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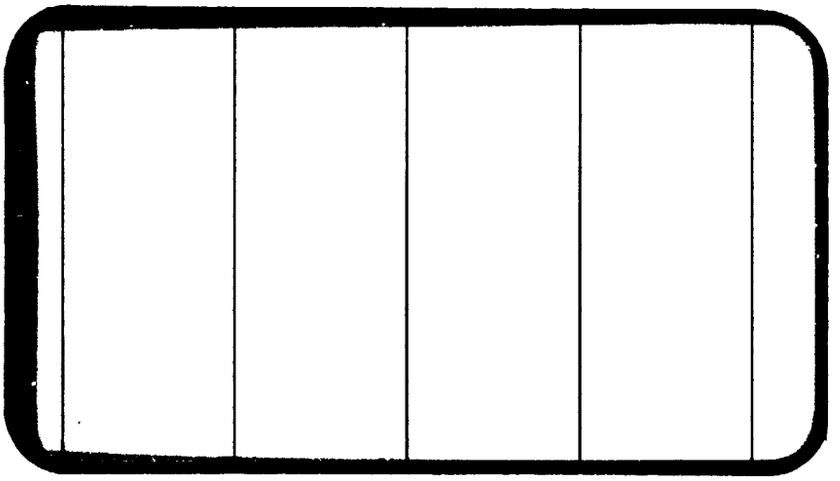

SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT

JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

October, 1974

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HEAT TRANSFER TESTS OF AN 0.006-SCALE THIN-SKIN SPACE SHUTTLE MODEL (41-OTS) IN THE AMES 3.5-FOOT HWT AT M = 5.3 (IH15)

By

D. G. Walstad, Rockwell International
W. K. Lockman, NASA Ames

Prepared under NASA Contract No. NAS9-13247

by

Data Management Services
Chrysler Corporation Space Division
New Orleans, La. 70189

for

Engineering Analysis Division

Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

WIND TUNNEL SPECIFICS:

Test Number:	Ames 3.5 HWT - 172
NASA Series No.:	IH15
Model Number:	41-OTS
Date:	13 August 1973 - 17 August 1973
Occupancy:	48

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Chrysler Corporation Space Division assumes no responsibility for the data presented other than display characteristics.

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ABSTRACT

This report presents data obtained from heat transfer tests of an 0.006-scale Space Shuttle Vehicle in the Ames Research Center, 3.5-foot HWT. The purpose of these tests was to parametrically investigate the ascent heating of the integrated vehicle. Configurations tested were complete for integrated vehicle, orbiter alone, external tank alone, and SRB alone. All configurations were tested with and without transition grit. Testing was conducted at a Mach number of 5.3, and at Reynolds numbers of 2 and 5 million per foot. The angle of attack range varied from 0 to -5 degrees, except for SRB alone, which was tested from -5 to 90 degrees. Heat transfer data were obtained from 223 iron-constantan thermocouples attached to thin-skin stainless steel inserts.

TABLE OF CONTENTS

INDEX OF MODEL FIGURES

INDEX OF DATA FIGURES

FIGURE NUMBER	TITLE	COEFFICIENT SCHEDULE	VARYING PARAMETERS	PAGE NUMBERS
Fig. 4	Undisturbed and Interference Heat Transfer Ratios, External Tank.	A	CONFIGURATION, HAW/HT	1-16
Fig. 5	Ratio of Interference to Undisturbed Heat Transfer Coef., External Tank.	B	HAW/HT	17-24
Fig. 6	Undisturbed and Interference Heat Transfer Ratios, External Tank.	A	CONFIGURATION, HAW/HT	25-40
Fig. 7	Ratio of Interference to Undisturbed Heat Transfer Coefficient., External Tank.	B	HAW/HT	41-56
Fig. 8	Undisturbed and Interference Heat Transfer Ratios, External Tank.	A	CONFIGURATION, HAW/HT	57-72
Fig. 9	Ratio of Interference to Undisturbed Heat Transfer Coef., External Tank.	B	HAW/HT	73-88
Fig. 10	Undisturbed and Interference Heat Transfer Ratios, SRB.	A	CONFIGURATION, HAW/HT	89-100
Fig. 11	Ratio of Interference to Undisturbed Heat Transfer Coef., SRB.	B	HAW/HT	101-112
Fig. 12	Undisturbed and Interference Heat Transfer Ratios, SRB.	A	CONFIGURATION, HAW/HT	113-130
Fig. 13	Ratio of Interference to Undisturbed Heat Transfer Coef., SRB.	B	HAW/HT	131-136

INDEX OF DATA FIGURES (Continued)

INDEX OF DATA FIGURES (Continued)

FIGURE NUMBER	TITLE	COEFFICIENT SCHEDULE	VARYING PARAMETERS	PAGE NUMBERS
Fig. 25	Undisturbed and Interference Heat Transfer Ratios, Windshield.	E	CONFIGURATION, HAW/HT	204-215
Fig. 26	Ratio of Interference to Undisturbed Heat Transfer Coef., Windshield.	F	HAW/HT	216-219
Fig. 27	Undisturbed and Interference Heat Transfer Ratios, Windshield.	E	CONFIGURATION, HAW/HT	220-231
Fig. 28	Undisturbed and Interference Heat Transfer Ratios, Windshield.	F	HAW/HT	232-235
Fig. 29	Undisturbed and Interference Heat Transfer Ratios, External Tank.	A	HAW/HT	236-239
Fig. 30	Undisturbed and Interference Heat Transfer Ratios, External Tank.	A	HAW/HT	240-251
Fig. 31	Undisturbed and Interference Heat Transfer Ratio, External Tank.	A	HAW/HT	252-263
Fig. 32	Undisturbed and Interference Heat Transfer Ratios, SRB	A	HAW/HT	264-269
Fig. 33	Undisturbed and Interference Heat Transfer Ratios, SRB	A	HAW/HT	270-281

INDEX OF DATA FIGURES (Concluded)

COEFFICIENT SCHEDULE:

A:	H/HREF	vs.	X/L
B:	HI/HU	vs.	X/L
C:	H/HREF	vs.	X/C
D:	HI/HU	vs.	X/C
E:	H/HREF	vs.	X
F:	HI/HU	vs.	X

NOMENCLATURE

Symbol	Plot Symbol	Definition
A	-	Area of integration
b	-	Intercept of straight line equation
B.P.	B.P.	Butt plane, inches
C	-	Specific heat of model material, Btu/lbm-°R
c_p	-	Specific heat at constant pressure of airstream, Btu/lbm-°R
g	-	Gravitational acceleration, ft/sec^2
h	H	Heat-transfer coefficient, Btu/ft^2-sec-°R
H	-	Enthalpy, Btu/lb
Haw	-	Adiabatic wall enthalpy, Btu/lb
H_i	HI	Heat transfer coefficient in interference region, BTU/ft^2-sec-°R
H_u	HU	Heat transfer coefficient in undisturbed region, BTU/ft^2-sec-°R
H_t	HT	Stagnation enthalpy, Btu/lb
k	-	Thermal conductivity coefficient, Btu/ft-sec-°R
m	-	Slope of straight line equation
M	MACH	Mach number
P_o	PO	Stagnation pressure, psia
P	-	Static pressure, psia
Pr	-	Prandtl number
$\dot{q}$	QDOT	Heat flux, Btu/ft^2-sec
q_{ot}	-	Stagnation-point heat-transfer rate calculated using Fay and Riddell's equation, Btu/(ft^2) (sec)
r_s	-	Radius of scaled one-ft sphere, inches
r	HAW/HT	Adiabatic wall temperature ratio, T_{aw}/T_o (recovery factor)

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
R	-	Gas constant, ft-lb/slug-°R
R_e	-	Reynolds Number
RN/L	RN/L	Unit Reynolds number, per foot
ST	-	Stanton number
t	-	Time, sec
T	-	Temperature, °R
T_o	TO	Tunnel total temperature, °R
T/C	-	Thermocouple
u	-	Velocity, ft/sec
W	-	Density of model material, lbm/ft^3
W.L.	W.L.	Waterline, inches
2y/b	2Y/B	Nondimensional spanwise location, fraction of span
X/C	X/C	Nondimensional chordwise location, fraction of local chord
X/l	X/L	Nondimensional longitudinal location, fraction of body length
Y	Y	Lateral distance from vehicle centerline, inches
α	ALPHA	Angle between model centerline and wind vector, degrees
τ	-	Model skin thickness, inches
μ	-	Viscosity of air, $lb\text{-}sec/ft^2$
ϕ	PHI	Angular coordinate on model surface.degrees
ϕ_m	PHI-M	Model roll angle, degrees
ρ	-	Density of model material, $slug/ft^3$
	RHOVEL	Product of density and velocity, $slug/ft^2\text{-}sec$
θ	-	Caloric imperfection effect on static to total temperature ratio
β	BETA	Angle of sideslip, degrees

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
h_s	HREF	Reference sphere heat transfer coefficient, Btu/ft^2- SEC -°R
h/h_s	H/HREF	Ratio of heat transfer coefficient to reference sphere heat transfer coefficient.
H_i/H_u	HI/HU	Ratio of heat transfer coefficient in interference region to heat trarsfer coefficient in undisturbed region.

Subscripts

Symbol	Plot Symbol	Definition
aw	-	Adiabatic wall
∞	-	Tunnel free-stream conditions
i	-	Initial conditions
m	-	Measured
PG	-	Perfect gas
0,1,2	-	Constants in specific heat (temperature) equation
s	-	Reference sphere
t	-	Stagnation conditions
TPG	-	Thermally perfect gas
w	-	Model wall conditions
'	-	Primed quantities which indicate conditions behind normal shock

CONFIGURATION INVESTIGATED

The orbiter was a 0.006-scale representation of the modified VL70-00089B lines. The orbiter main body was defined by Grumman drawing SS-H-00326-11. The orbiter nose was defined by Grumman drawing SS-H-00326-15. Radii of 0.900 inch was provided at the left-hand and right-hand double delta wing junctures. The external tank was defined by the VL72-000061C configuration. Both solid rocket boosters are defined by the VL77-000062B lines.

The orbiter was a full-span configuration Stycast-type model (Grumman Material "G"). Thin-skin thermocouple instrumented inserts were located on the orbiter underside centerline region, left-hand wing underside, and left-hand windshield.

The external tank (ET) and left-hand solid rocket booster (SRB) were constructed of thin-skin (nominal skin thickness of 0.040-in.) 15-5 PH stainless steel. The right-hand SRB was constructed of solid steel material and was not instrumented.

The orbiter had no provisions for elevon, rudder, or body-flap deflections.

All thermocouple leads were spot-welded to the skin and clamped in bundles at convenient locations within the models.

As an aid in checkout, fiberglass masks with thermocouple locating holes in them were provided for the orbiter external tank, and solid rocket booster. This made for an accurate and rapid means of checking thermocouples.

CONFIGURATIONS INVESTIGATED (Continued)

The following configurations were tested. Dimensional data for these configurations are presented in Table III.

Configuration	Description
B_{10}	Fuselage per -89B Lines, 2A configuration
C_5	Orbiter canopy used on fuselage B_{10}
D_7	Manipulator housing per -93 Lines, 2A configuration
F_4	Aft body flap used on fuselage B_{10}
M_3	OMS pods per -94A Lines, 2A configuration
V_5	Centerline vertical tail, double wedge airfoil with rounded leading edges
W_{87}	Wing per -93 Lines. Used on fuselage B_{10}
T_8	External tank which attaches to orbiter
S_6	Solid rocket booster which attaches to external tank, T_8

MODEL INSTRUMENTATION

The orbiter, external tank, and left-hand solid rocket booster were instrumented with a total of 223 iron-constantan thermocouples. All thermocouples were spot welded to thin skin (nominally 0.030-inch) stainless steel. The thermocouple leads were 50 feet long and all leads were fitted with plugs.

Prior to testing, all thermocouples were checked with a heat source to assure proper hook-up, polarity, and response. The exact locations of each thermocouple are presented in Tables IV, V, and VI and are illustrated in Figure 2.

TEST FACILITY DESCRIPTION

The NASA-Ames 3.5-Foot Hypersonic Wind Tunnel is a closed-circuit, blowdown-type tunnel capable of operating at nominal Mach numbers of 5, 7, and 10 at pressures to 1800 psia and temperatures to 3400°R for run times to four minutes. The major components of the facility include a gas storage system where the test gas is stored at 3000 psi, a storage heater filled with aluminum-oxide pebbles capable of heating the test gas to 3400°R, axisymmetric contoured nozzles with exit diameters of 42 inches for generating the desired Mach number, and a 900,000 ft^3 vacuum storage system which operates to pressures of 0.3 psia. The test section itself is an open-jet type enclosed within a chamber approximately 12-feet in diameter and 40-feet in length, arranged transversally to the flow direction.

A model support system is provided that can pitch models through an angle-of-attack range of -20 to +18 degrees, in a vertical plane, about a fixed point of rotation on the tunnel centerline. This rotation point is adjustable from 1 to 5 feet from the nozzle exit plane. The model normally is out of the test stream (strut centerline 37-inches from tunnel centerline) until the tunnel test conditions are established after which it is inserted. Insertion time is adjustable to as little as 1/2 second and models may be inserted at any strut angle.

A high-speed, analog-to-digital data acquisition system is used to record test data on magnetic tape. The present system is equipped to measure and record the outputs from 80 transducers in addition to 20 channels of tunnel parameters.

TEST PROCEDURES

Heat transfer data were obtained by measuring the temperature rise over a period of time from a total of 223 iron-constantan thermocouples. The model was injected into the flow stream from the side and held on tunnel centerline for approximately 3 seconds, during which time temperature measurements were taken. Model angle of attack had to be preset manually before securing the test section for testing.

A maximum of 75 thermocouples could be recorded at any one time. Temperature measurements were collected through the Beckman Data Acquisition system. The thermocouple leads were routed through the model support system and connected to a terminal board. Leads that were exposed to flow conditions were wrapped with asbestos tape.

Thermocouple leads were connected directly to a terminal board in the test section. Thermocouple changes were a manual operation requiring the handling of each individual lead. After each thermocouple change, a response and location check was performed after each change to assure a proper hook up.

Prior to testing, a thermocouple heat response check, through the data system, was performed on all thermocouples. The model was leveled in pitch and roll by means of a leveling block which attached to the top of the orbiter. When leveling the external tank or solid rocket booster, the inclinometer was applied directly to the external surface. Proper roll relationships between the orbiter, external tank, and solid rocket booster were assured by scribe lines located on the stings of each component and on the attaching brackets.

When testing the SRB alone at high angles of attack, the SRB was positioned so that the longitudinal row containing thermocouples 1 through 17 was facing upstream.

DATA REDUCTION

All test data were reduced at the NASA/Ames Research Center using the data-reduction techniques outlined below. The thermocouple data were reduced using the one dimensional thin-wall equation:

$$\dot{q} = WCb \frac{dT_w}{dt} = h\,(H_{aw} - H_w) \equiv hH_t \left(\frac{H_{aw}}{H_t} - \frac{H_w}{H_t}\right) \qquad (1)$$

where: $C = C_o + C_1 T_w + C_2 T_w^2$ for the T_w range in this test. (2)

Integration of equation (1) for $t = t_i$ to t and $T_w = T_{w_i}$ to T_w yields the linear equation:

$$f(T_w) = -\ell n \left(\frac{T'_{aw} - T_w}{T'_{aw} - T_{w_i}}\right) - \left[\frac{C_1}{C'_{aw}} + \frac{C_2}{C'_{aw}}\left(T'_{aw} + \frac{T_w + T_{w_i}}{2}\right)\right](T_w - T_{w_i})$$

$$= \frac{hc_p}{WC'_{aw}b}\,(t - t_i) \qquad (3)$$

where it is defined that:

$$T'_{aw} \equiv \frac{H_{aw}}{c_p} \equiv \frac{H_{aw}}{H_t}\,\frac{H_t}{c_p} \geq (T_{aw})_{PG}$$

$$C'_{aw} \equiv C_o + C_1 T'_{aw} + C_2 T'^2_{aw}$$

≠ specific heat at adiabatic wall temperature

The form of Eq (3) is $f(T_w) = mt + b$ where m is the slope and b is is the intercept for a straight line.

The slope, m, of $f(T_w)$ vs t from Eq (3) is computed by a least-squares, straight-line fit over a finite time interval (approx 1 sec) after model reaches tunnel centerline where

$$m = \frac{hc_p}{WC'_{aw}b}$$

and the value of the heat-transfer coefficient, h, is then determined from:

$$h = \frac{WC'_{aw}b}{c_p} \tag{4}$$

Using this value of h, the heating rate is evaluated at the initial time, t_i, when the model is isothermal at the initial wall enthalpy, H_{w_i}

$$\dot{q} = \dot{q}_i = h\,(H_{aw} - H_{w_i}) \equiv hH_t\,\left(\frac{H_{aw}}{H_t} - \frac{H_{wi}}{H_t}\right) \tag{5}$$

where H_{aw}/H_t is the same value used to evaluate h. The resultant value of $\dot{q}$ is independent of the value of H_{aw}/H_t used for both the h and $\dot{q}$ evaluations.

The reference sphere heating is also evaluated at the initial wall enthalpy by the method of Fay and Riddell (ref. 1):

$$\dot{q}_s = h_s\,(H_t - H_{w_i}) \equiv h_s\,H_t\,\left(1.0 - \frac{H_{w_i}}{H_t}\right) \tag{6}$$

The model-to-sphere ratio of heat transfer coefficients is then determined from Eqs (5) and (6) as

$$\frac{h}{h_s} = \frac{\dot{q}_i}{\dot{q}_s}\left[\frac{1.0 - H_{w_i}/H_t}{H_{aw}/H_t - H_{w_i}/H_t}\right] \tag{7}$$

where $\dot{q}_i$ is constant for all values of H_{aw}/H_t.

To determine h/h_s for various values of H_{aw}/H_t, the particular value of H_{aw}/H_t is substituted into Eq (7).

The Stanton number is defined as

$$ST \equiv \frac{h}{\rho u} = \frac{\dot{q}_i}{\rho u(H_{aw} - H_{w_i})} \qquad (8)$$

where for free-stream conditions, $\rho u = \rho_\infty V_\infty$.

The calculations of the model heating, reference sphere heating and Reynolds number included the corrections of NACA report 1135 (ref. 2) for calorically imperfect, thermally perfect air. Keyes' equation for viscosity was also used for the sphere heating and Reynolds number computations.

REFERENCES

1. Fay, J. A.; and Ridell, F. R.: Theory of Stagnation Point Heat Transfer in Disassociated Air. Journal of Aeronautical Science, Vol. 25, No. 2, February 1958.

2. Equations, Tables and Charts for Compressible Flow. NACA 1135, 1953.

TABLE I.

TEST : IH15 DATE : AUGUST, 1973

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
5.3	2×10^6/ft		
5.3	5×10^6/ft		

BALANCE UTILIZED: N/A

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF			
SF			
AF			
PM			
RM			
YM			

COMMENTS: Model instrumented with 223 Iron-Constantan Thermocouples:

57 on Orbiter
111 on ET
55 on SRB

TABLE II.

TEST: IH-15 — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: AUG 1ST 1972

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES M	PARAMETERS/VALUES h	PARAMETERS/VALUES Ø	NO. OF RUNS	RN/L 2.0	RN/L 5.0	T/C SCH (TABLE VI) ORB	T/C SCH (TABLE VI) ET	T/C SCH (TABLE VI) SRB
-38001	ORBITER	0	0	5.3	—	0	2	1	31	A	—	—
2		-5			—		2	32	33	A	—	—
3	ORB + ET	0			.18		1		5	A	B	—
4		0					1		18	—	A	—
5	ORB+ET+SRB	0					2	6	7	A	B	—
6		-5						8	9	A	B	—
7		0						10	11	—	C	A
8		-5						12	13		C	A
9		0						14	15	—	A	—
10		-5						16	17	—	A	—
11	ET	0			—			19	20	—	A	—
12		-5			—			21	22	—	A	—

TEST RUN NUMBERS

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

COEFFICENTS — IDVAR (1) — IDVAR (2) — NDV

α OR β SCHEDULES

h = vertical separation distance in inches, model scale

*Data collated as
R data sets, HAW/HT = 1.0
A data sets, HAW/HT = 0.9
B data sets, HAW/HT = 0.85
Q data sets, QDOT(Btu/ft^2-sec)

TABLE II. - Concluded.

TEST: IH-1S

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: AUG 27 1975

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES M	PARAMETERS/VALUES h	PARAMETERS/VALUES ø	NO. OF RUNS	RN/L 2.0	RN/L 5.0	T/C SCH (TABLE VII) ORB	T/C SCH (TABLE VII) ET	T/C SCH (TABLE VII) SRB
-BB013	SRB	0	0	5.3	—	0	2	23	24	—	—	A
14		-5				0	2	25	26	—	—	A
15		20				90	1		27	—	—	A
16		45							28	—	—	A
17		70							29	—	—	A
18		90							30	—	—	A

TEST RUN NUMBERS

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

COEFFICENTS IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

TABLE III. - MODEL DIMENSIONAL DATA

Model Component: Body (10)

General Description: Fuselage, 2A configuration lightweight orbiter, per Rockwell lines VL70-000089B

Model Scale = 0.00593

Drawing Number: VL70-000089B, VL70-000092, 93, 94A

Dimensions:	Full-Scale	Model Scale
Length - in.	1328.3	7.87682
Max width - in. (at X_o = 1528.3)	265.0	1.57145
Max depth - in. (at X_o = 1480.52)	243.0	1.47064
Fineness ratio	5.012	5.012
Area - ft^2		
Max cross-sectional	456.4	0.01605
Planform		
Wetted		
Base		

TABLE III. - Continued.

Model Component: Canopy (C_5)

General Description: Orbiter canopy for lightweight orbiter configuration

Model Scale = 0.00593

Drawing Number: VL-70-000092

Dimensions:	Full-Scale	Model Scale
Sta fwd bulkhead - in.	391.0	2.31863
Sta TE - in.	560.0	3.32080
Canopy/body intersection - in.	391.0	2.31863

TABLE III. - Continued.

Model Component: Manipulator Housing (D_7)

General Description: 2A configuration per Rockwell lines VL70-000093

Model Scale = 0.00593

Drawing Number: VL70-000093, SS-A-00092

Dimensions:	Full-Scale	Model Scale
Length - in.	881.0	5.22433
Max width - in.	51.0	0.30243
Max depth - in.	23.0	0.13639
Fineness ratio	-	-
Area - ft^2		
Max cross-sectional	-	-
Planform	-	-
Wetted	-	-
Base	-	-

Location at:

℄ Fuselage BP = 0.0
WP = 500.0 in. FS
X_o426.0 to X_o1307.0 in. FS

TABLE III. - Continued.

Model Component: Body Flap (F_4)

General Description: Aft body flap used on lightweight orbiter configuration

Model Scale = 0.00593

Drawing Number: VL-70-000094A, SS-A-00092

Dimensions:	Full-Scale	Model Scale
Length - in.	84.70	0.50227
Max width - in.	265.00	1.57145
Max depth - in.	-	-
Fineness ratio	-	-
Area - ft^2		
Max cross-sectional	-	-
Planform	142.64	0.00502
Wetted	-	-
Base	38.65	0.00136

TABLE III. - Continued.

Model Component: OMS Pod (M_3)

General Description: 2A lightweight orbiter configuration per Rockwell lines VL70-000094A

Drawing Number: VL70-000094A, SS-A-00092

Dimensions:	Full-Scale	Model Scale
Length ~ in.	346.0	2.95178
Max width ~ in. at X_o 1450.0	108.0	0.64044
Max depth ~ in. at X_o 1500.0	113.8	0.67483
Fineness ratio	-	-
Area ~ ft^2		
Max cross-sectional	-	-
Planform	-	-
Wetted	-	-
Base	-	-

℄ of OMS pod

Z_o = 463.9 in. FS: WP 400 + 63.9 = 463.9 in. FS

Y_o = 80.0 in FS

Length: X_o 1214.0 to X_o 1560.0 = 346.0 in. FS

TABLE III. - Continued.

Model Component: Booster Solid Rocket Motor (S_6)

General Description: Booster solid rocket motor, lightweight orbiter configuration, body of revolution, data for 1 of 2 sides

Model Scale = 0.00593

Drawing Number: VL-72-000061C, VL-77-000012B, SS-A-00094

Dimensions:	Full-Scale	Model Scale
Length (includes nozzle), in.	1741.0	10.32413
Max width (tank dia), in.	142.0	0.84206
Max depth (aft shroud), in.	259.0	1.53587
Fineness ratio	6.722	6.722
Area - ft^2		
Max cross-sectional	365.87	0.01287
Planform	-	-
Wetted	-	-
Base	-	-
WP of BSRM centerline, (Z_T), in.	400.0	2.3720
FS of BSRM nose (X_T), in.	743.0	4.40599

TABLE III. - Continued.

Model Component: External Tank (T_8)

General Description: External oxygen-hydrogen tank lightweight orbiter configuration to which the orbiter and the two solid rocket motors attach

Model Scale = 0.00593

Drawing Number: VL-70-000061C, VL-78-000018, SS-A-00093

Dimensions:	Full-Scale	Model Scale
Length ~ in. (nose at X_T = 185.0)	1989.0	11.79477
Max width (dia), in.	324.0	1.92132
Max depth ~ in.	-	-
Fineness ratio	6.1389	6.1389
Area ~ ft^2		
Max cross-sectional	572.56	0.02013
Planform	-	-
Wetted	-	-
Base	-	-
WP of tank centerline, (Z_T) in.	400.0	2.3720

TABLE III. - Continued.

MODEL COMPONENT: WING - W87-- LIGHTWEIGHT ORBITER

GENERAL DESCRIPTION: Orbiter configuration per Rockwell Lines VL70-000093

NOTE: Dihedral angle is defined at the lower surface of the wing at the 75.33-percent element line projected into a plane perpendicular to the FRL.

MODEL SCALE: 0.00593 DRAWING NO. VL70-000093

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Planform area (theo) - ft^2	2690.0	0.09459
Span (theo) - in.	936.682	5.55452
Aspect ratio	2.265	2.265
Rate of taper	1.177	1.177
Taper ratio	0.200	0.200
Dihedral angle - deg.	3.500	3.500
Incidence angle - deg.	3.000	3.000
Aerodynamic twist - deg.	+ 3.000	+ 3.000
Sweep-back angles - deg.		
Leading edge	45.000	45.000
Trailing edge	- 10.24	- 10.24
0.25 element line	35.209	35.209
Chords - in.		
Root (theo) at BP 0.0	689.24	4.08919
Tip (theo)at BP	137.85	0.81745
M.A.C.	474.81	2.81562
Fus. sta. of 0.25 MAC	1136.89	6.74176
WP of 0.25 MAC	299.20	1.77426
BL of 0.25 MAC	182.13	1.08003
Exposed data		
Area (theo) - ft^2	1752.29	0.06162
Span (theo) - in. (BP 108.0 to tip)	720.68	4.27363
Aspect ratio	2.058	2.058
Taper ratio	0.2451	0.2451
Chords - In.		
Root at BP 108.0	562.40	3.33503
Tip at 1.00 b/2	137.85	0.81745
MAC	393.03	2.33067
Fus. sta of 0.25 MAC	1185.31	7.02889
WP of 0.25 MAC	300.20	1.78019
BL of 0.25 MAC	143.76	0.85250
Airfoil section (Rockwell mod NASA XXXX-64)		
t/c at root b/2 = 0.425	0.10	0.10
t/c at tip b/2 = 1.00	0.12	0.12
DATA FOR 1 OF 2 SIDES		
Leading edge cuff		
Planform area - ft^2	120.33	0.00423
Leading edge intersects fus at sta - in.	560.0	3.32080
Leading edge intersects wing at sta - in.	1035.0	6.13755

TABLE III. - Concluded.

Model Component: Vertical (V5)--Lightweight Orbiter Configuration

General Description: Centerline vertical tail, double-wedge airfoil with rounded leading edge

Model Scale = 0.00593

Drawing Number: VL-70-000095, SS-A-00092

Dimensions:	Full-Scale	Model Scale
Total Data		
Planform area (theo) ~ ft^2	413.25	0.01453
Span (theo) ~ in.	315.72	1.87222
Aspect ratio	1.675	1.675
Rate of taper	0.507	.507
Taper ratio	0.404	.404
Sweepback angles ~ deg		
Leading edge	45.000	45.000
Trailing edge	26.249	26.249
0.25 element line	41.130	41.130
Chords ~ in.		
Root (theo) WP	268.50	1.59220
Tip (theo) WP	108.47	0.62323
MAC	199.81	1.18487
Fus sta of 0.25 MAC	1463.50	8.67856
WP of 0.25 MAC	635.52	3.76863
BL of 0.25 MAC	0.0	0.0
Airfoil section		
Leading edge angle ~ deg	10.00	10.00
Trailing edge angle ~ deg	14.92	14.92
Leading edge radius ~ in.	2.00	0.01186
Void area ~ ft^2	13.17	0.00046
Blanketed area ~ ft^2	12.67	0.00045

TABLE IV. ORBITER THERMOCOUPLE LOCATIONS

T/C No.	Skin Thick.	* Location y - b/2	* Location x/l - x/c	Remarks	T/C No.	Skin Thick	* Location y - b/2	* Location x/l - x/c	Remarks
1	.033	Y=.047	.1536	Windshield	31	.0315	Y=.415	1.00	Fuselage
2	.031	Y=.047	.1612		32	.0315	b/2=.40	.225	Wing
3	.034	Y=.047	.1694		33	.033		.250	
4	.0375	Y=.213	.1588		34	.0312		.300	
5	.0375	Y=.196	.1657		35	.033		.400	
6	.0335	Y=.178	.1724		36	.0335		.500	
7	.033	Y=0	.0875	Fuselage	37	.032		.600	
8	.032		.100		38	.0315		.700	
9	.031		.125		39	.0315		.800	
10	.0305		.150		40	.0310		.900	
11	.030		.175		41	.034	b/2=.60	.175	
12	.031		.200		42	.032		.200	
13	.0295		.250		43	.031		.300	
14	.0295		.300		44	.033		.400	
15	.0295		.400		45	.032		.500	
16	.0302		.500		46	.032		.600	
17	.0312		.600		47	.0325		.700	
18	.0315		.700		48	.031		.800	
19	.031		.800		49	.0315		.875	
20	.0295		.900		50	.035	b/2=.80	.250	
21	.030		1.00		51	.033		.300	
22	.0305		1.025		52	.033		.400	
23	.0285	Y=.415	.350		53	.0315		.500	
24	.0285		.375		54	.032		.600	
25	.0315		.400		55	.032		.700	
26	.0325		.500		56	.0335		.800	
27	.0320		.600		57	.033		.850	
28	.0315		.700						
29	.0325		.800						
30	.0315		.900						

* model scale, in.

x/l = (t/c's 1 - 31)

x/c = (t/c's 32 57)

TABLE V. - EXTERNAL TANK THERMOCOUPLE LOCATIONS

T/C No.	Skin Thick.	Location x/l	Location ϕ, deg.	T/C No.	Skin Thick.	Location x/l	Location ϕ, deg.	T/C No.	Skin Thick.	Location x/l	Location ϕ, deg.
1	.037	0	Nose	34	.032	.40	135	67	.030	.60	45
2	.030	.005	180	35	.033	.40	112.5	68	.030	.60	0
3	.030	.01	180	36	.033	.40	90	69	.033	.625	180
4	.030	.02	180	37	.030	.40	67.5	70	.033	.65	180
5	.030	.04	180	38	.029	.40	45	71	.032	.65	157.5
6	.030	.06	180	39	.031	.40	0	72	.031	.65	135
7	.029	.08	180	40	.032	.425	180	73	.030	.65	112.5
8	.029	.10	180	41	.032	.45	180	74	.030	.65	90
9	.028	.125	180	42	.033	.45	157.5	75	.030	.65	67.5
10	.028	.15	180	43	.031	.45	135	76	.033	.675	180
11	.028	.175	180	44	.031	.45	112.5	77	.033	.70	180
12	.028	.20	180	45	.031	.45	90	78	.032	.70	157.5
13	.028	.20	90	46	.033	.475	180	79	.032	.70	135
14	.032	.25	180	47	.033	.50	180	80	.031	.70	112.5
15	.029	.25	90	48	.033	.50	157.5	81	.030	.70	90
16	.030	.275	112.5	49	.032	.50	135	82	.031	.70	67.5
17	.030	.275	90	50	.033	.50	112.5	83	.029	.70	45
18	.034	.30	180	51	.031	.50	90	84	.033	.75	180
19	.031	.30	112.5	52	.031	.50	67.5	85	.033	.75	157.5
20	.031	.30	90	53	.030	.50	45	86	.032	.75	135
21	.031	.30	67.5	54	.032	.525	180	87	.031	.75	112.5
22	.031	.325	135	55	.032	.55	180	88	.031	.75	90
23	.031	.325	112.5	56	.033	.55	157.5	89	.030	.75	67.5
24	.031	.325	90	57	.031	.55	135	90	.033	.80	180
25	.032	.35	180	58	.031	.55	112.5	91	.033	.80	157.5
26	.032	.35	135	59	.031	.55	90	92	.032	.80	135
27	.031	.35	112.5	60	.032	.575	180	93	.032	.80	112.5
28	.031	.35	90	61	.032	.60	180	94	.031	.80	90
29	.031	.35	67.5	62	.033	.60	157.5	95	.030	.80	67.5
30	.034	.375	180	63	.031	.60	135	96	.029	.80	45
31	.032	.375	135	64	.031	.60	112.5	97	.030	.80	0
32	.033	.40	180	65	.031	.60	90	98	.033	.85	180
33	.032	.40	157.5	66	.031	.60	67.5	99	.032	.85	157.5

TABLE V. - Concluded.

T/C No.	Skin Thick.	Location x/l	Location ϕ, deg.
100	.032	.85	135
101	.030	.85	112.5
102	.030	.85	90
103	.033	.90	180
104	.033	.90	157.5
105	.032	.90	135
106	.032	.90	112.5
107	.031	.90	90
108	.030	.90	67.5
109	.029	.90	45
110	.033	.935	180
111	.033	.974	180

TABLE VI. - SRB THERMOCOUPLE LOCATIONS

T/C No.	Skin Thick.	Location X/l	Location ϕ	T/C No.	Skin Thick.	Location X/l	Location ϕ
1	.040	0	0	29	.030	.100	180°
2	.035	0	270°	30	.035	.200	180°
3	.033	.025	270°	31	.034	.400	180°
4	.030	.050	270°	32	.034	.600	180°
5	.030	.100	270°	33	.033	.650	180°
6	.035	.112	270°	34	.033	.700	180°
7	.032	.150	270°	35	.034	.750	180°
8	.036	.200	270°	36	.035	.800	180°
9	.034	.300	270°	37	.035	.920	180°
10	.033	.400	270°	38	.035	.950	180°
11	.035	.500	270°	39	.034	.996	180°
12	.022	.600	270°	40	.040	.700	135°
13	.033	.700	270°	41	.040	.750	135°
14	.034	.800	270°	42	.038	.800	135°
15	.035	.920	270°	43	.030	.920	135°
16	.035	.950	270°	44	.034	.996	135°
17	.035	.990	270°	45	.032	.400	90°
18	.034	.200	225°	46	.038	.700	90°
19	.034	.300	225°	47	.038	.800	90°
20	.035	.400	225°	48	.030	.920	90°
21	.030	.600	225°	49	.030	.996	90°
22	.033	.650	225°	50	.025	.200	315°
23	.032	.700	225°	51	.028	.400	315°
24	.032	.750	225°	52	.030	.600	315°
25	.033	.800	225°	53	.029	.800	315°
26	.033	.920	225°	54	.032	.920	315°
27	.034	.996	225°	55	.032	.996	315°
28	.030	.05	180				

TABLE VII.

Instrumentation Groups - IM15 - ARC 3.5 Ft HWT

Grouping	Thermocouple No.
ET-A	ET - 1 - 3 - 8 - 10 - 12 - 14 - 18 - 21 - 25 - 30 - 32 - 41 - 46 - 55 - 60 - 70 - 76 - 84 - 90 - 98 - 103 - 111
ET-B	ET - 42 - 43 - 45 - 56 - 57 - 59 - 71 - 74 - 85 - 88 - 99 - 102
ET-C	ET - 2 - 9 - 11 - 15 - 17 - 22 - 24 - 26 - 27 - 28 - 29 - 31 - 44 - 58 - 75 - 89
SRB-A	SRB - 1 - 55
ORB-A	ORB - 1 - 57

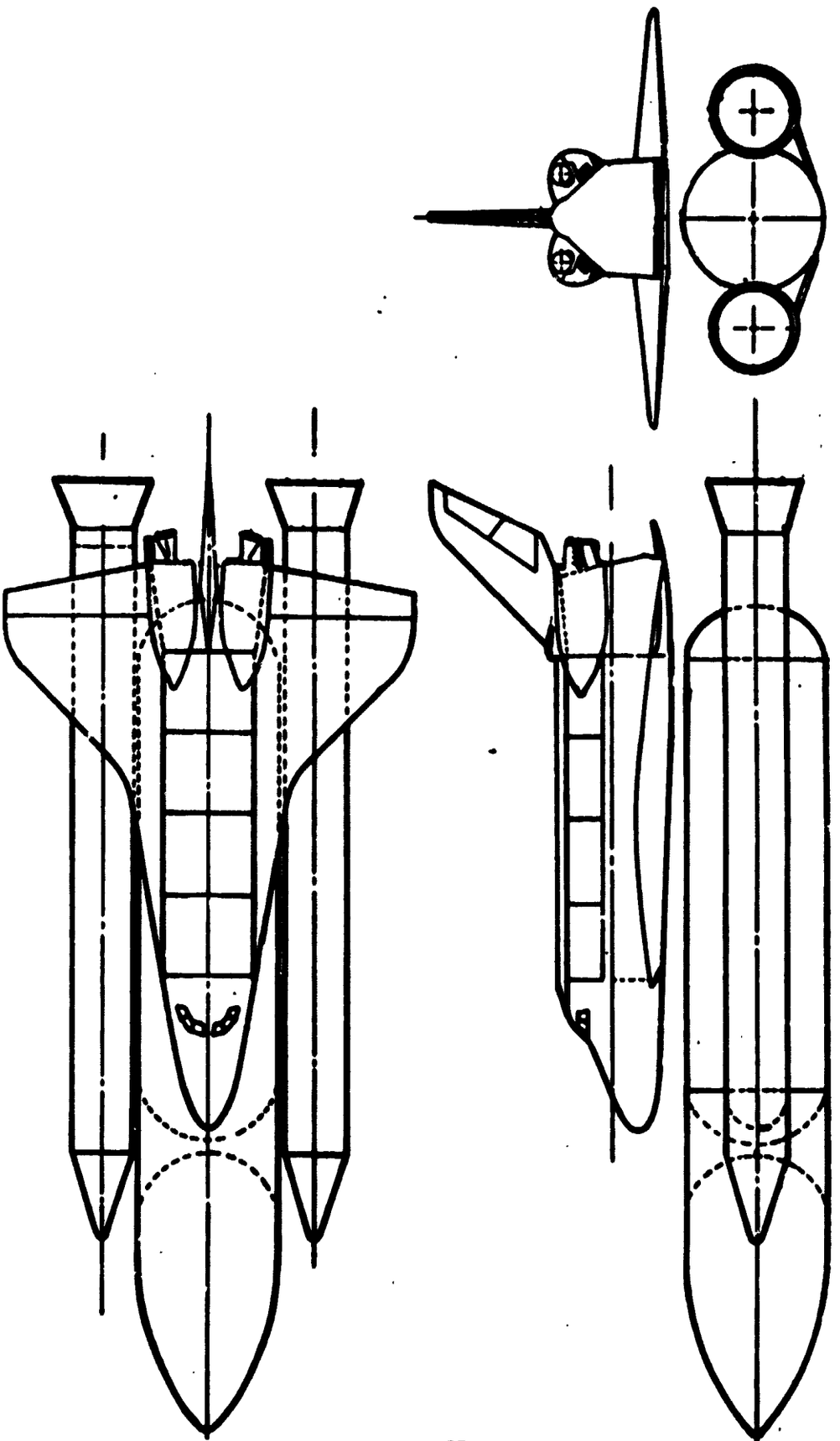
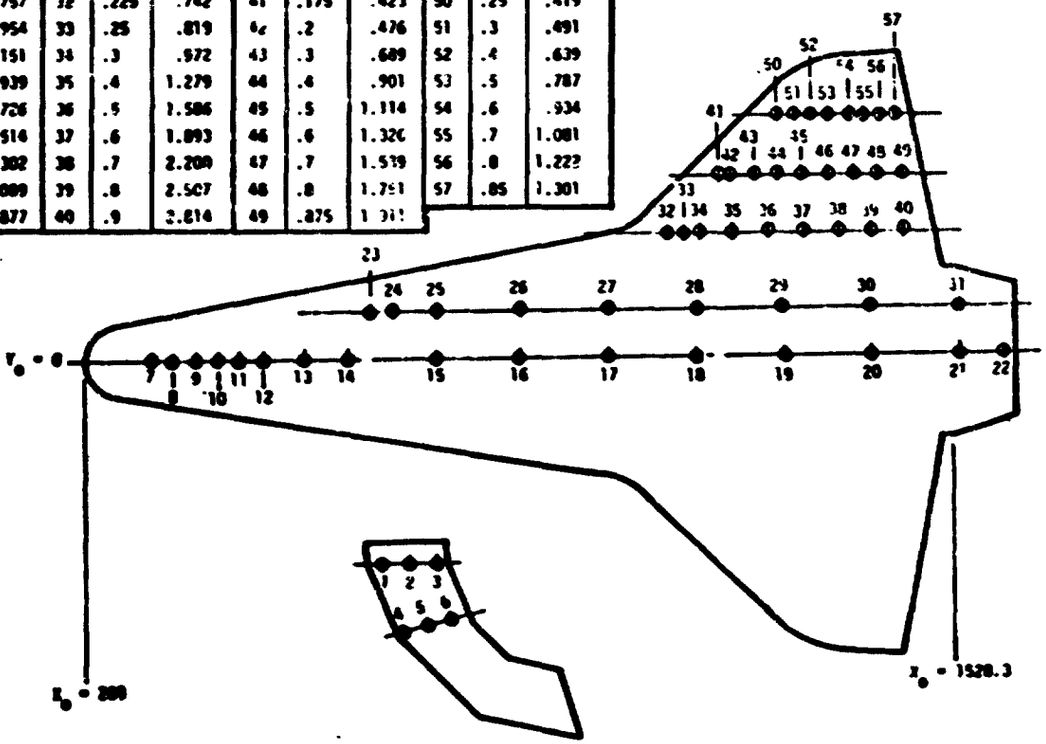


Figure 1. Integrated Vehicle General Arrangement.

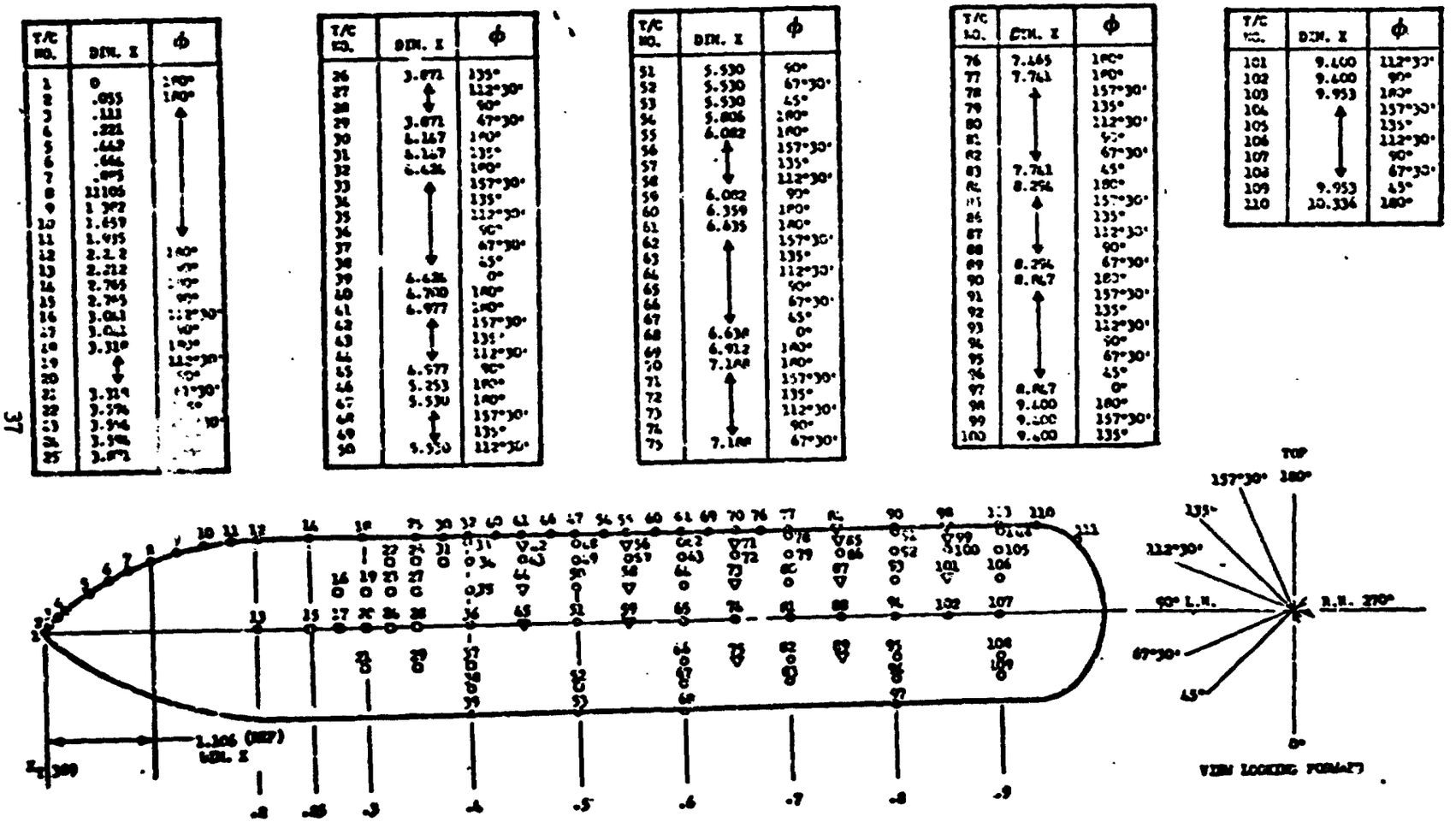
THERMOCOUPLE LOCATIONS

WINDSHIELD			Y_o 0			BP 7			.4 b/2			.6 b/2			.8 b/2		
			Y = .415			Y = 1.111			Y = 1.667			Y = 2.222					
NO.	DIST. FROM X_o 293	r	NO.	X/L	DIST. FROM X_o 200	NO	X/L	DIST. FROM X_o 200		X/C	DIST. FROM L.E.	NO.	X/C	DIST. FROM L.E.	NO.	X/C	DIST. FROM L.E.
1	1.210	.047	7	.0875	.649	23	.35	2.757	32	.225	.742	41	.175	.423	50	.25	.419
2	1.272	.047	8	.100	.708	24	.375	2.954	33	.25	.819	42	.2	.476	51	.3	.491
3	1.334	.047	9	.125	.935	25	.4	3.151	34	.3	.972	43	.3	.689	52	.4	.639
4	1.251	.213	10	.150	1.182	26	.5	3.939	35	.4	1.279	44	.4	.901	53	.5	.787
5	1.386	.196	11	.175	1.378	27	.6	4.726	36	.5	1.586	45	.5	1.114	54	.6	.934
6	1.358	.178	12	.20	1.595	28	.7	5.514	37	.6	1.893	46	.6	1.326	55	.7	1.081
			13	.25	1.969	29	.8	6.302	38	.7	2.200	47	.7	1.539	56	.8	1.222
			14	.3	2.363	30	.9	7.089	39	.8	2.507	48	.8	1.751	57	.85	1.301
			15	.4	3.151	31	1.0	7.877	40	.9	2.814	49	.875	1.911			
			16	.5	3.939												
			17	.6	4.726												
			18	.7	5.514												
			19	.8	6.302												
			20	.9	7.089												
			21	1.0	7.877												
			22	1.085	8.594												



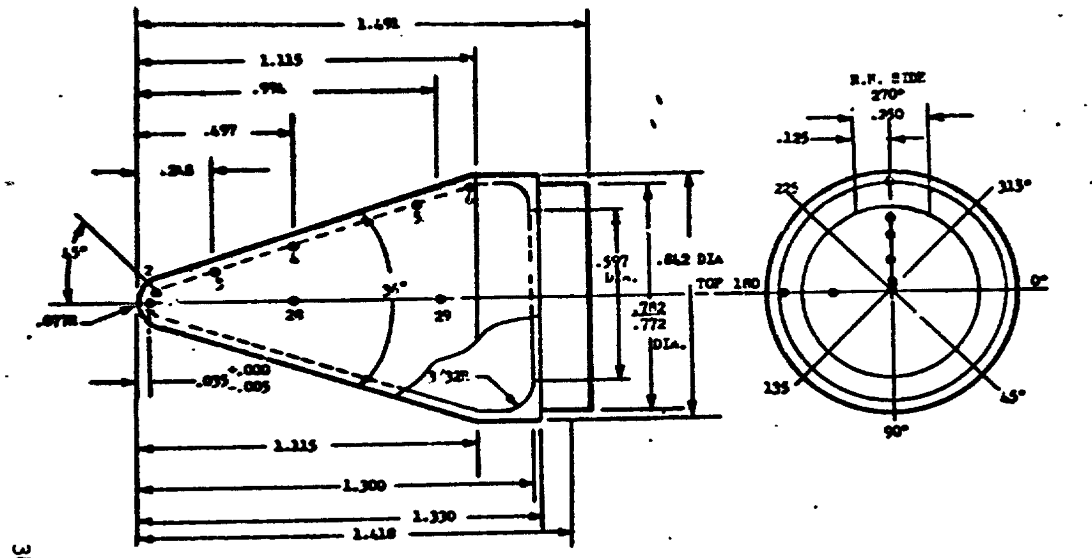
a. 41-OTS .006 Scale Orbiter T/C Locations (57)

Figure 2. Model Instrumentation.



b. 41-OTS 0.006 External Tank T/C Locations (1'1)

Figure 2. (Continued).



THERMOCOUPLE LOCATIONS (BODY)

T/C NO.	ℓ DIST.	℄ LOCATION	T/C NO.	ℓ DIST.	℄ LOCATION
7	1.491	270°			
8	1.988		30	1.988	180°
9	2.982		31	3.976	
10	3.976		32	5.963	
11	4.970		33	6.460	
12	5.963		34	6.957	
13	6.957		35	7.454	
14	7.951		36	7.951	
15	9.144		37	9.144	
16	9.442		38	9.442	
17	9.900	270°	39	9.900	180°
18	1.988	22	40	6.957	135°
19	2.982		41	7.454	
20	3.976		42	7.951	
21	5.963		43	9.144	
22	6.460		44	9.900	135°
	6.957		45	3.976	90°
24	7.454		46	6.957	
25	7.951		47	7.951	
26	9.144		48	9.144	
27	9.900	225°	49	9.970	90°
			50	1.988	315°
			51	3.976	
			52	5.963	
			53	7.951	
			54	9.144	
			55	9.950	315°

THERMOCOUPLE LOCATIONS (NOSE CAP)

T/C NO.	ℓ DIST.	℄ LOCATION
1	0	0
2	AT 45° CORNER	270°
3	.248	
4	.497	
5	.994	
6	1.115	270°
28	.497	180°
[illegible]	.994	180°

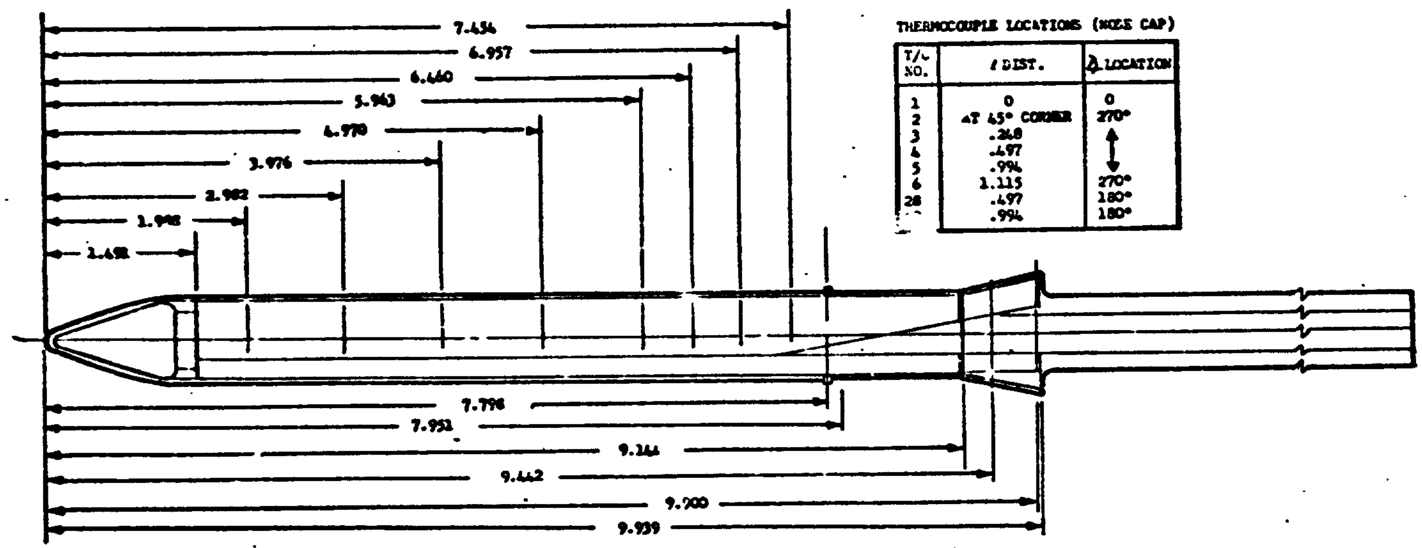
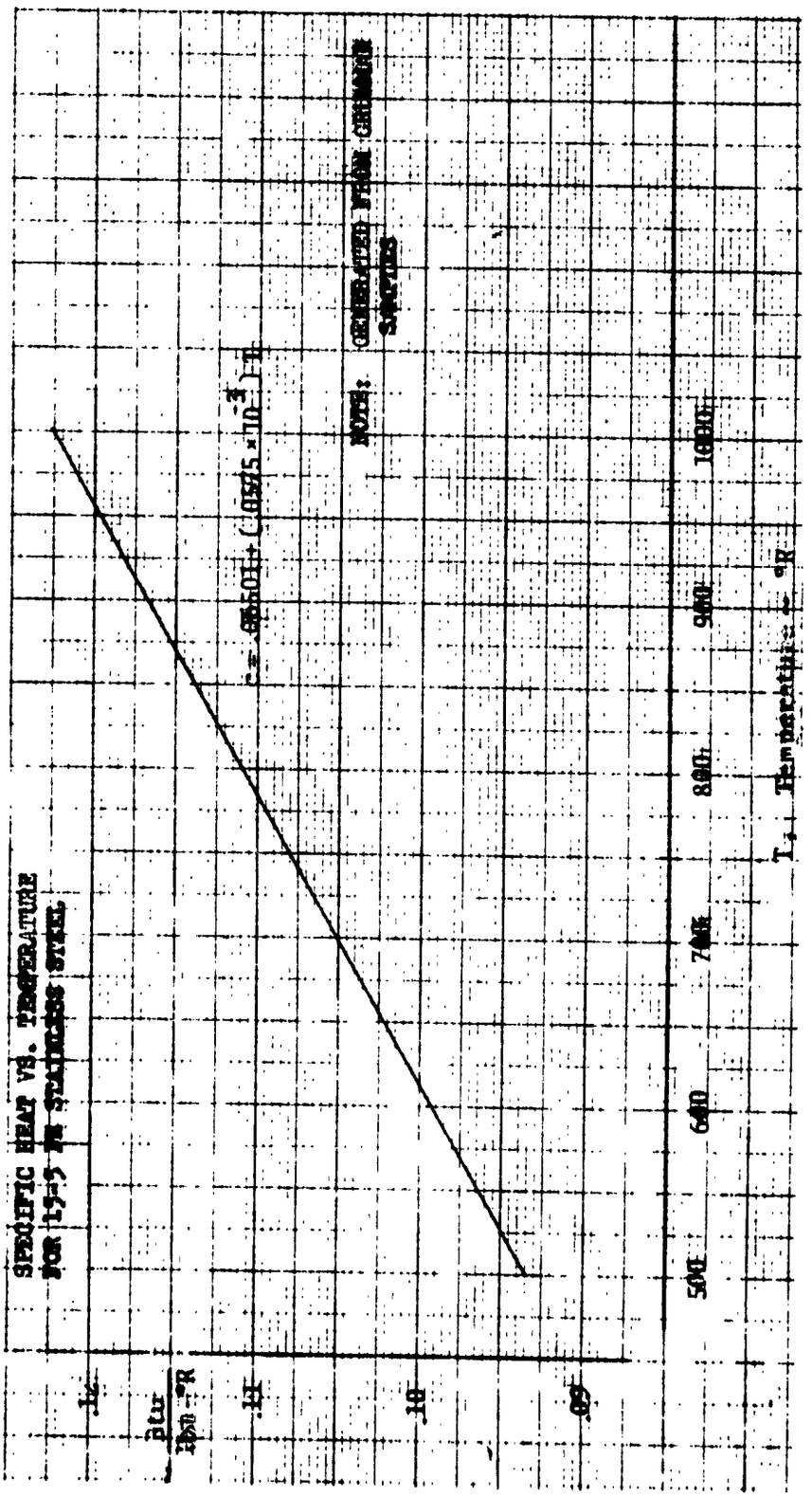
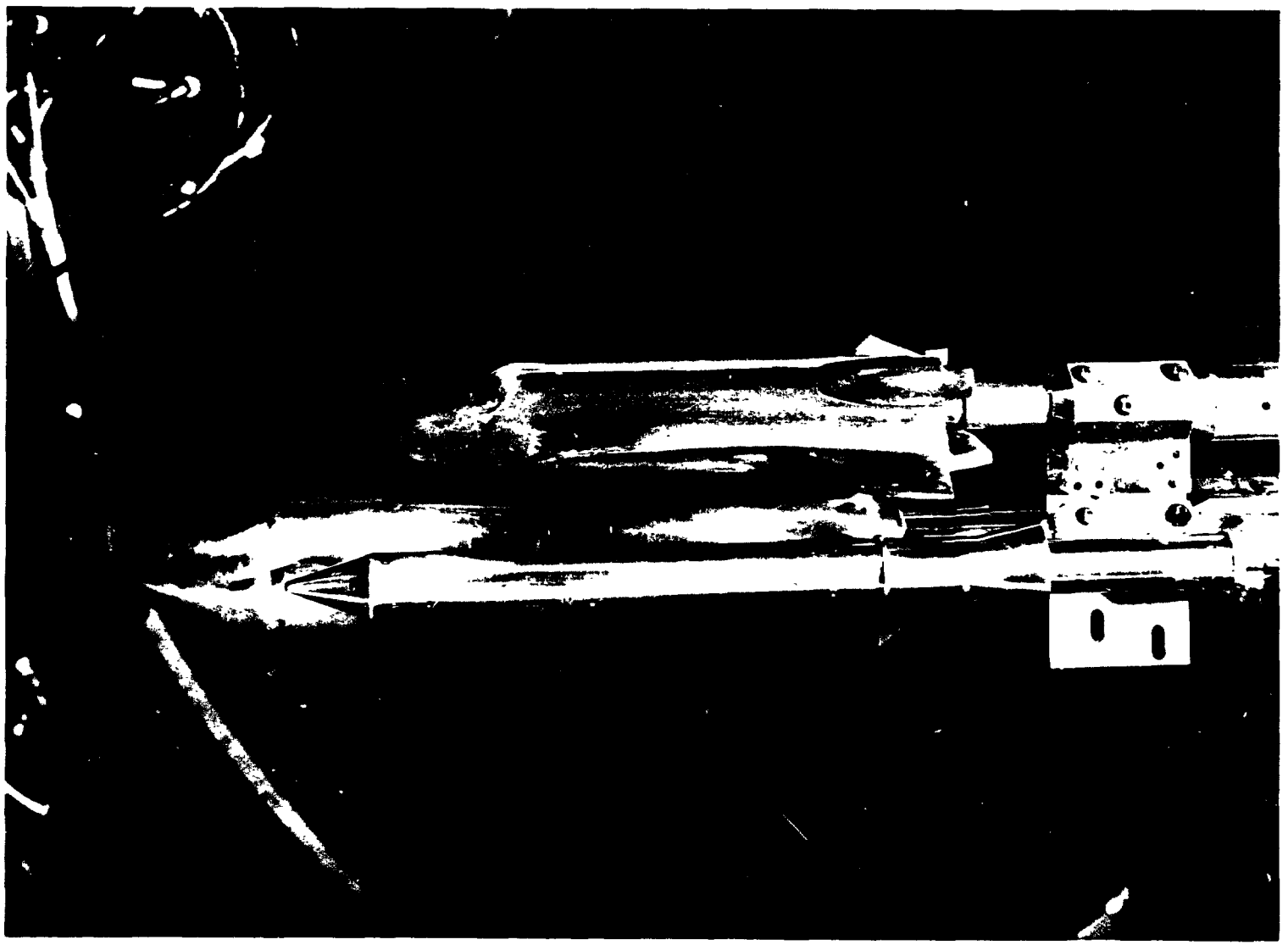


Figure 2. (Continued). c. 41-OTS 0.006-Scale BSRM (Left-Hand) T/C Locations (55)



d. Specific Heat Curve

Figure 2. (Concluded).

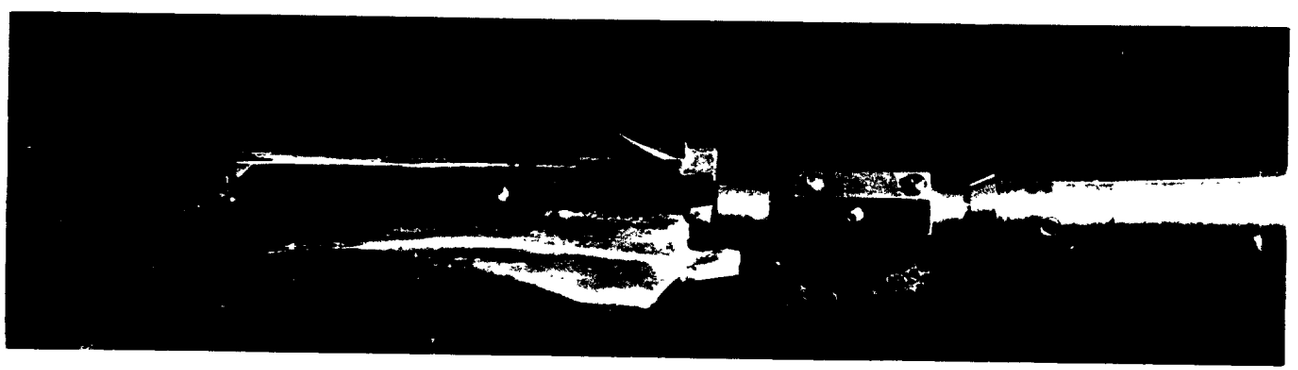


(a) Integrated vehicle

Figure 3. - Model Photographs.

(b) SRB alone

Figure 3. - Continued.



(c) Orbiter alone

Figure 3. - Concluded.

DATA FIGURES

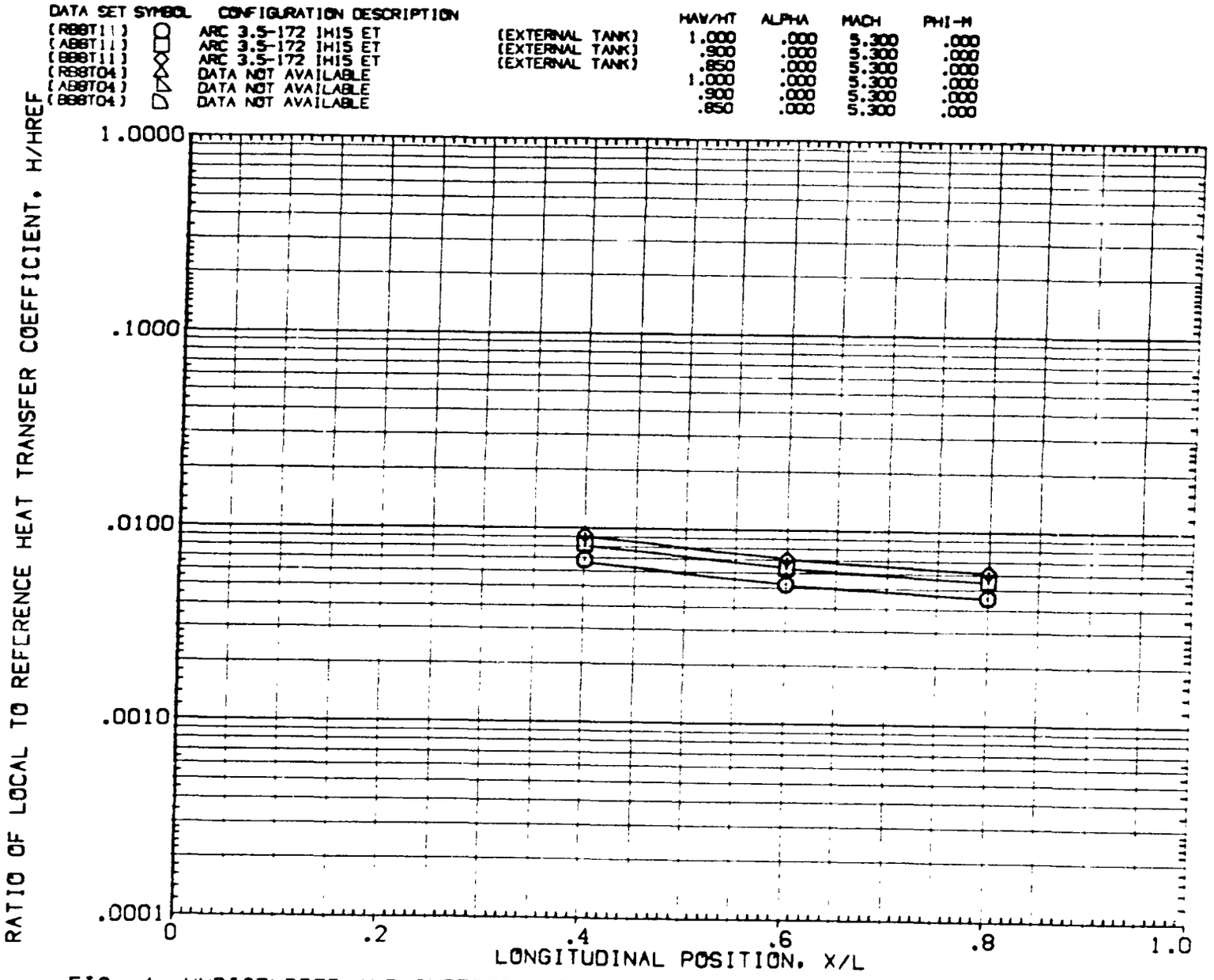


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MAC- = 5.300 PHI = .000

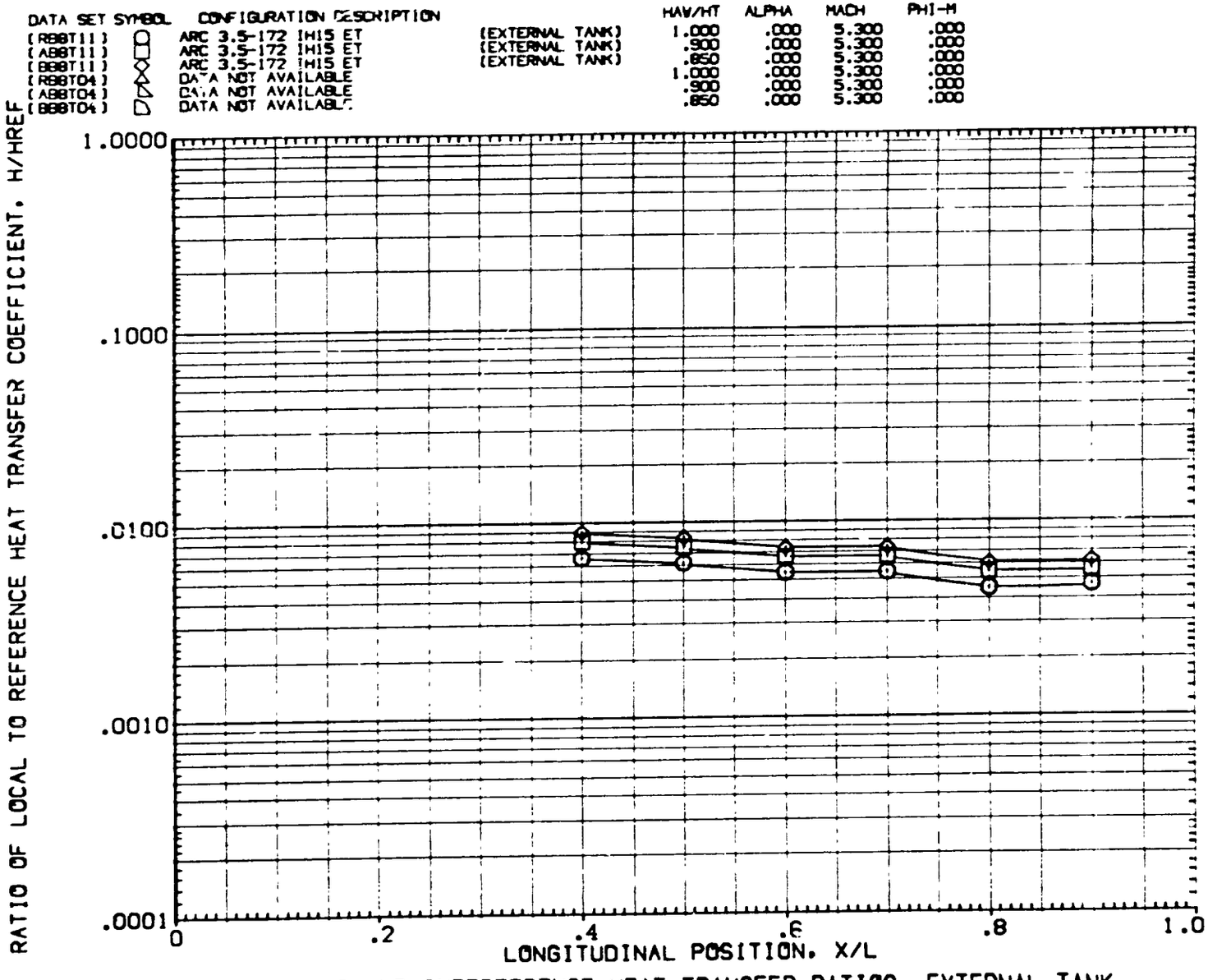


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 45.000

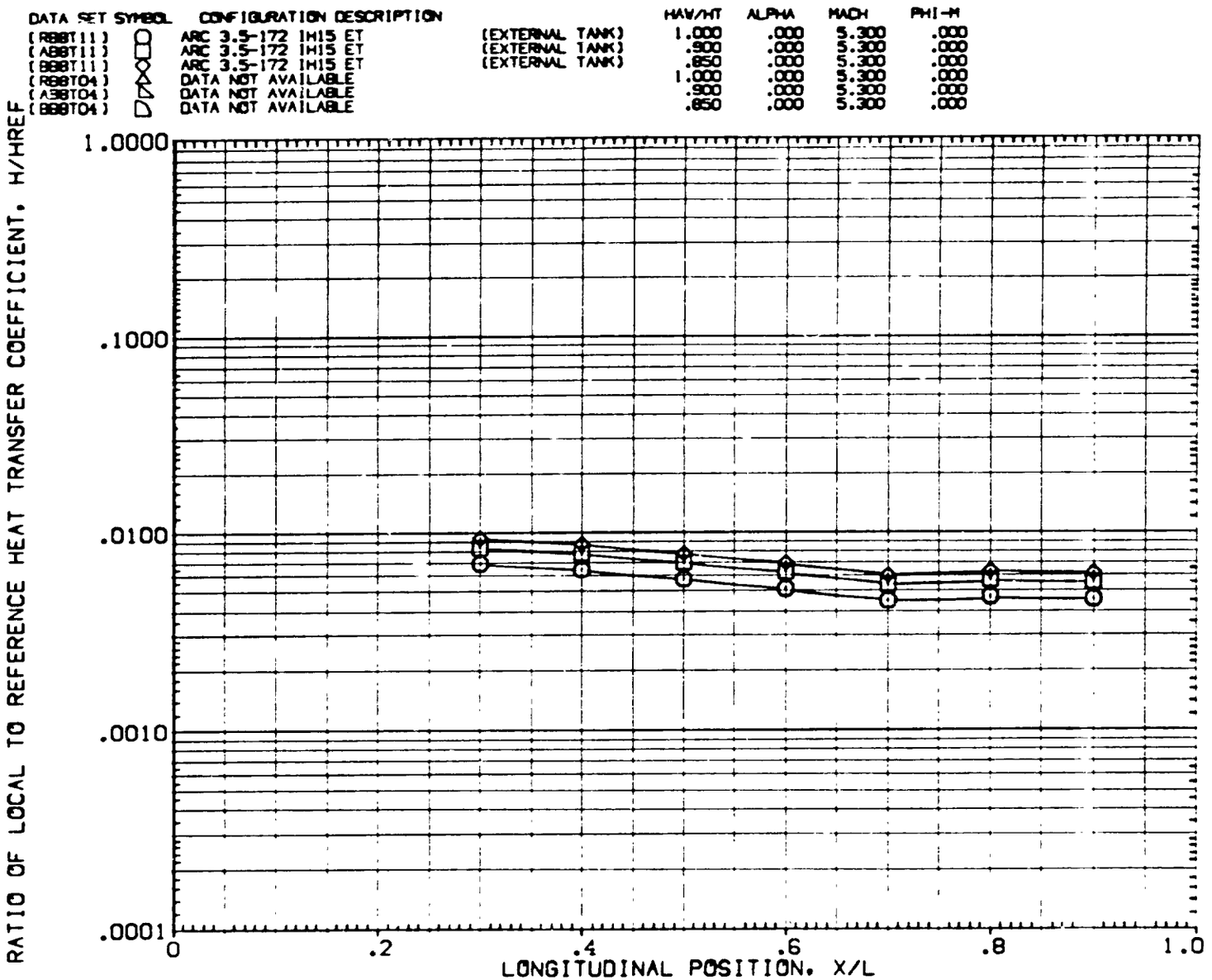


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 67.500

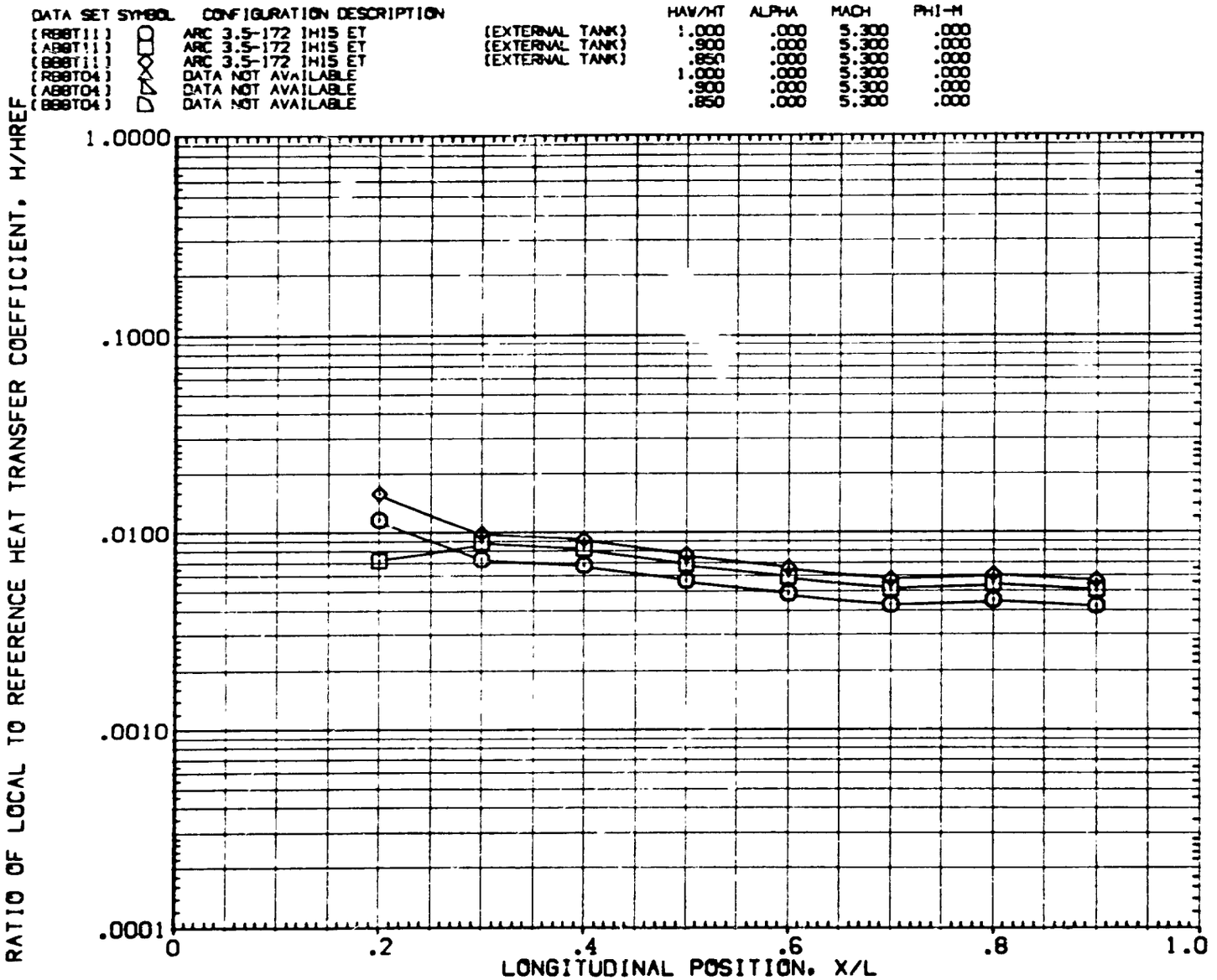


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 90.000

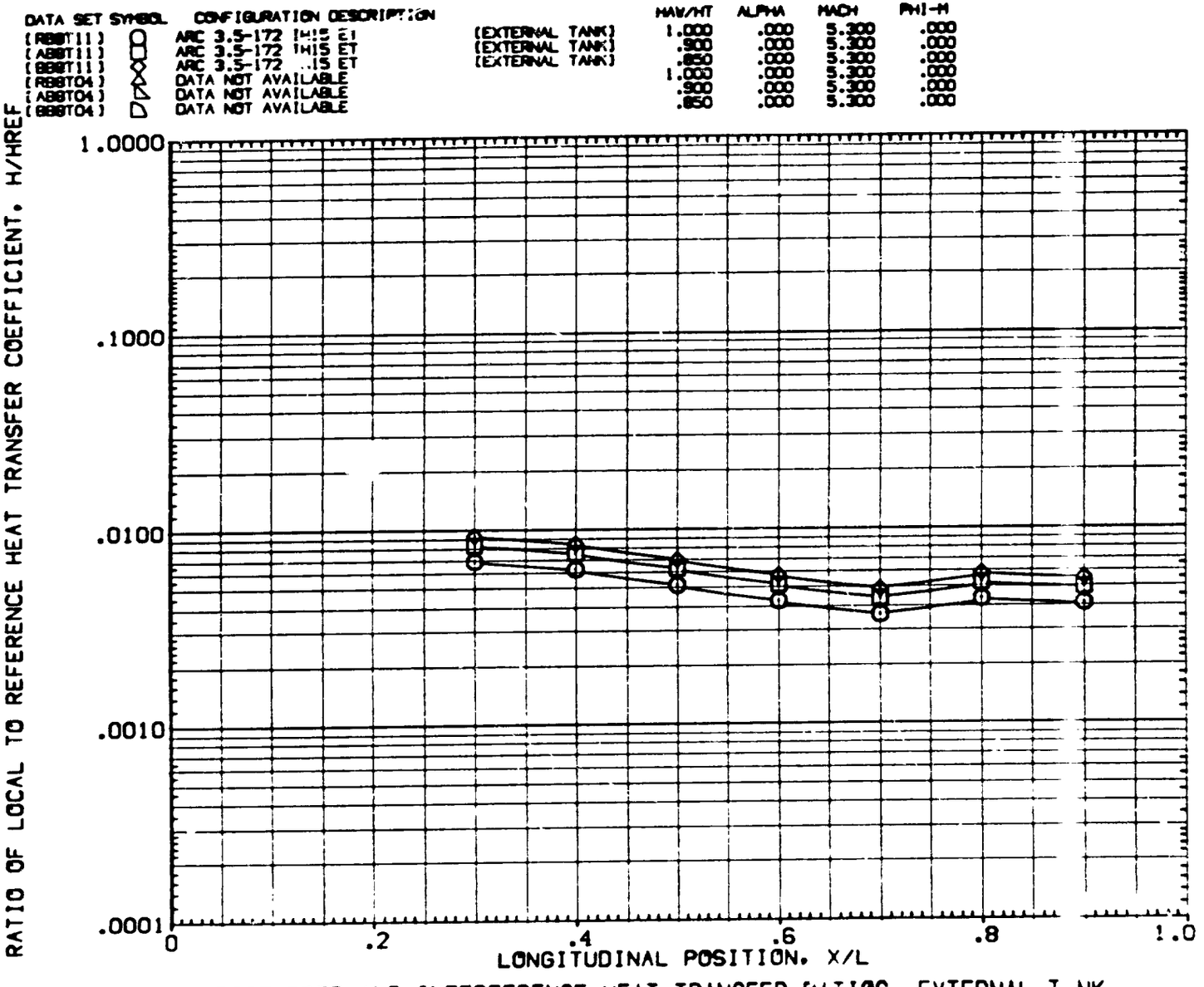


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 112.500

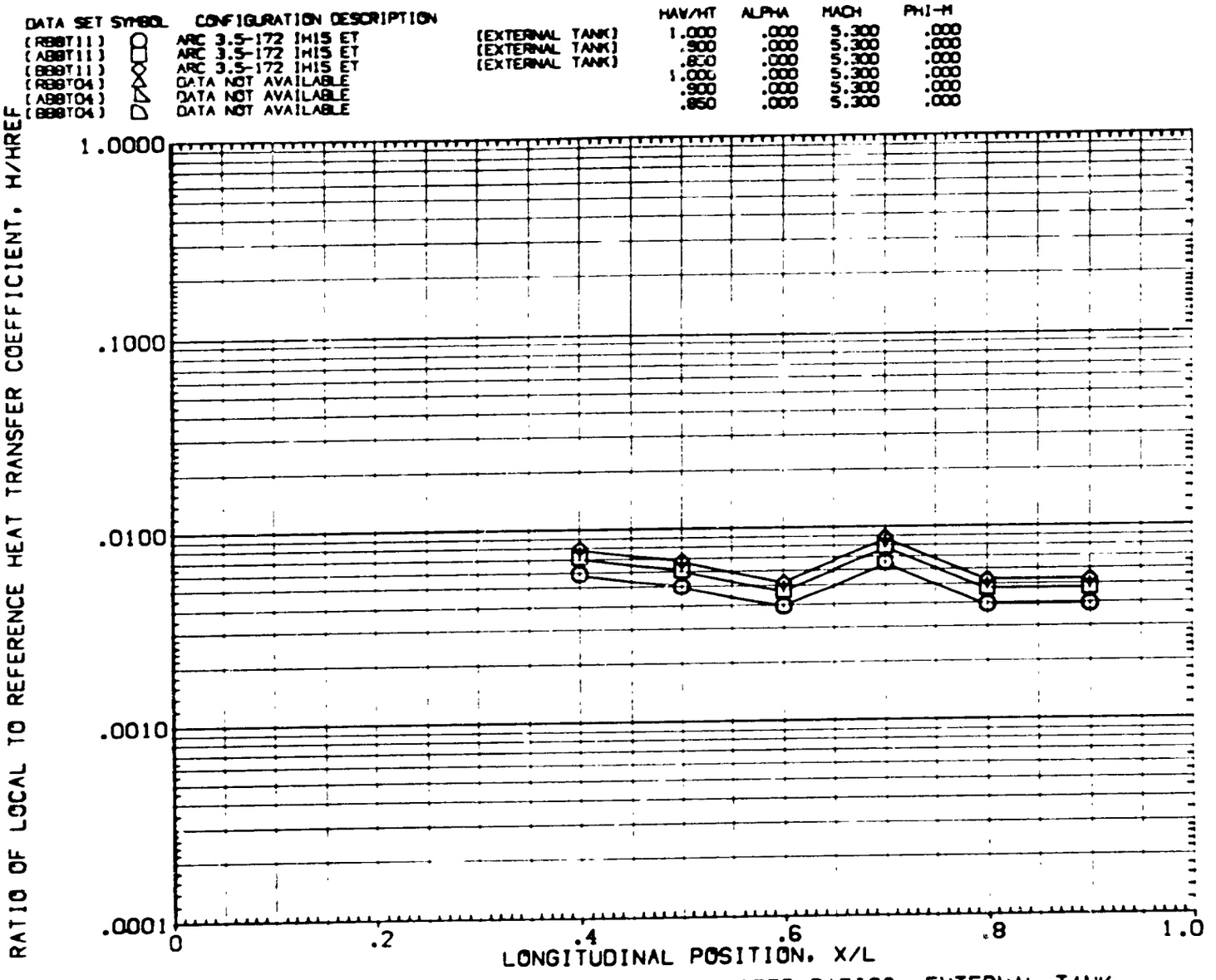


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 135.000

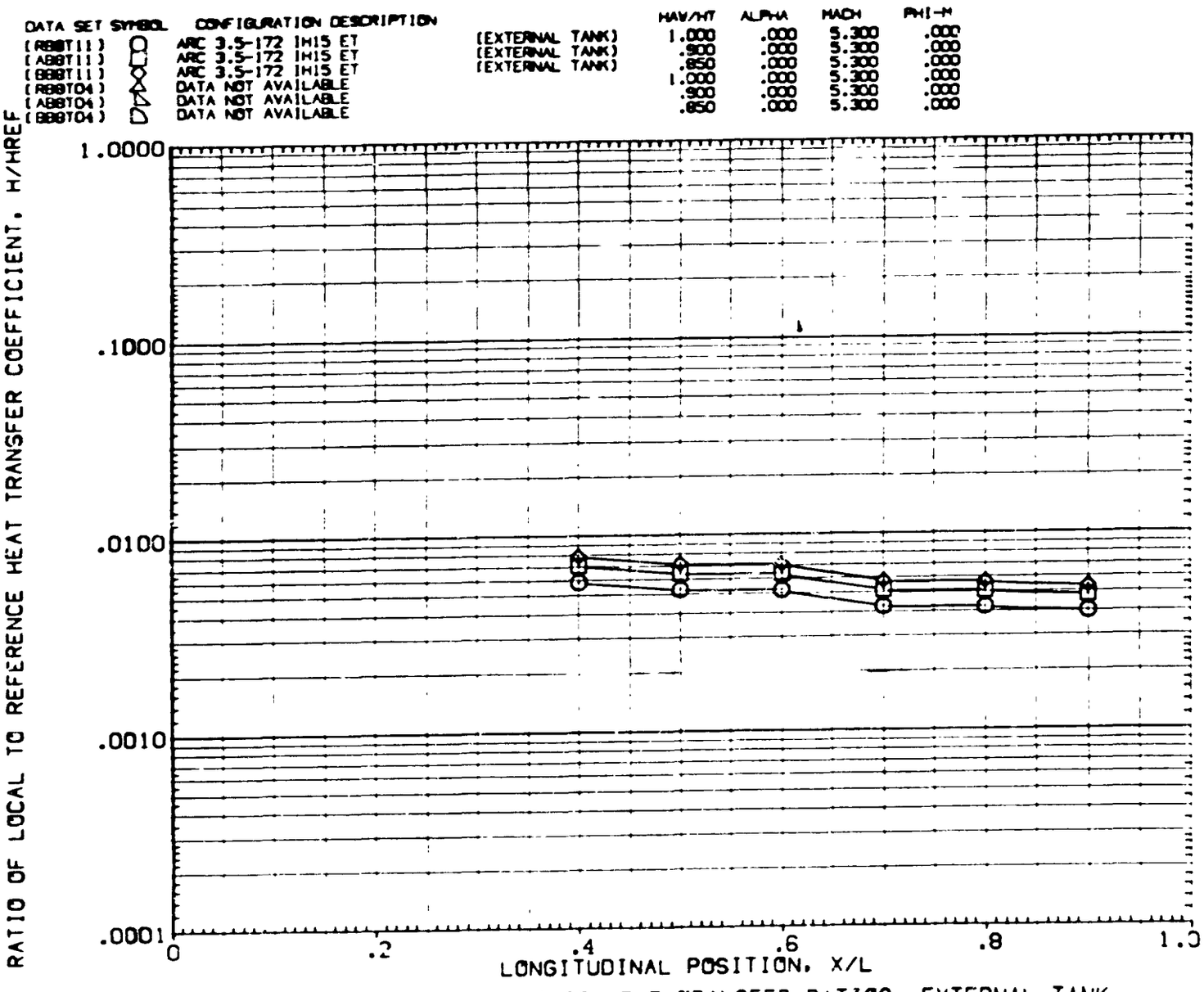


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 157.500

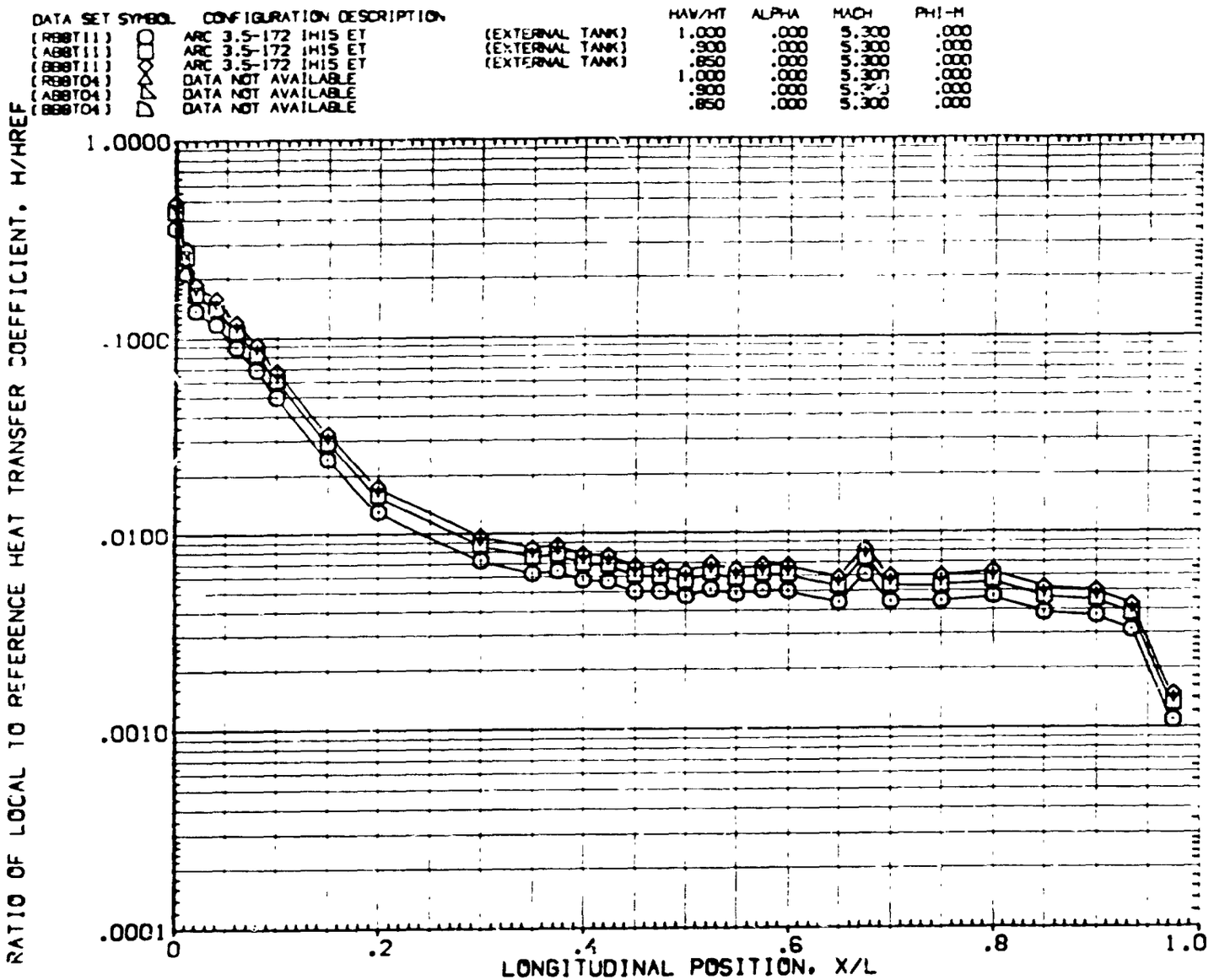


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 180.000

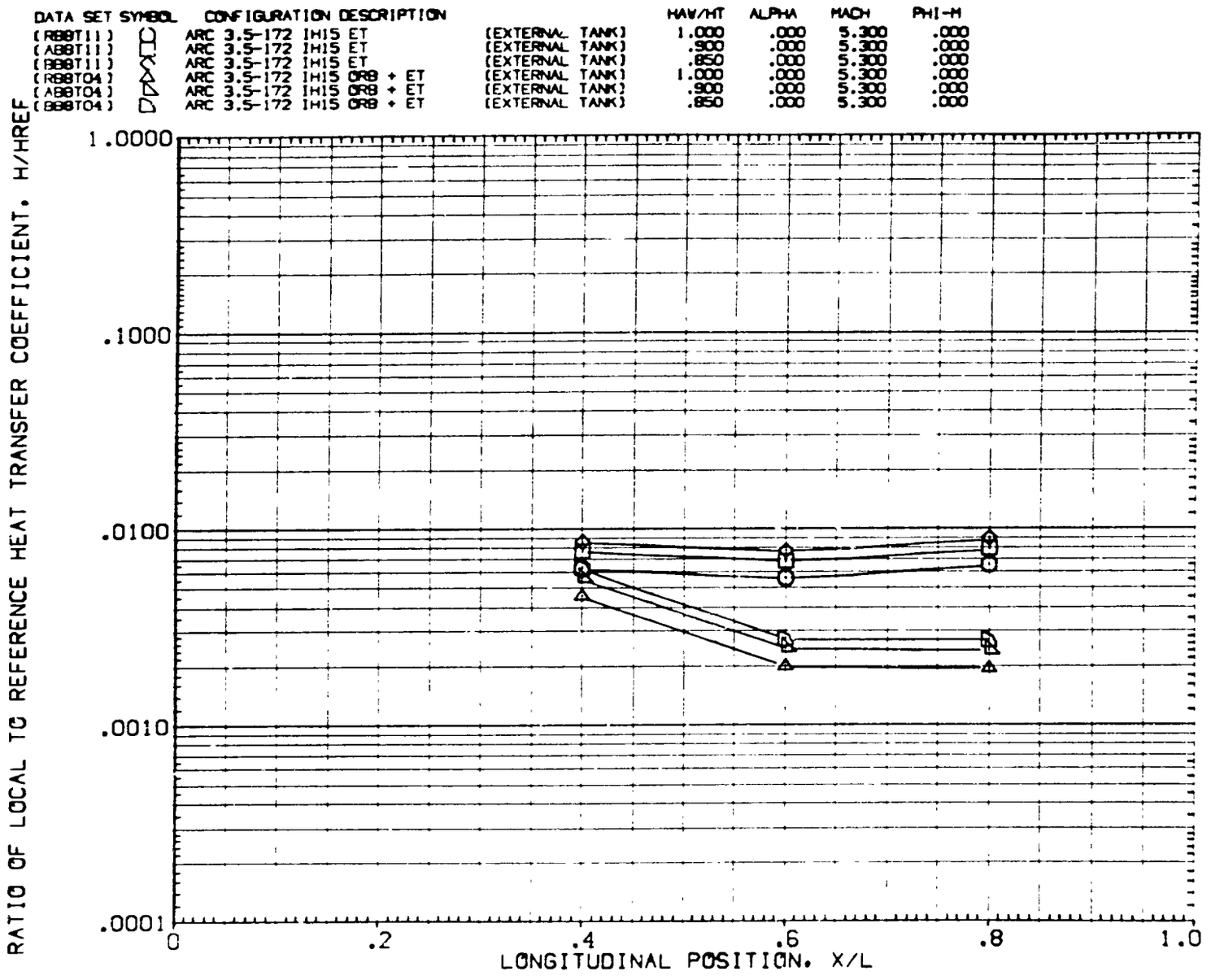


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = .000

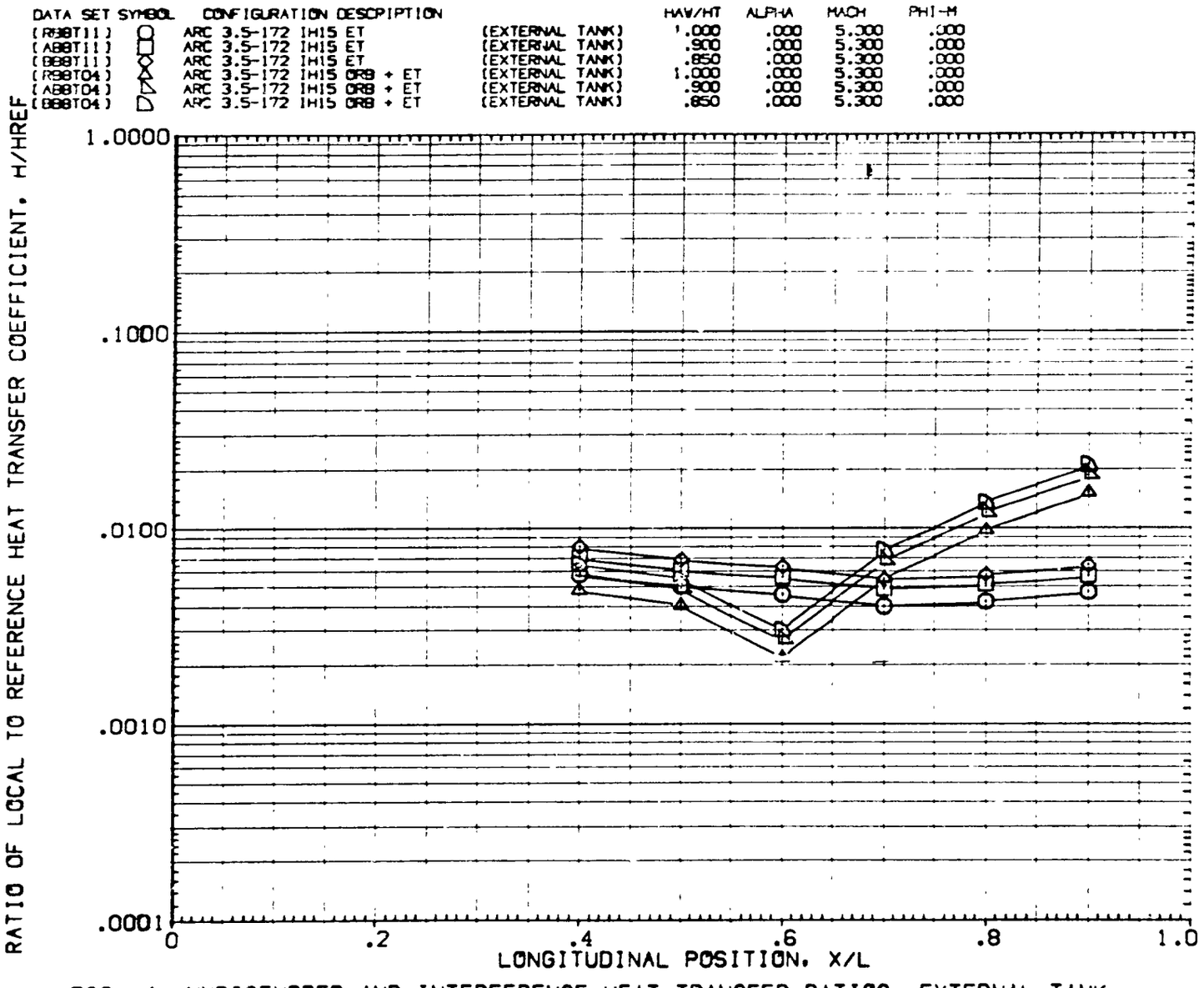


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 45.000 PAGE 10

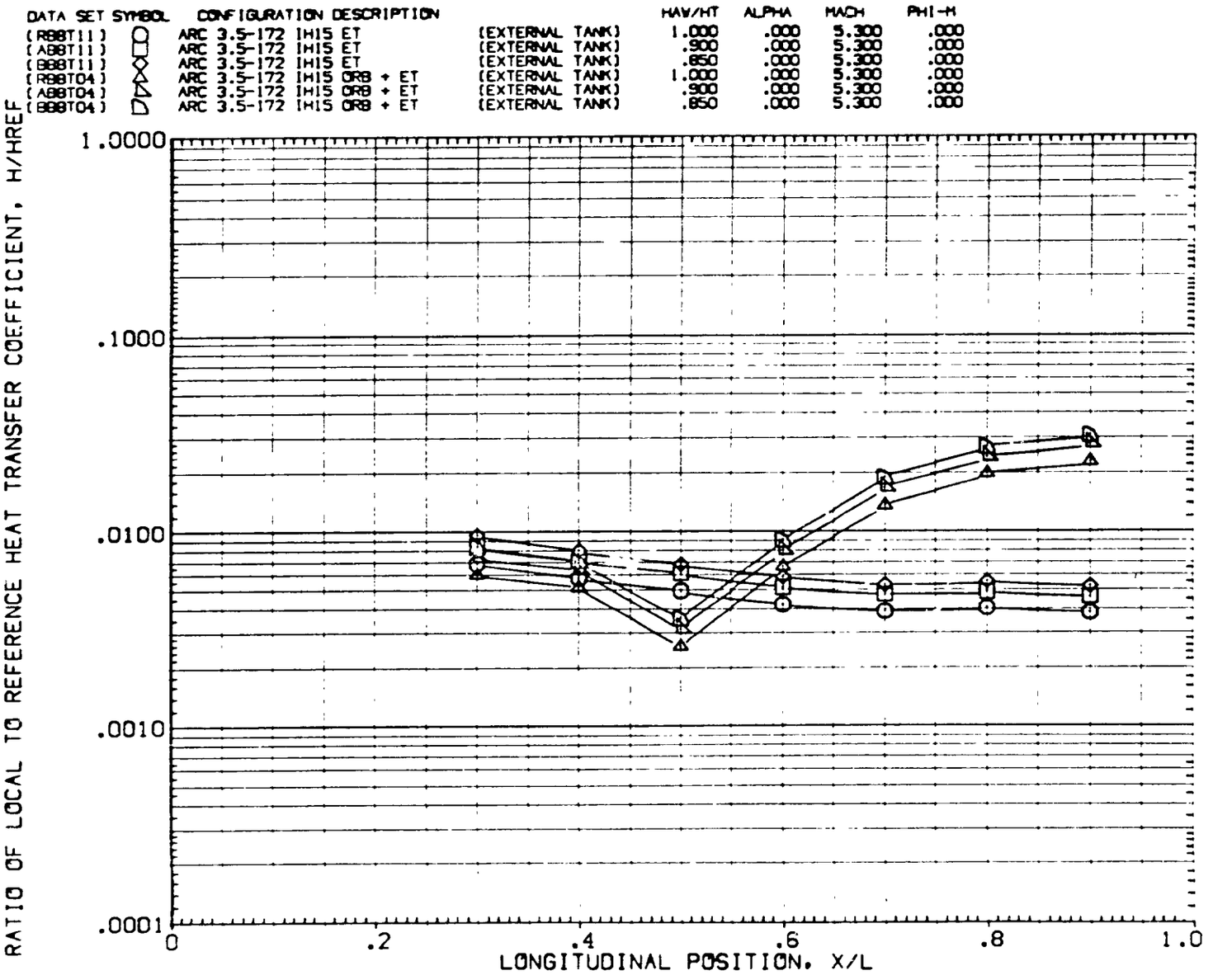


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 67.500

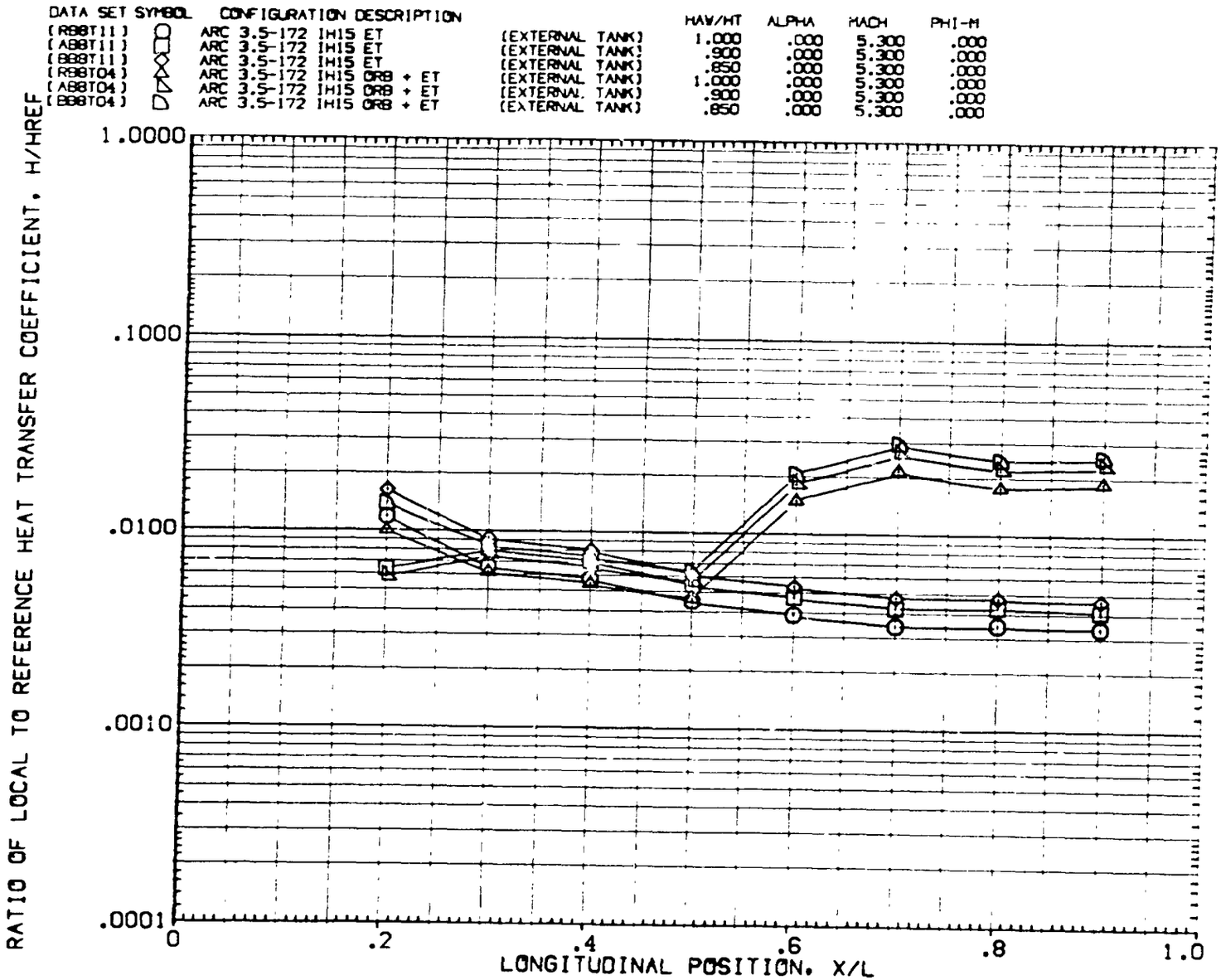


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 90.000

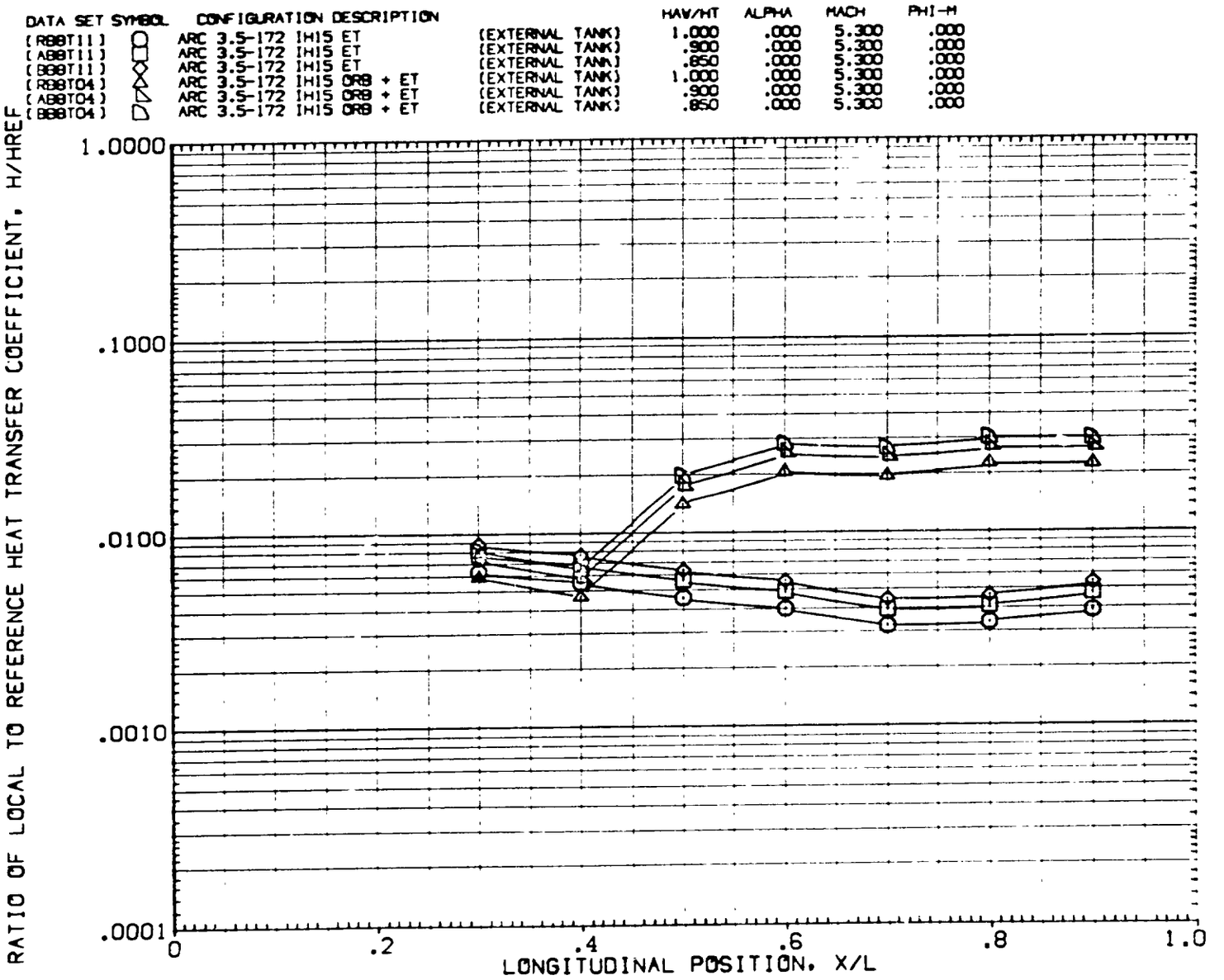


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 112.500

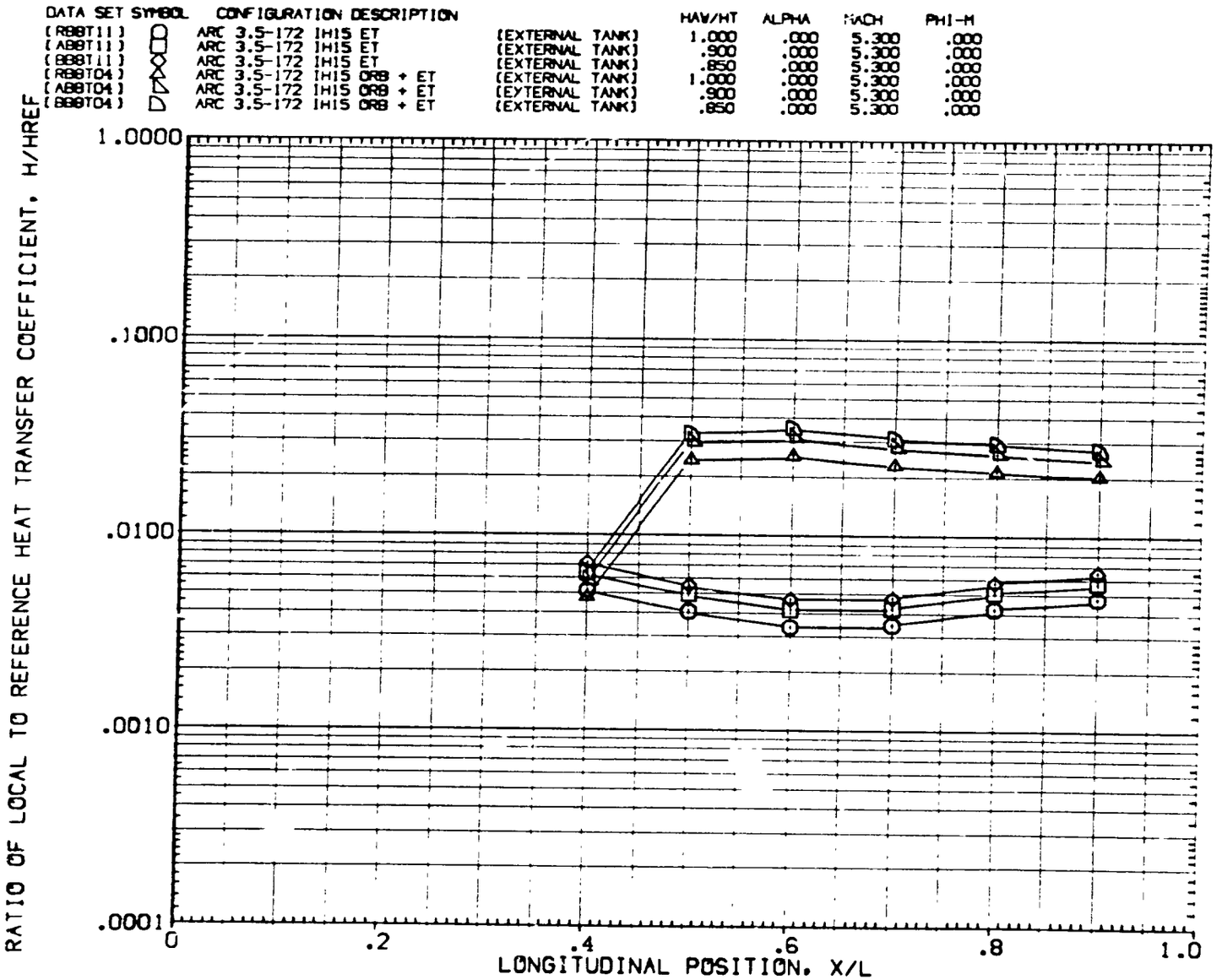


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 135.000

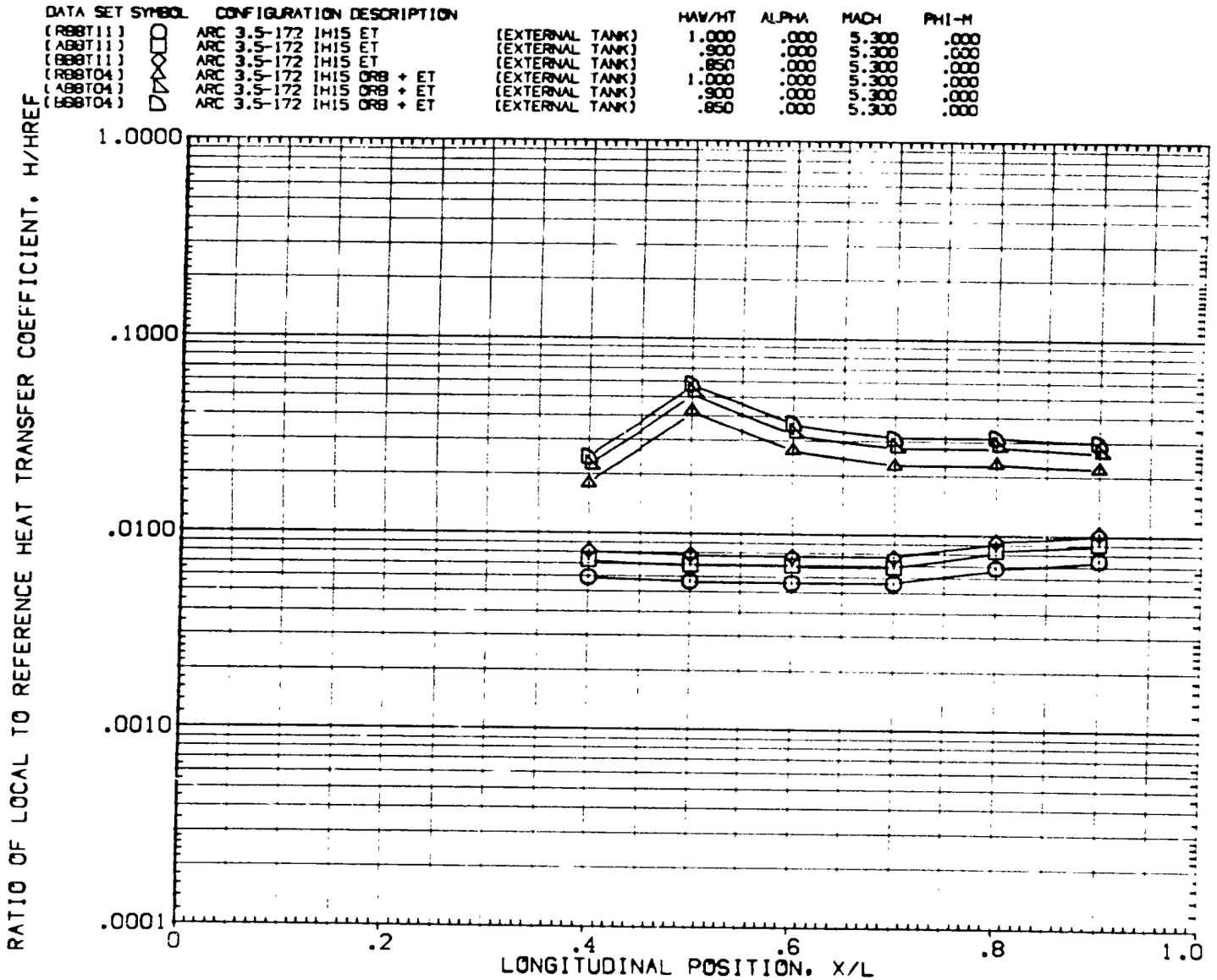


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 157.500

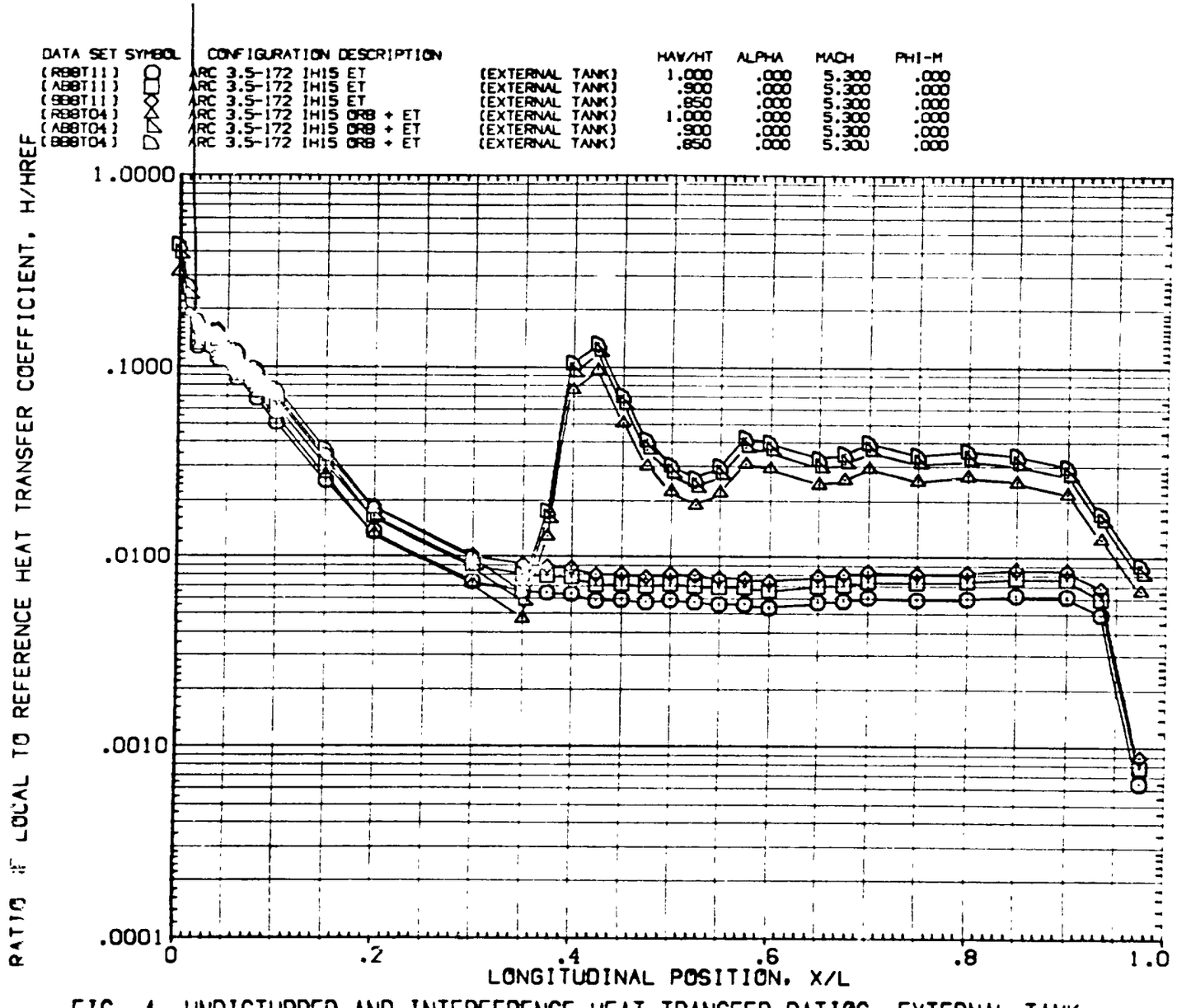


FIG. 4 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(DBBT04)	○	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBT04)	□	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(FBBT04)	◇	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

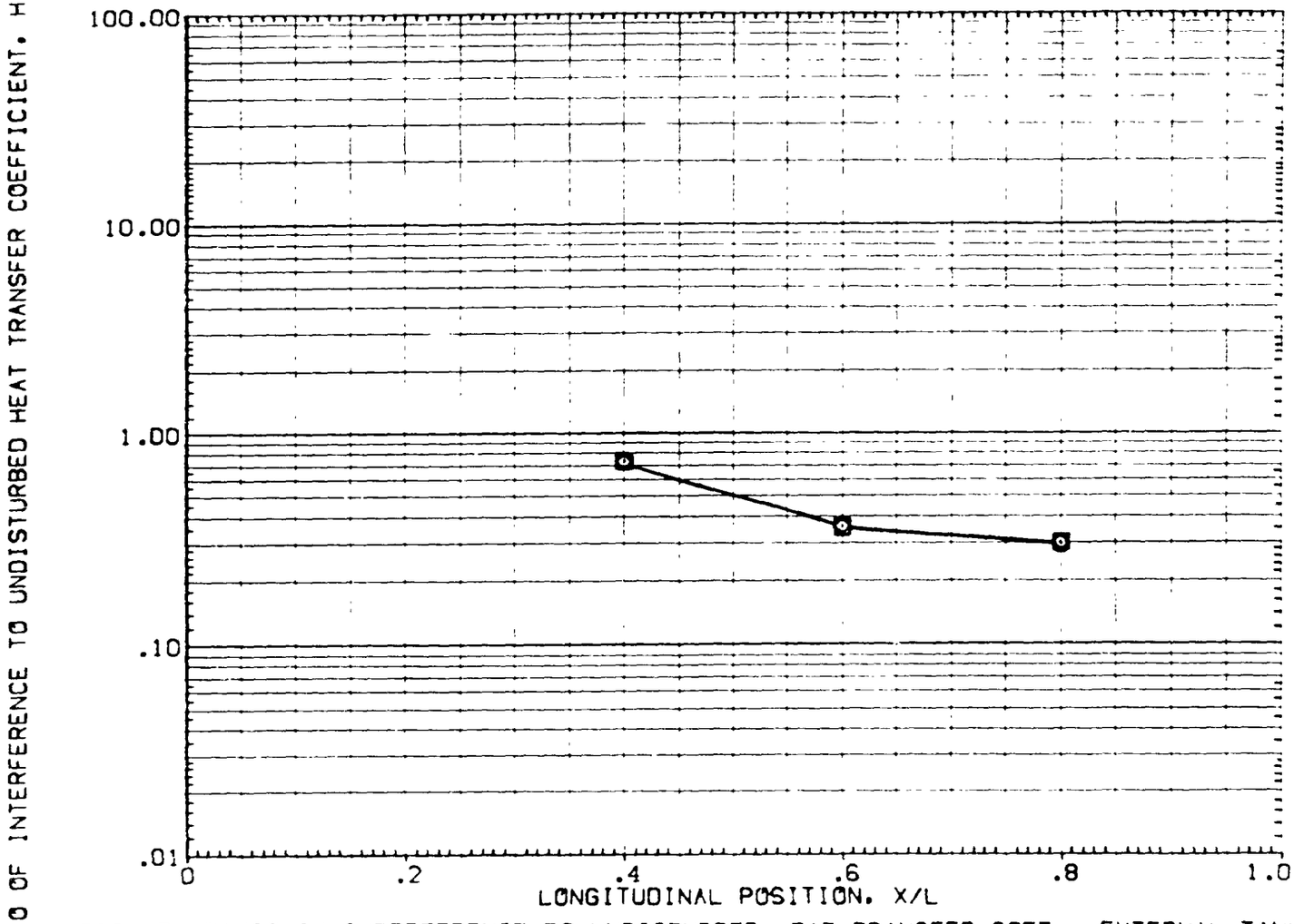


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 MACH = 5.300 PHI = .000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(DB8T04) ○	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(EF3T04) □	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(F.8T04) ◇	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

