NASA Contractor Report 178415, Part 1

SPACE SHUTTLE PHASE B WIND TUNNEL
MODEL AND TEST INFORMATION

VOLUME 2 - ORBITER CONFIGURATION

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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.

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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: OMS-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	OMS-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	OMS-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

Booster Type	Contractor	PAGE NUMBER 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-		

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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	0.10	MAC	0.01	MDAC SPACE SHUTTLE BOOSTER
B1	CANARD	MDAC	1108	2.0-6.0	AEDC	0.00556	MARTIN BOOSTER
B1	CANARD	MDAC	1139	0.36	NSRDC	0.016	MDAC DELTA CANARD BOOSTER
B1	CANARD	MDAC/MMC	1054	0.16	MAC	0.03	MDAC/MMC SPACE SHUTTLE BOOSTER
B1	CANARD	MDAC/MMC	1066	0.6-1.0	ARC	0.007	MDC-MMC SSV CONFIG.-14 BOOSTER (SINGLE BODY, CANARD)
B1	CANARD	MDAC/MMC	1077	0.6-0.26	MAC	0.03	MDAC/MMC SPACE SHUTTLE BOOSTER
B1	CANARD	MDAC/MMC	1080	7.4	ARC	0.007	MDC-MMC SSV BOOSTER SINGLE BODY CANARD
B1		MDAC/MMC	1116				MMC/MDC SSC BOOSTER

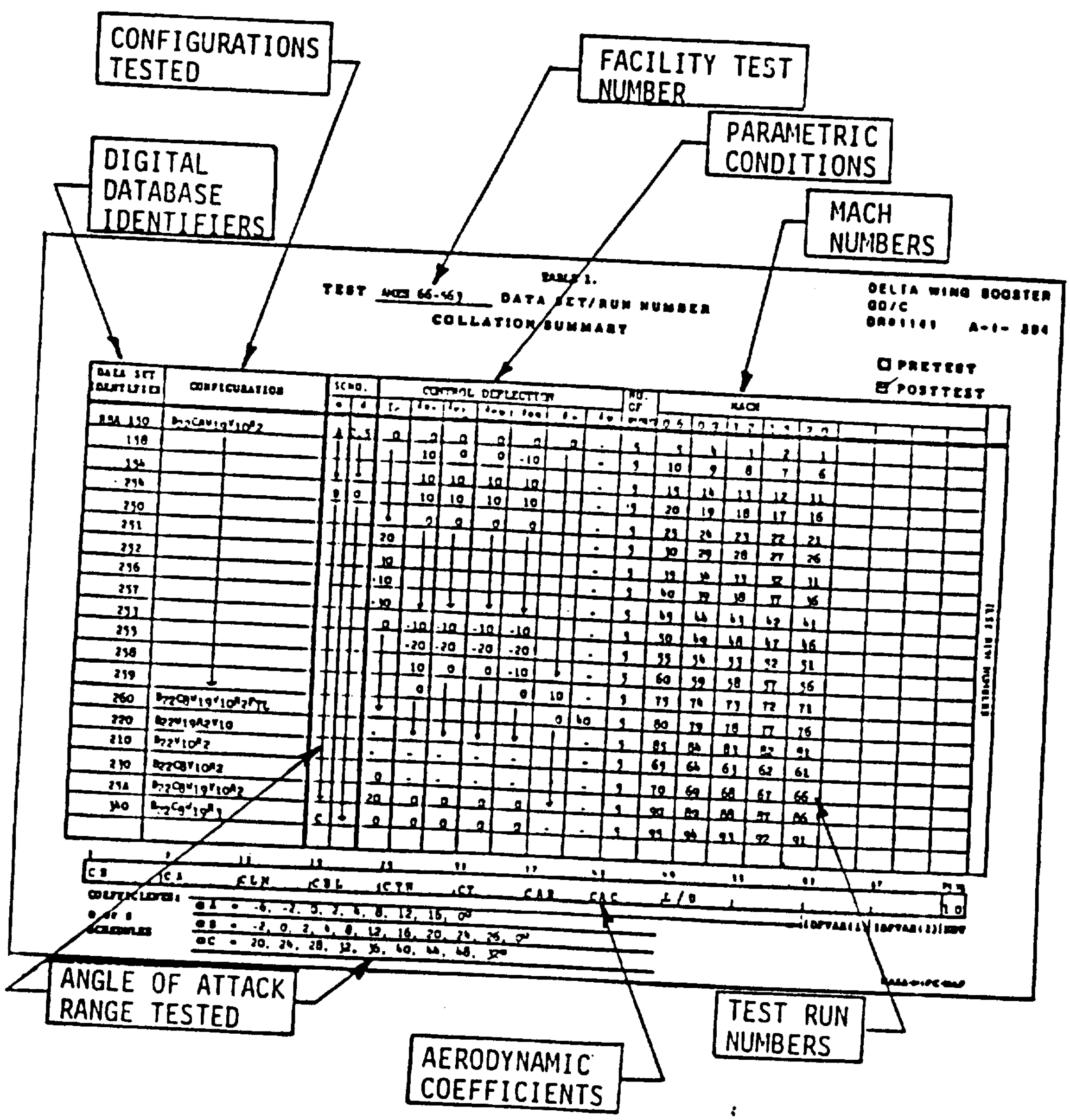
Step 3 - DMS-DB-02, Vol.1, Booster Configuration: Locate the model sketches and test conditions and parameters.

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
B1	MDAC/MMC	1116	
	MDAC/MMC		

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



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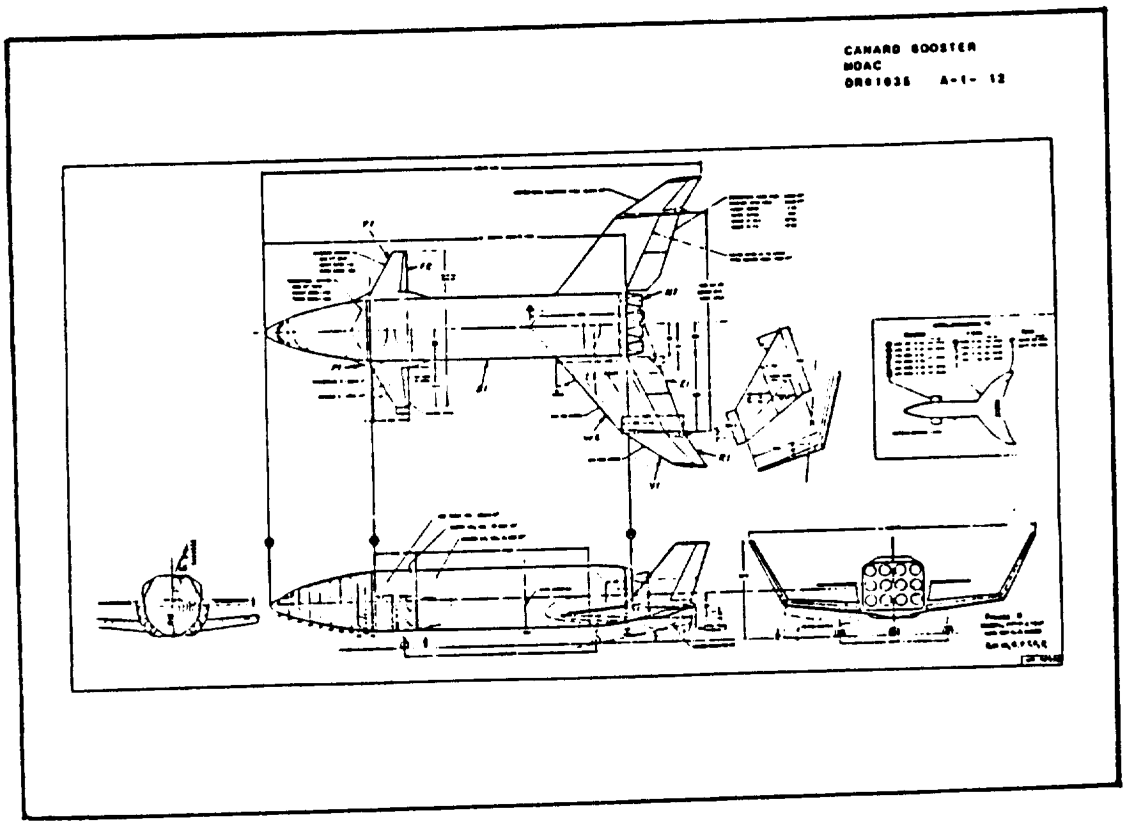
Step 4b- Configuration Sketches: Examine configuration sketches to obtain model and aerodynamic details such as model dimensions, wing type, canard surfaces, tail surfaces, body shape,etc.



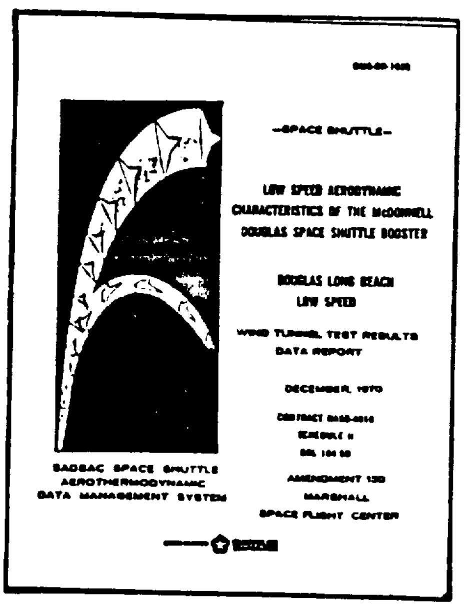
Step 5 - Table 2, DMS-DB-02, Vol.1: Refer to table to determine publication availability: data report, contractor report or NASA publication.

Table 2

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

DMS-DR#	NASA SERIES NUMBER	VOLUME NUMBER	NASA CR NUMBER	NASA TM-X NUMBER	FACILITY TEST NUMBER	VEHICLE COMPONENT
1001	61002-61001	1	102,150	--	MSFC 14TWT 461	BOOSTER
1002	66006	1	--	62,036	ARC 3.5HWT 78	ORBITER
1032						BOOSTER
1034	60232	1	102,188	--	NRLAB LSWT 632	ORBITER
1035	60404	1	102,181	--	MAC LSWT 1351	BOOSTER
1036	MO401-MO402	1	--	--	LARC.8VCHT 147-170,266-322	LAUNCH
			--	--	LARC 8VCHT 147-170,266-322	BOOSTER

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


DMS-DR-1035

-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

CONTRACT NAS8-4016
SCHEDULE II
DRL 104-80

AMENDMENT 130
MARSHALL
SPACE FLIGHT CENTER

SADSAC SPACE SHUTTLE
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	81	MDAC	1035	CC	69	967
2			1139	N2	574	8037
3		MDAC/MMC	1054	CE	203	2185
4			1066	AD	86	1033
5			1077	C0	95	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

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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; $\frac{\text{rolling moment}}{qSb}$

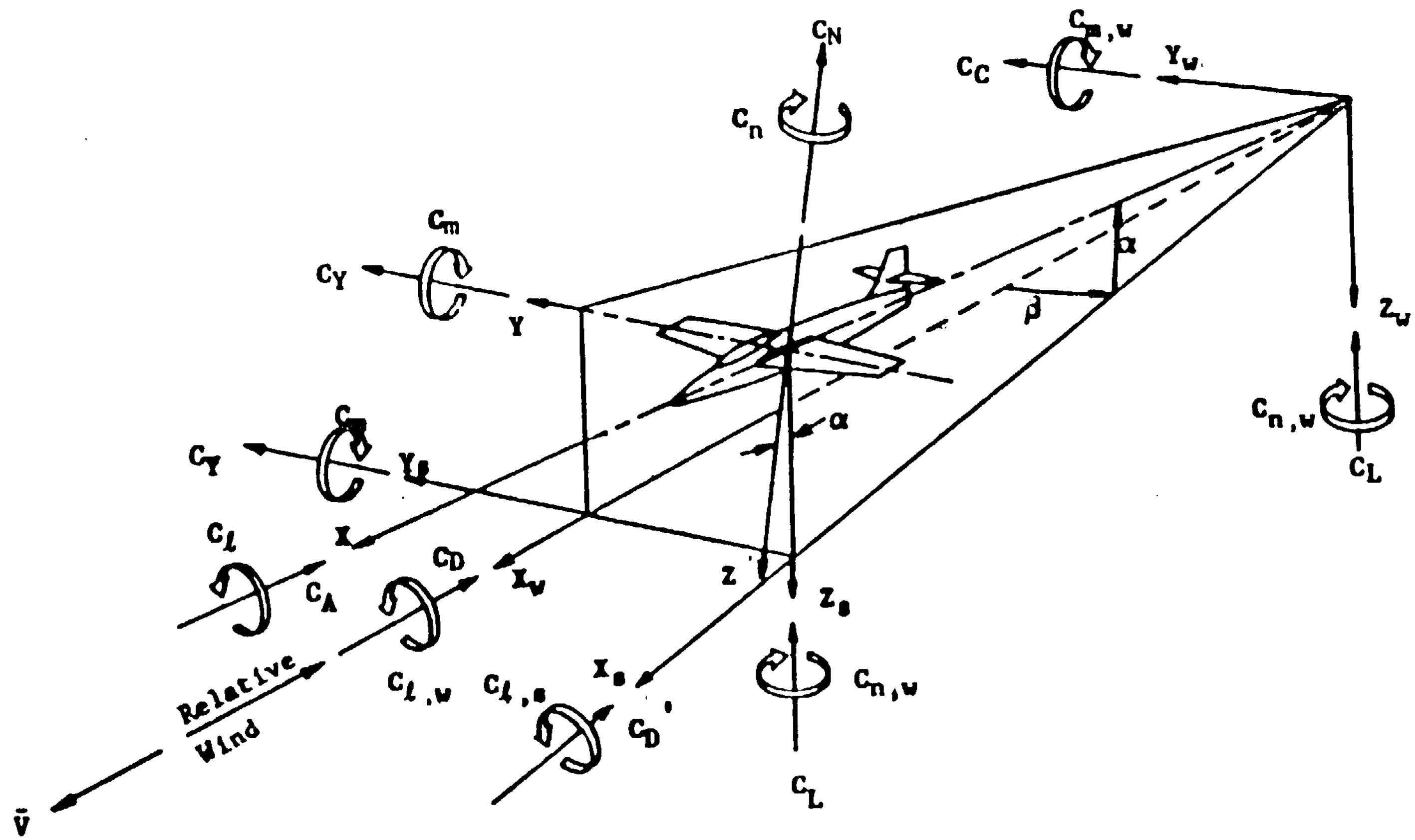
Stability-Axis System

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 1.1.2

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
01	DELTA BODY	GAC	1005	0.2	GAC	0.025	GAC III A CONFIGURATION EARTH ORBITING SHUTTLE
01	DELTA BODY	LMSC	1103	2.3-4.60	LARC	0.01	LMSC DELTA LIFTING BODY ORBITER
01	DELTA BODY	LMSC	1147	0.2	LARC	0.03	LMSC DELTA BODY ORBITER
01	DELTA BODY	LMSC	1157	0.25	LARC	0.01	LMSC DELTA BODY ORBITER
01	DELTA BODY	LMSC	1169	0.05-0.26	LARC	0.01	LMSC DELTA BODY ORBITER
02	DELTA WING	GAC	1053	0.17	GAC	0.025	GAC IIF EARTH ORBITING SHUTTLE
02	DELTA WING	GAC	1081	0.17	GAC	0.04	GAC ROS-NB1 ORBITER, GAC ROS-WB1 ORBITER
02	DELTA WING	GAC	1142	0.17	GAC	0.04	GAC ROS-NB1 ORBITER, GAC ROS-NB2 DELTA WING ORBITER, GAC ROS-WB1 ORBITER
02	DELTA WING	GAC	1159	10.0	GAC	0.005	GAC DELTA WING ORBITER ROS-NB1, GAC DELTA WING ORBITER ROS-WB1
02	DELTA WING	GAC	1161	0.7-1.16	GAC	0.005	GAC DELTA WING ORBITER ROS-NB1, GAC DELTA WING ORBITER ROS-WB1
02	DELTA WING	GAC	1163	1.75-2.48	GAC	0.005	GAC DELTA WING ORBITER ROS-NB1
02	DELTA WING	GAC	1167	0.17	GAC	0.004	GAC H-33 ORBITER
02	DELTA WING	GAC	1184	0.6-4.96	MSFC	0.003366	GAC H-33 ORBITER
02	DELTA WING	GAC	1189	0.25	LARC	0.0148	GAC H-33 ORBITER
02	DELTA WING	GAC	1194	10.2	LARC	0.005854	GAC ORBITER H-33
02	DELTA WING	GAC	1195	0.6-1.2	LARC	0.0148	GAC H-33 ORBITER
02	DELTA WING	GAC	1196	1.6-2.16	LARC	0.0148	GD/C H-33 ORBITER (ENTRY CONFIGURATION)
02	DELTA WING	GAC	1203	6.0	LARC	0.005854	GAC H-33 ORBITER
02	DELTA WING	GAC	1211	20.3	LARC	0.003366	GAC H-33 ORBITER
02	DELTA WING	GAC	1211	20.3	LARC	0.005854	GAC H-33 ORBITER
02	DELTA WING	GAC	1216	2.3-4.63	LARC	0.0148	GAC H-33 ORBITER
02	DELTA WING	GAC	1239	0.25	LARC	0.0148	GAC H-33 ORBITER

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Table 1.1.2 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG. I.D	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
02	DELTA WING	LARC	1123	10.4	LARC	NONE	PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1168	0.21-0.26	LARC	NONE	PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1199	2.01	LARC	NONE	PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1229	0.21-0.26	LARC	NONE	PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1232	0.25	LARC	NONE	LARC PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1232	1.5-2.16	LARC	NONE	LARC PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1233	.264	LARC	0.0186	LARC PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1235	1.5-2.16	LARC	NONE	LARC PARAMETRIC DELTA WING ORBITER
02	DELTA WING	LARC	1268	0.25	LARC	0.01875	DOUBLE DELTA WING ORBITER
02	DELTA WING	LARC	1270	20.3	LARC	0.004	DOUBLE DELTA WING ORBITER
02	DELTA WING	LARC	1277	10.3	LARC	0.01	DOUBLE DELTA WING ORBITER
02	DELTA WING	LMSC	1153	0.4-4.96	MSFC	0.0033	LMSC ORBITER
02	DELTA WING	LMSC	1201	0.6-4.96	MSFC	0.0033	MSFC/LMSC ORBITER
02	DELTA WING	LMSC	1201	0.6-4.96	MSFC	0.0033	MSFC/LMSC ORBITER
02	DELTA WING	LMSC	1254	0.6-4.96	MSFC	0.004	NASA DOUBLE DELTA ORBITER
02	DELTA WING	MDAC	1028	0.7-2.0	ARC	0.007	MDAC ORBITER (LCR), MDAC ORBITER (HCR)
02	DELTA WING	MDAC	1040	0.17-0.27	MAC	0.04	MDC STS ORBITER (02) HIGH CROSS RANGE
02	DELTA WING	MDAC	1041	0.25	MAC	0.04	MDC STS ORBITER (02) HIGH CROSS RANGE
02	DELTA WING	MDAC	1067	0.26	MAC	0.04	MDAC PHASE B SHUTTLE STS ORBITER (02)
02	DELTA WING	MDAC	1071	7.4	ARC	0.0070	MDAC DELTA WING ORBITER
02	DELTA WING	MDAC	1072	7.4	ARC	0.007	MDAC STRAIGHT WING ORBITER, MDAC DELTA WING ORBITER
02	DELTA WING	MDAC	1074	0.18	MAC	0.01333	M/D GENERIC HIGH CROSS RANGE ORBITER
02	DELTA WING	MDAC	1083	1.6-2.0	ARC	0.007	MDAC DELTA WING ORBITER

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Table 1.1.2 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
02	DELTA WING	MDAC	1086	20.3	LARC	0.0033	MDAC BASELINE DELTA WING ORBITER
02	DELTA WING	MDAC	1094	7.4	ARC	0.0078	MDC DELTA WING ORBITER
02	DELTA WING	MDAC	1108	2.0-6.0	AEDC	0.00558	MDAC ORBITER
02	DELTA WING	MDAC	1117	2.3-4.6	LARC	0.007	MDAC/MMC HCR DELTA WING ORBITER, MDAC/MMC SBC BOOSTER
02	DELTA WING	MDAC	1149	0.25	LARC	0.0133	MDAC DELTA WING ORBITER
02	DELTA WING	MDAC	1151	10.3	LARC	0.00555	MDAC BASELINE DELTA WING ORBITER
02	DELTA WING	MDAC	1171	0.4-1.2	LARC	0.007	MDC DELTA WING ORBITER
02	DELTA WING	MDAC	1171	2.0	LARC	0.007	MDC DELTA WING ORBITER
02	DELTA WING	MDAC	1172	0.25	LARC	0.007	MDAC DELTA WING ORBITER
02	DELTA WING	MDAC	1173	1.6-2.86	LARC	0.0133	MDAC DELTA WING ORBITER (050-B)
02	DELTA WING	MDAC	1175	2.01	LARC	0.00555	MDAC DELTA WING ORBITER (0150-B)
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
02	DELTA WING	MMC	1003	0.4-4.95	MSFC	0.0038	MMC PHASE A SPACE SHUTTLE MODIFIED ORBITER
02	DELTA WING	MMC	1009	20.6	LARC	NONE	MARTIN-MARIETTA CORP. MODIFIED ORBITER
02	DELTA WING	MMC	1013	0.38	LARC	NONE	MODIFIED SEPT. 1969 BASELINE MARTIN ORBITER FR5-2A
02	DELTA WING	MMC	1022	0.40-0.89	LARC	0.01279	MODIFIED MARTIN ORBITER FR5-2A
02	DELTA WING	MMC	1023	6.0	LARC	0.00588	MODIFIED MARTIN ORBITER
02	DELTA WING	MMC	1045	0.28	LARC	NONE	MODIFIED MARTIN ORBITER FR5-2A
02	DELTA WING	MMC	1048	6.0	LARC	0.00588	MMC MODIFIED ORBITER
02	DELTA WING	MMC	1059	20.6	LARC	NONE	MODIFIED MARTIN MARIETTA DELTA WING ORBITER
02	DELTA WING	MMC	1182	0.6-3.48	MSFC	0.0043	MMC TITAN III L BOOSTER WITH MMC DTO-7 ORBITER, MMC DTO-7 ORBITER

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Table 1.1.2 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
02	DELTA WING	MSC	1115	0.6-1.4	LTV	0.008105	MSC S-13A ORBITER, MSC SB-13A BOOSTER
02	DELTA WING	MSC	1186	0.6-4.96	MSFC	0.006	NASA/MSC 040A DELTA WING ORBITER
02	DELTA WING	MSC	1202	0.6-2.0	ARC	0.015	NR 040-A ORBITER
02	DELTA WING	MSC	1215	0.25	LARC	0.019	MSC 040A ORBITER
02	DELTA WING	MSC	1218	20.3	LARC	0.005	MSC 040A ORBITER
02	DELTA WING	MSC	1219	10.3	LARC	0.0075	MSC 040A ORBITER
02	DELTA WING	MSC	1221	2.0-4.0	JPL	0.0075	MSC 040A ORBITER
02	DELTA WING	MSC	1230	0.6-4.5	MDAC	0.006	PARALLEL BURN PRESSURE FED AND SRM BOOSTERS. 040A ORBITER
02	DELTA WING	MSC	1243	0.6-4.96	MSFC	0.006	MSC 040A ORBITER
02	DELTA WING	MSC	1250	0.6-1.2	ARC	0.05	MSC 040A ORBITER
02	DELTA WING	MSC	1258	2.3-4.62	LARC	0.019	MSC 040A ORBITER
02	DELTA WING	MSC	1274	0.6-4.96	MSFC	0.006	040A DELTA WING ORBITER
02	DELTA WING	NR	1021	0.25-2.0	ARC	0.008	NARC 129 SSV ORBITER (DELTA WING, HIGH CROSS RANGE)
02	DELTA WING	NR	1026	0.6-2.0	ARC	0.0076	NAR/GD STRAIGHT WING ORBITER, NAR/GD DELTA WING ORBITER
02	DELTA WING	NR	1027	0.6-5.0	MSFC	0.0035	134B DELTA WING ORBITER, 130G STRAIGHT WING ORBITER
02	DELTA WING	NR	1031	7.4	ARC	0.008	NAR HIGH CROSS-RANGE ORBITER
02	DELTA WING	NR	1037	0.26	NRLAD	0.0763	NAR 134B DELTA WING ORBITER
02	DELTA WING	NR	1043	0.6-5.0	MSFC	0.0035	NAR DELTA WING (134B) ORBITER, NAR STRAIGHT WING ORBITER (130G)
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)

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Table 1.1.2 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
02	DELTA WING	NR	1076	0.6-4.96	MSFC	0.0035	NR DELTA WING ORBITER (134D), NR STRAIGHT WING ORBITER (130G)
02	DELTA WING	NR	1078	0.25-2.0	ARC	0.00763	NR/GD DELTA WING ORBITER
02	DELTA WING	NR	1084	10.0	LARC	0.0076	NR DELTA WING ORBITER - HCR 134D/161B
02	DELTA WING	NR	1088	20.3	LARC	0.0035	NR 134D DELTA WING ORBITER
02	DELTA WING	NR	1092	0.4-1.3	AEDC	0.0035	NR DELTA WING ORBITER
02	DELTA WING	NR	1095	6.0	LARC	0.00763	NR DELTA WING ORBITER - HCR 134D/161B
02	DELTA WING	NR	1096	2.5-4.6	LARC	0.00763	NR DELTA WING ORBITER - HCR 134D/161B
02	DELTA WING	NR	1097	0.6-1.2	LARC	0.01189	NR DELTA WING ORBITER (134D)
02	DELTA WING	NR	1101	1.6-4.63	LARC	0.01189	NR 134D DELTA WING ORBITER
02	DELTA WING	NR	1104	7.37	ARC	0.00761	NR DELTA WING ORBITER
02	DELTA WING	NR	1105	0.6-1.2	LARC	0.00763	NR DELTA WING ORBITER
02	DELTA WING	NR	1106	0.22-0.25	LARC	0.00763	NR DELTA WING ORBITER 134D/161B
02	DELTA WING	NR	1107	0.25	LARC	0.01189	NR DELTA WING ORBITER 134D
02	DELTA WING	NR	1113	10.0	LARC	0.00555	NR 134D ORBITER
02	DELTA WING	NR	1114	0.6-1.3	MSFC	0.0035	NR DELTA WING ORBITER
02	DELTA WING	NR	1124	0.26	NRLAD	0.00763	NR DELTA WING ORBITER
02	DELTA WING	NR	1126	0.6-4.96	MSFC	0.0035	NR DELTA WING ORBITER
02	DELTA WING	NR	1144	2.5-4.6	LARC	0.00763	NR 134D/161B ORBITER
02	DELTA WING	NR	1176	20.3	LARC	0.0035	NR 134D DELTA WING ORBITER, NR 134D/161B DELTA WING ORBITER
02	DELTA WING	NR	1185	0.6-4.96	MSFC	0.0044	NR-110C ORBITER
02	DELTA WING	NR	1190	0.25	LARC	0.0035	MDAC/MMC 256-14 BOOSTER, MDAC 0050B ORBITER, NAR/GDC B-15B-1 BOOSTER, NAR 134D ORBITER

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Table 1.1.2 - Continued

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
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
03	STRAIGHT WING	MDAC	1028	0.7-2.0	ARC	0.007	MDAC ORBITER (LCR), MDAC ORBITER (HCR)
03	STRAIGHT WING	MDAC	1072	7.4	ARC	0.007	MDAC STRAIGHT WING ORBITER, MDAC DELTA WING ORBITER
03	STRAIGHT WING	MDAC	1090	0.26	MAC	0.04	MDAC LCR ORBITER
03	STRAIGHT WING	MSC	1002	7.43	ARC	0.0125	MSC ORBITER S-3 (12.5K ORBITER)
03	STRAIGHT WING	MSC	1004	6.0	LARC	0.00725	NASA/MSC ORBITER (AUG 1969 REVISED BASELINE)
03	STRAIGHT WING	MSC	1007	0.19-0.25	MAC	0.01875	MSC (AUGUST 1969 CONFIGURATION) ORBITER (S-5)
03	STRAIGHT WING	MSC	1008	0.25	TAM	0.01875	NASA/MSC ORBITER SHUTTLE (MODEL S-5)
03	STRAIGHT WING	MSC	1011	0.25-2.0	ARC	0.0125	MSC ORBITER S-3
03	STRAIGHT WING	MSC	1012	0.6-1.35	ARC	0.02	MSC ORBITER (MOD. OF MAY 1969 CONFIGURATION)
03	STRAIGHT WING	MSC	1057	0.25	TAM	0.01875	MSC S-1 ORBITER, MSC S-5 ORBITER
03	STRAIGHT WING	MSC	1057	0.25	TAM	0.02	MSC S-1 ORBITER, MSC S-5 ORBITER
03	STRAIGHT WING	MSC	1060	0.25	TAM	0.05	NASA-MSC S-4 ORBITER (AUG. 1969 BASELINE)
03	STRAIGHT WING	MSC	1062	0.25	TAM	0.01875	NASA/MSC S-5 ORBITER
03	STRAIGHT WING	MSC	1073	0.25	TAM	0.01875	NASA/MSC MODEL S-5 SHUTTLE
03	STRAIGHT WING	MSC	1205	0.25	TAM	0.05	NASA/MSC AUG. 1969 BASELINE ORBITER (MODEL S-4)
03	STRAIGHT WING	NR	1010	0.26	NRLAD	0.0076	ILRV STRAIGHT WING ORBITER (MODEL 130C)
03	STRAIGHT WING	NR	1026	0.6-2.0	ARC	0.0076	NAR/GD STRAIGHT WING ORBITER, NAR/GD DELTA WING ORBITER
03	STRAIGHT WING	NR	1027	0.6-5.0	MSFC	0.0035	134B DELTA WING ORBITER, 130G STRAIGHT WING ORBITER
03	STRAIGHT WING	NR	1034	0.26	NRLAD	0.00761	NAR STRAIGHT WING ORBITER

Table 1.1.2 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Aerodynamics

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
03	STRAIGHT WING	NR	1043	0.6-5.0	MSFC	0.0035	NAR DELTA WING (134B) ORBITER, NAR STRAIGHT WING ORBITER (130G)
03	STRAIGHT WING	NR	1049	0.25-0.40	LARC	0.0076	NR STRAIGHT WING ORBITER
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)
03	STRAIGHT WING	NR	1064	0.4-1.2	LARC	0.00761	NAR STRAIGHT WING ORBITER
03	STRAIGHT WING	NR	1069	1.5-2.0	LARC	0.00556	NAR 130G STRAIGHT WING ORBITER
03	STRAIGHT WING	NR	1076	0.6-4.96	MSFC	0.0035	NR DELTA WING ORBITER (134D), NR STRAIGHT WING ORBITER (130G)
03	STRAIGHT WING	NR	1082	0.25-2.0	ARC	0.00761	NR/GD STRAIGHT WING ORBITER
03	STRAIGHT WING	NR	1104	7.37	ARC	0.00761	NR STRAIGHT WING ORBITER
04	UNIQUE CONFIGS.	GAC	1112	0.6-2.0	ARC	0.0133	GRUMMAN ROS-NB2 ORBITER
04	UNIQUE CONFIGS.	GAC	1187	0.6-4.96	MSFC	0.0034	S-IC BOOSTER WITH GAC H-33 ORBITER, GAC H-33 ORBITER
04	UNIQUE CONFIGS.	LARC	1018	0.21-0.33	LARC	NONE	LARC VARIABLE DIHEDRAL ORBITER
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
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

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Table 1.2.2

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Airloads

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
02	DELTA WING	MDAC	1225	8.0	AEDC	0.011	MDAC CANARD BOOSTER AND DELTA WING ORBITER, AND NR DELTA WING ORBITER
02	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
02	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
02	DELTA WING	NR	1225	8.0	AEDC	0.011	MDAC CANARD BOOSTER AND DELTA WING ORBITER, AND NR DELTA WING ORBITER
03	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

Table 1.3.2

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Heat Transfer

CODE	CONFIG. I.D	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
01	DELTA BODY	LARC	1224	10.5	AEDC	NONE	LRC-DB DELTA BODY, LRC-SB STRAIGHT BODY
02	DELTA WING	GAC	1146	10.3	LARC	0.0067	GAC DELTA WING ORBITER ROS-NB2
02	DELTA WING	GAC	1154	8.0	GAC	0.0067	GAC DELTA WING ORBITER ROS-NB1, GAC DELTA WING ORBITER ROS-WB1
02	DELTA WING	GAC	1234	8.0	LARC	0.005	GRUMMAN H-33 ORBITER, H-33/HO ORBITER LAUNCH CONFIGURATION
02	DELTA WING	LMSC	1266	8.0	AEDC	0.012	040C DELTA WING ORBITER, 040A-L4 DELTA WING ORBITER
02	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
02	DELTA WING	MDAC	1206	8.0	AEDC	0.011	MDAC DELTA WING ORBITER
02	DELTA WING	MDAC	1207	8.0	AEDC	0.011	MDAC CANARD BOOSTER AND DELTA WING ORBITER
02	DELTA WING	MDAC	1262	8.0	AEDC	0.011	MDAC CANARD BOOSTER AND DELTA WING ORBITER
02	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
02	DELTA WING	NR	1056	10.3	LARC	0.0035	NAR STRAIGHT WING ORBITER, NAR DELTA WING ORBITER
02	DELTA WING	NR	1056	8.0	LARC	0.0035	NAR STRAIGHT WING ORBITER, NAR DELTA WING ORBITER
02	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
02	DELTA WING	NR	1165	8.0	LARC	0.0035	NR-SD-9992-161B DELTA WING ORBITER
02	DELTA WING	NR	1177	8.0	AEDC	0.009	GD/C B-15B-2 BOOSTER, NAR 161B ORBITER
02	DELTA WING	NR	1180	7.4	ARC	0.006	NR 84B DELTA WING ORBITER
02	DELTA WING	NR	1231	8.0	AEDC	0.013	NR DELTA WING ORBITER

Table 1.3.2 - Concluded

Space Shuttle Phase B Wind Tunnel Test
Database Summary

Orbiter Heat Transfer

CODE	CONFIG. I.D.	CONTRACTOR	DMS-DR#	MACH RANGE	FACILITY	MODEL SCALE	CONFIGURATIONS TESTED
02	DELTA WING	NR	1252	7.4	ARC	0.009	NR 161B DELTA WING ORBITER
02	DELTA WING	NR	1264	8.0	AEDC	0.013	NR DELTA WING ORBITER, GD/C BOOSTER
03	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
03	STRAIGHT WING	NR	1056	10.3	LARC	0.0035	NAR STRAIGHT WING ORBITER, NAR DELTA WING ORBITER
03	STRAIGHT WING	NR	1066	8.0	LARC	0.0035	NAR STRAIGHT WING ORBITER, NAR DELTA WING ORBITER
03	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
03	STRAIGHT WING	NR	1131	7.4	ARC	0.006	NAR 130C STRAIGHT WING ORBITER
04	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
04	UNIQUE CONFIGS.	LARC	1224	10.5	AEDC	NONE	LRC-DB DELTA BODY, LRC-SB STRAIGHT BODY

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

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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

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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
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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

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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

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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

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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

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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

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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

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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

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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

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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 8TWT 1273	BOOSTER
1228	S0622-S0623	1	120,069	--	TBC 84SWT 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

OMS-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 8TWT 1282	BOOSTER
1275	S0629-S0630	1	120,073	--	TBC 84SWT 557	BOOSTER
1276	S0629-S0630	1	120,078	--	TBC 8TWT 1282	BOOSTER
[illegible]	S0629-S0630	1	120,078	--	TBC 84SWT 557	BOOSTER
1277	S1256	1	--	--	LARC CFHT 85	ORBITER
1278	H1035	1	--	--	LARC 8VDHT 2886-2929	LAUNCH

Table 3.1.2

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
1002	STRAIGHT WING	1	MSC ORBITER S-3 (12.5K ORBITER) INVESTIGATION OF HYPERSONIC AERODYNAMIC CHARACTERISTICS
1003	DELTA WING	1	MMC PHASE A SPACE SHUTTLE MODIFIED ORBITER -- INVESTIGATION OF STABILITY CHARACTERISTICS AND CONTROL EFFECTIVENESS
1004	STRAIGHT WING	1	NASA/MSC ORBITER (AUG 1969 REVISED BASELINE) LONGITUDINAL, DIRECTIONAL, AND LATERAL STABILITY AND CONTROL CHARACTERISTICS
1005	DELTA BODY	1	GAC III A CONFIGURATION EARTH ORBITING SHUTTLE -- EVALUATION OF LOW SPEED AERODYNAMIC CHARACTERISTICS
1007	STRAIGHT WING	1	MSC ORBITER (S-5) (AUGUST 1969 CONFIGURATION) LONGITUDINAL AND LATERAL STABILITY INVESTIGATION
1008	STRAIGHT WING	1	INVESTIGATION OF LONGITUDINAL, LATERAL AND DIRECTIONAL STABILITY CHARACTERISTICS FOR MODEL S-5, NASA/MSC ORBITER SHUTTLE
1009	DELTA WING	1	LONGITUDINAL STATIC STABILITY CHARACTERISTICS OF MARTIN MARIETTA CORPORATION MODIFIED ORBITER TEST 7341-7343
1010	STRAIGHT WING	1	ILRV STRAIGHT WING ORBITER (MODEL 130C) LONGITUDINAL AND LATERAL STATIC STABILITY CHARACTERISTICS DURING CONFIGURATION BUILD-UP - HORIZONTAL TAIL CONTROL EFFECTIVENESS
1011	STRAIGHT WING	1	LONGITUDINAL AND LATERAL STATIC STABILITY CHARACTERISTICS AND ELEVATOR EFFECTIVENESS FOR MSC ORBITER S-3
1012	STRAIGHT WING	1	MSC SPACE SHUTTLE ORBITER (MOD. MAY 1969 CONFIGURATION) -- EFFECTS OF REYNOLDS NUMBER, BODY CORNER RADIUS, AND MACH NUMBER ON AERODYNAMIC CHARACTERISTICS
1013	DELTA WING	1	INVESTIGATION OF SUBSONIC AERODYNAMIC CHARACTERISTICS OF MODIFIED SEPTEMBER 1969 BASELINE MARTIN ORBITER CONFIGURATION FR5-2A
1018	UNIQUE CONFIGS	1	LARC VARIABLE DIHEDRAL ORBITER -- INVESTIGATION OF SUBSONIC STABILITY, CONTROL, AND PERFORMANCE CHARACTERISTICS
1021	DELTA WING	1	LONGITUDINAL AND LATERAL DIRECTIONAL CHARACTERISTICS AND CONTROL EFFECTIVENESS OF THE NARC 129 SSV ORBITER (DELTA WING, HIGH CROSS RANGE)
1022	DELTA WING	1	MODIFIED MARTIN ORBITER FR 5-2A -- INVESTIGATION OF SUBSONIC STABILITY, CONTROL AND PERFORMANCE CHARACTERISTICS
1023	DELTA WING	1	LONGITUDINAL AND DIRECTIONAL STATIC STABILITY CHARACTERISTICS OF MARTIN MARIETTA CORPORATION MODIFIED ORBITER (1/170 SCALE)

Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG. I D	VOLUME NUMBER	REPORT TITLE
1026	STRAIGHT WING	1	AERODYNAMIC CHARACTERISTICS OF SPACE SHUTTLE VEHICLES - NORTH AMERICAN ROCKWELL ORBITERS (M = 0 6 TO 2.0)
1027	STRAIGHT WING	1	STATIC STABILITY AND CONTROL INVESTIGATION FOR THE NORTH AMERICAN ROCKWELL DELTA WING (134B) AND STRAIGHT WING (130G) SPACE SHUTTLE ORBITERS
1028	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF MCDONNELL DOUGLAS LOW AND HIGH CROSS-RANGE ORBITERS AT MACH NUMBERS FROM 0 6 TO 2.0
1031	DELTA WING	1	HYPERSONIC AERODYNAMIC PERFORMANCE AND STABILITY AND CONTROL CHARACTERISTICS OF THE NAR HIGH CROSS-RANGE ORBITER
1034	STRAIGHT WING	1	EFFECT OF NACELLE POSITION, REFAIRED FUSELAGE, AND ELEVATOR EFFECTIVENESS AT MACH NUMBER 0.26 FOR THE NORTH AMERICAN ROCKWELL STRAIGHT WING ORBITER (0 00761 SCALE)
1037	DELTA WING	1	INVESTIGATION OF SUBSONIC AERODYNAMIC CHARACTERISTICS OF THE NAR 134B DELTA WING ORBITER
1040	DELTA WING	1	LONGITUDINAL AND LATERAL STABILITY CHARACTERISTICS OF THE MDC STS HIGH CROSS RANGE ORBITER (02)
1041	DELTA WING	1	INVESTIGATION OF LOW SPEED AERODYNAMIC CHARACTERISTICS OF A HIGH CROSS RANGE MDC STS ORBITER
1043	STRAIGHT WING	1	STATIC STABILITY AND CONTROL INVESTIGATION FOR THE NORTH AMERICAN ROCKWELL DELTA WING (134B) AND STRAIGHT WING (130G) SPACE SHUTTLE ORBITERS
1045	DELTA WING	1	MODIFIED MARTIN ORBITER FR5-2A -- INVESTIGATION OF CONFIGURATION CHANGES ON THE SUBSONIC AERODYNAMIC CHARACTERISTICS
1048	DELTA WING	1	LONGITUDINAL AND DIRECTIONAL STATIC STABILITY CHARACTERISTICS OF MARTIN MARIETTA CORPORATION MODIFIED ORBITER (1/170 SCALE)
1049	STRAIGHT WING	1	REYNOLDS NUMBER EFFECTS ON THE LOW-SPEED AERODYNAMIC CHARACTERISTICS OF THE NR STRAIGHT-WING ORBITER
1052	STRAIGHT WING	1	AERODYNAMIC FORCES AND MOMENT ON ORBITER AND BOOSTER DURING SPACE SHUTTLE ABORT SEPARATION
1053	DELTA WING	1	INVESTIGATION OF THE AERODYNAMIC CHARACTERISTICS OF THE GAC 518 EARTH ORBITING SHUTTLE, CONFIGURATION IIF, AT MACH NUMBER = 170
1057	STRAIGHT WING	1	INVESTIGATION OF LATERAL AND LONGITUDINAL STATIC STABILITY CHARACTERISTICS OF THE MSC ORBITERS S-1 AND S-5 AT MACH NUMBERS = 0.25
1059	DELTA WING	1	MODIFIED MARTIN-MARIETTA DELTA WING ORBITER AERODYNAMIC CHARACTERISTICS WITHOUT WING TIP FINS AND EFFECT OF ELEVON HINGE-LINE SWEEP ON ROLL-YAW COUPLING
1060	STRAIGHT WING	1	AERODYNAMIC CHARACTERISTICS OF THE NASA-MSC S-4 ORBITER IN CRUISE AND LANDING

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Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG. I.D	VOLUME NUMBER	REPORT TITLE
1062	STRAIGHT WING	1	MODEL S-5 NASA/MSC ORBITER SHUTTLE INVESTIGATION OF THE EFFECTS OF VERTICAL TAIL, AND GEOMETRY ON DIRECTIONAL STABILITY
1064	STRAIGHT WING	1	DETERMINATION OF STABILITY AND CONTROL CHARACTERISTICS OF THE NAR STRAIGHT WING ORBITER (M = 0.4 TO 1.2)
1067	DELTA WING	1	LONGITUDINAL AND LATERAL DIRECTIONAL STABILITY CHARACTERISTICS OF THE MDAC HIGH CROSS RANGE DELTA WING ORBITER
1069	STRAIGHT WING	1	STABILITY AND CONTROL INVESTIGATION OF NAR STRAIGHT WING ORBITER (M = 1.5 AND 2.0)
1071	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE MCDONNELL-DOUGLAS DELTA-WING ORBITER SPACE SHUTTLE VEHICLE
1072	STRAIGHT WING	1	STATIC AERODYNAMIC CHARACTERISTICS OF MDAC STRAIGHT-WING AND DELTA-WING SPACE SHUTTLE ORBITERS AT MACH NO. 7.4
1073	STRAIGHT WING	1	EFFECTS OF HORIZONTAL TAIL GEOMETRY AND POSITION ON LONGITUDINAL STABILITY OF MODEL S-5, NASA/MSC 0.01875 SCALE ORBITER SHUTTLE
1074	DELTA WING	1	DETERMINATION OF SUBSONIC AERODYNAMIC CHARACTERISTICS FOR MCDONNELL-DOUGLAS GENERIC HIGH CROSS RANGE SHUTTLE ORBITER
1076	STRAIGHT WING	1	STATIC STABILITY AND CONTROL INVESTIGATION OF THE NAR DELTA WING (134D) AND STRAIGHT WING (130G) SPACE SHUTTLE ORBITERS
1078	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE NORTH AMERICAN ROCKWELL DELTA-WING ORBITER AT MACH NUMBERS FROM 0.25 TO 2.0
1081	DELTA WING	1	SUBSONIC AERODYNAMIC CHARACTERISTICS OF THE GAC ORBITER
1082	STRAIGHT WING	1	AERODYNAMIC CHARACTERISTICS OF THE NORTH AMERICAN ROCKWELL STRAIGHT WING ORBITER AT MACH NUMBERS FROM 0.25 TO 2.0
1083	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF MCDONNELL - DOUGLAS DELTA WING ORBITER AT MACH NUMBERS FROM 0.6 TO 2.0
1084	DELTA WING	1	HYPERSONIC LONGITUDINAL AND LATERAL STABILITY AND CONTROL CHARACTERISTICS OF THE NR HIGH CROSS RANGE DELTA WING ORBITER
1086	DELTA WING	1	STATIC LONGITUDINAL, LATERAL AND DIRECTIONAL CHARACTERISTICS OF THE MDAC BASELINE ORBITER AT HYPERSONIC SPEEDS
1088	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE NR DELTA WING ORBITER (M = 20.3)
1090	STRAIGHT WING	1	SUBSONIC LONGITUDINAL AND LATERAL-DIRECTIONAL STABILITY INVESTIGATION OF THE MDAC LCR ORBITER UNPOWERED AND POWERED

Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
[illegible]	DELTA WING	[illegible]	DETERMINATION OF STATIC AERODYNAMIC CHARACTERISTICS FOR THE NORTH AMERICAN ROCKWELL DELTA WING ORBITER AT MACH NUMBERS OF 0.4 TO 1.3
1094	DELTA WING	1	AERODYNAMIC FORCE CHARACTERISTICS AND OIL FLOW STUDIES OF A DELTA WINGED SPACE SHUTTLE ORBITER
1095	DELTA WING	1	HYPERSONIC STABILITY AND CONTROL INVESTIGATION AND EVALUATION OF SPLIT ELEVON CONCEPT FOR YAW CONTROL FOR THE 0.00763 SCALE NR DELTA WING ORBITER, HCR 134D/161B
1096	DELTA WING	1	SUPERSONIC STABILITY AND CONTROL CHARACTERISTICS OF THE NR DELTA WING ORBITER - 134D/161B
1097	DELTA WING	1	TRANSONIC LONGITUDINAL AND LATERAL AERODYNAMIC CHARACTERISTICS OF THE NR DELTA WING ORBITER 134D
1101	DELTA WING	1	SUPERSONIC AERODYNAMIC STABILITY, CONTROL, AND PERFORMANCE OF A MODIFIED NR-134D ORBITER CONFIGURATION
1103	DELTA BODY	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE 0.01-SCALE LMSC DELTA LIFTING BODY ORBITER
1104	DELTA WING	1	STABILITY AND CONTROL CHARACTERISTICS FOR NR DELTA WING ORBITER AT HYPERSONIC VELOCITY
1104	DELTA WING	2	STABILITY AND CONTROL CHARACTERISTICS FOR NR STRAIGHT WING ORBITER AT HYPERSONIC VELOCITY
1105	DELTA WING	1	LONGITUDINAL, LATERAL-DIRECTIONAL STABILITY, AND CONTROL CHARACTERISTICS OF THE NR DELTA WING ORBITER OVER MACH NUMBER RANGE OF 0.6 TO 1.2
1106	DELTA WING	1	REYNOLDS NUMBER EFFECTS ON LONGITUDINAL AND LATERAL DIRECTIONAL STABILITY AND CONTROL QF THE NR DELTA WING ORBITER, 134D/161B
1107	DELTA WING	1	SUBSONIC LONGITUDINAL AND LATERAL AERODYNAMIC CHARACTERISTICS OF THE NR DELTA WING ORBITER 134D
1108	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	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	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	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	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

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Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS TR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
1106	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	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
1112	UNIQUE CONFIGS	1	AERODYNAMIC CHARACTERISTICS OF TWO DELTA WING SPACE SHUTTLE ORBITERS WITH AND WITHOUT EXTERNAL HYDROGEN TANKS (M = 0 3 TO 2 0)
1113	DELTA WING	1	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL CHARACTERISTICS OF THE NR 134-D DELTA WING ORBITER (M = 10 4)
1114	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF THE NR DELTA WING ORBITER M = 0.6 - 1 3
1115	DELTA 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	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MDAC/MMC SBC BOOSTER, DELTA WING ORBITER, AND ASCENT CONFIGURATIONS
1117	DELTA WING	2	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MDAC/MMC SBC BOOSTER, DELTA WING ORBITER, AND ASCENT CONFIGURATIONS
1117	DELTA WING	3	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MDAC/MMC SBC BOOSTER, DELTA WING ORBITER, AND ASCENT CONFIGURATIONS
1123	DELTA WING	1	STATIC STABILITY AND CONTROL CHARACTERISTICS OF THREE ELEVON CONFIGURATIONS, YAW CONTROL FLAP AND WING-MOUNTED DORSAL FINS OF A SPACE SHUTTLE PARAMETRIC DELTA WING ORBITER (M = 10.4)
1124	DELTA WING	1	LOW SPEED STABILITY AND CONTROL CHARACTERISTICS OF THE NORTH AMERICAN ROCKWELL DELTA WING ORBITER -134D AND -134C CONFIGURATIONS
1126	DELTA WING	1	STATIC STABILITY AND CONTROL CHARACTERISTICS OF THE NR DELTA WING (134D) SPACE SHUTTLE ORBITER M = 0 6 - 5 0
1142	DELTA WING	1	BASIC AERODYNAMIC CHARACTERISTICS FOR THREE GAC REUSABLE ORBITAL SPACEPLANE CONFIGURATIONS, ROS-NB1, ROS-NB2, AND ROS-WB1 AT 0 17 MACH NUMBER
1144	DELTA WING	1	SUPERSONIC STABILITY AND CONTROL CHARACTERISTICS OF A NR DELTA WING ORBITER - PART II M = 2 5-4 6
1147	DELTA BODY	1	STATIC STABILITY, CONTROL, AND PERFORMANCE OF LOCKHEED DELTA BODY ORBITER AT 0 205 MACH NUMBER
1149	DELTA WING	1	LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC CHARACTERISTICS OF THE LARC MODEL, MDAC DELTA WING ORBITER

Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
1151	DELTA WING	1	HYPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MCDONNELL-DOUGLAS 050B DELTA WING ORBITER (M = 10.23)
1153	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS AND CONTROL EFFECTIVENESS FOR MCDONNELL-DOUGLAS ORBITER CONFIGURATION FOR MACH NUMBER RANGE OF 0.4 TO 5.0
1157	DELTA BODY	1	STABILITY CONTROL AND PERFORMANCE CHARACTERISTICS OF THE LMSC DELTA BODY ORBITER AT SUBSONIC SPEEDS
1159	DELTA WING	1	BASIC HYPERSONIC FORCE DATA FOR GRUMMAN DELTA WING ORBITER CONFIGURATIONS ROS-NB1 AND ROS-WB1
1161	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS FOR THE GAC ROS-NB1 AND ROS-WB1 ORBITER CONFIGURATIONS AT TRANSONIC MACH NUMBERS (M = 0.7 - 1.16)
1162	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
1163	DELTA WING	1	BASIC SUPERSONIC FORCE DATA FOR GRUMMAN DELTA WING ORBITER CONFIGURATION ROS-NB1
1167	DELTA WING	1	BASIC SUBSONIC STATIC AERODYNAMIC CHARACTERISTICS FOR GRUMMAN H-33 ORBITER CONFIGURATION (M = 0.17)
1168	DELTA WING	1	SUBSONIC PERFORMANCE, STATIC STABILITY, AND CONTROL EFFECTIVENESS OF A PARAMETRIC DELTA WING ORBITER
1169	DELTA BODY	1	LMSC DELTA BODY ORBITER STALL CHARACTERISTICS AS INFLUENCED BY FIN AND BODY GEOMETRY VARIATIONS
1171	DELTA WING	1	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC CHARACTERISTICS OF THE MDAC DELTA WING ORBITER WITH FLARED RUDDER AND RL-10 ENGINE FAIRING
1171	DELTA WING	1	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC CHARACTERISTICS OF THE MDAC DELTA WING ORBITER WITH FLARED RUDDER AND RL-10 ENGINE FAIRING
1172	DELTA WING	1	DETERMINATION OF LOW SPEED LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC CHARACTERISTICS OF THE 0.007-SCALE MDAC DELTA WING ORBITER WITH AND WITHOUT ENGINE FAIRING
1173	DELTA WING	1	DETERMINATION OF TRIM CHARACTERISTICS AND AILERON CONTROL AT SUPERSONIC SPEEDS FOR THE MDAC 050-B ORBITER
1175	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MCDONNELL-DOUGLAS 050B DELTA WING ORBITER
1176	DELTA WING	1	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL CHARACTERISTICS FOR NR 134D AND 134D/161B DELTA WING ORBITERS (M = 20.3)

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Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
1132	UNIQUE CONFIGS	1	AERODYNAMIC CHARACTERISTICS OF SEVERAL LAUNCH CONFIGURATIONS UTILIZING THE TITAN III L BOOSTER AND MMC DTO-7 ORBITER
1184	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS AND CONTROL EFFECTIVENESS OF THE H-33 ORBITER AT MACH NUMBERS FROM 0.6 TO 4.96
1185	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)
1186	DELTA WING	1	AERODYNAMIC STABILITY AND CONTROL CHARACTERISTICS OF THE NASA/MSC .006 SCALE 040-A DELTA WING ORBITER
1187	UNIQUE CONFIGS	1	STATIC AERODYNAMIC CHARACTERISTICS OF THE S-IC BOOSTER/GAC H-33 ORBITER LAUNCH VEHICLE CONFIGURATION
1189	DELTA WING	1	LOW SPEED AERODYNAMIC CHARACTERISTICS OF A GAC H-33 ORBITER
1190	DELTA WING	1	HYPERSONIC STATIC LONGITUDINAL AERODYNAMIC CHARACTERISTICS OF PHASE B ASCENT CONFIGURATIONS
1194	DELTA WING	1	HYPERSONIC AERODYNAMIC CHARACTERISTICS WITH CONTROL EFFECTIVENESS OF A GAC H-33 ORBITER M = 10.2
1195	DELTA WING	1	TRANSONIC AERODYNAMIC CHARACTERISTICS OF A GAC H-33 ORBITER M = 0.6 TO 1.2
1196	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF A GAC H-33 ORBITER M = 1.6 TO 2.16
1199	DELTA WING	1	STATIC STABILITY AND CONTROL CHARACTERISTICS OF TWO ELEVON CONFIGURATIONS, A YAW CONTROL FLAP AND WING-MOUNTED DORSAL FINS OF A SPACE SHUTTLE PARAMETRIC DELTA WING ORBITER (M = 2.01)
1201	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS AND CONTROL EFFECTIVENESS OF TWO DELTA WING ORBITER CONFIGURATIONS (M = 0.6 TO 4.96)
1202	DELTA WING	1	AERODYNAMIC STABILITY AND CONTROL CHARACTERISTICS OF THE MSC 040-A ORBITER WITH VARIATIONS OF BODY, WING, VERTICAL TAIL AND CANOPY (M = 0.6 TO 2.0)
1203	DELTA WING	1	HYPERSONIC AERODYNAMIC CHARACTERISTICS WITH CONTROL EFFECTIVENESS OF A GAC H-33 ORBITER M = 6.0
1205	STRAIGHT WING	1	AN INVESTIGATION OF THE LANDING CHARACTERISTICS OF THE NASA-MSC AUGUST 1969 BASELINE ORBITER CONFIGURATION IN GROUND EFFECT
1211	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS AND OIL FLOW AND ELECTRON BEAM ILLUMINATION RESULTS OF 0.005854 AND 0.003366-SCALE MODELS OF THE GRUMMAN AIRCRAFT CORPORATION SPACE SHUTTLE ORBITER (H-33) AT A MACH NUMBER OF 20.3

Table 3.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1215	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A 1.9 PERCENT SCALE MODEL MSC 040A SPACE SHUTTLE ORBITER AT VARIOUS REYNOLDS NUMBERS (M = 0.25)
1216	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF A GAC H-33 ORBITER (M = 2.30 TO 4.63)
1218	DELTA WING	1	NOSE SHAPE AND CANOPY EFFECTS ON THE STATIC AERODYNAMIC CHARACTERISTICS OF THE 040A SHUTTLE ORBITER AT M = 20.3
1219	DELTA WING	1	HYPERSONIC AERODYNAMIC CHARACTERISTICS OF A 0.0075 SCALE MODEL MSC-040A SPACE SHUTTLE ORBITER (M = 10.3)
1221	DELTA WING	1	SUPERSONIC AERODYNAMIC CHARACTERISTICS OF THE MSC 040A ORBITER (M = 2.0 TO 4.0)
1229	DELTA WING	1	STATIC STABILITY AND CONTROL EFFECTIVENESS OF A LARC SPACE SHUTTLE ORBITER MODEL WITH A PLANE AND A TWISTED AND CAMBERED WING AT MACH NUMBER 0.25
1230	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	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	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	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	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
1232	DELTA WING	1	INVESTIGATION OF PROPULSION PACKAGES FOR THE NASA/LARC PARAMETRIC DELTA WING ORBITER
1232	DELTA WING	1	INVESTIGATION OF PROPULSION PACKAGES FOR THE NASA/LARC PARAMETRIC DELTA WING ORBITER
1233	DELTA WING	1	AN INVESTIGATION OF THE SUBSONIC STABILITY AND CONTROL CHARACTERISTICS OF A "STRETCHED" PAYLOAD TYPE DELTA WING ORBITER
1235	DELTA WING	1	STABILITY AND CONTROL CHARACTERISTICS OF ORBITER WITH TWISTED AND CAMBERED WING AT SUPERSONIC SPEEDS

Table 3.1.2 - Concluded

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
[illegible]	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS OF STAGE ARRANGEMENTS AT SUPERSONIC SPEEDS FOR A SPACE SHUTTLE (0056 SCALE MODEL)
[illegible]	DELTA WING	1	EFFECTS OF ROUGHNESS ON AERODYNAMIC CHARACTERISTICS OF GRUMMAN H-33 ORBITER AT M = 0.25
1243	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS OF THE MSC-040A SPACE SHUTTLE ORBITER WITH WEDGE CENTERLINE VERTICAL AND TWIN VERTICAL TAILS AT MACH NUMBERS FROM 0.6 TO 4.96
1250	DELTA WING	[illegible]	EFFECTS OF REYNOLDS NUMBER ON AERODYNAMIC STABILITY AND CONTROL CHARACTERISTICS OF THE MANNED SPACECRAFT CENTER CLASS 040 SPACE SHUTTLE ORBITER AT MACH NUMBERS OF 0.6 TO 1.2
1254	DELTA WING	1	AERODYNAMIC CHARACTERISTICS OF A DOUBLE DELTA WING SPACE SHUTTLE ORBITER (M = 0.6 - 5.0)
1258	DELTA WING	1	EFFECTIVENESS OF WING-UPPER-SURFACE FLAP AT SUPERSONIC SPEEDS ON 040A DELTA-WING ORBITER
1268	DELTA WING	1	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL STABILITY CHARACTERISTICS OF A 0.01875 SCALE MODEL DOUBLE DELTA WING SPACE SHUTTLE ORBITER AT A MACH NUMBER OF 0.25
1270	DELTA WING	1	STATIC AERODYNAMIC CHARACTERISTICS AND CONTROL EFFECTIVENESS OF A DOUBLE DELTA WING ORBITER CONFIGURATION AT M = 20.3
1270	DELTA WING	2	STATIC AERODYNAMIC CHARACTERISTICS AND CONTROL EFFECTIVENESS OF A DOUBLE DELTA WING ORBITER CONFIGURATION AT M = 20.3 -- FLOW STUDIES
1274	DELTA WING	1	STATIC STABILITY AND CONTROL EFFECTIVENESS OF THE 040A DELTA WING ORBITER (M = 0.6 TO 4.96)
1277	DELTA WING	1	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL STABILITY CHARACTERISTICS OF A 0.0075 SCALE MODEL DOUBLE DELTA-WING SPACE SHUTTLE ORBITER AT MACH NUMBER OF 10.33

Table 3.2.2

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

Orbiter Airloads

DMS-DP#	CONFIG. I.D.	VOLUME NUMBER	REPORT TITLE
1129	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	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	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
1225	DELTA WING	1	SURFACE PRESSURE AND INVISCID FLOW FIELD PROPERTIES OF THE MCDONNELL-DOUGLAS DELTA-WING ORBITER FOR NOMINAL MACH NUMBER OF 8
1225	DELTA WING	2	SURFACE PRESSURE AND INVISCID FLOW FIELD PROPERTIES OF THE NORTH AMERICAN ROCKWELL DELTA-WING ORBITER FOR NOMINAL MACH NUMBER OF 8
1225	DELTA WING	3	SURFACE PRESSURE AND INVISCID FLOW FIELD PROPERTIES OF THE MCDONNELL-DOUGLAS BOOSTER AT NOMINAL MACH NUMBER OF 8
1259	DELTA WING	1	PRELIMINARY PRESSURE DISTRIBUTIONS ON THE 049 ORBITER, ORBITER IN PRESENCE OF H/O TANK AND ORBITER IN LAUNCH CONFIGURATION

Table 3.3.2

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

Orbiter Heat Transfer

DMS-DR#	CONFIG I.D	VOLUME NUMBER	REPORT TITLE
1032	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
1056	STRAIGHT WING	1	INVESTIGATION OF CONFIGURATION EFFECTS ON ENTRY HEAT TRANSFER DISTRIBUTIONS AND DEFINITION OF INTERFERENCE HEATING AREAS ON SPACE SHUTTLE ORBITER CONFIGURATIONS
1056	STRAIGHT WING	1	INVESTIGATION OF CONFIGURATION EFFECTS ON ENTRY HEAT TRANSFER DISTRIBUTIONS AND DEFINITION OF INTERFERENCE HEATING AREAS ON SPACE SHUTTLE ORBITER CONFIGURATIONS
1098	STRAIGHT WING	1	HEAT TRANSFER RESULTS ON SPACE SHUTTLE PHASE B LAUNCH CONFIGURATION AT MACH NUMBERS OF 2.5 AND 3.7
1131	STRAIGHT WING	1	AERODYNAMIC HEATING OF A SPACE SHUTTLE STRAIGHT-WING ORBITER
1146	DELTA WING	1	HEAT TRANSFER TEST TO DETERMINE INTERFERENCE HEATING ON THE GRUMMAN DELTA-WING ORBITER (ROS-NB2) AND TANK SURFACES AT MACH 10.0
1154	DELTA WING	1	AERODYNAMIC HEATING OF THE GRUMMAN SPACE SHUTTLE ORBITERS (ROS-NB1 AND ROS-WB1) AT MACH NUMBER 8.0
1165	DELTA WING	1	HEAT TRANSFER VERIFICATION ON NORTH AMERICAN ROCKWELL DELTA WING ORBITER (SSV-161B)
1170	DELTA WING	1	AERODYNAMIC HEATING TESTS OF THE MDAC DELTA WING ORBITER AND CANARD BOOSTER
1177	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	2	HEAT TRANSFER RATE MEASUREMENTS ON CONVAIR BOOSTER (B-15B-2) AT NOMINAL MACH NUMBER OF 8
1177	DELTA WING	3	HEAT TRANSFER RATE MEASUREMENTS ON NORTH AMERICAN ROCKWELL ORBITER (161B) AT NOMINAL MACH NUMBER OF 8
1178	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
1180	DELTA WING	1	AERODYNAMIC HEATING OF A SPACE SHUTTLE DELTA-WING ORBITER AT M = 7.4
1206	DELTA WING	1	HEAT TRANSFER INVESTIGATION OF THE MCDONNELL-DOUGLAS DELTA WING ORBITER AT A NOMINAL MACH NUMBER OF 10.5
1207	DELTA WING	1	HEAT TRANSFER RATE DISTRIBUTIONS ON MCDONNELL-DOUGLAS DELTA WING ORBITER DETERMINED BY PHASE-CHANGE PAINT TECHNIQUE FOR NOMINAL MACH NUMBER OF 8

Table 3.3.2 - Concluded

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

Orbiter Heat Transfer

DMS-DR#	CONFIG I D	VOLUME NUMBER	REPORT TITLE
1207	DELTA WING	2	HEAT TRANSFER RATE DISTRIBUTIONS ON MCDONNELL-DOUGLAS BOOSTER DETERMINED BY PHASE-CHANGE TECHNIQUE FOR NOMINAL MACH NUMBER OF 8
1224	DELTA BODY	1	HEAT TRANSFER INVESTIGATION OF TWO LANGLEY RESEARCH CENTER DELTA WING CONFIGURATIONS AT A MACH NUMBER OF 10.5
1224	DELTA BODY	2	HEAT TRANSFER INVESTIGATION OF LANGLEY RESEARCH CENTER TRANSITION MODELS AT A MACH NUMBER OF 8
1231	DELTA WING	1	HEAT TRANSFER RATE DISTRIBUTIONS ON NORTH AMERICAN ROCKWELL DELTA WING ORBITER DETERMINED BY PHASE CHANGE PAINT TECHNIQUES AT A MACH NUMBER OF 8
1234	DELTA WING	1	HEAT TRANSFER STUDY OF THE GRUMMAN H-33/HO ORBITER
1252	DELTA WING	1	AERODYNAMIC HEATING DISTRIBUTIONS ON A SPACE SHUTTLE DELTA-WING ORBITER
1262	DELTA WING	1	HEAT TRANSFER TESTS OF THE MCDONNELL-DOUGLAS DELTA WING ORBITER MATED WITH -17A BOOSTER AT MACH NUMBER 8
1262	DELTA WING	2	HEAT TRANSFER TESTS OF THE MCDONNELL-DOUGLAS DELTA WING ORBITER AND THE -17A BOOSTER (NOT MATED) AT MACH NUMBER 8
1264	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	2	ASCENT HEAT TRANSFER RATE DISTRIBUTION ON THE NR DELTA WING ORBITER AND THE GD/C BOOSTER AT MACH NUMBER OF 8 (NOT MATED)
1266	DELTA WING	1	HEAT TRANSFER DISTRIBUTIONS ON THE LMSC 040C AND 040A-L4 DELTA WING ORBITERS (M = 8)

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Table 4.1.2

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1002	STRAIGHT WING	ARC 3 5HWT 78	J AXELSON /ARC	RE-ENTRY CHARACTERISTICS
1003	DELTA WING	MSFC 14TWT 453	D SARVER /MMC	CRUISE-LANDING CHARACTERISTICS, CAMBER EFFECTS
1004	STRAIGHT WING	LARC 20HT6 6315	D. STONE /LARC	RE-ENTRY CHARACTERISTICS
1005	DELTA BODY	GAC 710SWT 280	S KALEMARIS, A MCBRIDE, J WHEELER /GAC	LOW SPEED AERO CHARACTERISTICS, RETRACTABLE WING CAPABILITIES
1007	STRAIGHT WING	MAC LSWT 223	A. M WHITNAH /MSC	LOW SPEED AERO CHARACTERISTICS, WING POSITION EFFECTS
1006	STRAIGHT WING	TAM 710SWT S-VI	A M WHITNAH /MSC	LOW SPEED AERO CHARACTERISTICS, ELEVATOR EFFECTIVENESS, EFFECTS OF HORIZONTAL TAIL INCIDENCE ANGLE
1009	DELTA WING	LARC 22HT 7341-7343	J. P. ARRINGTON /LARC	RE-ENTRY CHARACTERISTICS, ELEVATOR DEFLECTION EFFECTS
1010	STRAIGHT WING	NRLAD LSWT 629	R MENNELL /NR	LOW SPEED AERO CHARACTERISTICS, WING LOCATION AND BUILD-UP EFFECTS
1011	STRAIGHT WING	ARC 66SWT 465	J. J. BROWNSON /ARC	CONFIGURATION BUILD-UP AND ELEVATOR EFFECTS
1012	STRAIGHT WING	ARC 11TWT 481-1	J. J. BROWNSON /ARC	REYNOLDS NUMBER, BODY CORNER RADIUS AND MACH NUMBER EFFECTS
1013	DELTA WING	LARC LTPT 50	D C. FREEMAN /LARC	LOW SPEED AERO CHARACTERISTICS, ELEVON EFFECTIVENESS
1018	UNIQUE CONFIGS	LARC LTPT 49	B. SPENCER, G. M. WARE /LARC	WING DIHEDRAL, BODY FLAP AND WING-MOUNTED ELEVON DEFLECTION EFFECTS
1021	DELTA WING	ARC 66SWT 484	J. CLEARY /ARC	CONFIGURATION BUILD-UP, WING AND TAIL VARIATIONS, ELEVON AND RUDDER FLARE EFFECTS
1022	DELTA WING	LARC 710SWT 905	D. C. FREEMAN, C. FOX /LARC	EFFECTS OF CONTROL SURFACE DEFLECTIONS, BODY BOATTAILING, WING TIP VARIATIONS
1023	DELTA WING	LARC 20HT6 6329	G. C. ASHBY /LARC	ELEVATOR DEFLECTIONS AND CENTER VERTICAL FIN EFFECTS

Table 4.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG. I.D.	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1026	STRAIGHT WING	ARC 66SWT 503	G. N. MALCOLM /ARC - A. L. CLARKE, D. C. OLSEN /NR	BODY BUILD-UP, NOSE AND HORIZONTAL STABILIZER EFFECTS - COMPARISON
1026	DELTA WING	ARC 66SWT 503	G. N. MALCOLM /ARC - A. L. CLARKE, D. C. OLSEN /NR	BODY BUILD-UP, NOSE AND HORIZONTAL STABILIZER EFFECTS - COMPARISON
1027	STRAIGHT WING	MSFC 14TWT 468	E. C. ALLEN /MSFC - D. C. OLSEN /NR	BODY BUILD-UP EFFECTS - COMPARISON
1027	DELTA WING	MSFC 14TWT 468	E. C. ALLEN /MSFC - D. C. OLSEN /NR	BODY BUILD-UP EFFECTS - COMPARISON
1028	DELTA WING	ARC 66SWT 514	P. F. INTRIERI /ARC	CONTROL SURFACE AND CONFIGURATION COMPONENT VARIATIONS EFFECTS
1028	STRAIGHT WING	ARC 66SWT 514	P. F. INTRIERI /ARC	CONTROL SURFACE AND CONFIGURATION COMPONENT VARIATIONS EFFECTS
1031	DELTA WING	ARC 3.5HWT 88	J. W. CLEARY /ARC - B. CAMERON, L. CLARKE /NR	RE-ENTRY STABILITY AND CONTROL CHARACTERISTICS EVALUATION
1034	STRAIGHT WING	NRLAD LSWT 632	A. TWEEDIE, T. TUTTLE, W. LESTER /NR	NACELLE POSITION, REFAIRED FUSELAGE EFFECTS AND ELEVATOR EFFECTIVENESS
1037	DELTA WING	NRLAD LSWT 630	R. MENNELL /NR	SUBSONIC AERO CHARACTERISTICS
1040	DELTA WING	MAC LSWT 235	R. E. COLE, M. V. HECKART, D. FIELD /MDAC-E	RUDDER AND ELEVON EFFECTIVENESS, AERODYNAMIC CHARACTERISTICS
1041	DELTA WING	MAC LSWT 240	D. FIELD, M. V. HECKART, P. J. SEENEY /MDAC-E	LOW SPEED LONGITUDINAL AND LATERAL AERODYNAMIC CHARACTERISTICS
1043	STRAIGHT WING	MSFC 14TWT 471	E. C. ALLEN /MSFC	BODY BUILD-UP EFFECTS
1043	DELTA WING	MSFC 14TWT 471	E. C. ALLEN /MSFC	BODY BUILD-UP EFFECTS
1045	DELTA WING	LARC LTPT 50-2	D. C. FREEMAN /LARC	ELEVON EFFECTIVENESS
1048	DELTA WING	LARC 20HT6 6355-6329	G. C. ASHBY /LARC	STATIC STABILITY CHARACTERISTICS
1049	STRAIGHT WING	LARC LTPT 52	P. PHILLIPS, B. SPENCER /LARC - R. MENNELL, H. PARRELL /NR	REYNOLDS NUMBER EFFECTS
1052	STRAIGHT WING	GDC 4HSWT 304-0	J. M. DEBEVOISE /GD/C	ABORT SEPARATION EFFECTS
1052	DELTA WING	GDC 4HSWT 304-0	J. M. DEBEVOISE /GD/C	ABORT SEPARATION EFFECTS
1053	DELTA WING	GAC 710SWT 279	S. KALEMARIS, A. MCBRIDE, J. WHEELER /GAC	EFFECTS OF FUSELAGE CAMBER LINES, CHINE RADII AND WING VARIATIONS

Table 4.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1057	STRAIGHT WING	TAM 710SWT S-18/S-35	R H MOORE /MSC	COMPONENT BUILD-UP, HORIZONTAL TAIL INCIDENCE, WING LOCATION AND ELEVATOR DEFLECTIONS
1057	STRAIGHT WING	TAM 710SWT S-18/S-35	R H MOORE /MSC	COMPONENT BUILD-UP, HORIZONTAL TAIL INCIDENCE, WING LOCATION AND ELEVATOR DEFLECTIONS
1059	DELTA WING	LARC 22HT 7369	J P ARRINGTON /LARC	AERODYNAMIC CHARACTERISTICS WITHOUT WING TIP FINS AND EFFECT OF ELEVON HINGELINE SWEEP ON ROLL-YAW COUPLING
1060	STRAIGHT WING	TAM 710SWT S-8-1	E B CHAMBLISS, R H MOORE /MSC - D MILLIKAN /TA&M	CRUISE AND LANDING AERO CHARACTERISTICS, COMPONENT BUILD-UP
1062	STRAIGHT WING	TAM 710SWT S-38	D L EICHBLATT /TA&M	EFFECTS OF VERTICAL TAIL, GEOMETRY ON DIRECTIONAL STABILITY
1064	STRAIGHT WING	LARC LTPT 545	R MAGEE, P PHILLIPS /LARC - H. PARRELL, R. MENNELL /NR	TRANSONIC STABILITY AND CONTROL CHARACTERISTICS
1067	DELTA WING	MAC LSWT 248	P J SEENEY, D FIELD, D. HEINEMANN /MDAC-E	LONGITUDINAL AND LATERAL DIRECTIONAL STABILITY, CRUISE AND LANDING
1069	STRAIGHT WING	LARC UPWT 922	R W POWELL /LARC	STABILITY AND CONTROL, HORIZONTAL TAIL INCIDENCE AND DIHEDRAL
1071	DELTA WING	ARC 3 5HWT 111/113	J A MELLENTHIN /ARC - R HAMILTON /MDAC-E	AERO CHARACTERISTICS - VERTICAL TAIL CONFIGURATION VARIATIONS
1072	STRAIGHT WING	ARC 3 5HWT 104	J A MELLENTHIN /ARC - R HAMILTON /MDAC-E	HYPERSONIC PERFORMANCE, STABILITY AND CONTROL CHARACTERISTICS
1072	DELTA WING	ARC 3 5HWT 104	J A MELLENTHIN /ARC - R. HAMILTON /MDAC-E	HYPERSONIC PERFORMANCE, STABILITY AND CONTROL CHARACTERISTICS
1073	STRAIGHT WING	TAM 710SWT S-39	H A POPE /MSC	EFFECTS OF HORIZONTAL TAIL GEOMETRY AND POSITION ON LONGITUDINAL STABILITY
1074	DELTA WING	MAC LSWT 138	L. S WHITE /MDAC-E	SUBSONIC AERODYNAMIC CHARACTERISTICS, CONFIGURATION VARIATION
1075	STRAIGHT WING	MSFC 14TWT 478	E. C ALLEN /NR	STATIC STABILITY AND CONTROL INVESTIGATION
1076	DELTA WING	MSFC 14TWT 478	E. C. ALLEN /NR	STATIC STABILITY AND CONTROL INVESTIGATION

Table 4.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DP#	CONFIG I.D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1078	DELTA WING	ARC 66SWT 503/513	G. N. MALCOLM /ARC	STABILITY AND CONTROL CHARACTERISTICS, CONFIGURATION VARIATION
1081	DELTA WING	GAC 710SWT 289	W. JUNG, M. FRACINELLA, M. QUAN /GAC	SUBSONIC AERODYNAMIC CHARACTERISTICS, CONFIGURATION BUILD-UP
1082	STRAIGHT WING	ARC 66SWT 503/513	G. N. MALCOLM /ARC	STABILITY AND CONTROL CHARACTERISTICS, CONFIGURATION BUILD-UP
1083	DELTA WING	ARC 66SWT 527	P. F. INTRIERI /ARC - L. S. WHITE /MDAC	BASIC STATIC LONGITUDINAL, LATERAL AND DIRECTIONAL AERODYNAMIC CHARACTERISTICS
1084	DELTA WING	LARC CFHT 63	T. BLACKSTOCK /LARC - R. MENNELL /NR	HYPERSONIC STABILITY AND CONTROL CHARACTERISTICS, COMPONENT VARIATION
1086	DELTA WING	LARC 22HT 7377	J. P. ARRINGTON /LARC	HYPERSONIC LONGITUDINAL, LATERAL AND DIRECTIONAL CHARACTERISTICS
1088	DELTA WING	LARC 22HT 7376	J. P. ARRINGTON /LARC	AERODYNAMIC CHARACTERISTICS
1090	STRAIGHT WING	MAC LSWT 237	R. MANN, P. J. SEENEY, J. E. WILLIAMS /MDAC-E	STABILITY CHARACTERISTICS - POWERED AND UNPOWERED
1092	DELTA WING	AEDC PWT4T TC135	C. D. ANDREWS /LMSC - E. C. ALLEN /NR	AERODYNAMIC FORCE AND MOMENT COEFFICIENTS
1094	DELTA WING	ARC 3.5HWT 125	J. A. MELLENTHIN /ARC - R. K. HAMILTON, G. D. ZOERNER /MDAC-E	STATIC AERODYNAMIC DATA - FLOW VISUALIZATION
1095	DELTA WING	LARC 20HT6 6366	T. GOLDBERG, C. EMERY /LARC - D. C. OLSEN, R. MENNELL /NR	HYPERSONIC STABILITY AND CONTROL CHARACTERISTICS
1096	DELTA WING	LARC UPWT 951	G. FOSTER, E. GRAVES /LARC - R. MENNELL, D. C. OLSEN, B. CAMERON /NR	BODY BUILD-UP AND STABILITY CHARACTERISTICS
1097	DELTA WING	LARC 8TPT 574	D. C. FREEMAN /LARC	TRANSONIC AERODYNAMIC CHARACTERISTICS
1101	DELTA WING	LARC UPWT 944/961	D. C. FREEMAN /LARC	SUPERSONIC AERO CHARACTERISTICS
1103	DELTA BODY	LARC UPWT 955	H. SVENDSEN /LMSC	SUPERSONIC AERO CHARACTERISTICS
1104	DELTA WING	ARC 3.5HWT 109A	J. W. CLEARY /ARC - R. C. MENNELL, A. L. CLARKE /NR	HYPERSONIC STABILITY AND CONTROL CHARACTERISTICS

Table 4.1.2 - Continued
Space Shuttle Phase B Wind Tunnel Test
Database Test Engineers and Test Purposes

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1104	STRAIGHT WING	ARC 3 5HWT 1098	J W CLEARY /ARC - R C MENNELL, A L CLARKE /NR	HYPERSONIC STABILITY AND CONTROL CHARACTERISTICS
1105	DELTA WING	LARC 8TPT 573	G. WARE /LARC - R. MENNELL, D C. OLSEN, B CAMERON /NR	SUBSONIC AND TRANSONIC STABILITY AND CONTROL CHARACTERISTICS
1106	DELTA WING	LARC LTPT 57	R. MENNELL /LARC	REYNOLDS NUMBER EFFECTS ON LONGITUDINAL AND LATERAL-DIRECTIONAL STABILITY
1107	DELTA WING	LARC LTPT 58	D C. FREEMAN /LARC	SUBSONIC AERO CHARACTERISTICS
1108	DELTA WING	AEDC CWTA 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
1112	UNIQUE CONFIGS	ARC 66SWT 547	J J. BROWNSON /ARC - M. QUAN, W. JUNG /GAC	TRANSONIC AERODYNAMIC CHARACTERISTICS, BUILD-UP
1113	DELTA WING	LARC CFHT 62	P T. BERNOT /LARC	STATIC AERODYNAMIC CHARACTERISTICS, RUDDER AND AILERON EFFECTIVENESS
1114	DELTA WING	MSFC 14TWT 477	C. D. ANDREWS /LMSC	FORCE AND STABILITY INVESTIGATION
1115	DELTA WING	LTV HSWT S-30	P R. ROMERE, I H FOSSLER /MSC	AERO CHARACTERISTICS DURING SEPARATION OR ABORT
1117	DELTA WING	LARC UPWT 963	E. B. GRAVES /LARC - G. HOLLE /MMC	AERODYNAMIC CHARACTERISTICS, INTERFERENCE EFFECTS
1123	DELTA WING	LARC CFHT 61	H. W. STONE /LARC	STATIC AERO CHARACTERISTICS
1124	DELTA WING	NRLAD LSWT 633	O. M SOKOLSKY, W LESTER /NR	LOW SPEED STABILITY AND CONTROL
1126	DELTA WING	MSFC 14TWT 484	E. C. ALLEN /NR	STATIC STABILITY AND CONTROL INVESTIGATION
1142	DELTA WING	GAC 710SWT 290	W. JUNG, F CARLUCCI /GAC	BASIC SUBSONIC AERO DATA
1144	DELTA WING	LARC UPWT 9518	E B GRAVES /LARC - R C. MENNELL, B W. CAMERON /NR	STABILITY AND CONTROL CHARACTERISTICS
1147	DELTA BODY	LARC V/STOL 007	P PHILLIPS /LARC	SUBSONIC AERO DATA, COMPONENT VARIATIONS
1149	DELTA WING	LARC LTPT 62	J C ELLISON, B SPENCER /LARC	LONGITUDINAL AND LATERAL DIRECTIONAL AERO CHARACTERISTICS

Table 4.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1151	DELTA WING	LARC CFHT 68/71	R W POWELL /LARC	STATIC LONGITUDINAL LATERAL AND DIRECTIONAL CHARACTERISTICS
1153	DELTA WING	MSFC 14TWT 494	R R ELLIS /LMSC	AERODYNAMIC FORCES, MOMENTS, STATIC STABILITY CHARACTERISTICS AND CONTROL EFFECTIVENESS
1157	DELTA BODY	LARC LTPT 63	B SPENCER, W. P PHILLIPS /LARC	EFFECTS OF RUDDER, SPEED BRAKE, FLAP AND ELEVON
1159	DELTA WING	GAC 36HWT 019	M MILHOUS, J LEVINE, B JOHANNESEN /GAC	LONGITUDINAL AND LATERAL CONTROL EFFECTIVENESS
1161	DELTA WING	GAC 26TWT 035	F. MANKE, R. KREPSKI, B. JOHANNESEN /GAC	ELEVON, RUDDER, FIN EFFECTIVENESS - CONFIGURATION BUILD-UP
1162	UNIQUE CONFIGS	MSFC 14TWT 497	E. C ALLEN /NR	AERODYNAMIC FORCE AND MOMENT DATA, CONTROL EFFECTIVENESS
1163	DELTA WING	GAC 15SWT 022	F MANKE, R KREPSKI, B. JOHANNESEN /GAC	CONFIGURATION BUILD-UP, ELEVON AND RUDDER EFFECTIVENESS
1167	DELTA WING	GAC 710SWT 292	W JUNG, F CARLUCCI /GAC	STATIC AERODYNAMIC CHARACTERISTICS
1168	DELTA WING	LARC LTPT 65	W I SCALLION /LARC	SUBSONIC STATIC STABILITY, CONTROL, AND PERFORMANCE
1169	DELTA BODY	LARC LTPT 69	B SPENCER, R PHILLIPS /LARC - H. H DROSDAT /LMSC	STALL CHARACTERISTICS
1171	DELTA WING	LARC 8TPT 595	J C. ELLISON, L. E. PUTNAM /LARC - T G. BLEEDORN, K J. GLASS, L. S. WHITE /MDAC	RUDDER FLARE AND RL-10 ENGINE FAIRING EFFECTS ON STABILITY AND CONTROL CHARACTERISTICS
1171	DELTA WING	LARC 44SPT 438	J C. ELLISON, L E. PUTNAM /LARC - T G. BLEEDORN, K J. GLASS, L. S. WHITE /MDAC	RUDDER FLARE AND RL-10 ENGINE FAIRING EFFECTS ON STABILITY AND CONTROL CHARACTERISTICS
1172	DELTA WING	LARC LTPT 71	J. C ELLISON /LARC	STATIC AERODYNAMIC CHARACTERISTICS
1173	DELTA WING	LARC UPWT 942	J. C ELLISON /LARC	STATIC AERODYNAMIC CHARACTERISTICS
1175	DELTA WING	LARC 44SPT 432	R W POWELL /LARC	ELEVATOR, AILERON, AND RUDDER EFFECTIVENESS
1176	DELTA WING	LARC 22HT 7386-7390	J. P ARRINGTON /LARC	STATIC AERODYNAMIC CHARACTERISTICS

Table 4.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I.D.	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1182	UNIQUE CONFIGS	MSFC 14TWT 505	D J MICHNA /MMC	ASCENT AND REENTRY AERODYNAMIC DATA
1182	DELTA WING	MSFC 14TWT 505	D J MICHNA /MMC	ASCENT AND REENTRY AERODYNAMIC DATA
1184	DELTA WING	MSFC 14TWT 507	R KREPSKI, M QUAN, A FRANCARIO /GAC - K BLACKWELL /MSFC	EFFECTS OF COMPONENT BUILD-UP AND VARIOUS CONTROL DEFLECTIONS
1185	DELTA WING	MSFC 14TWT 509	E. C ALLEN /NR	AERODYNAMIC FORCE AND MOMENT DATA, ORBITER ALONE AND WITH EXTERNAL TANKS
1186	DELTA WING	MSFC 14TWT 510	P L CLICK, D. MICHNA, D. A. SARVER /MMC	CONTROL EFFECTIVENESS AND VEHICLE STABILITY, CONFIGURATION BUILD-UP
1187	UNIQUE CONFIGS	MSFC 14TWT 502	J F SIMS /MSFC - R. W AINSWORTH /TBC	AERODYNAMIC CHARACTERISTICS
1189	DELTA WING	LARC LTPT 75	G WARE, B SPENCER /LARC - B. JOHANNESEN /GAC	EFFECTS OF SYMMETRIC AND ASYMMETRIC ELEVON, RUDDER DEFLECTIONS
1190	DELTA WING	LARC 22HT 7377-79,7380-90	J P ARRINGTON /LARC	STATIC AERODYNAMIC CHARACTERISTICS, ASCENT INTERFERENCE EFFECTS
1190	DELTA WING	LARC 22HT 7377-79,7380-90	J P ARRINGTON /LARC	STATIC AERODYNAMIC CHARACTERISTICS, ASCENT INTERFERENCE EFFECTS
1194	DELTA WING	LARC CFHT 76	R POWELL /LARC	SEPARATION TEST, AERODYNAMIC CHARACTERISTICS
1195	DELTA WING	LARC 8TPT 604	G. WARE /LARC - B JOHANNESEN /GAC	EFFECTS OF ELEVON, RUDDER DEFLECTIONS
1196	DELTA WING	LARC UPWT 964	G WARE /LARC - B JOHANNESEN /GAC	EFFECTS OF ELEVON, RUDDER DEFLECTIONS
1199	DELTA WING	LARC 44SPT 430	H W STONE, R J. RE /LARC	EFFECTS OF ELEVON CONFIGURATION, YAW CONTROL FLAP, WING-MOUNTED FINS
1201	DELTA WING	MSFC 14TWT 498	R R ELLIS, R BUCHHOLTZ, J A MOORE /LMSC	FORCE, STATIC STABILITY, CONTROL EFFECTIVENESS DATA
1201	DELTA WING	MSFC 14TWT 498	R R. ELLIS, R BUCHHOLTZ, J. A. MOORE /LMSC	FORCE, STATIC STABILITY, CONTROL EFFECTIVENESS DATA
1202	DELTA WING	ARC 66SWT 605	J J BROWNSON /ARC - I H FOSSLER /MSC - D OLSEN /NR	EFFECTS OF COMPONENTS AND COMPONENT VARIATIONS
1203	DELTA WING	LARC 20HT6 6392	D R STONE /LARC	REENTRY STABILITY AND CONTROL CHARACTERISTICS

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Table 4.1.2 - Continued

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1205	STRAIGHT WING	TAM 7105WT S-8-2	E. B. CHAMBLISS /MSC - D. MILLIKAN /TA&M	LANDING AERODYNAMIC CHARACTERISTICS
1211	DELTA WING	LARC 22HT 7397	D. R. STONE, J. P. ARRINGTON /LARC	REENTRY STABILITY AND CONTROL CHARACTERISTICS
1211	DELTA WING	LARC 22HT 7397	D. R. STONE, J. P. ARRINGTON /LARC	REENTRY STABILITY AND CONTROL CHARACTERISTICS
1215	DELTA WING	LARC [illegible] 45	K. J. [illegible], F. [illegible] KIRKBRIDE /MDAC - J. C. ELLISON, B. SPENCER /LARC - A. M. WHITNAH, E. R. HILLJE /MSC	STABILITY, CONTROL AND PERFORMANCE CHARACTERISTICS, CONFIGURATION VARIATION, REYNOLDS NUMBER EFFECTS
1216	DELTA WING	LARC UPWT 964-969	G. M. WARE /LARC	AERODYNAMIC FORCE AND MOMENT DATA
1218	DELTA WING	LARC 22HT 7398	J. P. ARRINGTON /LARC	STATIC STABILITY, CONTROL AND PERFORMANCE CHARACTERISTICS, EFFECT OF CONFIGURATION ALTERATIONS
121[illegible]	DELTA WING	LARC CFHT [illegible]	B. ROBERTS, R. MORE /MSC - R. MEYER, M. QUAN /GAC - T. BLACKSTOCK /LARC	EFFECTS OF COMPONENT BUILD-UP AND VARIOUS CONTROL DEFLECTIONS
1221	DELTA WING	JPL 20SWT 681	F. TESSITORE, M. QUAN /GAC - R. ROMERE, R. MOORE /MSC - R. WEAVER /JPL	SUPERSONIC AERO CHARACTERISTICS, EFFECTS OF COMPONENT BUILD-UP
1229	DELTA WING	LARC LTPT 72	W. I. SCALLION /LARC	LONGITUDINAL AND LATERAL CONTROL EFFECTIVENESS, STATIC STABILITY AND PERFORMANCE
1230	DELTA WING	MDAC 4TWT S-222	T. W. JARRETT /MDAC	AERODYNAMIC CHARACTERISTICS, INDIVIDUAL CONTRIBUTIONS DURING ASCENT, AND RELATIVE ORBITER AND BOOSTER POSITION INTERFERENCE EFFECTS
1232	DELTA WING	LARC UPWT 968	J. C. ELLISON /LARC	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC EFFECTS OF VARIOUS CONFIGURATION CHANGES
1232	DELTA WING	LARC LTPT 77	J. C. ELLISON /LARC	STATIC LONGITUDINAL AND LATERAL-DIRECTIONAL AERODYNAMIC EFFECTS OF VARIOUS CONFIGURATION CHANGES

Table 4.1.2 - Concluded

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

Orbiter Aerodynamics

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1233	DELTA WING	LARC LTPT 87	W P PHILLIPS /LARC	STATIC STABILITY AND LONGITUDINAL CONTROL CHARACTERISTICS
1235	DELTA WING	LARC UPWT 970	W I SCALLION, R H FOURNIER /LARC	SUPERSONIC LATERAL STABILITY AND CONTROL DATA
1237	DELTA WING	LARC UPWT 966	W I SCALLION, R H. FOURNIER /LARC	FORCES AND MOMENTS, INTERFERENCE EFFECTS, COMPONENT EFFECTS
1239	DELTA WING	LARC LTPT 86/88	J P DECKER, G M WARE /LARC	EFFECTS OF ROUGHNESS ON THE AERODYNAMIC CHARACTERISTICS
1243	DELTA WING	MSFC 14TWT 528	K. J. GLASS /MDAC-E - A M WHITNAH /MSC	STATIC STABILITY AND CONTROL CHARACTERISTICS
1250	DELTA WING	ARC 11TWT 628	M A. WHITNAH, E B CHAMBLISS /MSC - J J. BROWNSON, A R GROSS /ARC	EFFECTS OF REYNOLDS NUMBER ON STABILITY AND CONTROL CHARACTERISTICS
1254	DELTA WING	MSFC 14TWT 542	R. R ELLIS, M. GAMBLE /LMSC	LONGITUDINAL AND LATERAL-DIRECTIONAL FORCE DATA
1258	DELTA WING	LARC UPWT 979	H W. STONE, E B GRAVES /LARC	EFFECTIVENESS OF WING-UPPER-SURFACE FLAPS
1268	DELTA WING	LARC LTPT 103	G W WARE /LARC	SUBSONIC AERODYNAMIC CHARACTERISTICS
1270	DELTA WING	LARC 22HT 405	W C. WOODS, D. STONE, J. P. ARRINGTON /LARC	HYPERSONIC STATIC STABILITY CONTROL AND PERFORMANCE CHARACTERISTICS
1274	DELTA WING	MSFC 14TWT 551	J. M. RAMPY, R. GYORFI /NSI	STATIC STABILITY AND CONTROL EFFECTIVENESS
1277	DELTA WING	LARC CFHT 85	R W POWELL /LARC	HYPERSONIC STATIC LONGITUDINAL AND LATERAL DIRECTIONAL STABILITY

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Table 4.2.2

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

Orbiter Airloads

DMS-DR#	CONFIG. I.D.	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1124	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	ARC 66SWT 509	J. A. MELLENTHIN /ARC - B. W. CAMERON, C. R. LEEF /NR	PRESSURE DATA PERTINENT TO AERODYNAMIC LOADING CHARACTERISTICS
1225	DELTA WING	AEDC HWTB 1162-5	J. D. WARMBROD /MSFC - W. R. MARTINDALE, R. K. MATTHEWS /ARO	SURFACE PRESSURE AND FLOW FIELD TESTS
1225	DELTA WING	AEDC HWTB 1162-5	J. D. WARMBROD /MSFC - W. R. MARTINDALE, R. K. MATTHEWS /ARO	SURFACE PRESSURE AND FLOW FIELD TESTS
1259	DELTA WING	MSFC 14TWT 540	J. F. SIMS /MSFC - J. T. HAMILTON, J. M. RAMPY /NSI	PRESSURE DISTRIBUTIONS

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Table 4.3.2

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

Orbiter Heat Transfer

DMS-DR#	CONFIG I D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1032	STRAIGHT WING	LARC 8VDHT 137-146,189-205	W R GINSKY /GD/C - R RAPARELLI /NR	EVALUATION OF INTERFERENCE HEATING RATES
1032	DELTA WING	LARC 8VDHT 137-146,189-205	W. R GINSKY /GD/C - R. RAPARELLI /NR	EVALUATION OF INTERFERENCE HEATING RATES
1056	STRAIGHT WING	LARC CFHT 51	H. H HAMILTON, R A. JONES, J. L. HUNT /LARC - H. GOROWITZ, R. S. RAPARELLI /NR	REENTRY CONFIGURATION EFFECTS ON HEAT TRANSFER AND INTERFERENCE HEATING AREAS
1056	DELTA WING	LARC CFHT 51	H. H. HAMILTON, R. A JONES, J. L. HUNT /LARC - H. GOROWITZ, R. S. RAPARELLI /NR	REENTRY CONFIGURATION EFFECTS ON HEAT TRANSFER AND INTERFERENCE HEATING AREAS
1056	STRAIGHT WING	LARC 8VDHT 1-58	H. H. HAMILTON, R. A. JONES, J. L. HUNT /LARC - H GOROWITZ, R. S. RAPARELLI /NR	REENTRY CONFIGURATION EFFECTS ON HEAT TRANSFER AND INTERFERENCE HEATING AREAS
1056	DELTA WING	LARC 8VDHT 1-58	H. H. HAMILTON, R. A. JONES, J. L. HUNT /LARC - H. GOROWITZ, R. S. RAPARELLI /NR	REENTRY CONFIGURATION EFFECTS ON HEAT TRANSFER AND INTERFERENCE HEATING AREAS
1098	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	LARC UPWT 945	R. L. STALLINGS /LARC - A. M. ROBERGE /GD/C - H. GOROWITZ /NR	ASCENT HEAT TRANSFER DISTRIBUTIONS, INTERFERENCE HEATING INFORMATION
1131	STRAIGHT WING	ARC 3.5HWT 106	W. K. LOCKMAN, C. E. DEROSE /ARC	DETAILED AERO HEATING DISTRIBUTION
1146	DELTA WING	LARC CFHT 66	A. D'ERRICO, R ROMANOWSKI /GAC	INTERFERENCE HEATING ON ORBITER AND TANK SURFACES
1154	DELTA WING	GAC 36HWT 017	A. D'ERRICO /GAC	PHASE-CHANGE PAINT HEAT TRANSFER TEST, RE-ENTRY HEATING
1165	DELTA WING	LARC 8VDHT 823-887	T. R. CREEL /LARC - H. GOROWITZ, R. S. RAPARELLI /NR	ENTRY HEAT TRANSFER DISTRIBUTIONS, EFFECT OF FLOW DEFLECTOR ON WINDSHIELD HEATING
1170	DELTA WING	CAL 96HST H/T MDAC	T. L. ANDRESEN /MDAC-E	THERMAL ENVIRONMENT DATA FOR THERMAL PROTECTION SYSTEM DESIGN
1177	DELTA WING	AEDC HWTB 1162-1	J. D. WARMBROD /MSFC - W. R. MARTINDALE, R. K MATTHEWS /ARO	ASCENT AND REENTRY HEATING DATA

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Table 4.3.2 - Concluded

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

Orbiter Heat Transfer

DMS-DR#	CONFIG. I.D	FACILITY TEST NUMBER	TEST ENGINEERS	PURPOSE
1178	UNIQUE CONFIGS	LARC CFHT 69	A D'ERRICO, C SONITSCH /GAC	INTERFERENCE HEATING DURING LAUNCH, HEATING DURING REENTRY AND HIGH ALTITUDE ABORT REENTRY
1180	DELTA WING	ARC 3 5HWT 106	W K LOCKMAN, C E DEROSE /ARC - H GOROWITZ, P CARROLL /NR	DETAILED AERODYNAMIC HEATING DISTRIBUTIONS
1206	DELTA WING	AEDC SWTA 1162-F00	R H EAVES, T BUCHANAN /ARO - J. D WARMBROD /MSFC	HEAT TRANSFER RESULTS
1207	DELTA WING	AEDC HWTB 1162-4	J. D WARMBROD /MSFC, - W R. MARTINDALE, R K MATTHEWS /ARO	HEAT TRANSFER RESULTS
1224	DELTA BODY	AEDC HWTF 1162-F00	R H EAVES, T D BUCHANAN /ARO - J. D WARMBROD /MSFC - C. B. JOHNSON /LARC	HEAT TRANSFER RESULTS
1224	UNIQUE CONFIGS	AEDC HWTF 1162-F00	R H EAVES, T D BUCHANAN /ARO - J. D WARMBROD /MSFC - C. B JOHNSON /LARC	HEAT TRANSFER RESULTS
1231	DELTA WING	AEDC HWTB 1162-9	J. D WARMBROD /MSFC - R. K. MATTHEWS, W R MARTINDALE /ARO	ASCENT AND RE-ENTRY HEAT TRANSFER PHASE-CHANGE PAINT TEST
1234	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
1252	DELTA WING	ARC 3 5HWT 131	W. K. LOCKMAN, C. E. DEROSE /ARC	AERODYNAMIC HEATING DISTRIBUTIONS
1262	DELTA WING	AEDC HWTB 1162-9	R K. MATTHEWS, W. R. MARTINDALE /ARO - J. D WARMBROD /MSFC	INTERFERENCE HEATING DATA
1264	DELTA WING	AEDC HWTB 1162	R. K. MATTHEWS, W. R. MARTINDALE /ARO - J D WARMBROD /MSFC	INTERFERENCE HEATING DATA
1266	DELTA WING	AEDC HWTB 0288	R. C. BAKER, K. W. MCGEE, H. D. SCHULTZ /LMSC	AERODYNAMIC HEAT TRANSFER DISTRIBUTION

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	VT0055	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	481-1	ORBITER	AERODYNAMICS	1012	09/70	A5
ARC	11TWT	628	ORBITER	AERODYNAMICS	1250	04/72	BF
ARC	11TWT	629	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	131	ORBITER	HEAT-TRANSFER	1252	04/72	N/A
ARC	3.5HWT	78	ORBITER	AERODYNAMICS	1002	06/70	A6
ARC	3.5HWT	88	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	AT
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	88

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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
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

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

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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	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	M0
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

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	SUBFACILITY	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

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	BOOSTER	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

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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	8TWT	1282	BOOSTER	AERODYNAMICS	1275	11/72	D8
UW	812SWT	1021	BOOSTER	AERODYNAMICS	1079	07/71 REV 01	U1

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C-2

TABLE 5.2

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
ORBITER AERODYNAMICS

FILE #	OCC	O-CONTRA	DR#	2-CHAR. CODE	# D/S's	# RECORDS
1	Ø1	GAC	1005	C3	30	251
2		LMSC	1103	M2	52	625
3			1147	ME	98	1079
4			1157	MG	21	295
5			1169	MI	84	1009
6	Ø2	GAC	1053	CL	22	232
7			1081	CQ	43	431
8			1142	CW	66	661
9			1159	CT	48	491
10			1161	CR	16	161
11			1163	CS	33	331
12			1184	49	39	547
13			1189	MN(L)	52	651
14			1194	MQ	44	610
15			1195	MN(T)	26	313
16			1196	MN(U)	30	361
17			1203	MR	18	226
18			1211	MS	9	127
19			1216	MØ	14	197
20		LARC	1123	LT	180	2071
21			1168	M5	60	631
22			1199	MX	117	1639
23			1229	Ø7	43	603
24			1232	Ø9	22	309
25			1233	ØA	12	169
26			1235	ØC	20	281
27			1268	ØM	27	379
28			1270	ØN	22	309
29		LMSC	1153	36	46	645
30			1201	41	81	1135
31			1254	69	98	1324

TABLE 6.2 (Continued)

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
ORBITER AERODYNAMICS

FILE #	OCC	O-CONTRA	DR#	2-CHAR. CODE	# D/S's	# RECORDS
32	Ø2/Ø3	MDAC	1028	A9	98	1177
33	Ø2		1040	CB	42	442
34			1041	CF	36	379
35			1067	CP	82	903
36			1071	AM/AU	92	967
37	Ø2/Ø3		1072	AJ	104	1041
38	Ø2		1074	CN	59	650
39			1083	AT	34	409
40			1086	LZ	20	231
41			1094	AX	56	729
42			1149	MF	32	385
43			1151	M4	32	449
44			1171	MJ	64	984
45			1172	ML	18	223
46			1173	MK	10	141
47			1175	LY	30	421
48		MMC	1003	17	18	208
49			1009	L2	14	141
50			1013	L3	9	118
51			1022	L8	30	391
52			1023	LA	28	337
53			1045	LF	48	553
54			1048	LA	6	85
55			1059	LH	56	645
56		MSC	1186	52	54	757
57			1202	BE	65	911
58			1215	Ø1	86	1033
59			1218	Ø6	28	393
60			1219	Ø5	45	631

TABLE 6.2 (Continued)

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
ORBITER AERODYNAMICS

FILE #	OCC	O-CONTRA	DR#	2-CHAR. CODE	# D/S's	# RECORDS
61	Ø2	MSC	1221	GB	130	1431
62			1243	62	60	745
63			1250	BF	34	477
64			1258	ØF	62	838
65			1274	74	4	57
66		NR	1021	A3	44	507
67	Ø2/Ø3		1026	AE	52	625
68			1027	21	254	2922
69	Ø2		1031	A4	38	419
70			1037	C5	58	813
71	Ø2/Ø3		1043	23	76	875
72			1076	27	173	2016
73	Ø2		1078	AF/AE	56	665
74			1084	LQ	74	852
75			1088	LV	22	254
76			1092	RT	6	79
77			1095	LU	34	396
78			1096	LP	44	551
79			1097	MO	20	271
80			1101	M7	34	392
81	Ø2/Ø3		1104	AK	91	1072
82	Ø2		1105	LØ	54	649
83			1106	LN	27	379
84			1107	M1	24	289
85			1113	M9	54	622
86			1114	26	4	53
87			1124	CJ	108	1297
88			1126	29	44	507
89			1144	MD	30	381

TABLE 6.2 (Concluded)

SPACE SHUTTLE PHASE B
DIGITAL DATABASE
ORBITER AERODYNAMICS

FILE #	OCC	O-CONTRA	DR#	2-CHAR. CODE	# D/S's	# RECORDS
1	Ø3	MDAC	1090	CD	231	2542
2		MSC	1002	A6	148	1555
3			1004	L1	58	668
4			1007	C1	149	1491
5			1008	G1	26	313
6			1011	A7	42	463
7			1012	A5	36	397
8			1057	G3	158	1581
9			1060	G6	163	1794
10			1062	G7	62	651
11			1073	G2	86	990
12			1205	G9	180	2341
13		NR	1010	C4	108	1513
14			1034	CG	90	1141
15			1049	L9	46	645
16			1064	LD	18	208
17			1069	LI	118	1340
18			1082	AF/AE	158	1853
19	Ø4	GAC	1112	BB	21	252
20		LARC	1018	L7	64	737

APPENDIX B-1

MODEL FIGURES

ORBITER AERODYNAMICS

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TEST GWTT 280 DATA SET COLLATION SHEET

δ_R = RUDDER DEFLECTION
δ_{VT} = "V" TAIL DIHEDRAL

α A = 1
α B = 2
α C = 3

βA = 7

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_R	CONTROL DEFLECTION δ_{VT}	NO. of RUNS	MACH NUMBERS .2
RC3012	B301 N301 $T_{1,50}$	B	0	0	50		10
RC3022		B	5	0	50		12
RC3037		0	A	0	50		16
RC3047		10	A	0	50		18
RC3057		20	A	0	50		20
RC3062	B301 N301	B	5	-	-		14
RC3077		20	A	-	-		22
RC3087		10	A	-	-		24
RC3097		0	A	-	-		26
RC3101		A	0	-	-		8

1 7 13 19 25 31 37 43 49 55 61

COEFFICIENTS: CL CD CY CNM CYM CRL

α OR β SCHEDULES
α A = -10 to 30° BY 4° (PS), BY 2° (P) β A = +10 TO -4° BY 4° (YS), 2°(Y)
α B = -4 TO 30° BY 4° (PS), BY 2° (P)
α C = -4 to 16° BY 4°

PS = WIND OFF PITCH(STATIC)
P = WIND ON PITCH
YS = YAW STATIC
Y = WIND ON YAW

NDV DELTA BODY ORBITER
GAC
DR#1005 B-1-1

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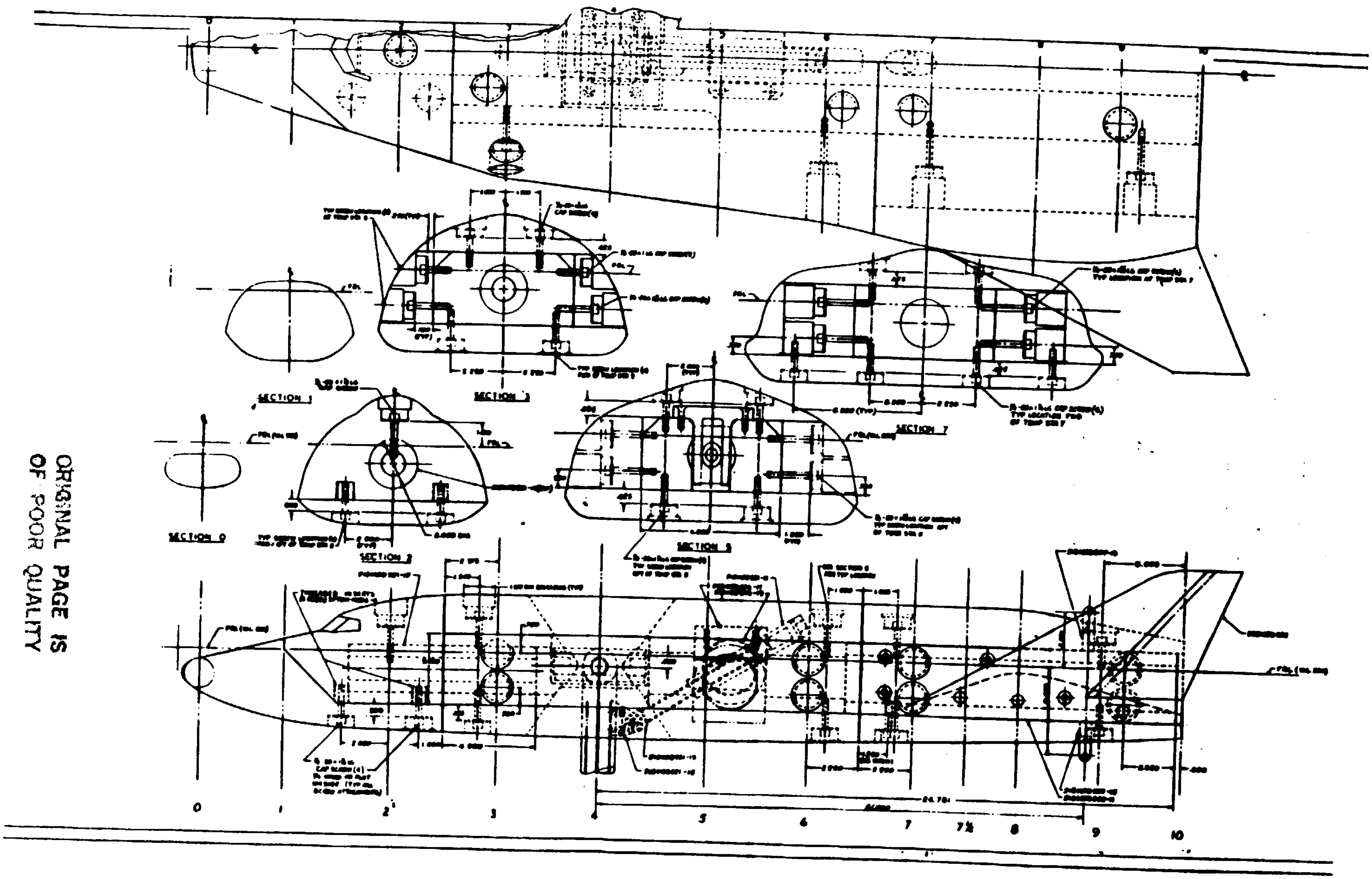

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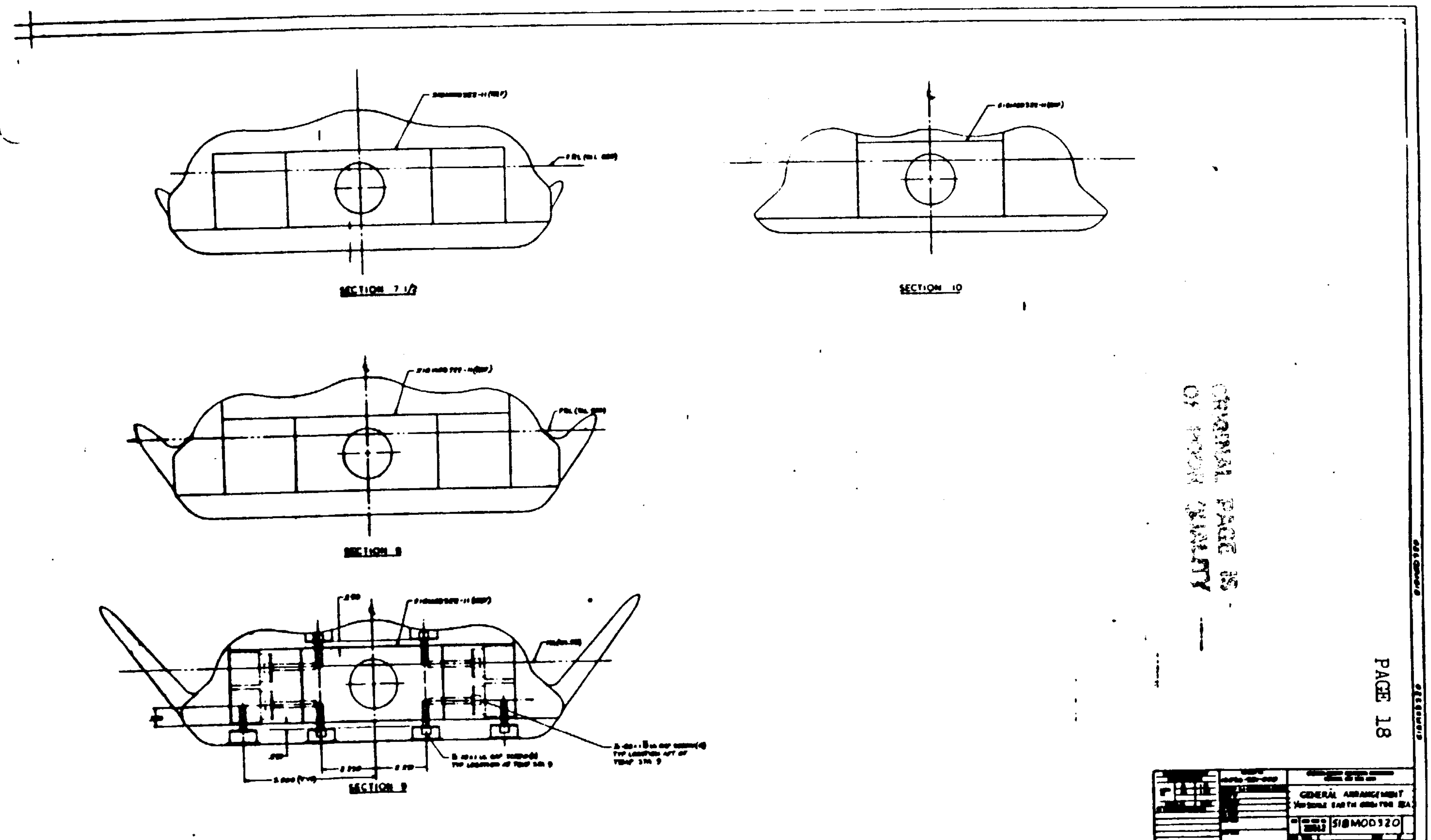
FIGURE 1. GENERAL ARRANGEMENT DRAWING OF 1/40 SCALE EARTH ORBITER-III A 518 MOD 320



DELTA BODY ORBITER
GAC
DR#1005 B-1- 3

FIGURE 1. (Continued)

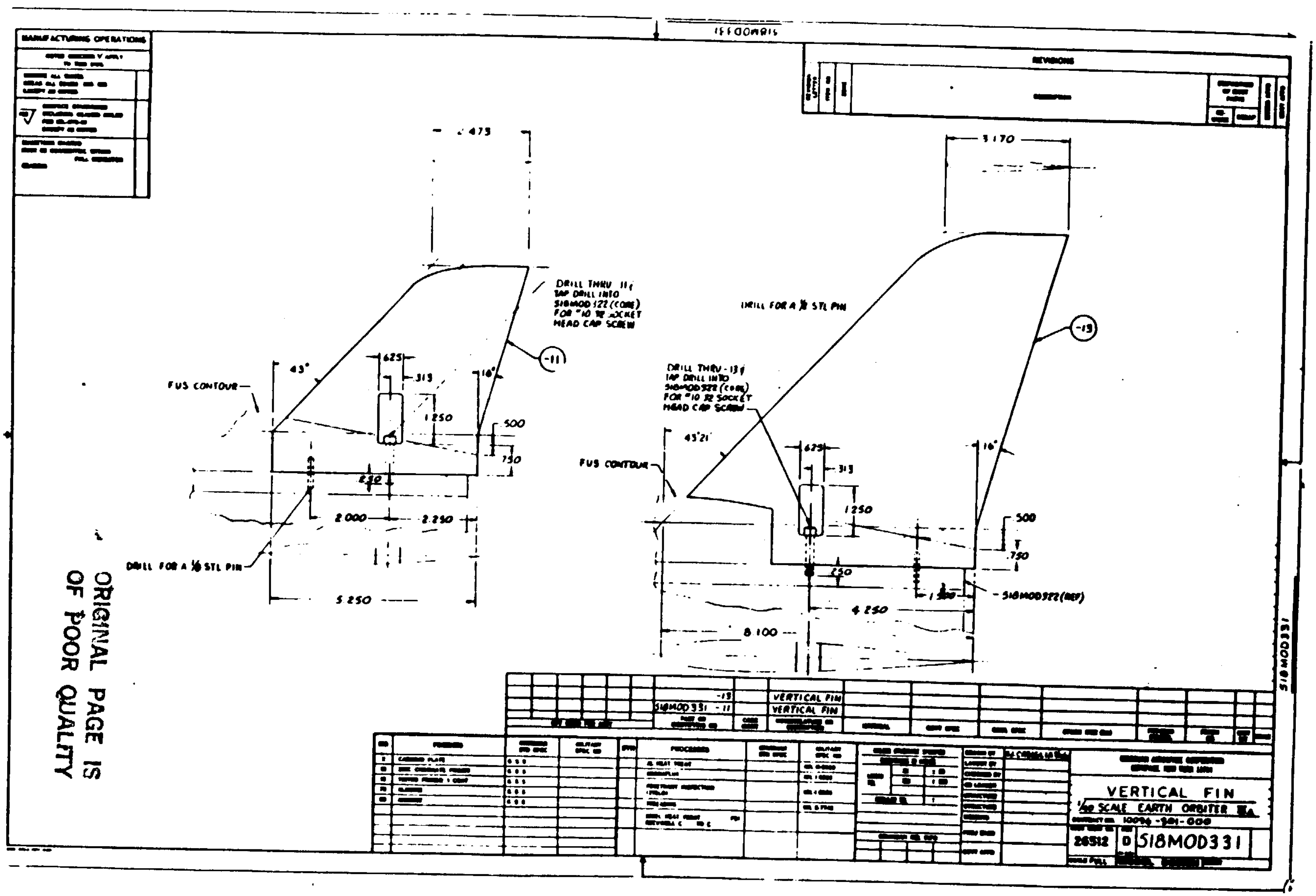


FIGURE 2. VERTICAL FIN - 518 MOD 331

TEST LARC-UPWT-955 DATA SET COLLATION SHEET

☐ PRETEST

☐ POSTTEST

SET IFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_F	δ_{R_L}	δ_{R_R}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2.30	2.96	3.95	4.60
2001	B4F16E3	A	0	-10	-20	-20	20	4	8	9	10	11
002				-10				1				12
003				0				4	13	19	29	37
004				+10				4	45	46	47	48
005				0	0			4	49	50	51	52
006					-30			4	53	54	55	56
007					-40			3	57	59	61	
008				-10	-40			4	63	64	65	66
009				-10	-30			4	67	68	69	70
010				0	-40	0	0	4	71	73	74	75
011						10	-10	4	77	79	81	83
012						10	10	3	85	86		87
013			4		-20	-20	20	4	27	28	30	38
014					-40	-20	20	3	58	60	62	
015						0	0	2	72			76
016						10	-10	4	78	80	82	84
017		10	B		-20	-20	20	4	14	20	31	39
018		15						4	15	25	32	40
019		20						4	16	22	33	41
020		30						4	17	23	34	42

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

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

A = -4 to 60 degrees

B = -4 to 10 degrees

8

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DELTA BODY ORBITER
LMSC
DR#1103 B-1- 5

TEST LaRC-UPWT-955 DATA SET COLLATION SHEET

DELTA BODY ORBITER
LMSC
DR#1103 B-1- 6

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☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_F	δ_{R_L}	δ_{R_R}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2.30	2.96	3.95	4.60
RM2021	$B_4F_{16}E_3$	40	B	0	-20	-20	20	1	18			
022		45						3		24	35	43
023		60						2			36	44
024	B_4E_3	A	0	0	-40	-	-	2	88			90
025	B_4E_3	A	4	0	-40	-	-	2	89			91
026	B_4	A	0	-	0	-	-	2	92			93

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

COEFFICIENTS:

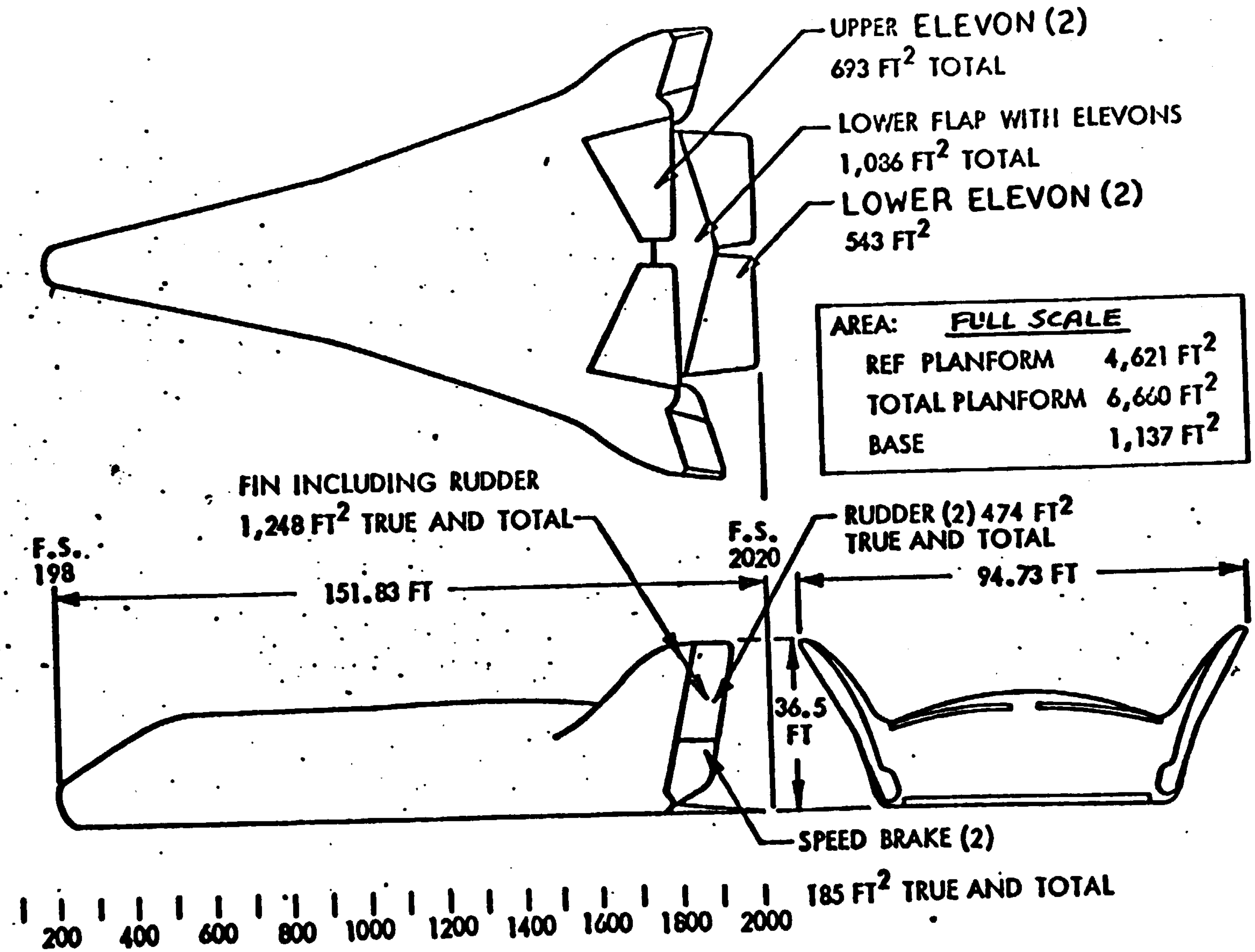
IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES

B = -4 to 10 degrees
A = -4 to 60 degrees

FIGURE 3.

GENERAL ARRANGEMENT - ORBITER



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DELTA BODY ORBITER
LMSC
DR#1103 B-1- 7

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Prepared by:	Date	LOCKHEED MISSILES & SPACE COMPANY	Page
Checked by:	Date	Title	Model
Approved by:	Date		Report No.

BODY STATIONS ARE IN INCHES
FULL SCALE
MODEL SCALE = 0.01

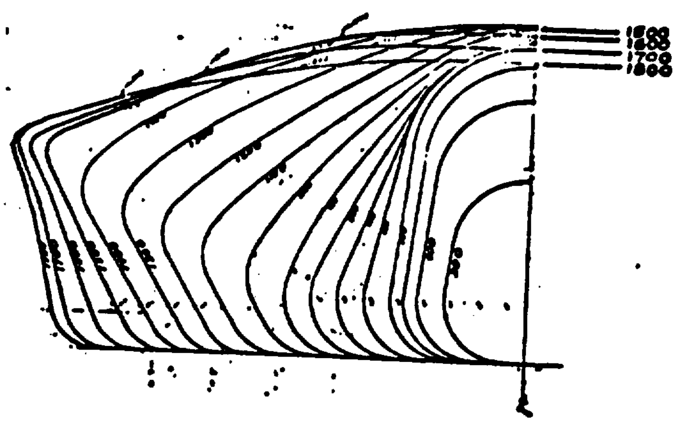
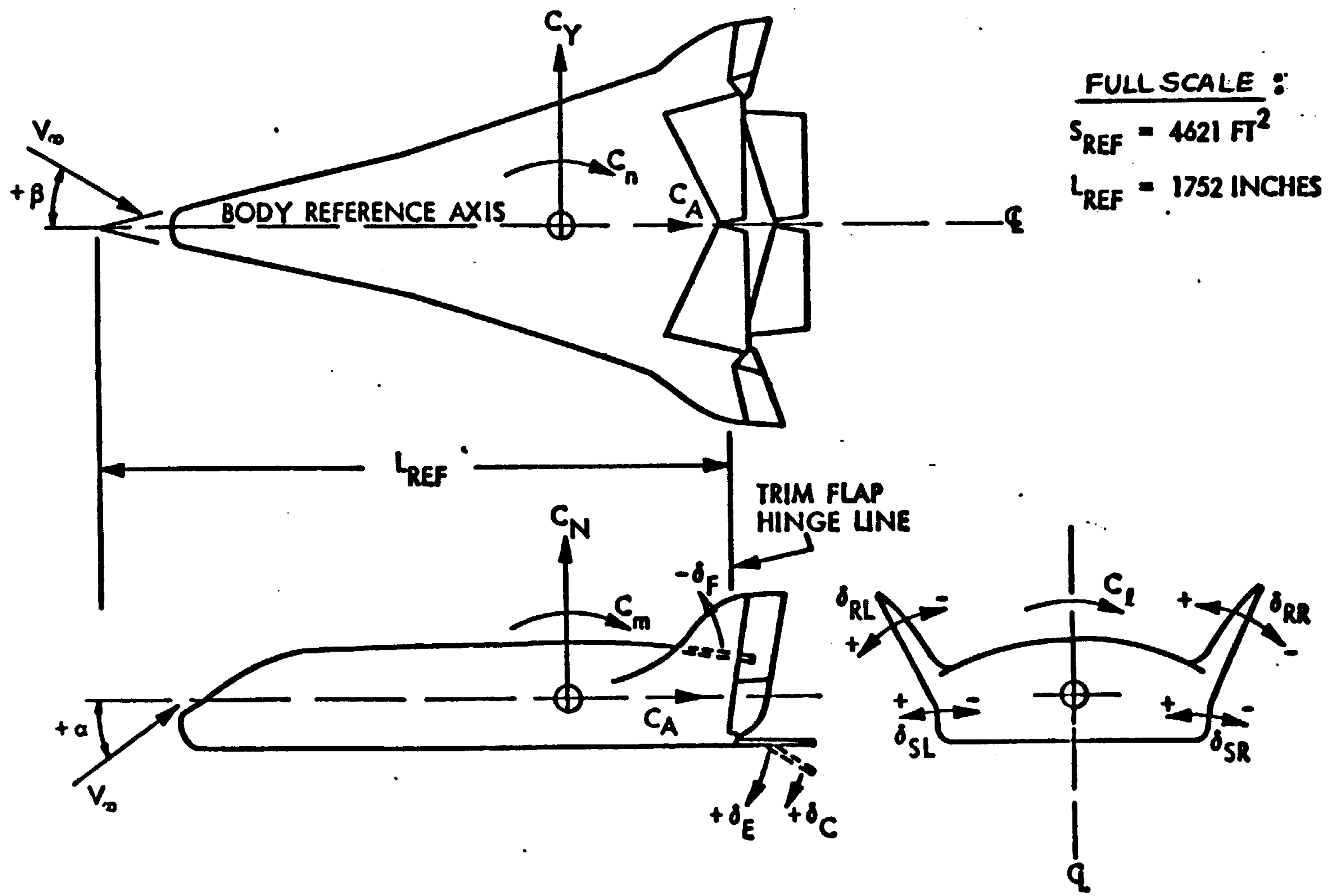


FIGURE 4.

BODY CONTOURS CONFIGURATION B_4.

FIGURE 5.

