYNAMICS	1042	12/70	AN
ARC	66SWT	503	ORBITER	AERODYNAMICS	1026	10/70	AE
ARC	66SWT	503/513	ORBITER	AERODYNAMICS	1082	06/71	AF
ARC	66SWT	503/513	ORBITER	AERODYNAMICS	1078	06/71	AF
ARC	66SWT	504	BOOSTER	AERODYNAMICS	1066	02/71	AD
ARC	66SWT	505	BOOSTER	AERODYNAMICS	1050	01/71	AG
ARC	66SWT	505	LAUNCH	AERODYNAMICS	1050	01/71	AG
ARC	66SWT	508	LAUNCH	AERODYNAMICS	1065	04/71	AB
ARC	66SWT	509	ORBITER	AIRLOADS	1129	08/72	AX
ARC	66SWT	509	LAUNCH	AIRLOADS	1129	08/72	AX
ARC	66SWT	509	BOOSTER	AIRLOADS	1129	08/72	AX
ARC	66SWT	510	BOOSTER	AERODYNAMICS	1116	08/71	AR
ARC	66SWT	511	LAUNCH	AERODYNAMICS	1075	10/72	AH
ARC	66SWT	511	BOOSTER	AERODYNAMICS	1075	10/72	AH
ARC	66SWT	512	LAUNCH	AERODYNAMICS	1118	12/72	AC
ARC	66SWT	514	ORBITER	AERODYNAMICS	1028	12/70	A9
ARC	66SWT	522	BOOSTER	AERODYNAMICS	1089	05/71	RL
ARC	66SWT	522	BOOSTER	AERODYNAMICS	1046	01/71	AO
ARC	66SWT	524	LAUNCH	AERODYNAMICS	1063	03/71	AO
ARC	66SWT	526	BOOSTER	AERODYNAMICS	1121	08/71 REV 01	AS
ARC	66SWT	527	ORBITER	AERODYNAMICS	1083	06/71	AI
ARC	66SWT	542	LAUNCH	AERODYNAMICS	1085	05/71	AV
ARC	66SWT	546	LAUNCH	AERODYNAMICS	1122	05/72	AW
ARC	66SWT	547	ORBITER	AERODYNAMICS	1112	12/71	BB

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
ARC	66SWT	548	LAUNCH	AERODYNAMICS	1127	09/72	AZ
ARC	66SWT	550	BOOSTER	AERODYNAMICS	1111	04/72	BD
ARC	66SWT	551	LAUNCH	AERODYNAMICS	1137	12/71	BC
ARC	66SWT	557	LAUNCH	AERODYNAMICS	1099	02/72	AY
ARC	66SWT	561	LAUNCH	AERODYNAMICS	1136	02/72	BC
ARC	66SWT	561	LAUNCH	AIRLOADS	1136	02/72	BC
ARC	66SWT	563	BOOSTER	AERODYNAMICS	1141	05/72	BA
ARC	66SWT	605	ORBITER	AERODYNAMICS	1202	02/72	BE
ARC	97SWT	629	LAUNCH	AERODYNAMICS	1267	09/72	BG
CAL	8TWT	18-063	BOOSTER	AERODYNAMICS	1212	02/72	U9
CAL	96HST	H/T MDAC	ORBITER	HEAT-TRANSFER	1170	01/72	N/A
CAL	96HST	H/T MDAC	BOOSTER	HEAT-TRANSFER	1170	01/72	N/A
CAL	96HST	H/T MDAC	LAUNCH	HEAT-TRANSFER	1170	01/72	N/A
GAC	15SWT	022	ORBITER	AERODYNAMICS	1163	09/71	CS
GAC	26TWT	035	ORBITER	AERODYNAMICS	1161	08/71	CR
GAC	36HWT	017	ORBITER	HEAT-TRANSFER	1154	07/71	N/A
GAC	36HWT	019	ORBITER	AERODYNAMICS	1159	09/71	CT
GAC	36HWT	020	BOOSTER	AERODYNAMICS	1158	11/71	CX
GAC	710SWT	279	ORBITER	AERODYNAMICS	1053	01/71	CL
GAC	710SWT	280	ORBITER	AERODYNAMICS	1005	07/70	C3
GAC	710SWT	289	ORBITER	AERODYNAMICS	1081	04/71	CQ
GAC	710SWT	290	ORBITER	AERODYNAMICS	1142	09/71	CW
GAC	710SWT	292	ORBITER	AERODYNAMICS	1167	11/71	D1
GDC	18HWT	247-0	BOOSTER	AERODYNAMICS	1029	12/70	C9

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Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
GDC	4HSWT	291-0	BOOSTER	AERODYNAMICS	1025	10/70	C6
GDC	4HSWT	304-0	LAUNCH	AERODYNAMICS	1052	03/71	CA
GDC	4HSWT	304-0	ORBITER	AERODYNAMICS	1052	03/71	CA
GDC	4HSWT	304-0	BOOSTER	AERODYNAMICS	1052	03/71	CA
GDC	812SWT	579-0	BOOSTER	AERODYNAMICS	1030	11/70	C7
GDC	812SWT	580-0	BOOSTER	AERODYNAMICS	1039	01/71	C8
GDC	812SWT	587-0	BOOSTER	AERODYNAMICS	1109	08/71	CM
GDC	812SWT	587-1	BOOSTER	AERODYNAMICS	1110	08/71	CV
GDC	812SWT	603-0	BOOSTER	AERODYNAMICS	1223	04/72	D4
JPL	20SWT	681	ORBITER	AERODYNAMICS	1221	05/72	GB
LARC	20HT6	1-20	BOOSTER	HEAT-TRANSFER	1244	03/72	N/A
LARC	20HT6	6315	ORBITER	AERODYNAMICS	1004	07/70	L1
LARC	20HT6	6329	ORBITER	AERODYNAMICS	1023	11/70	LA
LARC	20HT6	6355-6329	ORBITER	AERODYNAMICS	1048	01/71	LA
LARC	20HT6	6366	ORBITER	AERODYNAMICS	1095	06/71	LU
LARC	20HT6	6386-6387	LAUNCH	HEAT-TRANSFER	1238	08/72	HT
LARC	20HT6	6392	ORBITER	AERODYNAMICS	1203	03/72 REV. 01	MR
LARC	20HT6	6397	BOOSTER	AERODYNAMICS	1214	12/71	O4
LARC	20HT6	6398	BOOSTER	AERODYNAMICS	1220	02/72	O2
LARC	22HT	405	ORBITER	AERODYNAMICS	1270	08/72	ON
LARC	22HT	7341-7343	ORBITER	AERODYNAMICS	1009	09/70	L2
LARC	22HT	7369	ORBITER	AERODYNAMICS	1059	02/71	LH
LARC	22HT	7376	ORBITER	AERODYNAMICS	1088	04/71	LV
LARC	22HT	7377	ORBITER	AERODYNAMICS	1086	06/71	LZ

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
LARC	22HT	7377-79,7380-90	BOOSTER	AERODYNAMICS	1190	02/72	MU
LARC	22HT	7377-79,7380-90	ORBITER	AERODYNAMICS	1190	02/72	MU
LARC	22HT	7377-79,7380-90	LAUNCH	AERODYNAMICS	1190	02/72	MU
LARC	22HT	7386-7390	ORBITER	AERODYNAMICS	1176	01/72	MT
LARC	22HT	7397	ORBITER	AERODYNAMICS	1211	02/72	MS
LARC	22HT	7398	ORBITER	AERODYNAMICS	1218	06/72	O6
LARC	44SPT	430	ORBITER	AERODYNAMICS	1199	05/72	MX
LARC	44SPT	432	ORBITER	AERODYNAMICS	1175	01/72	LY
LARC	44SPT	438	ORBITER	AERODYNAMICS	1171	12/71	MJ
LARC	6HRNT	489	BOOSTER	HEAT-TRANSFER	1236	02/72	N/A
LARC	710SWT	905	ORBITER	AERODYNAMICS	1022	10/70	L8
LARC	8TPT	573	ORBITER	AERODYNAMICS	1105	09/71	LO
LARC	8TPT	574	ORBITER	AERODYNAMICS	1097	06/71	MO
LARC	8TPT	595	ORBITER	AERODYNAMICS	1171	12/71	MJ
LARC	8TPT	604	ORBITER	AERODYNAMICS	1195	12/71	MN
LARC	8TPT	605	BOOSTER	AERODYNAMICS	1200	03/72	MZ
LARC	8TPT	605	LAUNCH	AERODYNAMICS	1200	03/72	MZ
LARC	8VDHT	1-58	ORBITER	HEAT-TRANSFER	1056	01/71	N/A
LARC	8VDHT	1075-1107	LAUNCH	HEAT-TRANSFER	1143	06/71	N/A
LARC	8VDHT	1204-1213	BOOSTER	HEAT-TRANSFER	1138	07/71	N/A
LARC	8VDHT	123-136,180-188	BOOSTER	HEAT-TRANSFER	1024	10/70	N/A
LARC	8VDHT	1237-1297	LAUNCH	HEAT-TRANSFER	1145	07/71	N/A
LARC	8VDHT	1237-1297	BOOSTER	HEAT-TRANSFER	1145	07/71	N/A
LARC	8VDHT	137-146,189-205	ORBITER	HEAT-TRANSFER	1032	11/70	N/A

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Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
LARC	8VDHT	137-146,189-205	BOOSTER	HEAT-TRANSFER	1032	11/70	N/A
LARC	8VDHT	137-146,189-205	LAUNCH	HEAT-TRANSFER	1032	11/70	N/A
LARC	8VDHT	147-179,206-322	BOOSTER	HEAT-TRANSFER	1036	12/70	N/A
LARC	8VDHT	147-179,206-322	LAUNCH	HEAT-TRANSFER	1036	12/70	N/A
LARC	8VDHT	1948-2000	LAUNCH	HEAT-TRANSFER	1234	04/72	N/A
LARC	8VDHT	1948-2000	ORBITER	HEAT-TRANSFER	1234	04/72	N/A
LARC	8VDHT	2505-2565	BOOSTER	HEAT-TRANSFER	1261	06/72	N/A
LARC	8VDHT	2505-2565	LAUNCH	HEAT-TRANSFER	1261	06/72	N/A
LARC	8VDHT	2886-2929	LAUNCH	HEAT-TRANSFER	1278	10/72	N/A
LARC	8VDHT	703-766	BOOSTER	HEAT-TRANSFER	1070	03/71	N/A
LARC	8VDHT	823-887	ORBITER	HEAT-TRANSFER	1165	08/71	N/A
LARC	CFHT	50	LAUNCH	HEAT-TRANSFER	1016	09/70	N/A
LARC	CFHT	51	ORBITER	HEAT-TRANSFER	1056	01/71	N/A
LARC	CFHT	52	BOOSTER	HEAT-TRANSFER	1020	10/70	N/A
LARC	CFHT	53	BOOSTER	HEAT-TRANSFER	1036	12/70	N/A
LARC	CFHT	53	LAUNCH	HEAT-TRANSFER	1036	12/70	N/A
LARC	CFHT	54	LAUNCH	AERODYNAMICS	1047	01/71	LB
LARC	CFHT	54	LAUNCH	AERODYNAMICS	1061	02/71	LC
LARC	CFHT	61	ORBITER	AERODYNAMICS	1123	01/72	LT
LARC	CFHT	62	ORBITER	AERODYNAMICS	1113	07/71	M9
LARC	CFHT	63	ORBITER	AERODYNAMICS	1084	08/71	LQ
LARC	CFHT	64	BOOSTER	AERODYNAMICS	1093	05/71	LG
LARC	CFHT	66	ORBITER	HEAT-TRANSFER	1146	07/71	N/A
LARC	CFHT	68/71	ORBITER	AERODYNAMICS	1151	11/71	M4

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SURFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB DATE	DATASET CODE
LARC	CFHT	69	LAUNCH	HEAT-TRANSFER	1178	10/71	N/A
LARC	CFHT	69	ORBITER	HEAT-TRANSFER	1178	10/71	N/A
LARC	CFHT	70	BOOSTER	AERODYNAMICS	1156	12/71	MB
LARC	CFHT	74	LAUNCH	AERODYNAMICS	1198	01/72	MY
LARC	CFHT	74	BOOSTER	AERODYNAMICS	1198	01/72	MY
LARC	CFHT	76	ORBITER	AERODYNAMICS	1194	12/71	MQ
LARC	CFHT	78	LAUNCH	HEAT-TRANSFER	1260	09/72	OK
LARC	CFHT	80	ORBITER	AERODYNAMICS	1219	05/72	O5
LARC	CFHT	85	ORBITER	AERODYNAMICS	1277	09/72	OO
LARC	LTPT	103	ORBITER	AERODYNAMICS	1268	08/72	OH
LARC	LTPT	47	BOOSTER	AERODYNAMICS	1015	09/70	L6
LARC	LTPT	49	ORBITER	AERODYNAMICS	1018	10/70	L7
LARC	LTPT	50	ORBITER	AERODYNAMICS	1013	09/70	L3
LARC	LTPT	50-2	ORBITER	AERODYNAMICS	1045	01/71	LF
LARC	LTPT	52	ORBITER	AERODYNAMICS	1049	11/71	L9
LARC	LTPT	545	ORBITER	AERODYNAMICS	1064	03/71	LD
LARC	LTPT	55	BOOSTER	AERODYNAMICS	1100	07/71	LE
LARC	LTPT	57	ORBITER	AERODYNAMICS	1106	07/71	LN
LARC	LTPT	58	ORBITER	AERODYNAMICS	1107	06/71	M1
LARC	LTPT	59	BOOSTER	AERODYNAMICS	1087	07/71	LS
LARC	LTPT	62	ORBITER	AERODYNAMICS	1149	08/71	MF
LARC	LTPT	63	ORBITER	AERODYNAMICS	1157	09/71	MG
LARC	LTPT	64	BOOSTER	AERODYNAMICS	1150	10/71	MC
LARC	LTPT	65	ORBITER	AERODYNAMICS	1168	11/71	M5

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Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
LARC	LTPT	69	ORBITER	AERODYNAMICS	1169	04/72	MI
LARC	LTPT	71	ORBITER	AERODYNAMICS	1172	12/71	ML
LARC	LTPT	72	ORBITER	AERODYNAMICS	1229	05/72	O7
LARC	LTPT	73	BOOSTER	AERODYNAMICS	1193	05/72	MV
LARC	LTPT	75	ORBITER	AERODYNAMICS	1189	12/71	MN
LARC	LTPT	77	ORBITER	AERODYNAMICS	1232	06/72	O9
LARC	LTPT	85	ORBITER	AERODYNAMICS	1215	01/72	O1
LARC	LTPT	86/88	ORBITER	AERODYNAMICS	1239	04/72	OE
LARC	LTPT	87	ORBITER	AERODYNAMICS	1233	04/72	EO
LARC	UPWT	886	BOOSTER	AERODYNAMICS	1017	10/70	L4
LARC	UPWT	913	BOOSTER	AERODYNAMICS	1019	09/70	L5
LARC	UPWT	9143	BOOSTER	AERODYNAMICS	1089	05/71	RL
LARC	UPWT	9143	BOOSTER	AERODYNAMICS	1068	03/71	RL
LARC	UPWT	922	ORBITER	AERODYNAMICS	1069	03/71	LI
LARC	UPWT	942	ORBITER	AERODYNAMICS	1173	12/71	MK
LARC	UPWT	944/961	ORBITER	AERODYNAMICS	1101	06/71	M7
LARC	UPWT	945	BOOSTER	HEAT-TRANSFER	1098	06/71	N/A
LARC	UPWT	945	LAUNCH	HEAT-TRANSFER	1098	06/71	N/A
LARC	UPWT	945	ORBITER	HEAT-TRANSFER	1098	06/71	N/A
LARC	UPWT	951	ORBITER	AERODYNAMICS	1096	05/71	LP
LARC	UPWT	951B	ORBITER	AERODYNAMICS	1144	09/71	MD
LARC	UPWT	955	ORBITER	AERODYNAMICS	1103	06/71	M2
LARC	UPWT	962	LAUNCH	AERODYNAMICS	1197	03/72	MW
LARC	UPWT	962	BOOSTER	AERODYNAMICS	1197	03/72	MW

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB DATE	DATASET CODE
LARC	UPWT	963	ORBITER	AERODYNAMICS	1117	09/71	LR
LARC	UPWT	963	BOOSTER	AERODYNAMICS	1117	09/71	LR
LARC	UPWT	963	LAUNCH	AERODYNAMICS	1117	09/71	LR
LARC	UPWT	964	ORBITER	AERODYNAMICS	1196	01/72	MN
LARC	UPWT	964/969	ORBITER	AERODYNAMICS	1216	05/72	MO
LARC	UPWT	966	LAUNCH	AERODYNAMICS	1237	05/72	OB
LARC	UPWT	966	ORBITER	AERODYNAMICS	1237	05/72	OB
LARC	UPWT	966	BOOSTER	AERODYNAMICS	1237	05/72	OB
LARC	UPWT	967	LAUNCH	HEAT-TRANSFER	1263	09/72 REV. A	OL
LARC	UPWT	968	ORBITER	AERODYNAMICS	1232	06/72	O9
LARC	UPWT	970	ORBITER	AERODYNAMICS	1235	05/72	OC
LARC	UPWT	979	ORBITER	AERODYNAMICS	1258	05/72	OF
LARC	UPWT	981	LAUNCH	AERODYNAMICS	1265	01/73	OH
LARC	V/STOL	007	ORBITER	AERODYNAMICS	1147	09/71	ME
LTV	HSWT	S-28	LAUNCH	AERODYNAMICS	1058	02/71	CH
LTV	HSWT	S-30	ORBITER	AERODYNAMICS	1115	08/71	CU
LTV	HSWT	S-30	BOOSTER	AERODYNAMICS	1115	08/71	CU
LTV	HSWT	S-30	LAUNCH	AERODYNAMICS	1115	08/71	CU
MAC	LSWT	132	BOOSTER	AERODYNAMICS	1014	10/70	C2
MAC	LSWT	1351	BOOSTER	AERODYNAMICS	1035	12/70	CC
MAC	LSWT	138	ORBITER	AERODYNAMICS	1074	04/71	CN
MAC	LSWT	223	ORBITER	AERODYNAMICS	1007	08/70	C1
MAC	LSWT	235	ORBITER	AERODYNAMICS	1040	12/70	CB
MAC	LSWT	237	ORBITER	AERODYNAMICS	1090	05/71	CD

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
MAC	LSWT	239	BOOSTER	AERODYNAMICS	1054	02/71	CE
MAC	LSWT	240	ORBITER	AERODYNAMICS	1041	01/71	CF
MAC	LSWT	248	ORBITER	AERODYNAMICS	1067	03/71	CP
MAC	LSWT	249	BOOSTER	AERODYNAMICS	1077	04/71	CO
MAC	LSWT	258	BOOSTER	AERODYNAMICS	1120	08/71	CZ
MDAC	4TWT	S-222	LAUNCH	AERODYNAMICS	1230	11/72	D7
MDAC	4TWT	S-222	BOOSTER	AERODYNAMICS	1230	11/72	D7
MDAC	4TWT	S-222	ORBITER	AERODYNAMICS	1230	11/72	D7
MSFC	14TWT	451	BOOSTER	AERODYNAMICS	1001	06/70	19
MSFC	14TWT	453	ORBITER	AERODYNAMICS	1003	07/70	17
MSFC	14TWT	466	LAUNCH	AERODYNAMICS	1051	03/71	22
MSFC	14TWT	466	BOOSTER	AERODYNAMICS	1051	03/71	22
MSFC	14TWT	468	ORBITER	AERODYNAMICS	1027	10/70	21
MSFC	14TWT	470	LAUNCH	AERODYNAMICS	1044	02/71	24
MSFC	14TWT	471	ORBITER	AERODYNAMICS	1043	02/71	23
MSFC	14TWT	476	LAUNCH	AERODYNAMICS	1055	02/71	25
MSFC	14TWT	477	ORBITER	AERODYNAMICS	1114	09/71	26
MSFC	14TWT	478	ORBITER	AERODYNAMICS	1076	04/71	27
MSFC	14TWT	481	BOOSTER	AERODYNAMICS	1102	03/72	28
MSFC	14TWT	484	ORBITER	AERODYNAMICS	1126	09/71	29
MSFC	14TWT	485	LAUNCH	AERODYNAMICS	1091	05/71	30
MSFC	14TWT	489	LAUNCH	AERODYNAMICS	1119	07/71	31
MSFC	14TWT	490	LAUNCH	AERODYNAMICS	1130	03/72	32
MSFC	14TWT	490	BOOSTER	AERODYNAMICS	1130	03/72	32

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR*	PUB. DATE	DATASET CODE
MSFC	14TWT	491	LAUNCH	AERODYNAMICS	1140	08/71	33
MSFC	14TWT	492	BOOSTER	AERODYNAMICS	1148	09/71	34
MSFC	14TWT	492	LAUNCH	AERODYNAMICS	1148	09/71	34
MSFC	14TWT	493	BOOSTER	AERODYNAMICS	1152	09/71	35
MSFC	14TWT	494	ORBITER	AERODYNAMICS	1153	10/71	36
MSFC	14TWT	495	BOOSTER	AERODYNAMICS	1155	09/71	37
MSFC	14TWT	496	BOOSTER	AERODYNAMICS	1160	10/72	38
MSFC	14TWT	497	BOOSTER	AERODYNAMICS	1162	10/71	39
MSFC	14TWT	497	LAUNCH	AERODYNAMICS	1162	10/71	39
MSFC	14TWT	497	ORBITER	AERODYNAMICS	1162	10/71	39
MSFC	14TWT	498	ORBITER	AERODYNAMICS	1201	03/72	41
MSFC	14TWT	501	LAUNCH	AERODYNAMICS	1166	09/71	43
MSFC	14TWT	502	LAUNCH	AERODYNAMICS	1187	07/72	44
MSFC	14TWT	502	ORBITER	AERODYNAMICS	1187	07/72	44
MSFC	14TWT	503	LAUNCH	AERODYNAMICS	1188	02/72	45
MSFC	14TWT	504	LAUNCH	AERODYNAMICS	1181	01/72	46
MSFC	14TWT	505	LAUNCH	AERODYNAMICS	1182	02/72	47
MSFC	14TWT	505	ORBITER	AERODYNAMICS	1182	02/72	47
MSFC	14TWT	506	LAUNCH	AERODYNAMICS	1183	10/71	48
MSFC	14TWT	506	BOOSTER	AERODYNAMICS	1183	10/71	48
MSFC	14TWT	507	ORBITER	AERODYNAMICS	1184	06/72	49
MSFC	14TWT	509	LAUNCH	AERODYNAMICS	1185	02/72	51
MSFC	14TWT	509	ORBITER	AERODYNAMICS	1185	02/72	51
MSFC	14TWT	510	ORBITER	AERODYNAMICS	1186	11/71	52

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
MSFC	14TWT	512	BOOSTER	AERODYNAMICS	1204	12/71	50
MSFC	14TWT	512	LAUNCH	AERODYNAMICS	1204	12/71	50
MSFC	14TWT	513	BOOSTER	AERODYNAMICS	1209	04/72	53
MSFC	14TWT	514	BOOSTER	AERODYNAMICS	1210	02/72	58
MSFC	14TWT	514	LAUNCH	AERODYNAMICS	1210	02/72	58
MSFC	14TWT	517	LAUNCH	AERODYNAMICS	1213	02/72	56
MSFC	14TWT	517	BOOSTER	AERODYNAMICS	1213	02/72	56
MSFC	14TWT	518	BOOSTER	AERODYNAMICS	1208	01/72	54
MSFC	14TWT	521	BOOSTER	AERODYNAMICS	1226	05/72	55
MSFC	14TWT	523	LAUNCH	AERODYNAMICS	1227	02/72	57
MSFC	14TWT	523	BOOSTER	AERODYNAMICS	1227	02/72	57
MSFC	14TWT	524	BOOSTER	AERODYNAMICS	1240	04/72	59
MSFC	14TWT	526	BOOSTER	AERODYNAMICS	1242	06/72	61
MSFC	14TWT	528	ORBITER	AERODYNAMICS	1243	03/72	62
MSFC	14TWT	529	BOOSTER	AERODYNAMICS	1245	04/72	63
MSFC	14TWT	531	LAUNCH	AERODYNAMICS	1241	06/72	60
MSFC	14TWT	534	LAUNCH	AERODYNAMICS	1249	04/72	65
MSFC	14TWT	538	LAUNCH	AERODYNAMICS	1251	04/72	66
MSFC	14TWT	540	LAUNCH	AIRLOADS	1259	01/73	67
MSFC	14TWT	540	ORBITER	AIRLOADS	1259	01/73	67
MSFC	14TWT	541	BOOSTER	AERODYNAMICS	1253	09/72	68
MSFC	14TWT	542	ORBITER	AERODYNAMICS	1254	08/72	69
MSFC	14TWT	543	LAUNCH	AIRLOADS	1255	03/73	70
MSFC	14TWT	544	LAUNCH	AERODYNAMICS	1256	08/72	71

Table 5 - Continued

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
MSFC	14TWT	544X	LAUNCH	AERODYNAMICS	1272	10/72	71
MSFC	14TWT	550	LAUNCH	AIRLOADS	1273	01/73	73
MSFC	14TWT	551	ORBITER	AERODYNAMICS	1274	09/72	74
NRLAD	LSWT	629	ORBITER	AERODYNAMICS	1010	08/70	C4
NRLAD	LSWT	630	ORBITER	AERODYNAMICS	1037	01/71	C5
NRLAD	LSWT	632	ORBITER	AERODYNAMICS	1034	11/70	CG
NRLAD	LSWT	633	ORBITER	AERODYNAMICS	1124	07/71	CJ
NSRDC	710TWT	3110	BOOSTER	AERODYNAMICS	1139	10/71	N2
NSRDC	710TWT	3210	BOOSTER	AERODYNAMICS	1164	02/72	N3
NSRDC	710TWT	3310	BOOSTER	AERODYNAMICS	1192	05/72	N4
TAM	710SWT	S-18/S-35	ORBITER	AERODYNAMICS	1057	02/71	G3
TAM	710SWT	S-38	ORBITER	AERODYNAMICS	1062	02/71	G7
TAM	710SWT	S-39	ORBITER	AERODYNAMICS	1073	04/71	G2
TAM	710SWT	S-8-1	ORBITER	AERODYNAMICS	1060	03/71	G6
TAM	710SWT	S-8-2	ORBITER	AERODYNAMICS	1205	10/72	RG
TAM	710SWT	S-VI	ORBITER	AERODYNAMICS	1008	08/70	G1
TAM	710SWT	S-XXIV	ORBITER	AERODYNAMICS	1033	12/70	G4
TBC	B4SWT	553	BOOSTER	AERODYNAMICS	1228	06/72	D4
TBC	B4SWT	557	BOOSTER	AERODYNAMICS	1276	09/72	D9
TBC	B4SWT	557	BOOSTER	AERODYNAMICS	1275	11/72	D8
TBC	B4SWT	558	BOOSTER	AERODYNAMICS	1128	08/72	DC
TBC	BTWT	1265	BOOSTER	AERODYNAMICS	1191	02/72	D2
TBC	BTWT	1273	BOOSTER	AERODYNAMICS	1228	06/72	D4
TBC	BTWT	1282	BOOSTER	AERODYNAMICS	1276	09/72	D9

Table 5 - Concluded

Space Shuttle Phase B Facility
Wind Tunnel Summary

FACILITY	SUBFACILITY	FACILITY TEST NUMBER	VEHICLE COMPONENT	TEST DISCIPLINE	DMS-DR#	PUB. DATE	DATASET CODE
TBC	BTWT	1282	BOOSTER	AERODYNAMICS	1275	11/72	D8
UW	812SWT	1021	BOOSTER	AERODYNAMICS	1079	07/71 REV 01	U1

TABLE 6.3

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
LAUNCH AERODYNAMICS

FILE #	BCC	B-CONTRA	OCC	O-CONTRA	DR#	2-CHAR CODE	# D/S's	# RECORDS
1	B1	MDAC	Ø2/Ø3	MDAC	1065	AB	132	1618
2			Ø2		1108	T8	882	9691
3					1118	AC	144	1837
4		MDAC/MMC			1117	LR	154	1721
5	B1/B3				1190	MU	16	225
6	B1	TBC		GAC	1148	34	118	1417
7		MDAC	Ø4	MDAC	1099	AY	24	265
8					1166	43	12	145
9	B2	GD/C	Ø2	MSC	1204	50	41	560
10	B2/B3				1210	58	76	913
11	B2	MDAC			1230	D7	1051	13235
12		MSFC		LMSC	1256	71	88	1233
13					1272	71	62	869
14				MSC	1241	60	44	397
15					1249	65	24	337
16					1251	66	26	365
17					1265	ØH	21	295
18					1267	BG	120	1681
19		NR		NR	1185	51	26	313
20		TBC		MSC	1227	57	36	505
21		MSFC	Ø4	GAC	1181	46	16	193
22	B3/B4	GD/C	Ø2/Ø3	NR	1052	CA	99	1219
23	B3		Ø2		1127	AZ	55	606
24					1130	32	140	1751
25					1237	ØB	26	365
26		MMC		MSC	1213	56	42	589
27	B3/B4	MSC	Ø2/Ø3		1115	CU	104	1249
28		MSC/MDAC		MSC/MDAC	1038	AA	227	2569
29	B3	TBC	Ø2/Ø4	MSC	1183	48	74	1037
30		MDAC	Ø3		1047	LB	10	86

TABLE 6.3 (Continued)

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
LAUNCH AERODYNAMICS

FILE #	BCC	B-CONTRA	OCC	O-CONTRA	DR#	2-CHAR CODE	# D/S's	# RECORDS
31	B3	MDAC	Ø3	MSC	1061	LC	10	91
32	B3/B4	MSC	↓	↓	1058	CH	80	881
33	B3	GD/C	Ø4	NR	1119	31	29	407
34	↓	↓	↓	↓	1162	39	25	351

TABLE 6.3 (Concluded)

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
LAUNCH AERODYNAMICS

FILE #	BCC	B-CONTRA	OCC	O-CONTRA	DR#	2-CHAR CODE	# D/S's	# RECORDS
1	B4	GD/C	Ø2/Ø3	NR	1050	AG	14	169
2					1051	22	76	875
3					1075	AH	52	696
4		MSC	Ø3	MSC	1042	AN	3	31
5					1063	AØ	90	1006
6		TBC	Ø4	GAC	1122	AW	26	330
7					1136	BC	5	54
8					1137	BC	30	313
9	B5	LMSC	Ø1	LMSC	1085	AV	20	221
10		LARC	Ø2	NR	1197	MW	98	1167
11					1198	MY	50	576
12					1200	MZ	36	429
13		MMC	Ø2/Ø4	MMC	1182	47	26	313
14		TBC	Ø2	NR	1055	25	9	127
15					1091	30	19	267
16			Ø3	GAC	1044	24	18	253
17		MMC	Ø4		1188	45	23	323
18		TBC			1140	33	22	309
19					1187	44	20	261

TABLE 6.4

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
LAUNCH AIRLOADS AND HEAT TRANSFER

FILE #	BCC	B-CONTRA	OCC	O-CONTRA	DR#	2-CHAR CODE	# D/S's	# RECORDS
AIRLOADS								
20	B1	MDAC	Ø2	MDAC	1174	T8	891	11881
21					1222	TC	113	5490
22	B2	MSFC		MSFC	1259	67	48	1315
23	B4	GD/C	Ø2/Ø3	NR	1129	AX	130	4959
HEAT TRANSFER								
24	B1	MDAC	Ø2	MDAC	1263	ØL	21	247

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APPENDIX C-1

MODEL FIGURES

LAUNCH AERODYNAMICS

TEST 6x6 508 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δA	δF	δR	δV	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.85	1.1	1.2	1.6	2.0						
RAB L01	L2 + 02	A	0°	0°	0°	0°	6°	5	5	4	3		2	1						
L02		A	5°	0°	0°	0°	6°	5	31	30	29		28	27						
L03		A	0°	0°	0°	0°	0°	5	11	10	9		8	7						
L04		A	5°	0°	0°	0°	0°	5	26	25	24		23	22						
L05		A	0°	10°	0°	0°	0°	5	16	15	14		13	12						
L06		A	0°	0°	0°	10°	0°	5	21	20	19		18	17						
		A	0°	0°	0°	0°	0°	4	41	40		39		38						
RAB L07	L1 + 02	A	5°	0°	0°	0°	0°	6	37	36	34	35	33	32						
L08		A	0°	10°	0°	0°	0°	4	49	48		47		46						
L09		A	0°	0°	0°	10°	0°	4	45	44		43		42						
L10		A	0°	0°	0°	0°	0°	4	82	81		80		79						
L11	L2 + 01	A	5	0°	0°	0°	0°	4	70	69		68		67						
L12		A	0°	10°	0°	0°	0°	4	74	73		72		71						
L13		A	0°	0°	0°	10°	0°	4	78	77		76		75						
L14		-5	B	0°	0°	0°	0°	3	127			126		125						
L15		-5	B	0°	0°	10	0°	3	130			129		128						
L16																				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN ICA ICAB ICLM ICY ICYN ICBL ICL ICD IL/D IMACH IALPHA 10

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

B = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1065 C-1-1

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1065 C-1- 2

TEST 6x6 508 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δA	δF	δR	δV	NO. of RUNS	0.6	0.85	1.1	1.2	1.5	2.0
RAB L17	L1 + O1	A	0°	0°	0°	0°	0°	4	61	60		59		58
L18		A	5°	0°	0°	0°	0°	4	66	65		64		63
L19		A	0°	10°	0°	0°	0°	4	53	52		51		50
L20		A	0°	0°	0°	10°	0°	4	57	56		55		54
L21		A	0°	0°	-10°	0°	0°	4	116	115		114		113
L22		-5°	B	0°	0°	0°	0°	4	120	119		118		117
L23		-5°	B	0°	0°	10°	0°	4	124	123		122		121
L24	L3 + O1	A	0°	0°	0°	0°	0°	3		85		84	83	
RAB L25	L3 + O1	H	5°	0°	0°	0°	0°	3		109		108	107	
L26	L4+B2W2V1R1	A	0°	0°	0°	-	-	3		88		86	87	
RAB L27		A	5°	0°	0°	-	-	3		103		102	101	
L28	B1J1 + B2V1R1	A	0°	-	-	-	-	3		91		90	89	
L29		A	5°	-	-	-	-	3		100		99	98	
L30	B1 + B2	A	0°	-	-	-	-	3		94		93	92	
L31		A	5°	-	-	-	-	3		97		96	95	
L32	L5+B2W2V1R1	A	0°	0°	0°	-	-	3		112		111	110	
RAB L33		A	5°	0°	0°	-	-	3		106		105	104	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CAB	KLM	KY	CYN	CBL	CL	CD	L/D	MACH	ALPHA	10

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES
A: -10,-8,-6,-4,-2,0,2,4,6,8,10
B: -10,-8-6,-4,-2,0,2,4,6,8,10

OF POOR QUALITY

6x6

TEST 508 DATA SET COLLATION SHEET

☐ PRETEST

☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δA	δE	δR		NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.85	1.1	1.2	1.5	2.0						
RAB 001	02 HCR	A	0°	0°	0°	0°		5	5	4	3		2	1						
002		A	5°					5	31	30	29		28	27						
003		A	0°					5	11	10	9		8	7						
004		A	5°					5	26	25	24		23	22						
005		A	0°					5	16	15	14		13	12						
006		A	0°					5	21	20	19		18	17						
007		A	0°					4	41	40		39		38						
008		A	5°					6	37	36	34	35	33	32						
009		A	0°					4	49	48		47		46						
010		A	0°					4	45	44		43		42						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN CNC CA CAB CLM CY CYN CBL CL CD MACH ALPHA

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES $A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10$

CANARD BOOSTER
MDAC
DELTA WING ORBITE
MDAC
DR#1065 C-1- 3

ORIGINAL PAGE IS OF POOR QUALITY

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1065 C-1- 4

TEST 6x6 508 DATA SET COLLATION SHEET

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δA		δR	δH	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.85	1.1	1.2	1.5	2.0
RAB011	01 LCR	A	0°	0°		0°	0°	4	82	81		80		79
012		A	5°					4	70	69		68		67
013		A	0°					4	74	73		72		71
014		A	0°					4	78	77		76		75
015		5°	B					3	127			126		125
016		5°	B					3	130			129		128
017		A	0°					4	61	60		59		58
018		A	5°					4	66	65		64		63
019		A	0°					4	53	52		51		50
020		A	0°					4	57	56		55		54
021		A	0°					4	116	115		114		113
022		5°	B					4	120	119		118		117
023		5°	B					4	124	123		122		121
024		A	0°					3		85		84	83	
025		A	5°					3		109		108	107	
026	B2W2V1R1	A	0°				-	3		88		86	87	
027		A	5°				-	3		103		102	101	
028	B2V1R1	A	0°	-			-	3		91		90	89	
029		A	5°	-			-	3		100		99	98	
030	B2	A	0°	-		-	-	3		94		93	92	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CNC	CA	CAB	CLM	CY	CYN	CBL	CL	CD	MACH	ALPHA	10

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES
A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10
B = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

6x6

TEST 508 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_A		δ_R	δ_N	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.85	1.1	1.2	1.5	2.0						
RAB031	B2	A	5°	–		–	–	3		97		96	95							
032	B2W2V1R1	A	0°	0°		0°	–	3		112		111	110							
033	↓	A	5°	0°		0°	–	3		106		105	104							

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN ICNC ICA ICAB ICLM CY CYN ICBL ICL ICD MACH ALPHA 10

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES A: -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

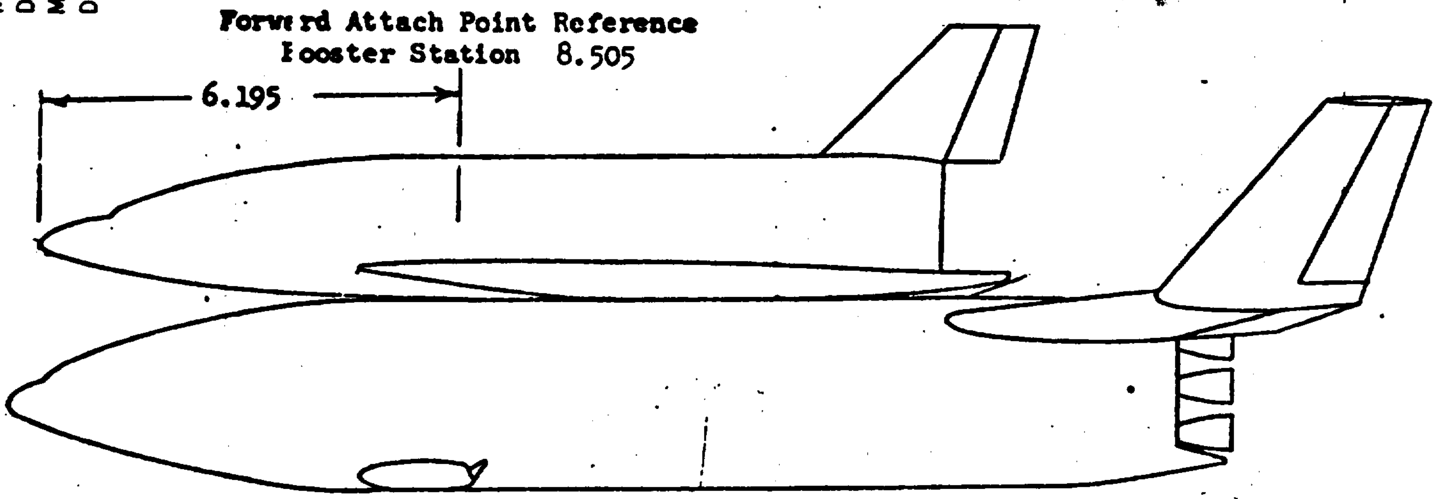
ORIGINAL PAGE IS OF POOR QUALITY

CANARD BOOSTER
MDAC
DELTA WING ORBITE
MDAC
DR#1065 C-1- 5

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1065 C-1-6

TYPICAL BOOSTER + ORBITER COMPOSITE MODEL CONFIGURATIONS

High Wing Booster + HCR Orbiter



High Wing Booster + LCR Orbiter

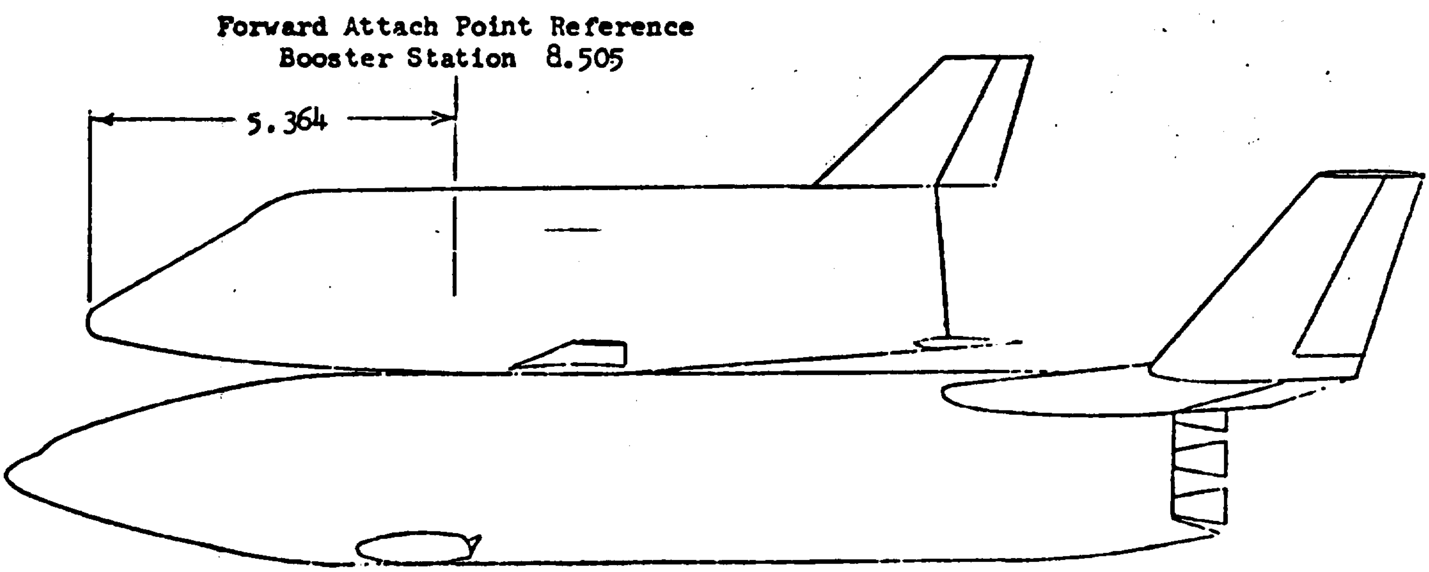


FIGURE 5

HIGH WING BOOSTER MODEL CONFIGURATION

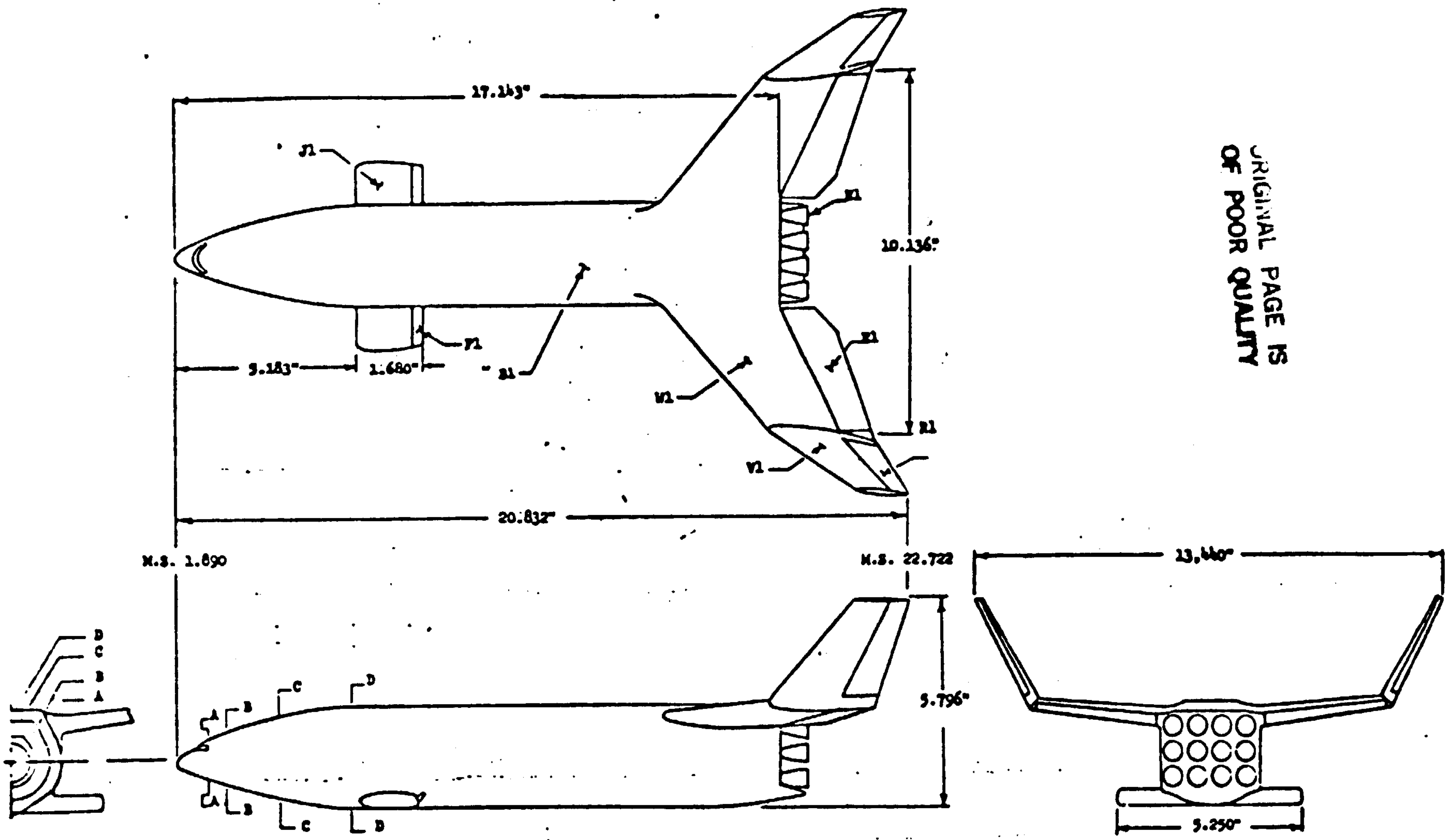


FIGURE 6

CANARD BOOSTER
MDAC
DELTA WING ORBITE
MDAC
DR#1065 C-1- 7

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1065 C-1- 8

LOW WING BOOSTER MODEL CONFIGURATION

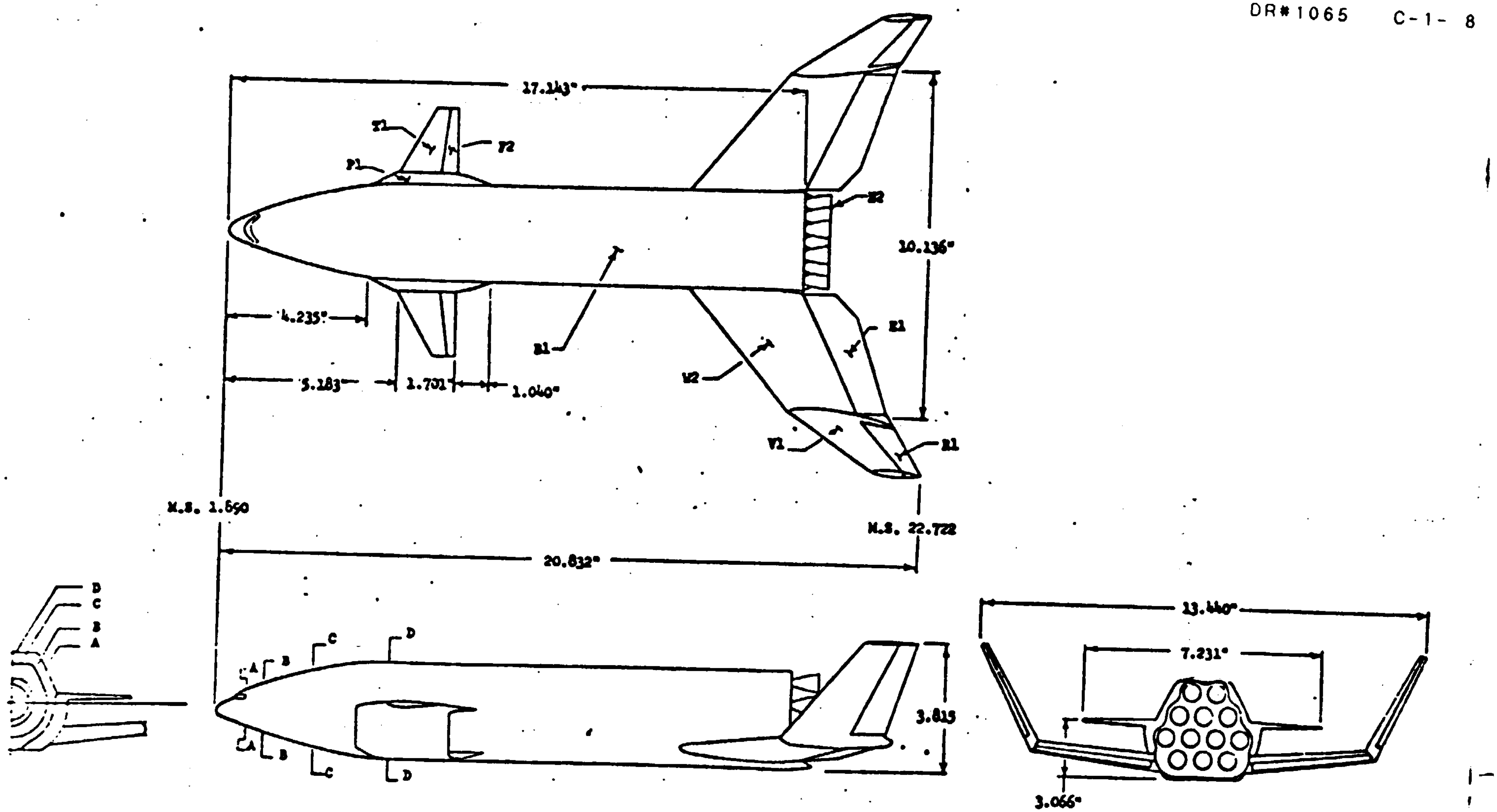
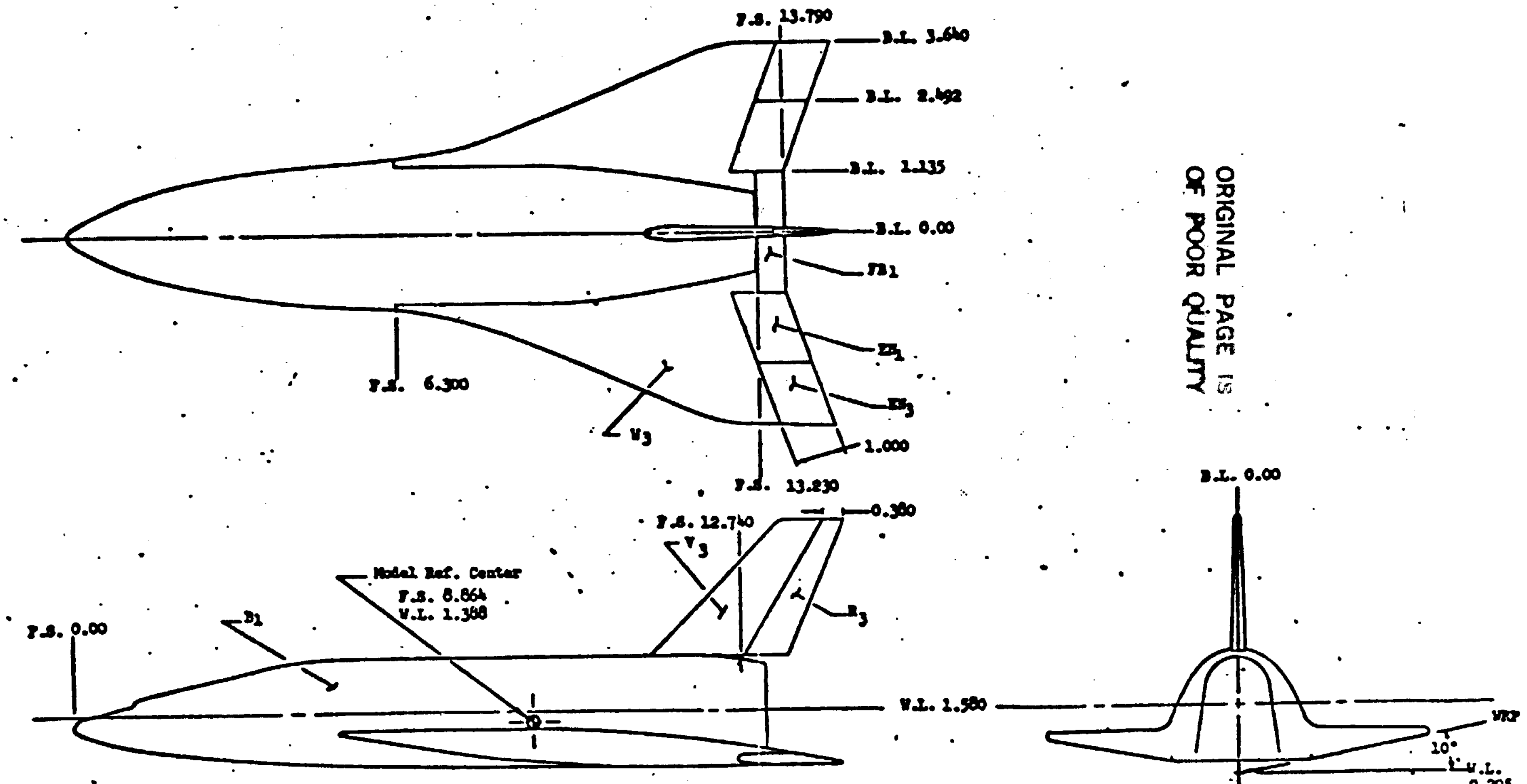


FIGURE 7



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OF POOR QUALITY

Notes: 1. All dimensions are model scale in inches
2. Reference: Dwg. No. CCN-770-1603-MD02

Figure 18 – GENERAL ARRANGEMENT OF THE 0.7-PERCENT SCALE MODEL ORBITER (O_2)

CANARD BOOSTER
MDAC
DELTA WING ORBIT
MDAC
DR#1065 C-1-9

LCR ORBITER (01) MODEL CONFIGURATION (0.007)

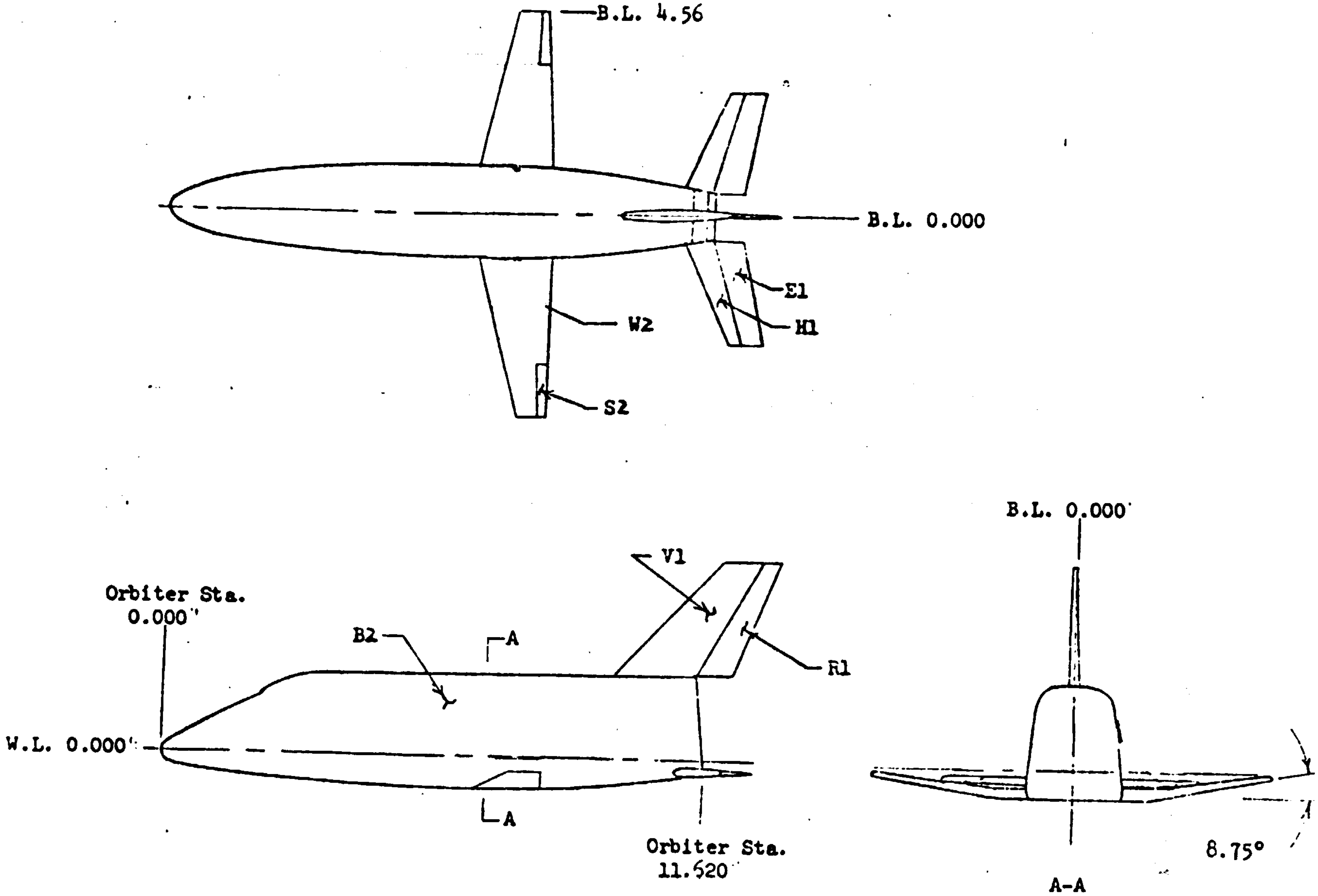


FIGURE 13

BOOSTER WING (0.007)

W1 WING
E1 ELEVON

(W2 WING)
(E1 ELEVON)

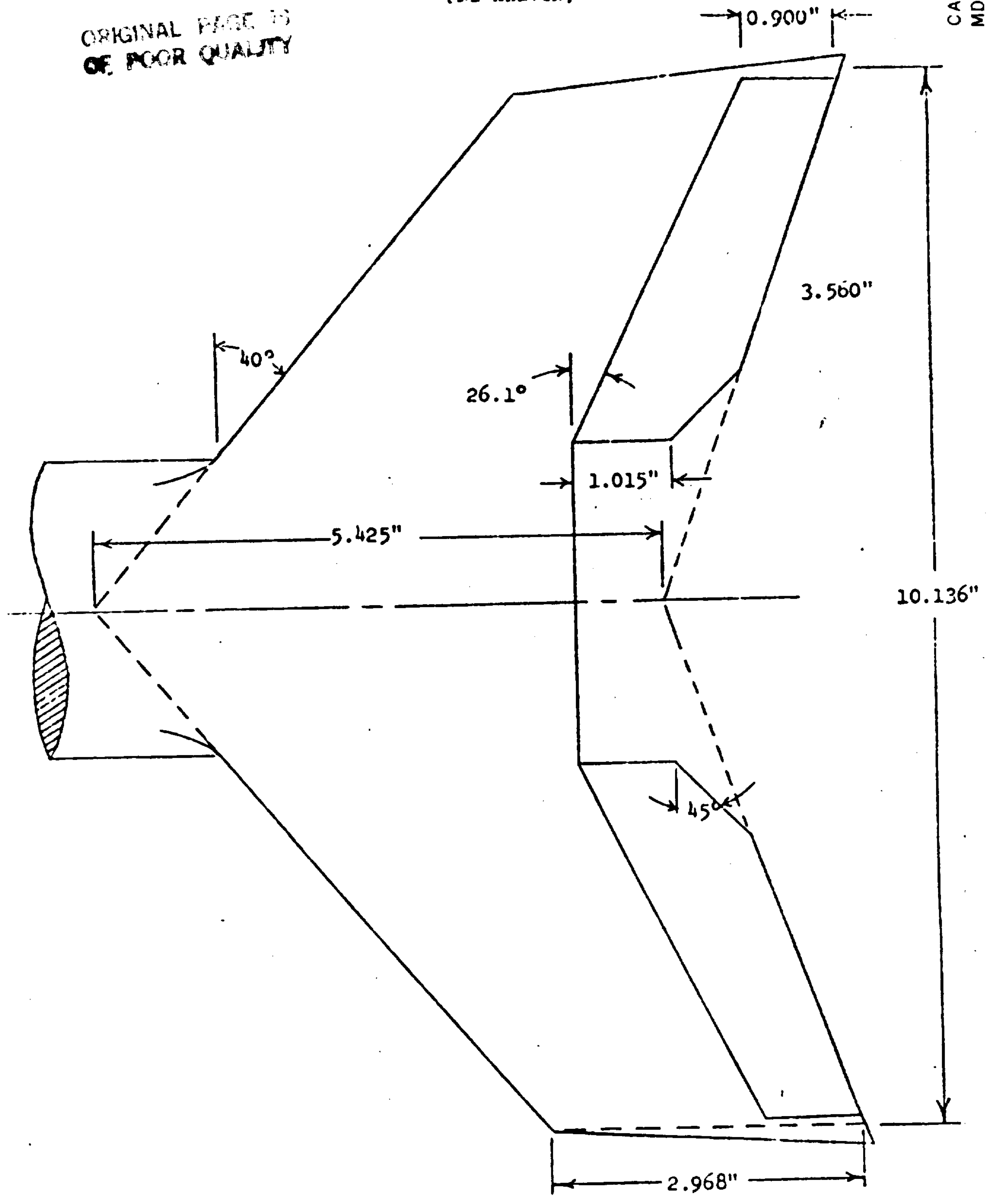


FIGURE 8

BOOSTER BODY (0.007)

B1 BODY

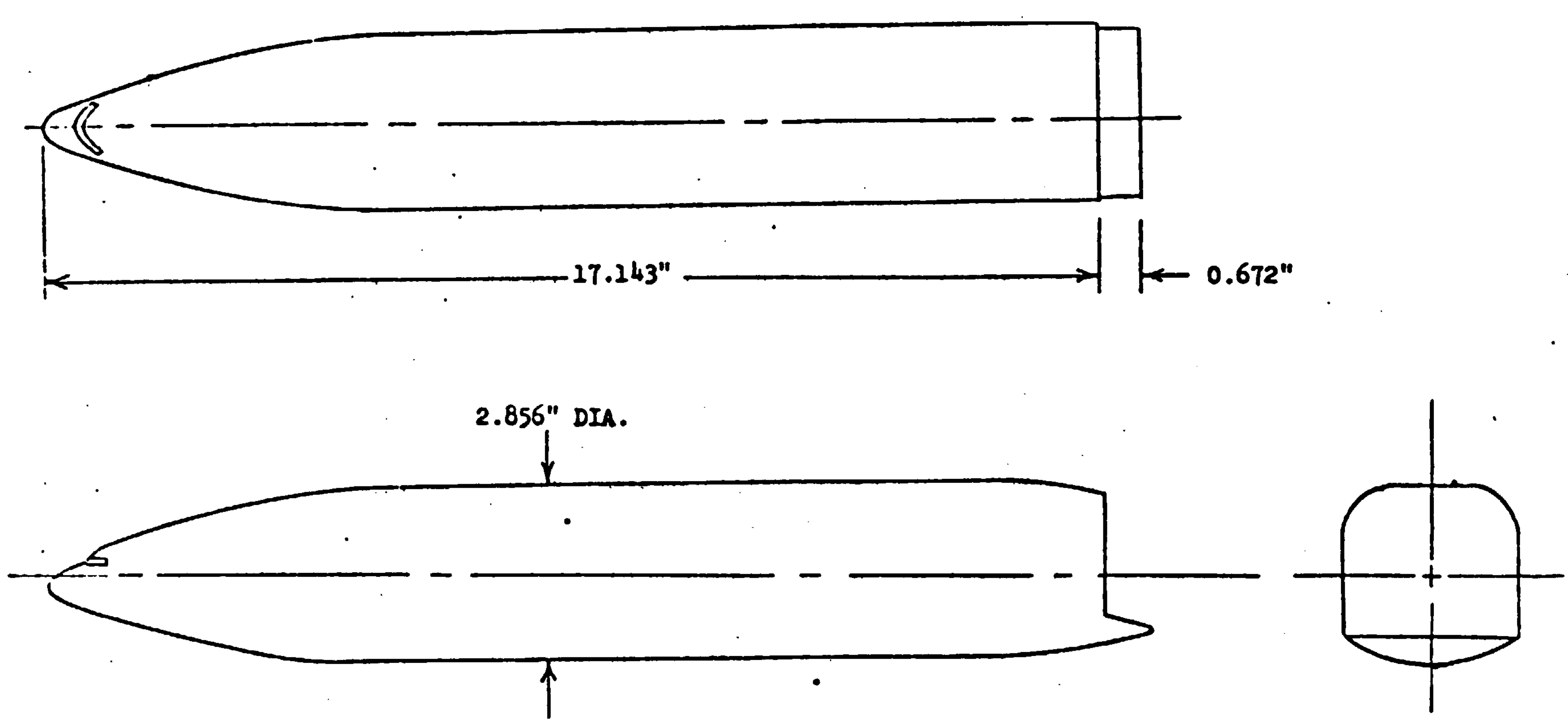


FIGURE 9

BOOSTER SIMULATED JET FLAP CANARD (0.007)

J1 JET CANARD

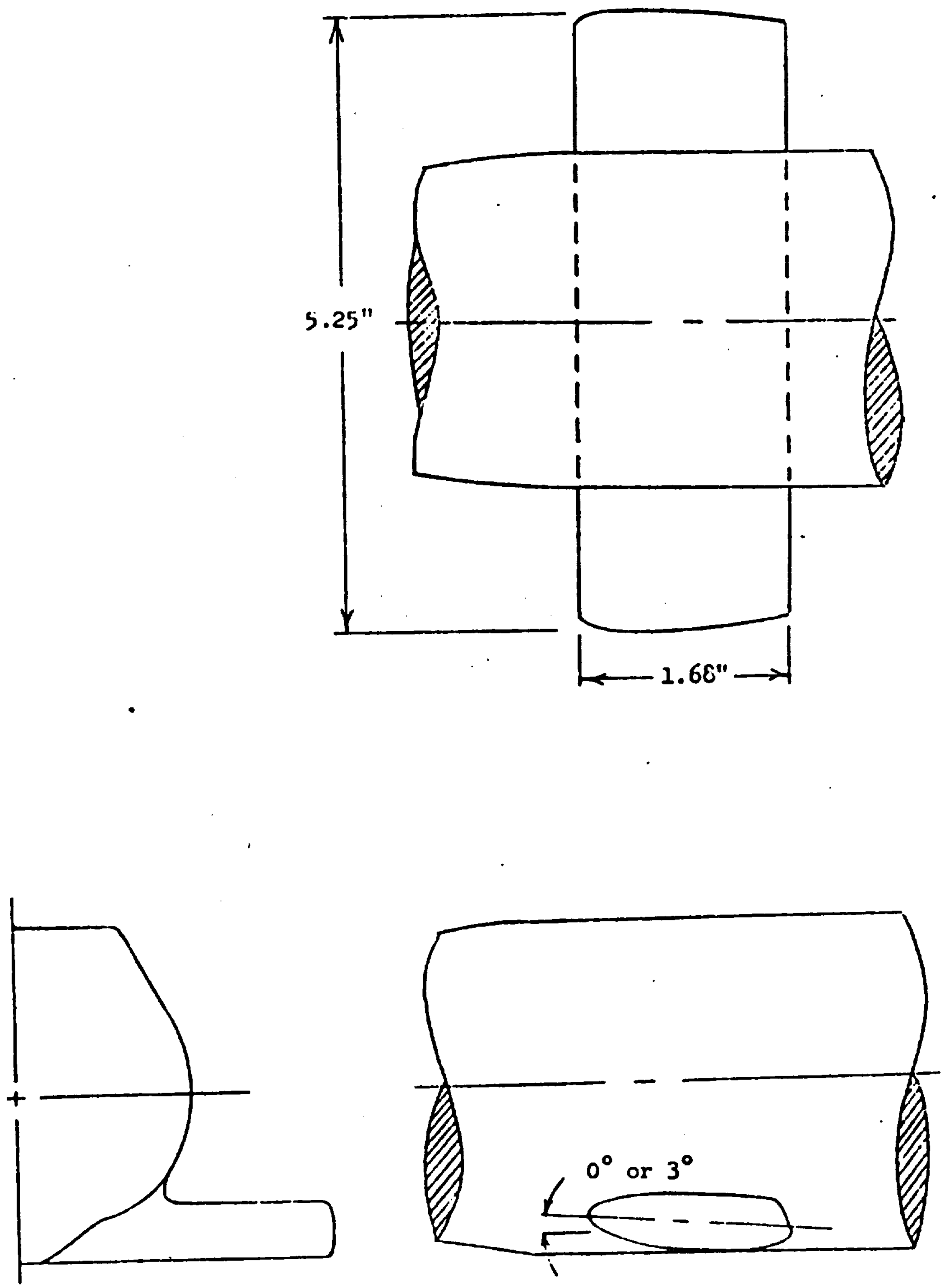


FIGURE 10

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1065 C-1- 14

BOOSTER AERODYNAMIC CANARD (0.007)

T1 AERODYNAMIC CANARD
F2 FLAP

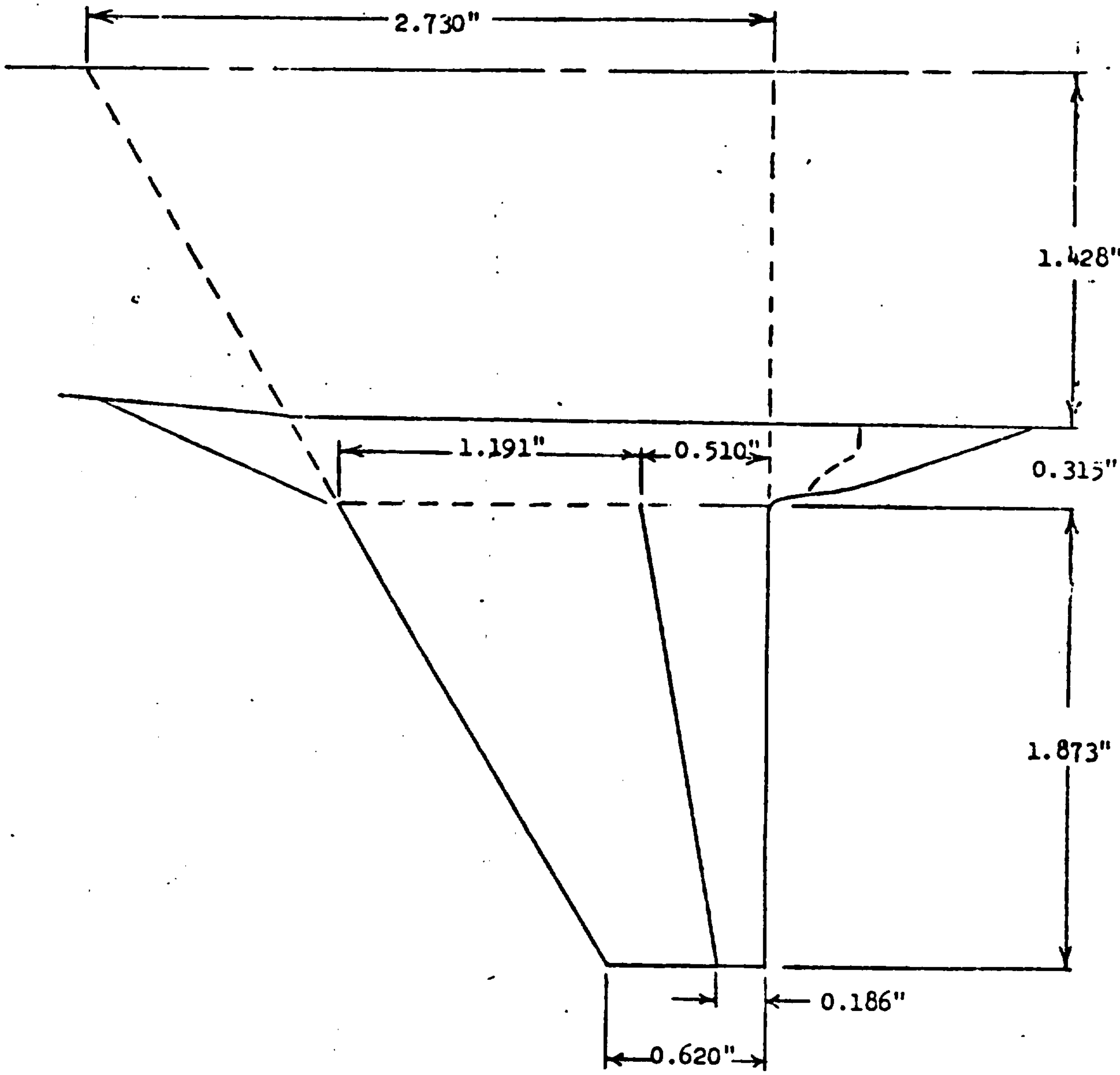


FIGURE 11

BOOSTER WING TIP VERTICAL (0.007)

V1 VERTICAL
R1 RUDDER

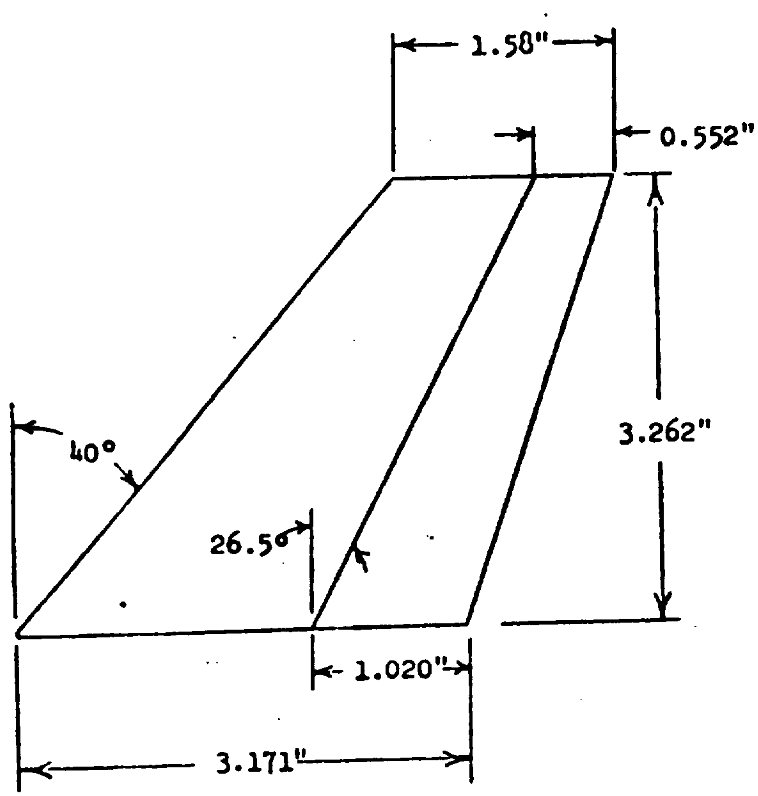


FIGURE 12

LCR ORBITER (01) BODY (0.007)
B2 - EXTENDED NOSE BODY

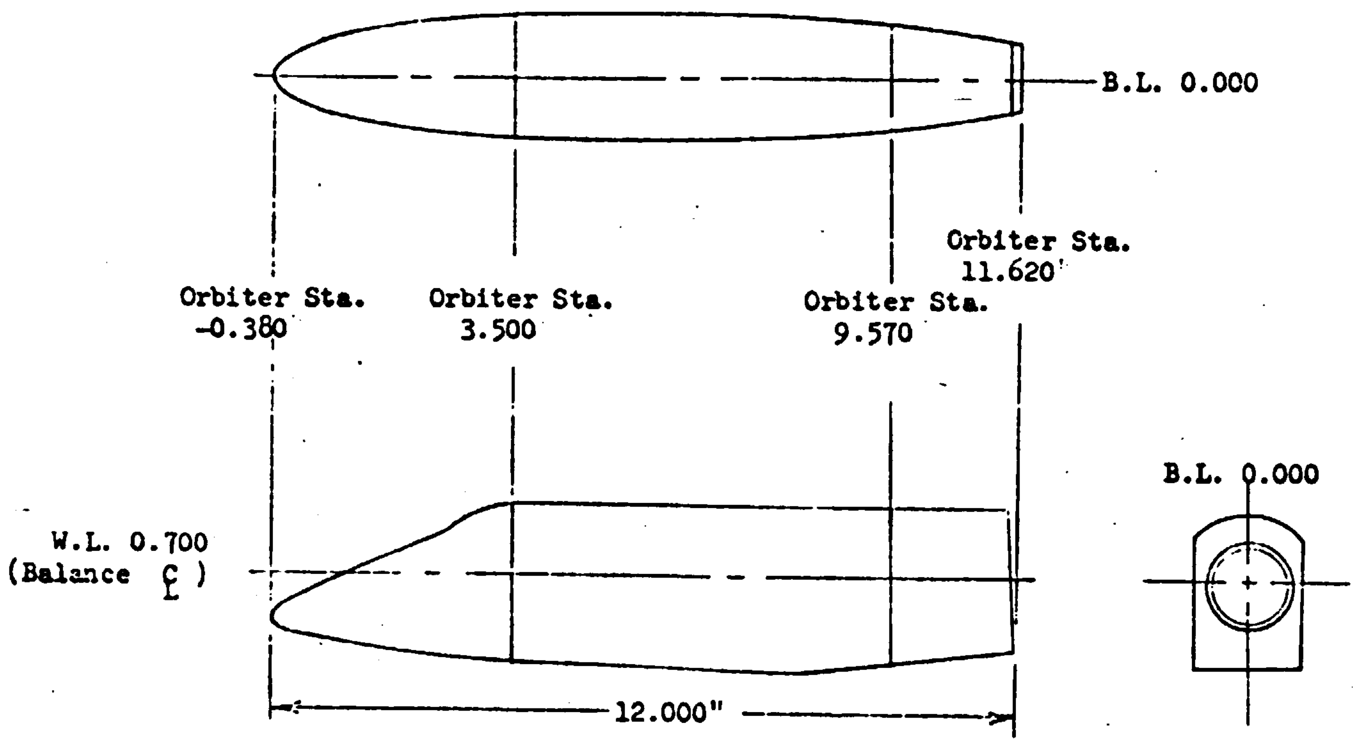


FIGURE 14

LCR ORBITER (O1) WING (0.00?)
W2 - WING (SYMMETRICAL)

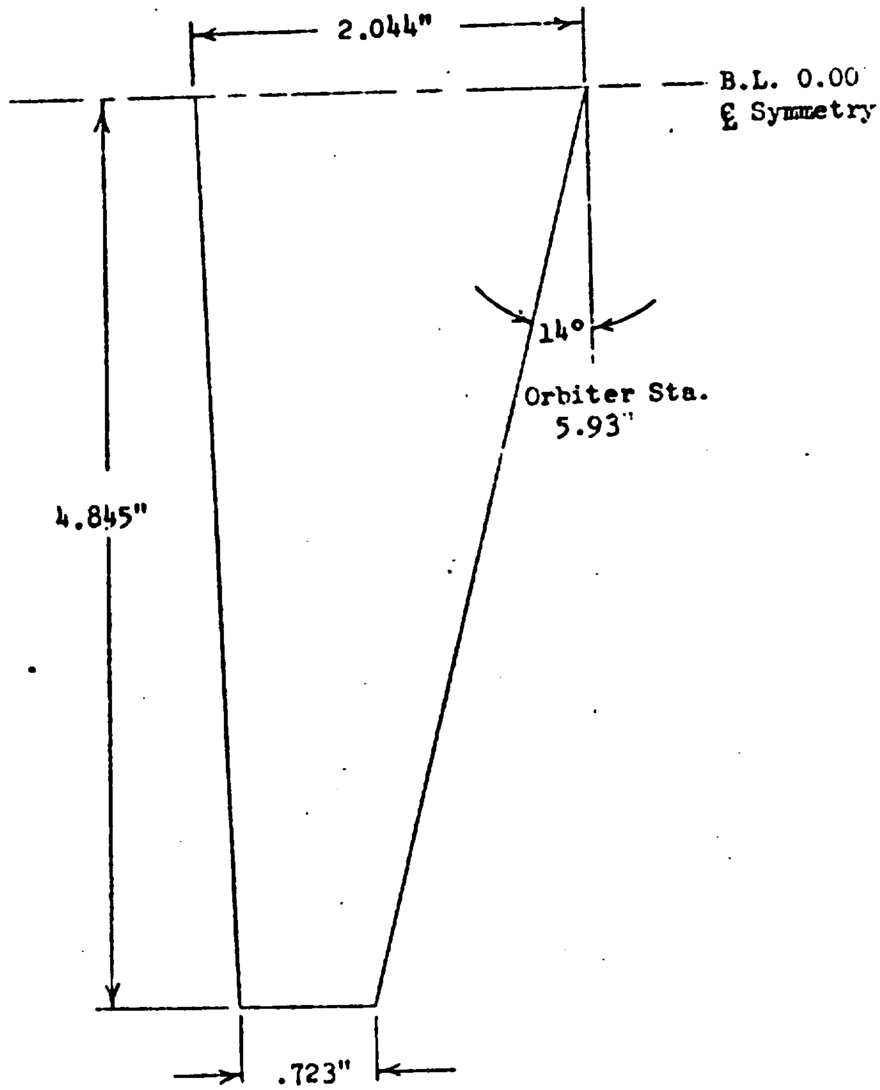


FIGURE 15

LCR ORBITER (O1) HORIZONTAL TAIL

H1 HORIZONTAL TAIL
E1 ELEVATOR

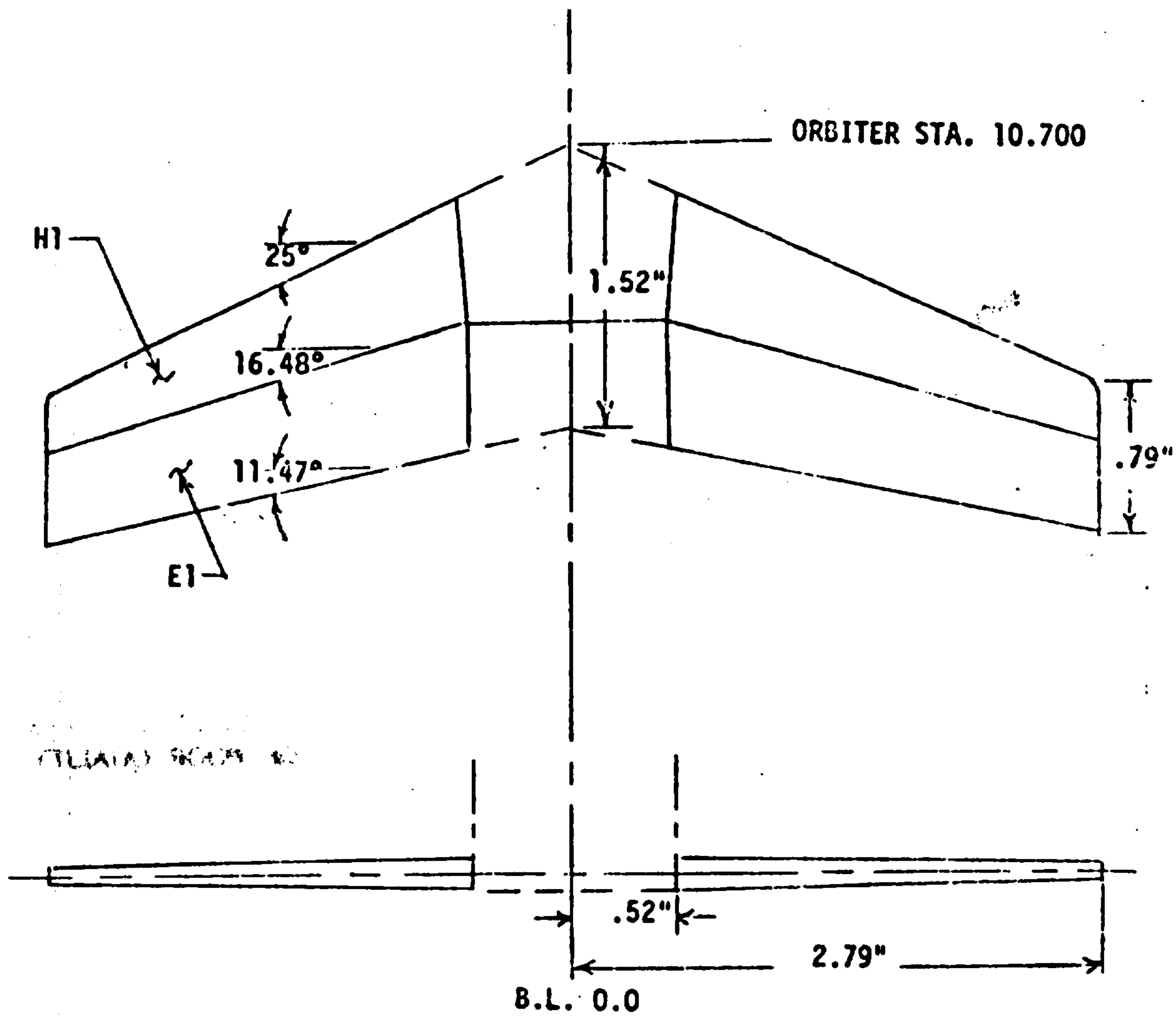
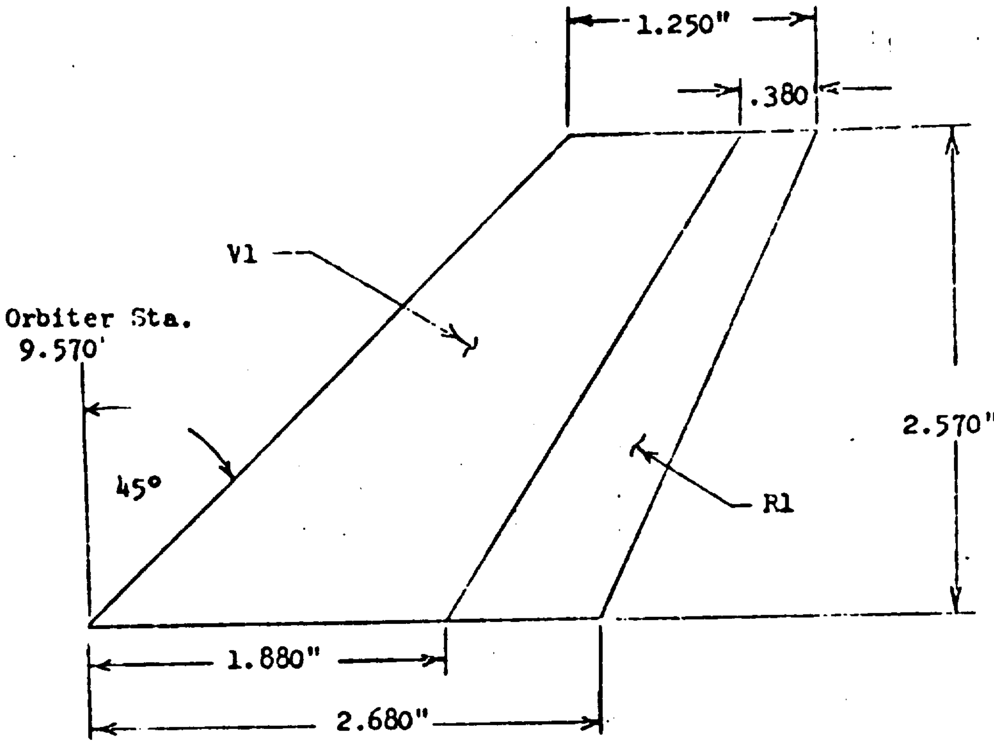


FIGURE 16

LCR ORBITER (01) VERTICAL TAIL ASSEMBLY (0.007)
V1 - VERTICAL TAIL
R1 - RUDDER



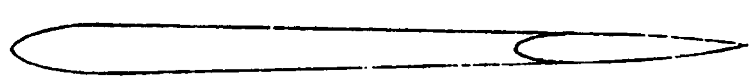
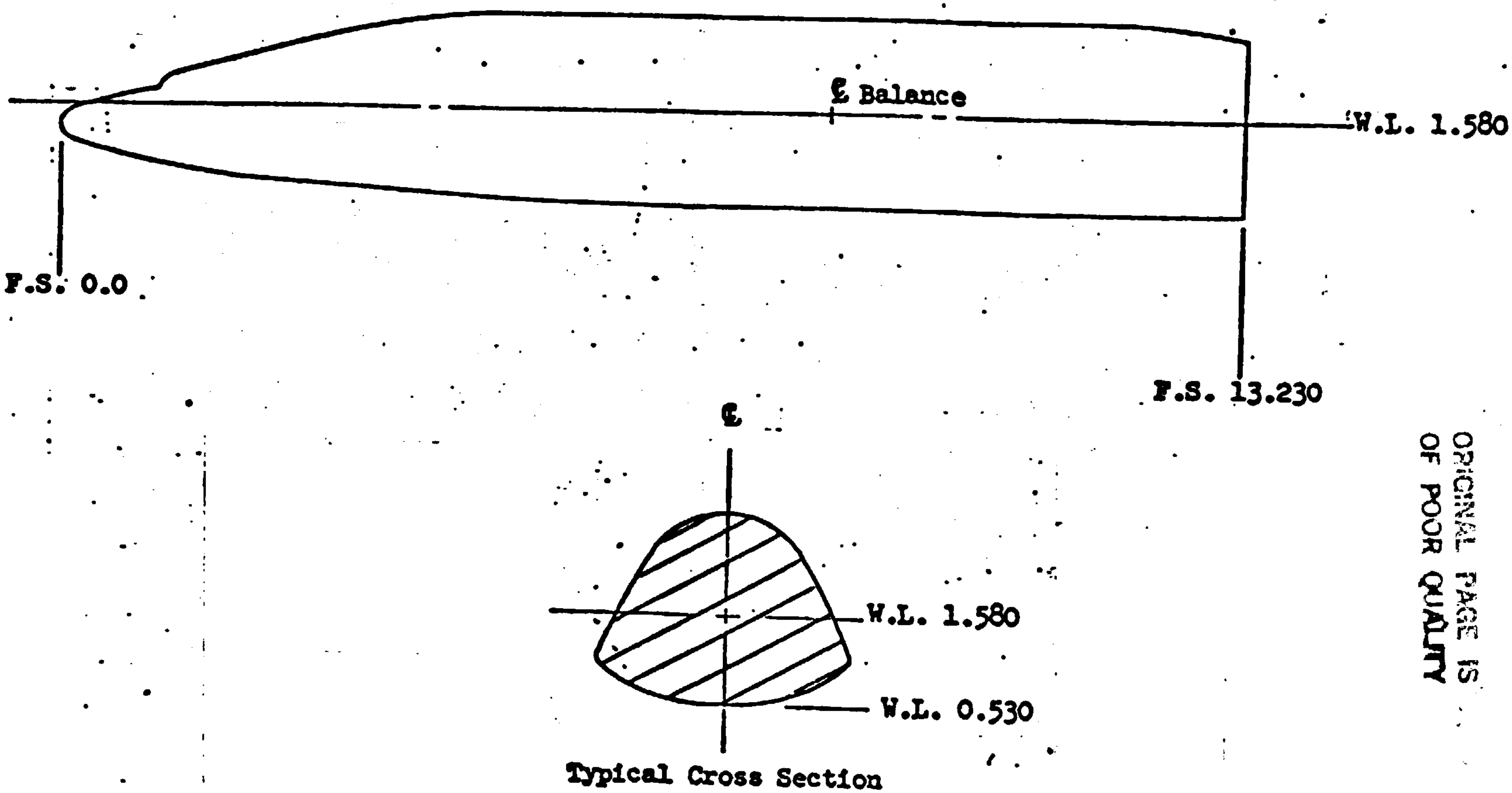
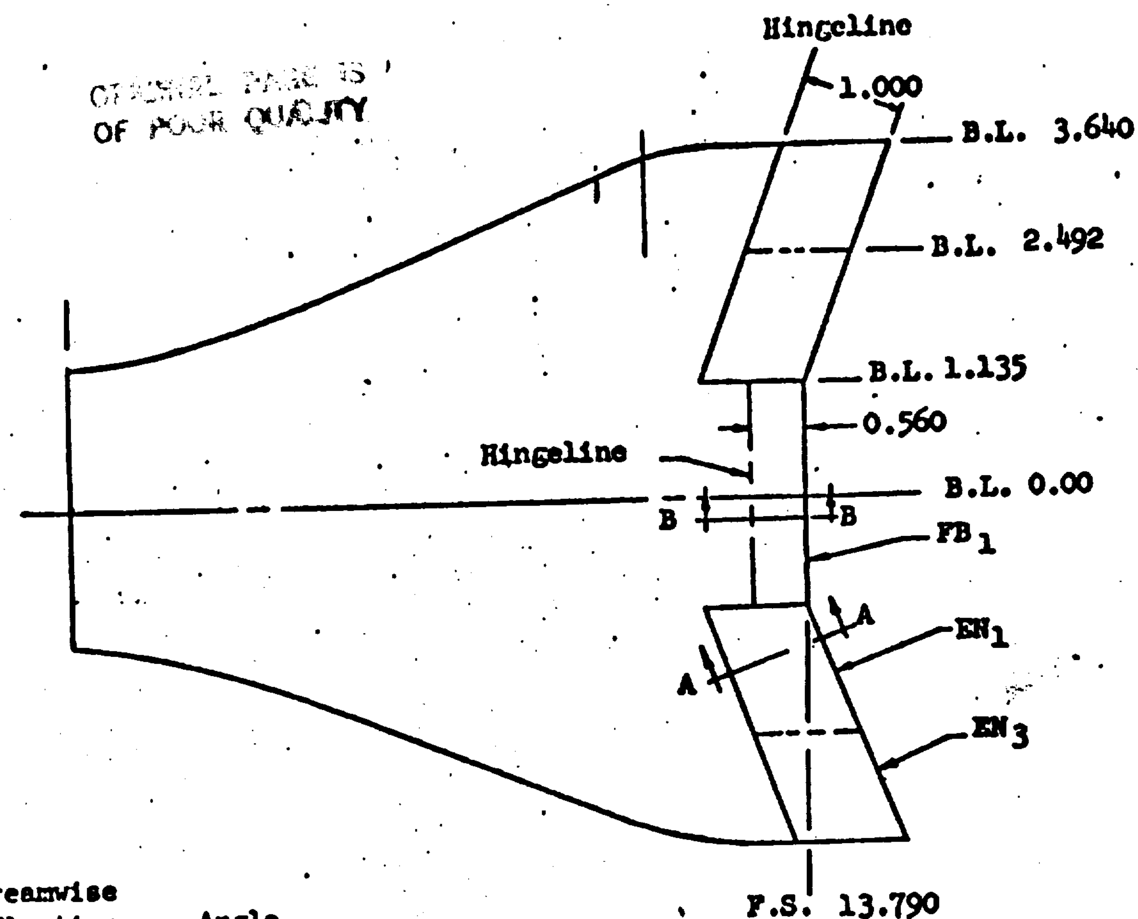


FIGURE 17

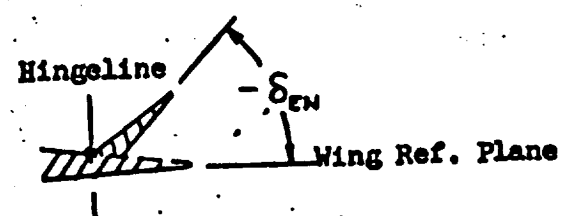


Notes:
1. All dimensions are model scale in inches.
2. Reference Dwg. CON-770-1603-MD02

FIGURE 19 - HCR - BASIC FUSELAGE (B_1)

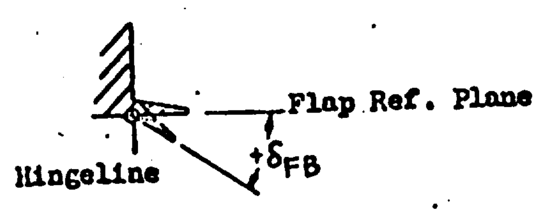


Streamwise Deflection Angle	Angle δ_{EN}
+15°	15°55'
0°	0°
-15°	-15°55'
-30°	-31°34'
-45°	-46°47'



Section A-A

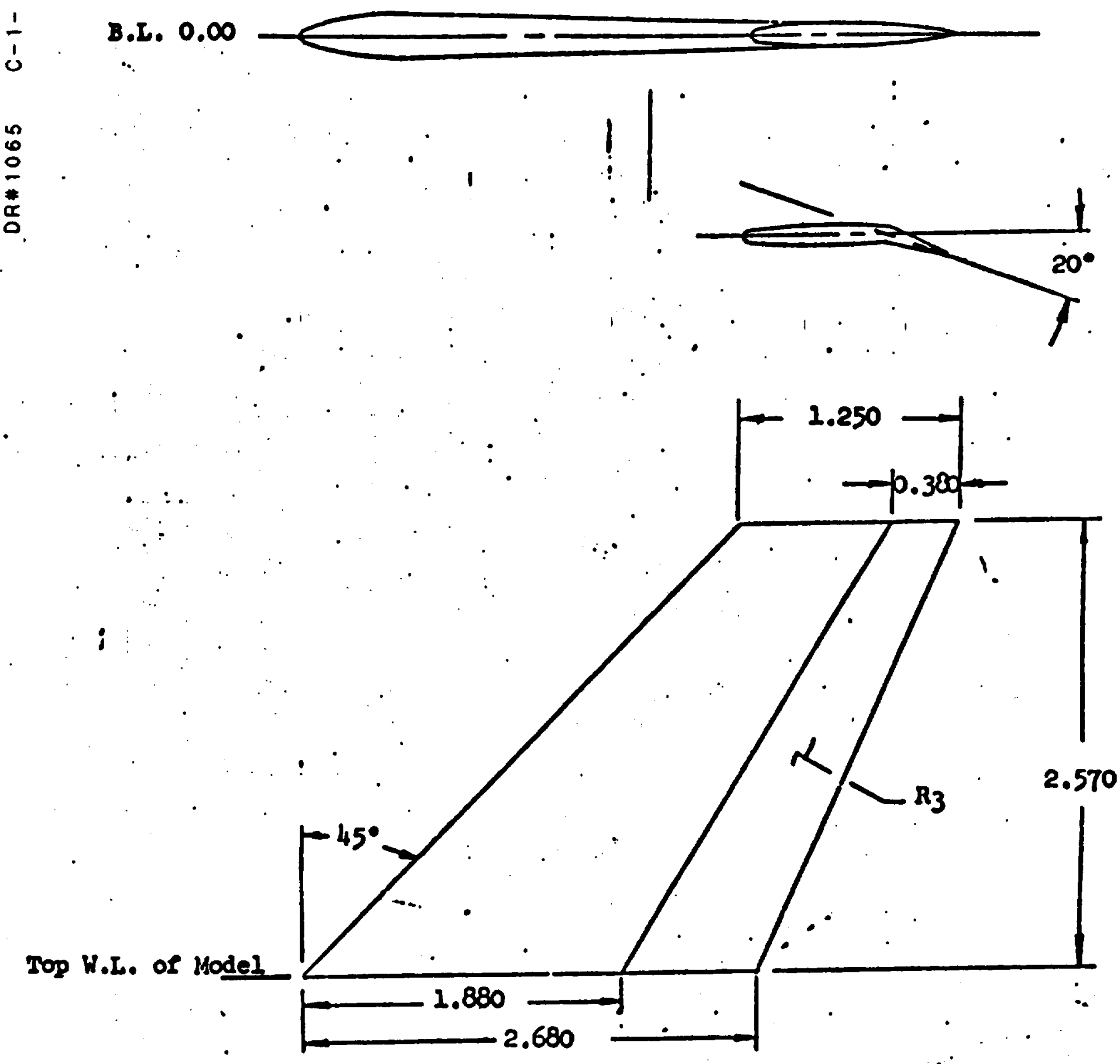
	δ_{FB}
0°	0°
+15°	+15°



Section B-B

Notes:
1. All dimensions are model scale in inches.
2. Reference: Dwg. CON-770-1003-MD02

FIGURE 20 - HCR - WING (W_3), ELEVONS (EN_1, EN_3), AND BODY FLAP (FB_1)



Planform View

Notes: 1. All dimensions are model scale in inches.
2. Ref: Dwg. CON-770-1603-MD01

FIGURE 21- HCR-VERTICAL TAIL (V_3) AND RUDDER (R_3)

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES							No. of Runs	DELTA Z/ℓ_B								
		α	β	PWR	PWR	$\Delta X/\ell$	α_i	M_∞	δe_R	δe_L			.119	.151	.182	.228	.352	.591	.908	10.0
RT8001	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	5.0	0.0	0.0	8		301	311	319	338	339	354	355	355
002						-.145					8		302	317	320	337	342	353	356	
003						-.019					8		303	316	321	336	341	352	357	
004						.043					6		304	315	322	335	342			
005						.105					8		305	314	323	333	343	351	358	
006						.167					6		306	313	324	332	344			
007						.228					8		307	312	325	331	345	350	359	
008						.351					8		308	311	326	330	346	349	360	
009						.532					8		309	310	327	328	347	348	361	
010						-.391	5.1				6			601	618	619	636	637		637
011						-.145					6			602	617	620	635	638		
012						-.019					5			603	616	621	634			
013						.043					5			604	615	622	633			
014						.105					6			605	614	623	632	639		
015						.167					5			606	613	624	631			
016						.228					5			607	612	625	630			
017						.351					5			608	611	626	629			
018						.532					6			609	610	627	628	640		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA DCLM DCN DCA DCBL DCY DCYN DELTAB

COEFFICIENTS: IDPVAR(1) IDPVAR(2)

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 23

ORIGINAL PAGE IS OF POOR QUALITY

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 24

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/L	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.222	.357	.579	.908	10.0
RTB019	MDAC BOOSTER	A	0	0.0	0.0	-.591	10.1	5.0	0.0	0.0	5				1101	1118	1119	1131		1131
020						-.475					5				1102	1117	1120	1130		
021						-.919					4				1103	1116	1121			
022						.043					4				1104	1115	1122			
023						.105					5				1105	1114	1123	1129		
024						.167					4				1106	1113	1124			
025						.228					4				1107	1112	1125			
026						.351					4				1108	1111	1126			
027						.501					5				1109	1110	1127	1128		
028						-.591	-4.9				7		741	701	718	719	736	737		737
029						-.475					7		743	702	717	720	735	738		
030						-.019					6		744	703	716	721	734			
031						.043					6		745	704	715	722	733			
032						.105					7		746	705	714	723	732	739		
033						.167					6		747	706	713	724	731			
034						.228					6		748	707	712	725	730			
035						.351					6		749	708	711	726	729			
036						.522					7		750	709	710	727	728	740		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM ICN ICA ICBL CY CYN DELTAD 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/l	α	M_∞	δ_{e_B}	δ_{e_P}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.352	.599	.908	10.0
RTR 037	MDAC BOOSTER	A	0	50.	100.	-.391	0.0	5.0	0.0	0.0	8		401	418	419	436	437	453	454	454
038						-.145					8		402	417	420	435	438	452	455	
039						-.019					8		403	416	421	434	439	451	456	
040						.043					6		404	415	422	433	440			
041						.105					8		405	414	423	432	441	450	457	
042						.167					6		406	413	424	431	442			
043						.228					8		407	412	425	430	443	449	458	
044						.351					8		408	411	426	429	444	447	459	
045						.522					8		409	410	427	4–	445	446	460	
046						-.391	5.1				6		.	501	518	519	536	537		537
047						-.143					6			502	517	520	535	538		
048						-.019					5			503	516	521	534			
049						.043					5			504	515	522	533			
050						.105					6			505	514	523	532	539		
051						.167					5			506	513	524	531			
052						.228					5			507	512	525	530			
053						.351					5			508	511	526	529			
054						.522					6			509	510	527	528	540		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A= -10° to +10° ONE DATA POINT PER DEGREE

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 25

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 26

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/l	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.352	.599	.9?	1.00
RT8055	MDAC BOOSTER	A	0	50.	100.	-.391	10.1	5.0	0.0	0.0	5				1001	1019	1020	1032		1052
056						-.143					5				1002	1018	1021	1031		
057						-.019					4				1003	1017	1022			
058						.043					4				1004	1016	1023			
059						.105					5				1005	1015	1024	1030		
060						.167					4				1006	1014	1025			
061						.228					4				1007	1012	1026			
062						.351					4				1008	1011	1027			
063						.501					5				1009	1010	1028	1029		
064						-.391	-5.0				7		801	818	819	837	838	850		850
065						-.143					7		802	817	820	836	839	849		
066						-.019					6		803	816	821	835	840			
067						.043					6		804	815	822	834	841			
068						.105					7		805	814	823	833	842	848		
069						.167					6		806	813	824	832	843			
070						.228					6		807	812	825	831	844			
071						.351					6		808	811	827	830	845			
072						.522					7		809	810	828	829	846	847		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES							No. of Runs	DELTA Z/l_B								
		α	β	PWR	PWR	$\Delta X/l_B$	α_i	M_∞	δ_{e_R}	δ_{e_L}			.119	.151	.182	.228	.352	.549	.708	10.0
RTR 073	MDAC BOOSTER	A	0	50.	100.	-.391	-10.1	5.0	0.2	0.0	5				1201	1218	1219	1231		1231
074						-.143					5				1202	1217	1220	1230		
075						-.019					4				1203	1216	1221			
076						.043					4				1204	1215	1222			
077						.105					5				1205	1214	1223	1229		
078						.167					4				1206	1213	1224			
079						.228					4				1207	1212	1225			
080						.351					4				1208	1211	1226			
081						.522					5				1209	1210	1227	1228		
082				0.0	0.0	-.391	0.0				4		201	208	209	216				
083						-.143					4		202	207	210	215				
084						.105					4		203	206	211	214				
085						.522					4		204	205	212	213				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHAOCLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 27

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 28

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/L	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs		DELTA Z/l_B .119	.151	.182	.228	.352	.599	.908	10.0
RT1086	MDAC BOOSTER	A	D	100.	100.	-.391	0.0	5.0	0.0	0.0	6		1301	1314	1315	1328	1329			1334
087						-.143					6		1302	1313	1316	1327	1330			
088						-.017					5		1303	1312	1317	1326				
089						.105					6		1304	1311	1318	1325	1331			
090						.167					5		1305	1310	1319	1324				
091						.351					6		1306	1309	1320	1323	1332			
092						.522					6		1307	1308	1321	1322	1333			
093						-.391	5.0				5			1501	1514	1515	1526			1527
094						-.143					5			1502	1513	1516	1525			
095						-.019					4			1503	1512	1517				
096						.105					5			1504	1511	1518	1524			
097						.167					4			1505	1510	1519				
098						.351					5			1506	1509	1520	1523			
099						.522					5			1507	1508	1521	1522			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHADCLM ICN ICA ICBL CY CYN IDELTAB 7

COEFFICIENTS: IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/l	α	M_∞	δ_{eR}	δ_{eL}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.352	.599	.90P	10.0
RT8 100	MDAC BOOSTER	A	0	0.0	100.	-.391	0.0	5.0	0.0	0.0	5		1401	1414	1415	1428				355
101						-.143					5		1402	1413	1416	1427				
102						-.019					5		1403	1412	1417	1426				
103						.105					5		1404	1411	1418	1425				
104						.167					5		1405	1410	1419	1424				
105						.351					5		1406	1409	1420	1423				
106						.522					5		1407	1408	1421	1422				
107				50.	50.	-.391					6		1801	1814	1815	1828	1829			[illegible]
108						-.143					6		1802	1813	1816	1827	1830			
109						-.019					5		1803	1812	1817	1826				
110						.105					6		1804	1811	1818	1825	1831			
111						.167					5		1805	1810	1819	1824				
112						.351					6		1806	1809	1820	1823	1832			
113						.522					6		1807	1808	1821	1822	1833			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA	CLM	CN	CA	CBL	CY	CYN	DELTAZ	7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 29

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108   C-1- 30

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/L	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.352	.577	.908	10.0
RTR 114	MDAC BOOSTER	A	0	50.	50.	-.391	5.0	5.0	0.0	0.0	5			1601	1614	1615	1626			1627
115						-.143					5			1602	1613	1616	1625			
116						-.014					4			1603	1612	1617				
117						.105					5			1604	1611	1618	1624			
118						.167					4			1605	1610	1619				
119						.351					5			1606	1609	1620	1623			
120						.522					5			1607	1608	1621	1622			
121				50.	25.	-.391					3			1701	1714					
122						-.143								1702	1713					
123						-.014								1703	1712					
124						.105								1704	1711					
125						.167								1705	1710					
126						.351								1706	1709					
127						.522								1707	1708					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CR CBL CY CYN DELTAZ | 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	$\Delta x/l_B$	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.558	.599	.908	1.00
RTR 128	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	5.0	20.	-20.	6		1901	1914	1915	1928	1929			1934
129						-.143					6		1902	1913	1916	1927	1930			
130						-.019					5		1903	1912	1917	1926				
131						.105					6		1904	1911	1918	1925	1931			
132						.167					5		1905	1910	1919	1924				
133						.351					6		1906	1909	1920	1923	1932			
134						.522					6		1907	1908	1921	1922	1935			
135				100.	100.	-.391					3		2001	2014	2015					
136						-.143					3		2002	2013	2016					
137						-.019					3		2003	2012	2017					
138						.105					2		2004	2011						
139						.167					2		2005	2010						
140						.351					2		2006	2009						
141						.522					2		2007	2008						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTA 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 31

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	$\Delta X/\ell$	α_i	M_∞	δ_{eR}	δ_{eP}	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.599	.908	10.0
RT8142	MDAC ORBITER	A	0	0.0	0.0	-.391	0.0	5.0	0.0	0.0	8		301	318	319	338	339	354	355	[illegible]
143						-.145					8		302	317	320	337	340	353	356	
144						-.019					8		303	316	321	336	341	352	357	
145						.043					6		304	315	322	335	342			
146						.105					8		305	314	323	333	343	351	358	
147						.167					6		306	313	324	332	344			
148						.228					8		307	312	325	331	345	350	359	
149						.351					8		308	311	326	330	346	349	360	
150						.522					8		309	310	327	328	347	348	361	
151						-.391	5.1				6			601	618	619	636	637		[illegible]
152						-.143					6			602	617	620	635	638		
153						-.019					5			603	616	621	634			
154						.043					5			604	615	622	633			
155						.105					6			605	614	623	632	639		
156						.167					5			606	613	624	631			
157						.228					5			607	612	625	630			
151						.351					5			608	611	626	629			
159						.522					6			609	610	627	628	640		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHADCLM ICN ICA ICBL CY CYN IDELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/l	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.222	.357	.579	.908	10.0
RT8160	MDAC ORBITER	A	0	0.0	0.0	-.391	10.1	5.0	0.0	0.0	5				1101	1118	1119	1131		[illegible]
161						-.145					5				1102	1117	1120	1130		
162						-.019					4				1103	1116	1121			
163						.043					4				1104	1115	1122			
164						.105					5				1105	1114	1123	1129		
165						.167					4				1106	1113	1124			
166						.228					4				1107	1112	1125			
167						.351					4				1108	1111	1126			
168						.501					5				1109	1110	1127	1128		
169						-.391	-4.9				7		741	701	718	719	736	737		740
170						-.145					7		743	702	717	720	735	738		
171						-.019					6		744	703	716	721	734			
172						.043					6		745	704	715	722	733			
173						.105					7		746	705	714	723	732	739		
174						.167					6		747	706	713	724	731			
175						.228					6		748	707	712	725	730			
176						.351					6		749	708	711	726	729			
177						.522					7		750	709	710	727	728	740		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA DCLM ICN ICA ICBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: $A = -10^\circ$ to $+10^\circ$ ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 33

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/ℓ	α	M_∞	δ_{e_B}	δ_{e_O}	No. of Runs	DELTA Z/ℓ_B .119	.151	.182	.228	.352	.599	.908	10.0
RTR178	MDAC ORBITER	A	O	50.	100.	-.391	0.0	5.0	0.0	0.0	8	401	418	419	436	437	453	454	[illegible]
179						-.145					8	402	417	420	435	438	452	455	
180						-.019					8	403	416	421	434	439	451	456	
181						.043					6	404	415	422	433	440			
182						.105					8	405	414	423	432	441	450	457	
183						.167					6	406	413	424	431	442			
184						.228					8	407	412	425	430	443	449	458	
185						.351					8	408	411	426	429	444	447	459	
186						.522					8	409	410	427	428	445	446	460	
187						-.391	5.1				6		501	518	519	536	537		540
188						-.143					6		502	517	520	535	538		
189						-.019					5		503	516	521	534			
190						.043					5		504	515	522	533			
191						.105					6		505	514	523	532	539		
192						.167					5		506	513	524	531			
193						.228					5		507	512	525	530			
194						.351					5		508	511	526	529			
195						.522					6		509	510	527	528	540		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHAQCLM ICN ICA ICBL ICY CYN IDELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A= -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/ℓ_B								
												.	.119	.151	.182	.228	.352	.579	.901	10.0
RT8196	MDAC [illegible]	A	0	50.	100.	-.391	10.1	5.0	0.0	0.0	5				1001	1019	1020	1032		1039
197						-.143					5				1002	1018	1021	1031		
198						-.019					4				1003	1017	1022			
199						.043					4				1004	1016	1023			
200						.105					5				1005	1015	1024	1030		
201						.167					4				1006	1014	1025			
202						.229					4				1007	1012	1026			
203						.351					4				1008	1011	1027			
204						.501					5				1009	1010	1028	1029		
205						-.391	-5.0				7		801	818	819	837	838	850		847
206						-.143					7		802	817	820	836	839	849		
207						-.019					6		803	816	821	835	840			
208						.043					6		804	815	822	834	841			
209						.105					7		805	814	823	833	842	848		
210						.167					6		806	813	824	832	843			
211						.229					6		807	812	825	831	844			
212						.351					6		808	811	827	830	845			
213						.502					7		809	810	828	829	846	847		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA DCLM ICN CA ICBL CY CYN IDELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 35

