

DATA MANAGEMENT COPY #3

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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 184-58

AMENDMENT 130

MARSHALL

SPACE FLIGHT CENTER

SADSAC SPACE SHUTTLE
AEROTHERMODYNAMIC
DATA MANAGEMENT SYSTEM

FACILITY FORM 602

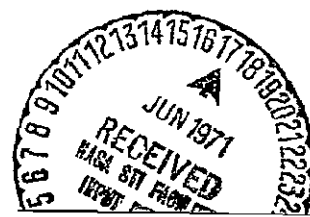
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CHRYSLER
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DMS-DR- 1035
DECEMBER 1970

SADSAC/SPACE SHUTTLE
WIND TUNNEL TEST DATA REPORT

CONFIGURATION: McDonnell Douglas Space Shuttle Booster

TEST PURPOSE: To evaluate the interference effects of the power off jet flap
and a mid-body aerodynamic canard on a high and low wing
booster configuration.

TEST FACILITY: Douglas Long Beach Low Speed Wind Tunnel

TESTING AGENCY: McDonnell Douglas (Western Division)

TEST NO. & DATE: # 1351 - 20 - 28 August 1970

TEST CONDUCTOR(S): C. M. Finch

DATA MANAGEMENT SERVICES

LIAISON: John E. Vaughan DATA OPERATIONS: Albert M. Martin

RELEASE APPROVAL: N. D. Kemp, Supervisor
Aero Thermo Data Group

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TABLE OF CONTENTS

LIST OF FIGURES	iii
ABSTRACT	1
TEST CONDITIONS.	2
DATA REDUCTION.	4
CONFIGURATIONS INVESTIGATED	5
DATA SET COLLATIONS.	22
TEST FACILITY DESCRIPTION	26
TEST NOMENCLATURE	27
FIGURES	35
DATA DISPLAY INDEX	45
DATA	63

LIST OF FIGURES

Figure No.		Page No.
1.	Body (B_1)	8
2.	Booster Wing (W_1) with Elevon (E_1).	10
3.	Aerodynamic Canard (T_1) with Flap (F_2)	13
4.	Jet Flap Canard (J_1).	16
5.	Wing Tip Vertical Fin (V_1) and (V_4).	19
6.	Body Centerline Vertical Fin (V_3)	21
7.	Typical Tunnel Installation.	26
8.	General Arrangement - Configuration $B_1N_1W_1E_1V_1J_1$	36
9.	General Arrangement - Configuration $B_1N_1W_2E_1V_1T_1F_2P_1$	37
10.	Photographs of Configuration $B_1N_1W_1E_1V_1J_1$	38
11.	Photographs of Configuration $B_1N_1W_2E_1V_1T_1F_2P_1$	41
12.	Axis System, Showing Direction and Sense of Force and Moment Coefficients, Angle of Attack and Side Slip Angle	44

LIST OF TABLES

I.	Test Conditions	3
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ABSTRACT

A one-percent scale model of the McDonnell Douglas Corporation Space Shuttle Booster (Configuration 14) was tested in the Long Beach Low Speed Wind Tunnel during the period 20 - 28 August, 1970, with the primary objective of configuration development. Tests were conducted at a Mach number of 0.18 and dynamic pressure of 50 psf over an angle of attack range from -6 to 16 at fixed sideslip angles of 0° and -6° . The test configurations were varied so an evaluation of the interference effects of the power off jet flap on a high and low wing could be made. Similarly tests were conducted to evaluate the interference effects of a mid-wing aero canard on a high wing and low wing configuration.

Plotted data are presented herein.

TEST CONDITIONS

Table I lists the conditions under which data were taken and an estimate of the data accuracy. In addition to the six component force and moment data measured with an internal balance, two balance cavity pressures, two model base pressures and two rocket nozzle base pressures were recorded. The model was sting mounted in the tunnel as shown in Figure 7.

TABLE I. TEST CONDITIONS
TEST DOUGLAS LSWT-1351

MACH NUMBER	REYNOLDS NUMBER per unit length	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
0.18	1.25×10^6	.346	
0.16	1.10×10^6	.278	

BALANCE UTILIZED: DAL NO. 58 - 0.75 Task MK X Mfg. Ser. No. 004160

CAPACITY:

N1 100 LBF
N2 100 LBF
Y1 100 LBF
Y2 100 LBF
FA 50 LBF
RM 40 IN-LBF

ACCURACY:

.5% Max Load
.5% Max Load
.5% Max Load
.5% Max Load
.5% Max Load
.5% Max Load

COEFFICIENT

TOLERANCE:

.02 CN
.0025 CNM
.02 CY
.0021 CYM
.005 CA
.000167 CRL

COMMENTS:

DATA REDUCTION

The six-component balance loads have been reduced to coefficient form using the following reference values:

$$S_{\text{ref}} = \text{reference area} = 1.0 \text{ ft}^2$$

$$l_{\text{ref}} = \text{reference longitudinal length} = 2.0 \text{ ft}$$

$$b_{\text{ref}} = \text{reference lateral length} = 2.0 \text{ ft}$$

Moments are reduced about a reference center of gravity located at the following position:

$$X_{\text{MRP}} = \text{longitudinal moment reference point} = 1.703 \text{ ft (fus. sta.)}$$

$$Y_{\text{MRP}} = \text{lateral moment reference point} = 0.0$$

$$Z_{\text{MRP}} = \text{vertical moment reference point} = 0.0125 \text{ ft (water line)}$$

Base pressures were measured during the test and were converted to base drag which was then subtracted from total measured drag to give a forebody drag. Lift to drag ratios (L/D) have been calculated using the corrected drag values.

CONFIGURATIONS INVESTIGATED

Components and Nomenclature

B1	-	body
W1	-	wing, high position
W2	-	wing, low position
E1	-	elevon
J1	-	jet flap canard
T1	-	aerodynamic canard
F2	-	flap on aerodynamic canard
V1	-	wing tip fins ,
V3	-	center mounted vertical fins
V4	-	cambered wing tip fins
R1	-	rudder for tip fins
R3	-	rudder for center vertical fin
N1	-	rocket engine nozzles
P1	-	engine pods
δ_e	-	wing flap angle
δ_F	-	canard flap angle
δ_{IW}	-	wing incidence angle
δ_{IJ}	-	jet flap canard incidence angle
δ_{IT}	-	aerodynamic canard incidence angle
δ_R	-	rudder deflection angle
Ω	-	tip fin toe-in angle
Λ	-	tip fin roll-out angle

Refer to the immediately following pages for pertinent dimensional data on these components.

Component Combinations Tested

B1N1	-	body + rocket nozzles (basic body)
B1N1T1F2P1	-	basic body + aero canard
B1N1J1	-	basic body + jet flap canard
B1N1W1E1	-	basic body + high wing
B1N1W1E1T1F2P1	-	basic body + high wing + aero canard
B1N1W1E1J1	-	basic body + high wing + jet flap canard
B1N1W1E1V1	-	basic body + high wing + tip fins
B1N1W1E1V1T1F2P1	-	basic body + high wing + tip fins + aero canard
B1N1W1E1V4T1F2P1	-	basic body + high wing + cambered tip fins + aero canard
B1N1W1E1V1J1	-	basic body + high wing + tip fins + jet flap canard
B1N1W1E1V3	-	basic body + high wing + center line vertical fin
B1N1W1E1V3T1F2P1	-	basic body + high wing + center line vertical fin + aero canard
B1N1W2E1	-	basic body + low wing
B1N1W2E1T1F2P	-	basic body + low wing + aero canard
B1N1W2E1J1	-	basic body + low wing + jet flap canard
B1N1W2E1V1	-	basic body + low wing + tip fins
B1N1W2E1V1T1F2P	-	basic body + low wing + tip fins + aero canard
B1N1W2E1V1J1	-	basic body + low wing + tip fins + jet flap canard
B1N1W2E1V3	-	basic body + low wing + center line vertical fin

Refer to the data collation sheet for a complete summary on the test conditions.

MODEL COMPONENT: BODY - (B1)

GENERAL DESCRIPTION: BOOSTER MAIN BODY

DRAWING NUMBER: _____

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE (0.01)</u>
Length	<u>213.58 ft</u>	<u>2.136 ft</u>
Max. Width	<u>34 ft</u>	<u>0.34 ft</u>
Max. Depth	<u>34 ft</u>	<u>0.34 ft</u>
Fineness Ratio	<u>6.28</u>	<u>6.28</u>
Area		
Max. Cross-Sectional	<u>908 ft²</u>	<u>0.0908 ft²</u>
Planform	<u>6 553 ft²</u>	<u>0.6553 ft²</u>
Wetted	<u>19 935 ft²</u>	<u>1.994 ft²</u>
Base	<u>908 ft²</u>	<u>0.0908 ft²</u>

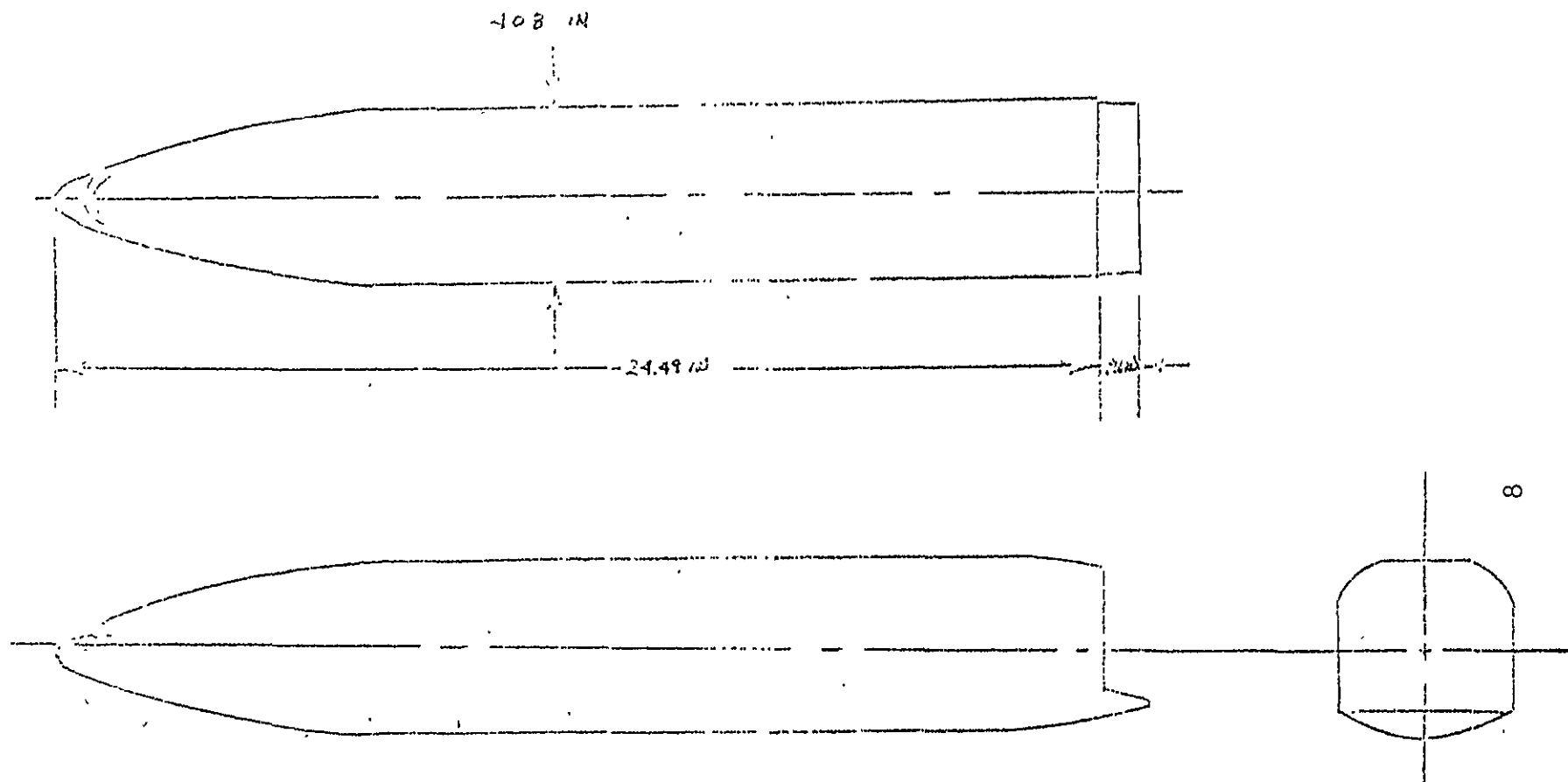


FIGURE 1. BODY (0.01)
B1

MODEL COMPONENT: WING (W1)

GENERAL DESCRIPTION: BOOSTER MAIN WING MOUNTED IN THE HIGH POSITION

DRAWING NUMBER: _____

DIMENSIONS:

FULL-SCALE

MODEL SCALE (0.01)

TOTAL DATA

Area		
Planform	6020 ft ²	.6020 ft ²
Wetted	8810 ft ²	.8810 ft ²
Span (equivalent)	120.67 ft	1.21 ft
Aspect Ratio	2.42	2.42
Rate of Taper	----	----
Taper Ratio	0.547	0.547
Diehedral Angle, degrees	7.67	7.67
Incidence Angle, degrees	3.0	3.0
Aerodynamic Twist, degrees	0.0	0.0
Toe-In Angle	----	----
Cant Angle	----	----
Sweep Back Angles, degrees		
Leading Edge	40°	40°
Trailing Edge	19°	19°
0.25 Element Line	35.75°	35.75°
Chords:		
Root (Wing Sta. 0.0)	64.7 ft	.647 ft
Tip, (equivalent)	35.6 ft	.356 ft
MAC	612 in.	6.12 in.
Fus. Sta. of .25 MAC	2496 in.	24.96 in.
W.P. of .25 MAC	160 in.	1.60 in.
B.L. of .25 MAC	330 in.	3.30 in.
Airfoil Section		
Root	NACA 64A010	NACA 64A010
Tip	NACA 64A010	NACA 64A010

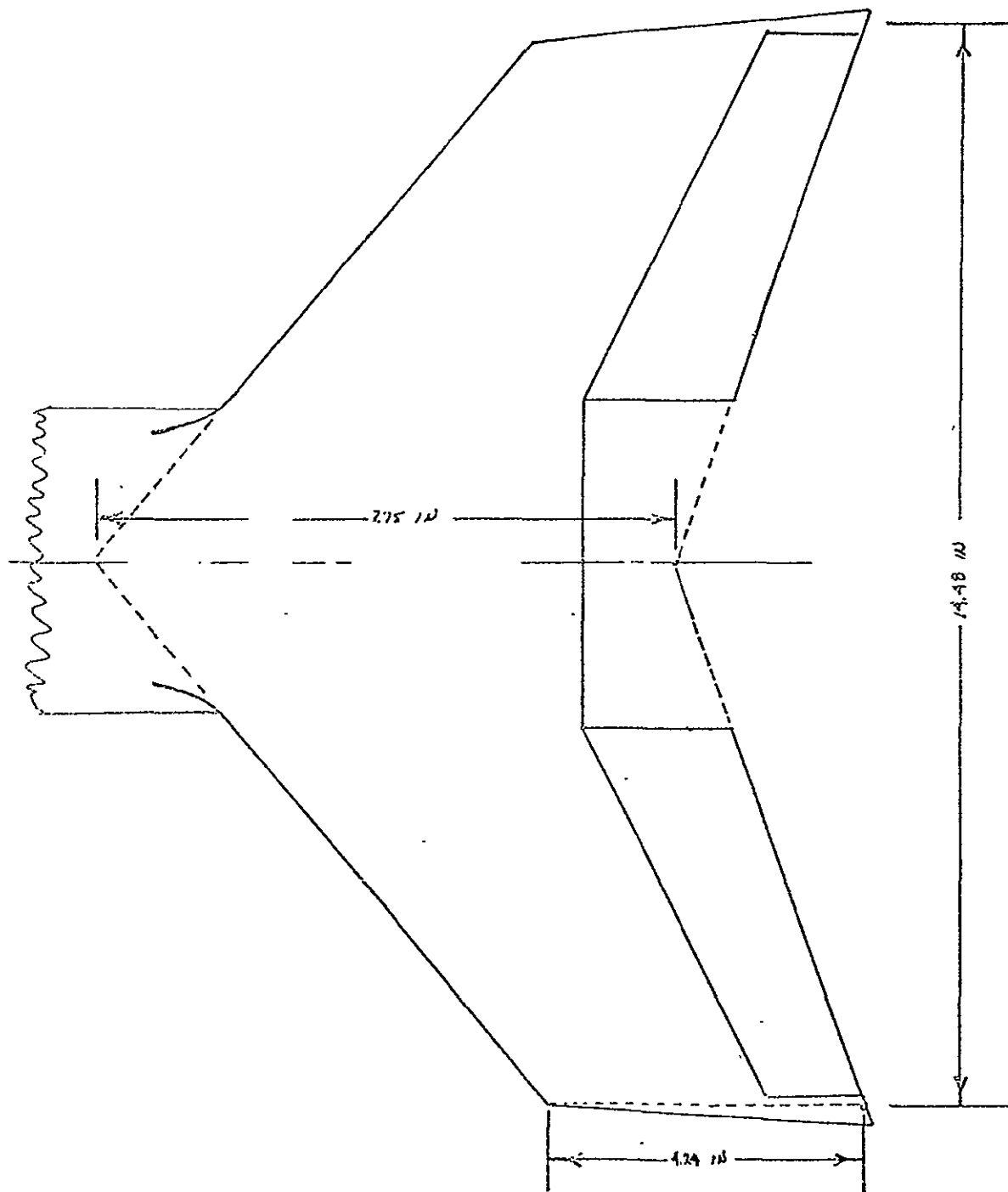
EXPOSED DATA

Area	3920 ft ²	.3920 ft ²
Span, (equivalent)	86.7 ft	.867 ft
Aspect Ratio	1.89	1.89
Taper Ratio	0.632	0.632
Chords		
Root	56.3 ft	.563 ft
Tip	35.6 ft	.356 ft
MAC	45.8 ft	.458 ft
Fus. Sta. of .25 MAC	2627 in.	26.27 in.
W.P. of .25 MAC	175 in.	1.75 in.
B.L. of .25 MAC	458 in.	4.58 in.

BOOSTER WING (0.01)

W1 WING

E1 ELEVON



10

FIGURE 2 BOOSTER WING (W₁) with
ELEVON (E₁)

MODEL COMPONENT: ELEVON (E1)

GENERAL DESCRIPTION: 30% FLAP ON BOOSTER WING

DRAWING NUMBER: _____

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE (0.01)</u>
Area	<u>1098 ft²</u>	<u>.1124 ft²</u>
Span (equivalent)	<u>980 in.</u>	<u>9.80 in.</u>
Inb'd equivalent chord	<u>145 in.</u>	<u>2.00 in.</u>
Outb'd equivalent chord	<u>129 in.</u>	<u>1.29 in.</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>.234</u>	<u>.30</u>
At Outb'd equiv. chord	<u>.30</u>	<u>.30</u>
Sweep Back Angles, degrees		
Leading Edge	<u>26.1°</u>	<u>26.1°</u>
Tailing Edge	<u>19.3°</u>	<u>19.3°</u>
Hingeline	<u>26.1°</u>	<u>26.1°</u>
Area Moment (Normal to hinge line)	<u>5490 ft³</u>	<u>.00562 ft³</u>

MODEL COMPONENT: AERODYNAMIC CANARD (T1)

GENERAL DESCRIPTION: BOOSTER CANARD WITH SWEEP LEADING EDGE AND 20% CHORD
PLAIN FLAP MOUNTED IN MID-BODY POSITION

DRAWING NUMBER: _____

DIMENSIONS:

FULL-SCALE

MODEL SCALE (0.01)

TOTAL DATA

Area		
Planform	<u>1705 ft²</u>	<u>.1705 ft²</u>
Wetted	<u>1330 ft²</u>	<u>.1330 ft²</u>
Span (equivalent)	<u>78.6 ft</u>	<u>.786 ft</u>
Aspect Ratio	<u>4.34</u>	<u>4.34</u>
Rate of Taper	<u>----</u>	<u>----</u>
Taper Ratio	<u>0.229</u>	<u>0.229</u>
Diehedral Angle, degrees	<u>0°</u>	<u>0°</u>
Incidence Angle, degrees	<u>3°</u>	<u>3°</u>
Aerodynamic Twist, degrees	<u>0°</u>	<u>0°</u>
Toe-In Angle	<u>----</u>	<u>----</u>
Cant Angle	<u>----</u>	<u>----</u>
Sweep Back Angles, degrees		
Leading Edge	<u>30°</u>	<u>30°</u>
Trailing Edge	<u>0°</u>	<u>0°</u>
0.25 Element Line	<u>-----</u>	<u>-----</u>
Chords:		
Root (Wing Sta. 0.0)	<u>30 ft</u>	<u>.30 ft</u>
Tip, (equivalent)	<u>7.35 ft</u>	<u>.0735 ft</u>
MAC	<u>268.8 in.</u>	<u>2.688 in.</u>
Fus. Sta. of .25 MAC	<u>1251 in.</u>	<u>12.51 in.</u>
W.P. of .25 MAC	<u>30.0 in.</u>	<u>.30 in.</u>
B.L. of .25 MAC	<u>208.0 in.</u>	<u>2.08 in.</u>
Airfoil Section		
Root	<u>NACA64A009</u>	<u>NACA64A009</u>
Tip	<u>NACA64A009</u>	<u>NACA64A009</u>

EXPOSED DATA

Area	<u>615 ft²</u>	<u>.0615 ft²</u>
Span, (equivalent)	<u>44.6 ft</u>	<u>.446 ft</u>
Aspect Ratio	<u>1.61</u>	<u>1.61</u>
Taper Ratio	<u>0.364</u>	<u>0.364</u>
Chords		
Root	<u>20.2 ft</u>	<u>.202 ft</u>
Tip	<u>7.35 ft</u>	<u>.0735 ft</u>
MAC	<u>177.8 in.</u>	<u>1.778 in.</u>
Fus. Sta. of .25 MAC	<u>1261 in.</u>	<u>12.61 in.</u>
W.P. of .25 MAC	<u>30.0 in.</u>	<u>.300 in.</u>
B.L. of .25 MAC	<u>360.0 in.</u>	<u>3.60 in.</u>

BOOSTER AERODYNAMIC CANARD (2.01)

T1 AERODYNAMIC CANARD

F2 FLAP

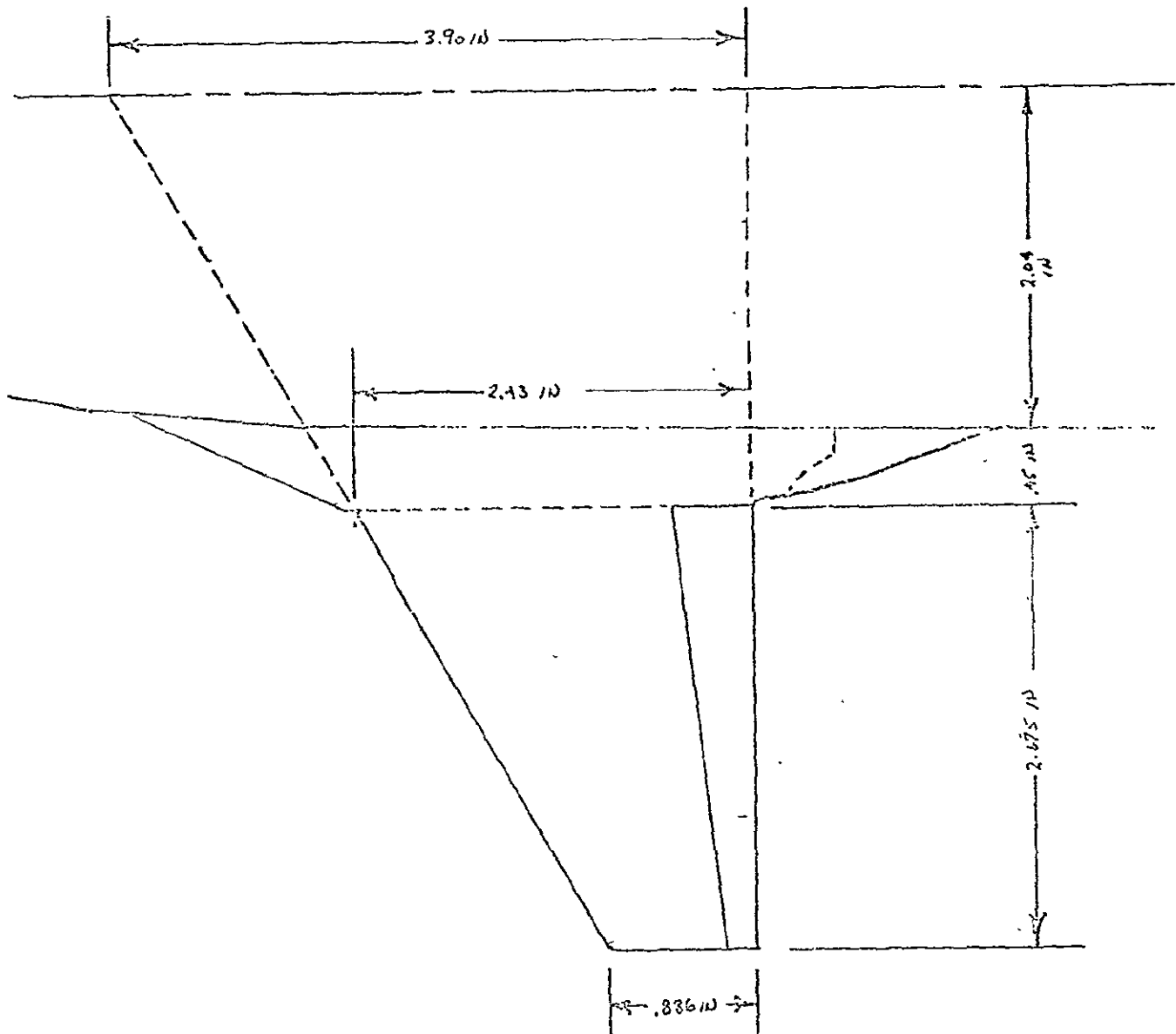


FIGURE 3 AERODYNAMIC CANARD (T₁)
with FLAP (F₂)

MODEL COMPONENT: FLAP (F2)

GENERAL DESCRIPTION: 20% FLAP ON AERODYNAMIC CANARD

DRAWING NUMBER: _____

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE (0.01)</u>
Area	<u>123 ft²</u>	<u>.0123 ft²</u>
Span (equivalent)	<u>535 in.</u>	<u>5.35 in.</u>
Inb'd equivalent chord	<u>48.6 in.</u>	<u>.486 in.</u>
Outb'd equivalent chord	<u>17.72 in.</u>	<u>.177 in.</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>.20</u>	<u>.20</u>
At Outb'd equiv. chord	<u>.20</u>	<u>.20</u>
Sweep Back Angles, degrees		
Leading Edge	<u>6.5°</u>	<u>6.5°</u>
Tailing Edge	<u>0°</u>	<u>0°</u>
Hingeline	<u>6.5°</u>	<u>6.5°</u>
Area Moment (Normal to hinge line)	<u>184.5 ft³</u>	<u>.000185 ft³</u>

MODEL COMPONENT: JET CANARD (J1)

GENERAL DESCRIPTION: BOOSTER RECTANGULAR PLANFORM (NO FLAP) SIMULATED

JET FLAP CANARD

DRAWING NUMBER:

DIMENSIONS:

FULL-SCALE

MODEL SCALE (0.01)

TOTAL DATA

Area		
Planform	<u>1250 ft²</u>	<u>.1250 ft²</u>
Wetted	<u>1760 ft²</u>	<u>.1760 ft²</u>
Span (equivalent)	<u>62.5 ft</u>	<u>.625 ft</u>
Aspect Ratio	<u>3.12</u>	<u>3.12</u>
Rate of Taper	<u>----</u>	<u>----</u>
Taper Ratio	<u>1.0</u>	<u>1.0</u>
Diehedral Angle, degrees	<u>0.0</u>	<u>0.0</u>
Incidence Angle, degrees	<u>3.0</u>	<u>3.0</u>
Aerodynamic Twist, degrees	<u>0.0</u>	<u>0.0</u>
Toe-In Angle	<u>----</u>	<u>----</u>
Cant Angle	<u>----</u>	<u>----</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.0</u>	<u>0.0</u>
Trailing Edge	<u>0.0</u>	<u>0.0</u>
0.25 Element Line	<u>0.0</u>	<u>0.0</u>
Chords:		
Root (Wing Sta. 0.0)	<u>20.0 ft</u>	<u>.20 ft</u>
Tip, (equivalent)	<u>20.0 ft</u>	<u>.20 ft</u>
MAC	<u>20.0 ft</u>	<u>.20 ft</u>
Fus. Sta. of .25 MAC	<u>1069 in.</u>	<u>10.69 in.</u>
W.P. of .25 MAC	<u>-172.5 in.</u>	<u>-1.725 in.</u>
B.L. of .25 MAC	<u>187.8 in.</u>	<u>1.878 in.</u>
Airfoil Section	<u>Front 35% of theoretical 360"</u>	
Root	<u>chord is NACA63-018</u>	
Tip	<u>Same as above</u>	

EXPOSED DATA

Area	<u>863 ft²</u>	<u>.0863 ft²</u>
Span, (equivalent)	<u>34 ft</u>	<u>.34 ft</u>
Aspect Ratio	<u>1.34</u>	<u>1.34</u>
Taper Ratio	<u>1.0</u>	<u>1.0</u>
Chords		
Root	<u>20.0 ft</u>	<u>.20 ft</u>
Tip	<u>20.0 ft</u>	<u>.20 ft</u>
MAC	<u>20.0 ft</u>	<u>.20 ft</u>
Fus. Sta. of .25 MAC	<u>1069 in.</u>	<u>10.69 in.</u>
W.P. of .25 MAC	<u>-172.5 in.</u>	<u>-1.725 in.</u>
B.L. of .25 MAC	<u>289.5 in.</u>	<u>2.895 in.</u>

BOOSTER SIMULATED JET FLAP CANARD
 J1 JET CANARD (0.01)

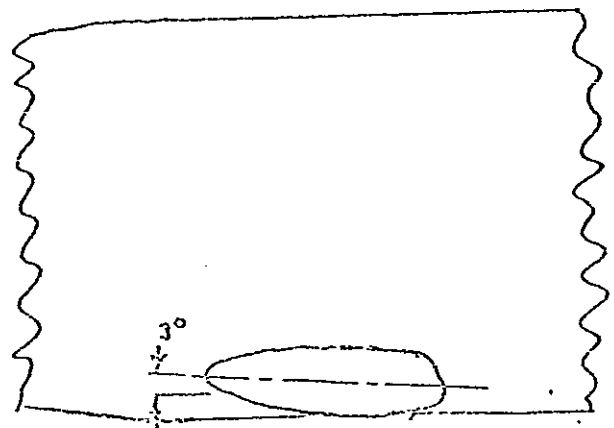
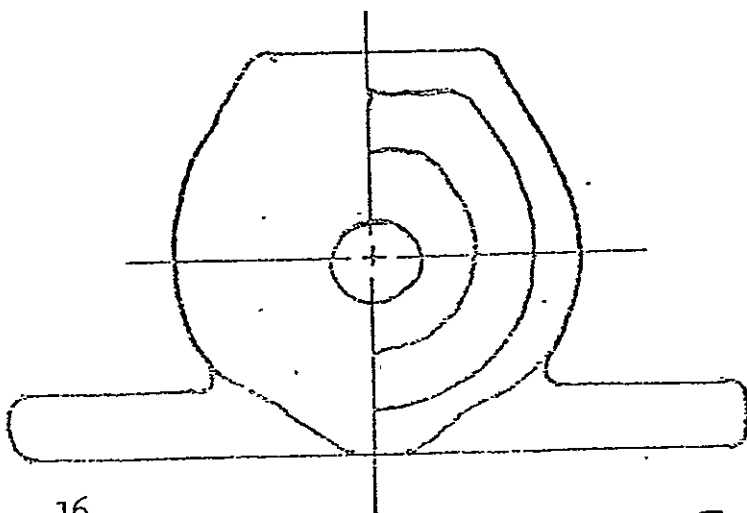
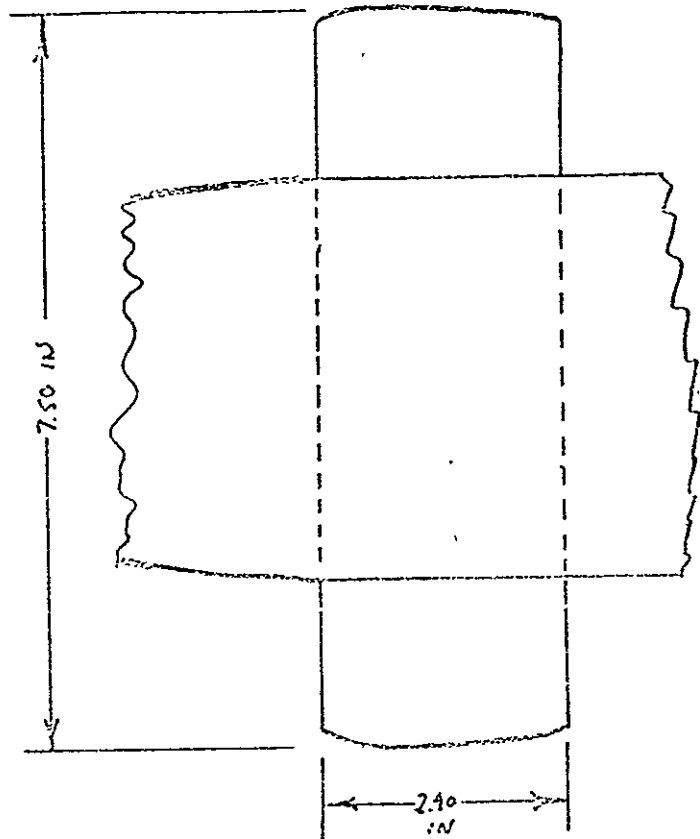


FIGURE 4. JET FLAP CANARD (J₁)

MODEL COMPONENT: VERTICAL (V1)

GENERAL DESCRIPTION: BOOSTER WING TIP VERTICAL

DRAWING NUMBER: _____

DIMENSIONS:

FULL-SCALE

MODEL SCALE (0.01)

TOTAL DATA

Area	<u>1100 ft²</u>	<u>.1100 ft²</u>
Planform	<u>2200 ft²</u>	<u>.220 ft²</u>
Wetted	<u>38.8 ft</u>	<u>.388 ft</u>
Span (equivalent)	<u>1.36</u>	<u>1.36</u>
Aspect Ratio	<u>----</u>	<u>----</u>
Rate of Taper	<u>0.5</u>	<u>0.5</u>
Taper Ratio	<u>----</u>	<u>----</u>
Diehedral Angle, degrees	<u>----</u>	<u>----</u>
Incidence Angle, degrees	<u>0</u>	<u>0</u>
Aerodynamic Twist, degrees	<u>0° and 6°</u>	<u>0° and 6°</u>
Toe-In Angle	<u>25°</u>	<u>25°</u>
Cant Angle		
Sweep Back Angles, degrees	<u>40</u>	<u>40</u>
Leading Edge	<u>19</u>	<u>19</u>
Trailing Edge	<u>35</u>	<u>35</u>
0.25 Element Line		
Chords:		
Root (Wing Sta. 0.0)	<u>37.75 ft</u>	<u>.378 ft</u>
Tip, (equivalent)	<u>18.88 ft</u>	<u>.189 ft</u>
MAC	<u>29.4 ft</u>	<u>.294 ft</u>
Fus. Sta. of .25 MAC	<u>2920 in.</u>	<u>29.2 in.</u>
W.P. of .25 MAC	<u>382 in.</u>	<u>3.82 in.</u>
B.L. of .25 MAC	<u>815 in.</u>	<u>8.15 in.</u>
Airfoil Section		
Root	<u>NACA64A009</u>	<u>NACA64A009</u>
Tip	<u>NACA64A009</u>	<u>NACA64A009</u>

EXPOSED DATA

Area	<u>Same as above</u>	<u>Same as above</u>
Span, (equivalent)	<u>"</u>	<u>"</u>
Aspect Ratio	<u>"</u>	<u>"</u>
Taper Ratio	<u>"</u>	<u>"</u>
Chords		
Root	<u>"</u>	<u>"</u>
Tip	<u>"</u>	<u>"</u>
MAC	<u>"</u>	<u>"</u>
Fus. Sta. of .25 MAC	<u>"</u>	<u>"</u>
W.P. of .25 MAC	<u>"</u>	<u>"</u>
B.L. of .25 MAC	<u>"</u>	<u>"</u>

MODEL COMPONENT: VERTICAL (V4)

GENERAL DESCRIPTION: BOOSTER WING TIP VERTICAL

DRAWING NUMBER: _____

DIMENSIONS:

FULL-SCALE

MODEL SCALE (0.01)

TOTAL DATA

Area

Planform

1100 ft²

.1100 ft²

Wetted

2200 ft²

.220 ft²

Span (equivalent)

38.8 ft

.388 ft

Aspect Ratio

1.36

1.36

Rate of Taper

Taper Ratio

0.5

0.5

Diehedral Angle, degrees

Incidence Angle, degrees

Aerodynamic Twist, degrees

0°

0°

Toe-In Angle

6°

6°

Cant Angle

25°

25°

Sweep Back Angles, degrees

Leading Edge

40

40

Trailing Edge

19

19

0.25 Element Line

35

35

Chords:

Root (Wing Sta. 0.0)

37.75 ft

.378 ft

Tip, (equivalent)

18.88 ft

.189 ft

MAC

29.4 ft

.294 ft

Fus. Sta. of .25 MAC

2920 in.

29.2 in.

W.P. of .25 MAC

382 in.

3.82 in.

B.L. of .25 MAC

815 in.

8.15 in.

Airfoil Section

Root

NACA 4415

NACA 4415

Tip

NACA 4415

NACA 4415

EXPOSED DATA

Area

Same as above

Same as above

Span, (equivalent)

"

"

Aspect Ratio

"

"

Taper Ratio

"

"

Chords

"

"

Root

"

"

Tip

"

"

MAC

"

"

Fus. Sta. of .25 MAC

"

"

W.P. of .25 MAC

"

"

B.L. of .25 MAC

"

"

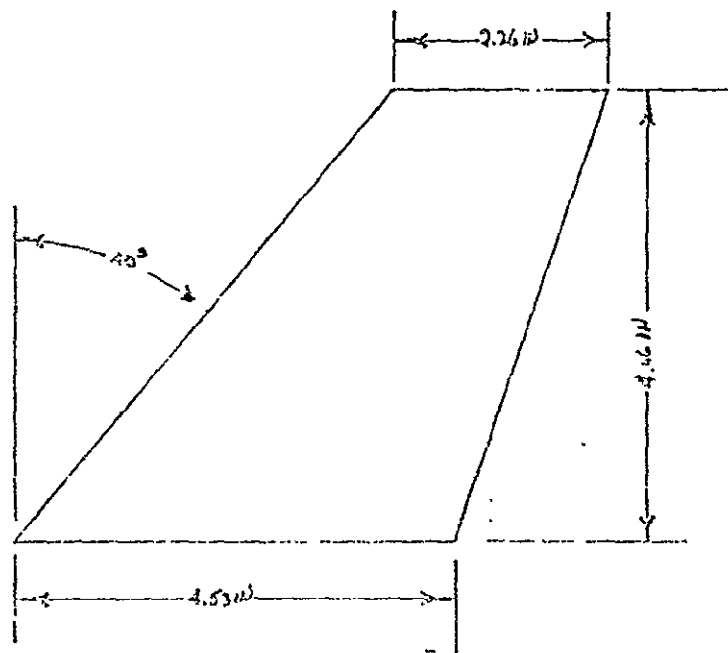
BOOSTER WING TIP VERTICAL (0.01).

V1 VERTICAL

AIRFOIL SECTION: NACA 64A009

V4 VERTICAL

AIRFOIL SECTION: NACA 4415



MODEL COMPONENT: VERTICAL (V3)

GENERAL DESCRIPTION: CENTER VERTICAL FIN

DRAWING NUMBER: _____

DIMENSIONS:

FULL-SCALE

MODEL SCALE (0.01)

TOTAL DATA

Area

Planform

See below

See below

Wetted

Span (equivalent)

2500 ft²

.2500 ft²

Aspect Ratio

"

"

Rate of Taper

"

"

Taper Ratio

"

"

Diehedral Angle, degrees

-

-

Incidence Angle, degrees

-

-

Aerodynamic Twist, degrees

0

0

Toe-In Angle

-

-

Cant Angle

-

-

Sweep Back Angles, degrees

Leading Edge

49°

49°

Trailing Edge

32°

32°

0.25 Element Line

45°

Chords:

Root (Wing Sta. 0.0)

See below

See below

Tip, (equivalent)

"

"

MAC

"

"

Fus. Sta. of .25 MAC

"

"

W.P. of .25 MAC

"

"

B.L. of .25 MAC

"

"

Airfoil Section

Root

NACA 0009

NACA 0009

Tip

NACA 0009

NACA 0009

EXPOSED DATA

Area

1245 ft²

.1245 ft²

Span, (equivalent)

530 in.

5.30 in.

Aspect Ratio

1.57

1.57

Taper Ratio

.456

.456

Chords

Root

465 in.

4.65 in.

Tip

212 in.

2.12 in.

MAC

355 in.

3.55 in.

Fus. Sta. of .25 MAC

2583 in.

25.83 in.

W.P. of .25 MAC

440 in.

4.40 in.

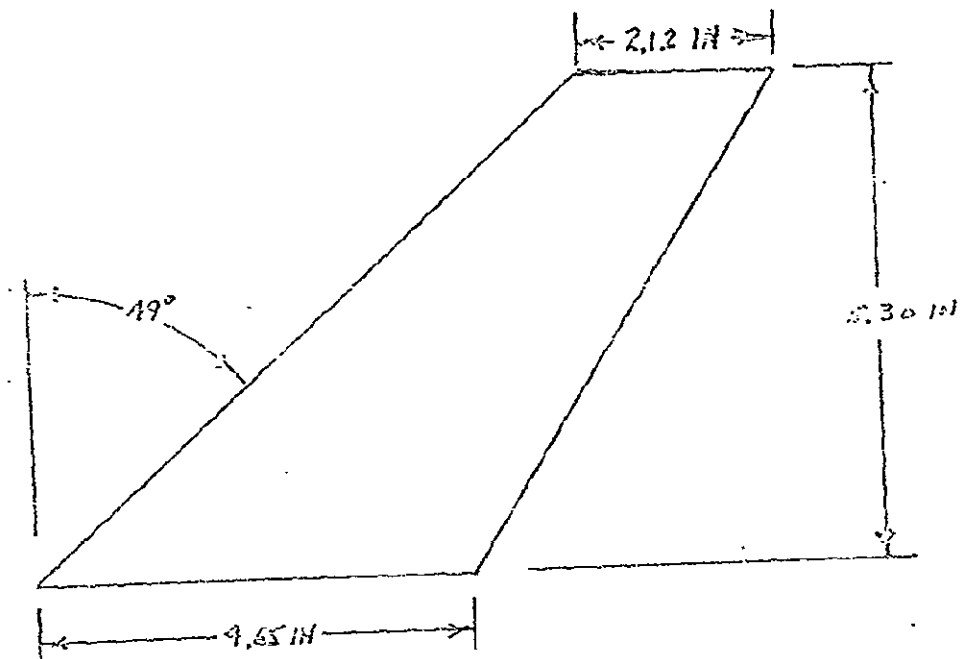
B.L. of .25 MAC

0.0

0.0

BOOSTER CENTER VERTICAL FIN (0.01)

V3 VERTICAL
CENTER VERTICAL FIN



TEST MDAC-W, LSWT/35 DATA SET COLLATION SHEET

SHEET 1 of 4

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)									
		α	β	δ_e	δ_f	Ω	Λ		S_{IN}	S_{IJ}	S_{IT}	S_a			0.16	0.18		
RCC 068	BINI	A	0	-	-	-	-		-	-	-	-				9		
069	↓		-6	-	-	-	-		-	-	-	-				10		
064	BINITIF2PI		0	-	0	-	-		-	-	3	-				26		
065	↓		-6	-	0	-	-		-	-	↓	-				27		
066	↓		0	-	20	-	-		-	-	↓	-				42		
067	↓		0	-	40	-	-		-	-	↓	-				43		
062	BINIJI		0	-	-	-	-		-	3	-	-				12		
063	↓		-6	-	-	-	-		-	3	-	-				11		
058	BINIWIEI		0	0	-	-	-		3	-	-	0				8		
059	↓		-6	0	-	-	-		↓	-	-	↓				7		22
052	BINIWIEITIF2PI		0	0	0	-	-		↓	-	3	↓				29		
053	↓		-6	↓	0	-	-		↓	-	3	↓				28		
050	BINIWIEIJI		0	↓	-	-	-		↓	3	-	↓				5		
051	↓		-6	↓	-	-	-		↓	3	-	↓				6		
033	BINIWIEIVI		0	↓	-	6	25		↓	-	-	↓				33		
034	↓		-6	↓	-	↓	↓		↓	-	-	↓				32		
035	↓		0	-15	-	↓	↓		↓	-	-	↓				36		
036	↓		0	-30	-	↓	↓		↓	-	-	↓				34		
037	↓		0	15	-	↓	↓		↓	-	-	↓				35		

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CN	CLM	CY	CYN	CRL	CA	CAF	CLF	CDF	L/D				

COEFFICIENTS:

α or β
SCHEDULES

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

Ω FIN TOE-IN ANGLE
 Λ FIN ROLL OUT ANGLE

NASA-MSFC-MAF

TEST MDAC-W, LSWT 1351 DATA SET COLLATION SHEET

SHEET 2 of 4

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)									
		α	β	δ_e	δ_f	Ω	Λ		δ_{IW}	δ_{IT}	δ_{IT}	δ_a			0.16	0.18		
RCC 005	BINIWIEIVTIF2PI	A	0	0	0	6	25		3	-	3	0				30		
006			-6	0	0					-		0				31		
007			0	0	40					-		0				53		
008			0	0	0					-		15			66			
009			0	-15	0					-		0				39		
010			0	-15	20					-						38		
011			0	-15	40					-						37		
012			0	-30	0					-						54		
013			0	15	0					-						40		
014			0	0	0	0				-						64		23
015			-6	0	0	0				-						65		
016			0	-15	0	0				-						71		
017	BINIWIEIV4TIF2PI		0	0	0	6				-						59		
018			-6	0	0					-						60		
001	BINIWIEIVIJI		0	0	-					3	-					2		
002			-6	0	-						-					1		
003			0	-15	-						-					4		
004			0	-30	-						-					3		
046	BINIWIEIV3		0	0	-	-	-			-	-					58		
047			-6	0	-	-	-			-	-					57		

1 7 13 19 25 31 37 43 49 55 61 67 75 76
 CN CLM CY CYN CRL CA CAF CLF CDF L/D

COEFFICIENTS:

α or β

SCHEDULES

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

Ω FIN TOE-IN ANGLE

Λ FIN ROLL OUT ANGLE

NASA-MSFC-MAF

TEST MDAC-W, LSWT 1351 DATA SET COLLATION SHEET

SHEET 3 of 4

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)									
		α	β	δ_e	δ_F	Ω	Λ		δ_{IW}	δ_{IS}	δ_{IT}	δ_a			0.16	0.18		
RCC 043	BINIW2E1V3TIF2PI	A	0	0	0	-	-		3	-	3	0				62		
↓ 044	↓	↓	-6	0	0	-	-		↓	-	↓	↓				61		
↓ 045	↓	↓	0	-15	0	-	-		↓	-	↓	↓				63		
RCC 060	BINIW2E1	A	0	0	-	-	-		3	-	-	0				22		
↓ 061	↓	↓	-6	0	-	-	-		↓	-	-	↓				23		
056	BINIW2E1TIF2PI		0	0	0	-	-		↓	-	3	↓				25		
↓ 057	↓	↓	-6	0	0	-	-		↓	-	3	↓				24		
054	BINIW2E1J1		0	0	-	-	-		↓	3	-	↓				13		42
↓ 055	↓	↓	-6	0	-	-	-		↓	3	-	↓				14		
038	BINIW2E1V1		0	0	-	6	25		↓	-	-	↓				21		
↓ 039	↓	↓	-6	0	-	↓	↓		↓	-	-	↓				20		
040	↓		0	-15	-	↓	↓		↓	-	-	↓				51		
↓ 041	↓	↓	0	-30	-	↓	↓		↓	-	-	↓				49		
↓ 042	↓	↓	0	15	-	↓	↓		↓	-	-	↓				50		
019	BINIW2E1V1J1		0	0	-	↓	↓		↓	3	-	↓				16		
↓ 020	↓	↓	-6	0	-	↓	↓		↓	3	-	↓				15		
↓ 021	↓	↓	0	-15	-	↓	↓		↓	3	-	↓				17		

1 7 13 19 25 31 37 43 49 55 61 67 75 76
 CN CLM CY CYN CRL CA CAF CLF CDF L/D

COEFFICIENTS:

α or β
 SCHEDULES

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

Ω FIN TOE-IN ANGLE

Λ FIN ROLL-OUT ANGLE

NASA-MSFC-MAF

TEST MDAC-W, LSWT 1351 DATA SET COLLATION SHEET

SHEET 4 of 4

☐ PRETEST

☒ POSTTEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. of RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)									
		α	β	δ_e	δ_F	Ω	Λ		δ_{IW}	δ_{IS}	δ_{IT}	δ_a			0.16	0.18		
RCC022	BINIW2EIVITIF2PI	A	0	0	0	6	25		3	-	3	0				18		
023			-6	0	0					-						19		
024			0	-15	0					-						46		
025			0	-15	20					-						45		
026			0	-15	40					-						44		
027			0	-30	0					-						48		
028			0	15	0					-						47		
029			0	0	0	0				-						67		
030			-6	0	0					-						68		
031			0	-15	0					-						70		25
032			-6	-15	0					-						69		
048	BINIW2EIV3		0	0	-	-	-			-	-					55		
049			-6	0	-	-	-			-	-					56		

1	7	13	19	25	31	37	43	49	55	61	67	75	76
CN	CLM	CY	CYN	CRL	CA	CAF	CLF	CDF	L/D				

COEFFICIENTS:

α or β
SCHEDULES

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

Ω FIN TOE-IN ANGLE

Λ FIN ROLL-OUT ANGLE

NASA-MSFC-MAF

TEST FACILITY DESCRIPTION

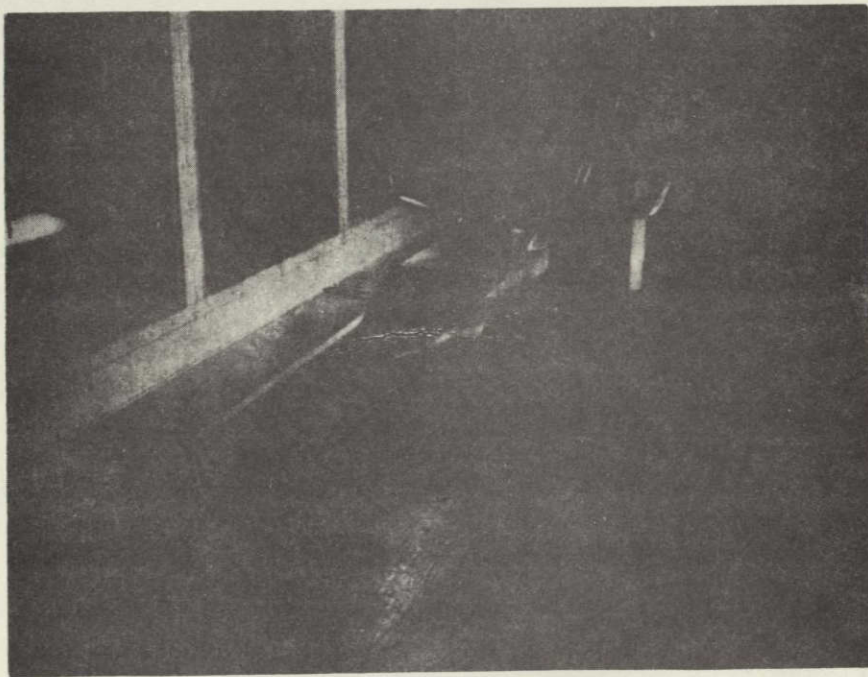
Long Beach Low Speed Wind Tunnel

The DAC-Long Beach Low Speed Wind Tunnel is a convention 3 ft X 5 ft return flow low speed tunnel.

The tunnel is capable of operating up to a dynamic pressure of 60 psf and a test section mach number of .20.

The tunnel has an on-line analog to digital converter with direct read out and card punching capabilities. In addition to forces and moments, the tunnel has extensive pressure measuring capabilities using pressure transducers and manometers.

The photograph below illustrates the test section and sting mount used in the present test.



NOT REPRODUCIBLE

FIGURE 7. TYPICAL TUNNEL INSTALLATION

NOMENCLATURE

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
A_b		base area; m^2 , ft^2 , in^2
a		speed of sound; m/sec, ft/sec
AR	ASPECT	aspect ratio, b^2/S
b	REFB	wing span or reference span; m, ft, in
c		wing chord; m, ft, in
$\bar{c}$		wing mean aerodynamic chord or reference chord; m, ft, in (see ℓ_{ref} or refl)
c.g.		center of gravity
C.P.		center of pressure
C_A	CA	axial force coefficient, F_A/qS_{ref}
C_{A_b}	CAB	base axial force coefficient, $[(p_\infty - p_b)/q] (A_b/S_{ref})$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_D	CDTOTL	drag force coefficient in the wind axis system, $F_D/q S_{ref}$

NOMENCLATURE (continued)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
C'_D	CD	drag force coefficient in the stability axis system, $F'_D/q S_{ref}$
C_L	CL	lift force coefficient (stability or wind axis) $F_L/q S_{ref}$
C_l	CBL	rolling moment coefficient in body axis system, $M_x/q S_{ref} b$
$C_{l,s}$	CSL	rolling moment coefficient in the stability axis system, $M_{x,s}/q S_{ref} b$
$C_{l,w}$	CWL	rolling moment coefficient in the wind axis system, $M_{x,w}/q S_{ref} b$
C_m	CLM	pitching moment coefficient in the body axis system, $M_y/q S_{ref} \ell_{ref}$
$C_{m,s}$	CLM	pitching moment coefficient in the stability axis system, $C_{m,s} = C_m$
$C_{m,w}$	CPM	pitching moment coefficient in the wind axis system, $M_{y,w}/q S_{ref} \ell_{ref}$
C_N	CN	normal force coefficient in the body axis system, $F_N/q S_{ref}$

NOMENCLATURE (continued)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
C_n	CYN	yawing moment coefficient in the body axis system, $M_z/q S_{ref} b$
$C_{n,s}$	CLN	yawing moment coefficient in the stability axis system, $C_{n,s} = C_n$
$C_{n,w}$	CLN	yawing moment coefficient in the wind axis system, $M_{z,w}/q S_{ref} b$
C_p	CP	pressure coefficient, $(p-p_\infty)/q$
C_y	CY	side force coefficient (body or stability axis system), $F_y/q S_{ref}$
C_c	CC	side force coefficient (wind axis system), $F_y/q S_{ref}$
F_A		axial force; N, lb
F_D		drag force in wind axis system; N, lb
F'_D		drag force in the stability axis system; N, lb
F_L		lift force (stability or wind axis system); N, lb
F_N		normal force; N, lb

NOMENCLATURE (continued)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
F_Y		side force; N, lb
	N/A	normal to axial force ratio
ℓ_{ref}	REFL	reference length; m, ft, in (see $\bar{c}$)
L/D	L/D	lift-to-drag ratio, C_L/C_D (stability axis system)
L/D	CL/CD	lift-to-drag ratio, C_L/C_D (wind axis system)
M	MACH	Mach number
MRP	MRP	abbreviation for moment reference point
	XMRP	abbreviation for moment reference point on x-axis
	YMRP	abbreviation for moment reference point on y-axis
	ZMRP	abbreviation for moment reference point on z-axis
M_x		rolling moment in the body axis system; N-m, ft-lb
$M_{x,s}$		rolling moment in the stability axis system; N-m, ft-lb

NOMENCLATURE (continued)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
$M_{x,w}$		rolling moment in the wind axis system; N-m, ft-lb
M_y		pitching moment in the body (or stability) axis system; N-m, ft-lb
$M_{y,w}$		pitching moment in the wind axis system; N-m, ft-lb
M_z		yawing moment in the body axis system; N-m, ft-lb
$M_{z,w}$		yawing moment in the wind axis system; N-m, ft-lb
p		static pressure; N/m ² ; psi
P		total pressure; N/m ² ; psi
q	Q(PSI) Q(PSF)	dynamic pressure; N/m ² , psi, psf
RN/L	RN/L	Reynold's number per unit length; million/ft.
S		wing area; m ² , ft ²
S _{ref}	REFS	reference area; m ² , ft ²
T		temperature; °K, °C, °R, °F
V		speed of vehicle relative to surrounding atmosphere; m/sec, ft/sec

NOMENCLATURE (continued)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
i_T		tail incidence positive when trailing edge down, deg
$\bar{V}$		velocity of vehicle relative to surrounding atmosphere; m/sec, ft/sec
α	ALPHA	angle of attack, angle between the projection of the wind X_W -axis on the body X, Z-plane and the body X-axis; deg
β	BETA	sideslip angle, angle between the wind X_W -axis and the projection of this axis on the body X-Z-plane; deg
γ		ratio of specific heats
Γ	DIHDRL	wing dihedral angle; deg
δ	—	control surface deflection angle; deg
		positive deflections are:
	AILRON	aileron - left aileron trailing edge down
	ELVATR	elevator - trailing edge down
	RUDDER	rudder - trailing edge to the left
	FLAP	flap - trailing edge down
	TAB	tab - trailing edge down with respect to control surface
ρ		air density; K_g/m^3 , slugs/ft ³

NOMENCLATURE (continued)

<u>SYMBOL</u>	<u>SADSAC SYMBOL</u>	<u>DEFINITION</u>
θ		pitch angle, angle of rotation about the body Y-axis, positive when the positive Z-axis is rotated toward the positive X-axis; deg
ϕ	PHI	roll angle, angle of rotation about the body X-axis, positive when the positive Y-axis is rotated toward the positive Z-axis; deg
ψ	PSI	yaw angle, angle of rotation about the body Z-axis, positive when the positive X-axis is rotated toward the positive Y-axis; deg

NOMENCLATURE (continued)

<u>SUBSCRIPTS</u>	<u>DEFINITION</u>
a	aileron
b	base
c	canard
e	elevator or elevon
f	flap
r	rudder or ruddervator
s	stability axis system
t	tail, or total conditions
w	wind axis system
ref	reference conditions
∞	freestream condition

FIGURES

NOT REPRODUCIBLE

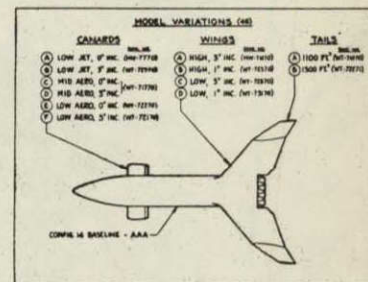
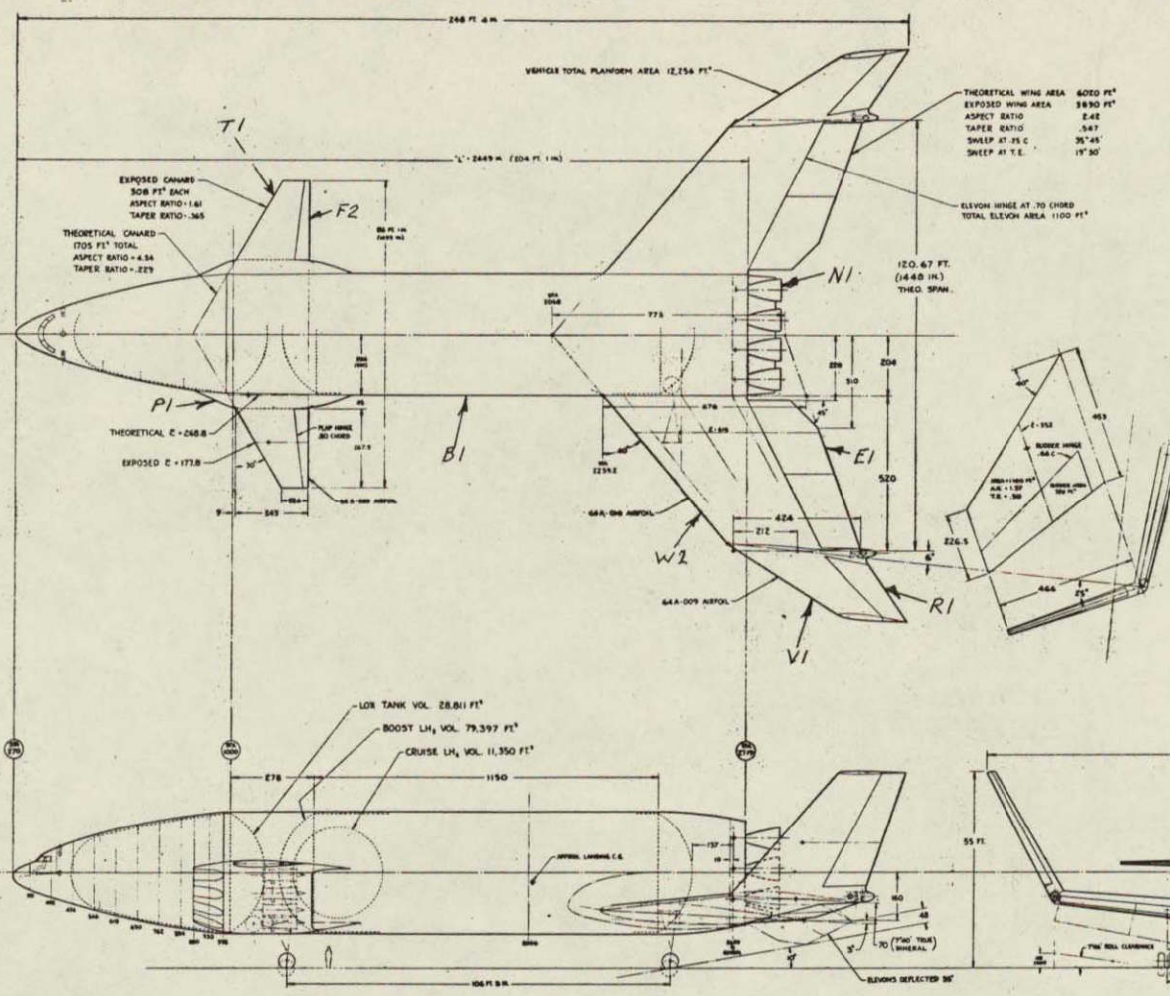


FIGURE 9.
 GENERAL ARRANGEMENT
 MODEL 25A-1000 BOOSTER
 B, N, W, E, V, T, F, P

WT-92970



FIGURE 10. (a) $B_1N_1W_1E_1V_1J_1$ (SIDE VIEW)
MDC(WD) SPACE SHUTTLE 1% BOOSTER SCALE MODEL JET FLAP CANARD HIGH WING CONFIGURATION

NOT REPRODUCIBLE

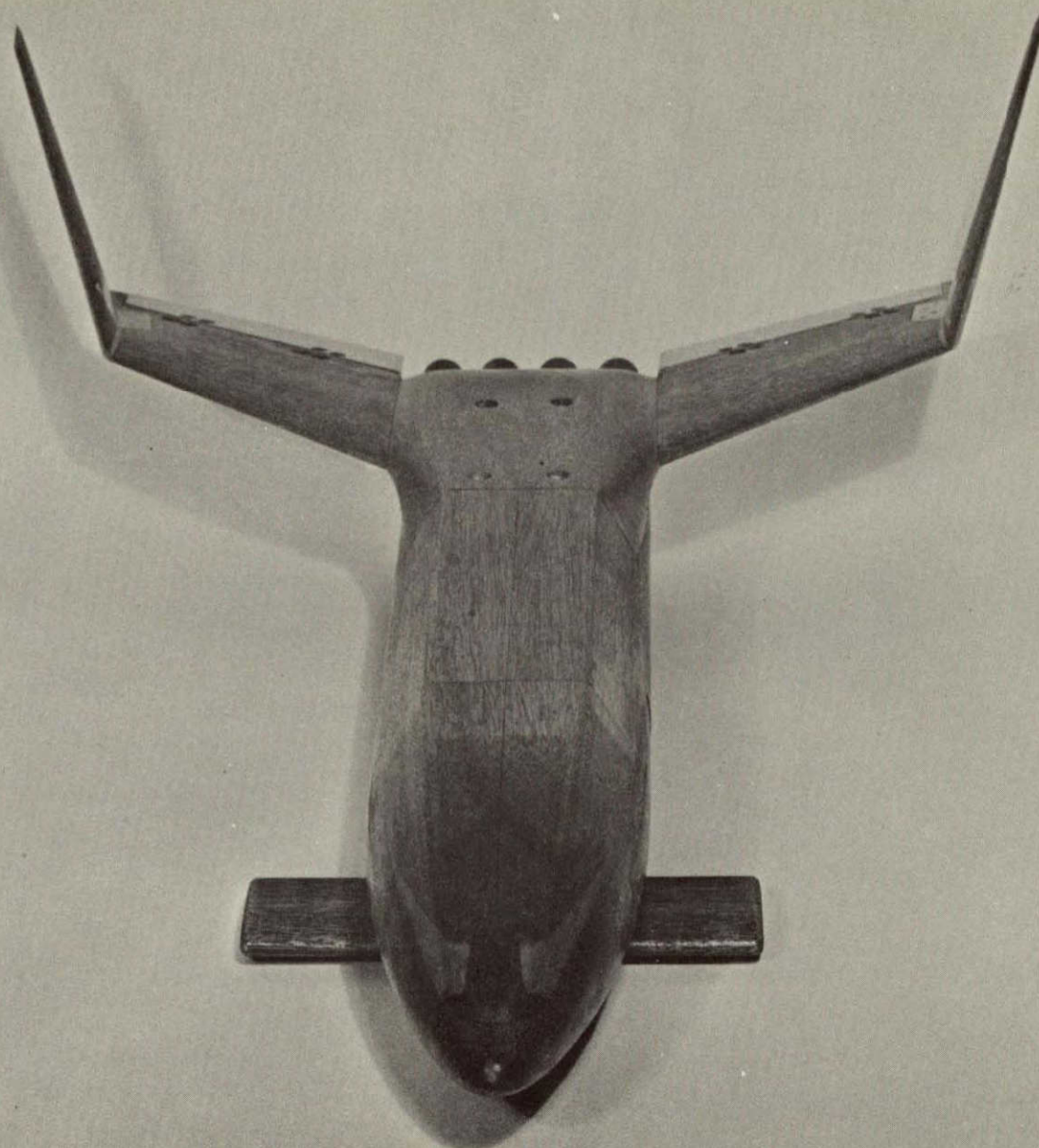


FIGURE 10. (b) $B_1N_1W_1E_1V_1J_1$ (FRONT VIEW)

MDC(WD) SPACE SHUTTLE 1% BOOSTER SCALE MODEL JET FLAP CANARD HIGH WING CONFIGURATION

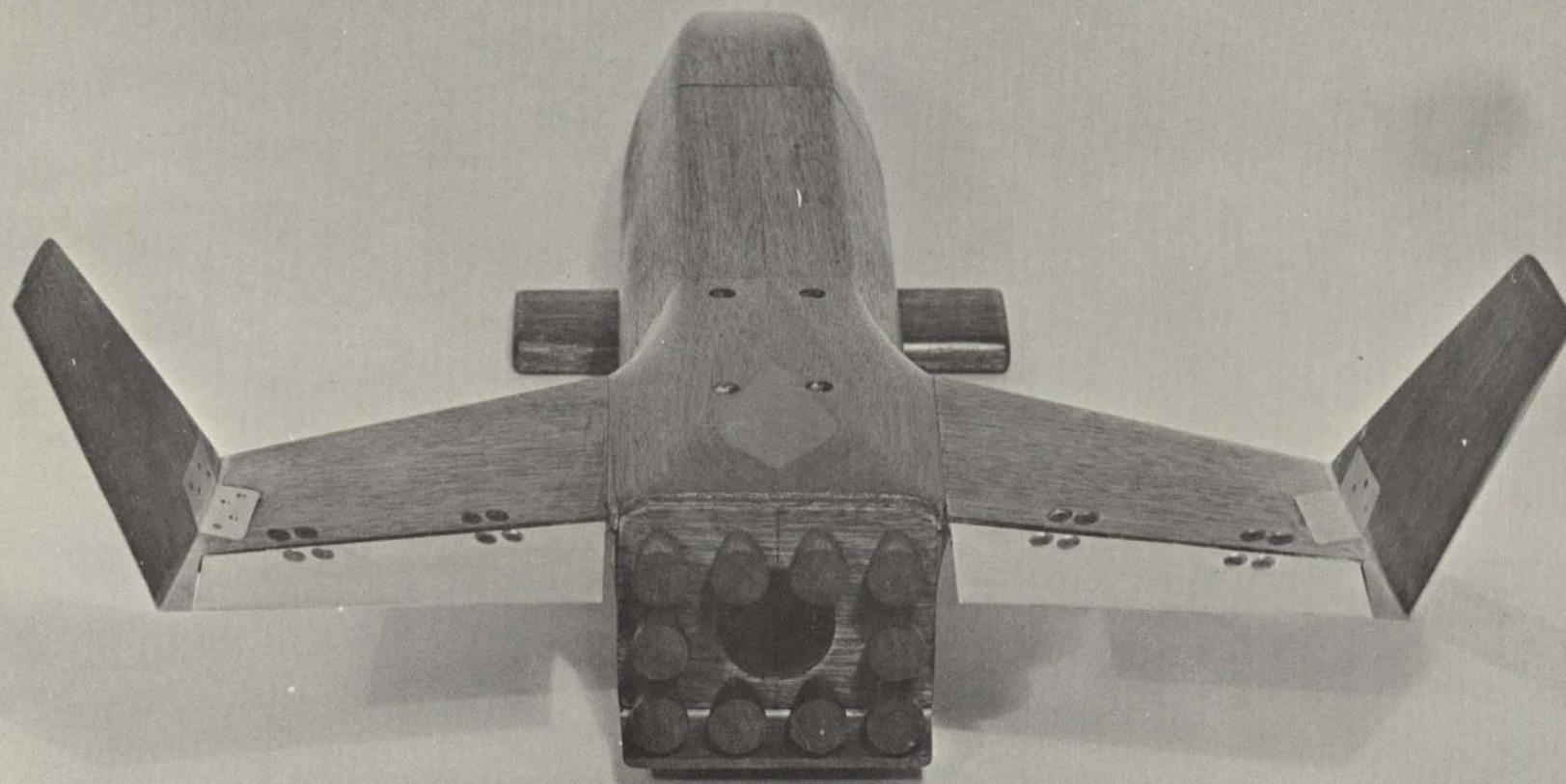


FIGURE 10. (c) $B_1N_1W_1E_1V_1J_1$ (REAR VIEW)

MDC(WD) SPACE SHUTTLE 1% BOOSTER SCALE MODEL JET FLAP CANARD HIGH WING CONFIGURATION

NOT REPRODUCIBLE



41

FIGURE 11. (a) $B_1N_1W_2E_1V_1T_1F_2P_1$ (SIDE VIEW)

MDC(WD) SPACE SHUTTLE 1% BOOSTER SCALE MODEL AERODYNAMIC CANARD LOW WING CONFIGURATION

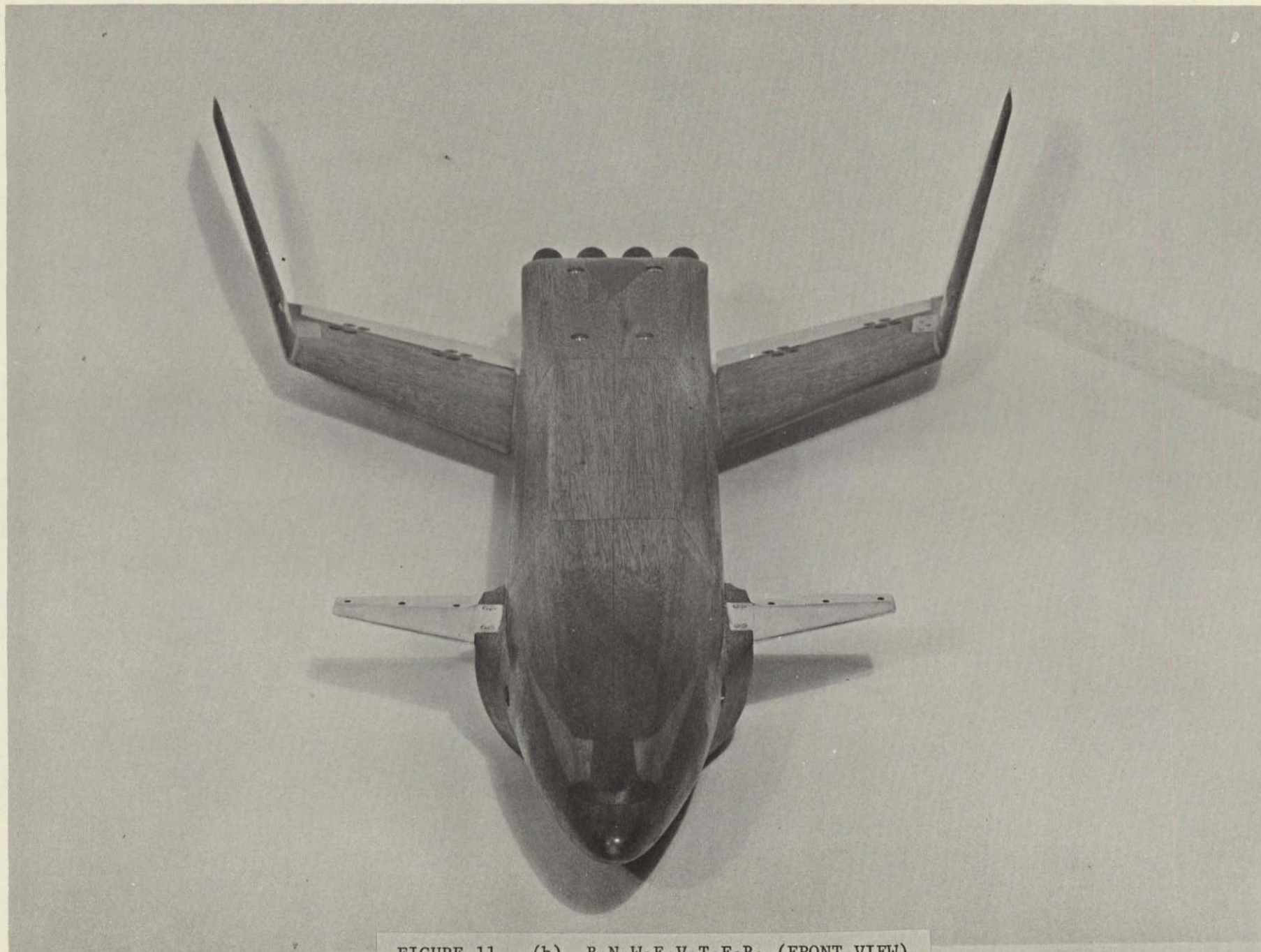


FIGURE 11. (b) $B_1N_1W_2E_1V_1T_1F_2P_1$ (FRONT VIEW)

MDC(WD) SPACE SHUTTLE 1% BOOSTER SCALE MODEL AERODYNAMIC CANARD LOW WING CONFIGURATION

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.