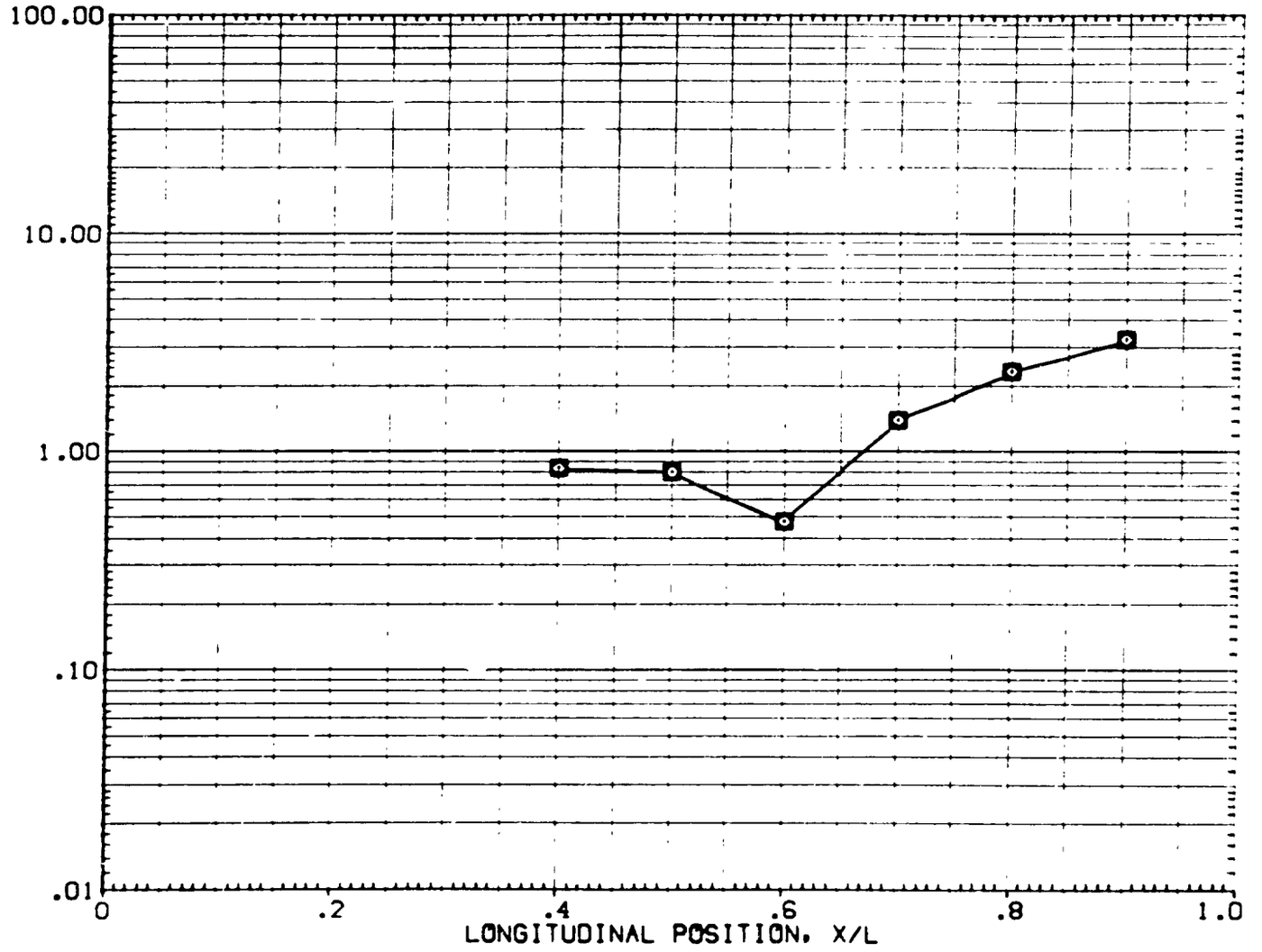


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 MACH = 5.300 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAV/HT	ALPHA	MACH	PHI-M
(DBBTO4)	○	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBTO4)	□	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(FBBTO4)	◇	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

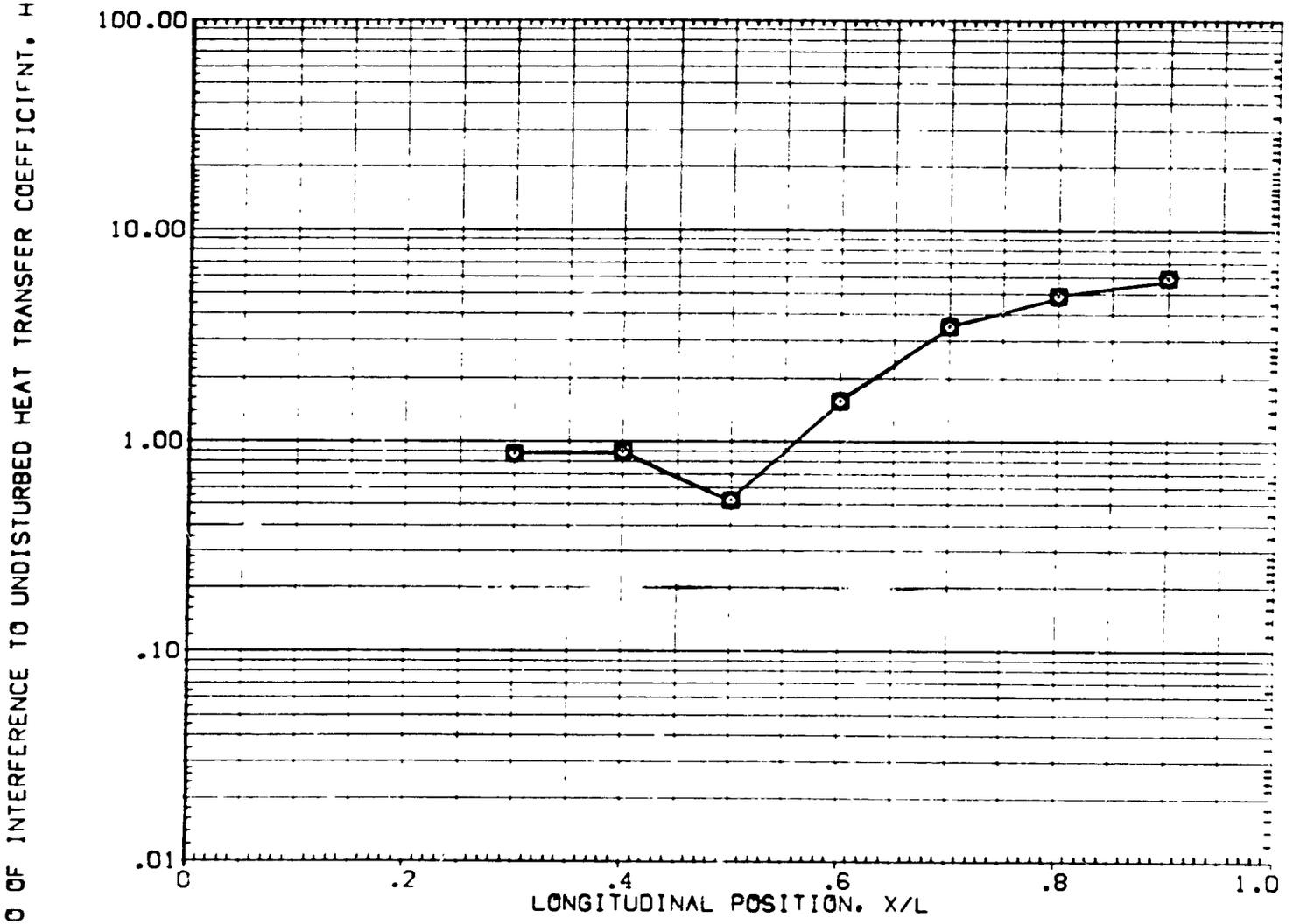


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 [illegible] = 5.300 PHI = 67.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION		MAV/HT	ALPHA	MACH	PHI-M
(DBBTO4)	ARC 3.5-172 IHI5 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBTO4)	ARC 3.5-172 IHI5 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(FBBTO4)	ARC 3.5-172 IHI5 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

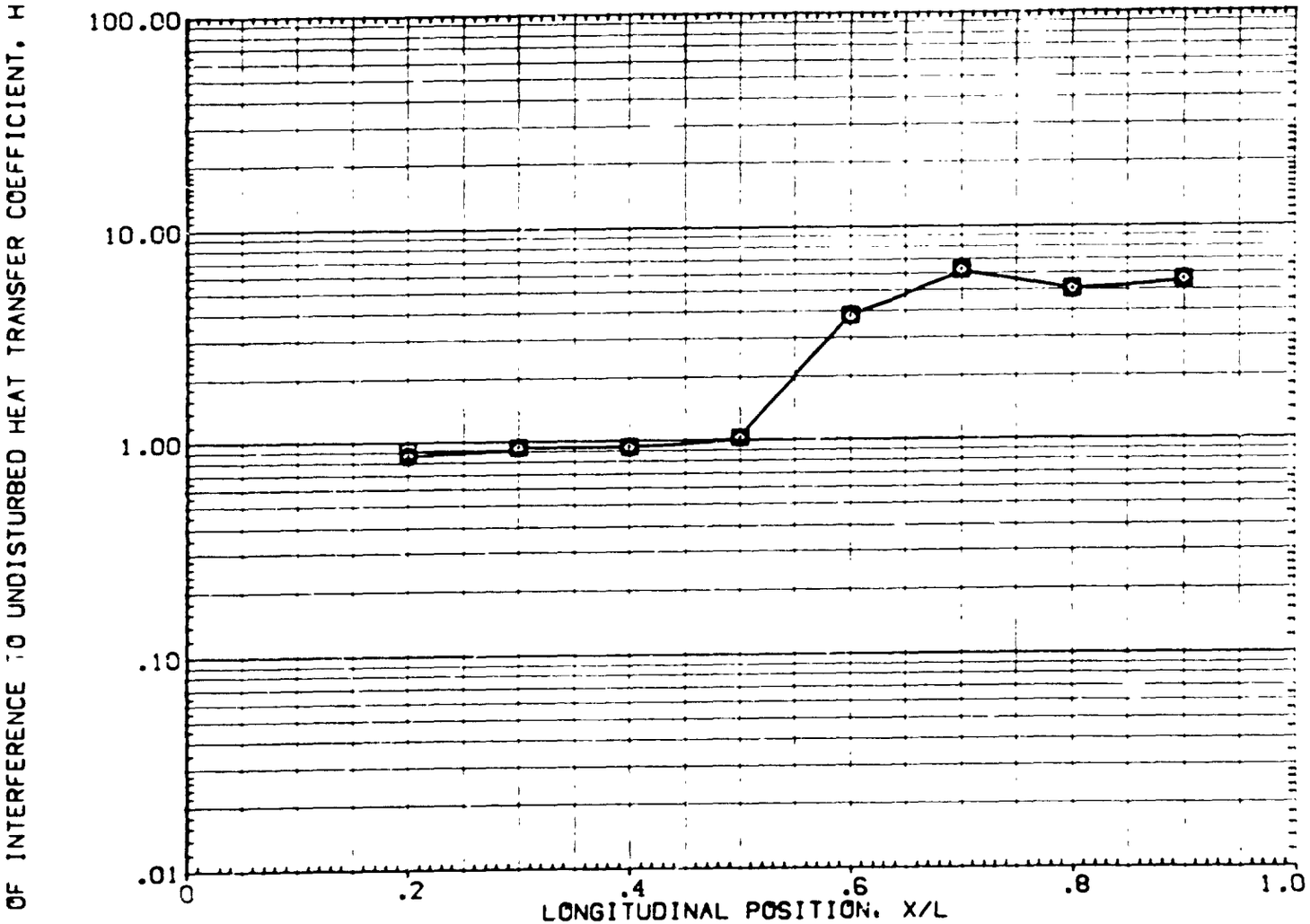


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

XSN/L = 4.781 MACH = 5.300 PHI = 90.000

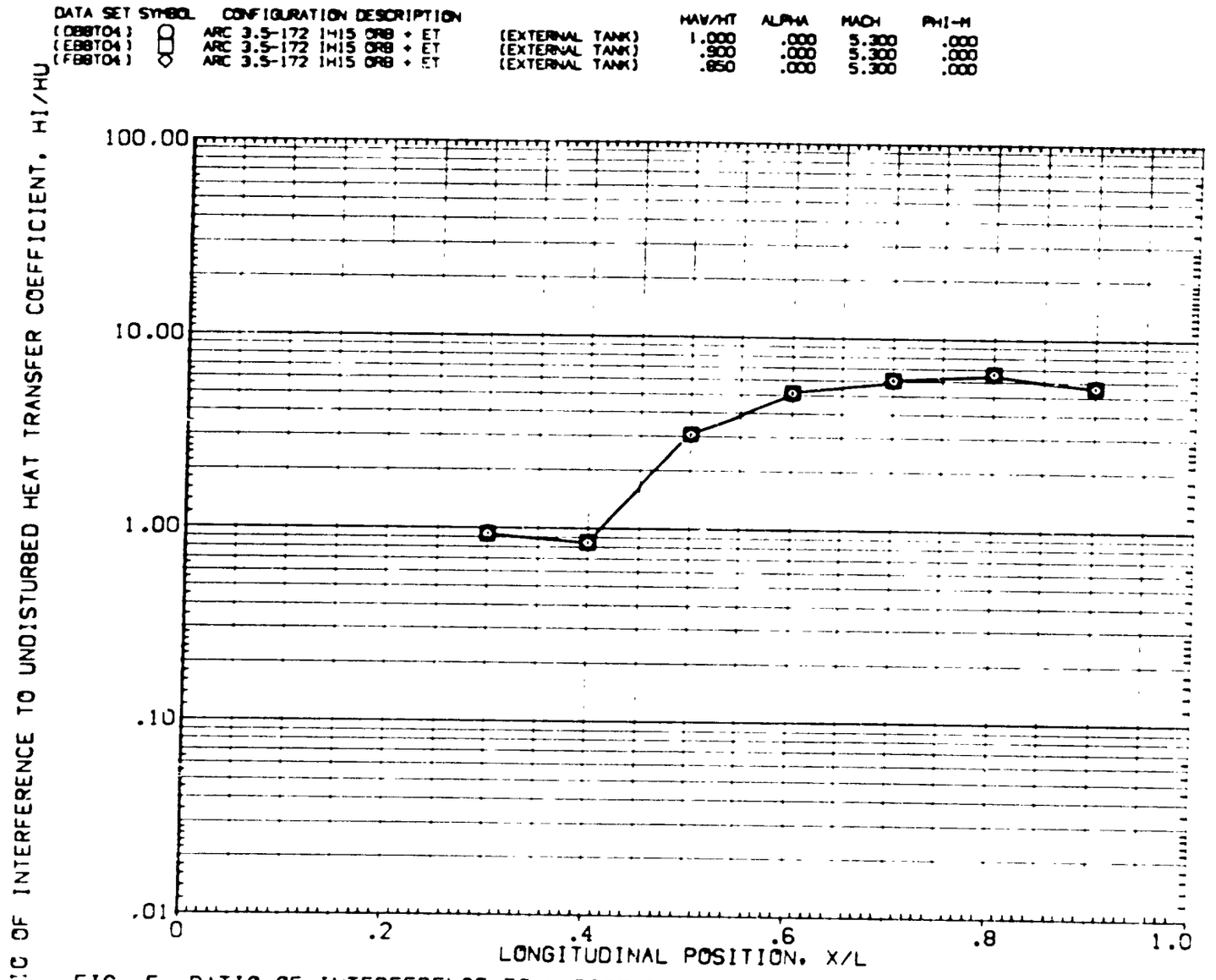


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 MACH = 5.300 PHI = 112.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAV/HT	ALPHA	MACH	PHI-H
(DBBTO4)	○	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBTO4)	□	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(FBBTO4)	◇	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

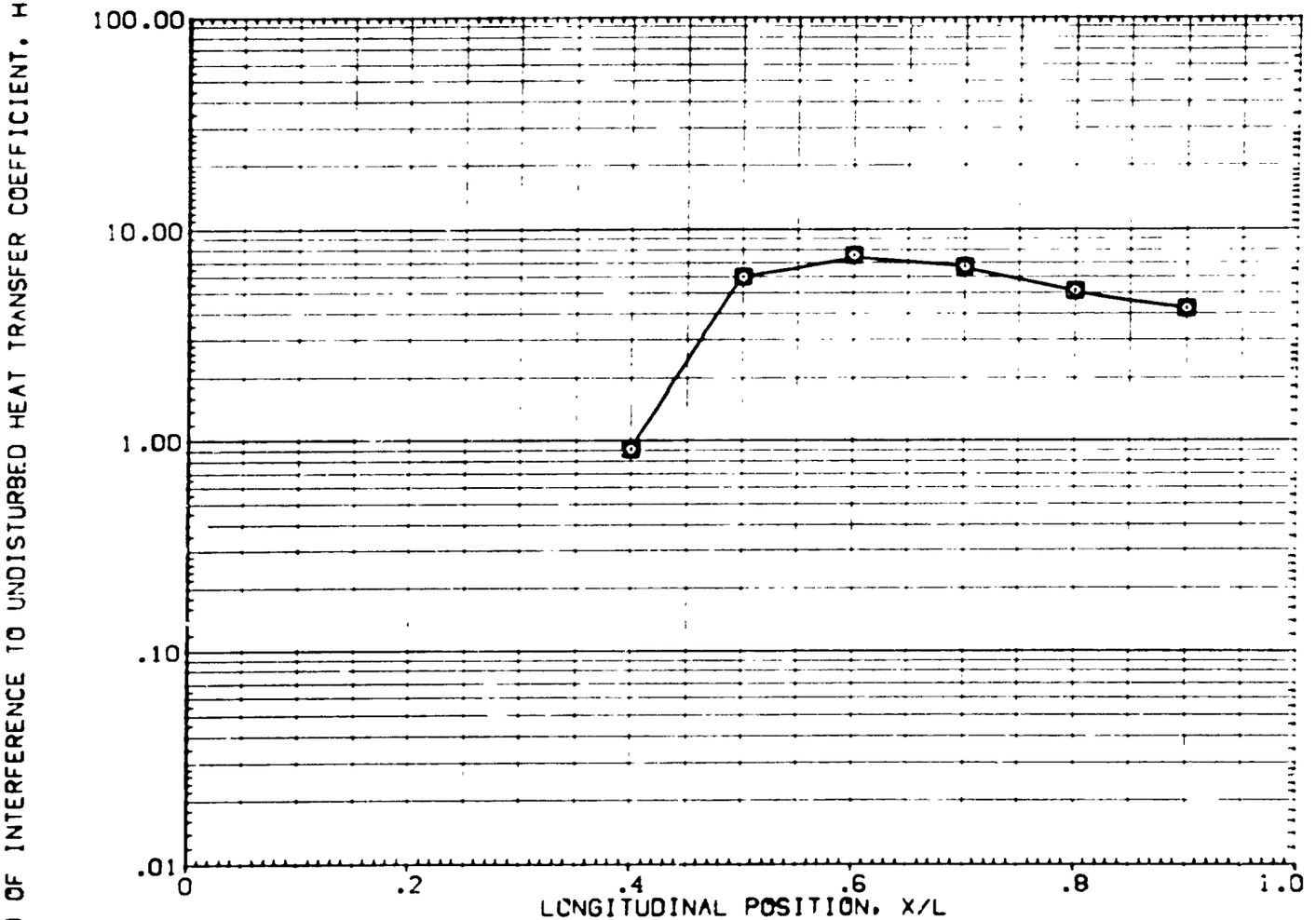


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 MACH = 5.300 PHI = 135.000

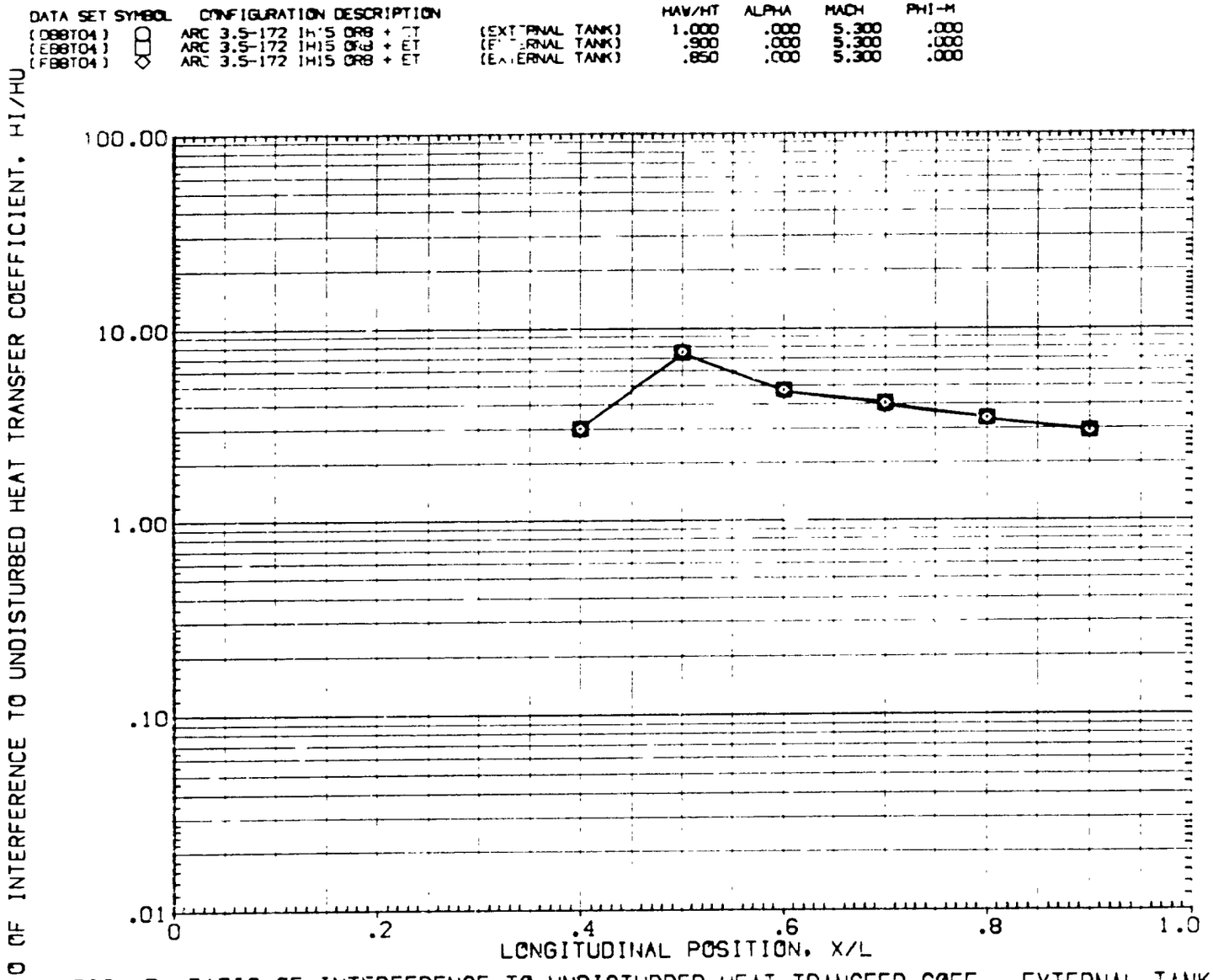


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 MACH = 5.300 PHI = 157.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(088T04)		ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(E88T04)		ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(F88T04)		ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

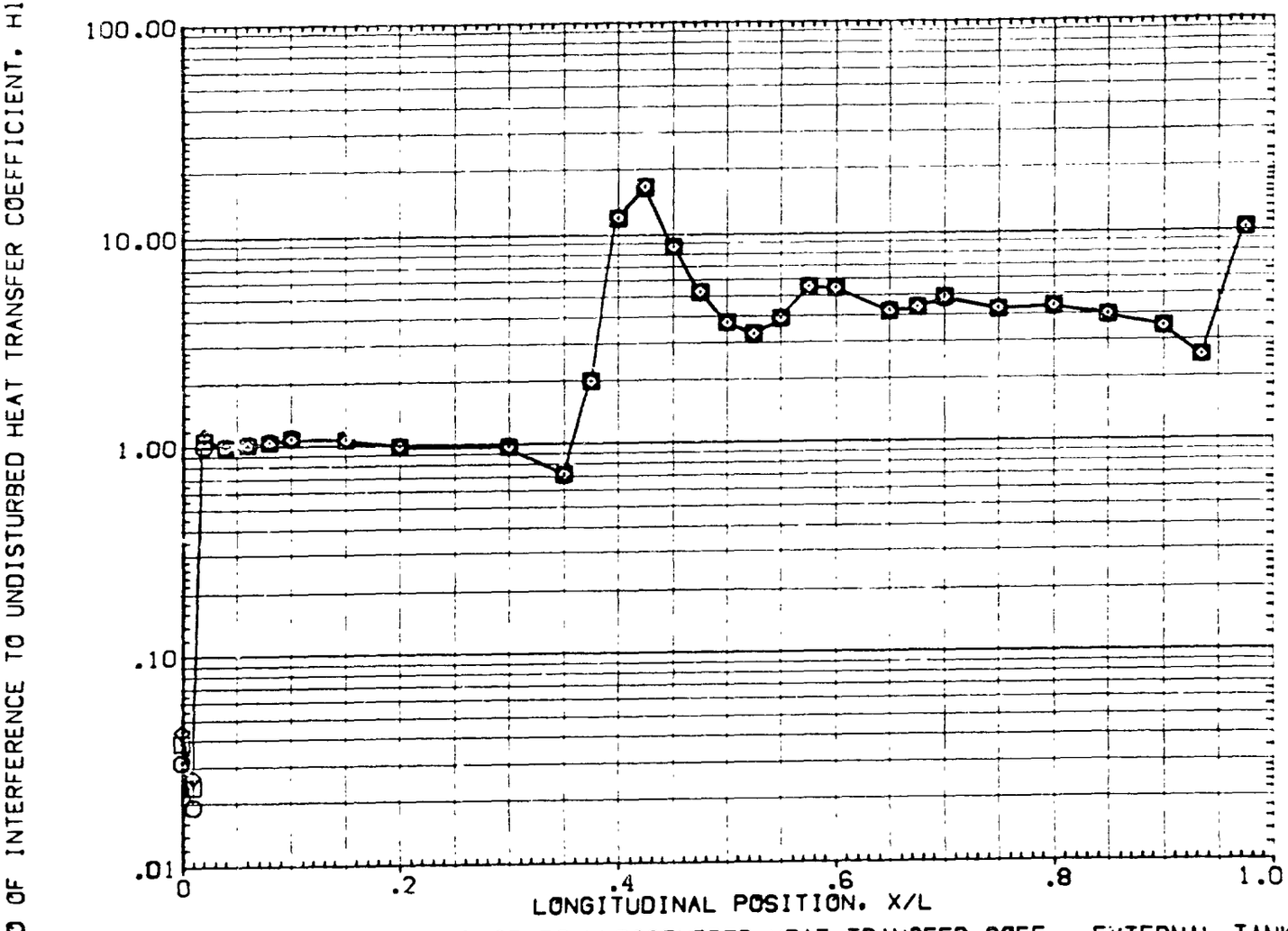


FIG. 5 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.781 MACH = 5.300 PHI = 180.000

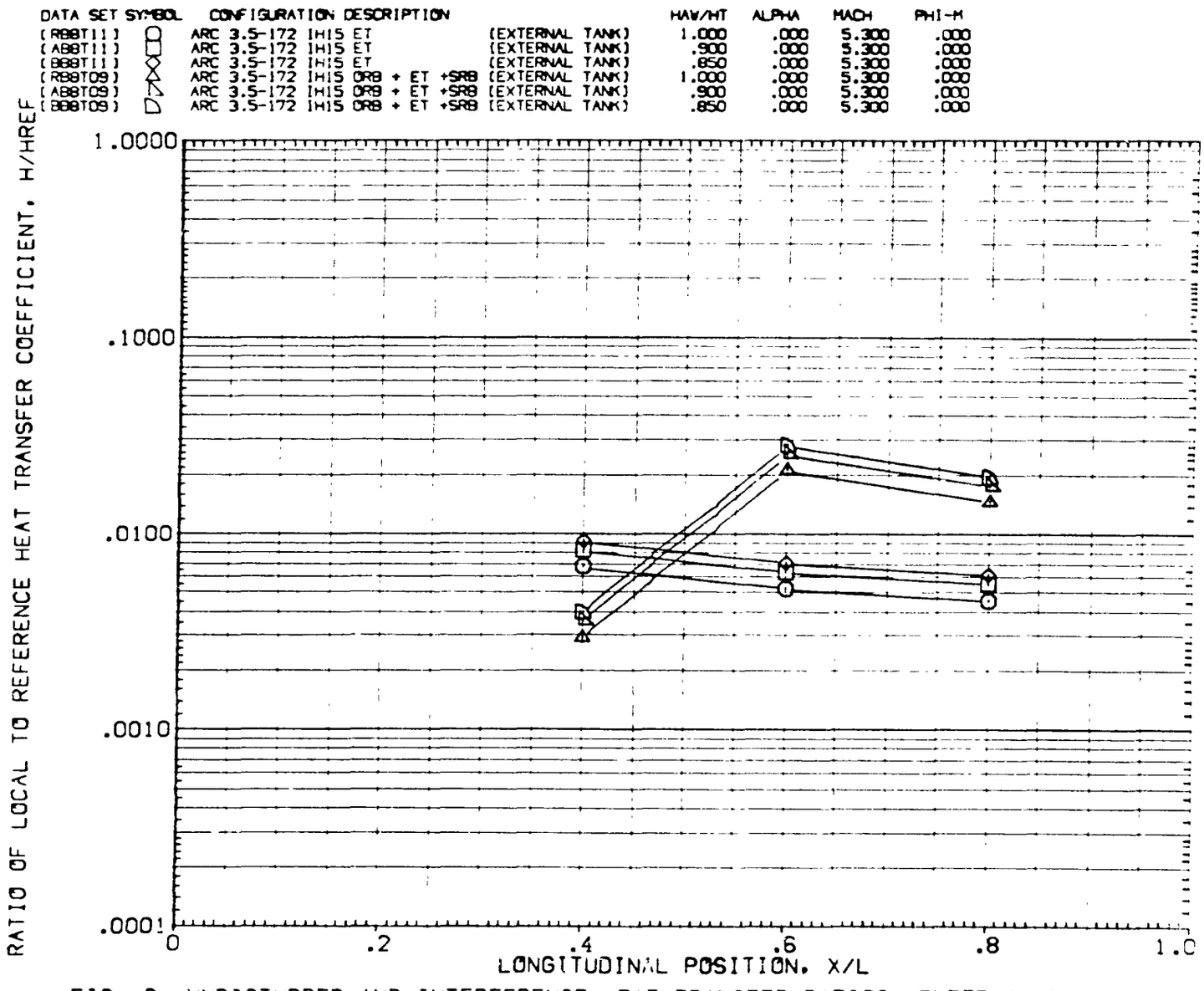


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MAC = 5.300 PHI = .000

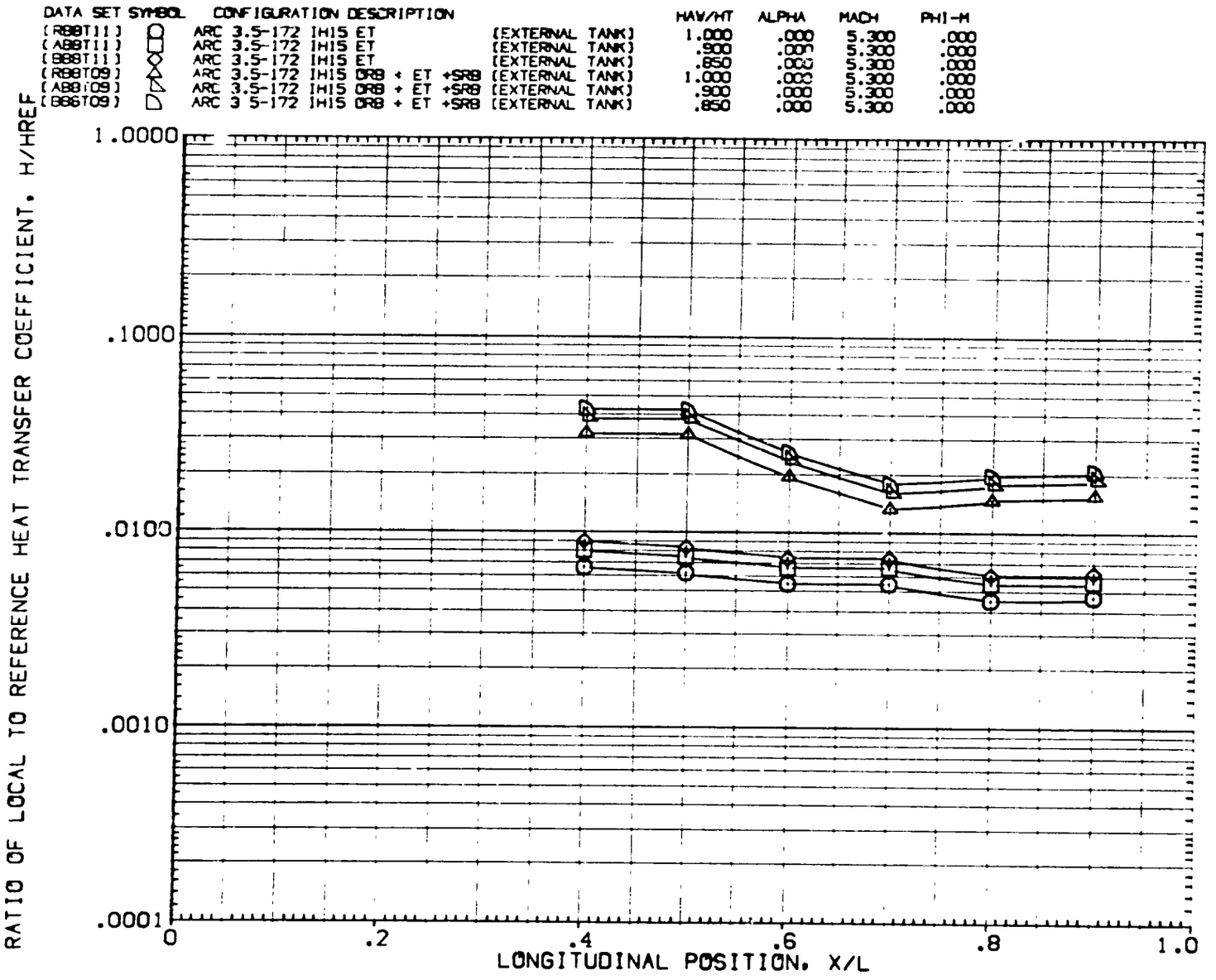


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 45.000

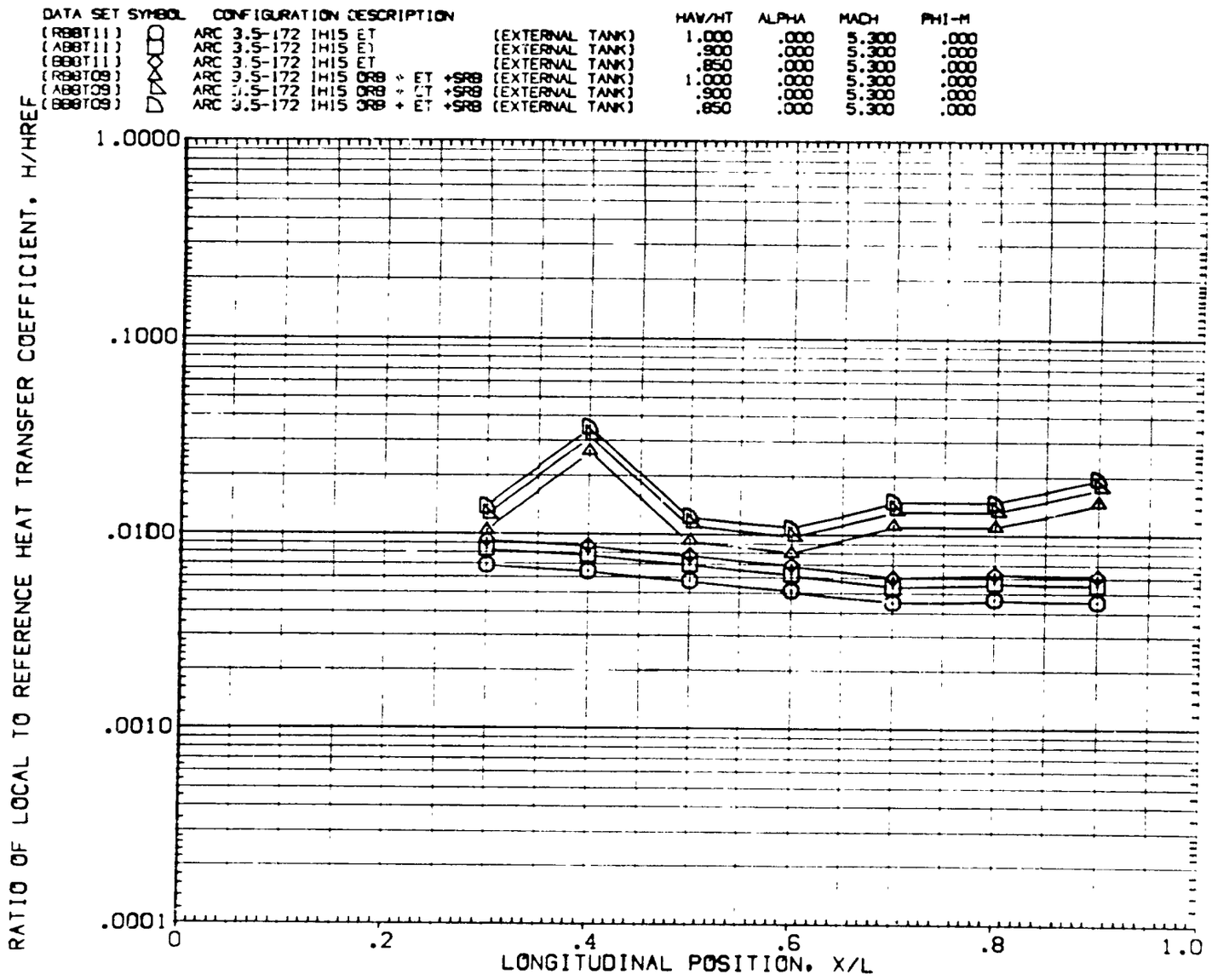


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 67.500

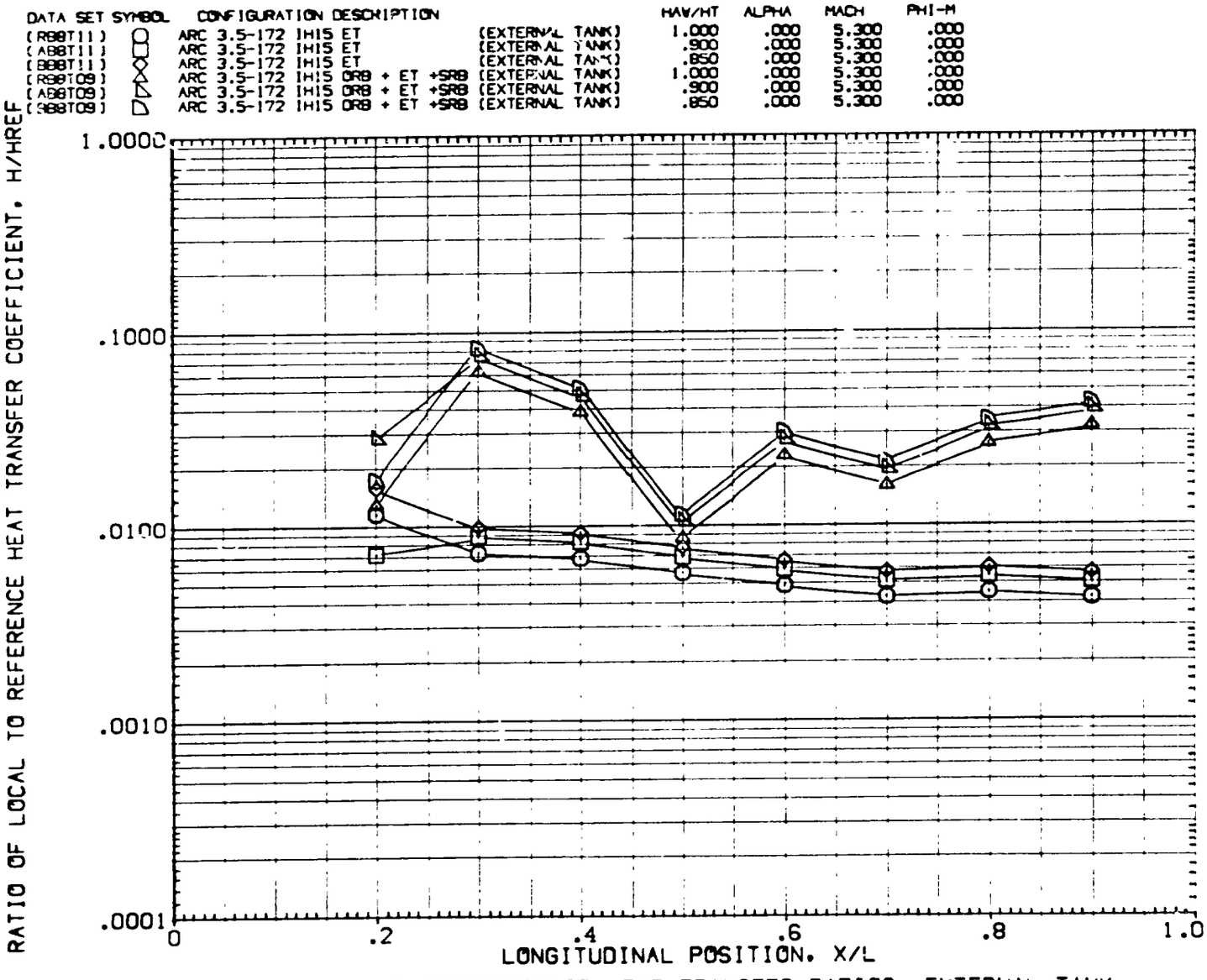


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 90.000

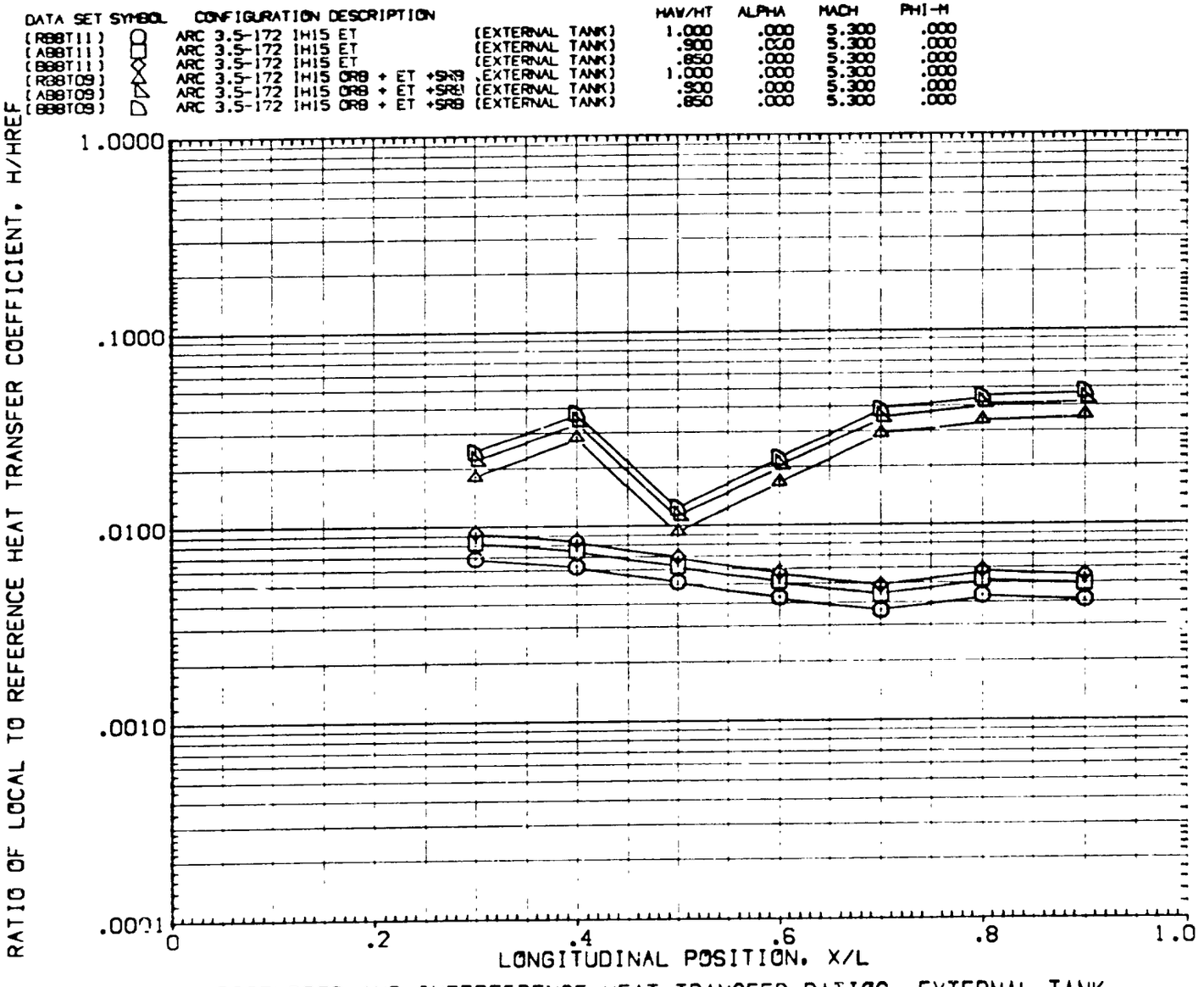


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 112.500

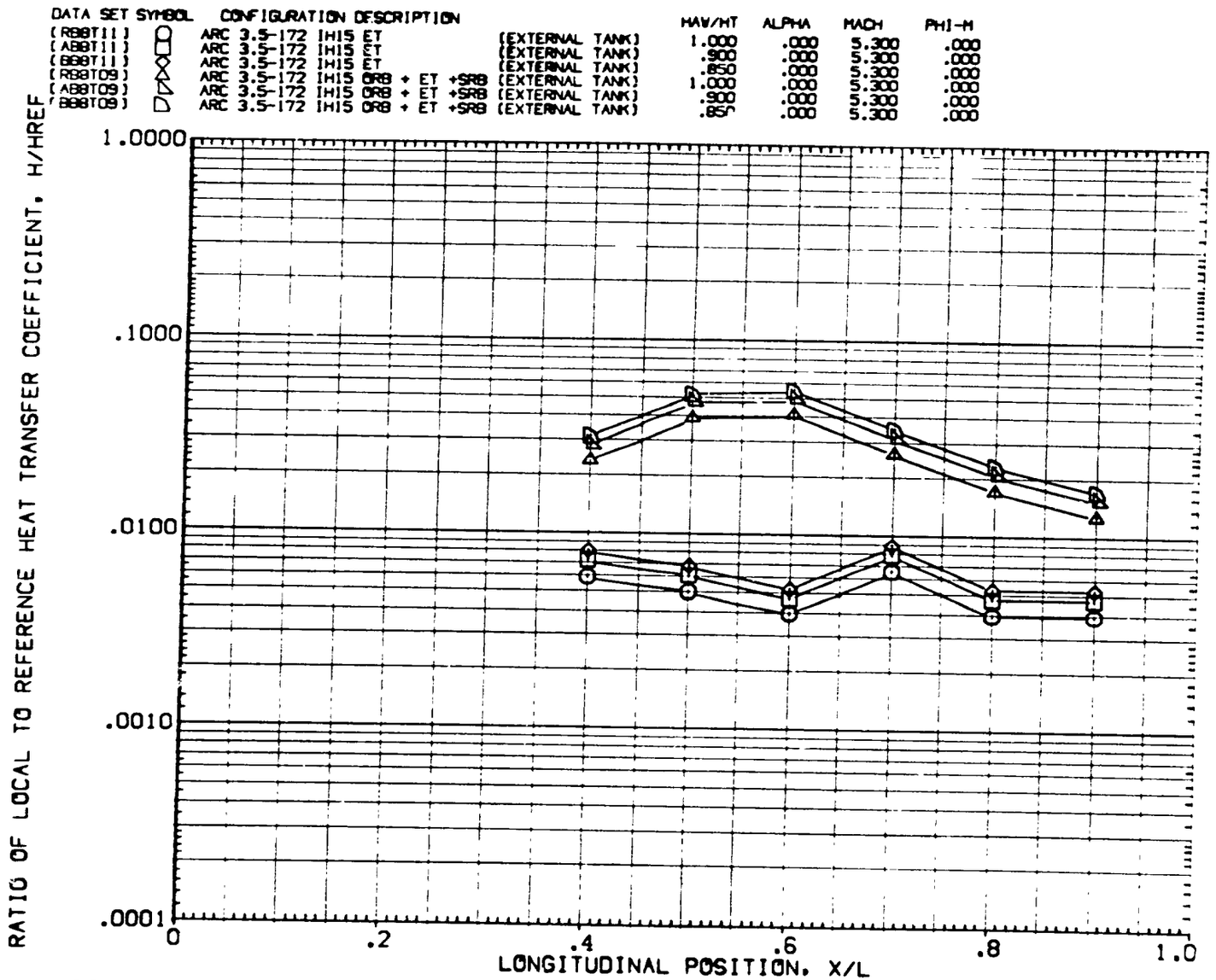


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 135.000

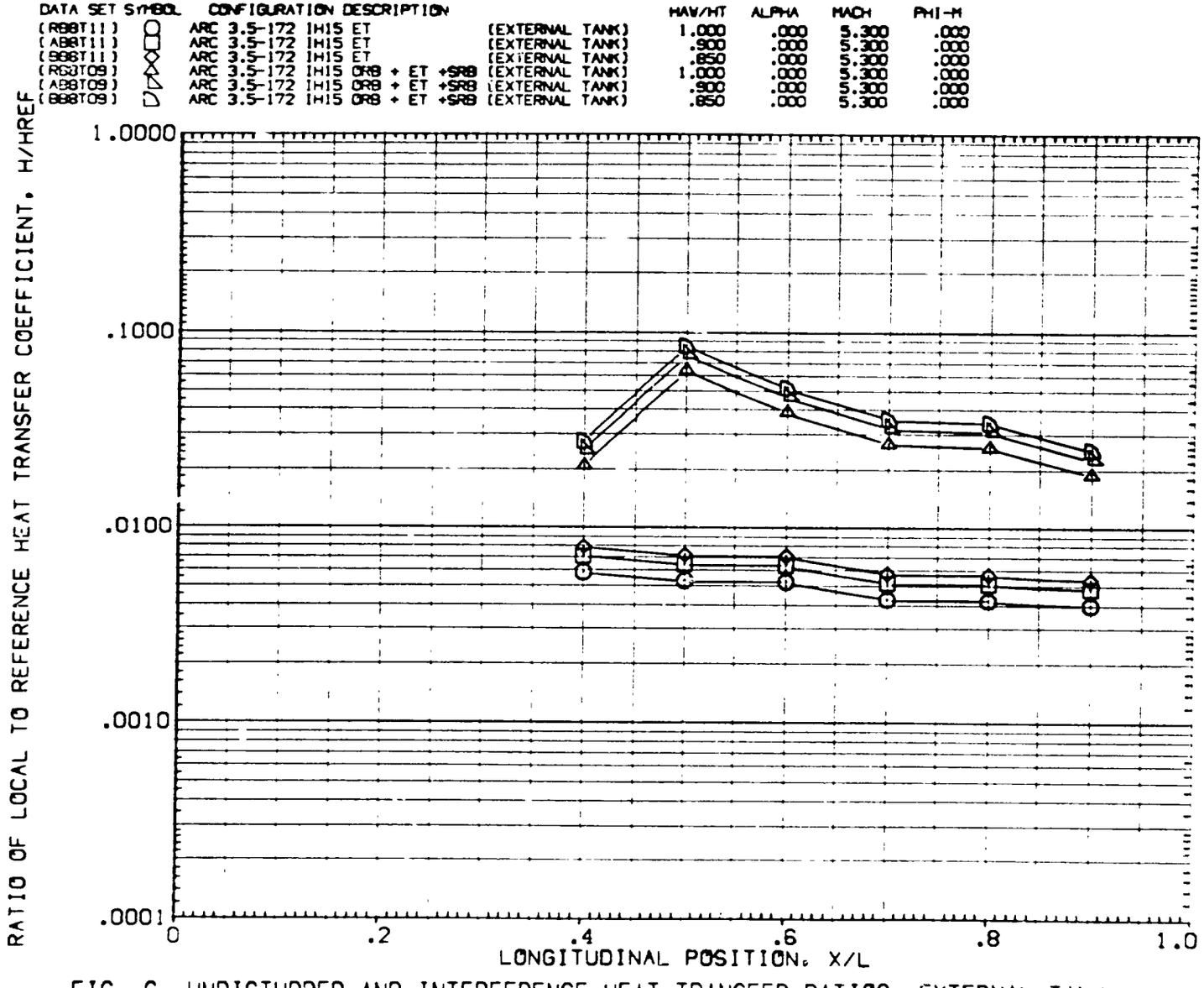


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 157.500

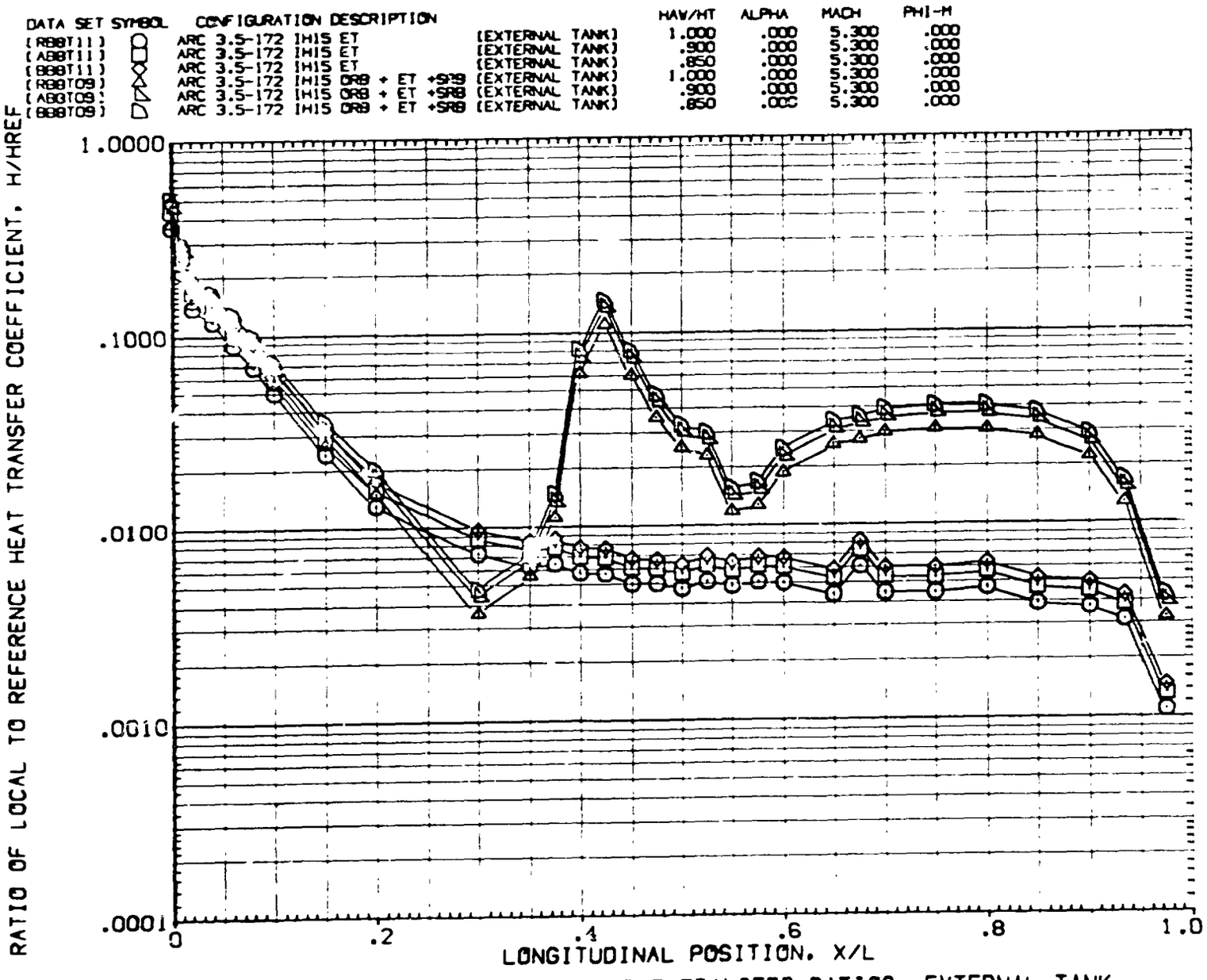


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.982 MACH = 5.300 PHI = 180.000

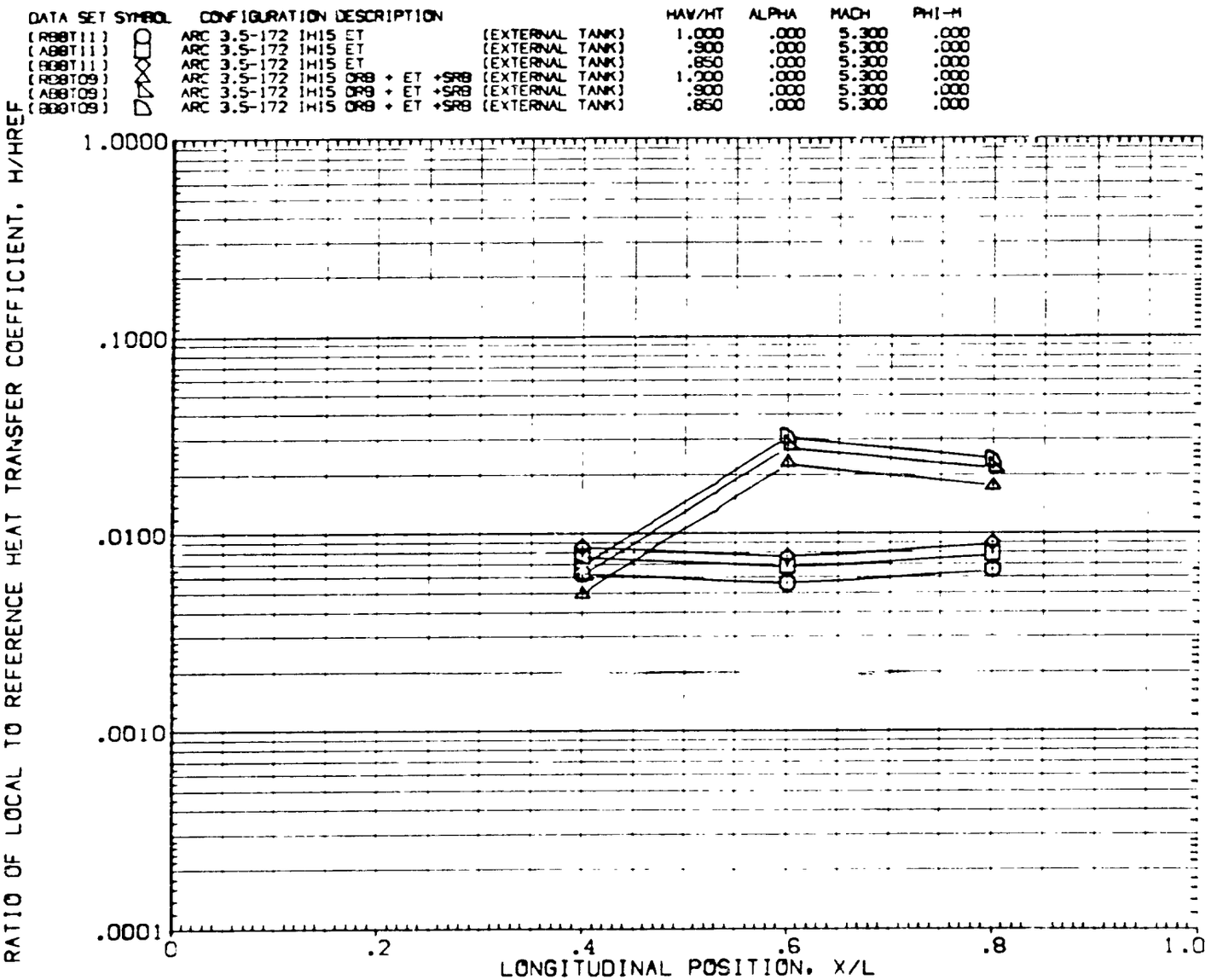


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = .000

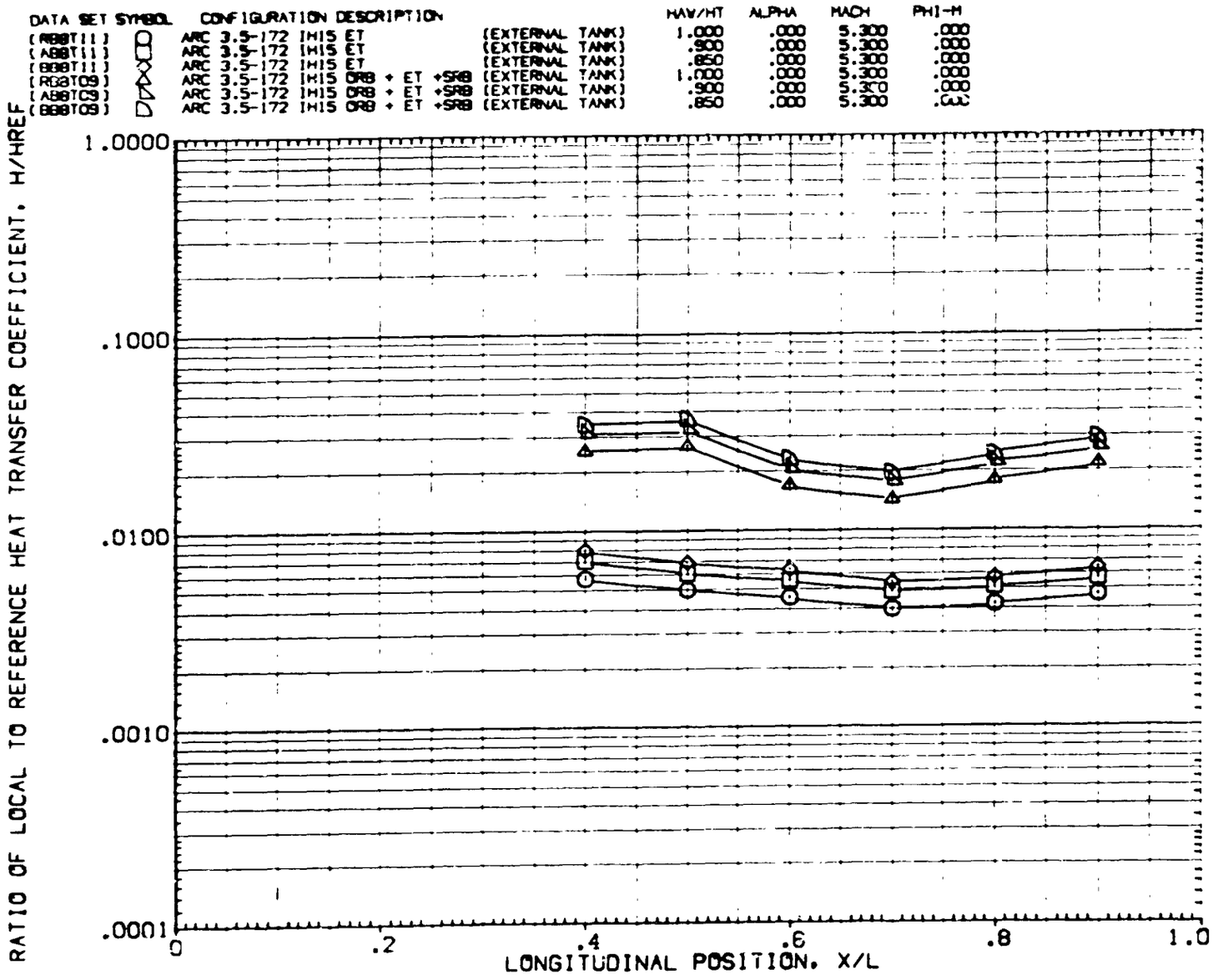


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 45.000

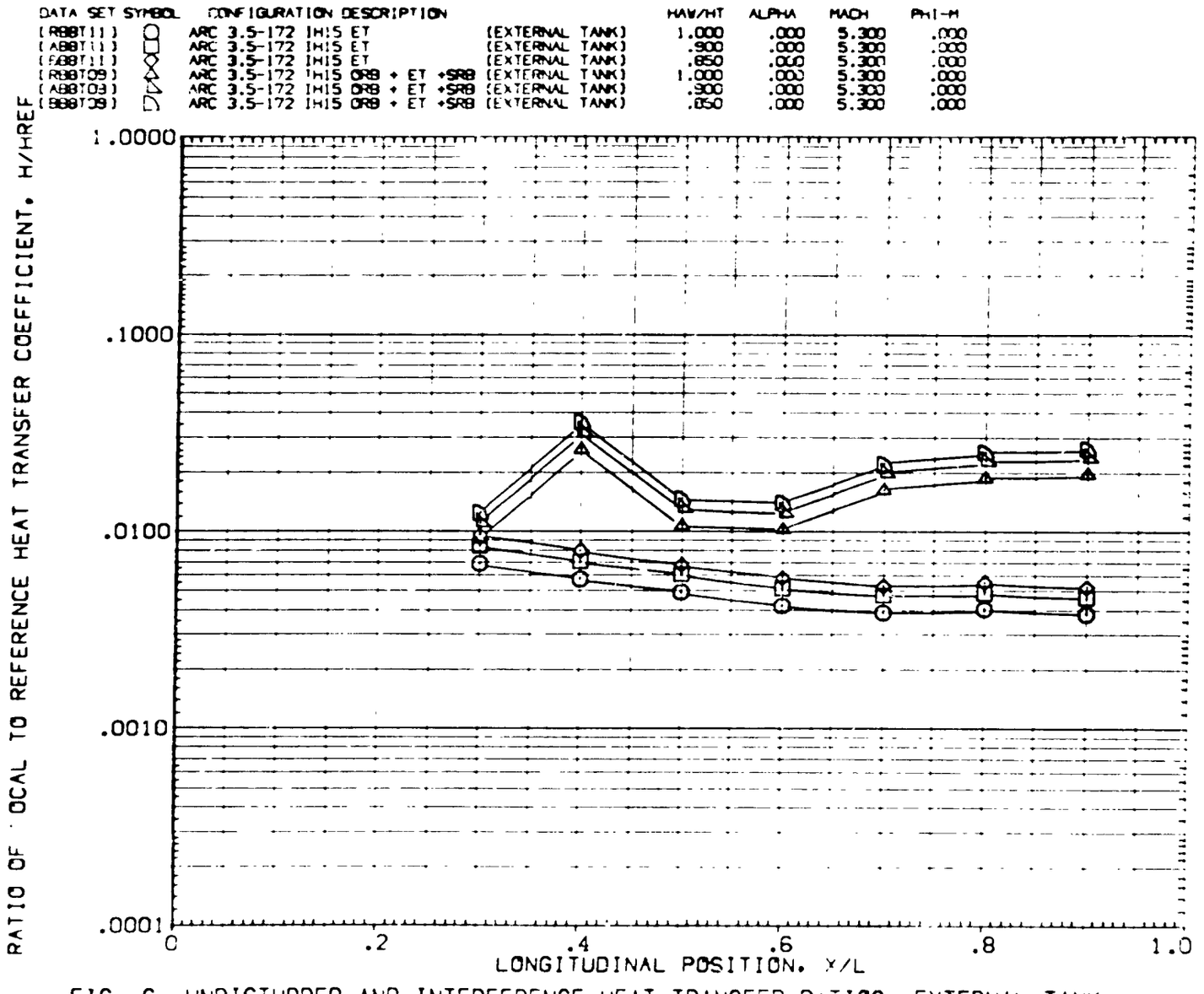


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 67.500

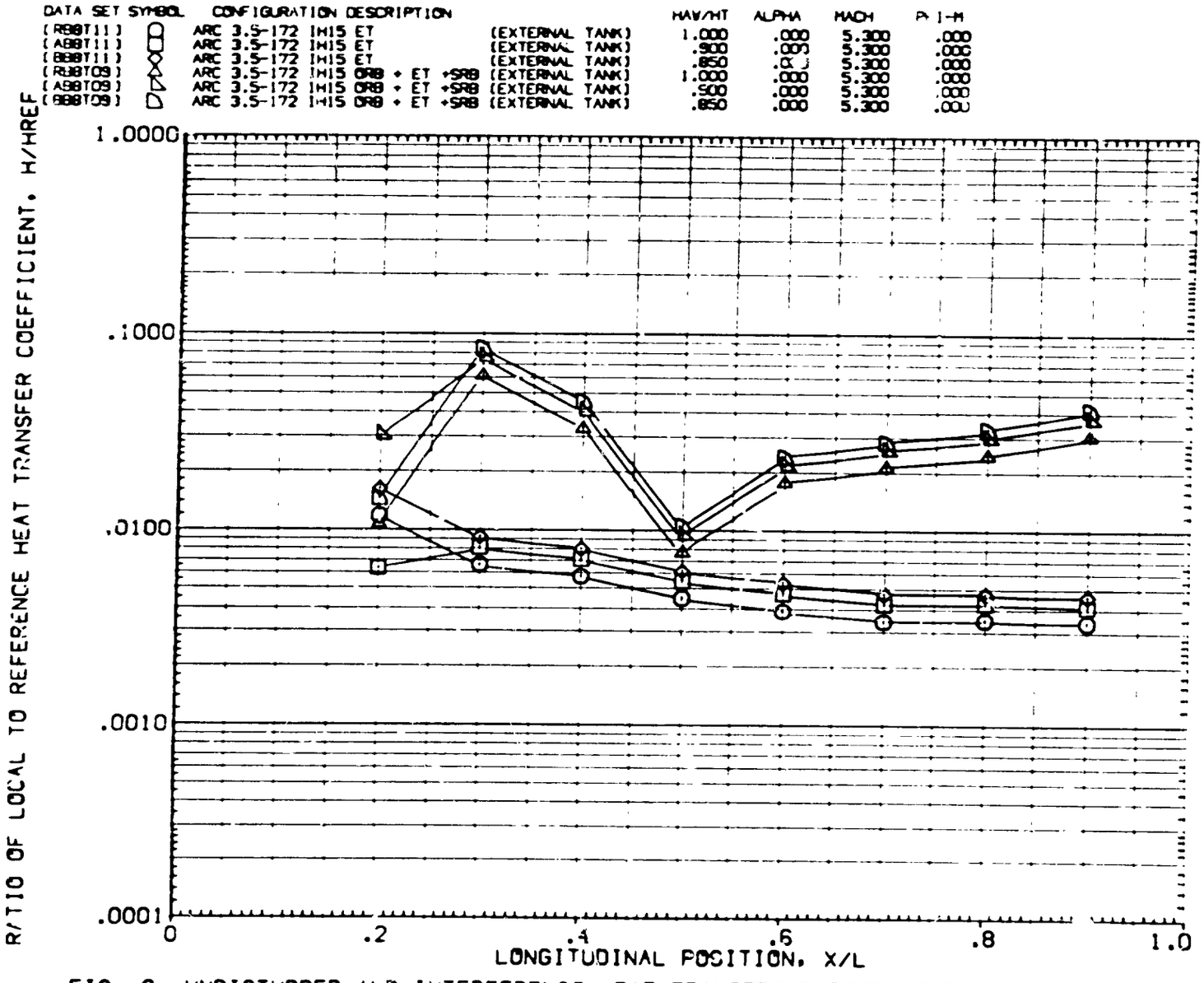


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 90.000

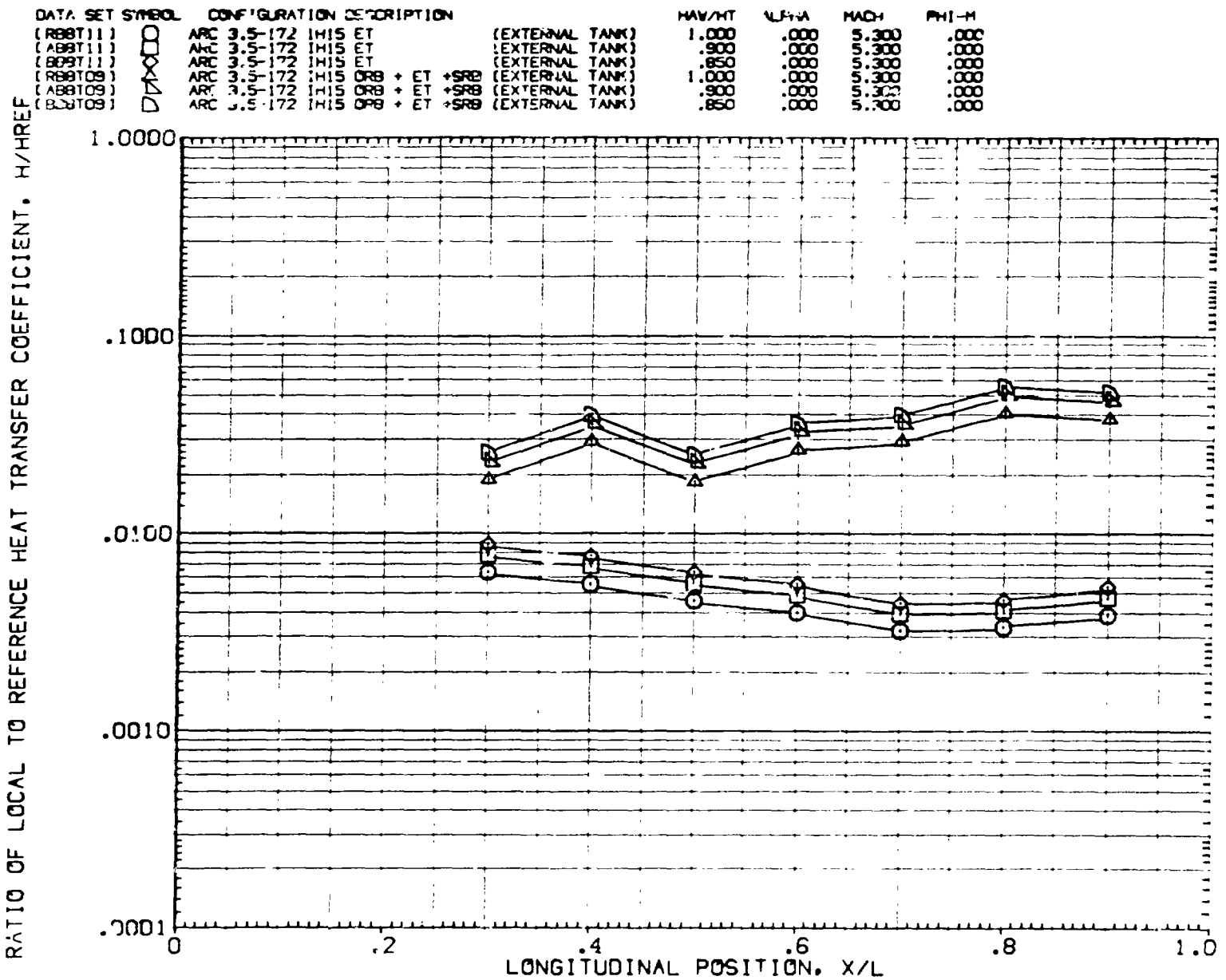


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 112.500

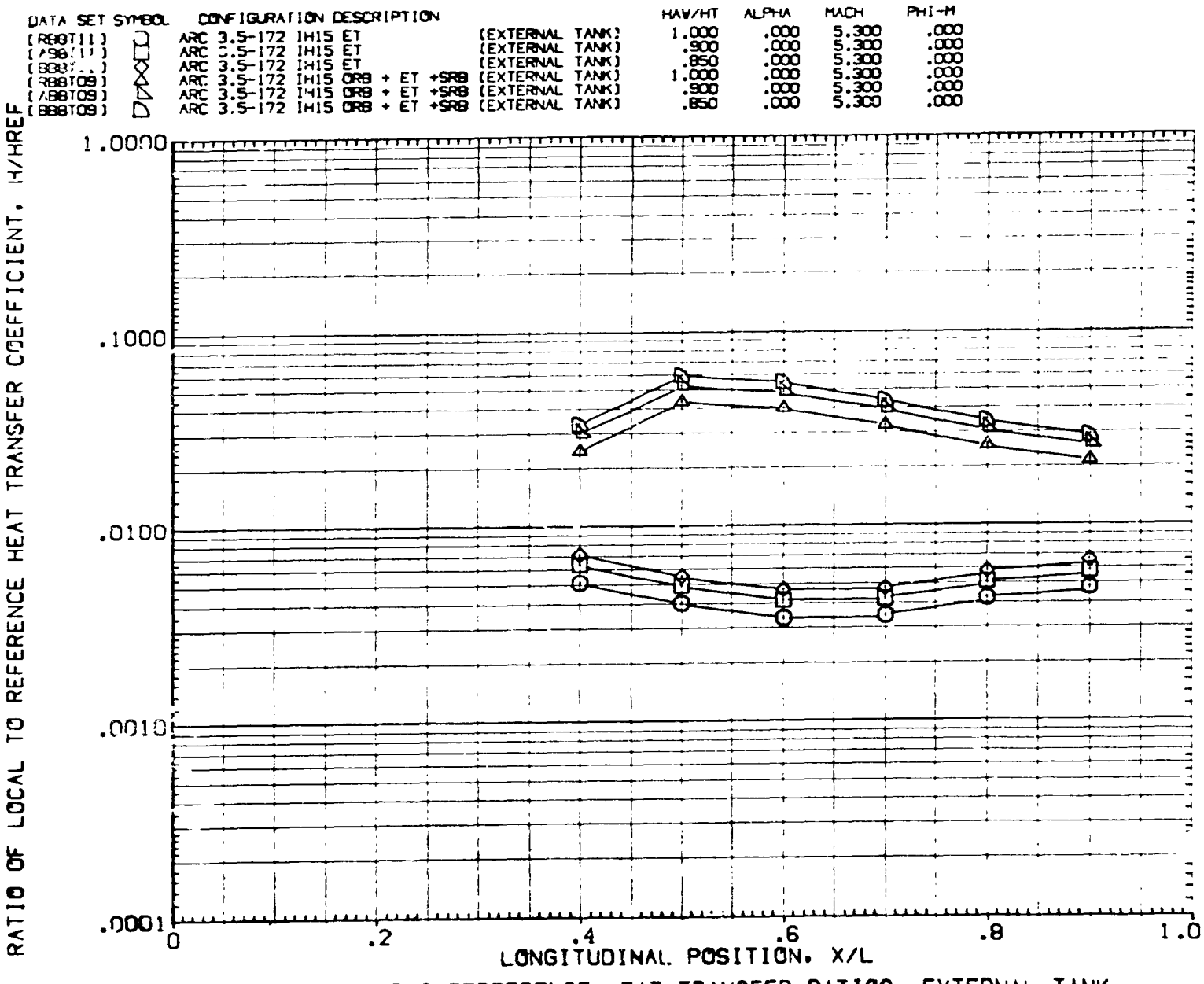


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 135.000

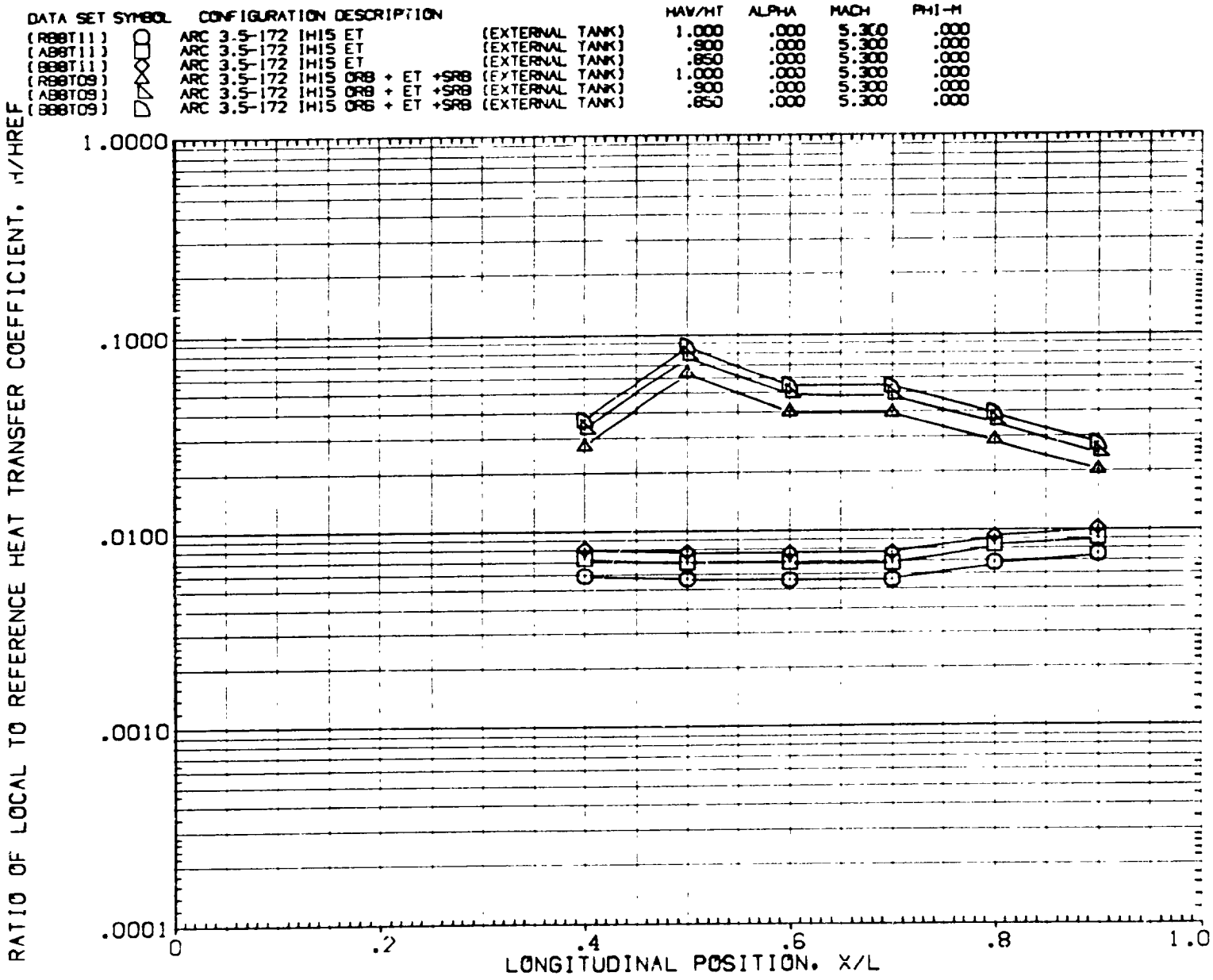


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 157.500

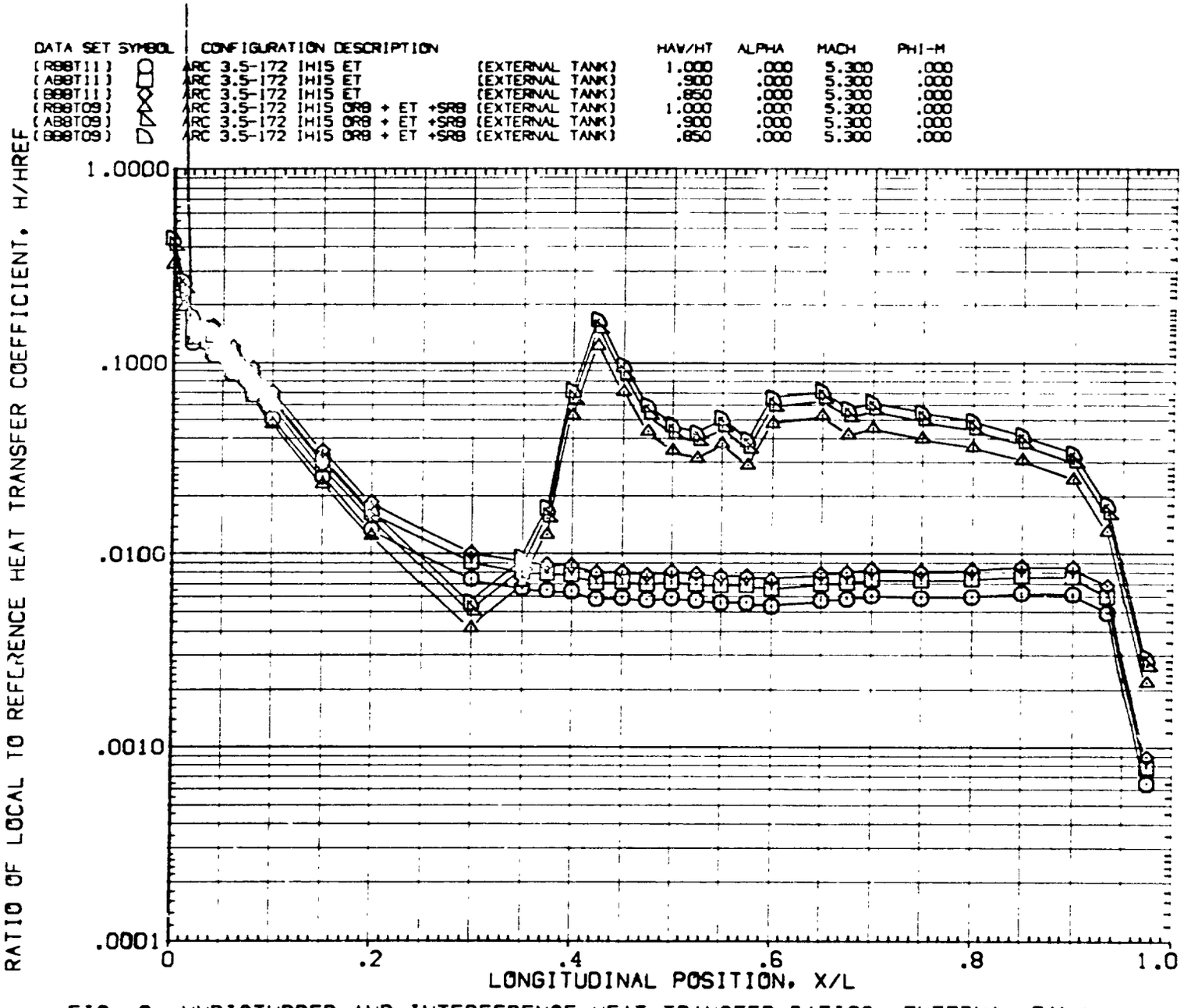


FIG. 6 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.674 MACH = 5.300 PHI = 180.000

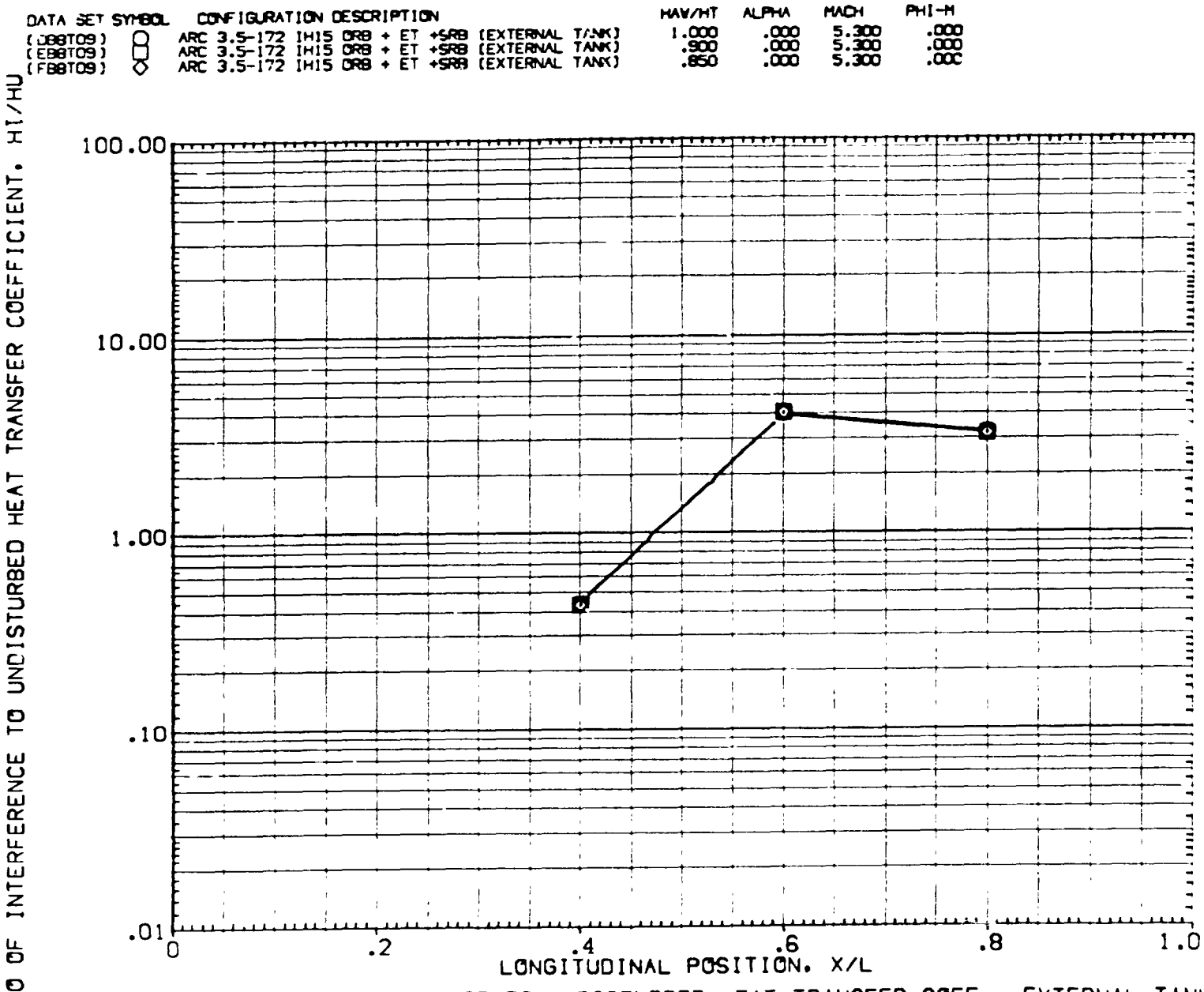


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 1.804 MACH = 5.300 PHI = .000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88T09) ○	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(E88T09) □	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(F88T09) ◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

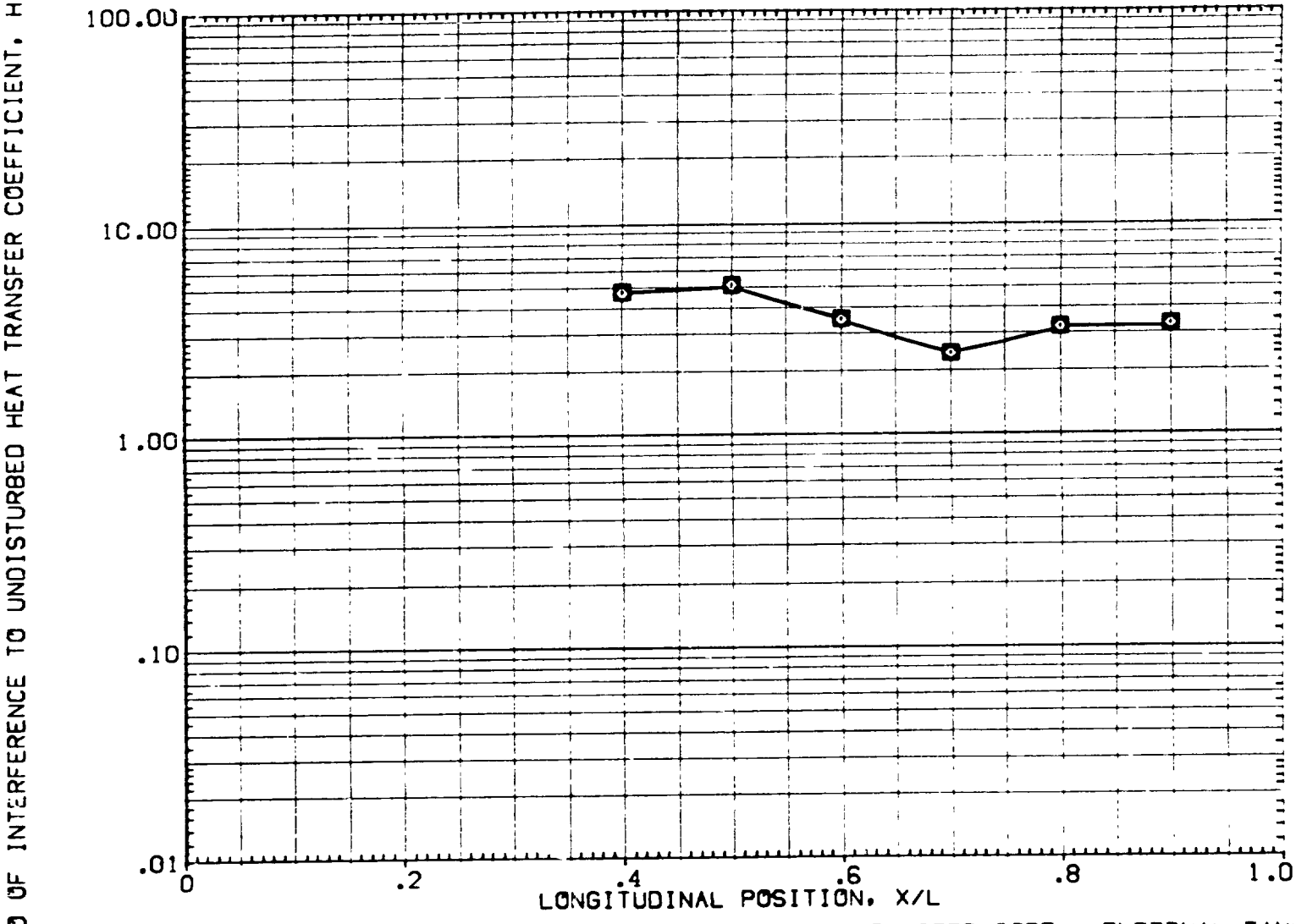


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 1.804 MACH = 5.300 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	AV/HT	ALPHA	MACH	PHI-M
(D88TC9)		ARC 3.5-172 IH1[illegible] ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(E88TC9)		ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(F88TC9)		ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

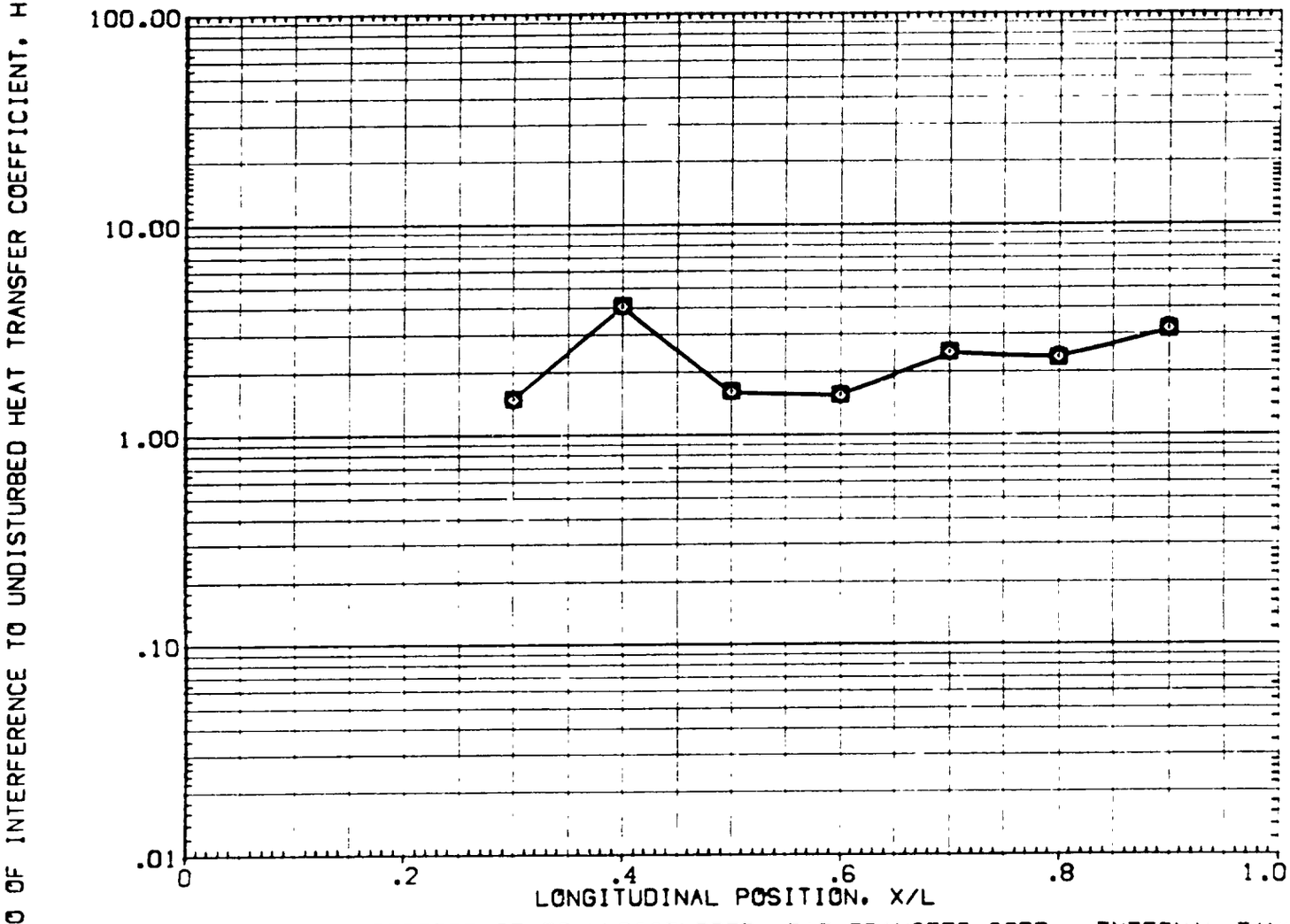


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 1.804 MACH = 5.300 PHI = 67.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88T09)	ARC 3.5-172 IH15 SRB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(E88T09)	ARC 3.5-172 IH15 SRB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(F88T09)	ARC 3.5-172 IH15 SRB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

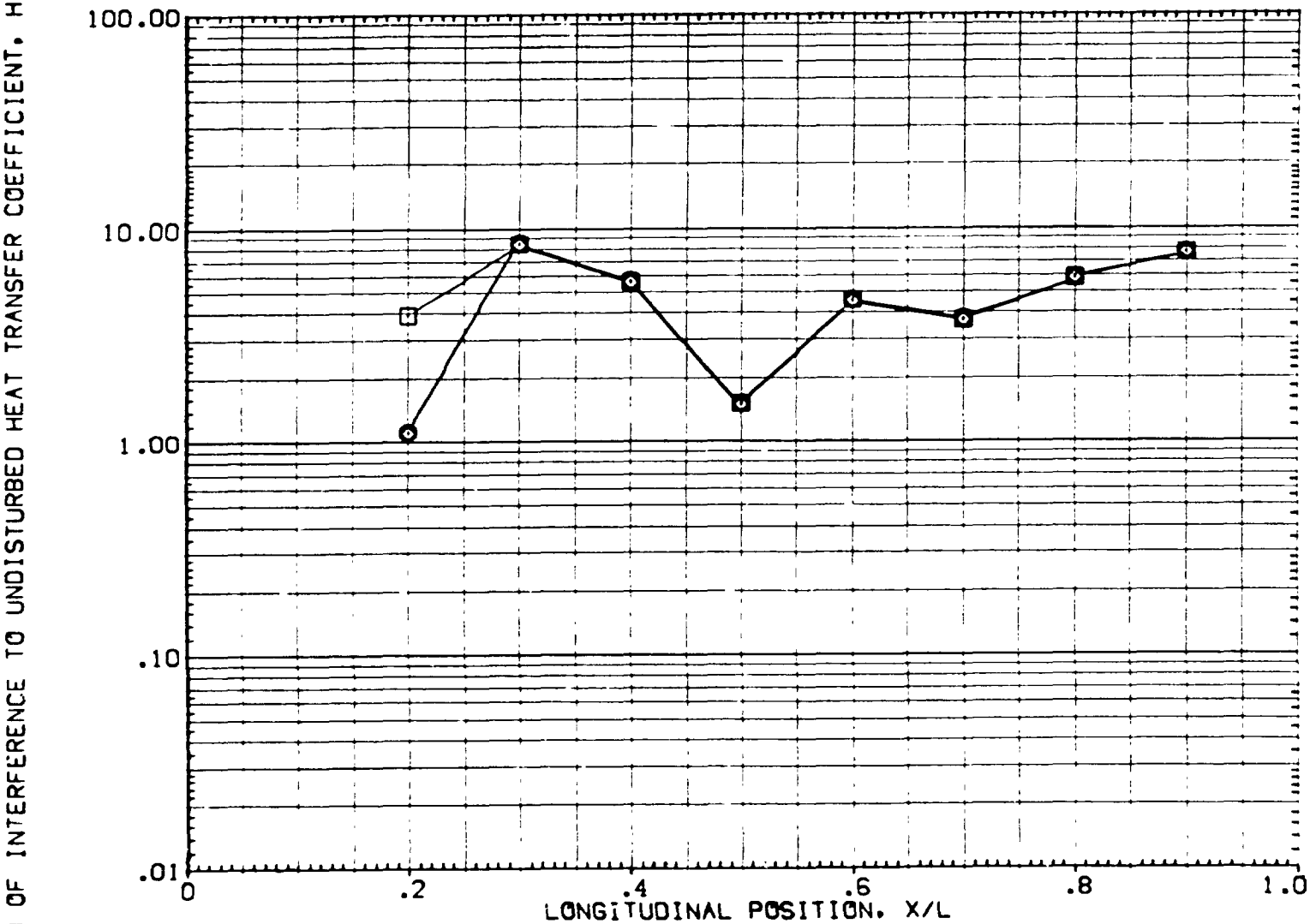


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 1.804 MACH = 5.300 PHI = 90.000

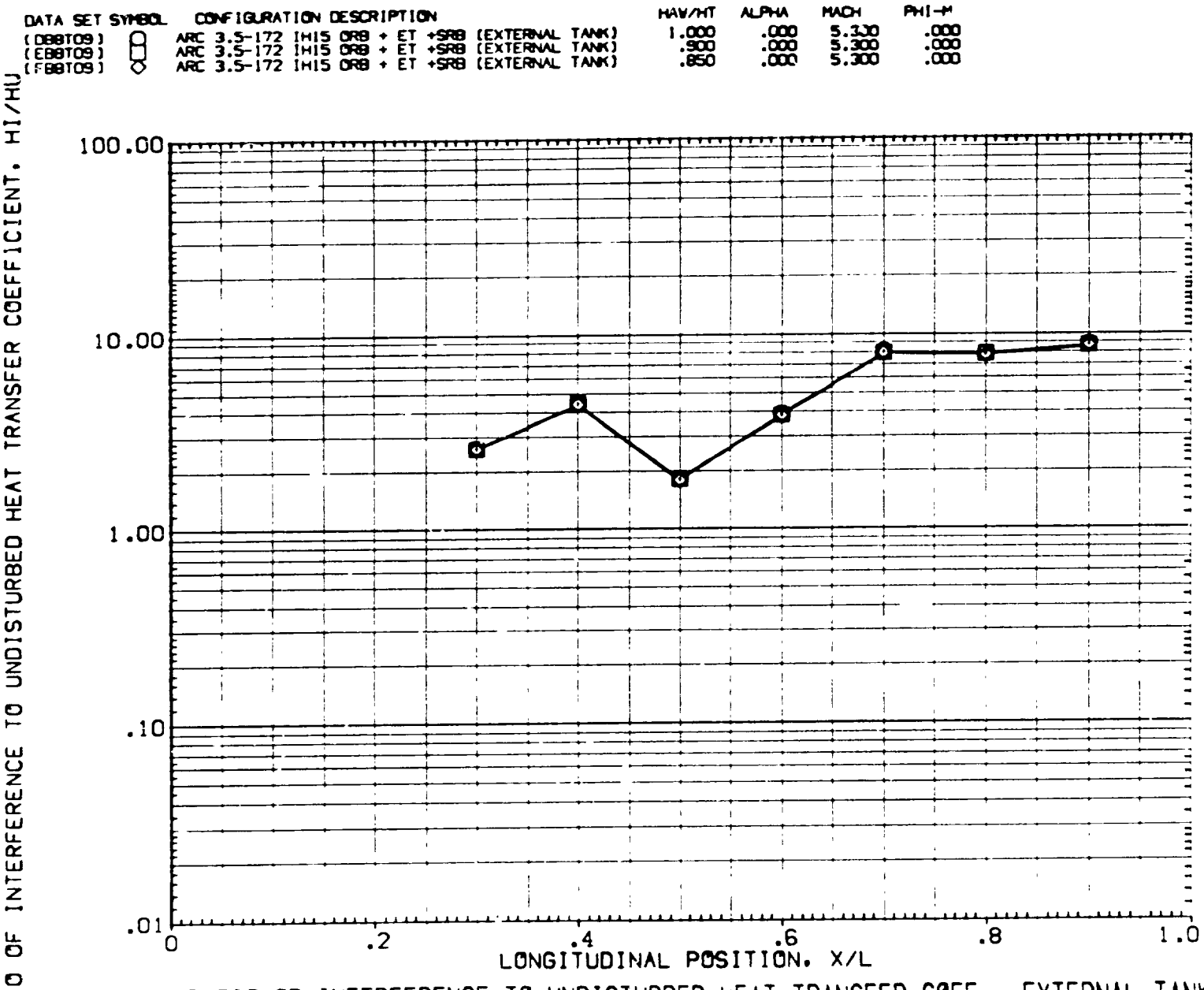


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 1.804 MACH = 5.300 PHI = 112.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88T09)	ARC 3.[illegible] 72 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(E88T09)	ARC 3.[illegible] IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(F88T09)	ARC 3.[illegible] IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

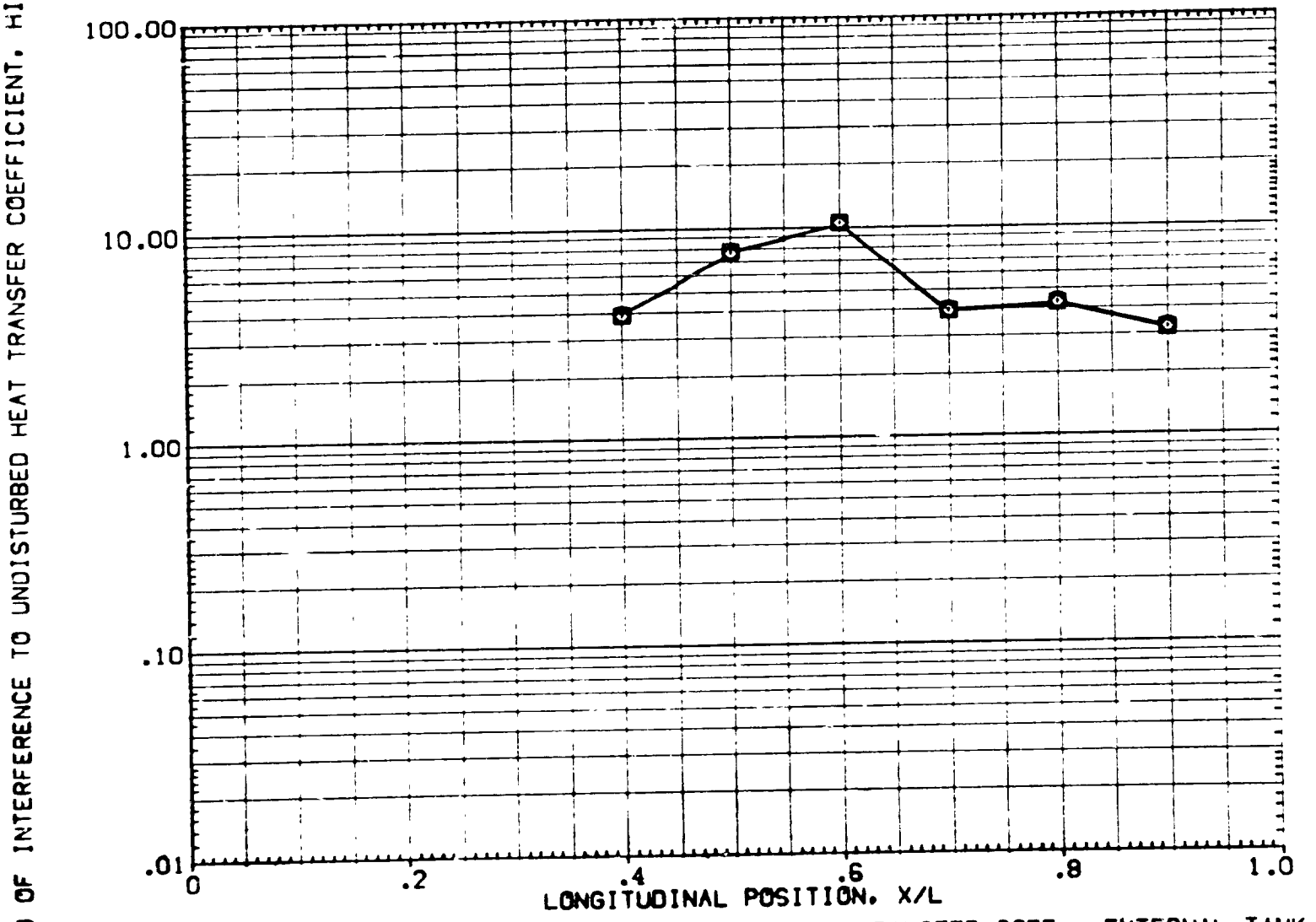


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 1.804 MACH = 5.300 PHI = 135.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DBBTO9)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBTO9)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(FBBTO9)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

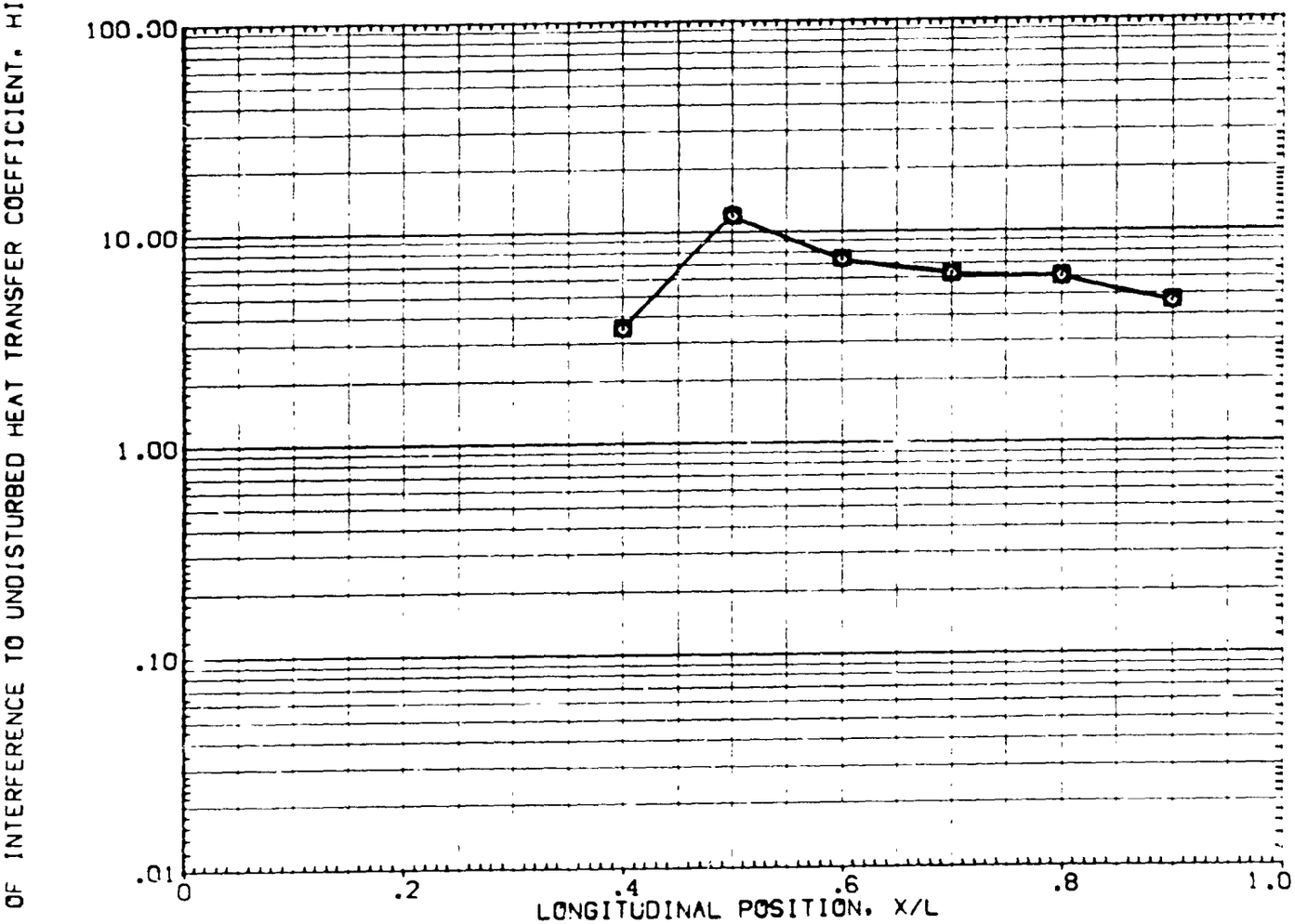


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 1.804 MACH = 5.300 PHI = 157.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88T09)	○	ARC 3.5-172 IHI5 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(E88T09)	□	ARC 3.5-172 IHI5 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(F88T09)	◇	ARC 3.5-172 IHI5 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

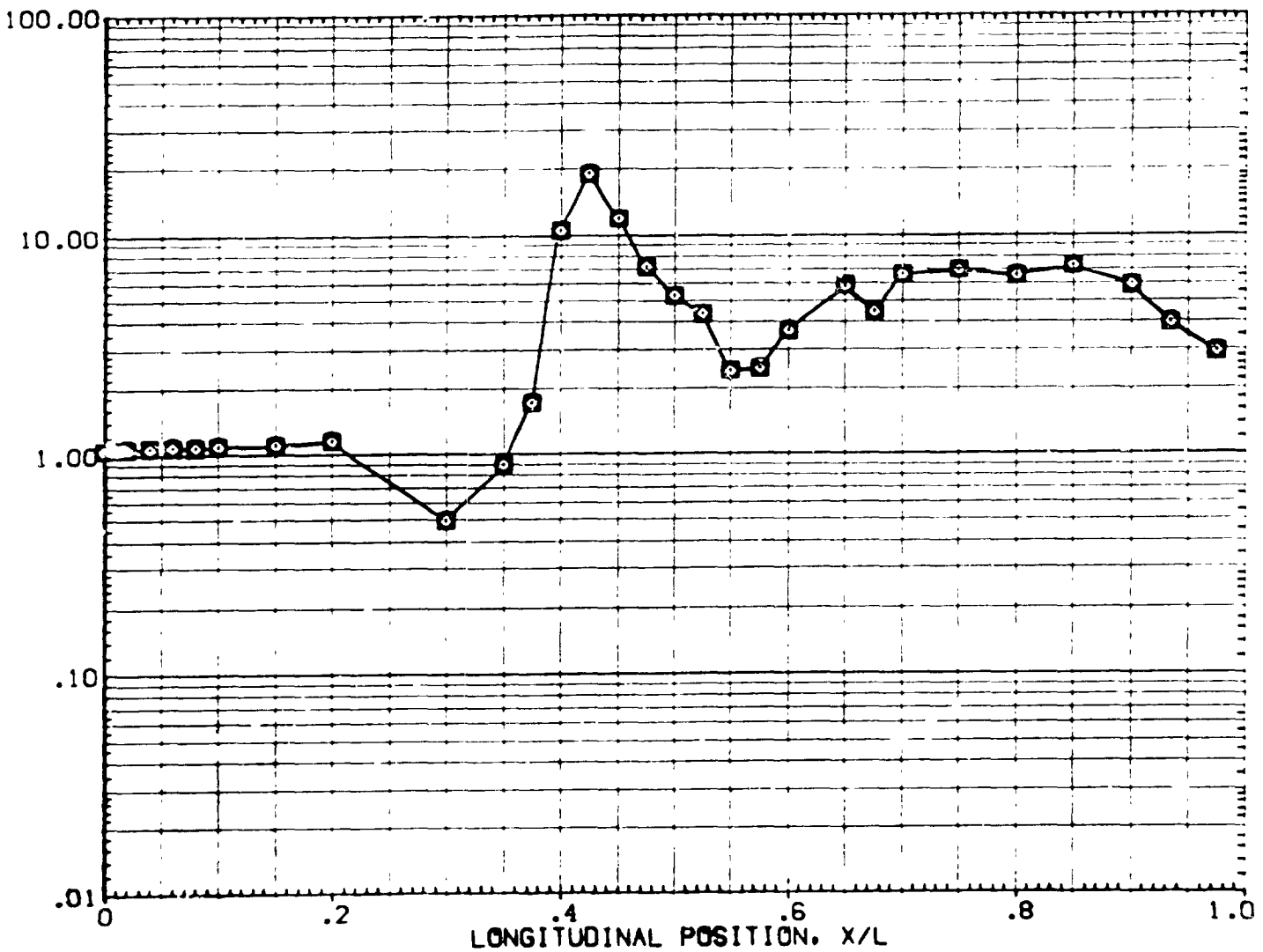


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 1.804 MACH = 5.300 PHI = 180.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(OBBTO9)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBTO9)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(FBBTO9)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

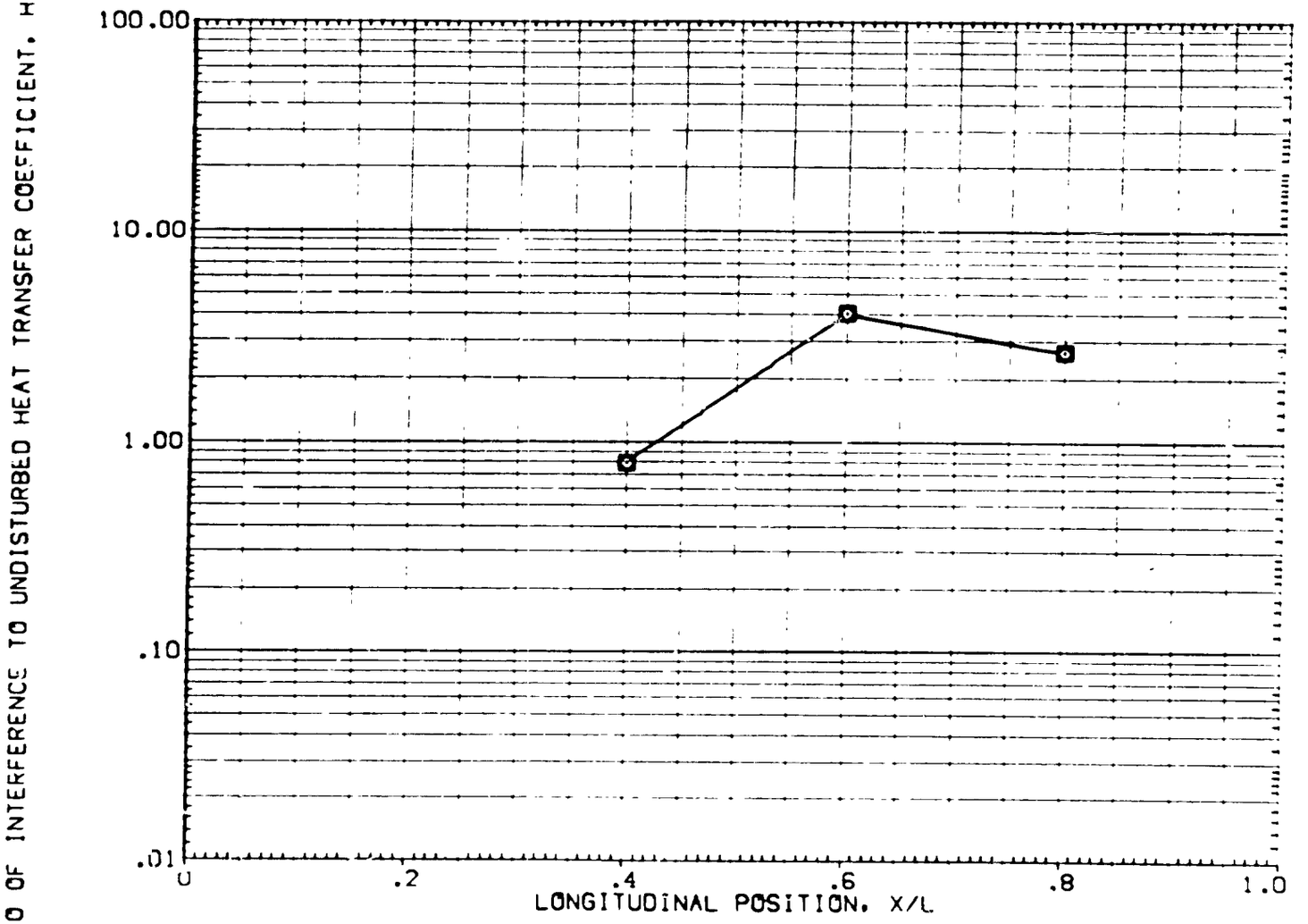


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(OBBTO9)	□	ARC 3.5-172 IHIS ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(EBBTO9)	▽	ARC 3.5-172 IHIS ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(FBBTO9)	◇	ARC 3.5-172 IHIS ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

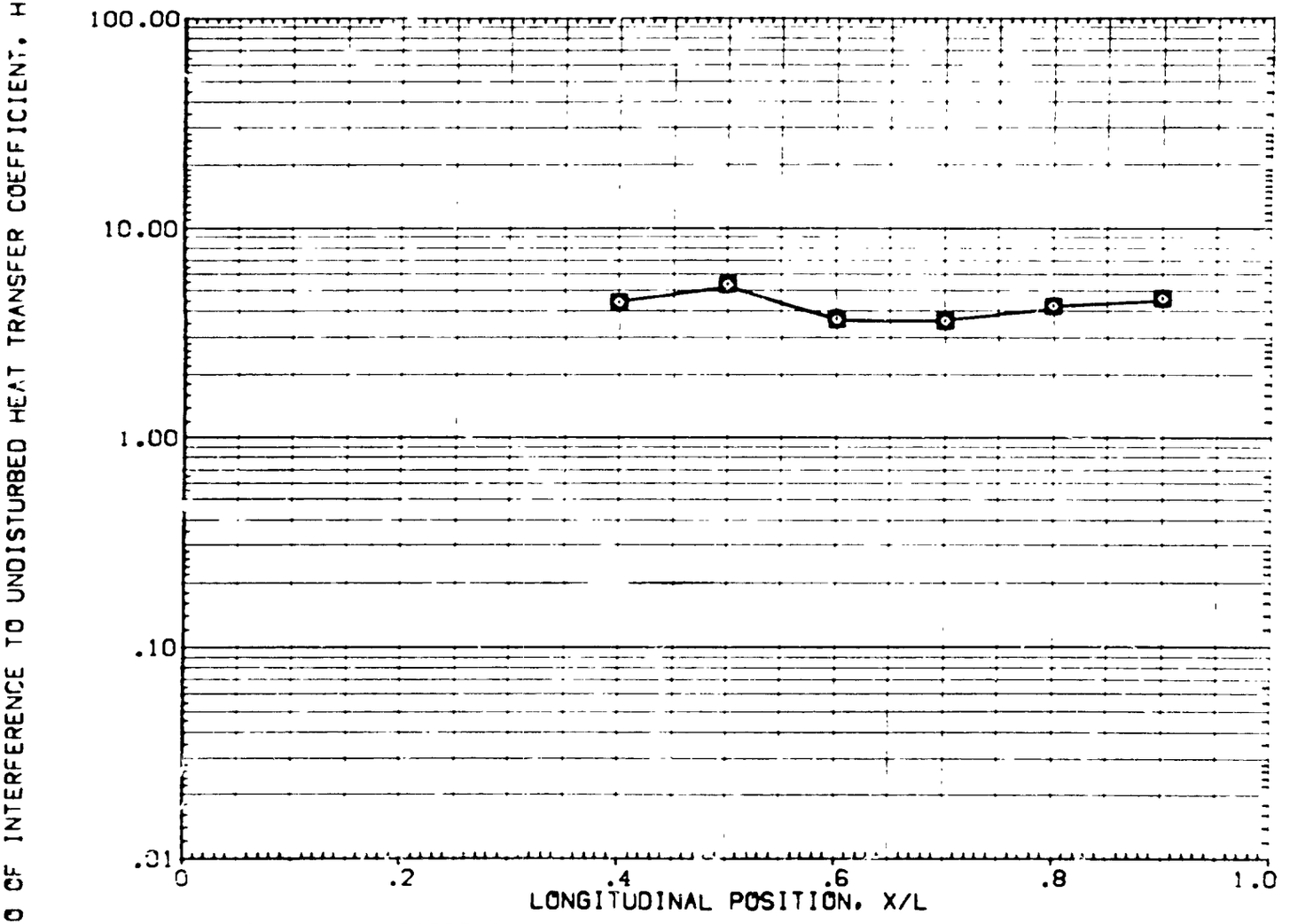


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DB0T09)	□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(EB0T09)	◁□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(FB0T09)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

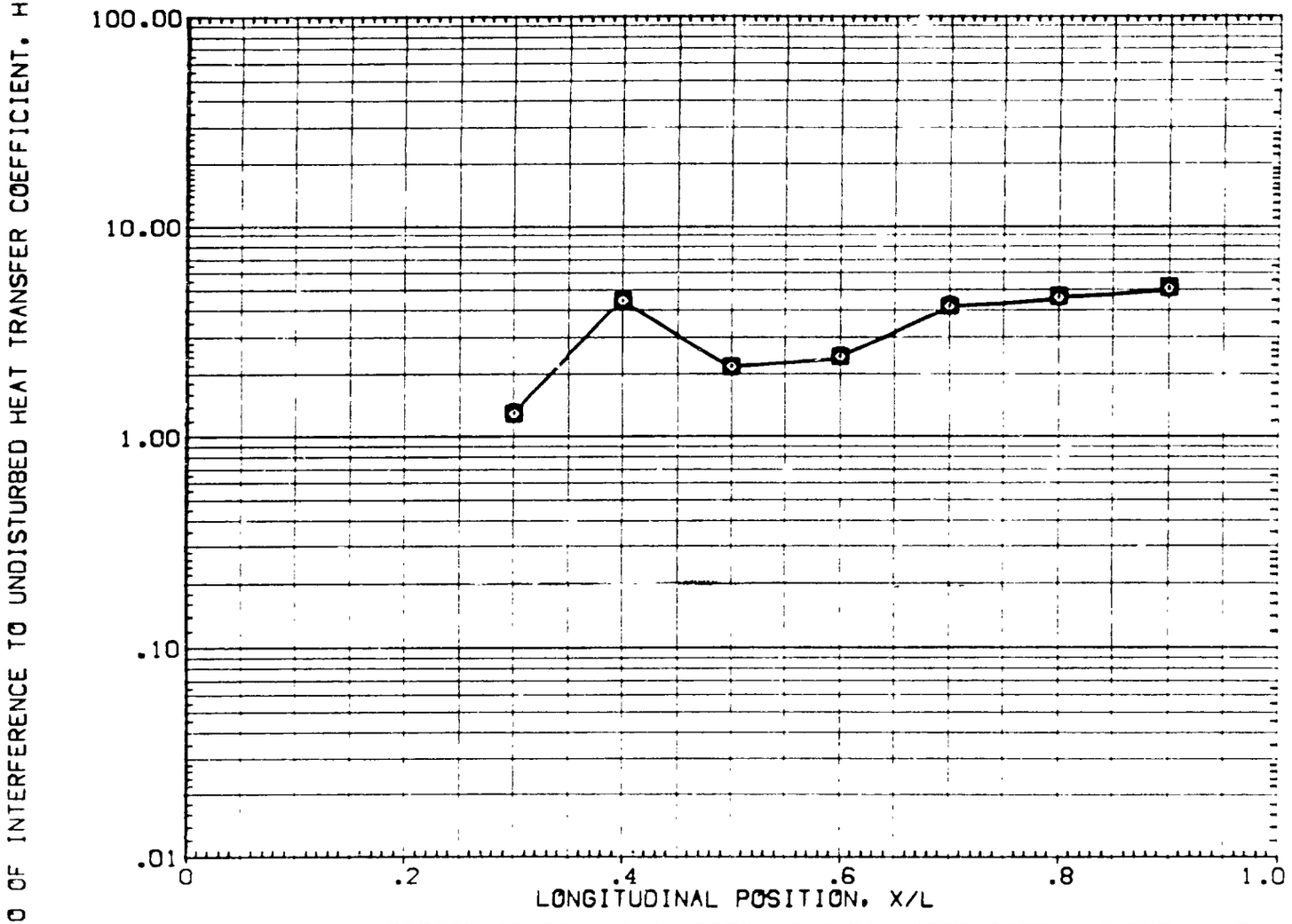


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 67.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T09)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
(E88T09)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
(F88T09)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