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/L	α_i	M_∞	δ_{e_0}	δ_{a_0}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.352	.599	.938	10.0
RTR 214	MDAC ORBITER	A	0	50.	100.	-.391	-10.	5.0	0.2	0.0	5				1201	1218	1219	1231		1227
215						-.143					5				1202	1217	1220	1230		
216						-.019					4				1203	1216	1221			
217						.043					4				1204	1215	1222			
218						.105					5				1205	1214	1223	1229		
219						.167					4				1206	1213	1224			
220						.228					4				1207	1212	1225			
221						.351					4				1208	1211	1226			
222						.522					5				1209	1210	1257	1228		
223				0.0	0.0	-.391	0.0				4		201	208	209	216				
224						-.143					4		202	207	210	215				
225						.105					4		203	206	211	214				
226						.522					4		204	205	212	213				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTA2

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° TO +10° ONE DATA POINT PER DEGREE

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_O}	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.599	.908	10.0
RTB 227	[illegible]	A	D	100.	100.	-.391	0.0	5.0	0.0	0.0	6		1301	1314	1315	1328	1329			[illegible]
228						-.143					6		1302	1313	1316	1327	1330			
229						-.019					5		1303	1312	1317	1326				
230						.105					6		1304	1311	1318	1325	1331			
231						.167					5		1305	1310	1319	1324				
232						.351					6		1306	1309	1320	1323	1332			
233						.522					6		1307	1308	1321	1322	1333			
234						-.391	5.0				5			1501	1514	1515	1526			1527
235						-.143					5			1502	1513	1516	1525			
236						-.019					4			1503	1512	1517				
237						.105					5			1504	1511	1518	1524			
238						.167					4			1505	1510	1519				
239						.351					5			1506	1509	1520	1523			
240						.522					5			1507	1508	1521	1522			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 37

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{ea}	δ_{ep}	No. of Runs	DELTA Z/ℓ_B	.119	.157	.182	.228	.352	.599	.90P	10.0
RT8241	MDAC ORBITER	A	0	0.0	100.	-.391	0.0	5.0	0.0	0.0	5		1401	1414	1415	1428				1460
242						-.143					5		1402	1413	1416	1427				
243						-.019					5		1403	1412	1417	1426				
244						.105					5		1404	1411	1418	1425				
245						.167					5		1405	1410	1419	1424				
246						.357					5		1406	1409	1420	1423				
247						.522					5		1407	1408	1421	1422				
248				50.	50.	-.391					6		1801	1814	1815	1828	1829			1834
249						-.143					6		1802	1813	1816	1827	1830			
250						-.019					5		1803	1812	1817	1826				
251						.105					6		1804	1811	1818	1825	1831			
252						.167					5		1805	1810	1819	1824				
253						.351					6		1806	1809	1820	1823	1832			
254						.522					6		1807	1808	1821	1822	1833			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-HAP

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_O}	No. of Runs	DELTA Z/ℓB	.119	.151	.172	.228	.352	.577	.901	10.0
RT8255	MDAC ORBITER	A	0	50.	50.	-.391	5.0	5.0	0.0	0.0	5			1601	1614	1615	1626			1657
256						-.143					5			1602	1613	1616	1625			
257						-.019					4			1603	1612	1617				
258						.105					5			1604	1611	1618	1624			
259						.167					4			1605	1610	1619				
260						.351					5			1606	1609	1620	1623			
261						.522					5			1607	1608	1621	1622			
262				50.	25.	-.391					2			1701	1714					
263						-.143								1702	1713					
264						-.019								1703	1712					
265						.105								1704	1711					
266						.167								1705	1710					
267						.351								1706	1709					
268						.522								1707	1708					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA BCLM ICN ICA ICBL CY CYN IDELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 39

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 40

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δe_R	δe_P	No. of Runs	DELTA Z/ℓ$_B$	.119	.151	.182	.228	.358	.599	.908	10.0
RTB 269	MDAC ORBITER	A	0	0.0	0.0	-.391	0.0	5.0	20.	-20.	6		1901	1914	1915	1928	1929			1934
270						-.143					6		1902	1913	1916	1927	1930			
271						-.019					5		1903	1912	1917	1926				
272						.105					6		1904	1911	1918	1925	1931			
273						.167					5		1905	1910	1919	1924				
274						.357					6		1906	1909	1920	1923	1932			
275						.522					6		1907	1908	1921	1922	1935			
276				100.	100.	-.391					3		2001	2014	2015					
277						-.143					3		2002	2013	2016					
278						-.019					3		2003	2012	2017					
279						.105					2		2004	2011						
280						.167					2		2005	2010						
281						.351					2		2006	2009						
282						.522					2		2007	2008						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHAMCLM ICN ICR ICBL CY CYN IDC TAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° TO +10° ONE DATA POINT PER DEGREE

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/ℓ_B	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/ℓ_B .113	.119	.151	.182	.228	.352	.594	.908	1.00
RTR283	MDAC BOOSTER	A	0	0.0	2.2	-.391	0.0	2.0	0.0	0.0	9	4201	3301	3318	3319	3336	3337	3352	3353	335[illegible]
284						-.143					9	4202	3302	3317	3320	3335	3338	3351	3354	
285						-.019					8	4203	3303	3316	3321	3334	3339	3350		
286						.043					7	4204	3304	3315	3322	3333	3340			
287						.105					9	4205	3305	3314	3323	3332	3341	3349	3355	
288						.167					7	4206	3306	3313	3324	3331	3342			
289						.228					8	4207	3307	3312	3325	3330	3343	3348		
290						.351					8	4208	3308	3311	3326	3329	3344	3347		
291						.581					9	4209	3309	3310	3327	3328	3345	3346	3356	
292						-.391	5.0				7			3501	3518	3519	3536			335[illegible]
293						-.143					7			3502	3517	3520	3535	3538		
294						-.019					6			3503	3516	3521	3534			
295						.043					5			3504	3515	3522	3533			
296						.105					7			3505	3514	3523	3532			
297						.167					5			3506	3513	3524	3531			
298						.228					6			3507	3512	3525	3530			
299						.351					6			3508	3511	3526	3529			
300						.522					7			3509	3510	3527	3528	3593	3549	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA(CLM ICN ICA KBL CY KYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 41

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δe_B	δe_O	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.579	.908	10.0
ATB 301	MDAC BOOSTER	A	0	0.0	0.0	-.391	10.0	2.0	0.0	0.0	6				3801	3818	3819	3834	3835	3835
302						-.143					6				3802	3817	3820	3833	3836	
303						-.019					5				3803	3816	3821	3832		
304						.043					4				3804	3815	3822			
305						.105					6				3805	3814	3823	3831	3837	
306						.167					4				3806	3813	3824			
307						.228					5				3807	3812	3825	3830		
308						.351					5				3808	3811	3826	3829		
309						.501					6				3809	3810	3827	3828	3838	
310						-.391	-5.0				8		3701	3718	3719	3736	3737	3752	3753	[illegible]
311						-.143					8		3702	3717	3720	3735	3738	3751	3754	
312						-.019					7		3703	3716	3721	3734	3739	3750		
313						.043					6		3704	3715	3722	3733	3740			
314						.105					8		3705	3714	3723	3732	3741	3749	3755	
315						.167					6		3706	3713	3724	3731	3742			
316						.228					7		3707	3712	3725	3730	3743	3748		
317						.351					7		3708	3711	3726	3729	3744	3747		
318						.502					8		3709	3710	3727	3728	3745	3746	3756	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHADCLM ICN ICA ICBL ICY CYN DELTAB

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

TEST VA 1163 **DATA SET COLLATION SHEET**

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_R}	δ_{e_P}	No. of Runs	DELTA Z/ℓ_B .119	.151	.192	.228	.352	.599	.908	1.00
RTB319	MDAC BOOSTER	A	0	50.0	100.0	-.391	0.0	2.0	0.0	0.0	7	3401	3418	3419	3436	3437	3452		3461
320						-.143					8	3402	3417	3420	3435	3438	3451	3454	
321						-.019					7	3403	3416	3421	3434	3439	3450		
322						.043					6	3404	3415	3422	3433	3440			
323						.105					8	3405	3414	3423	3432	3441	3449	3455	
324						.167					6	3406	3413	3424	3431	3442			
325						.228					7	3407	3412	3425	3430	3443	3448		
326						.351					7	3408	3411	3426	3429	3444	3447		
327						.523					8	3409	3410	3427	3428	3445	3446	3456	
328						-.391	5.0				7		3601	3618	3619	3636	3637	3647	3657
329						-.143					7		3602	3617	3620	3635	3638	3646	
330						-.019					6		3603	3616	3621	3634	3639		
331						.043					5		3604	3615	3622	3633			
332						.105					7		3605	3614	3623	3632	3640	3645	
333						.167					5		3606	3613	3624	3631			
334						.228					6		3607	3612	3625	3630	3641		
335						.351					6		3608	3611	3626	3629	3642		
336						.523					7		3609	3610	3627	3628	3643	3644	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB IDPVAR(1) IDPVAR(2) NDV 2

COEFFICIENTS: A = -10° to +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

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NASA-MSFC-MAP

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 44

ORIGINAL PAGE IS
OF POOR QUALITY

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{eR}	δ_{eL}	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.599	.908	10.0
RTB337	MDAC BOOSTER	A	0	50.0	100.0	-.391	10.0	8.0	0.0	0.0	6				4001	4018	4019	4034	4035	4055
338						-.145					6				4002	4017	4020	4033	4036	
339						-.019					5				4003	4016	4021	4032		
340						.043					4				4004	4015	4022			
341						.105					6				4005	4014	4023	4031	4037	
342						.167					4				4006	4013	4024			
343						.228					5				4007	4012	4025	4030		
344						.351					5				4008	4011	4026	4029		
345						.501					6				4009	4010	4027	4028	4038	
346				0.0	0.0	-.391	0.0				8		3901	3918	3919	3936	3937	3952	3953	3953
347						-.145					8		3902	3917	3920	3935	3938	3951	3954	
348						-.019					7		3903	3916	3921	3934	3939	3950		
349						.043					6		3904	3915	3922	3933	3940			
350						.105					8		3905	3914	3923	3932	3941	3949	3955	
351						.167					6		3906	3913	3924	3931	3942			
352						.228					7		3907	3912	3925	3930	3943	3948		
353						.351					7		3908	3911	3926	3929	3944	3947		
354						.501					8		3909	3910	3927	3928	3945	3946	3956	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_B}	No. of Runs	DELTA Z/ℓ_B .119	.151	.182	.226	.352	.599	.908	10.0
RTB 355	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	2.0	20.0	-20.0	8	4401	4414	4415	[illegible]	4430	4441	[illegible]	[illegible]
356						-.143					8	4402	4413	4416	[illegible]	4431	4440	[illegible]	
357						-.019					6	4403	4412	4417	4427		[illegible]		
358						.105					8	4404	4411	4418	4426	4432	[illegible]	4444	
359						.167					5	4405	4410	4419	4424				
360						.351					7	4406	4409	4420	4425	4433	4436		
361						.522					8	4407	4408	4421	4422	4434	4435	4445	
362				50.0	100.0	-.391					8	4501	4518	4519	4537	4538	4553	4554	4554
363						-.143					8	4502	4517	4520	4536	4539	4552	4555	
364						-.019					7	4503	4516	4521	4535	4540	4551		
365						.043					6	4504	4515	4522	4534	4541			
366						.105					8	4505	4514	4523	4533	4542	4550	4556	
367						.167					6	4506	4513	4524	4532	4543			
368						.220					7	4507	4512	4525	4530	4544	4549		
369						.351					7	4508	4511	4526	4529	4545	4548		
370						.522					8	4509	4510	4527	4528	4546	4547	4557	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHAOCLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° to +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
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MDAC
DR#1108 C-1- 45

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/L	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/ℓ_B								
													.119							
RTB 371	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	2.0	0.0	0.0	1		4201							
372						-.145							4202							
373						-.019							4203							
374						.043							4204							
375						.105							4205							
376						.167							4206							
377						.228							4207							
378						.351							4208							
379						.501							4209							
380				100.0		-.391							4101							
381						-.145							4102							
382						-.019							4103							
383						.043							4104							
384						.105							4105							
385						.167							4106							
386						.228							4107							
387						.351							4108							
388						.501							4109							

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA DCLM DCN DCA DCBL DCY DCYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	$\Delta x/\ell$	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/ℓ_B .119
RTB389	MDCC BOOSTER	A	0	0.0	0.0	-.391	0.0	2.0	20.0	-20.0	1	4801
390						-.143						4802
391						-.019						4803
392						.043						4804
393						.105						4805
394						.167						4806
395						.228						4807
396						.351						4808
397						.522						4809
398				100.0		-.391						4901
399						-.143						4902
400						-.019						4903
401						.043						4904
402						.105						4905
403						.167						4906
404						.228						4907
405						.351						4908
406						.522						4909

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A= -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 47

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_R}	δ_{e_0}	No. of Runs	DELTA Z/ℓ_B .113	.119	.151	.182	.228	.353	.599	.908	1.00
RTR 407	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	3.0	0.0	0.0	9	3101	2201	2218	2219	2236	2237	2252	2253	2253
408						-.142					9	3102	2202	2217	2220	2235	2238	2251	2254	
409						-.019					8	3103	2203	2216	2221	2234	2239	2250		
410						.043					7	3104	2204	2215	2222	2233	2240			
411						.105					9	3105	2205	2214	2223	2232	2241	2249	2255	
412						.167					7	3106	2206	2213	2224	2231	2242			
413						.228					8	3107	2207	2212	2225	2230	2243	2248		
414						.351					8	3108	2208	2211	2226	2229	2244	2247		
415						.501					9	3109	2209	2210	2227	2228	2245	2246	2256	
416						-.391	5.0				8			2401	2418	2419	2436	2437	2447	[illegible]
417						-.143					8			2402	2417	2420	2435	2438	2446	
418						-.019					7			2403	2416	2421	2434	2439		
419						.043					6			2404	2415	2422	2433			
420						.105					8			2405	2414	2423	2432	2440	2445	
421						.167					6			2406	2413	2424	2431			
422						.228					7			2407	2412	2425	2430	2441		
423						.351					7			2408	2411	2426	2429	2442		
424						.522					8			2409	2410	2427	2428	2443	2444	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHADCLM ICN ICA ICBL ICY ICYN IDELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:
α or β SCHEDULES: A = -10° to +10° ONE DATA POINT PER DEGREE

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/l_B	α_i	M_∞	δ_{e_R}	δ_R	No. of Runs		.119	.151	.182	.228	.352	.599	.908	1.0
RTB 425	MDAC BOOSTER	A	0	0.0	0.0	-.391	10.0	3.0	0.0	0.0	6				2901	2918	2919	2934	2925	2935
426						-.143					6				2902	2917	2920	2933	2936	
427						-.019					5				2903	2916	2921	2932		
428						.043					4				2904	2915	2922			
429						.105					6				2905	2914	2923	2931	2937	
430						.167					4				2906	2913	2924			
431						.228					5				2907	2912	2925	2930		
432						.351					5				2908	2911	2926	2929		
433						.501					6				2909	2910	2927	2928	2938	
434						-.391	-5.0				8		2601	2618	2619	2636	2637	2652	2653	2655
435						-.143					8		2602	2617	2620	2635	2638	2651	2654	
436						-.019					7		2603	2616	2621	2634	2639	2650		
437						.043					6		2604	2615	2622	2633	2640			
438						.105					8		2605	2614	2623	2632	2641	2649	2655	
439						.167					6		2606	2613	2624	2631	2642			
440						.228					7		2607	2612	2625	2630	2643	2648		
441						.351					7		2608	2611	2626	2629	2644	2647		
442						.522					8		2609	2610	2627	2628	2645	2646	2656	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° to +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 49

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α	M_∞	δ_{eR}	δ_{eL}	No. of Runs	DELTA Z/ℓ_B .113	.119	.151	.182	.228	.352	.599	.908	10.0
RTR1143	MDAC BOOSTER	A	O	50.0	100.0	-.391	0.0	3.0	0.0	0.0	8	3001	2301	2318	2319	2336	2337	2352	2353	2357
444						-.143					7	3002	2302	2317	2320	2335		2351	2354	
445						-.019					7	3003	2303	2316	2321	2334	2339	2350		
446						.043					6	3004	2304	2315	2322	2333	2340			
447						.105					8	3005	2305	2314	2323	2332	2341	2349	2355	
448						.167					6	3006	2306	2313	2324	2331	2342			
449						.228					7	3007	2307	2312	2325	2330	2343	2348		
450						.351					7	3008	2308	2311	2326	2329	2344	2347		
451						.501					8	3009	2309	2310	2327	2328	2345	2346	2356	
452						-.391	5.0				7			2501	2518	2519	2536	2537	2547	2547
453						-.143					7			2502	2517	2520	2535	2538	2546	
454						-.019					6			2503	2516	2521	2534	2539		
455						.043					5			2504	2515	2522	2533			
456						.105					7			2505	2514	2523	2532	2540	2545	
457						.167					5			2506	2513	2524	2531			
458						.228					6			2507	2512	2525	2530	2541		
459						.351					6			2508	2511	2526	2529	2542		
460						.532					7			2509	2510	2527	2528	2543	2544	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAD 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A= -10° TO +10° ONE DATA POINT PER DEGREE

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	$\Delta X/l_B$	α_i	M_∞	δ_{eR}	δ_{eP}	No. of Runs	DELTA Z/l_B .119	.151	.182	.228	.352	.599	.908	10.0
RT8461	MDAC BOOSTER	A	0	50.0	100.0	-.391	10.0	3.0	0.0	0.0	6			2801	2818	2819	2834	2835	[illegible]
462						-.143					6			2802	2817	2820	2833	2836	
463						-.019					5			2803	2816	2821	2832		
464						.043					4			2804	2815	2822			
465						.105					6			2805	2814	2823	2831	2837	
466						.167					4			2806	2813	2824			
467						.228					5			2807	2812	2825	2830		
468						.351					5			2808	2811	2826	2829		
469						.501					6			2809	2810	2827	2828	2838	
470						-.391	-5.0				8	2701	2718	2719	2736	2737	2752	2753	2753
471						-.143					8	2702	2717	2720	2735	2738	2751	2754	
472						-.019					7	2703	2716	2721	2734	2739	2750		
473						.043					6	2704	2715	2722	2733	2740			
474						.105					8	2705	2714	2723	2732	2741	2749	2755	
475						.167					6	2706	2713	2724	2731	2742			
476						.228					7	2707	2712	2725	2730	2743	2748		
477						.351					7	2708	2711	2726	2729	2744	2747		
478						.532					8	2709	2710	2727	2728	2745	2746	2756	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 51

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 52

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔZ/ℓ	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/ℓB	.119	.151	.182	.228	.358	.599	.908	10.0
RTB 479	MDAC BOOSTER(NO CANARD)	A	0	50.0	100.0	-.391	0.0	3.0	0.0	0.0	4		3201	3218	3219					3223
480						-.145					4		3202	3217	3220					
481						-.019					3		3203	3216						
482						.043					3		3204	3215						
483						.105					4		3205	3214	3221					
484						.167					3		3206	3213						
485						.228					3		3207	3212						
486						.351					3		3208	3211						
487						.522					4		3209	3210	3222					
488	MDAC BOOSTER(DAMP=.5[illegible])					-.391					8		5201	5218	5219	5236	5237	5252	5253	5253
489						-.145					8		5202	5217	5220	5235	5238	5251	5254	
490						-.019					7		5203	5216	5221	5234	5239	5250		
491						.043					6		5204		5222	5233	5240			
492						.105					8		5205	5214	5223	5232	5241	5249	5255	
493						.167					6		5206	5213	5224	5231	5242			
494						.228					7		5207	5212	5225	5230	5243	5248		
495						.357					7		5208	5211	5226	5229	5244	5247		
496						.522					8		5209	5210	5227	5228	5245	5246	5256	

1 7 13 19 25 31 37 43 49 55 61 67 73 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

ORIGINAL PAGE IS OF POOR QUALITY

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/ℓ_B .113								
RTB497	MDAC BOOSTER	A	O	100.0	0.0	-.371	0.0	3.0	0.0	0.0	1	5001								
498						-.143						5002								
499						-.019						5003								
500						.043						5004								
501						.105						5005								
502						.167						5006								
503						.228						5007								
504						.351						5008								
505						.522						5009								
506				0.0	0.0	-.391						5101								
507						-.143						5102								
508						-.019						5103								
509						.043						5104								
510						.105						5105								
511						.167						5106								
512						.228						5107								
513						.351						5108								
514						.522						5109								

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHAQCLM ICN ICA ICBL ICY ICYN → DELTAB | IDPVAR(1) | IDPVAR(2) | NDV 7

COEFFICIENTS: A= -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 53

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	X/L	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.597	.908	10.0
RTB 515	[illegible] BOOSTER	A	0	50.0	100.0	-.391	0.0	4.0	0.0	0.0	7		5301	5318	5319	5336	5337	5352		5352
516						-.145					7		5302	5317	5320	5335	5338	5351		
517						-.019					7		5303	5316	5321	5334	5339	5350		
518						.043					6		5304	5315	5322	5333	5340			
519						.105					7		5305	5314	5323	5332	5341	5349		
520						.167					6		5306	5313	5324	5331	5342			
521						.228					7		5307	5312	5325	5330	5343	5348		
522						.351					7		5308	5311	5326	5329	5344	5347		
523						.522					7		5309	5310	5327	5328	5345	5346		
524						-.391		6.0			6		5401	5418	5419	5436	5437			5437
525						-.145							5402	5417	5420	5435	5438			
526						-.019							5403	5416	5421	5434	5439			
527						.043							5404	5415	5422	5433	5440			
528						.105							5405	5414	5423	5432	5441			
529						.167							5406	5413	5424	5431	5442			
530						.228							5407	5412	5425	5430	5443			
531						.351							5408	5411	5426	5429	5444			
532						.522							5409	5410	5427	5428	5445			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/l	α_i	M_∞	δe_R	δe_P	No. of Runs	DELTA Z/l_B	.119	.151	10.0
RTB 533	MDAC BOOSTER (W/O CANARD)	A	0	50.0	100	-.391	6.0	6.0	0.0	0.0	3		5501	5518	5519
534						-.143							5502	5517	
535						-.019							5503	5516	
536						.043							5504	5515	
537						.105							5505	5514	
538						.167							5506	5513	
539						.229							5507	5512	
540						.351							5508	5511	
541						.522							5509	5510	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A= -10° to +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 55

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_O}	No. of Runs	DELTA Z/ℓ_B .113	.119	.151	.182	.228	.352	.599	.908	1.00
RTR 542	MDHC ORBITER	A	0	0.0	0.0	-.591	0.0	2.0	0.0	0.0	9	4201	3301	3318	3319	3336	3337	3352	3353	3357
543						-.145					9	4202	3302	3317	3320	3335	3338	3351	3354	
544						-.019					8	4203	3303	3316	3321	3334	3339	3350		
545						.043					7	4204	3304	3315	3322	3333	3340			
546						.105					9	4205	3305	3314	3323	3332	3341	3349	3355	
547						.167					7	4206	3306	3313	3324	3331	3342			
548						.228					8	4207	3307	3312	3325	3330	3343	3348		
549						.351					8	4208	3308	3311	3326	3329	3344	3347		
550						.591					9	4209	3309	3310	3327	3328	3345	3346	3356	
551						-.591	5.0				7			3501	3518	3519	3536			3544
552						-.145					7			3502	3517	3520	3535	3538		
553						-.019					6			3503	3516	3521	3534			
554						.043					5			3504	3515	3522	3533			
555						.105					7			3505	3514	3523	3532			
556						.167					5			3506	3513	3524	3531			
557						.228					6			3507	3512	3525	3530			
558						.351					6			3508	3511	3526	3529			
559						.591					7			3509	3510	3527	3528	3543	3544	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_0}	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.577	.906	10.0
AT8560	MDAC ORBITER	A	0	0.0	0.0	-.391	10.0	2.0	0.0	0.0	6				3801	3818	3819	3834	3835	[illegible]
561						-.143					6				3802	3817	3820	3833	3836	
562						-.019					5				3803	3816	3821	3832		
563						.043					4				3804	3815	3822			
564						.105					6				3805	3814	3823	3831	3837	
565						.167					4				3806	3813	3824			
566						.228					5				3807	3812	3825	3830		
567						.351					5				3808	3811	3826	3829		
568						.501					6				3809	3810	3827	3828	3837	
569						-.391	-5.0				8		3701	3718	3719	3736	3737	3752	3753	3756
570						-.143					8		3702	3717	3720	3735	3738	3751	3254	
571						-.019					7		3703	3716	3721	3734	3739	3750		
572						.043					6		3704	3715	3722	3733	3740			
573						.105					8		3705	3714	3723	3732	3741	3749	3755	
574						.167					6		3706	3713	3724	3731	3742			
575						.228					7		3707	3712	3725	3730	3743	3748		
576						.351					7		3708	3711	3726	3729	3744	3747		
577						[illegible]					8		3709	3710	3727	3728	3745	3746	3756	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA DCLM ICN ICA ICBL ICY EYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 57

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_O}	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.599	.908	1.00
RTB578	MDAC ORBITER	A	0	50.0	100.0	-.391	0.0	2.0	0.0	0.0	7		3401	3418	3419	3436	3437	3452		[illegible]
579						-.143					8		3402	3417	3420	3435	3438	3451	3454	
580						-.019					7		3403	3416	3421	3434	3439	3450		
581						.043					6		3404	3415	3422	3433	3440			
582						.105					8		3405	3414	3423	3432	3441	3449	3455	
583						.167					6		3406	3413	3424	3431	3442			
584						.228					7		3407	3412	3425	3430	3443	3448		
585						.351					7		3408	3411	3426	3429	3444	3447		
586						.522					8		3409	3410	3427	3428	3445	3446	3456	
587						-.391	5.0				7			3601	3618	3619	3636	3637	3647	3644
588						-.143					7			3602	3617	3620	3635	3638	3646	
589						-.019					6			3603	3616	3621	3634	3639		
590						.043					5			3604	3615	3622	3633			
591						.105					7			3605	3614	3623	3632	3640	3645	
592						.167					5			3606	3613	3624	3631			
593						.228					6			3607	3612	3625	3630	3641		
594						.351					6			3608	3611	3626	3629	3642		
595						.522					7			3609	3610	3627	3628	3643	3644	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
ALPHAQ	CLM	ICN	ICA	ICBL	CY	ICYN				IDELTAB		7
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS: A = -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/ℓ_B	.119	.151	.182	.228	.352	.599	.908	10.0
RTB596	[illegible] ORBITER	A	0	50.0	100.0	-.391	10.0	2.0	0.0	0.0	6				4001	4018	4019	4034	4035	4038
597						-.143					6				4002	4017	4020	4033	4036	
598						-.019					5				4003	4016	4021	4032		
599						.043					4				4004	4015	4022			
600						.105					6				4005	4014	4023	4031	4037	
601						.167					4				4006	4013	4024			
602						.228					5				4007	4012	4025	4030		
603						.351					5				4008	4011	4026	4029		
604						.501					6				4009	4010	4027	4028	4038	
605				0.0	0.0	-.391	0.0				8		3901	3918	3919	3936	3937	3952	3953	3956
606						-.143					8		3902	3917	3920	3935	3938	3951	3954	
607						-.019					7		3903	3916	3921	3934	3939	3950		
608						.043					6		3904	3915	3922	3933	3940			
609						.105					8		3905	3914	3923	3932	3941	3949	3955	
610						.167					6		3906	3913	3924	3931	3942			
611						.228					7		3907	3912	3925	3930	3943	3948		
612						.351					7		3908	3911	3926	3929	3944	3947		
613						.501					8		3909	3910	3927	3928	3945	3946	3956	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° to +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 59

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/L	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs		DELTA Z/l_B .119	.151	.182	.228	.352	.599	.908	10.0
RTB 614	MDAC ORBITER	A	0	0.0	0.0	-.391	0.0	2.0	20.0	-20.0	8		4401	4414	4415	4429	4430	4441	4442	4445
615						-.143					8		4402	4413	4416	4428	4431	4440	4443	
616						-.081					6		4403	4412	4417	4427		4439		
617						.105					8		4404	4411	4418	4426	4432	4438	4444	
618						.167					5		4405	4410	4419	4424				
619						.351					7		4406	4409	4420	4425	4433	4436		
620						.522					8		4407	4408	4421	4422	4434	4435	4445	
621				50.0	100.0	-.391					8		4501	4518	4519	4537	4538	4553	4554	4557
622						-.143					8		4502	4517	4520	4536	4539	4552	4555	
623						-.019					7		4503	4516	4521	4535	4540	4551		
624						.043					6		4504	4515	4522	4534	4541			
625						.105					8		4505	4514	4523	4533	4542	4550	4556	
626						.167					6		4506	4513	4524	4532	4543			
627						.228					7		4507	4512	4525	4530	4544	4549		
628						.351					7		4508	4511	4526	4529	4545	4548		
629						.522					8		4509	4510	4527	4528	4546	4547	4557	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAP

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_L}	δ_{e_R}	No. of Runs	DELTA Z/ℓ_B	.119
RTB 630	MDAC ORBITER	A	0	0.0	0.0	-.291	0.0	2.0	0.0	0.0	1		4201
631						-.143							4202
632						-.019							4203
633						.043							4204
634						.105							4205
635						.167							4206
636						.228							4207
637						.351							4208
638						.501							4209
639				1600.0		-.291							4101
640						-.143							4102
641						-.019							4103
642						.043							4104
643						.105							4105
644						.167							4106
645						.228							4107
646						.351							4108
647						.501							4109

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 61

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 62

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/l_B	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/l_B	.119							
ATB648?	MDAC ORBITER	A	0	0.0	0.0	-.391	0.0	2.0	20.0	-20.0	1		4801							
649?						-.143							4802							
650?						-.019							4803							
651						.043							4804							
652						.105							4805							
653						.167							4806							
654						.228							4807							
655						.351							4808							
656						.522							4809							
657				100.0		-.391							4901							
658						-.143							4902							
659						-.019							4903							
660						.043							4904							
661						.105							4905							
662						.167							4906							
663						.228							4907							
664						.351							4908							
665						.522							4909							

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA ... CLM ... CN ... CA ... CBL ... CY ... CYN ... IDELTAB ... 7

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

ORIGINAL PAGE IS OF POOR QUALITY

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/L	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/l_B .113	.119	.151	.182	.228	.352	.599	.908	10.0
RT8 666	MDAC ORBITER	A	0	0.0	0.0	-.391	0.0	3.0	0.0	0.0	9	3101	2201	2218	2219	2236	2237	2252	2253	[illegible]
667						-.143					9	3102	2202	2217	2220	2235	2238	2251	2254	
668						-.019					[illegible]	3103	2203	2216	2221	2234	2239	2250		
669						.043					7	3104	2204	2215	2222	2233	2240			
670						.105					9	3105	2205	2214	2223	2232	2241	2249	2255	
671						.167					7	3106	2206	2213	2224	2231	2242			
672						.228					8	3107	2207	2212	2225	2230	[illegible]	[illegible]		
673						.351					8	3108	2208	2211	2226	2229	[illegible]	2247		
674						.501					9	3109	2209	2210	2227	2228	2245	2246	2256	
675						-.391	5.0				8			2401	2418	2419	2436	2437	2447	[illegible]
676						-.145					8			2402	2417	2420	2435	2438	2446	
677						-.019					7			2403	2416	2421	2434	2439		
678						.043					6			2404	2415	2422	2433			
679						.105					8			2405	2414	2423	2432	2440	2445	
680						.167					6			2406	2413	2424	2431			
681						.228					7			2407	2412	2425	2430	2441		
682						.351					7			2408	2411	2426	2429	2442		
683						.532					8			2409	2410	2427	2428	2443	2444	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 63

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	$\Delta X/l_B$	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.352	.599	.908	10.0
RTB684	MDAC ORBITER	A	O	0.0	0.0	-.391	10.0	3.0	0.0	0.0	6				2901	2918	2919	2934	2935	2938
685						-.143					6				2902	2917	2920	2933	2936	
686						-.019					5				2903	2916	2921	2932		
687						.043					4				2904	2915	2922			
688						.105					6				2905	2914	2923	2931	2937	
689						.167					4				2906	2913	2924			
690						.228					5				2907	2912	2925	2930		
691						.351					5				2908	2911	2926	2929		
692						.501					6				2909	2910	2927	2928	2938	
693						-.391	-5.0				8		2601	2618	2619	2636	2637	2652	2653	[illegible]
694						-.143					8		2602	2617	2620	2635	2638	2651	2654	
695						-.019					7		2603	2616	2621	2634	2639	2650		
696						.043					6		2604	2615	2622	2633	2640			
697						.105					8		2605	2614	2623	2632	2641	2649	2655	
698						.167					6		2606	2613	2624	2631	2642			
699						.228					7		2607	2612	2625	2630	[illegible]	2648		
700						.351					7		2608	2611	2626	2629	2644	2647		
701						.502					8		2609	2610	2627	2628	2645	2646	2656	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAZ 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	$\Delta X/\ell_B$	α_i	M_∞	δ_{e_L}	δ_{e_R}	No. of Runs	DELTA Z/ℓ_B .113	.119	.151	.182	.228	.352	.599	.908	10.0
RT8 702	MDAC ORBITER	A	0	50.0	100.0	-.391	0.0	3.0	0.0	0.0	8	3001	2301	2318	2319	2336	2337	2352	2353	[illegible]
703						-.143					7	3002	2302	2317	2320	2335		2351	2354	
704						-.019					7	3003	2303	2316	2321	2334	2339	2350		
705						.043					6	3004	2304	2315	2322	2333	2340			
706						.105					8	3005	2305	2314	2323	2332	2341	2344	2355	
707						.167					6	3006	2306	2313	2324	2331	2342			
708						.228					7	3007	2307	2312	2325	2330	2343	2348		
709						.351					7	3008	2308	2311	2326	2329	2344	2347		
710						.591					8	3009	2309	2310	2327	2328	2345	2346	2356	
711						-.391	5.0				7			2501	2518	2519	2536	2537	2547	[illegible]
712						-.143					7			2502	2517	2520	2535	2538	2546	
713						-.019					6			2503	2516	2521	2534	2539		
714						.043					5			2504	2515	2522	2533			
715						.105					7			2505	2514	2523	2532	2540	2545	
716						.167					5			2506	2513	2524	2531			
717						.228					6			2507	2512	2525	2530	2541		
718						.351					6			2508	2511	2526	2529	2542		
719						.532					7			2509	2510	2527	2528	2543	2544	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° TO +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAP

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 65

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES							No. of Runs	DELTA Z/ℓ_B								
		α	β	PWR	PWR	$\Delta X/\ell_B$	α_i	M_∞	δe_R	δe_L			.119	.151	.182	.228	.358	.599	.908	10.0
RTR720	MDAC ORBITER	A	0	50.0	100.0	-.391	10.0	3.0	0.0	0.0	6				2801	2818	2819	2834	2835	2838
721						-.143					6				2802	2817	2820	2833	2836	
722						-.019					5				2803	2816	2821	2832		
723						.043					4				2804	2815	2822			
724						.105					6				2805	2814	2823	2831	2837	
725						.167					4				2806	2813	2824			
726						.228					5				2807	2812	2825	2830		
727						.351					5				2808	2811	2826	2829		
728						.501					6				2809	2810	2827	2828	2838	
729						-.391	-5.0				8		2701	2718	2719	2736	2737	2752	2753	2756
730						-.143					8		2702	2717	2720	2735	2738	2751	2754	
731						-.019					7		2703	2716	2721	2734	2739	2750		
732						.043					6		2704	2715	2722	2733	2740			
733						.105					8		2705	2714	2723	2732	2741	2749	2755	
734						.167					6		2706	2713	2724	2731	2742			
735						.228					7		2707	2712	2725	2730	2743	2748		
736						.351					7		2708	2711	2726	2729	2744	2747		
737						.522					8		2709	2710	2727	2728	2745	2746	2756	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA QCLM ICN ICA ICBL ICY ICYN DELTAB

COEFFICIENTS: IDFVAR(1) IDFVAR(2) NDV

a or B SCHEDULES A = -10° TO +10° ONE DATA POINT PER DEGREE

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	$\Delta X/l_B$	α	M_∞	δ_{e_B}	δ_{e_O}	No. of Runs	DELTA Z/l_B	.119	.151	.182	.228	.358	.599	.908	10.0
RTB 738	MDAC BOOSTER (BOOSTER ONLY)	A	0	50.0	100.0	-.391	0.0	3.0	0.0	0.0	4		3201	3218	3219					3223
739						-.145					4		3202	3217	3220					
740						-.019					3		3203	3216						
741						.043					3		3204	3215						
742						.105					4		3205	3214	3221					
743						.167					3		3206	3213						
744						.228					3		3207	3212						
745						.351					3		3208	3211						
746						.522					4		3209	3210	3222					
747	MDAC ORBITER (PWR = [illegible])					-.391					8		5201	5218	5219	5236	5237	5252	5253	5256
748						-.145					8		5202	5217	5220	5235	5238	5251	5254	
749						-.019					7		5203	5216	5221	5234	5239	5250		
750						.043					6		5204		5222	5233	5240			
751						.105					8		5205	5214	5223	5232	5241	5249	5255	
752						.167					6		5206	5213	5224	5231	5242			
753						.228					7		5207	5212	5225	5230	5243	5248		
754						.357					7		5208	5211	5226	5229	5244	5247		
755						.522					8		5209	5210	5227	5228	5245	5246	5256	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 67

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/L	α_i	M_∞	δe_L	δe_R	No. of Runs	DELTA Z/ℓ_B .113
RTB 756	MDAC BOOSTER	A	0	100.0	0.0	-.591	0.0	3.0	0.0	0.0	1	5001
757						-.143						5002
758						-.019						5003
759						.043						5004
760						.105						5005
761						.167						5006
762						.228						5007
763						.351						5008
764						.522						5009
765				0.0	0.0	-.591						5101
766						-.143						5102
767						-.019						5103
768						.043						5104
769						.105						5105
770						.167						5106
771						.228						5107
772						.351						5108
773						.522						5109

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHADCLM ICN ICA ICBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A= -10° TO +10° ONE DATA POINT PER DEGREE

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α	M_∞	δ_{eB}	δ_e	No. of Runs		DELTA Z/ℓ_B .119	.151	.187	.226	.352	.597	.908	10.0
RTR 774	[illegible] ORBITER	A	0	50.0	1000	-.351	0.0	4.0	0.0	0.0	7		5301	5318	5319	5336	5337	5352		[illegible]
775						-.145					7		5302	5317	5320	5335	5338	5351		
776						-.019					7		5303	5316	5321	5334	5339	5350		
777						.043					6		5304	5315	5322	5333	5340	—		
778						.105					7		5305	5314	5323	5332	5341	[illegible]		
779						.167					6		5306	5313	5324	5331	[illegible]			
780						.228					7		5307	5312	5325	5330	[illegible]	5348		
781						.351					7		5308	5311	5326	5329	5344	5347		
782						.522					7		5309	5310	5327	5328	5345	5346		
783						-.351		6.0			6		5401	5418	5419	[illegible]	5437			[illegible]
784						-.145							5402	5417	5420	5435	5438			
785						-.019							5403	5416	5421	5434	5439			
786						.043							5404	5415	5422	5433	5440			
787						.105							5405	5414	5423	5432	5441			
788						.167							5406	5413	5424	5431	5442			
789						.228							5407	5412	[illegible]	5430	5443			
790						.351							5408	5411	5426	5429	5444			
791						.522							5409	5410	5427	5428	5445			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A = -10° TO +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITE
MDAC
DR#1108 C-1- 69

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 70

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
■ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	$\Delta X/\ell_B$	α_i	M_∞	δe_R	δe_L	No. of Runs	DELTA Z/ℓ_B .119	.151	10.0
RTB 792	MDAC [illegible]	A	0	50.0	[illegible]	-.581	0.0	6.0	0.0	0.0	3	5501	5578	5579
793						-.149						5502	5577	
794						-.019						5503	5576	
795						.043						5504	5575	
796						.105						5505	5574	
797						.167						5506	5573	
798						.228						5507	5512	
799						.351						5508	5511	
800						.522						5509	5510	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB

COEFFICIENTS: IDVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A= -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{eR}	δ_{eL}	No. of Runs	DELTA Z/ℓ_B .113	.149	.151	.182	.228	.352	.579	.908
RTB801	MDAC ORBITER	A	0	0.0	0.0	-.591	0.0	2.0	0.0	0.0	8	3356	3356	3356	3356	3356	3356	3356	3356
802							5.0		0.0	0.0		3544	3544	3544	3544	3544	3544	3544	3544
803							10.0		0.0	0.0		3838	3838	3838	3838	3838	3838	3838	3838
804							0.0		20.0	-20.0		4445	4445	4445	4445	4405	4445	[illegible]	4445
805							0.0		0.0	0.0		3956	3956	3956	3956	3956	3956	[illegible]	3956
806				50.0	100.0		0.0		0.0	0.0		3456	3456	3456	3456	3456	3456	3456	3456
807							5.0		0.0	0.0		3644	3644	3644	3644	3644	3644	3644	3644
808							10.0		0.0	0.0		4038	4038	4038	4058	4038	4031	4032	4038
809							0.0		20.0	-20.0		4557	4557	4557	4557	4557	4557	4557	4557
810				0.0	0.0		-5.0		0.0	0.0		3756	3756	3756	3756	3756	3756	3756	3756
811							5.0	3.0				2444	2444	2444	2444	2444	2444	2444	2444
812							10.0					2938	2938	2938	2938	2931	2938	2938	2938
813				50.0	100.0		0.0					2356	2356	2356	2356	2356	2356	2356	2356
814							5.0					2544	2544	2544	2544	2544	2544	2544	2544
815							10.0					2838	2838	2838	2835	2838	2835	2838	2831
816							-5.0					2756	2756	2756	2756	2756	2756	2756	2756
817				0.0	0.0		-5.0					2656	2656	2656	2656	2656	2656	2656	2656
818	MDAC ORBITER (P...)			50.0	100.0		0.0					5256	5256	5256	5256	5256	5356	5256	5256

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA BCLM ICN ICA ICBL CY CYN DELTAB 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: A = -10° to +10° ONE DATA POINT PER DEGREE

α or β SCHEDULES

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 71

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TEST VA 1163 DATA SET COLLATION SHEET

■ PRETEST
■ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWC	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_B}	δ_{e_0}	No. of Runs	DELTA Z/ℓ_B .119	.151	.182	.228	.352	.599	.908
RTB819	MDAC ORBITER	A	0	0.0	0.0	-.371	0.0	5.0	0.0	0.0	7	361	361	361	361	361	361	361
820							5.0					640	640	640	640	640	640	640
821							10.0					1128	1128	1128	1128	1128	1128	1128
822							-5.0					740	740	740	740	740	740	740
823				50.0	100.0		0.0					460	460	460	460	460	460	460
824							5.0					540	540	540	540	540	540	540
825							10.0					1029	1029	1029	1029	1029	1029	1029
826							-5.0					847	847	847	847	847	847	847
827							-10.0					1228	1228	1228	1228	1228	1228	1228
828				100.0	100.0		0.0					1334	1334	1334	1334	1334	1334	1334
829							5.0					1527	1527	1527	1527	1527	1527	1527
830				70.0	50.0		0.0					1834	1834	1834	1834	1834	1834	1834
831							5.0					1627	1627	1627	1627	1627	1627	1627
832				0.0	0.0		0.0		20.0	-20.0		1934	1934	1934	1934	1934	1934	1934
833				50.0	100.0		0.0	4.0	0.0	0.0		5346	5346	5346	5346	5346	5346	5346
834				50.0	100.0		0.0	6.0				5445	5445	5445	5445	5445	5445	5445

1 7 13 19 25 31 37 43 49 55 61 67 75

ALPHA CLM CN CA CBL CY CYN ... IDELTA

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

ORIGINAL PAGE IS OF POOR QUALITY

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	ΔX/ℓ	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs	DELTA Z/ℓ_B -.113	.119	.151	.182	.226	.352	.599	.908	
ATB835	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	3.0	0.0	0.0	8	3353	3353	3353	3353	3353	3353	3353	3353	
837							10.0					3835	3835	3835	3835	3835	3835	3835	3835	
838							-5.0					3753	3753	3753	3753	3753	3753	3753	3753	
839				50.0	100.0		0.0					3454	3454	3454	3454	3454	3454	3454	3454	
840							5.0					3647	3647	3647	3647	3647	3647	3647	3647	
841							10.0					4035	4035	4035	4035	4035	4035	4035	4035	
842				0.0	0.0		0.0					3953	3953	3953	3953	3953	3953	3953	3953	
843							0.0		20.0	-20.0		4442	4442	4442	4442	4442	4442	4442	4442	
844				50.0	100.0		0.0		20.0	-20.0		4554	4554	4554	4554	4554	4554	4554	4554	
845				0.0	0.0		0.0	3.0	0.0	0.0		2353	2353	2353	2353	2353	2353	2353	2353	
846							5.0					2447	2447	2447	2447	2447	2447	2447	2447	
847							10.0					2935	2935	2935	2935	2935	2935	2935	2935	
848							-5.0					2653	2653	2653	2653	2653	2653	2653	2653	
849				50.0	100.0		0.0					2353	2353	2353	2353	2353	2353	2353	2353	
850							5.0					2547	2547	2547	2547	2547	2547	2547	2547	
851							10.0					2835	2835	2835	2835	2835	2835	2835	2835	
852							-5.0					2753	2753	2753	2753	2753	2753	2753	2753	
853	MDAC BOOSTER (NO CANARD)						0.0					3223	3223	3223	3223	3223	3223	3223	3223	
854	MDAC BOOSTER (Pos=SB.)						0.0					5253	5253	5253	5253	5253	5253	5253	5253	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA CLM CN CA CBL CY CYN DELTAB 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

CANARD BOOSTER
MDAC
DELTA WING ORBITE
MDAC
DR#1108 C-1-73

TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PWR	PWR	AX/L	α_i	M_∞	δ_{e_R}	δ_{e_L}	No. of Runs		DELTA Z/l_B .119	.151	.182	.228	.352	.599	.908	
RTB 855	MDAC BOOSTER	A	0	0.0	0.0	-.391	0.0	5.0	0.0	0.0	7		355	355	355	355	355	355	355	
856							5.0						637	637	637	637	637	637	637	
857							10.0						1131	1131	1131	1131	1131	1131	1131	
858							-5.0						737	737	737	737	737	737	737	
859				50.0	100.0		0.0						454	454	454	454	454	454	454	
860							5.0						537	537	537	537	537	537	537	
861							10.0						1032	1032	1032	1032	1032	1032	1032	
862							-5.0						850	850	850	850	850	850	850	
863							-10.0						1231	1231	1231	1231	1231	1231	1231	
864				100.0	100.0		0.0						1334	1334	1334	1334	1334	1334	1334	
865							5.0						1527	1527	1527	1527	1527	1527	1527	
866				50.0	50.0		0.0						1834	1834	1834	1834	1834	1834	1834	
867							5.0						1627	1627	1627	1627	1627	1627	1627	
868				0.0	0.0		0.0		20.0	-20.0			1934	1934	1934	1934	1934	1934	1934	
869				50.0	100.0			4.0	0.0	0.0			5352	5352	5352	5352	5352	5352	5352	
870								6.0					5437	5437	5437	5437	5437	5437	5437	
871	MDAC BOOSTER (NO CANARD)							6.0					5519	5519	5519	5519	5519	5519	5519	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

ALPHA DCLM CN CA CBL CY CYN DELTAB 1

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A = -10° to +10° ONE DATA POINT PER DEGREE

NASA-MSFC-MAF

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TEST VA 1163 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES PWR	PWR	AX/L	α_i	δe	δe_o	AZ/L	No. of Runs	MACH NUMBER 2.0	3.0	5.0
RTB 872	MDAC LAUNCH (ONE BALANCE)	A	0	100.0	0.0	.104	0.0	0.0	0.0	.105	3	5701	5701	5601
873	MDAC LAUNCH (ONE BALANCE)	↓	↓	0.0	↓	↓	↓	↓	↓	↓	3	5702	5702	5602
874	MDAC LAUNCH (ONE BALANCE NO CANARD)	↓	↓	100.0	↓	↓	↓	↓	↓	↓	1	5901		
875	MDAC LAUNCH (NO CANARD ONE BALANCE)	↓	↓	0.0	↓	↓	↓	↓	↓	↓	1	5902		
876	MDAC ORBITER (NO GRIT)	↓	↓	—	0.0	—	—	—	0.0	—	2		102	103
877	MDAC ORBITER (GRIT ON)	↓	↓	—	0.0	—	—	—	0.0	—	2		101	105
878	MDAC ORBITER ($R=1.0\times10^6$)	↓	↓	—	0.0	—	—	—	0.0	—	1			106
879	MDAC ORBITER ($R=4.0\times10^6$)	↓	↓	—	0.0	—	—	—	0.0	—	1			105
880	MDAC BOOSTER (NO GRIT)	↓	↓	0.0	—	—	—	0.0	—	—	2		102	103
881	MDAC BOOSTER (GRIT ON)	↓	↓	0.0	—	—	—	0.0	—	—	2		101	105
882	MDAC BOOSTER ($R=1.0\times10^6$)	↓	↓	0.0	—	—	—	0.0	—	—	1			106
883	MDAC BOOSTER ($R=4.0\times10^6$)	↓	↓	0.0	—	—	—	0.0	—	—	1			105

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM, CN, CA, CBL, CY, CYN 6

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A = −10° to +10° ONE DATA POINT PER DEGREE

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CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1-75

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CANARD BOOSTER
MDAC
DELTA WING ORBITEI
MDAC
DR#1108 C-1- 76

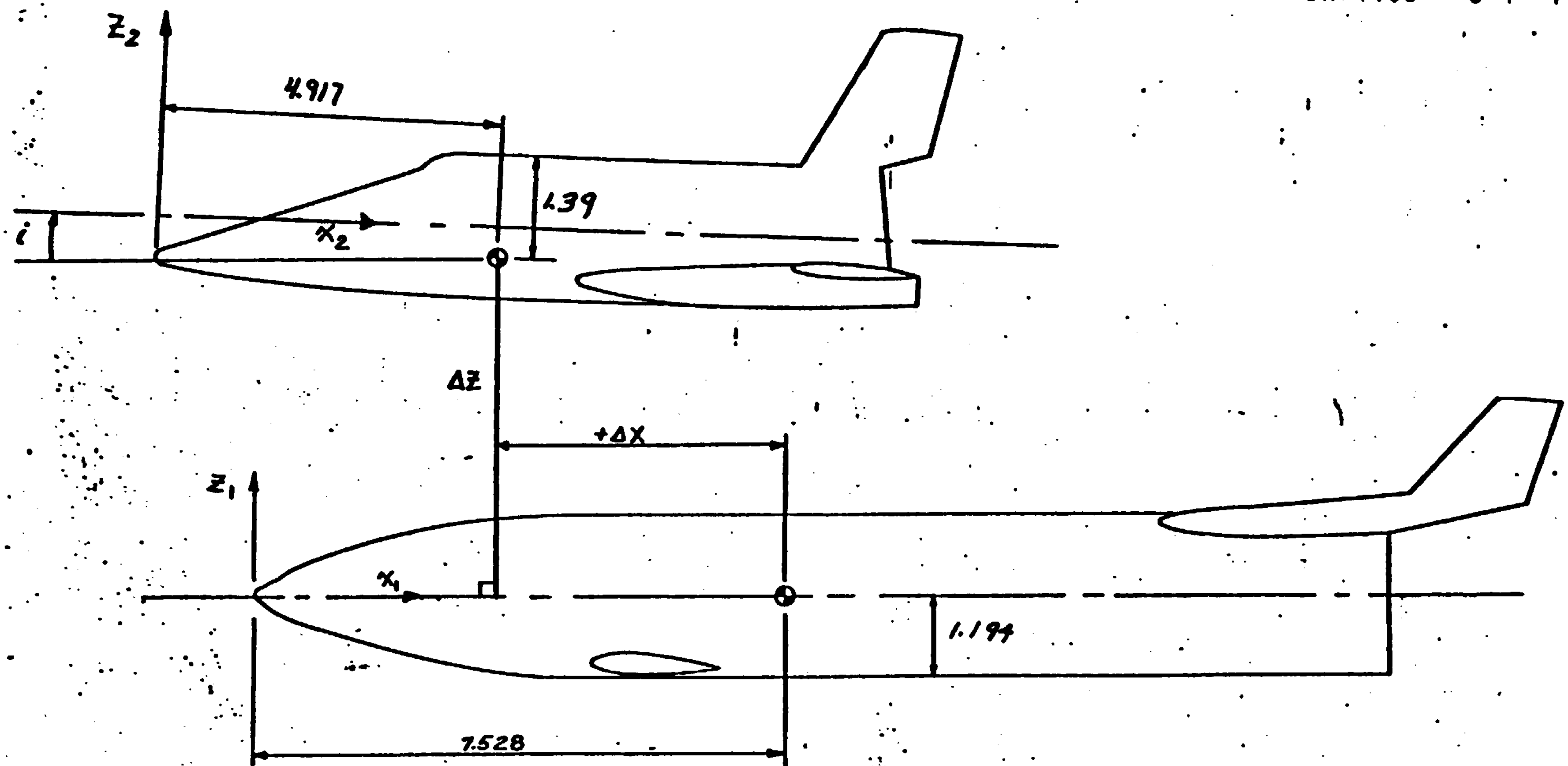

Fig. 2 - Separation Nomenclature and Moment Reference Points

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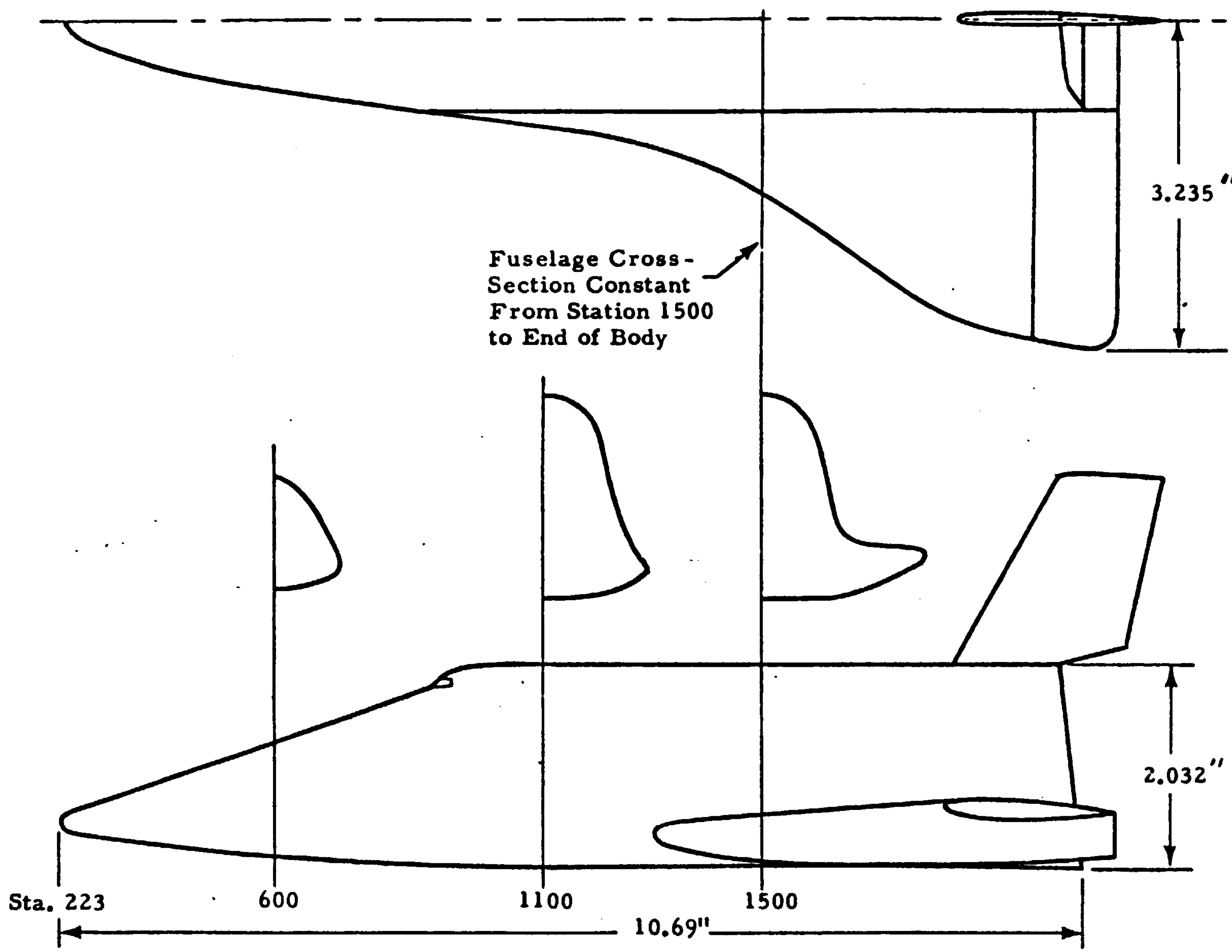

Fig. 4 - Modifications to Orbiter Model

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 77

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1108 C-1- 78

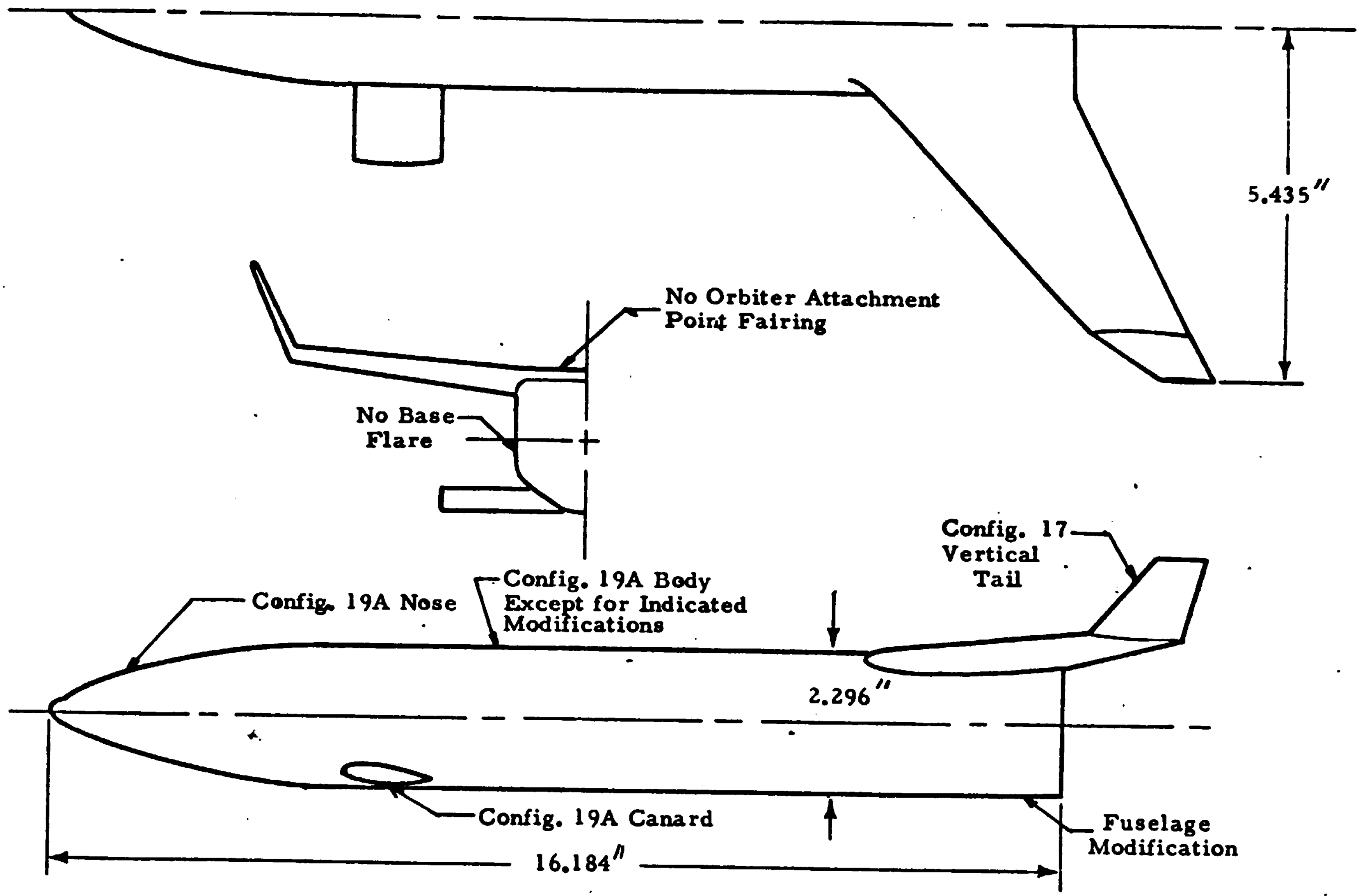

Fig. 5 - Modifications to Booster Model

TABLE I

TEST ARC6x6 - 5.2 DATA SET COLLATION SHEET

L5 = B3N12W5E3J6F4V6R6
L6 = B3N12W5E3J6F4V7R7
L7 = B4N12W5E3J6F4V6R6

01 = B5W11EV6R6

FWD = 1
NOM = 2.
AFT = 3.

POS = POSITION
INC = INCLINATION

1, PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER CON. DEFL. δ_a	BOOSTER CON. DEFL. δ_e	BOOSTER CON. DEFL. δ_r	BOOSTER CON. DEFL. δ_I	ORB. CON. DEFL. δ_a	ORB. CON. DEFL. δ_e	ORB. CON. DEFL. $\delta_\circ$	ORB. POS. Pos	ORB. POS. Inc	NO. OF RUNS	MACH .6	MACH .85	MACH 1.2	MACH 1.5	MACH 2.0
RACL01	B3N12 / B5	A	0	—	—	—	—	—	—	—	NOM	0	5	59	58	57	56	55
L02	↓	↓	5	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	54	53	52	51	50
L03	B3N12W5E3/B5		0	0	0		3							64	63	62	61	60
L04	↓		5										4	49	48	47	X	46
L05	B3N12W5E3/B5W11E		0					0	0				5	79	78	77	76	75
L06	↓		5											35	34	33	32	31
L07	B3N12W5E3V6R6/B5W11E		0			0								74	73	72	71	70
L08	↓		5			↓								40	39	38	37	36
L09	B3N12W5E3J6F4/B5W11E		0			—								84	83	82	81	80
L10			5											30	29	28	27	26
L11	/01		0							0				89	88	87	86	85
L12	↓		5											20	19	18	17	16
L13	L5 / B5V6R6		0			0		—	—					69	68	67	66	65
L14	↓		5					↓	↓					45	44	43	42	41
L15	L5/01		0					0	0					94	93	92	91	90
L16		↓	5										↓	10	9	8	7	6
L17	↓	B	0										1	163	X	X	X	X
L18	L6/01	A	0										5	99	98	97	96	95
L19	↓		5		↓									15	14	13	12	11
L20	L5/01	↓	0	↓	-20	↓	↓	↓	↓	↓	↓	↓	↓	104	103	102	101	100

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CN	CAC	CAB	CLM	CY	CYN	CBL	CL	CDF	L/D	MACH	ALPHA	10	
										IDPVAR(1)	IDPVAR(2)	NDV.	

COEFFICIENTS:
α OR β
SCHEDULES

A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10
B = -8, -6, -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 23
C = -23, -20, -18, -16, -14, -12, -10, -8, -6, -4, -2, 0, 2, 4, 6, 8

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 79

Attachment 1

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TABLE I (Continued)

TEST ARC 6x6 - 512 DATA SET COLLATION SHEET

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1-80

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER CON. DEFL. δ_a	δ_e	δ_r	δ_Σ	ORB. CON. DEFL. δ_a	δ_e	δ_f	ORB. POS. Pos	Inc	NO. OF RUNS	MACH NUMBERS .6	.85	1.2	1.5	2.0
RAC L21	L5/01	A	0	0	-10	0	3	0	0	0	NOM	0	5	133	132	131	130	129
L22					10									123	122	121	120	119
L23					20									118	117	116	115	114
L24				20	0									128	127	126	125	124
L25				40										113	112	111	110	109
L26				0					-15					142	141	140	139	138
L27									+15					147	146	145	144	143
L28	L5/B5W11V6RL							-	-					152	151	150	149	148
L29	L7/01						0	0	0				4	108	107	106	X	105
L30			5										5	5	4	3	2	1
L31	L5/01		0				3					2		162	161	160	159	158
L32												4		157	156	155	154	153
L33											FWD	0		249	248	247	246	245
L34												2		244	243	242	241	240
L35												4		239	238	237	236	235
L36											AFT	0		224	223	222	221	220
L37												2		229	228	227	226	225
L38												4		234	233	232	231	230
L39	L5/01	C	0	0	0	0	3	0	0	0	NOM	0	1	164				

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CA	CAB	CLM	CY	CYN	CBL	CL	CDF	L/D	MACH	ALPHA	10
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α OR β

SCHEDULES

NOTE: FWD = (NOM − 3")
AFT = (NOM + 3")

Attachment 1

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TABLE I (Continued)

TEST ARC6x6 - 512 DATA SET COLLATION SHEET

PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER CON. DEFL. δ_a	δ_e	δ_r	δ_I	ORB. CON. DEFL. δ_a	δ_e	δ_r	ORB. POS Pos	ORB. POS Inc	NO. OF RUNS	MACH .6	.85	1.2	1.5	2.0
RAC L40	L5/01	0	A	0	0	0	3	0	0	0	NOM	0	5	169	168	167	166	165
L41		-5												204	203	202	201	200
L42		5	↓										↓	209	208	207	206	205
L43	↓	0	B										1	169	X	X	X	X
L44	L6/01		A			↓							5	189	188	187	186	185
L45	↓					-10								194	193	192	191	190
L46	L5/01					↓				↓				174	173	172	171	170
L47	↓					0				10				179	178	177	176	175
L48	L5/B5W11EV6									—		↓		184	183	182	181	180
L49	L5/01									0	↓	4		199	198	197	196	195
L50											FWD	0		214	213	212	211	210
L51		↓	↓	↓	↓	↓	↓				AFT			219	218	217	216	215
L52	↓	A	5	0	0	0	3			↓	NØM		↓	25	24	23	22	21
L53	B3N1R/B5W11E	A	0	—	—	—	—			—	NØM		4	137	136	135	X	134
L54	L5/01 + PLUME	A	0	0	0	0	3	↓	↓	0	FWD	↓	2	X	X	251	X	250

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CN	CAC	CAB	CLM	CY	CYN	CBL	CL	CDF	L/D	MACH	BETA		10

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α OR β

SCHEDULES

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 81

Attachment 1

TABLE I (Continued)

TEST ARC 6x6 - 512 DATA SET COLLATION SHEET

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR# 1118   C-1- 82

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER CON. DEFL. δ_a	δ_e	δ_r	δ_I	ORB. CON. DEFL. δ_a	δ_e	δ_r	ORB. POS. POS	INC	NO. OF RUNS	MACH NUMBERS .6	.85	1.2	1.5	2.0
RAC001	B3N12/B5	A	0	—	—	—	—	—	—	—	NOM	0	5	59	58	57	56	55
002	↓		5	↓	↓		↓							54	53	52	51	50
003	B3N12W5E3/B5		0	0	0		3						↓	64	63	62	61	60
004	↓		5					↓	↓				4	49	48	47	X	46
005	B3N12W5E3/B5W11E		0					0	0				5	79	78	77	76	75
006	↓		5			↓								35	34	33	32	31
007	B3N12W5E3V6R6/B5W11E		0			0								74	73	72	71	70
008	↓		5			↓								40	39	38	37	36
009	B3N12W5E3V6F4/B5W11E		0			—								84	83	82	81	80
010	↓		5							↓				30	29	28	27	26
011	/01		0							0				89	88	87	86	85
012	↓		5			↓		↓	↓					20	19	18	17	16
013	L5/B5V6R6		0			0		—	—					69	68	67	66	65
014	↓		5					↓	↓					45	44	43	42	41
015	L5/01		0					0	0					94	93	92	91	90
016		↓	5										↓	10	9	8	7	6
017	↓	B	0										1	163	×	×	×	×
018	L6/01	A	0										5	99	98	97	96	95
019	↓		5		↓									15	14	13	12	11
020	L5/01	↓	0	↓	-20	↓	↓	↓	↓	↓	↓	↓	↓	104	103	102	101	100

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CNC	CAF	CAB	CLM	CY	CYN	CBL	CL	CDF	MACH	ALPHA	10
										IDPVAR(1)	IDPVAR(2)	NDV.

COEFFICIENTS: α OR β SCHEDULES

A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

B = -8, -6, -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 23

C = -23, -20, -18, -16, -14, -12, -10, -8, -6, -4, -2, 2, 4, 6, 8

4/6

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Attachment 1

TABLE I (Continued)

TEST ARC 6x6 - 512 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER CON. DEFL. δ_a	BOOSTER CON. DEFL. δ_e	BOOSTER CON. DEFL. δ_r	BOOSTER CON. DEFL. δ_I	ORB. CON. DEFL. δ_a	ORB. CON. DEFL. δ_e	ORB. CON. DEFL. δ_r	ORB. POS. POS	ORB. POS. INC	NO. OF RUNS	MACH NUMBERS .6	.85	1.2	1.5	2.0
RAC021	L5/01	A	0	0	-10	0	3	0	0	0	NOM	0	5	133	132	131	130	129
022					10									123	222	121	120	119
023				↓	20									118	117	116	115	114
024				20	0				↓					128	127	126	125	124
025				40										113	112	111	110	109
026				0					-15					142	141	140	139	138
027	↓							↓	+15					147	146	145	144	143
028	L5/B5W11V6R6						↓	–	–				↓	152	151	150	149	148
029	L7/01		↓				0	0	0				4	108	107	106	X	105
030	↓		5				↓					↓	5	5	4	3	2	1
031	L5/01		0				3					2		162	161	160	159	158
032	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	4	↓	157	156	155	154	153
039	L5/01	C	0	0	0	0	3	0	0	0	NOM	0	1	164	X	X	X	X

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CNC	CA	CAB	CLM	CY	CYN	CBL	CL	CDF	MACH	ALPHA	10
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS: ______

α OR β ______

SCHEDULES ______

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 83

Attachment 1

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MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 84

TABLE I (Concluded)

TEST ARC6x6 - 512 DATA SET COLLATION SHEET

■ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER CON. DEFL. δ_a	BOOSTER CON. DEFL. δ_e	BOOSTER CON. DEFL. δ_r	BOOSTER CON. DEFL. δ_I	ORB. CON. δ_a	ORB. CON. δ_e	DEFL. δ_r	ORB. POS Pos	ORB. POS Inc	NO. OF RUNS	MACH NUMBERS .6	.85	1.2	1.5	2.0
RAC040	L5/01	0	A	0	0	0	3	0	0	0	NOM	0	5	169	168	167	166	165
041	↓	-5	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	204	203	202	201	200
042	↓	5	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	209	208	207	206	205
043	↓	0	B	↓	↓	↓	↓	↓	↓	↓	↓	↓	1	169	X	X	X	X
044	L6/01	↓	A	↓	↓	↓	↓	↓	↓	↓	↓	↓	5	189	188	187	186	185
045	↓	↓	↓	↓	↓	-10	↓	↓	↓	↓	↓	↓	↓	194	193	192	191	190
046	L5/01	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	174	173	172	171	170
047	↓	↓	↓	↓	↓	0	↓	↓	↓	10	↓	↓	↓	179	178	177	176	175
048	L5/B5W11EVC	↓	↓	↓	↓	↓	↓	↓	↓	—	↓	↓	↓	184	183	182	181	180
049	L5/01	↓	↓	↓	↓	↓	↓	↓	↓	0	↓	4	↓	199	198	197	196	195
052	↓	A	5	↓	↓	↓	↓	↓	↓	0	↓	0	↓	25	24	23	22	21
053	B3N12/B5W11E	A	0	—	—	—	—	↓	↓	—	↓	0	4	137	136	135	X	134

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CN	CNS	CA	CAB	CLM	CY	CYN	CBL	CL	CDF	MACH	BETA		10
										IDPVAR(1)	IDPVAR(2)		NDV

COEFFICIENTS:
α CR β
SCHEDULES

Attachment 1

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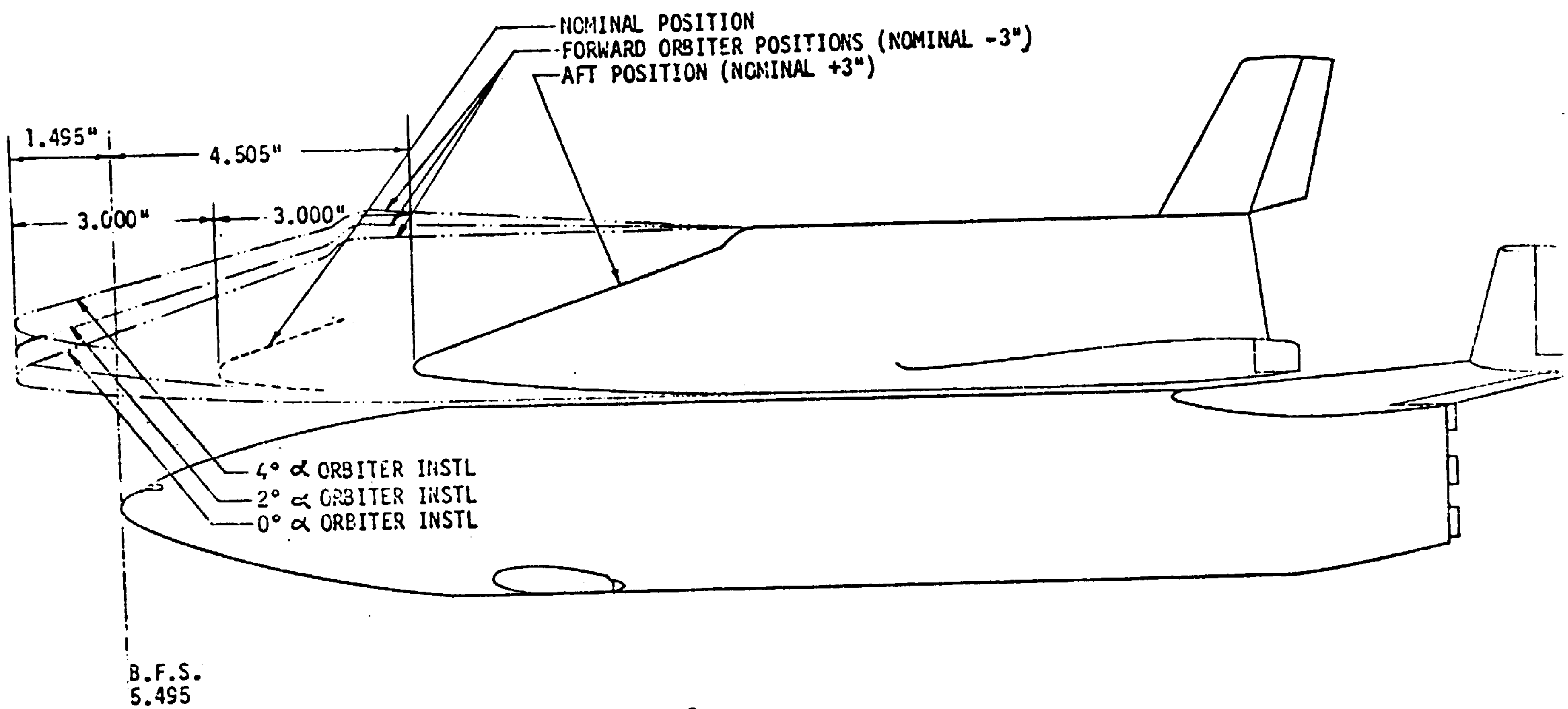
6/6

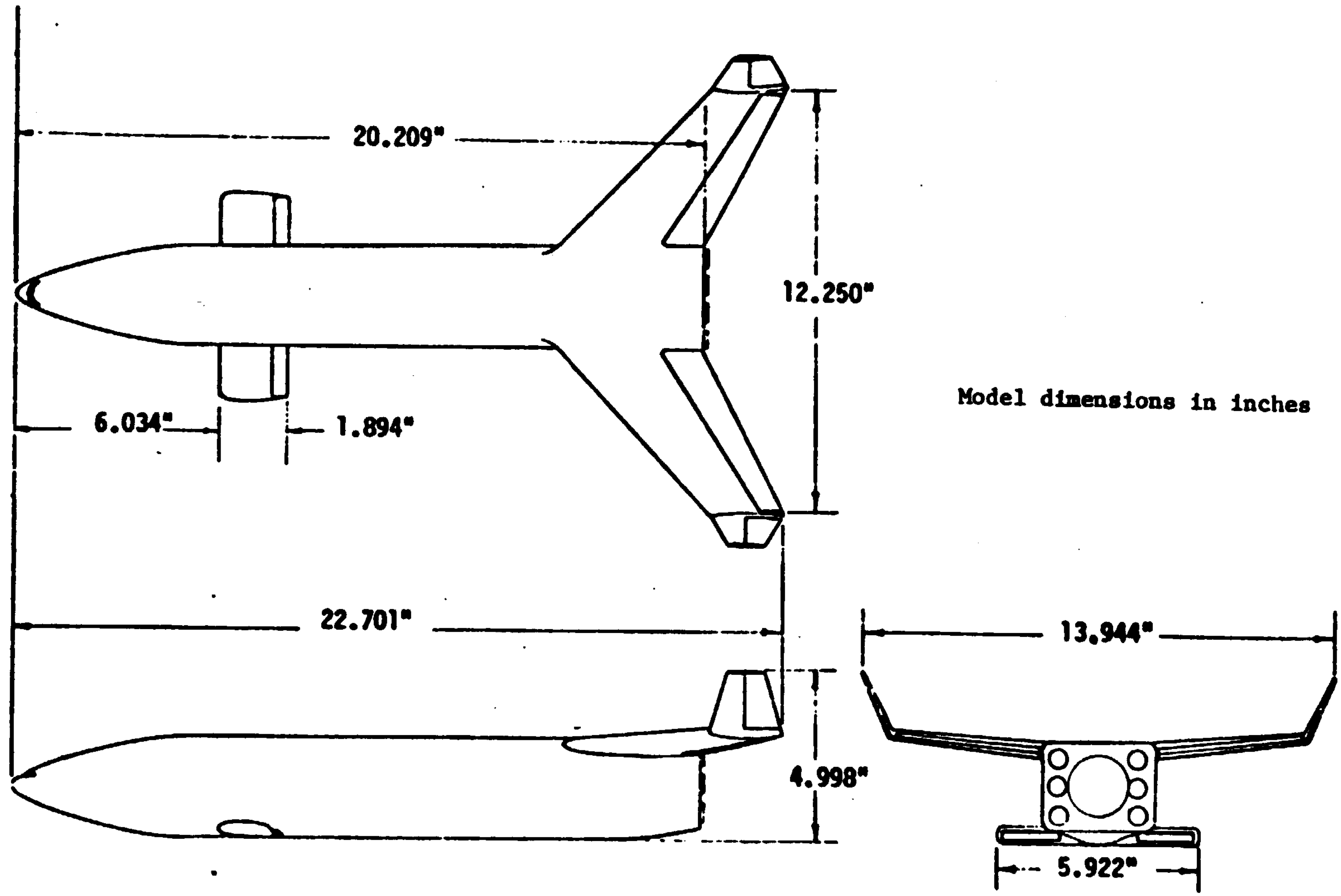
NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



ORBITER SHOWN IN AFT (NOMINAL +3") BOLTED DOWN POSITION
WITH NOMINAL AND FORWARD (NOMINAL -3") POSITIONS INDICATED

Figure B.- Space Shuttle Ascent Configuration

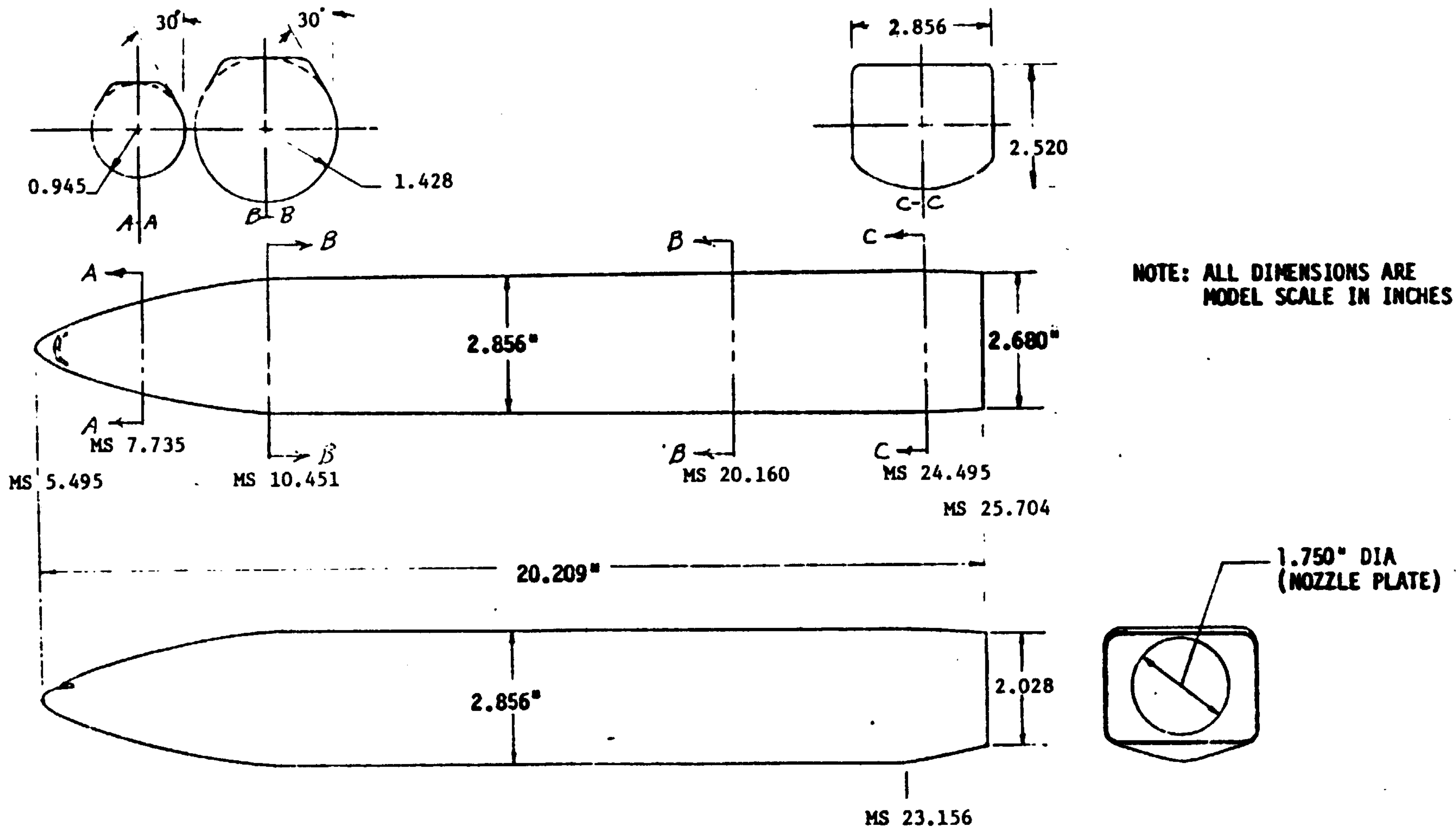
CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 85



Model dimensions in inches

(a) Three View

Figure E- Space Shuttle Booster (L5)



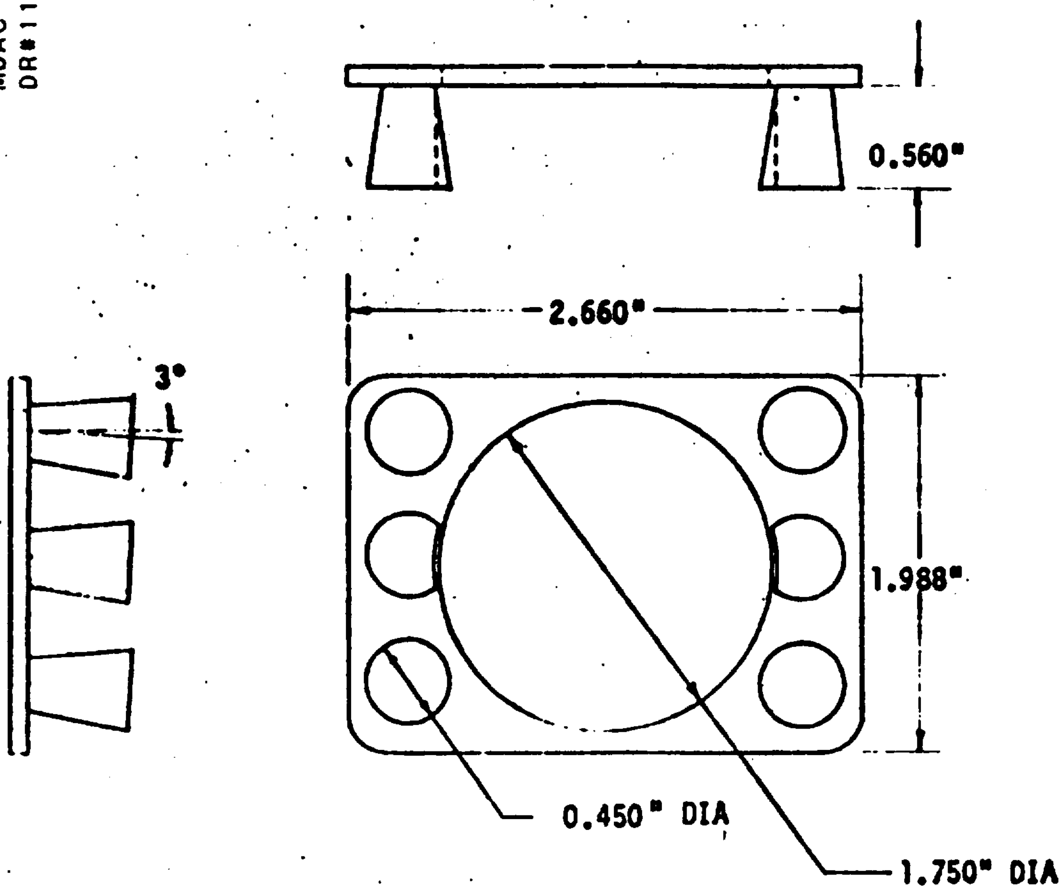
(b) Booster Body (B3)

Figure E.- continued

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 87

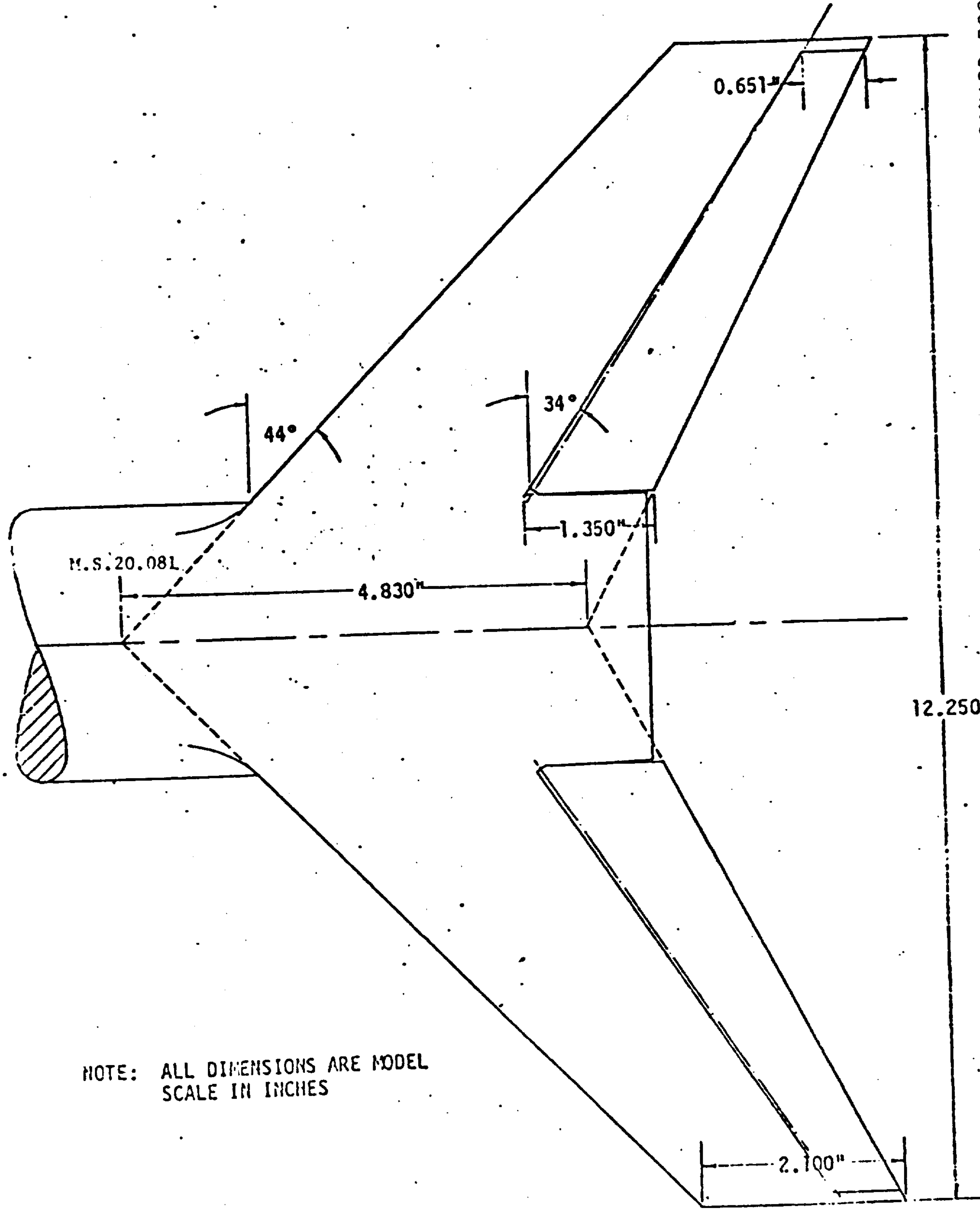
CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 88

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



(c) Booster Nozzle Plate N12 Nozzles

Figure E.- continued

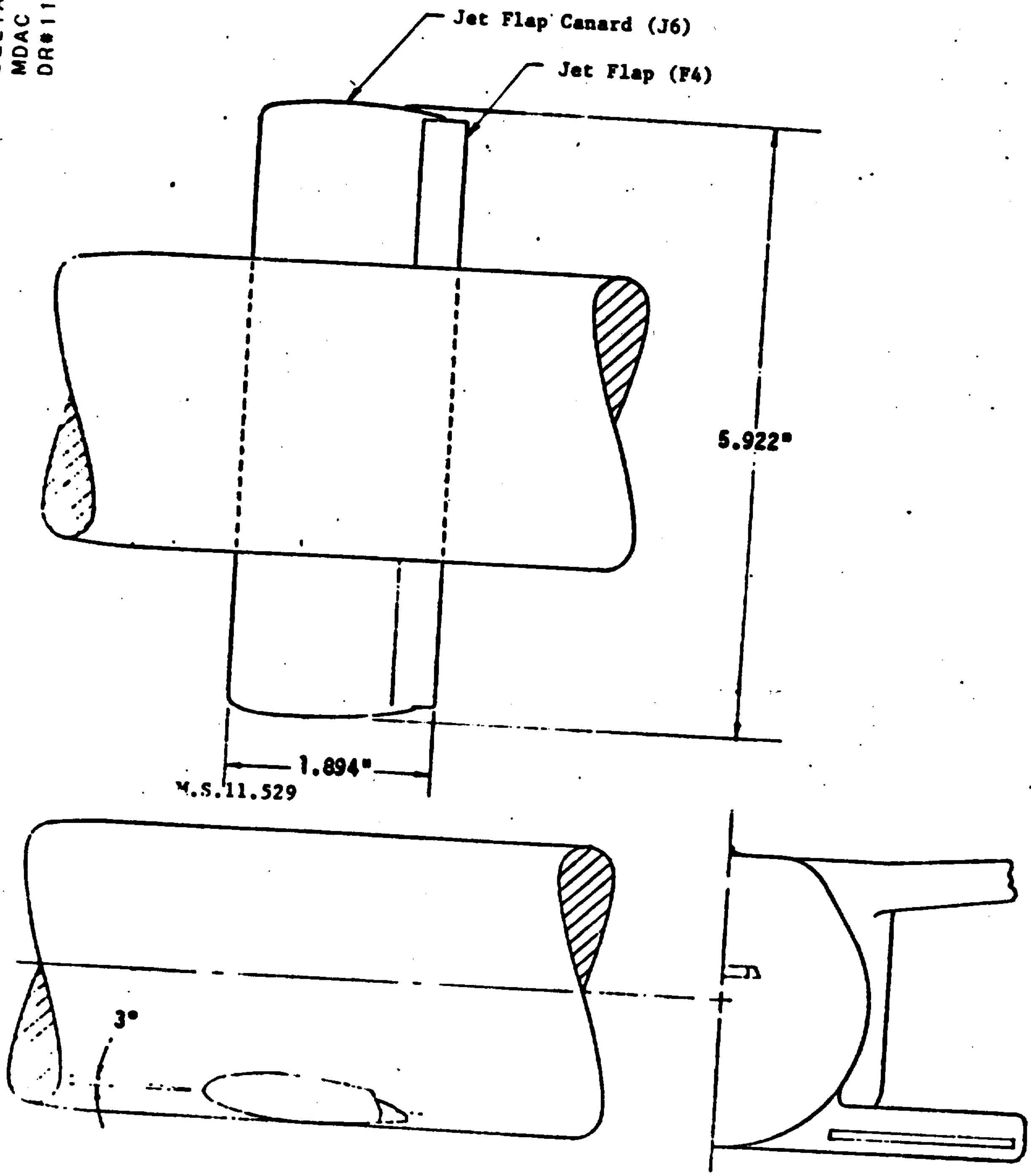


NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

(d) Booster Wing (W5), Elevon (E3)

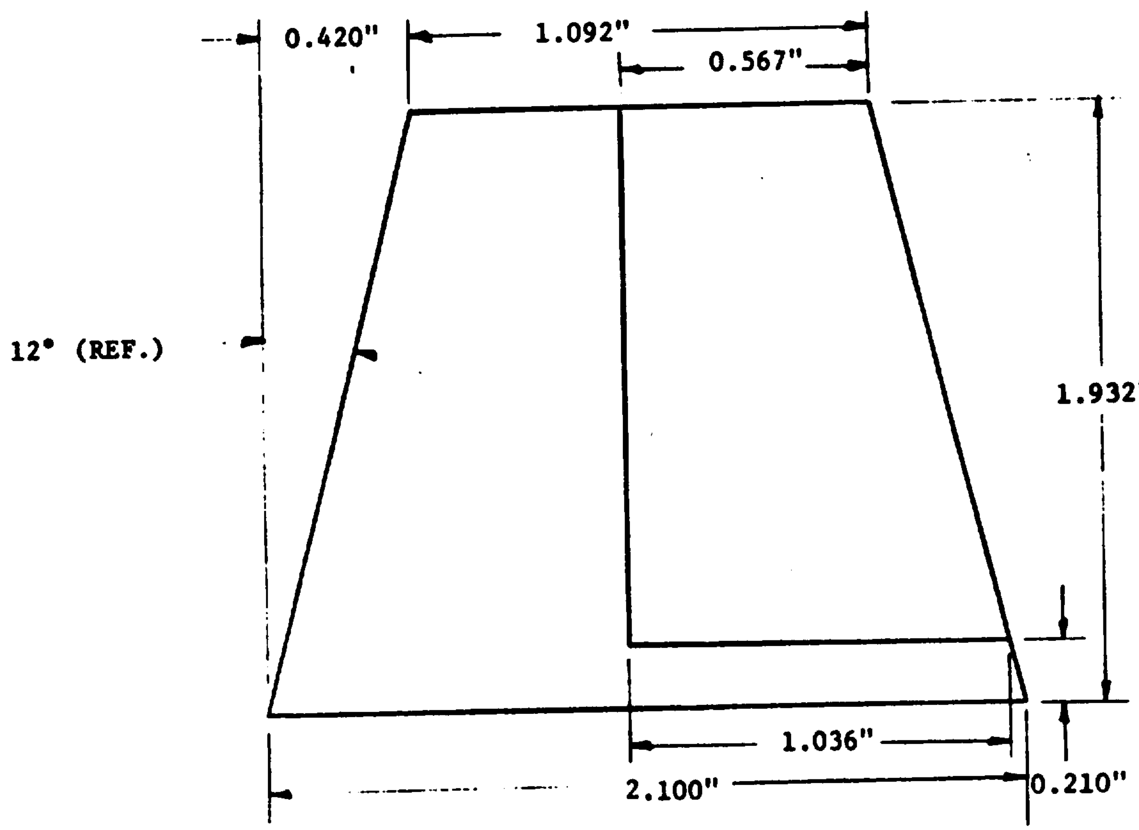
Figure E.- continued

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



(e) Booster Jet Flap Canard (J6), Jet Flap (F4)
Figure E.- continued

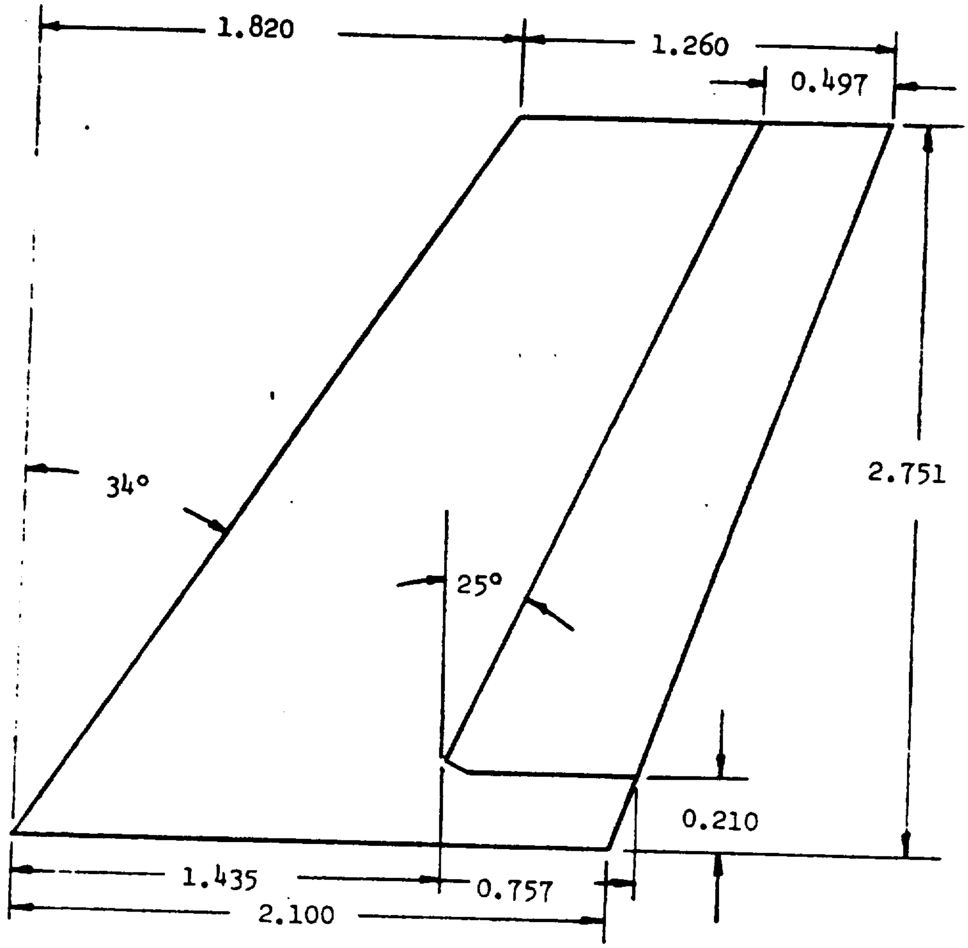
Model dimensions in inches



(f) Booster Wing Tip Vertical V6, Rudder R6

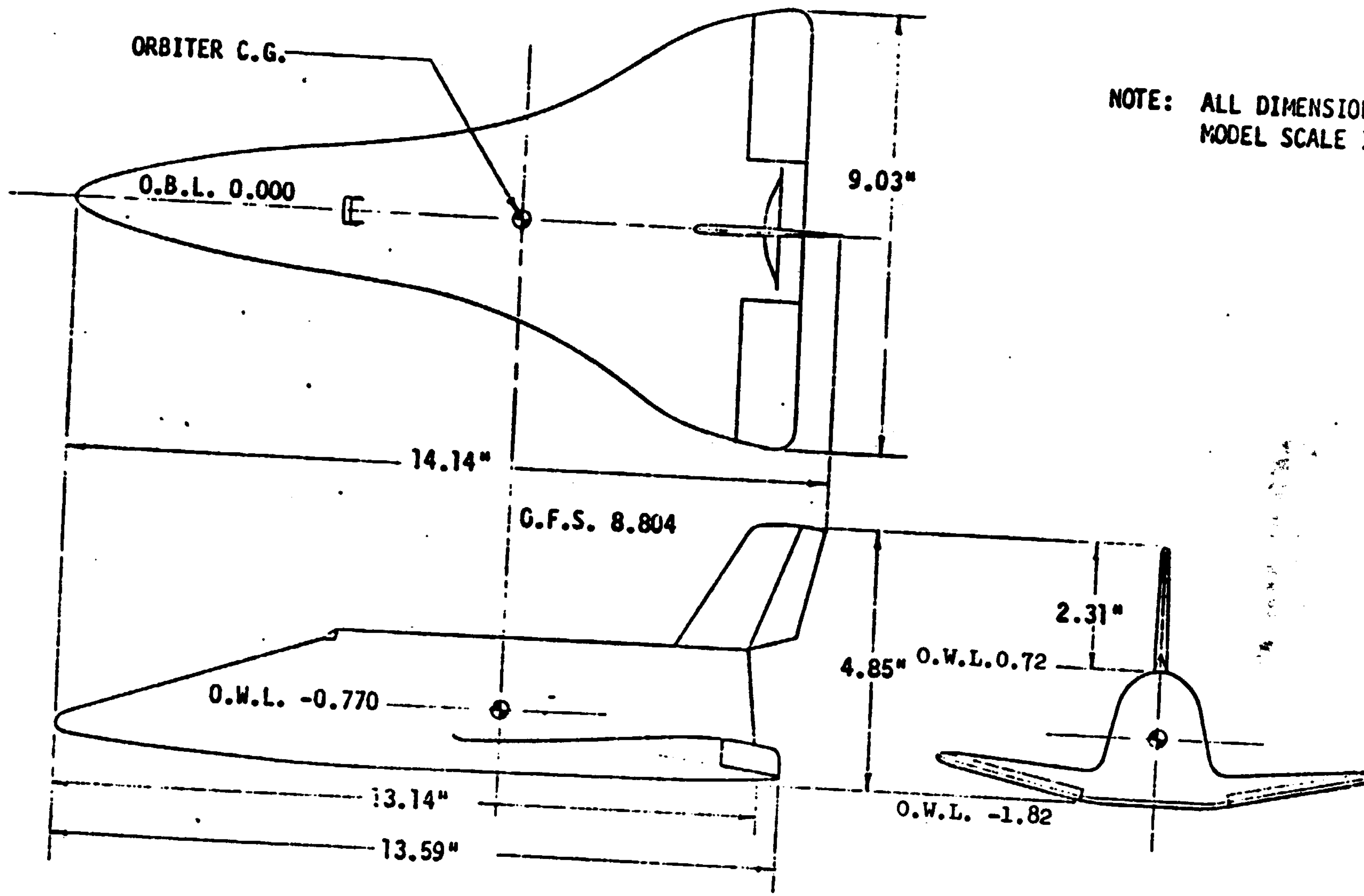
Figure E.- Continued

NOTE: All Dimensions are Model Scale in Inches



(g) Booster Wing Tip Vertical V7, Rudder R7

Figure E.- concluded



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

(a) Three View

Figure F.- Space Shuttle Orbiter (O1)

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 93

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 94

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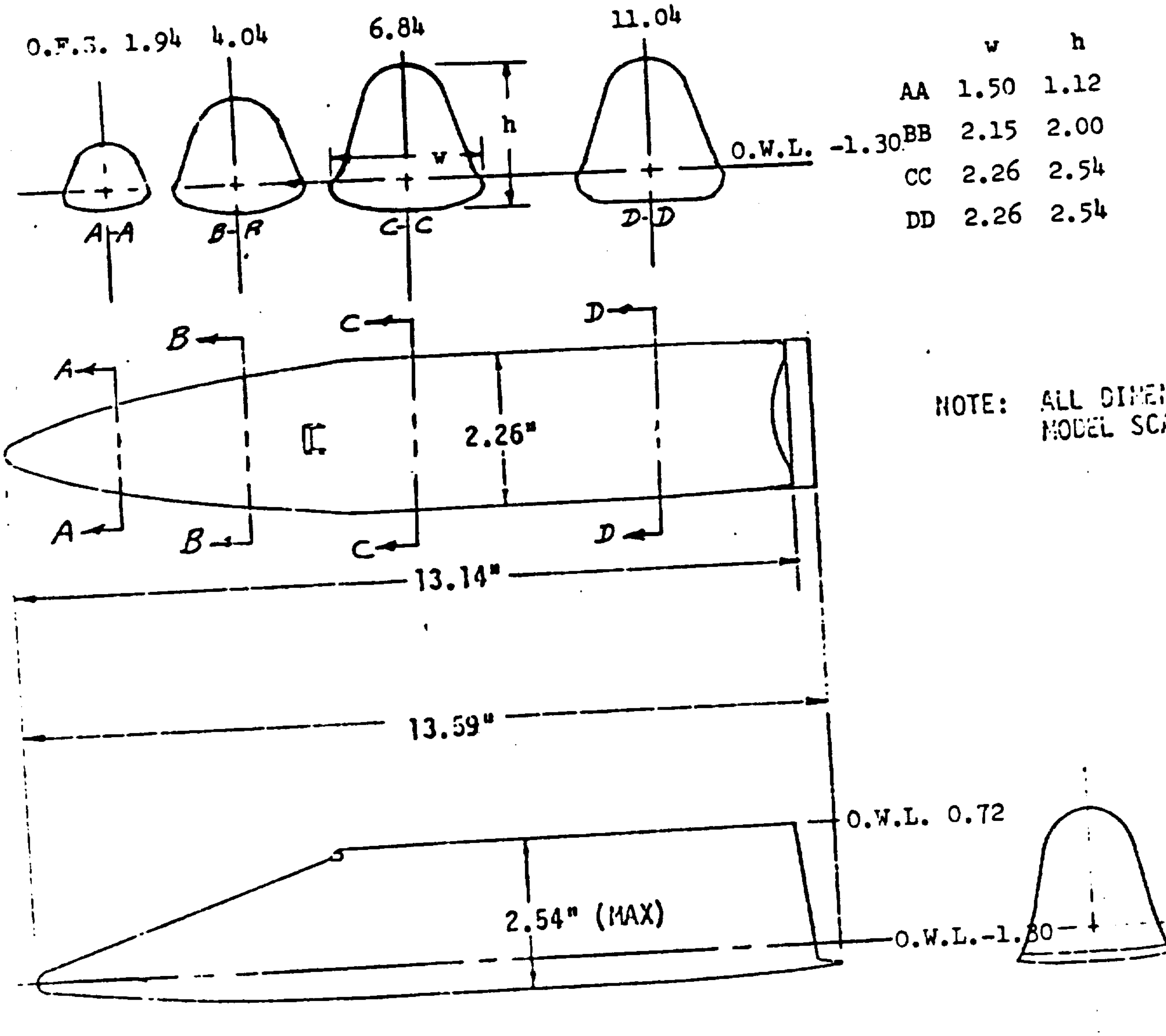
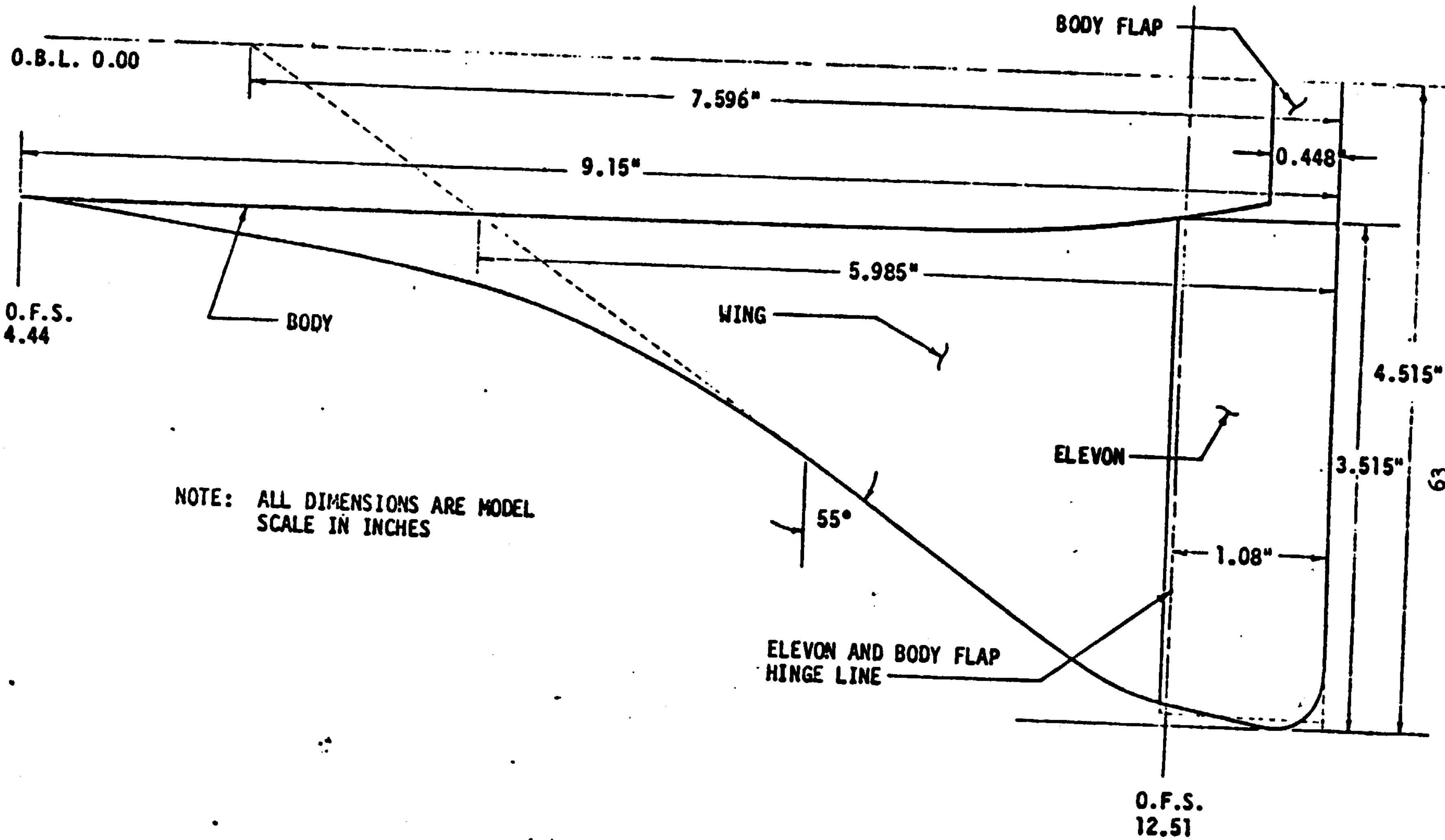


	w	h
AA	1.50	1.12
BB	2.15	2.00
CC	2.26	2.54
DD	2.26	2.54

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

(b) Orbiter Body, B5

Figure F.- continued

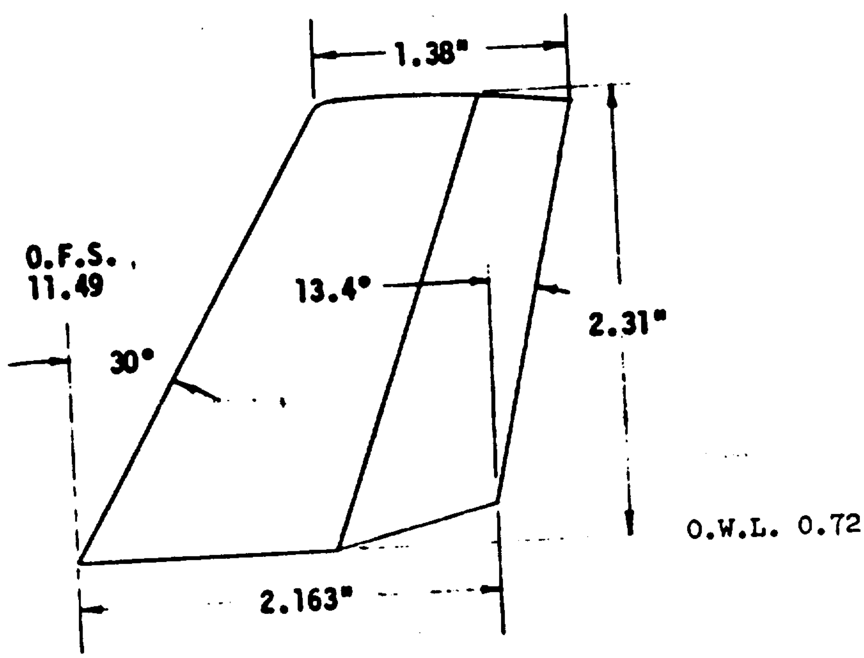


(c) Orbiter Wing (W11), Elevon (E), Body Flap

Figure F.- continued

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 96



(d) Orbiter Center Line Vertical (V6), Rudder (R6)

Figure F.- concluded

Distance Aft Exit Plane, in.	0	1.0	2.0	3.0	4.0	5.0	6.0	8.0
Diameter, in.	2.08	3.10	3.84	4.38	4.80	5.12	5.24	5.30

Model dimensions in inches

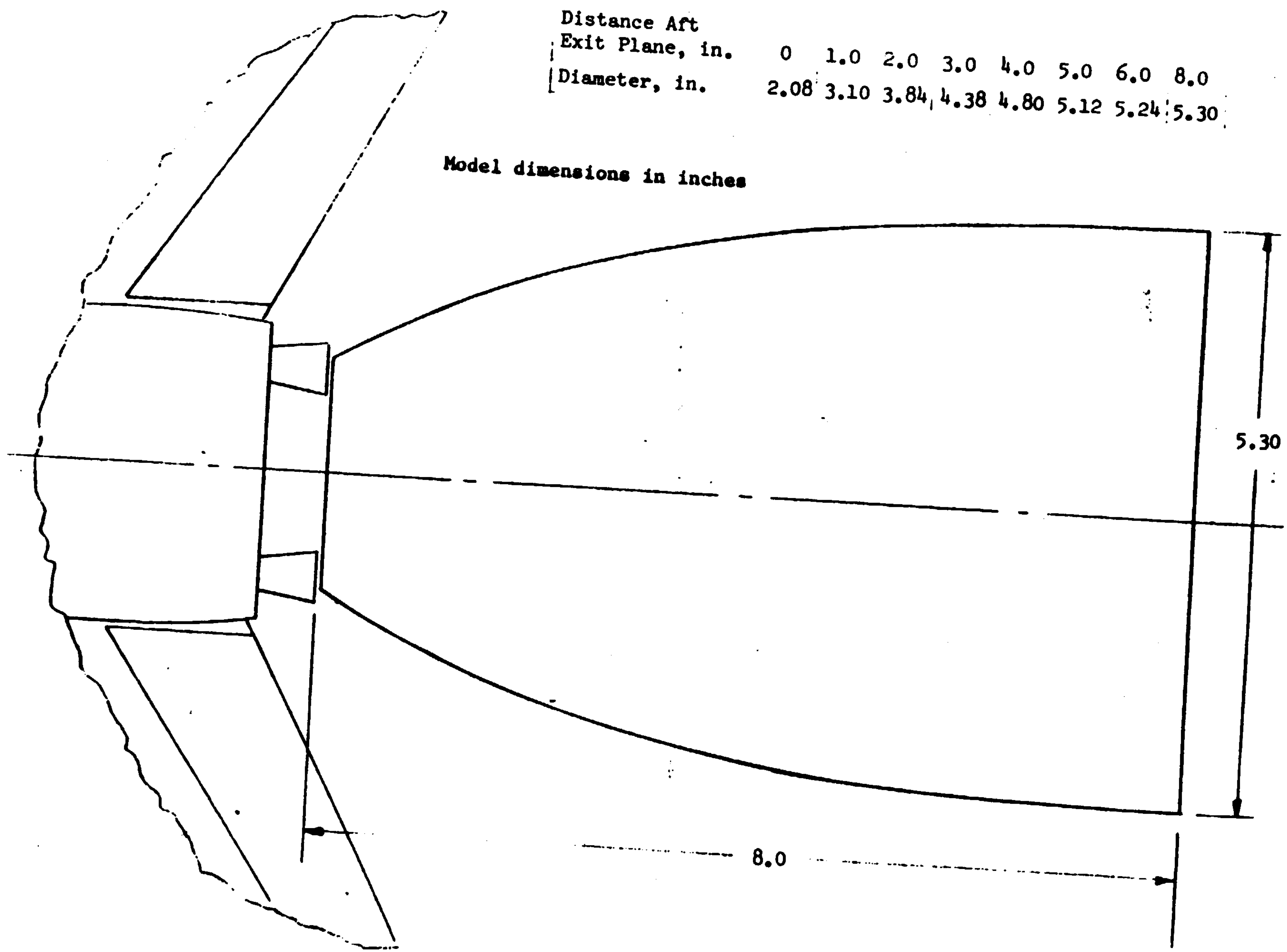


Figure G.- Booster Plume

CANARD BOOSTER
MDAC
DELTA WING ORBITER
MDAC
DR#1118 C-1- 97

ORBITER TEST LRC-4'-UPWT #163 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTIONS δ_e	δ_a	δ_r	δ_{BF}	NO. of RUNS	MACH NUMBERS 2.3	2.96	3.95	4.6
PLR 201	$B_5 W_{11} V_6$	C	0	0°	0°	0°	0°	4	149	151	153	155
202			4°					4	150	152	154	156
203			0°	-45°				2	157	158		
204			0°	-30°				4	159	161	162	163
205			4°	-30°				1	160			
206			0°	-15°				4	164	168	172	176
207			4°	-15°				4	165	169	173	177
208			0°	-15°	15°			4	180	181	182	183
209			0°	-15°	0°	10°		4	184	186	188	190
210			4°	-15	0°	10°		4	185	187	189	191
211		8°	B	-15°	0°	0°		4	166	170	174	178
212		25°	↓	-15°	↓	↓	↓	4	167	171	175	179

α or β SCHEDULES

SCHEDULE C: $\alpha = -10°, -6°, -4°, -2°, -1°, 0°, 1, 2°, 4°, 6°, 10°, 15°, 20°, 25°, 30°, 35°$

SCHEDULE B: $\beta = -4°, -2°, -1°, 0°, 1°, 2°, 4°, 6°, 8°$

COEFFICIENTS: BETA Q(PSF) CN CA CLM CBL CYN CY CAB

MACH / IDPV1 ALPHA / IDPV2

ASCENT TEST LRC-4'-UPWT, #963 DATA COLLATION SHEET

(ORBITER IN PRESENCE OF BOOSTER)

SINGLE BODY CANARD BOOSTER, $L_5 = B_3 N_{12} J_6 F_4 W_5 E_3 V_6 R_6$
DELTA WING ORBITER, $O_2 = B_5 W_{11} V_6$

DATA SET IDENTIFIER		CONFIGURATION	SCHD.		BOOSTER (L_5) CONTROL DEFLECTION				NO. of RUNS	ORBITER (O_2) CONTROL DEFLECTION					MACH NUMBERS			
			α	β	δ_e	δ_a	δ_R	δ_{RF}		δ_e	δ_a	δ_R	δ_{RF}	δ_{FB}	2.3	2.96	3.95	4.6
RLR	Φ01	$B_3 N_{12}/O_2$	D	0	—	—	—	—	4	0	0	0	0	0	3	5	8	10
	Φ02			4					4						4	6	9	11
	Φ03	$B_3 N_{12} W_5 E_3/O_2$		0	0	0			4						14	16	19	23
	Φ04			4					4						15	17	20	24
	Φ05	$B_3 N_{12} W_5 E_3 V_6 R_6/O_2$		0			0	0	4						29	31	25	27
	Φ06			4					4						30	32	26	28
	Φ07	L_5/B_5		0					4						74	76	79	83
	Φ08			4					4	—	—	—	—	—	75	77	80	84
	Φ09	$L_5/B_5 W_{11}$		0					4						65	67	69	71
	Φ10			4					4	0	0			0	66	68	70	72
	Φ11	L_5/O_2		0					4						34	38	43	49
	Φ12			4					4			0	0		35	39	44	50
	Φ13			0		10			4						61	62	63	64
	Φ14			0		0	-10		4						57	59	53	55
	Φ15			4					4						58	60	54	56
	Φ20		0	B			0		4						36	40	45	51
	Φ21		10	B					4						37	41	46	52

α or β SCHEDULES

SCHEDULE D: $\alpha = -10°, -6°, -4°, -2°, -1°, 0°, 1°, 2°, 4°, 6°, 10°$

SCHEDULE B: $\beta = -4°, -2°, -1°, 0°, 1°, 2°, 4°, 6°, 8°$

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1117 C-1- 99

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C-3

BOOSTER TEST **LRC-4'-UPWT #963** DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_a	δ_R	δ_{BF}	NO. of RUNS	MACH NUMBERS 2.3	2.96	3.95	4.6
RLR 101	$B_3N_{12}J_6F_4W_5E_3V_6R_6$	A	0	0	0	0	10	4	105	109	113	117
102			4					4	106	110	114	118
103			0	10				4	123	124	121	122
104				-20				4	125	126	127	128
105				0	10			4	129	131	133	135
106			4					4	130	132	134	136
107			0		0	-10		4	141	143	137	139
108			4					4	142	144	138	140
109	V_8R_8		0			0	-10	4	85	88	91	94
110			4					4	86	89	92	95
111			0			-10		4	101	102	103	104
116	V_6R_6	30	B			0	10	4	107	111	115	119
117		50						4	108	112	116	120
118	V_8R_8	30					-10	4	87	90	93	96

α or β SCHEDULES

SCHED. A: $\alpha = -10^\circ, -6^\circ, -4^\circ, -2^\circ, 0^\circ, 2^\circ, 4^\circ, 6^\circ, 10^\circ, 15^\circ, 20^\circ, 25^\circ, 30^\circ, 35^\circ, 40^\circ, 45^\circ, 50^\circ, 55^\circ, 60^\circ$

SCHED. B: $\beta = -4^\circ, -2^\circ, -1^\circ, 0^\circ, 1^\circ, 2^\circ, 4^\circ, 6^\circ, 8^\circ$

ASCENT TEST LRC-4'-UPWT #963 DATA COLLATION SHEET
(COMPOSITE)

SINGLE BODY CANARD BOOSTER, $L_5 = B_3 N_{12} J_6 F_4 W_5 E_3 V_6 R_6$
DELTA WING ORBITER, $O_2 = B_5 W_{11} V_6$

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	BOOSTER (L_5) CONTROL DEFLECTION δ_e	δ_a	δ_R	δ_{RF}	NO. of RUNS	ORBITER (O_2) CONTROL DEFLECTION δ_e	δ_a	δ_R	δ_{RF}	δ_{FB}	MACH NUMBERS 2.3	2.96	3.95	4.6		
RLR L01	B_3N_{12}/O_2	D	0					4	0	0	0	0	0	3	5	8	10		
L02			4					4						4	6	9	11		
L03	$B_3N_{12}W_5E_3/O_2$		0	0	0			4						14	16	19	23		
L04			4					4						15	17	20	24		
L05	$B_3N_{12}W_5E_3V_6R_6/O_2$		0			0	0	4						29	31	25	27		
L06			4					4						30	32	26	28		
L07	L_5/B_5		0					4	—	—	—	—	—	74	76	79	83		
L08			4					4						75	77	80	84		
L09	L_5/B_5W_{11}		0					4	0	0			0	65	67	69	71		
L10			4					4						66	68	70	72		
L11	L_5/O_2		0					4			0	0		34	38	43	49		
L12			4					4						35	39	44	50		
L13			0		10			4						61	62	63	64		
L14			0		0	-10		4						57	59	53	55		
L15			4					4						58	60	54	56		
L20		0	B			0		4						36	40	45	51		
L21		10	B					4						37	41	46	52		
—																			
—																			
—																			

SCHEDULE D: $\alpha = -10°, -6°, -4°, -2°, -1°, 0°, 1°, 2°, 4°, 6°, 10°$

SCHEDULE B: $\beta = -4°, -2°, -1°, 0°, 1°, 2°, 4°, 6°, 8°$

α or β SCHEDULES

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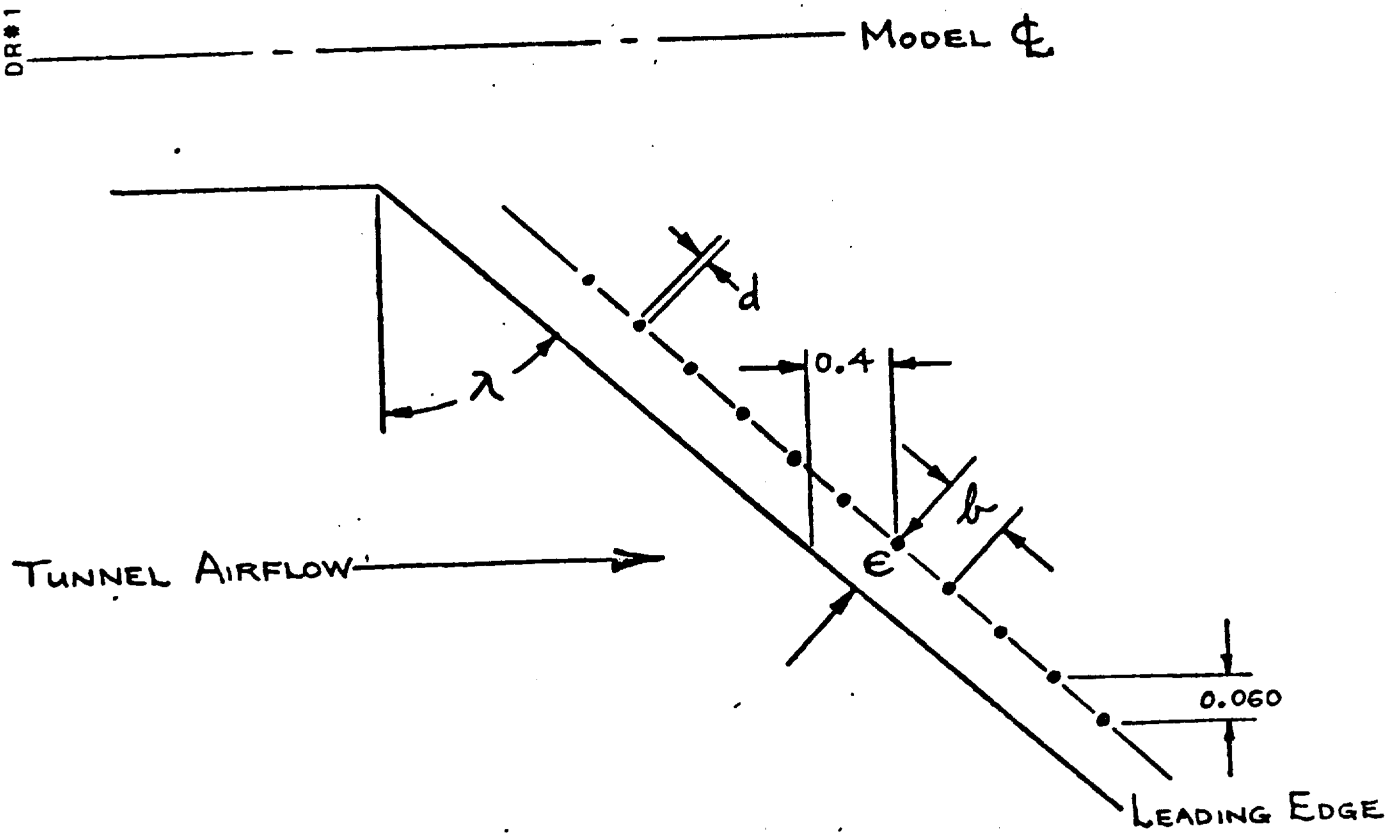
CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1117 C-1- 101

Boundary Layer Transition Trips for 0.7% Scale Space Shuttle at $2.3 \leq M \leq 4.6$



Given #45 Sand Grit

$d = 0.0152 \pm .0014$ in. dia

$\epsilon_o = 0.40$ in.