ORBITER BODY AXIS SYSTEM



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TEST V/STOL-007 DATA SET/RUN NUMBER
COLLATION SUMMARY

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_F	δ_e	δ_s	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .20 — TEST RUN NUMBERS
RME012	B4F16E2	A	0	0	0/0	0/0	0/0	1	12
11				-20		0/0	0/0		11
13						0/0	-20/20		13
10						-15/15	0/0		10
04			0				-20/20		04
05			5						05
06			-5			-15/15			06
14			0		0/0	-10/-10			14
16					-10/-10	0/0			16
17					0/-10				17
15					-10/-20				15
18					0/-20	0/0			18
19					0/-20	-10/-10			19
07			0		0/0	-15/15			07
08			5						08
09			-5						09
01			0						01
02			5						02
03	B4F16E2		-5		0/0				03
RME032	B4F16E2U3	A	0	-20	-10/-10	-15/15	-20/20	1	32

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

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

α or β SCHEDULES: Schedule A = -2, 0, 2, 4, 6, 8, 10, 12, 15, 17, 19, 21 (DEGREES)

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TEST V/STOL-007 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_F	δ_R	δ_S	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)	.25										
RMF024	B4F16E2U3	A	0	-20	-20/0	-15/15	-20/20	1		24										
25	B4F16E2U3				-20/10	-15/15				25										
35	B4F16E2U4				-20/0	-15/15				35										
36					-20/0	0/0				36										
37					0/0	0/0				37										
38	B4F16E2U4					-15/15	-20/20			38										
41	B4F16E3U4					10/-10	10/-10			41										
40				-20		-15/15	-20/20			40										
33				15	0/0					33										
34					-20/0					34										
39	B4F16E3U4				10/20					39										
20	B4F16E3U3		0		0/0					20										
21			5							21										
22			-5		0/0					22										
23			0		-20/0					23										
26					-20/10	-15/15				26										
27						0/0				27										
29						10/10				29										
30					-20/0					30										
RMF031	B4F16E3U3	A	0	-15	-10/-10	10/10	-20/20	1		31										

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

DELTA BODY ORBITER
LMSC
DR#1147 B-1- 11

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TEST V/STOL-002 DATA SET/RUN NUMBER
COLLATION SUMMARY

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_F	δ_R	δ_S	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .205
RME028	B4F16E2U3	A	0	-15	-20/-10	-10/-10	-10/10	1	28
42	B7F16E3U4		0	-20	0/0	-15/15	-20/-20		42
43			.5	-20		-15/15			43
44			-5	-20		-15/15			44
46			0	-15		-25/25	-20/20		46
48				-15		0/0	0/0		48
49				0		0/0	0/0		49
45				-15		-15/15	-20/20		45
RME047	B7F16E3U4	A	0	-15	0/0	0/0	-20/20	1	47

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

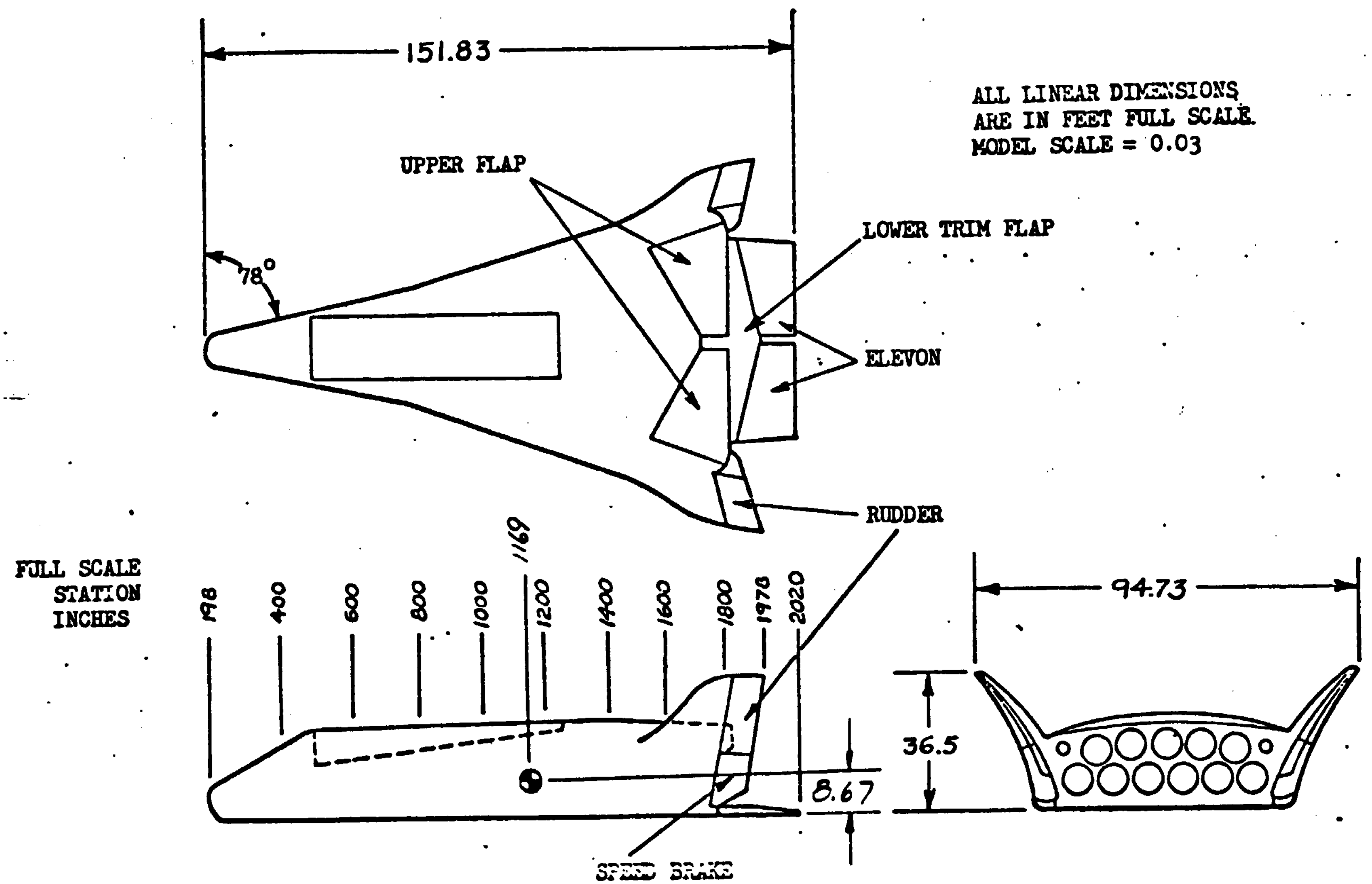

FIGURE 2. ORBITER CONFIGURATION $B_4F_{16}E_2$ THREE-VIEW

DELTA BODY ORBITER
LMSC
DR#1147 B-1- 13

BODY STATIONS ARE IN INCHES
FULL SCALE
MODEL SCALE = 0.03

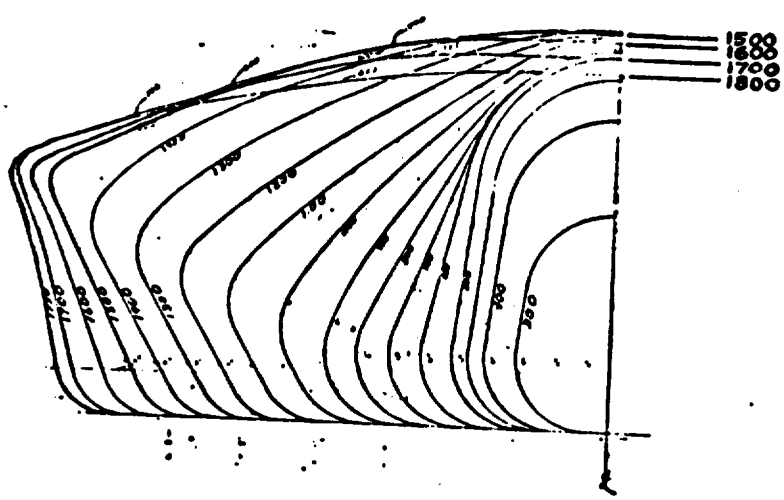

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FIGURE 3. BODY CONTOURS - CONFIGURATION B_4

TEST LTPT 63 DATA SET ORGANIZATION · SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δe	δF	δR	δc	δs	No. RUNS	~~HASH NUMBERS~~ R_N/L $\times 10^{-6}$ 2	4	6	8	10	12	14				
RMG001	B4F16E2	A	0	-20	0/0	-15/15	0/0	-20/-20	7	1	54	3	55	5	56	57				
02				-10		-25/25			7	14	13	12	11	10	9	8				
03				-20					7	15	16	17	18	19	20	21				
04				0	0/0	0/0	0/0	0/0	3	46	47	48								
05				-10					1		49									
06				-20					1		50									
07						-15/15			1		51									
08								-10/0	1		52									
09								-20/-20	1		53									
10			5	-10		0/0	0/0	0/0	3		63	[illegible]	64		65					
11				-20		-15/15			5		66		67	68	69	70				
12								-20/-20	4		71		72		73	[illegible]				
13	B4F16E3		0	-10	0/0	-25/25	0/0	-20/-20	7	28	27	26	25	24	23	22				
14				-20					6	34	33	32	31	30	29					
15				-15		-15/15			6	35	36	37	38	39	40					
16				-10			0/0		1		58									
17							0/-10		1		59									
18							0/10		1		60									
19						-25/25	0/0		1		61									
20						0/0		0/0	1		62									

Alpha Sch. A : -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 19

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

COEFFICIENTS:

DELTA BODY ORBITER
LMSC
DR#1157 B-1- 15

TEST LTPT 63 DATA SET ORGANIZATION · SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_F	δ_R	δ_C	δ_S	No RUNS	~~MACH NUMBERS~~ Bn/L X/L -6 2	4	6	8	10	12	14				
RMG021	B4F16 E3	A	5	-15	0/0	-15/15	0/0	-20/20	5	41	42	43	44	45						

α or β SCHEDULES

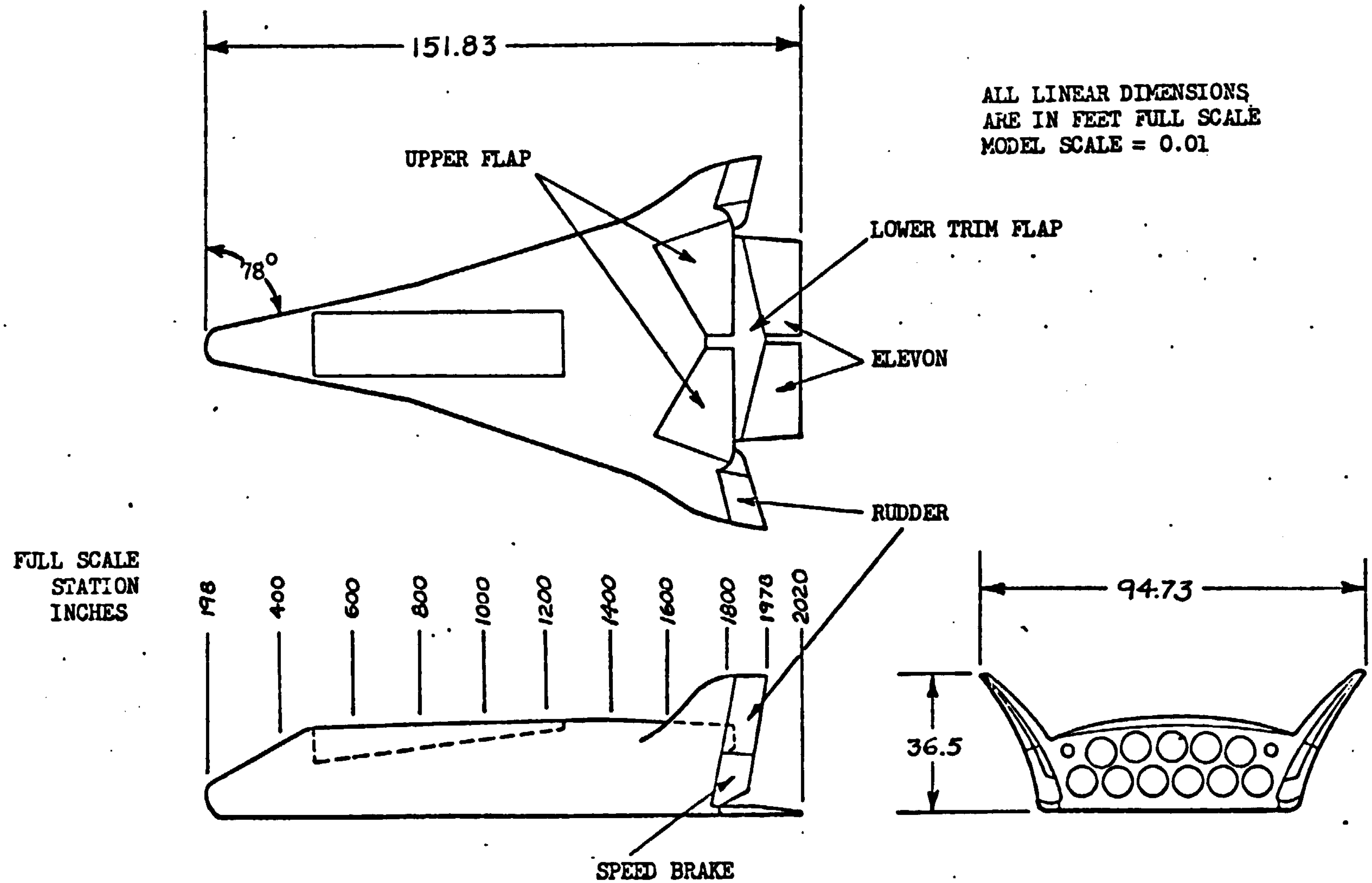

FIGURE 1. ORBITER CONFIGURATION $B_4F_{16}E_2$ THREE-VIEW

Prepared by:	Date	LOCKHEED MISSILES & SPACE COMPANY A GROUP DIVISION OF LOCKHEED AIRCRAFT CORPORATION	Page
Checked by:	Date	Title	Model
Approved by:	Date		Report No.

BODY STATIONS ARE IN INCHES
FULL SCALE
MODEL SCALE = 0.01

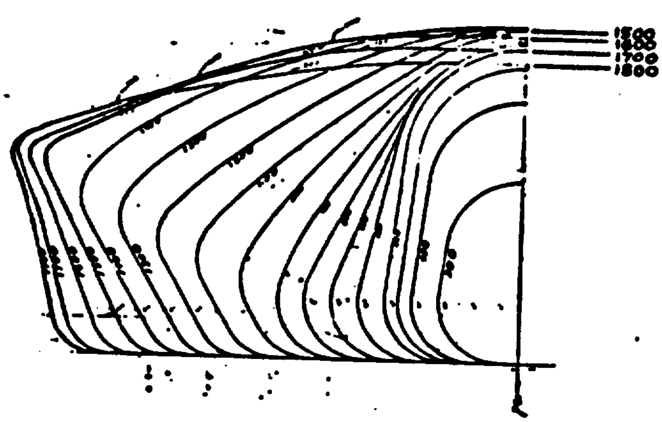

FIGURE 2. BODY CONTOURS - CONFIGURATION B_4

TABLE I.

TEST LaRC LTPT 69 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

RN/L x10^{-6}

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_F	δ_R	δ_C	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2	4	6	8	10	12	14
RHI001	$B_{10}F_{23}E_3$	A	0	-15	0/0	0/0	0/0	5	1	2	3	4	5		
02	$B_{10}F_{26}E_3$							4	6	7	8	9			
03	$B_{10}F_{27}E_3$							6	10	11	12	13	15	14	
04	$B_{10}F_{24}E_3$							5		16	17	18	19	20	
05	$B_{10}F_{26A}E_3$							5		21	22	23	24	25	
06	$B_{10}F_{22}E_3$							3		26	27	28			
07	$B_{10}F_{25}E_3$							3		29	30	31			
08	$B_{11}F_{27A}E_3$							3			34	33	32		
09	$B_{10}F_{27B}E_3$							4		35	36	37	38		
10	$B_{12}F_{27B}E_3$							4		39	42	41	40		
11	$B_{12}F_{26B}E_3$							1				43			
12	$B_{12}F_{26B}E_3Z$							3		44	45	46			
13	$B_{12}F_{23B}E_3K$							3		47	48	49			
14	$B_{10}F_{27B}E_3Z_1$							3			52	51	50		
15	$B_{10}F_{27B}E_3Z_2$							2				54	53		
16	$B_{10}F_{27B}E_3Z_3$							2				55	56		
17	$B_{10}F_{23B}E_3K_1$							1				57			
18	$B_{13}F_{24B}E_3$							1				58			
19	$B_{13}F_{26A}E_3$							1				59			
20	$B_{13}F_{26B}E_3Z_4$							1				60			

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	IQ(PSF)	CN	CA	CLM	CBL	CYN	CY	CL	CD	RN/L	ALPHA	10
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES A: -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

DELTA BODY ORBITER
LMSC
DR#1169 B-1- 19

TABLE I (CONTINUED)

TEST LaRC LTPT 69 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

RN/L x10^-6

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_F	δ_R	δ_c	NO. of RUNS	2	4	6	8	10	12	14					
RM1021	$B_{13} F_{26B} E_3 Z_5$	A	0	-15	0/0	0/0	0/0	2				62	61							
22	$B_{13} F_{26B} E_3 Z_6$	↓	↓	↓	↓	↓	↓	1				63								
23	$B_{10} F_{27B} E_3 Z_7$	↓	↓	↓	↓	↓	↓	1				64								
24	$B_{10} F_{27B} C_3 Z_7$	↓	↓	-15	0/0	-15/15	0/0	1				65								
28	$B_{10} F_{27B} E_3$	B	5	↓	↓	0/0	↓	1				69								
29	$B_{10} F_{27B} E_3 Z_7$	B	5	↓	↓	↓	↓	1				70								
30	$B_{10} F_{27B} E_3 Z_8$	C	0	↓	↓	↓	↓	1				71								
31	$B_{10} F_{27B} E_3$	C	0	↓	↓	-10/10	↓	2			73	72								

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	Q(PSF)	CN	CA	CLM	CBL	CYN	CY	CL	CD	RN/L	ALPHA	IC
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES
A: -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24
B: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24
C: 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28

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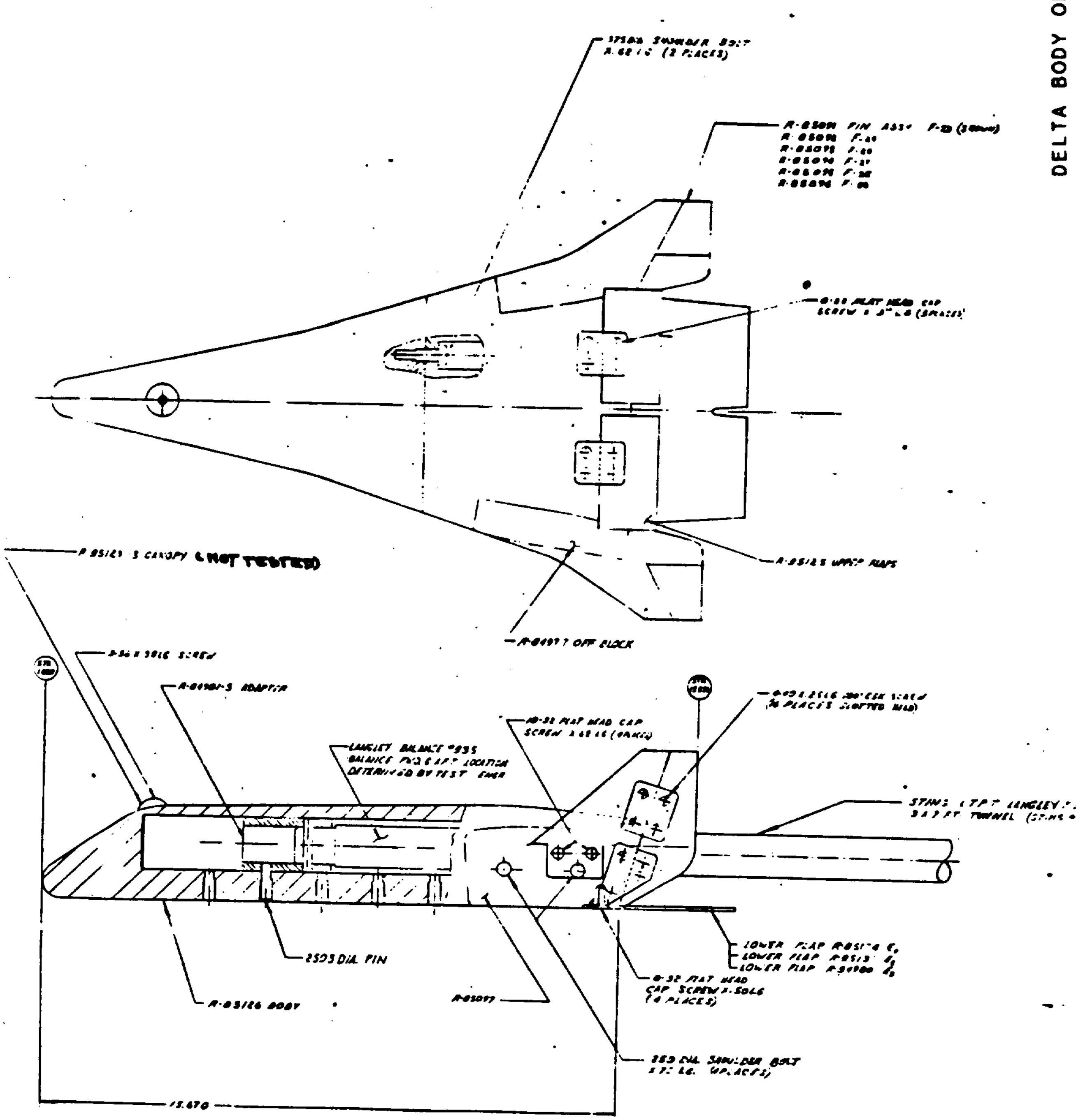

FIG. 2b Body B_{10}

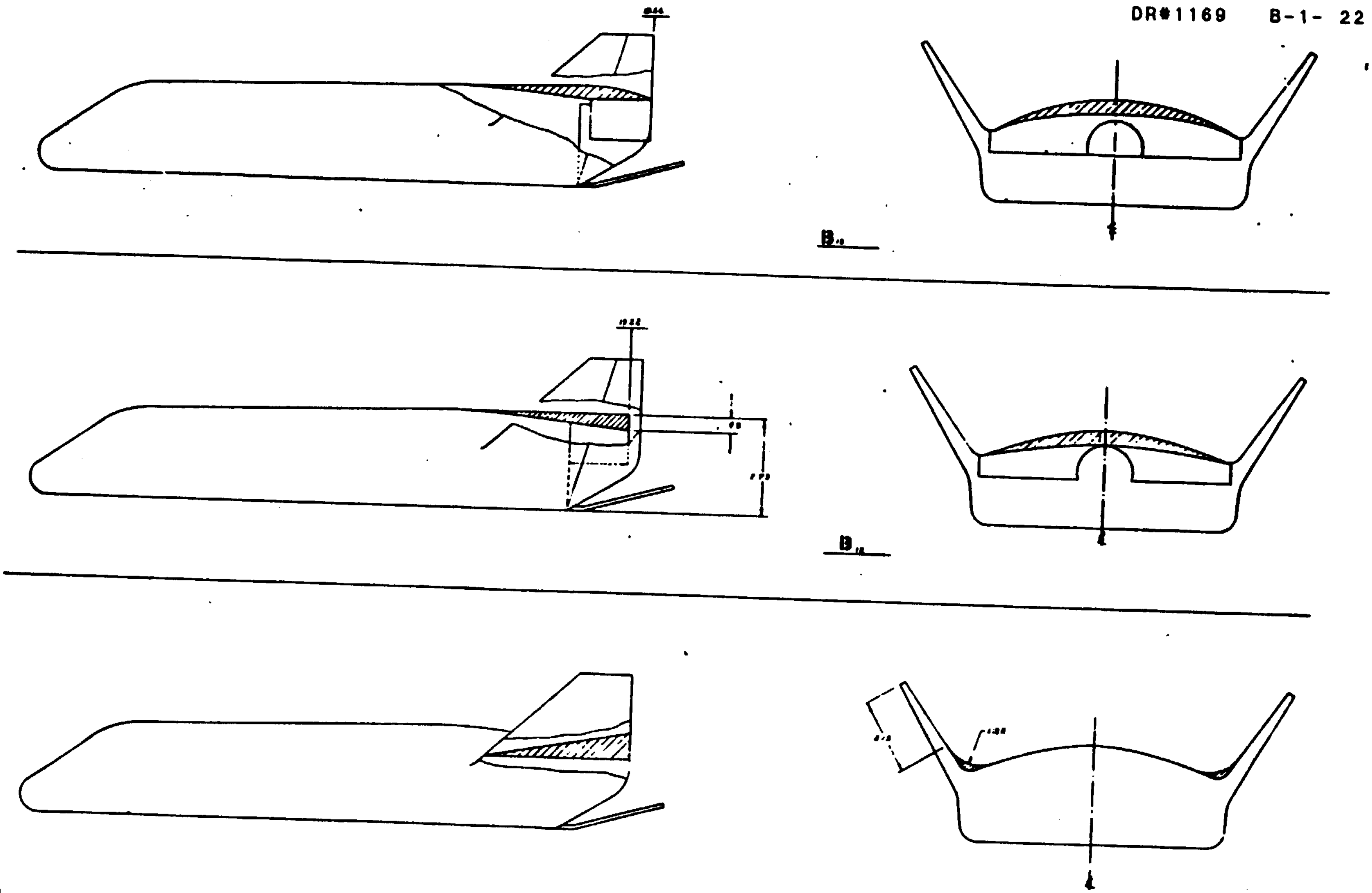

FIG. 2c Body Contours B_{11}, B_{12}, B_{13}

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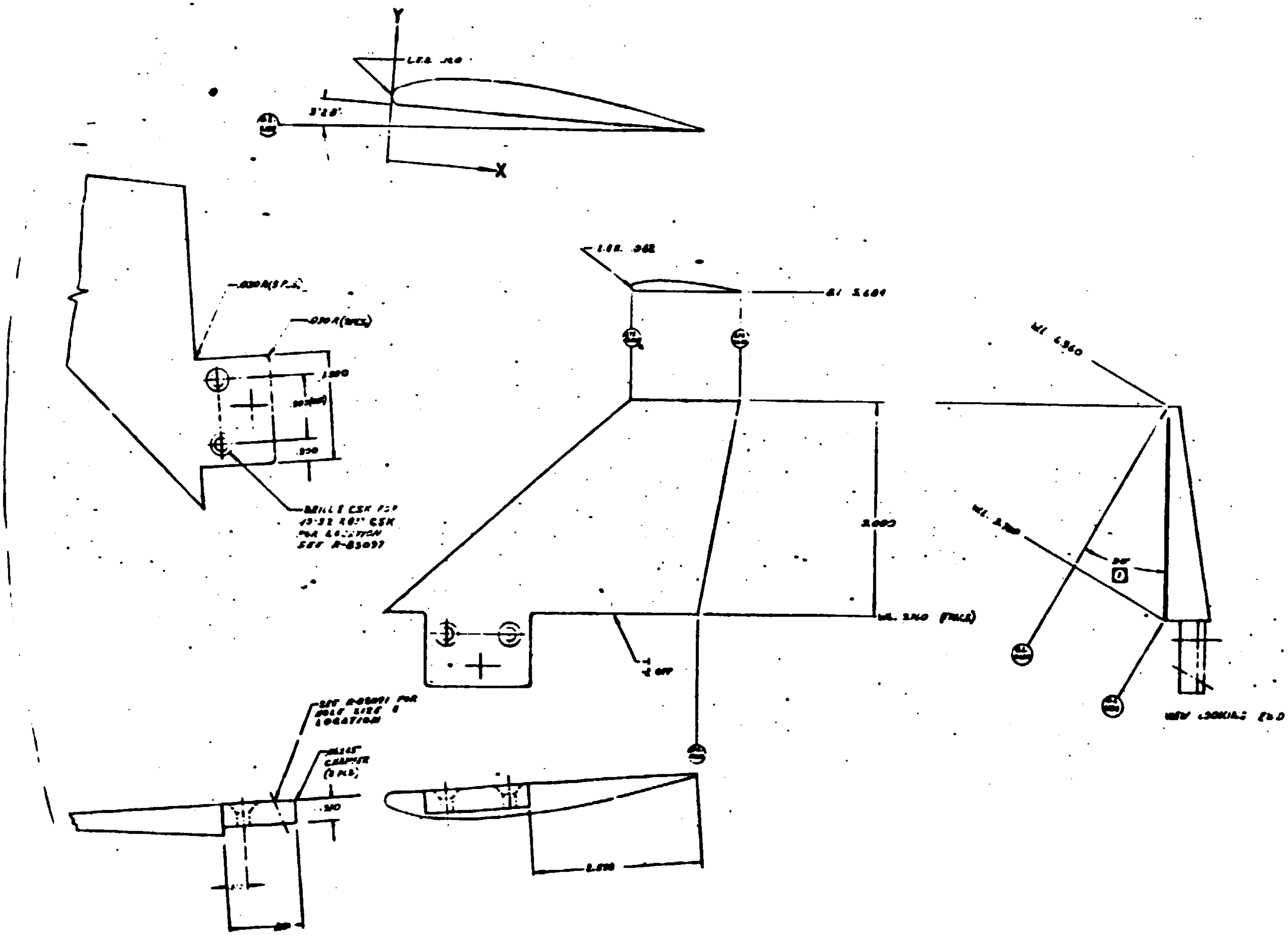

Figure 3. Fin Assembly - F_{24}

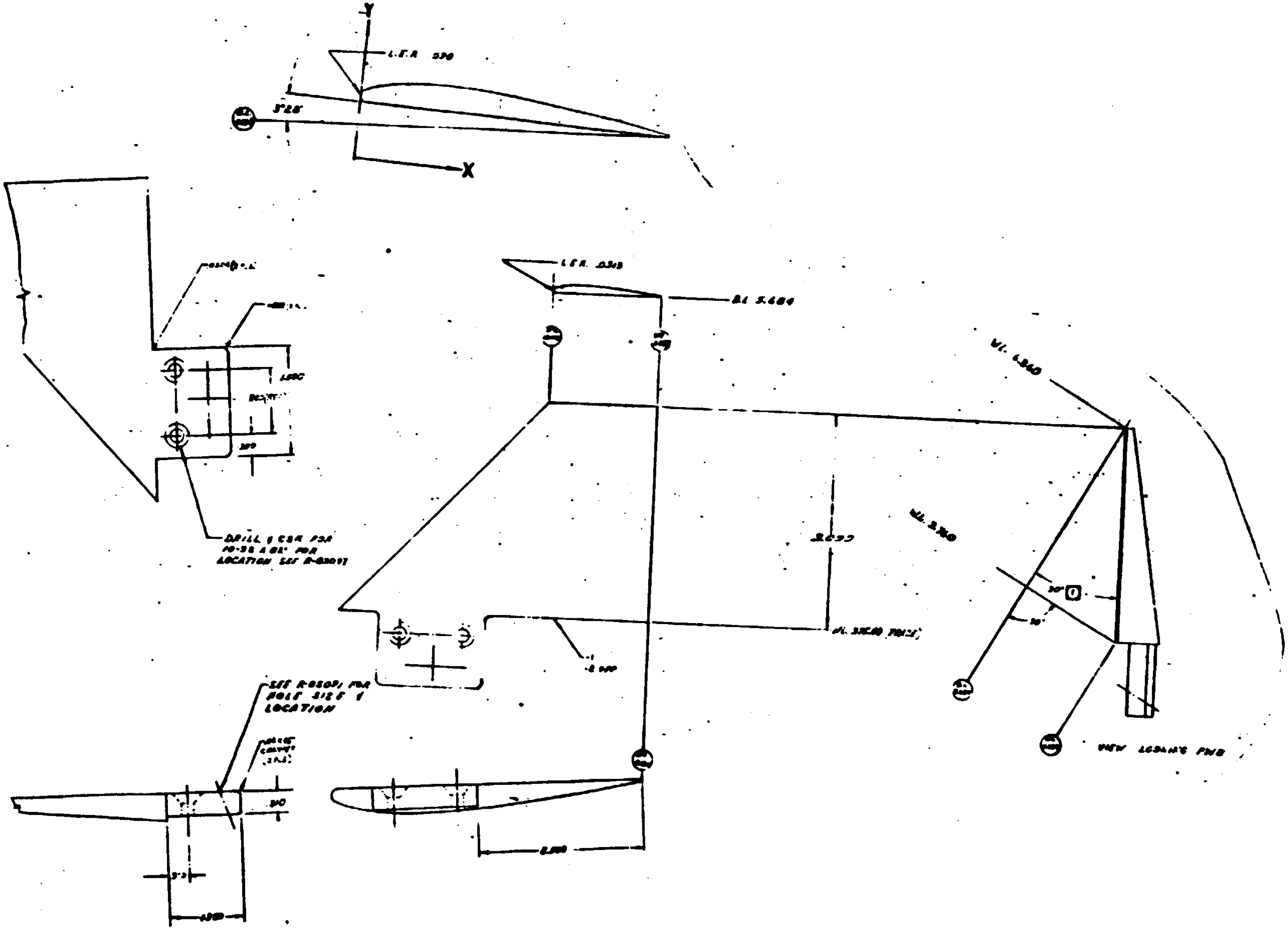

Figure 4. Fin Assembly - F_{25}

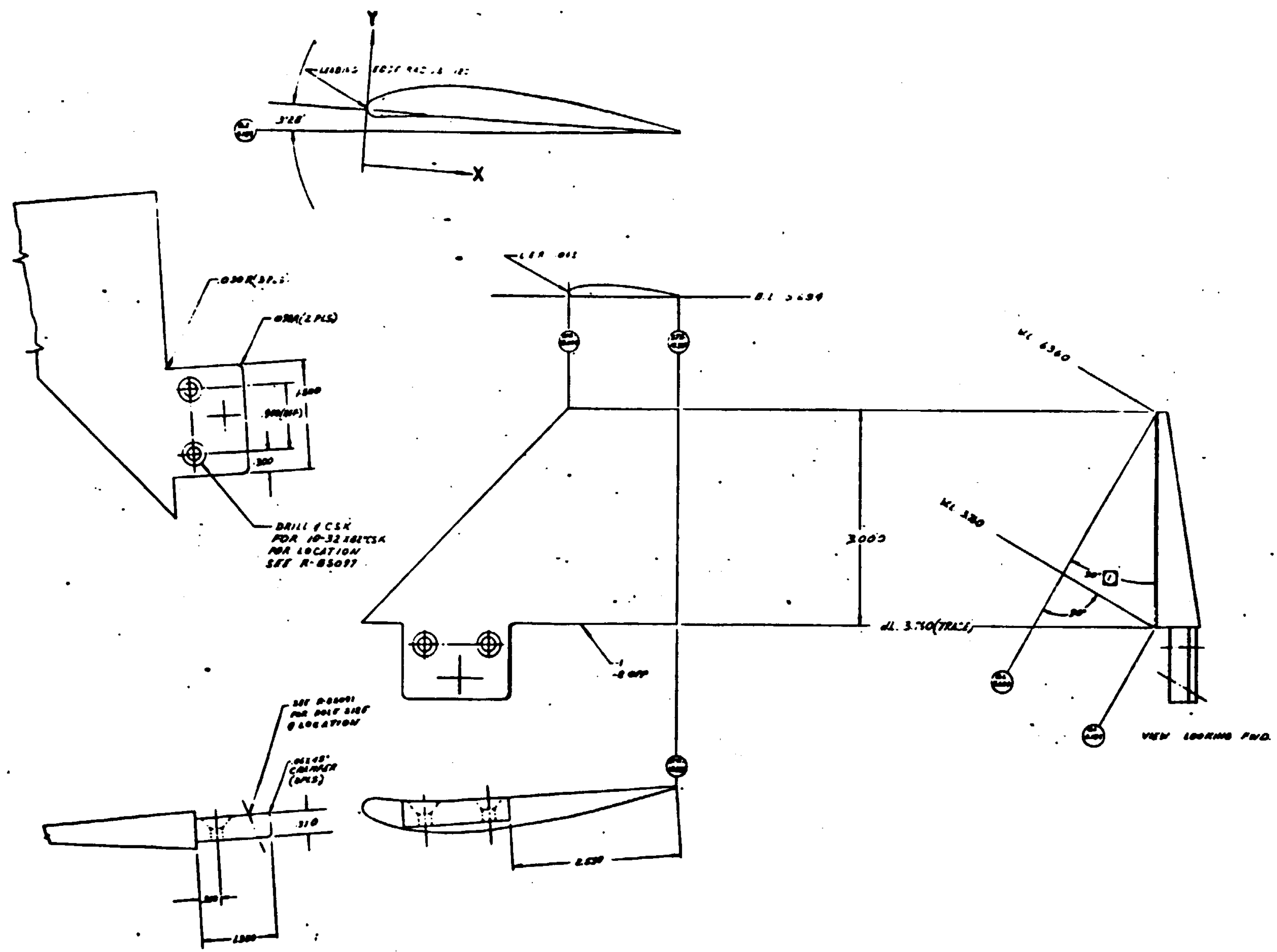

Figure 5. Fin Assembly - F_{26}

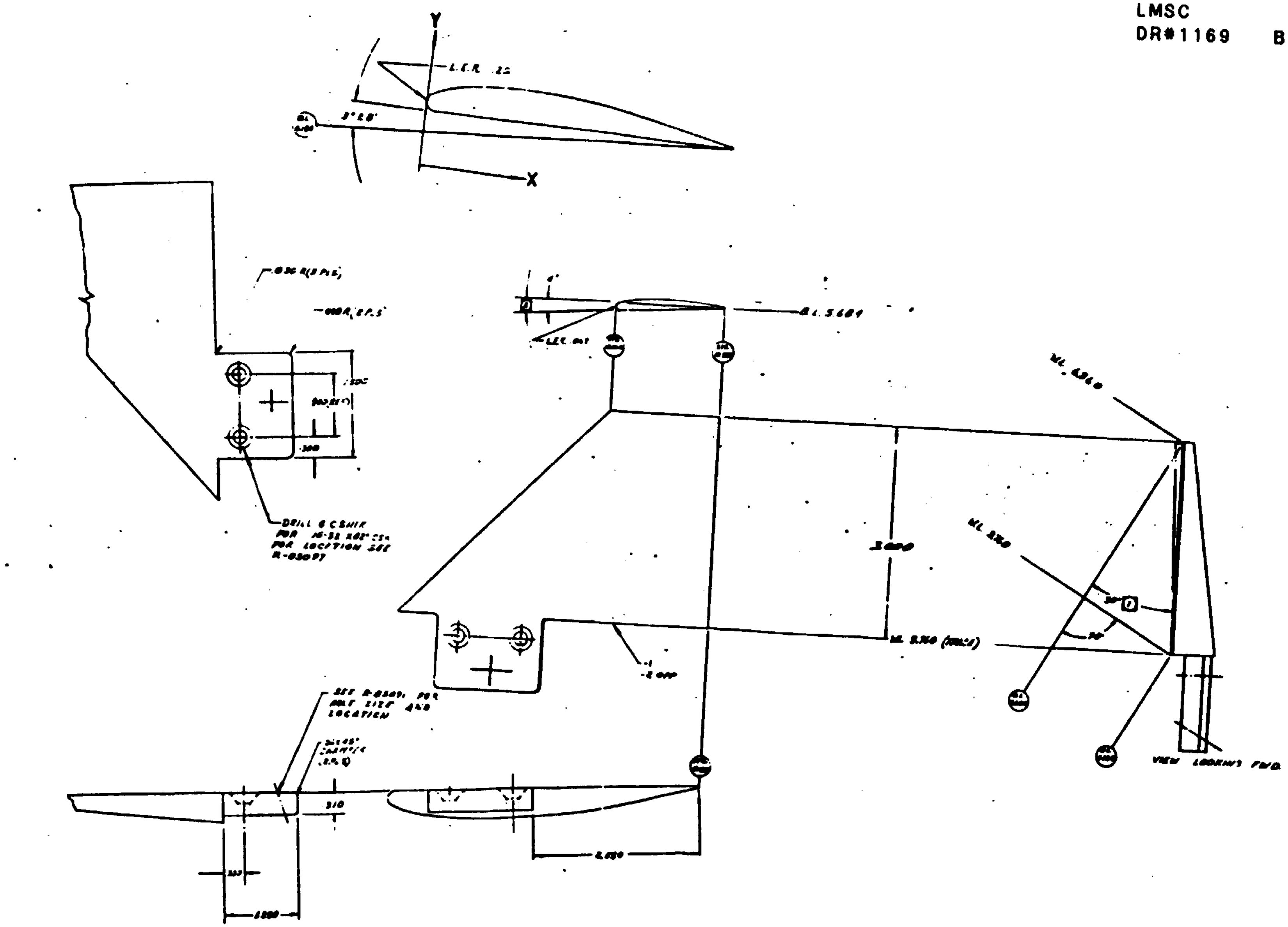

Figure 6. Fin Assembly - F_{27}

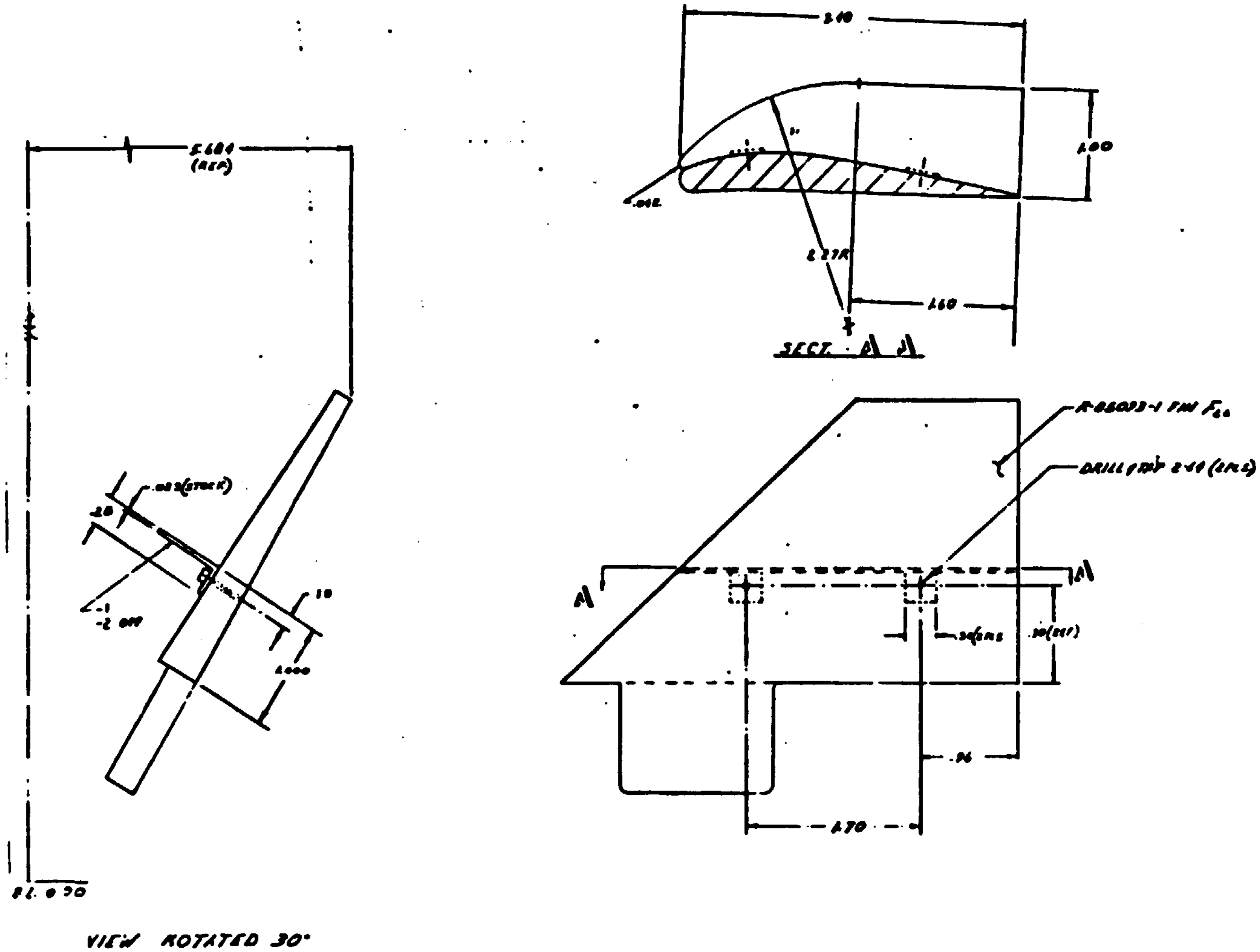

Figure 7. Fence-Fin - Z

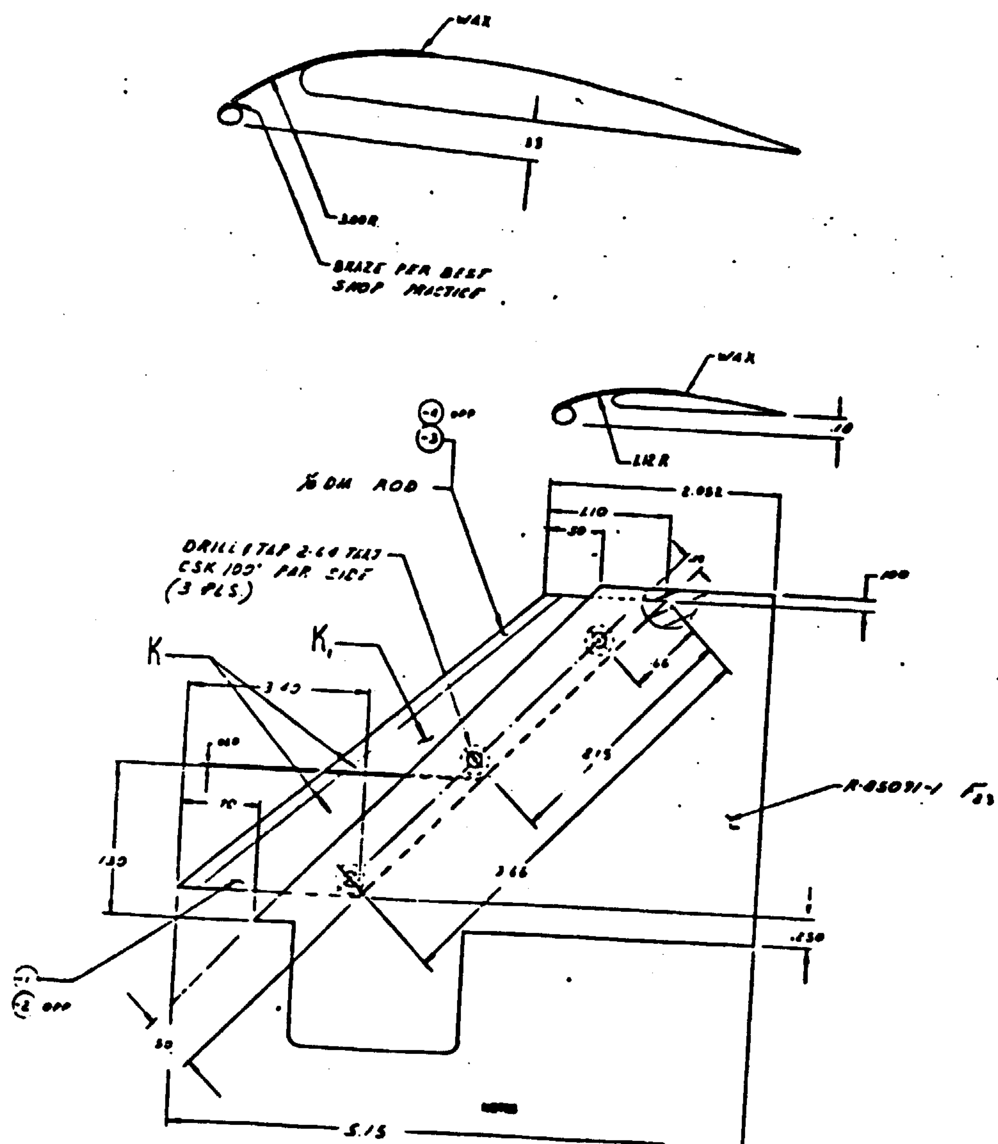

Figure 8. Kruger Flap

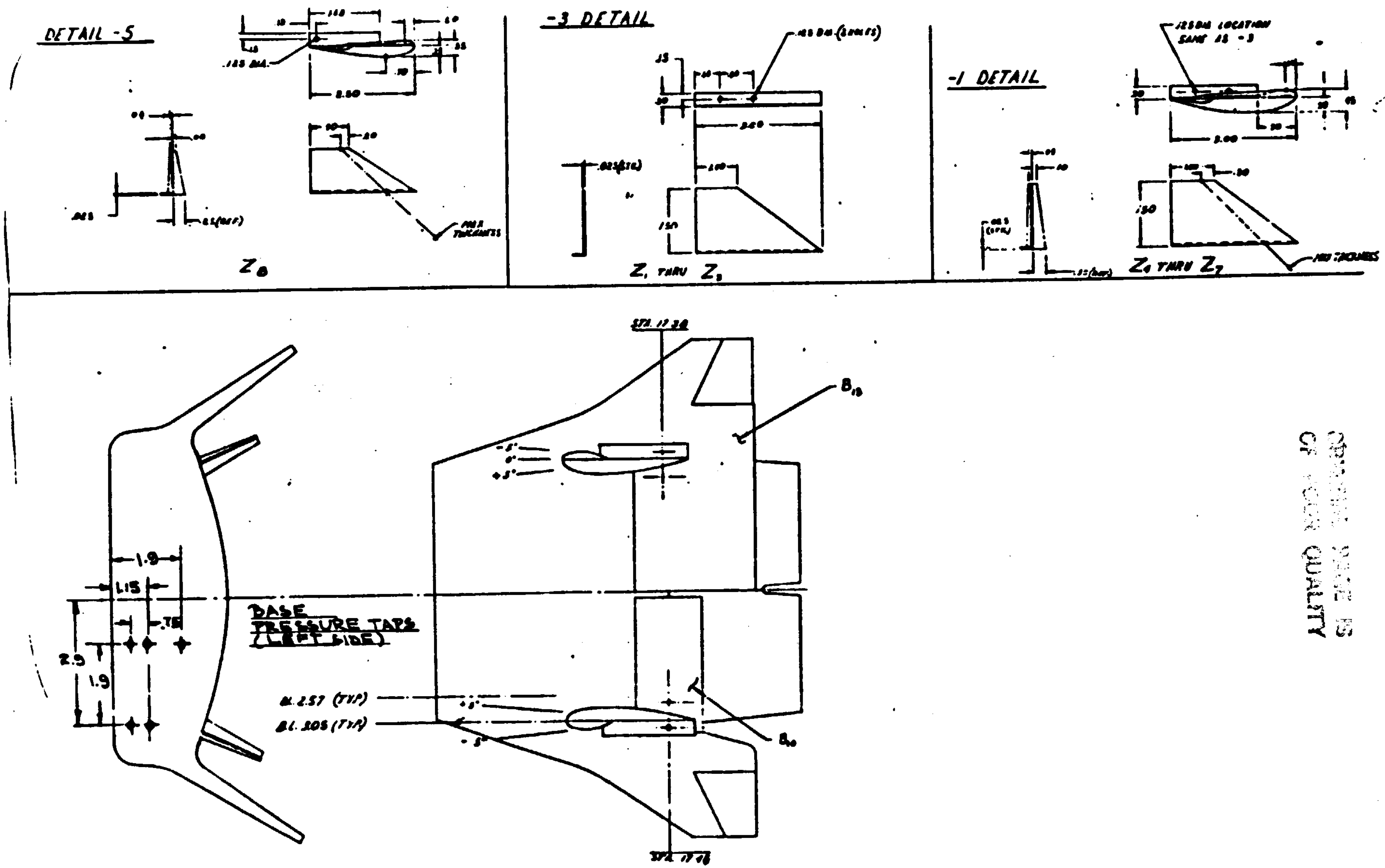

Figure 9. Fence Body

DELTA BODY ORBITER
LMSC
DR#1169 B-1- 29

TEST GWTT 279 DATA SET COLLATION SHEET

GAC IIf CONFIGURATION 1/40 SCALE EARTH ORBITING SHUTTLE
- LOW SPEED AERODYNAMIC FORCE TEST

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_E	CONTROL DEFLECTION δ_C			NO. of RUNS	MACH NUMBERS .17
RCL011	B_2N_1	A	0	0	OFF			1	22
RCL021	$B_2N_1W_1$	A	0	↓	↓			1	23
RCL032	$B_1N_1W_1$	5	B	↓	↓			1	28
RCL042	$B_1N_1W_1T$	5	B	↓	↓			1	46
RCL052	B_1N_1	5	B	↓	↓			1	52
RCL063	$B_{10}N_1W_4$	C	0	↓	↓			1	123
RCL073	$B_{10}N_1W_4F^{30}$	C	0	30	↓			1	125
RCL083	$B_{10}N_1W_4F^{30}C$	C	0	30	0			1	126
RCL093	$B_{10}N_1W_4F^{30}C^{10}$	C	0	30	10			1	127
RCL103	$B_{10}N_1W_{12}$	C	0	0	OFF			1	129
RCL113	$B_{10}N_1W_{12}K$	C	0	↓	↓			1	130

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CL	CD	CY	CLM	CLN	CSL					IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES

α A = -10° to 30° by 2°
β B = -4° to 10° by 2°
α C = -4° to 30° by 2°

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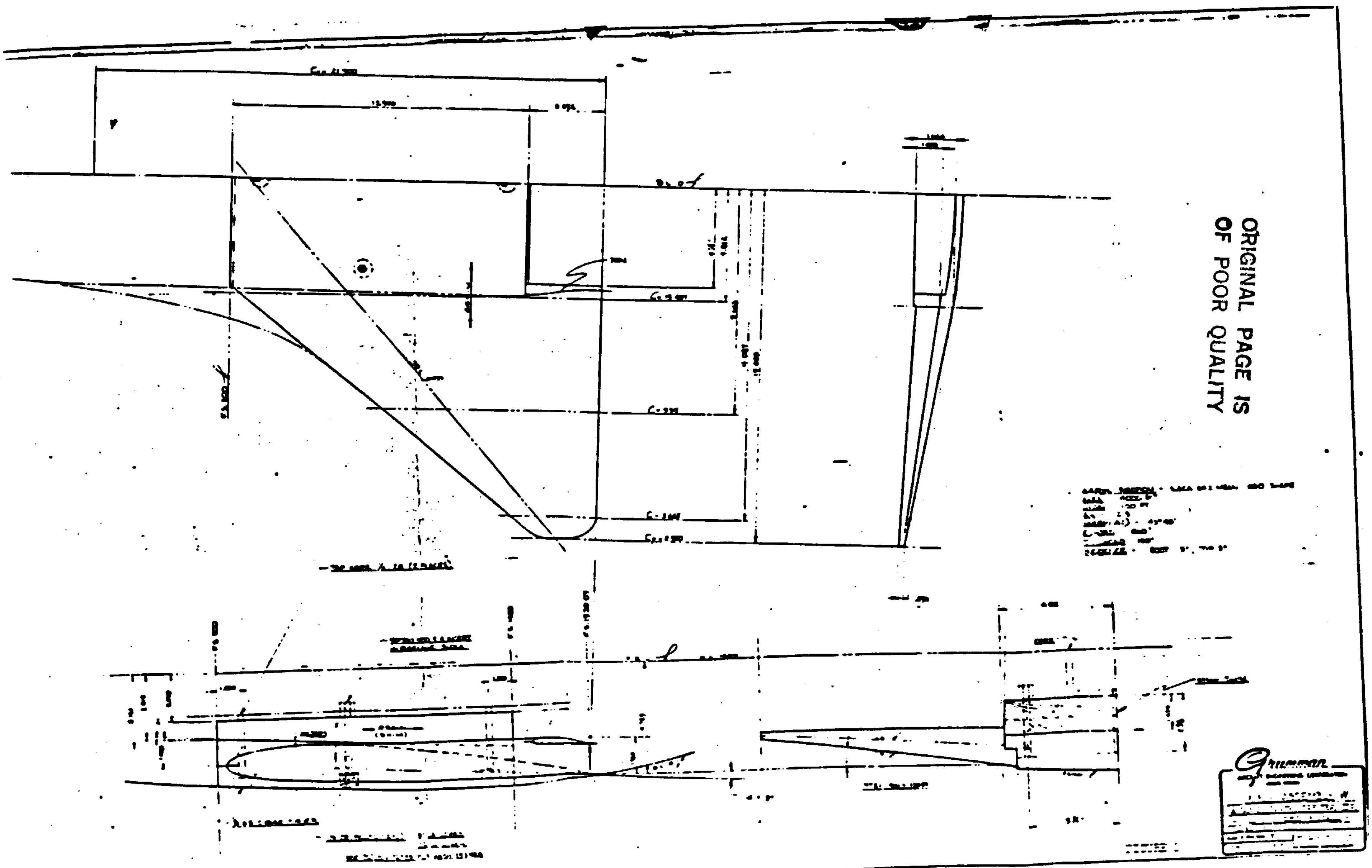
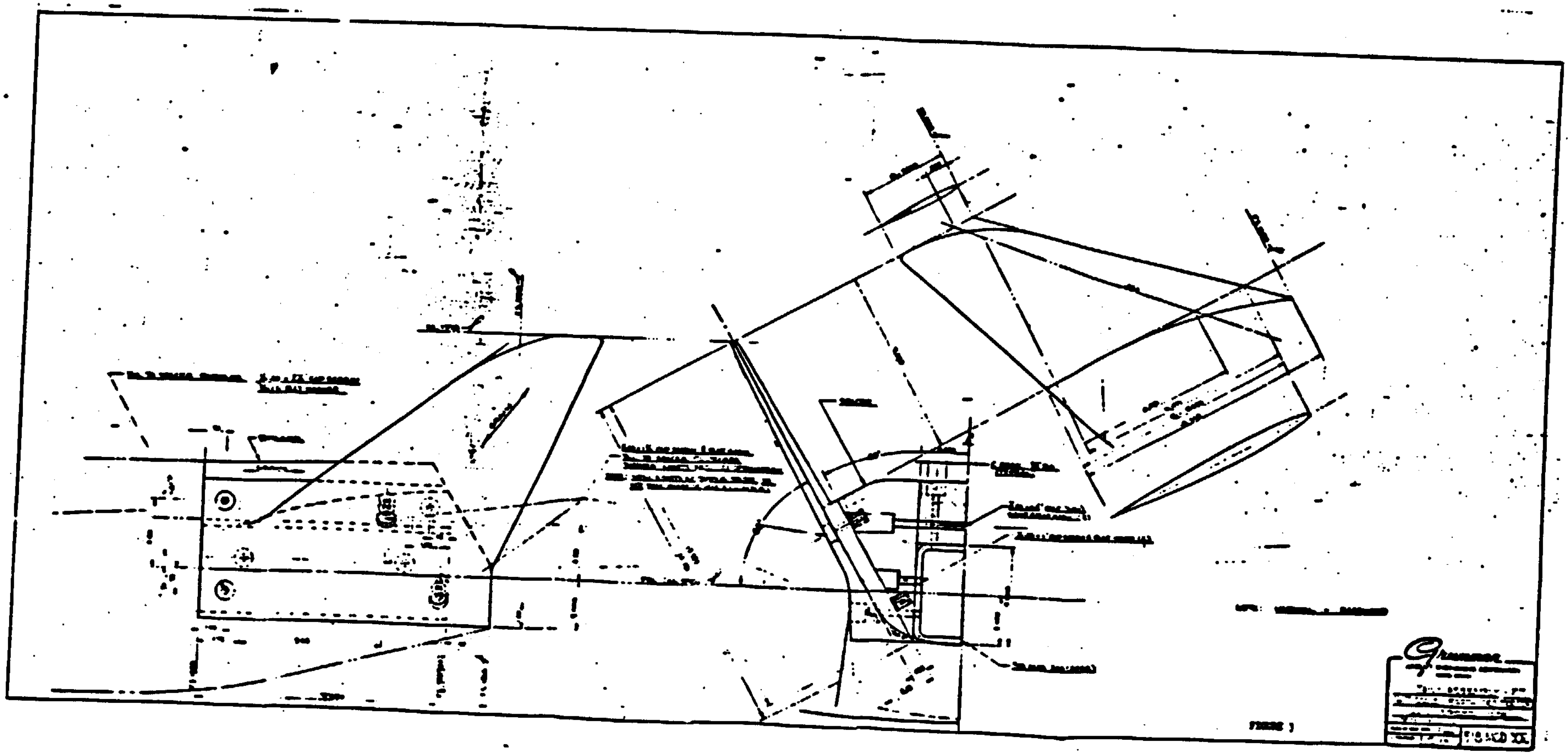
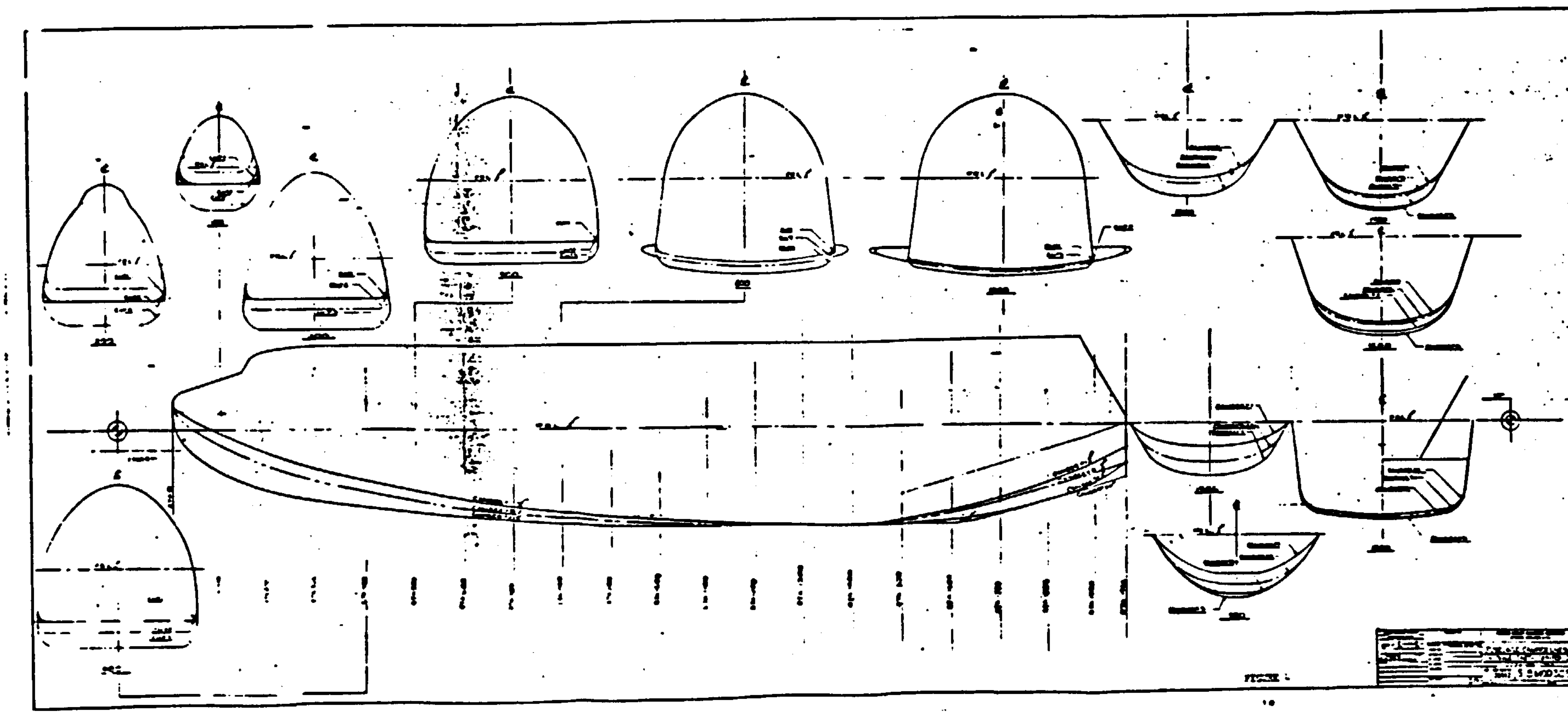


DELTA WING ORBITER
GAC
DR#1053 B-1- 31



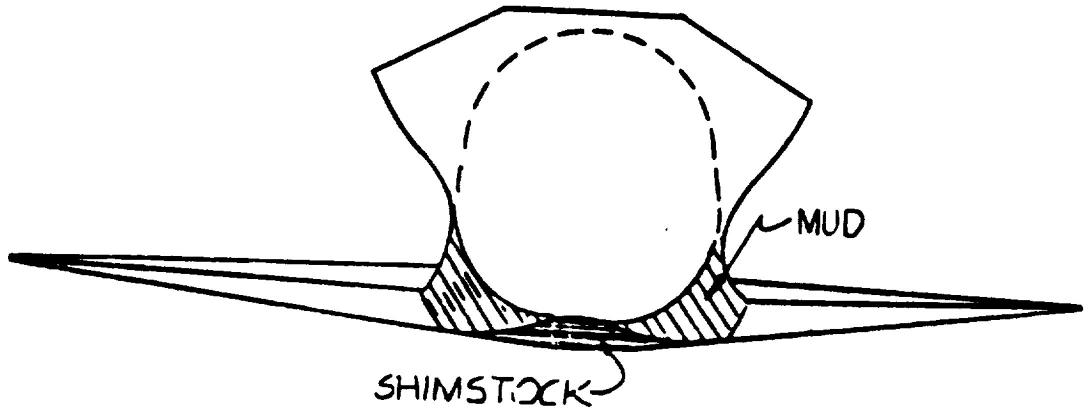


DELTA WING ORBITER
GAC
DR#1053 B-1- 33

DELTA WING ORBITER
GAC
DR#1053 B-1- 34

FIG

B_{10} W_4



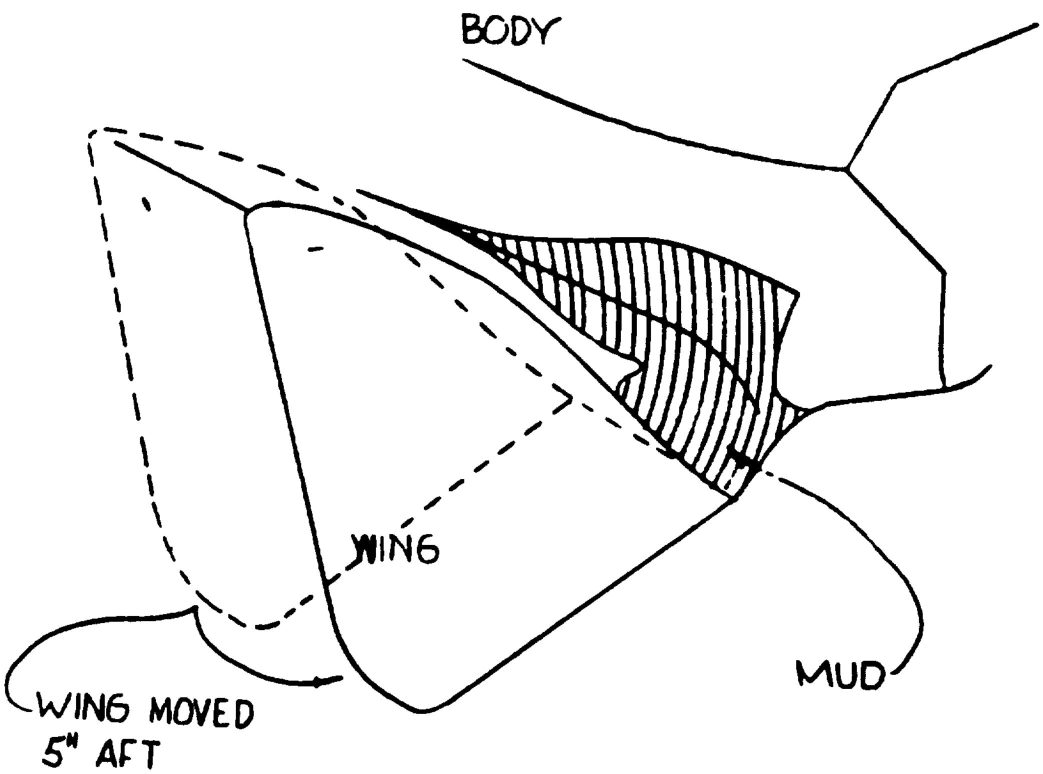


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FIGURE 5

GWTT 279
FEB. 1970

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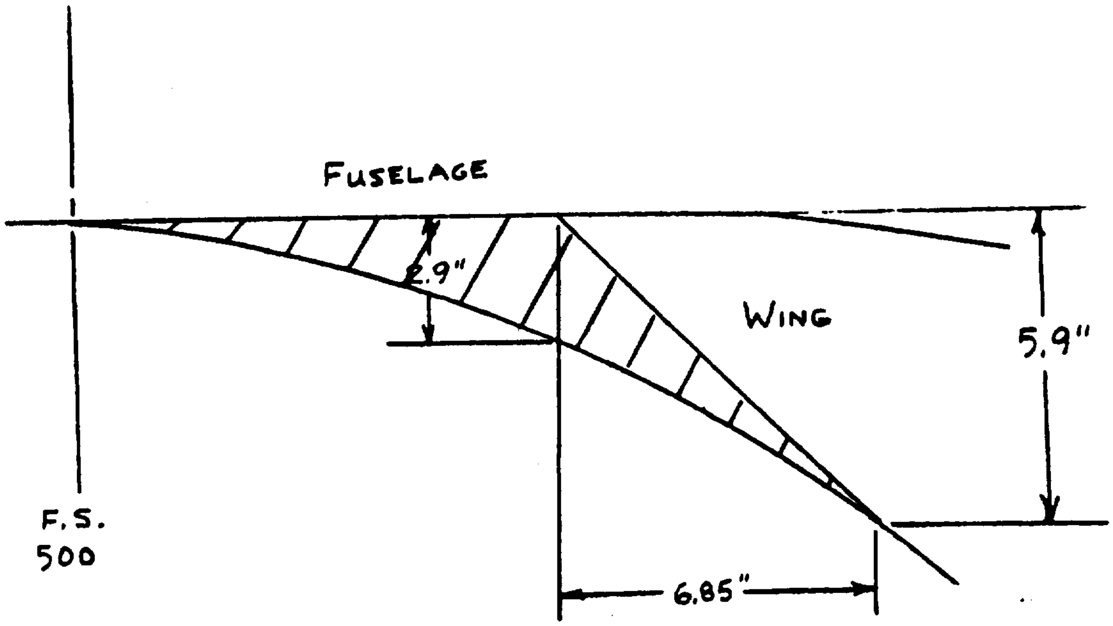
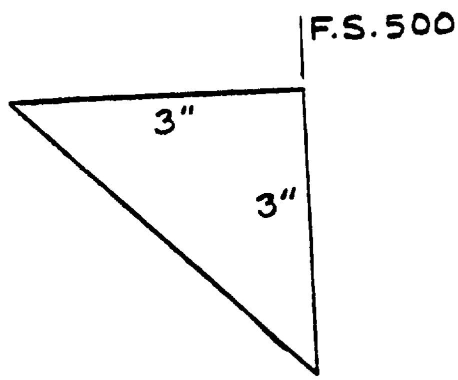
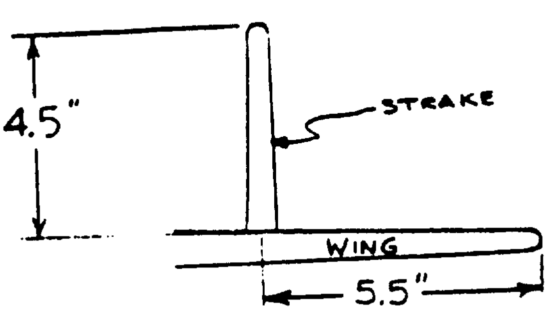
DELTA WING ORBITER
GAC
DR#1053 B-1- 35



W12 (fig. 6)



CANARD (fig. 7)



STRAKE

FIGURE 6

TEST GWTT 289 DATA SET COLLATION SHEET

LOW SPEED AERODYNAMIC FORCE TEST ON THE 1/25 SCALE GRUMMAN CONF. ROS-NB1 AND ROS-WB1.

☐ PRETEST
☒ POSTTEST

PAGE 1 OF 3

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBER 0.17	NO. of RUNS	δ_{EL}	δ_{ER}	δ_R	δ_F	δ_A
RCQ021	B_1W_1	A	0	21	1	0	0	—	0	0
RCQ023	B_1W_1	A	3	23	1	0	0	—	0	0
RCQ025	$B_1W_1V_1$	A	3	25	1	0	0	0	0	0
RCQ027	$B_1W_1V_1$	A	0	27	1	0	0	0	0	0
RCQ028	$B_1W_1^{0,-10}V_1$	A	0	28	1	0	-10	0	-5	-10
RCQ029	$B_1W_1^{-10,-10}V_1$	A	0	29	1	-10	-10	0	-10	0
RCQ030	$B_1W_1^{+5,-5}V_1$	A	0	30	1	5	-5	0	0	-10
RCQ031	$B_1W_1^{+5,-15}V_1$	A	0	31	1	5	-15	0	-5	-20
RCQ032	$B_1W_1^{-15,-15}V_1$	A	0	32	1	-15	-15	0	-15	0
RCQ033	$B_1W_1^{-5,-15}V_1$	A	0	33	1	-5	-15	0	-10	-10
RCQ034	$B_1W_1^{-5,-5}V_1$	A	0	34	1	-5	-5	0	-5	0
RCQ035	$B_1W_1V_1^{-10}$	A	0	35	1	0	0	-10	0	0
RCQ037	$B_1W_2V_3$	A	0	37	1	0	0	—	0	0
RCQ040	B_1	A	0	40	1	—	—	—	—	—
RCQ042	B_1	0	B	42	1	—	—	—	—	—
RCQ044	B_1V_1	0	C	44	1	—	—	0	—	—
RCQ046	$B_1W_2V_3$	0	B	46	1	0	0	—	0	0
RCQ048	B_1W_1	0	B	48	1	0	0	—	0	0
RCQ050	B_1W_1	[illegible]	B	50	1	0	0	—	0	0

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

COEFFICIENTS: CL CD CY CLM CLN CSL → IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES:
α A = -4° to +24° by 2°
β B = 0, ±1, ±2, ±3, ±5, ±7, ±9, ±12, ±15
β C = 0, 1, 2, 3, 5, 7, 9, 12, 15

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TEST GWTT 289 DATA SET COLLATION SHEET

☑ PRETEST
☐ POSTTEST

PAGE 2 OF 3

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBER 0.17				NO. of RUNS	δ_{EL}	δ_{ER}	δ_R	δ_E	δ_A							
RCQ052	$B_1W_1V_1$	21	B	52				1	0	0	0	0	0							
RCQ054	$B_1W_1V_1$	0	B	54				1	0	0	0	0	0							
RCQ055	$B_1W_1V_1E_1$	0	B	55				1	0	0	0	0	0							
RCQ056	$B_1W_1V_1^{-10}$	0	B	56				1	0	0	-10	0	0							
RCQ057	$B_1W_1V_1^{-10}$	21	B	57				1	0	0	-10	0	0							
RCQ058	$B_1W_1^{0,-10}V_1$	0	B	58				1	0	-10	0	-5	-10							
RCQ059	$B_1W_1^{-10,-10}V_1$	0	B	59				1	-10	-10		-10	0							
RCQ060	$B_1W_1^{+5,-5}V_1$	0	B	60				1	5	-5		0	-10							
RCQ061	$B_1W_1^{+5,-15}V_1$	0	B	61				1	5	-15		-5	-20							
RCQ062	$B_1W_1^{-5,-15}V_1$	0	B	62				1	-5	-15		-10	-10							
RCQ063	$B_1W_1^{-5,-5}V_1$	0	B	63				1	-5	-5		-5	0							
RCQ064	$B_1W_1^{-5,-5}V_1$	21	B	64				1	-5	-5		-5	0							
RCQ065	$B_1W_1^{-5,-15}V_1$	21	B	65				1	-5	-15		-10	-10							
RCQ066	$B_1W_1^{+5,-15}V_1$	21	B	66				1	5	-15		-5	-20							
RCQ067	$B_1W_1^{+5,-5}V_1$	21	B	67				1	5	-5		0	-10							
RCQ068	$B_1W_1^{-10,-10}V_1$	21	B	68				1	-10	-10		-10	0							
RCQ069	$B_1W_1^{0,-10}V_1$	21	B	69				1	0	-10		-5	-10							
RCQ071	$B_2W_1V_2$	0	B	71				1	0	0	-	0	0							
RCQ073	B_2W_1	0	B	73				1	0	0	-	0	0							
RCQ075	B_2W_1	A	0	75				1	0	0	-	0	0							

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

C_L | C_D | C_Y | C_{LM} | C_{LN} | C_{SL} | IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

$\alpha A = -4° \text{ to } +21° \text{ by } 2°$

$\beta B = 0, \pm 1, \pm 2, \pm 3, \pm 5, \pm 7, \pm 9, \pm 12, \pm 15$

$\beta C = 0, 1, 2, 3, 5, 7, 9, 12, 15$

DELTA WING ORBITER
GAC
DR#1081 B-1- 37

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TEST GWTT 289 **DATA SET COLLATION SHEET**

PAGE 3 OF 3

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBER 0.17				NO. of RUNS	δ_{EL}	δ_{ER}	δ_R	δ_E	δ_A							
RCQ077	$B_2 W_1 V_2$	A	0	77				1	0	0	—	0	0							
RCQ079	B_2	D	0	79				1	—	—	—	—	—							
RCQ081	B_2	0	B	81				1	—	—	—	—	—							
RCQ083	$B_2 V_2$	0	C	83				1	—	—	—	—	—							

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

COEFFICIENTS: CL CD CY CLM CLN CSL

IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: $\alpha A = -4°$ to $+24°$ by $2°$
$\alpha D = -4°$ to $+24$ by $4°$

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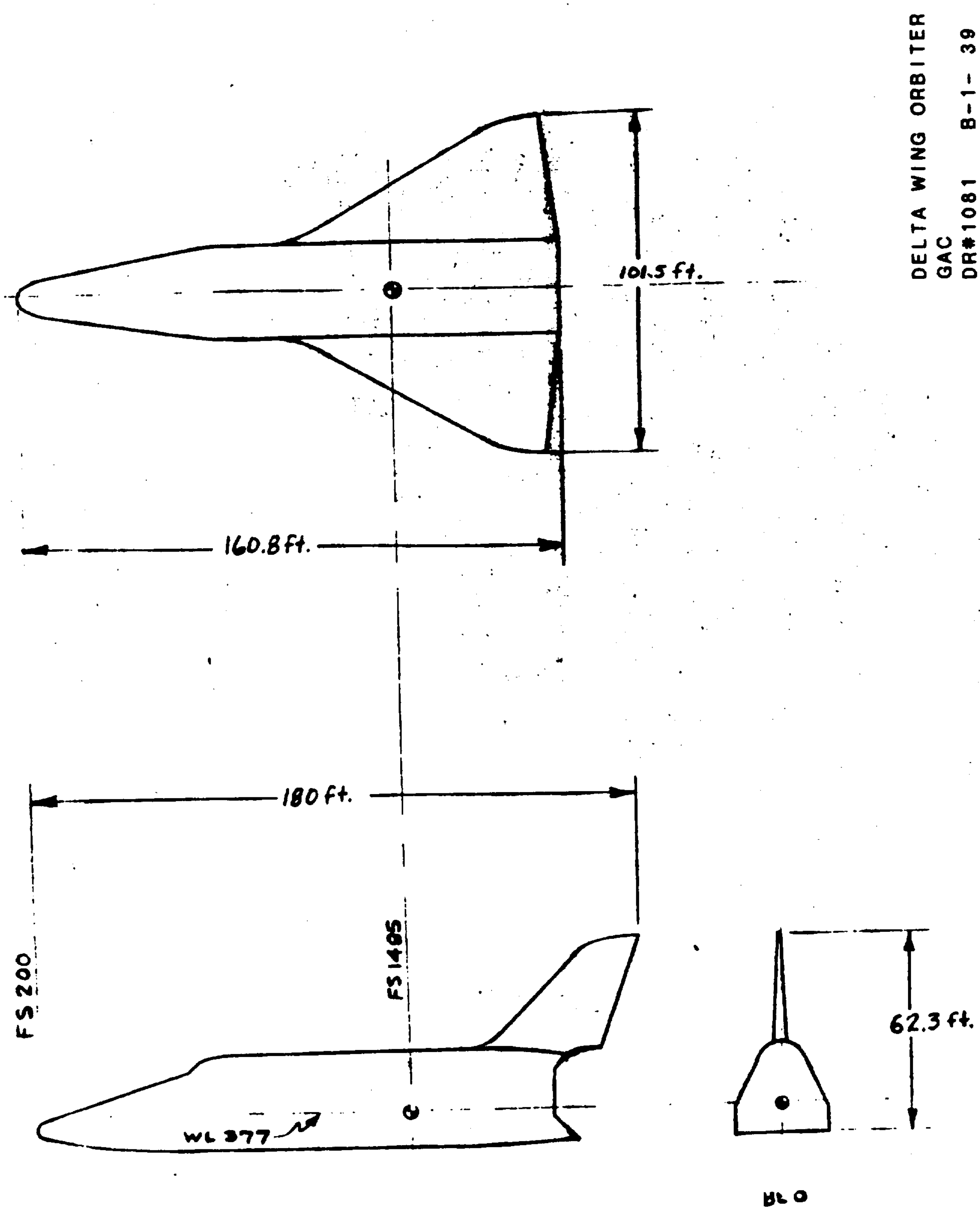

⊕ MOMENT CENTER 3-VIEW

FIGURE 2. THREE VIEW SKETCH SHOWING MOMENT REFERENCE POINT

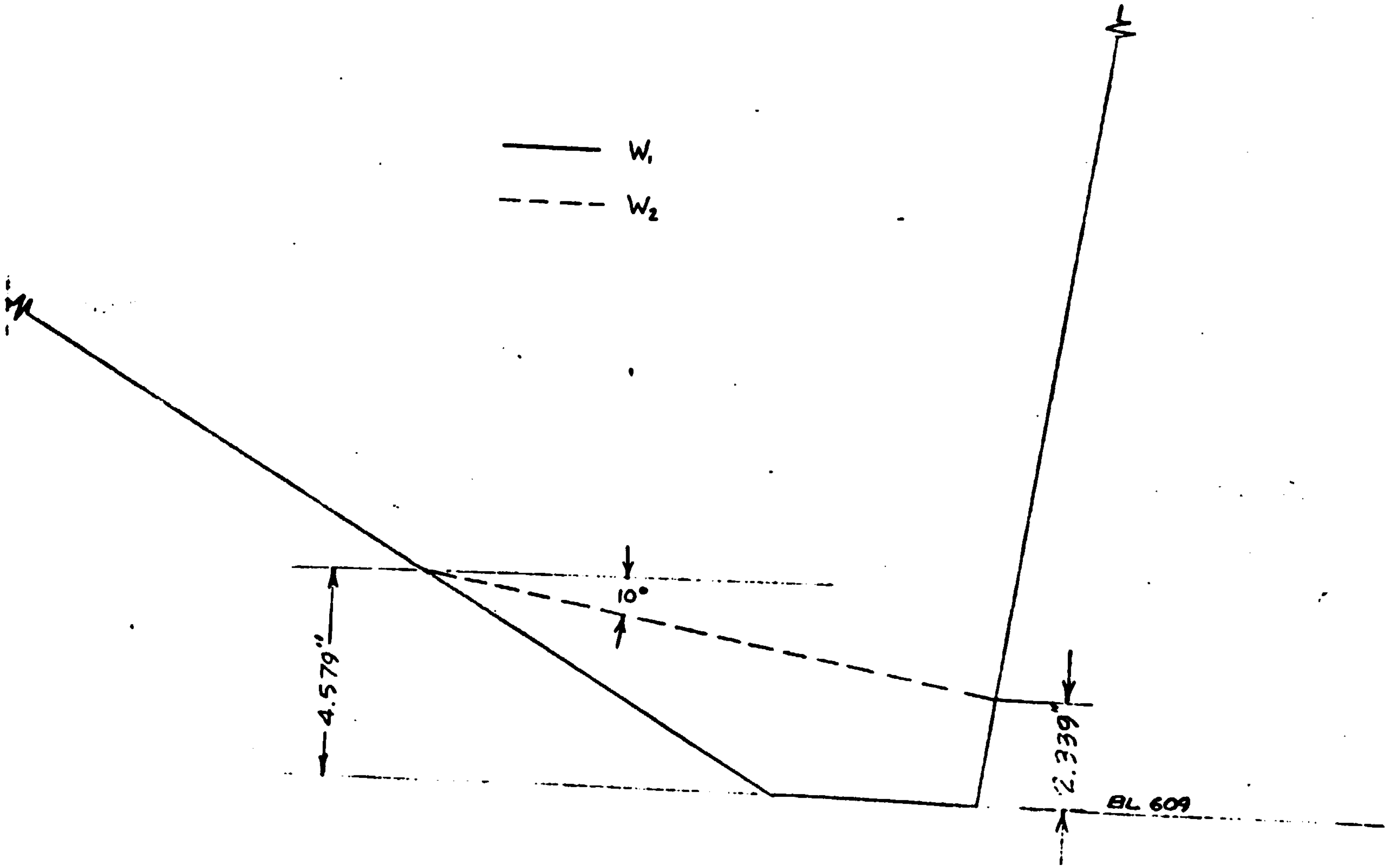

FIG. 7. W_2 - WING (1/25 SCALE)

E_1. Flow through models of the four air-breathing engines that swing out of the fuselage. There are two on each side; the forward one under the ℄ of the rear. See sketch for size and location specifics.

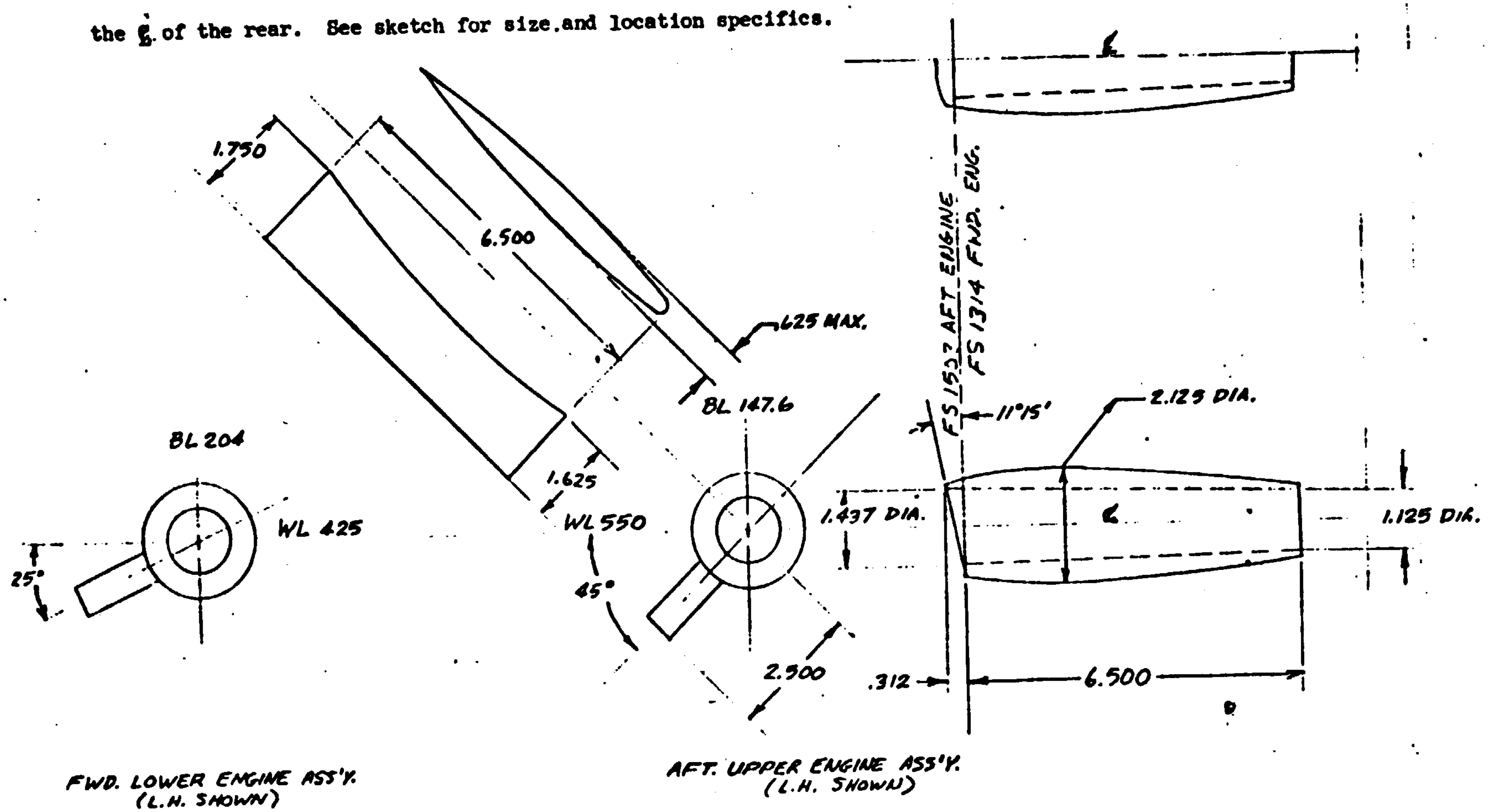

FIGURE 8. E_1 - ENGINES (1/25 SCALE)

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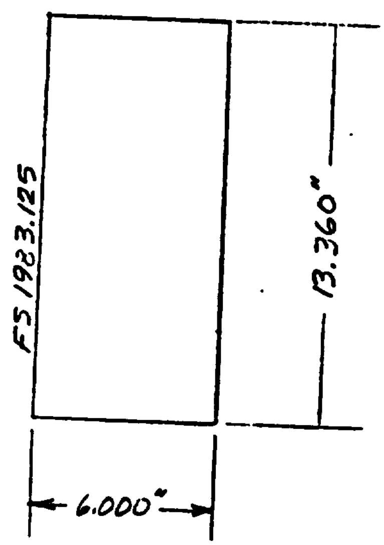
DR#1081 B-1- 41

* Note 1: Body flap is deflected-15° (T.E. up) from F.R.L. Hinge line is at FS 1983.125. In future tests, this particular configuration will be denoted as F_1^{-15} .



F_1 (1/25 SCALE)

FIGURE 9. BODY FLAP F1

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LOW SPEED AERODYNAMIC FORCE TEST ON THE
1/25 SCALE GRUMMAN CONF. ROS-N31, NB2, WB1

☐ PRETEST
☒ POSTTEST

PAGE 1 OF 4

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	Mach Number 0.17	NO. of RUNS	δ_{r}	δ_{SP}	δ_{P}	δ_{E}	δ_{A}
RCW002	$B_1F_1^{-15}W_1V_1$	O	B	2	1	0	0	0	0	0
RCW004	$B_1F_1^{-15}W_1V_1$	A	O	4	1	0	0	0	0	0
RCW005	$B_1F_1^{-15}W_1V_1+GB^{15}$	C	O	5	1	0	0	0	0	0
RCW007	$B_1F_1^{-15}W_1V_1+GB^{15}$	C	3	7	1	0	0	0	0	0
RCW008	[illegible] V_1+GB^{15}	C	O	8	1	0	-10	0	-5	-10
RCW009	$B_1F_1^{-15}W_1$ [illegible] V_1+GB^{15}	C	O	9	1	-10	-10	0	-10	0
RCW010	$B_1F_1^{-15}W_1^{+5,-5}V_1+GB^{15}$	C	O	10	1	+5	-5	0	0	-10
RCW011	$B_1F_1^{-15}W_1^{+5,-15}V_1+GB^{15}$	C	O	11	1	+5	-15	0	-5	-20
RCW012	$B_1F_1^{-15}W_1^{-15,-15}V_1+GB^{15}$	C	O	12	1	-15	-15	0	-15	0
RCW013	$B_1F_1^{-15}W_1^{-5,-15}V_1+GB^{15}$	C	O	13	1	-5	-15	0	-10	-10
RCW014	$B_1F_1^{-15}W_1^{-5,-5}V_1+GB^{15}$	C	O	14	1	-5	-5	0	-5	0
RCW015	$B_1F_1^{-15}W_1V_1^{-5}+GB^{15}$	C	O	15	1	0	0	-5	0	0
RCW016	$B_1F_1^{-15}W_1V_1^{-10}+GB^{15}$	C	O	16	1	0	0	-10	0	0
RCW017	$B_1F_1^{-15}W_1V_1^{-15}+GB^{15}$	C	O	17	1	0	0	-15	0	0
RCW018	$B_1F_1^{-15}W_1V_1^{-15}+GB^{15}$	O	B	18	1	0	0	-15	0	0
RCW019	$B_1F_1^{-15}W_1V_1^{-10}+GB^{15}$	O	B	19	1	0	0	-10	0	0
RCW020	$B_1F_1^{-15}W_1V_1^{-5}+GB^{15}$	O	B	20	1	0	0	-5	0	0
RCW021	$B_1F_1^{-15}W_1V_1+GB^{15}$	O	B	21	1	0	0	0	0	0
RCW022	$B_1F_1^{-15}W_1^{0,-10}V_1+GB^{15}$	O	B	22	1	0	-10	0	-5	-10
RCW023	$B_1F_1^{-15}W_1^{-10,-10}V_1+GB^{15}$	O	B	23	1	-10	-10	0	-10	0

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

CL CD CY CLN CLM CSL — IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

α A = -4° to +32° by 2°

β B = 0, ±1, ±2, ±3, ±5, ±7, ±9, ±12, ±15

α C = -4 to 30 by 2°

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DELTA WING ORBITER
GAC
DR#1142 B-1- 44

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PAGE 2 OF 4

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	Mach Number 2.1?			NO. of RUNS	δ_{EL}	δ_{ER}	δ_R	δ_E	δ_A						
RCW024	$B_1F_1^{-15}W_1^{15,-5}V_1+GB^{15}$	0	B	24			1	-5	-5	0	0	-10						
RCW025	$B_1F_1^{-15}W_1^{15,-15}V_1+GB^{15}$	0	B	25			1	+5	-15	0	-5	-20						
RCW0[illegible]	$B_1F_1^{-15}W_1^{-5,15}V_1+GB^{15}$	0	B	[illegible]			1	-5	-15	0	-10	-10						
RCW027	$B_1F_1^{-15}W_1^{-5,-5}V_1+GB^{15}$	0	B	27			1	-5	-5	0	-5	0						
RCW029	$B_1F_1^{-15}W_1^{-5,5}V_1+GB^{15}$	20	B	29			1	-5	-5	0	-5	0						
RCW0[illegible]	$B_1F_1^{-15}W_1^{-5,-15}V_1+GB^{15}$	20	B	30			1	-5	-15	0	-10	-10						
RCW031	$B_1F_1^{-15}W_1^{5,-15}V_1+GB^{15}$	20	B	31			1	+5	-15	0	-5	-20						
RCW032	$B_1F_1^{-15}W_1^{5,-5}V_1+GB^{15}$	20	B	32			1	+5	-5	0	0	-10						
RCW033	$B_1F_1^{-15}W_1^{-10,-10}V_1+GB^{15}$	20	B	33			1	-10	-10	0	-10	0						
RCW034	$B_1F_1^{-15}W_1^{0,-10}V_1+GB^{15}$	20	B	34			1	0	-10	0	-5	-10						
RCW035	$B_1F_1^{-15}W_1V_1+GB^{15}$	20	B	35			1	0	0	0	0	0						
RCW036	$B_1F_1^{-15}W_1V_1^{-5}+GB^{15}$	20	B	36			1	0	0	-5	0	0						
RCW037	$B_1F_1^{-15}W_1V_1^{-10}+GB^{15}$	20	B	37			1	0	0	-10	0	0						
RCW038	$B_1F_1^{-15}W_1V_1^{-15}+GB^{15}$	20	B	38			1	0	0	-15	0	0						
RCW040	$B_3F_1^{-15}W_1V_1$	20	B	10			1	0	0	0	0	0						
RCW012	$B_3F_1^{-15}W_1V_1$	0	B	12			1	0	0	0	0	0						
RCW011	$B_3F_1^{-15}$	0	B	11			1	—	—	—	—	—						
RCW0[illegible]	$B_3F_1^{-15}$	A	[illegible]	[illegible]			1	—	—	—	—	—						
RCW0[illegible]	$B_3F_1^{-15}W_1V_1$	A	C	[illegible]			1	0	0	0	0	0						
RCW0[illegible]	$B_3F_1^{-15}W_1V_1$	A	3	19			1	0	0	0	0	0						

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

CL CD CY CLM CLN CSL

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

α or β SCHEDULES

α A = -4° to +20° by 2°

β F = 0, ±1, ±2, ±3, ±5, ±7, ±9, ±12, ±15

α C: -4° to 20° by 2°

TEST GWI I 290 DATA SET COLLATION SHEET

☐ PRETEST

PAGE 3 OF 4 ☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	Mach Number .17				NO. of RUNS	Parameters/Values δ_{EL}	δ_{EP}	δ_R	δ_E	δ_A
RCW050	$B_1F_1^0W_1V_1$	A	0	50				1	0	0	0	0	0
RCW051	$B_1F_1^{-15}W_1V_1^{-5}$	A	0	51				1	0	0	-5	0	0
RCW052	$B_1F_1^{-15}W_1V_1^{-15}$	A	0	52				1	0	0	-15	0	0
RCW058	$B_1F_1^{-15}W_1V_1^{60,-60}$	A	0	58				1	0	0	60/-60	0	0
RCW059	$B_1F_1^{-15}W_1V_1^{30-30}$	A	0	59				1	0	0	30/-30	0	0
RCW060	$B_1F_1^{-15}W_1V_1E_1$	A	0	60				1	0	0	0	0	0
RCW061	$B_1F_1^{-15}W_1V_1E_1$	A	3	61				1	0	0	0	0	0
[illegible]CWC62	$B_1F_1^{-15}W_1V_1E_1$	20	B	[illegible]				1	0	0	0	0	0
[illegible]	$B_1F_1^{-15}W_1V_1^{-5}$	20	B	[illegible]				1	0	0	-5	0	0
[illegible]	$B_1F_1^{-15}W_1V_1^{-5}$	[illegible]	[illegible]	[illegible]				1	0	0	-5	0	0
RCW065	$B_1F_1^{-15}W_1V_1^{-15}$	0	B	[illegible]				1	0	0	-15	0	0
RCW066	$B_1F_1^{-15}W_1V_1^{-15}$	20	B	66				1	0	0	-15	0	0
RCW067	$B_1F_1^{-15}W_1V_1^{60,-60}$	20	B	67				1	0	0	60/-60	0	0
RCW068	$B_1F_1^{-15}W_1V_1^{60,-60}$	0	B	68				1	0	0	60/-60	0	0
RCW069	$B_1F_1^{-15}W_1V_1^{30,-30}$	0	B	69				1	0	0	30/-30	0	0
RCW070	$B_1F_1^{-15}W_1V_1^{30,-30}$	20	B	70				1	0	0	30/-30	0	0
RCW07[illegible]	B_2W_1	20	B	72				1	0	0	—	0	0
RCW074	$B_2W_1V_1$	[illegible]	B	74				1	0	0	0	0	0
RCW07[illegible]	$B_1F_1^{-15}W_1V_3$	[illegible]0	B	76				1	0	0	0	0	0
RCW077	$B_1F_1^{-15}W_2^{-15,-15}V_3$	10	B	77				1	-15	-15	0	-15	0

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

CL CD CY CLL CLN CSL → IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: $\alpha A = -4°$ to $+24°$ by $2°$

α or β SCHEDULES
$\beta B = 0, \pm1, \pm2, \pm3, \pm5, \pm7, \pm9, \pm12, \pm15$
$\alpha C = -4°$ to $20°$ by $2°$

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DELTA WING ORBITER
GAC
DR#1142 B-1- 45

TEST GWTT 290 DATA SET COLLATION SHEET

DELTA WING ORBITER
GAC
DR#1142 B-1- 46

☐ PRETEST
☒ POSTTEST

PAGE 4 of 4

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	Mach Number [illegible]				NO. of RUNS	Parameters/Values [illegible]	[illegible]	[illegible]	[illegible]	[illegible]							
RCW079	$B_1F_1^{-15}W_2^{-15,-15}V_3$	A	0	79				1	-15	-15	0	-15	0							
RCW080	$B_1F_1^{-15}W_2^{-15-15}V_{3B}$	A	0	80				1	-15	-15	0	-15	0							
RCW081	$B_{1B}F_1^{-15}W_1V_1$	D	0	81				1	0	0	0	0	0							
RCW082	$B_{1C}F_1^{-15}W_1V_1$	D	0	82				1	0	0	0	0	0							
RCW083	$B_1F_1^{-15}W_1V_1E_2$	A	0	83				1	0	0	0	0	0							
RCW084	$B_1F_1^{-15}W_1V_1E_2$	A	0	84				1	0	0	0	0	0							

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

CL CD CY CLM CLN CSL

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

αA: -2° to [illegible] by 2°
αD: -4° to 10° by 2°

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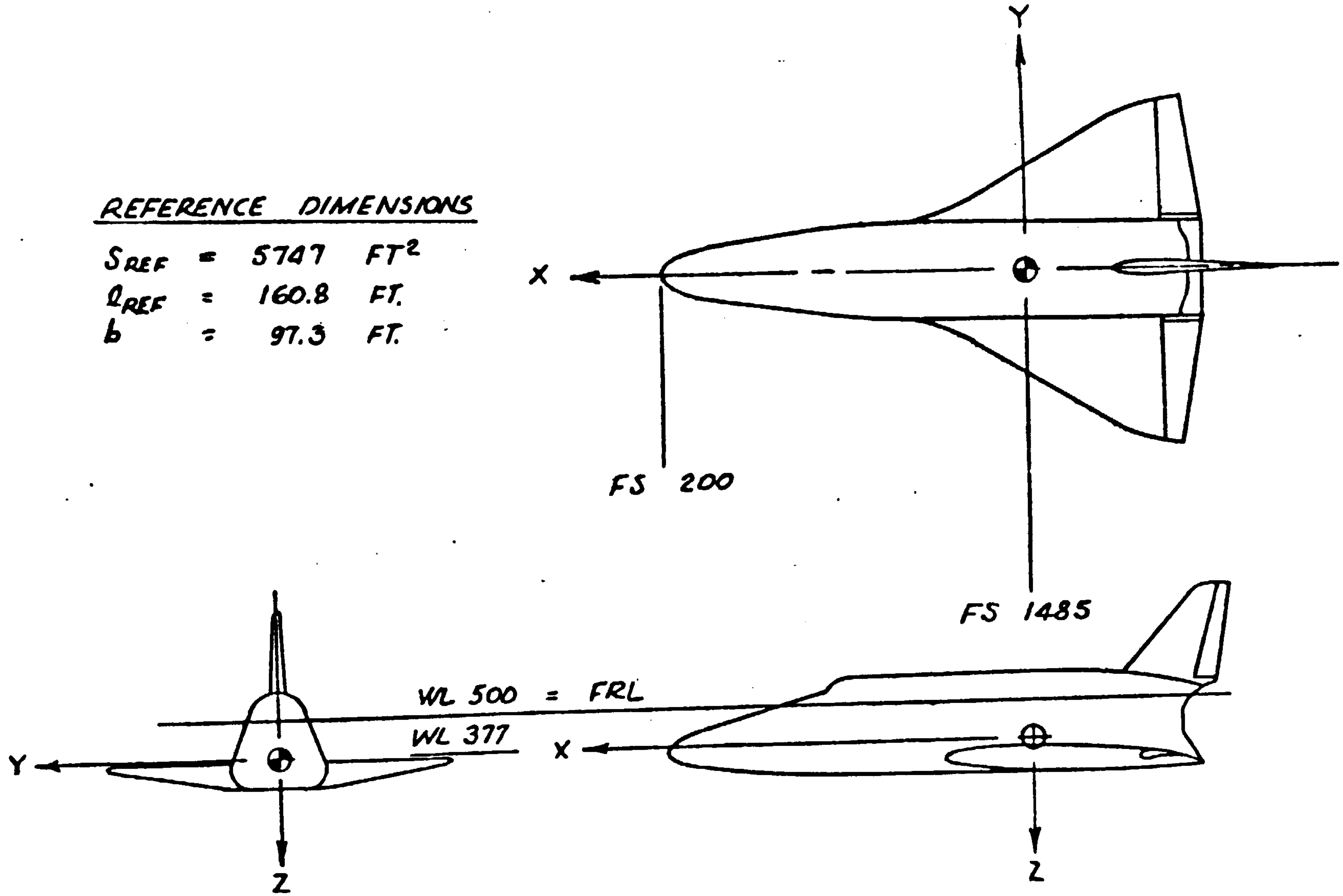


FIGURE 5. GENERAL ARRANGEMENT, ROS-NB1

DELTA WING ORBITER
GAC
DR#1142 B-1- 48

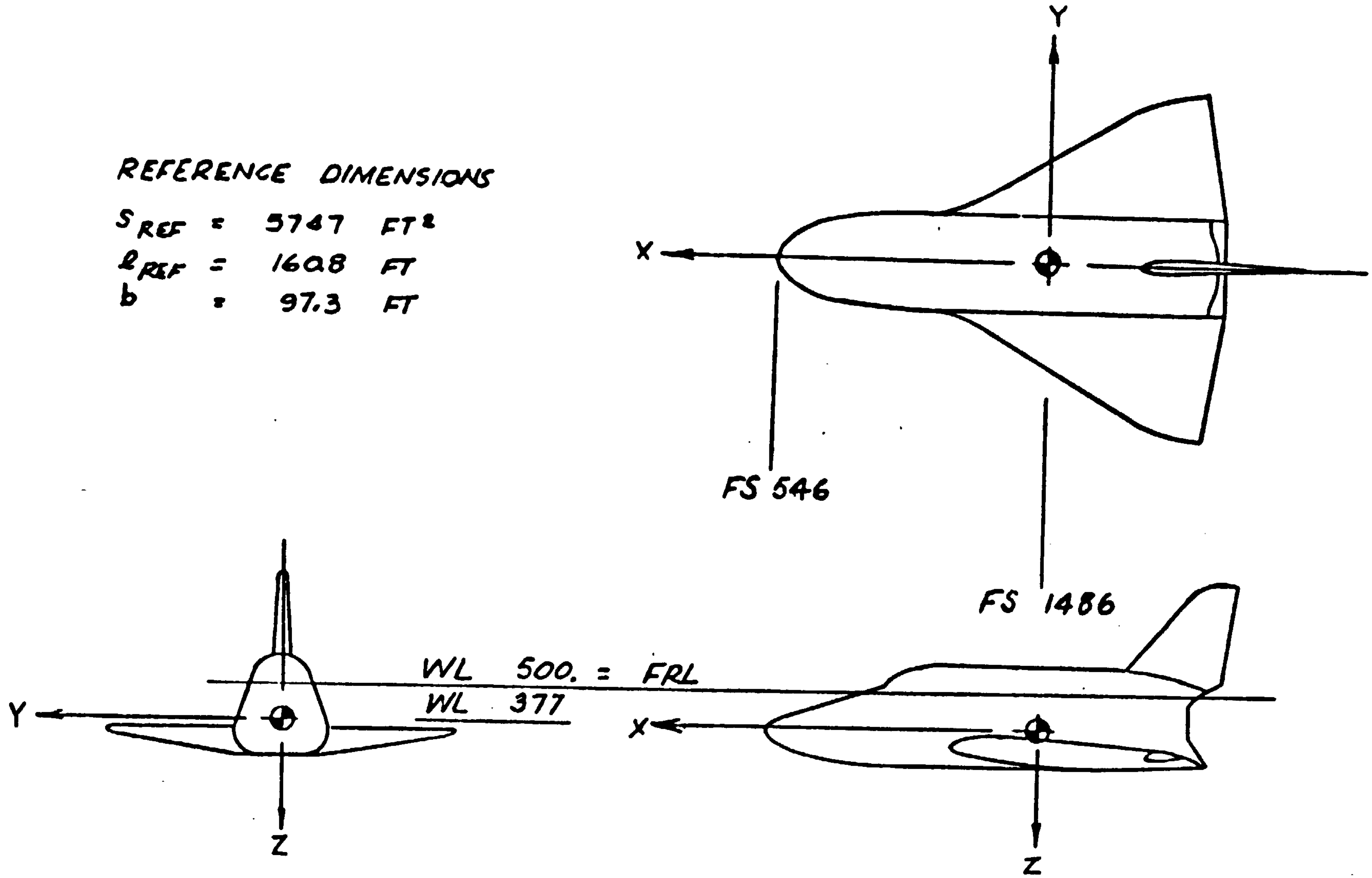


FIGURE 6. GENERAL ARRANGEMENT, ROS-NB2

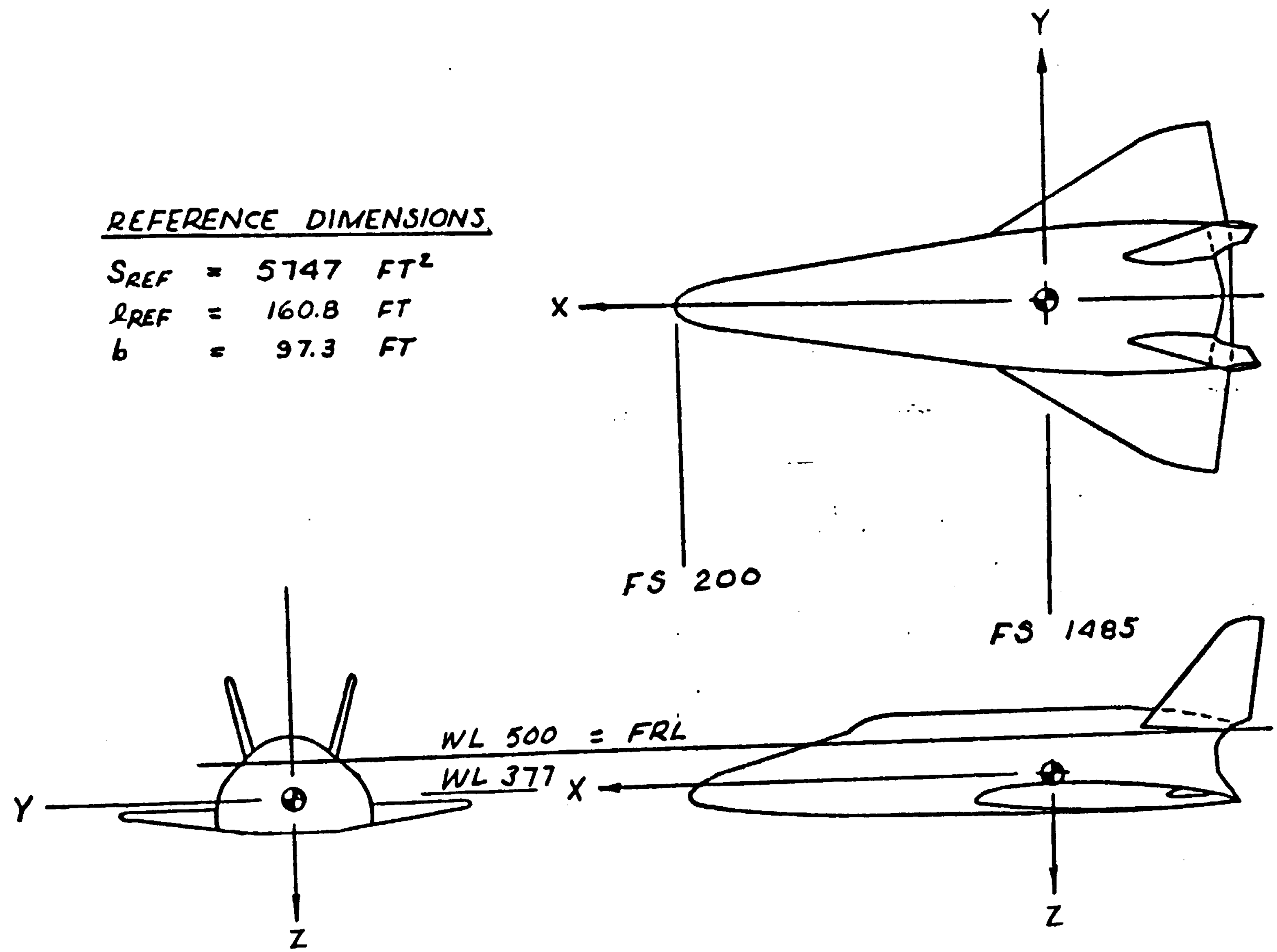


FIGURE 7. GENERAL ARRANGEMENT, ROS-WB1

DELTA WING ORBITER
GAC
DR#1142 B-1- 49

W_2 Basic W_1 wing clipped to accomadate V_3 wing tip fins. Ref. drawing 518 MOD 802.

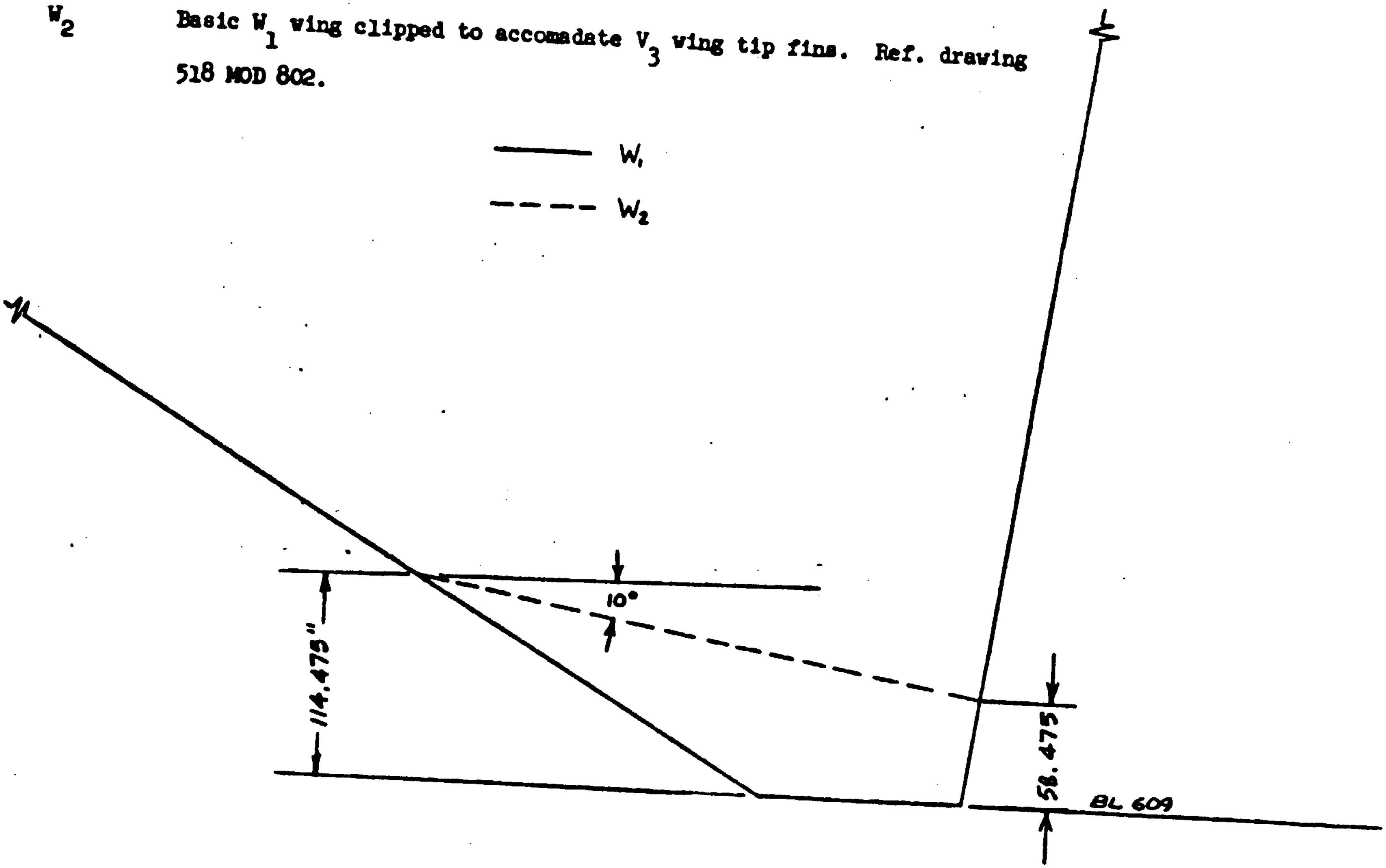


FIGURE 9. W_2 - WING (FULL SCALE)

Outboard leading edge buildup on vertical fins consisting of 5/16" dowel and shimstock.

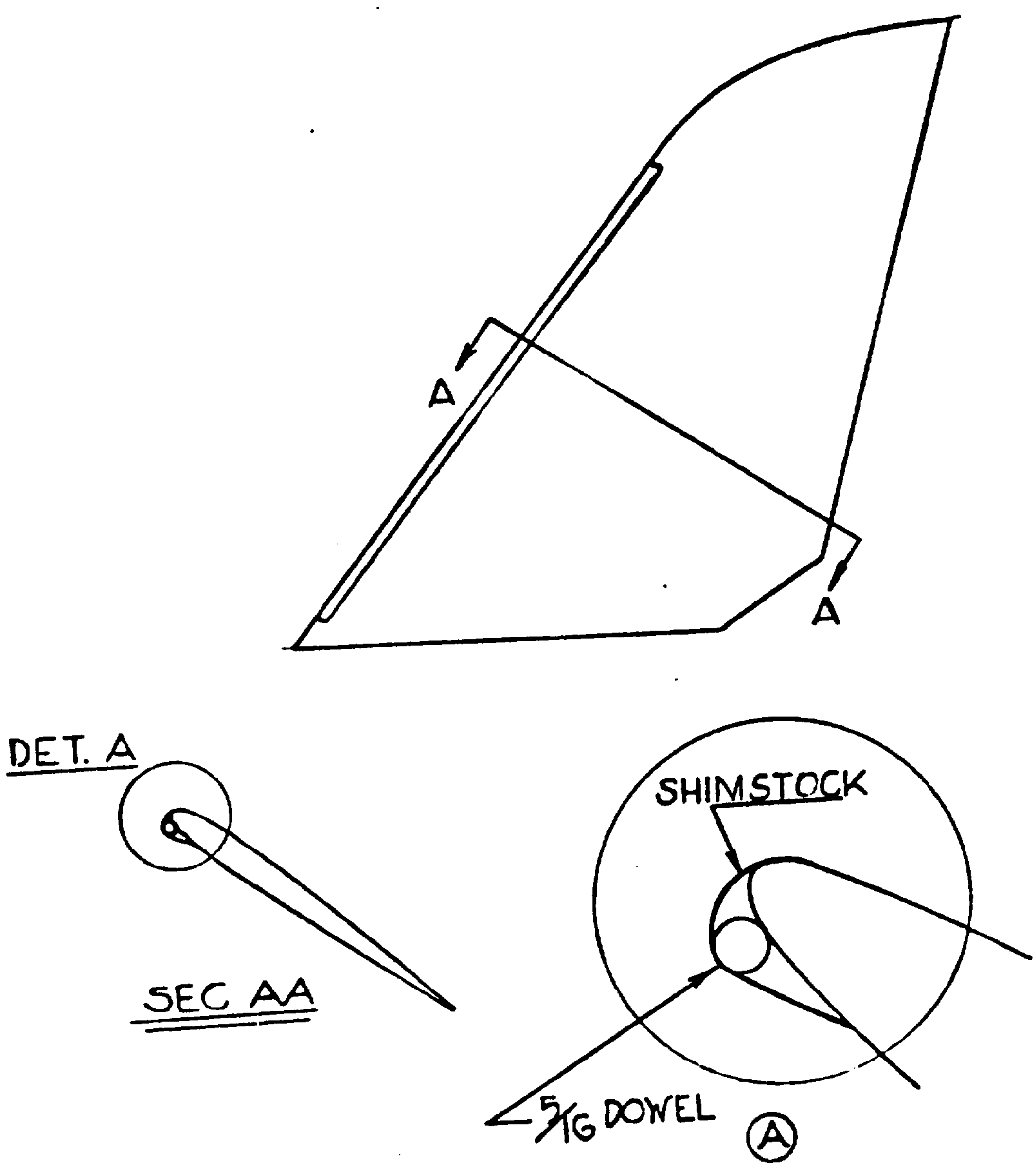


FIGURE 10. VERTICAL FIN, V_3B

E_1 Flow through models of the four air-breathing engines that swing out of the fuselage. There are two on each side; the forward one under the ℄ of the rear.

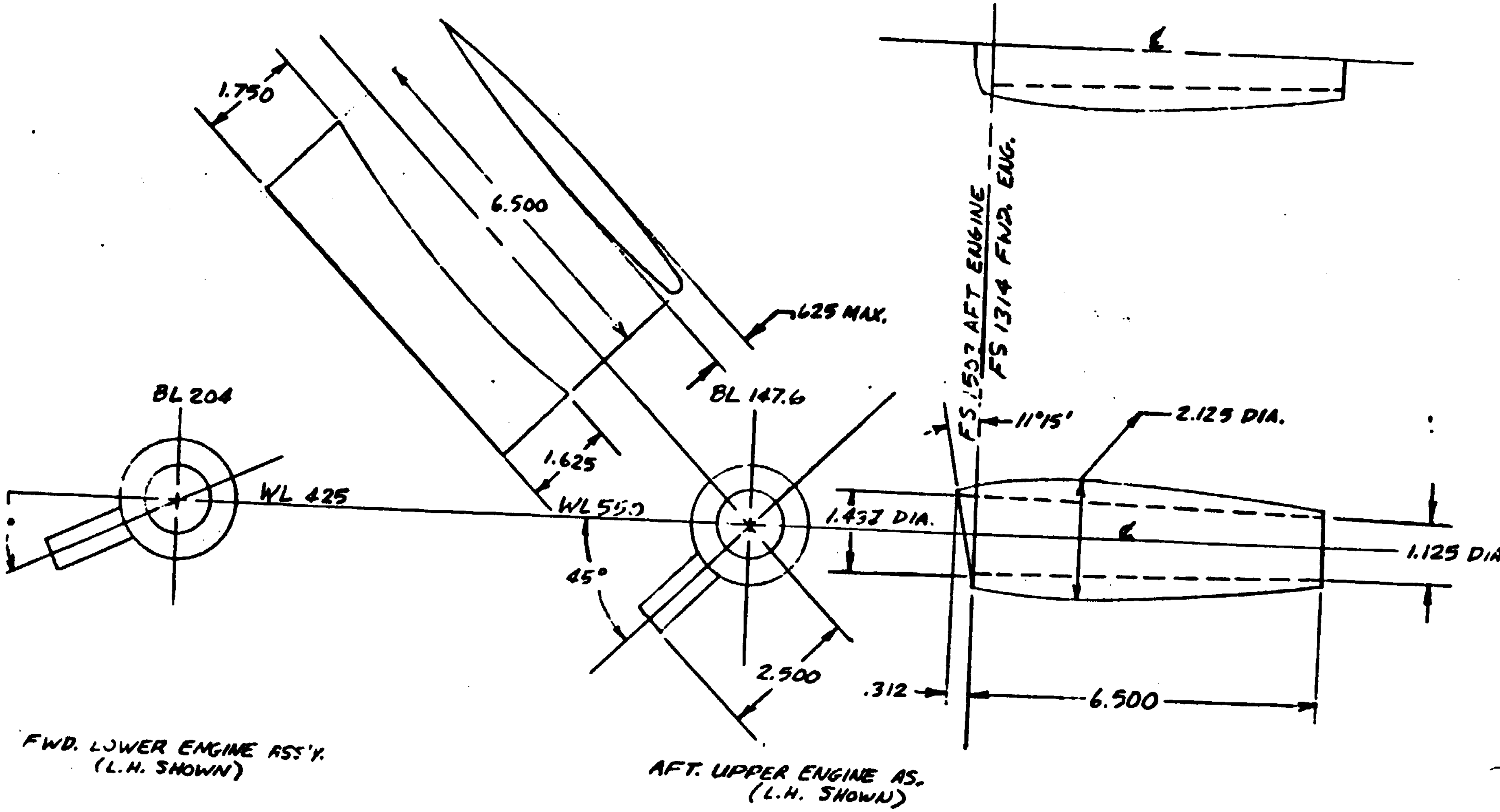
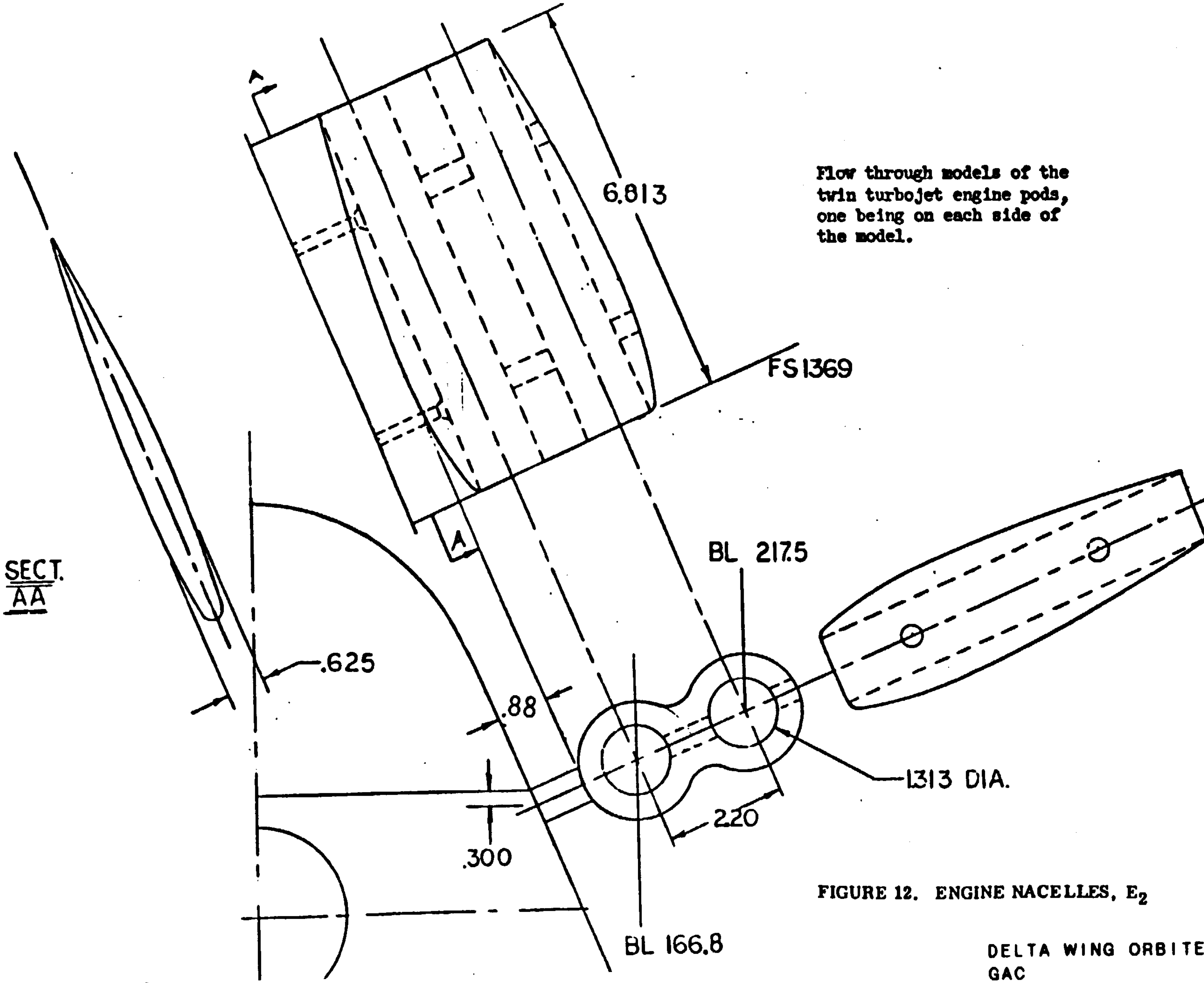


FIGURE 11. ENGINE NACELLES, E_1



Flow through models of the twin turbojet engine pods, one being on each side of the model.

FIGURE 12. ENGINE NACELLES, E_2

DELTA WING ORBITER
GAC
DR#1142 B-1- 53

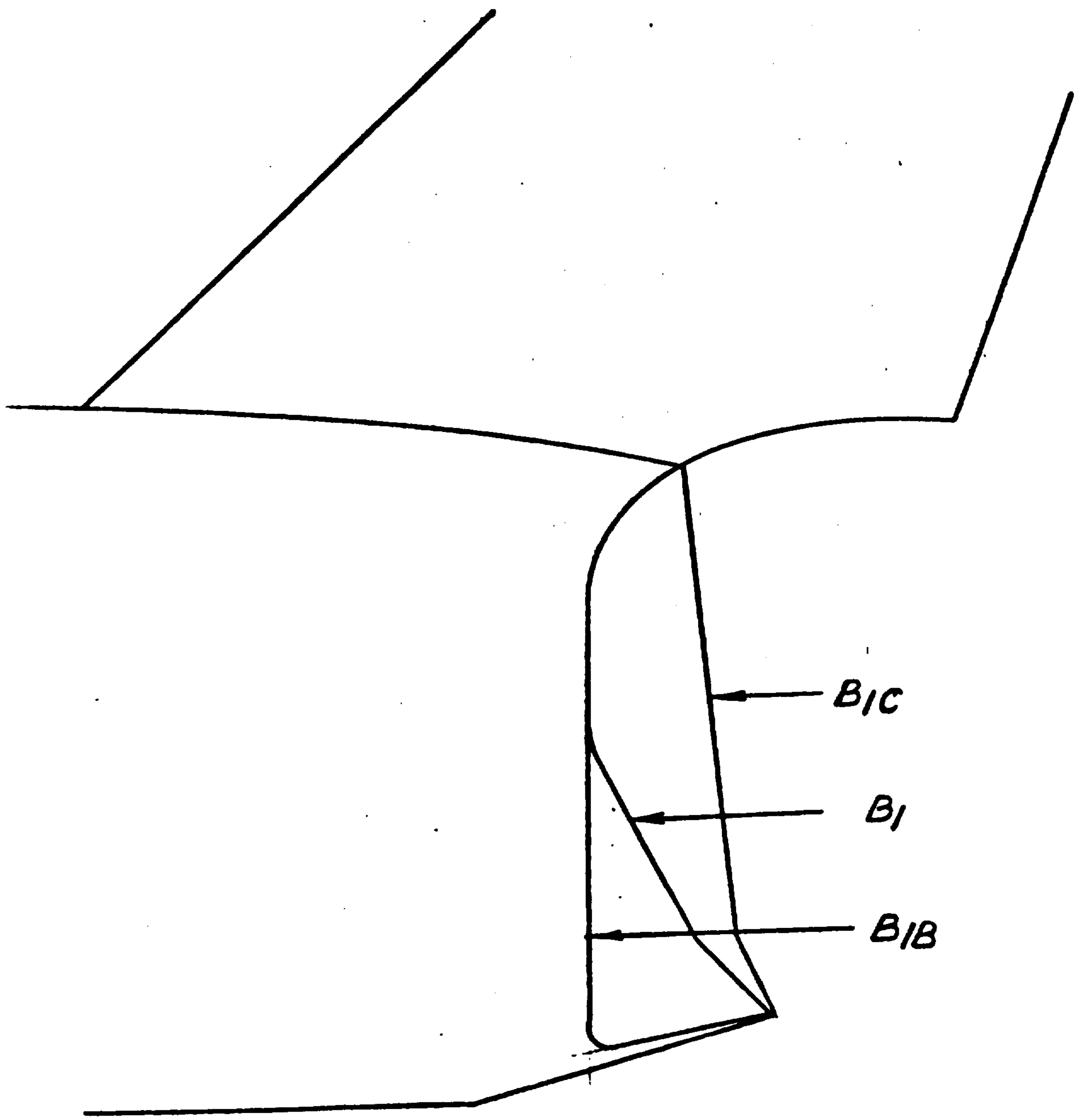


FIGURE 13. AFT END MODIFICATIONS

TEST GFH1-U14 DATA SET COLLATION SHEET

BASIC HYPERSONIC FORCE DATA ON TESTS OF TWO

1/200 SCALE MODELS OF THE GAC ROS-NBI AND ROS-WBI ORBITERS

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{e_L}	δ_{e_R}	δ_F	δ_u	NO. of RUNS	MACH NUMBERS 10											
RCT002	$B_1W_1V_1$	A	O	0	0	0	–	1	2											
RCT004	$B_1W_1^{-10,0}V_1$	A	O	-10	0	0	–	1	4											
RCT005	$B_1W_1^{10,0}V_1$	A	O	10	0	0	–	1	5											
RCT006	$B_1W_1V_1F_1^{15}$	A	O	0	0	10	–	1	6											
RCT007	$B_1W_1^{10,10}V_1F_1^{10}$	A	O	10	10	10	–	1	7											
RCT008	$B_1W_1^{-20,-20}V_1$	A	O	-20	-20	0	–	1	8											
RCT009	$B_1W_1^{-40,-40}V_1$	A	O	-40	-40	0	–	1	9											
RCT011	$B_1W_1V_1U_1^{10}$	A	O	0	0	0	10	1	11											
RCT012	$B_{1A}W_1V_1$	A	O	0	0	0	–	1	12											
RCT014	B_1V_1	A	O	–	–	0	–	1	14											
RCT015	$B_2W_1V_2$	A	O	0	0	0	–	1	15											
RCT016	B_2W_1	A	O	0	0	0	–	1	16											
RCT017	$B_1W_1V_1U_1^{0}$	A	O	0	0	0	0	1	17											
RCT018	$B_1W_1V_1U_1^{0}$	A	B	0	0	0	0	1	18											
RCT020	$B_1W_1V_1$	A	B	0	0	0	–	1	20											
RCT021	$B_{1A}W_1V_1$	A	B	0	0	0	–	1	21											
RCT023	B_1V_1	A	B	–	–	0	–	1	23											
RCT024	$B_2W_1V_2$	A	B	0	0	0	–	1	24											
RCT025	B_2W_1	A	B	0	0	0	–	1	25											
RCT026	$B_1W_1V_1$	A	C	0	0	0	–	1	26											

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

CN CA CY CLM CBL CYM BETA → IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

$\alpha A = 20°$ to $65°$

$\beta B = -10° \cos(\alpha)$

$\beta C = -3° \cos(\alpha)$

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DELTA WING ORBITER

GAC

DR#1159 B-1- 55

TEST GFHT-019 DATA SET COLLATION SHEET

DELTA WING ORBITER
GAC
DR#1159 B-1- 56

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{eL}	δ_{eR}	δ_r	δ_u	NO. of RUNS	MACH NUMBERS 10											
RCT027	$B_1W_1V_1U_1$	A	C	0	0	0	0	1	27											
RCT028	$B_{1A}W_1V_1$	A	C	0	0	0	-	1	28											
RCT030	B_1V_1	A	C	0	0	0	-	1	30											
RCT001	$B_1W_1V_1$	A	0	0	0	0	-	1	1											

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

CN CA CY CLM CBL CYM BETA

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

$\alpha A = 20° \text{ to } 65°$

$\beta C = -3° \cos(\alpha)$

ORIGINAL PAGE IS OF POOR QUALITY

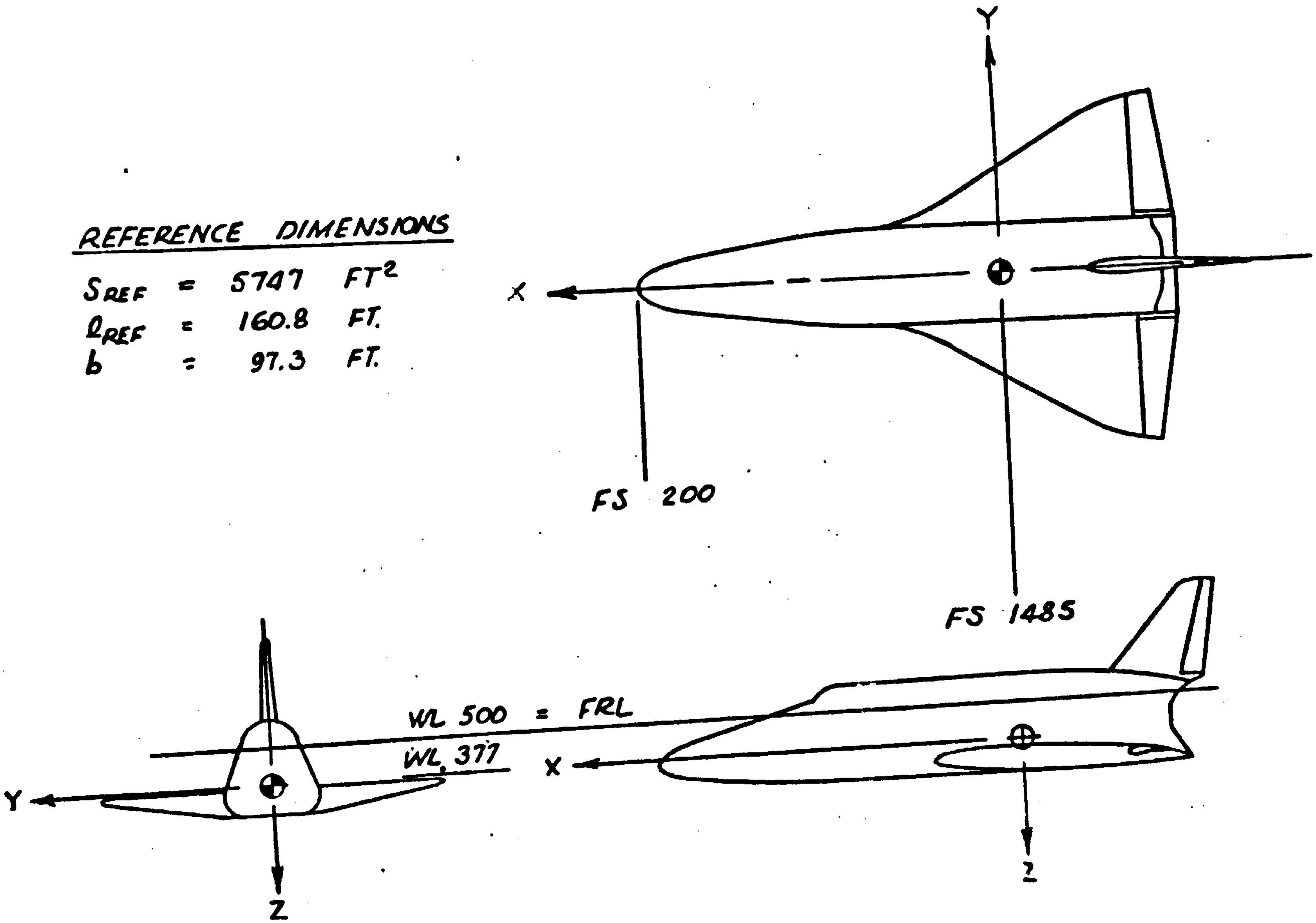


FIGURE 4. GENERAL ARRANGEMENT-ROS-NB1

DELTA WING ORBITER
GAC
DR#1159 8-1- 57

REFERENCE DIMENSIONS

S_{REF} = 5747 FT^2
ℓ_{REF} = 160.8 FT
b = 97.3 FT

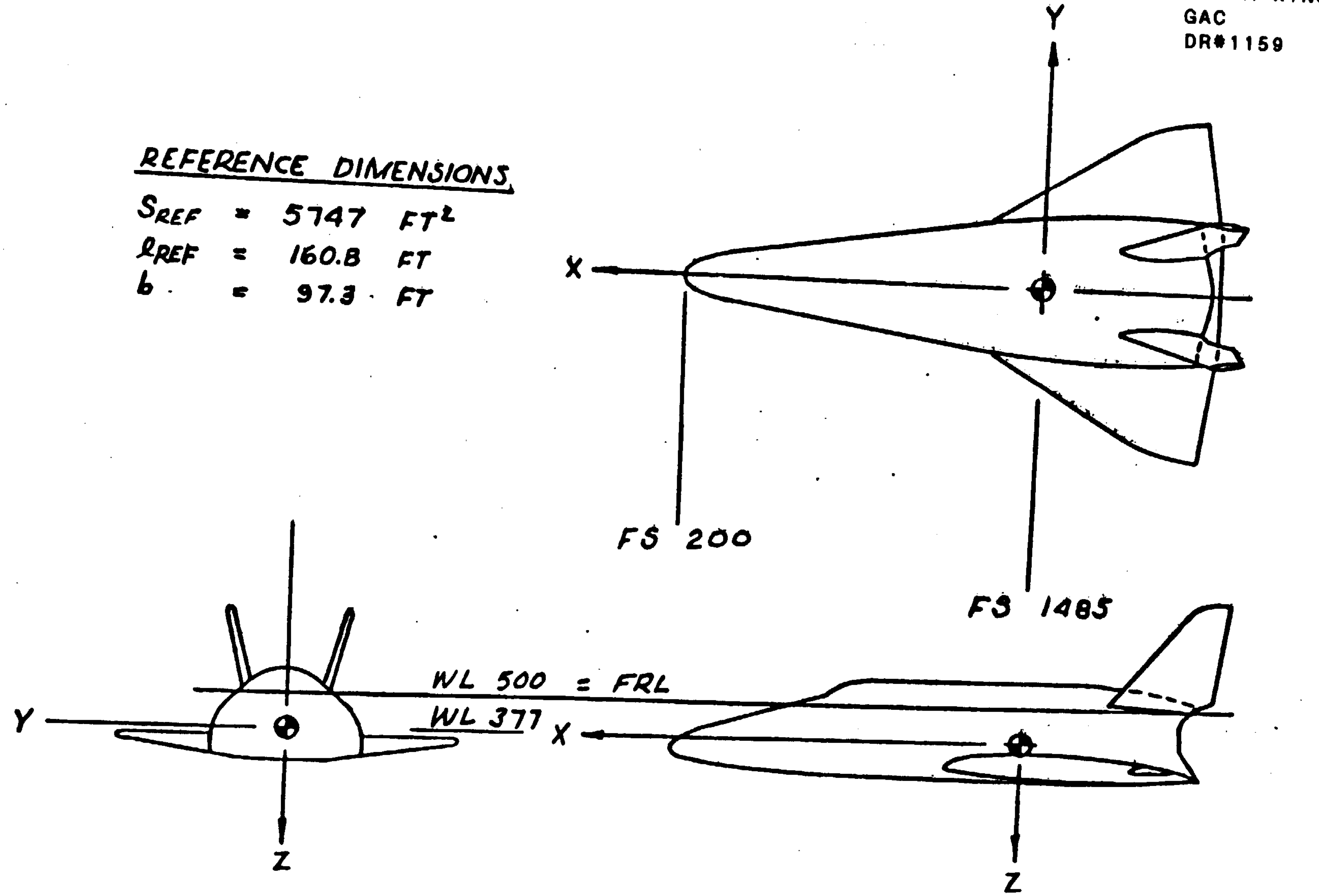


FIGURE 5. GENERAL ARRANGEMENT - ROS- WB1

B_{1A} Basic ROS-NB1 with modifications to lower surface of fuselage and nose. Defined in 518 MOD 909 (Available upon request from Aero Test, x7044) and in cross-sections below.