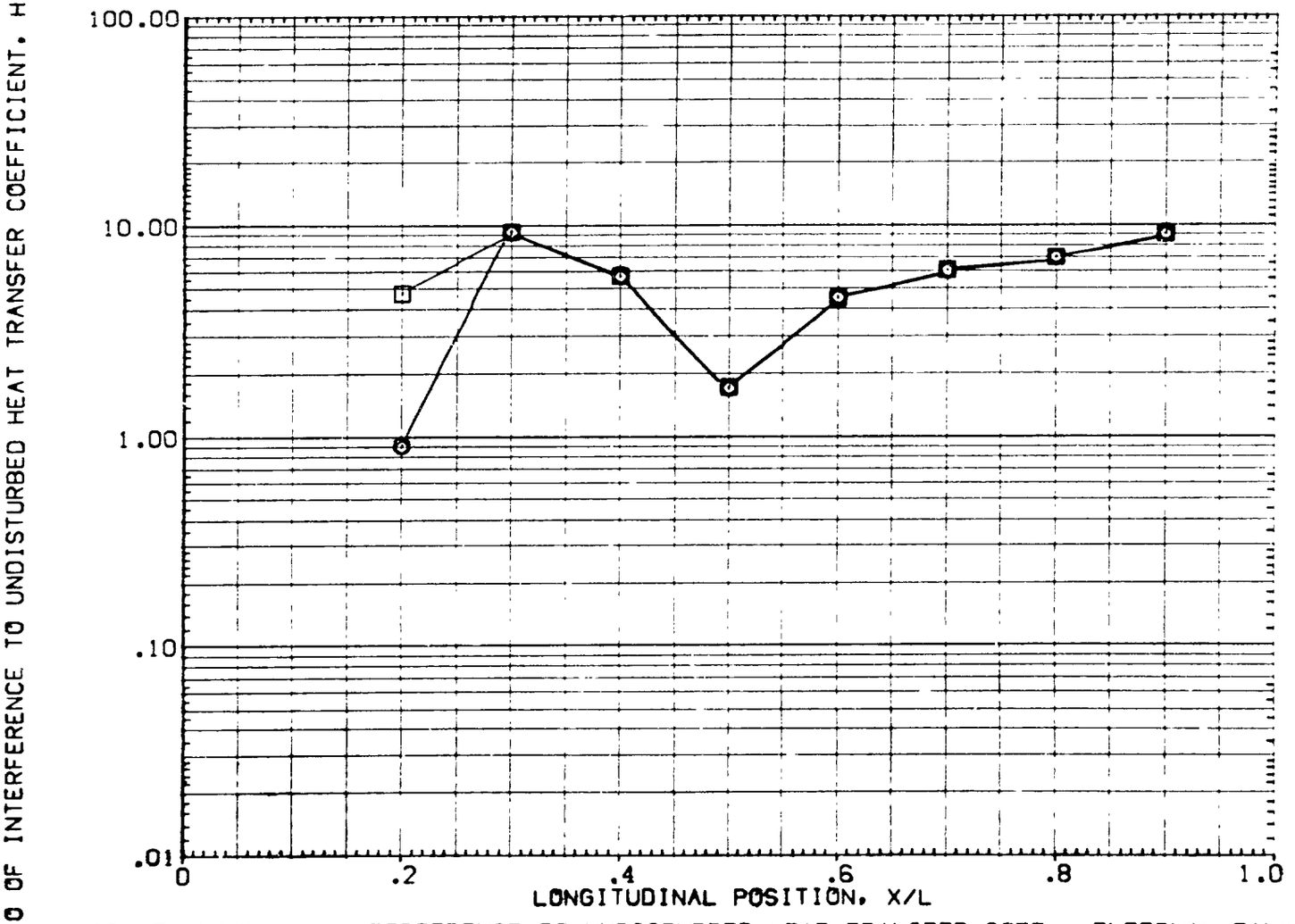


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 90.000

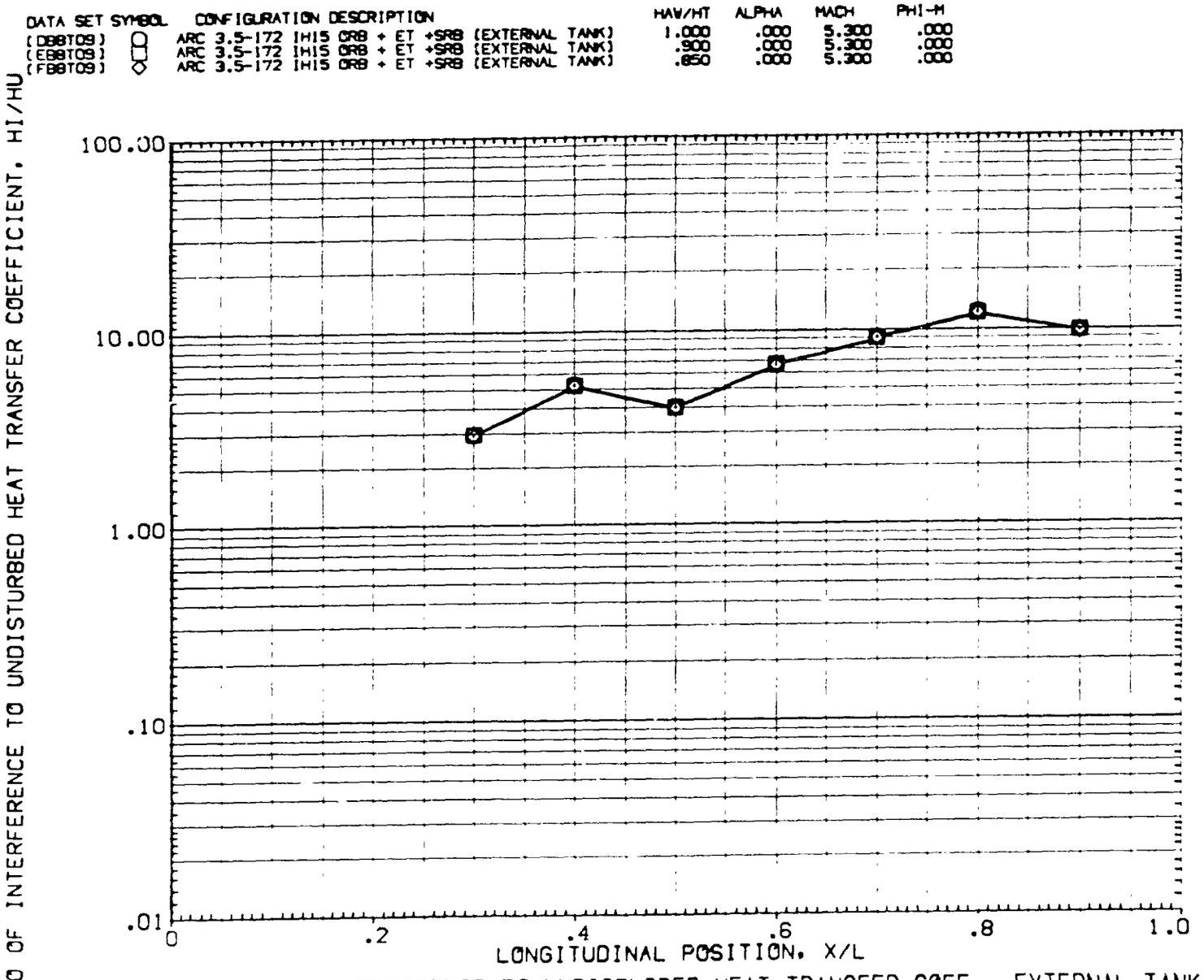


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 112.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
[D88T09]	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	.000	5.300	.000
[E88T09]	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	.000	5.300	.000
[F88T09]	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	.000	5.300	.000

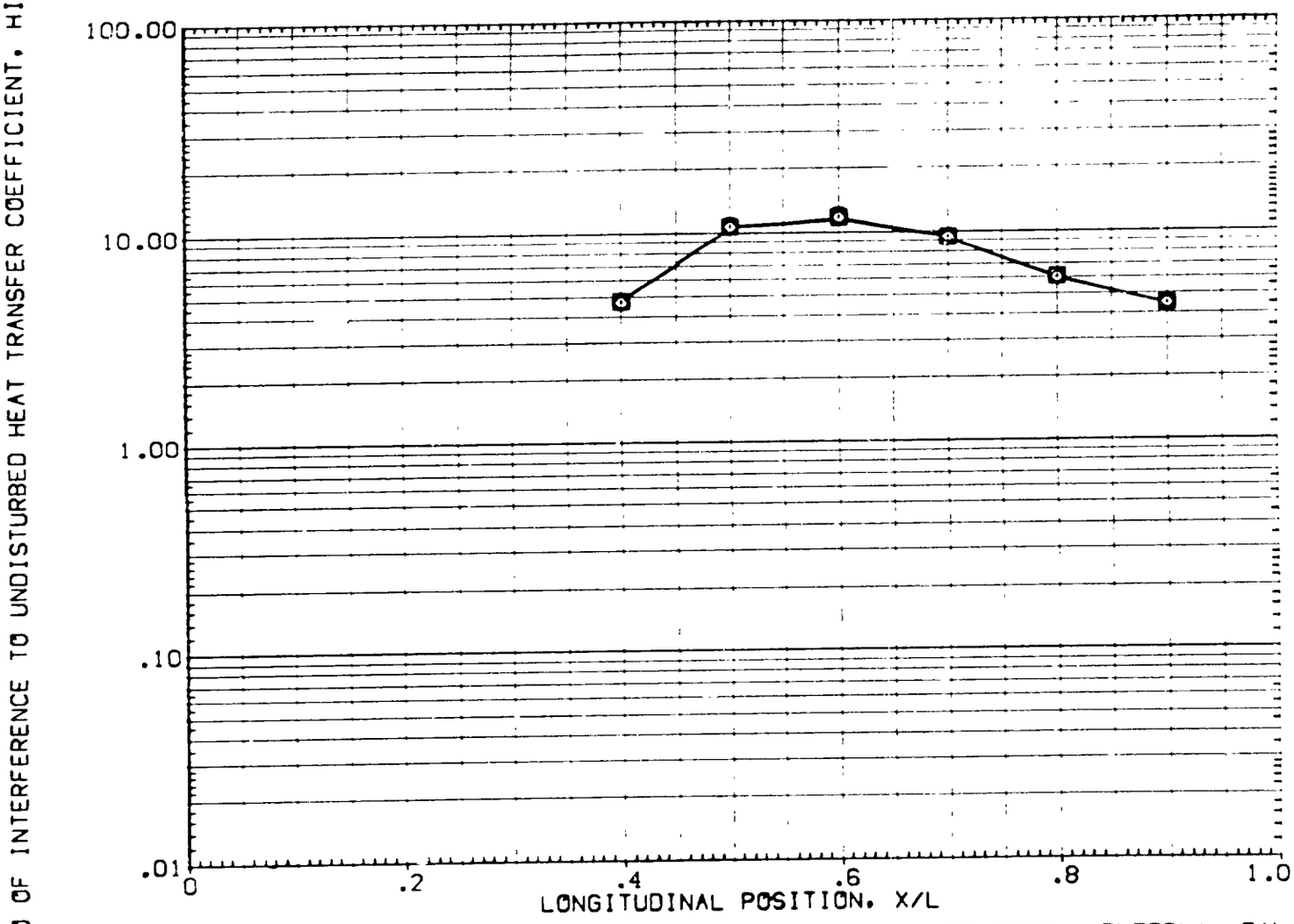


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 135.000

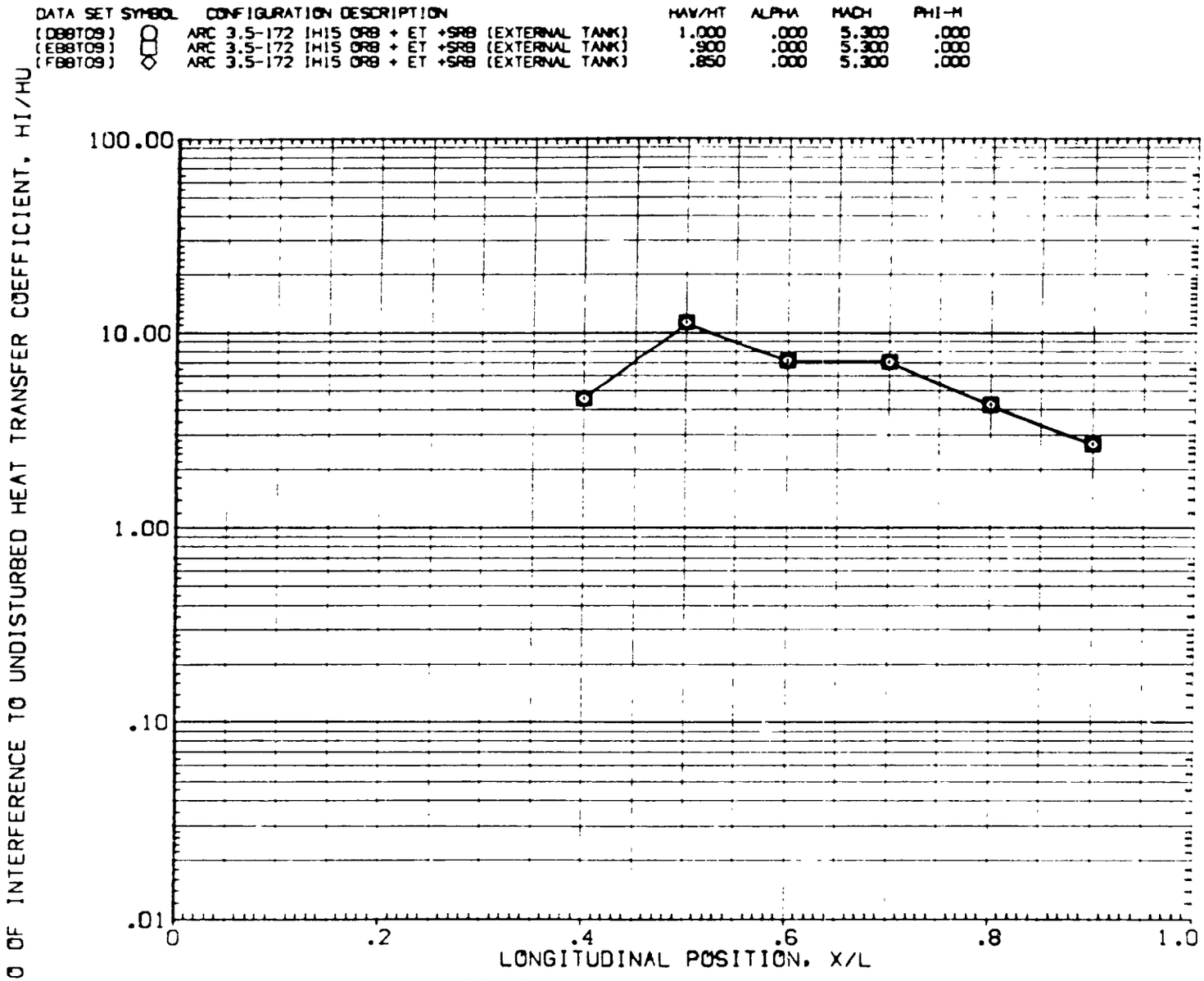


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 157.500

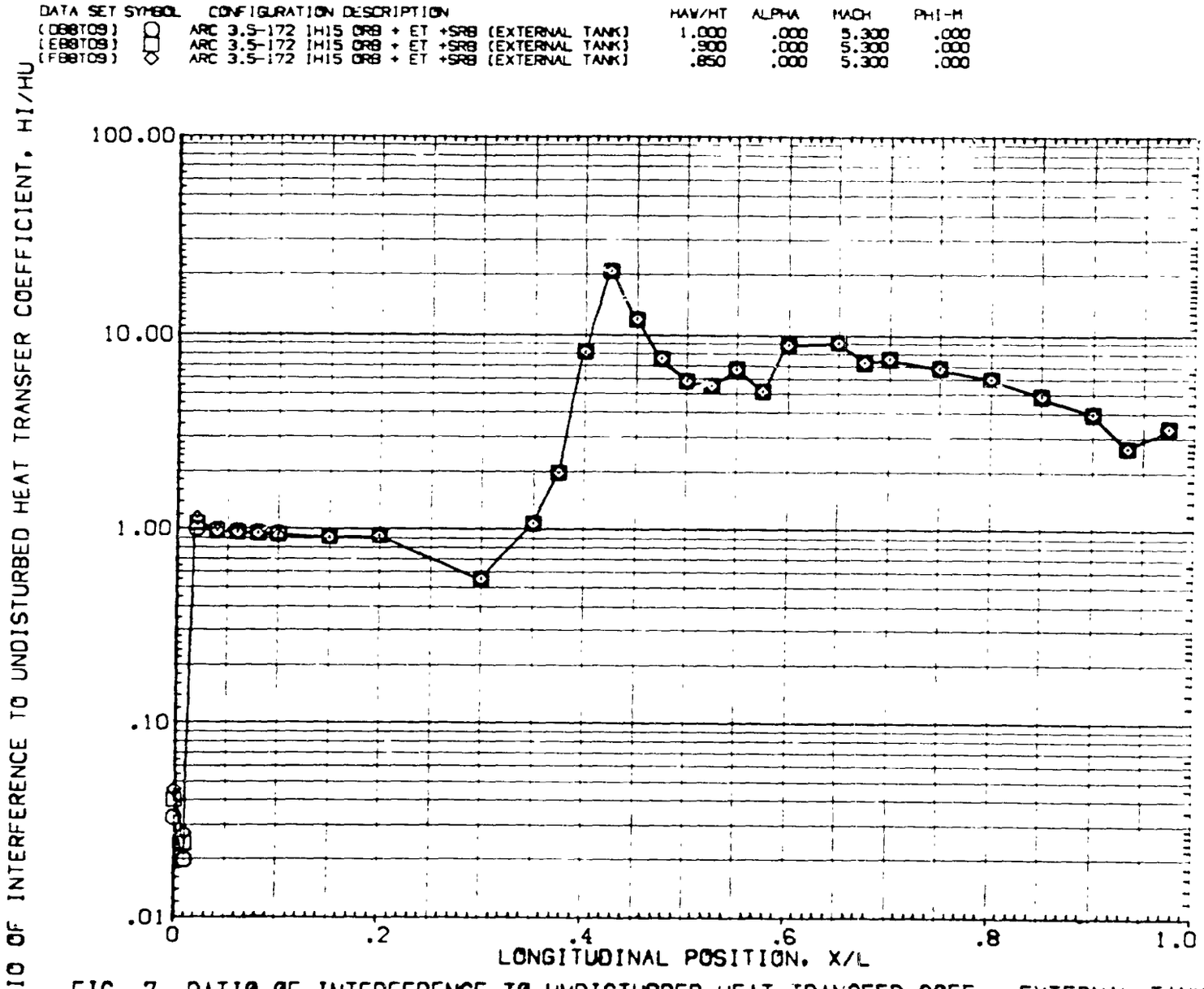


FIG. 7 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.652 MACH = 5.300 PHI = 180.000

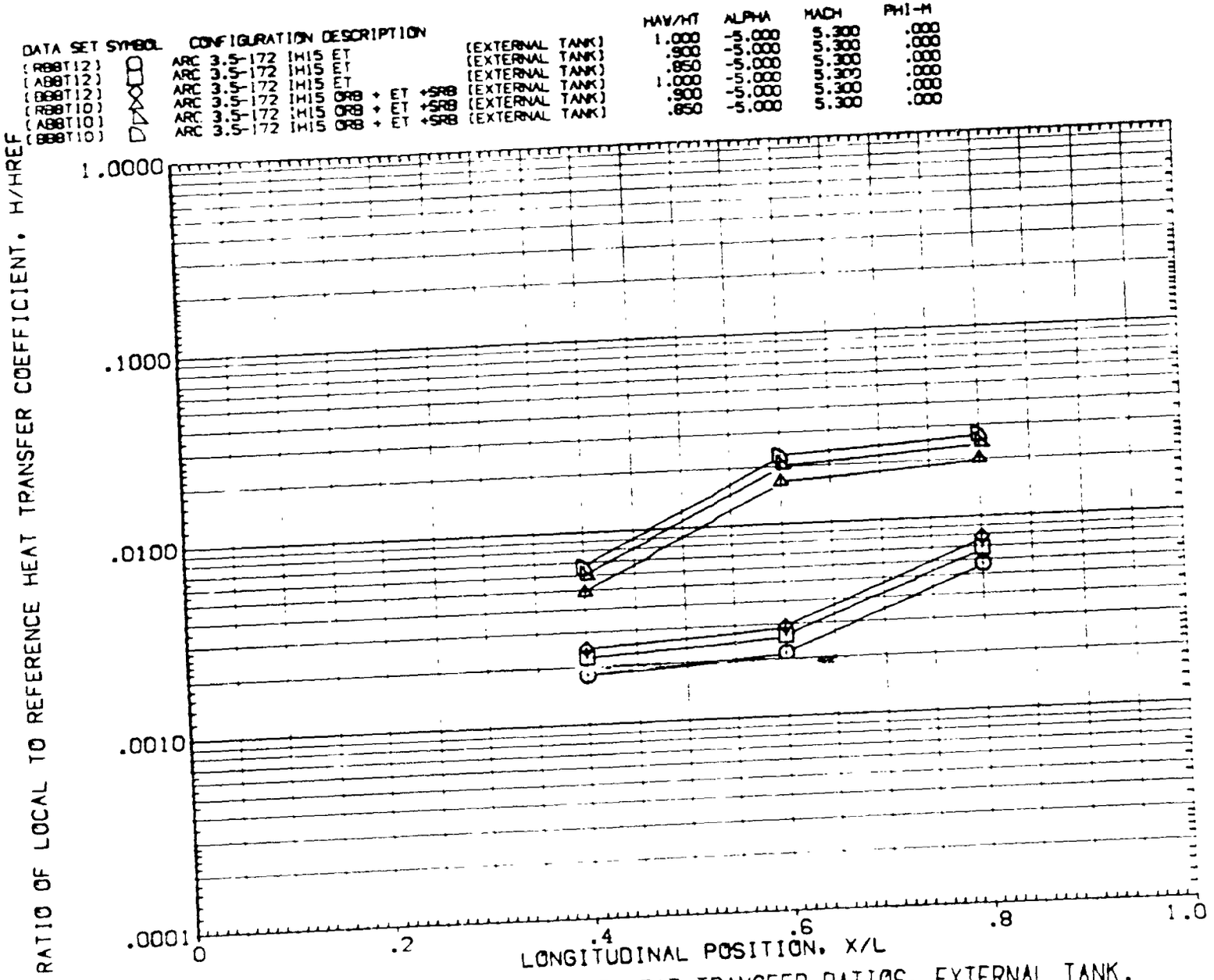


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 2.021 MACH = 5.300 PHI = .000

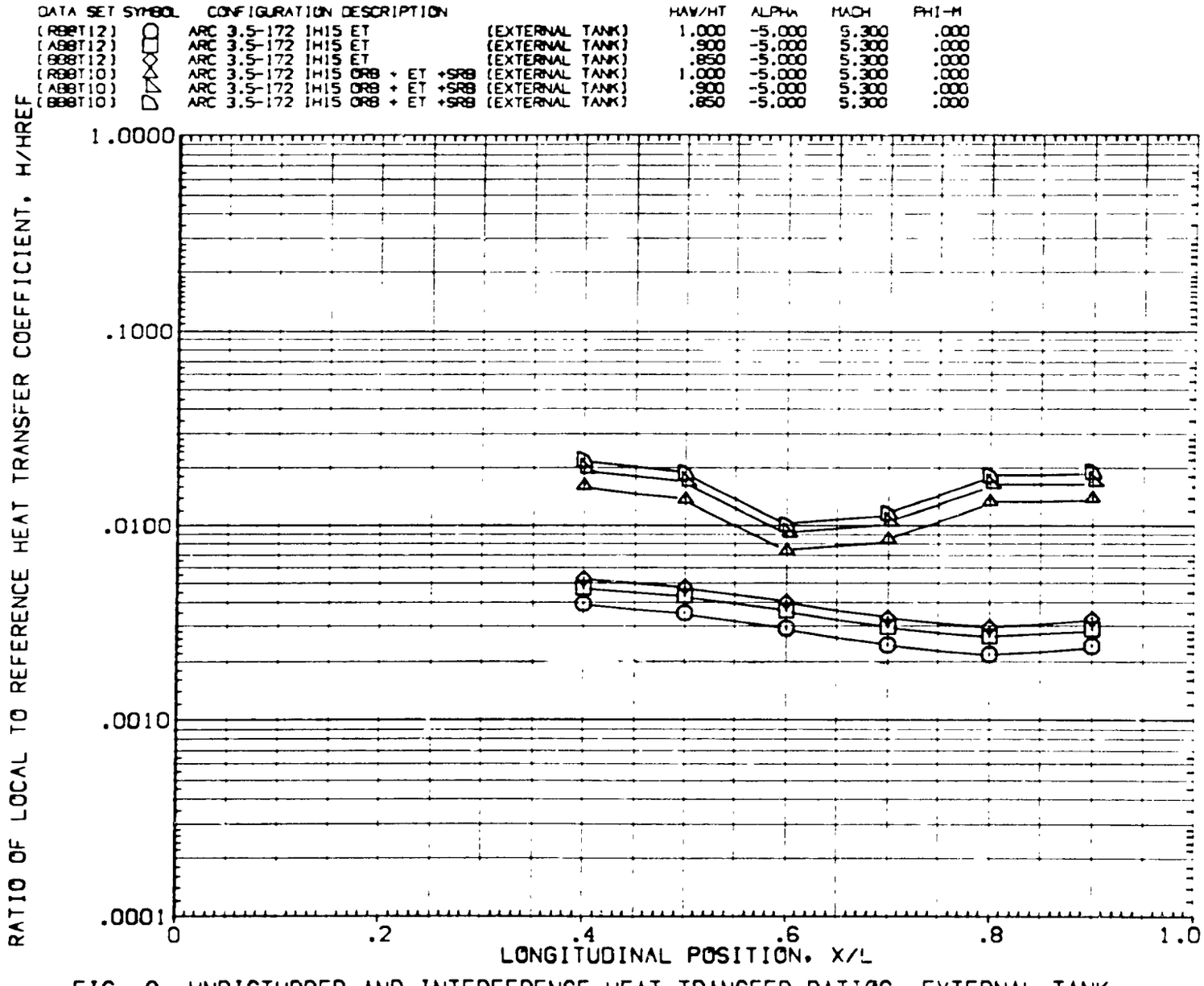


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 2.021 MACH = 5.300 PHI = 45.000

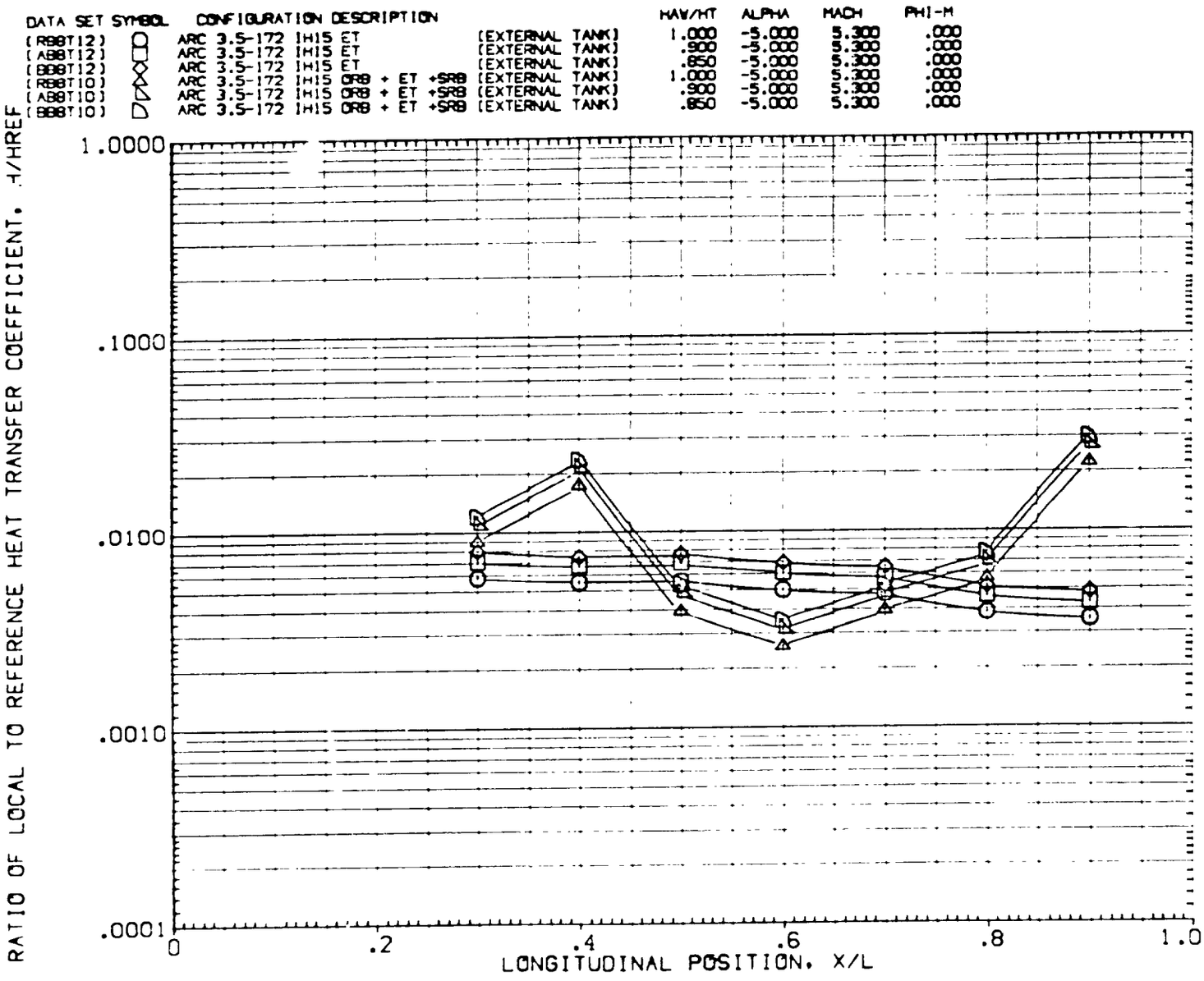


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 2.021 MACH = 5.300 PHI = 67.500

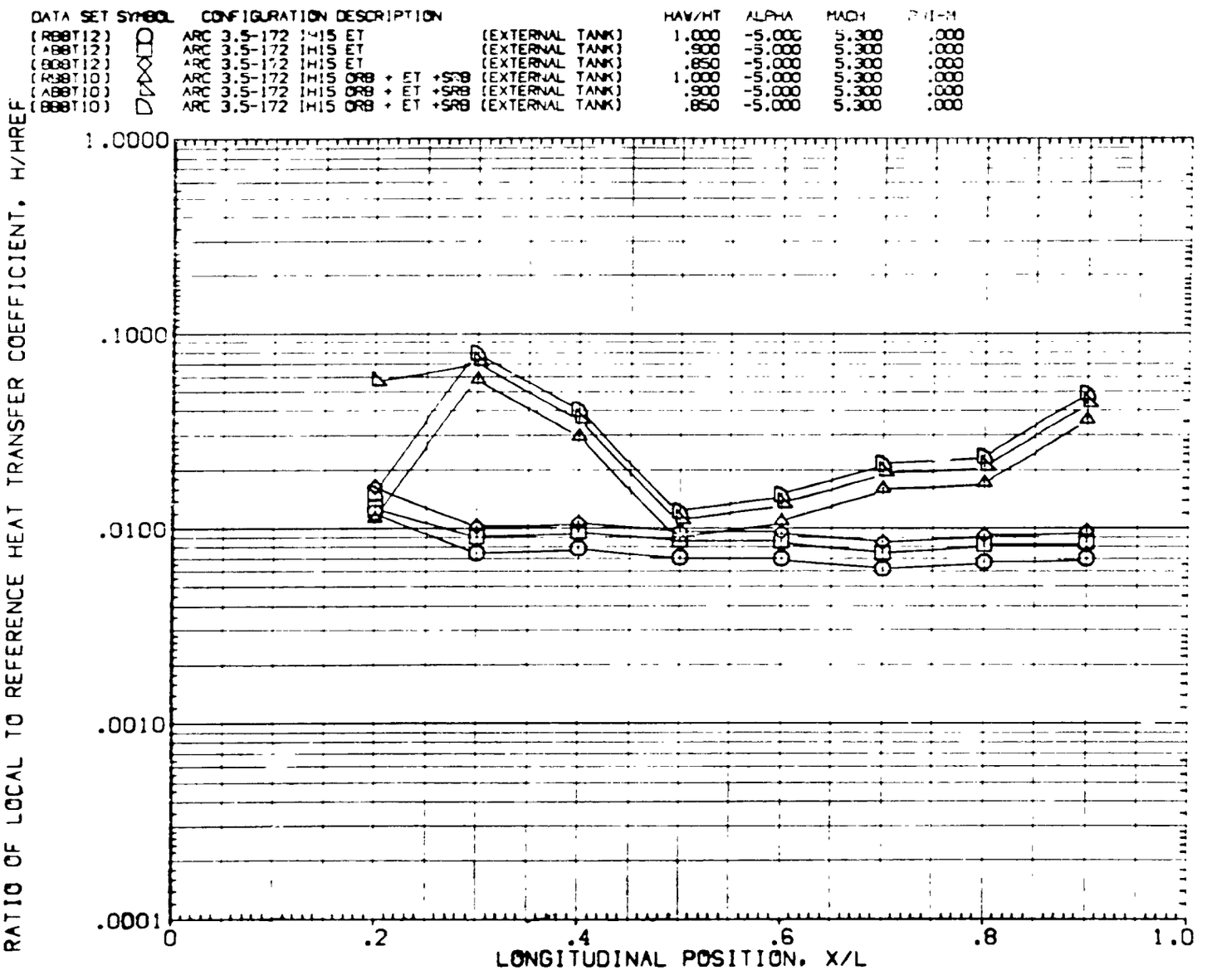


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 2.021 MACH = 5.300 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		H/W/HT	ALPHA	MACH	PHI-H
(RBBT12)		ARC 3.5-172 IH15 ET	(EXTERNAL TANK)	1.000	-5.000	5.300	.000
(ABBT12)		ARC 3.5-172 IH15 ET	(EXTERNAL TANK)	.900	-5.000	5.300	.000
(BBBT12)		ARC 3.5-172 IH15 ET	(EXTERNAL TANK)	.850	-5.000	5.300	.000
(RBBT10)		ARC 3.5-172 IH15 ORB + ET +SRB	(EXTERNAL TANK)	1.000	-5.000	5.300	.000
(ABBT10)		ARC 3.5-172 IH15 ORB + ET +SRB	(EXTERNAL TANK)	.900	-5.000	5.300	.000
(BBBT10)		ARC 3.5-172 IH15 ORB + ET +SRB	(EXTERNAL TANK)	.850	-5.000	5.300	.000

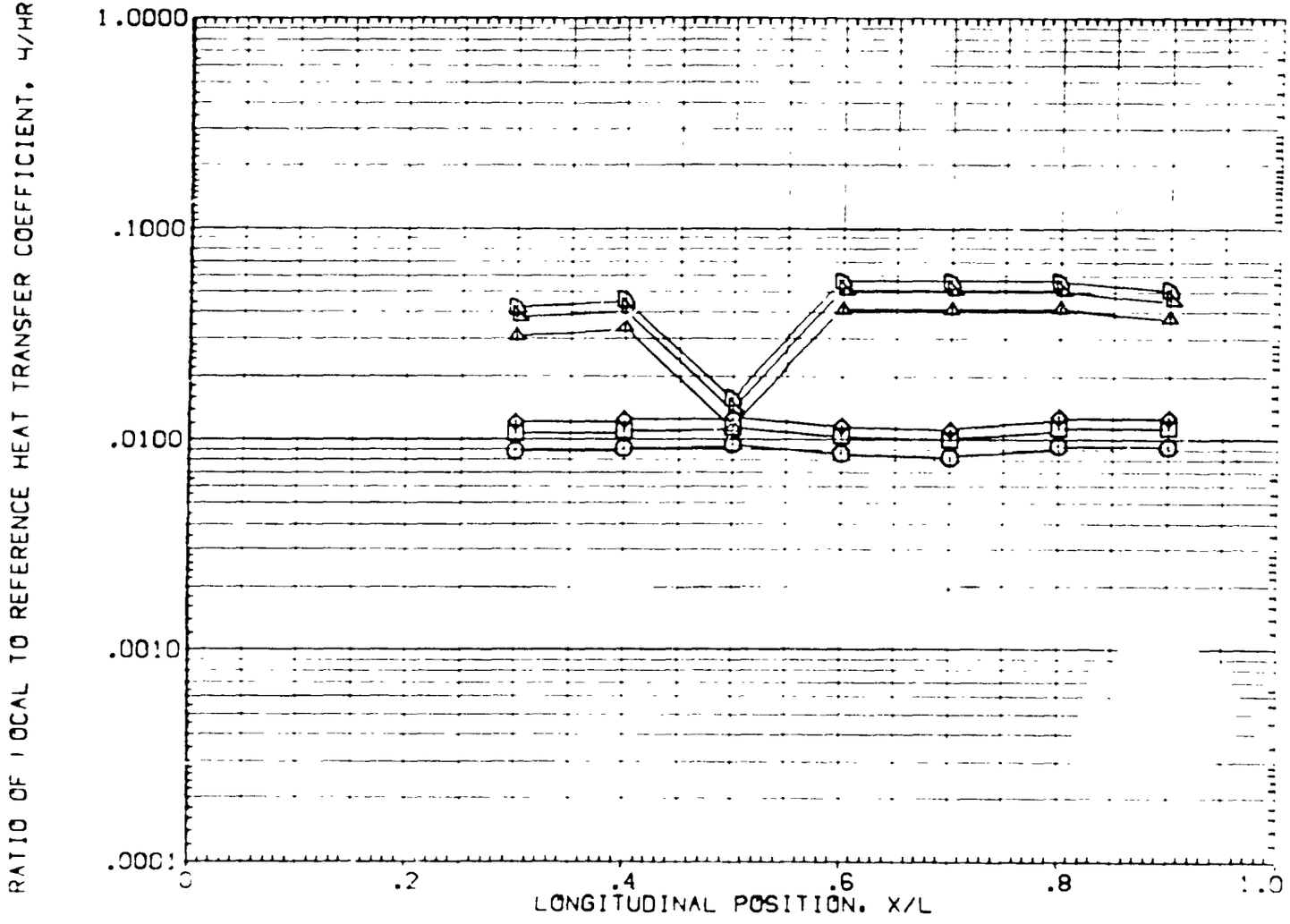


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

R'N/L = 2.021 MACH = 5.300 PHI = 112.500

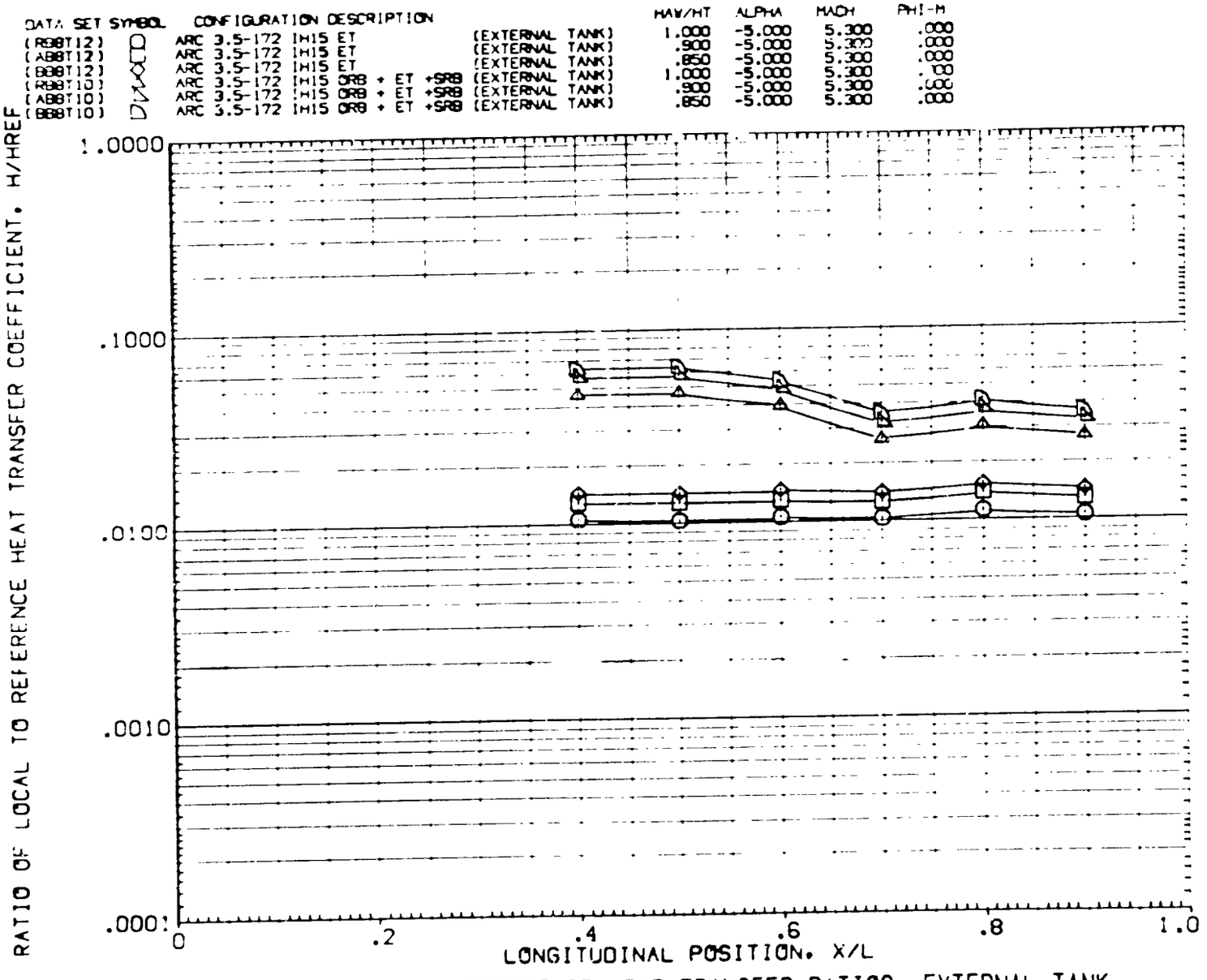


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 2.021 MACH = 5.300 PHI = 135.000

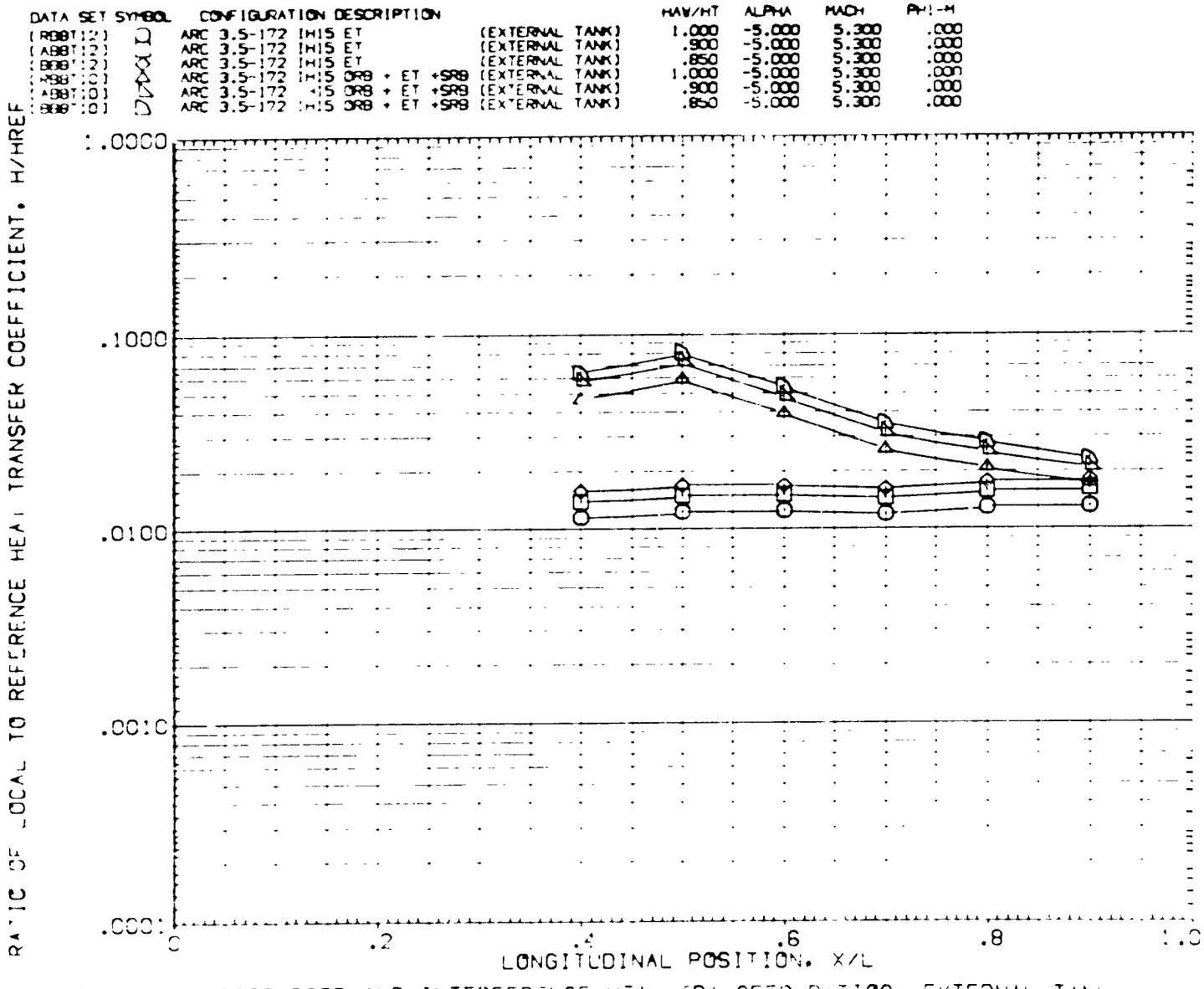


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

R[illegible] = 2.021 MACH = 5.300 PHI = 15.500

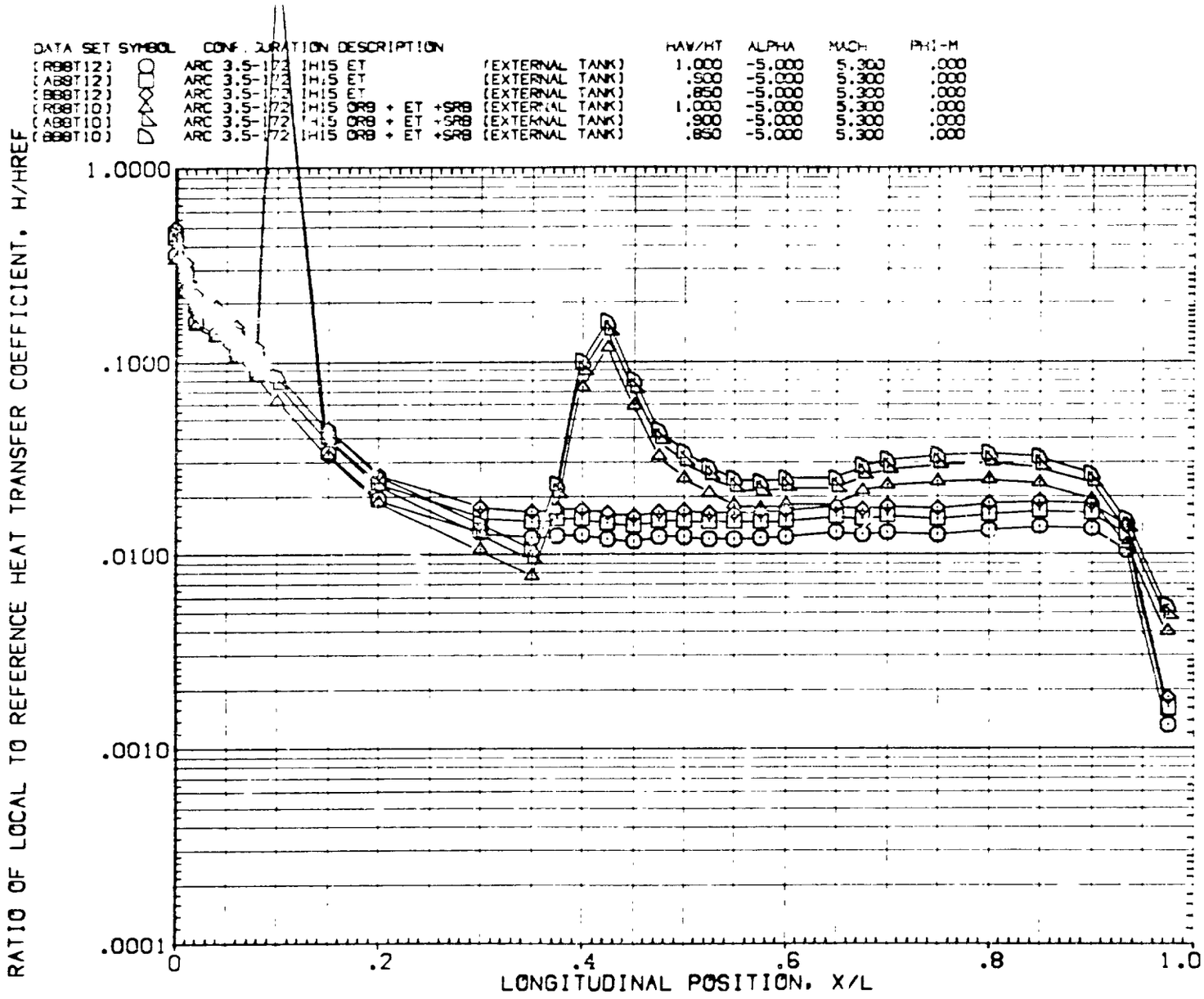


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 2.021 MACH = 5.300 PHI = 180.000 PAGE 64

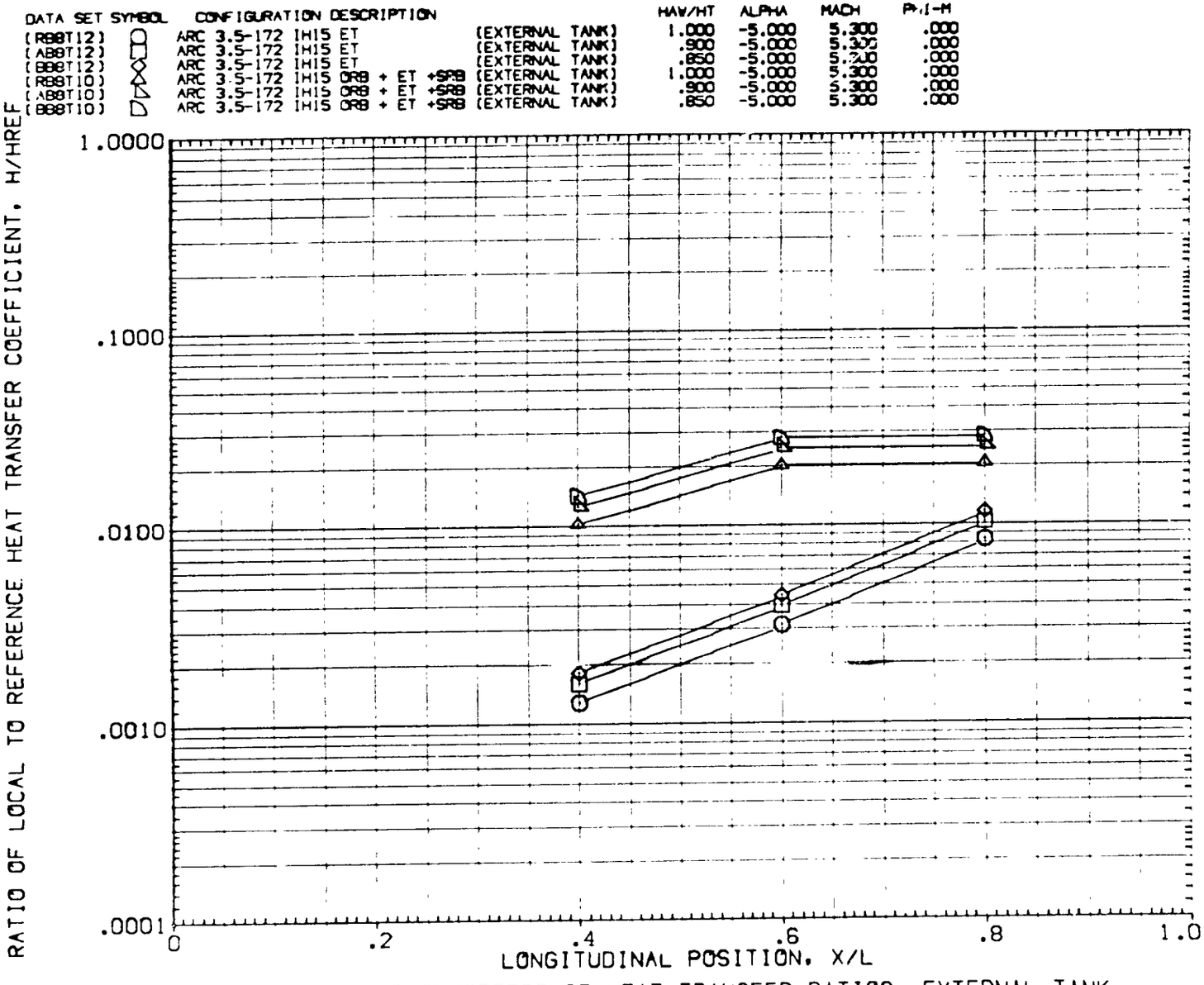


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = .000

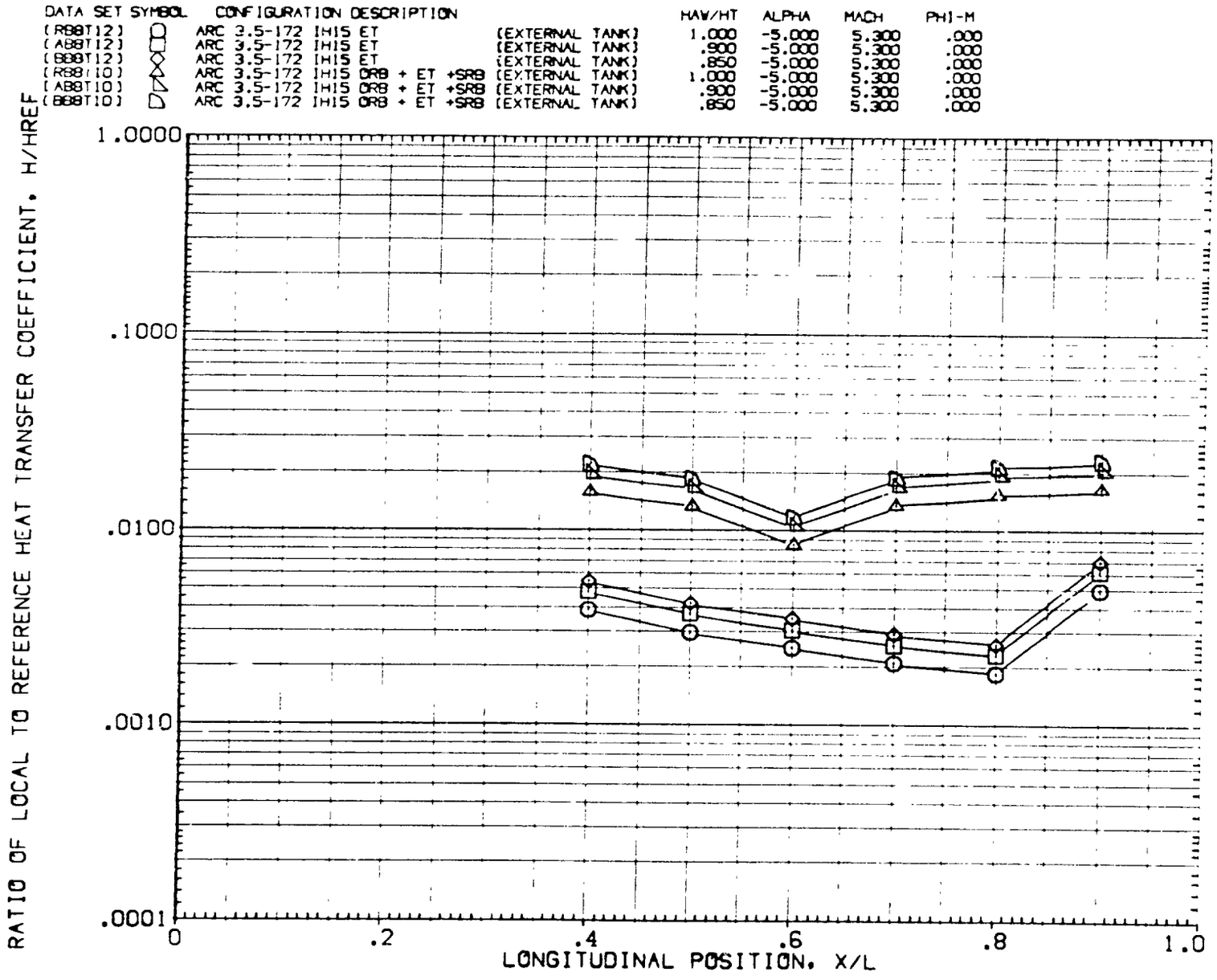


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 45.000

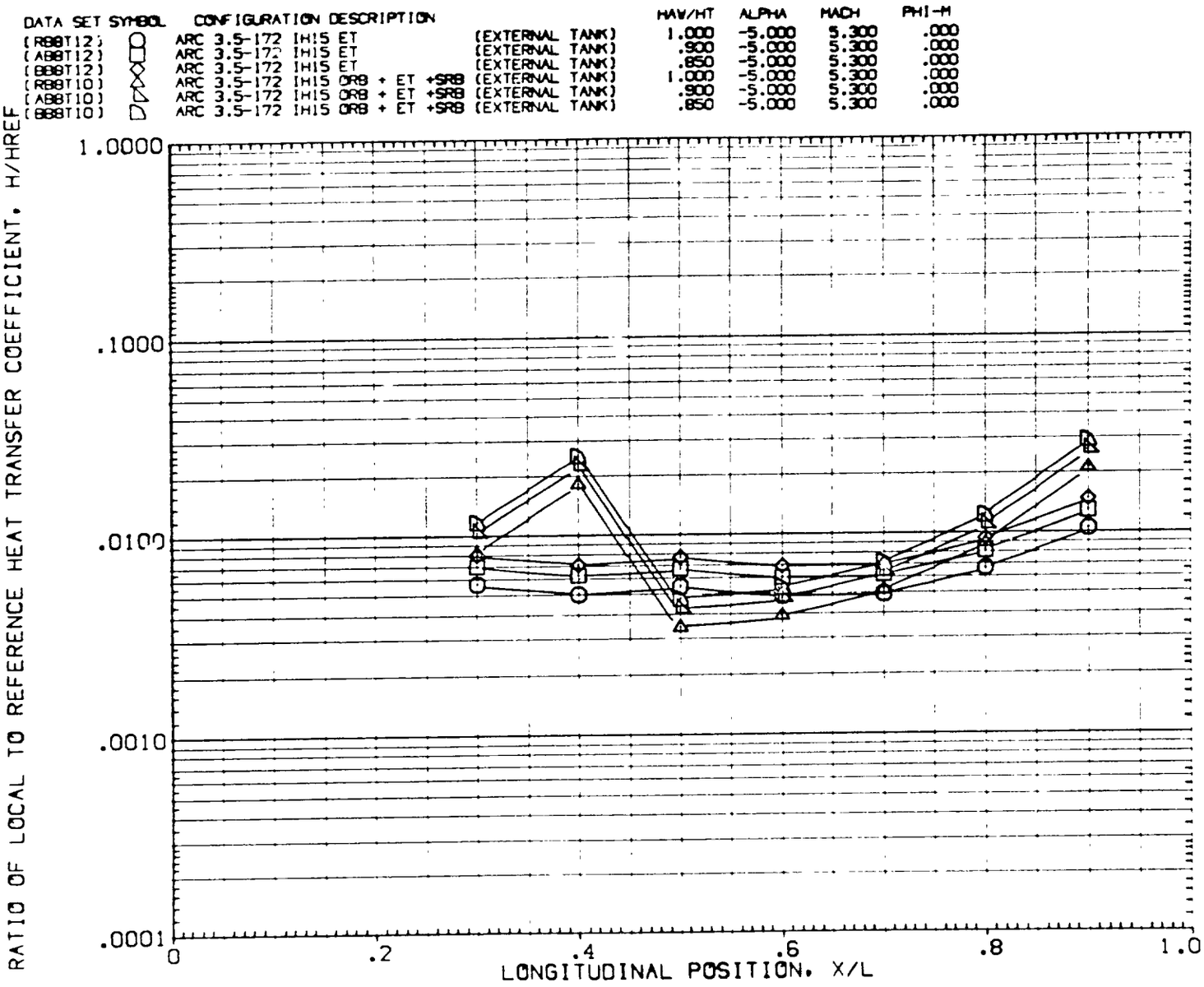


FIG. 8 UNDISTUPBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 67.500

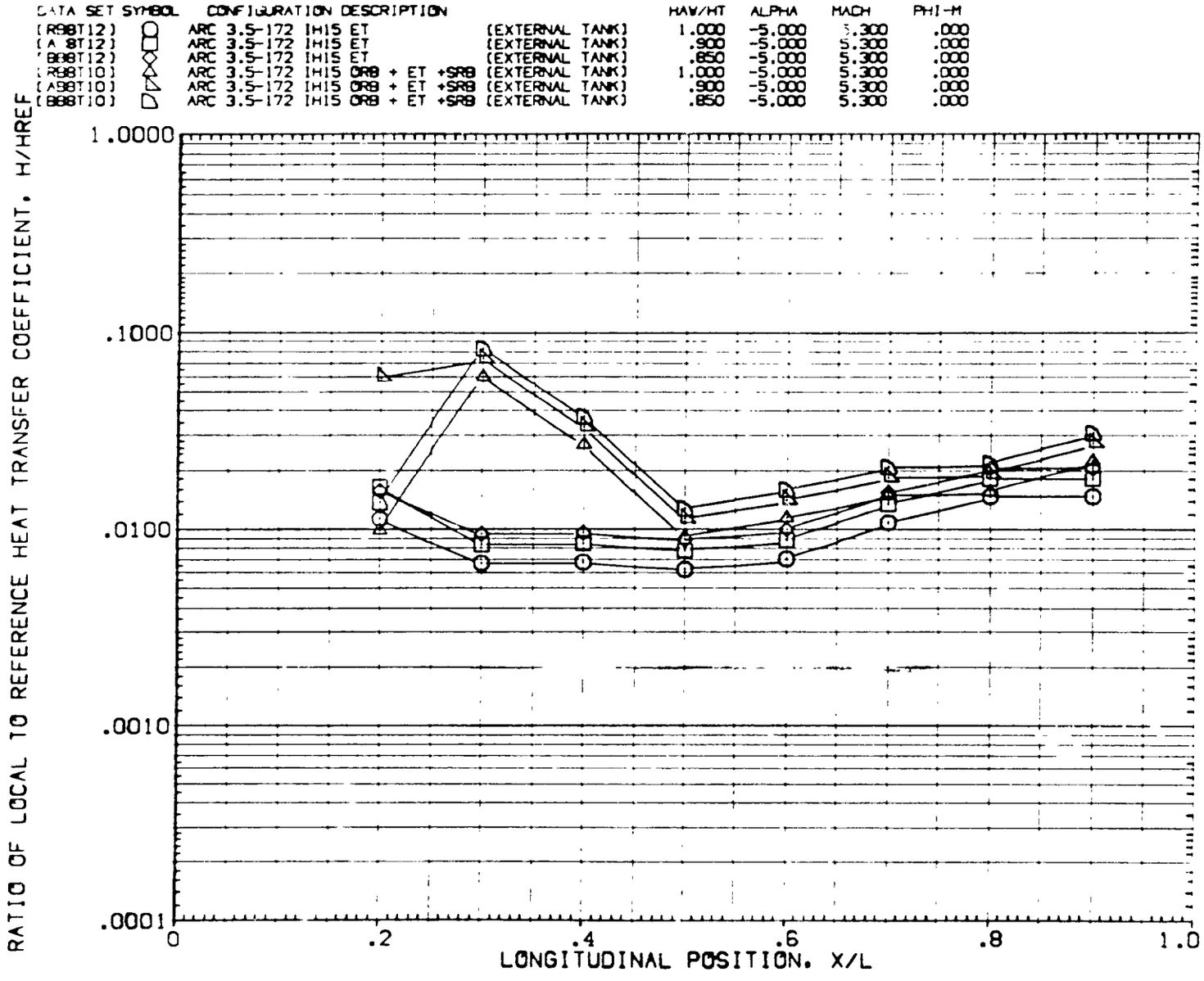


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 90.000 PAGE 68

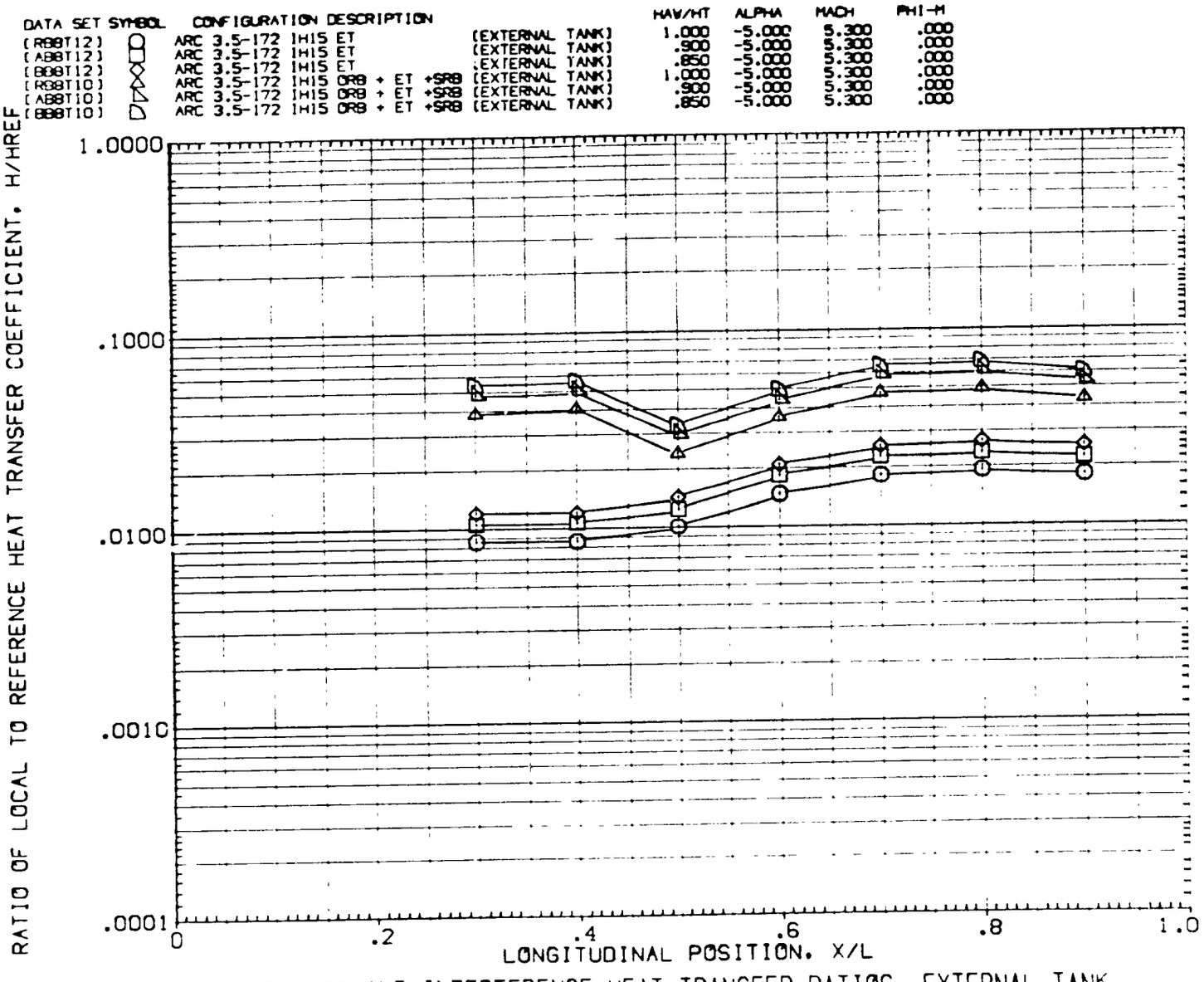


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 112.500

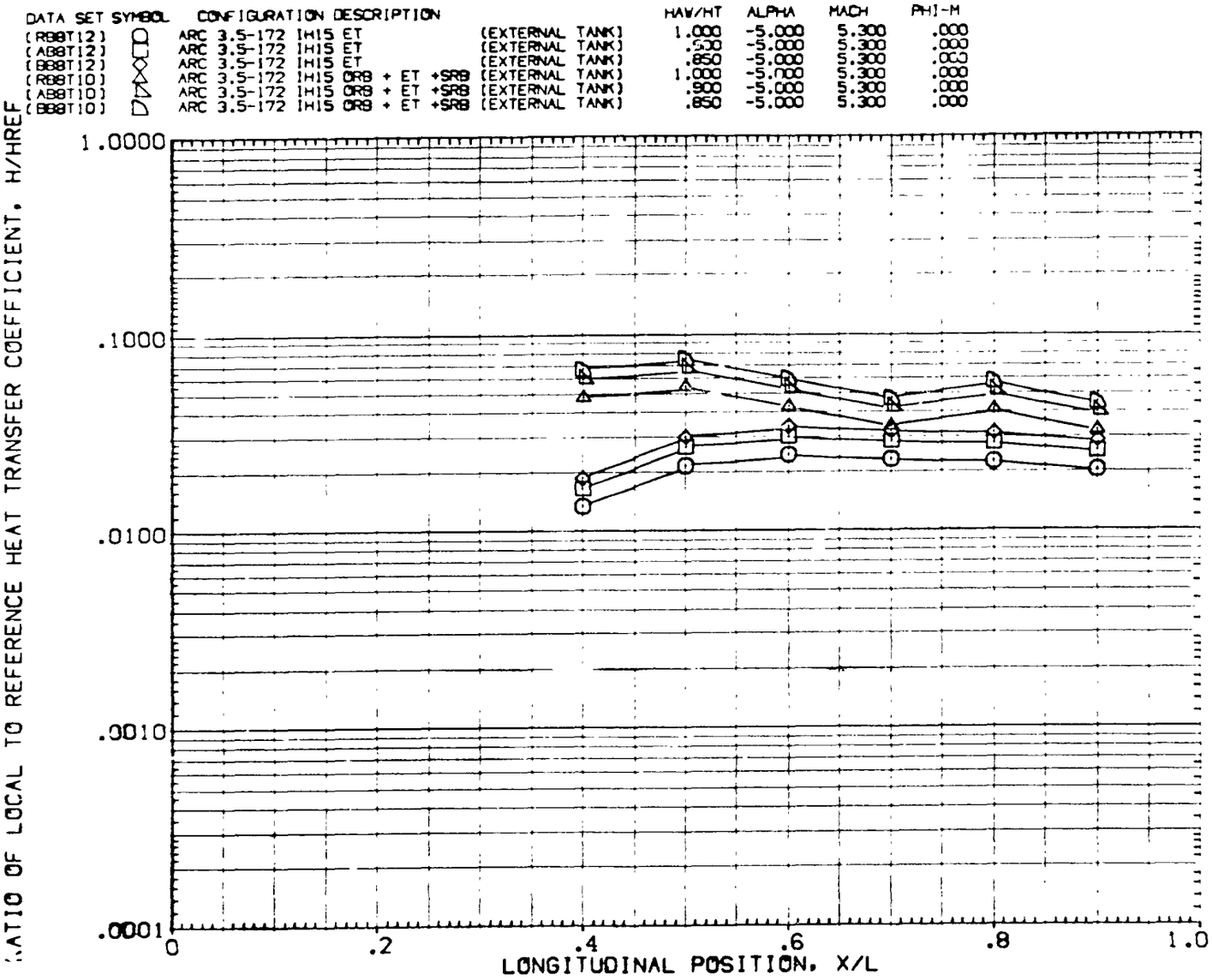


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 135.000

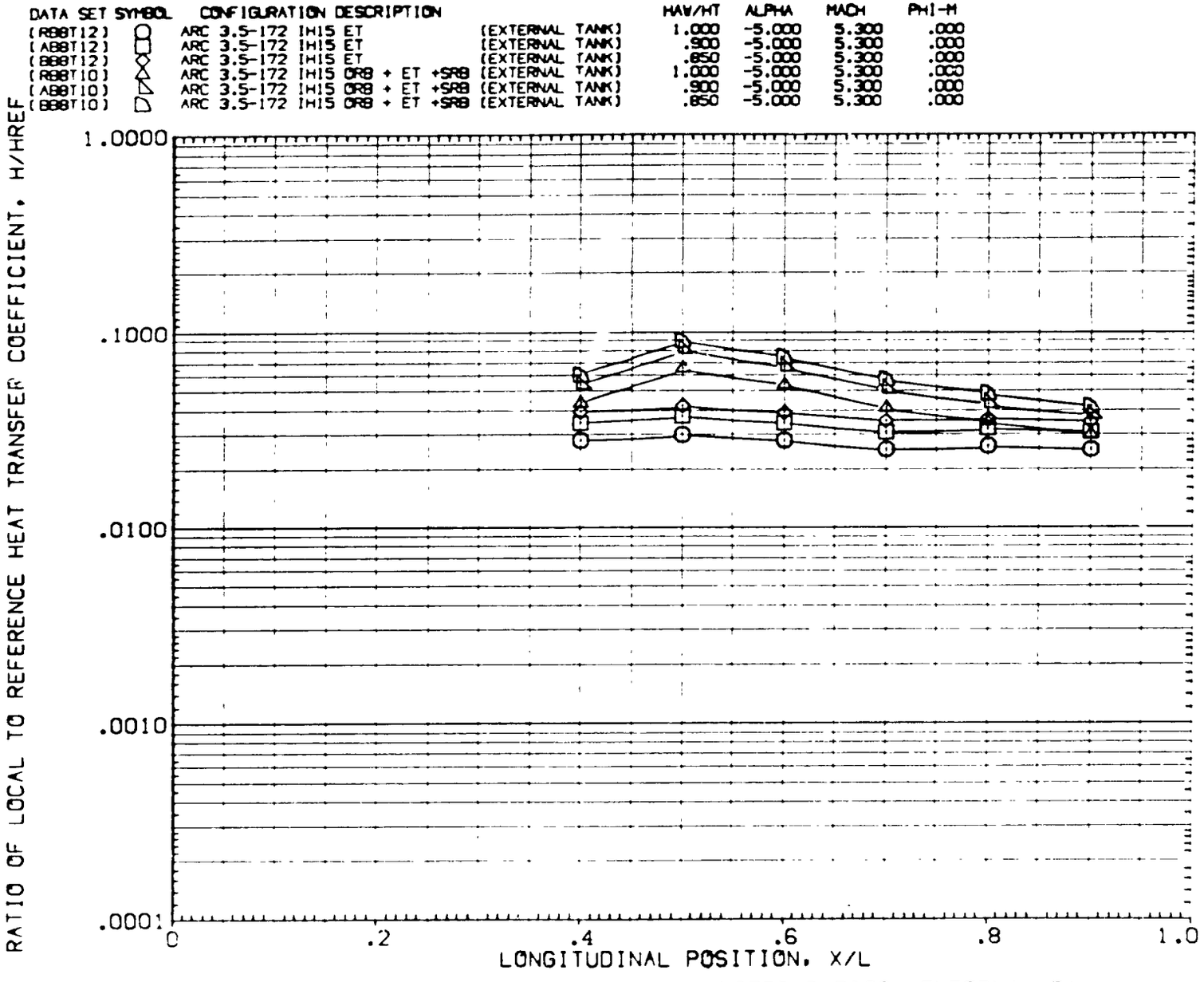


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 157.500

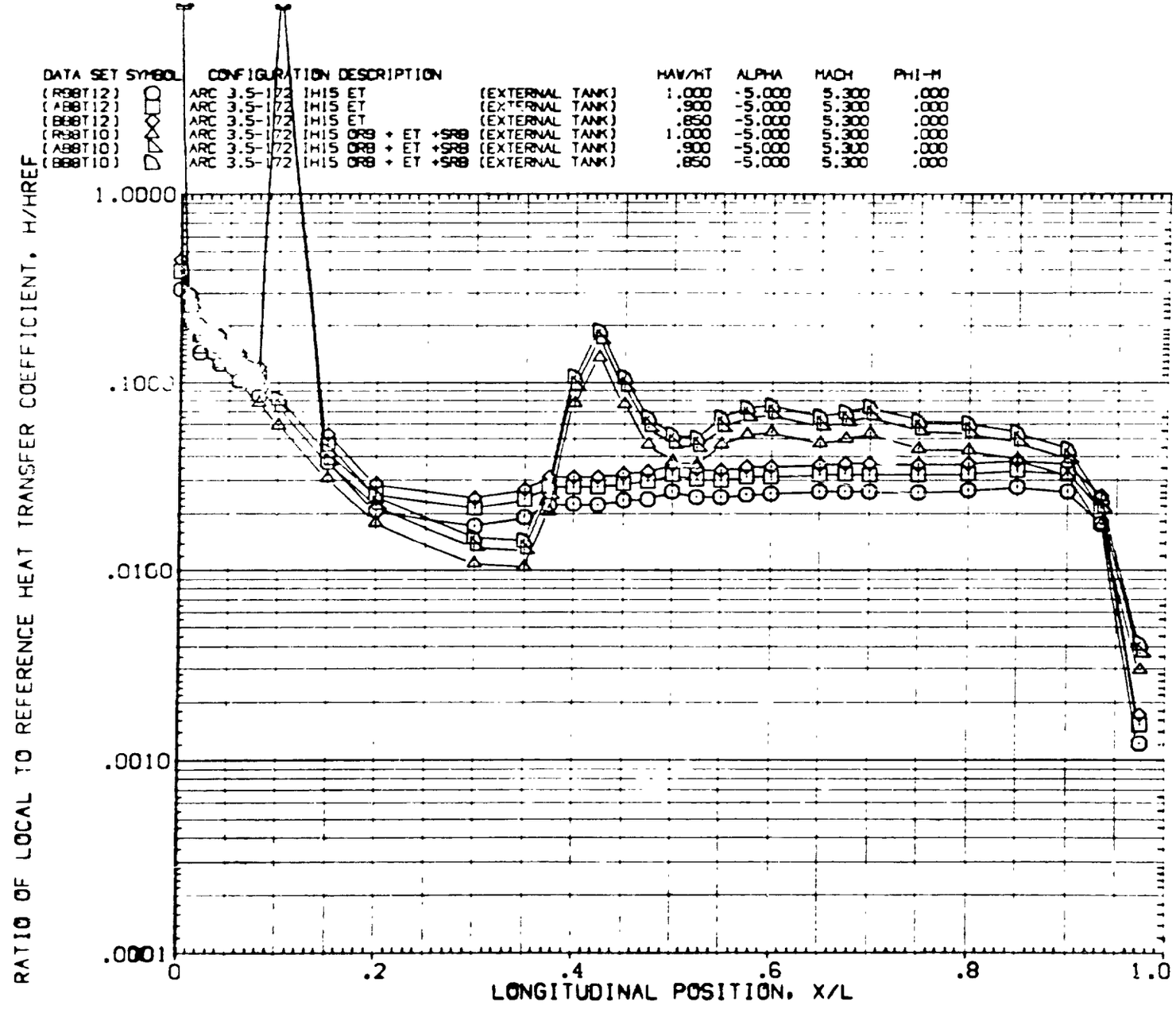


FIG. 8 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 5.266 MACH = 5.300 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DBBT10)	○	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(EBBT10)	□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(FBBT10)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

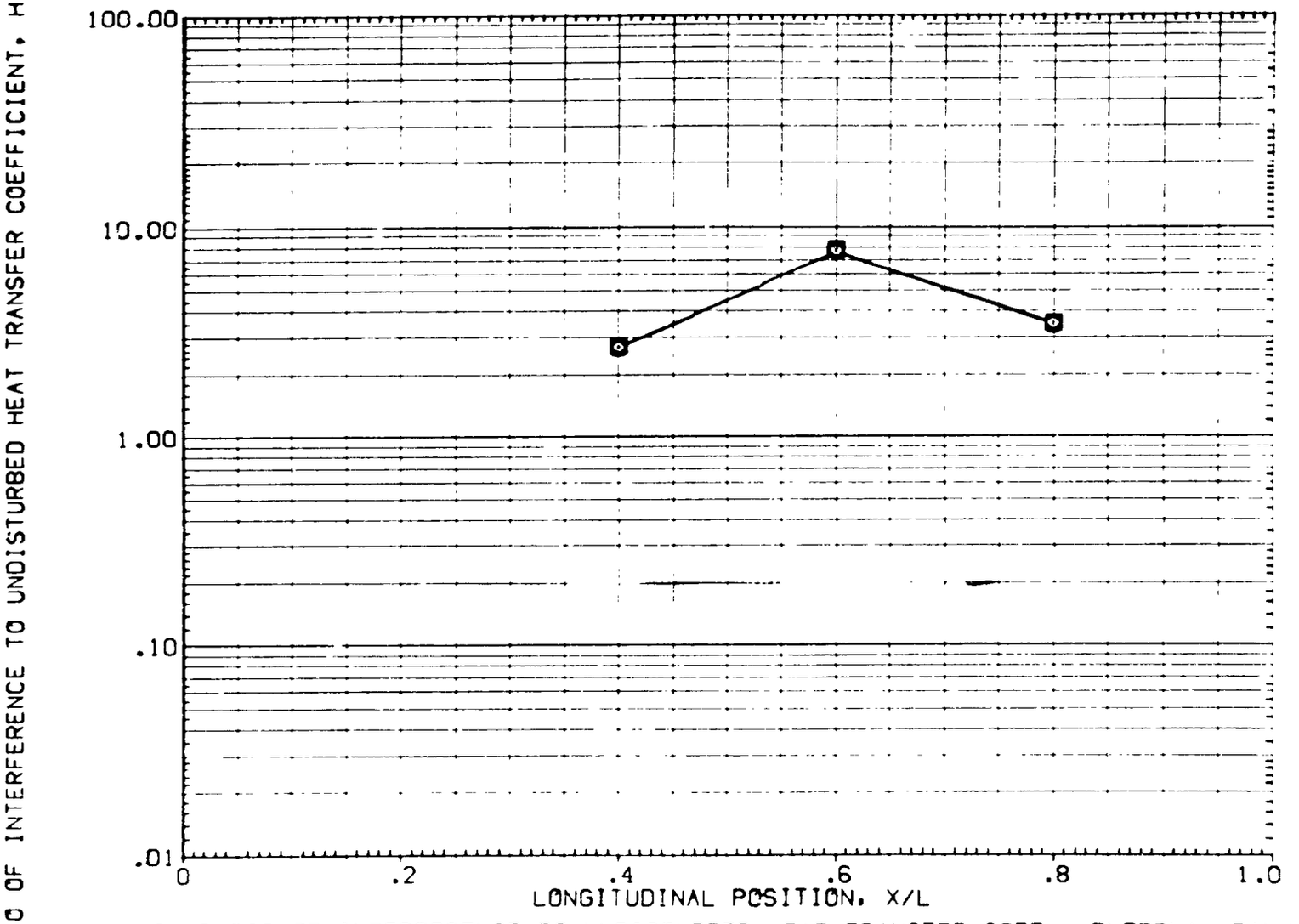


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 2.009 MACH = 5.300 PHI = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88T10)	□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)	△	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

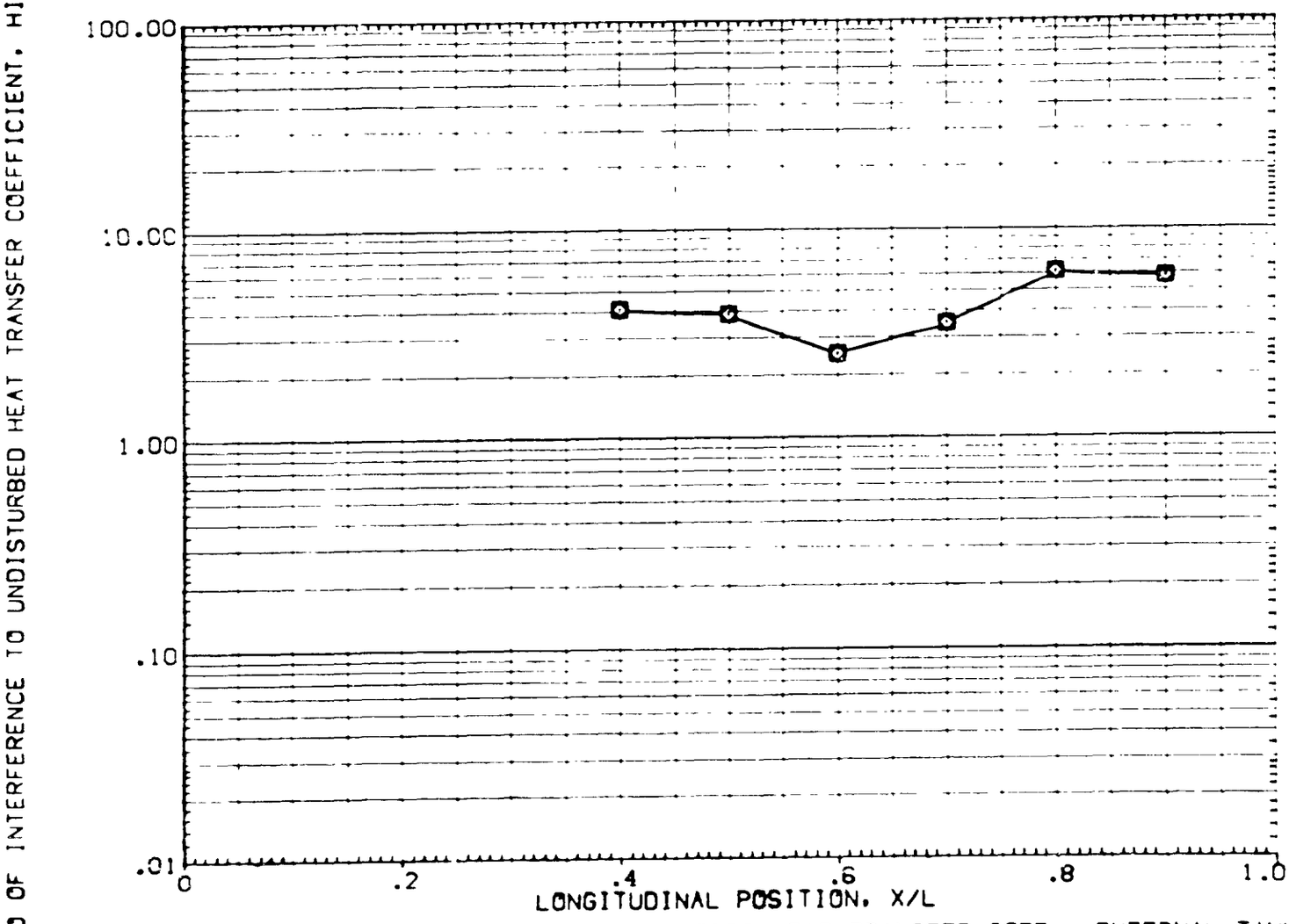


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 2.009 MACH = 5.300 PHI = 45.000

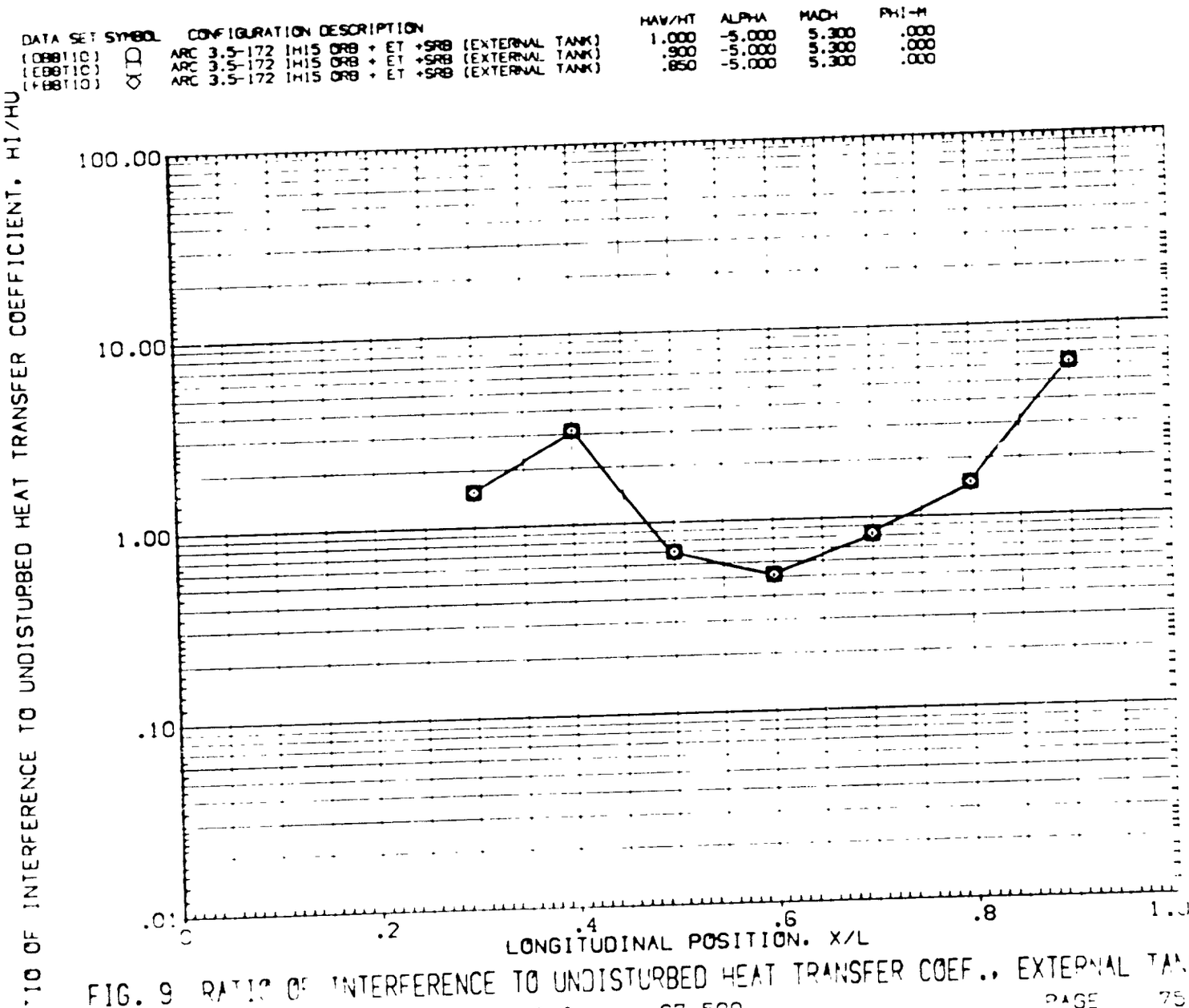


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 2.009 MACH = 5.300 PHI = 67.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T10)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

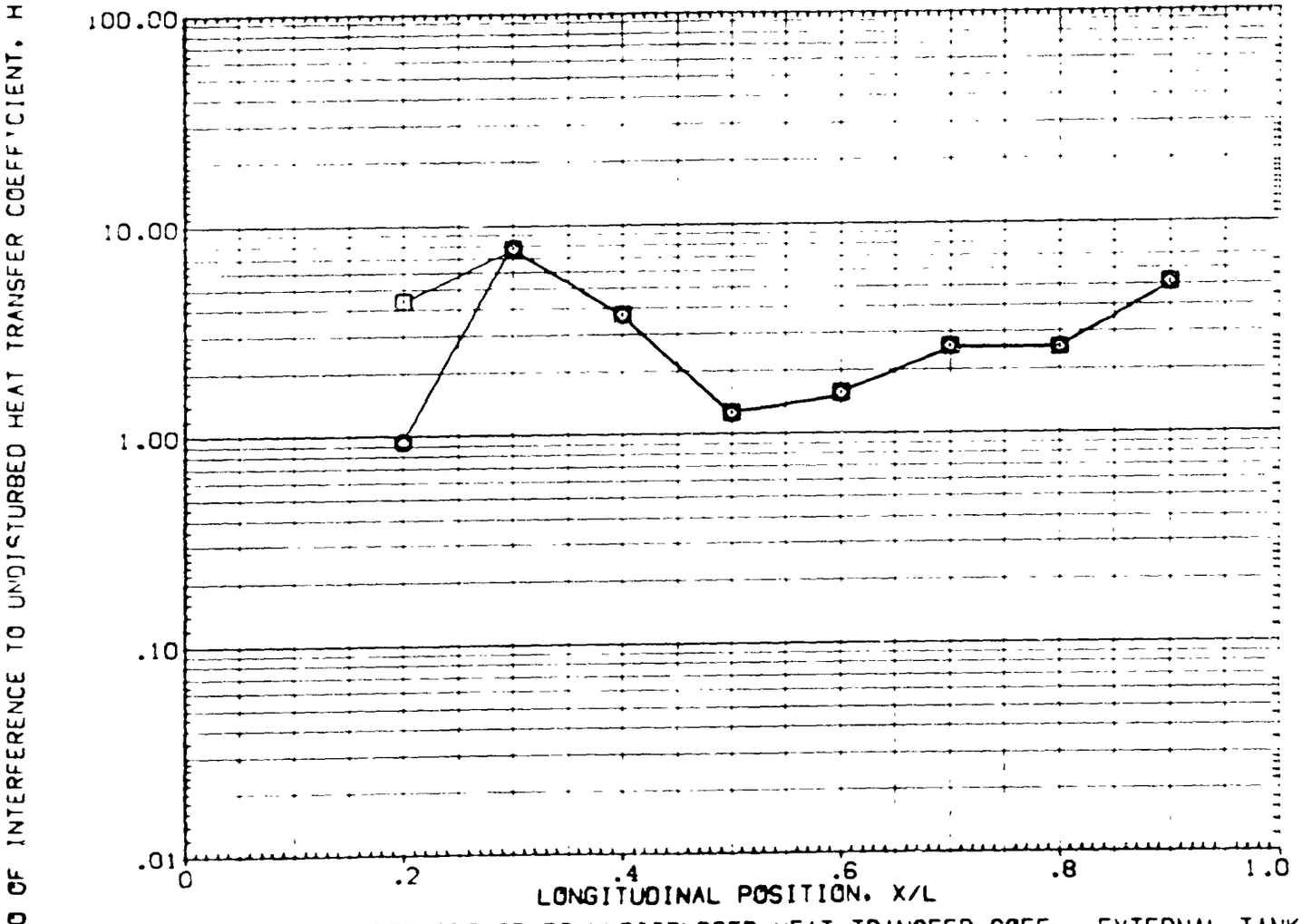


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 2.009 MACH = 5.300 PHI = 90.000

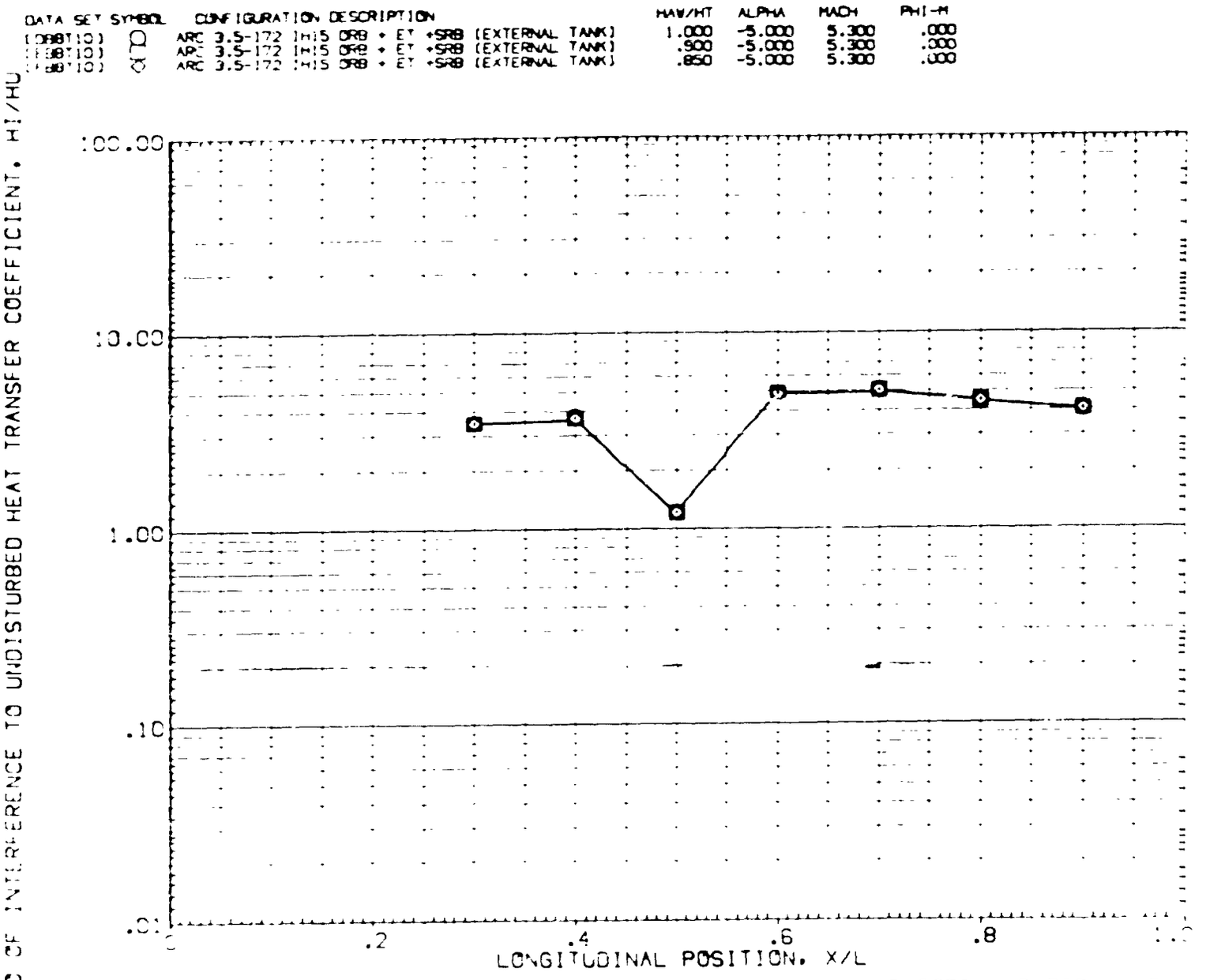


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEFF., EXTERNAL TANK.

5.300

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T10)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

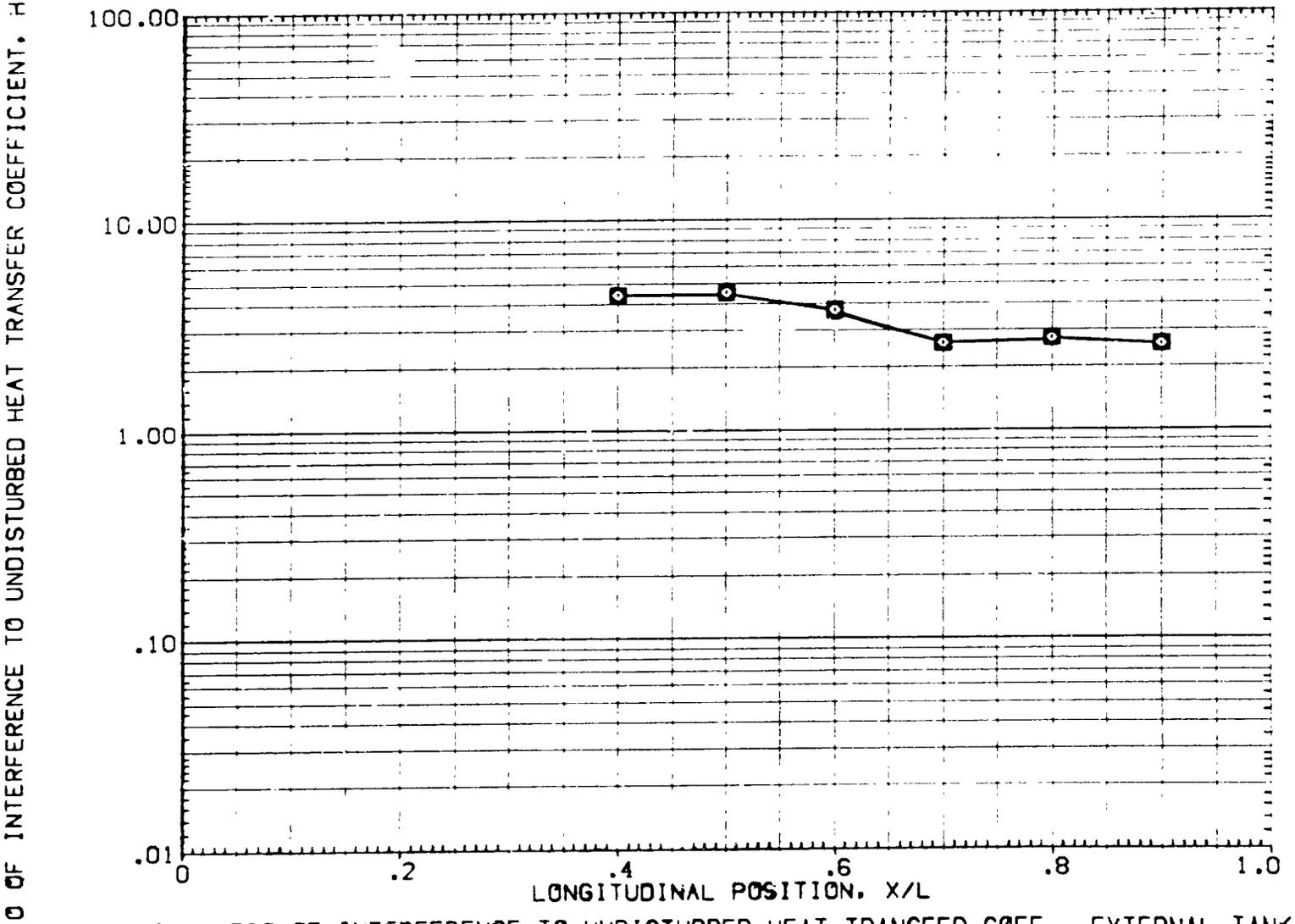


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 2.009 MACH = 5.300 PHI = 135.000

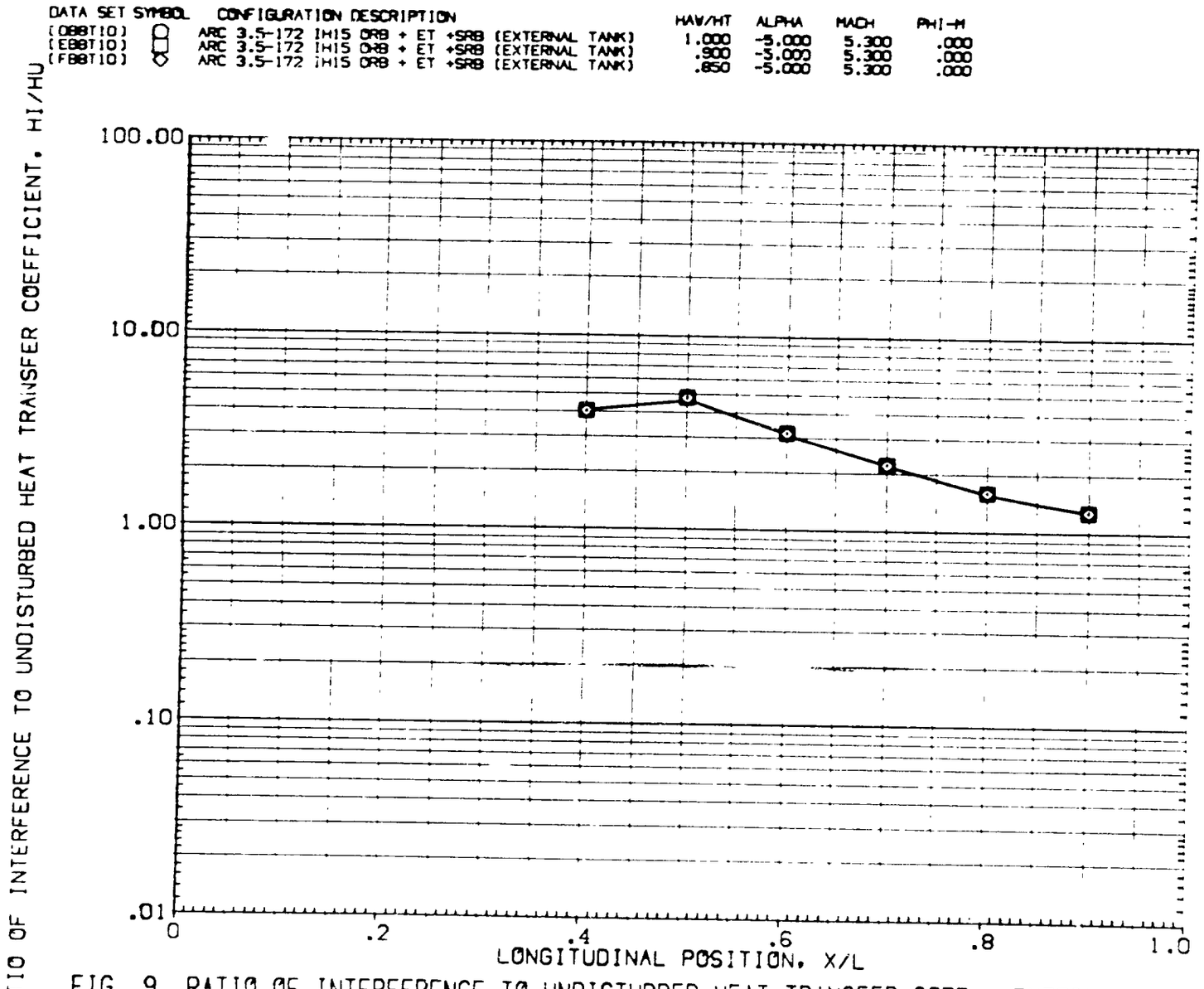


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 2.009 MACH = 5.300 PHI = 157.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T10)	○	ARC 3.5-172 (H15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	□	ARC 3.5-172 (H15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)	◇	ARC 3.5-172 (H15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

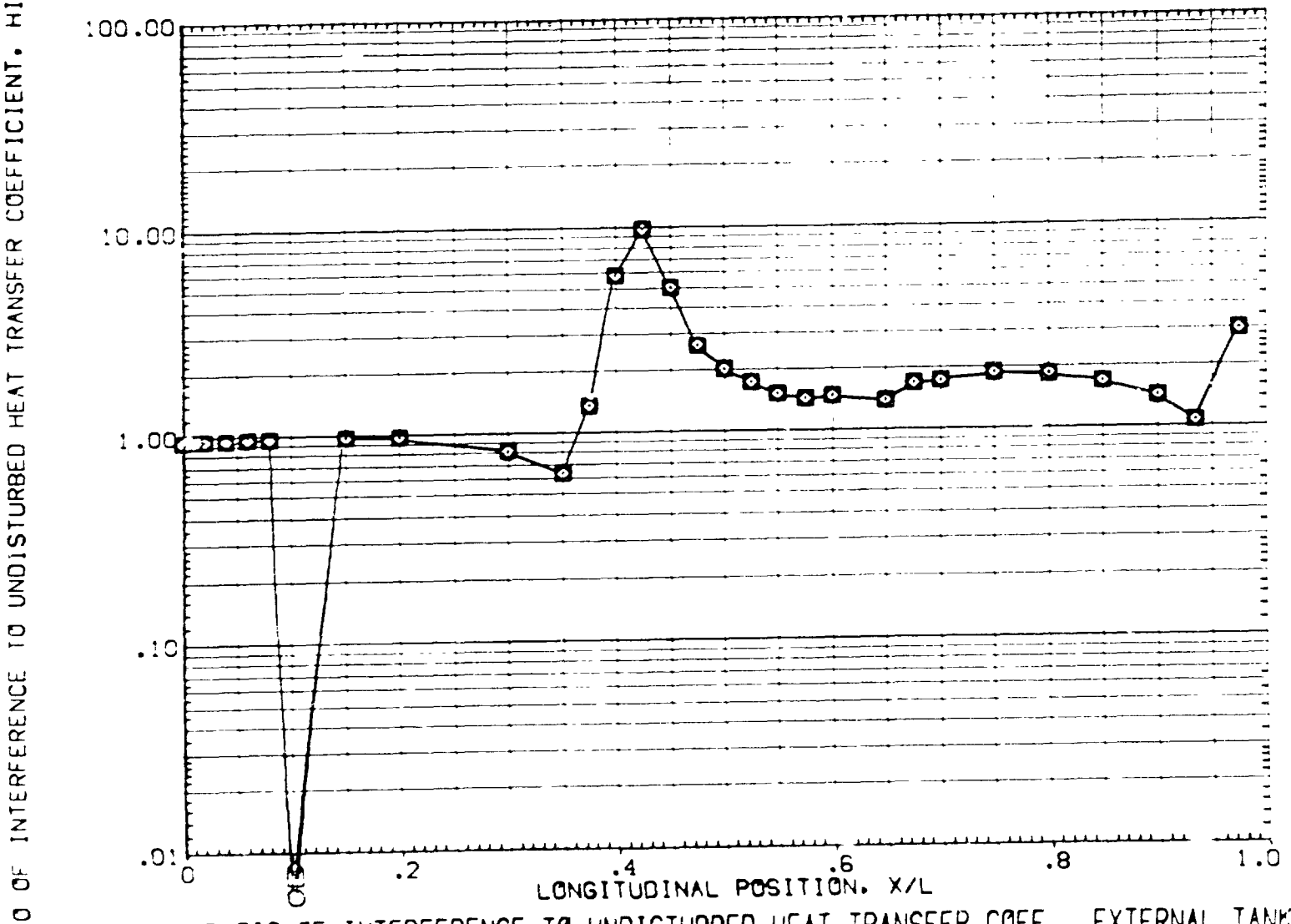


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 2.009 MACH = 5.300 PHI = 180.000

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T10)	○	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

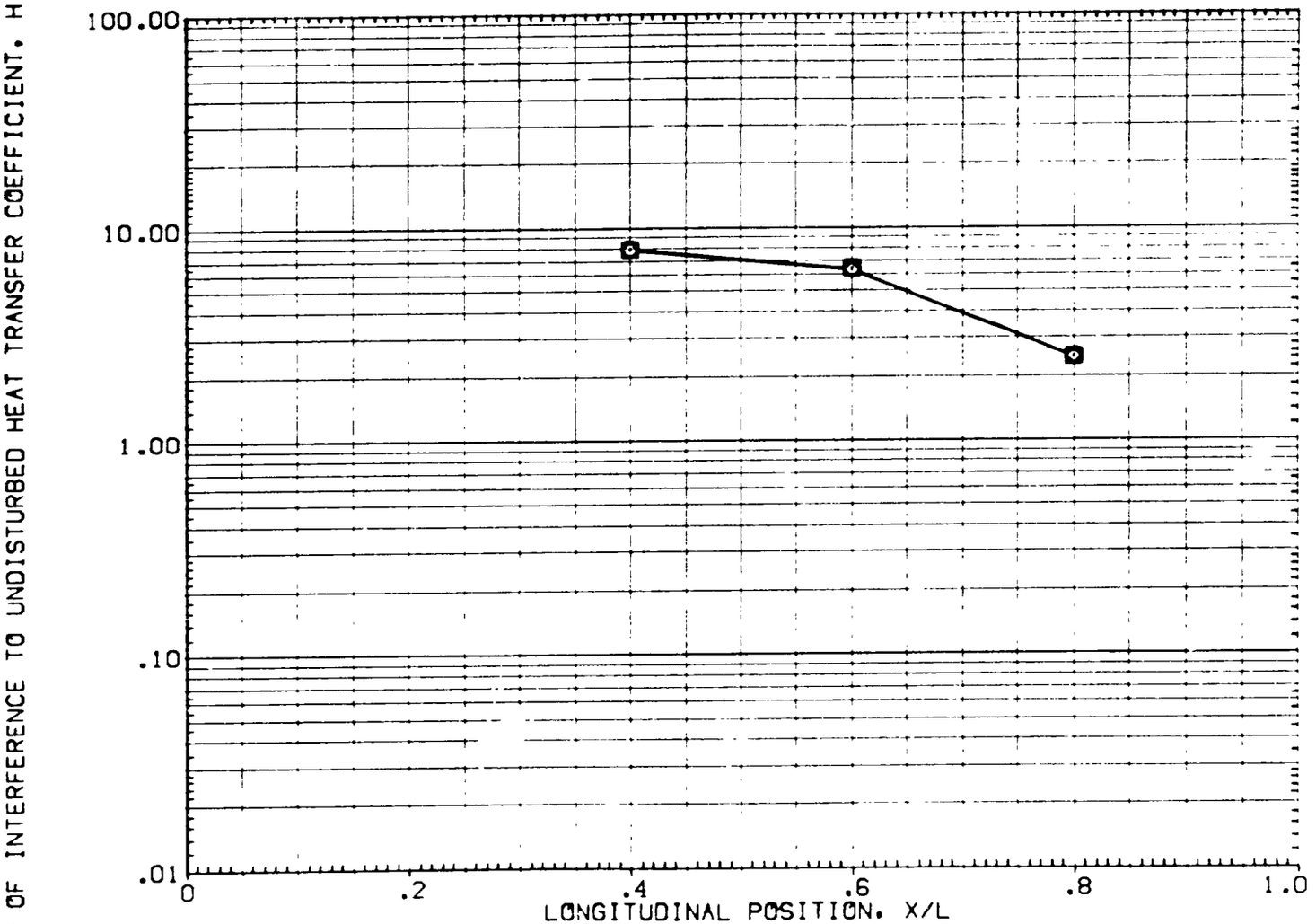


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 4.771 MACH = 5.300 PHI = .000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(DBBTIO)	ARC 3.5-172 (HIS ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(EBBTIO)	ARC 3.5-172 (HIS ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(FBBTIO)	ARC 3.5-172 (HIS ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

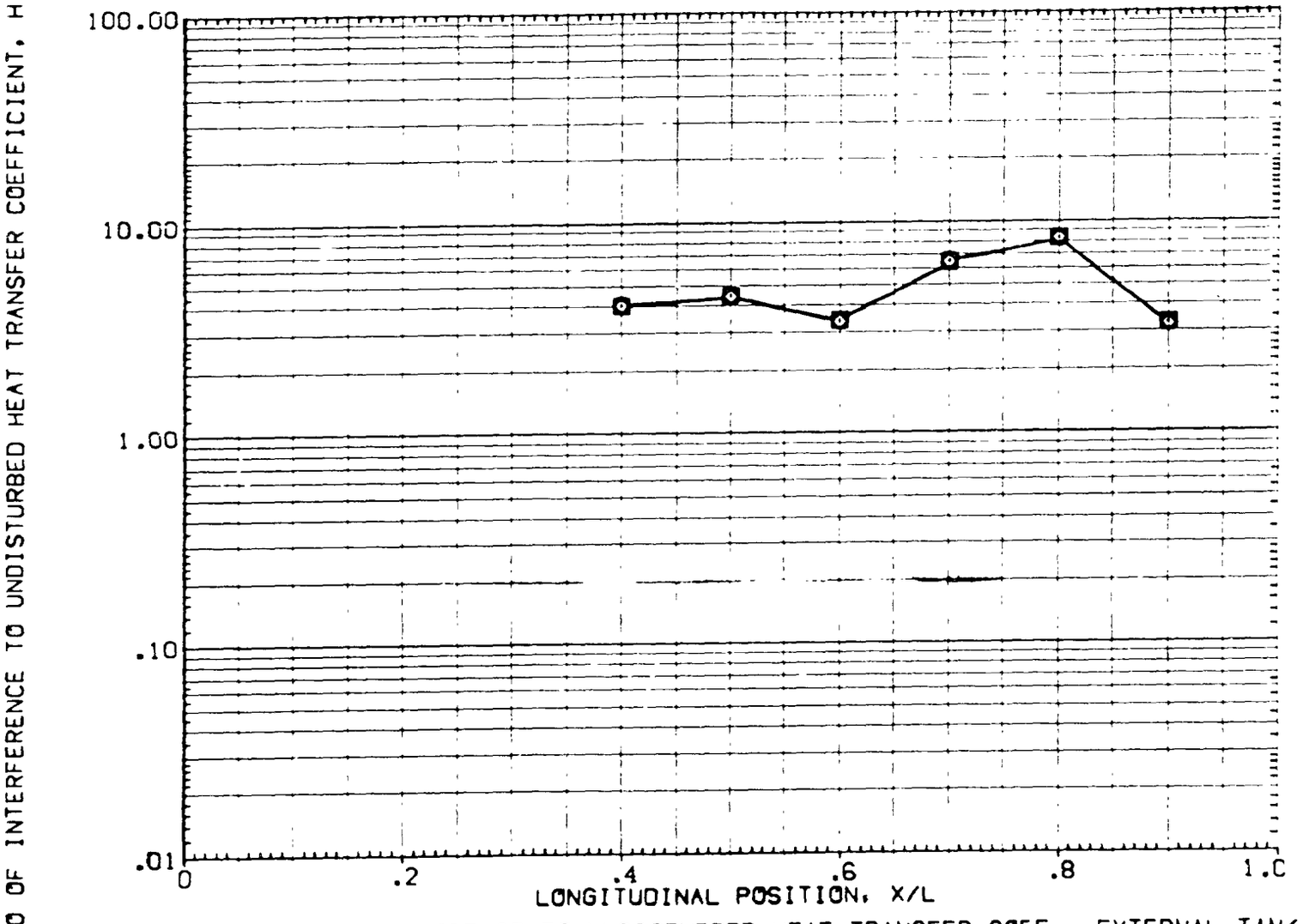


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.771 MACH = 5.300 PHI = 45.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DBBT10)	○	ARC 3.5-172 IH15 CRB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(EBBT10)	□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(FBBT10)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

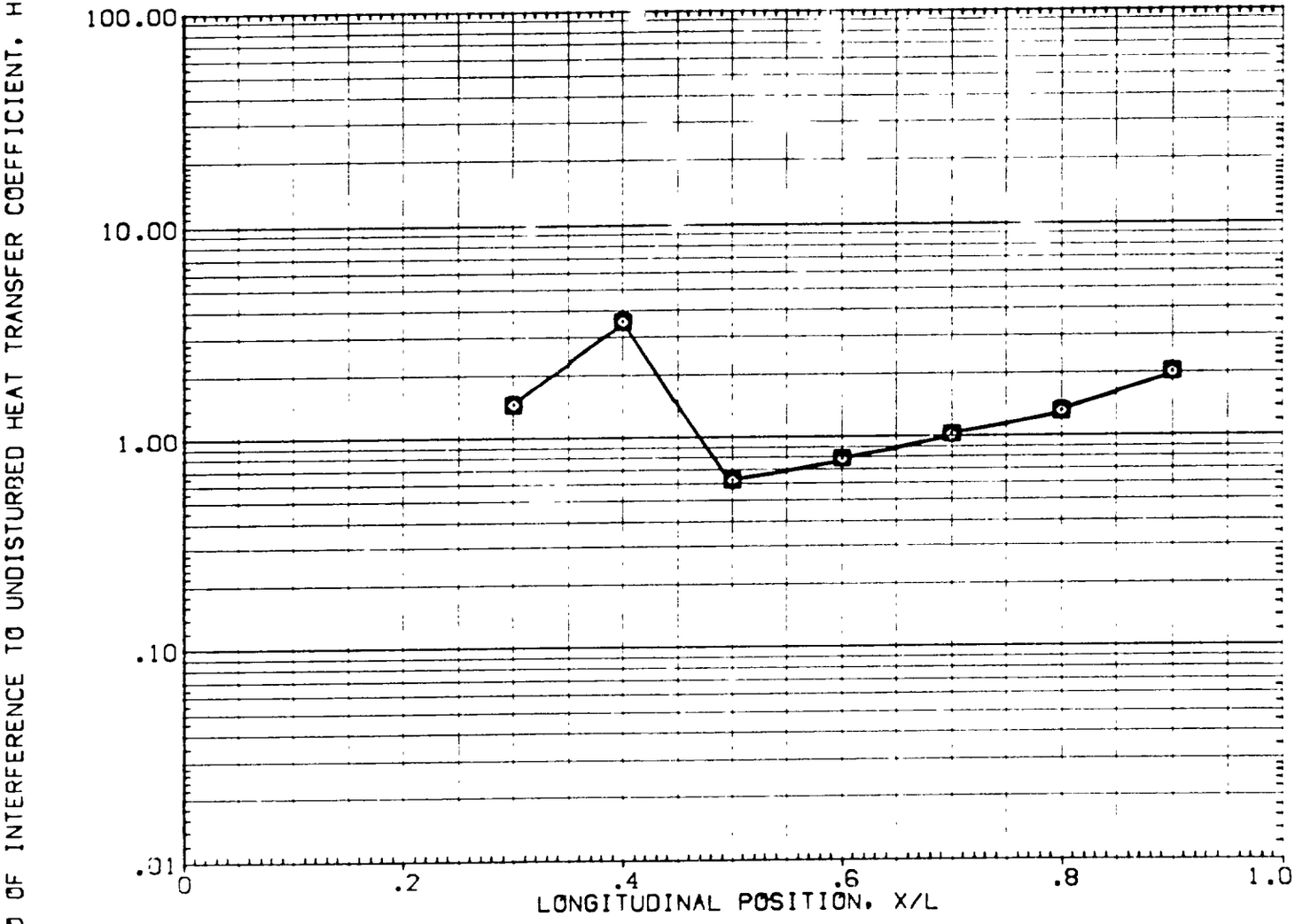


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.771 MACH = 5.300 PHI = 67.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88T10)	○	ARC 3.5-172 IHI5 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	□	ARC 3.5-172 IHI5 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)	◇	ARC 3.5-172 IHI5 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

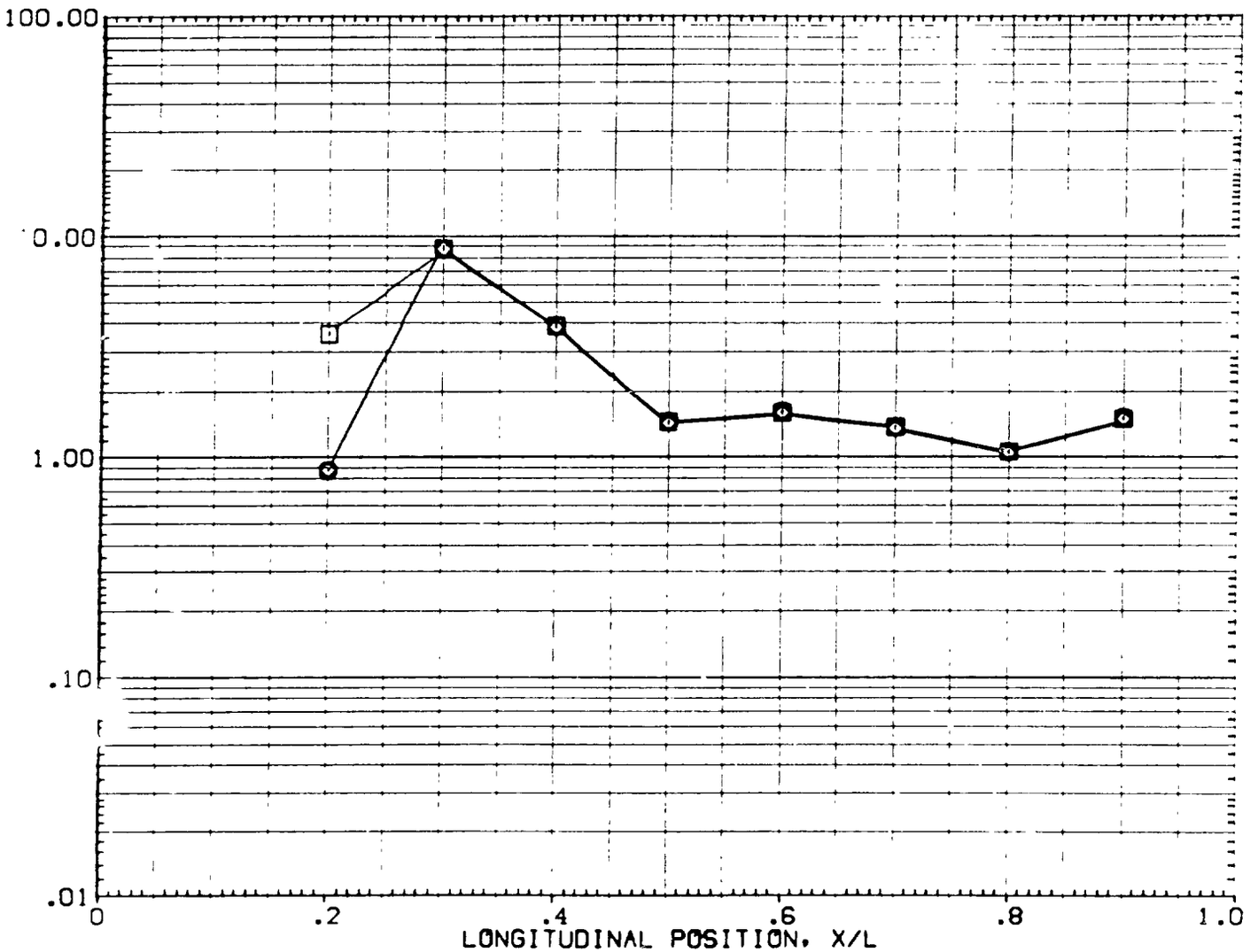


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.771 MACH = 5.300 PHI = 90.000

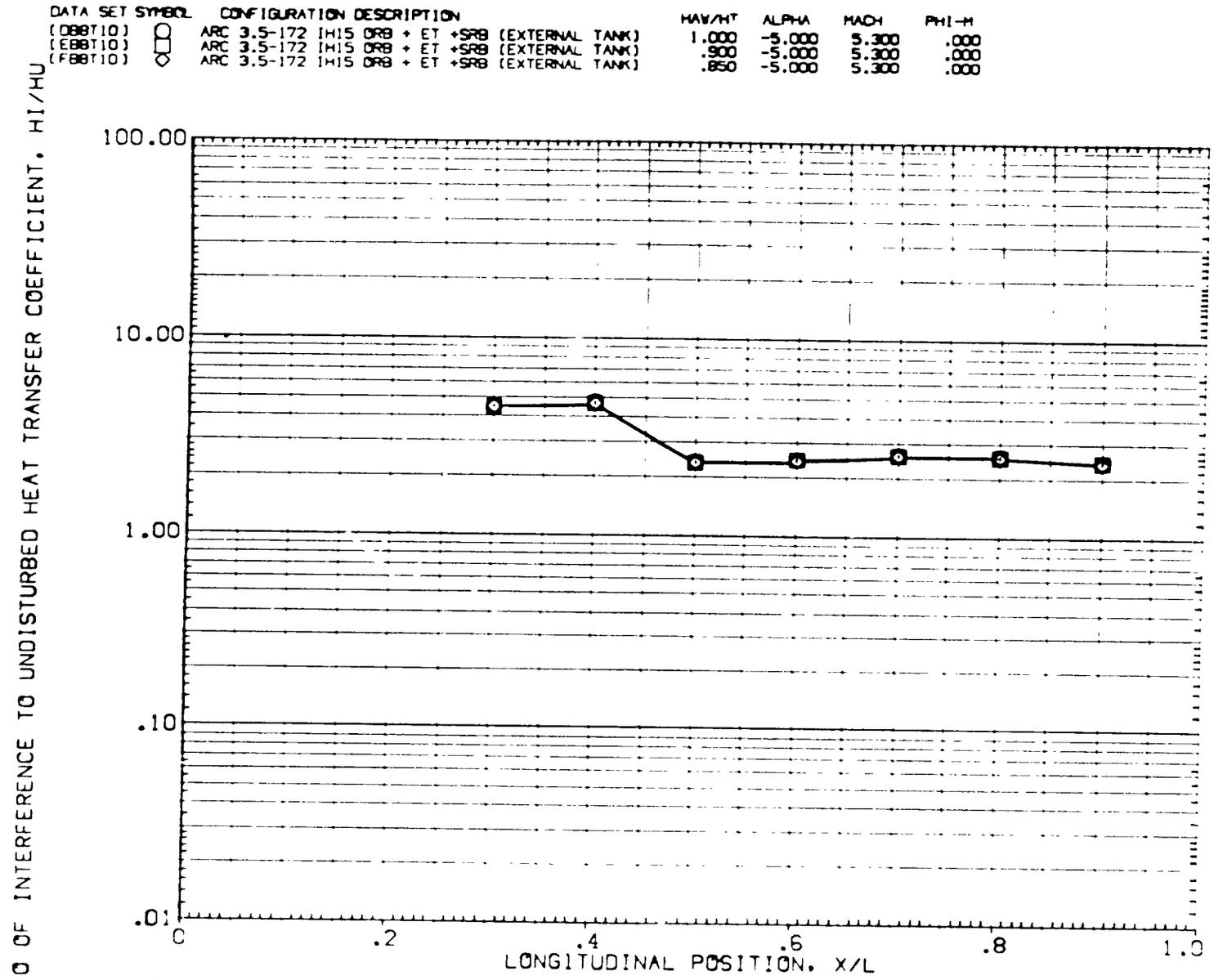


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RN/L = 4.77: MACH = 5.300 PHI = 112.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T10)	□	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(E88T10)	◁	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10)		ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

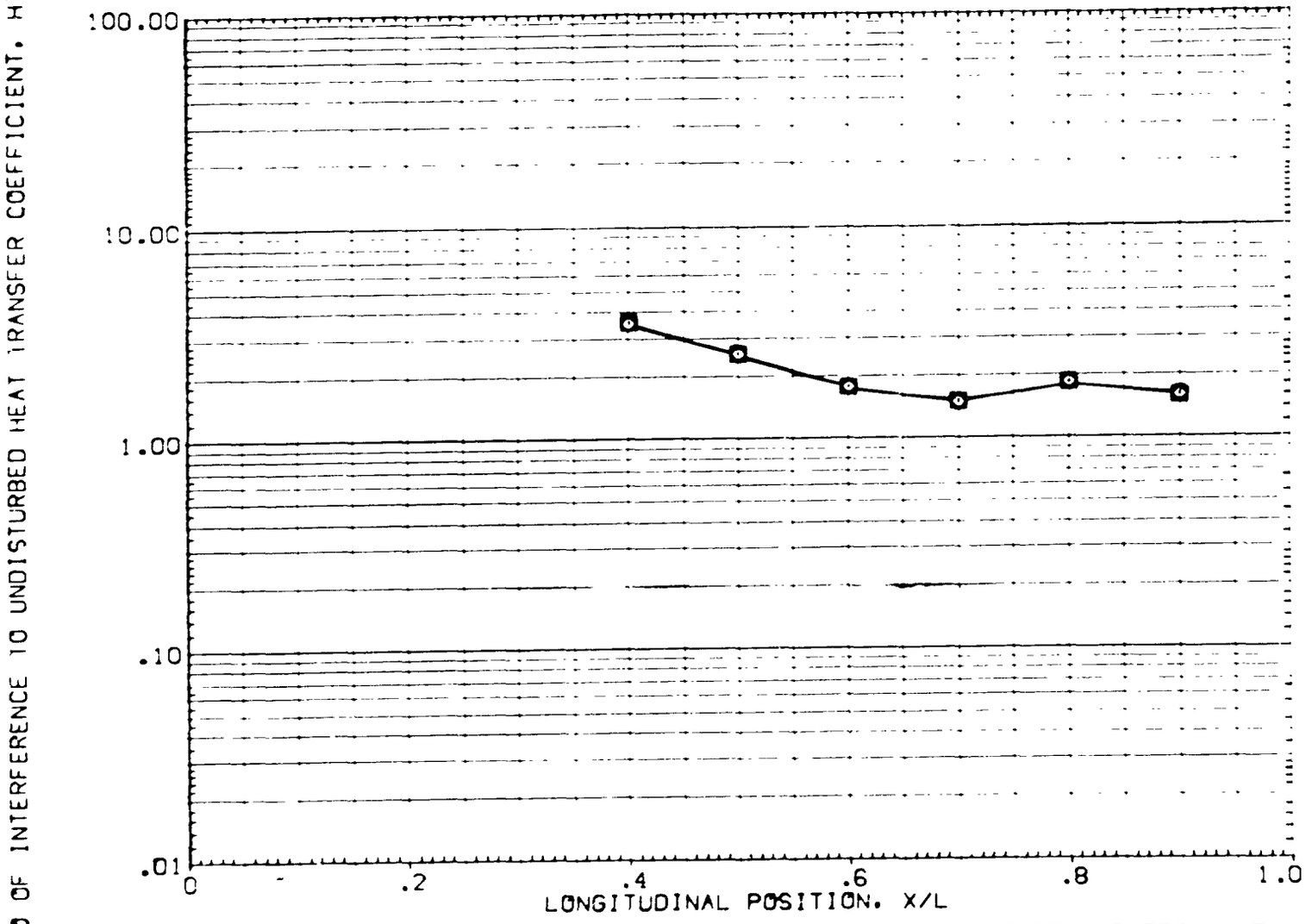


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

S'/L = 4.771 MACH = 5.300 PHI = 135.000

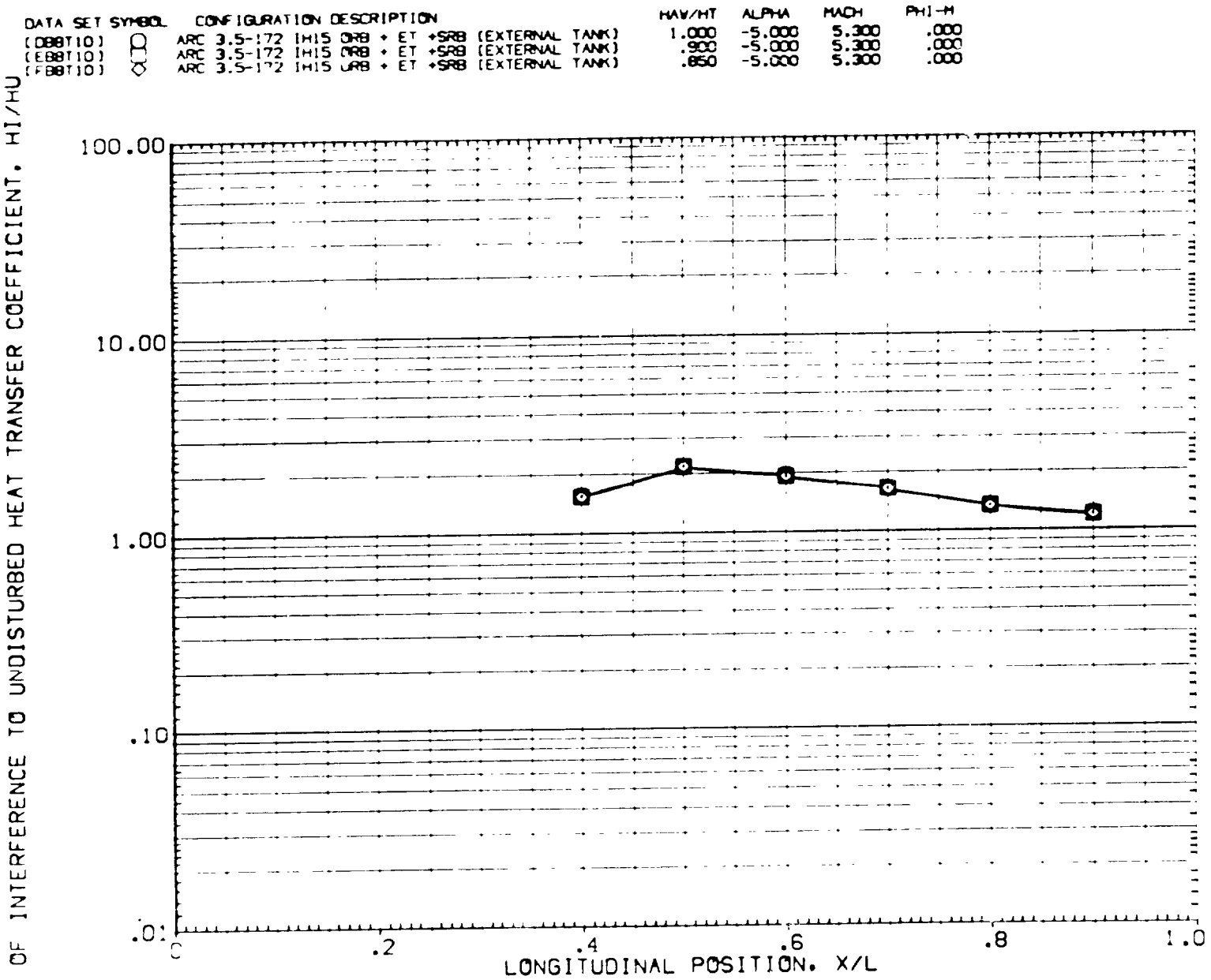


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

R.N./L = 4.771 MACH = 5.300 PHI = 157.500

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88T10) ○	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	1.000	-5.000	5.300	.000
(F88T10) □	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.900	-5.000	5.300	.000
(F88T10) ◇	ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK)	.850	-5.000	5.300	.000

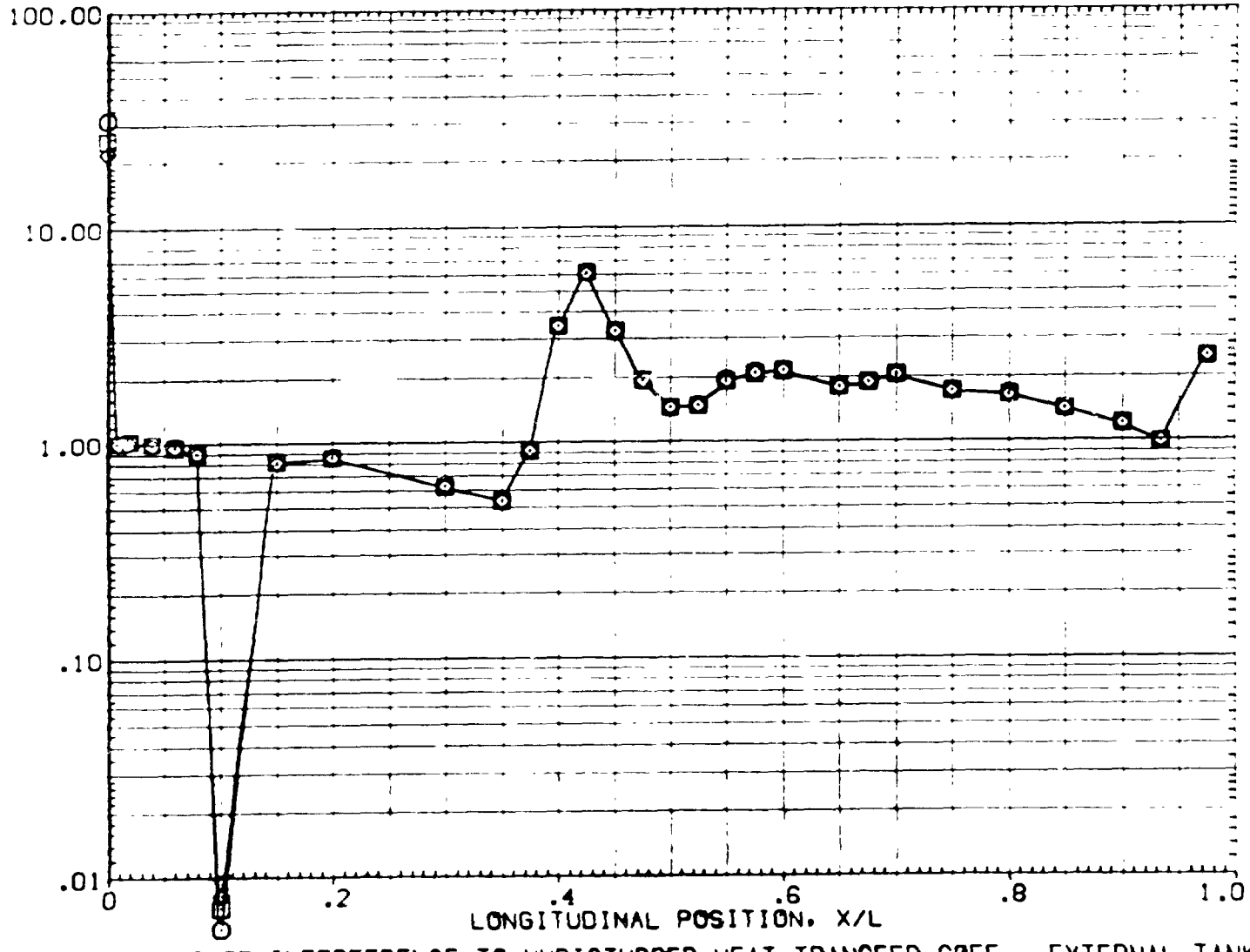


FIG. 9 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., EXTERNAL TANK.