$b_o = 0.060$ in.

where $\lambda = 0°$

Trip Geometry Relations

$$\epsilon = \epsilon_o \cos \lambda$$

$$b = \frac{b_o}{\cos \lambda}$$

FIGURE 4. BOUNDRY LAYER TRANSITION TRIPS

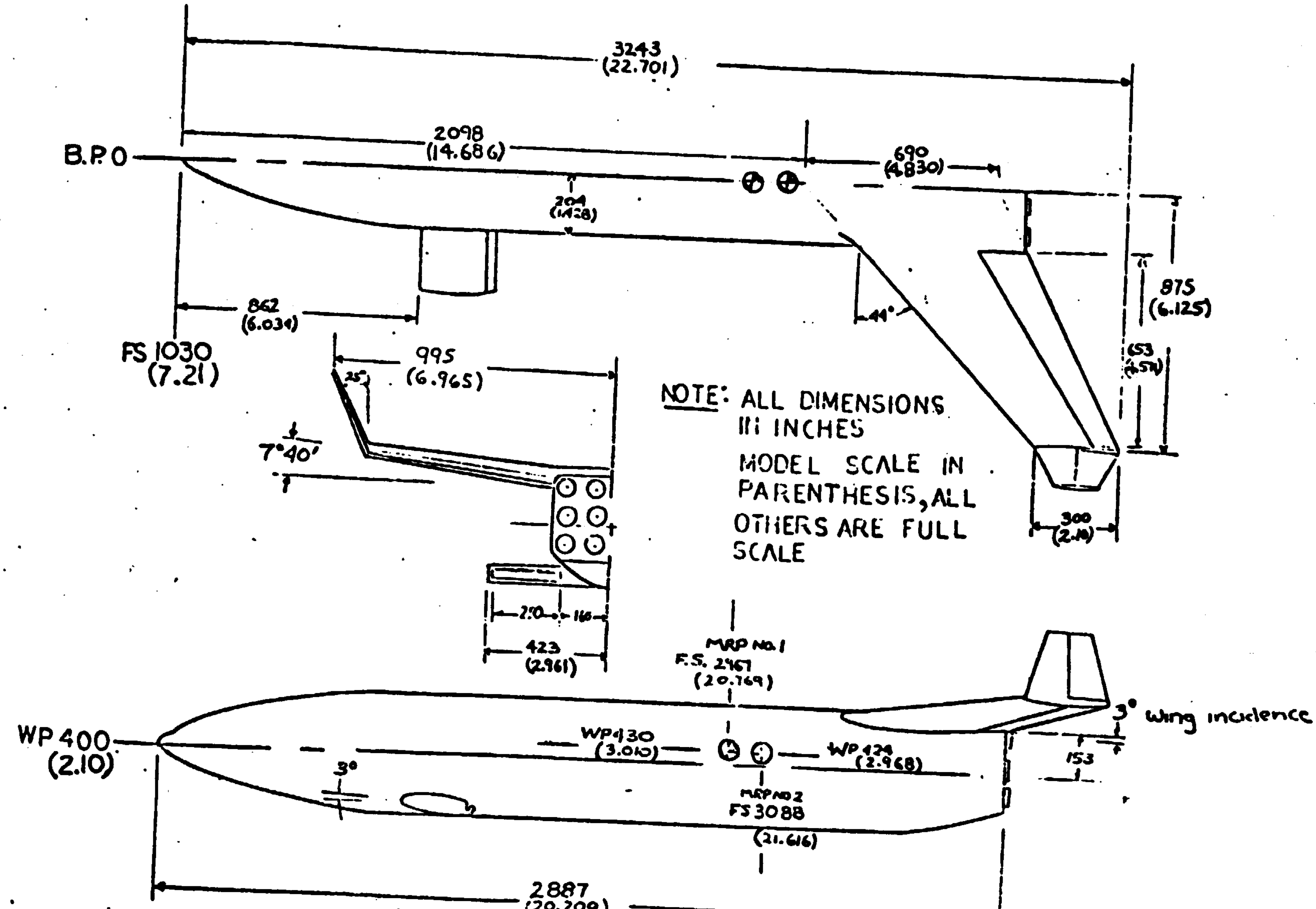


FIGURE 5 CONFIGURATION $B_3N_{12}J_6F_4W_5E_3V_6R_6$ GENERAL ARRANGEMENT FOR THE BOOSTER

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1117 C-1- 103

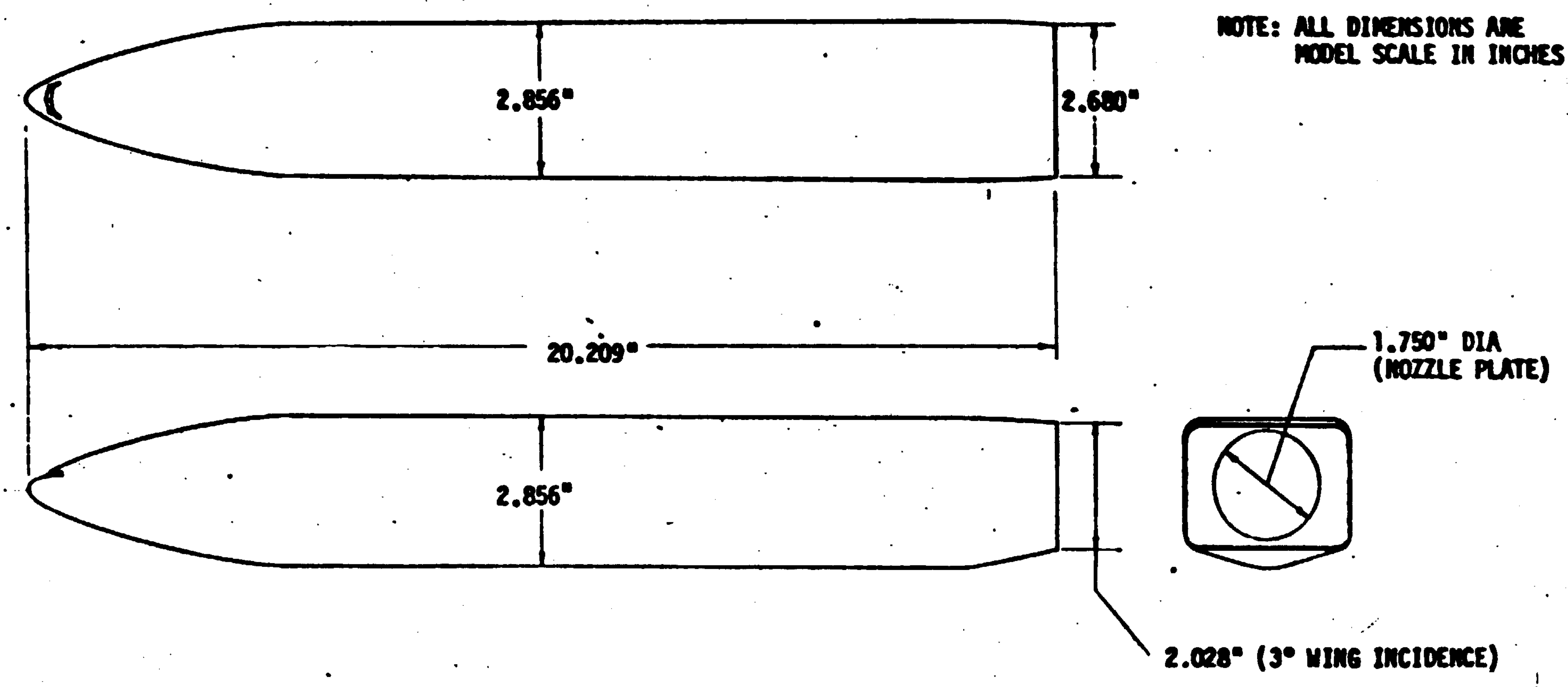
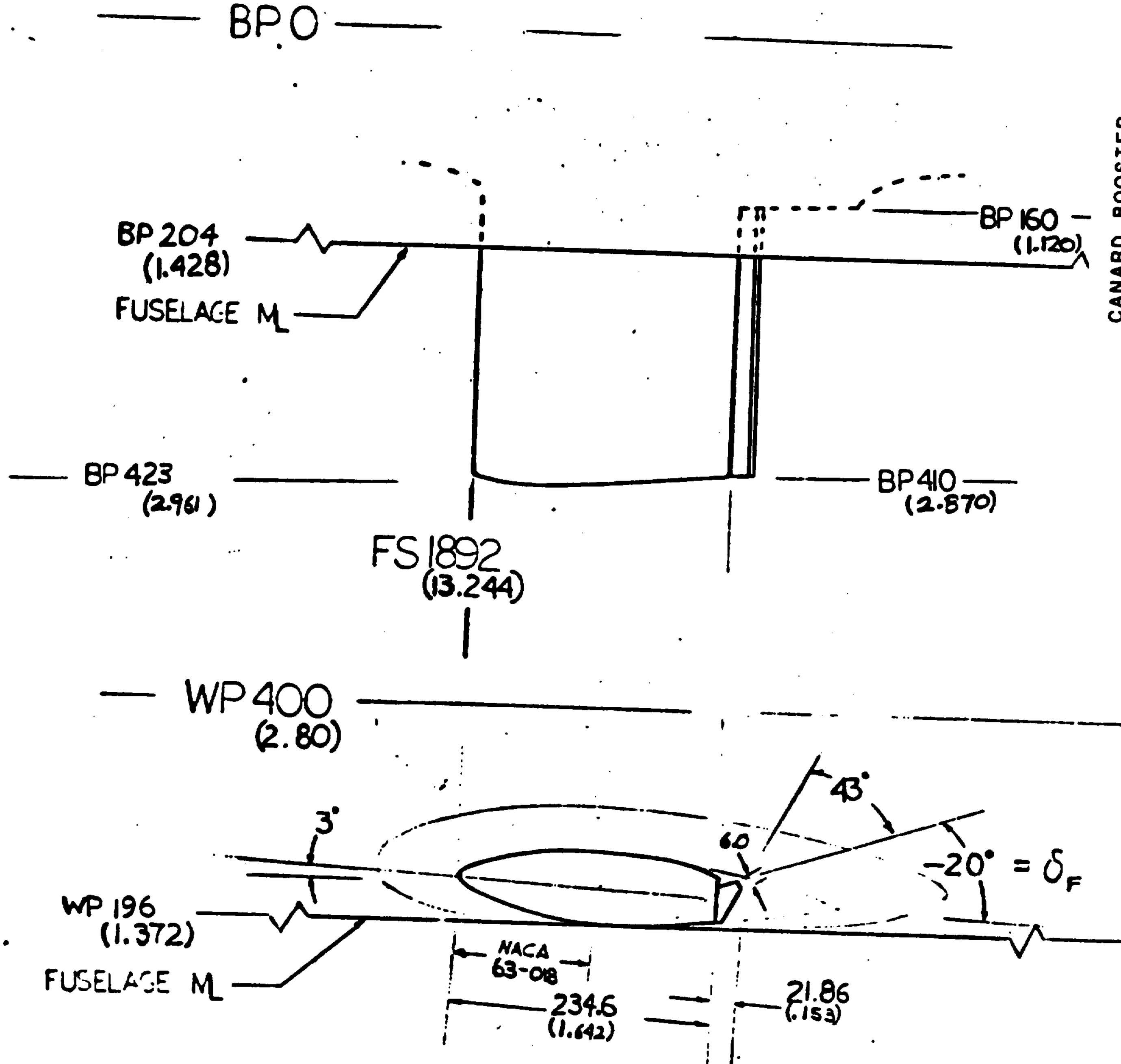


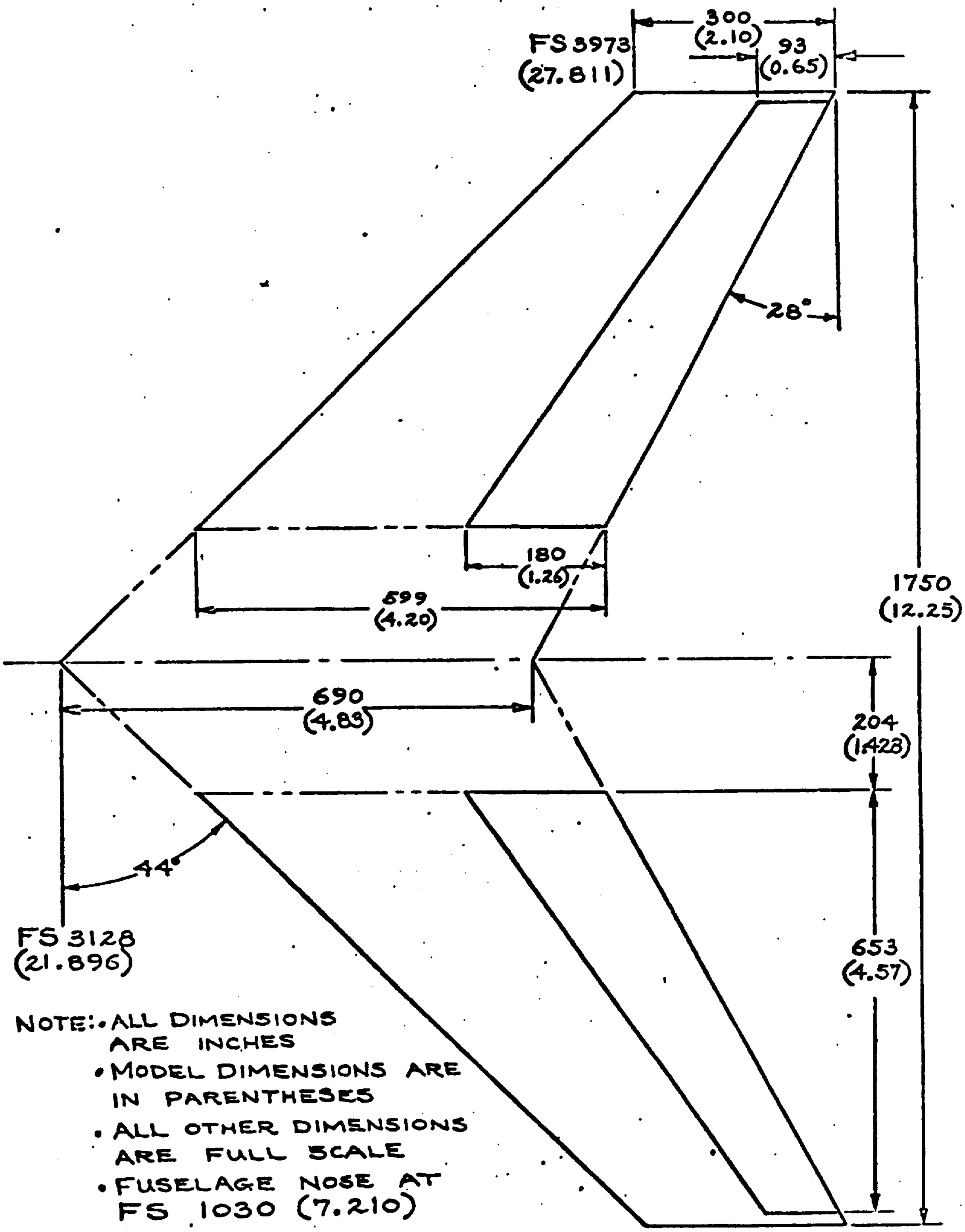
FIGURE 6 **BOOSTER BODY (0.007)**

B3 BODY



NOTE • ALL DIMENSIONS IN INCHES
• MODEL DIMENSIONS IN PARENTHESIS ALL OTHERS FULL SCALE
• FUSELAGE NOSE AT FS 1030

FIGURE 7 JET FLAP CANARD ~ $J_6 F_4$



NOTE: • ALL DIMENSIONS ARE INCHES
• MODEL DIMENSIONS ARE IN PARENTHESES
• ALL OTHER DIMENSIONS ARE FULL SCALE
• FUSELAGE NOSE AT FS 1030 (7.210)

FIGURE 8. DETAILS OF WING W5 E3

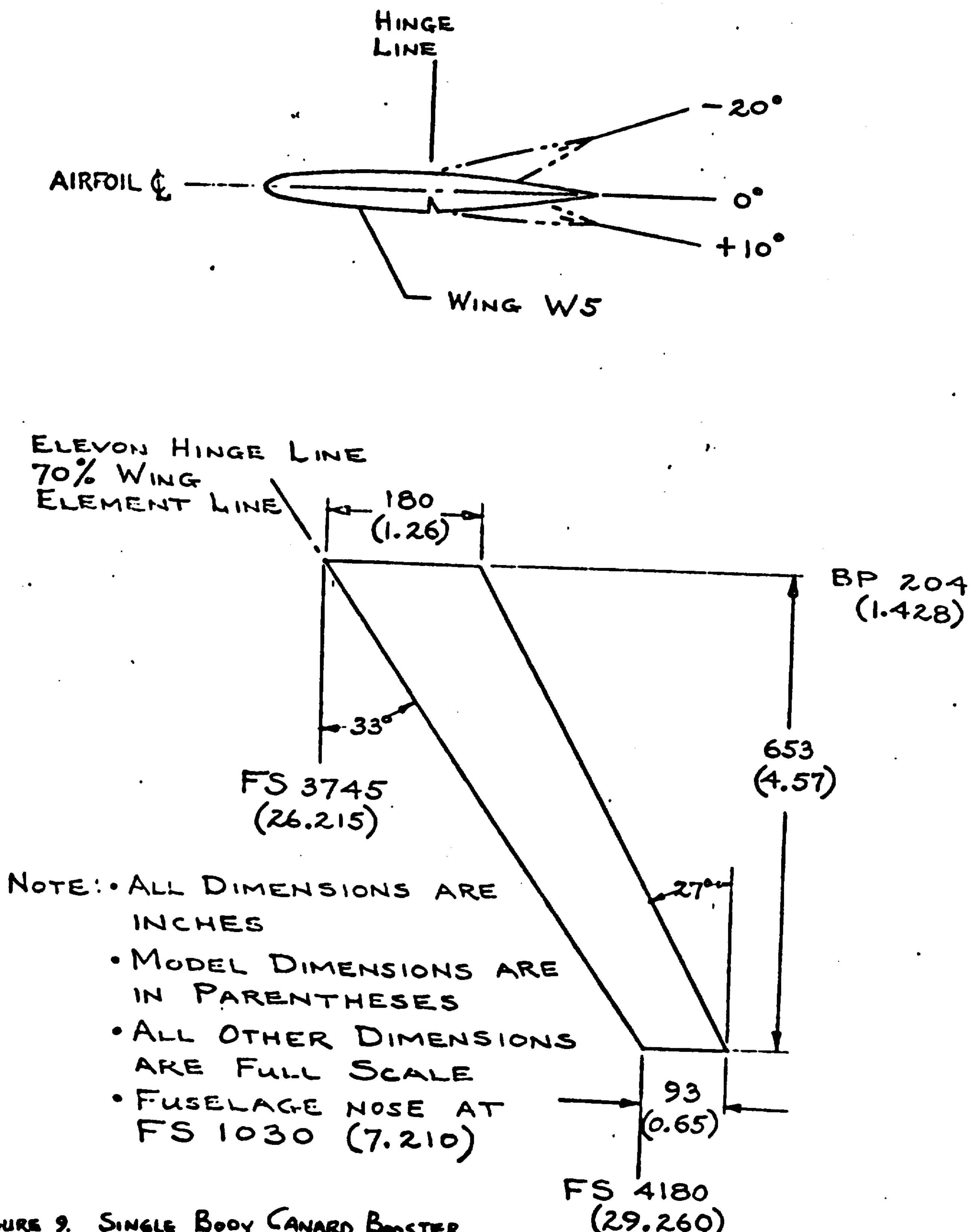


FIGURE 9. SINGLE BODY CANARD BOOSTER PLAIN ELEVON (E_3) FOR WING (W5)

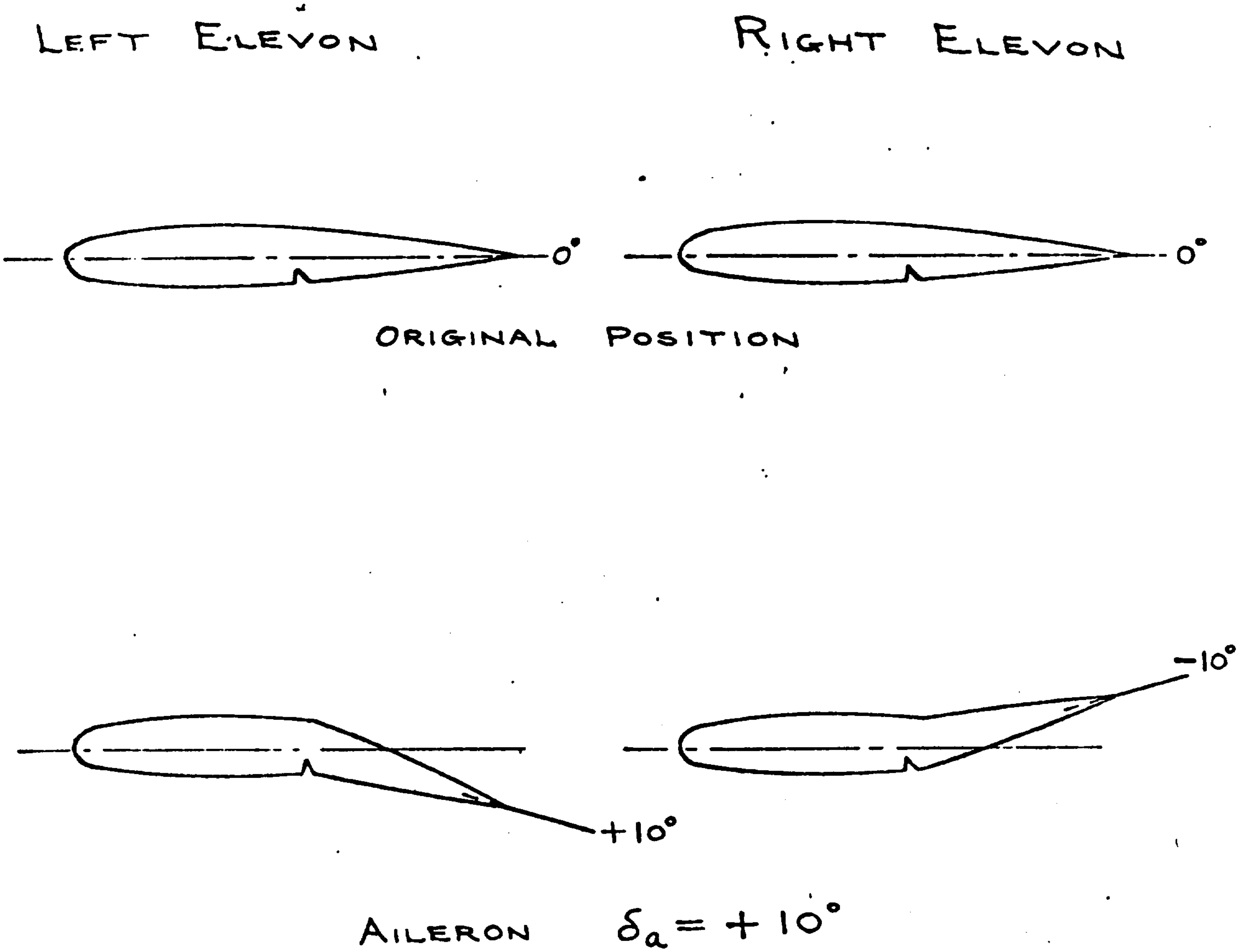


FIGURE 10. SINGLE BODY CANARD BOOSTER PLAIN ELEVONS (E_3) FOR LATERAL CONTROL

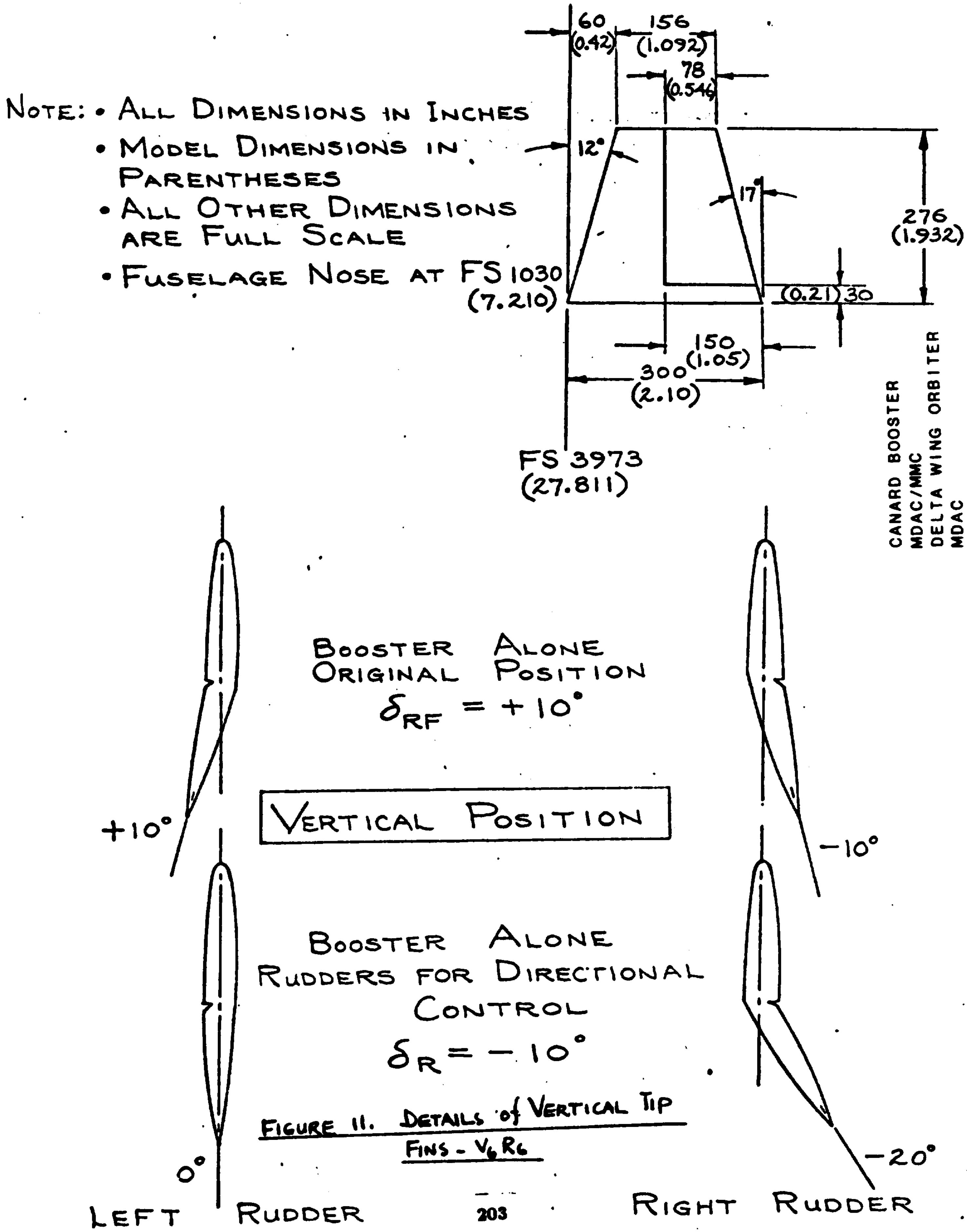


FIGURE 11. DETAILS of VERTICAL TIP FINS - $V_6 R_6$

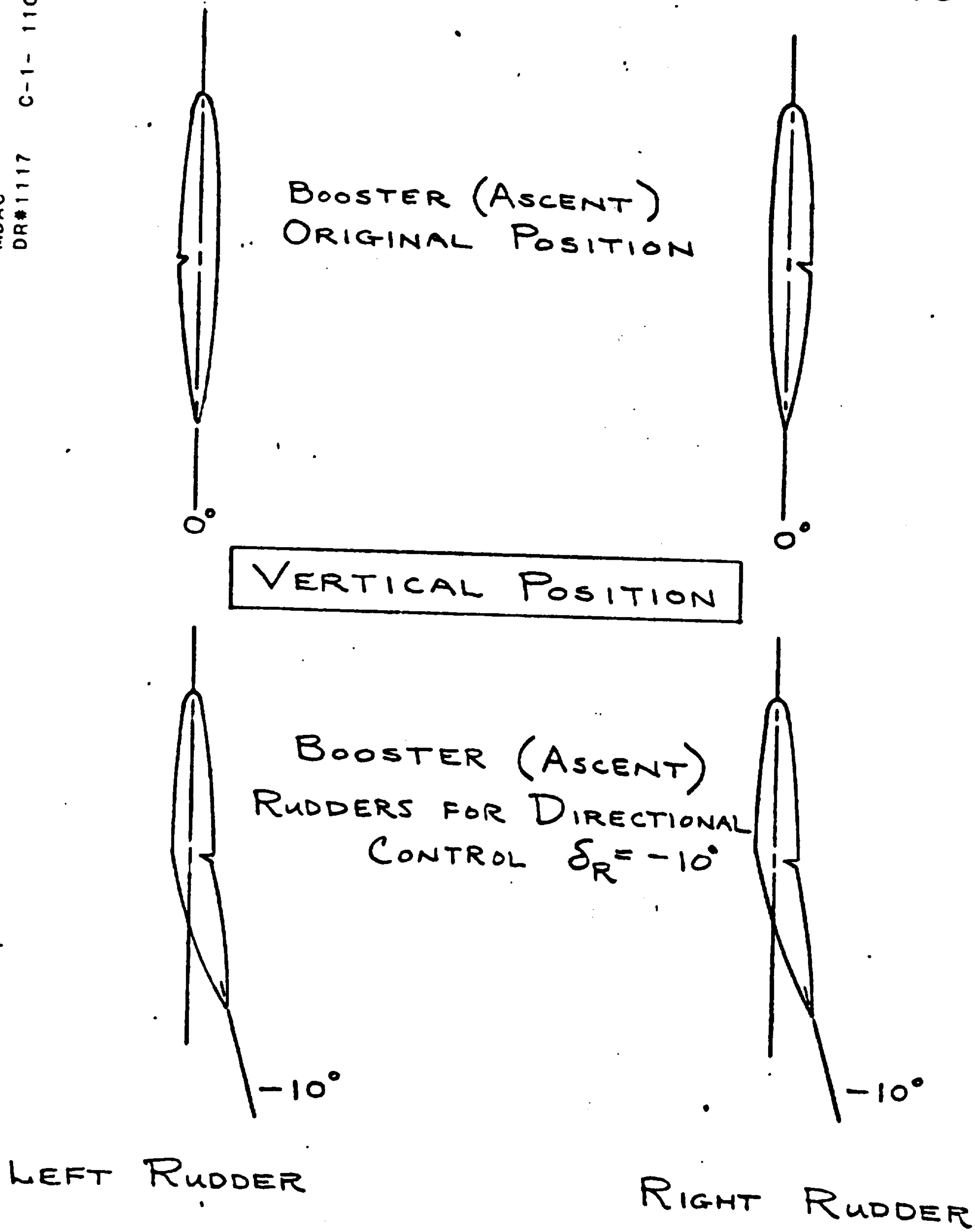
CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC

FIGURE 12

SINGLE BODY CANARD BOOSTER IN THE ASCENT CONFIGURATION (PRESENCE OF THE ORBITER)

PLAIN RUDDER SETTINGS FOR V6 R6

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1117 C-1- 110



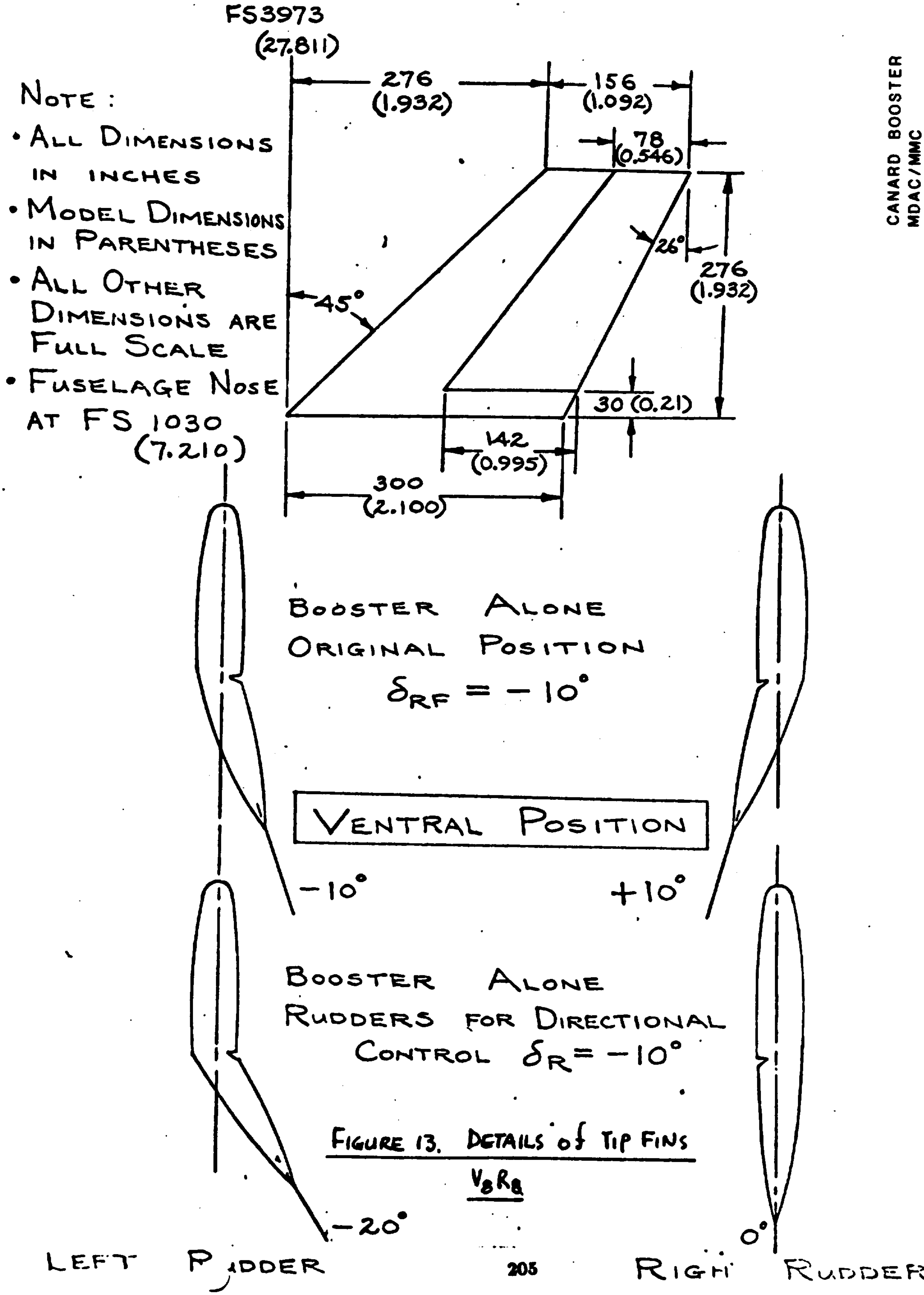
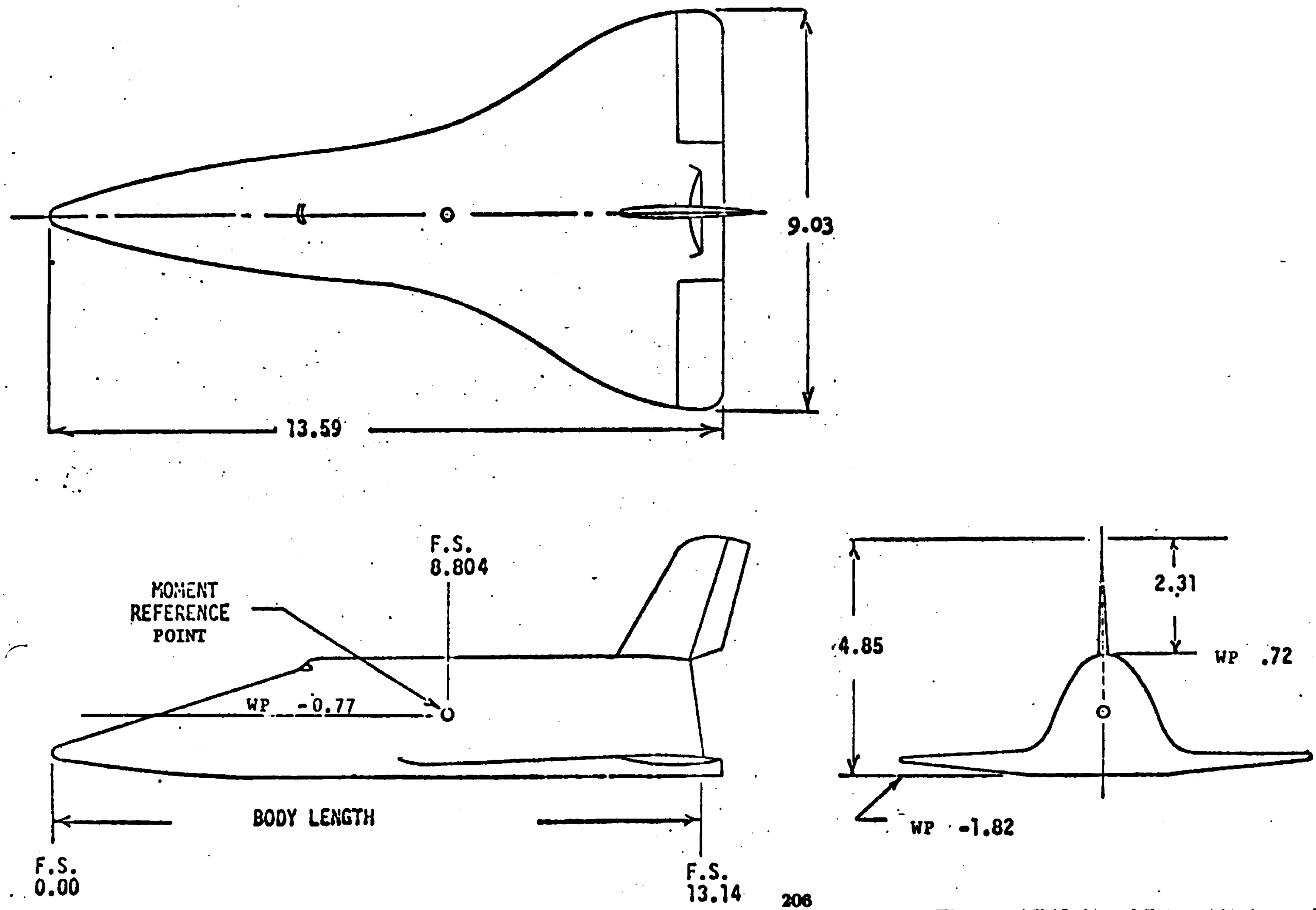


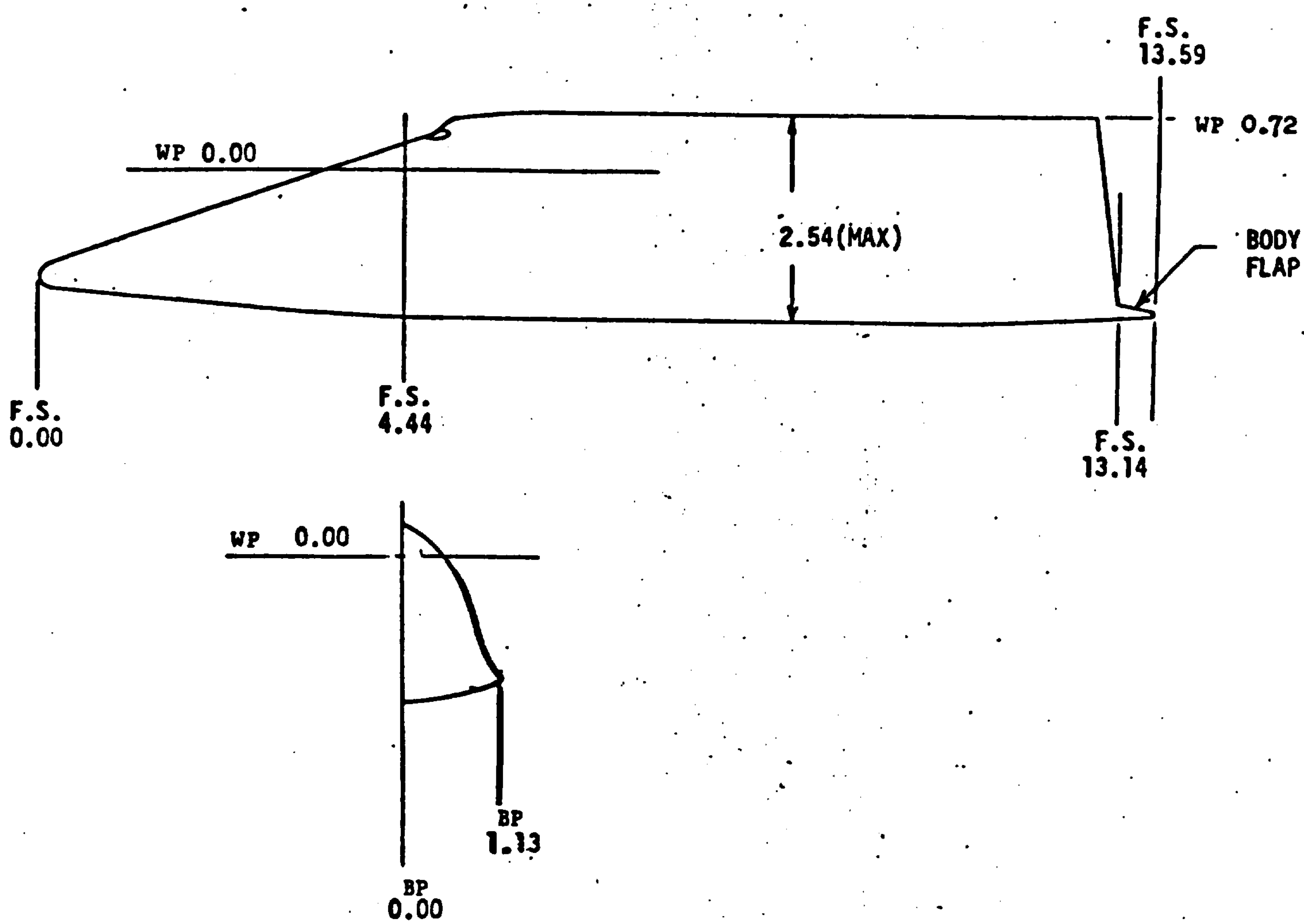
FIGURE 13. DETAILS OF TIP FINS
V_8R_8

FIGURE 14

DELTA WING ORBITER GENERAL ARRANGEMENT

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES





NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES.

FIGURE 15. DELTA WING ORBITER BODY, B5

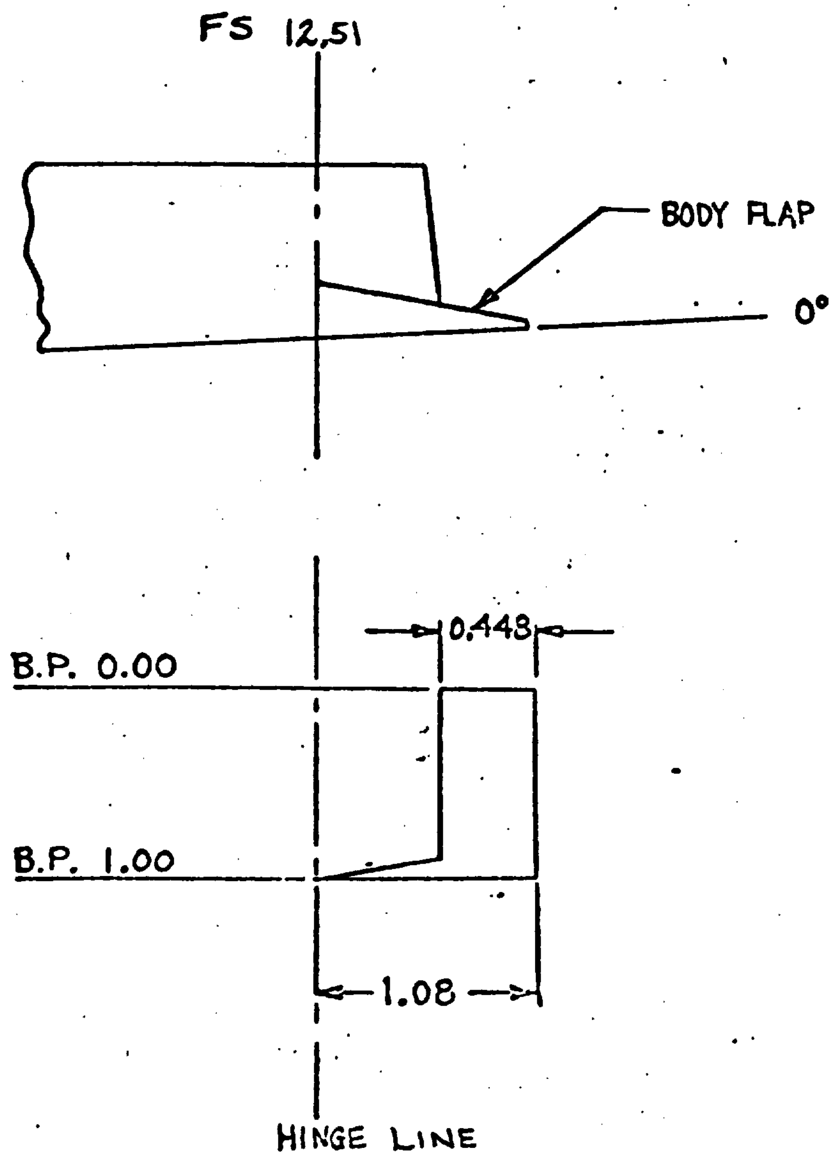


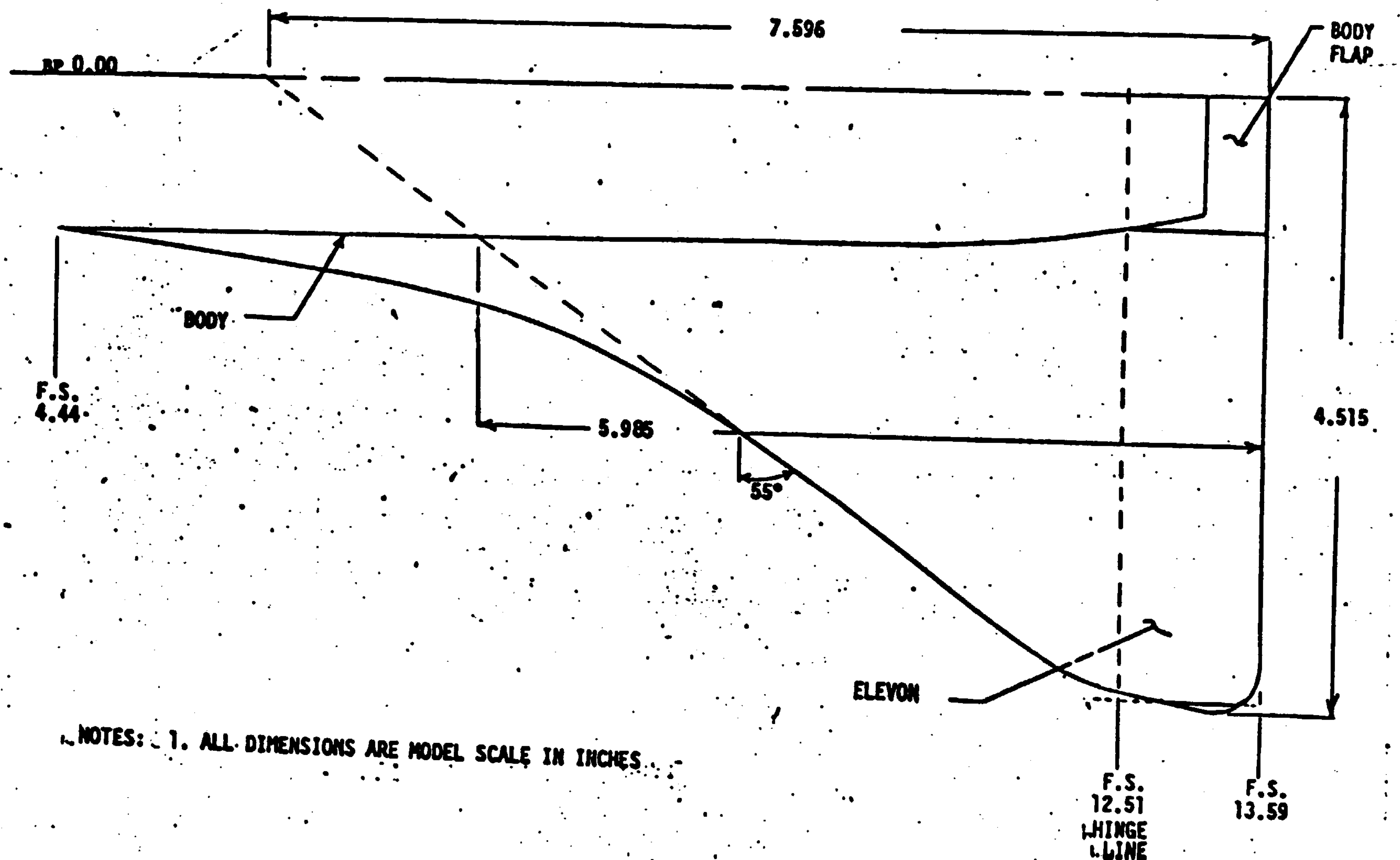
FIGURE 16. DELTA WING ORBITER BODY FLAP

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 17

DELTA WING ORBITER

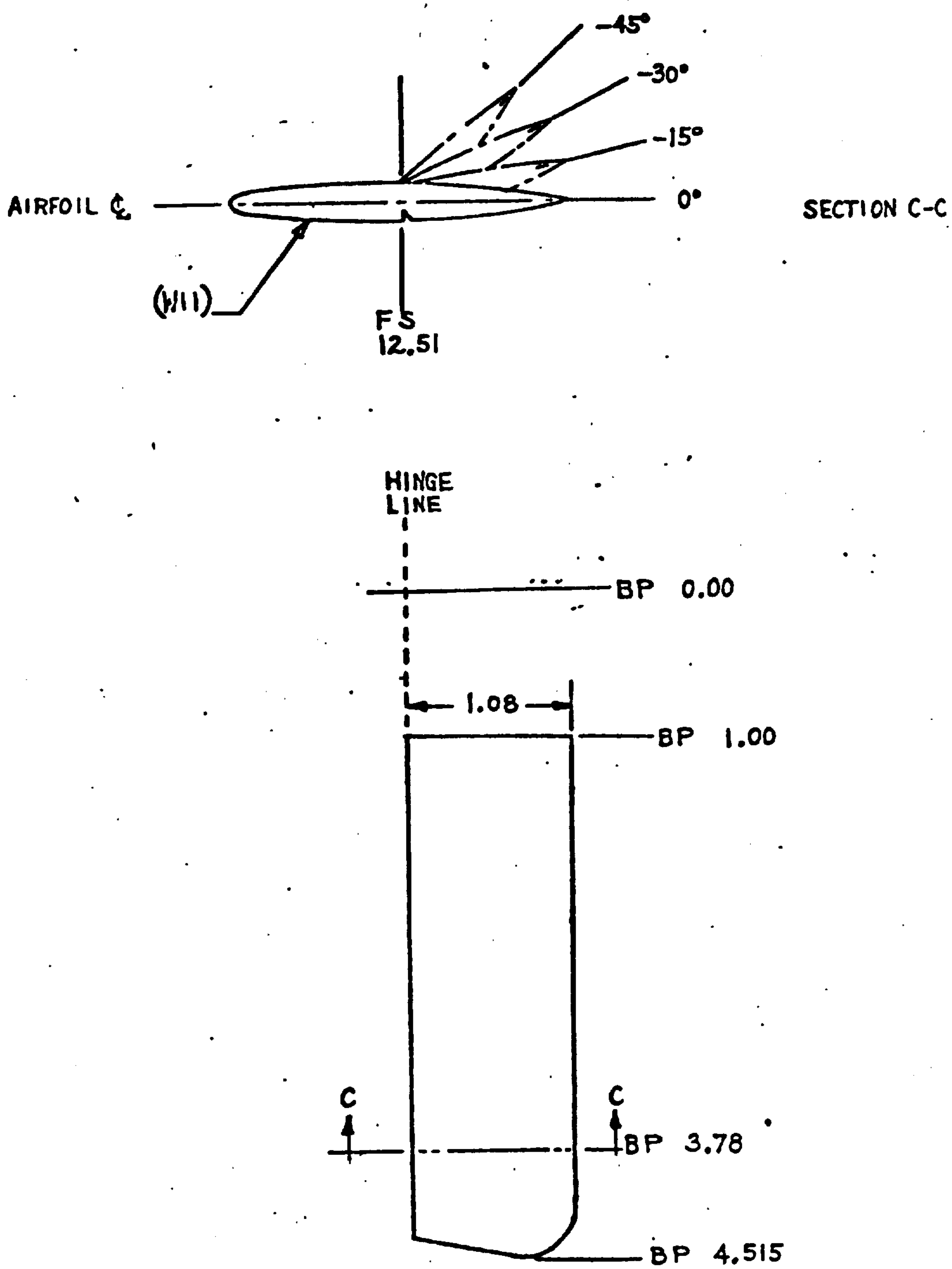
WING (W11)



NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 18

DELTA WING ORBITER
PLAIN ELEVON FOR WING (W11)



NOTES: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 19

DELTA WING ORBITER

PLAIN ELEVONS FOR LATERAL CONTROL

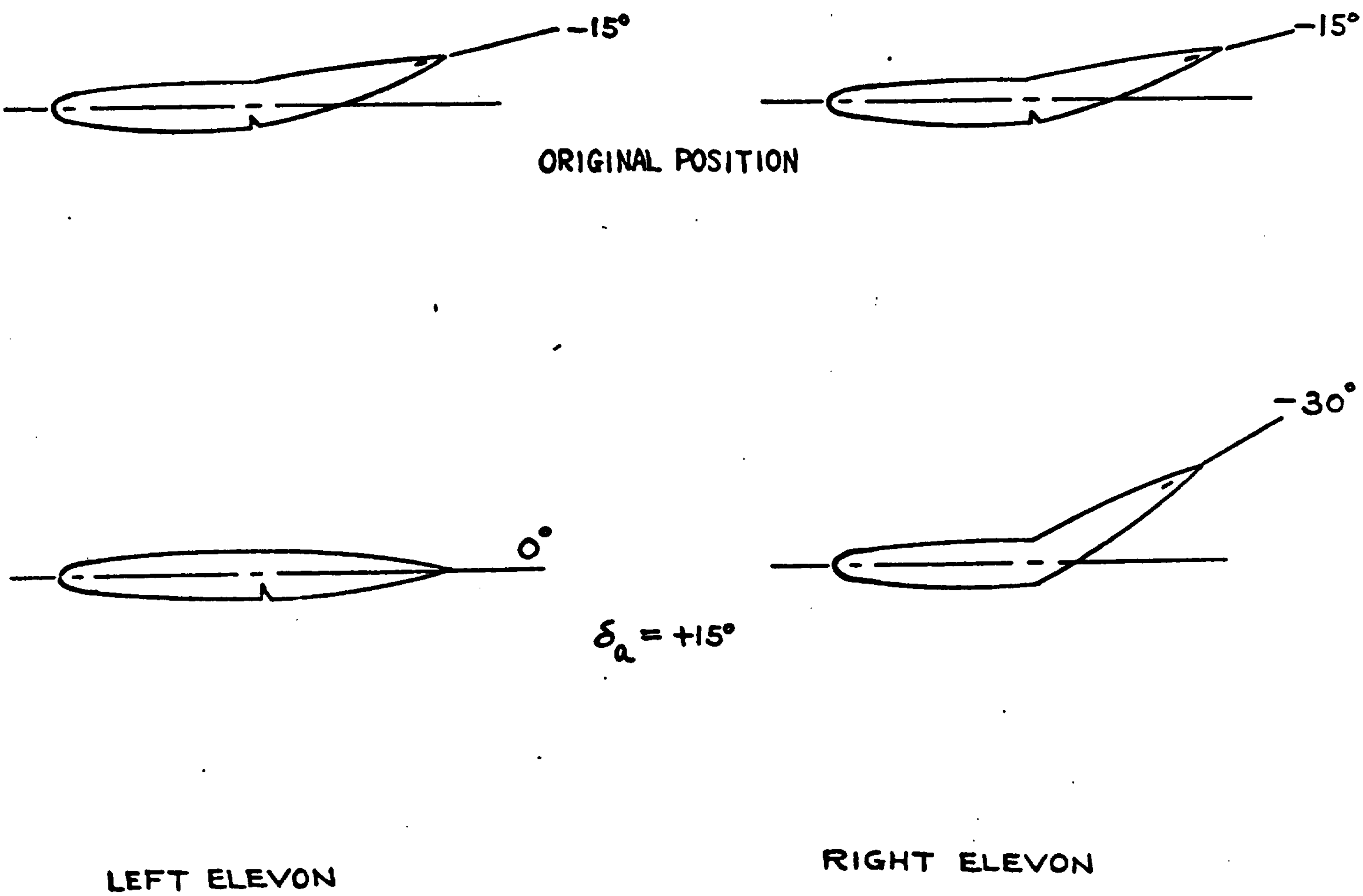
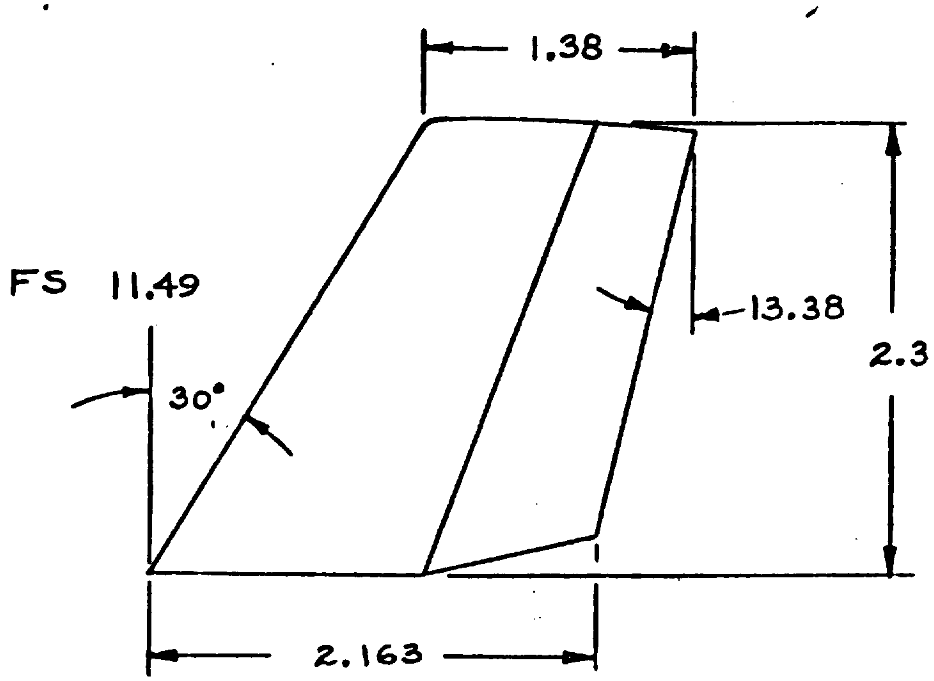


FIGURE 20

DELTA WING ORBITER

VERTICAL TAIL V_6
AND PLAIN RUDDER



$C_R/C_V = .369$

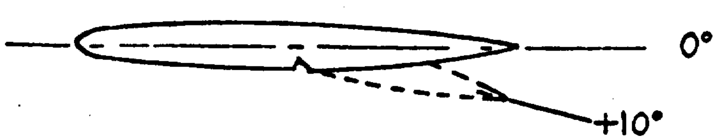


FIGURE 20.

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

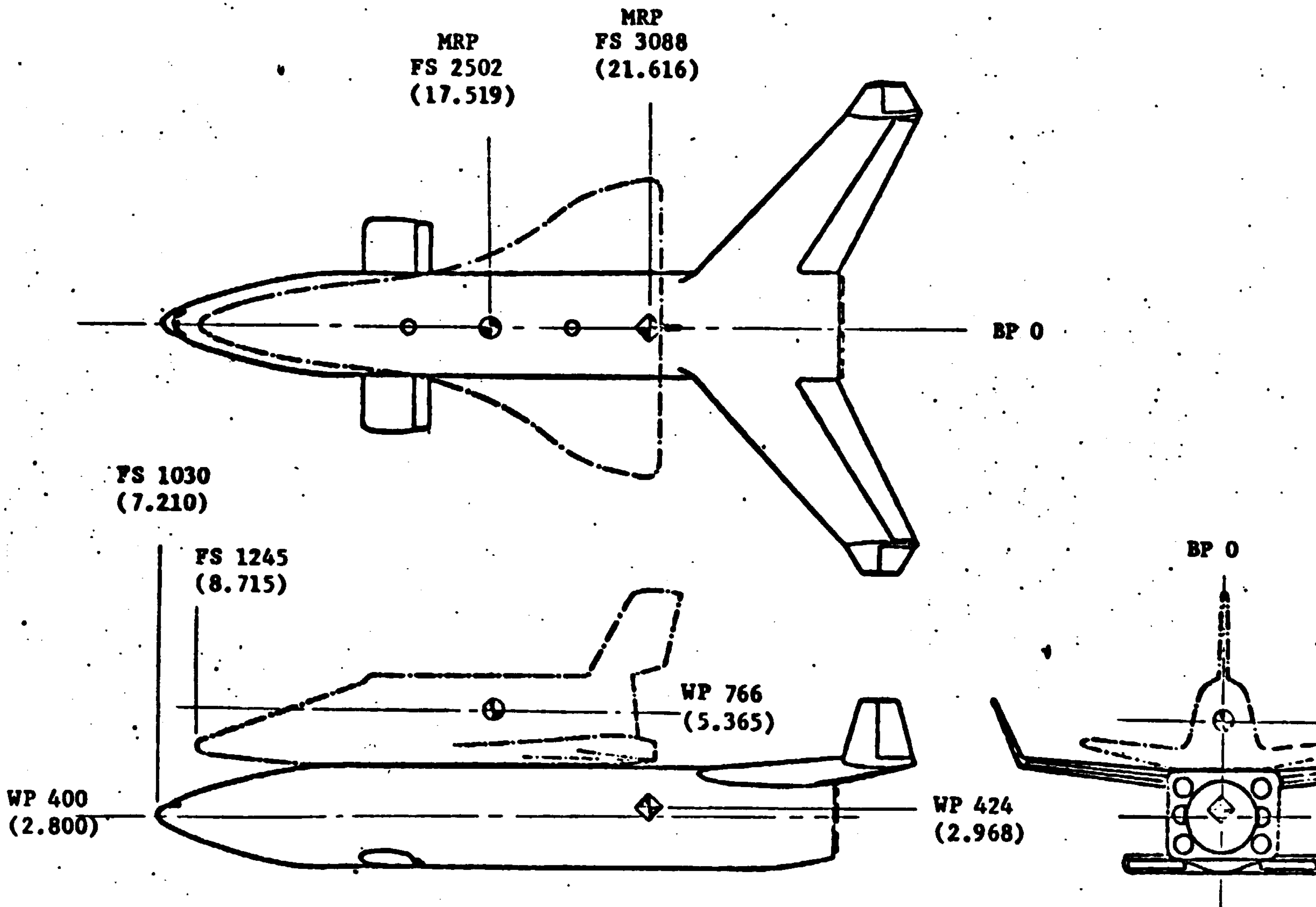


FIGURE 21

SPACE SHUTTLE ASCENT CONFIGURATION (0.007)

ORBITER INDICATED IN NOMINAL
POSITION AT 0° INCIDENCE

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1117 C-1- 119

NOTE: All dimensions are model scale in inches

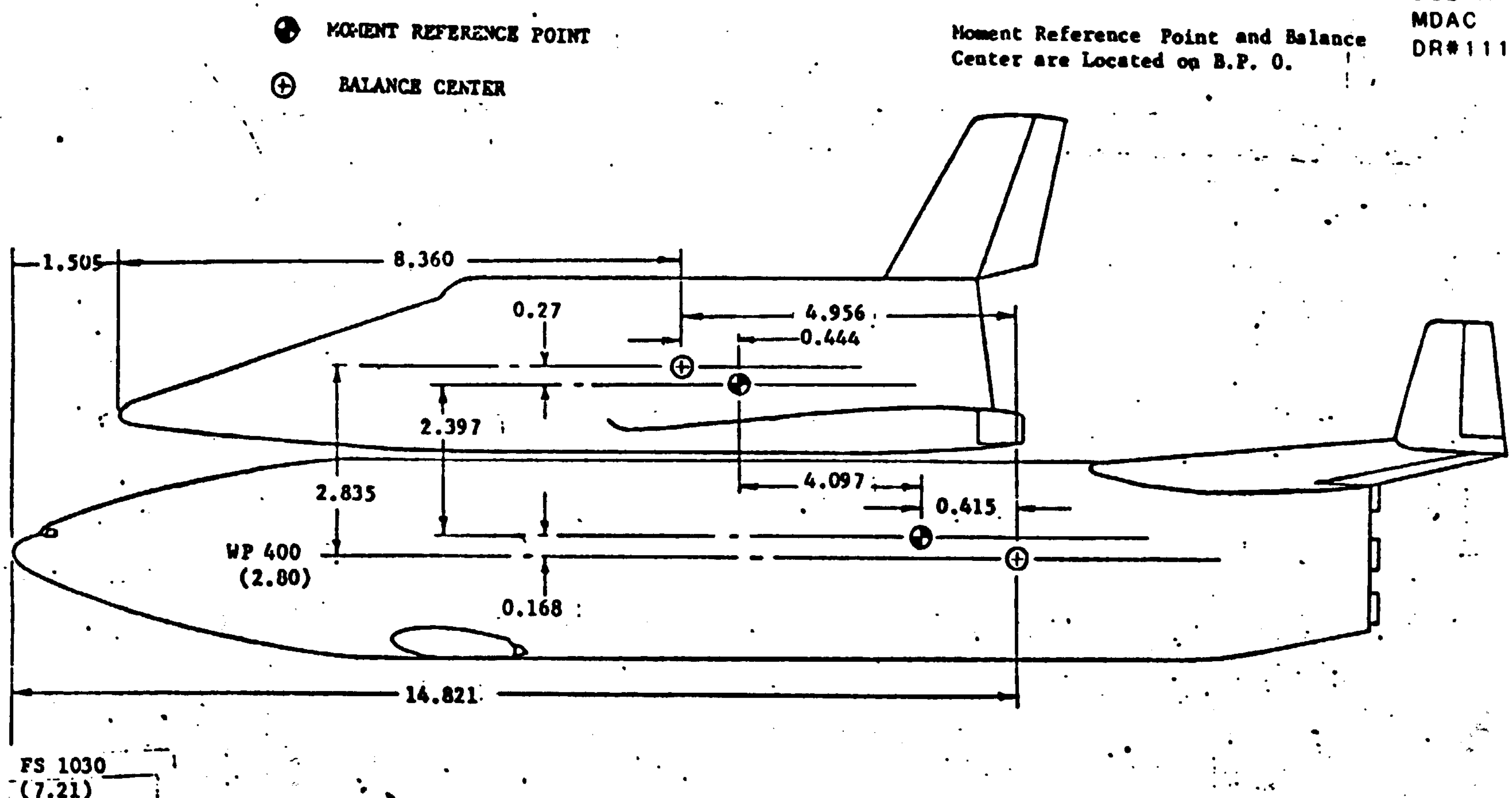


FIGURE 27 SPACE SHUTTLE NOMINAL ASCENT CONFIGURATION (ORBITER INSTALLED WITH $\delta_{IO_2} = 0^{\circ}$)

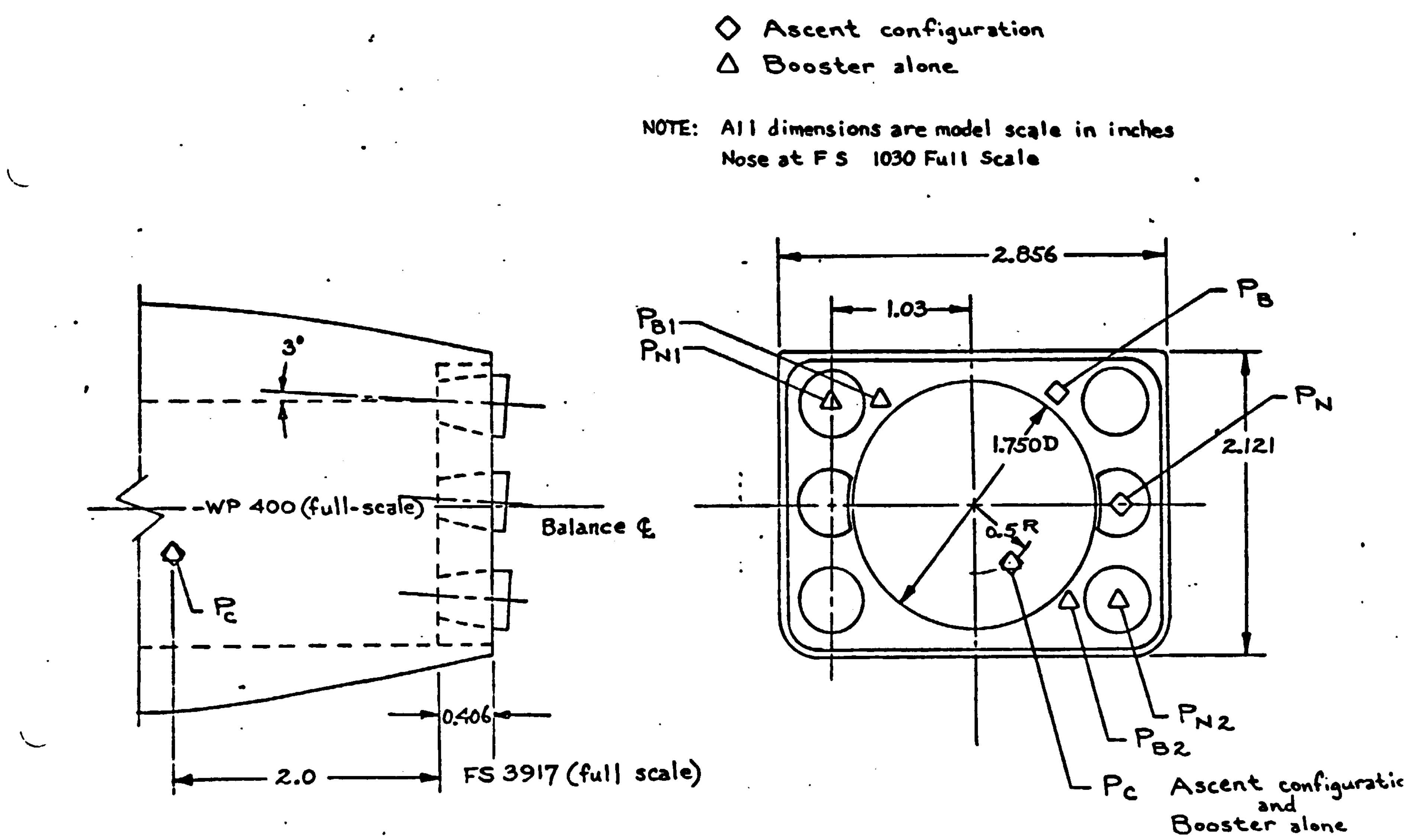


FIGURE 28 BASE N12 GEOMETRY AND BASE PRESSURE INSTRUMENTATION – BOOSTER

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1117 C-1- 121

◇ Ascent configuration (in the presence of the booster)
△ Orbiter alone

NOTE: All dimensions are model scale in inches

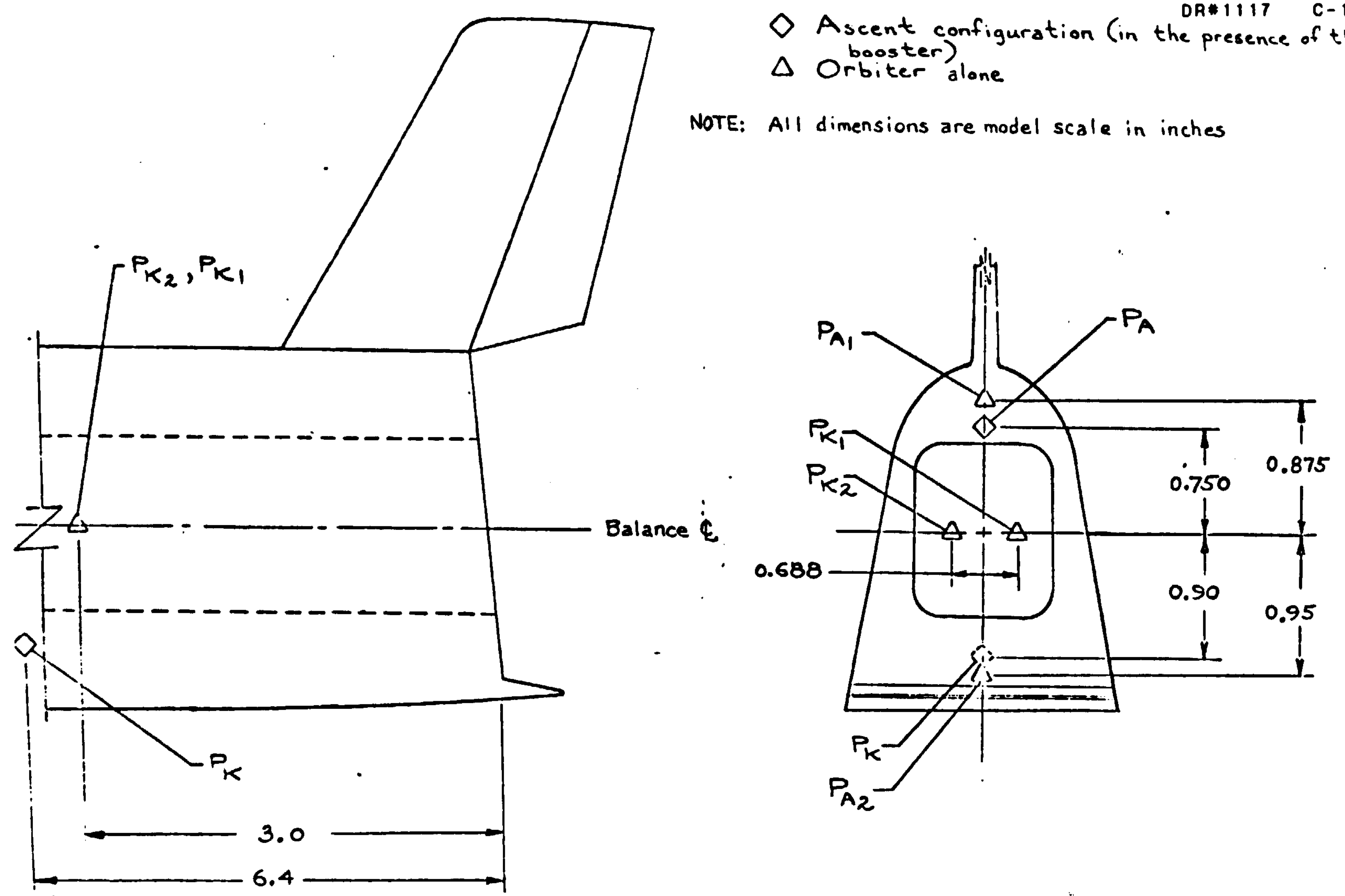


FIGURE 29 ORBITER BASE GEOMETRY AND BASE PRESSURE INSTRUMENTATION

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TABLE I

TEST 22-IN He TUNNEL DATA SET/RUN NUMBER COLLATION SUMMARY

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δc (ORBITER)	δe (BOOSTER)			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) TEST 7377 20.3		TEST 7379 20.5		TEST 7390 20.3		TEST 7380 20.3					
RMU017	MDAC 00508	A	0	-5	-			1	17											
171				-5	-				171											
172				-5	-				172											
201	MDAC 256-N			-	0						1									
211				-							11									
212				-							12									
204	MDAC ASCENT			-5							4									
241	MDAC ASCENT	A		-5	0						41									
304	NAR 134D	B		0	-								4							
341		B		0	-								41							
342		B		0	-								42							
401	GDC B-BB-1	A		-	0										1					
411				-											11					
412				-											12					
404	NAR/GDC ASCENT			0											4					
RMU441	NAR/GDC ASCENT	A	0	0	0			1							41					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

Q(PSI)	CN	CAF	CLM	CBL	CYN	CY	CL	CDF	L/DF	MACH	ALPHA	10

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

A -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

B -10, -7, -4, -2, 0, 2, 4, 7, 10

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1190 C-1- 123

CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1190 C-1- 124

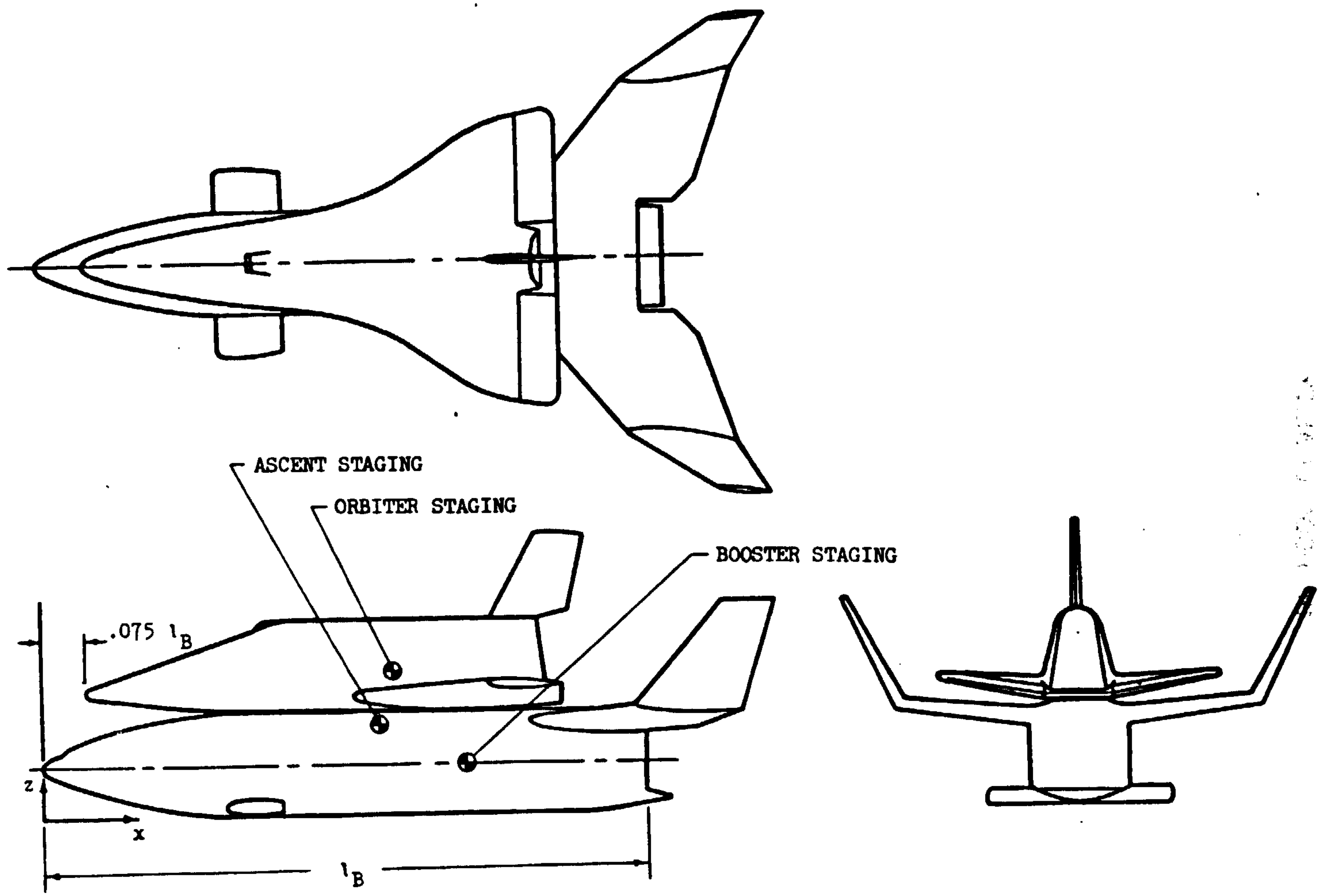

FIGURE 3. MDAC/MMC ASCENT CONFIGURATION. CENTER OF GRAVITY NOTED FOR DIFFERENT CONDITIONS.

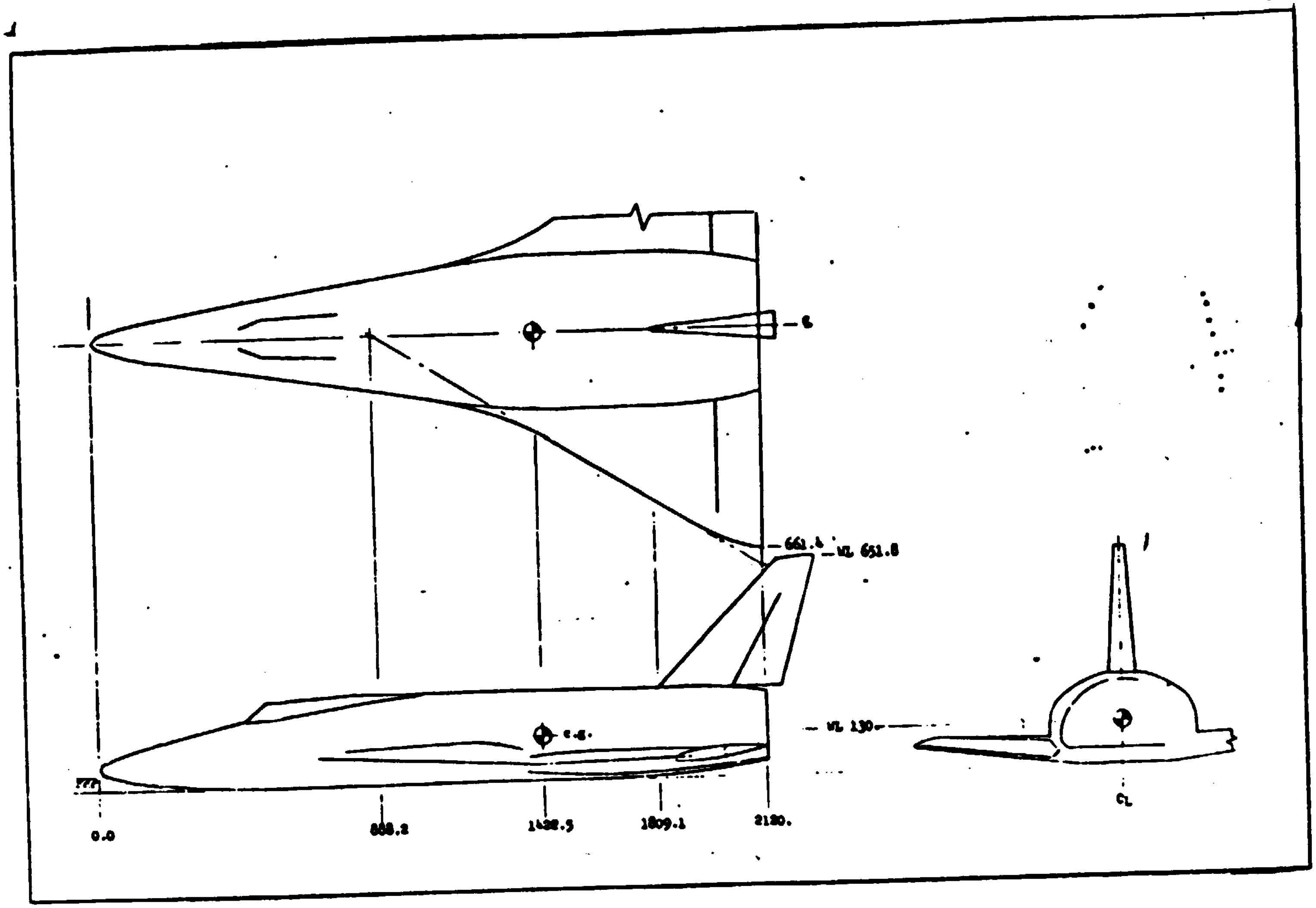

FIGURE 4. NAR 134D ORBITER. FULL-SCALE DIMENSIONS SHOWN

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CANARD BOOSTER
MDAC/MMC
DELTA WING ORBITER
MDAC
DR#1190 C-1- 125

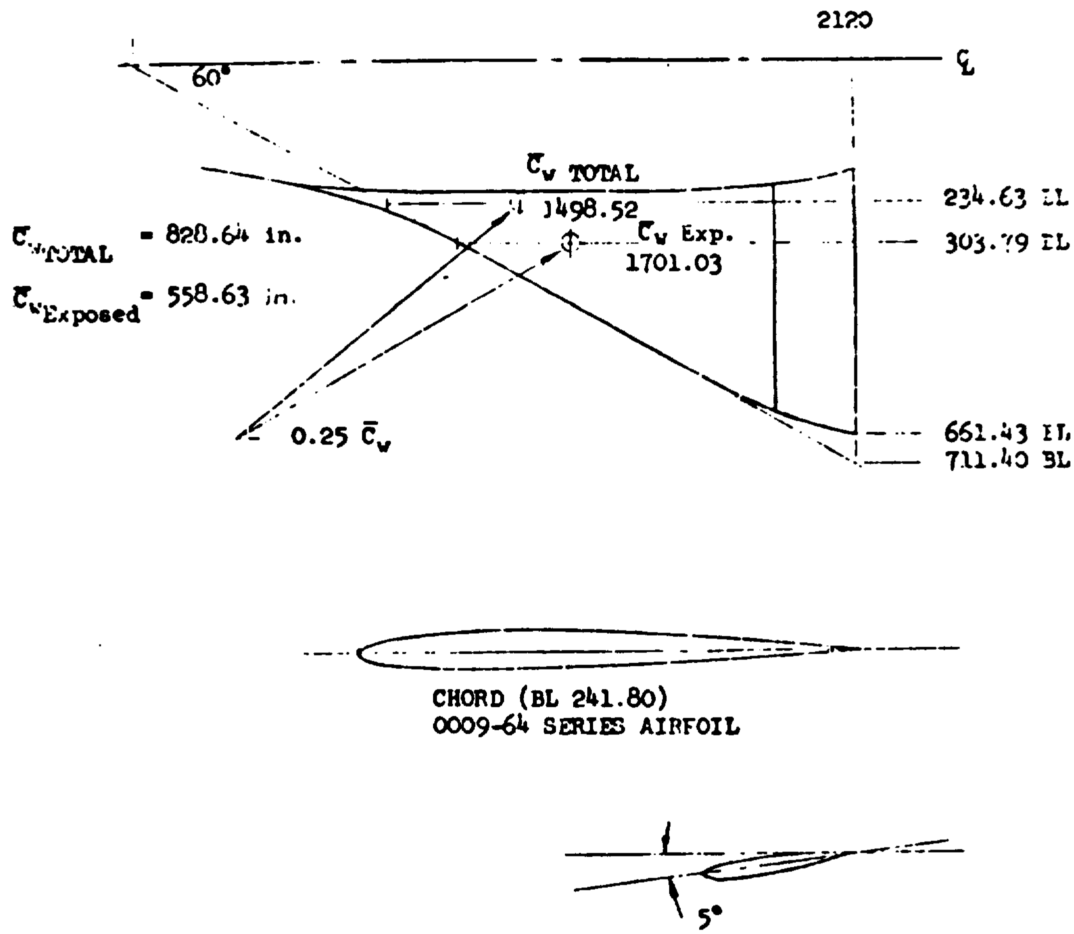

FIGURE 5. NAR WING W_{17} 9992-134 D CONFIGURATION

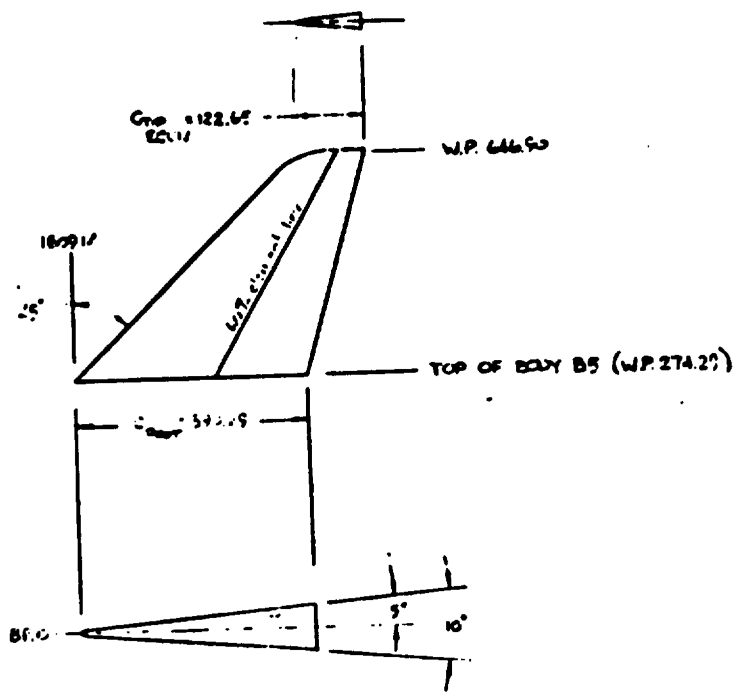

FIGURE 6. VERTICAL STABILIZER V_{17} (NAR ORBITER)

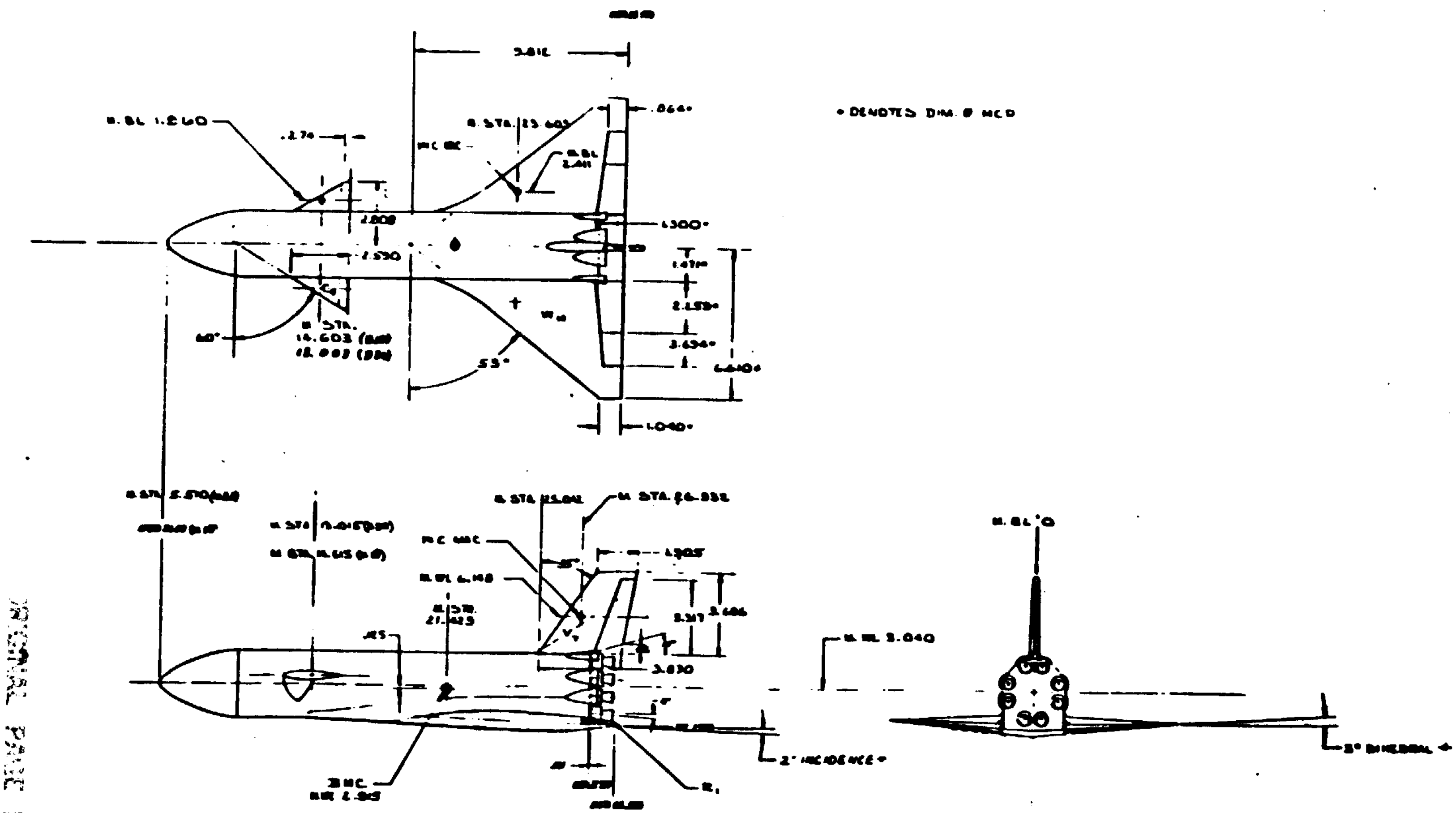

FIGURE 7. GDC B-15B-1 BOOSTER (.0076 SCALE)

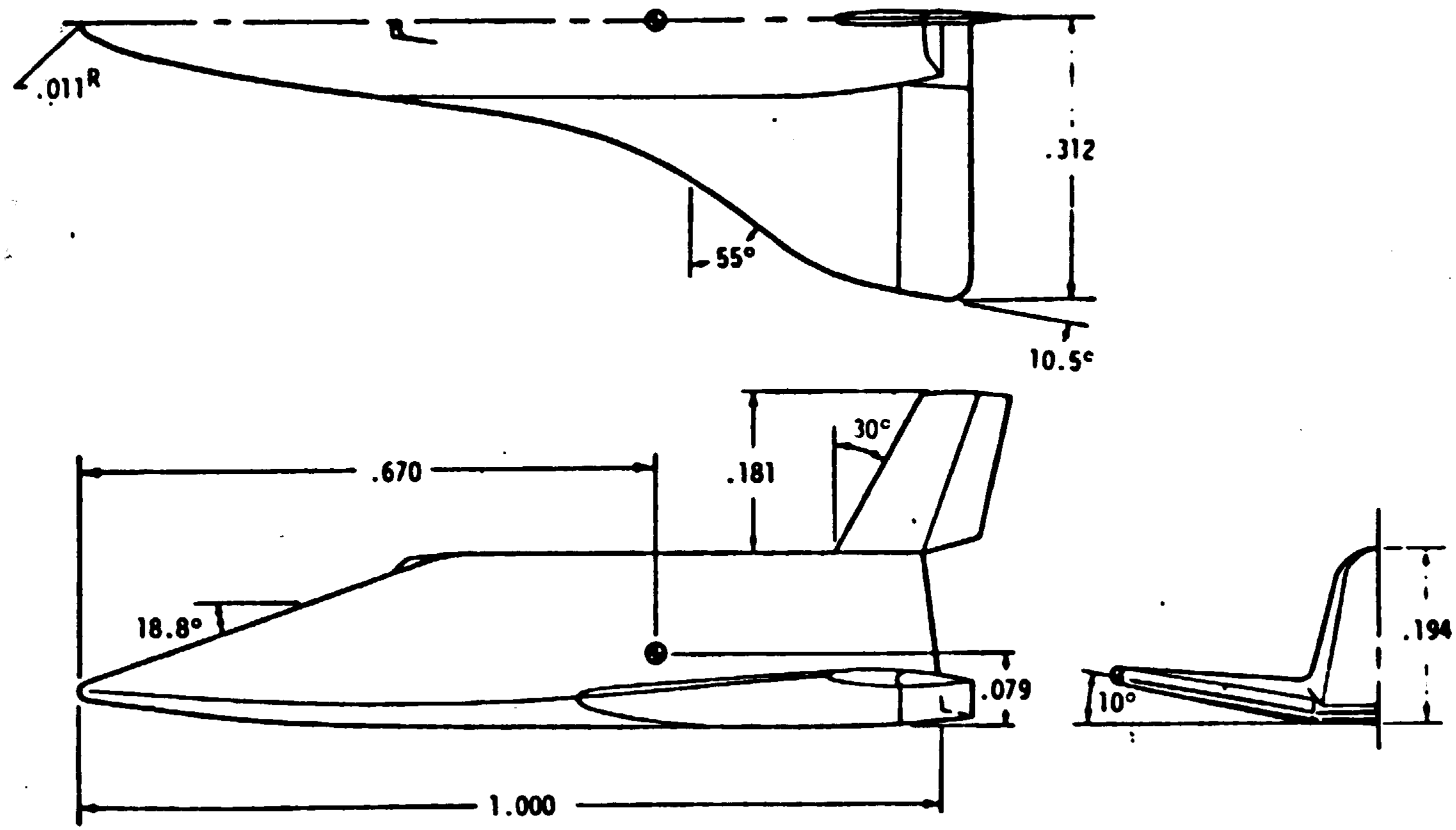

FIGURE 8. MDAC 0050B ORBITER MODEL SKETCH. ALL DIMENSIONS ARE IN TERMS OF BODY LENGTH

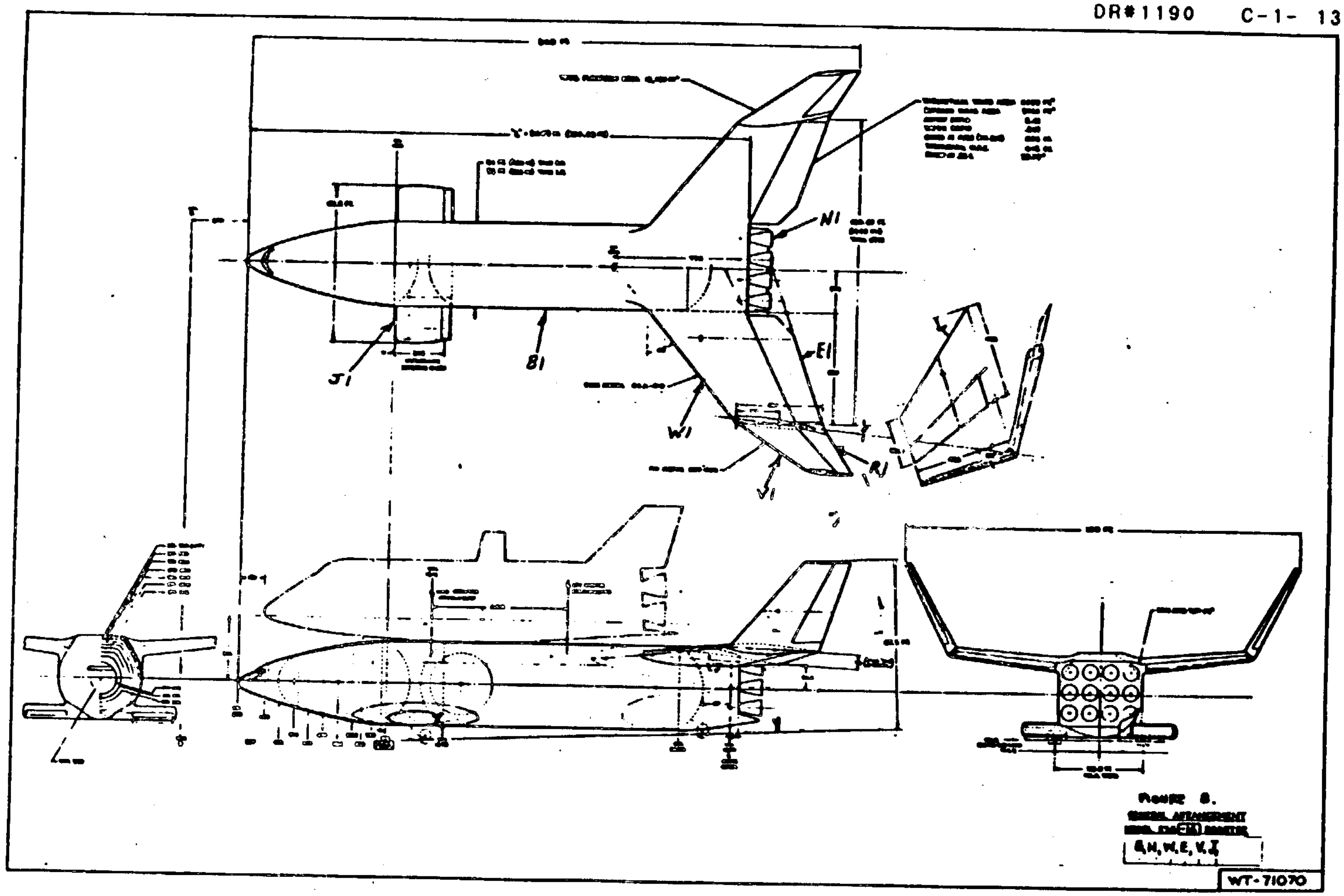

FIGURE 9. MDAC 256-14 BOOSTER WITH FULL SCALE DIMENSIONS

TEST TWT # 492 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe	δc	δa		NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.8	0.9	0.95	1.0	1.1	1.2	1.96	3.5	4.96	
R3403A	B_2W_6	A	0	0	—	0		9	006/0	005/0	004/0	003/0	002/0		001/0	209/0	270/0	271/0	
R3401A	B_2	A	0	—	—	—		2									263/0	[illegible]	
R3401H	↓	+15	F	↓	↓	↓		1										256/0	
R3401G		+10	F					2								206/0	262/0		
R3401F		0	F					2								207/0	261/0		
R3401I		+30	F					1								205/0			
R3402G	$B_2C_1^2$	+10	F		0			5	027/0		025/0				022/0	280/0	[illegible]		
R3402H	↓	-15	F		↓			1	028/0										
R3402F		0	F					1									255/0		
R3402J		+50	F					1										250/0	
R3402A		A	0					1								203/0			
R3404F	$B_2W_6C_1^2$	0	F	0		0		8	[illegible]	030/0	031/0	032/0	033/0		034/0	275/0	275/0		
R3404G	↓	+10	F	↓		↓		5	040/0		038/0		036/0		035/0		265/0		
R3404H		+15	F					1	041/0										
R3404I		+30	F					3								209/0	246/0	245/0	
R3404J		+50	F					1										244/0	
R3405H	$B_2W_6C_1^2V_2$	+15	F					2	042/0									236/0	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CYN	CY	CBL	CL	CAB	CAF	CPBI	CD	IDPVAR(1)	IDPVAR(2)	NDV 10