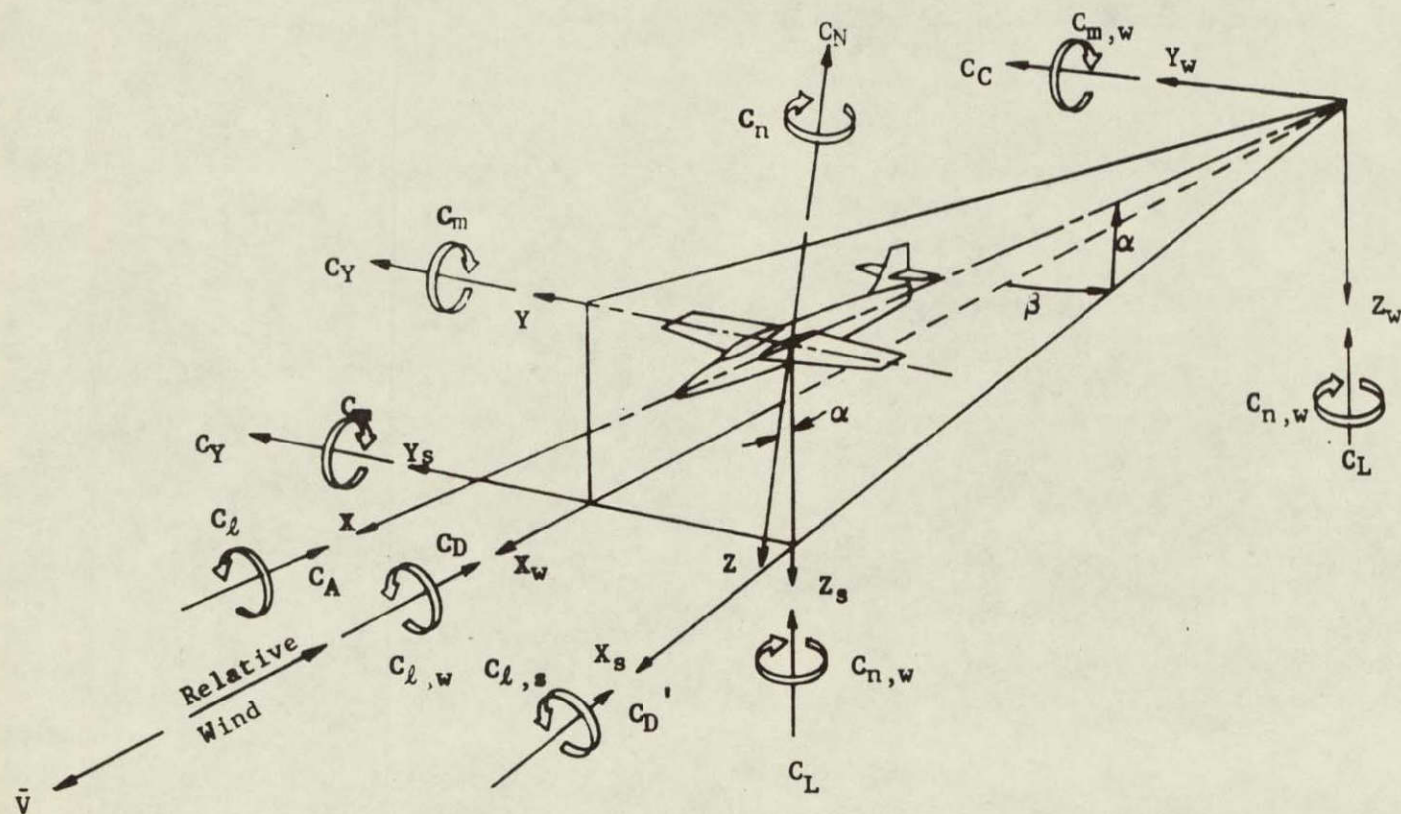
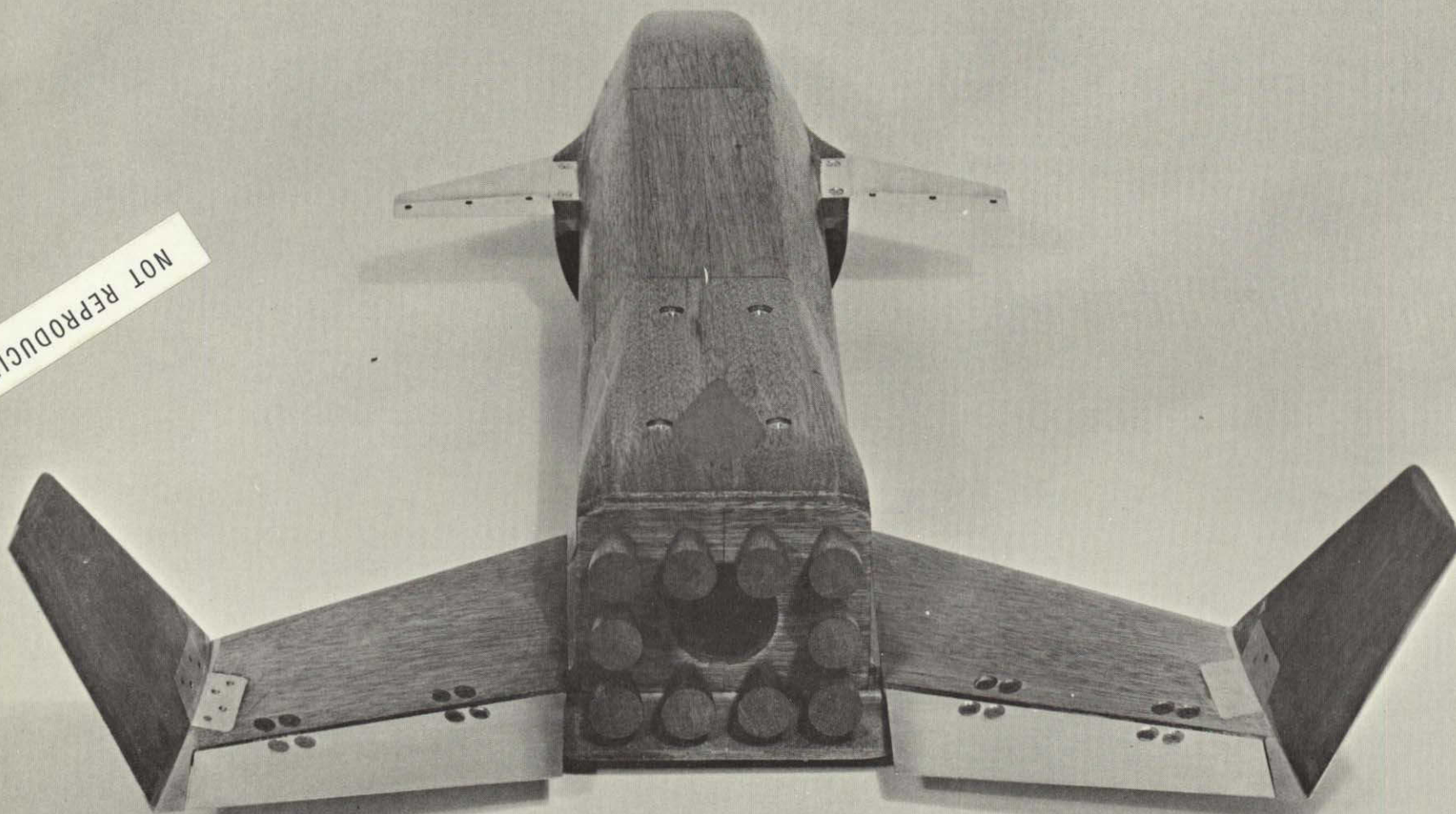


Figure 1. Axis systems, showing direction and sense of force and moment coefficients, angle of attack, and sideslip angle

NOT REPRODUCIBLE



43

FIGURE 11. (c) $B_1N_1W_2E_1V_1T_1F_2P_1$ (REAR VIEW)

MDC(WD) SPACE SHUTTLE 1% BOOSTER SCALE MODEL. AERODYNAMIC CANARD LOW WING CONFIGURATION

DATA DISPLAY INDEX

DATA PLOT INDEX

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:

RCC012 RCC009 RCC005 RCC013

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	1	1
CLM	ALPHA	2	2
CDF	ALPHA	3	3
L/D	ALPHA	4	4

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:

RCC012 RCC009 RCC005 RCC013

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	5	5
CLM	CL	6	6
L/D	CL	7	7

DATA PLOT INDEX

ELEVON EFFECTIVENESS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:

RCC027 RCC024 RCC022 RCC028

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	8	8
CLM	ALPHA	9	9
CDF	ALPHA	10	10
L/D	ALPHA	11	11

ELEVON EFFECTIVENESS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:

RCC027 RCC024 RCC022 RCC028

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	12	12
CLM	CL	13	13
L/D	CL	14	14

DATA PLOT INDEX

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:

RCC009 RCC010 RCC011

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	15	15
CLM	ALPHA	16	16
CDF	ALPHA	17	17
L/D	ALPHA	18	18

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:

RCC009 RCC010 RCC011

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	19	19
CLM	CL	20	20
L/D	CL	21	21

DATA PLOT INDEX

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

RCC001 RCC005

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	22	22
CLM	ALPHA	23	23
CDF	ALPHA	24	24
L/D	ALPHA	25	25

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

RCC001 RCC005

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	26	26
CLM	CL	27	27
L/D	CL	28	28

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

CCC001 CCC005

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	29	29
DCYNDB	ALPHA	30	30
DCBLDB	ALPHA	31	31

DATA PLOT INDEX

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

CCCU01 CCC005

DEPENDENT
VARIABLE

DEPENDENT
VARIABLE

PLOT PAGE
BEGINNING / ENDING

DCYNDB

CYBETA

32

32

DATA PLOT INDEX

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:
RCC019 RCC022

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	33	33
CLM	ALPHA	34	34
CDF	ALPHA	35	35
L/D	ALPHA	36	36

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:
RCC019 RCC022

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	37	37
CLM	CL	38	38
L/D	CL	39	39

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:
CCC019 CCC022

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	40	40
DCYNDB	ALPHA	41	41
DCBLDB	ALPHA	42	42

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:
CCC019 CCC022

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
DCYNDB	CYBETA	43	43

DATA PLOT INDEX

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN
DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:
RCC006 RCC005

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CY	ALPHA	44	44
CYN	ALPHA	45	45
CBL	ALPHA	46	46

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN
DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:
RCC006 RCC005

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYN	CY	47	47

DATA PLOT INDEX

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:

RCC023 RCC022

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CY	ALPHA	48	48
CYN	ALPHA	49	49
CBL	ALPHA	50	50

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:

RCC023 RCC022

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYN	CY	51	51

NOT REPRODUCIBLE

DATA PLOT INDEX

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN
DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:
RCC002 RCC001

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CY	ALPHA	52	52
CYN	ALPHA	53	53
CBL	ALPHA	54	54

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN
DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:
RCC002 RCC001

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYN	CY	55	55

DATA PLOT INDEX

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN
DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:
RCC020 RCC019

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CY	ALPHA	56	56
CYN	ALPHA	57	57
CBL	ALPHA	58	58

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN
DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAK)

DATASETS PLOTTED:
RCC020 RCC019

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYN	CY	59	59

NOT REPRODUCIBLE

DATA PLOT INDEX

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN
DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:

RCC015 RCC014

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CY	ALPHA	60	60
CYN	ALPHA	61	61
CBL	ALPHA	62	62

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN
DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:

RCC015 RCC014

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYN	CY	63	63

DATA PLOT INDEX

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN
DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, PARAMETRIC STUDY (FPALFA)

DATASETS PLOTTED:
RCC030 RCC029

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CY	ALPHA	64	64
CYN	ALPHA	65	65
CBL	ALPHA	66	66

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN
DEPENDENT VARIABLE VS DEPENDENT VARIABLE, PARAMETRIC STUDY (FPDVAR)

DATASETS PLOTTED:
RCC030 RCC029

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYN	CY	67	67

NOT REPRODUCIBLE

DATA PLOT INDEX

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:
RCC005 RCC022

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	68	68
CLM	ALPHA	69	69
CDP	ALPHA	70	70
L/D	ALPHA	71	71

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:
RCC005 RCC022

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDP	CL	72	72
CLM	CL	73	73
L/D	CL	74	74

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:
CCC005 CCC022

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	75	75
DCYNDB	ALPHA	76	76
DCBLDB	ALPHA	77	77

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:
CCC005 CCC022

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
DCYNDB	CYBETA	78	78

DATA PLOT INDEX

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

RCCU14 RCCU29

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	79	79
CLM	ALPHA	80	80
CDF	ALPHA	81	81
L/D	ALPHA	82	82

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

RCCU14 RCCU29

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	83	83
CLM	CL	84	84
L/D	CL	85	85

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

CCCU14 CCCU29

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	86	86
DCYNDB	ALPHA	87	87
DCBLDB	ALPHA	88	88

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

CCCU14 CCCU29

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
DCYNDB	CYBETA	89	89

DATA PLOT INDEX

HIGH WING VS LOW WING SUB BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

RCC001 RCC019

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	90	90
CLM	ALPHA	91	91
CDP	ALPHA	92	92
L/D	ALPHA	93	93

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

RCC001 RCC019

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDP	CL	94	94
CLM	CL	95	95
L/D	CL	96	96

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

CCC001 CCC019

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	97	97
DCYNDB	ALPHA	98	98
DCBLDB	ALPHA	99	99

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

CCC001 CCC019

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
DCYNDB	CYBETA	100	100

DATA PLOT INDEX

6 DEG. TOL IN VS 0 DEG TOL IN HIGH WING SBC BOOSTER WITH SBC BOOSTER

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

RCC005 RCC014

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	101	101
CLM	ALPHA	102	102
CDP	ALPHA	103	103
L/D	ALPHA	104	104

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

RCC005 RCC014

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDP	CL	105	105
CLM	CL	106	106
L/D	CL	107	107

NOT REPRODUCIBLE

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:

CCC005 CCC014

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	108	108
DCYNDB	ALPHA	109	109
DCBLDB	ALPHA	110	110

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:

CCC005 CCC014

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
DCYNDB	CYBETA	111	111

DATA PLOT INDEX

6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:
RCC019 RCC029

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CL	ALPHA	112	112
CLM	ALPHA	113	113
CDF	ALPHA	114	114
L/D	ALPHA	115	115

DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:
RCC019 RCC029

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CDF	CL	116	116
CLM	CL	117	117
L/D	CL	118	118

DEPENDENT VARIABLE VS INDEPENDENT VARIABLE, MULTIPLE DATASETS (FMALFA)

DATASETS PLOTTED:
CCC019 CCC029

DEPENDENT VARIABLE	INDEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
CYBETA	ALPHA	119	119
DCYNDB	ALPHA	120	120
DCBLDB	ALPHA	121	121

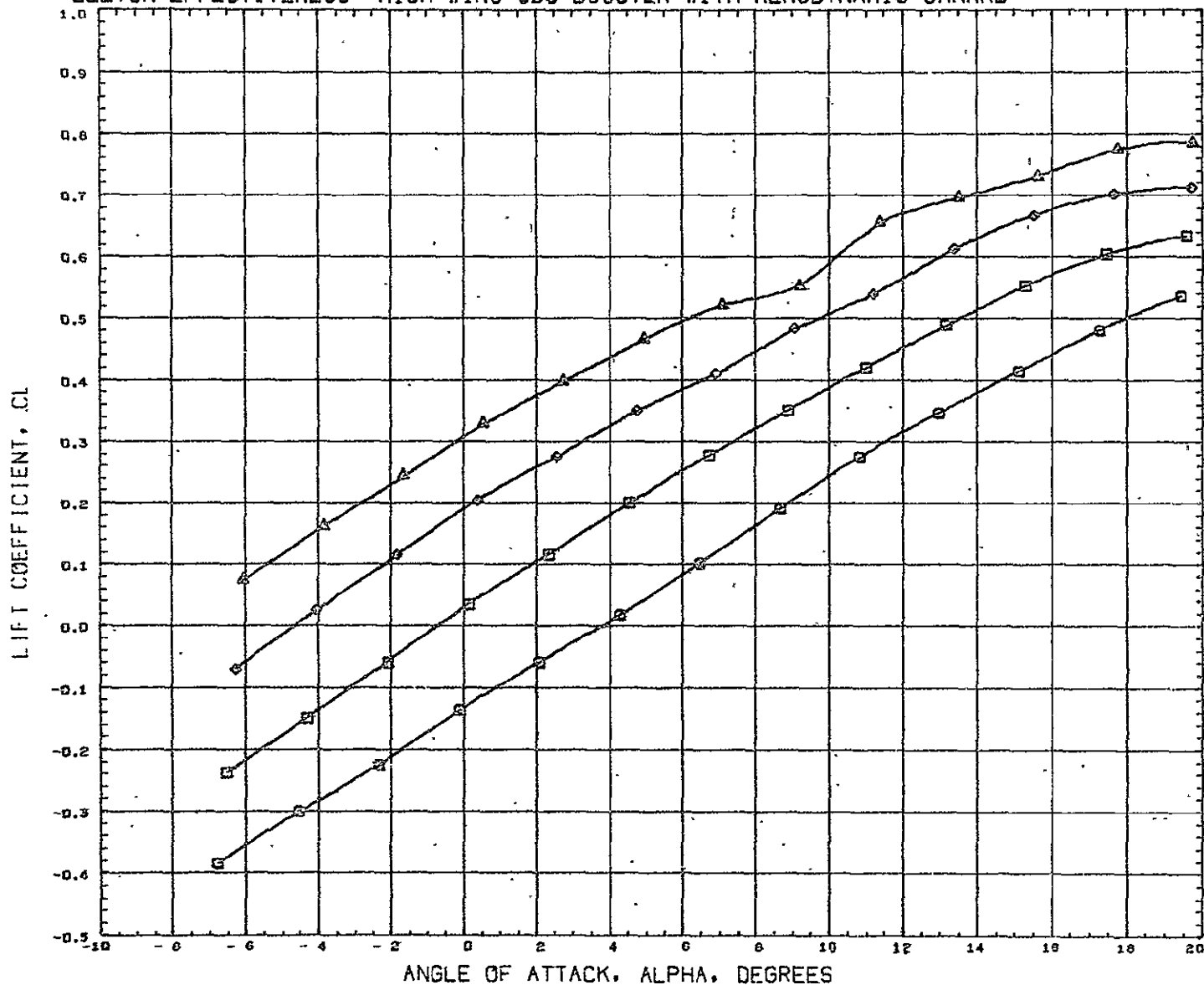
DEPENDENT VARIABLE VS DEPENDENT VARIABLE, MULTIPLE DATASETS (FMDVAR)

DATASETS PLOTTED:
CCC019 CCC029

DEPENDENT VARIABLE	DEPENDENT VARIABLE	PLOT PAGE BEGINNING / ENDING	
DCYNDB	CYBETA	122	122
	62		

DATA

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

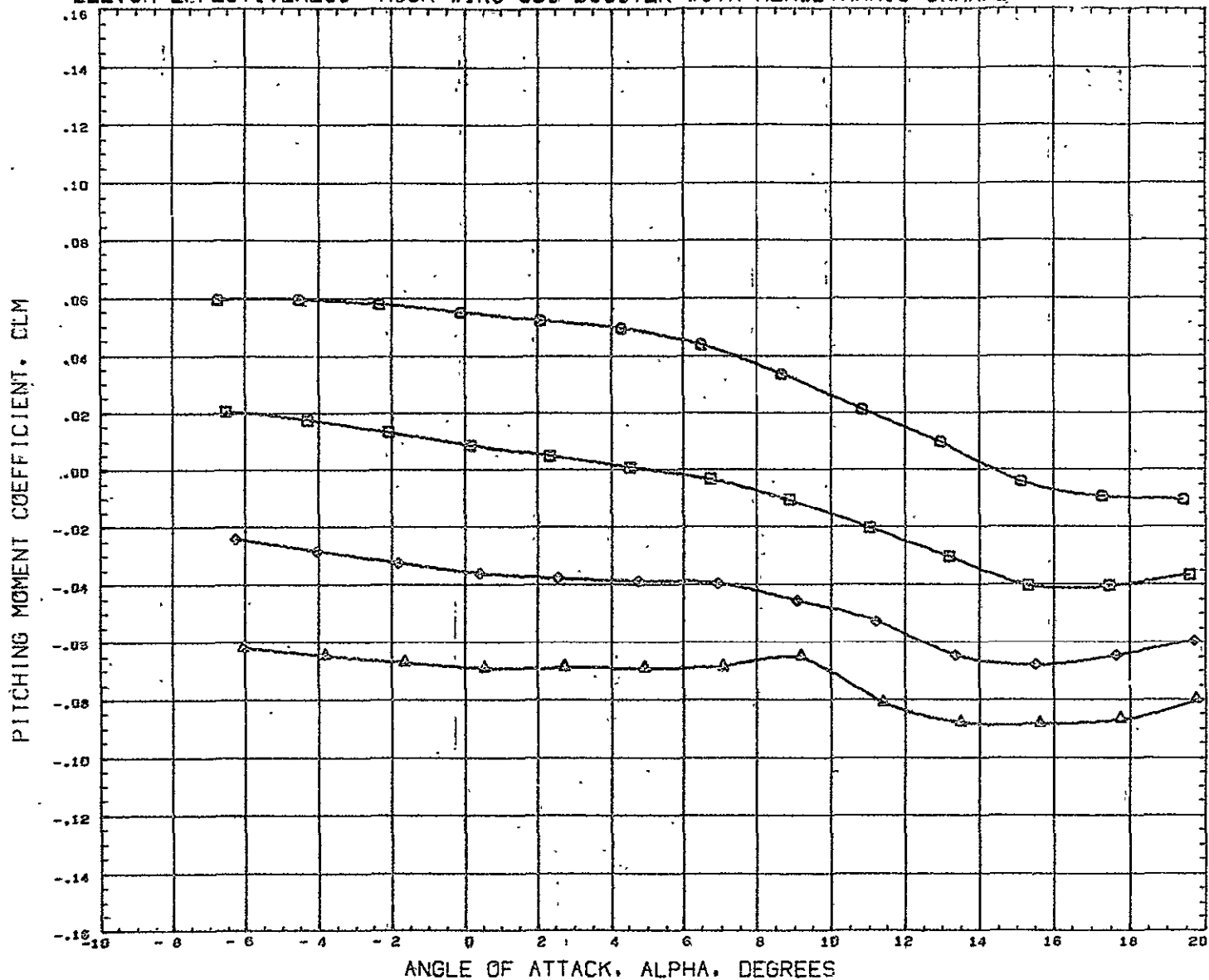


SYMBOL	ELEVON	PARAMETRIC VALUES			
○	-30.000	MACH	0.185	BETA	0.000
□	-15.000	FLAP	0.000	VTAIL	0.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HOC(WD) SPACESHUT-8

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES			
□	- 30.000	HACH	0.185	BETA	0.000
□	- 15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
REFS	1.0000	SG. FT.
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0123	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HNC(MD)SPACESHUT-B

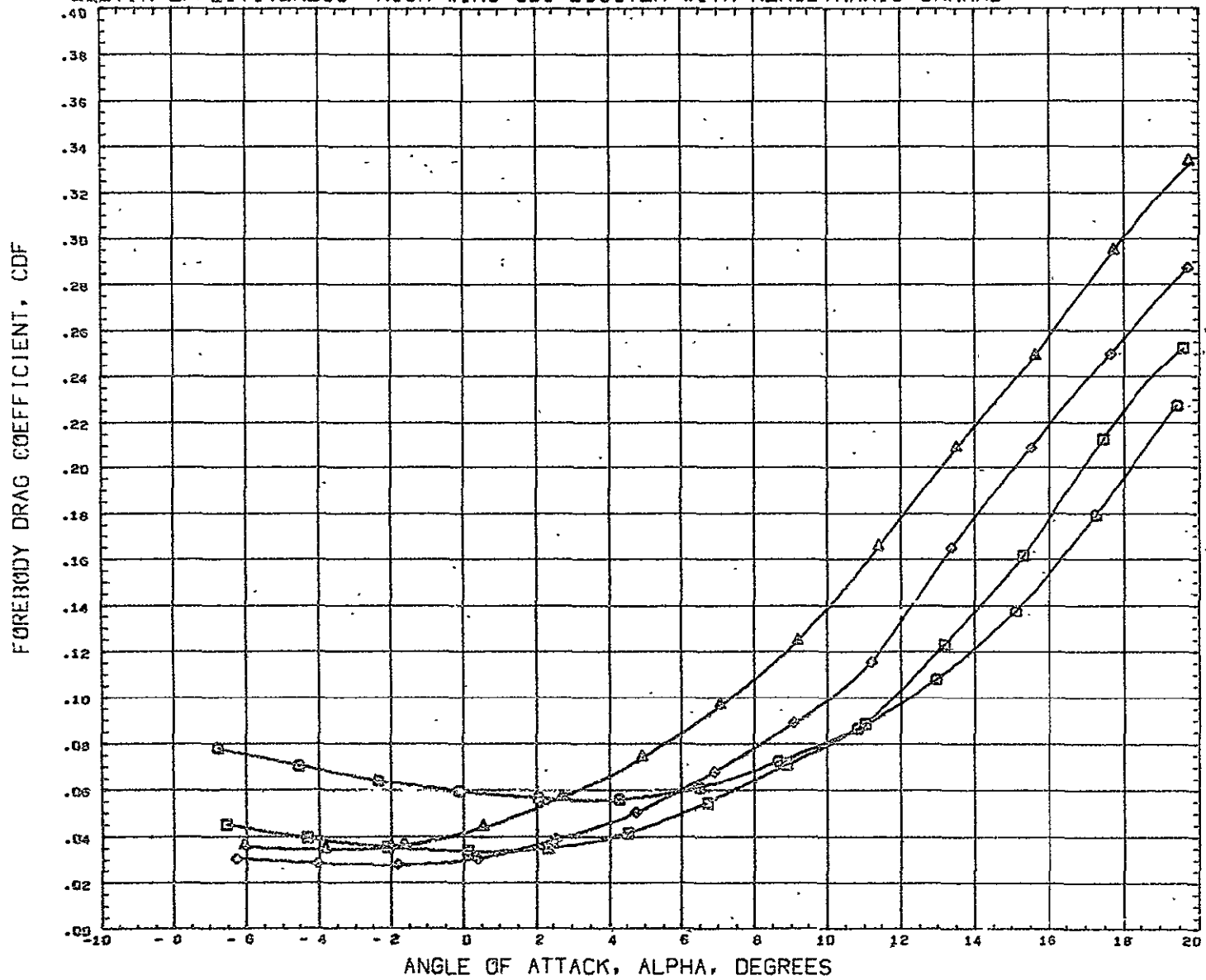
1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC012) 16 OCT 70

PAGE

2

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

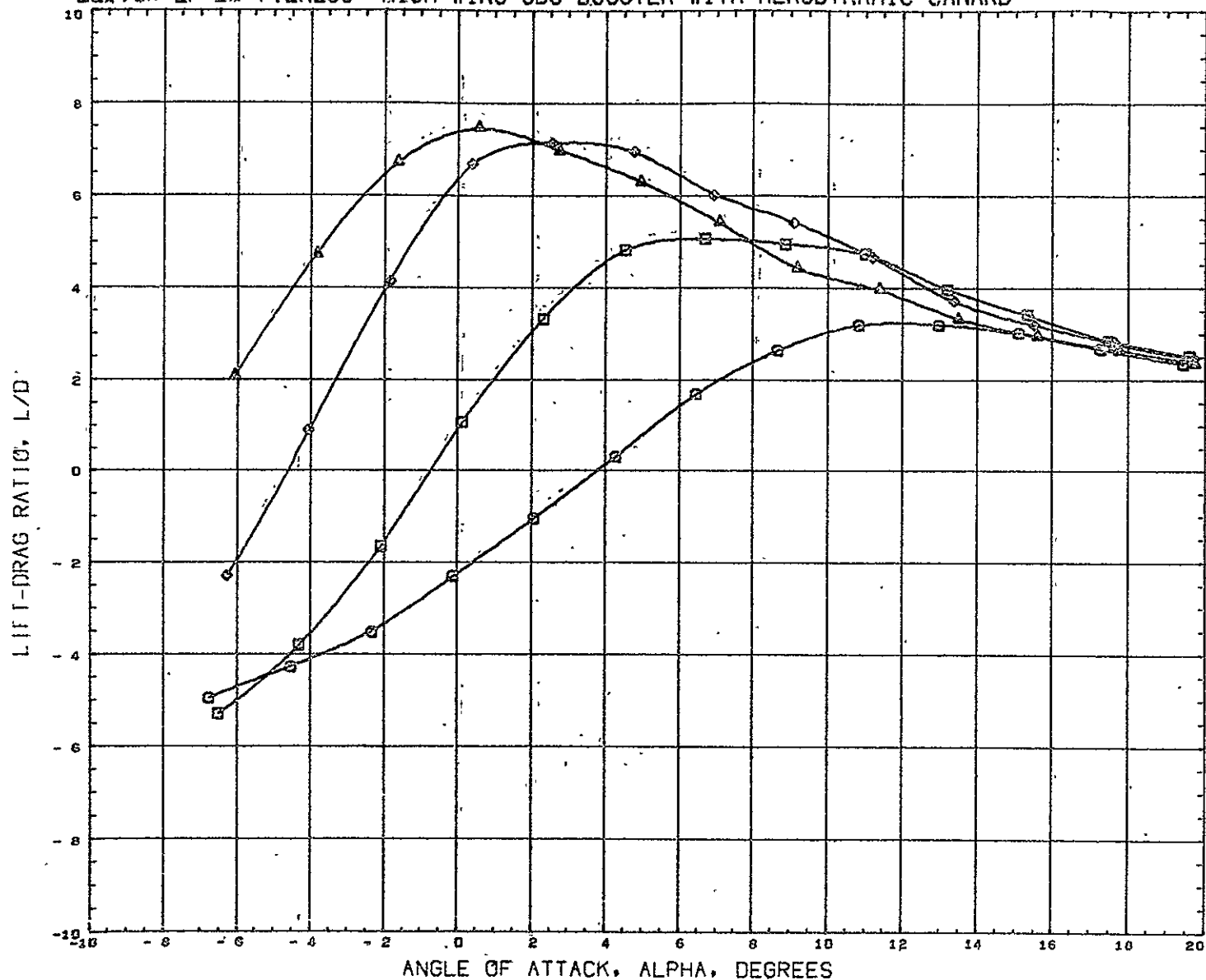


SYMBOL	ELEVON	PARAMETRIC VALUES			
□	30.000	MACH	0.185	BETA	0.000
□	15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XHRF	1.7030	FT.
YHRF	0.0000	FT.
ZHRF	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(MD) SPACESHUT-B

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES			
○	- 30.000	MACH	0.185	BETA	0.000
□	- 15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
REFS	1.0000	SG. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HDC(WD) SPACESHUT-B

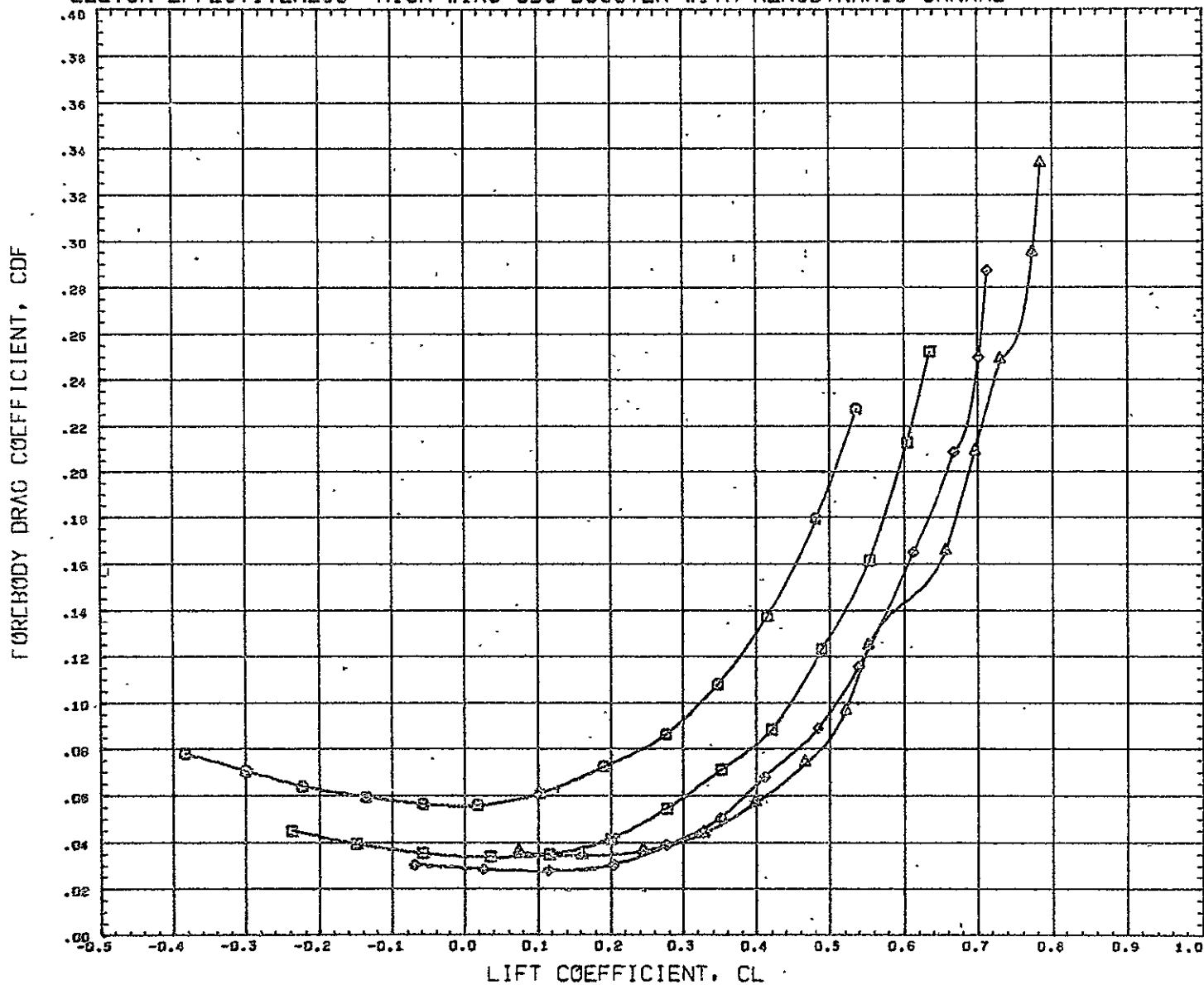
1351-DAC-LSWT-SBCBOOSTER BIN\WIT1P1V1E1F2

(RCC012) 16 OCT 70

PAGE

4

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

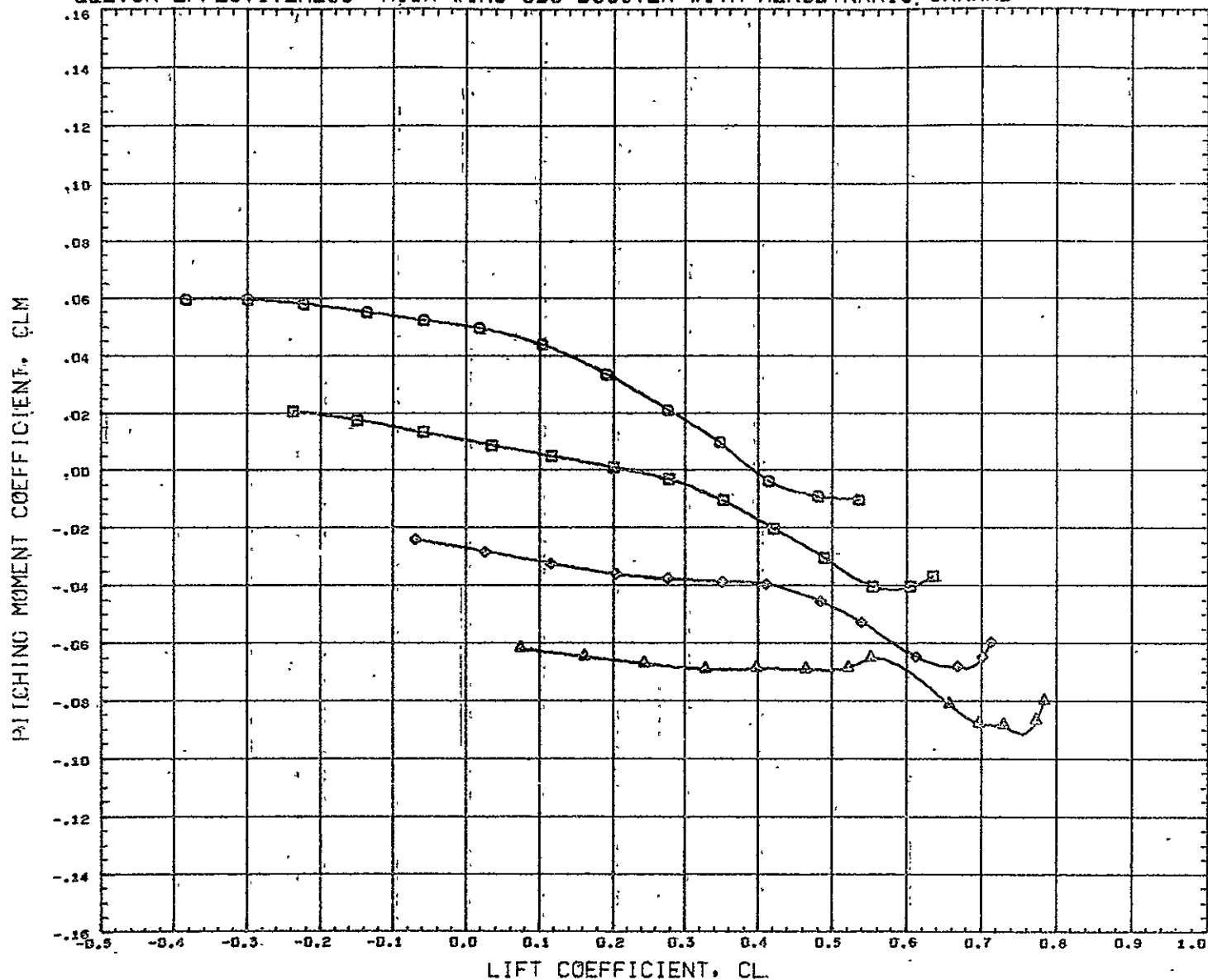


SYMBOL	ELEVON	PARAMETRIC VALUES			
○	- 30.000	MACH	0.185	BETA	0.000
□	- 15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE FILE HDC(WD)SPACESHUT-B

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRF	1.7030	FT.
YMRF	0.0000	FT.
ZMRF	0.0125	FT.
SCALE	0.0100	SCALE

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES			
○	35.000	MACH	0.185	BETA	0.000
□	15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
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REFL	2.9000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
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REFERENCE FILE MDC(WD) SPACESHUT-8

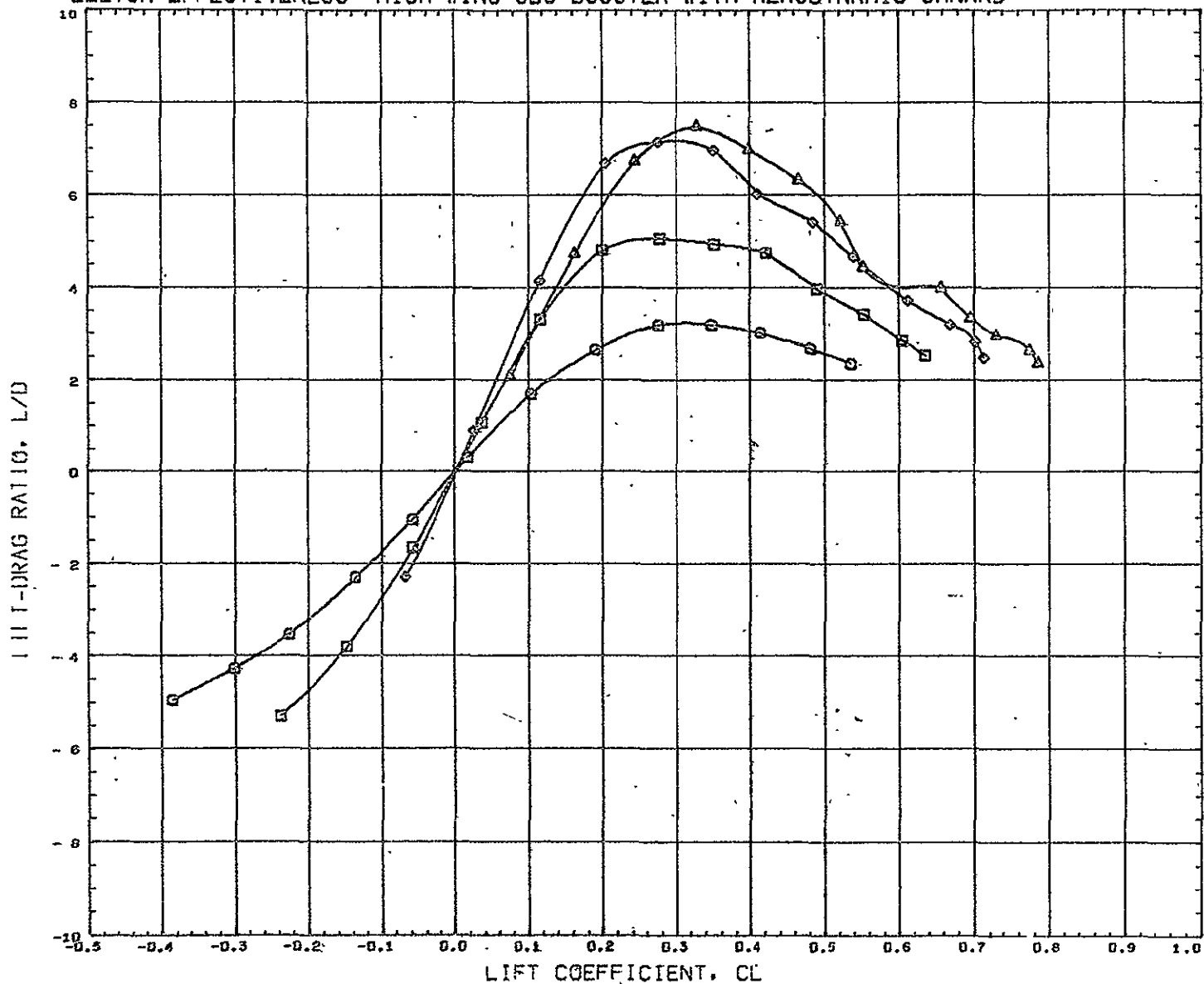
1351-DAC-LSWT-SBCBOOSTER BINIWITIPVIEIF2

(RCC012) 16 OCT 70

PAGE

6

ELEVON EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

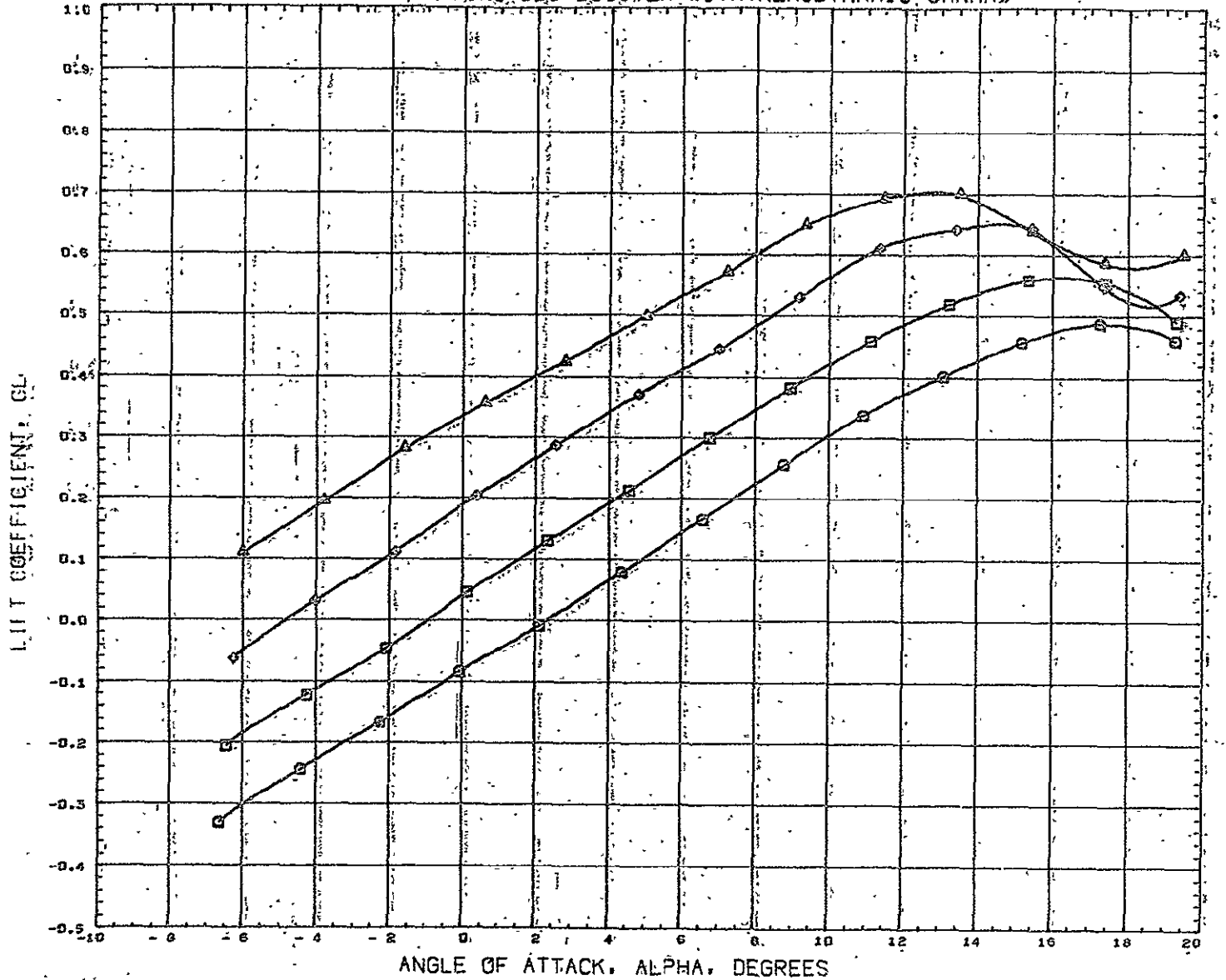


SYMBOL	ELEVON	PARAMETRIC VALUES			
○	- 30.000	MACH	0.185	BETA	0.000
□	- 15.000	FLAP	0.000	VTAIL	0.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
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REFL	2.0000	FT.
REFB	2.0000	FT.
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YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC (MD) SPACESHUT-B

ELEVON EFFECTIVENESS: LOW-WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES			
O	30.000	MACH	0.185	BETA	0.000
□	15.000	FLAP	0.000	VTAIL	5.000
◇	0.000				
Δ	15.000				

REFERENCE INFORMATION		
REFS	1.0000	SG. FT.
REFL	2.0000	FT.
REFB	2.0000	FT.
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YMAP	0.0000	FT.
ZMAP	0.0125	FT.
SCALE	0.0100	SCALE

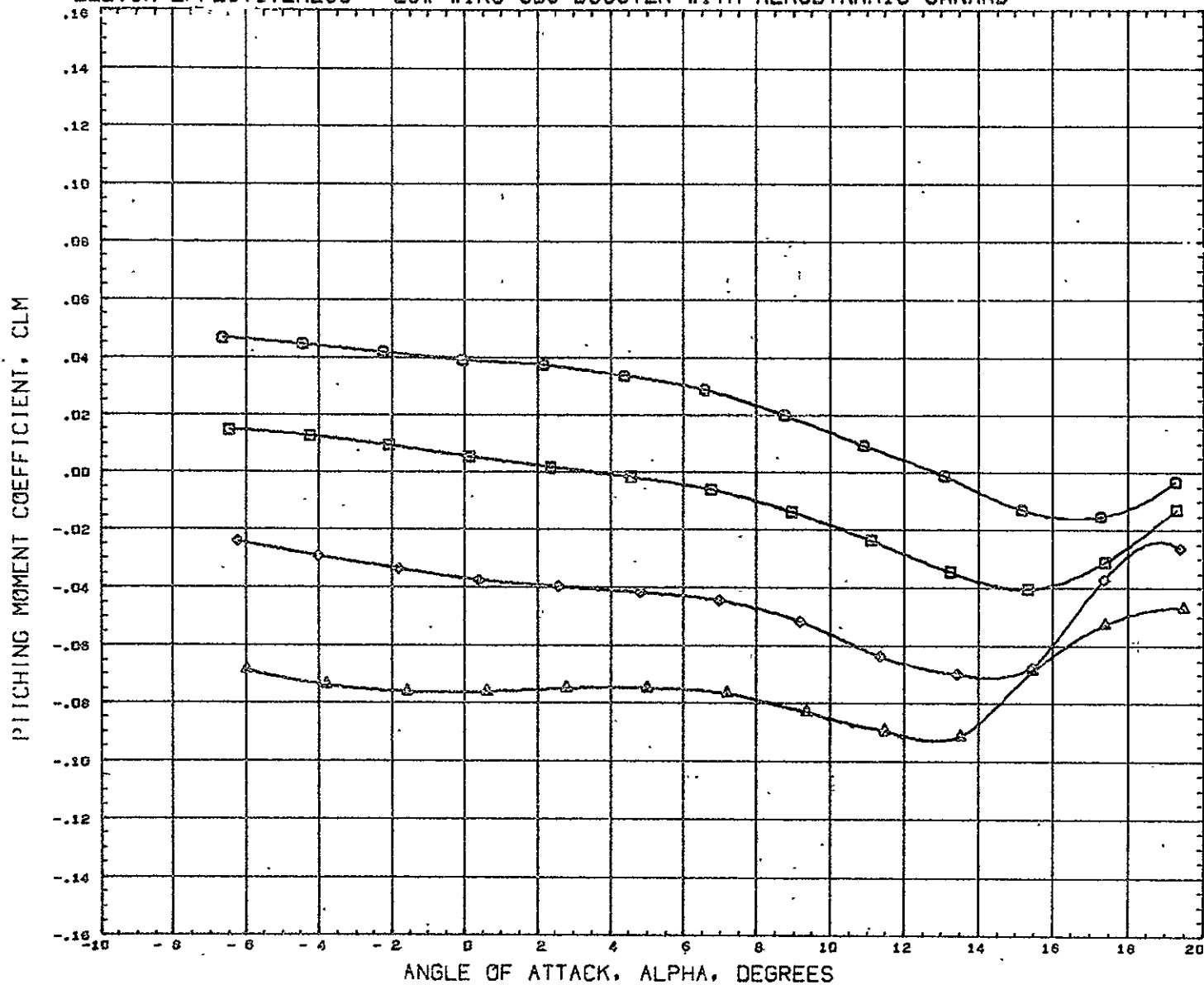
REFERENCE FILE HDC(WD) SPACESHUT-B

1351-SAC-LSWT-SBCBOOSTER BIN1WITIPVIE1F2

(RCC027) 16 OCT 70

PAGE 8

ELEVON EFFECTIVENESS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD



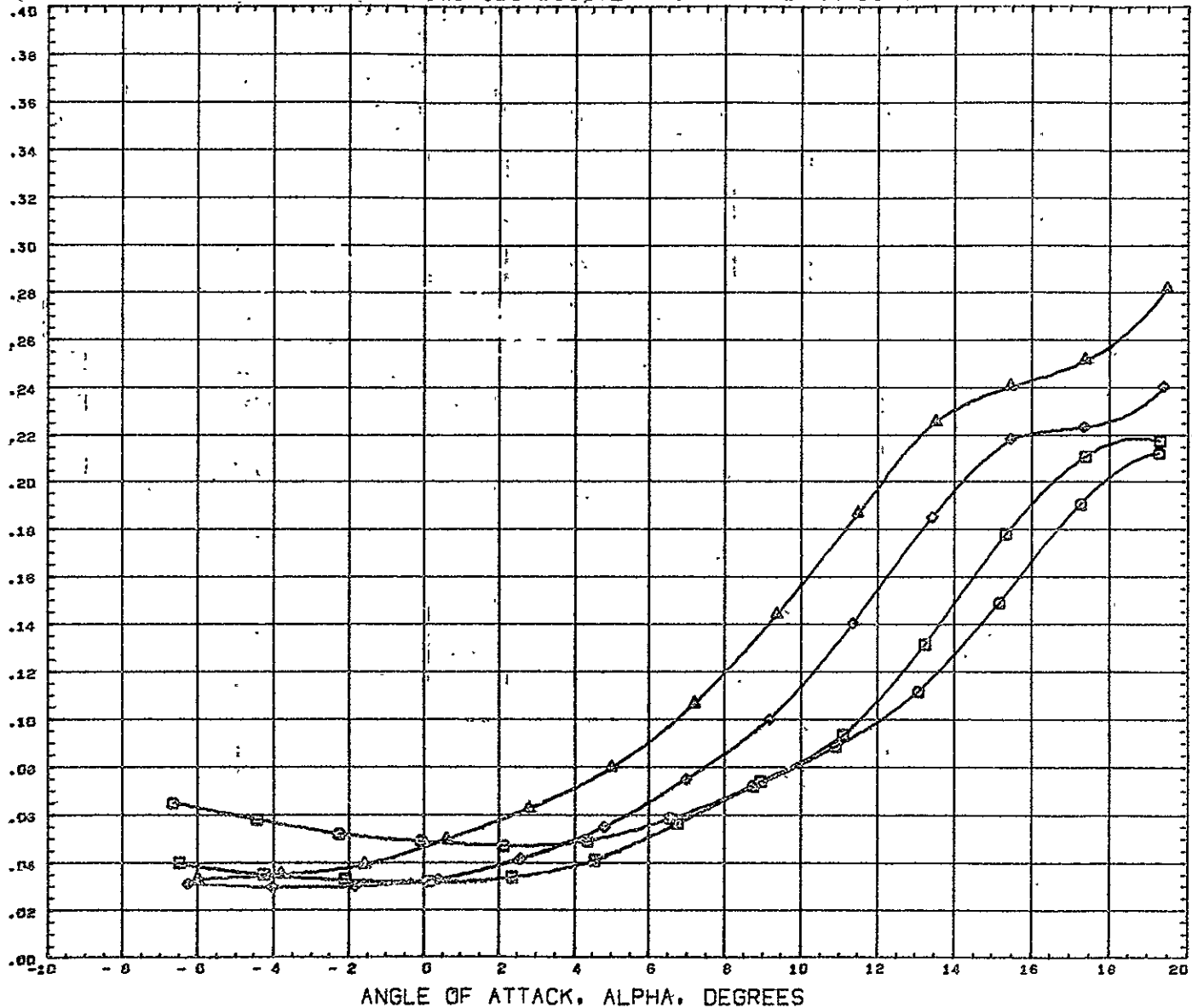
SYMBOL	ELEVON	PARAMETRIC VALUES			
○	- 30.000	MACH	0.185	BETA	.0.000
□	- 15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE FILE MDC (WD) SPACESHUT-B

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XHRP	1.7030	FT.
YHRP	0.0000	FT.
ZHRP	0.0125	FT.
SCALE	0.0100	SCALE

ELEVON EFFECTIVENESS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD

FOREBODY DRAG COEFFICIENT, CDF



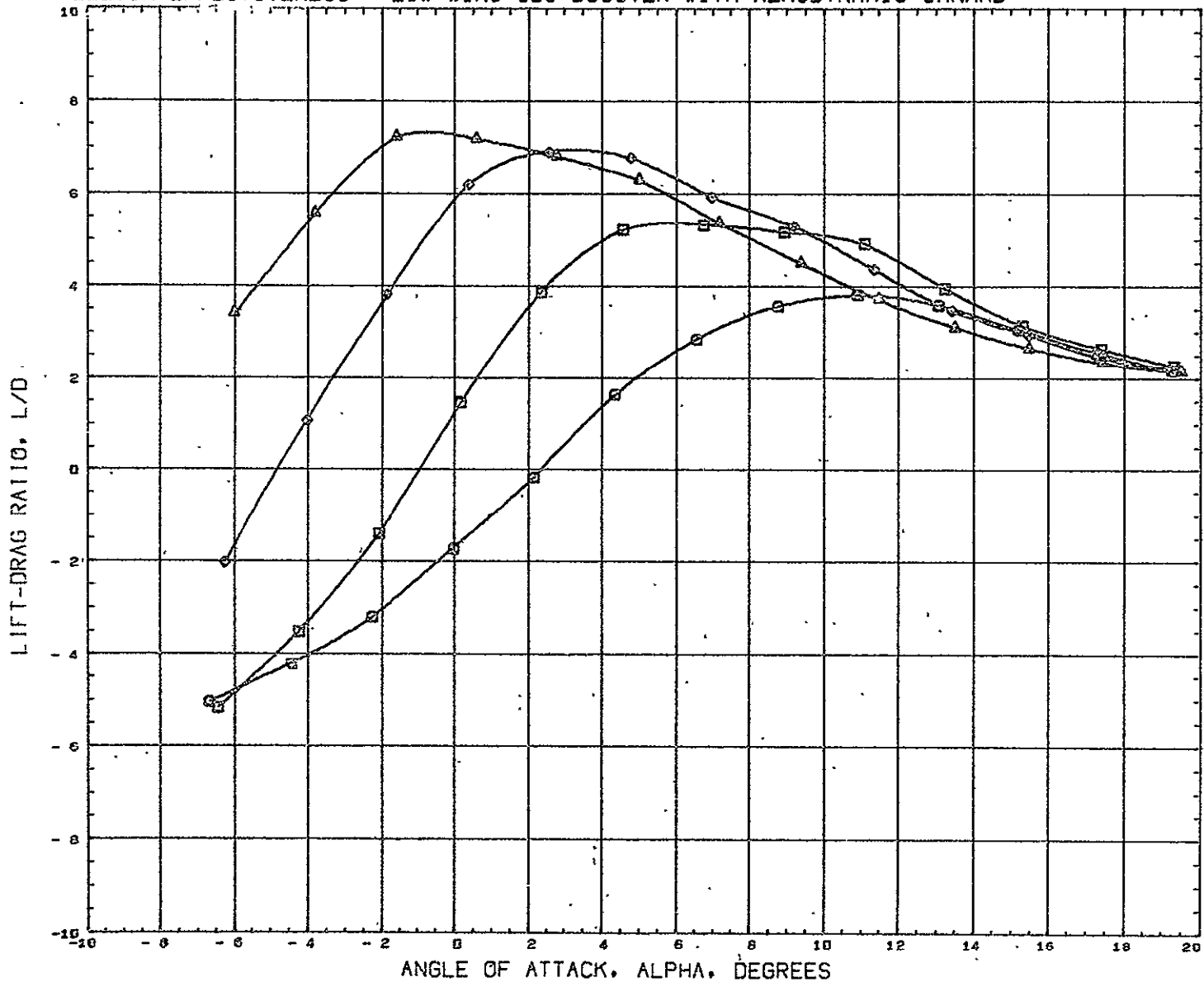
SYMBOL ELEVON
 □ -30.000
 ◇ -15.000
 ○ 0.000
 △ 15.000

PARAMETRIC VALUES
 MACH 0.185 BETA 0.000
 FLAP 0.000 VTAIL 6.000

REFERENCE FILE HDC(WD) SPACESHUT-B

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XHRF 1.7030 FT.
 YHRP 0.0000 FT.
 ZHRP 0.0125 FT.
 SCALE 0.0100 SCALE

ELEVON EFFECTIVENESS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD

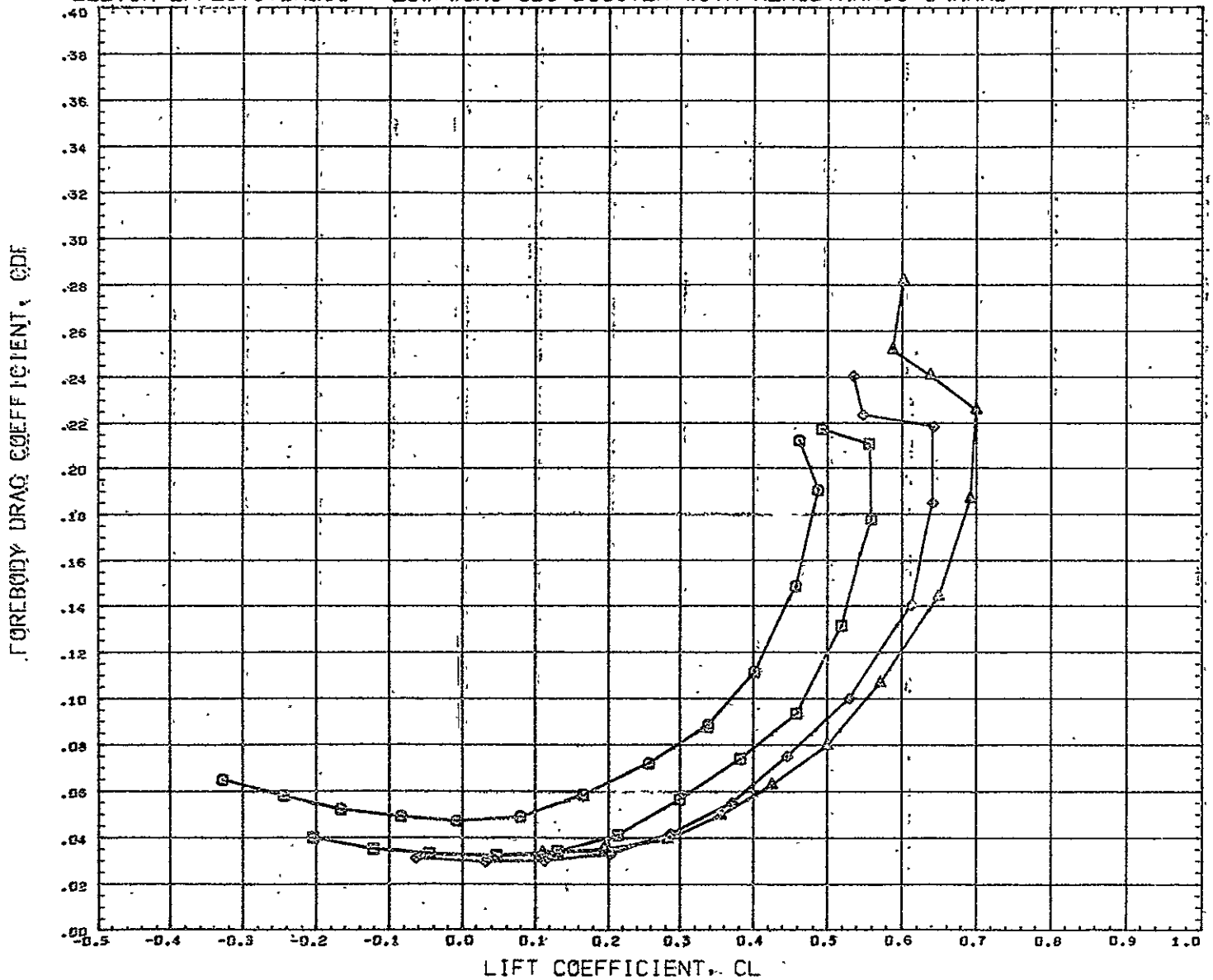


SYMBOL ELEVON
 □ - 30.000 HACH 0.185 BETA 0.000
 ◇ - 15.000 FLAP 0.900 VTAIL 6.000
 ○ 0.000
 △ 15.000

REFERENCE FILE HDC(ND) SPACESHUT-B

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XHRF 1.7030 FT.
 YHRF 0.0000 FT.
 ZHRF 0.0125 FT.
 SCALE 0.0100 SCALE

ELEVON EFFECTIVENESS: LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES			
○	- 30.000	MACH	0.105	BETA	0.000
□	- 15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XHRP	1.7030	FT.
YHRF	0.0000	FT.
ZHRF	0.0125	FT.
SCALE	0.0100	SCALE

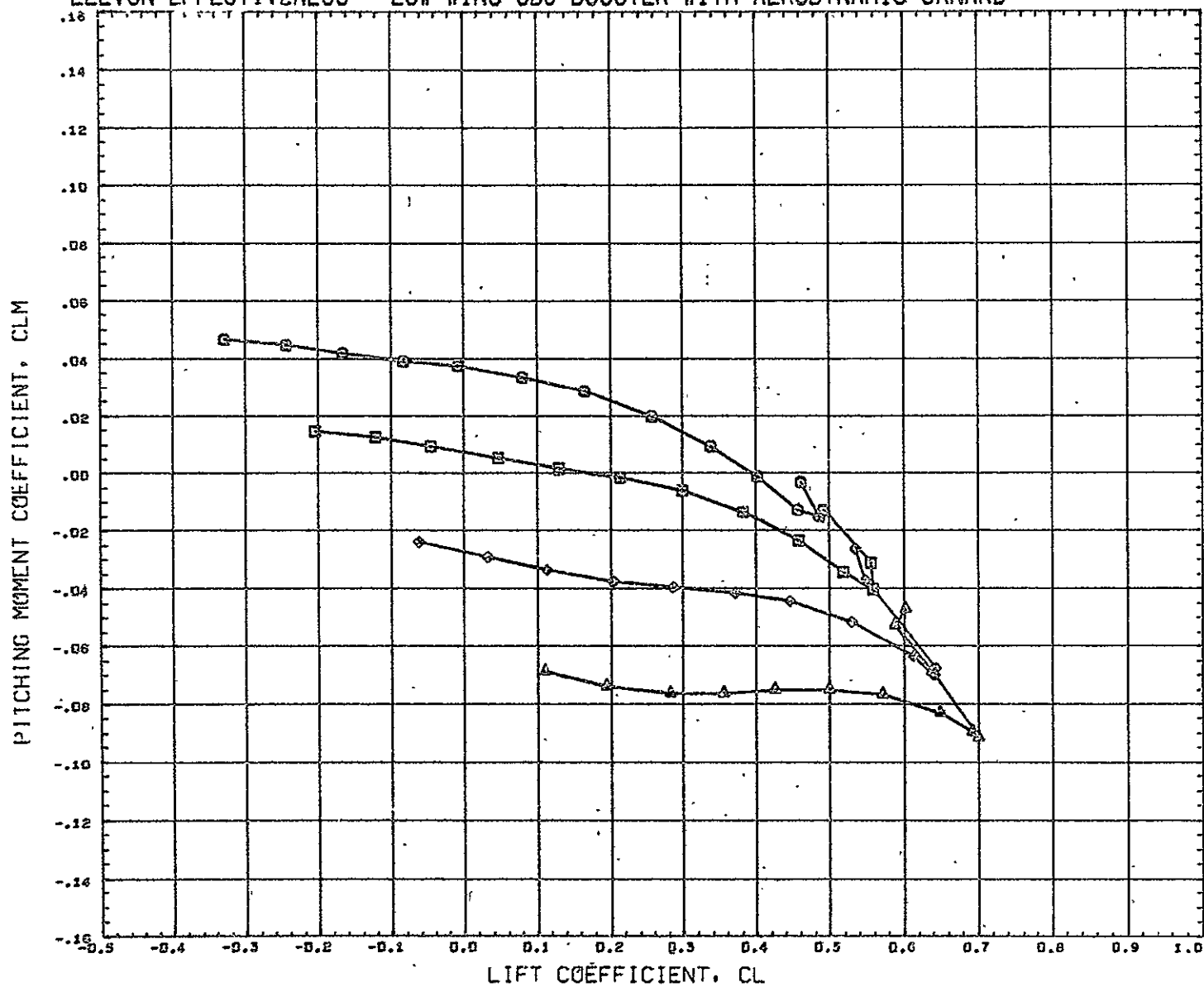
REFERENCE FILE HDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC027) 16 OCT 70

PAGE 12

ELEVON EFFECTIVENESS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES			
○	30.000	MACH	0.185	BETA	0.000
□	15.000	FLAP	0.000	VTAIL	6.000
◇	0.000				
△	15.000				

REFERENCE INFORMATION		
REFS	1.0000	Sq. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD)SPACEHUT-B

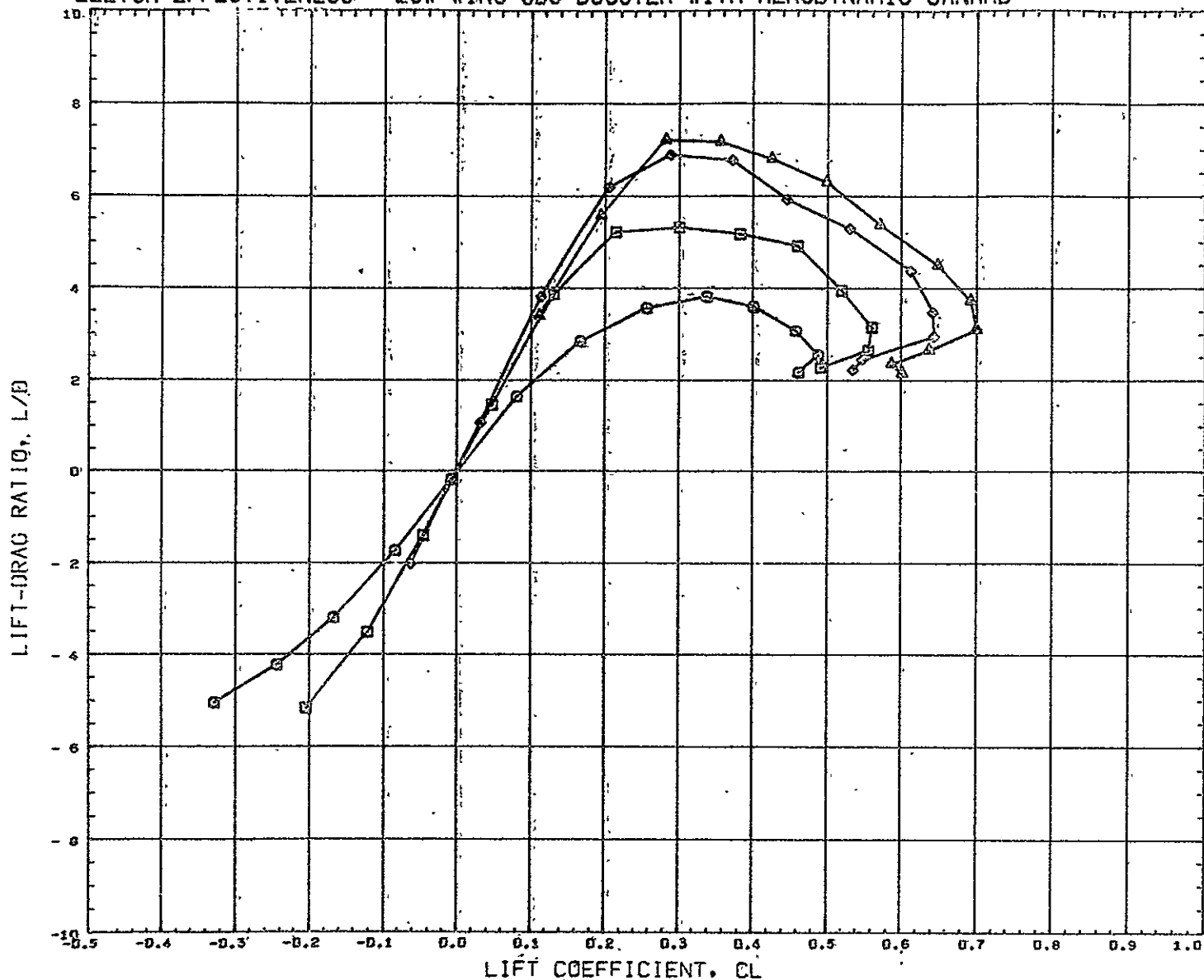
1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC027) 16 OCT 70

PAGE

13

ELEVON EFFECTIVENESS: LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	ELEVON	PARAMETRIC VALUES
○	- 30.000	MACH 0.185 BETA 0.000
□	- 15.000	FLAP 0.000 VTAIL 6.000
◇	0.000	
△	15.000	

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE NDC(MD)SPACESHUT-B

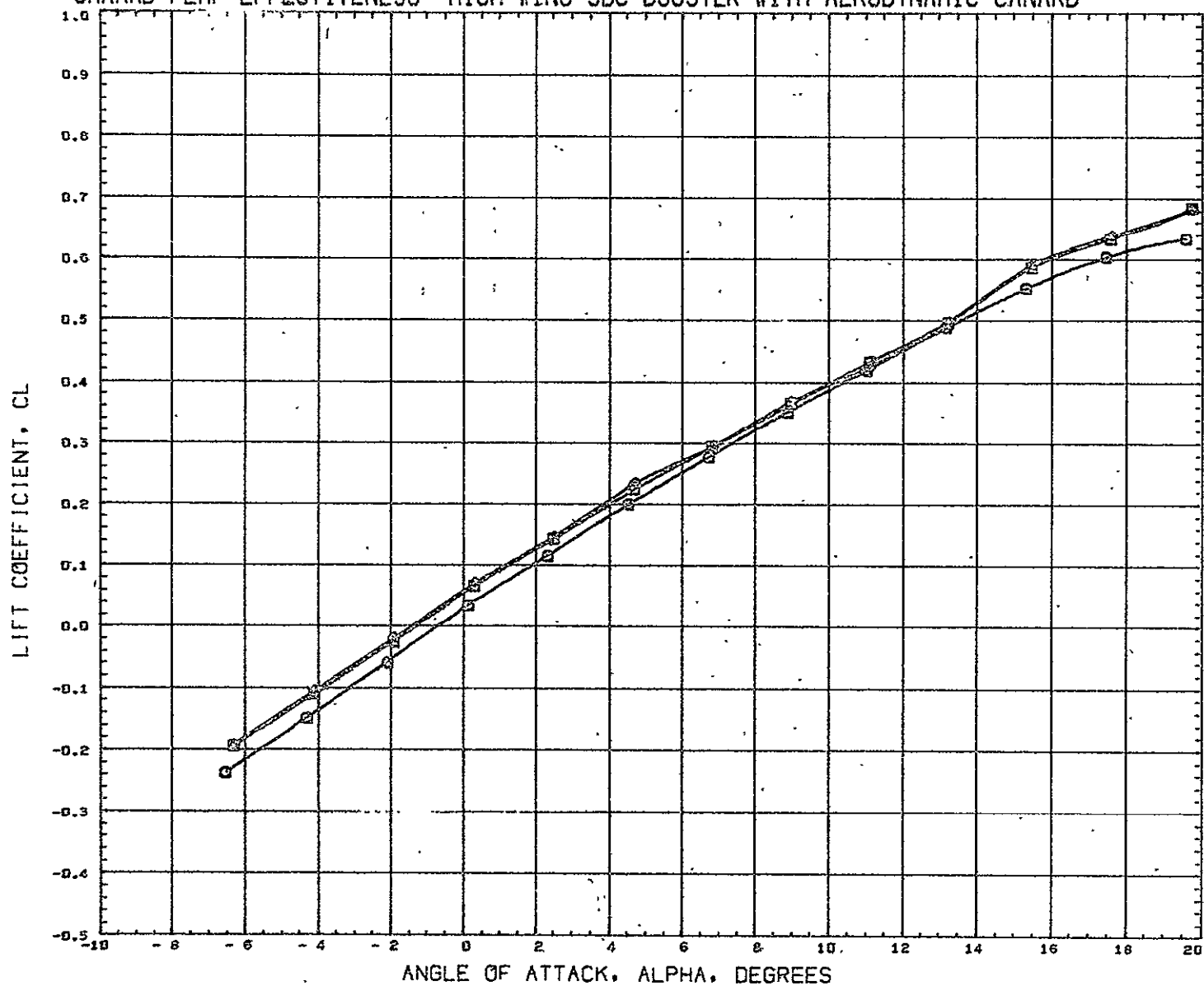
1351-DAC-LSWT-SBCBOOSTER BINIWITIP1VIEIF2

(RCC027) 16 OCT 70

PAGE

14

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

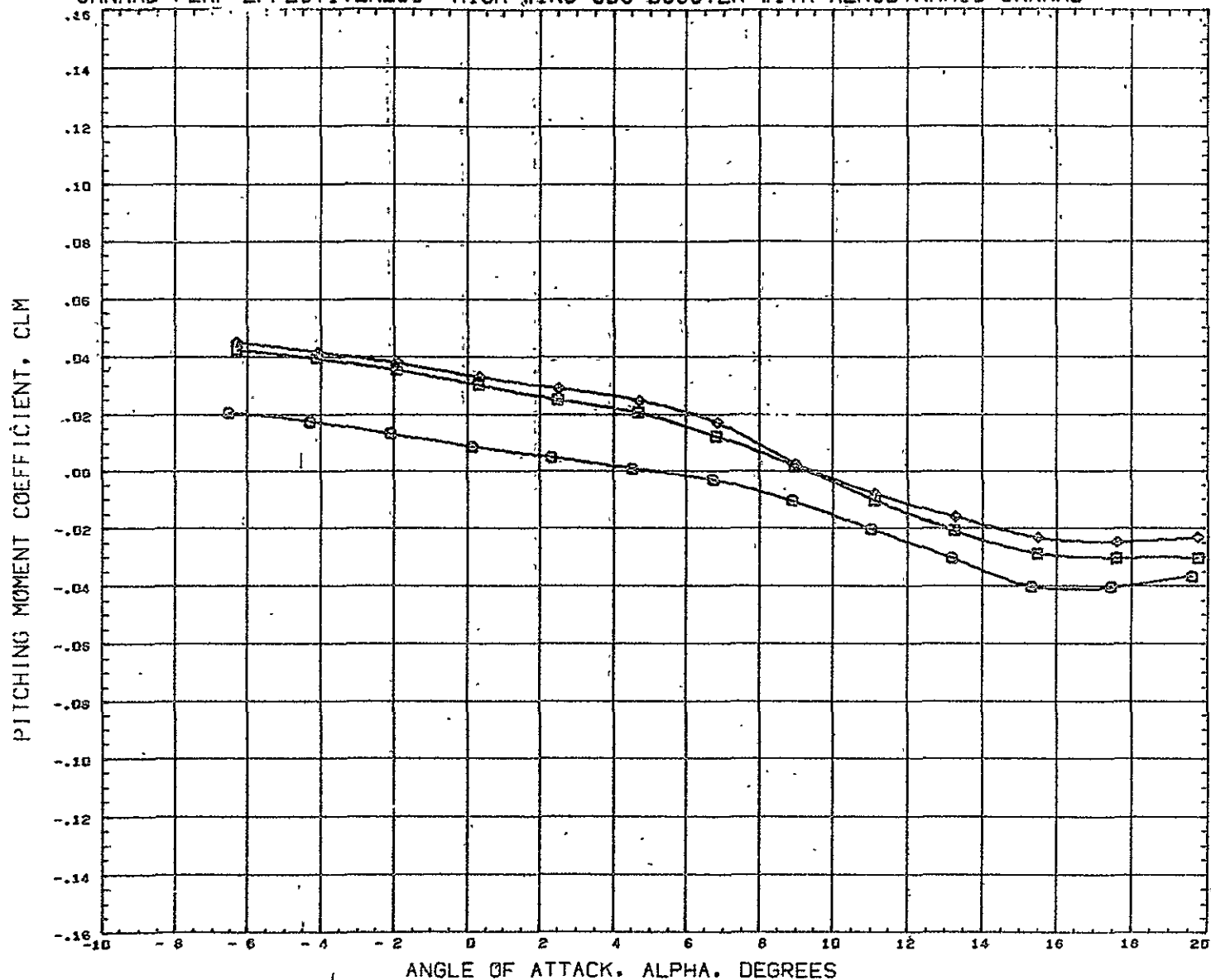


SYMBOL	FLAP	PARAMETRIC VALUES			
○	0.000	MACH	0.185	BETA.	0.000
□	20.000	ELEVON	-15.000	VTAIL	6.000
◇	40.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HDC(WD) SPACESHUT-B.