RRN/L = 4.771 MACH = 5.300 PHI = 180.000

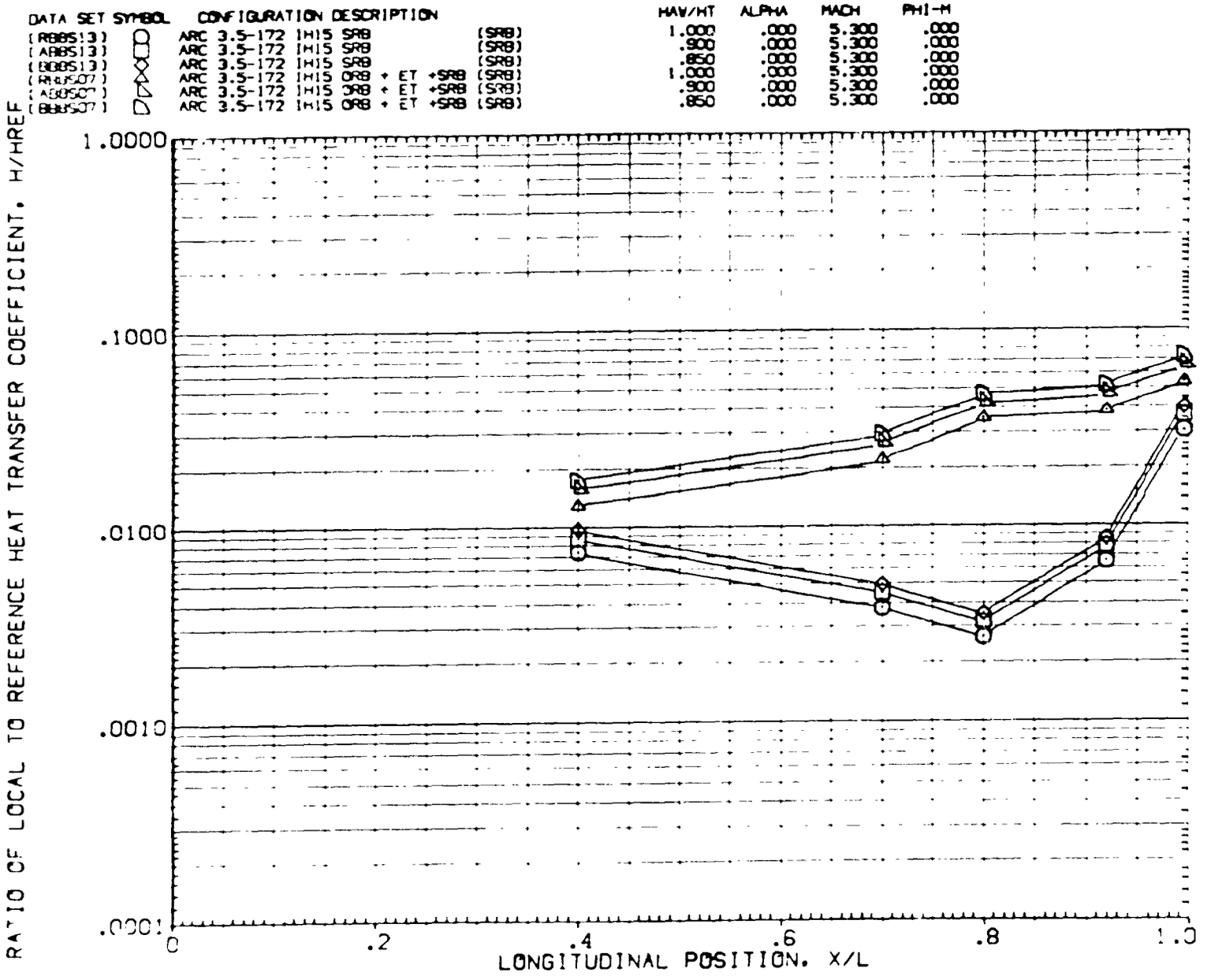


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 1.687 MACH = 5.300 PHI = 90.000

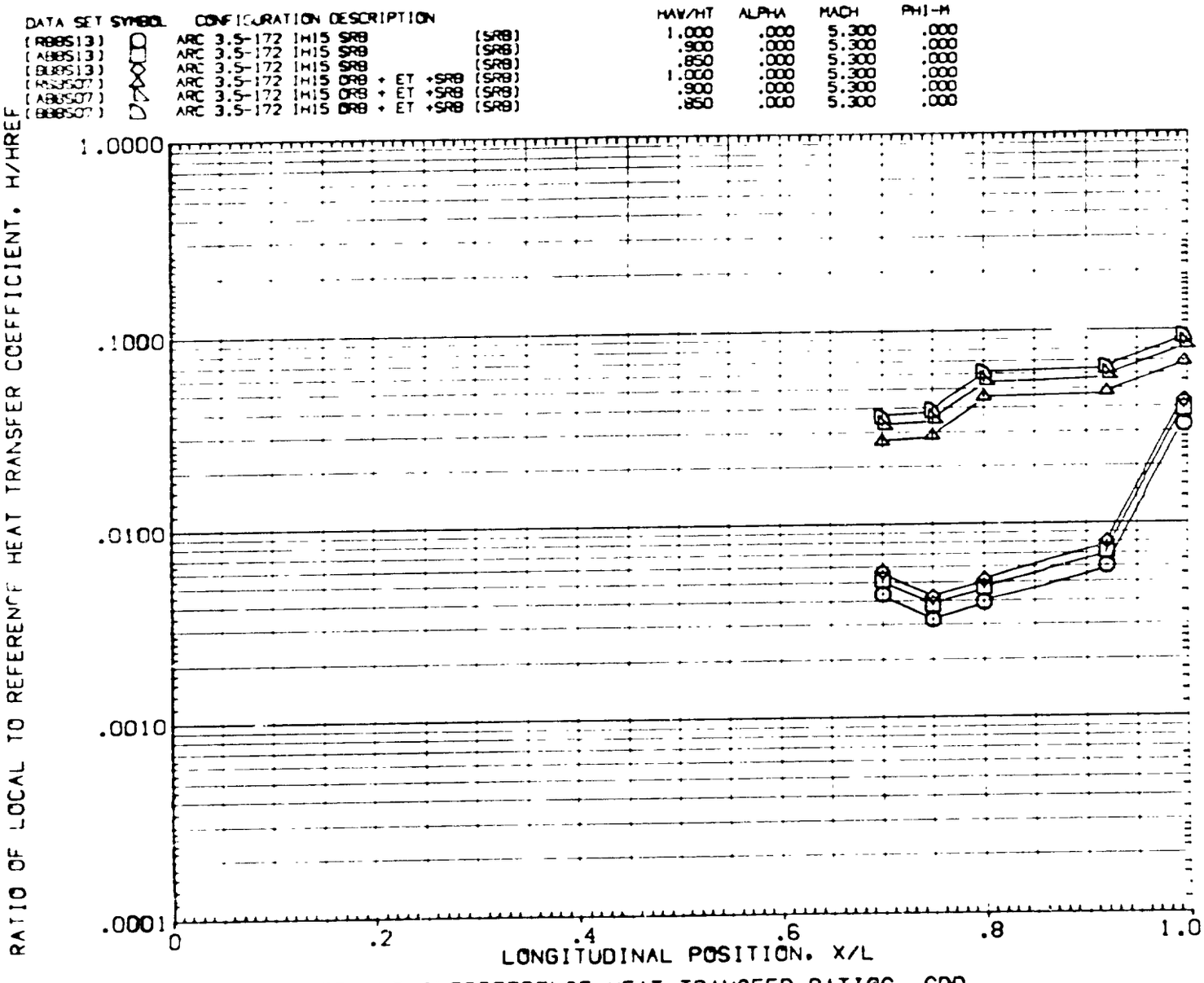


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 1.637 MACH = 5.300 PHI = 135.000

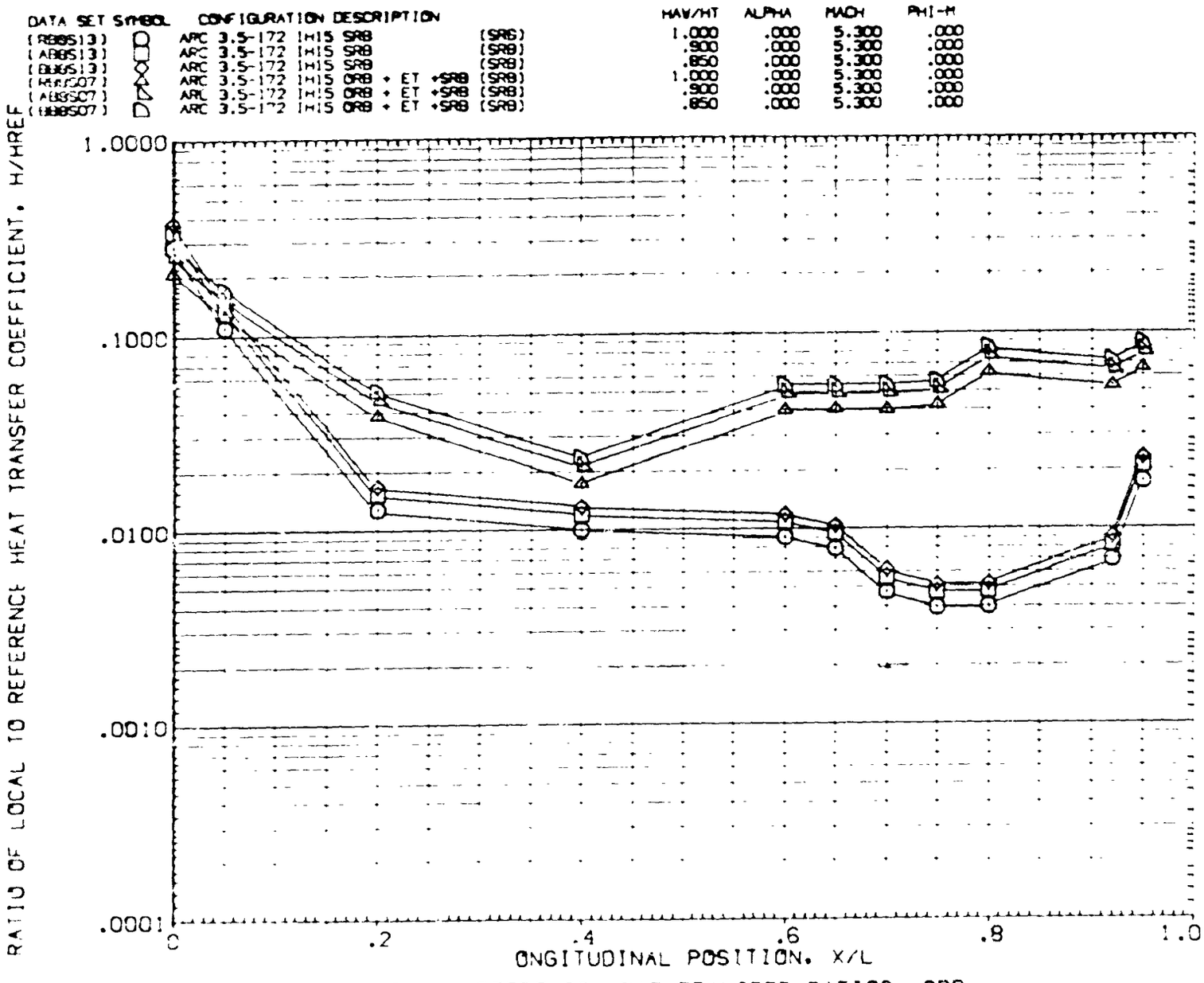


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

PAGE 91

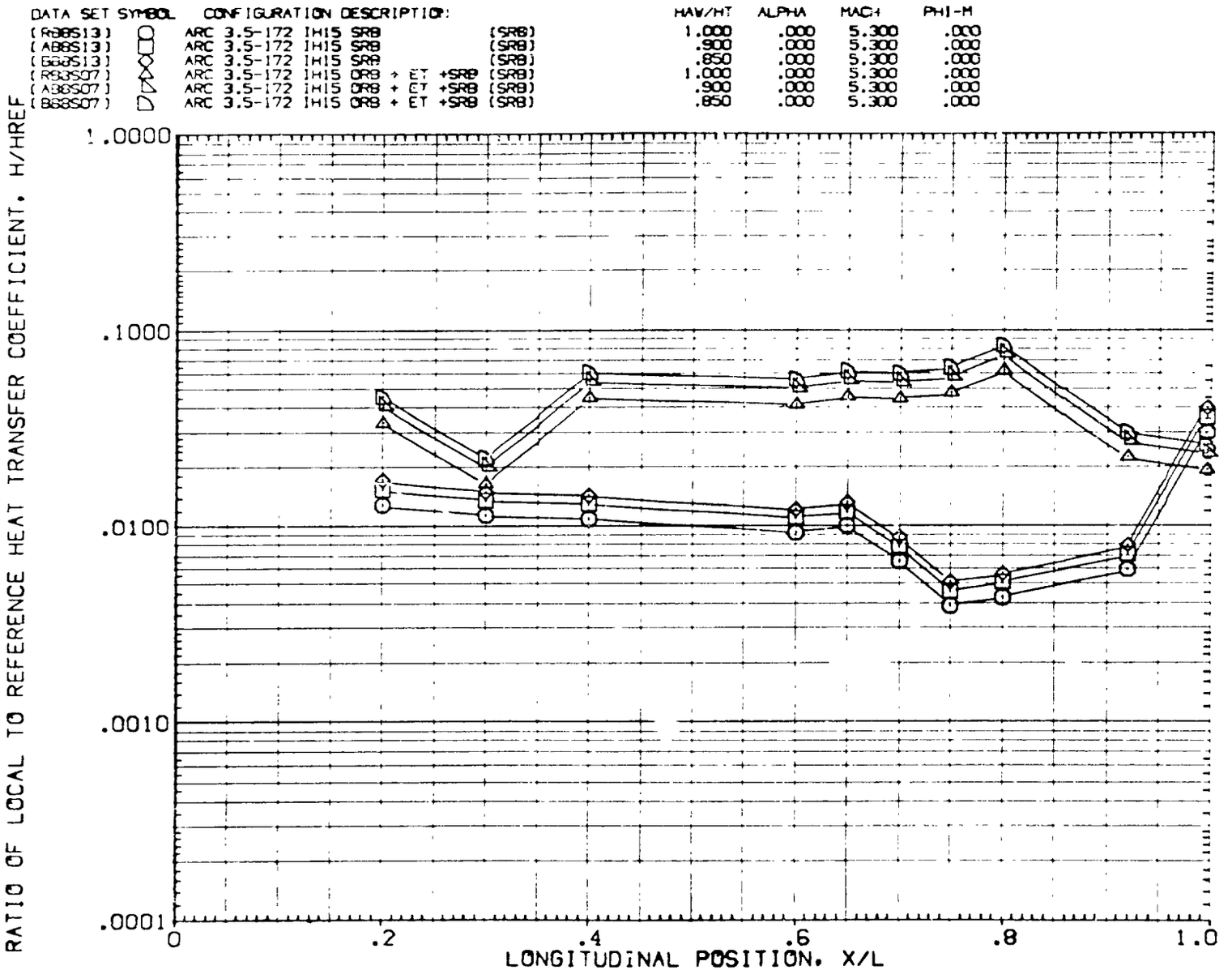


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 1.687 MACH = 5.300 PHI = 225.000

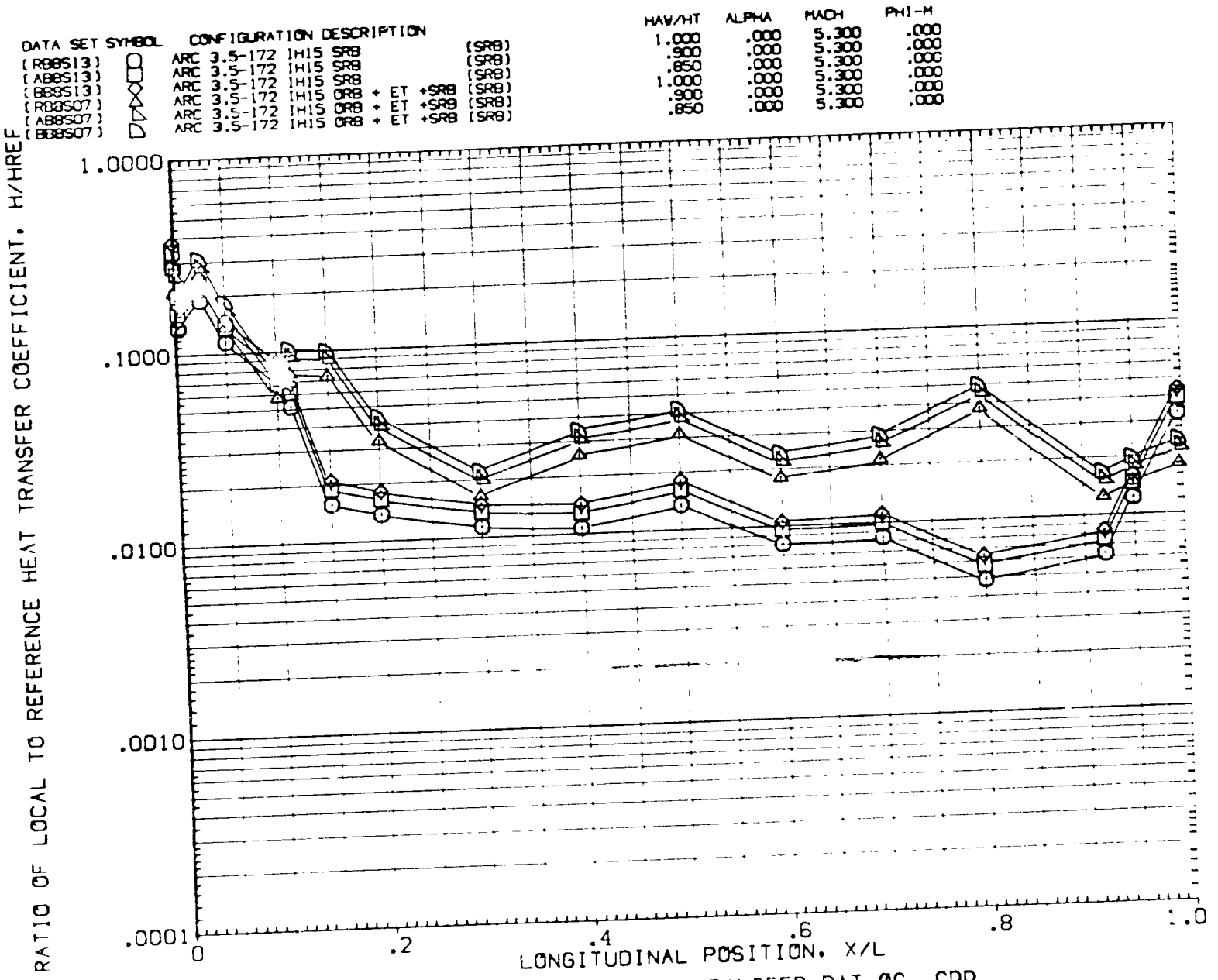


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 1.687 MACH = 5.300 PHI = 270.000

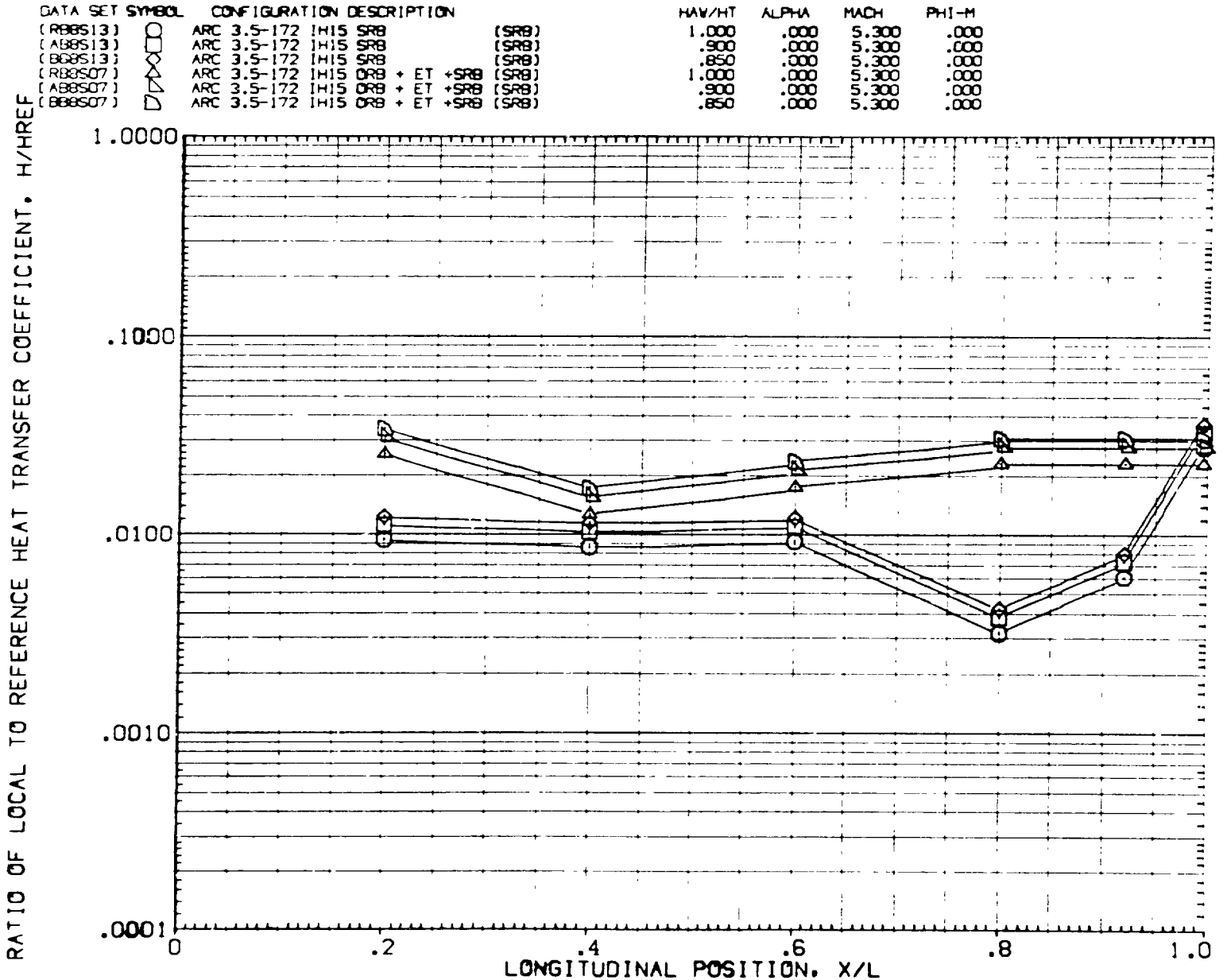


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 1.687 MACH = 5.300 PHI = 315.000

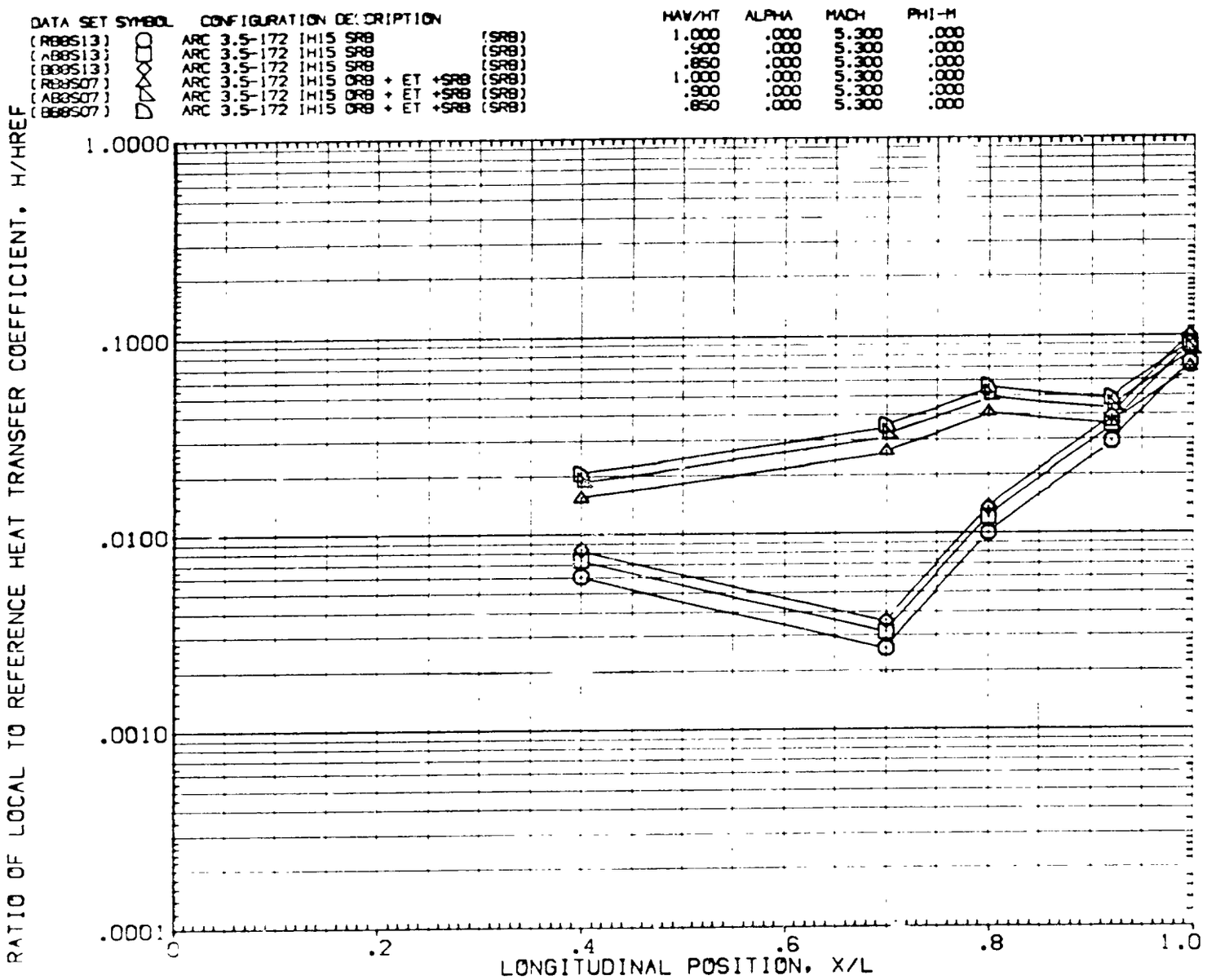


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.634 MACH = 5.300 PHI = 90.000

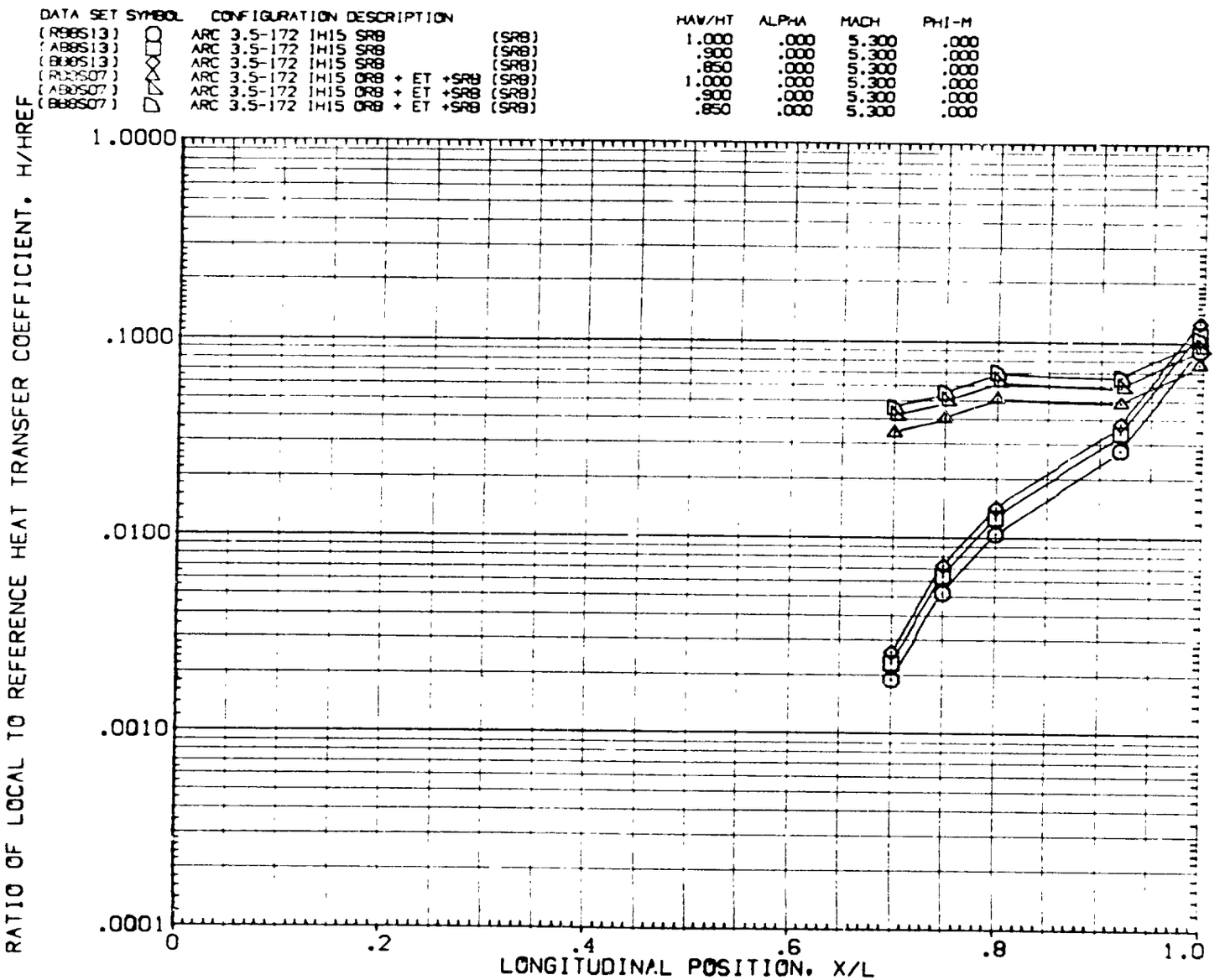


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.634 MACH = 5.300 PHI = 135.000

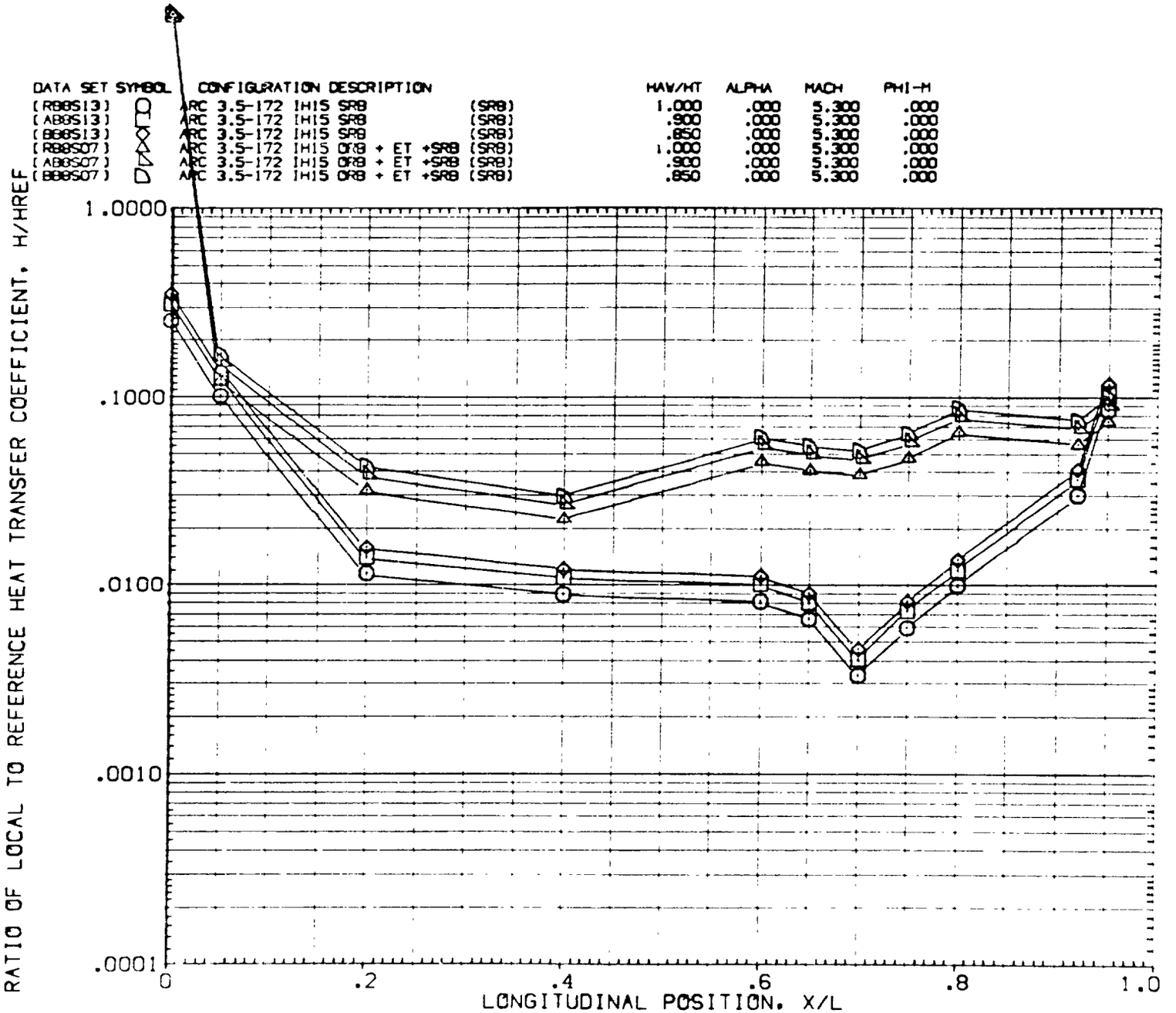


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.634 MACH = 5.300 PHI = 180.000

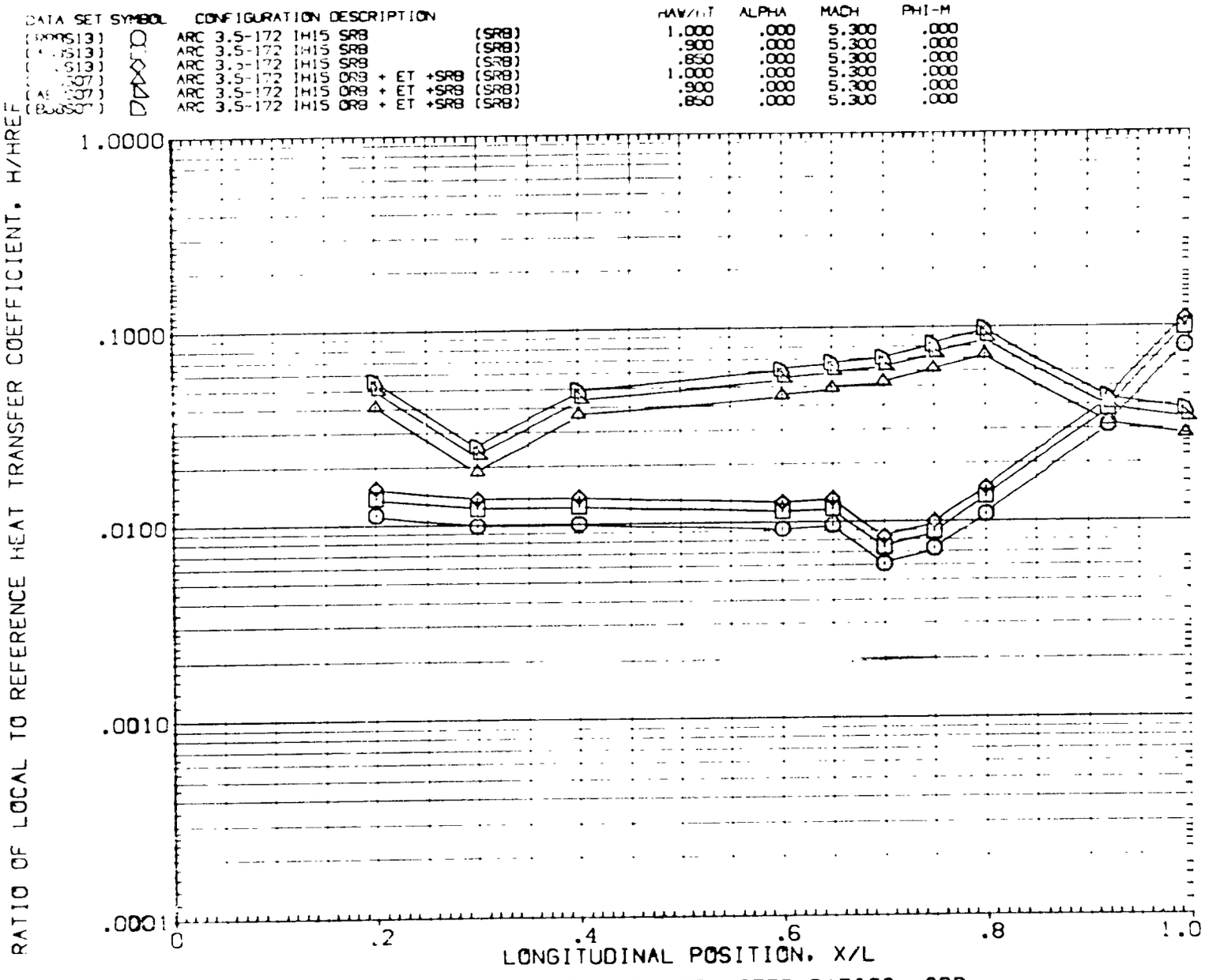


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.634 MACH = 5.300 PHI = 225.000

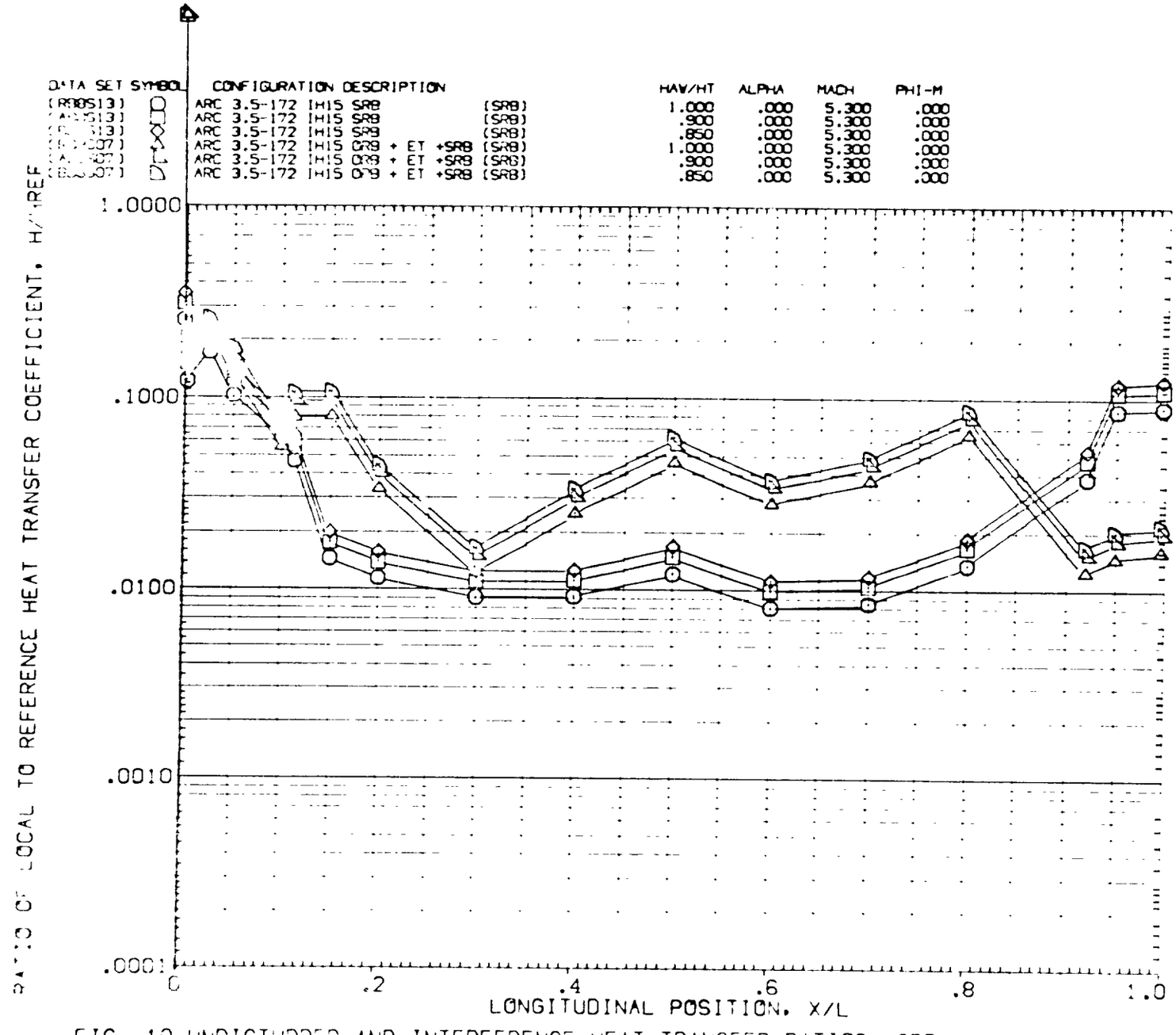


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

4.634 MACH = 5.300 PHI = 270.000

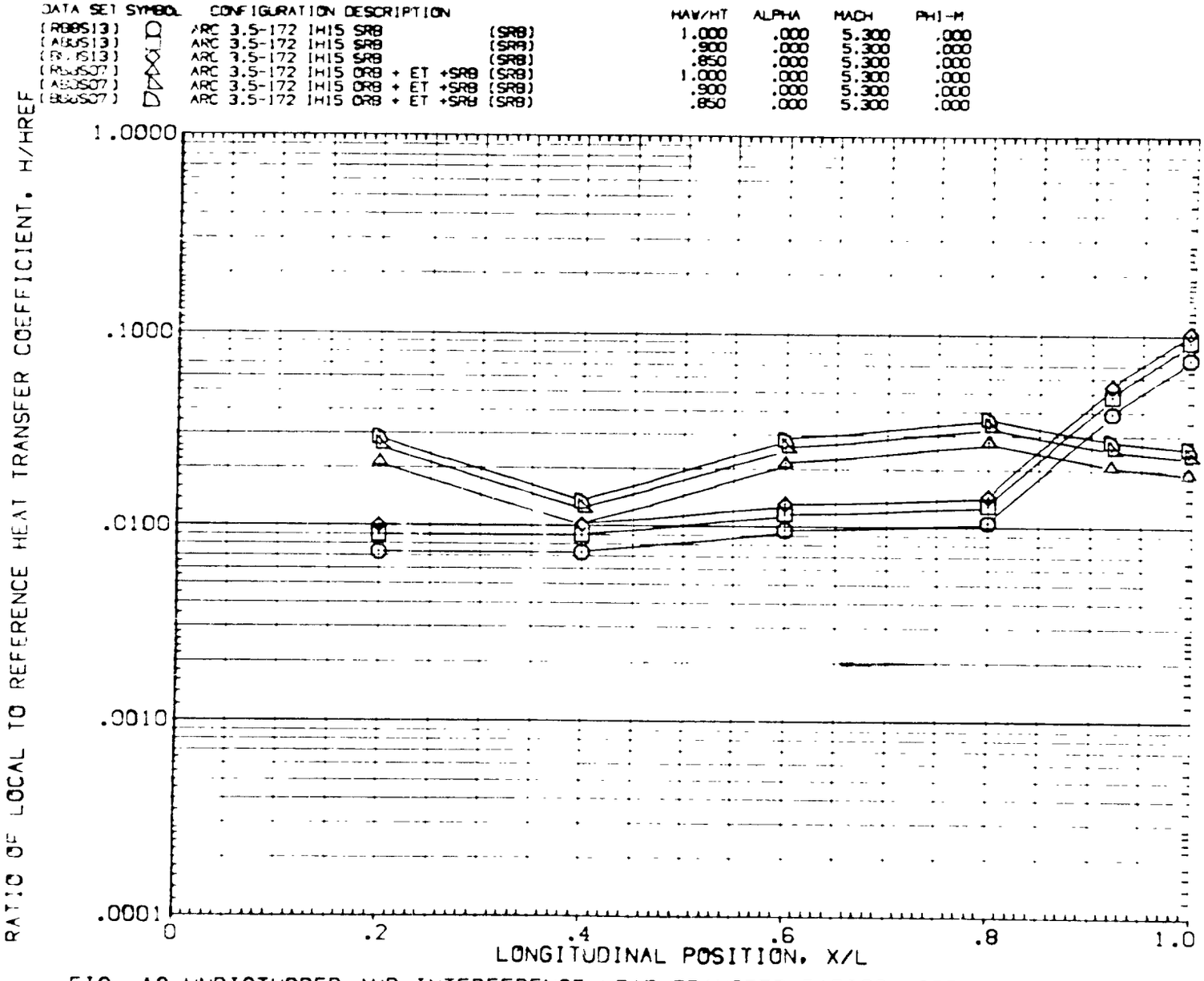


FIG. 10 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

R'N/L = 4.634 MACH = 5.300 PHI = 315.000

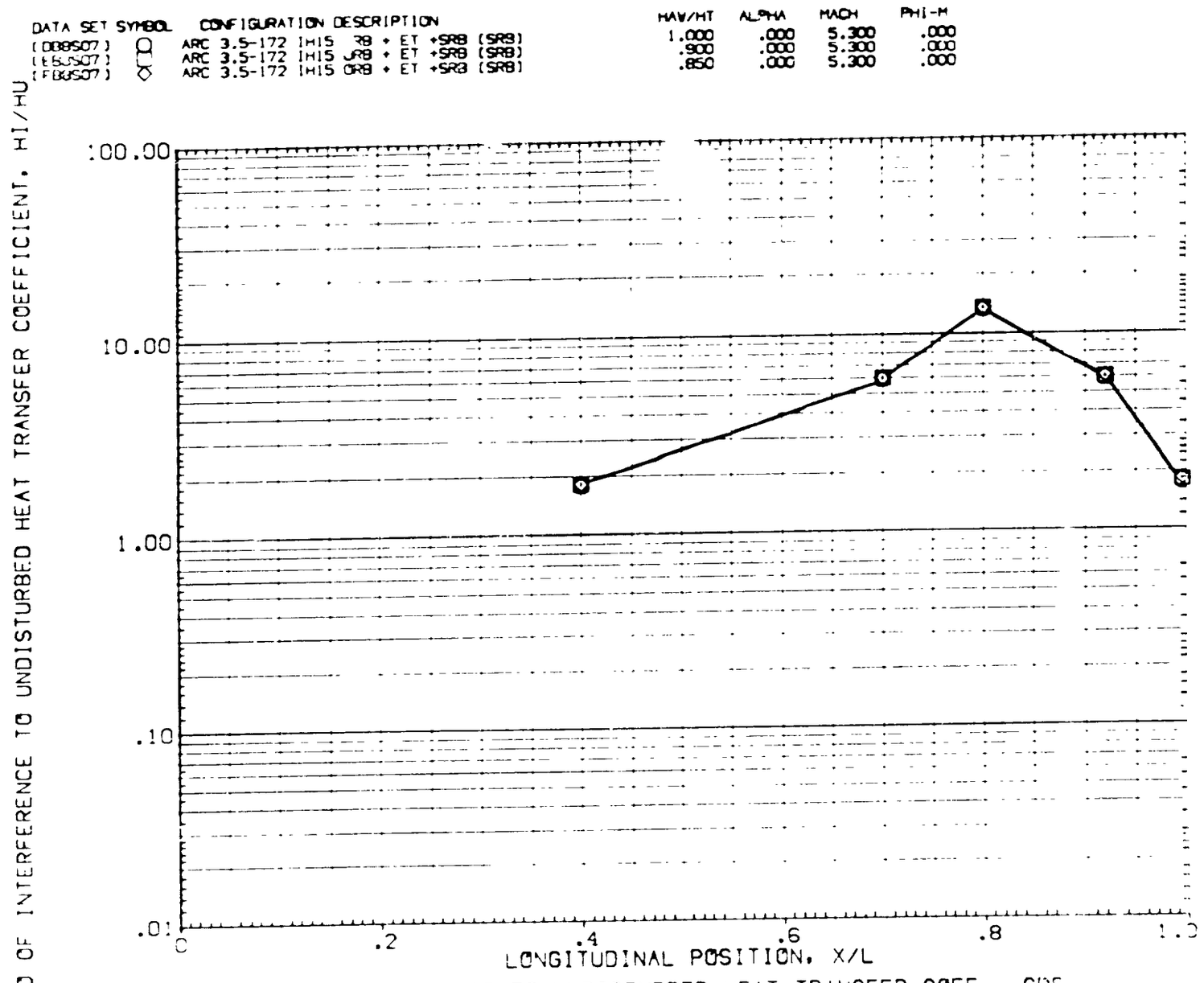


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB

RAV, L = 1.983 MAC = 5.300 PHI = 90.000

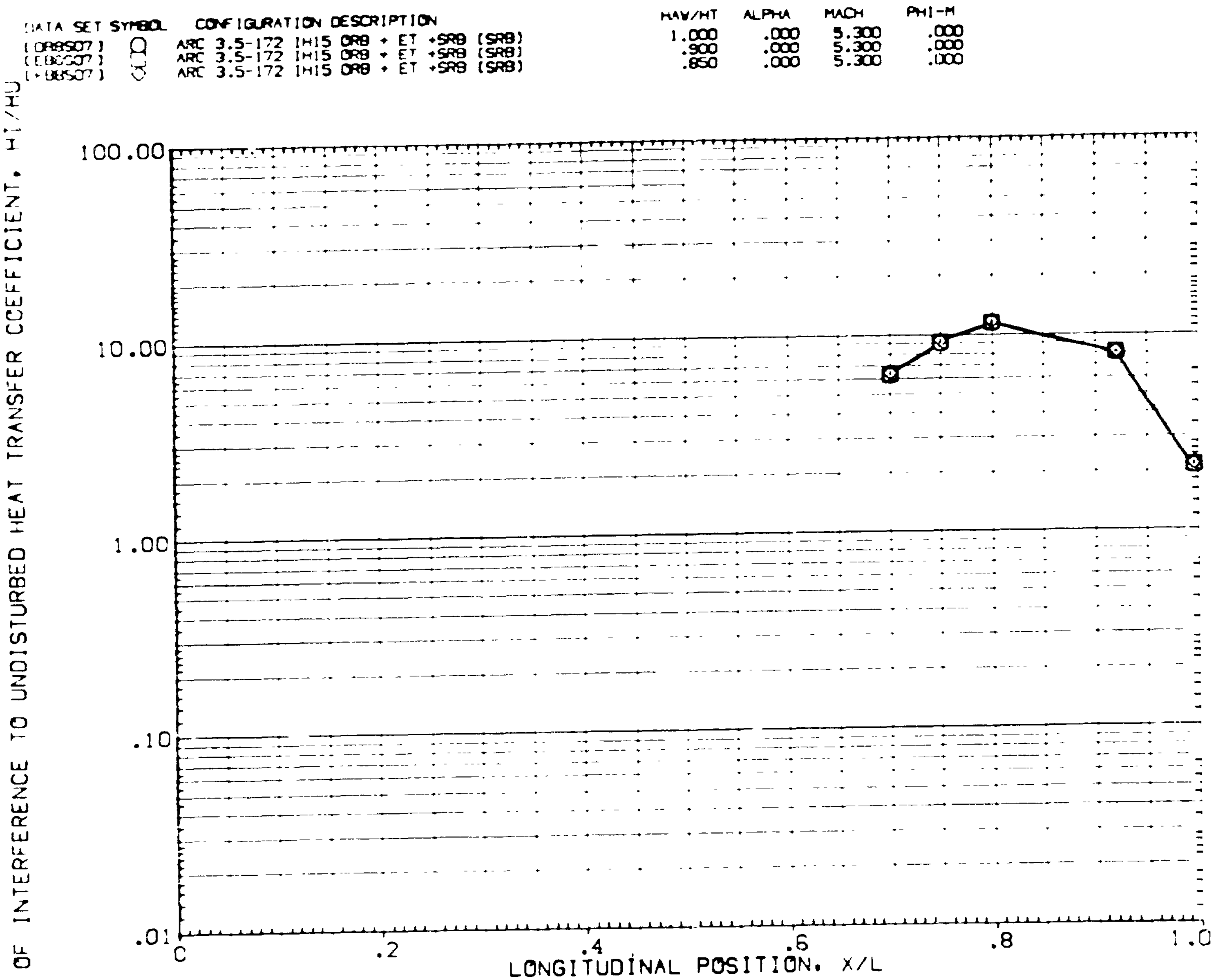


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 1.983 MACH = 5.300 PHI = 135.000

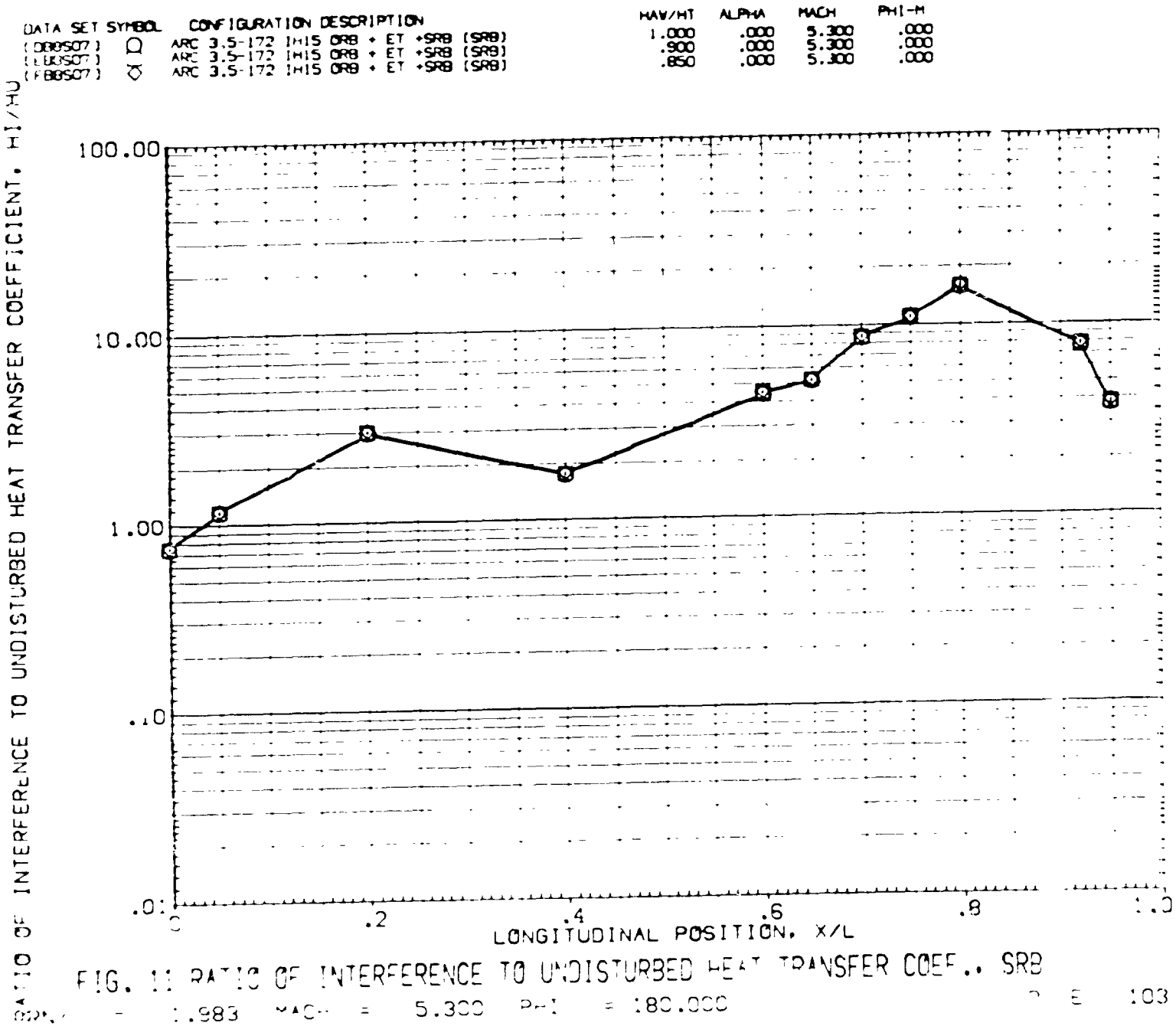


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB

= 1.983 MACH = 5.300 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(208S07)	◇	ARC 3.5-172 IHI5 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(208S07)		ARC 3.5-172 IHI5 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(208S07)		ARC 3.5-172 IHI5 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

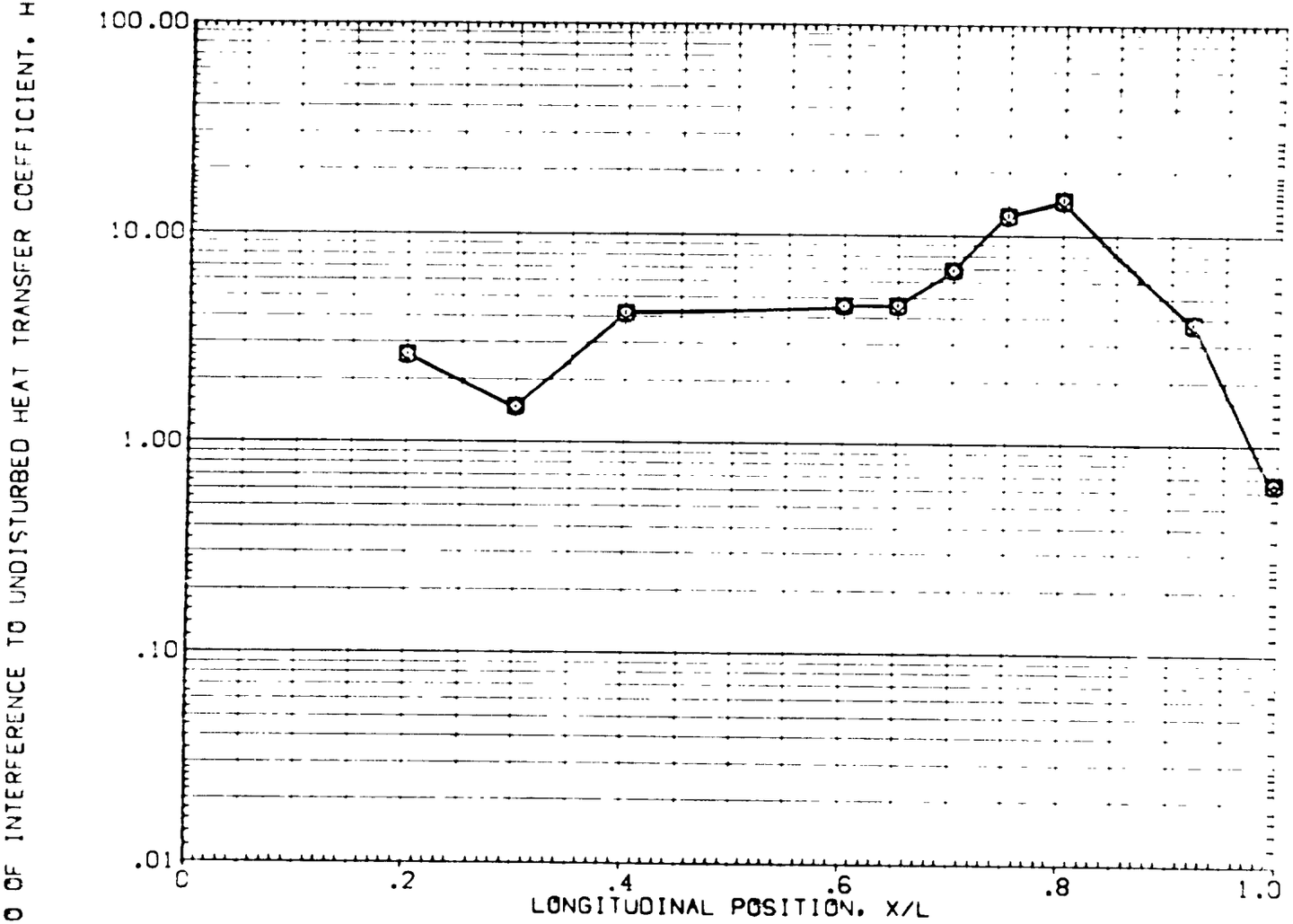


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 1.983 MACH = 5.300 PHI = 225.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D85S07)	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(E85S09)	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(B85S11)	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

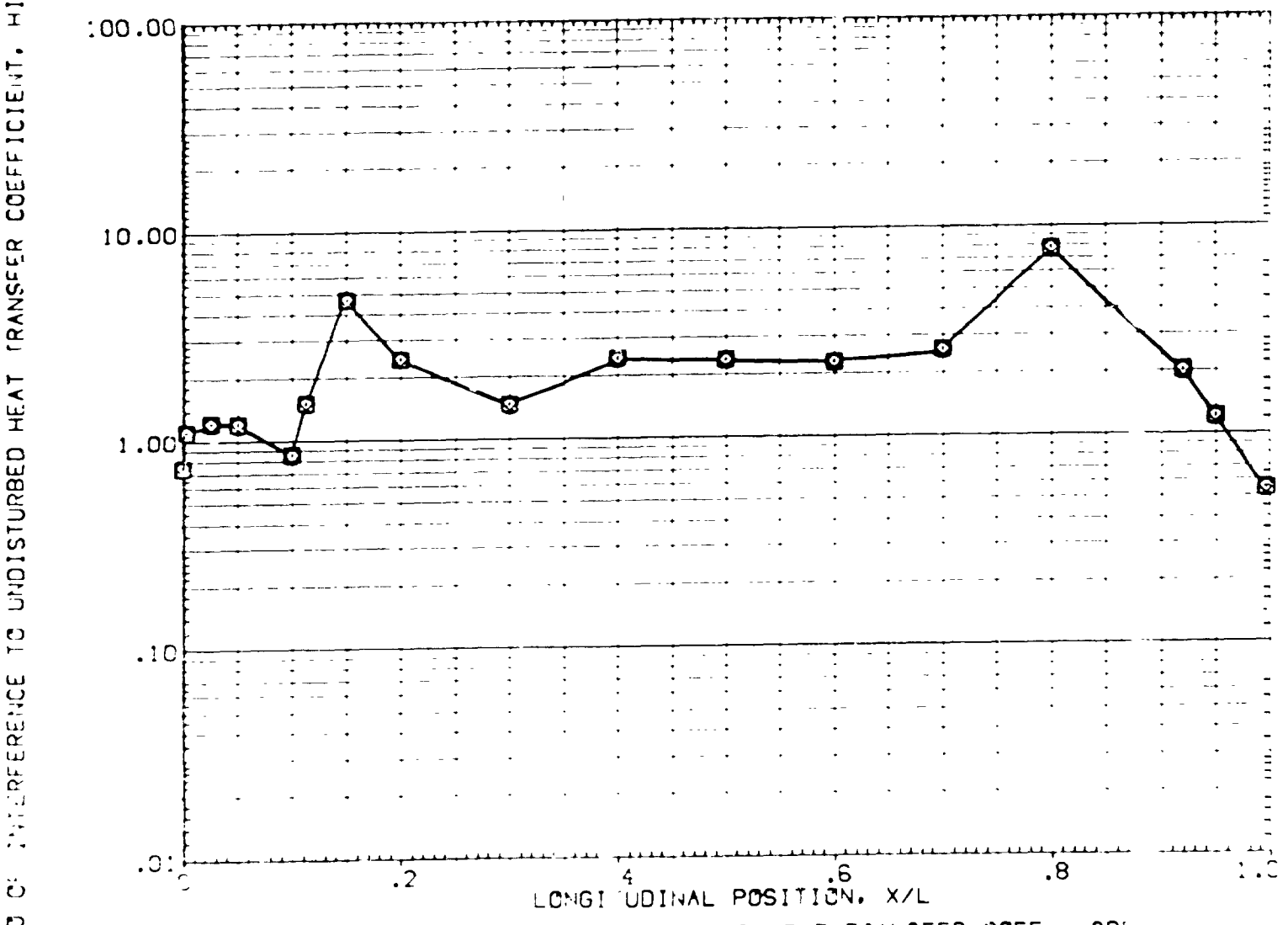


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB

RUN 1.983 MACH = 5.300 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(099507)	□	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(099503)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(099507)	○	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

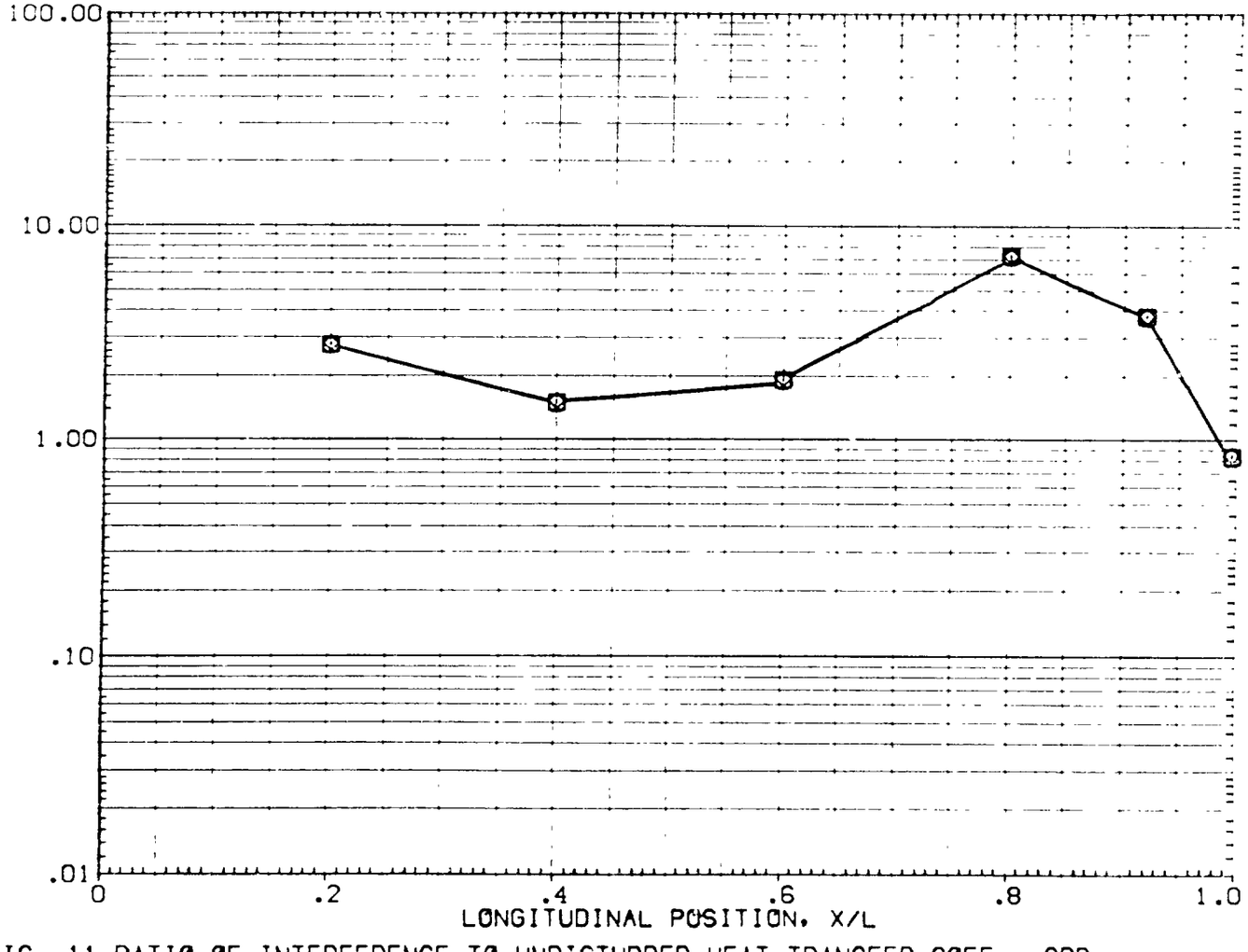


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 1.983 MACH = 5.300 PHI = 315.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(DBBSO7)	□	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(EBBSO7)	○	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(FBBSO7)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

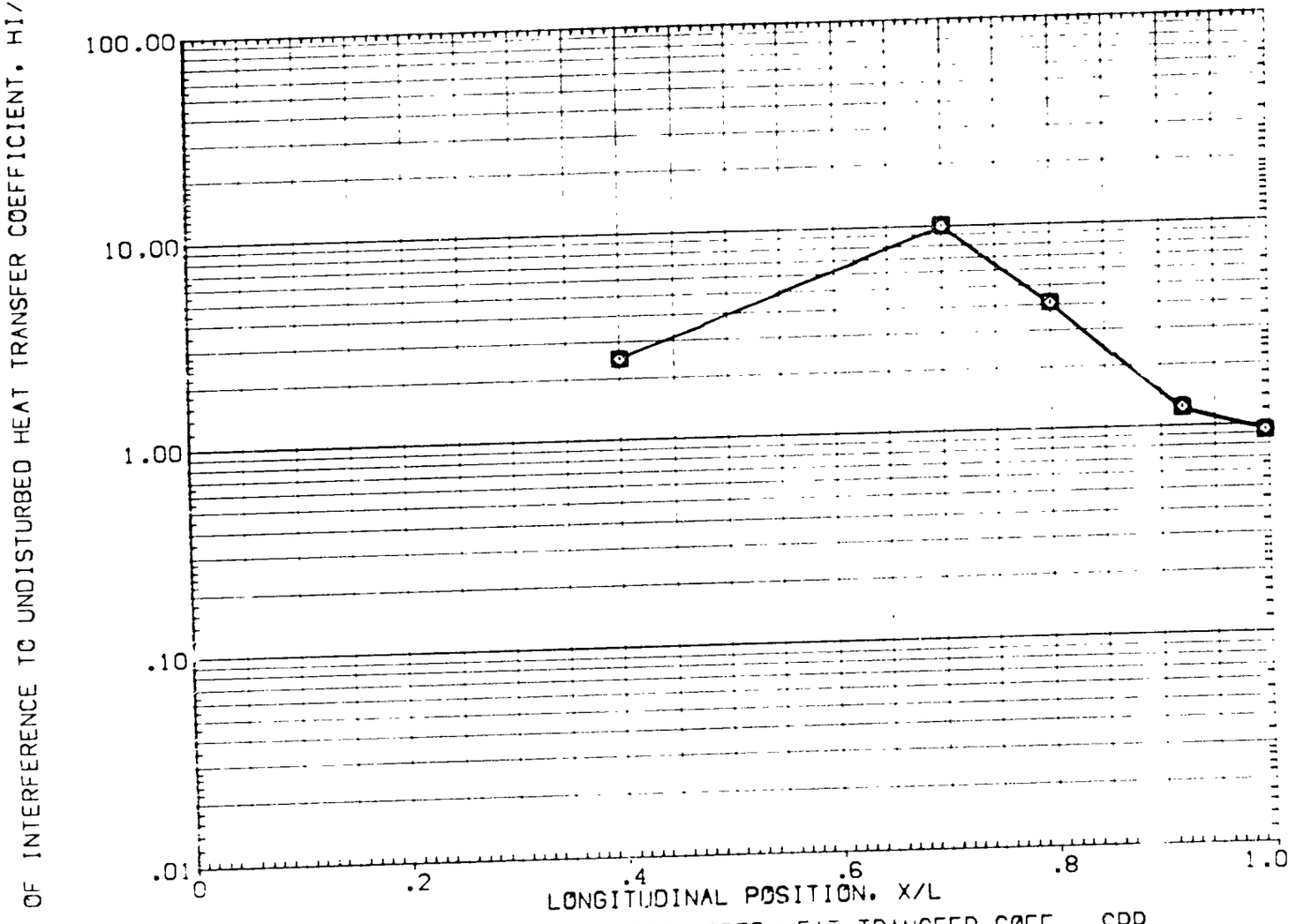


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB

RN/L = 4.311 MACH = 5.300 PHI = 90.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D65S07)		ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(E65S07)		ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(F65S07)		ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

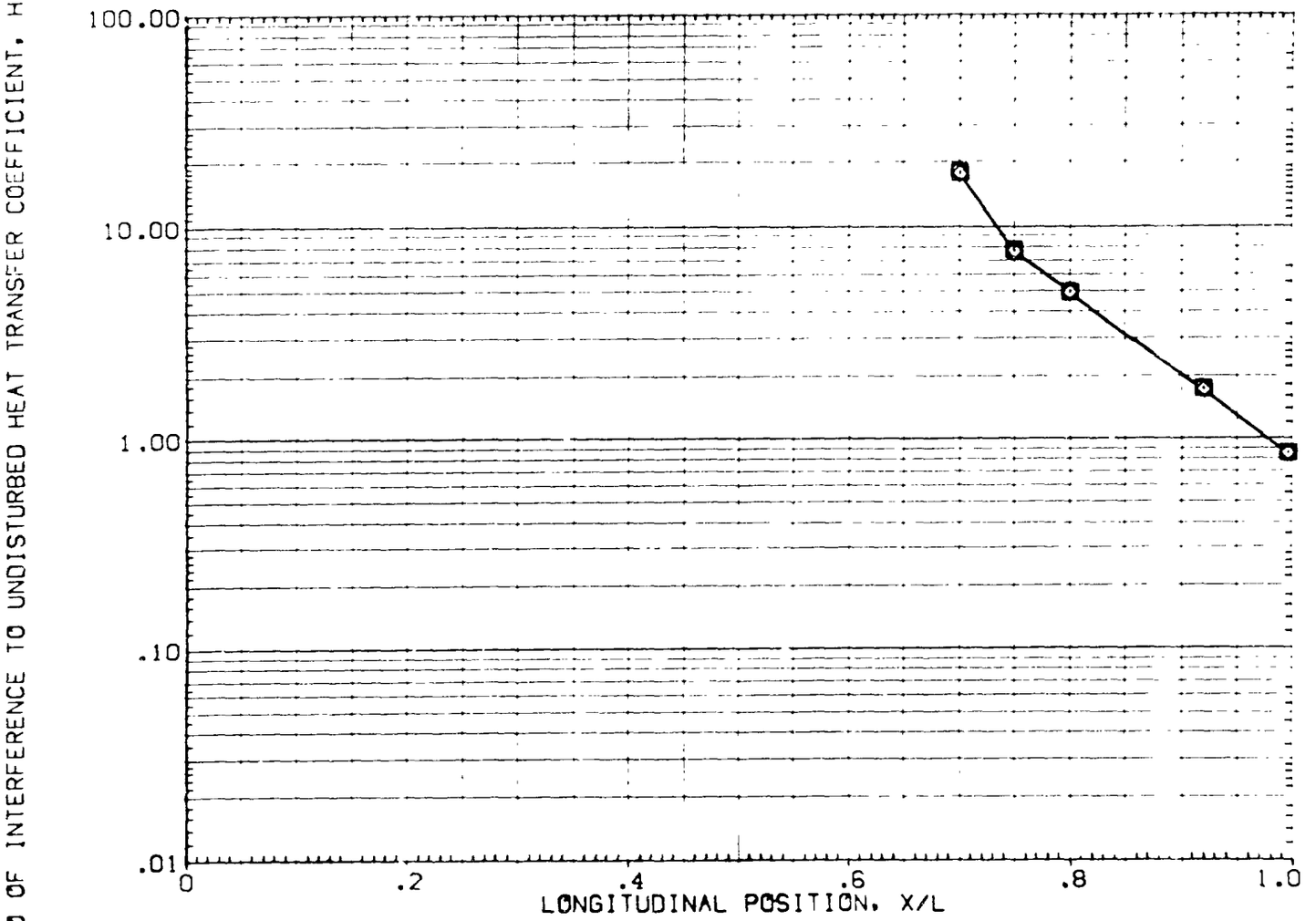


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 4.311 MACH = 5.300 PHI = 135.000

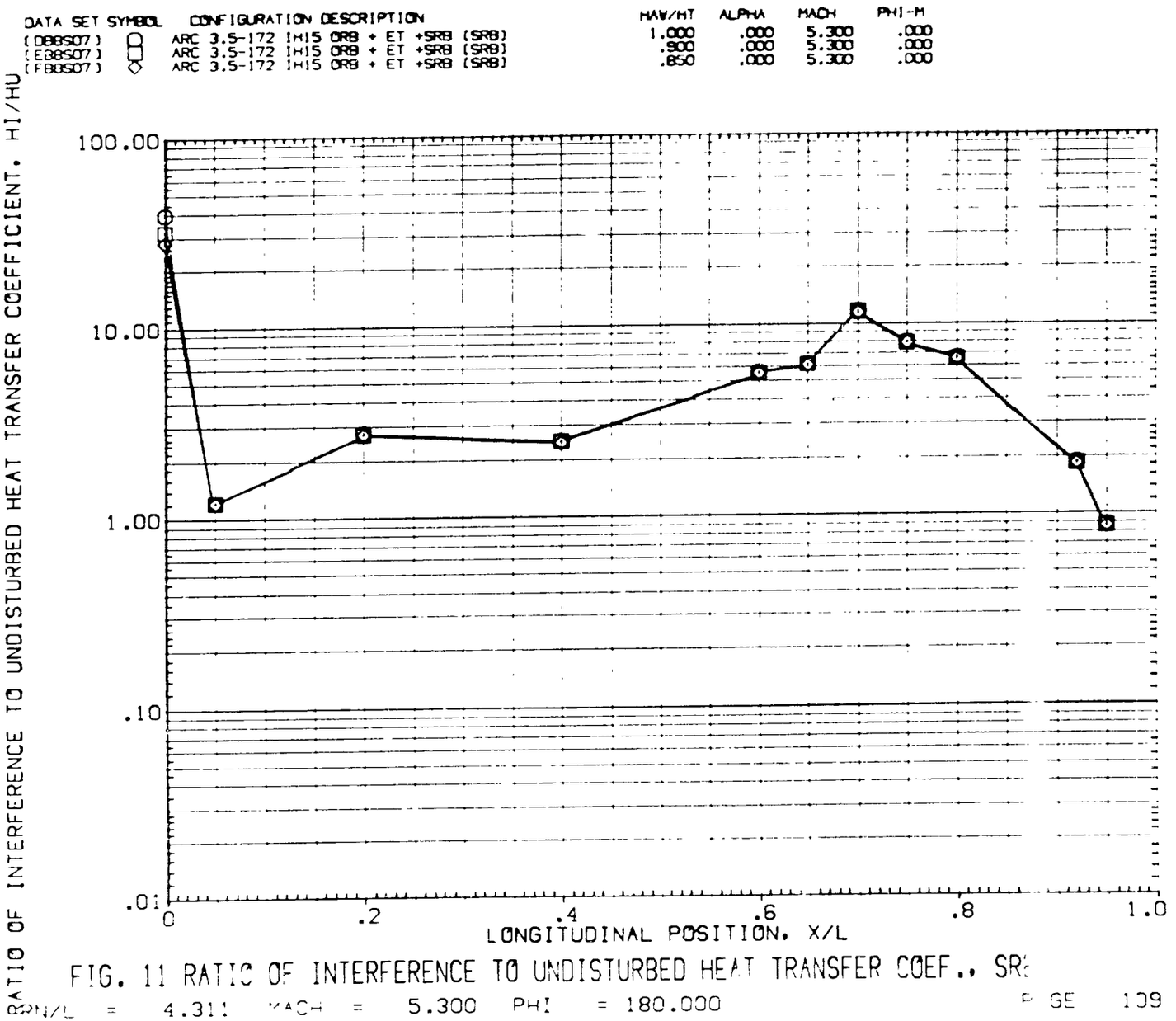


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SR

RN/L = 4.311 MACH = 5.300 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(088S07)	□	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(089S07)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(088S07)	△	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

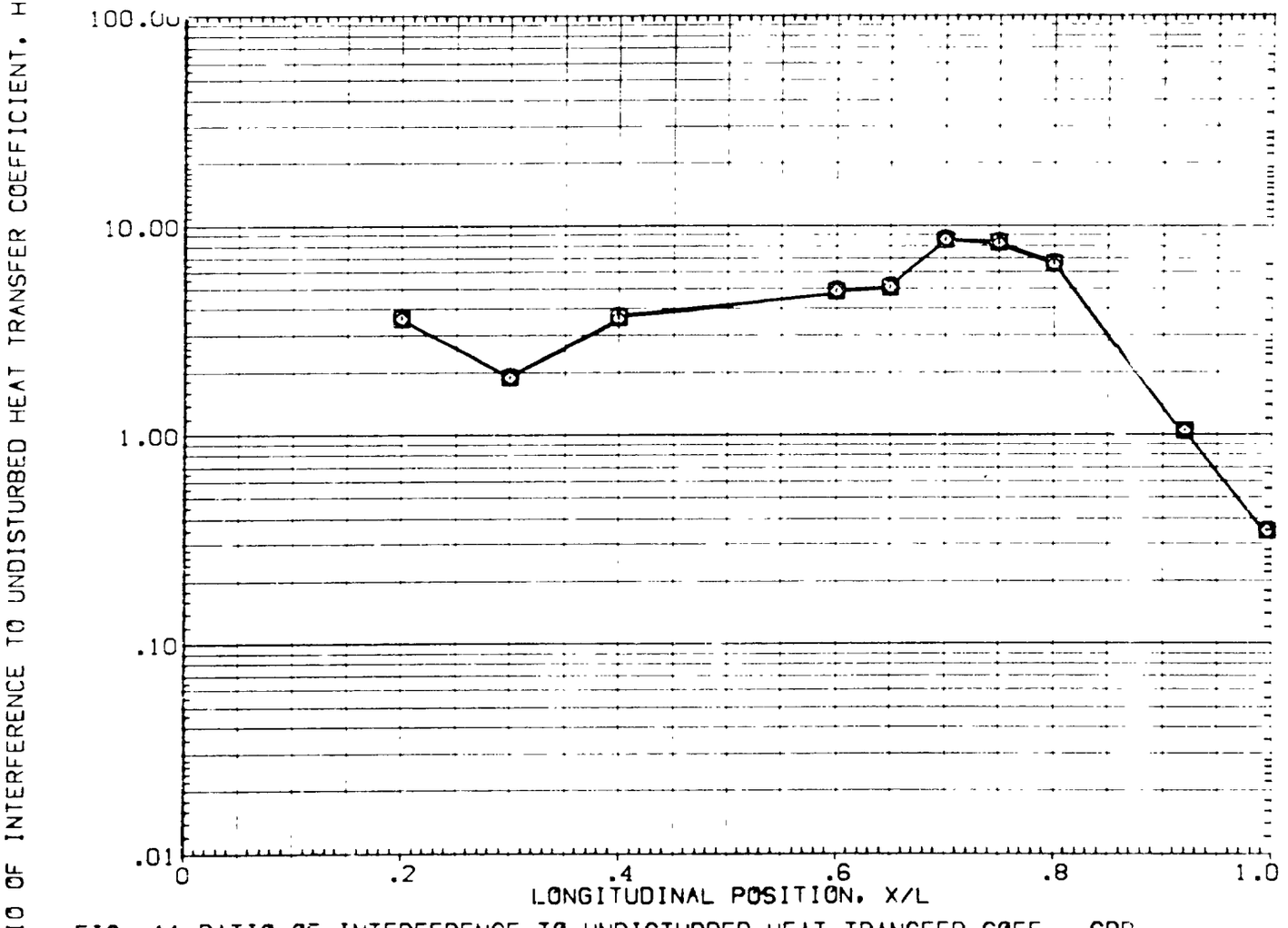


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 4.311 MACH = 5.300 PHI = 225.000

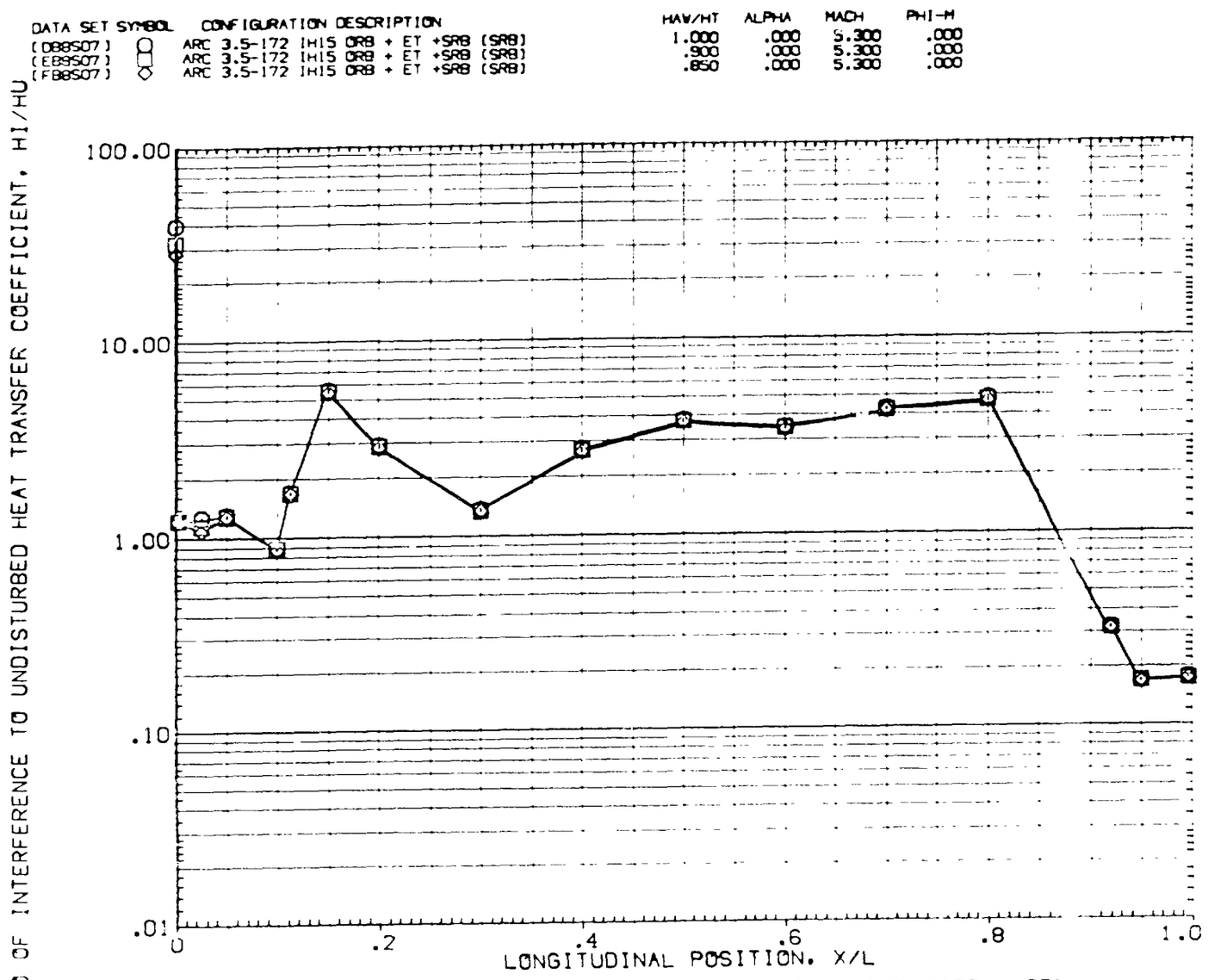


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB

RN/L = 4.311 MACH = 5.300 PHI = 270.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(088S07)	□	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	.000	5.300	.000
(188S07)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	.000	5.300	.000
(288S07)	△	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	.000	5.300	.000

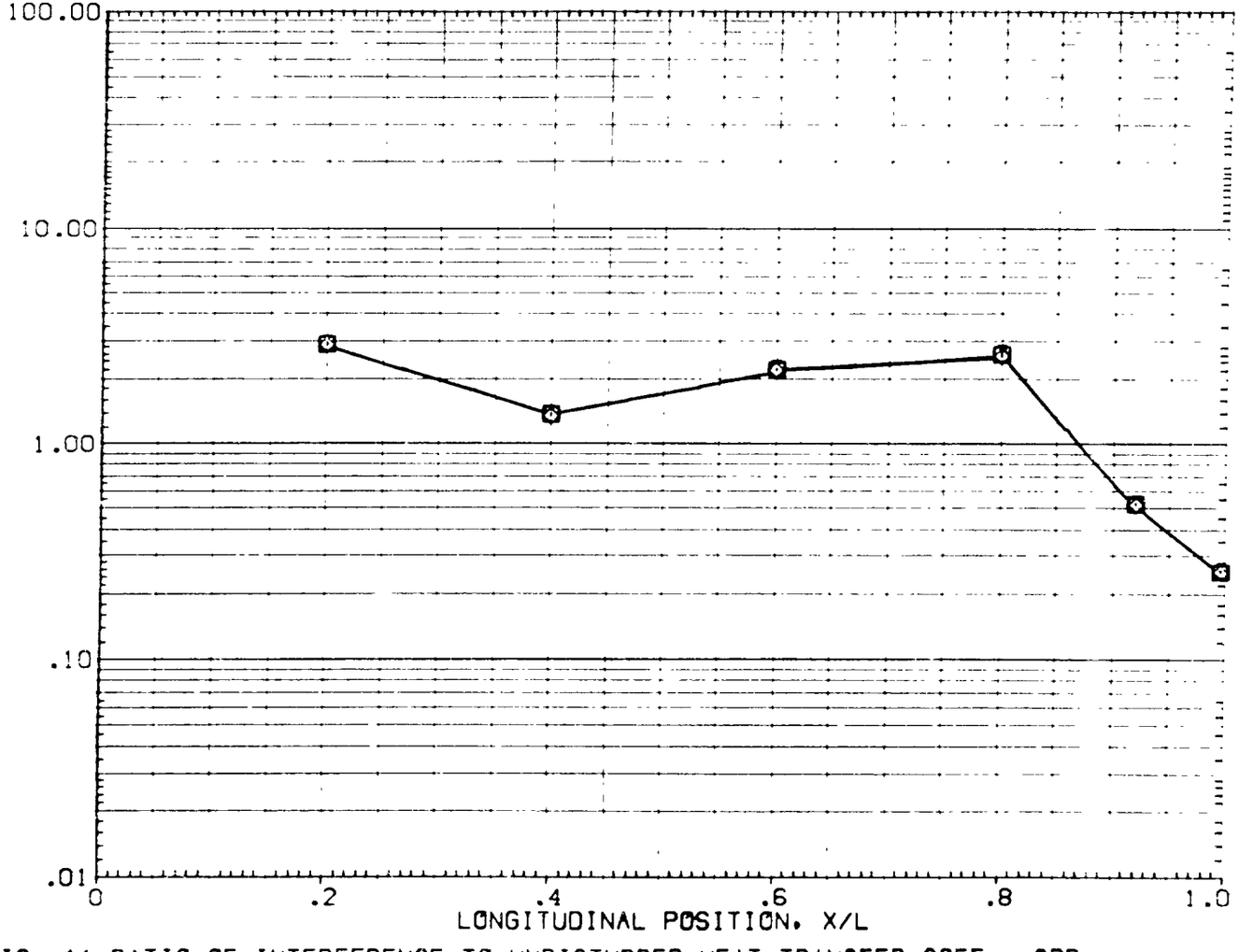


FIG. 11 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 4.311 MACH = 5.300 PHI = 315.000

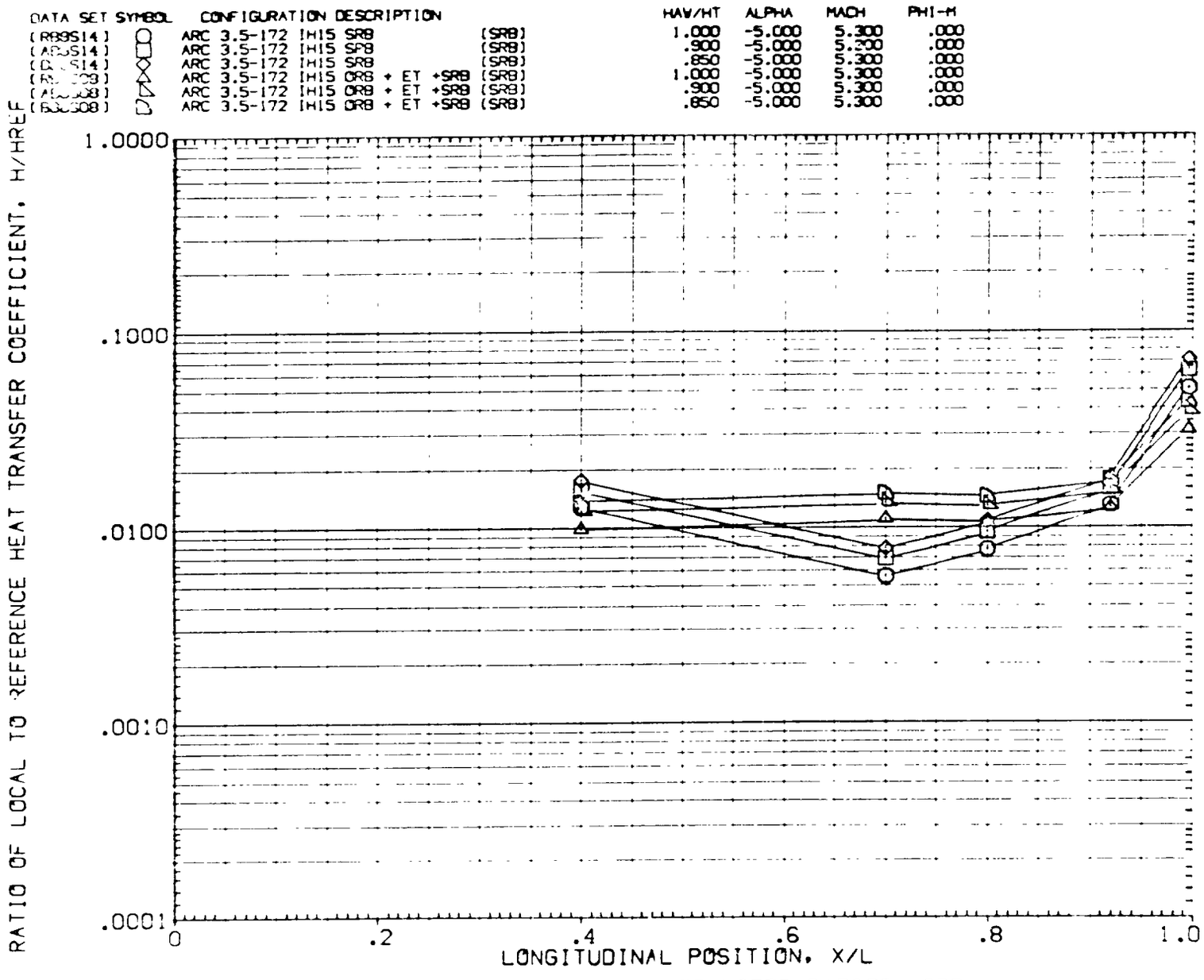


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 2.138 MACH = 5.300 PHI = 90.000

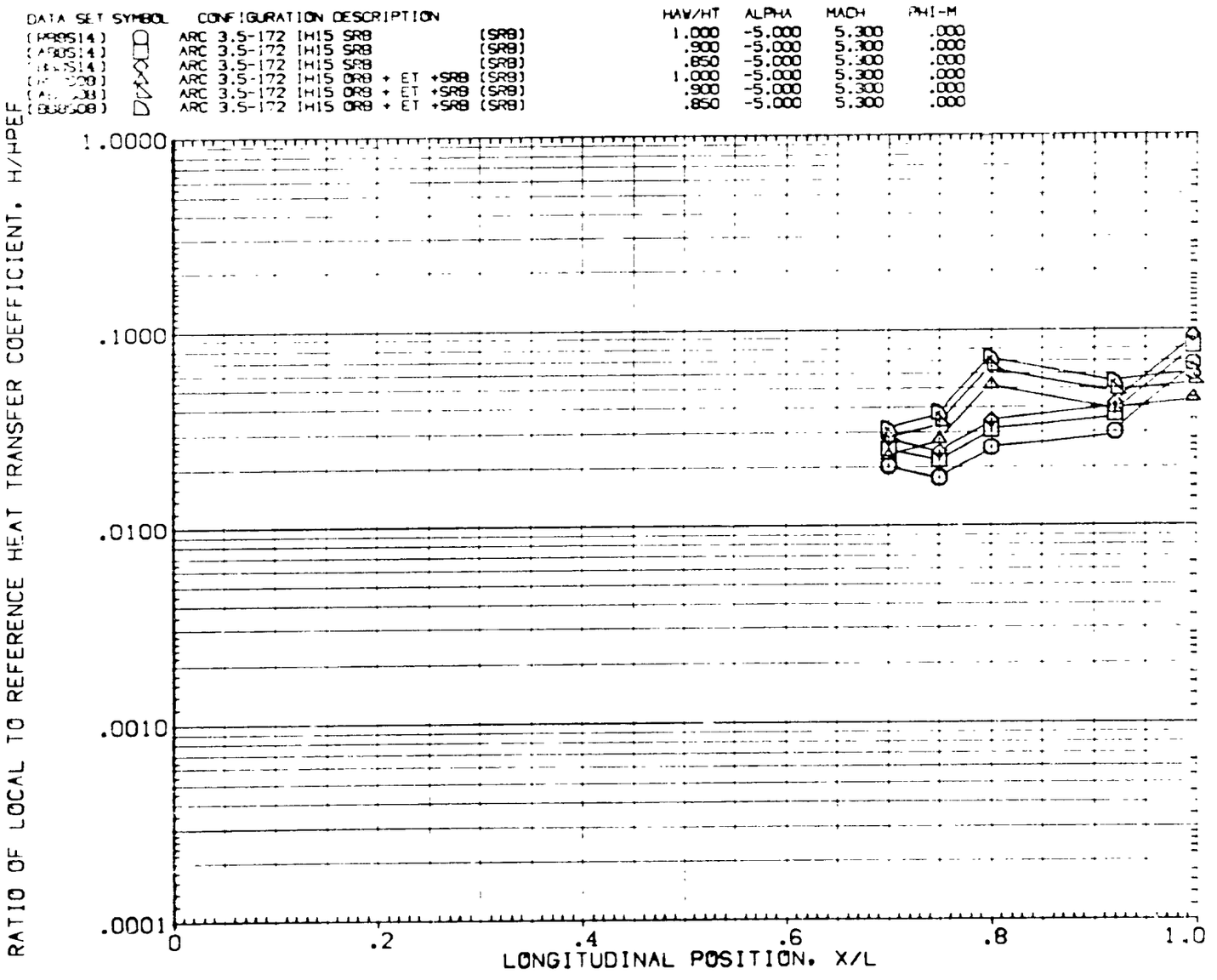


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 2.138 MACH = 5.300 PHI = 135.000

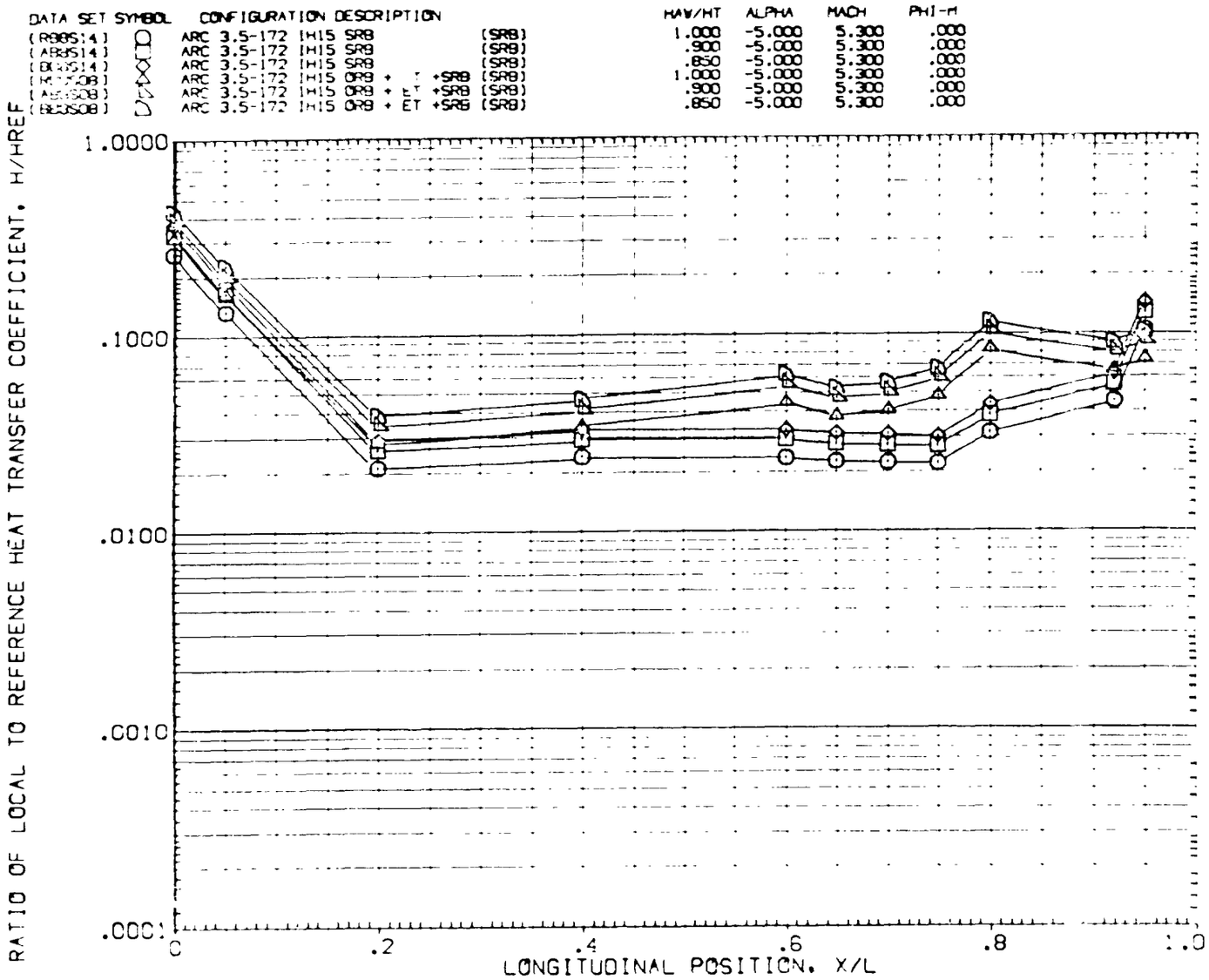


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 2.138 M∞ = 5.300 PHI = 180.000

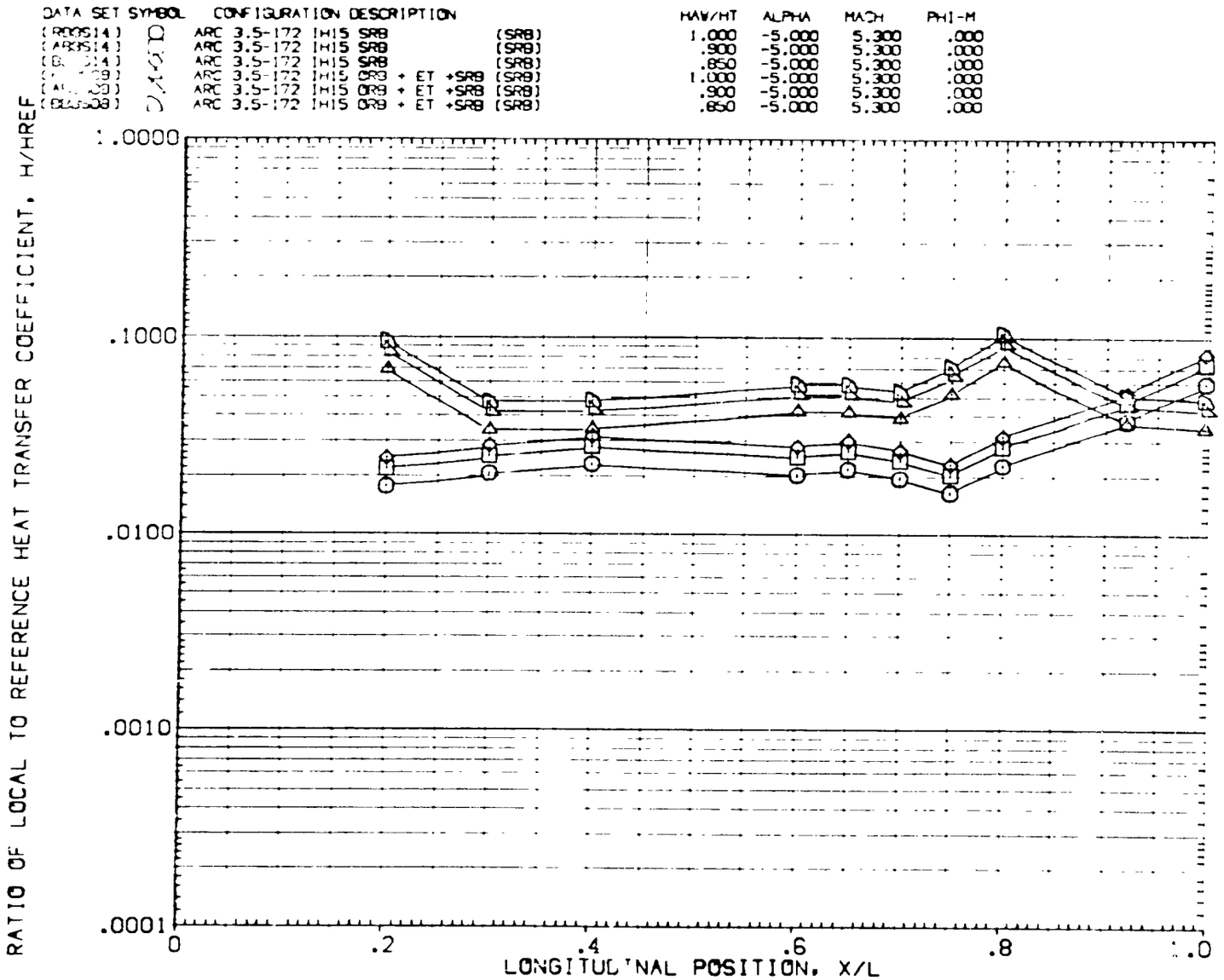


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 2.138 MACH = 5.300 PHI = 225.000

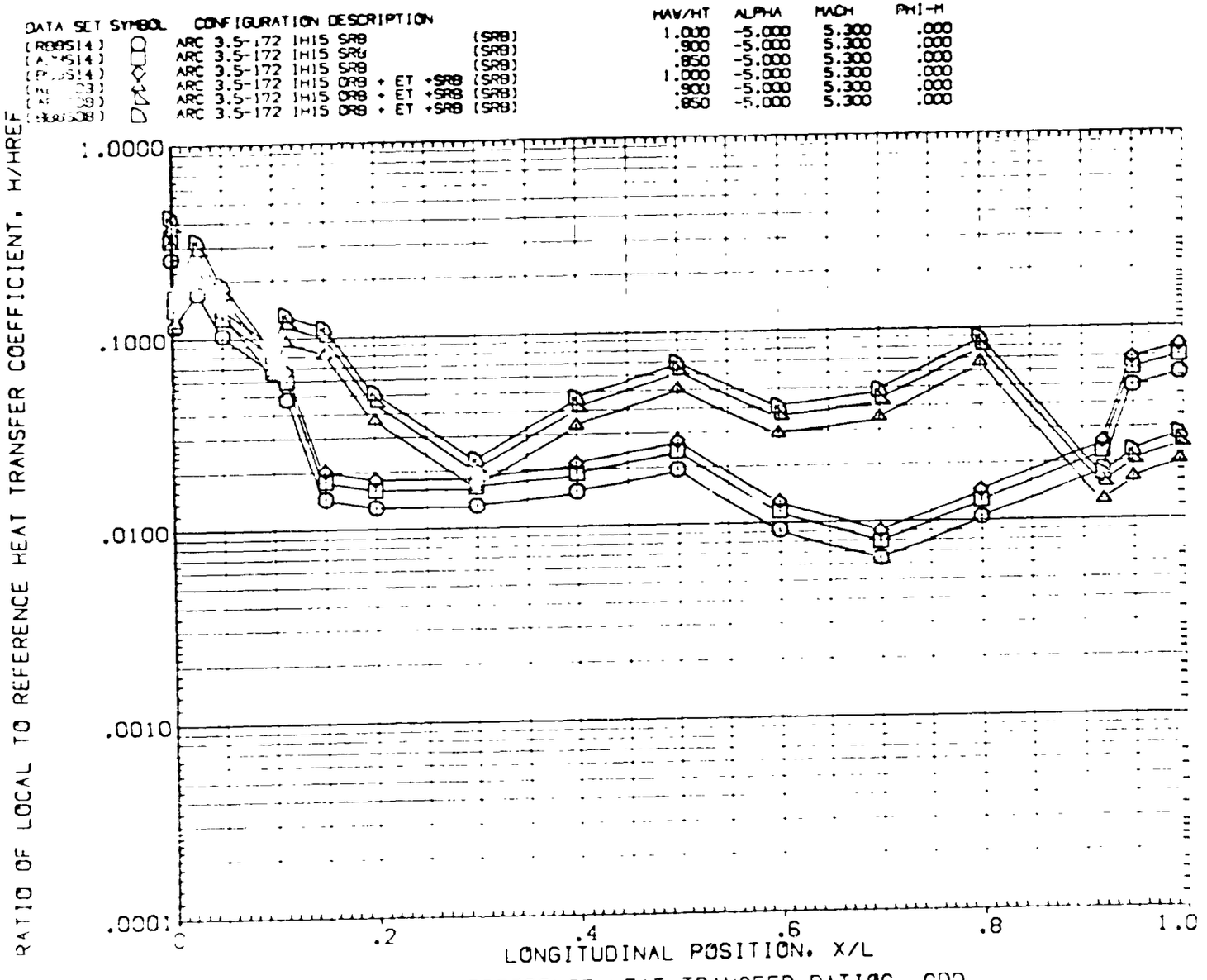


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

= 2.138 MACH = 5.300 PHI = 270.000

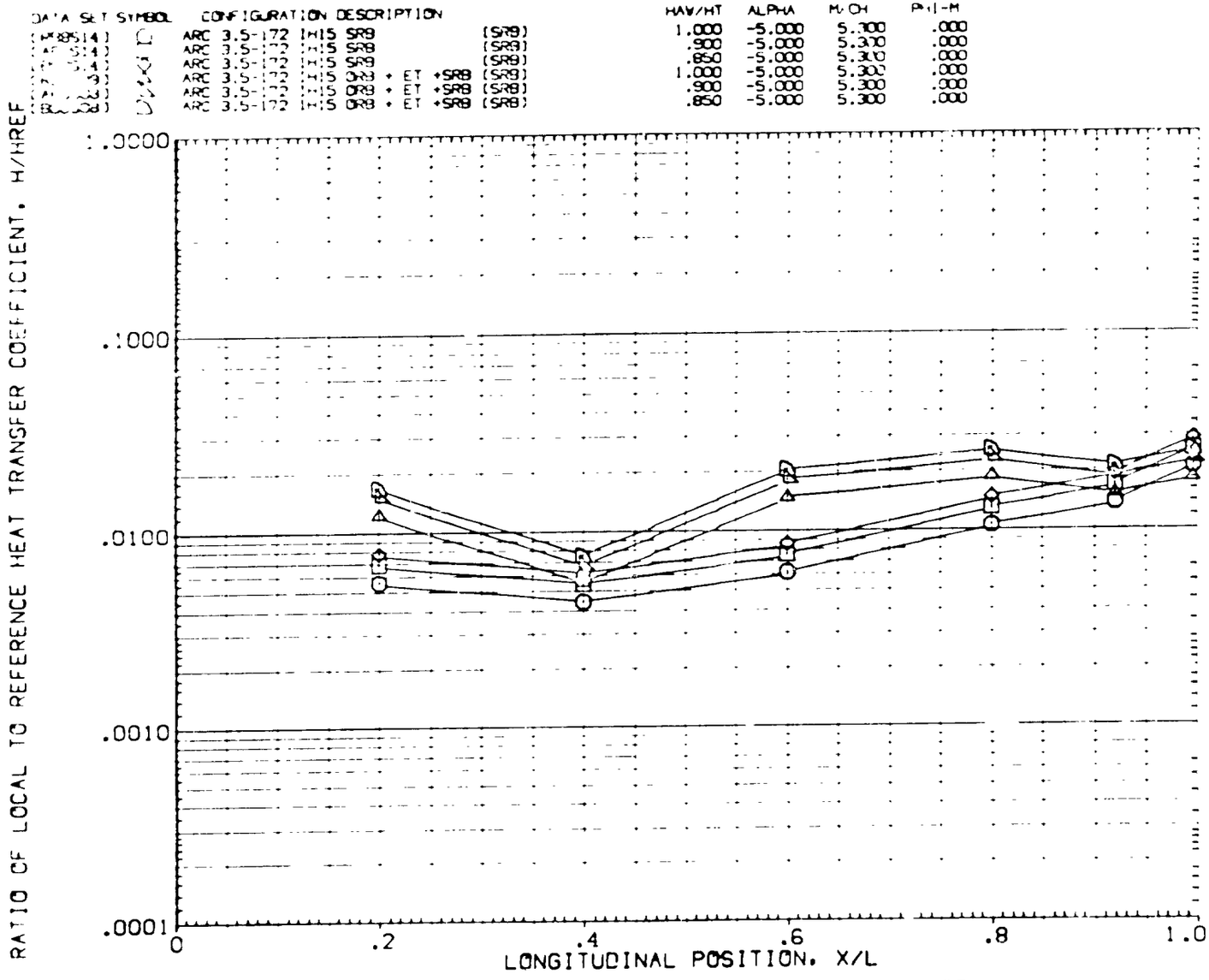


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 2.138 MACH = 5.300 PHI = 315.000