COEFFICIENTS:

α or β SCHEDULES

$\alpha A = 0, 2°, 4°, 6°, 8°, 10°, 12°, 14°, 16°, 18°, 20°$

$\beta F = -10°, -8°, -6°, -4°, -2°, 0°, +2°, +4°, +6°, +8°, +10°$

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CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 131

$\delta_e = \frac{\delta_{CL}}{\delta_{CR}}$

TEST TWT #492 DATA SET COLLATION SHEET

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 132
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. a	SCHD. b	δe	δc			NO. of RUNS	0.6	0.8	0.9	0.95	1.0	1.1	1.2	1.96	3.5	4.96		
R3405G	$B_2 W_6 C_1^2 V_2$	+10	F	0	0			8	055/0	056/0	057/0	058/0	059/0		060/0	19?/0	235/1			
R3405F		0	F		0			3	067/0							197/0	234/0			
R3407H		+5	F		+20			4	[illegible]		045/0		[illegible]		[illegible]					
R3407F		0	F		+20			4	[illegible]		[illegible]		062/0		061/0					
R3405A		A	O		0			10	079/0	078/0	077/0	076/0	075/0	074/0	073/0	196/0	232/0	233/0		
R3406A		A	O		+10			3								195/0	231/0	230/0		
R3407A		A	O		+20			7	093/0		091/0		089/0		087/0	194/0	228/0	229/0		
R3408A		A	O		-20			1	094/0											
R3410F	$B_2 V_6' C_1^2 V_1$	0	F		0			3	096/0							193/0	227/0			
R3410G		+10	F					8	107/0	106/0	105/0	104/0	103/0		102/0	192/0	226/0			
R3410I		+30	F					2									223/0	224/0		
R3410J		+50	F					1										221/0		
R3410H		+5	F					2	103/0									225/0		
R3411A	$B_2 W_6 V_2$	A	O		—			10	109/1	110/0	111/0	112/0	113/0	114/0	115/0	190/0	219/0	220/0		
R3412A		A	O	0/-10				5	122/0		120/0		118/0		116/0	263/0				
R3413A		A	O	+10/0				1			125/0									
R3414A		A	O	-30				1	131/0											
R3415A	$B_2 V_6 V_2 O_1'$	A	O	0				1	132/0											
R3415B		B	O					1	133/0											
R3415C		C	O					2							135/0	189/0				

1	7	13	19	25	31	37	43	49	55	61	67	73
CLM	CN	CYN	CY	CBL	CL	CAB	CAF	CPBI	CD			1/0

COEFFICIENTS: → IDVAR(1) IDVAR(2) NDV

a or B SCHEDULES

$\alpha B = 0, -2°, -4°, -6°, -8°, -10°, -12°, -14°, -16°, -18°, -20°$

$\alpha C = -10°, -8°, -6°, -4°, -2°, 0°, +2, +4°, +6°, +8°, +10°$

NASA-MSFC-1A1

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$\delta a = \boxed{\delta a_L / \delta c_R}$

TEST TWT # 492 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δe	δc	δa		NO. of RUNS	0.6	0.8	0.9	0.95	1.0	1.1	1.2	1.96	3.5	4.96		
R3416A	$B_2W_6V_2O_1'$	A	0	0	–	+10/-10		1	136/0											
R3416B		B	0					1	137/0											
R3416F		0	F					2		143/0					144/0					
R3415F		0	F			0		3	283/0						145/0	137/0				
R3415D		0	D					1	147/0											
R3415E		0	E					1	145/0											
R3415H		+15	F					1	156/0											
R3417C	$B_2W_6V_2C_1^2O_1'$	C	0		0			2	161/0						164/0					
R3418F	$B_2W_6V_1O_1'$	0	F		–			1								184/0				
R3419F	$B_2W_6O_1'$	0	F		–			2	177/0						178/0	179/0				
R3414K	$B_2W_6V_2$	K	0	-30	–	0		1										284/0		
R3414J		50	F	0	–	0		1										235/0		

1	7	13	19	25	31	37	43	49	55	61	67	73
CLM	CN	CYN	CY	CBL	CL	CAB	CAF	CPBI	CD			10

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

βD = 0°, 2°, +4°, +6°, +8°, +10°, +12°, +14°, +16°, +18°, +20°

βE = 0°, -2°, -4°, -6°, -8°, -10°, -12°, -14°, -16°, -18°, -20°

αK = +40°, +42°, +44°, +46°, +48°, +50°, +52°, +54°, +56°

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CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 133

TEST *TWT #492* DATA SET COLLATION SHEET

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 134
☒ POSTTEST

TRIP STRIP STUDY

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_3	δ_c	δ_e	ϵ	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.96	4.96
23405C	$B_2 W_6 V_2 C_1{}^2 + TS_1$	C	0	0	0	0	+10°	1	[illegible]	
05S	$+TS_2$	↓	↓	↓	↓	↓	↓	1	501/0	
05T	$+TS_3$	↓	↓	↓	↓	↓	↓	1	502/0	
05U	(NO TRIP)	↓	↓	↓	↓	↓	↓	2	503/0	506/0
05V	$+TS_4$	↓	↓	↓	↓	↓	↓	2	504/0	505/0
05W	$+TS_5$	↓	↓	↓	↓	↓	↓	1		507/0
09C	$+TS_5$	C	0	+30	0	0	+10°	1		508/0
09X	$+TS_6$	↓	↓	↓	↓	↓	↓	1		509/0
09Y	$+TS_7$	↓	↓	↓	↓	↓	↓	1		510/0
09Z	(NO TRIP)	↓	↓	↓	↓	↓	↓	1		511/5

1	7	13	19	25	31	37	43	49	55	61	67	73
CLM	CY	CYN	CY	CBL	CL	CAB	CAF	CPBI	CD			1c

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: $\alpha_C = -10°, -8°, -6°, -4°, -2°, 0°, +2°, +4°, +6°, +8°, +10°$

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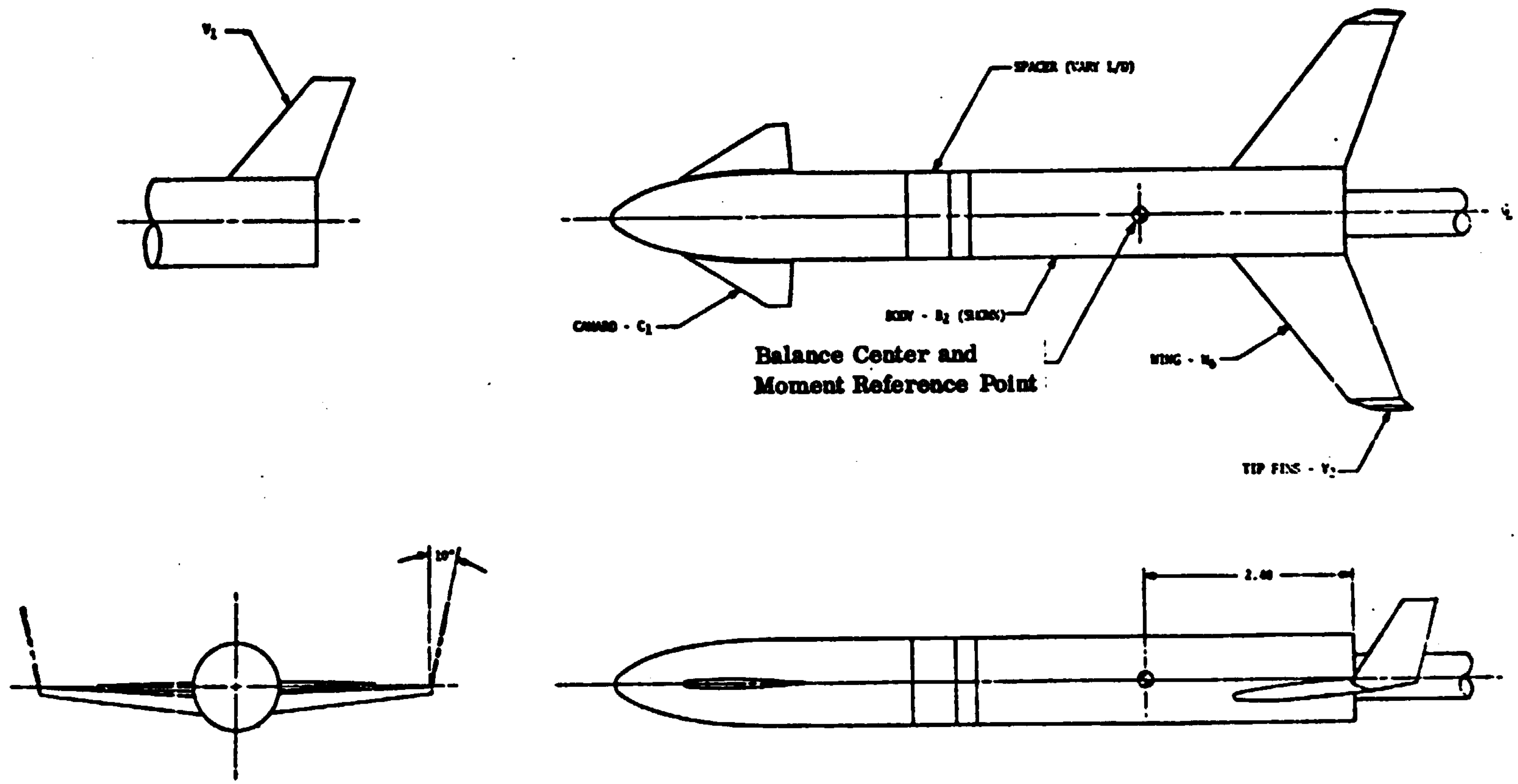

FIGURE 5. 0.002456 SCALE AR1198I-1 BOOSTER MODEL

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 136

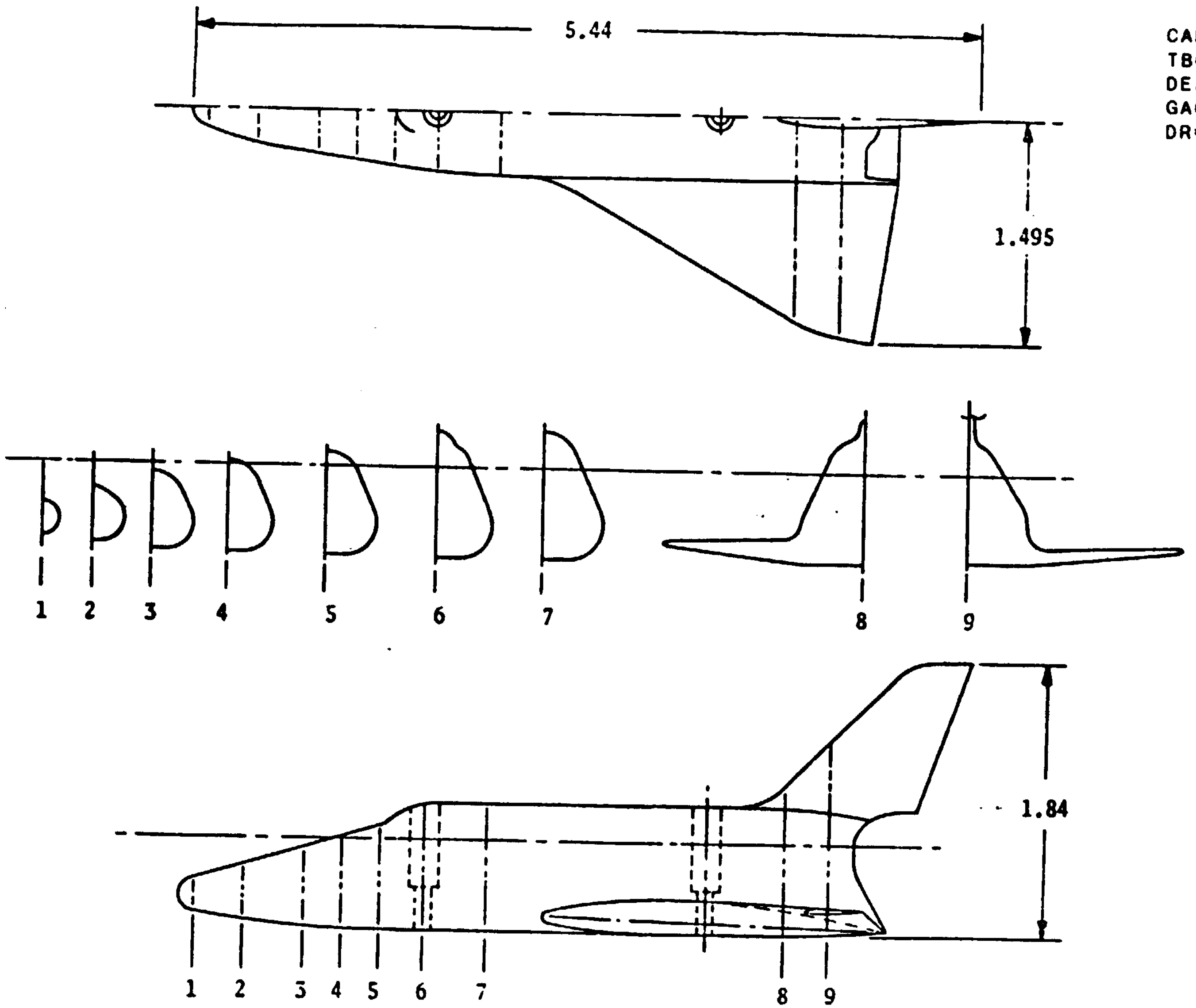

FIGURE 6. GRUMMAN G3-A ORBITER BODY

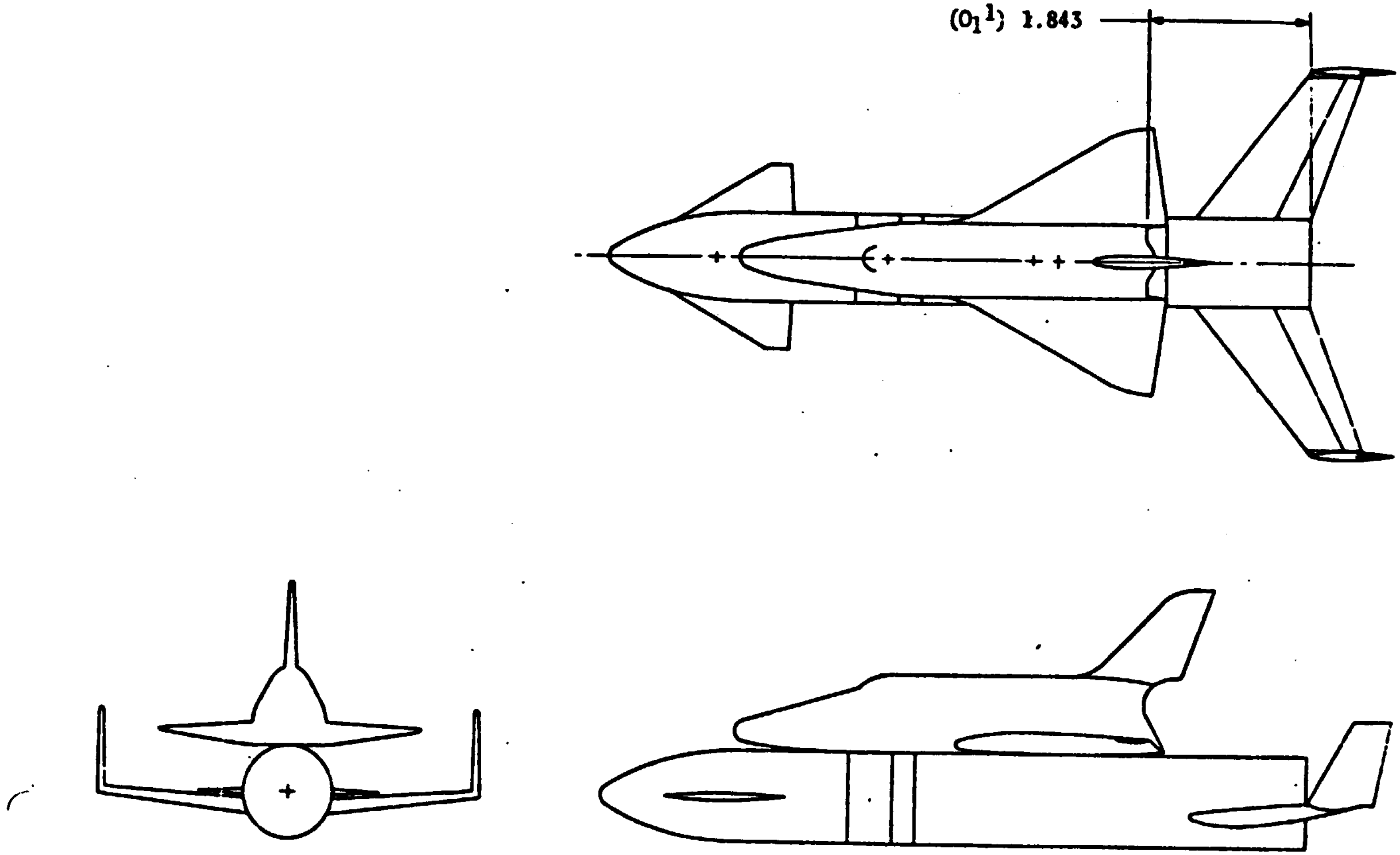

FIGURE 7. BOOSTER ORBITER CONFIGURATION

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 137

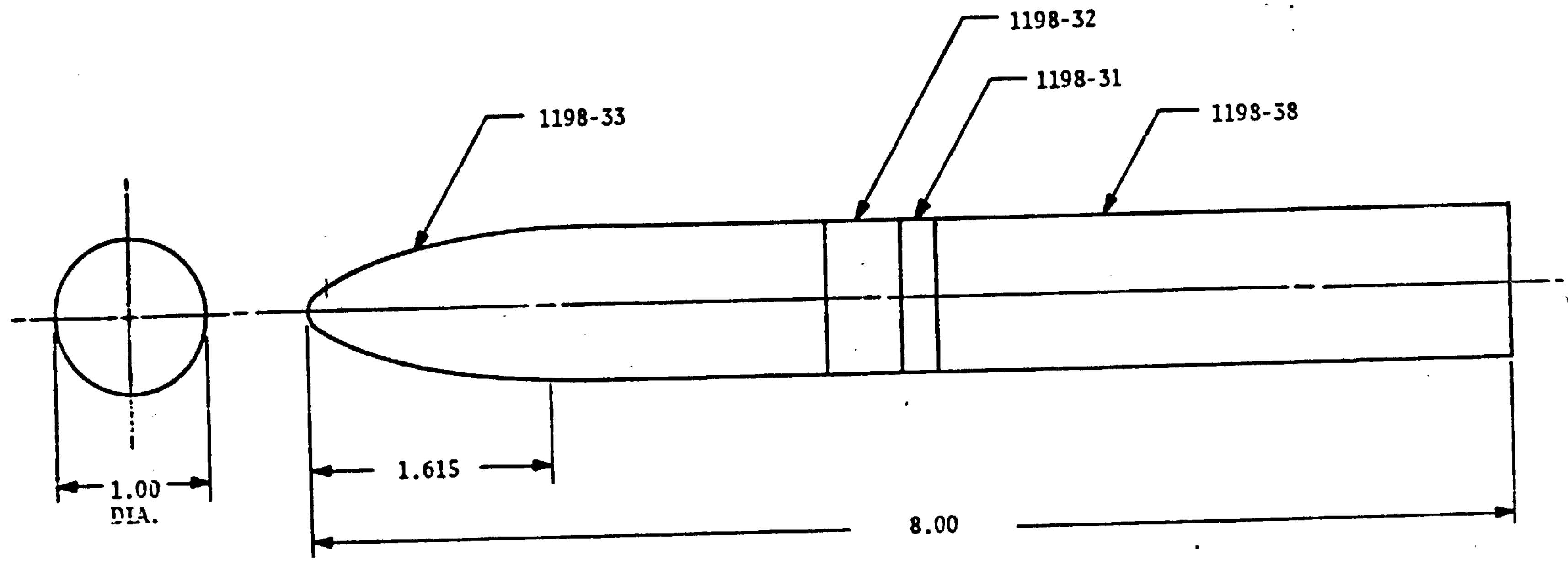

FIGURE 8. AR-1198 BODY B_2

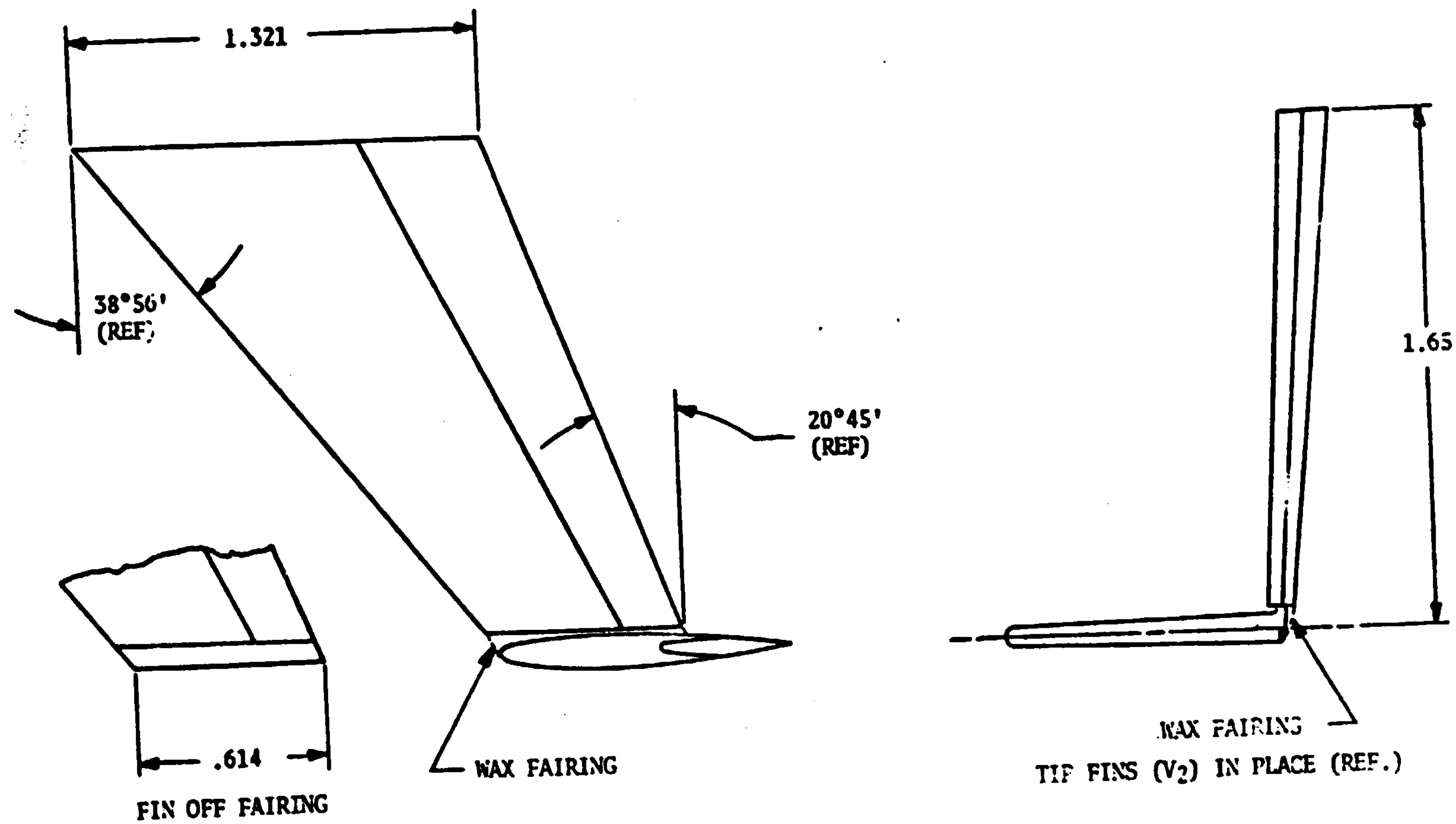

FIGURE 9. WING, W_6

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 139

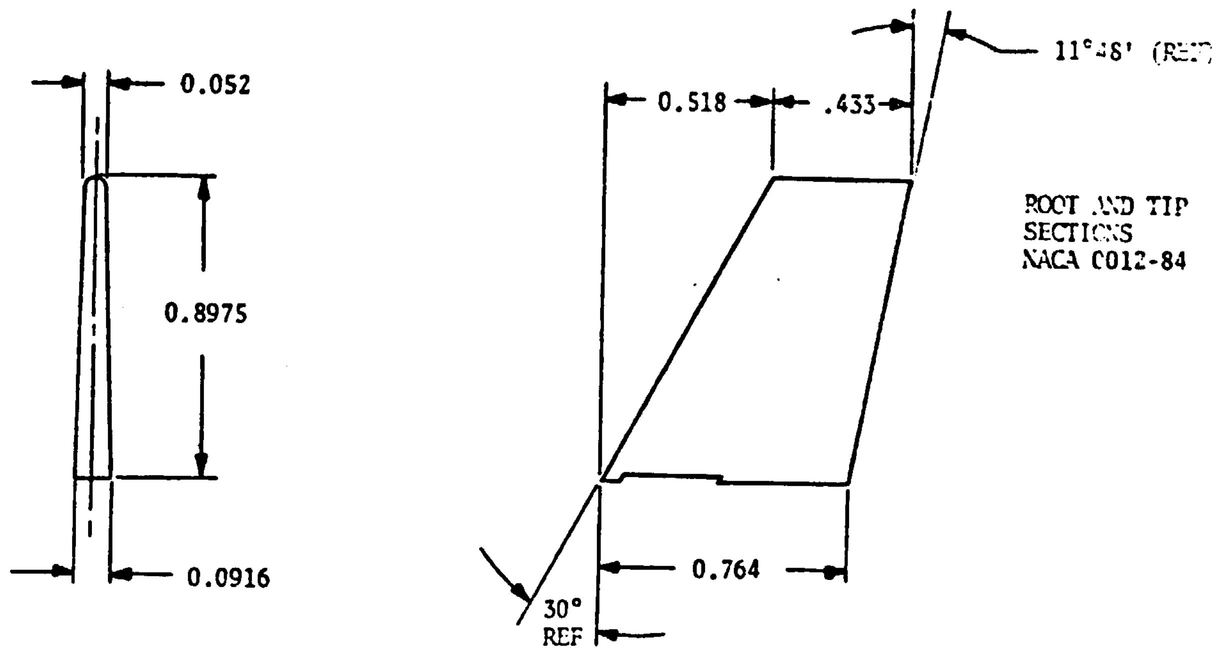

FIGURE 10. WING TIP FINS, V_2

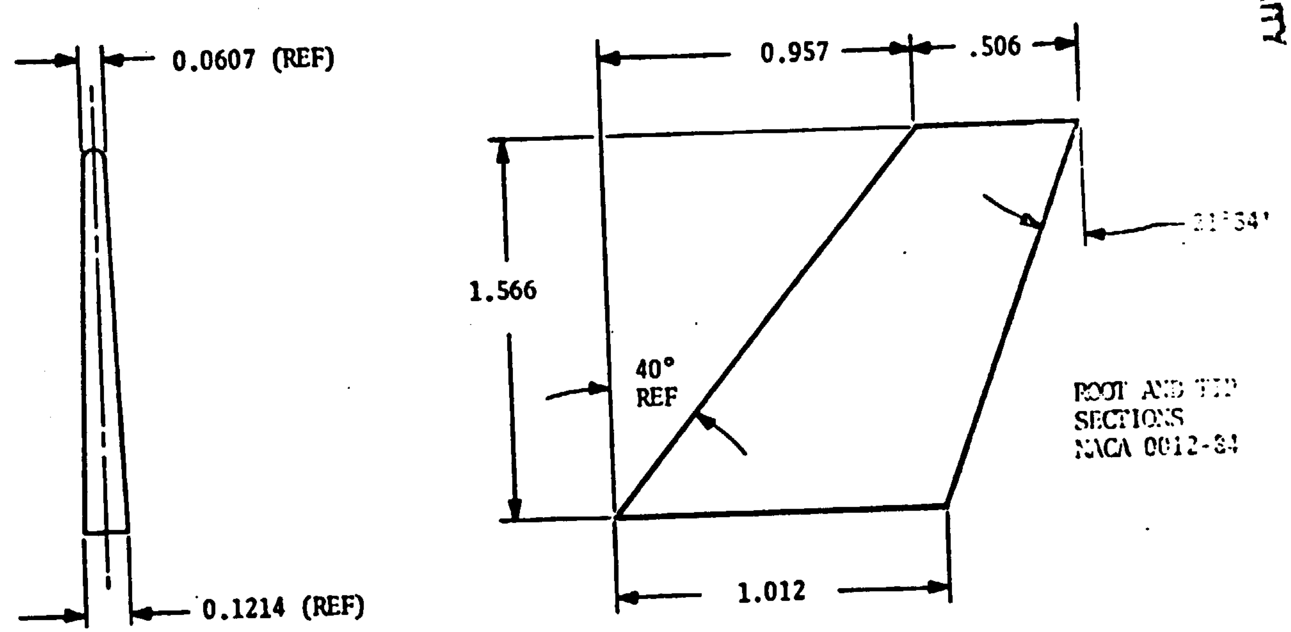

FIGURE 11. VERTICAL TAIL V_1
CENTERLINE

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 141

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 142

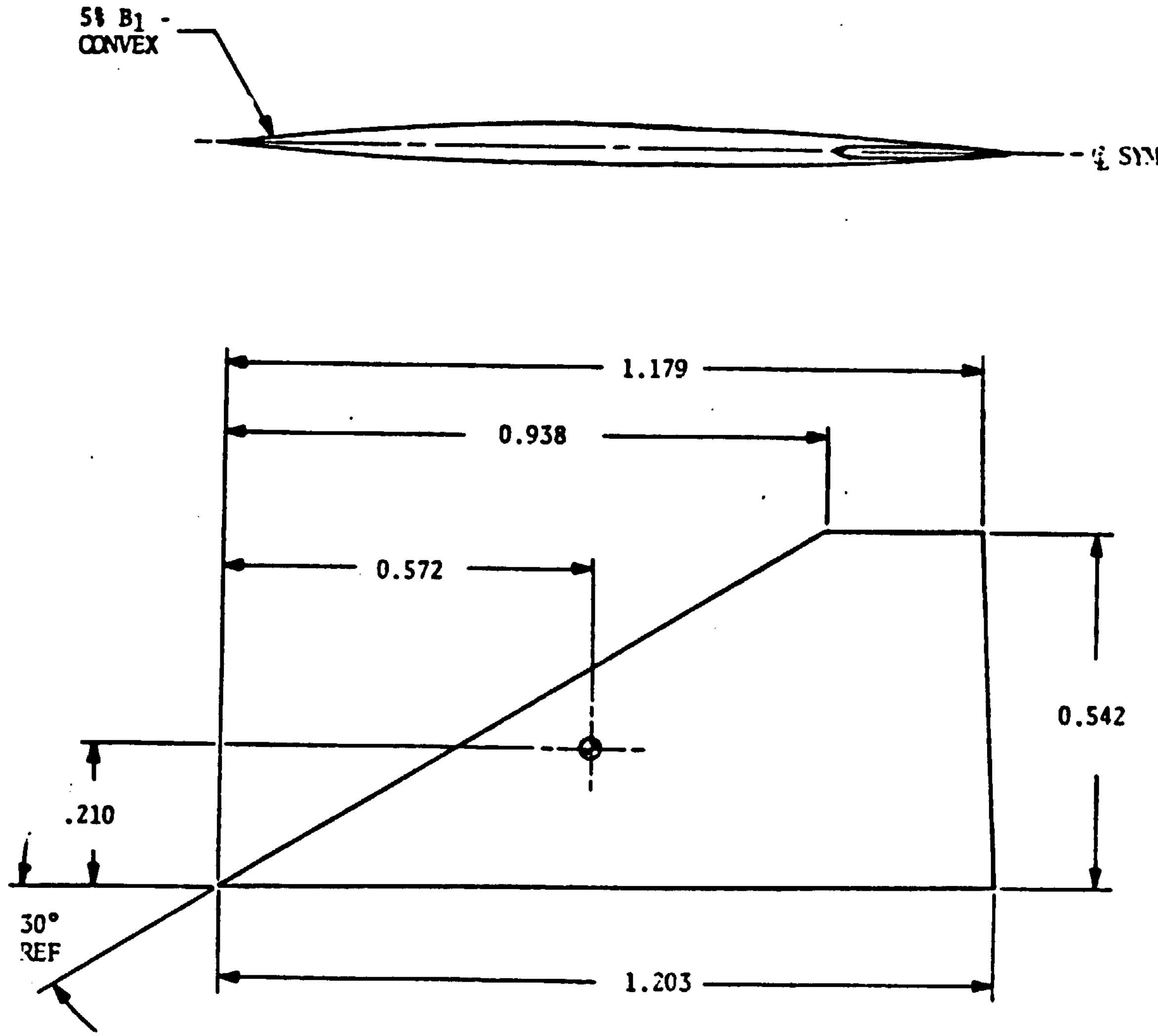

FIGURE 12. CANARD, C_1

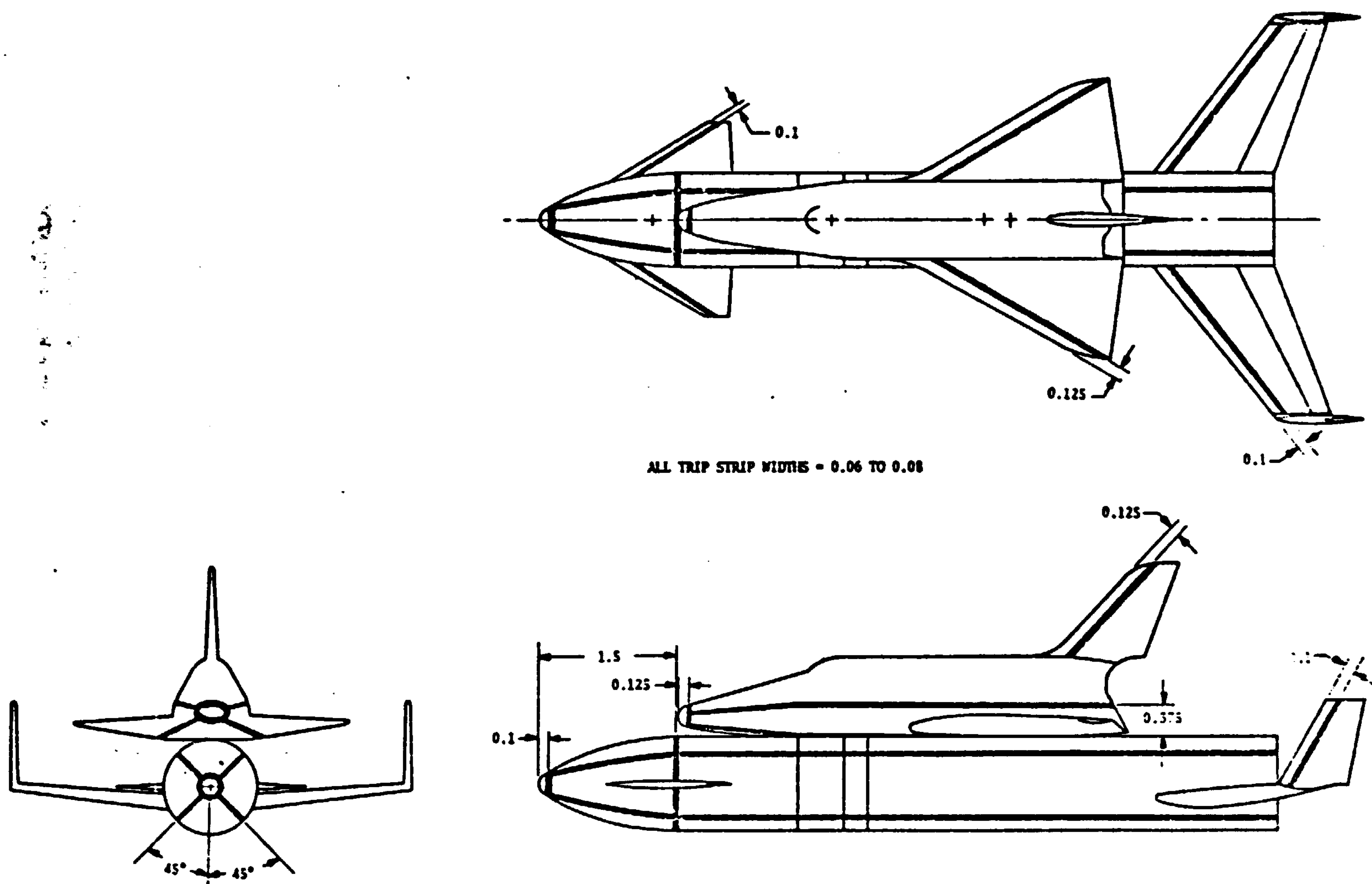

FIGURE 13. TRIP STRIP CHART

CANARD BOOSTER
TBC
DELTA WING ORBITER
GAC
DR#1148 C-1- 143

TABLE I

TEST ARC 6x6-551 DATA SET/RUN NUMBER

COLLATION SUMMARY

CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 144
☒ POSTTEST

L5 = B3N12W5E3J6F4V6R6

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_A	δ_E			NO. of RUNS	MACH 0.60	0.85	0.92	1.20	1.50	2.00						
RAYL01	L5 + Q6SP1	A	0°	0°	0°			6	6	5	4	3	2	1						
L02		A	5°					6	12	11	10	9	8	7						
L03		0°	A					6	18	17	16	15	14	13						
L04	L5 + QP1	A	0°					6	63	62	61	60	59	58						
L05		A	5°					6	69	68	67	66	65	64						
L06		0°	A					4	22	-	21	20	-	19						
L07	L5 + QP2	A	0°					6	57	56	55	54	53	52						
L09		0°	B					6	28	27	26	25	24	23						
L10	L5 + QP3	A	0°					5	45	44	43	42	-	41						
L12		0°	B					6	40	39	38	37	36	35						
L13	L5 + QP4	A	0°					6	51	50	49	48	47	46						
L15		0°	B					6	34	33	32	31	30	29						

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN CAF CAB CLM CY CYN CBL MACH ALPHA 7

COEFFICIENTS: IDPVAR(1) IDPVAR(2) OR BETA NDV

α or β SCHEDULES

A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

B = -6, -4, -2, -1, 0, 1, 2, 4, 6, 8, 10

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TABLE I. (Concluded)

TEST ARC 6X6-557 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

L5 = B3N12W5E3J6F4V6R6

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_A	δ_E			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.60	0.85	0.92	1.20	1.50	2.00
RAYP01	L5 + Q6SP1	A	0°	0°	0°			6	6	5	4	3	2	1
P02	↓	A	5°	↓	↓			6	12	11	10	9	8	7
P03	↓	0°	A					6	18	17	16	15	14	13
P04	L5 + QP1	A	0°					6	63	62	61	60	59	58
P05	↓	A	5°					6	69	68	67	66	65	64
P06	↓	0°	A					4	22	-	21	20	-	19
P07	L5+QP2	A	0°					6	57	56	55	54	53	52
P09	↓	0°	B					6	28	27	26	25	24	23
P10	L5 + QP3	A	0°					5	45	44	43	42	-	41
P12	↓	0°	B					6	40	39	38	37	36	35
P13	L5 + QP4	A	0°					6	51	50	49	48	47	46
↓ P15	↓	0°	B	↓	↓			6	34	33	32	31	30	29

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CN CA CAB CLM CY CYN CBL MACH ALPHA 7

IDPVAR(1) IDPVAR(2) OR BETA NDV

COEFFICIENTS:

α or β SCHEDULES

A = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

B = -6, -4, -2, -1, 0, 1, 2, 4, 6, 8, 10

CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 145

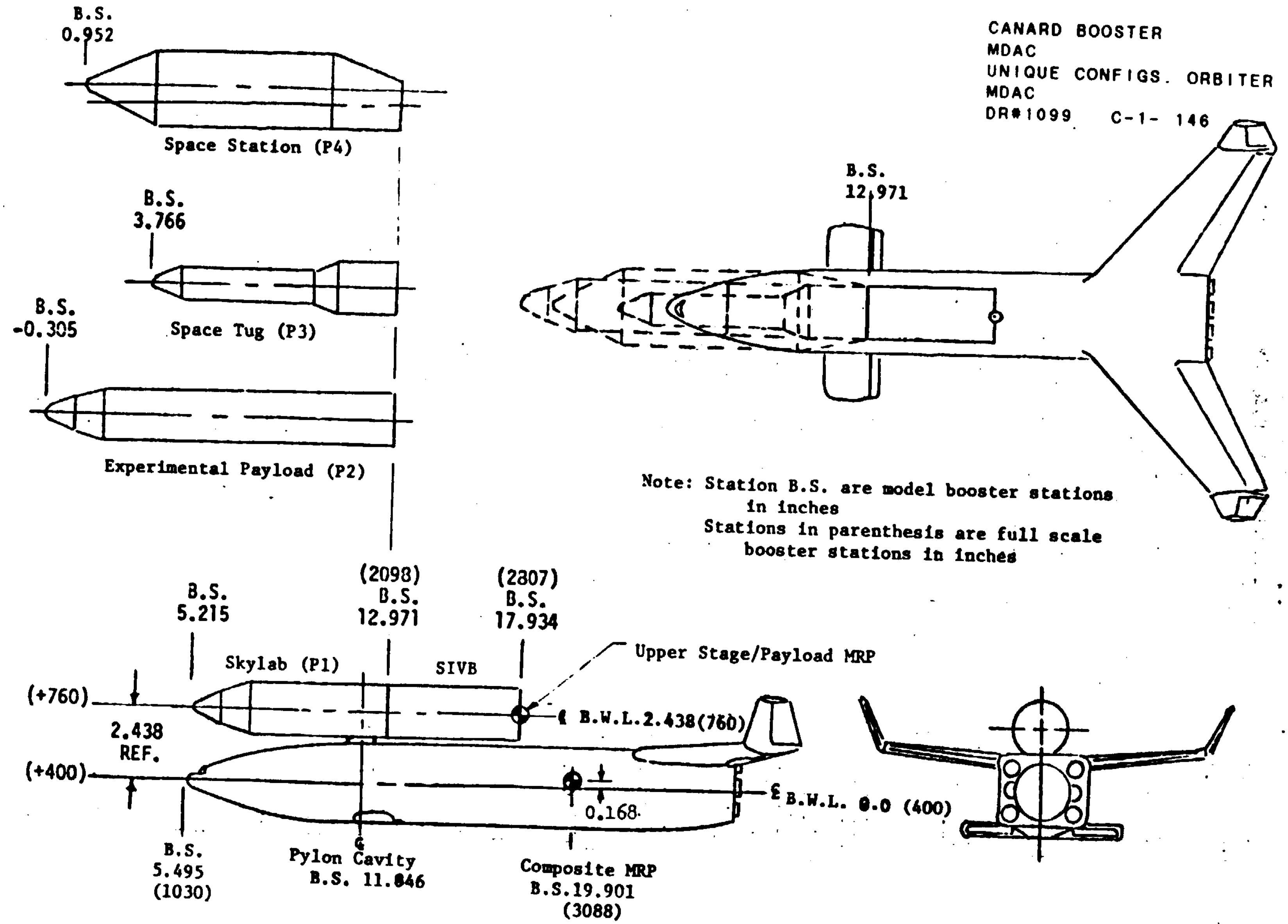
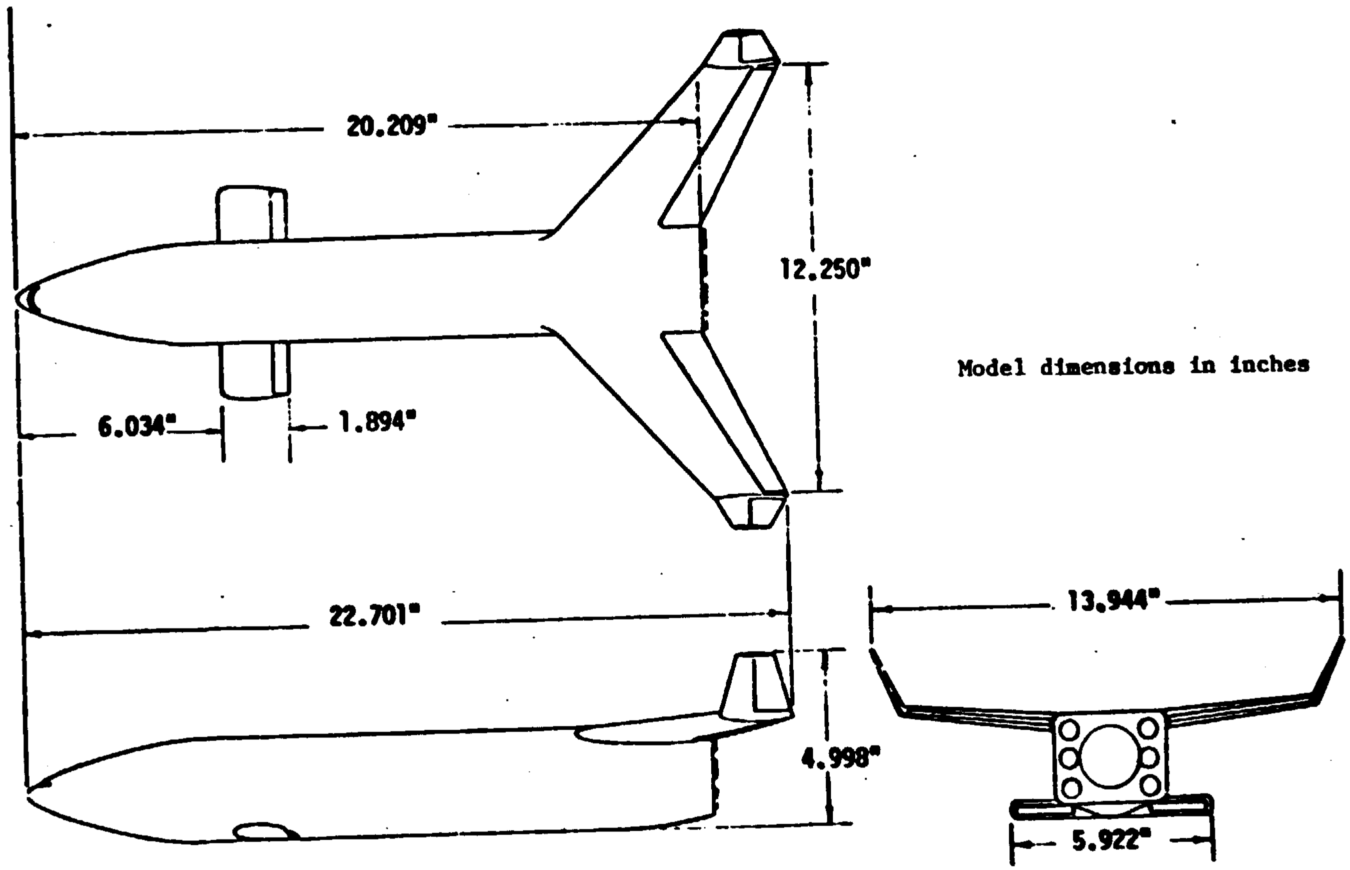


Figure B.- General Arrangement of Booster with Expendable Second Stage Plus Various Payloads

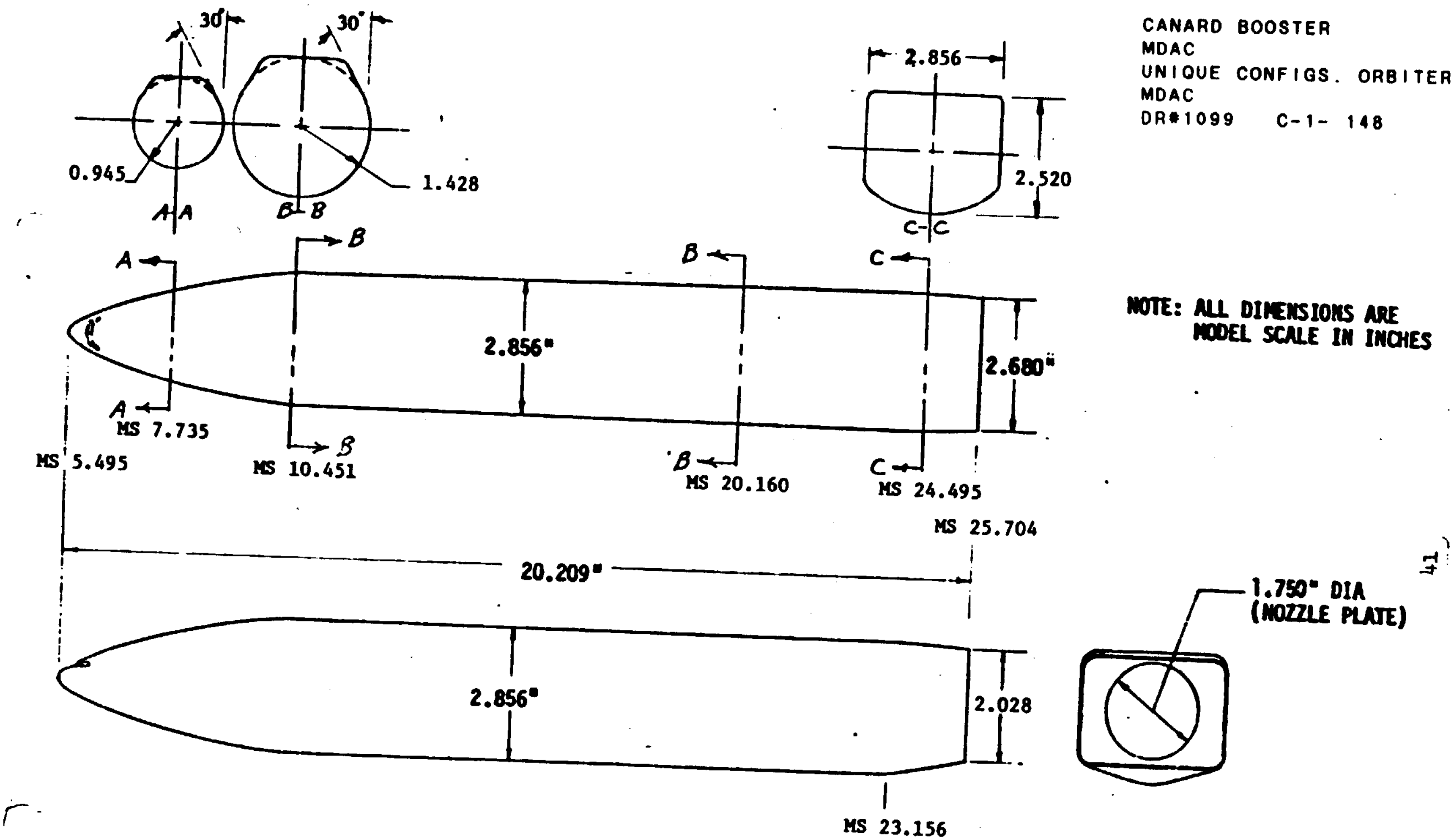


Model dimensions in inches

(a) Three View

Figure D.- Space Shuttle Booster (L5)

CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 147

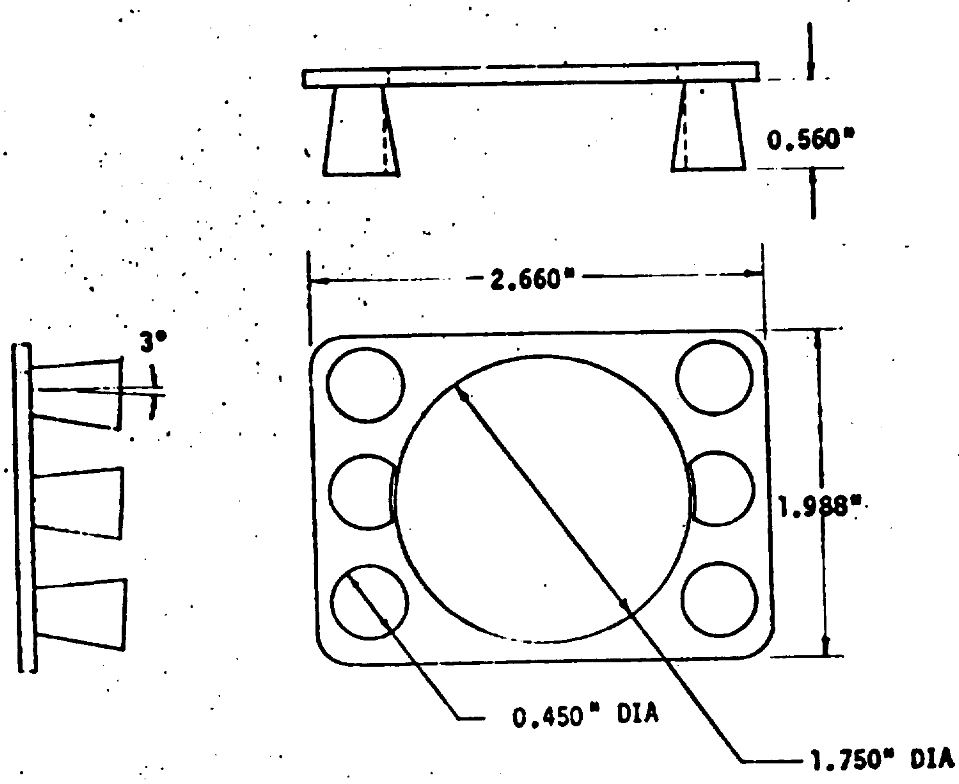


(b) Booster Body (B3)

Figure D.- continued

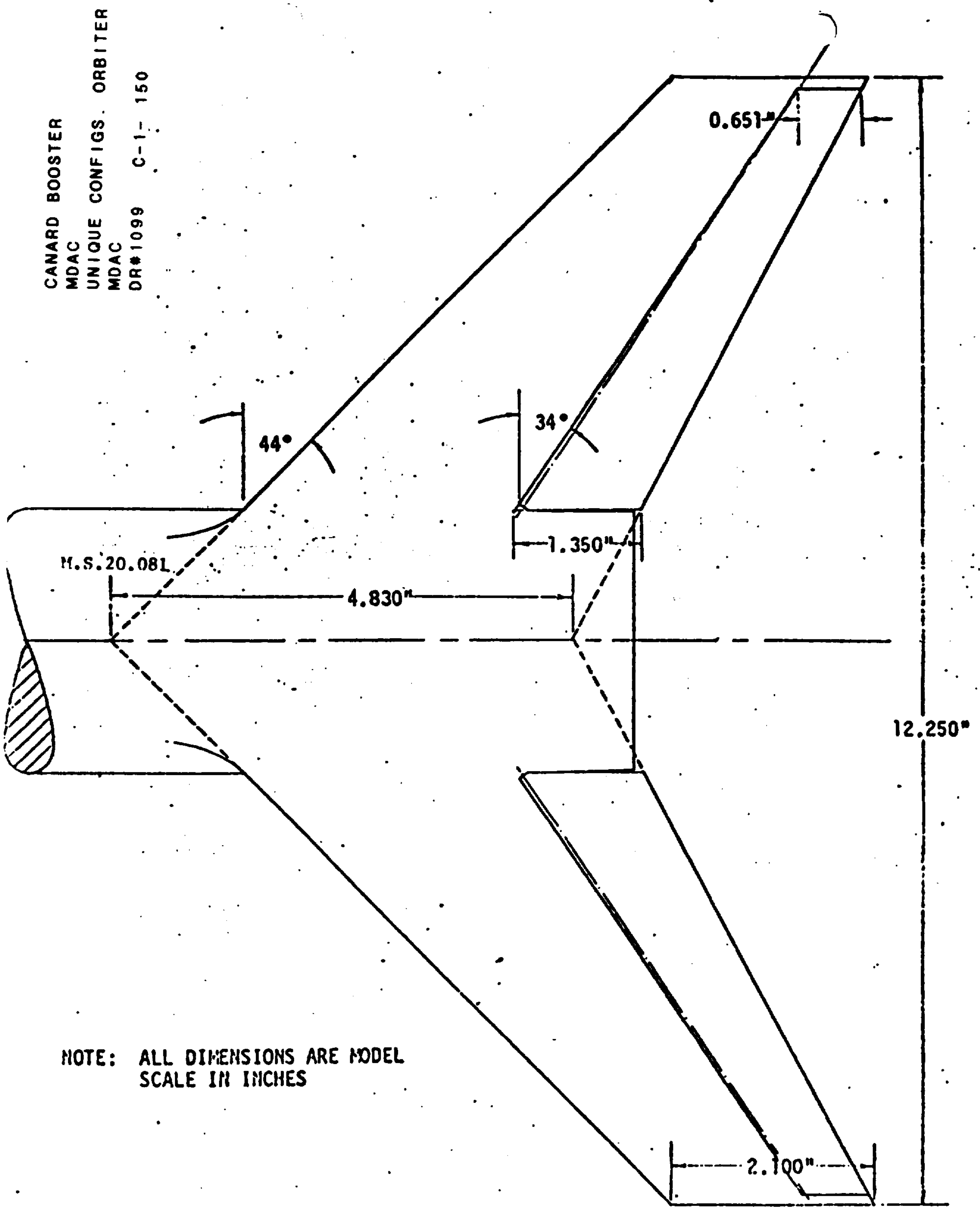
CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 149

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



(c) Booster Nozzle Plate N12 Nozzles

Figure D.- continued

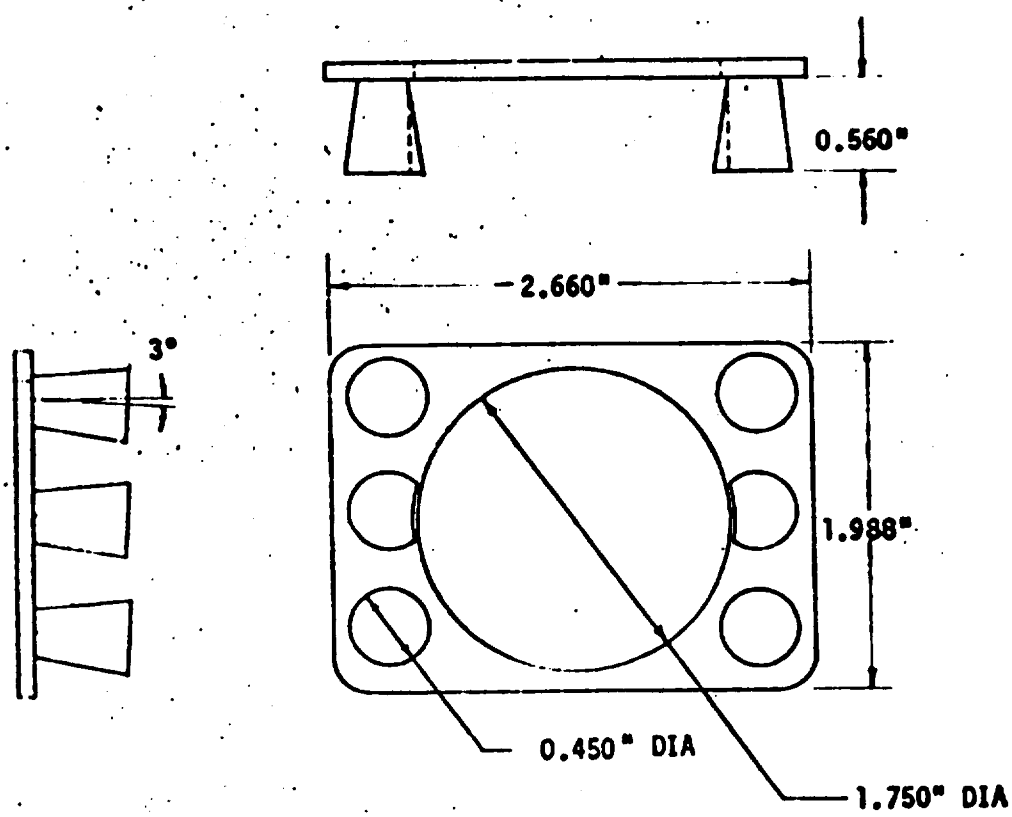


(d) Booster Wing (W5), Elevon (E3)

Figure D.- continued

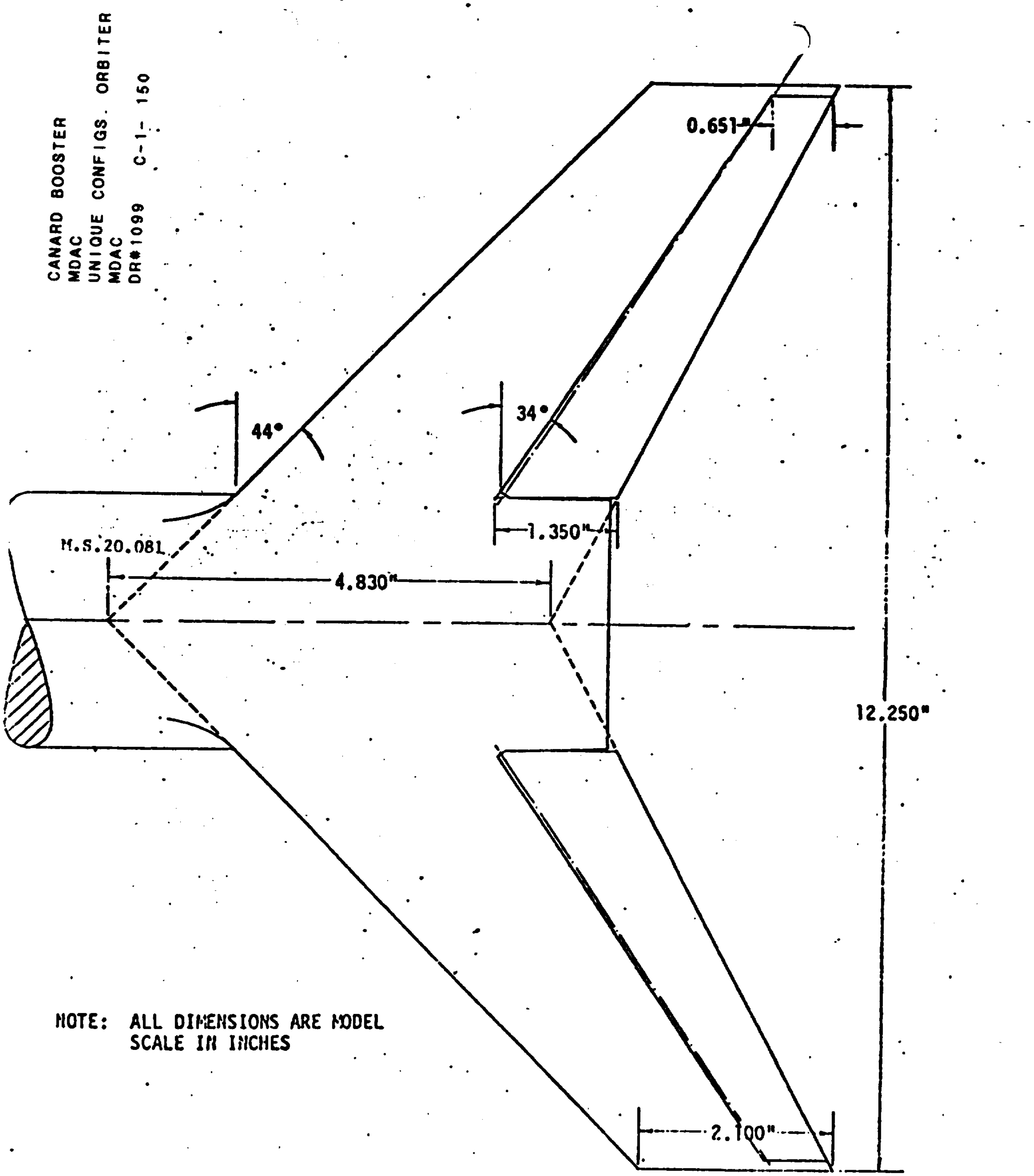
CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 149

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



(c) Booster Nozzle Plate N12 Nozzles

Figure D.- continued



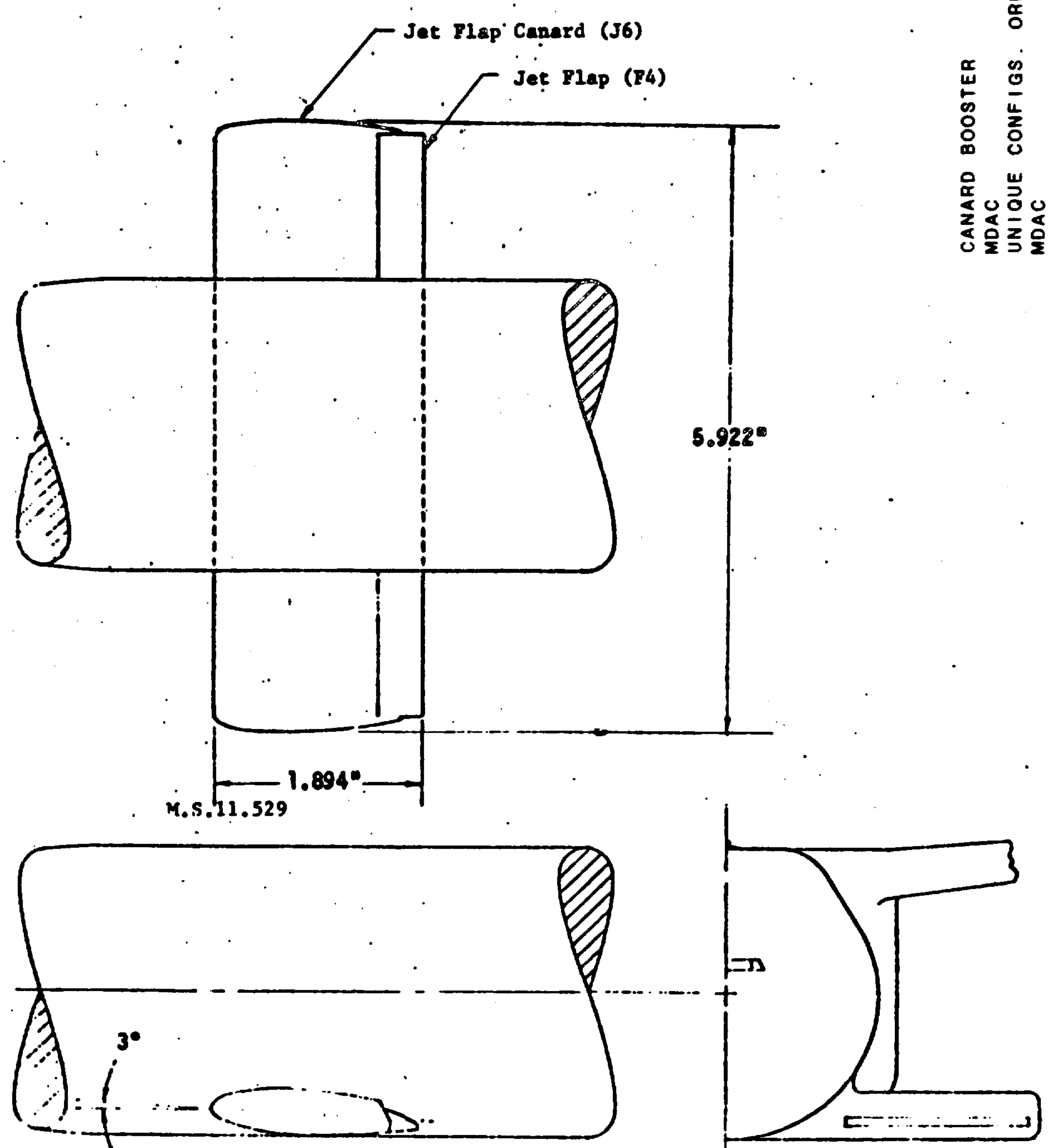
NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

(d) Booster Wing (W5), Elevon (E3)

Figure D.- continued

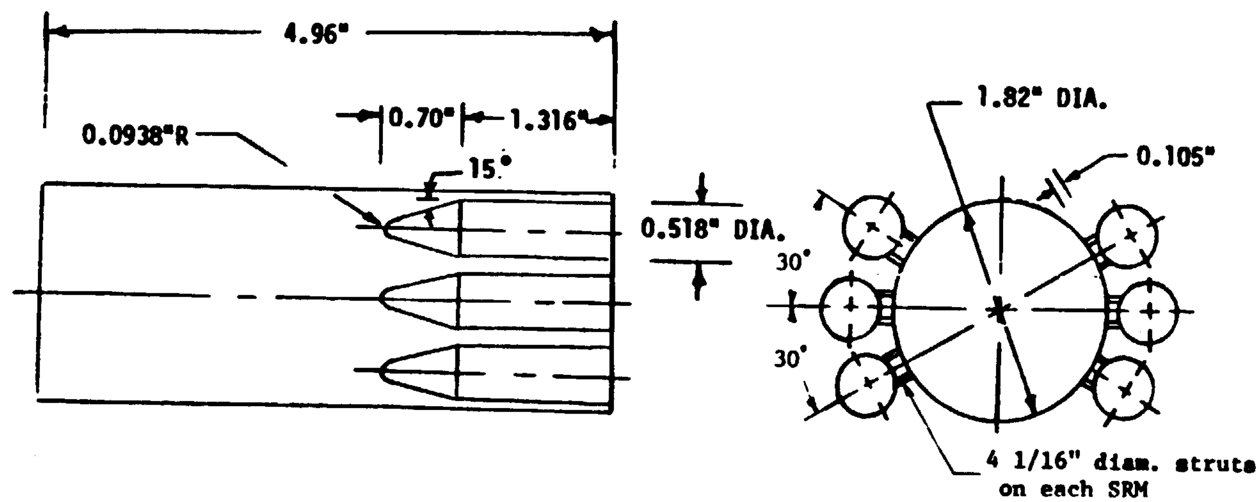
CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 151

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



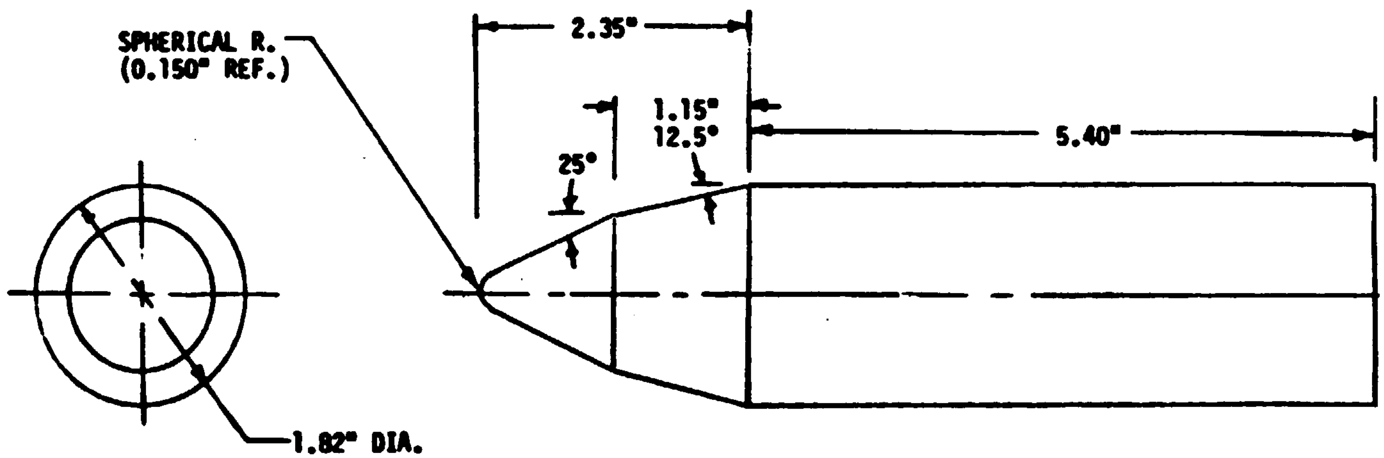
(e) Booster Jet Flap Canard (J6), Jet Flap (F4)

Figure D.- continued



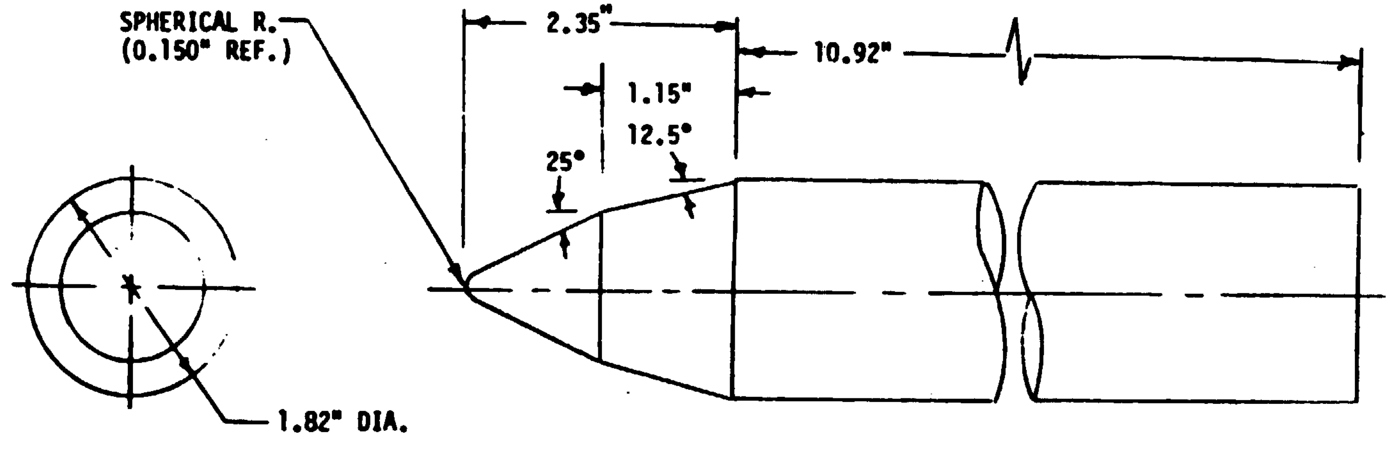
Model dimensions in inches

Figure E.- S-IVB Stage and Six SRM's (Q6S)



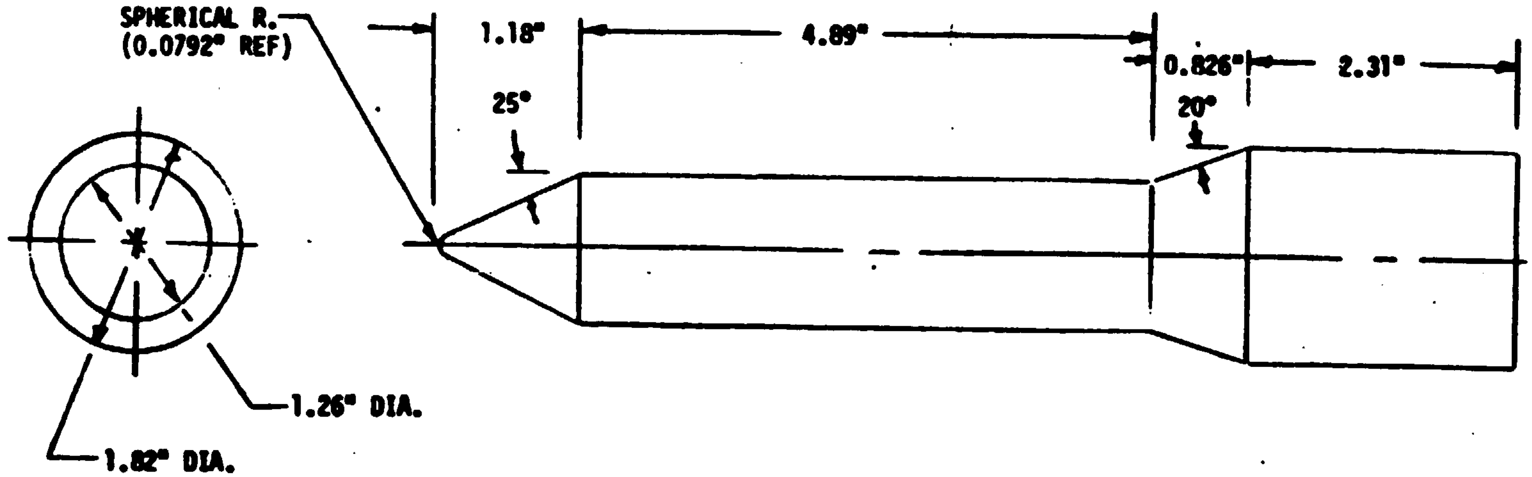
Model dimensions in inches

Figure F.-Skylab (P1)



Model dimensions in inches

Figure G.- Experimental Payload (P2)

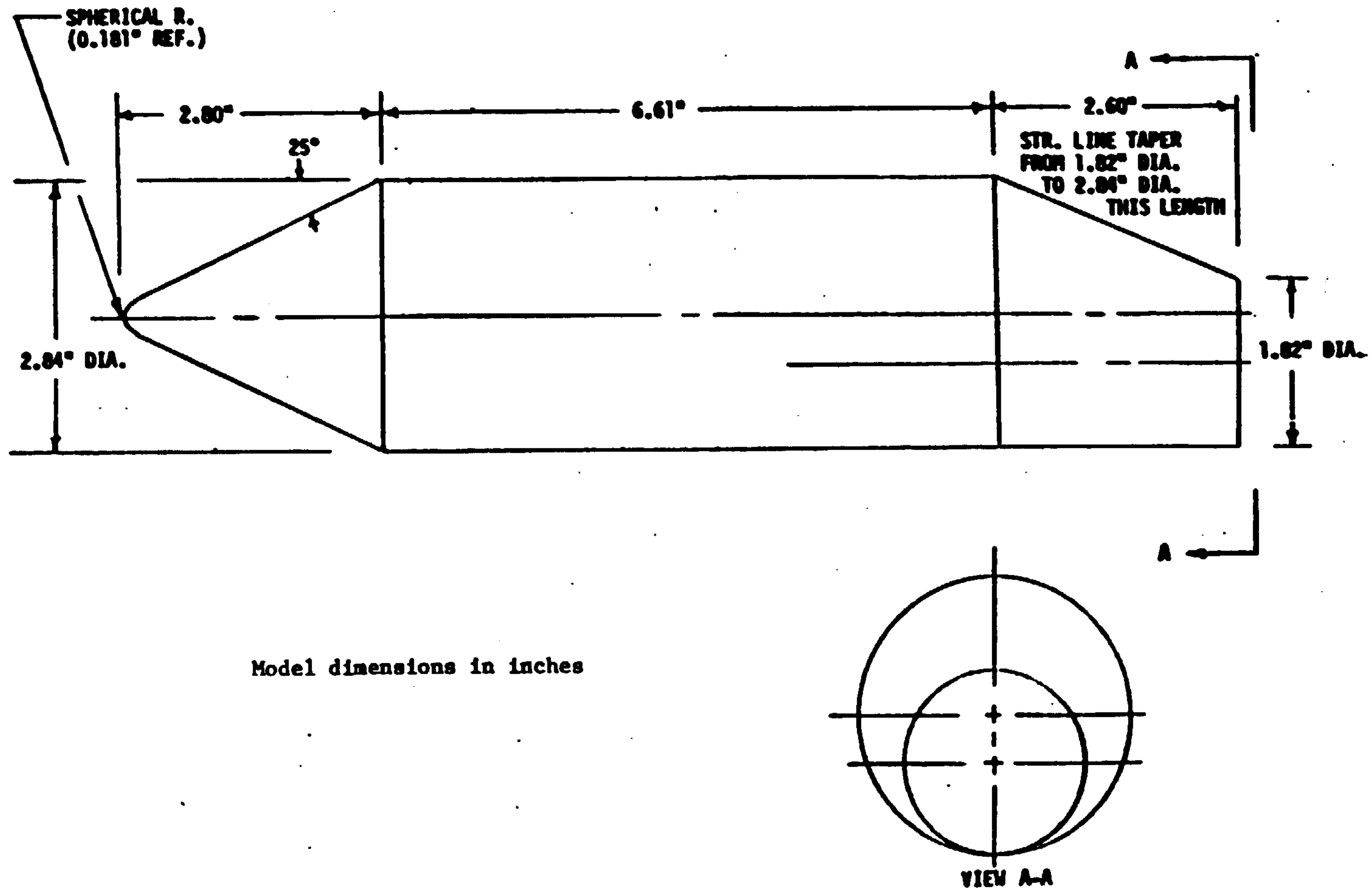


Model dimensions in inches

Figure H.- Space Tug (P3)

CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 155

CANARD BOOSTER
MDAC
UNIQUE CONFIGS. ORBITER
MDAC
DR#1099 C-1- 156



Model dimensions in inches

Figure I.- Space Station (P4)

TEST MSFC 501 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.8	.9	1.0	1.1	1.2	2.99	4.00	4.96			
R43011	L_1	A	0					9	1/0	2/0	3/0	4/0	5/0	6/0	9/0	10/0	11/0			
R43012	L_1	0	B					9	12/0	13/0	14/0	15/0	16/0	17/0	20/0	21/0	22/0			
R43022	L_2	0	B					8	34/0	35/0	36/0	37/0	38/0		42/0	43/0	44/0			
R43021	L_2	A	0					8	23/0	24/0	25/0	26/0	27/0		31/0	32/0	33/0			
R43001	B	A	0					9	45/0	46/0	47/0	48/0	49/0	50/0	53/0	54/0	55/2			
R43002	B	0	B					6	56/0	57/0	58/0	59/0	60/0	61/0						

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM CN CY CBL CYN CAF CAB CABØ CPBL CAT | IDPVAR(1) | IDPVAR(2) | NDV 10

COEFFICIENTS:

α or β SCHEDULES

αA = -10, -8, -6, -4, -2, -1, 0, 1, 2, 4, 6, 8, 10

βB = -4, -2, 0, 2, 4, 6, 8, 10

CANARD BOOSTER
MDAC
UNIQUE CONFIG. ORBITER
MDAC
DR#1166 C-2- 157

CANARD BOOSTER
MDAC
UNIQUE CONFIG. ORBITER
MDAC
DR#1166 C-2- 158

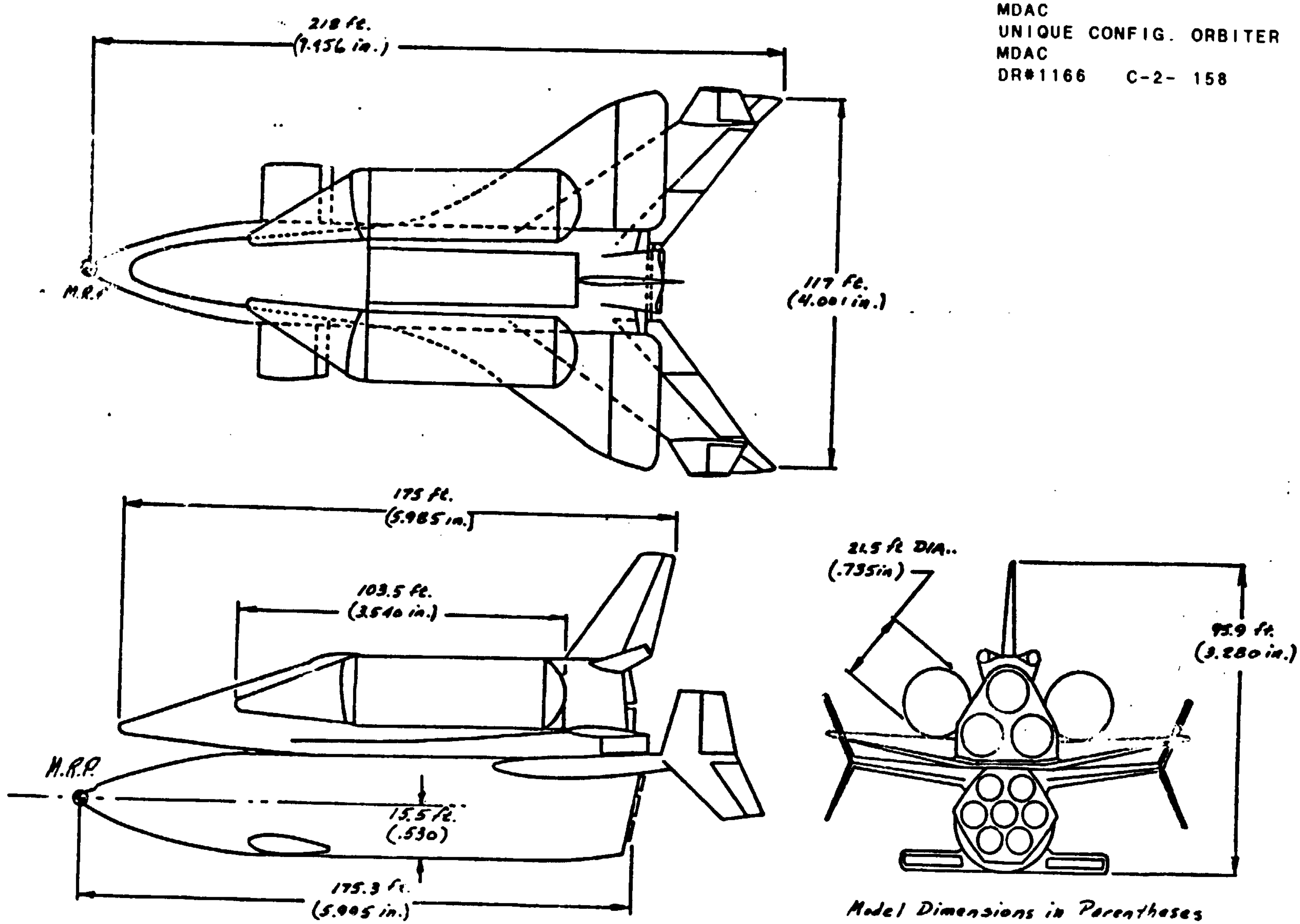


Figure 3: Launch Configuration Model Geometry (L_1)

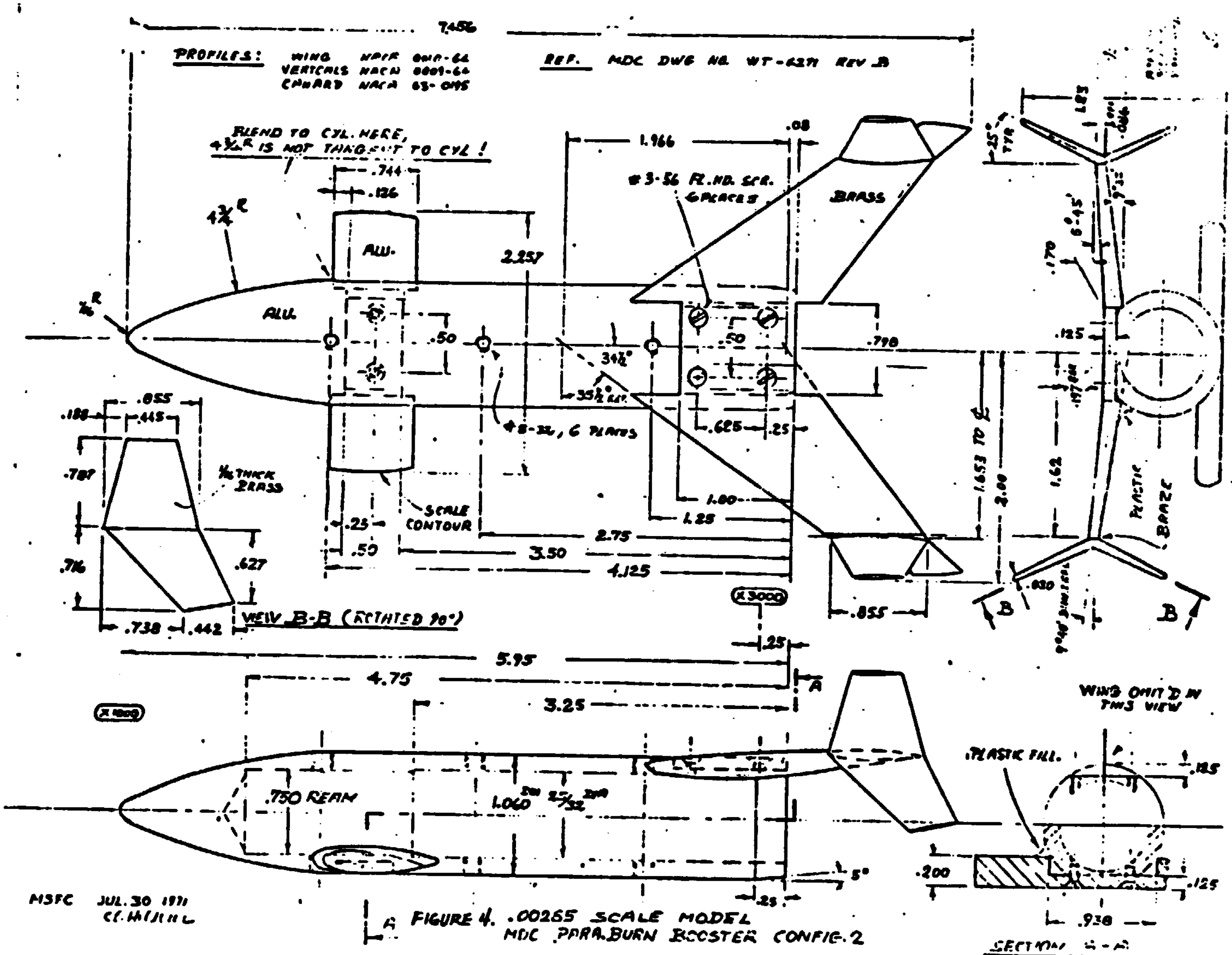


FIGURE 4. .00265 SCALE MODEL
MDC PARA.BURN BOOSTER CONFIG.2

CANARD BOOSTER
MDAC
UNIQUE CONFIG. ORBITER
MDAC
DR#1166 C-2- 159

CANARD BOOSTER
MDAC
UNIQUE CONFIG. ORBITER
MDAC
DR#1166 C-2- 160

ORIGINAL PAGE IS
OF POOR QUALITY

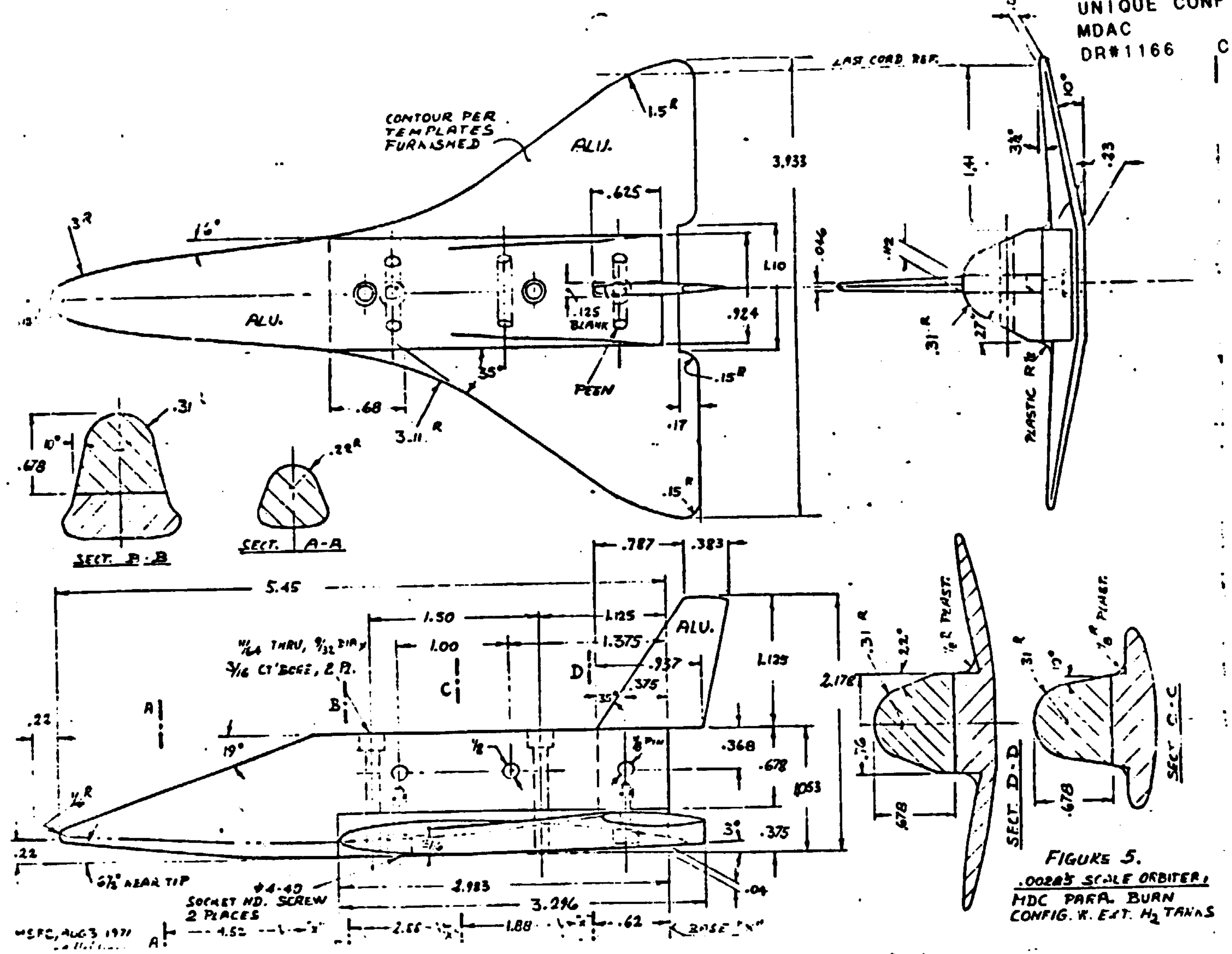
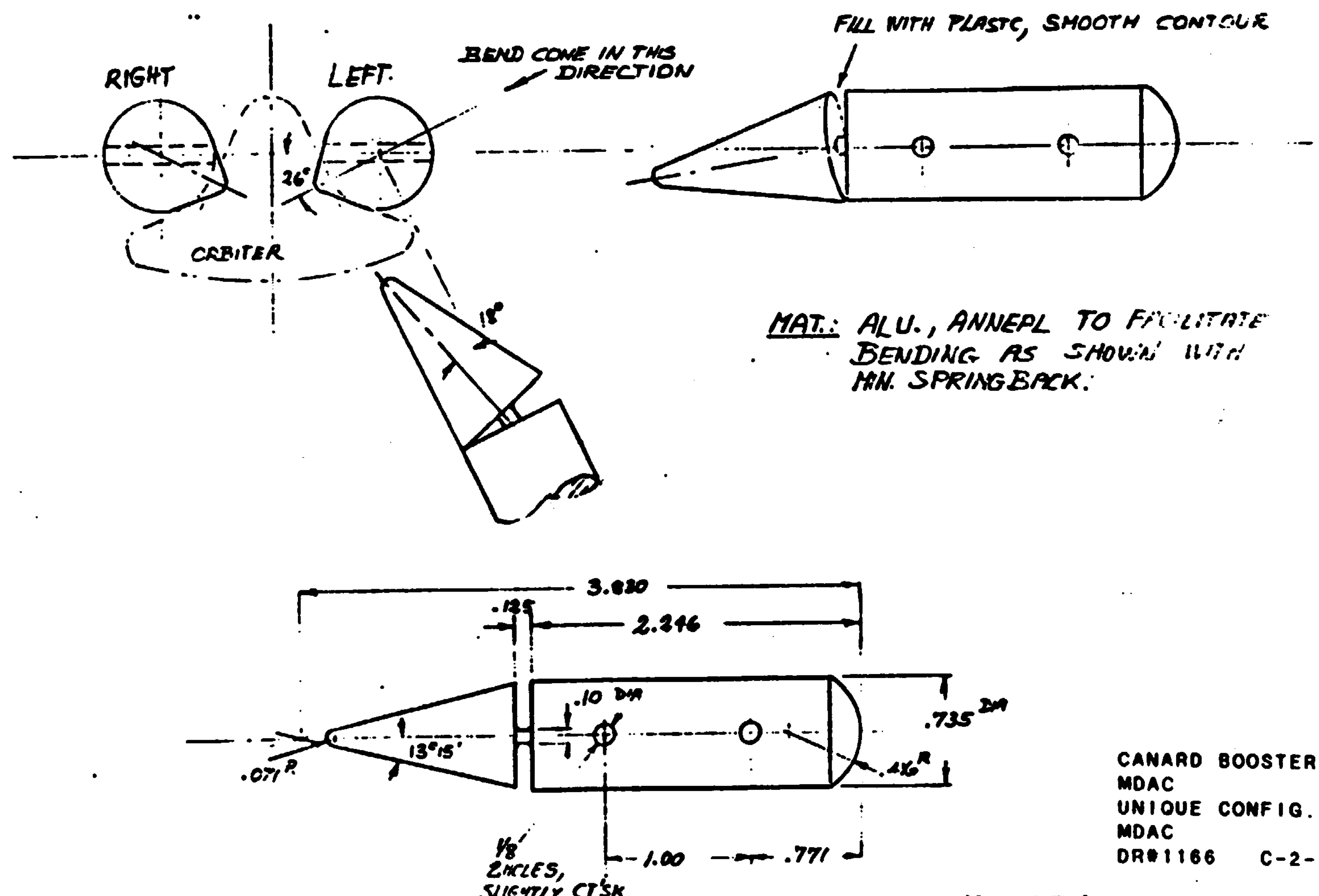


FIGURE 5.
.00285 SCALE ORBITER, MDC PARA. BURN CONFIG. W. EXT. H_2 TANKS



CANARD BOOSTER
MDAC
UNIQUE CONFIG. ORBITER
MDAC
DR#1166 C-2- 161

FIGURE 6.
EXTERNAL LIQU. HYDROG. TANKS FOR .0288 SCALE MDC PARA. ZERN ORBITER

MSFC AUG 1, 1971

TEST MSFC TWT 512 DATA SET COL ATION SHEET

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 162

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES ϕ_m	[illegible]	[illegible]	[illegible]	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.9	1.1	1.2	1.46	1.96	2.74	5.00
R50010	B34R6T10	B	0	0					001/0	002/0	003/0	004/0	014/0	023/0	041/0	040/0
R50020	B34R6T12	C	0	45					166/0	167/0	168/0	169/0	151/0	170/0	158/0	157/0
R50030		52	B	45									152/0	171/0	159/0	160/0
R50040	B34R6T11	B	0	0									015/0	024/0	047/0	046/0
R50050	B34R6T13	B	0	0									016/0	025/0	050/0	049/0
R50060	B34R6T14	B	0	0												048/0
R50070	B34R6T15	B	0	0									017/0	026/0	056/0	055/0
R50080	B34R6T16	B	0	0												057/0
R50090	B34R6T17	B	0	0					036/0				018/0	027/0	052/0	051/0
R50100	B34R6S3T10	B	0	0									013/0	028/0	059/0	058/0
R50110	B34R6	B	0	45					008/0	009/0	010/0	011/0	012/0	029/0	054/0	053/0
R50120		C	0	45									153/0	173/0	155/0	156/0
R50130	B34R6T10	E	0	0						007/0	006/0	005/0				
R50140	B35R6T10	B	0	0					032/0	031/0	030/0					
R50150	B36R6T10	B	0	0					033/0	034/0	035/0		020/0		045/0	044/0
R50160	B34R6T12	F	0	45					165/0	164/0	163/0	162/0	150/0	172/0	161/0	
R50170	B34R6T10ϕ2T3	A	0	0	✓		-3.0		096/0	097/0	098/0	099/0	149/0		061/0	064/0
R50180		A	0	45	✓						101/0	100/0	143/0			
R50190		0	D	0	✓				095/0	094/0	092/0	093/0	145/0		063/0	062/0
R50200	B34R6T10ϕ1T3	0	D	0	✓					125/0	126/0	127/0	134/0			

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CN	CY	CBL	CYN	CA	CAB	CAF	CAC	XCP	—	—	
COEFFICIENTS:										IDPVAR(1)	IDPVAR(2)	NDV

α or β SCHEDULES

αA = -10 TO +10 DEG. αE = +14 TO -4 DEG.

αB = -4 TO +14 DEG. αF = +20 TO +40 DEG.

αC = +40 TO +60 DEG. βD = -10 TO +10 DEG.