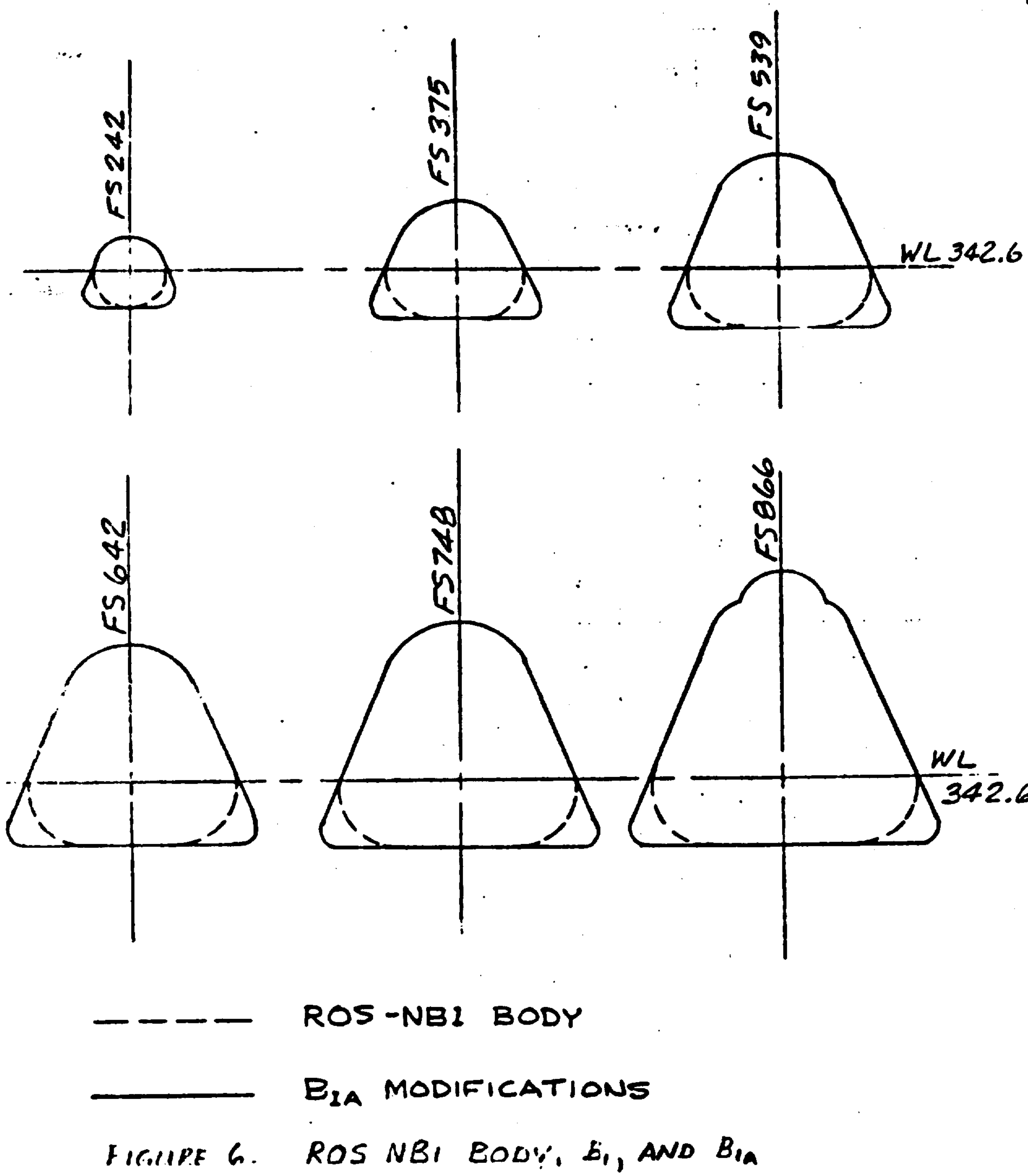
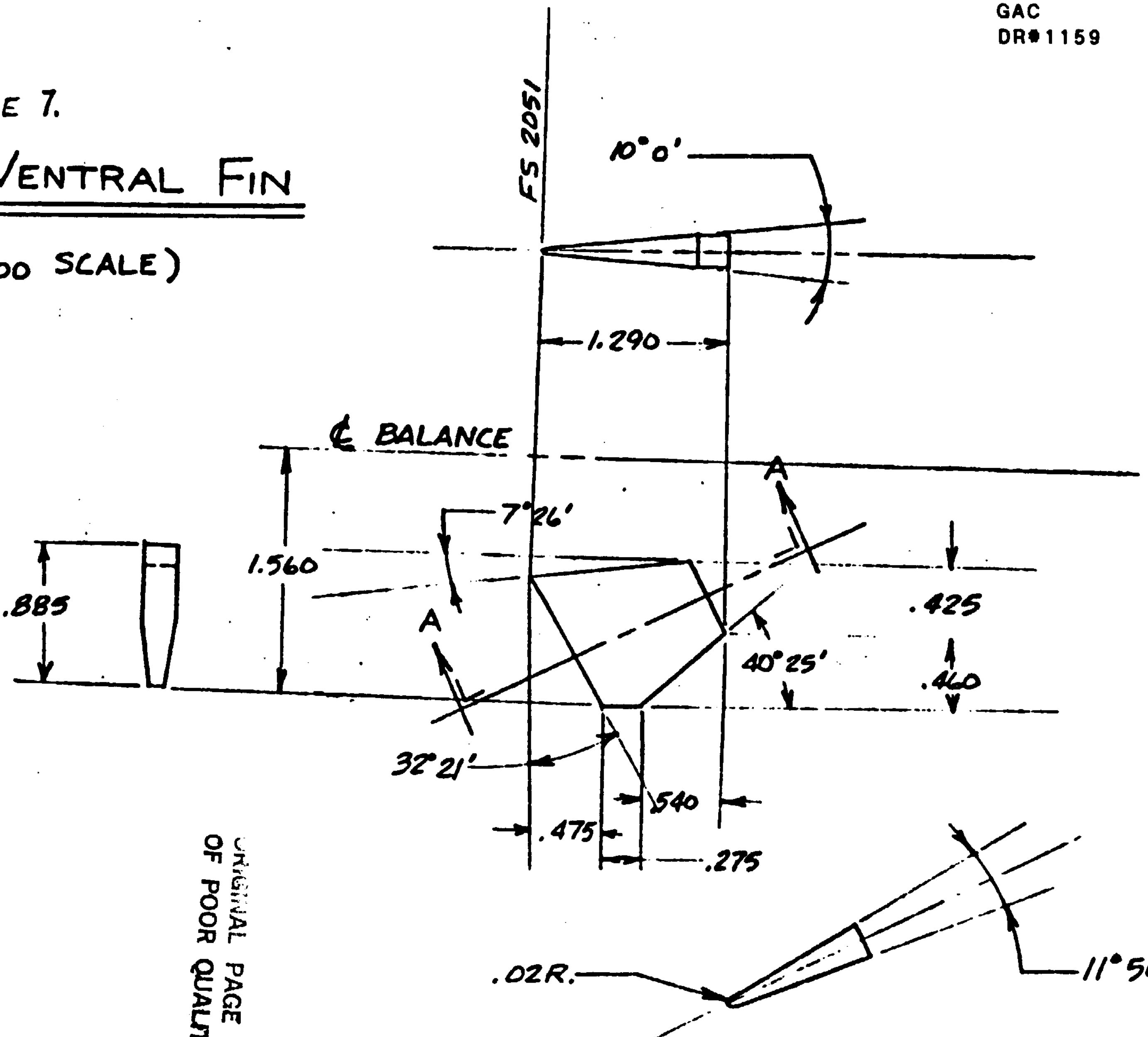


FIGURE 6. ROS NB1 BODY, B_1, AND B_{1A}

FIGURE 7.

U1 - VENTRAL FIN

(1/200 SCALE)



SECT. A-A

F_1^x Body flap at lower aft end of vehicle. Hinge line is at FS 1983.125 and dimensions are as noted below. (superscript indicates the deflection angle, with positive deflections T.E. down)

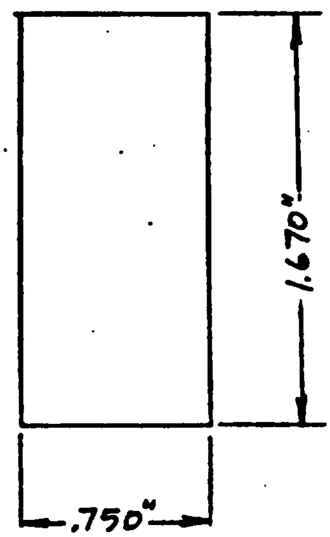


FIGURE 8. BODY FLAP, F_1

TEST GFTT-035 DATA SET COLLATION SHEET

BASIC TRANSONIC AERODYNAMIC DATA ON TWO 1/200 SCALE MODELS OF THE GRUMMAN ROS-NB1 AND ROS-WB1 ORBITERS

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_L	δ_R	δ_E		NO. of RUNS	MACH NUMBERS .7	.8	.9	.95	1.16
RCR021	$B_1W_1V_1$	A	O	0	0	0		5	21	22	23	25	26
RCR028	$B_1W_1V_1$	O	B	0	0	0		3	28		29		30
RCR031	$B_1W_1V_1$	10	B	0	0	0		3	31		32		33
RCR035	$B_1W_1^{-10,-10}V_1$	A	O	-10	-10	0		3	35		36		38
RCR039	$B_1W_1^{-5,-5}V_1$	A	O	-5	-5	0		2	39		40		
RCR041	$B_1W_1^{-20,-20}V_1$	A	O	-20	-20	0		1					41
RCR042	$B_1W_1V_1^{10}$	A	O	0	0	10		3	42		43		44
RCR045	$B_1W_1V_1U_1$	O	B	0	0	0		1					45
RCR046	B_1W_1	O	B	0	0	—		3	46		47		48
RCR049	$B_1W_2V_3$	O	B	0	0	0		2			49		50
RCR051	B_1	A	O	—	—	—		3	51		52		53
RCR055	$B_2W_1V_2$	A	O	0	0	0		3	55		56		57
RCR058	$B_2W_1V_2$	O	B	0	0	0		3	58		59		60
RCR061	$B_2W_1V_2$	10	B	0	0	0		3	61		62		63
RCR064	B_2W_1	A	O	0	0	—		3	64		65		66
RCR067	B_2W_1	O	B	0	0	—		3	67		68		69

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

CD CL CY CLM CSL CLN

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

α or β SCHEDULES
αA = -3° to 13° approx. every .7°
βB = -2° to 10° approx. every .7°

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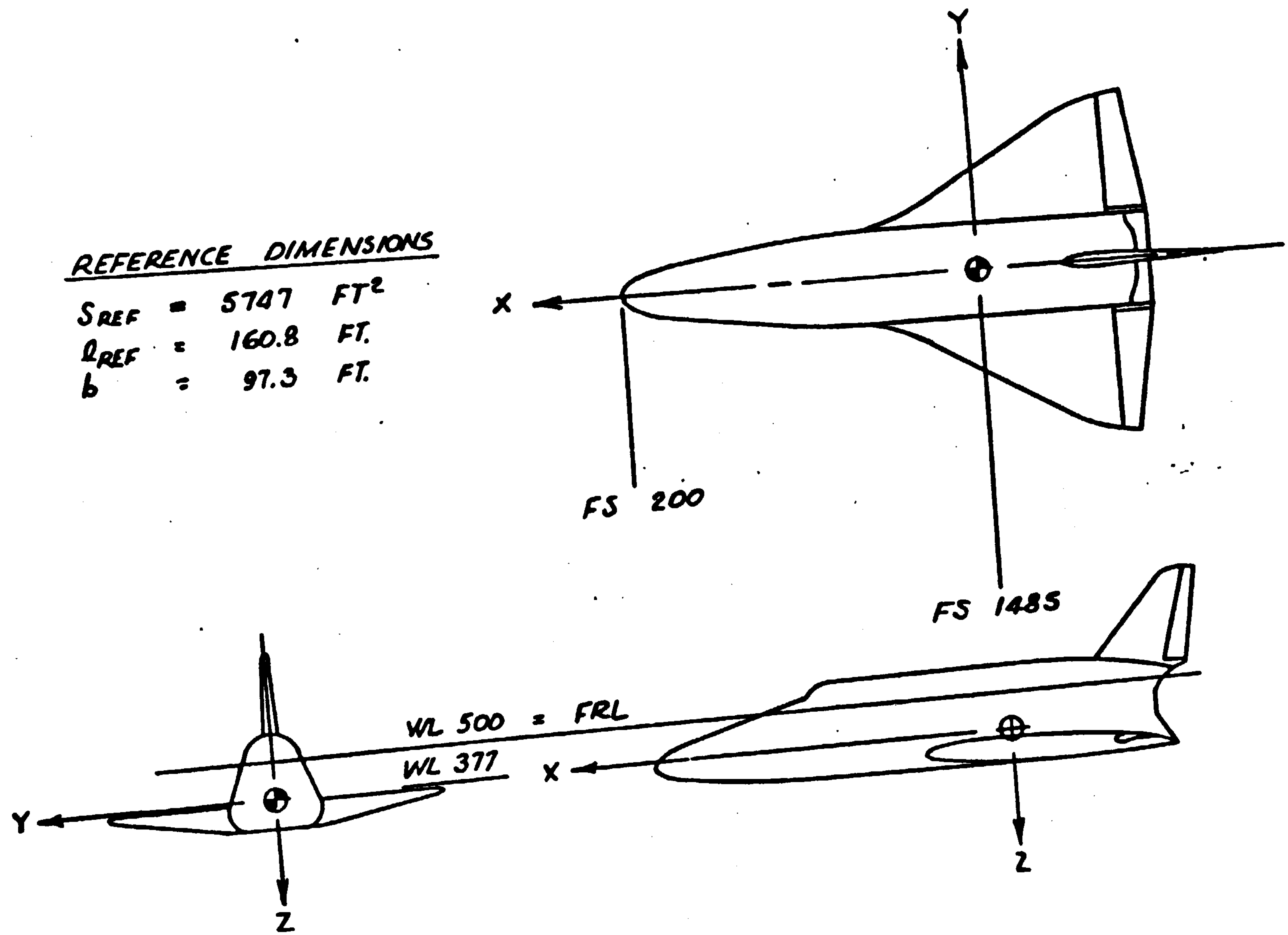

Figure 3. Three View Sketch-Configuration ROS-NB1

DELTA WING ORBITER
GAC
DR#1161 B-1- 63

REFERENCE DIMENSIONS

S_{REF} = 5747 FT^2
ℓ_{REF} = 160.8 FT
b = 97.3 FT

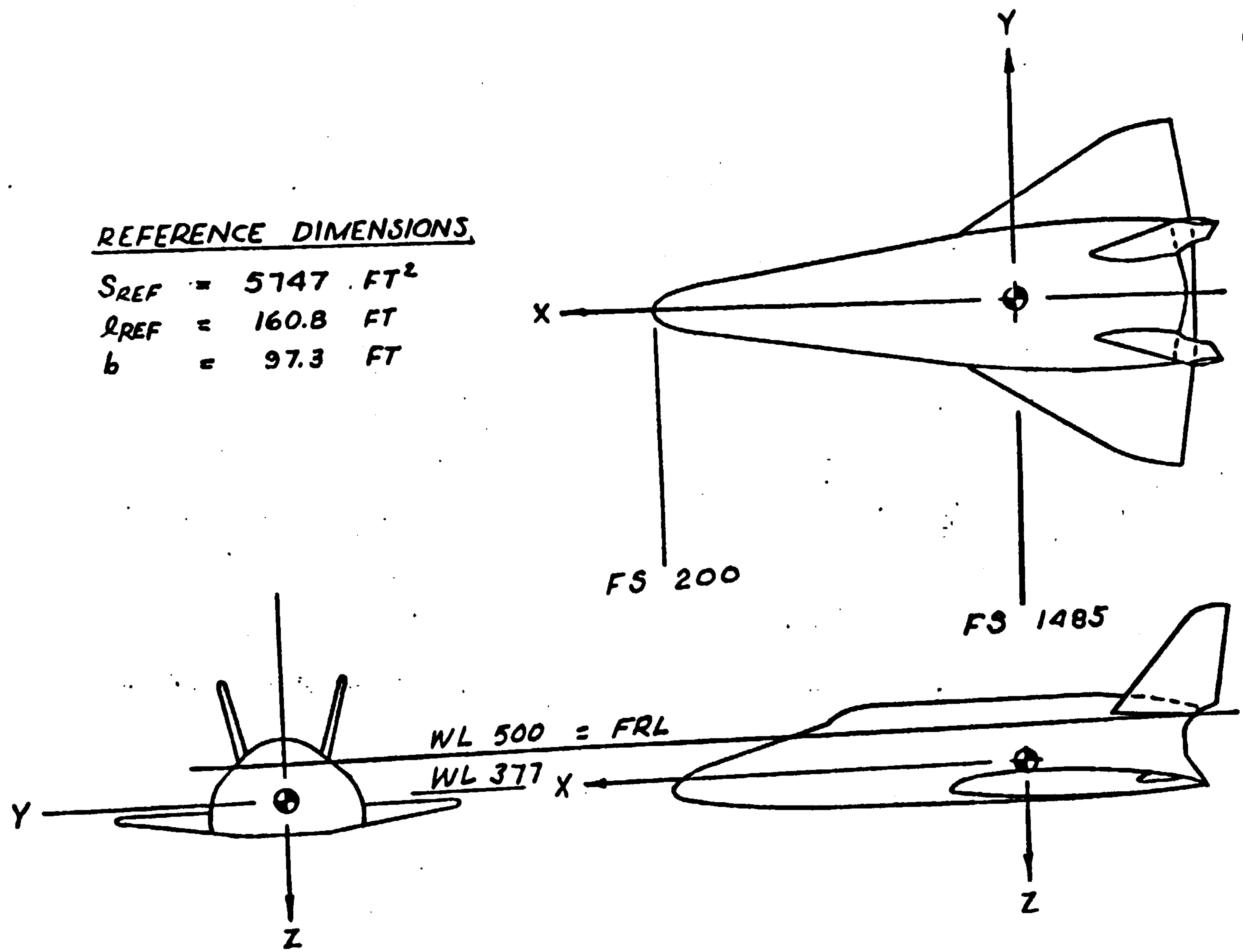

Figure 4. Three View Sketch-Configuration ROS-WB1

W_2 Basic W_1 wing clipped to accomadate V_3 wing tip fins. Ref. drawing 518 MOD 802.

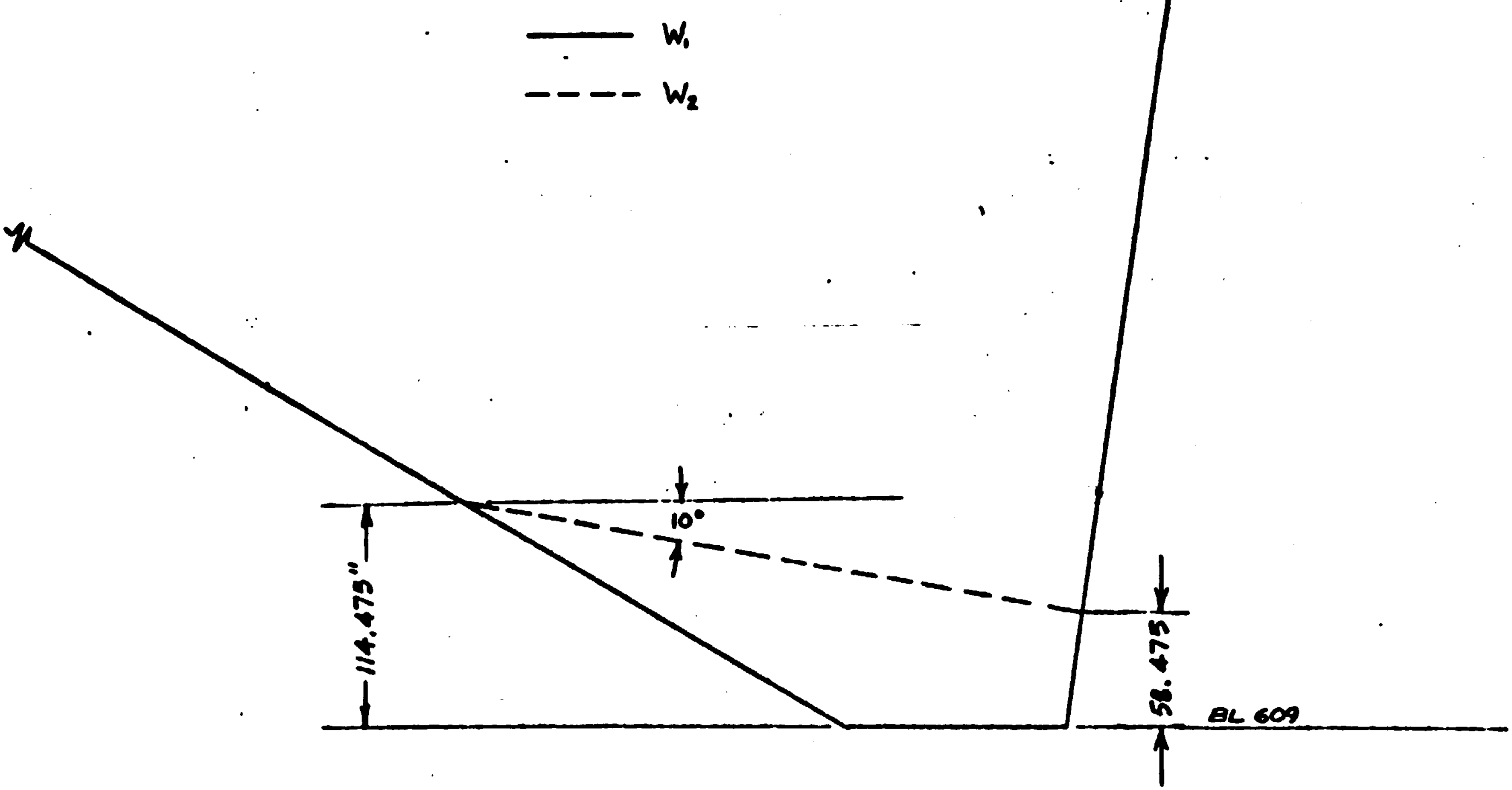

FIGURE 5. W_2 - WING (FULL SCALE) DELTA WING ORBITER GAC DR#1161 B-1- 65

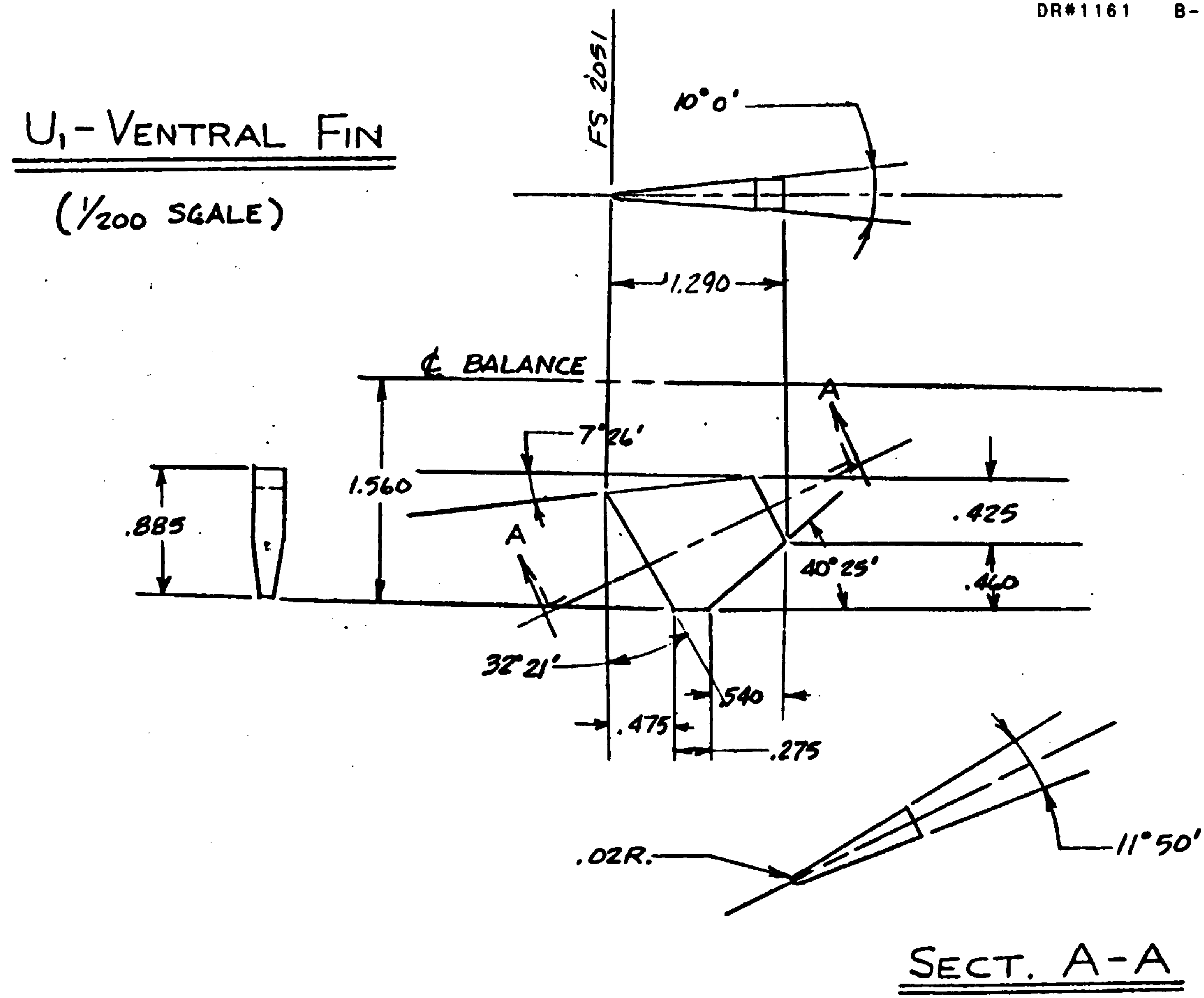

Figure 6. U_1 - Ventral Fin

TEST GFST 022 DATA SET COLLATION SHEET

BASIC SUPERSONIC FORCE DATA ON THE GRUMMAN ROS-NB1

SPACE SHUTTLE ORBITER CONFIGURATION

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{CL}	δ_{ER}	δ_R	NO. of RUNS	MACH NUMBERS 1.75	2.02	2.48
RCS002	$B_1W_1V_1$	0	B	0	0	0	3	43	2	31
RCS003	$B_1W_1V_1$	A	0	0	0	0	3	40	3	24
RCS004	$B_1W_1^{-20,-20}V_1$	A	0	-20	-20	0	3	41	4	25
RCS005	$B_1W_1^{-40,-40}V_1$	A	0	-40	-40	0	3	42	5	26
RCS007	$B_1W_1V_1^{10}$	A	0	0	0	10	2		7	28
RCS008	$B_1W_1^{-40,-20}V_1$	A	0	-40	-20	0	1		8	
RCS009	$B_1W_1V_1U_1$	0	B	0	0	0	1		9	
RCS010	B_1W_1	0	B	0	0	—	3	44	10	33
RCS012	$B_1W_1V_1^{\pm30}$	0	B	0	0	±30	3	45	12	32
RCS014	$B_1W_1V_1$	A	4.2	0	0	0	1		14	
RCS015	$B_1W_1V_1$	A	2.6	0	0	0	1		15	
RCS016	B_1	A	0	—	—	—	1		16	
RCS017	B_1W_1	10	B	0	0	—	1		17	
RCS018	$B_1W_1V_1$	5	B	0	0	0	1		18	
RCS019	$B_1W_1V_1$	10	B	0	0	0	1		19	
RCS020	$B_1W_1V_1^{\pm30}$	10	B	0	0	±30	1		20	
RCS021	$B_1W_1V_1U_1$	10	B	0	0	0	1		21	
RCS022	$B_1W_1V_1$	15	B	0	0	0	1		22	
RCS027	$B_1W_1^{-40,-40}V^{\pm30}$	A	0	-40	-40	±30	1			27
RCS034	B_1W_1	A	3	0	0	—	2	49		34

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

CL CD CY CLM CSL CLN → IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

α A - -5 to 25°

β B = -5° to 10°

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DELTA WING ORBITER
GAC
DR#1163 B-1- 67

TEST GFST 022 DATA SET COLLATION SHEET

DELTA WING ORBITER
GAC
DR#1163 B-1- 68

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ	CONTROL DEFLECTION δ	CONTROL DEFLECTION δ_A		NO. of RUNS	MACH NUMBERS 1.75	2.02	2.48
RCS035	$B_1W_1V_1$	A	3.4	0	0	0		2	48		35
RCS036	$B_1W_1V_1^{\pm 30}$	A	3.4	0	0	±30		2	47		36
RCS037	$B_1W_1V_1^{\pm 30}$	A	0	0	0	±30		2	46		37
RCS038	B_1W_1	A	0	0	0	–		2	50		38
RCSXX1	B_1W_1	0	C	0	0	–		2	49/50		34/38
RCSXX2	B_1W_1	5	C	0	0	–		2	49/50		34/38
RCSXX3	B_1W_1	10	C	0	0	–		2	49/50		34/38
RCSXX4	$B_1W_1V_1$	0	C	0	0	0		3	40/48	3/14/15	24/35
RCSXX5	$B_1W_1V_1$	5	C	0	0	0		3	40/48	3/14/15	24/35
RCSXX6	$B_1W_1V_1$	10	C	0	0	0		3	40/48	3/14/15	24/35
RCSXX7	$B_1W_1V_1^{\pm 30}$	0	C	0	0	±30		2	16/47		36/37
RCSXX8	$B_1W_1V_1^{\pm 30}$	5	C	0	0	±30		2	16/47		36/37
RCSXX9	$B_1W_1V_1^{\pm 30}$	10	C	0	0	±30		2	16/47		36/37

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

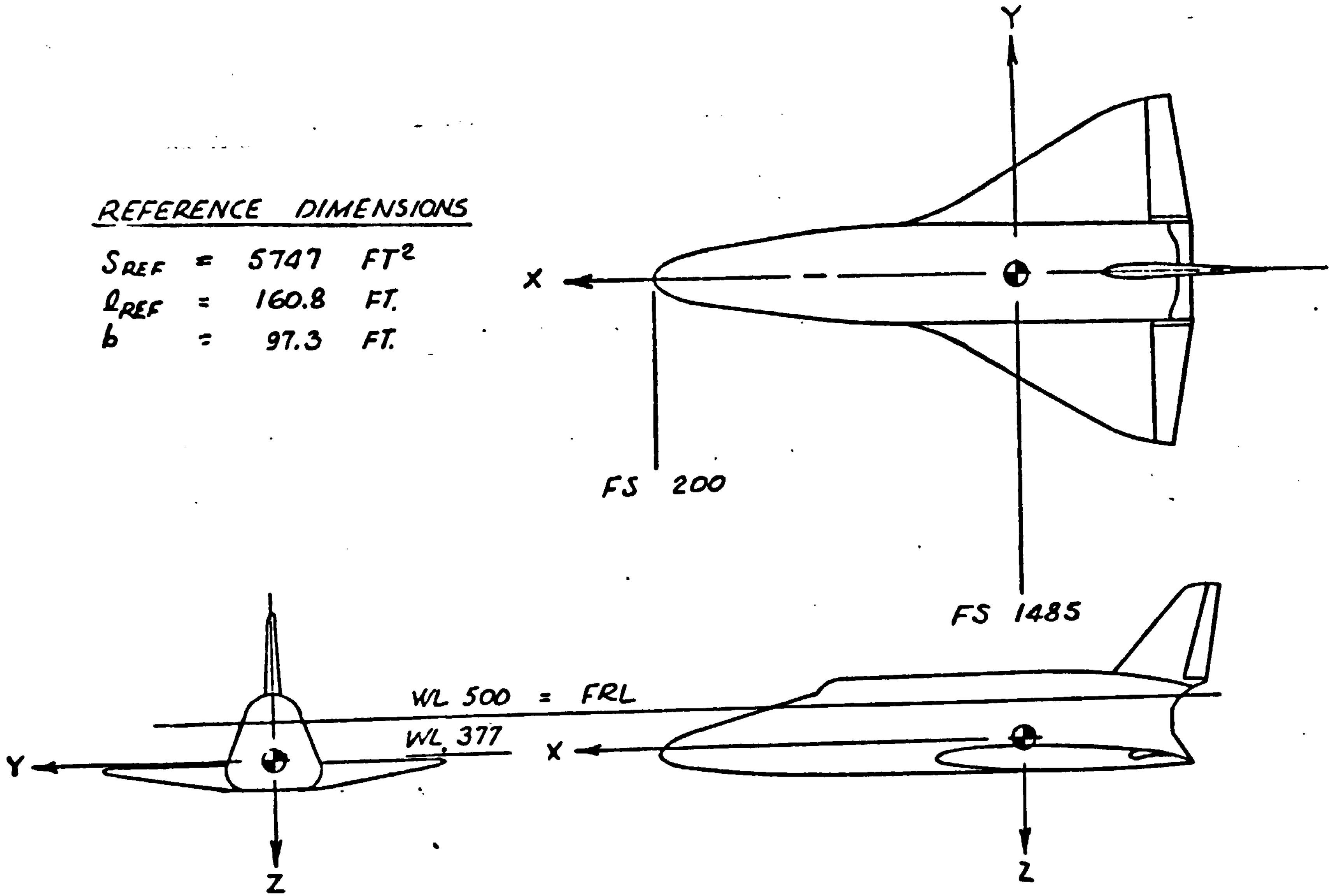
CL CD CY CLM CSL CLN

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES
α A = −5° to 25°
β B = −5° to 10°
β C = 0°, 3.4° (FOR M = 2.02 IN RCSXX4, RCSXX5, RCSXX6, βC = 0°, 2.6°, 4.2°)

REFERENCE DIMENSIONS

S_{REF}	=	5747	FT^2
ℓ_{REF}	=	160.8	FT.
b	=	97.3	FT.



DELTA WING ORBITER
GAC
DR#1163 B-1- 69

FIGURE 2. CONFIGURATION ROS-NB1, THREE-VIEW

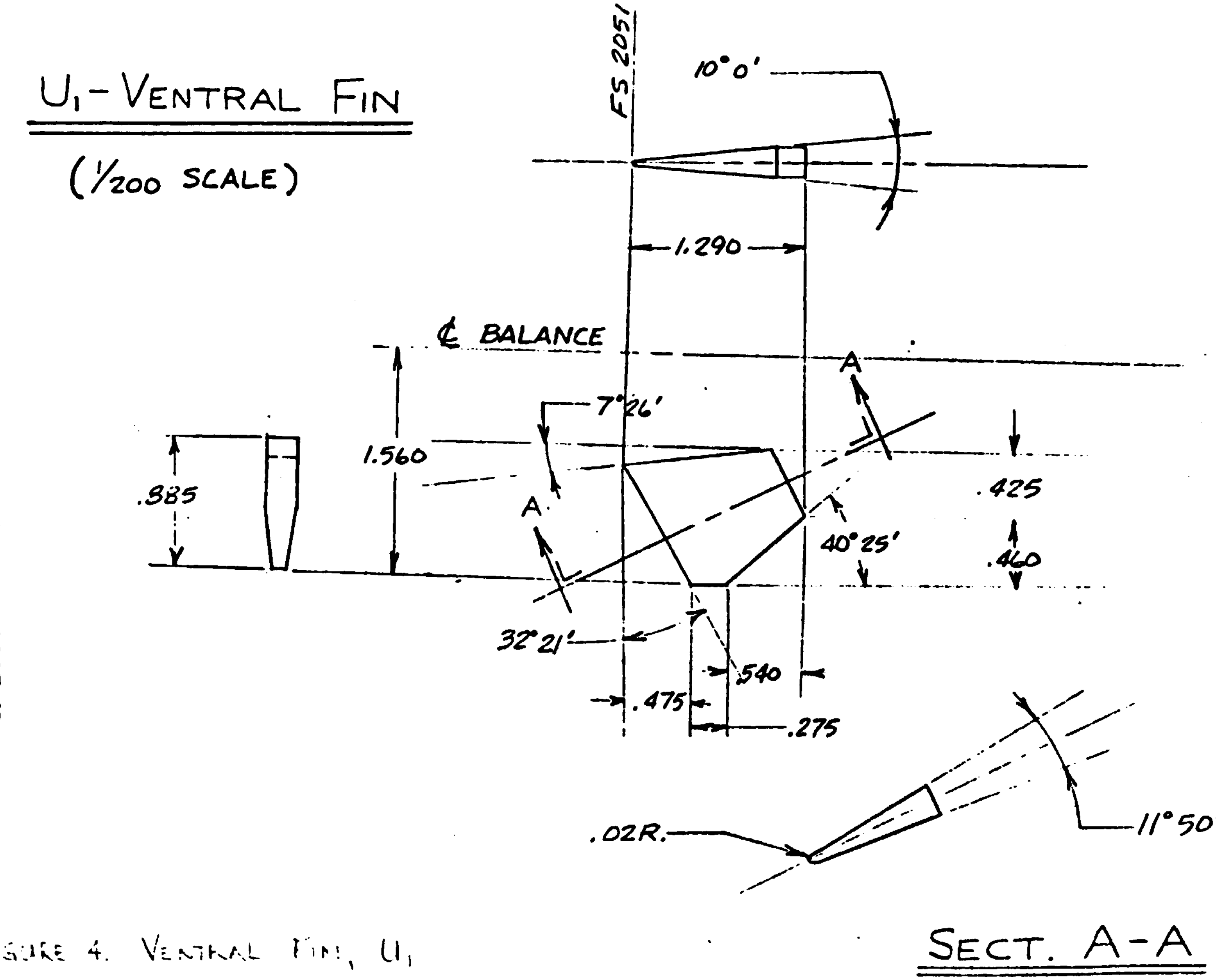


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FIGURE 4. VENTRAL FIN, U_1

TEST GWTT 292 DATA SET COLLATION SHEET

LOW SPEED AERODYNAMIC CHARACTERISTICS OF A 1/25 SCALE MODEL OF THE GRUMMAN CONF. H-33 ORBITER

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS 0.17	NO. of RUNS	δ_{eL}	δ_{eR}	δ_R	δ_{PT}	δ_{RLL}	δ_{RLR}
RD1002	$B_5W_4V_5$	A	0	2	1	0	0	0	–	–	–
004	$B_5W_4V_5$	A	3	4		0	0	0	–	–	–
006	$B_5W_4^{-5,-5}V_5$	A	0	6		-5	-5	0	–	–	–
007	$B_5W_4^{-10,-10}V_5$	A	0	7		-10	-10	0	–	–	–
008	$B_5W_4^{-15,-15}V_5$	A	0	8		-15	-15	0	–	–	–
009	$B_5W_4^{-35,-35}V_5$	A	0	9		-35	-35	0	–	–	–
010	$B_5W_4^{+5,-5}V_5$	A	0	10		-5	-5	0	–	–	–
011	$B_5W_4^{+5,-15}V_5$	A	0	11		+5	-15	0	–	–	–
012	$B_5W_4^{-5,-15}V_5$	A	0	12		-5	-15	0	–	–	–
013	$B_5W_4^{0,-10}V_5$	A	0	13		0	-10	0	–	–	–
014	$B_5W_4V_5^{0,+15,-15}$	A	0	14		0	0	–	0	+15	-15
015	$B_5W_4V_5^{0,+30,-30}$	A	0	15		0	0	–	0	+30	-30
016	$B_5W_4V_5^{-10,+5,-25}$	A	0	16		0	0	–	-10	+5	-25
017	$B_5W_4V_5^{-15,0,-30}$	A	0	17		0	0	–	-15	0	-30
018	$B_5W_4V_5^{-15,+25,-35}$	A	0	18		0	0	–	-15	+25	-35
019	$B_5W_4V_5^{-5}$	A	0	19		0	0	-5	–	–	–
020	$B_5W_4V_5^{-10}$	A	0	20		0	0	-10	–	–	–
021	$B_5W_4V_5^{-15}$	A	0	21		0	0	-15	–	–	–
023	B_5	A	0	23		–	–	–	–	–	–

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

CL CD CY CLM CLN CSL → IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

αA = −4° to 24° by 2°

βB = 0, ±1, ±2, ±3, ±5, ±7, ±9, ±12, ±15

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DELTA WING ORBITER
GAC
DR#1167 B-1- 71

DELTA WING ORBITER
GAC
DR#1167 B-1- 72

TEST GWTT 292 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS 0.17				NO. of RUNS	δ_{eL}	δ_{eR}	δ_R	δ_{RT}	δ_{RLL}	δ_{FLP}
RD1025	B_5W_4	O	B	25				1	0	0	–	–	–	–
027	$B_5W_4V_5$	O	B	27					0	0	0	–	–	–
028	$B_5W_4^{0,-10}V_5$	O	B	28					0	-10	0	–	–	–
029	$B_5W_4^{-10,-10}V_5$	O	B	29					-10	-10	0	–	–	–
030	$B_5W_4^{-5,-15}V_5$	O	B	30					-5	-15	0	–	–	–
031	$B_5W_4^{+5,-15}V_5$	O	B	31					+5	-15	0	–	–	–
032	$B_5W_4^{+5,-5}V_5$	O	B	32					+5	-5	0	–	–	–
033	$B_5W_4^{-5,-5}V_5$	O	B	33					-5	-5	0	–	–	–
034	$B_5W_4V_5^{0,+30,-30}$	O	B	34					0	0	–	0	+30	-30
035	$B_5W_4V_5^{-10,+25,-35}$	O	B	35					0	0	–	-10	+25	-35
036	$B_5W_4V_5^{-15,+25,-35}$	O	B	36					0	0	–	-15	+25	-35
037	$B_5W_4V_5^{-15,0,-30}$	O	B	37					0	0	–	-15	0	-30
038	$B_5W_4V_5^{-10,+5,-25}$	O	B	38					0	0	–	-10	+5	-25
039	$B_5W_4V_5^{0,+15,-15}$	O	B	39					0	0	–	0	+15	-15
040	$B_5W_4V_5^{-10,-10}$	O	B	40					0	0	-10	–	–	–
041	$B_5W_4V_5^{-15,-15}$	O	B	41					0	0	-15	–	–	–
042	$B_5W_4V_5^{-5,+25,-35}$	O	B	42					0	0	–	-5	+25	-35
054	$B_5W_4^{-25,-25}V_5$	A	O	54					-25	-25	0	–	–	–
055	$B_5W_4V_5^{-5,+25,-35}$	A	O	55				↓	0	0	–	-5	+25	-35

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

COEFFICIENTS: CL, CD, CY, CLM, CLN, CSL → IDPVAR(1) | IDPVAR(2) | NDV

α or β SCHEDULES
$\alpha A = -4^\circ$ to 24° by 2°
$\beta B = 0, \pm1, \pm2, \pm3, \pm5, \pm7, \pm9, \pm12, \pm15$

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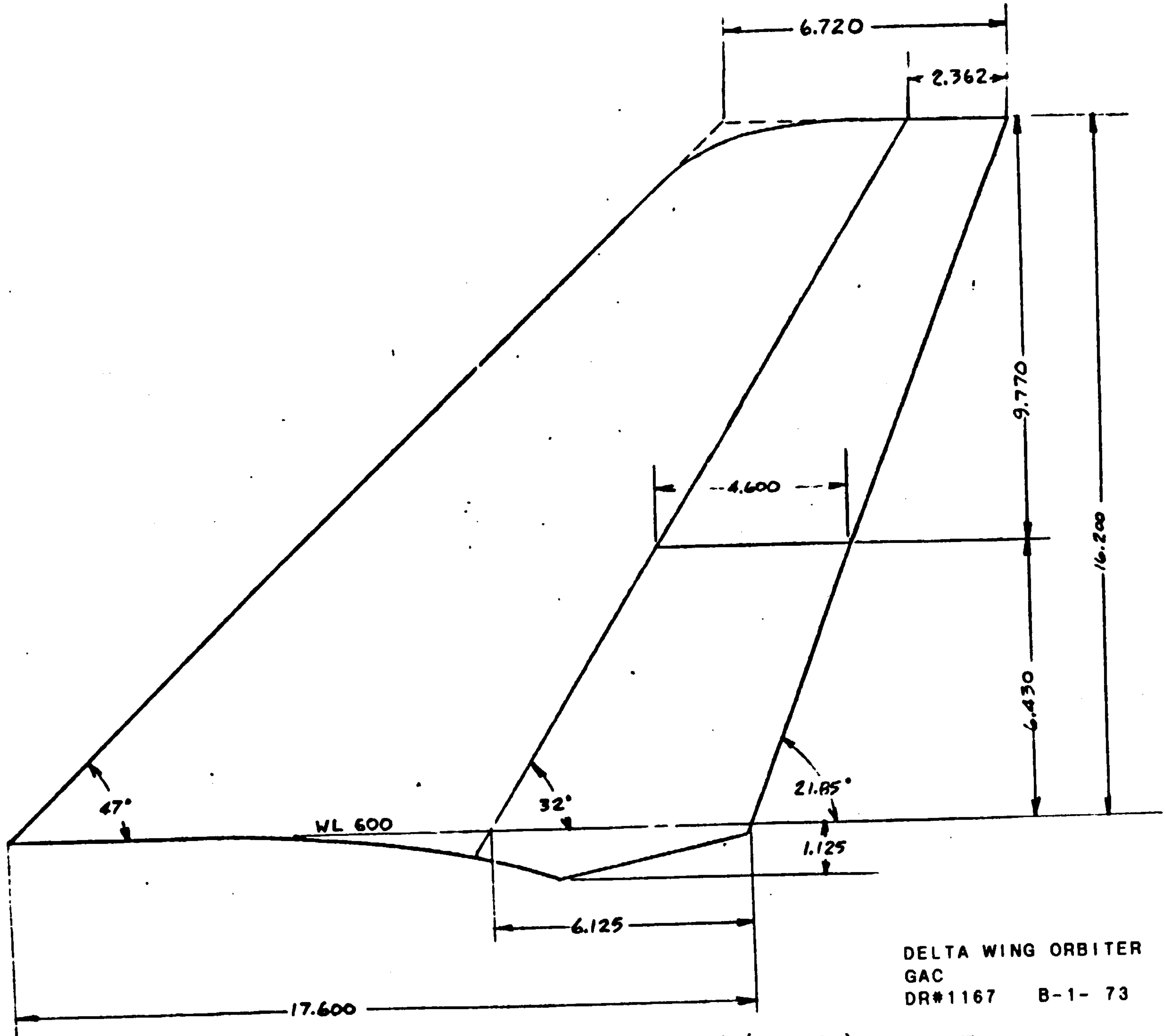

Figure 4. H-33 Orbiter Vertical Tail With Segmented Rudder (1/25 Scale)

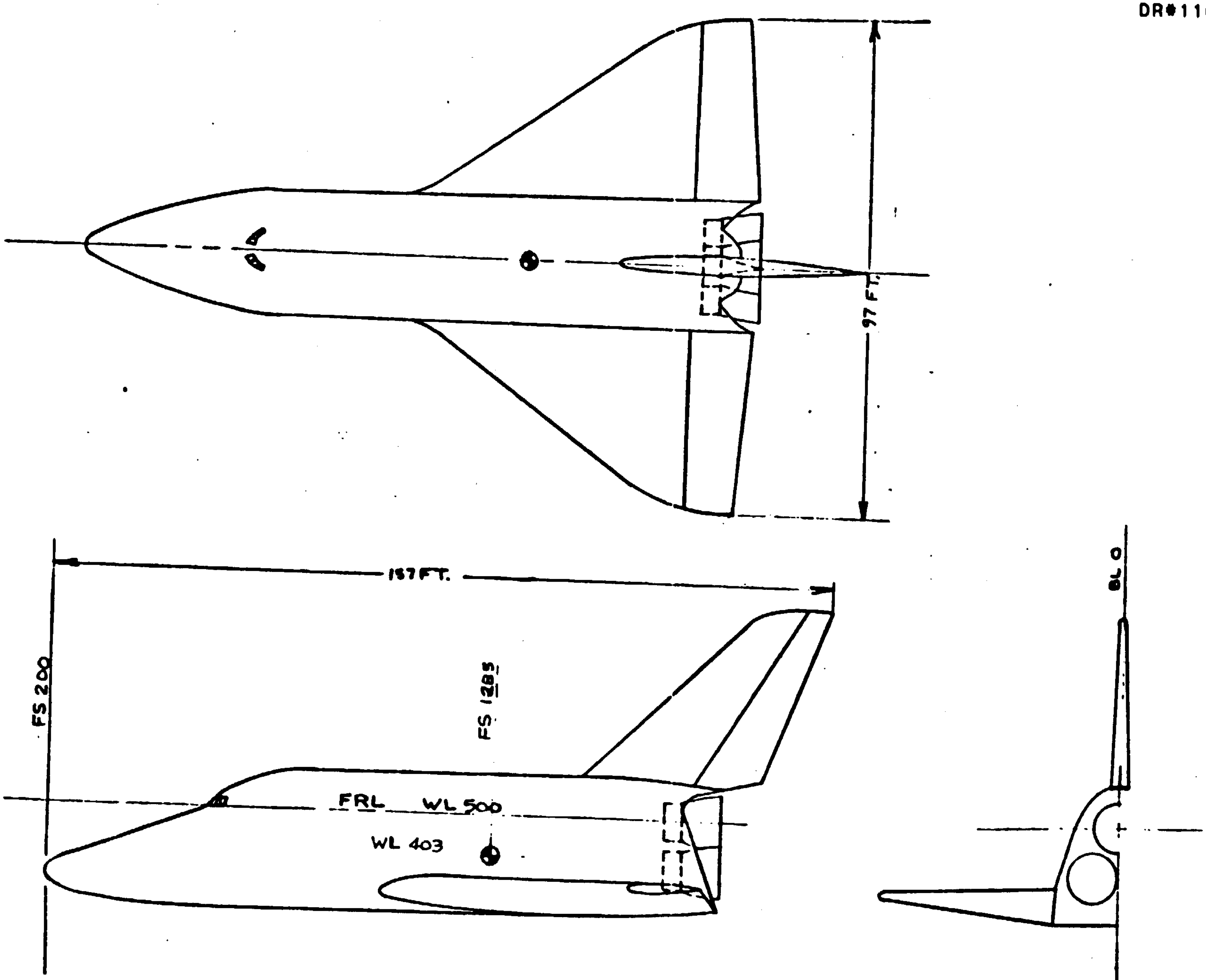

Figure 3. Full-Scale Model of H-33 Orbiter Without External Tanks

TABLE II.

TEST MSFC 507 DATA SET COLLATION SHEET

.00336b SCALE MODEL OF THE GRUMMAN H-33 ORBITER IN THE MSFC 14" TRISONIC WIND TUNNEL

☐ 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			1.46	1.96	2.99	3.48	4.00	4.96						
R49001	$B_5W_4V_5^{\pm30}$	A	O	0	0	±30		4			4	3	2/1	1/1						
R49002	$B_5W_4^{-10,-10}V_5^{\pm30}$	A	O	-10	0	±30		4			5	6	7	8						
R49003	$B_5W_4^{-20,-20}V_5^{\pm30}$	A	O	-20	0	±30		4			12	11	10	9						
R49004	$B_5W_4^{-10,-30}V_5^{\pm30}$	A	O	-20	10	±30		4			16	15	14	13						
R49005	$B_5W_4^{-40,-40}V_5^{\pm30}$	A	O	-40	0	±30		4			17	18	19	20						
R49006	$B_5W_4^{+10,+10}V_5^{\pm30}$	A	O	+10	0	±30		4			24	23	22	21						
R49007	$B_5W_4V_5^{+35,-25}$	A	O	0	0	+35/-25		4			25	26	27	28						
R49008	$B_5W_4V_5$	A	O	0	0	0		4			32	31	30	29						
R49009	$B_5W_4V_5^{\pm30}$	10	C	0	0	±30		4			33	34	35	36						
R49010	$B_5W_4V_5^{\pm30}$	15	C	0	0	±30		4			40	39	38	37						
R49011	$B_5W_4V_5$	15	C	0	0	0		4			41	42	43	44						
R49012	B_5W_4	15	C	0	0	–		4			48	47	46	45						
R49013	B_5W_4	10	C	0	0	–		4			49	50	51	52						
R49014	B_5W_4	0	C	0	0	–		4			56*	55*	54*	53*						
R49015	$B_5W_4V_5$	0	C	0	0	0		4			57*	58*	59*	60*						
R49016	$B_5W_4V_5^{\pm30}$	0	C	0	0	±30		4			64*	63*	62*	61*						

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

CLM KL KY EBL KLN ED EAF EAB EPB1 EPB2 | 10

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

α A = 0° → 20° by 2°

α B = 20° → 40° by 2°

β C = -4, -3, -2, -1, 0, 1, 2, 3, 4, 6, 8, 10

* AXIAL FORCE GAGE INOPERATIVE DURING THESE RUNS

DELTA WING ORBITER
GAC
DR#1184 B-1-75

TABLE II. (Continued)

TEST MSFC 507 DATA SET COLLATION SHEET

.003366 SCALE MODEL OF THE GRUMMAN H-33 ORBITER IN THE M.S.F.C. 14" TRISONIC WIND TUNNEL

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_A	δ_R		NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.46	1.96	2.74	2.99	3.40	4.00	4.96	0.6	0.9	1.2		
R49017	$W_4^0 B_5 V_5^{\pm30}$	B	0	0	0	±30		4				65/1	66/1	67/1	68/1					
R49018	$W_4^{-10} B_5 V_5^{\pm30}$	B	0	-10	0	±30		4				72/1	71/1	70/1	69/1					
R49019	$W_4^{-10,-30} B_5 V_5^{\pm30}$	B	0	-20	+10	±30		4				73/1	74	75	76					
R49020	$W_4^{-20} B_5 V_5^{\pm30}$	B	0	-20	0	±30		4				80	79	78	77					
R49021	$W_4^{-40} B_5 V_5^{\pm30}$	B	0	-40	0	±30		4				81	82	83	84					
R49022	$W_4^0 B_5 V_5^{+35,-25}$	B	0	0	0	+35/-25		4				88	87	86	85					
R49023	$W_4^{0,-20} B_5 V_5^0$	B	0	-10	+10	0		4				89	90	91	92					
R49024	$W_4^0 B_5 V_5^0$	B	0	0	0	0		4				96	95	94	93					
R49025	$W_4^0 B_5 V_5^0$	30	C	0	0	0		4				97	98	99	100					
R49026	$W_4^0 B_5 V_5^{\pm30}$	30	C	0	0	±30		4				104	103	102	101					
R49027	$W_4^0 B_5$	30	C	0	0	–		4				105	106	107	108					
R49028	$W_4^0 B_5$	0	C	0	0	–		3	139	137*	109									
R49029	$W_4^0 B_5 V_5^0$	10	C	0	0	0		10	141	135	110	111	112	113	114	152	153	154		
R49030	$W_4^{-20} B_5 V_5^{\pm30}$	10	C	-20	0	±30		7	144	134	119	118	117	116	115					
R49031	$W_4^0 B_5$	10	C	0	0	–		3	138	136	120									
R49032	$W_4^0 B_5 V_5^{\pm30}$	10	C	0	0	±30		3	142	133	121									
R49033	$W_4^0 B_5 V_5^{\pm30}$	0	C	0	0	±30		3	143	131	122									
R49034	$W_4^0 B_5 V_5^0$	0	C	0	0	0		5	140		123					157	156	155		
R49035	$W_4^0 B_5 V_5^{\pm30}$	A	0	0	0	±30		3	145	130	124									
R49036	$W_4^{-10,+10} B_5 V_5^0$	A	0	0	-10	0		1				125								

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 = 0° → 20° by 2°
B = 20° → 40° by 2°
C = ±4°, ±3°, ±2°, ±1°, 0°, 6°, 8°, 10°

*ROLLING MOMENT COEFFICIENT, C_{SL}, NOT PRESENTED FOR DATASET R49028, M = 1.96

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TABLE II. (Continued)

TEST MSFC 507 DATA SET COLLATION SHEET

.003366 SCALE MODEL OF THE GRUMMAN H-33 ORBITER IN THE MSFC. 14" TRISONIC WIND TUNNEL

☐ 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			1.46	1.96	2.74	2.99	3.48	4.00	4.96	0.6	0.9	1.2		
R49037	$W_4^{-10} B_5 V_5^{+35,-25}$	A	0	-10	0	+35/-25		4				126	127	128	129					
R49038	$W_4^{0} B_5 V_5^{0}$	A	0	0	0	0		3								146	147	148		
R49039	$W_4^{-10} B_4 V_5^{0}$	A	0	-10	0	0		3								151	150	149		

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

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

$\alpha A = 0° \rightarrow 20°$ by $2°$

$\alpha B = 20° \rightarrow 40°$ by $2°$

$\beta C = -4°, -3°, -2°, -1°, 0°, 1°, 2°, 3°, 4°, 6°, 8°, 10°$

DELTA WING ORBITER
GAC
DR#1184 B-1-77

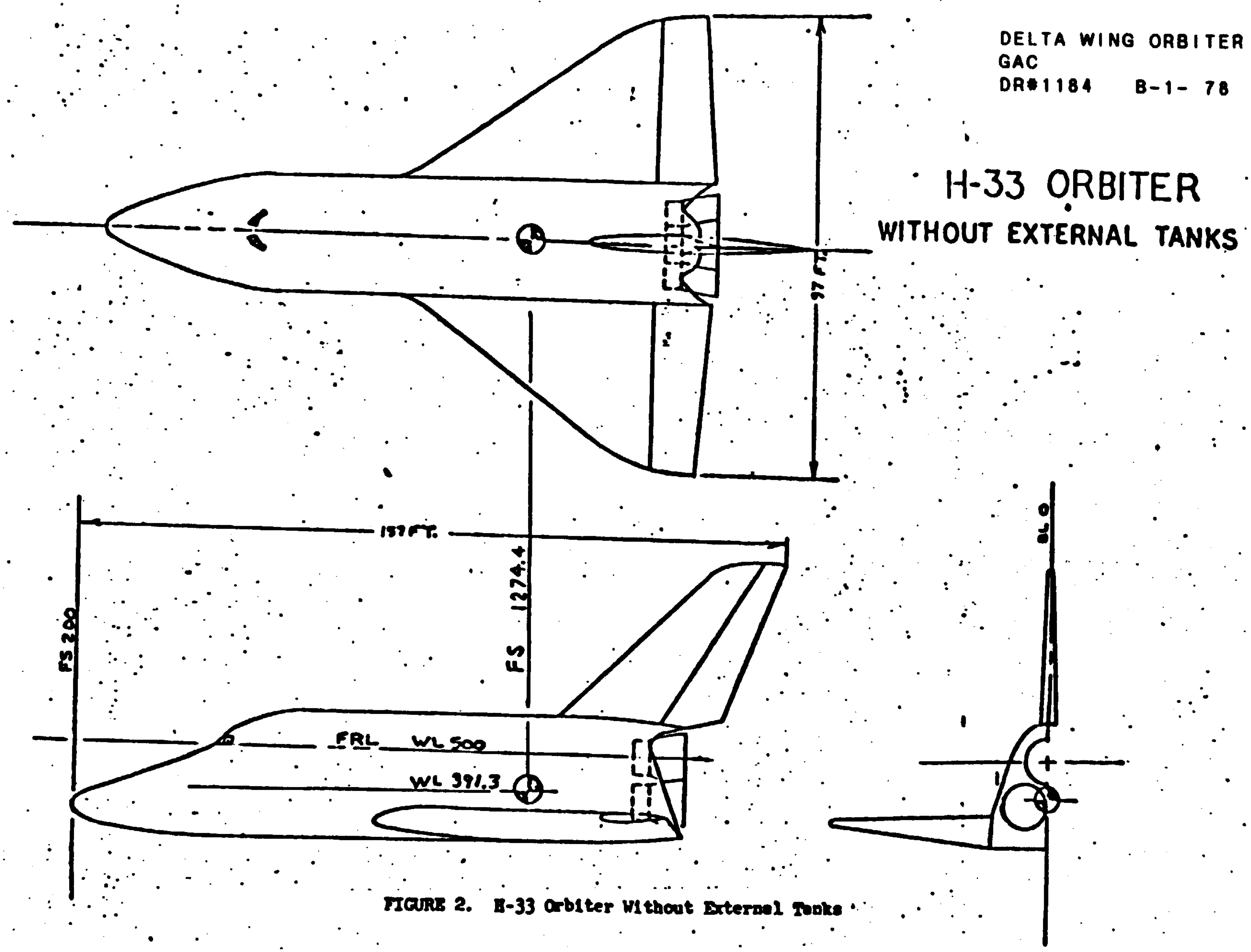

FIGURE 2. H-33 Orbiter Without External Tanks

TEST LTPT-75 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	REYNOLDS NO. x 10^6 2.0	4.0	6.0	8.0	10.0	12.0	14.0
RMNL 01	$W_4B_5V_5$	A	0	0	0	0	1	1						
RMNL 02				0	0	0	1		2					
RMNL 03				0	0	0	1					3		
RMNL 04				0	0	0	1						4	
RMNL 05				0	0	0	1							5
RMNL 06				0	0	0	1				6			
RMNL 07				0	0	0	1			7				
RMNL 08	$W_4^{-5,-5}B_5V_5$			-5	-5	0	1					8		
RMNL 09				-5	-5	0	1						9	
RMNL 10	$W_4^{-5,-10}B_5V_5$			-5	-10	0	1					10		
RMNL 11	$W_4^{-10,-10}B_5V_5$			-10	-10	0	1					11		
RMNL 12	$W_4^{-5,-5}B_5V_5^{-10}$			-5	-5	-10	1				12			
RMNL 13	$W_4^{-5,-5}B_5$			-5	-5	—	1				13			
RMNL 14	$W_4^{0,-10}B_5V_5$			0	-10	0	1				14			
RMNL 15	$W_4B_5V_5$		5	0	0	0	1	15						
RMNL 16				0	0	0	1		16					
RMNL 17				0	0	0	1			17				
RMNL 18				0	0	0	1				18			
RMNL 19				0	0	0	1					19		
RMNL 20				0	0	0	1						20	

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	Q(PSF)	CN	CA	CAB	CAF	CLM	CY	CYN	CBL	RN/L	ALPHA	

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS: A = -1, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22,24

α or β SCHEDULES

DELTA WING ORBITER
GAC
DR#1189 B-1- 79

DELTA WING ORBITER
GAC
DR#1189 B-1- 80

TEST LTPT-75 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	REYNOLDS NUMBER x 10^{-6}												
		α	β	δ_{eL}	δ_{eR}	δ_R			2.0	4.0	6.0	8.0	10.0	12.0	14.0						
RMNL 21	$W_4B_5V_5$	A	5	0	0	0		1													
RMNL 22	W_4B_5	↓	↓	0	0	—		1							21						
RMNL 23	$W_4{}^{-5,-5}B_5V_5$	↓	0	-5	-5	0		1				22									
RMNL 24	$W_4{}^{-5,-5}B_5V_5$ Motors Off	↓	↓	-5	-5	0		1				23									
RMNL 25	↓	↓	↓	-5	-5	0		1					24								
RMNL 26	↓	↓	↓	-5	-5	0		1				25									
											26										

TEST RUN NUMBERS

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

COEFFICIENTS: R N/ L

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

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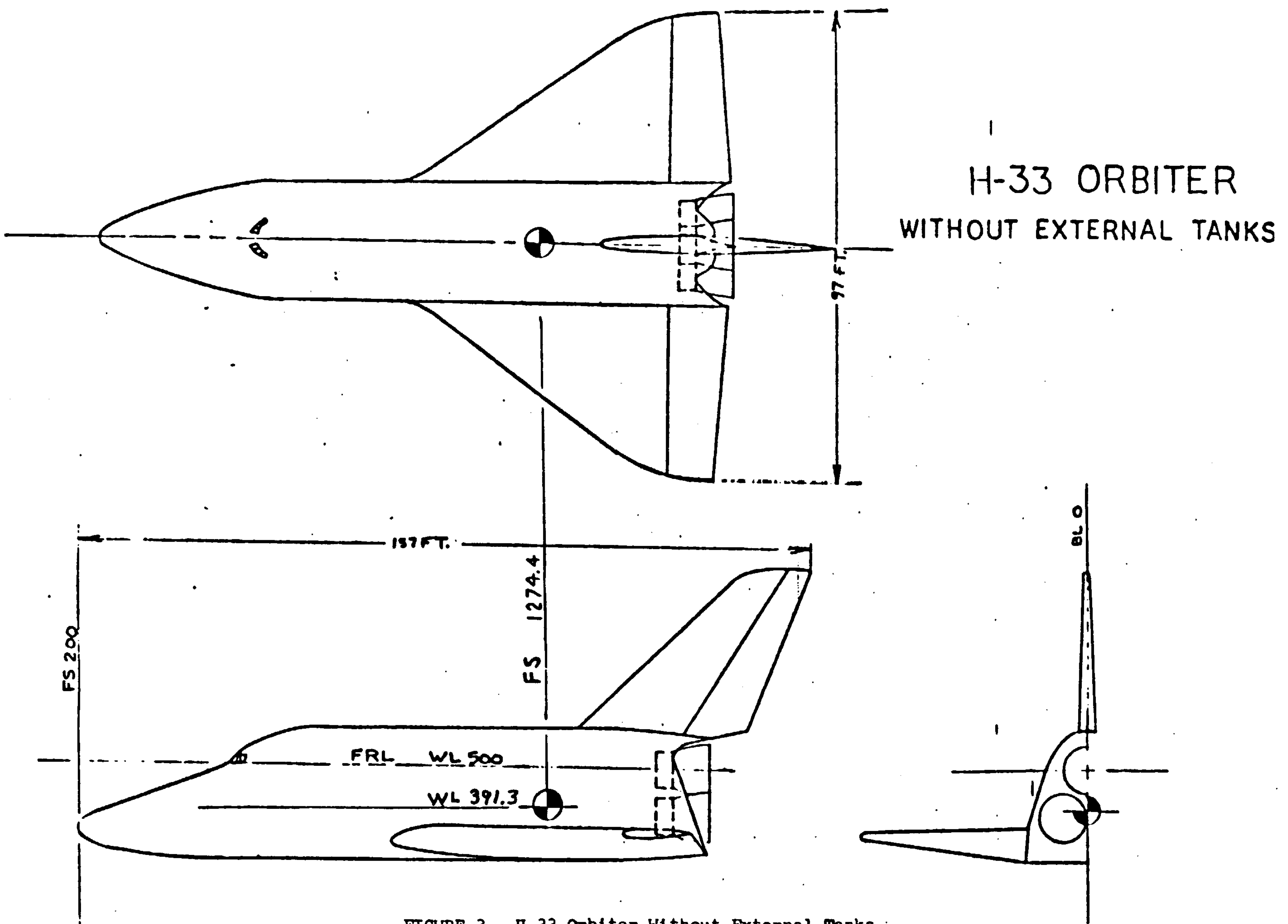

FIGURE 3. H-33 Orbiter Without External Tanks

DELTA WING ORBITER
GAC
DR#1189 B-1- 81

DELTA WING ORBITER
GAC
DR#1194 8-1- 82

TEST CFHT 76 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) 10.20 (TEST RUN NUMBERS)
RMQ 001	B W V	A	0°	0°	0°	30°/30°			14
002				15	15				21
003				-15	-15				17
004				-30	-30				19
005			-5°	0	0				15
006				15	15				22
007				-15	-15				18
008				-30	-30				20
009			0°	-15	15				33
010				-30	0				35
011				-45	-15				37
012			-5°	-15	15				34
013				-30	0				36
014				-45	-15				38
016			0°	0	0	20°/40°			39
019			-5°	0	0				40
026			0°	-45	-45	30/30			43
027			-5°	-45	-45				44
030	B W V T_{HO}	D	0°	0	0	0°/0°			26
031		D	-5°	0	0				27

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

α or β SCHEDULES

ALPHA SCHEDULE: A 0, 5, 10, 20, 25, 30, 35, 40, 45

BETA SCHEDULE: B -5, -3, 0, 2

BETA SCHEDULE: C -5, -3, 0

ALPHA SCHEDULE: D 0, 5, 10, 15, 20, 25, 30, 35, 40

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TEST CFHT 76 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_{eL}	δ_{eR}	δ_R		NO. of RUNS	10.20												
RMQ 032	B W V T_{HO}	D	0°	15°	15°	0°/0°			28												
033		D	-5°	15°	15°				29												
034		5°	B	0°	0°				23												
035		20°	B						24												
036		30°	C						25												
023	B W V	25°	B			30°/-30°			16												
021	B W V T_H	D	0°			0°/0°			31												
022			-5°						32												
028			0°	15°	15°				41												
029			-5°	15°	15°				42												

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

ALPHA SCHEDULE: A 0, 5, 10, 20, 25, 30, 35, 40, 45
BETA SCHEDULE: B -5, -3, 0, 2
BETA SCHEDULE: C -5, -3, 0
ALPHA SCHEDULE: D 0, 5, 10, 15, 20, 25, 30, 35, 40

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DELTA WING ORBITER
GAC
DR#1194 B-1- 83

DELTA WING ORBITER
GAC
DR#1194 B-1- 84

TEST CFHT 76 DATA SET/RUN NUMBER
COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	X	Z	i_T	NO. of RUNS	BAL 1	BAL 2
RMQ 037	BWV ($\delta_e = 0, \delta_R = 0$)	E	0°	0	146.75	0°		52	
038		F		-400	146.75			47	
039		G		-400	390			48	
040		F		-800	390			50	
041		H		-400	650			49	
042		E		-800	650			51	
043		E		-800	650	10°		55	
044	HO TANK	E		0	146.75	0°			52
045		F		-400	146.75				47
046		G		-400	390				48
047		F		-800	390				50
048		H		-400	650				49
049		E		-800	650				51
050		E		-800	650	10°			55

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

ALPHA SCHEDULE: E 0, 10, 20, 25
ALPHA SCHEDULE: F 0, 10, 20, 25, 30
ALPHA SCHEDULE: G 0, 10, 20, 30, 35, 40
ALPHA SCHEDULE: H 0, 10, 20, 30, 35

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H-33 ORBITER
WITHOUT EXTERNAL TANKS

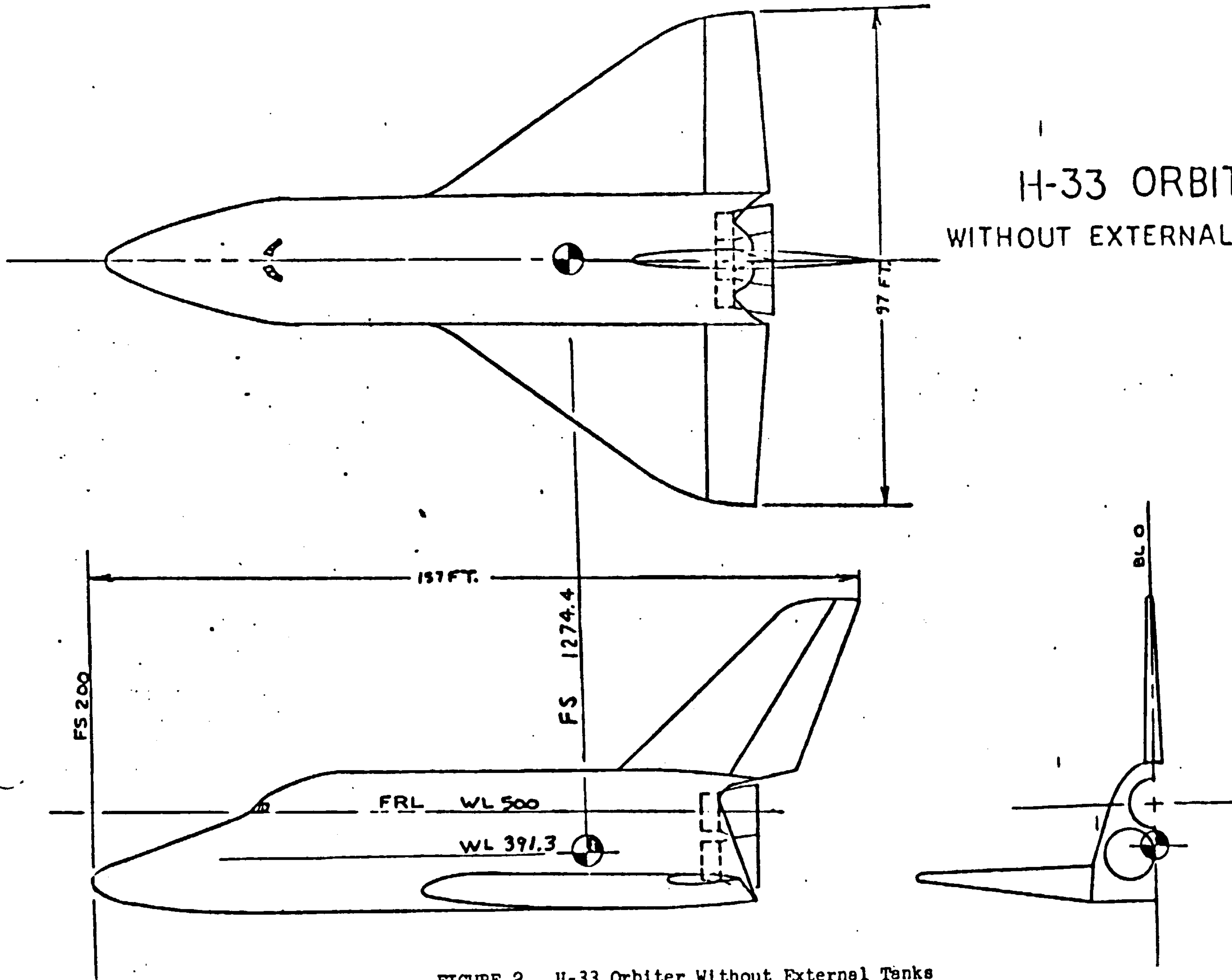

FIGURE 2. H-33 Orbiter Without External Tanks

DELTA WING ORBITER
GAC
DR#1194 B-1- 85

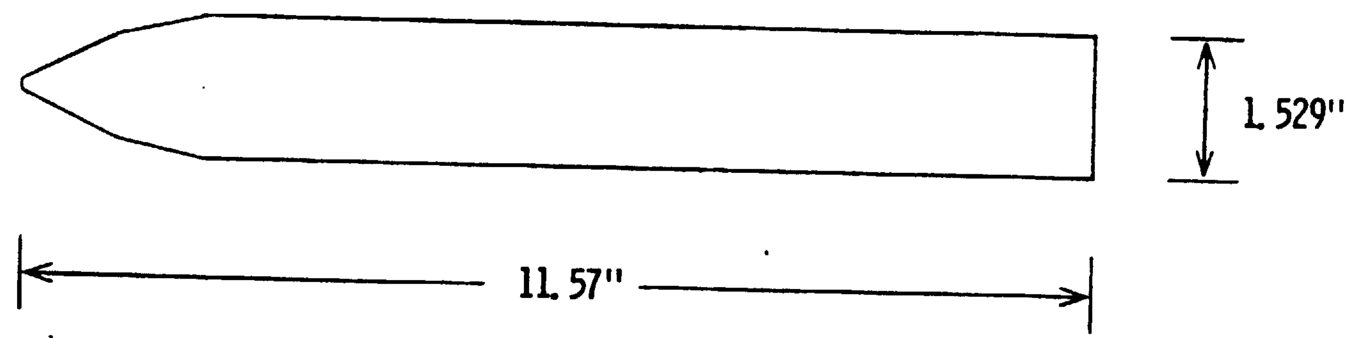

FIGURE 3.

EOHT FOR H-33 ORBITER

TEST 8' ~~TPT~~-604 **DATA SET/RUN NUMBER**

COLLATION SUMMARY

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_{eL}	δ_{eR}	δ_R	δ_{RF}	NO. of RUNS	0.6	0.8	0.9	0.95	1.2
RMNT 01	$W_4B_5V_5$	A	0	0	0	0	0	5	5	4	3	2	1
02	$W_4(-30,-30)\ B_5V_5$			-30	-30				10	9	8	7	6
03	$W_4(-20,-20)\ B_5V_5$			-20	-20				15	14	13	12	11
04	$W_4(-10,-10)\ B_5V_5$			-10	-10				20	19	18	17	16
05	$W_4(-10,-10)\ B_5V_5(15,-15)$						±15		25	24	23	22	21
06	$W_4(-10,-10)B_5V_5(30,-30)$						±30		30	29	28	27	26
07	$W_4(-10,-10)B_5V_5(10)$					-10	0		35	34	33	32	31
08	$W_4(-10,\ 10)B_5V_5$				+10	0			40	39	38	37	36
09	$W_4(-10,-10)B_5$				-10	-	-		45	44	43	42	41
11	$W_4(-10,-10)B_5$		5			-	-		55	54	53	52	51
12	$W_4(-10,-10)B_5V_5(15,-15)$					0	±15		60	59	58	57	56
13	$W_4(-10,-10)B_5V_5(30,-30)$						±30		65	64	63	62	61
14	$W_4(-10,-10)B_5V_5$						0		70	69	68	67	66

TEST RUN NUMBERS

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

BETA IQ(PSF) CN CA CLM CBL CYN CY CAB MACH ALPHA

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

ALPHA SCHEDULE A: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

DELTA WING ORBITER
GAC
DR#1195 B-1- 87

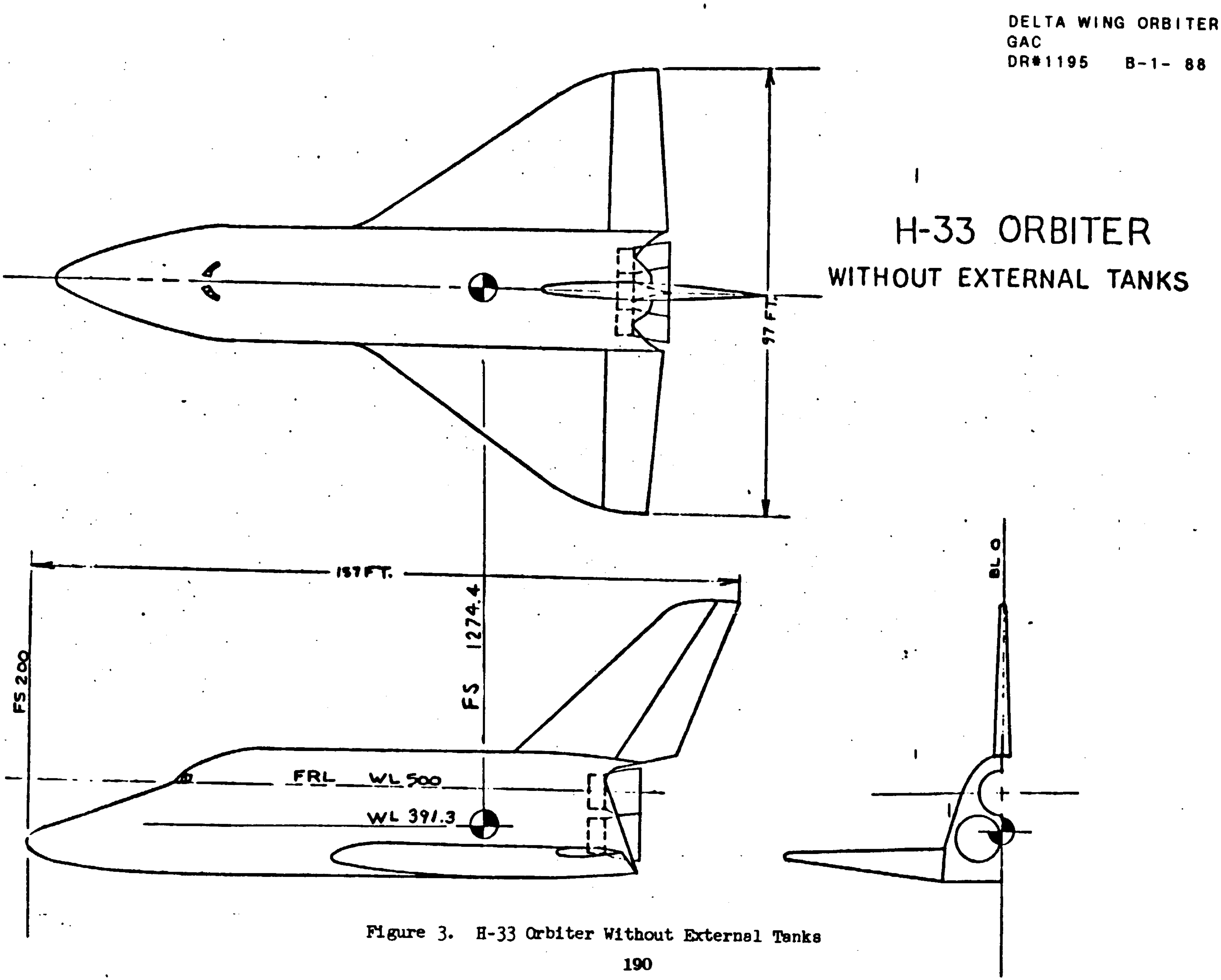

Figure 3. H-33 Orbiter Without External Tanks

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TEST UPWT 964 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{eL}	δ_{eR}	δ_R	δ_{RF}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.6	1.9	2.16
RMNU 02	$W_4B_5V_5$ (UPRIGHT)	A	0	0	0	0	0	3	7	11	17
03			4					3	10	16	22
04		0	B					3	8	12	18
05		10						3	9	13	19
06		20						2		14	20
07		30						2		15	21
08	$W_4B_5V_5(+30,-30)$	A	0				±30	3	23	25	27
09			4					3	24	26	28
10	$W_4(-20,-20)B_5V_5(+30,-30)$		0	-20	-20			3	29	30	31
11	$W_4(-20,-20)B_5V_5(+35,-25)$					5		3	32	33	34
12	$W_4(-30,-10)B_5V_5(+30,-30)$			-30	-10	0		3	35	36	37
13	$W_4(-40,-40)B_5V_5(+30,-30)$			-40	-40			3	41	39	40
14	$W_4(-20,-20)B_5$			-20	-20	-	-	3	42	44	46
15	$W_4(-40,-40)B_5V_5(+30,-30)$			-40	-40	0	±30	1	38		
16	$W_4(-20,-20)B_5$		4	-20	-20	-	-	3	43	45	47

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	Q(PSF)	CN	CA	CLM	CBL	CYN	CY	CAB		MACH	ALPHA	

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

α or β SCHEDULES
Schedule A Alpha -1, 0, 1, 2, 3, 5, 7, 9, 11, 13, 16, 20, 22, 26, 29, 32
Schedule B Alpha -4, 2, 0,2, 4,6, 8, 10

DELTA WING ORBITER
GAC
DR#1196 B-1- 89

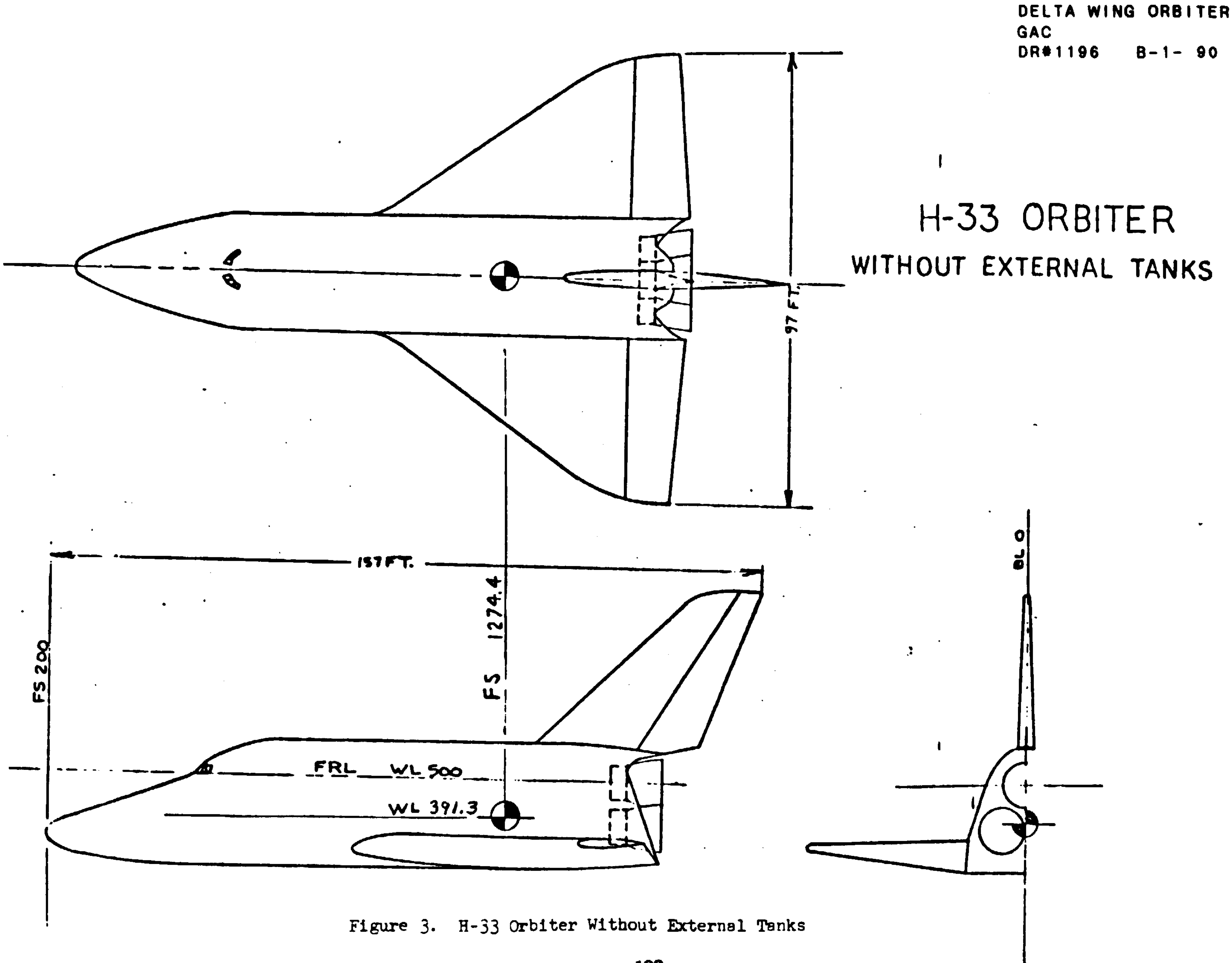

Figure 3. H-33 Orbiter Without External Tanks

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TEST LaRC 6392 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{el}	δ_{er}	δ_s	δ_R	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 5.96
RMR 016	GAC H-33 ORB	A	0	0	0	0	30/-30	1	16
013		A	0	-15	-15				13
014		A	0	-30	-30				14
018		B	-5	0	0				18
025		B	-5	-15	-15				25
021		A	0	-30	0	-15			21
022		B	-5	-30	0	-15			22
026		C	0	0	0	0			26
027		D	-5	0	0	0	0/0		27

TEST RUN NUMBERS

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

BETA Q(PSI) CN CA CLM CBL CYN CY CL CD L/D CPB 1 2

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

ALPHA SCHEDULE: A 10, 15, 20, 25, 30, 35, 40, 45

ALPHA SCHEDULE: B 10, 20, 30, 40, 45

ALPHA SCHEDULE: C 0, 10, 15, 20, 25, 30

ALPHA SCHEDULE: D 10, 20, 30

DELTA WING ORBITER
GAC
DR#1203 B-1- 91

DELTA WING ORBITER
GAC
DR#1203 B-1- 92

H-33 ORBITER
WITHOUT EXTERNAL TANKS

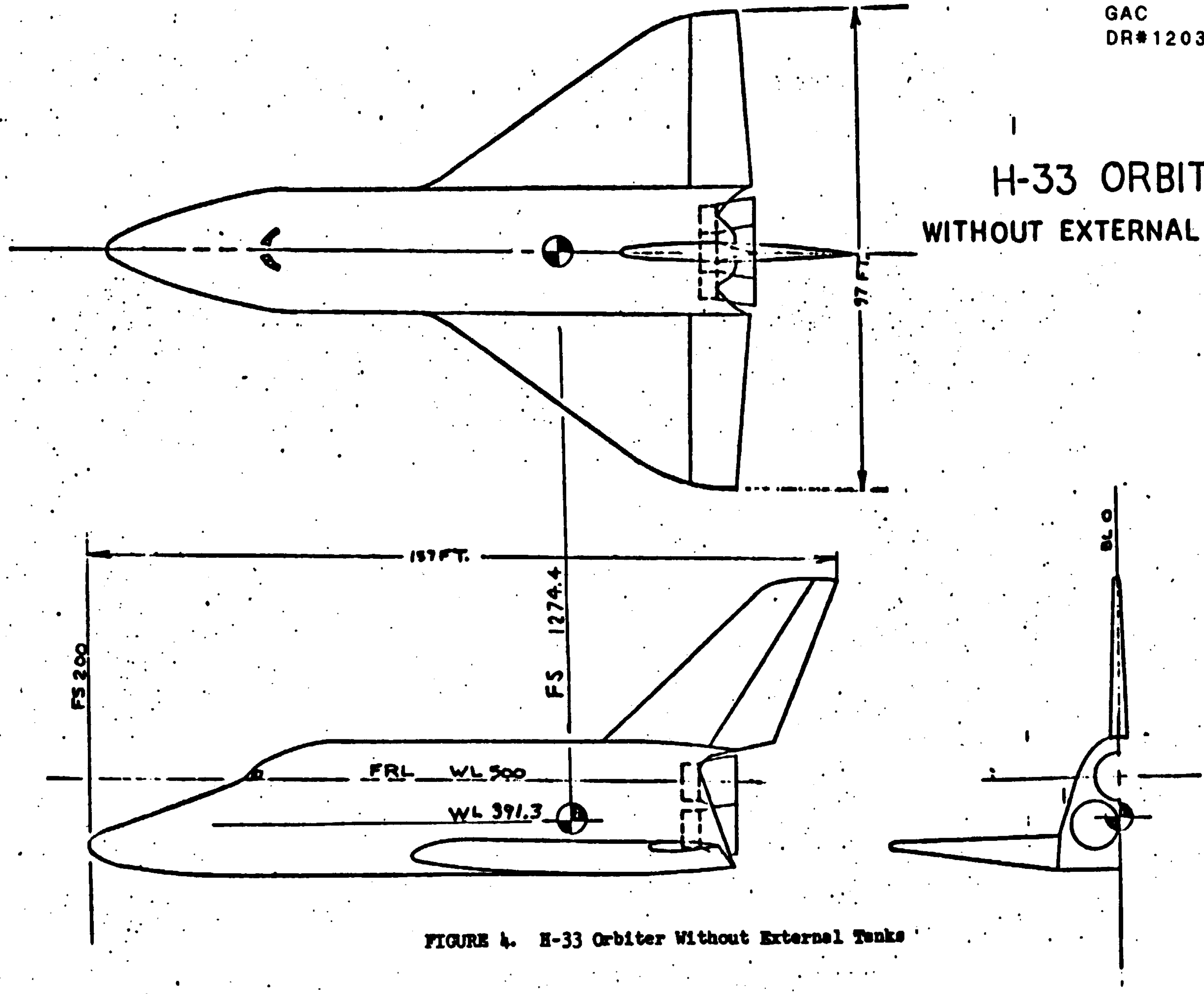

FIGURE 4. H-33 Orbiter Without External Tanks

C-3

TEST 7397 DATA- ORGANIZATION SHEET

TABLE I. DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_R			NO. of RUNS	MACH NUMBERS	20.3									
RMS001	GAC H-33 ΦRB	A	0	0	30/-30			1		1									
02	(.005854)			-15						2									
04				-30						4									
05			-2.5	0						5									
06			-2.5	-15						6									
10	GAC H-33 ORB	B	0	0						10									
11	(.003366)			-10						11									
12				-20						12									
13			-2.5	0						13									

α or β SCHEDULES

ALPHA SCH.: A, 14, 16, 18, 20, 22, 24, 26, 28, 30
B, 16, 20, 24, 28, 30, 32, 36, 40, 44, 48

COEFFICIENTS: BETA L/D)F CN CAF CLM —
CBL CYN CY CL CDF MACH ALPHA

DELTA WING ORBITER
GAC
DR#1211 B-1- 93

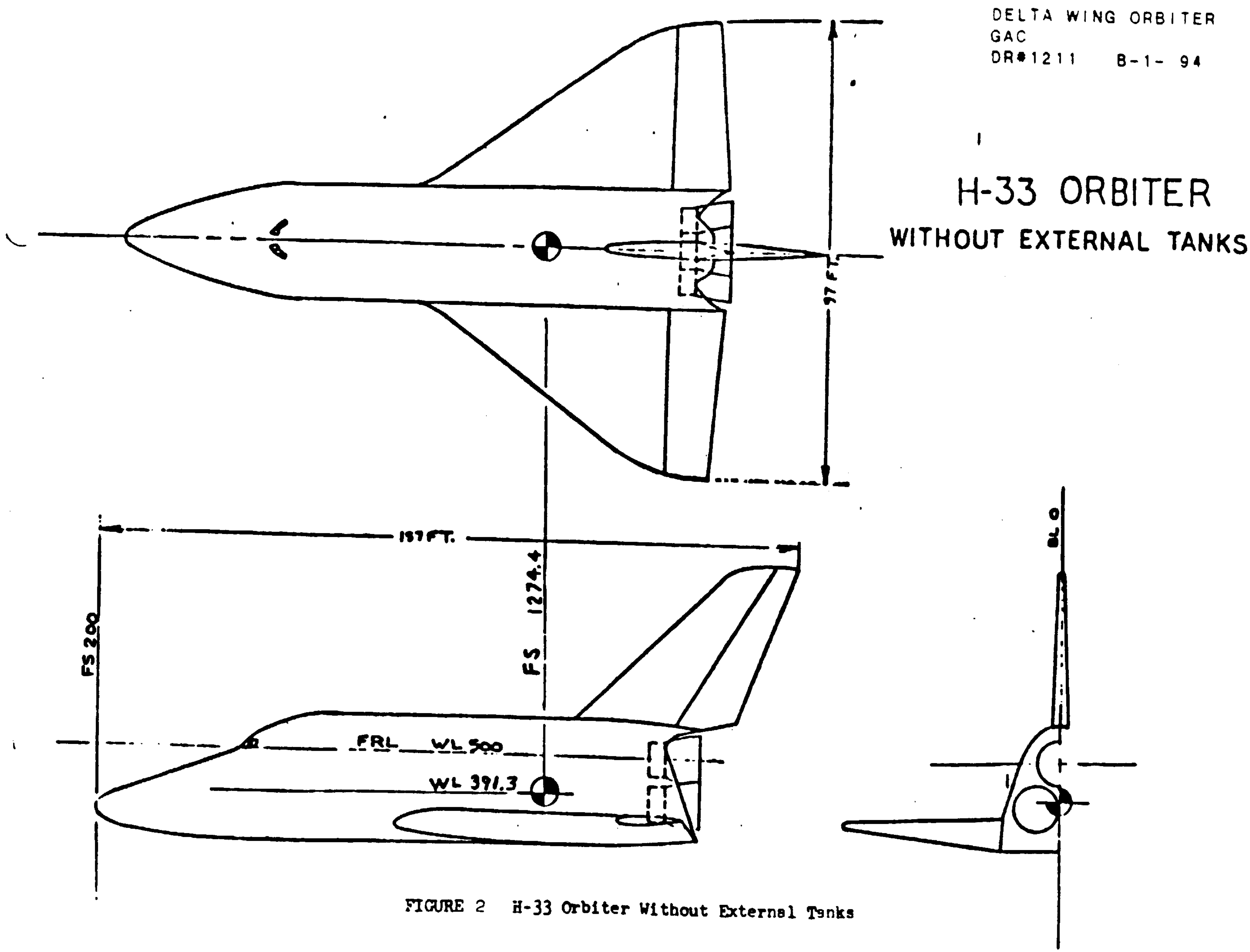

FIGURE 2 H-33 Orbiter Without External Tanks

TABLE I.

TEST LaRC UPWT 964/969 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{eL}	δ_{eR}	δ_R	δ_{RF}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2.3	2.86	3.95	4.63
RMφ001	$B_5 W_4 V_5$	A	0	0	0	0	30/-30		9	48	10	16
02		A	0	-10	10	0	30/-30		28			
03		A	0	-10	-10	0	30/-30			54	22	24
04		A	0	-20	-20	0	30/-30			59	3	5
05		A	0	-10	-10	5	35/-25			56	26	27
06		A	0	-20	0	0	30/-30			57	7	8
07		A	0	-30	-10	0	30/-30			58	29	30
08		A	4	0	0	0	30/-30			49	11	17
09		A	4	-10	-10	0	30/-30			55	23	25
10		A	4	-20	-20	0	30/-30			60	4	6
11		0	B	0	0	0	30/-30			50	12	18
12		10	B	0	0	0	30/-30			51	13	19
13		20	B	0	0	0	30/-30			52	14	20
14		30	B	0	0	0	30/-30			53	15	21

TEST RUN NUMBERS

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

BETA CN CA CLM CBL CYN CY CD L/D CAB MACH ALPHA

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

α or β SCHEDULES

A $\alpha = -4^\circ \rightarrow +32^\circ$

B $\beta = -4^\circ \rightarrow +10^\circ$

DELTA WING ORBITER

GAC

DR#1216 B-1- 95

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H-33 ORBITER
WITHOUT EXTERNAL TANKS

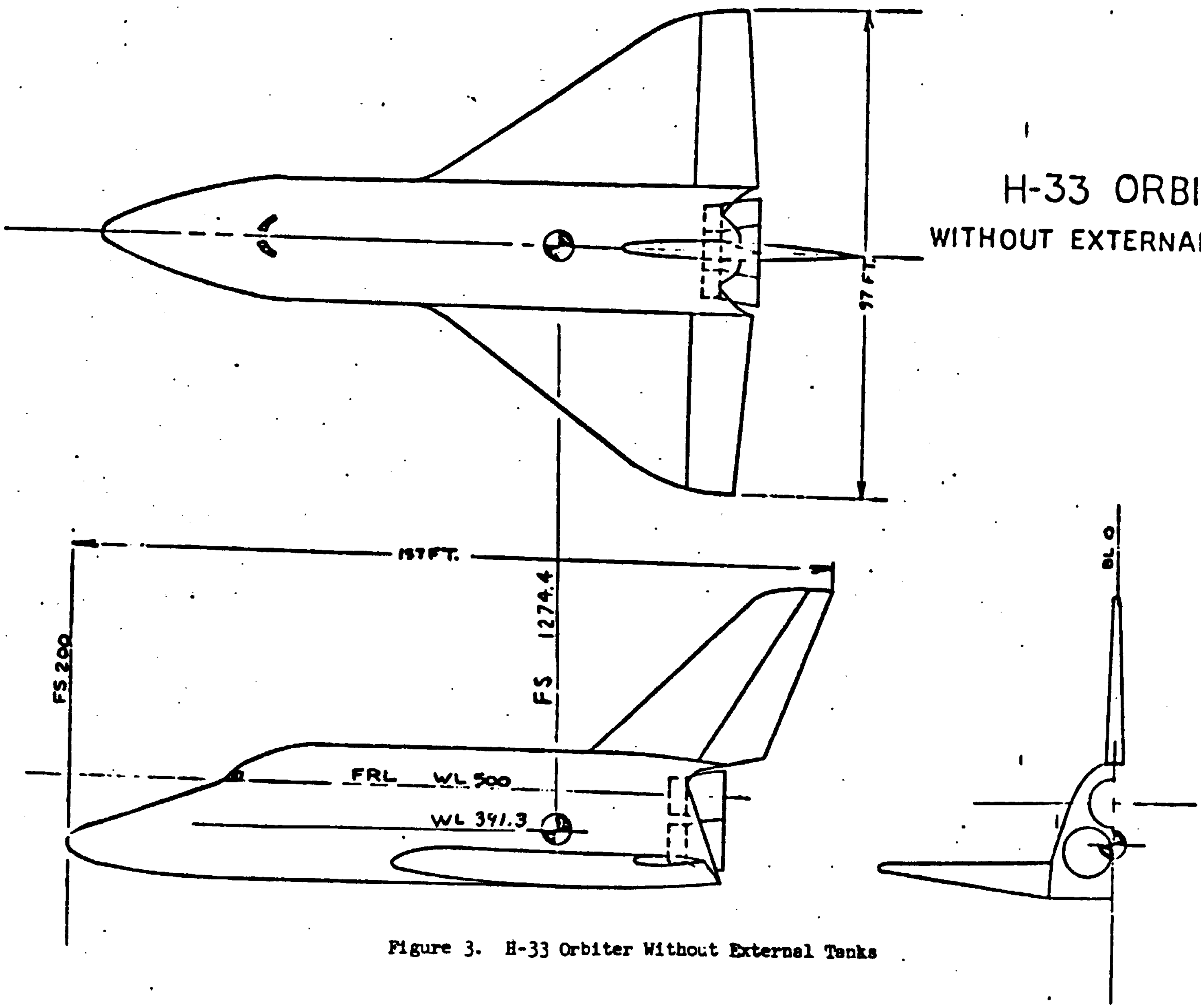

Figure 3. H-33 Orbiter Without External Tanks

TABLE II.

TEST LTPT 86 and 88 **DATA COLLATION SHEET**

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	ROUGHNESS HEIGHT $k/l \times 10^4$ NOSE	WING	VTAIL	NO. of RUNS	REYNOLDS NUMBERS x 10^{-6} Per Foot 2.7	4.2	6.1	8.0	9.7	11.7	14.2
ROE001	$W_1B_5V_5$	A	0°	-5°	0	0	0	7	8	9	10	11	12	13	14
002			5°		0	.63	0	5	16	17	18	19	20		
003			0°		0	.63	0	7	24	23	21	22	25	26	27
004					2.46	2.46	0	5	28	29	30	31	32		
005					4.88	4.88	0	5	33	34	35	36	37		
006					9.67	9.67	0	5	38	39	40	41	42		
007					9.67	9.67	9.67	5	43	44	45	46	47		
008					13.79	13.79	0	5	57	56	55	54	53		
009					1.20	1.20	0	5	58	59	60	61	62		
010					1.20	1.20	1.20	5	63	64	65	66	67		
011					6.88	6.88	0	5	68	69	70	71	72		
012	(REPEAT)				9.67	9.67	9.67	5	73	74	75	76	77		
013			5°		9.67	9.67	9.67	5	78	79	80	81	82		
014			5°		1.20	1.20	1.20	5	83	84	85	86	87		

• Alpha Schedule A: -1, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

α or β SCHEDULES

DELTA WING ORBITER
GAC
DR#1239 B-1- 97

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DELTA WING ORBITER
GAC
DR#1239 B-1- 98

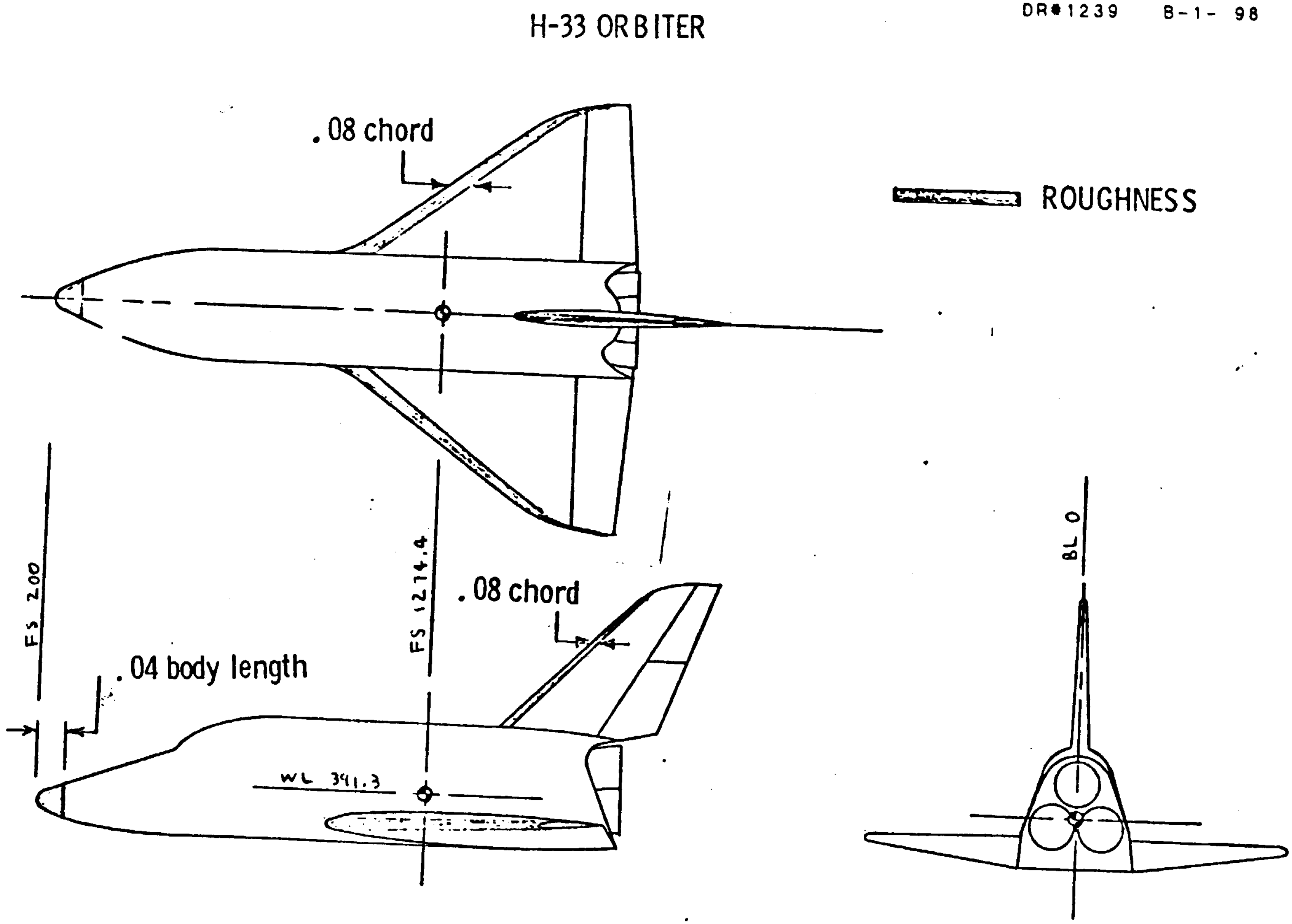

Figure 3.- General arrangement of orbiter and location of roughness.

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TABLE 1

TEST CFHT-61 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NO/RUN NO 10.4	NO. of RUNS	δ_R	δ_A	δ_{EL}	δ_{ER}	δ_{AL}	δ_{AR}
ALTD13	B3W2AV1	A	0	13		10	0	10	10	10	10
14		A	4	14							
15		15	B	15							
16		30	B	16							
23		A	0	23		-20	0	-20	-20	-20	-20
24		A	4	24							
25		30	B	25							
26		40	B	26							
27		A	0	27		-20	-10	-20	-20	-30	-10
28		A	4	28							
29		30	B	29							
30		40	B	30							
31		A	0	31		10	-10	10	10	0	20
32		A	4	32							
33		15	B	33							
34		30	B	34							
35		A	0	35		0	-10	5	5	-15	5
36		A	4	36							
37		15	B	37							
38		30	B	38							

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

BETA Q(PSF) CN CA CLM CBL CYN CY MACH ALPHA

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

SCHEDULE A: 0, 5, 10, 15, 20, 25, 30, 35, 40

" B: -5, -3, 0, 3, 4

DELTA WING ORBITER
LARC
DR#1123 B-1-99

TABLE 1 (Continued)

TEST CFHT-61 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NO/RUN NO				NO. of RUNS	PARAMETERS/VALUES δ_E	δ_A		δ_{EL}	δ_{ER}	δ_{AL}	δ_{AR}					
					0.4															
RLT039	B3W2A	A	0		39				0	0		0	0	0	0					
40		A	4		40															
41		15	B		41															
42		30	B		42															
43		40	B		43															
44	B3W2AV2	A	0		44															
45		A	4		45															
46		15	B		46															
47		30	B		47															
48	B3W2CV1	A	0		48				10	0		10	10	10	10					
49		A	4		49															
50		15	B		50															
51		30	B		51															
52		A	0		52				10	-10		10	10	0	20					
53		A	4		53															
54		15	B		54															
55		30	B		55															
56		A	0		56				-20	0		-20	-20	-20	-20					
57		A	4		57															
58		30	B		58															

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

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

α or β SCHEDULES

SCHEDULE A : 0, 5, 10, 15, 20, 25, 30, 35, 40
" B : -5, -3, 0, 3, 4

NASA-MSFC-MAF

TABLE 1 (Continued)

TEST CFHT-61 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NO/RUN NO 0.4			NO. of RUNS	δ_E	δ_A		δ_{EL}	δ_{ER}	δ_{AL}	δ_{AR}					
RLT059	B3W2CV1	40	B	59				-20	0		-20	-20	-20	-20					
60		A	0	60				-20	-10		-20	-20	-30	-10					
61		A	4	61															
62		30	B	62															
63		40	B	63															
64		A	0	64				0	-10		0	0	-10	10					
65		A	4	65															
66		15	B	66															
67		30	B	67															
68	B3W2BV1	A	0	68				10	-10		10	10	0	20					
69		A	4	69															
70		15	B	70															
71		30	B	71															
72		A	0	72				0	-10		0	0	-10	10					
73		A	4	73															
74		15	B	74															
75		30	B	75															
76		A	0	76				-20	-10		-20	-20	-30	-10					
77		A	4	77															
78		30	B	78															

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: α or β SCHEDULES

SCHEDULE A = 0, 5, 10, 15, 20, 25, 30, 35, 40

" B = -5, -3, 0, 3, 4

DELTA WING ORBITER
LARC
DR#1123 B-1- 101

TABLE 1 (Continued)

TEST CFHT-61 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

■ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NO/RUN NO 10.4			NO. of RUNS	PARAMETERS/VALUES δ_E	δ_A	δ_Y	δ_{EL}	δ_{ER}	δ_{AL}	δ_{AR}						
RLT079	B3W2BV1	40	B	79				-20	-10	0	-20	-20	-30	-10						
80	B3W2AV1Y	A	0	80				0	0	30	0	0	0	0						
81		A	4	81																
82		15	B	82																
83		20	B	83																
84		25	B	84																
85	B3W2AV1	A	0	85				0	-10	0	0	0	-10	10						
86		A	4	86																
87		15	B	87																
88		30	B	88																
89		A	0	89				0	+10		10	10	0	-20						
90		A	4	90																
91		15	B	91																
92		30	B	92																
93		A	0	93				0	0		0	0	0	0						
94		A	4	94																
97	B3W2AV1Y	A	0	97						45										
98		A	4	98																
99		30	B	99																
100		35	B	100																

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

SCHEDULE A = 0, 5, 10, 15, 20, 25, 30, 35, 40

" B = -5, -3, 0, 3, 4

NASA-MSFC-MAF

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TABLE 1 (Continued)

TEST CFHT-61 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NO/RUN NO 10.4	NO. of RUNS	δ_E	δ_A	δ_Y	δ_{EL}	δ_{ER}	δ_{AL}	δ_{AR}
RLT101	B3W2AV1Y	25	B	101		0	0	45	0	0	0	0
2		40	B	102								
3	B3W2BV1	A	0	103				0				
4		A	4	104								
5		15	B	105								
6		30	B	106								
7		A	0	107		10	0		10	10	10	10
8		A	4	108								
9		15	B	109								
10		30	B	110								

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: α or β SCHEDULES

SCHEDULE A : 0, 5, 10, 15, 20, 25, 30, 35, 40

" B : -5, -30, 3, 4

DELTA WING ORBITER
LARC
DR#1123 B-1- 103

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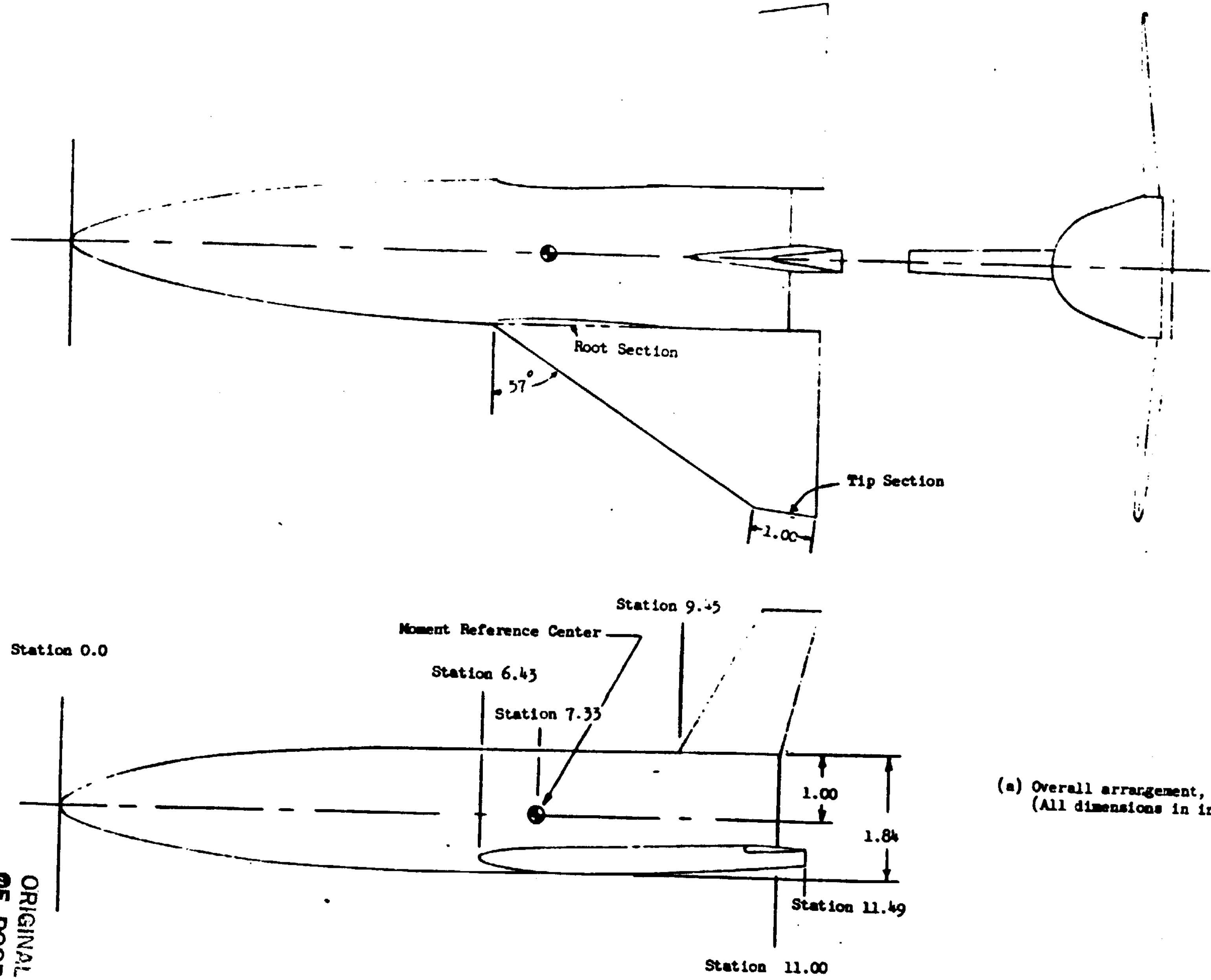

(a) Overall arrangement, B3W2V1.
(All dimensions in inches)

Figure 2. Model Configuration B3W2V1

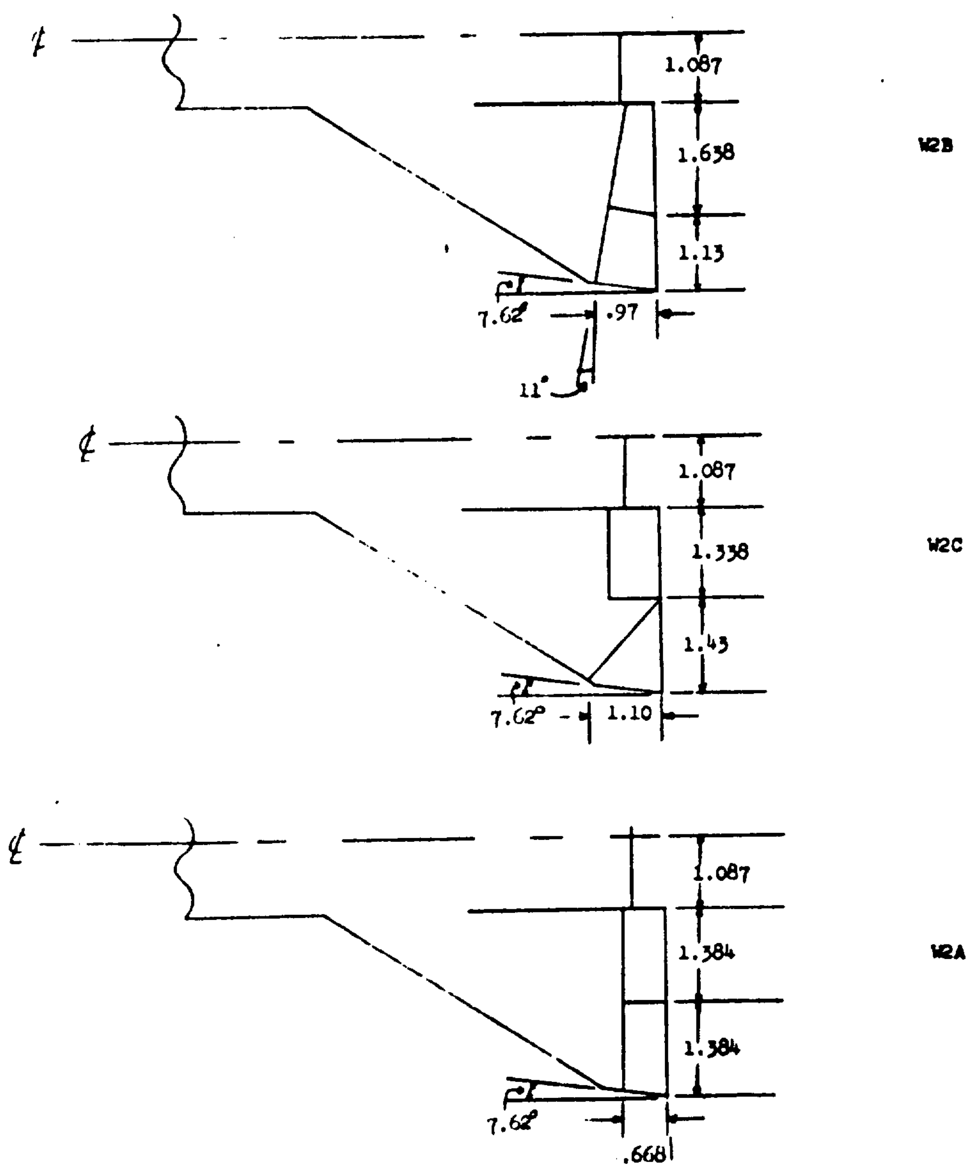

Figure 3. Elevon Arrangements

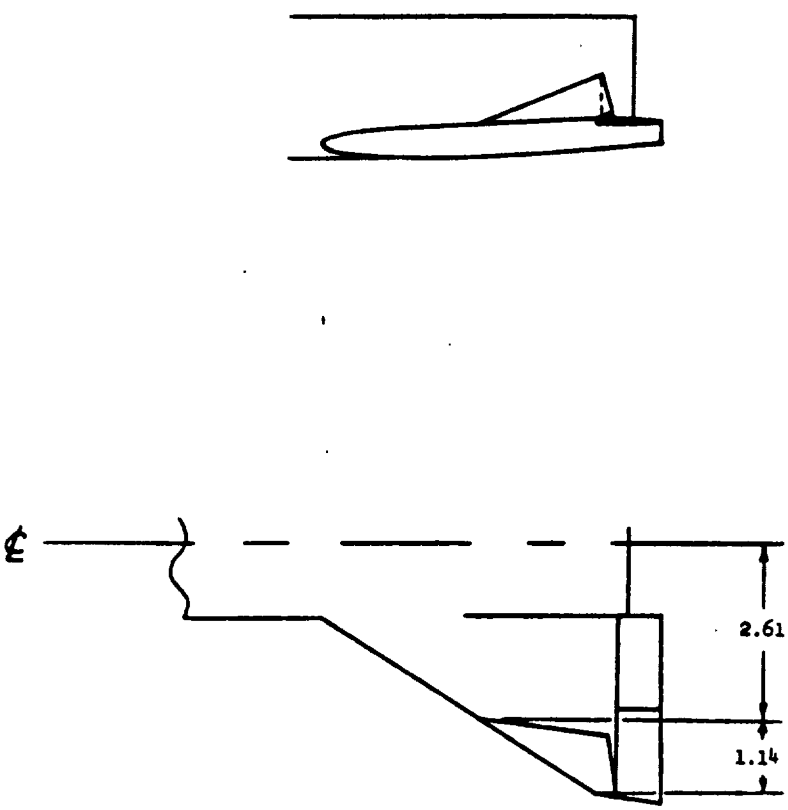

Figure 4. Wing W2A with upper surface flap (Y)

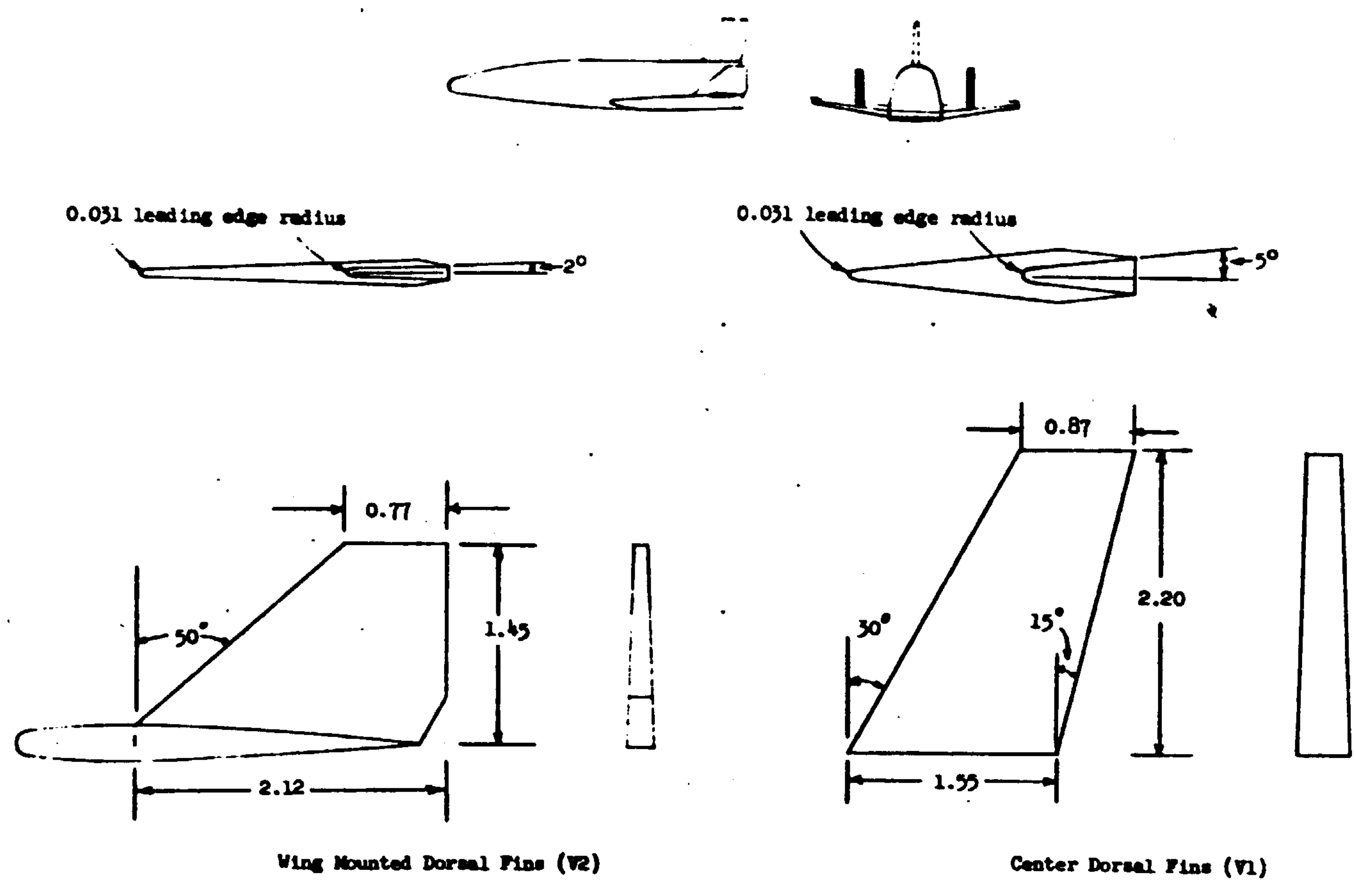

Figure 5. Wing-Mounted Dorsal Fins (V2)

TEST LaRC UPT 65 DATA SET

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δAL	δEL	δER	δAR	NO. of RUNS	REYNOLDS NUMBER/FOOT 2.35	3.35	5.71	7.72	9.71	11.38	14.05
RM 5001	B3W2BV1	A	0	0	0	0	0	7	1	2	3	4	5	6	7
02	B3W2B							1					8		
03	B3W2BV3												9		
04	B3W2BV1F												10		
05	B3W2BV1			0	0	-30	-30						11		
06				-30	-30	-30	-30						12		
07	B3W2BV3			-30	-30	-30	-30						13		
08				-15	-15	-15	-15						14		
09	B3W2B												15		
10	B3W2BV1												16		
11				0			-30						17		
12				-10			-20						18		
13				-10	-10	-10	-10						19		
14				0			-20						20		
15				0	0	-20	-20						21		
16				-20	-20	-20	-20						22		
17				-10			-30						23		
18				-10	-10	-30	-30						24		
19	B3W2BV2			0	0	0	0						25		
RM 5020		A	0	0	0	-20	-20	1					26		

TEST RUN NUMBERS

L/D 7 D(PSF) 13 MACH 19 25 31 37 43 49 55 61 67 75 76

BETA	CN	CA	CLM	CL	CD	CYN	CAB	CBL	CY	RN/L	ALPHA

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES $A(\alpha) = -1, 0, 2, 4, 6, 8, 10, 12, 14, 17, 19, 21, 23, 25$

NASA-MSFC-MAF

TEST LaRC LTPT 65 DATA SET

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{AL}	δ_{EL}	δ_{ER}	δ_{AR}	NO. of RUNS	REYNOLDS NUMBER/FOOT 2.35	3.85	5.71	7.72	9.71	11.38	14.05
RM 5021	B3W2BV2	A	5	0	0	-20	-20	1					27		
22				0	0	0	0						28		
23	B3W2B												29		
24	B3W2BV1							6	35	36	30	31	32	33	
25	B3W2BV3							1					34		
26	B3W2BV1			-15	-15	-15	-15						37		
27	B3W2B												38		
28	B3W2BV3												39		
29				-30	-30	-30	-30						40		
RM 5030	B3W2BV1												41		

TEST RUN NUMBERS

α or β SCHEDULES

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DELTA WING ORBITER
LARC
DR#1168 B-1- 109

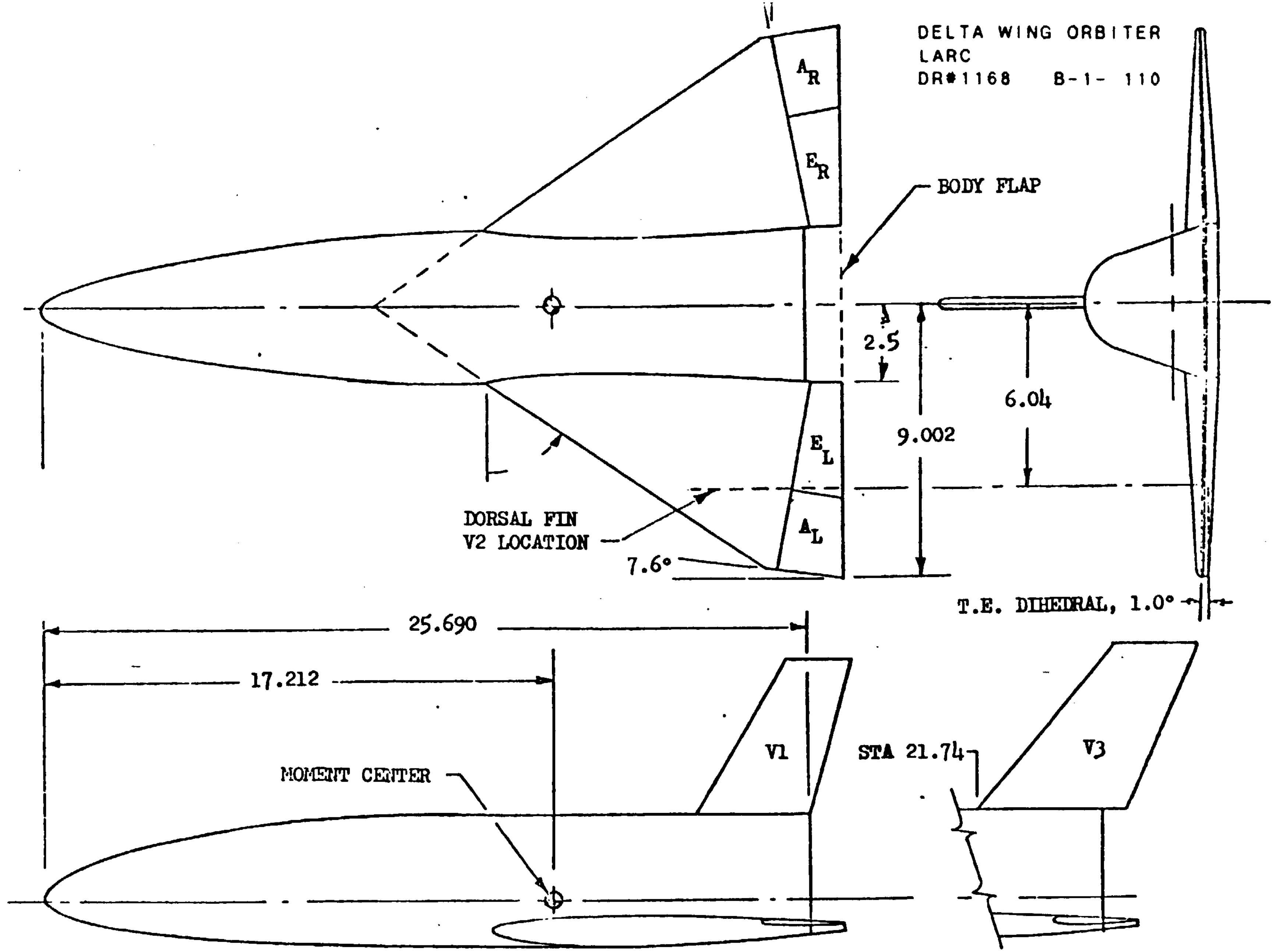

Figure 2.- General arrangement of delta wing orbiter model.
All dimensions are in inches.