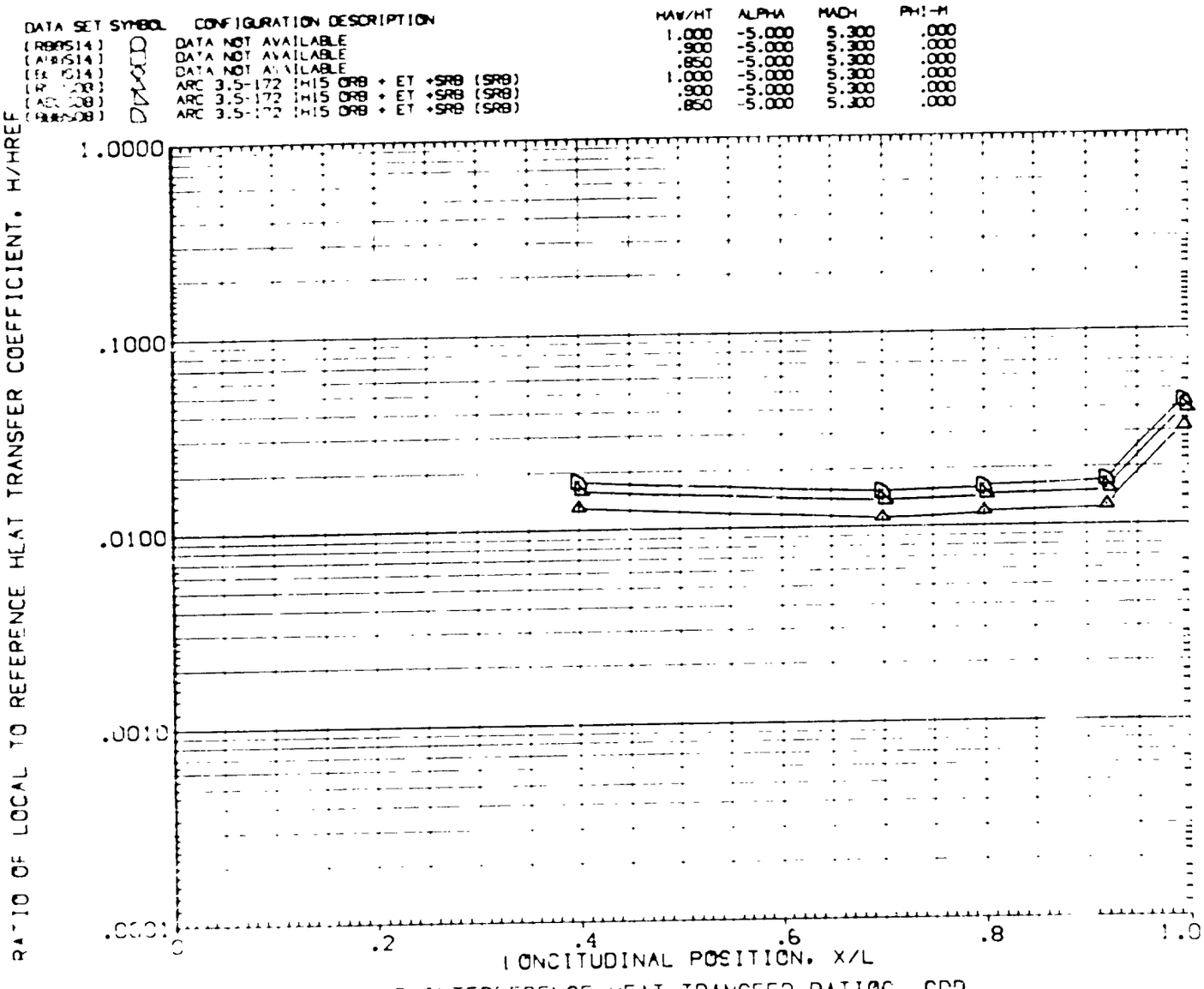


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN = 4.113 MACH = 5.300 PHI = 90.000

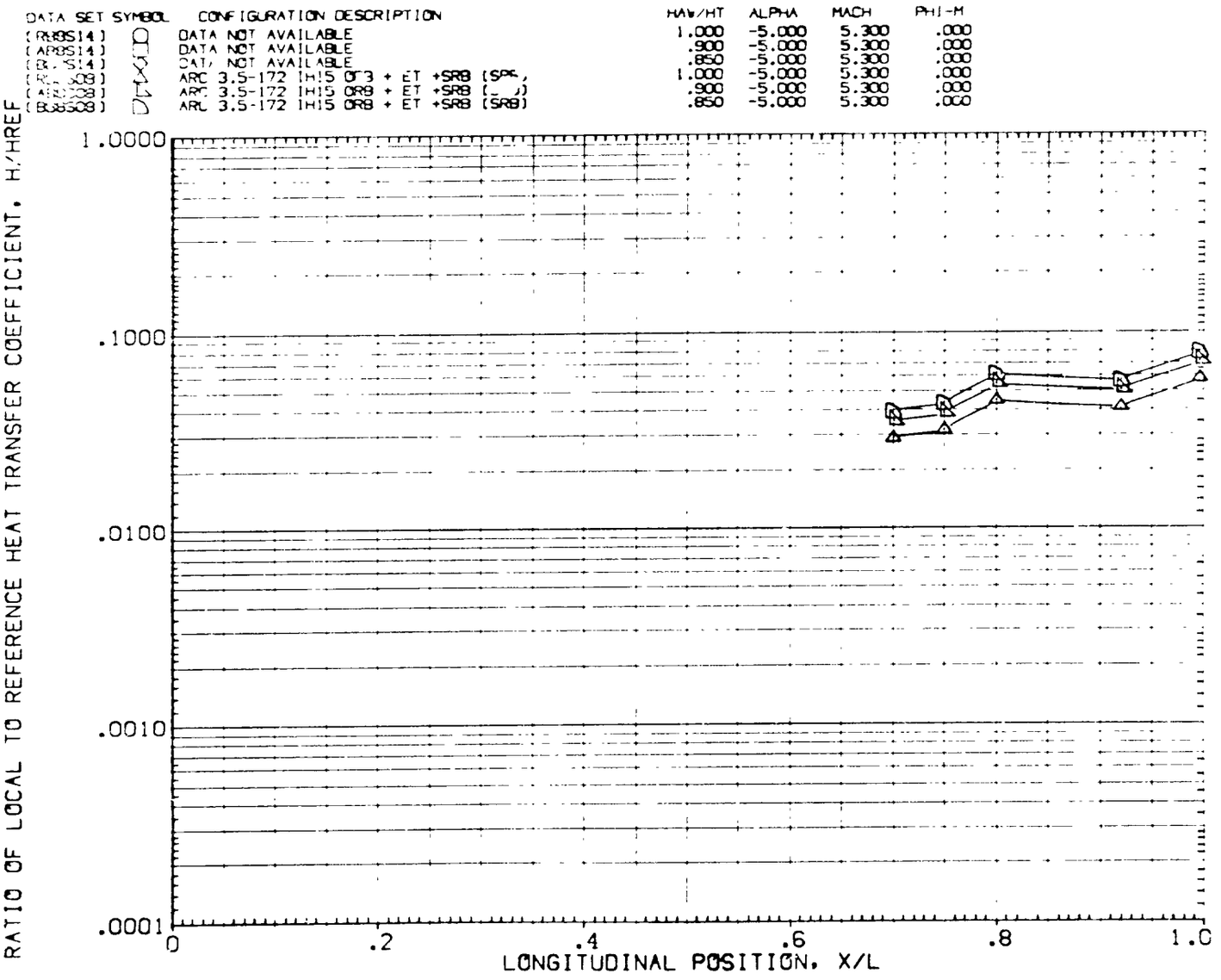


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.713 MACH = 5.300 PHI = 135.000

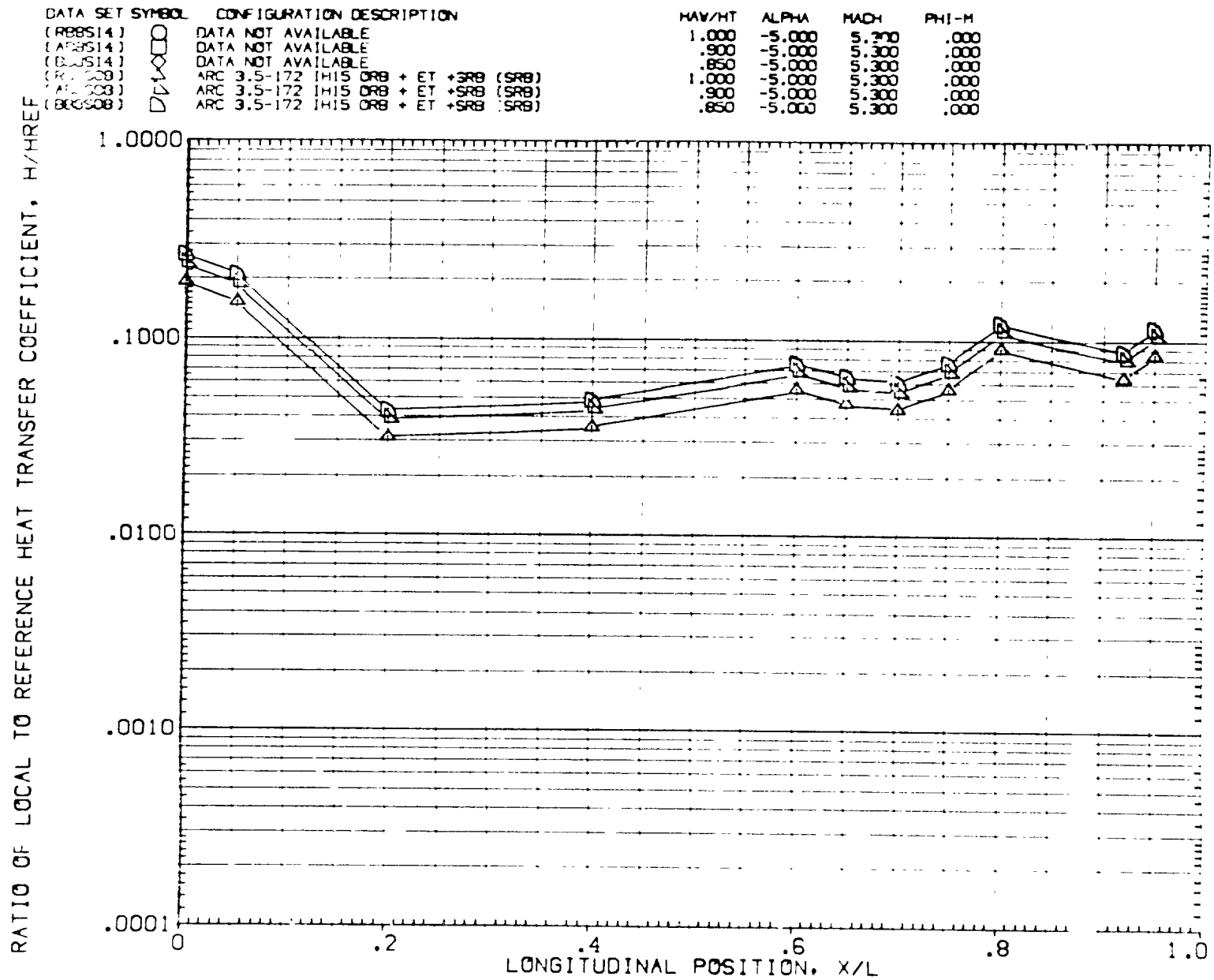


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.713 MACH = 5.300 PHI = 180.000

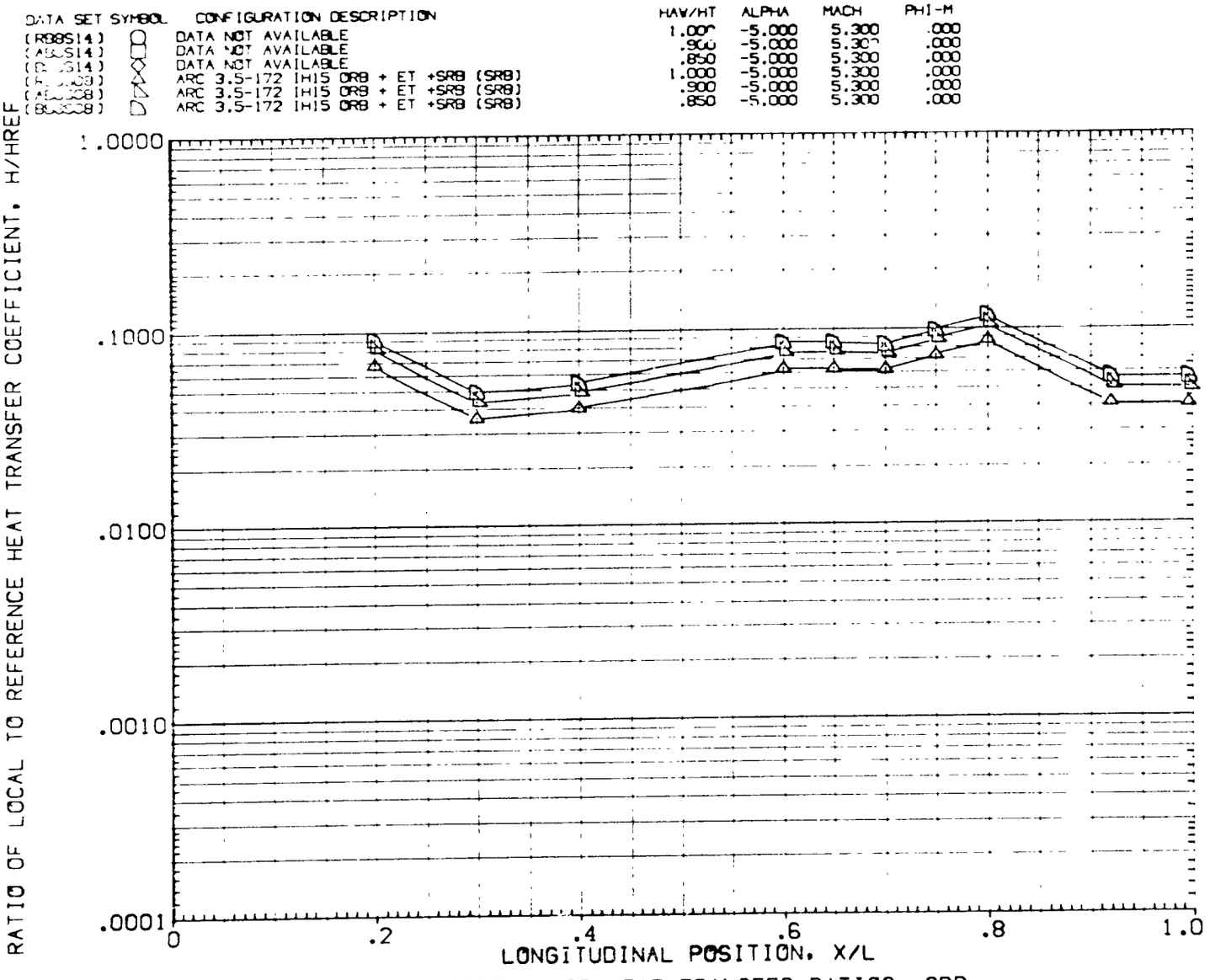


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.713 MACH = 5.300 PHI = 225.000

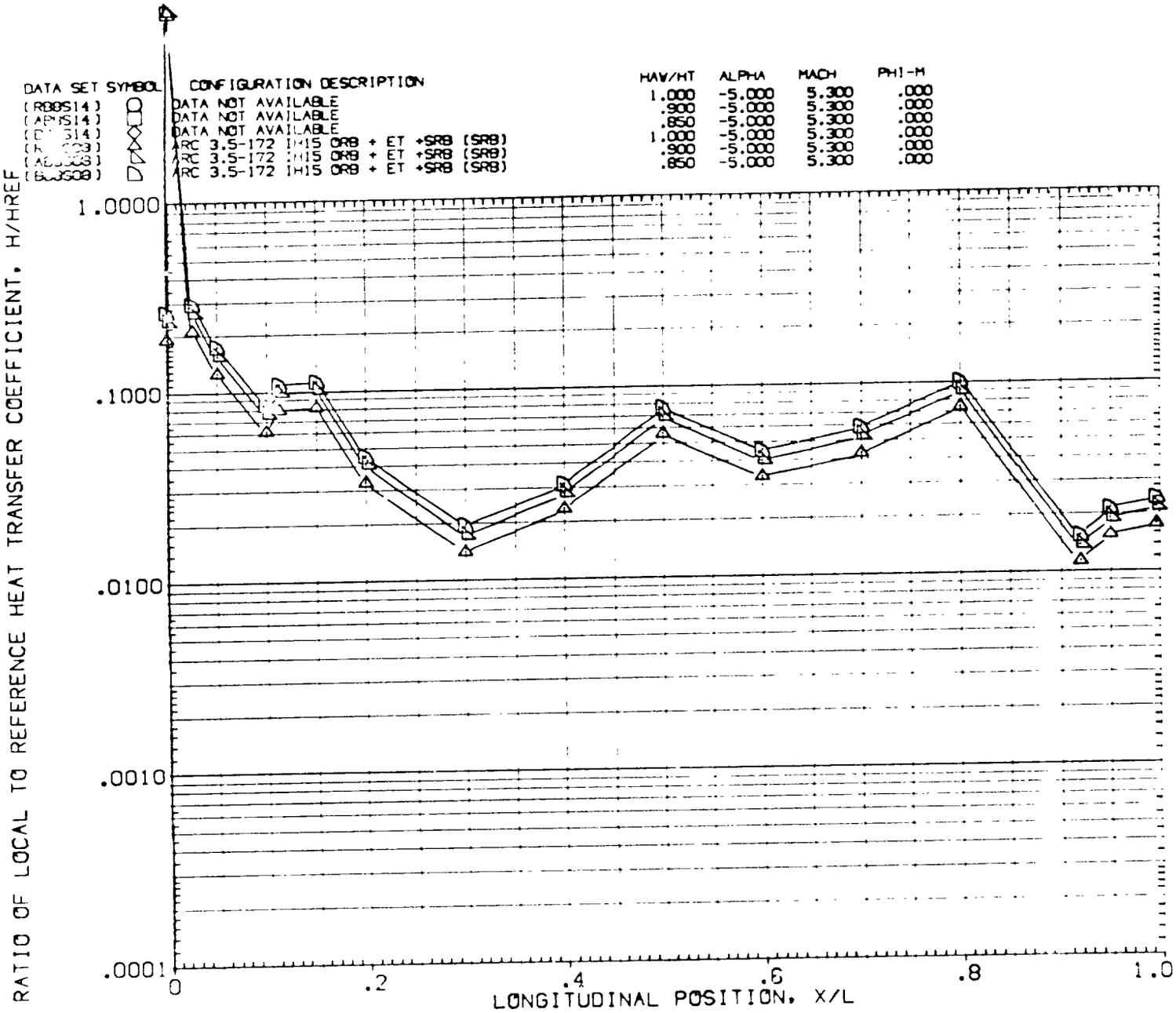


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.713 MACH = 5.300 PHI = 270.000

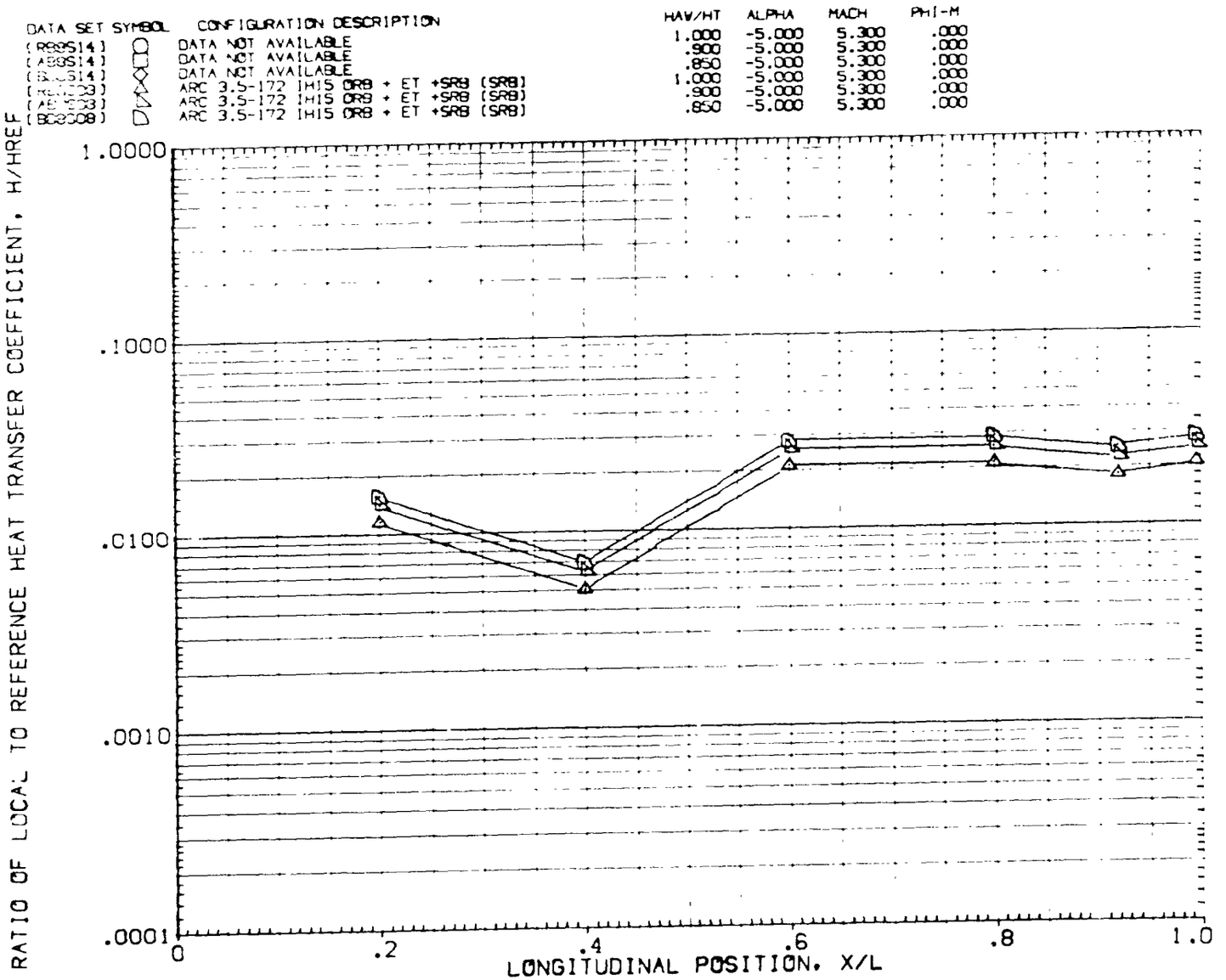


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.713 MACH = 5.300 PHI = 315.000

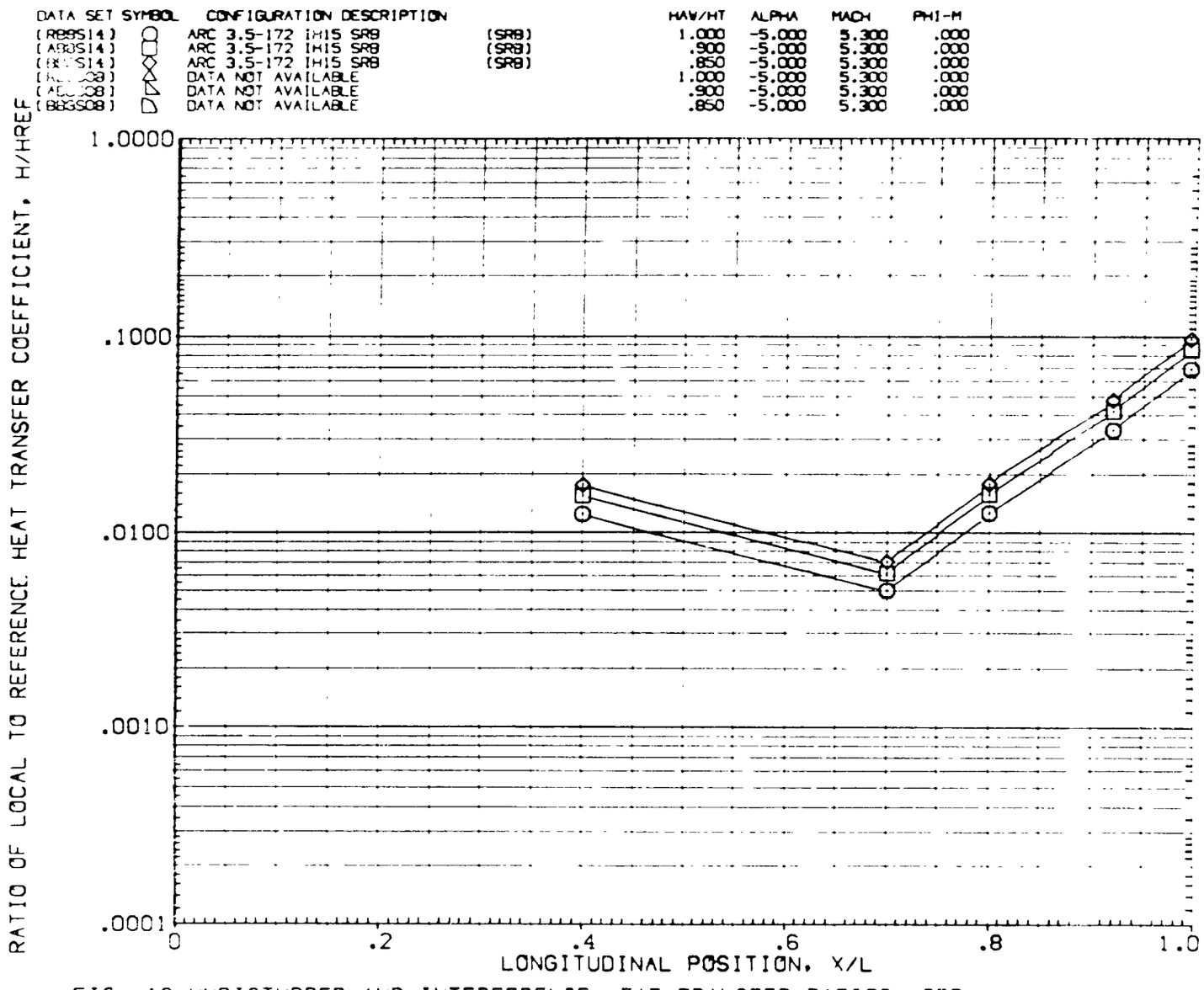


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.469 MACH = 5.300 PHI = 90.000

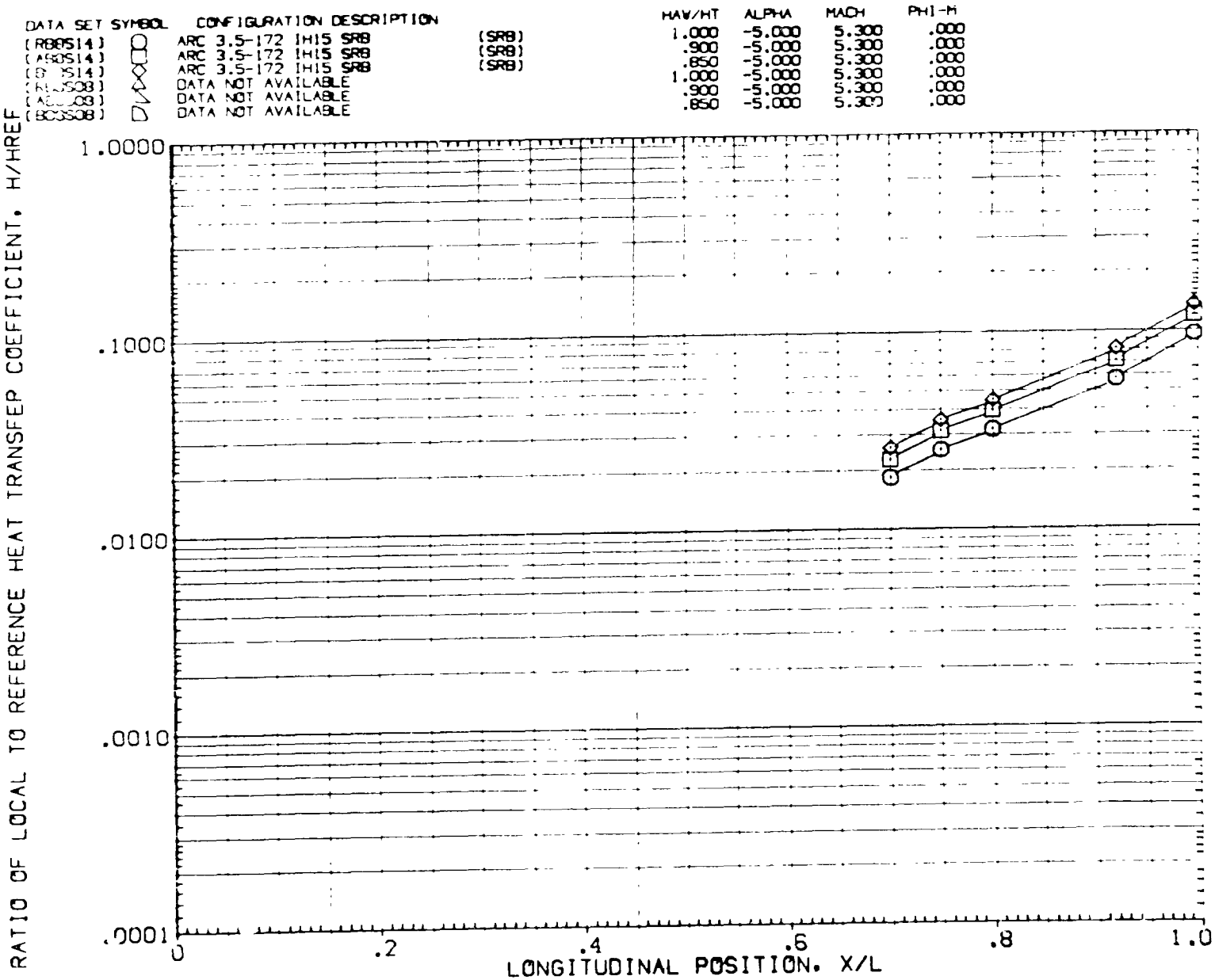


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.469 MACH = 5.300 PHI = 135.000

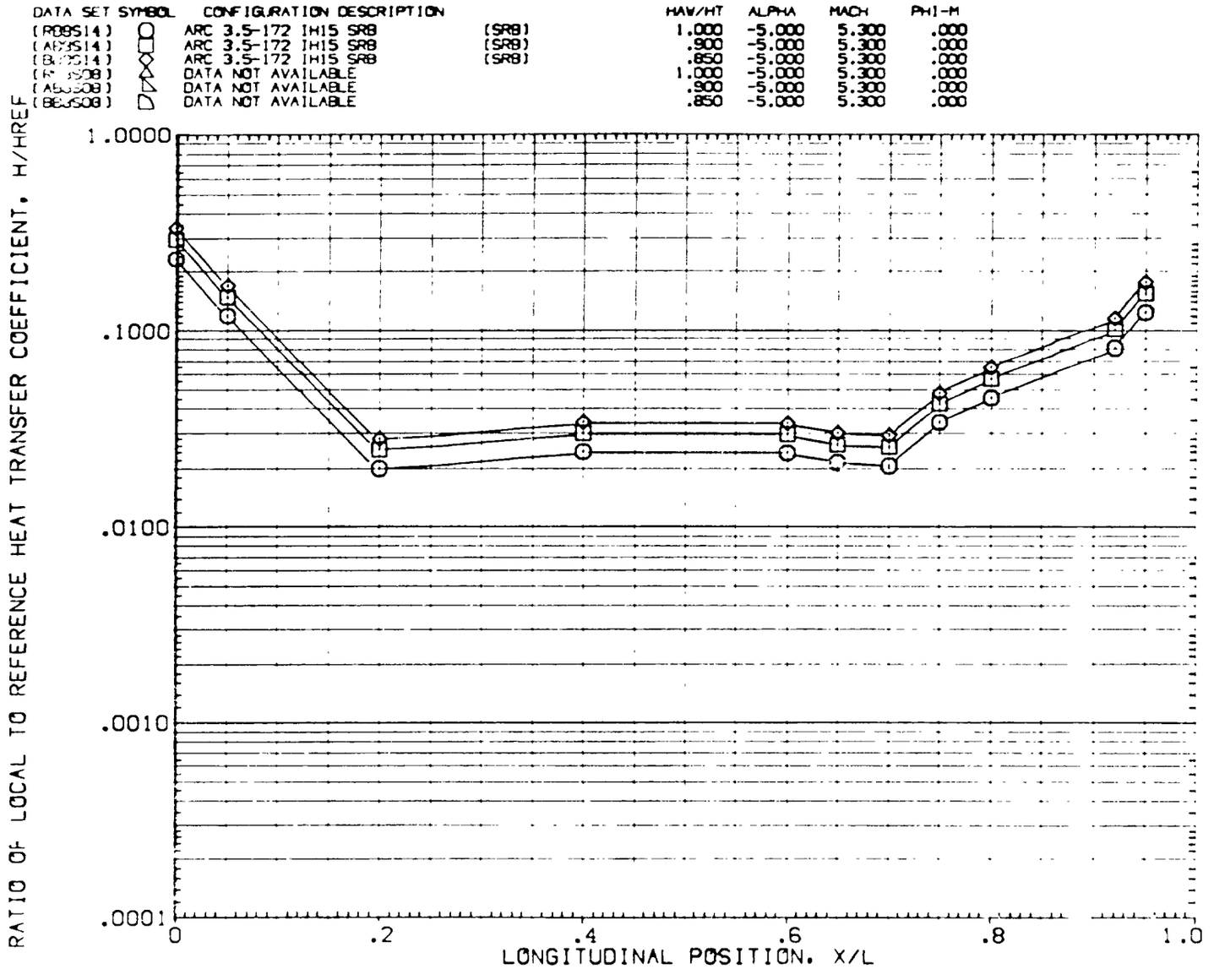


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.469 MACH = 5.300 PHI = 180.000

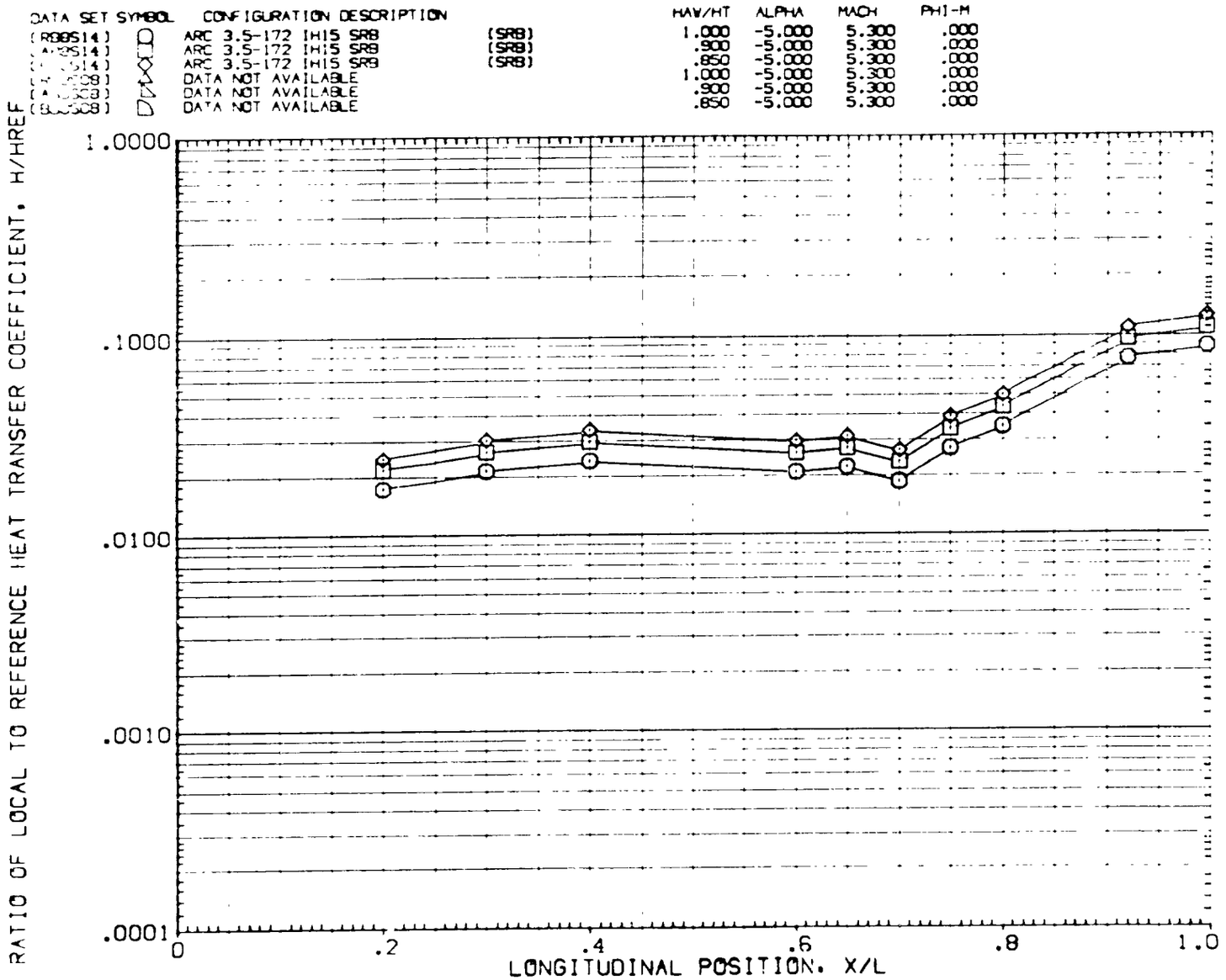


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.469 MACH = 5.300 PHI = 225.000

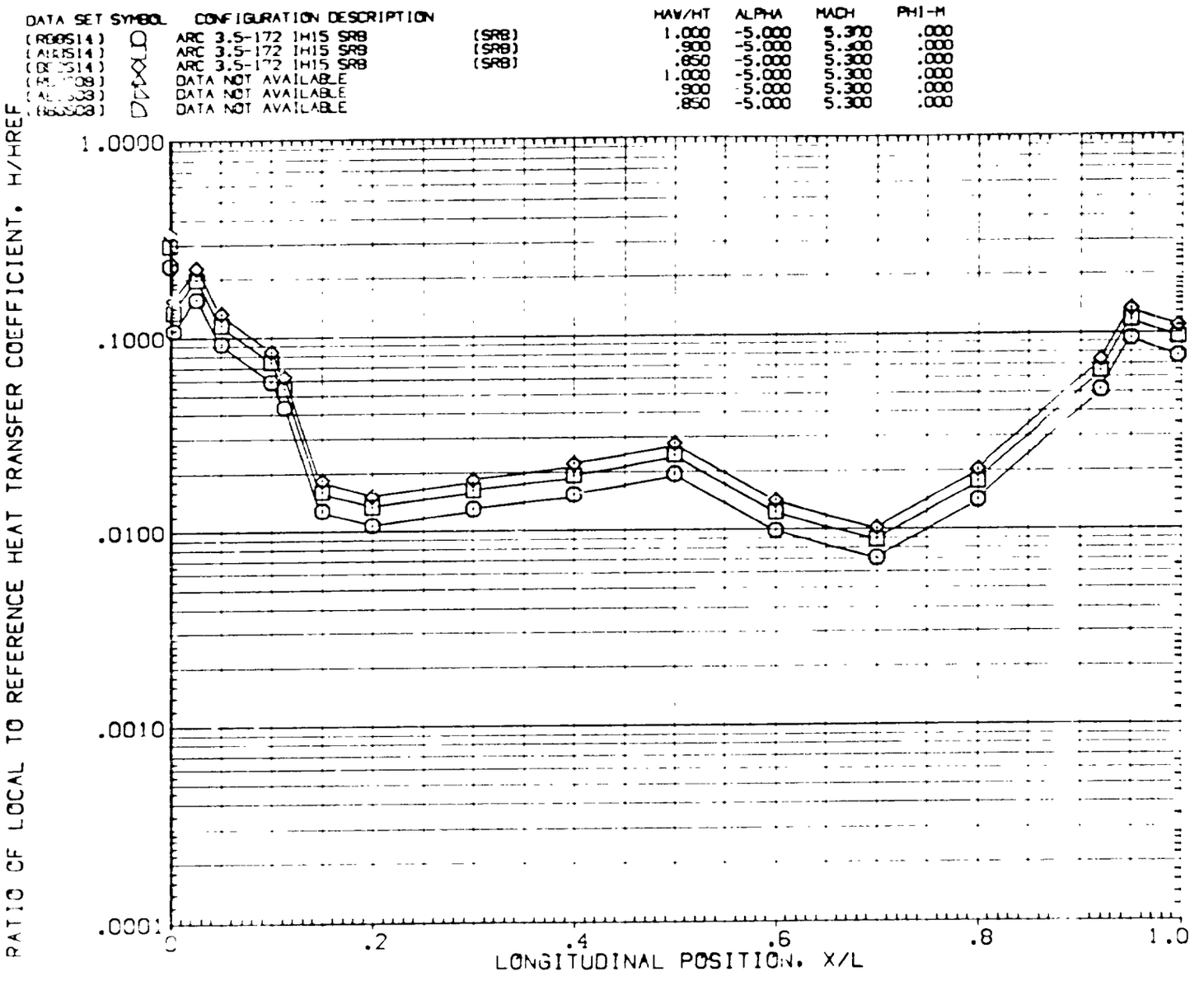


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

PN/L = 5.469 MACH = 5.300 PHI = 270.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(RUBS14)	ARC 3.5-172 IH15 SRB	(SRB)	1.000	-5.000	5.300	.000
(A[illegible]14)	ARC 3.5-172 IH15 SRB	(SRB)	.900	-5.000	5.300	.000
(B[illegible]14)	ARC 3.5-172 IH15 SRB	(SRB)	.850	-5.000	5.300	.000
([illegible]03)	DATA NOT AVAILABLE		1.000	-5.000	5.300	.000
([illegible]03)	DATA NOT AVAILABLE		.900	-5.000	5.300	.000
([illegible]03)	DATA NOT AVAILABLE		.850	-5.000	5.300	.000

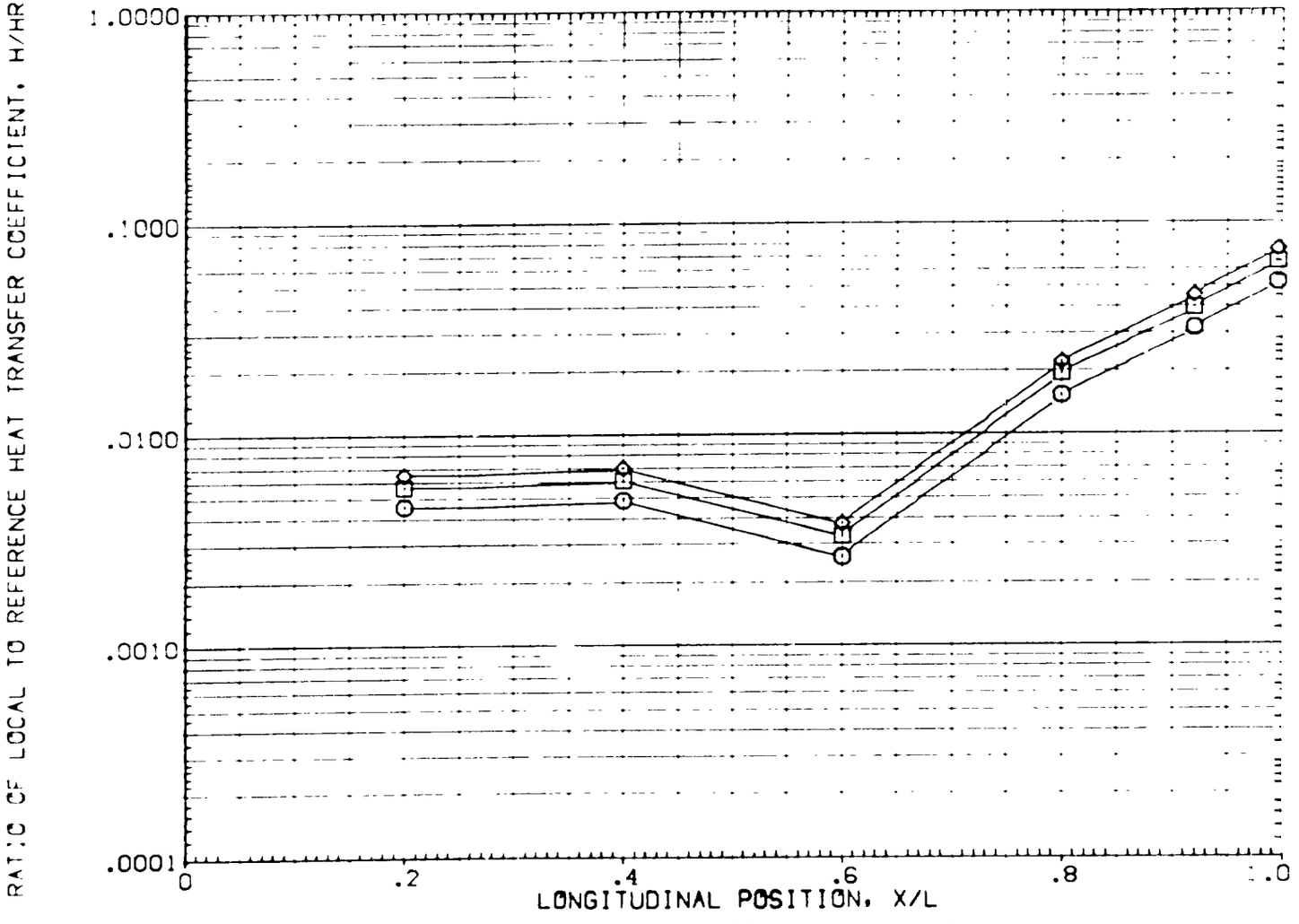


FIG. 12 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.469 MACH = 5.300 PHI = 315.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(089S08)	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	-5.000	5.300	.000
(EE&S08)	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	-5.000	5.300	.000
(FB8S08)	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	-5.000	5.300	.000

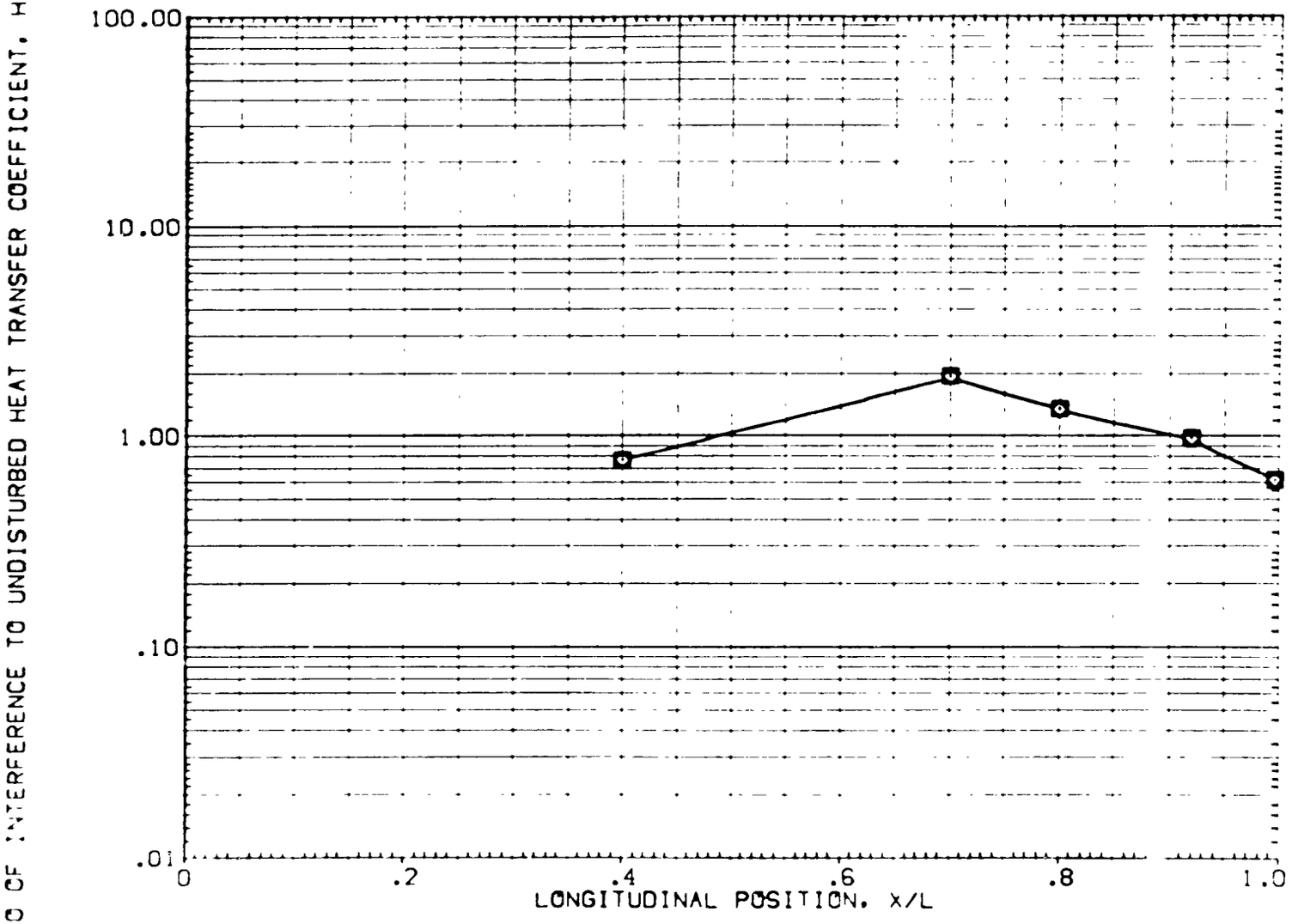


FIG. 13 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

R'N/L = 2.225 MACH = 5.300 PHI = 90.000

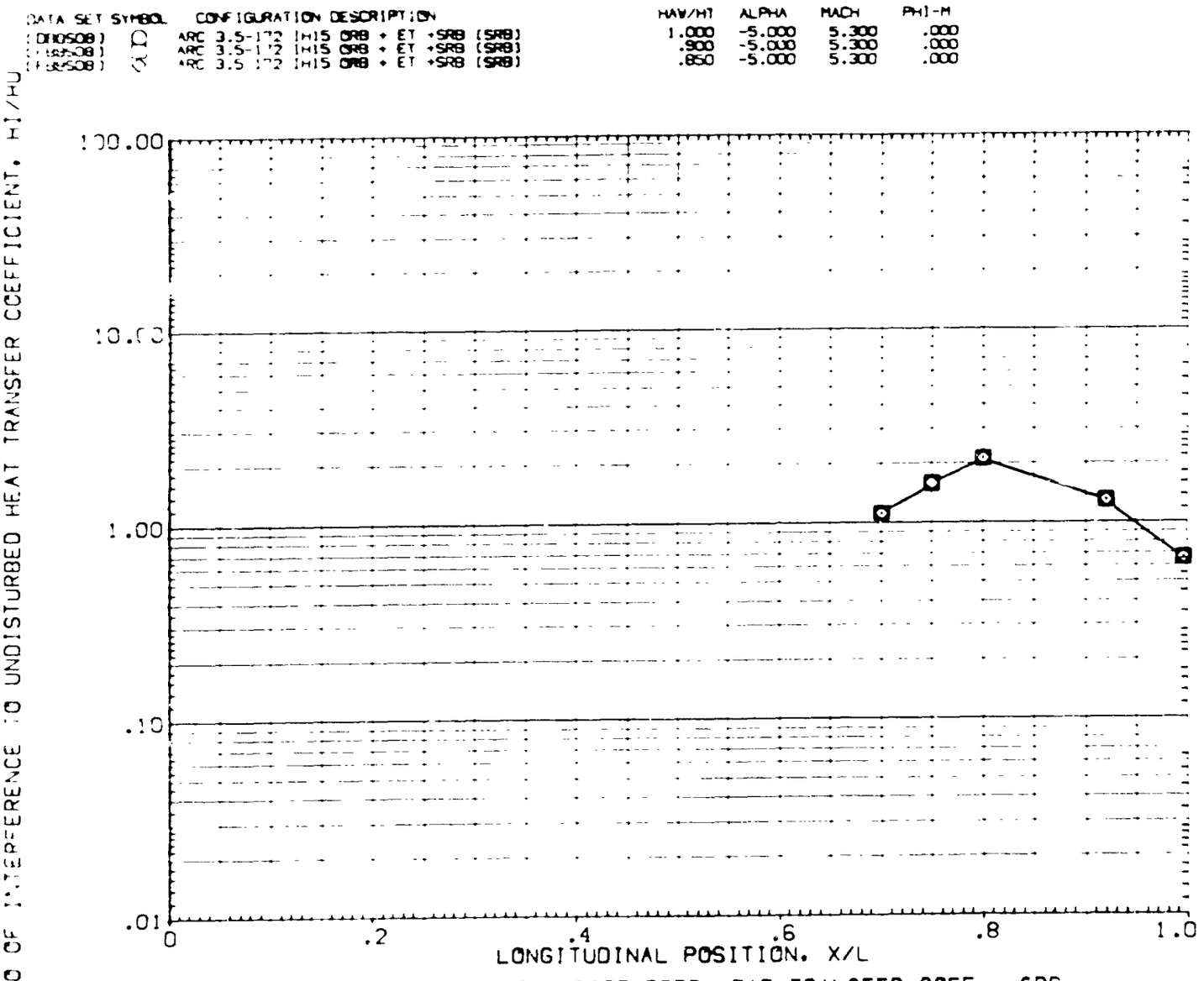


FIG. 13 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 2.225 MACH = 5.300 PHI = 135.000

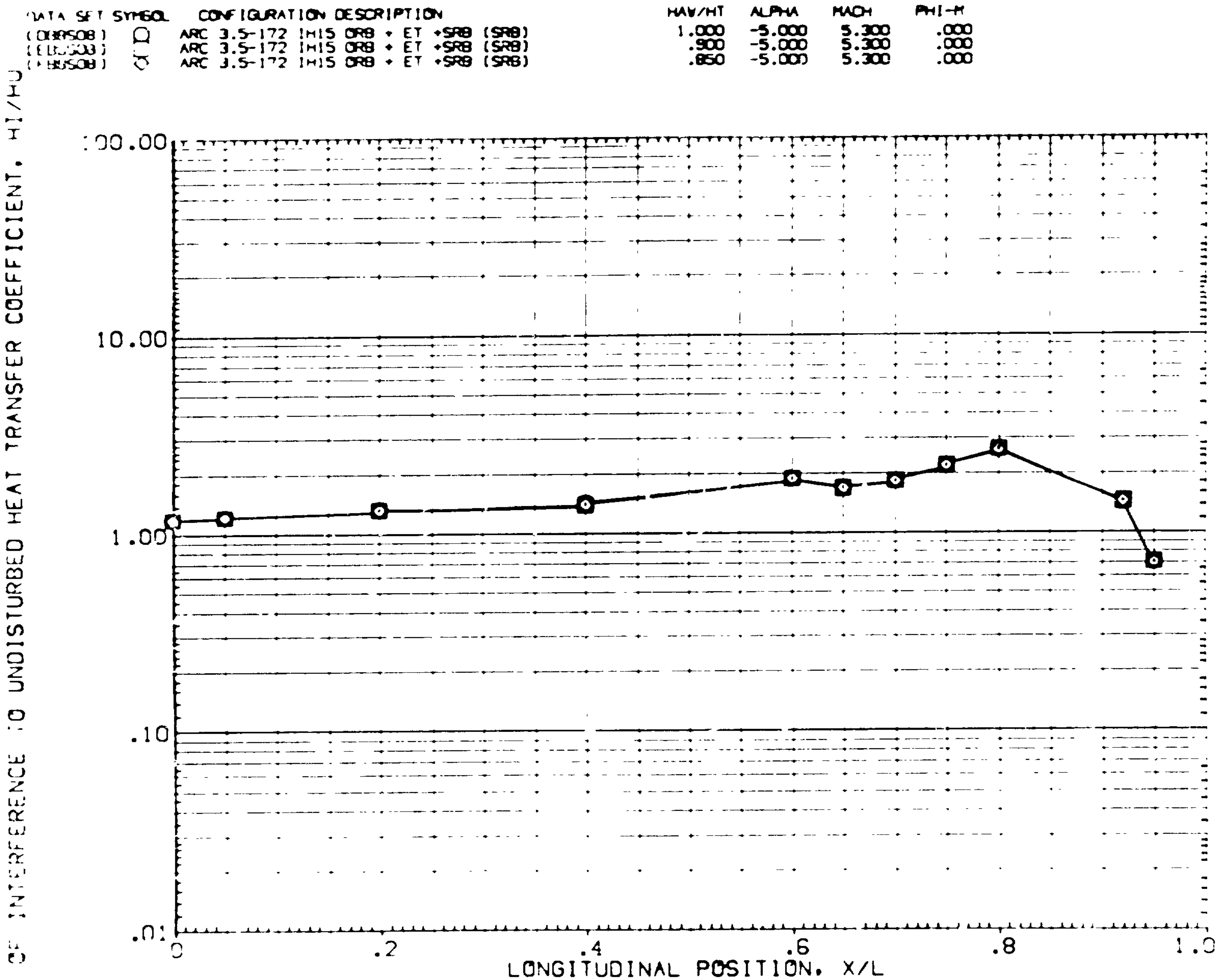


FIG. 13 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB

RN/L = 2.225 MACH = 5.300 PHI = 180.000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(083S08)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	1.000	-5.000	5.300	.000
(093S08)	△	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.900	-5.000	5.300	.000
(085S08)	□	ARC 3.5-172 IH15 ORB + ET +SRB (SRB)	.850	-5.000	5.300	.000

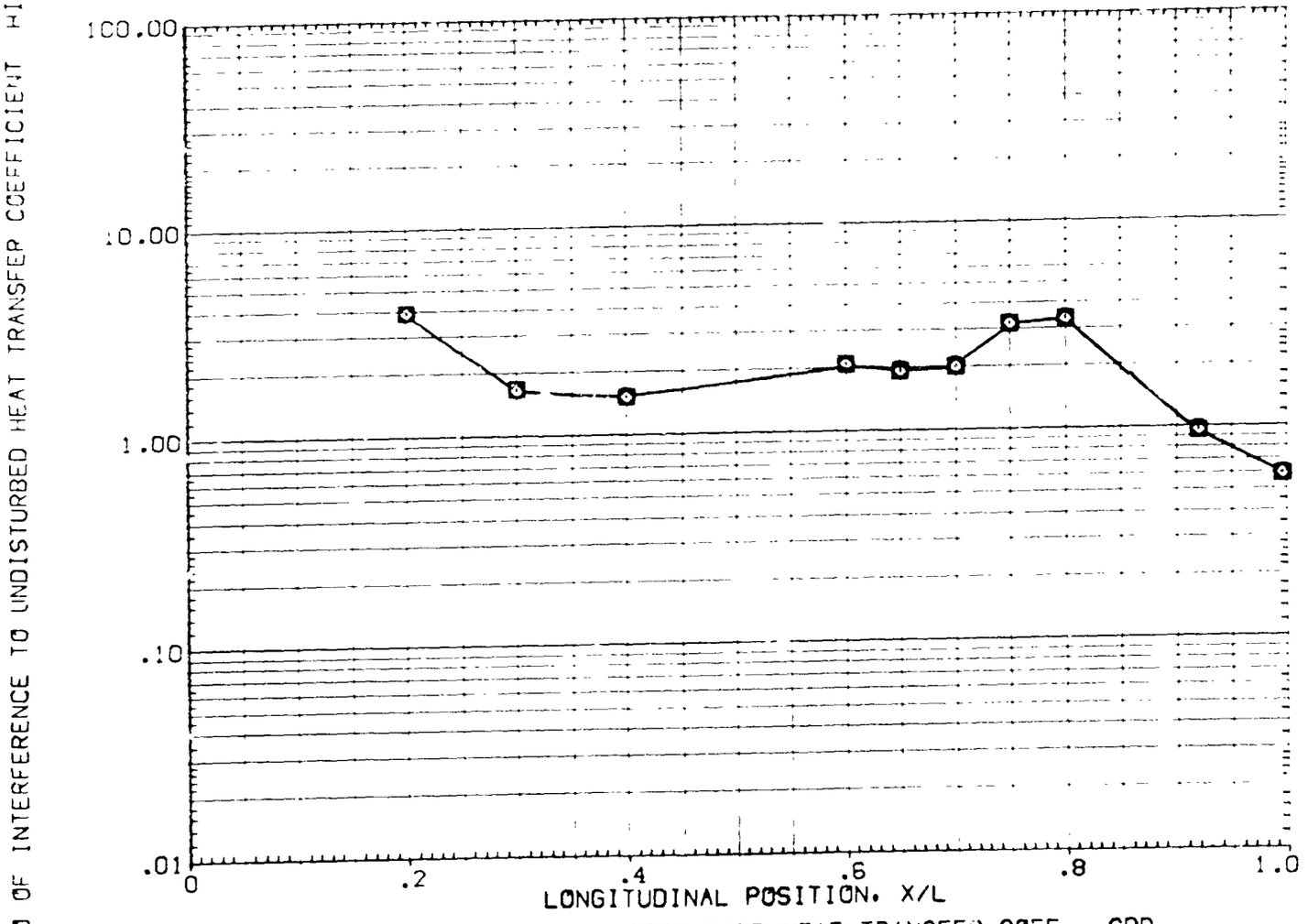


FIG. 13 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 2.225 MACH = 5.300 PHI = 225.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(DB3S08)	ARC 3.5-172 IHIS ORB + ET +SRB (SRB)	1.000	-5.000	5.300	.000
(SB8S08)	ARC 3.5-172 IHIS ORB + ET +SRB (SRB)	.900	-5.000	5.300	.000
(FB8S08)	ARC 3.5-172 IHIS ORB + ET +SRB (SRB)	.850	-5.000	5.300	.000

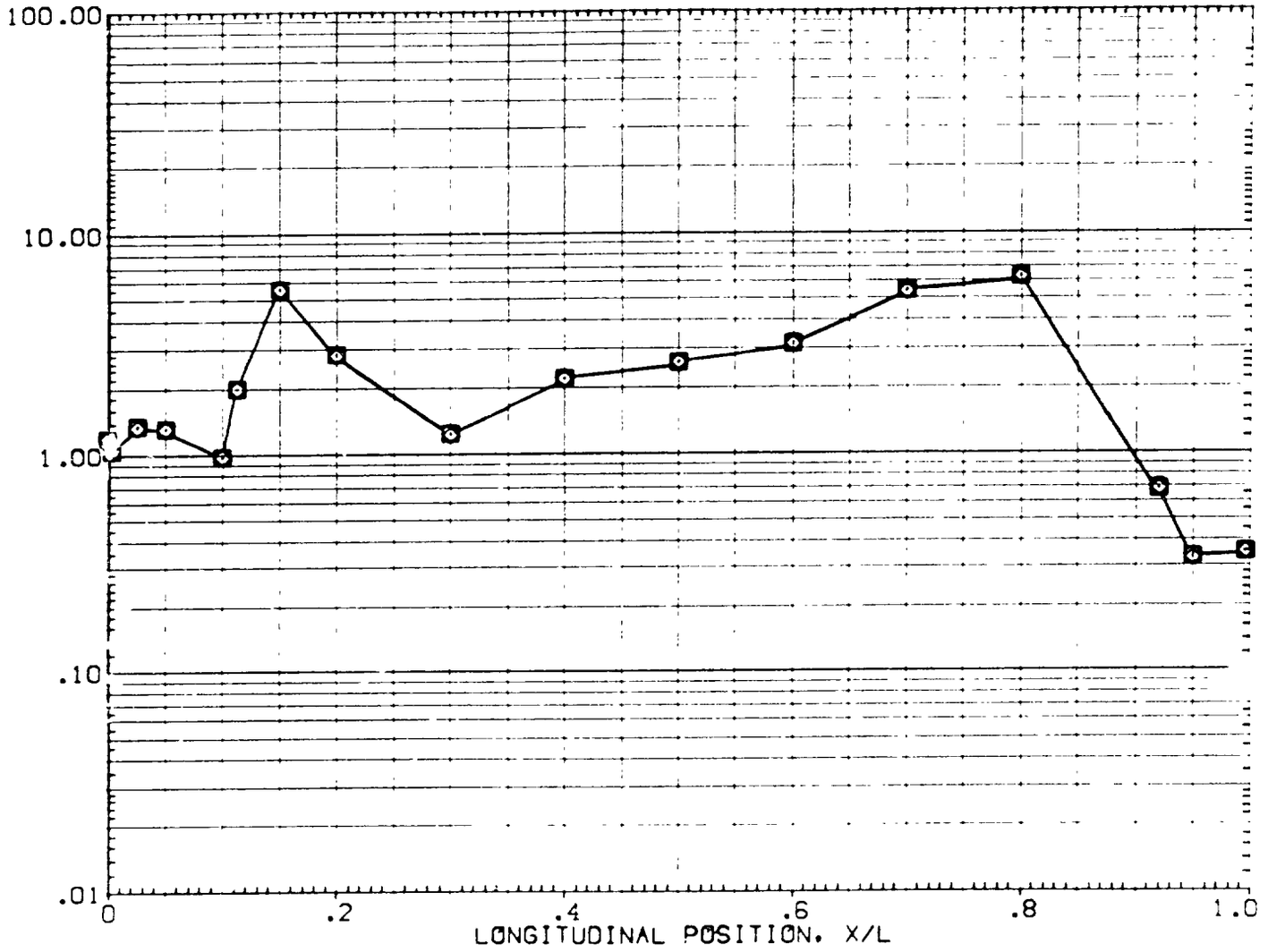


FIG. 13 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RN/L = 2.225 MACH = 5.300 PHI = 270.000

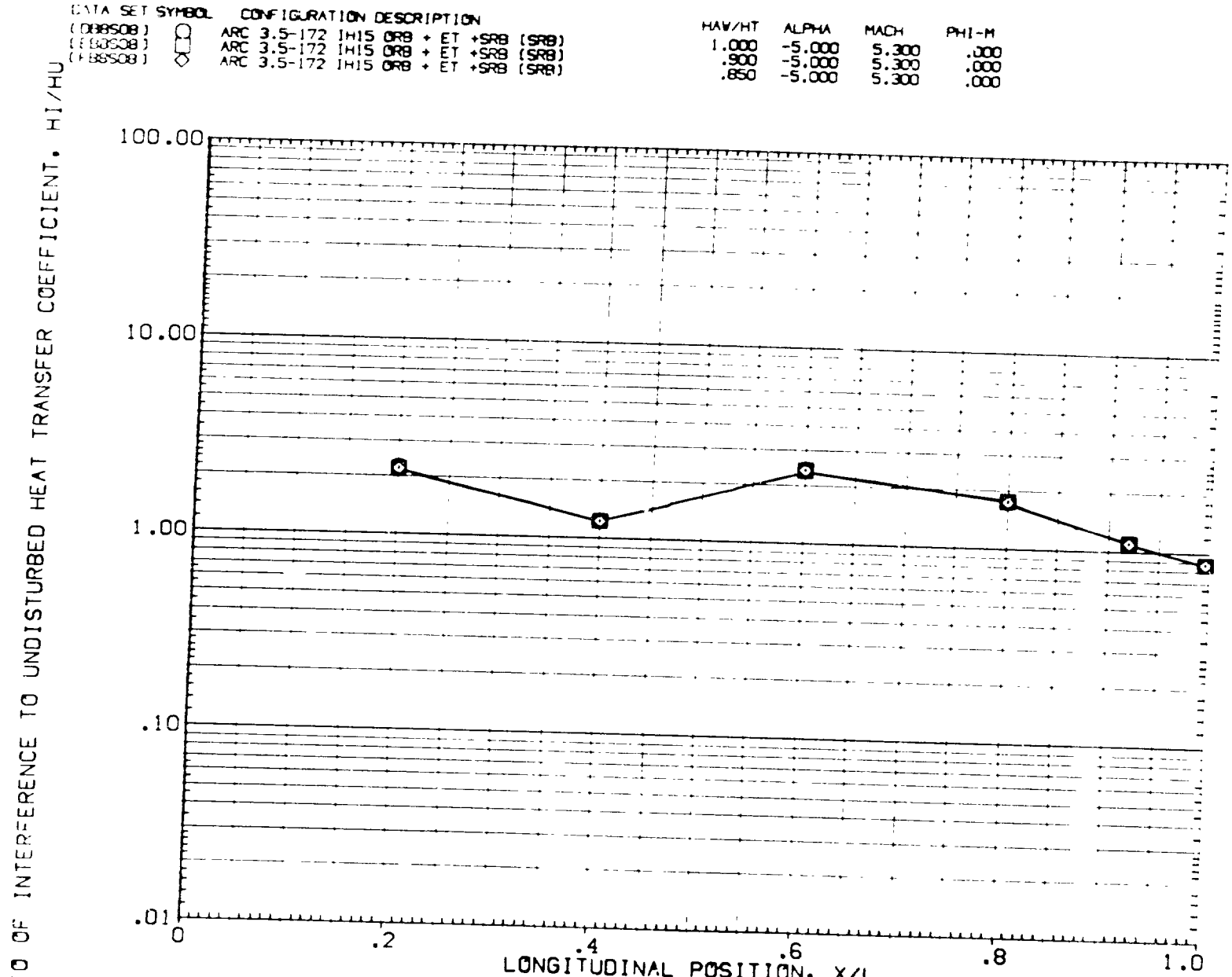


FIG. 13 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., SRB.

RRN/L = 2.225 MACH = 5.300 PHI = 315.000

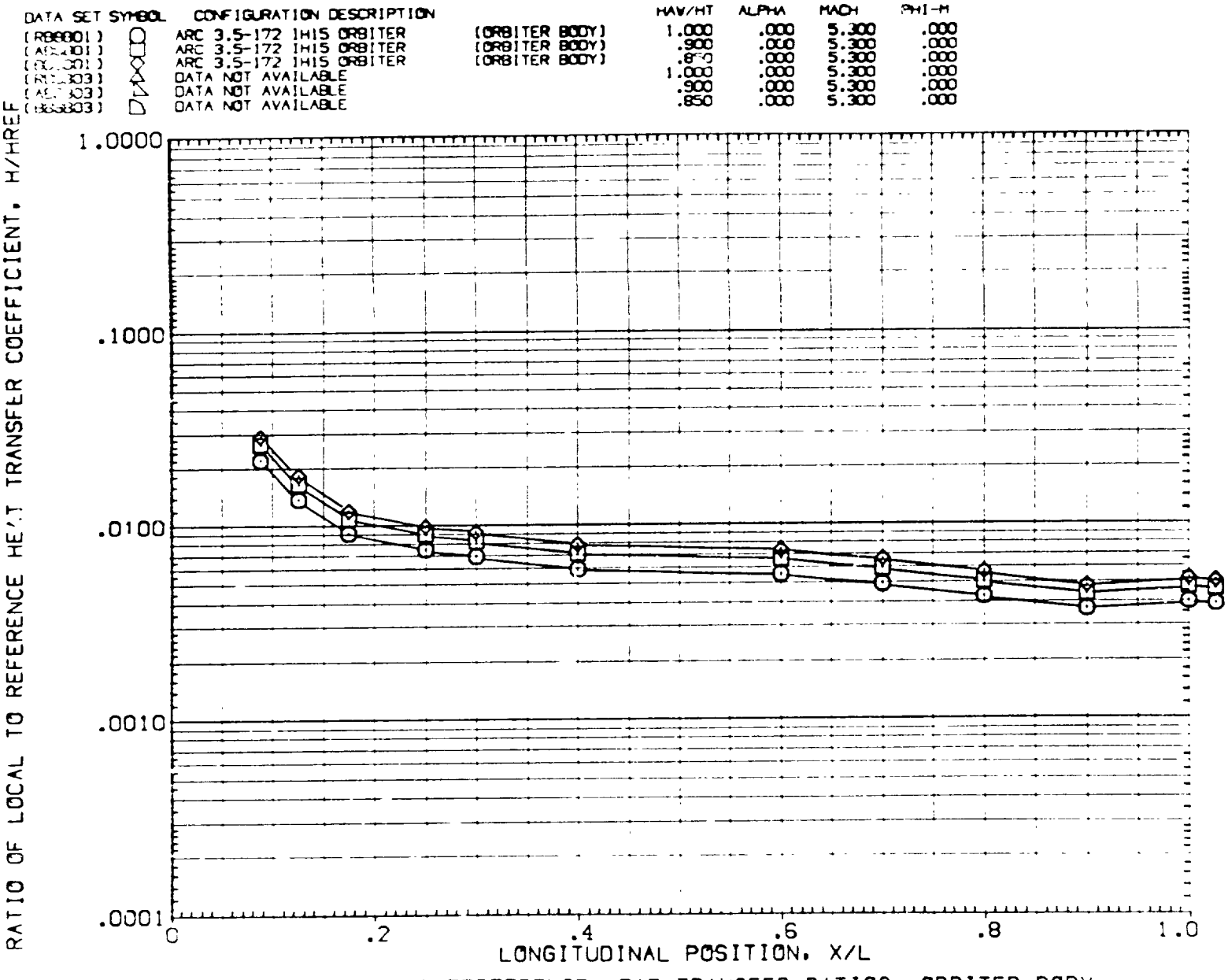


FIG. 14 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 1.764 MACH = 5.300 Y = .000

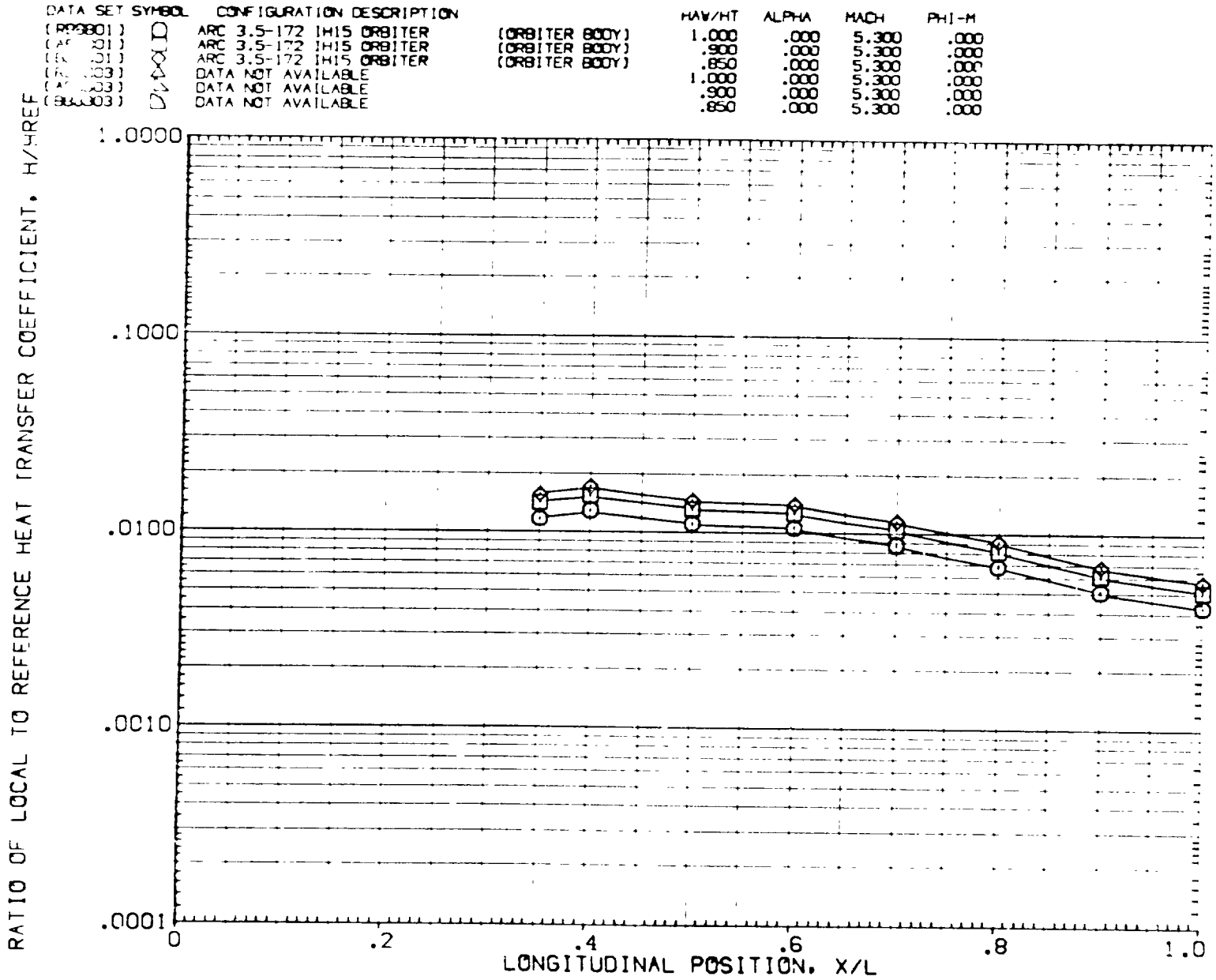


FIG. 14 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 1.764 MACH = 5.300 Y = .415

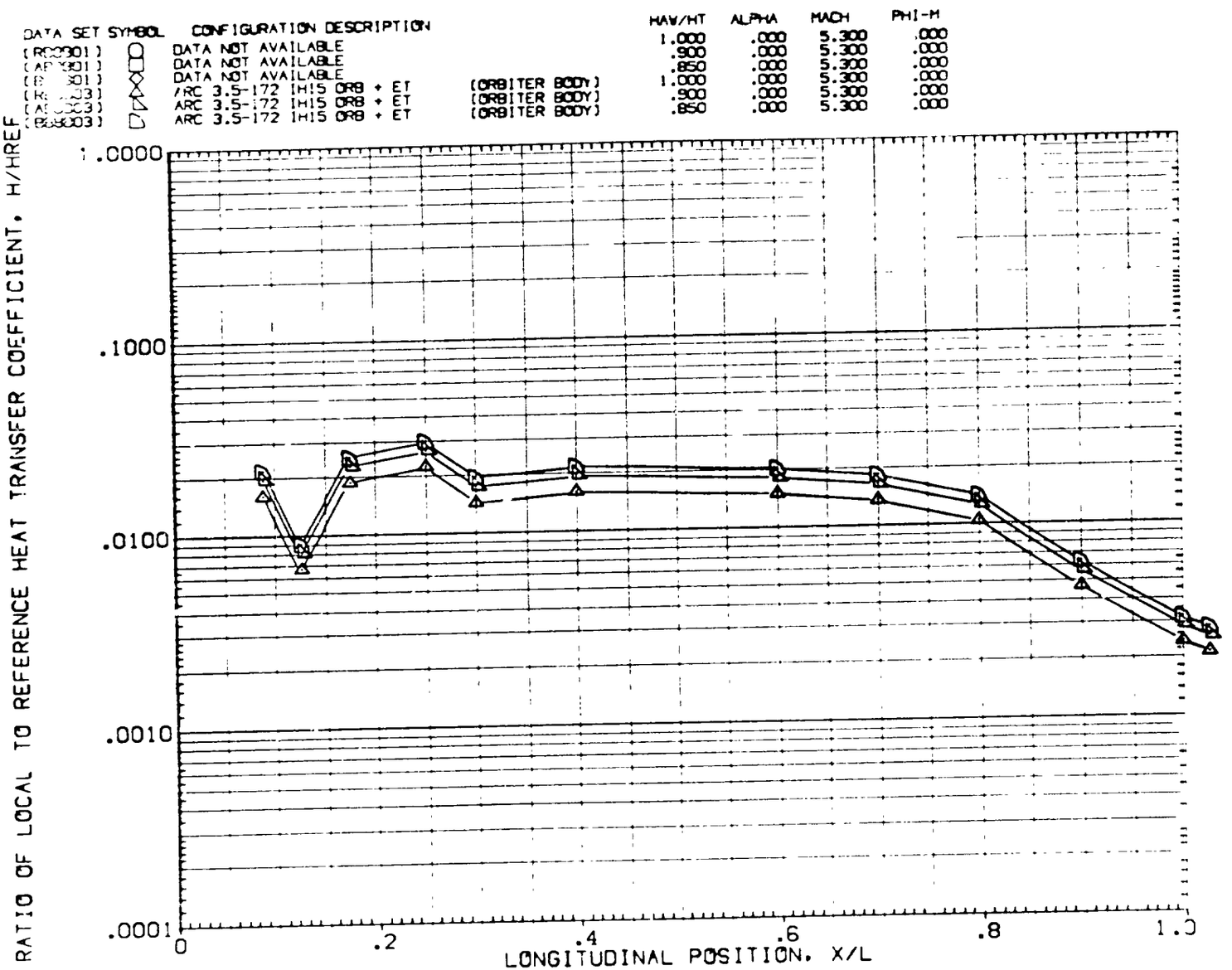


FIG. 14 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 4.332 MACH = 5.300 Y = .000

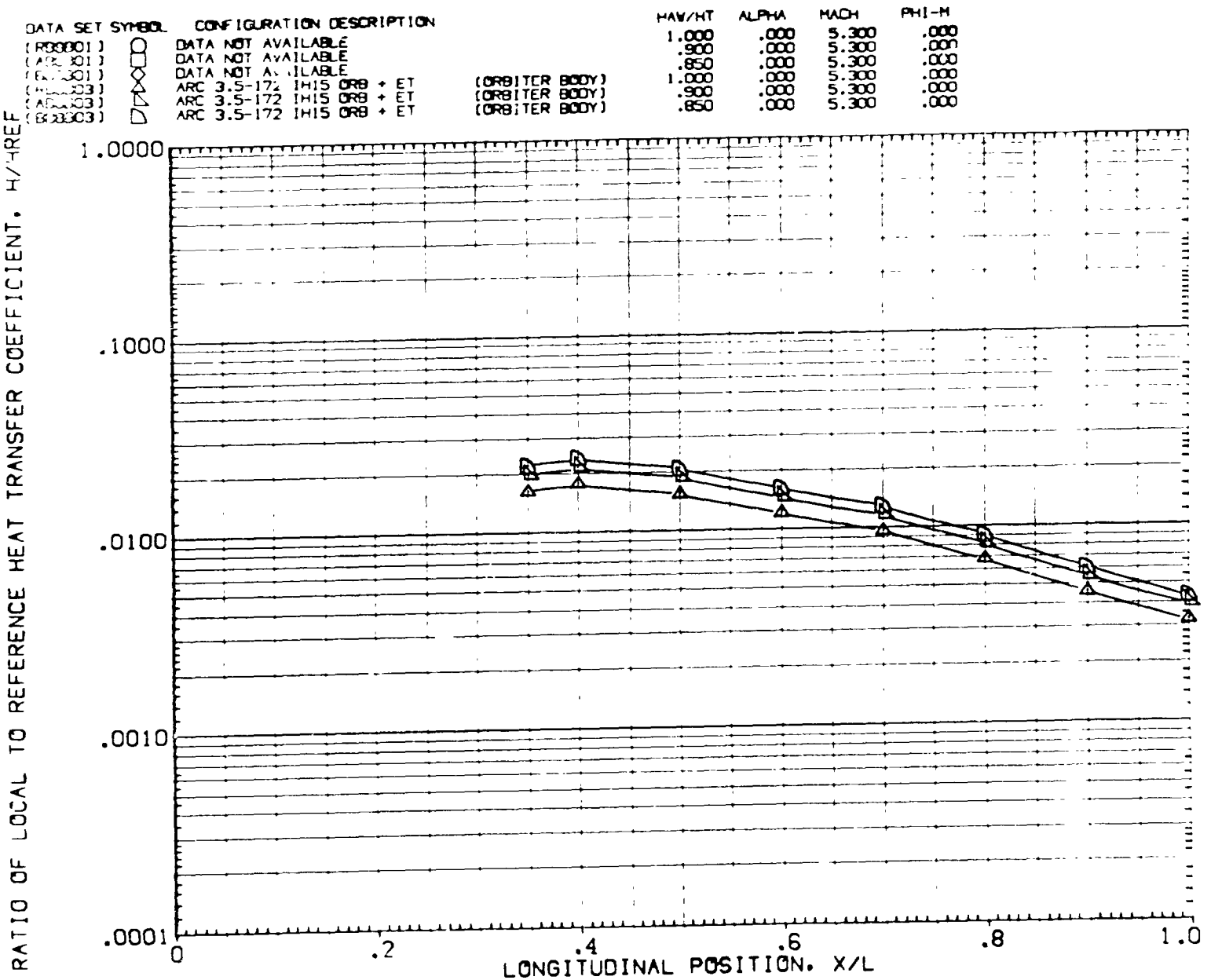


FIG. 14 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 4.332 MACH = 5.300 Y = .415

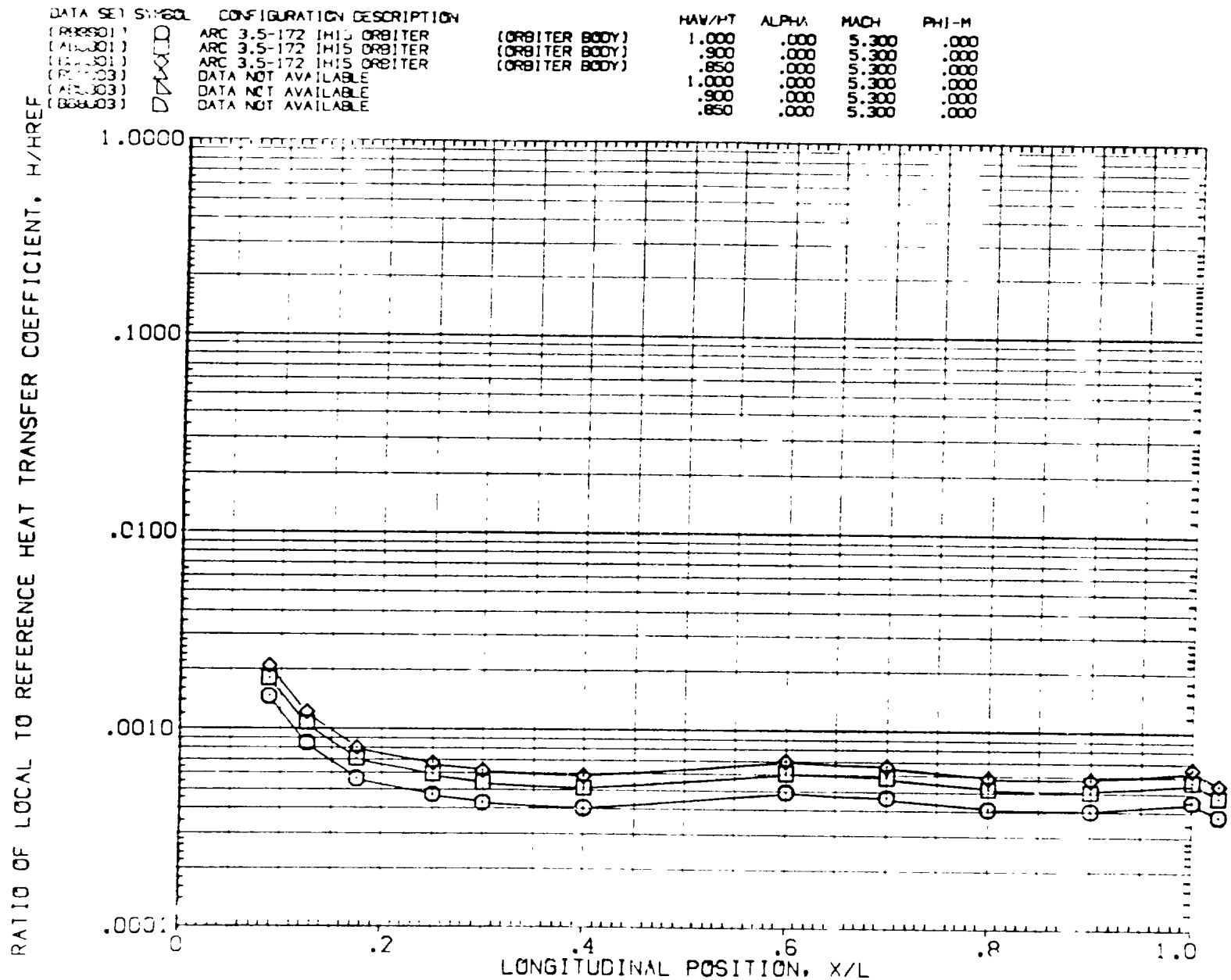


FIG. 14 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

P = 5.214 MACH = 5.300 Y = .000

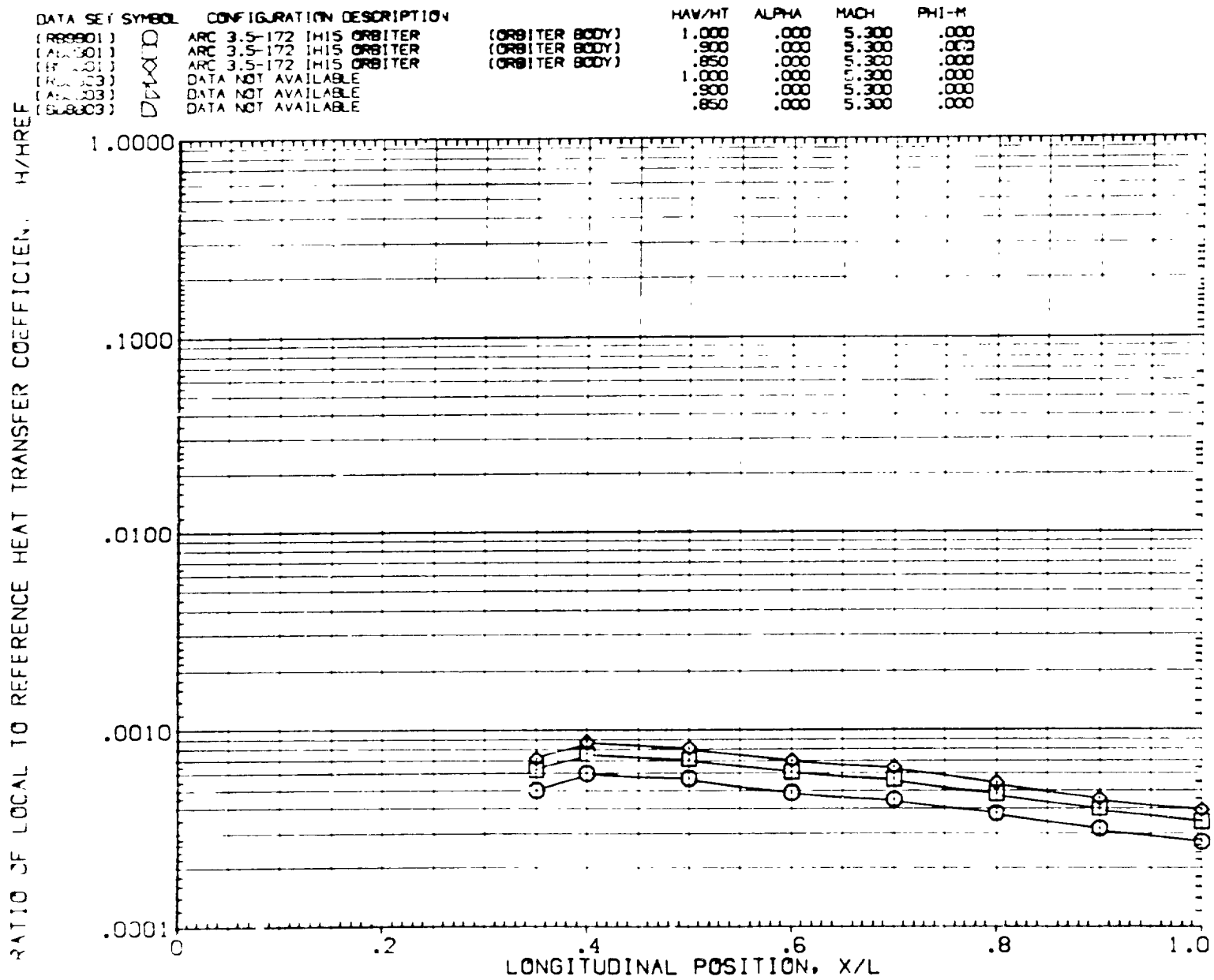


FIG. 14 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

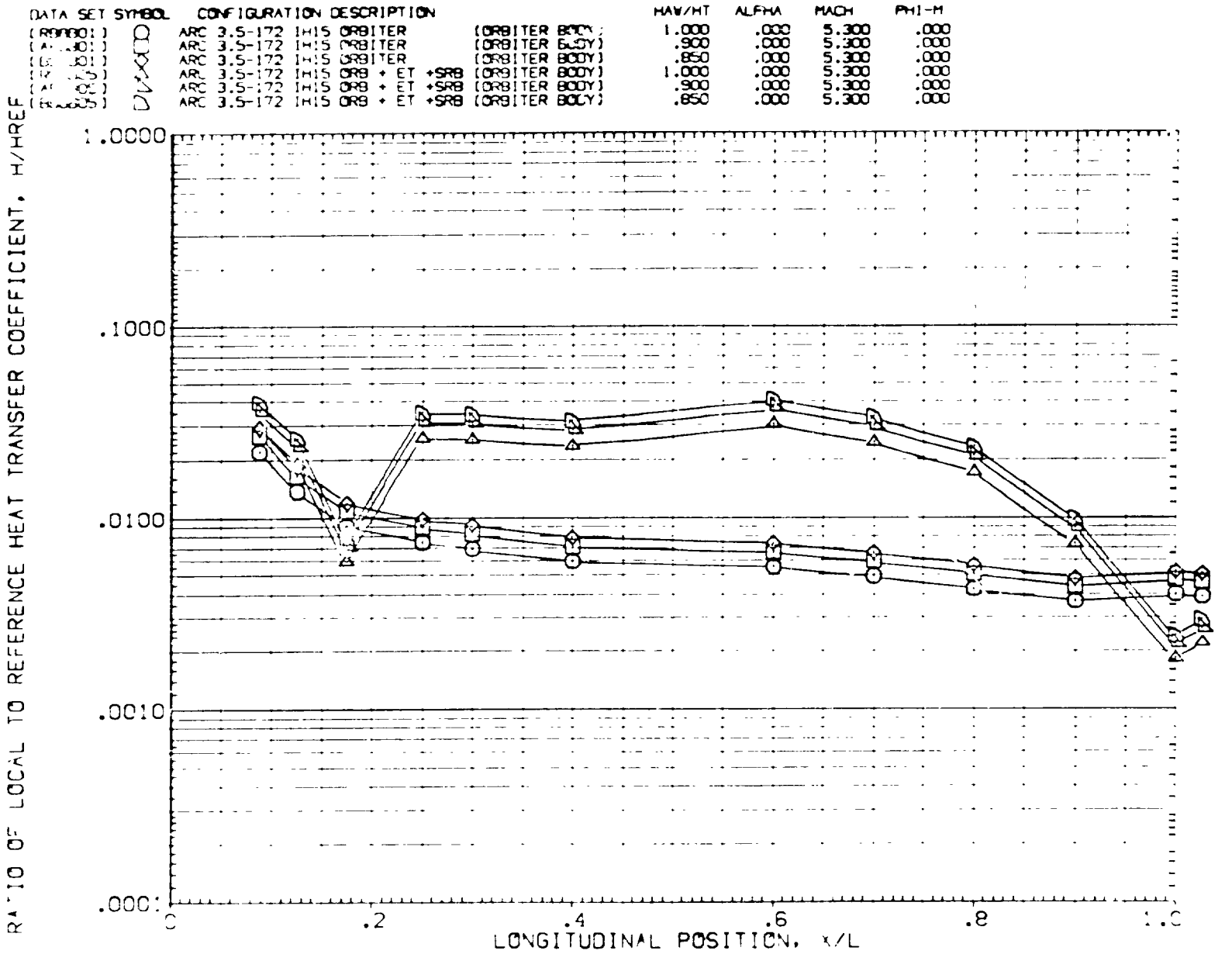


FIG. 15 UNDISTURBED AND INTERFERENCE HEAT TRANSFER [illegible], ORBITER BODY

[illegible] = 1.764 MACH = 5.300 Y = .000

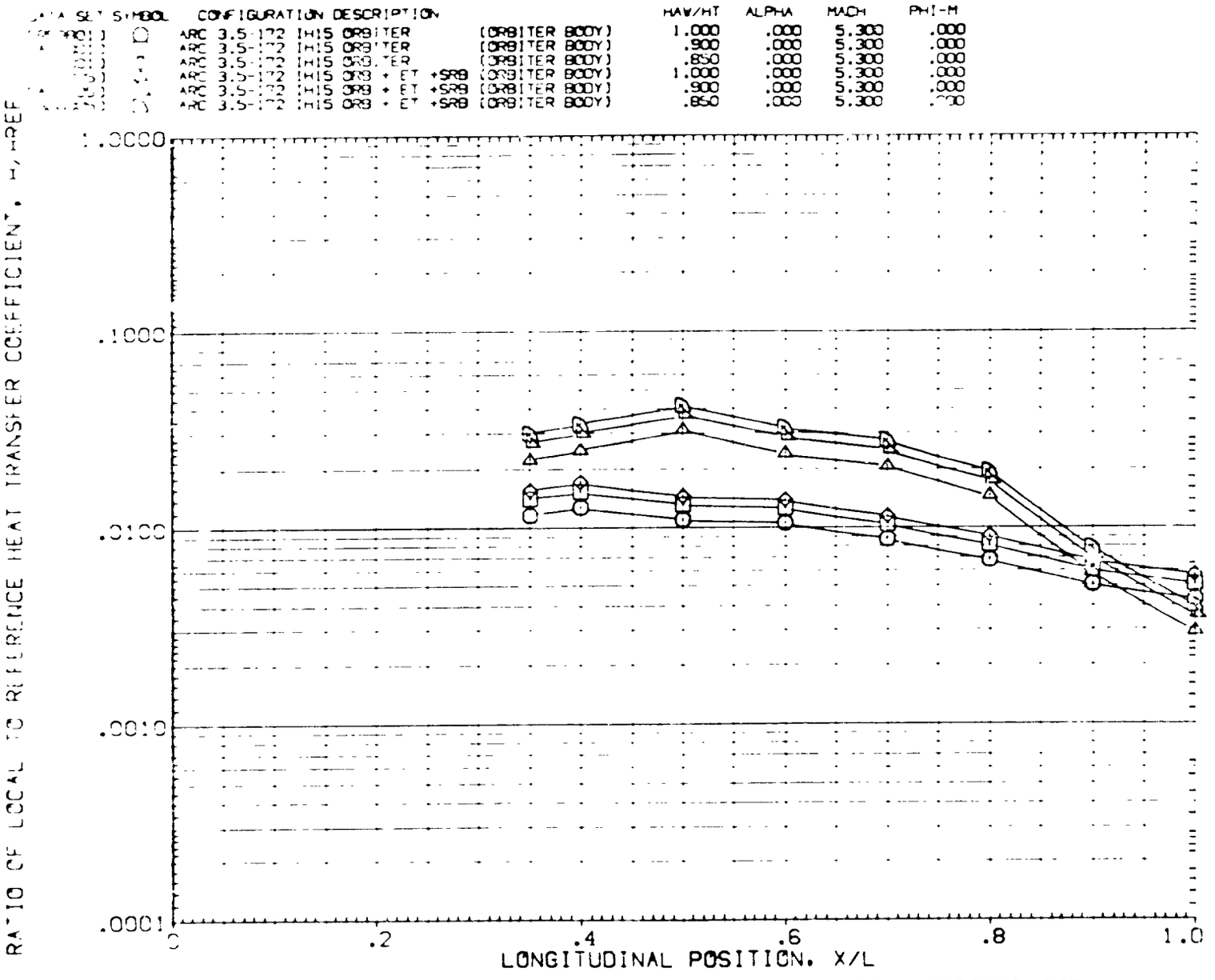


FIG. 15 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

R/L = 1.764 MACH = 5.300 Y = .415

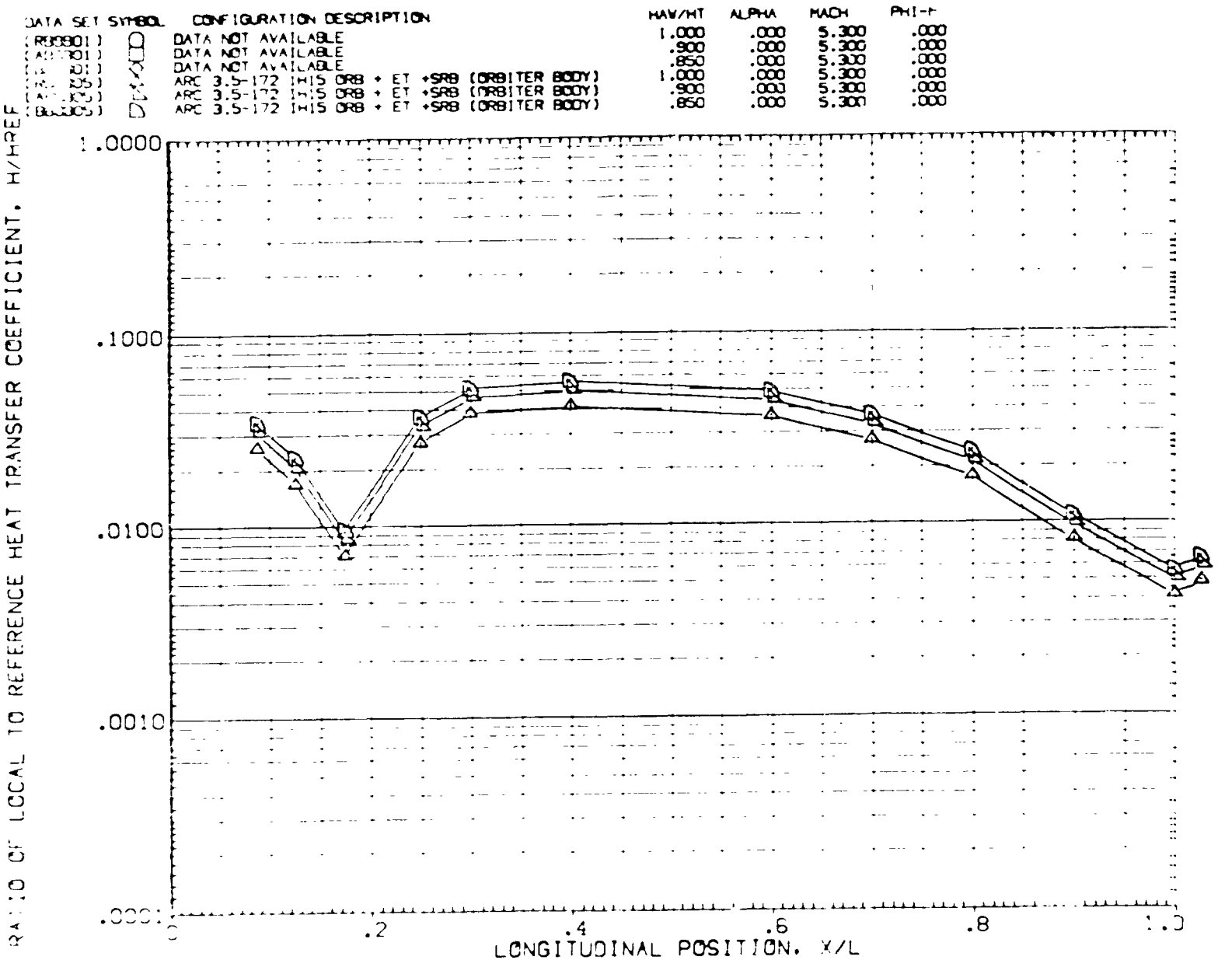


FIG. 15 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

4.43 MACH 5.300 = .000

PAGE 145

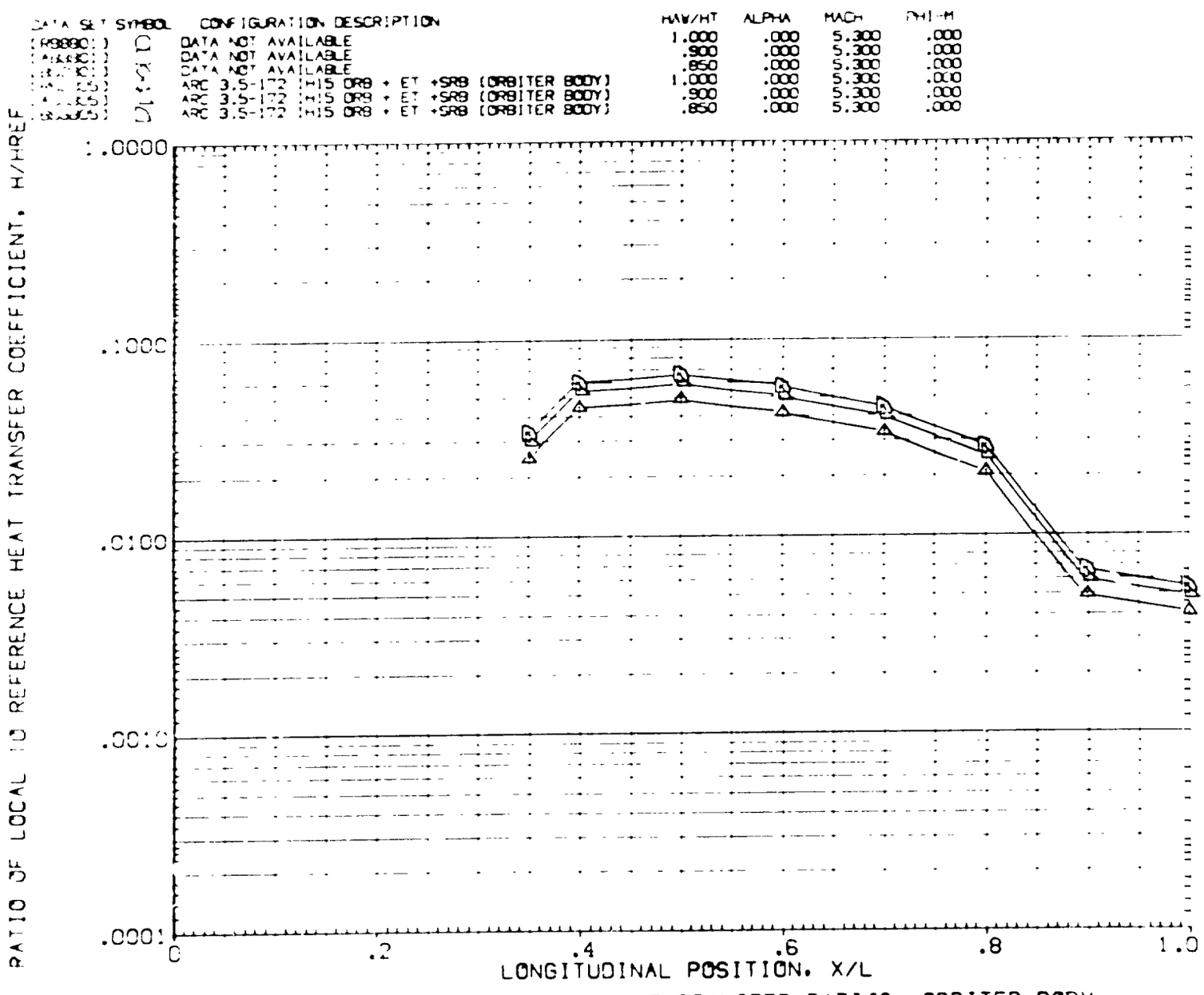


FIG. 15 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

PHI = 4.43 MACH = 5.300 Y = .415

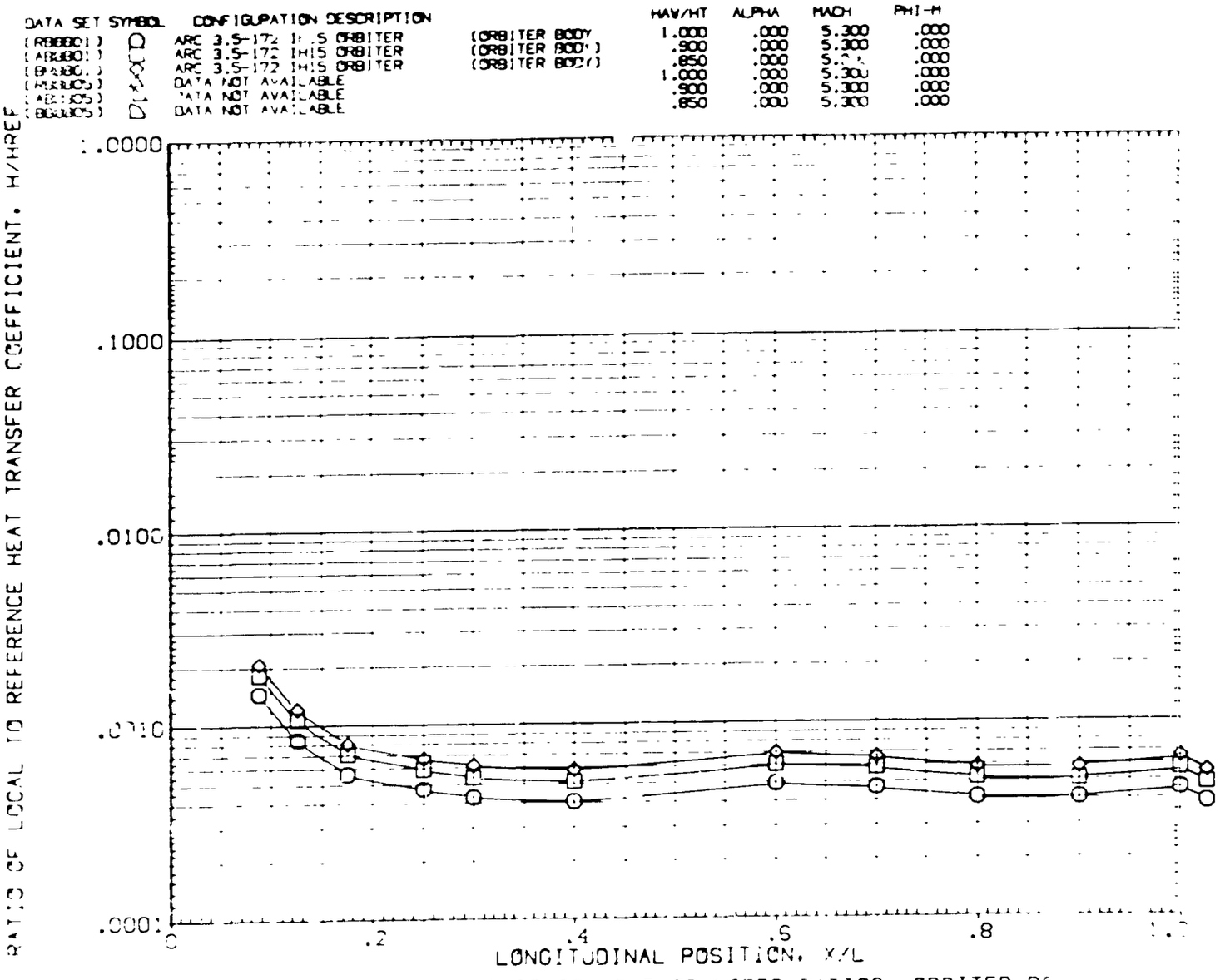


FIG. 15 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

5.214 = 5.300 = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(RB9801)		ARC 3.5-172 IH15 ORBITER	(ORBITER BODY)	1.000	.000	5.300	.000
(AB3801)		ARC 3.5-172 IH15 ORBITER	(ORBITER BODY)	.900	.000	5.300	.000
(BC?301)		ARC 3.5-172 IH15 ORBITER	(ORBITER BODY)	.850	.000	5.300	.000
(R[illegible]305)		DATA NOT AVAILABLE		1.000	.000	5.300	.000
(AB6305)		DATA NOT AVAILABLE		.900	.000	5.300	.000
(B8B805)		DATA NOT AVAILABLE		.850	.000	5.300	.000

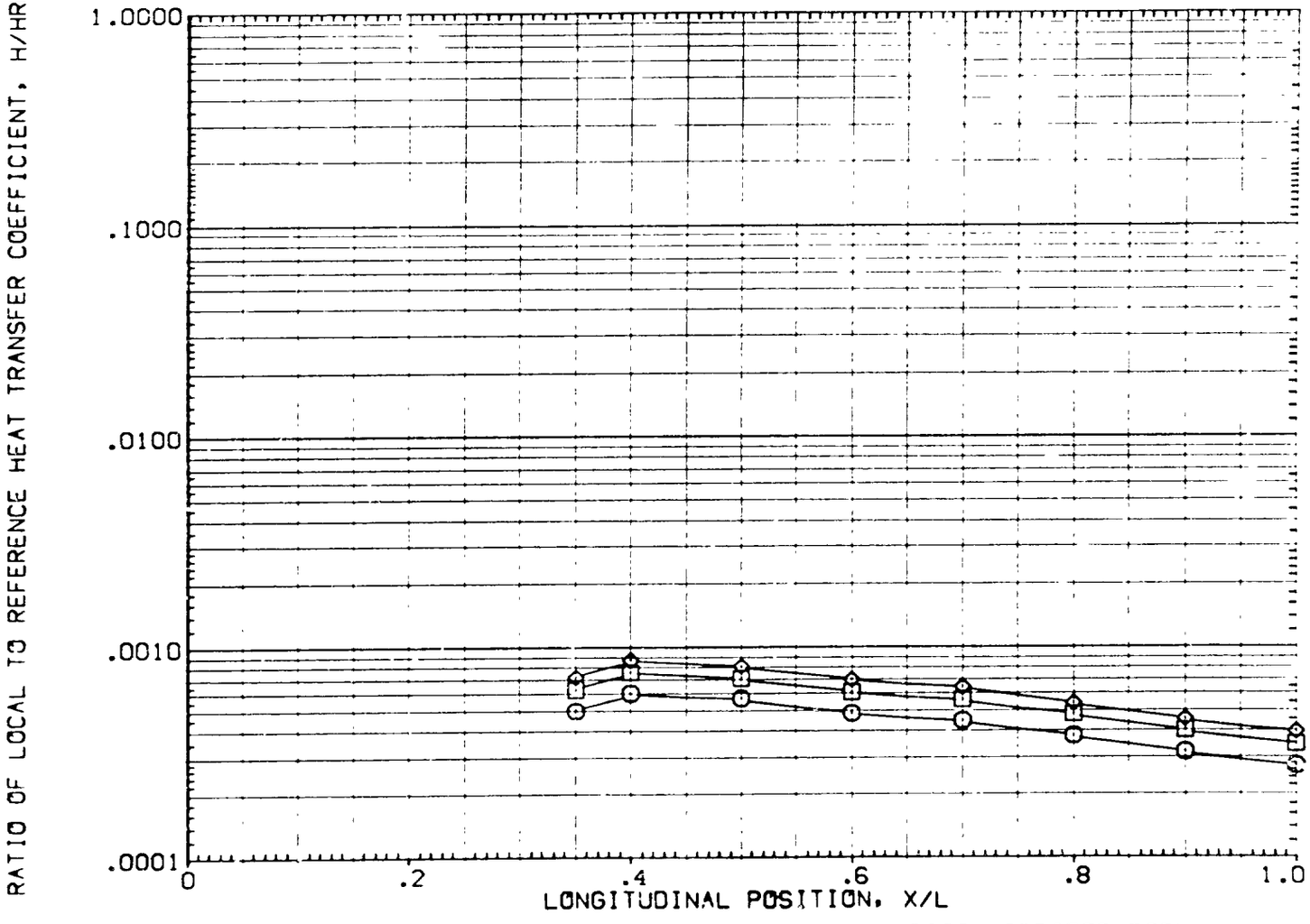


FIG. 15 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 5.214 MACH = 5.300 Y = .415

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DB0805) ○	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	1.000	.000	5.300	.000
(EB0805) □	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	.900	.000	5.300	.000
(FB0805) ◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	.850	.000	5.300	.000

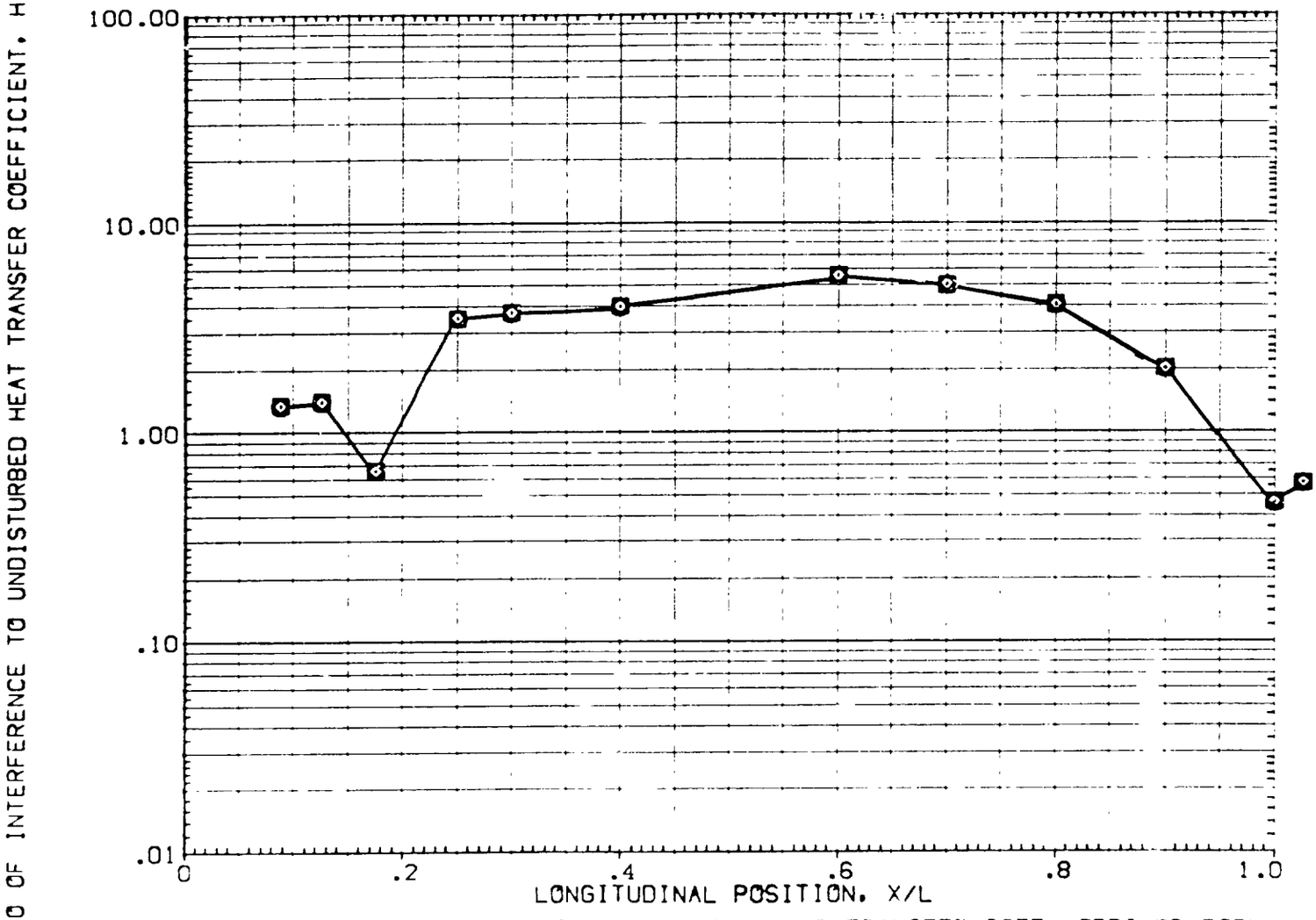


FIG. 16 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER BODY.

RN/L = 1.845 MACH = 5.300 Y = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(DB0305)	□	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	1.000	.000	5.300	.000
(EB0305)	◁	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	.900	.000	5.300	.000
(FB0305)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	.850	.000	5.300	.000

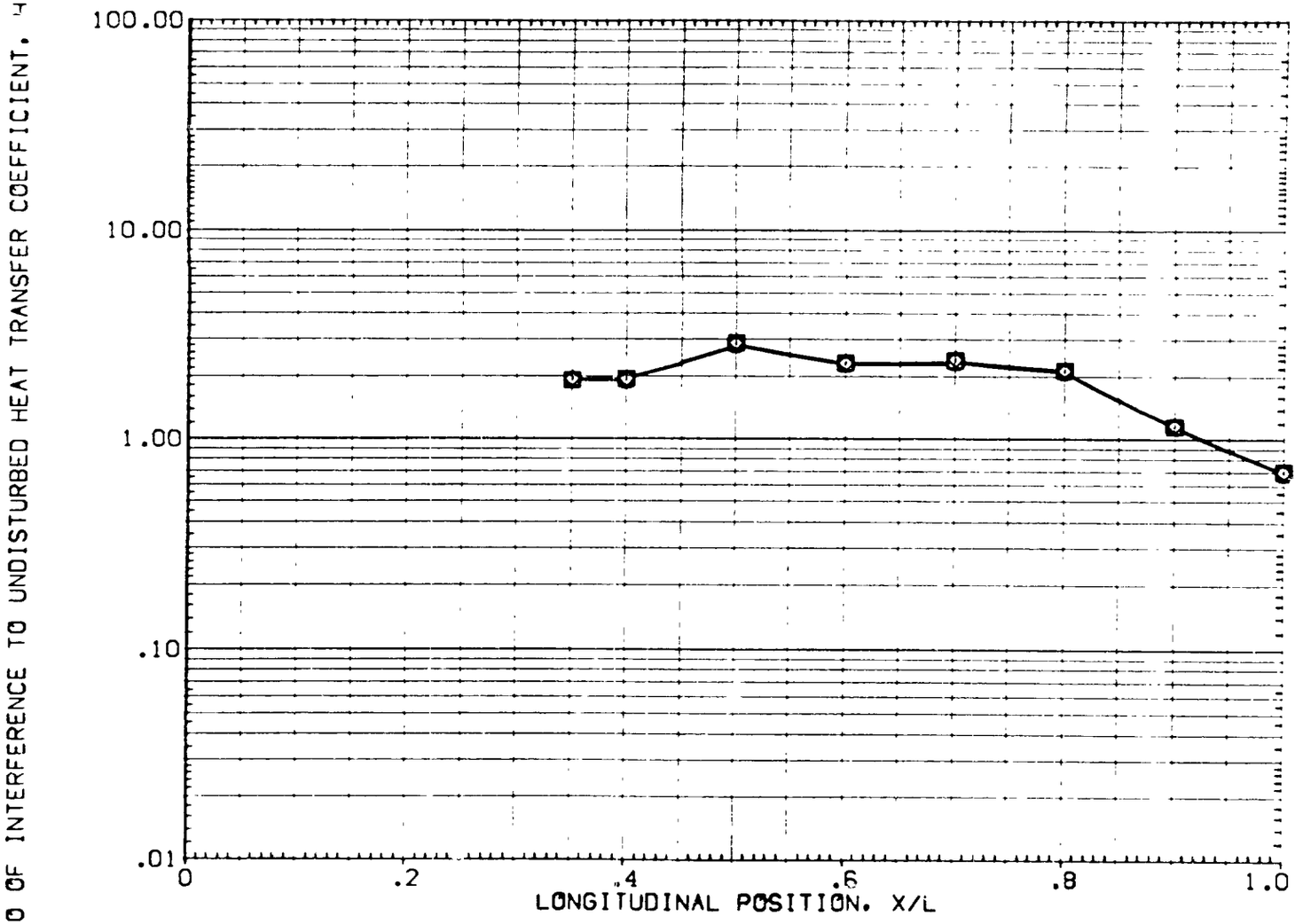


FIG. 16 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF.,ORBITER BODY.