TEST MSFC TWT 512 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES ϕ	[illegible]	[illegible]	[illegible]	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.9	1.1	1.2	1.46	1.96	2.94	5.0			
R50210	B34R6T10ϕ1T3	-6	D	0	✓		-3.0				037 / 0		021 / 0						
220	B34R6T10ϕ2T3	-6	D	0	✓						038 / 0		022 / 0						
230		0	D	45	✓						102 / 0	103 / 0	142 / 0						
240	B34R6ϕ2T3	A	0	0	✓					107 / 0	108 / 0	109 / 0	140 / 0						
250		0	D	0	✓					106 / 0	105 / 0	104 / 0	141 / 0						
260	B34R6T12ϕ2T3	A	0	0	✓							130 / 0	131 / 0						
270		0	D	0	✓							129 / 0	132 / 0						
280	B34R6T10ϕ3T3	0	D	0	✓					124 / 0	123 / 0	122 / 0	135 / 0						
290	B34R6T10ϕ4T3	A	0	0	✓					118 / 0	117 / 0	116 / 0	137 / 0						
300		0	D	0	✓					119 / 0	120 / 0	121 / 0	136 / 0						
310	B34R6T18ϕ2T3	0	D	0	✓		-3.0				128 / 0		133 / 0						
320	B34R6T10T3	A	0	0						113 / 0	114 / 0	115 / 0	138 / 0						
330	B34R6T3	A	0	0						112 / 0	111 / 0	110 / 0	139 / 0						
340	B34R6T10ϕ2T3	-6	D	45	✓		-3.0				039 / 0								
350	B34R6T10ϕ2T3	A	0	0		✓	0		076 / 0	077 / 0	078 / 0		147 / 0		069 / 0	068 / 0			
360		0	D	0		✓	0		081 / 0	080 / 0	079 / 0		146 / 0		070 / 0	071 / 0			
370	B34R6T10ϕ2T3	A	0	0		✓	-3.0		087 / 0	086 / 0	085 / 0		148 / 0		066 / 0	067 / 0			
380		0	D	0		✓	-3.0		082 / 0	083 / 0	084 / 0		149 / 0		065 / 0	064 / 0			
390	B34R6T13ϕ2T3	0	D	0		✓	0			090 / 0		091 / 0			073 / 0	072 / 0			
400		A	0	0		✓	0			089 / 0		088 / 0			074 / 0	075 / 0			

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS:
α or β SCHEDULES
IDPVAR(1) IDPVAR(2) NDV

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CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 163

TEST MSFC TWT 512 DATA SET COLLAT

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 164

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
				ϕ_A					0.6	0.9	1.1	1.2	1.46	1.96	2.74	5.0				
R50410	B34 R6 T12	F	0	45									15/0							

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

ORIGINAL PAGE IS
OF POOR QUALITY

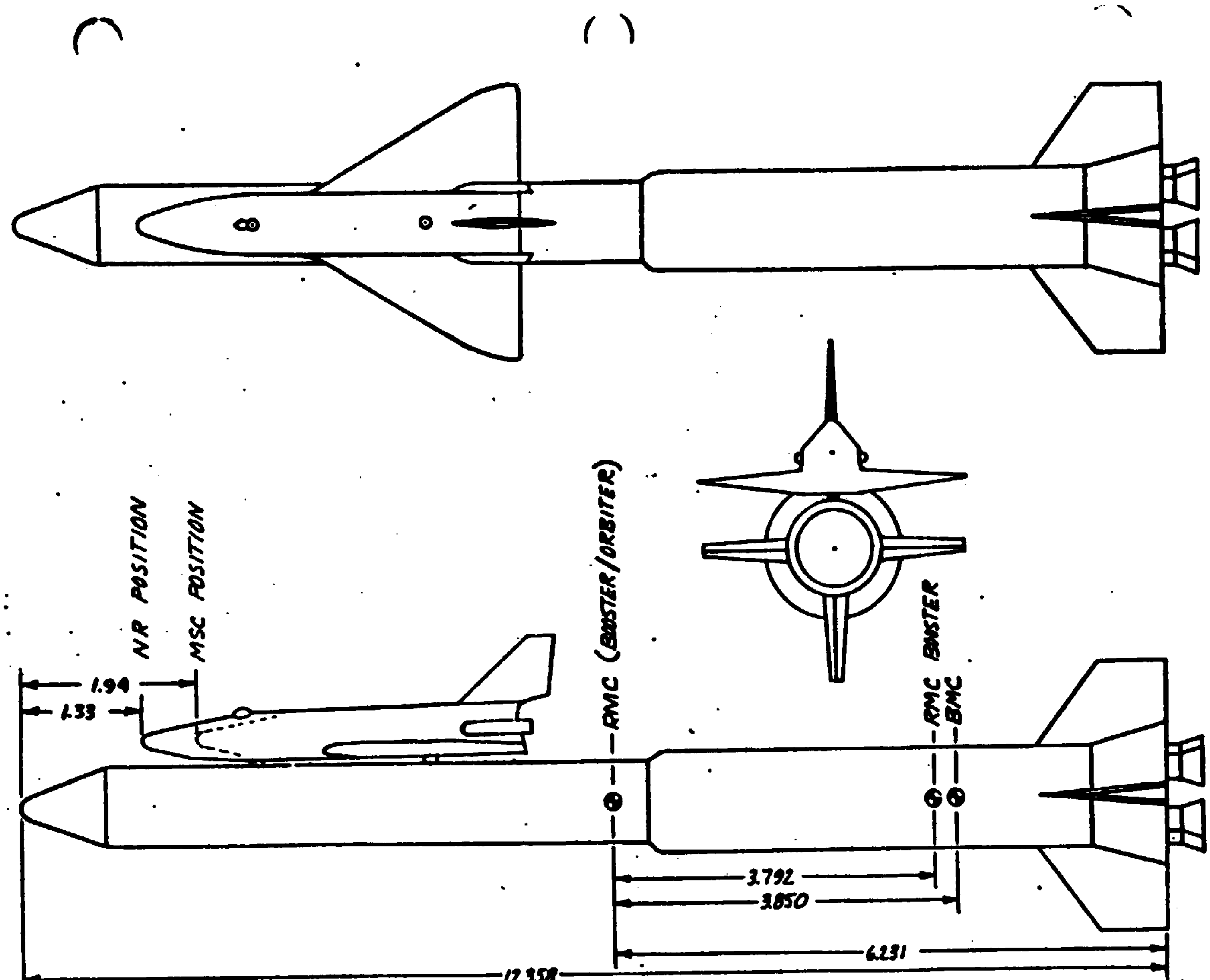


FIGURE 2. MOMENT TRANSFER DIAGRAM AND REFERENCE LENGTHS

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 165

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
OR#1204 C-1- 166

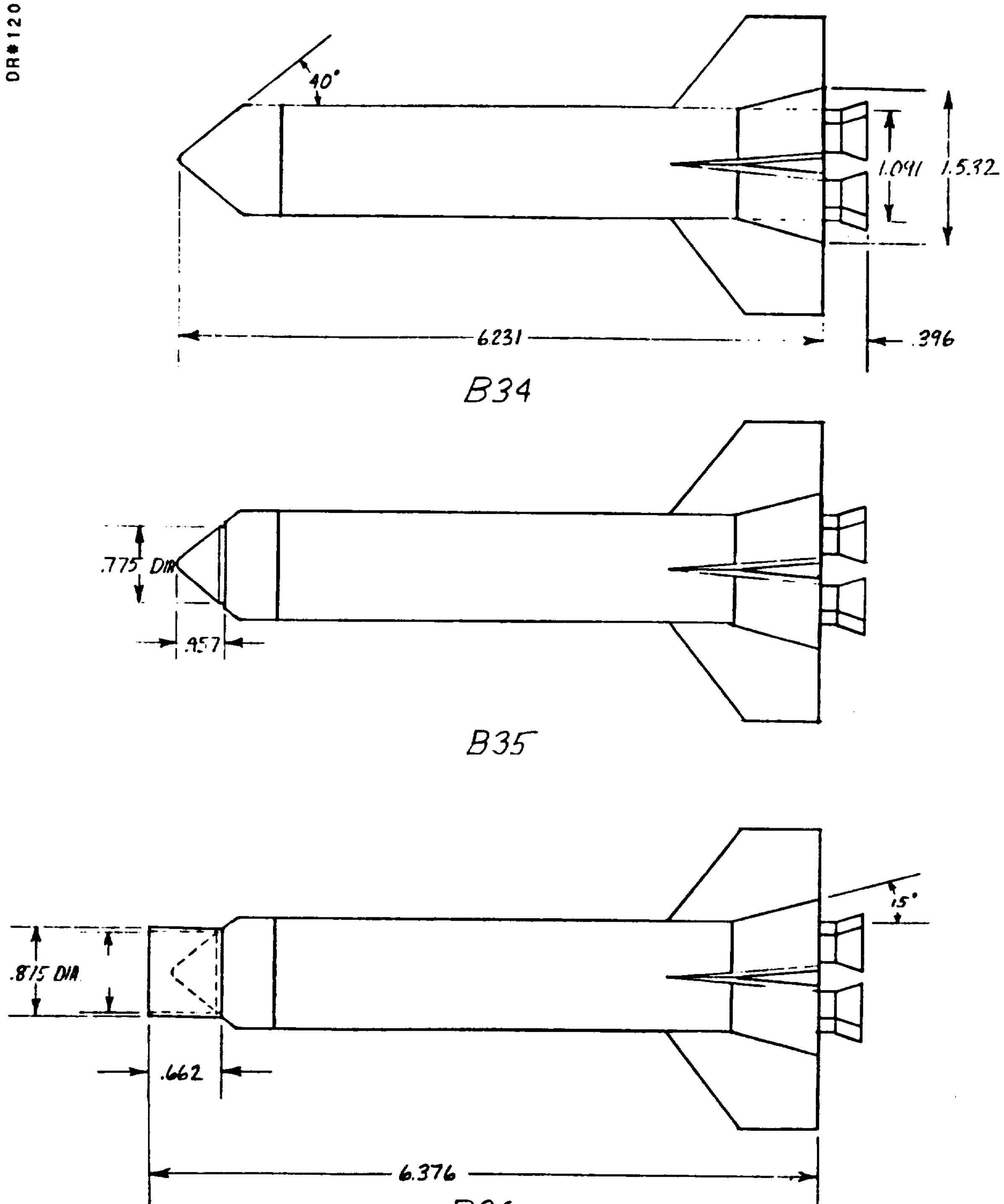


FIGURE 3. BODY B34, B35, B36

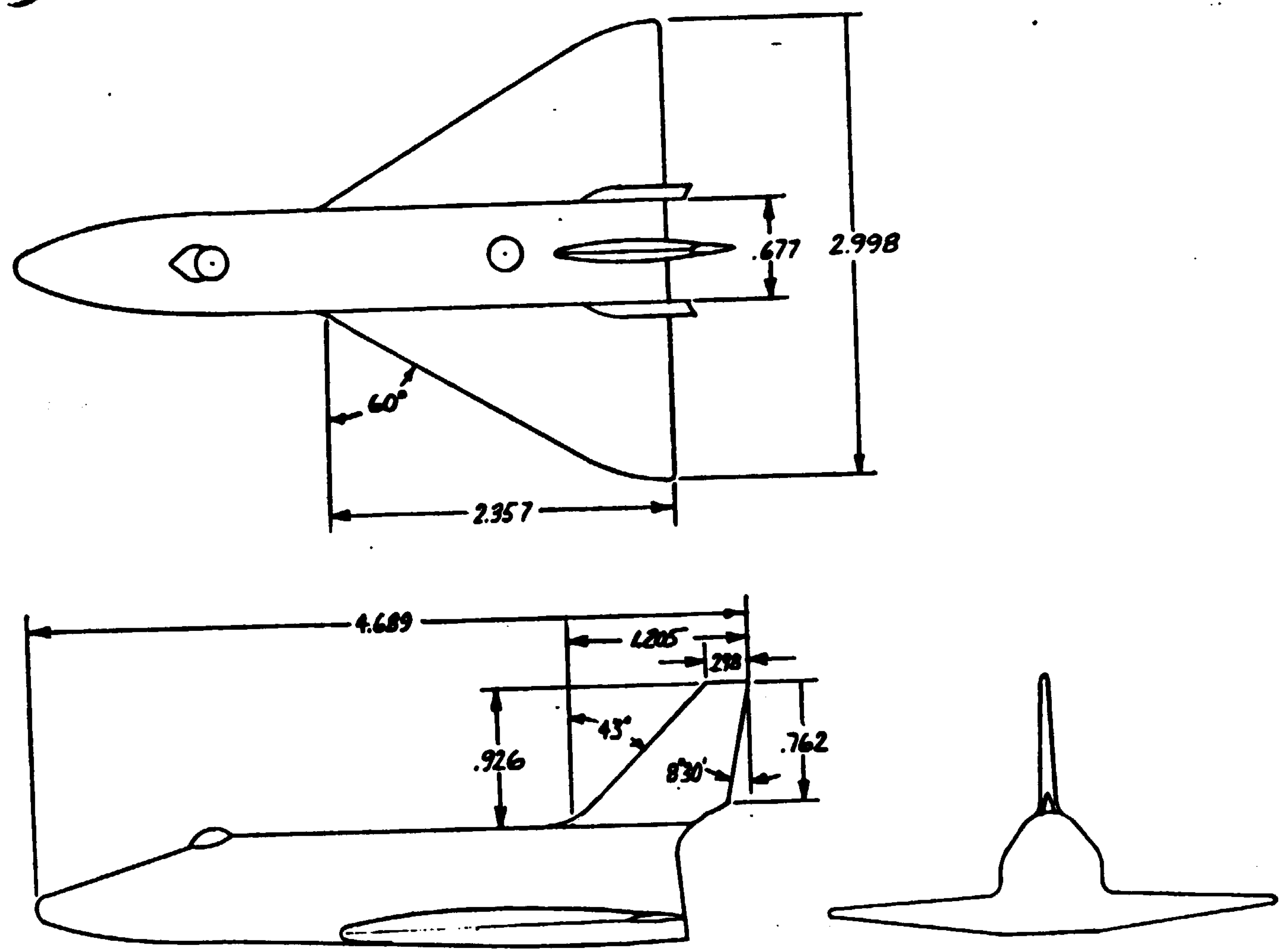
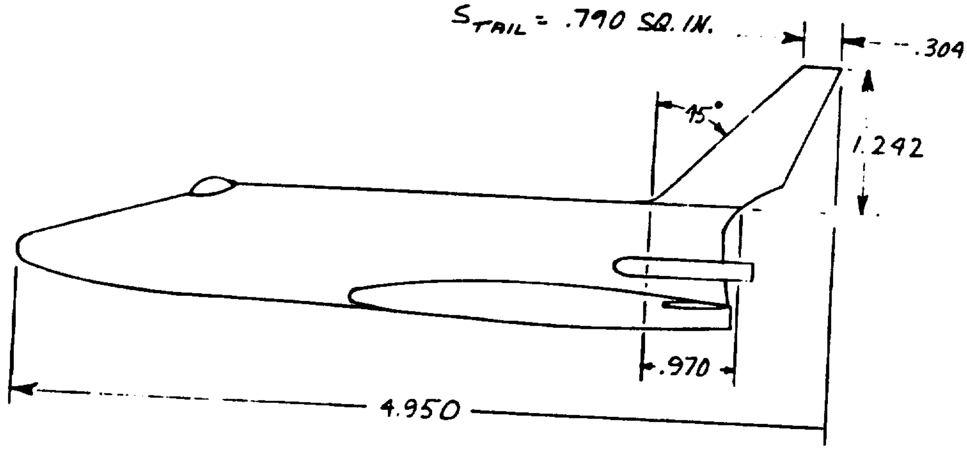


FIGURE 12. ORBITER 01

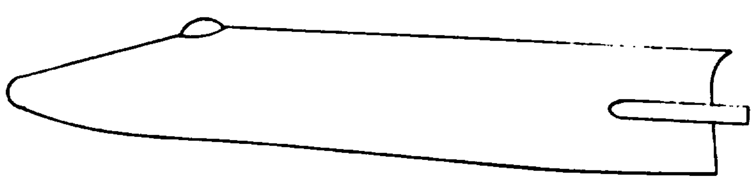
CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 167

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 168



ORBITER 02

ORBITER 03



ORBITER 04

FIGURE 13. ORBITER 02, 03, 04

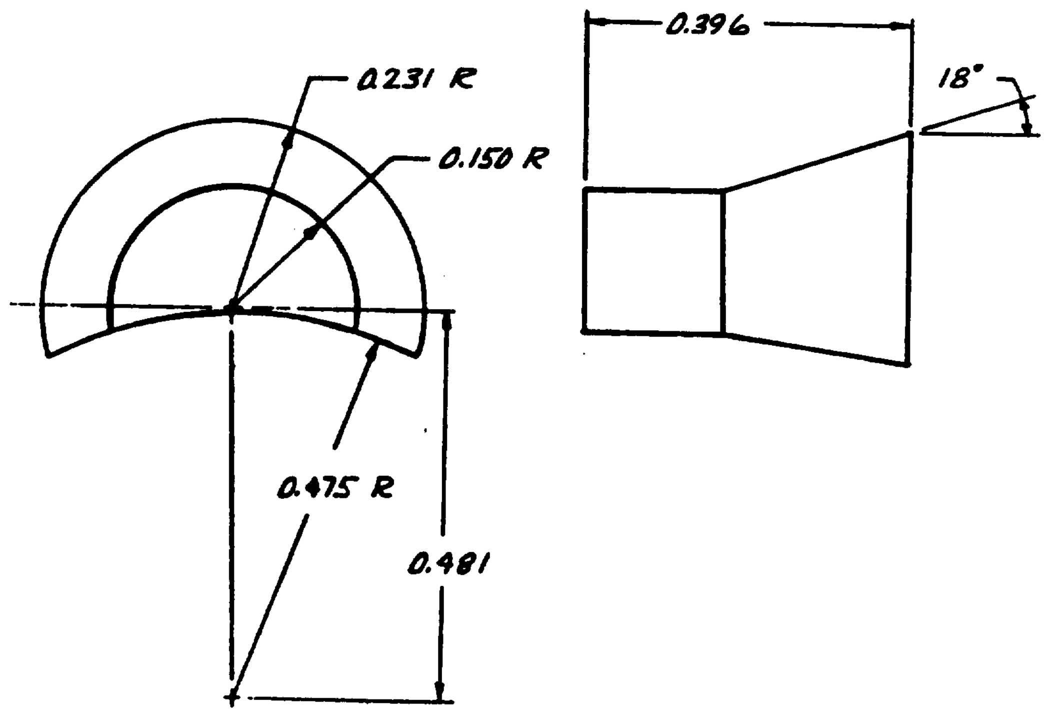


FIGURE 4. ROCKET ENGINE R6

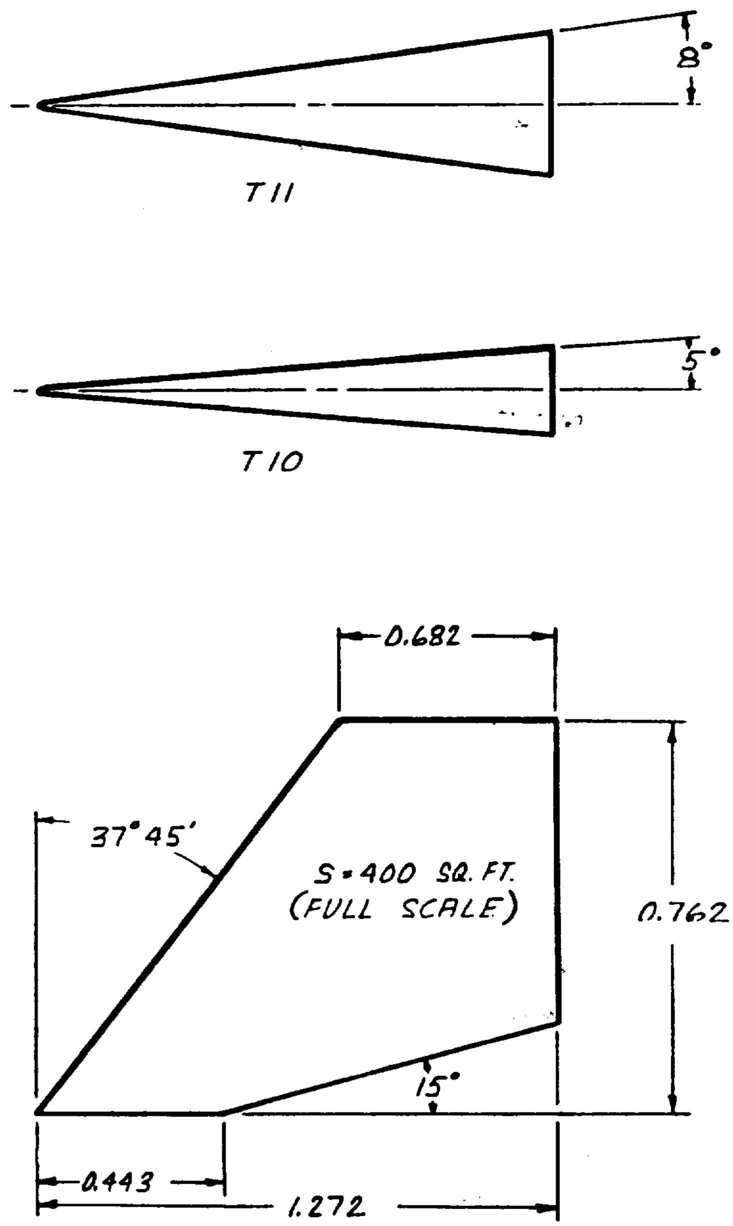


FIGURE 5. TAILS T10 AND T11

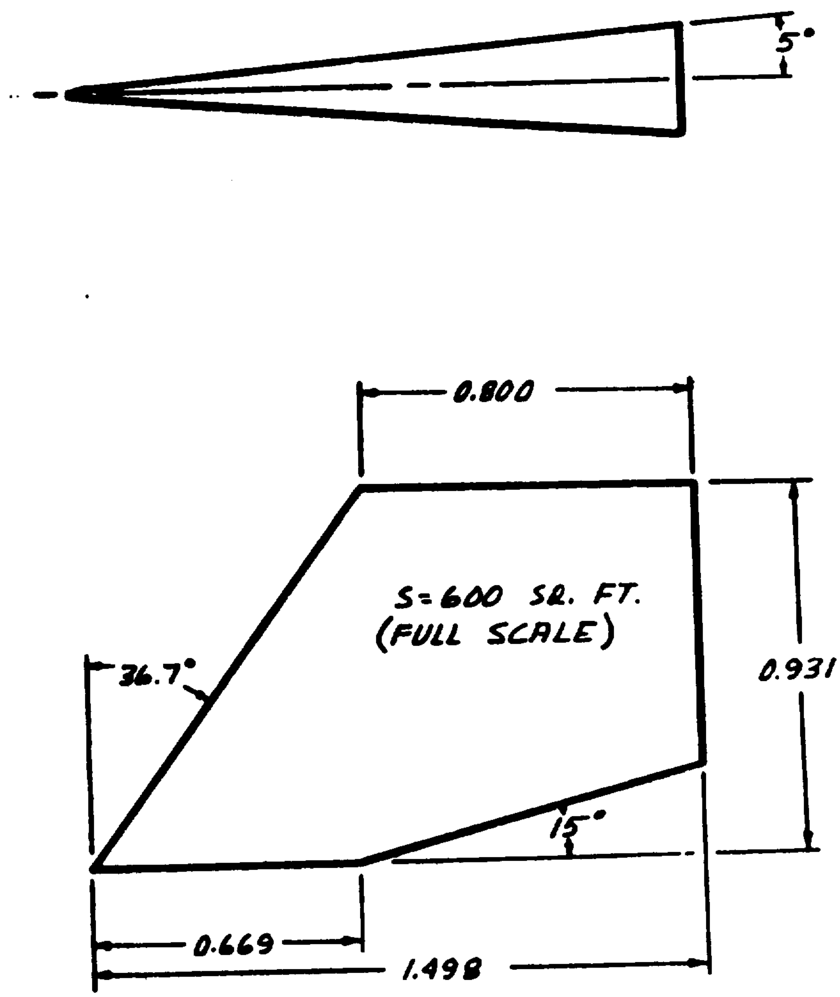


FIGURE 6. TAIL T13

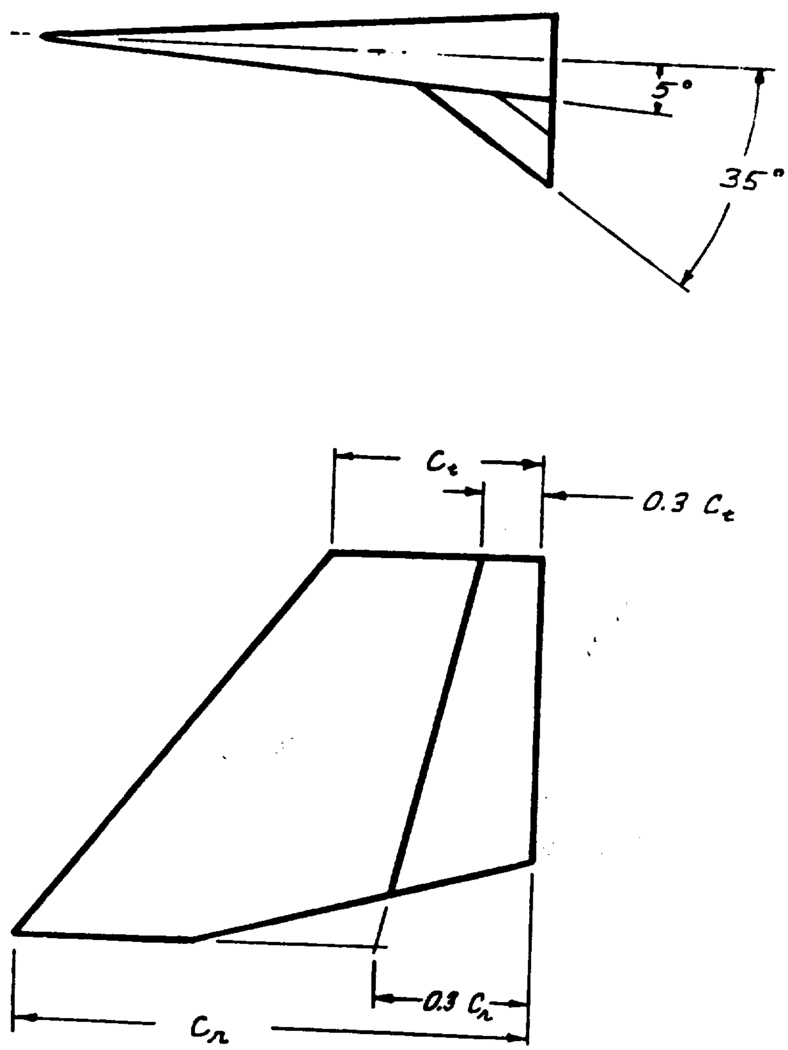


FIGURE 7. TAIL T14

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 173

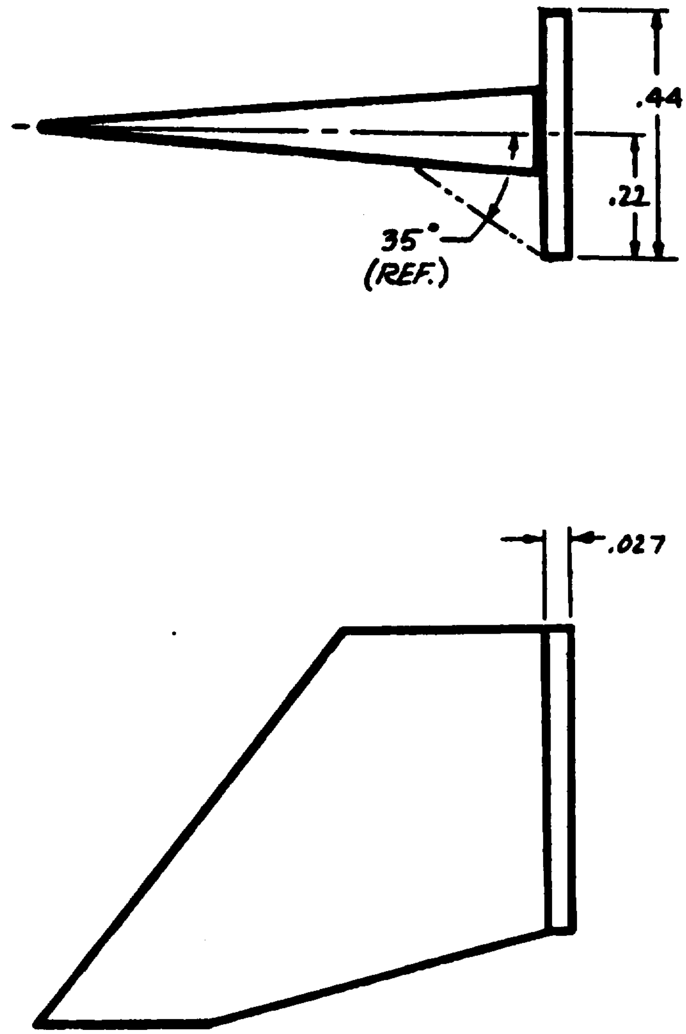


FIGURE 8. TAIL T15

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1204 C-1- 174

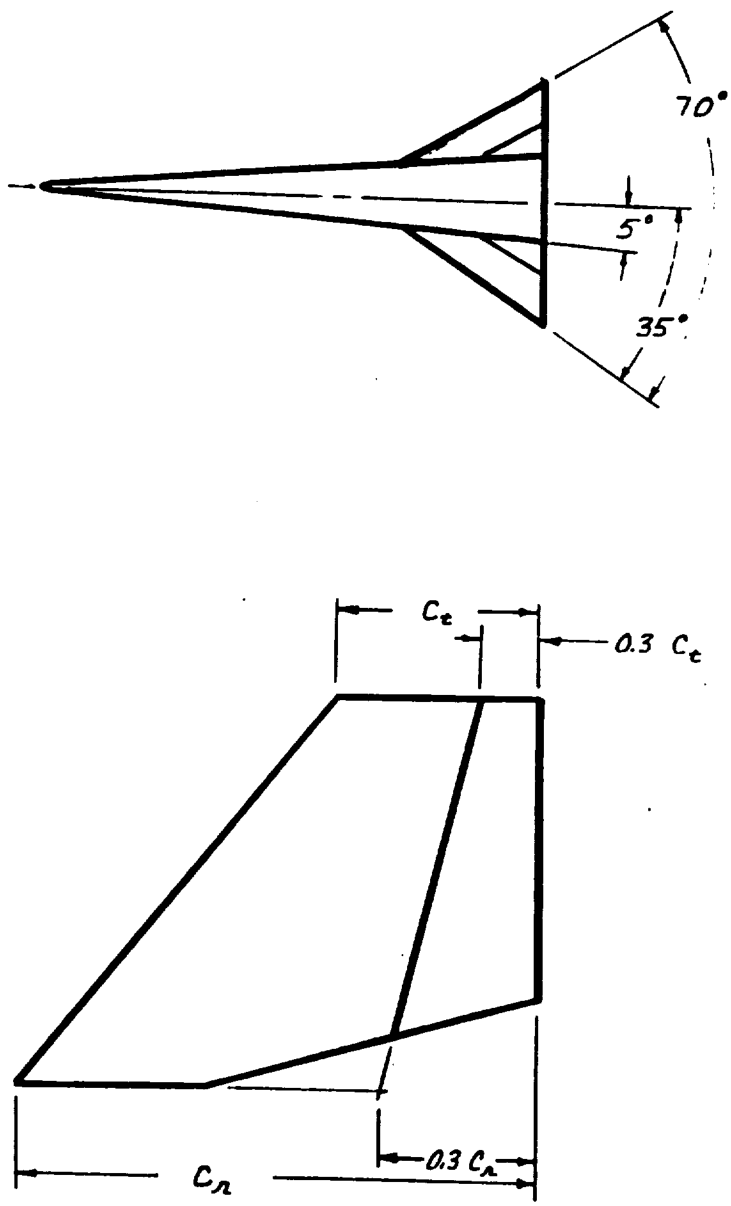


FIGURE 9. TAIL T17

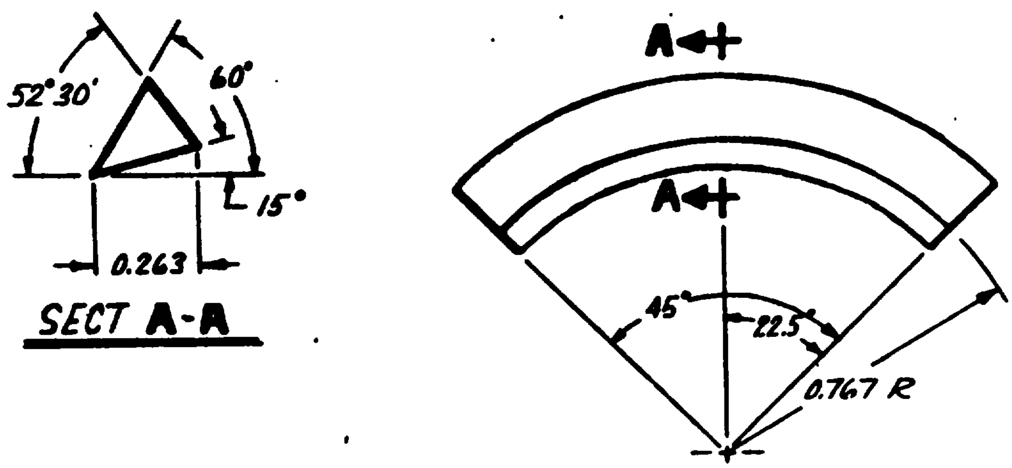


FIGURE 11. DRAG SKIRT S3

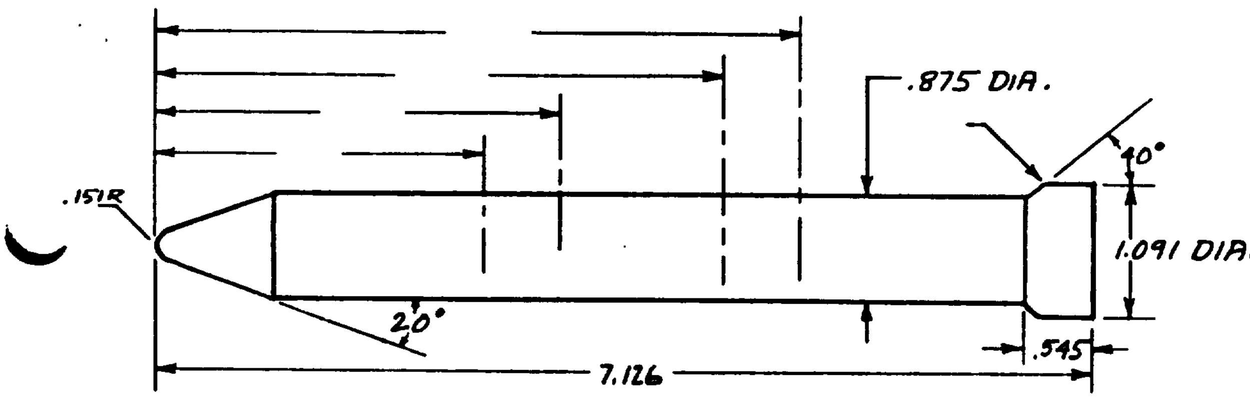


FIGURE 10. TANK T3

TABLE II.

TEST MSFC-514 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

TWIN PRESSURE FED BOOSTER

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES				NO. of RUNS	MACH .6	.9	1.0	1.1	1.3	1.5	2.0	2.74	3.0	4.0	5.0	
[illegible]	O2T4	A	0					6		10		11	12	5	4				1	
[illegible]	✓	0	8					6		9		8	7	6	3				2	
[illegible]	B37E7O2T4	A	0					6		15		14	13	51	50				47	
[illegible]	✓	0	5					6		16		17	18	52	49				48	
[illegible]	B37E7T19O2T4	A	0					6		22		23	24	38	39				46	
[illegible]	✓	0	8					6		21		20	19	37	40				45	
[illegible]	B37E7T19T4	A	0					5		[illegible]		33		35	42				43	
[illegible]	✓	0	5					6		31		30	29	36	41				44	
[illegible]	B37E7T19O5T4	A	0					2				26	25							
RSB[illegible]	✓	0	8					2				27	28							

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLN CN CY CBL CYN CA CAF CAB1* CAB2* XCP → IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES: αA=-12 TO 12 DEG. *SEE DATA REDUCTION SECTION

βB=-12 TO 12 DEG.

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 177

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CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 178

TABLE II. (CONTINUED)

TEST MSFC-514 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

B-18E-3 Pitch Runs

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δel	δec	δc		NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.9	1.0	1.1	1.2	1.5	2.0	2.75	3.0	4.0	5.0	
258110	B30W23C10	A	0	0	0	0		6		77			76	53	54		83		82	
120	B30W23C10	B		✓	✓	✓		2									84		85	
130	✓	C		✓	✓	✓		2									111		110	
140	B30W23C10	A		-20	-20	0		3		74			75		55					
150	B30W23C10	B		✓	✓	✓		2									87		86	
160	✓	C		✓	✓	✓		2									112		113	
170	B30W23C10	A		-40	-40	0		2		73			72							
180	✓	C		✓	✓	✓		2									115		114	
190	B30W23C10	A		10	10	0		3		70			71		56					
200	B30W23C10	A		0	0	30		3		65			62		57					
210	B30W23C10	B		✓	✓	✓		3							119		88		89	
220	✓	C		✓	✓	✓		2									108		107	
230	B30W23C10	B		✓	✓	-60		2									91		90	
240	✓	C		✓	✓	✓		2									107		106	
250	B31W23C10	A		0	0	0		2		66			67							
260	B31W23C10	B		✓	✓	✓		2									93		13	
270	✓	C		✓	✓	✓		2									104		105	
280	B32W23C10	A		✓	✓	✓		2		64			68							
258290	B32W23C10	B	0	✓	✓	✓		2									95		94	

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM CN CY CBL CYN CA CDE CAB CAC XCP → IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

αA = 0 TO 20 DEG.
αB = 20 TO 40 DEG
αC = 40 TO 60 DEG

NASA-MSFC-MAF

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TABLE II. (CONTINUED)

TEST MSFC-51 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

B-18E-3 YAW RUNS

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δel	δer	δc	δp	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.9	1.0	1.1	1.2	1.5	2.0	2.75	3.0	4.0	5.0	
RSR300	B30W23C10V1L	15	D	0	0	0	0	2		78			74							
1 310	B30W23C10V1L	✓	✓	✓	✓	✓	25	2		81			80							
RS3320	✓	30	✓	✓	✓	✓	0	3							118		116		117	

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CLL	CY	CBL	CYN	CA	CAF	CAB	CAC	XCP	IDPVAR(1)	IDPVAR(2)	NDV 10

COEFFICIENTS: BD = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

α or β SCHEDULES

273

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 179

TABLE II. (CONCLUDED)

TEST MSFC-576 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

B-18E-2

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{e1}	δ_{e2}			NO. of RUNS	.6	.9	1.0	1.1	1.2	1.5	2.0	2.75	3.0	4.0	5.0	
RSB330	B33W25	A	0	0	0			3		62			63		58					
340	B33W25	B		✓	✓			2									96		97	
350	✓	C		✓	✓			2									103		102	
360	B33W25	A		-20	-20			3		61			60		59					
370	B33W25	B		✓	✓			2									99		98	
RSB380	✓	C		✓	✓			2									100		101	
	B33W25	A		10	10			3												
	B33W25	B		✓	✓			2												
	✓	C	0	✓	✓			2												

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

[illegible] | [illegible] | BY | CBL | CYN | CA | CAF | CAB | [illegible] | XCP | IDPVAR(1) | IDPVAR(2) | NDV 15

COEFFICIENTS:

α or β SCHEDULES

ΔA 0 TO 20 DEG.

ΔB 20 TO 40 DEG.

ΔC 40 TO 60 DEG.

NASA-MSFC-MAF

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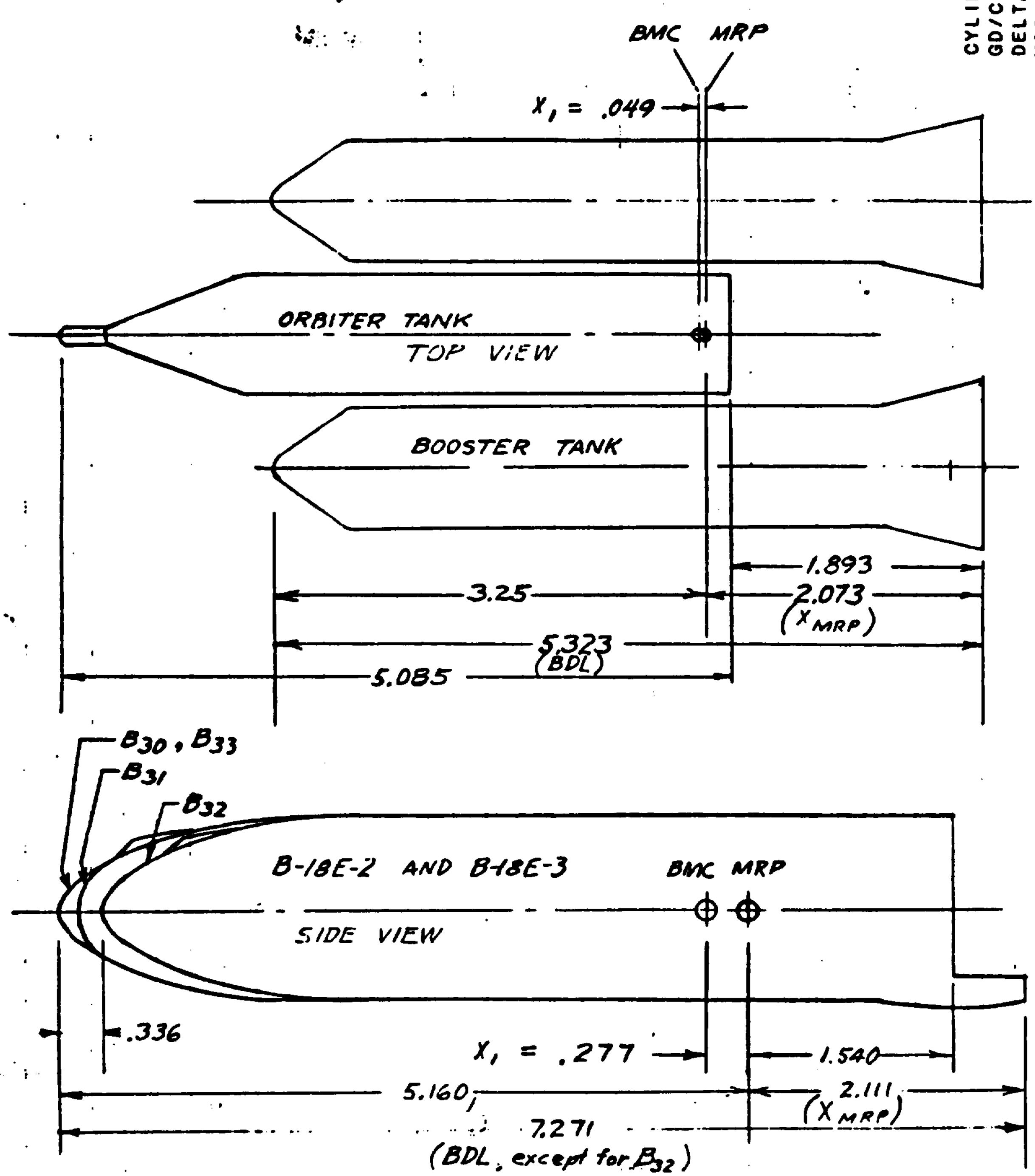

FIG 2. POSITIONS OF MOMENT REFERENCE POINTS

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 182

BASIC B-18E-2 = $B_{30} W_{23} C_{10} V_{14}$

BASIC B-18E-3 = $B_{33} W_{25} V_{16}$

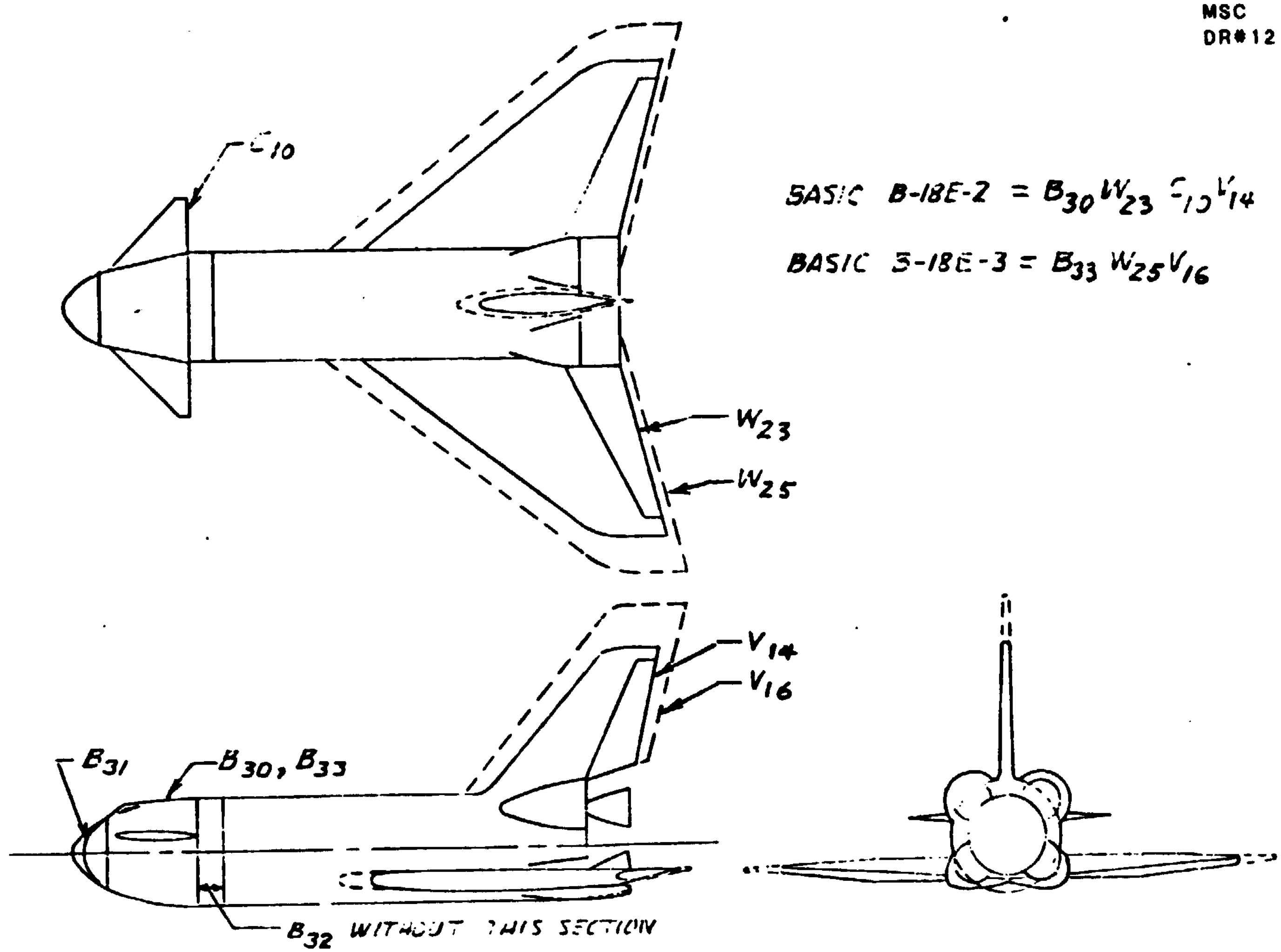

FIG 3. B-18E-2 AND B-18E-3, 3-VIEWS AND MODEL COMPONENT IDENTIFICATION

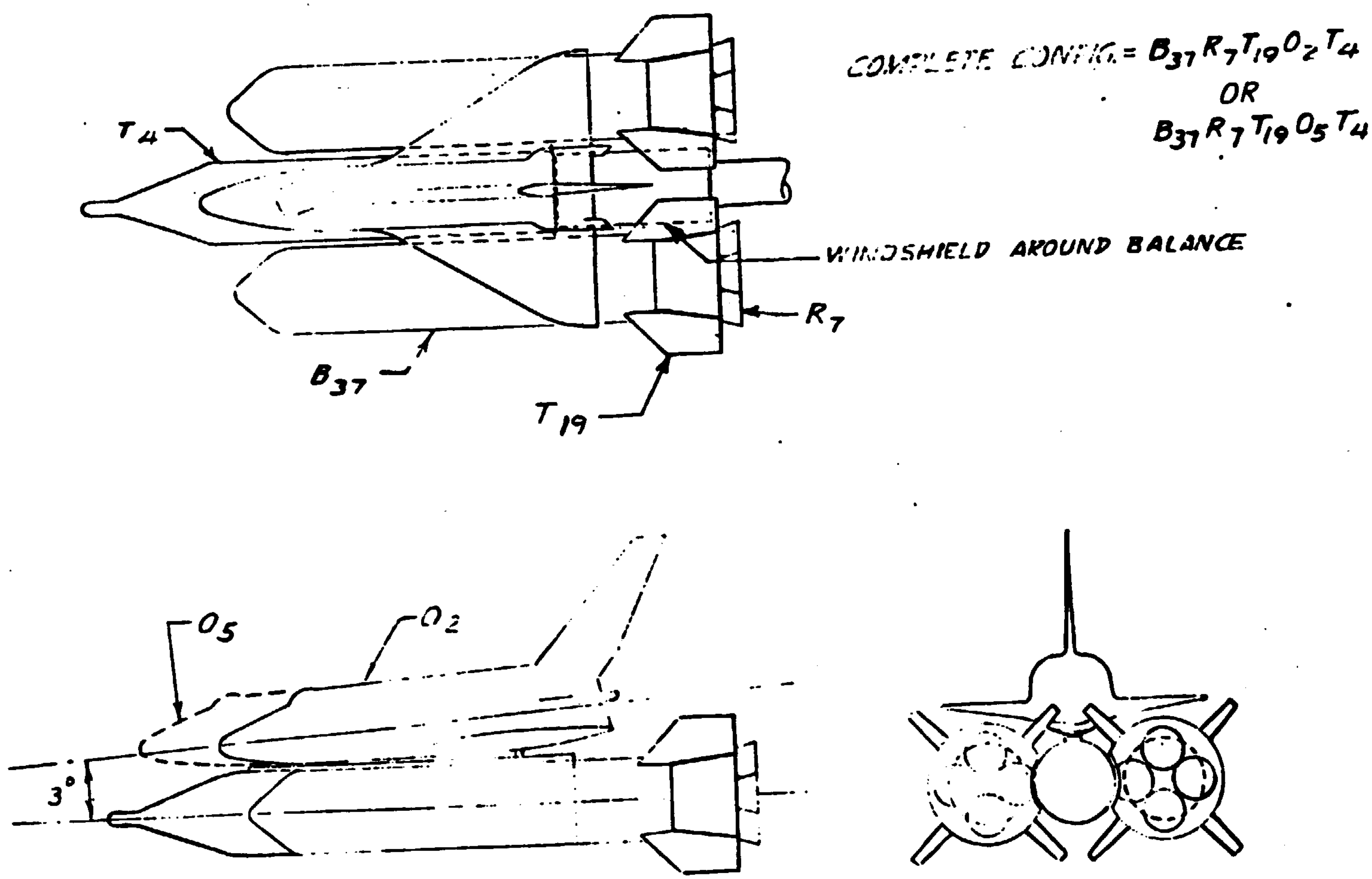

FIG 4. LAUNCH PHASE CONFIGURATION 040A ORBITER AND TWIN PRESSURE FED BOOSTERS

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 183

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 184

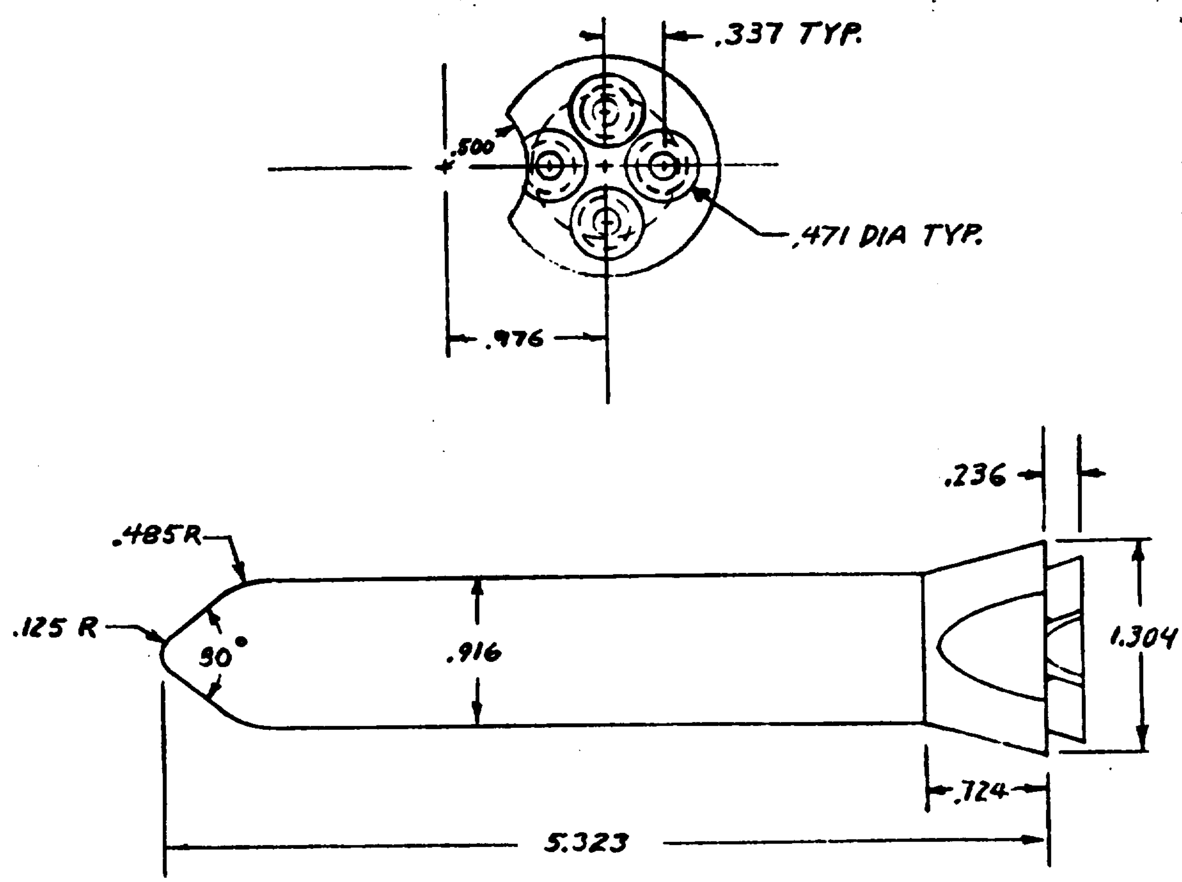

FIG 7. BODY B_{37} AND ROCKETS R_7

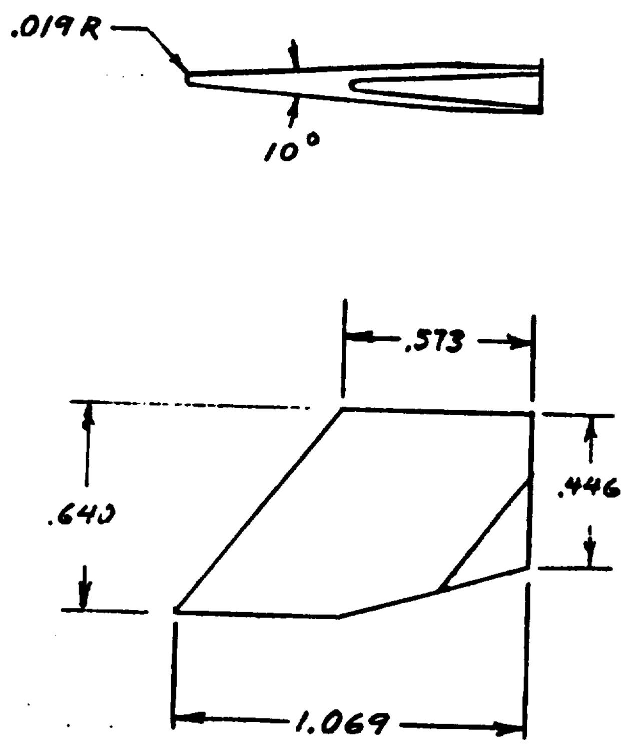

FIG 8. TAIL FIN T_{19}

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 186

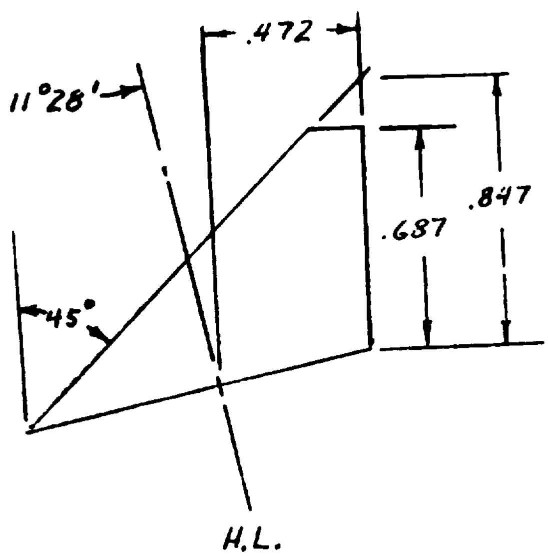

FIG 9. CANARD C10

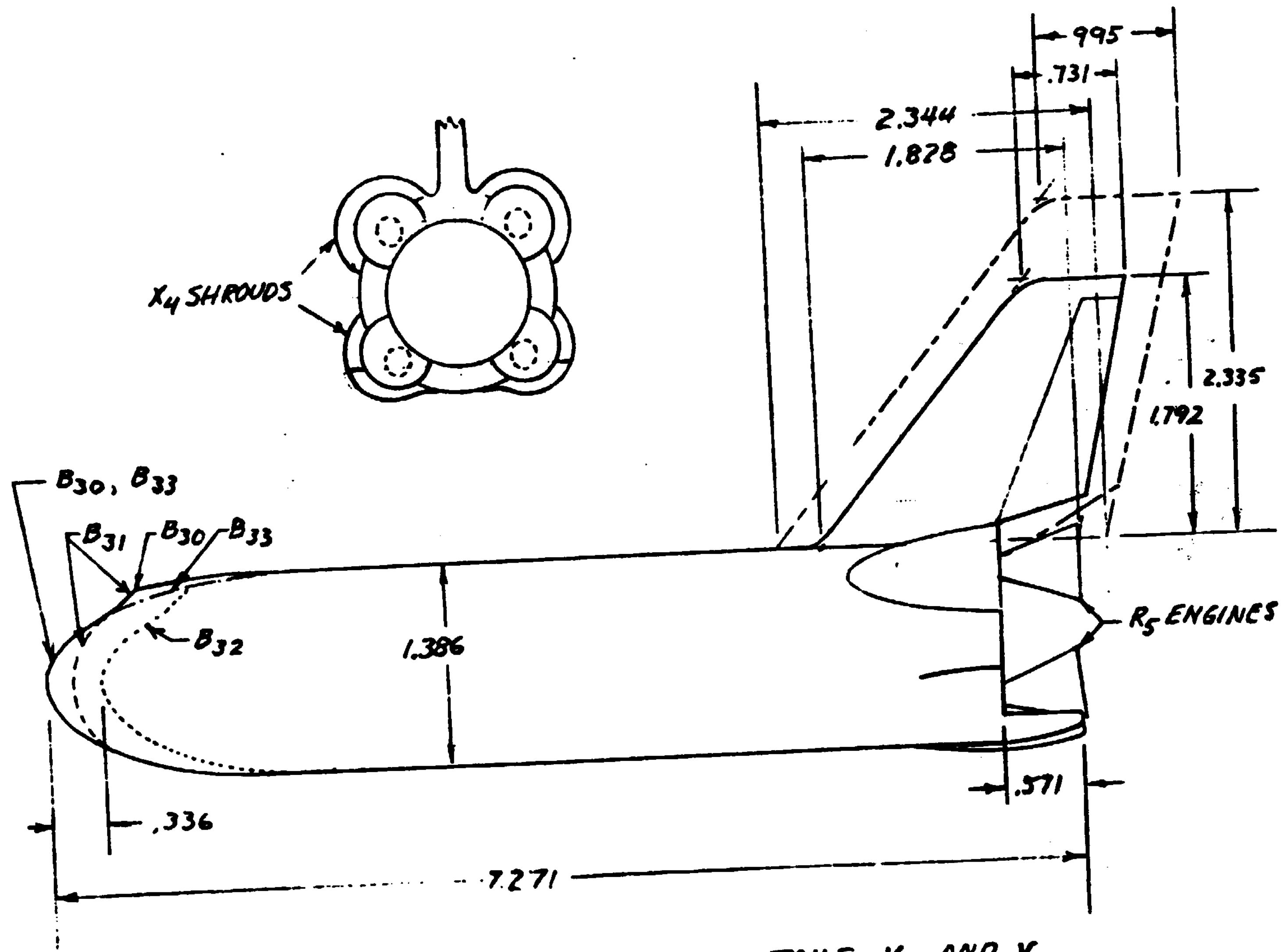

FIG 10. BODIES B_{30}, B_{31}, B_{32}, AND B_{33} ; VERTICAL TAILS V_{14} AND V_{16}

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 187

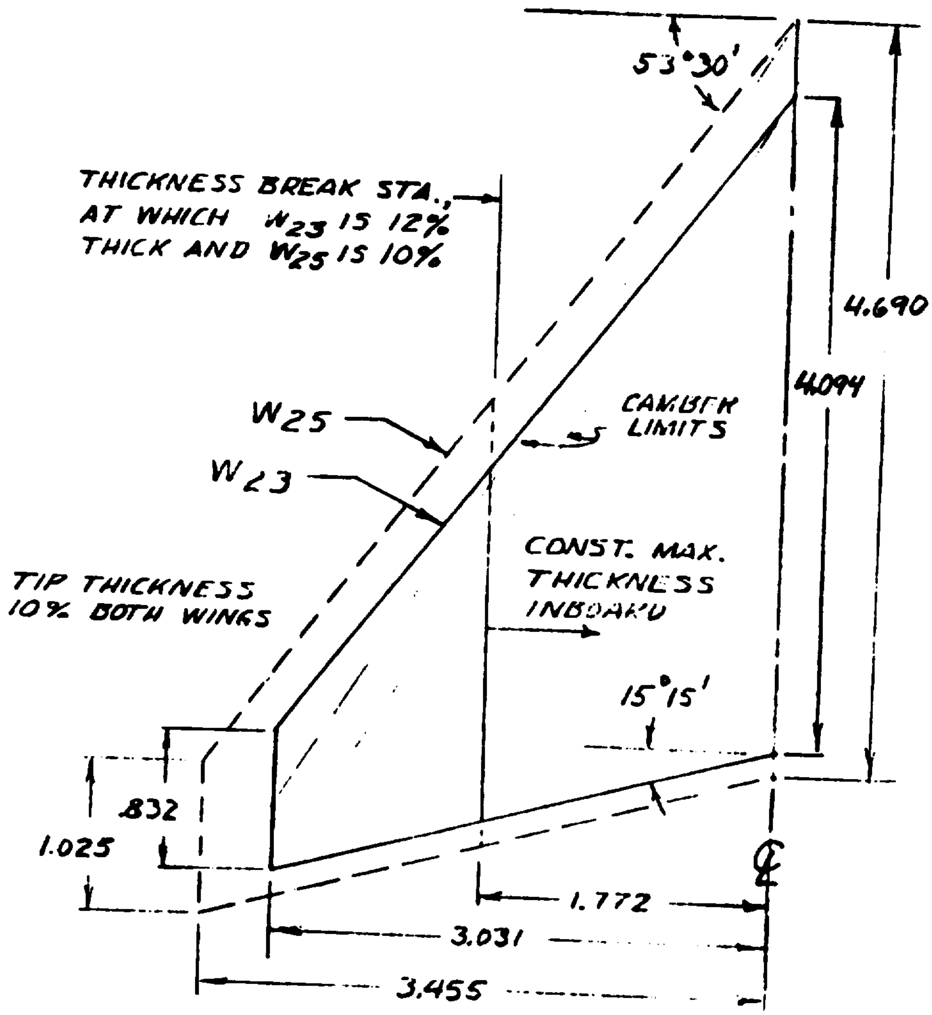

FIG 11. WINGS W_{23} AND W_{25}

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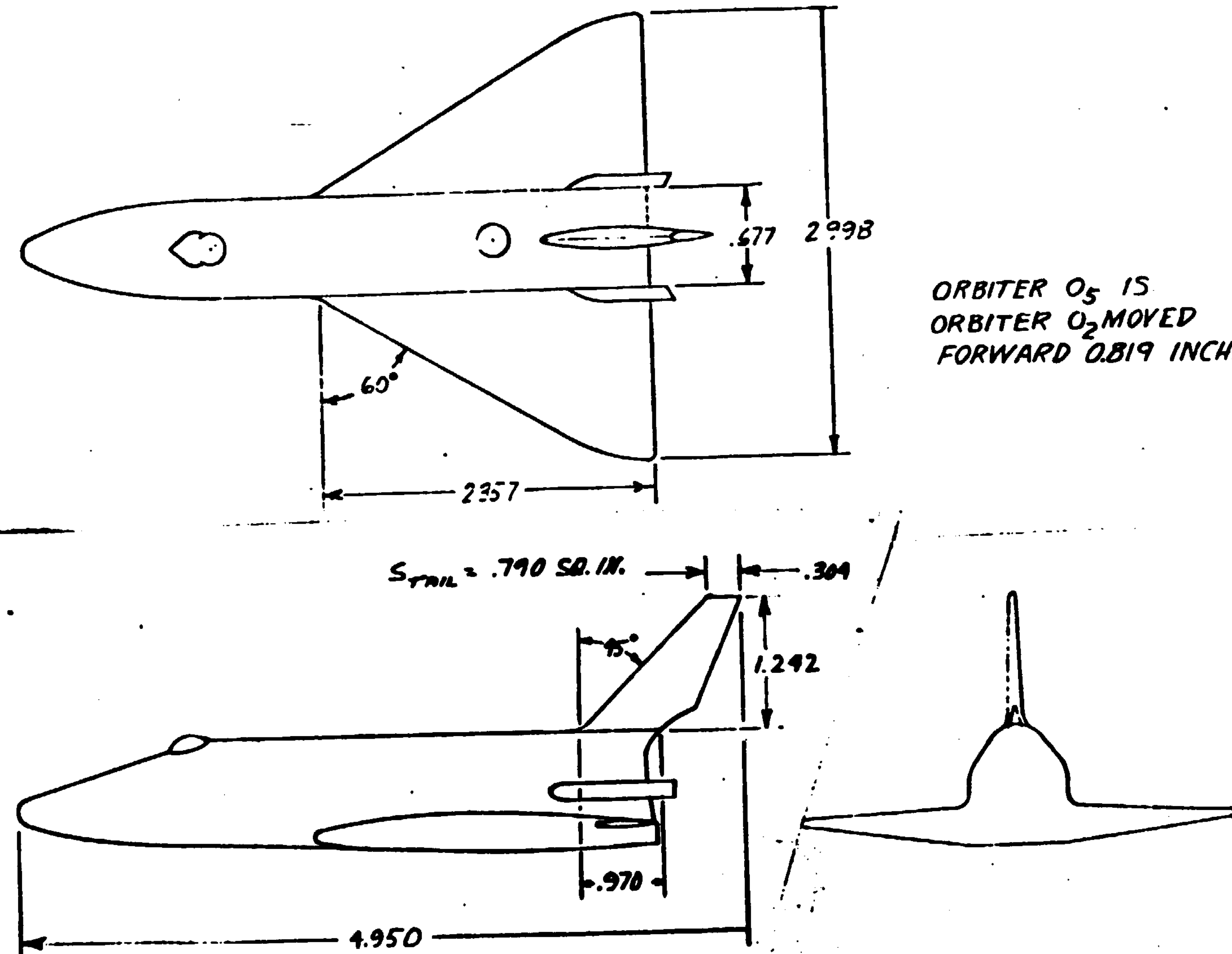

ORBITER O_5 IS ORBITER O_2 MOVED FORWARD 0.819 INCHES

FIG. 12. ORBITER O2 AND O5

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 189

CYLINDRICAL BOOSTER
GD/C
DELTA WING ORBITER
MSC
DR#1210 C-1- 190

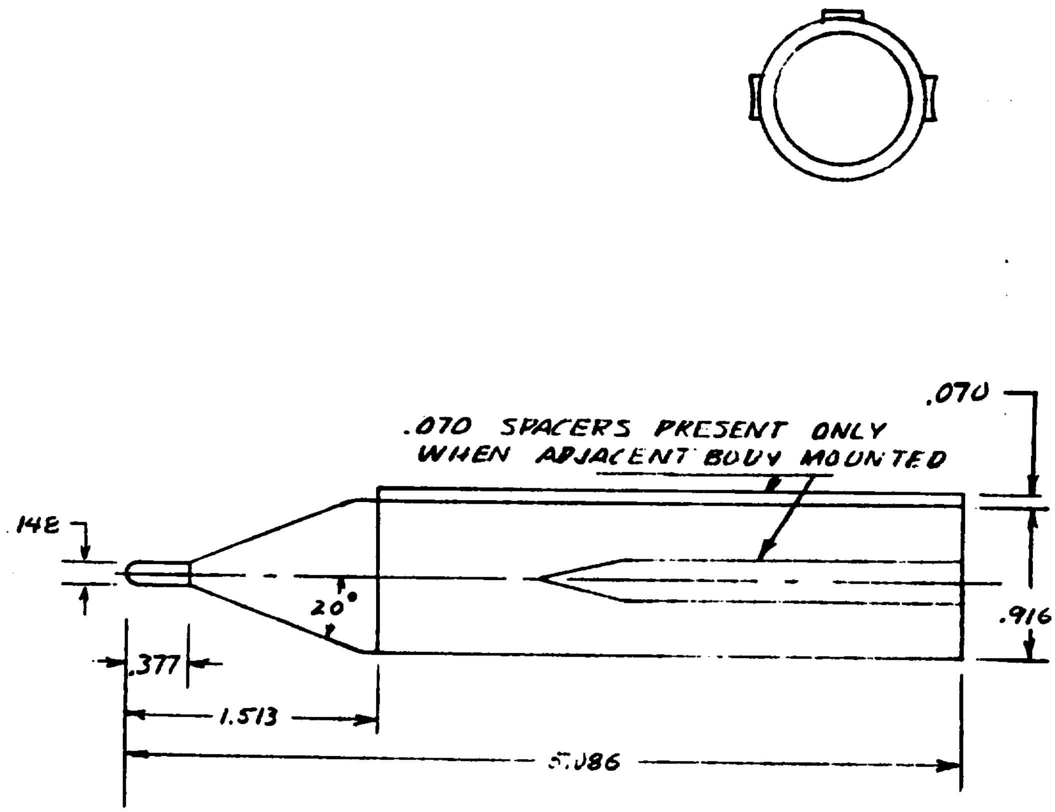

FIG. 13. TANK T_4

TABLE 2. TEST S-222 DATA SET COLLATION SHEET

ORBITER @ ORBITER MRC

(φ1) ORBITER ISOLATED ON SEPARATE BALANCE.
(BXX) BOOSTER ISOLATED WITHOUT A BALANCE.

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7101	(φ1) T1 B1	A	0	0	0	0		3		396	395			394						
102	↓	0	D	0	0	0		3		396	395			394						
103	↓	A	6	0	0	0		2							266	234				
104	↓	A	0	20	0	0		6		373	371			370	254	253		266		
105	(φ1) T1 B1L (B1R)	A	0	0	0	0		4			374			375		258		267		
106	↓	0	D	0	0	0		2			374			375						
107	↓	A	6	0	0	0		2								215		245		
108	(φ1) T1 (B1L) B1R	A	6	0	0	0		2								221		244		
109	(φ1) T1 B2	A	6	0	0	0		2							205	255				
110	(φ1) T1 B2L (B2R)	A	0	0	0	0		4			387			388		259		268		
111	↓	0	D	0	0	0		2			387			388						
112	↓	A	6	0	0	0		2								227		242		
113	(φ1) T1 (B2L) B2R	A	6	0	0	0		2								226		243		
114	(φ1) T1 B3	A	0	0	0	0		6		391	390			389	255	256		264		
115	↓	0	D	0	0	0		3		391	390			389						
116	↓	A	6	0	0	0		3							202	228		234		
117	(φ1) T1 B3L (B3R)	A	0	0	0	0		4			392			393		257		265		
118	↓	0	D	0	0	0		2			392			393						
119	↓	A	6	0	0	0		2								230		241		
120	(φ1) T1 (B3L) B3R	A	6	0	0	0		2								229		240		

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CY	CY	CA	CAF	CBL	CLM	CYN				MACH	ALPHA BETA	7
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES

A = −10° ↗ 10°
B = 10° ↗ −10°
C = −10° ↗ 20°
D = 6° ↗ −6°

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 191

BX - BOTH LEFT & RIGHT BOOSTERS
BXL - LEFT BOOSTER
BXR - RIGHT BOOSTER

INDRICAL BOOSTER
DELTA WING ORBITER
MSC
DR#1230 C-1- 192
☐ PRETEST
☑ POSTTEST

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5
RD7121	(φ1) T1 B4	A	O	0	0	0		6		378	377			376	269	273		276
122		A	C	0	0	0		1							272			
123		C	D	0	0	0		3		378	377			376				
124		A	6	0	0	0		3							201	231		238
125	(φ1) T1 B4L (B4R)	A	C	0	0	0		4			380			379		274		275
126		A	6	0	0	0		2								233		236
127		O	D	0	0	0		2			380			379				
128	(φ1) T1 (B4L) B4R	A	6	0	0	0		2								232		237
129	(φ1) T1 B5	A	6	0	0	0		2							249			248
130		A	6	0	0	0		1							208			
131	(φ1) T1 B5L (B5R)	A	6	0	0	0		1										246
132	(φ1) T1 (B5L) B5R	A	6	0	0	0		1										247
133	(φ1 V1) T1 B5	A	O	0	0	0		6		384	382			383	250	252		251
134		O	D	0	0	0		3		384	382			383				
135		A	6	0	0	0		1								218		
136		6	A	0	0	0		1								220		
137	(φ1 V1) T1 B5L (B5R)	A	O	0	0	0		4			386			385		261		262
138		O	D	0	0	0		2			386			385				
139		A	6	0	0	0		1								216		
140	(φ1 V1) T1 (B5L) B5R	A	6	0	0	0		1								217		

7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7141	(φ1V1) T1	A	0	0	0	0		3		399	398			397						
142		0	D	0	0	0		3		399	398			397						
143		A	0	20	0	0		3		401	402			400						
144		0	D	20	0	0		3		401	402			400						
145		A	0	0	0	10		3		405	404			403						
146		0	D	0	0	10		3		405	404			403						
147	(φ1) T1	A	0	0	0	0		8	360	361	362	363	364	365		260		263		
148		0	D	0	0	0		6	360	361	362	363	364	365						
149		A	6	0	0	0		2								234		235		
150	(φ1) T2 B1	A	0	0	0	0		3		415	416			417						
151		0	D	0	0	0		3		415	416			417						
152		A	6	0	0	0		2							207	223				
153	(φ1) T2 B1L (B1R)	A	6	0	0	0		1								214				
154	(φ1) T2 B2	A	6	0	0	0		1							204					
155	(φ1) T2 B3	A	6	0	0	0		1							203					
156	(φ1) T2 B4	A	0	0	0	0		3		420	419			418						
157		0	D	0	0	0		3		420	419			418						
158		A	6	0	0	0		1							200					
159	(φ1) T2 (B1L) B1R	A	6	0	0	0		1							222					
160	(φ1V1) T2 B5	A	0	0	0	0		3		408	407			406						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 193

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CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 194

☐ PRETEST
☒ POSTTEST

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7161	(ΦIV1) T2 B5	O	D	0	0	0		3		408	407			406						
162	(ΦIV1) T2A B5	A	O	0	0	0		3		409	410			411						
163	↓	O	D	0	0	0		3		409	410			411						
164	(Φ1) T2A B1	6	A	0	0	0		1								211				
165		A	O	0	0	0		3		414	413			412						
166		O	D	0	0	0		3		414	413			412						
167	↓	A	6	0	0	0		2							309	210				
168	(Φ1) T2A B1L (B1R)	A	6	0	0	0		1								213				
169	(Φ1) T2A (B1L) B1R	A	6	0	0	0		1								212				
170	(Φ1) T2	A	O	0	0	0		2			367			366						
171	↓	O	D	0	0	0		2			367			366						
172	(Φ1) T2A	A	O	0	0	0		2			368			369						
173	↓	O	D	0	0	0		2			368			369						
174	(Φ1) T3 B1	A	O	0	0	0		6		333	329			331	277	278		279		
175		O	A	0	0	0		3		334	330			332						
176	↓	A	6	0	0	0		3							309	308		310		
177	(Φ1) T3 B1L (B1R)	A	O	0	0	0		4			335			336		281		280		
178		O	D	0	0	0		2			335			336						
179	↓	A	6	0	0	0		2								312		311		
180	(Φ1) T3 (B1L) B1R	A	6	0	0	0		4			328			327		313		314		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β
SCHEDULES

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TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RP7181	(φ1)T3(B1L)B1R	A	6	0	0	0		1								326				
182	(φ1)T3 B2	A	0	0	0	0		5		350	351			352		296		297		
183	↓	O	D	0	0	0		3		350	351			352						
184	(φ1)T3 B2L (B2R)	A	C	0	0	0		4			354			353		299		298		
185		O	D	0	0	0		2			354			353						
186	↓	A	6	0	0	0		2								300		301		
187	(φ1)T3(B2L)B2R	A	6	0	0	0		2								303		302		
188	(φ1)T3 B3	A	0	0	0	0		6		356	355			357	287	286		288		
189		O	D	0	0	0		3		356	355			357						
190	↓	A	6	0	0	0		2							317	318				
191	(φ1)T3 B3L (B3R)	A	0	0	0	0		4			359			358		285		284		
192		O	D	0	0	0		2			359			358						
193	↓	A	6	0	0	0		1								319				
194	(φ1)T3(B3L)B3R	A	6	0	0	0		1								320				
195	(φ1)T3 B4	A	0	0	0	0		1							1					
196		C	H	0	0	0		1							2					
197		A	0	20	0	0		1							3					
198	↓	A	0	0	0	10		2							4	8				
190	(φ1)T3 B4L (B4R)	A	0	0	0	0		4			338			337		282		283		
1A1	↓	O	D	0	0	0		2			338			337						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 195

C-4

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 196
☐ PRETEST
☑ POSTTEST

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δF		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD71A2	(φ1)T3 B4L(B4R)	A	6	0	0	0		2								307		306		
1A3	(φ1)T3(B4L)B4R	A	6	0	0	0		2								304		305		
1A4	(φ1)T3 B4 F4	A	0	0	0	0		2							6	7				
1A5	(φ1V1) T3 B5	A	0	0	0	0		6		341	339			340	292	291		293		
1A6	↓	O	D	0	0	0		3		341	339			340						
1A7	↓	A	6	0	0	0		2							322	321				
1A8	(φ1V1)T3 B5L(B5R)	A	0	0	0	0		4			342			343		295		294		
1A9	↓	O	D	0	0	0		2			342			343						
1B1	↓	A	6	0	0	0		1								324				
1B2	(φ1V1)T3(B5L)B5R	A	6	0	0	0		1								325				
1B3	(φ1)T3	A	0	0	0	0		8	349	348	347	346	345	344		290		284		
1B4	↓	O	D	0	0	0		6	349	348	347	346	345	344						
1B5	↓	A	6	0	0	0		2								316		315		
1B6	(φ1V1) T1B5	O	D	0	0	0		3							558	563		566		
1B7	(φ1V1) T1	A	0	20	0	0		3							557	562		567		
1B8	↓	O	D	20	0	0		3							557	562		567		
1B9	(φ1V1) T2 B5	A	0	0	0	0		3							559	564		565		
1C1	(φ1)T1 B6	A	0	0	0	0		2		496					556					
1C2	↓	O	D	0	0	0		2		496					556					
1C3	↓	A	0	20	0	0		6		495	494			493	555	557		569		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

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TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.90	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD71C4	(ϕ_1) T1 B6	O	D	20	0	0		6		495	494			493	555	554		569		
1C5																				
1C6	$(\phi_1 \gamma_1)$ T1 B5	A	C	0	0	0		3							558	563		566		
1C7	(ϕ_1) T4 B7A1-4	A	O	0	0	0		6		477	476			475	544	542		539		
1C8		O	D	0	0	0		6		477	476			475	544	542		539		
1C9		A	G	0	0	0		6		506	507			504	517	520		527		
1D1		A	O	20	0	0		6		478	479			480	550	543		538		
1D2		O	D	20	0	0		6		478	479			480	550	543		538		
1D3		A	G	20	0	0		6		511	508			509	516	521		526		
1D4		A	O	0	0	10		6		483	482			481	551	544		537		
1D5		O	D	0	0	10		6		483	482			481	551	544		537		
1D6		A	G	0	0	10		6		512	513			514	515	522		525		
1D7	(ϕ_1) T4 B7-4	A	O	0	0	0		3		489	488			487						
1D8		O	D	0	0	0		3		489	488			487						
1D9	(ϕ_1) T4	A	C	0	0	0		6		490	491			492	548	547		536		
1E1		O	D	0	0	0		6		490	491			492	548	547		536		
1E2		E	O	0	0	0		1										534		
1E3		E	G	0	0	0		1										531		
1E4	(ϕ_1) T4 B7A1-5	A	C	0	0	0		6		484	485			486	552	545		540		
1E5		O	D	0	0	0		6		484	485			486	552	545		540		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES $F = -10^\circ \rightarrow 30^\circ$

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 197

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 198

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.90	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD71E6	(ϕ1)T4 B7A1-5	A	6	0	0	0		6		499	498			497	518	519		530		
1E7	↓	A	6	0	0	0		1										528		
1E8	(ϕ1V1)T2 B5	0	D	0	0	0		3							559	564		565		
1E9	(ϕ1V1)T2A B5	A	0	0	0	0		3							560	561		568		
1F1	↓	0	D	0	0	0		3							560	561		568		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

ORIGINAL PAGE IS
OF POOR QUALITY

#830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

TANK & BOOSTERS @ TANK MRC

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION				NO. of RUNS	MACH NUMBERS											
RD7201	NOTE: SAME AS																			
202	DATA SETS																			
203	RD71XX																			
204																				
205																				
206																				
207																				
208																				
209																				
210																				
211																				
212																				
213																				
214																				
215																				
216																				
217																				
218																				
219																				
220																				

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CN	CY	CA	CAF	CBL	CLM	CYN				MACH	ALPHA BETA		7
COEFFICIENTS:										IDPVAR(1)	IDPVAR(2)		NDV

α or β SCHEDULES

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 199

*830-528

TABLE 2. TEST S-2.2 DATA SET COLLATION SHEET (CONTINUE

ORBITER @ TANK MRC

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 200

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION				NO. of RUNS	MACH NUMBERS											
RD7301	NOTE: SAME AS																			
302	DATA SETS																			
303	RD71XX																			
304																				
305																				
306																				
307																				
308																				
309																				
310																				
311																				
312																				
313																				
314																				
315																				
316																				
317																				
318																				
319																				
320																				

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CY	CA	CAF	CBL	CLM	CYN				MACH	ALPHA BETA	7
COEFFICIENTS:										IDPVAR(1)	IDPVAR(2)	NDV

α or β
SCHEDULES

*830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

COMPOSITE @ TANK MRC.

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION				NO. of RUNS	MACH NUMBERS											
RD7401	NOTE: SAME AS																			
402	DATA SETS																			
403	RD71XX																			
404																				
405																				
406																				
407																				
408																				
409																				
410																				
411																				
412																				
413																				
414																				
415																				
416																				
417																				
418																				
419																				
420																				

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CY	CA	CAF	CBL	CLM	CYN				MACH	ALPHA BETA	7

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 201

*830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 202
☐ PRETEST
☑ POSTTEST

COMPOSITE @ TANK MRC

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	3.25	4.5		
RD7501	φ1 T1 B1	A	0	0	0	0		7		77	78			79	16	11	421	21		
502	↓	A	6	0	0	0		6		95	94			93	25	26		33		
503	↓	A	6	0	0	0		1								147				
504	↓	0	B	0	0	0		4		77	78				16	11				
505	↓	0	D	0	0	0		1									421			
506	↓	C	A	0	0	0		1						80						
507	φ1T1B1+PLUME(2.5)	A	0	0	0	0		2								185	422			
508	↓	A	6	0	0	0		1								196				
509	↓	A	0	20	0	0		2								186	423			
510	↓	A	0	0	0	10		2								187	424			
511	↓	0	D	0	0	0		1									422			
512	↓	0	D	20	0	0		1									423			
513	↓	0	D	0	0	10		1									424			
514	φ1 T1 B2	A	0	0	0	0		6		84	85			86	15	12		23		
515	↓	A	6	0	0	0		6		87	88			89	24	27		32		
516	φ1 T1 B2S	A	0	0	0	0		5		83	82			81	14	13				
517	↓	A	6	0	0	0		6		92	91			90	28	29		31		
518	φ1 T3 B2	A	0	0	0	0		1							49					
519	↓	A	6	0	0	0		3							48	39		38		
520	φ1 T3 B4	A	0	0	0	0		6		71	72			73	51	56		59		

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CY	CA	CAF	CBL	CLM	CYN				MACH	ALPHA BETA	7
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES

ORIGINAL PAGE IS OF POOR QUALITY

#830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7521	φ1 T3 B4	O	A	0	0	0		6		71	72			73	51	56		60		
522	↓	A	6	0	0	0		6		99	100			101	46	42		35		
523		C	B	0	0	0		6		104	103			102	45	43		36		
524		A	0	20	0	0		6		69	67			68	53	54		61		
525	↓	A	0	0	0	10		6		70	64			63	52	55		62		
526	φ1 T3 B4 F4	A	0	0	0	0		6		76	75			74	50	57		58		
527	↓	A	6	0	0	0		6		98	97			96	47	40		37		
528	φ1 T1 B1	A	0	0	0	0		2							425	431				
529		O	D	0	0	0		2							425	431				
530		A	0	20	0	0		2							426	432				
531		O	D	20	0	0		2							426	432				
532		A	0	10	0	0		1							427					
533		O	D	10	0	0		1							427					
534		A	0	-10	0	0		1							428					
535		O	D	-10	0	0		1							428					
536		A	0	0	0	10		2							429	430				
537		O	D	0	0	10		2							429	430				
538	φ1 T1 B1 + PLUME (15)	A	0	0	0	0		2							434	437				
539		O	D	0	0	0		2							434	437				
540		A	0	20	0	0		2							433	430				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 203

*830-528

☐ PRETEST
☒ POSTTEST

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7541	Φ1T1B1+Plume (1.5)	0	D	20	0	0		2							433	438				
542		A	C	0	0	10		2							435	436				
543		0	D	0	0	10		2							435	436				
544	T3B2	A	C	—	—	—		2							442	439				
545		0	D	—	—	—		2							442	437				
546	T3B5	A	0	—	—	—		2							441	440				
547		0	D	—	—	—		2							441	440				
548	Φ1T3B6	A	0	0	0	0		2							443	448				
549		0	D	0	0	0		2							443	448				
550		A	0	20	0	0		2							444	447				
551		0	D	20	0	0		2							444	447				
552		A	C	0	0	10		2							445	449				
553		C	D	0	0	10		2							445	449				
554		A	C	0	0	10		1								446				
555		C	D	0	0	10		1								446				
556	Φ1T3B6+Plume (1.5)	A	C	0	0	0		1							455					
557		C	D	0	0	0		1							455					
558		A	C	20	0	0		1							454					
559		C	D	20	0	0		1							454					
560		A	C	0	0	10		1							453					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

#830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.90	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7561	φ1T3B6+PLUME(1.5)	O	D	0	0	10		1												
562	φ1T3B6+PLUME(2.2)	A	O	0	0	0		1							453					
563	↓	O	D	0	0	0		1								450				
564		A	O	20	0	0		1								450				
565		O	D	20	0	0		1								451				
566		A	O	0	0	10		1								451				
567	↓	O	D	0	0	10		1								452				
568	T1B5	A	O	—	—	—		1								452				
569	↓	O	D	—	—	—		2							457	458				
570	T1B6	A	O	—	—	—		2							457	458				
571	↓	O	D	—	—	—		6		471	470			469	456	459		605		
572	φ1T4B7A1-4	A	O	0	0	0		6		471	470			469	456	459		605		
573	↓	O	D	0	0	0		4			460			461	598	572				
574	φ1T4B7A1-4+PLUME(1.5)	A	O	0	0	0		4			460			461	598	572				
575		O	D	0	0	0		1							586					
576		A	O	20	0	0		1							586					
577		O	D	20	0	0		1							588					
578		A	O	0	0	10		1							588					
579	↓	O	D	0	0	10		1							587					
580	φ1T4B7A1-4+PLUME(2.2)	A	O	0	0	0		1							587					
																577				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS:
α or β SCHEDULES

IDPVAR(1) | IDPVAR(2) | NDV

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1-205

#830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 206

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR	δRF	NO. of RUNS	MACH NUMBERS 0.7	0.6	0.4	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7581	φ1T4B7A1-4+Plume(2.2)	C	D	0	0	0	0	1								577				
582	↓	A	0	20	0	0	0	1								575				
583		0	D	20	0	0	0	1								575				
584		A	0	0	0	10	0	1								576				
585		0	D	0	0	10	0	1								576				
586	φ1T4F1B7A1-4	A	0	0	0	0	0	2							597	570				
587	↓	0	D	0	0	0	0	2							597	570				
588	T4 B7A1-4	A	0	—	—	—	—	6		474	463			462	600	573		604		
589	↓	0	D	—	—	—	—	6		474	463			462	600	573		604		
590	T4F1B7A1-4	A	0	—	—	—	—	4		645	644			646		599				
591	↓	0	D	—	—	—	—	4		645	644			646		599				
592	φ1V1T4B7A1-4	A	0	0	0	0	0	2							593	592				
593	↓	0	D	0	0	0	0	2							593	592				
594		A	0	0	0	10	0	2							594	591				
595		0	D	0	0	10	0	2							594	591				
596		A	0	0	0	0	20	2							595	[illegible]				
597		0	D	0	0	0	20	2							595	[illegible]				
598		A	0	0	0	10	20	2							596	589				
599		0	D	0	0	10	20	2							596	589				
5A1	φ1V1T4B7A1-4+Plume(1.5)	A	0	0	0	0	0	1							582					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β
SCHEDULES

30

*830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR	δRF	NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD75A2	ΦIVIT4B7A1-4+Plume(1.5)	0	D	0	0	0	0	1							582					
5A3	↓	A	0	0	0	10	0	1							583					
5A4		0	D	0	0	10	0	1							583					
5A5		A	0	0	0	0	20	1							585					
5A6		0	D	0	0	0	20	1							585					
5A7		A	0	0	0	10	20	1							584					
5A8		0	D	0	0	10	20	1							584					
5B1	ΦIVIT4B7A1-4+Plume(2.2)	A	0	0	0	0	0	1							581					
5B2	↓	0	D	0	0	0	0	1							581					
5B3		A	0	0	0	10	0	1							580					
5B4		0	D	0	0	10	0	1							580					
5B5		A	0	0	0	0	20	1							578					
5B6		0	D	0	0	0	20	1							578					
5B7		A	0	0	0	10	20	1							579					
5B8		0	D	0	0	10	20	1							579					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS:

α or β SCHEDULES

IDPVAR(1) | IDPVAR(2) | NDV

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 207

#830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 208
☐ PRETEST
☒ POSTTEST

RD76xx TANK @ TANK MRC
RD77xx ORBITER @ ORBITER MRC

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δA	δE	δR		NO. of RUNS	MACH NUMBERS 0.4	0.6	0.9	0.95	1.05	1.1	1.5	2.2	2.25	4.5		
RD7601	T1	A	0	—	—	—		4			105			107		190		193		
602	T2	A	0	—	—	—		4			109			108		191		192		
603	T3	A	0					4			110			111		189		194		
604	T4	A	0					6		466	467			468	601	574		603		
RD7701	φ1	C	0	0	0	0		6		126	127			128	181	180		182		
702	↓	C	6	0	0	0		6		155	154			153	156	157		165		
703		C	0	0	0	10		4		131	130			129		179				
704	φ1V1	C	0	0	0	0		3			139			140		175				
705	↓	C	6	0	0	0		3			146			145		160				
706		C	0	0	0	10		1								178				
707	φ1VφFF	C	0	0	0	—		3			142			141		174				
708	↓	C	6	0	0	—		3			143			144		161				
709	φ1C1	C	0	0	0	0		5		132	133			134		177		183		
710	↓	C	6	0	0	0		5		152	151			150		158		163		
711	φ1C2	C	0	0	0	0		5		137	136			135		176		184		
712	↓	C	6	0	0	0		5		149	147			148		159		164		

1 CN 7 CY 13 CA 19 CAF 25 CBL 31 CLM 37 CYN 43 49 55 61 MACH 67 ALPHA BETA 75 76 7

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

*830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

Booster @ Booster MRC Pitch Plane

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δD			NO. of RUNS	MACH NUMBERS 0.4	0.6	0.7	0.9	0.95	1.1	1.5	2.2	2.5	4.5		
RD7801	B1	A	0	—			4				117		116		170		169		
802	B2	A	0	—			4				120		121		172		166		
803	B2S	A	0	—			4				123		122		173		167		
804	B3	A	0	—			4				114		118		171		168		
805	B4	A	0	—			4				113		112		158		195		
806	B1S1	E	0	—			6			637		638	639	612		622	606		
807	B1S2	E	0	—			6			642		641	640	613		623	607		
808	B1D2	E	0	75			6			626		627	628	609		620	608		
809	B1D2	F	0	75			2									624	625		
810	B1D2	E	0	45			3					630	629			621			
811	B1D6	E	0	75			6			633		632	631	610		618	617		
812	B1D7	E	0	75			6			634		635	636	611		619	616		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: CA CY CA CAF CBL CLM CYN MACH ALPHA 7

IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES $F = 30° \nearrow 61°$

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 209

#830-528

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 210
☐ PRETEST
☑ POSTTEST

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONTINUED)

RD78AX BOOSTER @ TANK T1 MRC PITCH PLANE
RD78BX BOOSTER @ TANK T3 MRC. PITCH PLANE

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δD			NO. of RUNS	MACH NUMBERS 0.4	1.1	2.2	4.5
RD78A1	B1	A	0	—			4	117	116	170	169
A2	B2	A	0	—			4	120	121	172	166
A3	B2S	A	0	—			4	123	122	173	167
A4	B3	A	0	—			4	119	118	171	168
A5	B4	A	0	—			4	113	112	188	195
B1	B1	A	0	—			4	117	116	170	169
B2	B2	A	0	—			4	120	121	172	166
B3	B2S	A	0	—			4	123	122	173	167
B4	B3	A	0	—			4	119	118	171	168
B5	B4	A	0	—			4	113	112	188	195

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

*830-528

TABLE 2. TEST S-222 DATA SET COLLATION SHEET (CONCLUDED)

RD79XX BOOSTER @ BOOSTER MRC YAW PLANE
RD79AX BOOSTER @ TANK T1 MRC YAW PLANE
RD79BX BOOSTER @ TANK T3 MRC YAW PLANE

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δD				NO. of RUNS	MACH NUMBERS 0.9	1.1	2.2	4.5								
RD7901	B1	0	A	—				4	117	116	170	169								
902	B2	0	A	—				4	120	121	172	166								
903	B2S	0	A	—				4	123	122	173	167								
904	B3	0	A	—				4	119	118	171	168								
905	B4	0	A	—				4	113	112	188	195								
9A1	B1	0	A	—				4	117	116	170	169								
9A2	B2	0	A	—				4	120	121	172	166								
9A3	B2S	0	A	—				4	123	122	173	167								
9A4	B3	0	A	—				4	119	118	171	168								
9A5	B4	0	A	—				4	113	112	188	195								
9B1	B1	0	A	—				4	117	116	170	169								
9B2	B2	0	A	—				4	120	121	172	166								
9B3	B2S	0	A	—				4	123	122	173	167								
9B4	B3	0	A	—				4	119	118	171	168								
9B5	B4	0	A	—				4	113	112	188	195								

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CY	CA	CAF	CBL	CLM	CYN				MACH	BETA	7
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 212

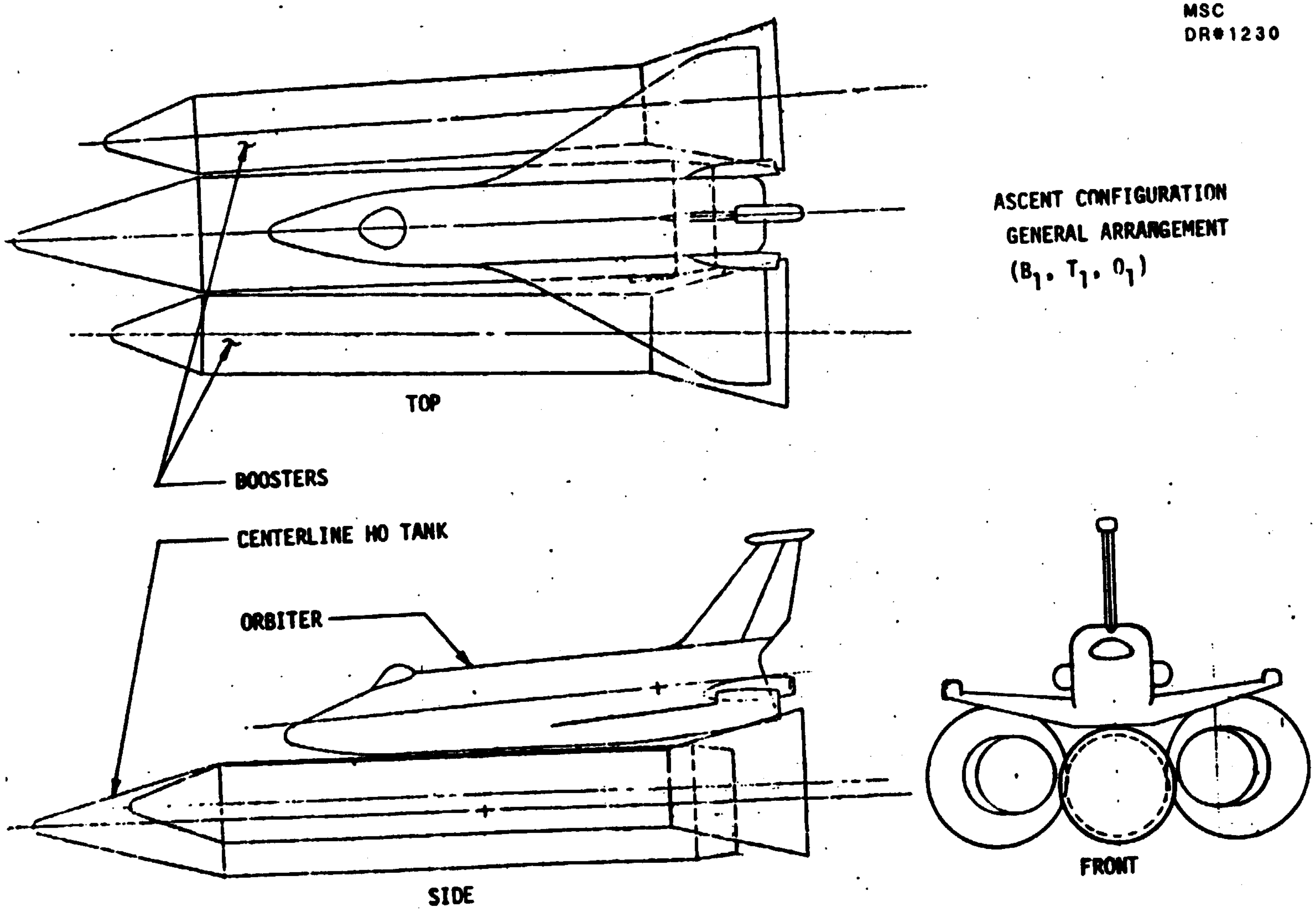
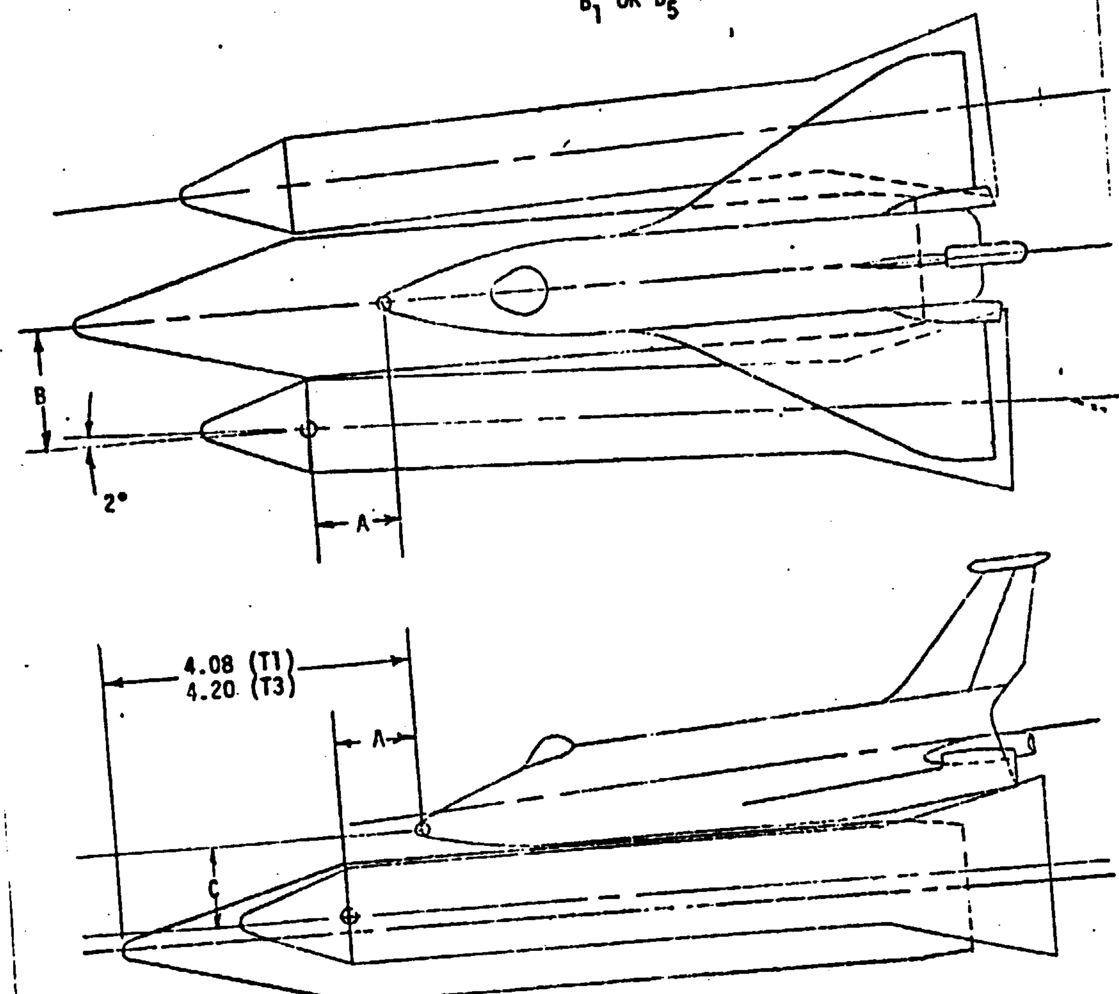


Figure 4. General Arrangement-Ascent Configuration $O_1T_1B_1$

B_1 OR B_5 BOOSTER LOCATION

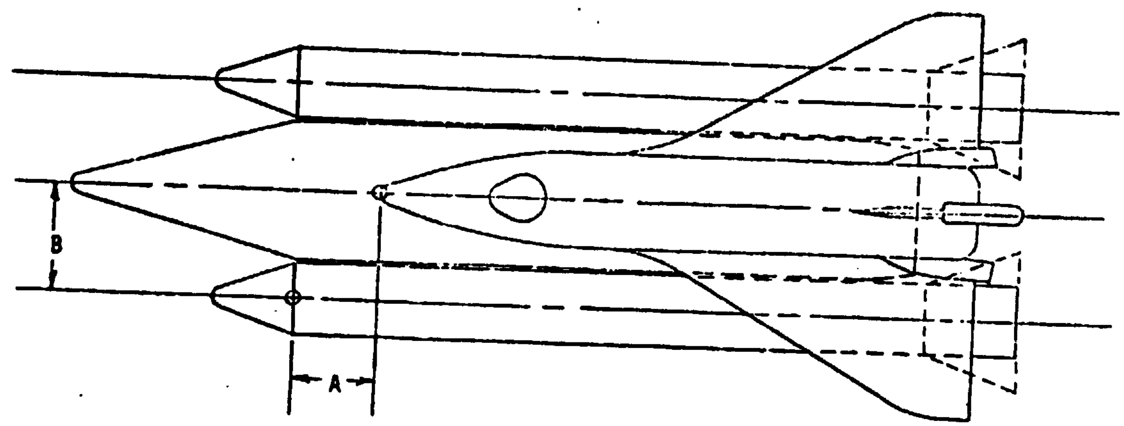


DIMENSION	TANK T1 & T2	TANK T3
A	1.080	1.360
B	1.560	1.628
C	1.282	1.340

Figure 5. General Arrangement-Ascent Configuration With Booster B_1 or B_5

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 213

B_2 AND B_2S BOOSTERS LOCATION



DIMENSION	TANK T1 & T2	TANK T3
A	1.060	-1.522
B	1.120	1.488
C	1.072	1.080

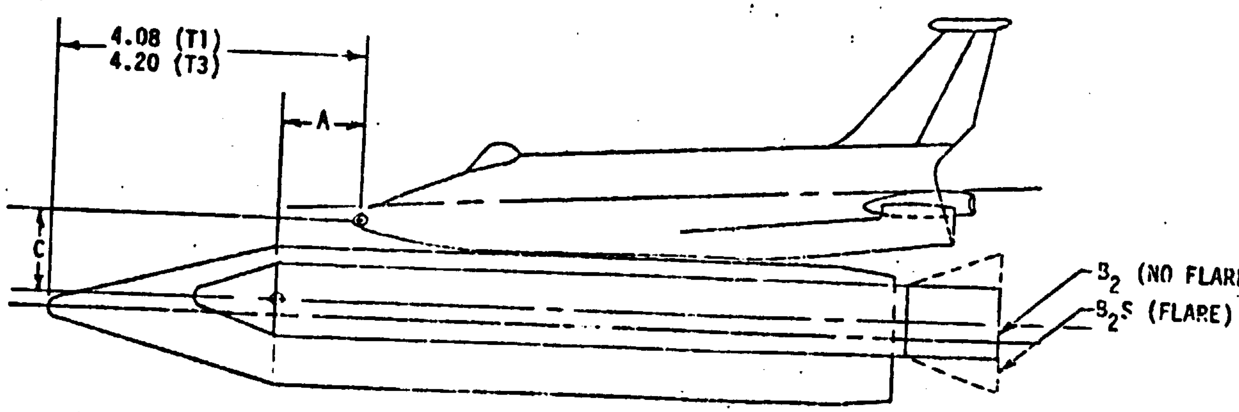
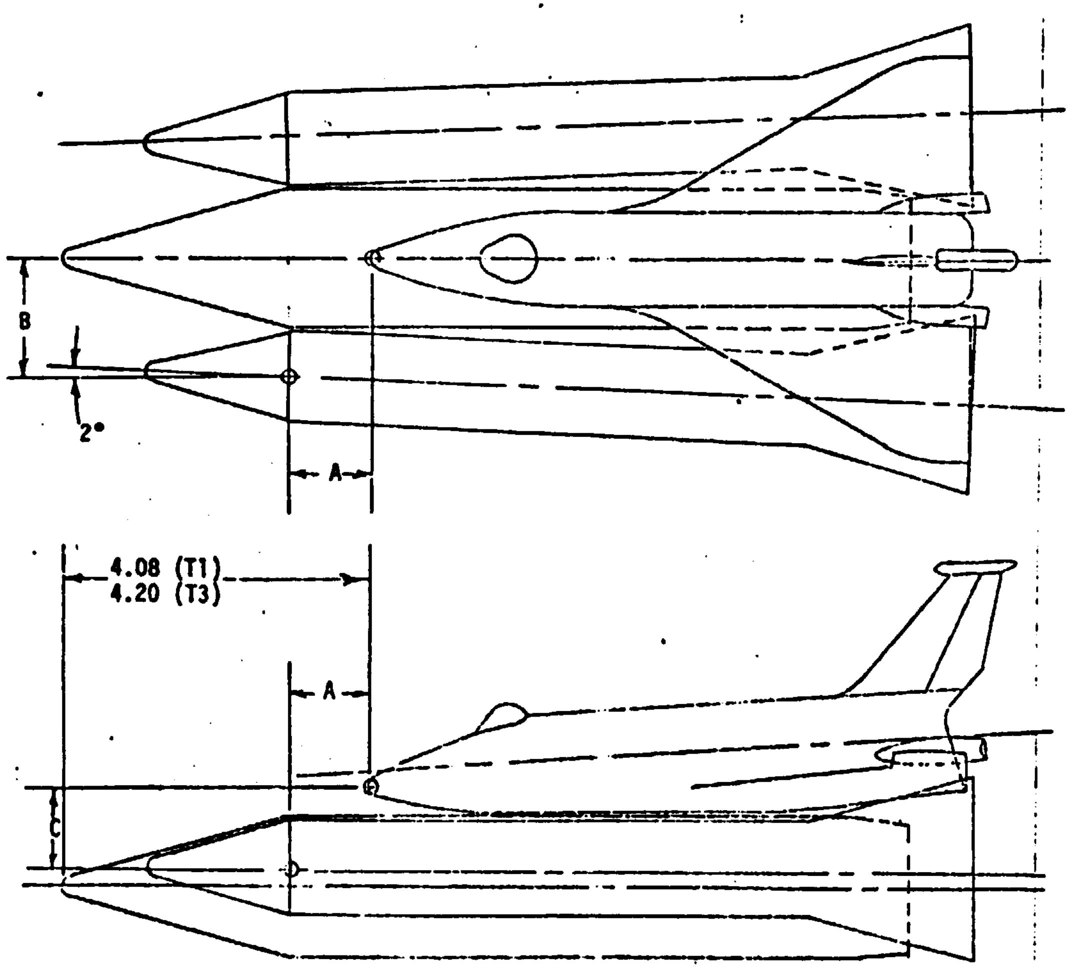


Figure 6. General Arrangement-Ascent Configuration with Booster B2 or B2S

B_3 BOOSTER LOCATION

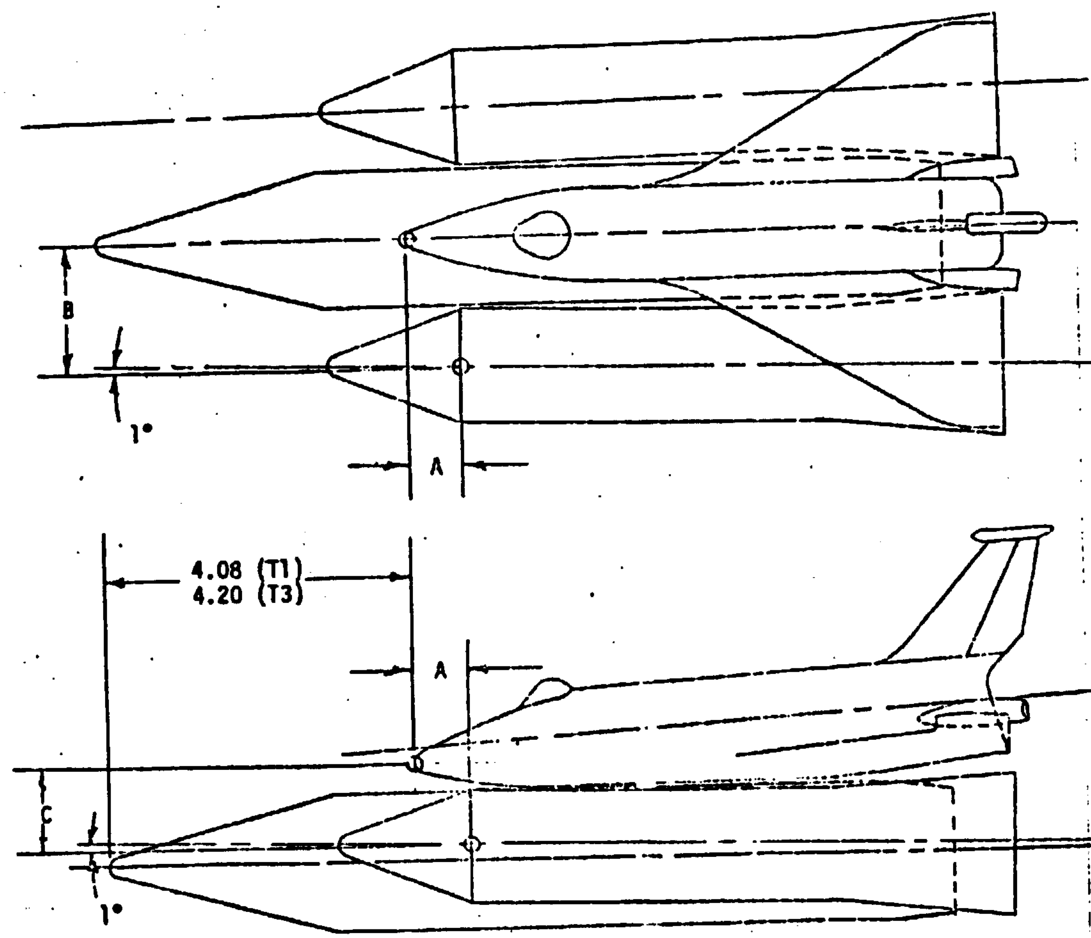


DIMENSION	TANK T1 & T2	TANK T3
A	0.682	0.962
B	1.560	1.628
C	1.282	1.340

Figure 7. General Arrangement-Ascent Configuration with Booster B_3

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 215

B_4 BOOSTER LOCATION



	TANK	
DIMENSION	T1 & T2	T3
A	0.640	0.757
B	1.685	1.753
C	1.091	1.091

Figure 8. General Arrangement-Ascent Configuration with Booster B_4

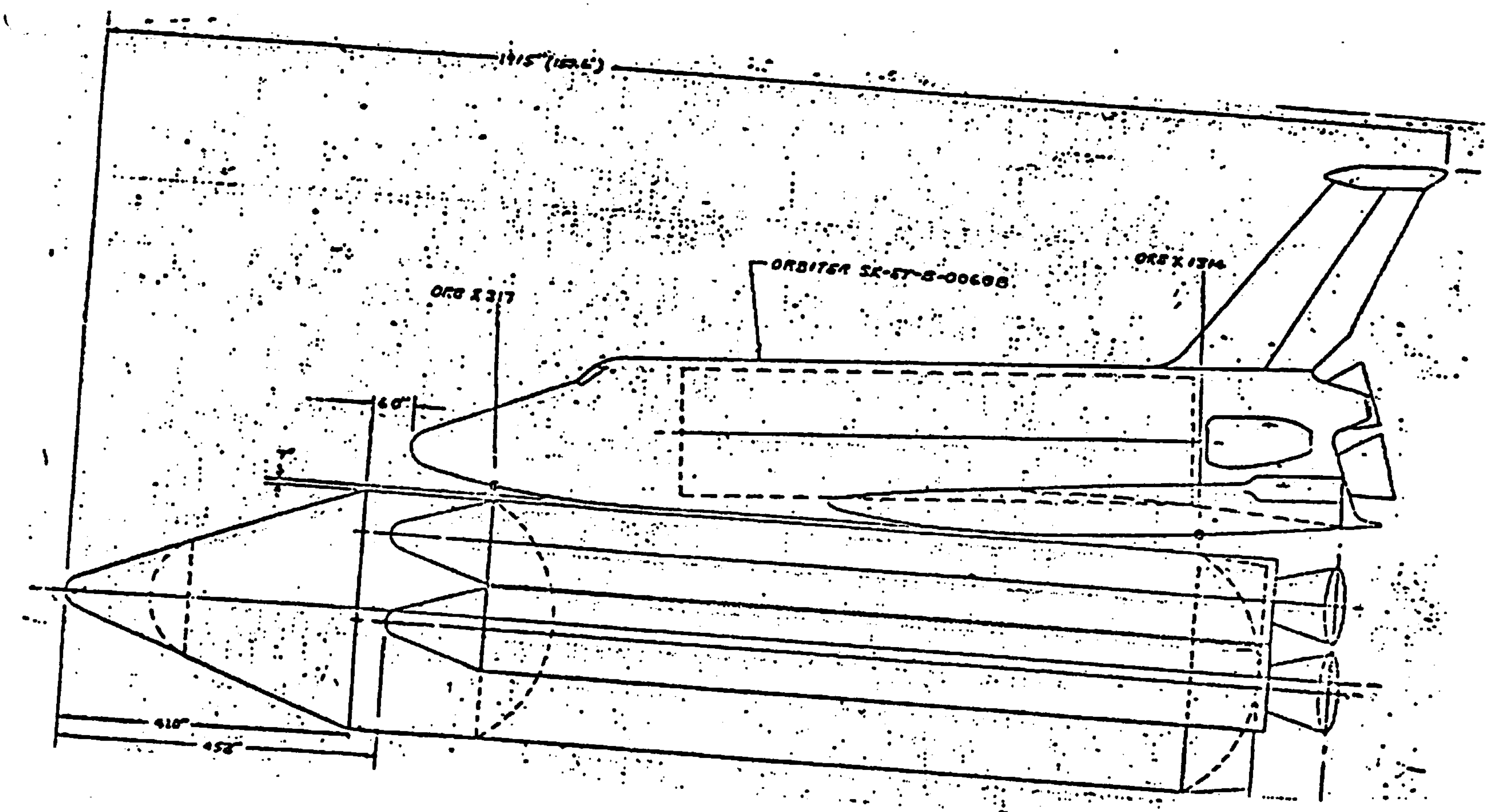


Figure 9. General Arrangement-Ascent Configuration
01T4B7-4 (Side View)

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 217

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 218

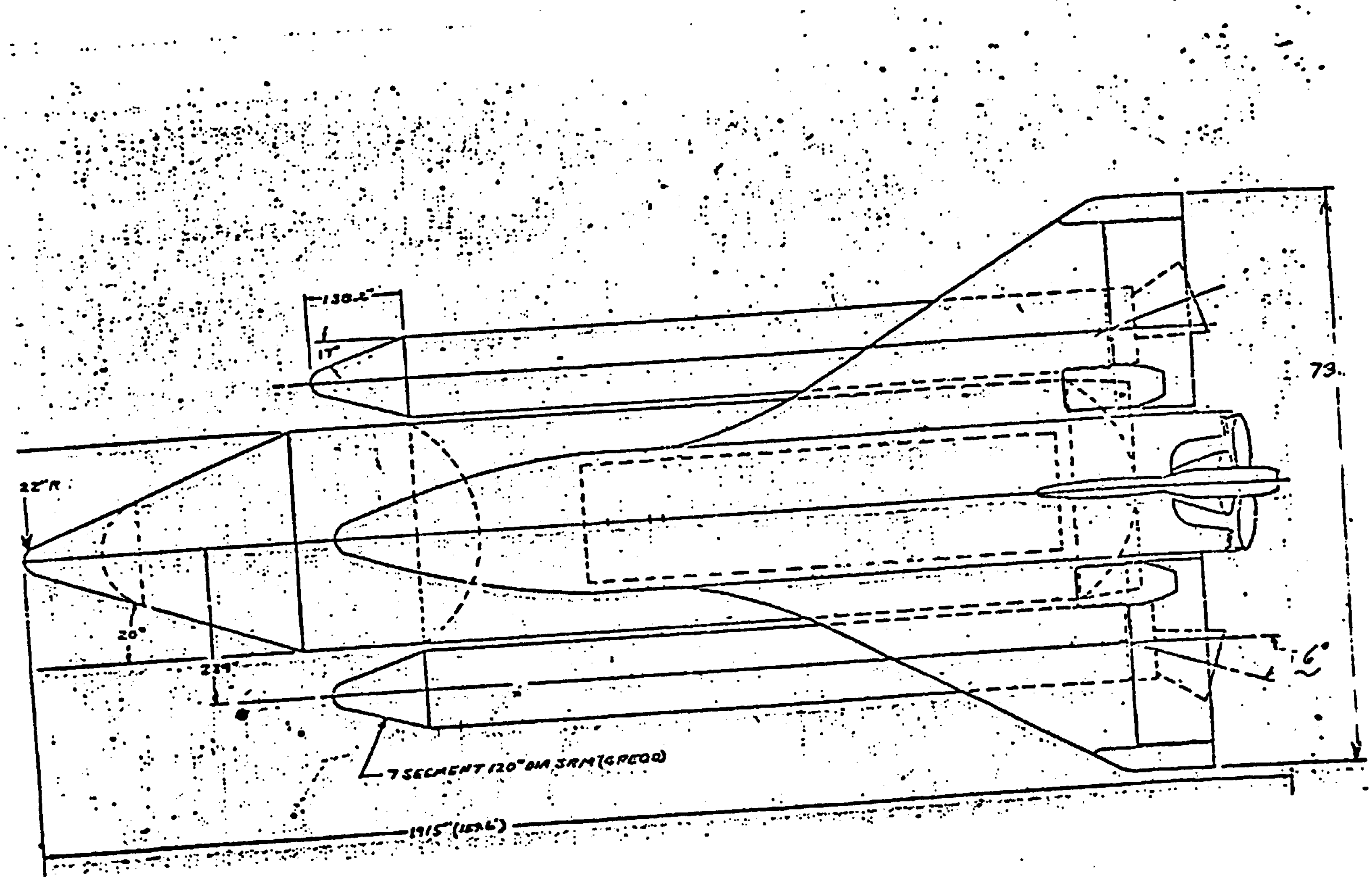


Figure 10. General Arrangement-Ascent Configuration
01T4B7-4 (Top View)

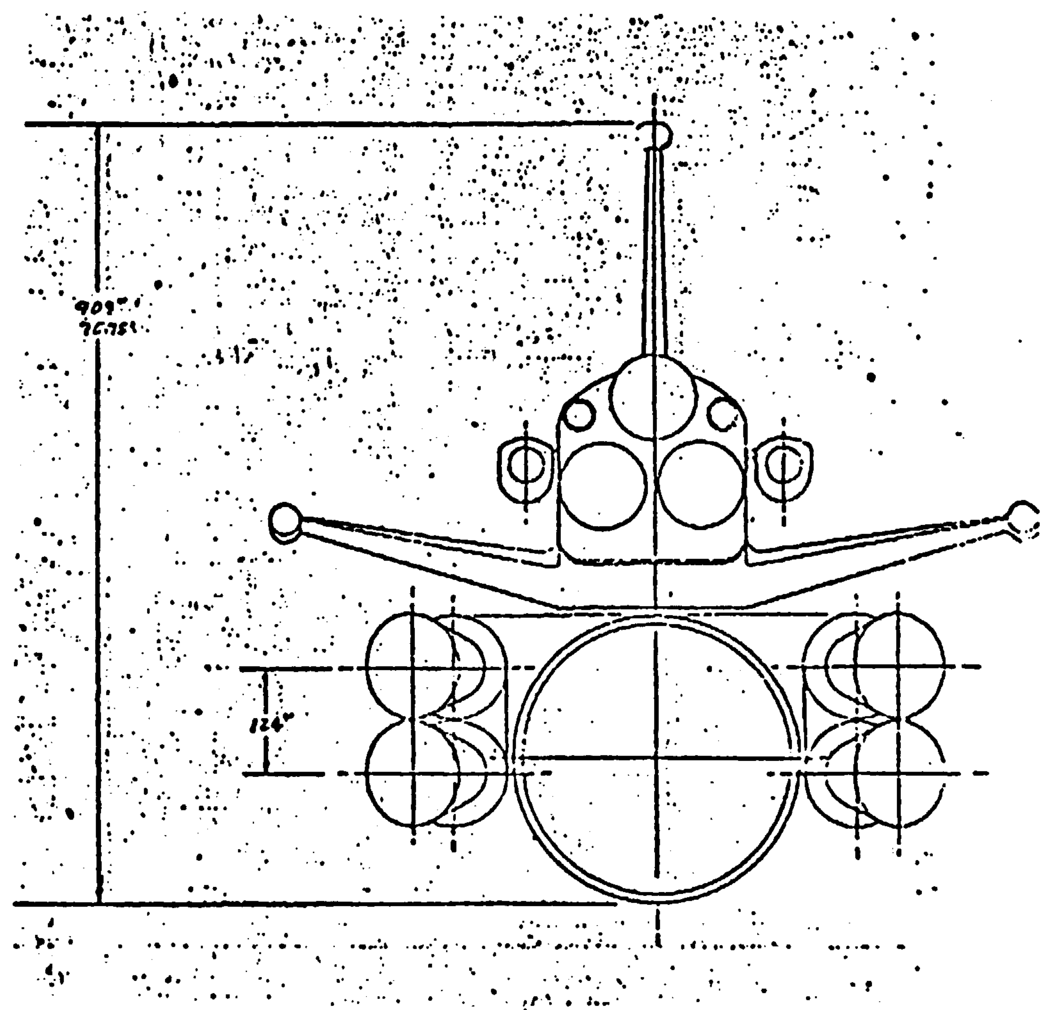
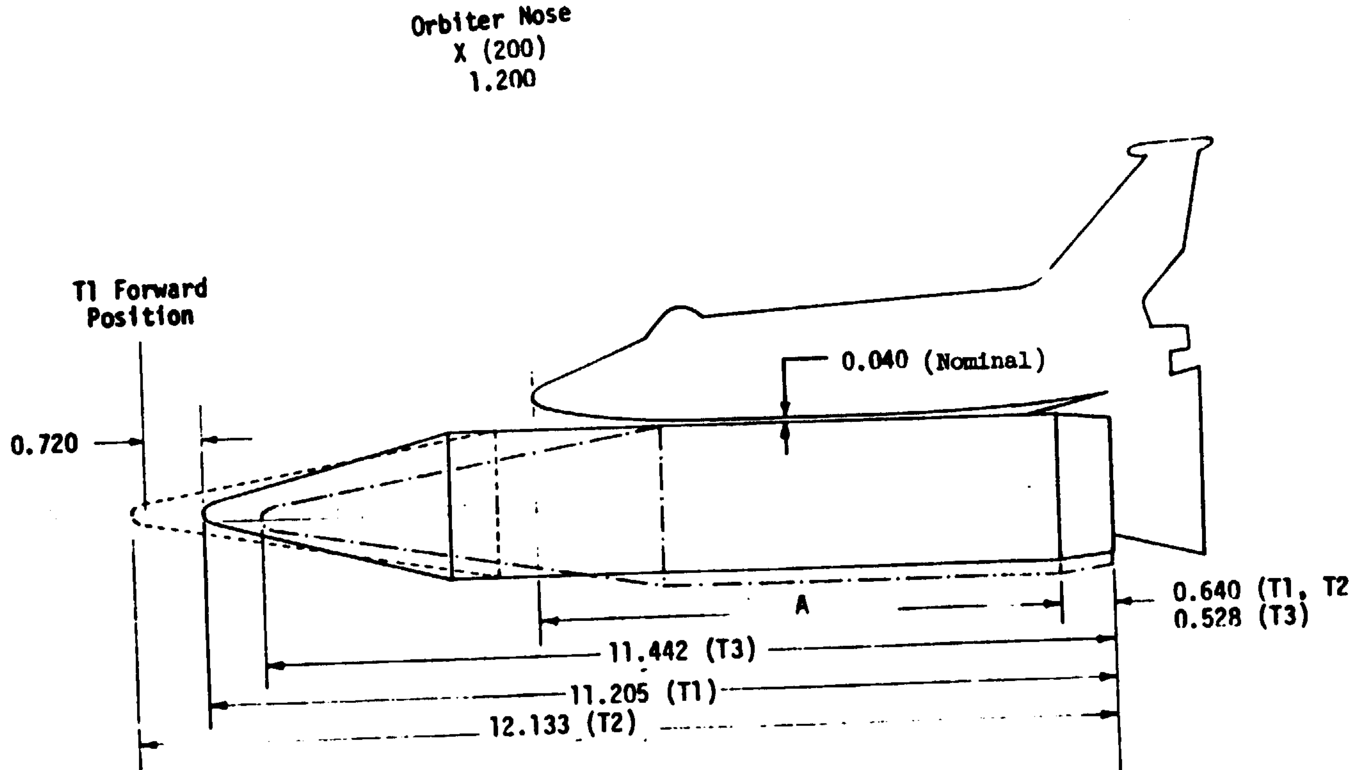


Figure 11. General Arrangement-Ascent Configuration 01T4B7-4
(Rear View)

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 219

CENTERLINE HO TANK LOCATIONS

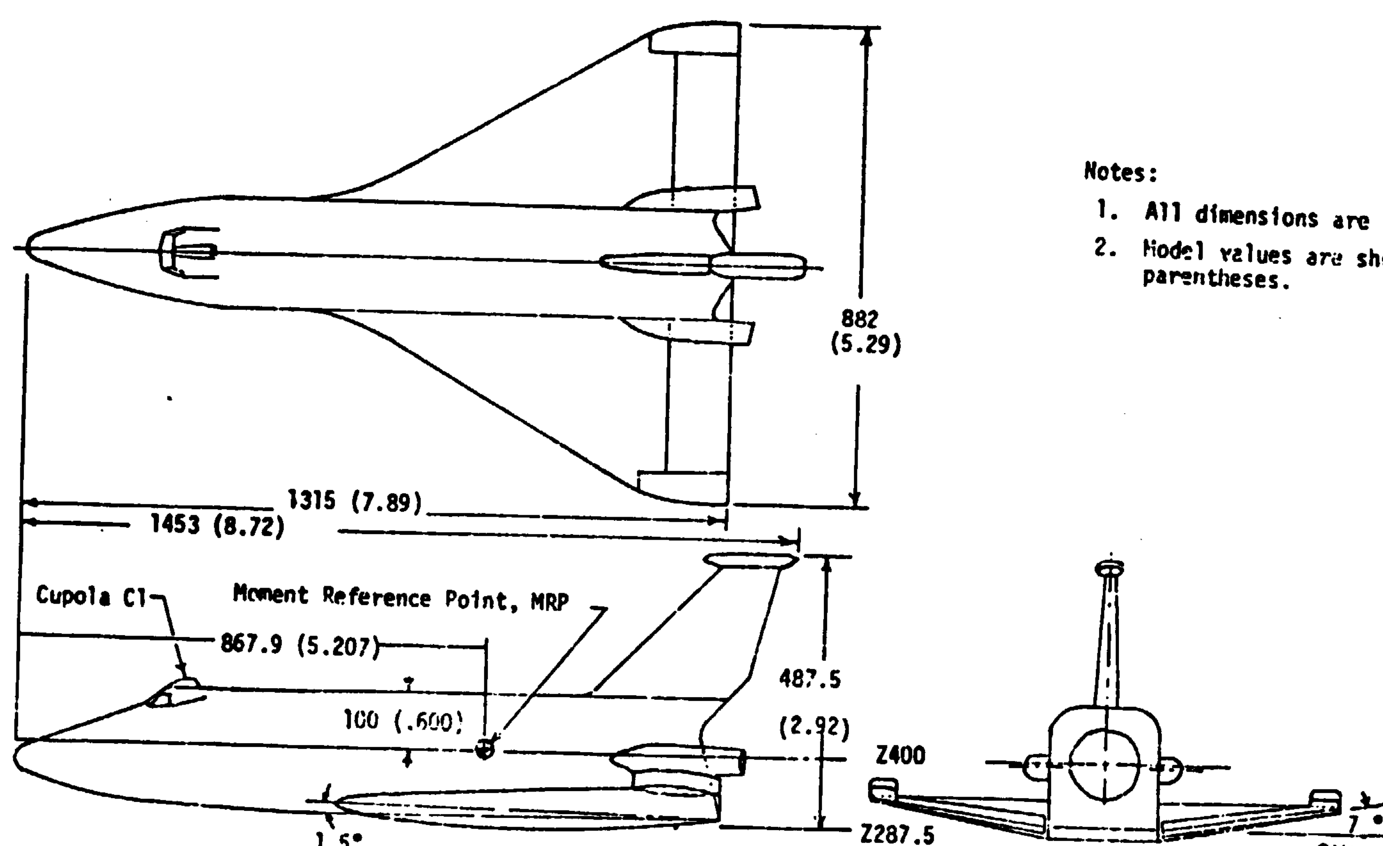


All dimensions are model scale, in inches. Orbiter stations are given in both full scale and model scale dimensions.