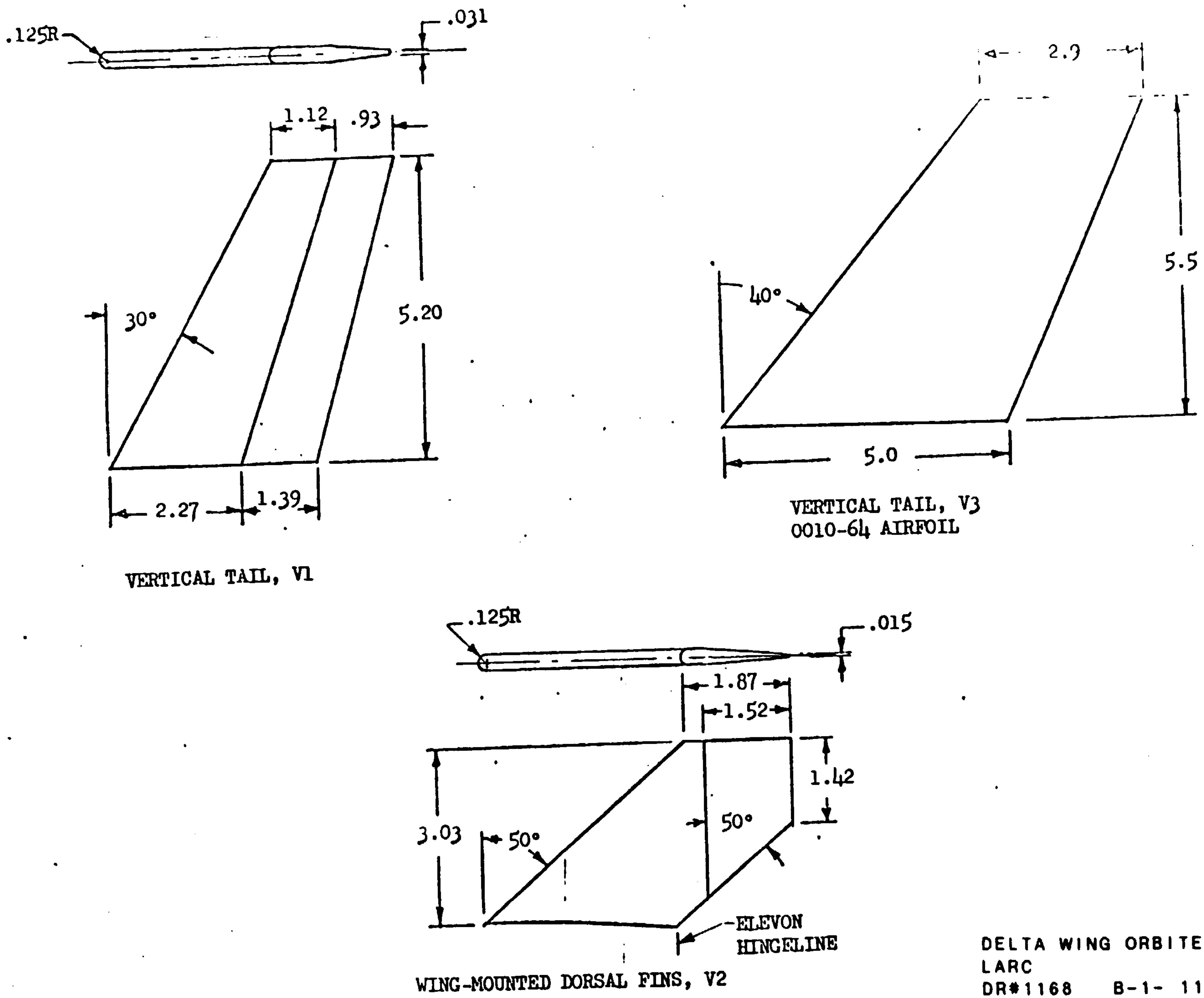

Figure 3.- Vertical fins

DELTA WING ORBITER
LARC
DR#1168 B-1- 111

TABLE II

TEST *4' SPT Test 930* DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS				NO. of RUNS	CONTROL DEFLECTIONS δ_e	δ_a	δ_{e_1}	δ_{e_2}	δ_{e_3}	δ_{e_4}	δ_r	δ_y			
						2.01													
RMY001	$B_3W_2V_1$	A	0			1		1	0	0	0	0	0	0	0	0			
02			3			6													
03	$B_3W_2ZV_1$		0			120													
04			3			121													
05		0	B			124													
06		12				123													
07		24				122													
08	$B_3W_2V_1$	0	C			2													
09		9				3													
10		15				4													
11		24				5													
12	$B_3W_2BV_1$	A	0			9													
13			3			13													
14			0			19			-15		-15	-15	-15	-15					
15			3			23													
16			0			34			-30		-30	-30	-30	-30					
17			3			36													
18			0			126			-45		-45	-45	-45	-45					
19			3			127													
20			0			14			0	10	10	0	0	-10					

α or β SCHEDULES

ALPHA SCHEDULE A -5, -2, 0, 3, 6, 9, 12, 16, 19, 23, 25, 27
BETA SCHEDULE B -6, -4, -2, -1, 0, 2, 4, 6
BETA SCHEDULE C -8, -6, -4, -3, -1, 0, 1, 3, 4, 6, 8, 10

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

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TABLE II. (CONTINUED)

TEST 4'SPT 430 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS		2.01		NO. of RUNS	CONTROL DEFLECTIONS δ_e	δ_a	δ_u	δ_{el}	δ_{er}	δ_u	δ_r	δ_y				
RMX021	$B_3W_2BV_1$	A	3			18		1	0	10	10	0	0	-10	0	0				
22			0			29			-15	10	-5	-15	-15	-25						
23			3			33														
24			0			37			-30	10	-20	-30	-30	-40						
25			3			39														
26			0			43			0	10	10	10	-10	-10						
27			3			47														
21			0			48			-15	10	-5	-5	-25	-25						
29			3			49														
30			0			40			-30	10	-20	-20	-40	-40						
31			3			42														
32	$B_3W_2BV_1R$		0			63			0	0	0	0	0	0	-20					
33			3			64														
34	$B_3W_2BV_1Y$		0			58									0	30				
35			3			59														
36	$B_3W_2BV_1K$		0			53										0				
37			3			54														
38	B_3W_2B		0			80									—					
39			3			81									—					
40	$B_3W_2BV_2$		0			71									0					

α or β SCHEDULES

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TABLE II. (CONTINUED)

TEST 4' SPT 130 DATA SET COLLATION SHEET

DELTA WING ORBITER
LARC
DR#1199 B-1- 114

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS				NO. of RUNS	CONTROL DEFLECTIONS δ_e	δ_a	δ_{i_L}	δ_{o_L}	δ_{o_R}	δ_{i_R}	δ_R	δ_r				
						201														
RM1041	$B_3W_2BV_2$	A	3			72		1	0	0	0	0	0	0	0	0				
42			0			76				10	10			-10						
43			3			77														
44	$B_3W_2BV_2R$		0			68				0	0			0	-20					
45			3			69														
46	$B_3W_2BV_1$	0	B			10									0					
47		12				11														
48		24				12														
49		0				20			-15		-15	-15	-15	-15						
50		12				21														
51		24				22														
52		12				35			-30		-30	-30	-30	-30						
53		0				130			-45		-45	-45	-45	-45						
54		12				129														
55		24				128														
56		0				15			0	10	10	0	0	-10						
57		12				16														
58		24				17														
59		0				30			-15	10	-5	-15	-15	-25						
60		12				31														

α or β SCHEDULES

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TABLE II. (CONTINUED)

TEST 4' SPT 930 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS				NO. of RUNS	CONTROL DEFLECTIONS δ_e	δ_a	δ_{eu}	δ_{el}	δ_{ei}	δ_{eo}	δ_r	δ_y				
						2.01														
RM1061	$B_3W_2BV_1$	24	B			32		1	-15	10	-5	-15	-15	-25	0	0				
62		12				38			-30	10	-20	-30	-30	-40						
63		0				46			0		10	10	-10	-10						
64		12				45														
65		24				44														
66		0				52			-15	10	-5	-5	-25	-25						
67		12				51														
68		24				50														
69		12				41			-30	10	-20	-20	-40	-40						
70	$B_3W_2BV_1R$	0				67			0	0	0	0	0	0	-20					
71		12				66														
72		24				65														
73	$B_3W_2BV_1Y$	0				62									0	30				
74		12				61														
75		24				60														
76	$B_3W_2BV_1K$	0				57										0				
77		12				56														
78		24				55														
79	B_3W_2B	0				82									–					
80		12				83									–					

α or β SCHEDULES

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TABLE II. (CONTINUED)

TEST 4' SPT 430 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	MACH NUMBERS		2.01		NO. of RUNS	CONTROL DEFLECTIONS δ_e	δ_a	δ_{su}	δ_{el}	δ_{er}	δ_{sl}	δ_r	δ_y				
RMX081	B_3W_2B	24	B			84		1	0	0	0	0	0	0	-	0				
82	$B_3W_2BV_2$	0				75									0					
83		12				74														
84		24				73														
85		0				79			0	10	10	0	0	-10	0					
86		12				78														
87	$B_3W_2BV_2R$	0				70				0	0			0	-20					
88	$B_3W_2CV_1$	A	0			85									0					
89			3			86									0					
90			0			95			-15	0	-15	-15	-15	-15						
91			3			96														
92			0			105			-30	0	-30	-30	-30	-30						
93			3			106														
94			0			90			0	10	+10	0	0	-10						
95			3			91														
96			0			100			-15	10	-5	-15	-15	-25						
97			3			101														
98			0			110			-30	10	-20	-30	-30	-40						
99			3			111														
RMX100		0				89			0	0	0	0	0	0						

α or β SCHEDULES

TABLE II. (CONCLUDED)

TEST 4' SPT 430 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		MACH NUMBERS				NO. of RUNS	CONTROL DEFLECTIONS											
		α	β			2.01			δ_e	δ_a	δ_{iu}	δ_{ou}	δ_{il}	δ_{ol}	δ_r	δ_y				
RMX101	BsW2CV1	12				88		1	0	0	0	0	0	0	0	0				
2		24				87														
3		0				99			-15	0	-15	-15	-15	-15						
4		12				98														
5		24				97														
6		0				109			-30	0	-30	-30	-30	-30						
7		12				108														
8		24				107														
9		0				94			0	10	10	0	0	-10						
10		12				93														
11		24				92														
12		0				104			-15	10	-5	-15	-15	-25						
13		12				105														
14		24				102														
15		0				114			-30	10	-20	-30	-30	-40						
16		12				113														
17		24				112														

α or β SCHEDULES

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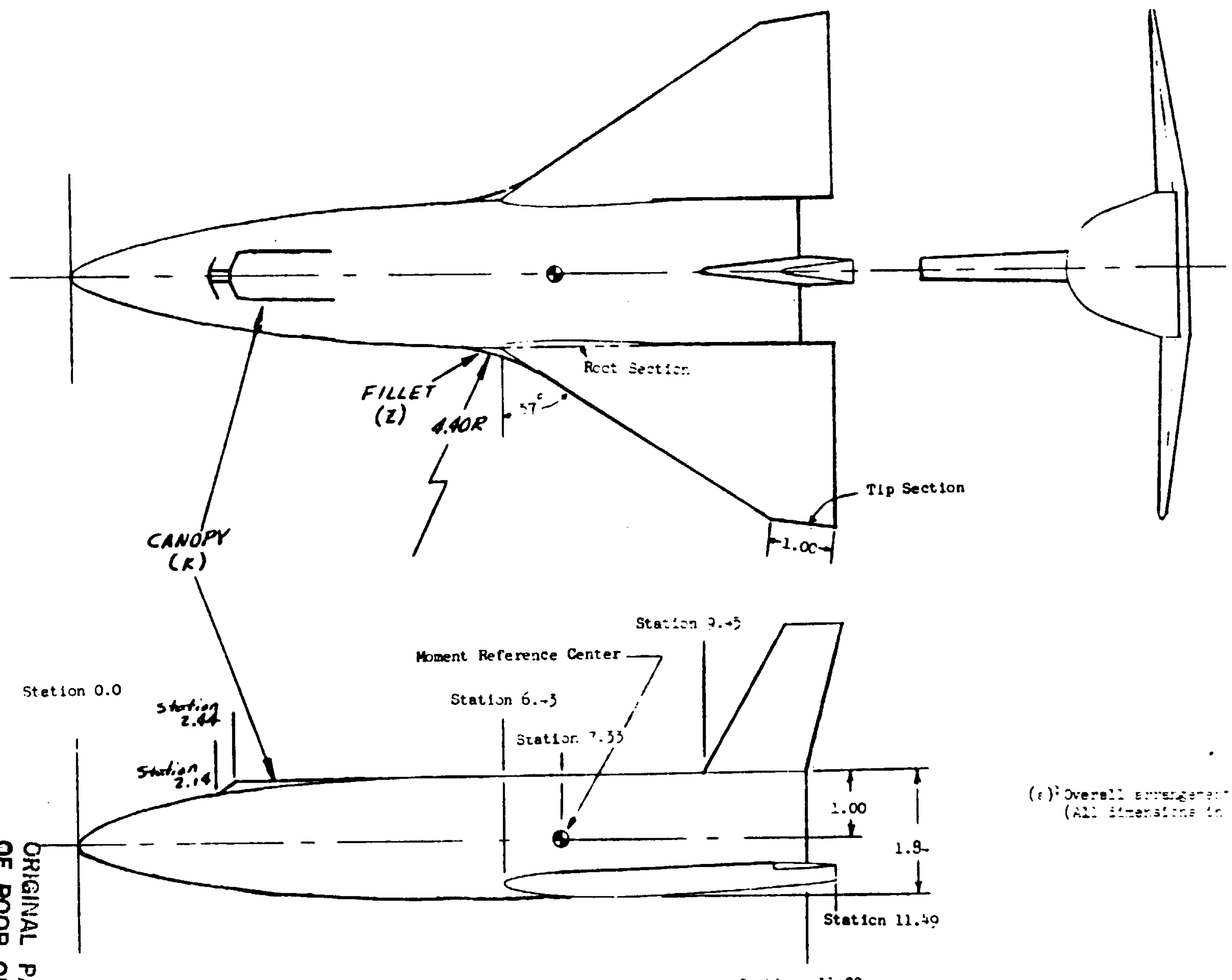

(c) Overall arrangement, B3W2V1.
(All dimensions in inches)

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Figure 2. Model Configuration B3W2V1

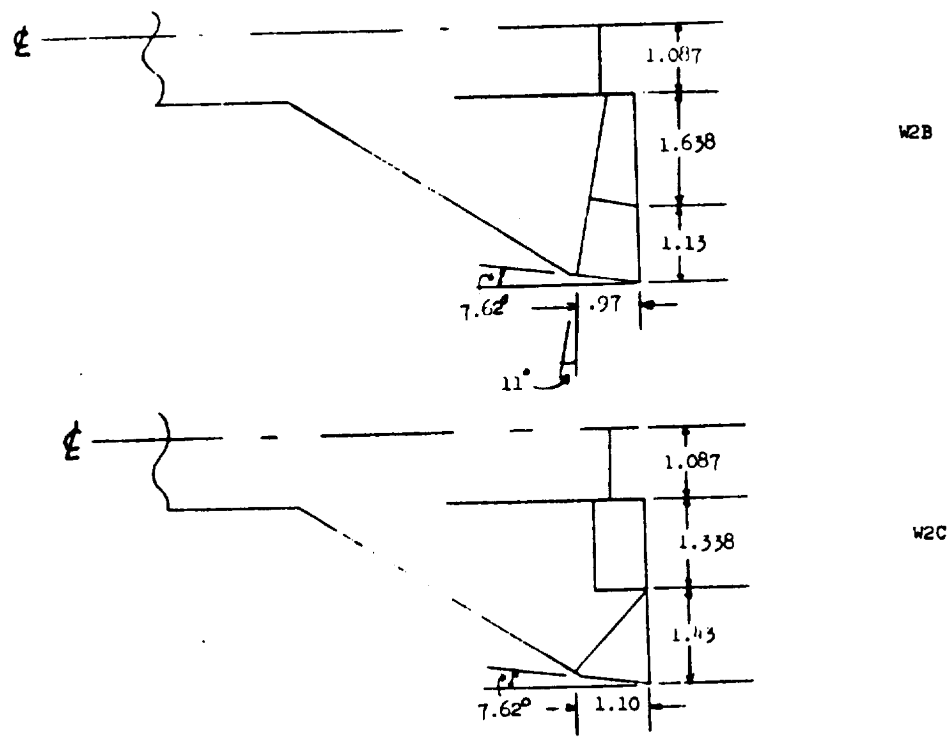

Figure 3. Elevon Arrangements

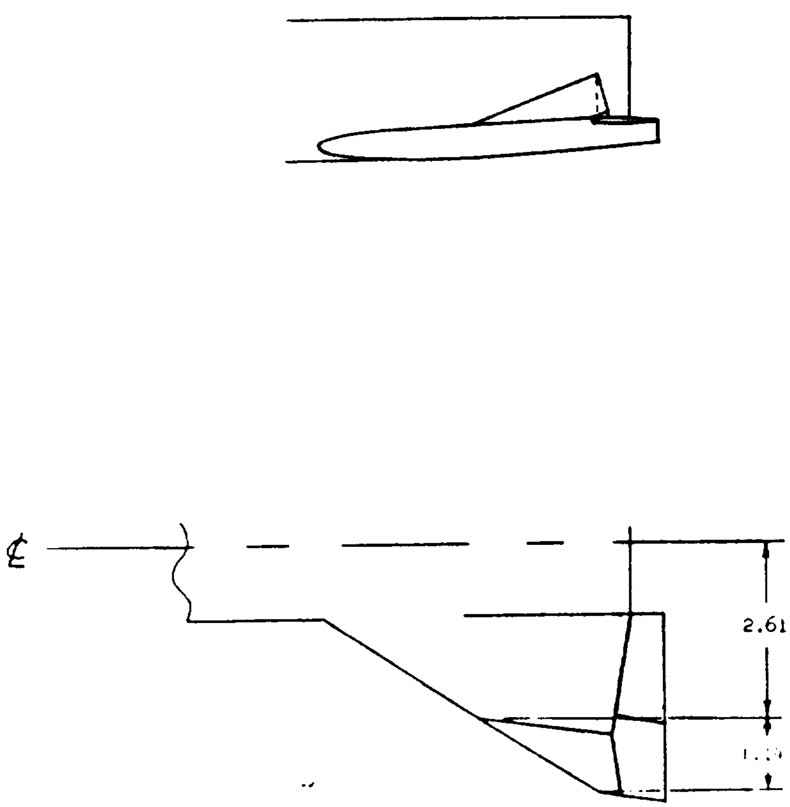

Figure 4. Wing W?B with upper surface flap (Y)

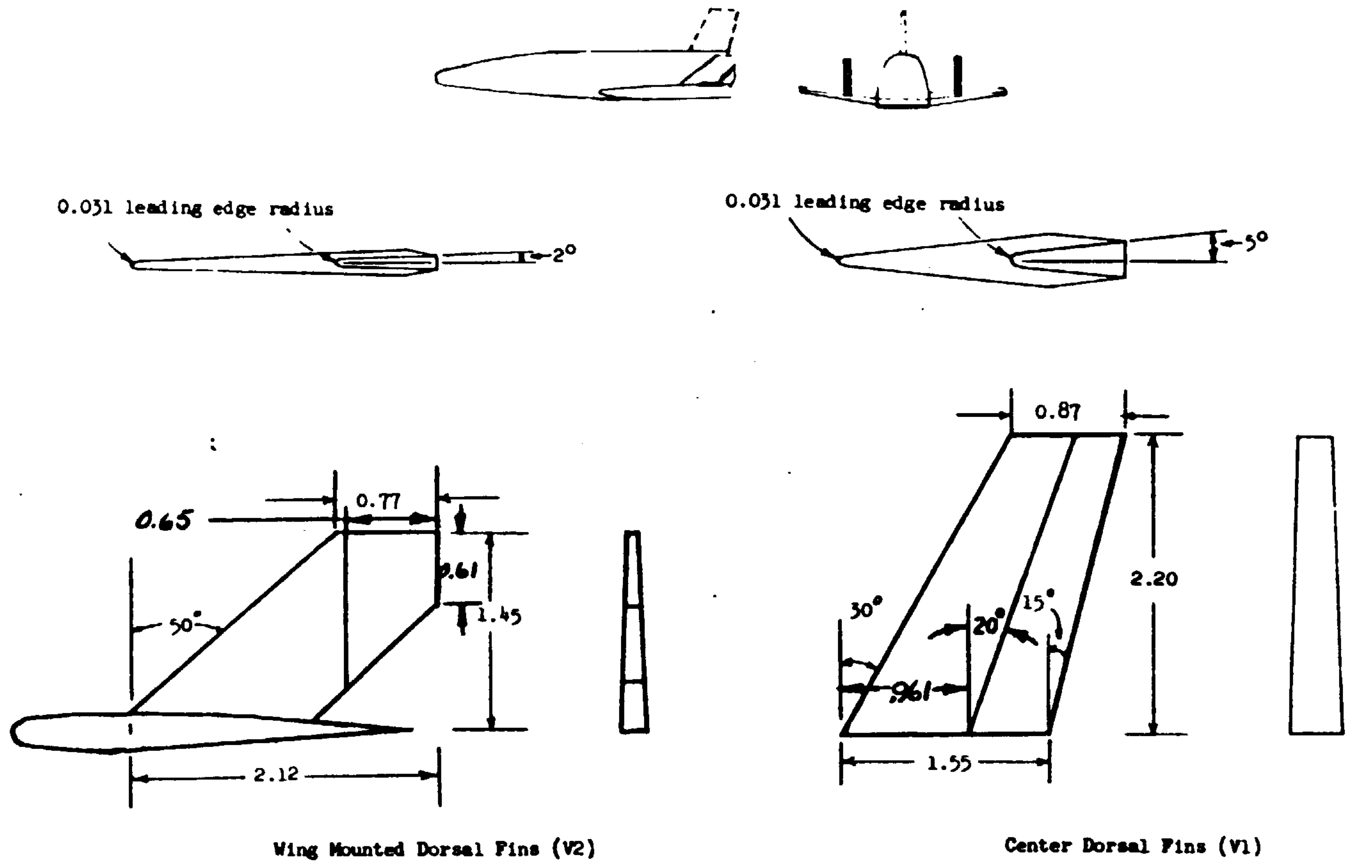

Figure 5. Wing-Mounted Dorsal Fins (V2)

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TABLE I. TEST LTPT - 72 DATA SET/RUN NUMBER

COLLATION SUMMARY

SHEET 1 of 3
☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. a	SCHD. b	δ_{eL}	δ_{eR}	δ_r		NO. of RUNS	2.4	3.9	5.9	7.9	9.7	11.4	14.1
RΦ7001	$B_3W_3V_3$	A	0	0	0	0		7	1	2	3	4	5	6	7
02	B_3W_3			0	0	—		1					8		
03	$B_3W_3V_3$			-10	-10	0		1					9		
04				-10	-20	0		1					10		
05				0	-20	0		1					11		
06				-20	-20	0		1					12		
07				-30	-30	0		1					13		
08				-15	-15	0		1					14		
09				-10	-30	0		1					15		
10				0	-30	0		1					16		
11				0	0	-10		1					17		
12				0	0	-20		1					18		
13				0	0	-30		1					19		
14				0	-20	-30		1					20		
15				-10	-30	-30		1					21		
16				-10	-30	-20		1					22		
17				0	-20	-20		1					23		
18				-10	-20	-20		1					24		
19			0	0	0	0		7	25	26	27	28	29	30	31
20		A	5	0	0	0		7	32	33	34	35	36	37	38

REYNOLDS NUMBERS / FOOT — TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	CN	CA	CLM	CBL	CYN	CY	CAB	L/D		RN/L		

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES A) $-2° \rightarrow 26°$, $\Delta\alpha = 2°$

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TABLE I. TEST LTPT 72 DATA SET/RUN NUMBER

COLLATION SUMMARY

SHEET 2 of 3

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{eL}	δ_{eR}	δ_r		NO. of RUNS	TEST RUN NUMBERS: REYNOLDS NUMBER/FOOT 2.4	3.9	5.9	7.9	9.7	11.4	14.1
RΦ7021	$B_3 W_3 V_3$	A	5	0	0	0		6	44	43	42	41	40	39	
22				-10	-10	0		1					45		
23				-15	-15	0		1					46		
24				-20	-20	0		1					47		
25				-10	-20	0		1					48		
26				-10	-30	0		1					49		
27				-30	-30	0		1					50		
28				0	-30	0		1					51		
29	$B_3 W_3$			0	0	—		1					52		
30	$B_3 N_1 W_1 V_3$			0	0	0		7	53	54	55	56	57	58	59
31	$B_3 N_1 W_1$			0	0	—		1					60		
32	$B_3 N_1 W_1 V_3$			-10	-10	0		1					61		
33				-15	-15	0		1					62		
34				-20	-20	0		1					63		
35				-30	-30	0		1					64		
36			0	-30	-30	0		1					65		
37				-20	-20	0		1					66		
38				-15	-15	0		1					67		
39				-10	-10	0		1					68		
40				0	0	0		1					69		

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

DELTA WING ORBITER
LARC
DR#1229 B-1- 123

TABLE I. TEST LTPT - 72 DATA SET/RUN NUMBER COLLATION SUMMARY

SHEET 3 of 3
☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{eL}	δ_{eR}	δ_r	NO. of RUNS	TEST RUN NUMBERS — REYNOLDS NUMBERS/FOOT 2.4	3.9	5.9	7.9	9.7	11.4	14.1
RØ7041	$B_3N_1W_1V_3$	A	0	0	0	0	7	76	75	74	73	72	71	70
42	$B_3N_1W_1V_3$	A	0	0	0	0	5	81	80	79	78		77	
43	$B_3N_1W_1$	A	0	0	0	—	1					82		

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

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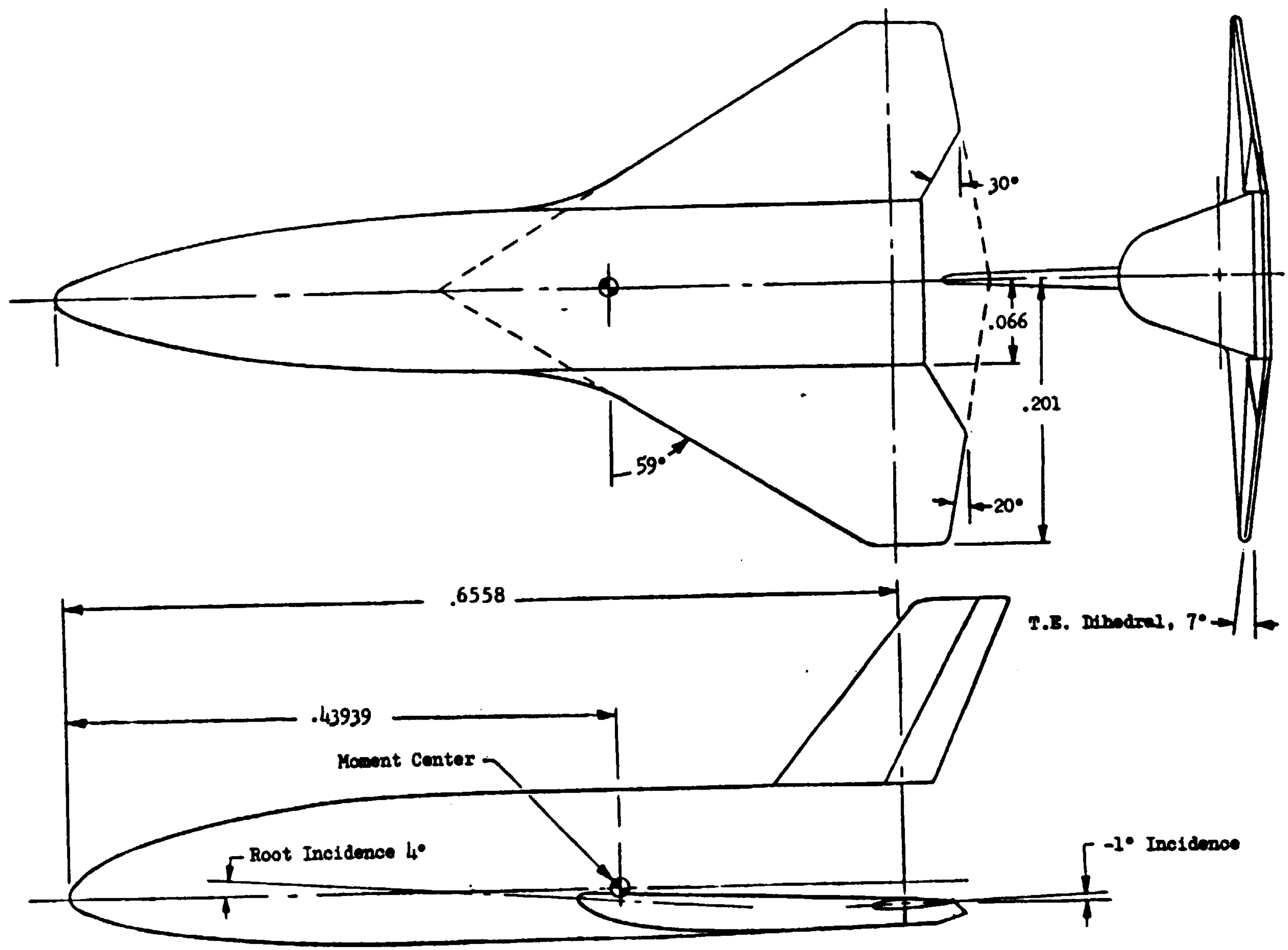

Figure 2.- General arrangement of orbiter with twisted and cambered delta wing. B3N1W1V3. Dimensions are in meters.

DELTA WING ORBITER
LARC
DR#1229 B-1- 125

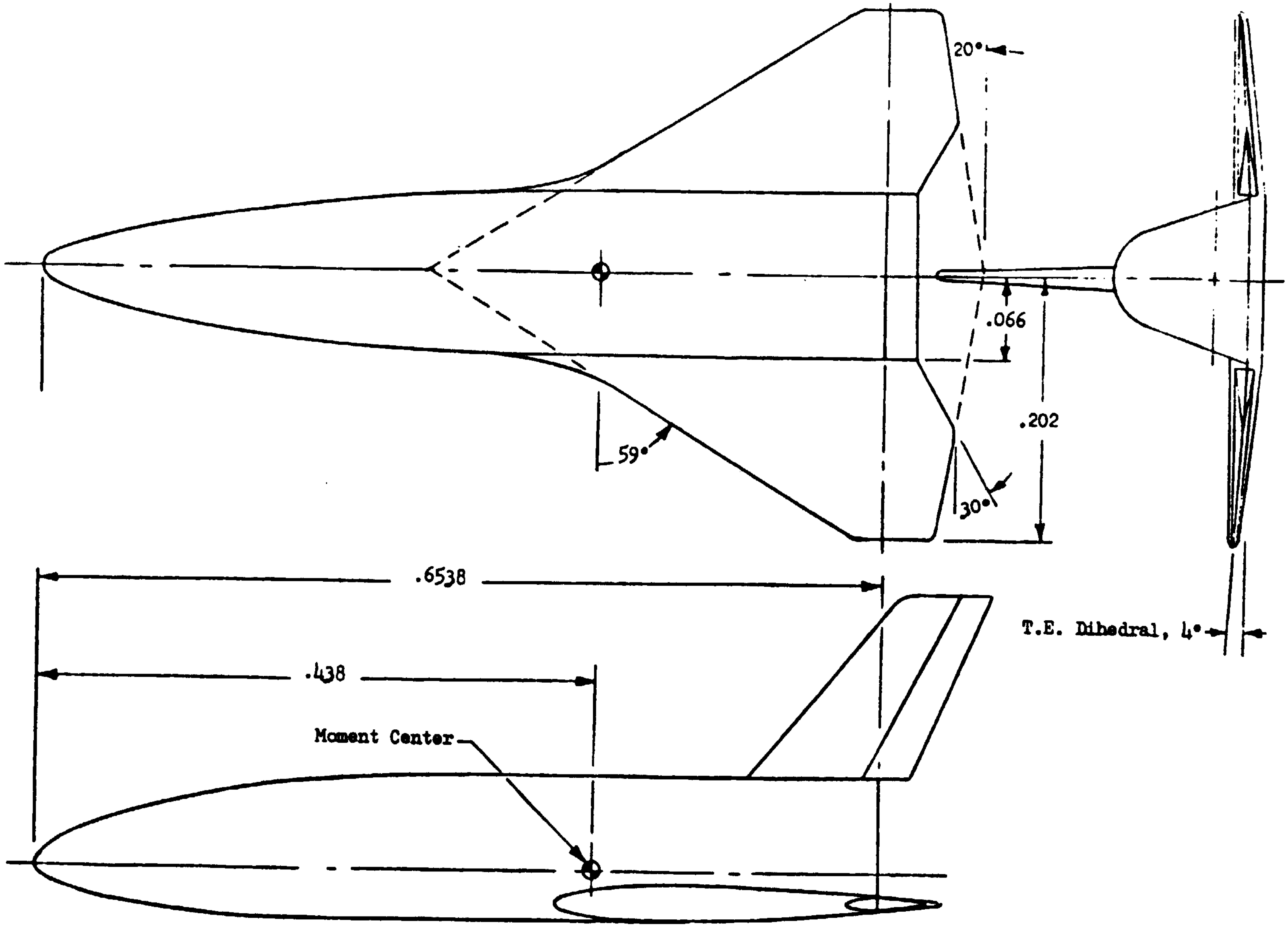

Figure 3.- General arrangement of orbiter with plane wing. B3W3V3. All dimensions are in meters.

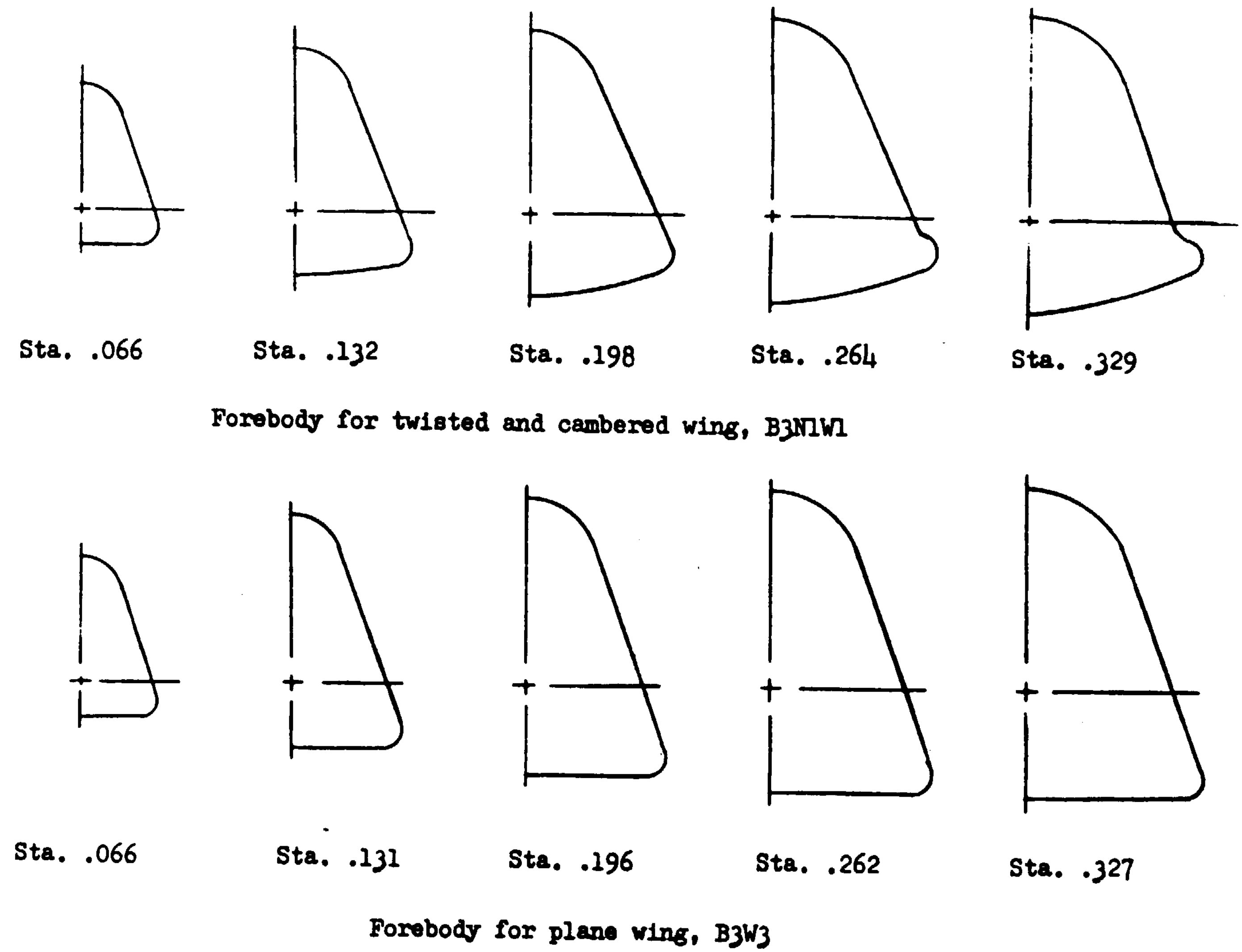

Figure 4.- Model forebody cross-section contours

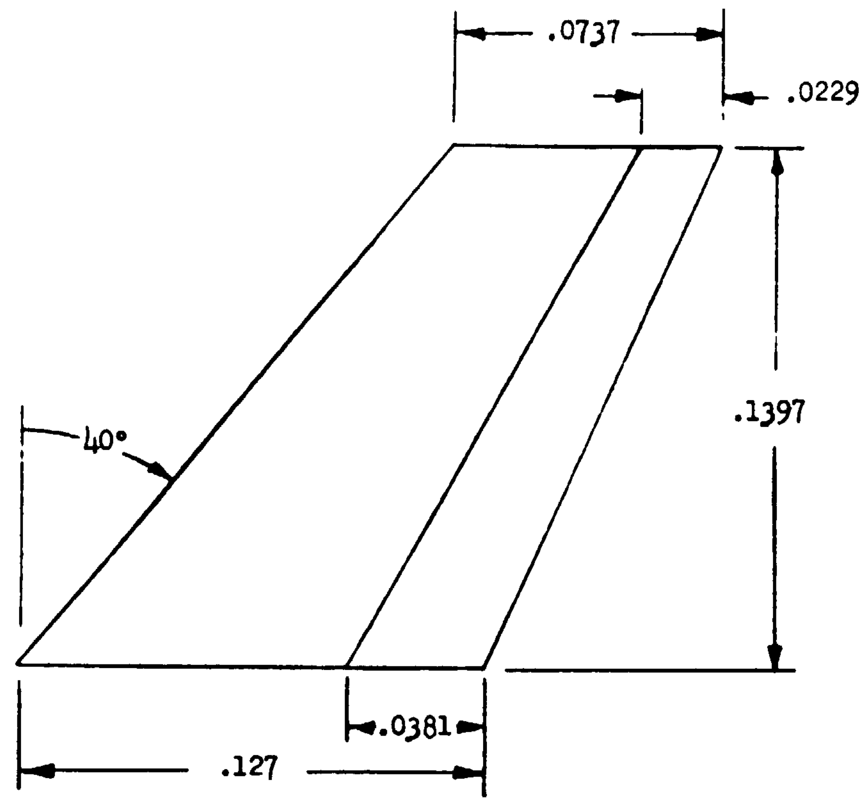

Figure 5.- Vertical tail, V3. Airfoil section 0010-64. All dimensions are in meters.

TABLE II

TEST LTPT 778 UPWT 968 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δPL	δEL	δER	δBF	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.25*	1.5**	2.16**									
RØ9001	B3W2BV1MTP2	A	5	0	0	0	0	1	1											
02	B3W2BV1MT							1	2											
03	B3W2BV1M							1	3											
04	B3W2BV1MTP1							1	4											
05	B3W2BV1MTP3							1	5											
06	B3W2BV1MTP3		0					1	6											
07	B3W2BV1MTP1							1	7											
08	B3W2BV1MTP2							1	8											
09	B3W2BV1MT							1	9											
10	B3W2BV1M							1	10											
11	B3W2BV1MTP1	B	0					2		3	5									
12	B3W2BV1MTP1		5					2		4	6									
13	B3W2BV1MTP2		0					2		7	9									
14	B3W2BV1MTP2		5					2		8	10									
15	B3W2BV1MTP3		0					2		11	13									
16	B3W2BV1MTP3		5					2		12	14									
17	B3W2BV1MT		0					2		15	17									
18	B3W2BV1MT		5					2		16	18									
19	B3W2BV1M		0					2		19	21									
20	B3W2BV1M		5					2		20	22									

1	7	13	19	25	31	37	43	49	55	61	67	75	76
BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D				

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

α or β SCHEDULES

Alpha Schedule : A $-1° \rightarrow 22°$ in $\Delta 2°$

: B $-4° \rightarrow 26°$ in $\Delta 2°$

* FACILITY: LaRC Low Turbulence Pressure Tunnel

** FACILITY: LaRC Unitary Plan Wind Tunnel

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TABLE II (Continued)

TEST LIPT77 & UPWT968 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
		α	β	δ_{AL}	δ_{EL}	δ_{ER}	δ_{AR}		0.25	1.5	2.16									
RΦ9021	B3W2 BV1	B	0	0	0	0	0	2		23	25									
RΦ9022	B3W2 BV1	B	5	0	0	0	0	2		24	26									

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D			

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

α or β SCHEDULES
Alpha Schedule: A $-1° \rightarrow 22°$ in $\Delta 2°$
: B $-4° \rightarrow 26°$ in $\Delta 2°$

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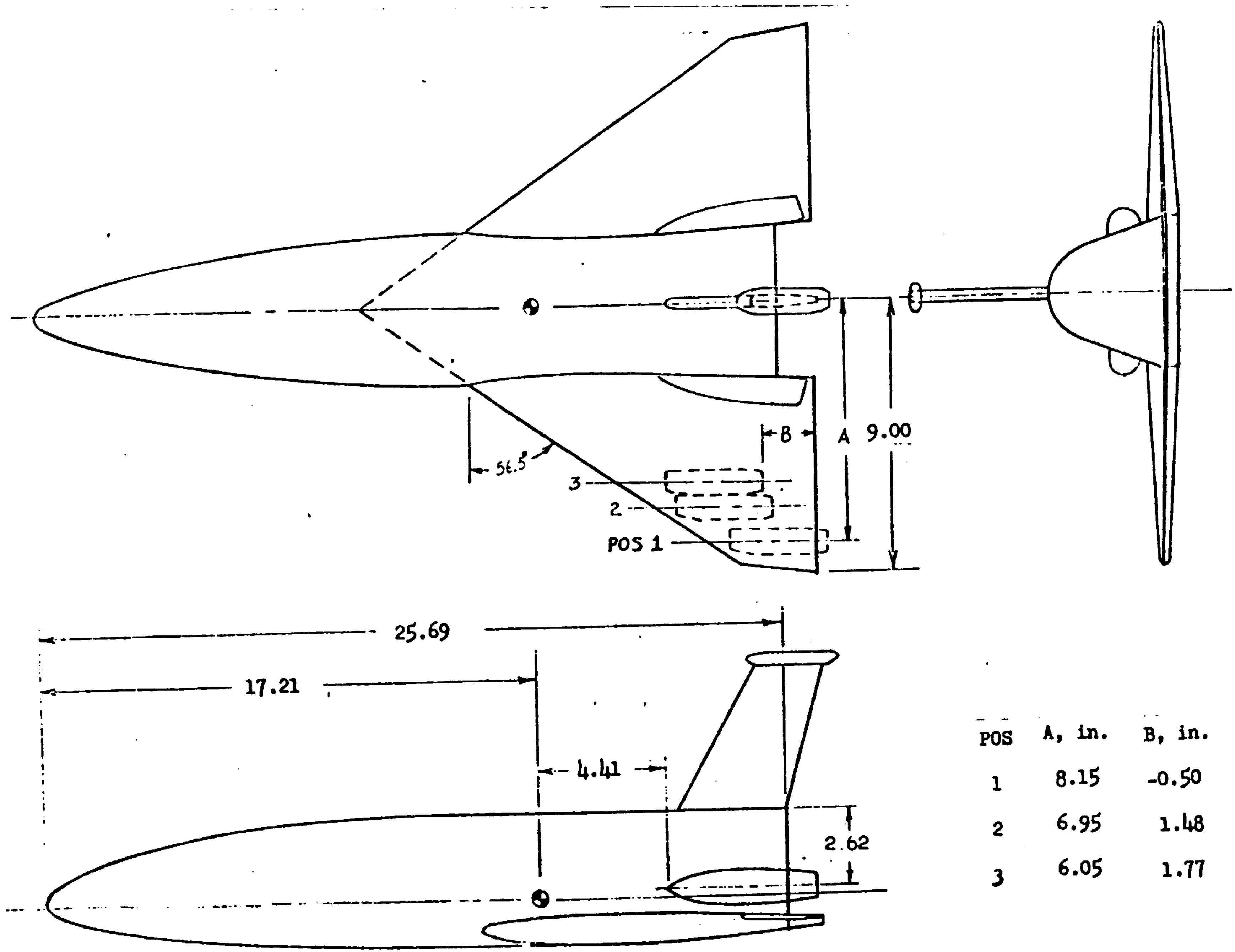
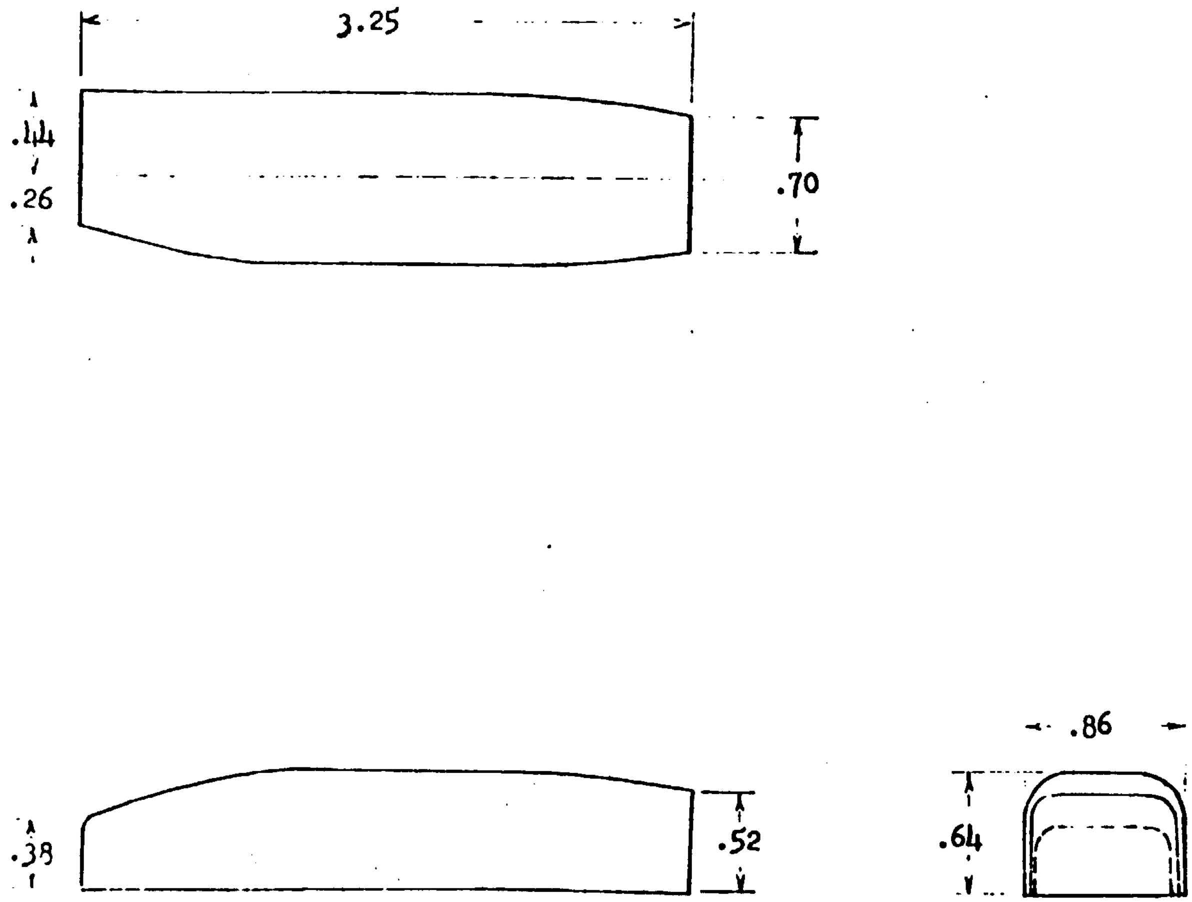


POS	A, in.	B, in.
1	8.15	-0.50
2	6.95	1.48
3	6.05	1.77

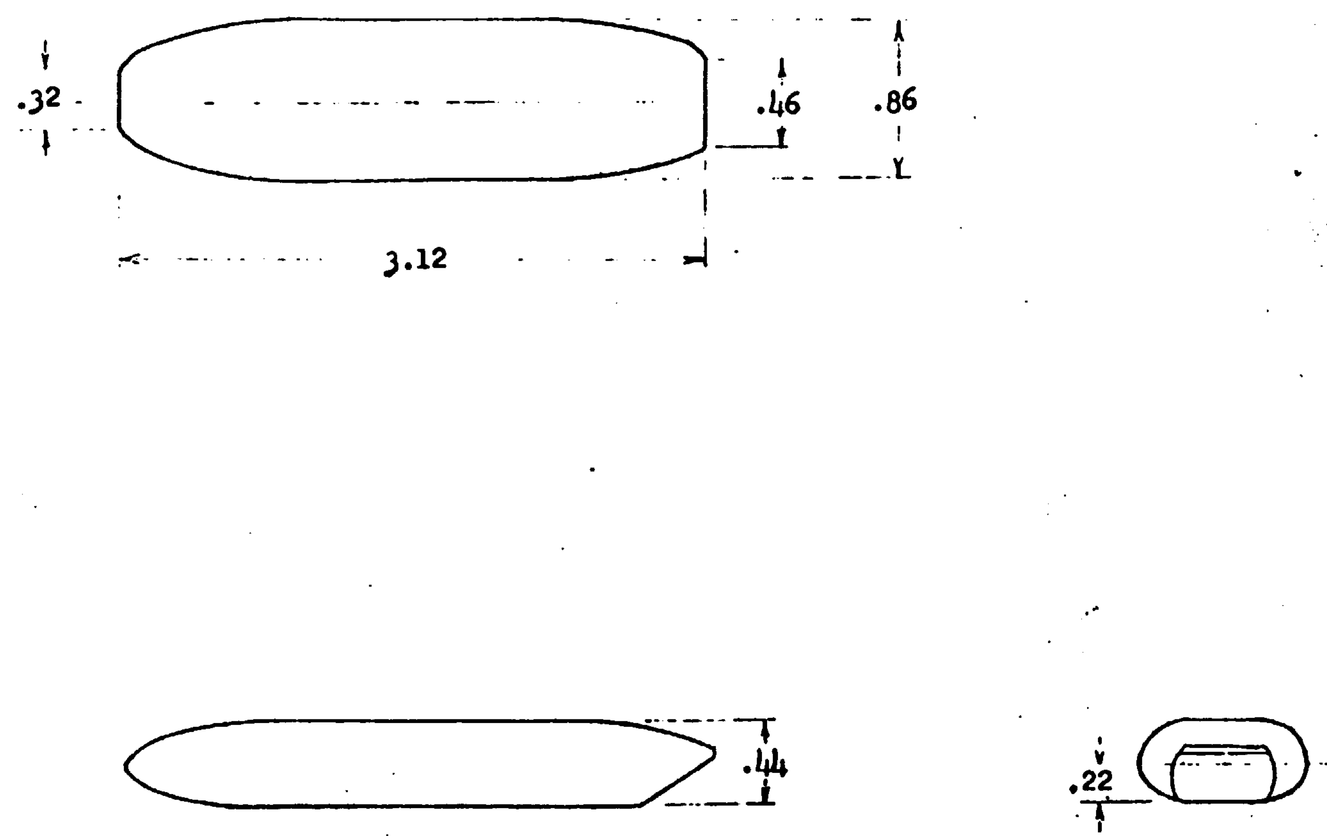
Figure 2.- General arrangement of delta wing orbiter model.
All dimensions are in inches.

DELTA WING ORBITER
LARC
DR#1232 B-1- 131



(a) Wing ACPS pods

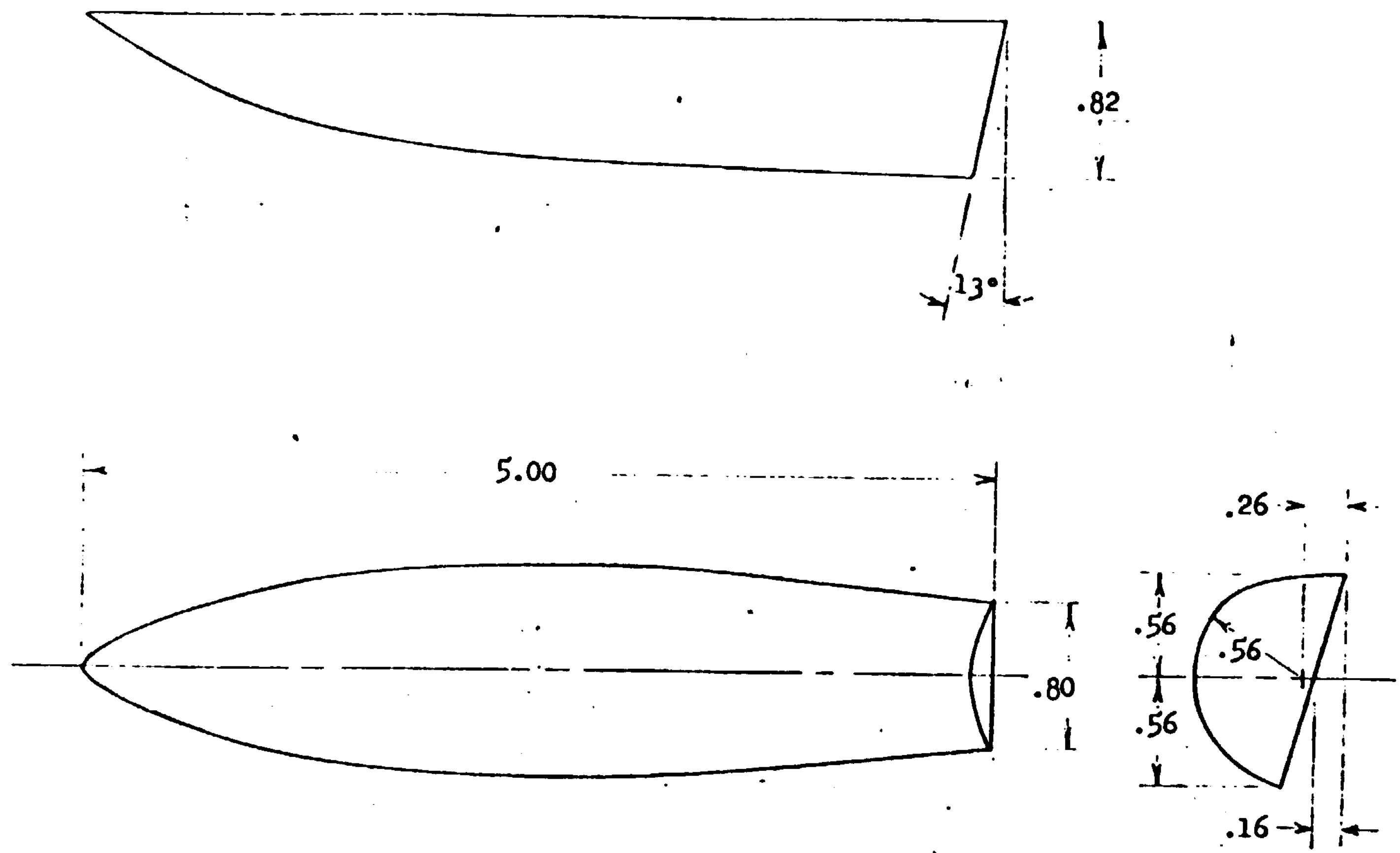
Figure 3.- Model components



(b) Vertical tail ACPS pod.

DELTA WING ORBITER
LARC
DR#1232 B-1- 133

Figure 3.- Continued.



(c) OMS engine pod.

Figure 3.- Concluded.

TABLE II.

TEST LTPT 87 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_{AL}	δ_{EL}	δ_{ER}	δ_{AR}	NO. of RUNS	RN/L 10.4
RQA001	B40W2BV3	A	0°	0	0	0	0	1	1
2	B60 W2BV3			0	0	0	0	1	2
3	B60 W2BV3			-15	-15	-15	-15	1	3
4	B40 W2BV3			-10	-10	-10	-10	1	4
5	B40 W2BV3	B	5°	-10	-10	-10	-10	1	5
6	B60 W2BV3	B	5°	-15	-15	-15	-15	1	6

TEST RUN NUMBERS

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

BETA 10(PSF) CN CA CLM CBL CYN CY CL CD L/D → IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES: αA: -1, 0, 2, 5, 7, 9, 12, 14, 17, 19, 21, 24, 26, 29°
αB: -2, 0, 2, 4, 7, 9, 11, 14, 14, 19, 21, 22

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DELTA WING ORBITER
LARC
DR#1233 B-1- 135

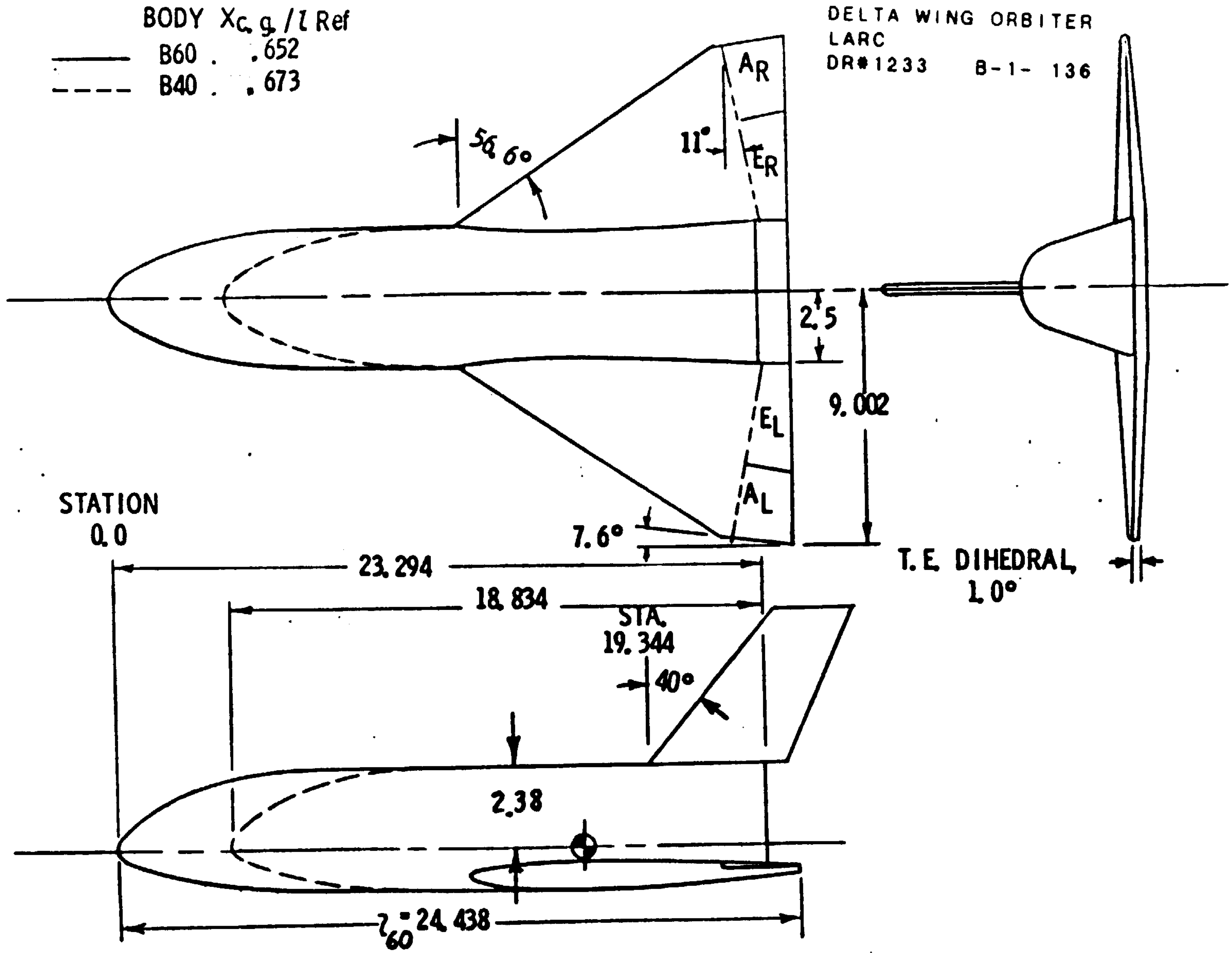

Figure 2. - General arrangement of delta wing orbiter models. All dimensions are in inches.

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TABLE I.

TEST UPWT 970 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{EL}	δ_{ER}	δ_{rf}		NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.5	2.16
RØC 001	$B_3N_1W_1V_3$	A	0	0	0	0°		2	1	5
002			5	0	0				4	8
003			0	-10	-10				9	11
004			5	-10	-10				10	12
005			0	-15	-15				19	20
006			0	-20	-20				21	23
007			5	-20	-20				22	24
008			0	-30	-30	0			31	32
009			0	0	0	30			33	37
010			5	0	0	30			34	38
011			0	-10	-10				13	15
012			5	-10	-10				14	16
013			0	-15	-15				17	18
014			0	-20	-20				25	27
015			5	-20	-20				26	28
016		A	0	-30	-30				29	30
017		0	B	0	0				35	39
018		15				30			36	40
019		0				0			2	6
RØC 020	$B_3N_1W_1V_3$	15	B	0	0	0		2	3	7

TEST RUN NUMBERS

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

BETA | CN | CA | CLM | CBL | CYN | CY | CL | CD | CAB | IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES

A -4, -2, -1, 0, 1, 2, 4, 6, 8, 10, 12, 14, 16, 17 @ M = 1.5
-3, -1, 0, 1, 2, 3, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26 @ M = 2.16

B -4, -2, -1, 0, 1, 2, 4, 6

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DELTA WING ORBITER
LARC
DR#1235 B-1- 137

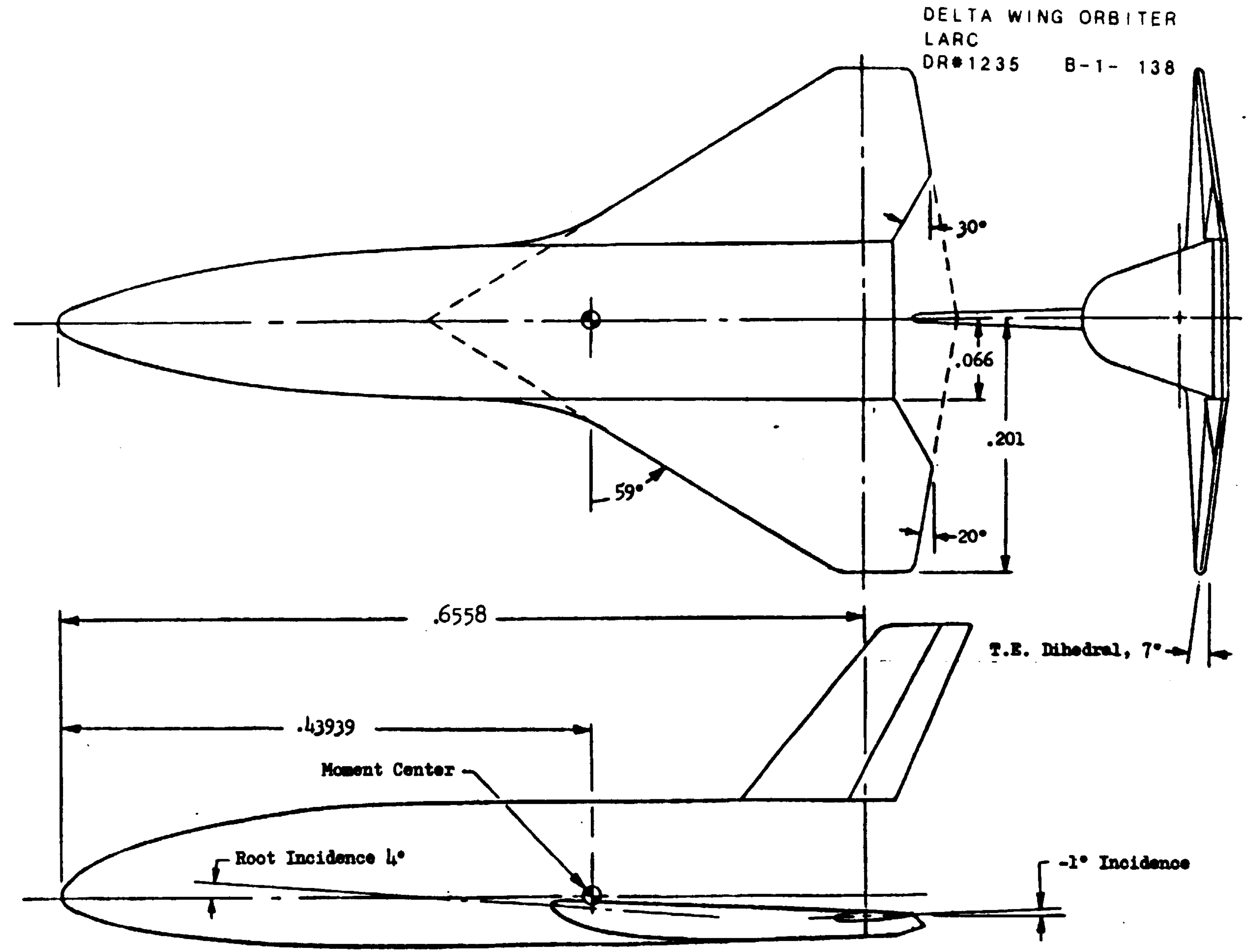

Figure 2.- General arrangement of orbiter with twisted and cambered delta wing. B3N1W1V3. Dimensions are in meters.

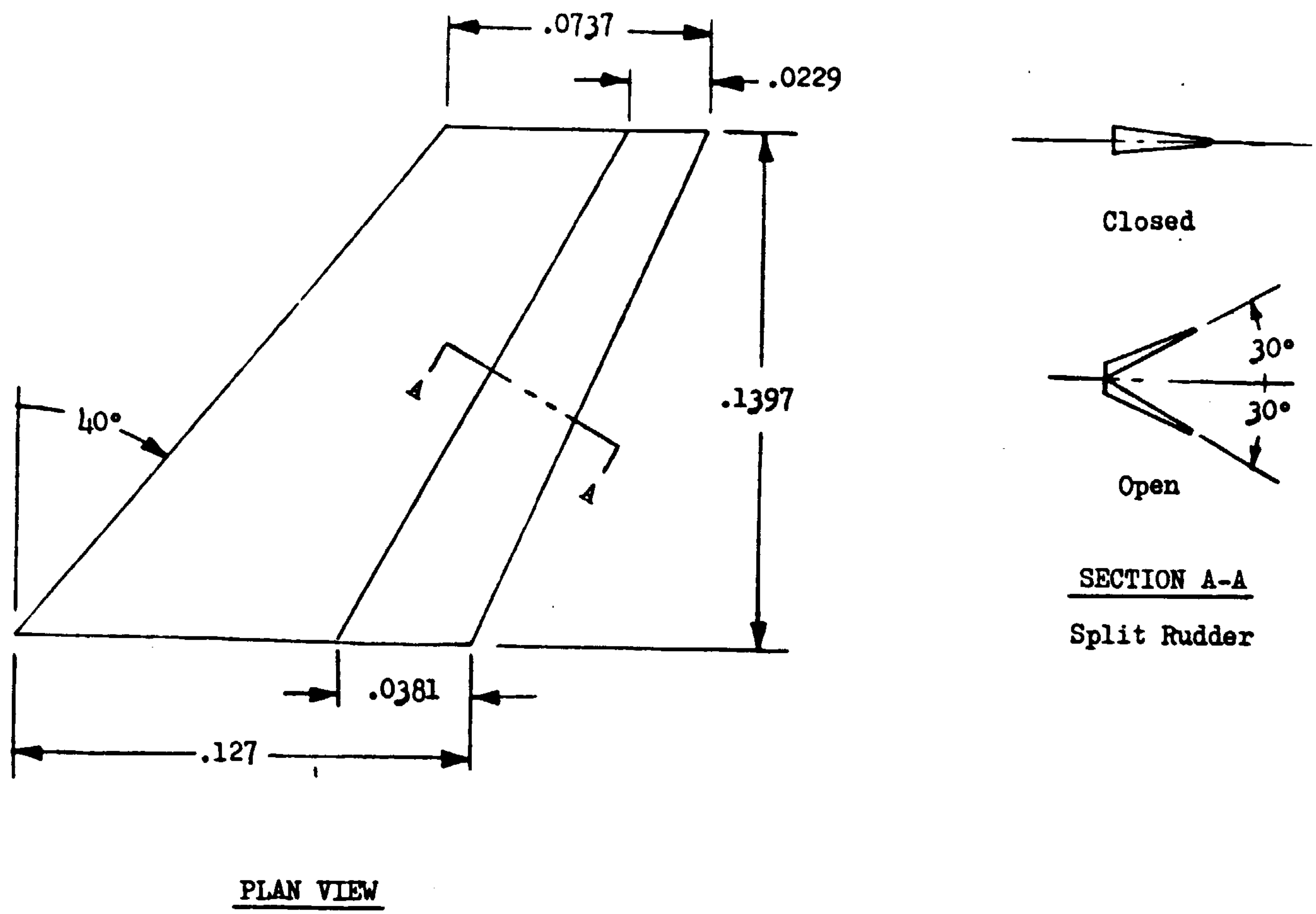

Figure 3.- Vertical tail, V3, and split rudder. All dimensions are in meters.

TABLE I

TEST LTPT-103 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{EL}	δ_{ER}	δ_{FL}	δ_{FR}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δ_F	R_N/L				.25							TEST RUN NUMBERS
RØM001	BW	A	0	-2.5	-2.5	—	—		—	6.0				13							
02	BWV (Pods OFF)			-2.5	-2.5	0	0		—	6.0				12							
03	BWV			0	0	0	0		—	6.0				1							
04				0	0	0	0		—	8.0				2							
05				0	0	0	0		—	10.0				3							
06				0	0	0	0		—	12.0				4							
07				-2.5	-2.5	0	0		—	6.0				8							
08				-5.0	-5.0	0	0		—	6.0				5							
09				-10	-10	0	0		—	6.0				7							
10				-5.	-10.	0	0		—	6.0				6							
11				-2.5	-2.5	-5.0	-5.0		—	6.0				9							
12				-2.5	-2.5	-5.0	5.0		—	6.0				11							
13	BWVF			0	0	0	0		0	6.0				23							
14	BWVF			0	0	0	0		10	6.0				24							
15	BWV1			-2.5	-2.5	0	0		—	6.0				22							
16	BWV2			-2.5	-2.5	0	0		—	6.0				10							
17	BW1			0	0	—	—		—	6.0				20							
18	BW1			0	0	—	—		—	2.0				21							
19	BW1V			0	0	0	0		—	6.0				19							

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D			

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

α or β SCHEDULES: A) -2° → 20°

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TABLE I (continued)

TEST LTPT-103 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{CL}	δ_{ER}	δ_{FL}	δ_{FR}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δ_F	R_N/L			.25						
RΦM021	BW	A	6.0	-2.5	-2.5	—	—		-	6.0			14						
22	BWV	A	6.0	-2.5	-2.5	0	0		—	6.0			16						
23	BWV_1	A	6.0	-2.5	-2.5	0	0		—	6.0			17						
24	BWV_2	A	6.0	-2.5	-2.5	0	0		—	6.0			15						
25	BW_1	A	6.0	0	0	—	—		—	2.0			27						
26	BW_1V	A	6.0	0	0	0	0		—	6.0			25						
27	BW_1V	A	6.0	0	0	0	0		—	2.0			26						
20	BW_1V_2	A	6.0	0	0	0	0		—	2.0			28						

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) $-2° \rightarrow 20°$

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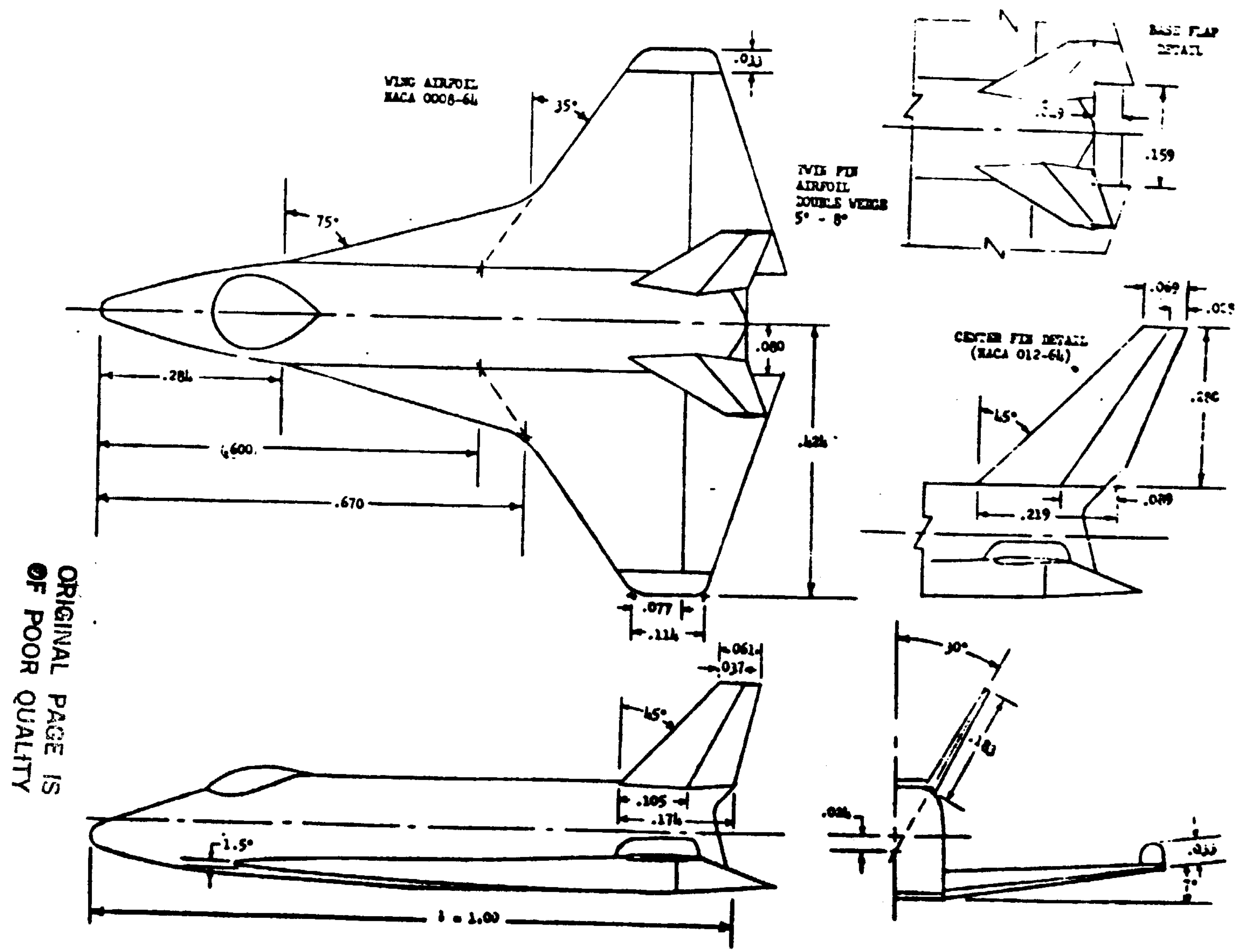

Figure 1. Sketch of Double Delta Orbiter

All dimensions are normalized with respect to body length.
Body length = 62.61 Cm. (24.65 In.)

TABLE II. TEST 22" HE-405 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☐ POSTTEST

ORIGINAL PAGE IS
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DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{el}	CONTROL DEFLECTION δ_{er}			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)	20.3										
RØN001	BW	A	0	0	0					27										
02	BW	B	0	0	0					5										
03	BWV	A	0	0	0					23										
04	BWV	B	0	0	0					11										
05	BWV	A	0	10	10					26										
06	BWV	B	0	10	10					12										
07	BWV	B	0	-10	-10					13										
08	BWV	A	0	-30	-30					25										
09	BWV	B	0	-30	-30					14										
10	BWV	B	0	10	-10					15										
11	BWVR	A	0	0	0					22										
12	BWVR	B	0	0	0					10										
13	BW	A	-4.5	0	0					20										
14	BW	B	-3.2	0	0					4										
15	BWV	A	-4.5	0	0					19										
16	BWV	B	-3.2	0	0					3										
17	BWV	A	-4.5	10	10					18										
18	BWVR	A	-4.5	0	0					21										
19	BWVR	B	-3.2	0	0					2										
20	BWVR	B	-3.2	0	0					1										

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
BETA	CN	CAF	CLM	CBL	CYN	CY	CL	CDF	(L/D)F	MACH	ALPHA	

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

$\alpha A = -5^\circ \rightarrow 17^\circ$

$\alpha B = 18 \rightarrow 55^\circ$

NASA-MSFC-MAF

DELTA WING ORBITER
LARC
DR#1270 B-1-143

TABLE II. TEST 22"He-405 DATA SET/RUN NUMBER COLLATION SUMMARY

DELTA WING ORBITER
LARC
DR#1270 B-1-144

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{eL}	δ_{eR}			NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
										20.3										
RØN021	BWV +T	C	0	0	0					30										
RØN022	BWV +T	C	0	10	-10					31										

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 $\alpha C = -10 \rightarrow 10, \; \Delta\alpha = 2°$

NASA-MSFC-MAF

Note: All dimensions are model scale, inches

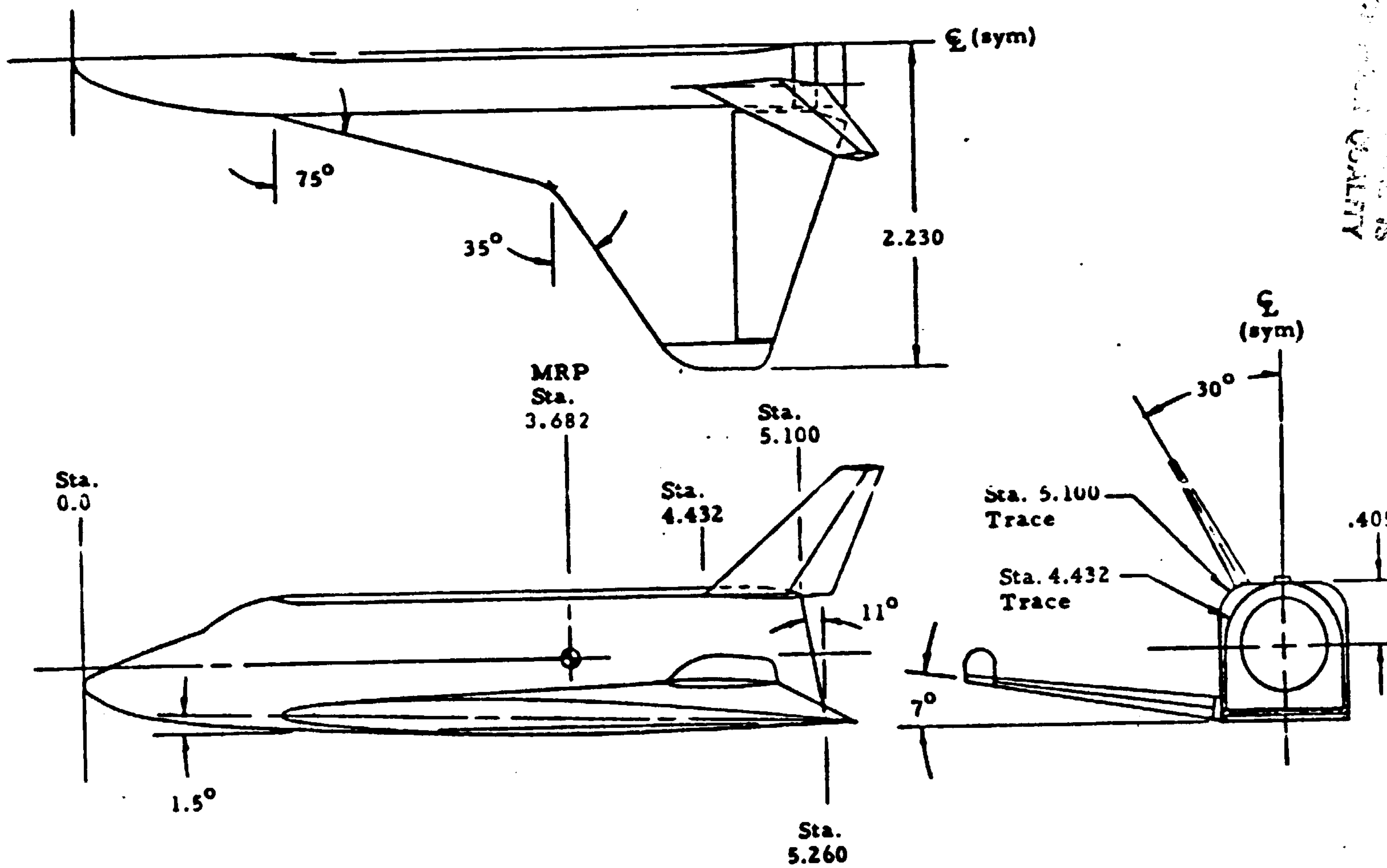

Fig. 2 - General Arrangement, Space Shuttle Orbiter

Note: All Dimensions in inches (model scale)

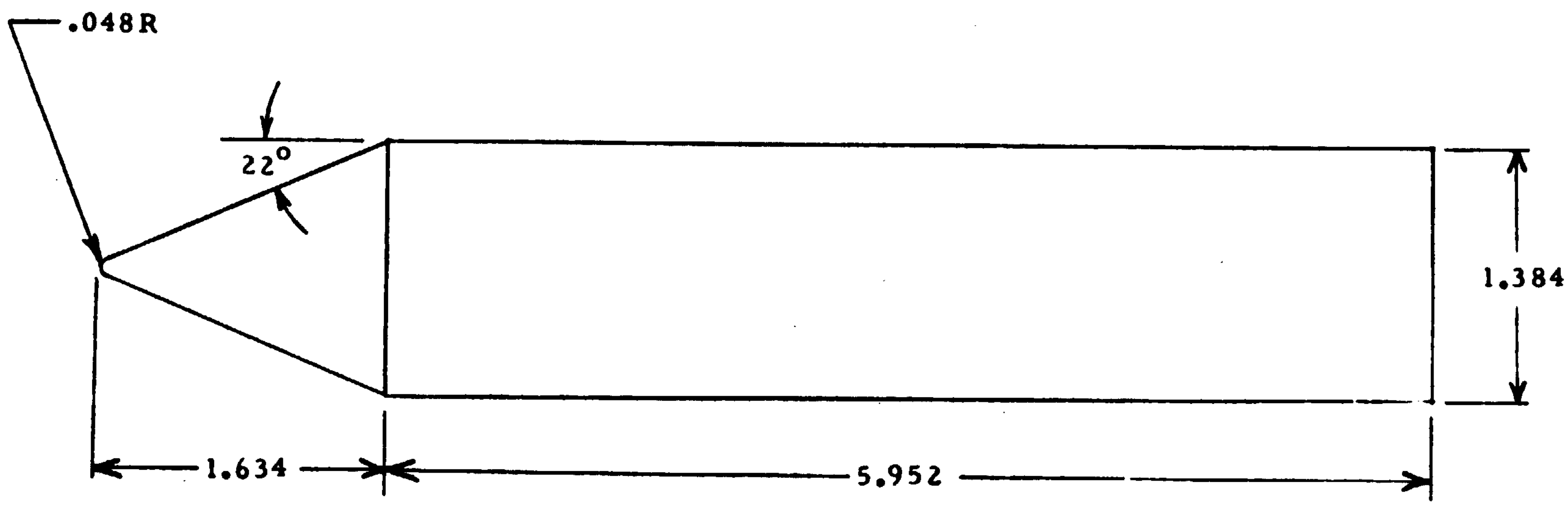

Figure 3. Hydrogen-Oxygen Centerline Tank

Note: All dimensions in inches (model scale)

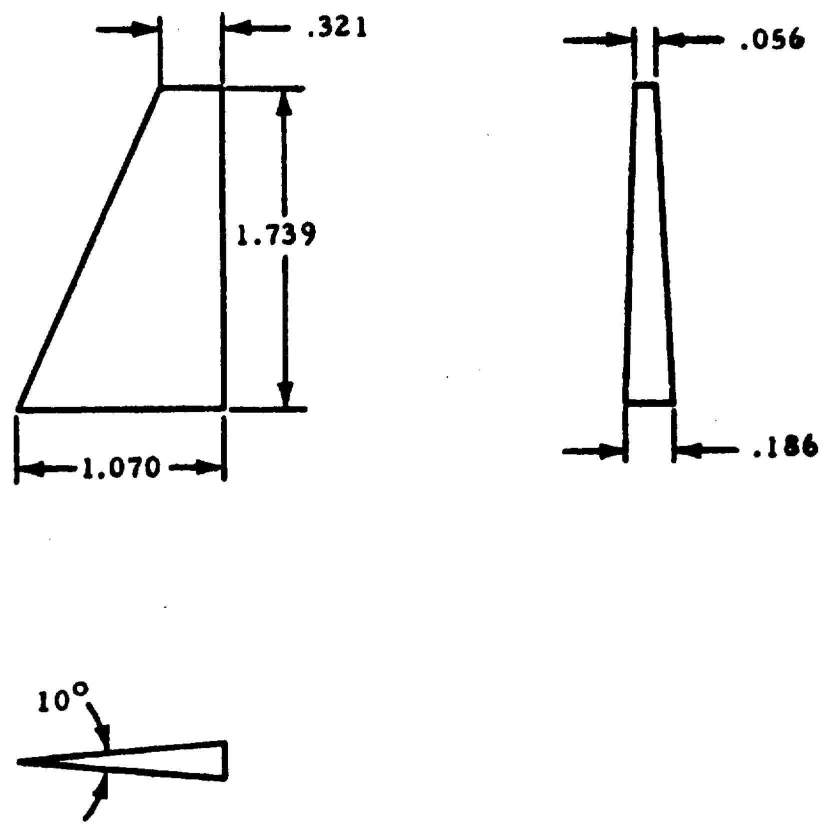

Fig. 4 - HO Tank Ventral Fin

TABLE II.

TEST: CFHT 85

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE Aug., 1972 & Nov., 1972

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_a	δ_{BF}		NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 10.3
ROZ001	LO-100	A	0	+5	0	OFF		1	73
02				0					65
03				-20					68
04			0	-40					70
05			-5	+5					74
06				0					66
07				-20					69
08			-5	-40	0	OFF			71
09			0	0	0	0			96
10				-10	0	0			99
11				0	0	-18			94
12			0	-10	+10	0			101
13			-5	0	0	0			97
14				-10	0	0			100
15				0	0	-18			95
16		A	-5	-10	+10	0			102
17		15	B	0	0	OFF			67
18		15	B	-40	0	OFF			72

TEST RUN NUMBERS

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

IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

COEFFICENTS

ALPHA SCH A: 0, 5, 10, 15, 20, 25, 30

BETA SCH B: 1, 0, -1.5, -3.5, -5

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TABLE II. (Continued)

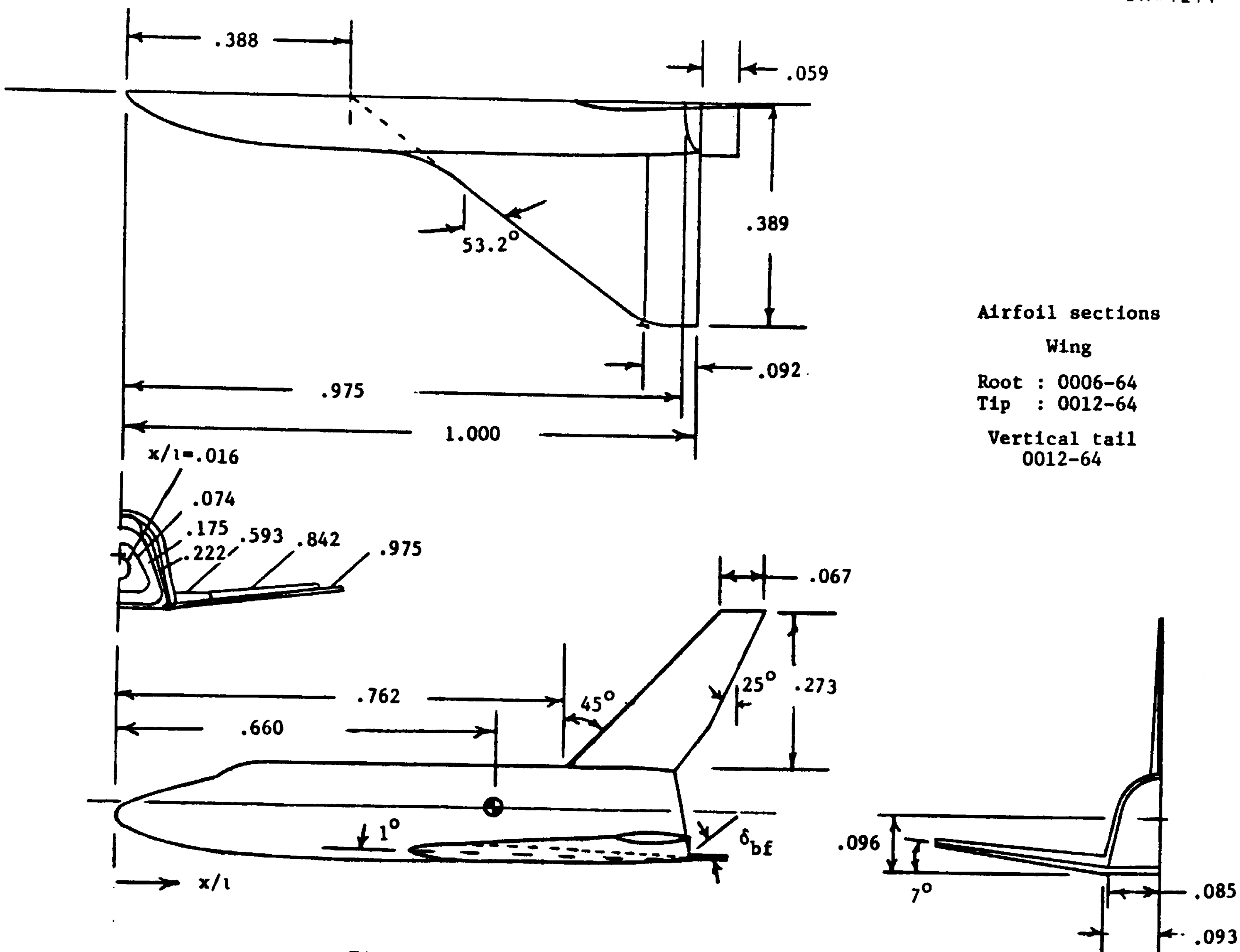
TEST: FHT 85	DATA SET/RUN NUMBER COLLATION SUMMARY								DATE Aug., 1972 & Nov., 1972									
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)									
		α	β	δe	δa	δ_{BF}				10.3								
ROZ019	LO-100	25	B	0	0	0		1		98								

TEST RUN NUMBERS

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

COEFFICENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES



Airfoil sections

Wing

Root : 0006-64
Tip : 0012-64

Vertical tail
0012-64

Figure 2. - General arrangement of LO-100 orbiter.

TEST TWT 494 DATA SET COLLATION SHEET

1 of 3

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe_1	δe_2	δr_3	δr_2	NO. of RUNS	PARAMETERS/VALUES δa	—	—	—	MACH NUMBERS 0.4	0.6	0.7	0.9	1.1	[illegible]	[illegible]	5.0
R3601A	BIWIVIEI	A	0	0	0	0	—	7	0				001/0	002/0	003/0	004/1	005/1	083/0	—	103/0
01B	"	B	0	"	"	"	"	8	"				054/0	053/0	055/0	057/0	056/0	082/0	086/0	104/0
01C	"	C	0	"	"	"	"	8	"				074/0	075/0	076/0	077/2	078/1	081/0	097/0	098/0
01D	"	C	D	"	"	"	"	8	"				022/0	023/0	024/0	025/0	026/0	084/0	085/0	106/0
01G	"	20	G	"	"	"	"	4	"					052/0		051/0			093/0	105/0
R3602A	BIWIVIEI	A	0	+10	"	"	"	2	"					007/0		006/0			—	—
02B	"	B	0	"	"	"	"	4	"					059/0		058/0			092/0	101/0
03A	"	A	0	-10	"	"	"	2	"					008/0		009/0			—	—
03B	"	B	0	"	"	"	"	4	"					060/0		061/0			088/0	100/0
03C	"	C	0	"	"	"	"	4	"					080/0		079/0			095/0	099/0
04A	"	A	0	-20	"	"	"	2	"					011/0		010/0			—	—
04B	"	B	0	"	"	"	"	4	"					063/0		062/0			089/0	102/0
05A	"	A	0	-30	"	"	"	2	"					012/0		013/0			—	—
05B	"	B	0	"	"	"	"	4	"					064/0		065/0			090/0	103/0
R3606A	BIWIVIEI	A	0	0	"	"	"	2	+10					015/0		014/0			—	—
06B	"	B	0	"	"	"	"	3	"					067/0		066/0			091/0	—
07A	"	A	0	"	"	"	"	2	+20					016/0		017/0			—	—
07B	"	B	0	"	"	"	"	3	"					068/0		069/1			097/0	—
R3608A	BIWIVIEIE2	A	0	"	10	"	"	2	0					019/0		018/1			—	—
08B	"	B	0	"	"	"	"	2	"					071/0		070/0			—	--

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

CLM CN CY CBL CYN BETA CAB CPB1 CPB2 CA | 10

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

α or β SCHEDULES

α: A = -4, -2, 0, 2, 4, 6, 8, 10

B = 10, 12, [illegible] 20, 22, 24, 26, 28, 30

C = [illegible]

β: D = -6, -3, 0, 3, 6, 9 @ α = 0 ; G = -6, -3, 0, 3, 6, 9 @ α = 20

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DELTA WING ORBITER
LMSC
DR#1153 B-1-151

24
24
56
40
13
157

TEST TWT 494 **DATA SET COLLATION SHEET**

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe1	δe2	δa3	δa3	NO. of RUNS	PARAMETERS/VALUES δa	—	—	—	MACH NUMBERS 0.4	0.6	0.7	0.9	1.1	~~1.46~~	1.96 2.0	2.96 5.0
R36009A	B1W1V1E1E2	A	0	0	20	0	—	2	0					020/0		021/0			—	—
09B	"	E	0	"	"	"	"	2	"					072/0		073/0			—	—
R3610D	B1W1V1E1R3	0	D	"	0	+10	"	2	"					028/0		027/0			—	—
10G	"	20	G	"	"	"	"	2	"					049/0		050/0			—	—
11D	"	0	D	"	"	+20	"	2	"					029/0		030/0			—	—
11G	"	20	G	"	"	"	"	2	"					048/0		047/0			—	—
R3612D	B1W1V3D2E1R2	0	D	"	"	—	0	2	"					032/0		031/0			—	—
12G	"	20	G	"	"	"	"	2	"					045/0		046/0			—	—
13D	"	0	D	"	"	"	+10	2	"					036/0		035/0			—	—
13G	"	20	G	"	"	"	"	2	"					041/0		042/0			—	—
14D	"	0	D	"	"	"	+20	2	"					037/0		039/0			—	—
14G	"	20	G	"	"	"	"	2	"					040/0		038/0			—	—
R3615D	B1W1V3E1	0	D	"	"	"	—	4	"					033/0		034/0			096/0	101/0
15G	"	20	G	"	"	"	"	4	"					044/0		043/0			092/0	101/0
R3616E	B1W1V1E1	E	0	"	"	0	"	6	"					135/0	143/0	136/0	137/0		122/1	110/0
16F	"	0	F	"	"	"	"	6	"					131/0	142/0	132/0	132/1		124/0	116/0
R3617E	B1W1V1E1	E	0	+10	"	"	"	4	"					145/0	—	144/0	—		126/0	111/0
18E	"	E	0	-10	"	"	"	4	"					140/0	—	148/0	—		127/0	113/0
19E	"	E	0	-20	"	"	"	3	"					150/0	—	151/0	—		128/0	—
19H	"	H	0	"	"	"	"	1	"					—	—	—	—		—	114/0

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

CLM CN CY CBL CYN BETA CAB CPB1 CPB2 CA | 10

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

α or β SCHEDULES
α: E = -4, -2, 0, 2, 4, 6, 8, 10, 12, 14
H = -4, -2, 0, 2, 4, 6, 8, 10, 12
β: F = -4, -2, 0, 2, 4, 6, 8 @ α = 0

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TEST TWT 494 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	PARAMETERS/VALUES				MACH NUMBERS							
		α	β	δe1	δe2	δa3	δa2		δa	—	—	—	0.4	0.6	0.7	0.9	1.1	~~1.46~~	1.96 2.0	[illegible]
R3620E	B1W1V1E1	E	0	0	0	0	—	4	+10					146/0		147/0			129/0	112/0
21E	"	E	0	"	"	"	"	4	+20					153/0		152/0			131/0	115/0
R3622F	B1W1V3D2E1R2	0	F	"	"	—	0	4	0					154/0		155/0			123/0	117/0
23F	"	0	F	"	"	"	+10	4	"					157/0		156/0			122/0	118/0
R3624E	B1W1V3E1	E	0	"	"	"	—	4	"					139/0		138/0			120/0	130/1
24F	"	0	F	"	"	"	"	4	"					140/0		141/0			121/0	119/0

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

CLM CN CY CBL CYN BETA CAB CPB1 CPB2 CA | 10

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

α or β SCHEDULES

α: E = -4, -2, 0, 2, 4, 6, 8, 10, 12, 14

O = 0, 4, 9, 14

β: F = -4, -2, 0, 2, 4, 6, 9 @ α = 0

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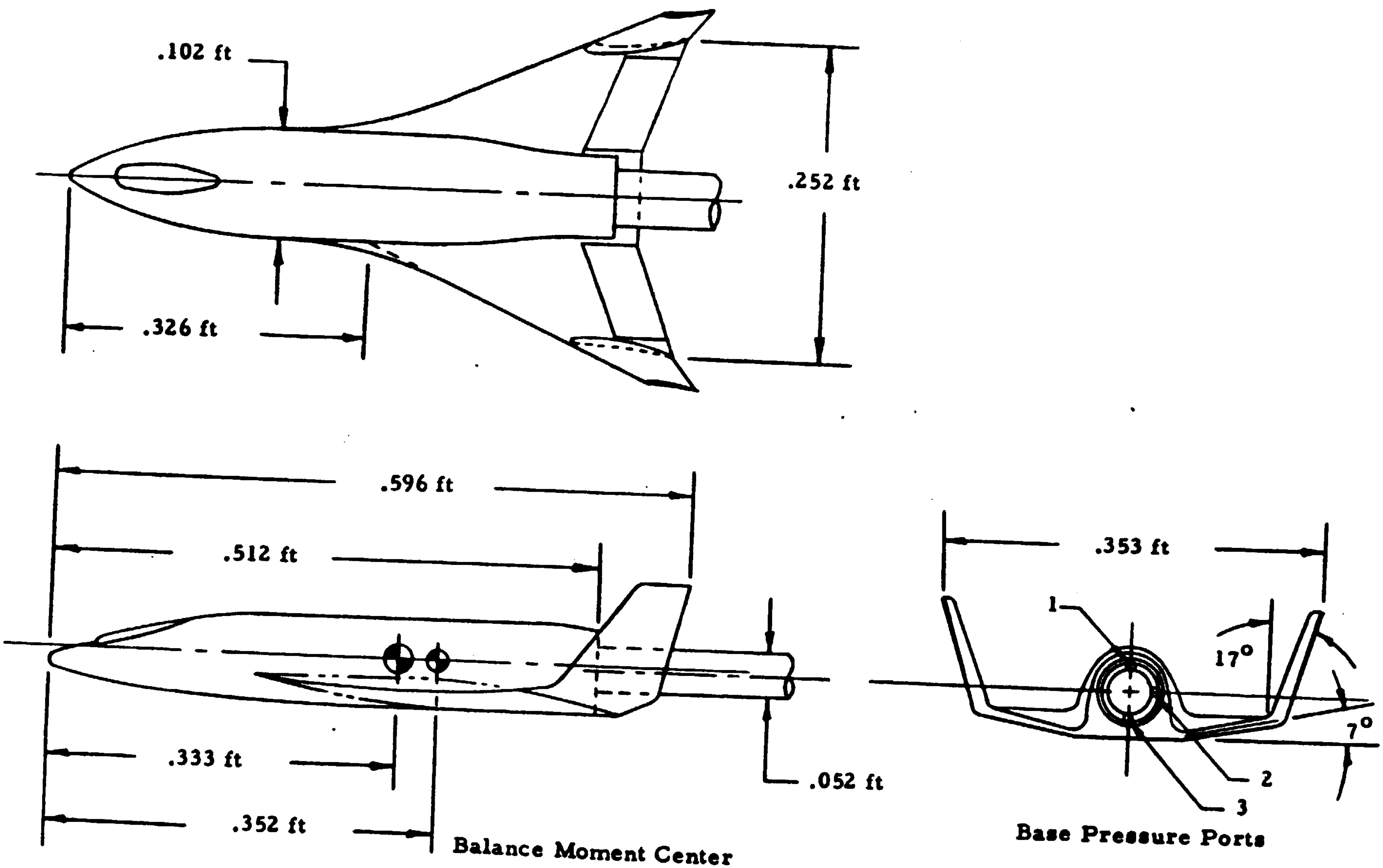
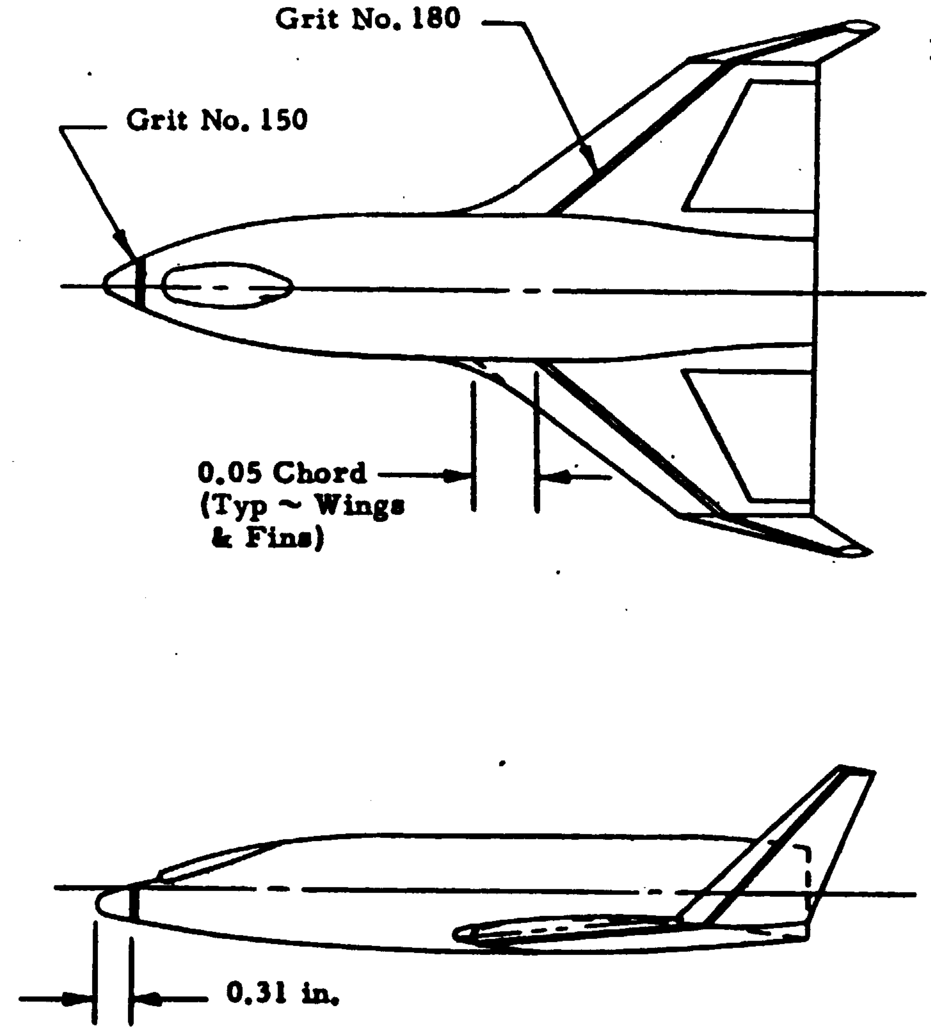


Fig. 2 - General Arrangement – Orbiter Model 1 (Baseline)



Note: Grit is Carborundum.
All Strips are 1/8
in. Wide

Fig. 4 - Typical Transition Grit Installation on Body, Wings and Fins

DELTA WING ORBITER
LMSC
DR#1201 B-1- 156

☐ PRETEST
☒ POSTTEST

TABLE II. TEST TWT 498 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe3	δn1	δn2	δn4	NO. of RUNS	PARAMETERS/VALUES δaL	δaR			MACH NUMBERS 0.6	0.7	0.9	1.1	1.46	1.96	4.96	
R4101A	B2W2V4D2e3n2	A	0	0	-	0	-	7	0	0			121/0	122/0	123/0	124/0	145/0	154/0	004/0	
01B		B	0					7					143/0	142/0	140/0	141/0	144/0	155/0	022/0	
01C		C	0					6					174/0	175/0	176/0		168/0	156/0	315/0	
01D		D	0					2										157/0	324/0	
01X		0	X					7					120/0	119/0	118/0	117/0	146/0	153/0	012/0	
01Y		10	Y					7					225/0	224/0	227/0	223/0	310/0	304/0	021/0	
01Z		15	Z					7					238/0	239/0	240/0	241/0	311/0	300/0	024/0	
R4102A		A	0	+10				5					127/0		126/0	125/0		290/0	002/1	
02B		B	0					4					243/0		242/0			259/0	029/0	
03A		A	0	-10				5					132/0		130/0	131/0		297/0	004/2	
03B		B	0					4					138/0		139/0			292/0	031/0	
03C		C	0					2										167/0	316/0	
03D		D	0					2										164/0	325/0	
04A		A	0	-20				5					133/0		134/0	135/0		293/0	005/0	
04B		B	0					4					137/0		136/0			286/0	026/0	
04C		C	0					2										166/0	217/0	
04D		D	0					2										165/0	324/0	
05A		A	0	-30				4					181/0		182/0			294/0	008/0	
05B		B	0					4					248/0		249/0			285/0	027/0	
R4106A		A	0	0				4	-10	+10			128/0		129/0			296/0	003/0	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CAF	CAB	CPB1	CPB2	CA			10

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

α or β SCHEDULES

αA = -4,-2,0,2,4,6,8,10; αB = 6,8,10,12,14,15,17,19,21,23,25;

αC = 20,22,24,26,28,30,32,34,36,38,40; αD = 40,42,44,46,48,50,52,54,56,58,60

βX = -4,-2,0,2,4,6,8,10 OR -9,-6,-3,0,3,6,9 @α=0; βY @α=10; βZ @α=15

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7/ TABLE II. TEST TWT 498 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe3	δe1	δe2	δe4	NO. of RUNS	PARAMETERS/VALUES δaL	δaR			MACH NUMBERS 0.6	0.7	0.9	1.1	1.46	1.96	4.96	
R4106B	B2W2V4D2e3ν2	B	0	0	—	0	—	4	-10	+10			244/0		245/0			283/0	030/0	
07A		A	0					4	-20	+20			188/0		187/0			292/0	006/0	
07B		B	0					4					252/0		253/0			287/0	033/0	
R4108A		A	0	+10				4	0				189/0		190/0			298/0	007/0	
08B		B	0					1											034/0	
09A		A	0					4	-10	+30			192/0		191/0			291/0	011/0	
09B		B	0					4					251/0		250/0			288/0	032/0	
10A		A	0	-10				4	-20	0			185/0		186/0			299/0	010/0	
10B		B	0					1											035/0	
11A		A	0					4	-30	+10			184/0		183/0			295/0	009/0	
11B		B	0					4					247/0		246/0			284/0	028/0	
R4112X		0	X	0		+10		5	0	0			193/0		194/0	195/0		303/0	013/0	
12Y		10	Y					1											020/0	
12Z		15	Z					5					237/0		236/0	235/0		301/0	023/0	
13X		0	X			+20		5					198/0		197/0	196/0		302/0	014/0	
13Y		10	Y					1											019/0	
13Z		15	Z					1											024/0	
R4114X	B2W2V4D1e3ν1	0	X		0	—		5					199/0		200/0	201/0		307/0	015/0	
14Y		10	Y					5					231/0		230/0	[illegible]/1		305/0	018/0	
14Z		15	Z					5					232/0		233/0	234/0		306/0	025/0	

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

CLM CN CY CBL CYN CAF CAB CPB1 CPB2 CA 10

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES — SEE PAGE 1 —

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DELTA WING ORBITER
LMSC
DR#1201 B-1- 157

TABLE II. TEST TWT 498 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe3	δa1	δa2	δa4	NO. of RUNS	PARAMETERS/VALUES δaL	δaR			MACH NUMBERS 0.6	0.7	0.9	1.1	1.46	1.96	4.96	
R4115X	B2W2V4D1e3n1	0	X	0	+10	—	—	5	0	0			204/0		203/0	202/0		306/0	016/0	
15Y	↓	10	Y	↓	↓	↓	↓	1	↓	↓									017/1	
R4116X	B2W2V4 e3	0	X	↓	—	↓	↓	6	↓	↓			205/0		206/0	207/0	254/0	309/0	314/0	
DSI	CONFIGURATION	α	β	δe4	δa1	δa2	δa4		δaL	δaR			0.6	0.7	0.9	1.1	1.46	1.96	4.96	
R41A01	B2W5V2e4n4	A	0	0	—	—	0	7	0	0			074/0	075/0	076/0	077/0	148/0	151/0	057/0	
B01	↓	B	0	↓	↓	↓	↓	7	↓	↓			112/0	111/0	109/0	110/0	149/0	150/0	047/0	
C01	↓	C	0	↓	↓	↓	↓	6	↓	↓			173/0	172/0	171/0		169/0	159/0	320/0	
D01	↓	D	0	↓	↓	↓	↓	2	↓	↓								158/0	321/0	
X01	↓	0	X	↓	↓	↓	↓	7	↓	↓			113/0	114/0	115/0	116/0	147/0	152/0	054/0	
Y01	↓	10	Y	↓	↓	↓	↓	7	↓	↓			224/0	223/0	222/0	221/0	313/0	263/0	053/0	
Z01	↓	15	Z	↓	↓	↓	↓	7	↓	↓			217/0	218/0	219/0	220/0	312/0	262/0	048/0	
R41A02	↓	A	0	+10	↓	↓	↓	5	↓	↓			080/0		079/0	078/0		264/0	052/0	
B02	↓	B	0	↓	↓	↓	↓	4	↓	↓			107/0		108/0			281/0	044/0	
A03	↓	A	0	-10	↓	↓	↓	5	↓	↓			085/0		083/0	084/0		266/0	063/0	
B03	↓	B	0	↓	↓	↓	↓	4	↓	↓			103/0		104/0			290/0	042/0	
C03	↓	C	0	↓	↓	↓	↓	2	↓	↓								160/0	319/0	
D03	↓	D	0	↓	↓	↓	↓	2	↓	↓								163/0	322/0	
R41A04	↓	A	0	-20	↓	↓	↓	5	↓	↓			086/0		087/0	088/0		273/0	064/0	

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

CLM CN CY CBL CYN CAF CAB CPB1 CPB2 CA 10

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES — SEE PAGE 1 —

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TABLE II. TEST TWT 498 DATA SET COLLATION SHEET (CONTINUED)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δeA	δa1	δa2	δaA	NO. of RUNS	PARAMETERS/VALUES δaL	δaR			MACH NUMBERS 0.6	0.7	0.9	1.1	1.46	1.96	4.96	
R41B06	B2W5V2e4N4	B	0	-20	—	—	0	4	0	0			102/0		101/0			274/0	037/0	
C04		C	0					2										161/0	318/0	
D04		D	0					2										162/0	323/0	
A05		A	0	-30				4					090/0		089/0			272/0	061/0	
B05		B	0					4					099/0		100/0			275/0	046/0	
A06		A	0	0				4	-10	+10			081/0		082/0			265/0	059/0	
B06		B	0					4					106/0		105/0			278/0	043/0	
A07		A	0					4	-20	+20			070/0		071/0			269/0	065/0	
B07		B	0					4					258/0		257/0			277/0	040/0	
A08		A	0	+10				4	0				069/0		068/0			270/0	067/0	
B08		B	0					1											039/0	
A09		A	0					4	-10	+30			094/0		093/0			267/0	062/0	
B09		B	0					4					095/0		096/0			279/0	041/0	
A10		A	0	-10				4	-20	0			073/0		072/0			268/0	066/0	
B10		B	0					1											038/0	
A11		A	0					4	-30	+10			091/0		092/0			271/0	060/0	
B11		B	0					4					098/0		097/0			276/0	045/0	
R41X12		0	X	0			+10	5	0	0			210/0		209/0	208/0		260/0	055/0	
Y12		10	Y					1											052/0	
Z12		15	Z					5					216/0		215/0	214/0		261/0	049/0	

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

CLM CN CY CBL CYN CAL CAR CPB1 CPB2 CA | | | 10

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES — SEE PAGE 1 —

NASA-MSFC-MAF

DELTA WING ORBITER
LMSC
DR#1201 B-1- 159

TABLE II. TEST TWT 499 DATA SET COLLATION SHEET (CONCLUDED)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES Se4	Sr1	Sr2	Sr4	NO. of RUNS	[illegible] SaL	SaR			[illegible] 0.6	0.7	0.9	1.1	1.46	1.96	4.96	
R41X13	B2WSV2e4r4	0	X	0	—	—	+20	5	0	0			211/0		212/0	213/0		259/0	054/0	
Y13	↓	10	Y	↓	↓	↓	↓	1	↓	↓									051/1	
Z13	↓	15	Z	↓	↓	↓	↓	1	↓	↓									050/0	
R41B14	B2WSV2D2e4r4r2	B	0	↓	↓	0	0	2	-20	+20			254/0		255/0					

1	7	13	19	25	31	37	43	49	55	61	67	75 76
ELM	EN	CY	[illegible]	[illegible]	[illegible]	[illegible]	CPB1	CPB2	[illegible]			10

COEFFICIENTS: — See Page 1 — IDPVAR(1) IDPVAR(2) NDV

α or β
SCHEDULES

NASA-MSFC-MAF

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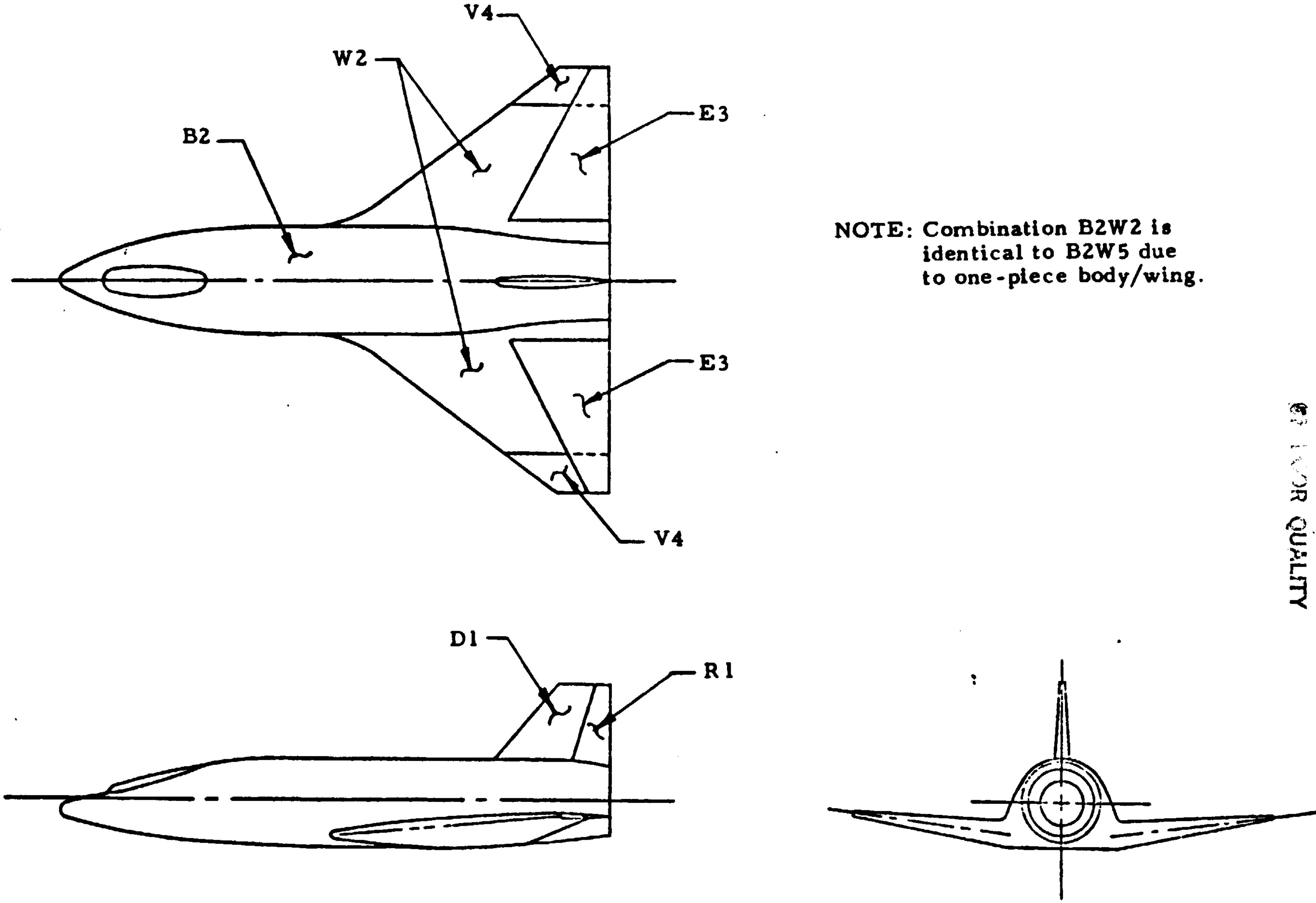


NOTE: Combination B2W2 is identical to B2W5 due to one-piece body/wing.