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	FLAP	PARAMETRIC VALUES			
	0.000	HACH	0.185	BETA	0.000
	20.000	ELEVON	-15.000	VTAIL	6.000
	40.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD)SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BINIWIT1P1V1E1F2

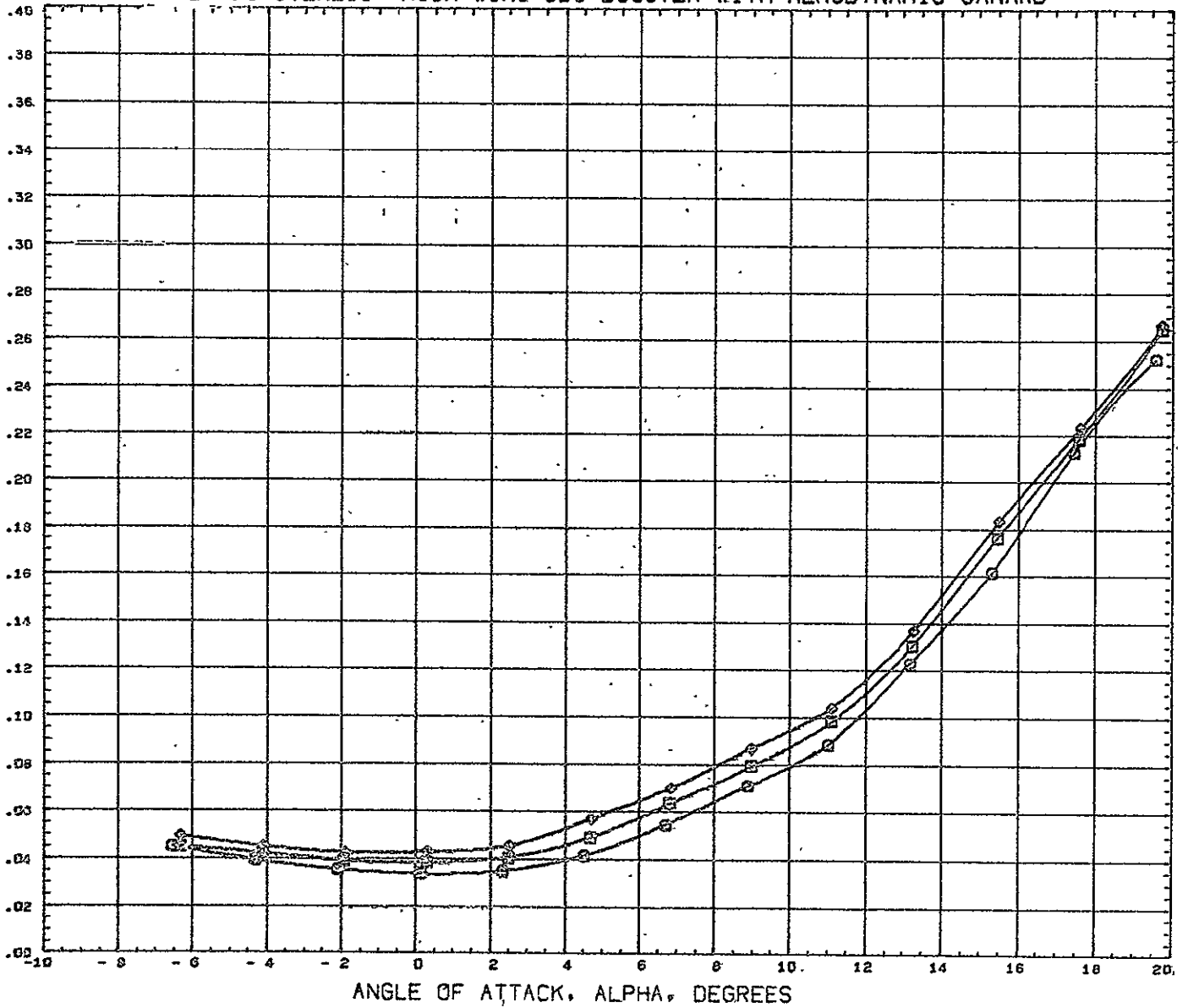
(RCC009) 16 OCT 70

PAGE

16

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD

FOREBODY DRAG COEFFICIENT, CDF



SYMBOL FLAP PARAMETRIC VALUES
 O 0.000 MACH 0.185 BETA 0.000
 □ 20.000 ELEVON -15.000 VTAIL 6.000
 ◇ 40.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

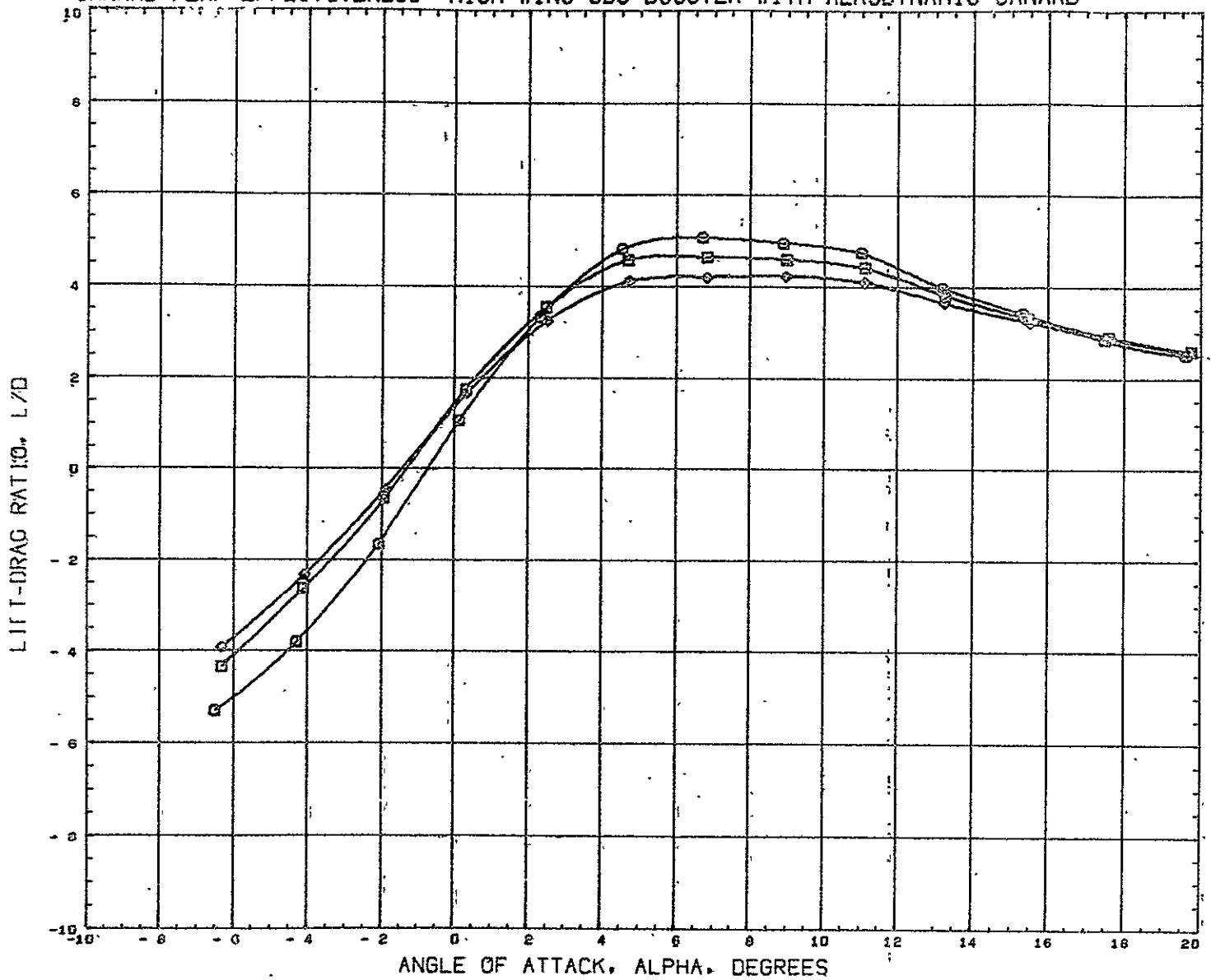
1351-DAC-LSWT-SBCBOOSTER BINIW1T1P1V1E1F2

(RCC009) 16 OCT 70

PAGE

17

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	FLAP	PARAMETRIC VALUES			
○	0.000	HACH	0.185	BETA	0.000
□	20.000	ELEVON	-15.000	VTAIL	6.000
◇	40.000				

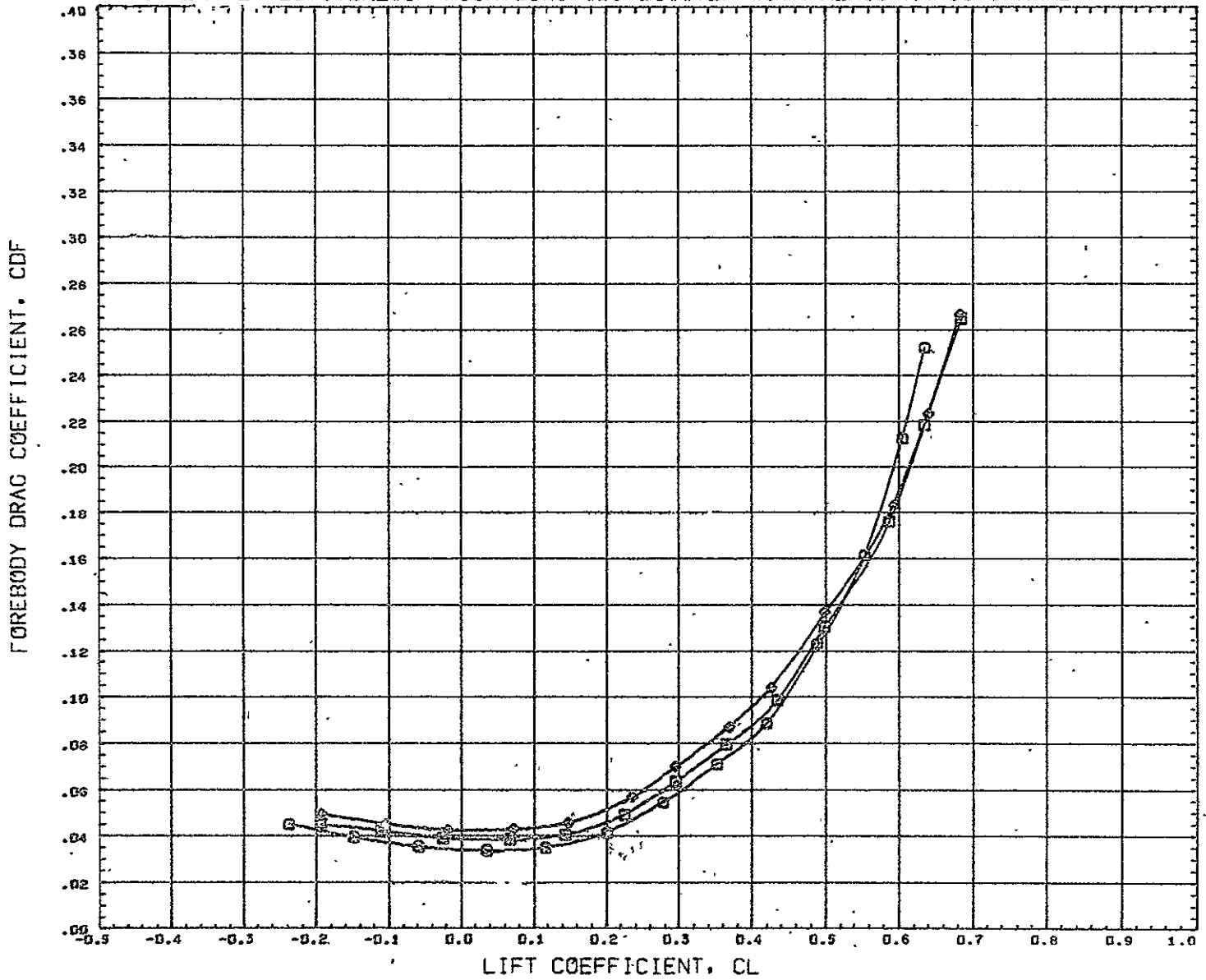
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REFL	2.0000	FT.
REFB	2.0000	FT.
XNRP	1.7030	FT.
YNRP	0.0000	FT.
ZNRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BINIWIT1P1VIE1F2

(RCC009) 16 OCT 70 PAGE 18

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	FLAP	PARAMETRIC VALUES			
○	0.000	MACH	0.185	BETA	0.000
□	20.000	ELEVON	-15.000	VTAIL	6.000
◇	40.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

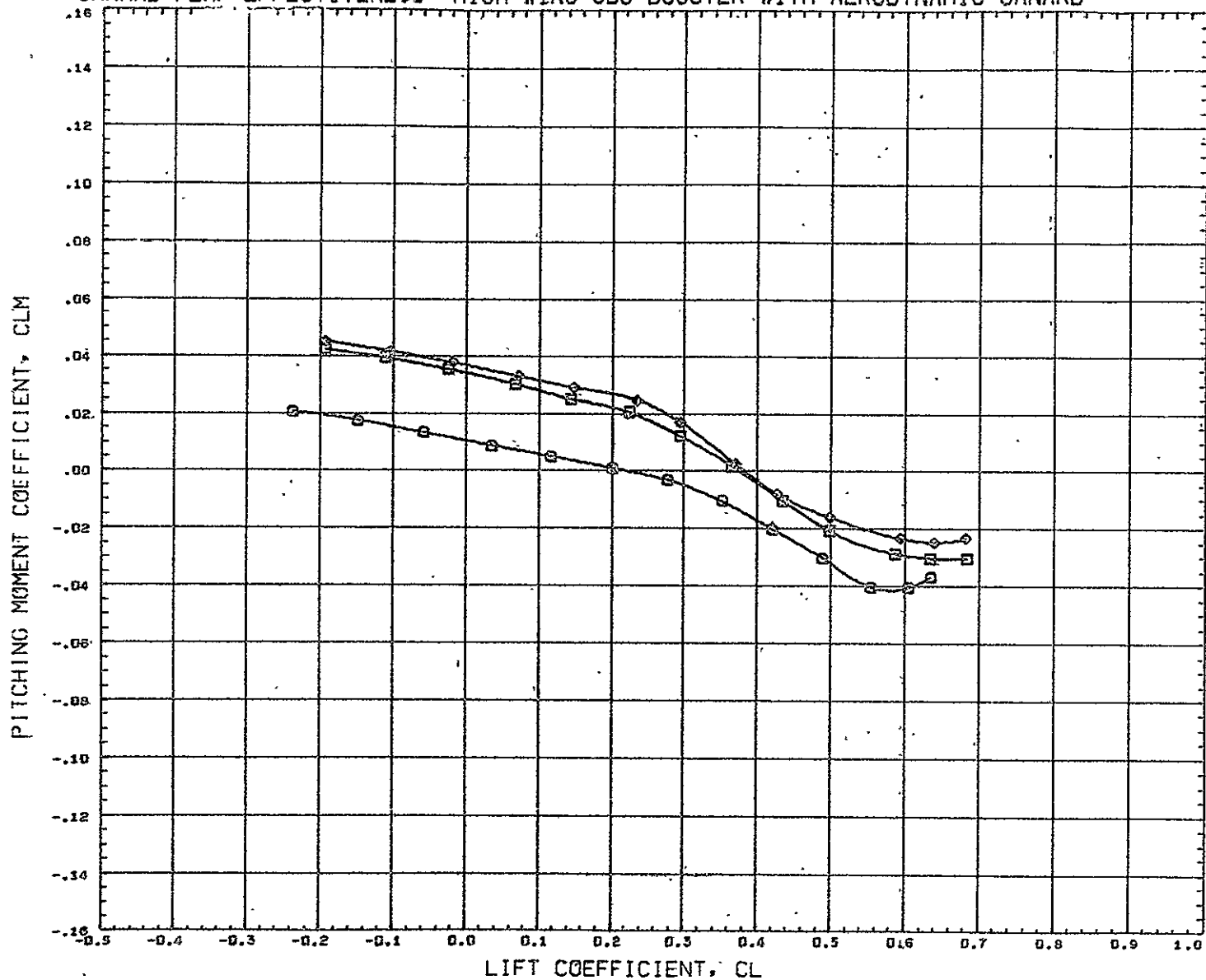
REFERENCE FILE H0C(WD)SPACESHOT-B

1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC009) 16 OCT 70

PAGE 19

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	FLAP	PARAMETRIC VALUES			
○	0.000	MACH	0.185	BETA	0.000
□	20.000	ELEVON	-15.000	VTAIL	6.000
◇	40.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

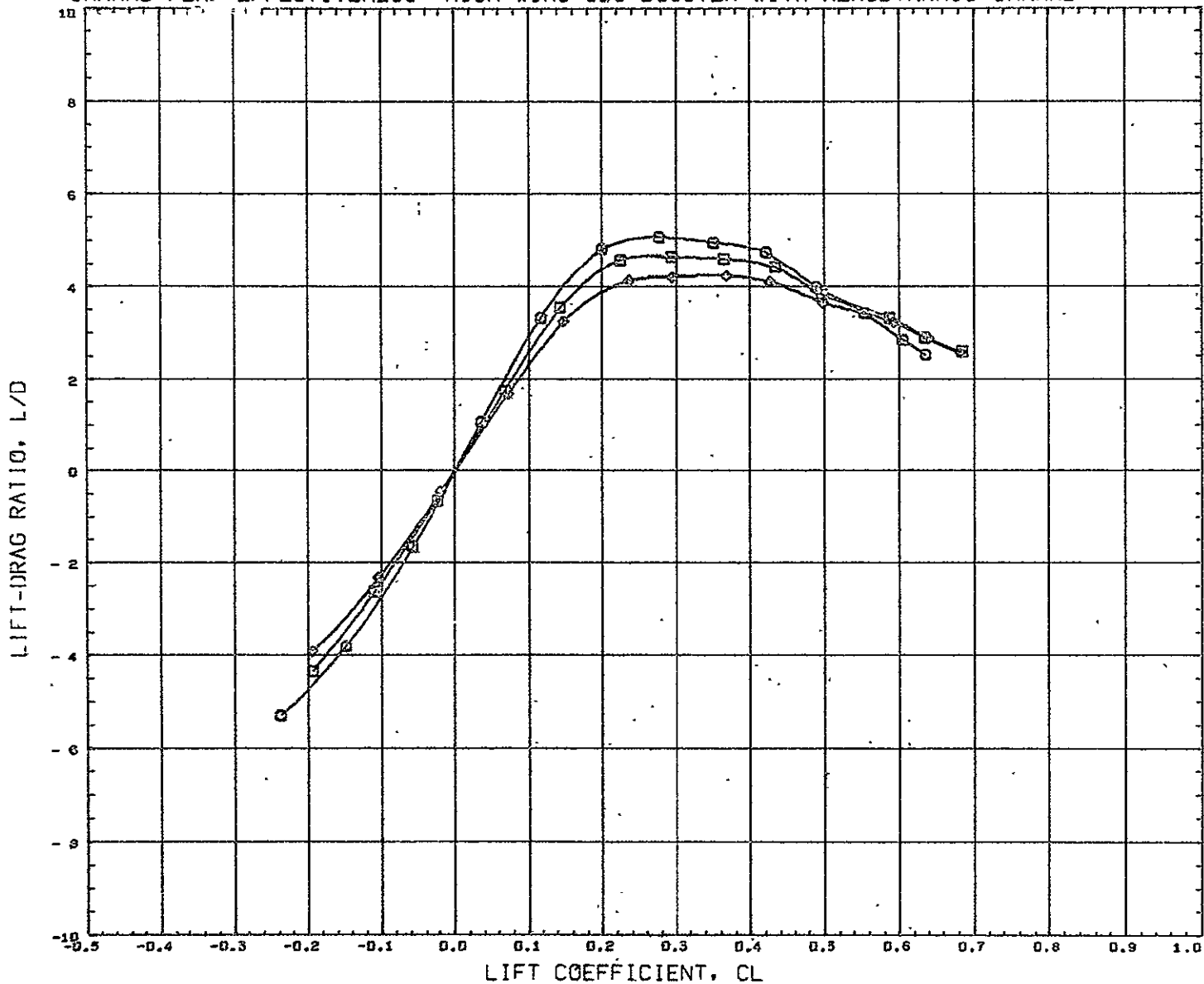
REFERENCE FILE MDC(MD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2

(RCC009) 16 OCT 70

PAGE 20

CANARD FLAP EFFECTIVENESS HIGH WING SBC BOOSTER WITH AERODYNAMIC CANARD



SYMBOL	FLAP	PARAMETRIC VALUES			
○	0.000	MACH	0.185	BETA	0.000
□	20.000	ELEVON	- 15.000	VTAIL	6.000
◇	40.000				

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XNRP	1.7030	FT.
YNRP	0.0000	FT.
ZNRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HOC(WD) SPACESHUT-B

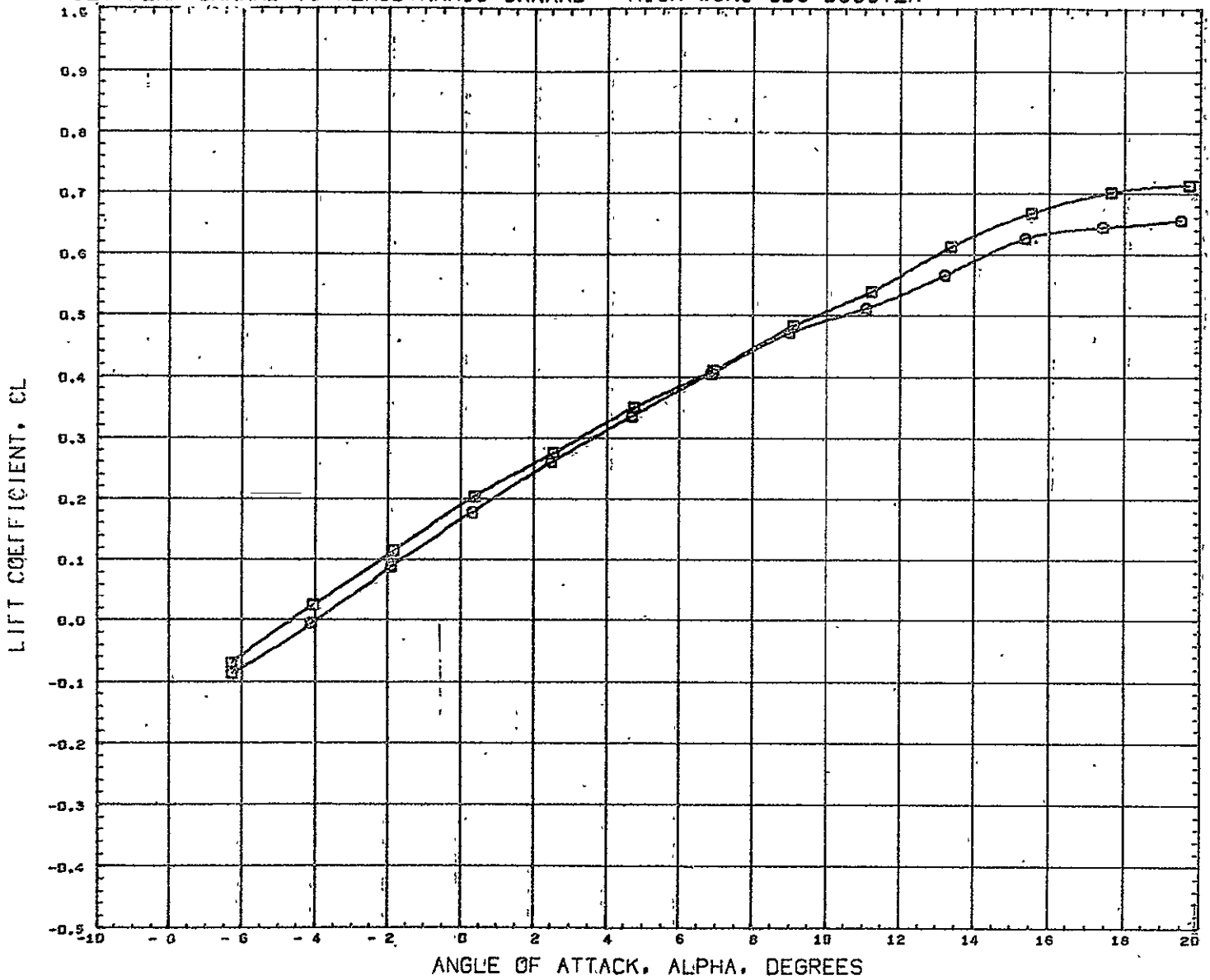
1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC009) 16 OCT 70

PAGE

21

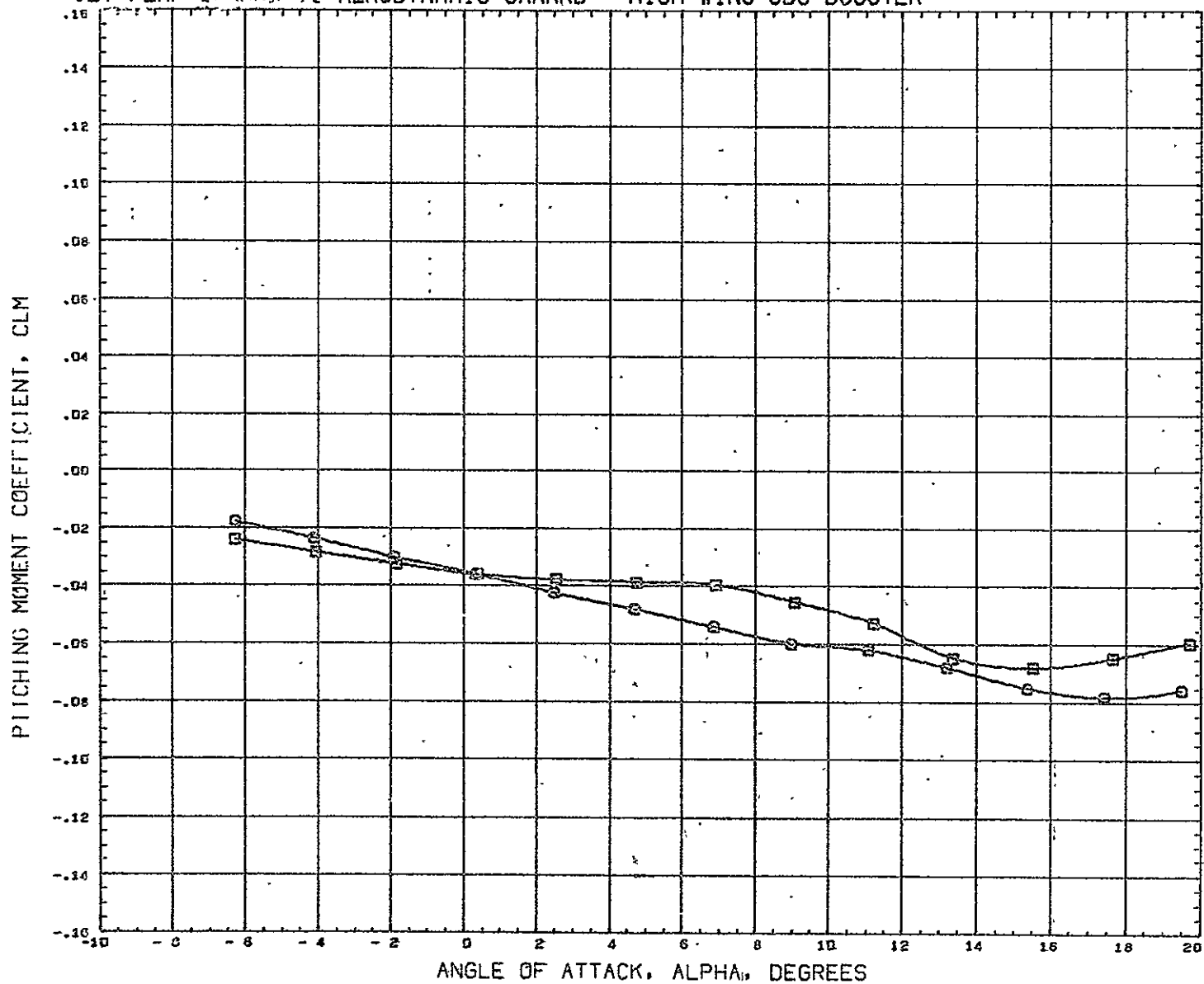
JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES		REFERENCE INFORMATION	
(RCC001)	1351-DAC-LSWT-SBCBOOSTER BIN1W1V1V1E1	BETA	0.000	ELEVON	0.000
(RCC003)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	VTAIL	6.000		
		REFS	1.0000	SCALE	SCALE
		REFL	2.0000	SCALE	SCALE
		REFB	2.0000	SCALE	SCALE
		XMRP	1.7030	SCALE	SCALE
		YNRP	0.0000	SCALE	SCALE
		ZMRP	0.0125	SCALE	SCALE
		SCALE	0.0100	SCALE	SCALE

MACH 0.105

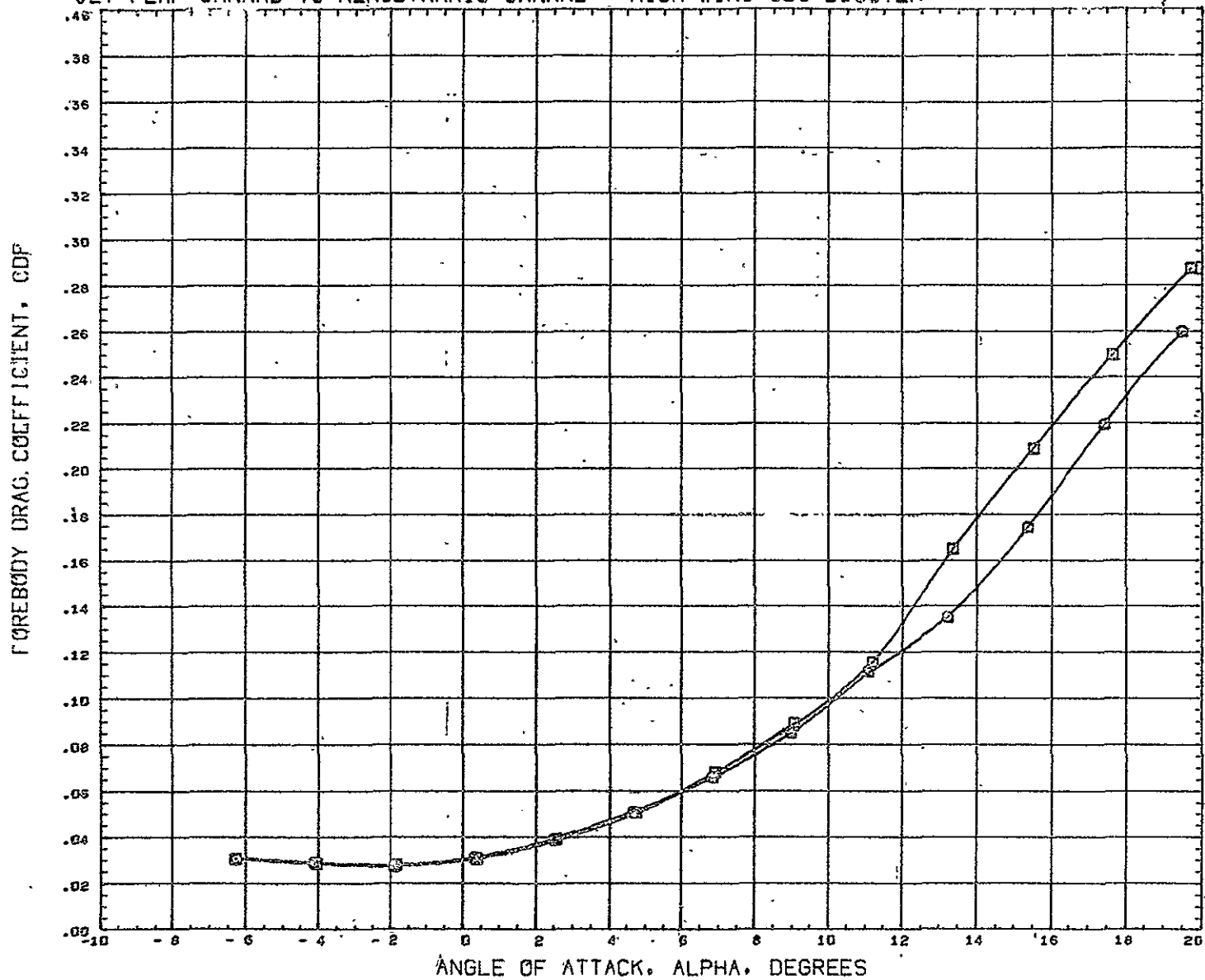
JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC001)	○	1351-DAC-LSWT-SBCBOOSTER B1N1W1J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC005)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1F1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XHRF	1.7030 FT.
							YHRF	0.0000 FT.
							ZHRF	0.0125 FT.
							SCALE	0.0100 SCALE.

NACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



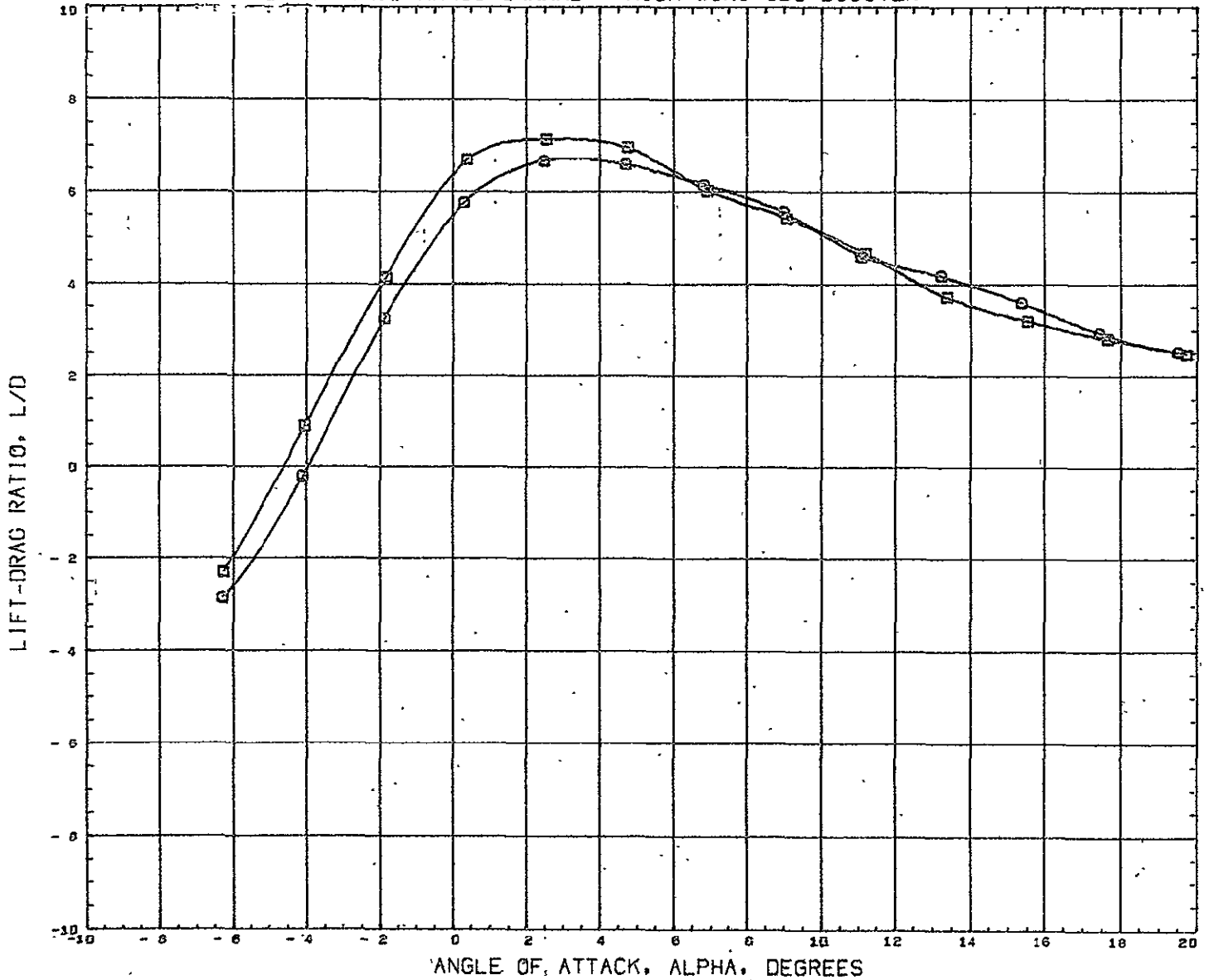
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (RCC001) O 1351-DAC-LSWT-SBCBOOSTER B1N1W1J1V1E1
 (RCC002) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFD 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



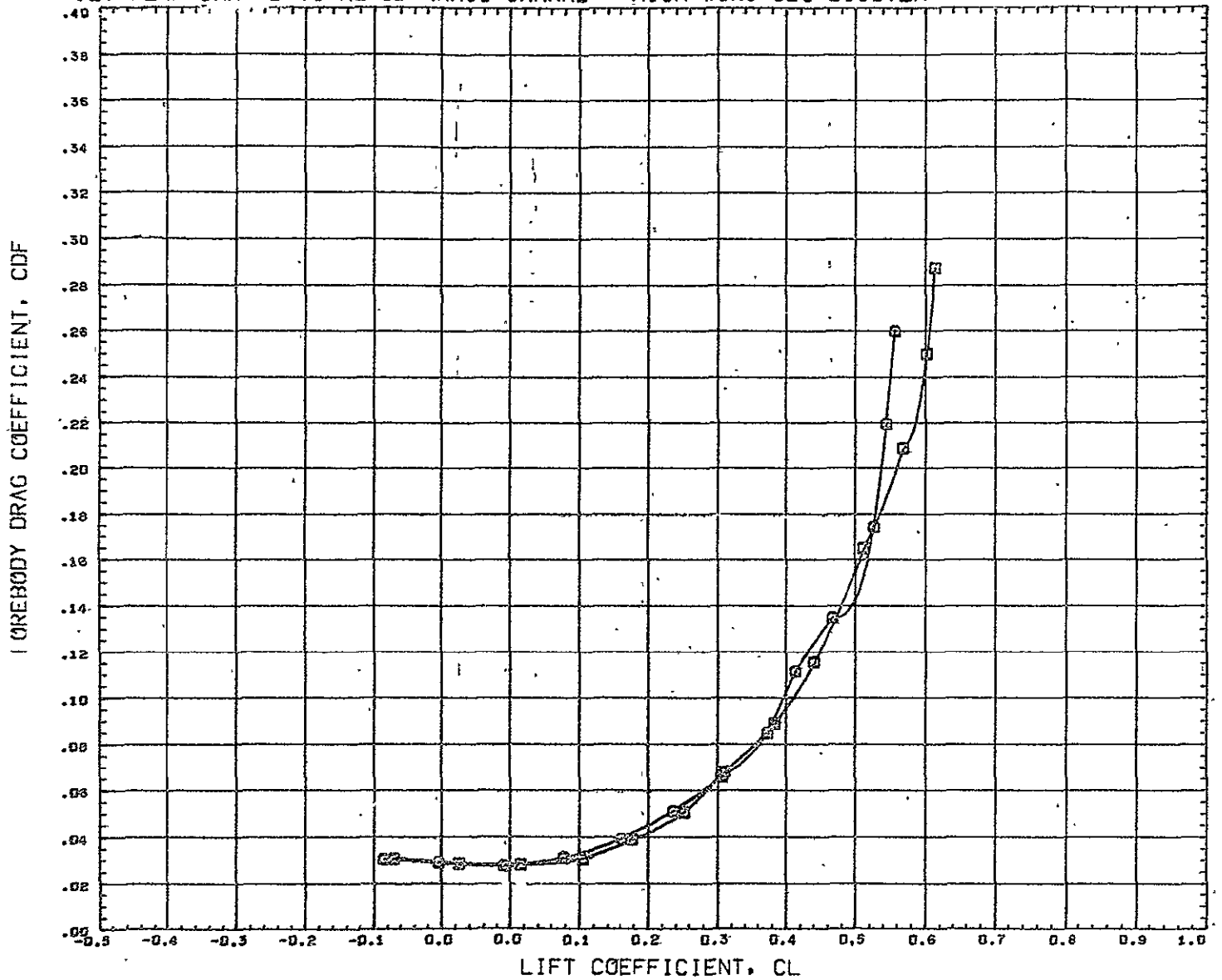
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 (RCC001) 1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1
 (RCC005) 1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.185

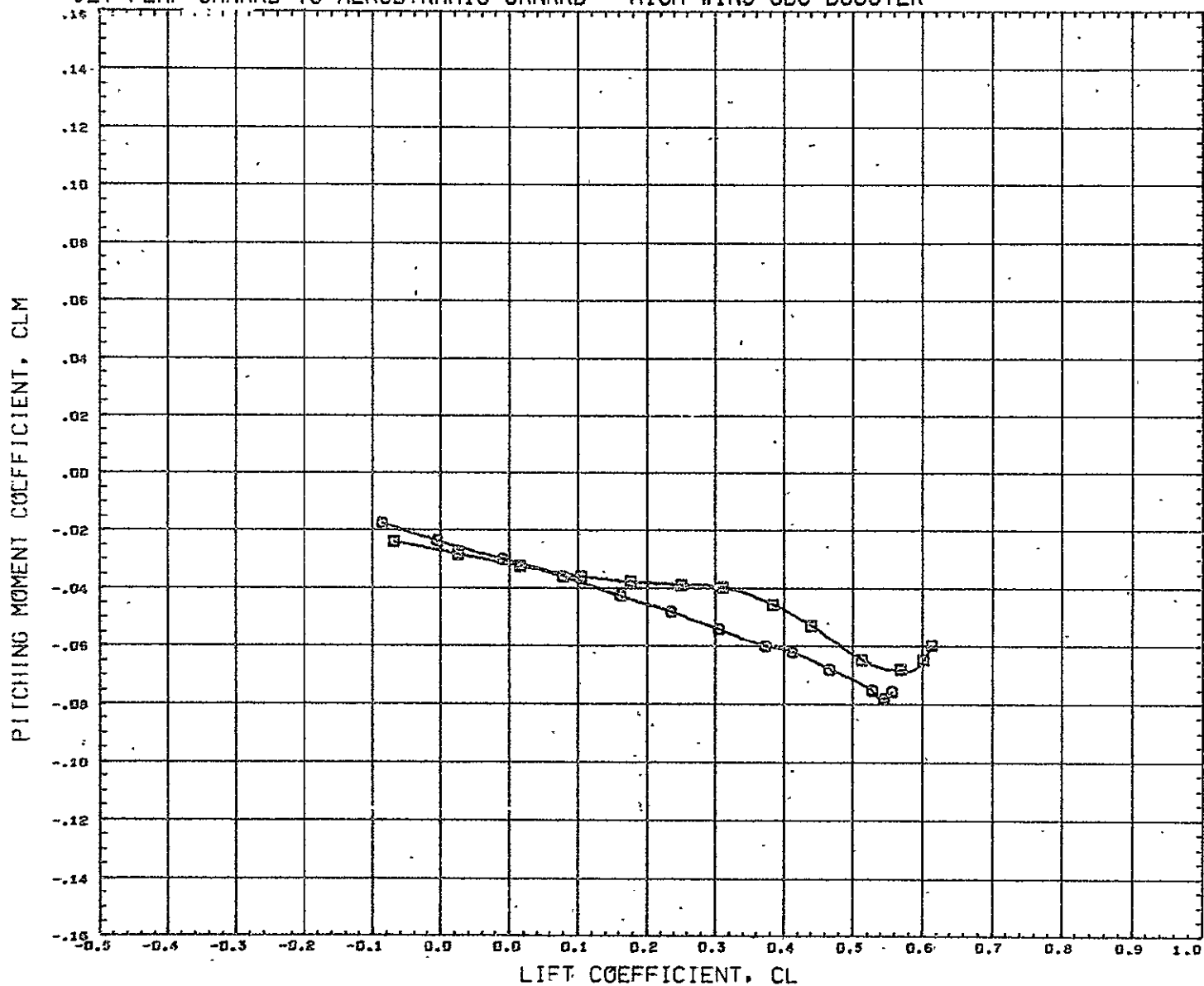
JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	ELEVON	REFERENCE INFORMATION
(RCC001)	1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1	0.000	6.000	0.000	REFS 1.0000 SQ. FT
(RCC005)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	0.000	6.000	0.000	REFL 2.0000 FT.
					REFB 2.0000 FT.
					XMRP 1.7030 FT.
					YMRP 0.0000 FT.
					ZMRP 0.0125 FT.
					SCALE 0.0100 SCALE

MACH 0.105

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



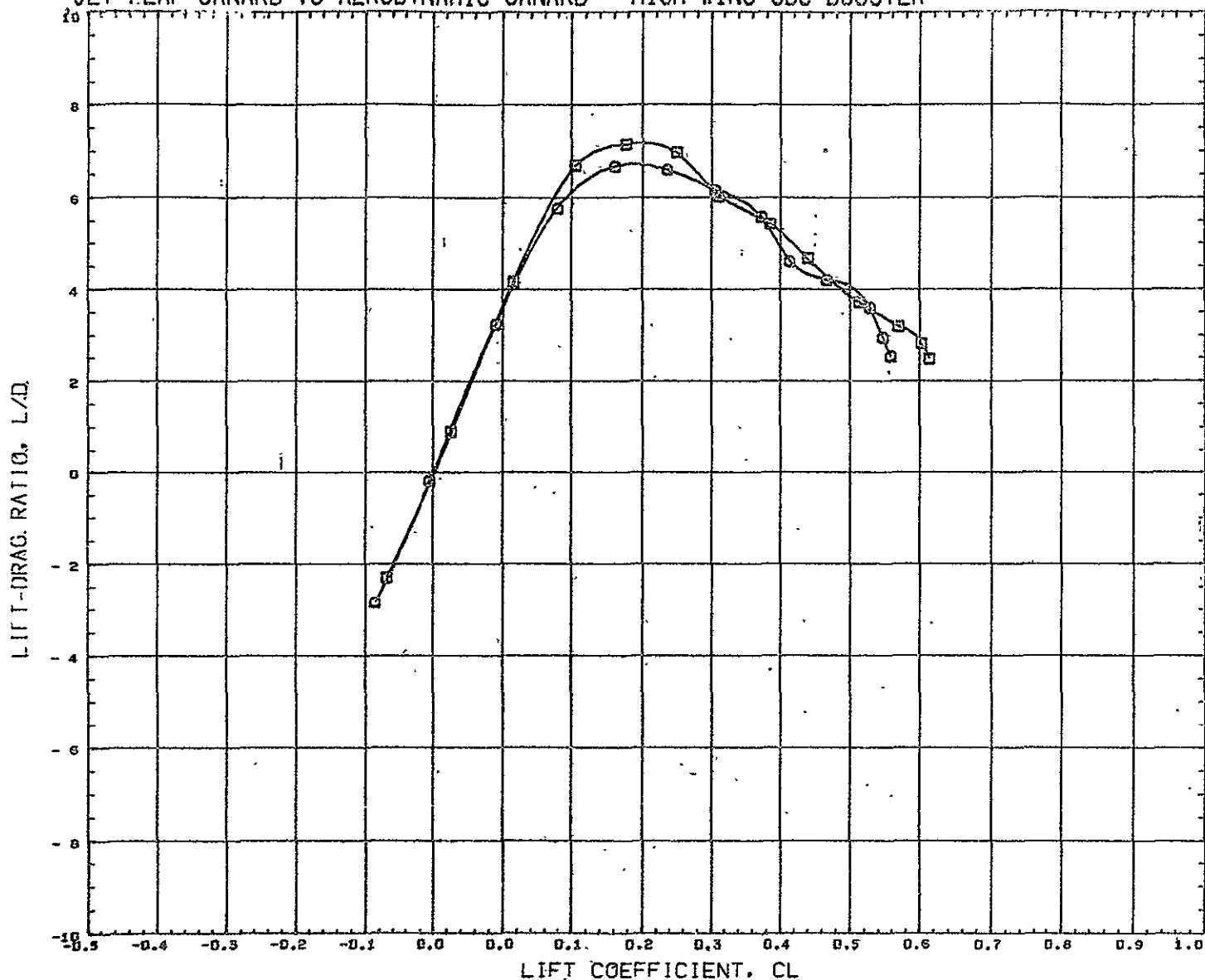
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RCC001) ○	1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1
(RCC005) □	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2

PARAMETRIC VALUES	
BETA	0.000
ELEVON	0.000
VTAIL	6.000

REFERENCE INFORMATION	
REFS	1.0000 SQ. FT
REFL	2.0000 FT.
REFB	2.0000 FT.
XHRF	1.7030 FT.
YHRF	0.0000 FT.
ZHRF	0.0125 FT.
SCALE	0.0100 SCALE

MACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

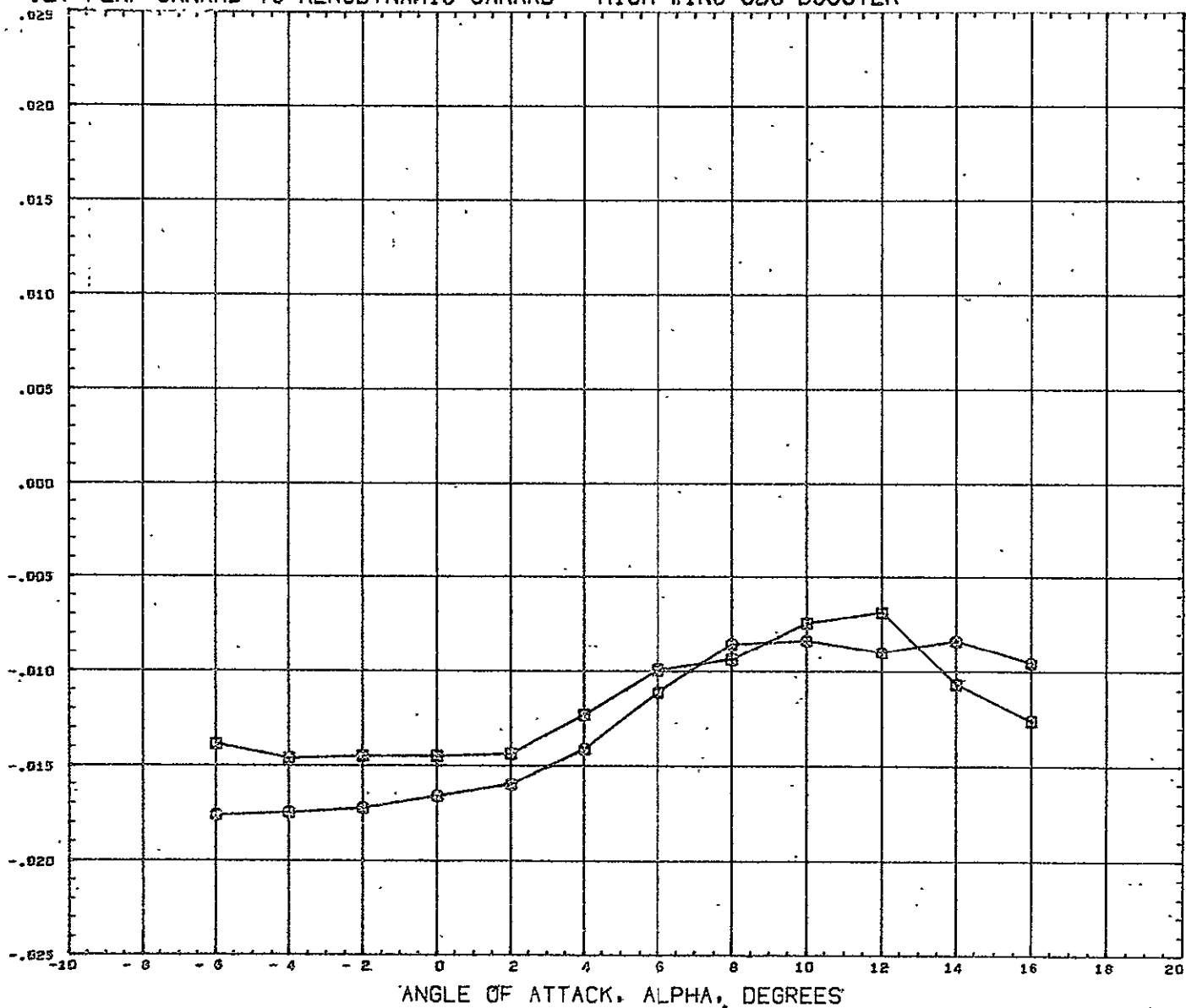


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES	REFERENCE INFORMATION
(RCC001)	1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1	BETA 0.000 ELEVON 0.000	REFS 1.0000 SQ. FT
(RCC005)	1351-DAC-LSWT-SBCBOOSTER BIN1W1F1V1E1F2	VTAIL 6.000	REFL 2.0000 FT.
			REFB 2.0000 FT.
			XMRP 1.7030 FT.
			YMRP 0.0000 FT.
			ZMRP 0.0125 FT.
			SCALE 0.0100 SCALE

MACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

SIDE FORCE DERIVATIVE, $DCY/DBETA$ (CYBETA) PER DEGREE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CCCC01) □ 1351-DAC-LSWT-SBCBOOSTER BINIWJ1V1E1
 (CCCC05) □ 1351-DAC-LSWT-SBCBOOSTER BINIWIT1P1V1E1F2

PARAMETRIC VALUES

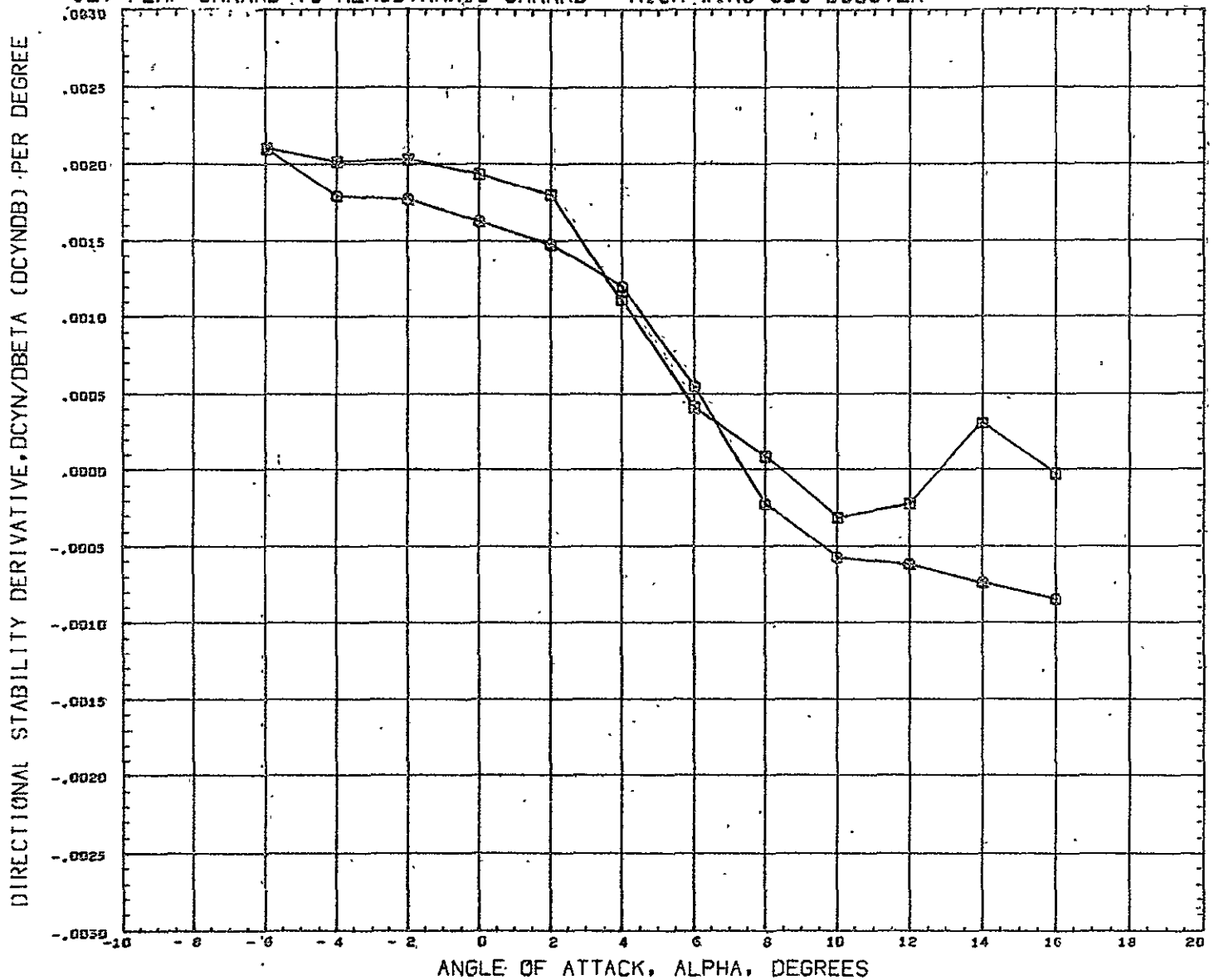
BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION

REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

HACK 0.180

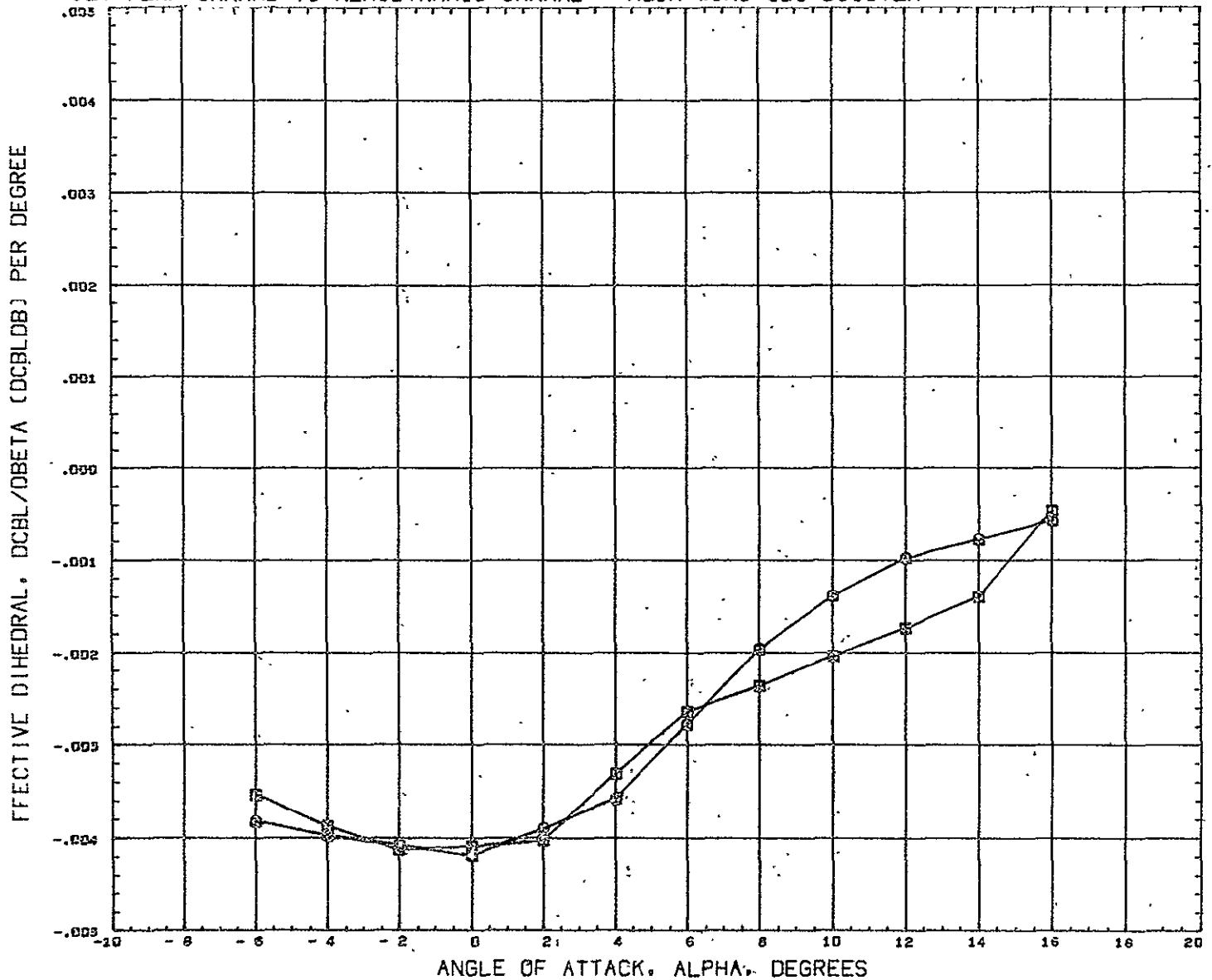
JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES	REFERENCE INFORMATION
(CCC001)	1351-DAC-LSWT-SBCBOOSTER BIN1WIJ1V1E1	BETA 0.000 ELEVON 0.000	REFS 1.0000 SQ. FT
(CCC005)	1351-DAC-LSWT-SBCBOOSTER BIN1WIJ1P1V1E1F2	VTAIL 6.000	REFL 2.0000 FT.
			REFB 2.0000 FT.
			XMRP 1.7030 FT.
			YMRP 0.0000 FT.
			ZMRP 0.0125 FT.
			SCALE 0.0100 SCALE