TANK	A
T1	6.485
T2	6.485
T3	6.714

Figure 12. Centerline HO Tank Locations

GENERAL ARRANGEMENT 040A ORBITER



Notes:

1. All dimensions are in inches
2. Model values are shown in parentheses.

Figure 20. General Arrangement 040A Orbiter

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 221

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 222

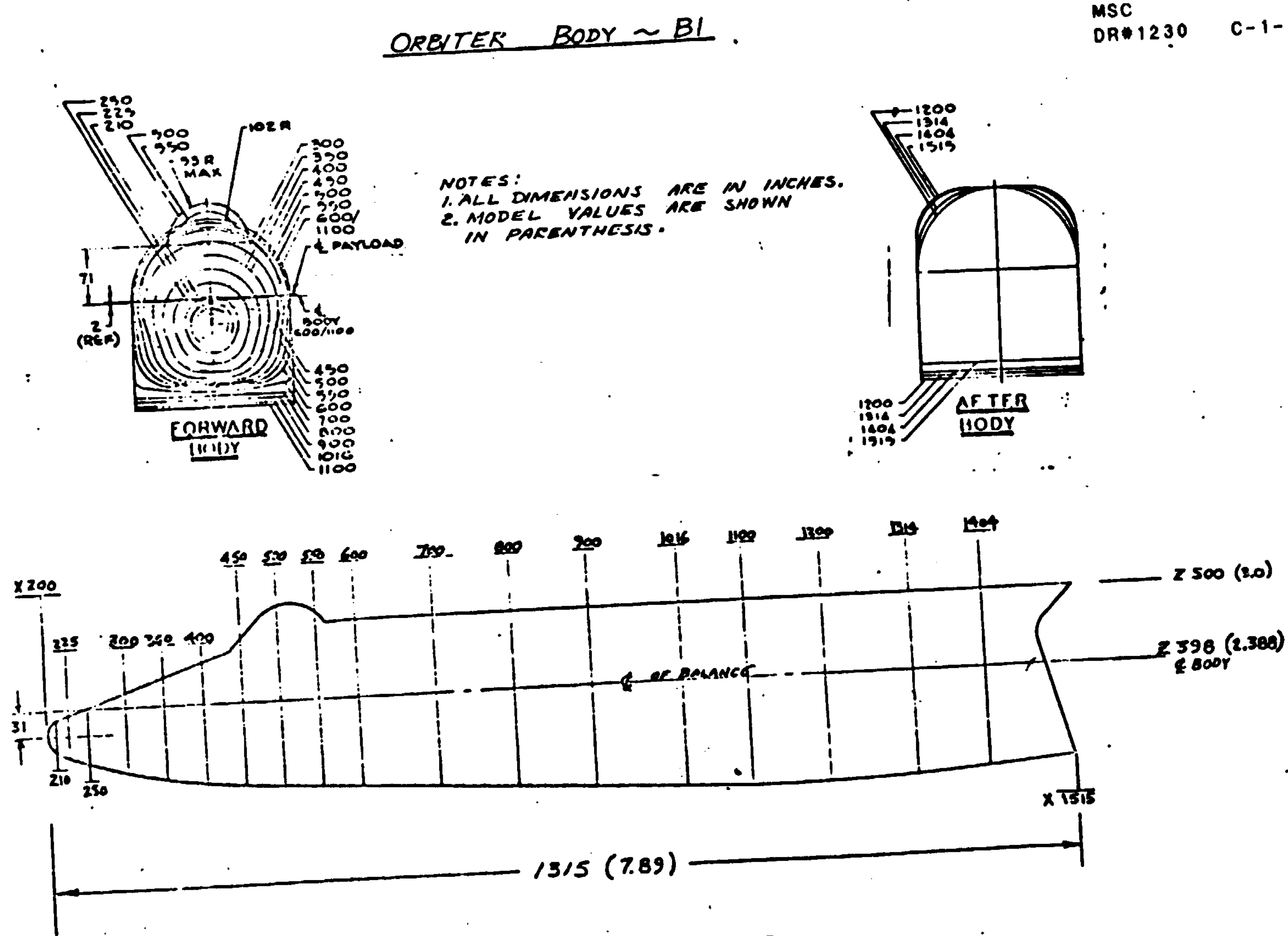
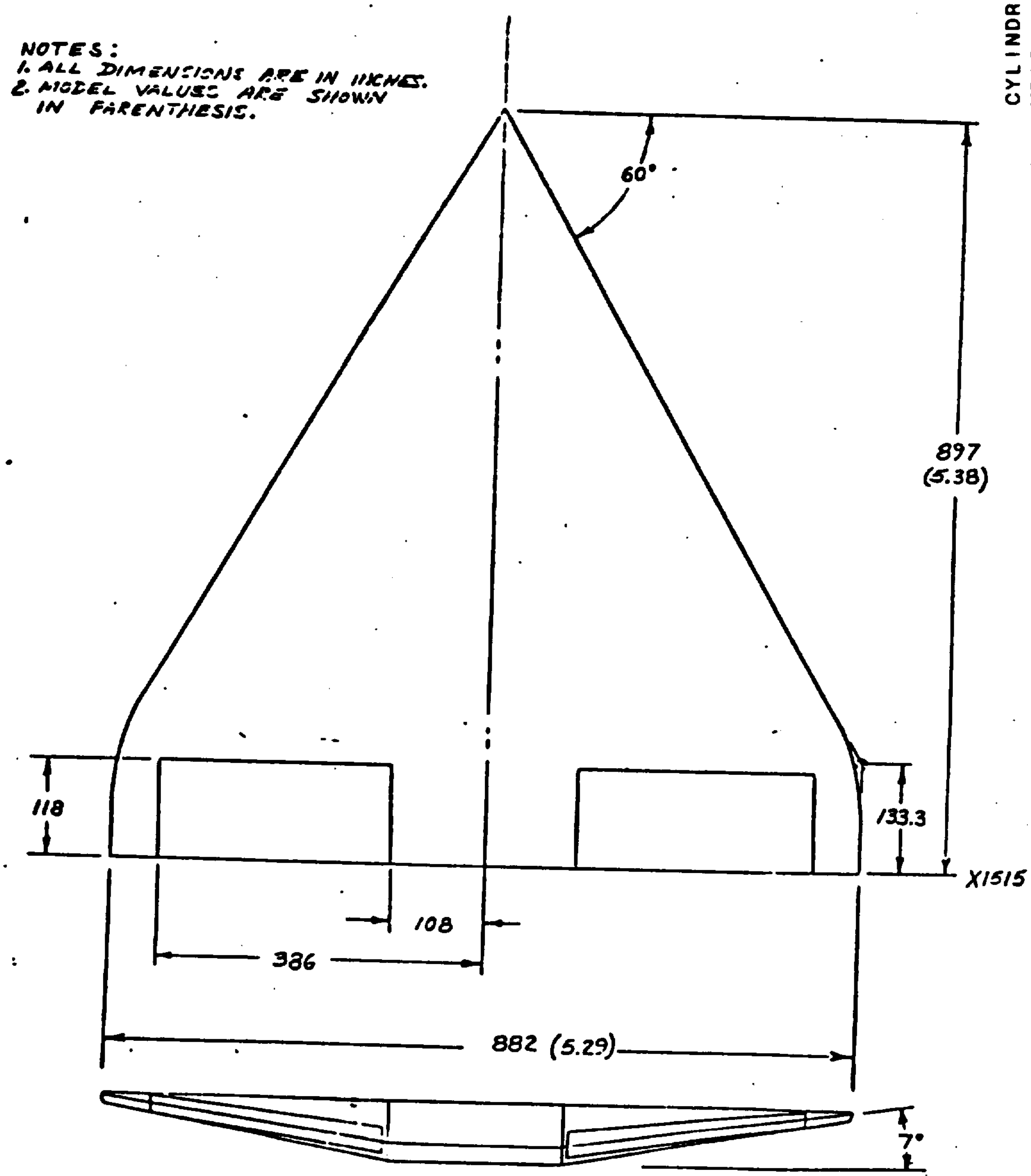


Figure 21. Orbiter Body, B_1

WING AND ELEVON ~ W1



.. Figure 22. Wing and Elevon, W_1

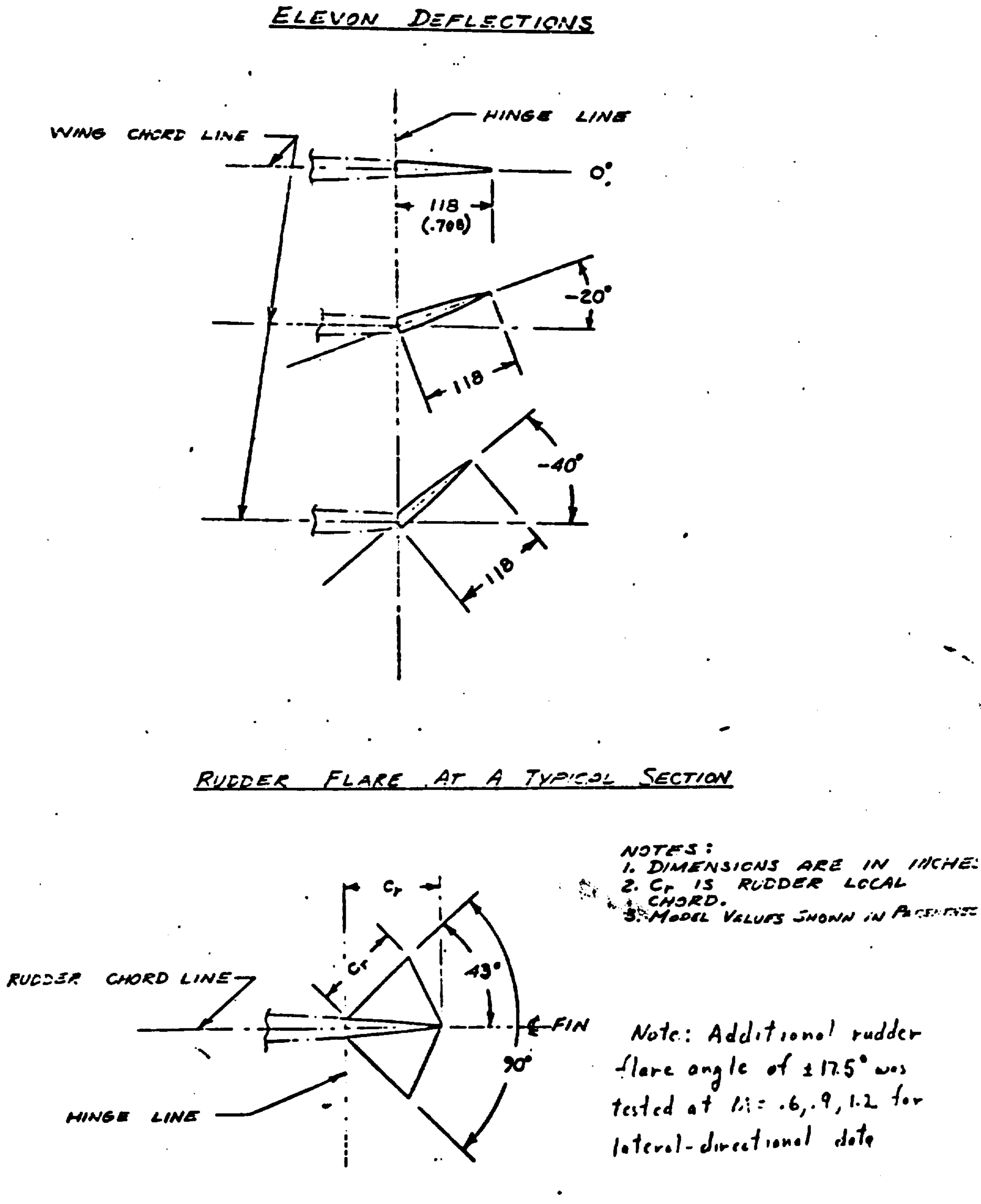
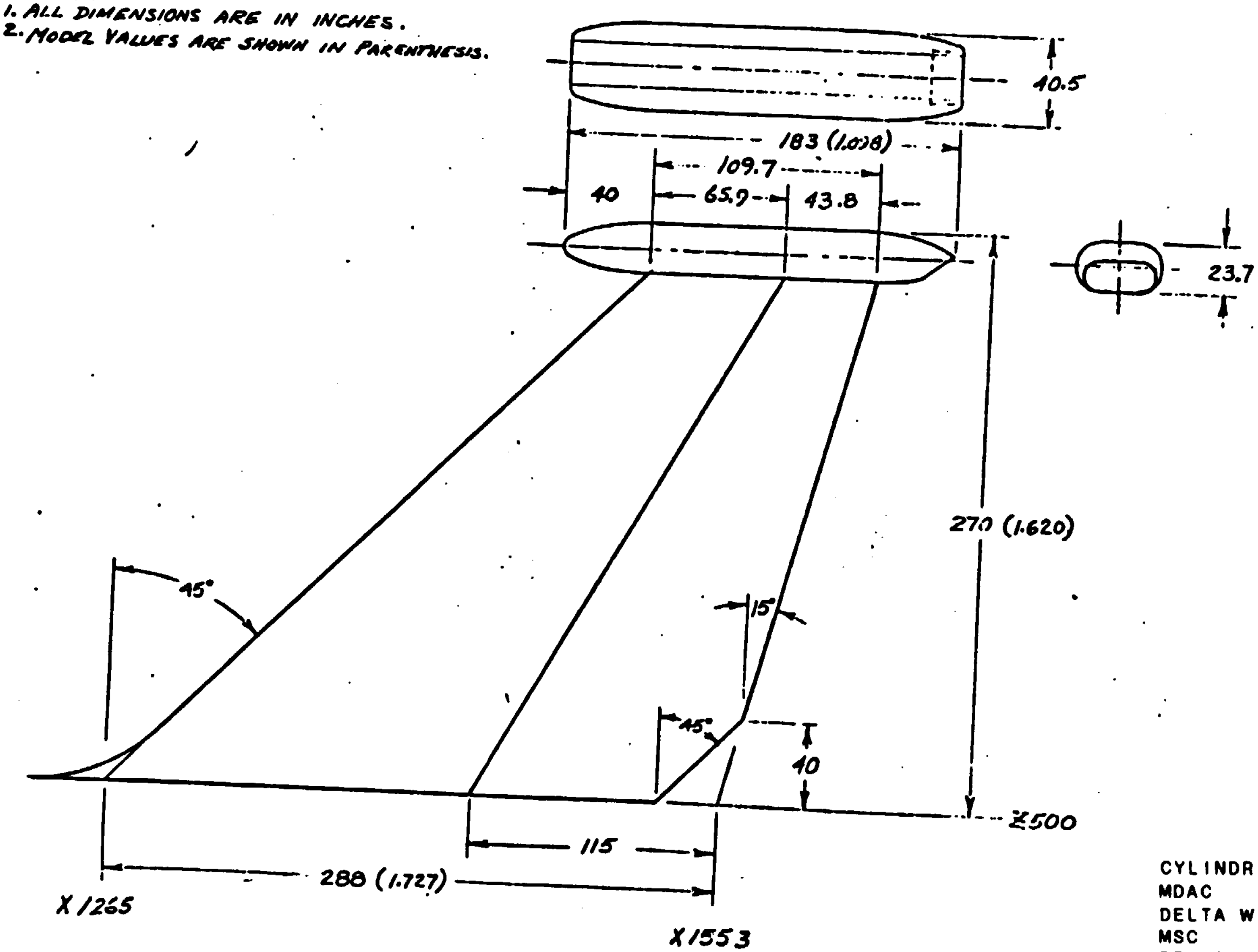


Figure 23. Elevon Deflections and Rudder Flare

Figure 24. Vertical Fin and Rudder, V_1

NOTES:
1. ALL DIMENSIONS ARE IN INCHES.
2. MODEL VALUES ARE SHOWN IN PARENTHESIS.

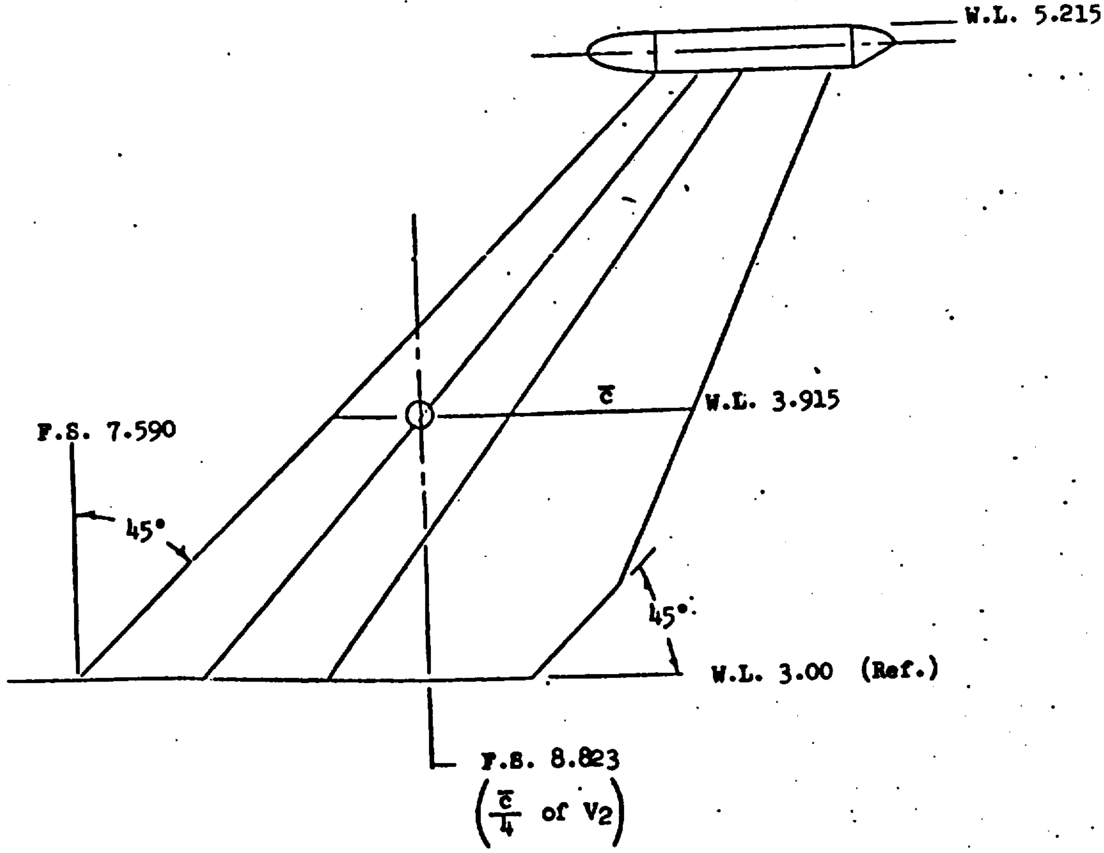


CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 225

V2 - LARGER AREA CENTERLINE VERTICAL TAIL AND RUDDER

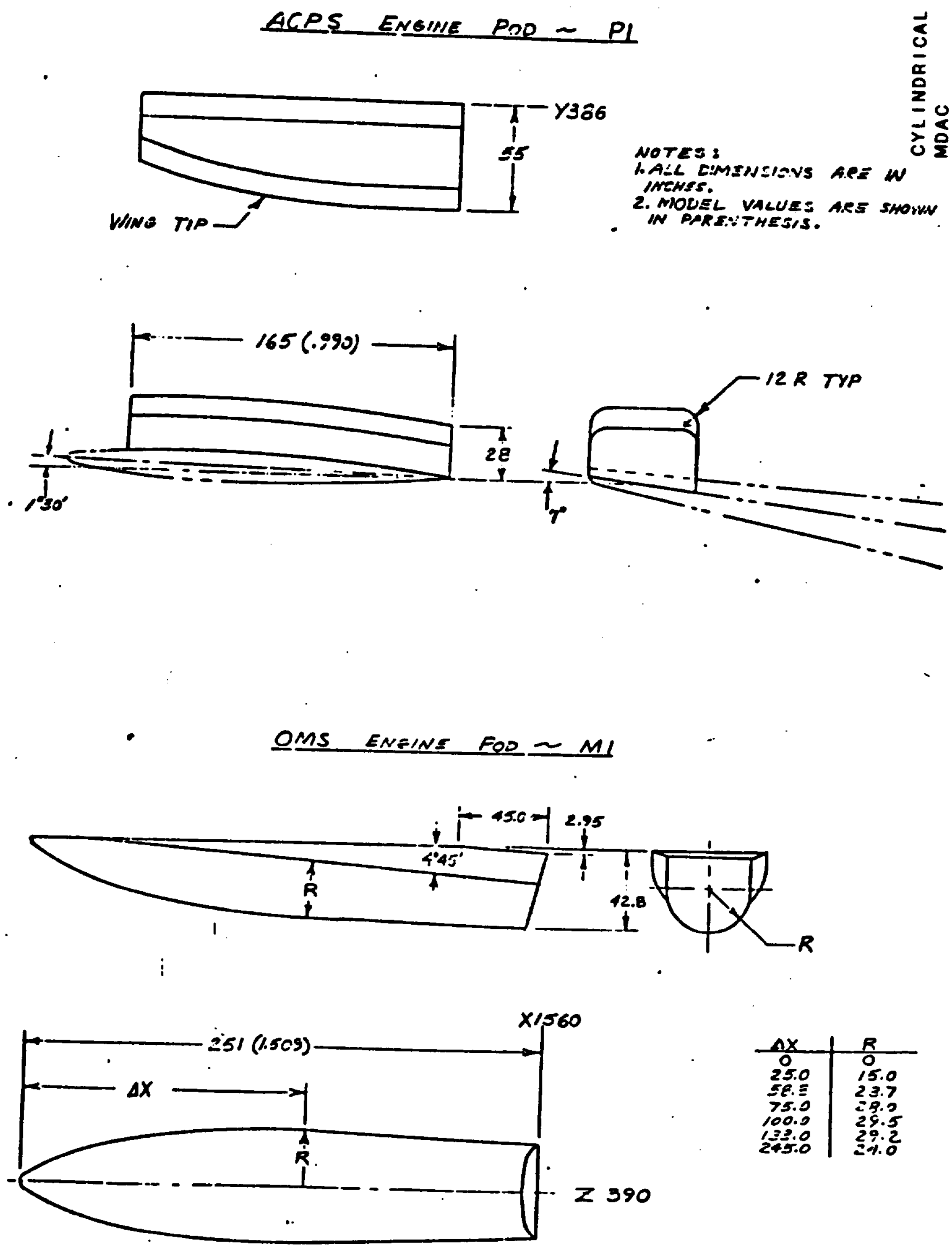
$S_V = 2.514 \text{ in}^2$
$b = 2.215$ in
$\bar{c} = 1.239$ in
$AR = 1.95$

$C_R = 1.728$ in
$C_T = 0.542$ in
$\lambda = 0.310$
$\Lambda_{LE} = 45^\circ$



Note: All dimensions are model scale in inches.

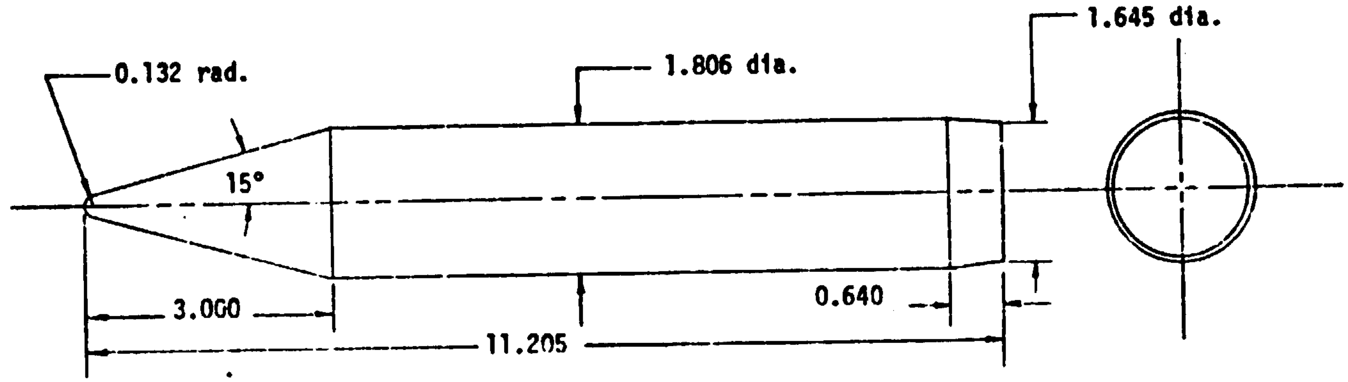
Figure 25. Vertical Fin and Rudder, V2



ΔX	R
0	0
25.0	15.0
58.5	23.7
75.0	28.0
100.0	29.5
133.0	29.2
245.0	24.0

Figure 26. ACPS Engine Pod, P1 and OMS Engine Pod, M1

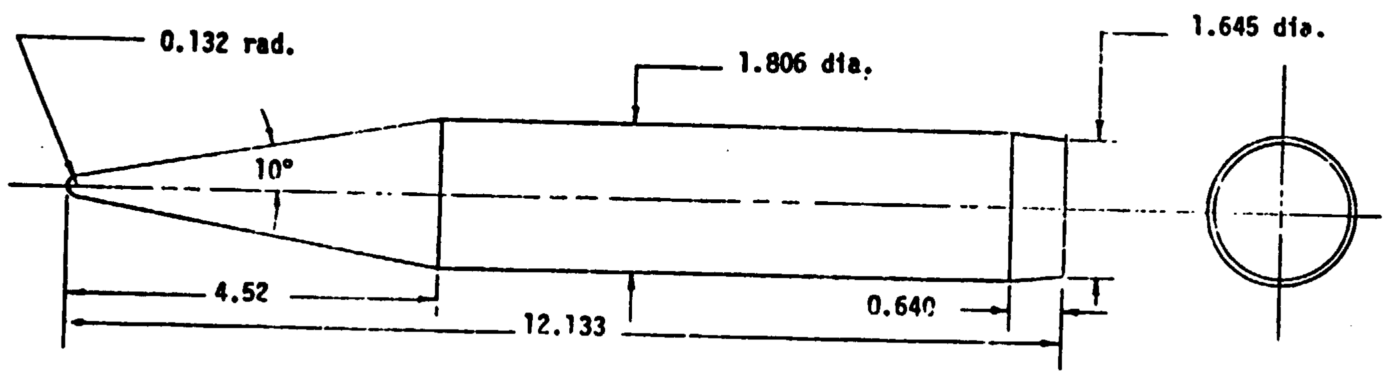
HO TANK, T_1



All dimensions are model scale, in inches.

Figure 27. Centerline HO Tank, T1

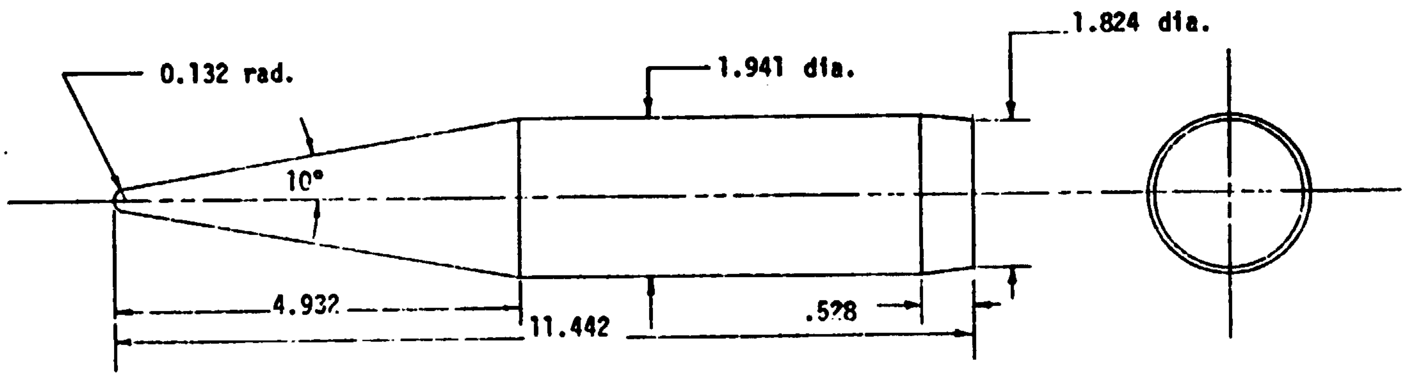
HO TANK, T_2



All dimensions are model scale, in inches.

Figure 28. Centerline HO Tank, T2

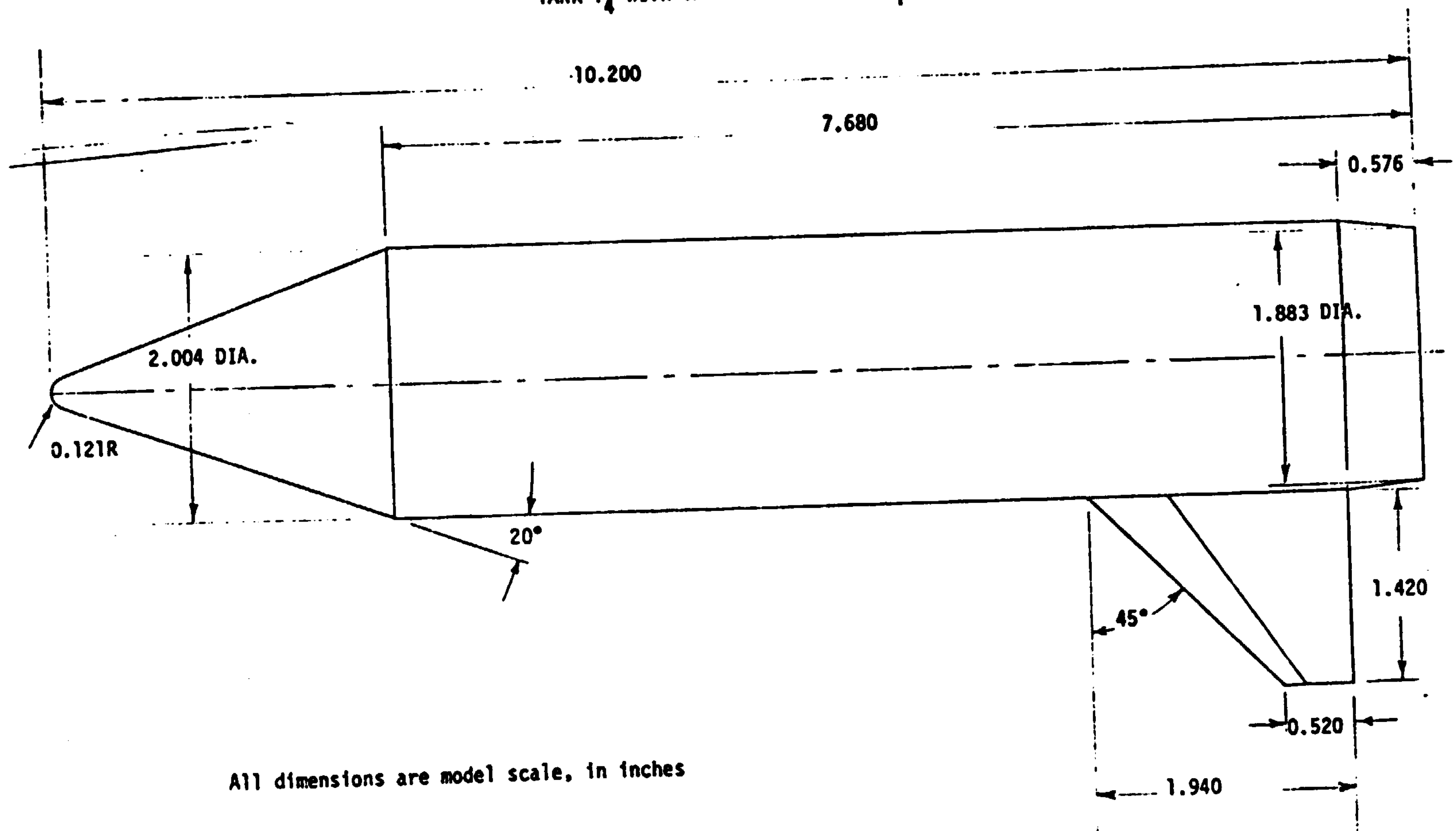
HO TANK, T_3



All dimensions are model scale, in inches.

Figure 29. Centerline HO Tank, T3

TANK T_4 WITH TANK VENTRAL FIN, F_1

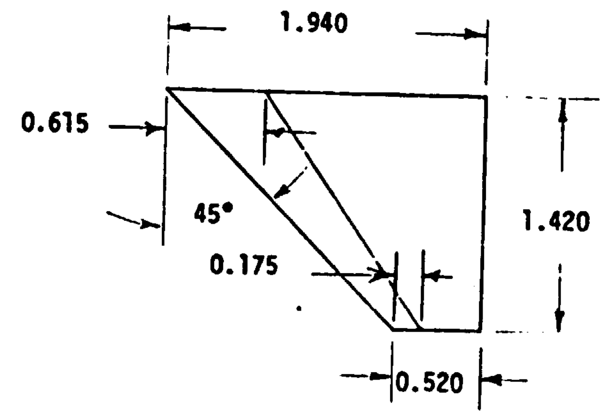


All dimensions are model scale, in inches

Figure 30. Centerline HO Tank T_4 With Tank Ventral Fin, F_1

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 231

TANK VENTRAL FIN, F_1



All dimensions are model scale, in inches

Figure 31. Centerline Ventral Fin, F_1

BOOSTER, B_1 & B5

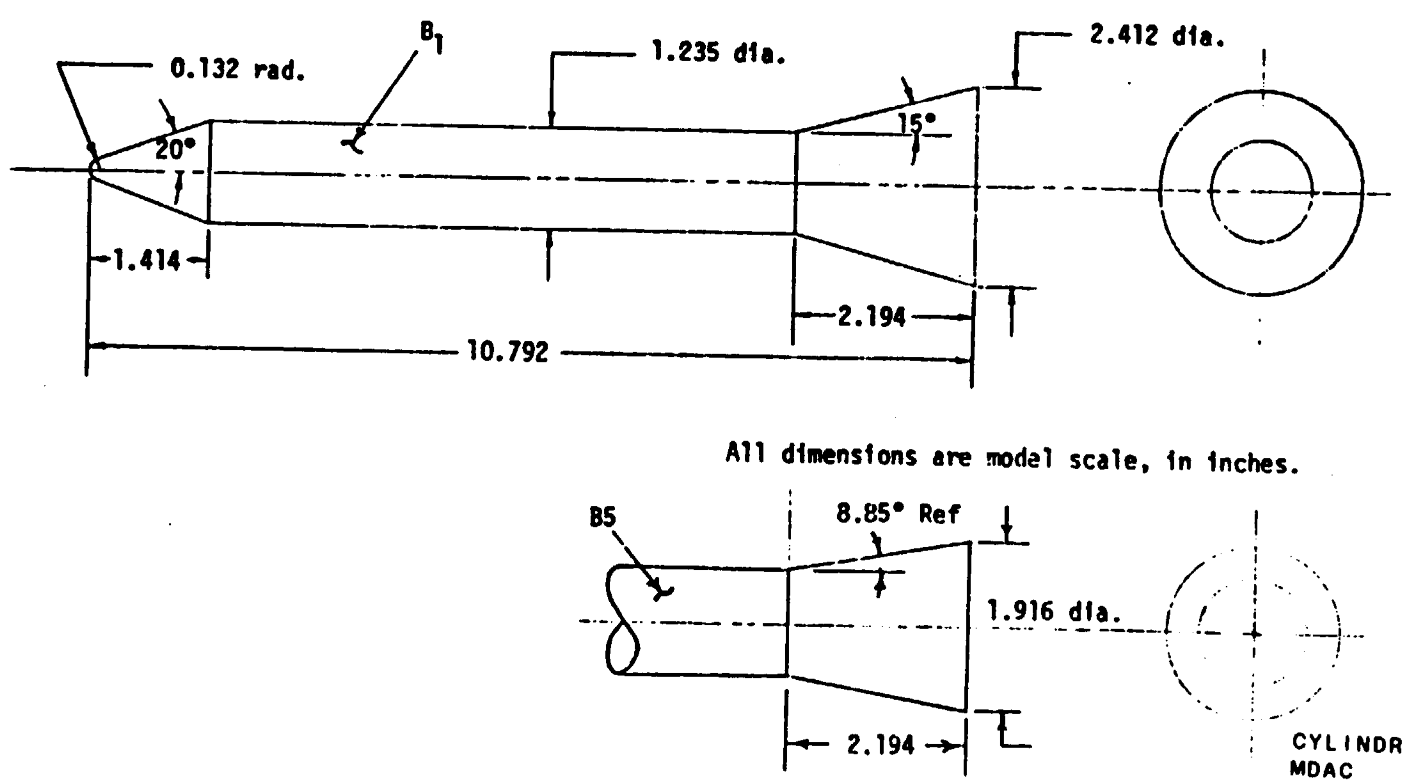


Figure 32. Boosters, B_1 and B_5

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 233

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 234

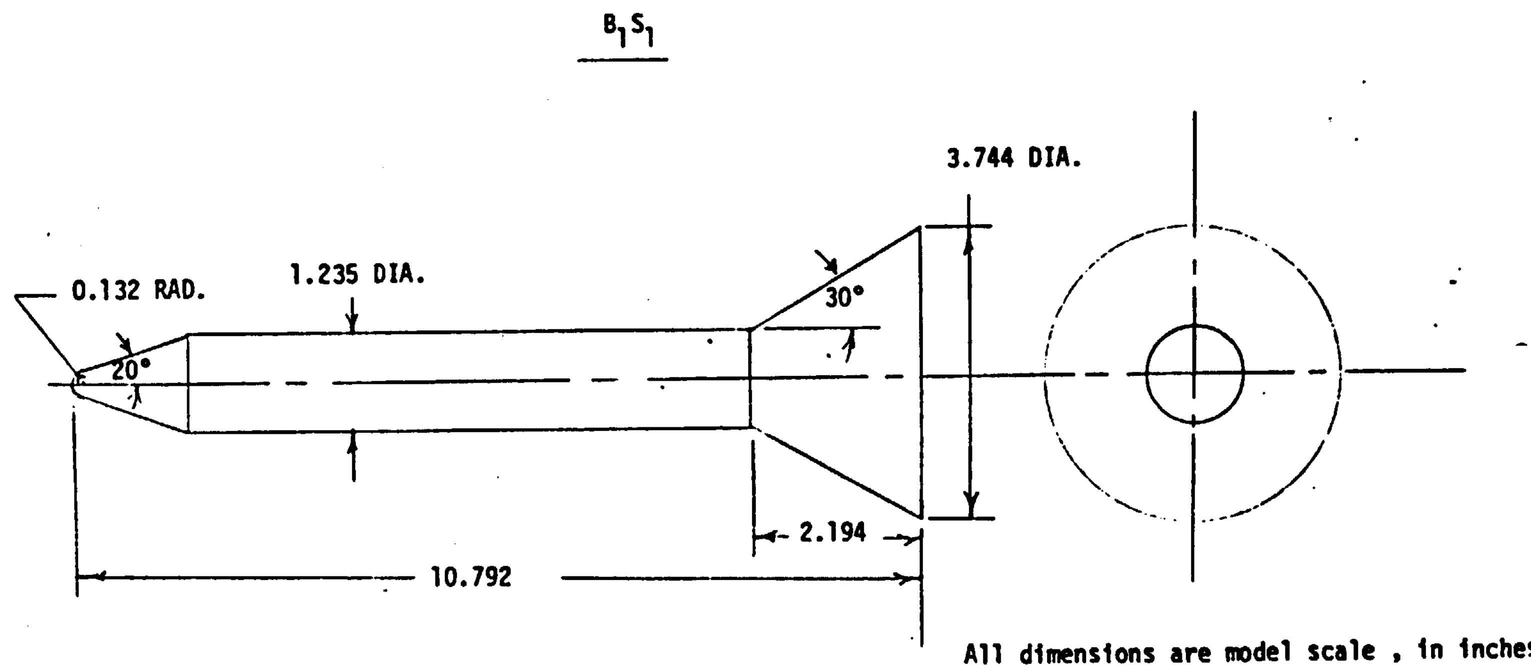
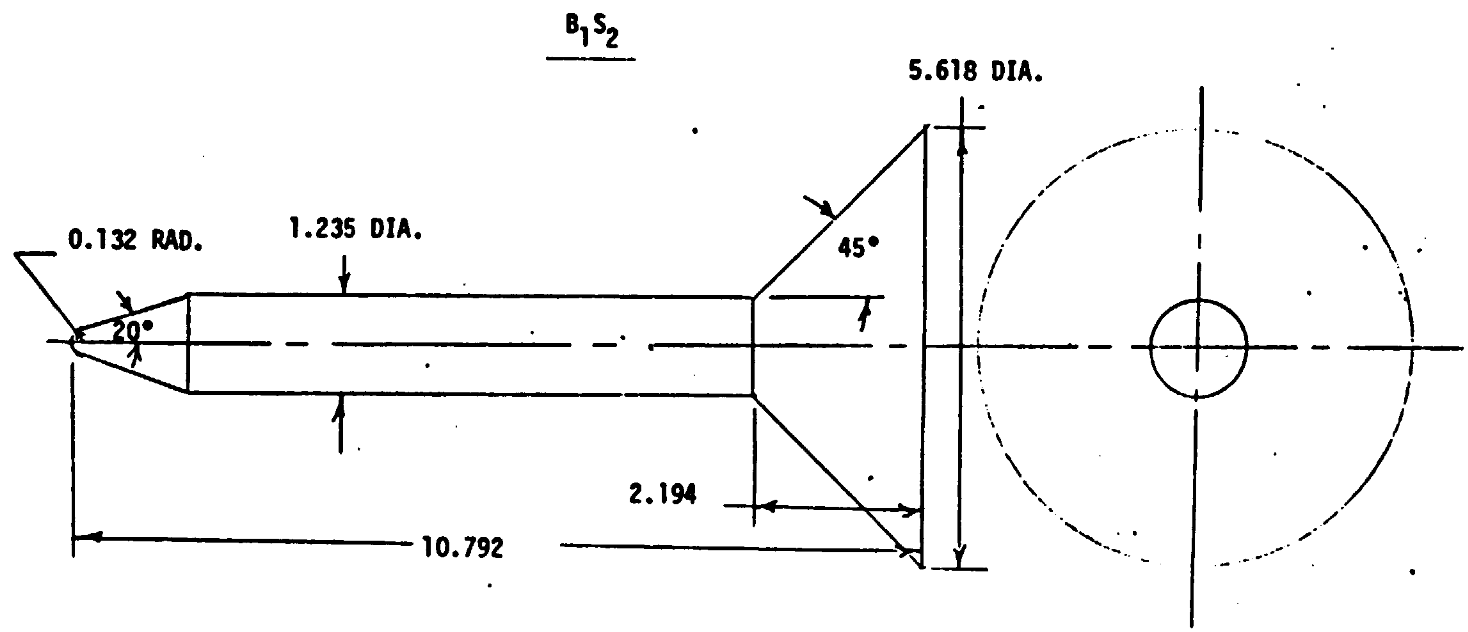


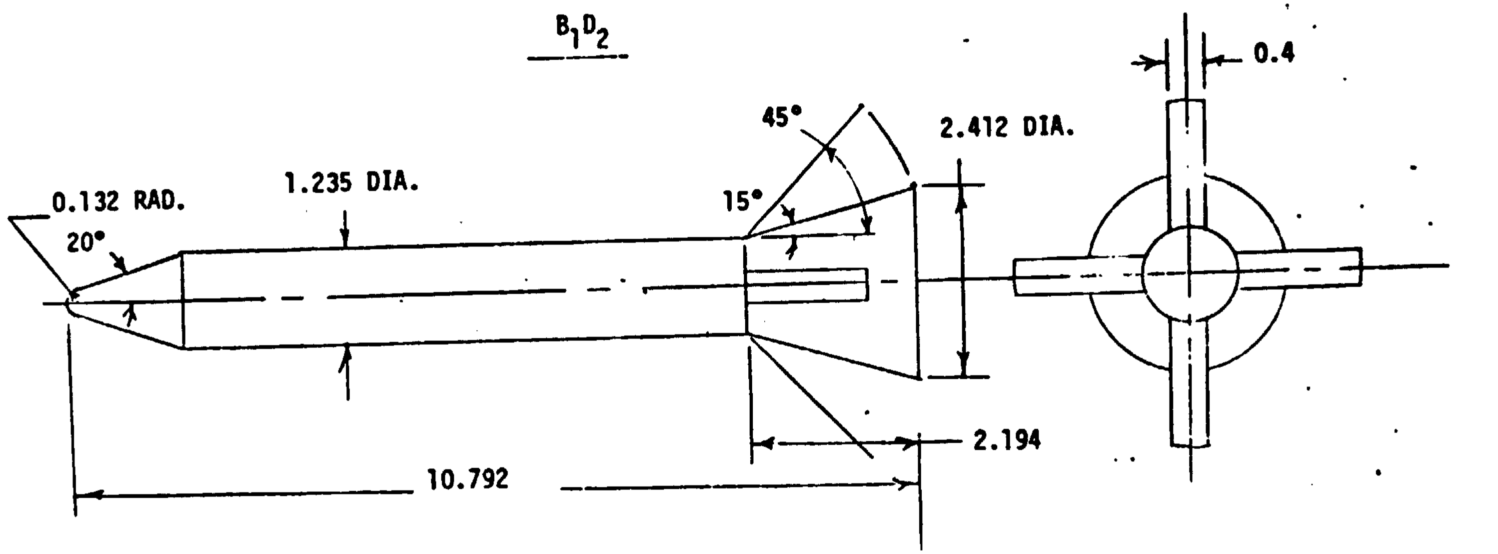
Figure 33. Booster, B_1S_1



All dimensions are model scale, in inches

Figure 34. Booster, B_1S_2

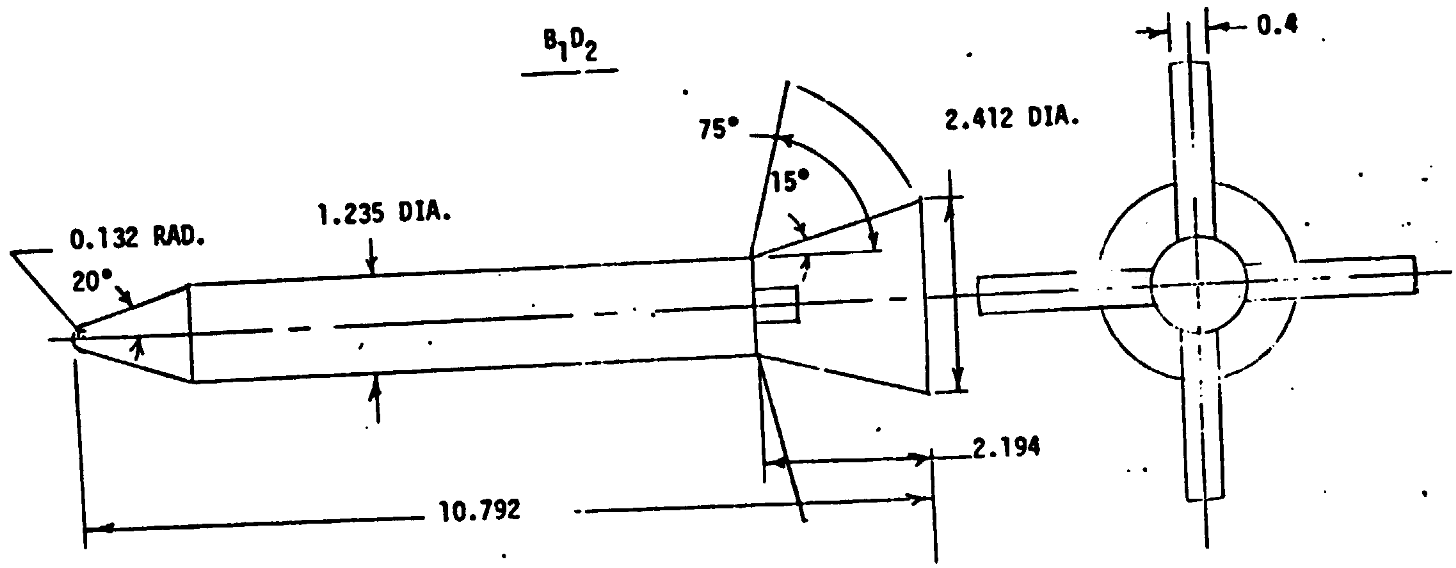
CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 236



All dimensions are model scale, in inches

Figure 35. Booster, B_1D_2

B_1D_2

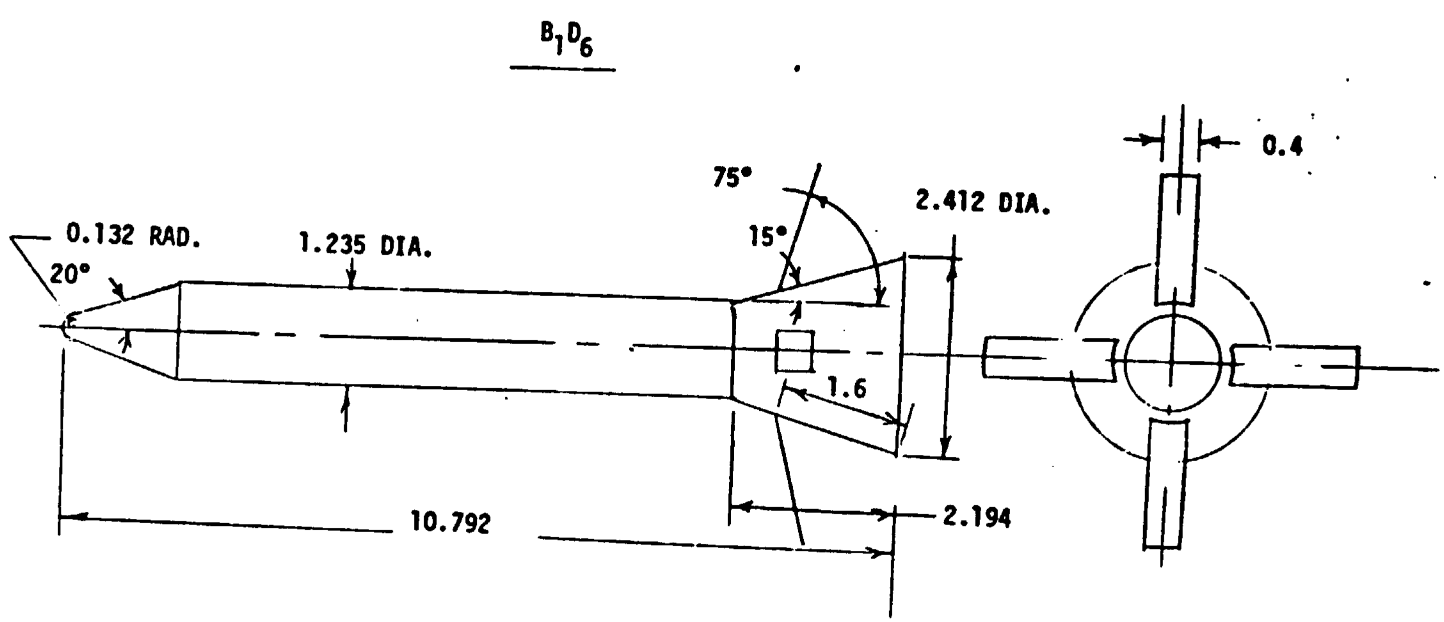


All dimensions are model scale, in inches

Figure 35. (Continued)

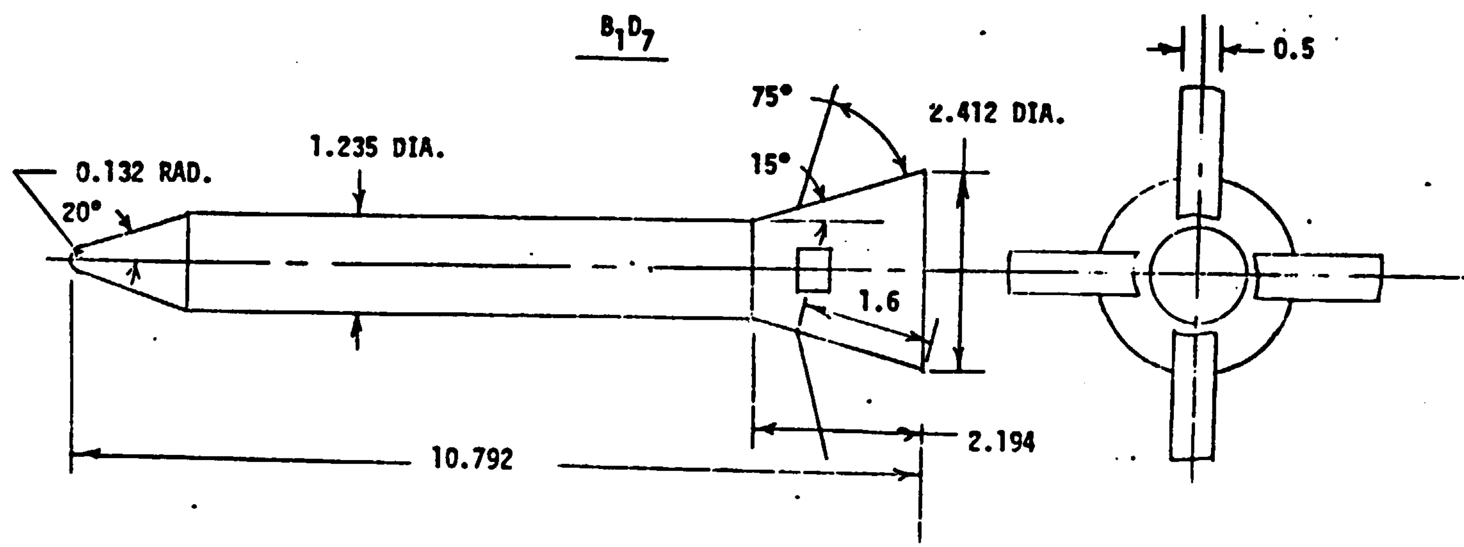
CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 237

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 238



All dimensions are model scale, in inches

Figure 36. Booster, B_1D_6



- All dimensions are model scale, in inches

Figure 37. Booster, B_1D_7

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 240

BOOSTERS, B_2 & B_2S & B_6

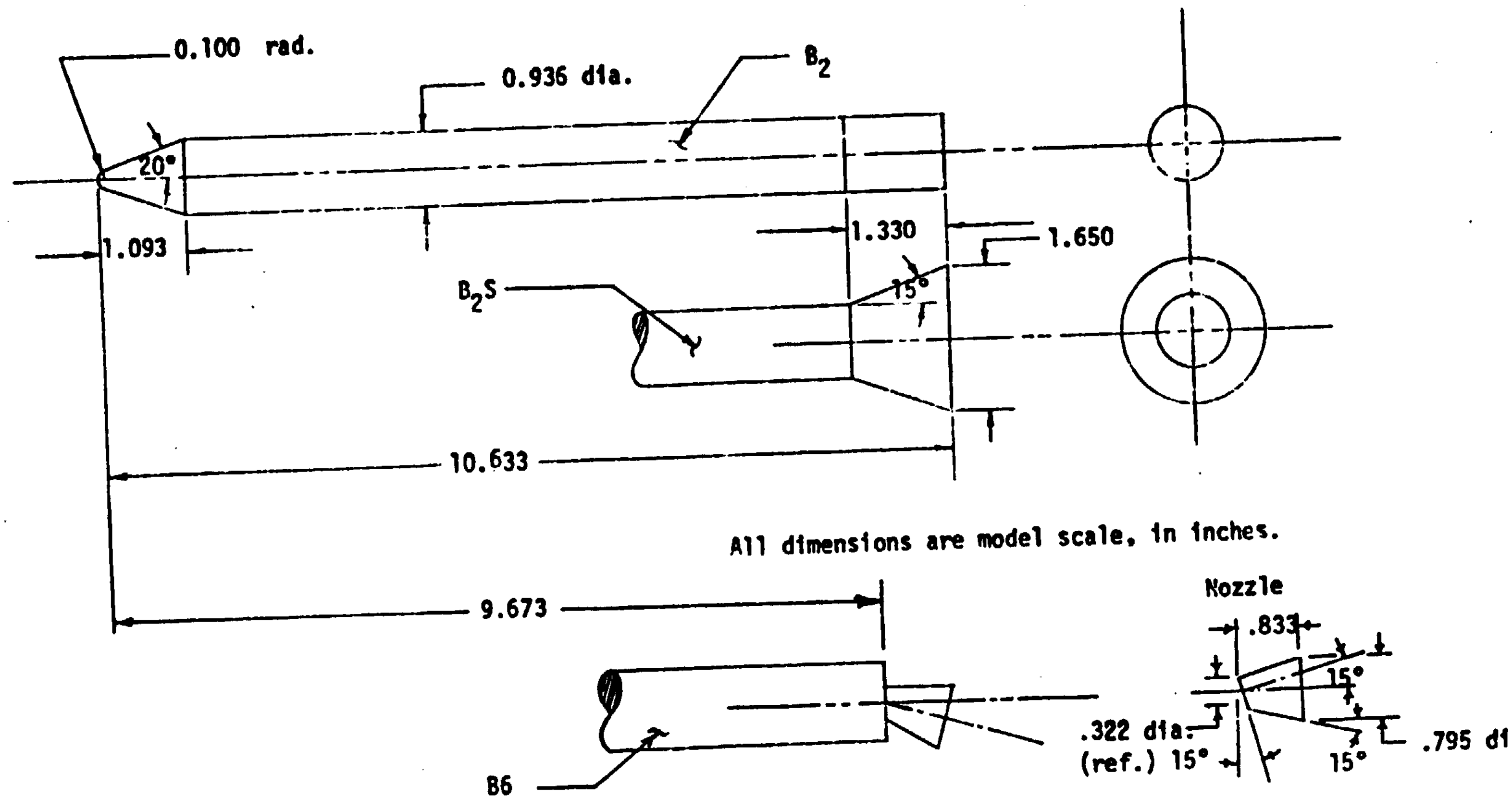
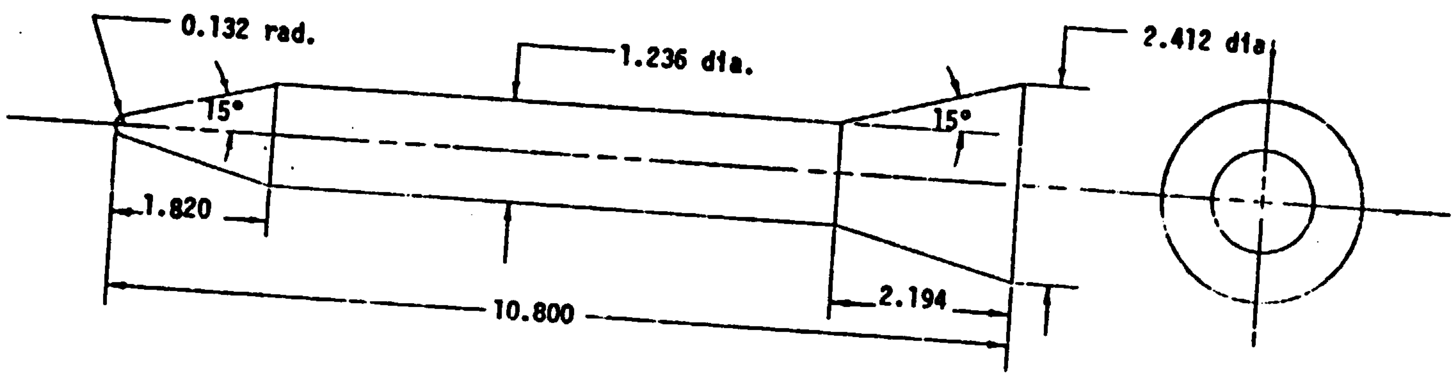


Figure 38. Boosters, B_2, B_2S & B_6

BOOSTER, B_3

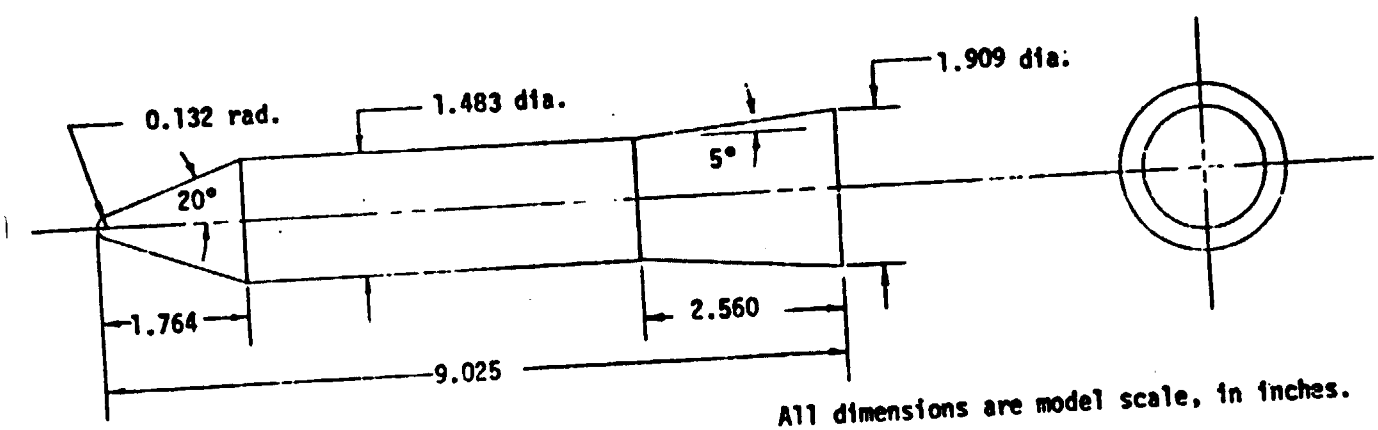


All dimensions are model scale, in inches.

Figure 39. Booster, B3

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 242

BOOSTER, B_4



All dimensions are model scale, in inches.

Figure 40. Booster, B4

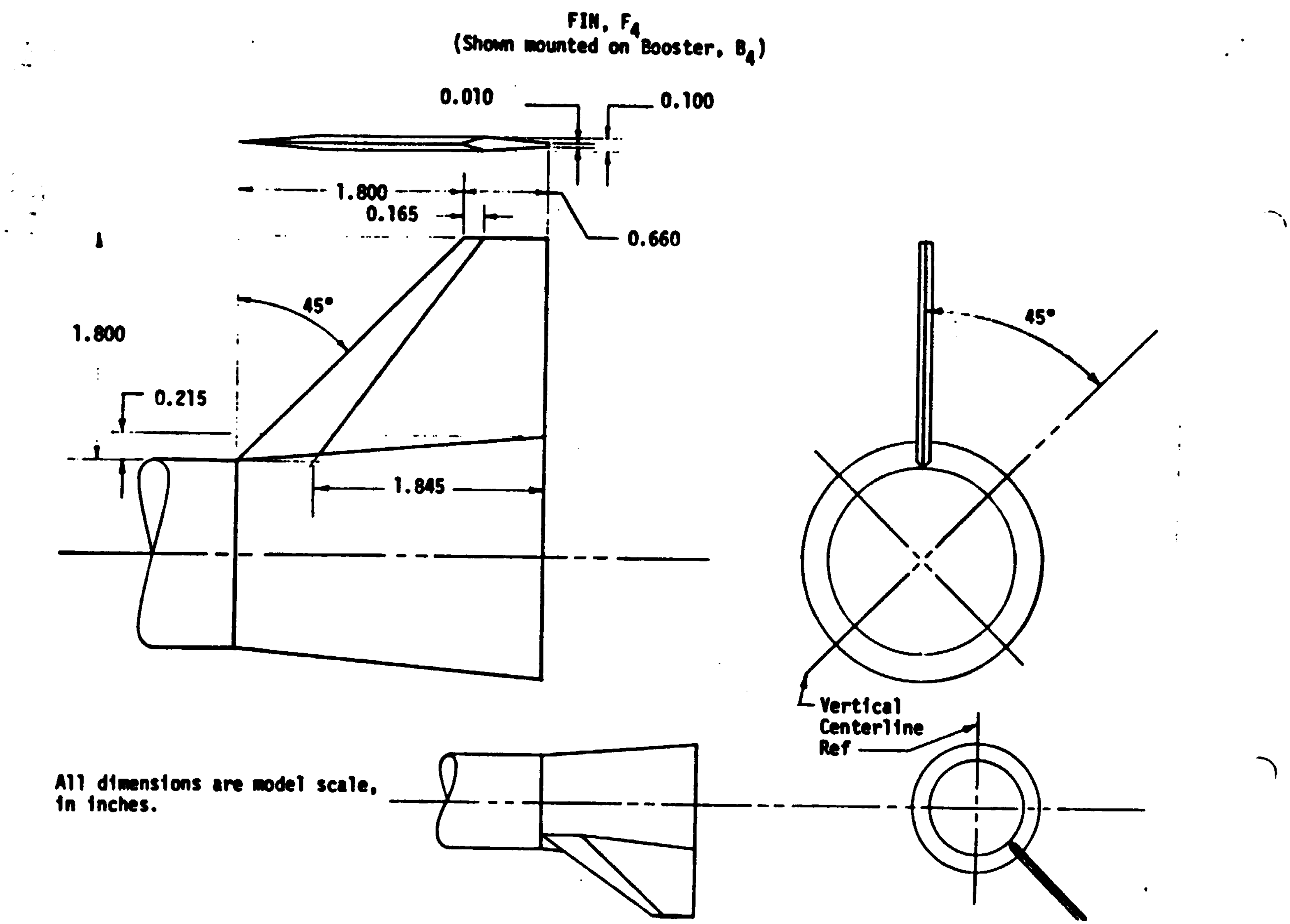


Figure 41. Booster Fin F_4 Mounted on Booster B_4

CYLINDRICAL BOOSTER
MDAC
DELTA WING ORBITER
MSC
DR#1230 C-1- 244

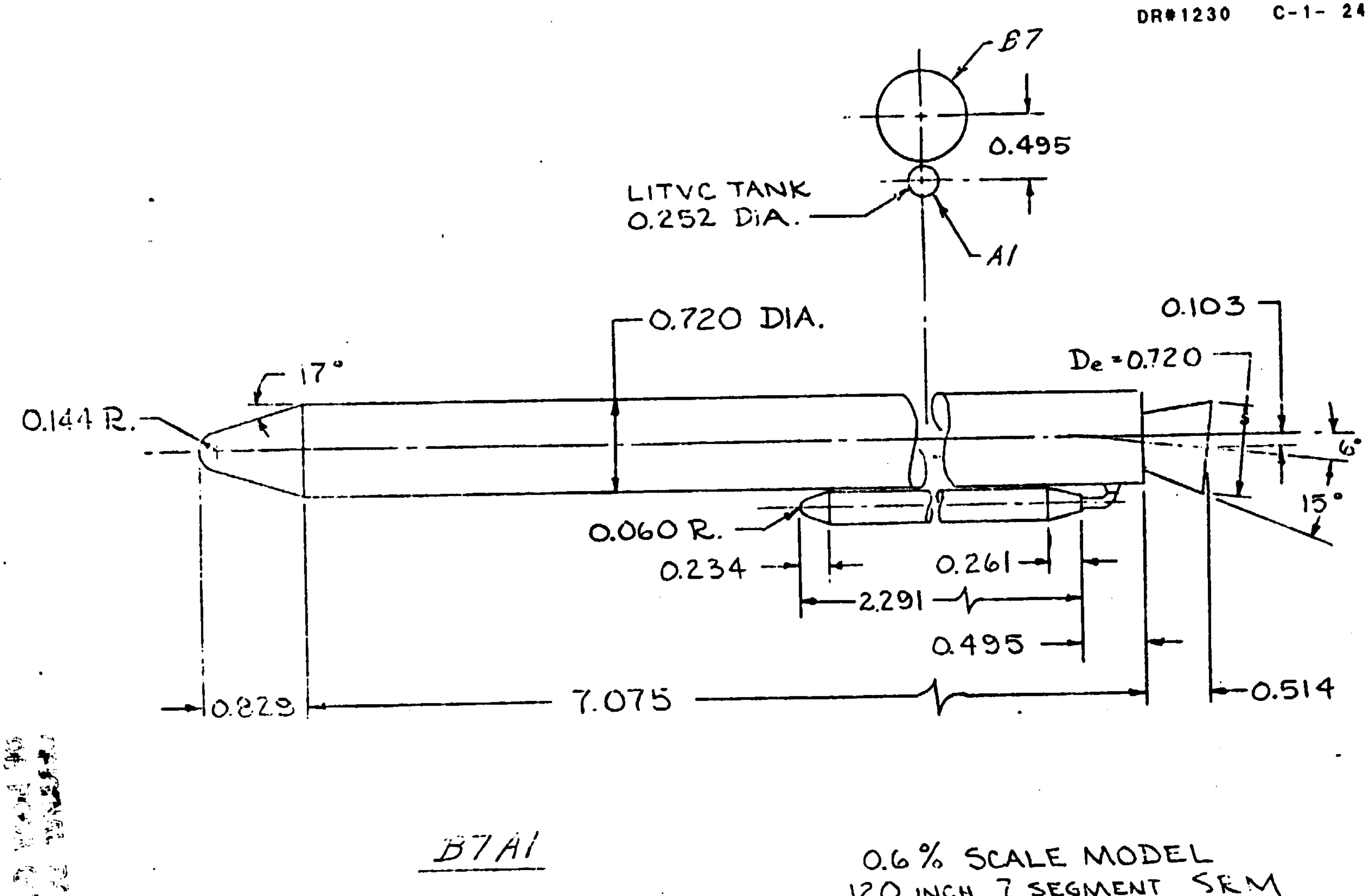


Figure 42. Booster, B_7A_1

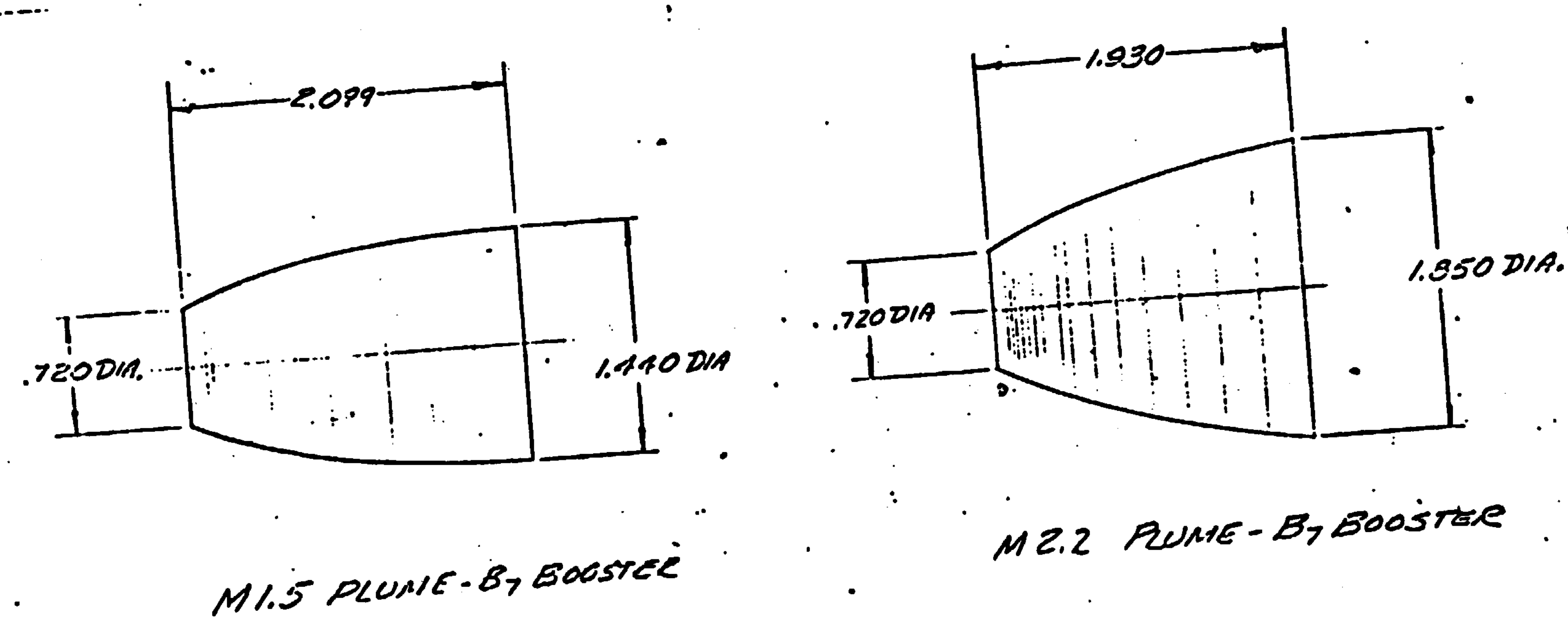


Figure 46. Sketch of Plume for Booster B_7

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
LMSC
DR#1256 C-1- 246

TABLE II.

TEST MSFC TWT 549 DATA SET COLLATION SHEET

☐ PRETEST

1 OF 5 ☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES i_o	ϕ_s	x_s	c_c	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δ_o	Y_E		0.6	0.9	1.1	1.2	1.3	1.4	1.56	3.48	[illegible]
C91001	T10151	A	O	0	75	0	0	4	0	0		145/0	150/0		151/0					22[illegible]/0
002				-1.5				7				131/0	132/0	213/0	133/0	314/0	306/0	257/0	19/[illegible]	[illegible]/0
003				-3.0				4				11[illegible]/0	141/0		14[illegible]/0					[illegible]/0
004				0	90			4				1[illegible]/0	[illegible]/0		15[illegible]/0					[illegible]/0
005				-1.5				7				13[illegible]/0	1[illegible]/0		13[illegible]/0		3[illegible]7/0	23[illegible]/0	19[illegible]/0	197/0
006				-3.0				4				14[illegible]/0	[illegible]/0		14[illegible]/0					[illegible]/0
007				0	135			4				15[illegible]/0	15[illegible]/0		157/0					244/0
008				-1.5				7				1[illegible]7/0	139/0		12[illegible]/0		329/0	203/0	1[illegible]/0	1[illegible]4/0
009				-3.0				4				141/0	14[illegible]/0		140/0					24[illegible]/0
010		O	A	-1.5	75			6				124/0	12[illegible]/0		122/0			2[illegible]/0	1[illegible]/0	19[illegible]/0
011					90			5				125/0	12[illegible]/0		127/0			8/0		191/0
012					135			5				13[illegible]/0	129/0		139/0			2[illegible]1/0		15[illegible]/0
013		A	O		75	0.625		2				15/0			14/0					
014		O	A					2				12/0			13/0					
015		A	O		90			2				16/0			17/0					
016		O	A					2				1[illegible]/0			18/0					
017		A	O		135			2				23/0			22/0					
018		O	A					2				20/0			21/0					
019	T10153	A	O		75	0		4	30						99/0					
020		O	A					4							78/0					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM CN CY CBL CYN CA CAB1 CAB2 CAB3 CAF

COEFFICIENTS:

α or β SCHEDULES

α: A = -10 deg to +10 deg, Δα = 2 deg

β: A = -10 deg to +10 deg [illegible]

X_S: 0 = [illegible] 0.9375 [illegible] of 156" [illegible] EVEN WITH [illegible] TANK

IDPVAR(1) IDPVAR(2) NDV

Y_E = SRM NOZZLE RADIAL POSITION: 0 = PARALLEL TO N2 TANK HORIZ ℄; 30 = 30° ABOVE N2 TANK HORIZ ℄

NASA-MSFC-MAP

ORIGINAL PAGE IS
OF POOR QUALITY

TABLE II. (CONTINUED)

TEST MSFC TWT 544 DATA SET COLLATION SHEET

2 of 5

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	L_o	ϕ_3	X_3	δ_e	NO. of RUNS	δ_r	Y_E		0.6	0.9	1.1	1.2	1.3	1.46	1.96	2.48	4.96
R71021	T10153	A	0	-1.5	75	0	0		0	0					97/1			263/0	152/0	153/0
022	↓	0	A	↓	↓	↓	↓		↓	↓					78/1			272/0	153/0	153/0
023	T10154	A	0	↓	↓	↓	↓		↓	↓					73/1			279/0	181/0	13[illegible]/0
024	↓	0	A	↓	↓	↓	↓		↓	↓					79/1			271/0	161/0	160/0
025	↓	A	0	↓	↓	↓	↓		↓	30					98/0					
026	↓	0	A	↓	↓	↓	↓		↓	↓					79/0					
027	T10152	A	0	↓	↓	↓	↓		↓	0		94/1			92/1			268/0	174/0	175/0
028	↓	0	A	↓	↓	↓	↓		↓	↓		81/1			80/1			273/0	162/0	16[illegible]/0
029	↓	A	0	↓	↓	↓	↓		↓	30		79/0			95/0					
030	↓	0	A	↓	↓	↓	↓		↓	↓		81/0			83/0					
031	T20151	A	0	↓	↓	↓	↓		↓	↓					96/0					
032	↓	0	A	↓	↓	↓	↓		↓	↓					85/0					
033	↓	A	0	↓	↓	↓	↓		↓	0					96/1			259/0	177/0	176/0
034	↓	0	A	↓	↓	↓	↓		↓	↓					95/1			253/0	165/0	164/0
035	T30151	A	0	↓	↓	↓	↓		↓	↓					97/1			26[illegible]/0	17[illegible]/0	17[illegible]/0
036	↓	0	A	↓	↓	↓	↓		↓	↓					84/1			275/0	166/0	167/0
037	↓	A	0	↓	↓	↓	↓		↓	30					97/0					
038	↓	0	A	↓	↓	↓	↓		↓	↓		93/0			81/0					
039	T40151	A	0	↓	↓	↓	↓		↓	↓					92/0					
040	↓	0	A	↓	↓	↓	↓		↓	↓		32/0			83/0					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: SEE SH 1

α or β SCHEDULES

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
LMSC
DR#1256 C-1- 247

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CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
LMSC
DR#1256 C-1- 248

TABLE II. (CONTINUED)

TEST MSFC TWT 544 DATA SET COLLATION SHEET

3 of 5

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	L_o	ϕ_o	X_s	δ_a	NO. of RUNS	δ_r	γ_z		0.6	0.9	1.1	1.2	1.3	1.46	1.96	2.48	4.96
R71041	T401S1	A	0	-1.5	75	0	0		0	0		93/1			92/1			[illegible]/0	173/0	172/0
042		0	A									81/1			92/1			271/0	[illegible]/0	[illegible]/0
043	T101S1F	A	0									89/1	29/1		21/1			272/0		171/0
044		0	A									99/1	37/1		56/1			176/0		173/0
045		A	0									55/0	90/0		91/0					
046		0	A							30		53/0	87/0		86/0					
047	T501S1	A	0									102/0	101/0		100/0			360/0	207/0	209/0
048		0	A							0		125/0	[illegible]/0		111/0			[illegible]/0	214/0	213/0
049	T601S1	A	0									103/0	105/0		55/0			301/0	[illegible]/0	203/0
050		0	A									128/0	[illegible]/0		[illegible]/0			302/0	211/1	[illegible]/1
051	T101S5	A	0									75/0			71/0			[illegible]/0		236/0
052		0	A									76/0			77/0			[illegible]/0		237/0
053		A	0		90							72/0			73/0			289/0		235/0
054		A	0		135							71/0			70/0			28[illegible]/0		231/0
055	T101S1	A	0		75		-10					43/0	50/0		51/0					
056		0	A									54/0	53/0		52/0					
057		A	0				+10					49/0	47/0		46/0					
058		0	A									55/0	56/0		57/0					
059		A	0		90							60/0	59/0		58/0					
060		A	0				-10					61/0	62/0		63/0					

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS:
α or β SCHEDULES SEE SH 1

IDPVAR(1) | IDPVAR(2) | NDV

NASA-MSFC-MAF

TABLE II. (CONTINUED)

TEST MSFC TWT 549 DATA SET COLLATION SHEET

4 of 5

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
		α	β	i_s	ϕ_s	x_s	δ_e		δ_r	Y_2		0.6	0.9	1.1	1.2	1.3	1.46	1.96	2.48	4.96
E71 061	T101S1	A	0	-1.5	135	0	-10		0	0		66/0	65/0		64/0					
062	↓	↓	↓	↓	↓	↓	+10		↓	↓		67/0	65/0		69/0					
063	T102S1	↓	↓	↓	75	↓	↓		↓	↓					[illegible]/0			279/0	229/0	229/0
064	↓	↓	↓	↓	↓	↓	-10		↓	↓					[illegible]/0			[illegible]/0	231/0	[illegible]/0
065	↓	↓	↓	↓	↓	↓	-30		↓	↓					43/0			281/0	225/0	[illegible]/0
066	T101S1	↓	↓	↓	↓	↓	0		30	↓		118/0	117/0		116/0			30[illegible]/0		216/0
067	↓	0	A	↓	↓	↓	↓		↓	↓		119/0	[illegible]/0		121/0			3[illegible]/0		215/0
068	T103S1	A	0	↓	↓	↓	↓		0	↓			312/0	311/0	310/0	309/0				
069	T7	A	0	—	—	—	—		—	—		001/0	00[illegible]/0		003/0					
070	T1S1	A	0	↓	75	0	—		—	0		039/0	040/0		041/0			296/0	217/0	214/0
071	↓	0	A	↓	↓	↓	↓		↓	↓		038/0			037/0			297/0		215/0
072	T101	A	0	-1.5	—	—	0		0	—		024/0	025/0		026/0			287/0	196/0	19[illegible]/0
073	↓	0	A	↓	↓	↓	↓		↓	↓		028/0			027/0			286/0		194/0
074	TS	A	0	—	↓	↓	—		—	↓		006/0	005/0		004/0			294/0	200/0	199/0
075	T5S1	A	0	↓	75	0	↓		↓	0		034/0	033/0		032/0			293/0	201/0	202/0
076	↓	0	A	↓	↓	↓	↓		↓	↓		035/0			036/0			292/0		203/0
077	T501	A	0	-1.5	—	—	0		0	—		007/1	008/0		009/0			299/0	206/0	205/0
078	↓	0	A	↓	↓	↓	↓		↓	↓		011/0			010/0			298/0		204/0
079	T102S1	A	0	↓	75	0	↓		↓	0					042/0			278/0	227/0	226/0
080	T1	A	0	—	—	—	—		—	—		029/0	030/0		031/0			295/0	197/0	198/0

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: see SA 1 → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

CYLINDRICAL BOOSTER
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CYLINDRICAL BOOSTER
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TABLE II. (CONTINUED)

TEST TWT 544 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

5 of 5

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES i_o	ϕ_s	x_s	δ_e	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δ_N	τ_z		0.6	0.9	1.1	1.2	1.3	1.4	1.96	3.48	4.96
271081	T5O1S1	A	0	-1.5	75	0	0		0	30		114/0			115/0					
082	↓	0	A	↓	↓	↓	↓		↓	↓		113/0			112/0					
083	T1O1S1	A	0	↓	↓	.885	↓		↓	0		244/1			245/0			256/0		243/0
084	↓	0	A	↓	↓	↓	↓		↓	↓		255/0			256/0			261/1		238/0
085	↓	A	0	↓	90	↓	↓		↓	↓		247/0			246/0			265/0		242/0
086	↓	0	A	↓	↓	↓	↓		↓	↓		252/0			253/0			262/0		239/0
087	↓	A	0	↓	135	↓	↓		↓	↓		248/0			249/0			264/0		241/0
088	↓	0	A	↓	↓	↓	↓		↓	↓		251/0			250/0			263/0		240/0

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: SEE SH 1
α or β
SCHEDULES

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Note: All dimensions in inches (model scale)

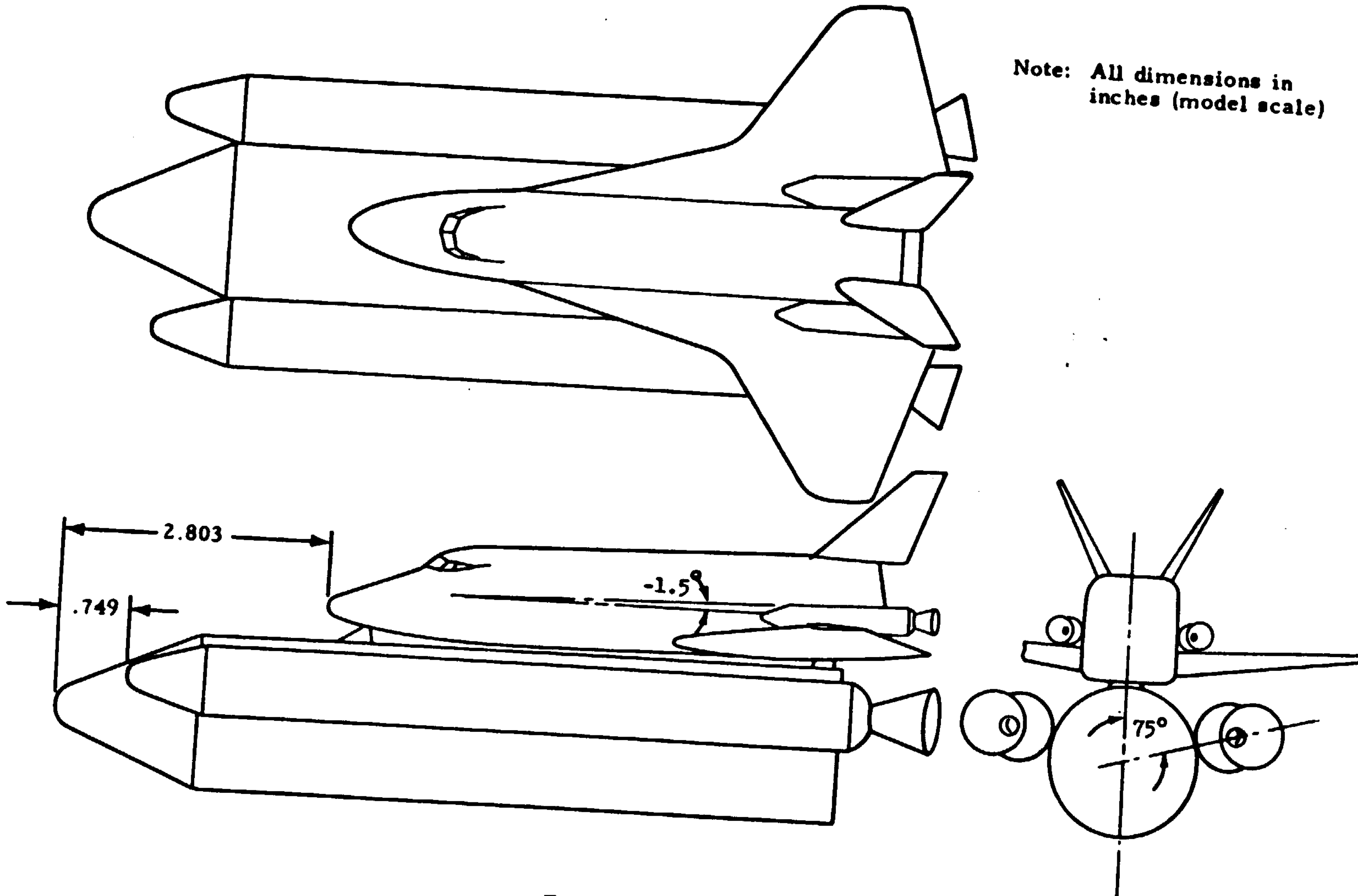

Fig. 3 - Baseline Launch Vehicle

CYLINDRICAL BOOSTER
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DELTA WING ORBITER
LMSC
DR#1256 C-1- 251

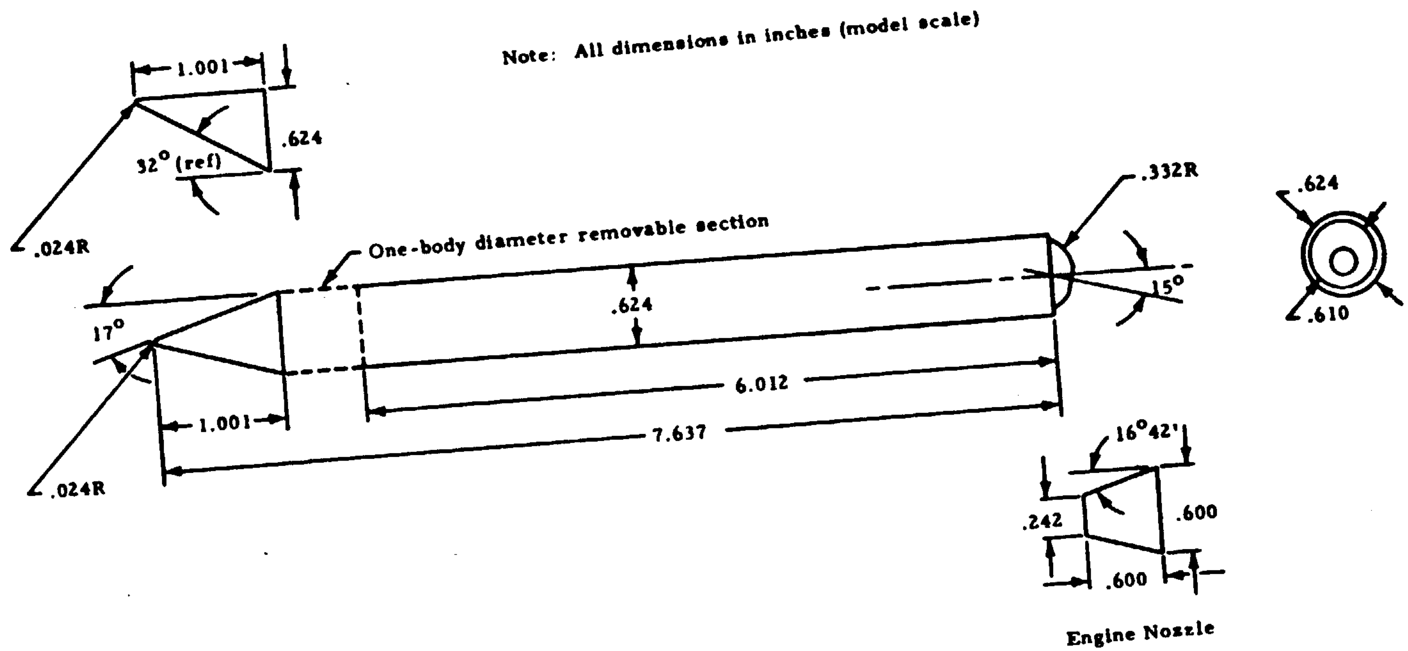

Fig. 4 - 156-Inch Solid Rocket Motor with Standard and Skewed Noses and One-Body Diameter Extension

Note: All dimensions in inches (model scale)

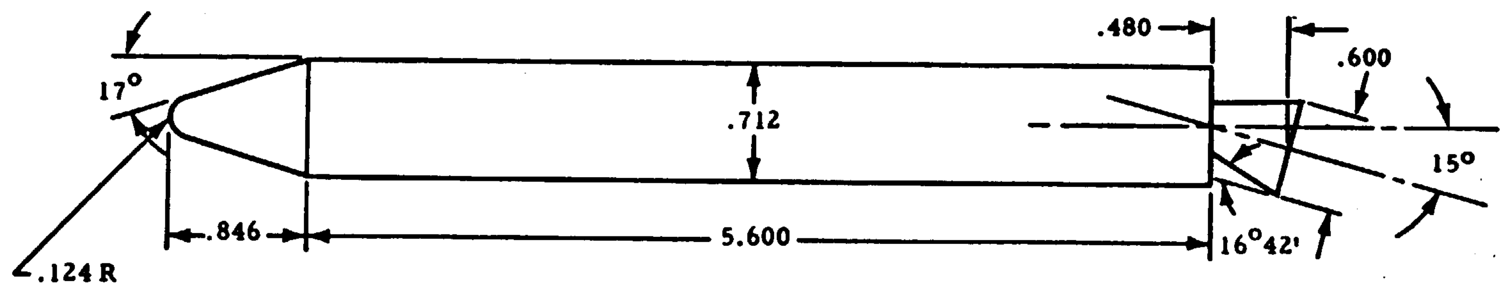

Fig. 5 - 178-Inch Solid Rocket Motor

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LMSC
DR#1256 C-1- 254

Note: All dimensions in inches (model scale)

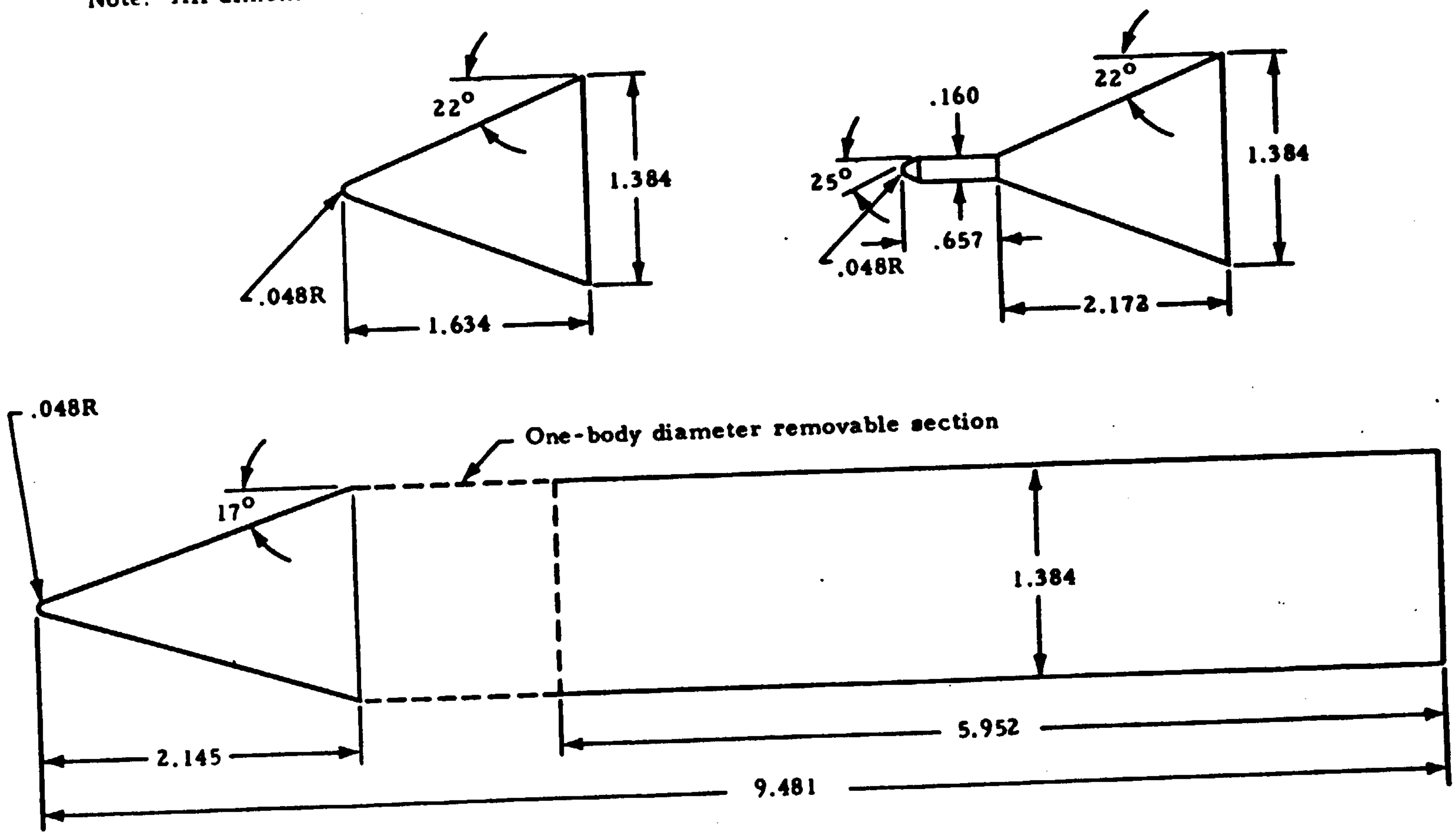

Fig. 6- 346-Inch HO Tank with Three Alternate Noses and One-Body Diameter Extension

Note: All dimensions in inches (model scale)

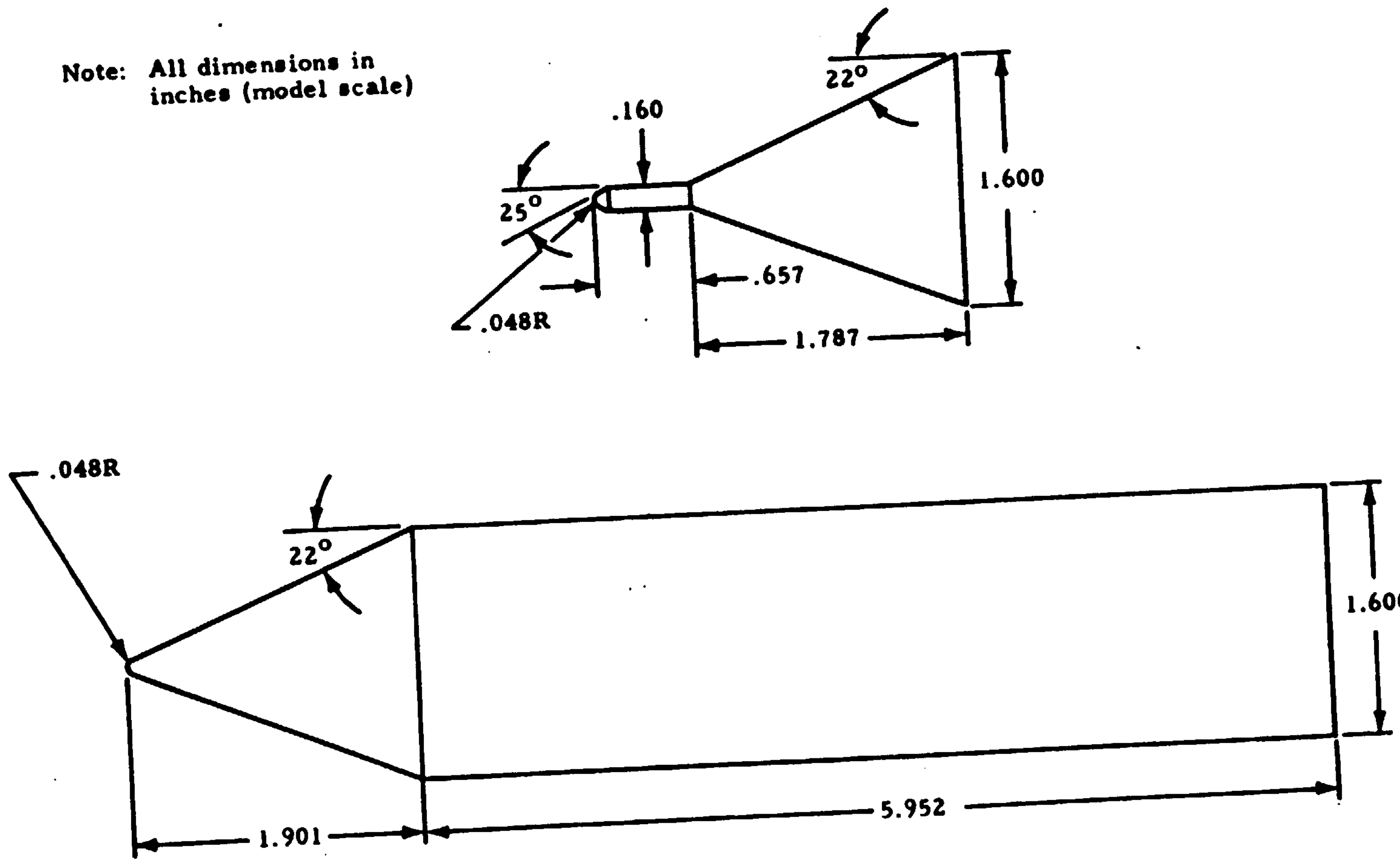

Fig. 7 - 400-Inch HO Tank with Two Alternate Noses

Note: **All dimensions in inches (model scale)**

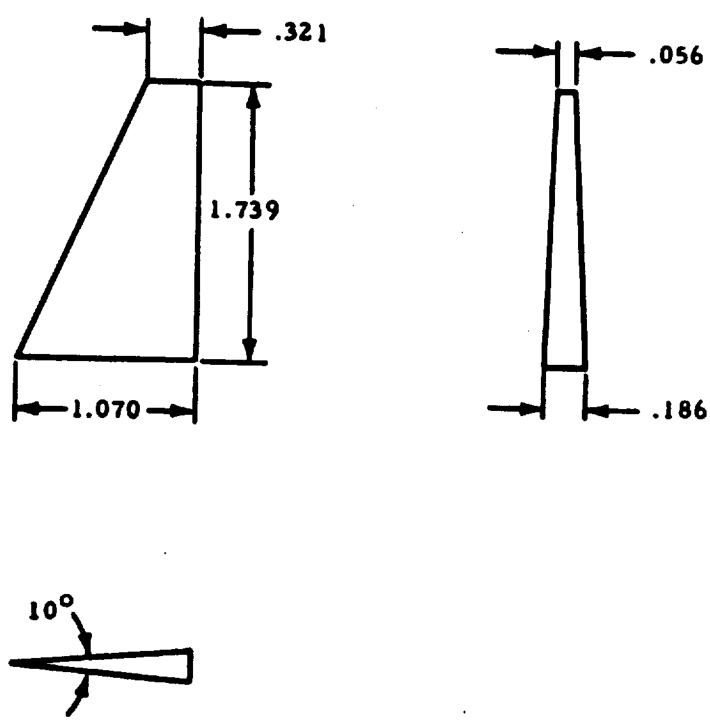

Fig. 8- HO Tank Ventral Fin

TABLE II

TEST TWT544x DATA SET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_r	i_o	Y_s	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.8	.9	1.0	1.1	1.2	1.46	1.96	3.5	4.96		
RTL089	T3Ø151	A	O	0	0	0.0	.022	6	339	340	341	344	[illegible]	342						
090		O	A					6	350	349	348	345	346	347						
091	T3Ø251	A	O					5						495	555	433	[illegible]	374		
092		O	A					5						494	554	[illegible]	372	[illegible]		
093		A	O		30			5						584	556	436	[illegible]	[illegible]		
094		O	A					5						585	557	[illegible]	379	378		
095	T3Ø151	A	O					6	581	490	582	489	[illegible]	583						
096		O	A					6	580	491	579	492	493	578						
097		A	O	10	0			6	574	485	573	486	487	572						
098		O	A					6	575	484	576	[illegible]	492	577						
099	T3Ø251	A	O					5						571	559	437	384	383		
100		O	A					5						570	558	439	385	386		
101		A	O	-10				5						563	560	440	389	[illegible]		
102		O	A					5						562	561	439	388	387		
103	T3Ø151	A	O					6	566	478	565	477	[illegible]	564						
104		O	A					6	567	479	568	480	481	569						
105		A	O	0			.073	4	463	462	460			461						
106		O	A				.073	4	464	465	466			467						
107		A	O				.123	4	472	473	474			475						
108		O	A				.123	4	471	470	469			468						

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CAT	CAB1	CAB2	CAB3	CAF	IDPVAR(1)	IDPVAR(2)	NDV 16

COEFFICIENTS:

α or β SCHEDULES: α: A [illegible] by Δα = 2°
β: A -10° [illegible] by Δβ = 2°

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DELTA WING ORBITER
LMSC
DR#1272 C-1- 257

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TABLE II (CONTINUED)

TEST TWT 544x DATA SET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_r	i_o	Y_v	NO. of RUNS	.6	.8	.9	1.0	1.1	1.2	1.46	1.96	3.5	4.96		
R71109	T3φ151	A	O	0	0	0.0	.223	4	449	448	447			451						
110	↓	O	A				.223	4	450	451	452			453						
111	T3φ251	A	O				.073	2								428		391		
112		O	A				.073	2								427		392		
113		A	O				.123	2								425		394		
114		O	A				.123	2								426		393		
115		A	O				.223	2								429		376		
116	↓	O	A				.223	2								430		377		
117	T3φ256	A	O				.073	2							552	432				
118	↓	O	A					2							553	431				
119	T3φ156	A	O					2			457			456						
120	↓	O	A			↓		2			458			459						
121	T8φ151	A	O			-4.5		6	315	316	317	320	319	318						
122	↓	O	A					6	326	325	324	321	322	323						
123	T5φ251	A	O					5						446	352	360	366	365		
124	↓	O	A					5						445	355	356	367	368		
125	T10φ251	A	O					5						443	353	361	362	363		
126	↓	O	A					5						444	354	357	371	370		
127	T10φ151	A	O					6	338	337	336	333	334	335						
↓ 128	↓	C	A	↓	↓	↓	↓	6	327	328	329	332	331	330						

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CAT	CAB1	CAB2	CAB3	CAF			10

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES
α: A = -10° to 10° by Δα = 2°
β: [illegible]

MSFC - Form 342-2 (February 1972)

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TABLE II (CONTINUED)

TEST TWT644x DATA SET COLLATION SHEET

☐ PRETEST

☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION *	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_a	δ_e	i_o	Y_c	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.8	.9	1.0	1.1	1.2	1.46	1.96	3.5	4.96		
R71129	T9Φ151	A	O	0	0	-1.5	.02	6	534	535	536	537	539	539						
130	↓	O	A					6	533	532	531	530	529	528						
131	T9Φ251	A	O			↓		5						540	543	424	396	395		
132		O	A					5						541	542	423	397	398		
133		A	O			0.0		5						496	544	421	401	402		
134	↓	C	A					5						497	545	422	400	[illegible]		
135	T9Φ151	A	O					6	506	507	508	505	504	509						
136		O	A		↓			6	501	500	499	502	503	493						
137		A	O		30			3	512		511			510						
138	↓	O	A					3	513		514			515						
139	T9Φ251	A	O					4							547	416	412	[illegible]		
140		O	A	↓	↓			4							546	415	413	414		
141		A	O	10	0			4							548	417	409	410		
142	↓	O	A					4							549	418	408	407		
143	T9Φ151	A	O					3	519		520			521						
144		O	A	↓				3	518		517			516						
145		A	O	-10				3	524		523			522						
146	↓	O	A					3	525		522			527						
147	T9Φ251	A	O					4							551	420	404	403		
148	↓	O	A	↓	↓	↓	↓	4							550	419	405	406		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM	CN	CY	CBL	CYN	CAT	CAB1	CAB2	CAB3	CAF	IDPVAR(1)	IDPVAR(2)	NDV
												10

COEFFICIENTS:

α or β SCHEDULES
- α: A = -10° to 10° by Δα = 2°
- β: A = -10° to 10° by Δβ = 2°

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LMSC
DR#1272 C-1-259

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MSFC
DELTA WING ORBITER
LMSC
DR#1272 C-1- 260

TABLE II (CONTINUED)

TEST TWT 544x DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe	δr	io	Y	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.8	.9	1.0	1.1	1.2	1.4	[illegible]	3.5	4.9		
R71 149	T10251	A	0	0	0	-1.5	.023	2												
R71 150	T10251	0	A	0	0	-1.5	.023	2								359		364		
																358		367		

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CAT	CAB1	CAB2	CAB3	CAF			10

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES
α: A = -10° to 10° by Δα = 2°
β: A = -10° to 10° by Δβ = 2°

MSFC - Form 342-2 (February 1972)

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Note: All dimensions in inches (model scale)