Figure 2. General Arrangement, Orbiter Model 2A, Model Component Location

DELTA WING ORBITER
LMSC
DR#1201 B-1- 161

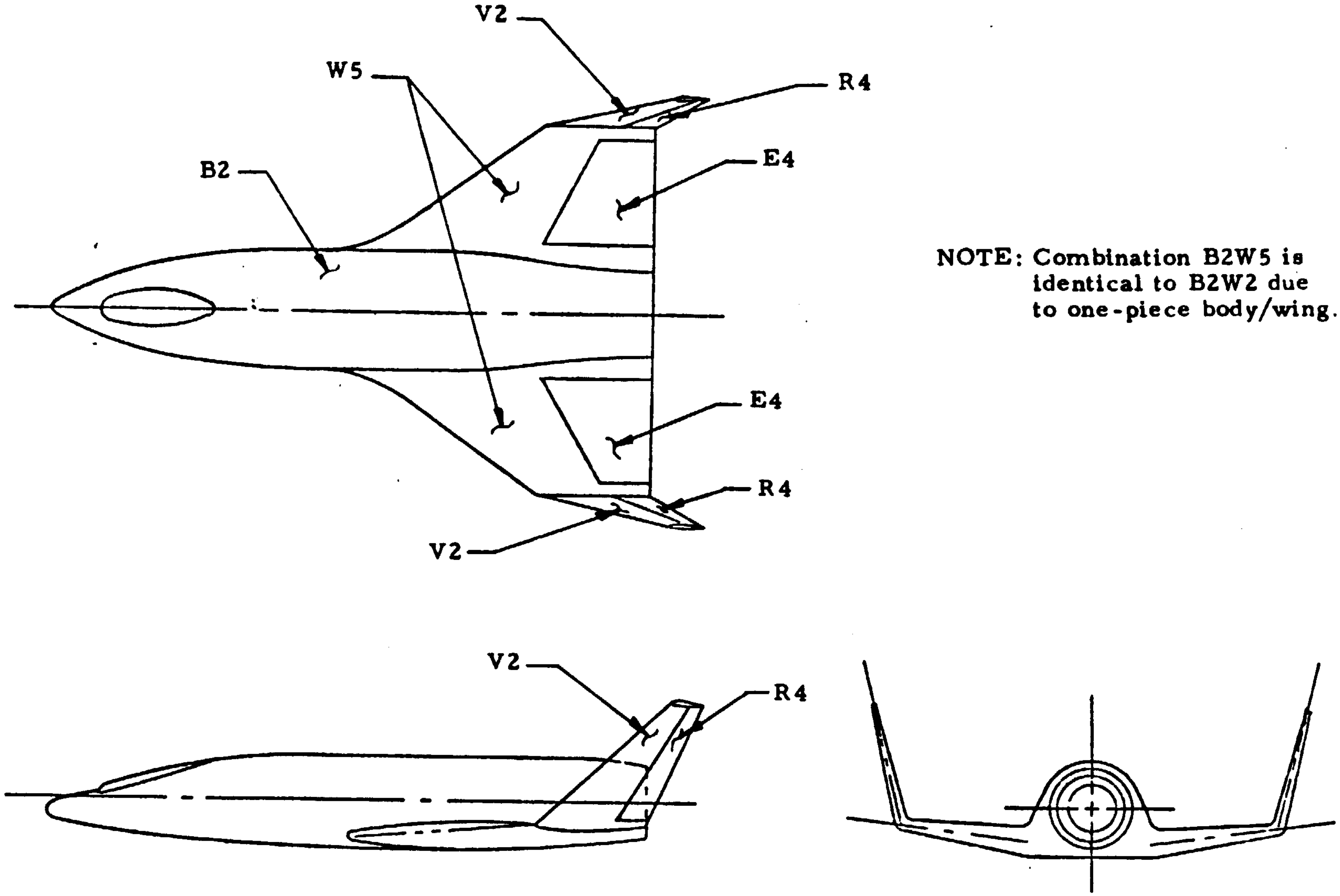
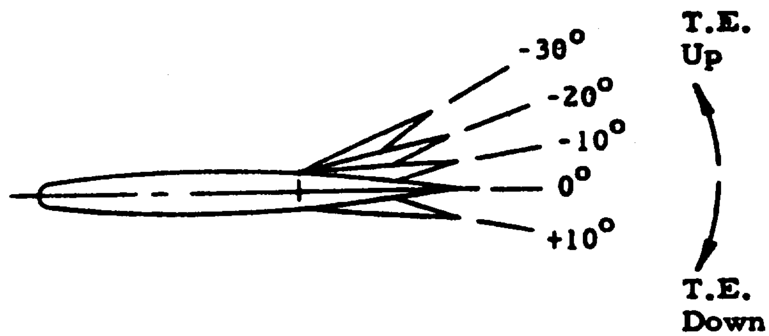
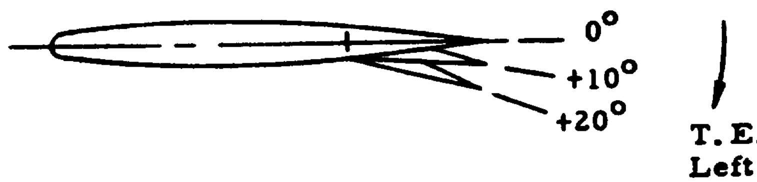


Figure 3. General Arrangement, Orbiter Model 2B, Model Component Location

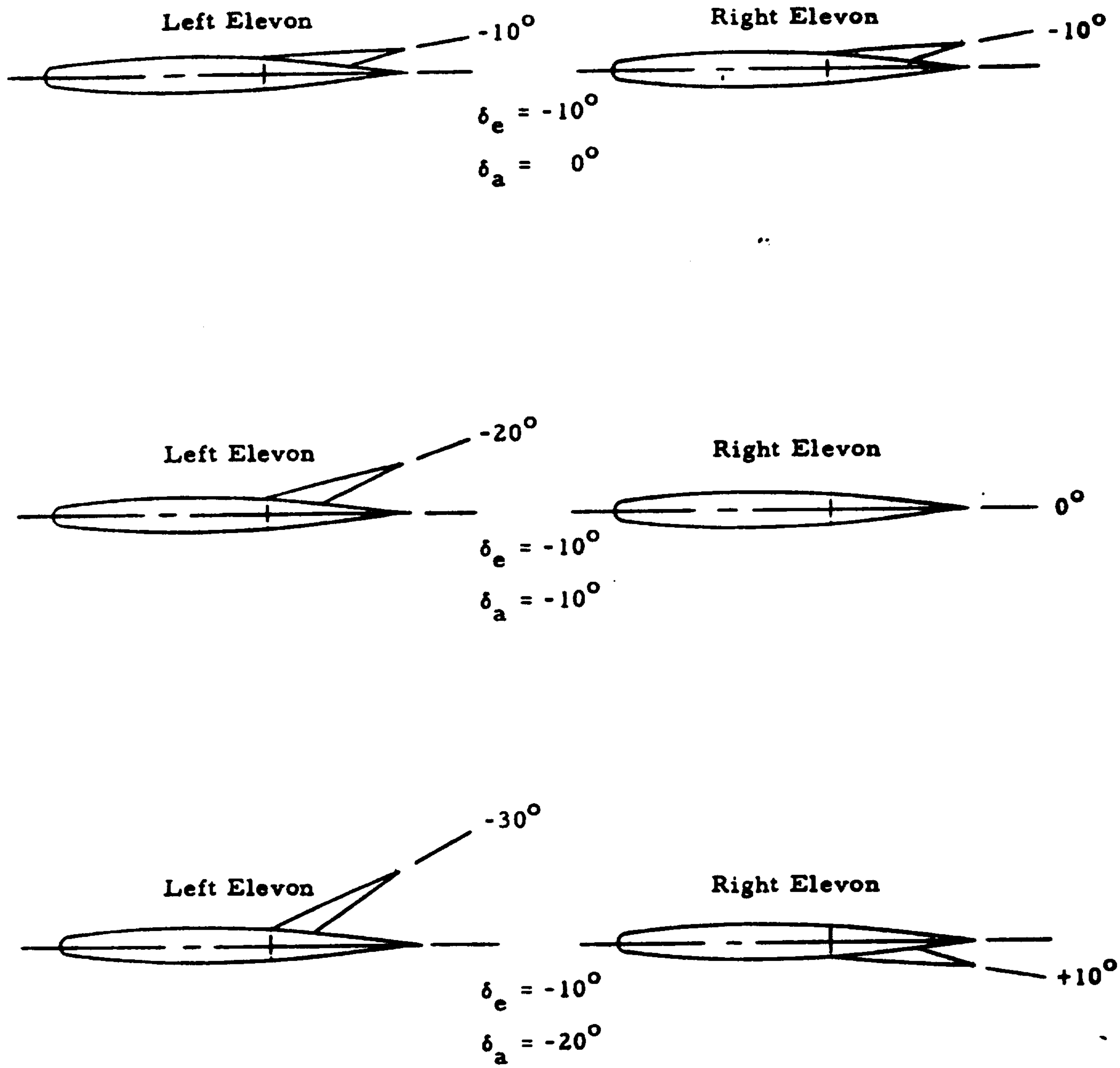


Sign Convention, Elevon Deflection



Sign Convention, Rudder Deflection

Figure 4. Deflection Angles Measured About the Hinge Line



Note: Aileron Sign Convention is Defined as Follows: $\delta_a = \dfrac{\text{Elevon (Left)} - \text{Elevon (Right)}}{2}$

Sign Convention, Elevon/Aileron Deflection

FIGURE 5. DEFLECTION ANGLES MEASURED ABOUT THE HINGE LINE

TABLE II

TEST TWT 542 DATA SET/RUN NUMBER

COLLATION SUMMARY

1 of 3

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{EL}	δ_{ER}	δ_{FEL}	δ_{FEI}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δ_F			0.6	0.9	1.2	1.46	1.96	3.5	4.96		
R69001	B1F2W4V11P1	A	0	0	0	0	0		0			012/0	011/0	010/0		118/0	131/0	130/0		
002		B	0									036/0	035/0	034/0						
003		C	0													125/0	139/0	138/0		
004		0	D									049/0	050/0	051/0						
005		10	D									048/0	047/0	046/0						
007	B1F2 W4 V11 P1	A	0	-10	-10	0	0		0			013/0	014/0	015/0		119/0		132/0		
008		B	0									037/0	03[illegible]	037/0						
009		C	0													124/0		137/0		
010		0	D									054/0	053/0	052/0						
011		A	0	-30	-30							018/0	017/0	016/0		120/0		133/0		
012		B	0									042/0	041/0	040/0						
013		C	0													123/0		136/0		
014		A	0	+10	+10							019/0	020/0	021/0		121/0		134/0		
015		B	0									043/0	044/0	045/0						
016		C	0													122/0		135/0		
017	B1F2W4V11P1A1	A	0									024/0	023/0	022/0						
018		A	0	-10	-10							025/0	026/0	027/0						
019		A	0	0	0							030/0	029/0	028/0						
020		B	0									031/0	032/0	033/0						

TEST RUN NUMBERS

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

CLM CN CY CBL CYN CA CAB CAF CPC CPB | 10

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

α: $A = -4^\circ$ to 10° $(\Delta\alpha = 2^\circ)$; $B = 10^\circ$ to 20° $(\Delta\alpha = 2^\circ)$

$C = 10^\circ$ to 30° $(\Delta\alpha = 2^\circ)$

β: $D = -6^\circ, -3^\circ, -2^\circ, -1^\circ, 0^\circ, 1^\circ, 2^\circ, 3^\circ, 6^\circ$

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DELTA WING ORBITER
LMSC
DR#1254 B-1- 165

TABLE II (CONTINUED)

TEST TWT 542 DATA SET/RUN NUMBER
COLLATION SUMMARY

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_{EL}	δ_{ER}	δ_{PF}	δ_{FF}	NO. of RUNS	δ_F			0.6	0.9	1.2	1.46	1.96	3.5	4.96		
				PARAMETERS/VALUES					MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
R69021	B1F2W4V11P1A1	0	D	0	0	0	0		0			062/0	051/0	056/0						
022		0	D	-10	-10							055/0	056/0	057/0						
023	B1F2W4V11P1	A	0	0	0	30/0	30/0					108/0	107/0	106/0						
024		0	D									067/0	068/0	069/0						
025		10	D									078/0	077/0	076/0						
026		A	0			30/-30	30/-30					097/0	098/0	099/0						
027		0	D									090/0	089/0	088/0						
028		10	D									085/0	086/0	087/0						
029		20	D									096/0	095/0	094/0						
030	B1F2W4V11P1R2	A	0									102/0	101/0	100/0						
031		0	D									091/0	092/0	093/0						
032		10	D									084/0	083/0	082/0						
033		A	0			30/0	30/0					103/0	104/0	105/0						
034		0	D									066/0	065/0	064/0						
035		10	D									079/0	080/0	081/0						
036		A	0			0	0					114/0	113/0	112/0		128/0		129/0		
037		0	D									061/0	062/0	063/0						
038		10	D									115/0	116/0	117/0						
039	B1F2W4V11P1A1	A	0			30/0	30/0					109/0	110/0	111/0						
040		0	D									072/0	071/0	070/0						

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CLM	CN	CY	CBL	CYN	CA	CAB	CAF	CPC	CPB			1.0
										IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α OR β SCHEDULES:

α: A = -4° to 10° ($\Delta\alpha$ = 2°) ; B = 10° to 20° ($\Delta\alpha$ = 2°)
C = 10° to 30° ($\Delta\alpha$ = 2°)

β: D = -6°, -3°, -2°, -1°, 0°, 1°, 2°, 3°, 6°

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TABLE II (CONTINUED)

TEST TWT 542 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_{EL}	δ_{EF}	δ_{RFI}	δ_{RFP}	NO. of RUNS	δ_F			0.6	0.9	1.2	1.46	1.96	3.5	4.96		
R69041	B1F2W4V11P1A1	10	D	0	0	30/0	30/0		0			013/0	074/0	075/0						
042	B1F2W4V11P1	A	0			0	0		64							127/0	143/0	142/0		
043		C	0									154/0	153/0	152/1		126/0	140/0	141/0		
044	B1F2W4P1	A	0			—	—		0			154/0	153/0	152/1		151/0		144/0		
047	B2	A	0	—	—	—	—		—			155/0	156/0	157/0		150/0	146/0	145/0		
048		B	0									160/0	159/0	158/0						
049		C	0													149/0	147/0	148/0		
052	B1F2W4V11P1 (NO GRIT)	A	0	+10	+10	0	0		0			004/0		005/0		003/0				
053		A	0	0	0							008/0		009/0		001/0				
054		A	0	-10	-10							007/0		006/0		002/0				

TEST RUN NUMBERS

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

CLM CN CY CBL CYN CA CAB CAF CPC CPB → IDPVAR(1) IDPVAR(2) NDV 1 C

COEFFICIENTS:

α or β SCHEDULES

α: A = −4° to 10° (Δα = 2°); B = 10° to 20° (Δα = 2°)

C = 10° to 30° (Δα = 2°)

β: D = −6°, −3°, −2°, −1°, 0°, 1°, 2°, 3°, 6°

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DELTA WING ORBITER
LMSC
DR#1254 B-1- 167

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Note: All dimensions are model scale, inches

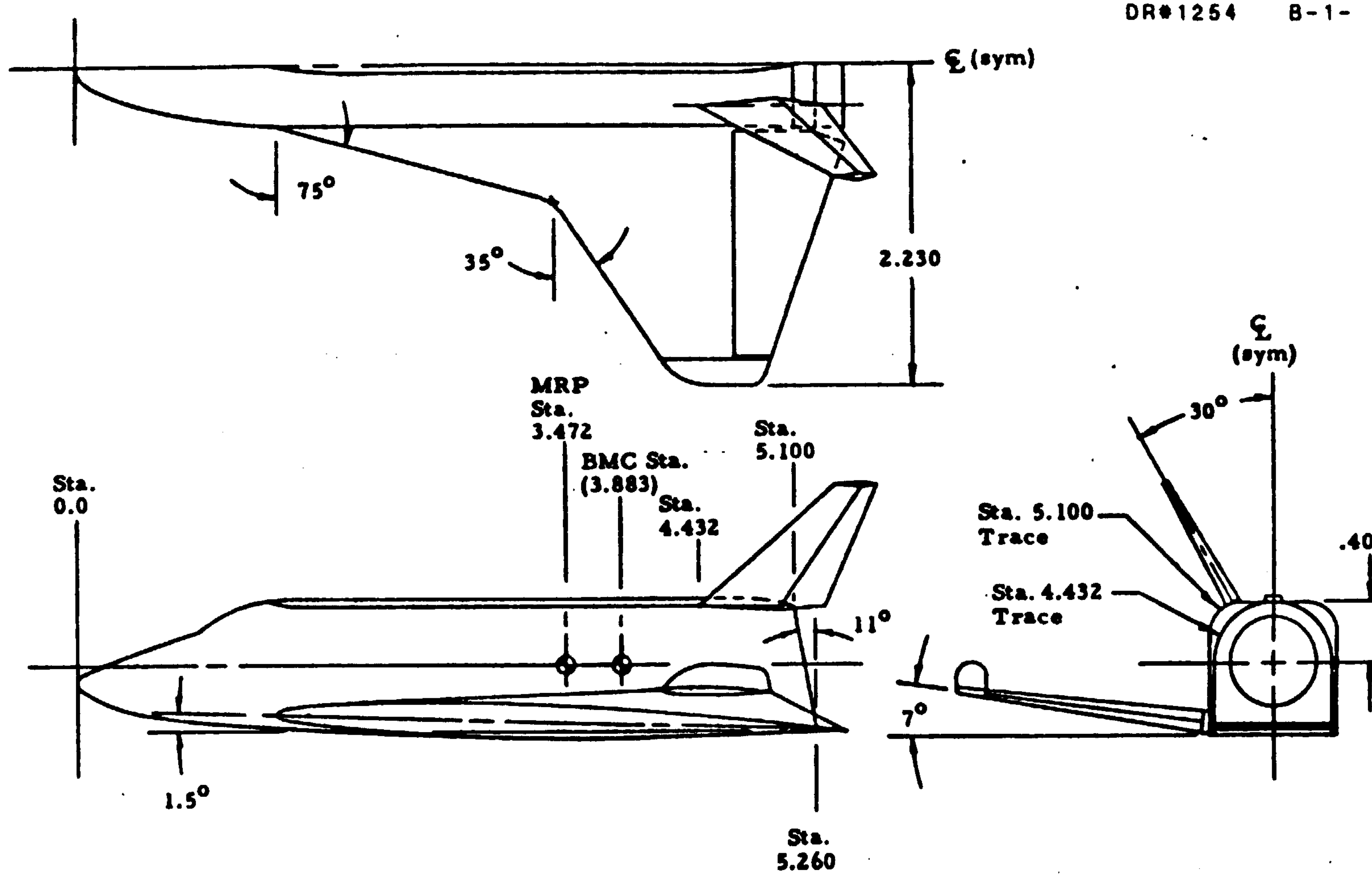

Fig. 2 - General Arrangement, Space Shuttle Orbiter

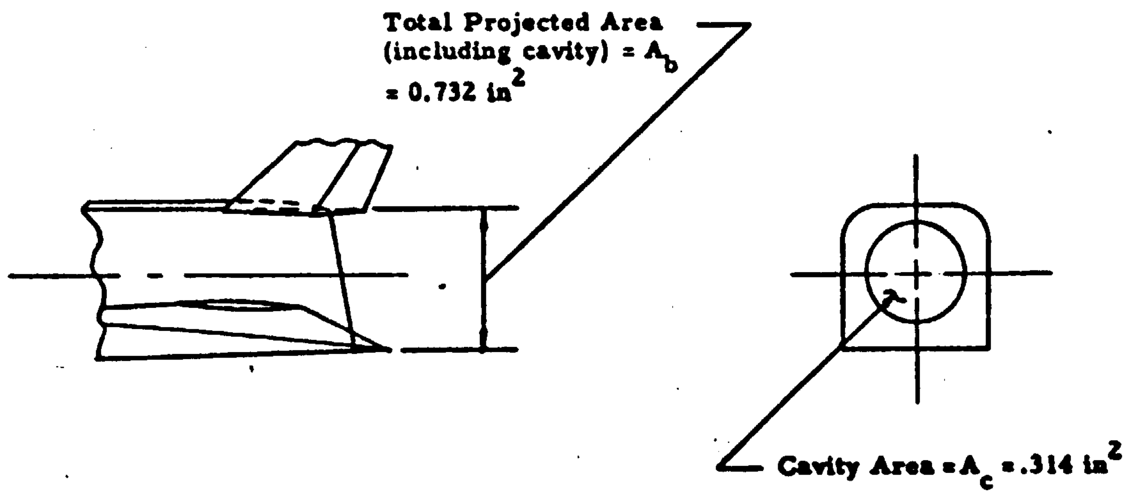

Fig. 3 - Definition of Base and Cavity Areas for Axial Force Corrections

DELTA WING ORBITER
MDAC
DR#1028 B-1- 170

TEST 66-514 **DATA SET COLLATION SHEET**

REF DIM W_2
LCR

MDC 0.7% LCR ORBITER (01)

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	Param.	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_i	δ_a	RN/L	NO. of RUNS	MACH NUMBERS 0.6	0.3	0.9	1.1	1.5	2.0					
RA9000		B_2	B	0	—	—	—	2.5	3		31		30		29					
RA9001		B_4	B	0	—	—	—	2.5	4	87	86		85		84					
RA9002		↓			—	—	—	4.0	1		88									
RA9010		$B_2 W_2$	B	0	—	—	0	2.5	3		28		27		26					
RA9011		$B_4 W_2$	B	0	—	—	0	2.5	4	92	91		90		89					
RA9012		↓			—	—	0	4.0	1		93									
RA9020		$B_2 H_1$	B	0	0	0	—	2.5	3		53		52		51					
RA9030		$B_2 W_2 H_1$	B	0	0	0	0	2.5	6	10	9	8	7	6	5					
RA9031		$B_2 W_2 H_1 ER_1$	B	0	-15	0	0	2.5	3		13		12		11					
RA9032		↓	B	0	+30	0	0	2.5	3		16		15		14					
RA9033			B	0	-30	0	0	2.5	3		19		18		17					
RA9034		↓	B	0	-30	-30	0	2.5	3		22		21		20					
RA9035		$B_2 W_2 H_1$	B	0	0	-30	0	2.5	3		25		24		23					
RA903[illegible]			B	0	0	-15	0	2.5	3		50		49		49					
RA9037			B	5°	0	0	0	2.5	3		66		65		64					
RA9039		↓	60	D	0	0	0	2.5	5		71	70	69	68	67					

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

CN ICA CAE CLM CY CYN CEL DCN

COEFFICIENTS: → IDPVAR(1) IDPVAR(2) N

α or β SCHEDULES

α: B = 33, 41, 44, 47, 50, 53, 54, 57, 60, 63, 69

β: D = -5, -3, -1, 0, 1, 3, 5, 7, 9

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TEST 66-514 **DATA SET COLLATION SHEET** REF DIM W_2 LCR

MDC 0.7% LCR ORBITER

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER		CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_i	δ_a	R_N/L	NO. of RUNS	MACH NUMBERS 0.6	0.8	0.9	1.1	1.5	2.0
RA9040		$B_2W_2V_1H_1$	C	0	0	0	0	2.5	5	80	79	78	77		76
RA9050		$B_4W_2H_1$	B	0	0	0	0	2.5	4	98	96		95		94
RA9051		↓	B	0	0	0	0	4.0	1		97				
RA9052			C	5°	0	0	0	2.5	3		109		108		107
RA9053			60°	D	0	0	0	2.5	4	103	101		100		99
RA9054			60°	D	0	0	0	4.0	1		102				
RA9060		$B_4W_2V_1H_1$	C	0	0	0	0	2.5	3	112	111		110		
RA9061		↓	C	5°	0	0	0	2.5	3		106		105		104
RA9070		$B_2W_2H_1P_6$	A	0	0	0	0	2.5	1	4	3		2		1

1	7	13	19	25	31	37	43	49	55	61	67
CN	CA	CAB	CLM	CY	CYN	CBL	DCN			IDPVAR(1)	IDPVAR(2)

COEFFICIENTS:

α or β SCHEDULES

α: A = 37, [illegible], 43, 46, 47, 51, 53, [illegible], [illegible], [illegible], [illegible]

α: B = [illegible], [illegible]1, 44, 47, 52, 52, 54, 57, [illegible], 63, 68

α: C = -3, 0, 3, 6, 9, 12, 15, 1[illegible], 21, 24, 27

DELTA WING ORBITER
MDAC
DR#1028 B-1- 171

TEST 66-514 DATA SET COLLATION SHEET

REF DIM W_1 LCR W_3

MDC 0.7% LCR ORBITER

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER		CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δe	δi	δa	RN/L	NO. of RUNS	MACH NUMBERS 0.6	0.8	0.9	1.1	1.5	2.0						
RA9100		$B_2 W_1 H_1 J_1$	B	0	0	0	0	2.5	4	41	40		39		38						
RA9101		$B_2 W_1 H_1 J_1 ER_1$	B	0	30	0	0	2.5	3		44		43		42						
RA9102		$B_2 W_1 H_1 J_1 A_1$	B	0	0	0	20	2.5	3		47		46		45						
RA9103		$B_2 W_1 H_1 J_1$	B	5°	0	0	0	2.5	3		63		62		61						
RA9110		$B_2 W_3 H_1$	B	0	0	0	0	2.5	3		35		34		33						
RA9111		$B_2 W_3 H_1 ER_1$	B	0	30	0	0	2.5	1				32								
RA9112		↓	B	0	-30	0	0	2.5	2		36		37								
RA9113		↓	B	0	-30	-30	0	2.5	4	57	56		55		54						
RA9114		$B_2 W_3 H_1$	B	5°	0	0	0	2.5	3		60		59		58						
RA9115		↓	60°	D	0	0	0	2.5	1						72						
RA9120		$B_2 W_3 V_1 H_1$	C	0	0	0	0	2.5	3		75		74		73						
RA9121		$B_2 W_3 V_1 H_1 ER_1$	C	0	-30	0	0	2.5	3		83		82		81						

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

COEFFICIENTS: → IDPVAR(1) IDPVAR(2)

α or β SCHEDULES

α : B = [illegible], 41, 44, [illegible], 52, 54, 57, 60, 63, [illegible]

α : C = -3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27

β : D = -5, -3, -1, 0, 1, 3, 5, 7, 9

TEST AMES 66-514 DATA SET COLLATION SHEET

MDAC 0.7% HCR ORBITER (02)

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☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{e2_L}	δ_{e1_L}	δ_{e1_R}	δ_{e2_R}	δ_F	RN/L	No. of RUNS	MACH NUMBERS 0.6	0.8	0.9	1.1	1.5	2.0
RA9D00	$B_1 W_1$	C	0	0	0	0	0	–	2.5	3		133		132		131
RA9D01	↓	C	5°	0	0	0	0	–	2.5	3		136		135		134
RA9D10	$B_1 W_1 V_1$	C	0	0	0	0	0	0	2.5	7	120	118	117	116	115	114
RA9D11	↓	C	0	0	0	0	0	0	4.0	1		119				
RA9D12		C	5°	0	0	0	0	0	2.5	3		139		138		137
RA9D20	$B_1 W_1 V_1 R_1$	C	0	0	0	0	0	10	2.5	3		142		141		140
RA9D30	$B_1 W_1 V_1 EN_1 EN_2$	C	0	15	15	15	15	0	2.5	3		126		125		124
RA9D31	↓	C	0	-15	-15	-15	-15	0	2.5	3		145		144		143
RA9D32		C	0	-30	-30	-30	-30	0	2.5	3		130		128		127
RA9D33		C	0	-45	-45	-45	-45	0	2.5	3		151		150		149
RA9D34		C	0	0	0	-30	-30	0	2.5	3		148		147		146
RA9D35		C	0	0	-15	-15	-30	0	2.5	3		123		122		121

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

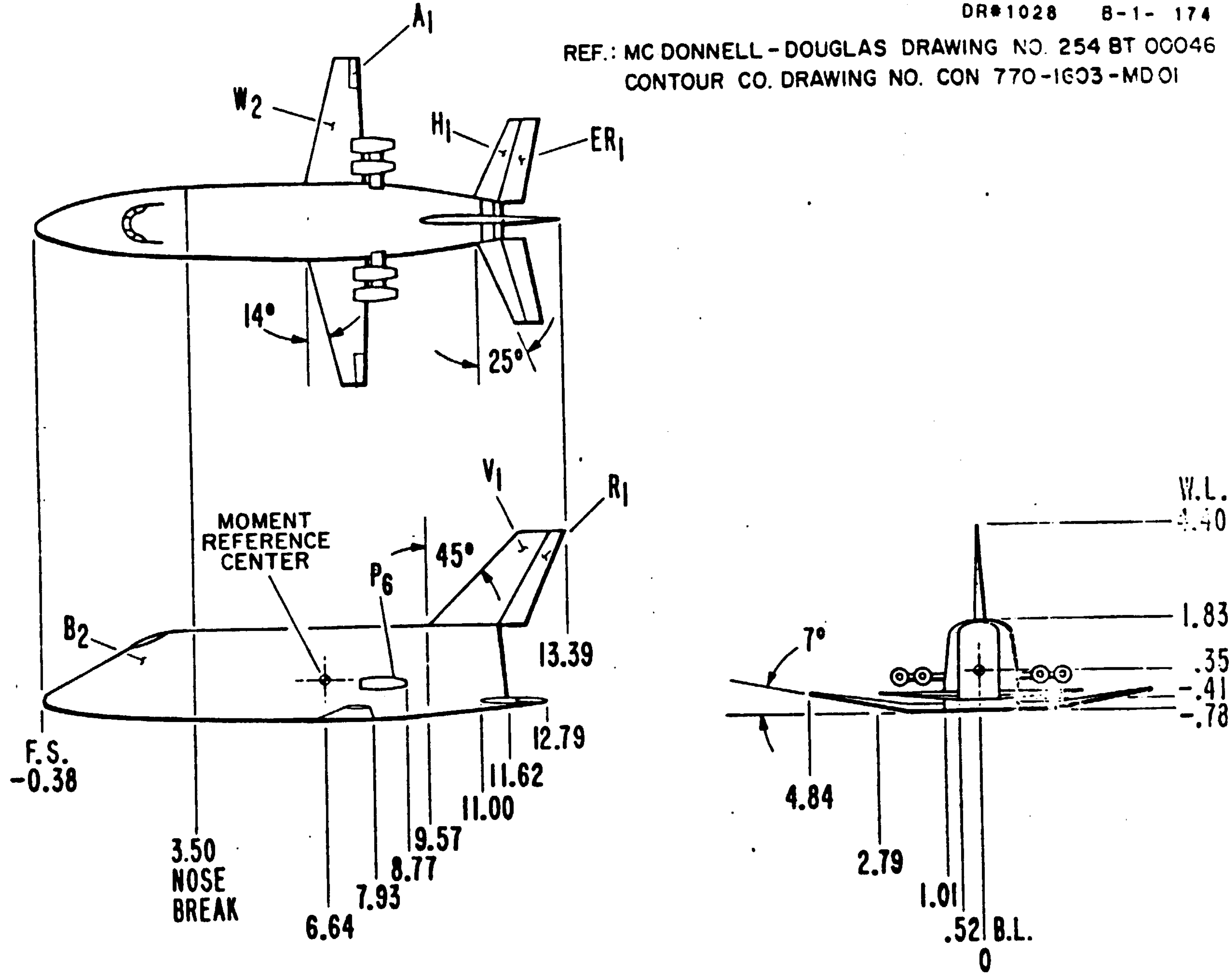
IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES α : C = -3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27

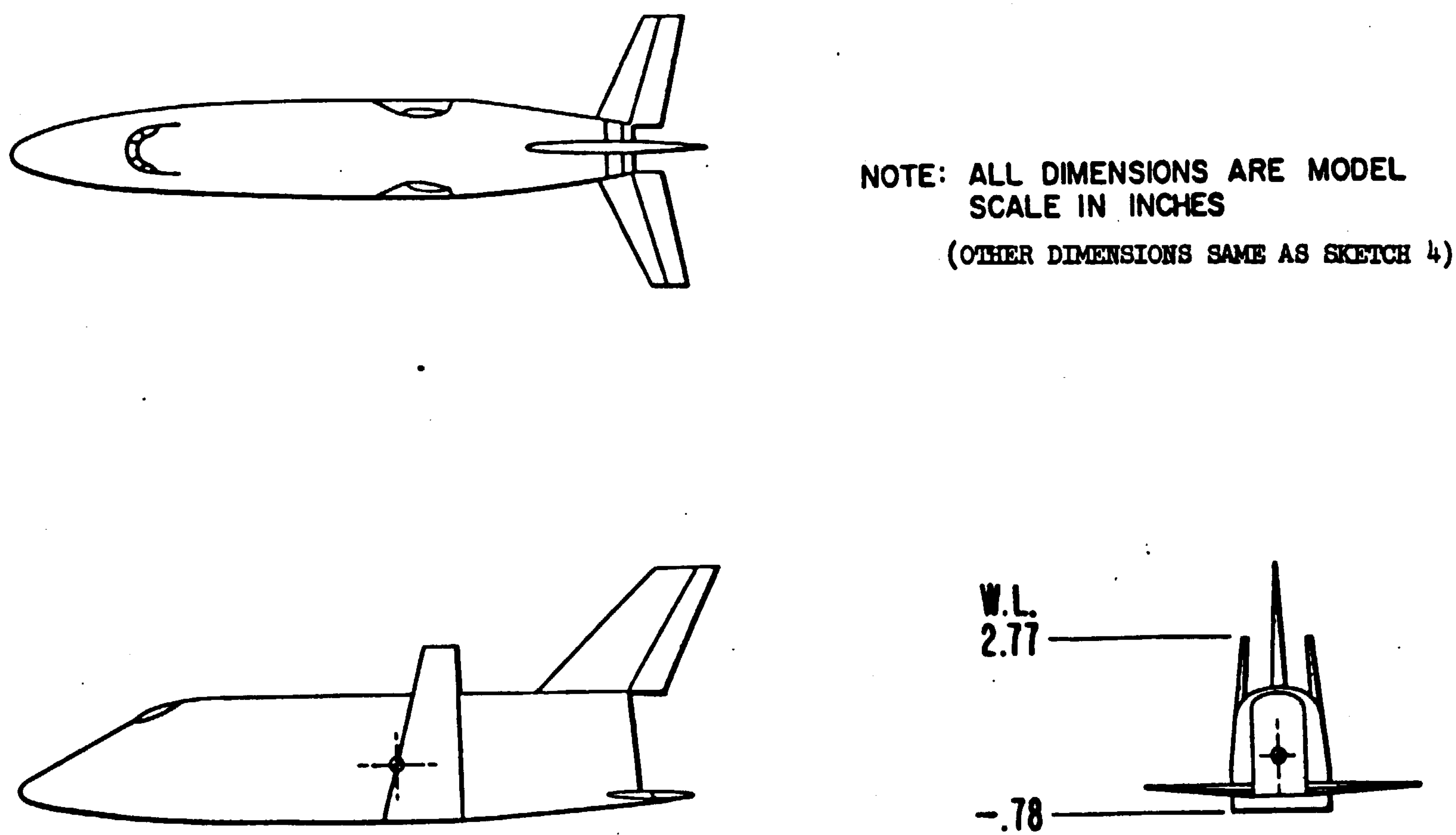
DELTA WING ORBITER
MDAC
DR#1028 B-1- 173

REF.: MC DONNELL-DOUGLAS DRAWING NO. 254 BT 00046
CONTOUR CO. DRAWING NO. CON 770-1603-MD01



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

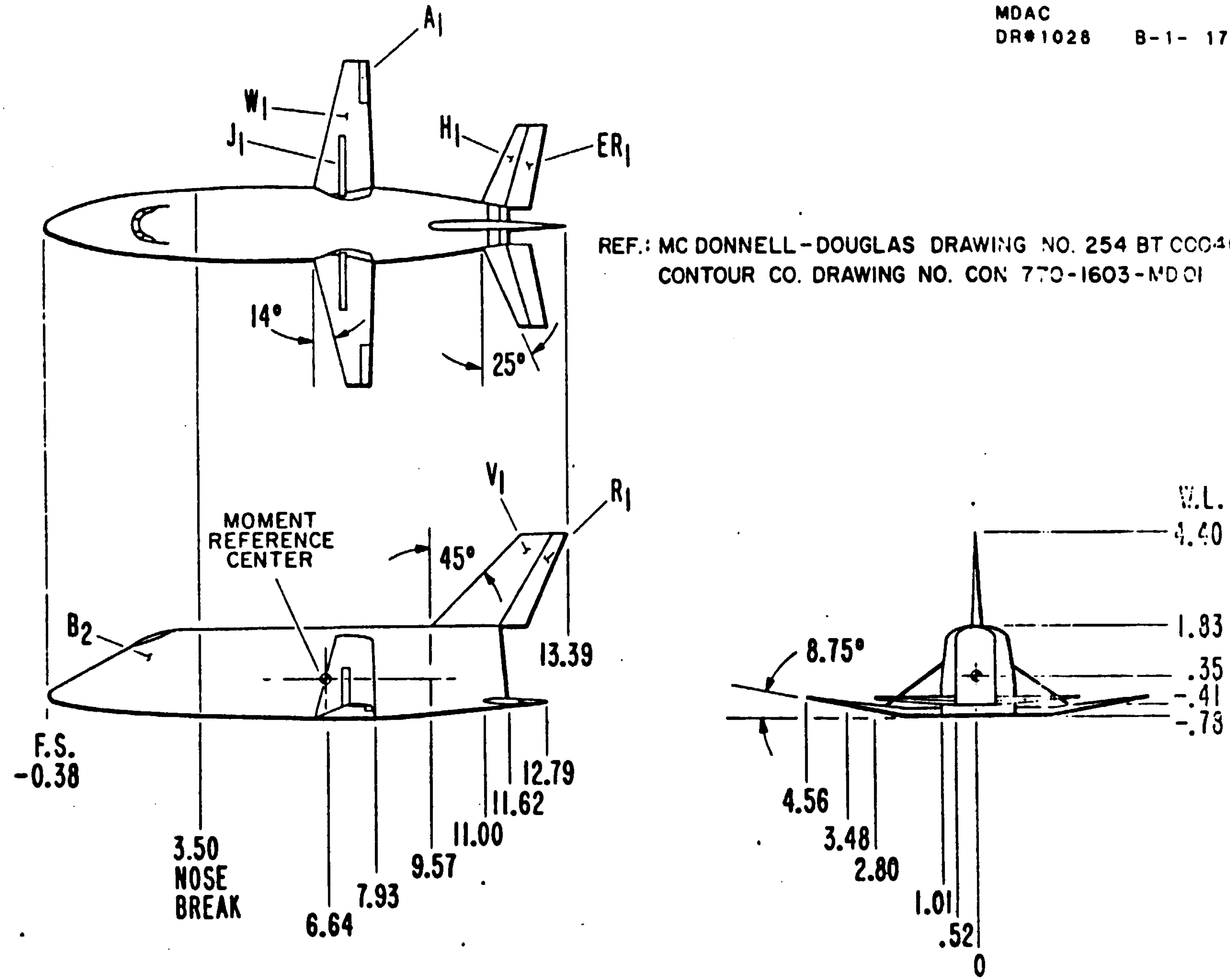
Sketch 2. 3-view sketch of low cross range orbiter model - symmetrical wing.



Sketch 3. 3-view sketch of low cross range orbiter model - cambered wing folded.

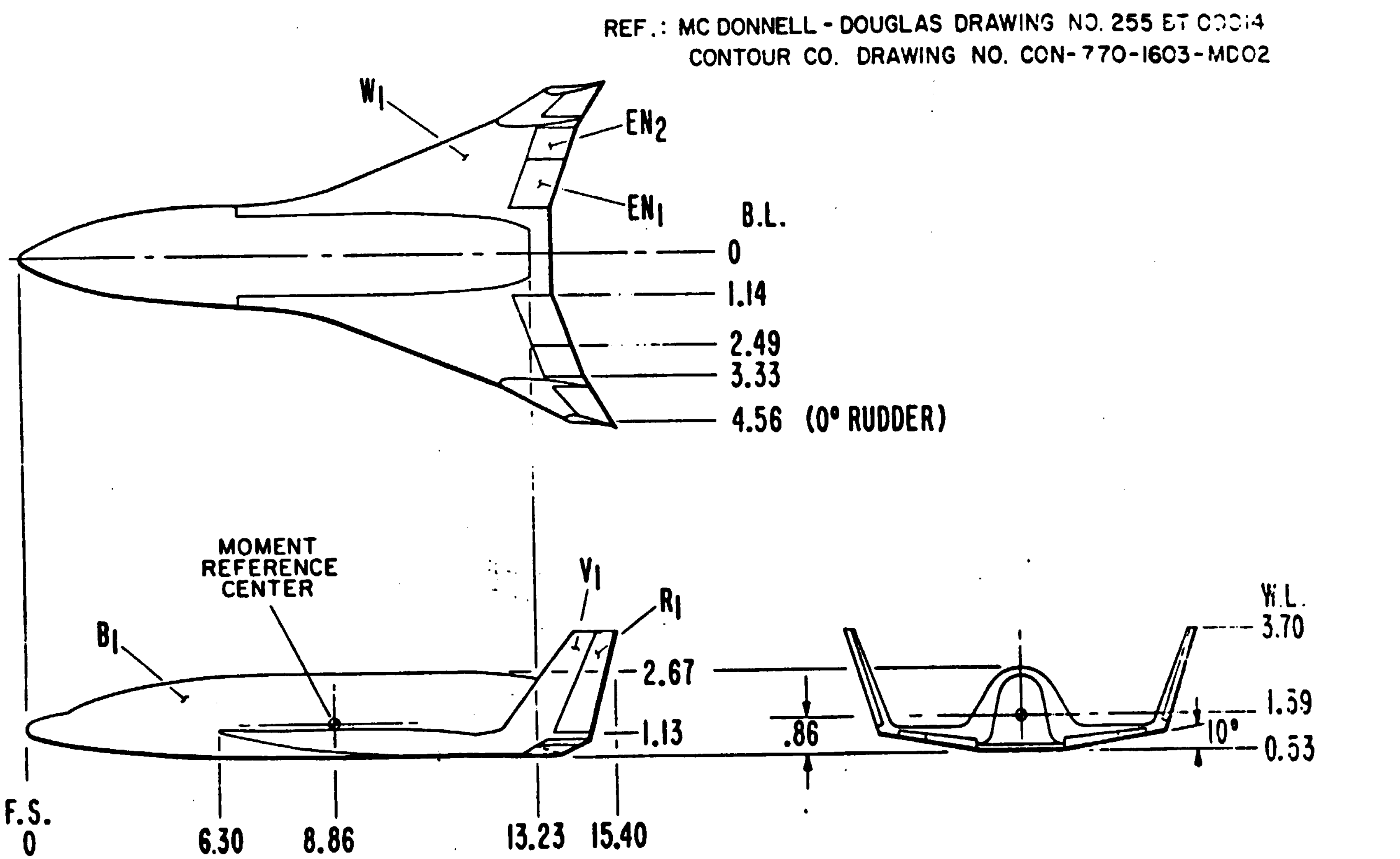
DELTA WING ORBITER
MDAC
DR#1028 B-1- 175

REF.: MC DONNELL-DOUGLAS DRAWING NO. 254 BT CC046
CONTOUR CO. DRAWING NO. CON 770-1603-MD01



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

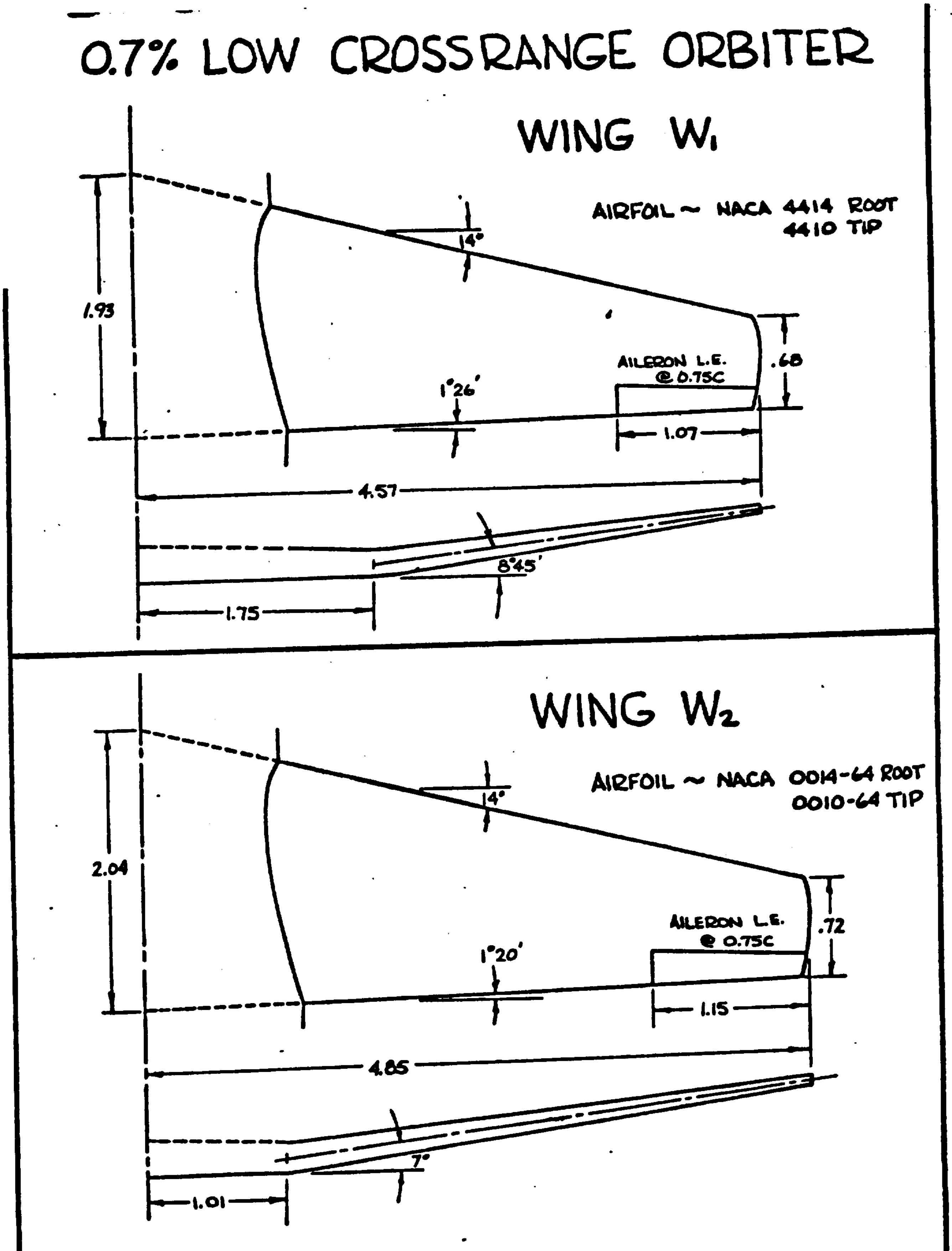
Sketch 4. 3-view sketch of low cross range orbiter model - cambered wing deployed



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

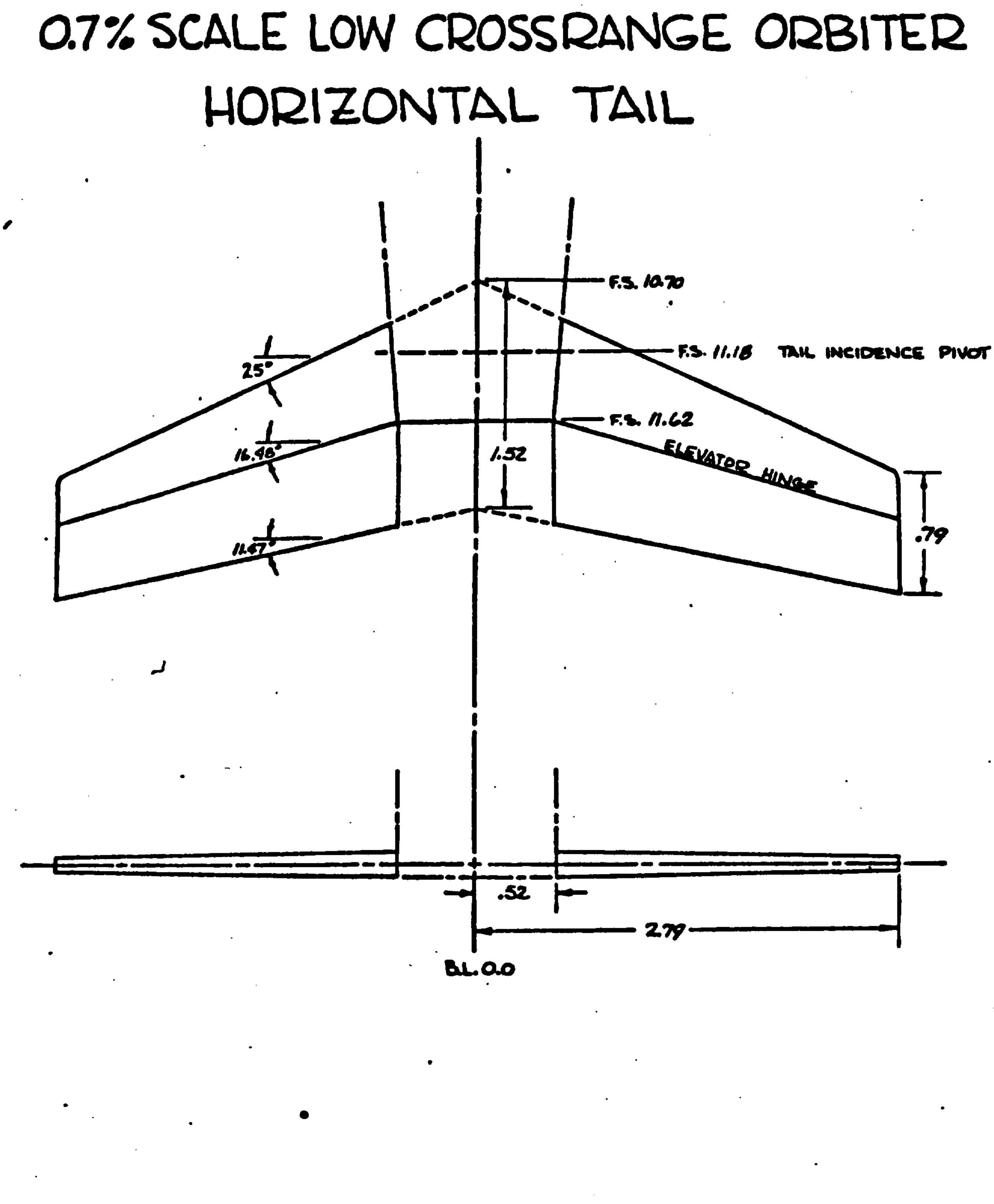
Sketch 5. 3-view sketch of high cross range orbiter model.

DELTA WING ORBITER
MDAC
DR#1028 B-1- 177



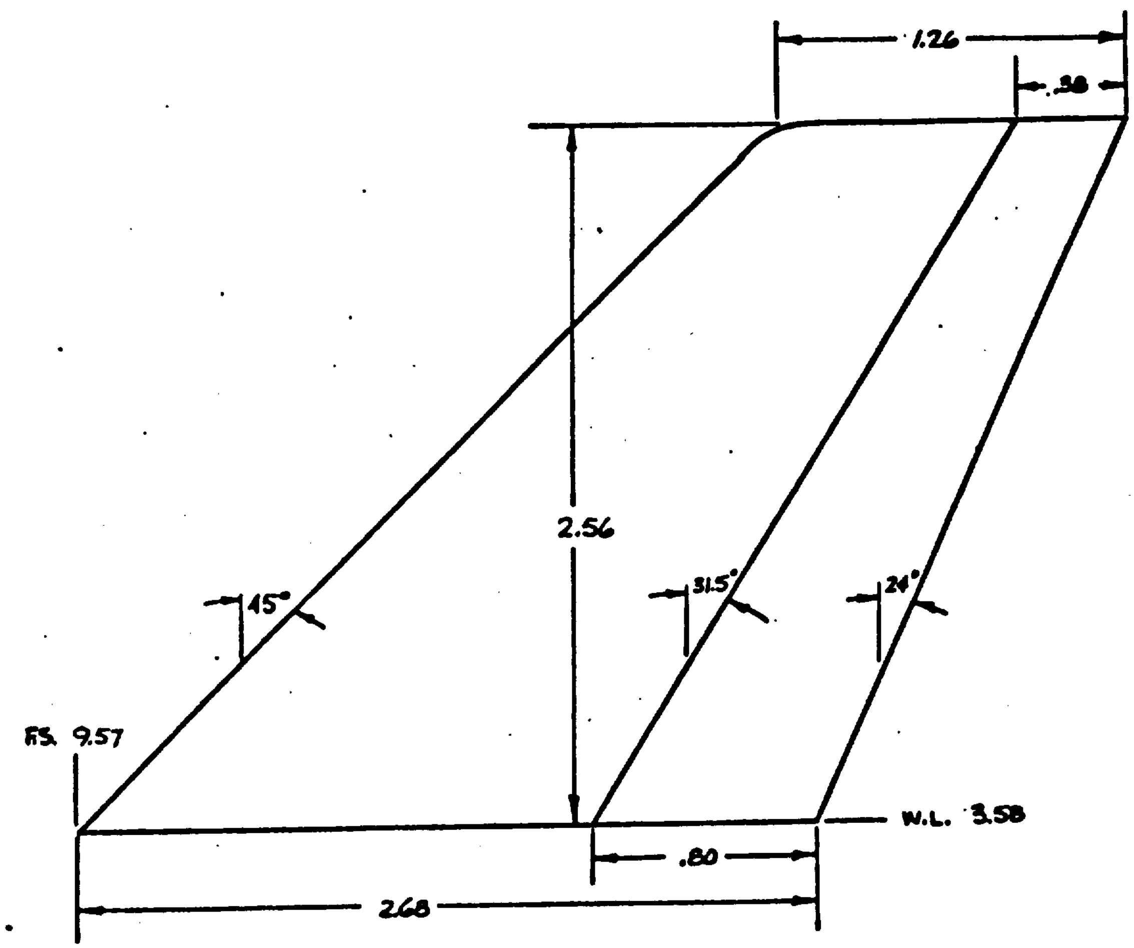
Sketch 6. Low cross range orbiter wings

DELTA WING ORBITER
MDAC
DR#1028 B-1-179

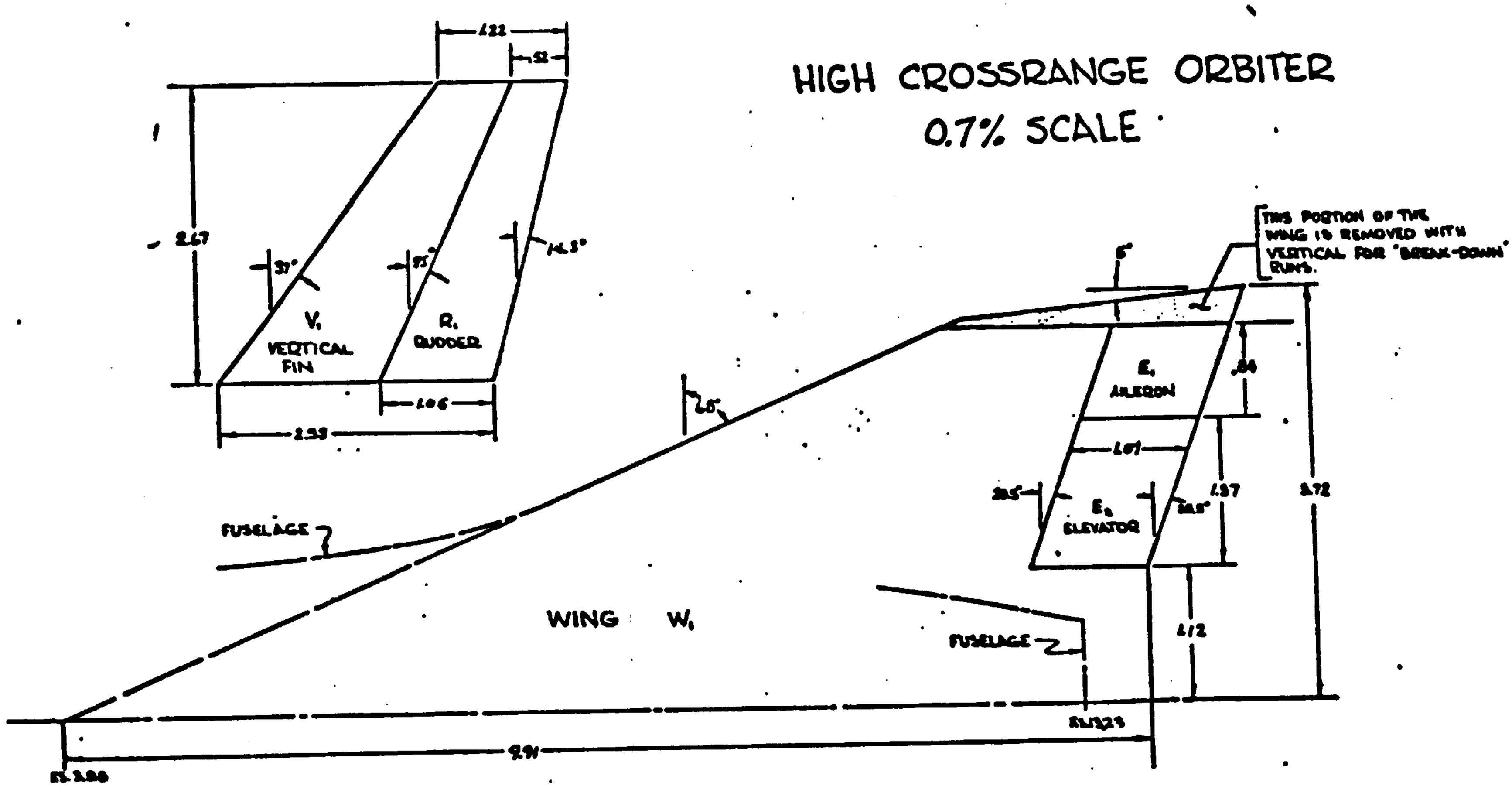


Sketch 7. Low cross range orbiter horizontal tail

0.7% SCALE LOW CROSSRANGE ORBITER VERTICAL TAIL



Sketch 8. Low cross range orbiter vertical tail



Sketch 9. High cross range orbiter wing

DELTA WING ORBITER
MDAC
DR#1028 B-1- 181

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SHEET 1 of 2

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTIONS δ_{eLI}	δ_{eLO}	δ_{eRI}	δ_{eRO}	$\delta_{L/R}$	NO. OF RUN	Q(PSF) 40	90	100								
RCBD10	B1W1	A/B	0	0	0	0	0	—	1	25										
11	B1W1	A/B	3	0	0	0	0	—	1	26										
20	B1W1V1	A	0	0	0	0	0	0	2	10		2								
21	B1W1V1	A/B	3	0	0	0	0	0	2	19		3								
23	B1W1V1	A/B	6	0	0	0	0	0	2	20		4								
50	B1W2V1	A	0	0	0	0	0	0	1	16										
60	B1W1V1G	A	0	0	0	0	0	0	1			11								
70	B1W1V1SB1	A	0	0	0	0	0	0	1			12								
22	B1W1V1	A	0	-30	-30	-30	-30	0	1			5								
33	B1W1V1	A	0	-15	-15	-15	-15	0	1			7								
25	B1W1V1	A	0	0	0	-30	-30	0	1			6								
27	B1W1V1	A/B	0	0	0	0	0	0	1	18										
24	B1W1V1	A	0	0	0	0	0	20/20	1			8								
26	B1W1V1	A	0	0	0	0	0	0/10	1			9								
28	B1W1V1	A	0	0	0	0	0	-25/20	2	21	29									
29	B1W1V1	A/B	3	0	0	0	0	-25/20	1	22										
30	B1W1V1	A/B	-3	0	0	0	0	-25/20	1	23										
32	B1W1V1	A	0	0	0	0	0	0/20	1	17										
31	B1W1V1	A	0	-30	-30	-30	-30	-25/20	1		28									
34	B1W1V1	A	0	-15	-15	-15	-15	-25/20	1		27									

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

CL CD CLM CY CLN CSL CDB Q(PSF)

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

α or β SCHEDULES

α: A = -10 $\xrightarrow{\Delta 2}$ 20

B = -8 $\xrightarrow{\Delta 4}$ 0 $\xrightarrow{\Delta 2}$ 14 (TUFT PHOTOS ONLY)

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TEST MCAU LSWT 235 DATA SET COLLATION SHEET

☐ PRETEST
☐ POSTTEST

SHEET 2 of 2

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTIONS					NO. OF RUN	Q(PSF) 40	90	100								
RCBCBO	B1W1V2	A	C	0	0	0	0	0/10	1	14										

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

CL CLL CLM CY CLN CSL CDB Q(PSF)

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

α or β SCHEDULES

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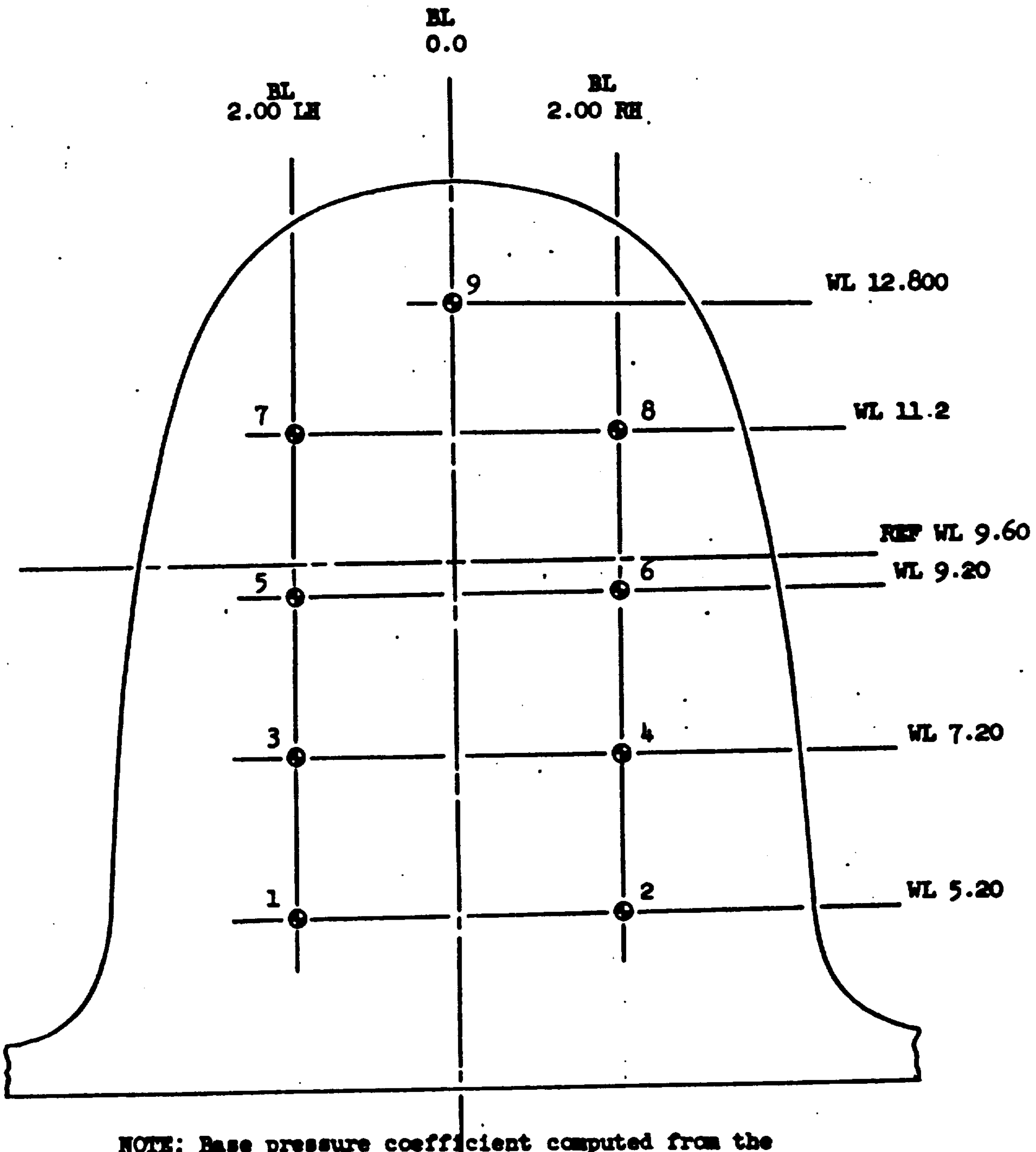
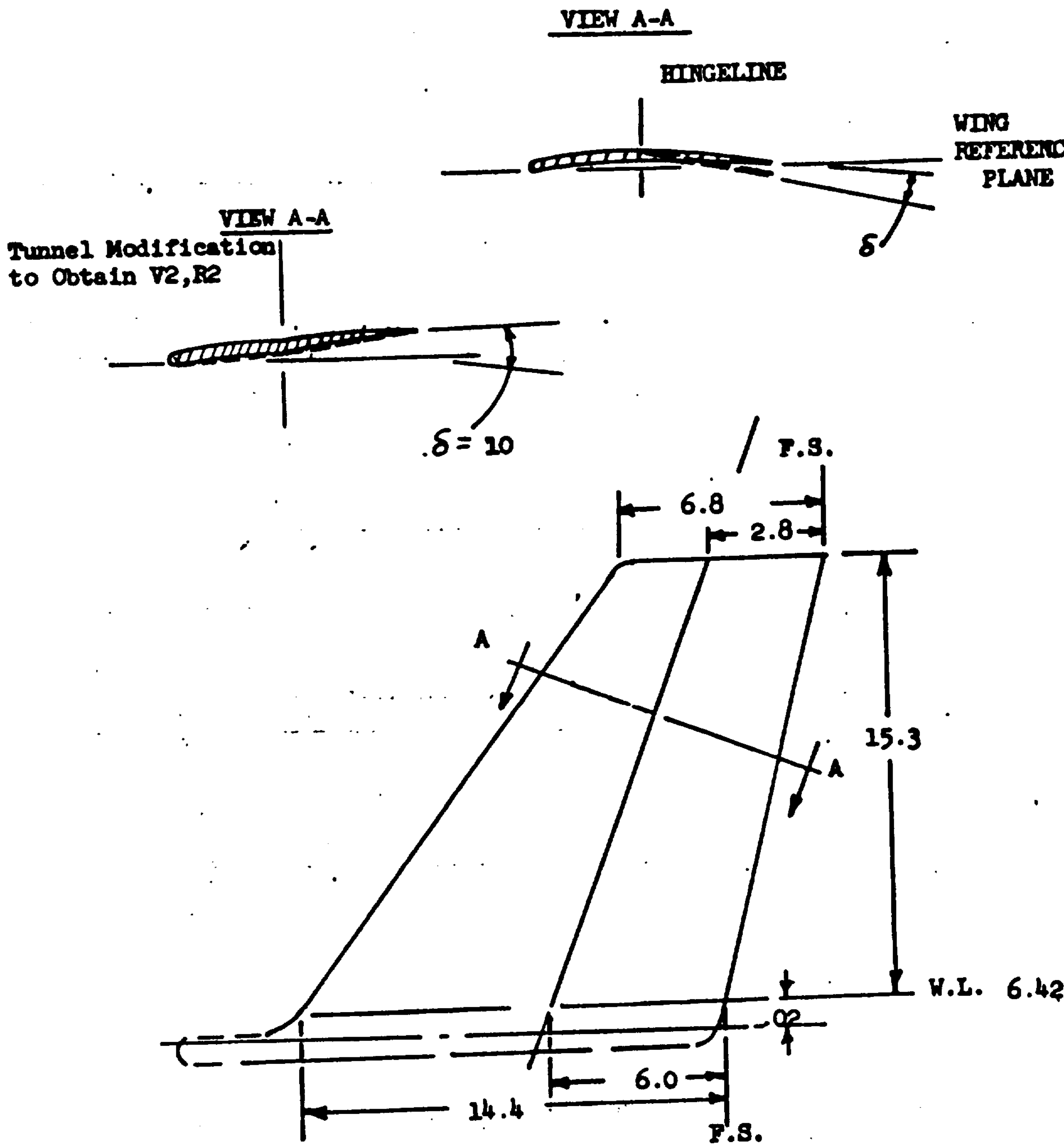
BASE PRESSURE ORIFICE LOCATION



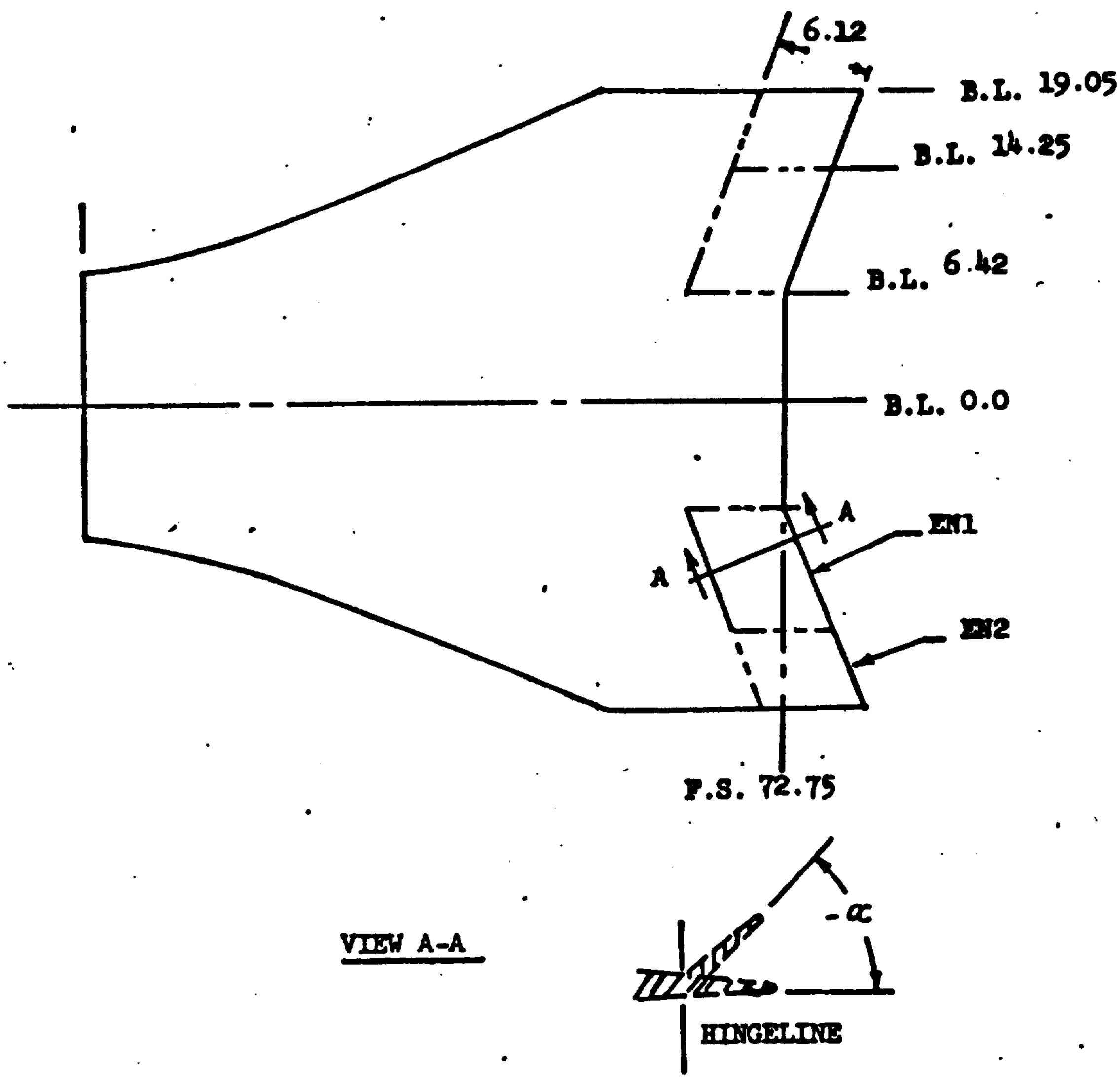
NOTE: Base pressure coefficient computed from the average of the active pressure orifices.

Figure 9. Drawing of Base Pressure Orifice Locations



HIGH CROSS RANGE ORBITER (O2)
L.H. VERTICAL (V1), RUDDER (R1)

Figure 10. Drawing of Vertical Fin and Rudder



4% SCALE

HIGH CROSS RANGE ORBITER (O2)
WING (W1), ELEVON (EN1,EN2)

Figure 11. Drawing of Wing and Elevons

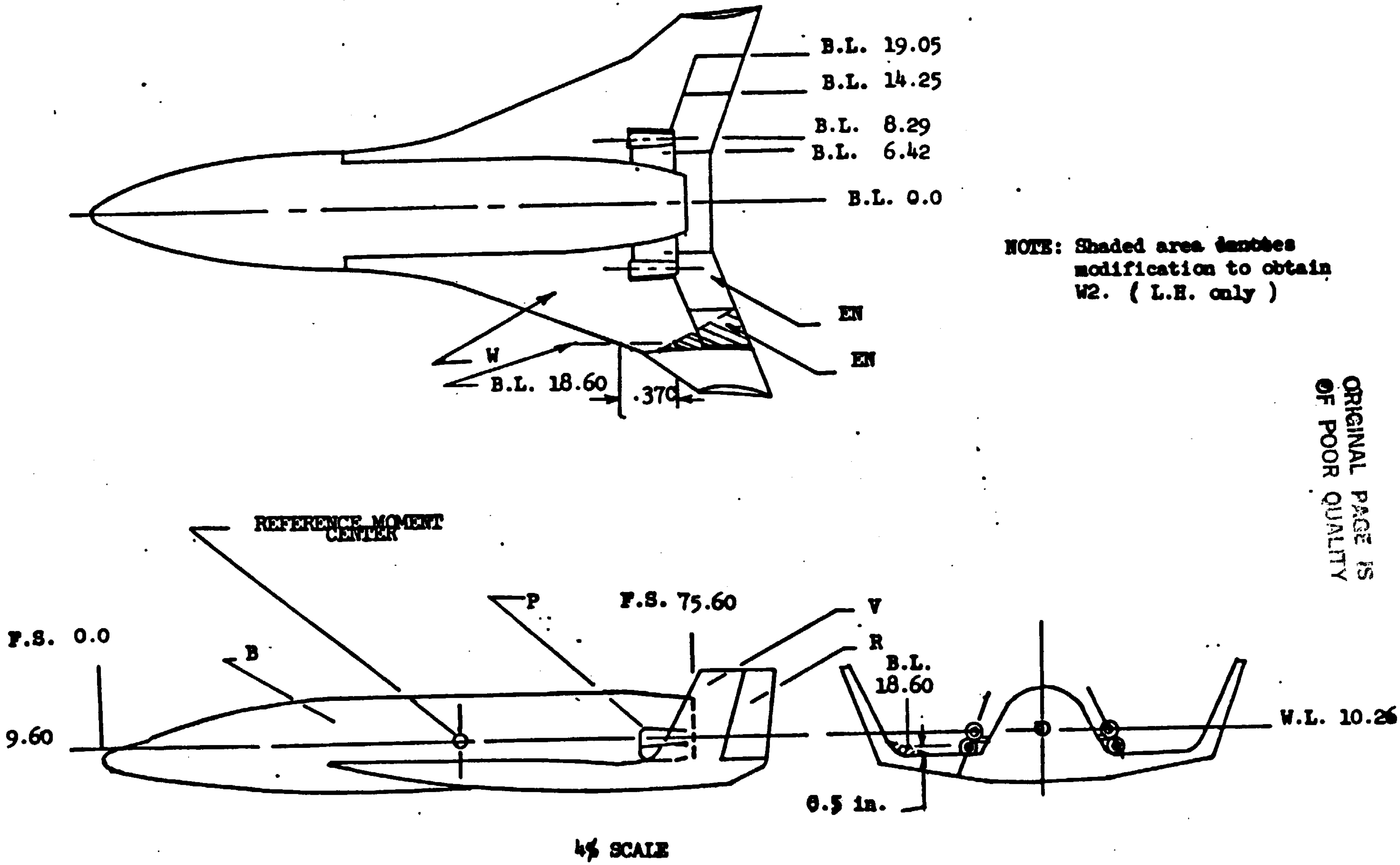


Figure 12. General Assembly High Cross Range Orbiter (02)

DELTA WING ORBITER
MDAC
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DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{EN1}	δ_{EN3}	δ_{R3}	δ_{FB1}	NO. of RUNS	IDPVAR (1) ELEVTR -3.)	-20	-15	-10	0	FLAP, B -30	-15	0	15			
RCFD10	B_1W_3	A	0					1					4							
11			3					1					5							
RCFD20	$B_1W_3V_3$	A	0					1					8							
21								1					29							
22			3					1					9							
23		4	AA					1					10							
24		8						1					11							
25		12						1					12							
RCFD26	R_3	A	0			20		1					7							
RCFD27	$B_1W_3V_3EN1$	A	0	—	0			1		13										
28	EN3			—	—			1		14										
29	$B_1W_3V_3EN3$			0	20/-20			1					15							
30	EN1			-	0			1	16											
31	$B_1W_3V_3EN1EN3$			—	—			3	17		21	20								
32				0/-30	0/-30			1					18							
33	EN1			—	0			1				19								
34	EN3FB1			-15	-15			4						25	24	21	26			
RCFD35		A	0	—	—		-30	2		28		27								

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CL	CD	CLM	CY	CLN	CSL	CDR				ELEVTR		

COEFFICIENTS: → IDPVAR(1) | IDPVAR(2) | NDV
FLAP, B

α or β SCHEDULES

α: $A = -10 \xrightarrow{\Delta 2} 20°$

β: $AA = -6 \xrightarrow{\Delta 1} 3°$

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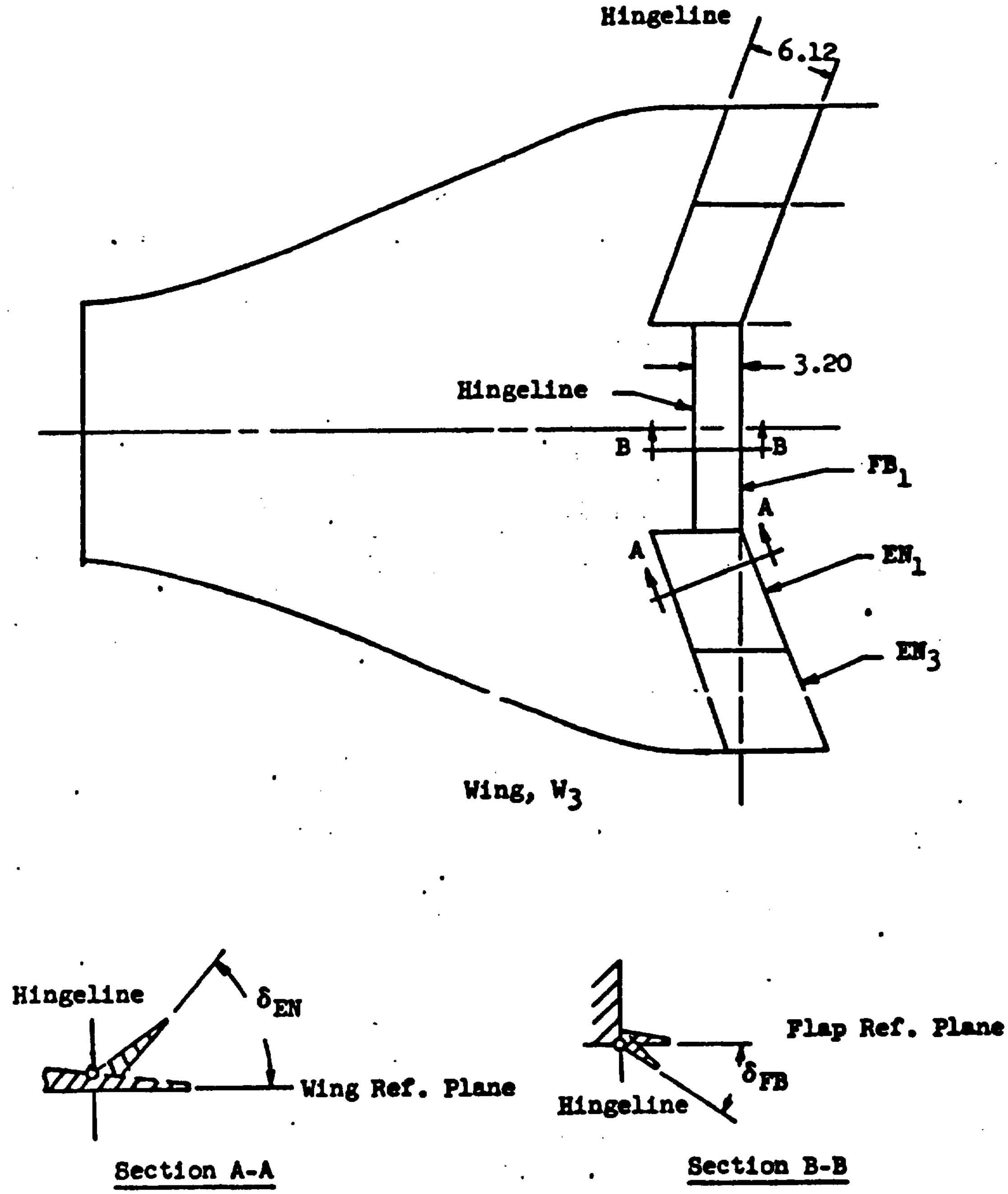
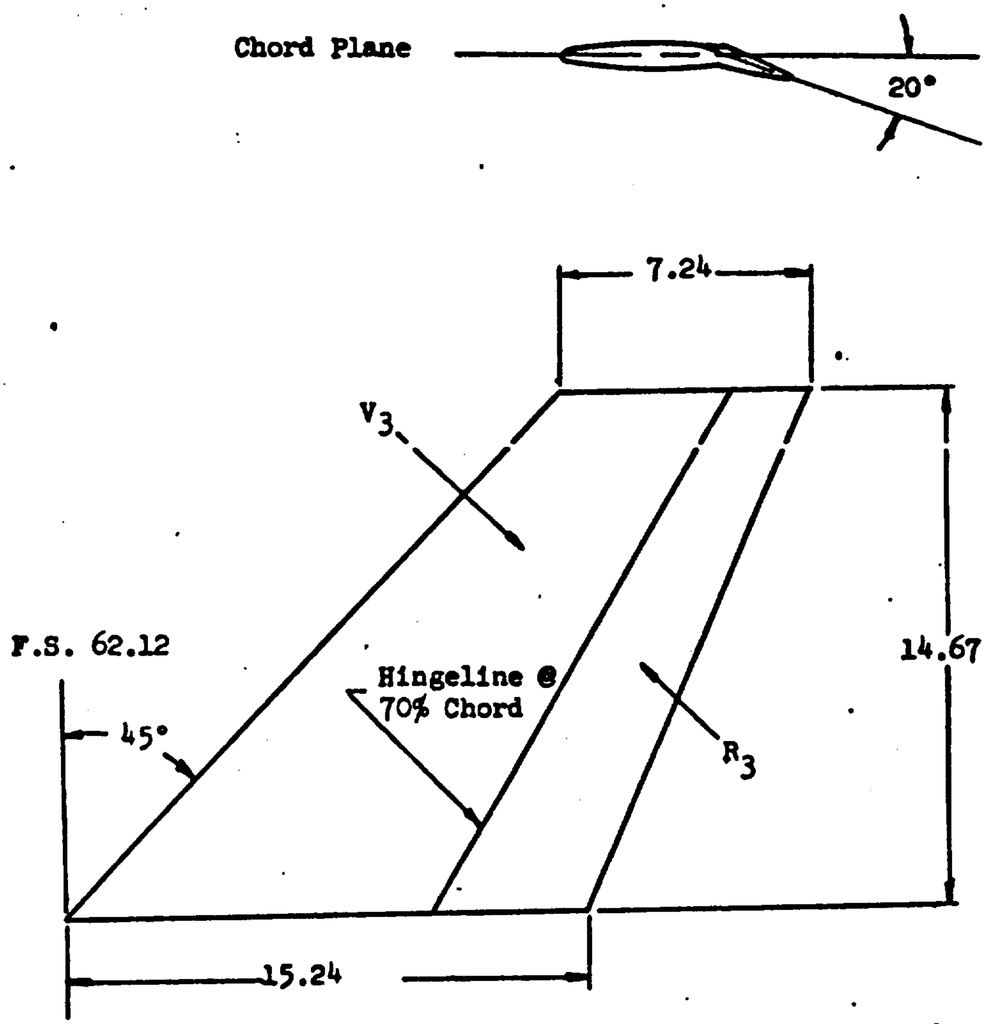


Notes:
All dimensions are model scale in inches.

FIGURE 4 - WING (W_3), ELEVONS (EN_1, EN_3), AND BODY FLAP (FB_1)



Notes:
All dimensions are model scale in inches.
Reference: McDonnell Dwg. No. STS-03303

FIGURE 5 - VERTICAL TAIL (V_3) AND RUDDER (R_3)

Note:
All dimensions are model scale in inches.
Reference: McDonnell Dwg. Nos. ST3-03300, ST3-03301, and ST3-03303

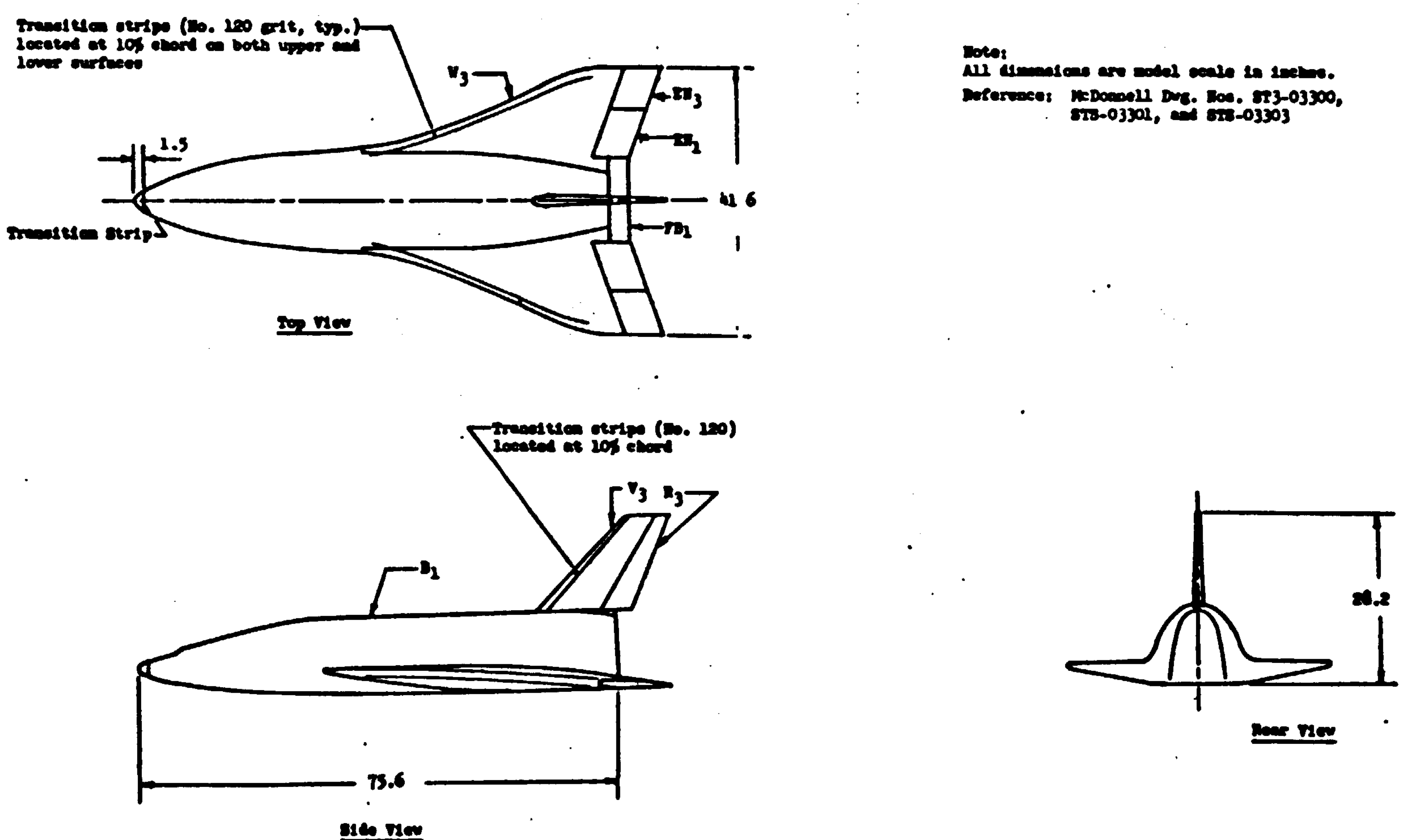
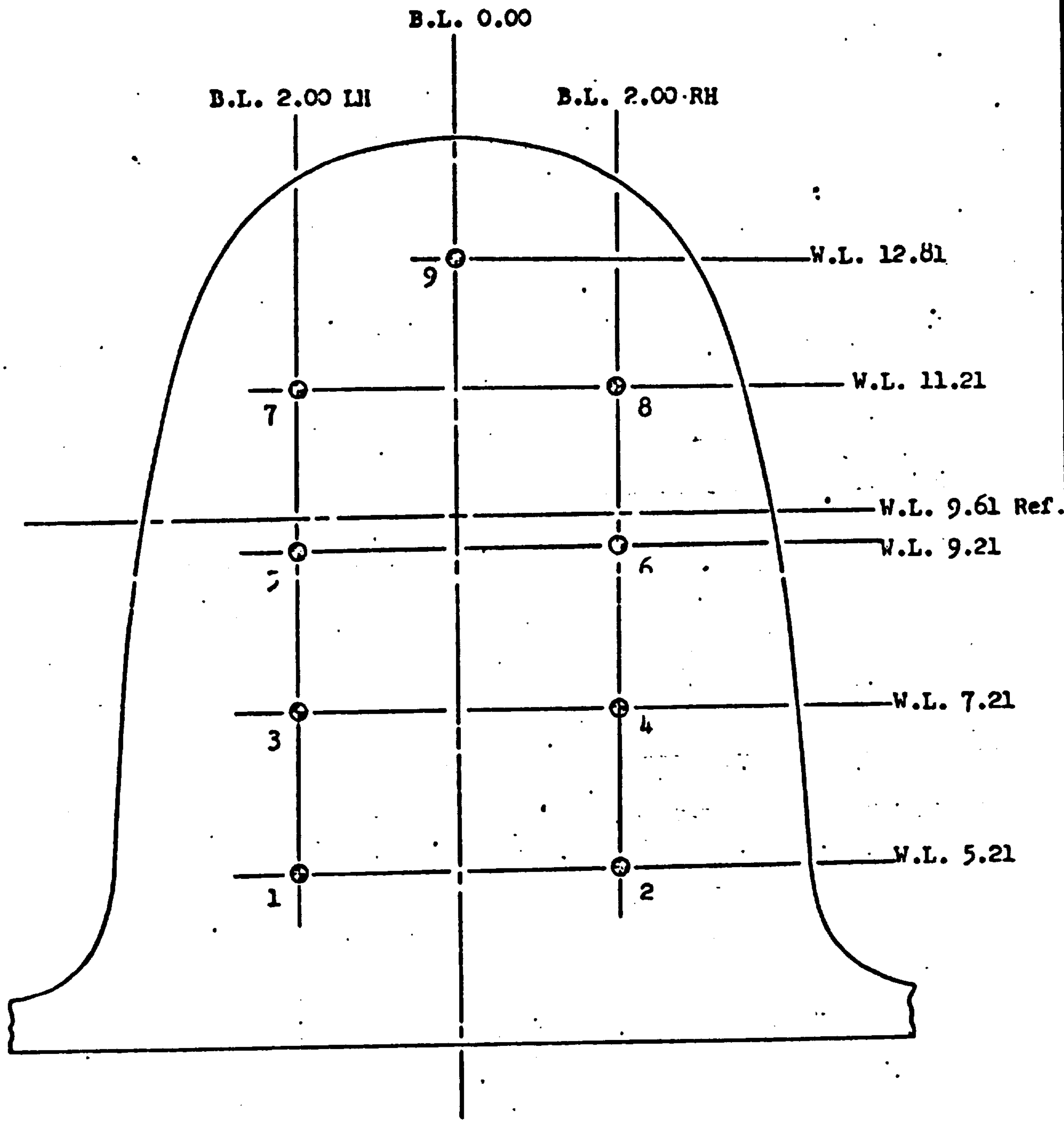


FIGURE 6 - GENERAL ASSEMBLY ($B_1EN_1EN_3R_3V_3W_3FB_1$)



View Looking Upstream

Notes:
All Dimensions are model scale in inches.
Ref.: McDonnell Dwg. No. STS-03300

FIGURE 7 - BASE-PRESSURE ORIFICE LOCATIONS

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DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_a	δ_R	δ_{SB}	δ_{BF}	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)
RCPO 06	B5W11 V6	A	0	-5	0	0	0	0	
07		A	-3	-5	0	0	0	0	
12		A	0	-10	0	0	0	0	
13		A	-3	-10	0	0	0	0	
17		A	3	-10	0	15	0	0	
18		A	0	-10	0	15	0	0	
19		A	-3	-10	0	15	0	0	
20		A	0	-10	0	30	0	0	
03		A	0	-10	10	0	0	0	
21		A	0	0	10	0	0	0	
04		A	-3	-10	10	0	0	0	
05		A	3	-10	10	0	0	0	
22		A	0	-10	20	0	0	0	
23		A	-3	-10	20	0	0	0	
8		A	0	-15	0	0	0	0	
9		A	-3	-15	0	0	0	0	
14		4	B	-10	0	0	0	0	
15		8	B	-10	0	0	0	0	
16		12	B	-10	0	0	0	0	
RCPO 58	B5W11 P	A	0	-10	0	-	0	0	

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

BETA CL CD CLM CY CLN CSL CDB

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

A) $-6° \rightarrow 18°, \Delta 2°$ $+7°, 9°, 11°$

B) $-5° \rightarrow 10°, \Delta 1°$

DELTA WING ORBITER
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☐ PRETEST

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DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES					MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)
		α	β	δ_e	δ_a	δ_R	δ_{SB}	δ_{BF}	SBPOS
RCPO 28	B5	A	0	-	-	-	0	0	-
29		A	-3	-	-	-	0	0	-
25	B5W11	A	0	0	0	-	0	0	-
26		A	-3	0	0	-	0	0	-
49		A	0	-10	0	-	0	15	-
48		A	0	-10	0	-	0	30	-
44	B5W11SB2	A	0	-10	0	-	30	0	3
41		A	0	-10	0	-	30	15	2
40		A	0	-10	0	-	30	15	1
39		A	0	-10	0	-	30	15	3
42		A	-3	-10	0	-	30	15	3
50		A	0	0	0	-	30	15	3
45		A	0	-10	0	-	60	0	3
46		A	0	-10	0	-	60	30	3
52	B5W11G	A	0	0	0	-	0	0	-
53		A	0	-10	0	-	0	0	-
54		A	-3	-10	0	-	0	0	-
RCPO 02	B5W11 V6	A	0	0	0	0	0	0	-
10		A	0	0	0	0	0	0	-
11		A	-3	0	0	0	0	0	-

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

BETA CL CD CLM CY CLN CSL CDB

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES
A) $-6° \rightarrow 18°, \Delta 2° + 7°, 9°, 11°$
B) $-5° \rightarrow 10°, \Delta 1°$

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DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES					MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
		α	β	δ_e	δ_a	δ_R	δ_{SB}	δ_{SF}												
RCPO 56	B5W11 PG	A	0	-10	0	-	0	0												

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

BETA CL CD CLM CY CLN CSL CDR

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

α or β SCHEDULES
A) $-6° \rightarrow 18°, \Delta 2° + 7°, 9°, 11°$
B) $-5° \rightarrow 10°, \Delta 1°$

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DELTA WING ORBITER
MDAC
DR#1067 B-1- 196

4% SCALE DELTA WING ORBITER

SERIES III LSWT

ALL DIMENSIONS ARE MODEL SCALE.

REF. DWG. STS-03304 TO 03313

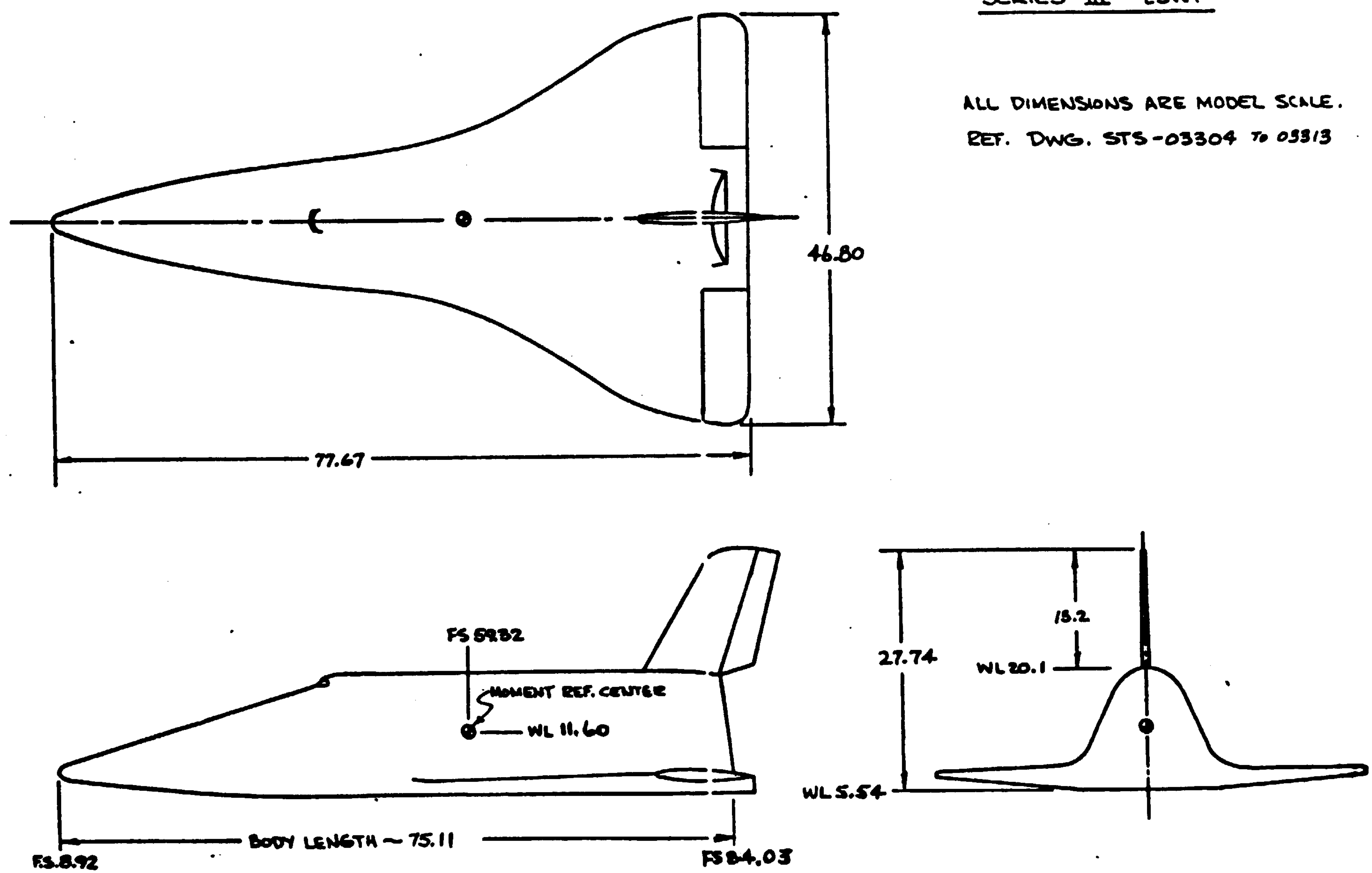

FIGURE 4.

NOTE: All dimensions are model scale in inches.
Reference: McDonnell DWG No. STS

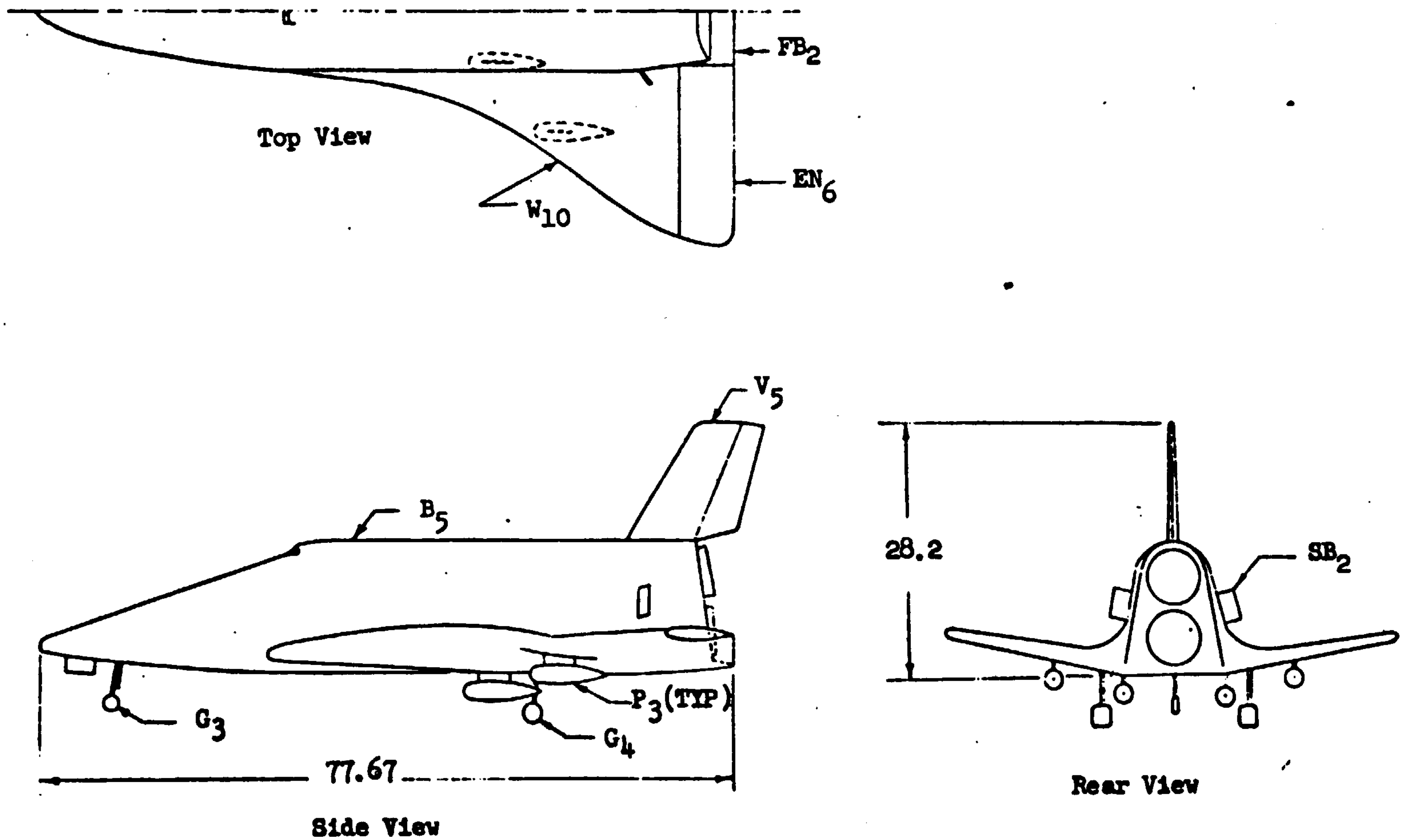

FIGURE 5. - GENERAL ASSEMBLY (B_5 EN_6 FB_2 G_3 G_4 P_3 V_5 W_{10})

DELTA WING ORBITER
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DR#1067 B-1- 197

HCR ORBITER - BODY ALONE DEFINITION

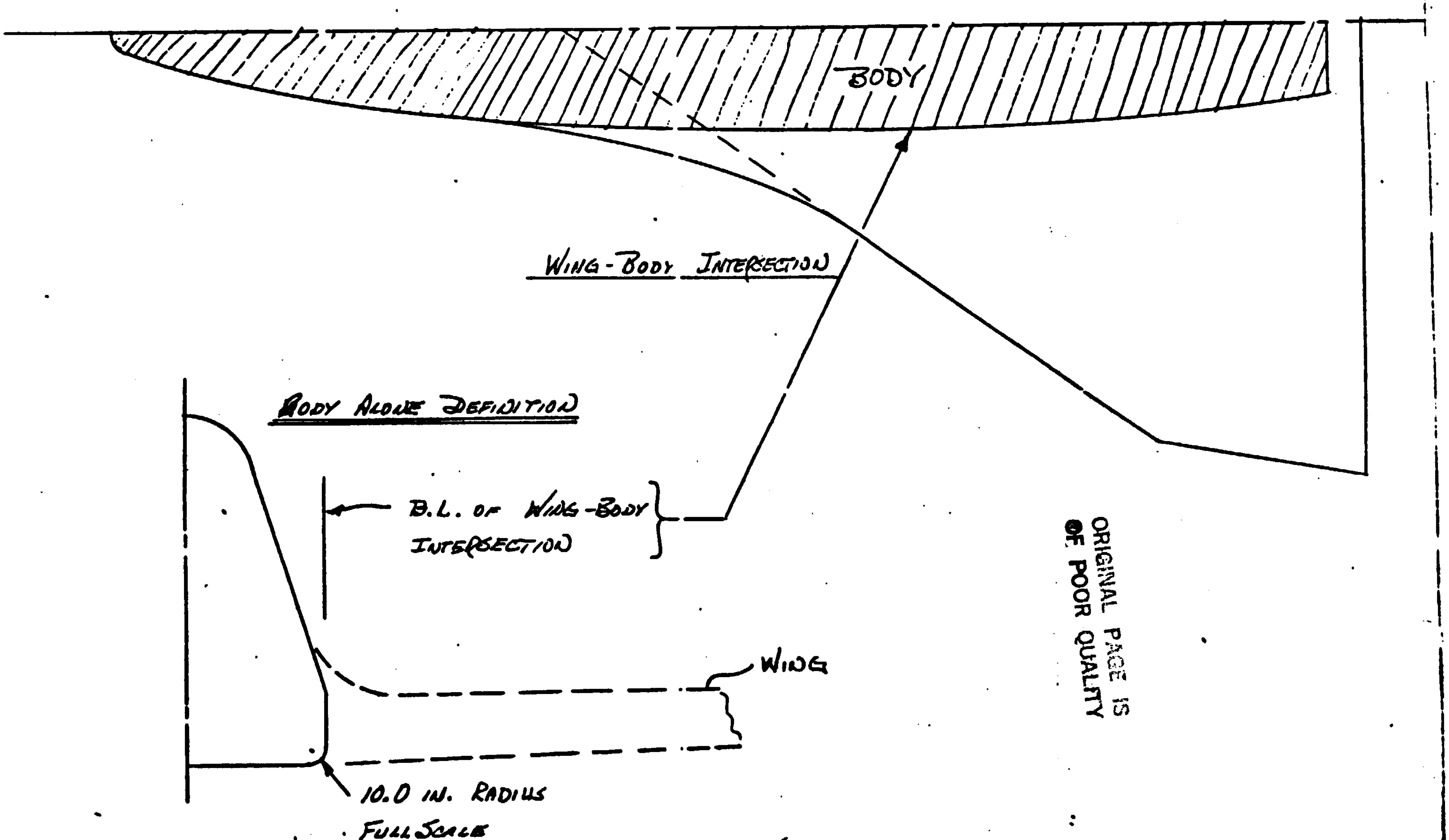


FIGURE 6.

BODY FLAP CONFIGURATION FOR 4% SCALE DELTA WING SER. III

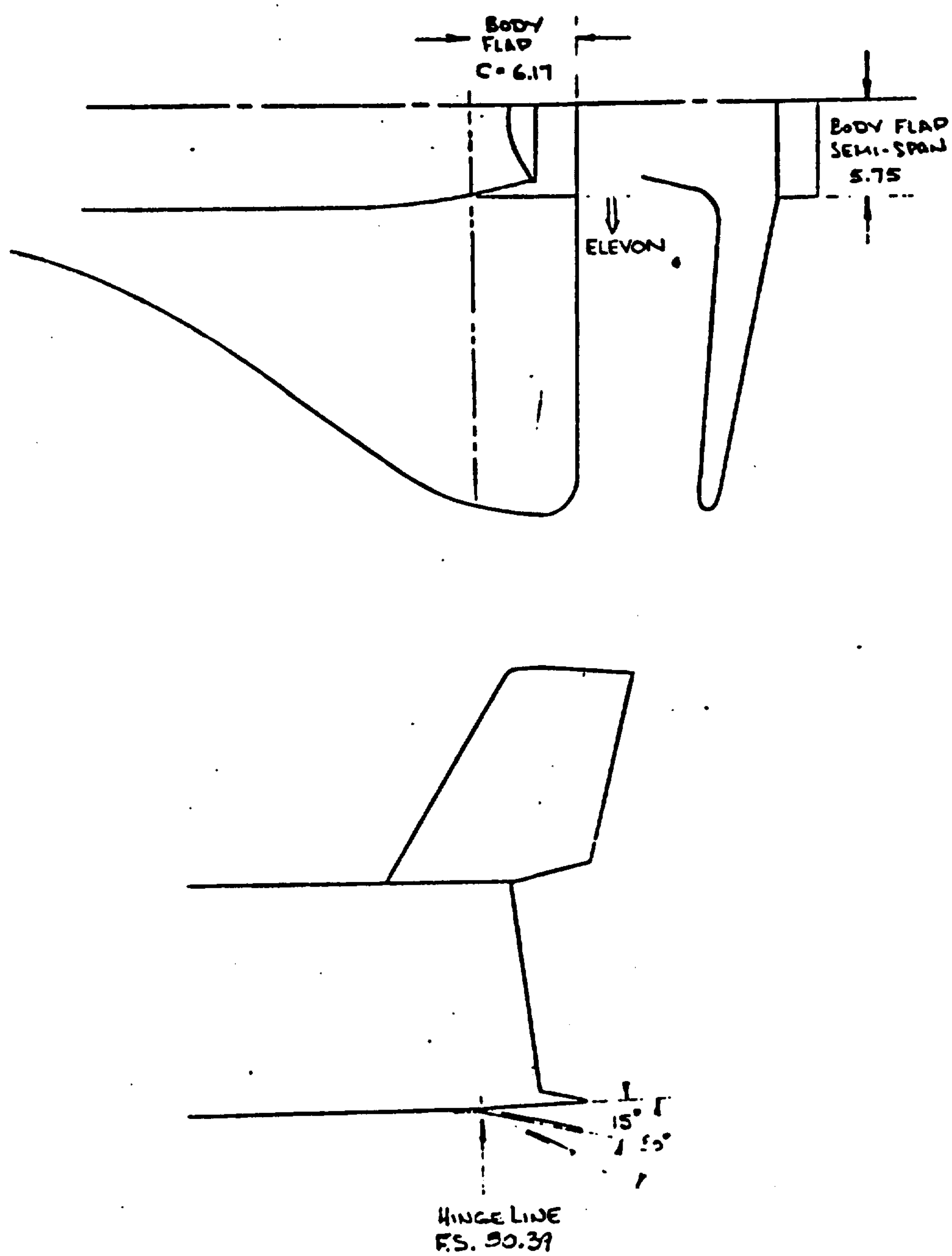
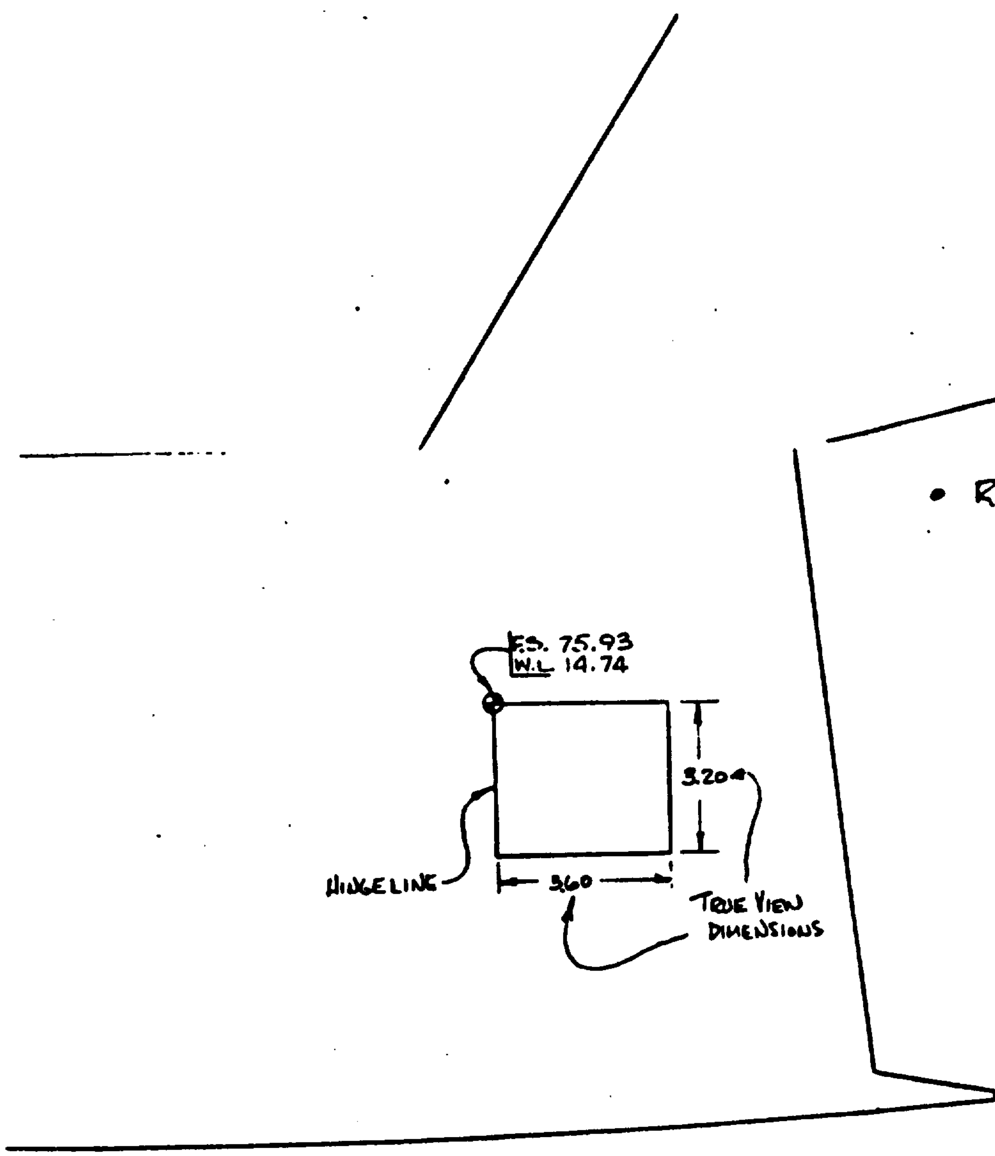


FIGURE 7.

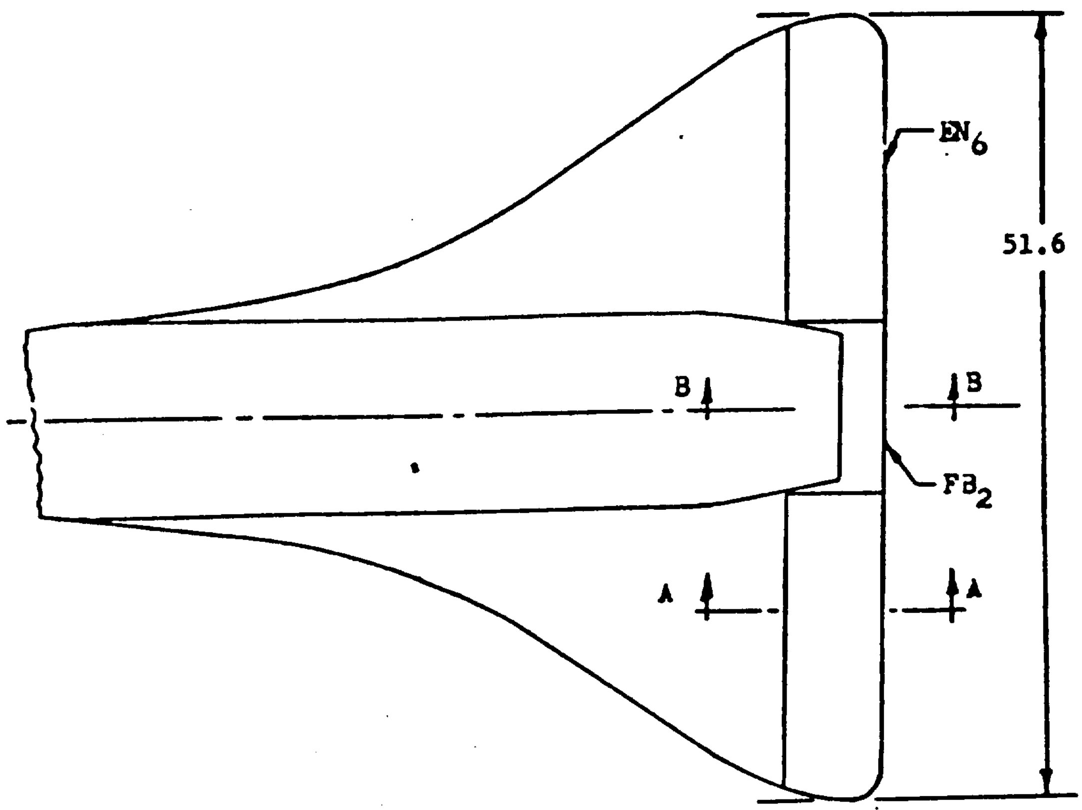
7 Jan '71

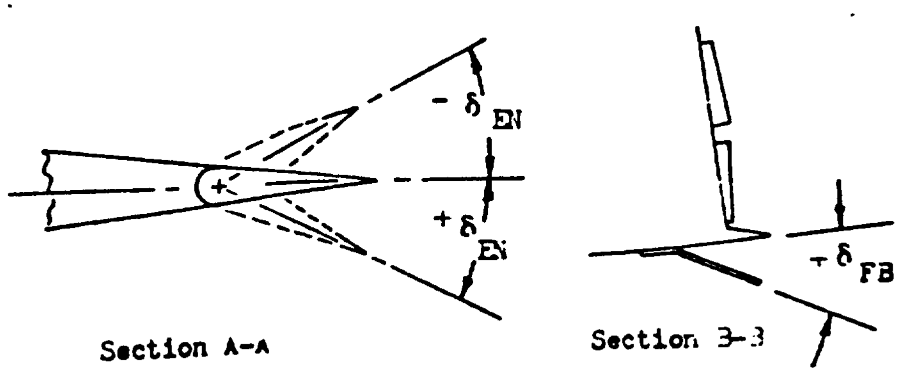
AFT BODY SPEED BRAKE ~ 4% DELTA WING SERIES III LSWT



• RH. & L.H. IDENTICAL.

FIGURE 8.

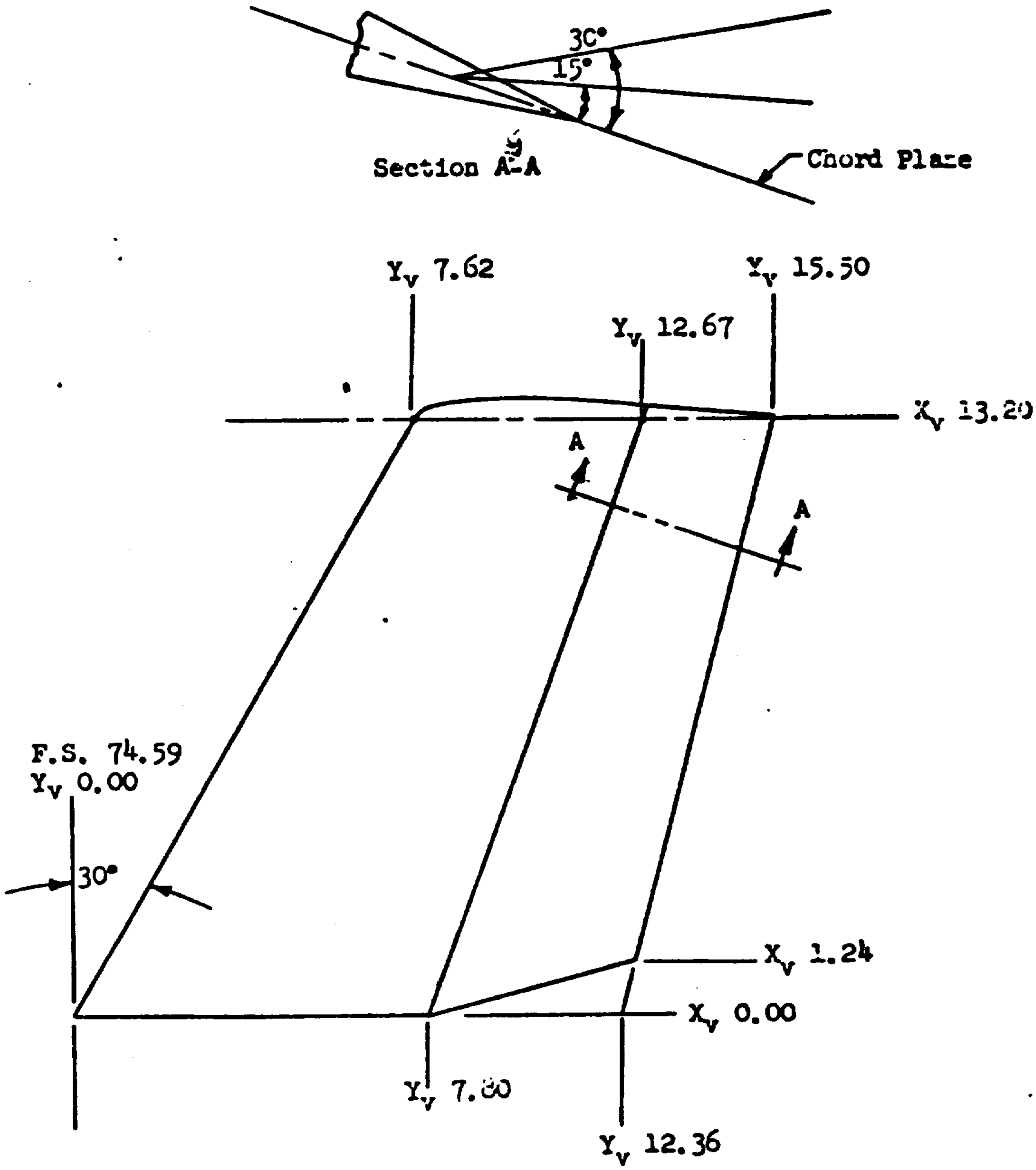




Note: All dimensions are model scale in inches.

Reference: McDonnell Dwg. Nos. STS-03305 and STS-03308

FIGURE 9.- WING (W_{11}), ELEVONS (EN_6), AND BODY FLAP (FB_2)



NOTES:
All dimensions are model scale in inches,
Reference: McDonnell DWG No. STS-03306

FIGURE 10.- VERTICAL TAIL (V_6)

BASE AREA AND SIMULATED ROCKET DETAILS

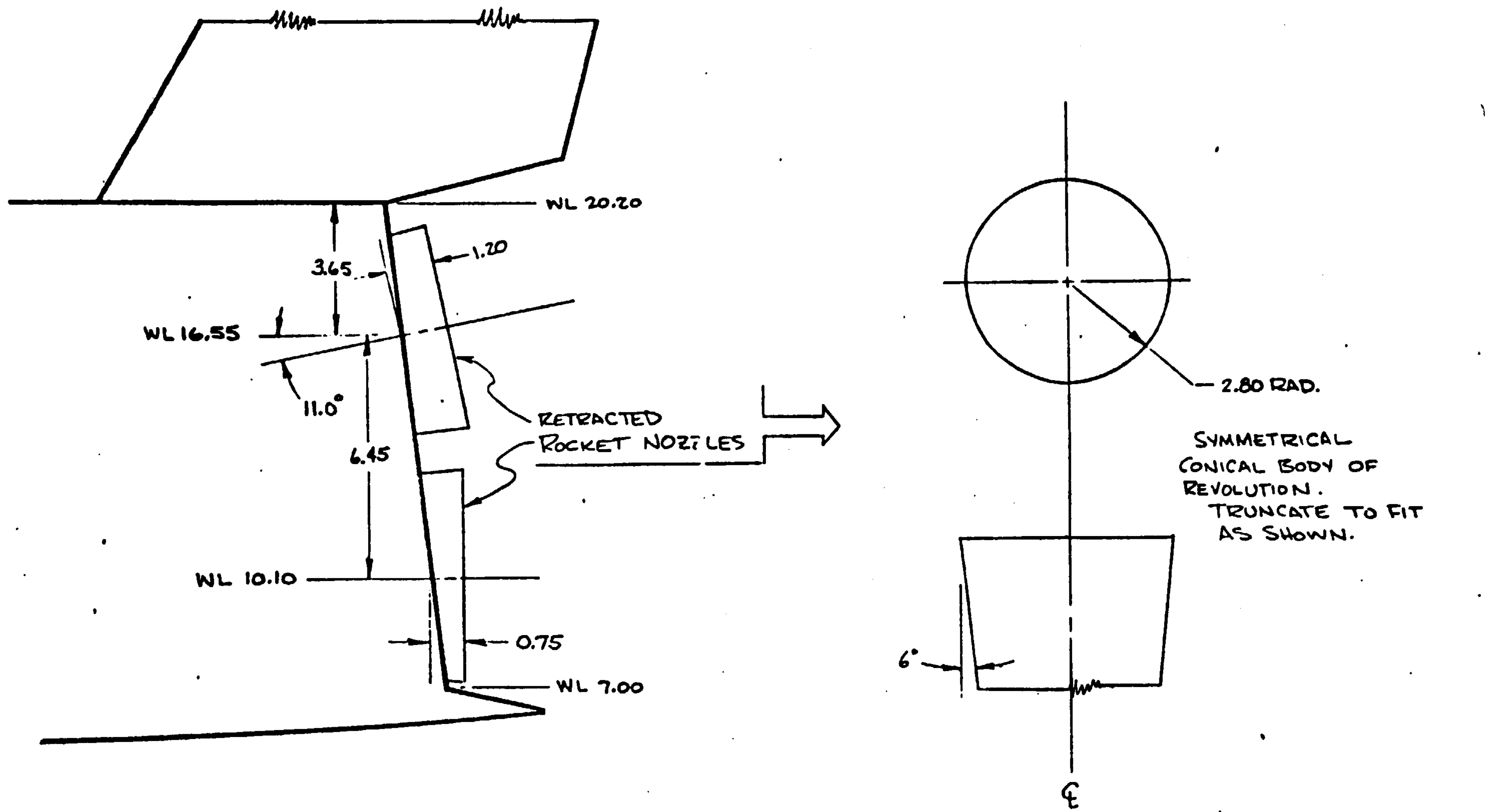
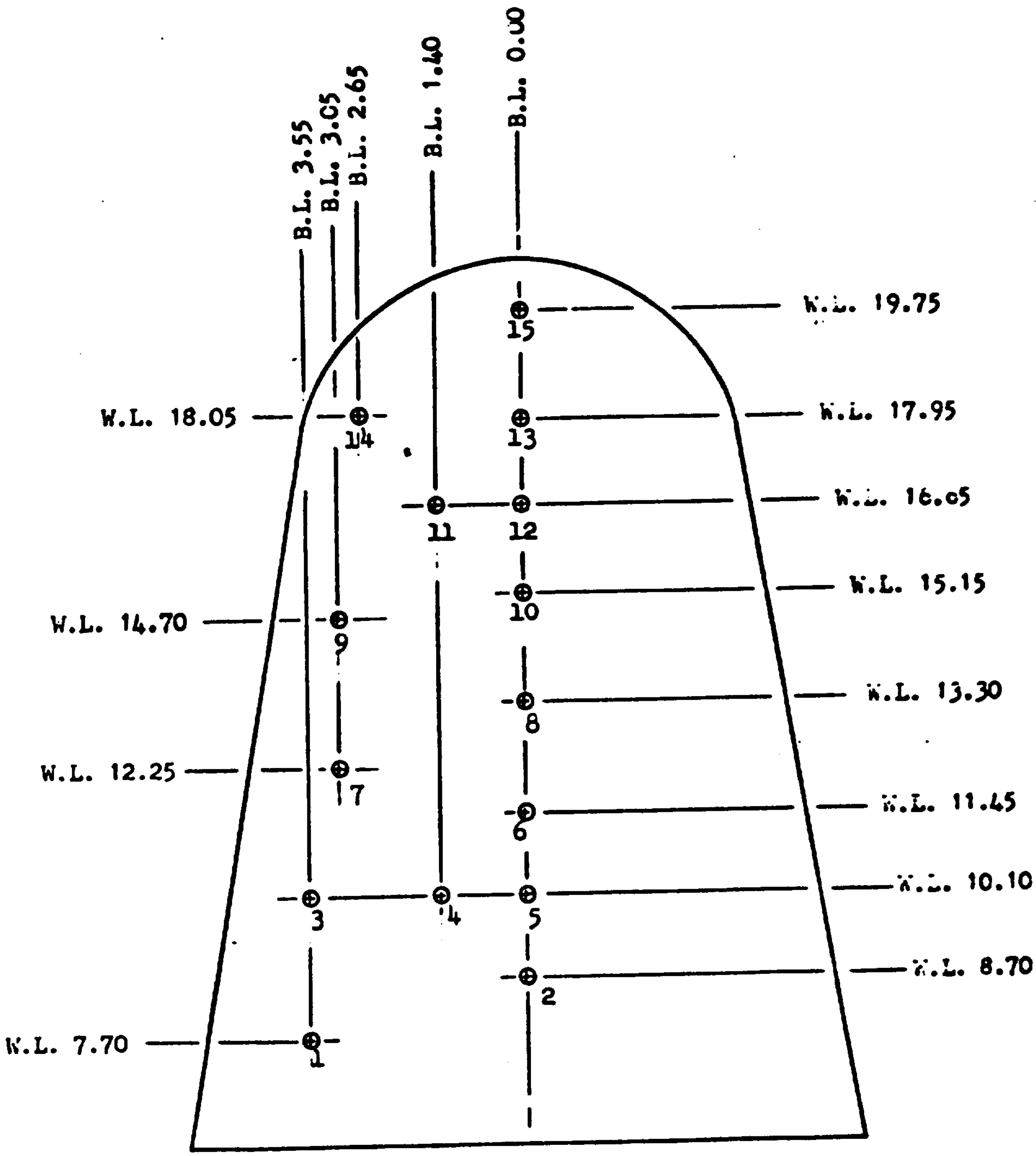


FIGURE 11.



View Looking Upstream

NOTES:
All dimensions are model scale in inches.
Reference: McDonnell DWG No. STS-03315

FIGURE 12. - BASE PRESSURE ORIFICE LOCATIONS

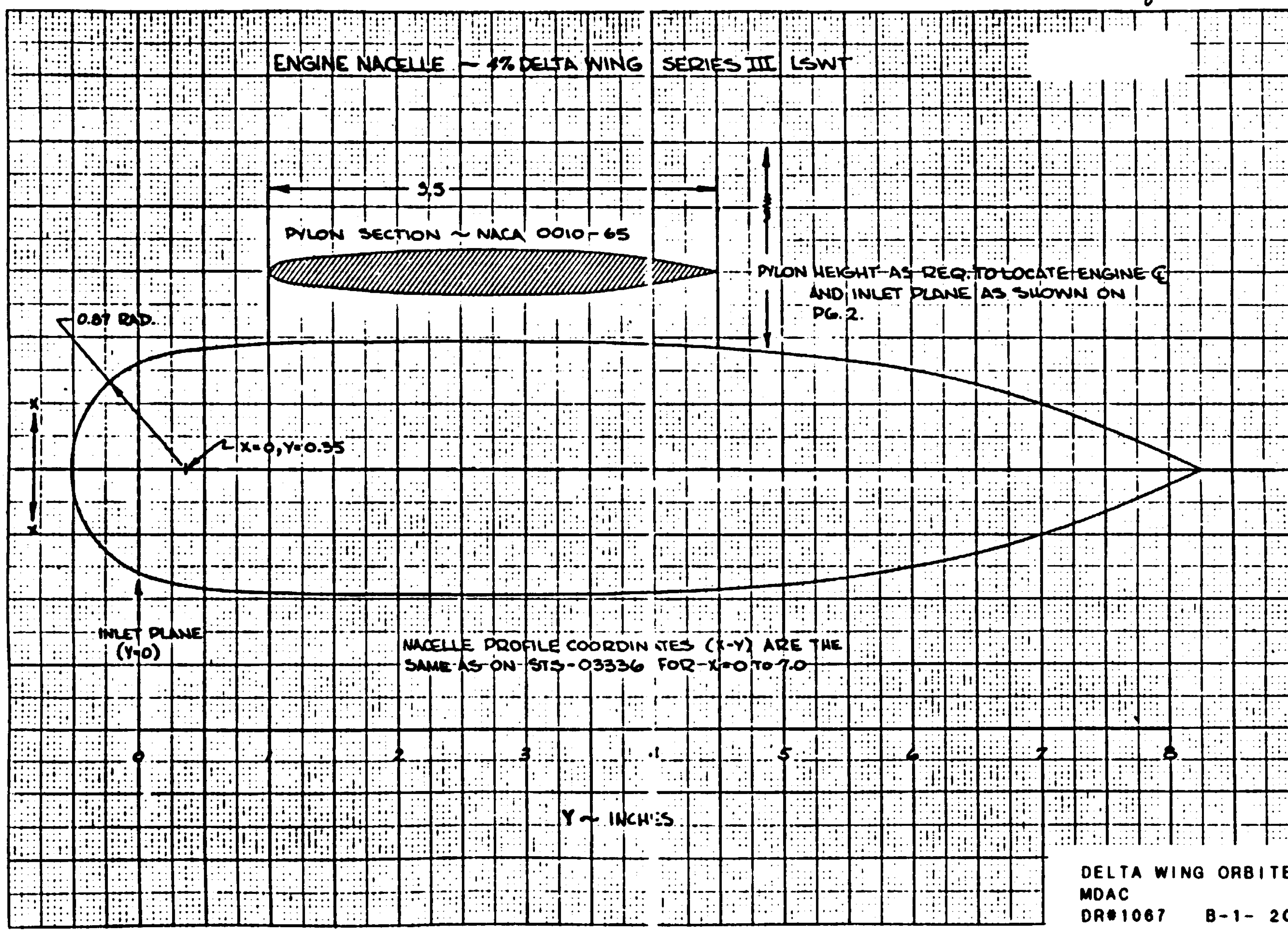

ENGINE NACELLE ~ 4% DELTA WING SERIES III LSWT
3.5
PYLON SECTION ~ NACA 0010-65
PYLON HEIGHT AS REQ. TO LOCATE ENGINE ℄
AND INLET PLANE AS SHOWN ON
PG. 2.
0.87 RAD.
X=0, Y=0.35
X
X
INLET PLANE
(Y=0)
NACELLE PROFILE COORDINATES (X-Y) ARE THE
SAME AS ON STS-03336 FOR X=0 TO 7.0
0
1
2
3
4
5
6
7
8
Y ~ INCHES
DELTA WING ORBITER
MDAC
DR#1067 B-1- 205

FIGURE 13.

DELTA WING ORBITER
MDAC
DR#1067 B-1- 206

ENGINE NACELLE ~ 4% DELTA WING SERIES III LSWT

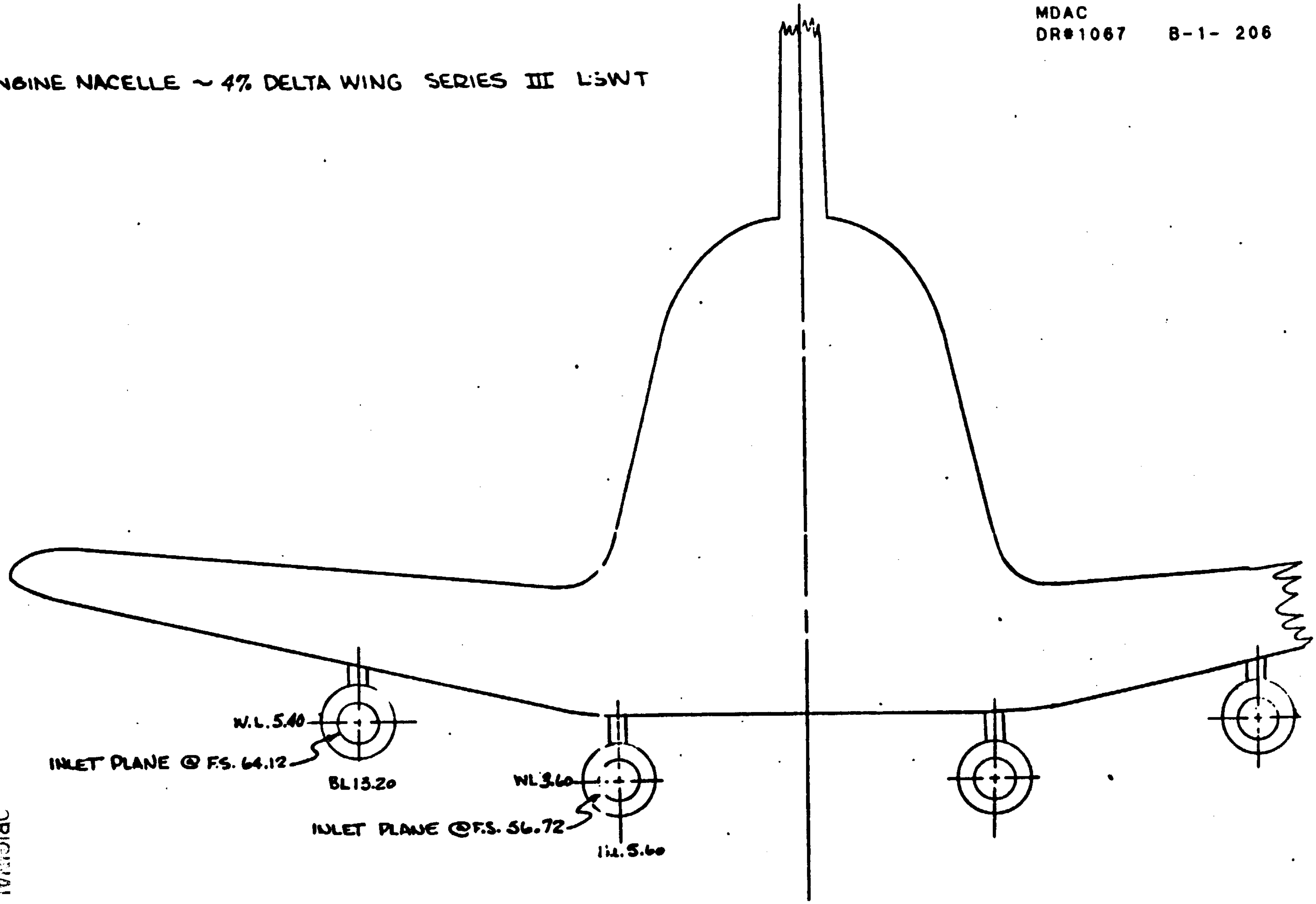


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FIGURE 14.

P. SEENEY 12·28·70

4% DELTA WING ORBITER ~ SERIES III LSWT

MAIN LANDING GEAR

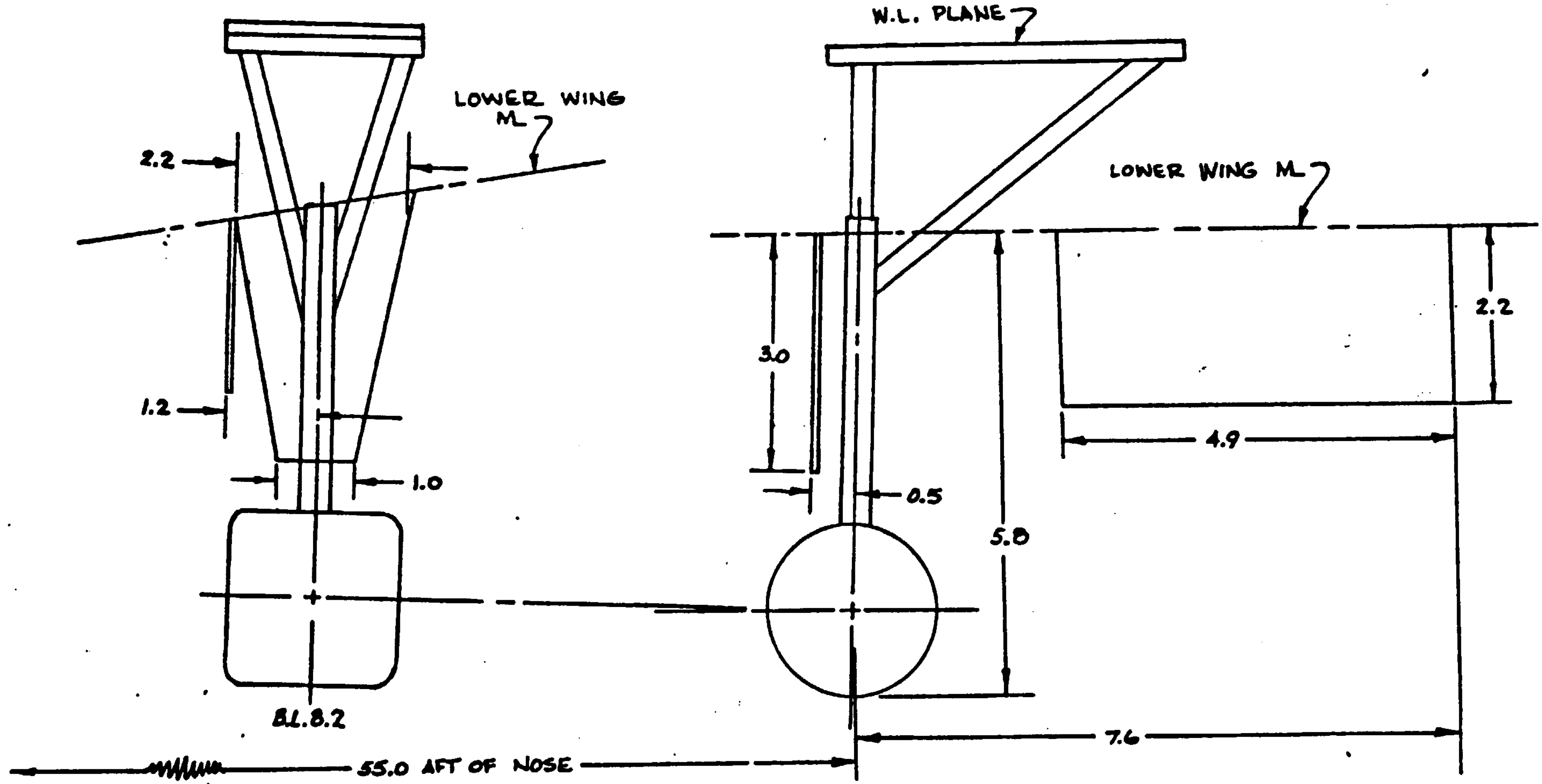

FIGURE 15.

4% DELTA WING ORBITER ~ SERIES III LSWT
NOSE LANDING GEAR

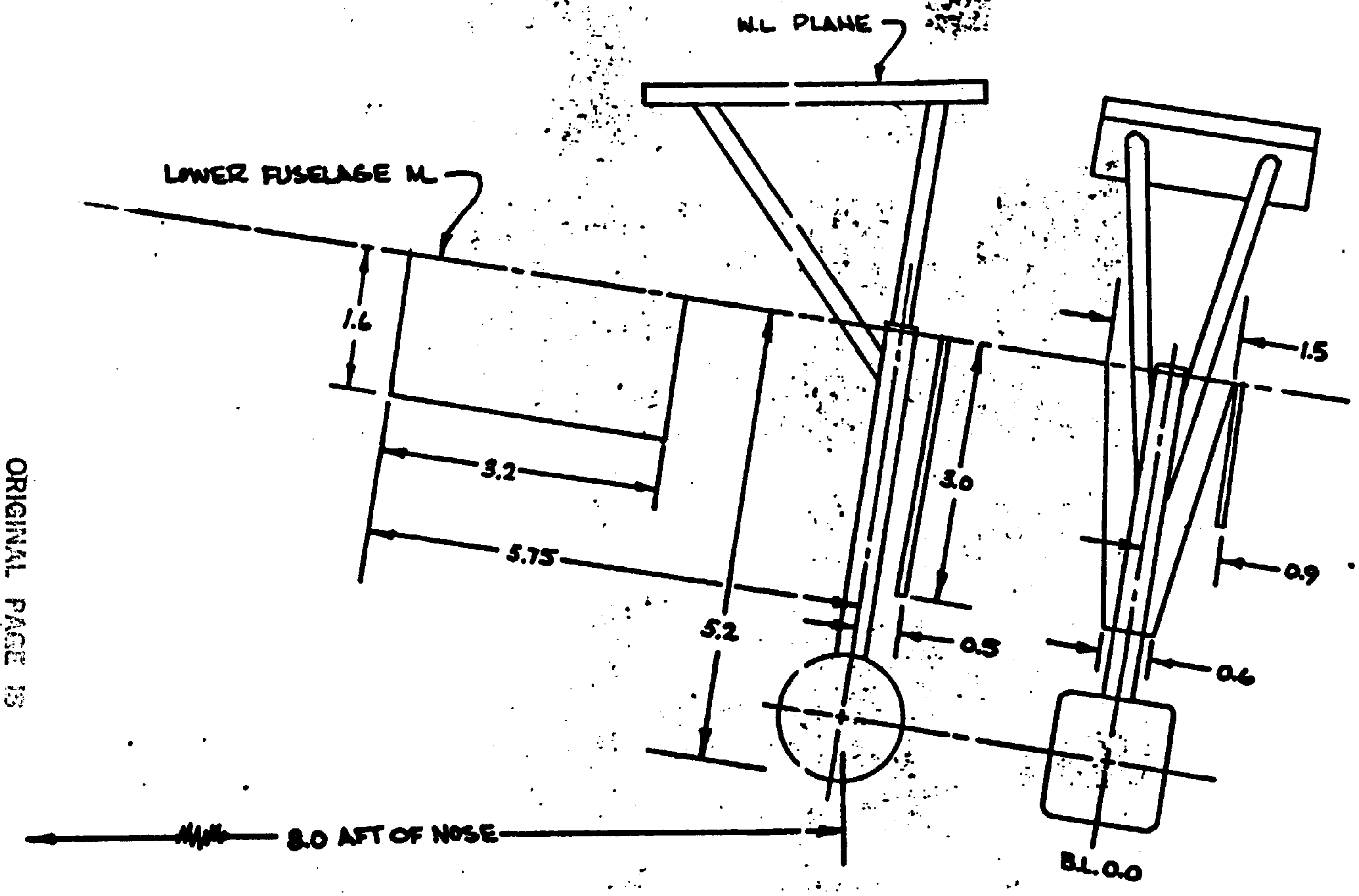

FIGURE 16.

TEST Ames 35-111 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION (E INBD) EL	ER	(A OUTBD) AL	AR	NO. of RUNS	CONTROL DEF (Bodyflap) FI	(Rudder) K	RN/L		MACH NUMBERS = 7.4 A: Low 10-28	B: Mid 30-48	F: Hi 50-68					
RAM 302	BI W3 FIV3	C	O	0	0	0	0	3	0	0	3.0		16	2	34					
203	↓	C	O	-15	-15	-15	-15	2	0	0	3.0		21	3						
205		C	O	-30	-30	-30	-30	2	0	0	3.0			5	36					
207		C	O	-45	-45	-45	-45	2	0	0	3.0			7	37					
211		C	O	+15	+15	+15	+15	2	0	0	3.0		25	11						
208	BIW3 FI	C	O	0	0	0	0	2	0	–	3.0		18	8						
309	BI W3 V3	C	O	0	0	0	0	3	–	0	3.0		19	9	35					
016	BI W3 FIV3	A	O	0	0	0	0	1	0	0	3.0		16							
015	↓	A	O	0	0	-15	+15	1	0	0	3.0		15							
013		A	O	+15	+15	-15	-15	1	0	0	3.0		13							
014		A	O	+15	+15	-30	0	1	0	0	3.0		14							
003		B	O	-15	-15	-15	-15	1	0	0	3.0			3						
005		B	O	-30	-30	-30	-30	1	0	0	3.0			5						
006		B	O	-30	-30	-45	-15	1	0	0	3.0			6						
004		B	O	-15	-15	-30	0	1	0	0	3.0			4						
202		D	O	0	0	0	0	2	0	0	3.0		16	2						
210		D	O	0	0	0	0	2	0	20	3.0		20	10						
023		A	O	+15	+15	+15	+15	1	0	0	1.0		23							
024		A	O	+15	+15	+15	+15	1	0	0	4.7		24							
RAM 025	↓	A	O	+15	+15	+15	+15	1	0	0	3.0		25							

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

CN CA CLM CY CYN CBL L/D ALPHA ALPHA

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES α:
A = 10° TO 28° ; F = 50° TO 70°
B = 30 TO 48°
C = 10° TO 70° = A+B+F
D = 10° TO 48° = A+B ; NOTE: A & B 2° INCRMTS.