MACH 0.180

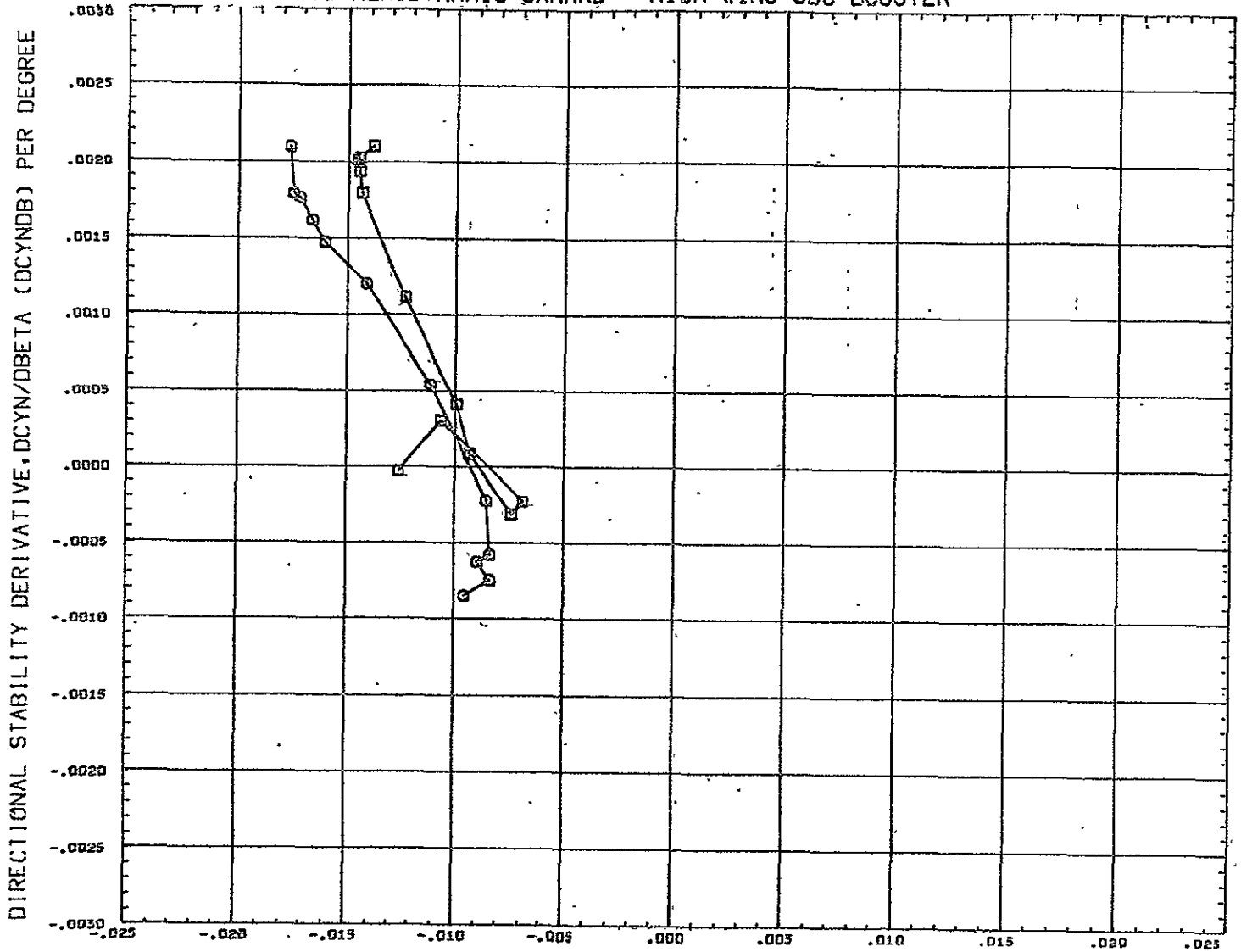
JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCCC01)	Q 1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCCC05)	□ 1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
						REFB	2.0000 FT.
						XMRP	1.7030 FT.
						YMRP	0.0000 FT.
						ZMRP	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.180

JET FLAP CANARD VS AERODYNAMIC CANARD HIGH WING SBC BOOSTER

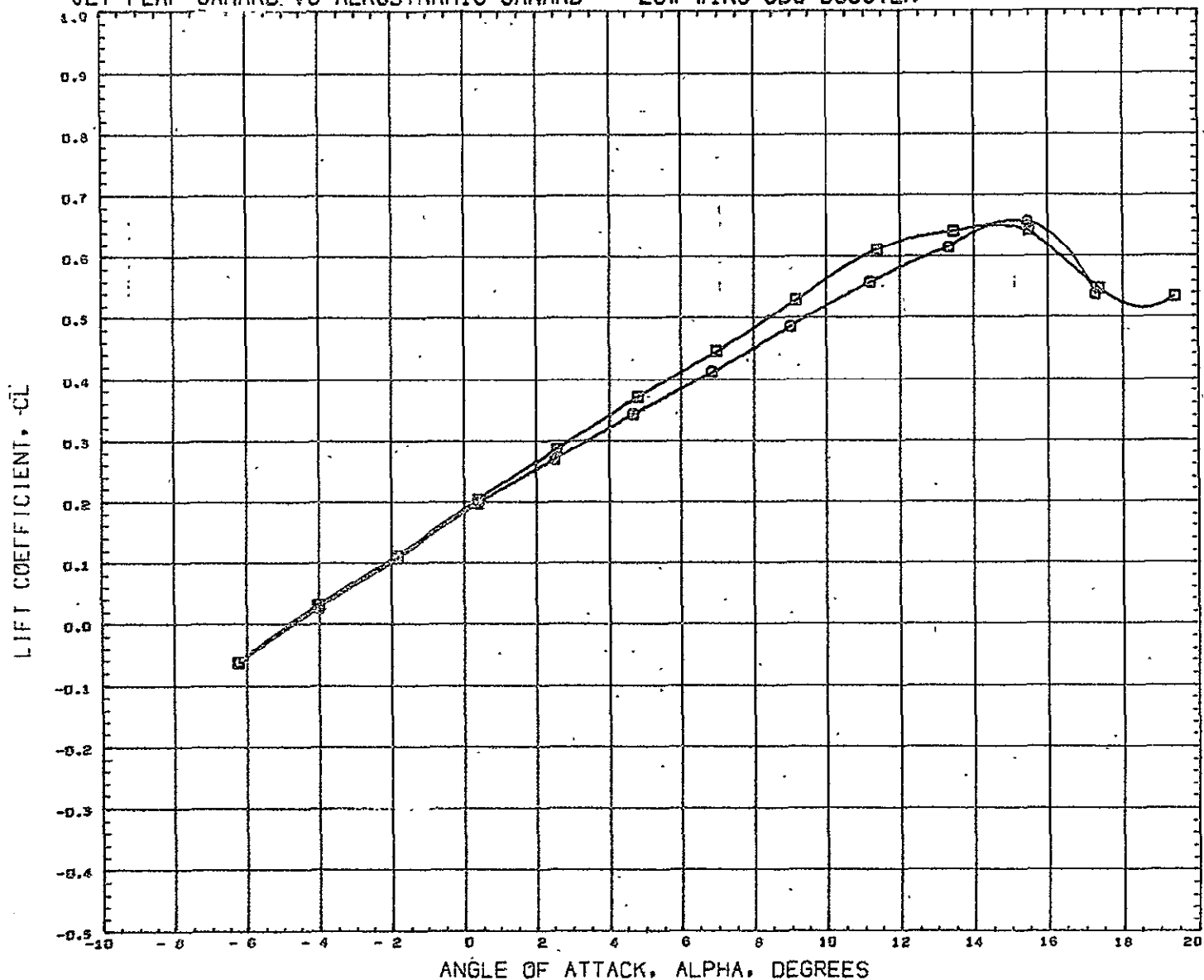


SIDE FORCE DERIVATIVE, DCY/DBETA (CYBETA) PER DEGREE

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCC001)	○	1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC005)	□	1351-DAC-LSWT-SBCBOOSTER BIN1W1P1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XNRP	1.7030 FT.
							YNRP	0.0000 FT.
							ZNRP	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.180

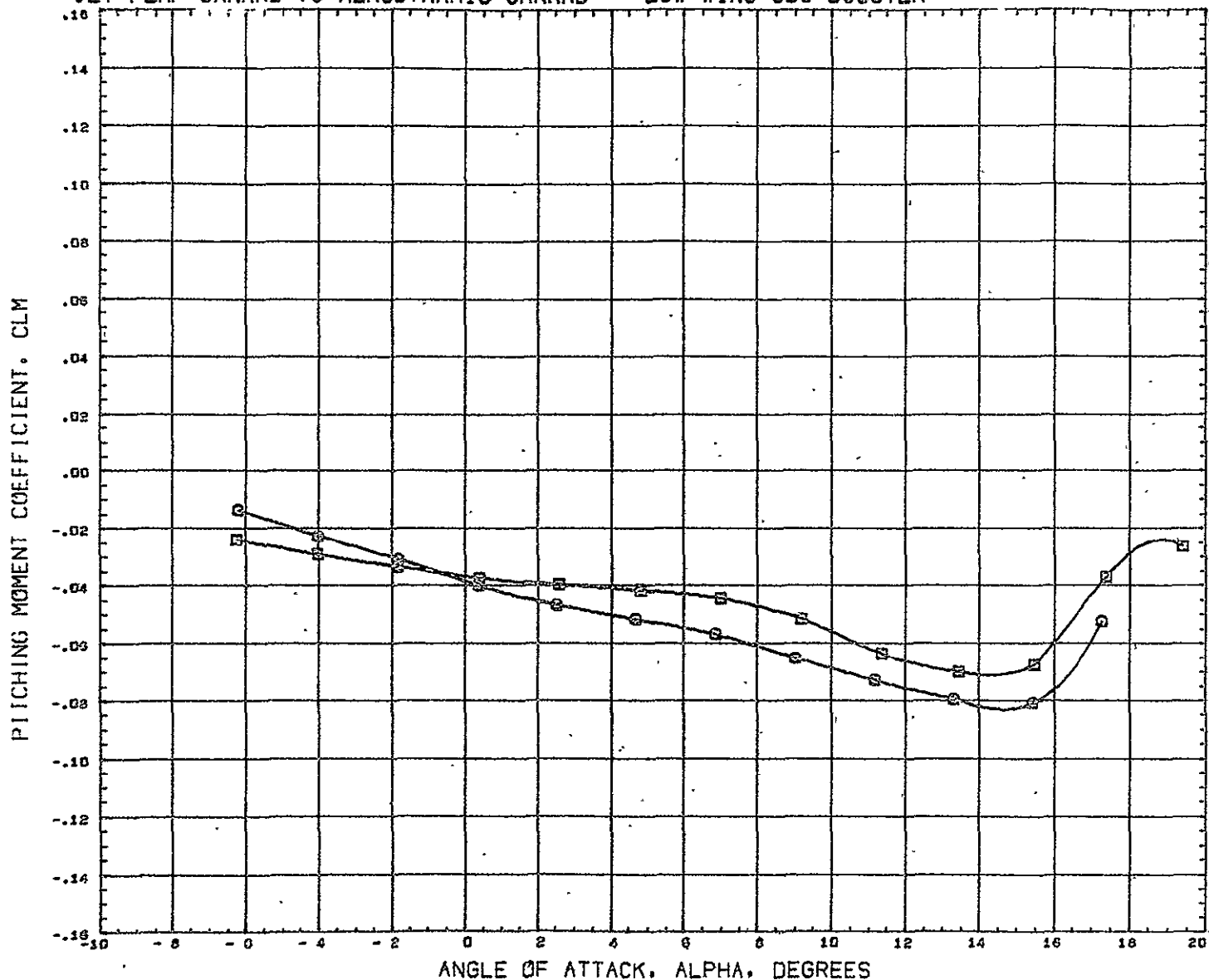
JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCCD19)	○	1351-DAC-LSWT-SBCBOOSTER	B1N1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCCD22)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1F1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YHRP	0.0000 FT.
								ZHRP	0.0125 FT.
								SCALE	0.0100 SCALE

MACH 0.105

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



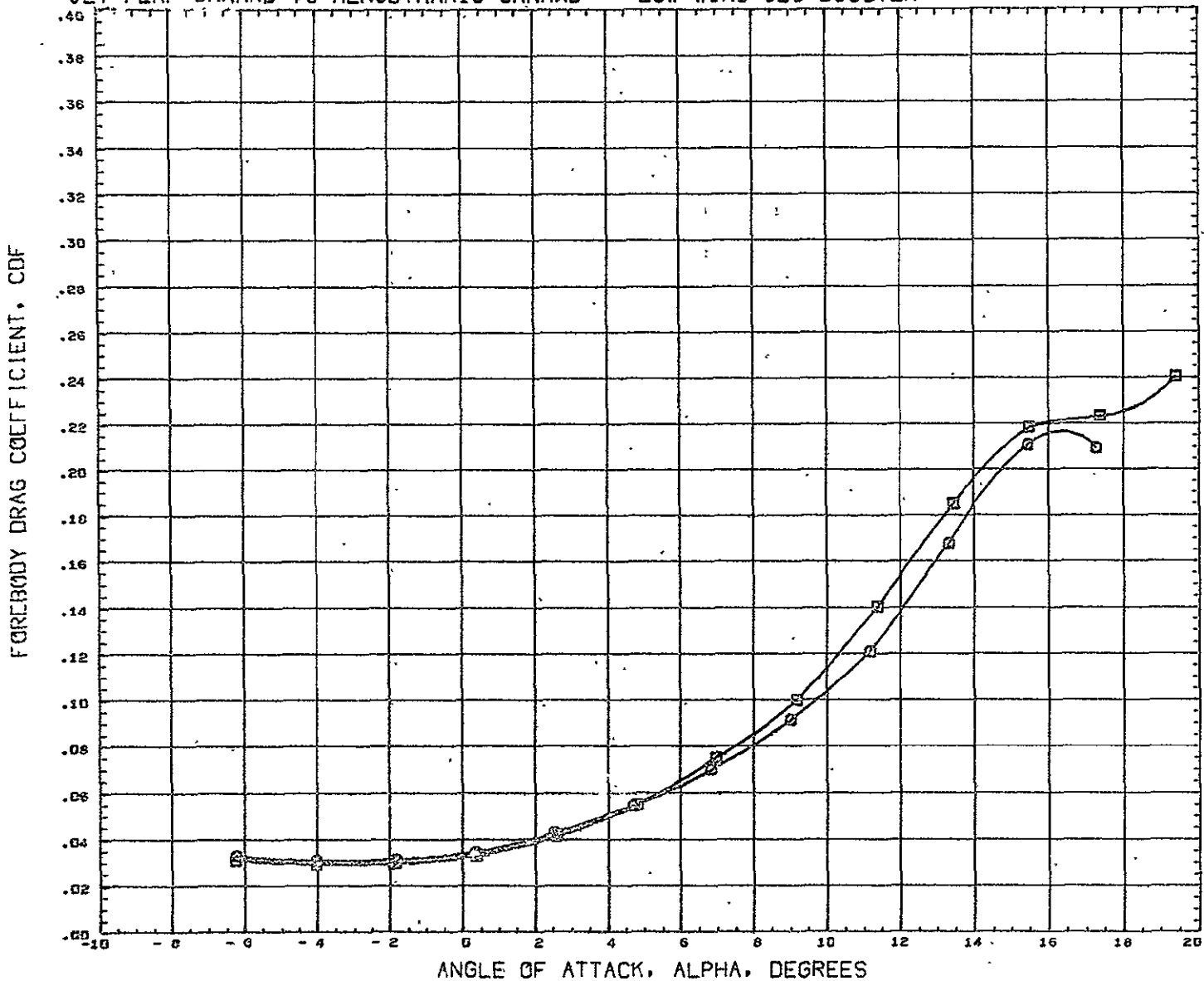
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 (RCCD22) 1351-DAC-LSWT-SBCBOOSTER 81N1W2T1P1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.185

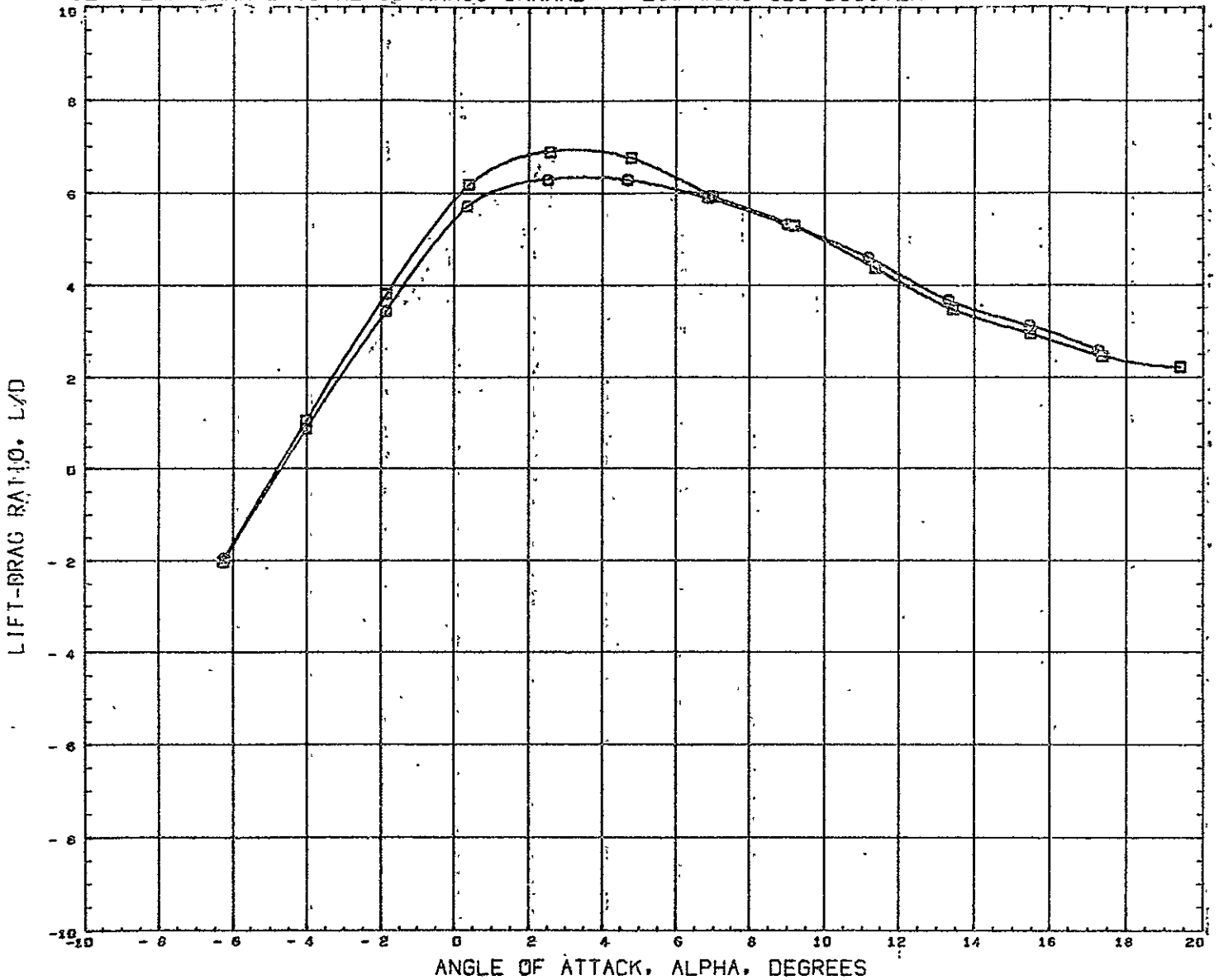
JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	ELEVON	REFERENCE INFORMATION
(RCC019)	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	0.000	0.000	0.000	REFS 1.0000 SQ. FT
(RCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	6.000			REFL 2.0000 FT.
					RFPB 2.0000 FT.
					XMRP 1.7030 FT.
					YMRP 0.0000 FT.
					ZMRP 0.0125 FT.
					SCALE 0.0100 SCALE

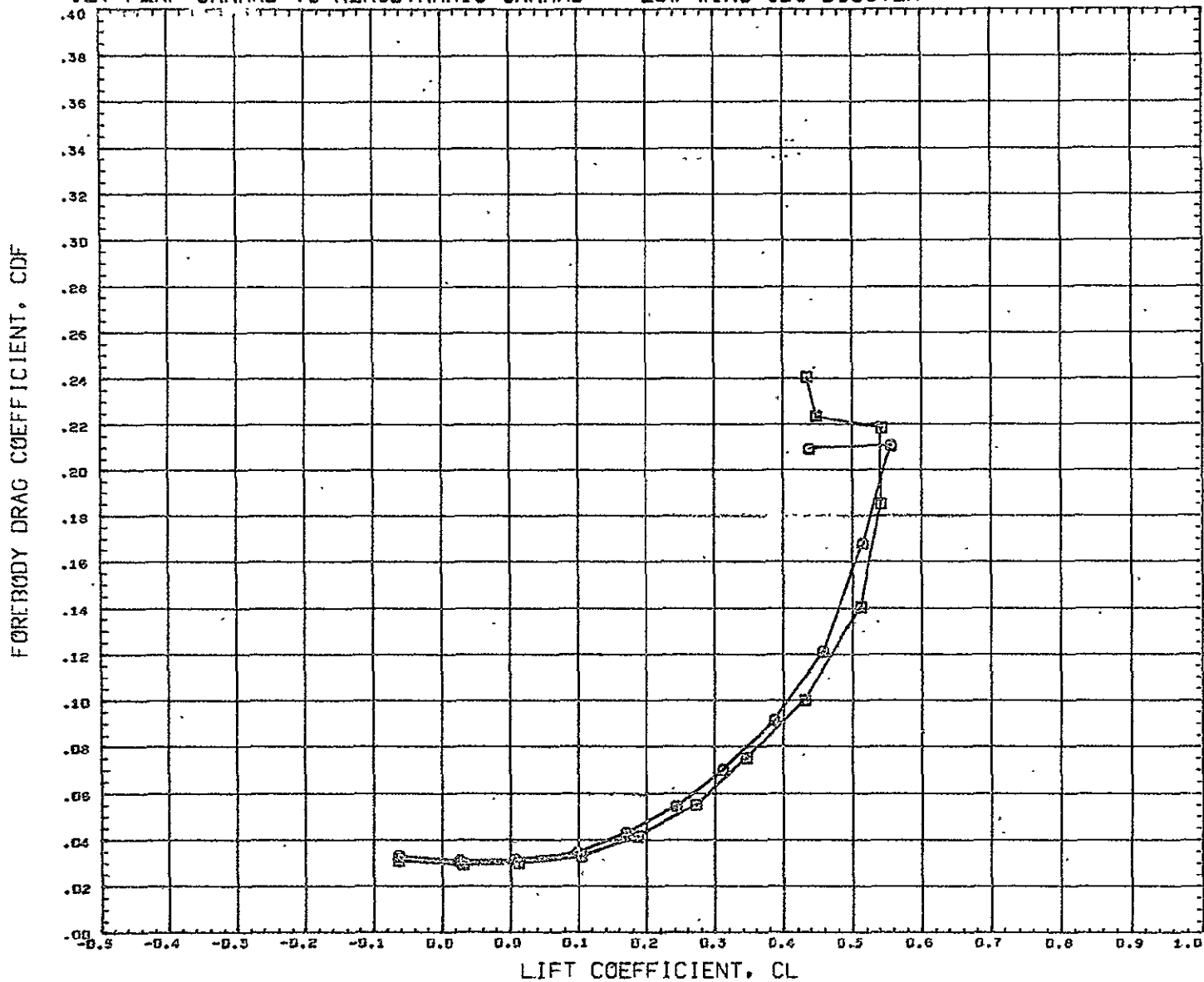
MACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC019)	○	1351-DAC-LSWT-SBCBOOSTER	B1N1WZJ1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC022)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1WZT1P1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
								REFB	2.0000 FT.
								YMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE
MACH		0.185							

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



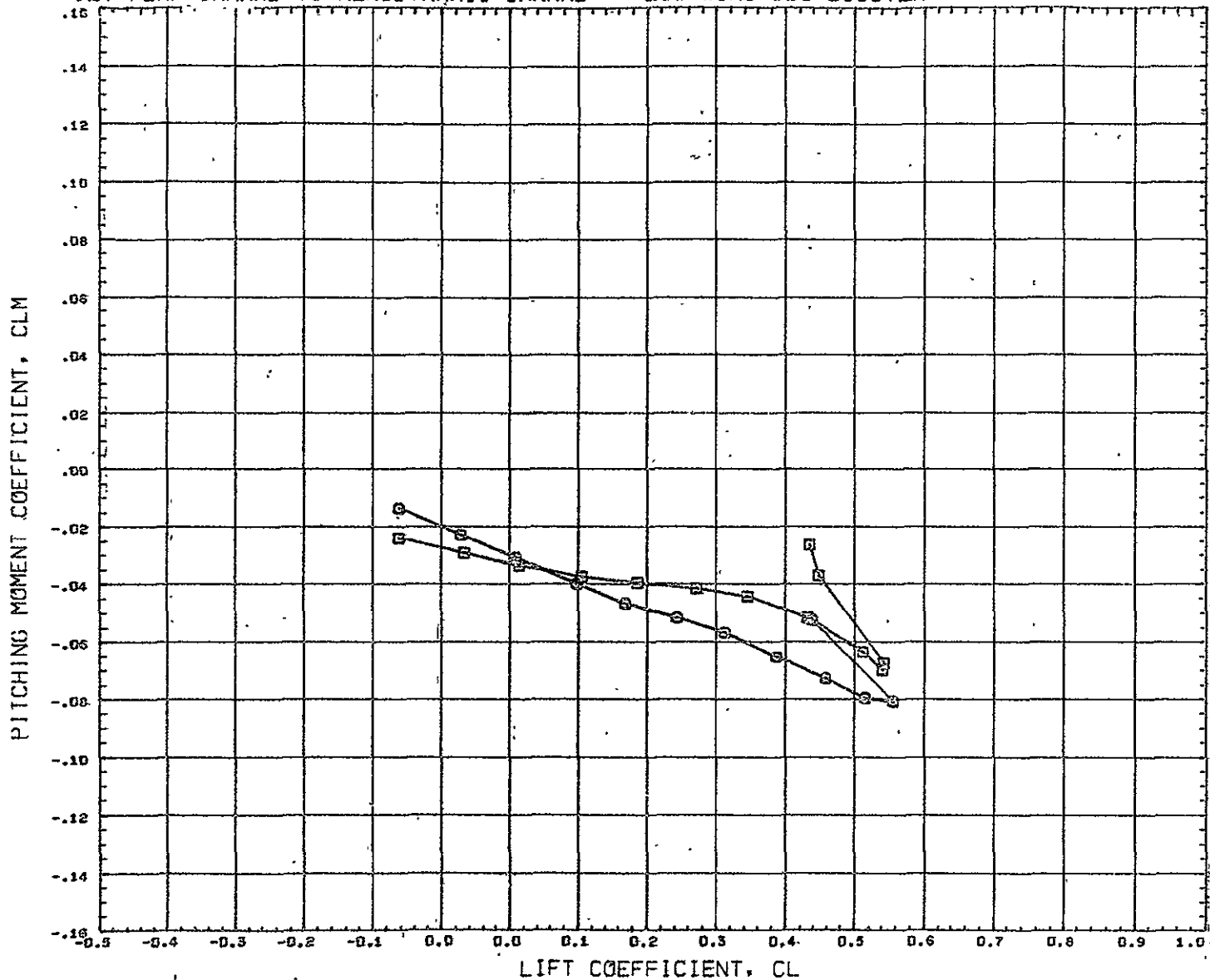
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RCC019)	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1
(RCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

PARAMETRIC VALUES	
BETA	0.000
ELEVON	0.000
VTAIL	6.000

REFERENCE INFORMATION	
REFS	1.0000 SQ. FT
REFL	2.0000 FT.
REFB	2.0000 FT.
XMRP	1.7030 FT.
YMRP	0.0000 FT.
ZMRP	0.0125 FT.
SCALE	0.0100 SCALE

MACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (RCC019) 1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1
 (RCC022) 1351-DAC-LSWT-SBCBOOSTER BIN1W2T1F1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XHRF 1.7030 FT.
 YHRF 0.0000 FT.
 ZHRF 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.105

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RCCD19) □	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1
(RCCD22) ○	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

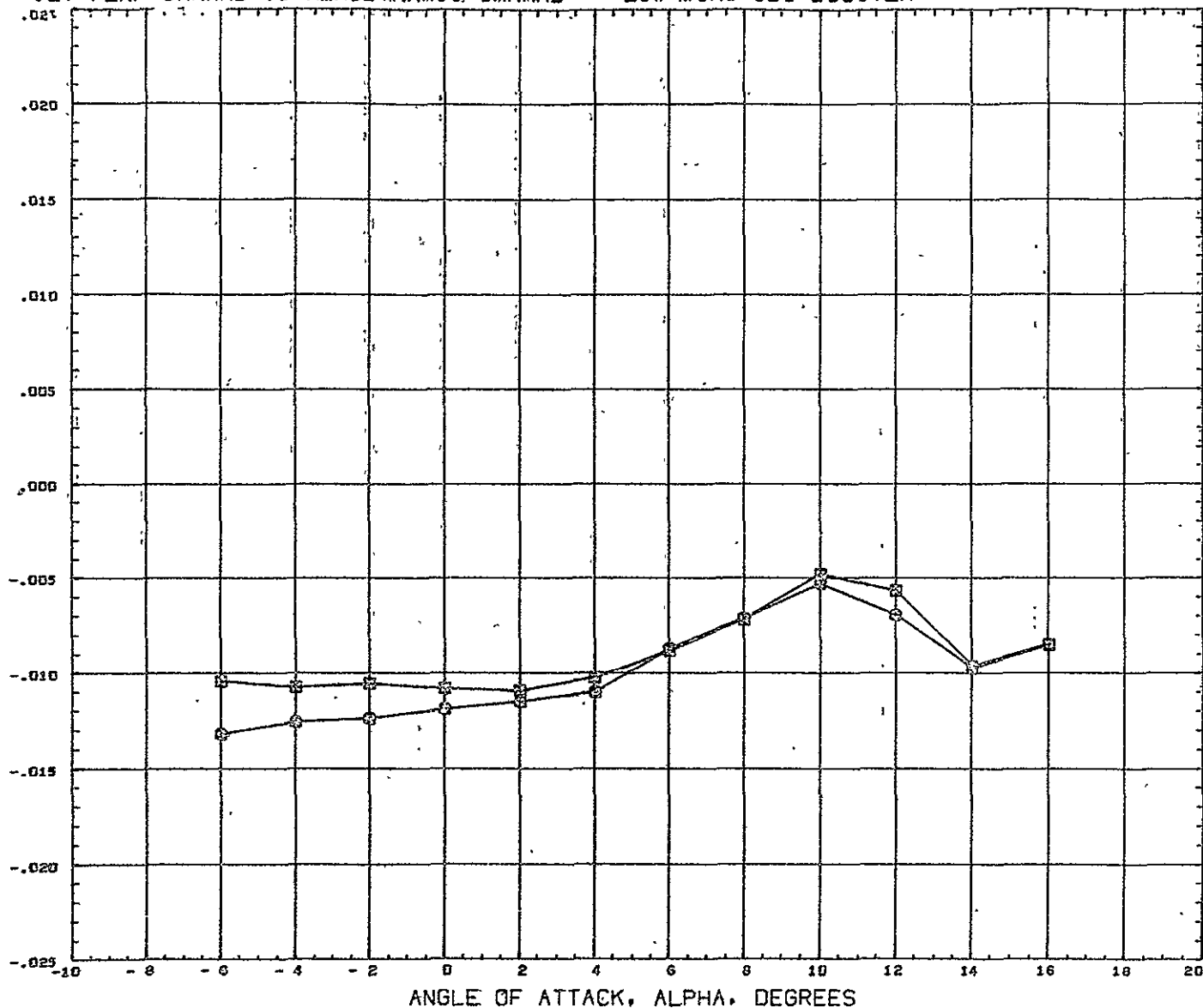
PARAMETRIC VALUES	
BETA	0.000 ELEVON 0.000
VTAI L	6.000

REFERENCE INFORMATION	
REFS	1.0000 SQ. FT
REFL	2.0000 FT.
REFB	2.0000 FT.
XMRP	1.7030 FT.
YMRP	0.0000 FT.
ZMRP	0.0125 FT.
SCALE	0.0100 SCALE

MACH 0.185

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER

SIDE FORCE DERIVATIVE, $DCY/DBETA$ (CYBETA) PER DEGREE

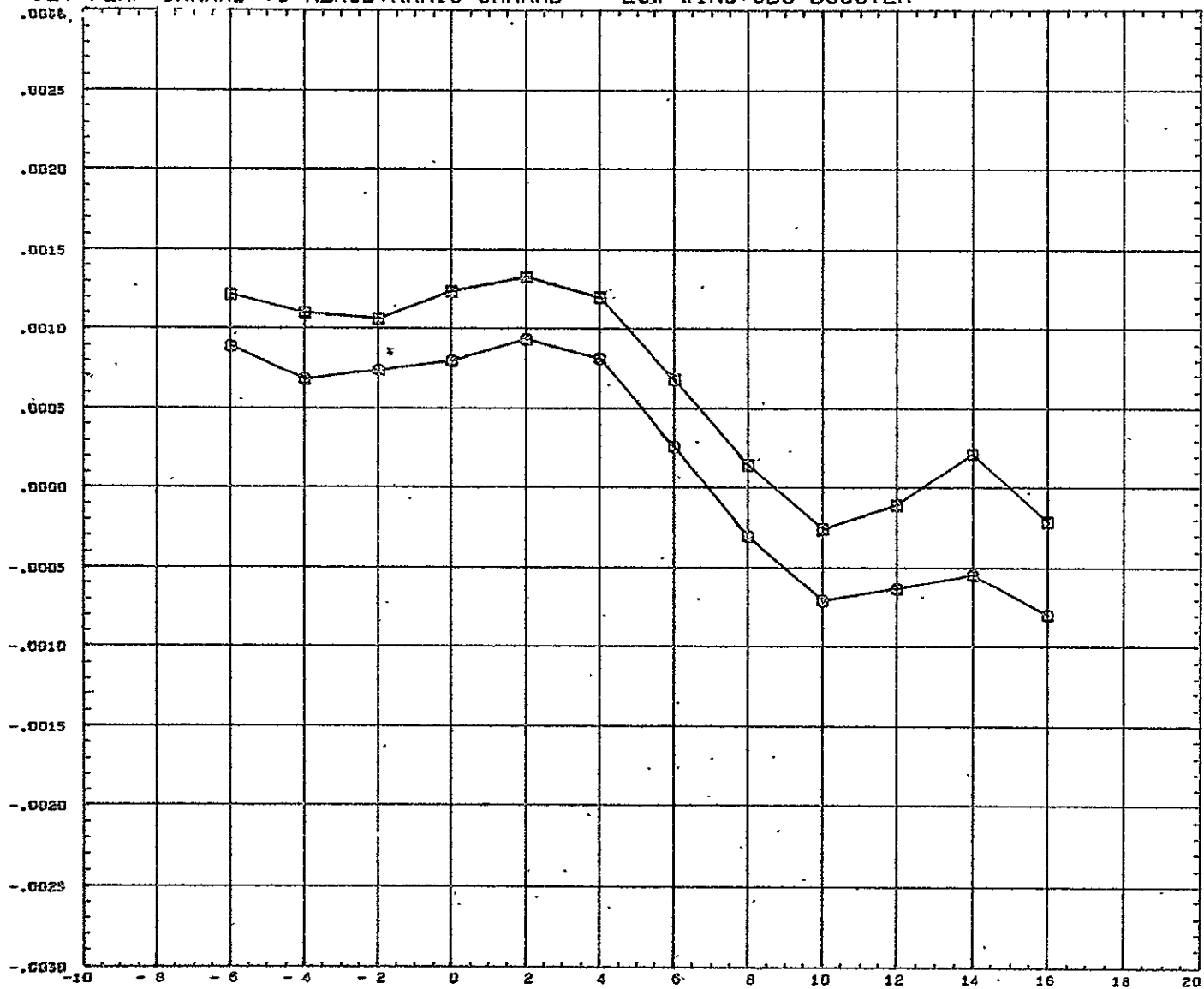


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
		BETA	ELEVON	VTAIL	REFS	SCALE	
(CCCC19)	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	0.000	0.000		1.0000		SQ. FT
(CCCC22)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	6.000			2.0000		FT.
					REFB	2.0000	FT.
					XMRP	1.7030	FT.
					YMRP	0.0000	FT.
					ZMRP	0.0125	FT.
						0.0100	SCALE

MACH 0.180

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER

DIRECTIONAL STABILITY DERIVATIVE, DCYN/DBETA (DCYNDB) PER DEGREE



ANGLE OF ATTACK, ALPHA, DEGREES

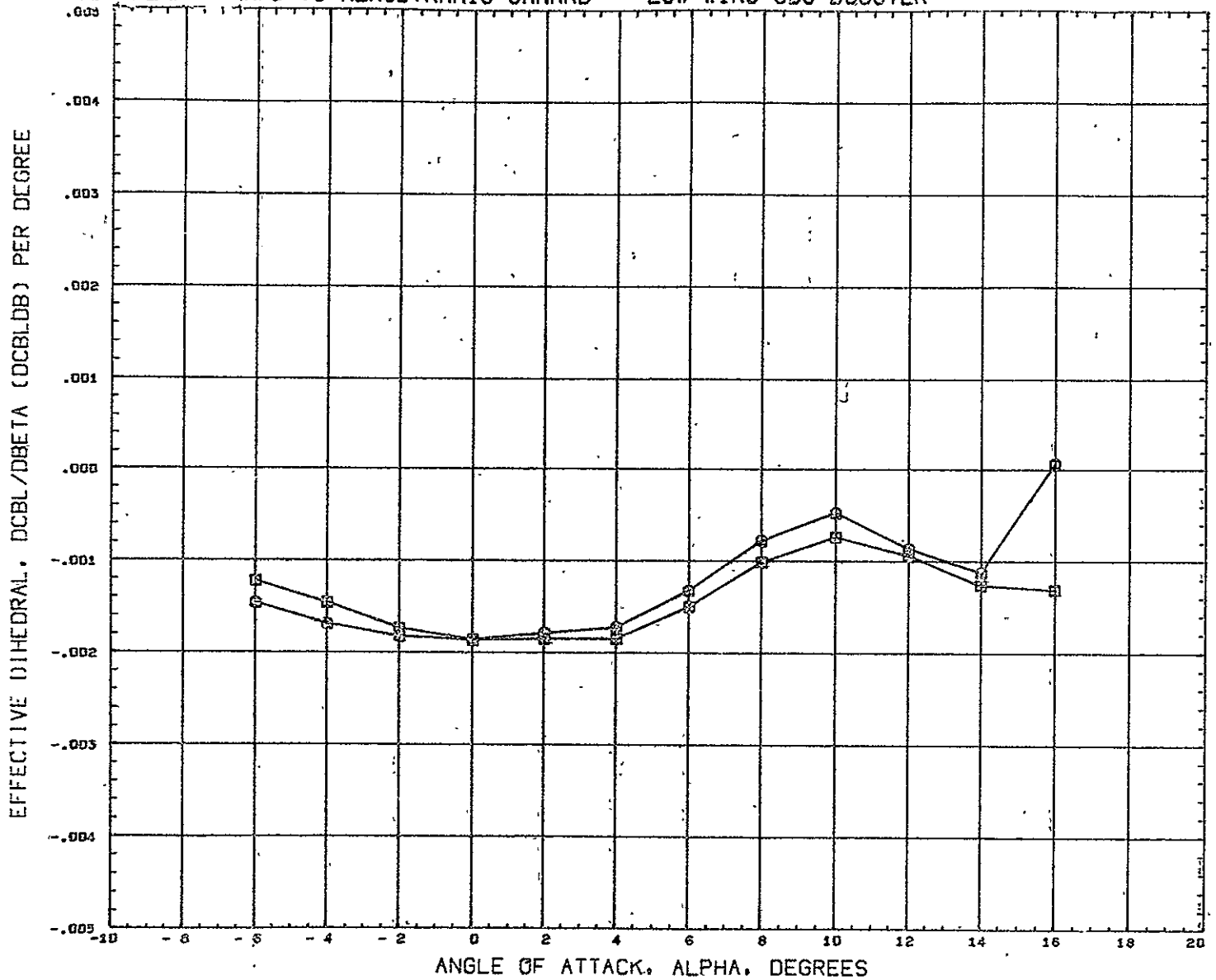
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (CCC019) □ 1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1
 (CCC022) □ 1351-DAC-LSWT-SBCBOOSTER BIN1W2T1P1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

HACH 0.100

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER

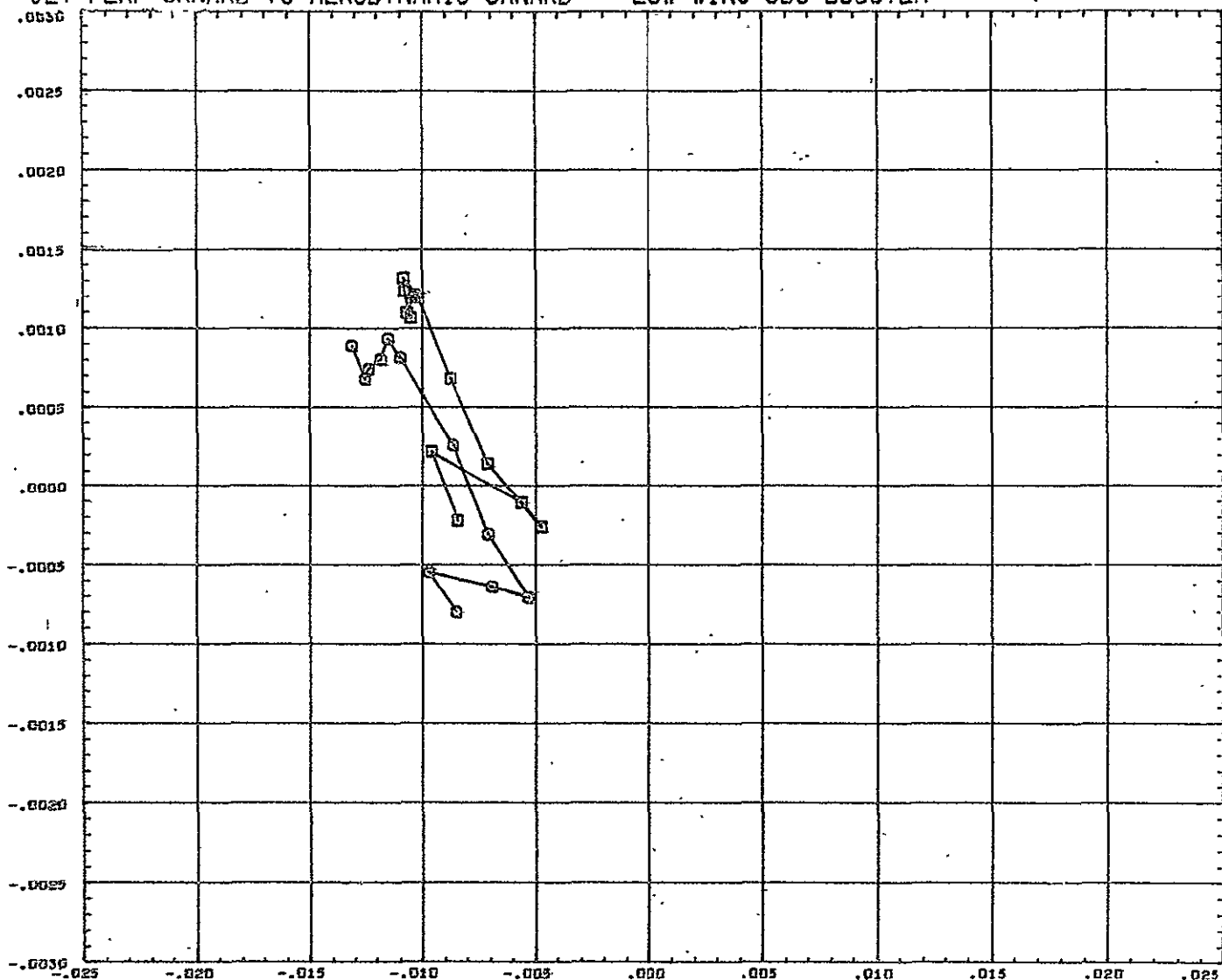


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
		BETA	ELEVON	YTAIL	REFS	SCALE	
(CCCC19)	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	0.000	0.000		1.0000		SQ. FT
(CCCC22)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	6.000			2.0000		FT.
					2.0000		FT.
					1.7030		FT.
					0.0000		FT.
					0.0125		FT.
					0.0100		SCALE

MACH 0.180

JET FLAP CANARD VS AERODYNAMIC CANARD LOW WING SBC BOOSTER

DIRECTIONAL STABILITY DERIVATIVE, DCYN/DBETA (CYNDB) PER DEGREE

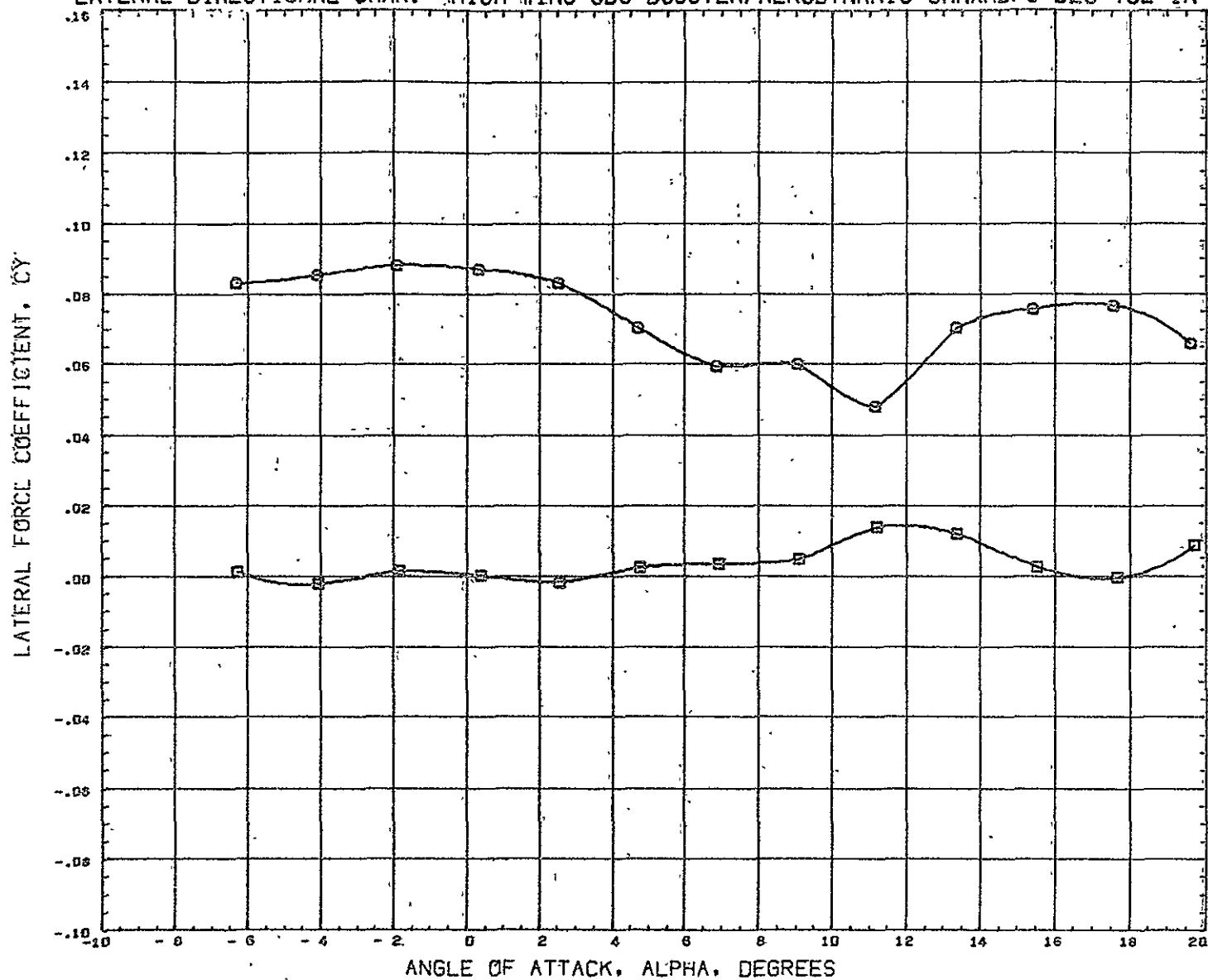


SIDE FORCE DERIVATIVE, DCY/DBETA (CYBETA) PER DEGREE

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION	
(CCC019)	O	1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS 1.0000 SQ. FT
(CCC022)	□	1351-DAC-LSWT-SBCBOOSTER BIN1W2T1P1V1E1F2	VTAIL	6.000			REFL 2.0000 FT.
							REFB 2.0000 FT.
							XHRP 1.7030 FT.
							YHRP 0.0000 FT.
							ZHRP 0.0125 FT.
							SCALE 0.0100 SCALE

MACH 0.100

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN



SYMBOL	BETA	PARAMETRIC VALUES
00	6.000	0.185 ELEVON 0.000
01	0.000	0.000 VTAIL 6.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

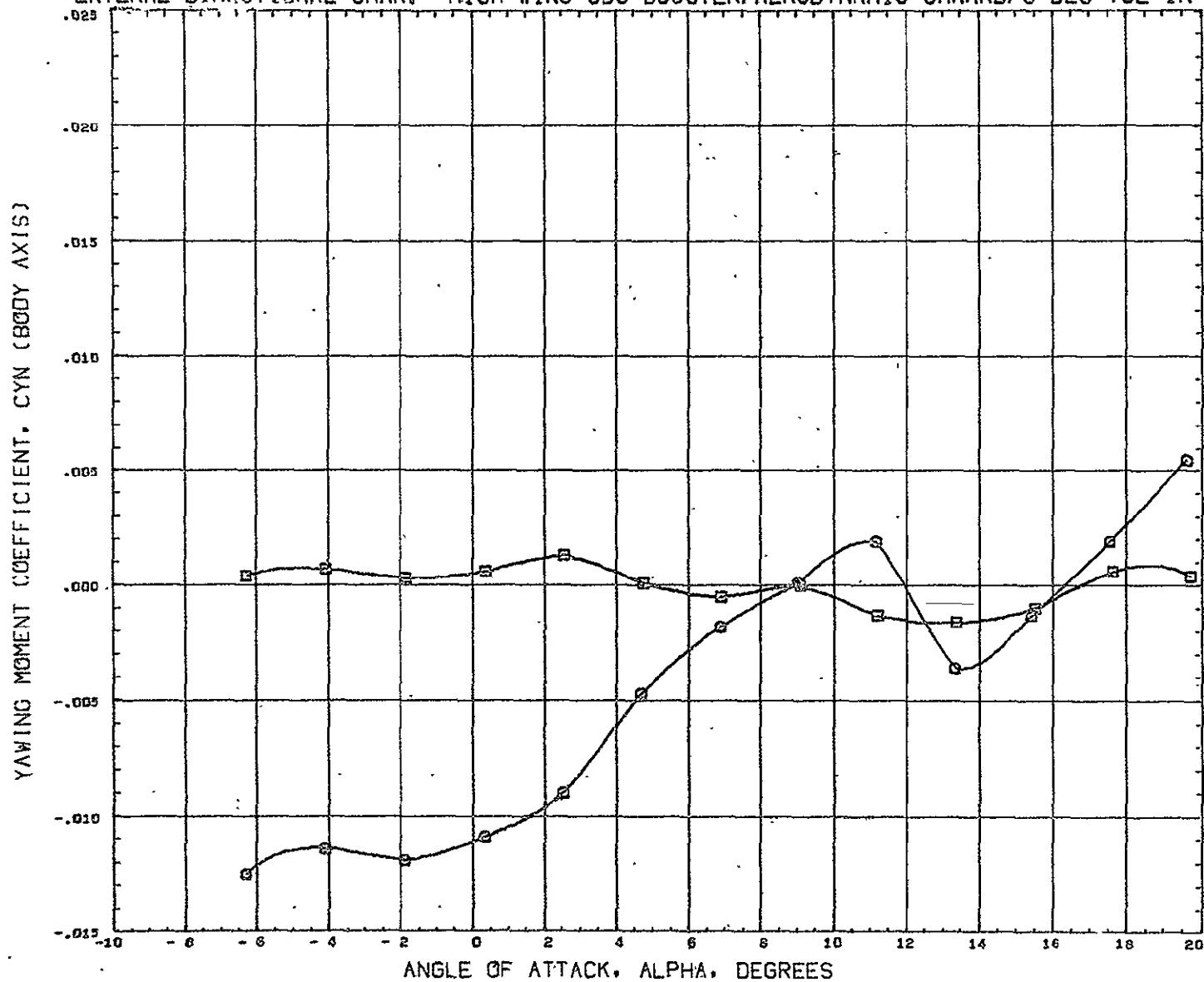
REFERENCE FILE MDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1WIT1P1V1E1F2

(RCC006) 16 OCT 70

PAGE 44

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN

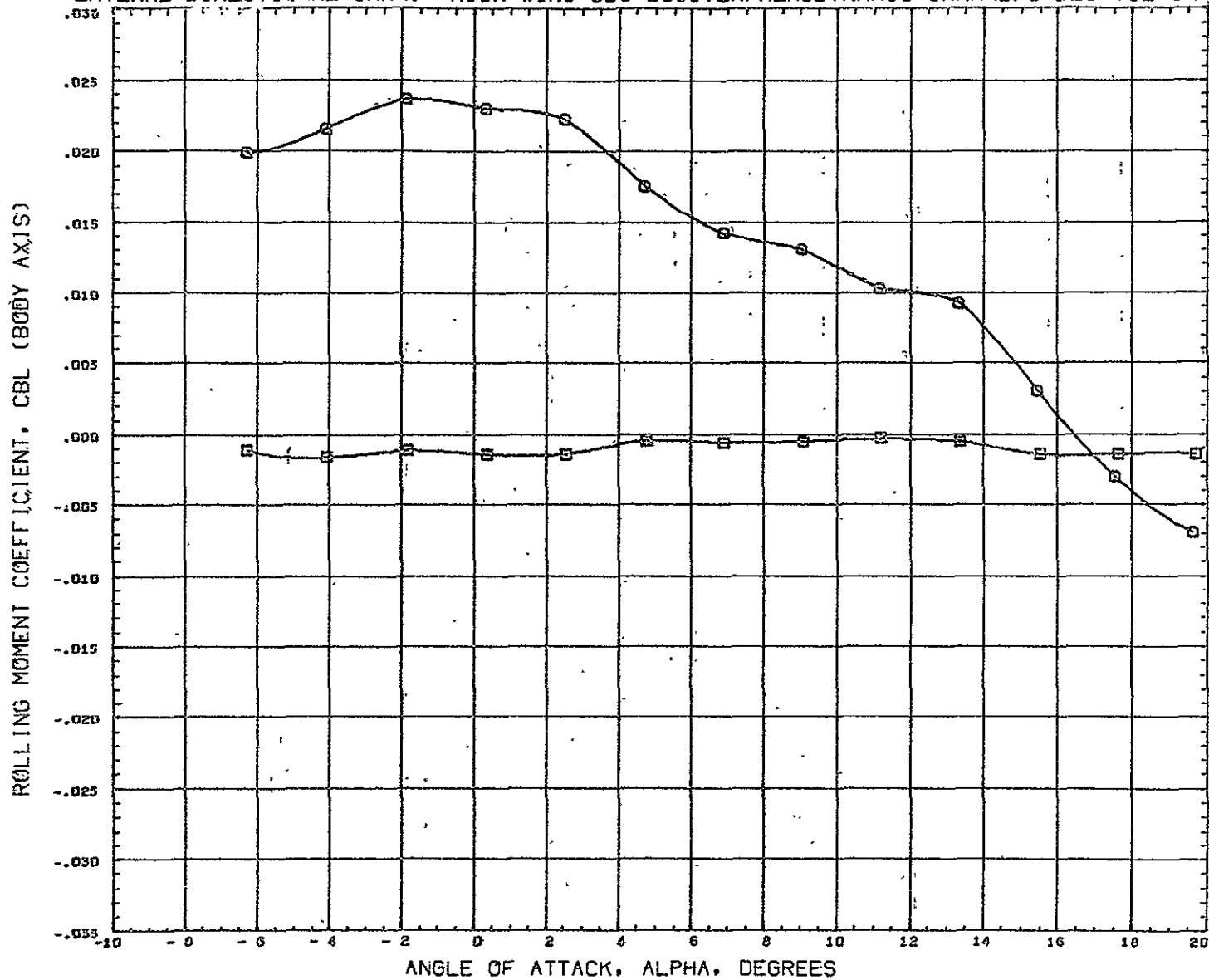


SYMBOL	BETA	PARAMETRIC VALUES			
○	0.000	MACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SG. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN



SYMBOL	BETA	:	PARAMETRIC VALUES		
□	- 6.000	NACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	6.000

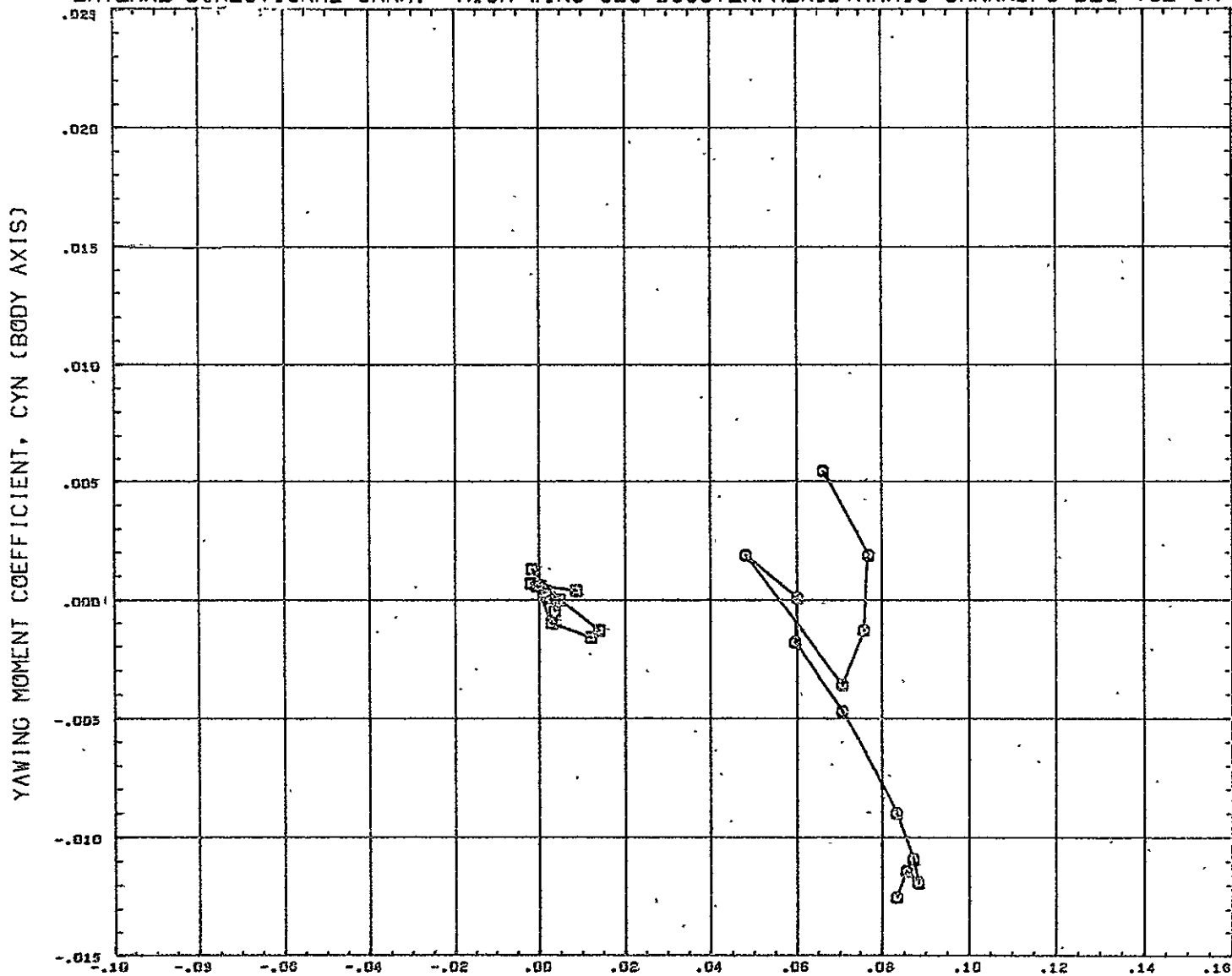
REFERENCE INFORMATION		
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REFL	2.0000	FT.
REFS	2.0000	FT.
XHRP	1.7030	FT.
YHRP	0.0000	FT.
ZHRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCB00STER BIN1W1T1P1V1E1F2

(RCC006) 16 OCT 70 PAGE 46

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN



LATERAL FORCE COEFFICIENT, CY

SYMBOL	BETA	PARAMETRIC VALUES			
○	- 6.000	MACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	6.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XHRP	1.7030	FT.
YHRP	0.0000	FT.
ZHRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

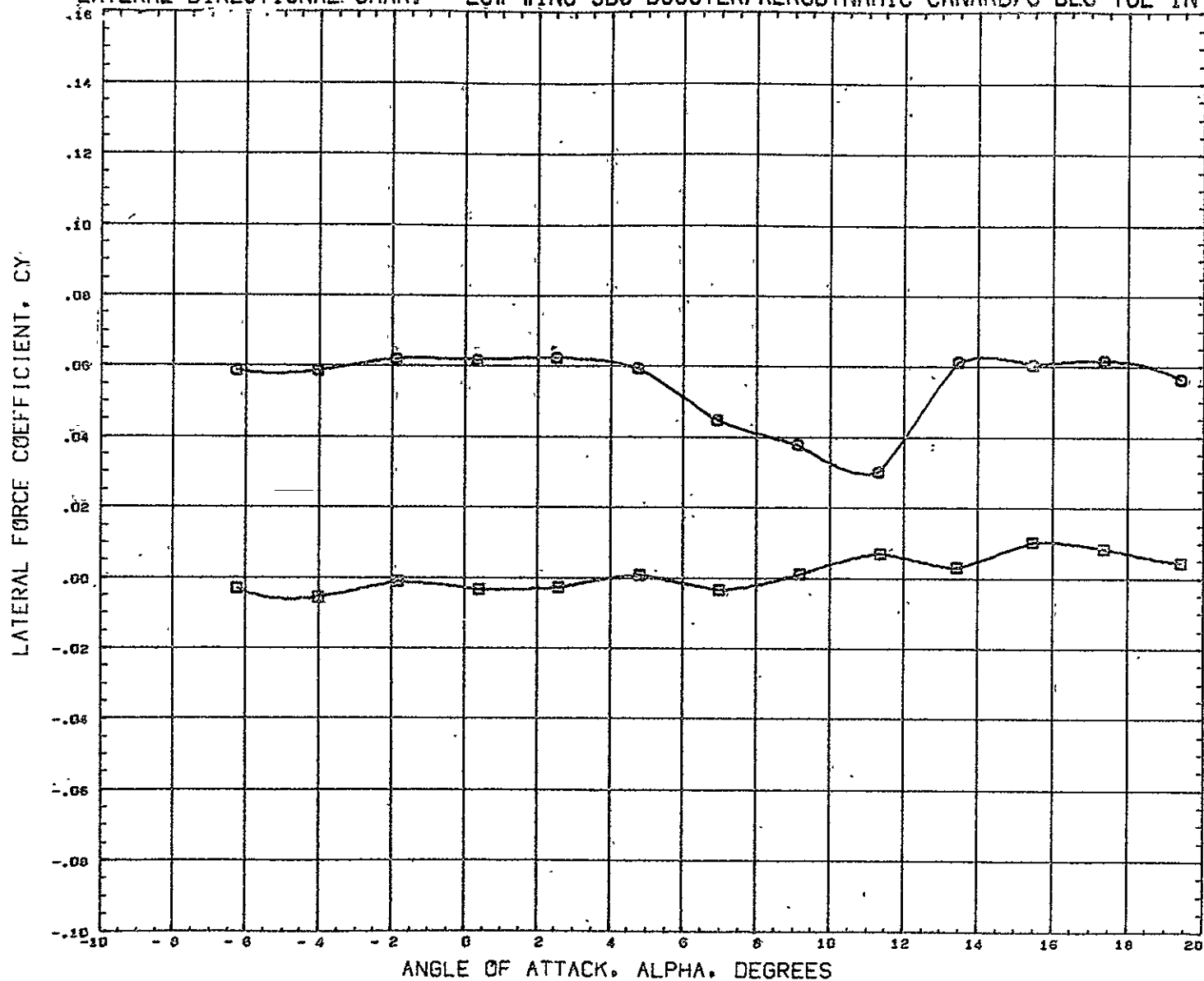
1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC006) 16 OCT 70

PAGE

47

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN



SYMBOL BETA PARAMETRIC VALUES
 O 6.000 HACH 0.185 ELEVON 0.000
 O 0.000 FLAP 0.000 VTAIL 6.000

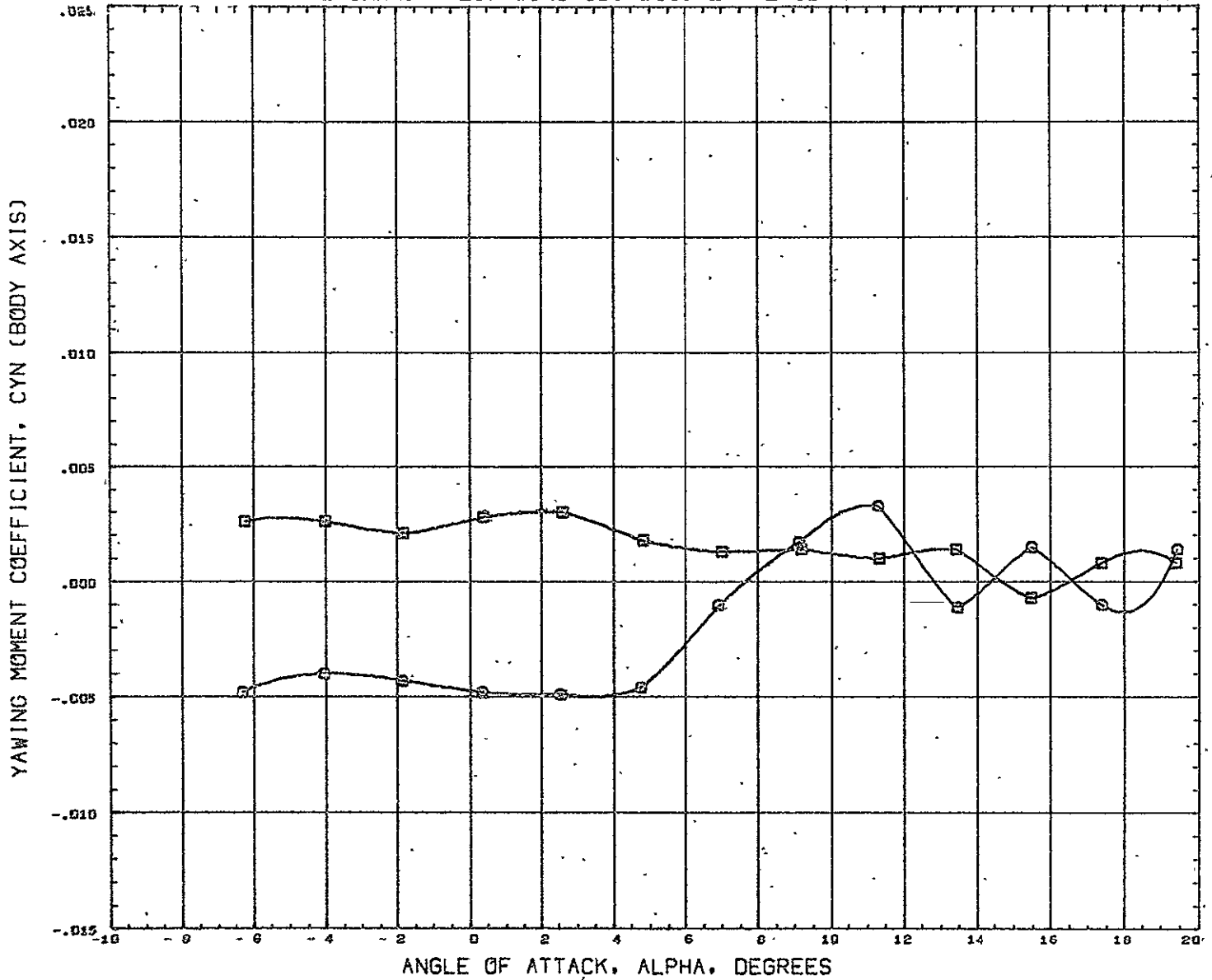
REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

REFERENCE FILE MDC(WD)SPACESHUT-B

1351-CAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

(RCC023) 16 OCT 70 PAGE 48

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN

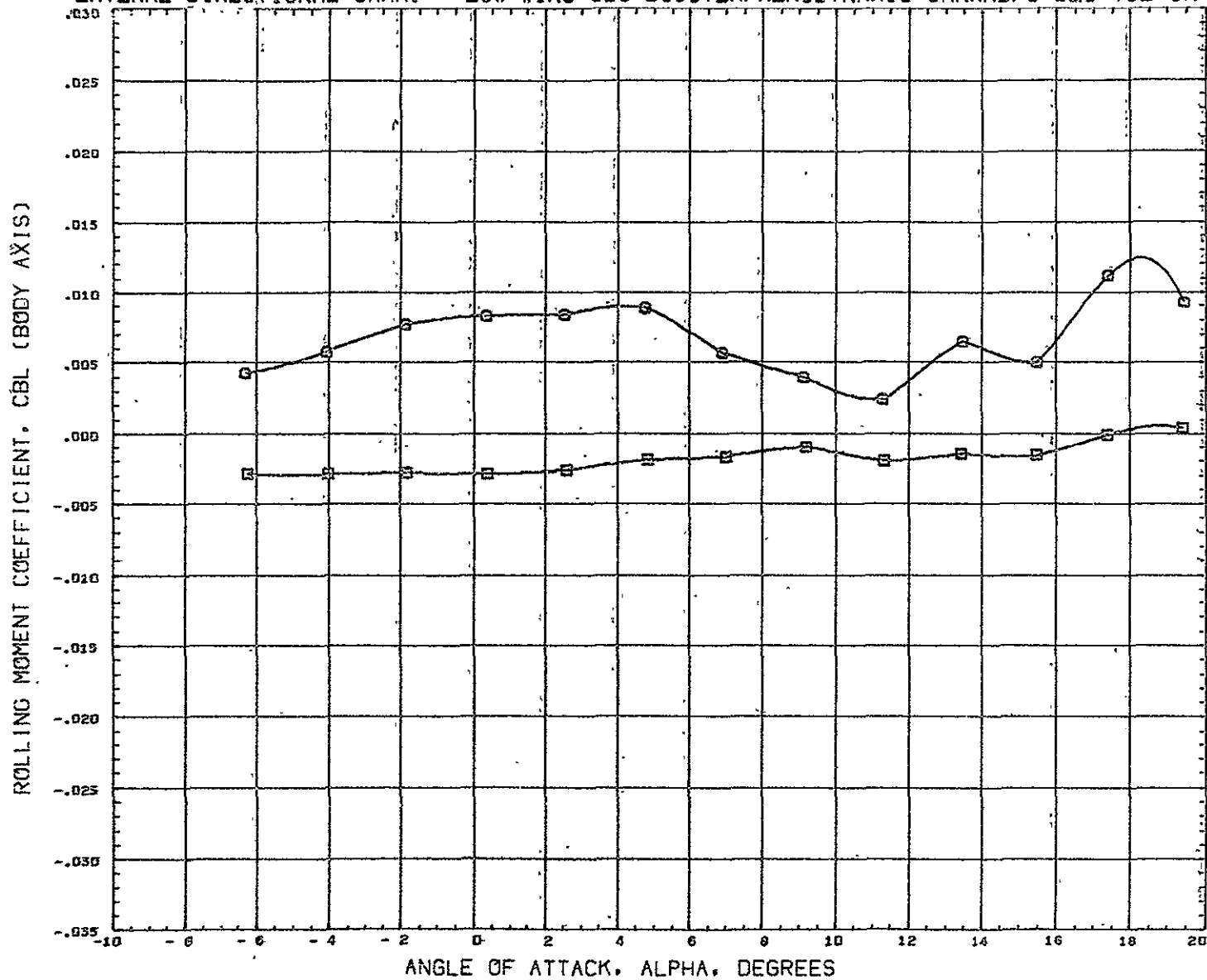


SYMBOL	BETA	PARAMETRIC VALUES			
○	- 0.000	MACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	6.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC (MD) SPACESHUT-B