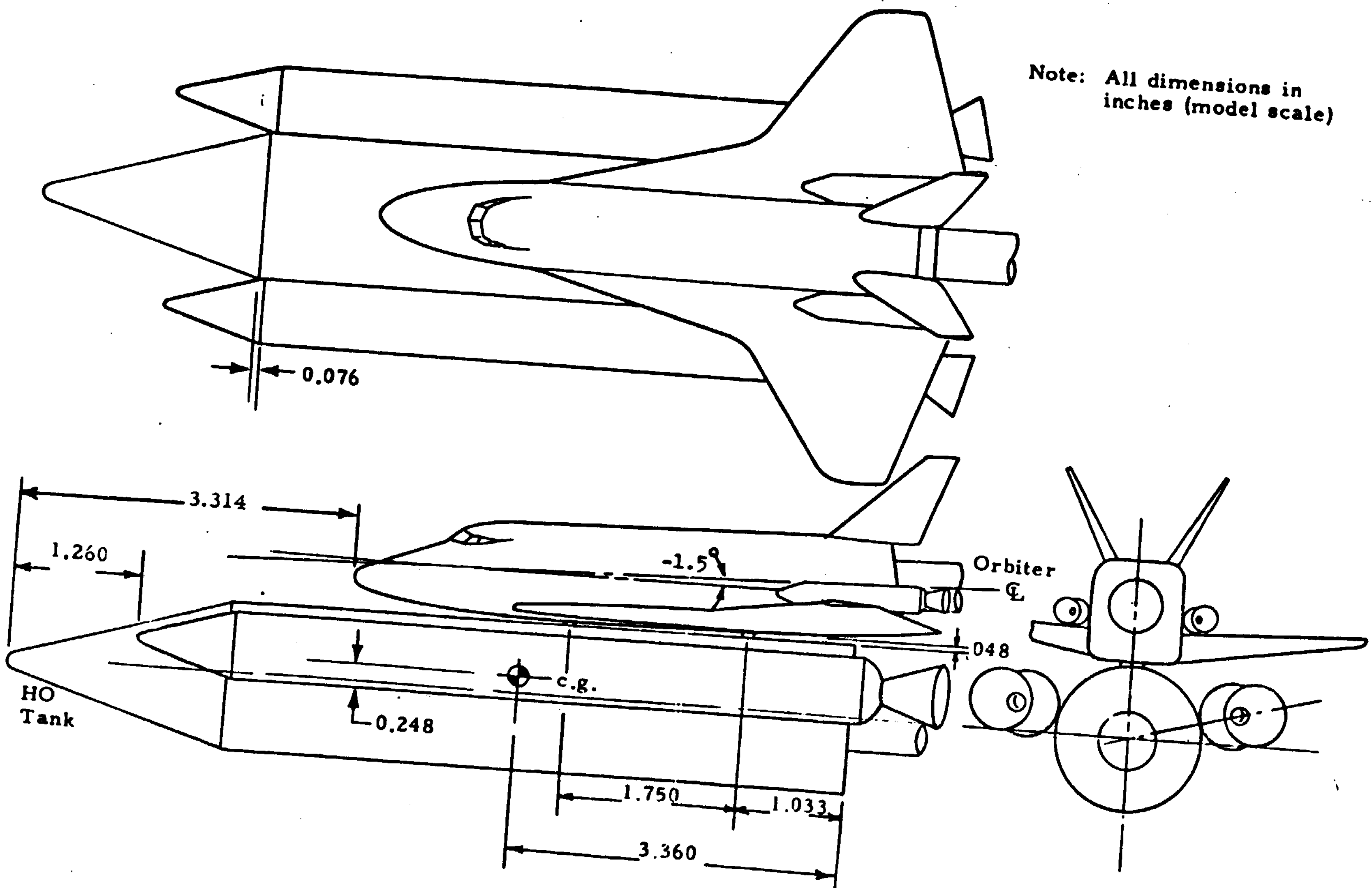

Figure 2 - Launch Vehicle T3 346 Inch HO Tank

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DR#1272 C-1- 261

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
LMSC
DR#1272 C-1- 262

Note: All dimensions are model scale, inches

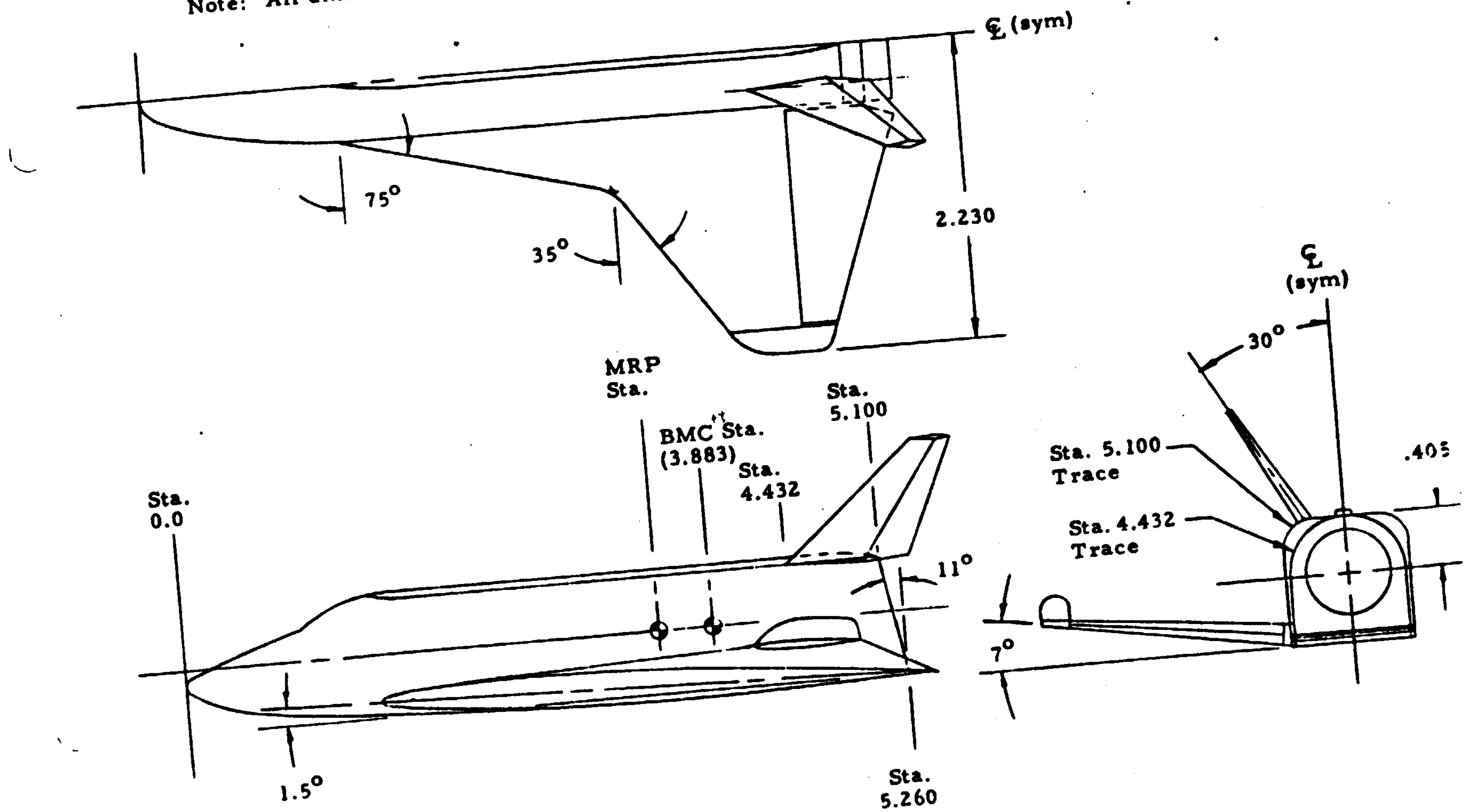


Fig. 3 - General Arrangement, Space Shuttle Orbiter

Note: All dimensions in inches (model scale)

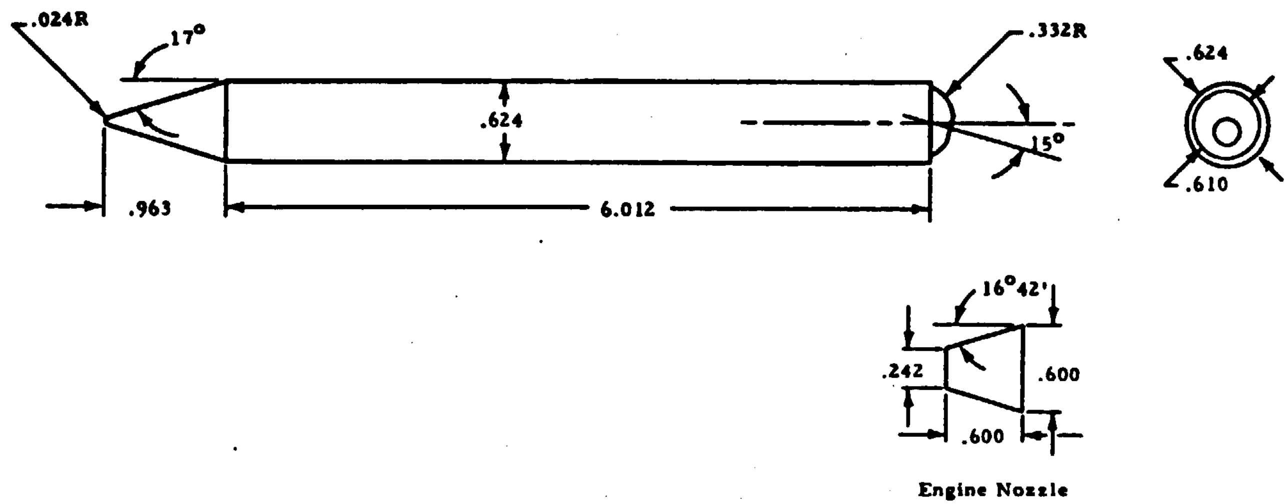


Fig. 4 - Baseline Solid Rocket Motor

NOTE: All dimensions in inches
(model scale)

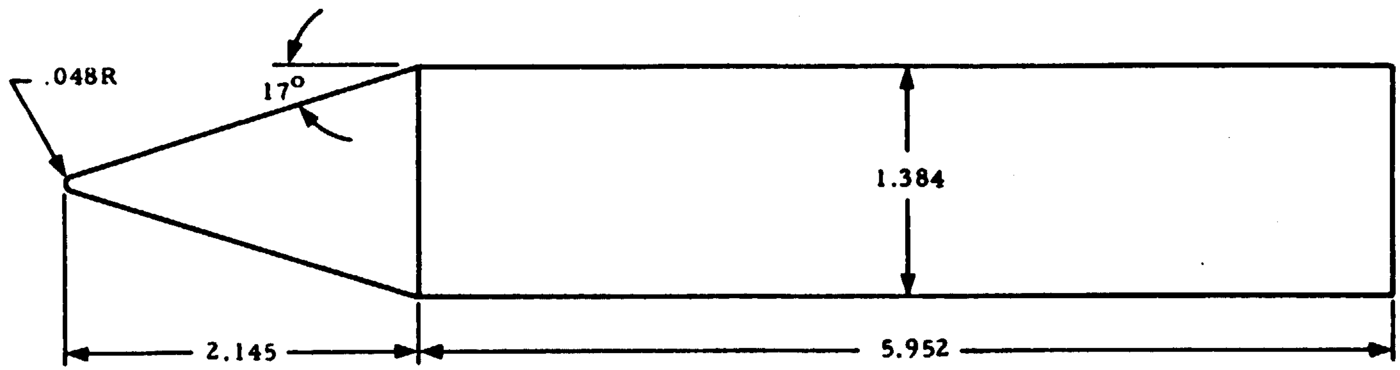


Fig. 5 - 346-Inch Diameter HO Tank with 17-Degree Nosecone

Note: All dimensions in inches

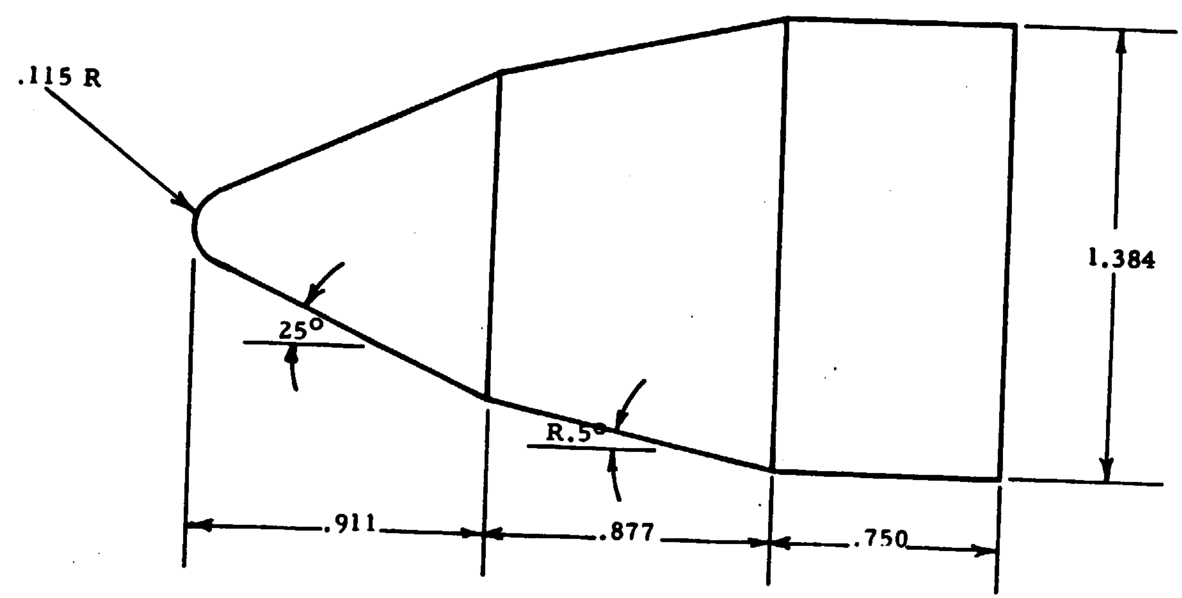
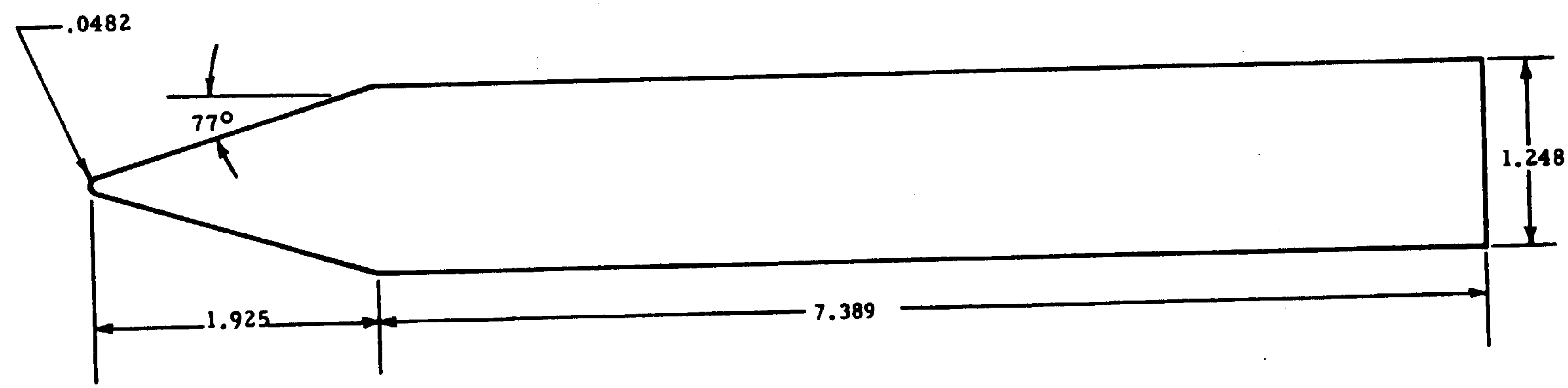


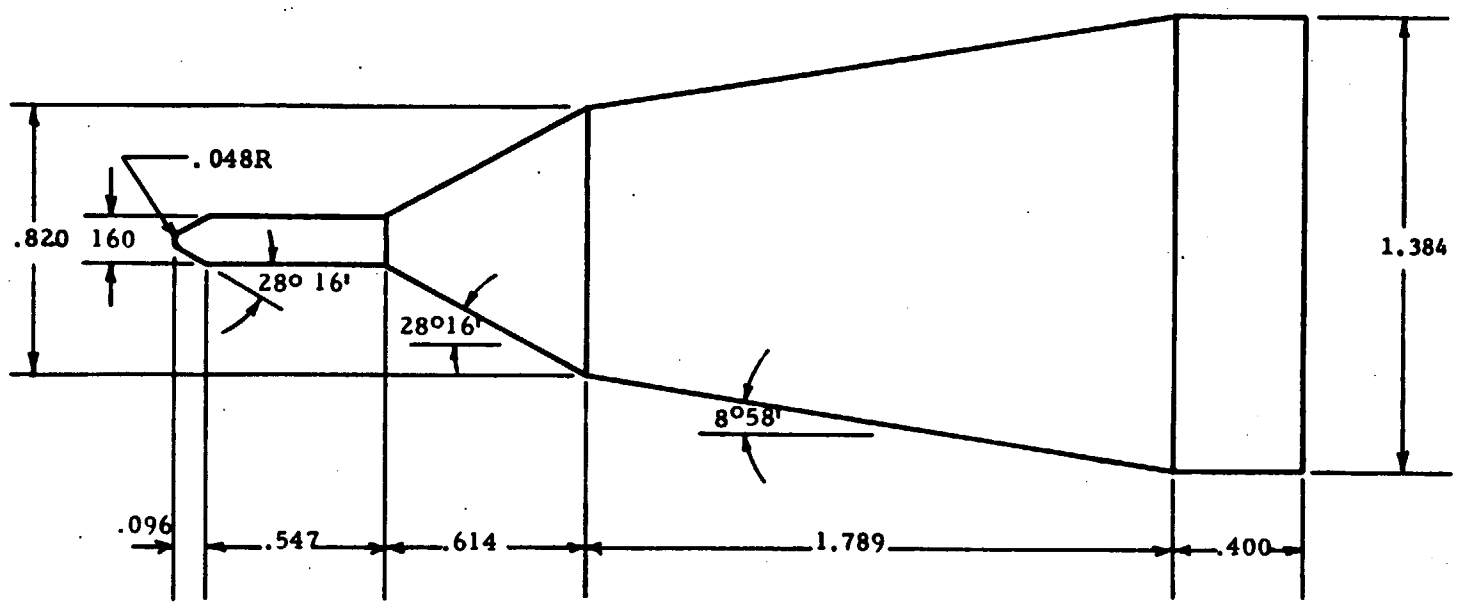
Figure 6 - T8 346 Inch HO Tank Nose Cone

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
LMSC
DR#1272   C-1- 266



Dimensions are in Inches

Figure 7 - T9, 346 Inch Diameter HO Tank



All dimensions in inches

Figure 8 - T10 346 Inch HO Tank Nose Cone

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1241 C-1- 268

SHEET 1 of 2
☐ PRETEST
☒ POSTTEST

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TABLE I.

TEST MSFC 531 DATA SET/RUN NUMBER
COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	M	α_i	$\Delta z/c$	NO. of RUNS	.3979	.5525	.5918	.6312	.7493	.8087	.9856	1.1805	1.3759	∞
R60Ø01	ØRBITER (IN PRE-	A	0	0.6	0	.8612		110	7	10			11				4
02	sence of TANKS)				5				14	15			16				
03					5	1.2798			18	17			19				
04					0				8	9			12				
05				1.96	0	.8612		43	36				37			42	1
06					0	.39							38			41	
07					0	-.1232							39			40	
08					5								32			35	
09					5	.39							31			34	
10					.5	.8612			44				45			33	
11				4.0	0	.8612		97	99	102							.5
12					0	1.058			100	101							
13					0	.6629			98		103		104				
14					5				50		81		52				
15					5	1.058			46	47							
16					5	.8612			48	49							
17					5	.4674					55		54	53			
18					10						57		60	62			
19					10	.6629					56		59				
20					10	.2765						58	61	63	64		

PARAMETERS/VALUES — VERTICAL SEPARATION DISTANCE $\Delta z/c$ — TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

DELTAZ

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES A) -5, -3, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 (ØRB ANGLE of ATTACK)

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TABLE I.

TEST MSFC 531 DATA SET/RUN NUMBER COLLATION SUMMARY

Sheet 2 of 3

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	M	α_i	ΔZ/Z	NO. of RUNS	.3979	.5565	.5918	.6312	.7493	.7807	.9056	1.1885	1.3759	∞
R60Φ21	ORBITER (IN PRE-	A	0	4.0	15	.2995						65	67	69	70		
R60Φ22	SENCE OF TANKS)	A	0	4.0	15	.4679							66	68			
R60T01	TANK (IN PRESENCE	A	0	0.6	0	.8612		13	7	10			11				3
02	of ORBITER)				5				14	15			16				
03					5	1.2998			18	17			19				
04					0				8	9			12				
05				1.96	0	.8612		43	36				37			42	2
06					0	.369							38			41	
07					0	-.1232							39			40	
08					5								32			35	
09					5	.369							31			34	
10					5	.8612							45			33	
11				4.0	0				44								6
12					0	1.058		97	99	102							
13					0	.665			100	101							
14					5				98		103		104				
15					5	1.058			50		81		52				
									46	47							

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES: A) -5, -3, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 (ORB. ANGLE of ATTACK)

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CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1241 C-1- 269

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1241 C-1- 270
SHEET 3 of 3
☐ PRETEST
☒ POSTTEST

TABLE I.

TEST MSFC 531 DATA SET/RUN NUMBER
COLLATION SUMMARY

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	M	α_i	ΔX/c	NO. of RUNS	VERTICAL SEPARATION DISTANCE - ΔZ/C	.3979	.5585	.5918	.6312	.7493	.7807	.9056	1.1885	1.3799	∞
R60T16	TANK (IN PRESENCE OF ORBITER)	A	0	4.0	5	.8612												
17					5	.4674				48	49							
18					10	.4674						55		54	53			
19					10	.6629						57		60	62			
20					10	.2705						56		59				
21					15	.2705							58	61	63	64		
22					15	.4674							65	67	69	70		
														66	68			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS:

IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A) -5, -3, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 (ORB. ANGLE OF ATTACK)

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FIGURE 2 - GENERAL ARRANGEMENT, MSC 040 A ORBITER

Note: All dimensions are model scale inches.

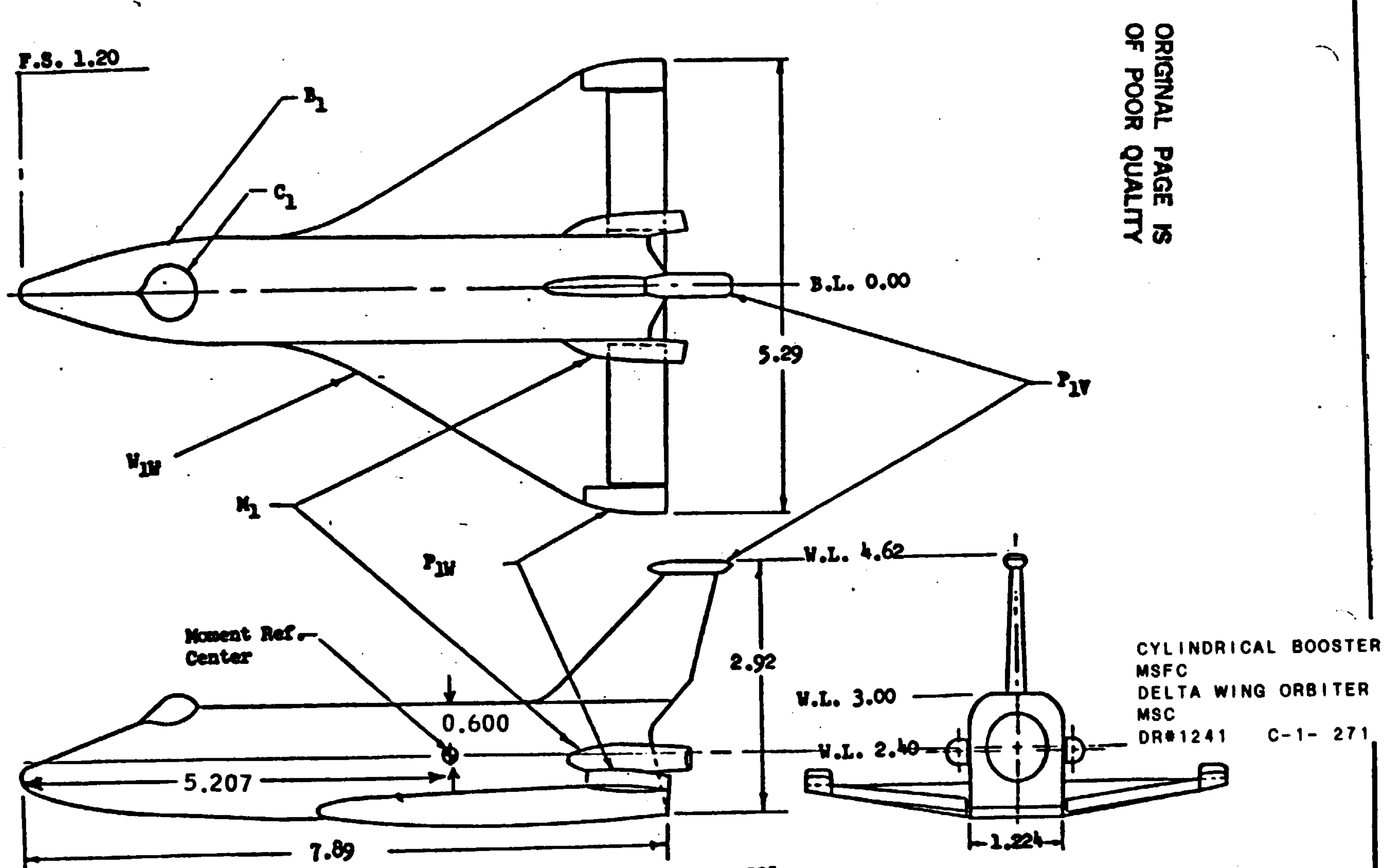

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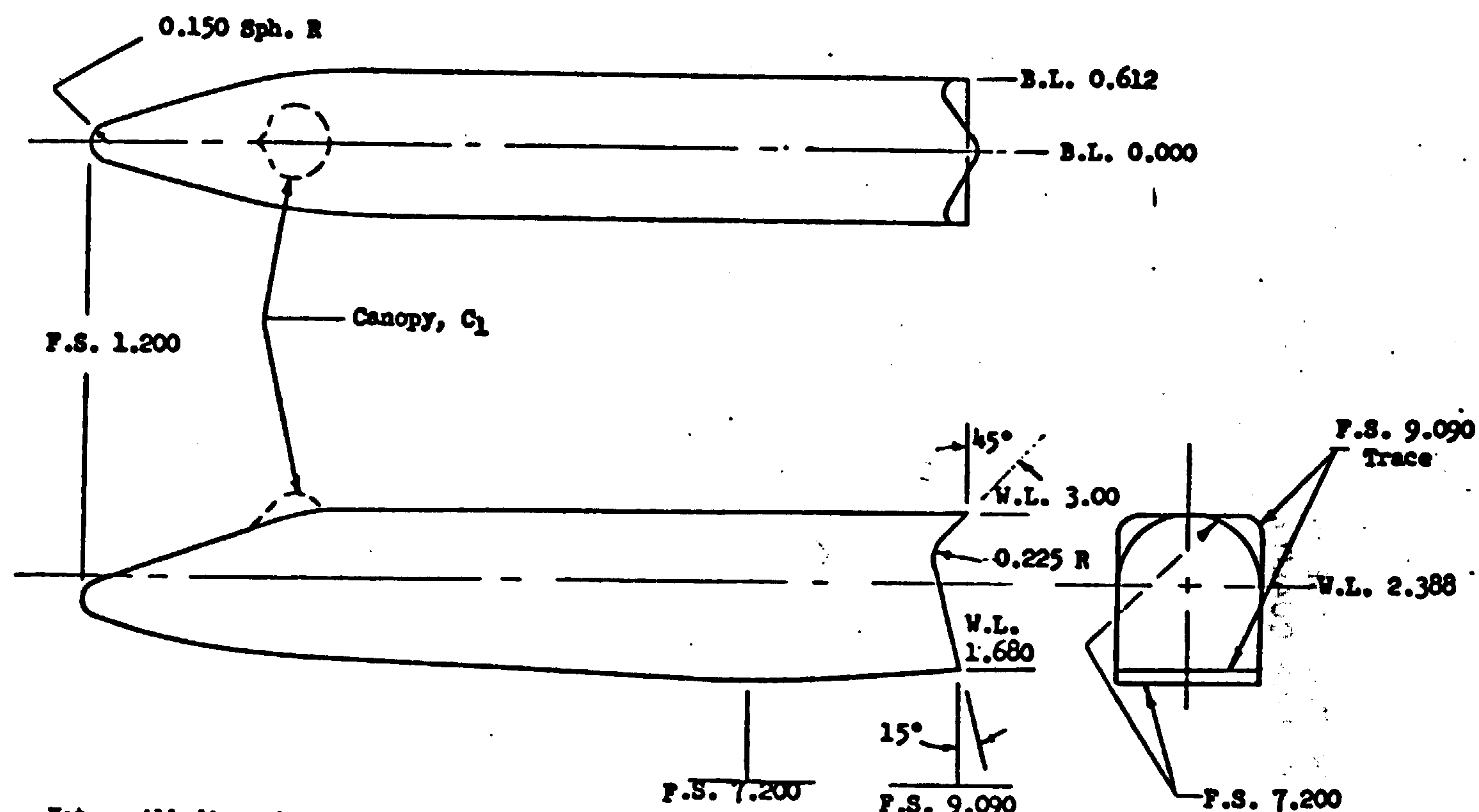
FIGURE 3 - B_1 BASELINE FUSELAGE



Note: All dimensions are model scale in inches.

FIGURE 4 - WING, FLAP AND ELEVON - W_{1W}

Notes: All dimensions are model scale in inches.
Surface flaps shown in undeflected position.

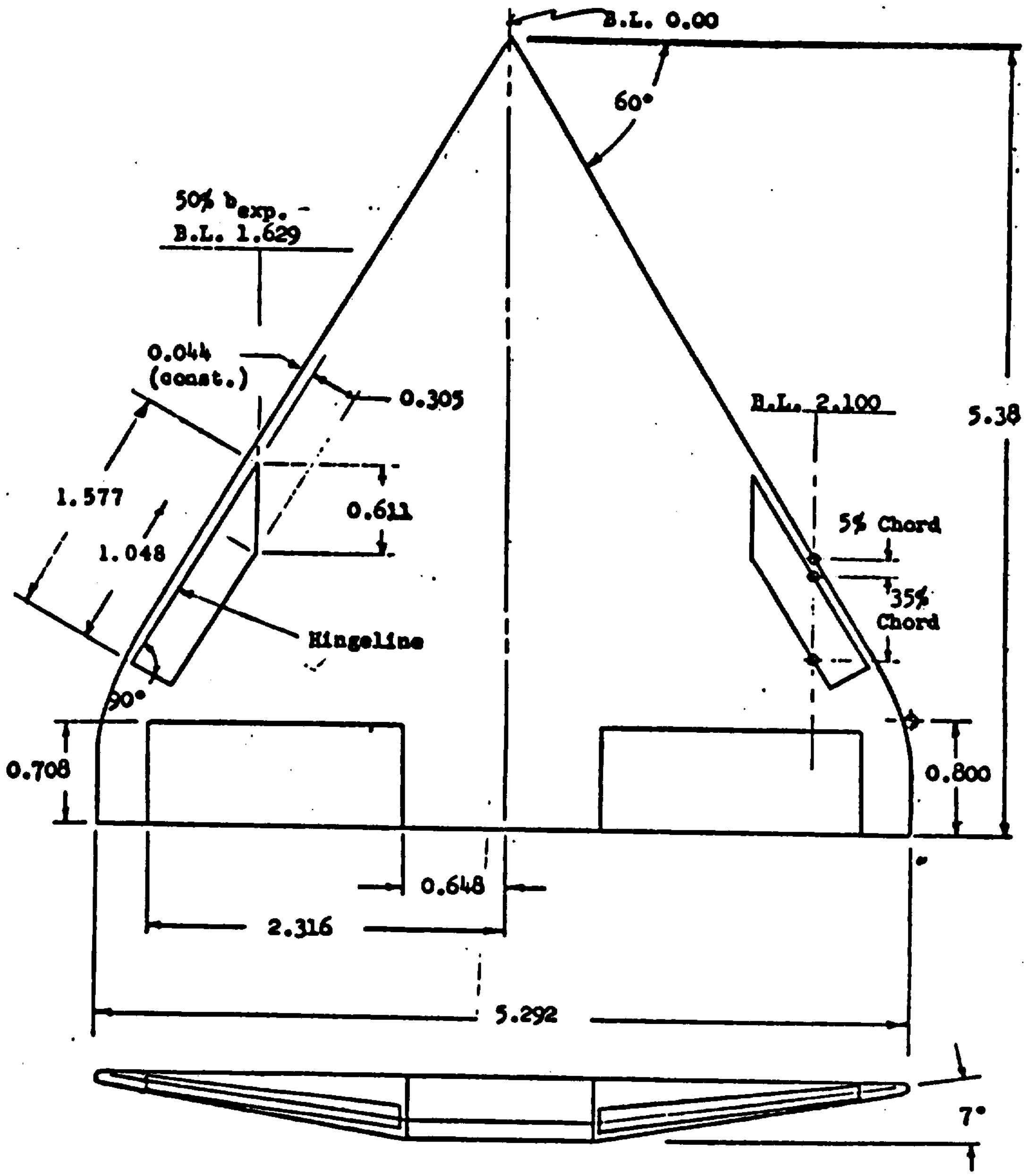
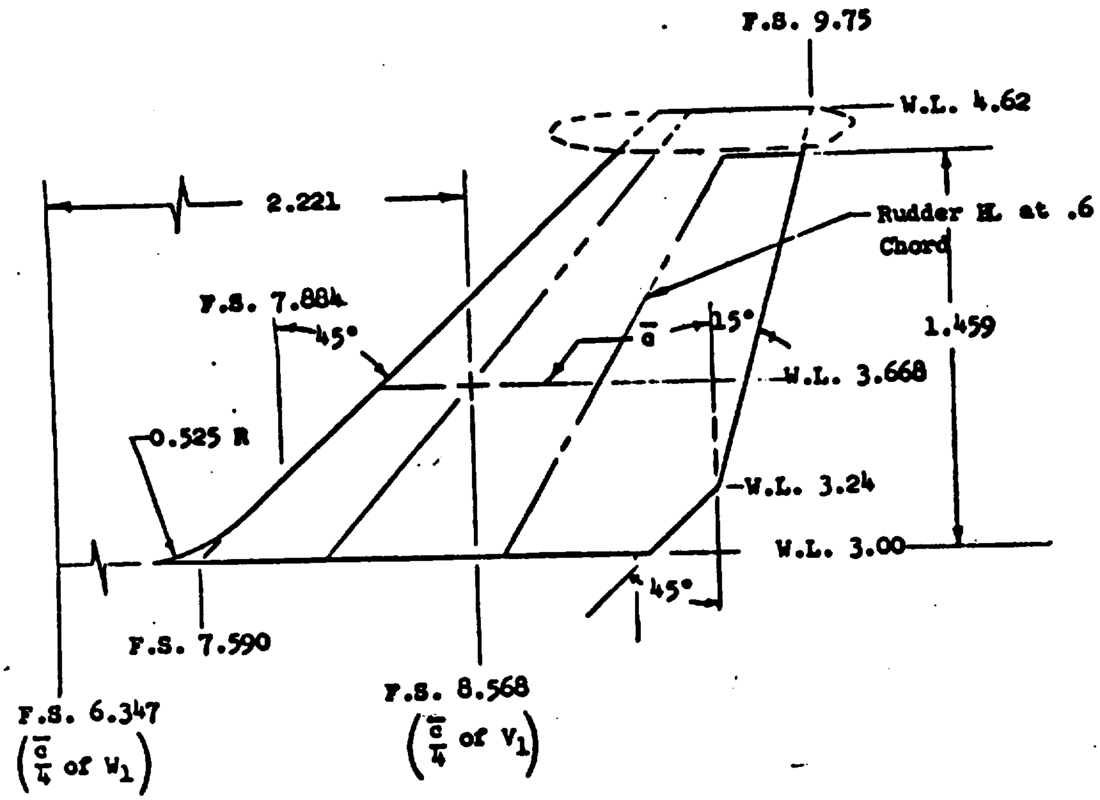


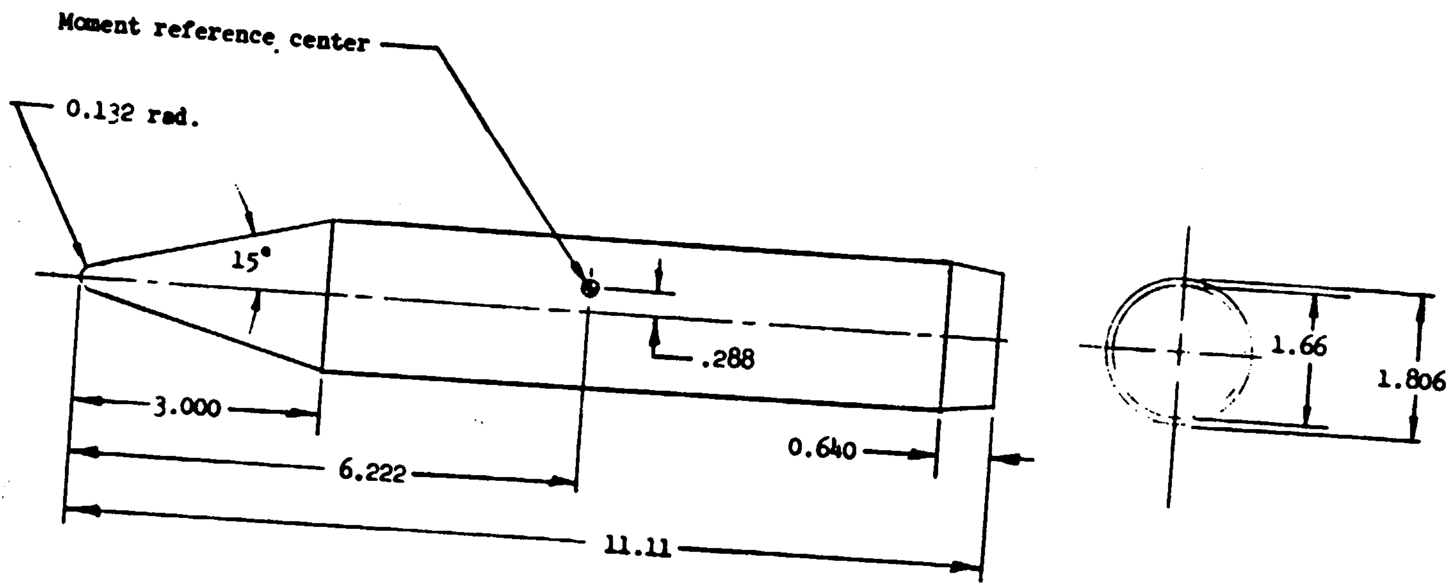
FIGURE 5 - V1 **VERTICAL TAIL AND RUDDER**

$S_v = 1.837$ in.^{2}	$C_R = 1.728$
$b = 1.620$	$C_T = 0.540$
$\bar{c} = 1.238$	$\lambda = .31$
$AR = 1.43$	$\Lambda_{L.E.} = 45°$



Notes: All dimensions are model scale in inches.
Vertical tail attached at B.L. 0.00.

FIGURE 6. HO TANK, T_1



All dimensions are model scale, in inches.

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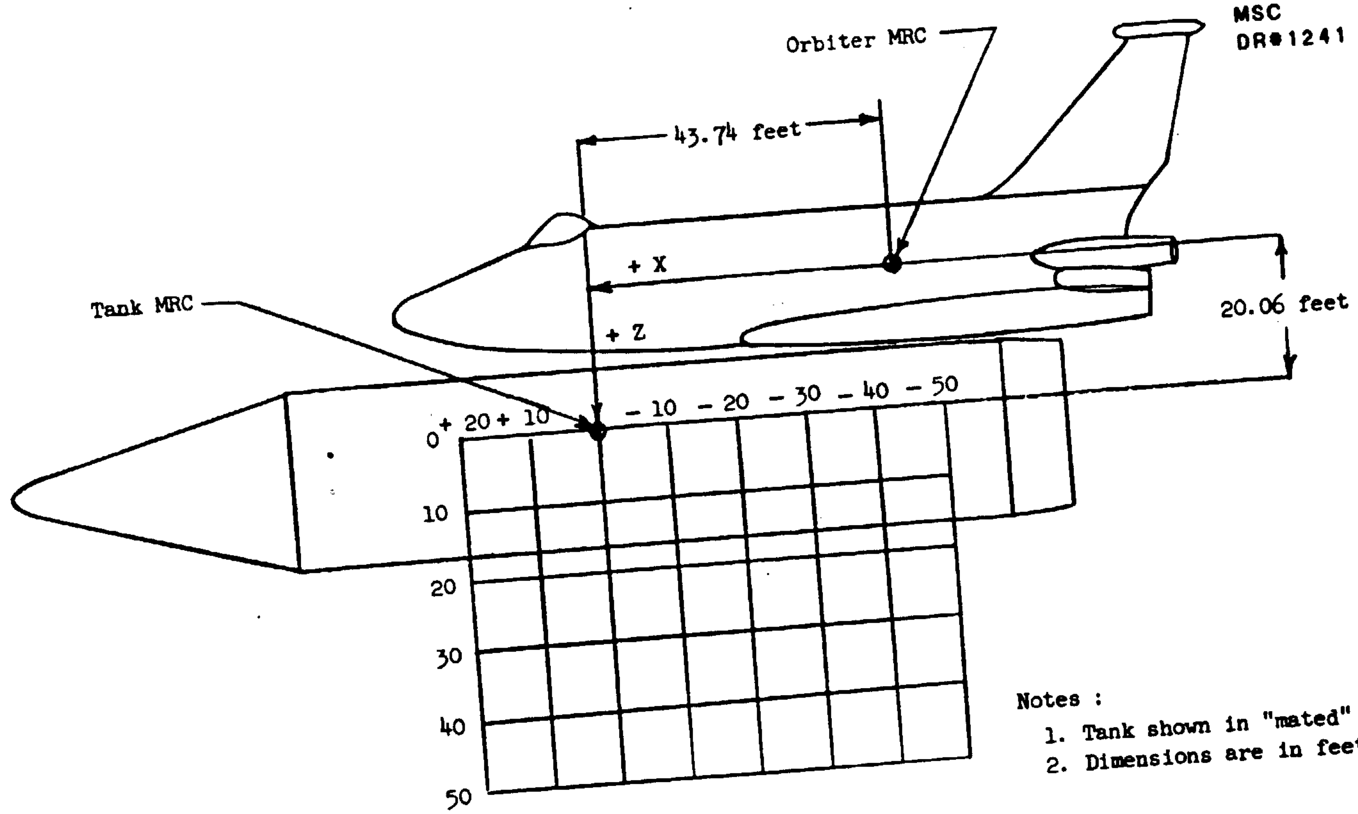

Notes :
1. Tank shown in "mated" position.
2. Dimensions are in feet full scale.

X, full scale, ft measured from "mated" position	X/$\bar{c}$ measured from Orbiter MRC to tank MRC
−50	−.1232
−30	.2705
−25	.3690
−20	.4674
−10	.6629
0	.8612
10	1.0580
20	1.2549

Z, full scale, ft measured from "mated" position	Z/$\bar{c}$ measured from Orbiter MRC to tank MRC
0	.3949
8	.5525
10	.5918
12	.6312
18	.7493
20	.7887
30	.9856
40	1.1825
50	1.3754

Figure 7 .– Separation Variable Grid.

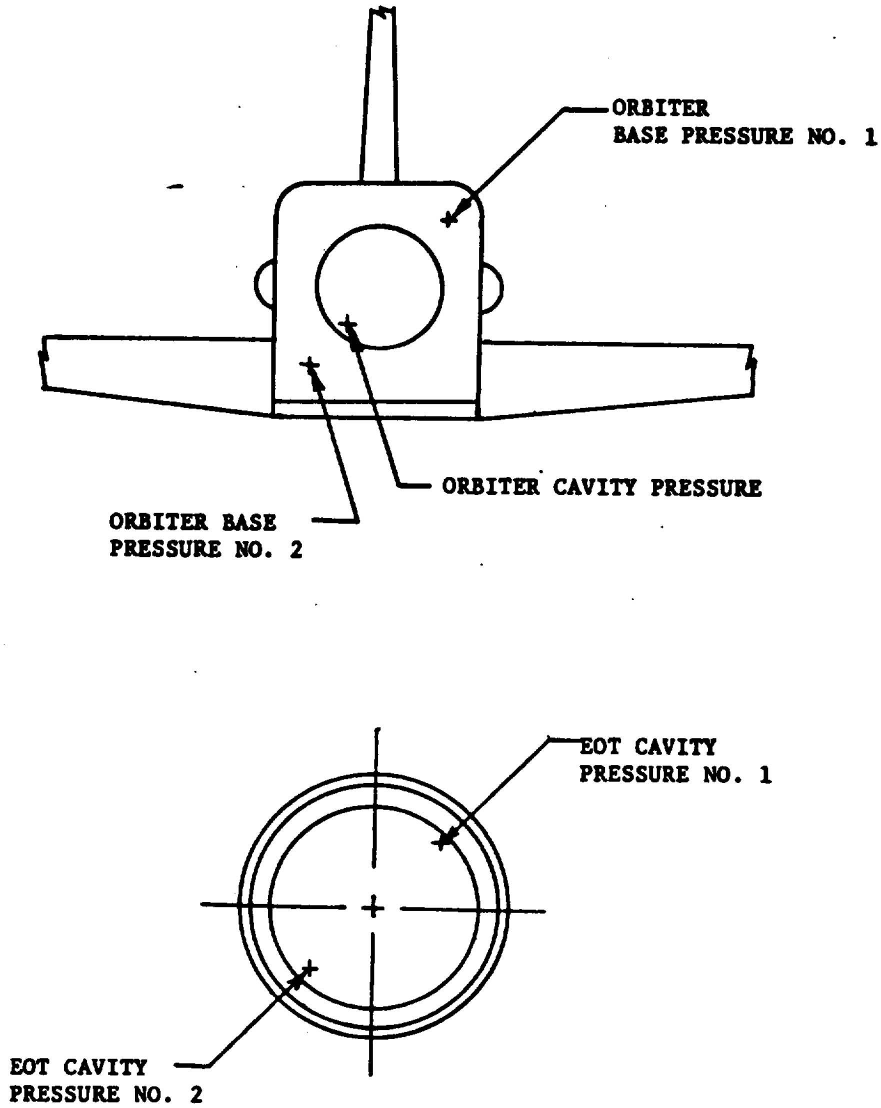

FIGURE 8 . BASE AND CAVITY PRESSURE LOCATIONS

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 278

TABLE II.

TEST MSFC 534 DATA SET/RUN NUMBER

COLLATION SUMMARY

SHEET 1 of 2

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES α_i	θ_s	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.8	0.9	1.1	1.2	1.96	2.74	4.96
R65001	T_1	A	0	—	—		1	2	3	4	5	98	147	146
02	$T_1 O_1$	A	0	-1.5	—		6	7	8	9	10	101	141	140
03		0	B	-1.5	—		15	14	13	12	11	102	142	143
04	$T_1 O_1 S_1$	A	0	-1.5	21		25	24	23	22	21	105	138	139
05		0	B	-1.5	21		79	80	81	19	20	106	137	136
06		6	B	-1.5	21		162	161	160	159	158	157		154
07		-6	B	-1.5	21		163		164		165	156		155
08	$T_1 O_1$	A	0	-3.0	—		28		27		26	100		144
09		A	0	0	—		29		30		31	99		145
10	$T_1 O_1 S_1$	A	0	-1.5	0		34		33	74	32	104		150
11		0	B	-1.5	0		78		77	75	76	103		151
12	$T_1 O_1 S_1 F_1$	A	0	-1.5	21		35		36	37	38	108		134
13		0	B	-1.5	21		83		82	84	85	107		135
14	$T_1 O_1 S_1 F_2$	A	0	-1.5	21		41		40		39	109		133
15		0	B	-1.5	21		89		88	87	86	110		132
16	$T_1 O_1 S_1 F_3$	0	B	-1.5	21		90		91	92	93	111		131
17	$T_1 O_1 S_2$	A	0	-1.5	21		42	43	44	45	46	113		129
18		0	B	-1.5	21		97		96	95	94	112		130
19	T_2	A	0	—	—		50		49	48	47	115		127
20	$T_2 O_1$	A	0	-1.5	—		51	52	53	54	55	116		128

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM CN CY CBL CYN CAF CABφ CABS CABHφ CAB

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

A) $\alpha = -10^\circ$ to 10°, $\Delta\alpha = 2^\circ$

B) $\beta = -10^\circ$ to 10°, $\Delta\beta = 2^\circ$

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TABLE II. (CONCLUDED)

TEST MSFC 534 DATA SET/RUN NUMBER

COLLATION SUMMARY

SHEET 2 of 2

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES α_i	θ_s			NO. of RUNS		MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.8	0.9	1.1	1.2	1.96	2.74	4.96			
R65021	T_2O_1	O	B	-1.5	—					60	59	58	57	56	117	126	125			
22	$T_2O_1S_1$	A	O	-1.5	21					61	62	63	64	65	118	122	121			
23	$T_1O_1S_3$	A	O	-1.5	21					70		71	72	73	114		128			
24	$T_3O_1S_1$	A	O	-1.5	21					69		68	67	66	119		120			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 279

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 280

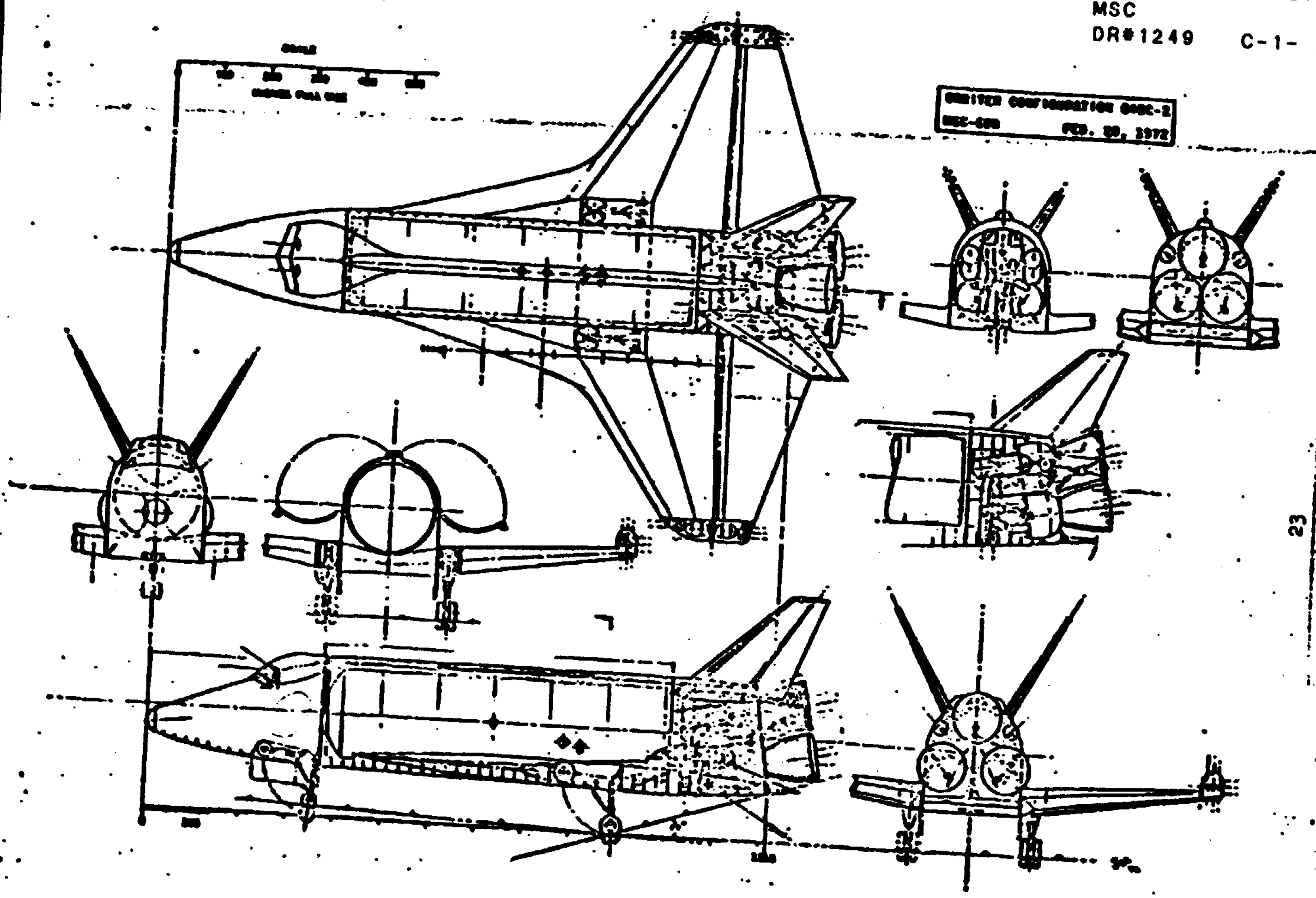

Figure 2. REFERENCE 1/100 SCALE DWG MSC-SDD DATED 28 FEB 1972 (ORBITER CONFIGURATION 040C-2)

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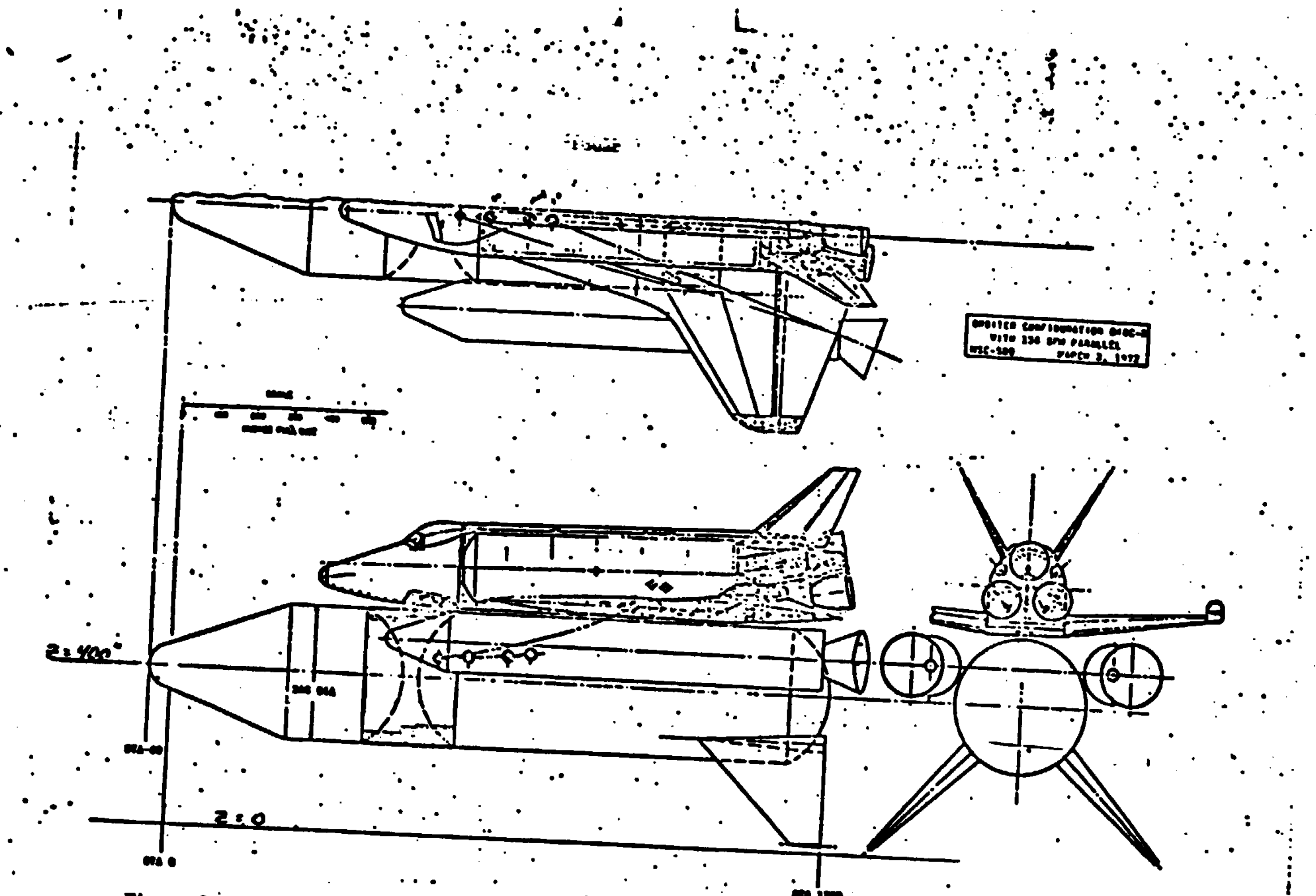

Figure 3. REFERENCE 1/100 SCALE DWG MSC-EDD DATED 3 MARCH 1972
(SRM Parallel Burn Launch Configuration)

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 281

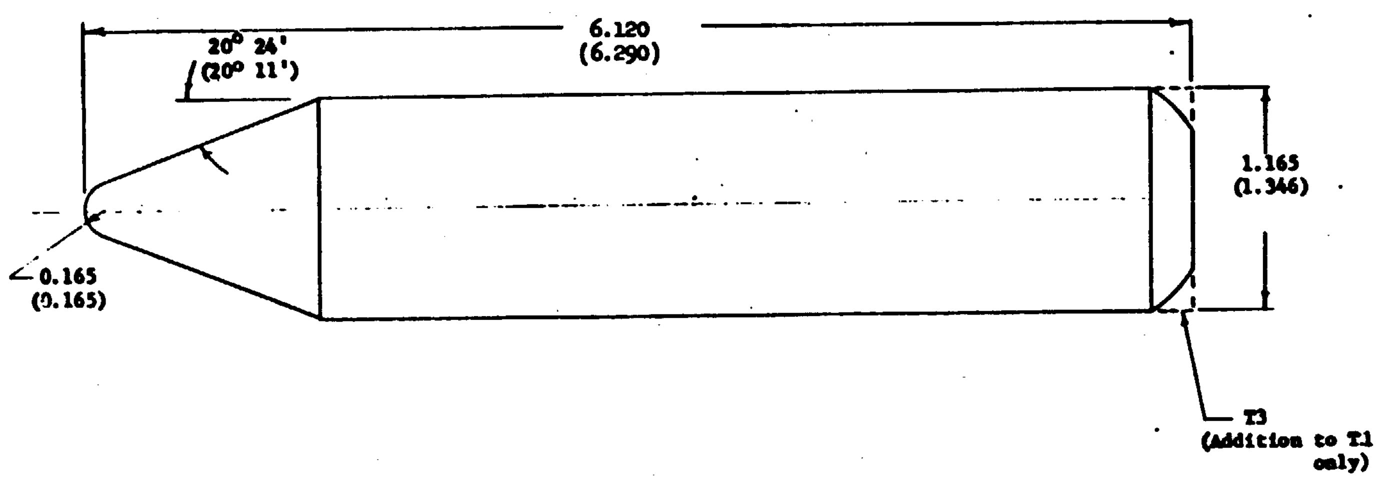

Figure 4. H-O TANK T1 (T2)

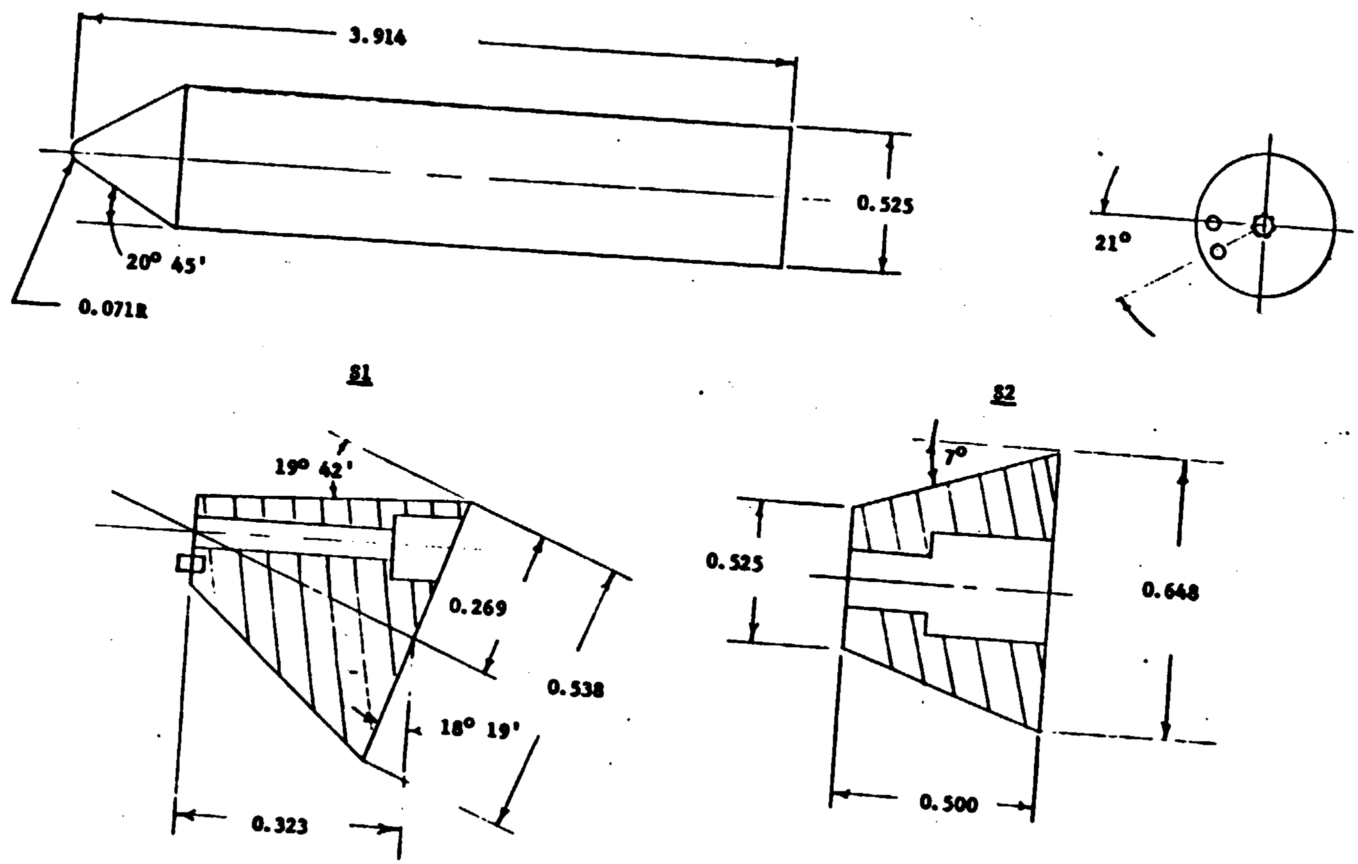

Figure 5. SOLID ROCKET MOTOR (S1, S2, S3)

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 283

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 284

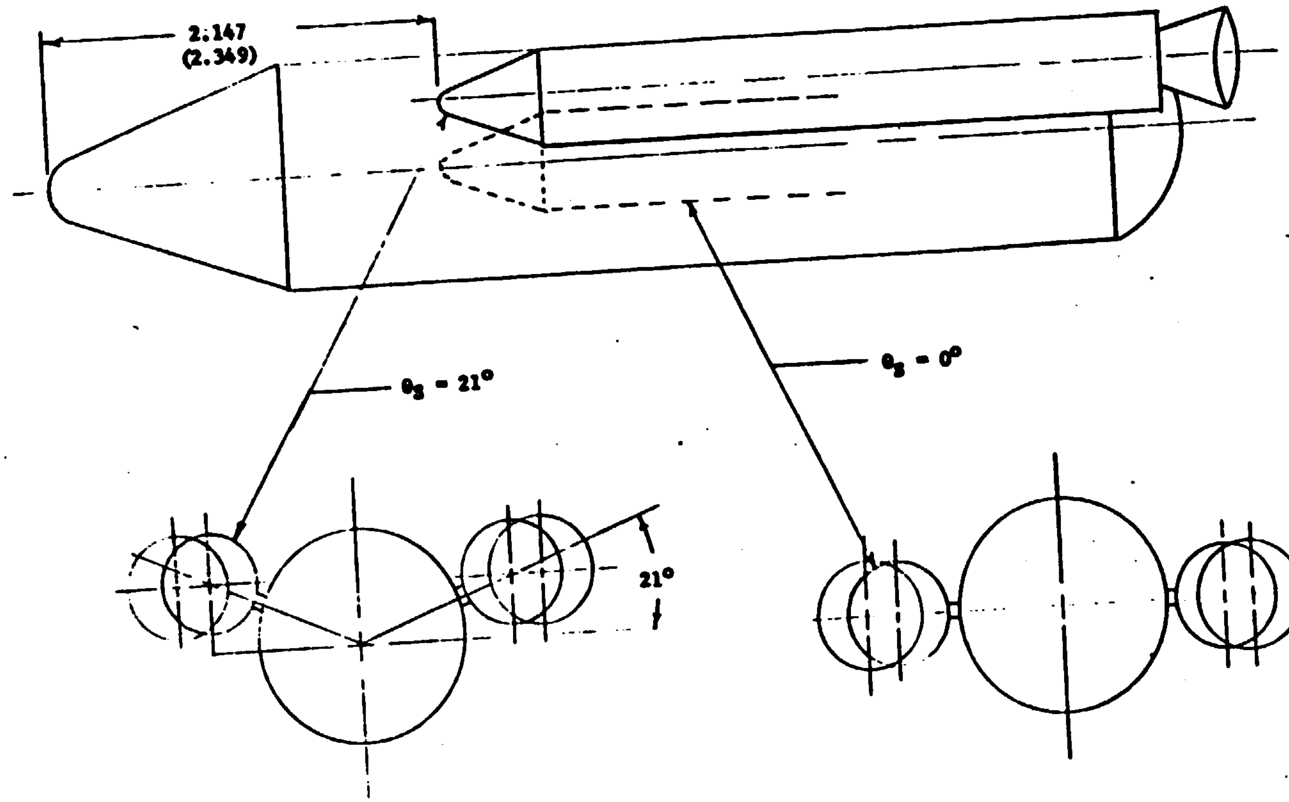

Figure 6. SOLID ROCKET MOTOR LOCATIONS T1 and (T2)

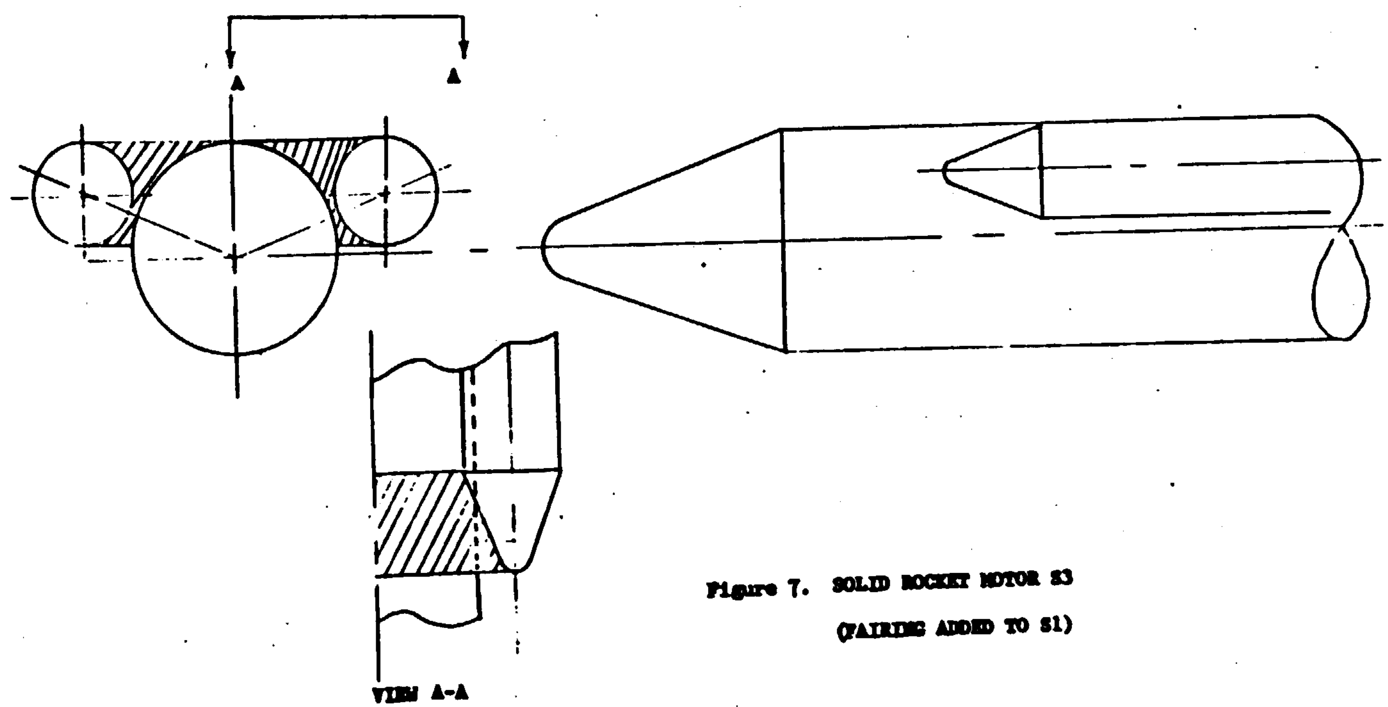

Figure 7. SOLID ROCKET MOTOR S3

(FAIRING ADDED TO S1)

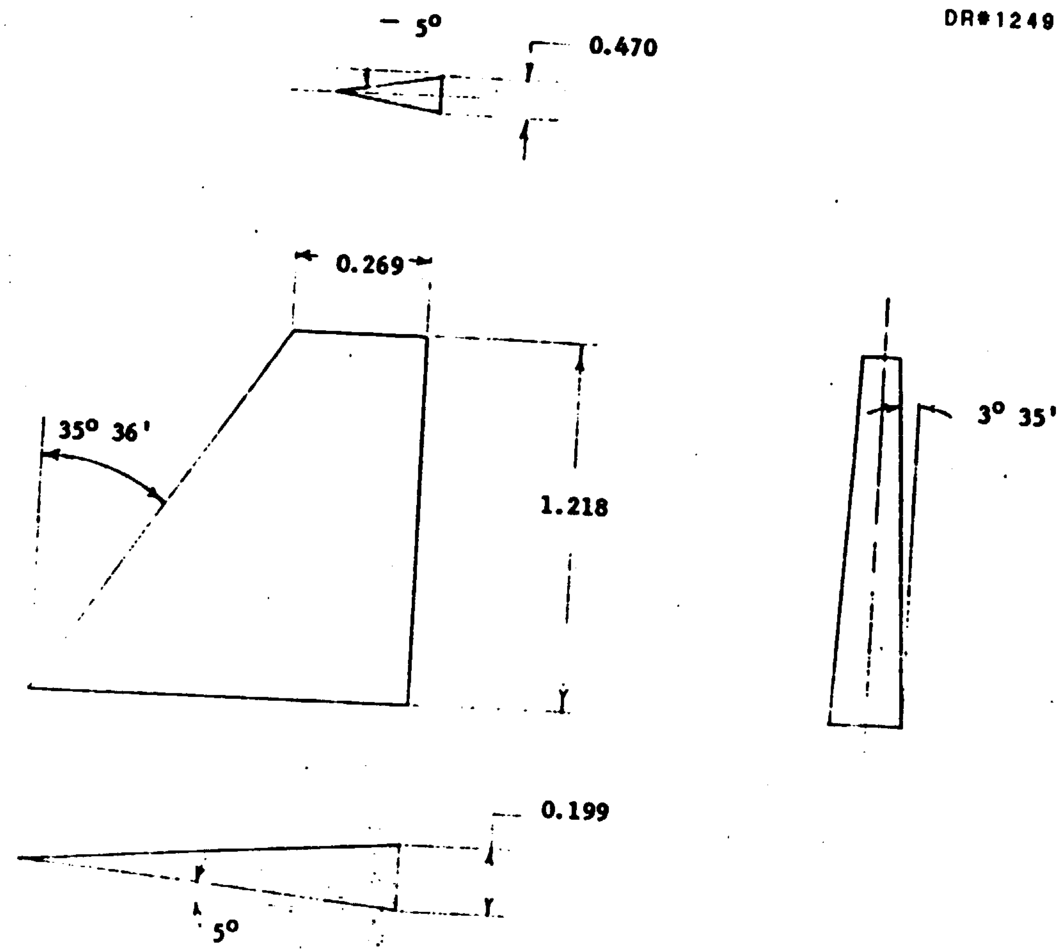

Figure 8. FIN (F1) 2 EACH, (F2) and (F3) 1 EACH

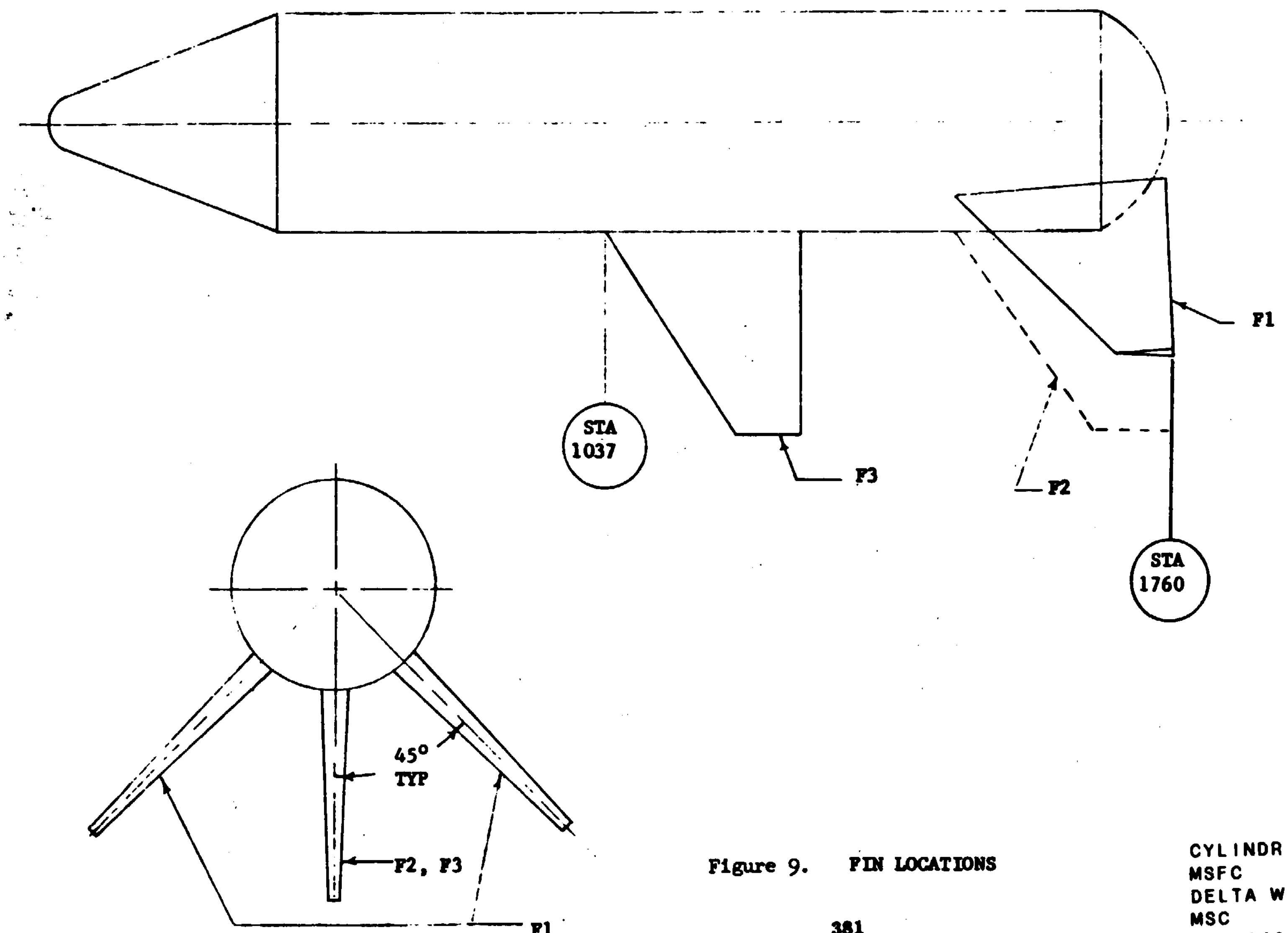

Figure 9. FIN LOCATIONS

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 287

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1249 C-1- 288

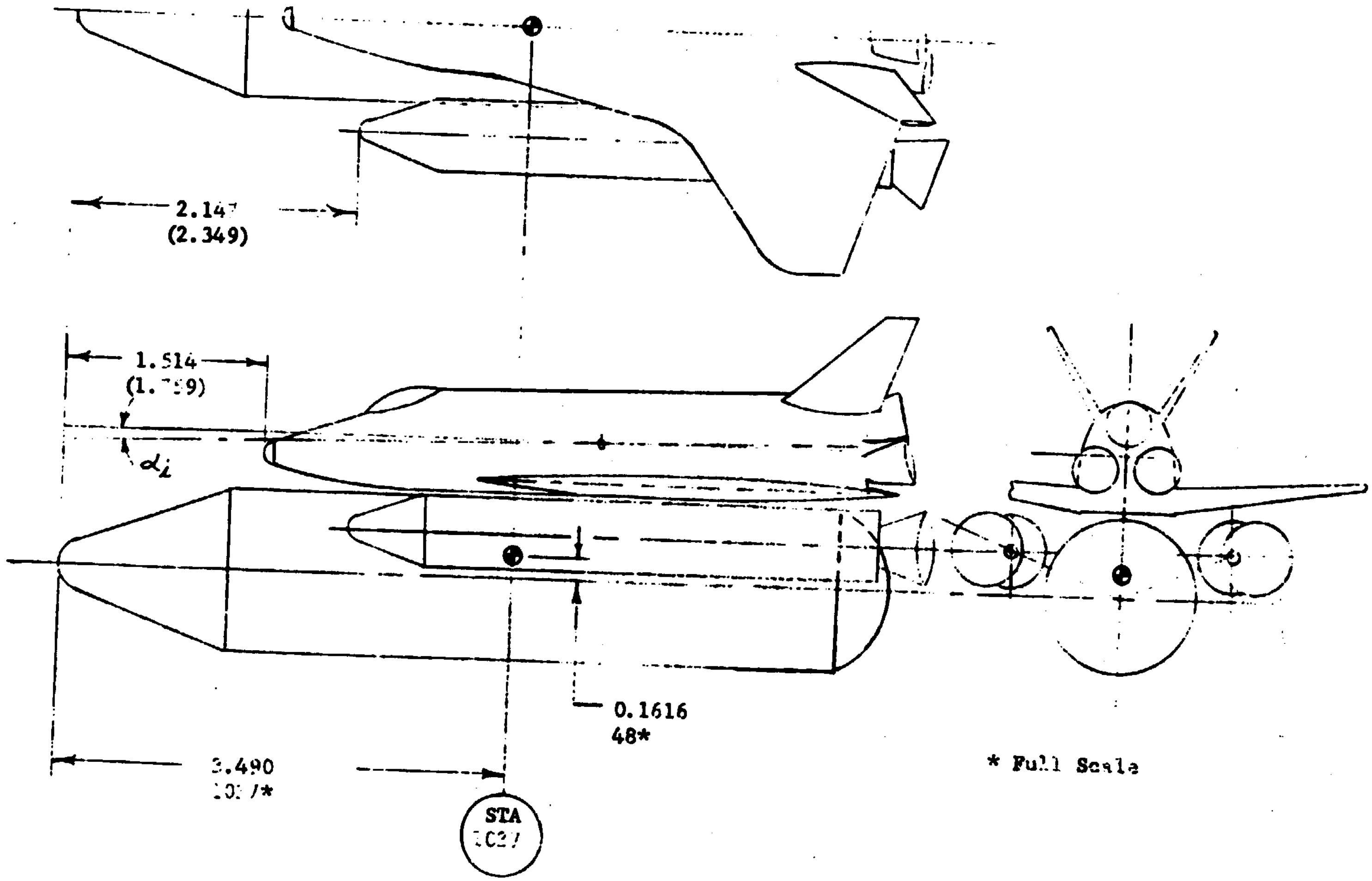

FIGURE 10. MOMENT REFERENCE CENTER, ORBITER AND SOLID ROCKET MOTOR LOCATIONS
T1 and (T2)

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TABLE II.

TEST MSFC TWT 538 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS, VALUES i				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.8	0.9	1.1	1.2	1.96	2.14	4.76				
[illegible]001	T1	A	O	—				8	1	2	[illegible]	[illegible]	5 S	126		[illegible]				
002	T1S1	A	O	—				8	[illegible]	[illegible]	5 S	7	[illegible] S	[illegible]		[illegible]				
003	↓	O	B	—				8	11	12	13	15	14			[illegible]				
004	T1O1	A	O	-1.5				9	21	22	23 S	25	24 S		56	57				
005	↓	O	B	-1.5				8	20	19	18	16	17	[illegible]		[illegible]				
006	T1O1S1	A	O	-1.5				8	30	29	28 S	26	27 S	112 S	155	[illegible]				
007	↓	O	B	-1.5				8	31	32	33	35	34	113	154	153				
008	T1O1S1R1	A	O	-1.5				8	41	42	43	45	46	115	142	141				
009		O	B	-1.5				8	40	39	38	36		114	143	144				
010		A	O	-3				5	103		102		101	13		136				
011		O	B	-3				5	98		99		100	132		135				
012		A	O	0				5	92		93		94	131		137				
013	↓	O	B	0				5	97		96		95	129		139				
014	T1O1S2R1	A	O	-1.5				7	49	48	47	46	50	116		150				
015	↓	O	B	-1.5				4			52		51	117		145				
016	T2O1S1R1	A	O	-1.5				8	91	90	89	87	88	120		148				
017	↓	O	B	-1.5				8	82	83	84	86	85	121		147				
018	T2O1S2R1	A	O	-1.5				5	57		56		55	119		142				
019	↓	O	B	-1.5				4			53		54	118		146				
020	T1O1S3R1	A	O	-1.5				6	75		76	77	74	134		151				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

CLM CN CY CBL CYN CAF CAB4Ø CABS CABØ CAB

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

A: $\alpha = -10^\circ$ TO 10° $\Delta\alpha = 2^\circ$

B: $\beta = -10^\circ$ TO 10° $\Delta\beta = 2^\circ$

MSFC - Form 342-3 (February 1972)

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1251 C-1- 289

TABLE II. (CONTINUED)

TEST MSFC TWT 538 DATA SET COLLATION SHEET

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1251 C-1- 290
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES i_o				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.6	0.8	0.9	1.1	1.2	1.96	2.74	4.96				
[illegible] 021	T1O1S3R1	O	B	-1.5				6	[illegible]		[illegible]	75	19	123		153				
022	T1O2S1R1	A	O	-1.5				6	63		55	55	64	124		14[illegible]				
023	↓	O	B	-1.5				6	71	63	6[illegible]	66	67	125		131				
024	T1O1S1R1(GF)*	A	O	-1.5				2			58		59							
025	T1S1 (GF)*	A	O	—				2			61		60							
026	T4	A	O	—				4	101		103		10[illegible]	107						
	*GAPS FILLED																			
	S-SHADOWGRAPH																			

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CAF	CABHQ	CABC	CABØ	CAB			10

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES
A: $\alpha = -10°$ TO $10°$ $\Delta\alpha = 2°$
B: $\beta = -10°$ TO $10°$ $\Delta\alpha = 2°$

MSFC - Form 263-2 (February 1973)

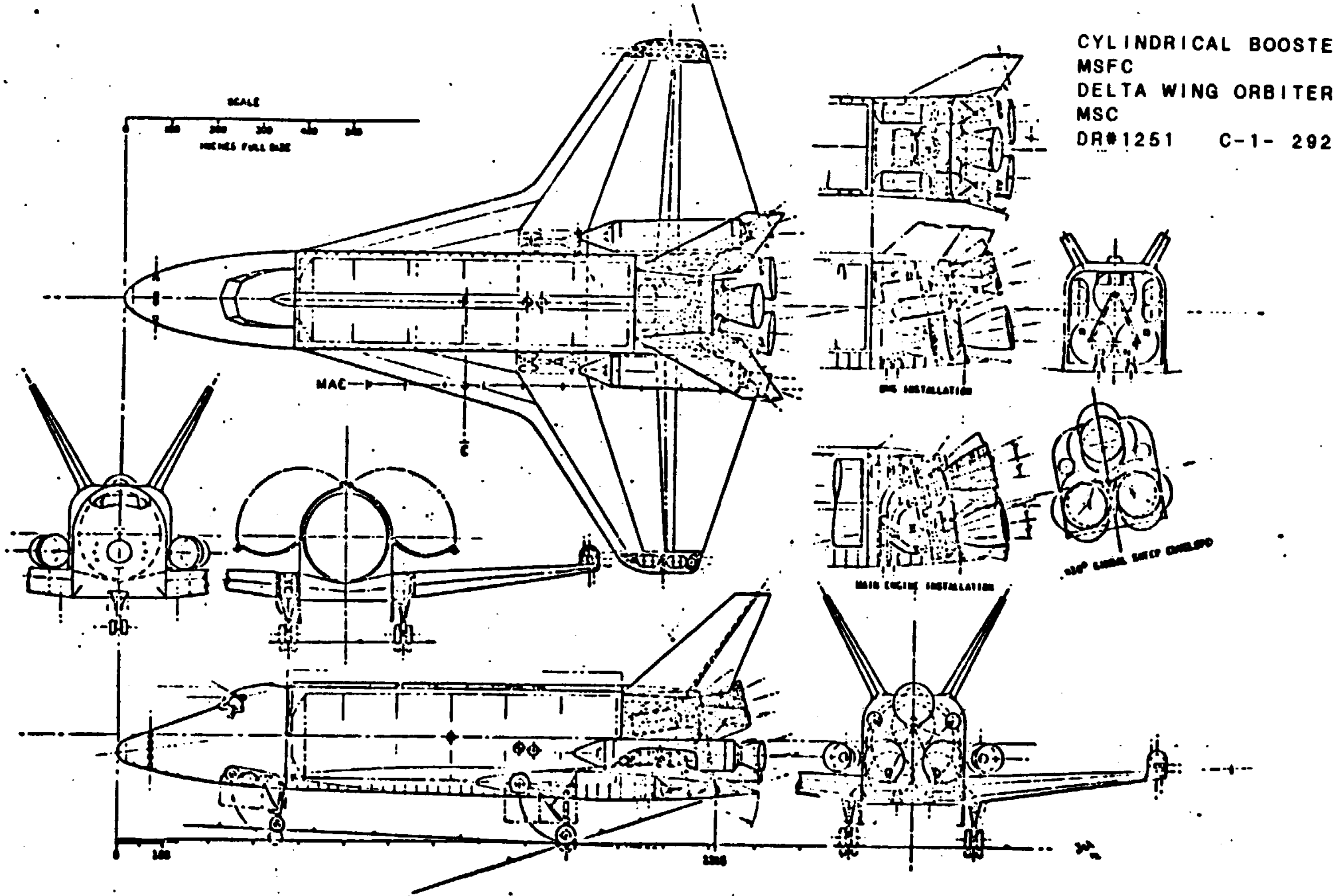

FIGURE 3. Orbiter Configuration

2

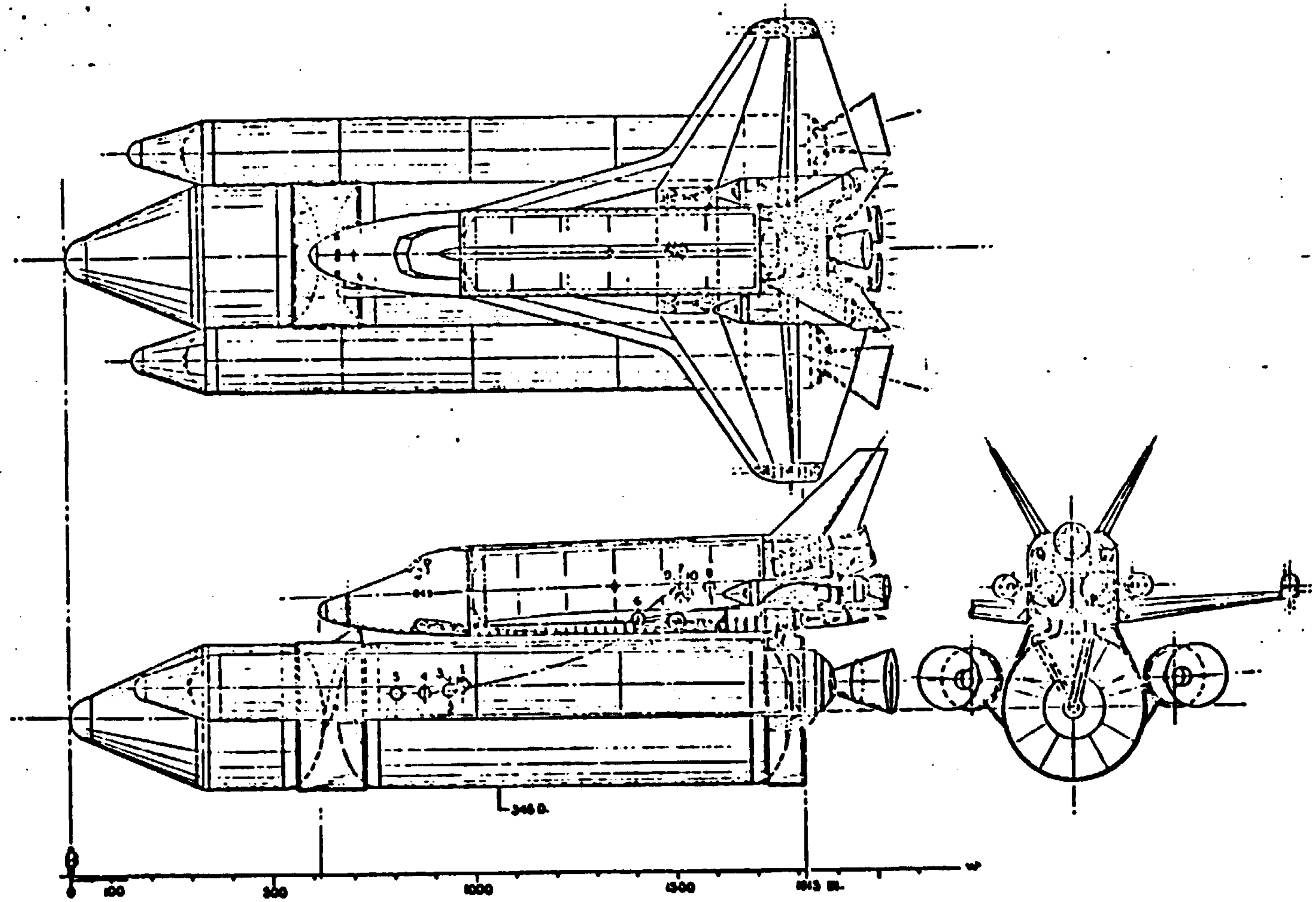

FIGURE 2. Orbiter Configuration With 156 SRM Parallel

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1251 C-1- 291

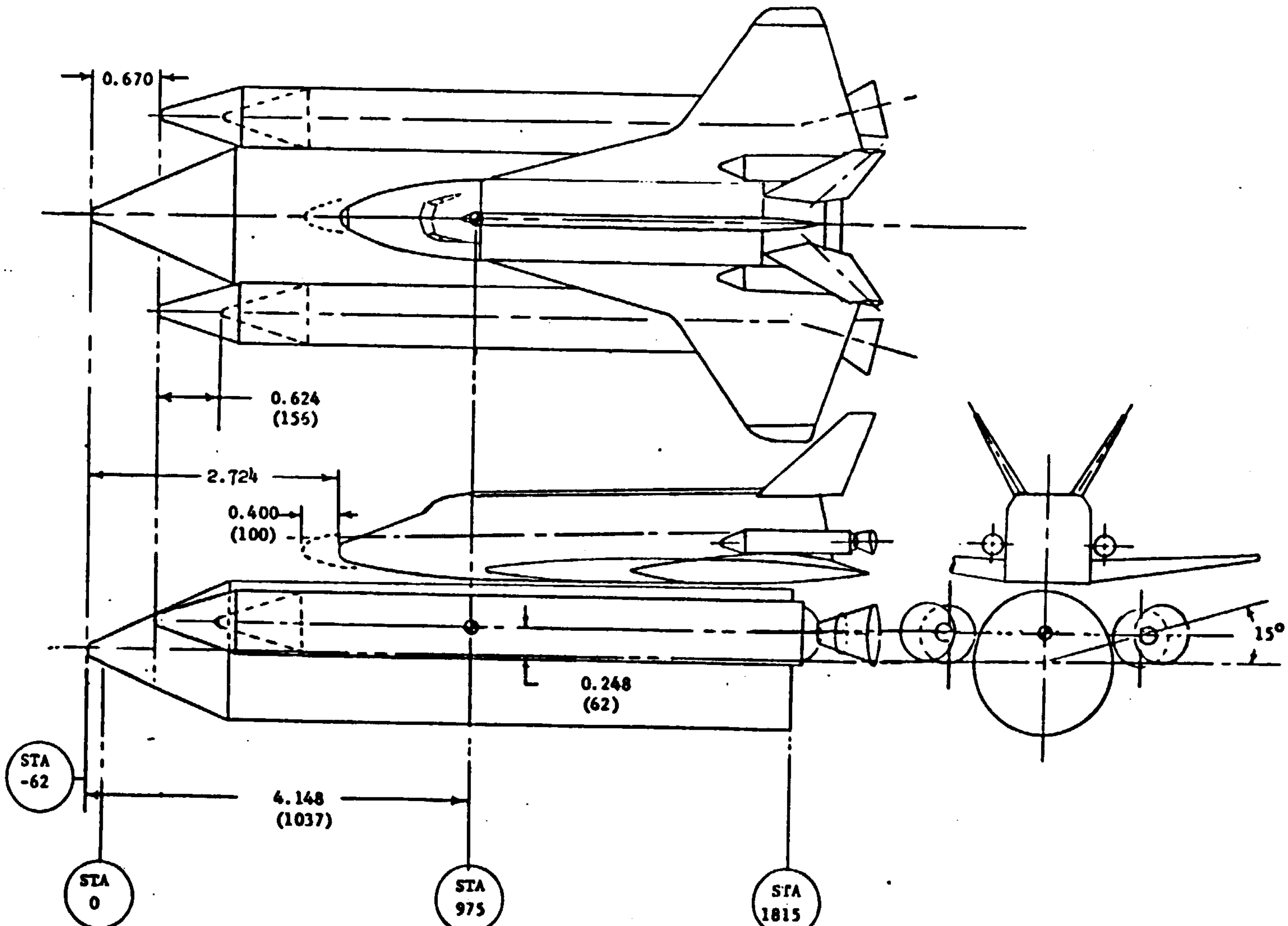

FIGURE 4. MOMENT REFERENCE CENTER AND LOCATIONS OF O1, O2, S1, S3

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1251 C-1- 293

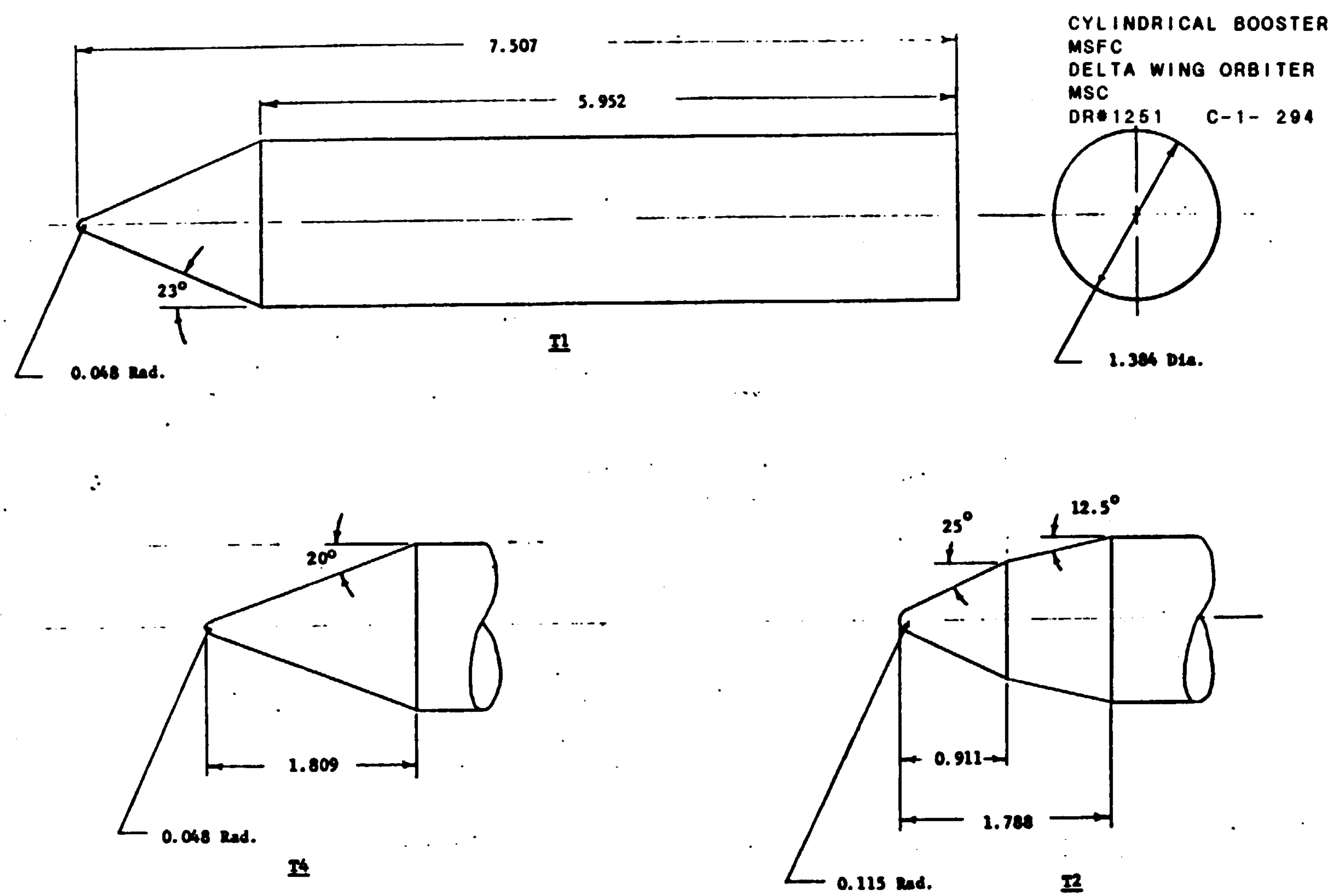

FIGURE 5. HYDROGEN - OXYGEN TANKS T1, T2, and T4

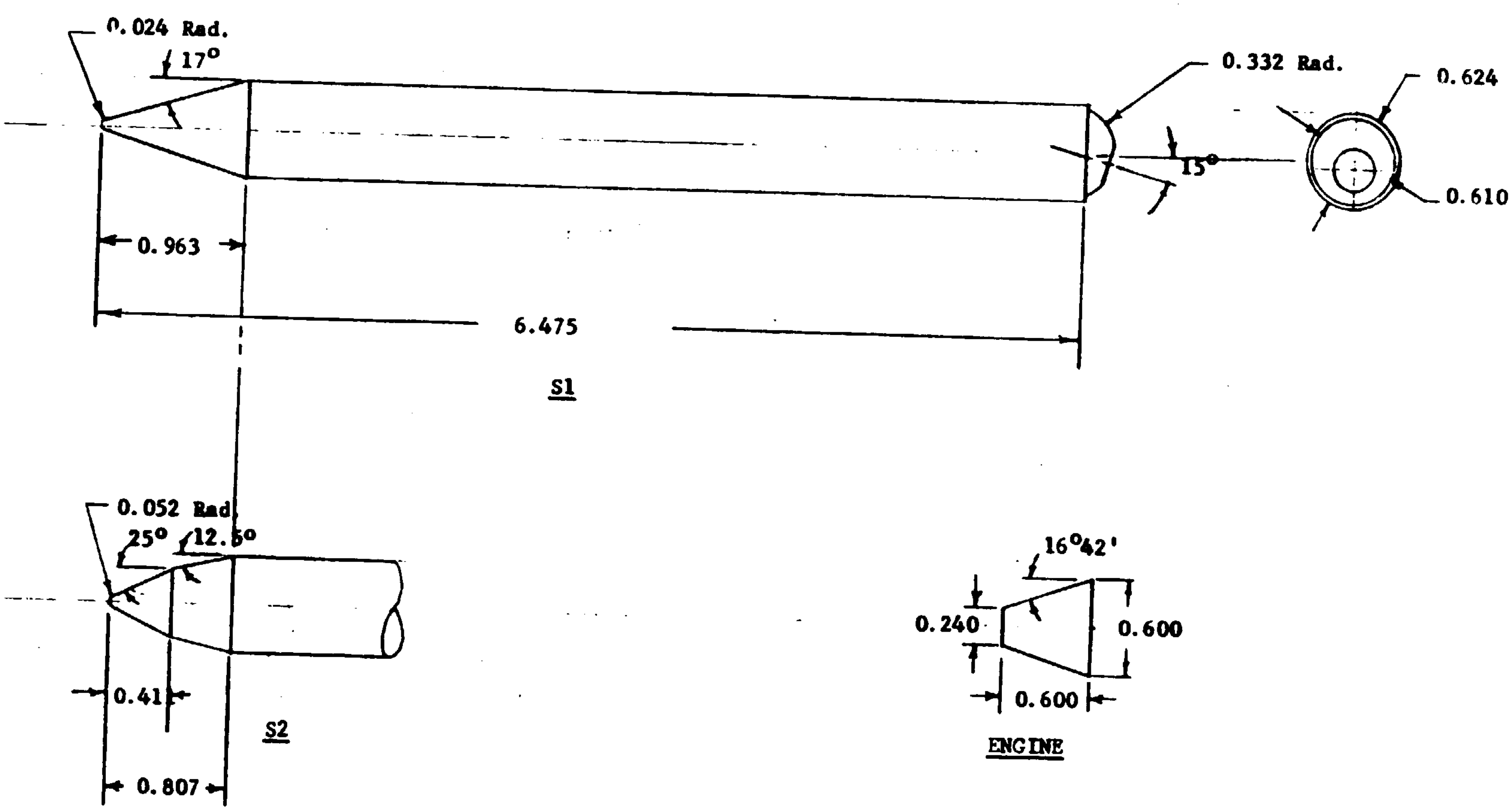

FIGURE 6. SOLID ROCKET MOTORS S1 and S2

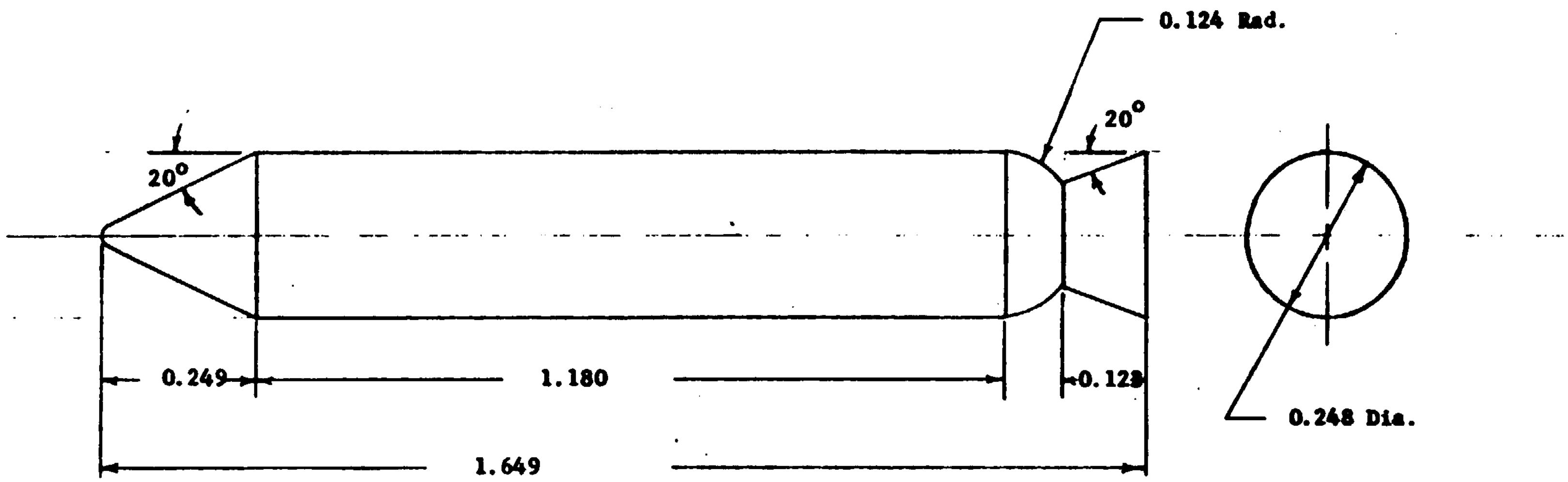

FIGURE 7. ABORT ROCKET MOTOR R1

TABLE II. TEST UPWT 981 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{EL}	δ_{ER}	δ_R	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2.3	2.96	3.95	4.62
RØH001	B,C,D,M,P,W,V,TR	0	B	0	0	0		1	8	12	13
02	↓	A	0	0	0	0		2	6	10	14
03		A	-3	0	0	0		3	7	11	15
04		A	0	0	-10	0		17	19	21	23
05		A	-3	0	-10	0		18	20	22	24
06		A	0	0	-20	0		25	27	29	31
07		A	-3	0	-20	0		26	28	30	32
08		A	0	10	-20	0		33	35	37	39
09		A	-3	10	-20	0		34	36	38	40
10		A	0	10	-10	0		41	43	44	46
11		A	-3	10	-10	0		42		45	47
12	B,C,D,M,P,W,V_2TR	A	0	10	-10	0		48	50	52	54
13	↓	A	-3	10	-10	0		49	51	53	55
14		A	0	10	-10	10		56	57	58	59
15		A	0	10	-10	20		60	61	62	63
16		A	0	10	-20	0		64	66	68	70
17		A	-3	10	-20	0		65	67	69	71
18		A	0	0	-20	0		72	74	76	78
19		A	-3	0	-20	0		73	75	77	79
20		A	0	0	0	0		80	82	84	86
21		A	-3	0	0	0		81	83	85	87

TEST RUN NUMBERS

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:
α or β SCHEDULES
A) -2, 0, 2, 4, 6, 8, 10 degrees
B) -8, -6, -4, -2, 0, 2, 4, 6 degrees

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1265 C-1- 297

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1265 C-1- 298

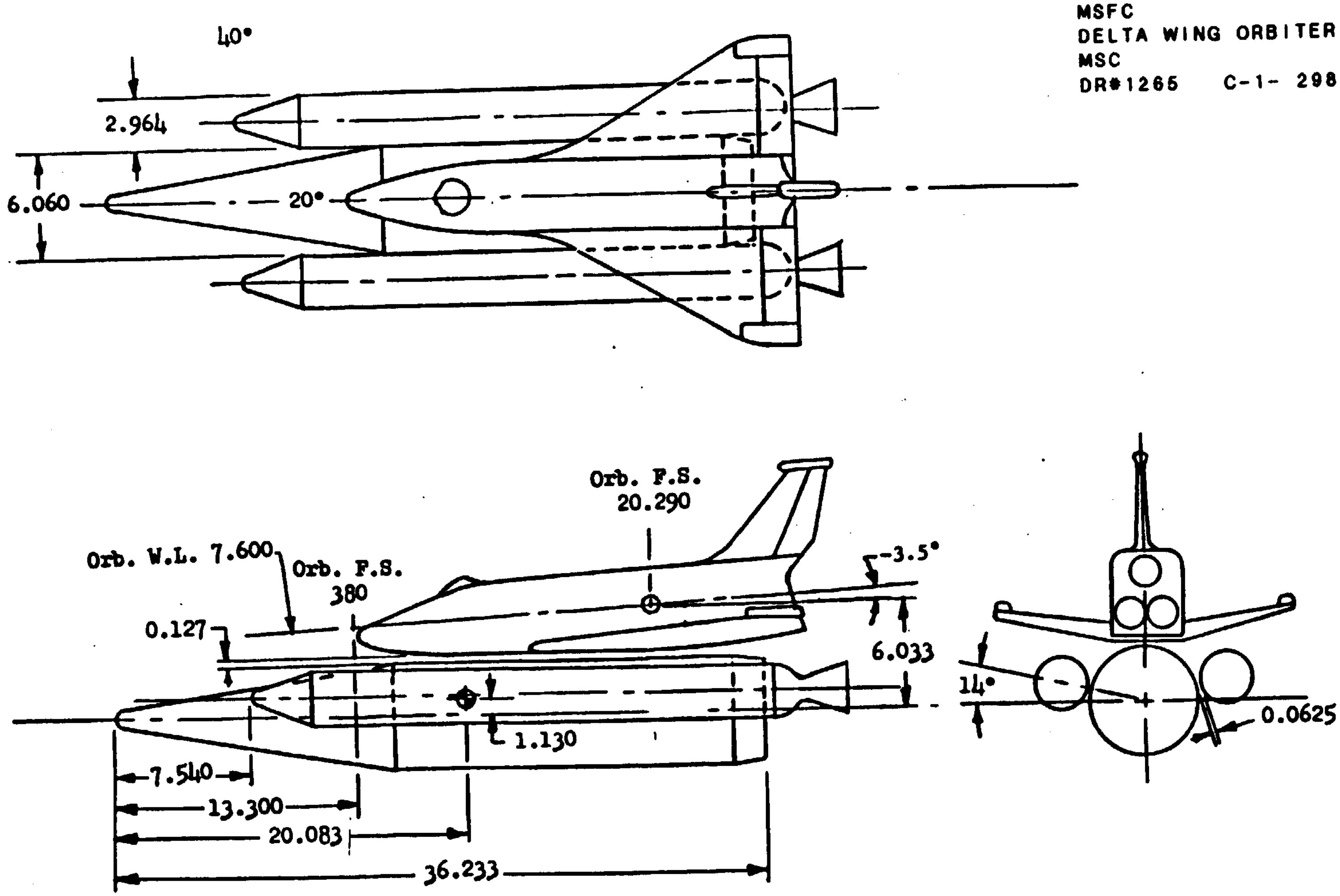

Figure 2.- Complete launch vehicle model, $B_1C_1D_1M_1P_1W_1V_1TR$. Dimensions are in inches.

ORIGINAL PAGE IS
OF POOR QUALITY

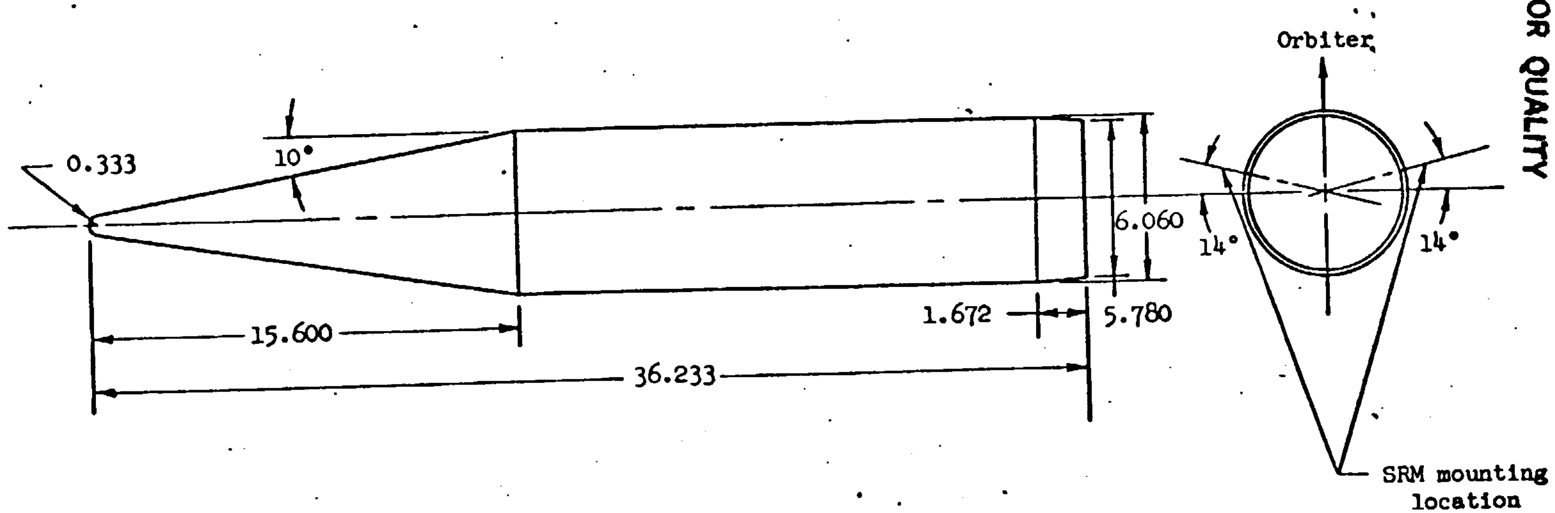

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Figure 3.- HO tank, T . Dimensions are in inches.