RN/L = 1.845 MACH = 5.300 Y = .415

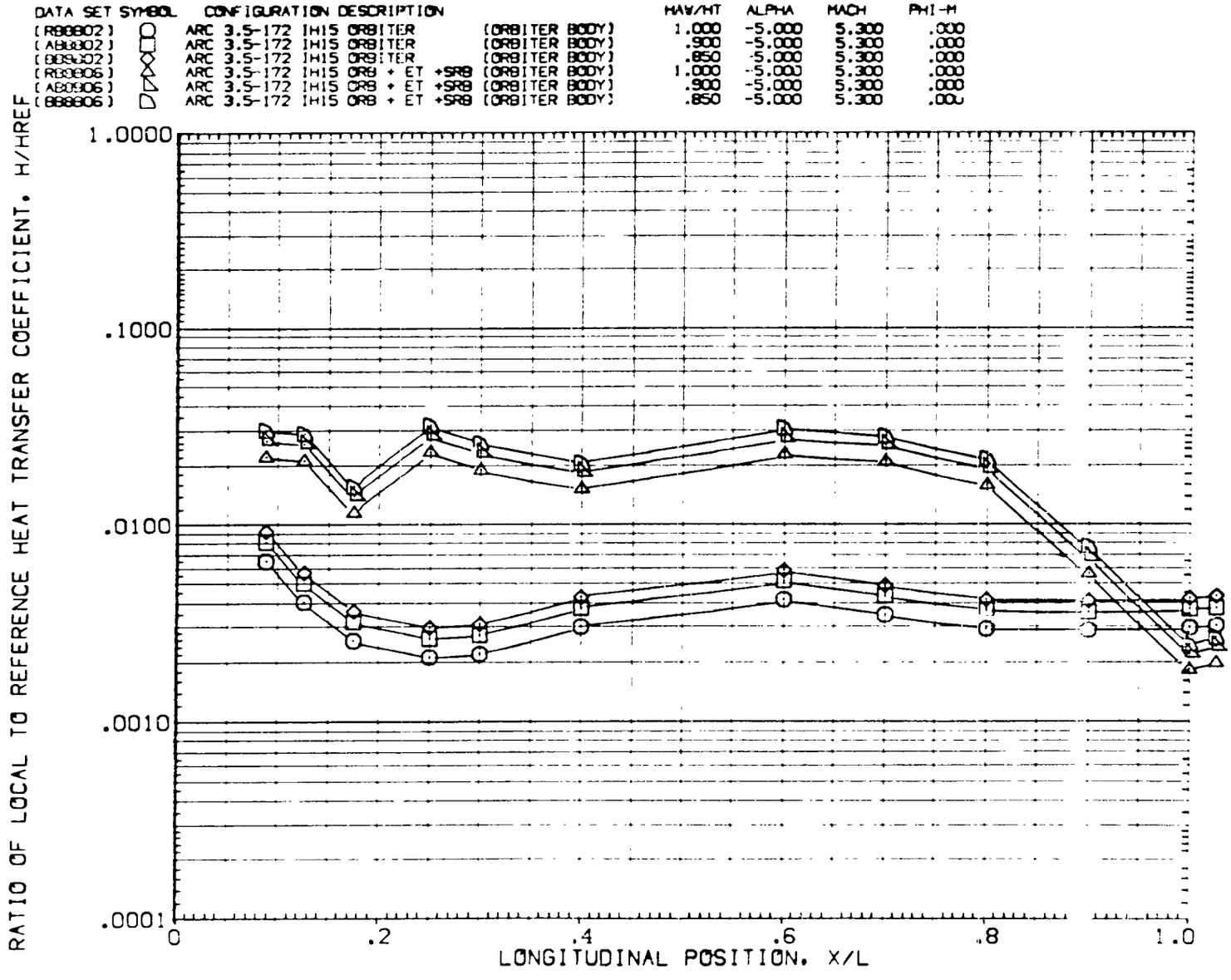


FIG. 17 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 2.143 MACH = 5.300 Y = .000

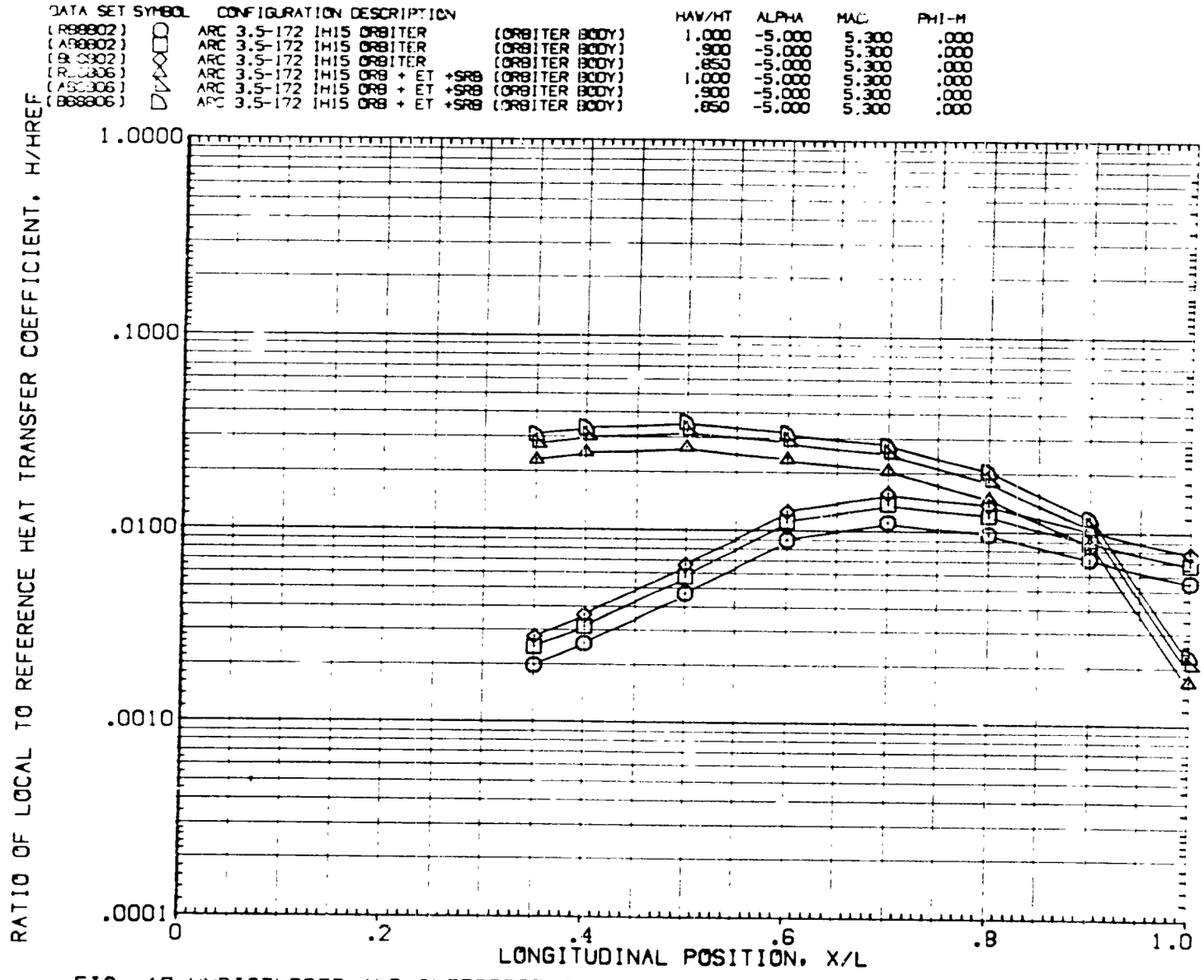


FIG. 17 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 2.143 MACH = 5.300 Y = .415

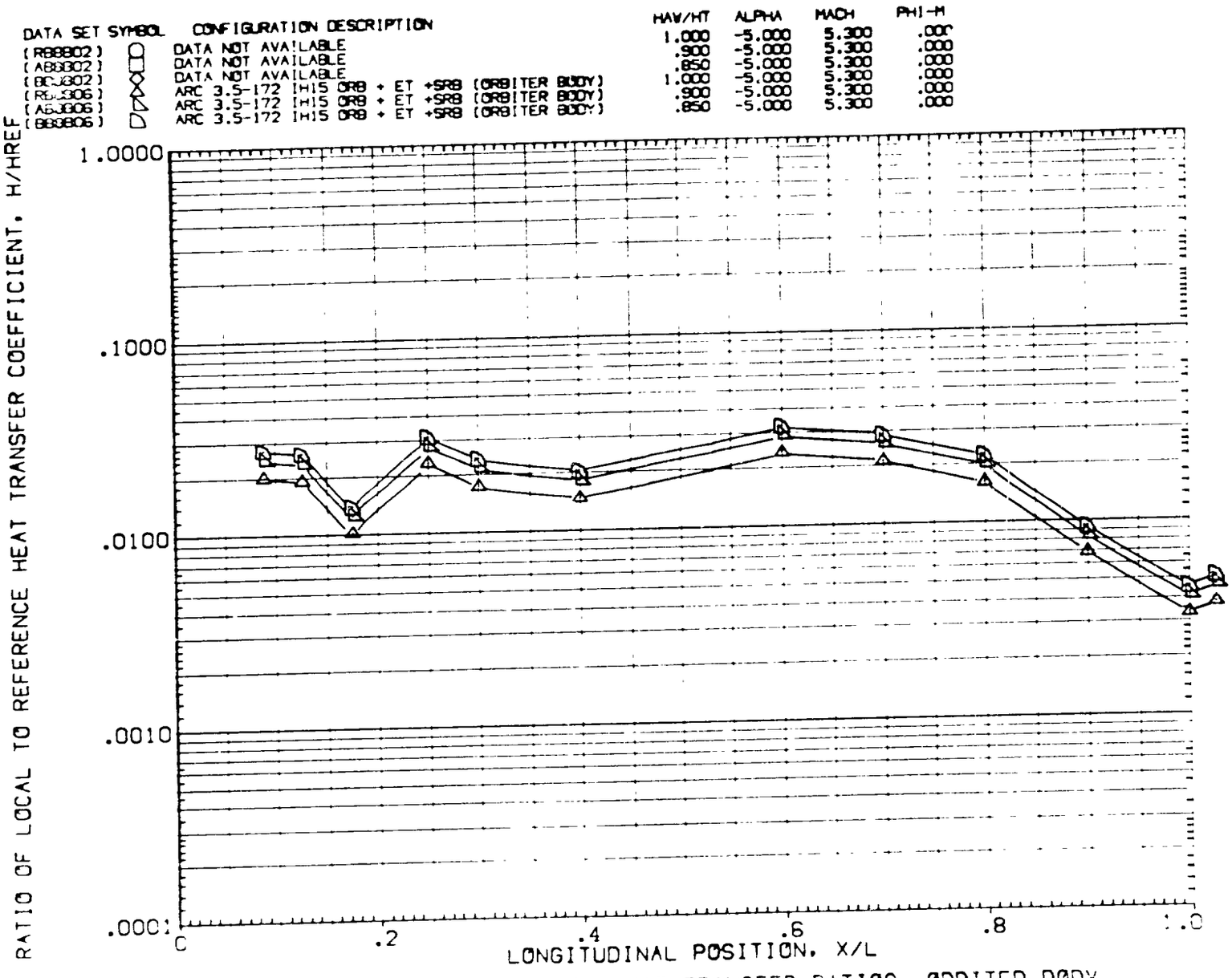


FIG. 17 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 4.570 MACH = 5.300 Y = .000

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(R[illegible]02)	□	DATA NOT AVAILABLE	1.000	-5.000	5.300	.600
(A[illegible]02)	◇	DATA NOT AVAILABLE	.900	-5.000	5.300	.000
(B[illegible]02)	△	DATA NOT AVAILABLE	.850	-5.000	5.300	.000
(R[illegible]06)	□	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	1.000	-5.000	5.300	.000
(A[illegible]06)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	.900	-5.000	5.300	.000
(B[illegible]06)	△	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY)	.850	-5.000	5.300	.000

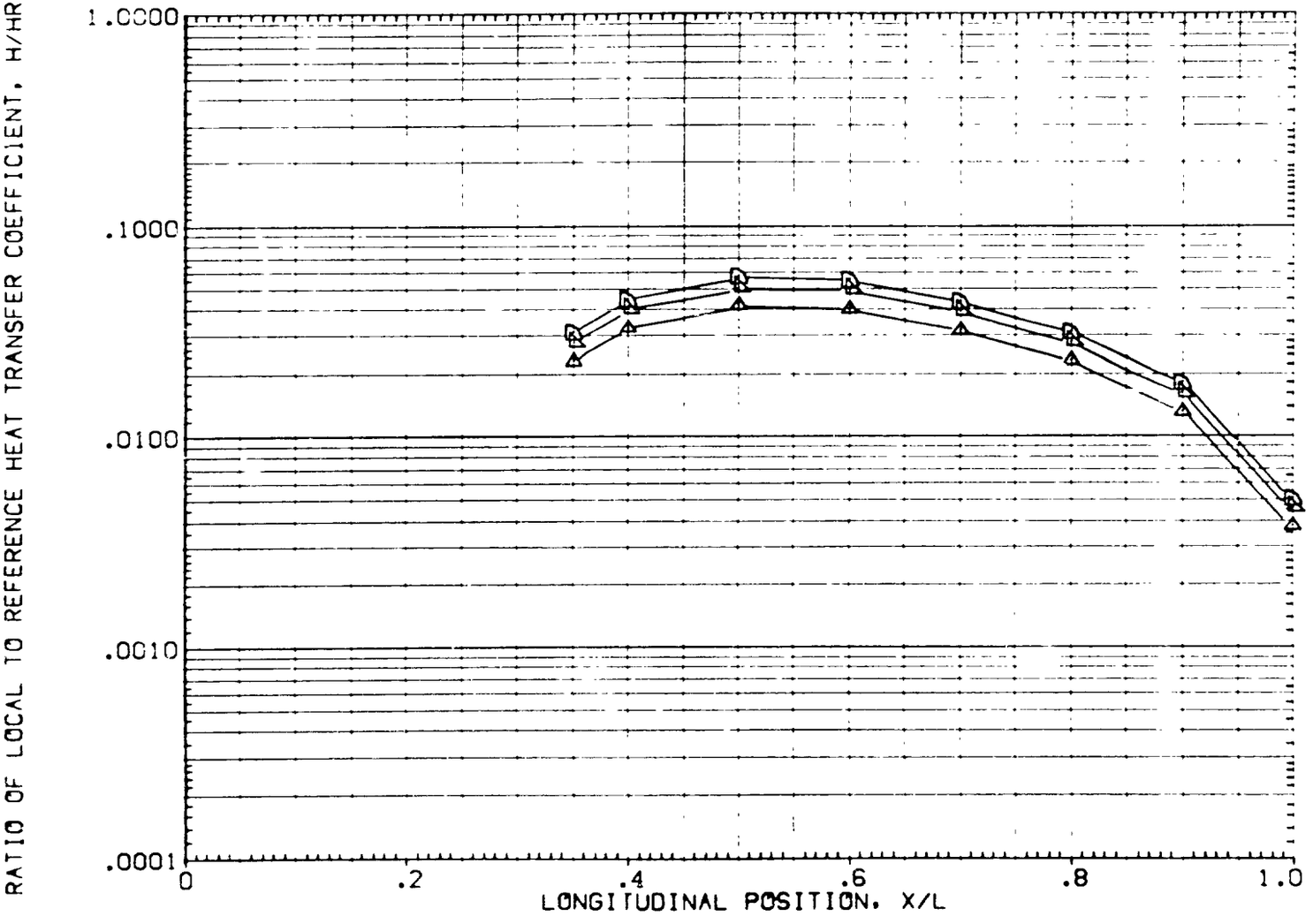


FIG. 17 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 4.570 MACH = 5.300 Y = .415

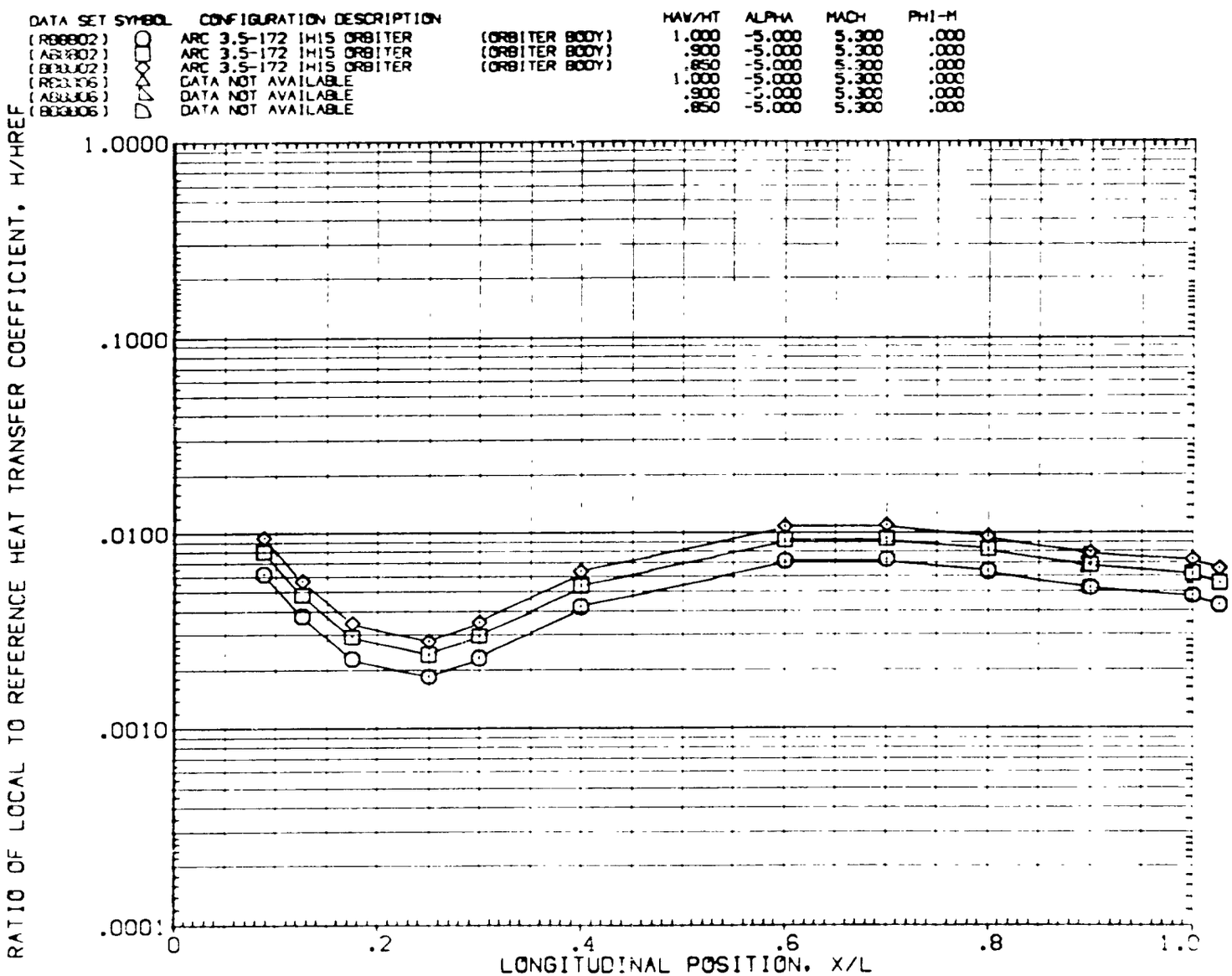


FIG. 17 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY

RN/L = 6.131 MACH = 5.300 Y = .000

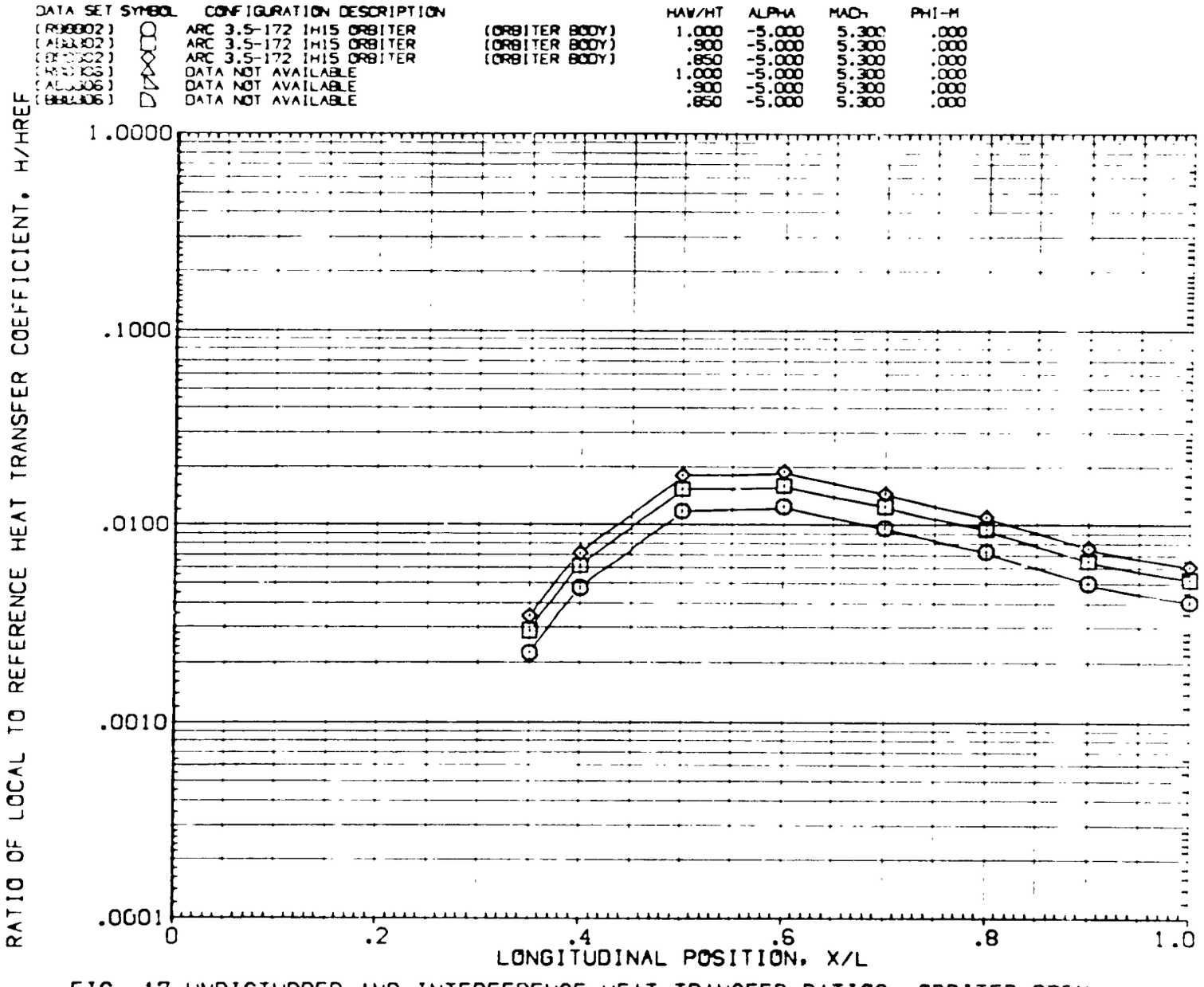


FIG. 17 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER BODY.

RN/L = 6.131 MACH = 5.300 Y = .415

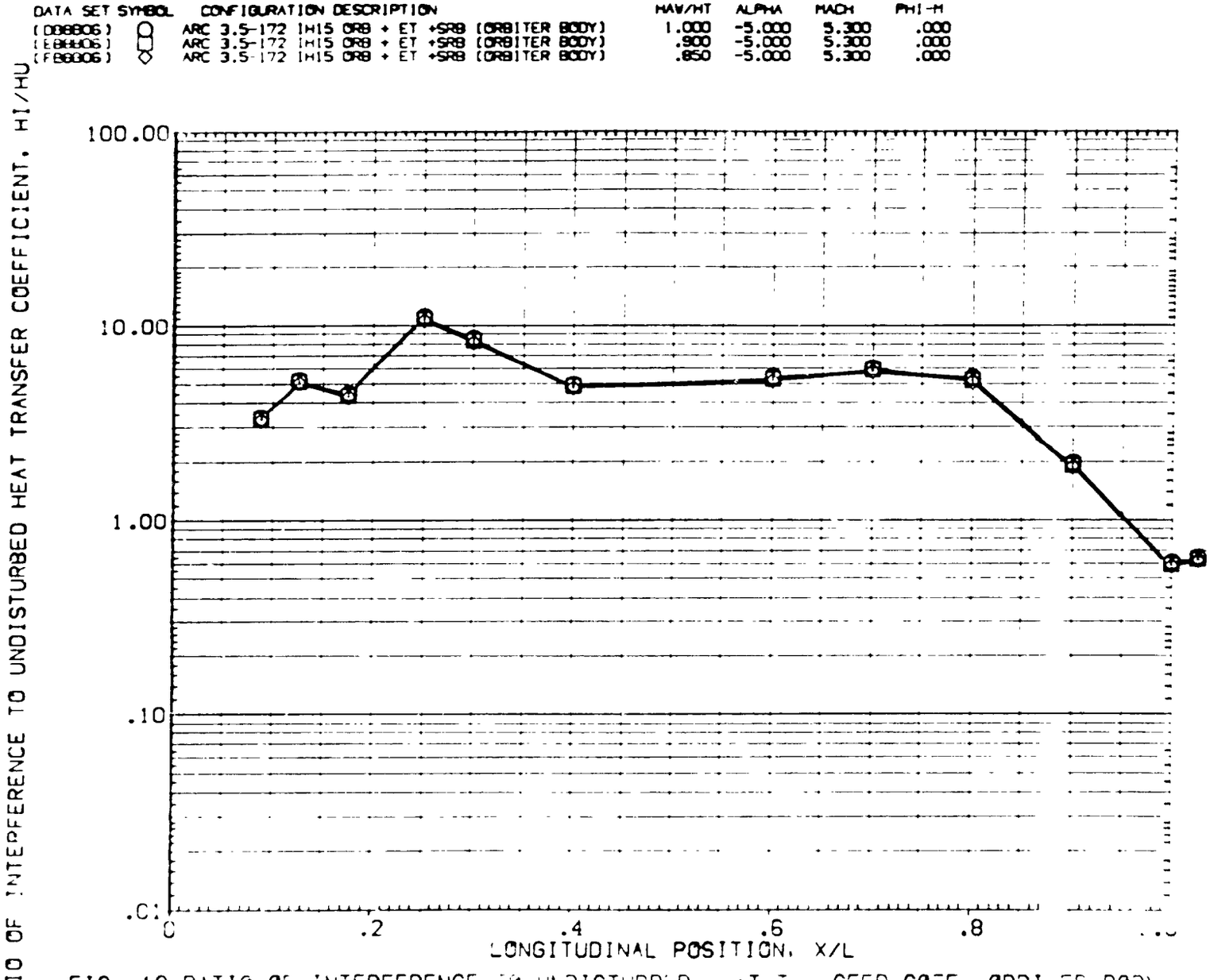


FIG. 18 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER BODY.

HAV = 1.952 MACH = 5.300 Y = .000

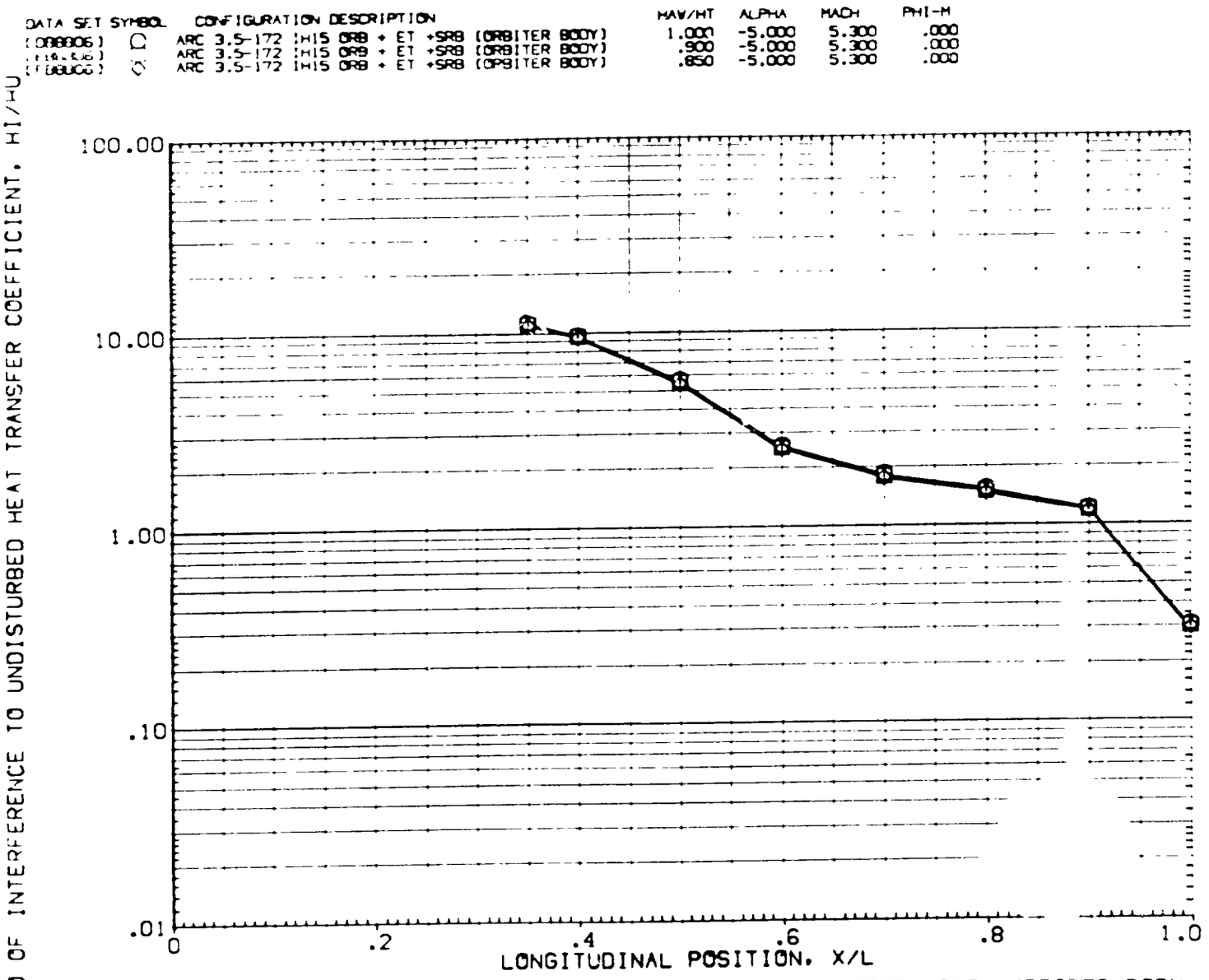


FIG. 18 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER BODY.

RRN/L = 1.952 MACH = 5.300 Y = .415

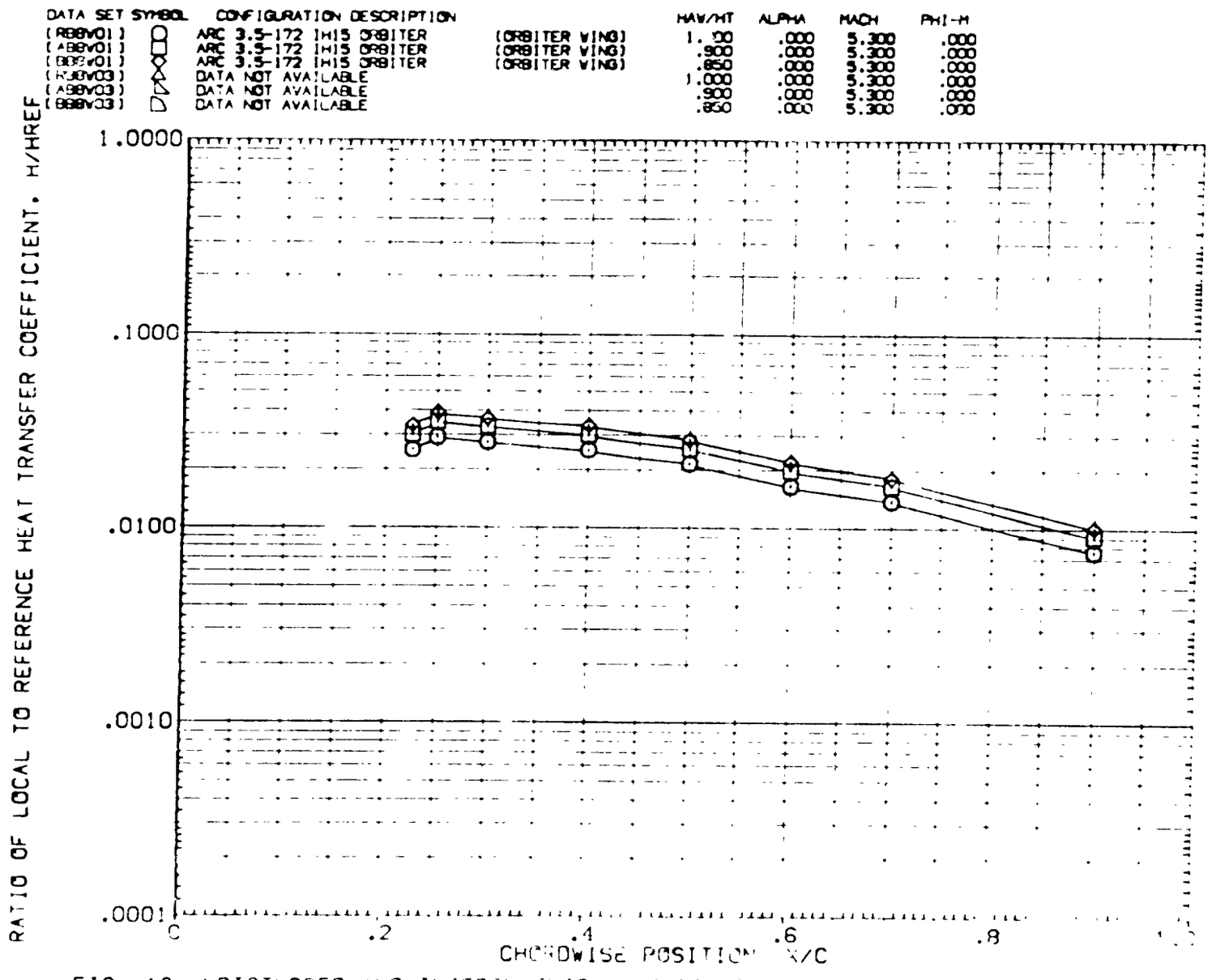


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER [illegible] ON ORBITER [illegible]

[illegible] 5.300 2Y/B [illegible]

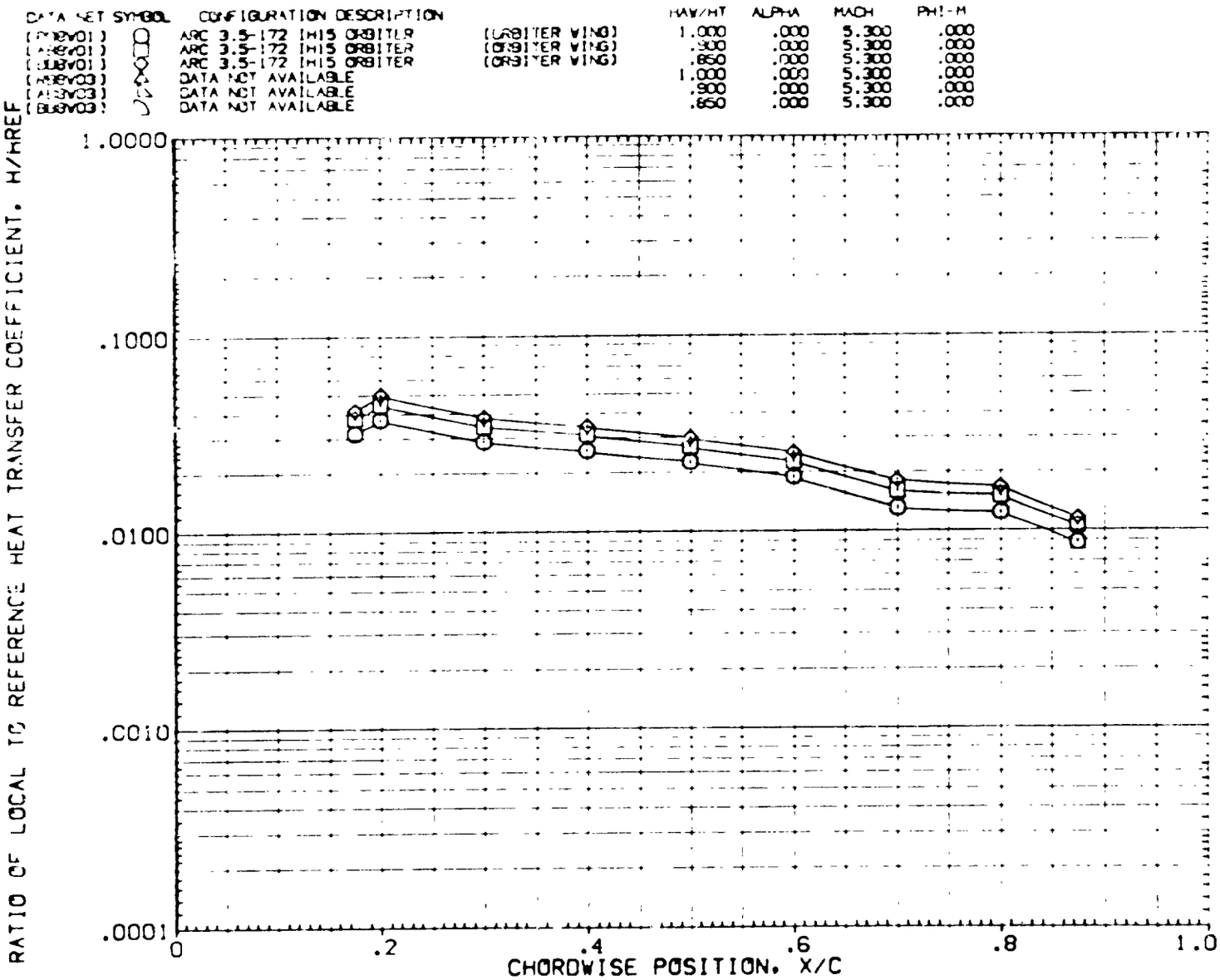


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 1.764 MACH = 5.300 2Y/B = .600

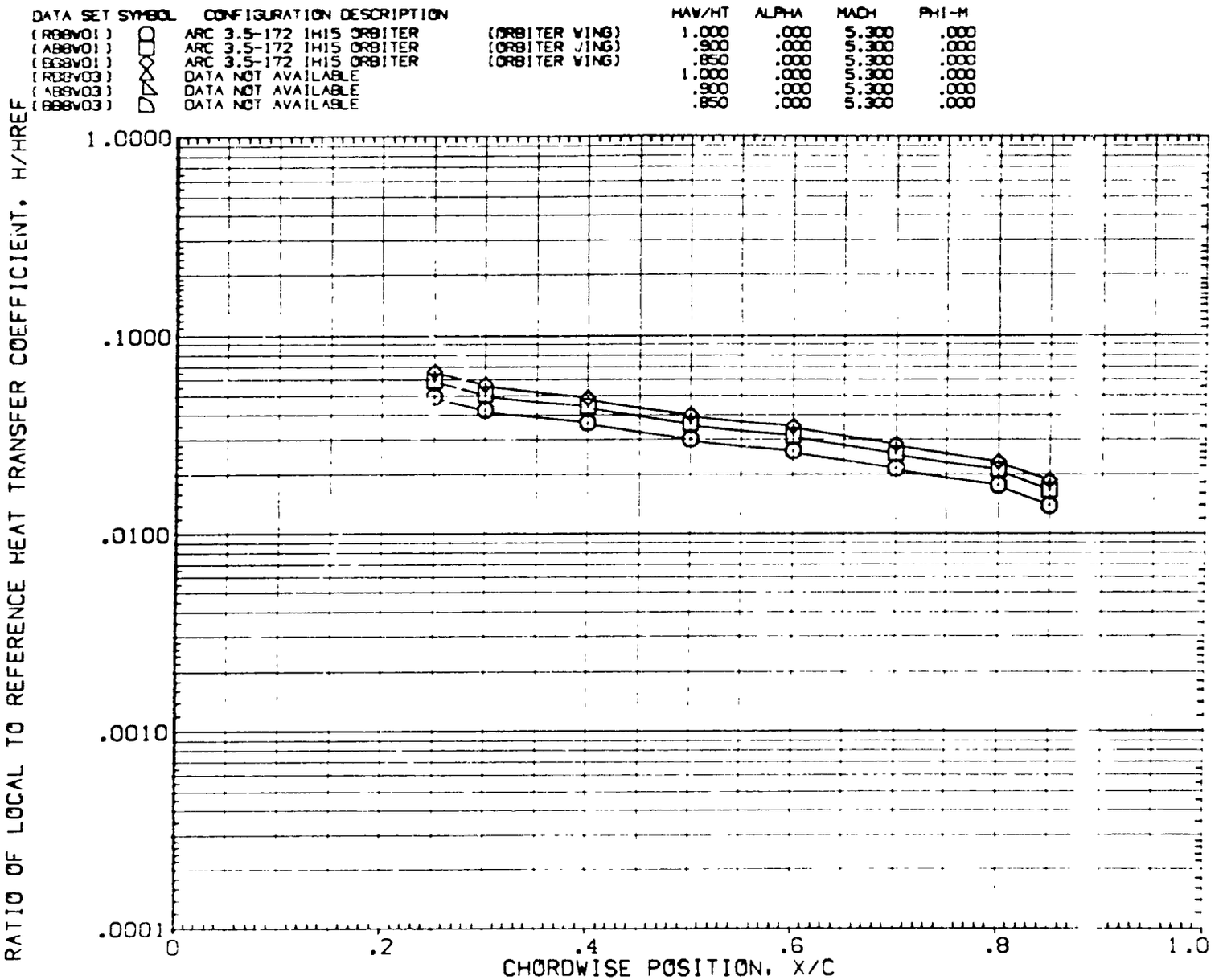


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 1.764 M = 5.300 2Y/B = .800

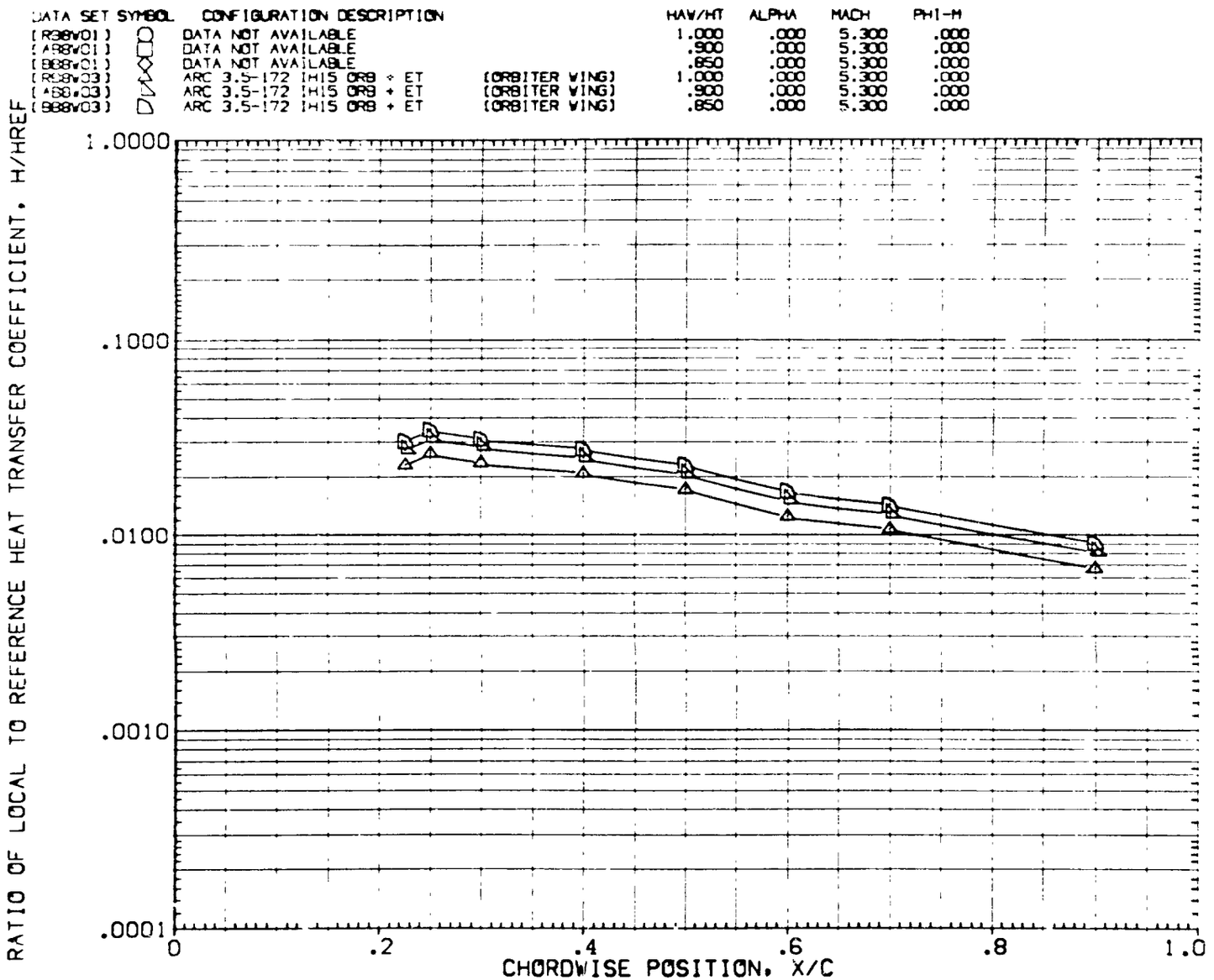


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.332 MACH = 5.300 2Y/B = .400

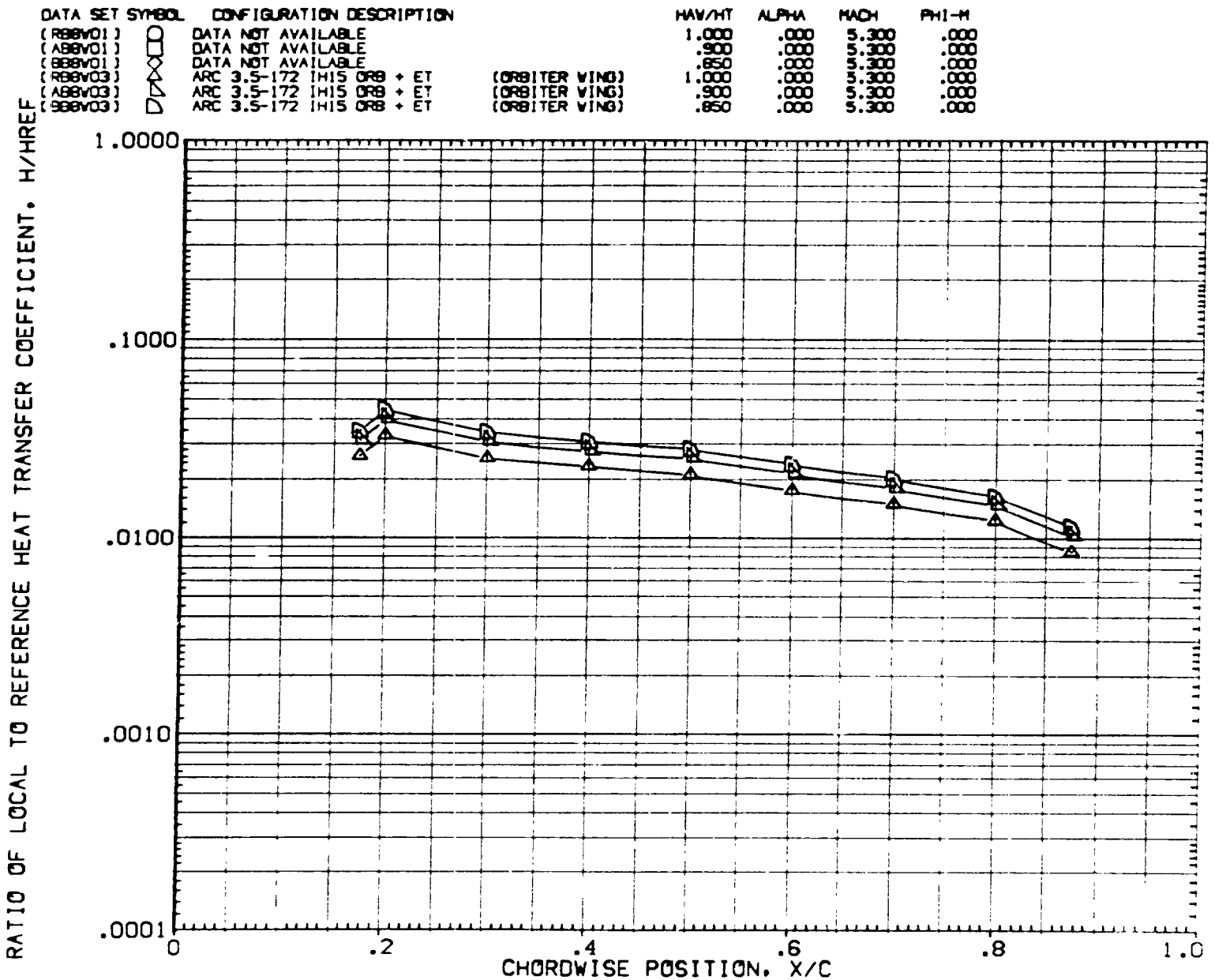


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.332 MACH = 5.300 2Y/B = .600

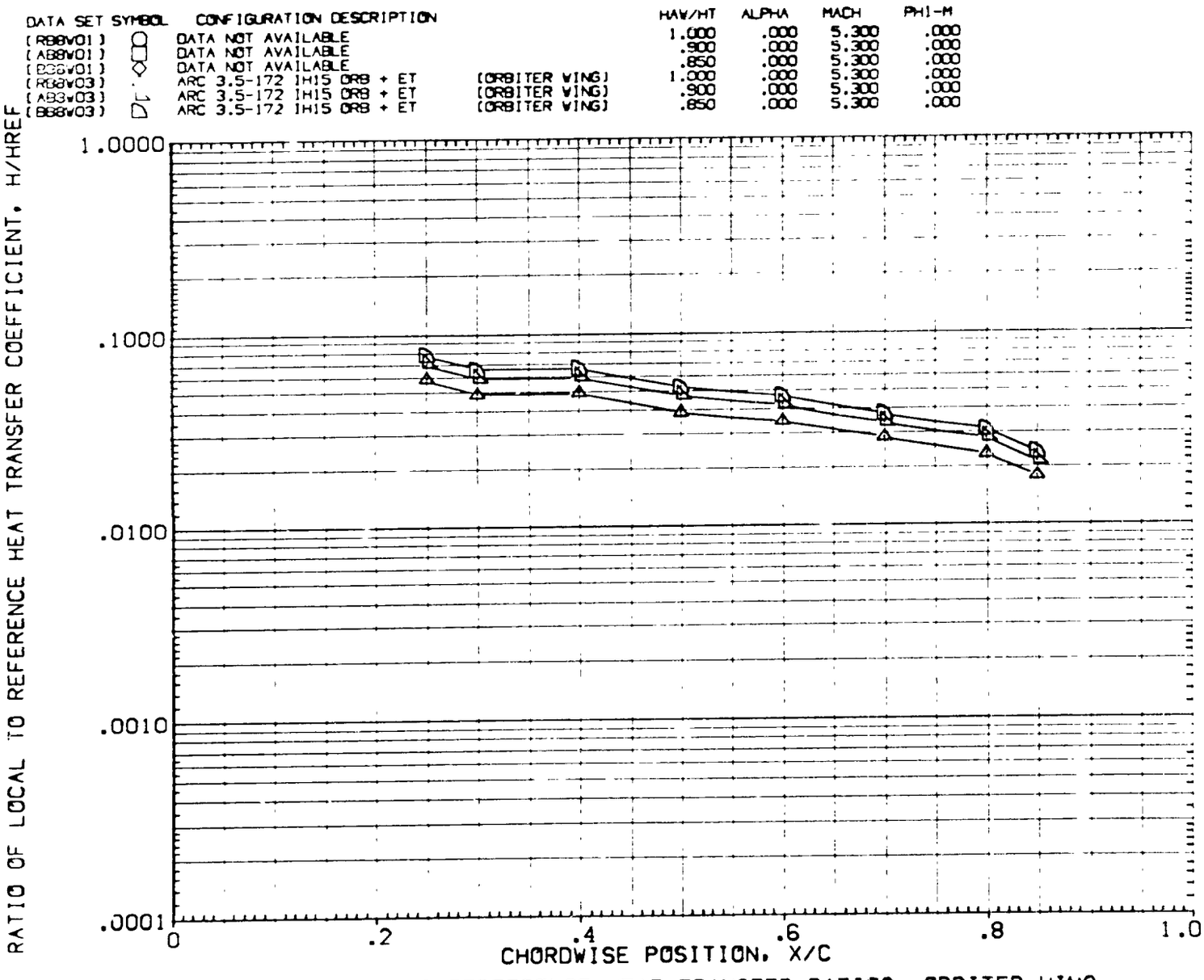


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.332 MACH = 5.300 2Y/B = .800

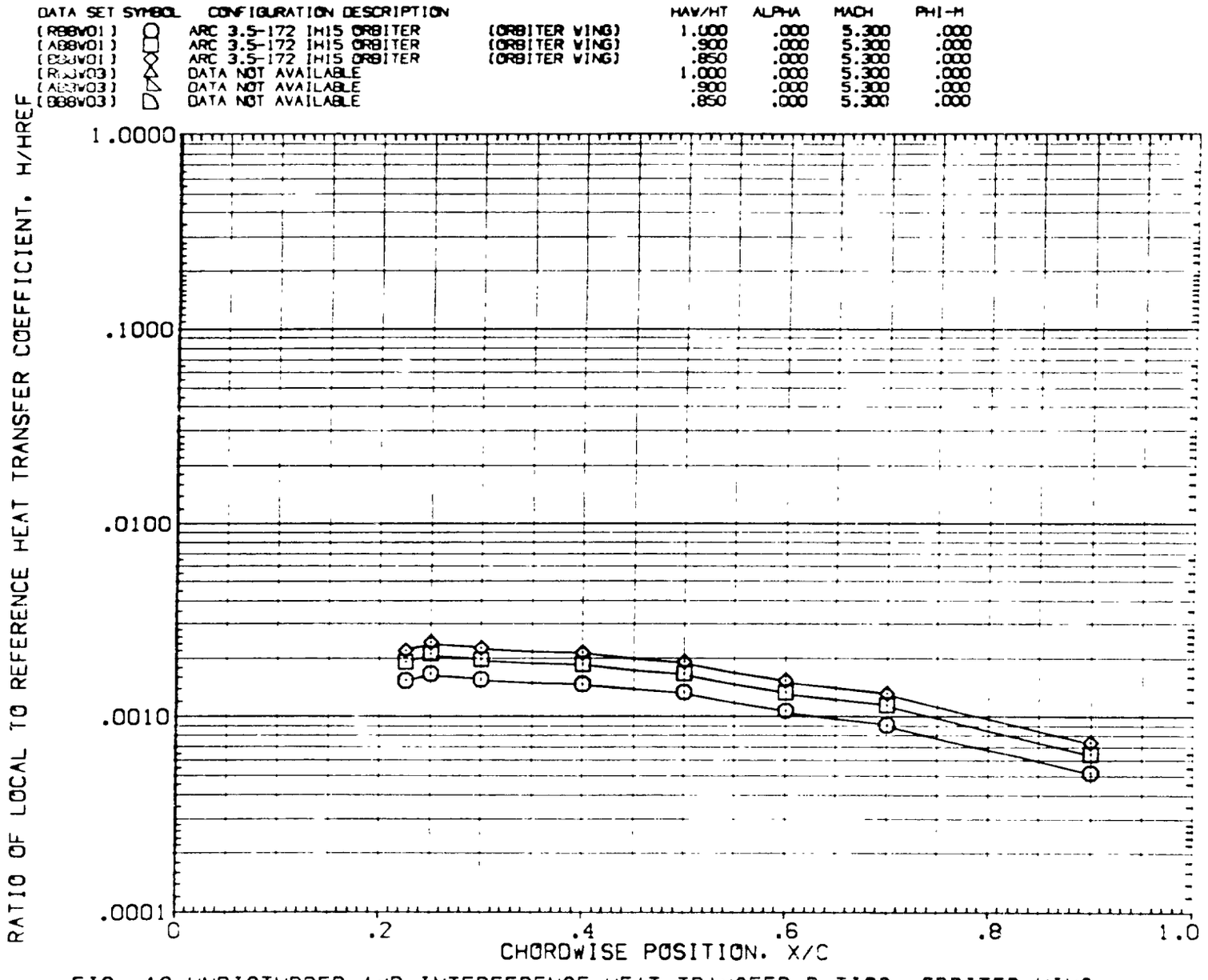


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 5.214 MACH = 5.300 2Y/B = .400

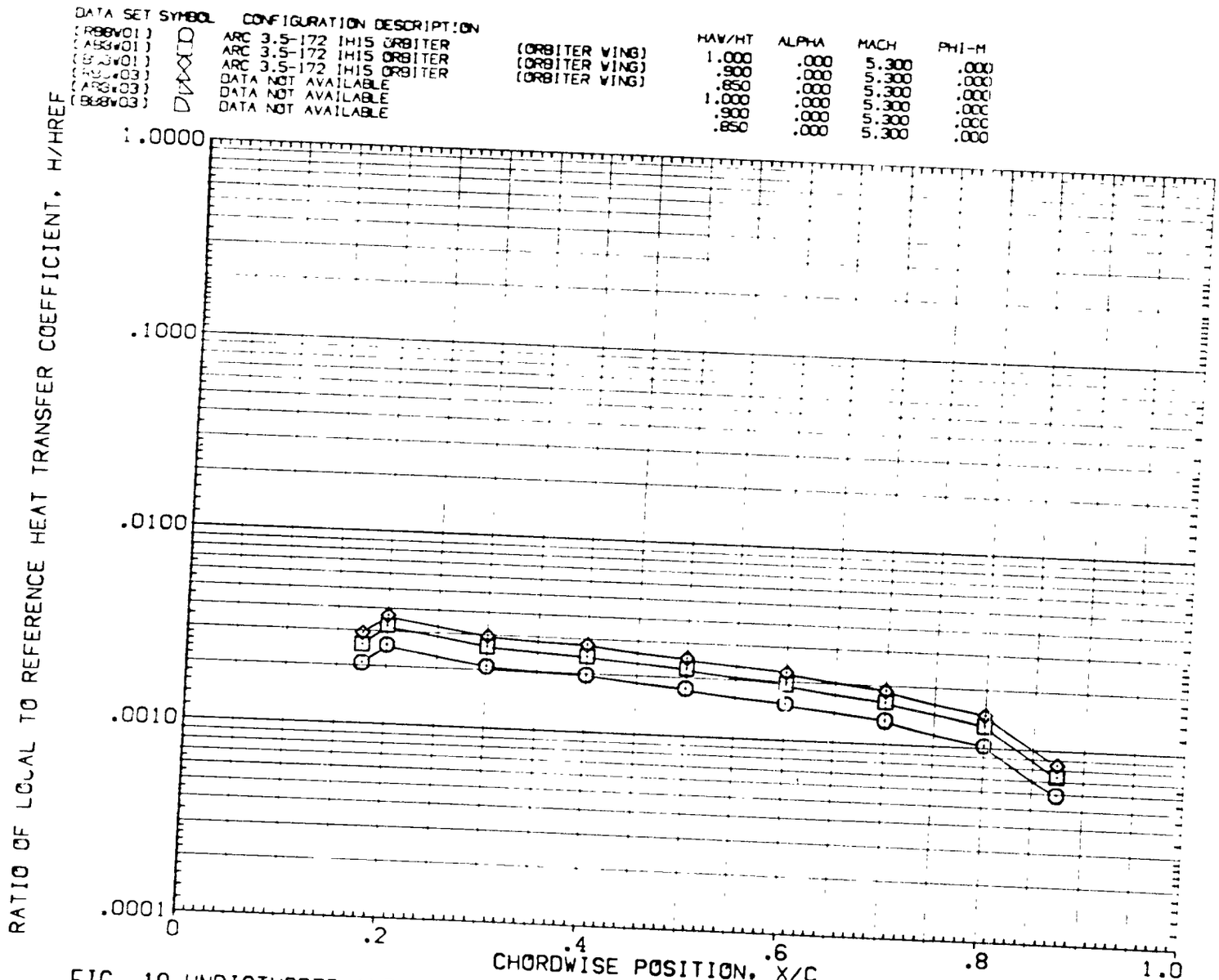


FIG. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 5.214 MACH = 5.300 2Y/B = .600

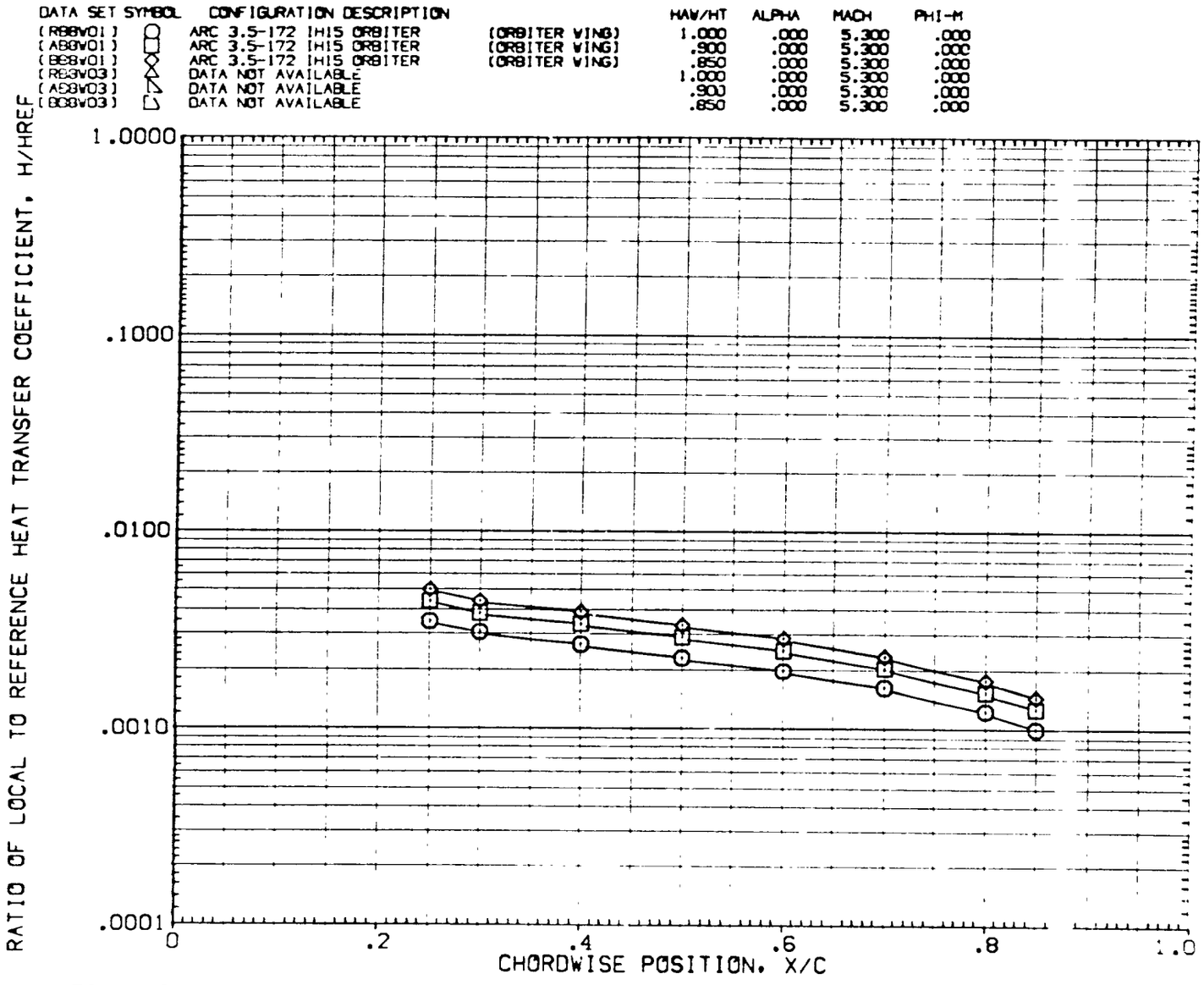


Fig. 19 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 5.214 MACH = 5.300 2Y/B = .800

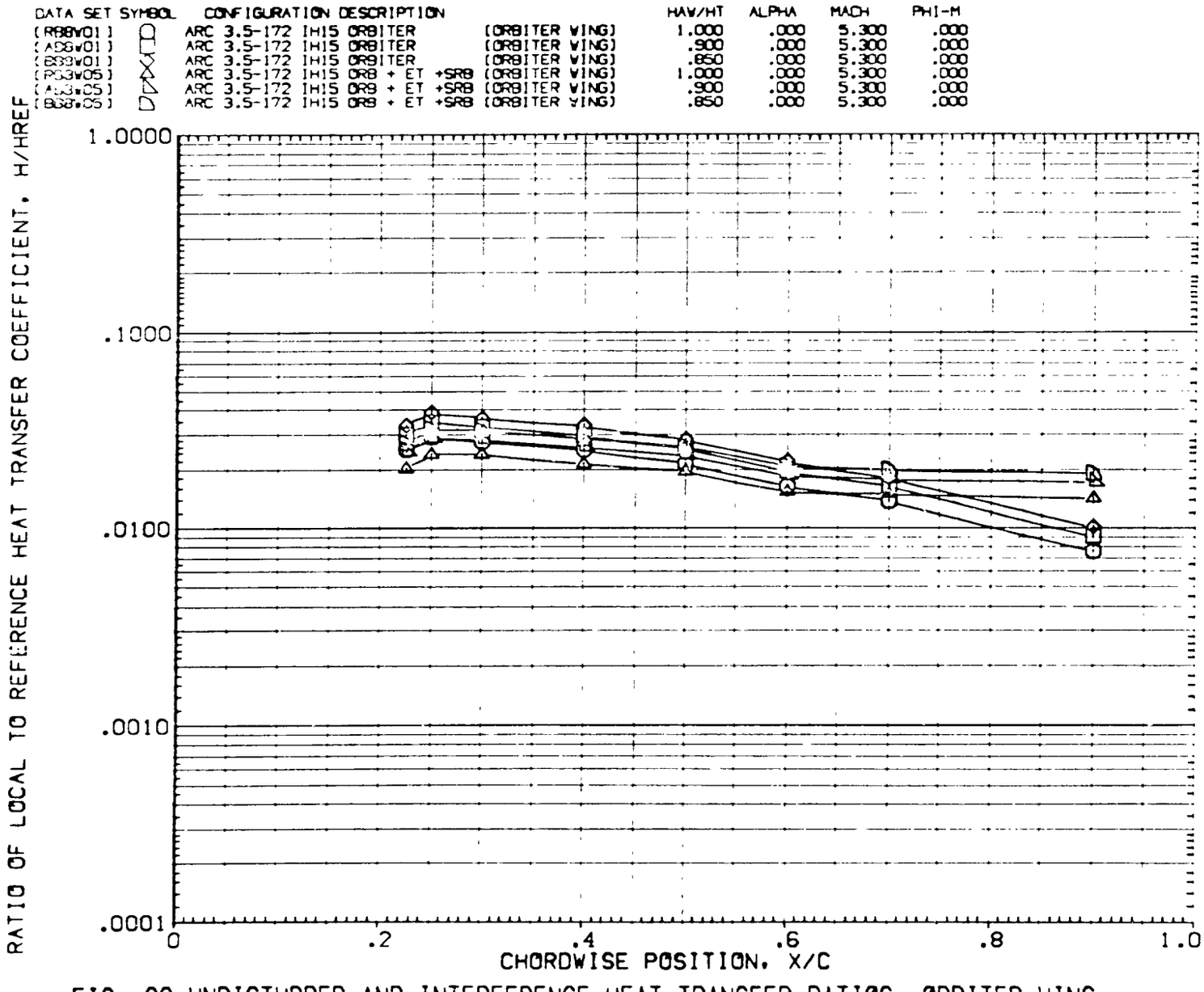


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 1.764 MACH = 5.300 2Y/B = .400

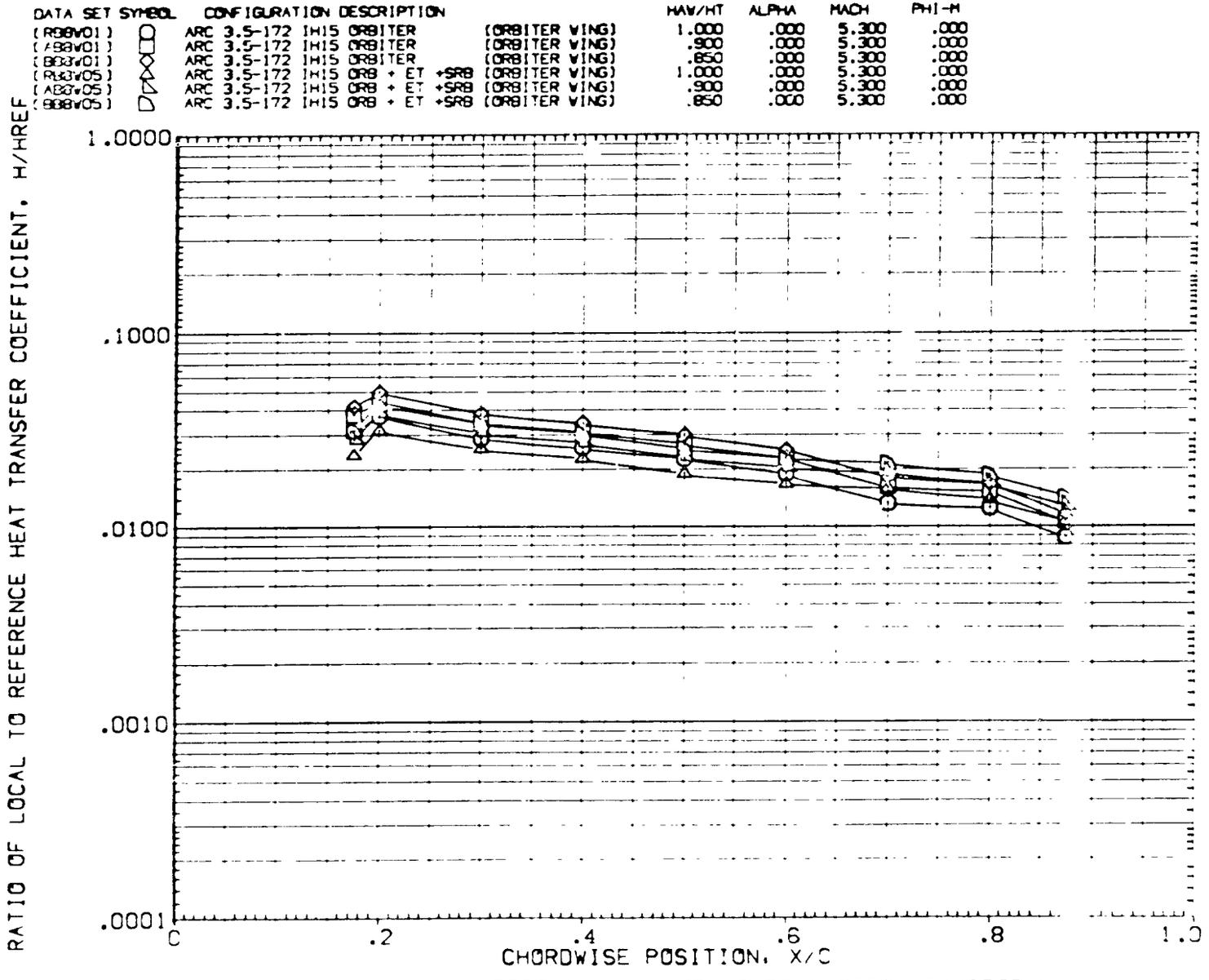


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 1.764 MACH = 5.300 2Y/B = .600

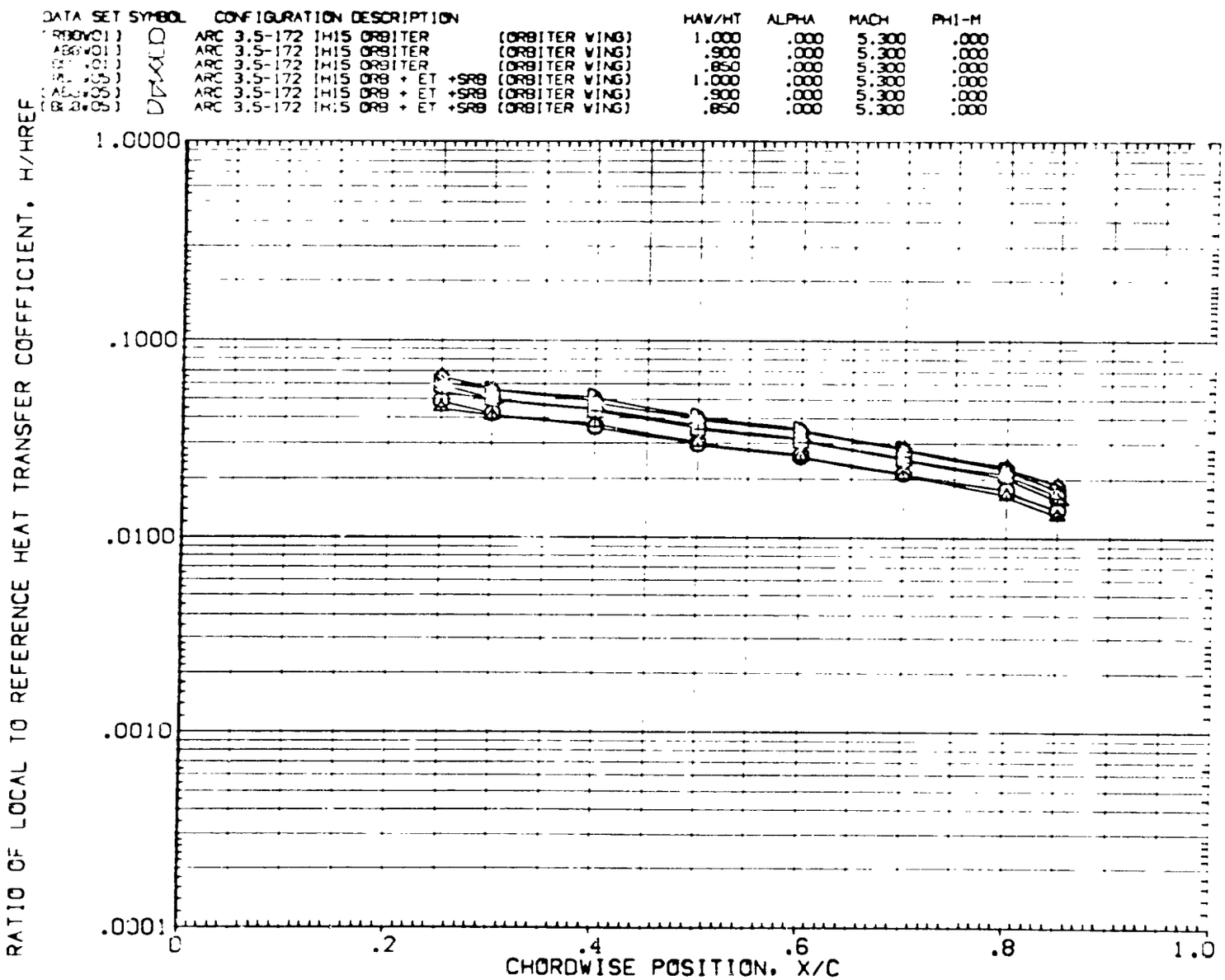


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 1.764 MACH = 5.300 2Y/B = .800

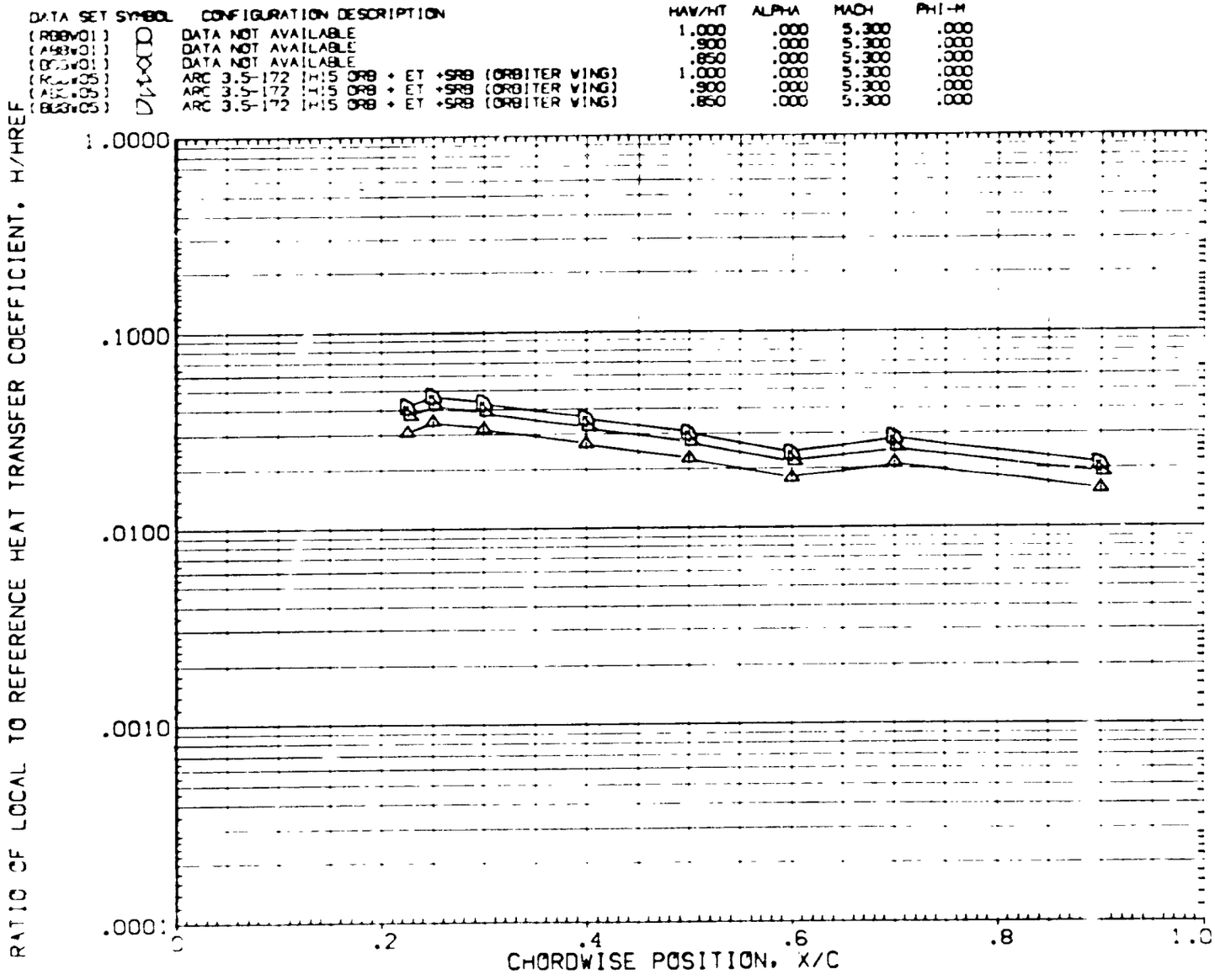


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.437 MACH = 5.300 2Y/B = .400

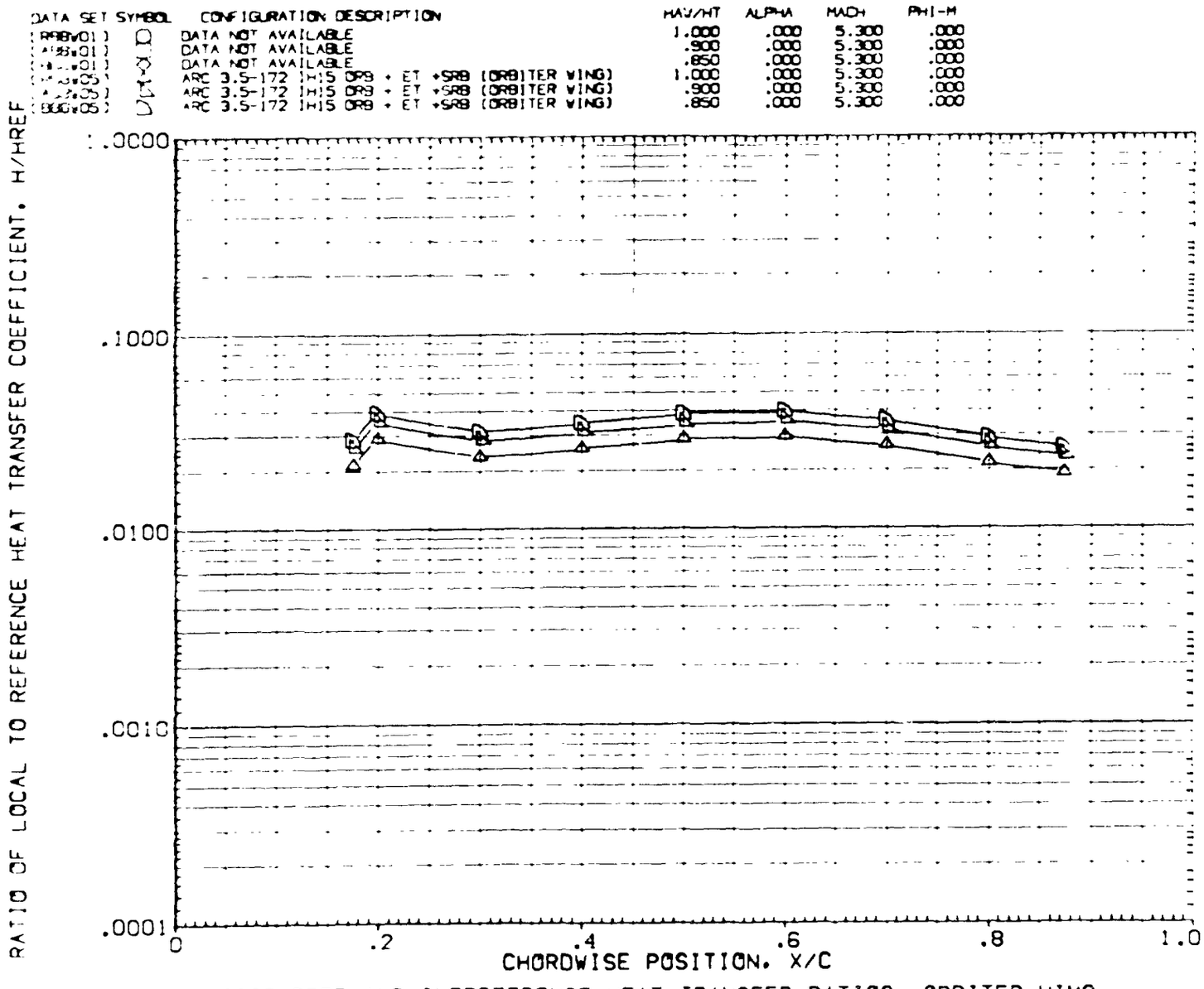


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.437 MACH = 5.300 2Y/B = .600

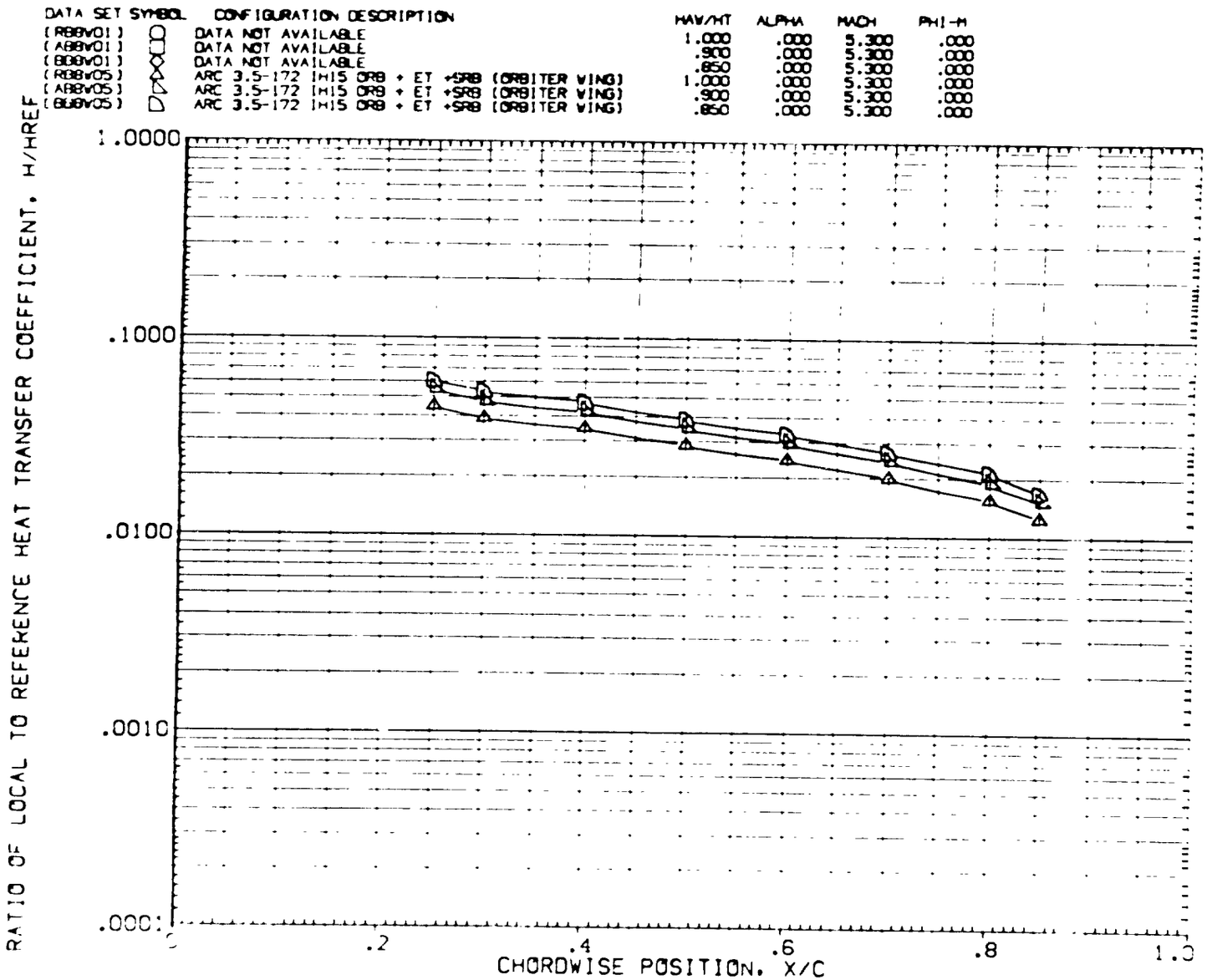


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

R_N/L = 4.437 MACH = 5.300 2Y/B = .800

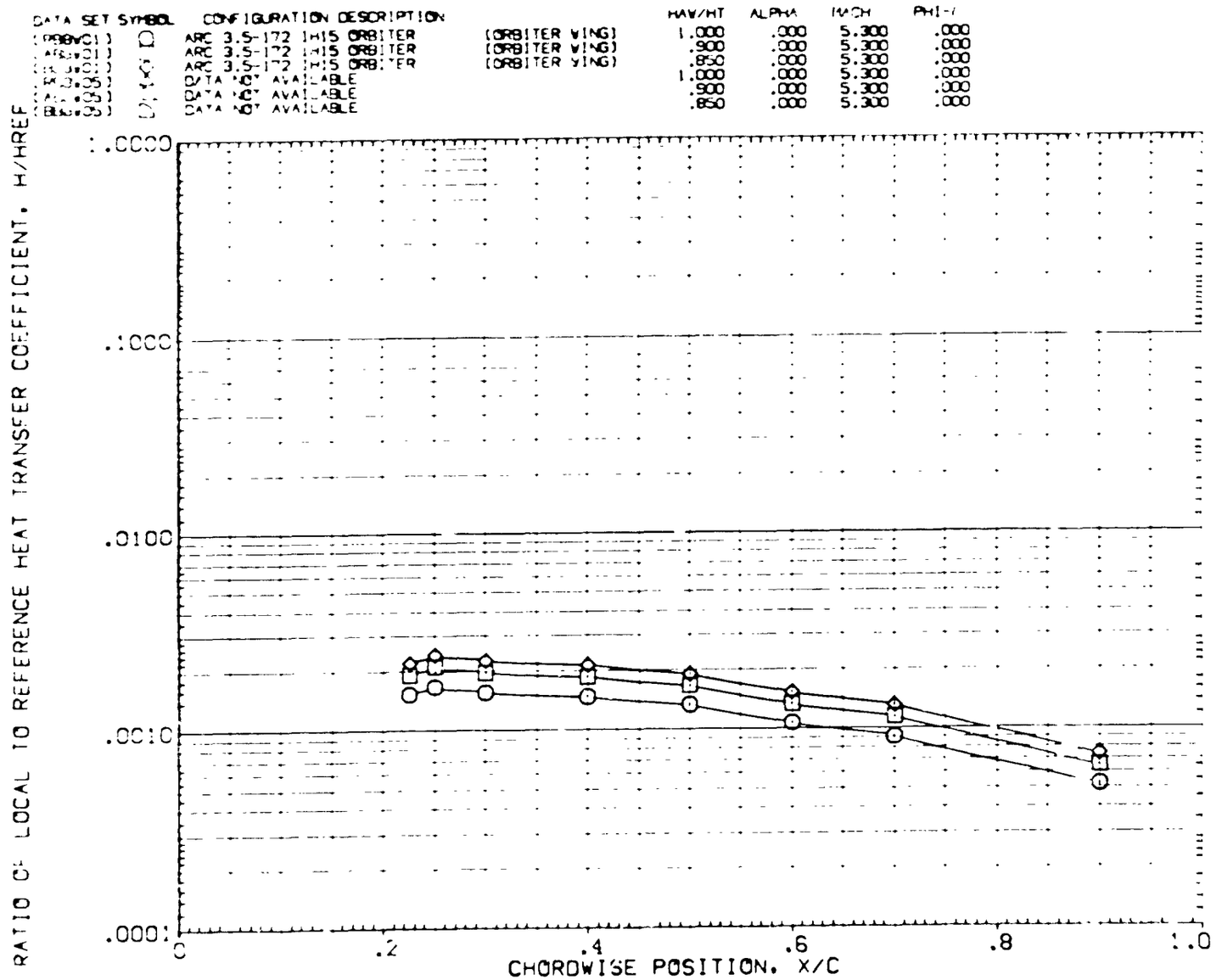


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

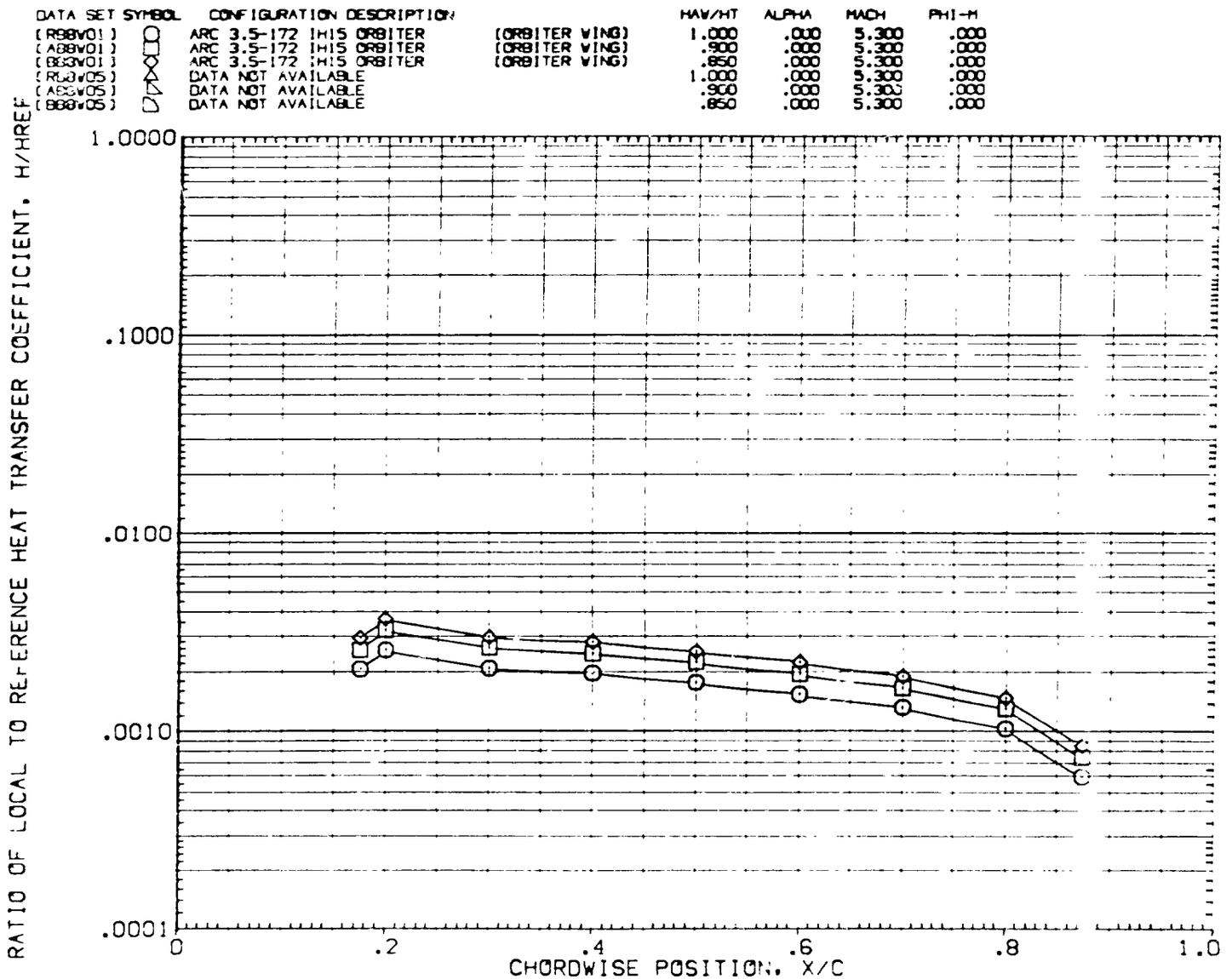


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER W.NG.

RN/L = 5.214 MACH = 5.300 2Y/B = .800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(P08v01)	□	ARC 3.5-172 IH15 ORBITER	(ORBITER WING)	1.000	.000	5.300	.000
(A08v01)	◇	ARC 3.5-172 IH15 ORBITER	(ORBITER WING)	.900	.000	5.300	.000
(B08v01)	○	ARC 3.5-172 IH15 ORBITER	(ORBITER WING)	.850	.000	5.300	.000
(P08v05)		DATA NOT AVAILABLE		1.000	.000	5.300	.000
(A08v05)		DATA NOT AVAILABLE		.900	.000	5.300	.000
(B08v05)		DATA NOT AVAILABLE		.850	.000	5.300	.000

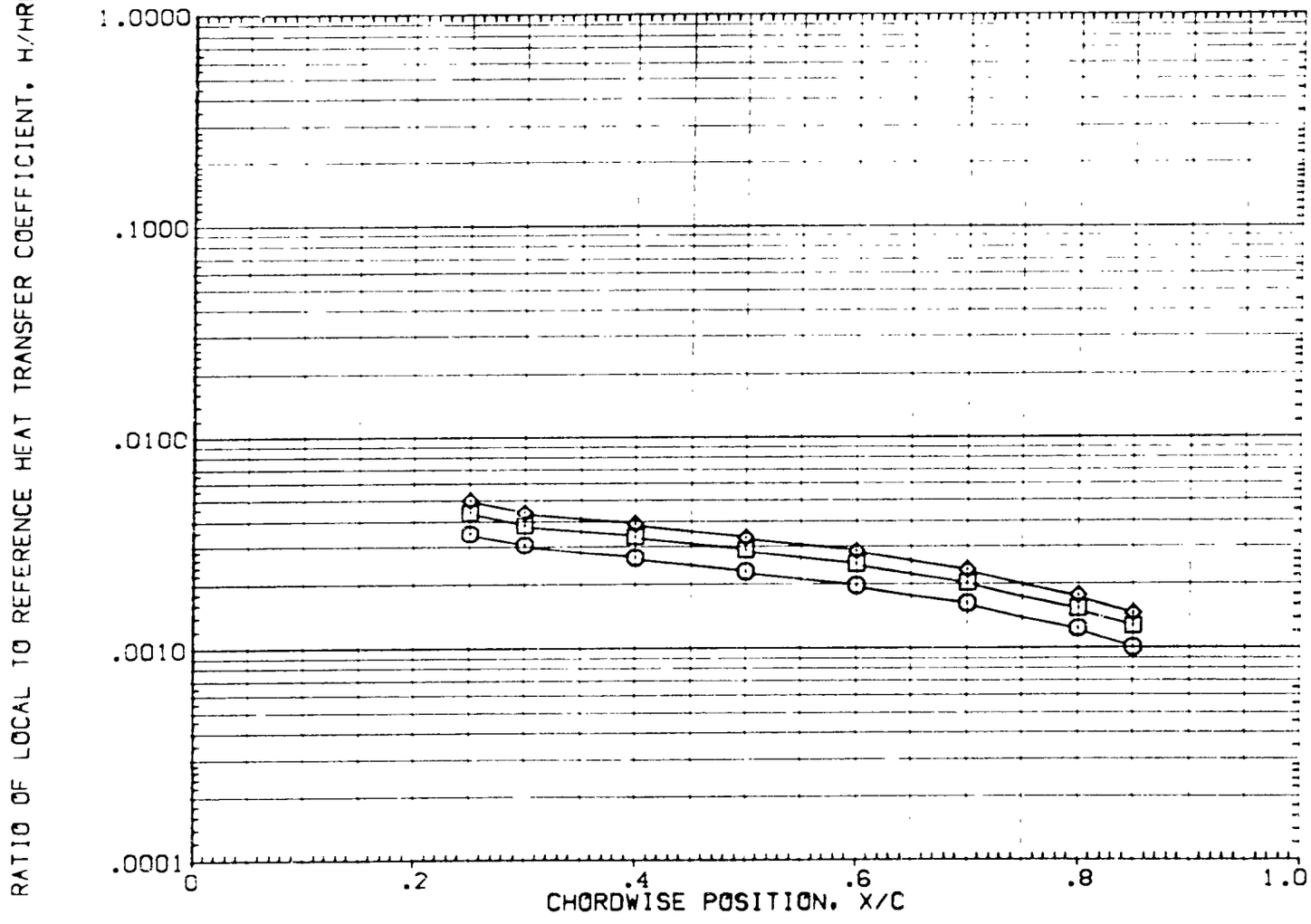


FIG. 20 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 5.214 MACH = 5.300 2Y/B = .800

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D88V05) ○	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	1.000	.000	5.300	.000
(E88V05) □	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.900	.000	5.300	.000
(F88V05) ◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.850	.000	5.300	.000

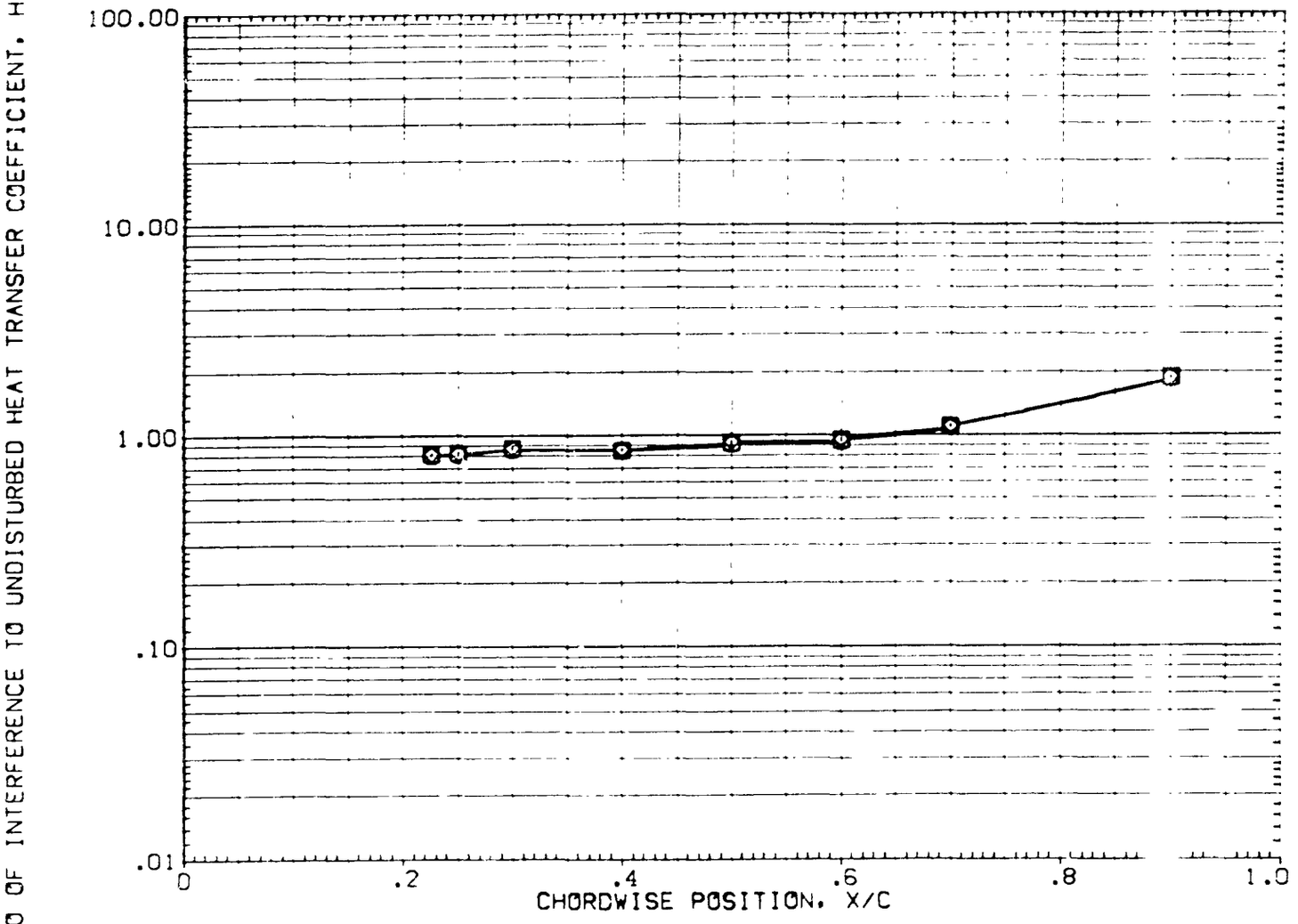


FIG. 21 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER WING.

RN/L = 1.845 MACH = 5.300 2Y/B = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D08V05)	○	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	1.000	.000	5.300	.000
(E63V05)	◁	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.900	.000	5.300	.000
(F83V05)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.850	.000	5.300	.000

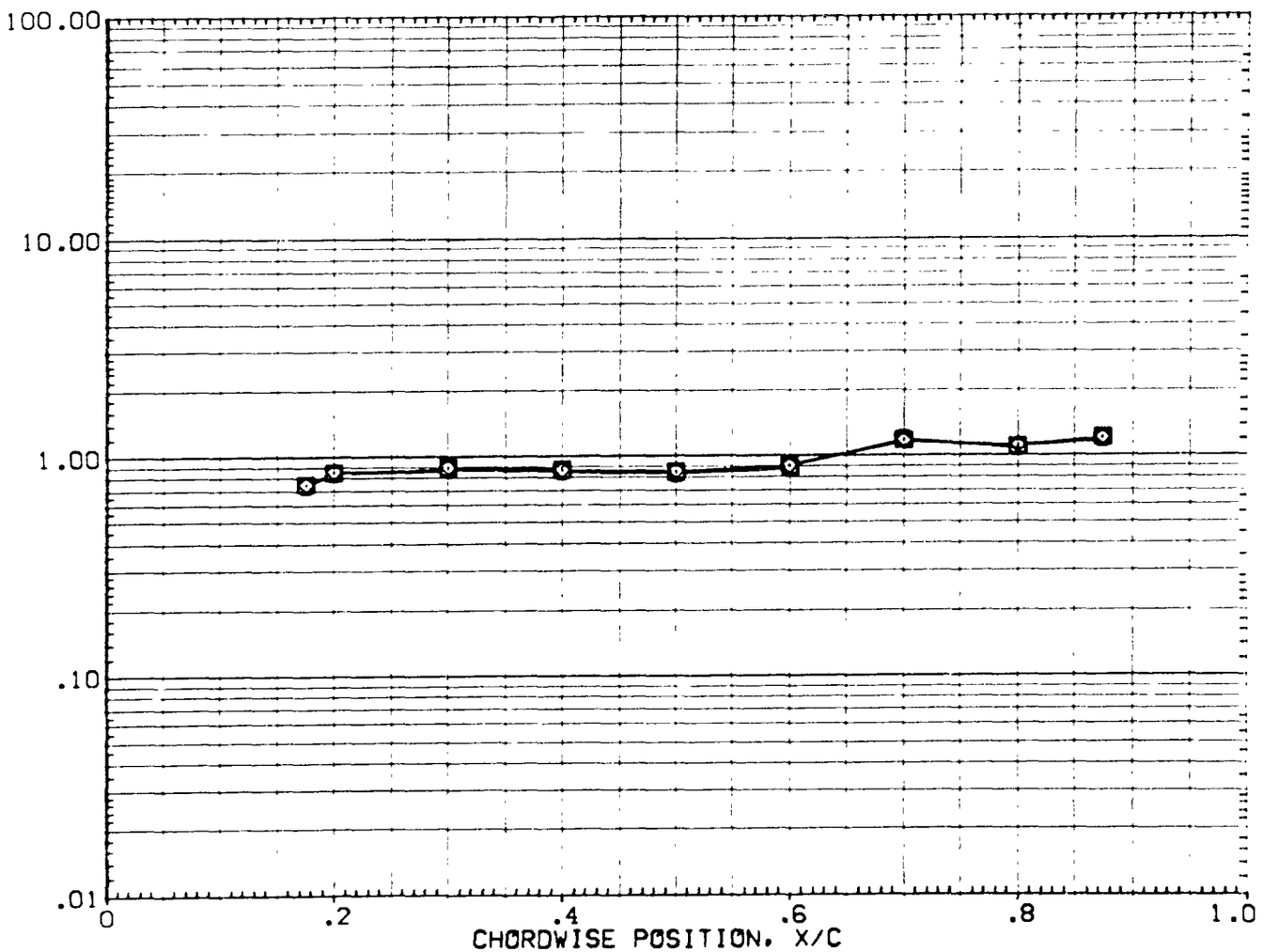


FIG. 21 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF.,ORBITER WING.

RRN/L = 1.845 MACH = 5.300 2Y/B = .600

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(D88V05)	□	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	1.000	.000	5.300	.000
(E88V05)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.900	.000	5.300	.000
(F88V05)		ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.850	.000	5.300	.000

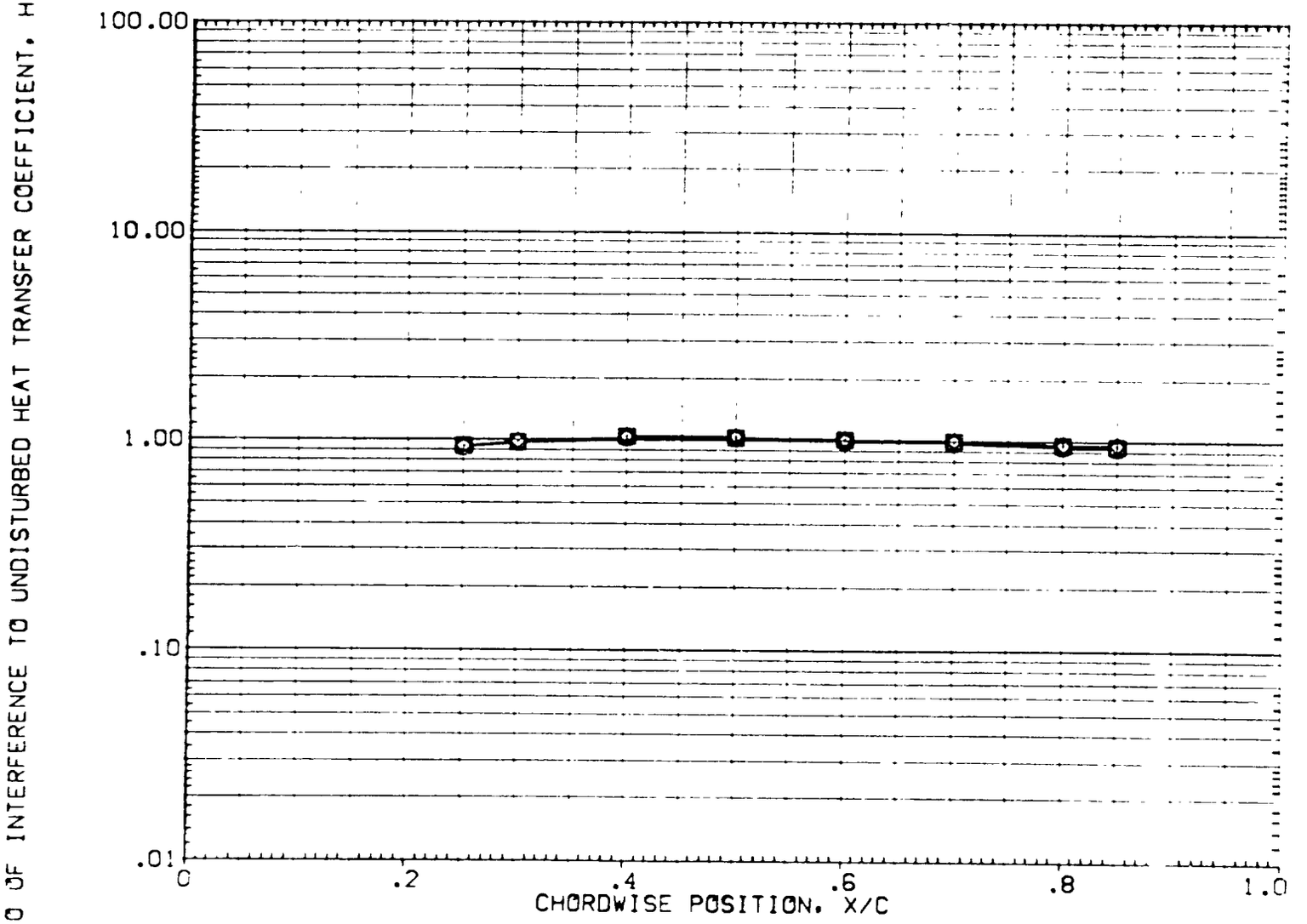


FIG. 21 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER WING.

RN/L = 1.845 M∞ = 5.300 2Y/B = .800

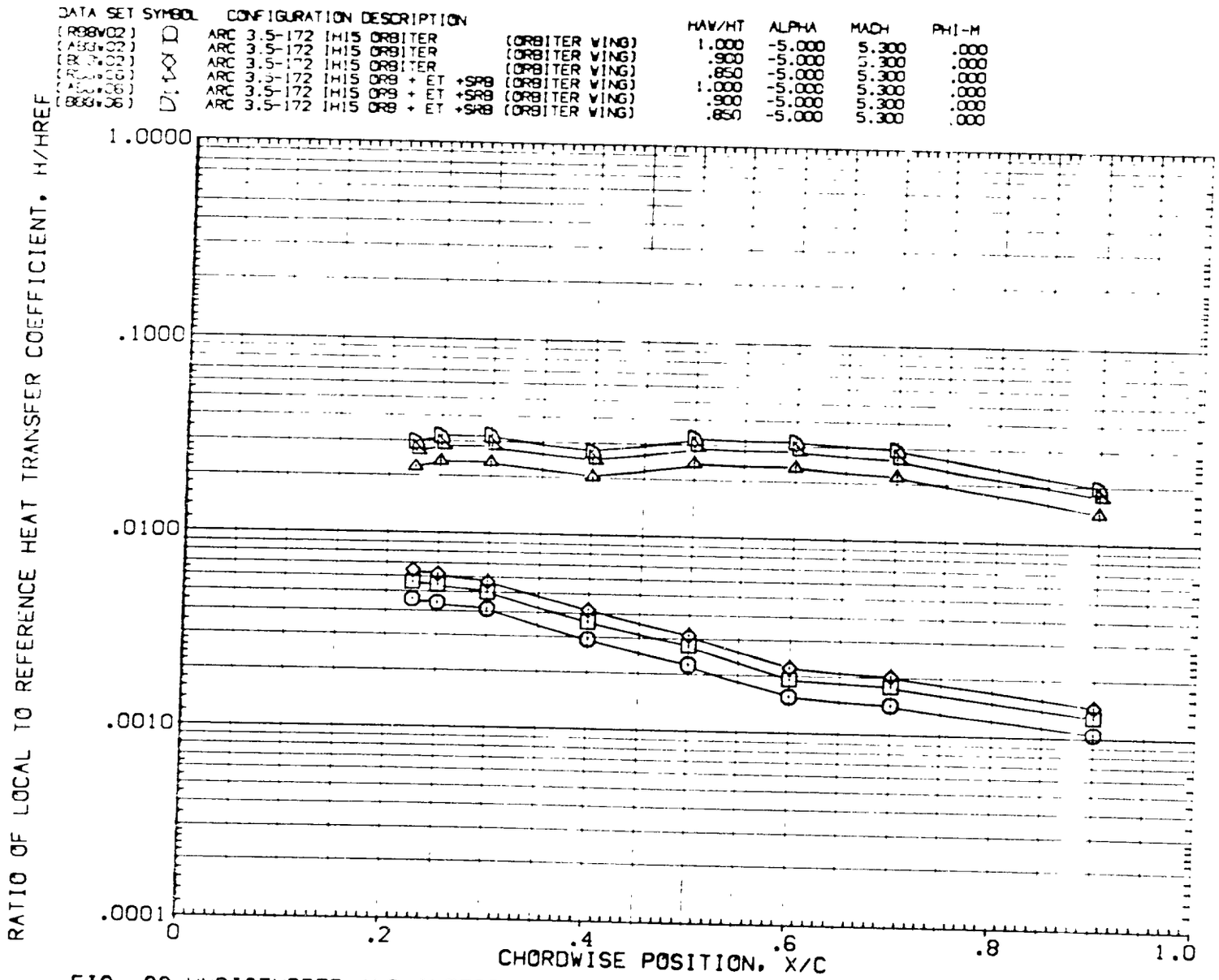


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 2.143 MACH = 5.300 2Y/B = .400

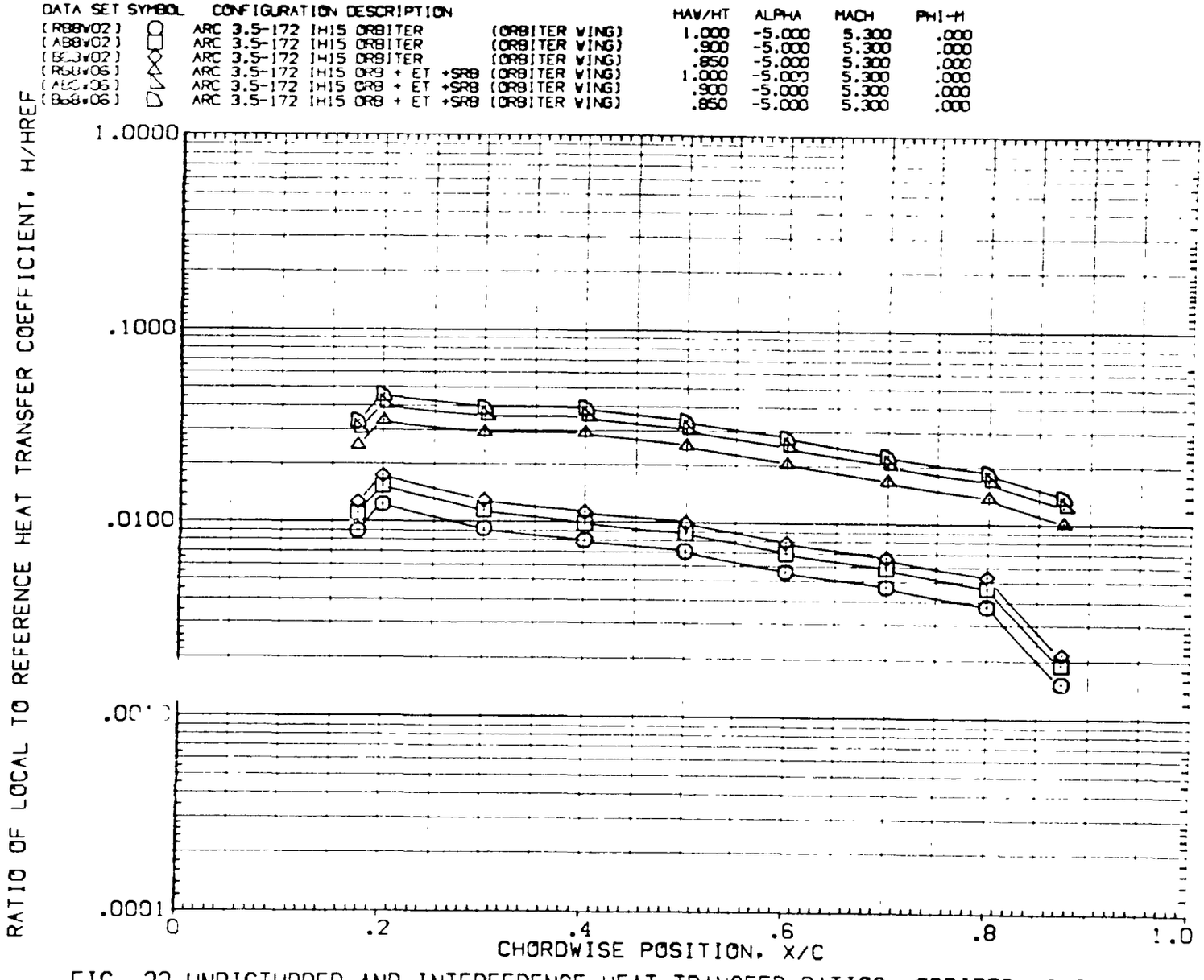


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 2.143 MACH = 5.300 2Y/B = .600

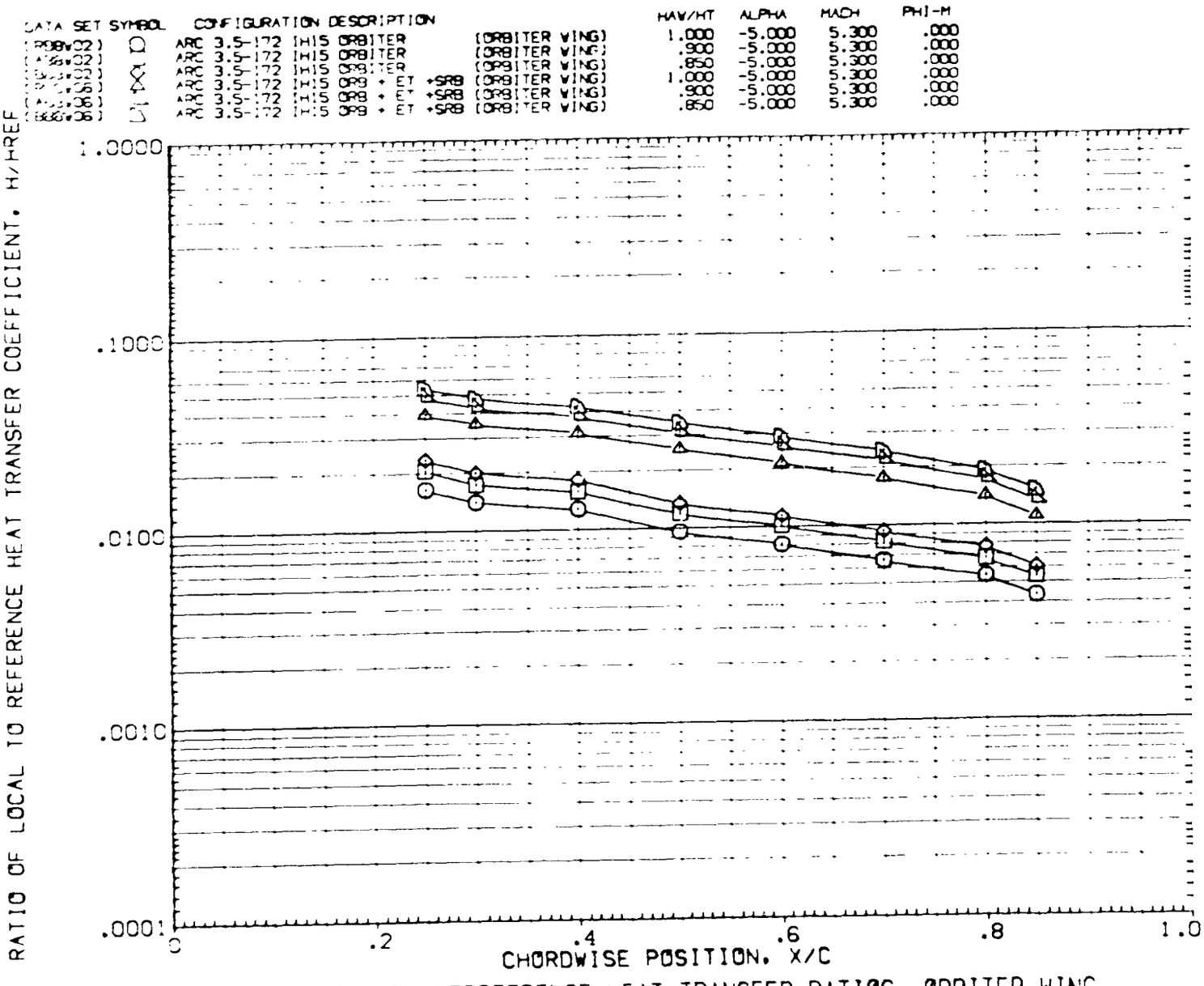


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

PW/L = 2.143 MACH = 5.300 2Y/B = .800

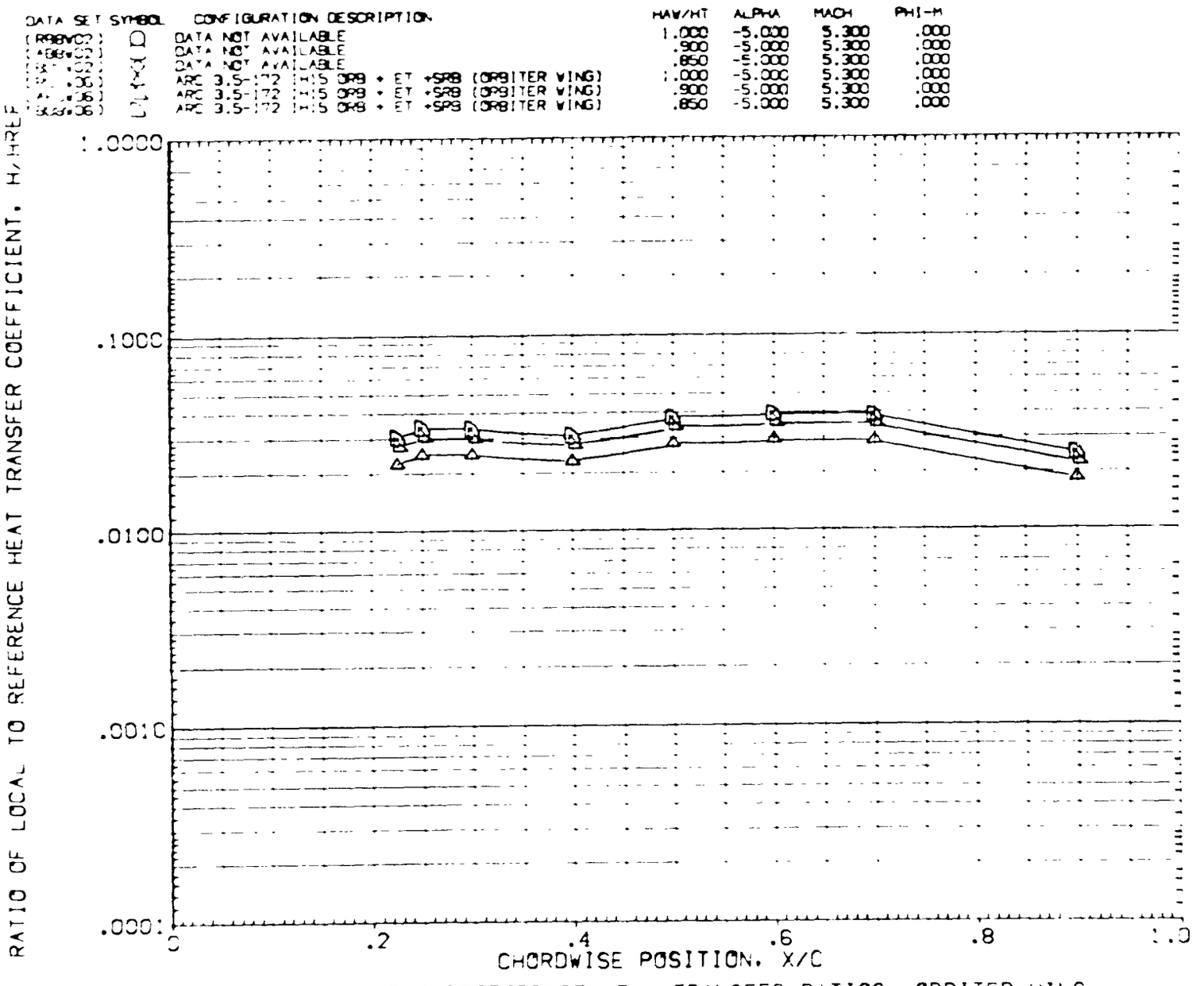


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

R[illegible] = 4.570 MACH = 5.300 Z/B = .400

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(RBBV02)	DATA NOT AVAILABLE	1.000	-5.000	5.300	.000
(ABBV02)	DATA NOT AVAILABLE	.900	-5.000	5.300	.000
(BB3.07)	DATA NOT AVAILABLE	.850	-5.000	5.300	.000
(R[illegible].06)	ARC 3.5-172 IHIS ORB + ET +SRB (ORBITER WING)	1.000	-5.000	5.300	.000
(A[illegible].06)	ARC 3.5-172 IHIS ORB + ET +SRB (ORBITER WING)	.900	-5.000	5.300	.000
(B[illegible].06)	ARC 3.5-172 IHIS ORB + ET +SRB (ORBITER WING)	.850	-5.000	5.300	.000

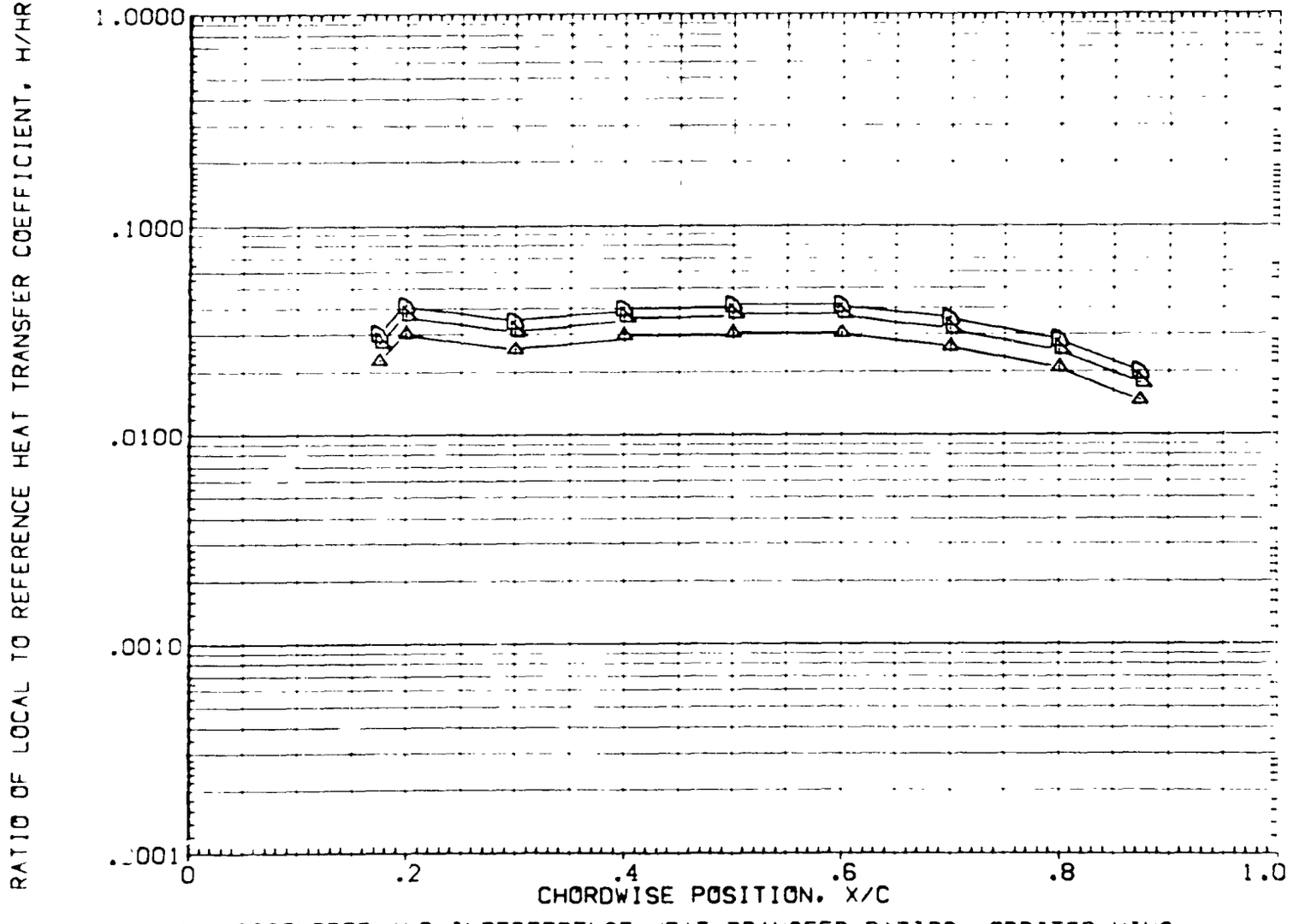


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.570 MACH = 5.300 2Y/B = .600

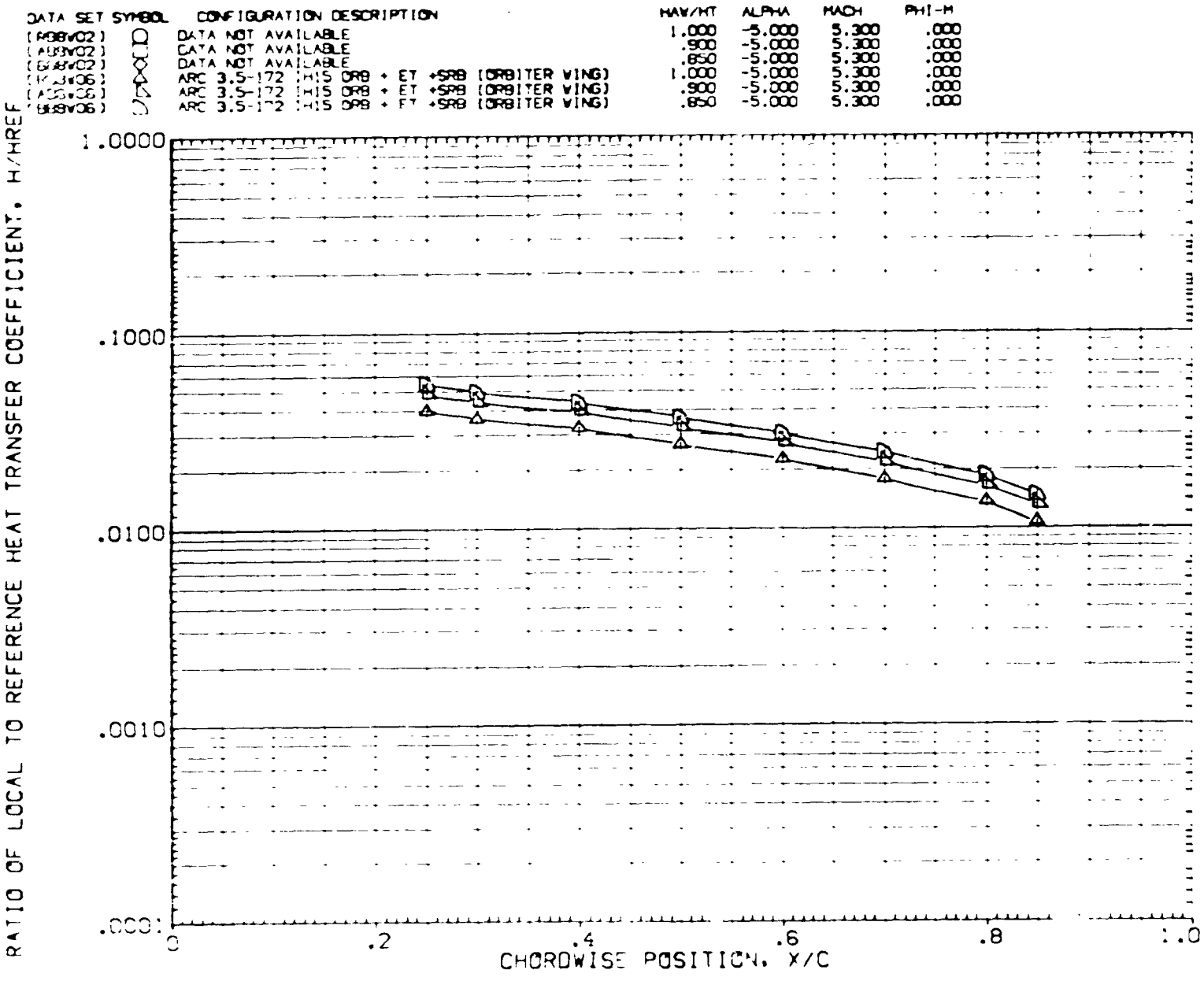


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 4.570 MACH = 5.300 Z/B = .800

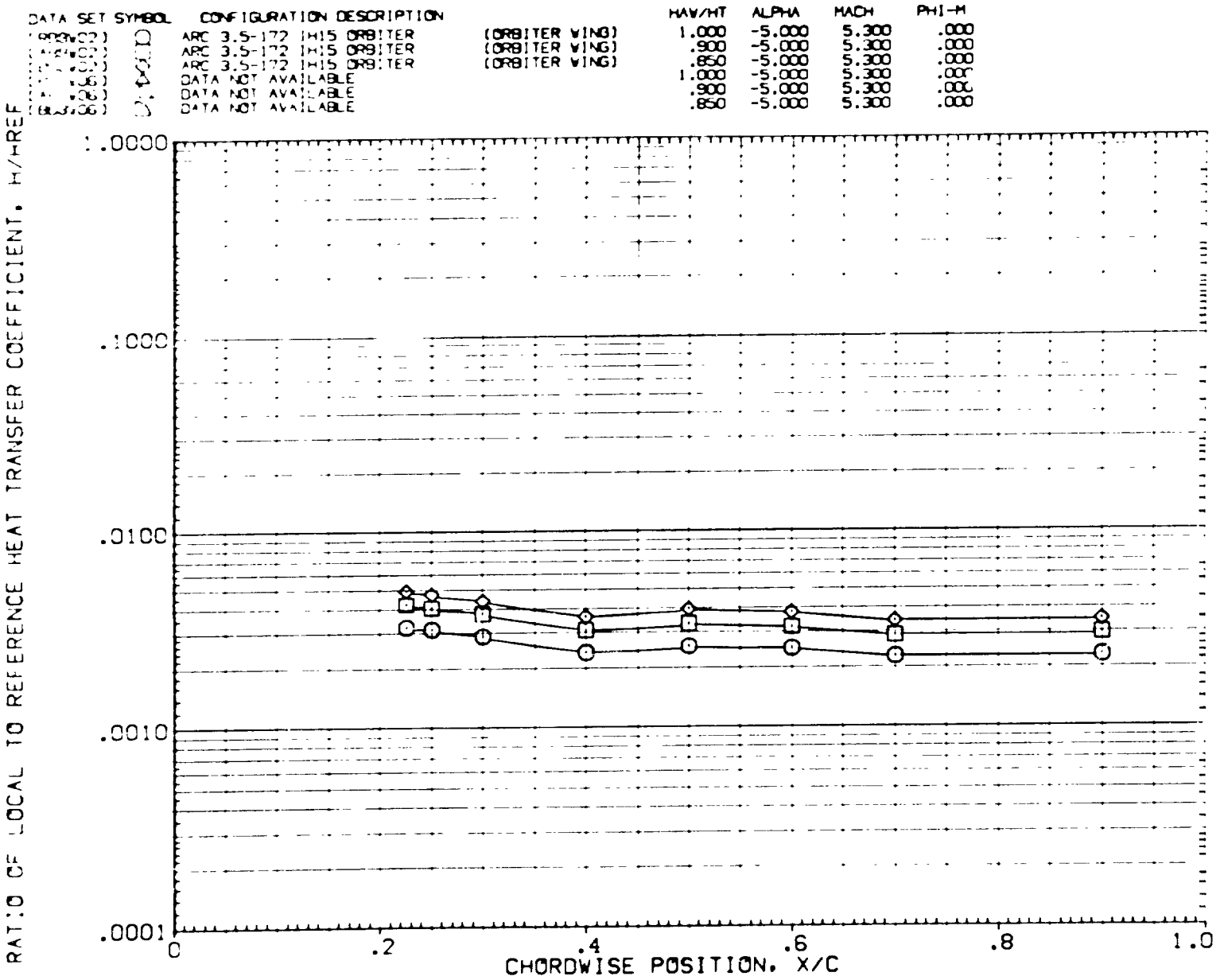


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 6.131 MACH = 5.300 2Y/B = .400

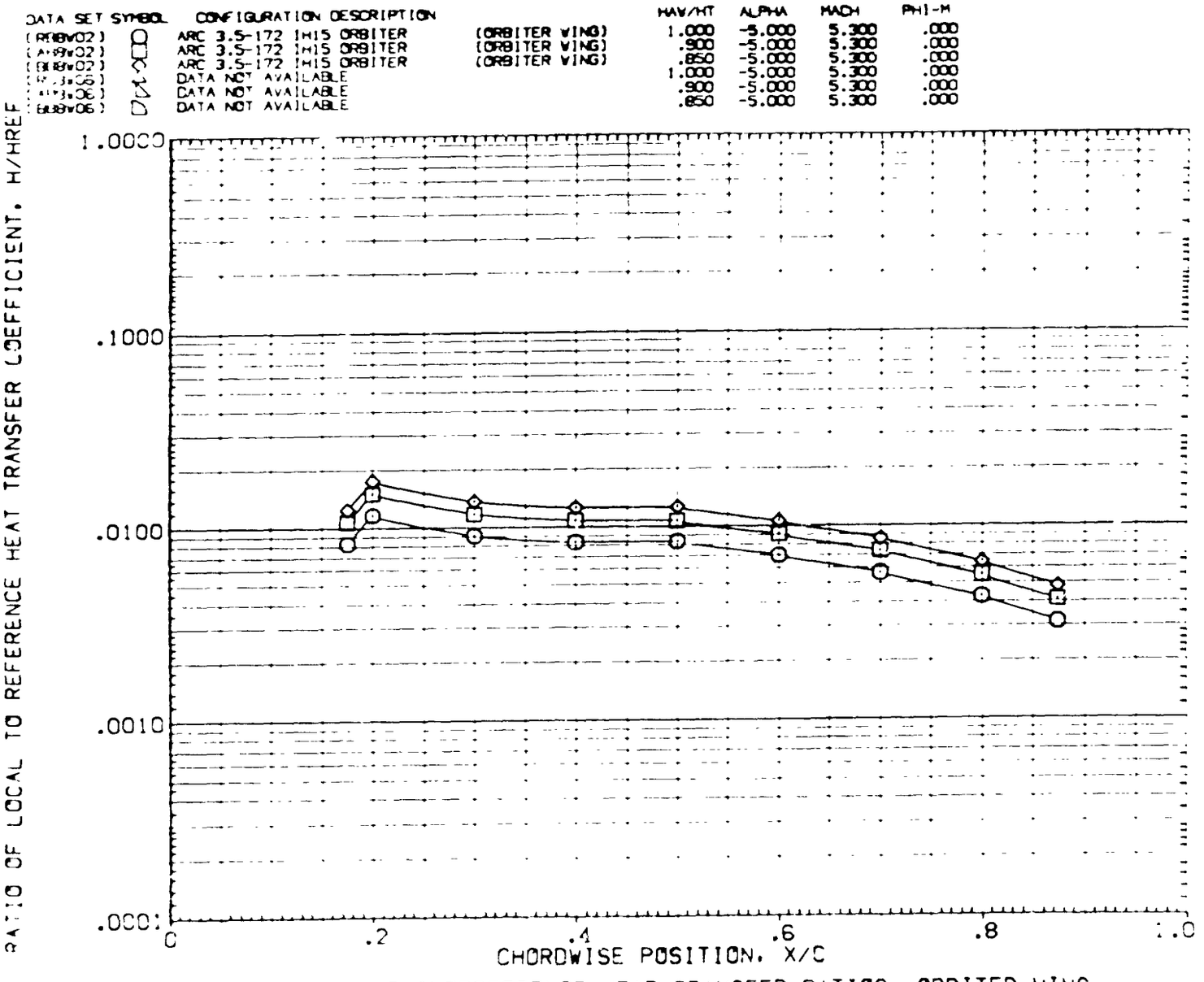


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

[illegible] 6.13: MACH = 5.300 2Y/B = .600

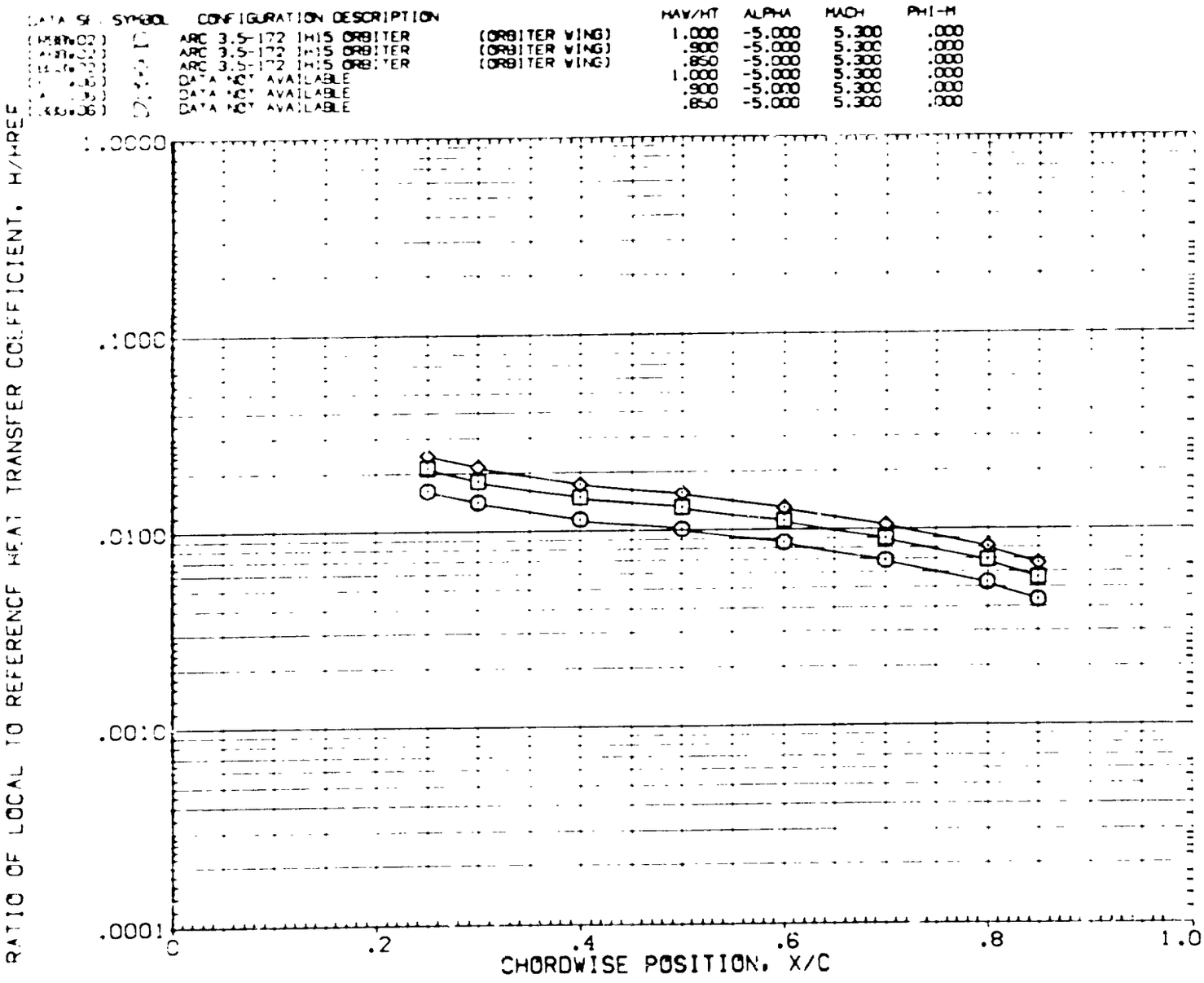


FIG. 22 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, ORBITER WING.