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN



SYMBOL	BETA	PARAMETRIC VALUES			
Q	6.000	MACH	0.185	ELEVON	0.000
Q	0.000	FLAP	0.000	VTAIL	6.000

REFERENCE INFORMATION		
REFS	1.0000	SG. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

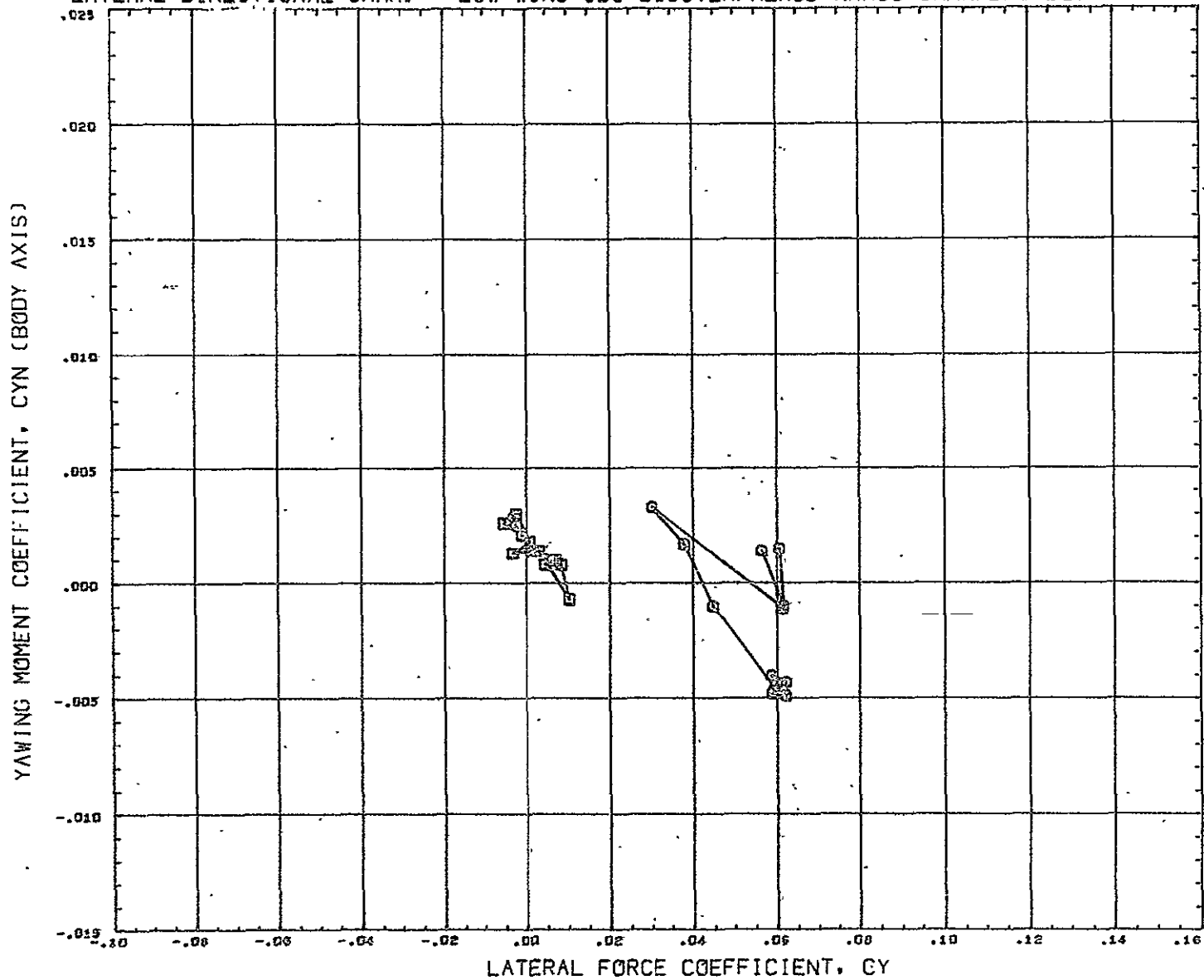
REFERENCE FILE MDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCB00STER B1N1W2T1P1V1EIF2

(RCC023) 16 OCT 70

PAGE 50

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/6 DEG TOE IN



SYMBOL	BETA	PARAMETRIC VALUES			
○	6.000	HACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	6.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

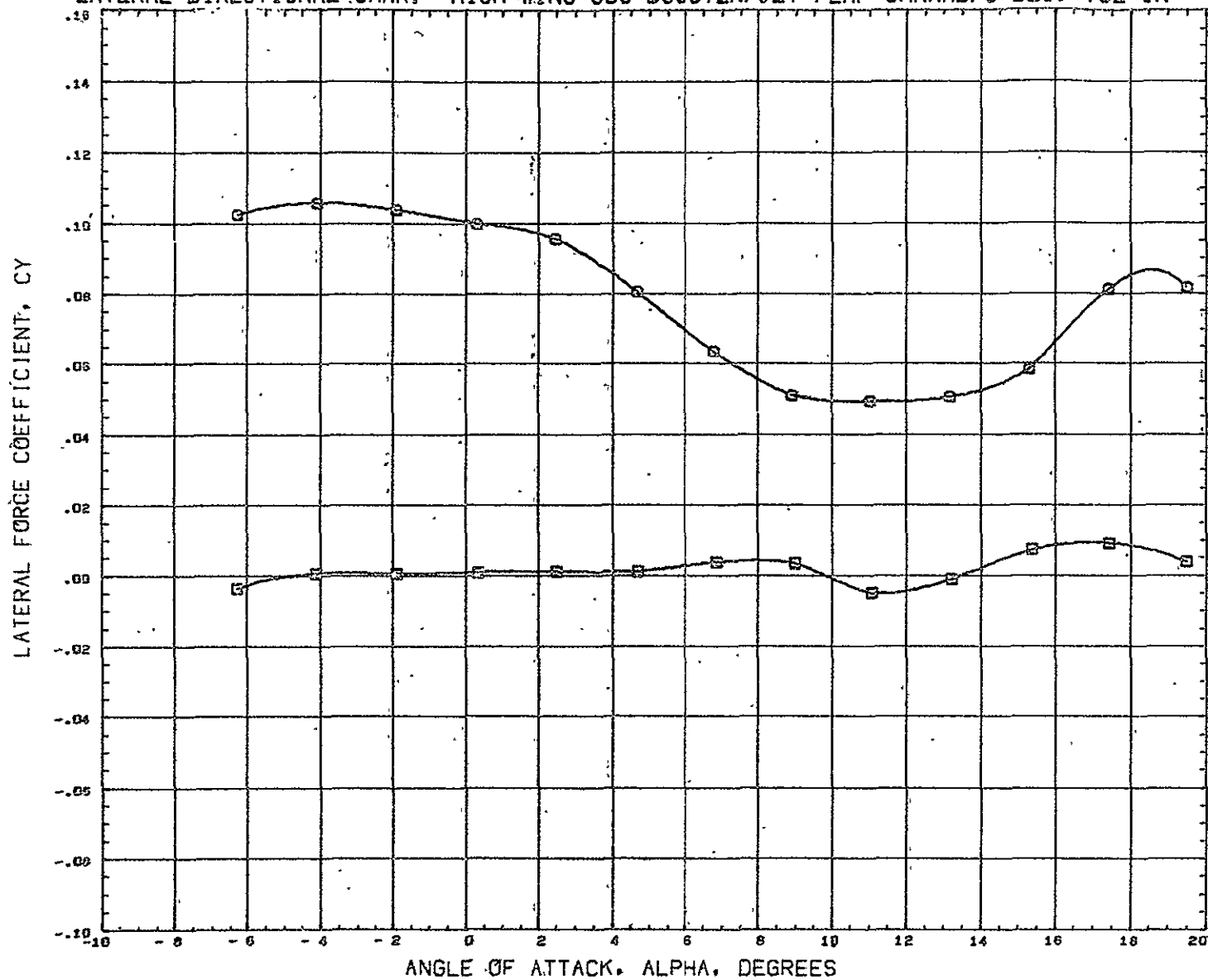
1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

(RCC023) 16 OCT 70

PAGE

51

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL BETA PARAMETRIC VALUES
 00 - 6.000 MACH 0.185 ELEVON 0.000
 00 0.000 VTAIL 6.000

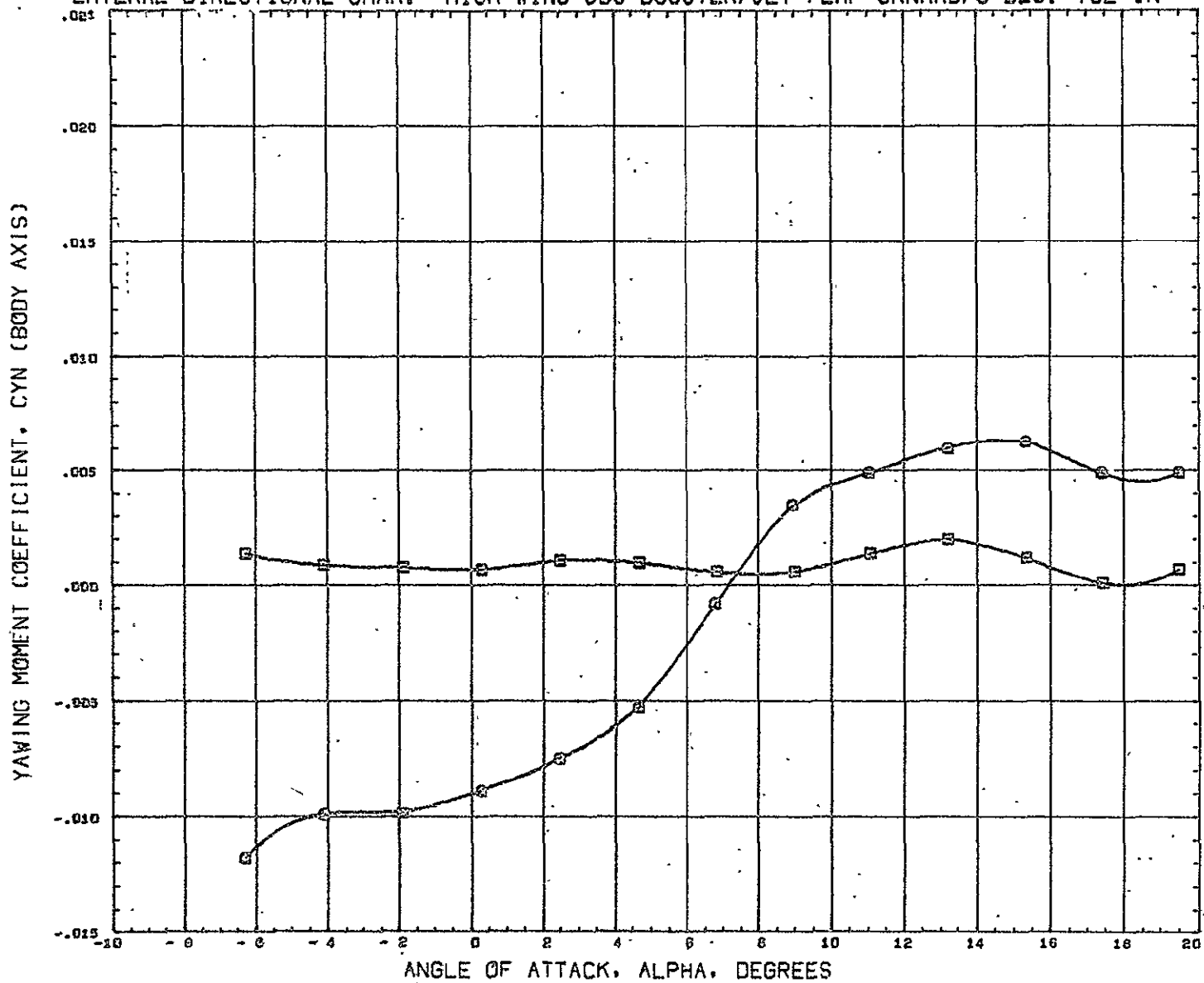
REFERENCE INFORMATION
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 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

REFERENCE FILE HDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1

(RCC002) 16 OCT 70 PAGE 52

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL BETA
 O - 0.000 MACH 0.165 ELEVON 0.000
 □ 0.000 VTAIL 0.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REPB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

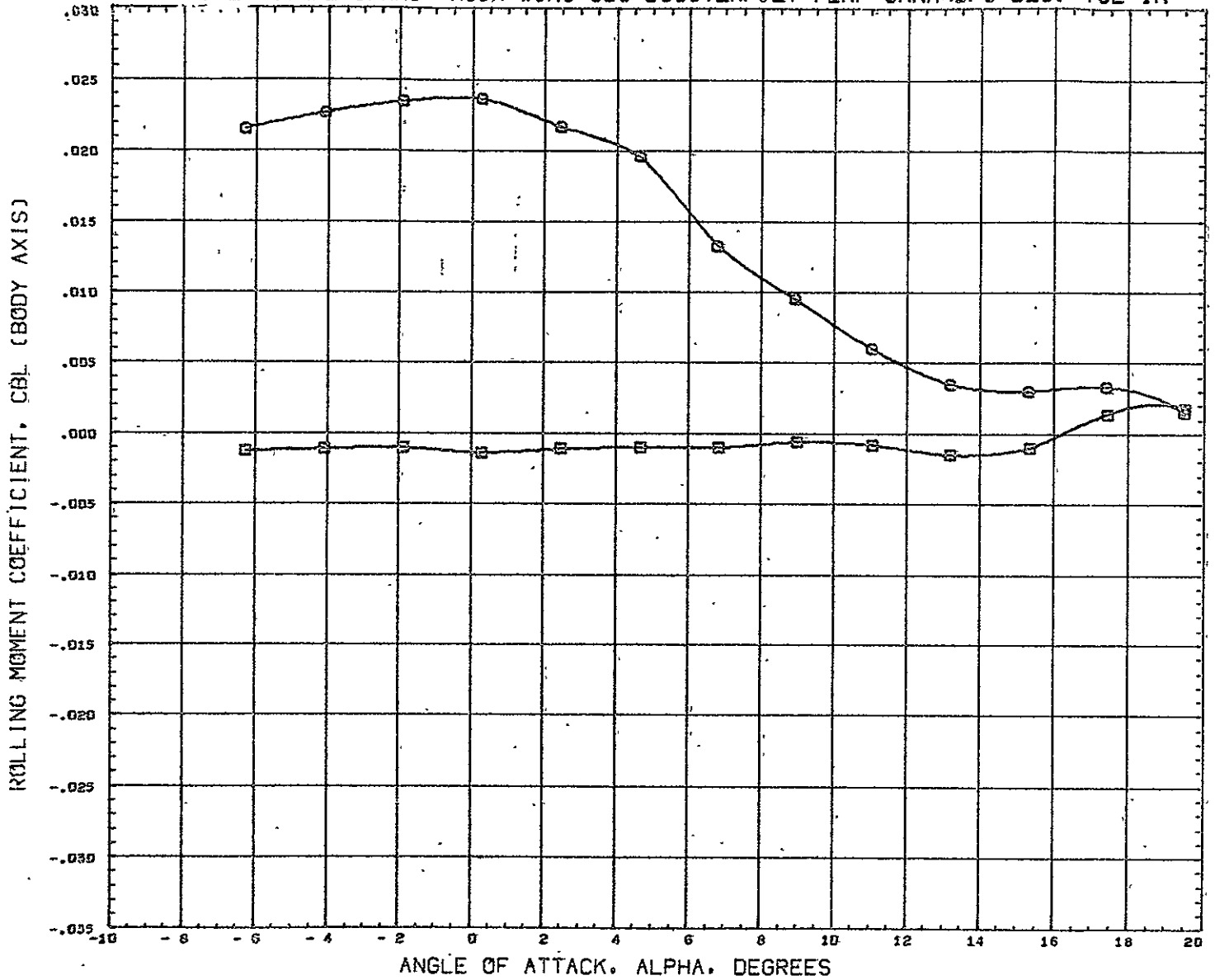
REFERENCE FILE HBC(WD)SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1

(RCC002) 16 OCT 70

PAGE 53

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL	BETA	PARAMETRIC VALUES			
○	6.000	HACH	0.185	ELEVON	0.000
□	0.000	VTAIL	6.000		

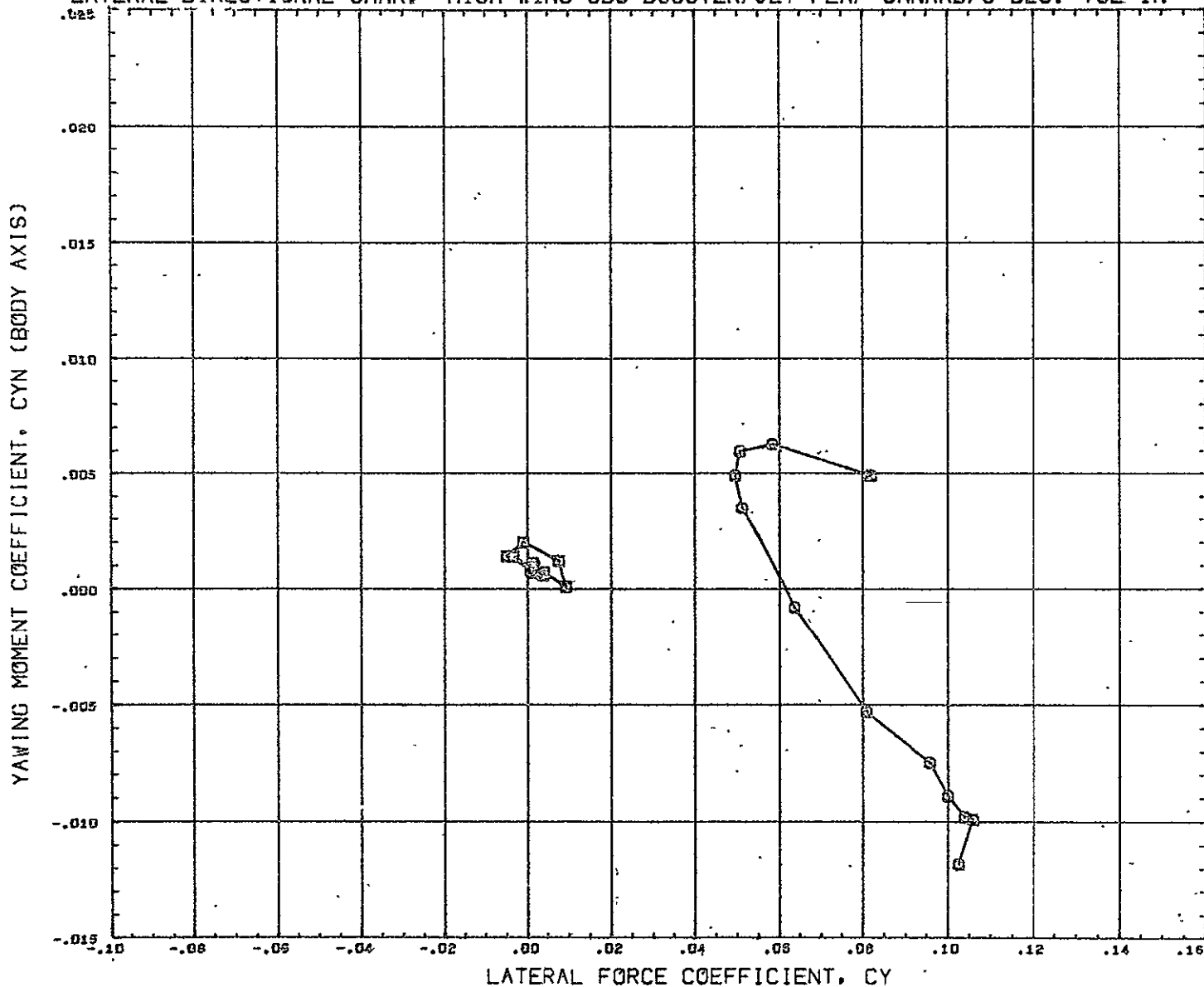
REFERENCE INFORMATION		
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REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(MD)SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1

(RCC002) 16 OCT 70 PAGE 54

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL	BETA	PARAMETRIC VALUES			
○	- 6.000	HACH	0.185	ELEVON	0.000
□	0.000	YTAIL	6.000		

REFERENCE INFORMATION		
REFS	1.0000	sq. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

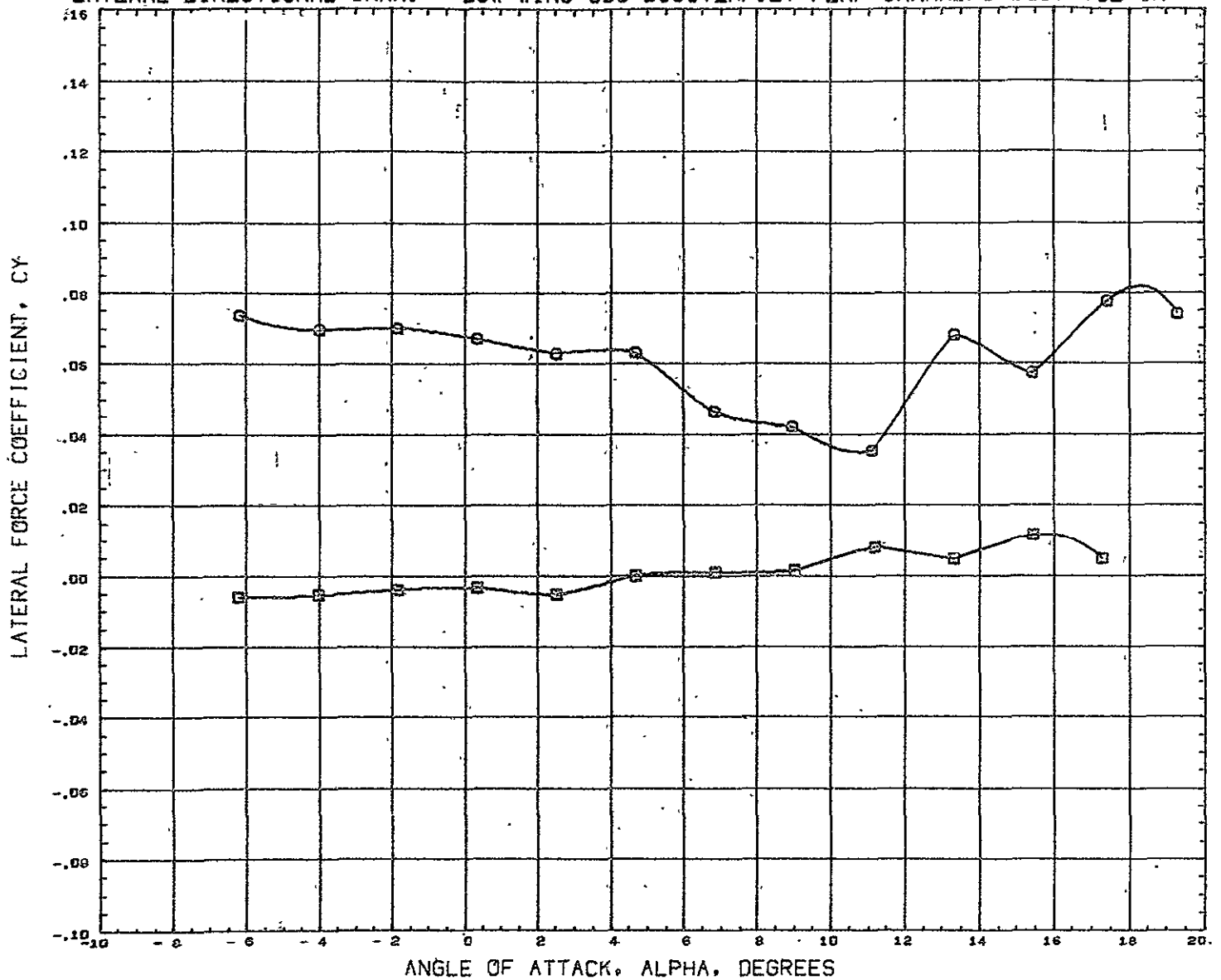
REFERENCE FILE HDC(WD)SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1

(RCC002) 16 OCT 70

PAGE 55

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL BETA
 O - 6.000 MACH 0.185 ELEVON 0.000
 O 0.000 VTAIL 6.000

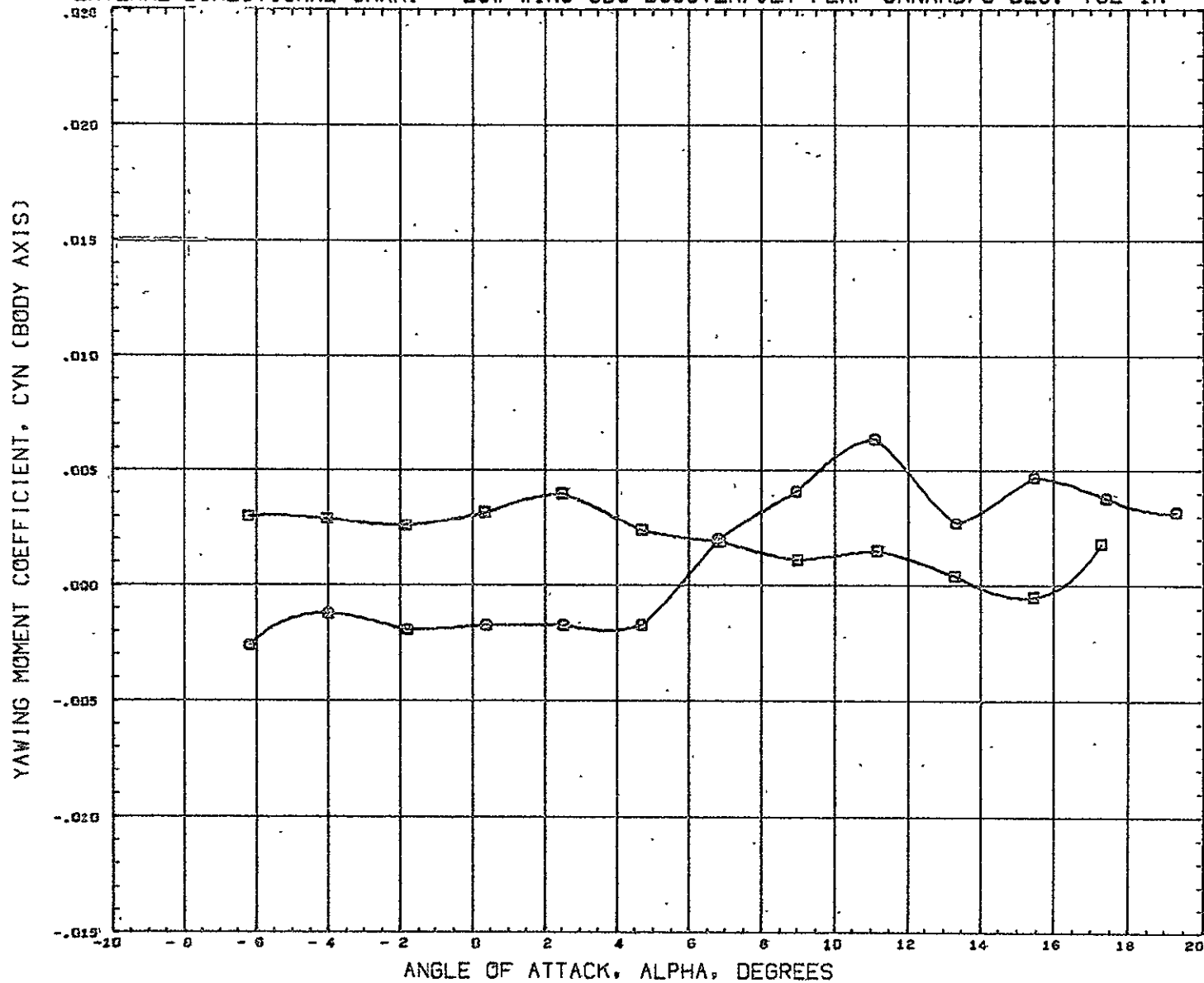
REFERENCE INFORMATION
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 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

REFERENCE FILE HOC(WD)SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1

(RCC020) 16 OCT 70 PAGE 56

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL BETA
 O - 6.000 HACH 0.185 ELEVON 0.000
 □ 0.000 VTAIL 6.000

PARAMETRIC VALUES

REFERENCE INFORMATION

REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

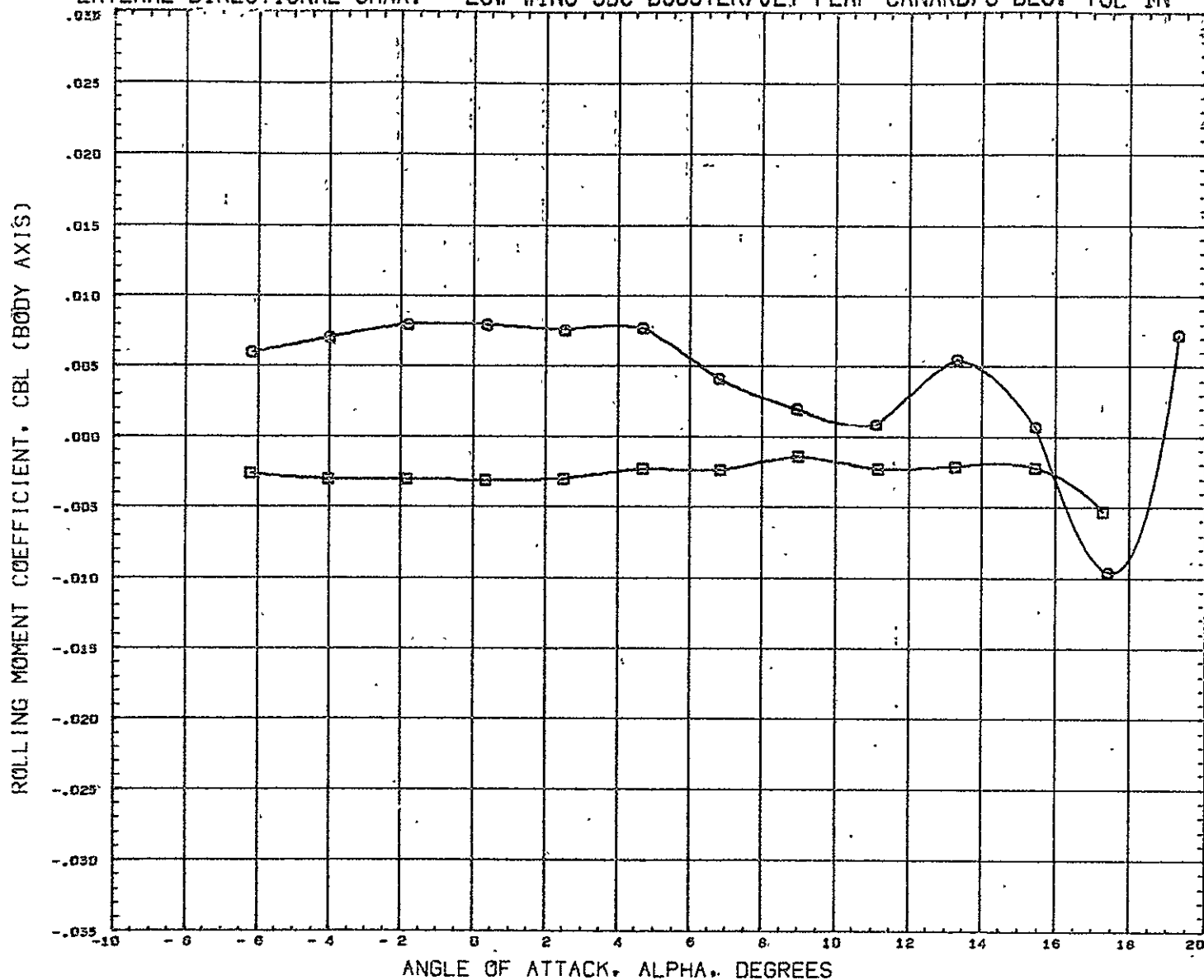
REFERENCE FILE NDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1

(RCC020) 16 OCT 70

PAGE 57

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN



SYMBOL	BETA	PARAMETRIC VALUES			
○	- 6.000	MACH	0.185	ELEVON	0.000
□	0.000	VTAIL	6.000		

REFERENCE INFORMATION		
REFS	1.0000	SG. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

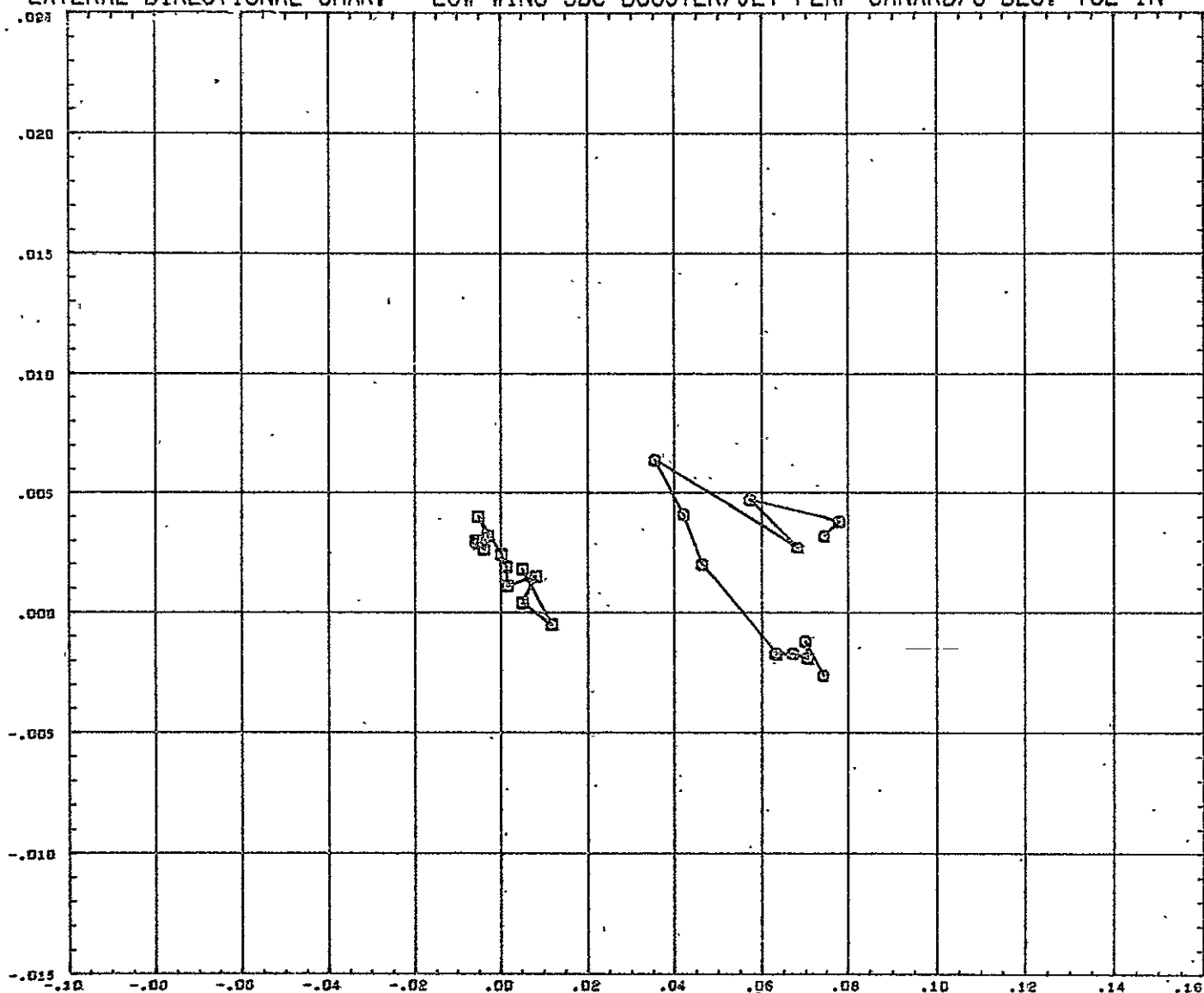
REFERENCE FILE MDC (WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1

(RCC020) 16 OCT 70 PAGE 58

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/JET FLAP CANARD/6 DEG. TOE IN

YAWING MOMENT COEFFICIENT, CYN (BODY AXIS)



LATERAL FORCE COEFFICIENT, CY

SYMBOL	BETA	PARAMETRIC VALUES		
○	- 6.000	HACH	0.185	ELEVON 0.000
□	0.000	VTAIL	6.000	

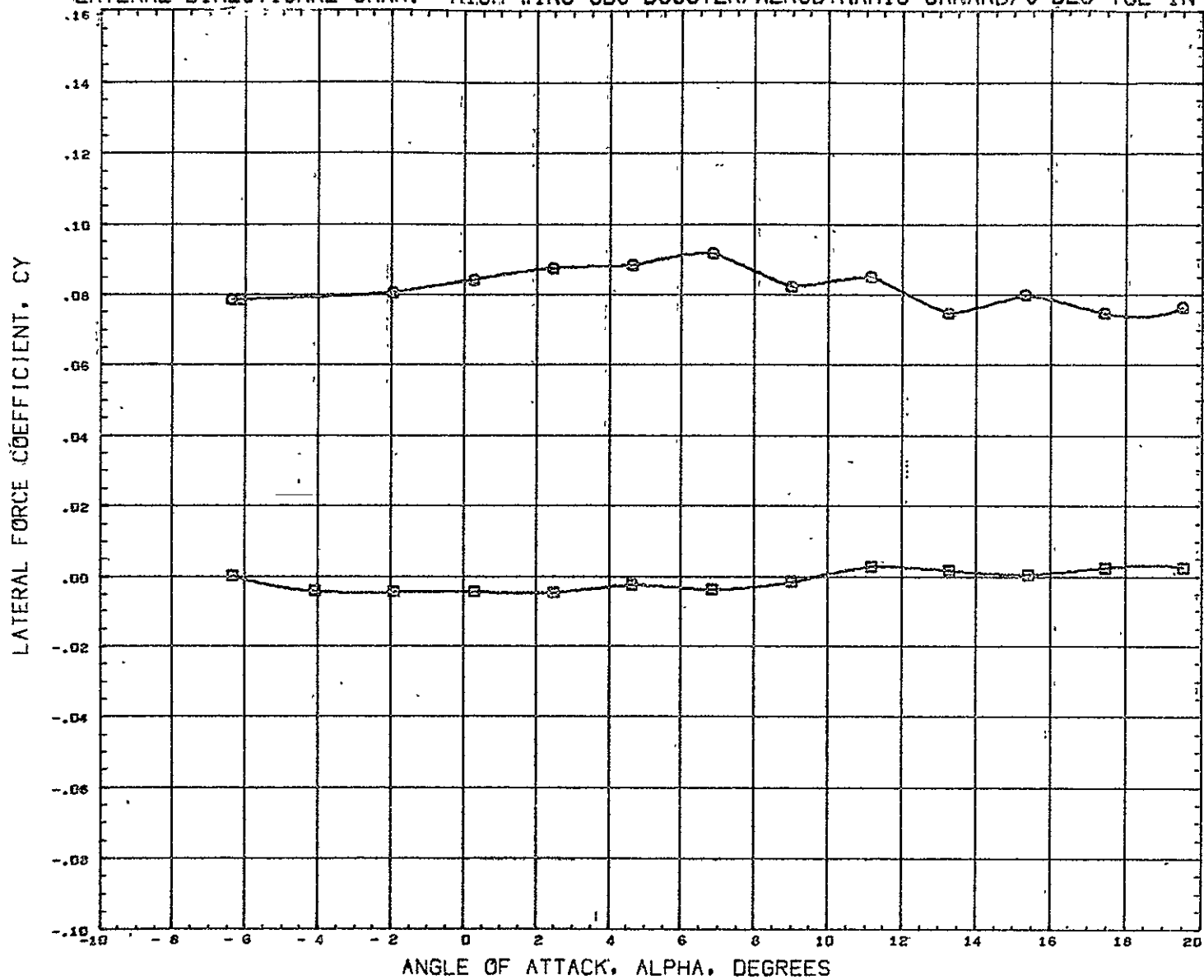
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REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC(WD) SPACESHUT-B

1351-CAC-LSWT-SBCBOOSTER B1N1W2J1V1E1

(RCC020) 16 OCT 70 PAGE 59

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN



SYMBOL	BETA		PARAMETRIC VALUES		
○	6.000	MACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

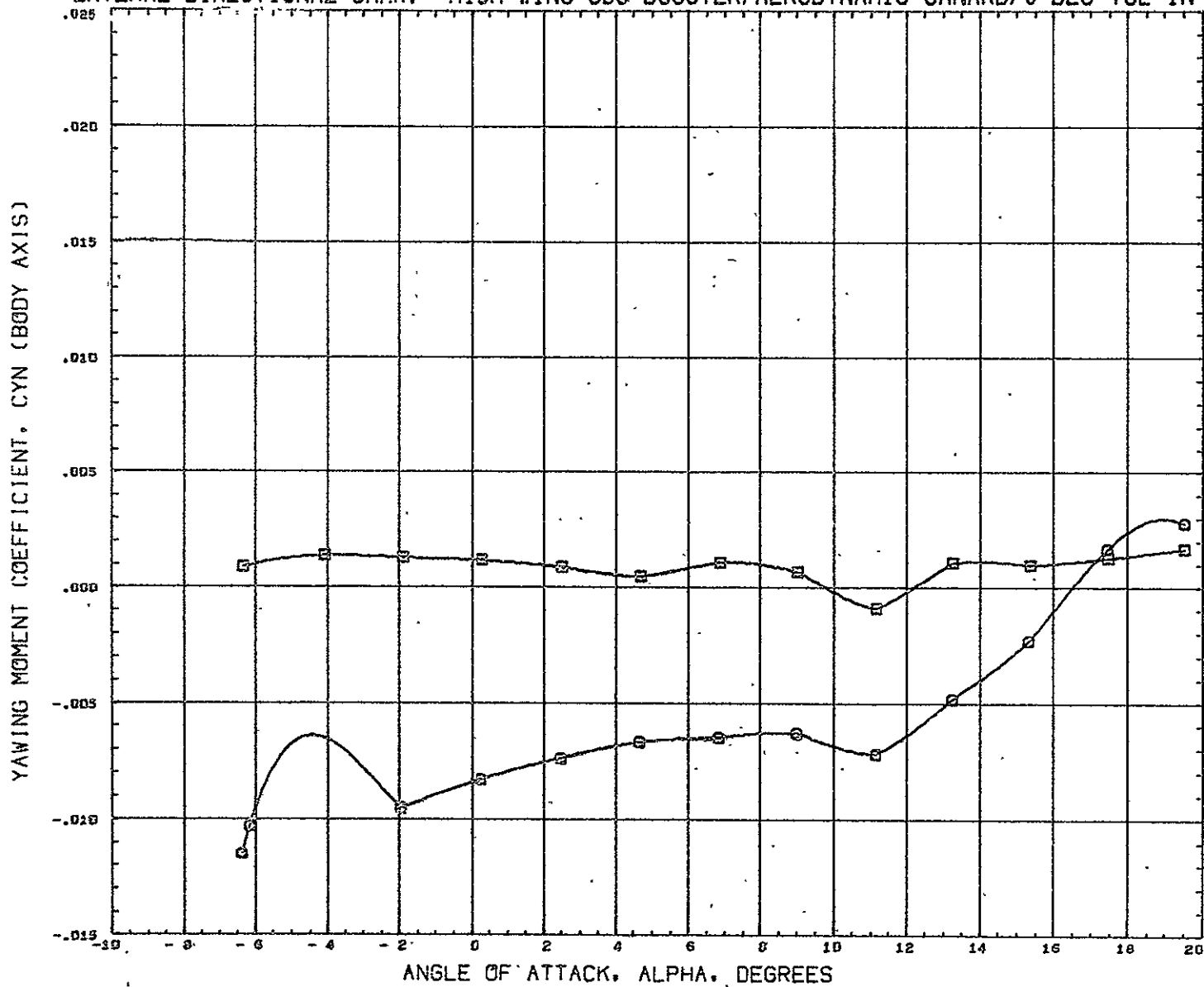
REFERENCE FILE MDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC015) 16 OCT 70

PAGE 60

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN

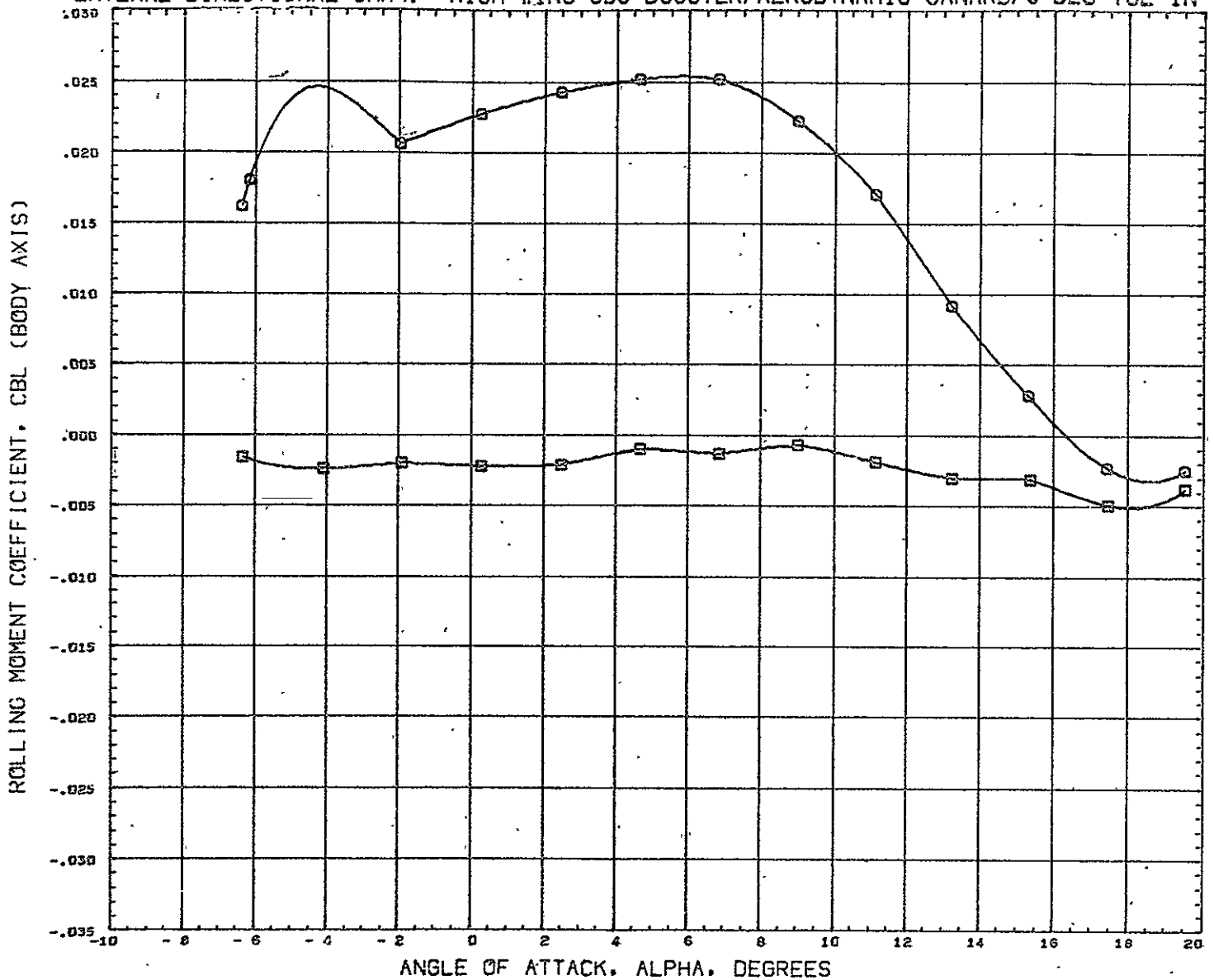


SYMBOL	BETA	PARAMETRIC VALUES			
□	- 6.000	MACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HDC(WD) SPACESHUT-B

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN



SYMBOL	BETA		PARAMETRIC VALUES		
Q	- 6.000	HACH	0.185	ELEVON	0.000
Q	0.000	FLAF	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	sq. ft
REFL	2.0000	ft.
REFB	2.0000	ft.
XHRP	1.7030	ft.
YHRP	0.0000	ft.
ZHRP	0.0125	ft.
SCALE	0.0100	SCALE

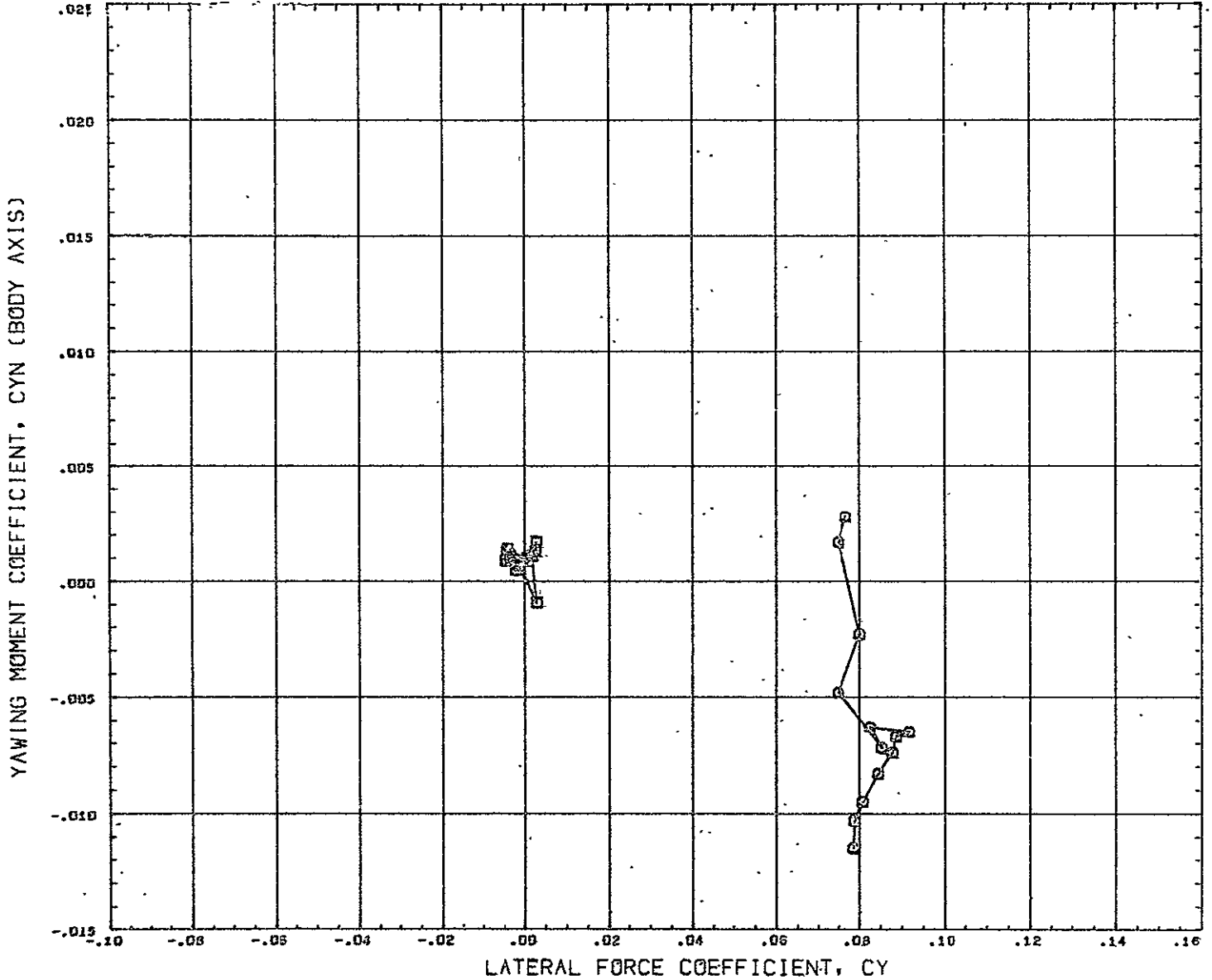
REFERENCE FILE HDC(WD) SPACESHUT-B

1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

(RCC015) 16 OCT 70

PAGE 62

LATERAL DIRECTIONAL CHAR. HIGH WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN

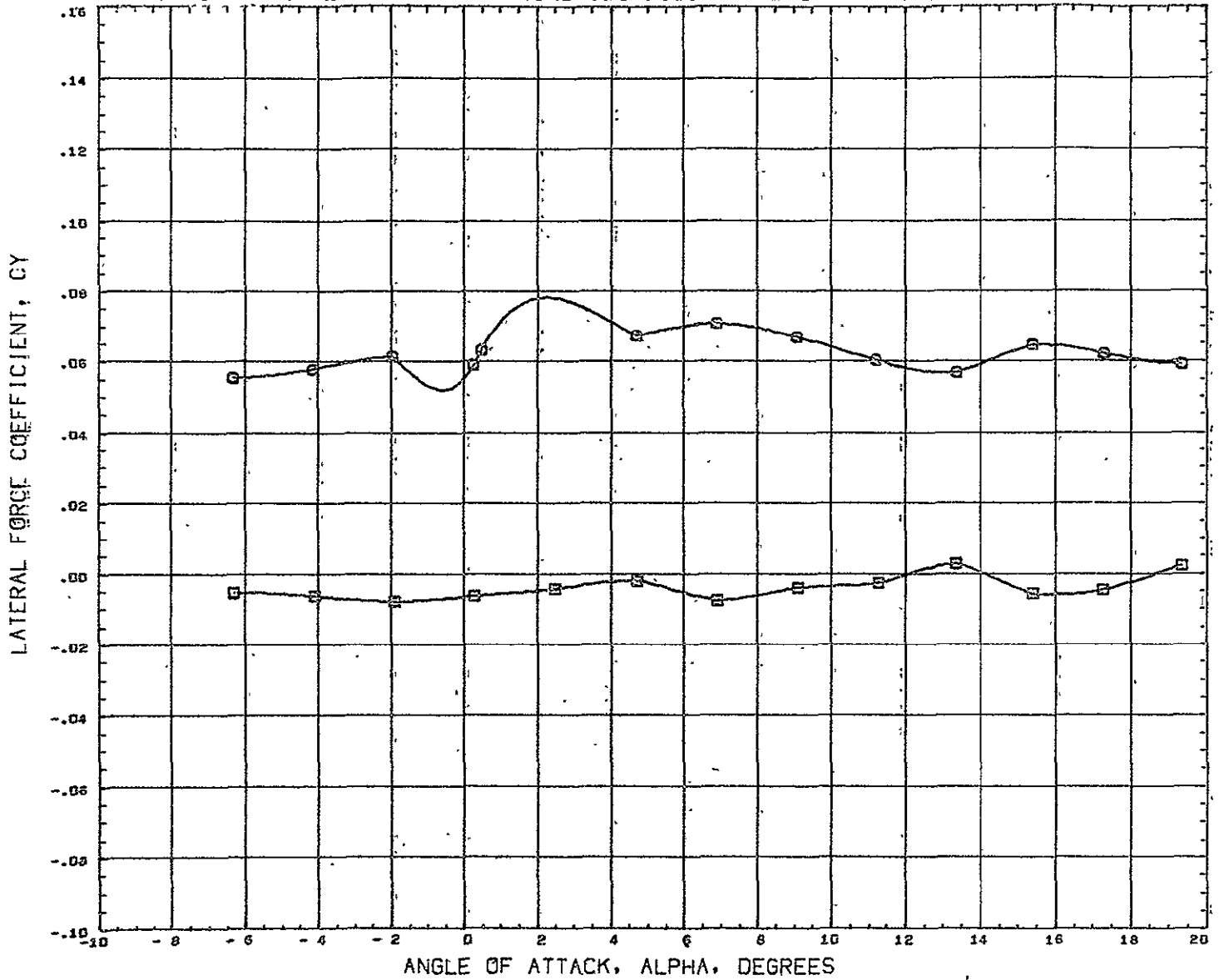


SYMBOL	BETA	PARAMETRIC VALUES			
○	- 6.000	MACH	0.165	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE HDC(WD) SPACESHUT-B

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN



SYMBOL BETA
 Q - 6.000 MACH 0.185 ELEVON 0.000
 Q 0.000 FLAP 0.000 VTAIL 0.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XHRF 1.7030 FT.
 YHRF 0.0000 FT.
 ZHRF 0.0125 FT.
 SCALE 0.0100 SCALE

REFERENCE FILE HDC(WD) SPACESHUT-B

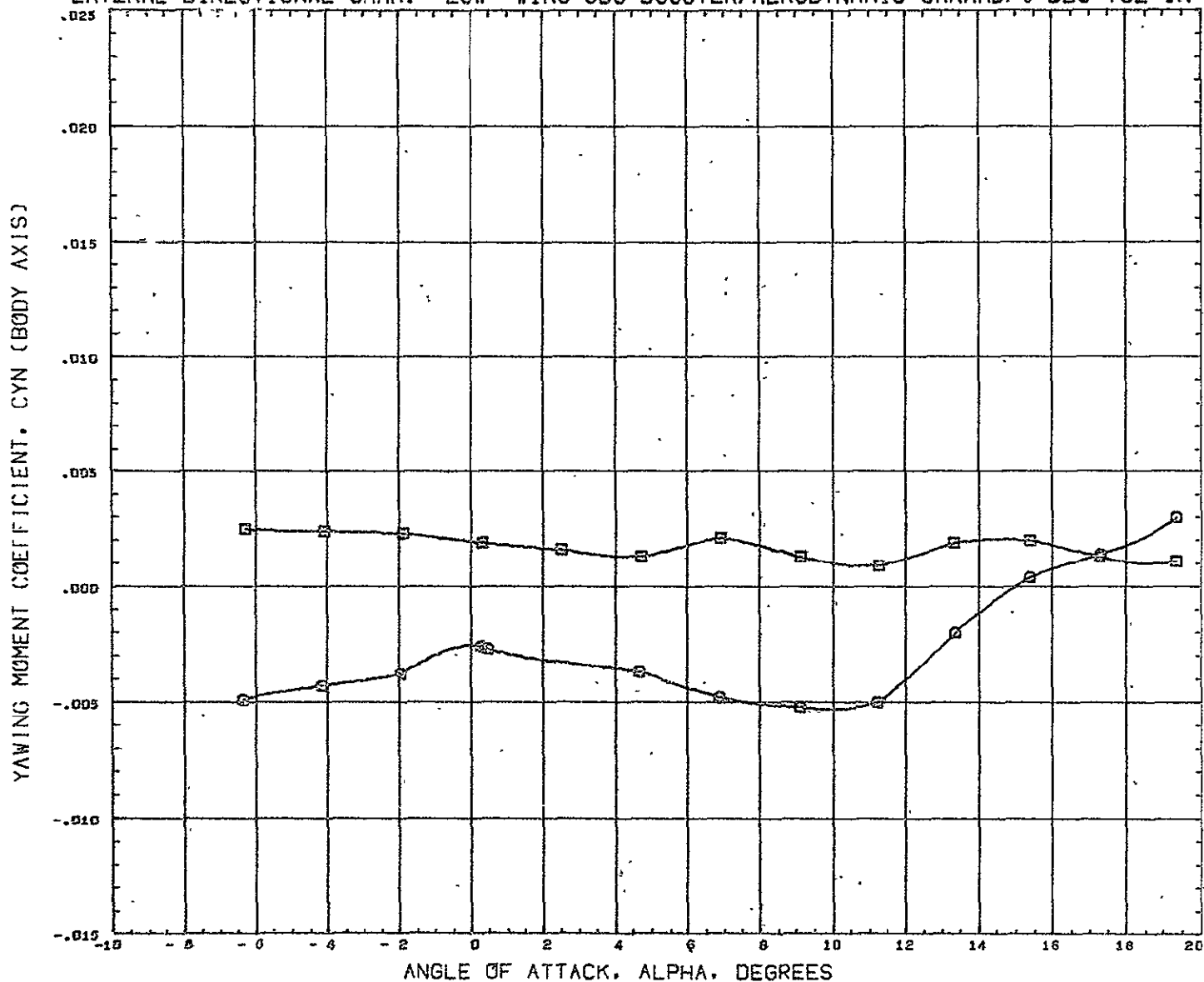
1351-DAC-LSWT-SBCBOOSTER BIN1W2T1P1V1E1F2

(RCC030) 16 OCT 70

PAGE

64

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN



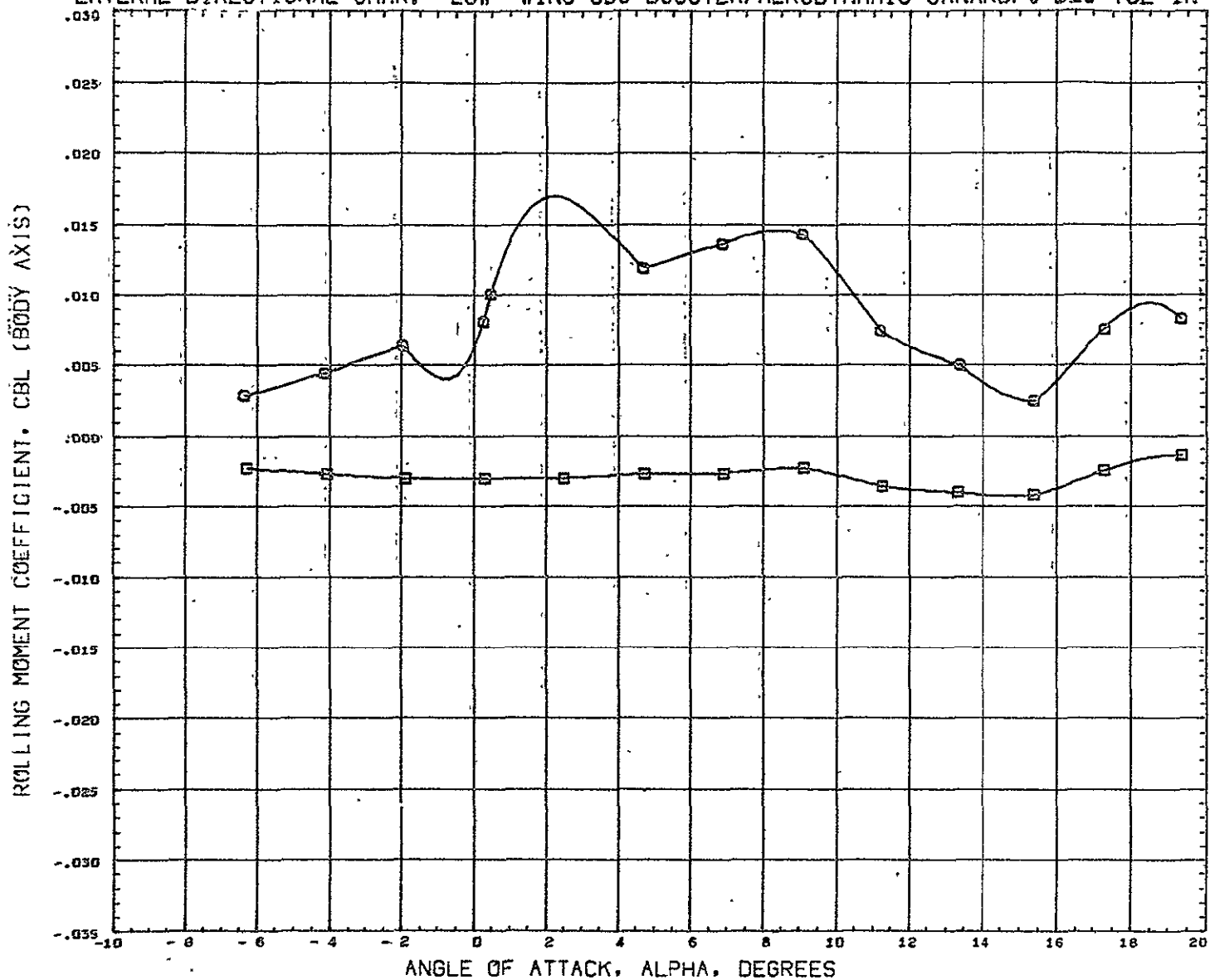
ANGLE OF ATTACK, ALPHA, DEGREES

SYMBOL	BETA	PARAMETRIC VALUES			
0	- 6.000	MACH	0.185	ELEVON	0.000
0	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE H0C(WD)SPACESHUT-B

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN



SYMBOL	BETA	PARAMETRIC VALUES			
Q	6.000	MACH	0.185	ELEVON	0.000
Q	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YNRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC (MD) SPACESHUT-B

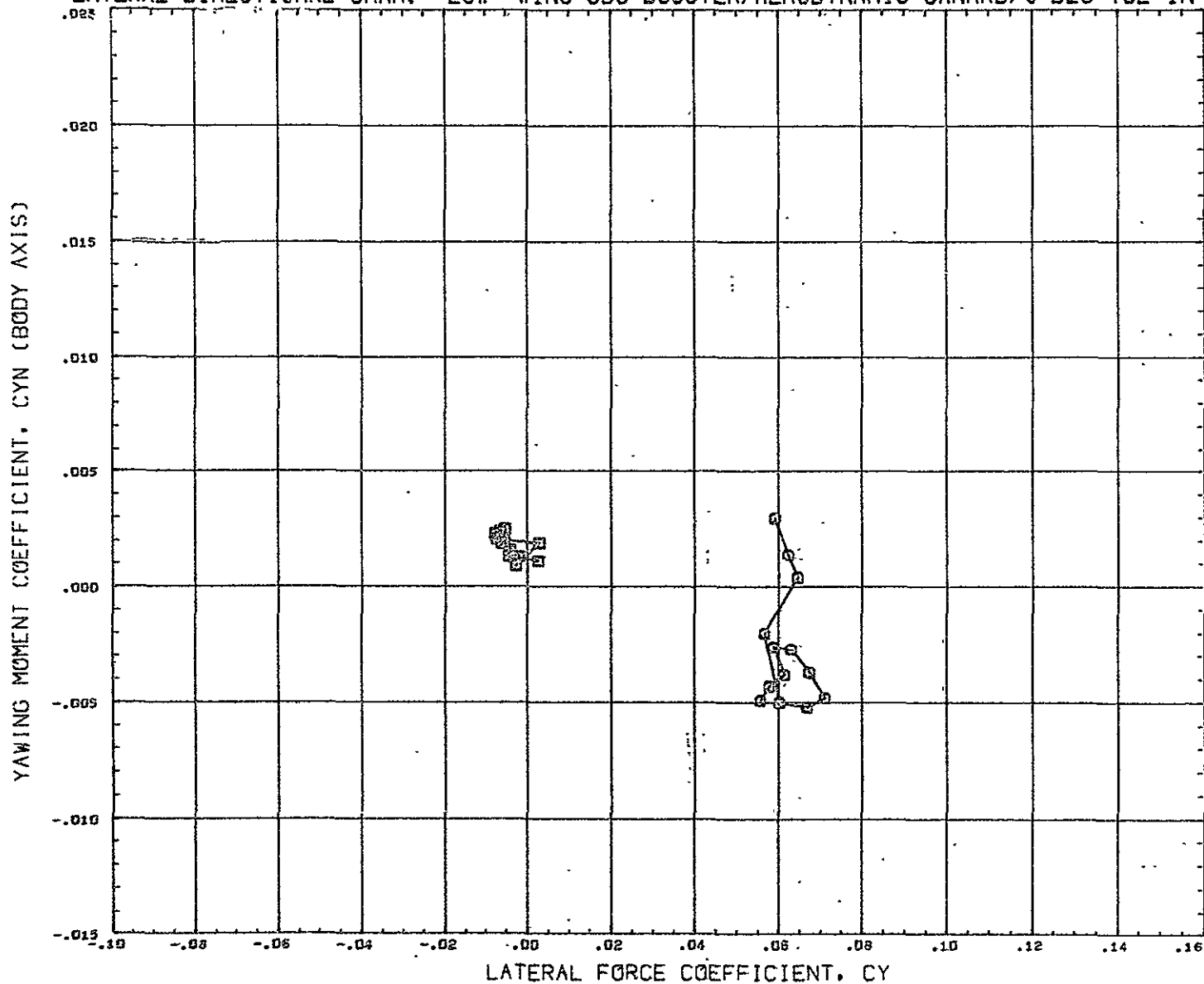
1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

(RCC030) 16 OCT 70

PAGE

66

LATERAL DIRECTIONAL CHAR. LOW WING SBC BOOSTER/AERODYNAMIC CANARD/0 DEG TOE IN

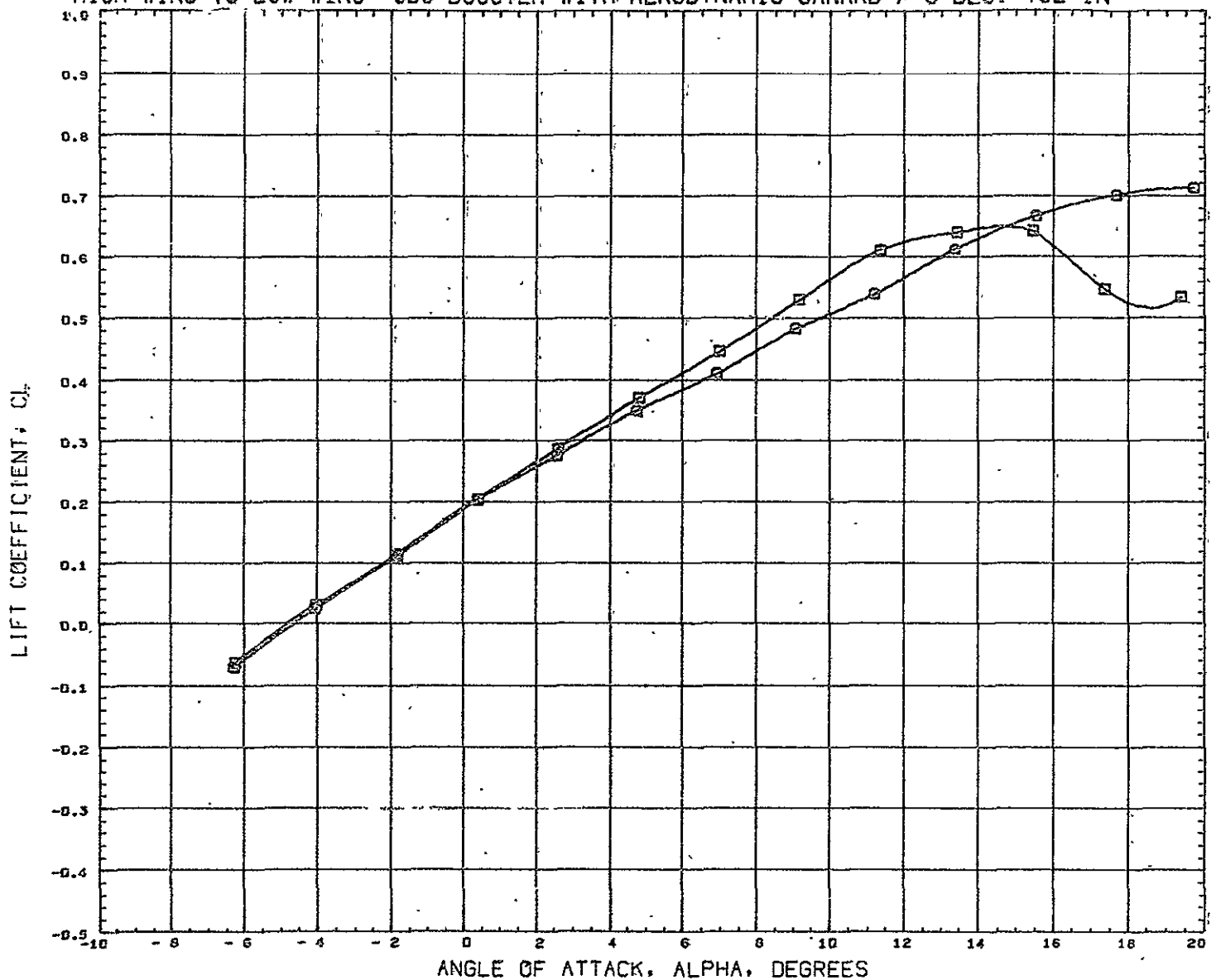


SYMBOL	BETA	PARAMETRIC VALUES			
□	6.000	MACH	0.185	ELEVON	0.000
□	0.000	FLAP	0.000	VTAIL	0.000

REFERENCE INFORMATION		
REFS	1.0000	SQ. FT
REFL	2.0000	FT.
REFB	2.0000	FT.
XMRP	1.7030	FT.
YMRP	0.0000	FT.
ZMRP	0.0125	FT.
SCALE	0.0100	SCALE