β: E = 0° TO 10° @ 2° INCRMTS

DELTA WING ORBITER
MDAC
DR#1071 B-1-209

TEST AMES 3.5-111 DATA SET COLLATION SHEET HCR

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION (E INBD) EL	ER	(A OUTBD) AL	AR	NO. of RUNS	CONTROL DEF (Body Flap) F1	(Rudder) R	MACH NUMBERS RN/L	RUN NO.
RAM017	B1 W3 F1 V3	A	0	0	0	0	0	1	+15	0	3.0	17
022	↓	A	0	+15	+15	+15	+15	1	+15	0	3.0	22
026	B1 W3 F1 V3	10	E	0	0	0	0	1	0	0	3.0	26
027	B1 W3 F1	10	E	0	0	0	0	1	0	-	3.0	27
028	↓	20	E	0	0	0	0	1	0	-	3.0	28
030	B1 W3 F1 V3	20	E	0	0	0	0	1	0	0	3.0	30
032	↓	50	E	0	0	0	0	1	0	0	3.0	32
↓ 033	B1 W3 F1	50	E	0	0	0	0	1	0	-	3.0	33
RAM001	B1 W1 F1	B	0	0	0	0	0	1	0	-	3.0	1
↓ 038	B1 W1 F1	F	0	0	0	0	0	1	0	-	3.0	38

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

ALPHA ALPHA
IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:
α or β SCHEDULES
α: A = 10° to 28° β: E = 0° to 10°
B = 30° to 48°
F = 50° to 70°

NASA-MSFC-MAF

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TEST AMES 3.5-113 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION (E INBD) EL	CONTROL DEFLECTION (E INBD) ER	CONTROL DEFLECTION (A OUTBD) AL	CONTROL DEFLECTION (A OUTBD) AR	NO. of RUNS	Body FLAP Fl	RUDDER R	RN/L	RUN NO.
RAU002	B1 W3 V_3	A	0	+15	+15	+15	+15	1	+15	0	3.0	02
RAU003		A	0	+15	+15	+15	+15	1	+15	0	5.0	03
RAU004		A	0	+15	+15	+15	+15	1	+15	0	7.0	04
RAU005		A	0	+15	+15	+15	+15	1	+15	0	1.0	05
RAU006		A	0	0	0	0	0	1	0	0	1.0	06
RAU008		A	0	0	0	-15	+15	1	0	0	7.0	08
RAU009		A	0	0	0	-15	+15	1	0	0	3.0	09
RAU011		A	0	0	0	0	0	1	0	0	7.0	11
RAU012		A	0	0	0	-5	+5	1	0	0	3.0	12
RAU013		A	0	+15	+15	-15	-15	1	+15	0	3.0	13
RAU014		A	0	+15	+15	-30	0	1	+15	0	3.0	14
RAU015		A	0	+15	+15	-45	+15	1	+15	0	3.0	15
RAU016		A	0	0	0	-15	+15	1	0	0	1.0	16
RAU017	B1 W3 V_3	25	E	0	0	0	0	1	0	0	3.0	17
RAU018	B1 W3	25	E	0	0	0	0	1	0	0	3.0	18
RAU010	B1 W3 V_3	A	0	0	0	-30	+15	1	0	0	3.0	10

MACH NUMBERS = 7.4

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

COEFFICIENTS:

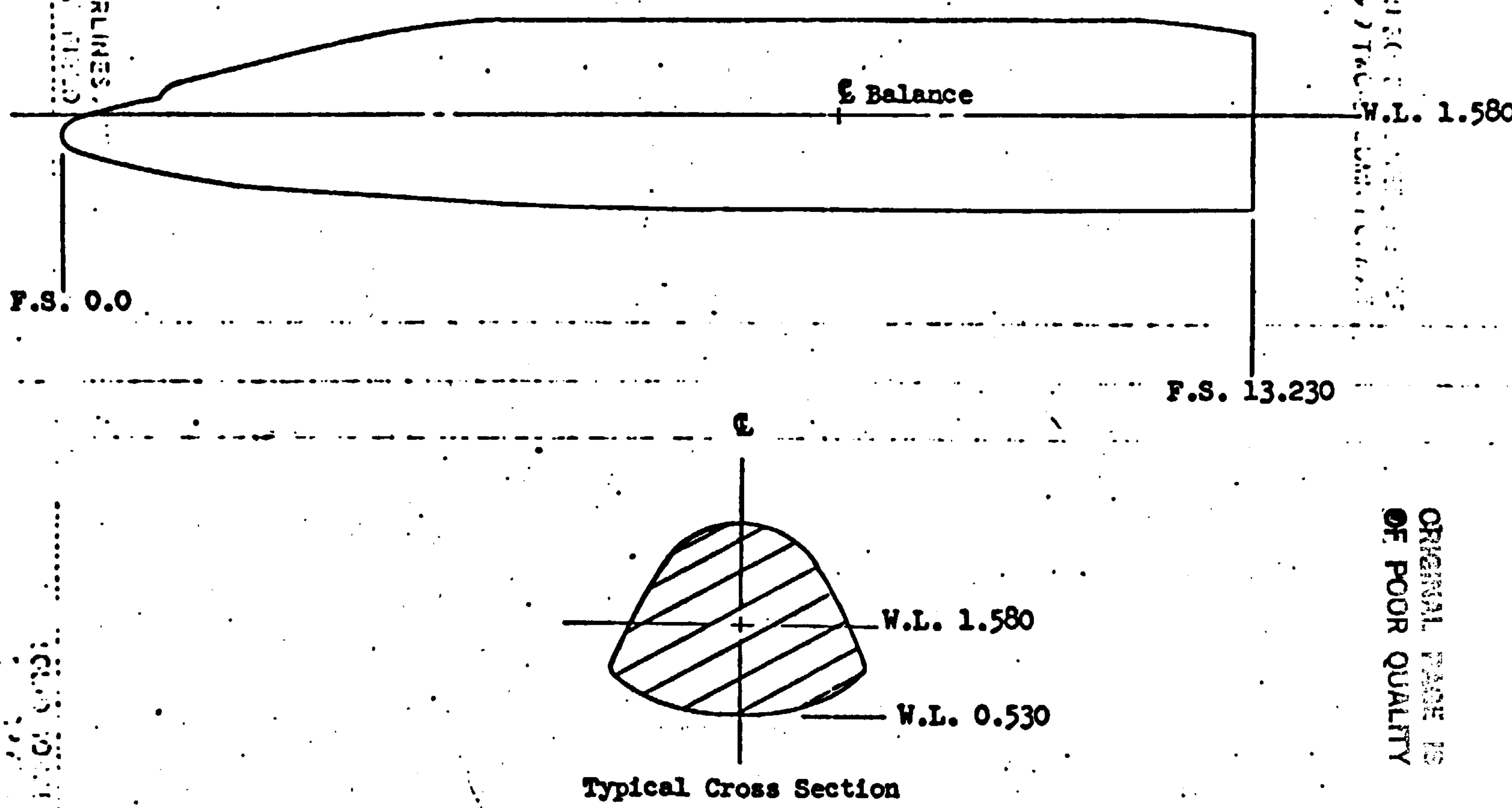
α or β SCHEDULES

α: A = 10 to 30 2° INCREMENTS

β: E = 0 to 10 2° INCREMENTS

DELTA WING ORBITER
MDAC
DR#1071 B-1- 211

35-111



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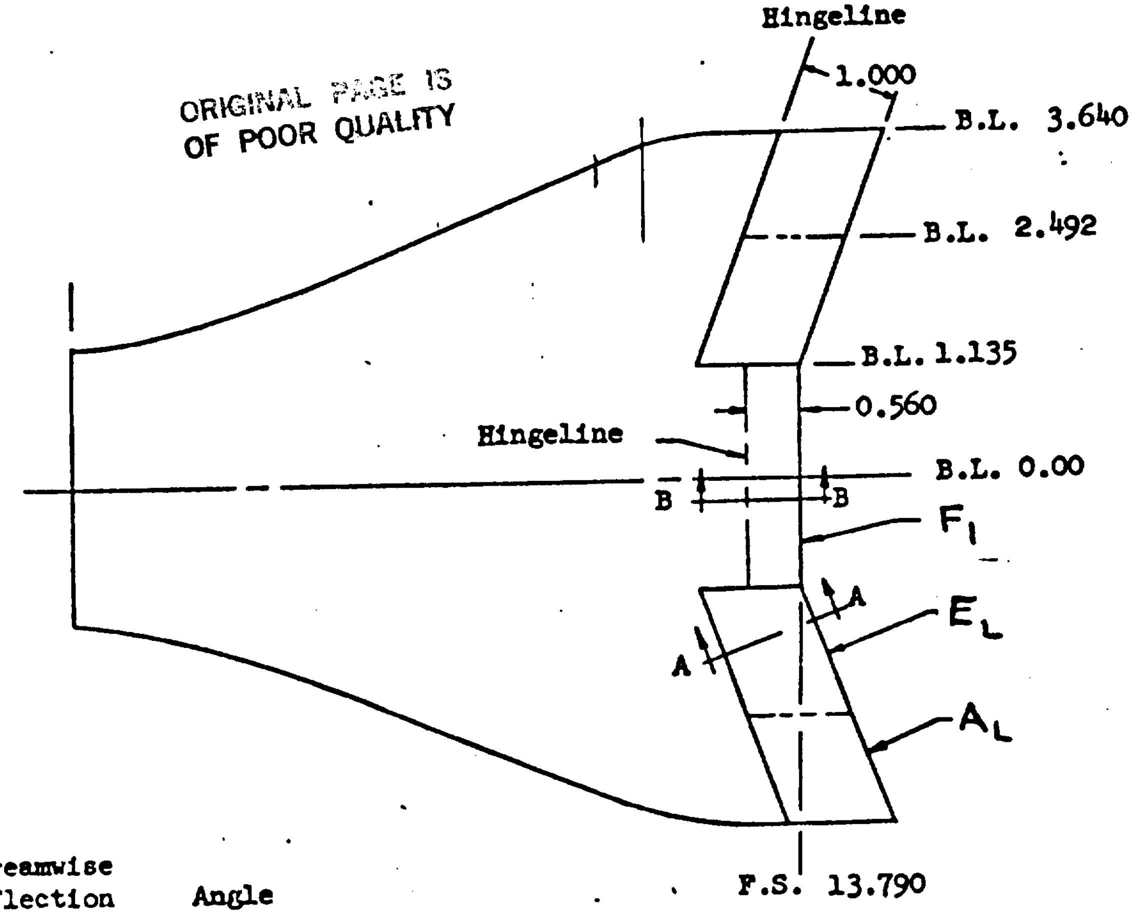
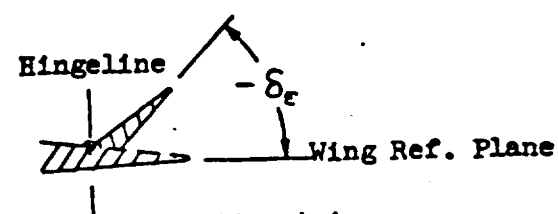
Notes:
1. All dimensions are model scale in inches.
2. Reference Dwg. CON-770-1603-MD02

Figure 3.- Basic fuselage B_1 of the Delta Wing Orbiter Model.

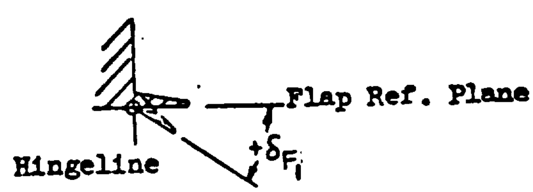


Streamwise Deflection Angle	Angle δE
+15°	15°55'
0°	0°
-15°	-15°55'
-30°	-31°34'
-45°	-46°47'



Section A-A

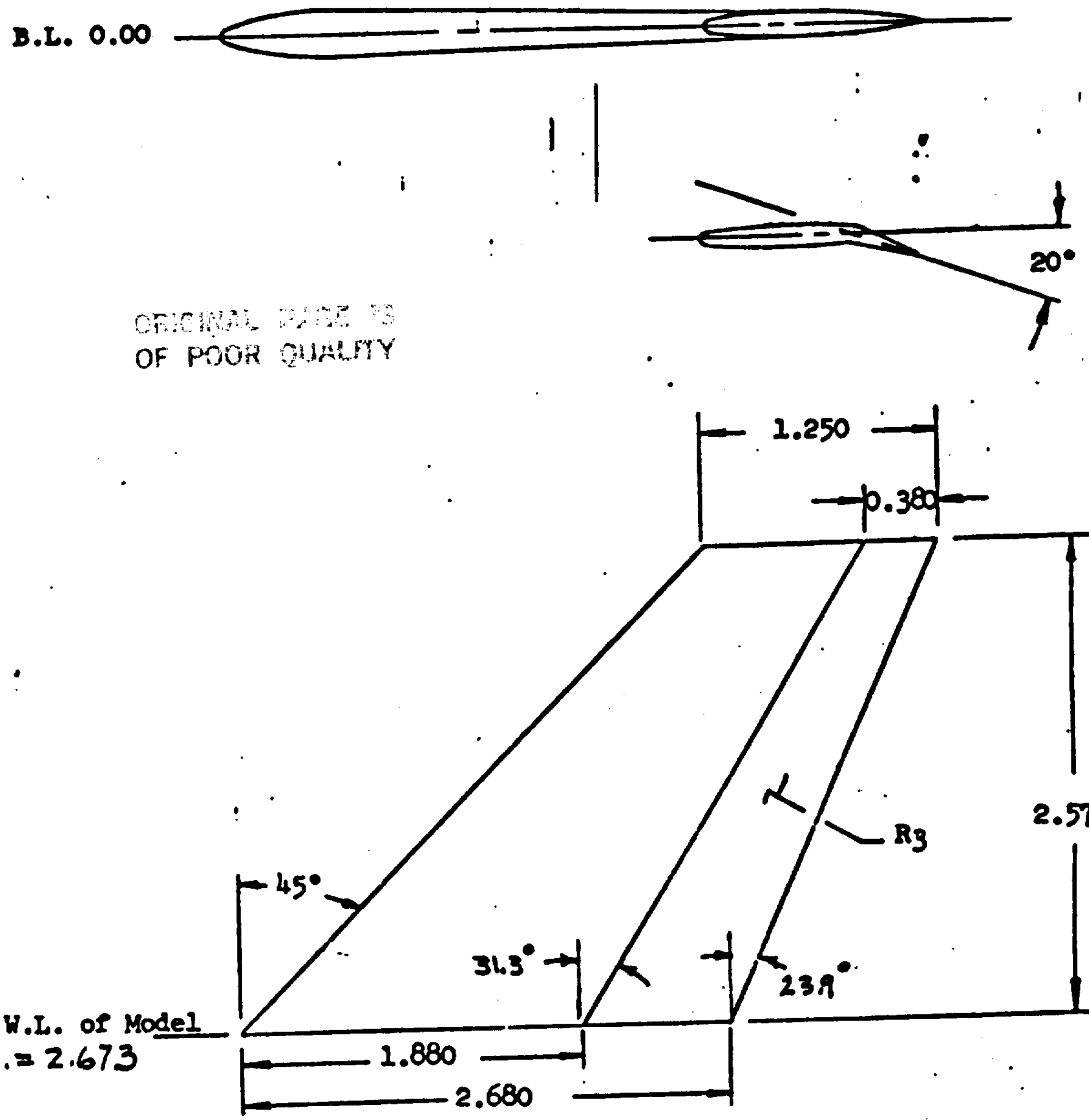
	δ_{F_1}
0°	0°
+15°	+15°



Section B-B

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

Figure 4.- Wing, W_3 of the Delta Wing Orbiter Model with elevators (E) ailerons (A) and body flap (F_1).



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Planform View

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

Figure 5.- Vertical tail (V_3) and rudder (R_3) of delta wing orbiter model.

REF : MC DONNELL - DOUGLAS DRAWING NO 254
BT 00046 CONTOUR CO. DRAWING NO.
CON 770-1603-MD 02

NOTE : ALL DIMENSIONS ARE MODEL SCALE IN INCHES

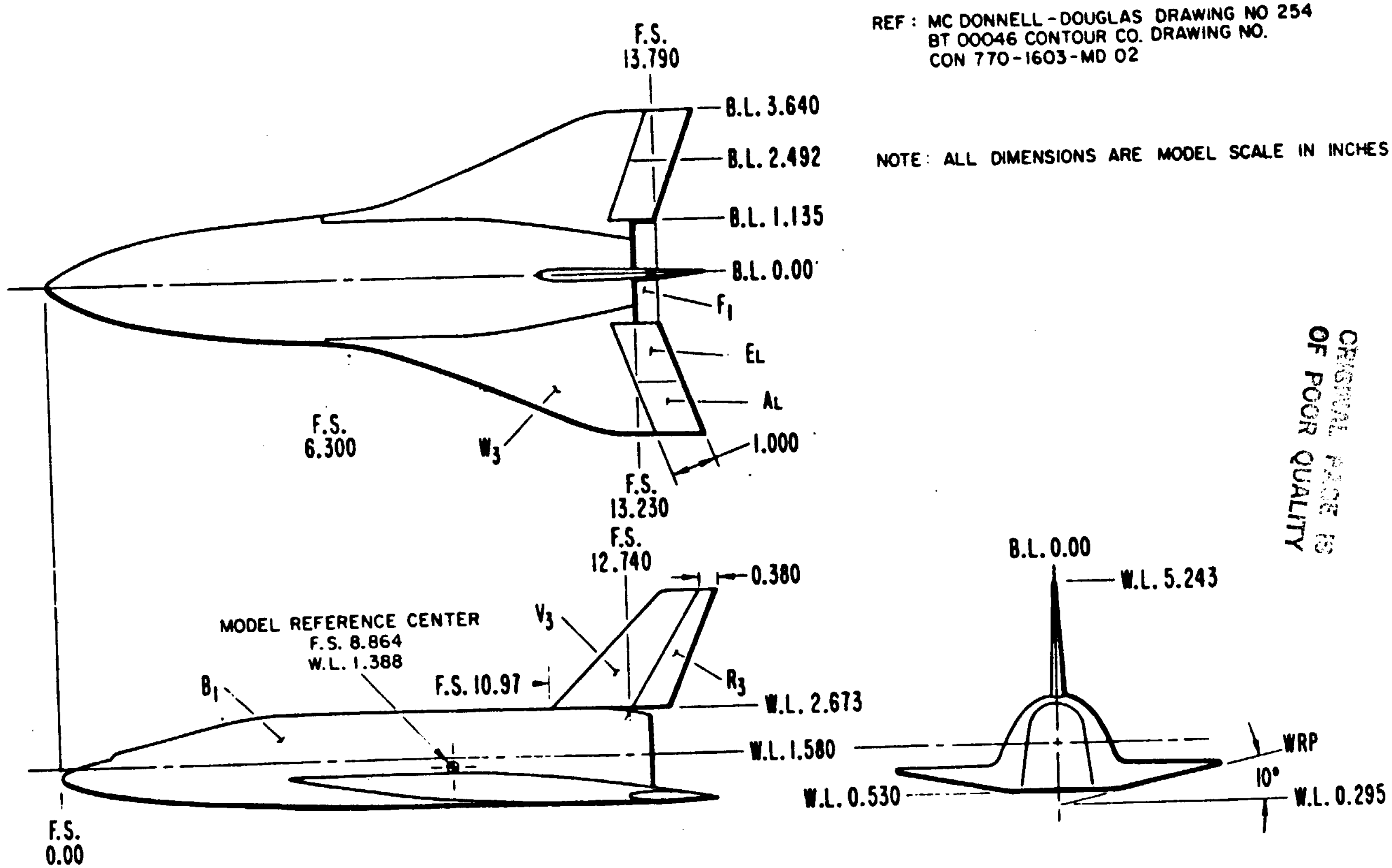
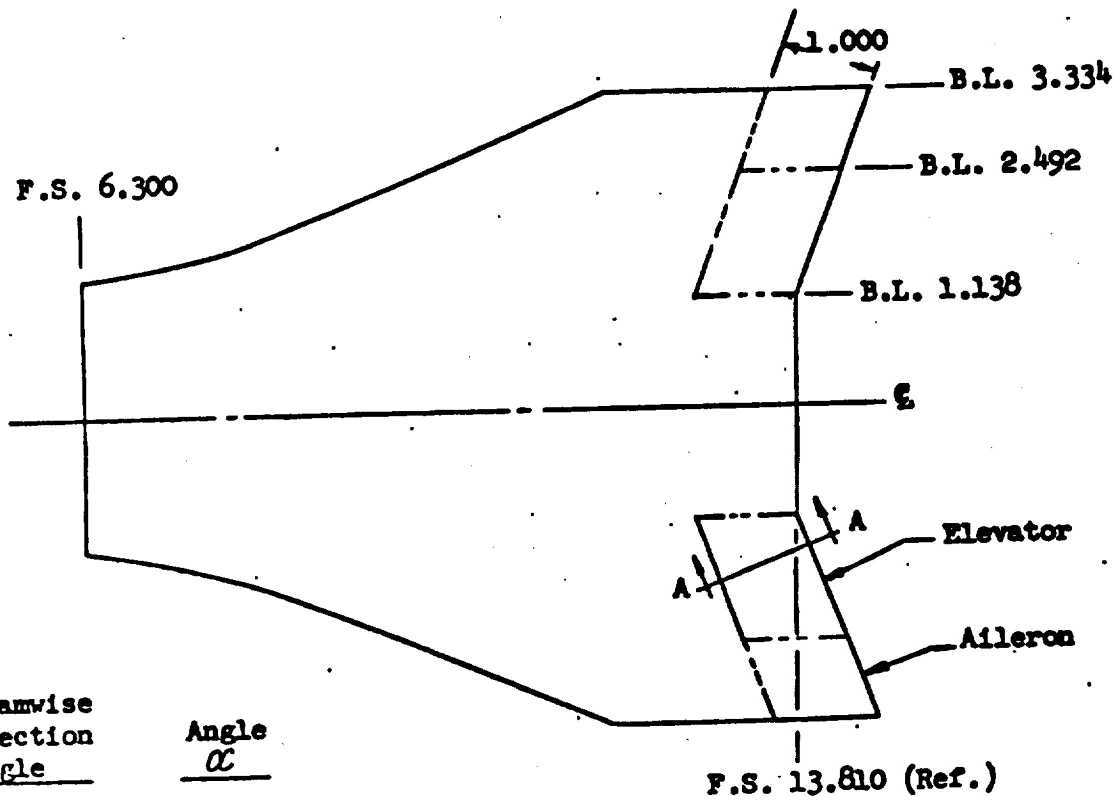


Figure 6.- Delta-wing orbiter model with vertical tail on body center line.

DELTA WING ORBITER
MDAC
DR#1071 B-1- 215

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



Streamwise Deflection Angle	Angle α
+15°	15°55'
0°	0°
-15°	-15°55'
-30°	-31°34'
-45°	-46°47'

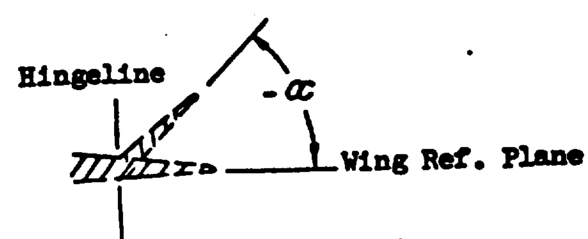
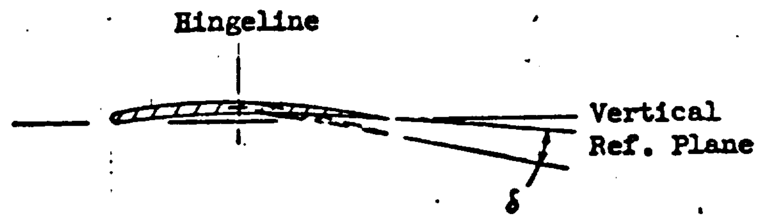


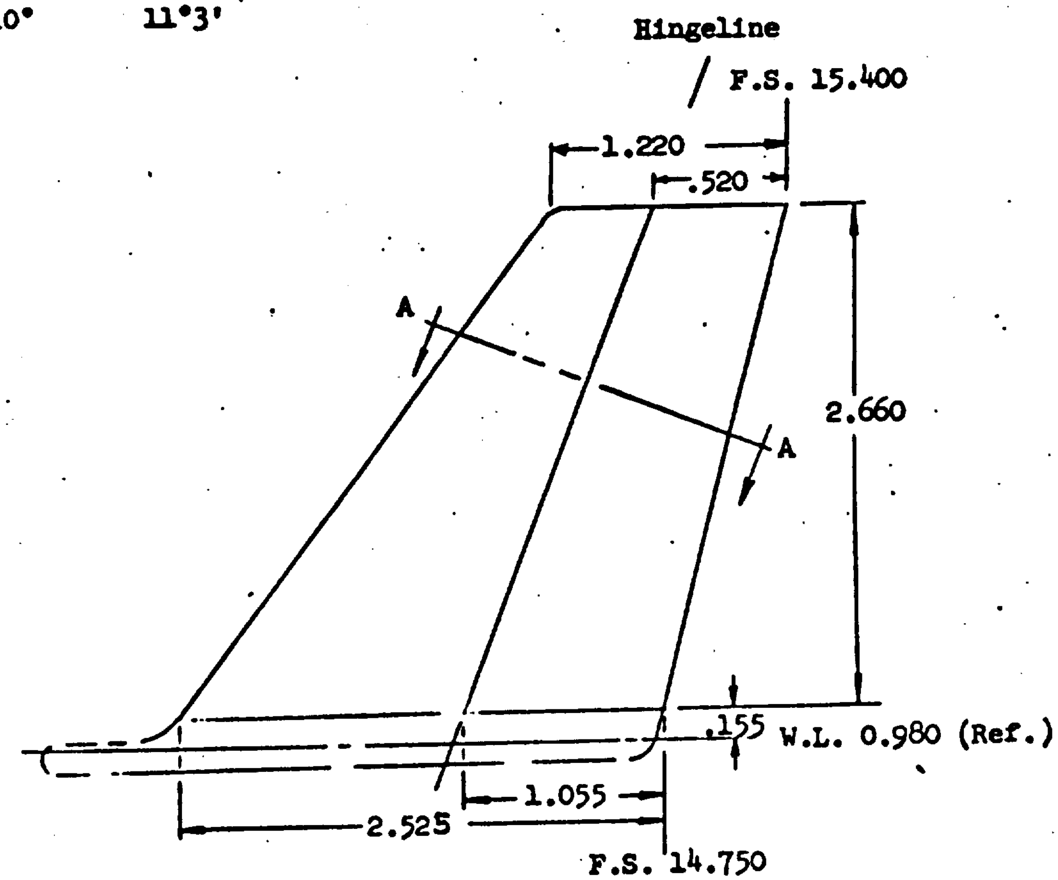
Figure 8.- Delta orbiter model wing (W_1), elevator (E) and aileron (A) for model with wing tip vertical stabilizers.

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



Section A-A

Streamwise Deflection Angle	δ
10°	11°3'

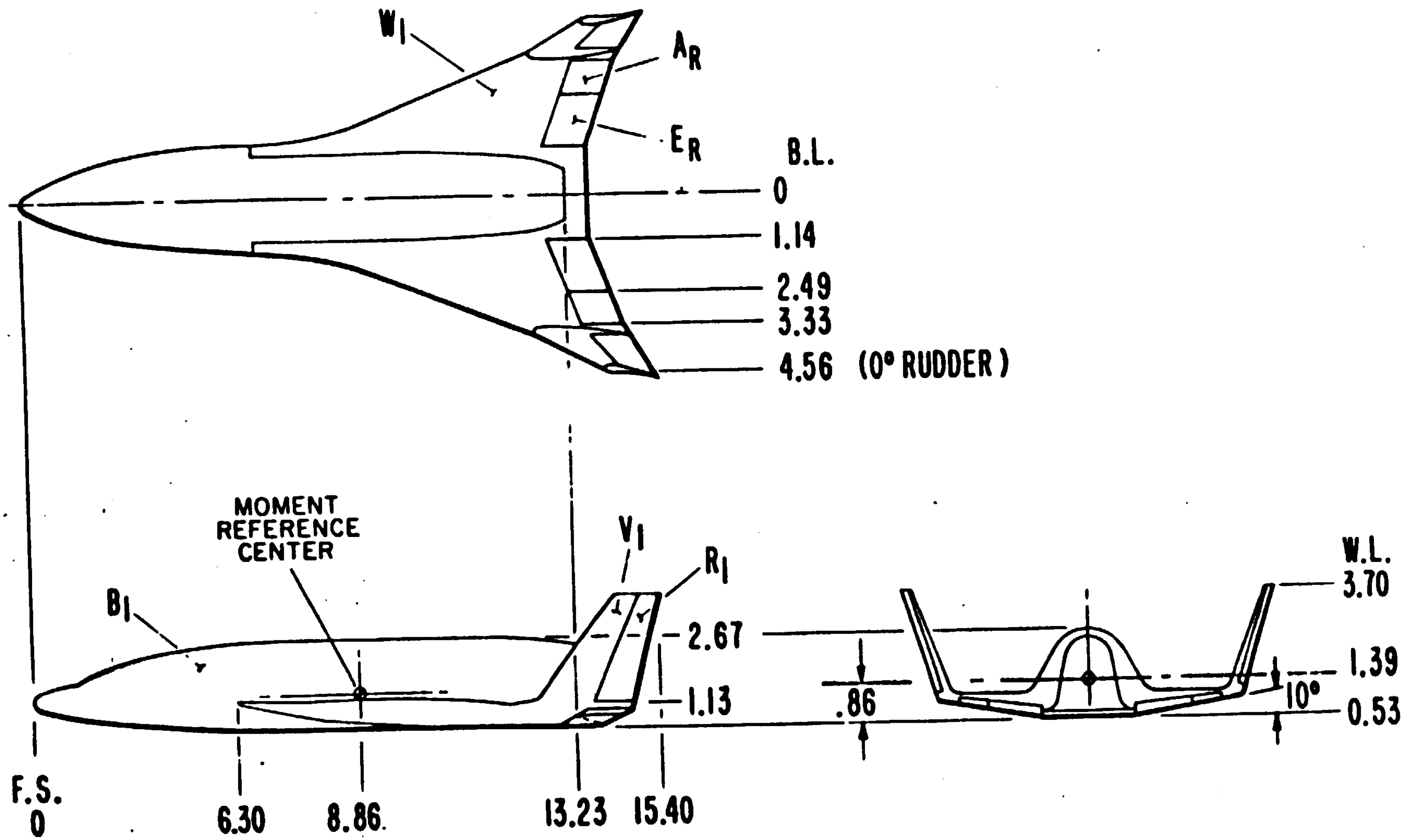


Vertical Planform

Figure 9.- Delta orbiter model vertical (V_1) and rudder (R_1) for model with wing tip vertical stabilizers.

35-111, 113

REF.: MC DONNELL - DOUGLAS DRAWING NO. 255 BT 00014
CONTOUR CO. DRAWING NO. CON-770-1603-MD02



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Figure 10.- Delta wing orbiter model with wing tip vertical stabilizers.

REF. DIM. W_2

TEST AMES 35-104 DATA SET COLLATION SHEET MD 0.7% LCR ORBIT. (01)

NOTE: +E (ELEVATOR), +I (HORIZ. TAIL) IS TRAILING EDGE DOWN.
-20 A (AILERON) IS LEFT WING TRAILING EDGE DOWN, RT. WING TRAILING EDGE UP
+R (RUDDER) IS TRAILING EDGE LEFT

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION E	I	A	Rn/L	NO. of RUNS	MACH NUMBERS 1.4											
RAJ016	B_4H_1 5	A	0	0	0	-	3.0	1	16											
RAJ059	✓	20	C	0	0	-	3.0	1	59											
RAJ064		50	C	0	0	-	1.6	1	64											
RAJ039		A	5	0	0	-	3.0	1	39											
RAJ017	B_4W_2 5	A	0	-	-	0	3.0	1	17											
RAJ037		A	5	-	-	0	3.0	1	37											
RAJ018	$B_4W_2H_1$ 4 1 5	A	0	0	0	0	3.0	1	18											
023	4 2	A	0	0	-15	0	3.0	1	23											
024	4	A	0	0	-30	0	3.0	1	24											
026	4	A	0	0	+10	0	3.0	1	26											
034		A	5	0	0	0	3.0	1	34											
036		A	5	0	-30	0	3.0	1	36											
011		A	5	0	0	0	3.0	1	41											
053	✓	20	C	0	0	0	3.0	1	53											
063		50	C	0	0	0	1.6	1	63											
019	$B_4W_2H_1$ 1	A	0	-15	0	0	3.0	1	19											
020	1	A	0	-30	0	0	3.0	1	20											
021	3	A	0	-30	-15	0	3.0	1	21											
022	2	A	0	-15	-15	0	3.0	1	22											
025	3	A	0	-30	-30	0	3.0	1	25											

32

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CATOTL	CLM	CY	CYN	CBL	CL/CD						7

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS:

α or β SCHEDULES
α: A = 51, 53, 55, 57, 59, 61, 63, 65, 67, 69
β: C = 0, 2, 4, 6, 8, 10

LCR (01) ½

TEST AMES 35-104 D. .A SET COLLATION SHEET

REF. DIMENSIONS W_2 LCR

☐ PRETEST

☒ POSTTEST

* NOTE: RUNS 65, 66, 67 ARE EARLIER RUNS, (33, 46, 50) RECOMPUTED USING W_2 DIMENSIONS

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES [illegible]	[illegible]	A	[illegible]	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 7.4										
RAJ027	$B_4W_2H_1$	A	0	+15	0	0	3.0	1	27										
035	↓	A	5	-20	0	0	3.0	1	35										
056	$B_4H_1V_1$	20	C	0	0	—	3.0	1	56										
042	↓	B	0	0	0	0	3.0	1	42										
013	$B_4W_2H_1V_1$	B	0	0	0	0	3.0	1	43										
044		B	0	0	+10	0	3.0	1	44										
057	↓	20	C	0	0	0	3.0	1	57										
028	$B_4W_2H_1P_{45}$	A	0	0	0	0	3.0	1	28										
040	↓	A	5	0	0	0	3.0	1	40										
065	$B_3W_3H_1$ *	A	5	0	0	0	3.0	1	65	(RAJ033		RESCALED TO W_3)							
066	$B_3W_3H_1V_1$ *	B	0	0	0	0	3.0	1	66	(RAJ046				)					
067	$B_3W_3V_1$ *	B	0	—	—	0	3.0	1	67	(RAJ050				)					

12 1 7 13 19 25 31 37 43 49 55 61 67

IDPVAR(1) IDPVAR(2)

COEFFICIENTS:

α or β SCHEDULES

α: A: 51, 53, 55, 57, 59, 61, 63, 65, 67, 69

α: B = 10, 12, 14, 16, 18, 20, 22, 24, 26, 28

β: C = 0, 2, 4, 6, 8, 10

LCR (01)

33

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MD 0.7... LC

TEST AMES 35-10½ DATA SET COLLATION SHEET
Ref. Dimensions; W_1, W_3

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES E	I	A	R	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 7.4	
RAJ031	$B_3W_3H_1$	A	0	0	0	0	–	1	31	
032	↓	A	0	0	-15	0	–	1	32	
033	↓	A	5	0	0	0	–	1	33	
029	$B_3W_1H_1J_1$	A	0	0	0	0	–	1	29	
033	↓	A	5	0	0	0	–	1	33	
030	$B_3W_1H_1J_1A_1$	A	0	0	0	-20	–	1	30	–20 AILERON IS LEFT WING TRAILING EDGE D...
045	$B_3W_1H_1V_1A_1$	B	0	0	0	-20	0	1	45	" RT WING " "
046	$B_3W_3H_1V_1$	B	0	0	0	0	0	1	46	
043	↓	B	0	0	+10	0	0	1	43	
047	$B_3W_3H_1V_1E_1$	B	0	+15	0	0	0	1	47	
049	$B_3W_3H_1V_1R_1$	B	0	0	0	0	+20	1	49	+20°R = TRAILING EDGE LEFT
050	$B_3W_3V_1$	B	0	–	–	0	0	1	50	

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

COEFFICIENTS: → IDPVAR(1) IDPVAR(2)

α or β SCHEDULES

α : A = 51, 53, 55, 57, 59, 61, 63, 65, 67, 69
α : B = 10, 12, 14, 16, 18, 20, 22, 24, 26, 28

LCR (01)

3/4

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DELTA WING ORBITER
MDAC
DR#1072 B-1- 221

DELTA WING ORBITER
MDAC
DR#1072 B-1- 222

TEST AMES 35-10'D. A SET COLLATION SHEET

AL AR EL ER

$\delta_{a_{L,R}}$ $\delta_{e_{L,R}}$

MD HCR (02)

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETRIC VALUES		R		NO. of RUNS	MACH NUMBERS 74										
RAJ051	B_1W_1	B	0	0	0	–	3.0	1	51										
05?		20	C	0	0	–	3.?	1	54										
061		A	0	0	0	–	3.0	1	61										
062		53	C	0	0	–	0.9	1	62										
053	$B_1W_1V_1$	B	0	0	0	0	3.0	1	53										
055	$B_1W_1V_1$	20	C	0	0	0	3.0	1	55										
052	$B_1W_1A_LA_RE_LE_R$	B	0	+15	+15	–	3.0	1	52										
060	$B_1W_1A_LA_RE_LE_R$	A	0	-30	-30	–	3.0	1	60										

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

COEFFICIENTS: IDPVAR(1) IDPVAR(2)

α or β SCHEDULES

α: A= 51, 53, 55, 57, 59, 61, 63, 65, 67, 69
α: B= 10, 12, 14, 16, 18, 20, 22, 24, 26, 28
β: C= 0, 2, 4, 6, 8, 10

HCR 02

DELTA WING ORBITER
MDAC
DR#1072 B-1-223

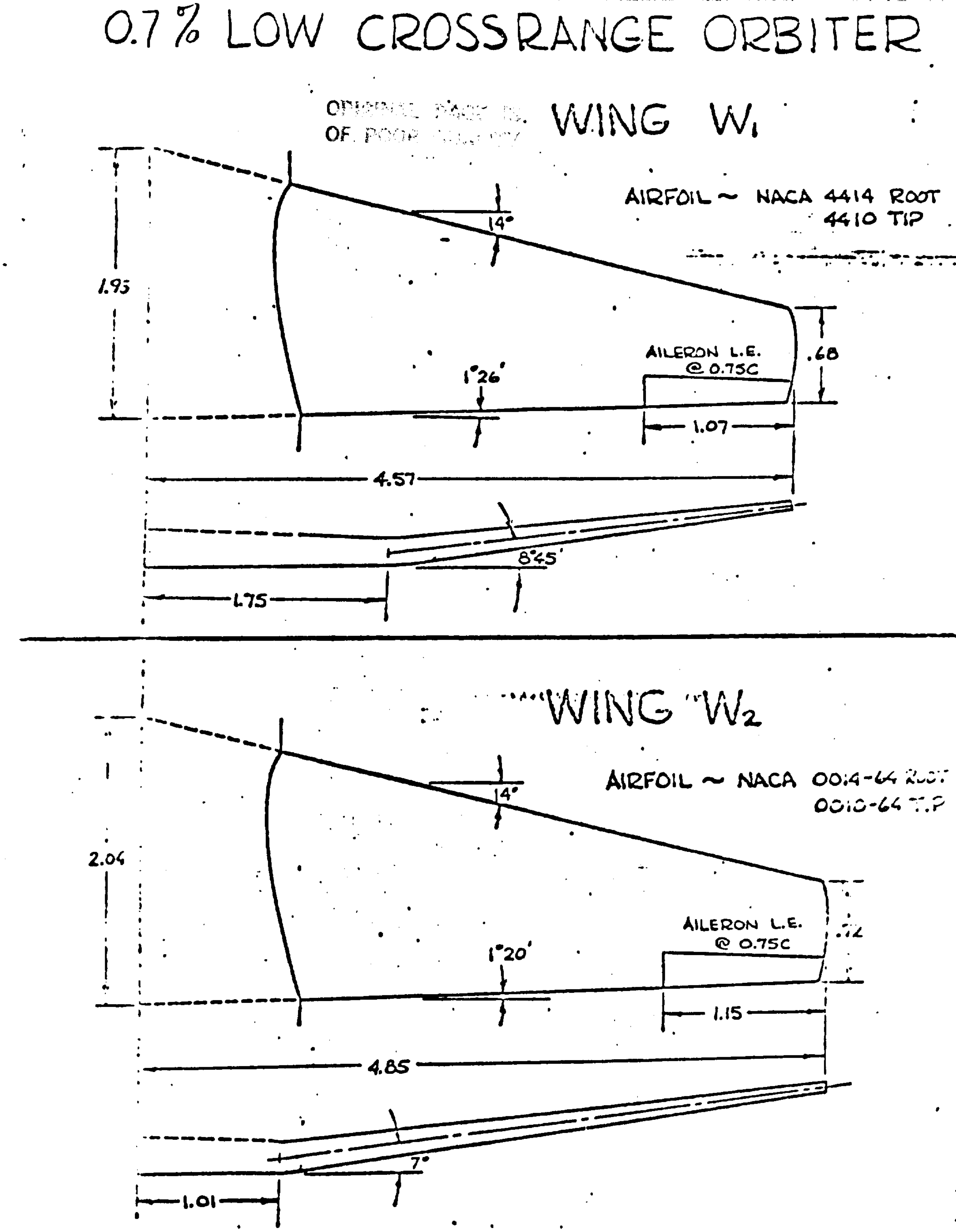
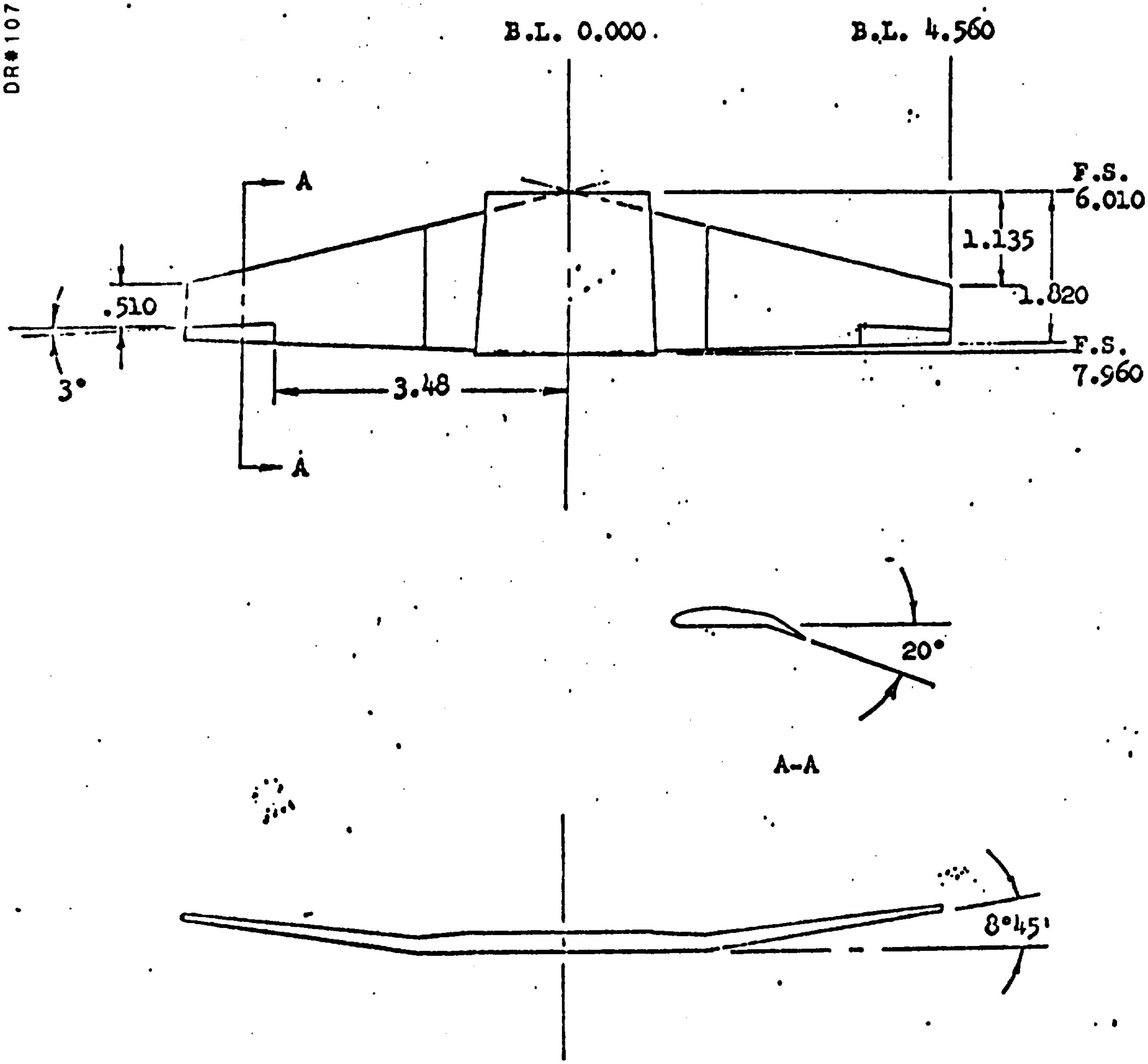


Figure 8.- Straight-wing model wings W_1 (basic-cambered) and W_2 (alternate - not cambered) with ailerons.



Notes:
1. All dimensions are model scale in inches.
2. L.H. aileron deflects +20° (T.E. down) and R.H. aileron deflects -20° (T.E. up).
3. W_1 wing has cambered airfoil.
4. Reference Dwg. No. CON-770-1603-MD01 (Sheet 3).

Figure 9.- Straight wing model basic wing (W_1) and aileron (A_1).

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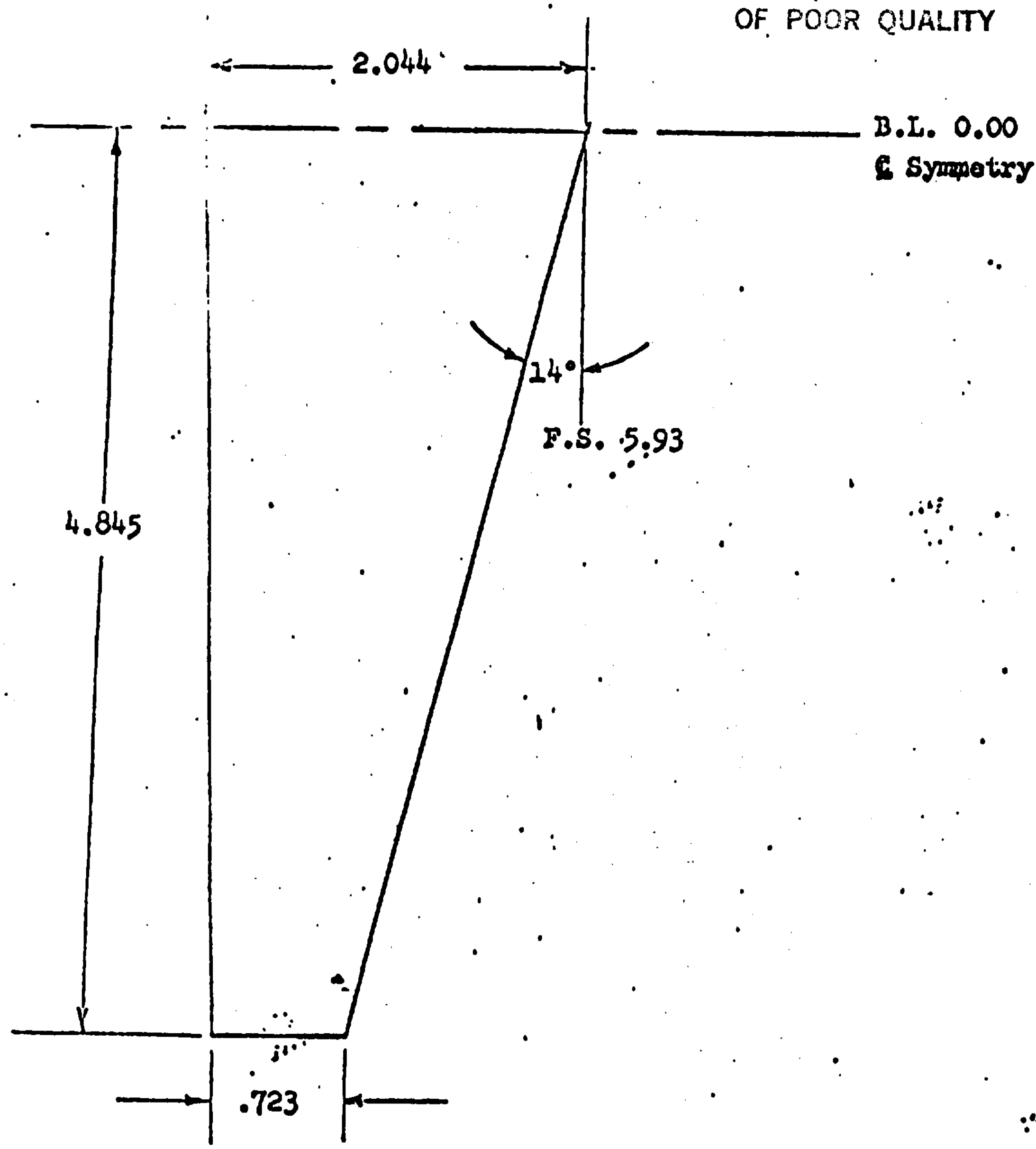

Notes:
1. All dimensions are model scale in inches.
2. W_2 wing has symmetrical airfoil (0014-64 root and 0010-64 tip).
3. Wing incidence is 7° and dihedral is 4°.
4. Aspect ratio is 7.0 and taper ratio is .353.
5. Reference Dwg. No.

Figure 10.- Straight-wing model alternate wing (W_2).

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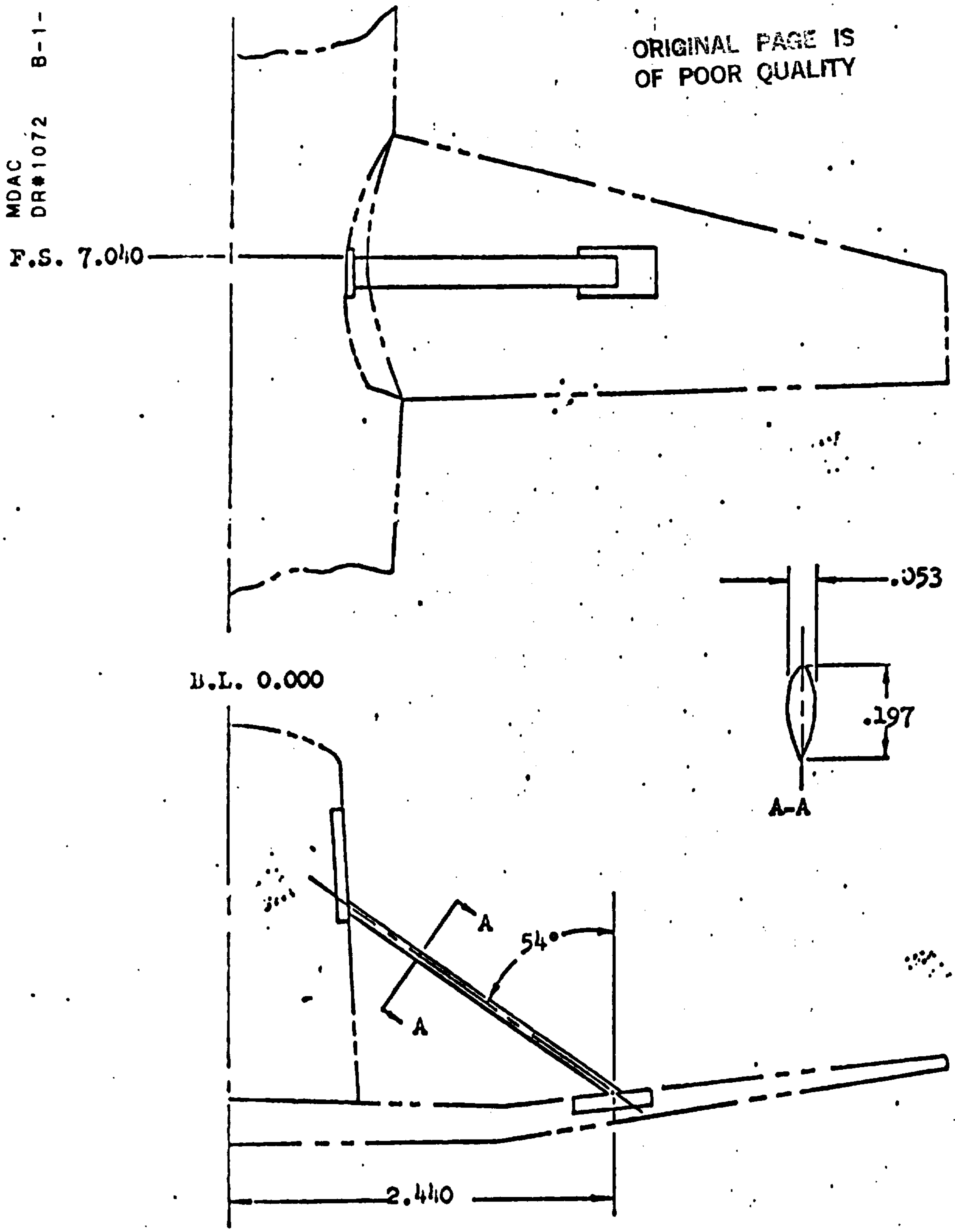
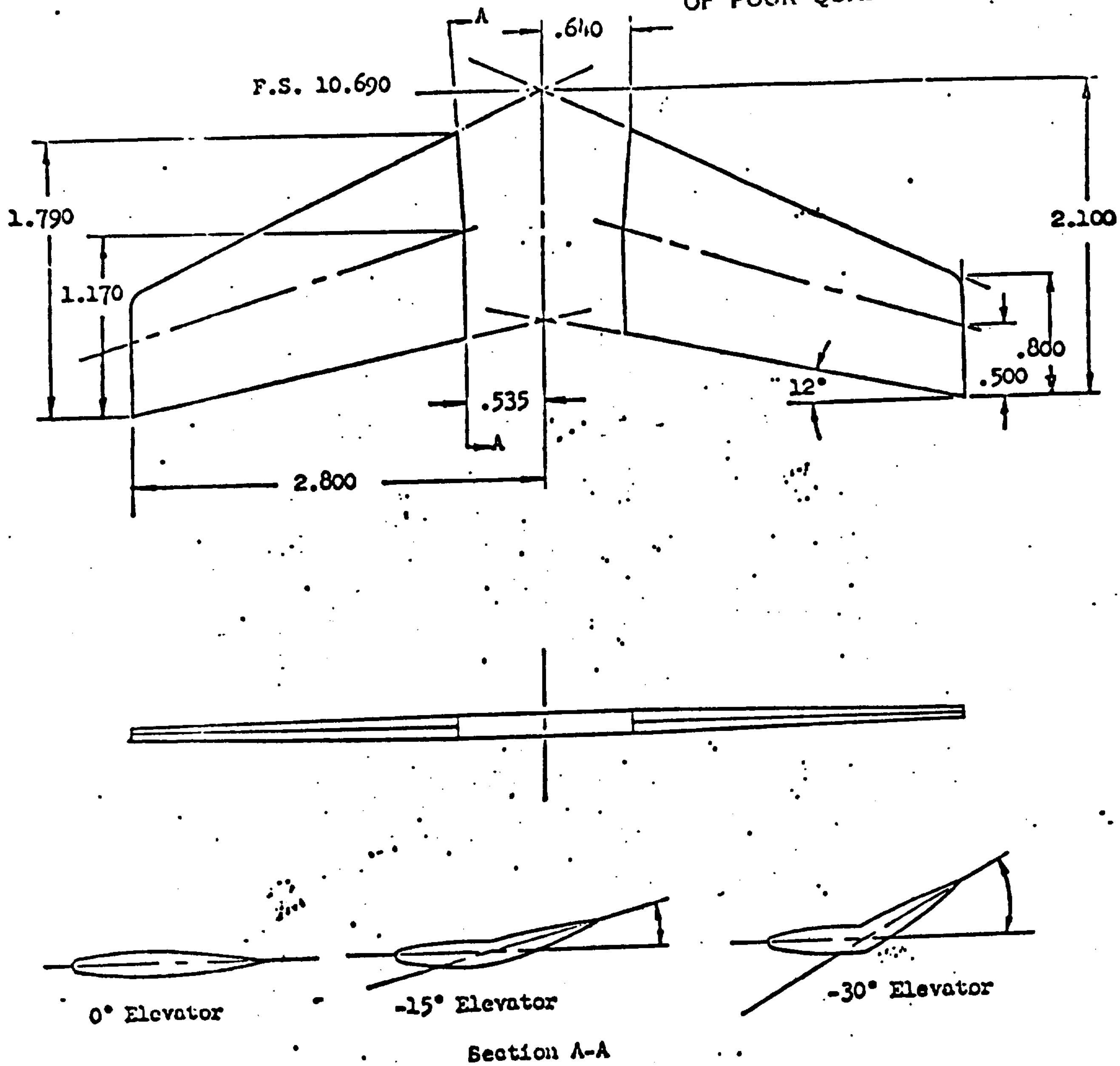


Notes:
1. All dimensions are model scale in inches.
2. Reference Dwg. No. CON-770-1603-MD01 (Sheet 3).

Figure 11.- Straight wing model wing strut, used only with basic (cambered) wing (W_1).



Notes: 1. All dimensions are model scale in inches.
2. Elevator deflections (δ_e) are negative T.E. up.
3. Reference Dwg. No. CON-770-1603-MD01 (Sheet 3).

Figure 12.- Straight wing model horizontal tail (H_1) and elevator (E_1).

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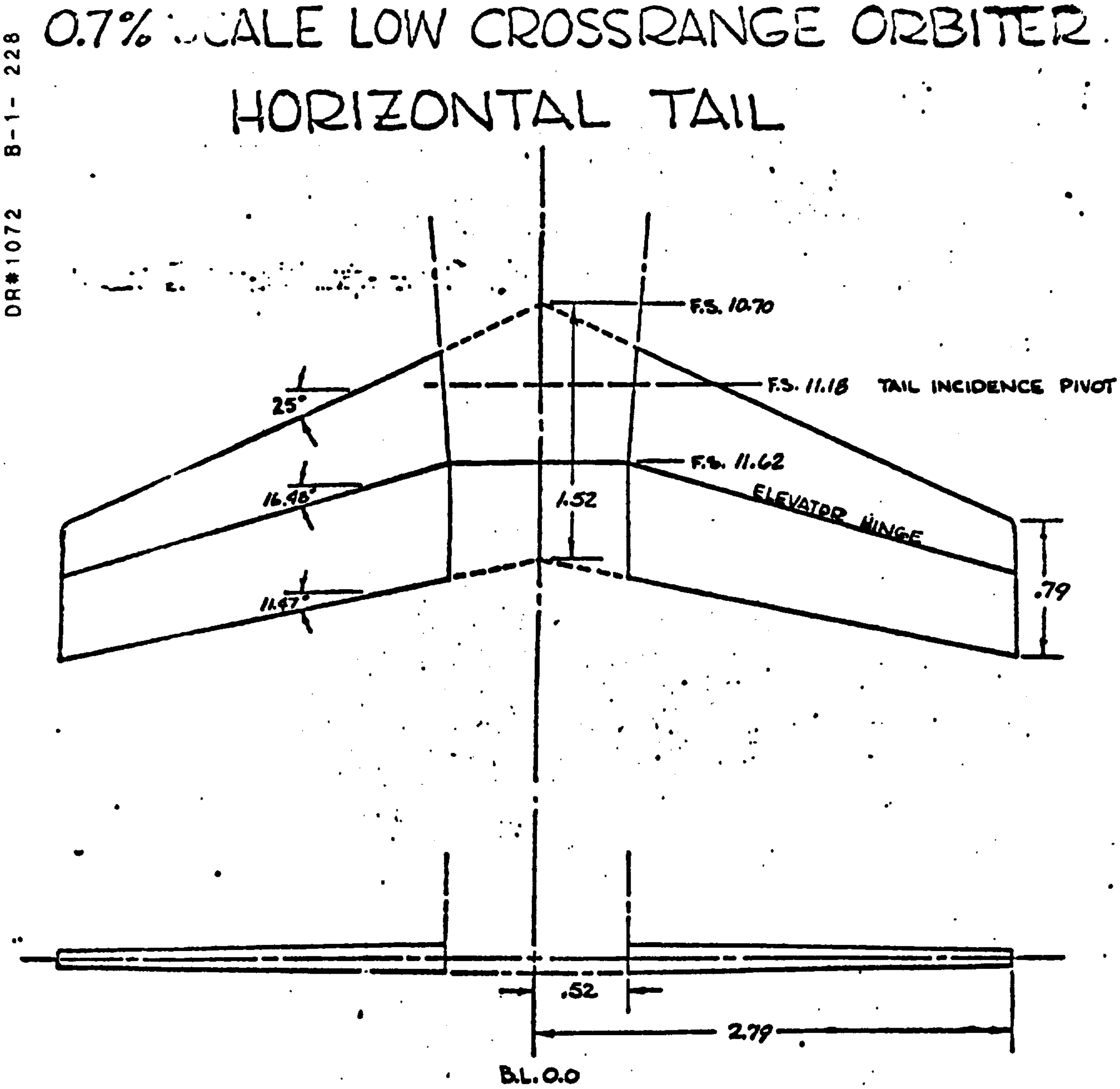

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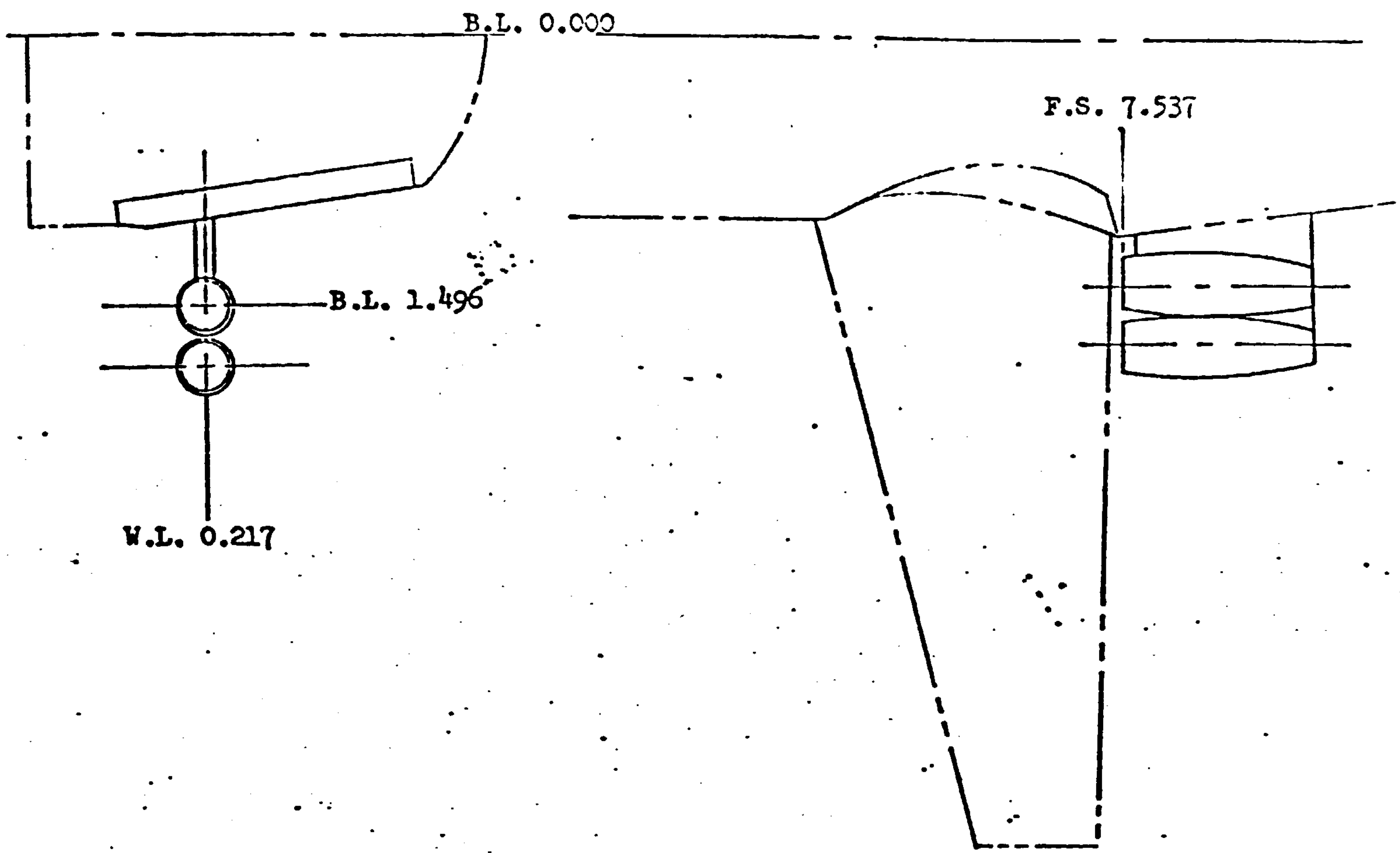
Figure 13.- Straight-wing model horizontal tail (H_1).



Notes:
1. All dimensions are model scale in inches.
2. Reference Dwg. No. CON-770-1603-MD01 (Sheets 1 and 3).

Figure 14.- Straight-wing model engine (POD (P_6)

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DELTA WING ORBITER
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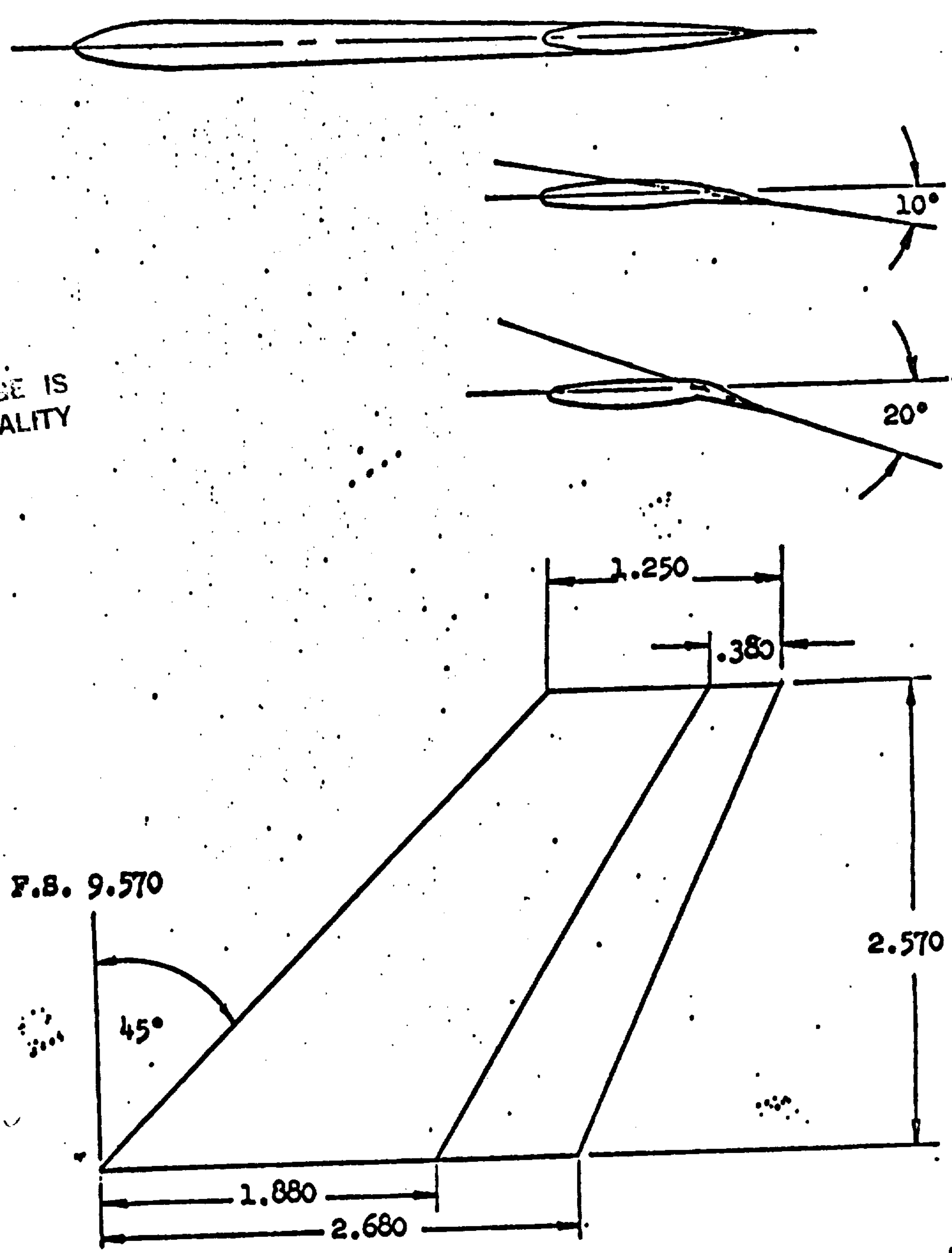
DR#1072 B-1- 229



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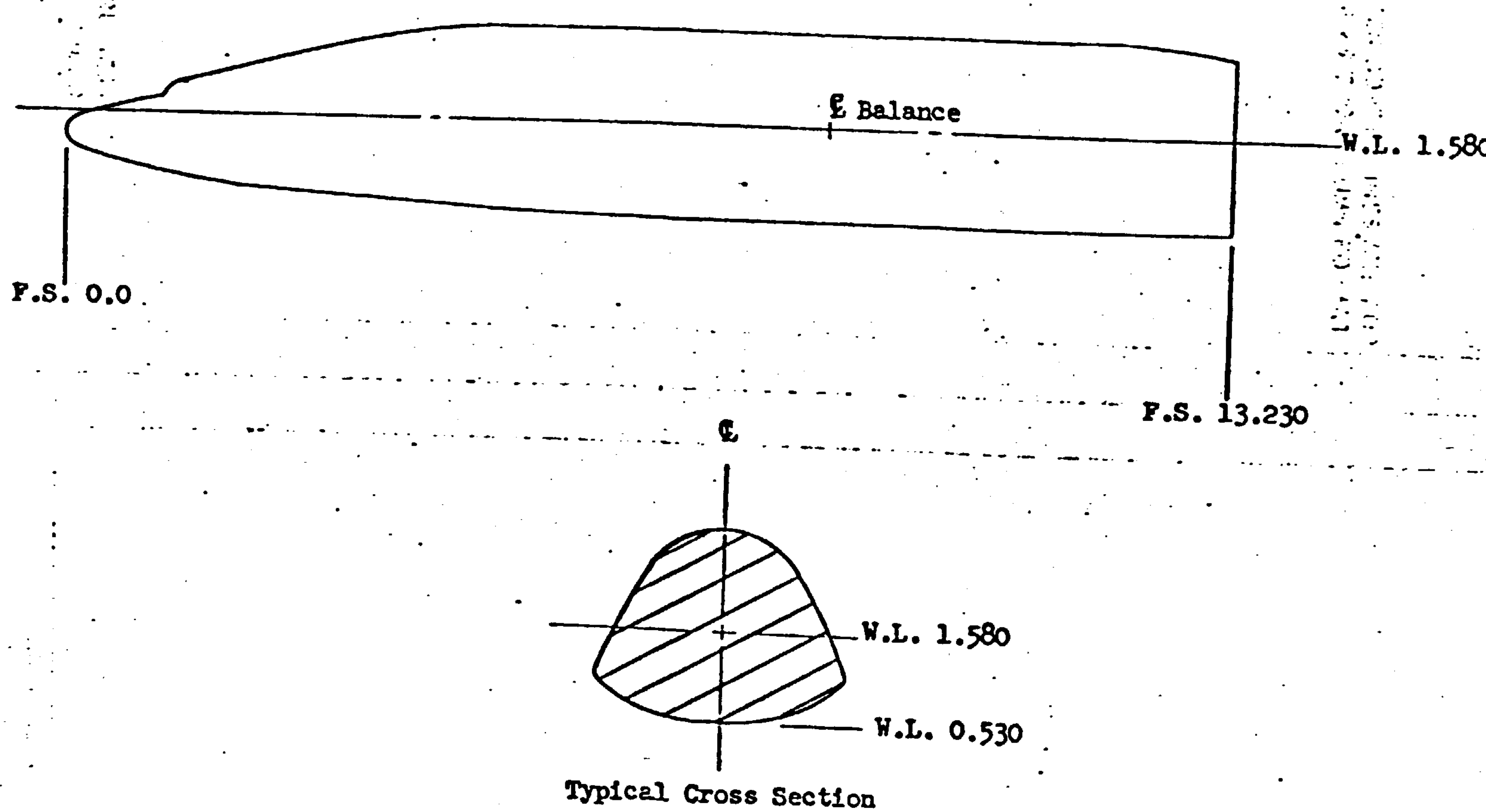
Notes:
1. All dimensions are model scale in inches.
2. Reference Dwg. No. CON-770-1603-MD01 (Sheet 3).

Figure 15.- Straight-wing model vertical tail (V_1) and rudder (R_1). /70



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

Figure 16.- Delta-wing model basic fuselage (B_1).

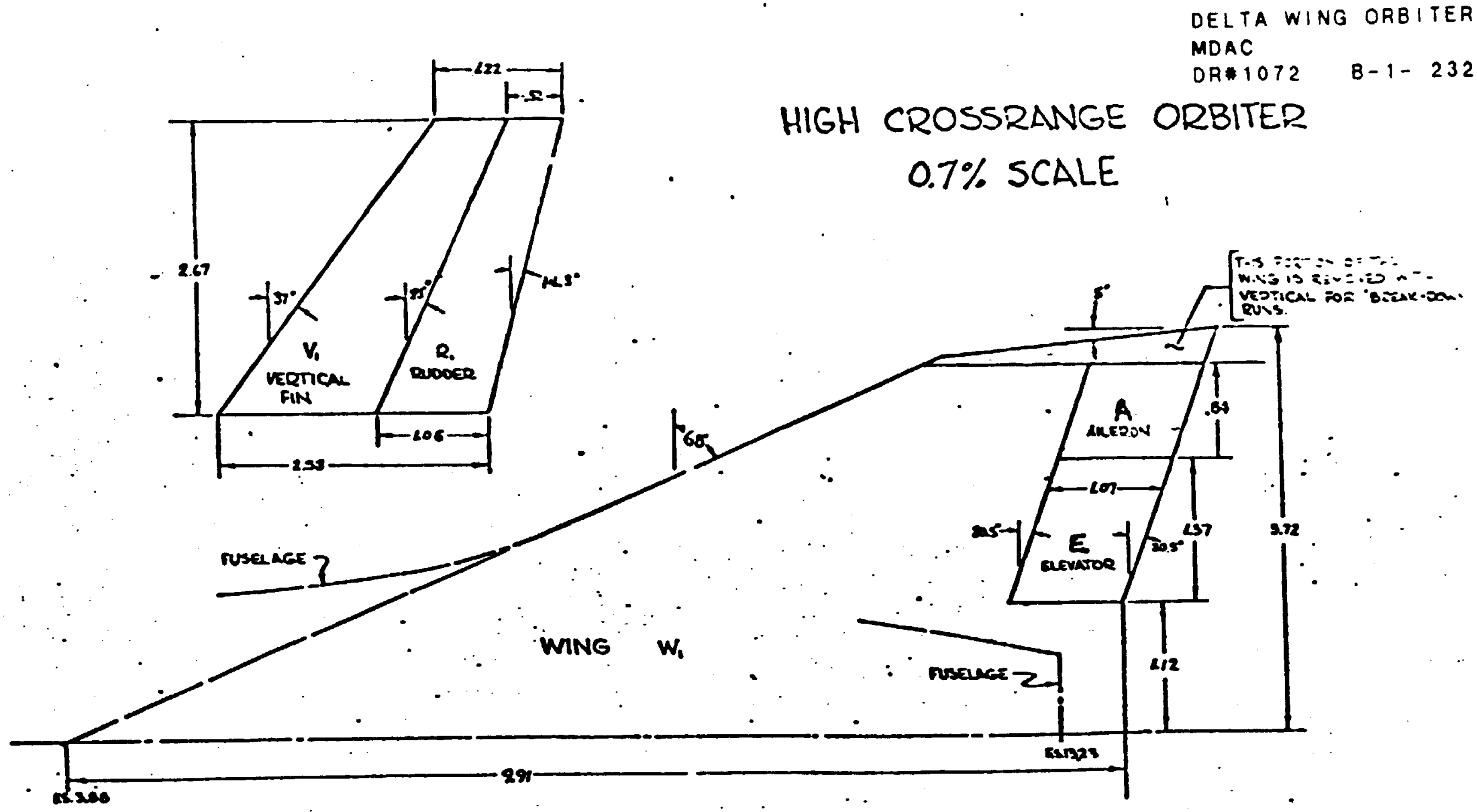


Figure 17. Delta-model vertical fin (V_1), rudder (R_1), wing (W_1), aileron (A_1) and elevator (E_1).

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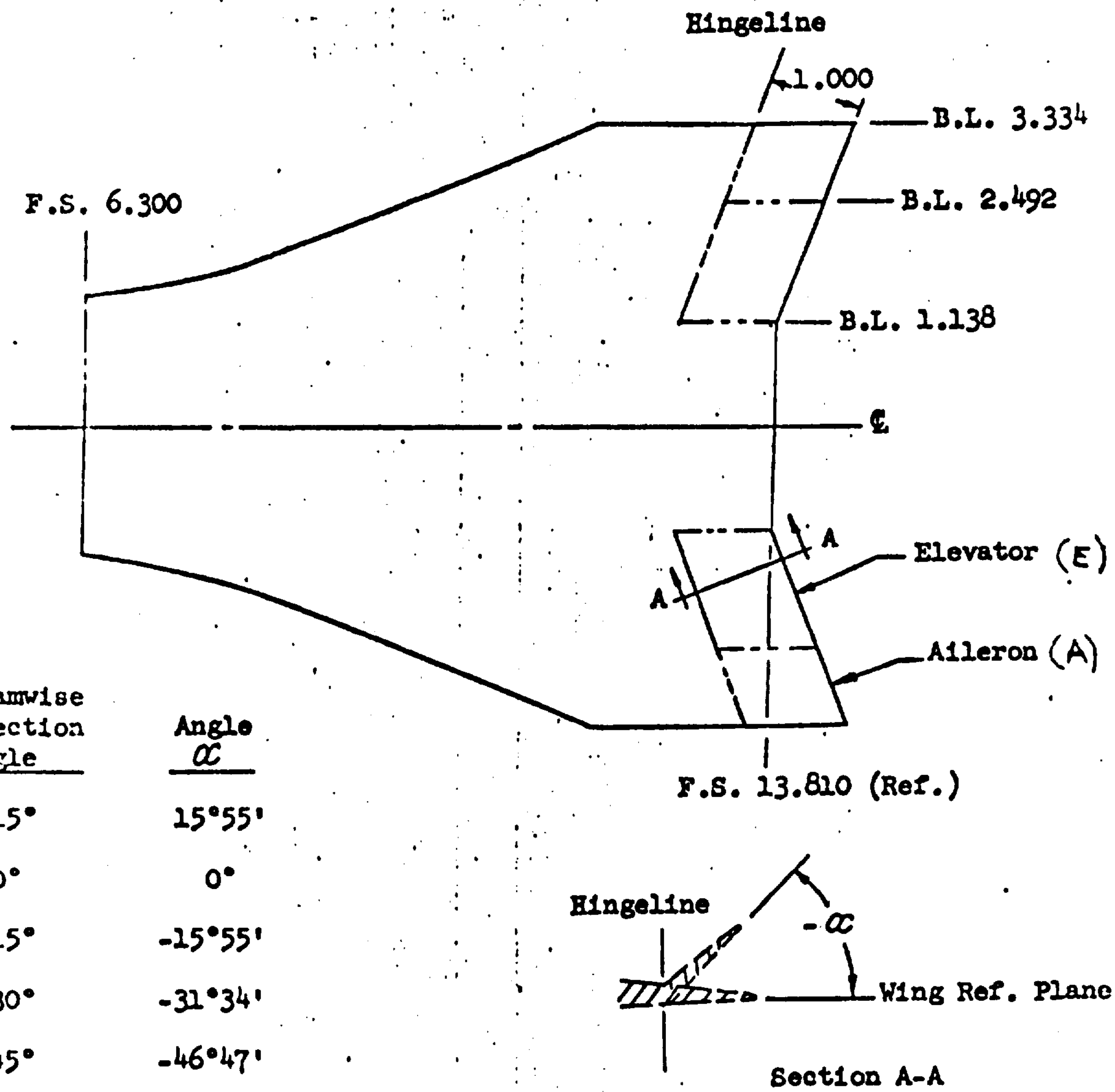
Notes:
1. All dimensions are model scale in inches.
2. Ref. Dwg. CON-770-1003-MD02



Streamwise Deflection Angle	Angle α
+15°	15°55'
0°	0°
-15°	-15°55'
-30°	-31°34'
-45°	-46°47'

Figure 18.- Delta-model wing (W_1) elevator (E_1) and aileron (A_1).

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

Streamwise Deflection Angle	δ
10°	11°3'

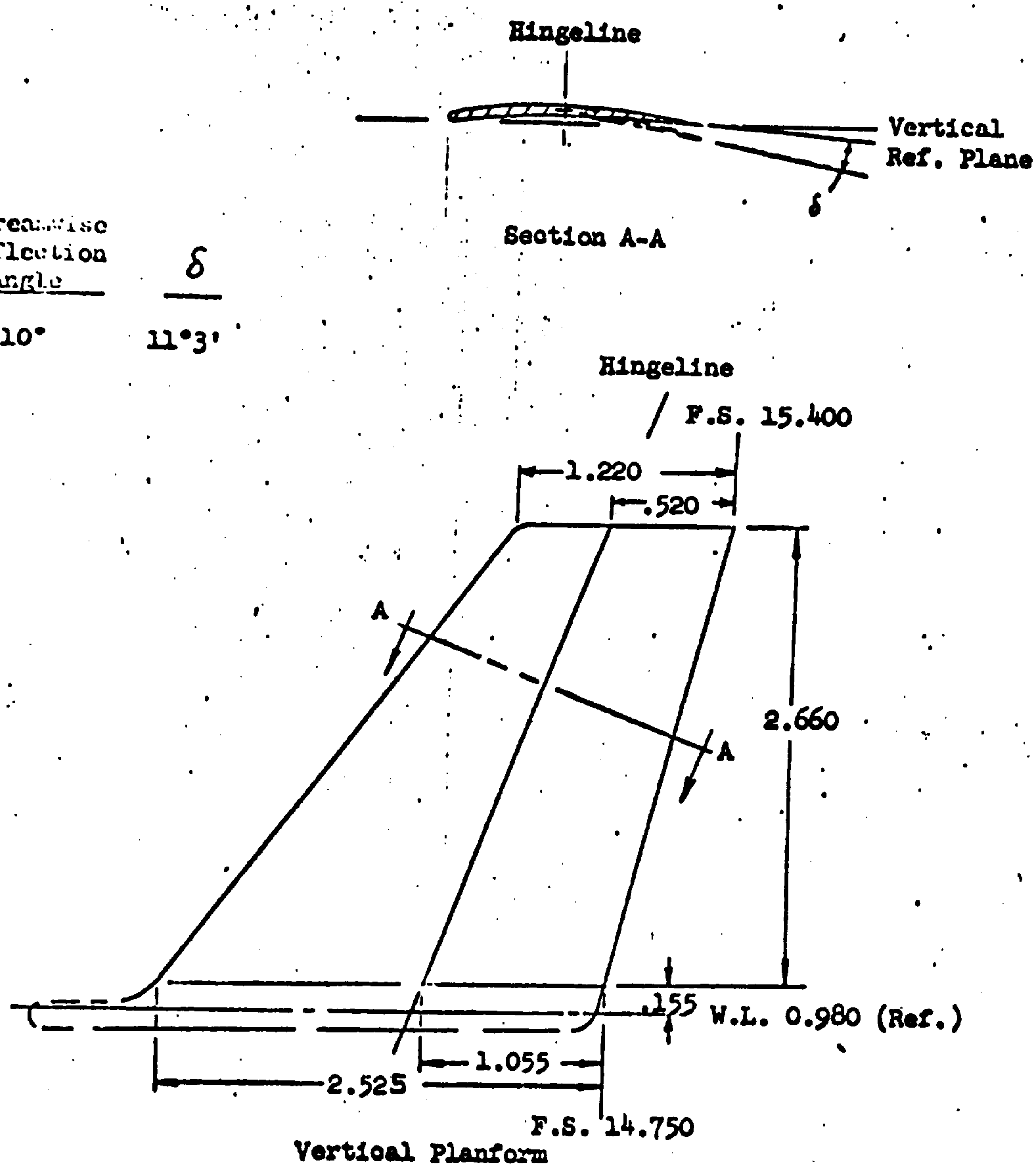
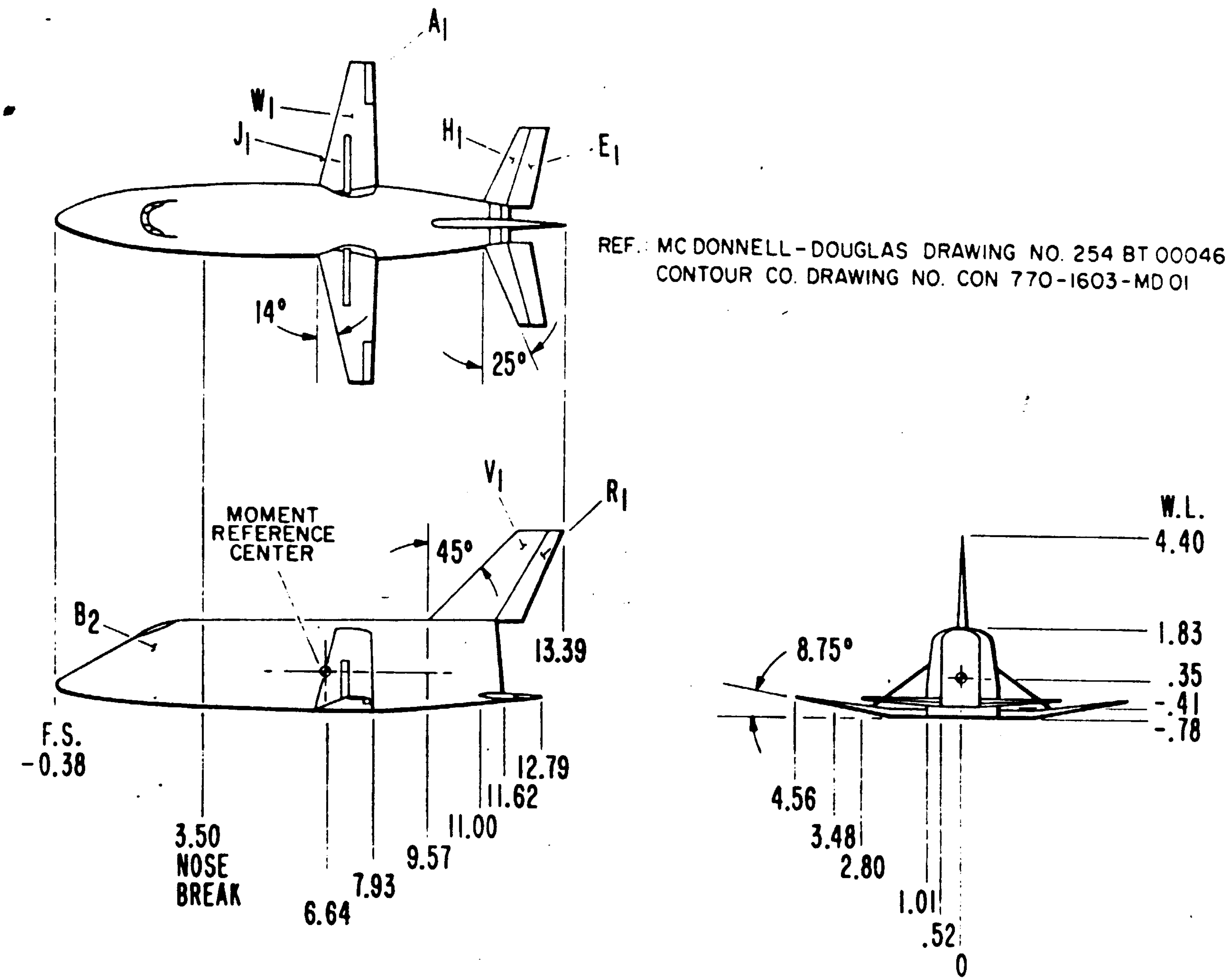


Figure 19.- Delta-model vertical (V_1) and rudder (R_1).



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Figure 20.- Straight-wing model with basic wing and wing struts. Configuration $B_3W_1V_1H_1J_1$.

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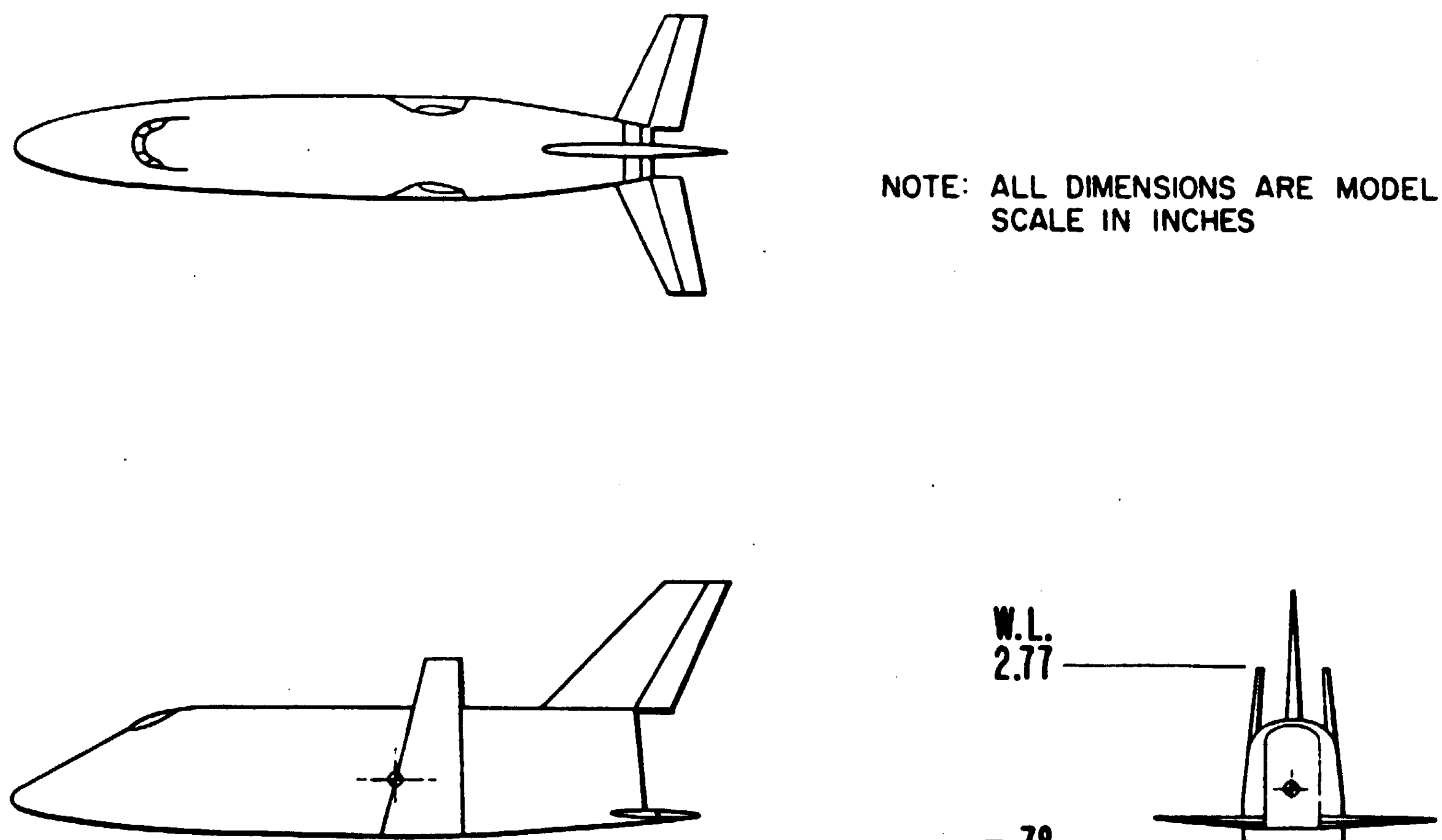
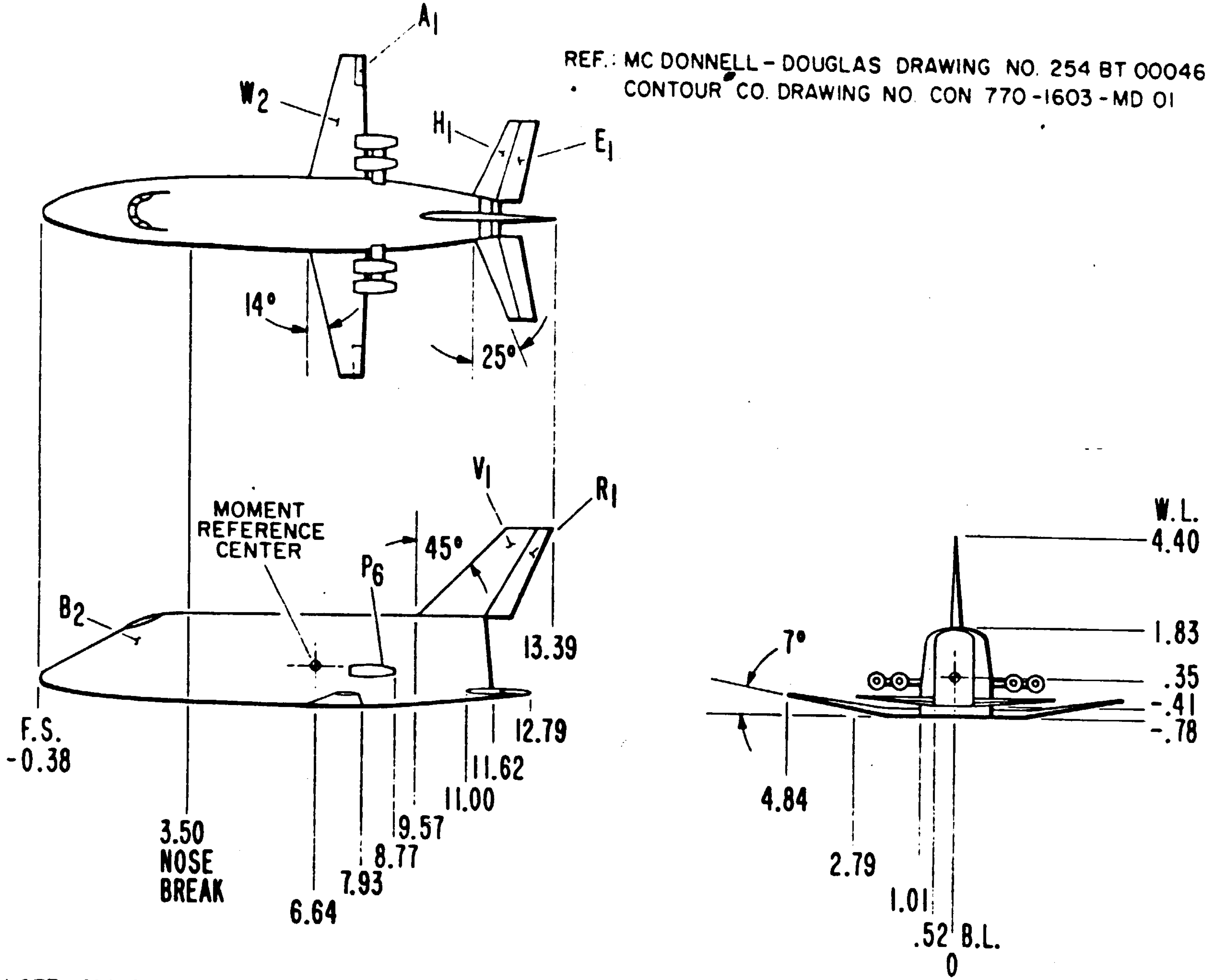


Figure 21.- Straight-wing model with basic wing folded. Configuration $B_3W_3V_1H_1$.

REF.: MC DONNELL - DOUGLAS DRAWING NO. 254 BT 00046
CONTOUR CO. DRAWING NO. CON 770-1603-MD 01



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NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

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Figure 22.- Straight-wing model with alternate wing. Configuration $B_4W_2V_1H_1$.

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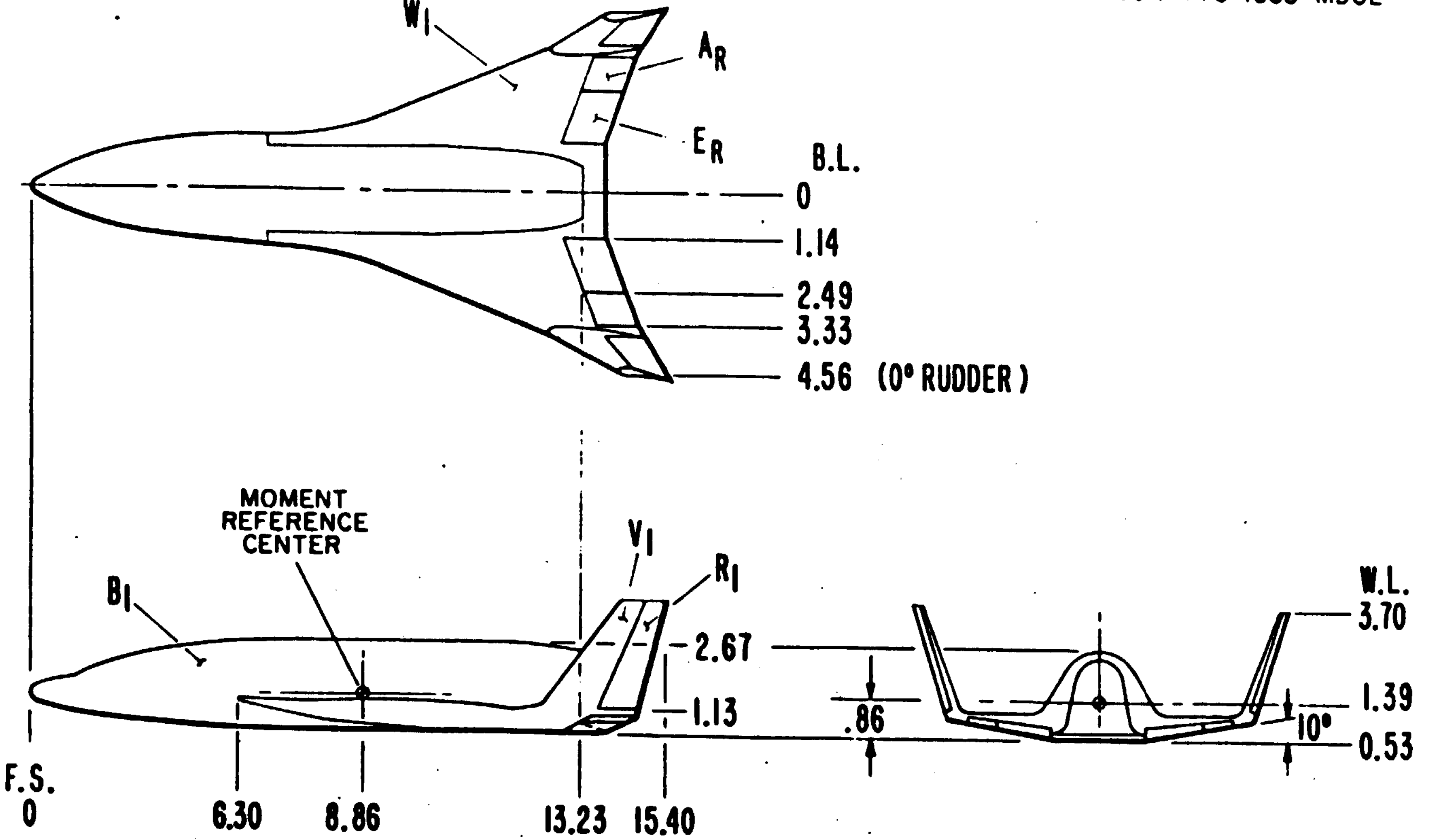
DR#1072 B-1- 238

REF.: MC DONNELL - DOUGLAS DRAWING NO. 255 BT 00014
CONTOUR CO. DRAWING NO. CON-770-1603-MD02



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Figure 23.- Delta-wing model with wing tip vertical stabilizers. Configuration $B_1W_1V_1$.

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TEST DLSWT Test No. 138 DATA SET COLLATION SHEET

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☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION $\delta_{e_{LO}}$	$\delta_{e_{RO}}$	$\delta_{e_{LI}}$	$\delta_{e_{RI}}$	NO. of RUNS	MACH NUMBERS 0.18
RCN002	B1AW3V3	A	-10	0	0	0	0	1	2
4			-3.5					1	4
5			0					1	5
7	B1AW3							1	7
9			-2.96					1	9
10	B1AW3V4		-2.59					1	10
RCN011			0					1	11

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CL	CD	CLM	CY	CLN	CSL	L/D				IDPVAR(1)	IDPVAR(2)	NDV

COEFFICIENTS:

α or β SCHEDULES: α : A = $-8 \xrightarrow{\Delta 2} +20$

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DELTA WING ORBITER
MDAC
DR#1074 B-1- 240

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☒ POSTTEST

TEST DLSWT Test No 138 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION $\delta_{e_{LO}}$	$\delta_{e_{RO}}$	$\delta_{e_{LI}}$	$\delta_{e_{RI}}$	NO. of RUNS	MACH NUMBERS 0.18
RCN017	BIAWSV4	A	-29	0	0	0	0	1	17
18			0					1	18

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES $\alpha: A = -8 \frac{\Delta 2}{} + 20$

Pg. 2 of 7

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TEST DLSWT Test No. 138 DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION $\delta_{e_{LO}}$	$\delta_{e_{RO}}$	$\delta_{e_{LI}}$	$\delta_{e_{RI}}$	NO. of RUNS	MACH NUMBERS 0.18											
RCN025	B1AW7V4	A	0	0	0	0	0	1	25											
26			-2.9					1	26											

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES α : A = -8 $\xrightarrow{\Delta 2}$ +20

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DELTA WING ORBITER
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DR#1074 B-1- 242
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☒ POSTTEST

TEST DLSWT Test No. 138 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION $\delta_{e_{LO}}$	$\delta_{e_{RO}}$	$\delta_{e_{LI}}$	$\delta_{e_{RI}}$	NO. OF RUNS	MACH NUMBERS 0.18
3CNO13	B1A	A	0	—	—	—	—	1	13
15			-2.95	—	—	—	—	1	15
20	B1AW4V4		0	0	0	0	0	1	20
21			-2.95					1	21
22	B1AW4BV4		-2.9[illegible]					1	22
23			0					1	23
28	B4W4AST2V4		-2.90					1	28
29			0					1	29
31	B1BW4AST2V4							1	31
32			-2.95					1	32
34	B1BW4AST2		-2.9[illegible]					1	34
35			0					1	35
36	S1BW4AST2V4		0	-10	-10	-10	-10	1	36
37				-20	-20	-20	-20	1	37
38				-30	-30	-30	-30	1	38
39			-2.90					1	39
40			-2.9[illegible]		0		0	1	40
41			0			-20	-20	1	41
42				0				1	42
3CNO 43						-30	-30	1	43

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: α: A = -8 $\xrightarrow{4^\circ}$ +20

α or β
SCHEDULES

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TEST DLSWT TEST No 138 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION δ_{eLO}	δ_{eLI}	δ_{eRI}	δ_{eRO}	NO. of RUNS	MACH NUMBERS 0.18
RCNC44	B1BW4AST2V4	A	0	-10	0	-10	0		44
46	B1BW4AST4V4			0		0			46
47			-2.90						47
49	B1BW4AST1V4		0						49
51	B1BW4AST3V4								51
59	B1AW8V4								59
60			-2.90						60
62	B1C		0	—	—	—	—		62
64	B1CW8V4			0	0	0	0		64
66	B1BW4AST2V4P1								66
67			-2.85						67
RCNO68	B1BW4AST2V4P2		0						68

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:
α or β SCHEDULES

α: A = −8 $\xrightarrow{\Delta 2}$ +20

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DELTA WING ORBITER
MDAC
DR#1074 B-1- 243

DELTA WING ORBITER

☐ PRETEST MDAC DR#1074 B-1- 244

☒ POSTTEST

TEST DLSWT Test No. 138 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION $\delta_{e_{LO}}$	$\delta_{e_{RO}}$	$\delta_{e_{LI}}$	$\delta_{e_{RI}}$	NO. of RUNS	MACH NUMBERS 0.18
RCN053	B2	A	0	–	–	–	–		53
54			-2.95	–	–	–	–		54
56	B2W6V4		-2.90	0	0	0	0		56
57			0						57

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

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

α: A: -8 $\xrightarrow{\Delta 2}$ +20

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TEST DLSWT TEST No. 138 DATA SET COLLATION SHEET

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	ELEVON CONTROL DEFLECTION $\delta_{e_{LO}}$	$\delta_{e_{RO}}$	$\delta_{e_{LI}}$	$\delta_{e_{RI}}$	NO. of RUNS	MACH NUMBERS 0.18											
RCN070	B3AW9AV4	A	0	0	0	0	0		70											
71			-2.8						71											
73	B3AW9A		-2.85						73											
74			0						74											
76	B3AW9AV5								76											
77			-2.90						77											
79	B3A		-2.95	—	—	—	—		79											
80			0	—	—	—	—		80											
82	B3B			—	—	—	—		82											
84	B3BW9AV5			0	0	0	0		84											
86	B3AW9BV5								86											
RCN088	B3CW9AV5								88											

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

IDPVAR(1) | IDPVAR(2) | NDV

COEFFICIENTS: α : A = -8 $\xrightarrow{\Delta 2}$ 20

α or β SCHEDULES

Pg 7 of 7

DELTA WING ORBITER
MDAC
DR#1074 B-1- 245

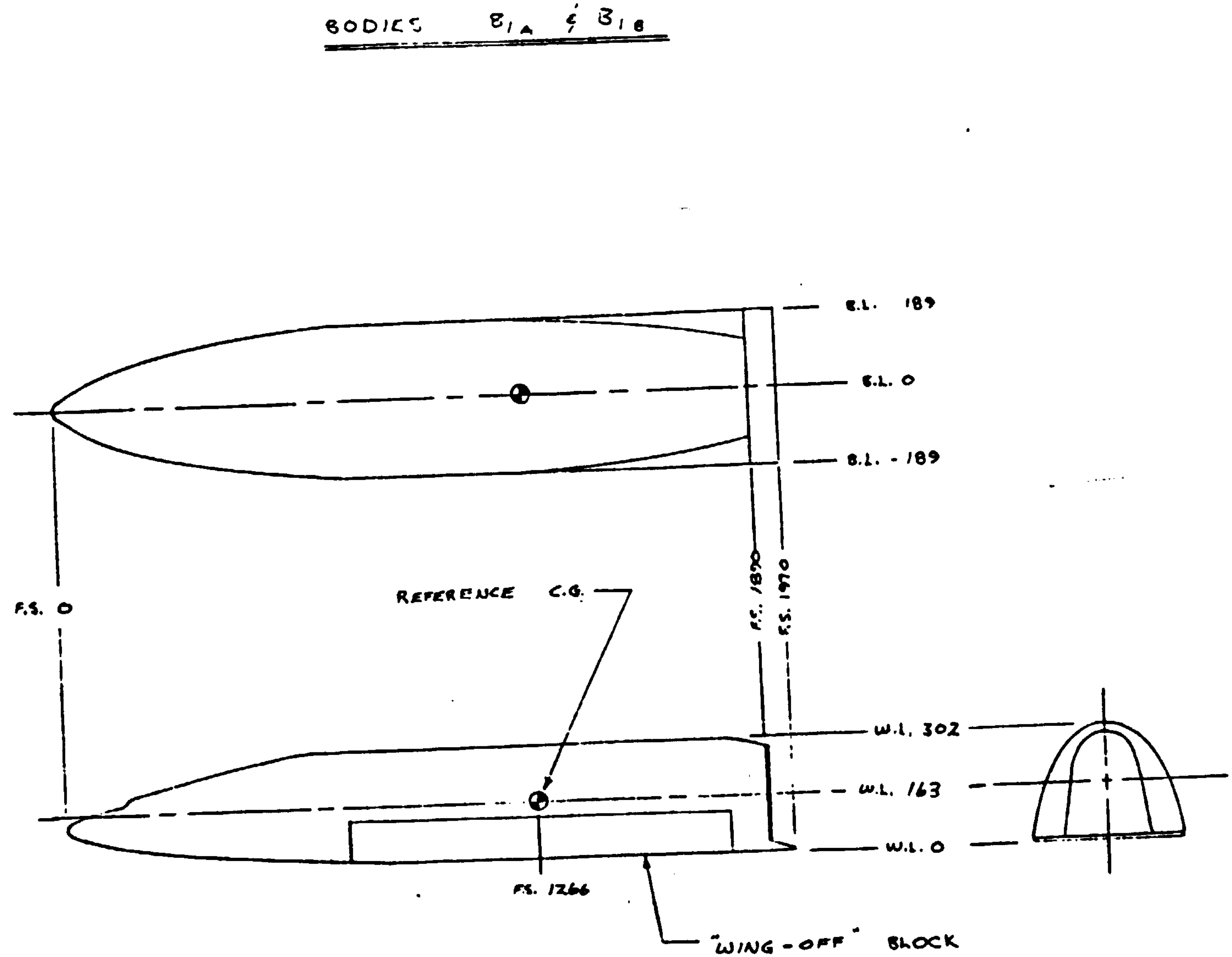
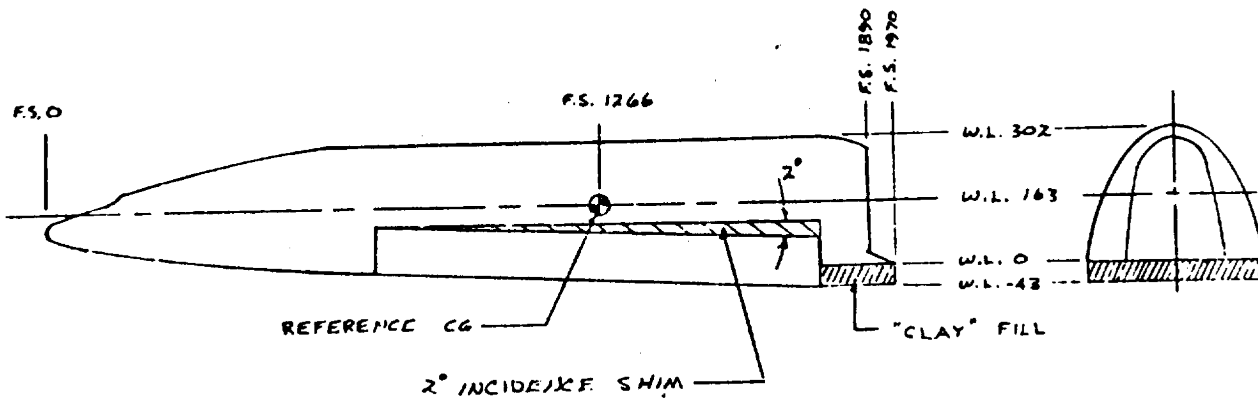


FIGURE 2. BODIES B_{1A} and B_{1B}

NOTE: BASIC B_{1A} BODY WITH A 2° INCIDENCE SHIM BETWEEN THE BODY AND THE WING/WING-OFF BLOCK



BODY B_2

NOTE: B_{1A} BODY SHAPE WITH A 4° WEDGE INSERTED AT F.S. 700 TO INCREASE THE FOREWARD BODY RAMP ANGLE.

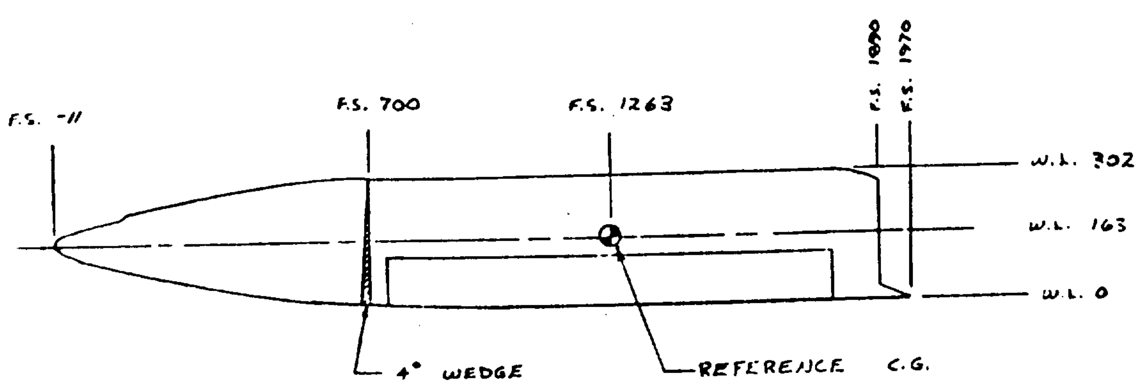


FIGURE 3. BODIES B_{1C} and B_2

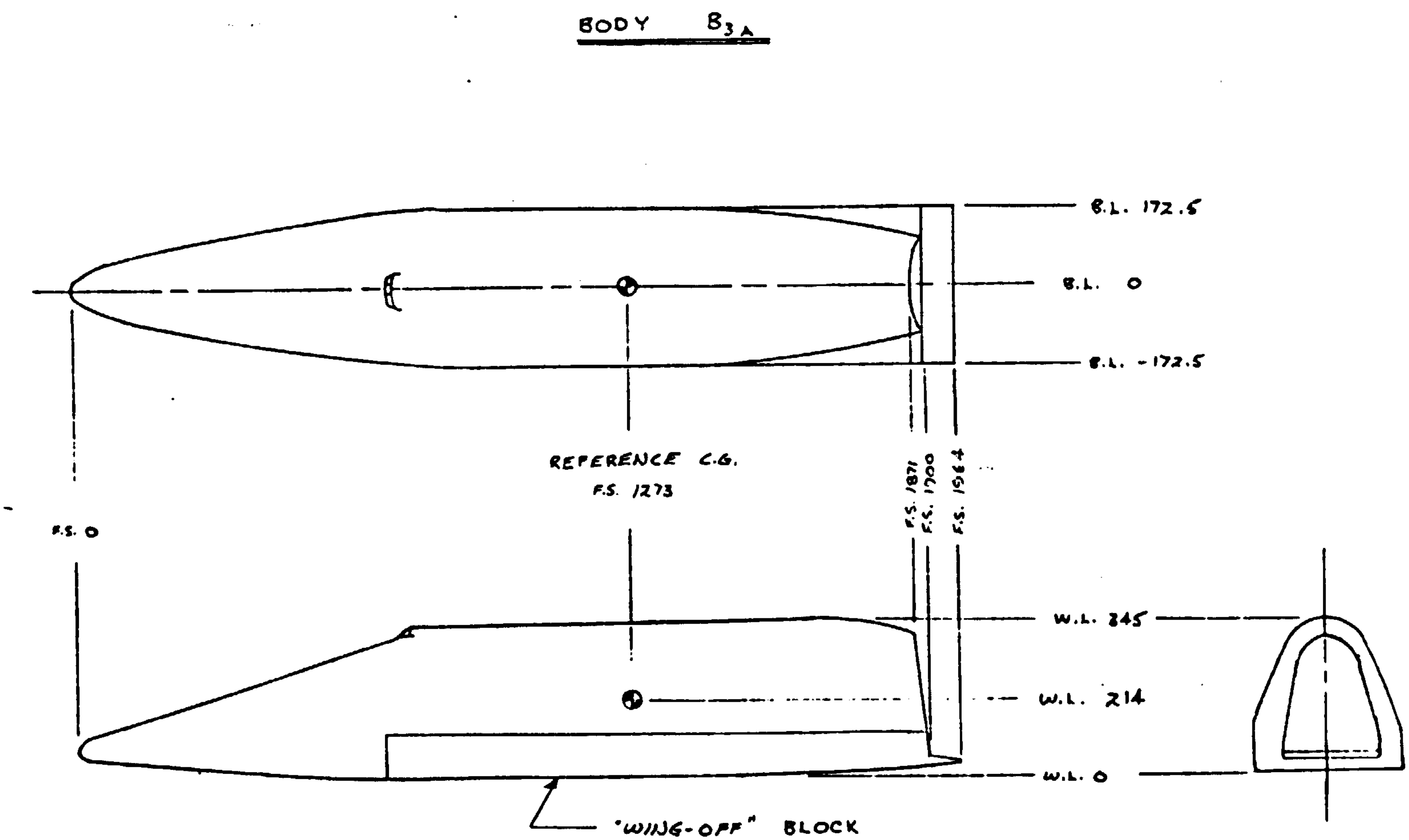
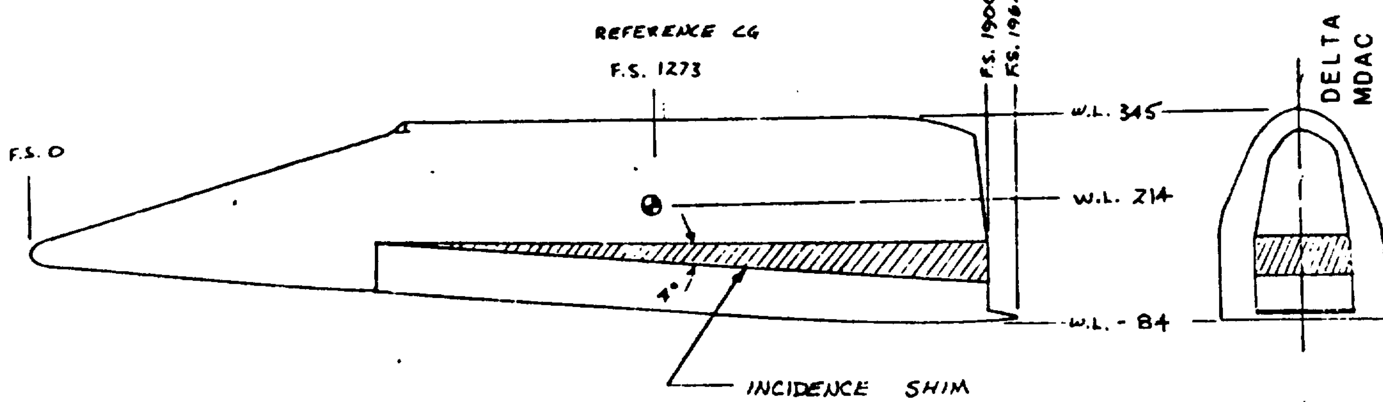


FIGURE 4. BODY B_{3A}

BODY B_{3B}

NOTE: BASIC B_{3A} BODY WITH A 4° INCIDENCE SHIM BETWEEN THE BODY AND THE WING / WING-OFF BLOCK



BODY B_{3C}

NOTE: BASIC B_{3A} BODY WITH THE BODY FLAP REMOVED. DUE TO A MIX-UP IN THE MODEL DESIGN, THE PORTION REMOVED AS A BODY FLAP IS ACTUALLY WIDER THAN THE "WING-OFF" BODY FLAP

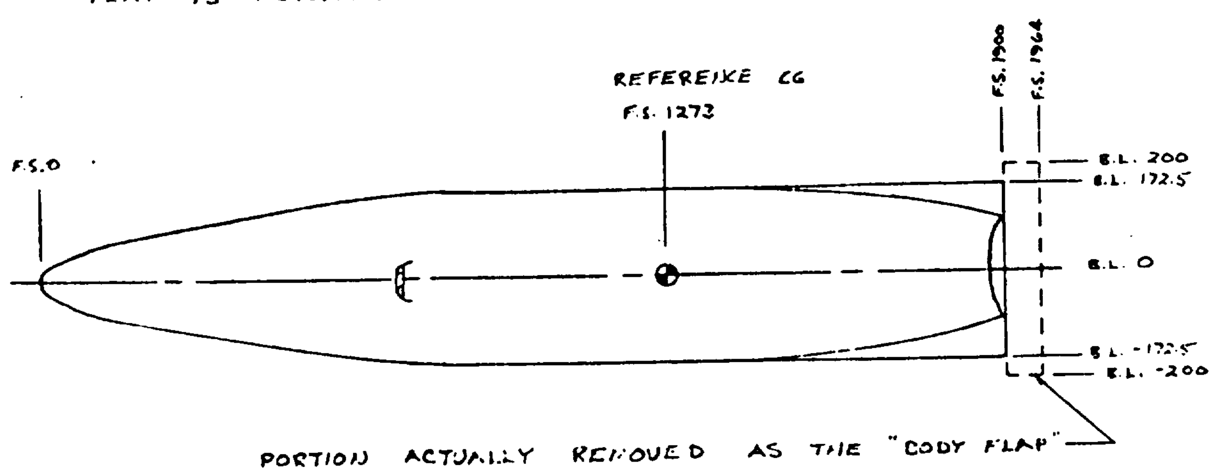
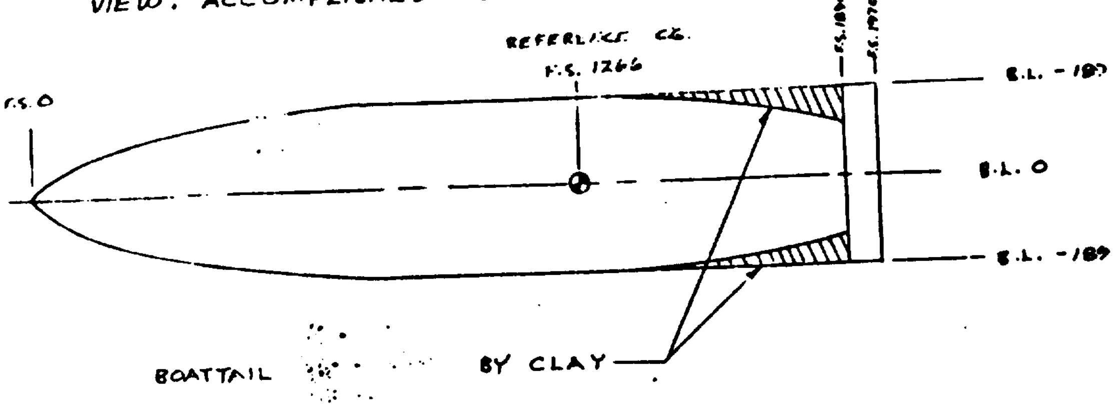


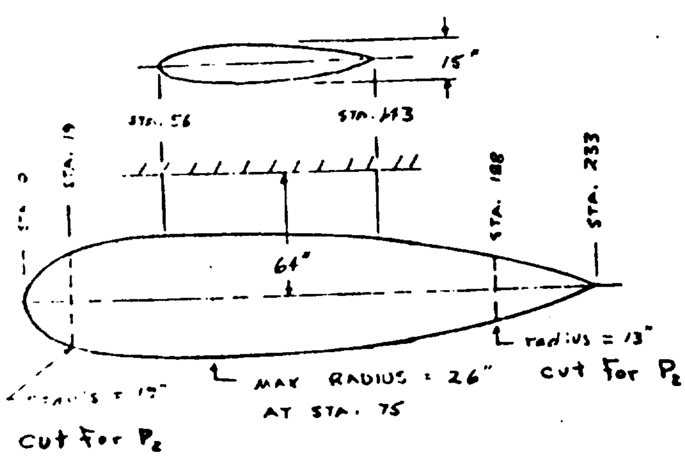
FIGURE 5. BODIES B_{3B} and B_{3C}

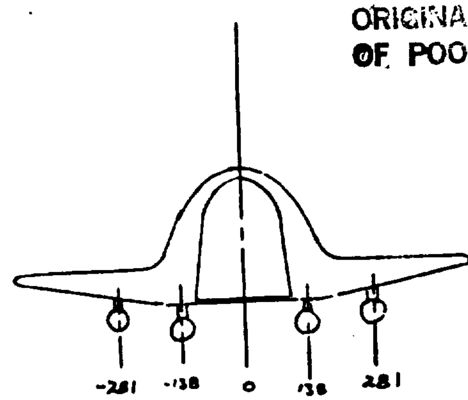
NOTE: BASIC B_{18} BODY WITH THE BOATTAIL REMOVED IN THE PLANFORM VIEW, ACCOMPLISHED BY JUDICIOUS APPLICATION OF MODEL CLAY.

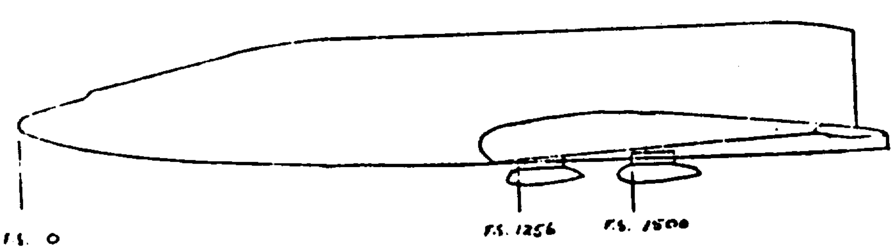


SIMULATED ENGINE PODS · P_1 & P_2

NOTE: ENGINE PODS WERE SIMULATED BY THESE "TEARDROP" SHAPES. FOR THE "ALL ENGINES RUNNING" (P_1) ALL 4 ENGINE PODS HAD THE "TEARDROP" SHAPE. FOR THE "ONE ENGINE OUT" CASE (P_2) THE LEFT OUTBOARD POD WAS CUT AS SHOWN. ALL PODS ARE BODIES OF REVOLUTION.







AS MOUNTED ON THE $B_{18}W_{4A}$ CONFIG.