RN/L = 6.131 MACH = 5.300 2Y/B = .800

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DB6V06)	○	ARC 3.5-172 IHIS ORB + ET +SRB (ORBITER WING)	1.000	-5.000	5.300	.000
(ES3V06)	□	ARC 3.5-172 IHIS ORB + ET +SRB (ORBITER WING)	.900	-5.000	5.300	.000
(B8V06)	◇	ARC 3.5-172 IHIS ORB + ET +SRB (ORBITER WING)	.850	-5.000	5.300	.000

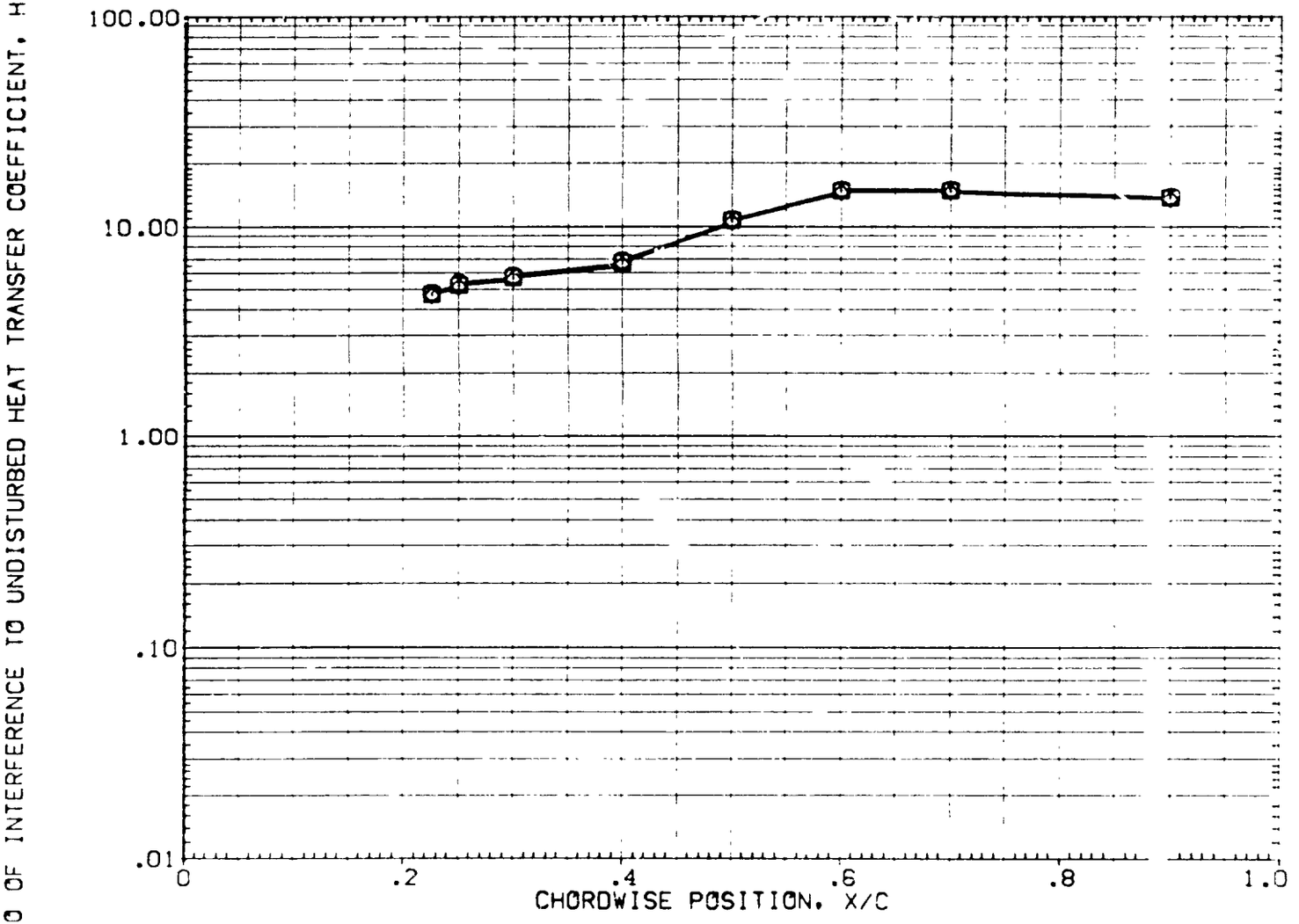


FIG. 23 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER WING.

RN/L = 1.952 MACH = 5.300 2Y/B = .400

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(088V06)	□	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	1.000	-5.000	5.300	.000
(083V06)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.900	-5.000	5.300	.000
(088V06)	△	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.850	-5.000	5.300	.000

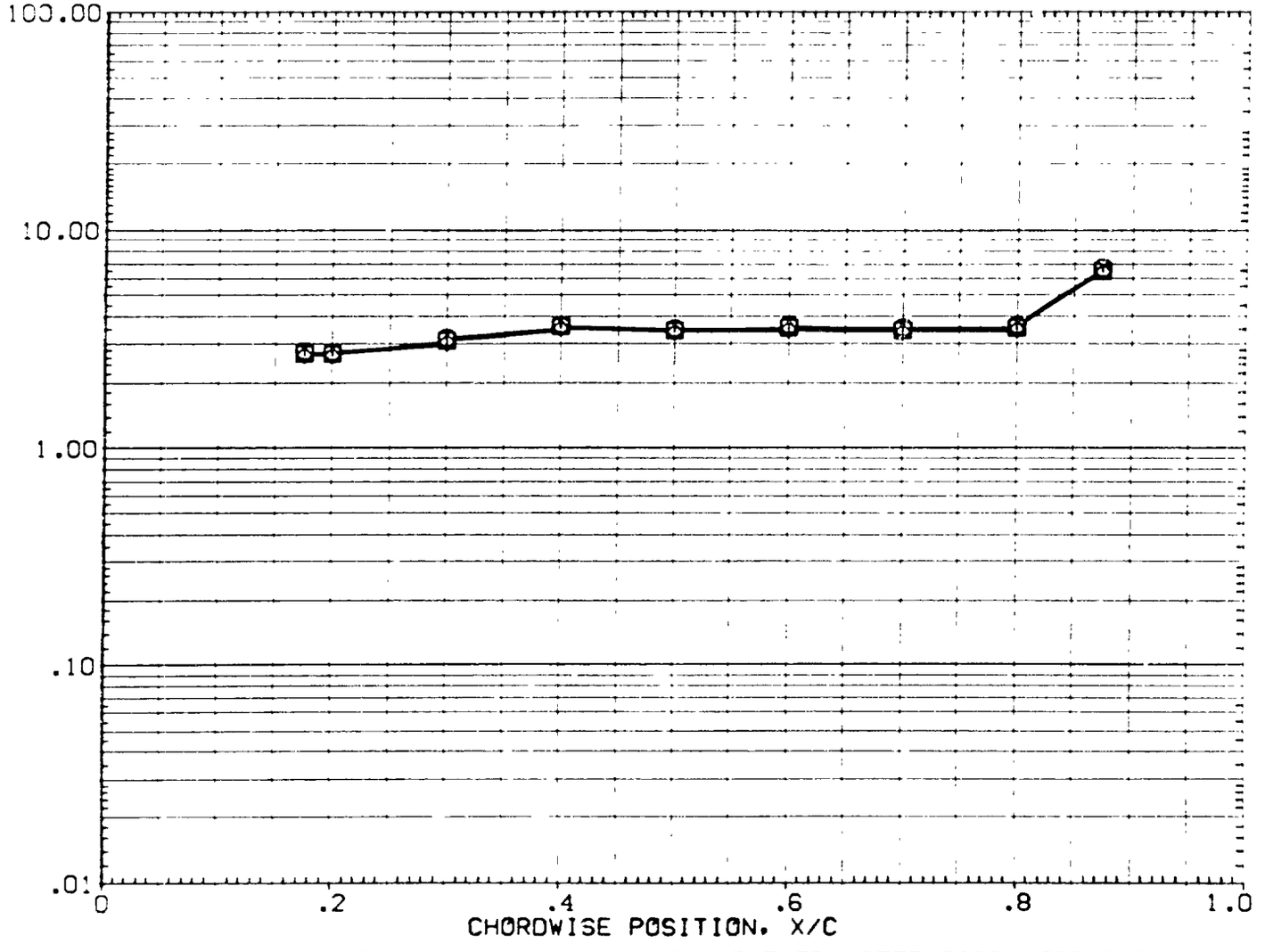


FIG. 23 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER WING.

RN/L = 1.952 MACH = 5.300 2Y/B = .600

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(D08V06)	□	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	1.000	-5.000	5.300	.000
(E08V06)	○	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.900	-5.000	5.300	.000
(F08V06)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING)	.850	-5.000	5.300	.000

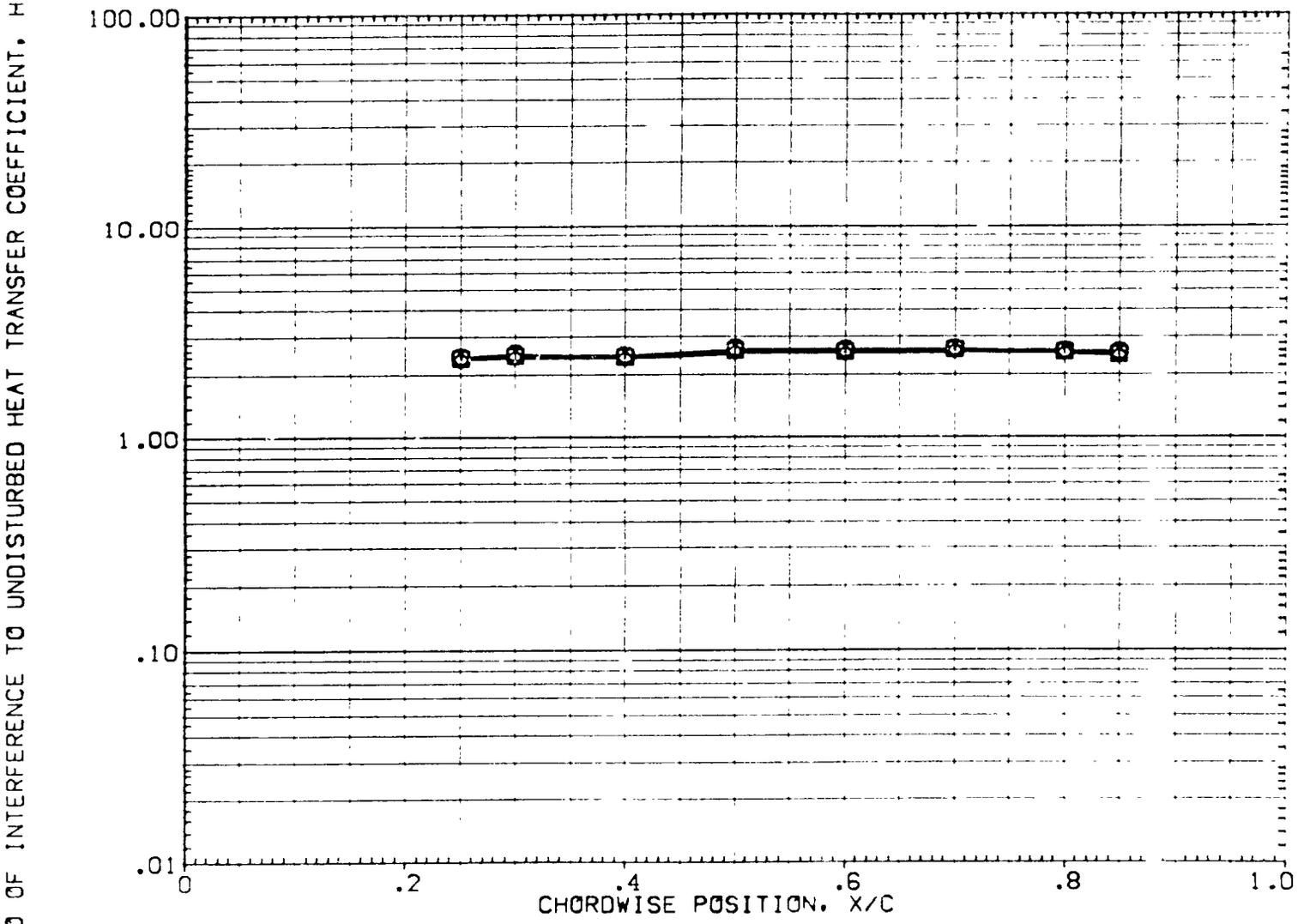


FIG. 23 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., ORBITER WING.

RN/L = 1.952 MACH = 5.300 2Y/B = .800

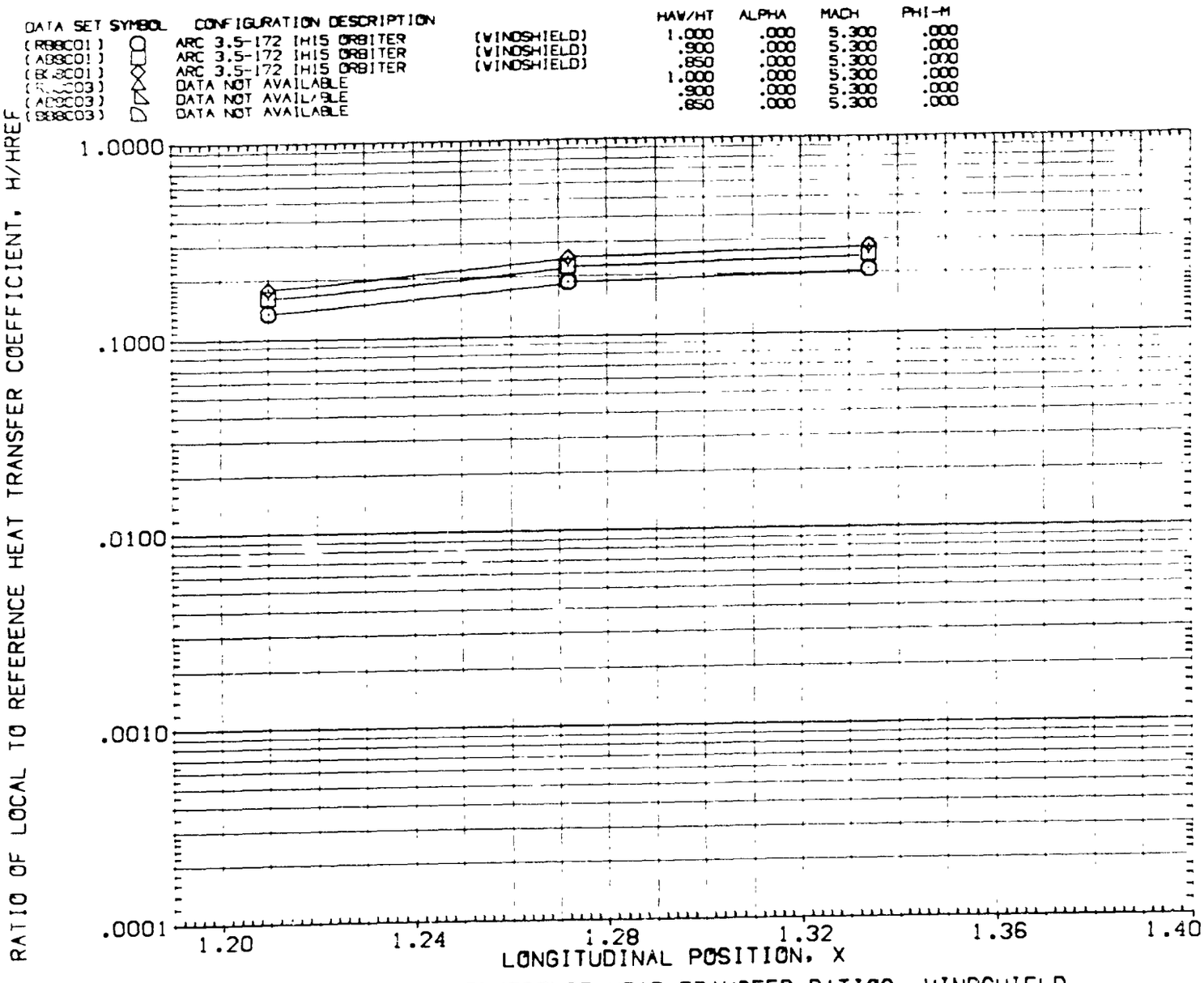


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .047

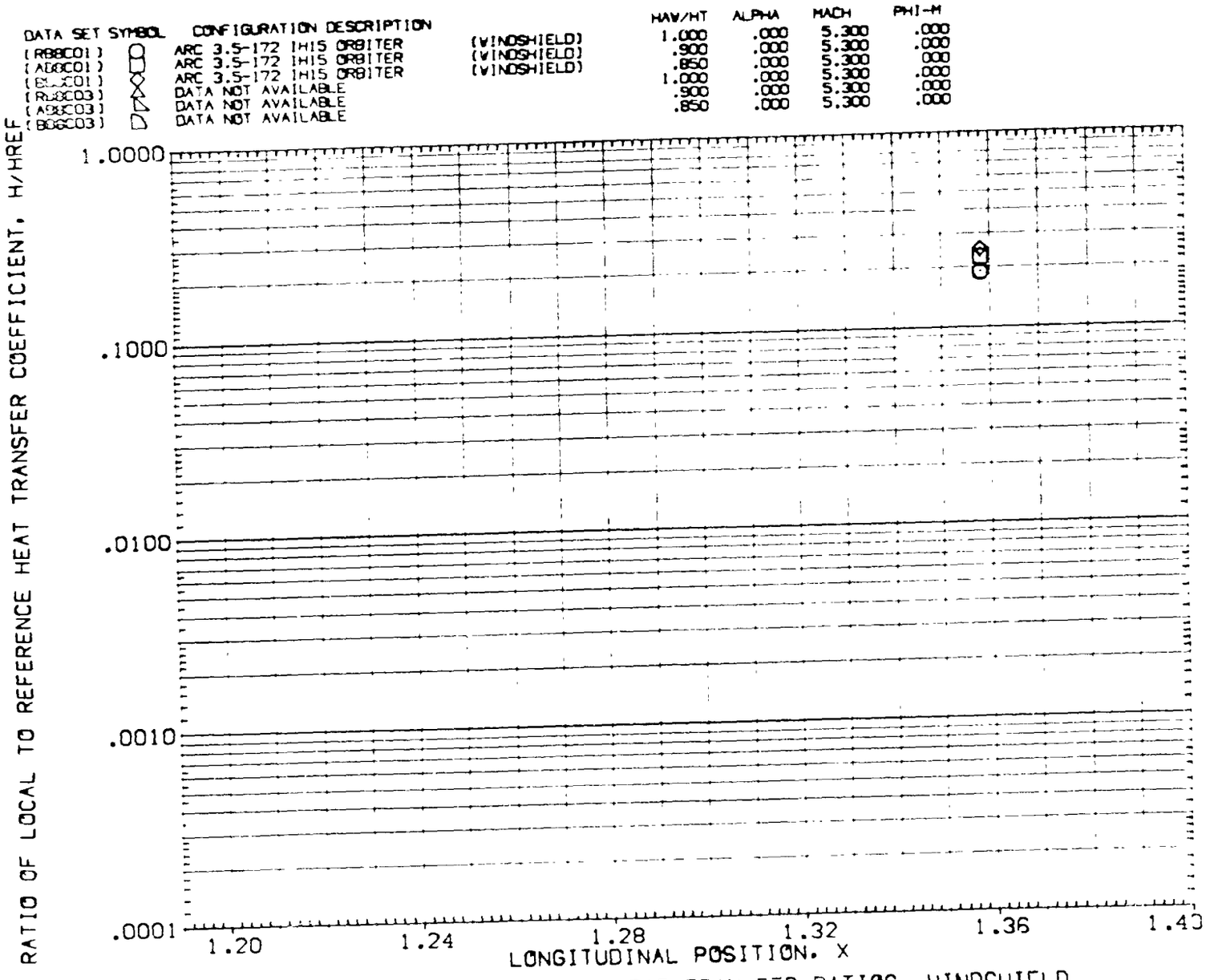


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .178

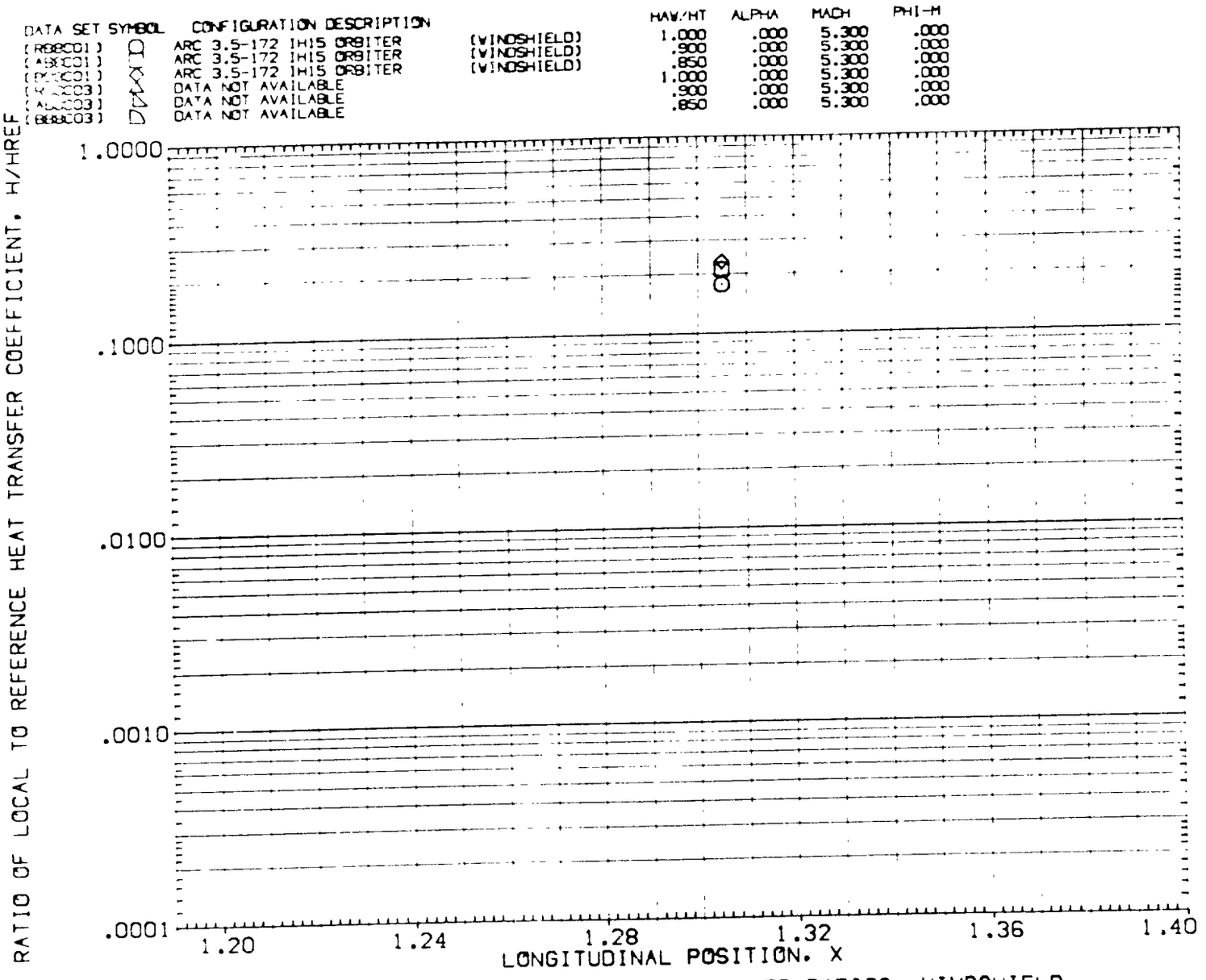


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .196

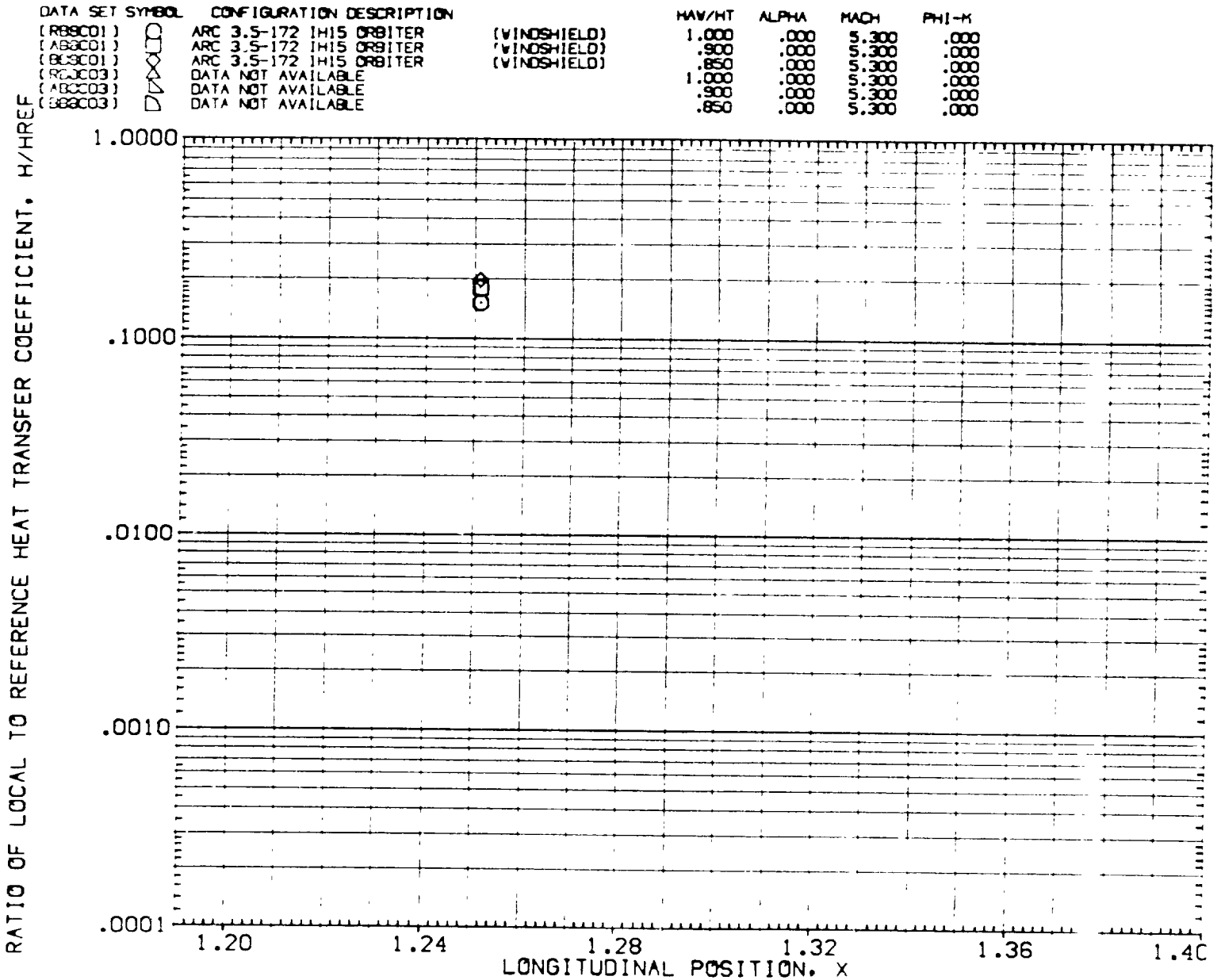


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .213

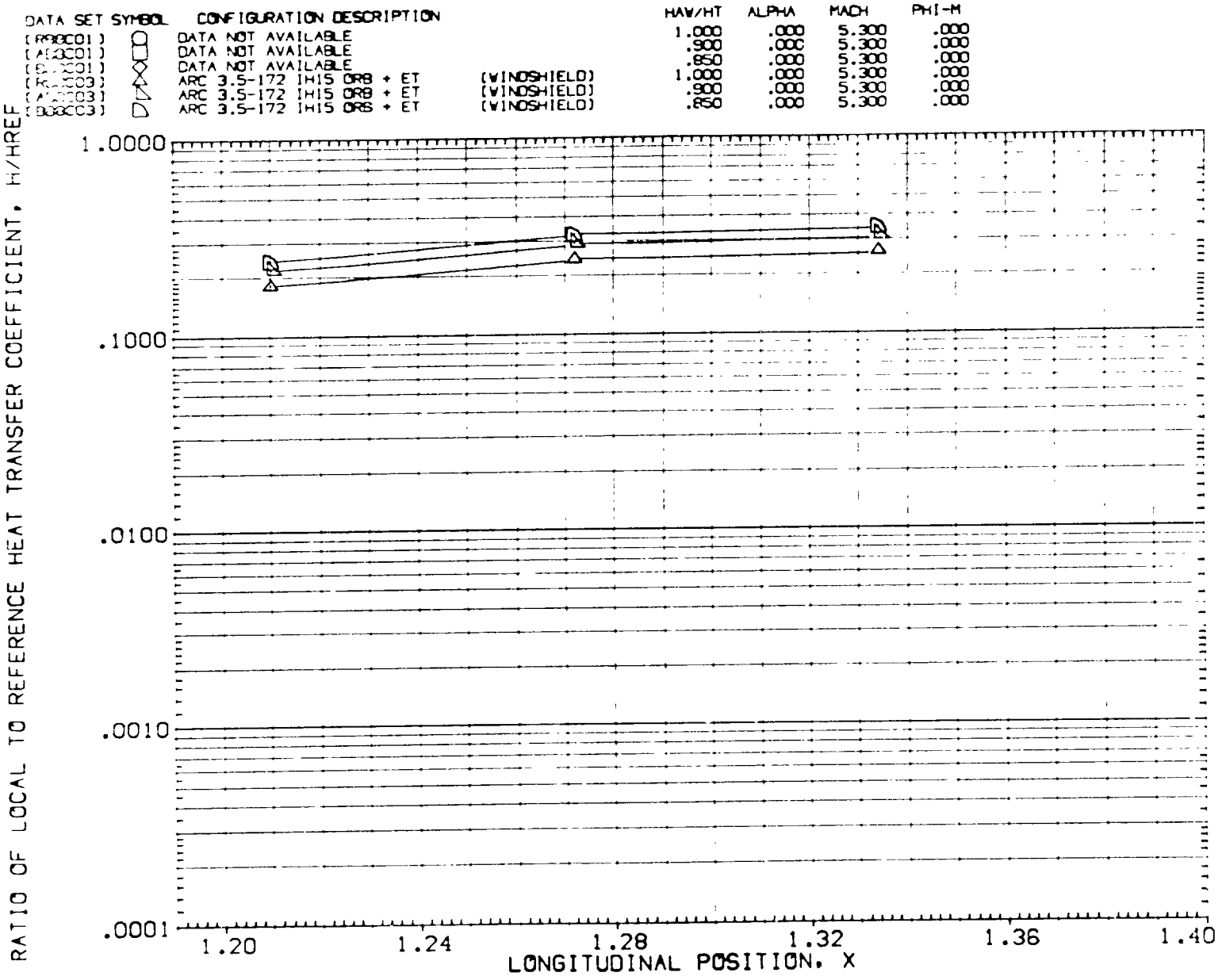


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.332 MACH = 5.300 Y = .047

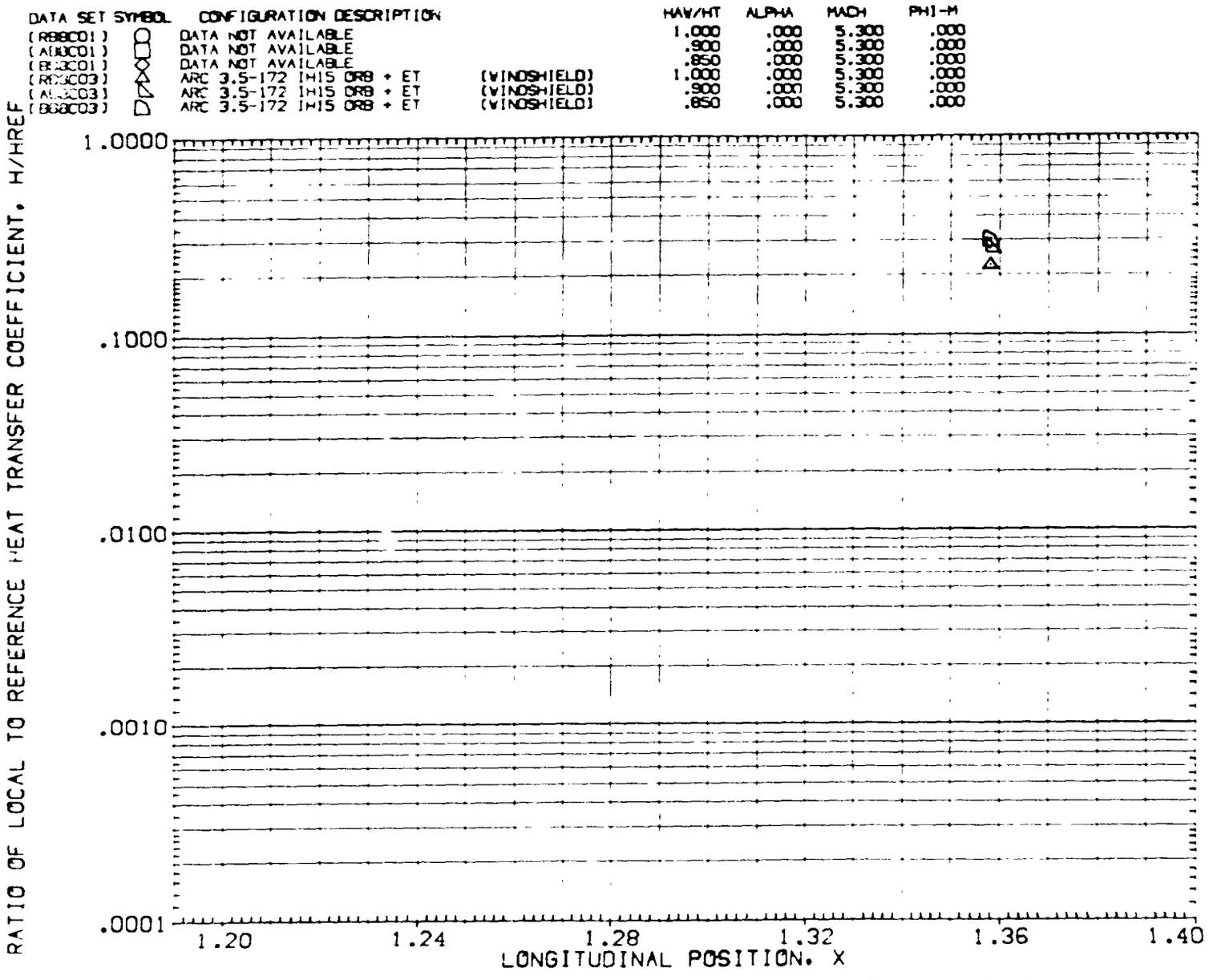


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.332 MACH = 5.300 Y = .178

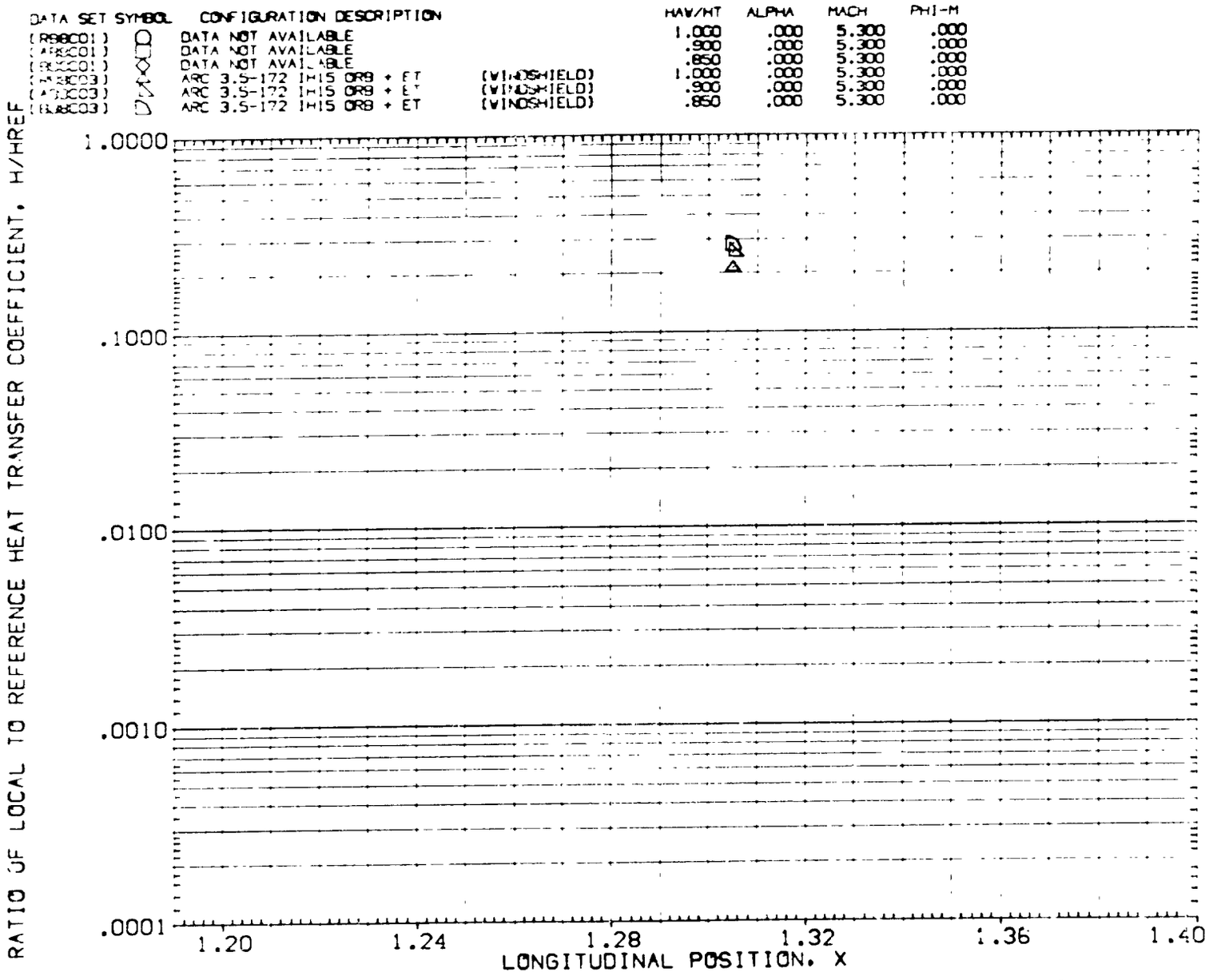


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.332 MACH = 5.300 Y = .196

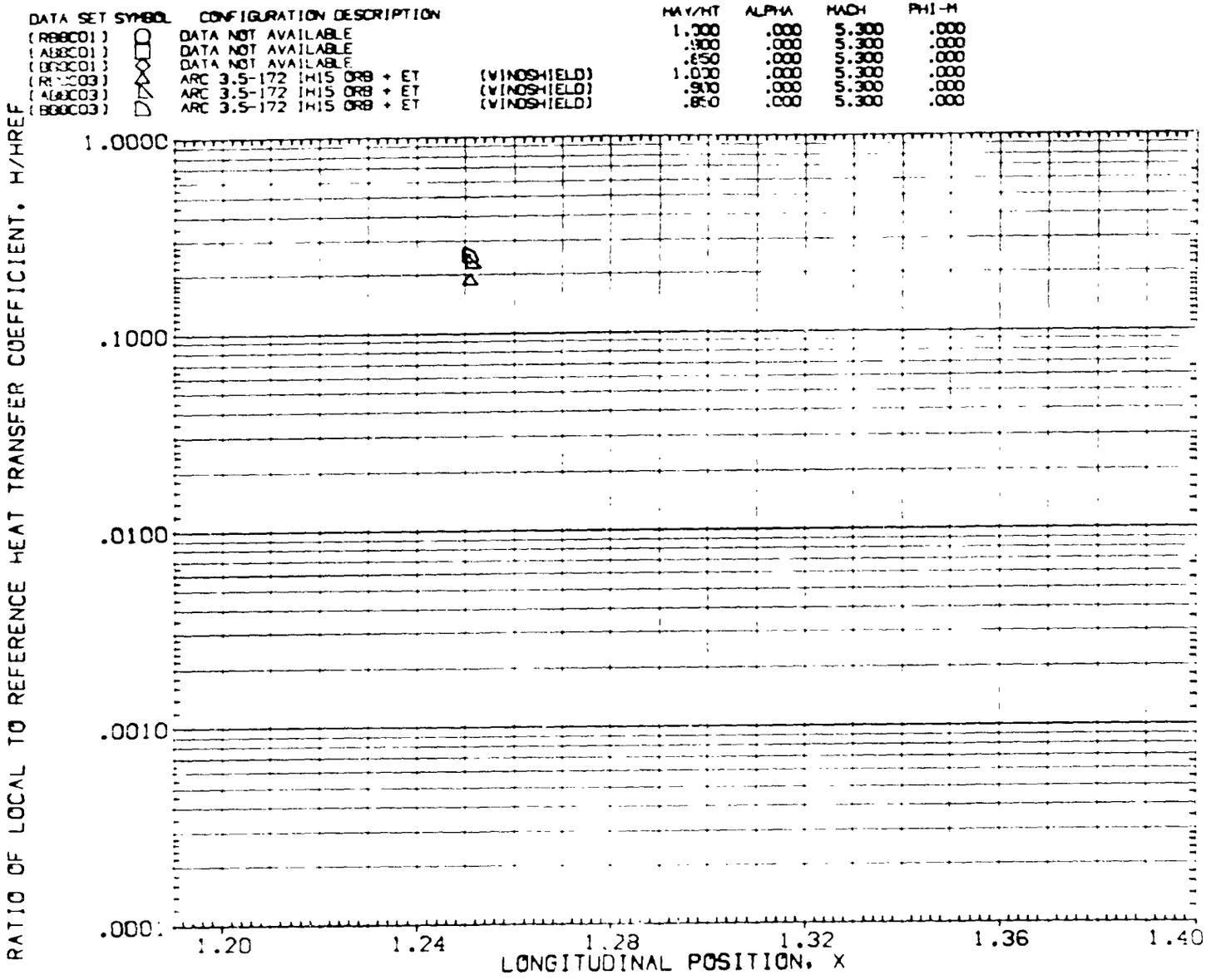


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.332 MACH = 5.300 Y = .213

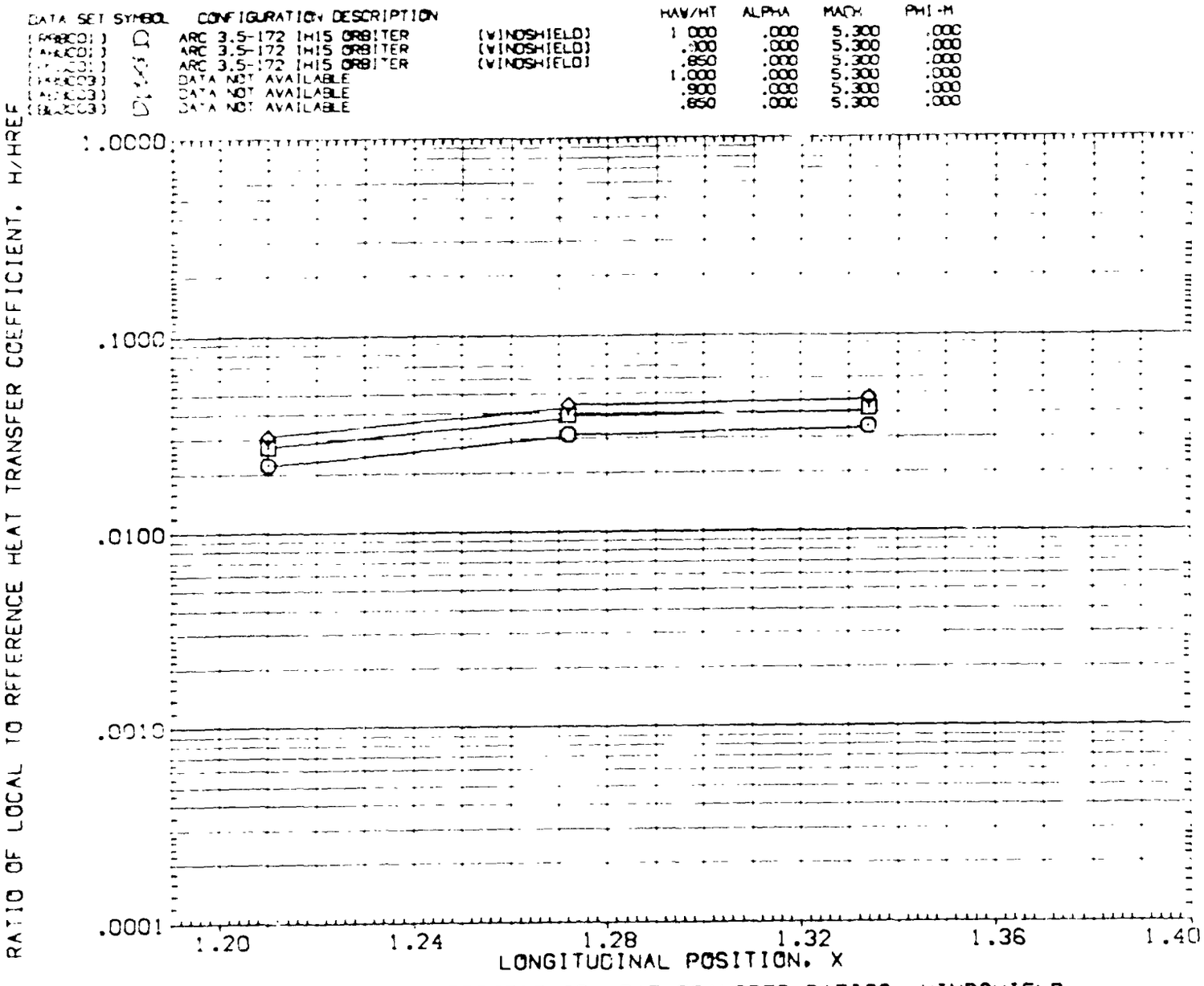


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 5.214 MACH = 5.300 Y = .047

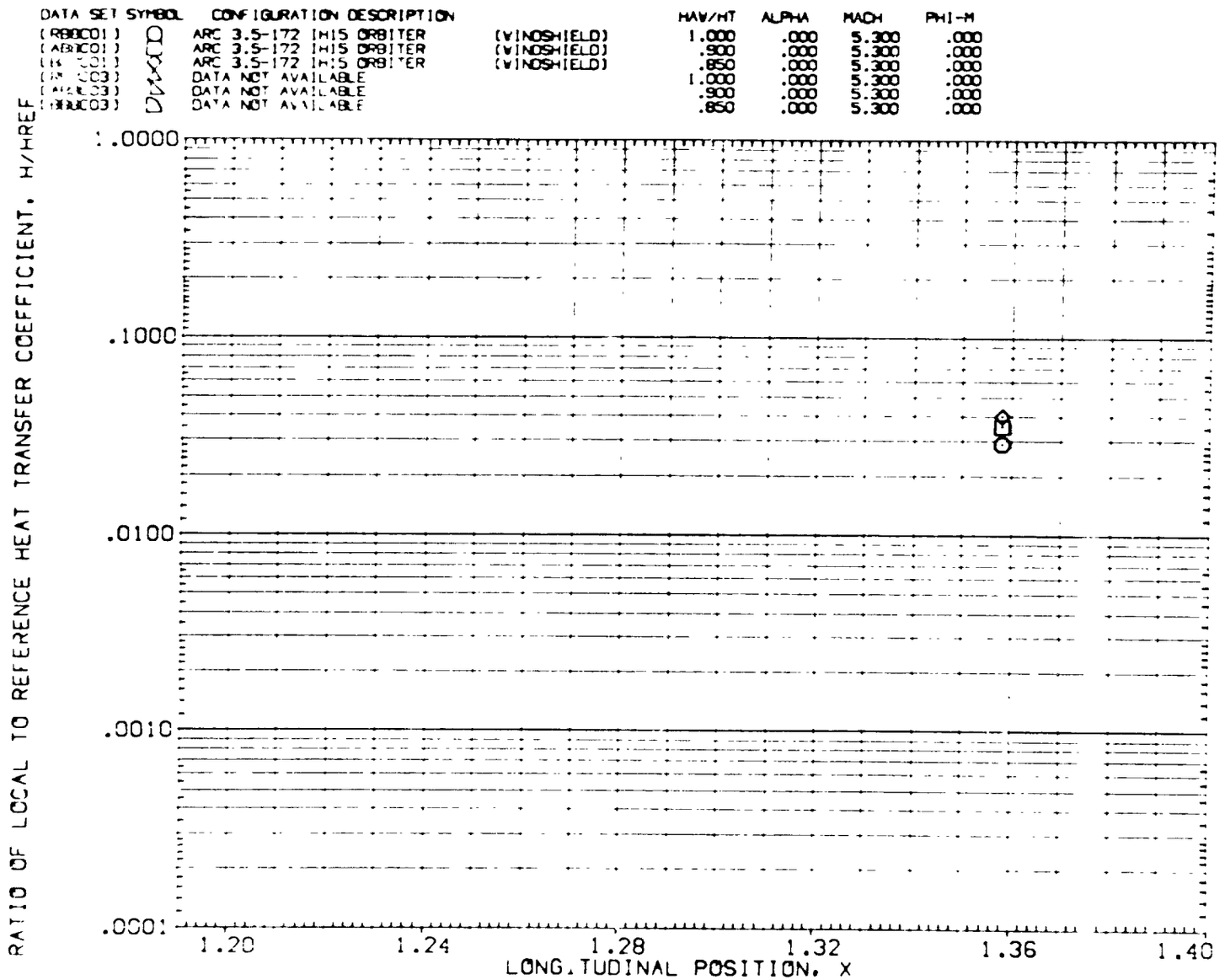


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD

RN/L = 5.214 MACH = 5.300 Y = .178

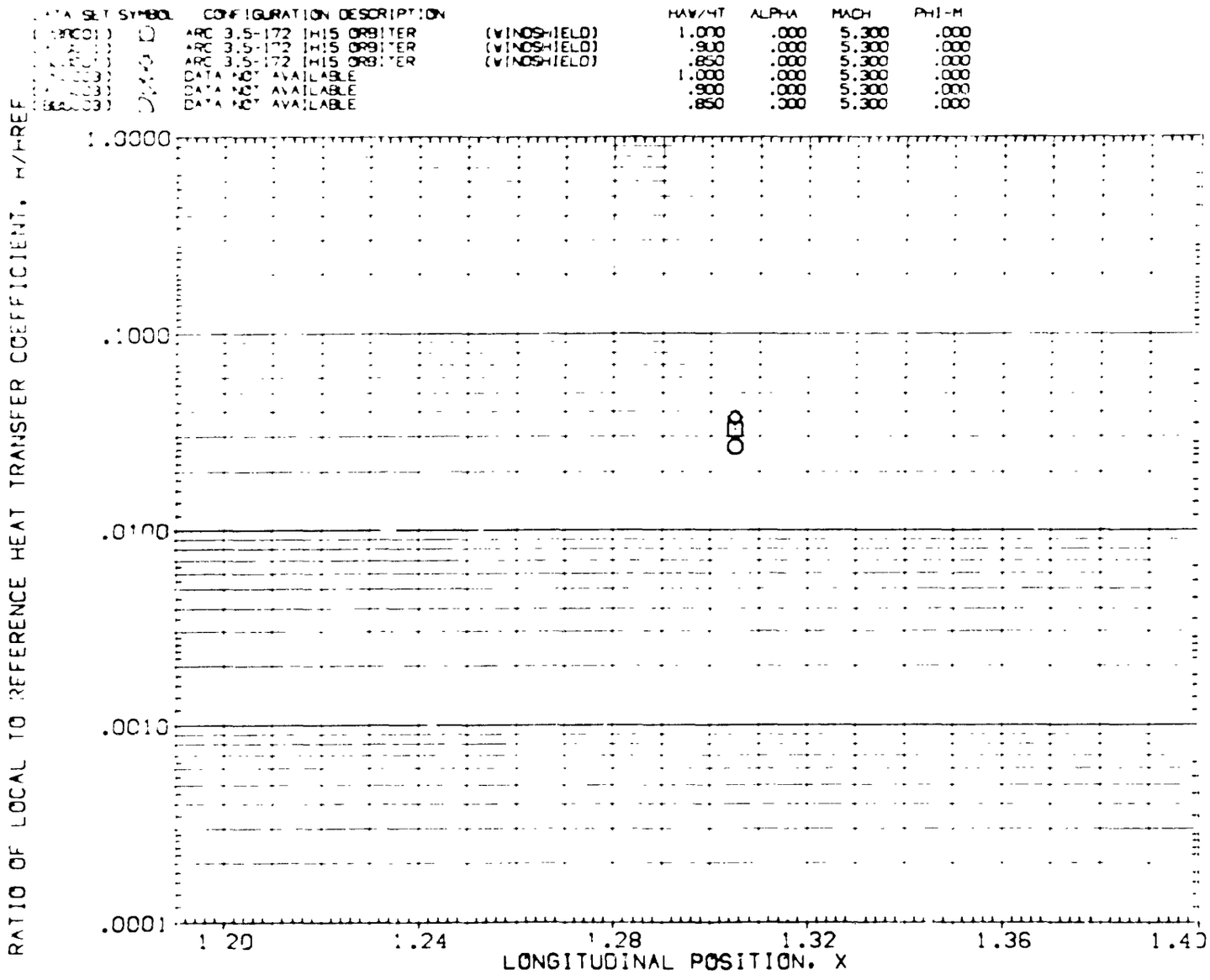


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS. WINDSHIELD.

RN/L = 5.214 MACH = 5.300 Y = .196

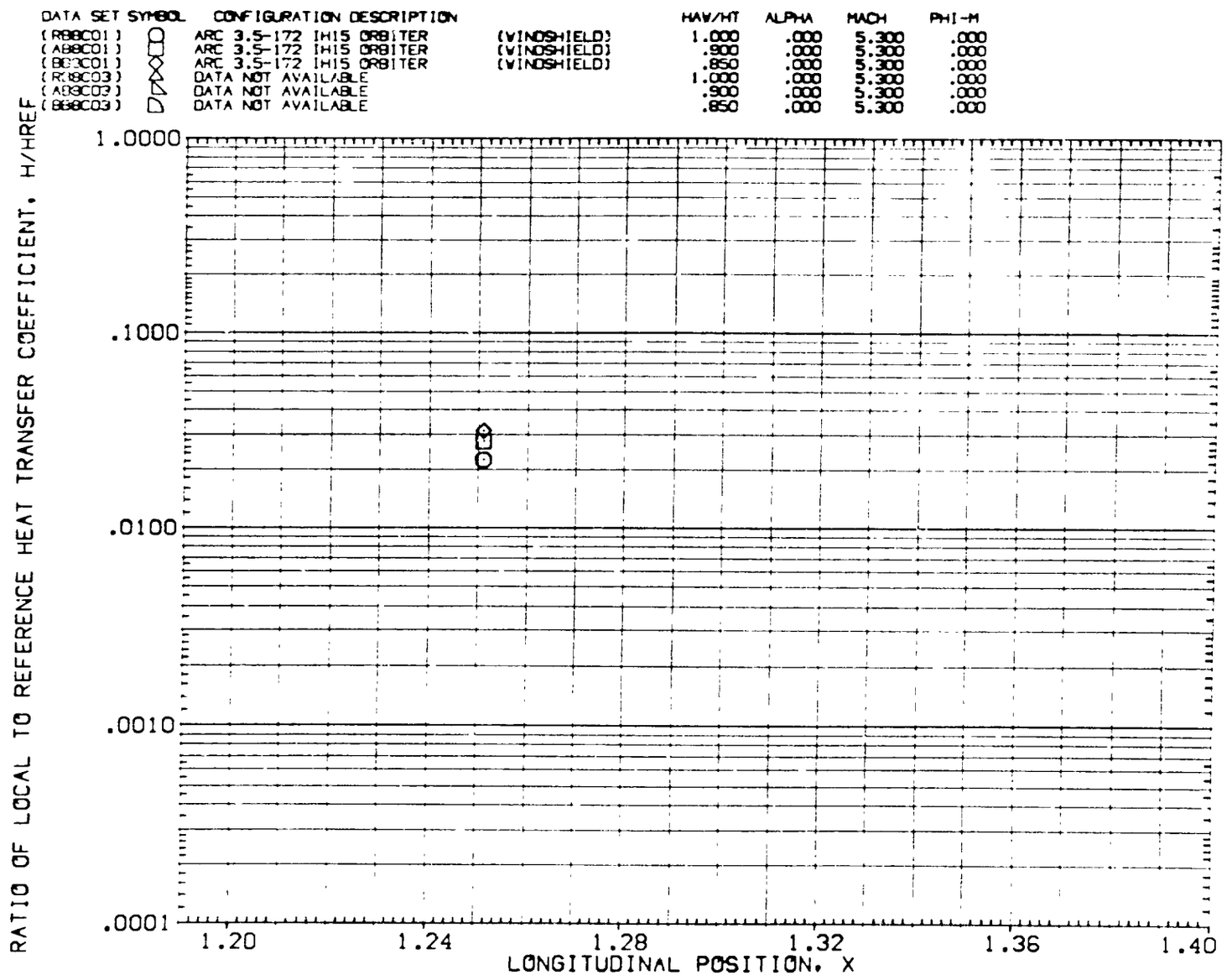


FIG. 24 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 5.214 MACH = 5.300 Y = .213

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
[illegible]		ARC 3.5-172 IH15 ORBITER	(WINDSHIELD)	1.000	.000	5.300	.000
[illegible]		ARC 3.5-172 IH15 ORBITER	(WINDSHIELD)	.900	.000	5.300	.000
[illegible]		ARC 3.5-172 IH15 ORBITER	(WINDSHIELD)	.850	.000	5.300	.000
[illegible]		ARC 3.5-172 IH15 ORB + ET +SRB	(WINDSHIELD)	1.000	.000	5.300	.000
[illegible]		ARC 3.5-172 IH15 ORB + ET +SRB	(WINDSHIELD)	.900	.000	5.300	.000
[illegible]		ARC 3.5-172 IH15 ORB + ET +SRB	(WINDSHIELD)	.850	.000	5.300	.000

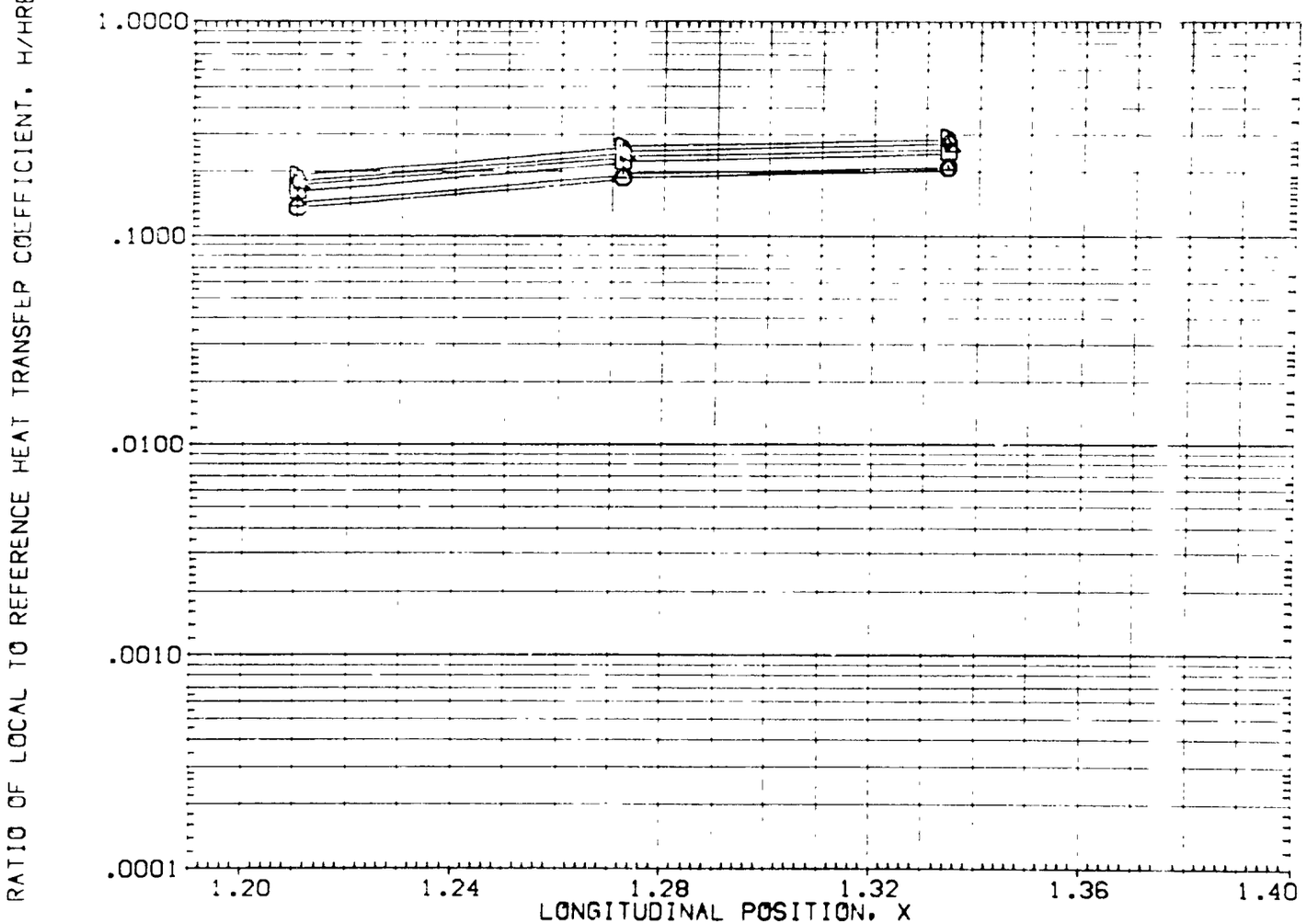


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .047

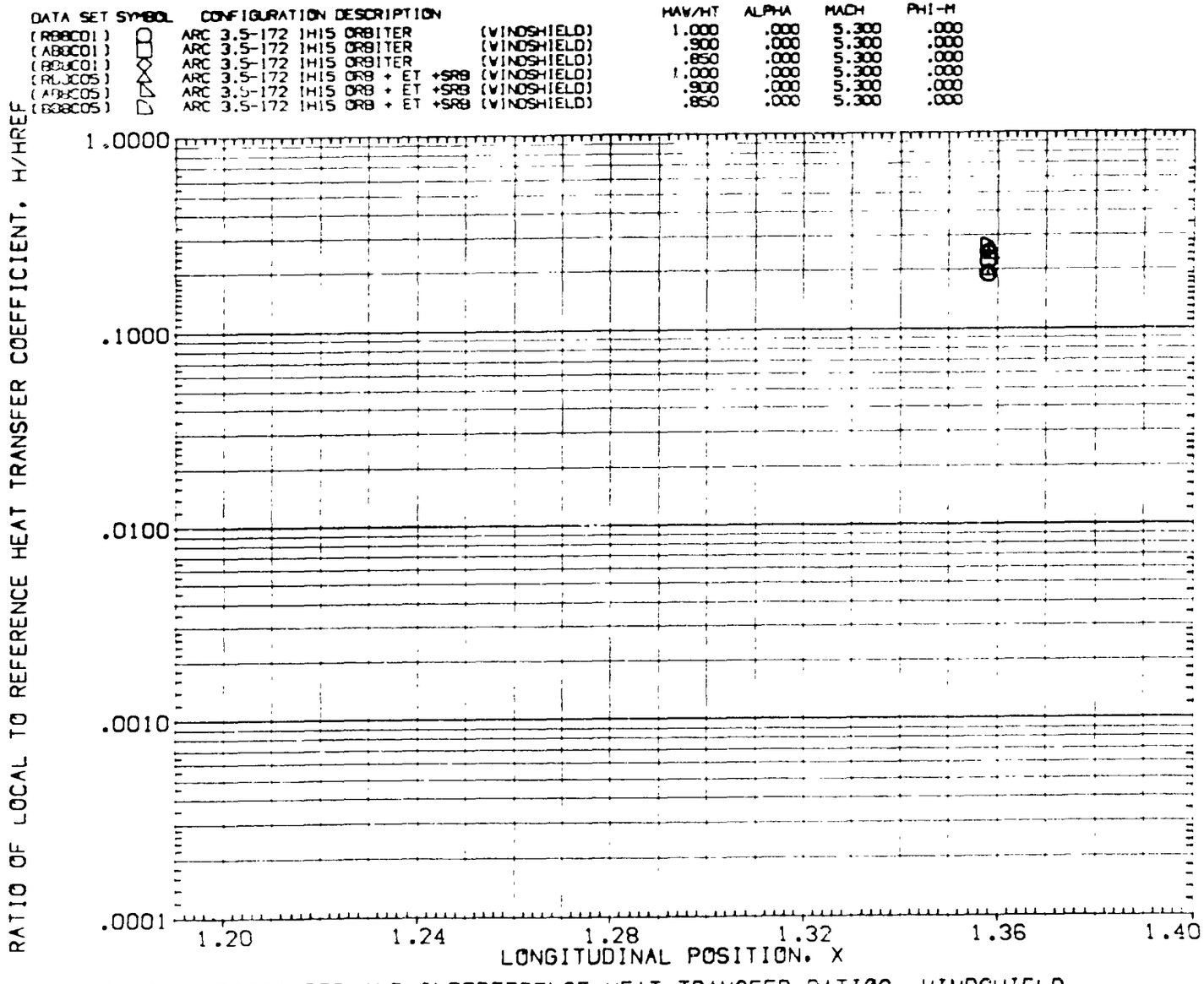


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .178

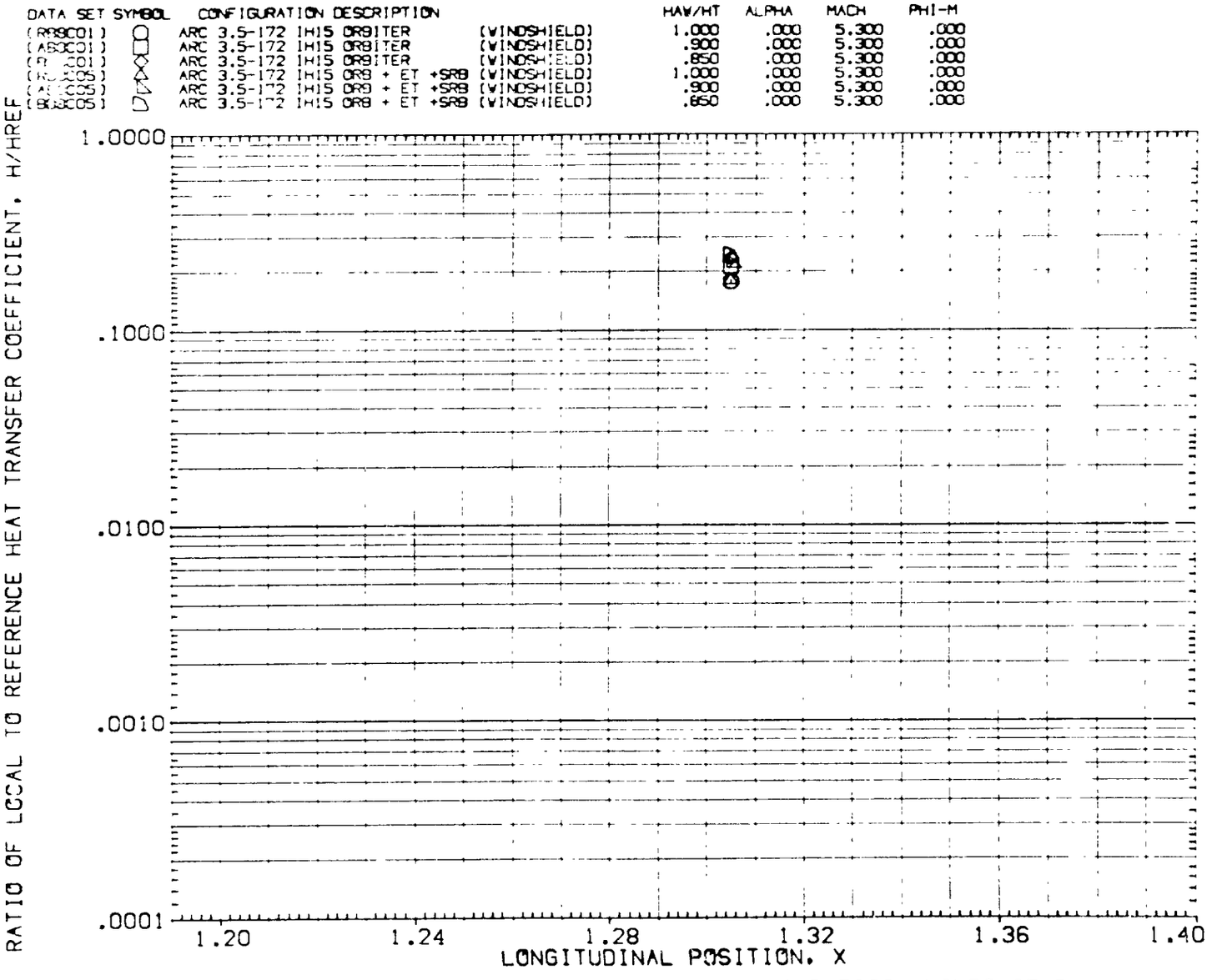


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .196

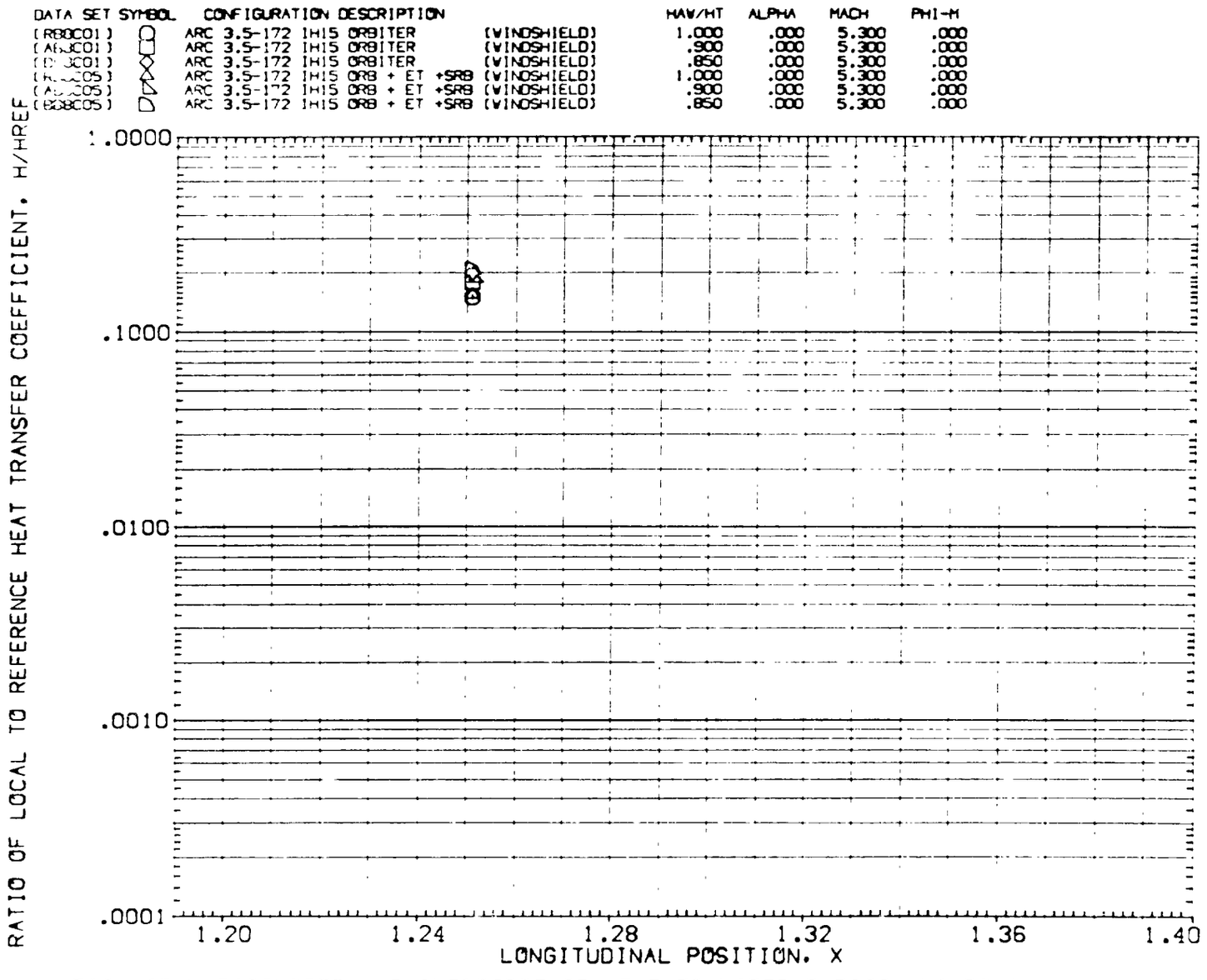


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 1.764 MACH = 5.300 Y = .213

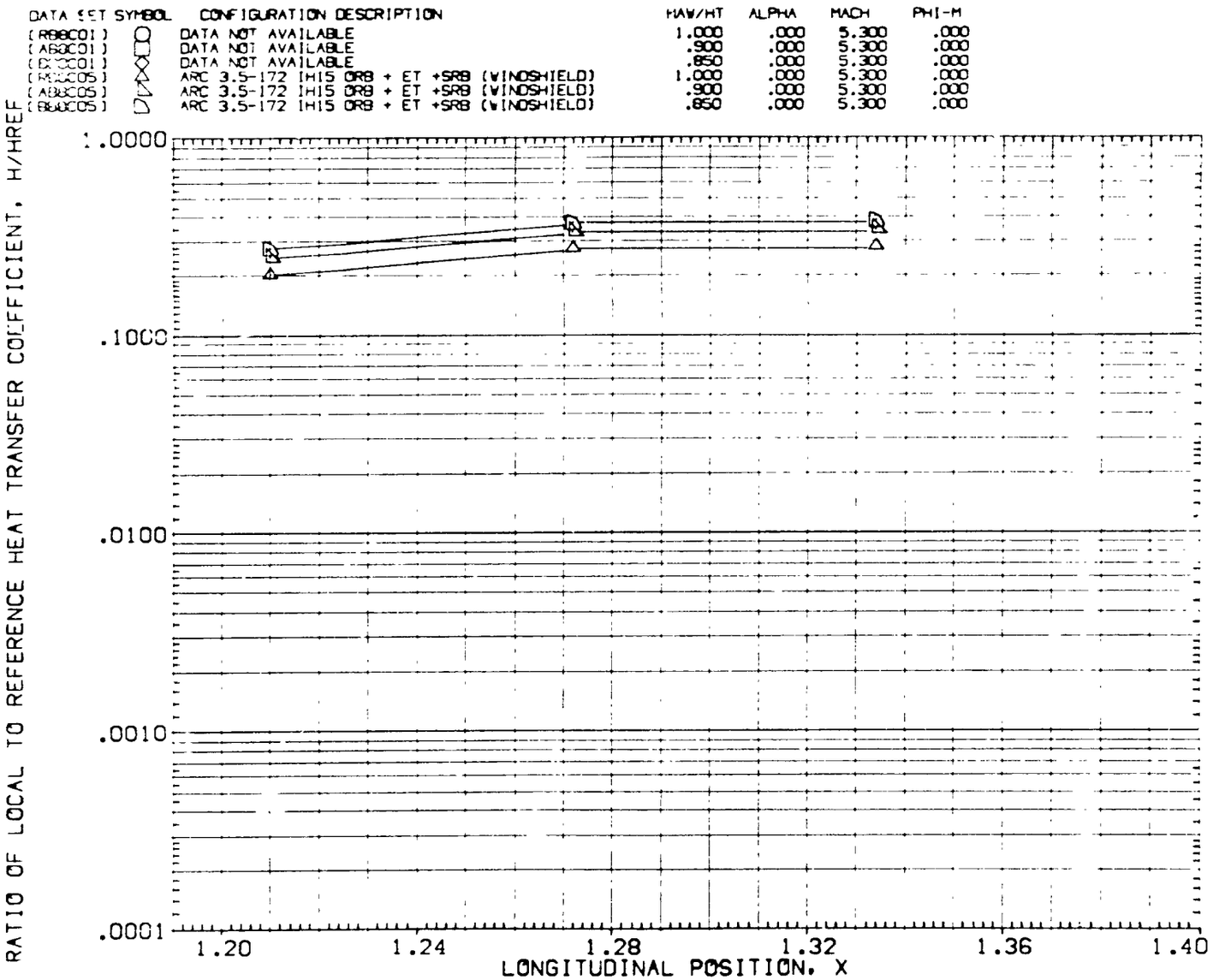


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.437 MACH = 5.300 Y = .047

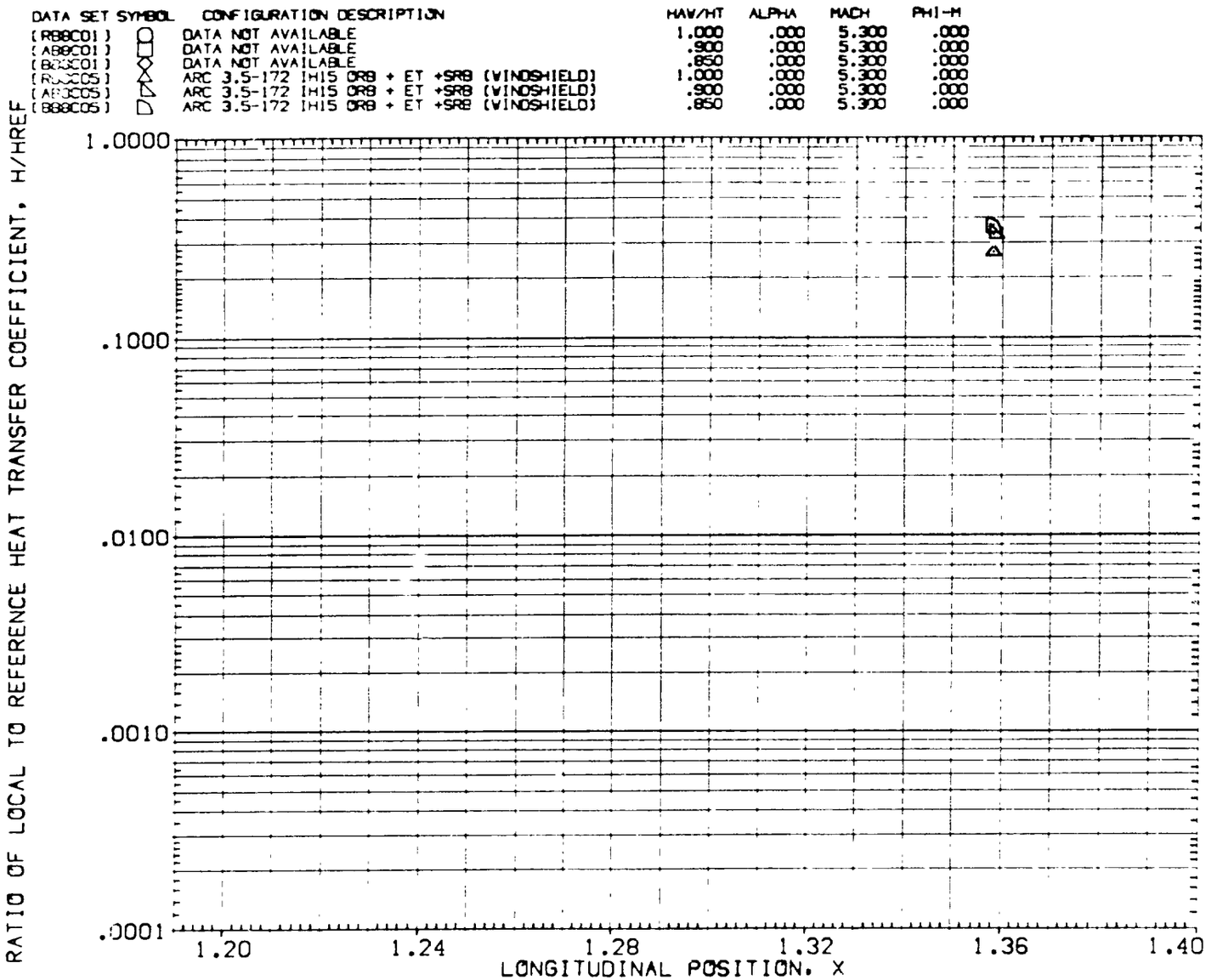


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.437 MACH = 5.300 Y = .178

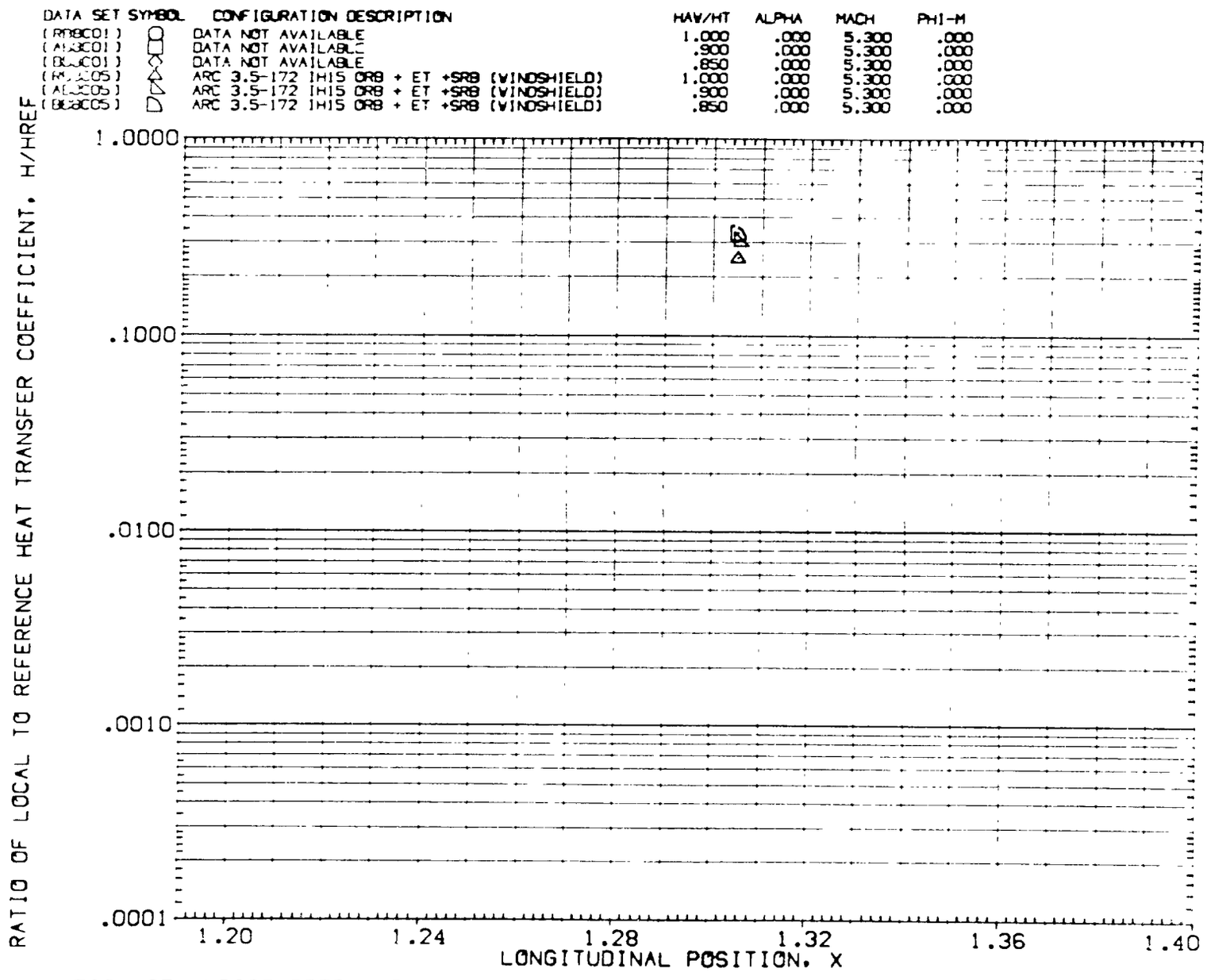


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.437 MACH = 5.300 Y = .196

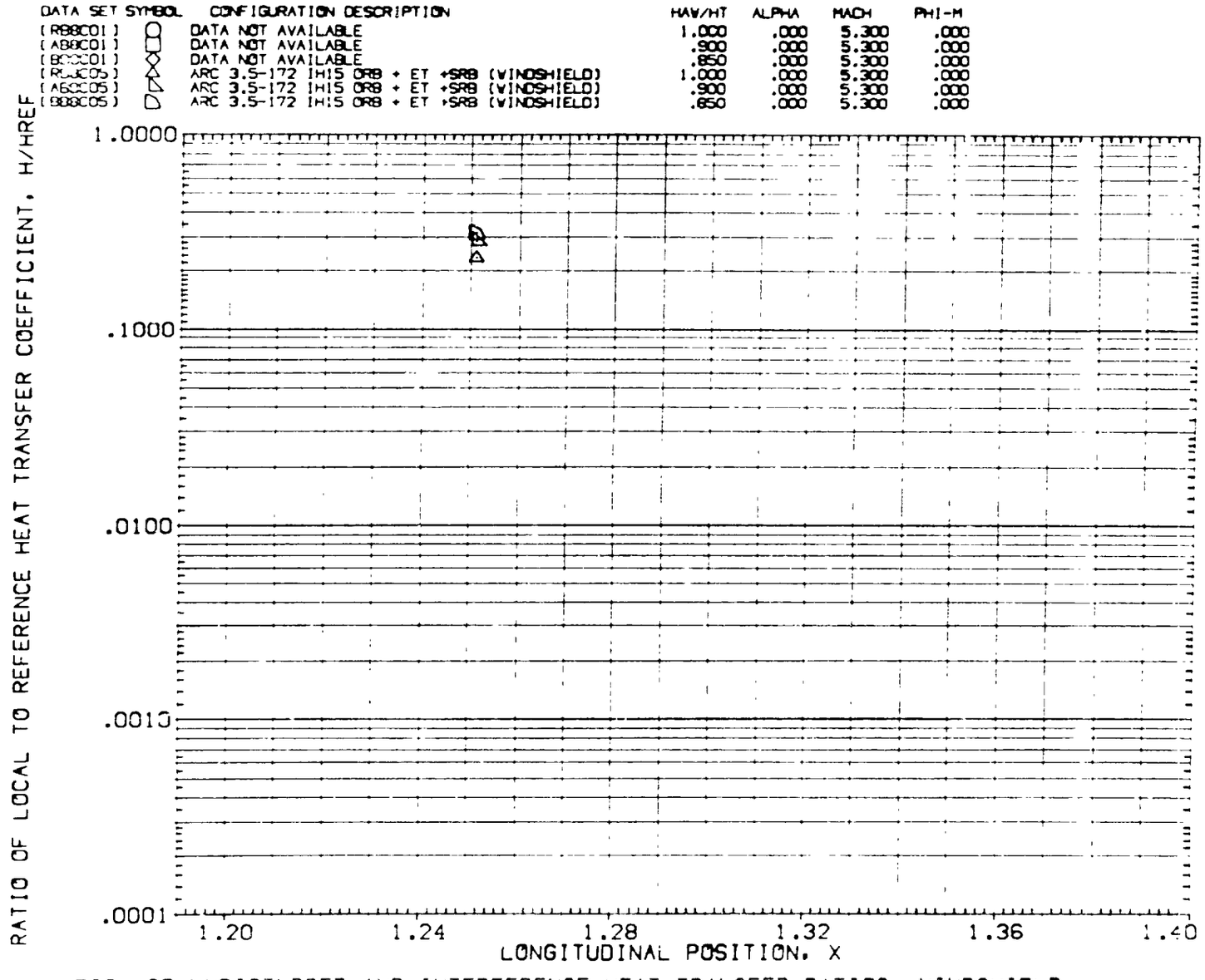


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.437 MACH = 5.300 Y = .213

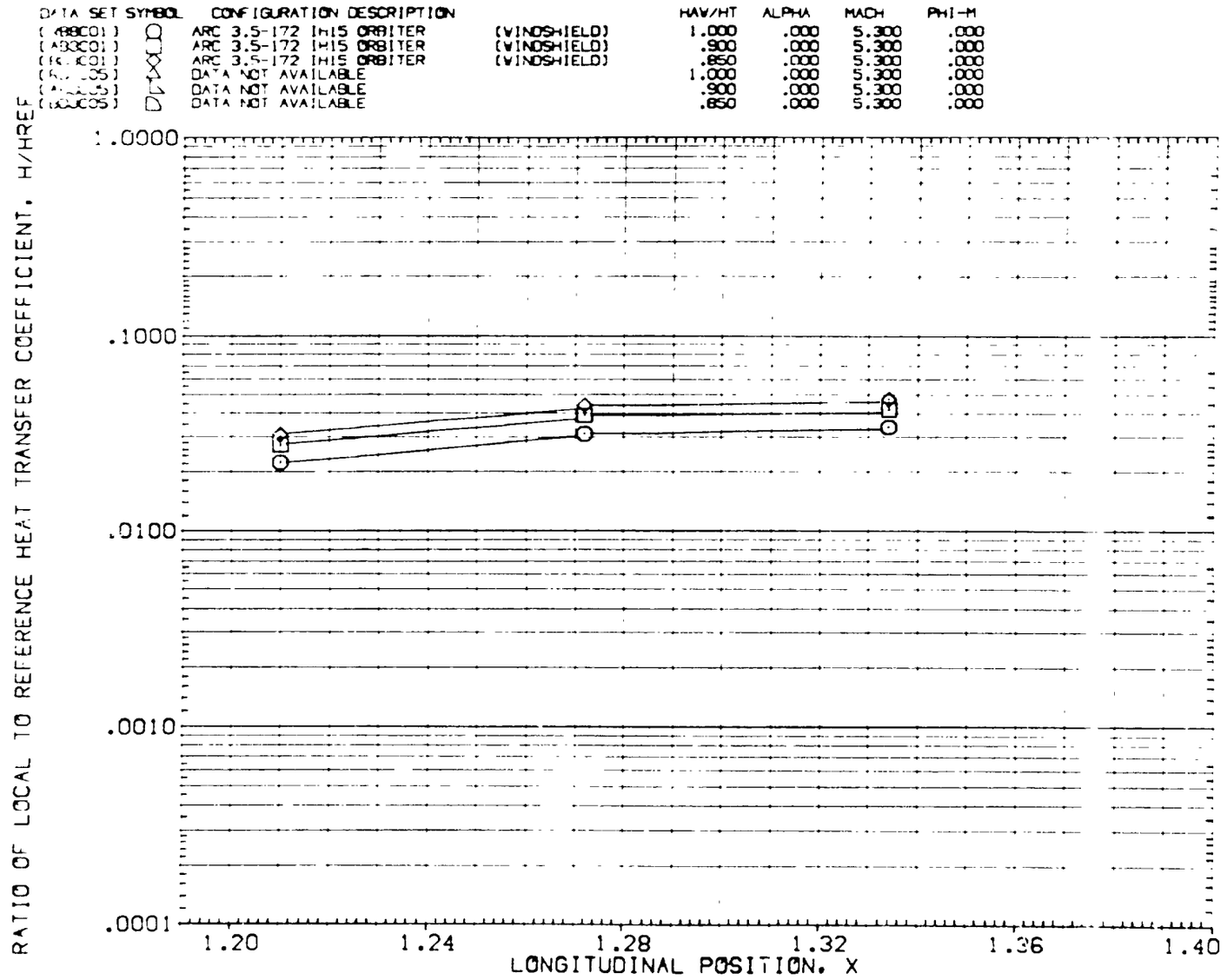


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD

RN/L = 5.214 MACH = 5.300 Y = .047

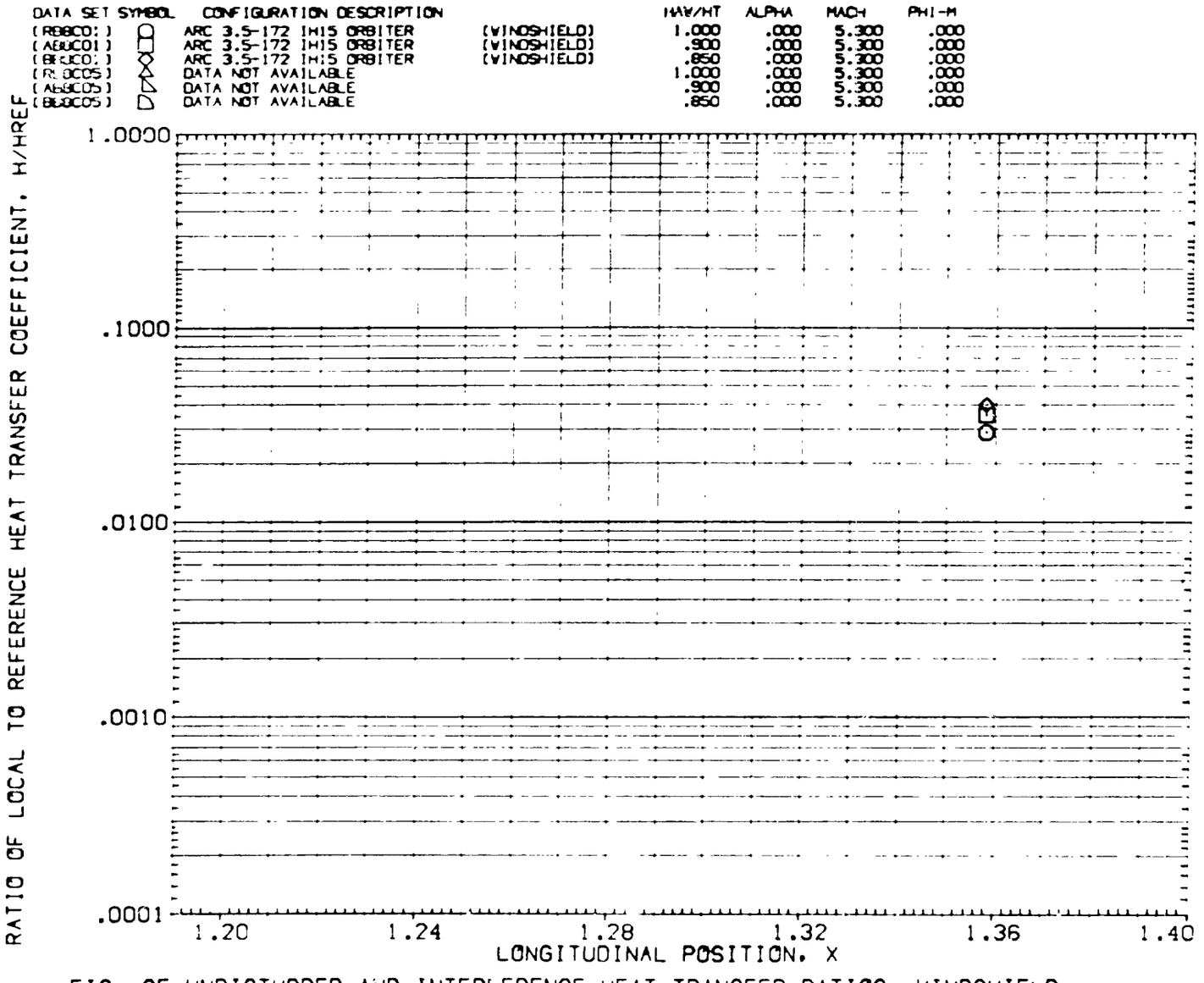


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 5.214 MACH = 5.300 Y = .178

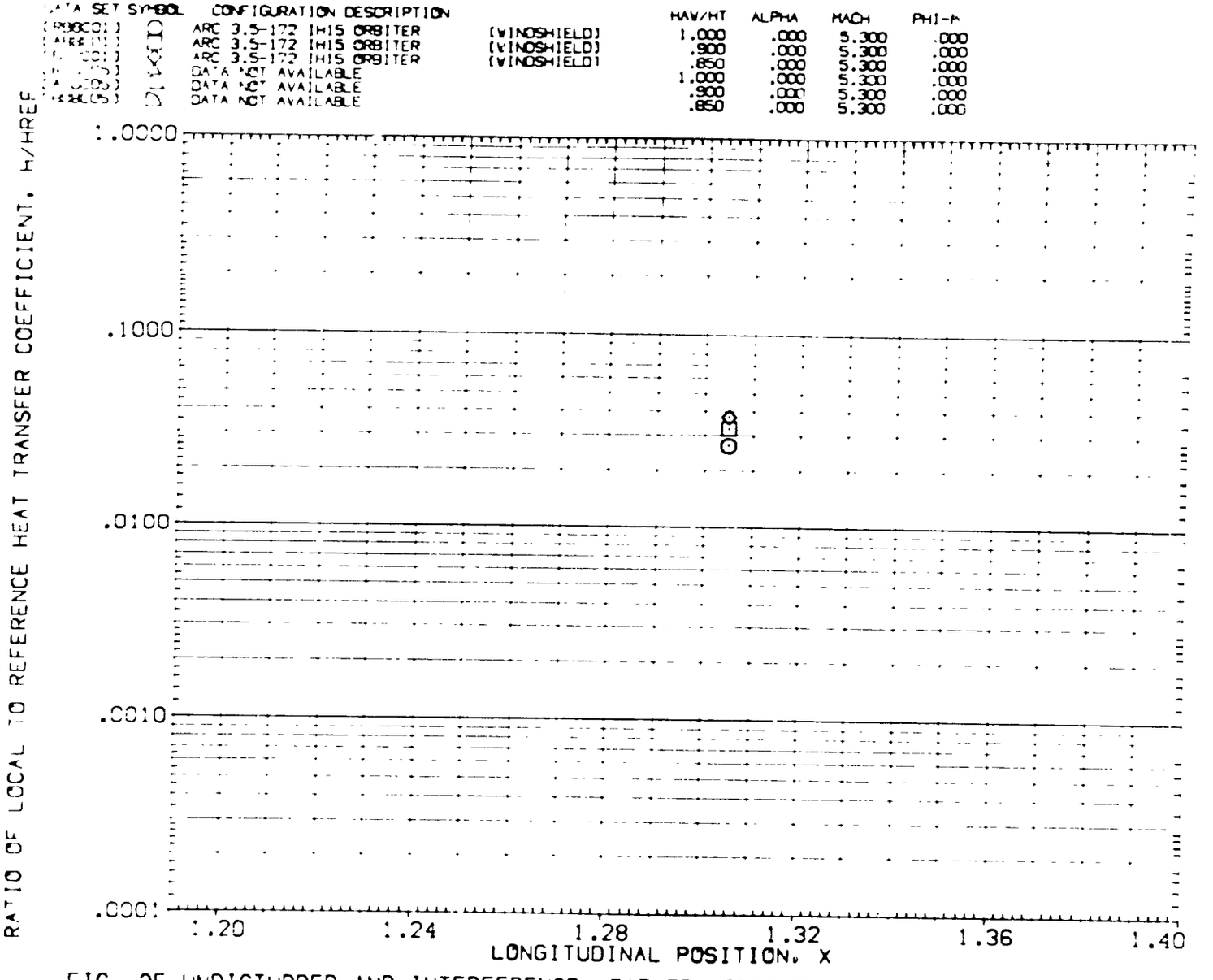


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 5.214 MACH = 5.300 Y = .196

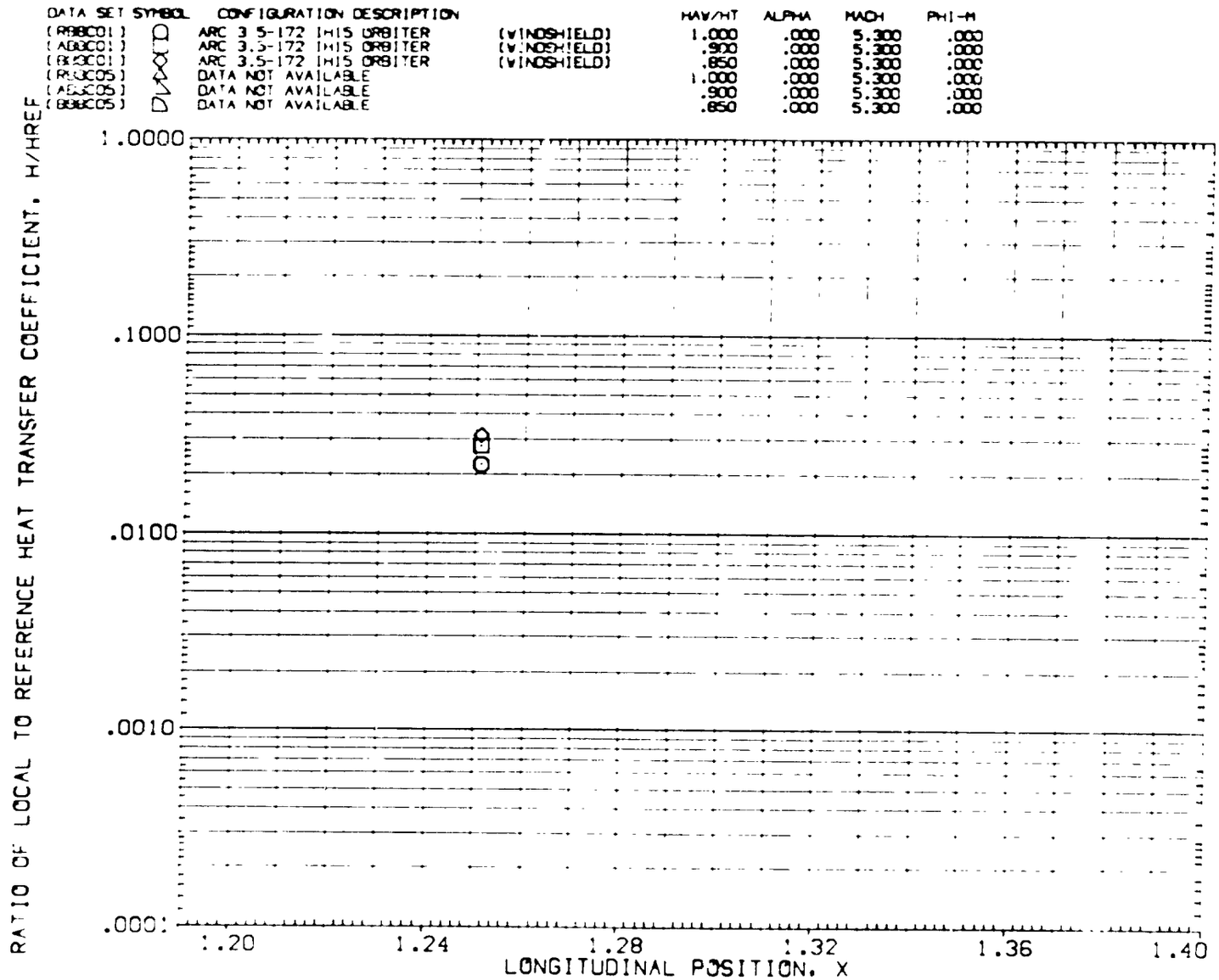


FIG. 25 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 5.214 MACH = 5.300 Y = .213

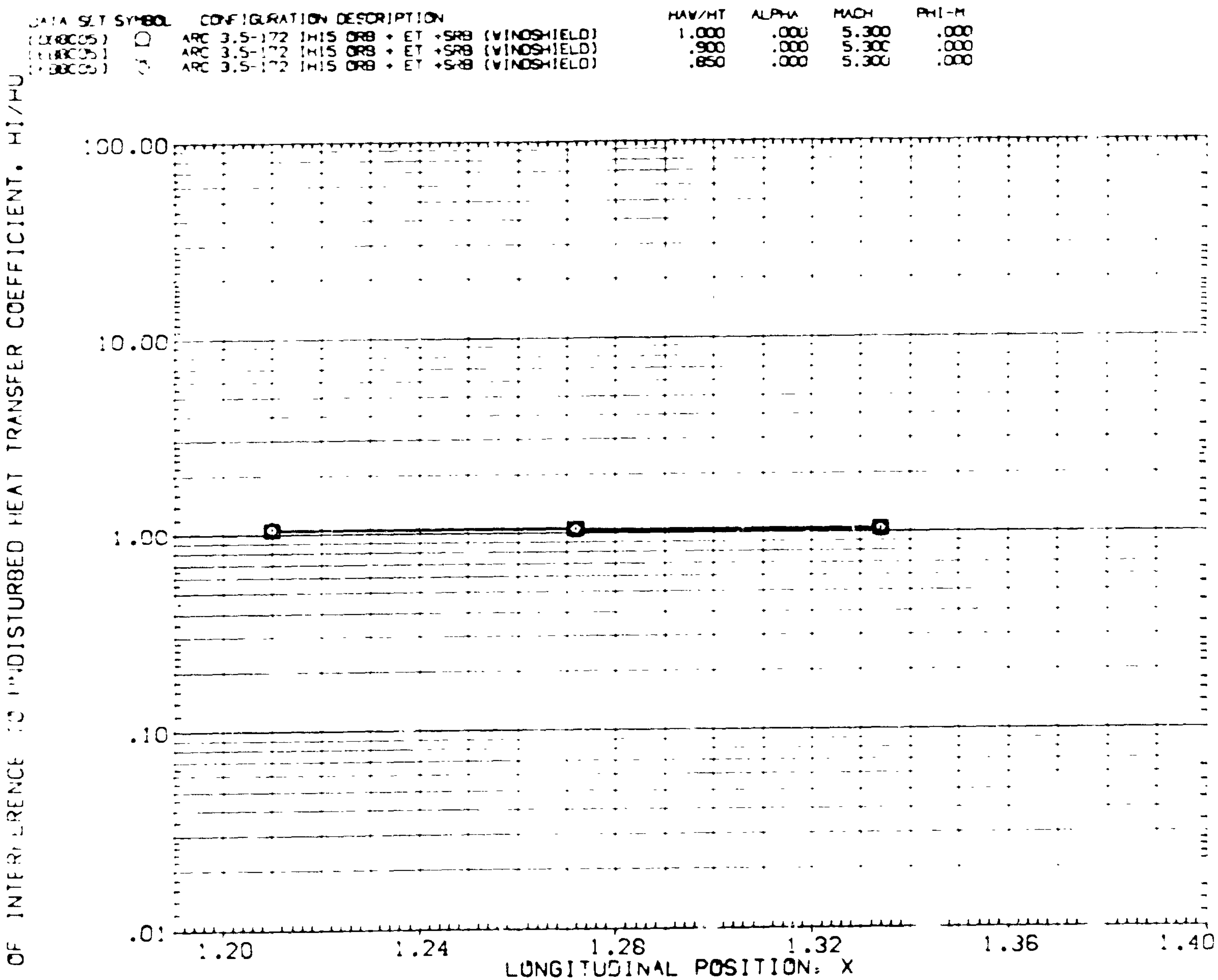


FIG. 23 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., WINDSHIELD.

RN/L = 1.845 MACH = 5.300 Y = .047

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	MAV/HT	ALPHA	MACH	PHI-M
(D88C05)	□	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	1.000	.000	5.300	.000
(E88C05)	□	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.900	.000	5.300	.000
(F88C05)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.850	.000	5.300	.000

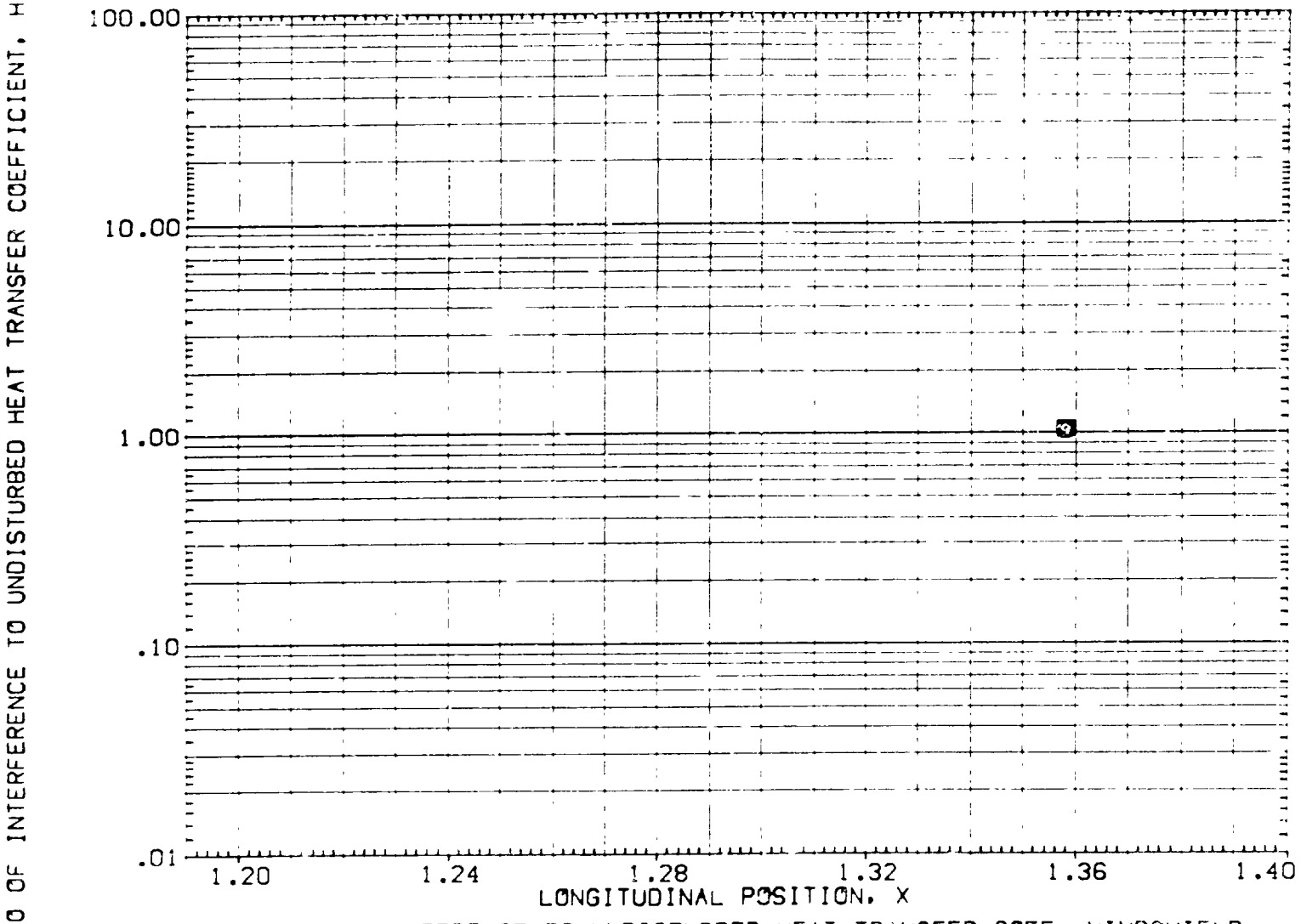


FIG. 26 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF.,WINDSHIELD.

RN/L = 1.845 MAC = 5.300 Y = .178

DATA SET SYMBOL	CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
[illegible]	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	1.000	.000	5.300	.000
[illegible]	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.900	.000	5.300	.000
[illegible]	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.850	.000	5.300	.000

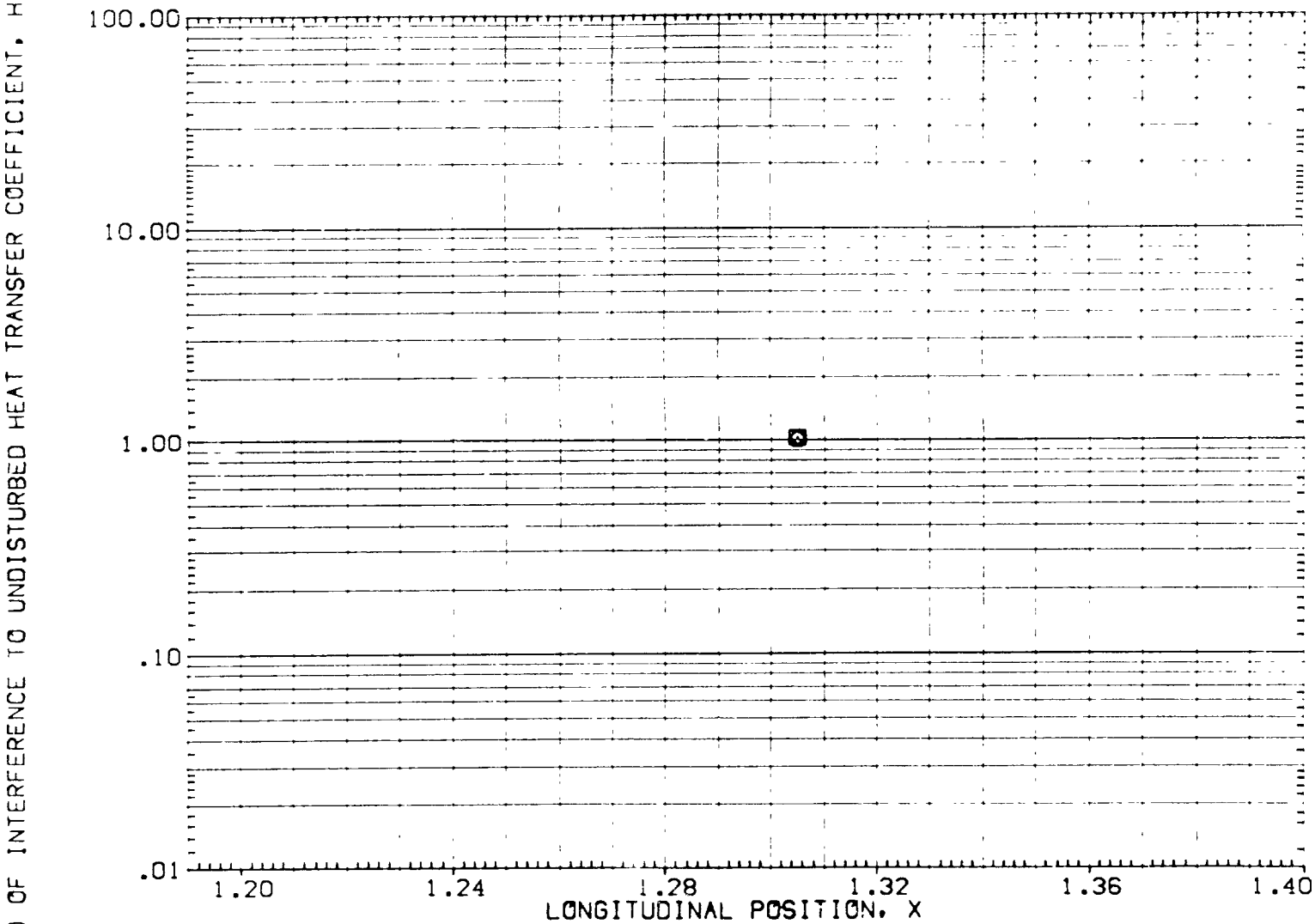


FIG. 26 RATIC OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF.,WINDSHIELD.

RN/L = 1.845 MACH = 5.300 Y = .196

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(DR9C05)	□	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	1.000	.000	5.300	.000
(EB8C05)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.900	.000	5.300	.000
(FB8C05)	◇	ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.850	.000	5.300	.000

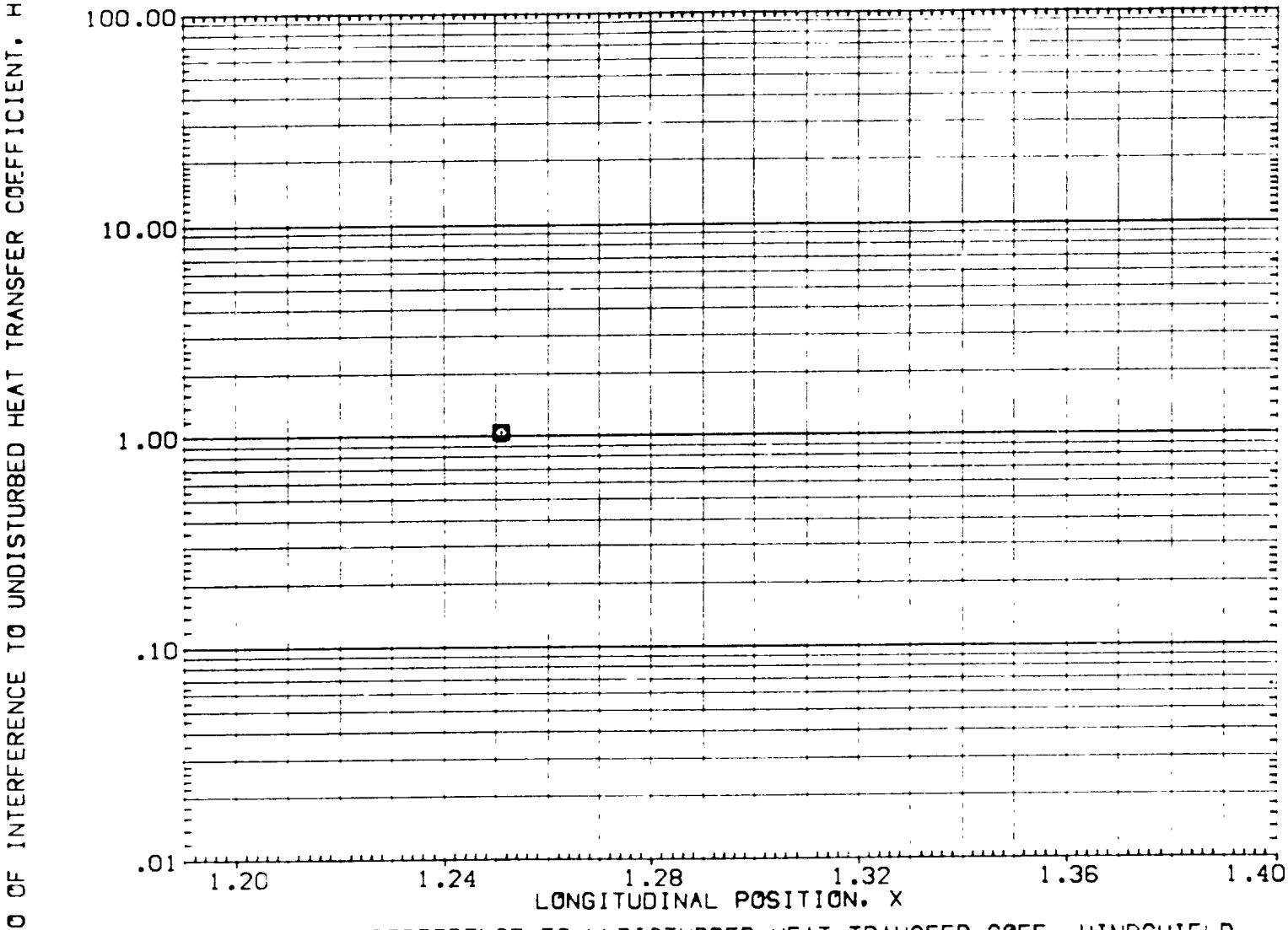


FIG. 26 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., WINDSHIELD.