REFERENCE FILE MDC (HD) SPACESHUT-B

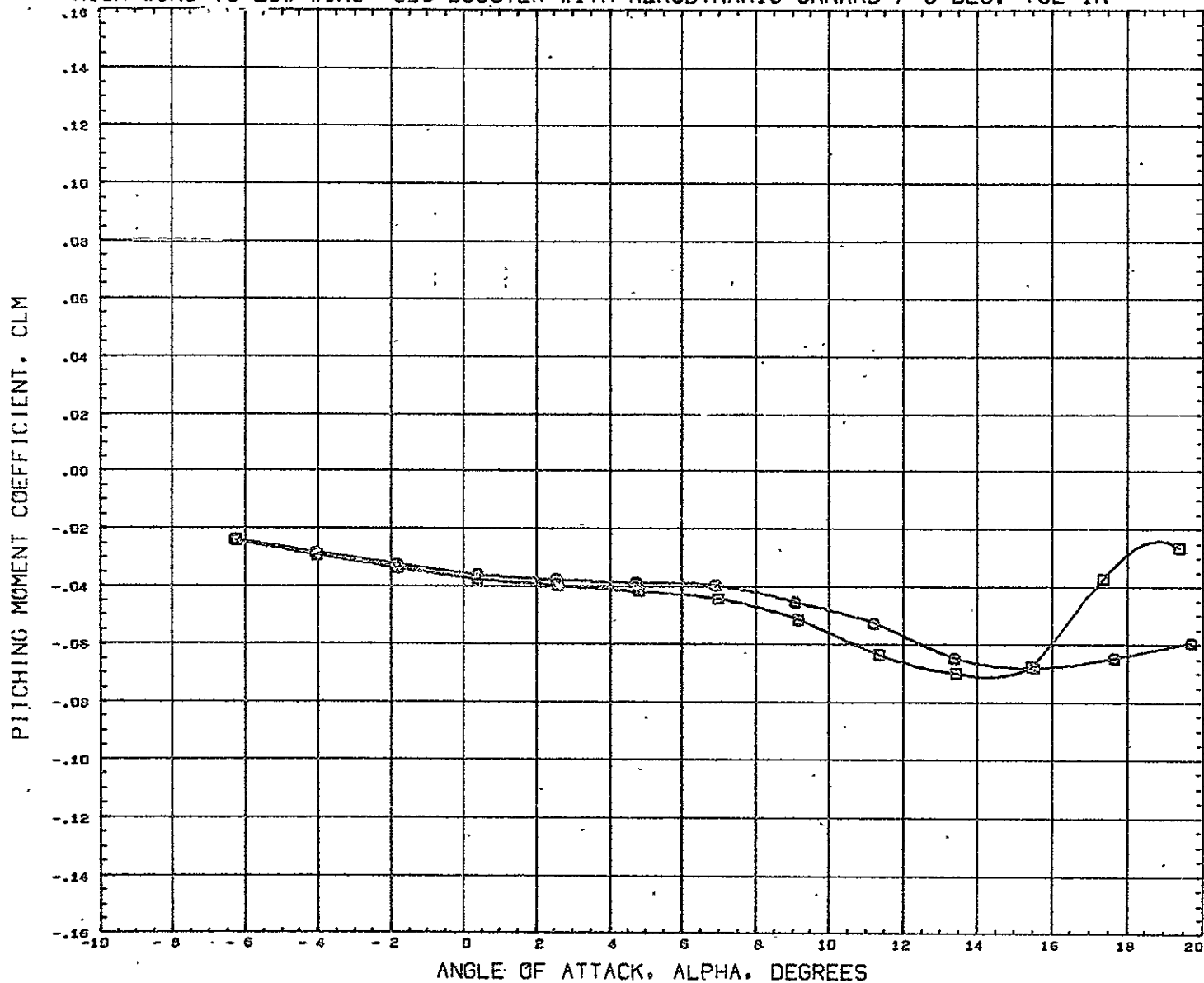
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XMRP	1.7030 FT.
						YMRP	0.0000 FT.
						ZMRP	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.184

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

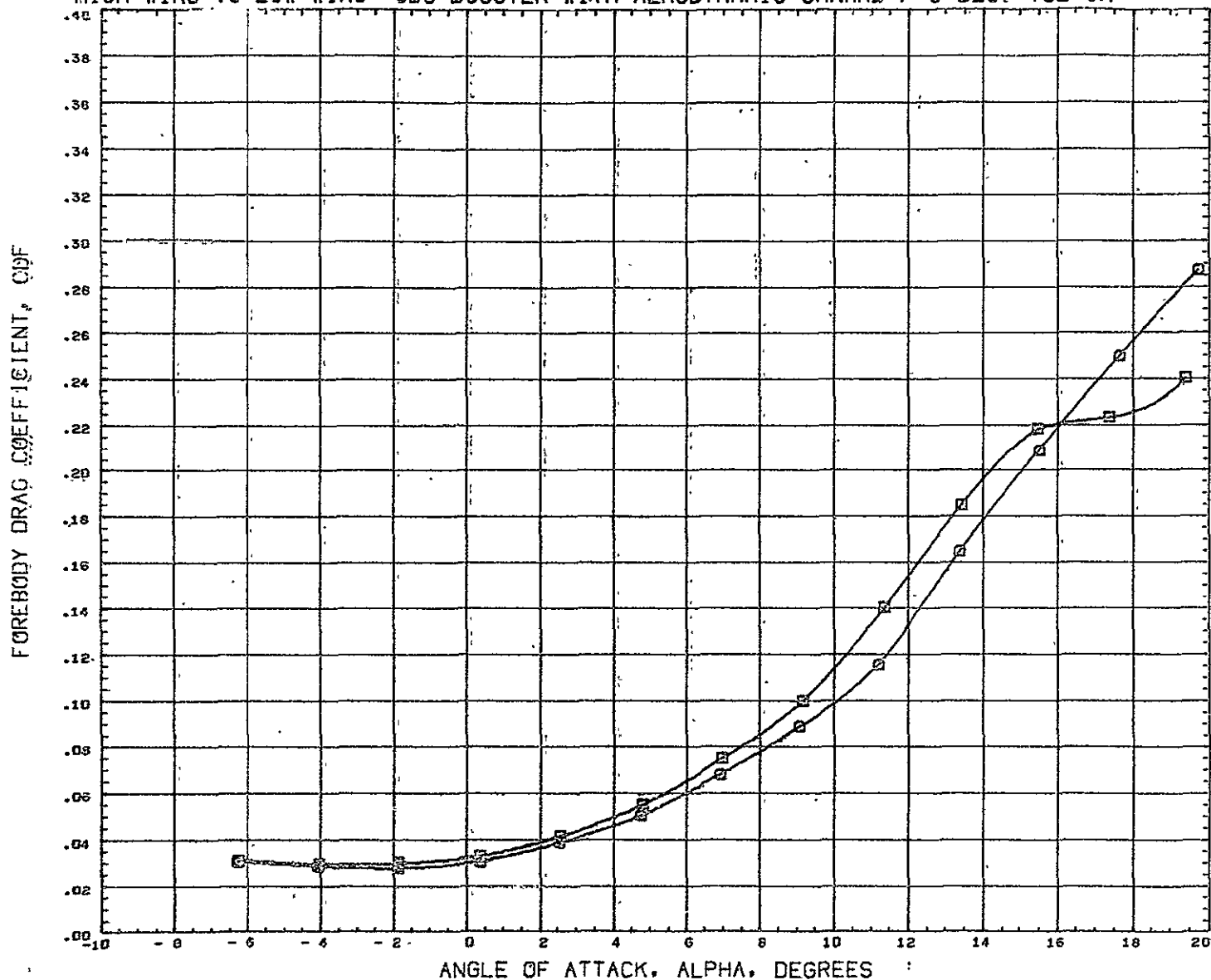


ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES				REFERENCE INFORMATION	
(RCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1F1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XMRP	1.7030 FT.
						YMRP	0.0000 FT.
						ZMRP	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.184

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD /-6 DEG. TOE IN



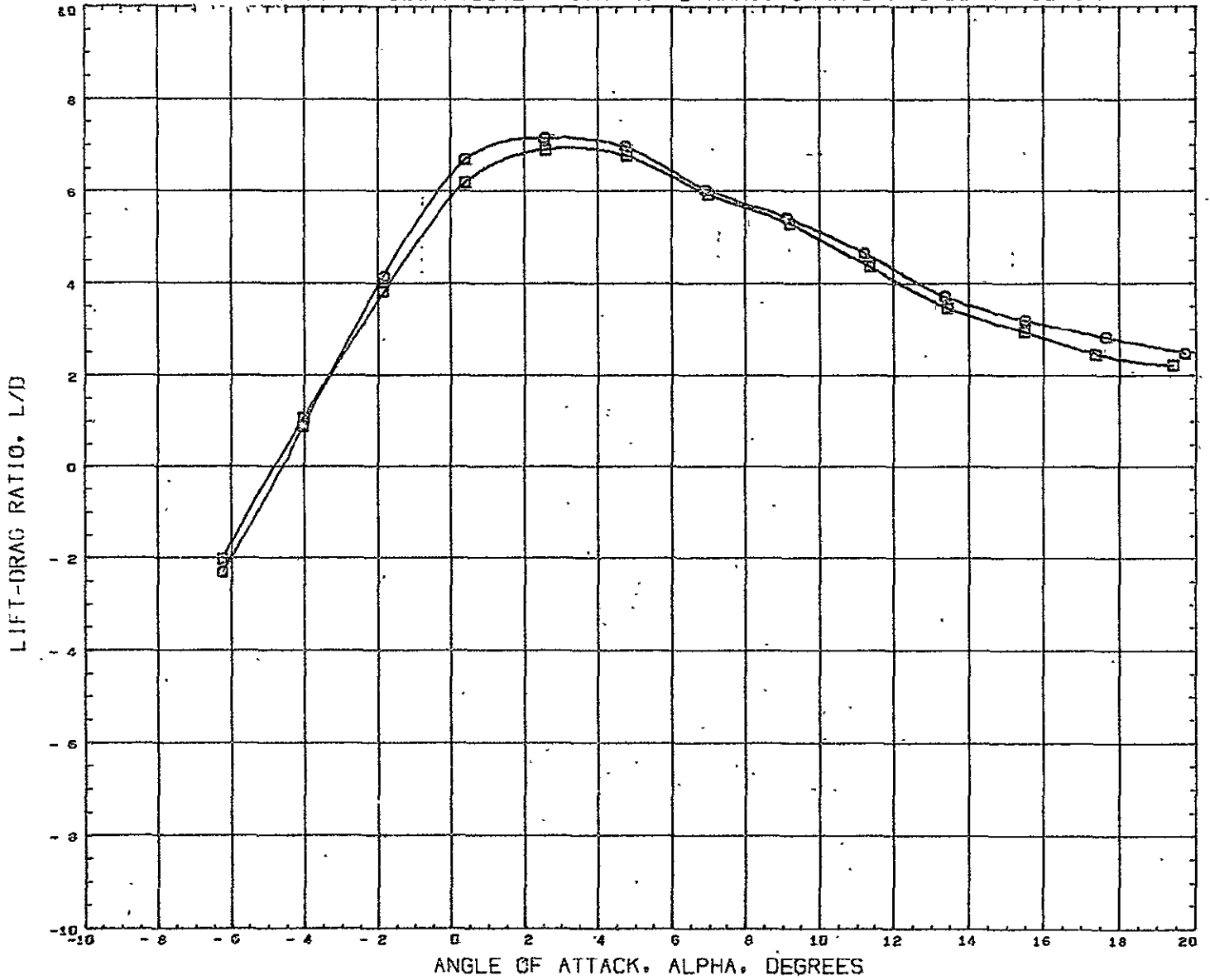
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (RCC005) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2
 (RCC022) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 FLAP 0.000 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT.
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XHRP 1.7030 FT.
 YHRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.184

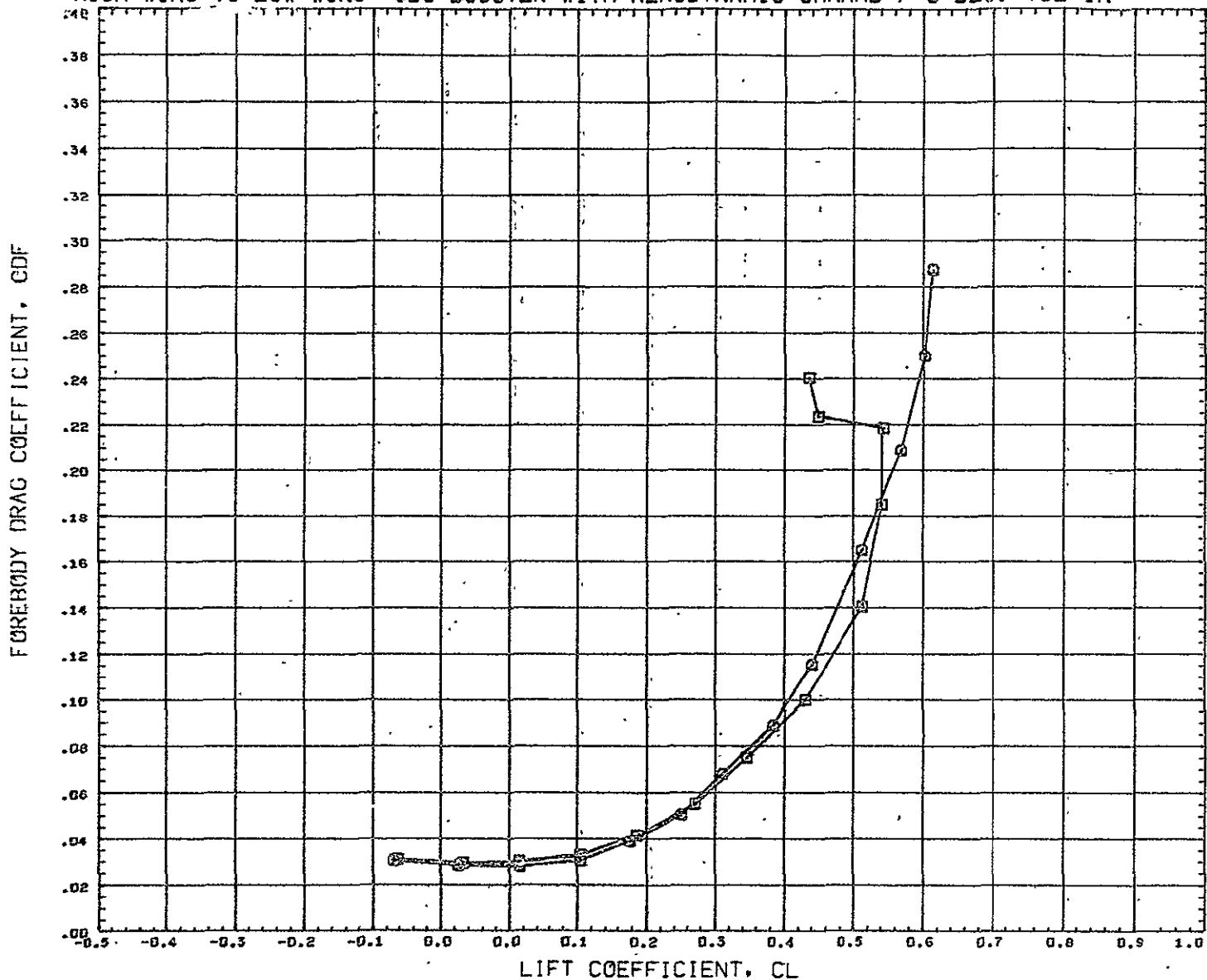
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES				REFERENCE INFORMATION	
(RCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XNRF	1.7030 FT.
						YNRF	0.0000 FT.
						ZNRF	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.184

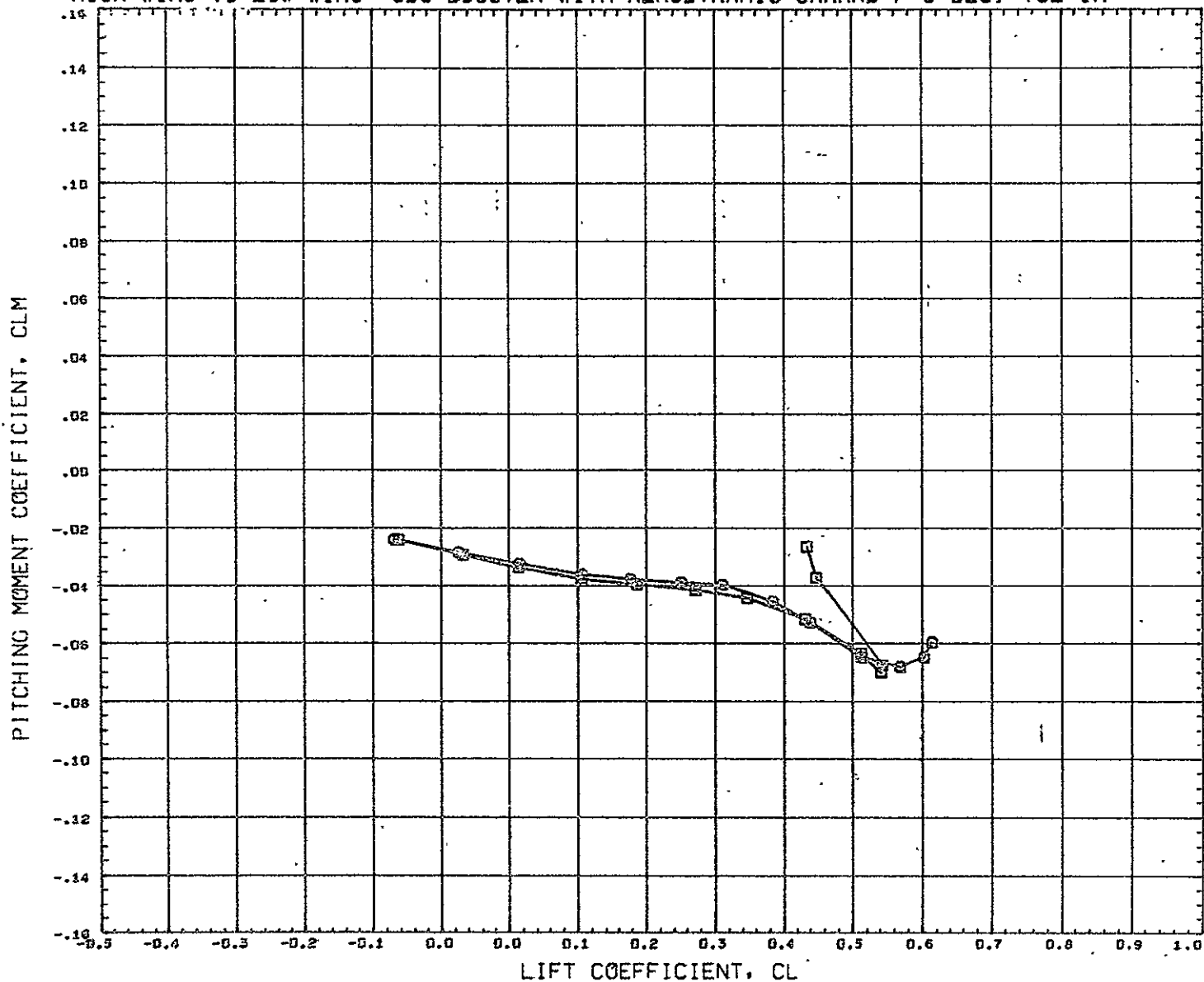
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	FLAP	PARAMETRIC VALUES	ELEVON	VTAIL	REFERENCE INFORMATION
(RCC003)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	0.000	0.000	0.000	0.000	0.000	REFS 1.0000 SQ. FT
(RCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	0.000	0.000	0.000	0.000	0.000	REFL 2.0000 FT.
							REFB 2.0000 FT.
							XMRP 1.7030 FT.
							YMRP 0.0000 FT.
							ZMRP 0.0125 FT.
							SCALE 0.0100 SCALE

MACH 0.184

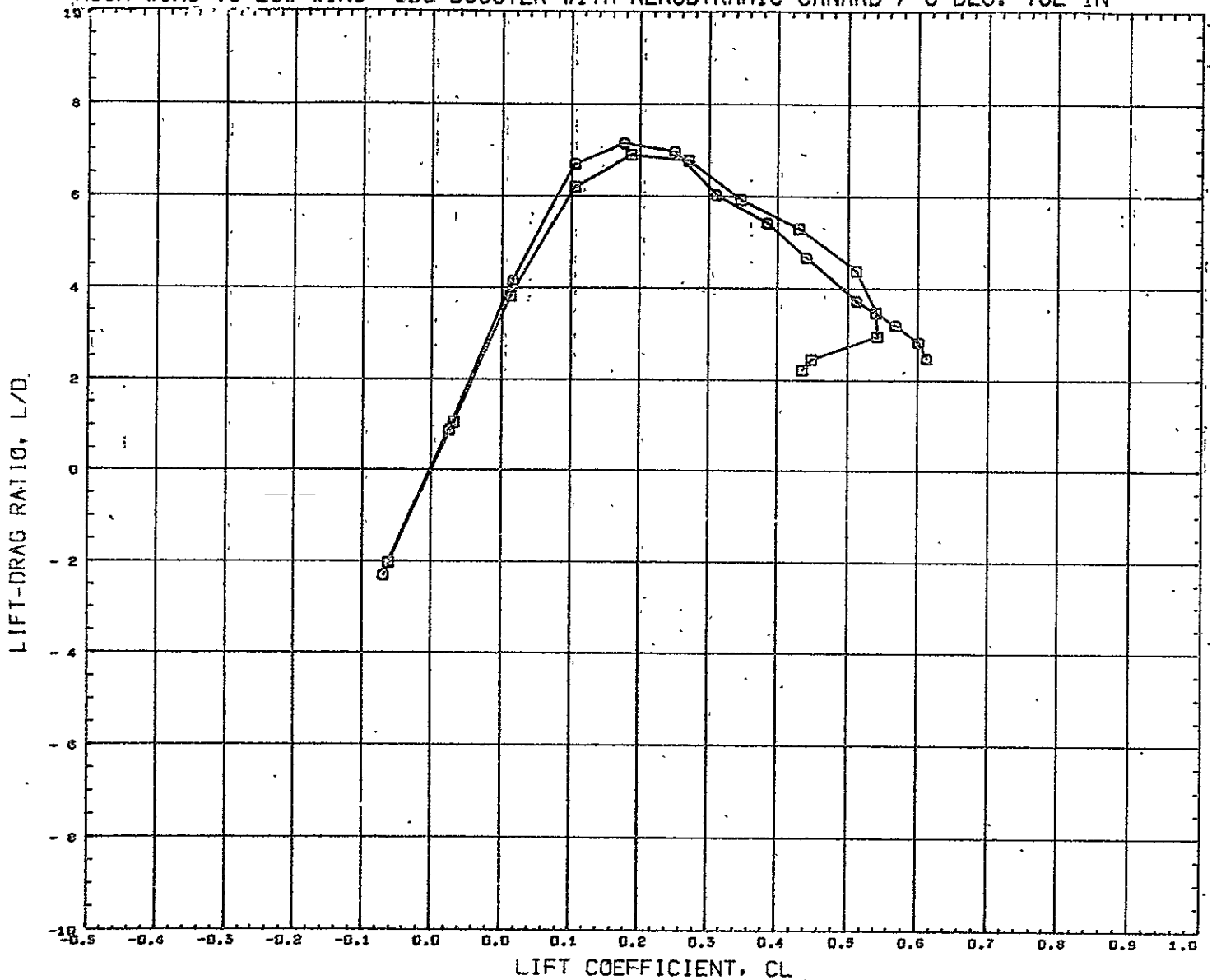
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES				REFERENCE INFORMATION		
(RCC005)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000	SQ. FT
(RCC022)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000	FT.
								REFB	2.0000	FT.
								XMRP	1.7030	FT.
								YMRP	0.0000	FT.
								ZMRP	0.0125	FT.
								SCALE	0.0100	SCALE

HACH 0.184

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

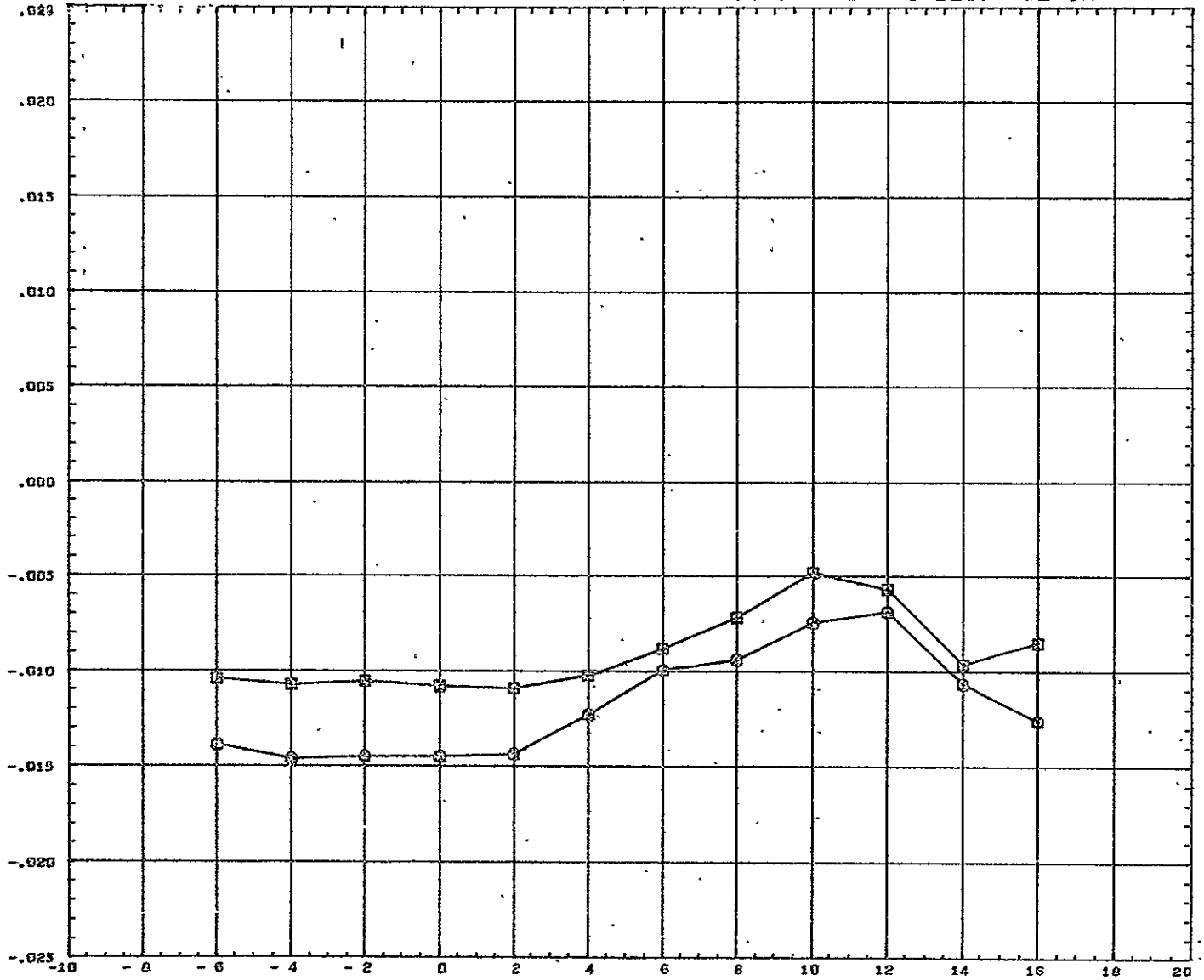


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES				REFERENCE INFORMATION		
(RCC003)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000	SQ. FT
(RCC022)	1351-DAC-LSWT-SBCBOOSTER BIN1W2T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000	FT.
						REFB	2.0000	FT.
						XMRP	1.7030	FT.
						YMRP	0.0000	FT.
						ZMRP	0.0125	FT.
						SCALE	0.0100	SCALE

MACH 0.184

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

SIDE FORCE DERIVATIVE, $DCY/DBETA$ (CYBETA) PER DEGREE



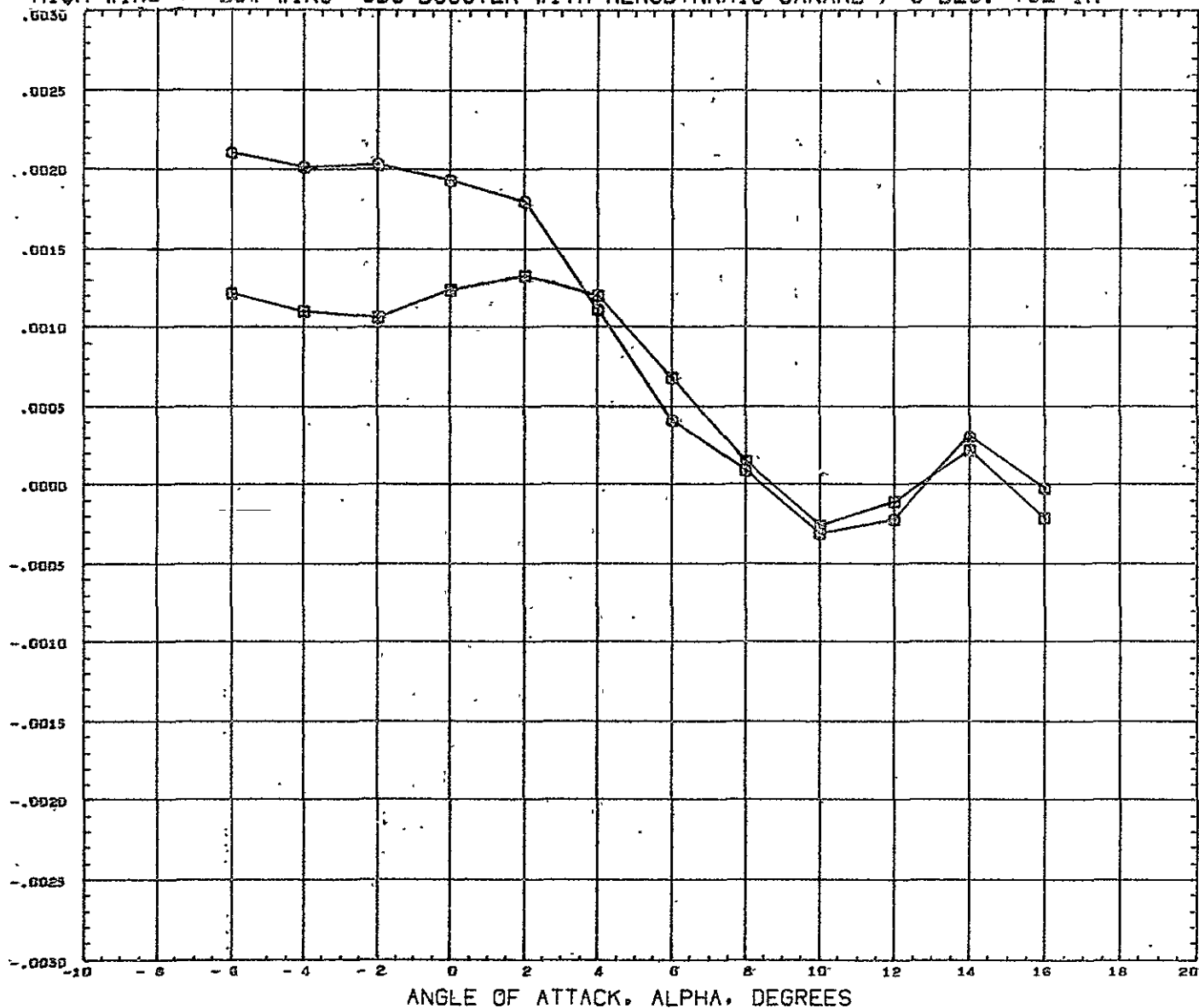
ANGLE OF ATTACK, ALPHA, DEGREES

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES				REFERENCE INFORMATION	
(CCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1F1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XMRP	1.7030 FT.
						YMRP	0.0000 FT.
						ZMRP	0.0125 FT.
						SCALE	0.0100 SCALE

HACH 0.180

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

DIRECTIONAL STABILITY DERIVATIVE, DCYN/DBETA (DCYNDB) PER DEGREE

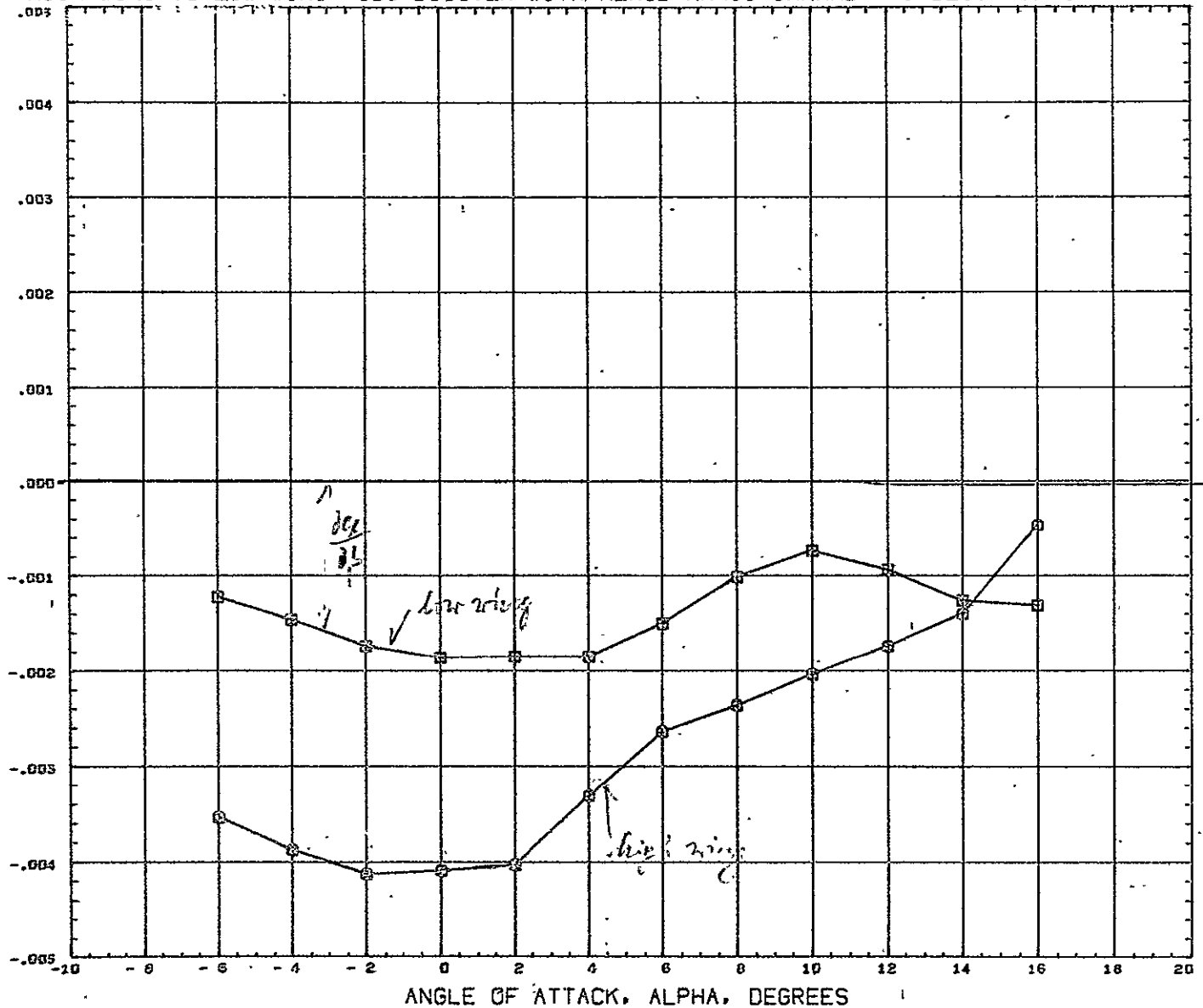


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	ELEVON	SCALE	REFERENCE INFORMATION
(CCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1F1V1E1F2	0.000	0.000	0.000	REFS	1.0000 SQ. FT
(CCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL 2.0000 FT.
						REFB 2.0000 FT.
						XMRP 1.7030 FT.
						YMRP 0.0000 FT.
						ZMRP 0.0125 FT.
						SCALE 0.0100 SCALE

MACH 0.180

HIGH WING VS. LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

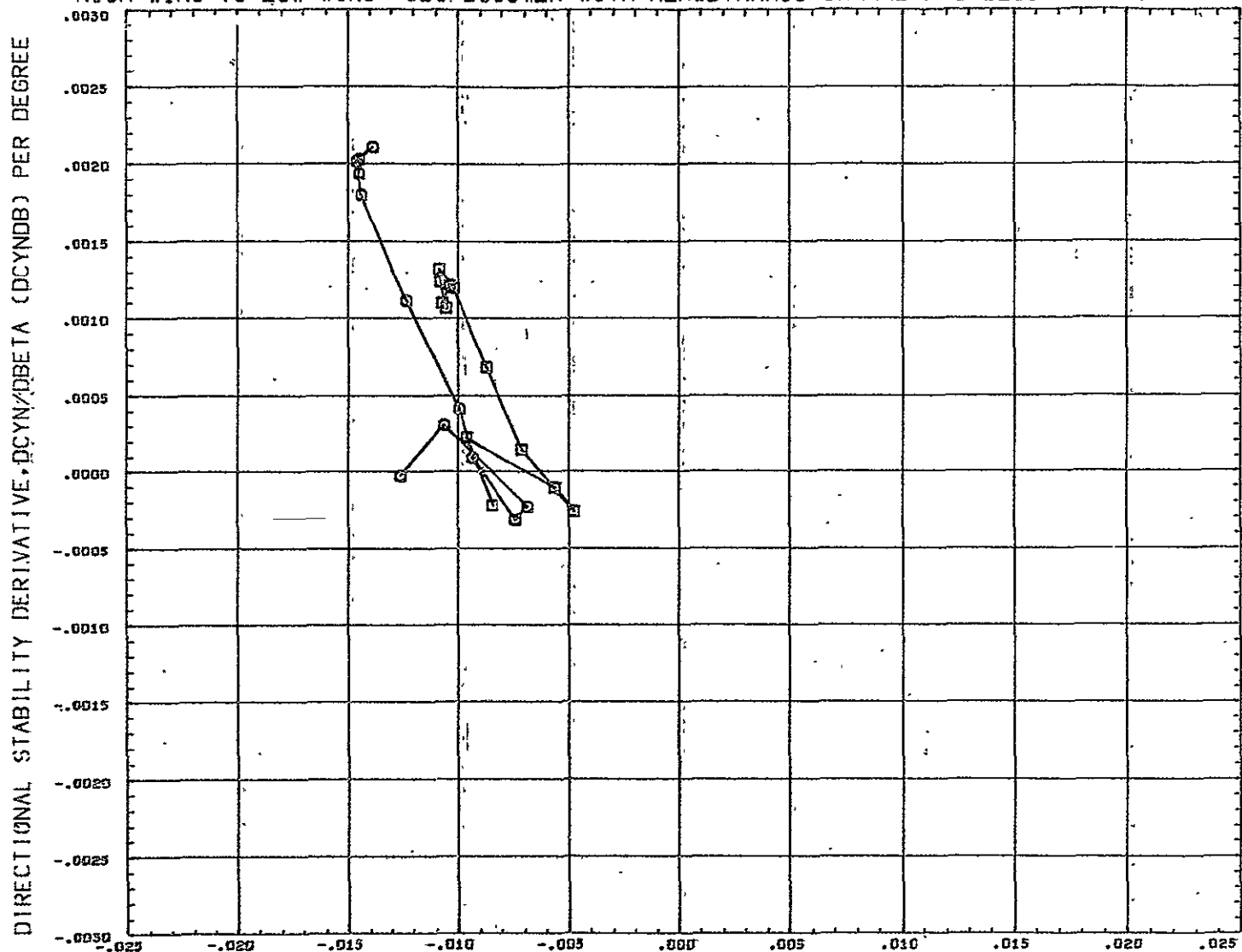
EFFECTIVE DIHEDRAL, DCBL/DBETA (DCBLDB) PER DEGREE



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCC005)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1F1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC022)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1F1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE

NACH 0.180

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 6 DEG. TOE IN

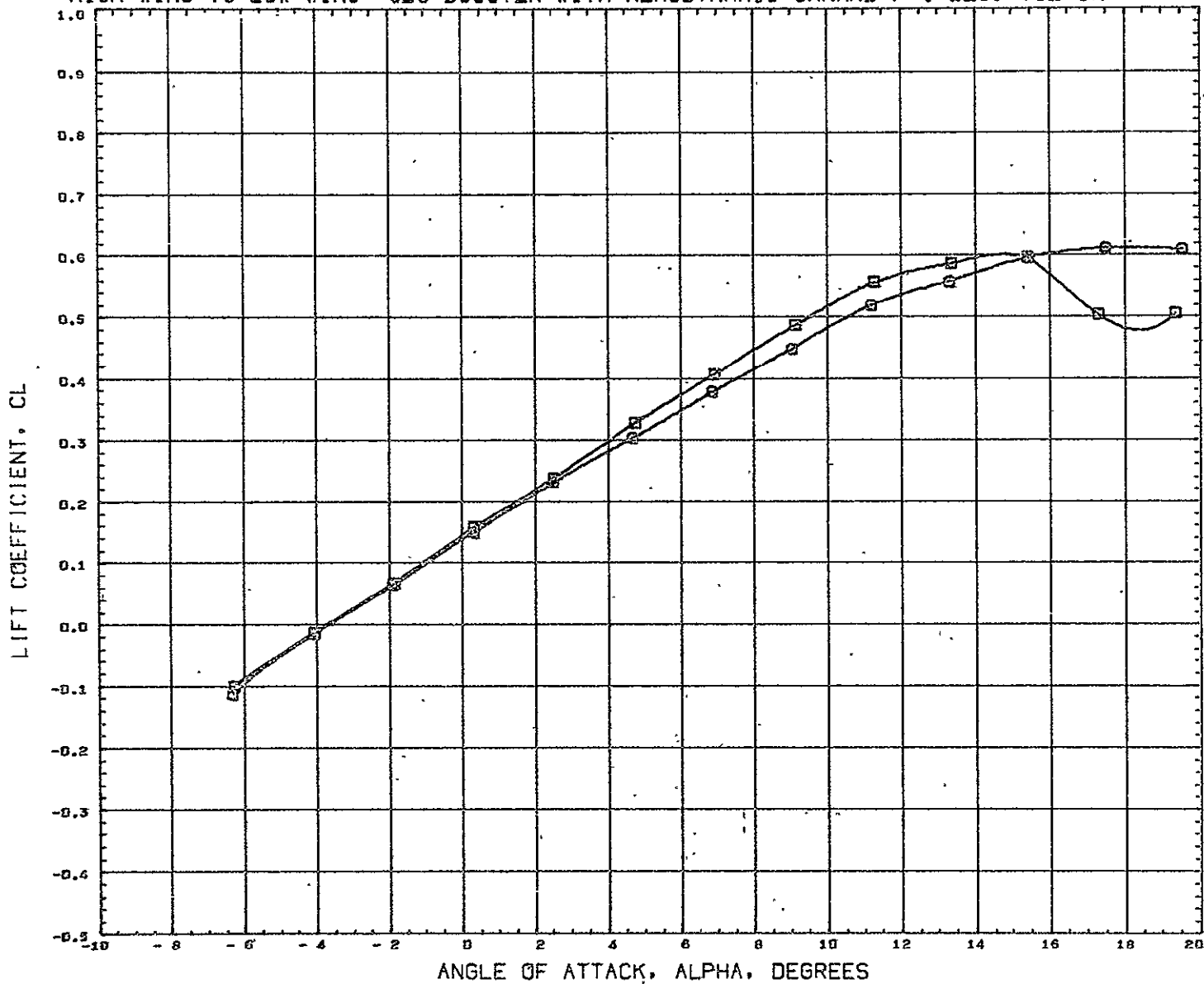


SIDE FORCE DERIVATIVE, DCY/DBETA (CYBETA) PER DEGREE

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	FLAP	PARAMETRIC VALUES	ELEVON	VTAIL	REFERENCE INFORMATION
(CCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1WLT1P1V1E1F2	0.000	0.000	0.000	0.000	0.000	REFS 1.0000 SQ. FT.
(CCC022)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	0.000	0.000	0.000	0.000	0.000	REFL 2.0000 FT.
							REFB 2.0000 FT.
							XMRP 1.7030 FT.
							YMRP 0.0000 FT.
							ZMRP 0.0125 FT.
							SCALE 0.0100 SCALE

MACH 0.180

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



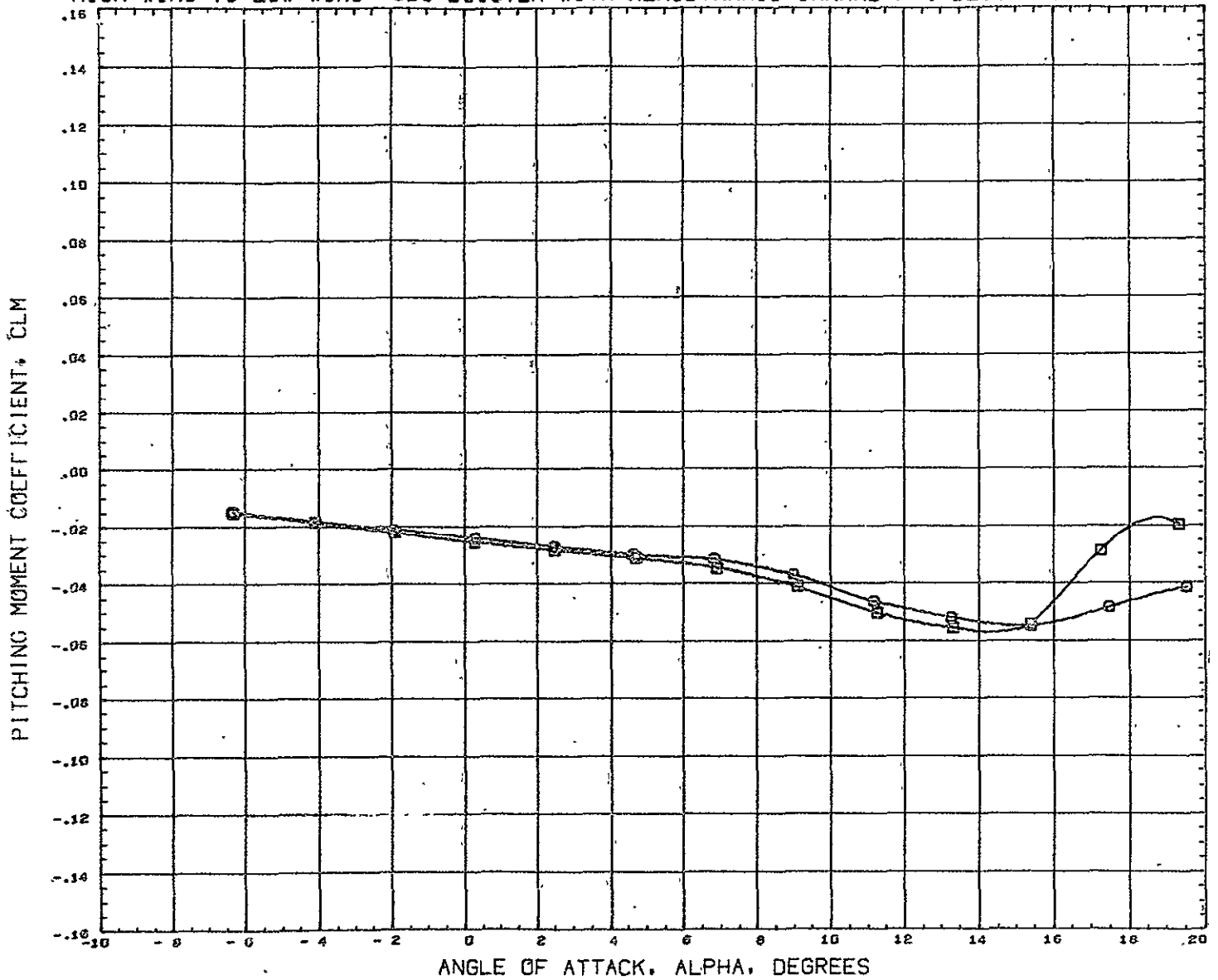
DATA SET SYMBOL CONFIGURATION DESCRIPTION
(RCC014) 1351-DAC-LSWT-SBCBOOSTER BINIWIT1P1VIE1F2
(RCC029) 1351-DAC-LSWT-SBCBOOSTER BINIW2T1P1VIE1F2

PARAMETRIC VALUES
BETA 0.000 ELEVON 0.000
FLAP 0.000 VTAIL 0.000

REFERENCE INFORMATION
REFS 1.0000 SQ. FT
REFL 2.0000 FT.
REFB 2.0000 FT.
XMRP 1.7030 FT.
YMRP 0.0000 FT.
ZMRP 0.0125 FT.
SCALE 0.0100 SCALE

HACH 0.165

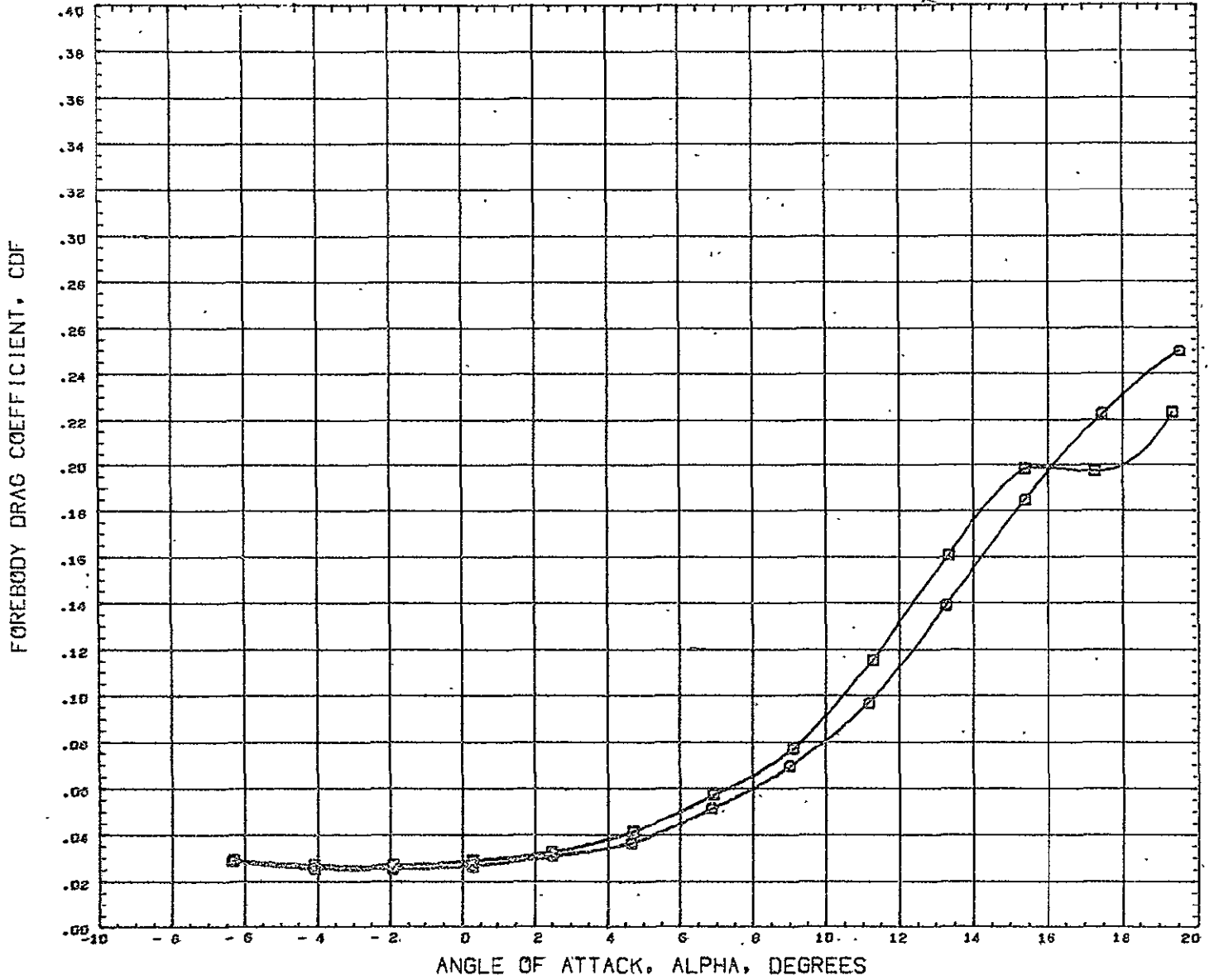
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	ELEVON	REFERENCE INFORMATION
(RCC014)	1351-DAC-LSHT-SBCBOOSTER BIN1W1T1P1V1E1F2	0.000	FLAP	0.000	REFS 1.0000 SQ. FT
(RCC029)	1351-DAC-LSWT-SBCBOOSTER, BIN1W2T1P1V1E1F2	0.000	VTAIL	0.000	REFL 2.0000 FT.
					REFB 2.0000 FT.
					XMRP 1.7030 FT.
					YMRP 0.0000 FT.
					ZMRP 0.0125 FT.
					SCALE 0.0100 SCALE

HACH D.185

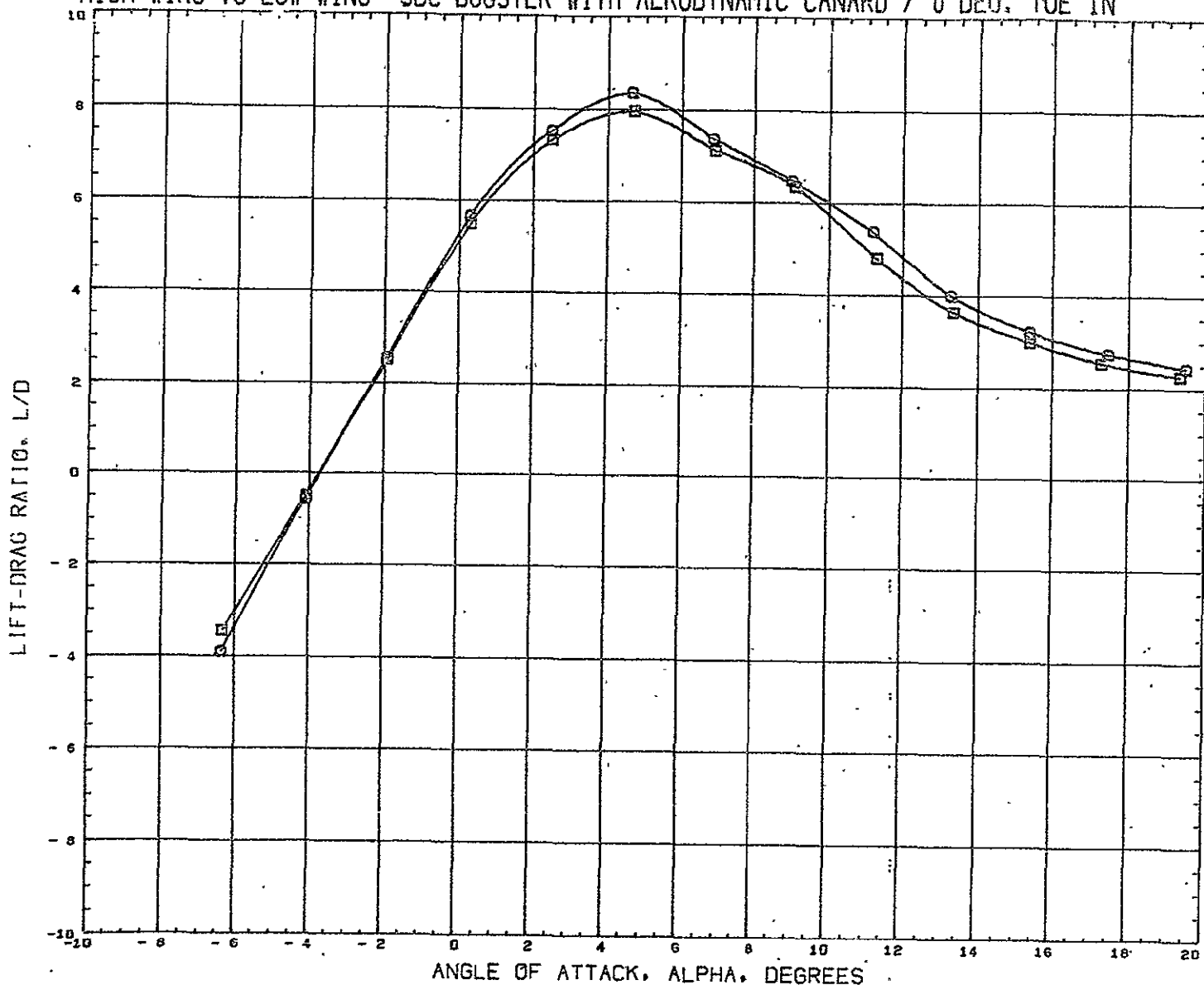
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC014)	○	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE

MACH 0.185

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RCC014) O 1351-DAC-LSWT-SBCBOOSTER B1N1W1T1F1V1E1F2
(RCC029) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2

PARAMETRIC VALUES

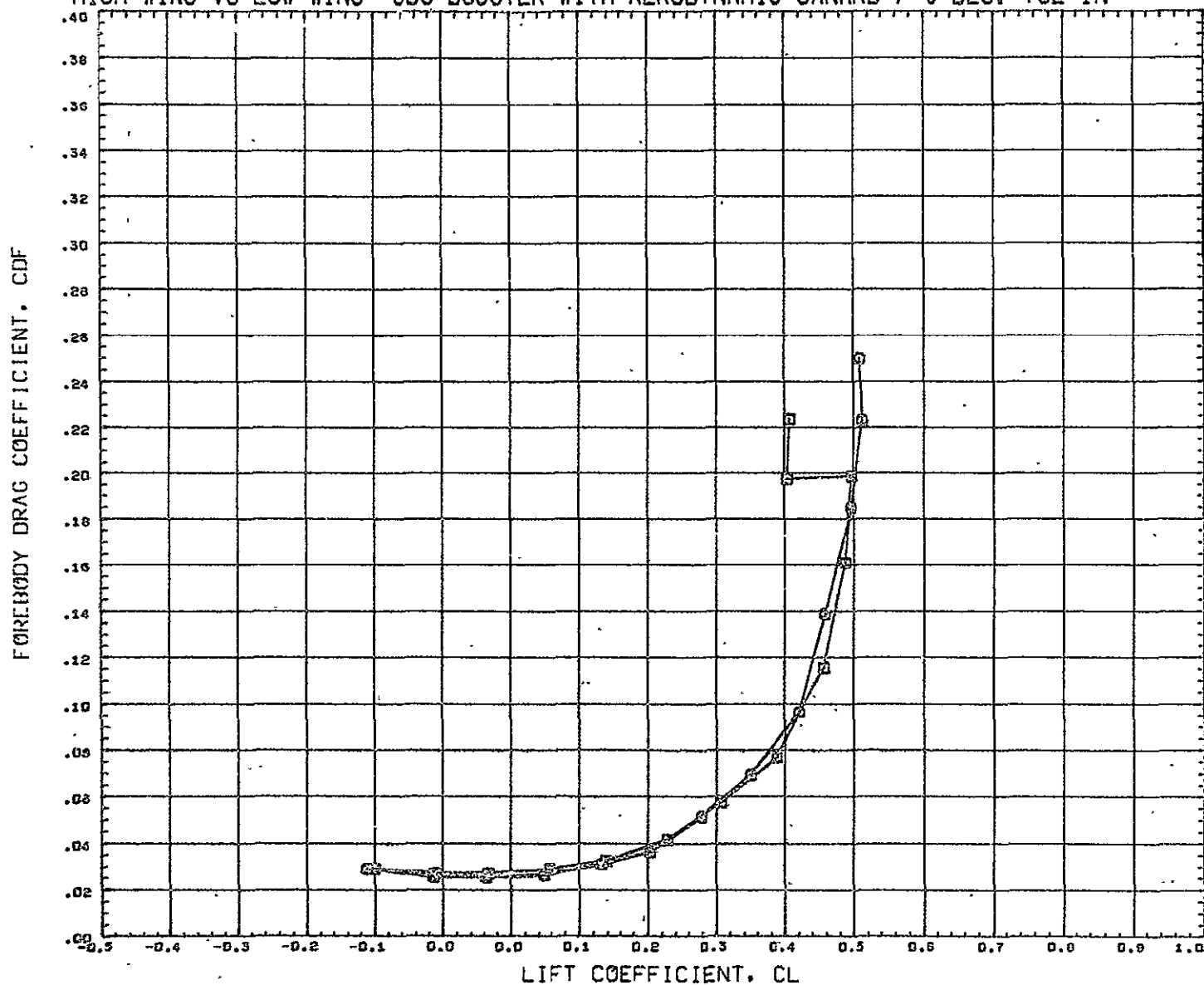
BETA 0.000 ELEVON 0.000
FLAP 0.000 VTAIL 0.000

REFERENCE INFORMATION

REFS 1.0000 SQ. FT
REFL 2.0000 FT.
REFB 2.0000 FT.
XMRP 1.7030 FT.
YMRP 0.0000 FT.
ZMRP 0.0125 FT.
SCALE 0.0100 SCALE

MACH 0.185

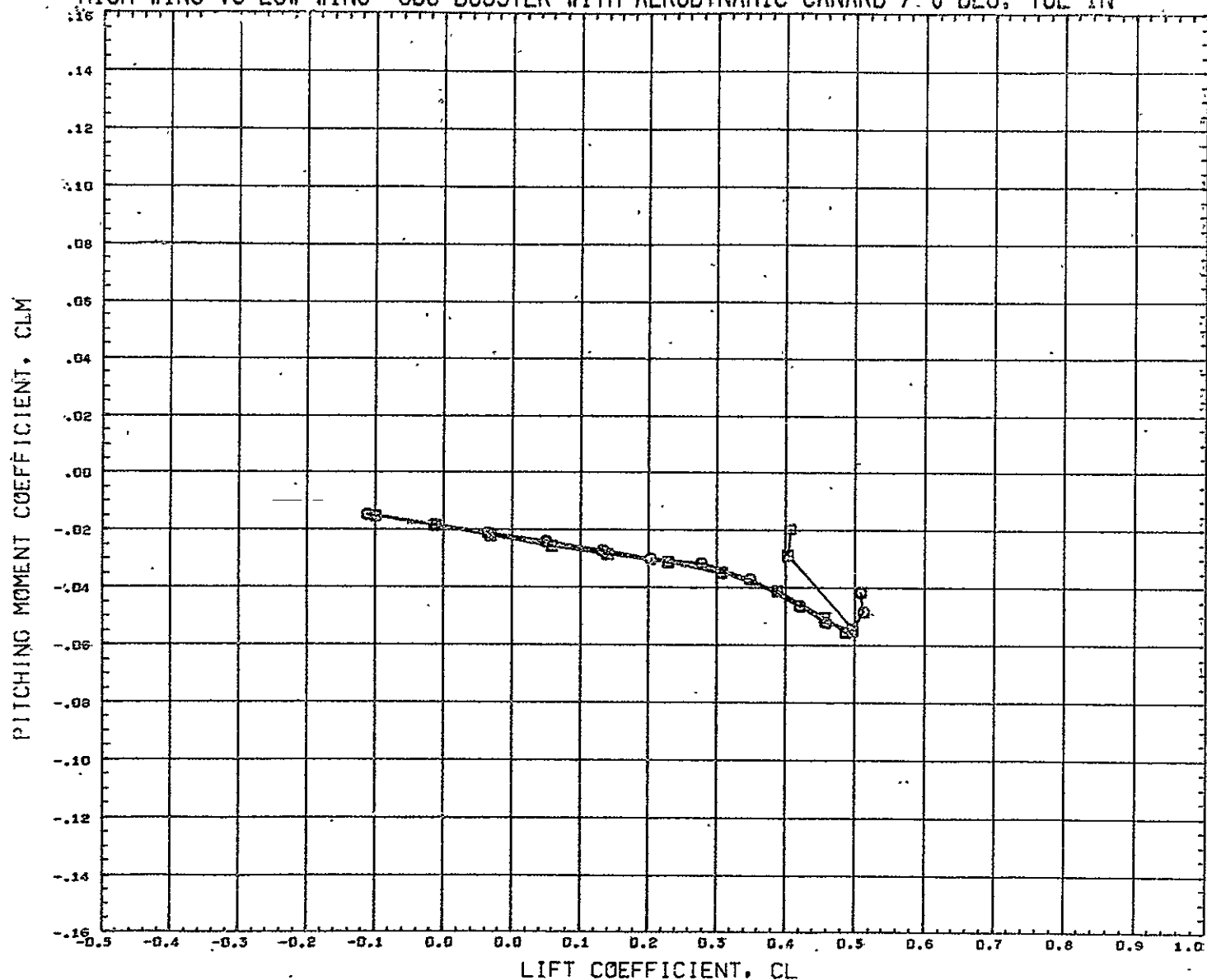
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC014)	○	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE

NACH 0.185

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
{RCC014}	○	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
{RCC029}	□	1351-DAC-LSWT-SBCBOOSTER BIN1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000 FT.
							REFB	2.0000 FT.
							XMRP	1.7030 FT.
							YMRP	0.0000 FT.
							ZMRP	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.185

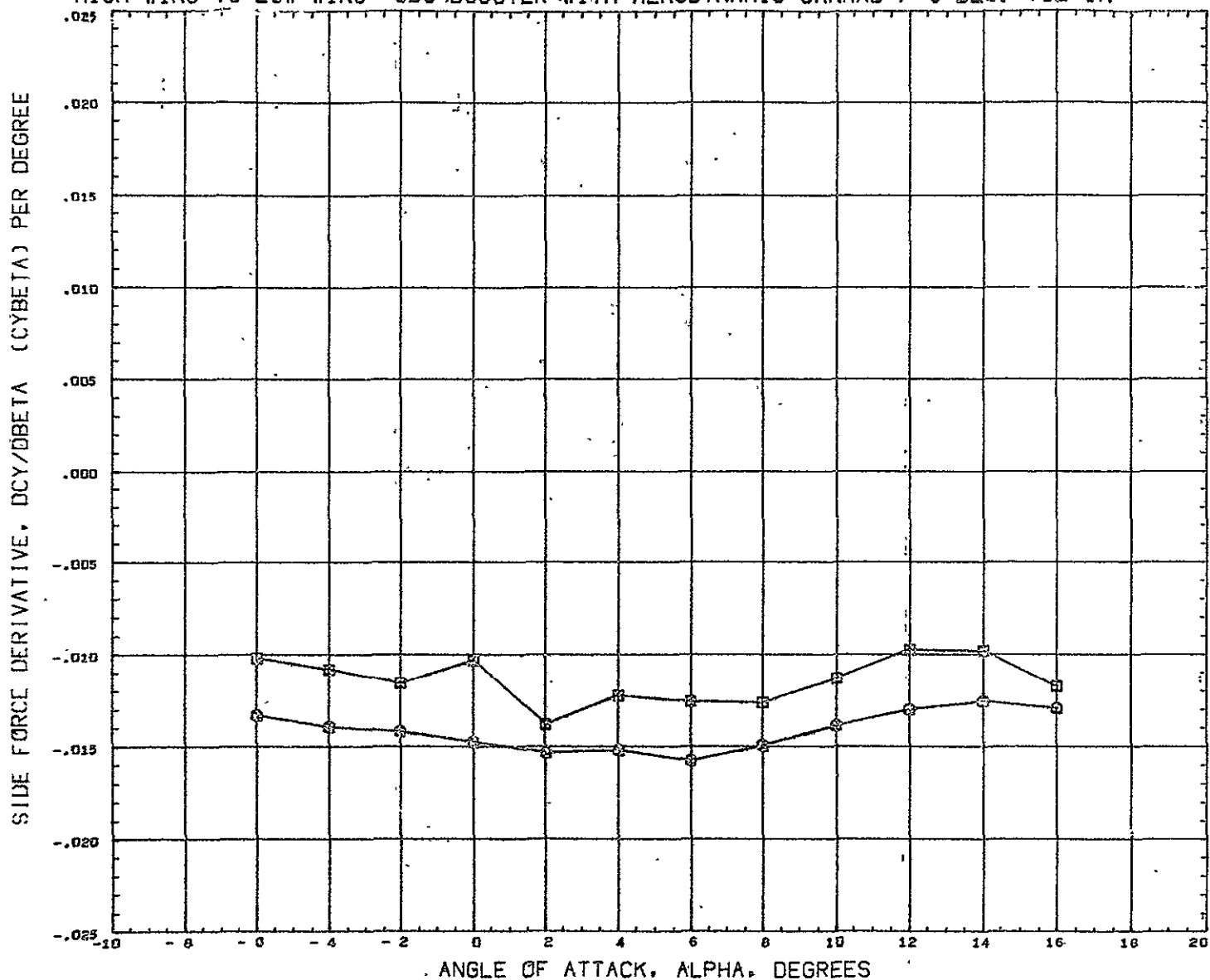
HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC014)	○	1351-DAC-LSWT-SBCBOOSTER	B1N1H1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE

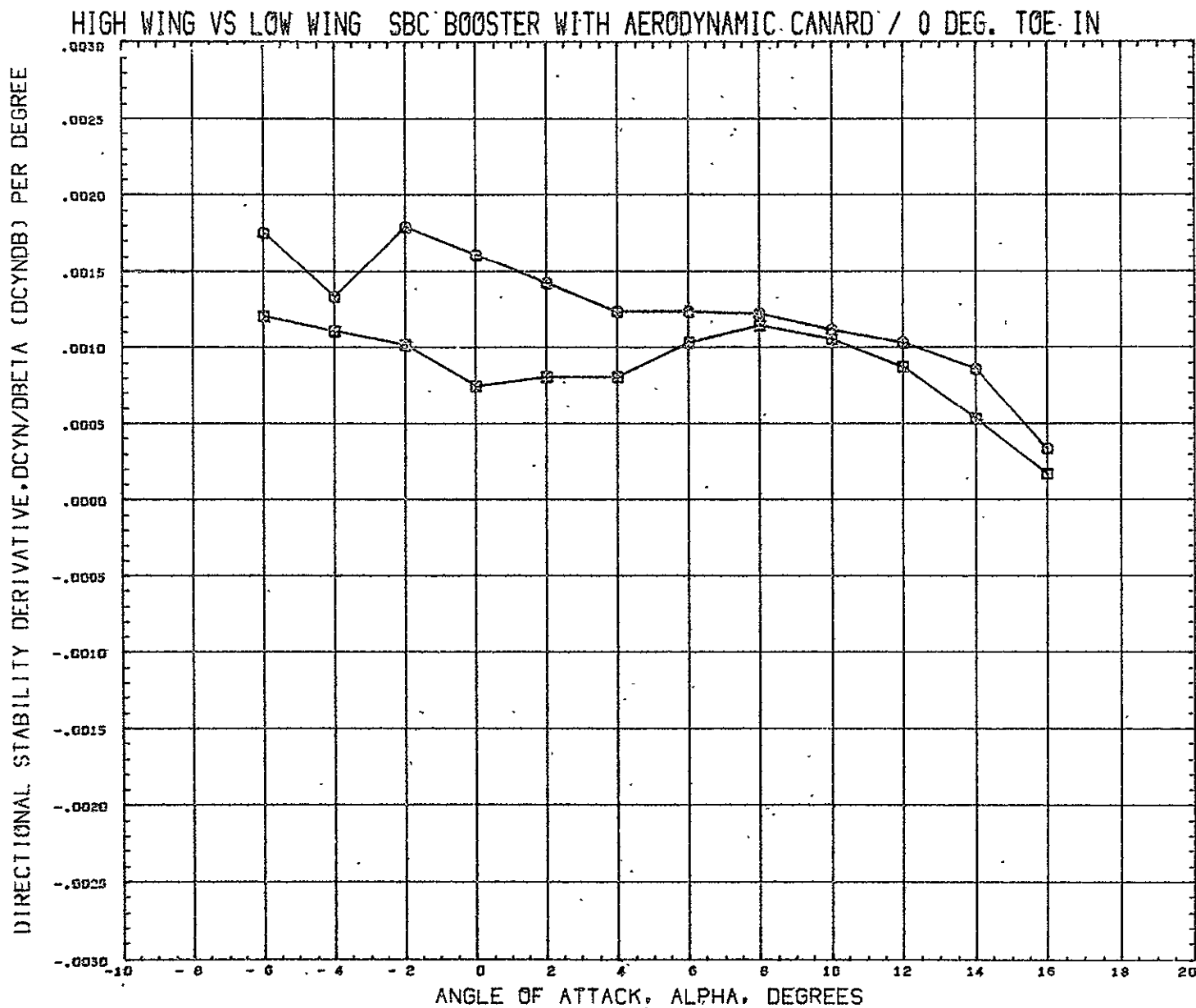
MACH 0.185

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES	REFERENCE INFORMATION
(CCCC14)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	BETA 0.000 ELEVON 0.000	REFS 1.0000 SQ. FT
(CCCC29)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	FLAP 0.000 VTAIL 0.000	REFL 2.0000 FT.
			REFB 2.0000 FT.
			XMRP 1.7030 FT.
			YMRP 0.0000 FT.
			ZMRP 0.0125 FT.
			SCALE 0.0100 SCALE