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1265 C-1- 299

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1265 C-1- 300

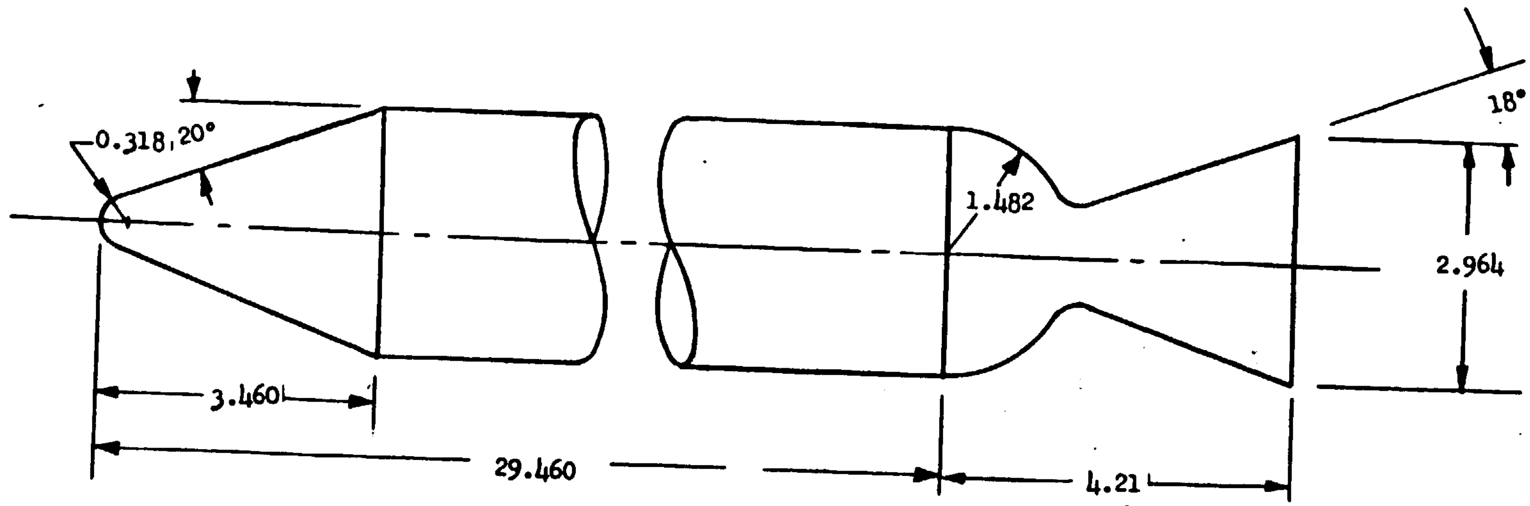


Figure 4.- SRM model, R. Dimensions are in inches.

TABLE III

TEST 9 x 7-629 / 11 - 629 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_a	δ_R	RN/L	NO. of RUNS	0.8	1.2	1.4	1.6	2.2
RBC001	$O_1 T_o S_1$	A	0	0	0	0	4.0	1					1
002		-5	B					1					2
003		0	B					1					3
004		5	B					1					4
005		A	0					1				5	
007		0	B					1				7	
008		5	B					1				8	
009		A	0	0	10	0	4.0	1					9
010		0	B					1					10
011		5	B					1					11
012		-5	B					1					12
013		A	0					1				13	
014		0	B					1				14	
015		5	B					1				15	
016		-5	B					1				16	
017		A	0	10	0	10	4.0	1				17	
018		0	B					1				18	
019		5	B					1				19	
020		-5	B					1				20	

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 301

TABLE III (Continued)

TEST ______________ DATA SET/RUN NUMBER

COLLATION SUMMARY

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 302

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_a	δ_R	RN/L	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.8	1.2	1.4	1.6	2.2
021	O_1 T_o S_1	A	0	10	0	10	4.0	1					21
022		0	B					1					22
023		5	B					1					23
024		-5	B					1					24
025		-5	B	0	0	0	4.0	1				25	
026	O_1 T_o S_1 + PLUMES	A	0				1.2	1				26	
027		A	0				2.4	1				27	
028		A	0				4.0	1				28	
029		0	B				4.0	1				29	
030		5	B				4.0	1				30	
031		-5	B				4.0	1				31	
032		A	0	0	10	0	4.0	1				32	
033		0	B					1				33	
034		5	B					1				34	
035		-5	B					1				35	
036		A	0	10	0	10	4.0	1				36	
037		0	B					1				37	
038		5	B					1				38	
039		-5	B					1				39	

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

NASA-MSFC-MAF

TABLE III (Continued)

TEST ______ DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_a	δ_R	RN/L	NO. of RUNS	0.8	1.2	1.4	1.6	2.2							
040	0_1 T_o S_1 PLUMES	A	0	10	0	10	4.0	1					40							
041		0	B					1					41							
042		5	B					1					42							
043		-5	B					1					43							
044		A	0	0	10	0	4.0	1					44							
045		0	B					1					45							
046		5	B					1					46							
047		-5	B					1					47							
048		A	0	0	0	0	1.2	1					48							
049		A	0				2.4	1					49							
050		A	0				4.0	1					50							
051		0	B					1					51							
052		5	B					1					52							
053		-5	B					1					53							

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: ______

α or β
SCHEDULES ______

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 303

TABLE III(Continued)

TEST ______________ DATA SET/RUN NUMBER

COLLATION SUMMARY

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 304

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_a	δ_R	RN/L	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.8	1.2	1.4	1.6	2.2
054	$0_1 T_o S_1$	A	0	0	0	0	5.5	1			54		
055		A	0				3.6	1			55		
056		A	0				2.5	1			56		
057		A	0				6.5	1		57			
058		A	0				3.9	1		58			
059		-5	C				6.5	1		59			
060		-5	C				5.5	1			60		
061		A	0				7.0	1	61				
062		-5	C				7.0	1	62				
063		A	0				3.2	1	63				
064		A	0				2.1	1	64				
065		A	0				2.7	1		65			
066		A	0	0	10	0	5.5	1			66		
067		-5	C				5.5	1			67		
068		A	0				2.5	1			68		
069		A	0				2.7	1		69			
070		A	0				6.5	1		70			
071		-5	C				2.7	1		71			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

NASA-MSFC-MAF

TABLE III(Continued)

TEST ______________ DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_a	δ_R	RN/L	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.8	1.2	1.4	1.6	2.2
072	0_1 T_0 S_1	A	0	0	10	0	2.1	1	72				
073		A	0				7.0	1	73				
074		-5	C				7.0	1	74				
075		-5	C				2.5	1			75		
076		A	0	10	0	10	5.5	1			76		
077		A	0				6.5	1		77			
078		A	0				2.7	1		78			
079		-5	C				2.7	1		79			
080		A	0				7.0	1	80				
081		A	0				2.1	1	81				
082		A	0				2.5	1			82		
083		-5	C				2.5	1			83		
084		-5	C				7.0	1	84				
085	0_1 T_0 S_1 + PLUMES	A	0	0	0	0	6.5	1		85			
086		A	0				3.9	1		86			
087		A	0				2.7	1		87			
088		-5	C				2.7	1		88			
089		A	0	0	10	0	6.5	1		89			
090		A	0				2.7	1		90			
091		-5	C				2.7	1		91			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 305

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 306

TABLE III (Continued)

TEST ____________ DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_a	δ_R	RN/L	NO. of RUNS	0.8	1.2	1.4	1.6	2.2
092	$0_1 T_o S_1$ + PLUMES	A	0	10	0	10	6.5	1		92			
093		A	0				2.7	1		93			
094		-5	C				2.7	1		94			
095	$0_1 T_o S_1+(M_\infty=0.8)$ PLUMES	A	0				6.5	1		95			
096	$0_1 T_o S_1$ + PLUMES	A	0				7.0	1	96				
097		-5	C				7.0	1	97				
098		A	0				2.1	1	98				
099		A	0	0	10	0	7.0	1	99				
100		-5	C				7.0	1	100				
101		A	0				2.1	1	101				
102		A	0	0	0	0	7.0	1	102				
103		-5	C				7.0	1	103				
104		A	0				3.2	1	104				
105		A	0				2.1	1	105				
106	$0_1 T_o S_1+(M_\infty=0.8)$ PLUMES	A	0				6.5	1		106			
107	$0_1 T_o S_1$ + PLUMES	A	0				5.5	1			107		
108		A	0				3.6	1			108		
109		A	0				2.5	1			109		
110		-5	C				2.5	1			110		
111	$0_1 T_o\ _1+(M_\infty=1.4)$ PLUMES	A	0				6.5	1			111		

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

NASA-MSFC-MAF

TABLE III (Concluded)

TEST ____________ DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)				
		α	β	δ_e	δ_a	δ_R	RN/L		0.8	1.2	1.4	1.6	2.2
112	$0_1 T_o S_1$ + PLUMES	A	0	0	10	0	5.5	1			112		
113	↓	A	0	↓	↓	↓	2.5	1			113		
114	↓	-5	C	↓	↓	↓	2.5	1			114		
115	$0_1 T_o S_1 + (M_\infty = 1.4)$ PLUMES	A	0	10	0	10	6.5	1		115			
116	$0_1 T_o S_1$ + PLUMES	A	0	↓	↓	↓	5.5	1			116		
117	↓	A	0	↓	↓	↓	2.5	1			117		
118	↓	A	0	↓	↓	↓	2.5	1			118		
119	↓	-5	C	↓	↓	↓	2.5	1			119		
120	$0_1 T_o S_1 + (M_\infty = 1.4)$ Orbiter Plumes ONLY	A	0	↓	↓	↓	6.5	1		120			
121	↓	A	0	↓	↓	↓	5.5	1			121		
122	↓	0	B	↓	↓	↓	2.5	1			122		

TEST RUN NUMBERS

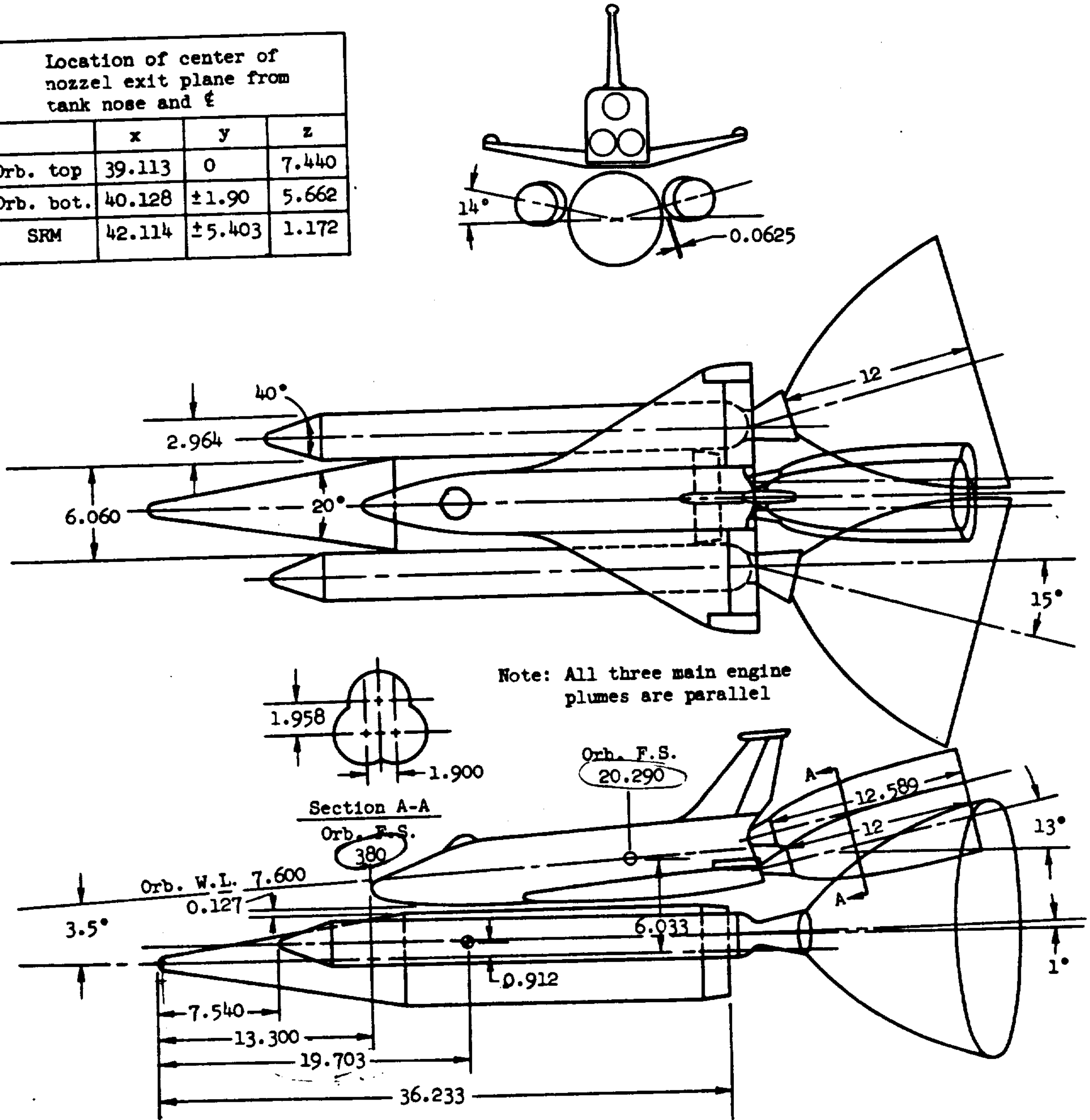
1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 307

Location of center of nozzel exit plane from tank nose and ℄			
	x	y	z
Orb. top	39.113	0	7.440
Orb. bot.	40.128	±1.90	5.662
SRM	42.114	±5.403	1.172



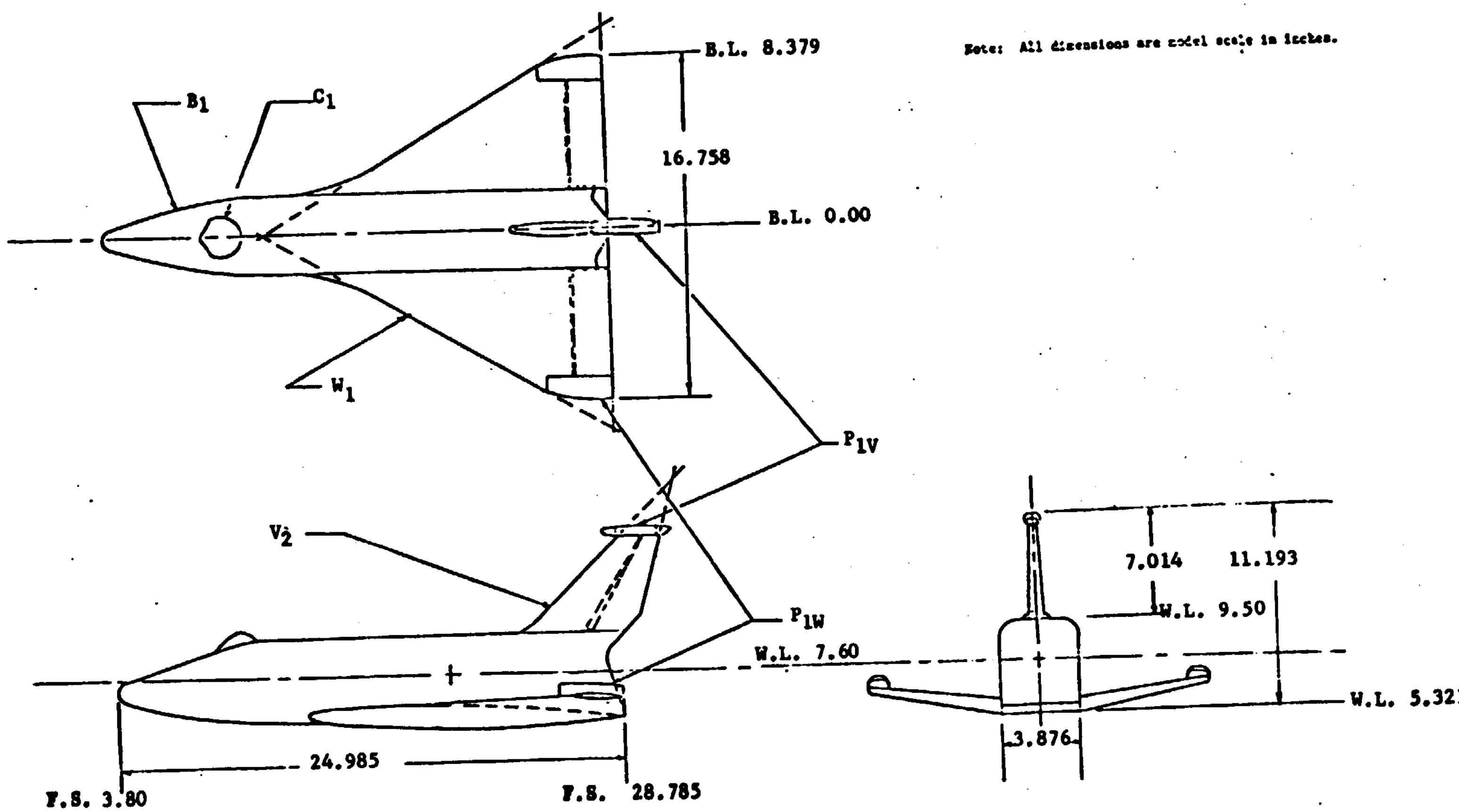
(a) General arrangement

Figure 2.- Model description.

Note: All dimensions are model scale in inches.

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 308

Note: All dimensions are model scale in inches.

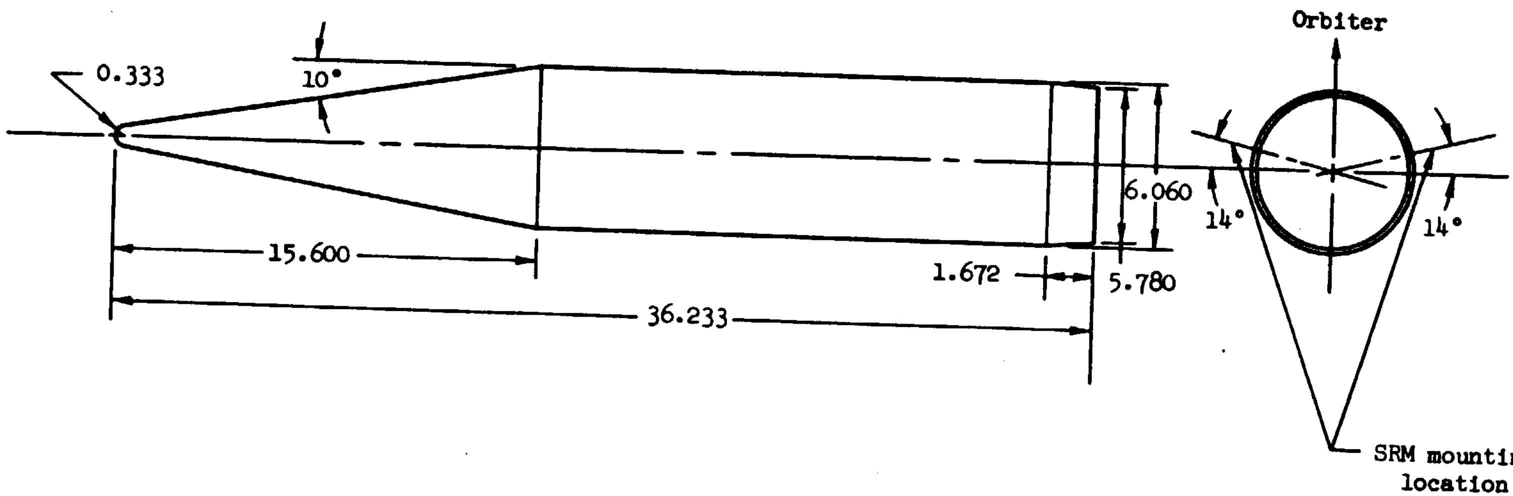


(b) Orbiter

Figure 2.- Continued.

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 309

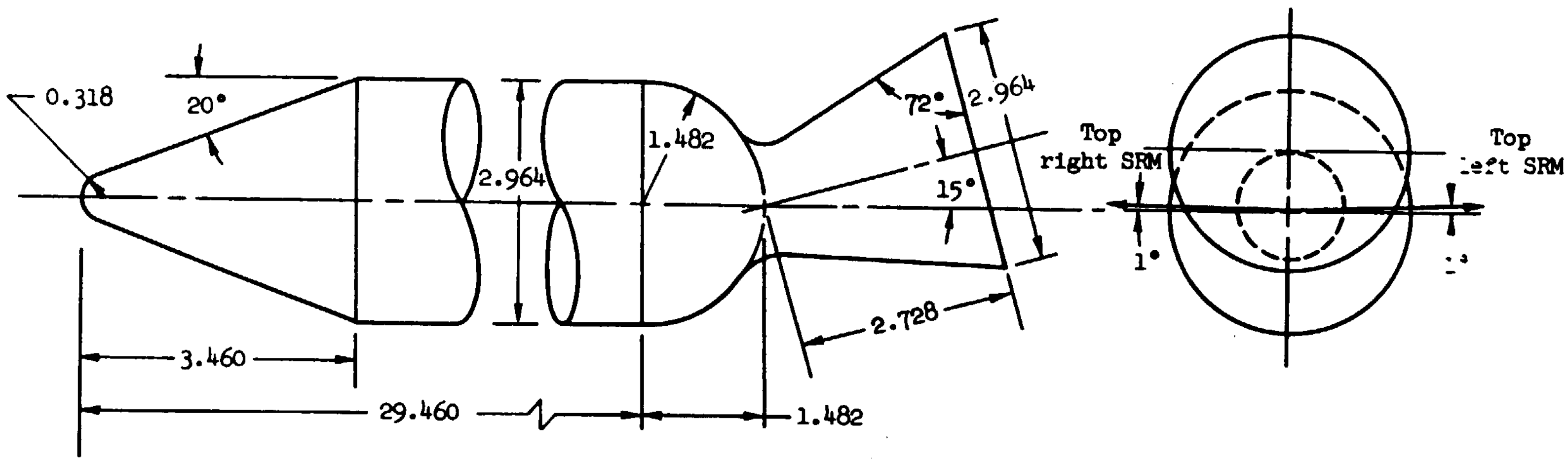
Note: All dimensions are model scale in inches.



(j) Hydrogen/Oxygen tank, T_o

Figure 2.- Continued.

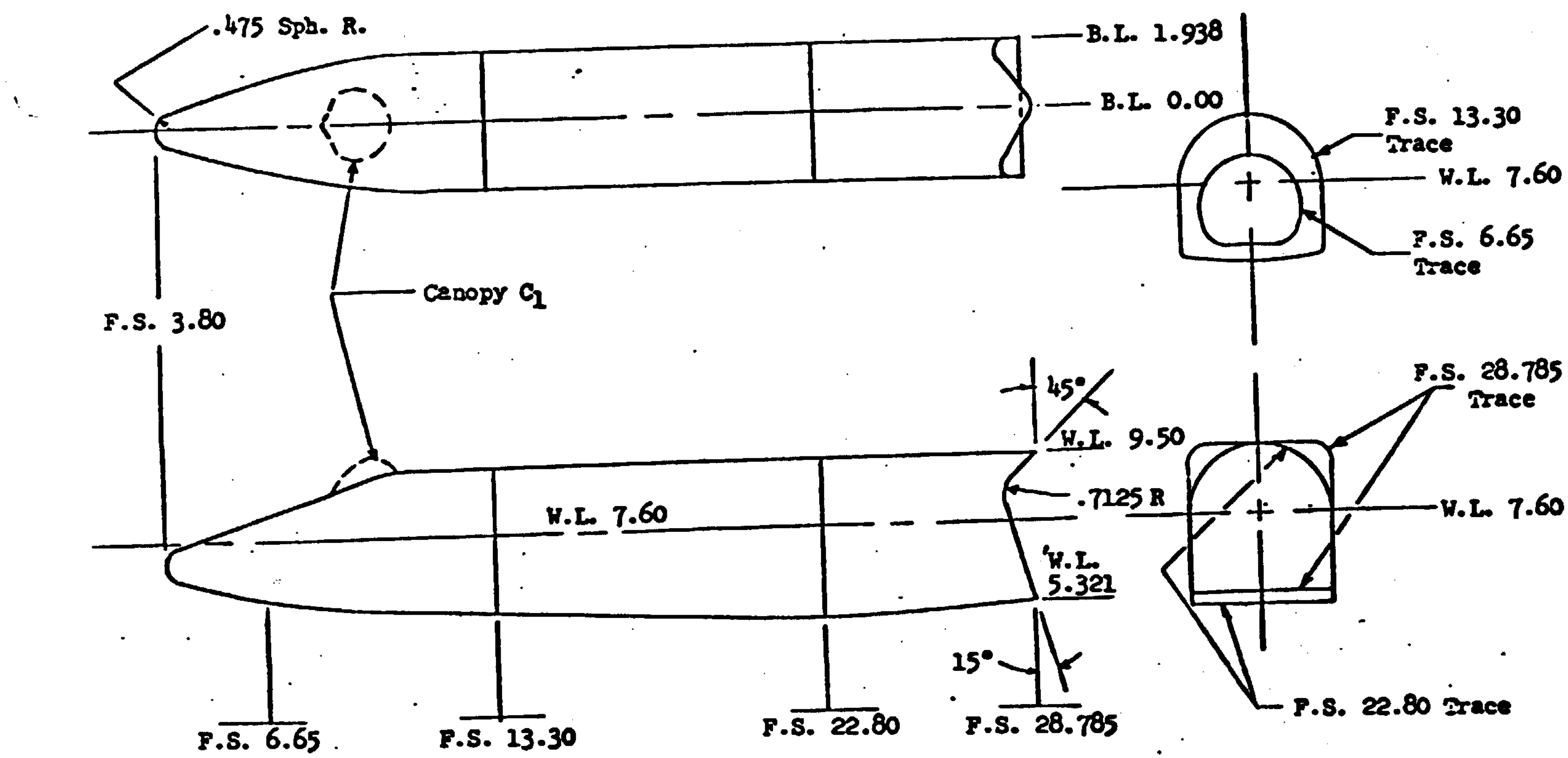
Note: All dimensions are model scale in inches.



(k) Solid rocket motor, S_1

Figure 2.- Continued.

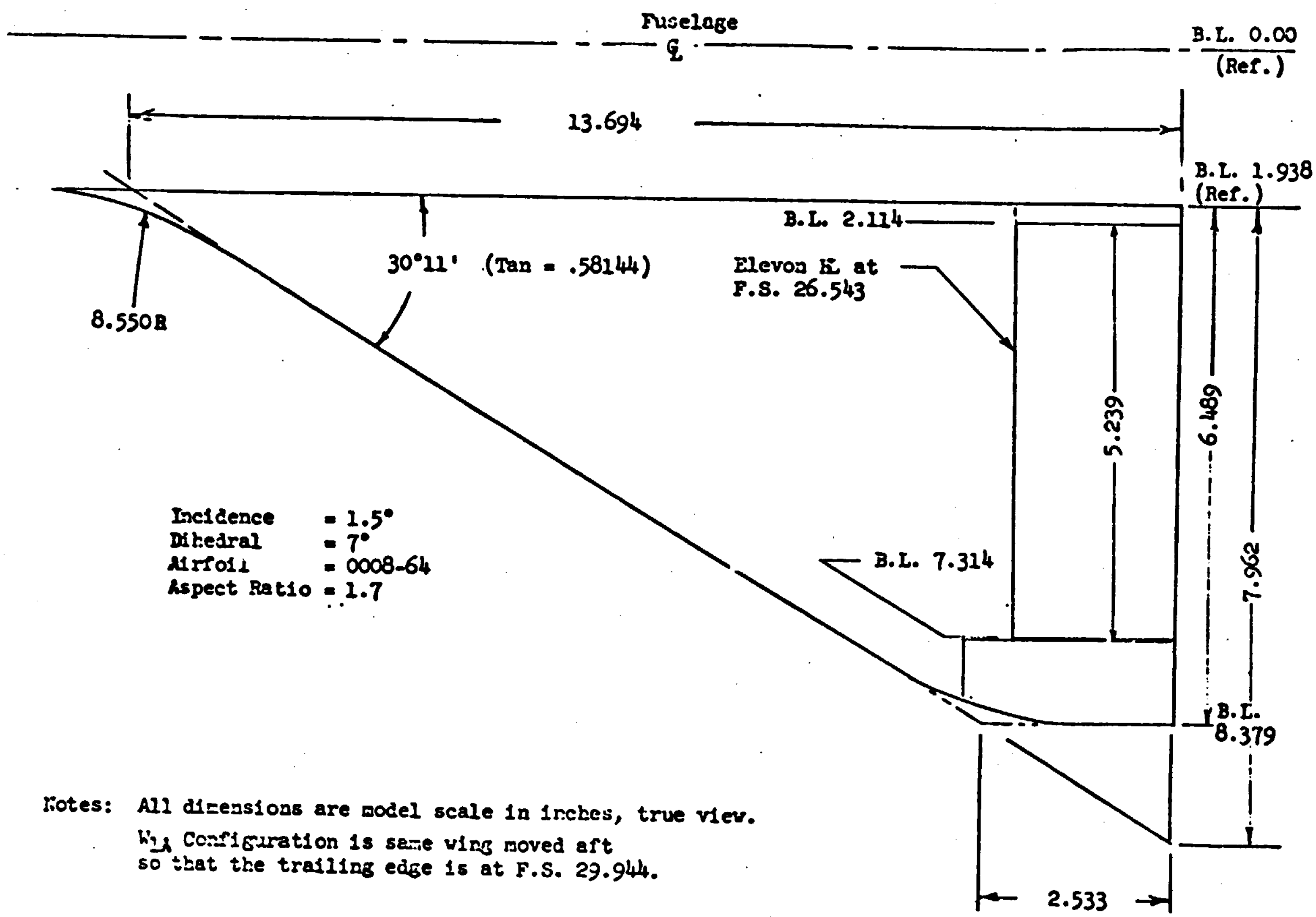
CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 312



Note: All dimensions are model scale in inches.

(c) Orbiter body, B_1

Figure 2.- Continued.



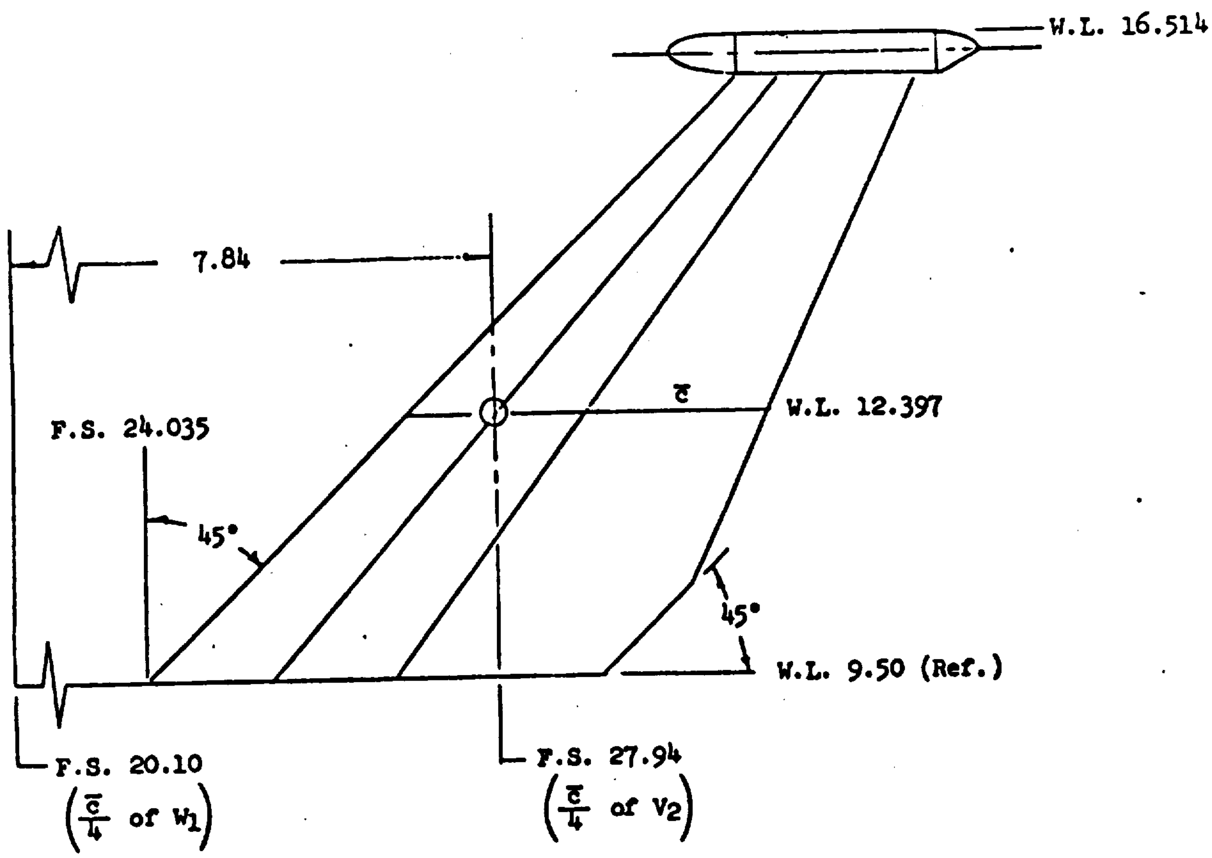
Notes: All dimensions are model scale in inches, true view.
W_{1A} Configuration is same wing moved aft so that the trailing edge is at F.S. 29.944.

(d) Orbiter Wing, W_1

Figure 2.- Continued.

CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 313

S_V = .173 ft.^{2}	C_R = 5.472
b = 7.014 (0.585 ft.)	C_T = 1.717
$\bar{c}$ = 3.922 (0.327 ft.)	λ = 0.31
AR = 1.95	$\Lambda_{L.E.}$ = 45°

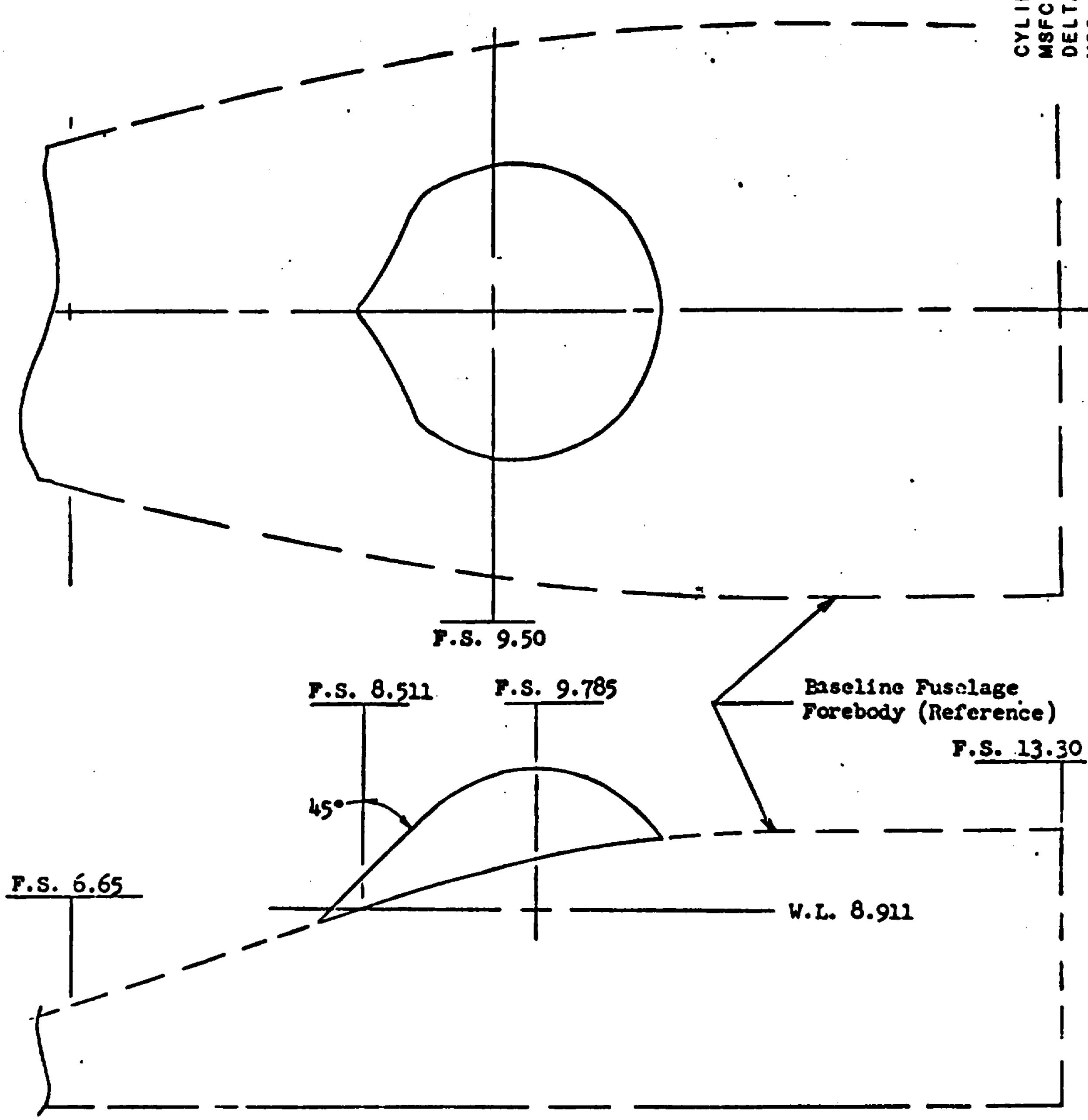


Note: All dimensions are model scale in inches.

(e) Orbiter vertical tail, V_2

Figure 2.- Continued.

Note: All dimensions are model scale in inches.

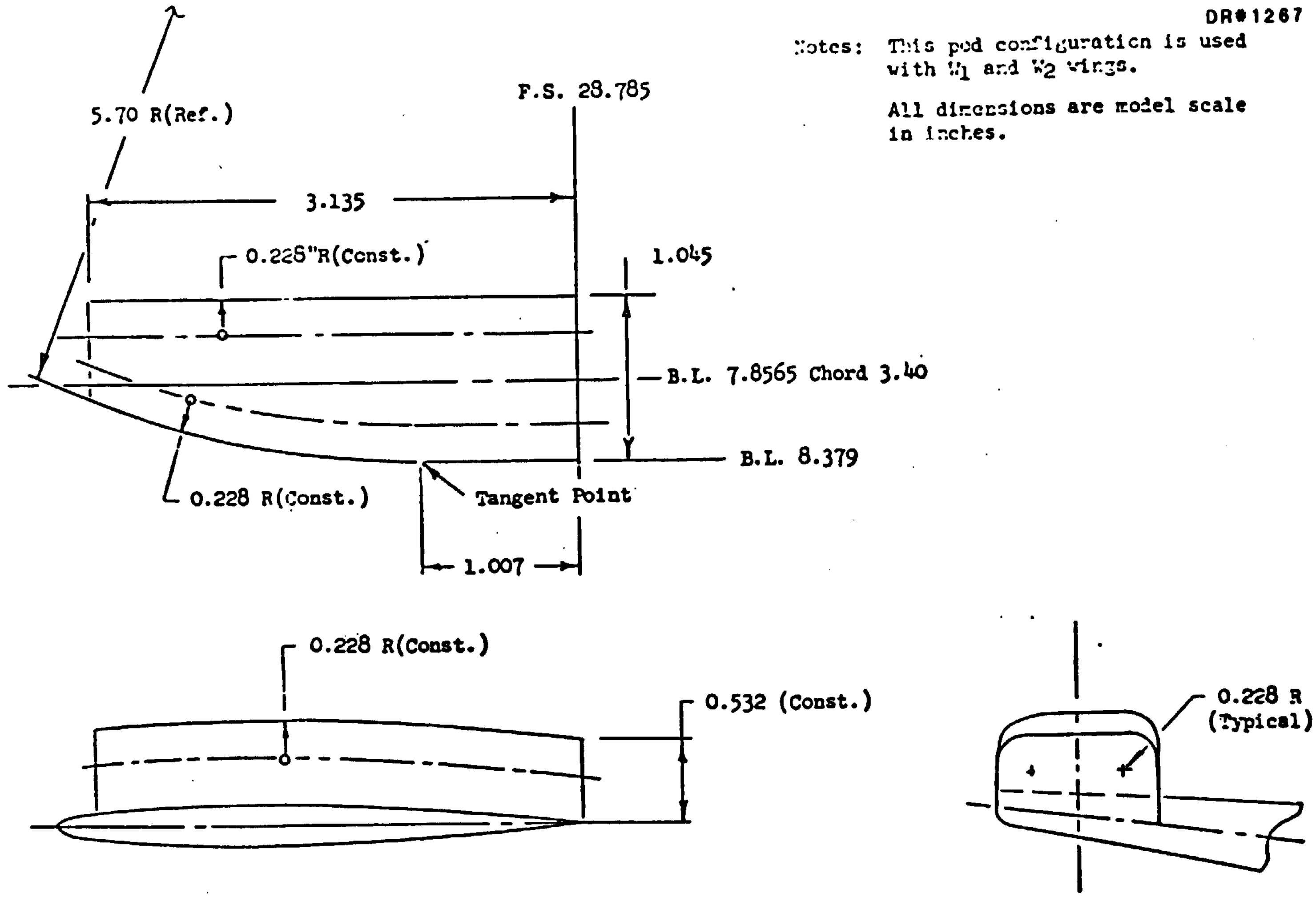


(f) Canopy, C_1

Figure 2.- Continued.

Notes: This pod configuration is used with W_1 and W_2 wings.

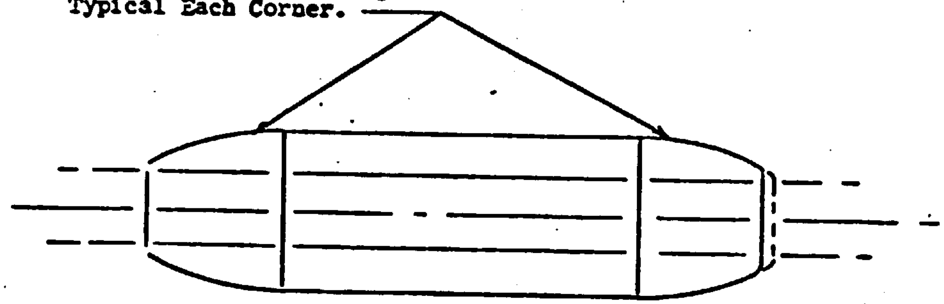
All dimensions are model scale in inches.



(g) Wing ACPS pods, P_{1W}

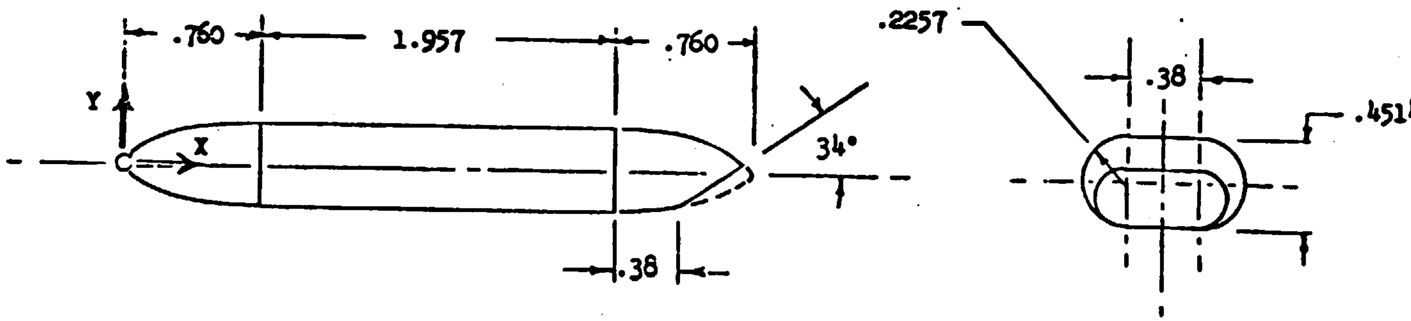
Figure 2.- Continued.

Note: All dimensions are model scale in inches.



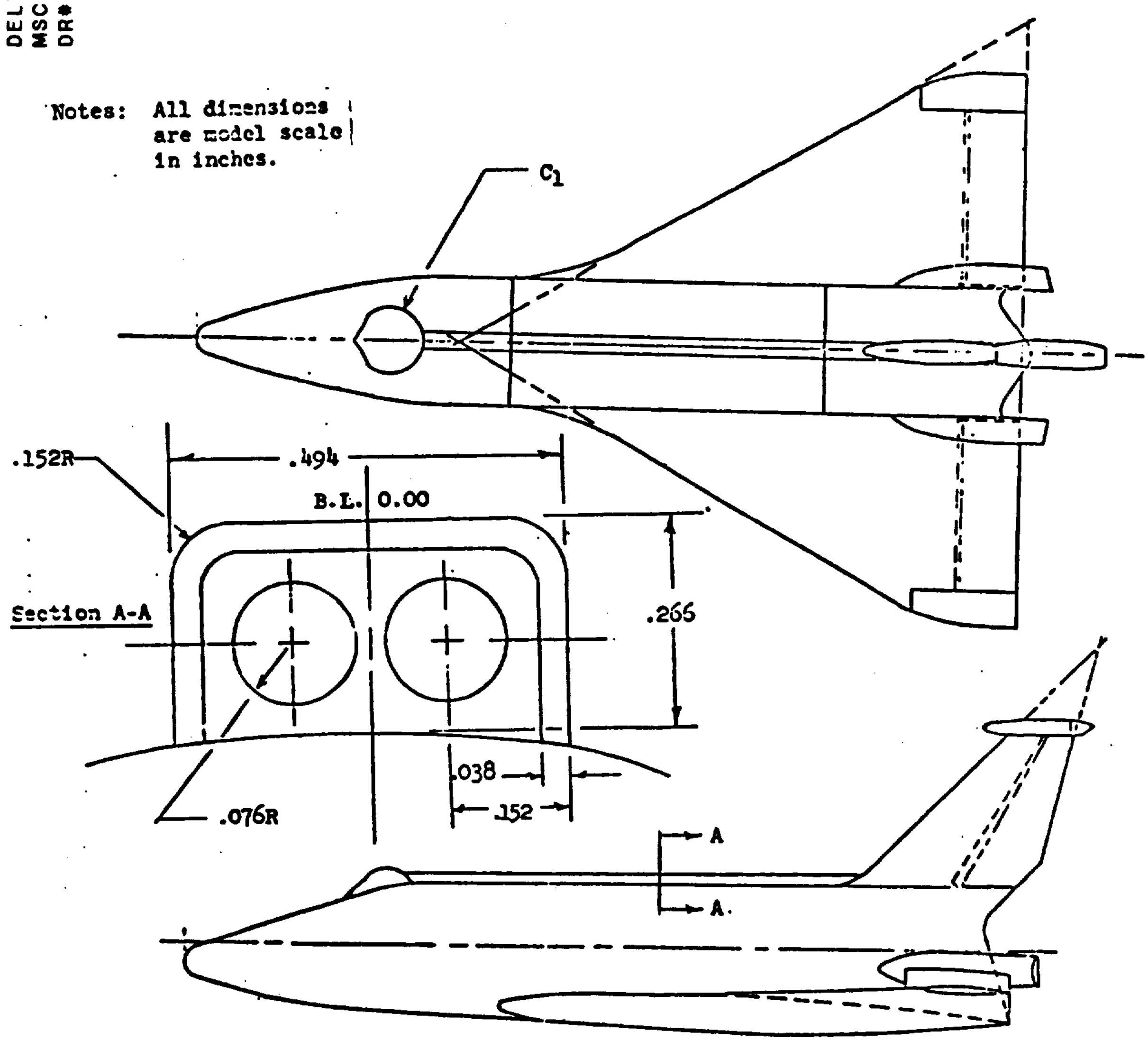
X Inches	Y Inches
0	0
0.0109	0.0352
0.0163	0.0430
0.0271	0.0556
0.0543	0.0779
0.1086	0.1094
0.1629	0.1331
0.2171	0.1522
0.3257	0.1812
0.4343	0.2018
0.5429	0.2157
0.6514	0.2235
0.7600	0.2257

L.E.Rad. = 0.0460



(h) Vertical tail ACPS pods, P_{1V}

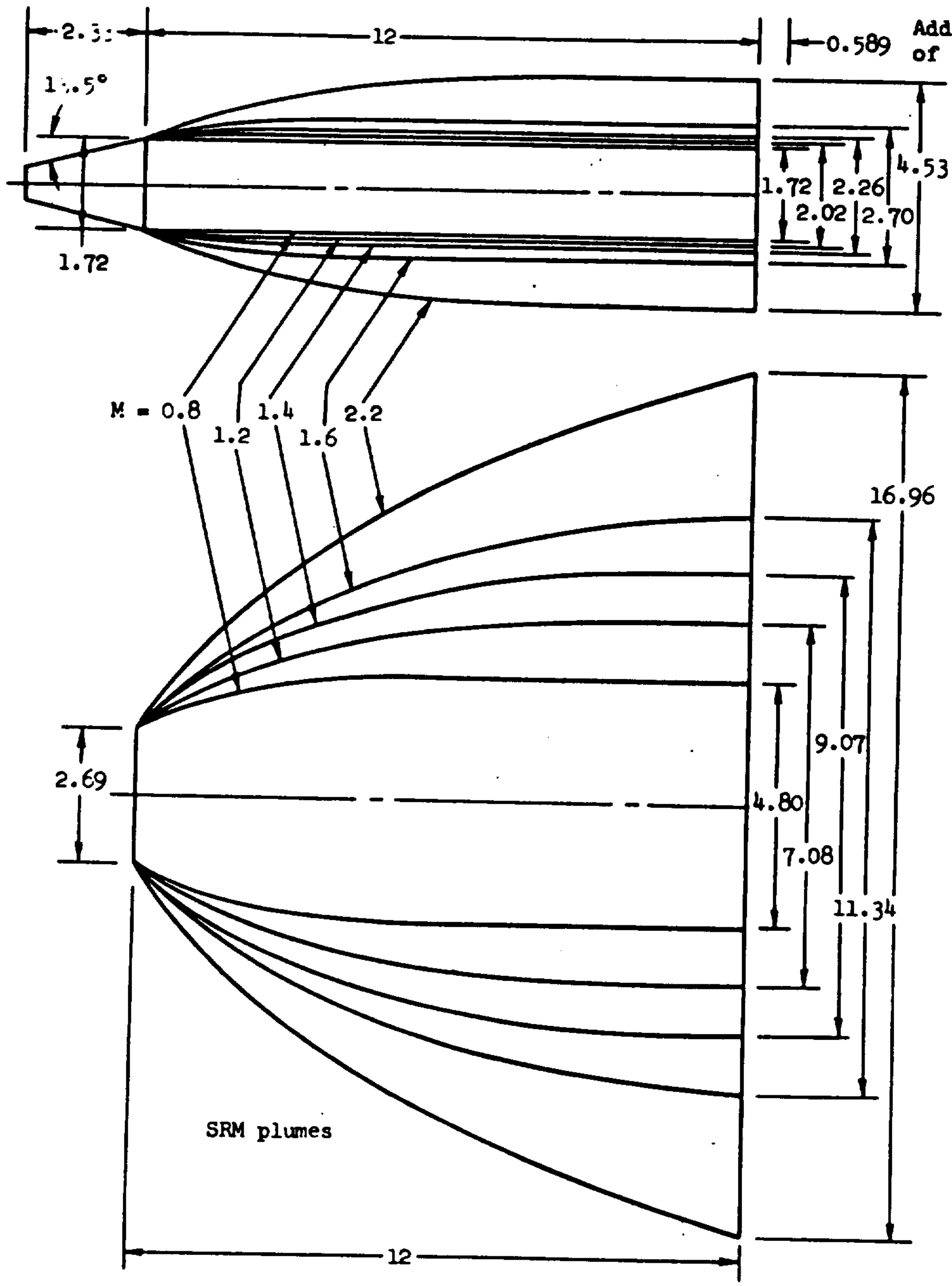
Figure 2.- Continued.



(i) Manipulator arm housing, D_1

Figure 2.- Continued.

Main engine plumes



CYLINDRICAL BOOSTER
MSFC
DELTA WING ORBITER
MSC
DR#1267 C-1- 319

(1) Rocket plumes

Figure 2.- Concluded.

Note: All dimensions are model scale in inches.

CYLINDRICAL BOOSTER
NR
DELTA WING ORBITER
NR
DR#1185 C-1- 320

TABLE I. TEST TWT-509 DATA SET COLLATION SHEET

Force- 110C ORIBTER ALONE AND ORBITER + BELLY TANK,
0.0044-SCALE

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION				NO. of FINS	MACH NUMBERS 0.6	0.9	1.2	1.96	2.99	4.96						
RE101A	B12W26E16V36	A	0					6	020/0	019/0	018/0	027/0	003/0	004/0						
01B	↓	B	↓					6	015/0	016/0	017/0	028/0	014/0	013/0						
01C	↓	C	↓					2					048/0	047/0						
02A	↓	A	-6					6	061/0	062/0	063/0	056/0	049/0	050/0						
03A	B13W26E16V36	A	0					6	032/0	031/0	030/0	041/0	006/0	005/0						
03B	↓	B	↓					6	027/0	028/0	029/0	042/0	007/0	008/0						
03C	↓	C	↓					2					044/0	043/0						
04A	B14K5W26E16V36	A	↓					6	021/0	022/0	023/0	040/0	011/0	012/0						
04B	↓	B	↓					6	026/0	025/0	024/0	039/0	010/0	009/0						
04C	↓	C	↓					2					045/0	046/0						
05A	↓	A	-6					6	060/0	059/0	058/0	057/0	052/0	051/0						
06A	B12W26E16V36+T2	↓	↓					6	066/0	065/0	064/0	055/0	053/0	054/0						
↓ 07A	↓	↓	0					6	033/0	034/0	035/0	036/0	002/0	001/0						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

L/D KLM KY KD KDB KSL KLN KL KPBI KN | 1 0

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

αA = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10
αB = 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
αC = 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60

SSV CONFIG. $B_{12}\,W_{26}\,E_{16}\,V_{36}$

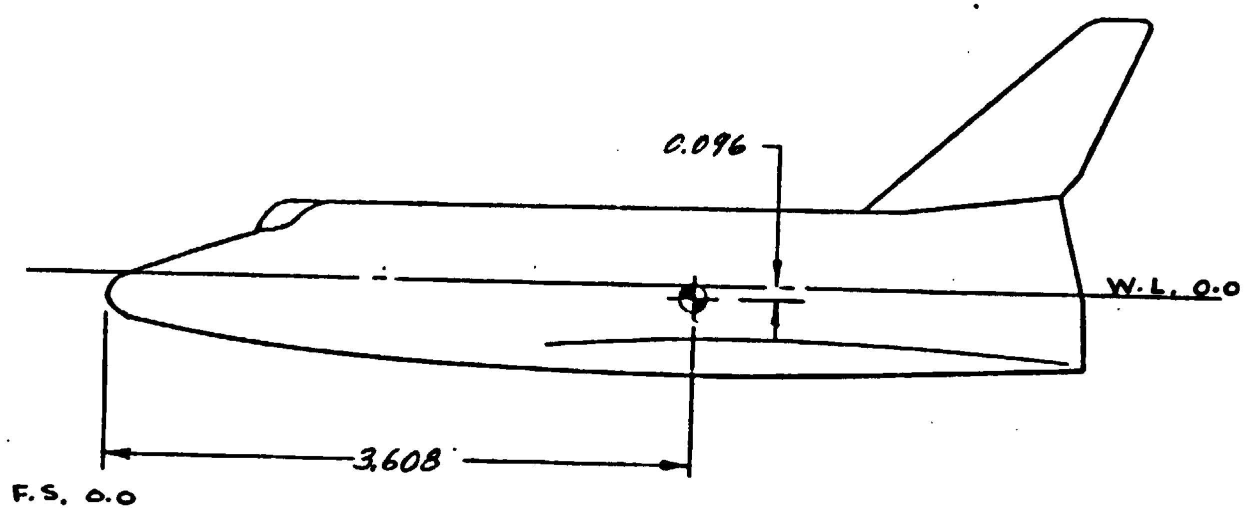


Figure D. LOCATION OF MOMENT REFERENCE POINT
1) Configuration $B_{12}W_{26}E_{16}V_{36}$

SSV CONFIG. $B_{13} W_{26} E_{16} V_{36}$

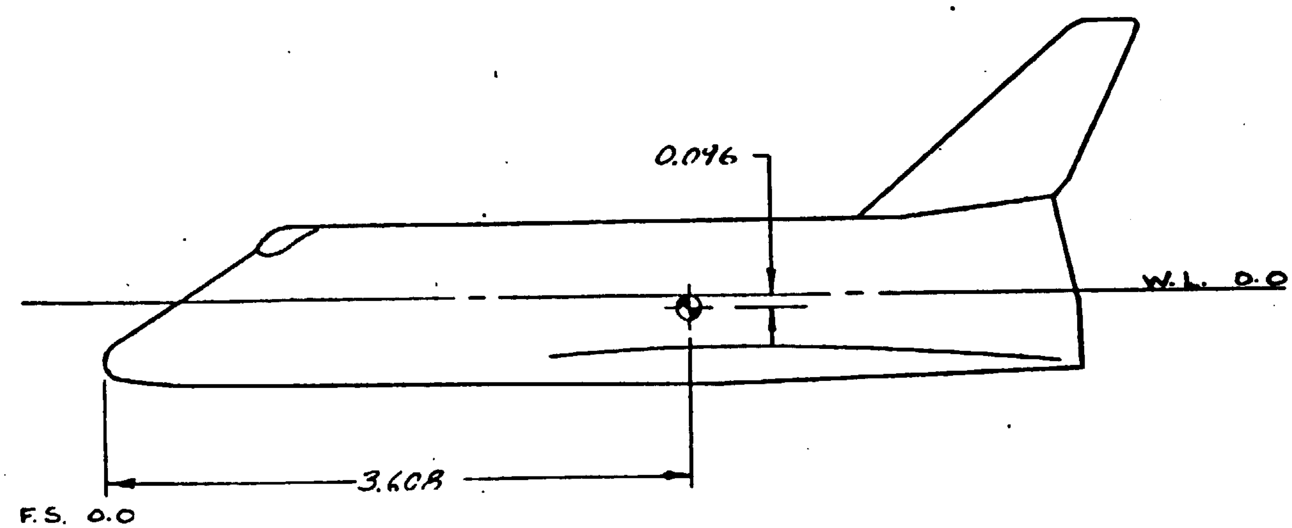


FIGURE D. LOCATION OF MOMENT REFERENCE POINT (Continued)
2) Configuration $B_{13}W_{26}E_{16}V_{36}$

SSV CONFIG. $B_{14} K_3 W_{26} E_{16} V_{36}$

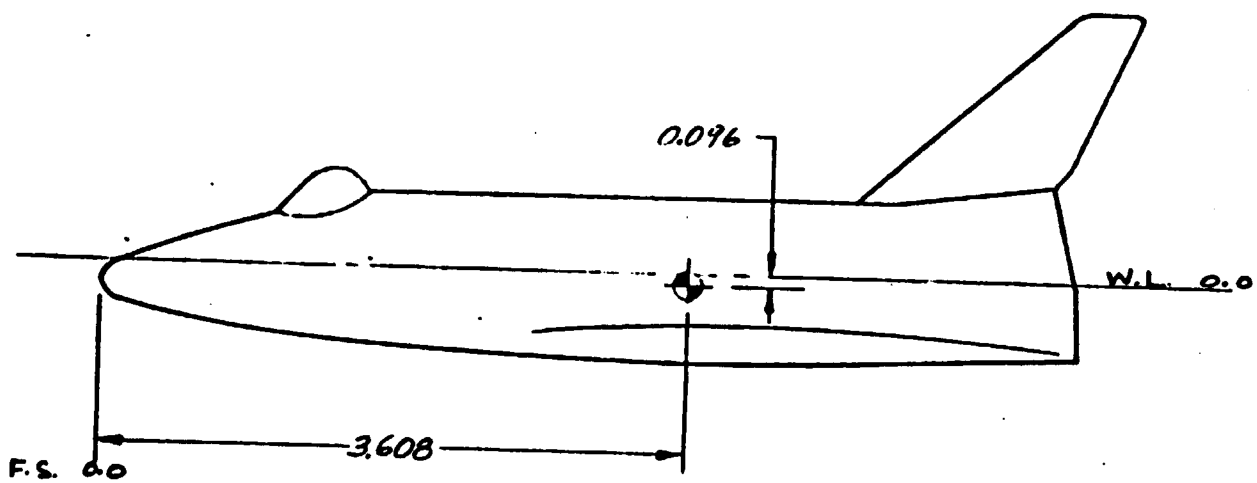


FIGURE D. LOCATION OF MOMENT REFERENCE POINT (Continued)
3) Configuration $B_{14}K_3W_{26}E_{16}V_{36}$

CYLINDRICAL BOOSTER
NR
DELTA WING ORBITER
NR
DR#1185 C-1- 324

SSV CONFIG. $B_{12} W_{26} E_{16} V_{36} + T_2$

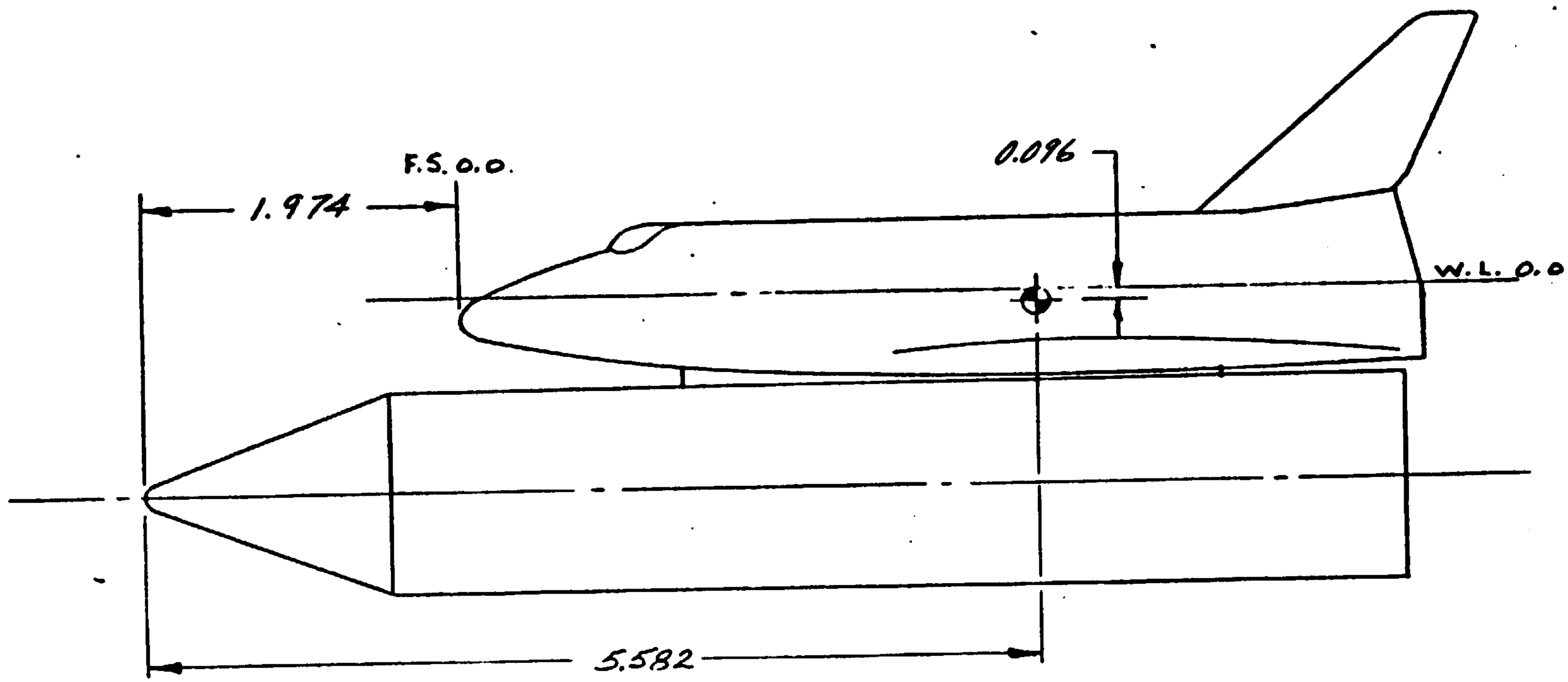


FIGURE D. LOCATION OF MOMENT REFERENCE POINT (Continued)
4) Configuration $B_{12}W_{26}E_{16}V_{36}+T_2$

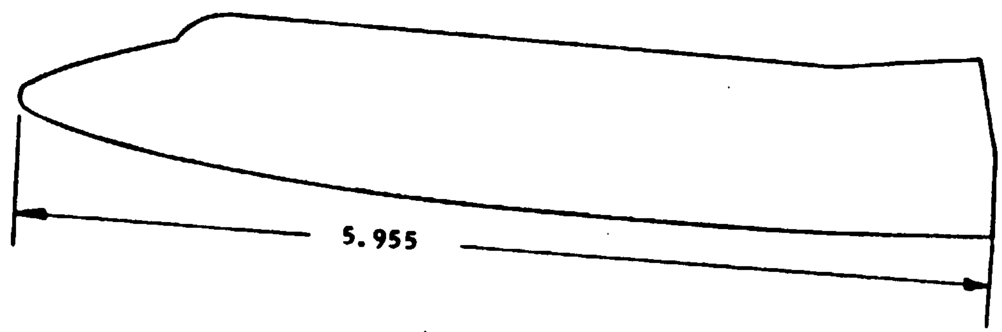


FIGURE E. BODY - B12

CYLINDRICAL BOOSTER
NR
DELTA WING ORBITER
NR
DR#1185 C-1- 326

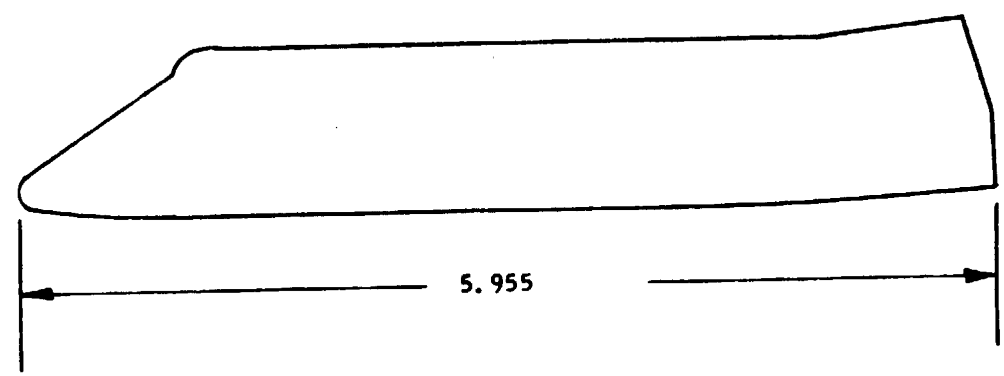


FIGURE F. BODY - B13

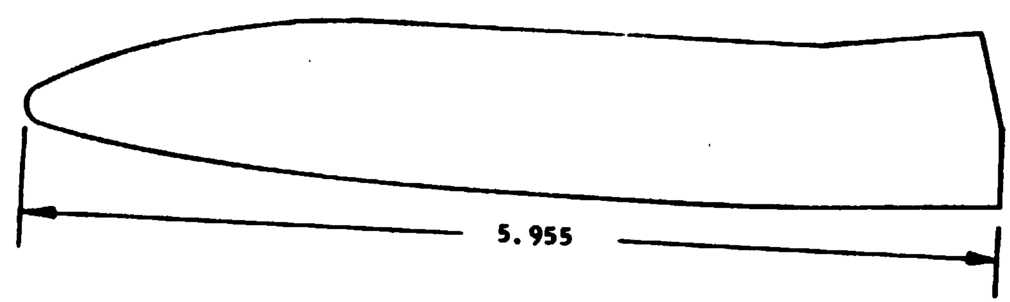


FIGURE G. BODY - B14

CYLINDRICAL BOOSTER
NR
DELTA WING ORBITER
NR
DR#1185 C-1- 327

CYLINDRICAL BOOSTER
NR
DELTA WING ORBITER
NR
DR#1185 C-1- 328

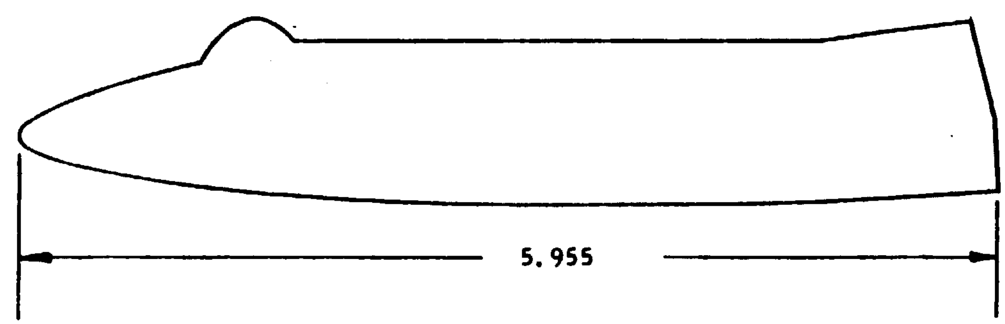


FIGURE H. **BODY - B14 + K3**

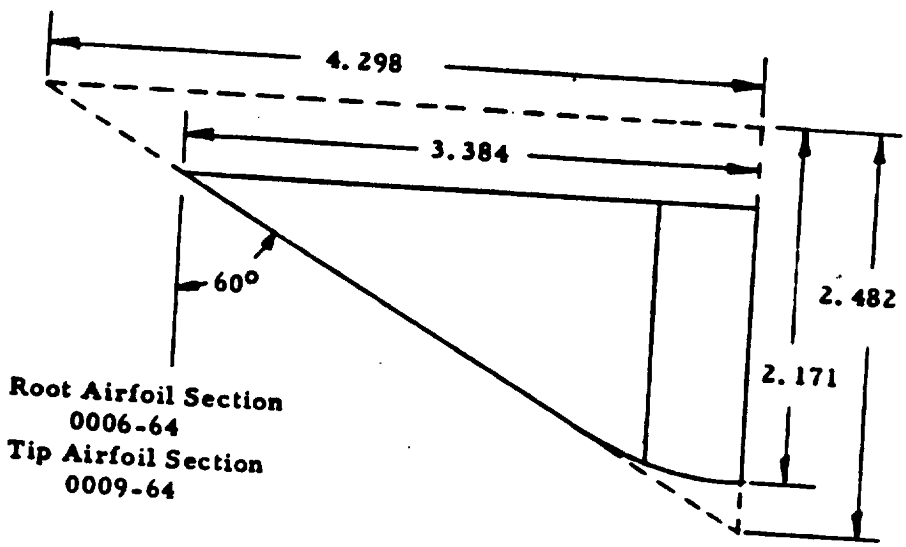


FIGURE I. WING - W26

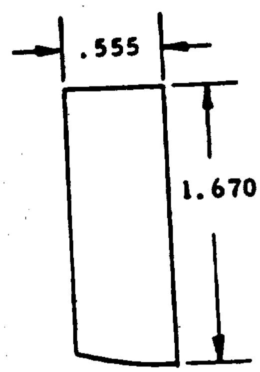


FIGURE J. ELEVON - E16

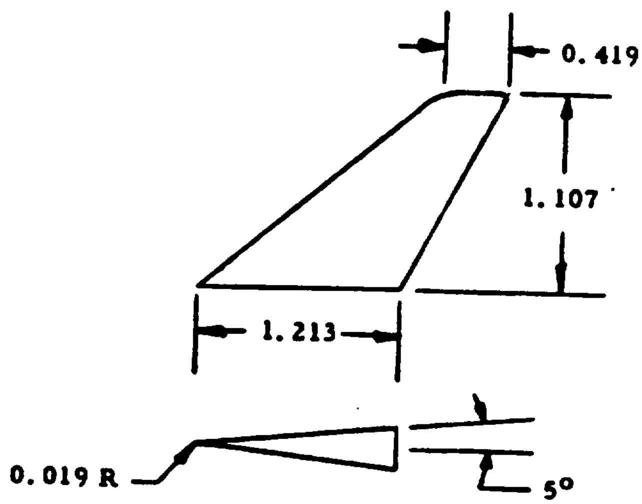


FIGURE K. VERTICAL TAIL - V36

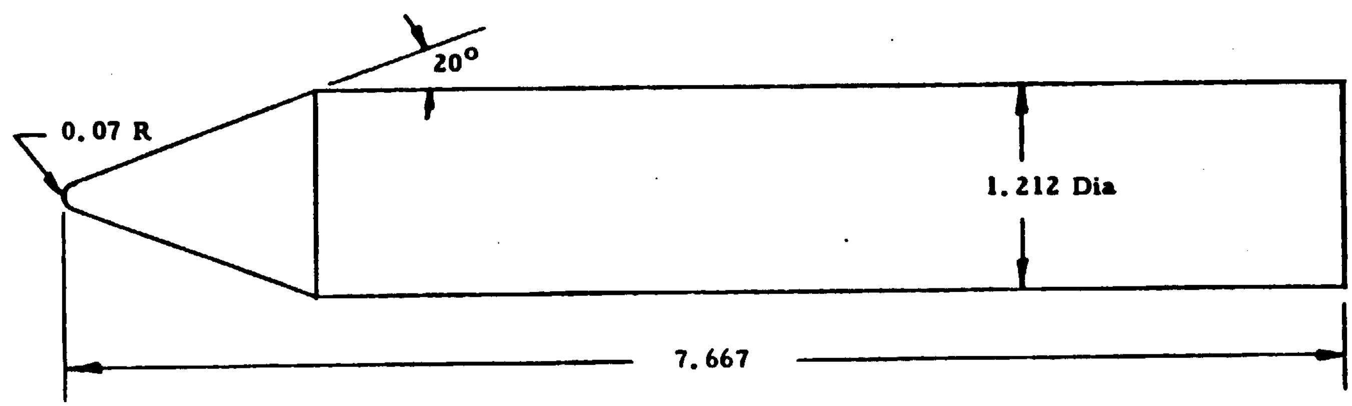


FIGURE L. TANK - T2

TABLE 1

ORIGINAL PAGE IS OF POOR QUALITY

TEST TWT #523 DATA SET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
				ζ_{SEP}					.6		.9		1.1		1.46		2.74		4.96	
R5705A	$B_5 \Phi_1^{-2} V_6$	A	0°	-2°							034/0		032/0		049/0					
05C	✓	0°	C								001/0		003/0		005/0					
07C	$B_5 \Phi_1^{-2} V_{6.2}$	✓	✓						033/0		003/0		003/0		003/0		095/0		096/0	
07A	✓	A	0°						061/0		033/0		037/0		059/0		098/0		013/0	
24A	$E_5 \Phi_1^{-2} P_1$	✓	✓												153/0					
06B	$B_5 \Phi_1^{-2} V_{6.1}$	0°	B								005/0		006/0							
08B	$B_5 \Phi_1^{-2} V_{6.3}$	✓	✓								008/0		007/0							
08A	✓	A	0°								121/0									
09A	$B_5 \Phi_1^{-2} V_{6.4}$	A	0°						056/0		030/0		031/0		077/0		091/0		092/0	
09C	✓	0°	C						057/0		009/0		010/0		076/0		090/0		089/0	
10C	$B_5 \Phi_1^{-2} V_7$	✓	✓						058/0		012/0		011/0		070/0		078/0		077/0	
24C	$B_5 \Phi_1^{-2} P_1$	✓	C												152					
03A	$B_5 \Phi_1^{-2}$	A	0°						038/0		037/0		036/0		081/0		086/0		085/0	
03C	✓	0°	C						013/0		014/0		015/0		080/0		087/0		084/0	
01A	B_5	A	0°						039/0		[illegible]/0		041/0		082/0		083/0		[illegible]/0	
13A	$B_5 V_6$	✓	✓								043/0		045/0		066/0					
13C	✓	0°	C								017/0		016/0		067/0					
14C	$B_5 V_{6.2}$	✓	✓								015/0		019/0		064/0					
14A	✓	A	0°								047/0		065/0		065/0					

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CAF	CAB	CPC	CL	CDF			1/2

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS; α or β SCHEDULES

$\alpha A = \alpha C = -10°, -8°, -6°, -4°, -2°, 0°, 2°, 4°, 6°, 8°, 10°$

$\beta B = -4°, -2°, 0°, 2°, 4°, 6°, 8°, 10°$

427

CYLINDRICAL BOOSTER
TBC
DELTA WING ORBITER
MSC
DR#1227 C-1- 333

CYLINDRICAL BOOSTER
TBC
DELTA WING ORBITER
MSC
DR#1227 C-1- 334

TABLE 1 (Continued)

TEST TWT #523 DATA SET COLLATION SHEET

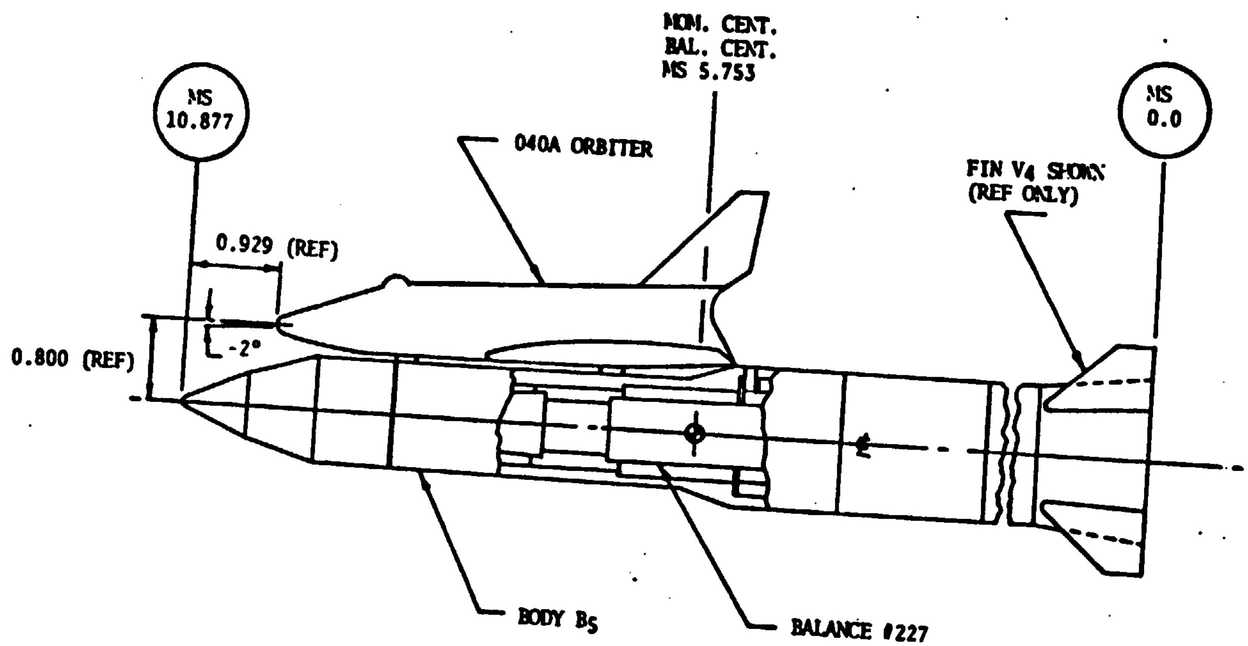
☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES $L_{?}$				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE): 0.6	0.9	1.1	1.46	2.74	4.96
357153	$B_5 V$ [illegible]	0°	3	—						021/0	020/0			
16C	$B_5 V_{6.4}$	✓	C	1						022/0	023/0	077/0		
16A	✓	A	0°	¦						022/0	046/0	078/0		
18A	$B_5 V_{7.2}$	✓	✓						048/0	049/0	050/0	073/0	103/0	104/0
17C	$B_5 V_7$	0°	C	1					029/0	025/0	053/0	071/0	107/0	105/0
19C	$B_5 \Phi_1^{-2} V_{7.2}$	0°	✓	-2					024/0	026/0	027/0	075/0	099/0	109/0
19A	✓	A	0°	✓					055/0	023/0	028/0	074/0	102/0	101/0
18C	$B_5 V_{7.2}$	0°	C	—					053/0	052/0	057/0	076/0	106/0	105/0
19G	$B_5 \Phi_1^{-2} V_{7.2}$	-6°	✓	-2					117/0	116/0	115/0	114/0	110/0	103/0
07G	$B_5 \Phi_1^{-2} V_{6.2}$	✓	✓	✓					11A/0	119/0	120/0	113/0	111/0	112/0
20C	$B_5 \Phi_2^{-2} V_{7.2}$	0°	✓	✓					134/0	135/0	136/0	144/0	143/0	142/0
21C	$B_5 \Phi_3^{-2} V_{7.2}$	✓	✓						133/0	138/0	137/0	145/0	140/0	141/0
12C	$B_6 \Phi_1^{-2} V_5$	0°	C	-2						125/0	124/0	150/0		
12A	✓	A	0°	¦						122/0	123/0	143/0		
11A	$B_6 \Phi_1^{-2} V_{3.3}$	✓	✓							129/0	128/0	148/0		
11C	✓	0°	C							126/0	127/0	147/0		
22C	$B_6 \Phi_2^{-2} V_{3.3}$	✓	✓							130/0	131/0	146/0		
23C	$B_6 \Phi_2^{-2} V_5$	✓	✓							133/0	132/0	151/0		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: SEE SHEET No. 1
α or β SCHEDULES

IDPVAR(1) | IDPVAR(2) | NDV



$S = 5.1478$ sq.in. (3155.3 sq.ft.)
$\ell_{LONG} = 4.426$ in. (109.58 ft)
$b_{LAT} = 2.969$ in. (73.5 ft)

FIGURE 2 - PRESSURE FED BOOSTER/040A ORBITER
0.003366 SCALE AX 1233 MODEL

CYLINDRICAL BOOSTER
TBC
DELTA WING ORBITER
MSC
DR#1227 C-1- 336

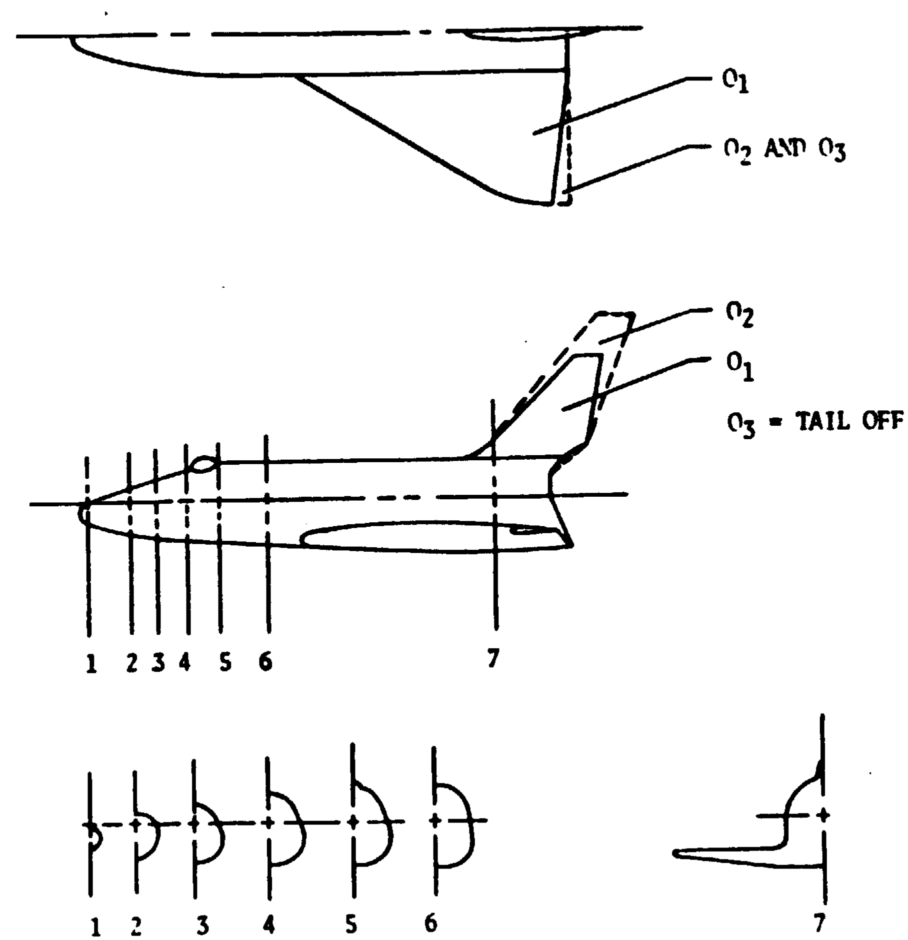
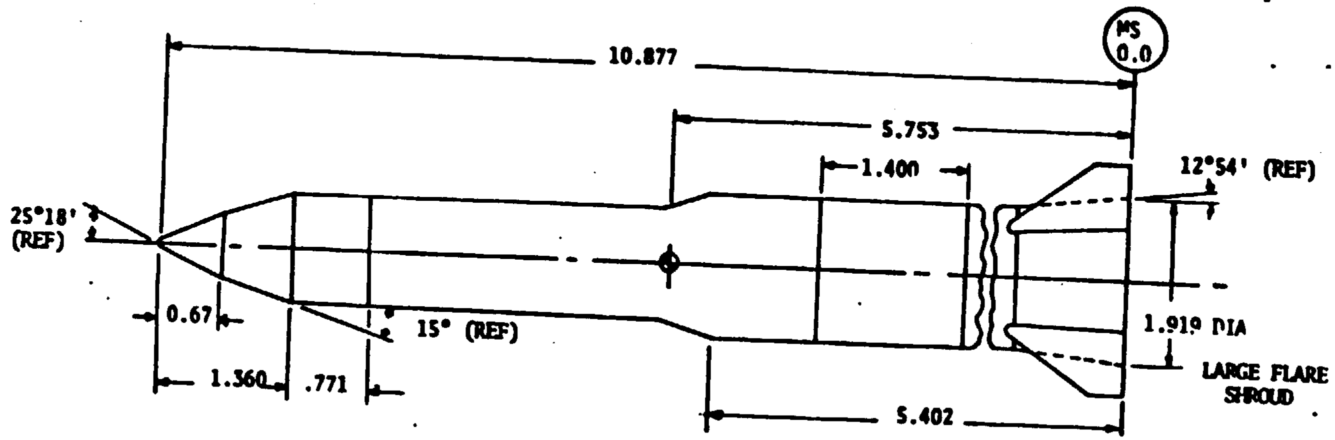
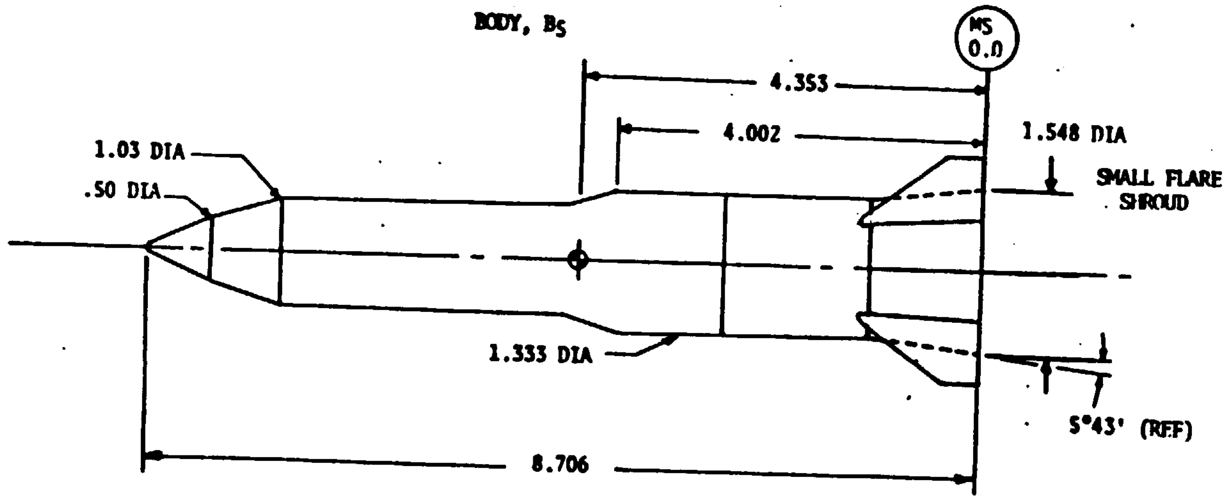


FIGURE 3 - MSC-040A ORBITER
0.003366 Scale Model



BODY, B_5



DWG. REF.

1233-7
1233-12
1233-15

FIGURE 4 - BODY, B_6

CYLINDRICAL BOOSTER
TBC
DELTA WING ORBITER
MSC
DR#1227 C-1- 337

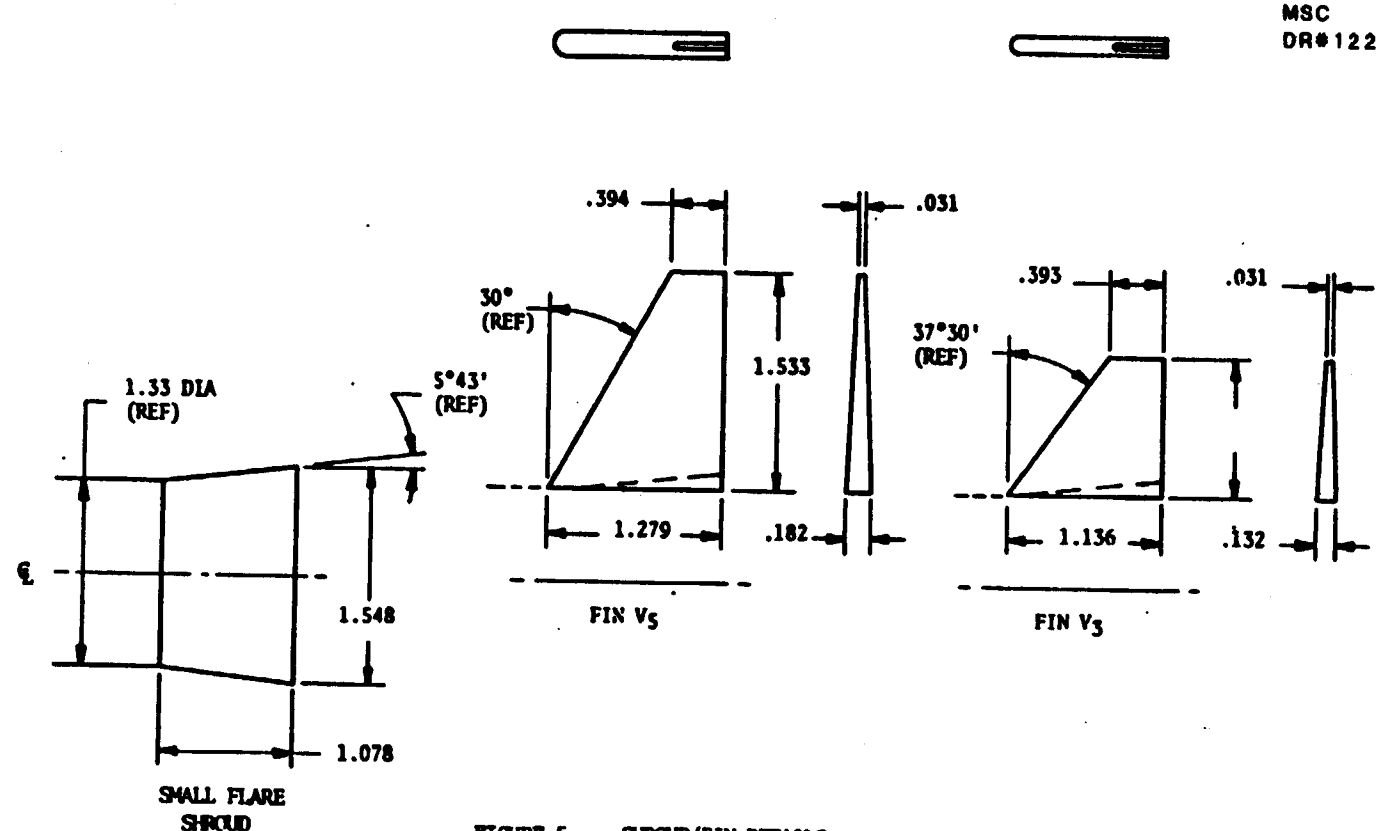


FIGURE 5 - SHROUD/FIN DETAILS
0.003366 SCALE AX 1233I-1 MODEL

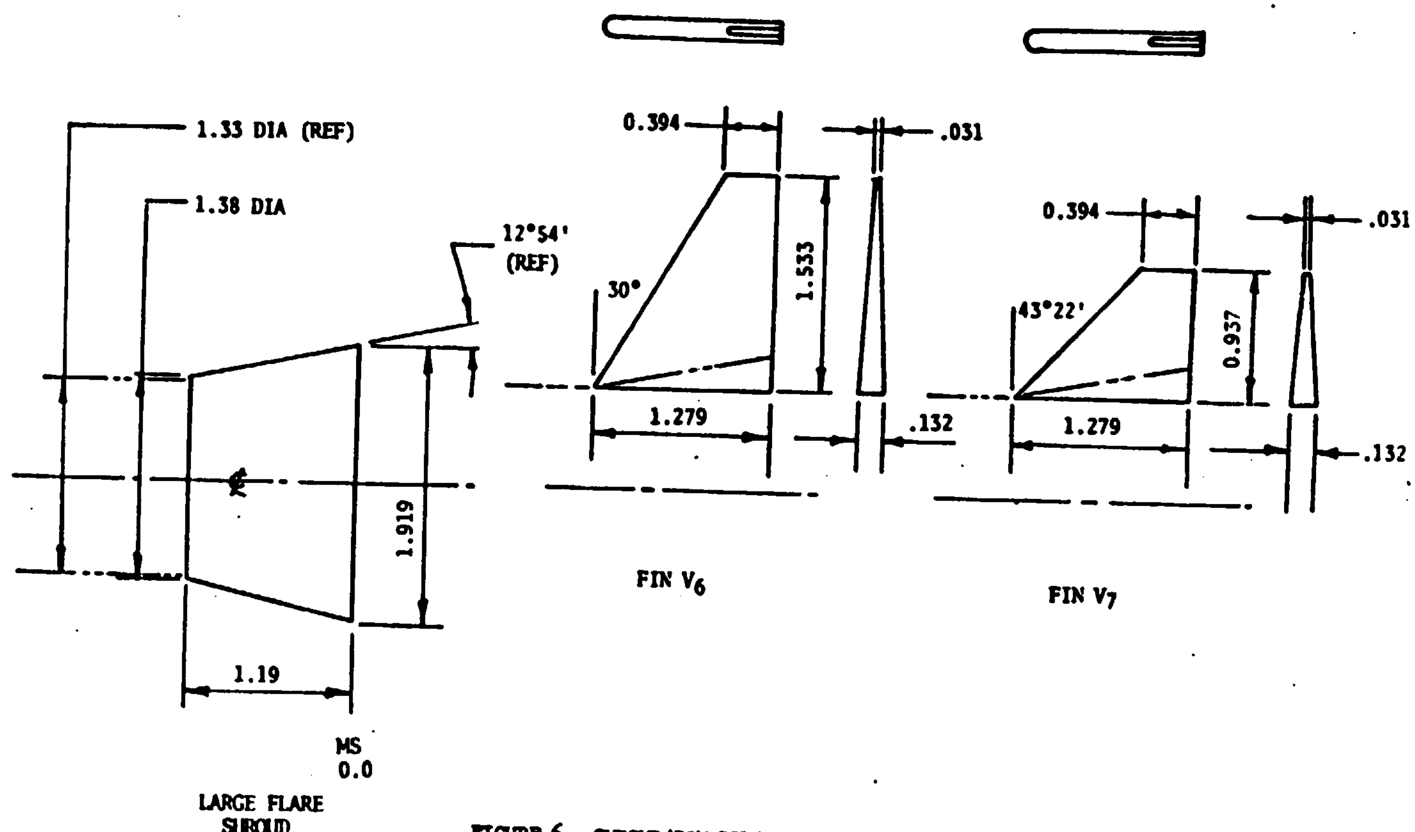


FIGURE 6 - SHROUD/FIN DETAILS
0.003366 SCALE AX 1233I-1 MODEL

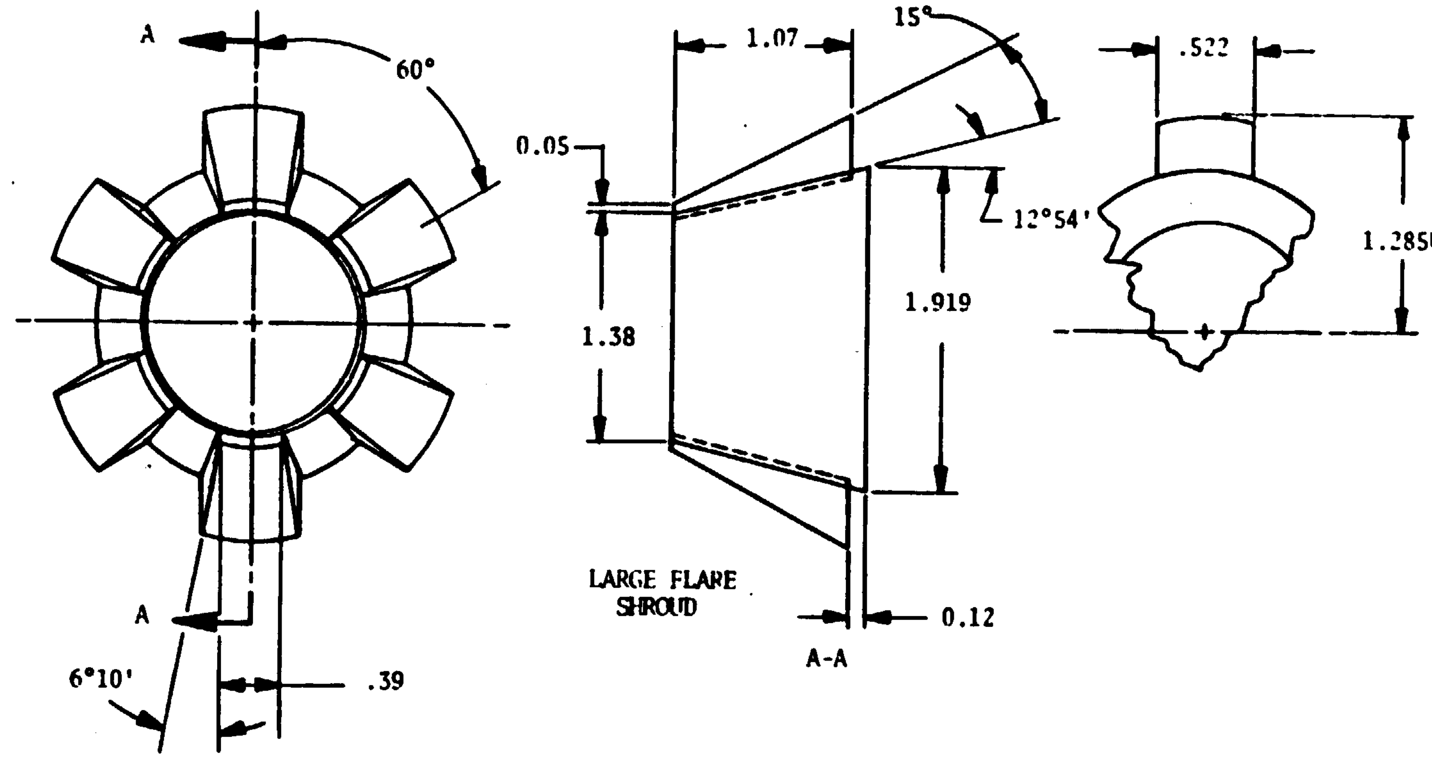


FIGURE 7 - PETAL DETAILS
0.003366 SCALE AX 1233I-1 MODEL

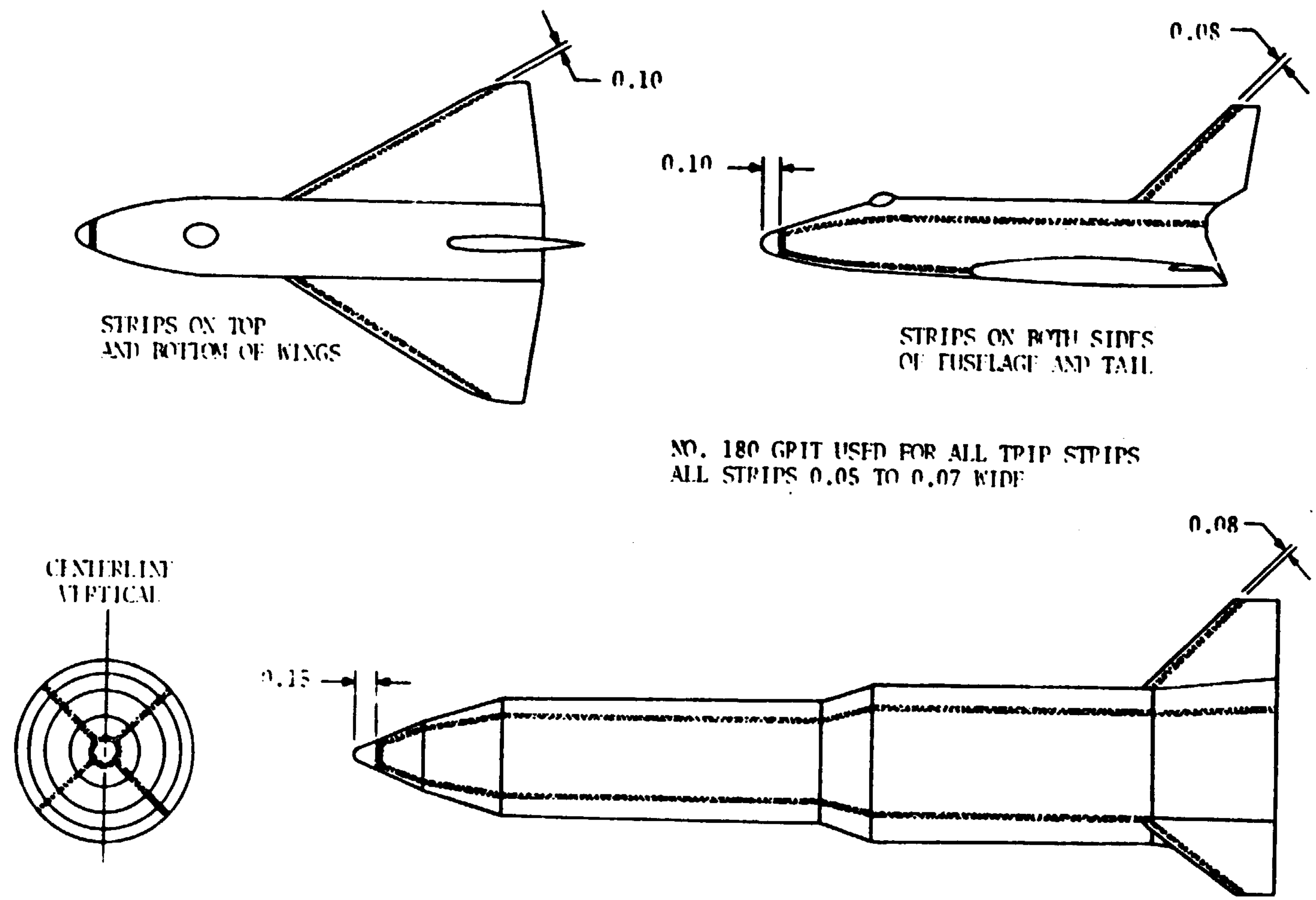


FIGURE 8 - TRIP STRIP CHART
0.003366 SCALE MODEL AX 1233I-1

CYLINDRICAL BOOSTER
TBC
DELTA WING ORBITER
MSC
DR#1227 C-1- 341

CYLINDRICAL BOOSTER
MSFC
UNIQUE CONFIGS. ORBITER
GAC
DR#1181 C-1- 342

TEST MSFC TWT 504 DATA SET/RUN NUMBER COLLATION SUMMARY

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES	NO. of RUNS	0.6	0.9	1.0	1.1	1.2	1.46	1.96	3.50	4.96
R46011	O_1	A	O		9	1	2	3	4	5	61	60	51	52
R46012	O_1	O	B		9	10	9	8	7	6	62	59	50	49
R46021	O_2	A	O		9	20	19	18	17	16	63	58	54	53
R46022	O_2	O	B		5	11	12	13	14	15				
R46041	H33/3x156 w/o DROP TANKS	A	O		5	21	22	23	24	25				
R46042	"	O	B		5	30	29	28	27	26				
R46031	H33/3x156 w/DROP TANKS	A	O		9	37	36	35	34	33	32	44	46	45
R46032	"	O	B		9	38	39	40	41	42	31	43	47	48

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) — TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

COEFFICIENTS: CLM CN CY CBL CYN CAT CAF CAB CPC CABS → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES
αA = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10
βB = -10, -8, -6, -4, -2, 0, 2, 4, 6, 8, 10

NASA-MSFC-MAF

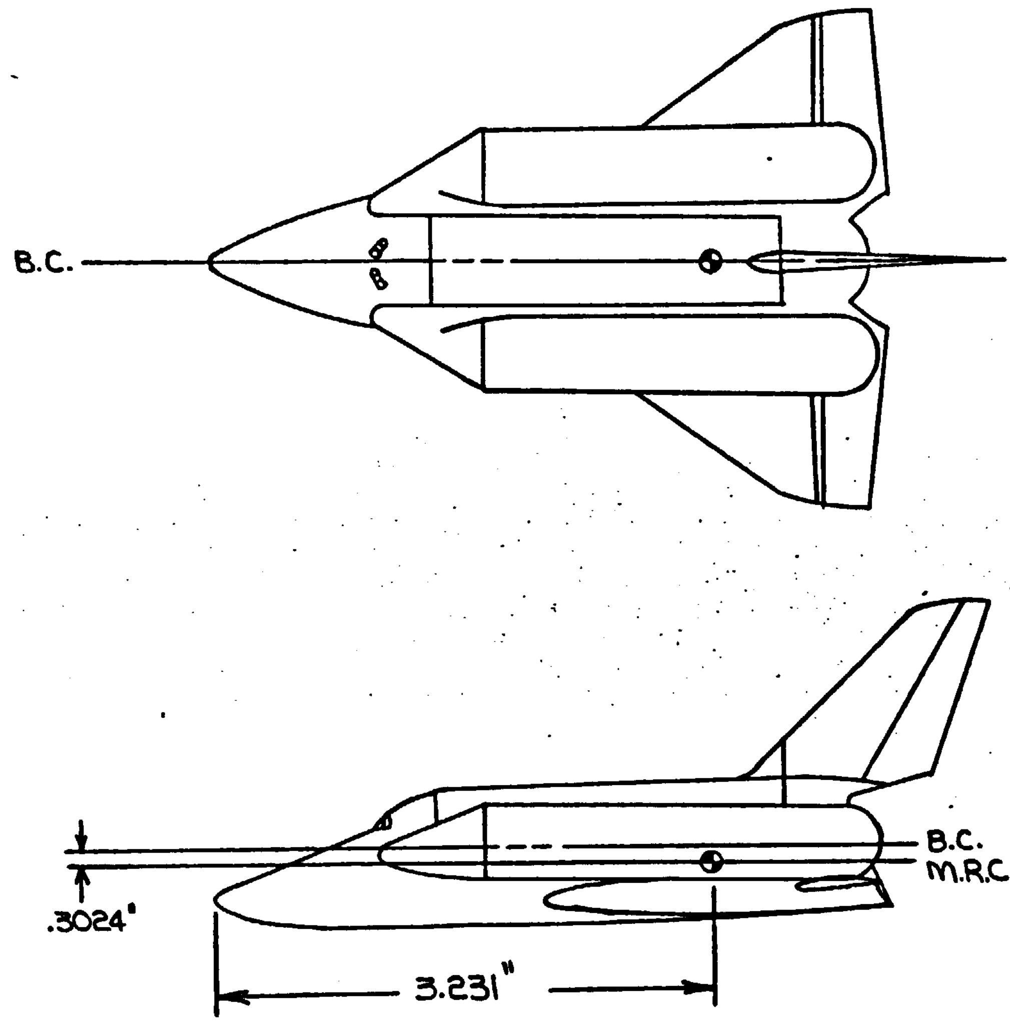


Figure 5. Side and Planview Sketch of the Grumman H-33 Orbiter With Drop Tanks Installed

CYLINDRICAL BOOSTER
MSFC
UNIQUE CONFIGS. ORBITER
GAC
DR#1181 C-1- 343

CYLINDRICAL BOOSTER
MSFC
UNIQUE CONFIGS. ORBITER
GAC
DR#1181 C-1- 344

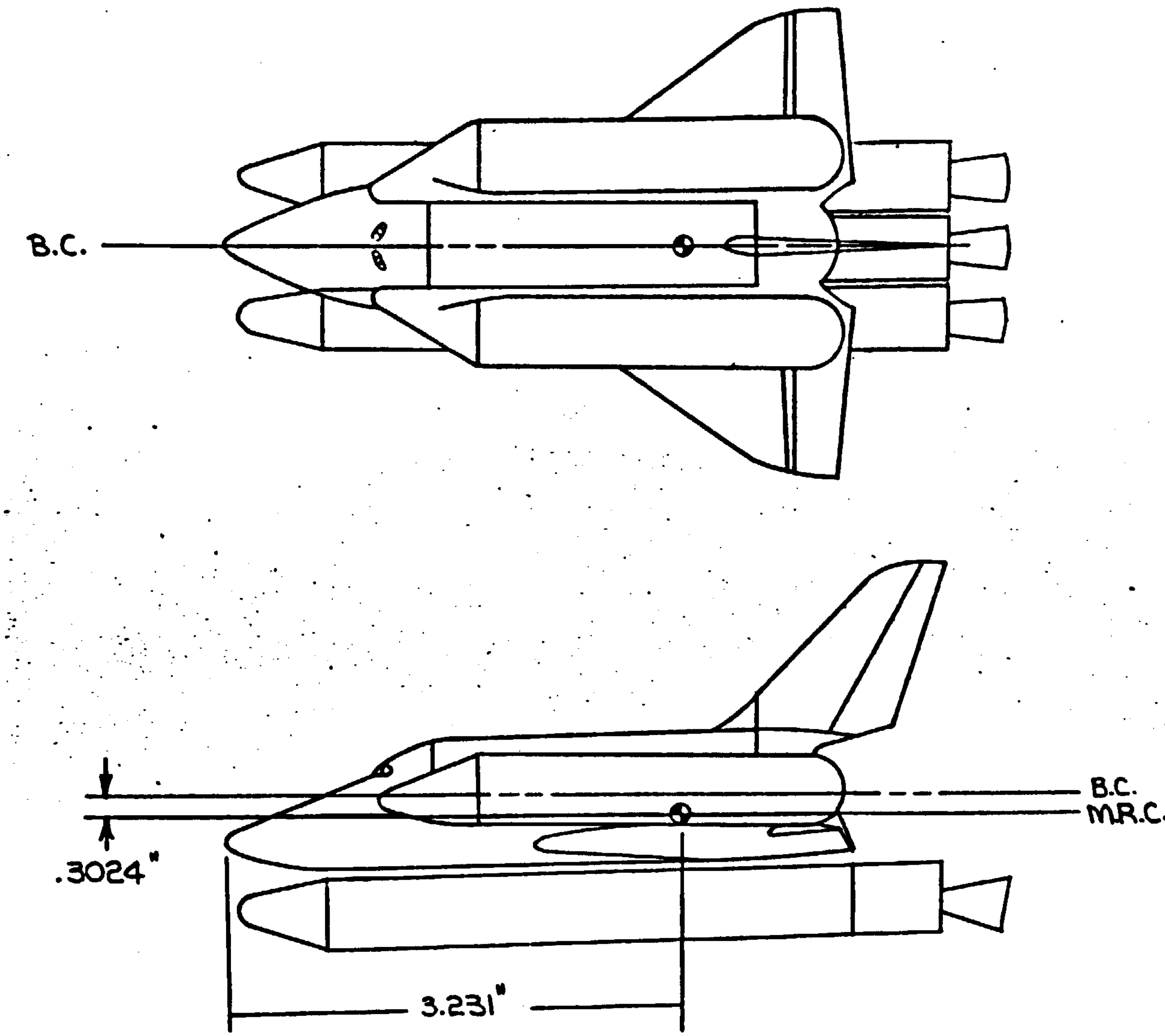


Figure 6. Side and Planview Sketch of the Grumman H-33 Orbiter With Drop Tanks and Three Solid Propellant Booster Motors Installed

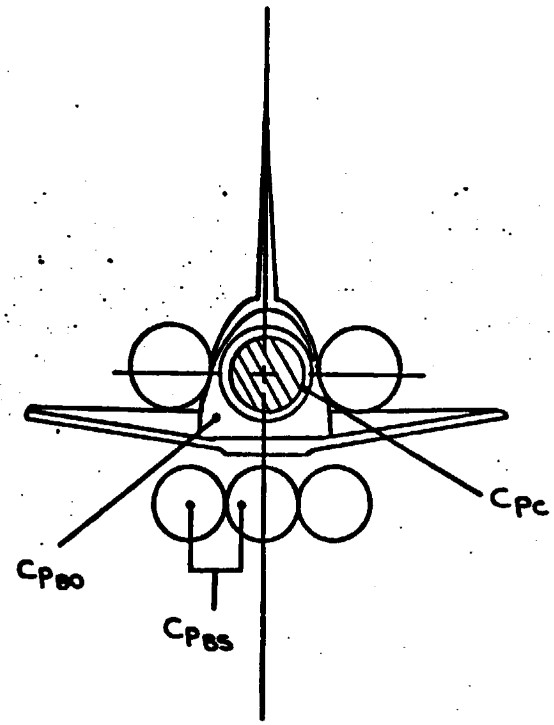


Figure 7. Base Pressure Measurements

CYLINDRICAL BOOSTER
MSFC
UNIQUE CONFIGS. ORBITER
GAC
DR#1181 C-1- 345

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Hampton, VA 23665-5225

13. Type of Report and Period Covered
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14. Sponsoring Agency Code

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Langley Technical Monitor: James C. Young
Volume 1 - NASA CR-178414; Volume 2 - NASA CR-178415

16. Abstract

Archived wind tunnel test data are available for flyback booster or other alternate recoverable configurations as well as reusable orbiters studied during initial development (Phase B) of the Space Shuttle. Considerable wind tunnel data was acquired by the competing contractors and the NASA centers for an extensive variety of configurations with an array of wing and body planforms.

All contractor and NASA wind tunnel test data acquired in the Phase B development have been compiled into a database and are available for applying to current winged flyback or recoverable booster aerodynamic studies.

The Space Shuttle Phase B Wind Tunnel Database is structured by vehicle component and configuration type. Basic components include the booster, the orbiter and the launch vehicle.

Booster configuration types include straight and delta wings, canard, cylindrical, retro-glide and twin body.

Orbiter configuration types include straight and delta wings, lifting body, drop tanks and double delta wings.

Launch configuration types include booster and orbiter components in various stacked and tandum combinations.

17. Key Words (Suggested by Authors(s))
Space Shuttle
Phase B
Wind Tunnel Tests
Digital Database
Aerodynamics
Recoverable Booster

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A19