FIGURE 6. BODY B_4 and SIMULATED ENGINE PODS P_1 and P_2

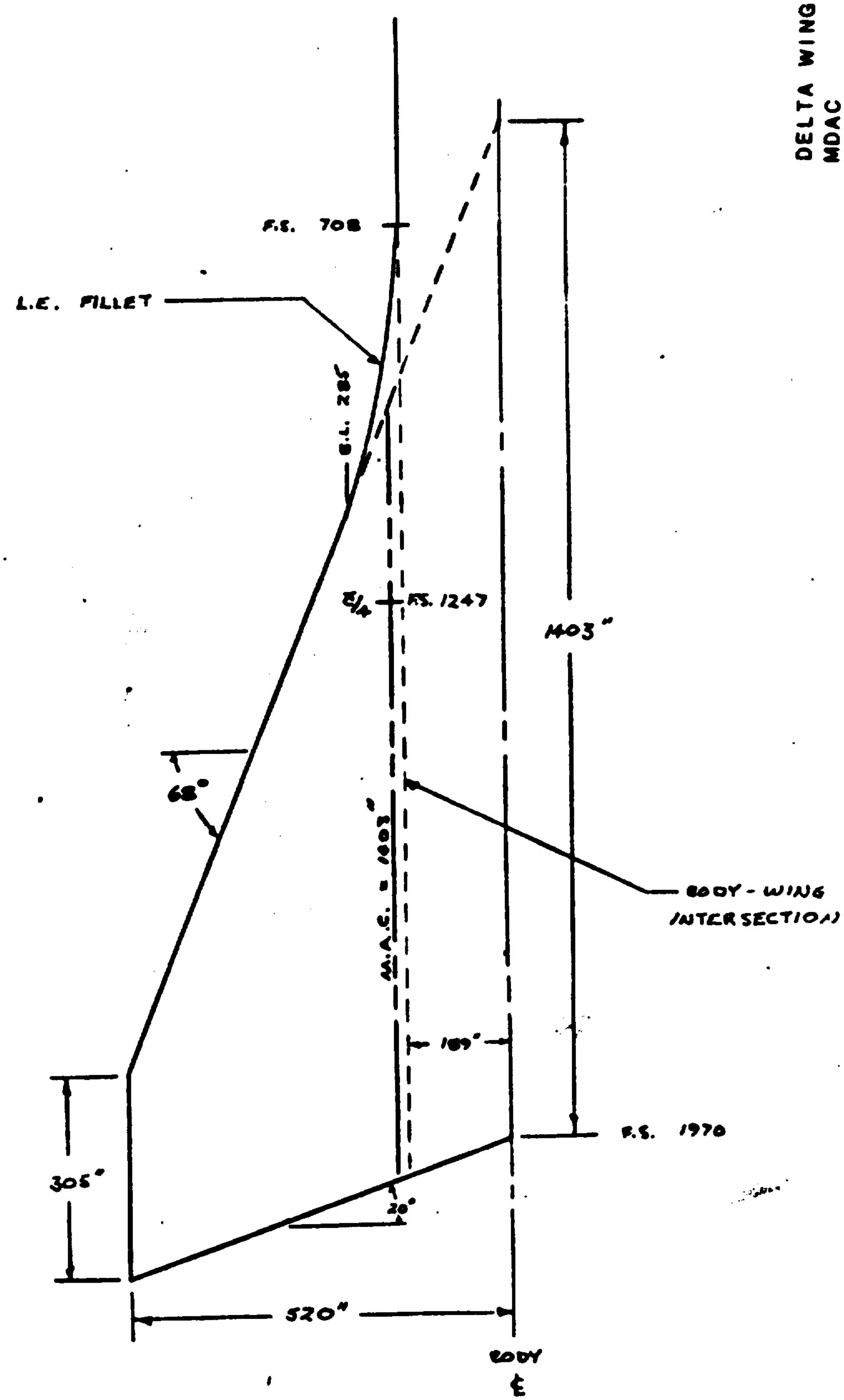


FIGURE 7. WING W_3

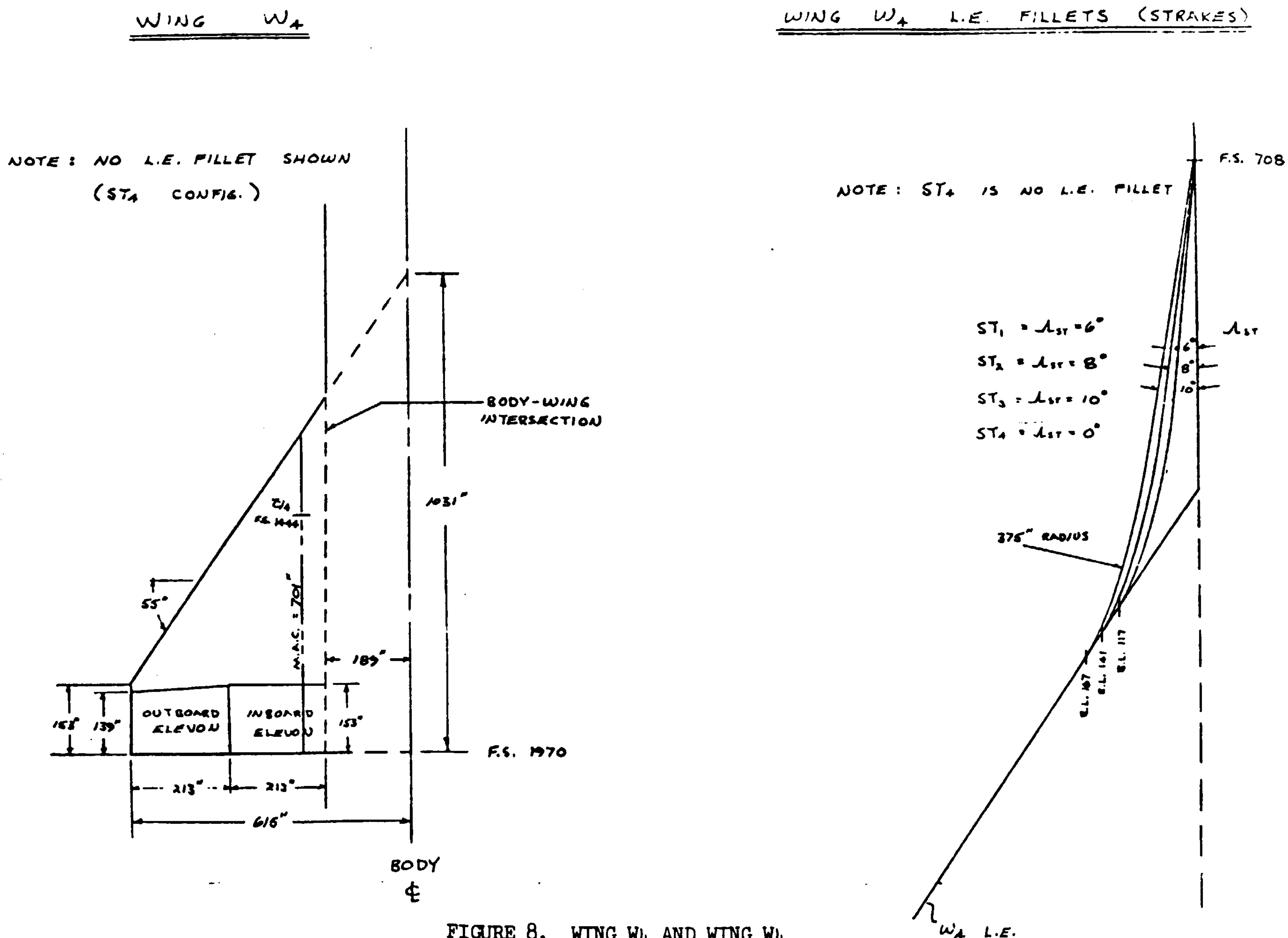


FIGURE 8. WING W_4 AND WING W_4 LEADING EDGE FILLETS (STRAKES)

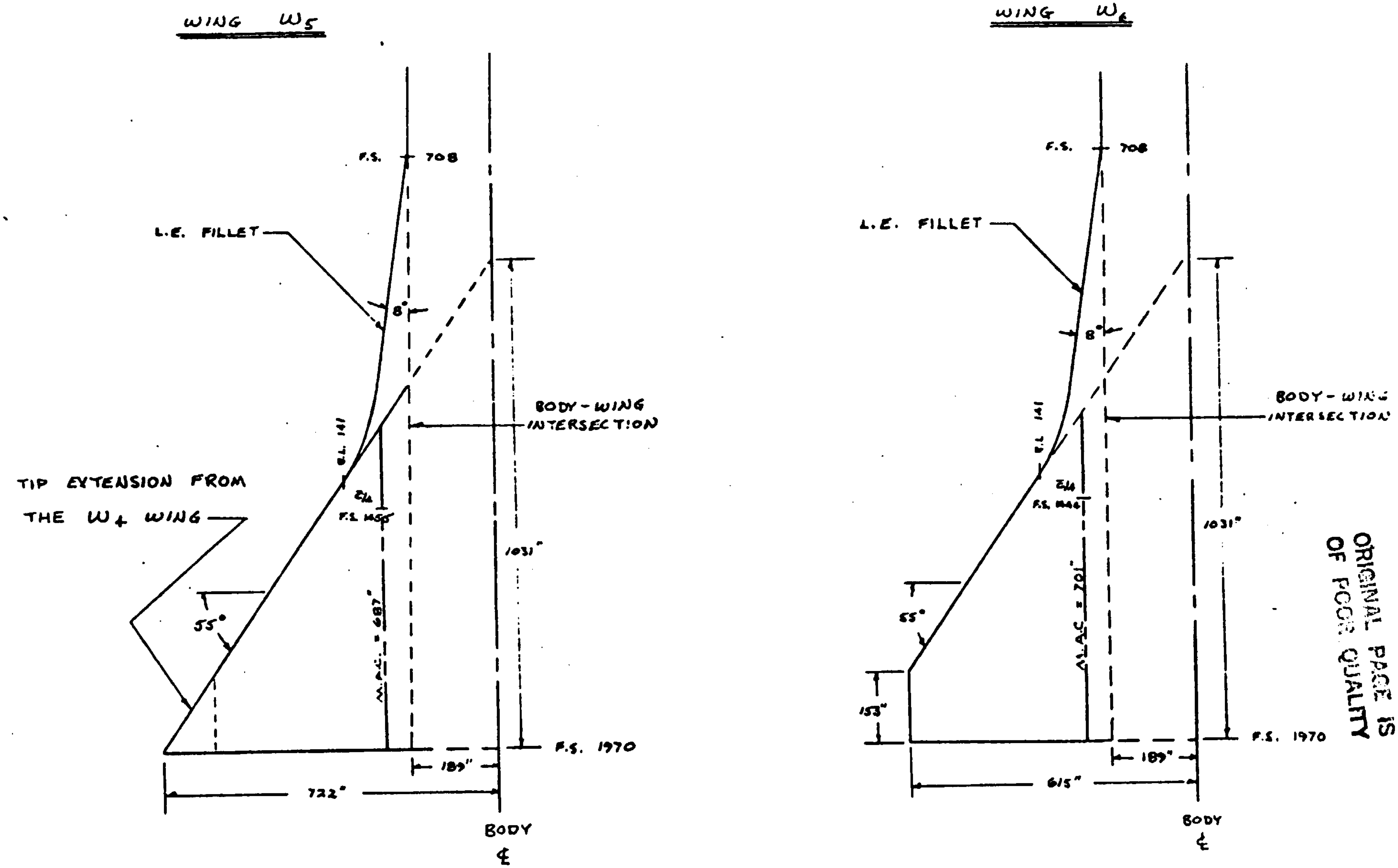


FIGURE 9. WINGS W_5 AND W_6

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DR#1074 B-1- 253

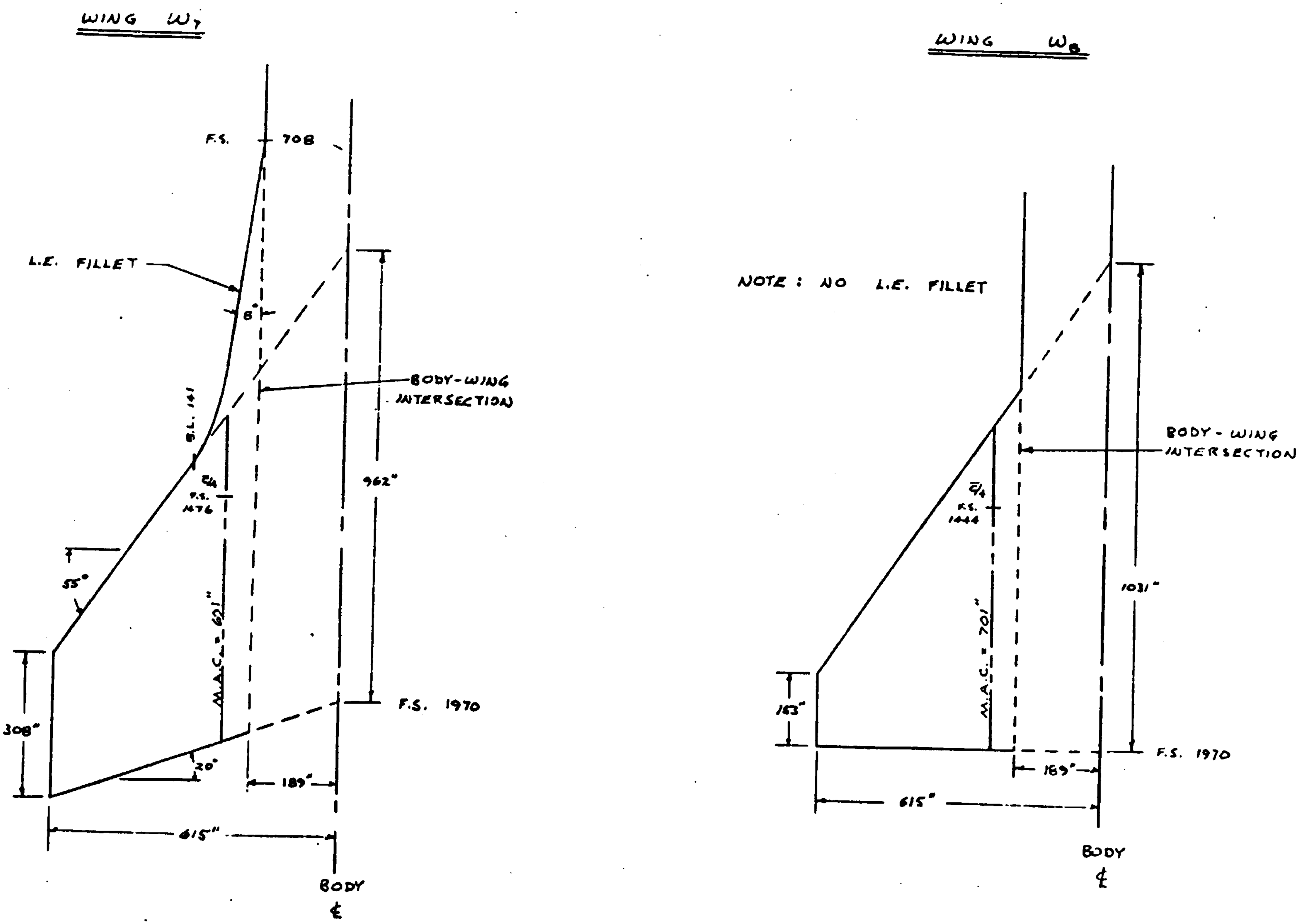


FIGURE 10. WINGS W_7 AND W_8

WING W_{9A} & W_{9B}

NOTE: THE ONLY DIFFENCE BETWEEN W_{9A} AND W_{9B} IS THE LOCATION OF THE WING ON THE BODY

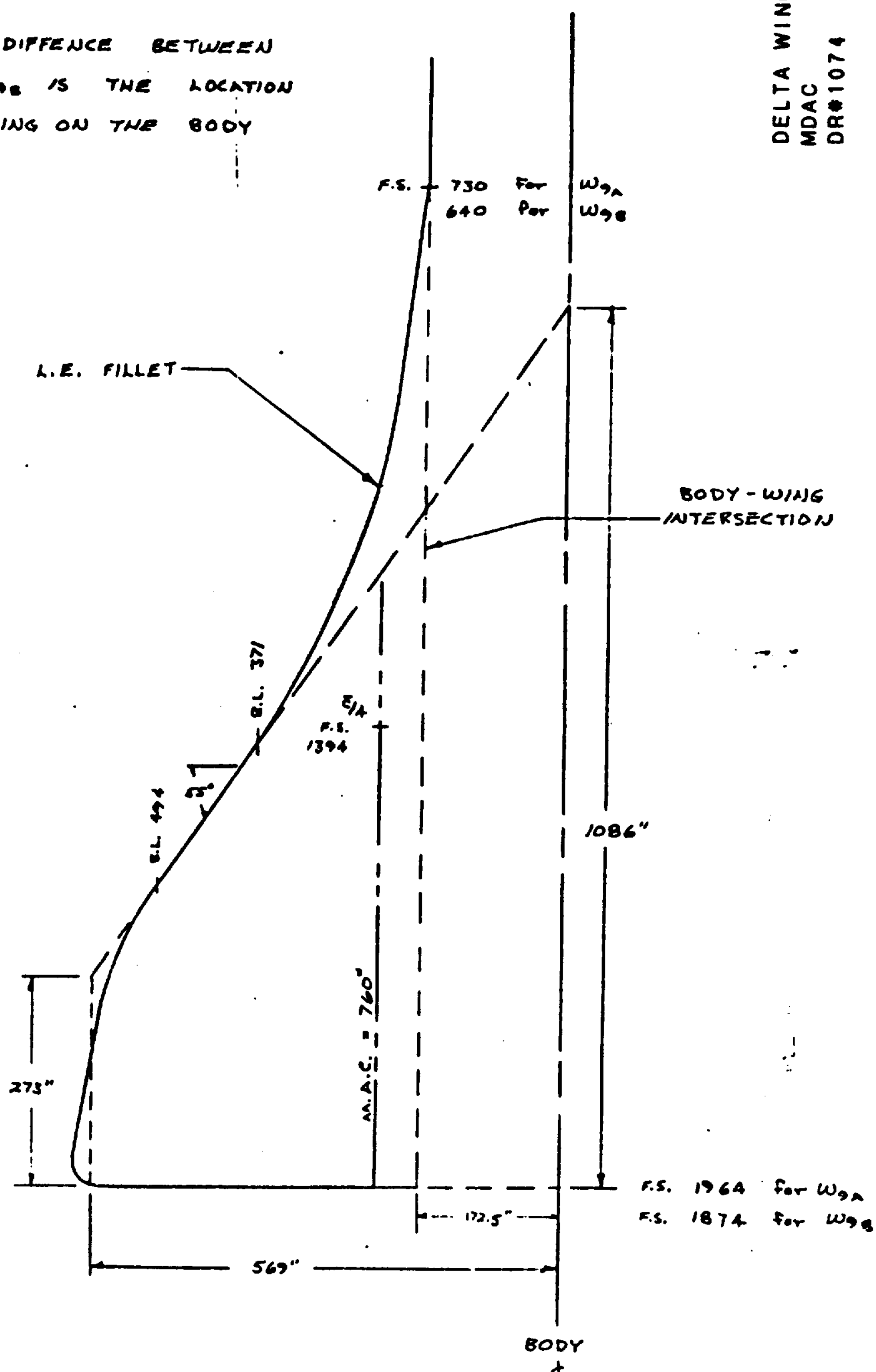


FIGURE 11. WINGS W_{9A} AND W_{9B}

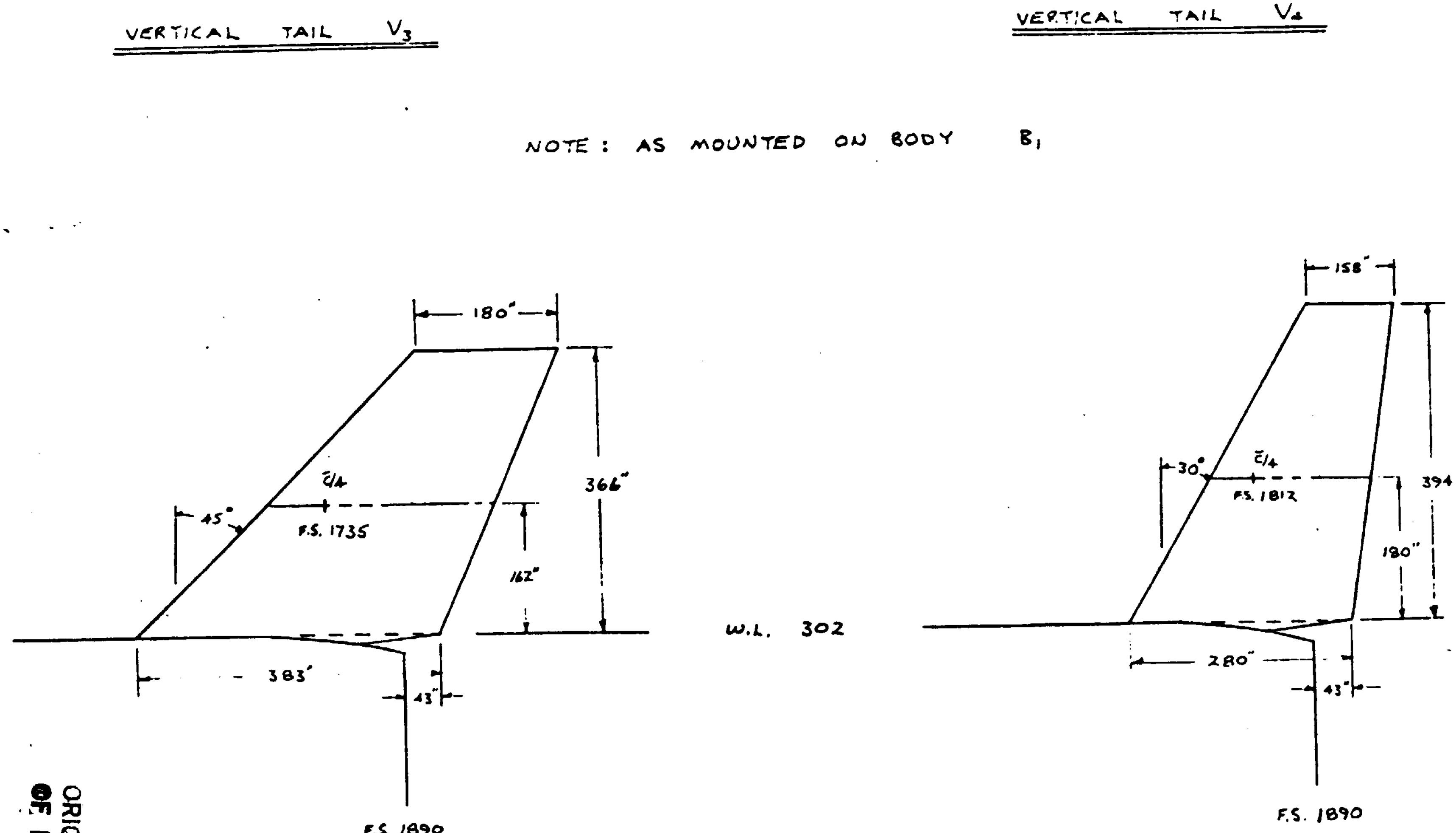


FIGURE 12. VERTICAL TAILS V_3 AND V_4 AS MOUNTED ON BODY B_1

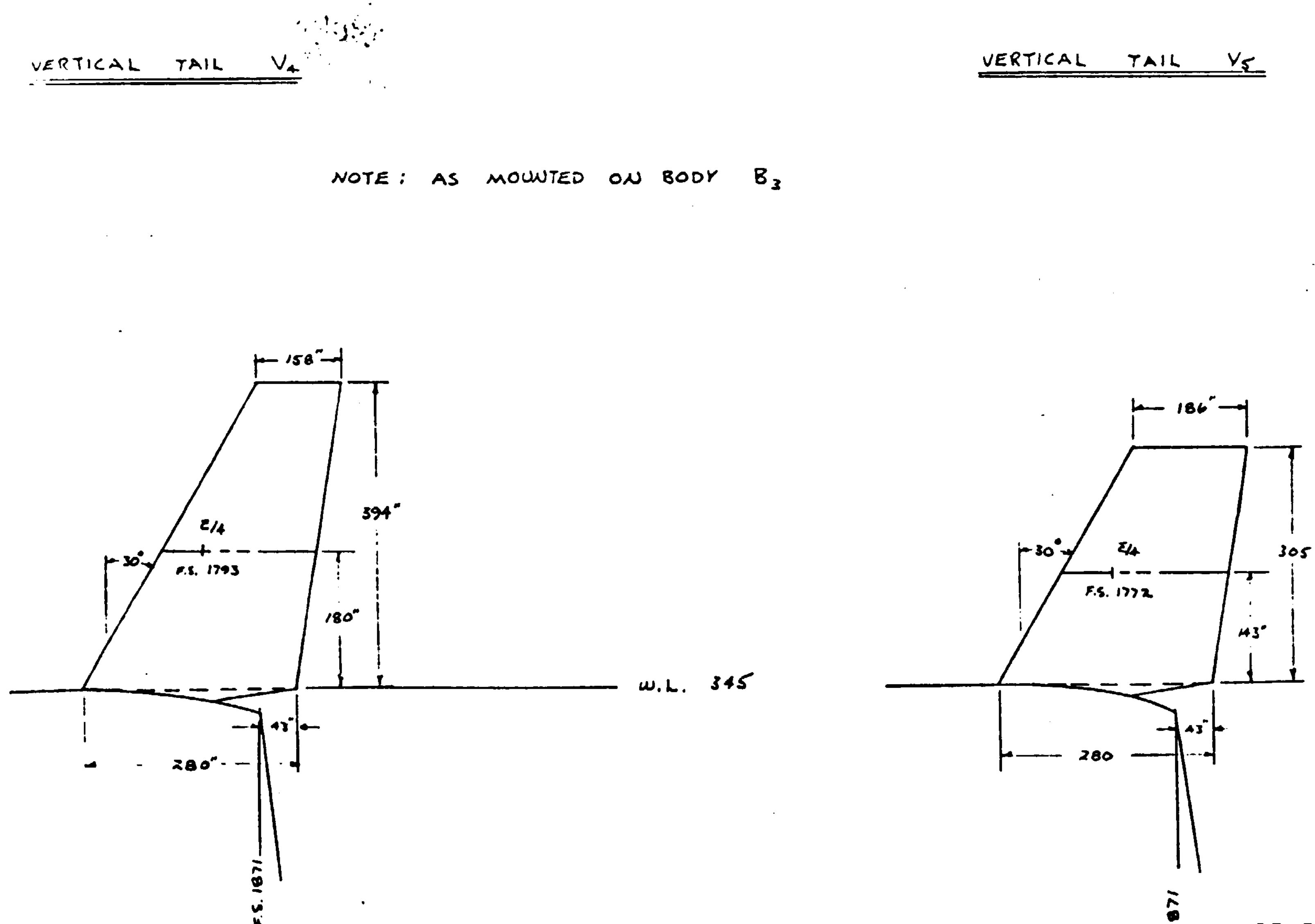
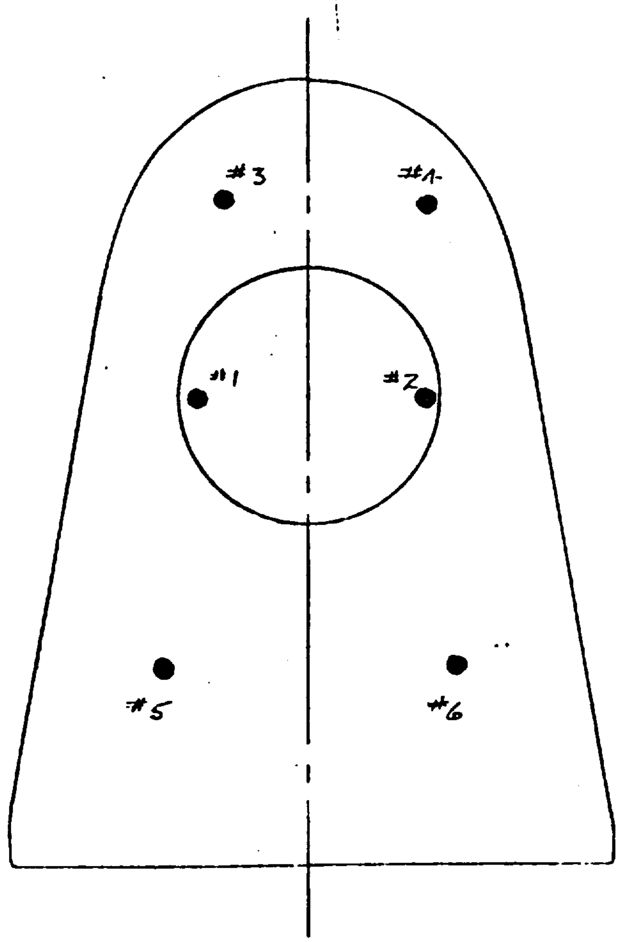


FIGURE 13. VERTICAL TAILS V_4 AND V_5 AS MOUNTED ON BODY B_3

DELTA WING ORBITER
MDAC
DR#1074 B-1- 257

BASE AND BALANCE CAVITY PRESSURE PROBES



NOTE: • PROBES #1 & #2 ARE LOCATED IN THE BALANCE CAVITY
• PROBES #3 → #6 ARE LOCATED FLUSH WITH THE BASE MIDWAY BETWEEN THE BALANCE CAVITY AND THE EDGE OF THE BODY BASE

FIGURE 14. BASE AND BALANCE CAVITY PRESSURE PROBES

TEST ARC 66-522 DATA SET COLLATION SHEET

☐ PRETEST
☐ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_a	δ_r	δ_{e_1}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) .6	.8	.9	1.2	1.5	2.0						
RAT001	$B_5 W_{11} V_6$	A	0	0	0	0	0	6	6	5	4	3	2	1						
002				-30				6	59	9	58	8	57	7						
003				-15	15			3		12		11		10						
004				-45	0			6	62	15	61	14	60	13						
005				-15				6	21	20	19	18	17	16						
006						10		3		24		23		22						
007	$B_5 W_{11}$			0		—		3		27		26		25						
008	B_5			~	~			3		30		29		28						
009	$B_5 W_{11} V_6$			+15	0	0	+15	6	64	34	63	33	32	31						
010			5	-15			0	6	41	40	39	38	37	36						
011						10/40		3		44		43		42						
012				0		0		3		47		46		45						
013	$B_5 W_{11}$					~		3		50		49		48						
014	B_5			~	~			3		53		52		51						
015	$B_5 W_{11} V_6$		0	-30/15	0	0		3		56		55		54						
016				-15		10/40		3		67		66		65						
017		10	C			0		6	73	72	71	70	69	68						

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

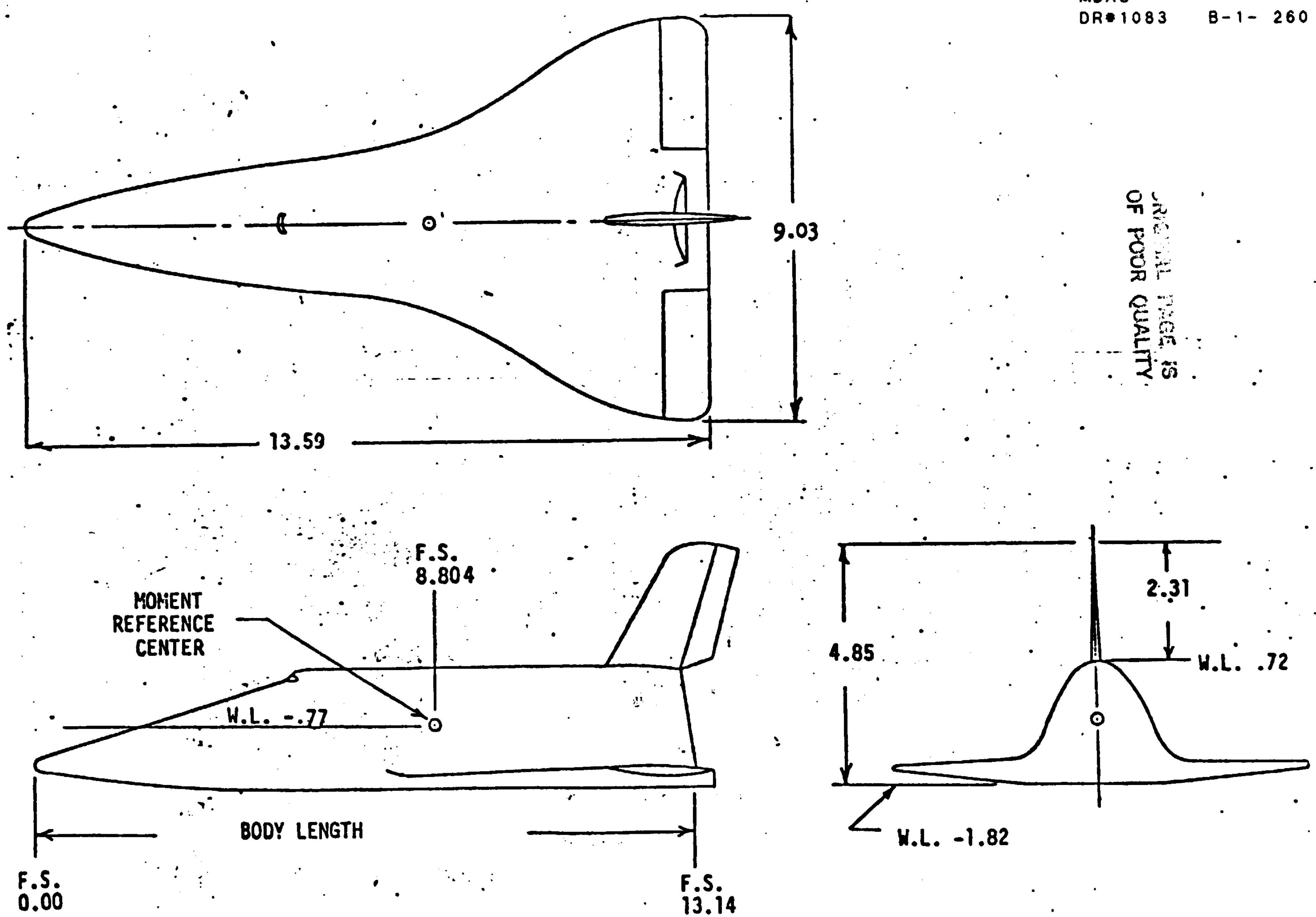
CN KA CY CLM CBL CYN CAC CABC CDRC CDC

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

α or β SCHEDULES
α: A: $-1^\circ \xrightarrow{\Delta 2^\circ} 27^\circ$
β: C: $-5, -3, -1, 0, +1, 2^\circ \xrightarrow{\Delta 2^\circ} 10^\circ$

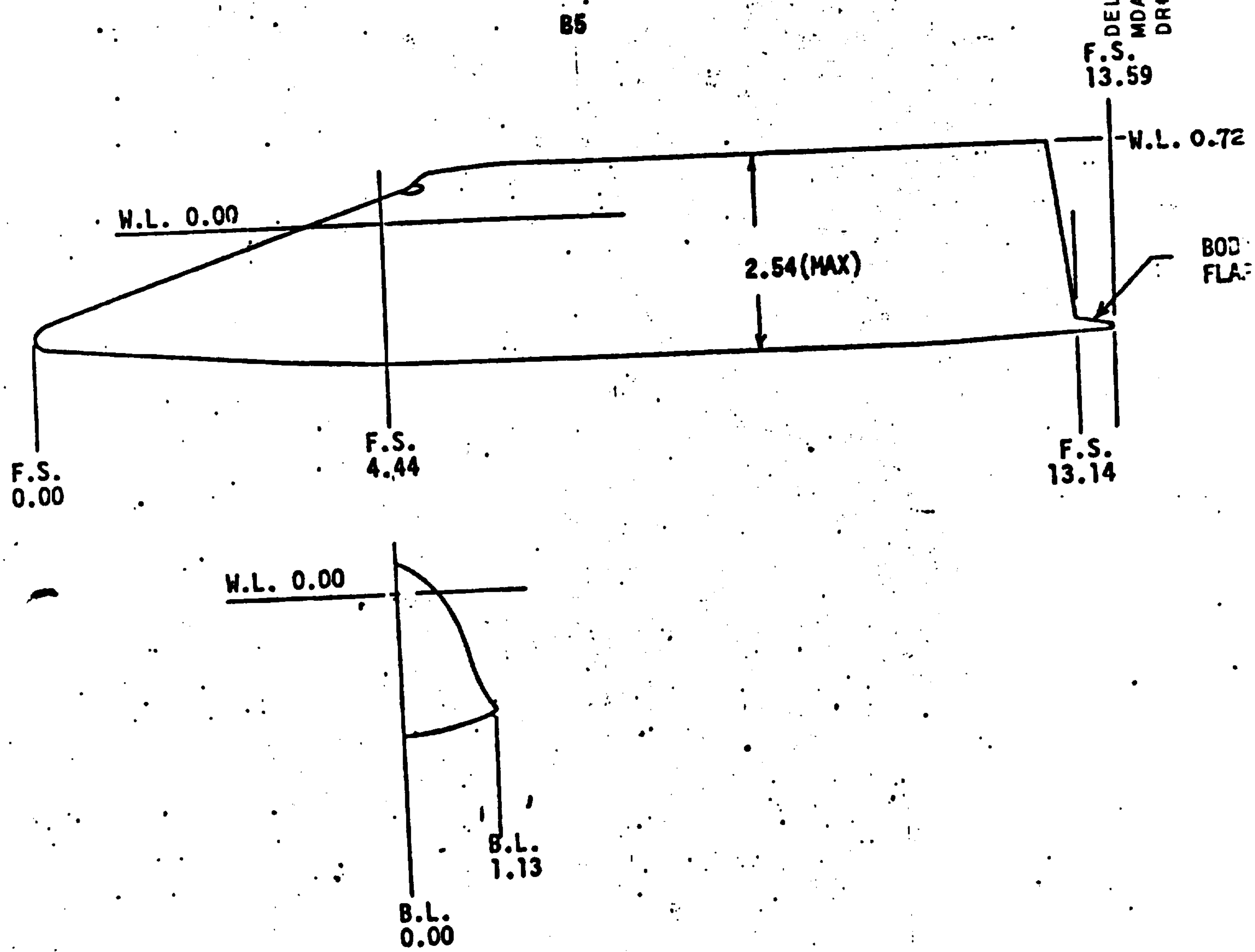
ORIGINAL PAGE IS OF POOR QUALITY

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



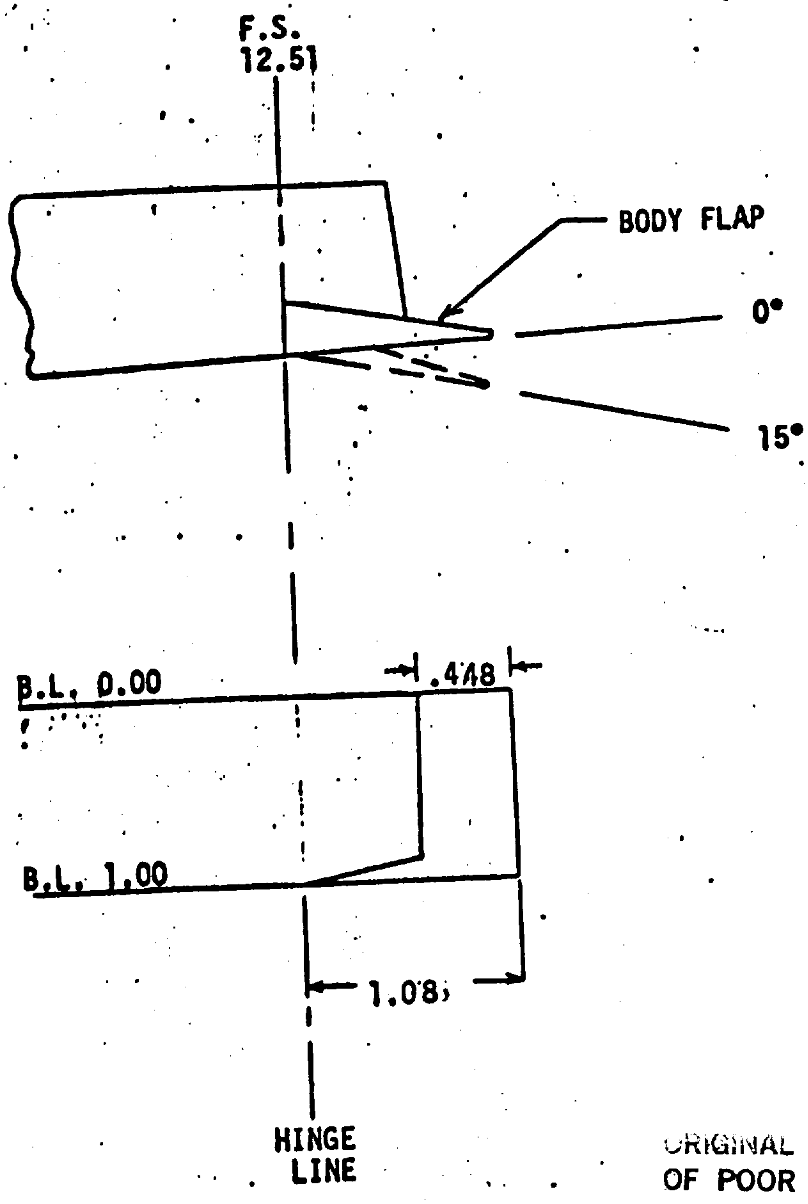
Sketch 2. Three-view sketch of delta wing orbiter model general arrangement.

DELTA WING ORBITER
MDAC B-1- 261
DR#1083



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Sketch 3. Dimensional sketch of delta wing orbiter body, (B5).



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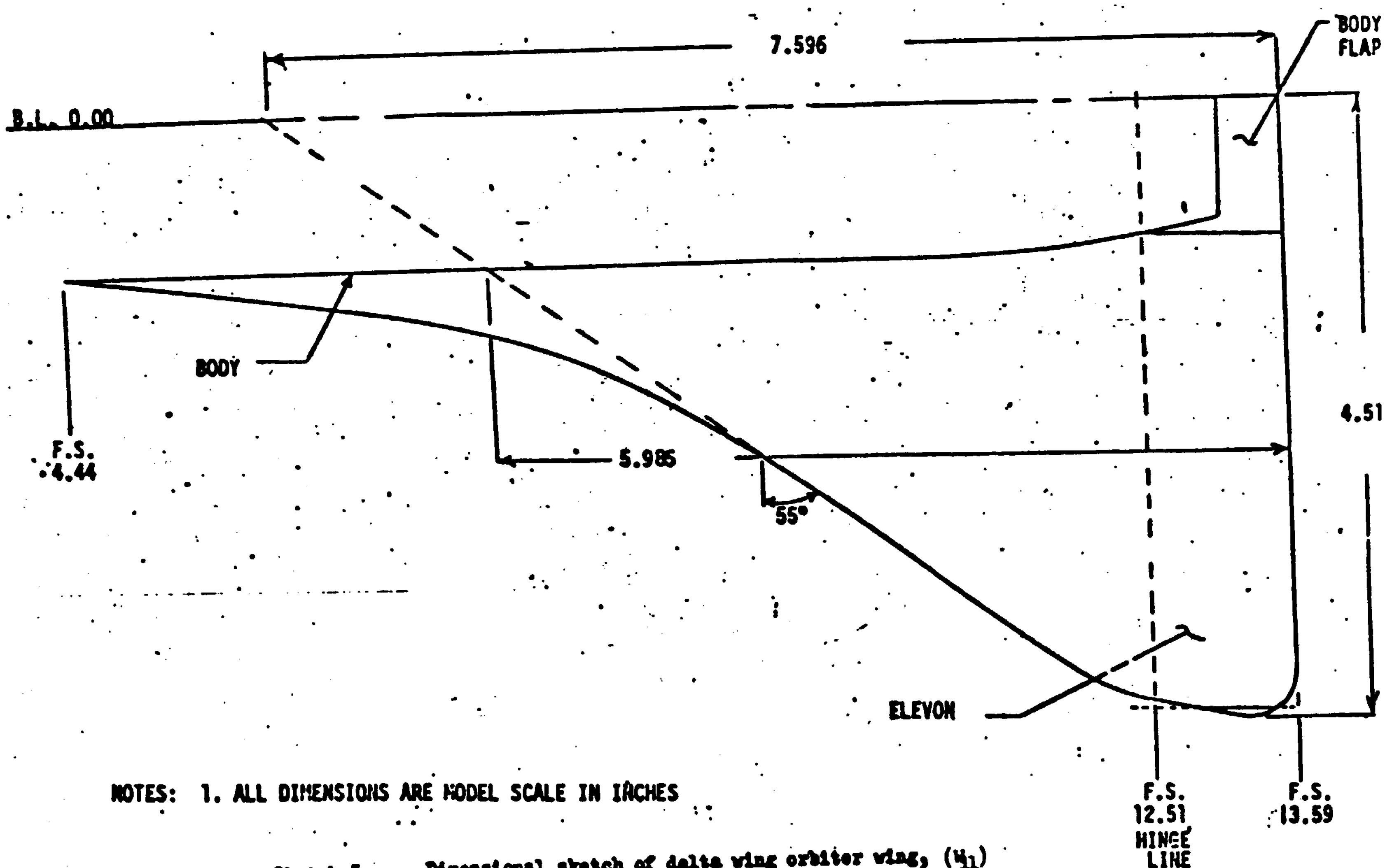
OF POOR QUALITY

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Sketch 4. Dimensional sketch of delta wing orbiter body flap.



NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Sketch 5. Dimensional sketch of delta wing orbiter wing, (W_{11})

DELTA WING ORBITER
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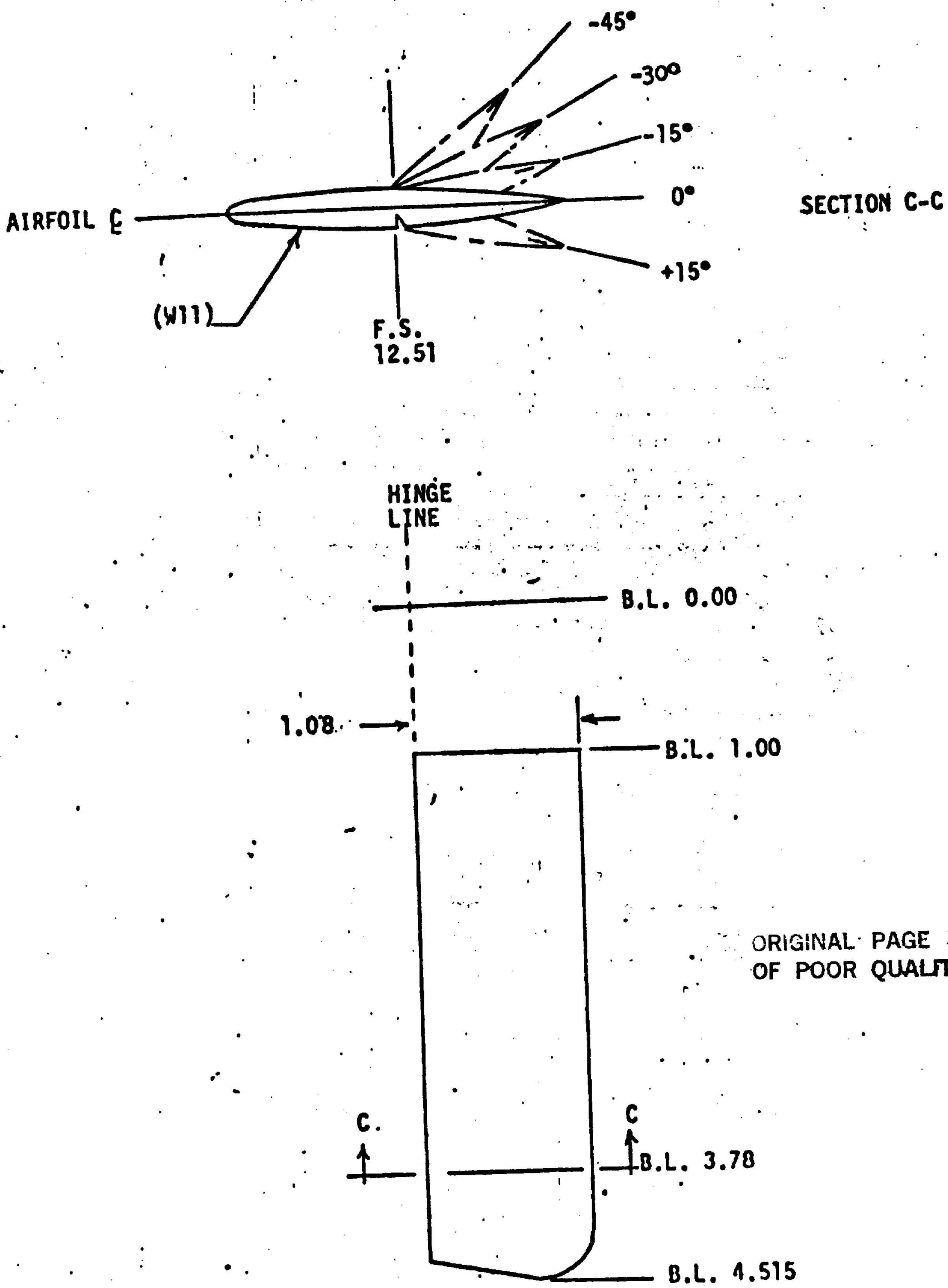
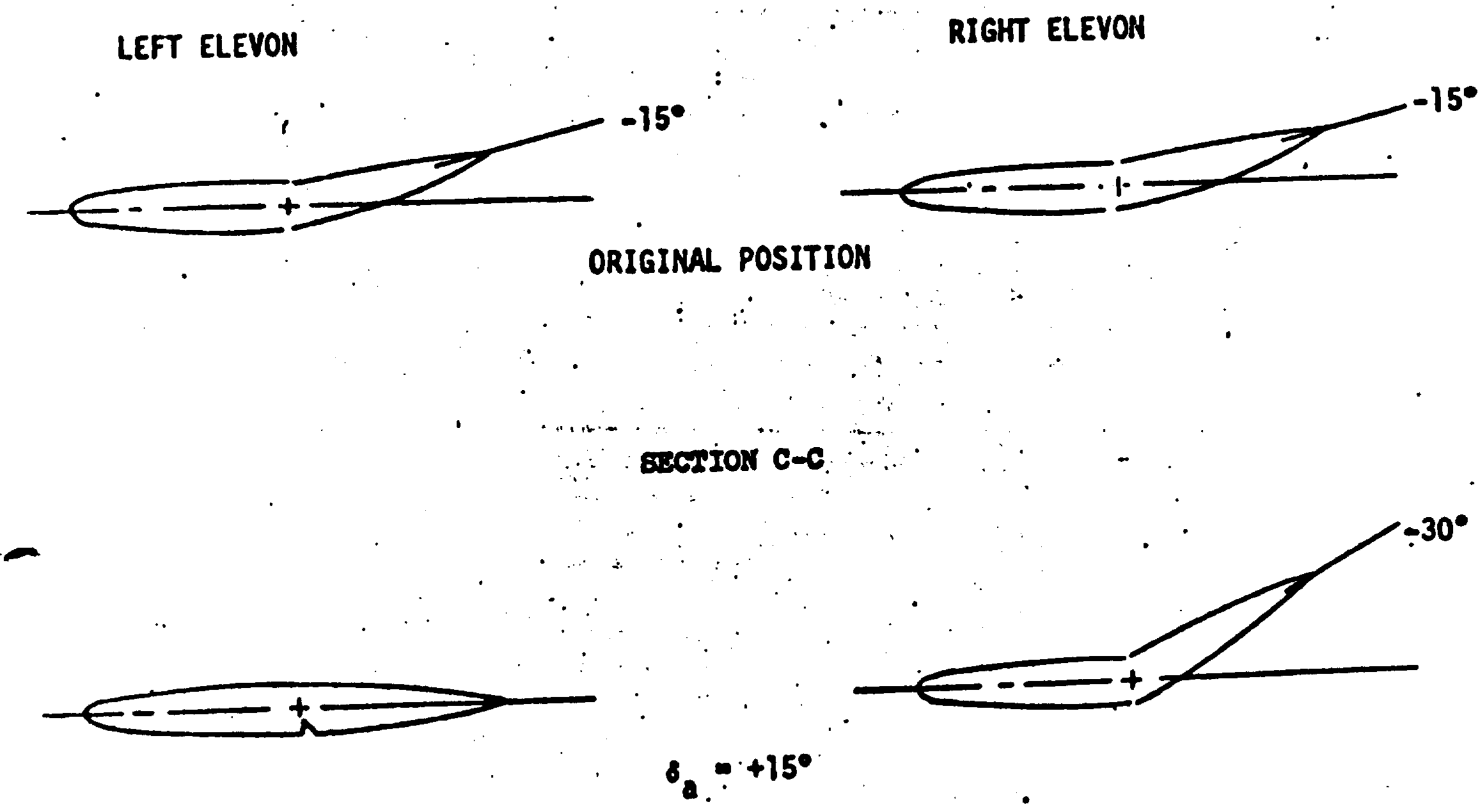
DR#1083

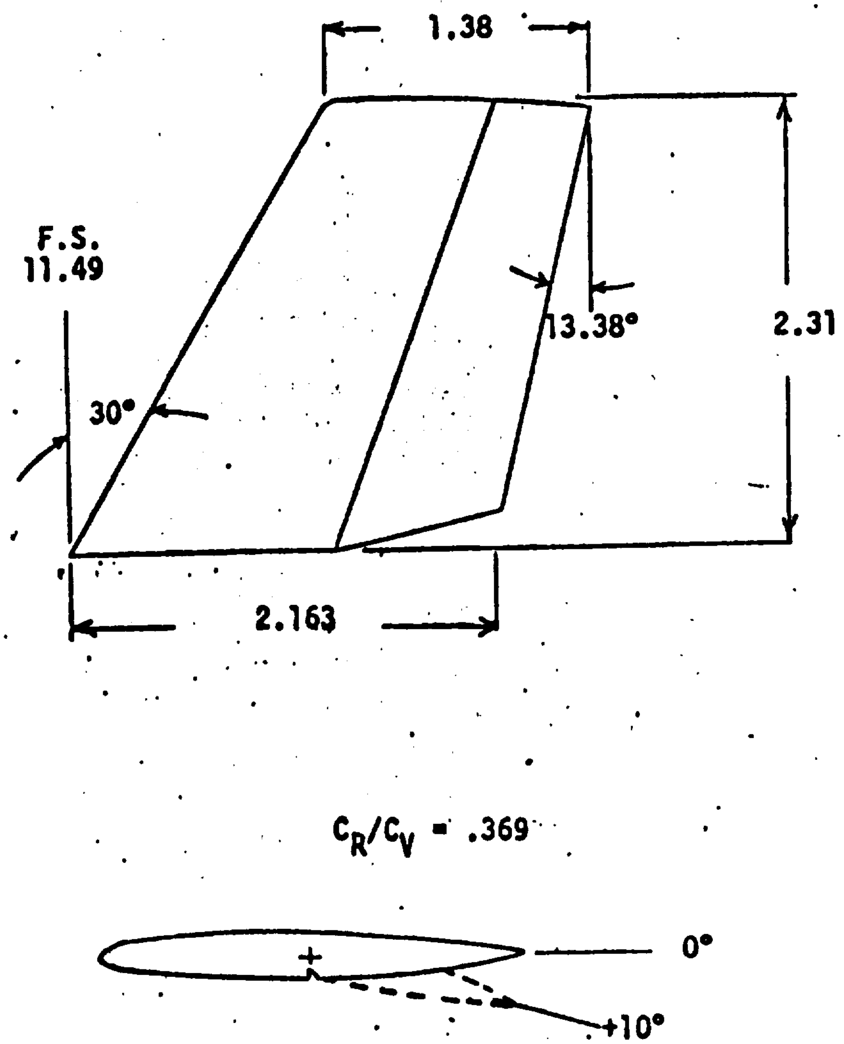


NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Sketch 6. **Dimensional sketch of delta wing orbiter plain elevons for wing.**

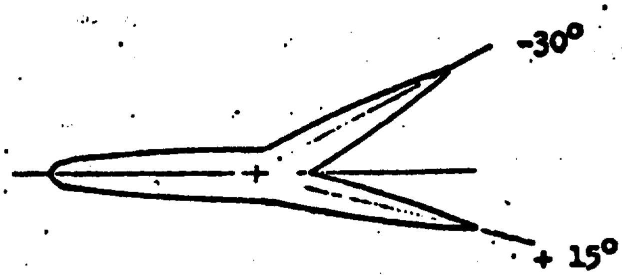


Sketch 7. Dimensional sketch of delta wing orbiter plain elevons for lateral control.



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

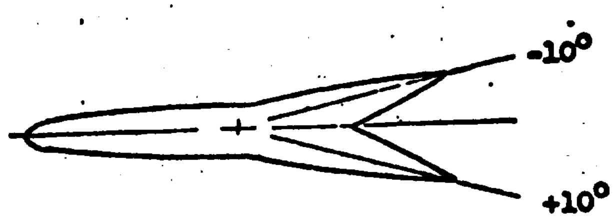
Sketch 8. Dimensional sketch of delta wing orbiter vertical tail (V_6) and plain rudder.



SECTION C-C

a) Flared elevons

NOTE: FLARED ELEVONS HAVE THE SAME GEOMETRIC CHARACTERISTICS AS THE PLAIN ELEVONS FOR WING W_{11}

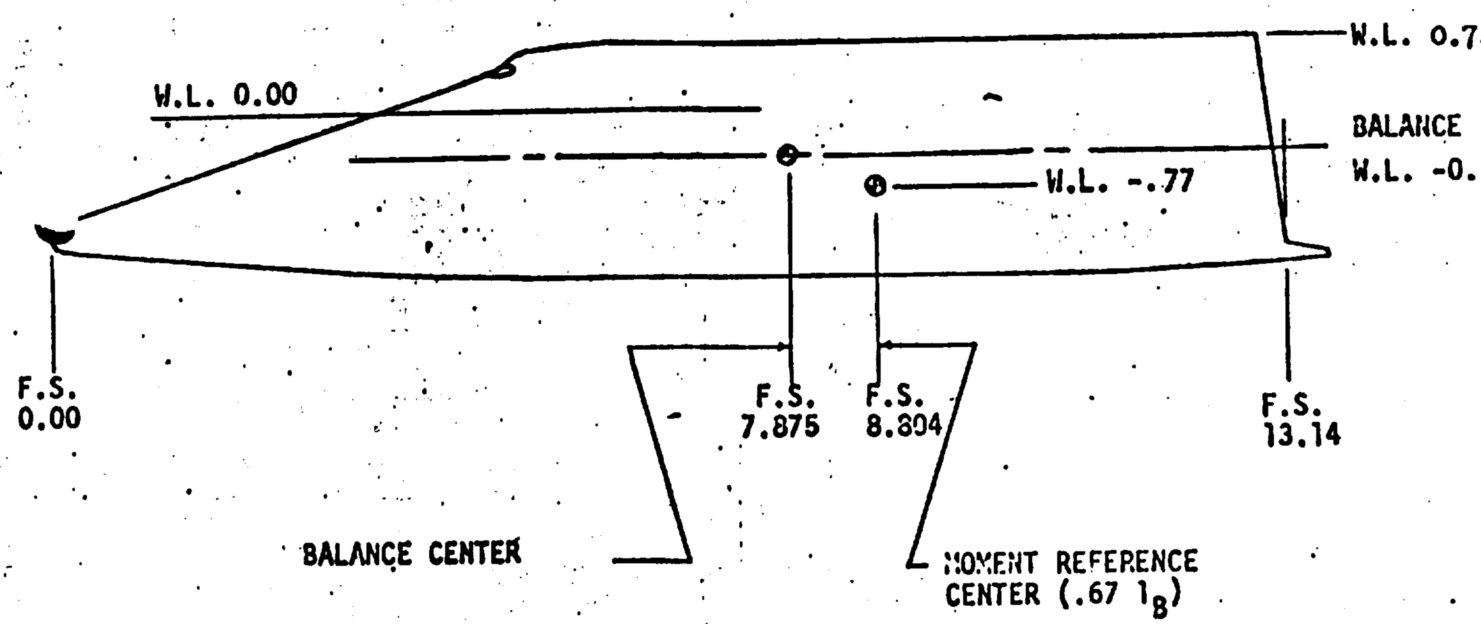


b) Flared rudder

NOTE: FLARED RUDDERS HAVE THE SAME GEOMETRIC CHARACTERISTICS AS THE PLAIN RUDDER FOR VERTICAL TAIL V_6

Sketch 9. Dimensional sketch of delta wing orbiter flared elevons and flared rudder.

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



Sketch 10. Moment transfer diagram.

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TEST 22" He #7377 DATA ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{e_L}	δ_{e_R}	δ_e	δ_a	NO. of RUNS	MACH NUMBERS 203
RLZ002	MDAC 050B	A	0	0	0	0	0	1	2
003				-10	-10	-10	0		3
004				-20	-20	-20	0		4
005				-5	-5	-5	0		5
006				-15	-15	-15	0		6
007				0	-10	-5	5		7
009				0	-20	-10	10		9
010			4.5	-5	-5	-5	0		10
017		B	0	-5	-5	-5	0		17
027		C	0	-5	-5	-5	0		27

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

BETA Q(PSI) CN CAF CLM CBL CYN CY MACH ALPHA

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

Alpha Sch:

A = 22, 24, 26, 28, 31, 34, 37, 40, 43, 46, 49°

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

α or β SCHEDULES

C = [redacted], 0, 2, 4, 6, 8, 10, 12, 14, 16, 18°

DELTA WING ORBITER
MDAC
DR#1086 B-1- 269

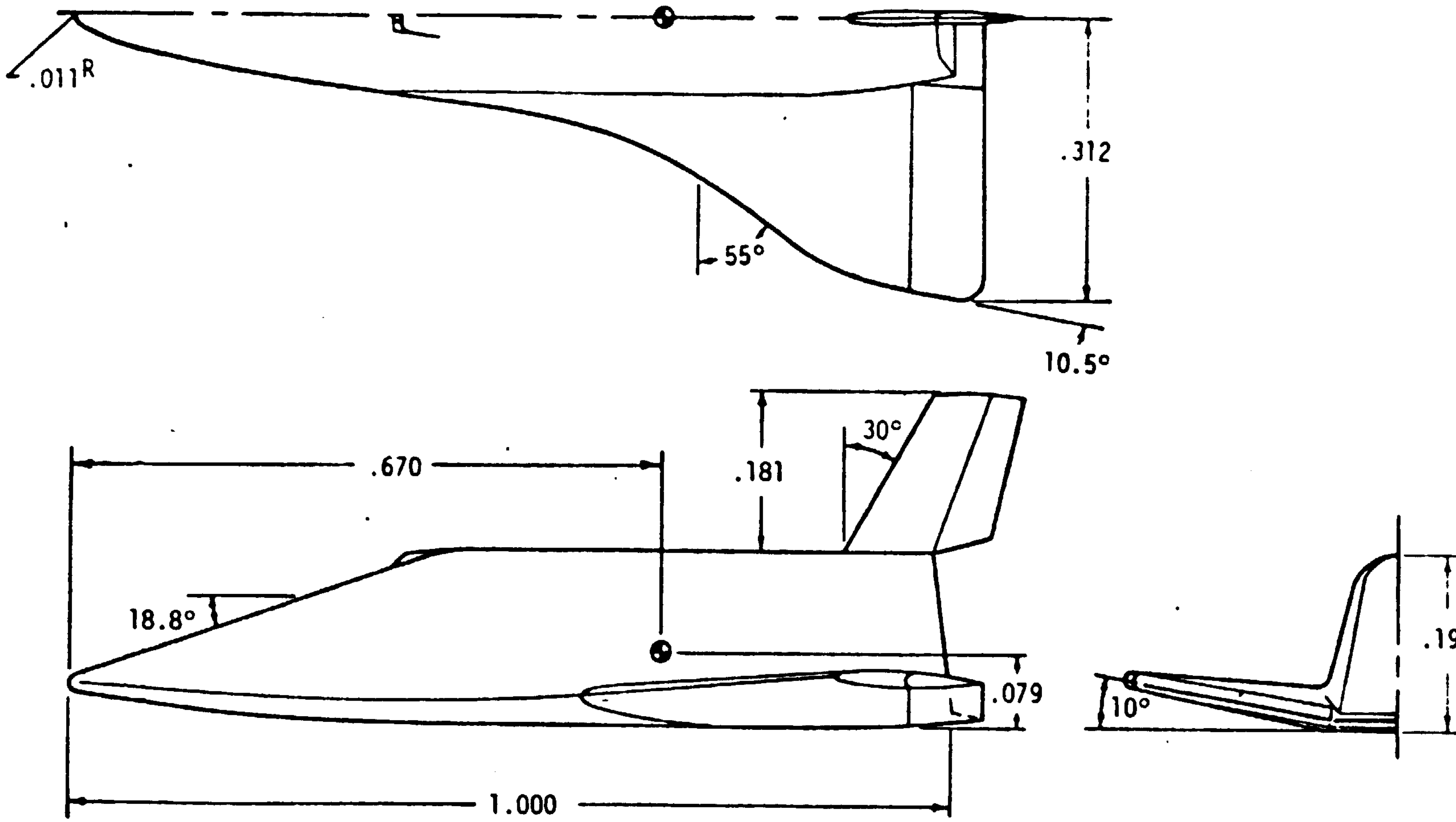

FIGURE 2. - MODEL SKETCH. ALL DIMENSIONS ARE IN TERMS OF BODY LENGTH.

TABLE III.-

TEST ARC 35-125 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δe	δa	δR	δFR	NO. of RUNS	M	RN/L ×10^6	Run No.	TEST RUN NUMBERS
001	B5 W11 V6	A	0	5	0	0	5	1	7.4	1.	1	
002										3.	2	
003										5.	3	
004										6.	4	
005							-			5.	5	
006							0				6	
007				15			15			1.	7	
008										3.	8	
009										5.	9	
010										6.	10	
011				-15			0			5.	11	
012				0						1.	12	
013										5.	13	
014										6.	14	
015	B5 W11					-				5	15	
016	B5 W11 V6					20/-20					16	
017	B5			—	—	—	—				17	
018	B5 W11 V6			-30/15	0	0	15				18	
019				0		20	0				19	
020				-15	15	0					20	

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CLM	CA	CL	CD	L/D	CY	CYN	CBL				

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

α or β SCHEDULES

α A: 10 → 31 B: 30 → 51 C: -7 → 13

α D: -1 → 20

β E: -1 → 9

NASA-MSFC-MAF

DELTA WING ORBITER
MDAC
DR#1094 B-1- 271

TABLE III.- Continued

TEST ARC 35-125 DATA SET/RUN NUMBER COLLATION SUMMARY

DELTA WING ORBITER
MDAC
DR#1094 B-1- 272

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_e	δ_a	δ_R	δ_{FB}	NO. of RUNS	M	RN/L	Run No.
021	$B_5 W_{11} V_6$	A	0	0	15	0	0	1	7.4	5.	21
022					0	20					22
023			5			0				1.	23
024										5.	24
025										6.	25
026				-15						5.	26
027				5			5				27
028	$B_5 W_{11}$			0		—	0				28
029	$B_5 W_{11} V_6$					20/ -20					29
030		B	0	-45		0					30
031				-30	15					4.6	31
032				-15	0					4.2	32
033										1.	33
034				-30						4.2	34
035							—				35
036				-15	15		0				36
037				0	0						37
038	$B_5 W_{11}$					—					38
039	B_5			—	—	—	0				39
040	$B_5 W_{11} V_6$	30	E	0	0	0	0			3.	40

TEST RUN NUMBERS

1	7	13	19	25	31	37	43	49	55	61	67	75 76
CN	CLM	CA	CL	CD	CL/CD	CY	CYN	CBL				

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES

α A: 10 → 31 B: 30 → 51 C: -7 → 13

α D: -1 → 20

β E: -1 → 9

NASA-MSFC-MAF

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TABLE III.- CONCLUDED

TEST ARC 35-125 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δe	δa	δR	δFB	NO. of RUNS	M	RN/L	Run No.
041	$B_5 W_{11}$	30	E	0	0	-	0	1	7.4	3.	41
042		20				-				5.	42
043	$B_5 W_{11} V_6$					0					43
044		C	0								44
045				-30							45
046				-45							46
047				-15							47
048		D	5	-30							48
049				0							49
050	$B_5 W_{11}$					-					50
051		25	E			-					51
052	$B_5 W_{11} V_6$					0					52
053		50		-30						3.	53
054				0							54
055	$B_5 W_{11}$					-					55
056	$B_5 W_{11} V_6$			-15		0					56

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)

TEST RUN NUMBERS

1 CN 7 CLM 13 CA 19 CL 25 CD 31 CL/CD 37 CY 43 CYN 49 CBL 55 61 67 75 76

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS:

α or β SCHEDULES

α A: 10 → 31 B: 30 → 51 C: -7 → 13 D: -1 → 20

β E: -1 → 9

NASA-MSFC-MAF

DELTA WING ORBITER
MDAC
DR#1094 B-1- 273

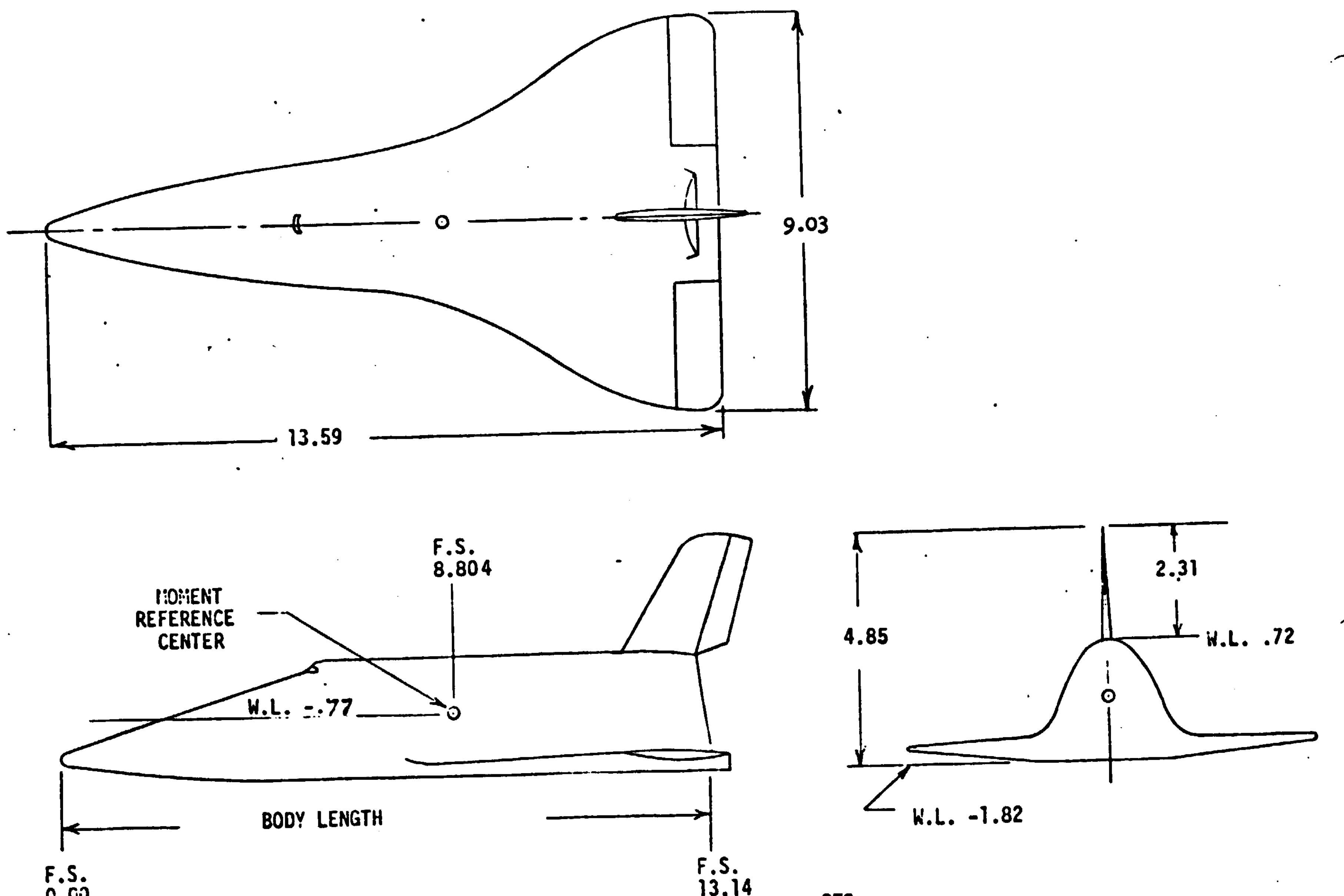
McDonnell-Douglas
Model Scale .007

DELTA WING ORBITER
MDAC
DR#1094 B-1- 274

Figure E.-

DELTA WING ORBITER GENERAL ARRANGEMENT

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

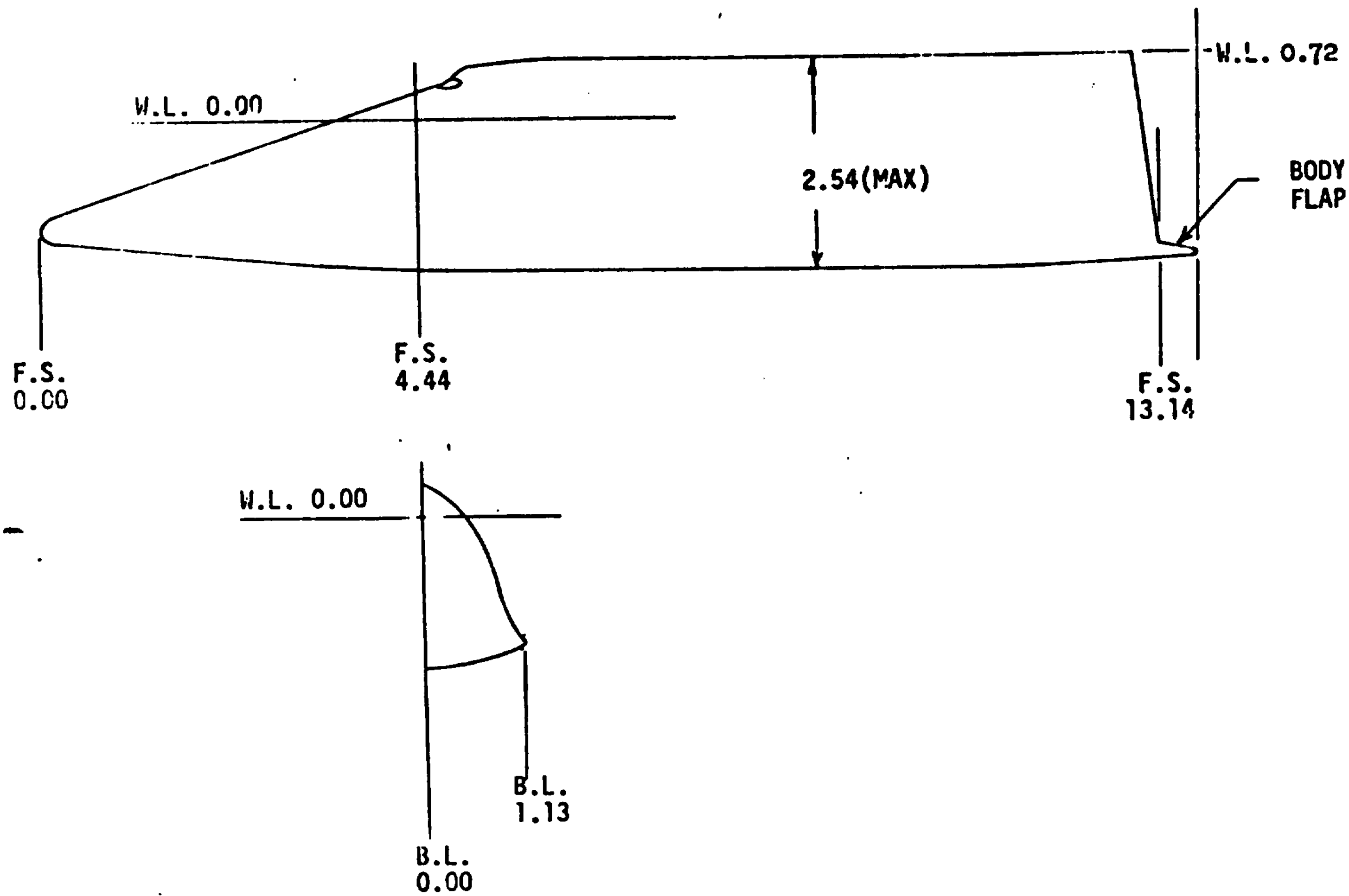


DELTA WING ORBITER B-1- 275
MDAC
DR#1094

Figure F.-

DELTA WING ORBITER BODY

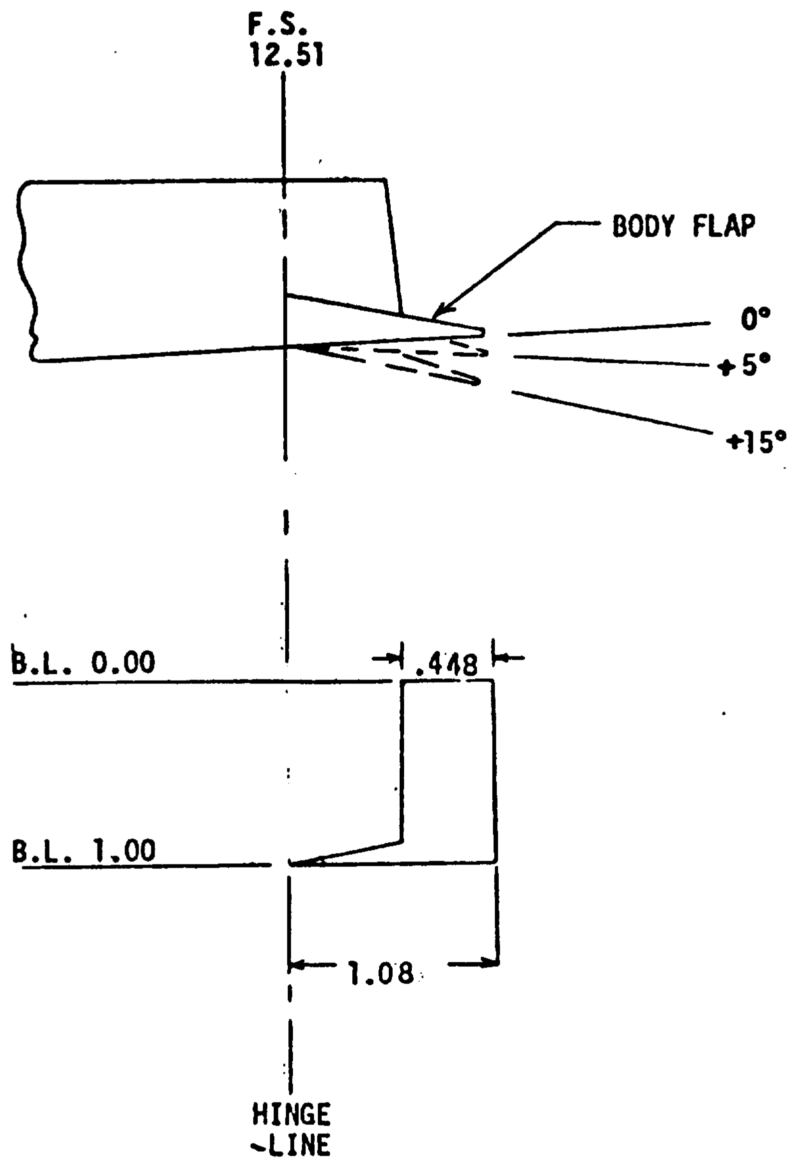
B5



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

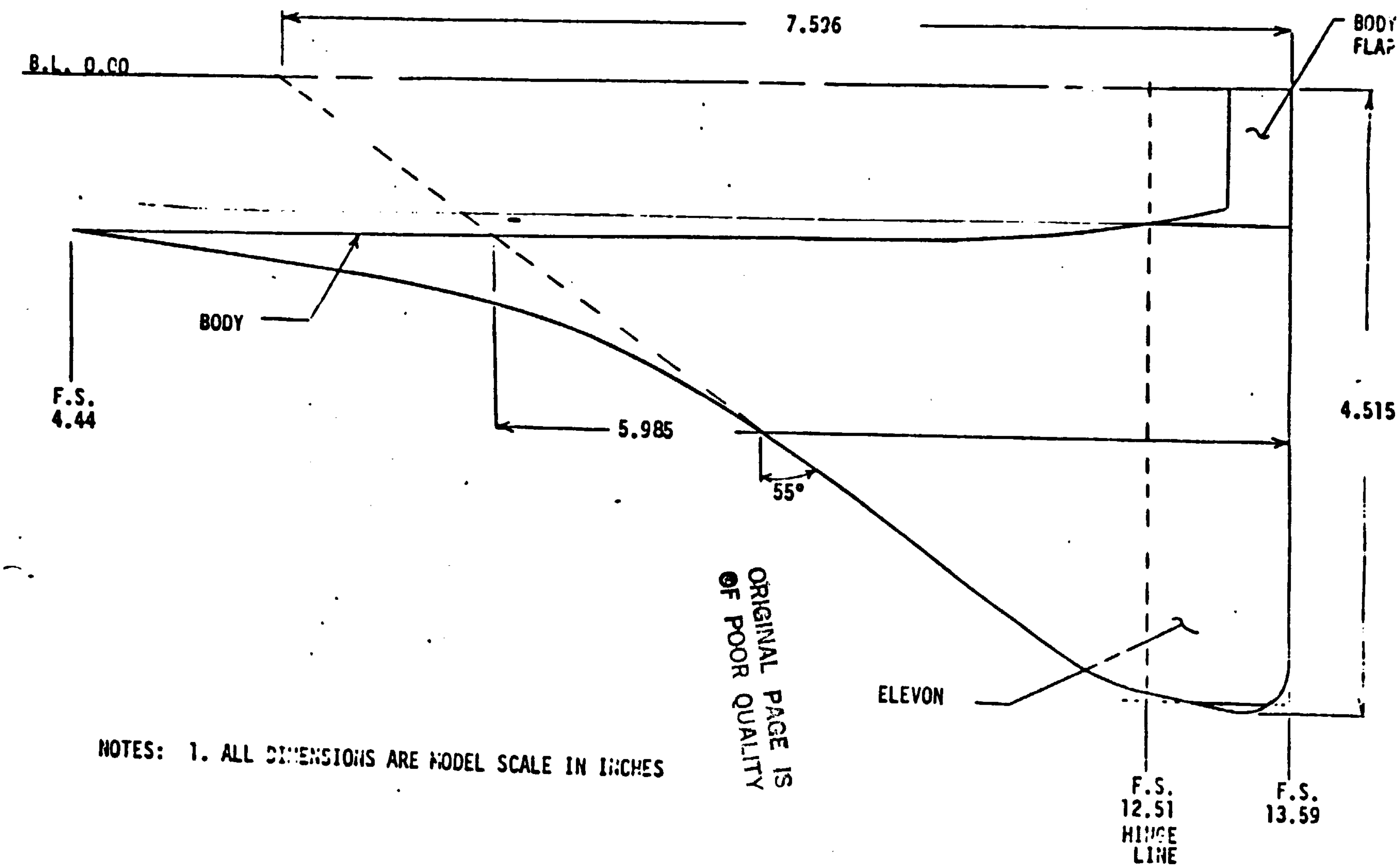
Figure G.-

DELTA WING ORBITER BODY FLAP



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Figure H.-
DELTA WING ORBITER
WING (W11)



NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

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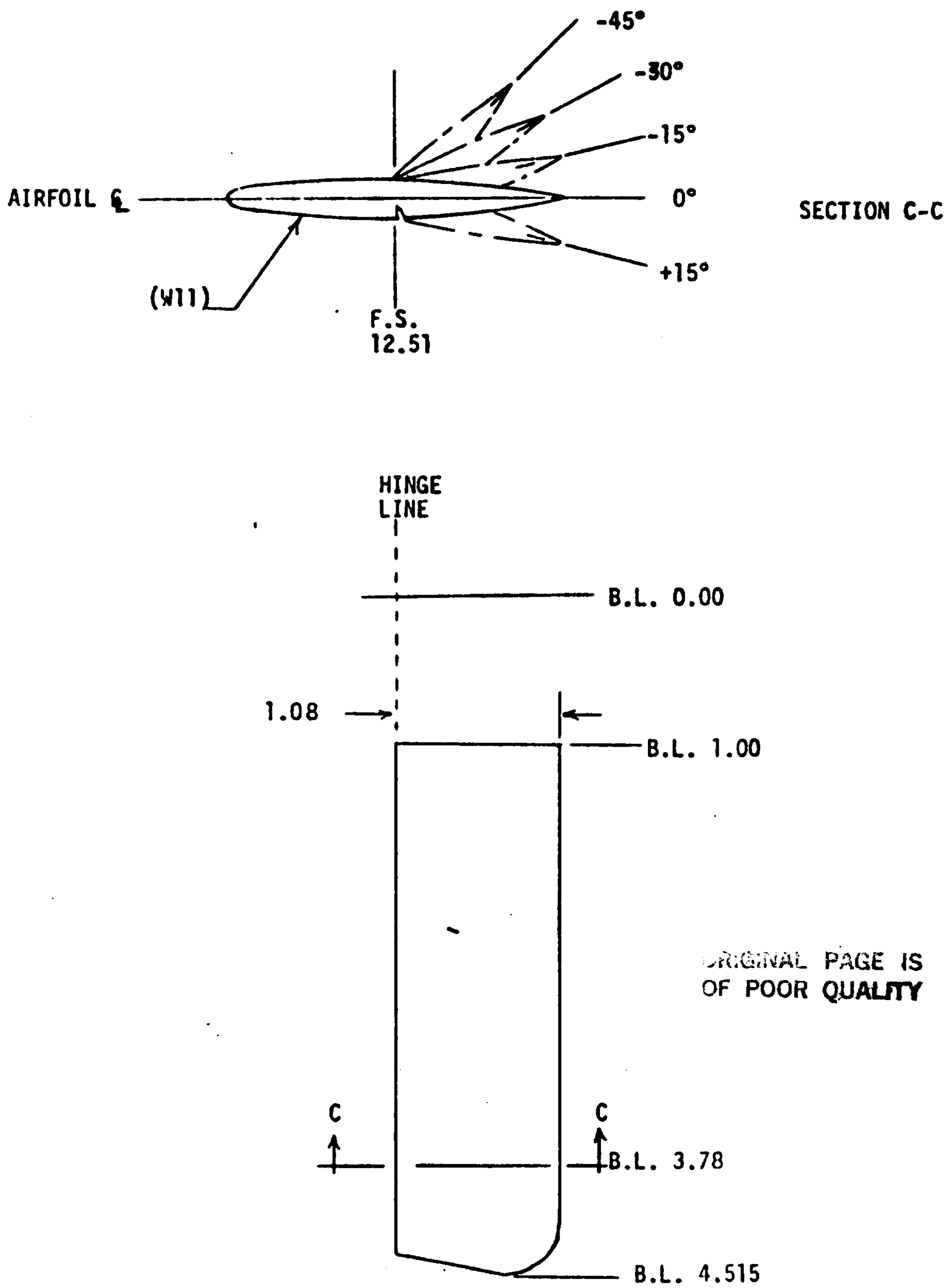
Figure I.-

DELTA WING ORBITER
PLAIN ELEVON FOR WING (W11)

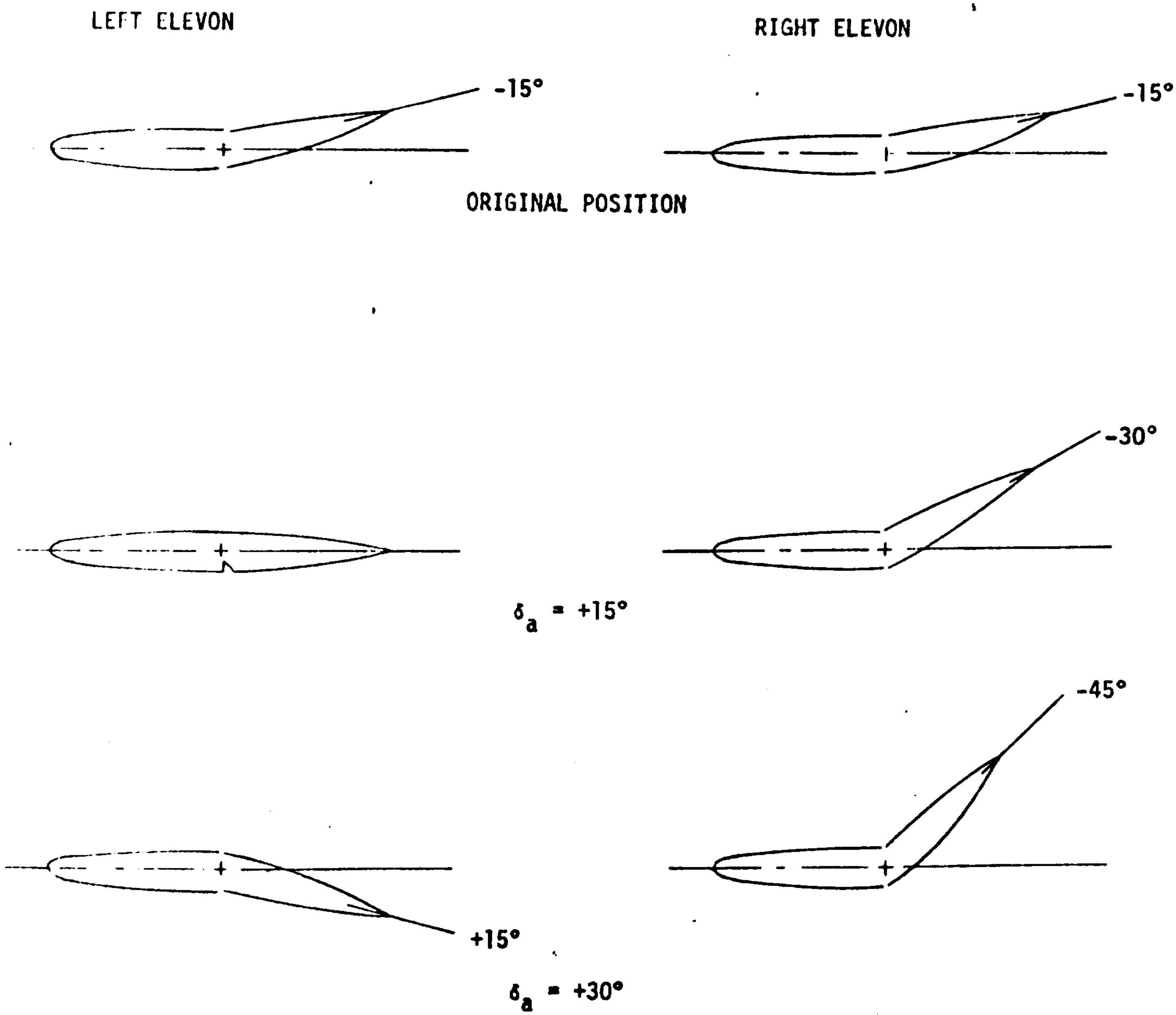


NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

Figure J.-

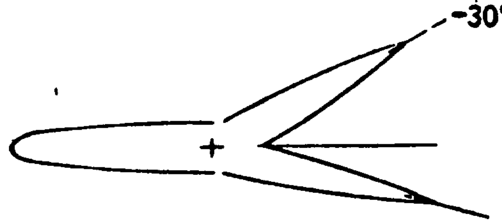
DELTA WING ORBITER

PLAIN ELEVONS FOR LATERAL CONTROL



DELTA WING ORBITER

FLARED ELEVONS

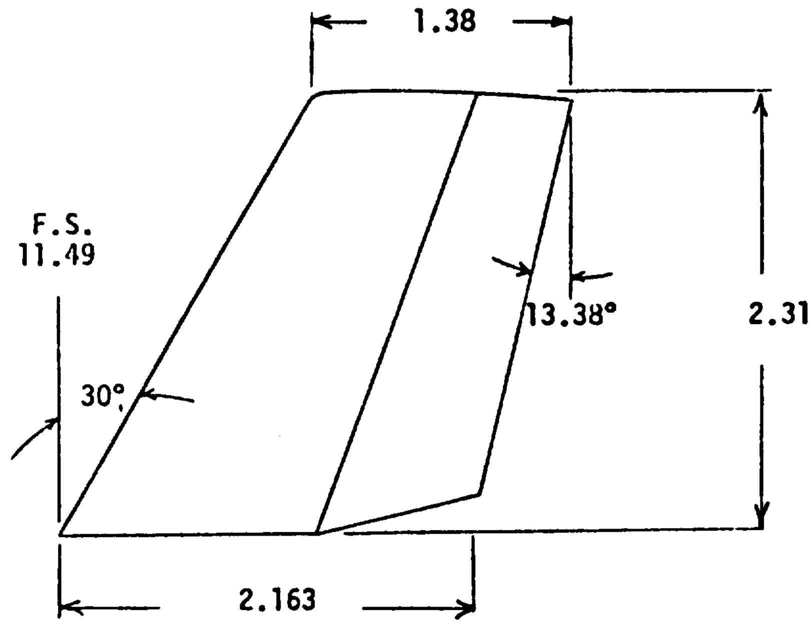


NOTE: FLARED ELEVONS HAVE THE SAME GEOMETRIC CHARACTERISTICS AS THE PLAIN ELEVONS

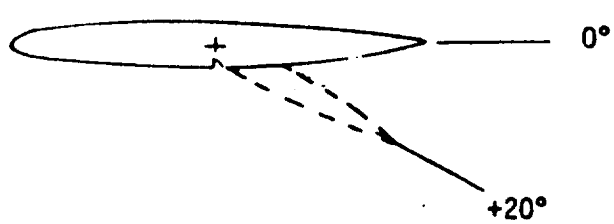
Figure L.-

DELTA WING ORBITER

VERTICAL TAIL V_6
AND PLAIN RUDDER



$C_R/C_V = .369$

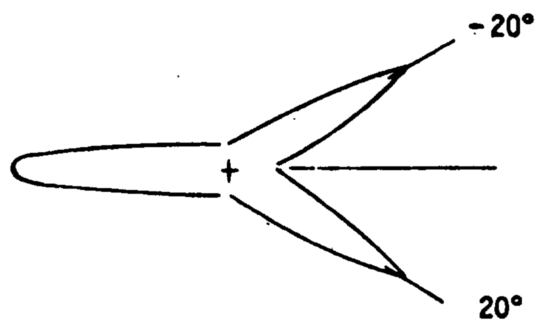


NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES.

Figure M.-

DELTA WING ORBITER

FLARED RUDDERS



NOTE: FLARED RUDDERS HAVE SAME GEOMETRY CHARACTERISTICS AS RUDDER FOR V_6

TEST LTPT #62 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

$RN/L \times 10^{-6}$

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_{e_L}	δ_{e_R}	δ_e	δ_a	NO. of RUNS	2.0	4.0	6.0	8.0	10.0	12.0	14.0
RMF001	BWY	A	0	0	0	0	0	7	8	9	10	11	12	13	14
03			0	-10	-10	-10	0	7	16	17	18	19	20	21	22
04			5	-10	-10	-10	0	6	68	69	70	71		72	73
05			0	-15	-15	-15	0	7	23	24	25	26	27	28	29
06			5	-15	-15	-15	0	1					63		
07			0	-20	-20	-20	0	5		39	40	41	42	43	
08			5	-20	-20	-20	0	1					64		
09			0	0	-20	-10	10	1					30		
10			5	0	-20	-10	10	1					65		
11			0	0	-30	-15	15	1					36		
12			5	0	-30	-15	15	1					66		
13			0	-10	-30	-20	10	1					38		
14			5	-10	-30	-20	10	1					67		
15	BW		0	0	0	0	0	6		44	45	46	47	48	49
16			5	0	0	0	0	6		52	53	54	55	56	57
17			0	-10	-10	-10	0	1					31		

TEST RUN NUMBERS

MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)

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

COEFFICIENTS: BETA Q(PSF) CN CA CLM CBL CYN CY CPB1 CPB2 RN/L ALPHA 10

IDPVAR(1) IDPVAR(2) NDV

α or β SCHEDULES: Alpha schedule A: -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

DELTA WING ORBITER
MDAC
DR#1149 B-1- 283

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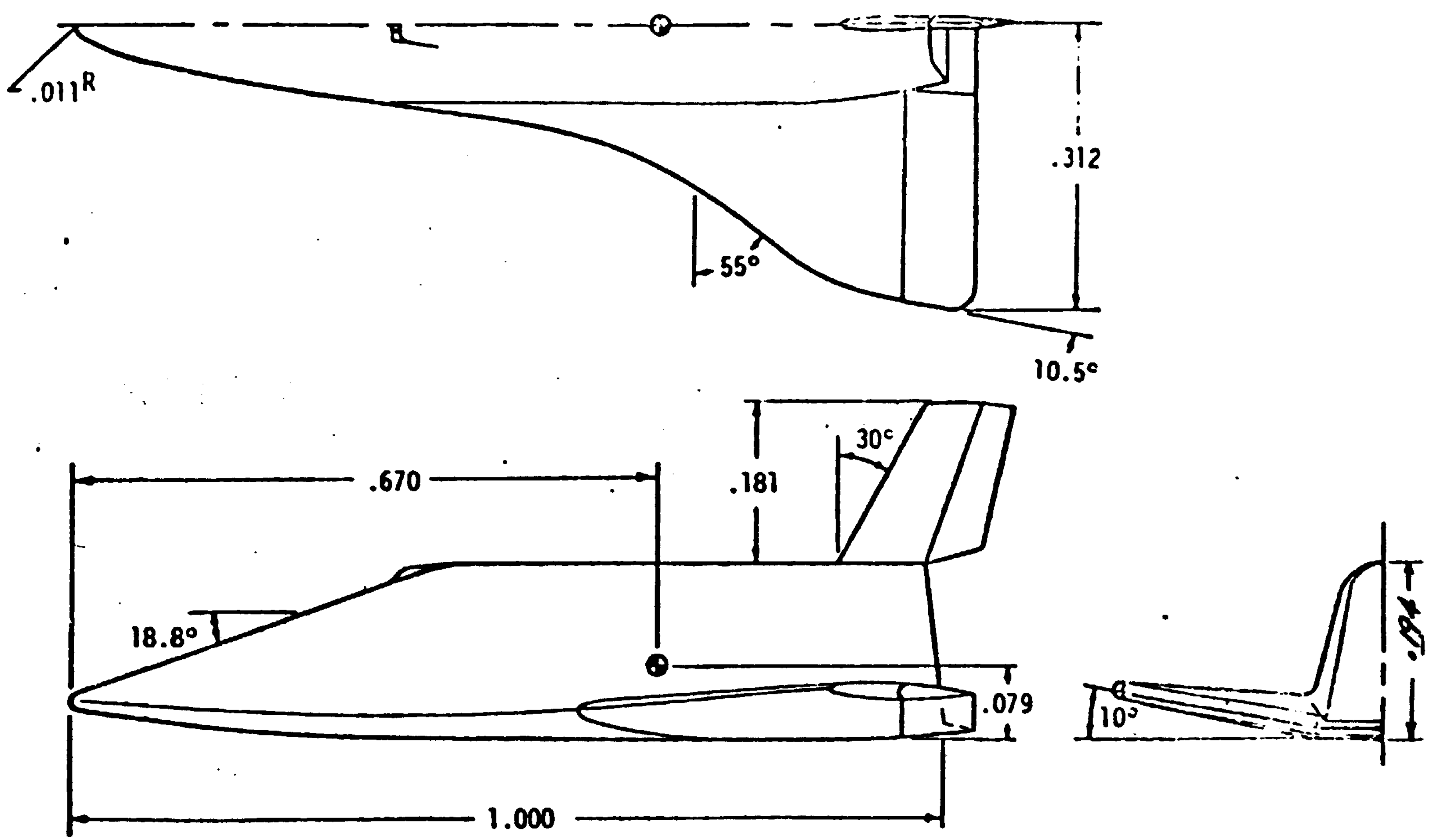

FIGURE 2. - MODEL SKETCH. ALL DIMENSIONS ARE IN TERMS OF BODY LENGTH.

TEST CFHT #68 & 71 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_L	δ_R	δ_R		NO. of RUNS	MACH NUMBERS 0.23
RM4001	BWEV	A	0	0	0	0		1	3
02				8	5.2				8
03				-15.5	-16.3				6
04				-30.3	-31.9				10
05				-15.5	13.5				14
06				-30.3	0				12
07		B	-5	0	0				5
08				8	5.2				9
09				-15.5	-16.3				7
10				-30.3	-31.9				11
11				-15.5	13.5				15
12				-30.3	0				13
13		15	A	0					2
14		30	A						20
15		40	B						4
16		A	0						2
17		B	-5						3
18	BWV	A	0	—	—				29
19	BWV	B	-5	—	—				30
20	BWEV	A	0	0	0	-136			31

CFHT #68 (data sets 01–15)

CFHT #71 (data sets 16–20)

α or β SCHEDULES

ALPHA SCH A: 10, 15, 20, 25, 30, 35, 40, 45, 50
B: 10, 15, 20, 25, 30, 35, 40,
C: 10, 15, 20, 25, 30, 35, 40, 45, 50, 55

BETA SCH A: -5, -3, 0, 2
B: 0, -3, -4, -5

1	7	13	19	25	31	37	43	49	55	61	67
BETA	CN	CA	CLM	CBL	CYN	CY	CL	CD	L/D	MACH	ALPHA

COEFFICIENTS — IDPVAR(1) IDPVAR(2)

DELTA WING ORBITER
MDAC
DR#1151 B-1-285

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TEST CFHT #68 + 71 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_L	CONTROL DEFLECTION δ_{CR}	CONTROL DEFLECTION δ_R	CONTROL DEFLECTION	NO. of RUNS	MACH NUMBERS 10.23	MACH NUMBERS
RM4021	BWEV	B	-5	0	0	-13.6		1	32	
22		A	0			-25.8			23	
23		B	-5			-25.8			24	
24		C	0			0			36	
25		C	-5						37	
26			0	-30.3	-31.9				41	CFHT #71
27			-5	-30.3	-31.9				42	
28			0	-44.5	-16.3				43	
29			-5	-44.5	-16.3				44	
30		15	A	0	0				38	
31		30							39	
32		40							40	

α or β SCHEDULES

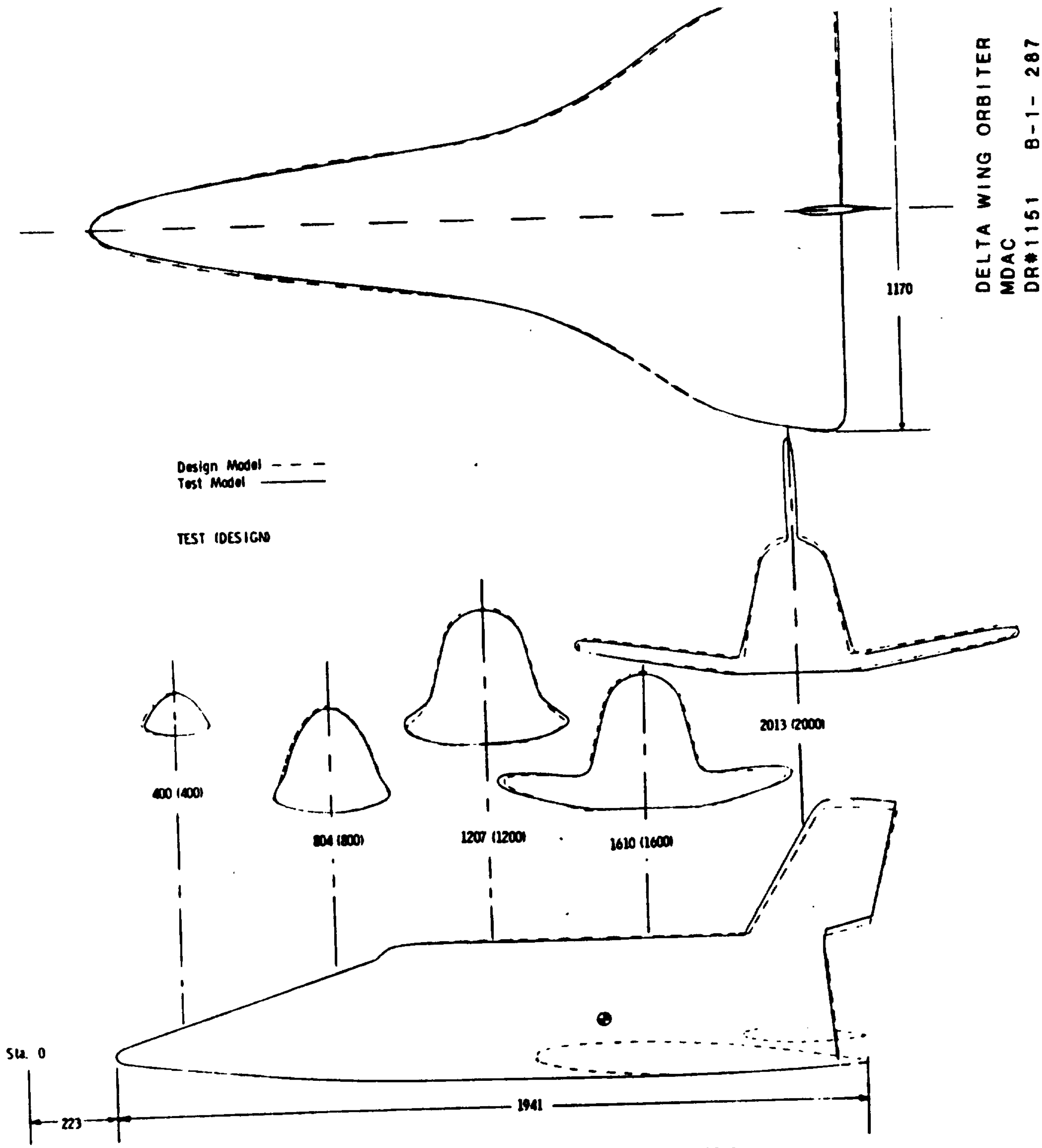

Figure 1. - DESIGN AND TEST MODEL BODY COMPARISONS

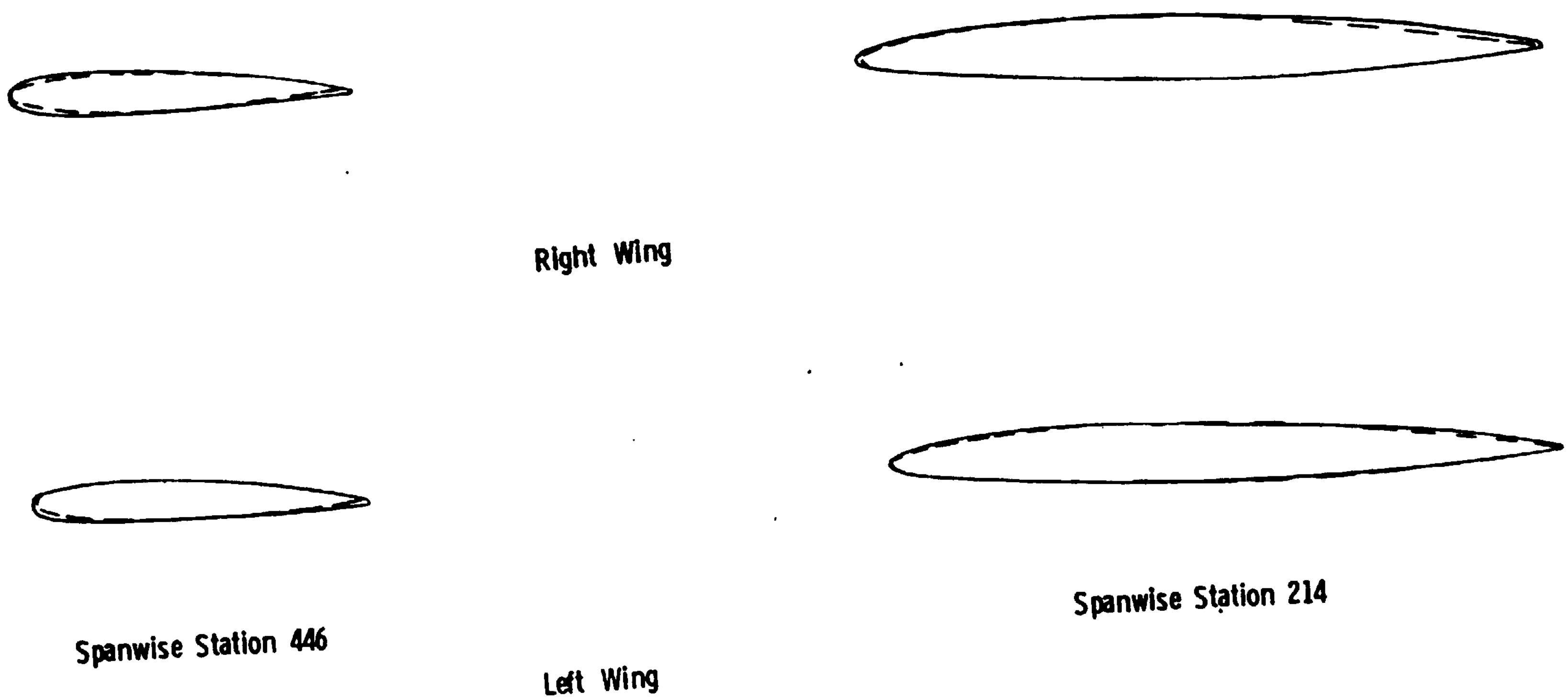

Figure 1 - Continued.

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TEST LaRC 8-FT. TPT TEST 595 E LaRC 4-FT SPT DATA SET COLLATION SHEET

PAGE 1 OF 2

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δe	δR	δLEF	δRT	NO. of RUNS	δa	δFB		0.4	0.6	0.8	0.9	1.2		20		
				PARAMETERS/VALUES		FLARED RUDDER			MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)											
RMJ801	B5 W11	A	0°	0°	—	—	—	2	0°	0°				21		20		401		
802			5°					2						40		41		402		
803	B5 W11 V7		0°		0°	0°	0°	7				37	36	35	34	33		403		
804			5°					2						39		38		404		
805			0°			+15°	-15°	2						23		22		405		
806			5°					2						48		47		406		
807			0°			+30°	-30°	1								24		407		
808			5°					1								45		408		
809	B9 W11 V7		0°			0°	0°	5				13	12	11	10	9		409		
810			5°					2						43		42		410		
811			0°			+15°	-15°	1						31						
812			5°					1						46						
813			0°			+30°	-30°	1								25		411		
814			5°					1								44		412		
815			0°	-15°		+15°	-15°	1						5						
816				-45°		+30°	-30°	2								4		413		
817				0°	10°	0°	0°	2						15		14		414		
818						+25°	-5°	1						32						
819						+40°	-20°	1								7		415		
820				-30°	0°	+15°	-15°	2						26		27				

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

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

α or β SCHEDULES A: -2,0,2,4,6,8,10,12,14,16,18,20,22,24

DELTA WING ORBITER
MDAC
DR#1171 B-1- 289

TEST LaRC 8 Ft. TPT DATA SET COLLATION SHEET
TEST 595

PAGE 2 OF 2
☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δe	δR	FLARED RUDDER δ_{LEFT}	FLARED RUDDER δ_{RT}	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δa	δ_{FB}				0.8		1.2				
RMJ 821	B5 W11 V7	A	0°	-15°	0°	+15°	-15°	1	0°	0°				30						
↓ 822	↓	↓	↓	-30°	↓	↓	↓	2	↓	↓				29		28				
↓ 823	B9 W11 V7	A	5°	-45°	0°	+30°	-30°	1	0°	0°						49				
RM18R3	B5 W11 V7	A	0°	0	0	0	0	2	0	0				17		16				
RMJR16	B9 W11 V7	A	0°	-45°	0	+30	-30	1	0	0						3				

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

COEFFICIENTS: → IDPVAR(1) IDPVAR(2)

A: -2,0,2,4,6,8,10,12,14,16,18,20,22,24

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TEST LaRC 4'SPT **DATA SET COLLATION SHEET**

TEST No. 438

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION		SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_R	δ_{LEFT} (FLARED RUDDER)	δ_{RT} (FLARED RUDDER)	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) δ_a	δ_{FB}		2.0	
RMJ401	B5 W11	GRIT ON	A	0°	0°	—	—	—	1	0°	0°	(1)	8	
402				5°					1				9	
403	B5 W11 V7			0°		0°	0°	0°	1				5	
404				5°					1				6	
405				0°			+15°	-15°	1				10	
406				5°					1				11	
407				0°			+30°	-30°	1				12	
408				5°					1				13	
409	B9 W11 V7			0°			0°	0°	1				17	
410				5°					1				18	
411				0°			+30°	-30°	1				15	
412				5°					1				16	
413				0°	-45°				1				14	
414					0°	10°	0°	0°	1				20	
415							+40°	-20°	1				19	RN/L
RMJ416	B5 W11 V7		-1°	0°	0°	0°	0°	0°	1	0°	0°	(2)	7	.4, .9, 1.4, 1.8, 2.3, 2.7, 2.9
RMJ417		GRIT OFF	-1°	0°	0°	0°	0°	0°	1	0°	0°		23	.4, .9, 1.4, [illegible], 4.6

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

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

α or β A: -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26

DELTA WING ORBITER
MDAC
DR#1171 B-1- 291

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FIGURE 2.
DELTA WING ORBITER GENERAL ARRANGEMENT

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

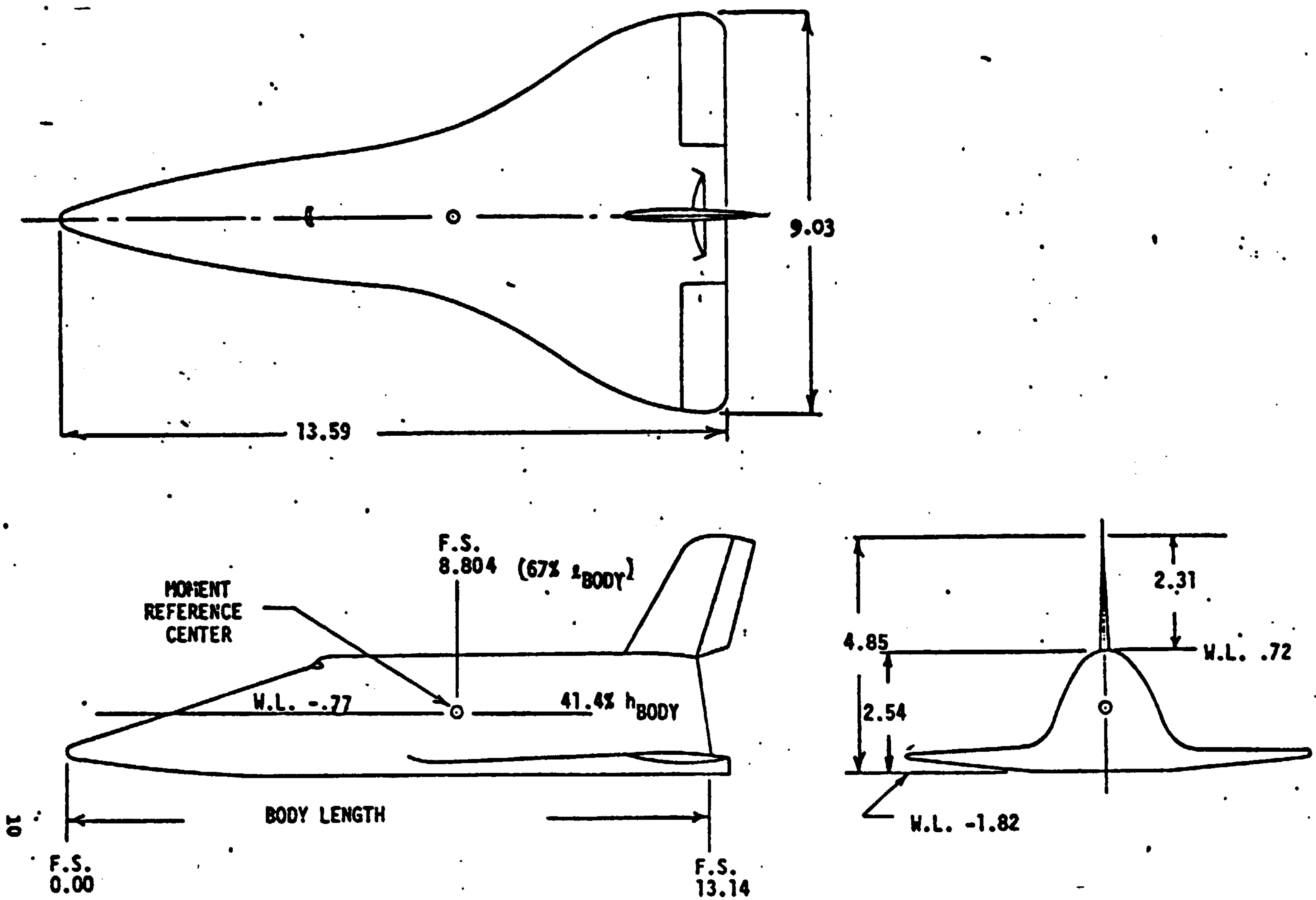
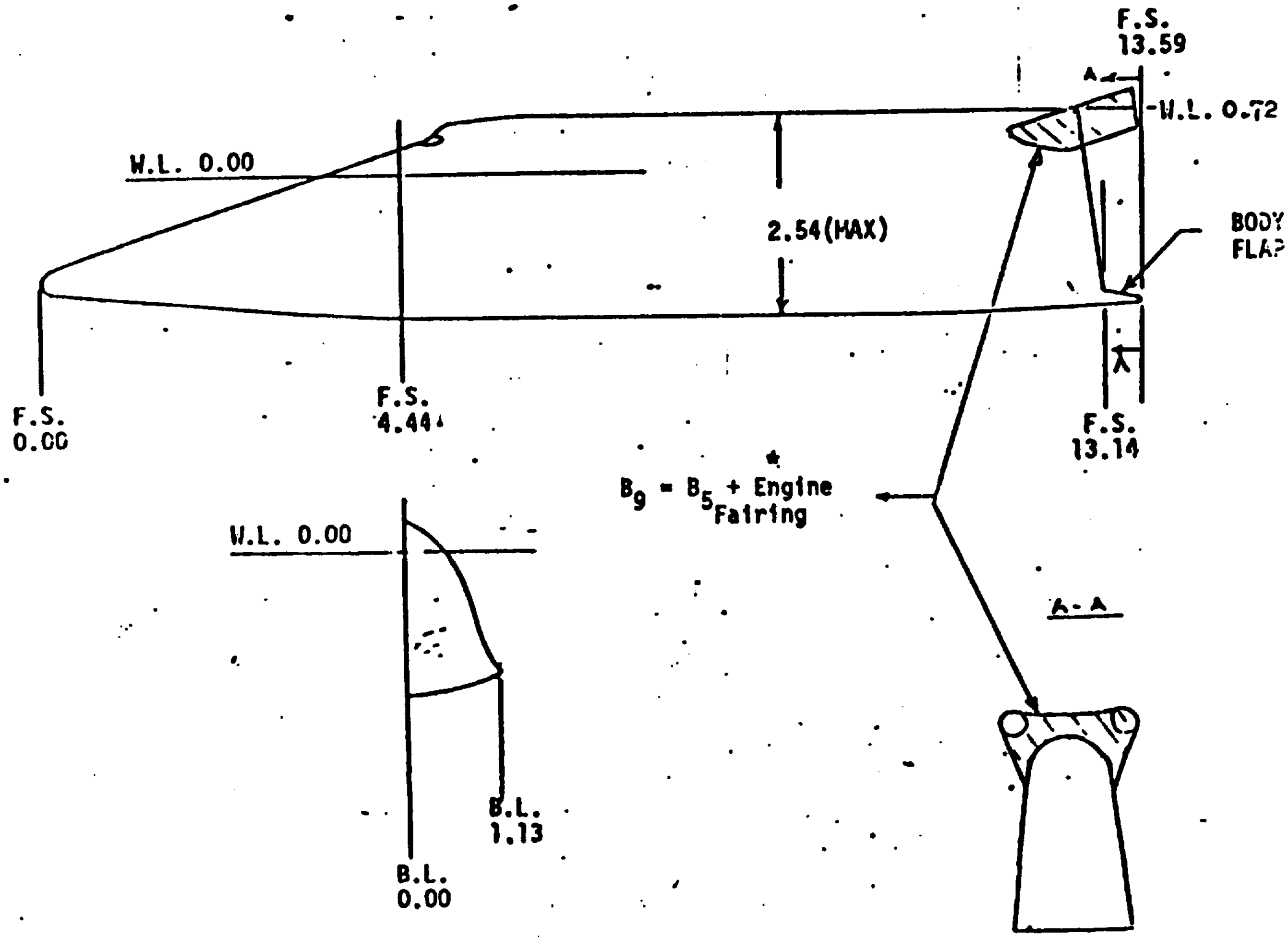


FIGURE 3.

DELTA WING ORBITER BODY

B5 & B_9

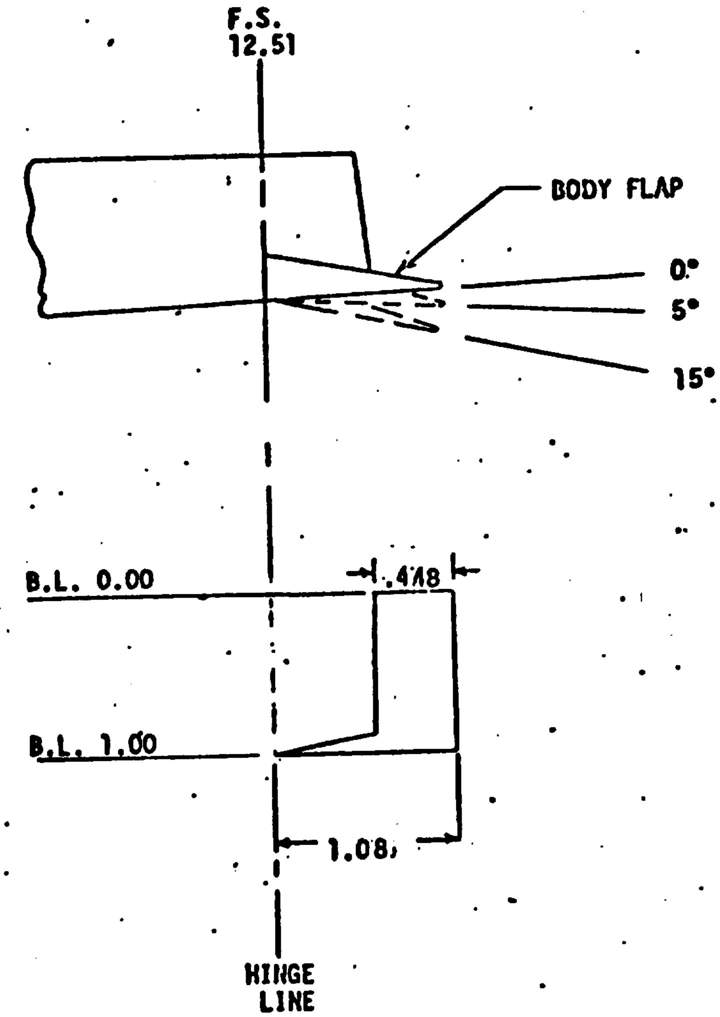


NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

* RL-10 ENGINE FAIRINGS RELOCATED TO DETERMINE CARRY-OVER EFFECTS WITH RUDDERS FLARED

FIGURE 4.

DELTA WING ORBITER BODY FLAP

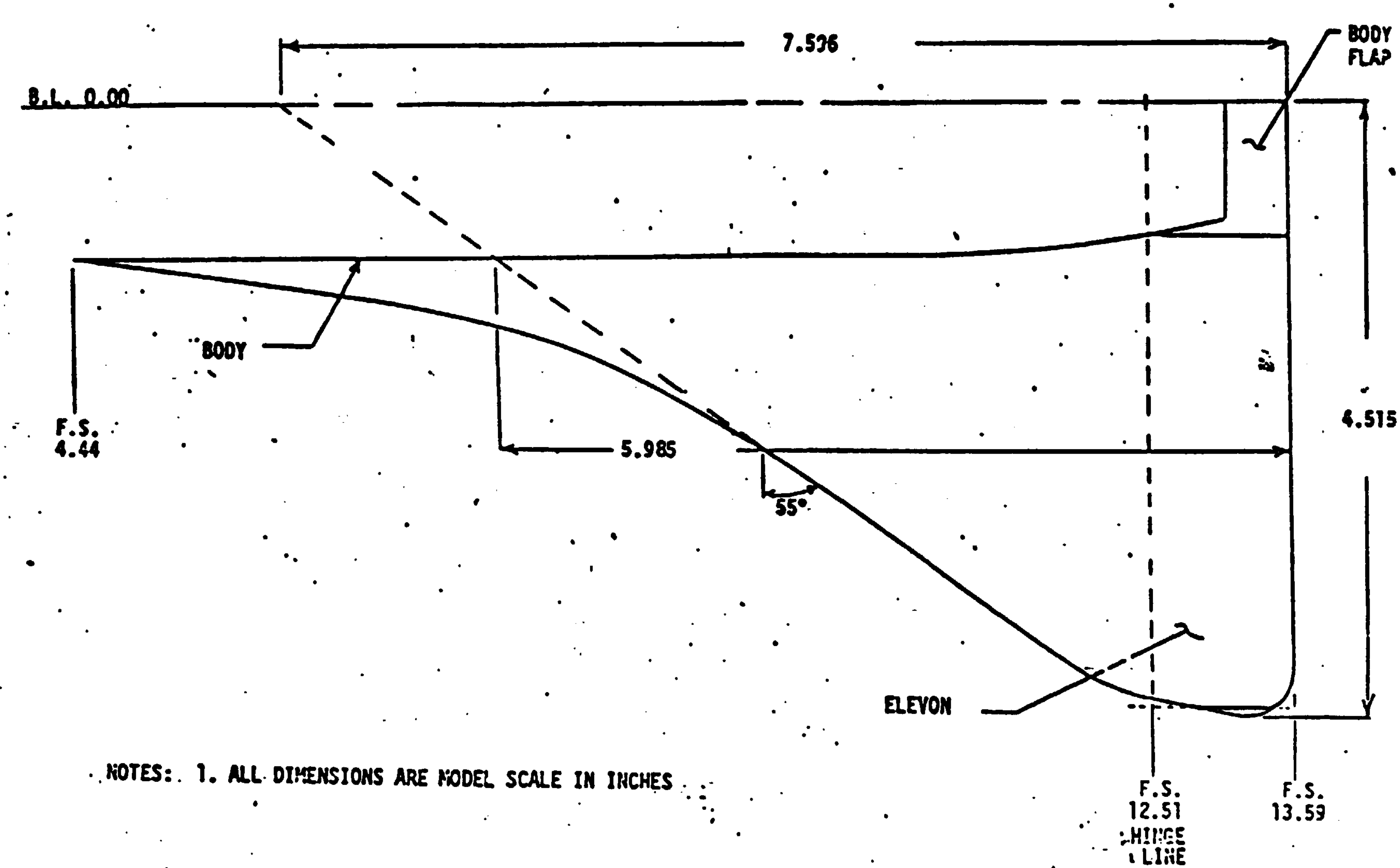


NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 5.

DELTA WING ORBITER

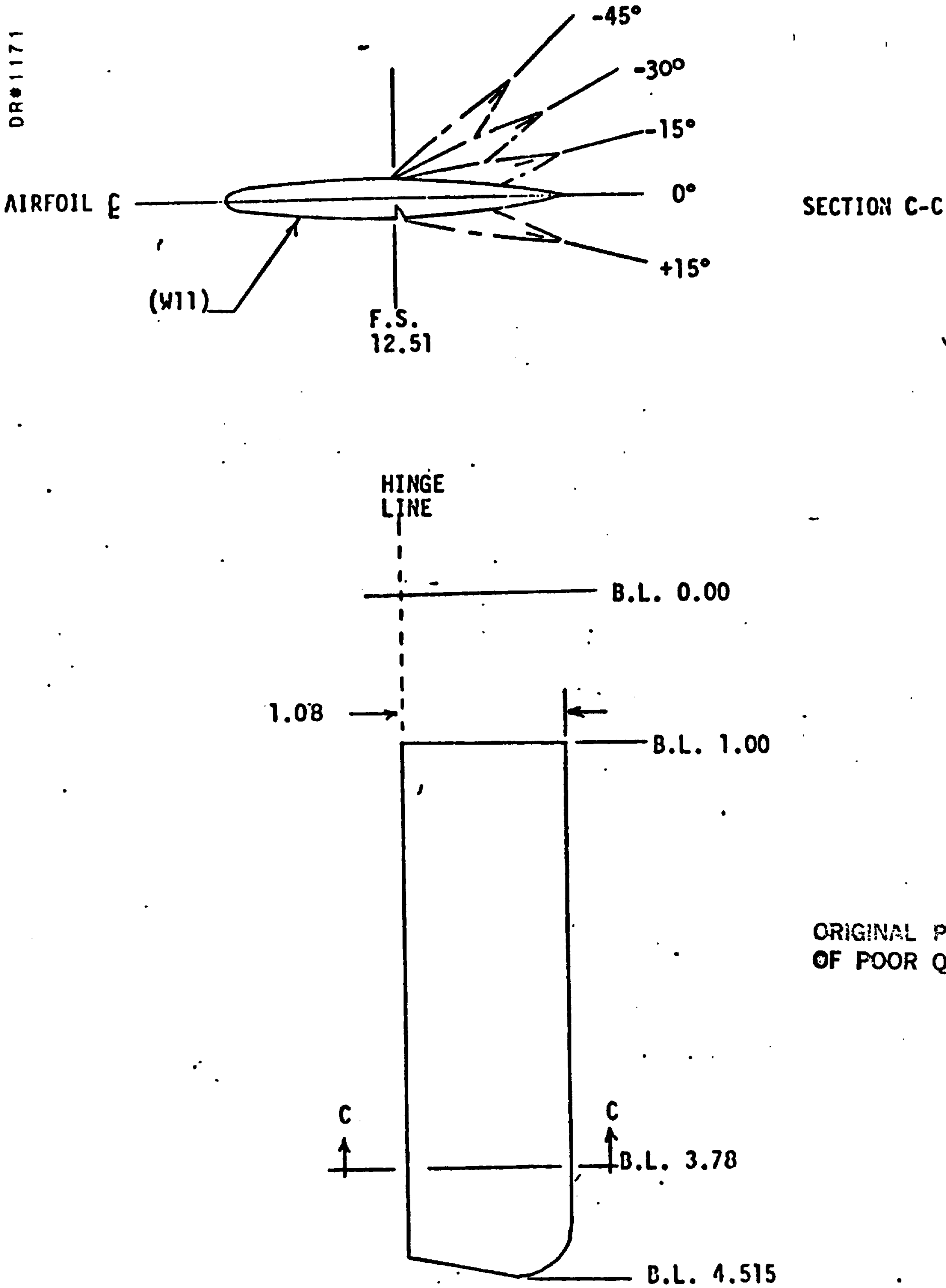
WING (W11)



NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 6.

DELTA WING ORBITER
PLAIN ELEVON FOR WING (W11)

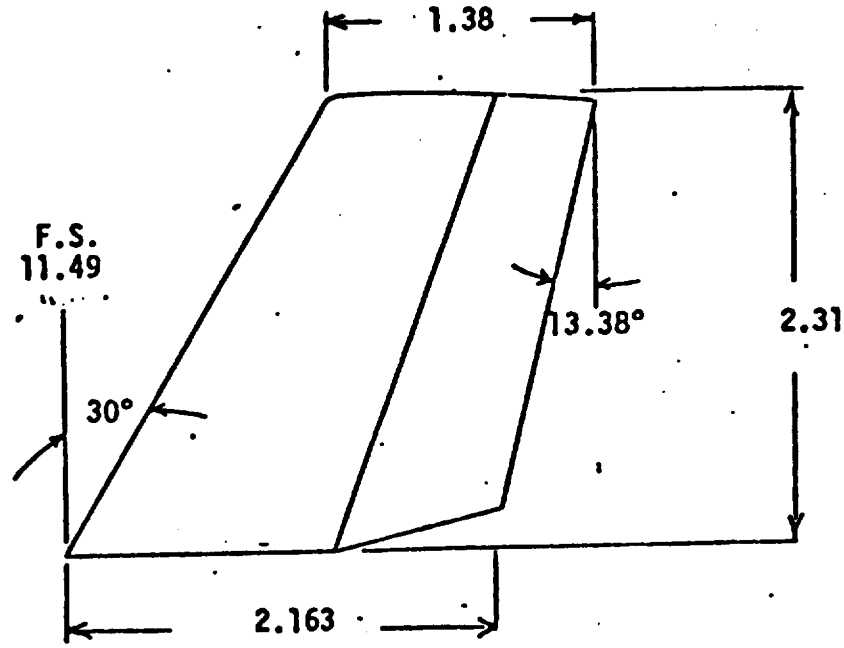


NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

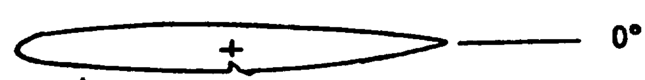
FIGURE 1.

DELTA WING ORBITER

VERTICAL TAIL V_6
AND PLAIN RUDDER



$(C_R/C_V = .369)$



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES.

FIGURE 8.

FLARED RUDDER AND VERTICAL TAIL

V_7

050G VERTICAL TAIL FOR TESTING FLARED RUDDERS

PARAMETER	FULL-SCALE	.007 SCALE
S	615.7 Ft^2	4.344 $in.^2$
C_r	324 in.	2.268 in.
C_t	133 in.	.931 in.
b	388 in.	2.716 in.
$\mathcal{R}$	1.70	1.70
λ	.41	.41
Λ LE	35°	35°
C_{RUDDER}/C	.40	.40
OVERHANG	129.6 in.	.907
AIRFOIL SECTION		
ROOT:	0012-64	0012-64
TIP	0012-64	0012-64

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NOTE: DIMENSIONS SHOWN ARE MODEL SCALE

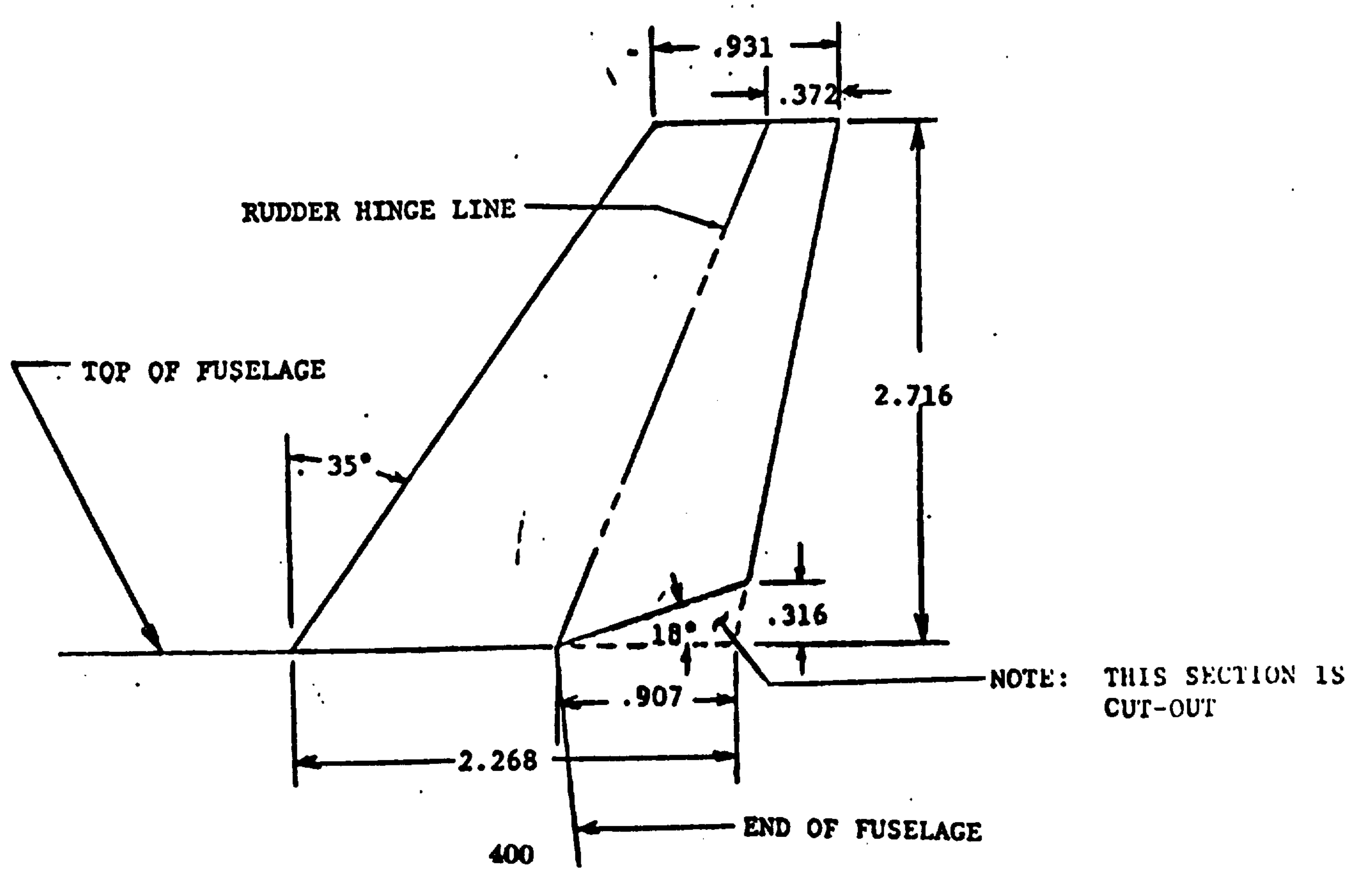

FIGURE 9.

050G VERTICAL TAIL FOR TESTING FLARED RUDDERS

RUDDERS

RUDDER #1 - PLAIN RUDDER

NOTE: CAPABLE OF 0° AND + 10° DEFLECTION

RUDDER #2 - 30° FLARED RUDDER

NOTE: CAPABLE OF 0° AND +10° DEFLECTION

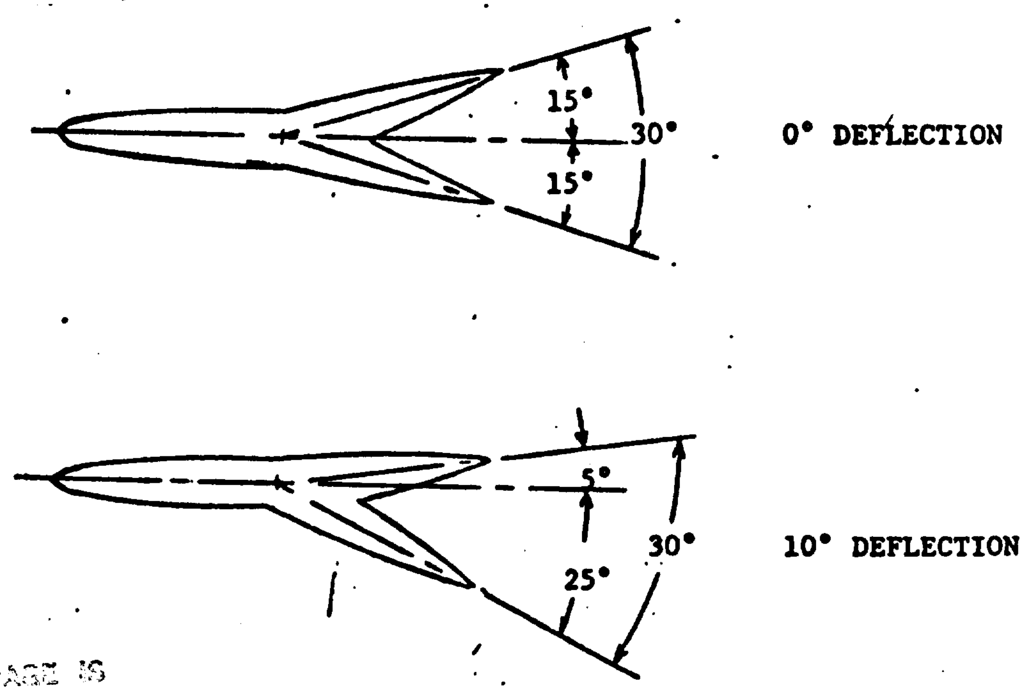

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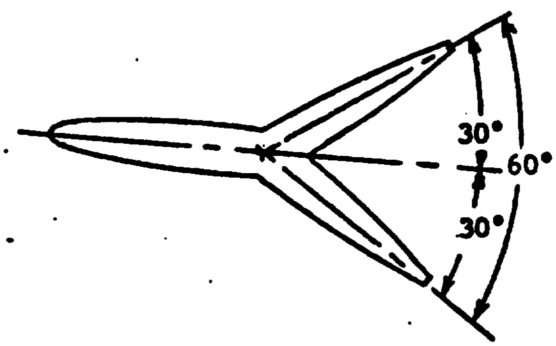
FIGURE 10.