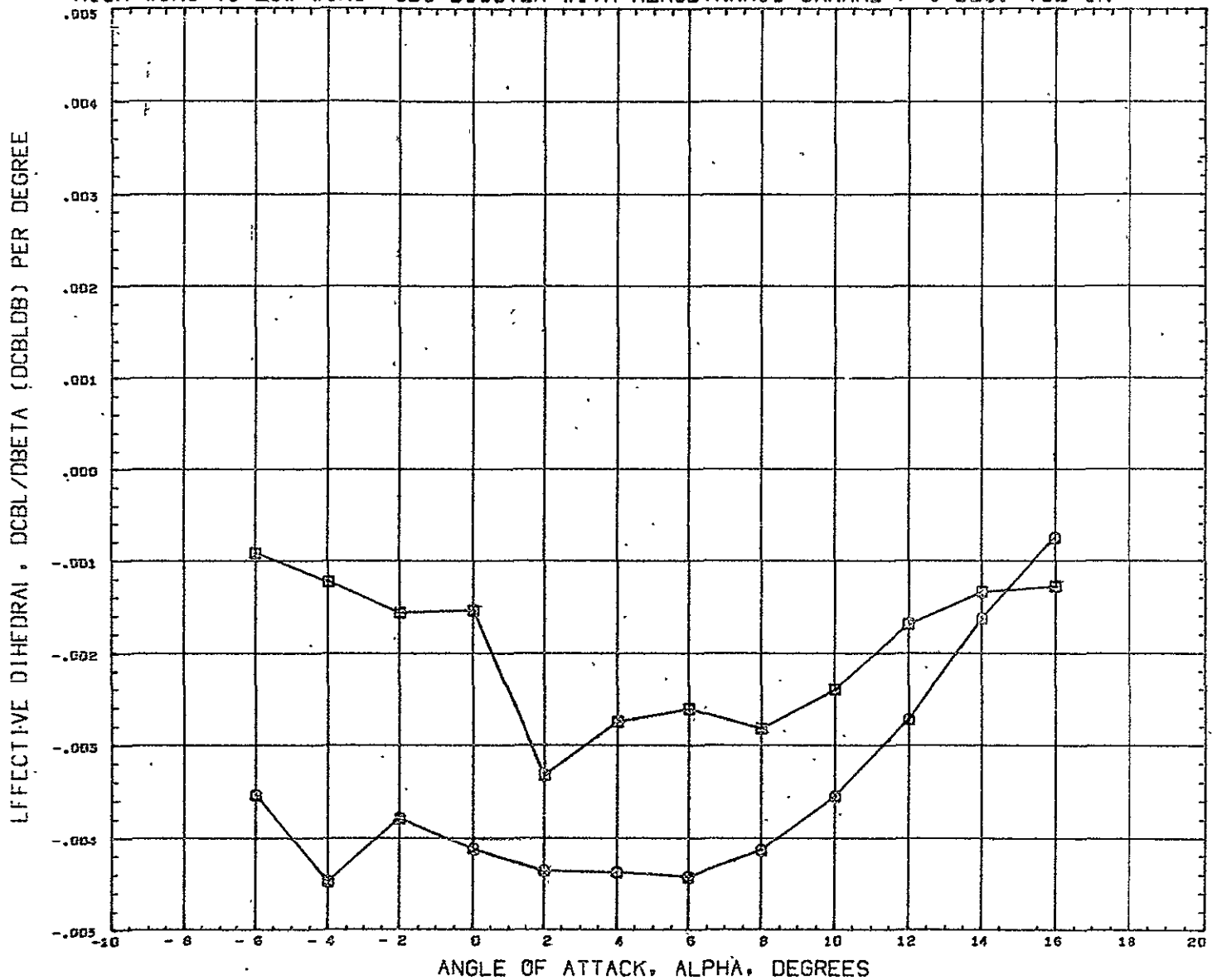
MACH 0.160



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCC014)	○	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC029)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE

MACH 0.180

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN

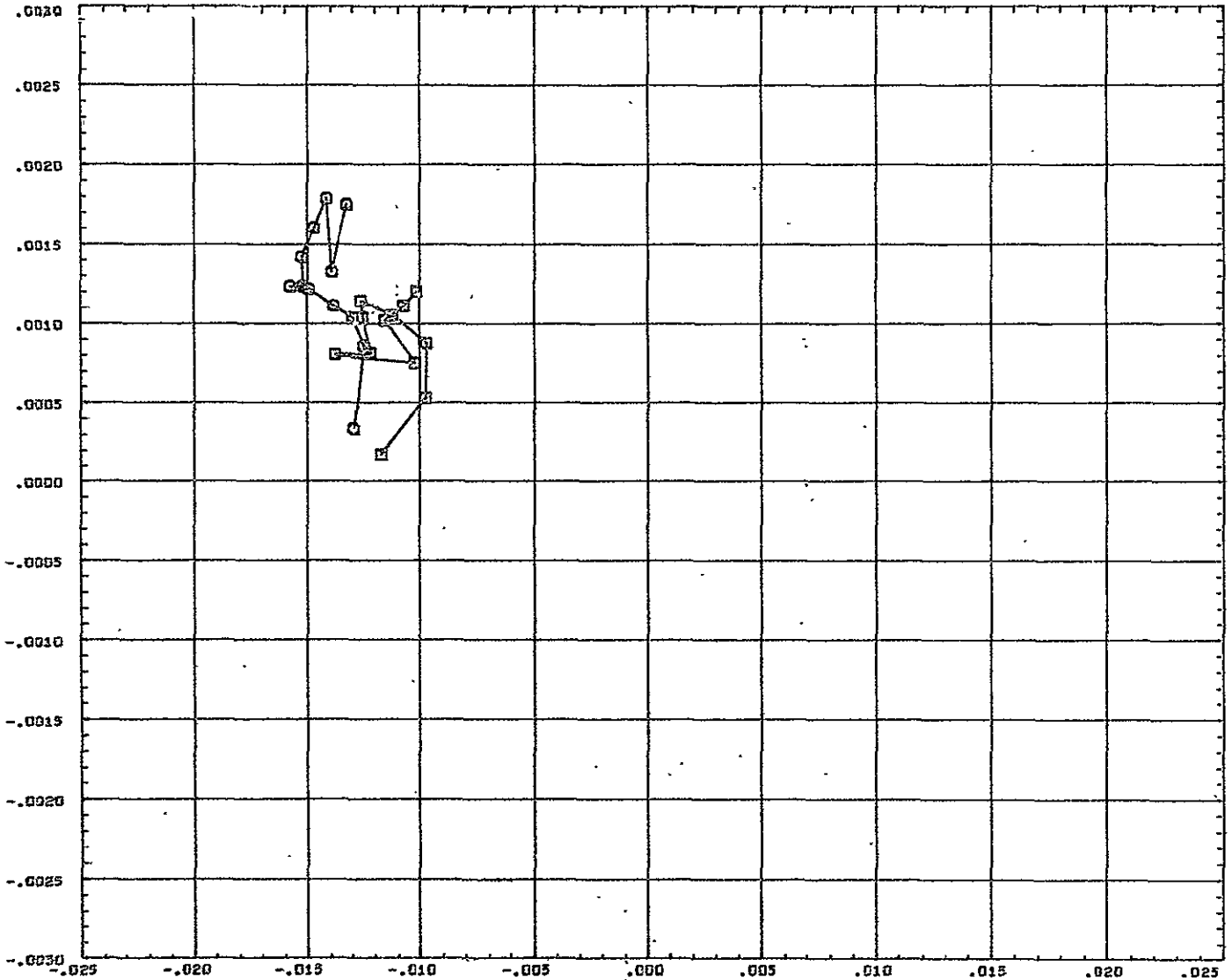


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES				REFERENCE INFORMATION		
(CCC014)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000	Sq. FT
(CCC029)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000	FT.
						REFB	2.0000	FT.
						XMRP	1.7030	FT.
						YMRP	0.0000	FT.
						ZMRP	0.0125	FT.
						SCALE	0.0100	SCALE

MACH 0.180

HIGH WING VS LOW WING SBC BOOSTER WITH AERODYNAMIC CANARD / 0 DEG. TOE IN

DIRECTIONAL STABILITY DERIVATIVE, DCYN/DBETA (DCYNDB) PER DEGREE

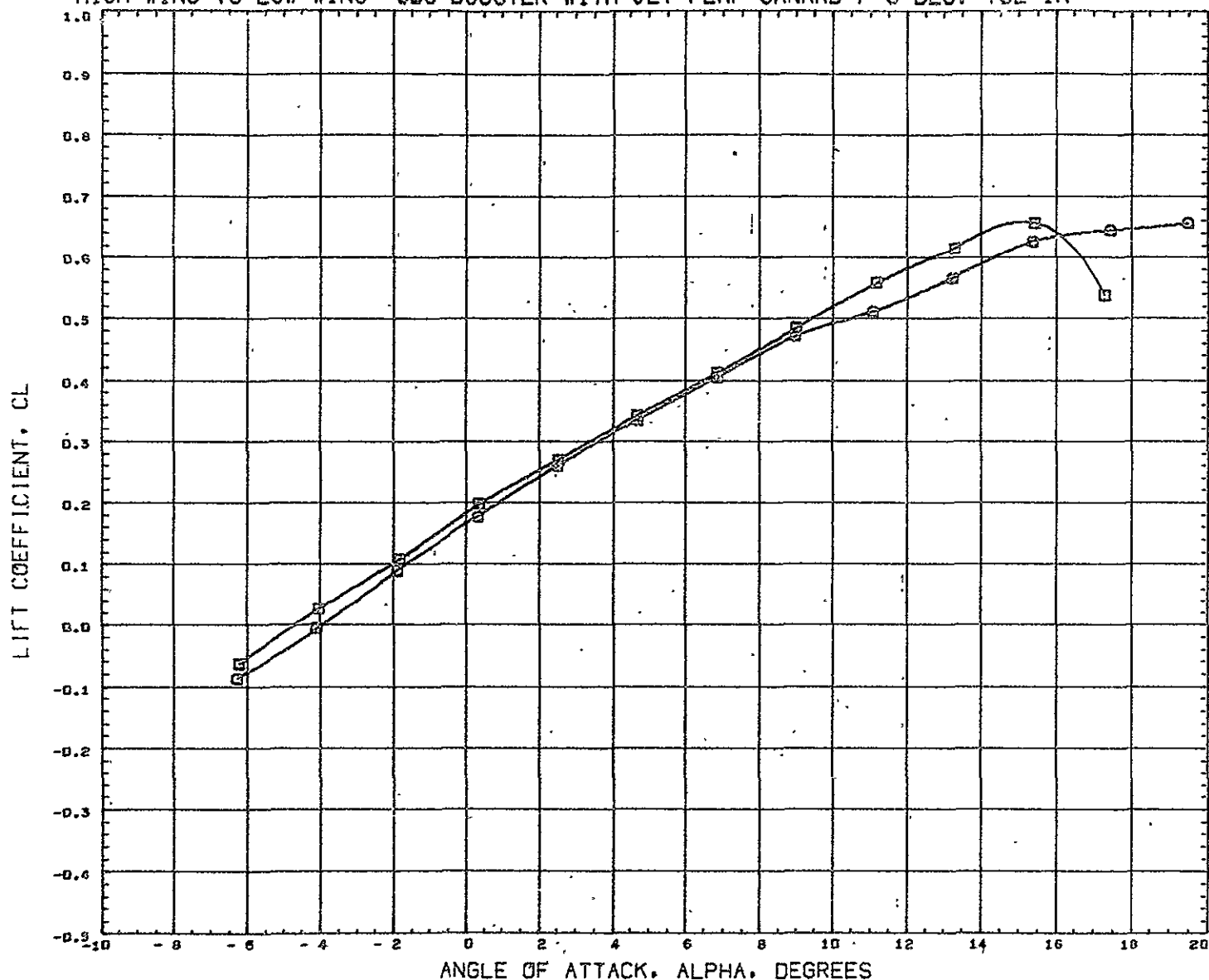


SIDE FORCE DERIVATIVE; DCY/DBETA (CYBETA) PER DEGREE

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCC014)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC029)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	FLAP	0.000	VTAIL	0.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XMRP	1.7030 FT.
						YMRP	0.0000 FT.
						ZMRP	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.180

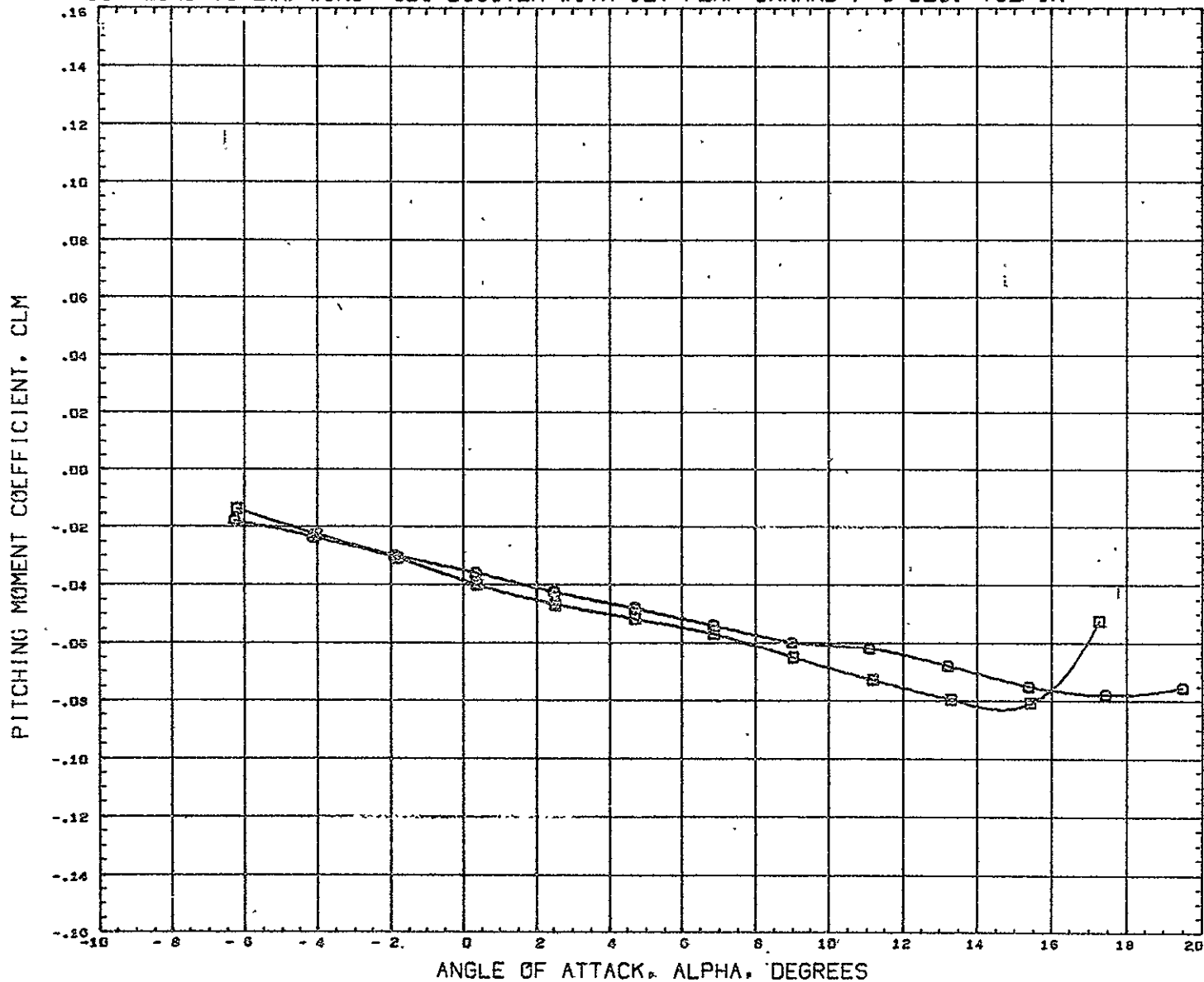
HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	ELEVON	REFERENCE INFORMATION
(RCC001)	1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1	0.000	0.000	0.000	REFS 1.0000 SQ. FT
(RCC019)	1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1	6.000			REFL 2.0000 FT.
					REFB 2.0000 FT.
					XMRP 1.7030 FT.
					YMRP 0.0000 FT.
					ZMRP 0.0125 FT.
					SCALE 0.0100 SCALE

MACH 0.185

HIGH WING VS LOW WING. SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN

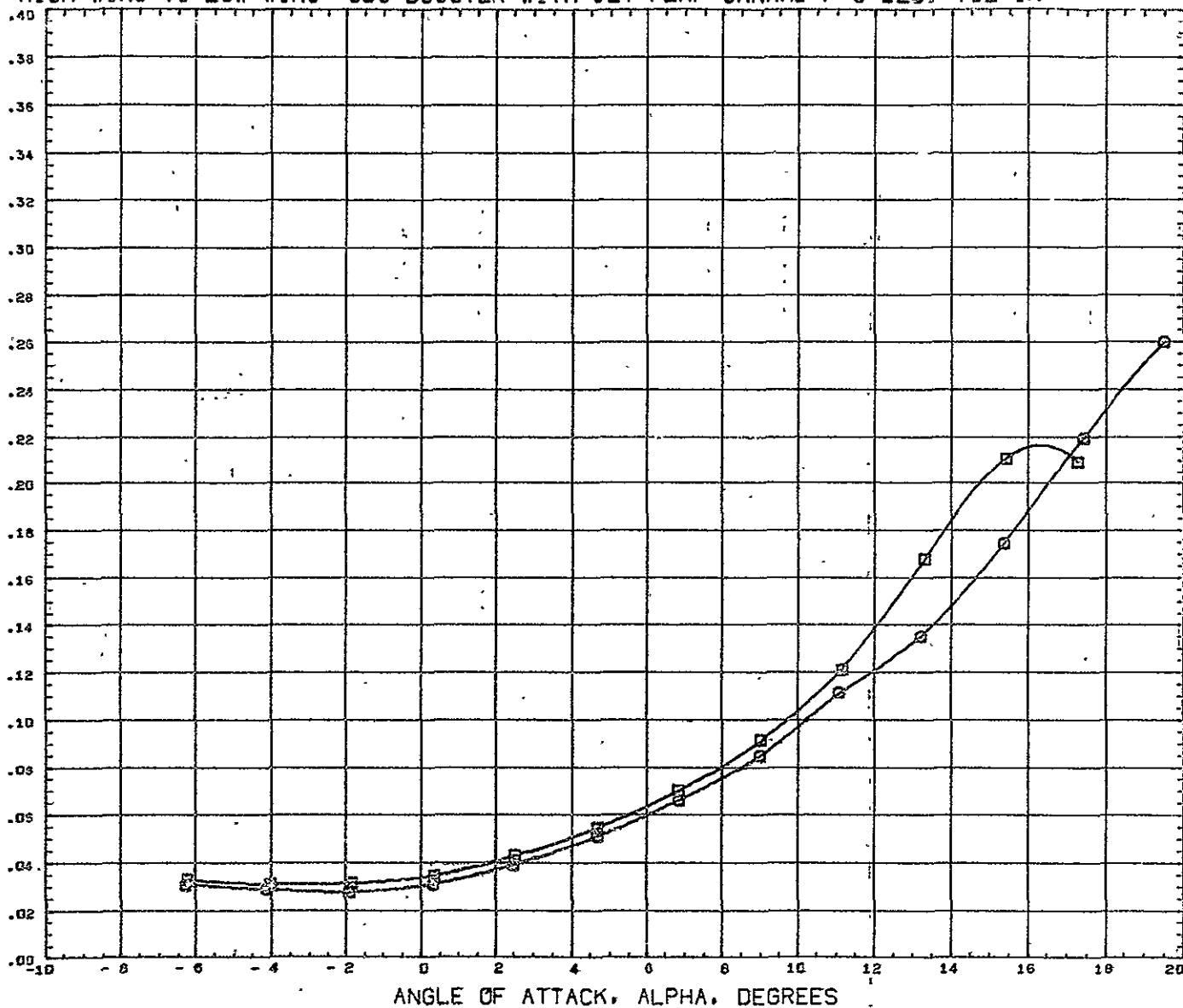


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC001)	○	1351-DAC-LSWT-SBCBOOSTER BINIWJ1VIE1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC019)	□	1351-DAC-LSWT-SBCBOOSTER BINIW2J1VIE1	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XMRP	1.7030 FT.
							YMRP	0.0000 FT.
							ZMRP	0.0125 FT.
							SCALE	0.0100 SCALE

NACH 0.185

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6. DEG. TOE IN

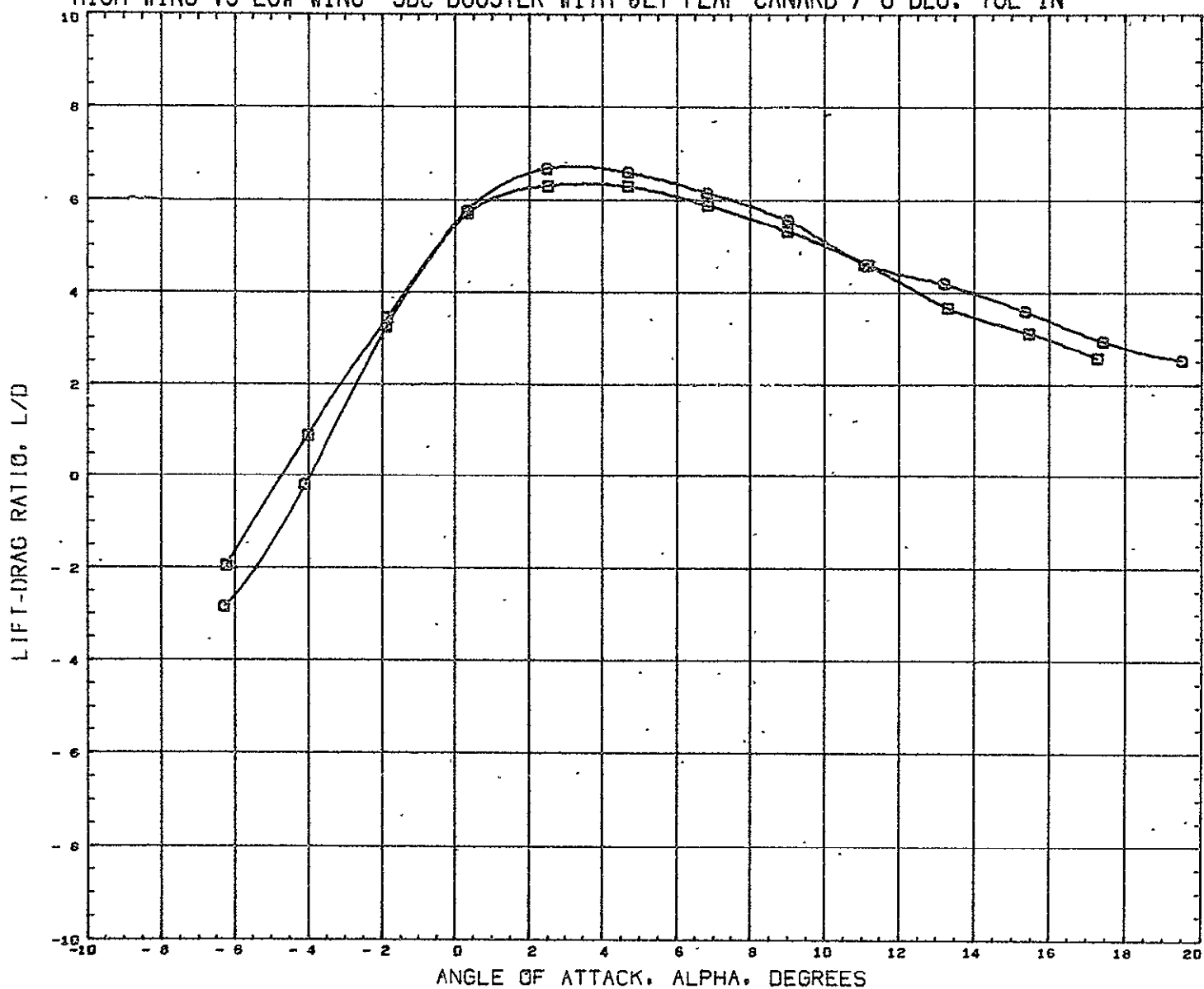
FOREBODY DRAG COEFFICIENT, CDF



DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC001)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W1J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SG. FT
(RCC019)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XNRP	1.7030 FT.
							YNRP	0.0000 FT.
							ZNRP	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.185

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



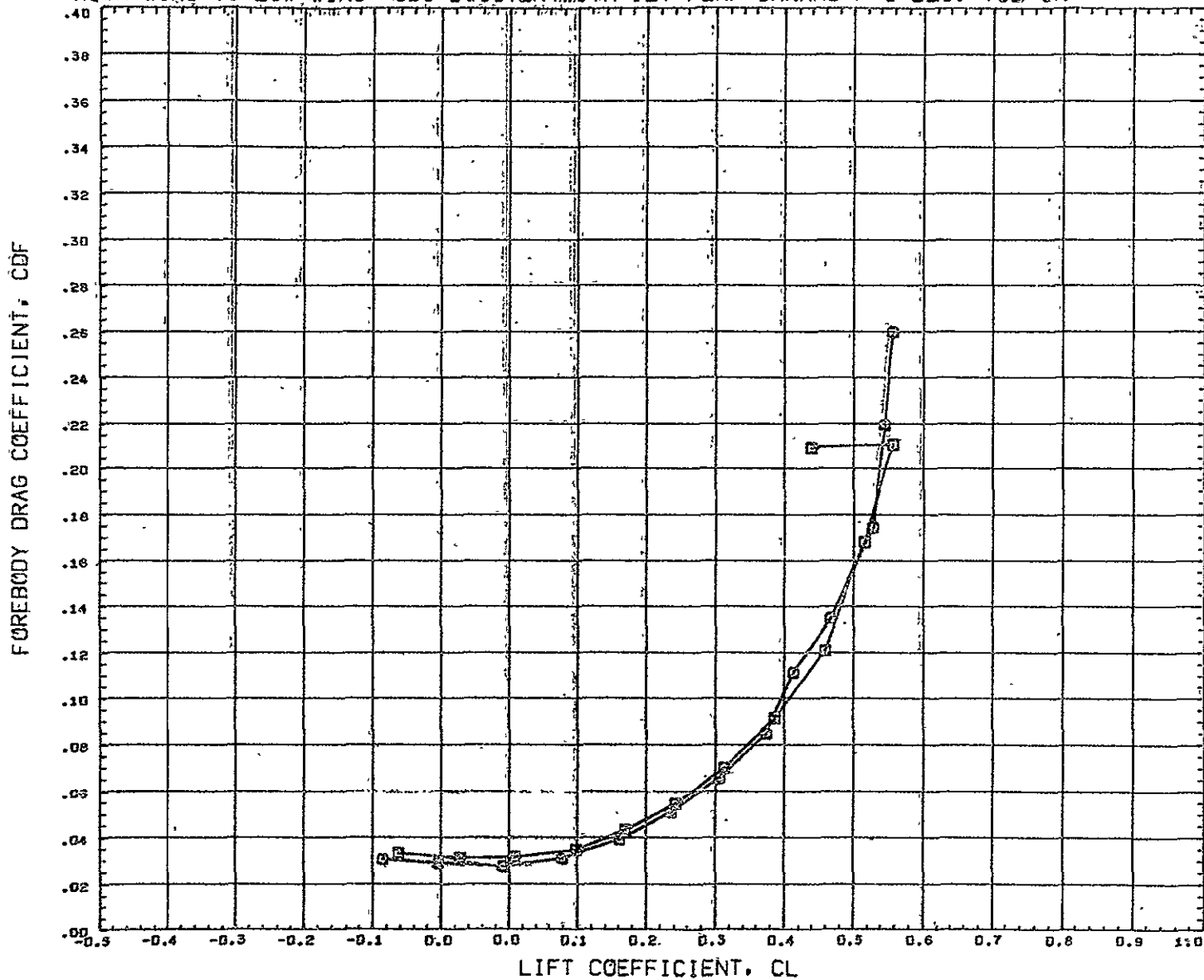
DATA SET SYMBOL CONFIGURATION DESCRIPTION
(RCC001) 1351-DAC-LSWT-SBCBOOSTER B1N1W1J1V1E1
(RCC019) 1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1

PARAMETRIC VALUES
BETA 0.000 ELEVON 0.000
VTAIL 6.000

REFERENCE INFORMATION
REFS 1.0000 SQ. FT
REFL 2.0000 FT.
REFB 2.0000 FT.
XMRP 1.7030 FT.
YMRP 0.0000 FT.
ZMRP 0.0125 FT.
SCALE 0.0100 SCALE

MACH 0.185

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



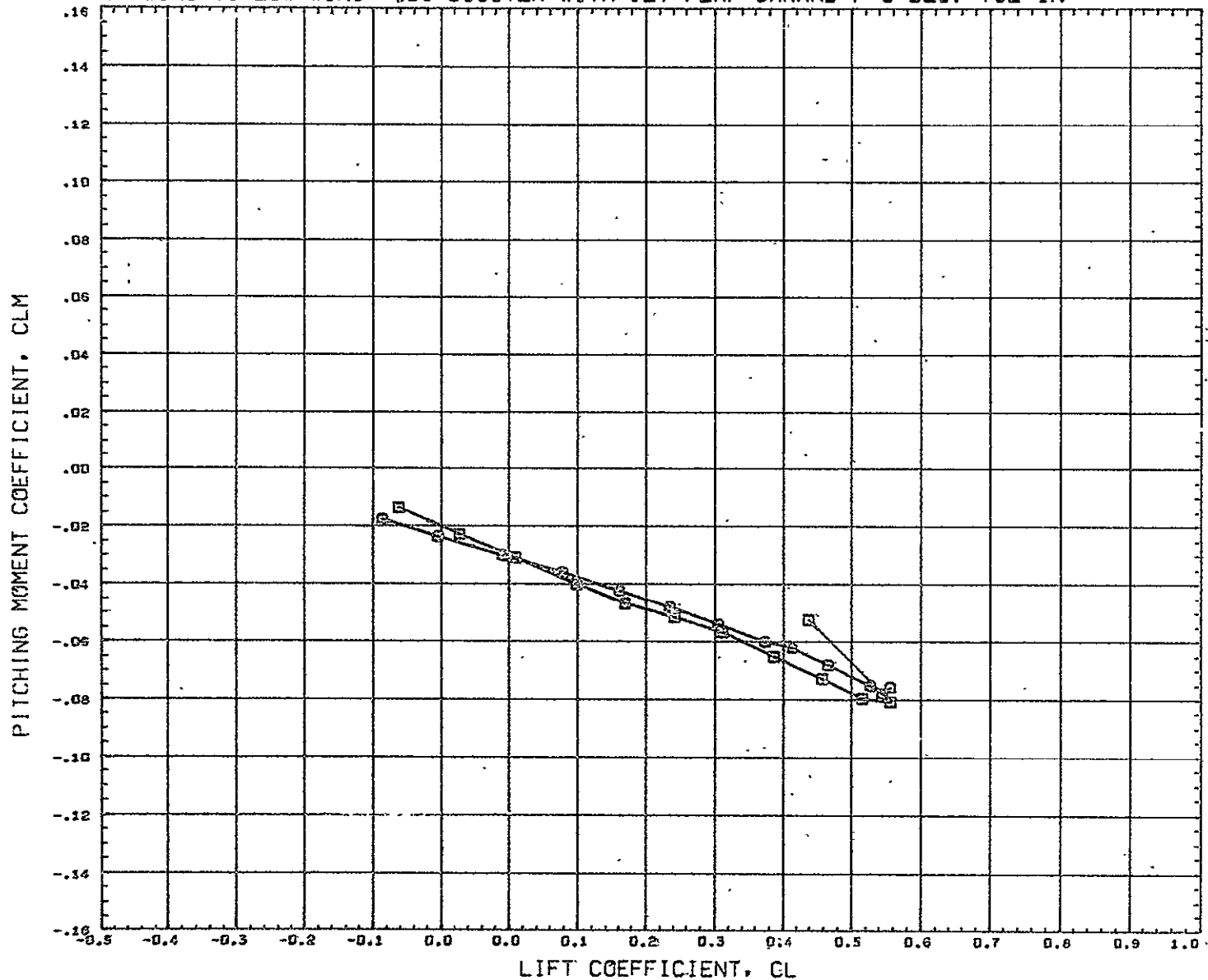
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (RCC001) 1351-DAC-LSHT-SBCBOOSTER BINIHIJ1VIE1
 (RCC019) 1351-DAC-LSHT-SBCBOOSTER BINIMPJ1VIE1

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XHRF 1.7030 FT.
 YHRF 0.0000 FT.
 ZHRF 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.165

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



LIFT COEFFICIENT, CL

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(RCC001) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W1J1V1E1
 (RCC019) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1

PARAMETRIC VALUES

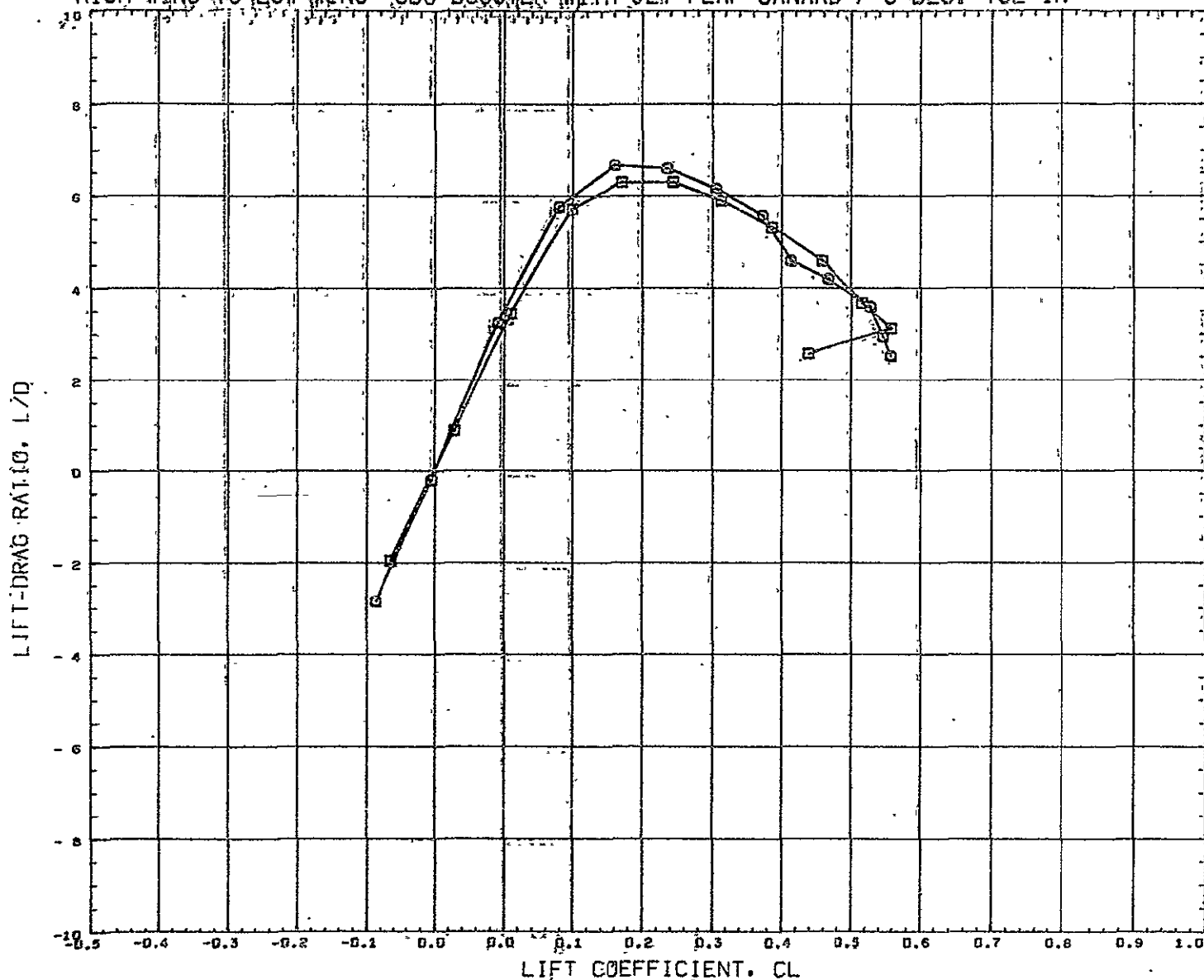
BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION

REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.185

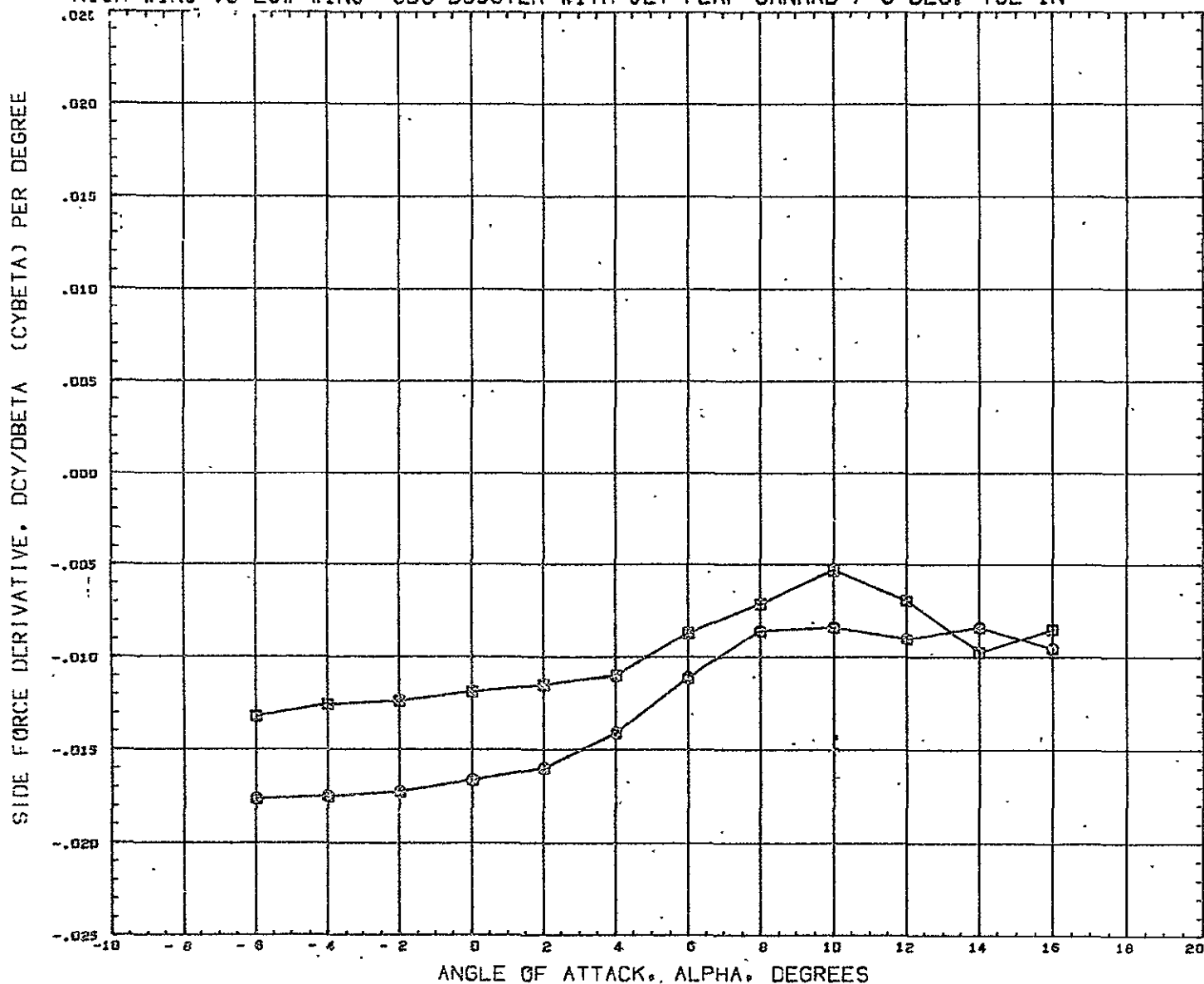
HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
{RCC001}	○	1351-DAC-LSWT-SBCBOOSTER B1H1W1J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
{RCC019}	□	1351-DAC-LSWT-SBCBOOSTER B1H1W2J1V1E1	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XMRP	1.7030 FT.
							YMRP	0.0000 FT.
							ZMRP	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.185

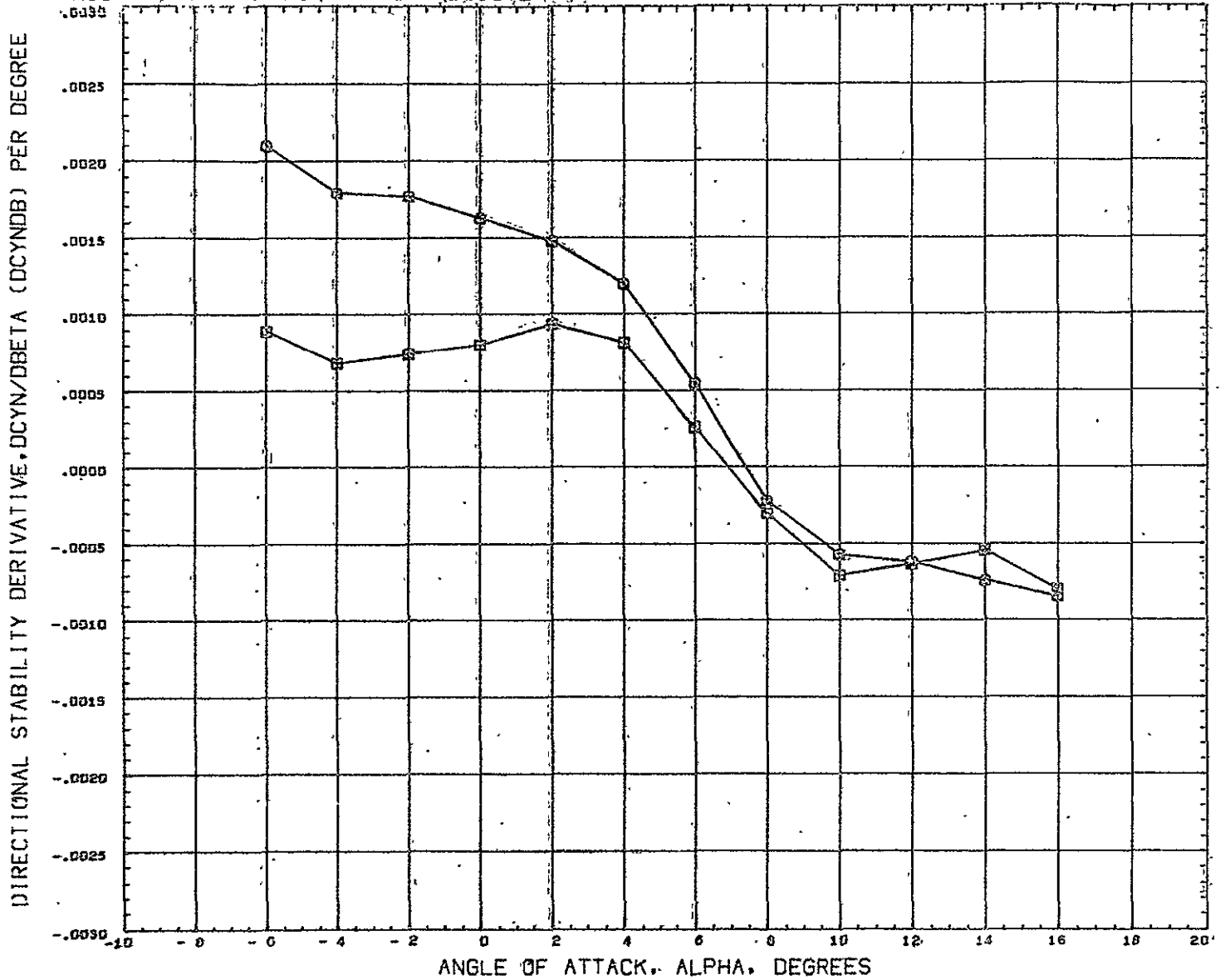
HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCCC01)	Q	1351-DAC-LSWT-SBCBOOSTER BIN1W1JIV1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCCC19)	Q	1351-DAC-LSWT-SBCBOOSTER BIN1W2JIV1E1	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XMRP	1.7030 FT.
							YMRP	0.0000 FT.
							ZMRP	0.0125 FT.
							SCALE	0.0100 SCALE

HACH 0.180

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



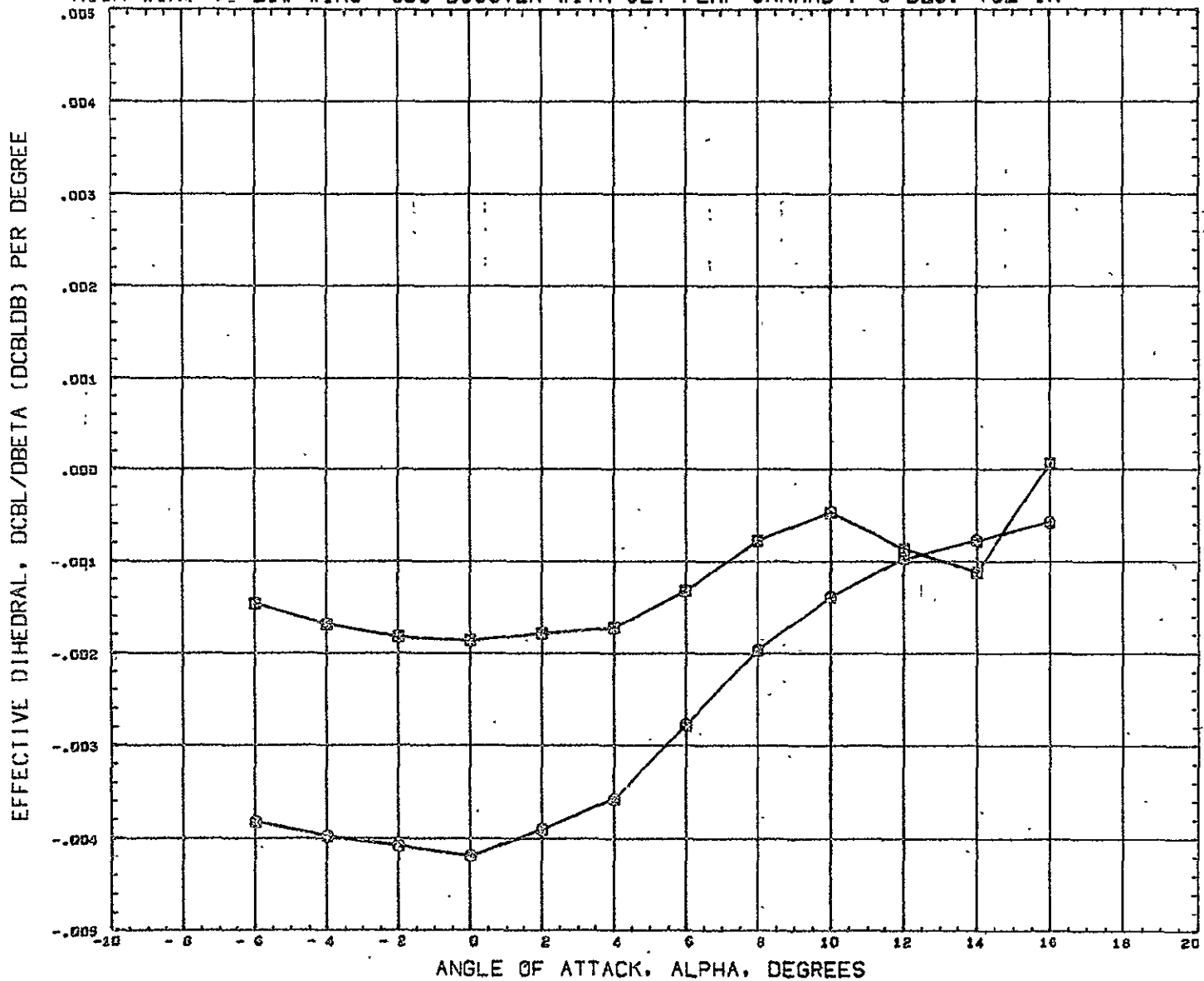
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (CCCC01) 1351-DAC-LSWT-SBCBOOSTER B1N1W1J1V1E1
 (CCCC19) 1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 RCPB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.160

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



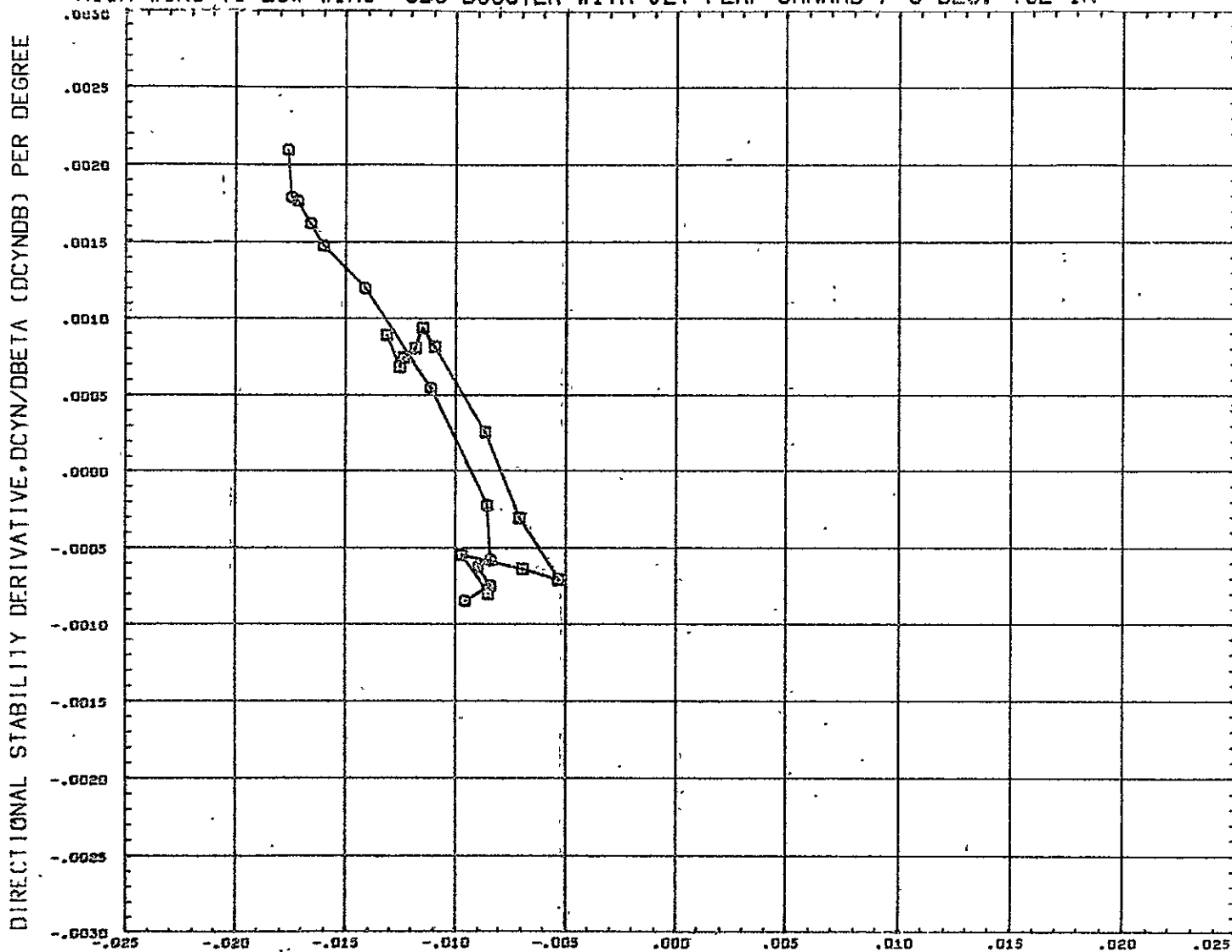
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (CCCC01) 1331-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1
 (CCCC19) 1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.160

HIGH WING VS LOW WING SBC BOOSTER WITH JET FLAP CANARD / 6 DEG. TOE IN



SIDE FORCE DERIVATIVE, DCY/DBETA (CYBETA) PER DEGREE

DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CCCC01) □ 1351-DAC-LSWT-SBCBOOSTER BIN1W1J1V1E1
 (CCCC19) □ 1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1

PARAMETRIC VALUES

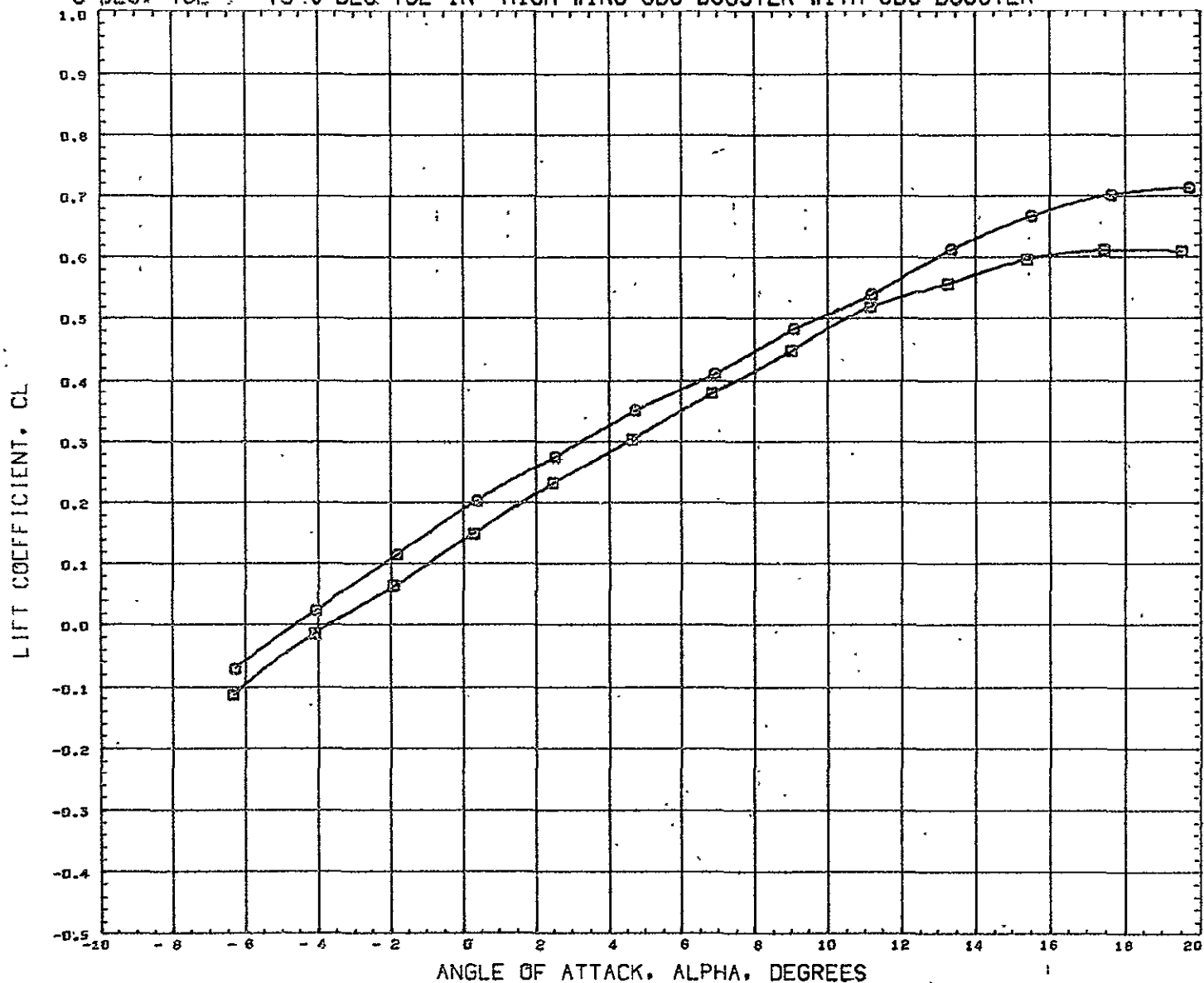
BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION

REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.180

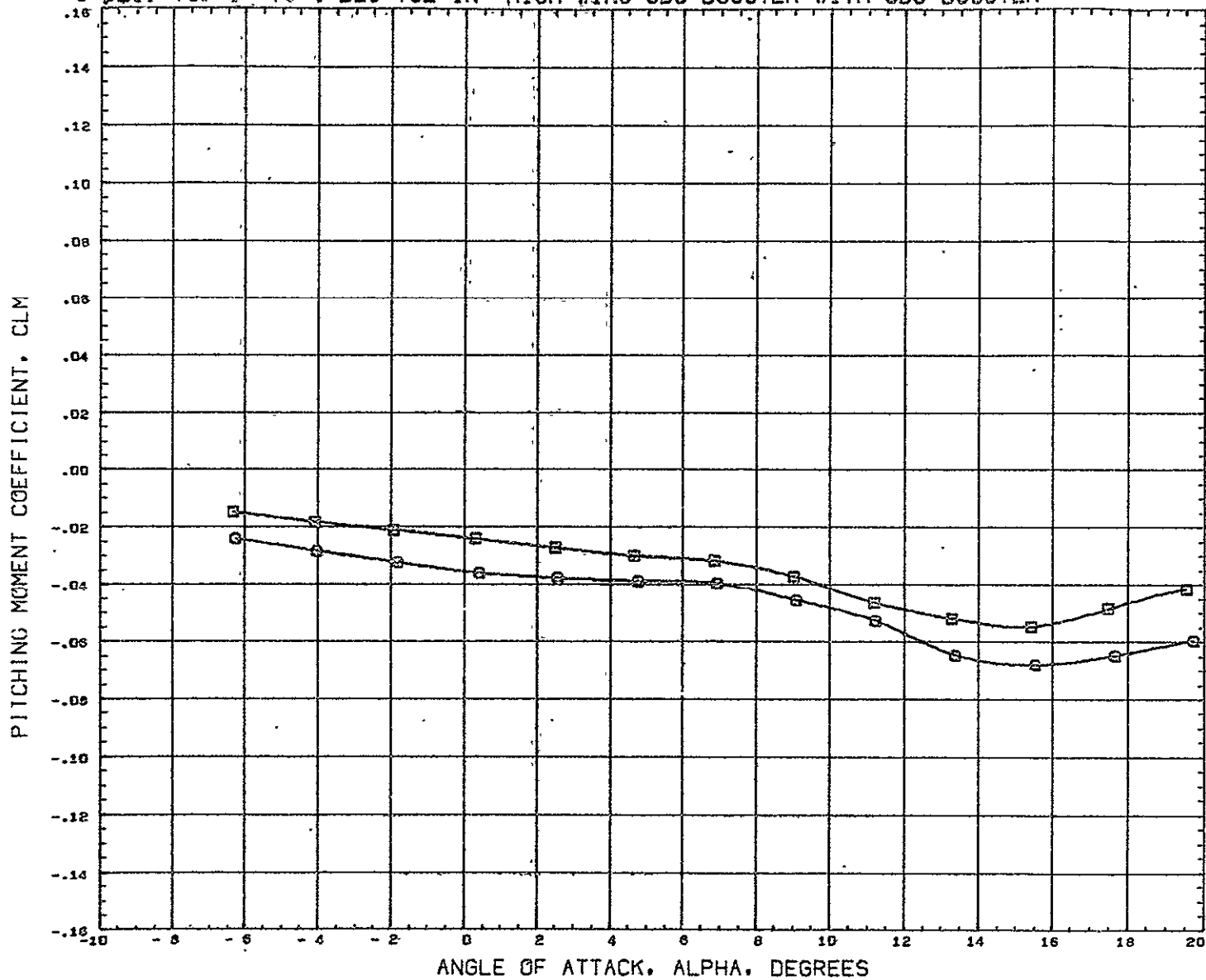
6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	REFERENCE INFORMATION
(RCC005)	1351-DAC-LSWT-SBCBOOSTER BIN1WIT1P1VIE1F2	0.000	ELEVON 0.000	REFS 1.0000 SQ. FT
(RCC014)	1351-DAC-LSWT-SBCBOOSTER BIN1WIT1P1VIE1F2	0.000	VTAIL 6.000	REFL 2.0000 FT.
				REFB 12.0000 FT.
				XHRF 1.7030 FT.
				YHRF 0.0000 FT.
				ZHRF 0.0125 FT.
				SCALE 0.0100 SCALE

MACH 0.184

6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



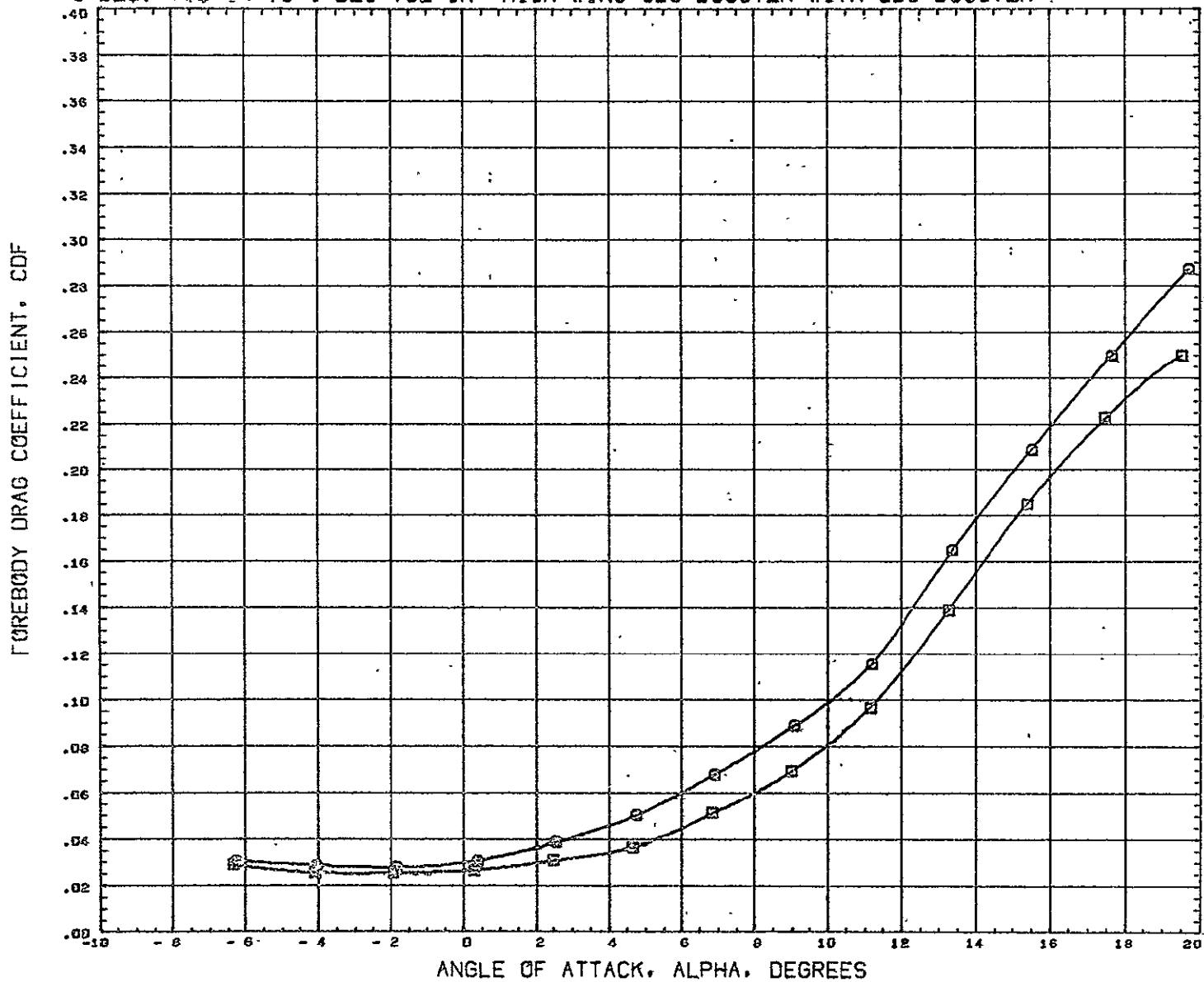
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (RCC005) 0 1351-DAC-LSWT-SBCBOOSTER BIN1W1T1F1VIE1F2
 (RCC014) 1 1351-DAC-LSWT-SBCBOOSTER BIN1W1T1F1VIE1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 FLAP 0.000 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

HACH 0.184

6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL. CONFIGURATION DESCRIPTION

(RCC005) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2
 (RCC014) □ 1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2

PARAMETRIC VALUES

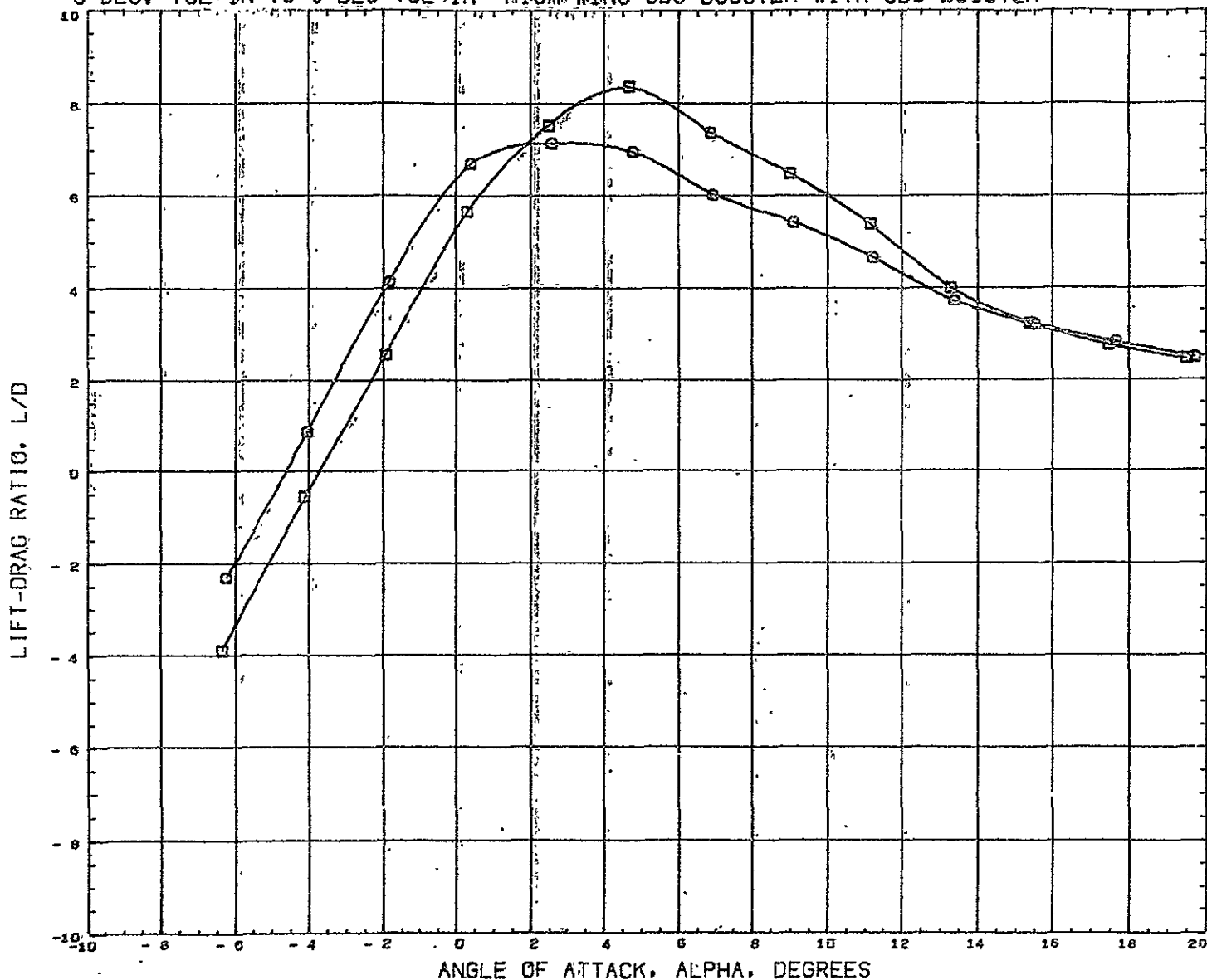
BETA 0.000 ELEVON 0.000
 FLAP 0.000 VTAIL 6.000

REFERENCE INFORMATION

REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XNRP 1.7030 FT.
 YNRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.184

6 DEG. TOE IN VS 0-DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



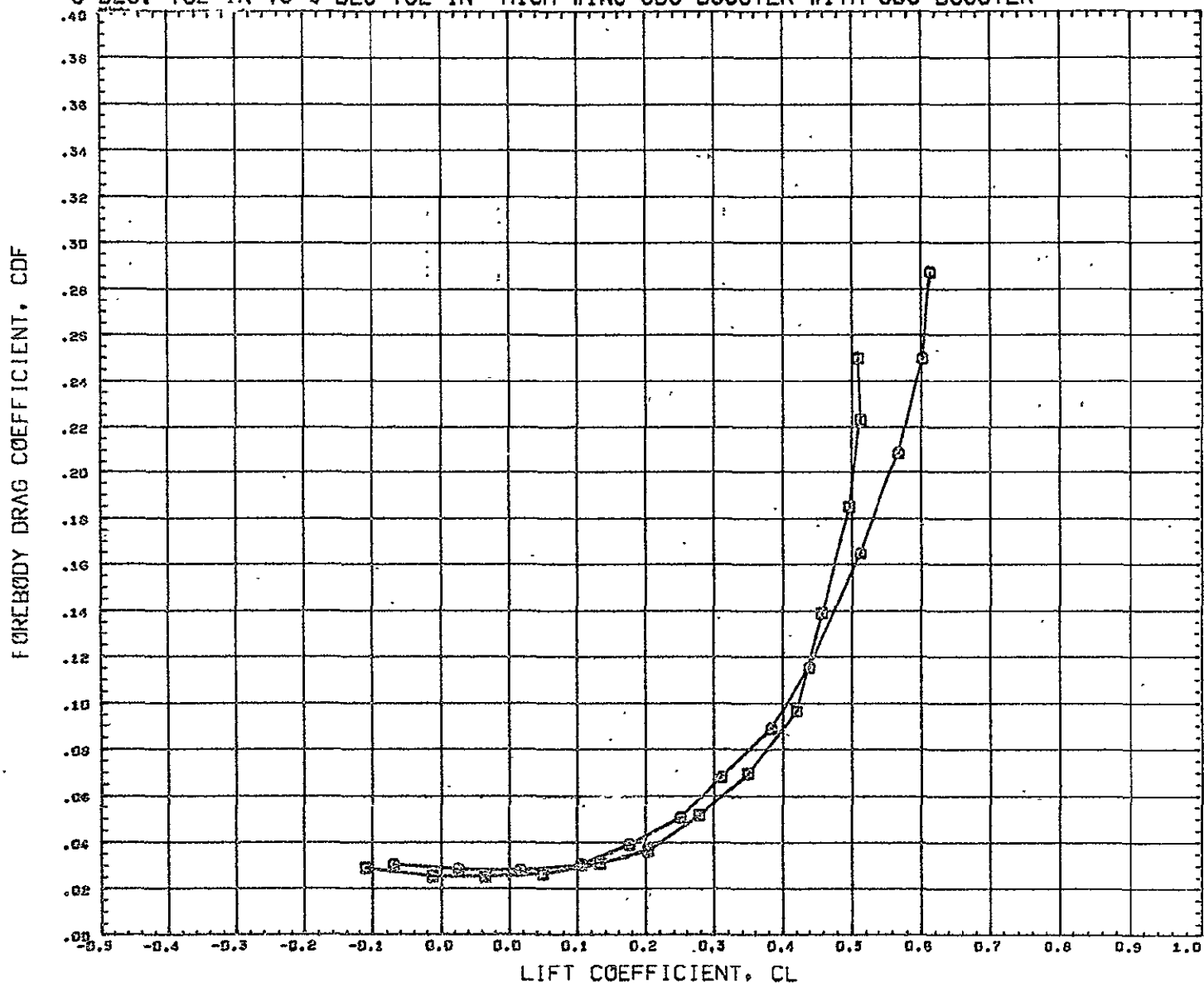
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (RCC003) 1351-DAC-LSWT-SBCBOOSTER BIN1WITIF1V1E1F2
 (RCC014) 1351-DAC-LSWT-SBCBOOSTER BIN1WITIF1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 FLAP 0.000 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.184