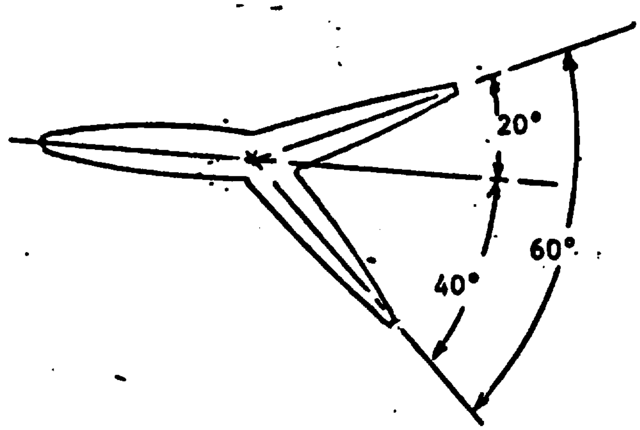
050G VERTICAL TAIL FOR TESTING FLARED RUDDERS

RUDDER #3 - 60° FLARED RUDDER

NOTE: CAPABLE OF 0° AND +10° DEFLECTION



0° DEFLECTION



10° DEFLECTION

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TEST LTPT 71 DATA SET/RUN NUMBER
COLLATION SUMMARY

☐ PRETEST
■ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_a				NO. of RUNS	RN/L (10)^6 (OR ALTERNATE INDEPENDENT VARIABLE)	4	6	8	10	12	14					
RML001	B9W11V7	A	0	0				6		1	2	3	4	5	6					
02	B9W11V7	A	0	-15				1					9							
03	B9W11V7	A	5	-15				1					10							
04	B5W11V7	A	0	0				1					7							
05	B5W11V7	A	0	-15				1					8							
06	B5W11V7	A	5	-15				1					11							

TEST RUN NUMBERS

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

* BETA Q(PSF) CN CA CLM CBL CYN CY CL CD RN/L 12

COEFFICIENTS: IDPVAR(1) IDPVAR(2) NDV

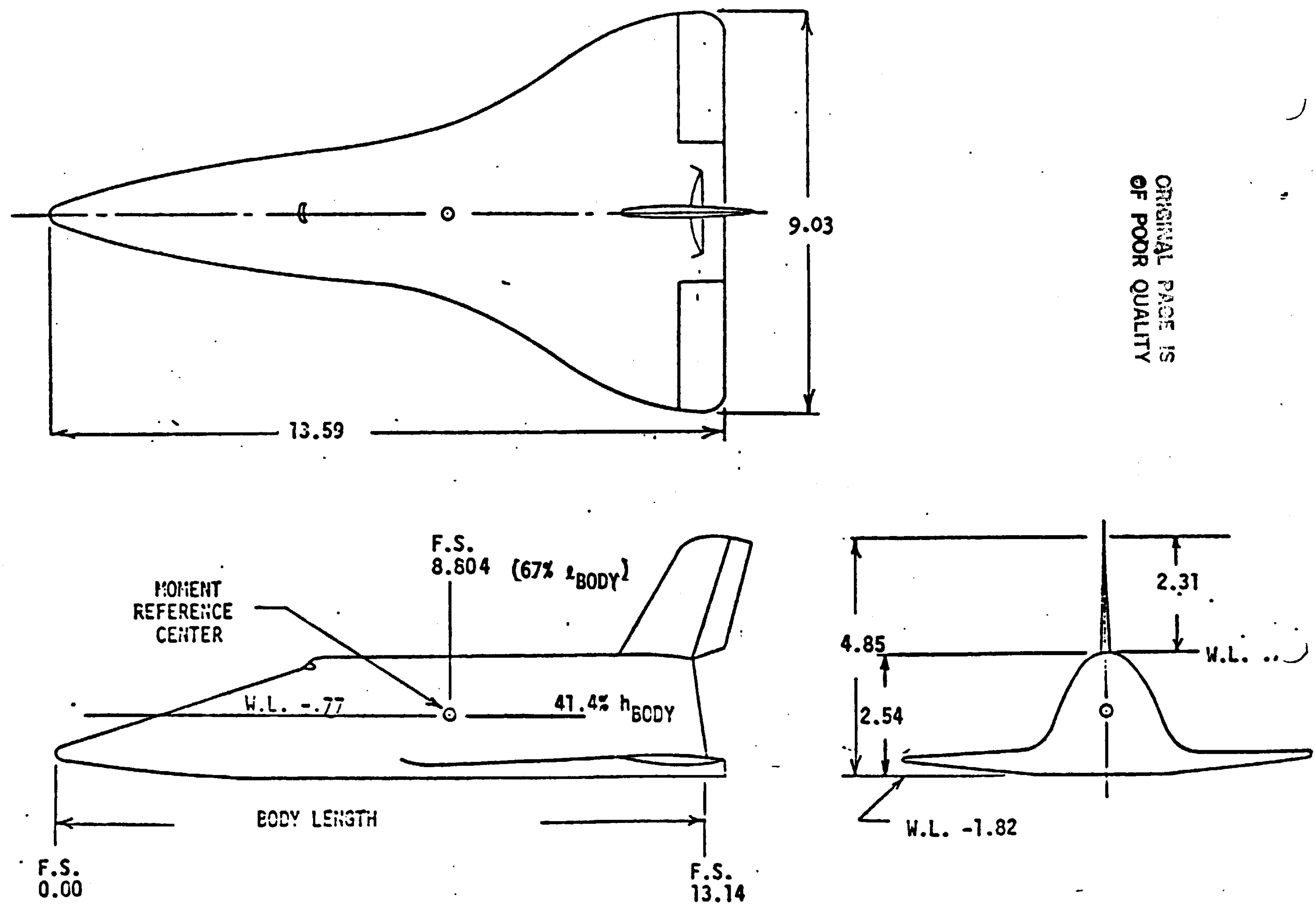
α or β SCHEDULES A: -1, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

Also: L/D CAB

DELTA WING ORBITER
MDAC
DR#1172 B-1- 301

FIGURE 2.
DELTA WING ORBITER GENERAL ARRANGEMENT

NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES



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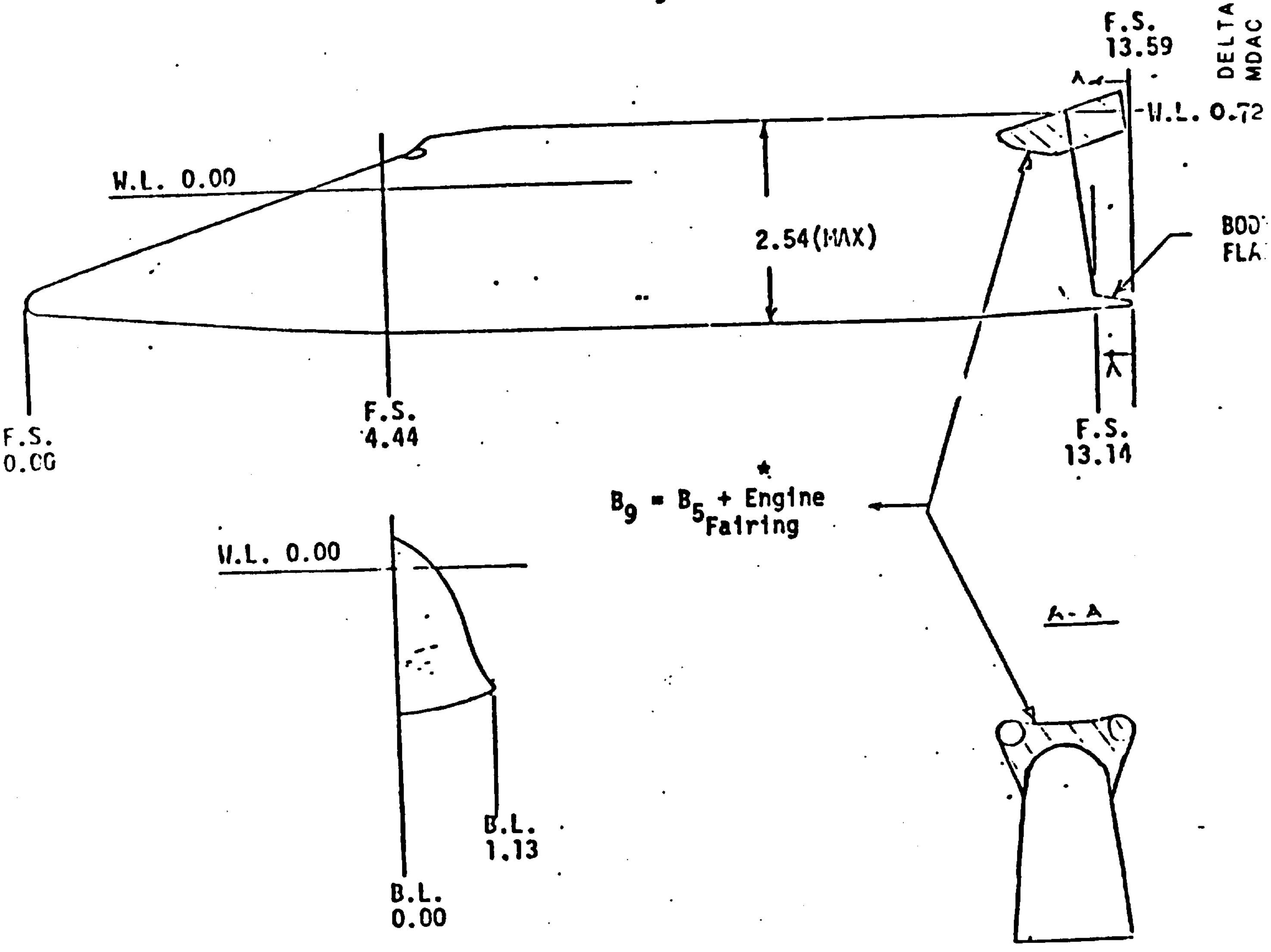
DELTA WING ORBITER MDAC DR#1172 B-1- 303

FIGURE 3.

DELTA WING ORBITER BODY

B5 & B_9

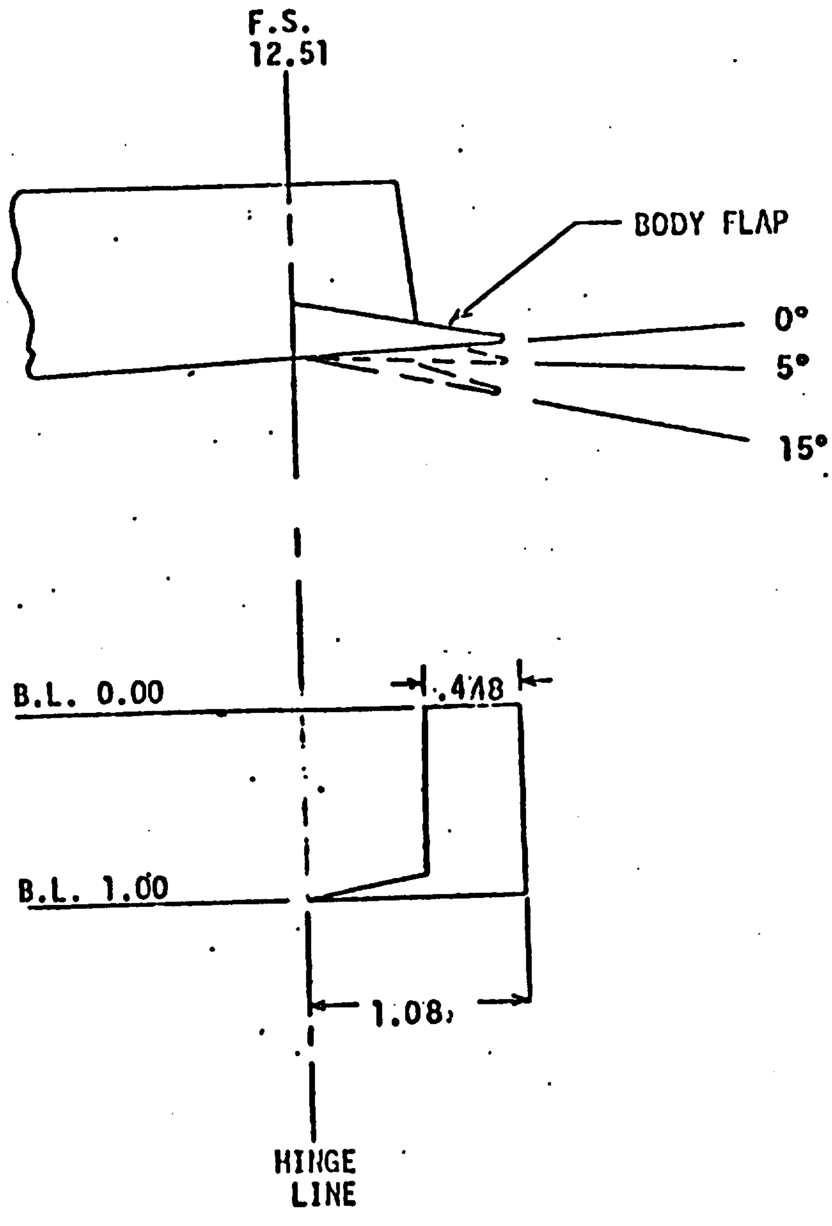


NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

* RL-10 ENGINE FAIRINGS RELOCATED TO DETERMINE CARRY-OVER EFFECTS WITH RUDDERS FLARED

FIGURE 4.

DELTA WING ORBITER BODY FLAP

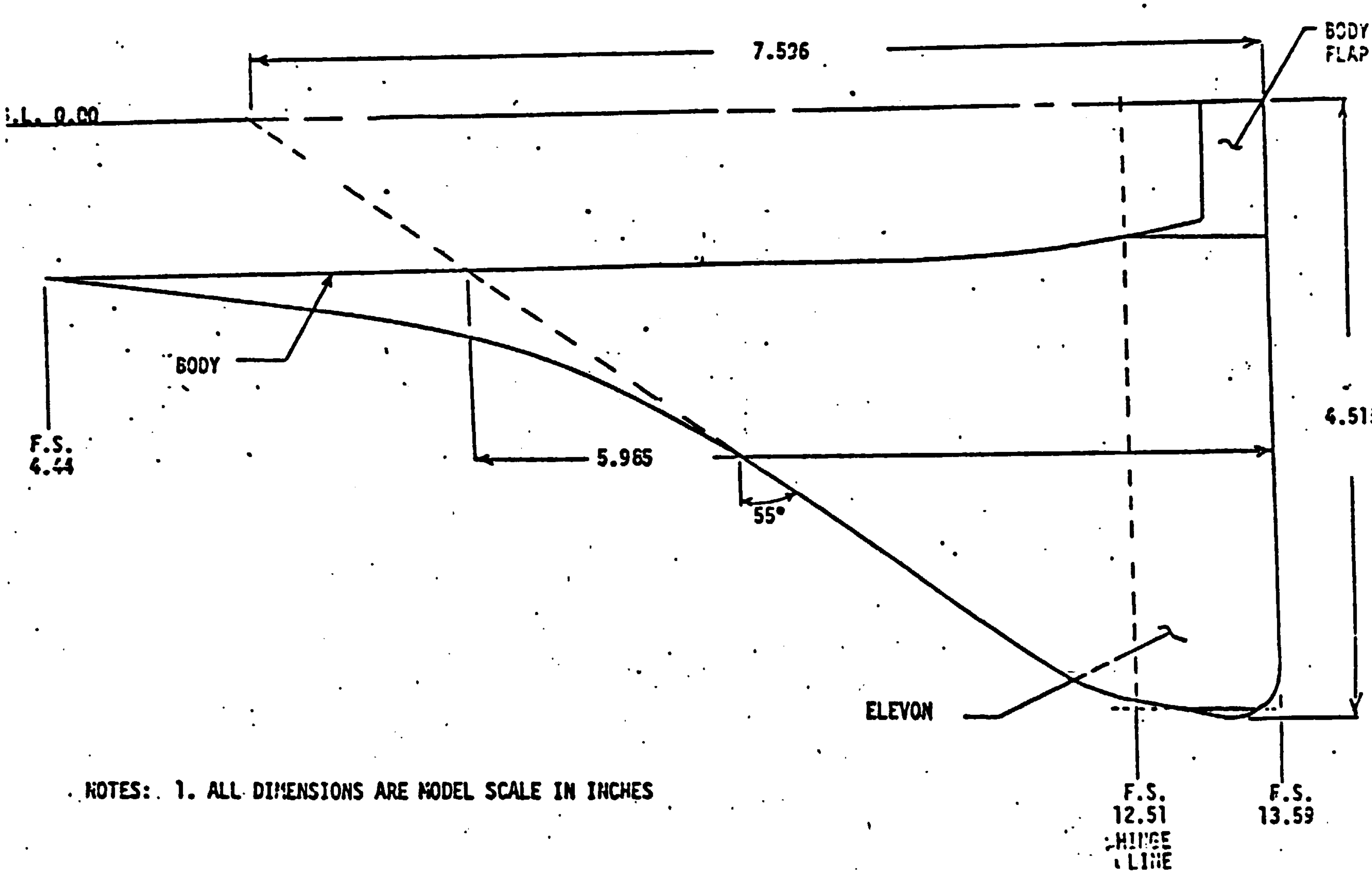


NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 5.

DELTA WING ORBITER

WING (W11)

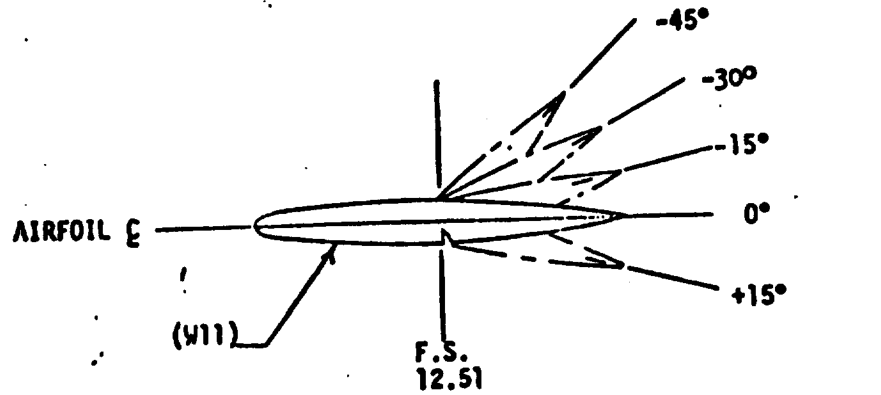


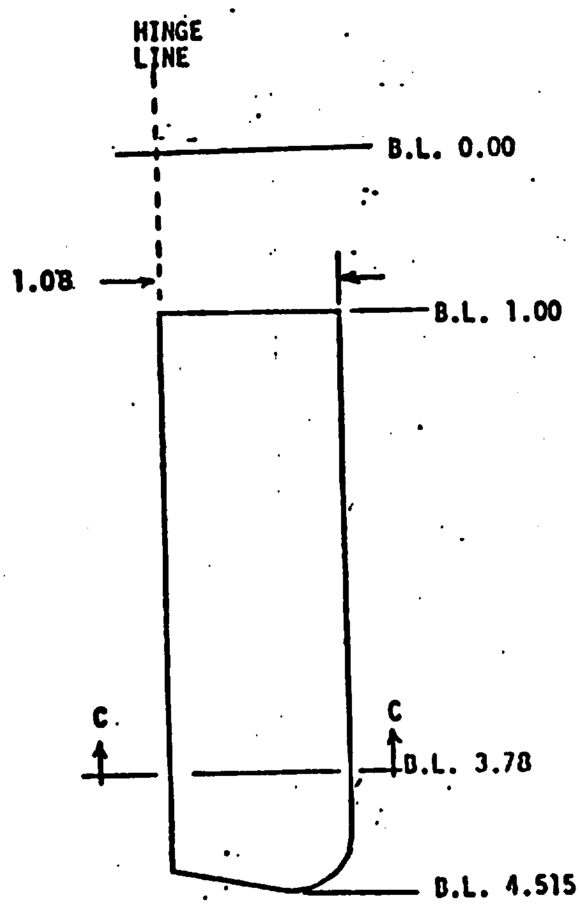
NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

DELTA WING ORBITER
MDAC
DR#1172 B-1- 305

FIGURE 6.

DELTA WING ORBITER
PLAIN ELEVON FOR WING (W11)





NOTES: 1. ALL DIMENSIONS ARE MODEL SCALE IN INCHES

FIGURE 7.

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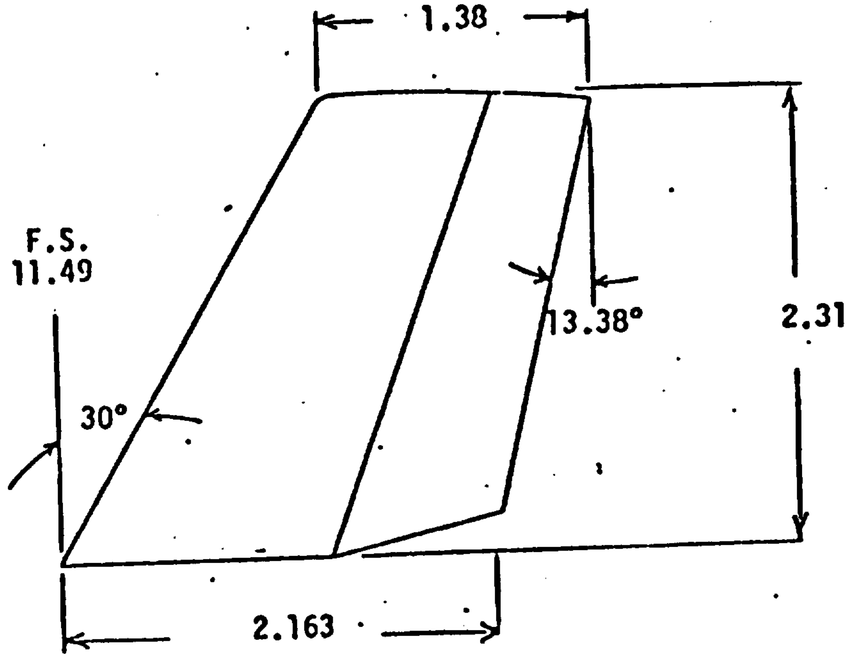
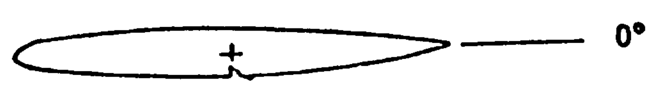
DELTA WING ORBITER
MDAC
DR#1172 B-1- 307

DELTA WING ORBITER

VERTICAL TAIL V_6
AND PLAIN RUDDER



$(C_R/C_V = .369)$



NOTE: ALL DIMENSIONS ARE MODEL SCALE IN INCHES.

FIGURE 8.

FLARED RUDDER AND VERTICAL TAIL

V_7

050G VERTICAL TAIL FOR TESTING FLARED RUDDERS

PARAMETER	FULL-SCALE	.007 SCALE
S	615.7 Ft^2	4.344 $in.^2$
C_r	324 in.	2.268 in.
C_t	133 in.	.931 in.
b	388 in.	2.716 in.
$\mathcal{R}$	1.70	1.70
λ	.41	.41
Λ_{LE}	35°	35°
C_{RUDDER}/C	.40	.40
OVERHANG	129.6 in.	.907
AIRFOIL SECTION		
ROOT:	0012-64	0012-64
TIP	0012-64	0012-64

NOTE: DIMENSIONS SHOWN ARE MODEL SCALE

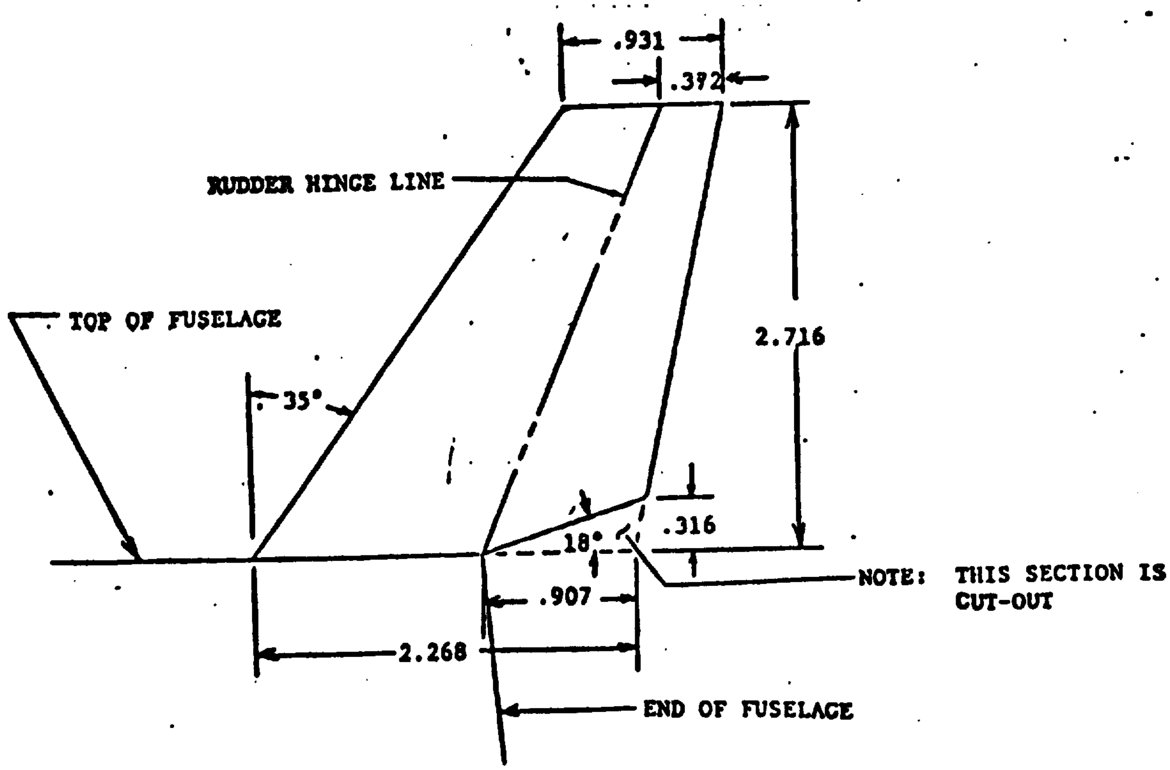


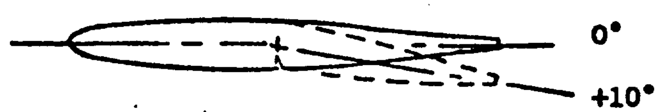
FIGURE 9.

050G VERTICAL TAIL FOR TESTING FLARED RUDDERS

RUDDERS

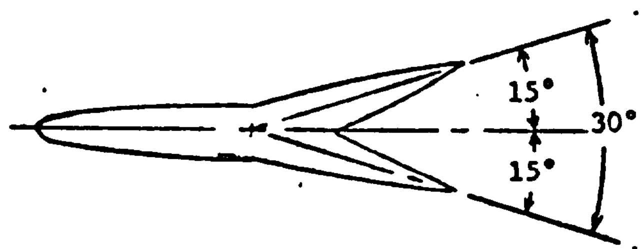
RUDDER #1 - PLAIN RUDDER

NOTE: CAPABLE OF 0° AND + 10° DEFLECTION

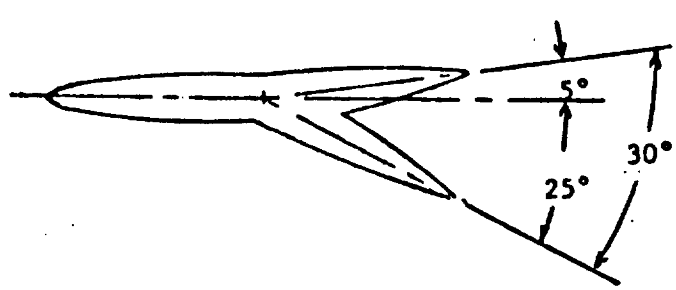


RUDDER #2 - 30° FLARED RUDDER

NOTE: CAPABLE OF 0° AND +10° DEFLECTION



0° DEFLECTION



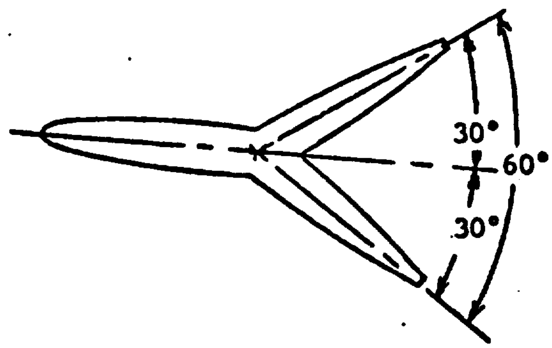
10° DEFLECTION

FIGURE 9(Cont.)

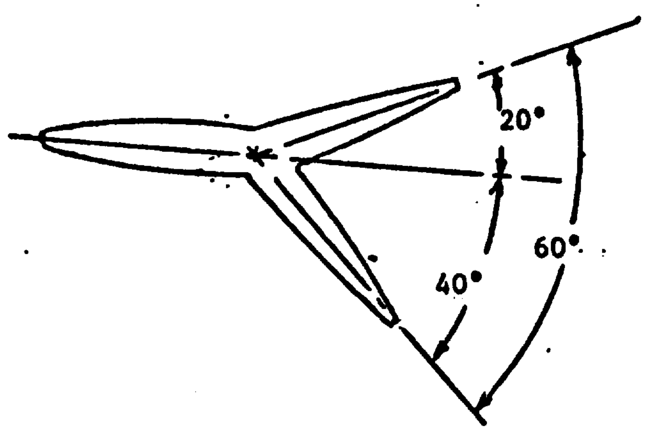
050G VERTICAL TAIL FOR TESTING FLARED RUDDERS

RUDDER #3 - 60° FLARED RUDDER

NOTE: CAPABLE OF 0° AND +10° DEFLECTION



0° DEFLECTION



10° DEFLECTION

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TEST UPWT 942 DATA SET/RUN NUMBER

COLLATION SUMMARY

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_{ei}	δ_{eF}	[illegible]	[illegible]	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)	1.6	2.0	2.36	2.86							
RMK001	BWV	A	0	-30	-30	-30	0	4		1	3	5	7							
02	BWV	A	5	-30	-30	-30	0	4		2	4	6	8							
03	BWV	A	0	-15	-15	-15	0	4		13	15	9	11							
04	BWV	A	5	-15	-15	-15	0	4		14	16	10	12							
05	BWV	A	0	0	-30	-15	15	4		23	24	21	22							

TEST RUN NUMBERS

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

* BETA Q(PSF) CN CA CLM CBL CYN CY CL CD MACH ALPHA 12

IDPVAR(1) IDPVAR(2) NDV

COEFFICIENTS: * L/D CAB also

α or β SCHEDULES: αA: -3, -1, 0, 1, 2, 3, 5, 9, 13, 17, 21, 25, 30, 32

DELTA WING ORBITER
MDAC
DR#1173 B-1- 311

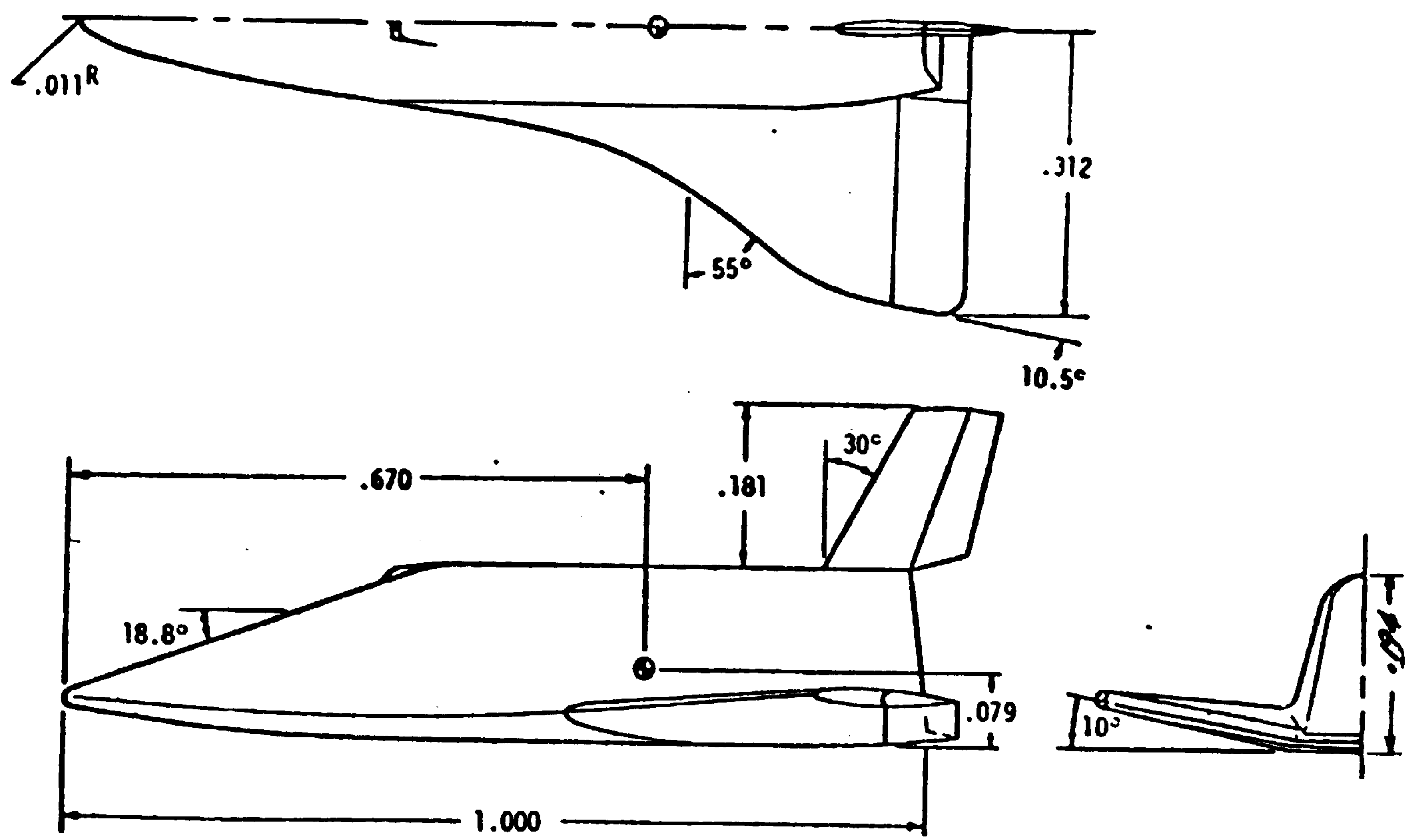

FIGURE 2. - MODEL SKETCH. ALL DIMENSIONS ARE IN TERMS OF BODY LENGTH.

TEST 4' [illegible] DATA SET COLLATION SHEET

☐ PRETEST
☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_a	δ_R	i	FLAP	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 2.01
RLY001	BWEVF	A	0	-1.1	0	0	0	1	6
2				-16					31
3				-30.1					26
4				43.1					37
5			-3	-1.1					7
6				-16					32
7				-30.1					27
8				43.1					38
12			0	-0.2		16.7			39
13				-15		14.9			22
14				-30.7		15.8			33
15			-3	0.2		16.7			40
16				-15		14.9			23
17				30.7		15.8			31
18			0	-1.1	-13.6	0			18
19					-25.8				12
20			+3		-13.6				16
21	BWEVF				-25.8				13
24	BWEV		0		0		—		20
26	BWEV		-3		0		—		21

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

COEFFICIENTS:

α or β SCHEDULES

A: -3, 0, 3, 6, 9, 12, 15, 19, 21, 24, 27

B: -6, -4, -2, -1, 0, 1, 2

NASA-MSFC-MAF

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DELTA WING ORBITER
MDAC
DR#1175 B-1- 313

DELTA WING ORBITER
MDAC
DR#1175 B-1- 314
☐ PRETEST
☒ POSTTEST

TEST 4-FT #432 DATA SET COLLATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_e	δ_t	δ_a	FLAP	NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)	a.01
RLY 028	BWV	A	0	—	0	—	—			47
29			-3	—	0	—	—			48
30	BWEF		0	-11	—	0	0			42
31			-3		—					43
09	BWEVF	0	B		0					8
10		12								9
11		24								10
22	BWEVF	0			-13.6					12
23		0			-25.5					14
32	BWEF	0			—					44

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

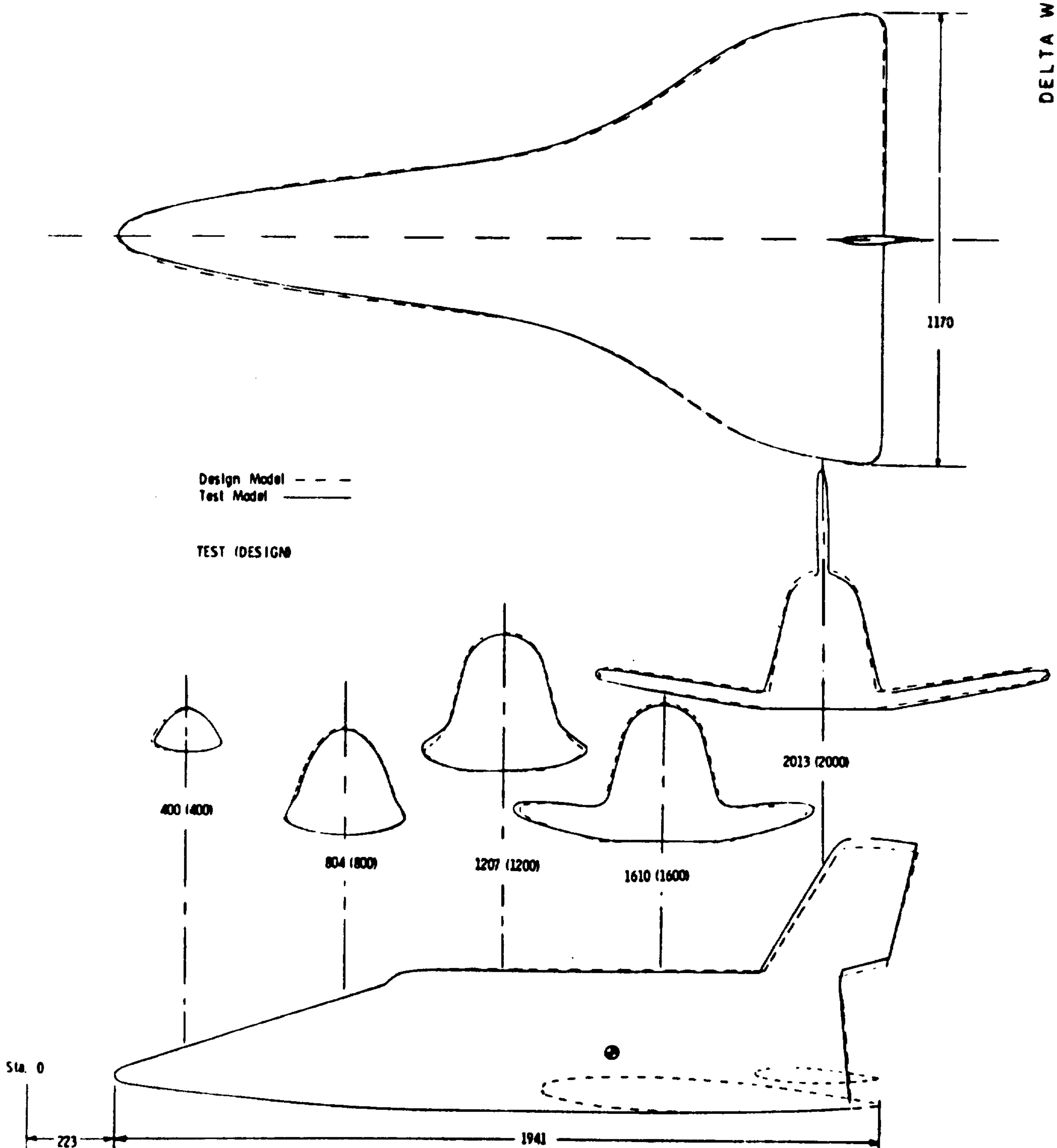


Figure 1.- DESIGN AND TEST MODEL BODY COMPARISONS

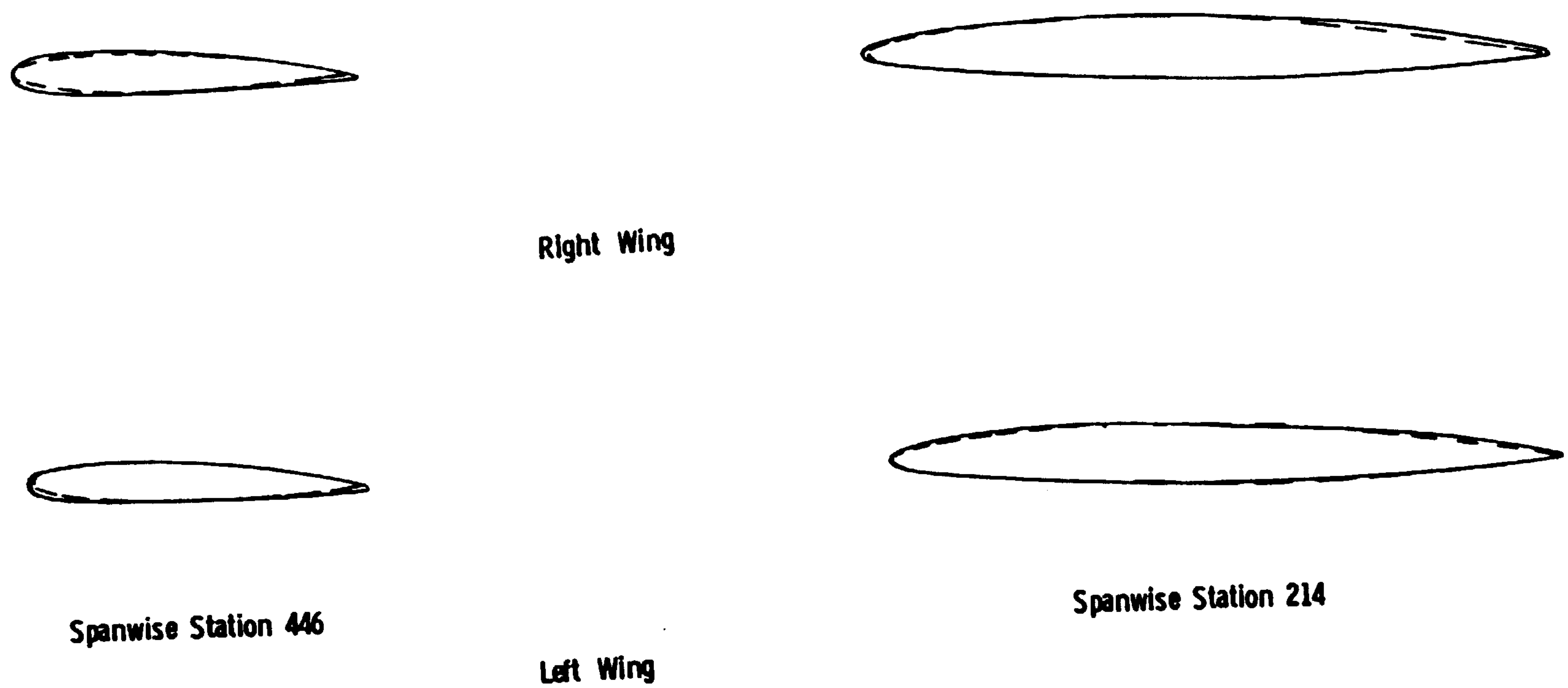


Figure 1. - Continued.

TEST MSFC TWT453 DATA SET COLLATION SHEET

☐ PRETEST
☑ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_E	δ_B			NO. of RUNS	MACH NUMBERS A	.8	1.0	1.2	2.74	3.48	4.95					
R17021	$B^2W^2E^1$	A	O	O	OFF			1	53											
R17022	↓	↓	↓	-15	↓			5	47	48		49	43		42					
R17023	↓	C	↓	↓	↓			2	52//						46					
R17024	$B^2W^2T'R'$	A	↓	OFF	O			5	21	22		23	40		41					
R17025	$B^2W^2T'E'R'$	↓	↓	O	↓			7	9	10	11	12	30	31	32					
R17026	↓	↓	↓	-15	↓			7	1	2	3	4//	24	25	26					
R17027	↓	↓	↓	-30	↓			3					59	55	56					
R17028	↓	C	↓	-15	↓			2	8					29						
R17029	↓	↓	↓	-30	↓			7	15	16	17	18	39	38	37					

1 7 13 19 25 31 37 43 49 55 61

COEFFICIENTS: CNM CN CYM CY CRL CATOTL CABRSE L/D CAFORE

α A = $-4° / +16°$
α C = $+10° / +25°$

3 OF 5 SCHEDULES

DELTA WING ORBITER
MMC
DR#1003 B-1- 317

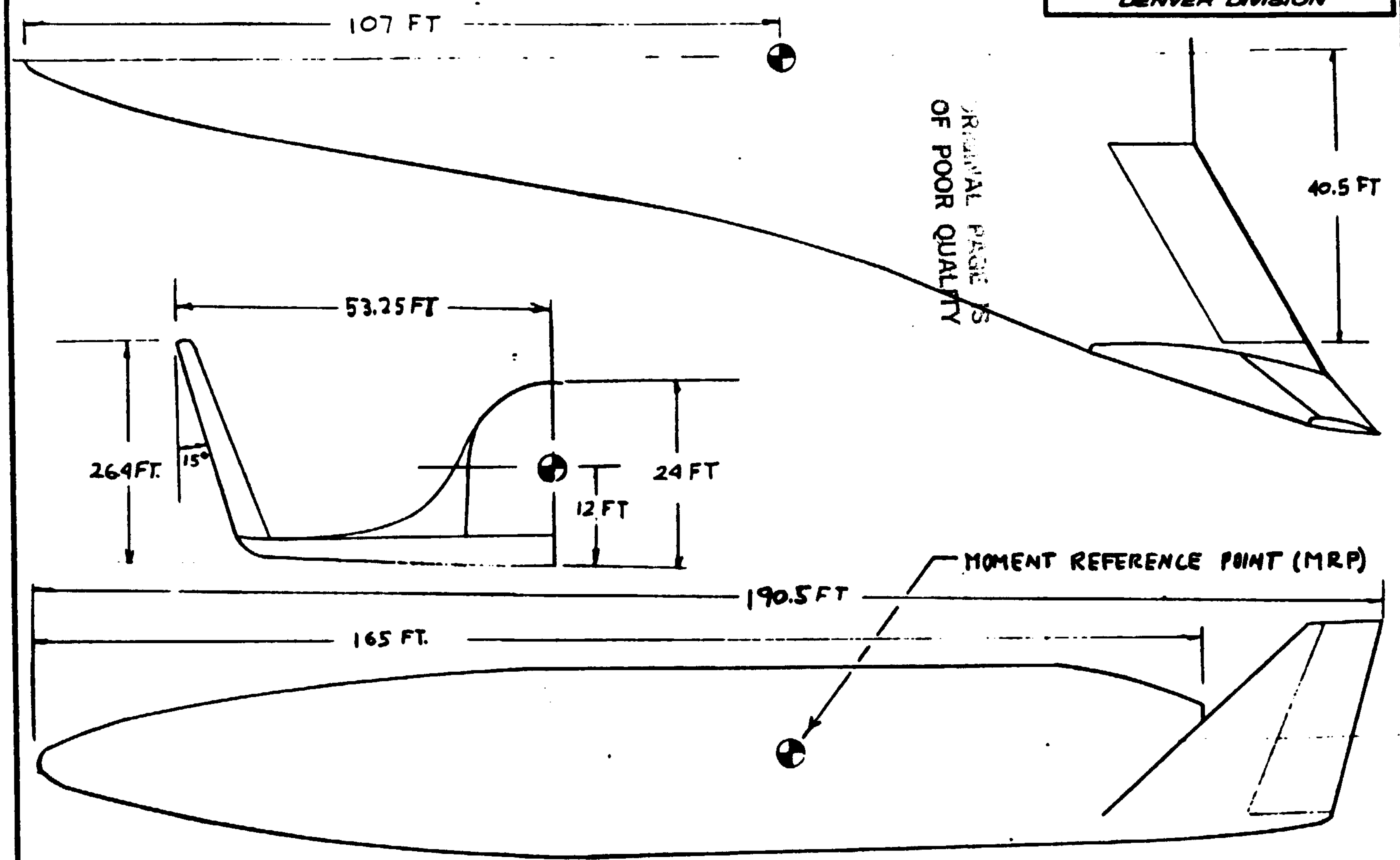


FIGURE 2. MODIFIED ORBITER CONFIGURATION
$B^2W^2T'E'R'$

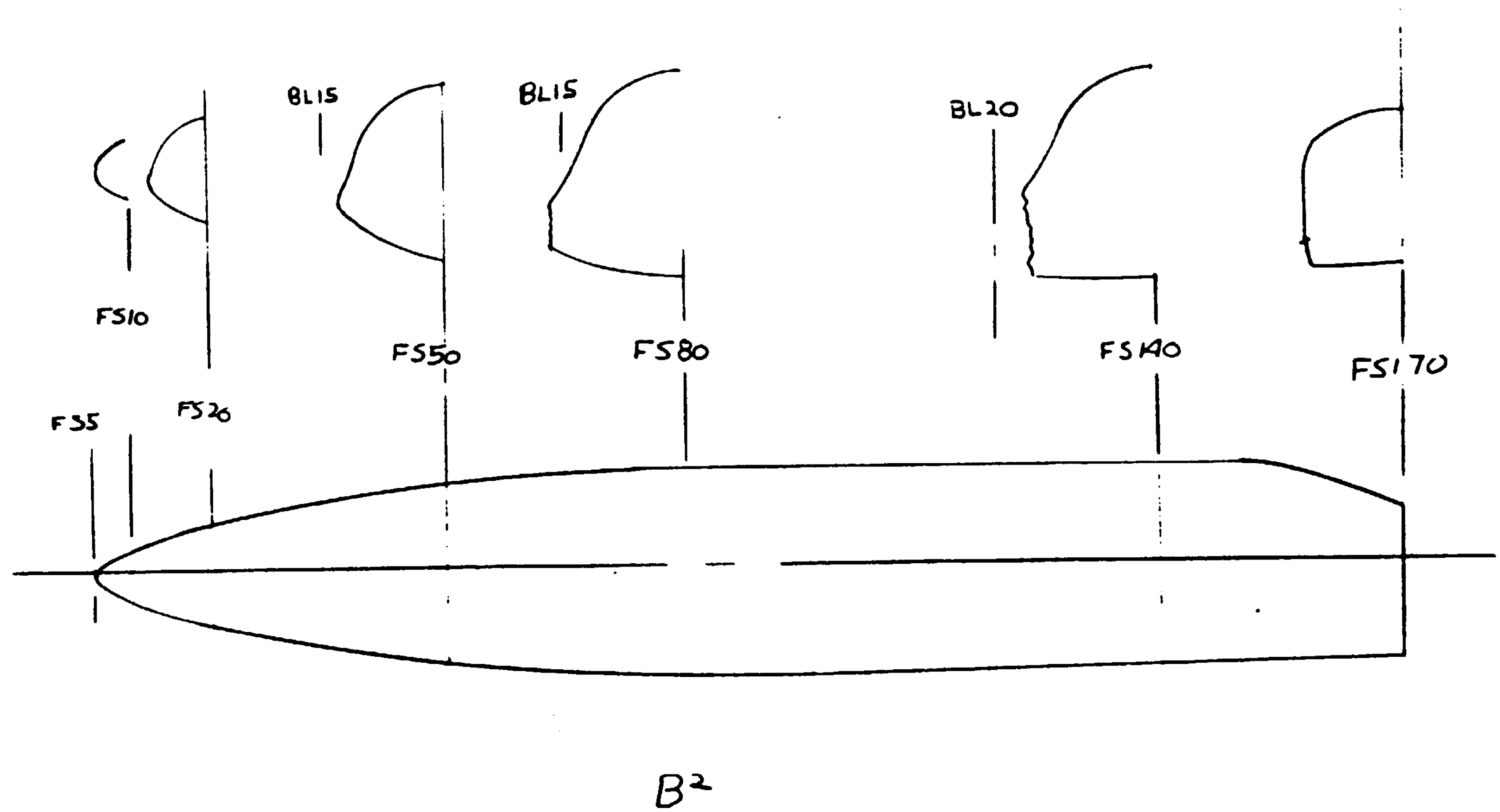
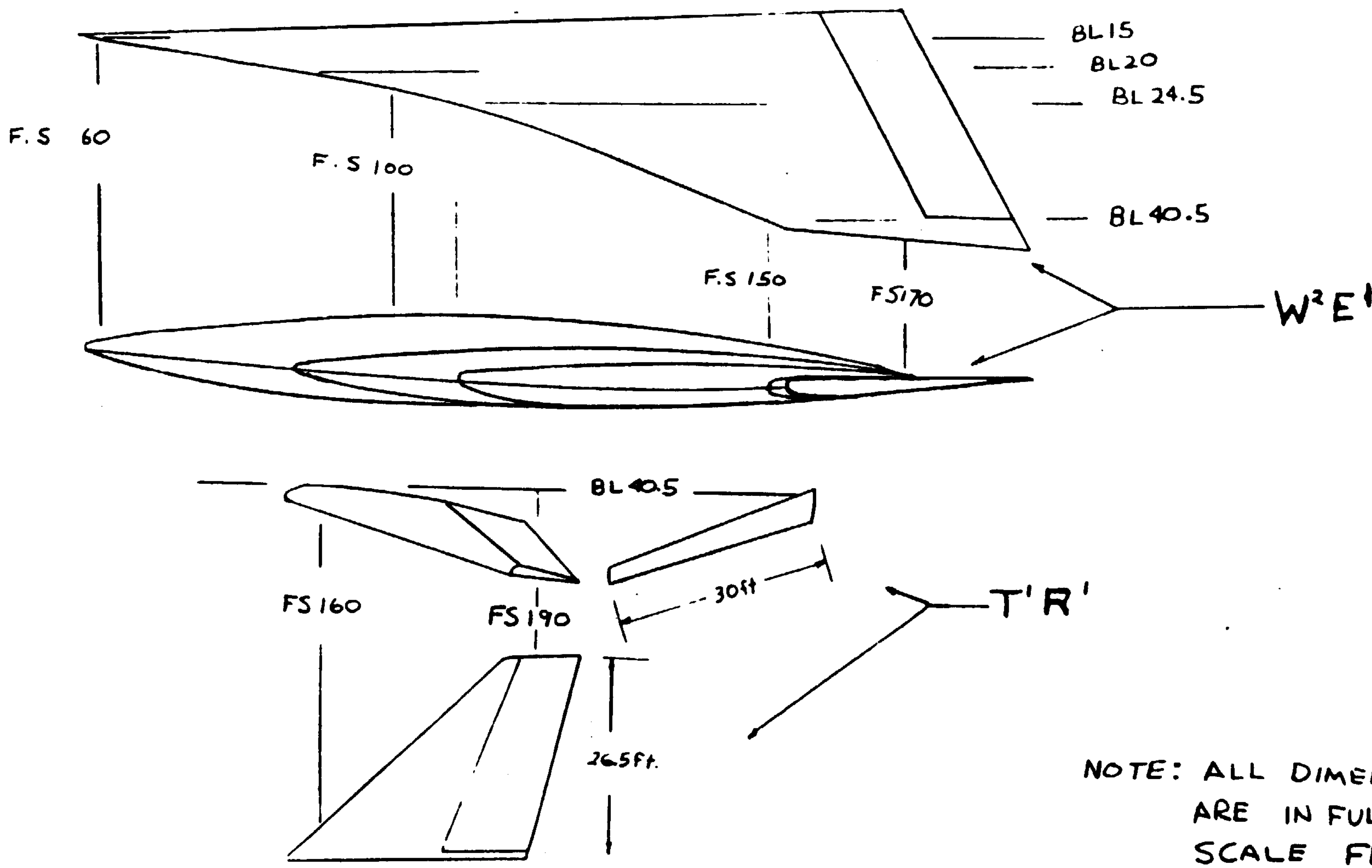


FIGURE 3. MODEL COMPONENT SKETCH

DELTA WING ORBITER
MMC
DR#1003 B-1- 319



NOTE: ALL DIMENSIONS ARE IN FULL SCALE FEET

FIGURE 4. MODEL COMPONENT SKETCH

TEST LaRC 7341-7343 DATA ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	CONTROL DEFLECTION (1)			NO. of RUNS	MACH NUMBERS 20.6
RL2020	FR5-2A1	A	0	20	0			1	020
RL2021	FR5-2A2	A	0						021
2022	FR5-2A2	A	4						022
2023	FR5-2A1	A	4		0				023
2120	FR5-2A1	B	0	20	20				120
2122	FR5-2A1			5					122
2123	FR5-2A2			5					123
2126		B		0	20				126
2222		C		0	40				222
2224				20					224
2225	FR5-2A2			15					225
2226	FR5-2A1			20					226
2227	FR5-2A1		4	20					227
2229	FR5-2A2		4	20					229
2230	FR5-2A2	C	4	0	40			1	230

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

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

α or β SCHEDULES

α schedule A -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18

B 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45

C 0, 4, 8, 10, 12, 14, 16, 18, 20, 22, 26, 30, 33, 35

(1) Sting

0—Straight sting

40—40° bent sting

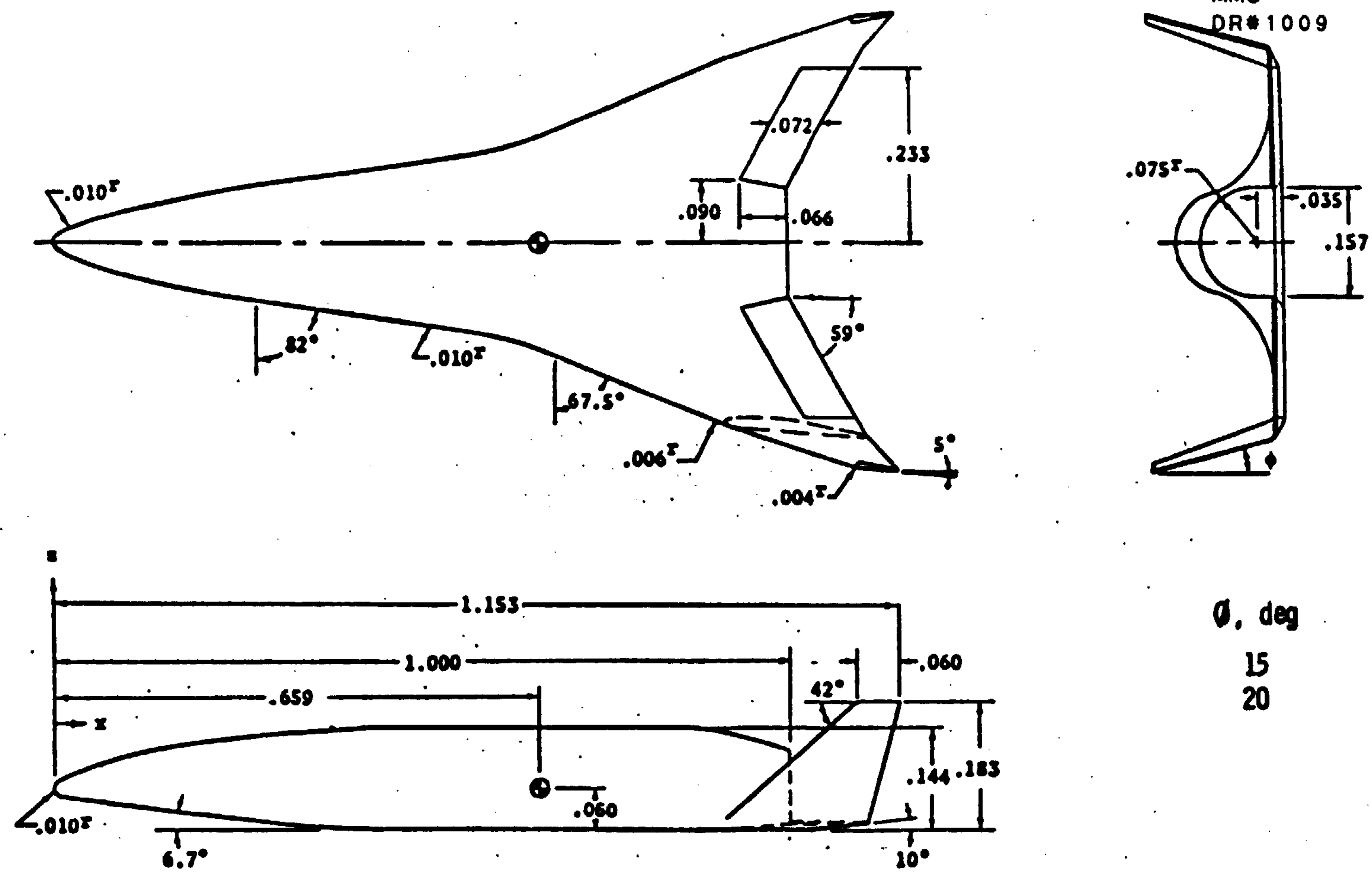
20—20° bent sting

DELTA WING ORBITER

MMC

DR#1009 B-1- 321

DELTA WING ORBITER
MMC
DR#1009 B-1- 322



NOTE: All dimensions are non-dimensionalized by body reference length.

FIGURE 2. MODIFIED MARTIN DELTA WING ORBITER

TEST : LTPT 50 DATA ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		CONTROL DEFLECTION				NO. of RUNS	Reynolds Number x 10^{-6}										
		α	β	δe					2.35	3.93	5.94	7.30	9.97	12.10	14.05				
RL 3001	BWV	A	0	0				7	1	2	3	4	5	6	7				

A : -6, -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

COEFFICIENTS : q(psf) CN CA CLM CBL CYN CY CP1

α or β SCHEDULES

DELTA WING ORBITER
MMC
DR#1013 B-1- 323

TEST : LTPT 50 DATA ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		CONTROL DEFLECTION			NO. of RUNS	MACH NUMBERS											
		α	β	δe				.28											
RL 3004	BWV	A	0	0			1	4											
RL 3024	BWV	A	0	-10			1	24											
RL 3023	BWV	A	0	-20			1	23											
RL 3022	BWV	A	0	-30			1	22											
RL 3026	BW	A	0	0			1	26											
RL 3027	BW	A	0	-30			1	27											
RL 3030	BWV	A	-6°	0			1	30											
RL 3029	BW	A	-6°	0			1	29											

α or β SCHEDULES

A -6, -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

COEFFICIENTS : q(psf) CN CA CLM CBL CYN CY CP1

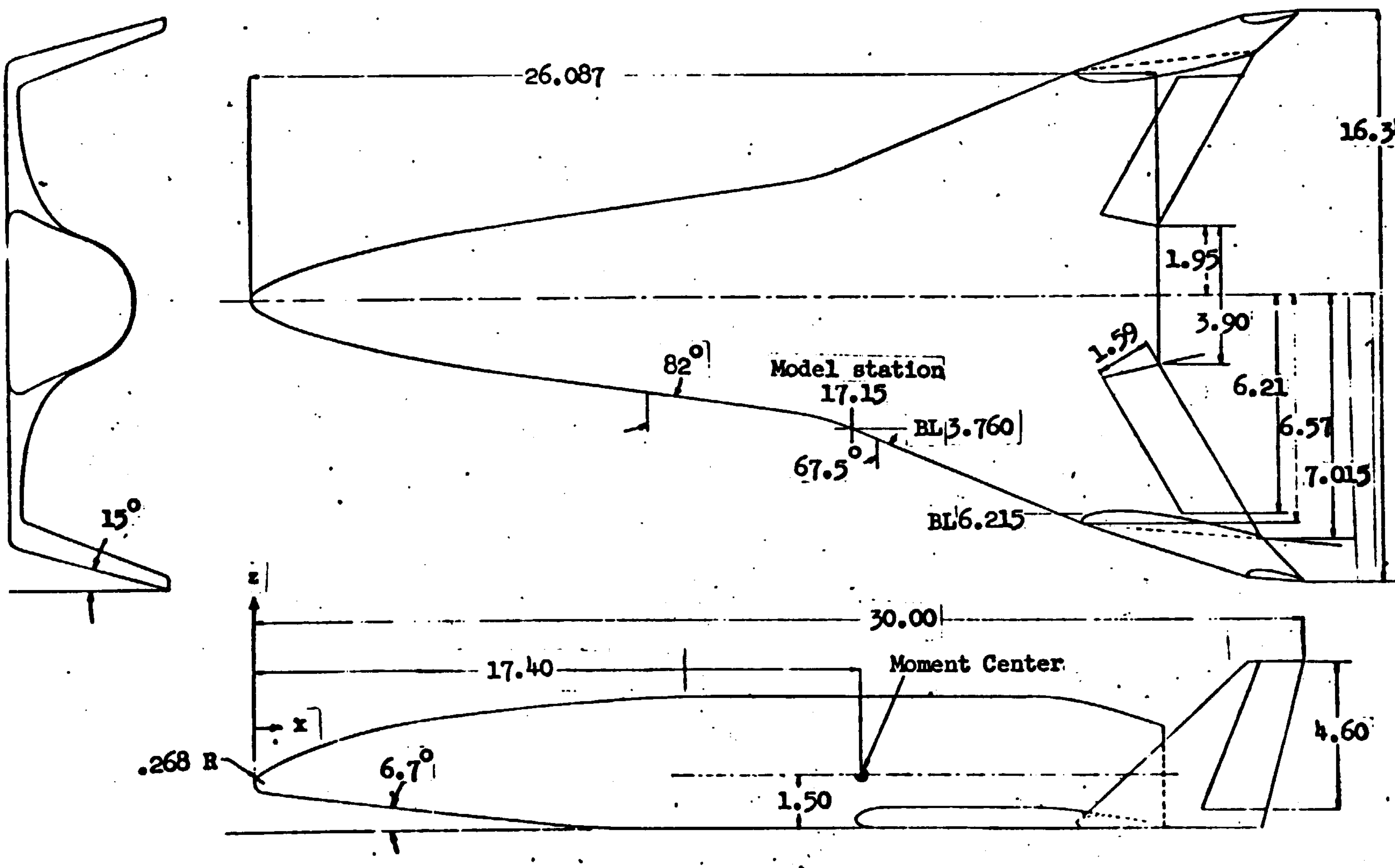


FIGURE 2. Model drawing. Linear dimensions are in inches.

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DELTA WING ORBITER
MMC
DR#1013 B-1- 325

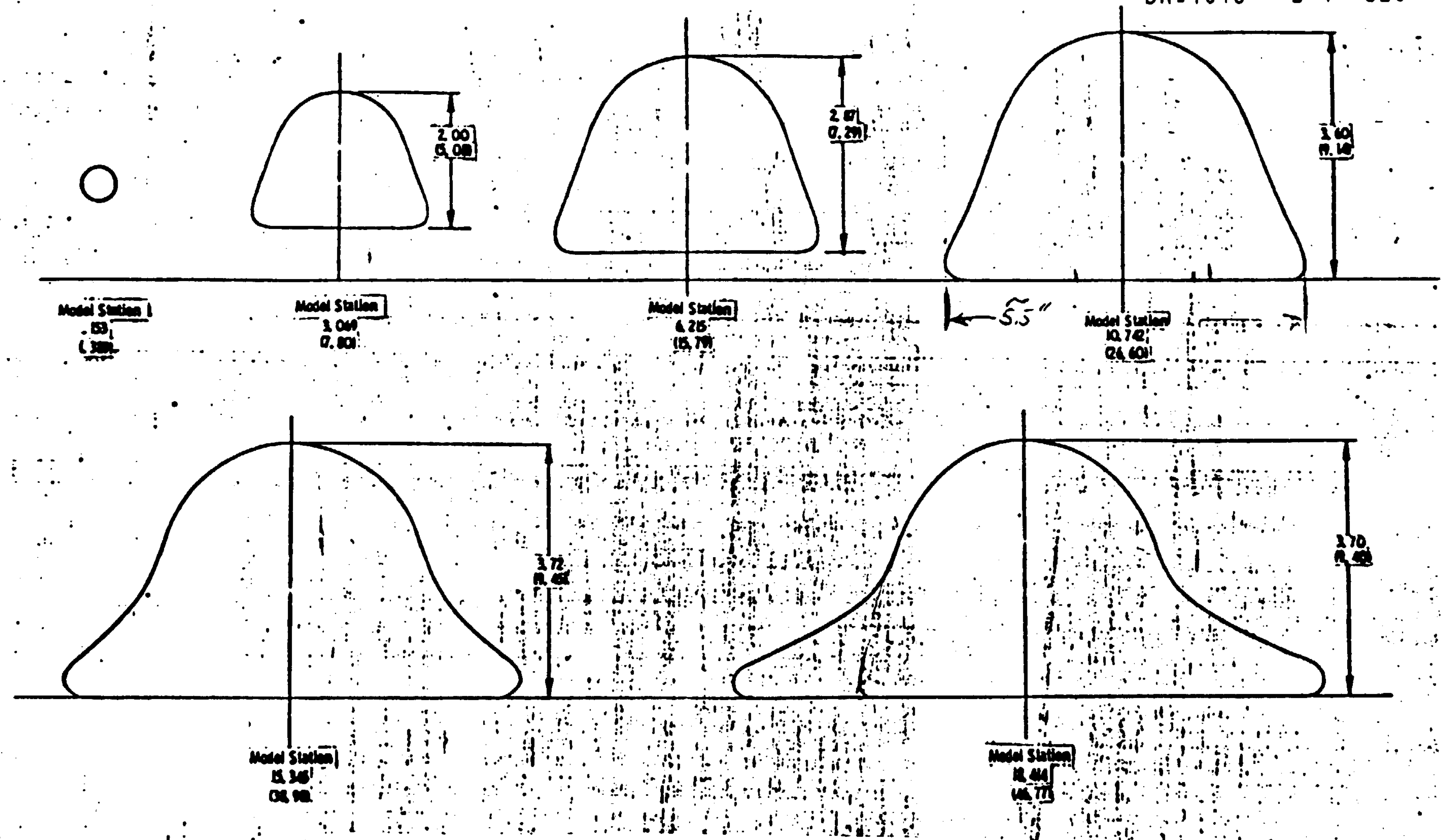

FIGURE 3. FOREBODY CROSS-SECTIONS

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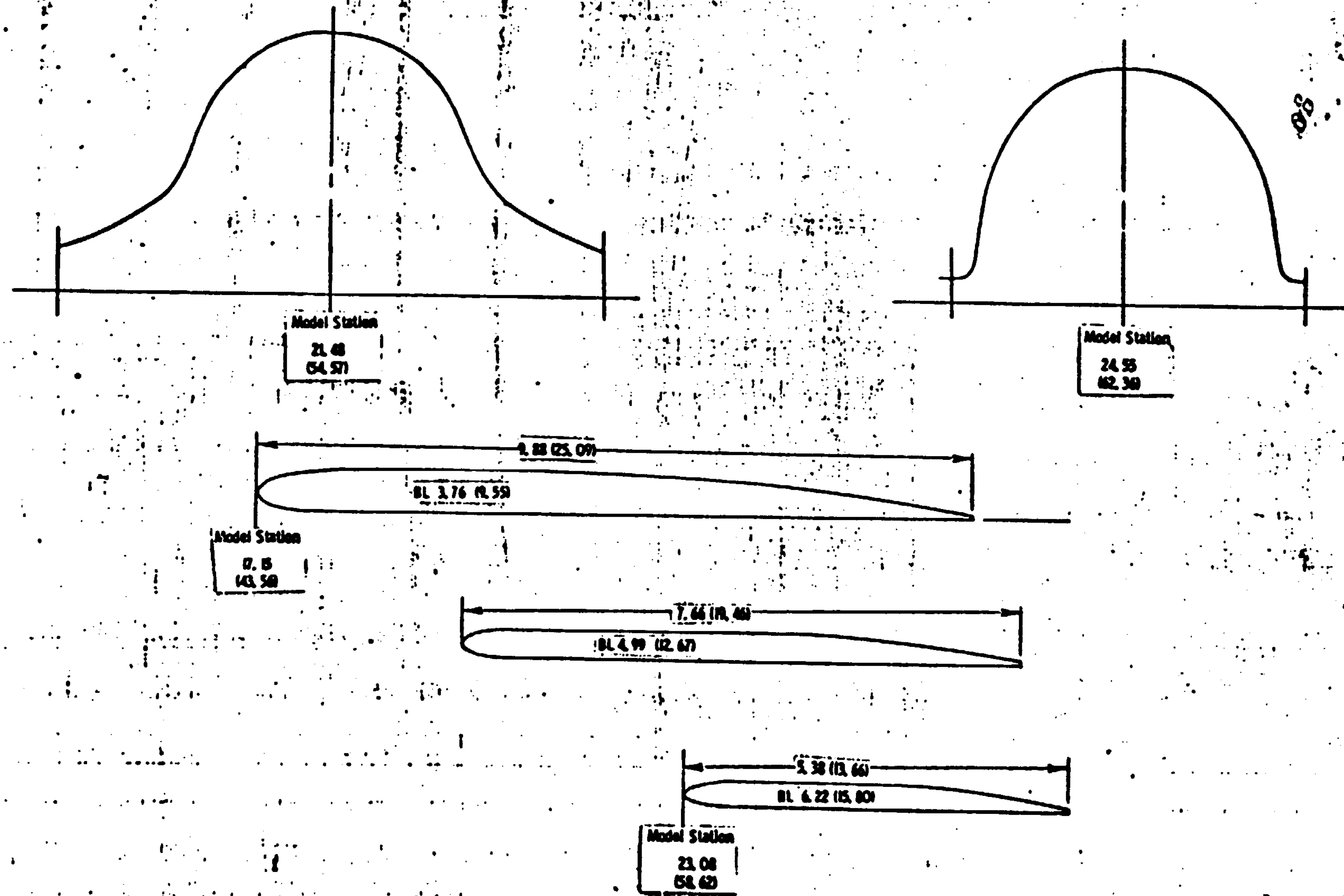

FIGURE 4. WING AND AFTERBODY CROSS-SECTIONS

DELTA WING ORBITER
MMC
DR#1013 B-1- 327

TEST 7 x 10 – 905 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_a	δ_{R_L}	δ_{R_R}	NO. of RUNS	MACH NUMBERS .4	.6	.7	.8	.89							
FL-005	B1WV1	A	0	0	0	0	0	5	3	4	5	6	7							
FL 012	B1WV1	A	0	-30	0	0	0	5	12	11	10	9	8							
FL 013	B1WV1	A	0	-20	0	0	0	2	13			14								
FL 015	B1WV1	A	0	-40	0	0	0	2	16			15								
FL-017	B1WV1	A	0	-30	+10	0	0	2	18			17								
FL 019	B1WV1	A	0	-30	+10	0	-20	2	20			19								
FL 021	B1WV1	A	0	-30	0	0	-20	2	22			21								
FL 023	B1WV1	A	0	-30	0	0	-10	2	24			23								
FL 025	B1WV1	A	0	-40	+10	0	0	2	26			25								
FL-028	B3WV1	A	0	0	0	0	0	1	28											
FL-029	B2WV1	A	0	0	0	0	0	1	29											
FL 030	B2WV2	A	0	0	0	0	0	1	30											
FL 031	B1WV2	A	0	0	0	0	0	1	31											
FL 034	B1WV1	0	B	0	0	0	0	2	34			35								
FL 036	B1WV1	9°	B	0	0	0	0	2	36			37								

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

COEFFICIENTS:

α or β SCHEDULES

A: -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22

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

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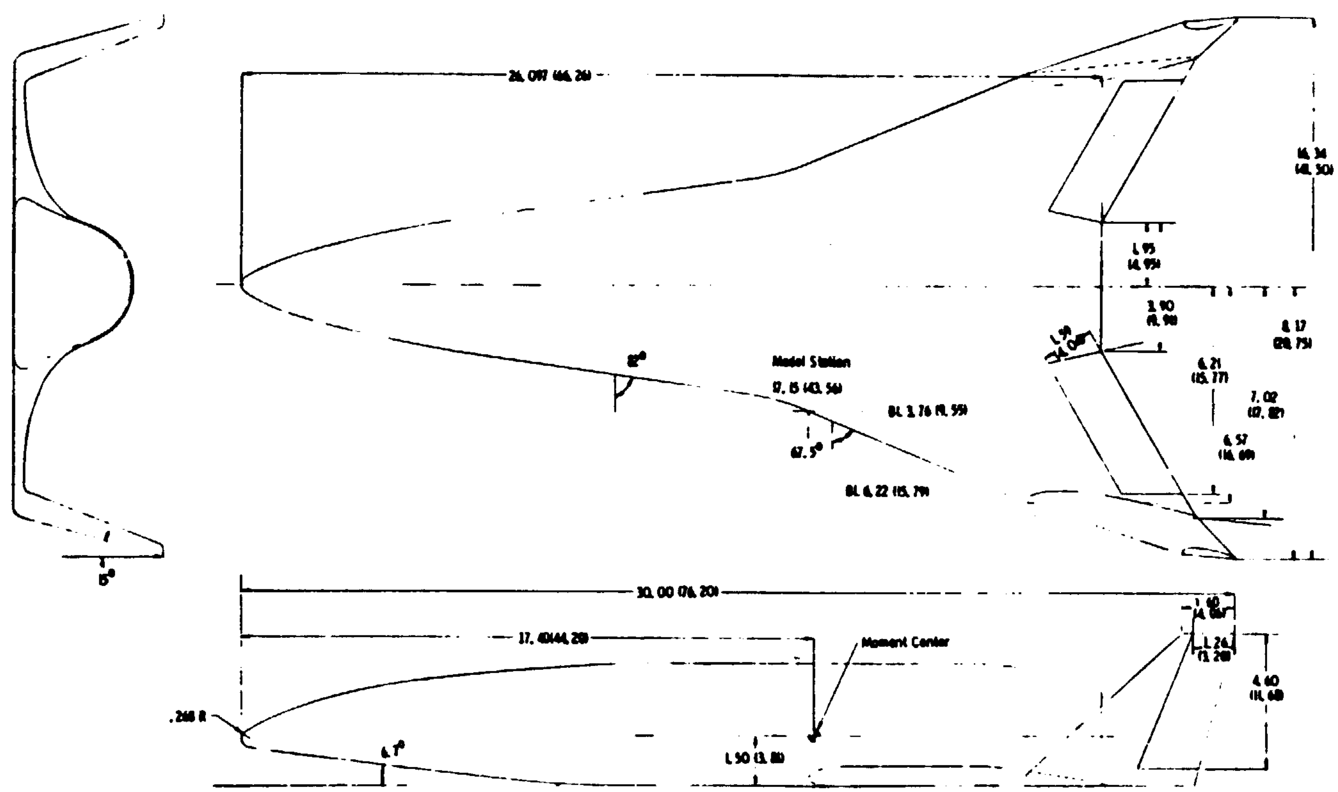

Figure 2. Model drawing. Linear dimensions are in inches with centimeters given in parenthesis.

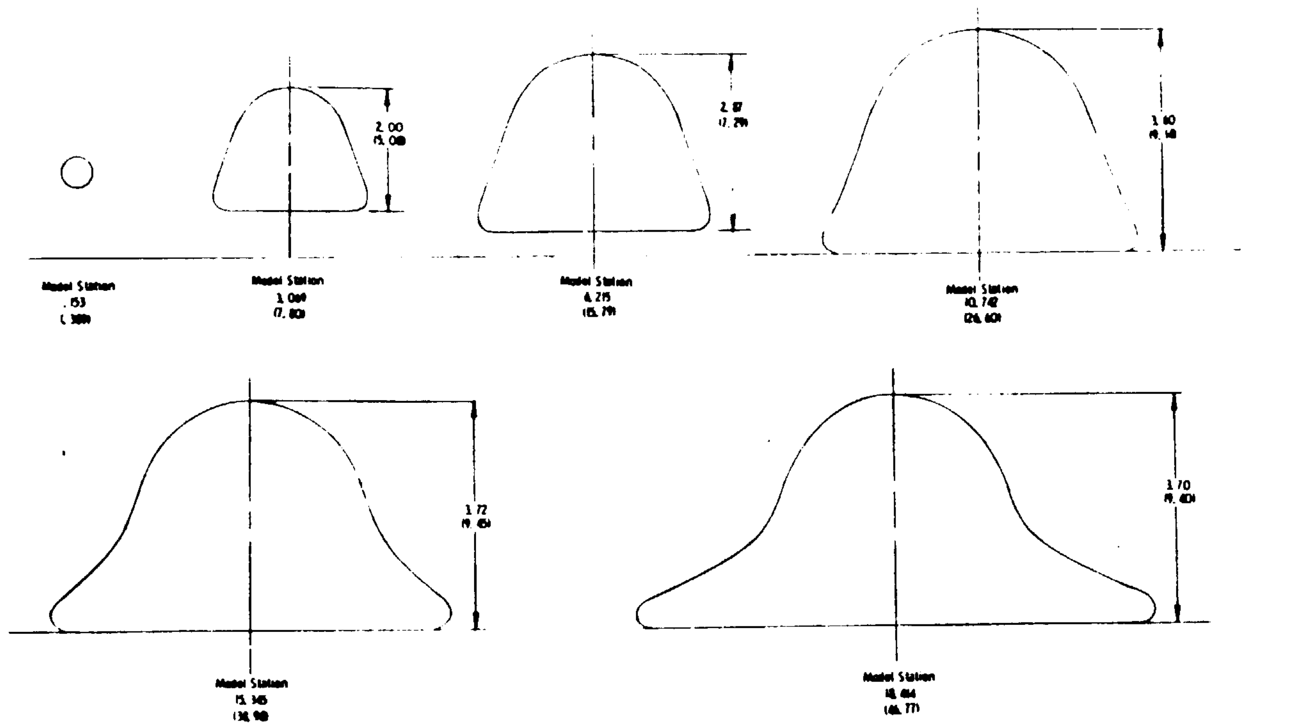

Figure 3. Forebody cross-sections.

1007.

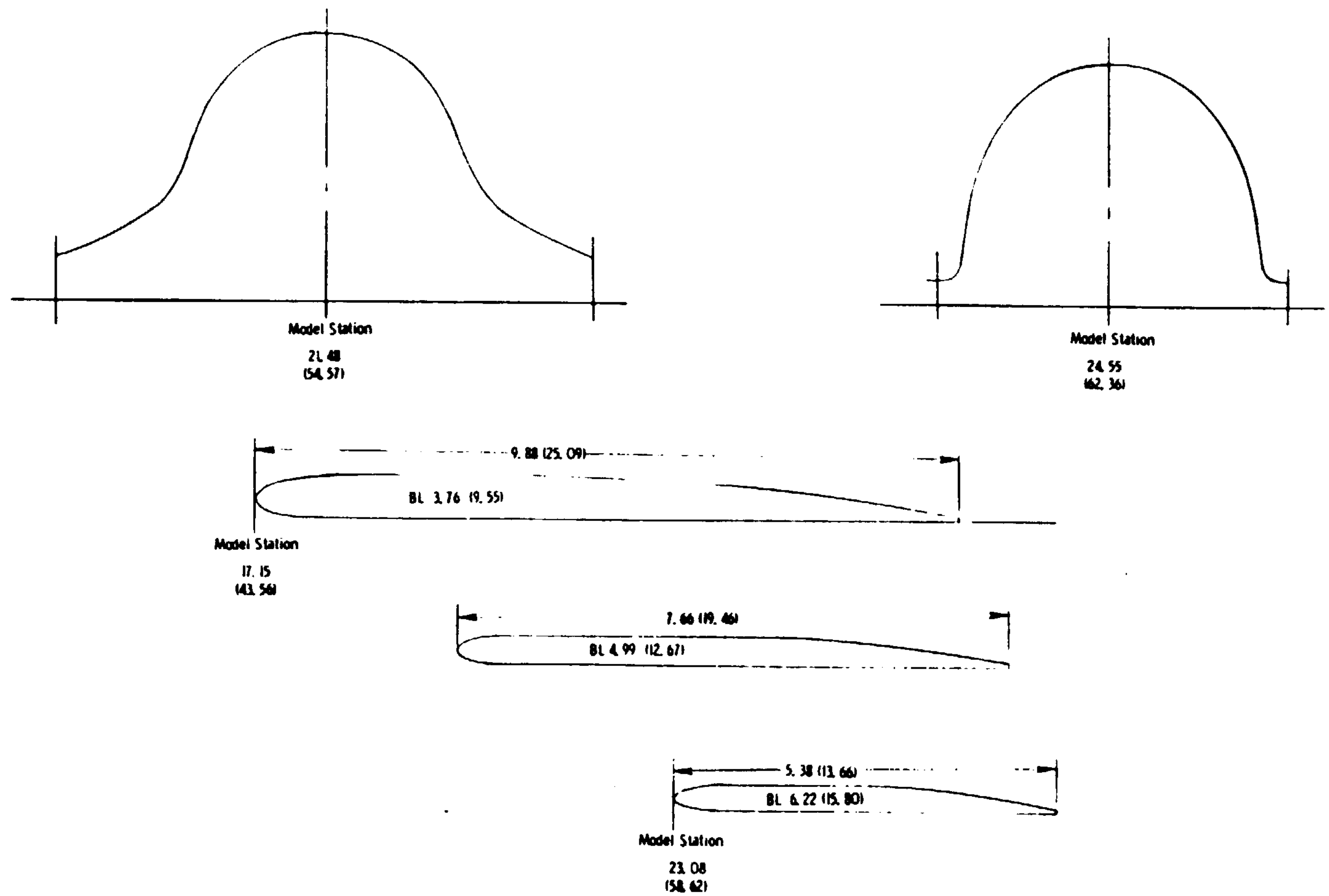

Figure 4. Wing and afterbody cross-sections.

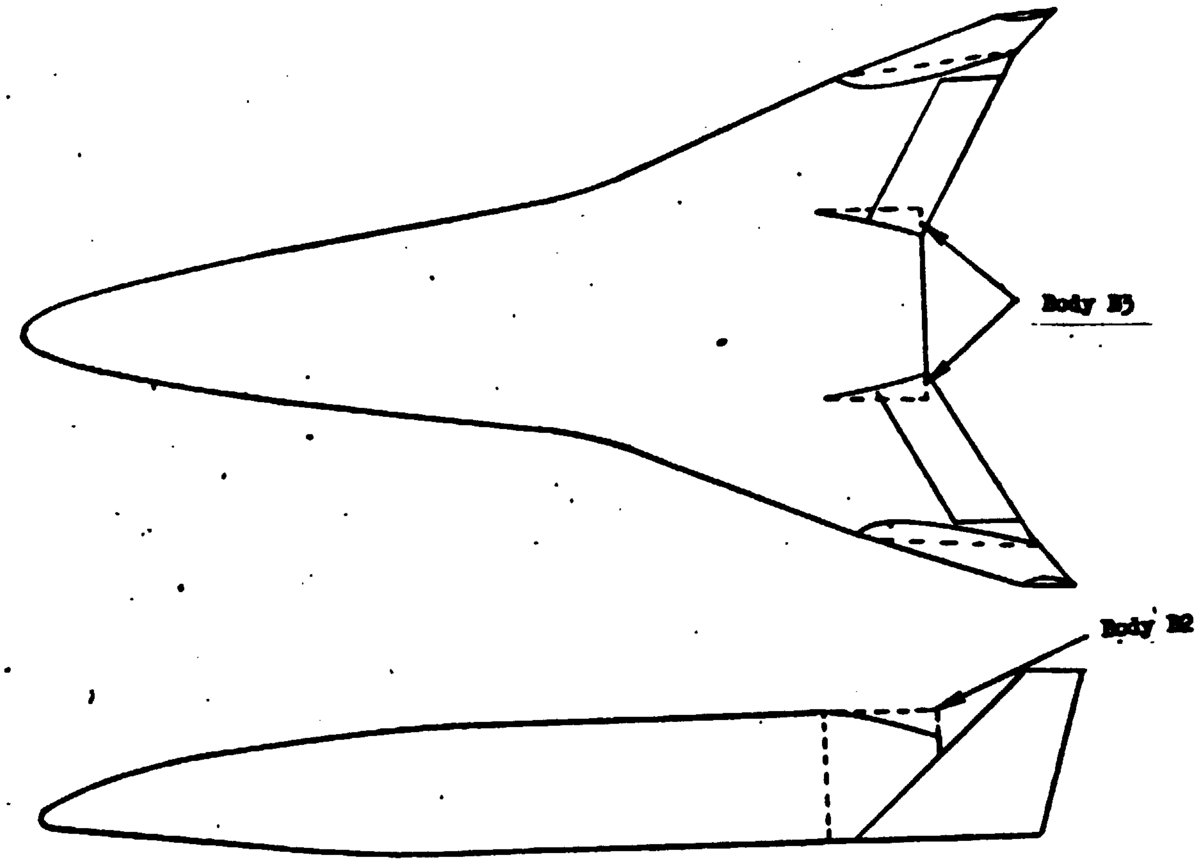

Figure 5. Body boattailing configurations

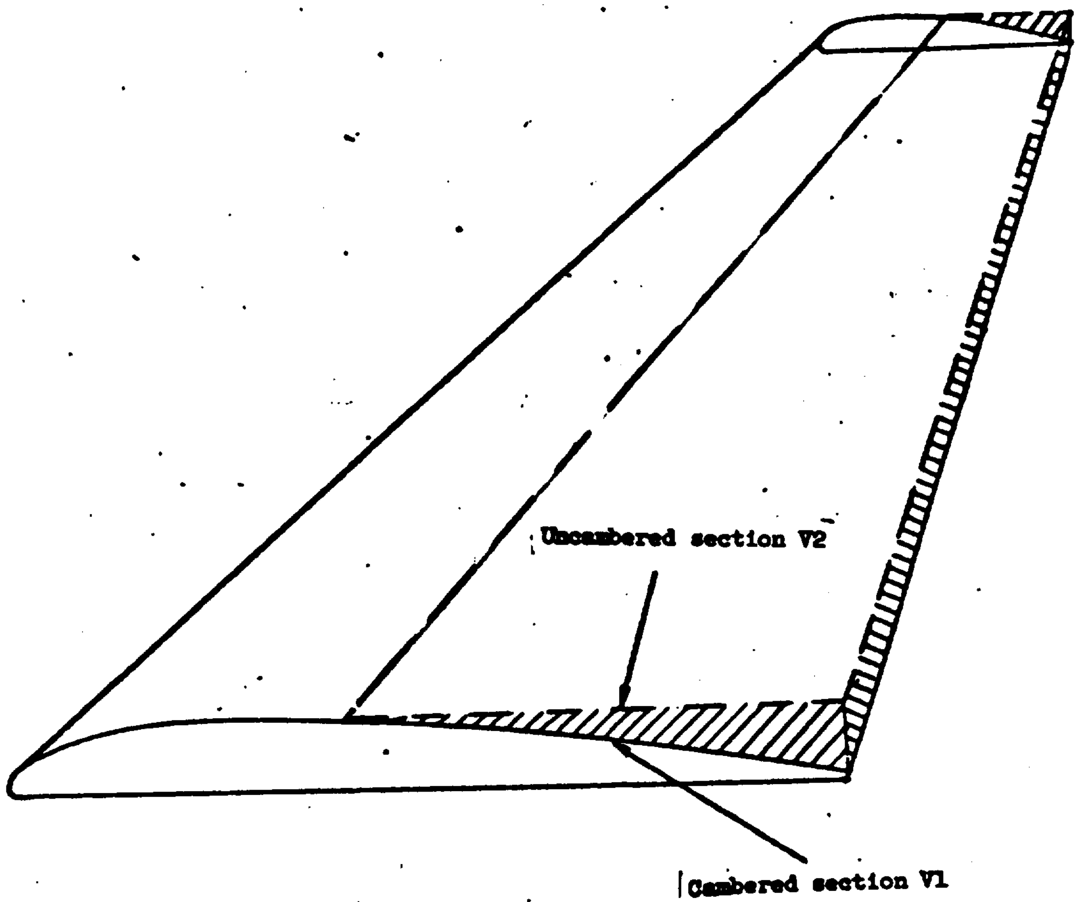

Figure 6. **Vertical fin cross-sections.**

TEST LaRC 20-Inch 6329 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e			NO. of RUNS	MACH NUMBERS 6											
RLA0 08	FR5-2A-F	A	0	0			1	8											
11			-4°					11											
12		B	-2°					12											
13		A	0°	20°				13											
14		C	-4°					14											
24		A	0°	-10°				24											
25		D	-2°					25											
26		A	-4°					26											
27			0°	10°				27											
28		E	-2°					28											
29		C	-4°					29											
30	FR5-2A	A	0°	0				30											
31		D	-2°					31											
32		A	-4°					32											

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

COEFFICIENTS:

α or β SCHEDULES

A	α schedule 0, 10, 13, 15, 18, 20, 30, 40, 45, 50, 54° or 55°
B	α schedule 0, 15, 25
C	α schedule 0, 15, 50
D	α schedule 0, 15, 45
E	α schedule 0°

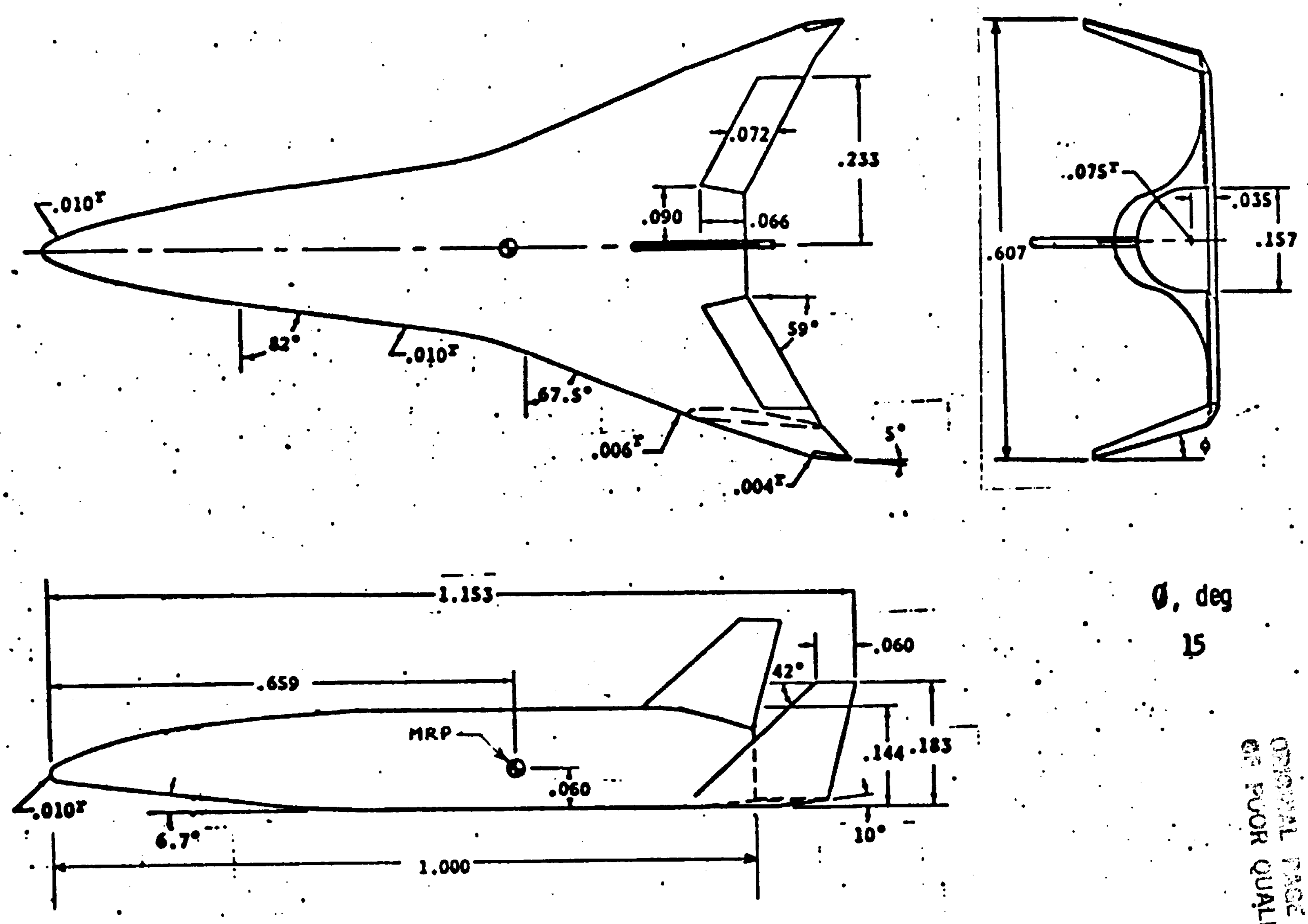

FIGURE 2. MARTIN DELTA WING ORBITER

Ø, deg

15

DELTA WING ORBITER
MMC
DR#1023 B-1- 335

TEST LTPT 50-2 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	δ_{r_L}	δ_{r_R}		NO. of RUNS	MACH NUMBERS .28
RLF101	B1W1V2	A	-6	0	--	--		1	101
RLF102	B1W1V2	A	-6	-20	--	--		1	102
RLF103	B1W1V2	A	-6	-30	--	--		1	103
RLF104	B1W1	A	-6	-30	--	--		1	104
RLF105	B1W1V1	A	-6	-30	0	0		1	105
RLF106	B1W1V1V2	A	-6	-30	0	0		1	106
RLF107	B1W1V1V2	A	-6	0	0	0		1	107
RLF113	B1W1V2	B	0	0	--	---		1	113
RLF114	B1W1V2	B	0	-20	--	---		1	114
RLF115	B1W1V2	B	0	-30	--	---		1	115
RLF116	B1W1V2	B	0	-40	--	---		1	116
RLF117	B2W1V2	B	0	0	--	---		1	117
RLF118	B1W1V1V2	B	0	-30	0	0		1	118
RLF119	B1W1V1	B	0	-30	0	0		1	119
RLF120	B1W1V1V2	B	0	0	0	0		1	120
RLF121	B1W1V1	B	0	0	15° Inb	15° Inb.		1	121
RLF122	B1W1V1	B	0	-30	15° Inb	15° Inb.		1	122
RLF123	B1W2V2	B	0	0	--	--		1	123
RLF124	B1W2V2	B	0	-10	--	--		1	124
RLF125	B1W2V2	B	0	-20	--	---		1	125

A: -4, -2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18

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

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

TEST LTPT 50-2 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		CONTROL DEFLECTION				NO. of RUNS	MACH NUMBERS											
		α	β	δ_e	δ_{r_L}	δ_{r_R}			.28											
RLF126	B1W1V2	B	0	-10	-	-		1	126											
RLF127	B2W1V2	B	0	-20	-	-		1	127											
RLF128	B2W1V2	B	0	-30	-	-		1	128											
RLF129	B1W1	B	0	-30	-	-		1	129											

A: -4,-2, 0, 2, 4, 6, 8, 10, 12, 14, 16, 18

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

α or β
SCHEDULES

DELTA WING ORBITER
MMC
DR#1045 B-1- 337

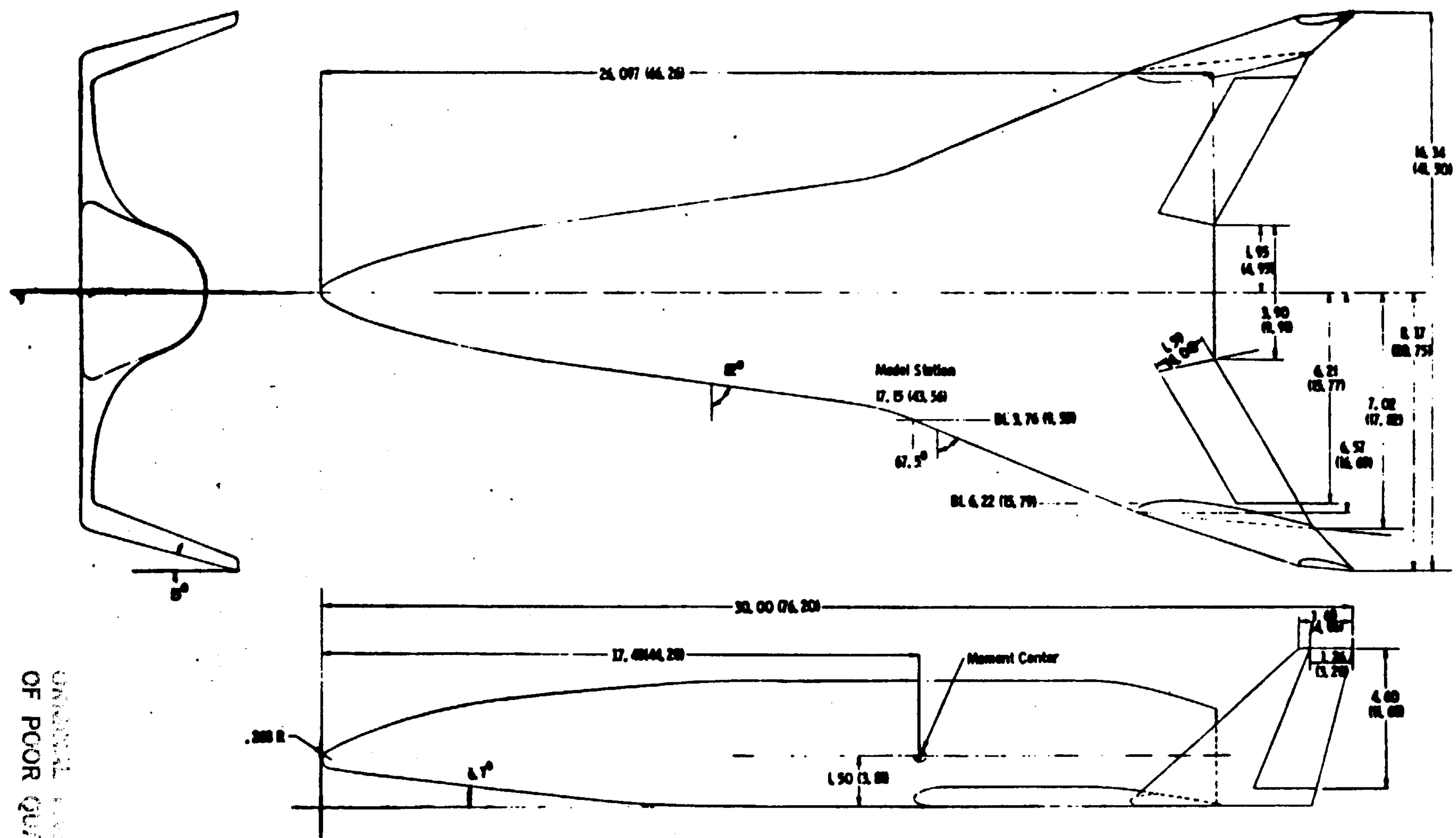

Figure 2. Three-View Sketch of Modified Martin Orbiter, FR5-2A

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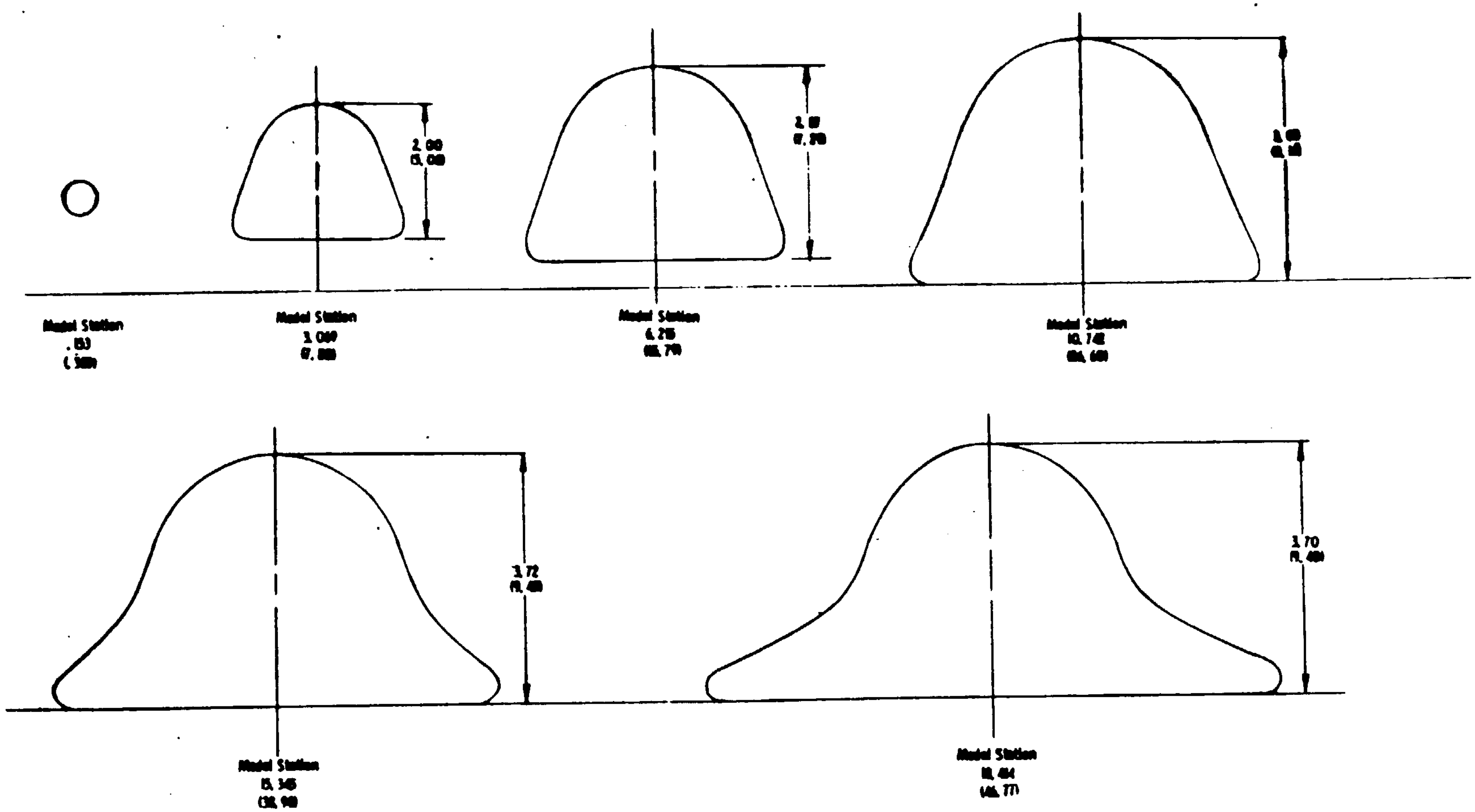


Figure 2. (Cont'd)

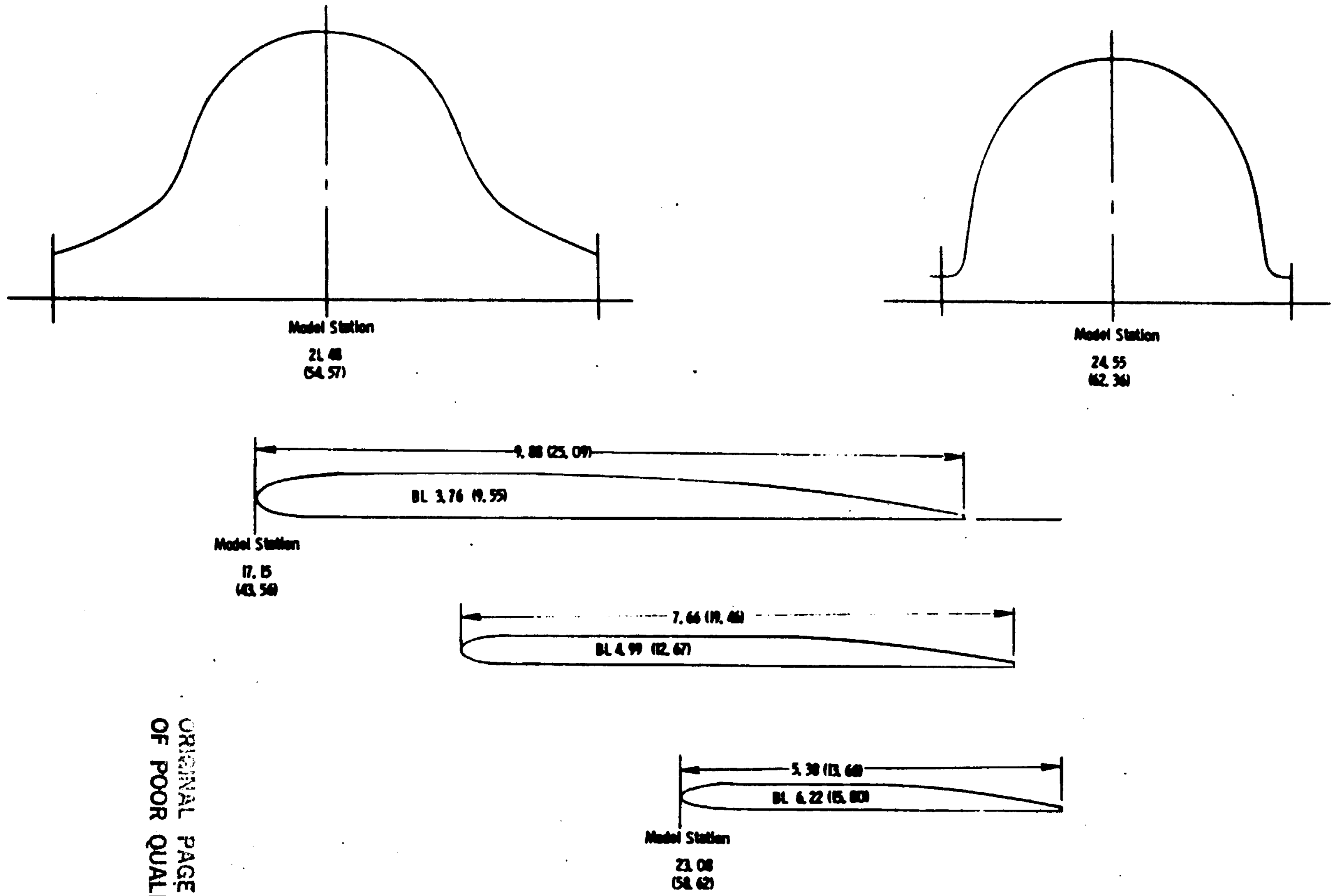


Figure 2. (Cont'd)

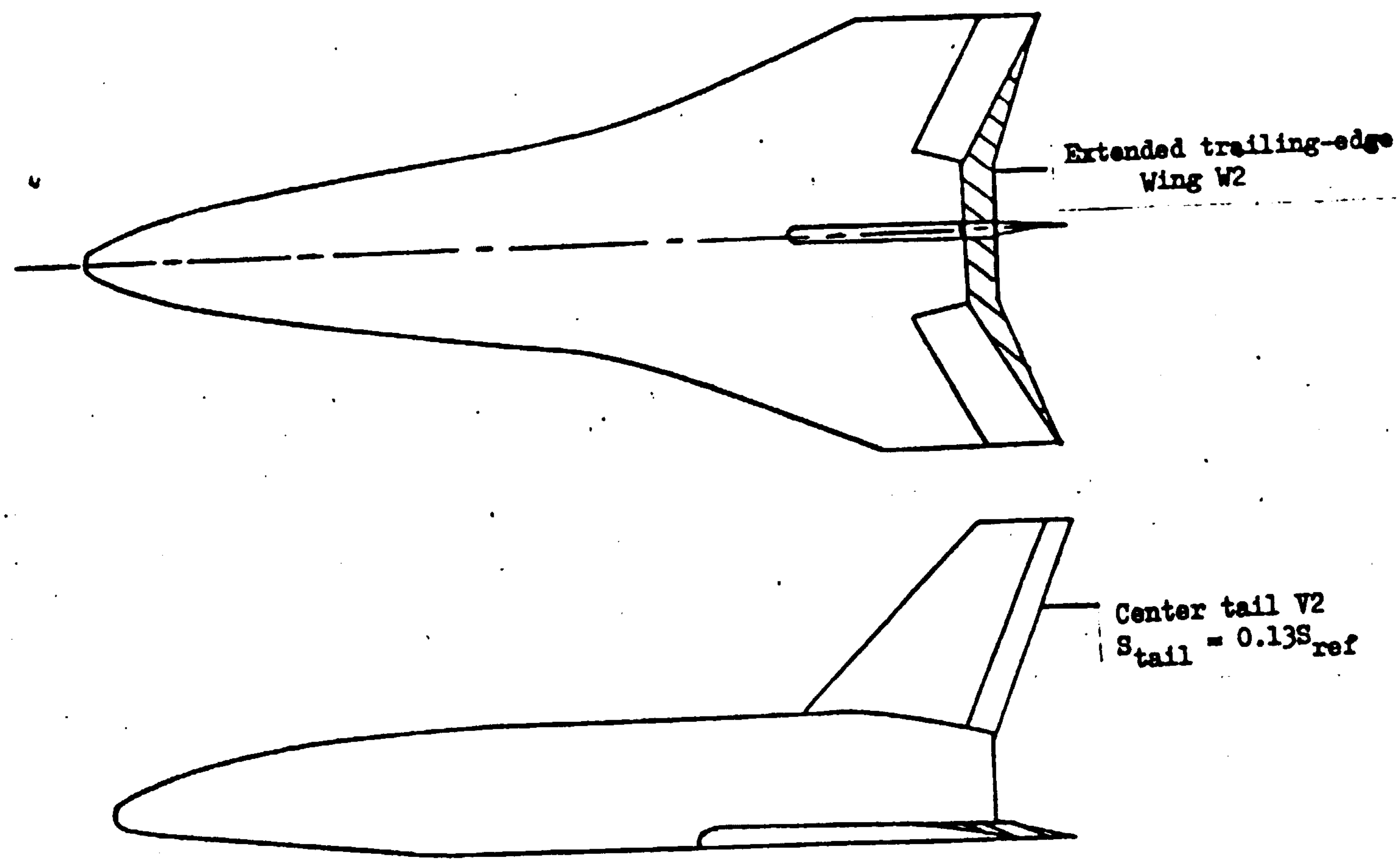


Figure 3. Modified Delta Wing Orbiter

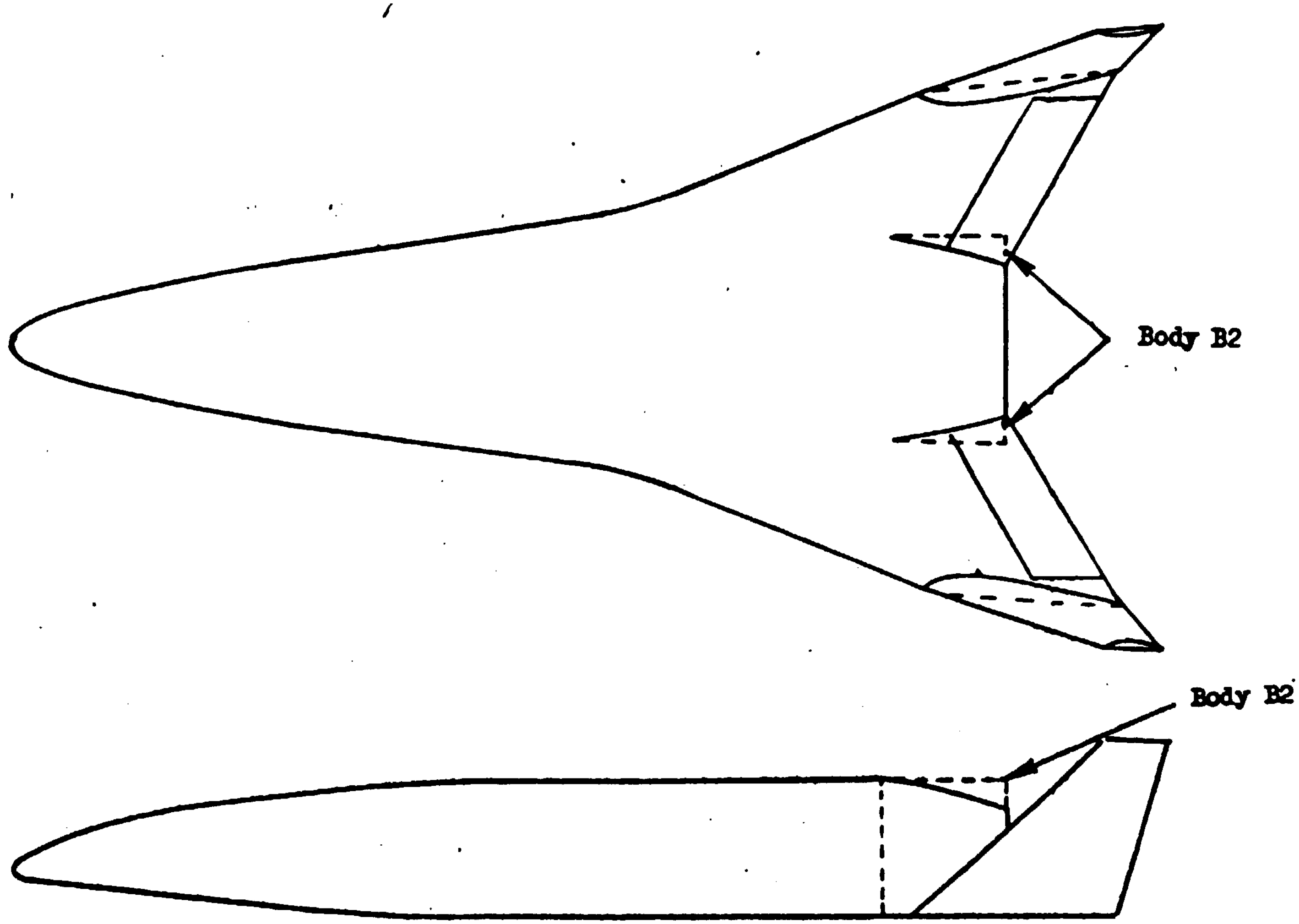
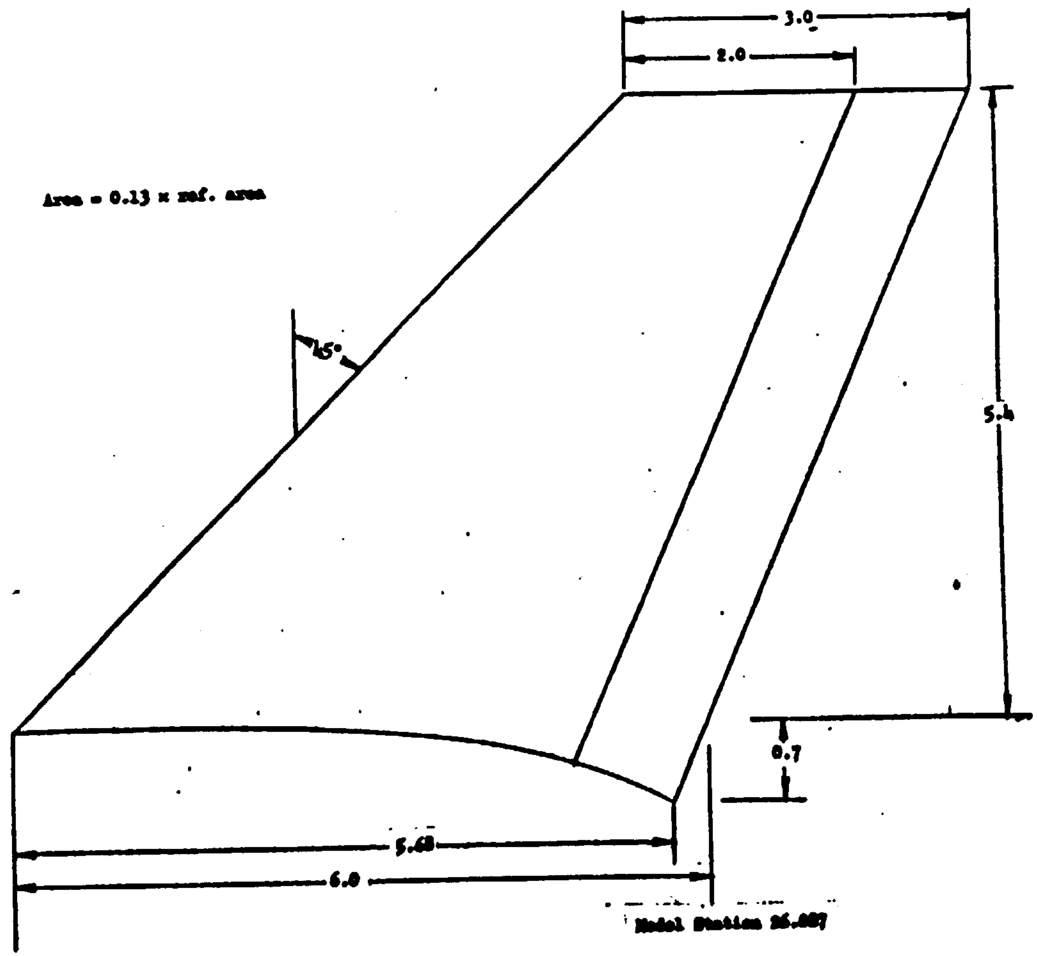


Figure 4. Body boattailing configuration.



Area = 0.13 x ref. area

All dimensions are in inches.

Figure 5. Vertical Tail, V2

TEST LaRC 20-inch 6355 DATA SET - ORGANIZATION - SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_e	NO. of RUNS	MACH NUMBERS 6
RLA1 11	FR5-2B	A	0	0°		11
12	↓	↓	-4°	↓		12
14	↓	F	0°	$+10^\circ$		14
15	↓	↓	-4°	↓		15
16	FR5-2B-F	↓	0°	↓		16
17	↓	↓	-4°	↓		17

BETA	Q(PSI)	CN	CAF	CLM	CBL	CYN	CY	FAB	CAB	MACH	ALPHA	

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

α or β SCHEDULES

A α schedule 0, 10°, 13°, 15°, 18°, 20°, 30°, 40°, 45°, 50°, 53.9°

F α schedule 0, 2.5°, 5°, 7.5°, 10°, 20°, 30°, 40°, 45°, 50°

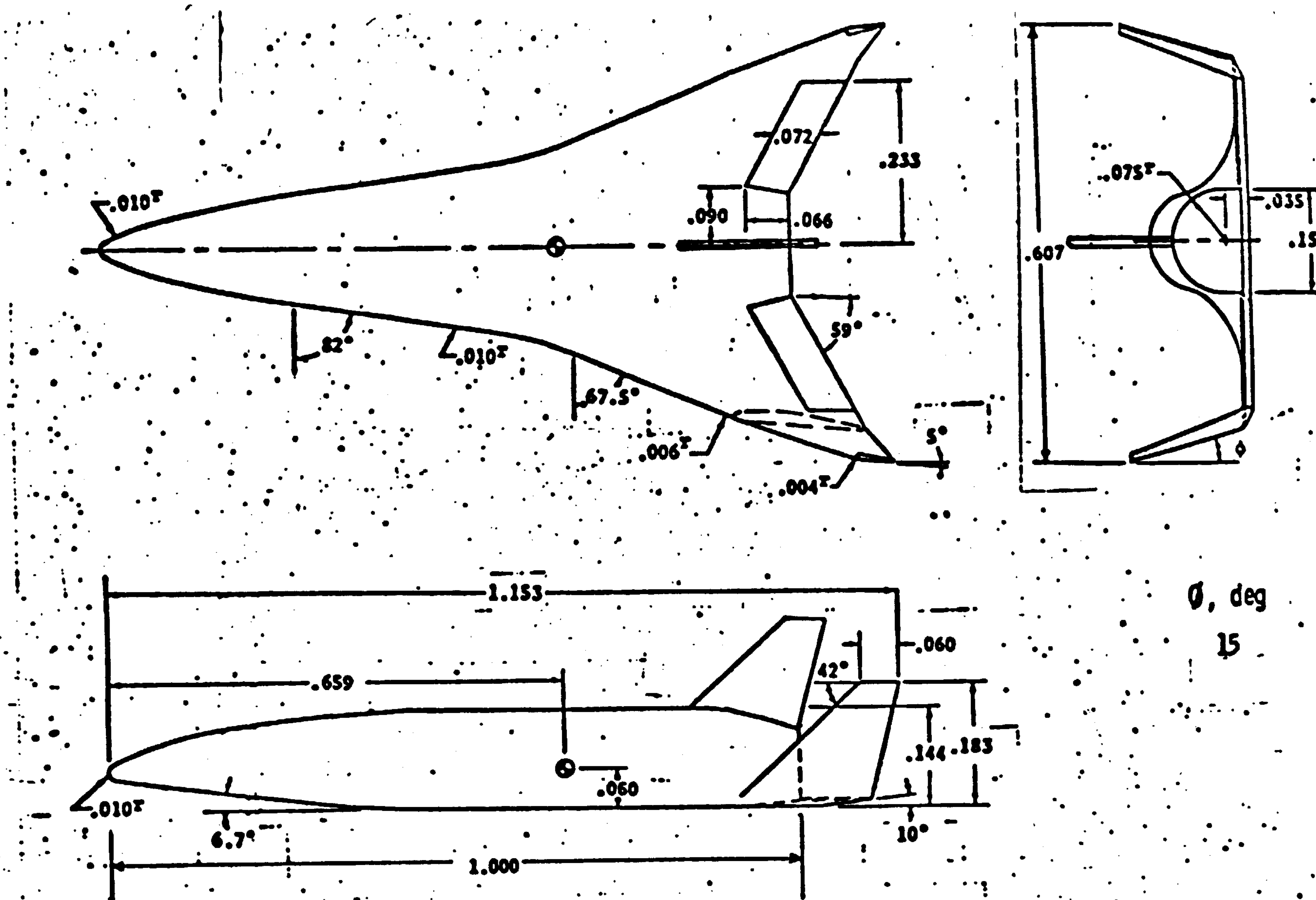


FIGURE 2 MARTIN DELTA WING ORBITER

DELTA WING ORBITER
MMC
DR#1048 B-1- 345

TEST 7369 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION δ_{eL}	δ_{eR}	δ_b	NO. of RUNS	MACH NUMBERS 20.6
RLH OC4	FR5-2B-BW_1	A	0	15	15	-10	1	4
011				-15	-15			11
040				-10	-10			40
013				5	-5			13
042			0	-5	-15			42
007			4.5	0	0			7
008	FR5-2B-BW_1F		4.5	-15	-15			8
014			0	0	0			14
012				5	5			12
010	FR5-2B-BW_1F			-15	-15			10
016	FR5-2B-BW_2			0	0	-10		16
018				0	0	0		18
033				3	3			33
017				5	5			17
034				7	7			34
036				12	2			36
037	FR5-2B-BW_2			8	-2	0		37
021	FR5-2B-BW_3			-10	-10	-10		21
030				-12.5	-12.5	0		30
RLH 022	FR5-2B-BW_3	A	0	-10	-10	0	1	22

α SCHD.A 21 → 46

BETA	Q(PSI)	CN	CAF	CLM	CBL	CYN	CY			MACH	ALPHA	

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

TEST 7369 DATA SET ORGANIZATION SHEET

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	CONTROL DEFLECTION				NO. of RUNS	MACH NUMBERS 20.6
RLH 019	FR5-2B-BW_3	A	0	0	0	0		1	19
032				5	-5				32
031	FR5-2B-BW_3			-7.5	-17.5				31
027	FR5-2B-BW_4			-5	-5				27
023				0	0				23
024				5	5				24
026				10	0				26
RLH 028	FR5-2B-BW_4	A	0	0	-10	0		1	28

α SHED.A 21 → 46

α or β SCHEDULES

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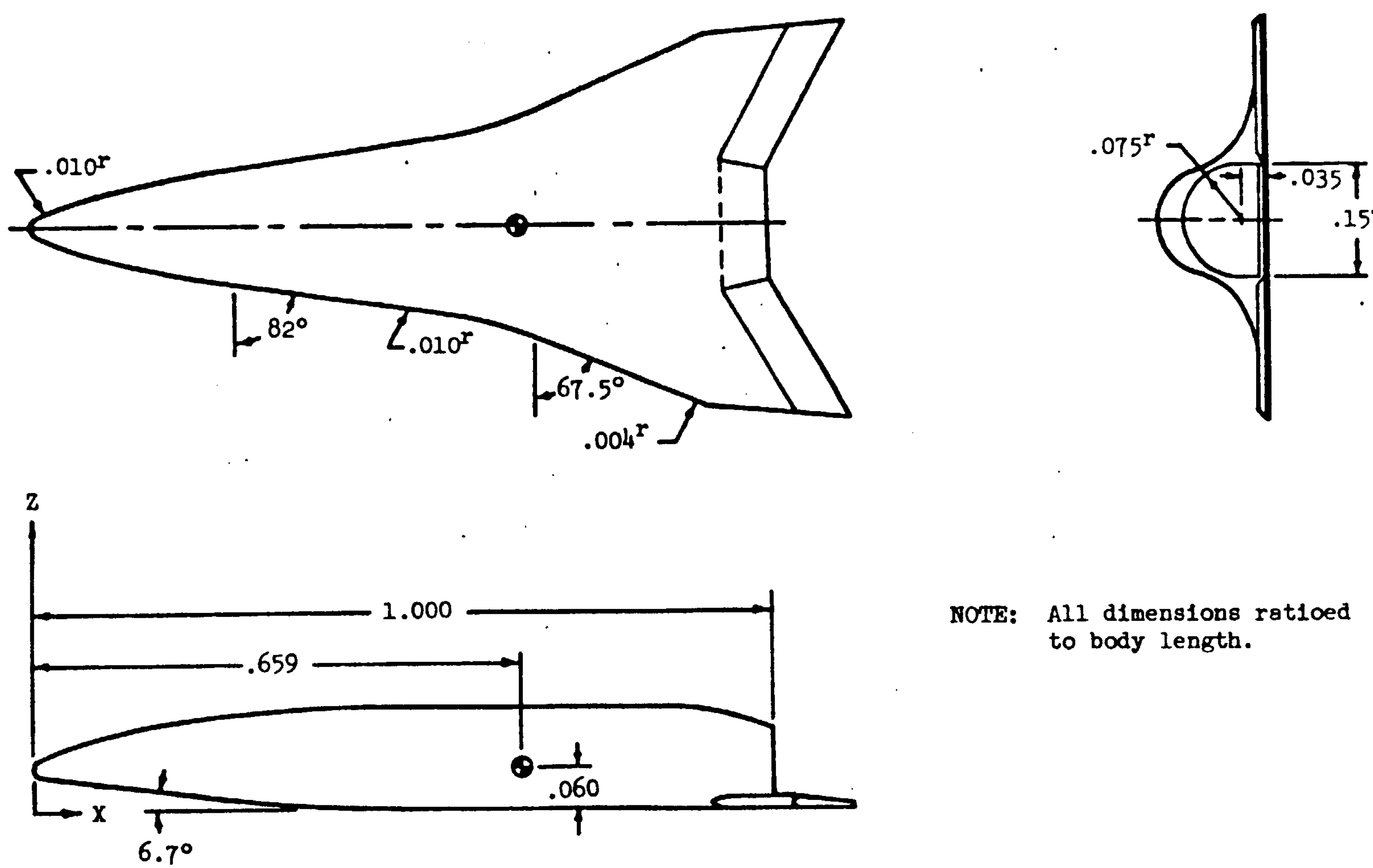
DELTA WING ORBITER
MMC
DR#1059 B-1- 347



NOTE: All dimensions ratioed to body length.

FIGURE 1. Modified Martin orbiter, FR5-2B, without wing tip fins.

NOTE: All dimensions ratioed
to body length.

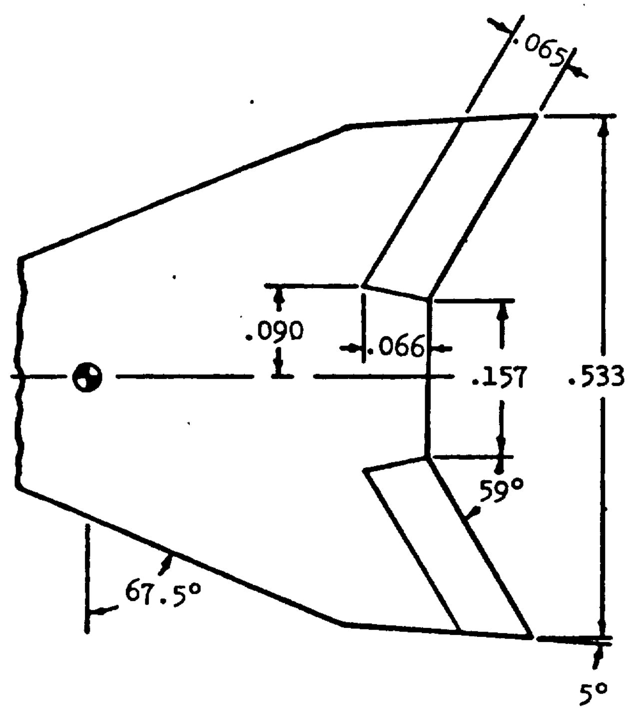


FIGURE 2. Wing W1.

NOTE: All dimensions ratioed to body length.

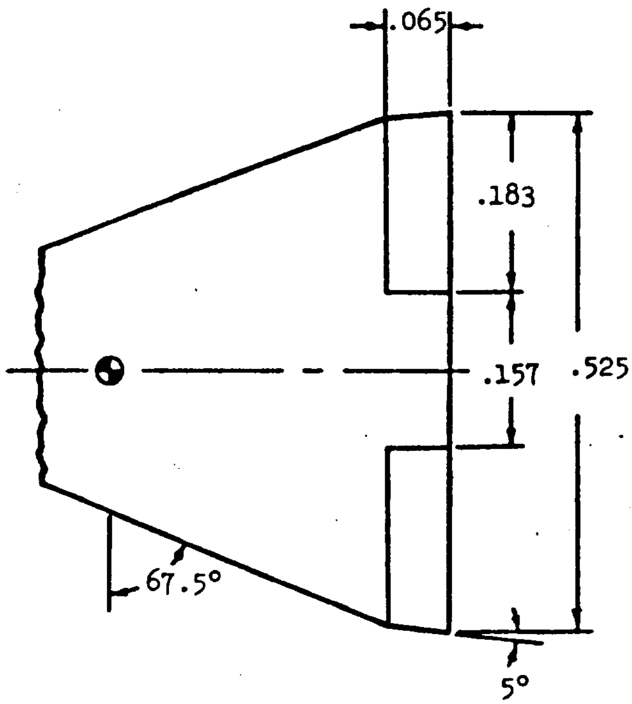


FIGURE 3. Wing W2.

NOTE: All dimensions ratioed to body length.

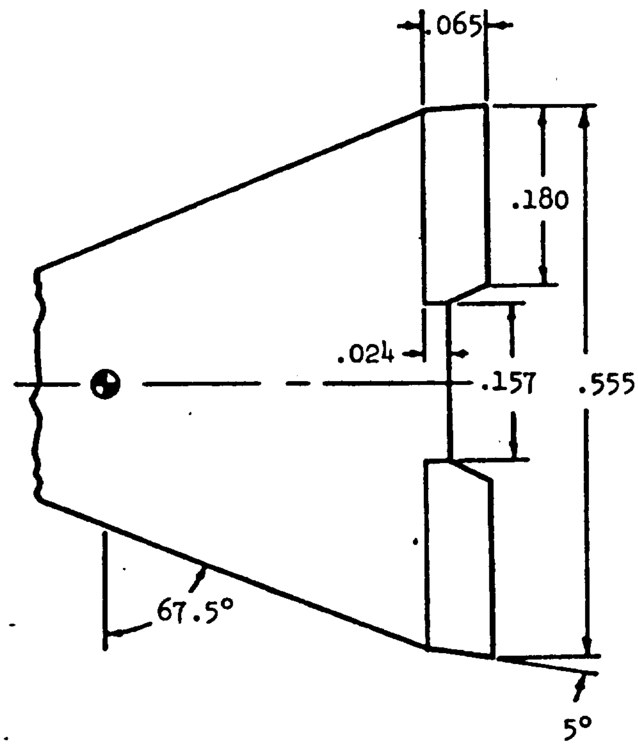


FIGURE 4. Wing W3.

NOTE: All dimensions ratioed
to body length.

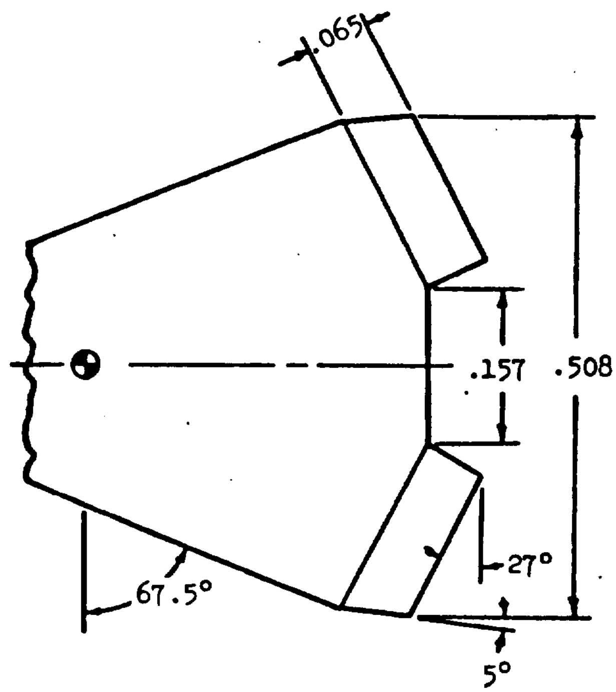


FIGURE 5. Wing W4.

NOTE: All dimensions ratioed to body length.

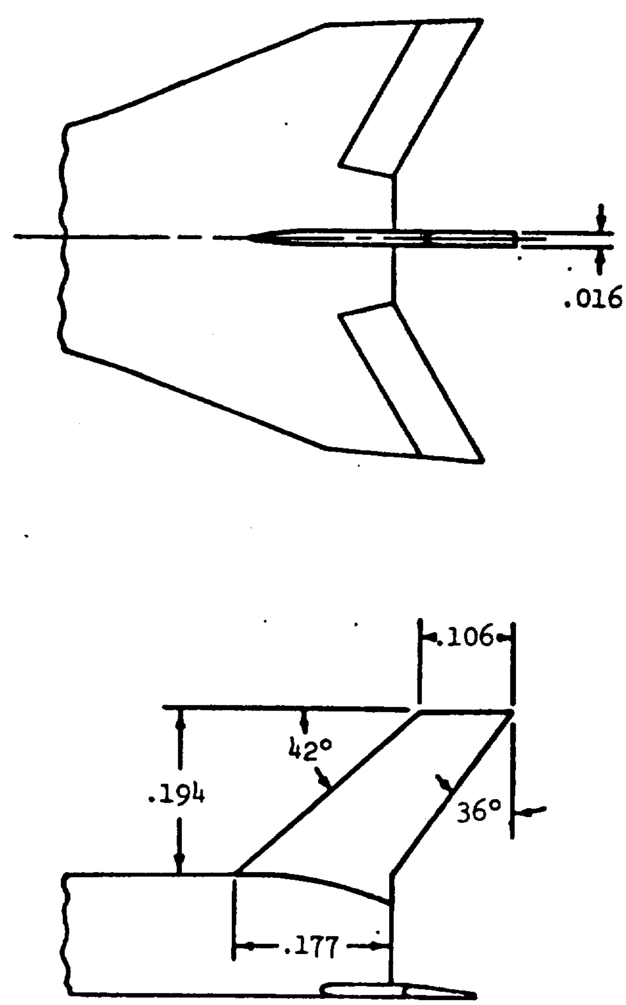


FIGURE 6. Body dorsal fin.

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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.

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