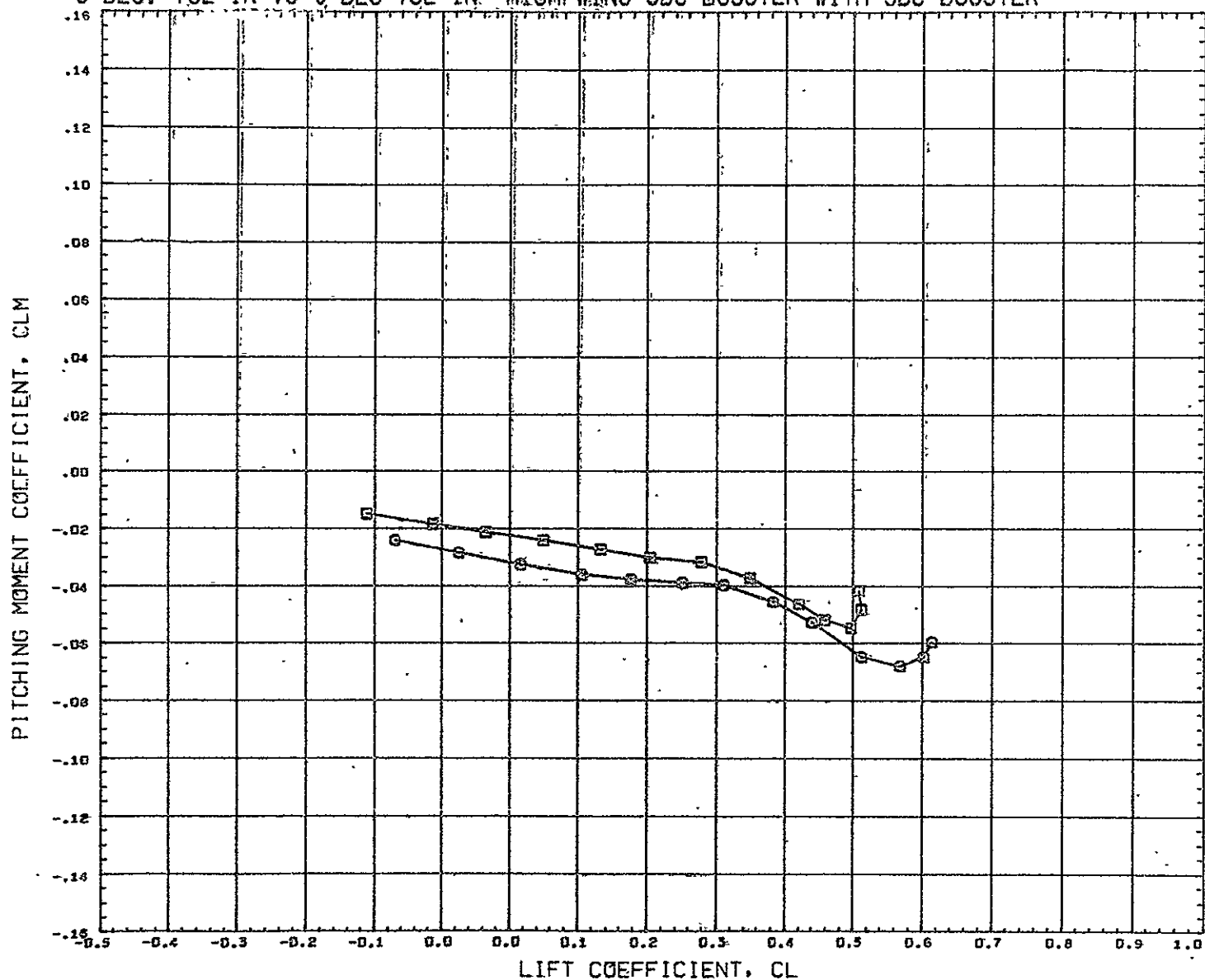
6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	FLAP	PARAMETRIC VALUES	ELEVON	VTAIL	REFERENCE INFORMATION
(RCC005)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1F1V1E1F2	0.000	0.000	0.000	0.000	0.000	REFS 1.0000 SQ. FT
(RCC014)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1F1V1E1F2	0.000	0.000	0.000	0.000	0.000	REFL 2.0000 FT.
							REFB 2.0000 FT.
							XNRP 1.7030 FT.
							YNRP 0.0000 FT.
							ZNRP 0.0125 FT.
							SCALE 0.0100 SCALE

MACH 0.184

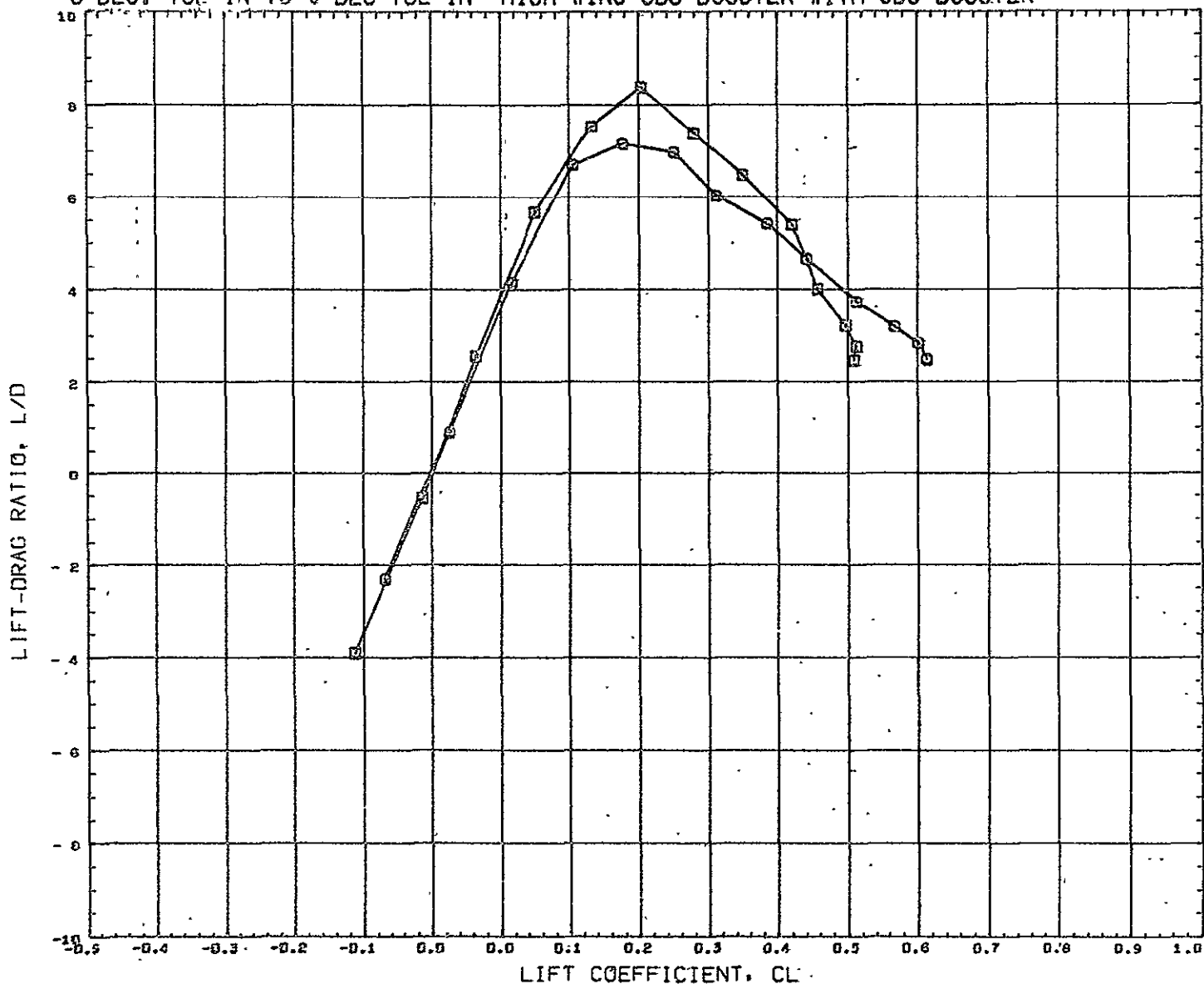
6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC005)	□	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC014)	□	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
							REFS	2.0000 FT.
							XHRF	1.7030 FT.
							YHRF	0.0000 FT.
							ZHRF	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.184

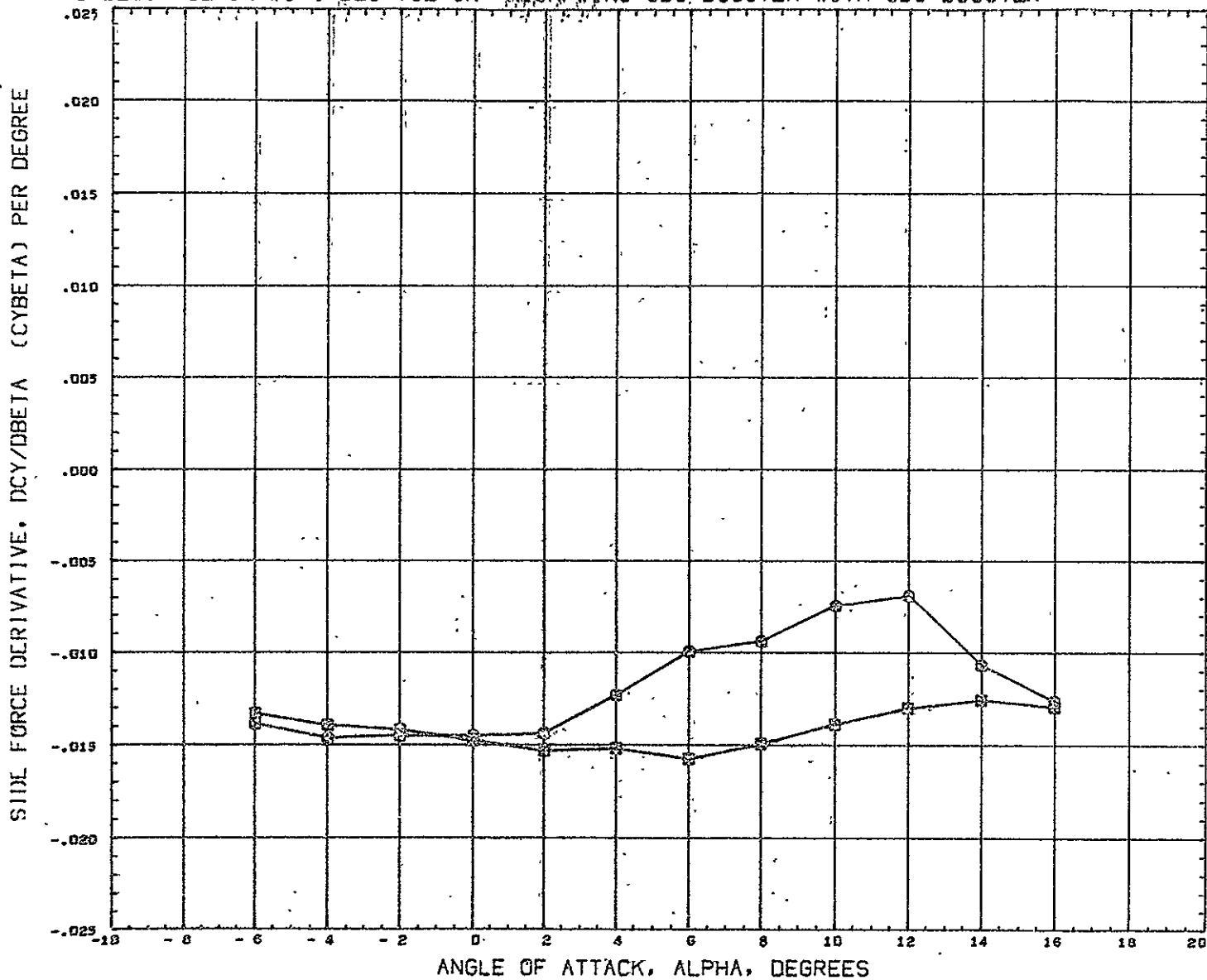
6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES				REFERENCE INFORMATION		
(RCC005)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000	SQ. FT.
(RCC014)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W1T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000	FT.
								REFD	2.0000	FT.
								XMRP	1.7030	FT.
								YMRP	0.0000	FT.
								ZMRP	0.0125	FT.
								SCALE	0.0100	SCALE

HACH 0.184

6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER

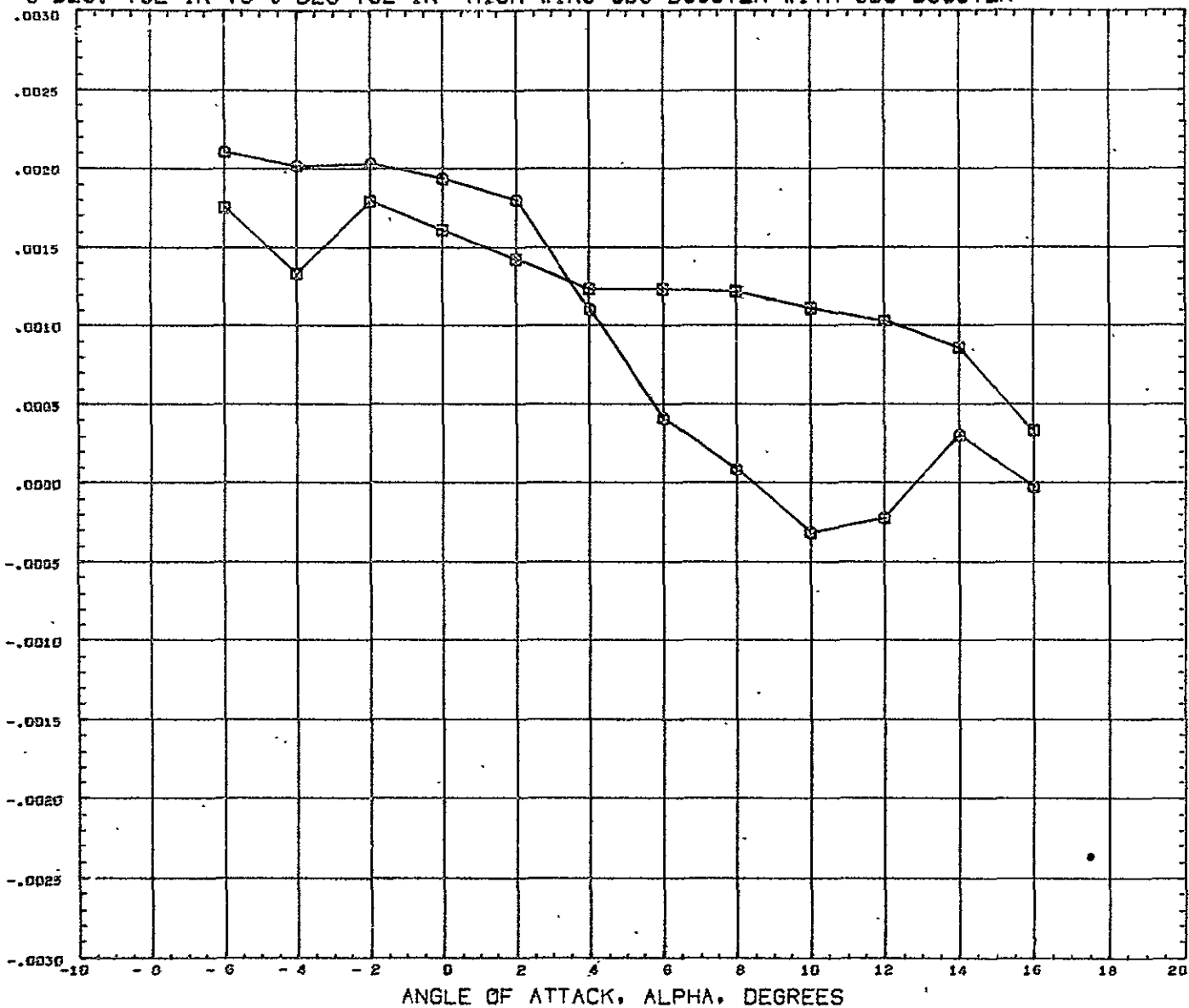


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES				REFERENCE INFORMATION	
(CCC005)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC014)	1351-DAC-LSWT-SBCBOOSTER B1N1W1T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XHRP	1.7030 FT.
						YHRP	0.0000 FT.
						ZHRP	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.180

6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER

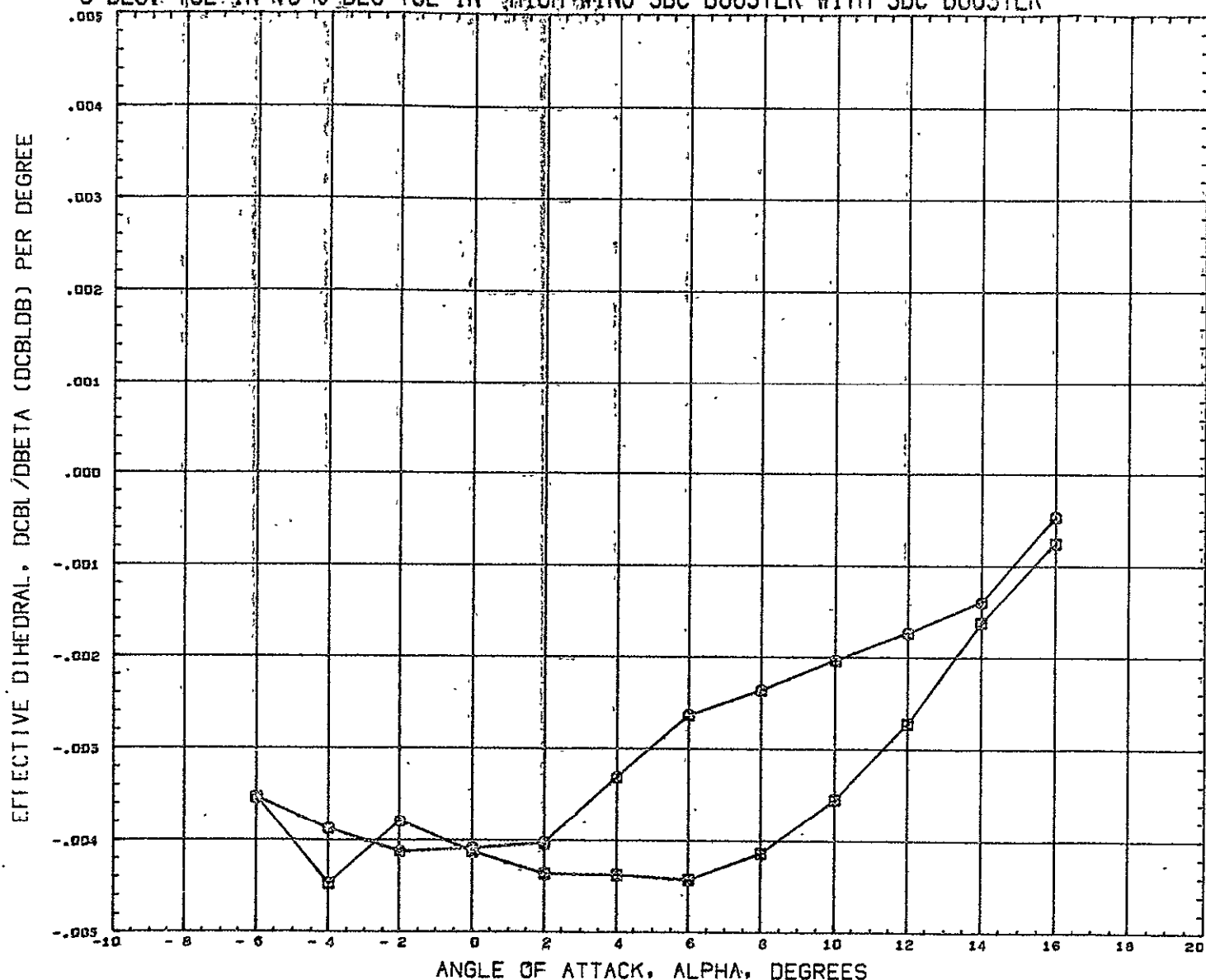
DIRECTIONAL STABILITY DERIVATIVE, DCYN/DBETA (DCYNDB) PER DEGREE



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES	REFERENCE INFORMATION
(CCCC05)	1351-DAC-LSWT-SBCBOOSTER BIN1WITIP1VIE1F2	BETA 0.000 ELEVON 0.000	REFS 1.0000 SQ. FT
(CCCC14)	1351-DAC-LSWT-SBCBOOSTER BIN1WITIP1VIE1F2	FLAP 0.000 VTAIL 6.000	REFL 2.0000 FT.
			REFB 2.0000 FT.
			XMRP 1.7030 FT.
			YMRP 0.0000 FT.
			ZMRP 0.0125 FT.
			SCALE 0.0100 SCALE

MACH 0.180

6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER

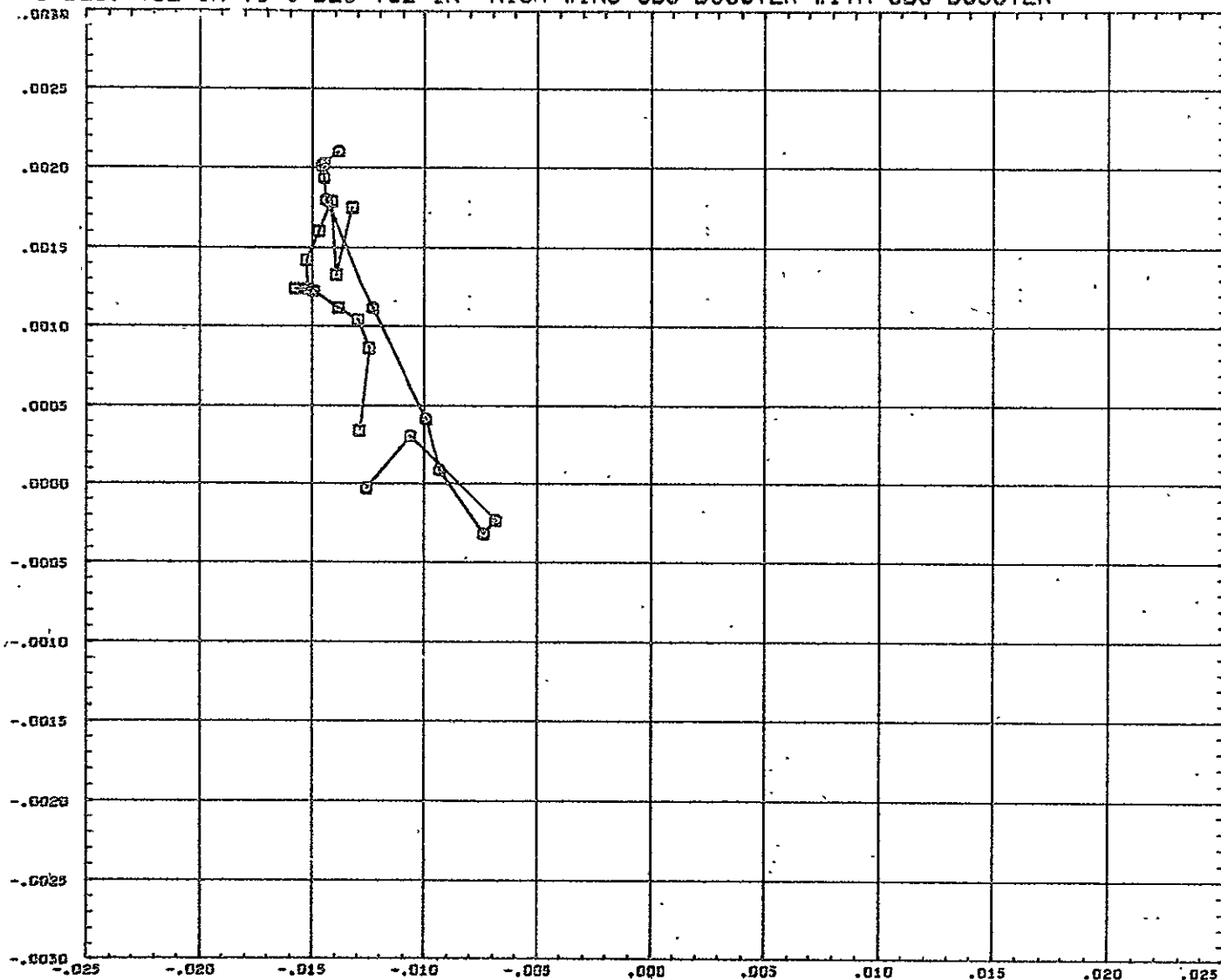


DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCC003)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCC014)	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL	2.0000 FT.
						REFB	2.0000 FT.
						XNRP	1.7030 FT.
						YNRP	0.0000 FT.
						ZNRP	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.180

6 DEG. TOE IN VS 0 DEG TOE IN HIGH WING SBC BOOSTER WITH SBC BOOSTER

DIRECTIONAL STABILITY DERIVATIVE, DCYN/DBETA (DCYNDB) PER DEGREE

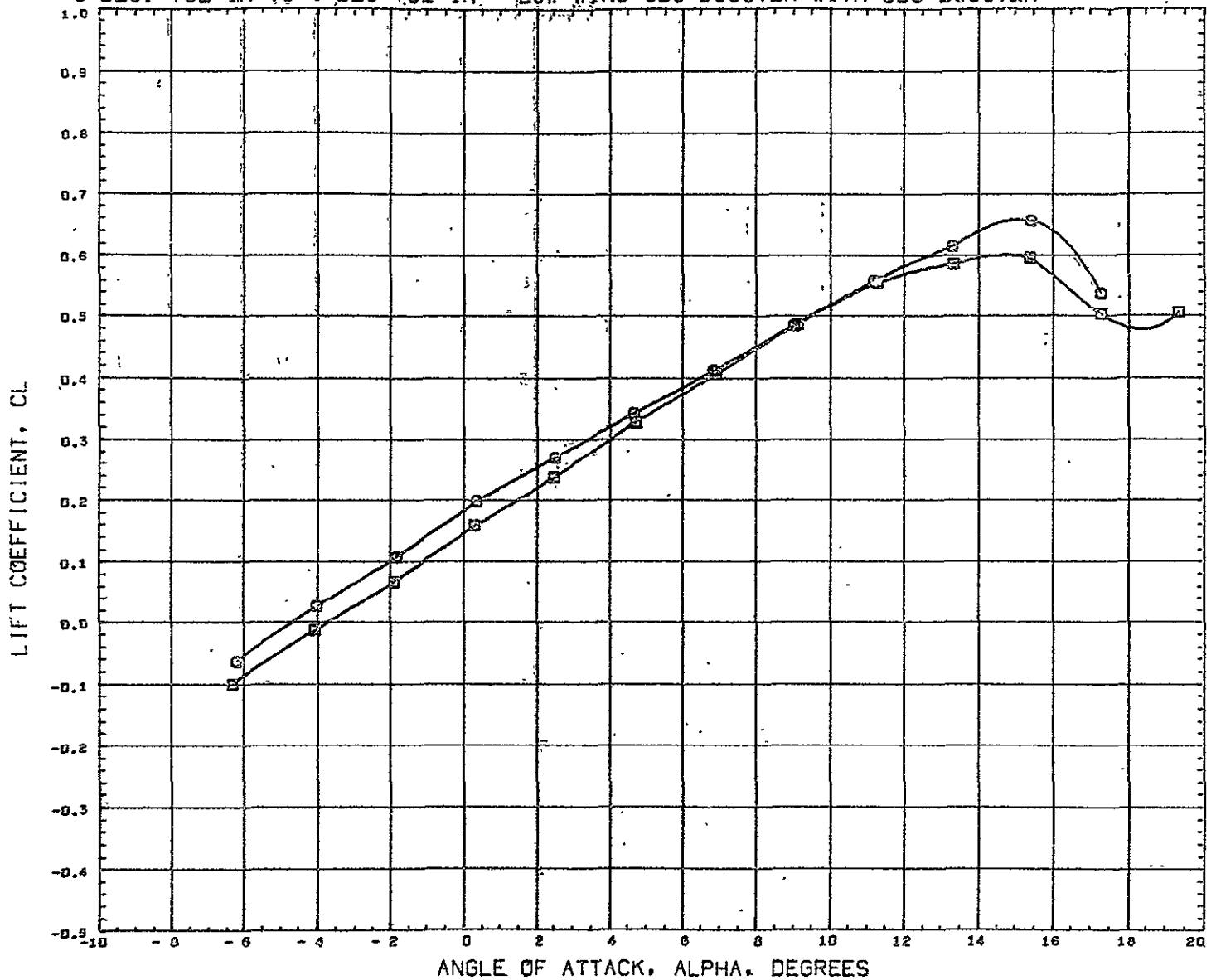


SIDE FORCE DERIVATIVE, DCY/DBETA (CYBETA) PER DEGREE

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION	
(CCCC05)	○	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	BETA	0.000	ELEVON	0.000	REFS 1.0000 SQ. FT
(CCCC14)	□	1351-DAC-LSWT-SBCBOOSTER BIN1W1T1P1V1E1F2	FLAP	0.000	VTAIL	6.000	REFL 2.0000 FT.
							REFB 2.0000 FT.
							XMRP 1.7030 FT.
							YMRP 0.0000 FT.
							ZMRP 0.0125 FT.
							SCALE 0.0100 SCALE

HACH 0.100

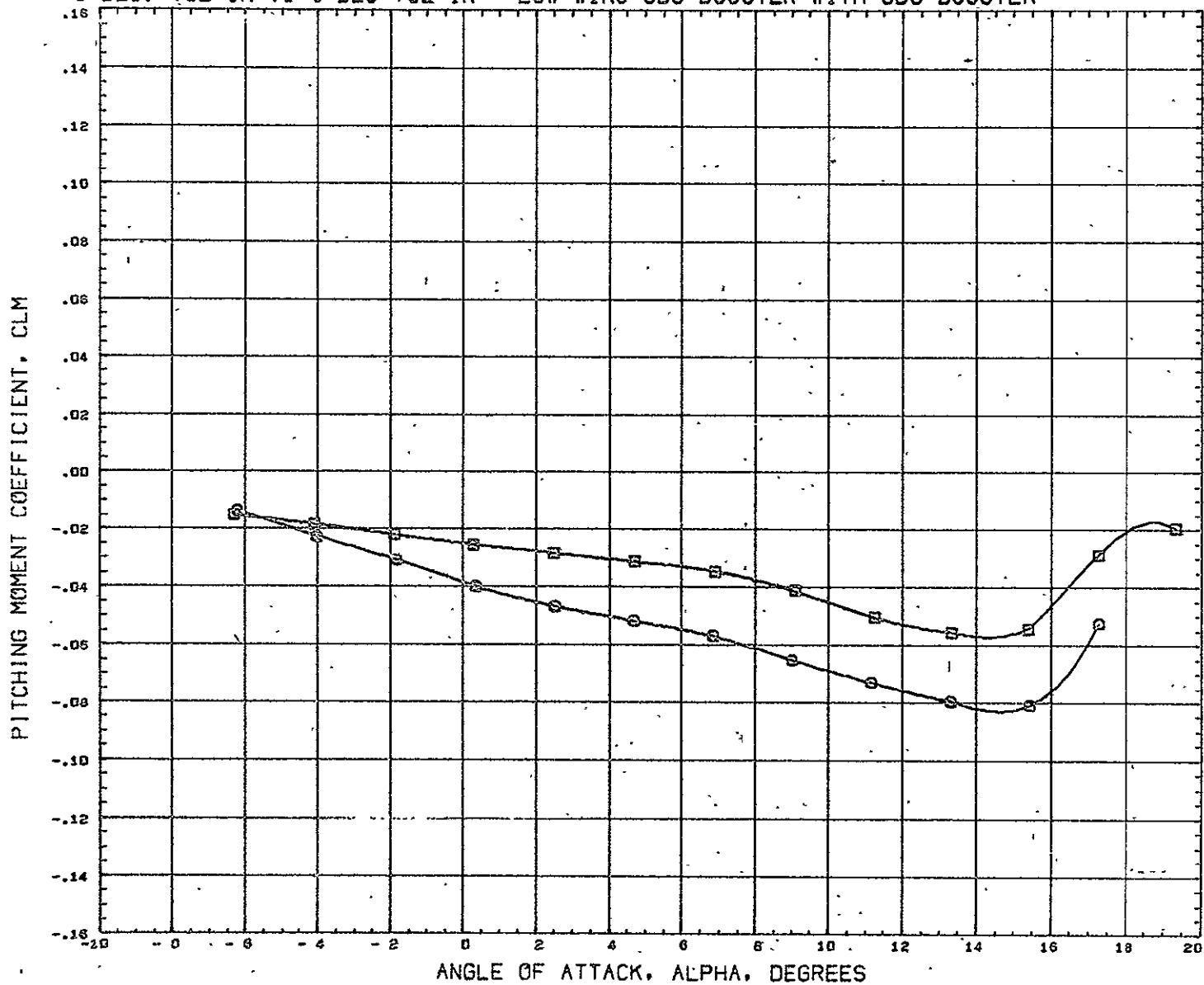
6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	BETA	PARAMETRIC VALUES	ELEVON	REFERENCE INFORMATION
(RCCQ19)	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	0.000	0.000	0.000	REFS 1.0000 SQ. FT
(RCCQ29)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2	VTAIL 6.000			REFL 2.0000 FT.
					REFB 2.0000 FT.
					XMRP 1.7030 FT.
					YNRP 0.0000 FT.
					ZMRP 0.0125 FT.
					SCALE 0.0100 SCALE

MACH 0.185

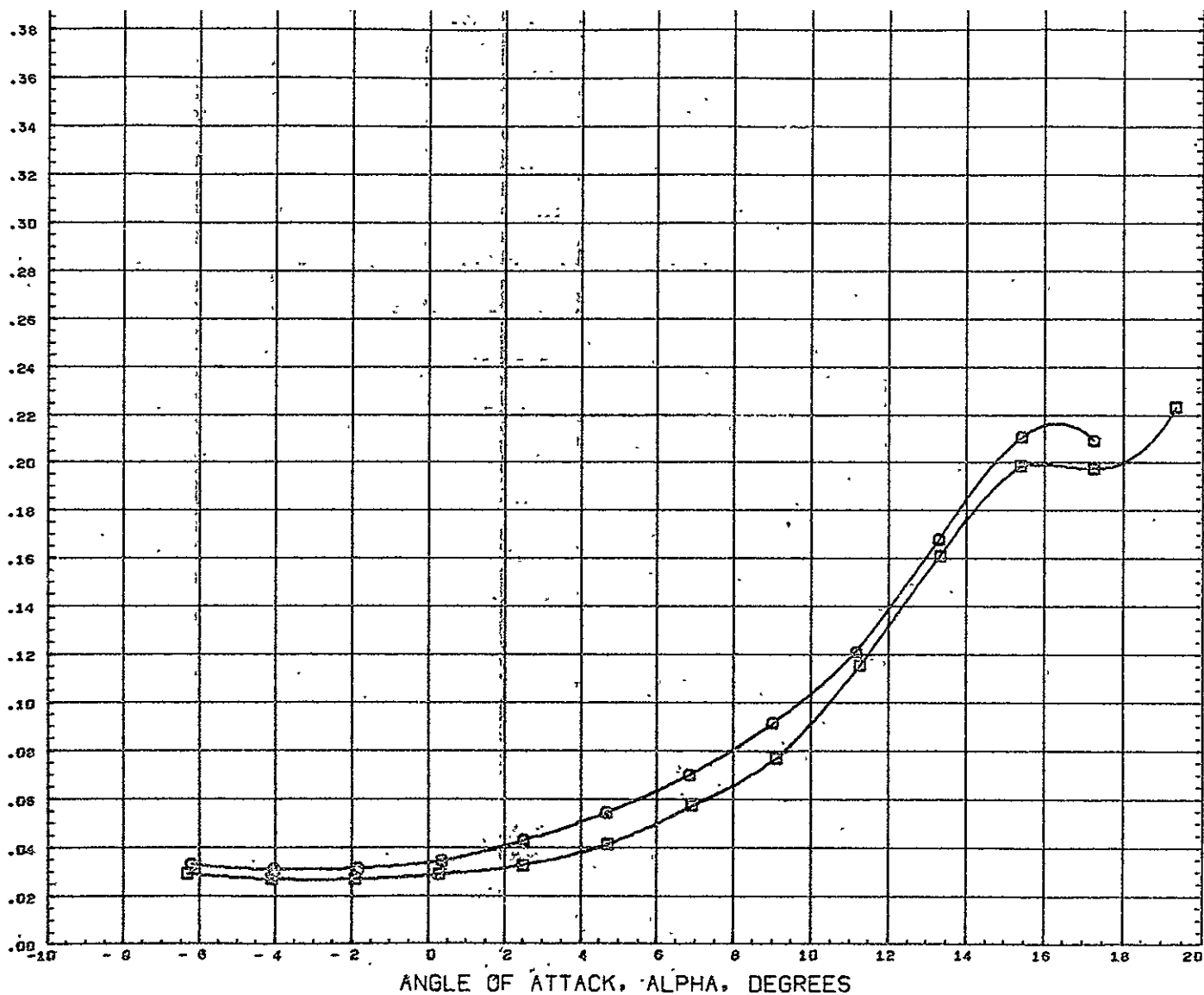
6 DEG. TØE IN VS 0 DEG TØE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION		PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC019)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER	B1N1W2T1P1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
								REFB	2.0000 FT.
								XMRP	1.7030 FT.
								YMRP	0.0000 FT.
								ZMRP	0.0125 FT.
								SCALE	0.0100 SCALE

MACH 0.185

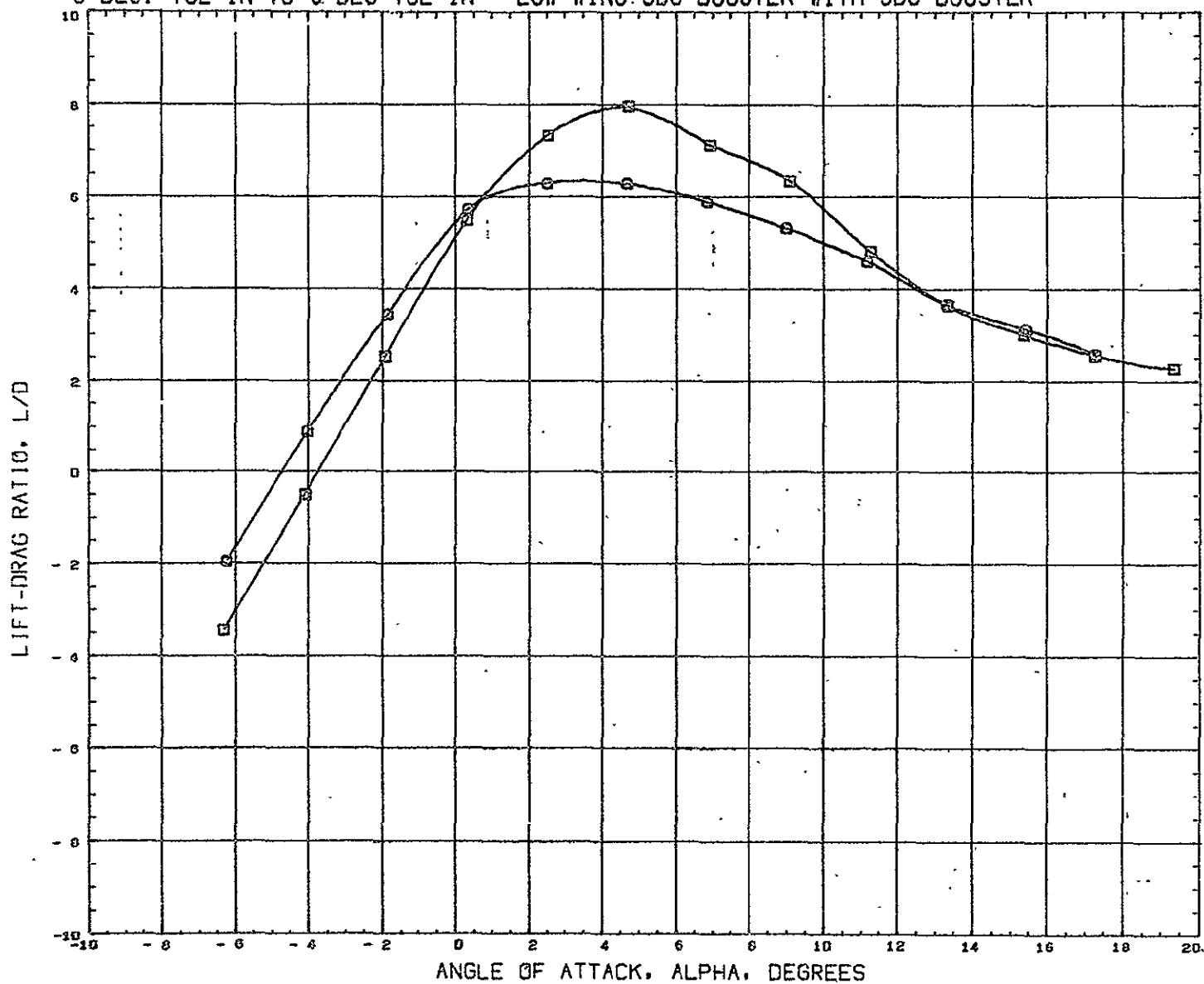
FOREBODY DRAG COEFFICIENT, CDF



DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES		REFERENCE INFORMATION	
(RCC019)	○	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	BETA	0.000	ELEVON	0.000
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W2I1P1V1E1F2	VTAIL	6.000		
			REFS	1.0000	SQ. FT	
			REFL	2.0000	FT.	
			REFB	2.0000	FT.	
			XMRP	1.7030	FT.	
			YMRP	0.0000	FT.	
			ZMRP	0.0125	FT.	
			SCALE	0.0100	SCALE	

MACH 0.185

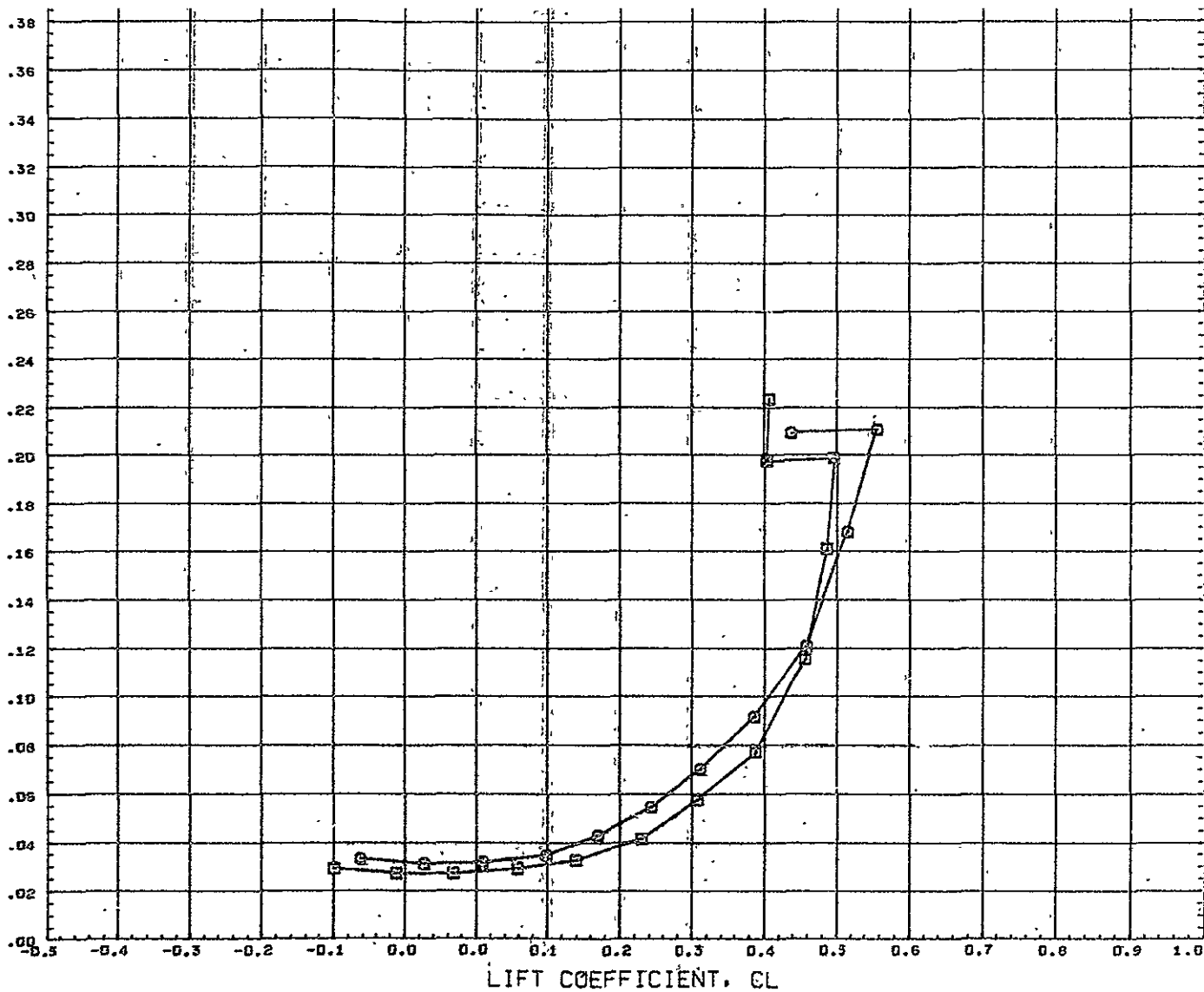
6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC019)	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
						REFB	2.0000 FT.
						XMRP	1.7030 FT.
						YMRP	0.0000 FT.
						ZMRP	0.0125 FT.
						SCALE	0.6100 SCALE

HACH 0.185

FOREBODY DRAG COEFFICIENT, CDF



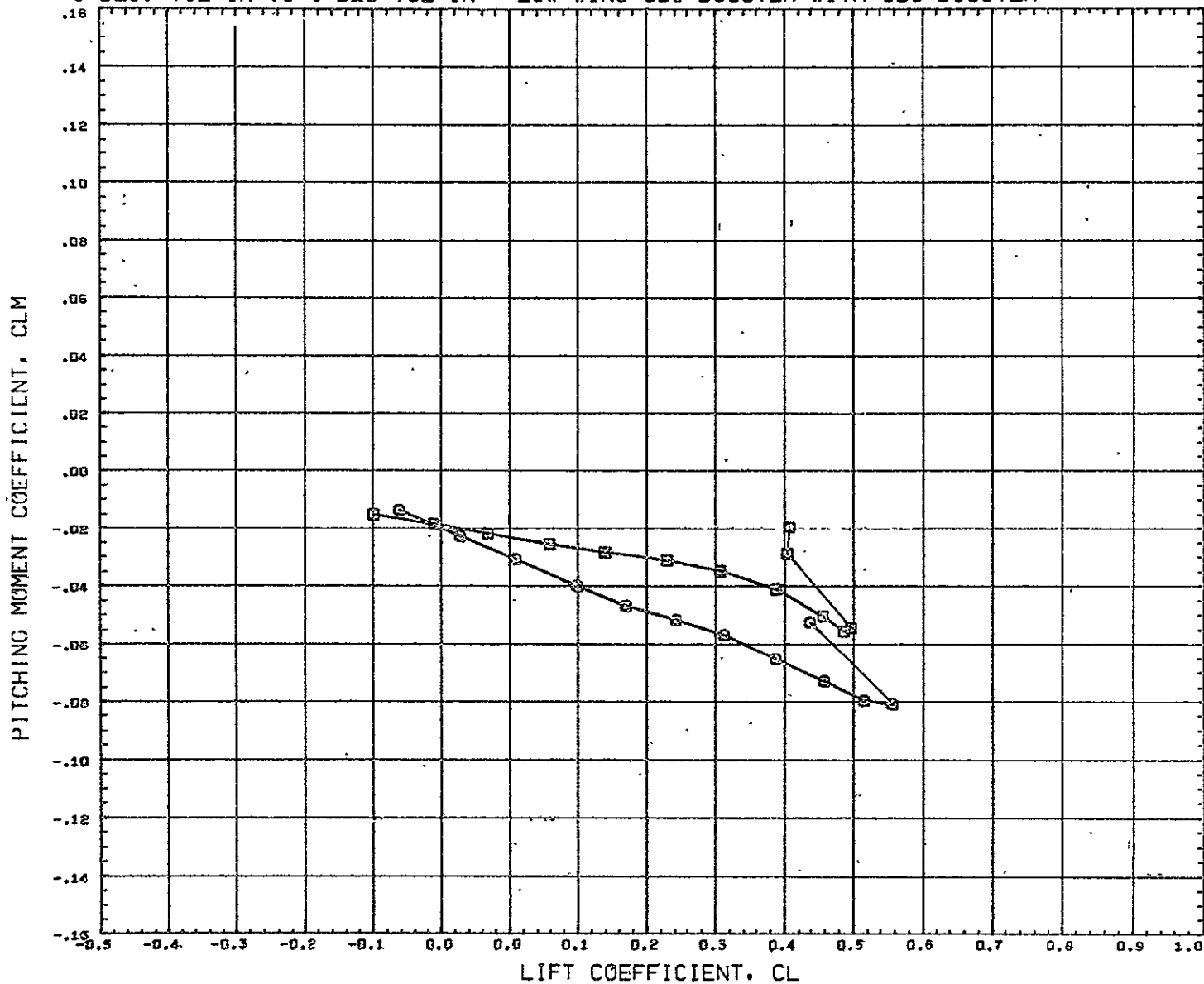
DATA SET SYMBOL	CONFIGURATION DESCRIPTION
(RCC019) ○	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1
(RCC029) □	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1P1V1E1F2

PARAMETRIC VALUES	
BETA	0.000
ELEVON	0.000
VTAIL	6.000

REFERENCE INFORMATION	
REFS	1.0000 SQ. FT
REFL	2.0000 FT.
REFB	2.0000 FT.
XMRP	1.7030 FT.
YMRP	0.0000 FT.
ZMRP	0.0125 FT.
SCALE	0.0100 SCALE

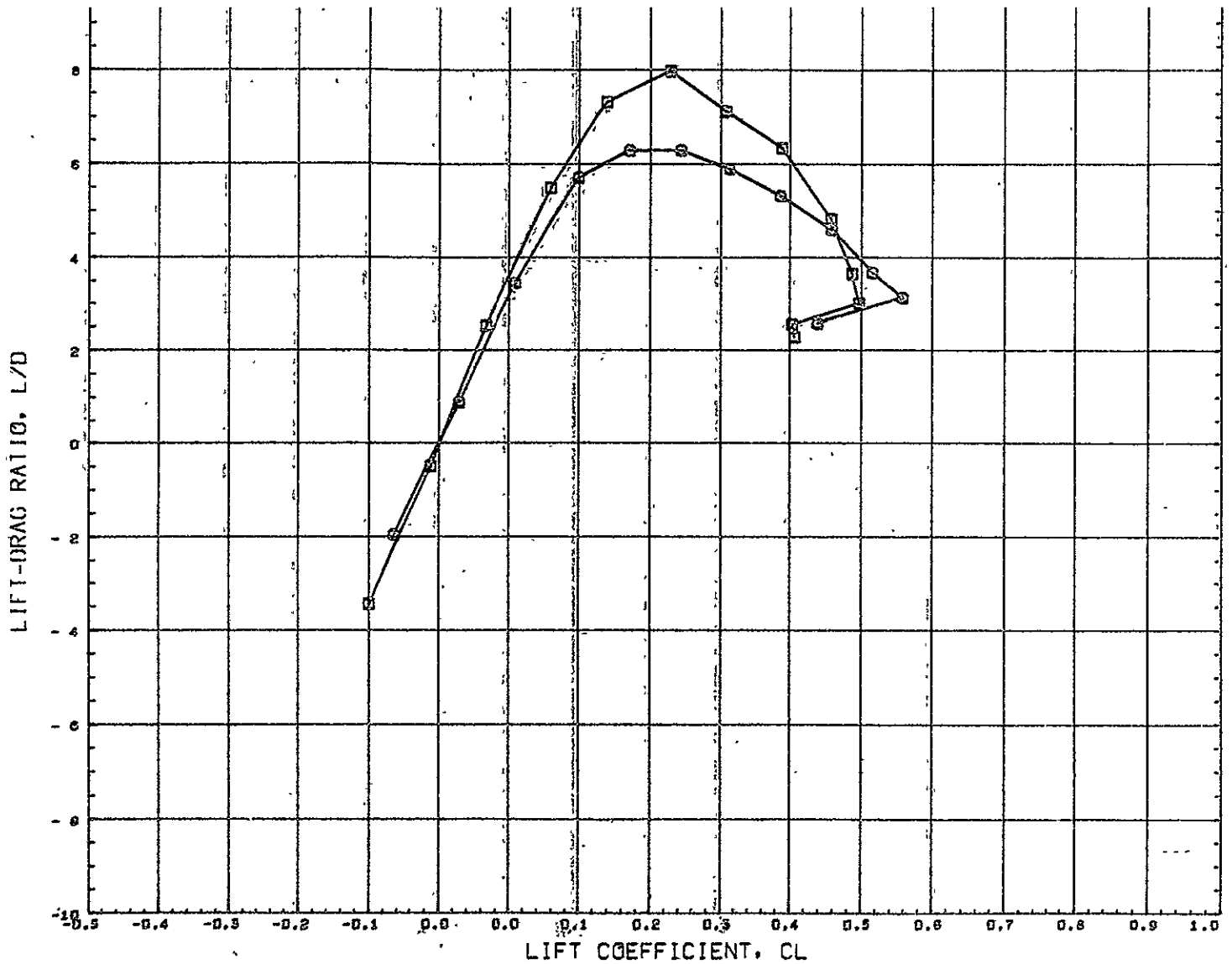
MACH 0.105

6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC019)	○	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XMRP	1.7030 FT.
							YMRP	0.0000 FT.
							ZMRP	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.185

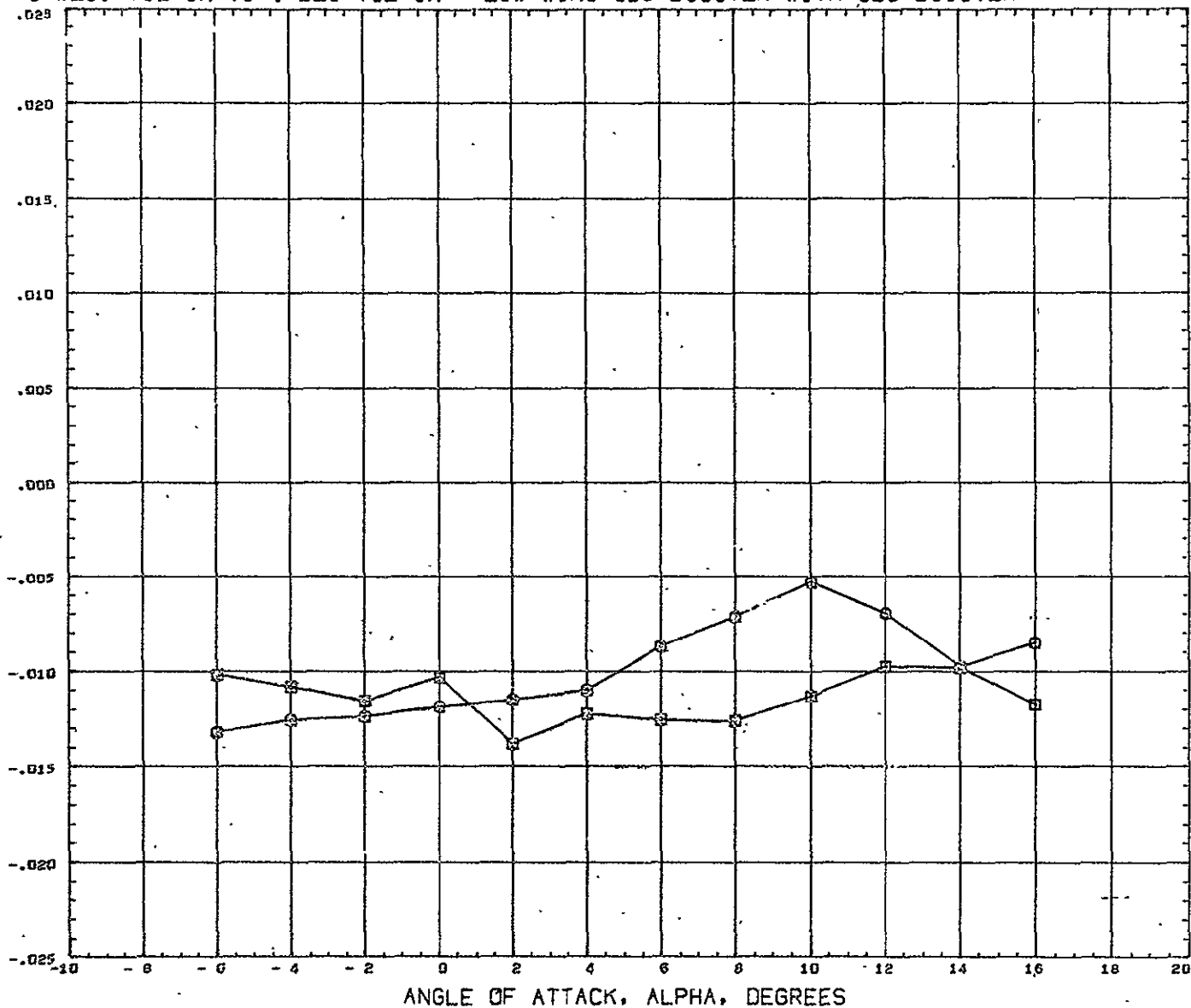


DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(RCC019)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(RCC029)	□	1351-DAC-LSWT-SBCBOOSTER B1N1W2TIP1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
							REFB	2.0000 FT.
							XMRP	1.7030 FT.
							YMRP	0.0000 FT.
							ZMRP	0.0125 FT.
							SCALE	0.0100 SCALE

MACH 0.185

6 DEG. TØE IN VS 0 DEG TØE IN LOW WING SBC BOOSTER WITH SBC BOOSTER

SIDE FORCE DERIVATIVE, $DCY/DBETA$ (CYBETA) PER DEGREE



DATA SET SYMBOL CONFIGURATION DESCRIPTION

(CCCC19) $\square$ 1351-DAC-LSWT-SBCBOOSTER B1N1W2J1V1E1
 (CCCC29) $\square$ 1351-DAC-LSWT-SBCBOOSTER B1N1W2T1F1V1E1F2

PARAMETRIC VALUES

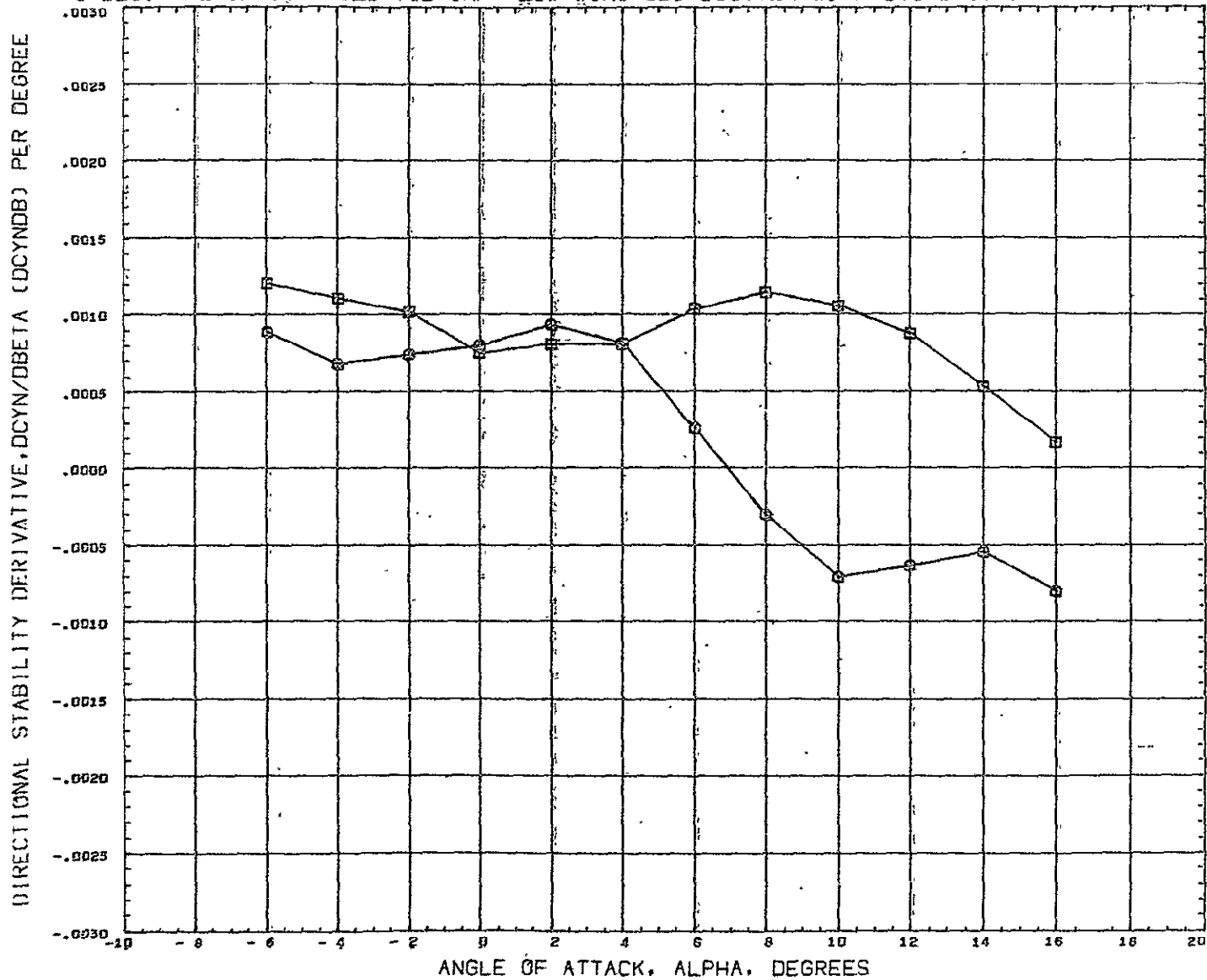
BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION

REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XNRP 1.7030 FT.
 YNRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

NACH 0.100

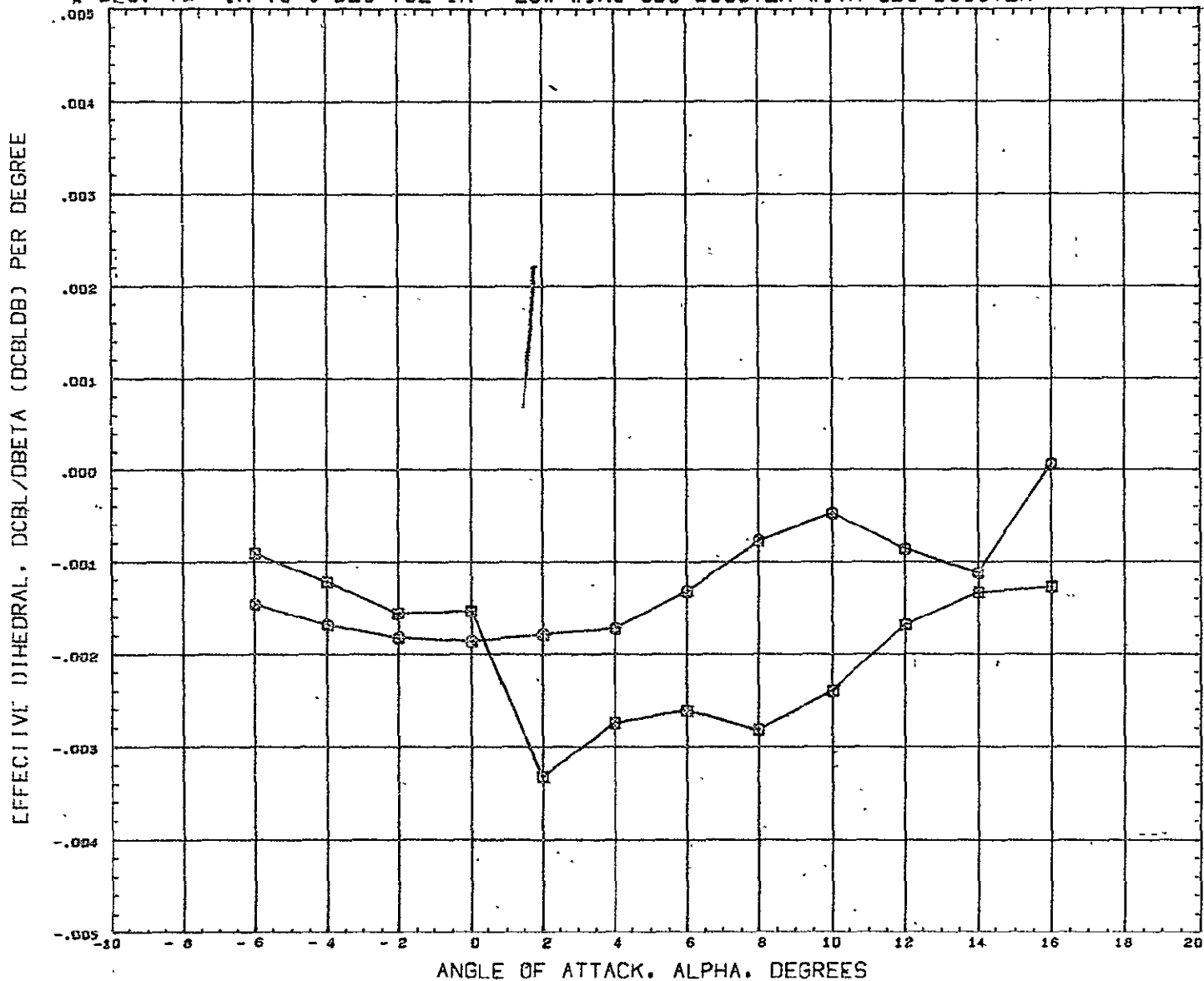
6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



DATA SET SYMBOL		CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION	
(CCC019)	○	1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS 1.0000 SQ. FT
(CCC029)	□	1351-DAC-LSWT-SBCBOOSTER BIN1W2T1P1V1E1F2	VTAIL	6.000			REFL 2.0000 FT.
							REFB 2.0000 FT.
							XMRP 1.7030 FT.
							YMRP 0.0000 FT.
							ZMRP 0.0125 FT.
							SCALE 0.0100 SCALE

MACH 0.180

6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



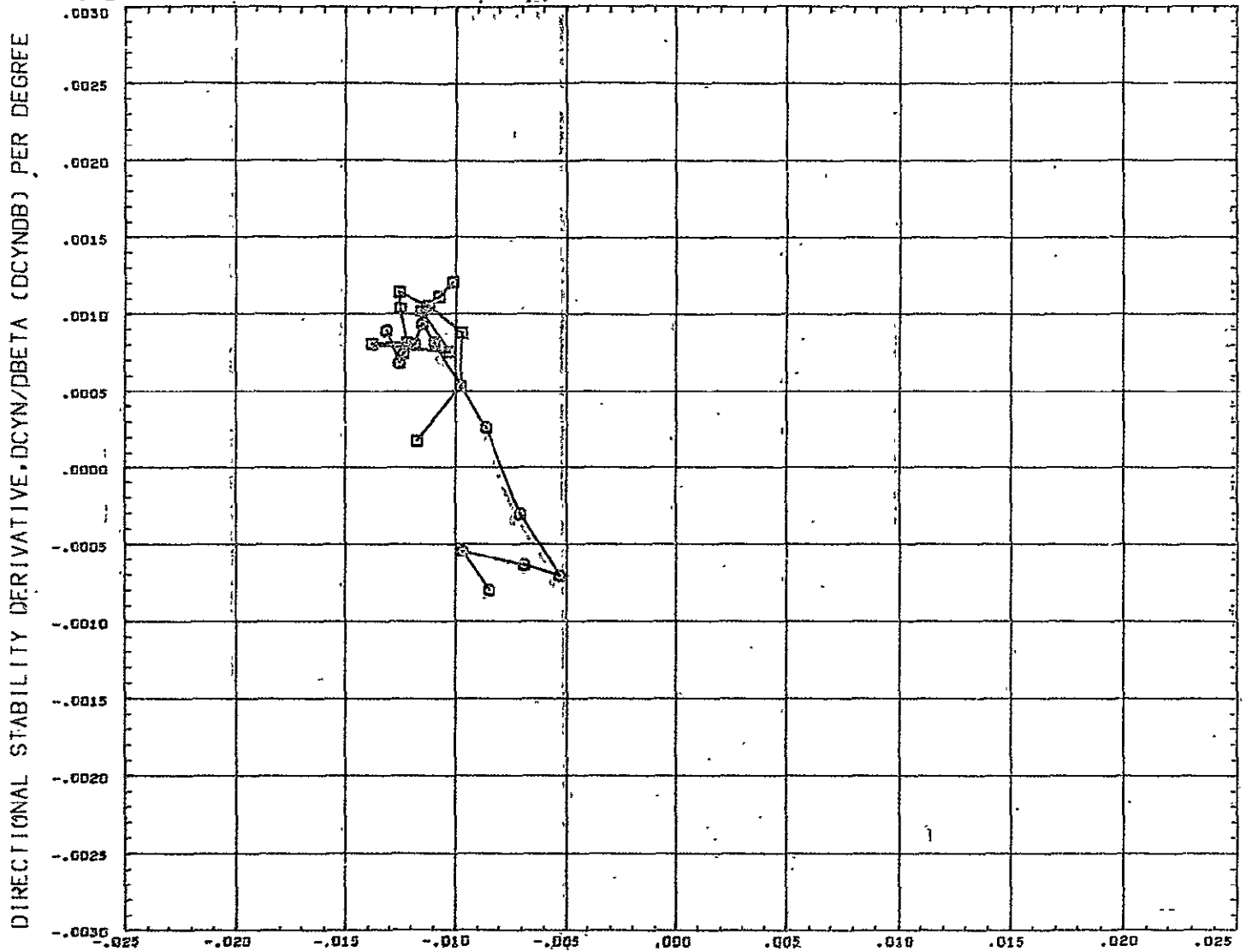
DATA SET SYMBOL CONFIGURATION DESCRIPTION
 (CCCC19) 1351-DAC-LSWT-SBCBOOSTER BIN1W2J1V1E1
 (CCCC29) 1351-DAC-LSWT-SBCBOOSTER BIN1W2J1P1V1E1F2

PARAMETRIC VALUES
 BETA 0.000 ELEVON 0.000
 VTAIL 6.000

REFERENCE INFORMATION
 REFS 1.0000 SQ. FT
 REFL 2.0000 FT.
 REFB 2.0000 FT.
 XMRP 1.7030 FT.
 YMRP 0.0000 FT.
 ZMRP 0.0125 FT.
 SCALE 0.0100 SCALE

MACH 0.180

6 DEG. TOE IN VS 0 DEG TOE IN LOW WING SBC BOOSTER WITH SBC BOOSTER



SIDE FORCE DERIVATIVE, DCY/DBETA (CYBETA) PER DEGREE

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	PARAMETRIC VALUES			REFERENCE INFORMATION		
(CCCC19)	Q 1351-DAC-LSHT-SBCBOOSTER 81N1W2J1V1E1	BETA	0.000	ELEVON	0.000	REFS	1.0000 SQ. FT
(CCCC29)	S 1351-DAC-LSHT-SBCBOOSTER 81N1W2T1P1V1E1F2	VTAIL	6.000			REFL	2.0000 FT.
						REFB	2.0000 FT.
						XHRF	1.7030 FT.
						YHRF	0.0000 FT.
						ZHRF	0.0125 FT.
						SCALE	0.0100 SCALE

MACH 0.180