RN/L = 1.845 MACH = 5.300 Y = .213

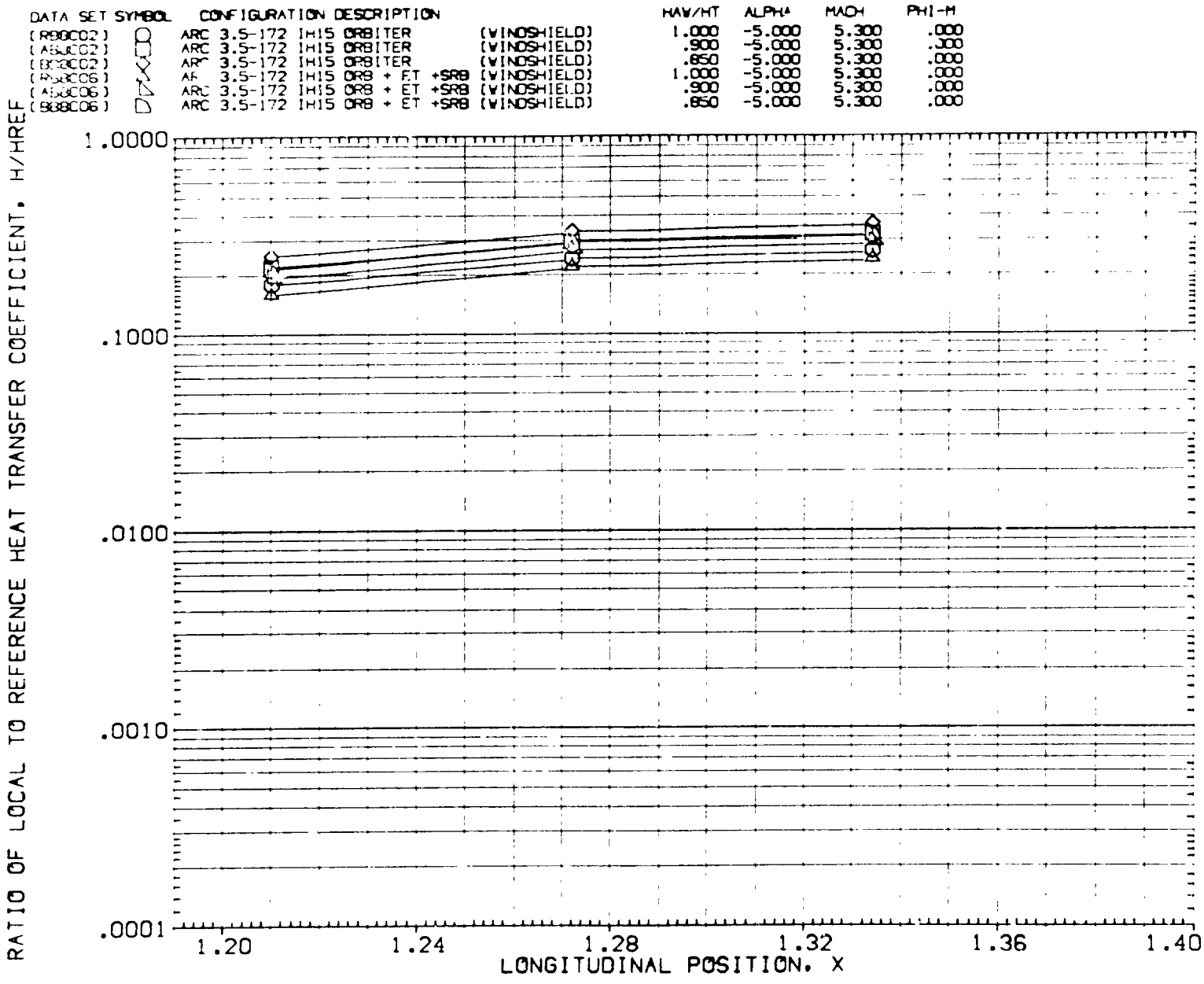


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 2.143 MACH = 5.300 Y = .047

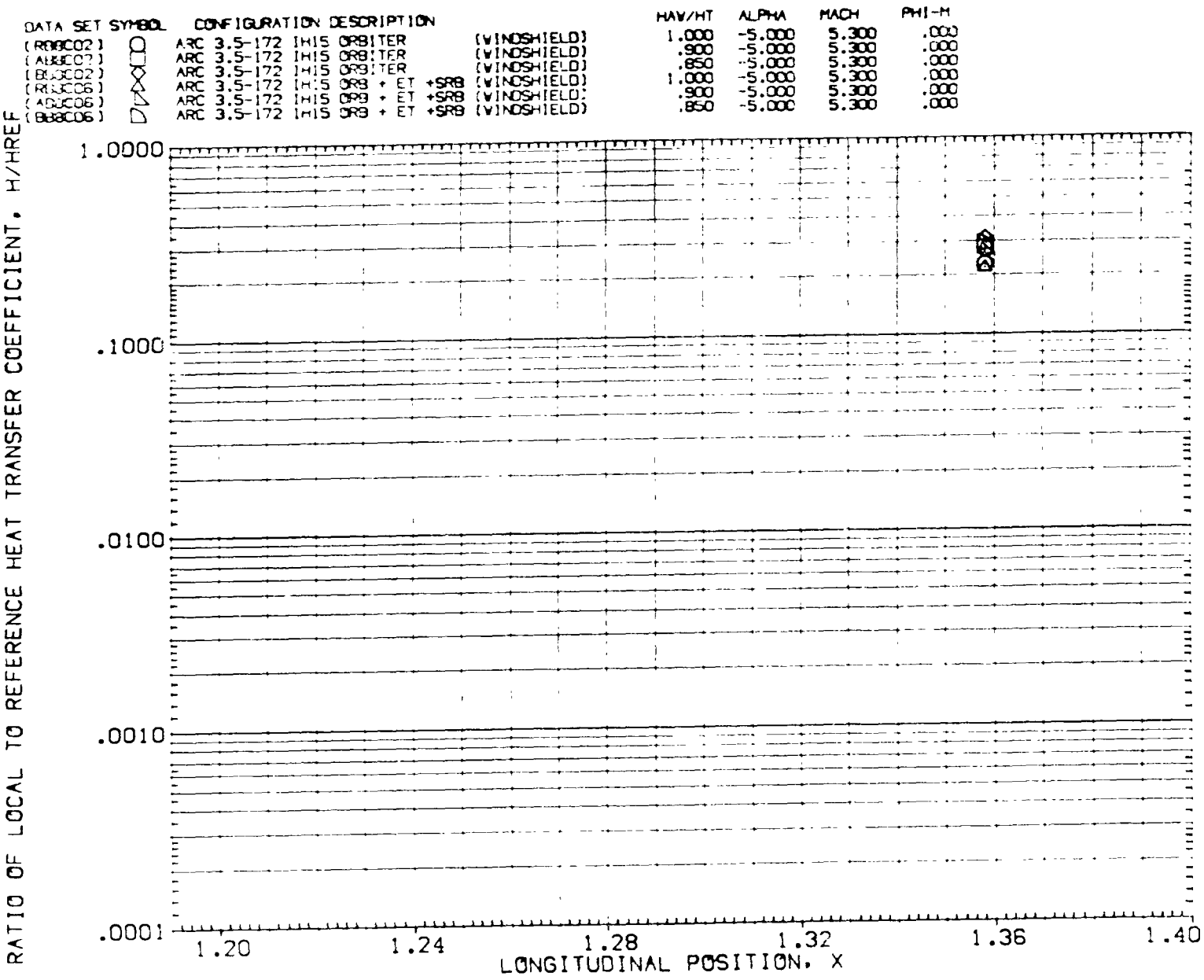


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 2.143 MACH = 5.300 Y = .178

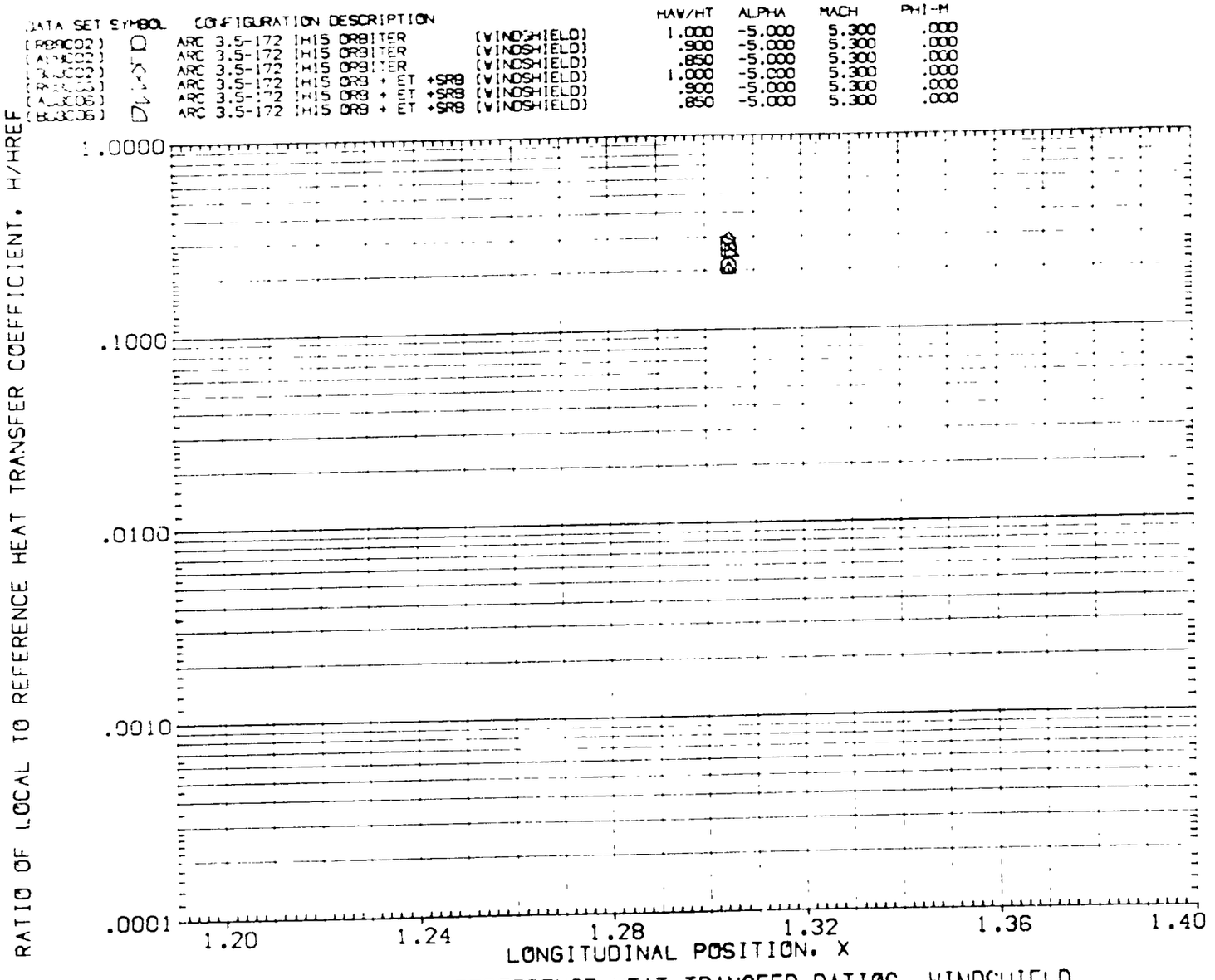


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 2.143 MACH = 5.300 Y = .196

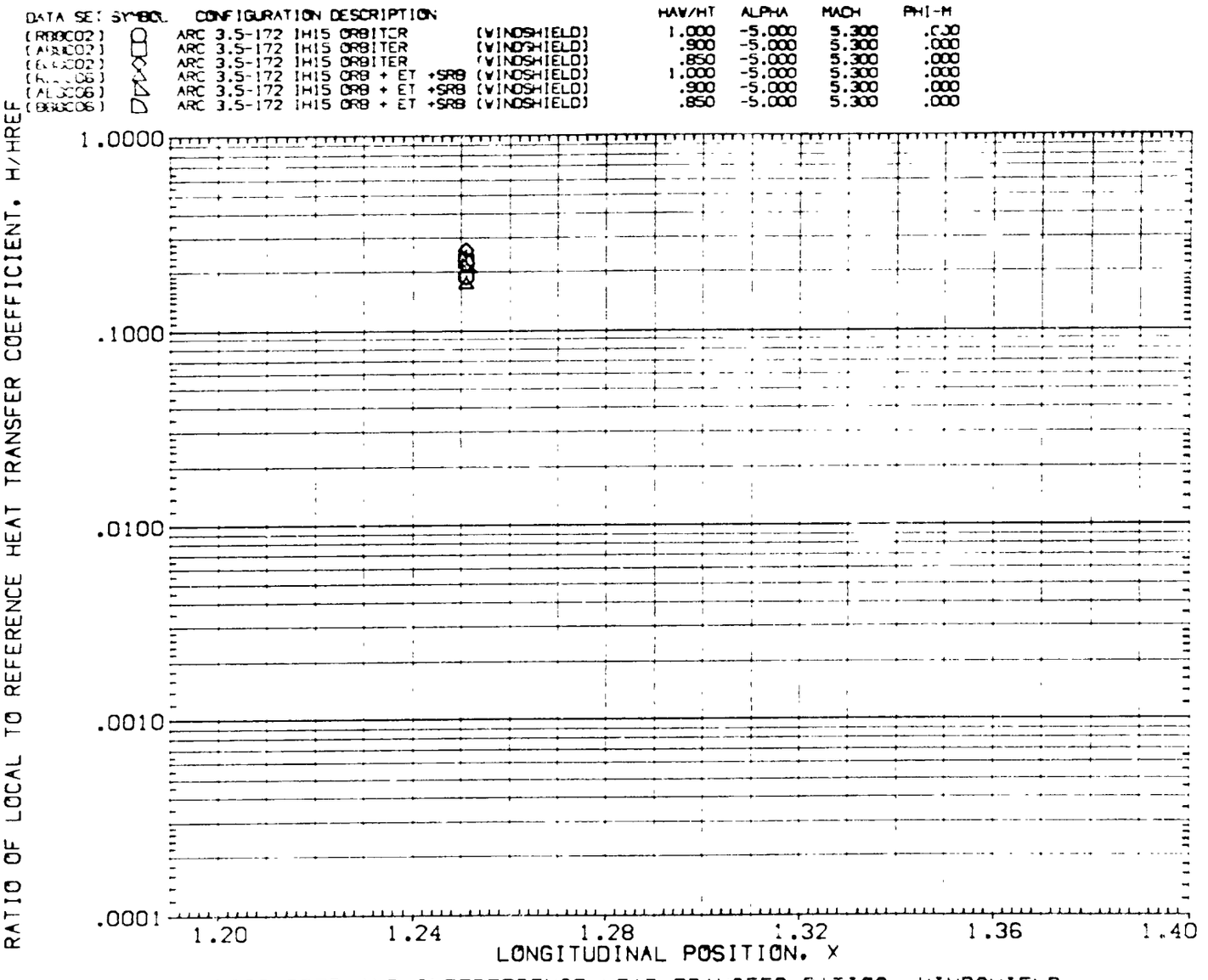


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 2.143 MACH = 5.300 Y = .213

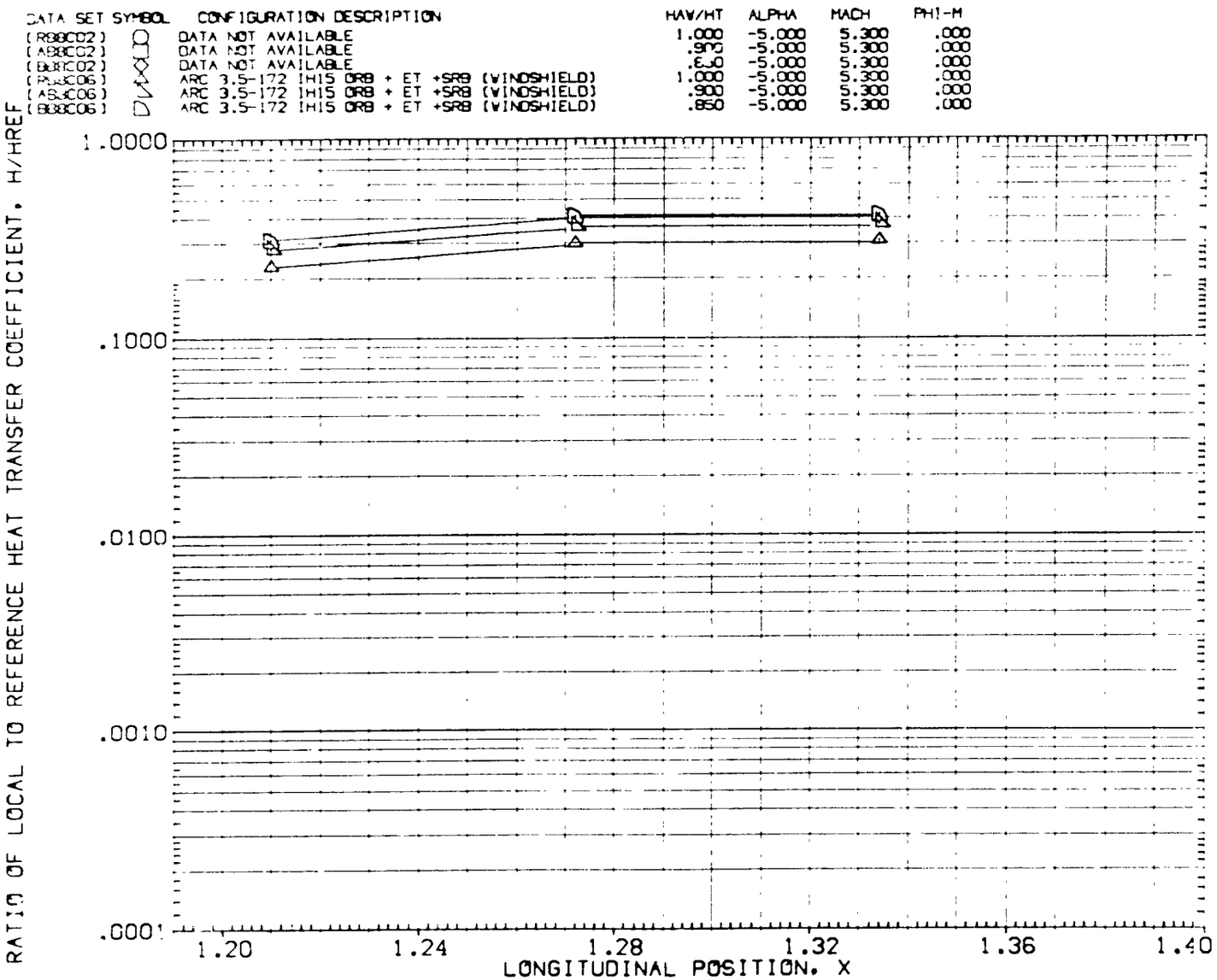


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.570 MACH = 5.300 Y = .047

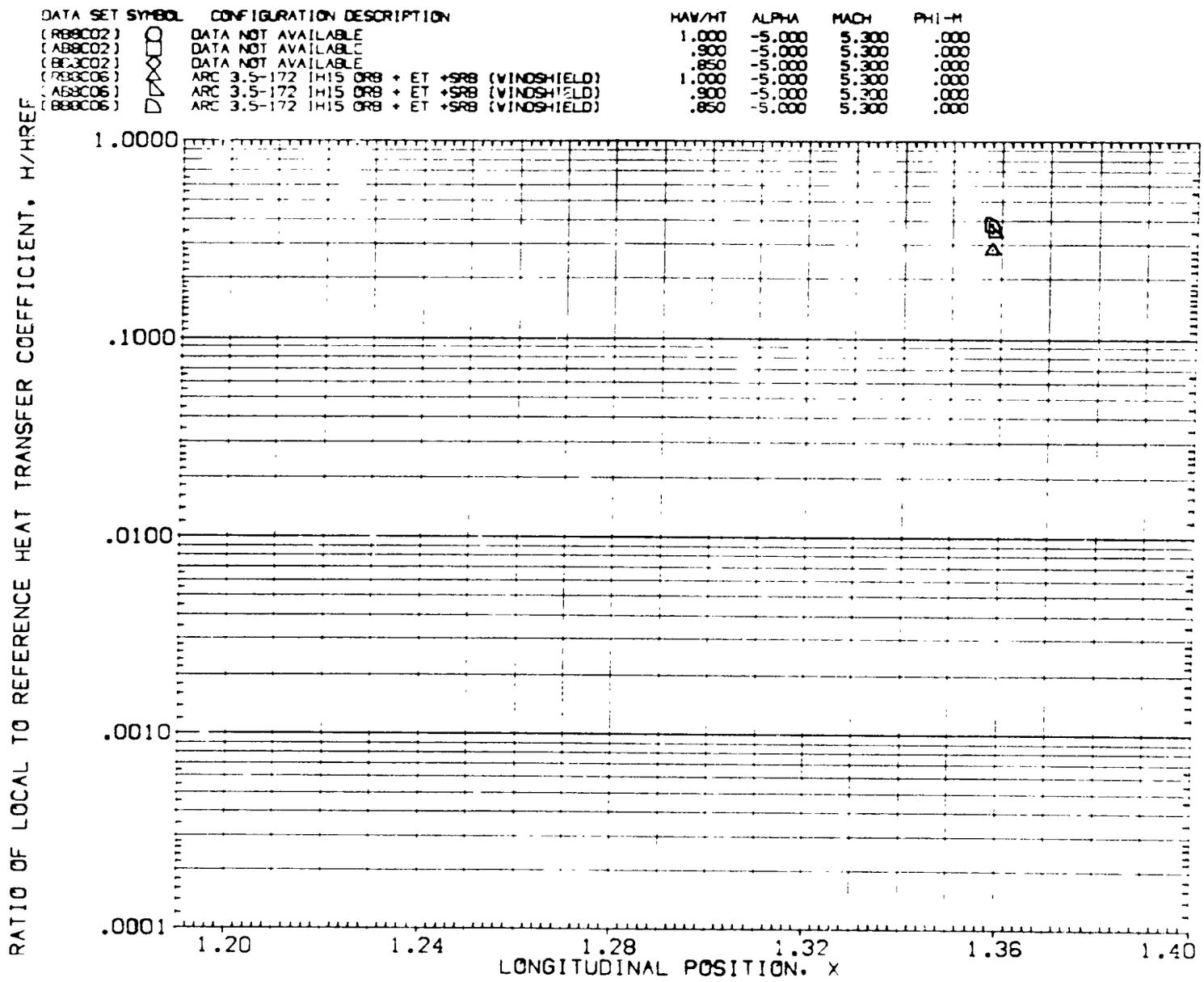


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.570 MACH = 5.300 Y = .178

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION	HAV/HT	ALPHA	MACH	PHI-M
(R89C03)		DATA NOT AVAILABLE	1.000	-5.000	5.300	.000
(A[illegible]C03)		DATA NOT AVAILABLE	.900	-5.000	5.300	.000
(B[illegible]C03)		DATA NOT AVAILABLE	.850	-5.000	5.300	.000
(R89C06)		ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	1.000	-5.000	5.300	.000
(A[illegible]C06)		ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.900	-5.000	5.300	.000
(B89C06)		ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD)	.850	-5.000	5.300	.000

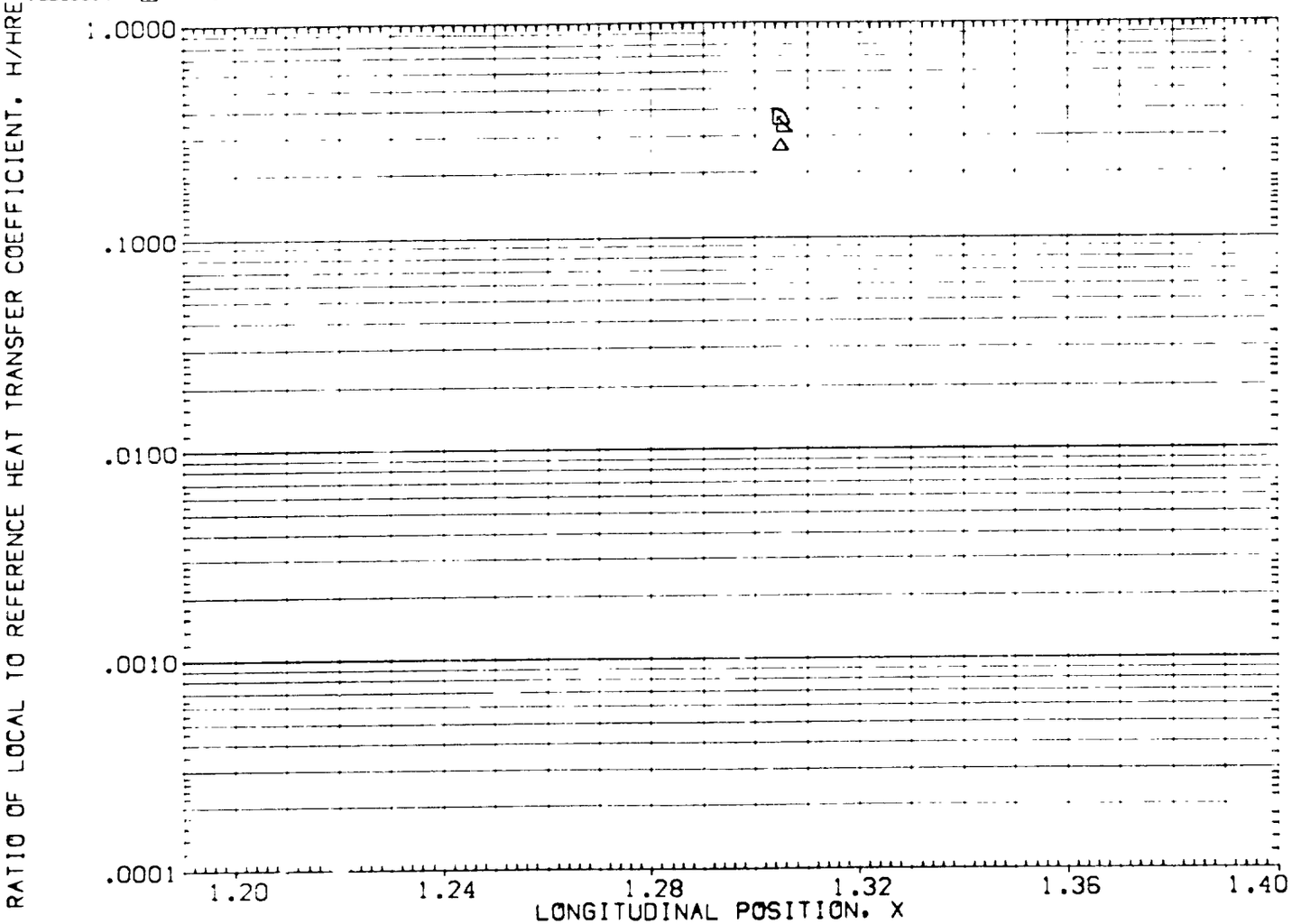


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.570 MACH = 5.300 Y = .196

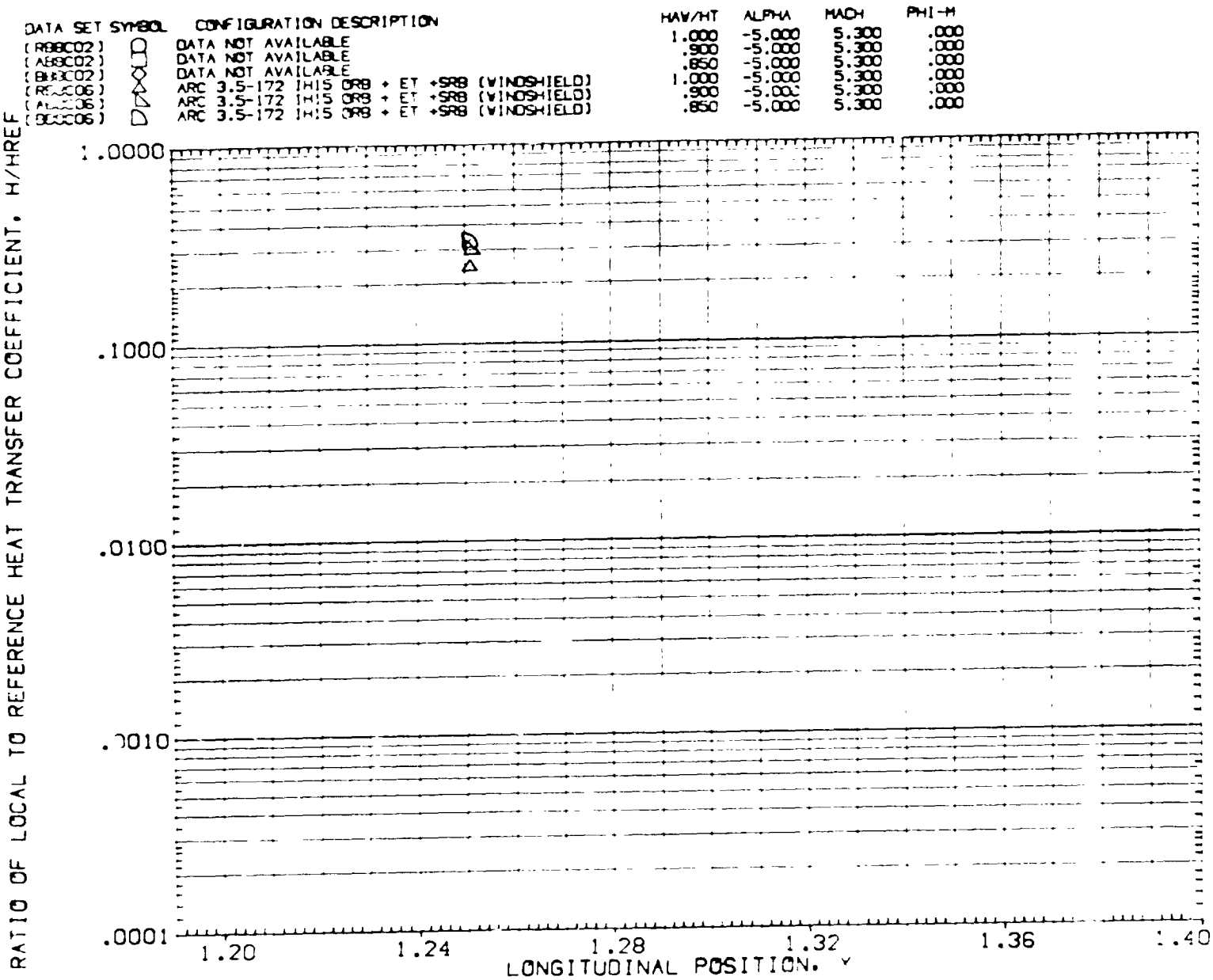


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 4.570 MACH = 5.300 Y = .213

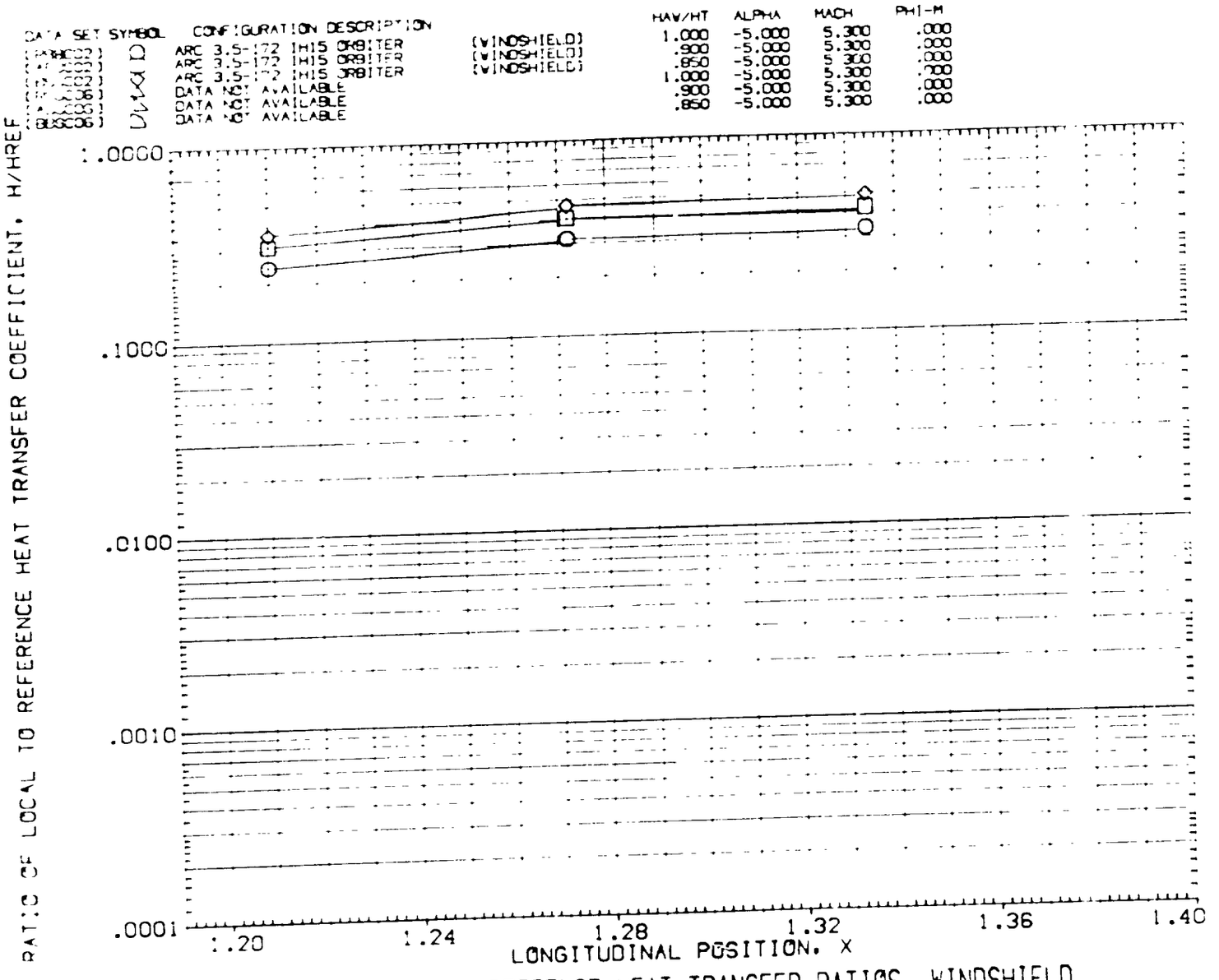


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 6.131 MACH = 5.300 Y = .047

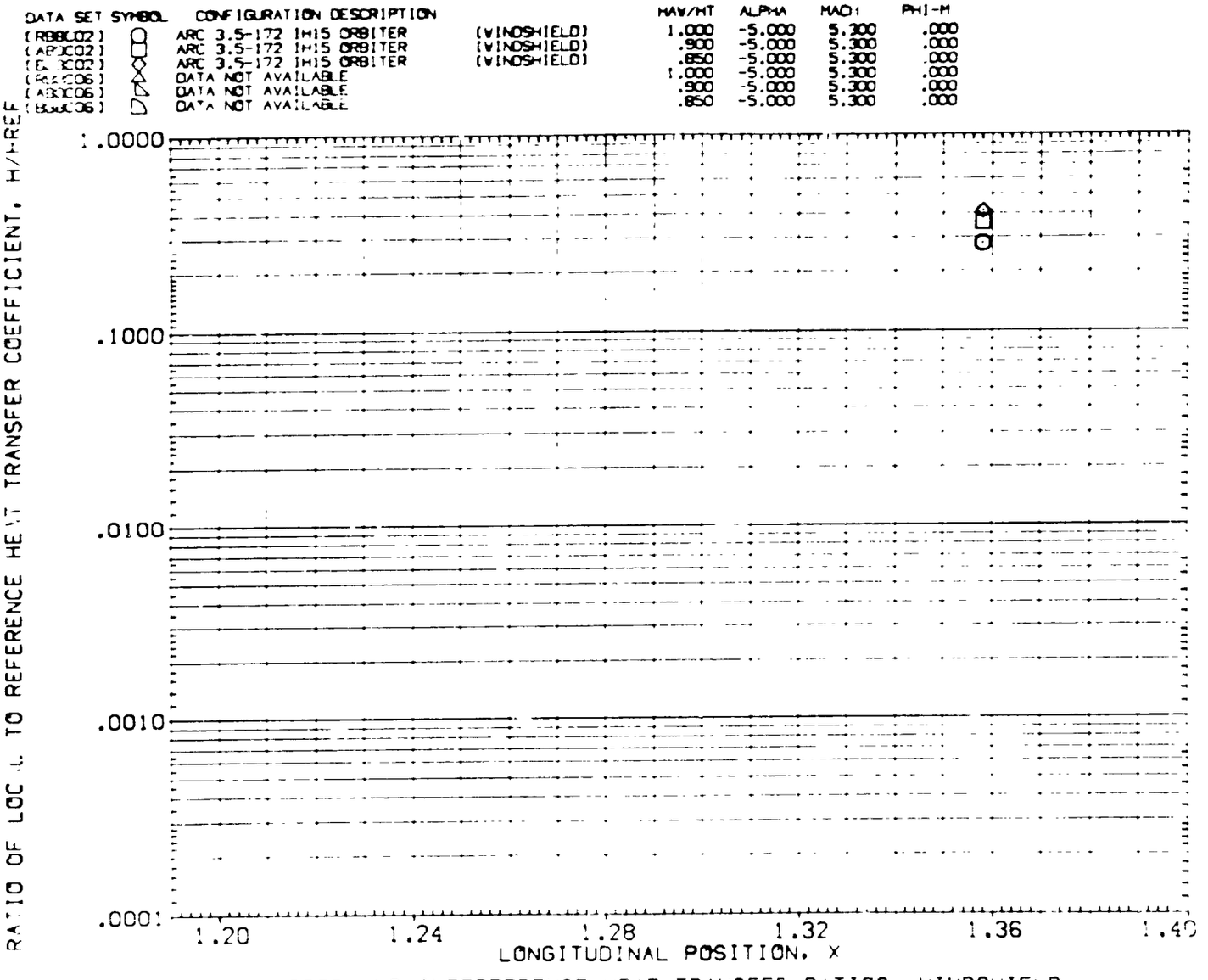


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 6.131 MACH = 5.300 Y = .178

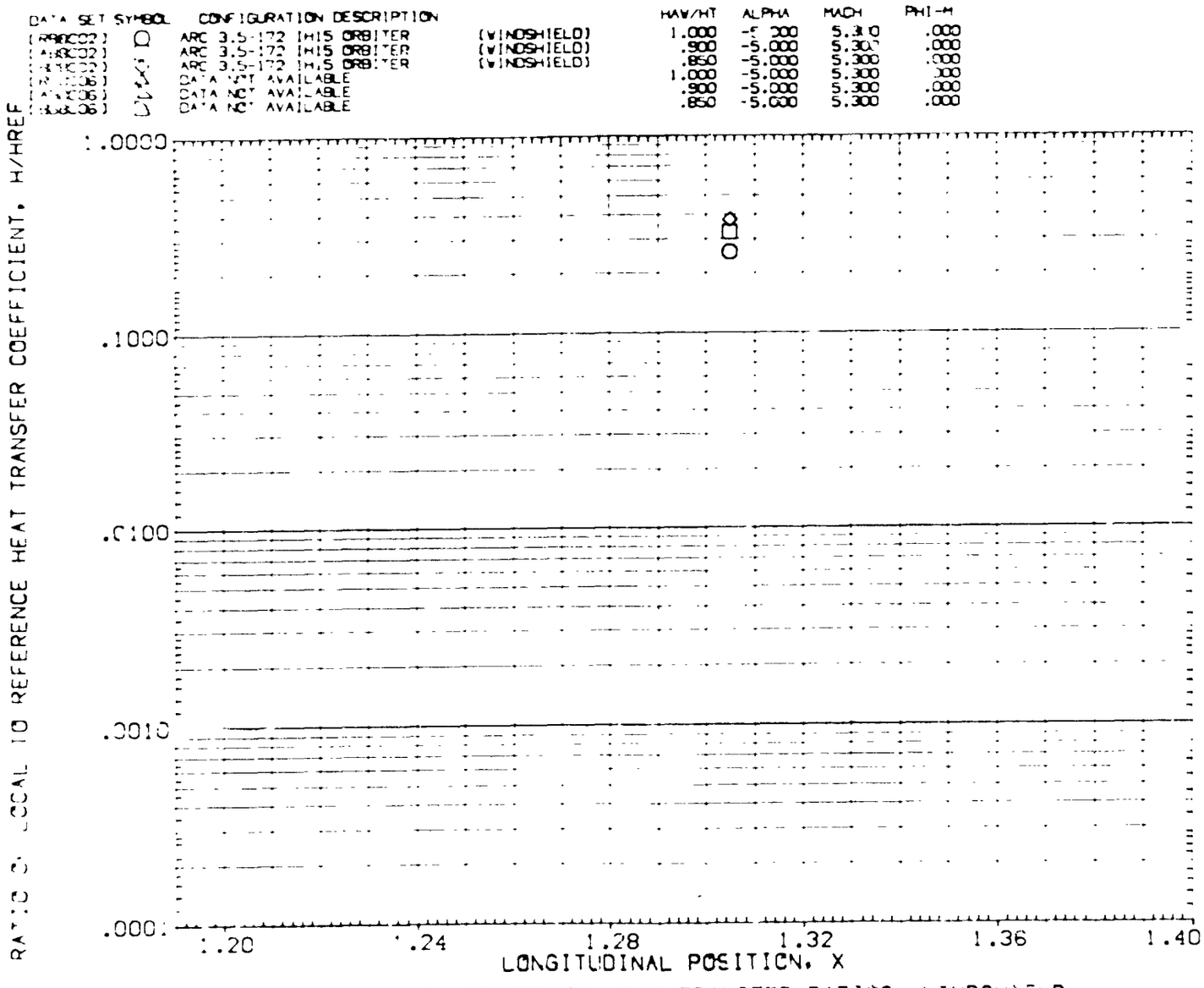


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 6.131 MACH = 5.300 Y = .196

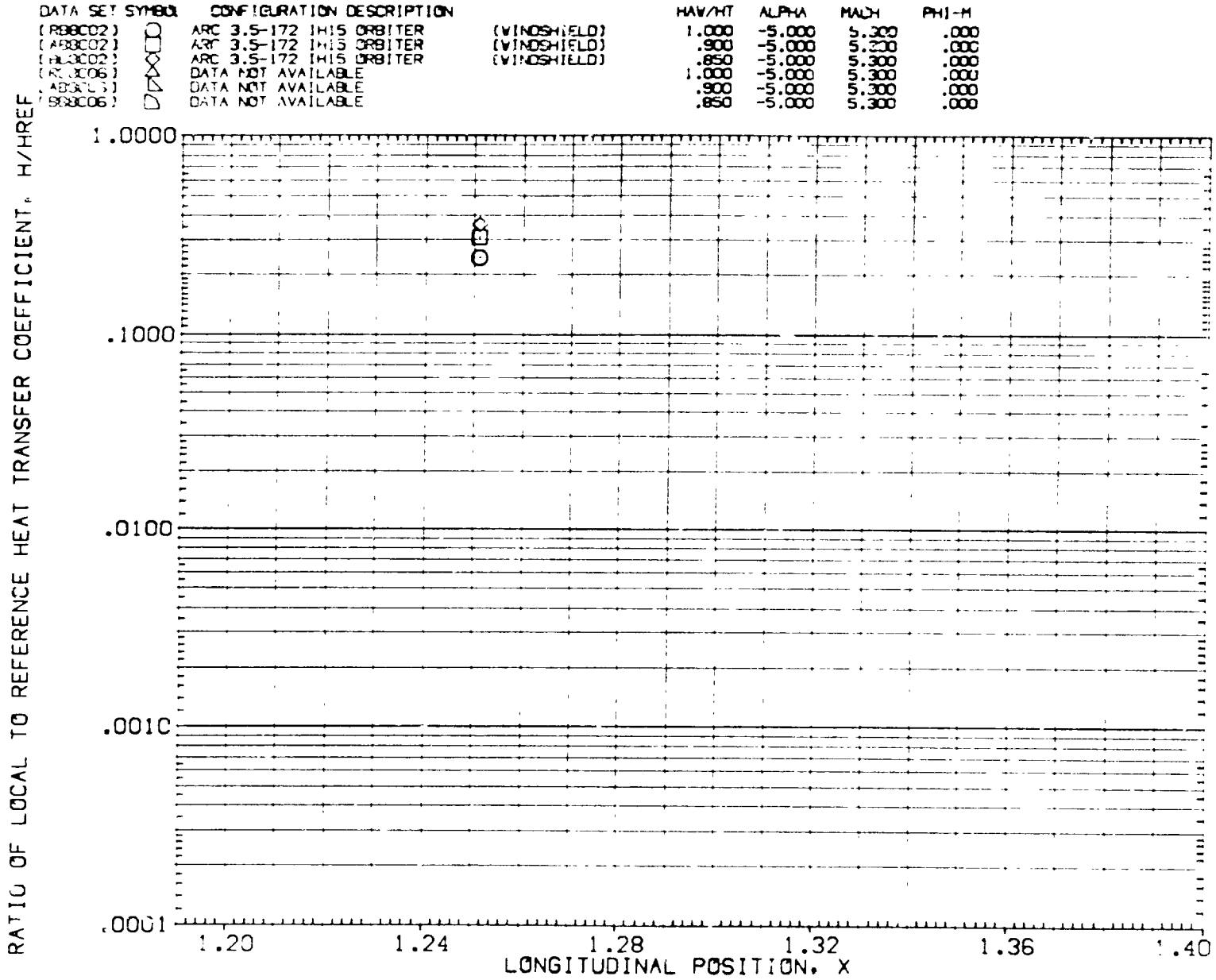


FIG. 27 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, WINDSHIELD.

RN/L = 6.131 MACH = 5.300 Y = .213

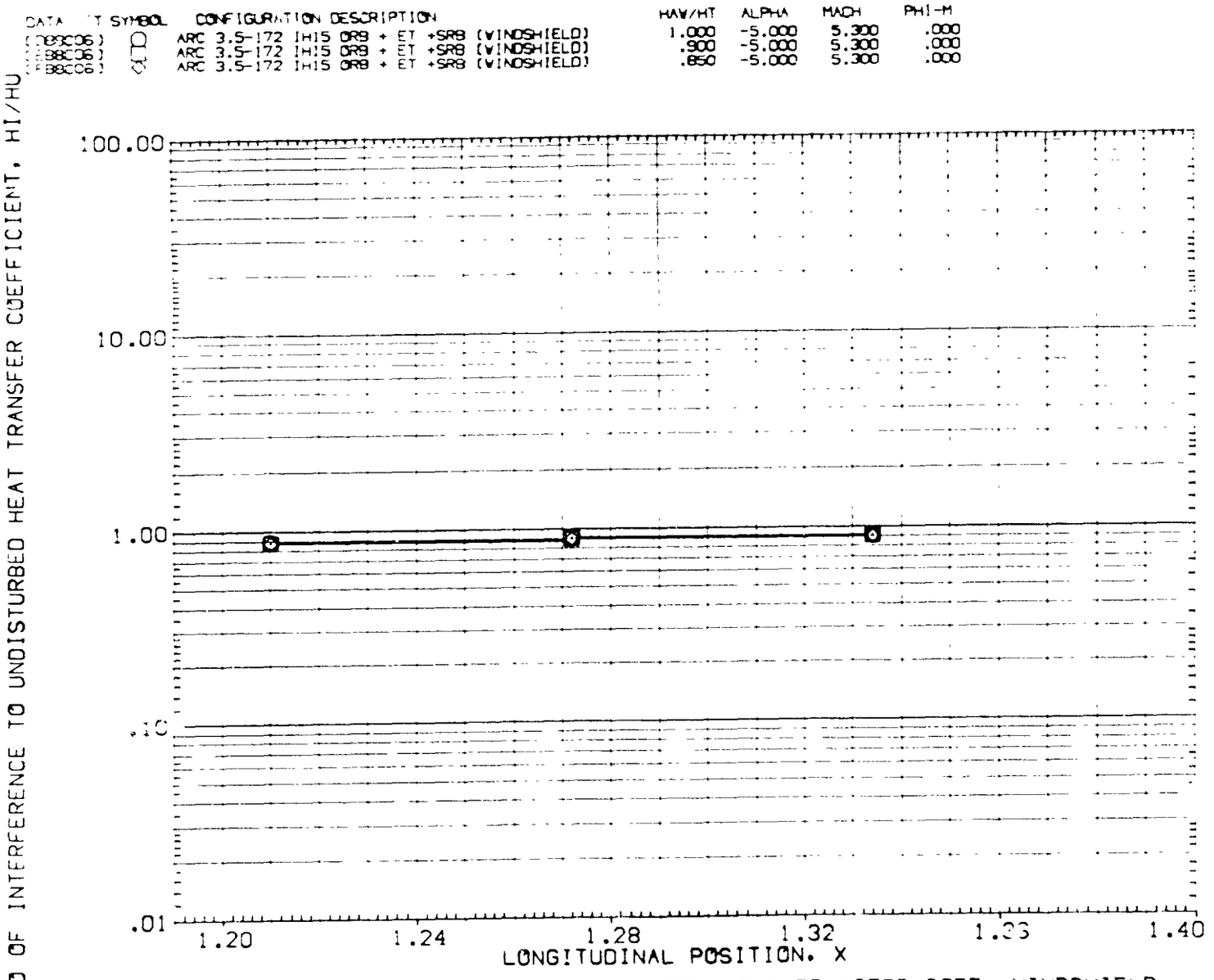


FIG. 28 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., WINDSHIELD.

RN/L = 1.952 MACH = 5.300 Y = .047

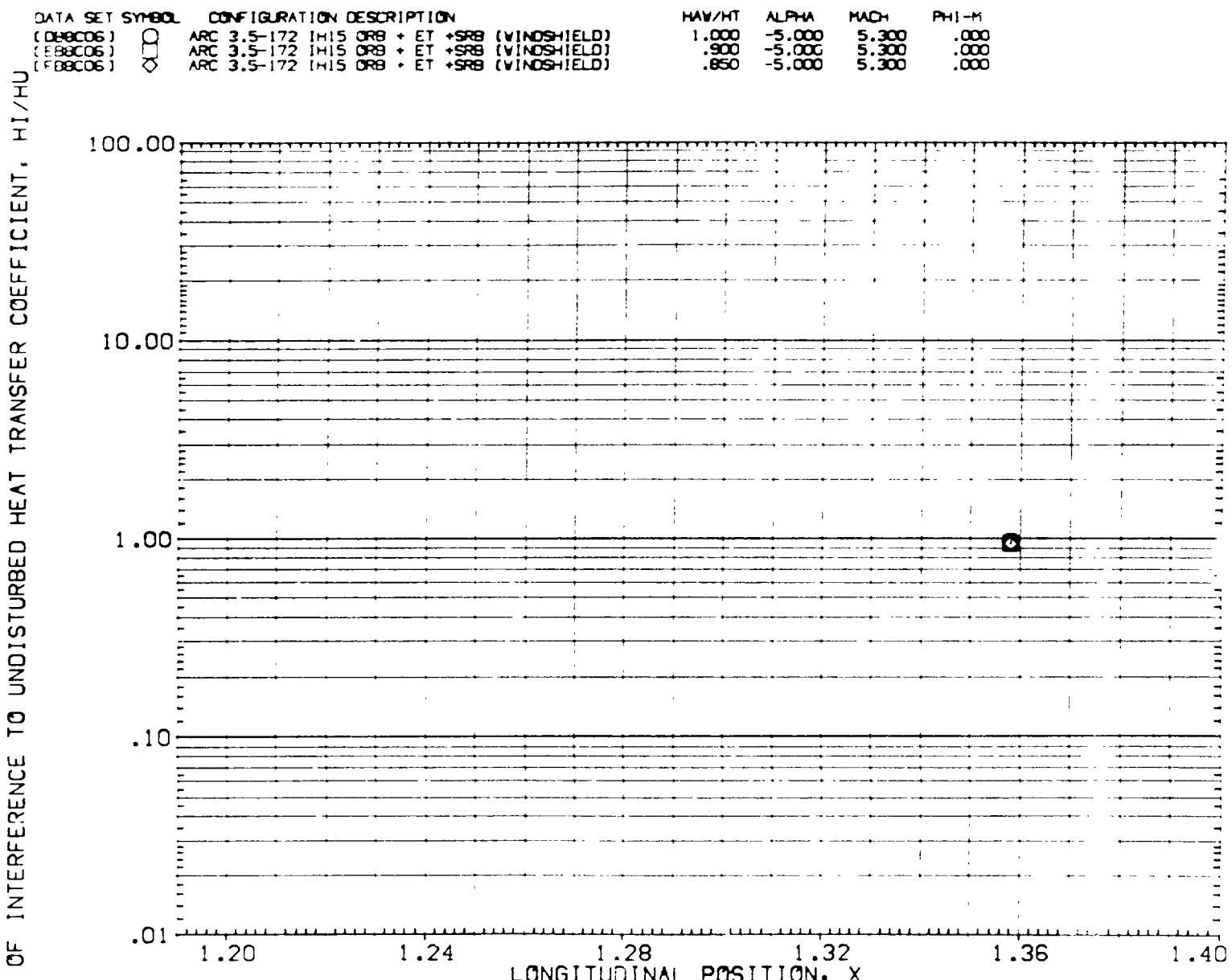


FIG. 28 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., WINDSHIELD.

RN/L = 1.952 MACH = 5.300 Y = .178

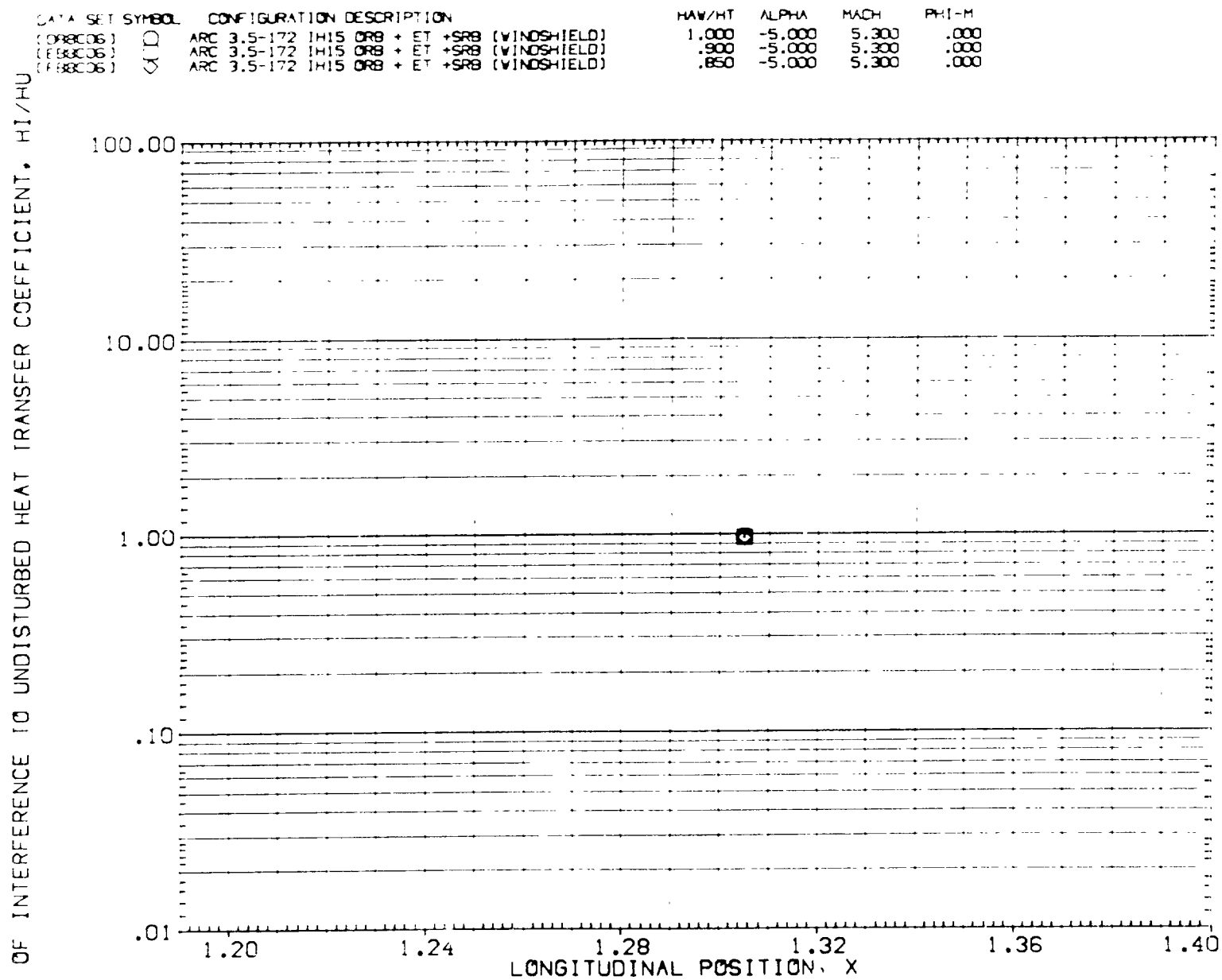


FIG. 28 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., WINDSHIELD.

RN/L = 1.552 MACH = 5.300 Y = .196

DATA SET SYMBOL		CONFIGURATION DESCRIPTION	HAW/HT	ALPHA	MACH	PHI-M
(DB8C06)	□	ARC 3.5-172 THIS ORB + ET +SRB (WINDSHIELD)	1.000	-5.000	5.300	.000
(EB8C06)	◇	ARC 3.5-172 THIS ORB + ET +SRB (WINDSHIELD)	.900	-5.000	5.300	.000
(FB8C06)		ARC 3.5-172 THIS ORB + ET +SRB (WINDSHIELD)	.850	-5.000	5.300	.000

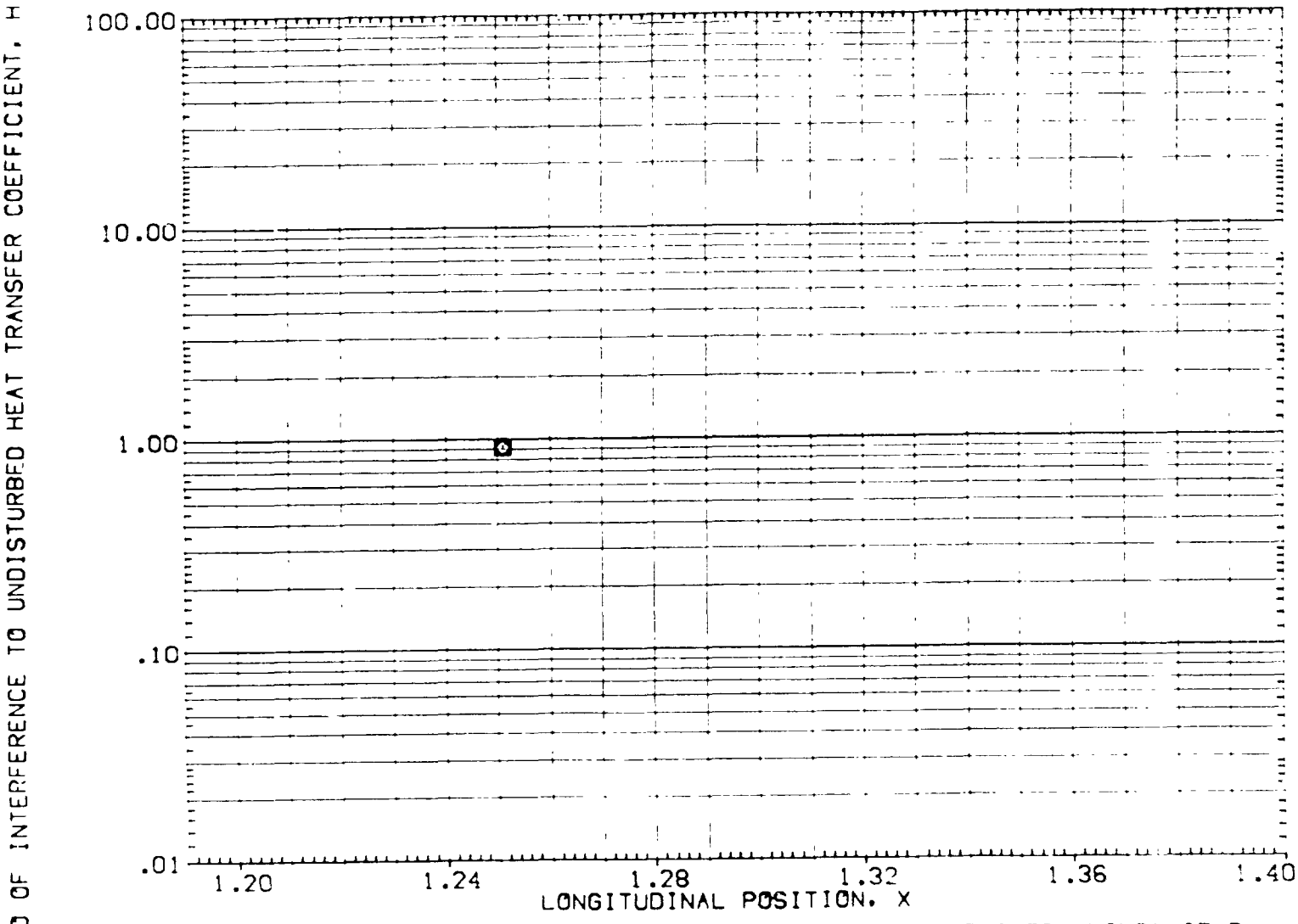


FIG. 28 RATIO OF INTERFERENCE TO UNDISTURBED HEAT TRANSFER COEF., WINDSHIELD.

RN/L = 1.952 MACH = 5.300 Y = .213

DATA SET SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(R38TO3)	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(A38TO3)	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(B38TO3)	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

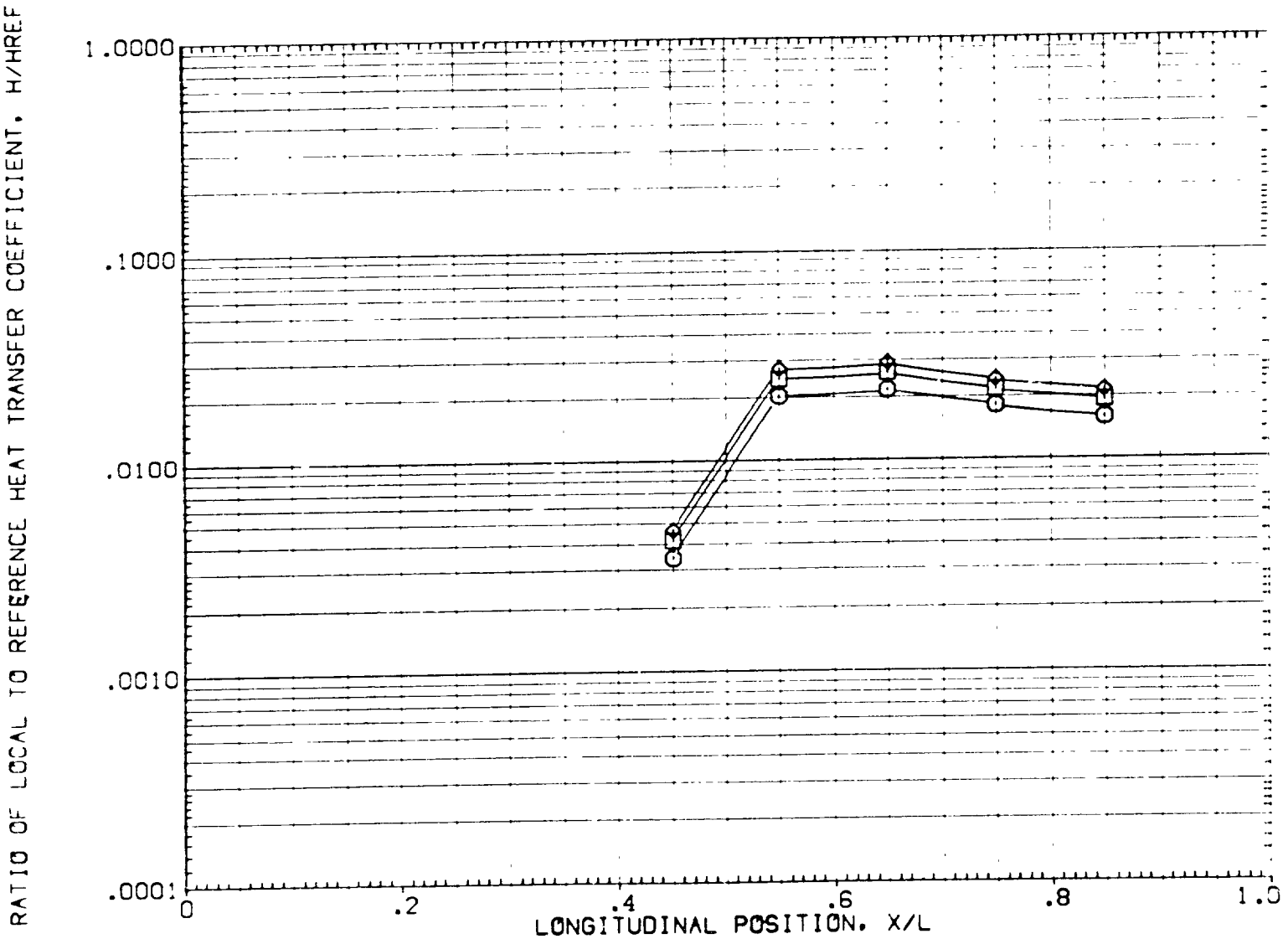


FIG. 29 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.332 MACH = 5.300 PHI = 90.000

DATA SET SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(RBBTO3)	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(ABBTO3)	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(BBBTO3)	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

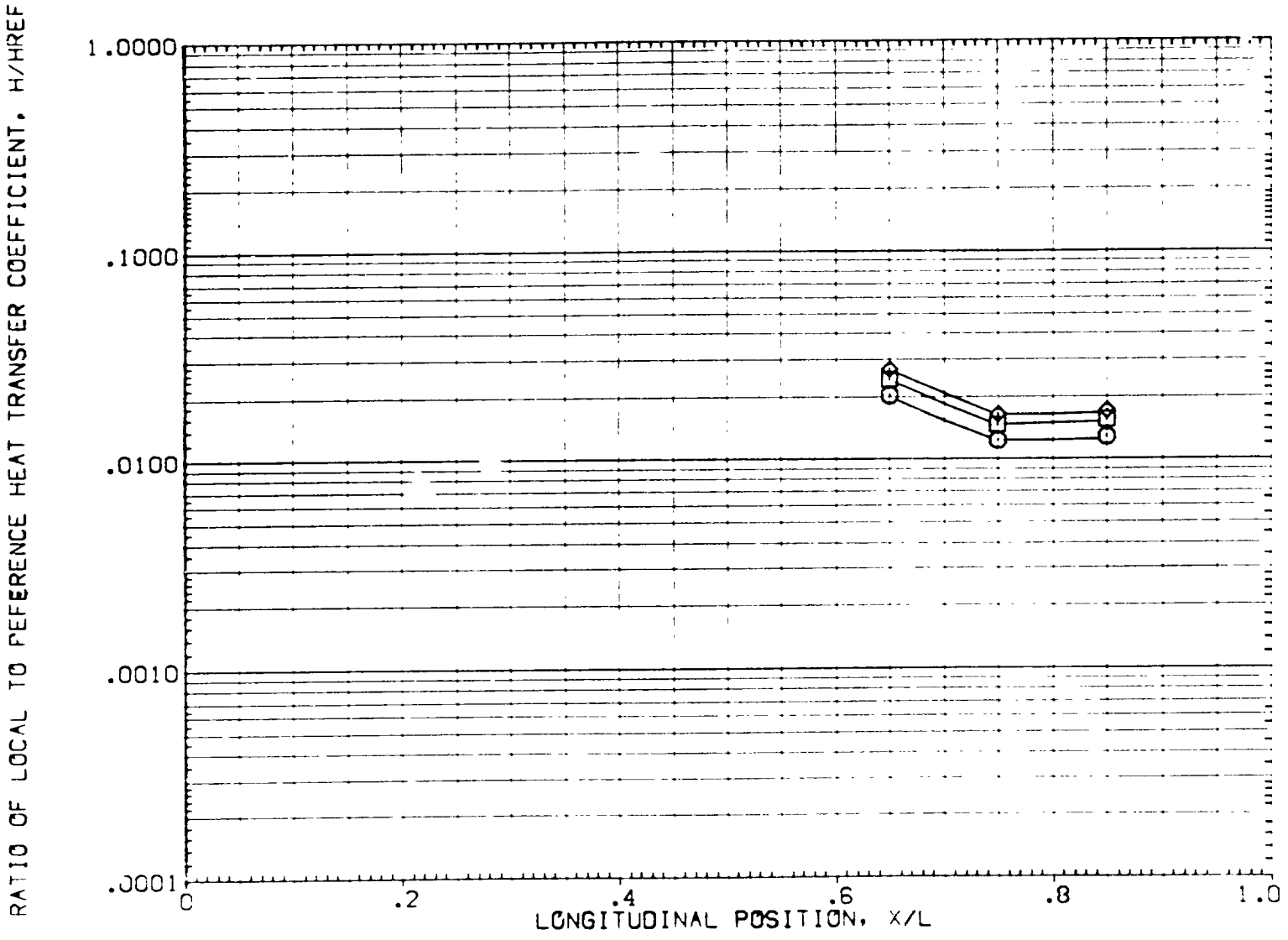


FIG. 29 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.332 MACH = 5.300 PHI = 112.500

DATA SET	SYMBOL	CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(A38TC3)	□	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(A38TC3)	○	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(B38TC3)	◇	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

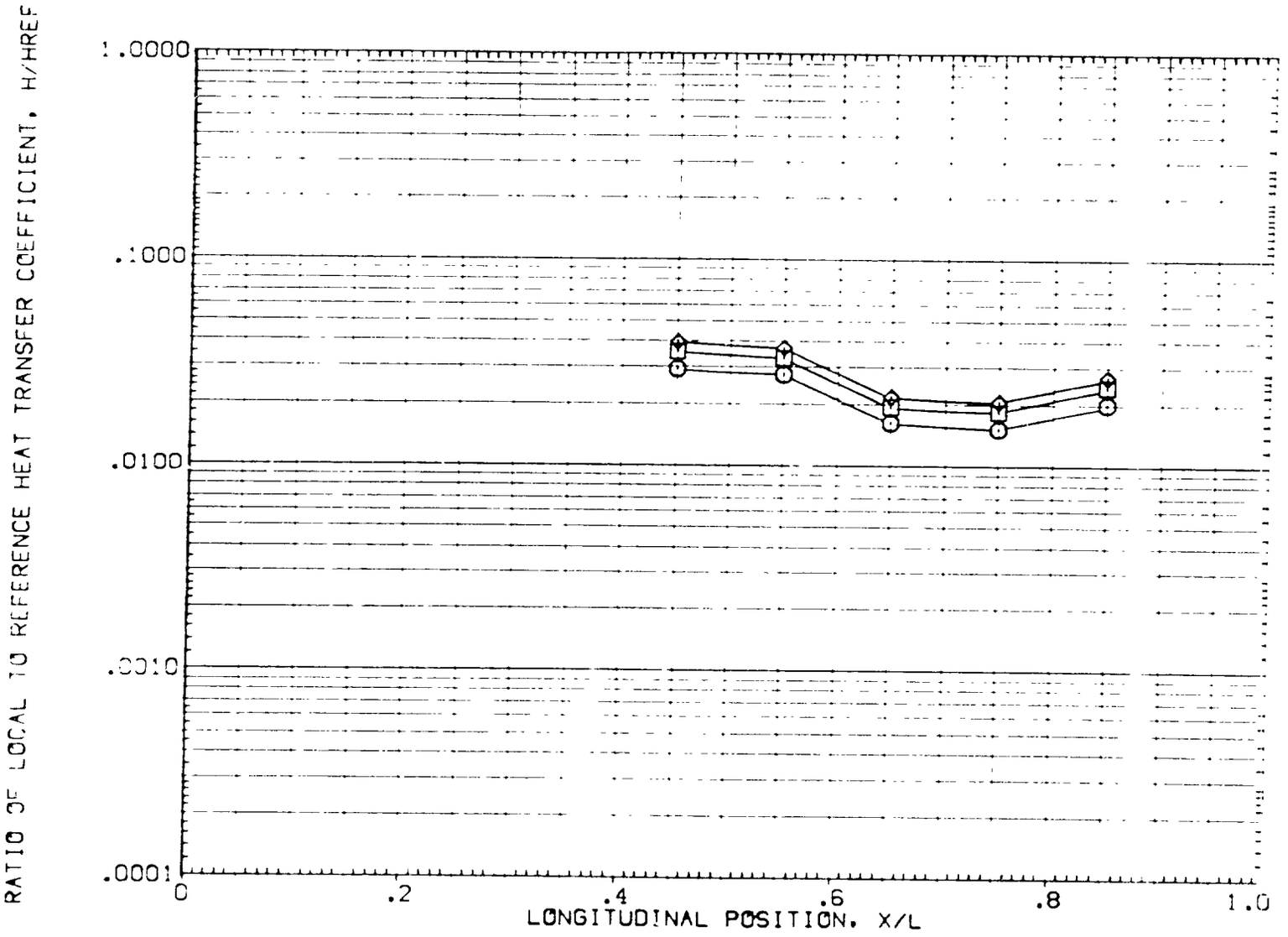


FIG. 29 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.332 MACH = 5.300 PHI = 135.000

DATA SET SYMBOL		CONFIGURATION DESCRIPTION		HAW/HT	ALPHA	MACH	PHI-M
(R88T03)	□	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	1.000	.000	5.300	.000
(A88T03)	◇	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.900	.000	5.300	.000
(B88T03)	△	ARC 3.5-172 IH15 ORB + ET	(EXTERNAL TANK)	.850	.000	5.300	.000

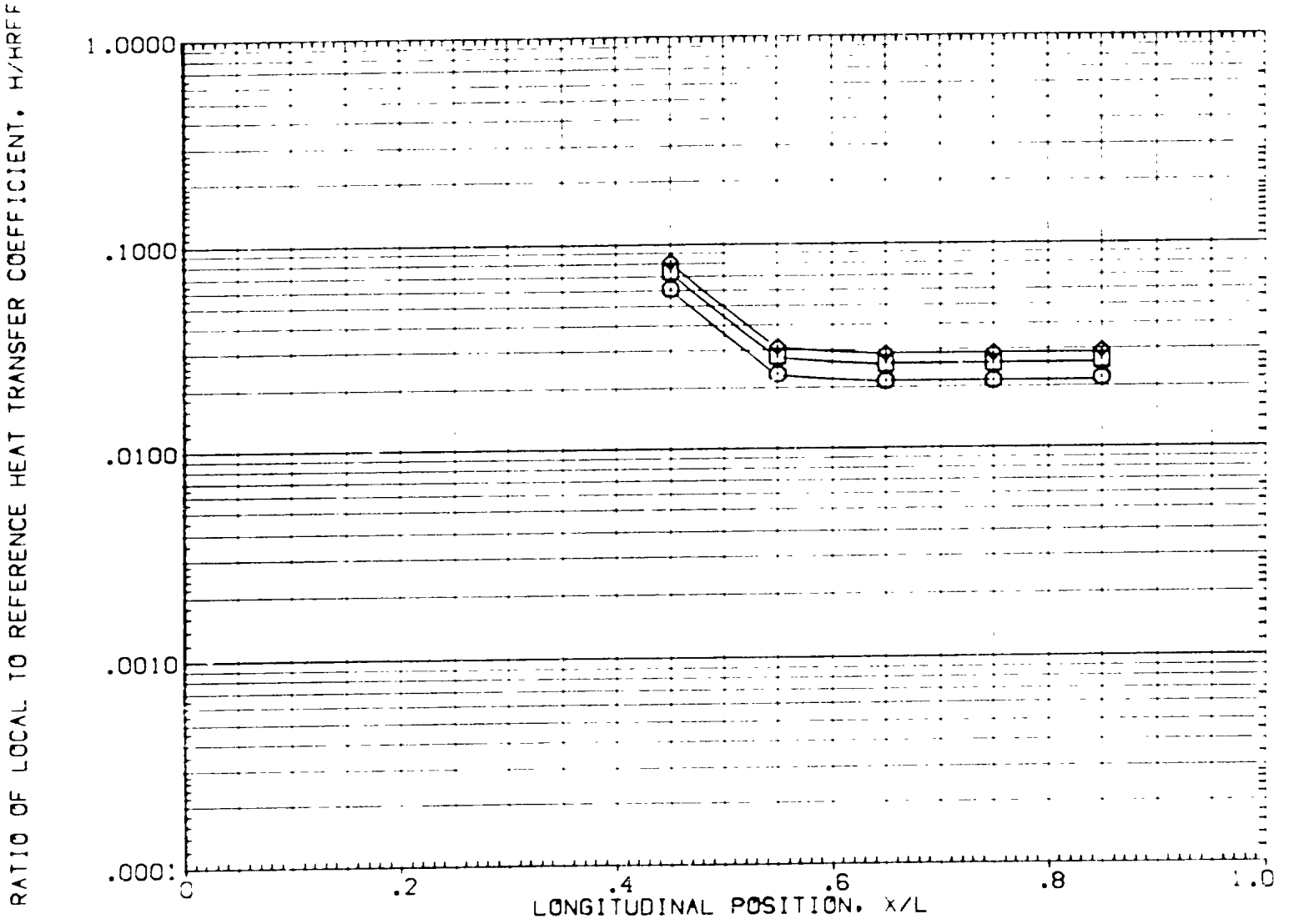


FIG. 29 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK

RN/L = 4.332 MACH = 5.300 PHI = 157.500

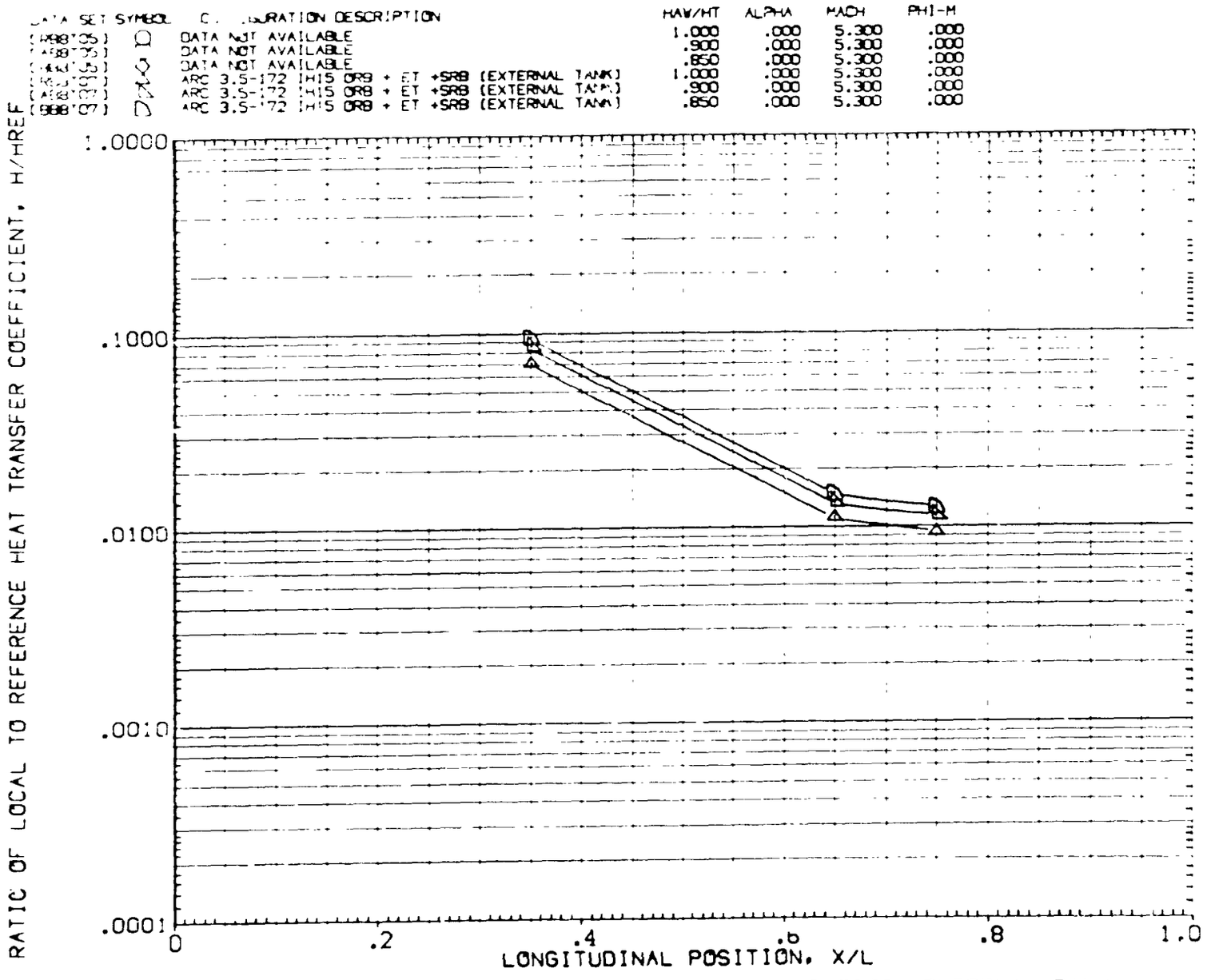


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.845 MACH = 5.300 PHI = 67.50

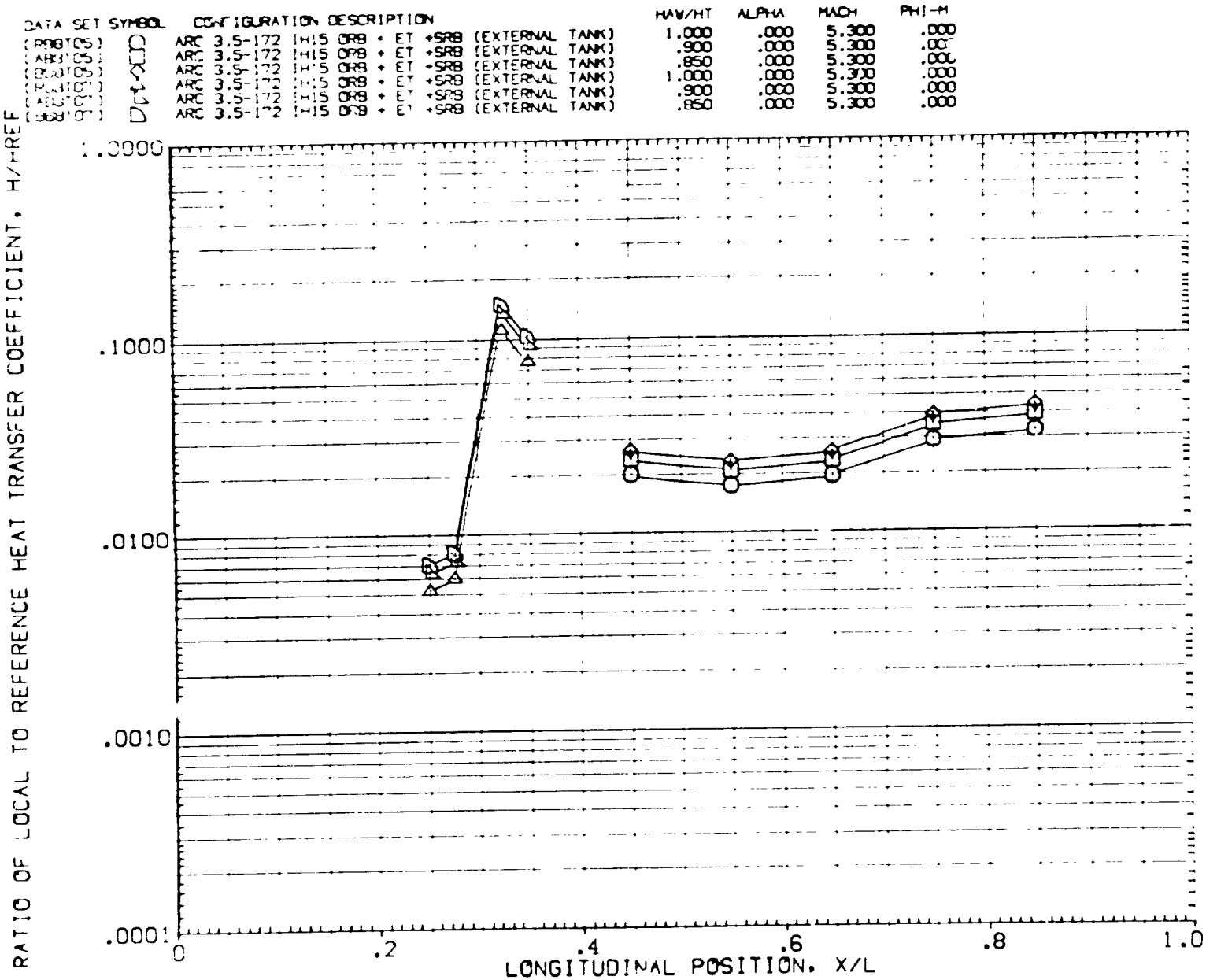


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.845 MAC = 5.300 PHI = 90.000

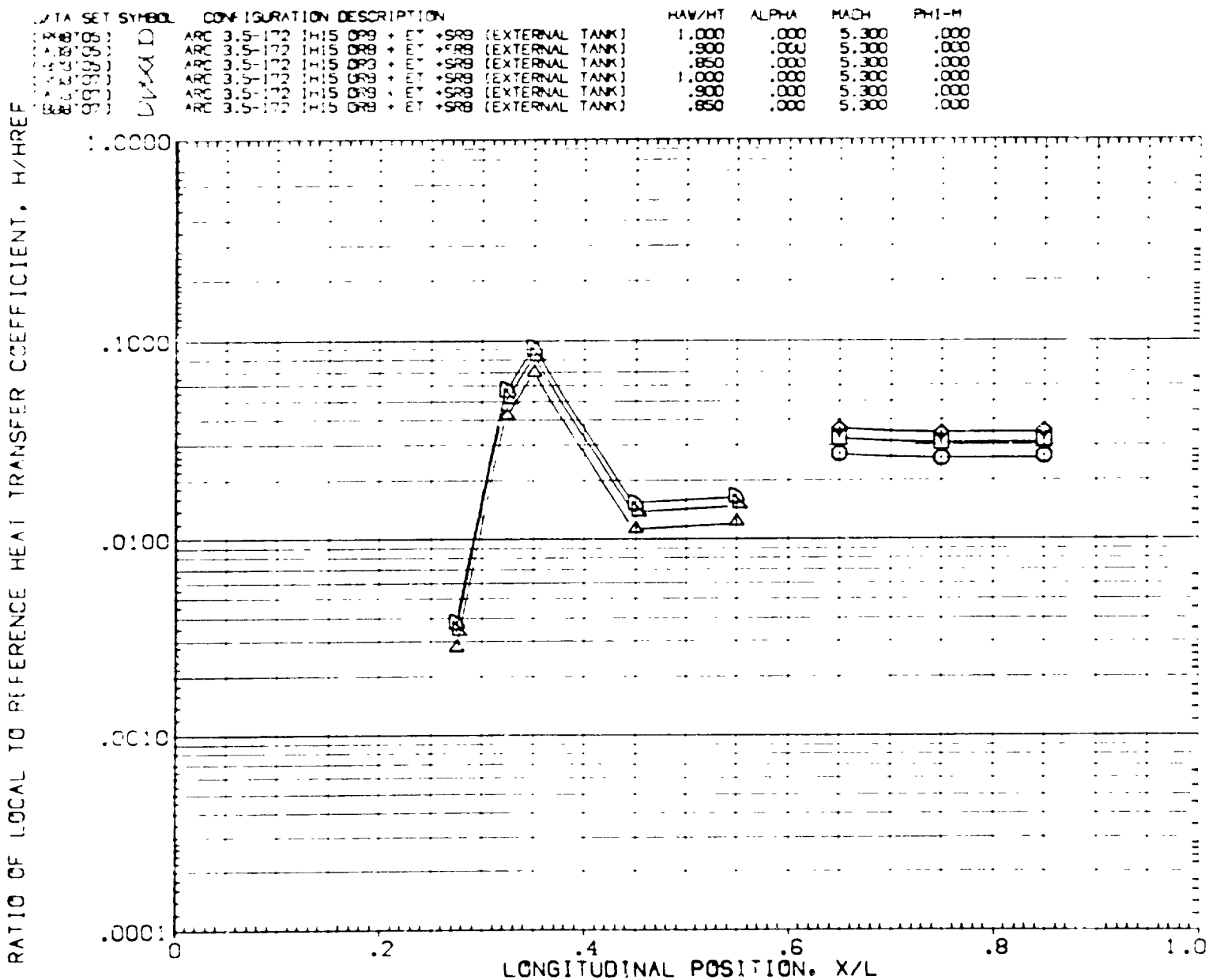


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.845 MACH = 5.300 PHI = 112.500

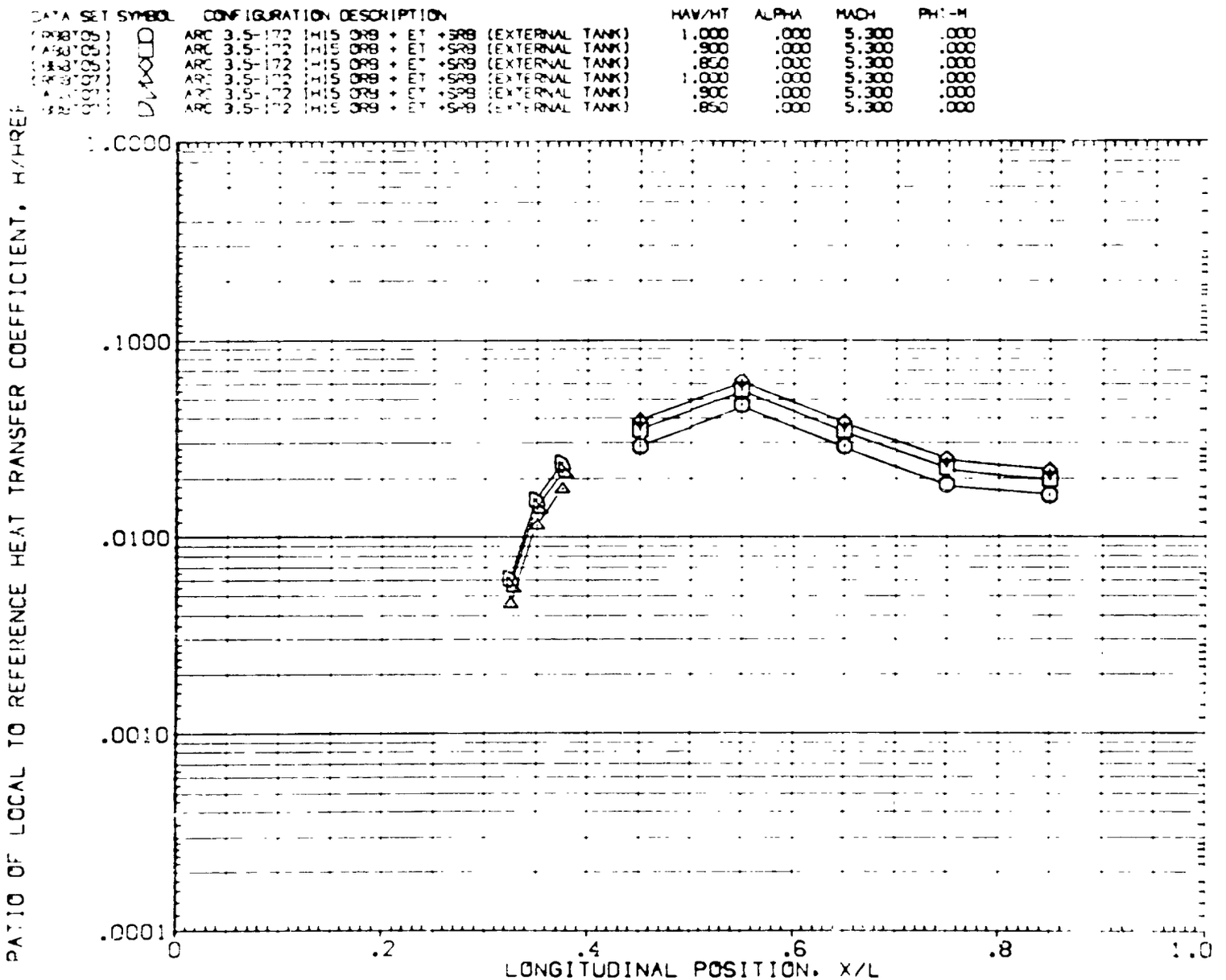


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL T NK.

PN/L = 1.845 MACH = 5.300 PHI = 10 .000

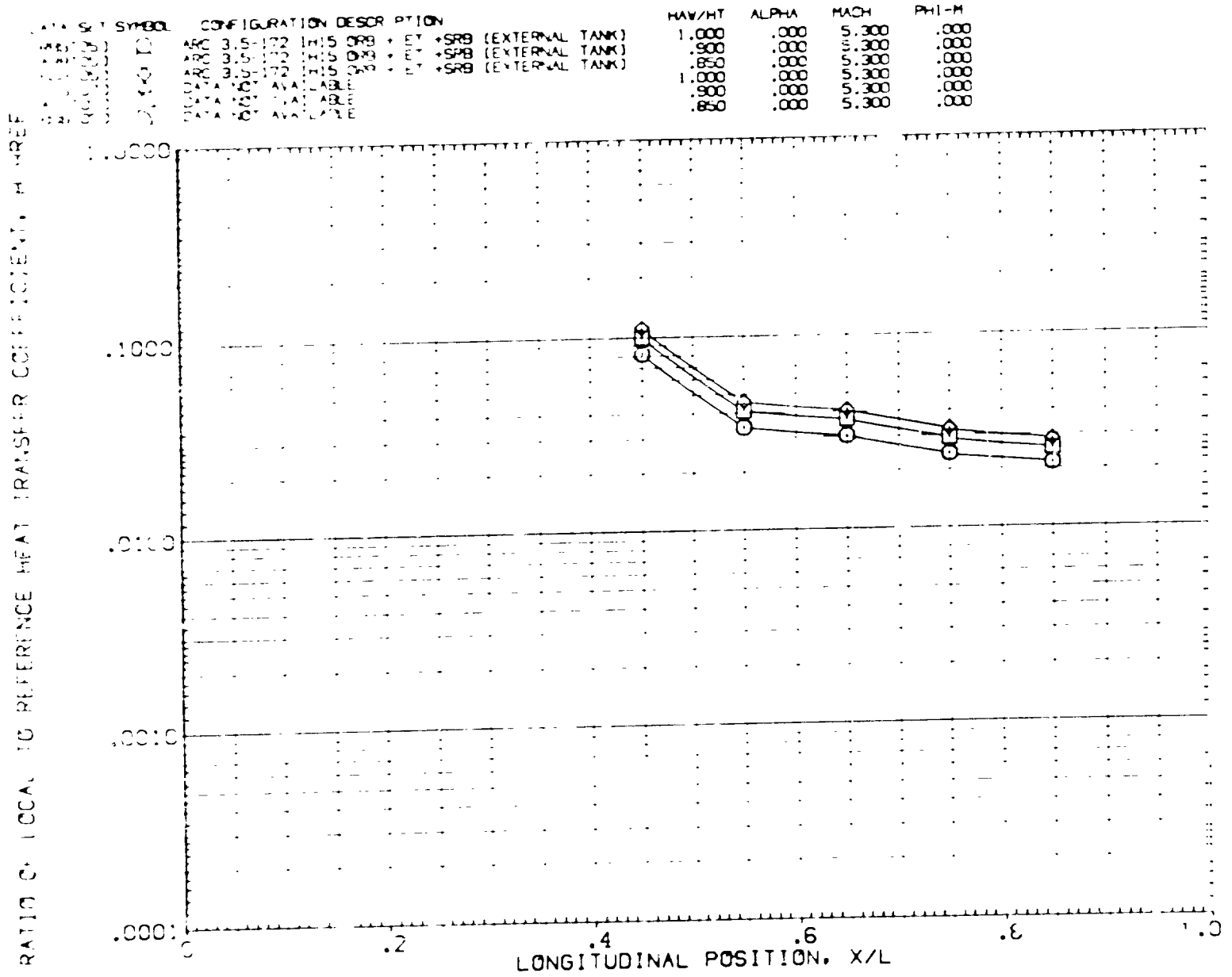


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

R/L = 1.845 MACH = 5.300 PHI = 157.500

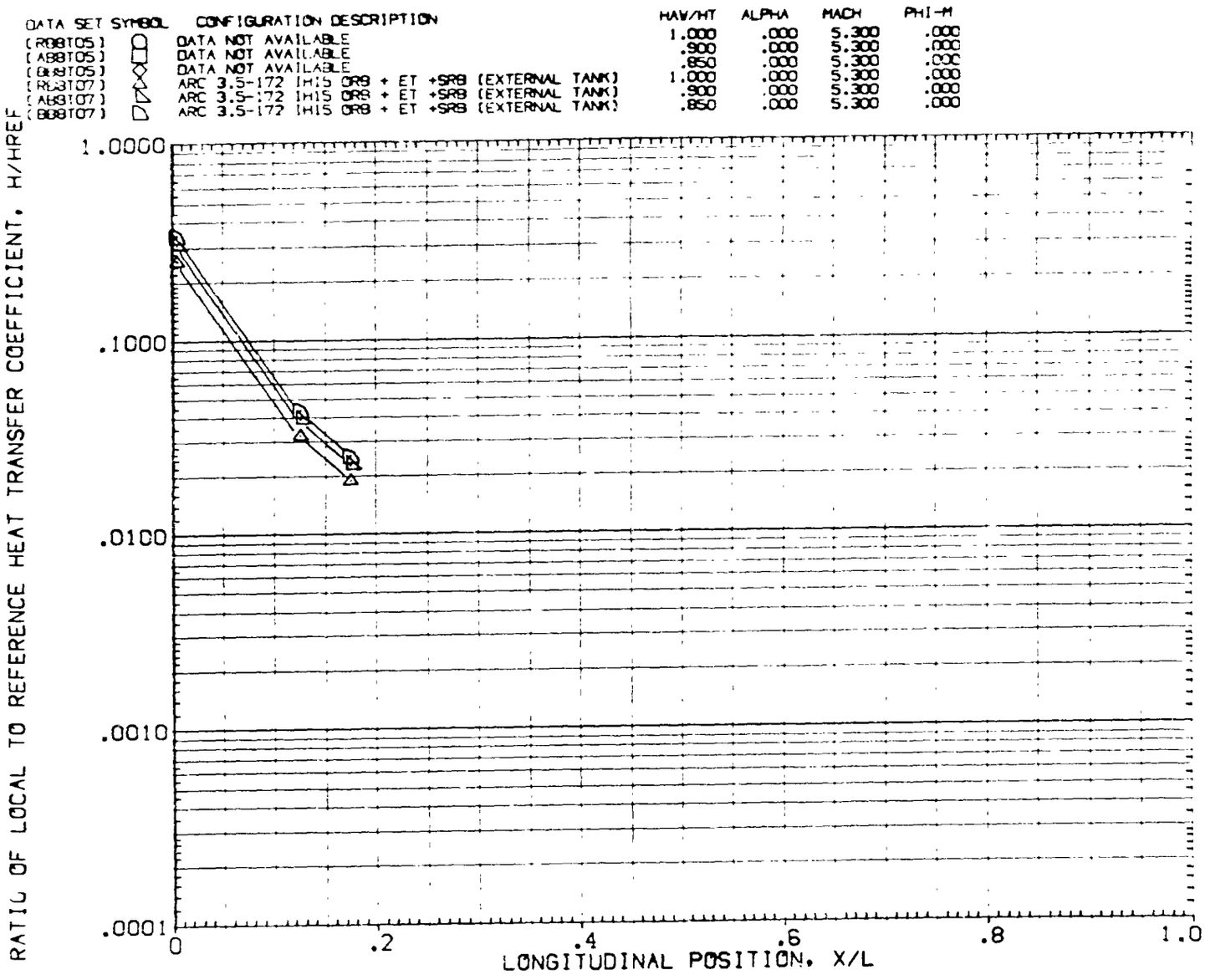


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK,

RN/L = 1.845 MACH = 5.300 PHI = 180.000

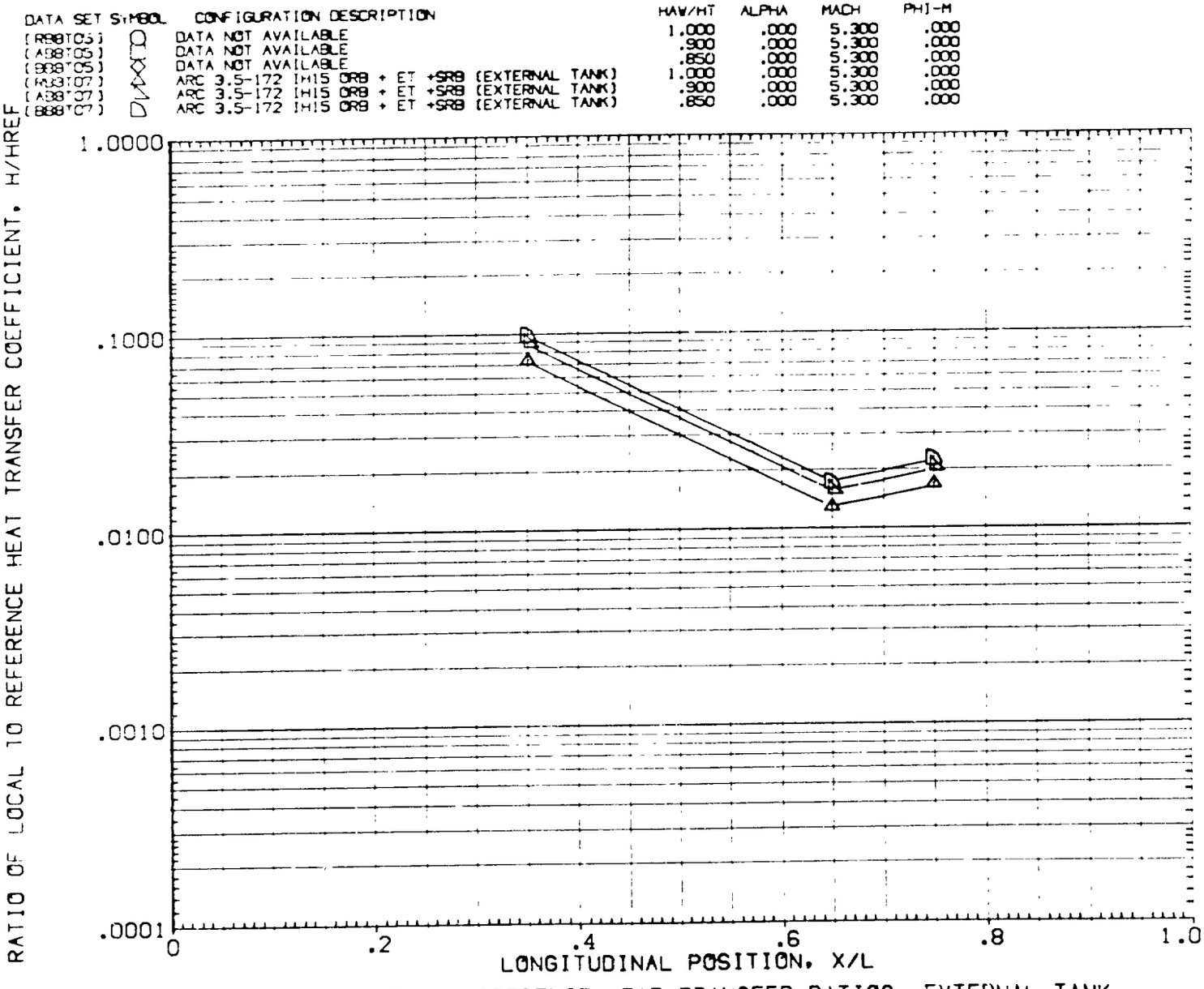


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.437 MACH = 5.300 PHI = 67.500

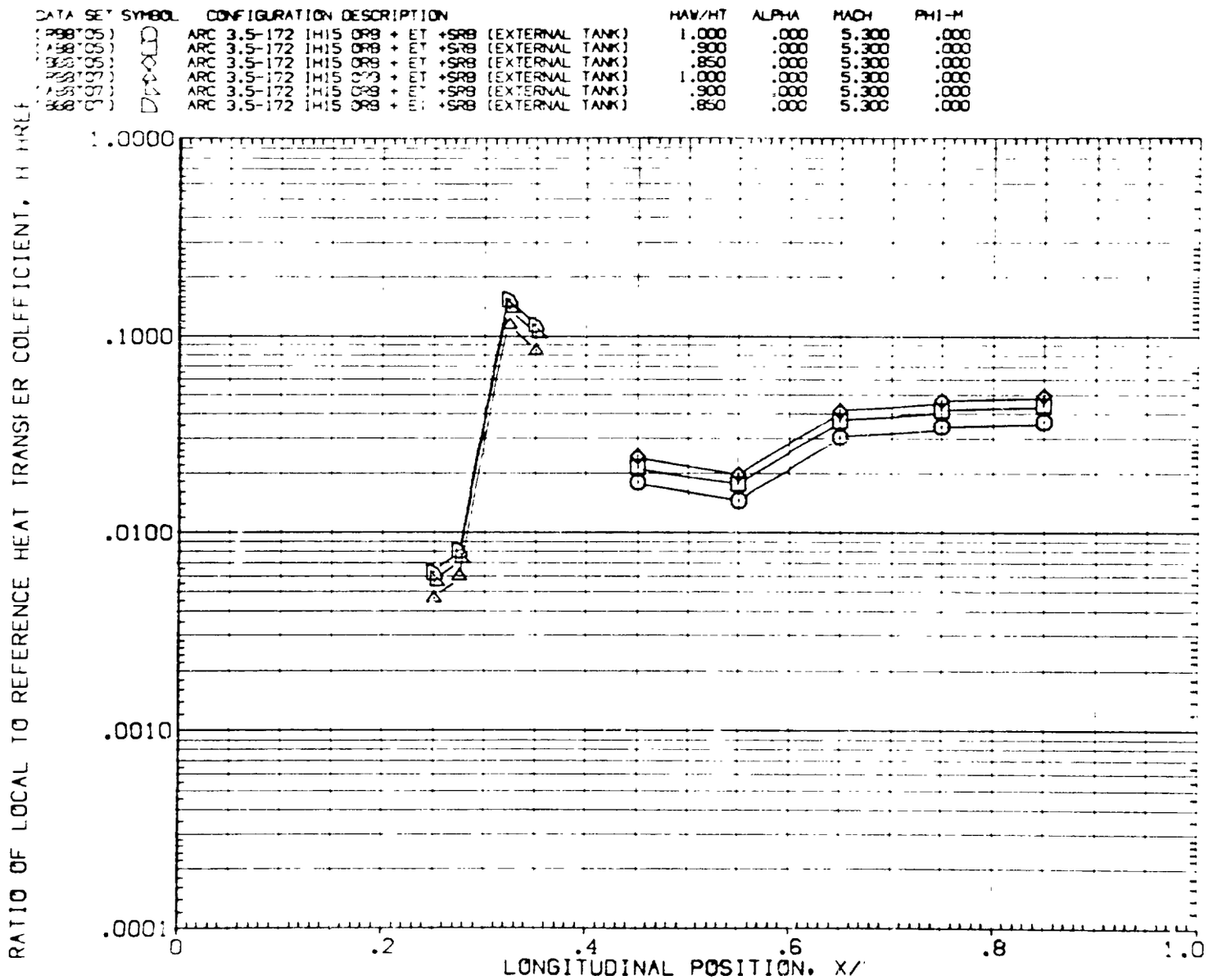


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.437 MACH = 5.300 PHI = 90.000

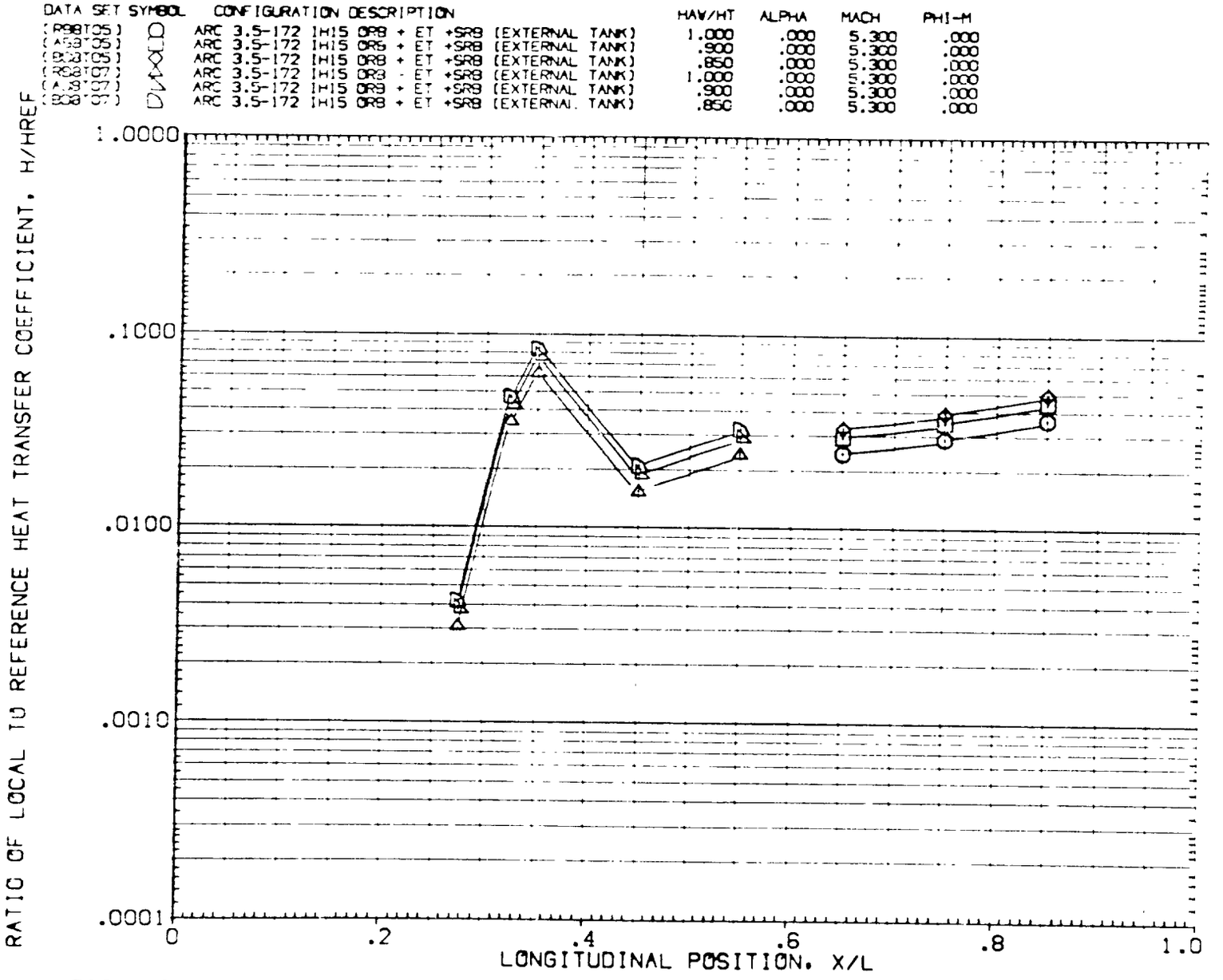


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.437 MACH = 5.300 PHI = 112.500

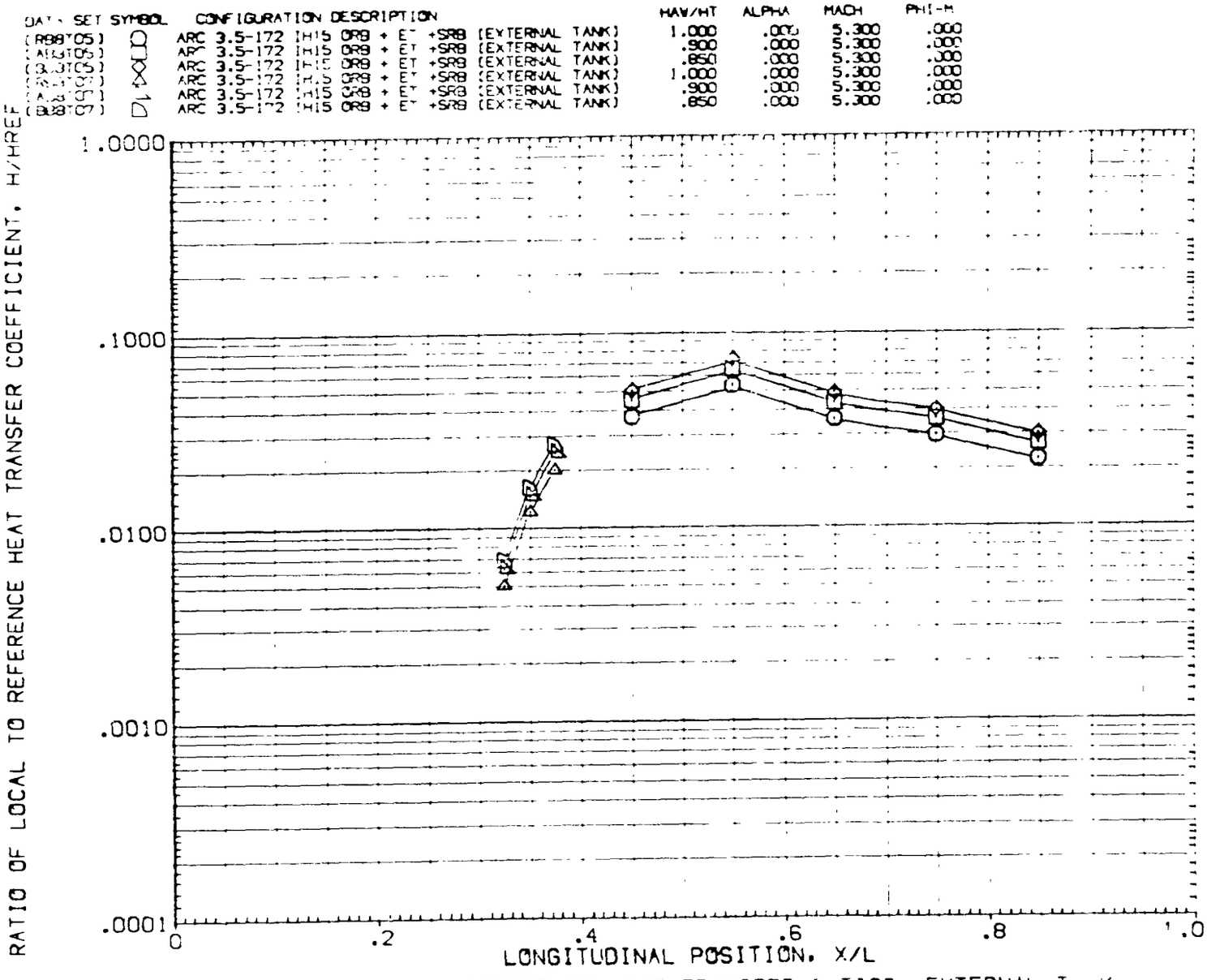


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.437 MAC = 5.300 PHI = 135.000

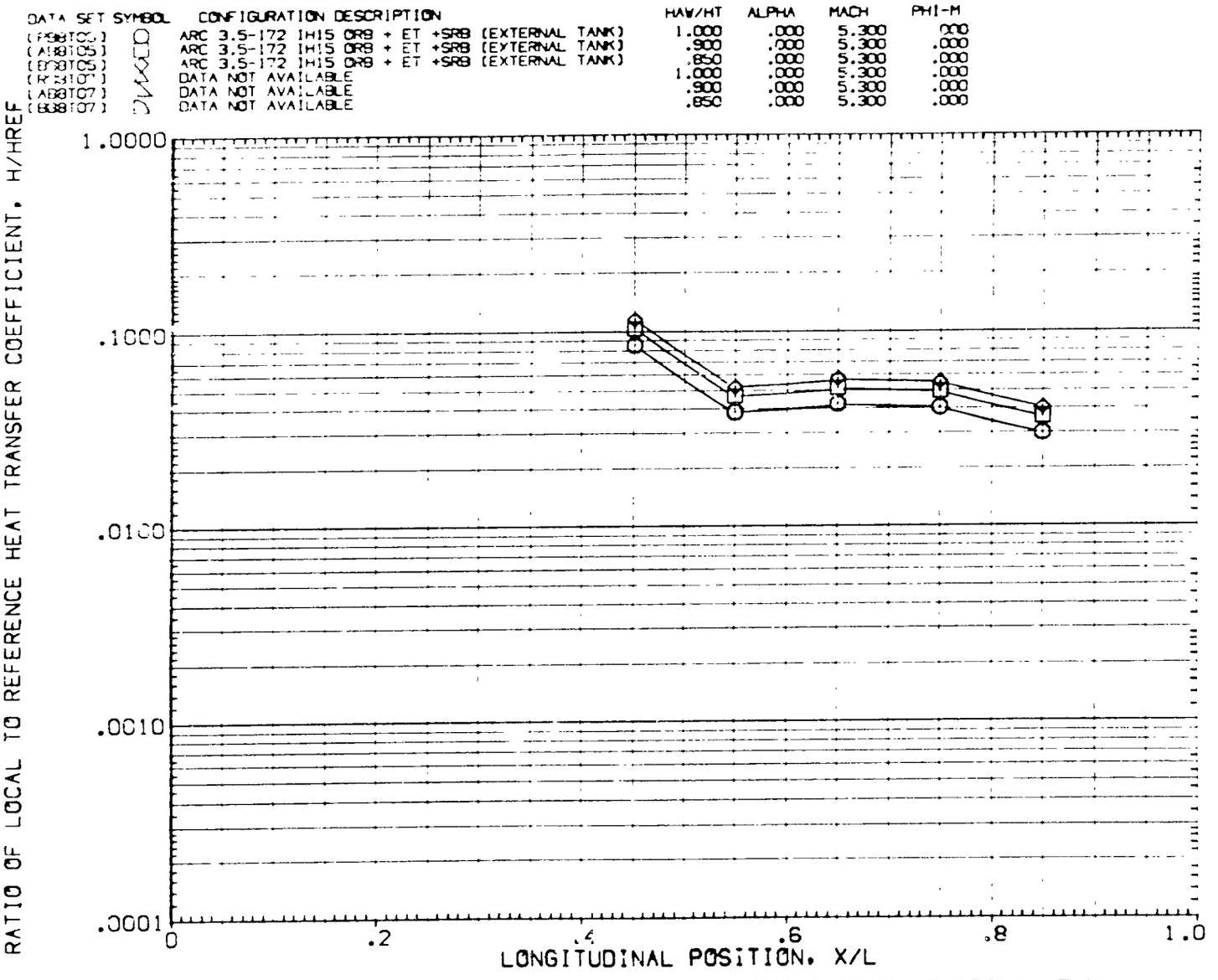


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.437 MACH = 5.300 PHI = 157.500

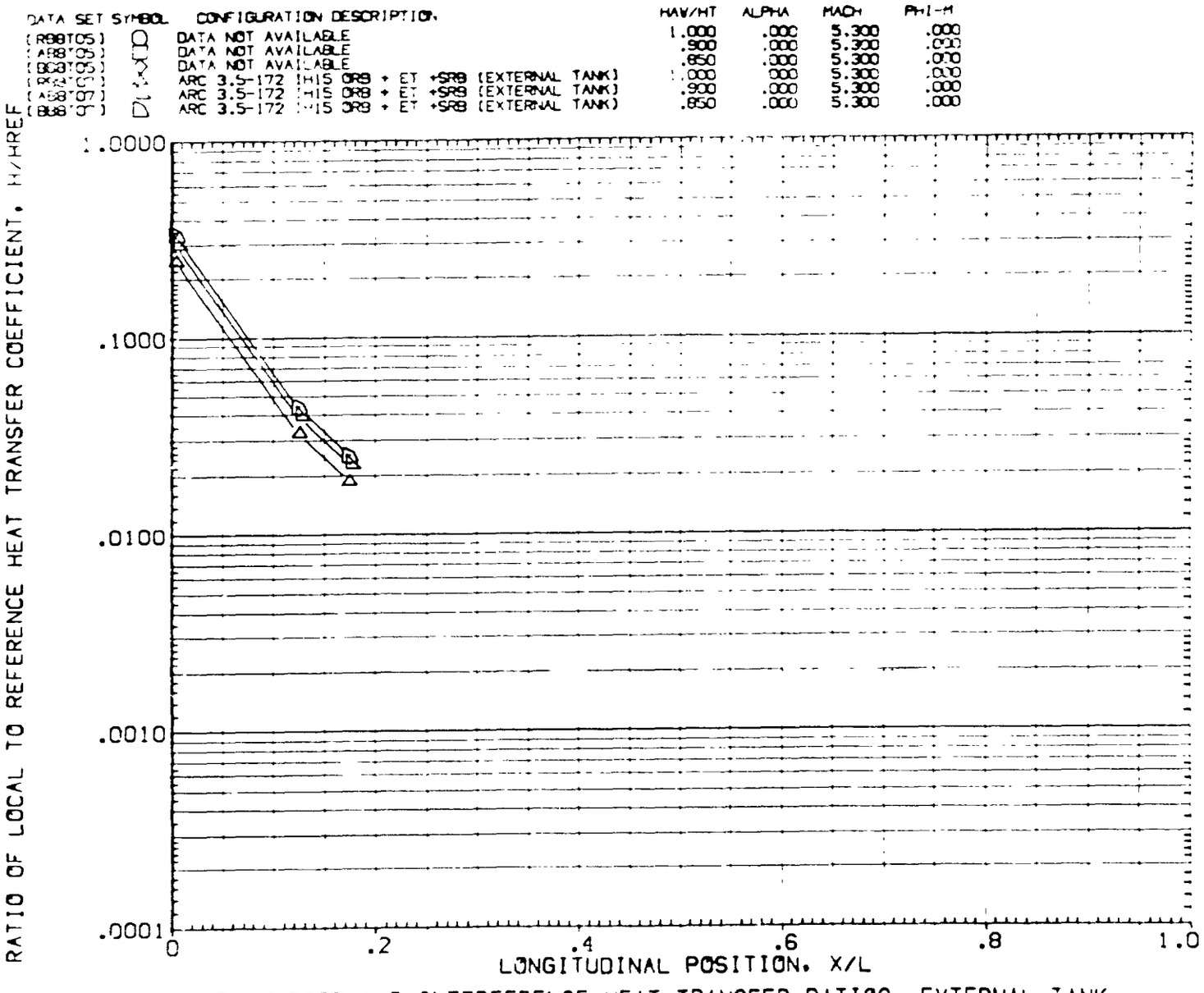


FIG. 30 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.437 M = 5.300 PHI = 180.000

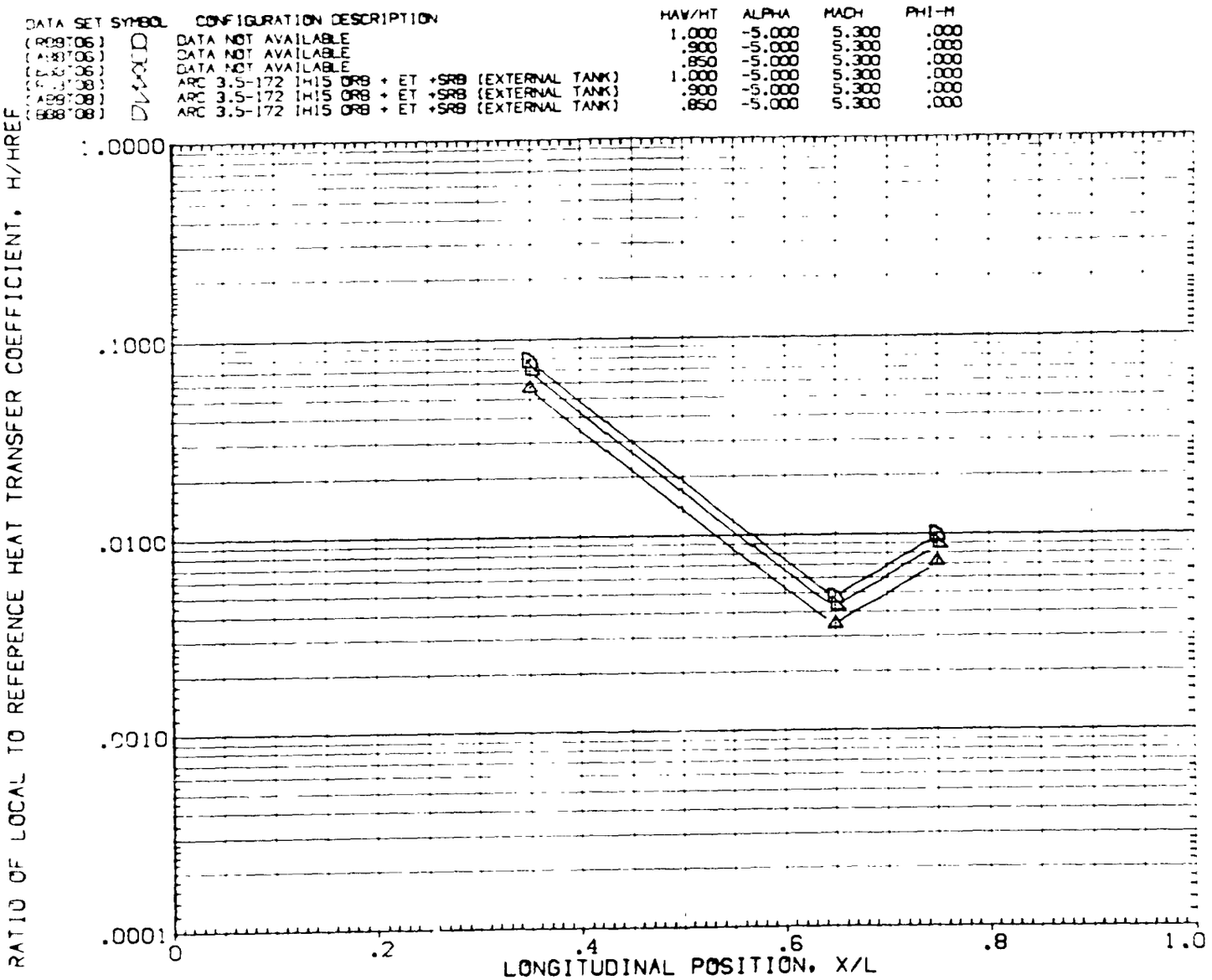


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.952 MACH = 5.300 PHI = 67.500

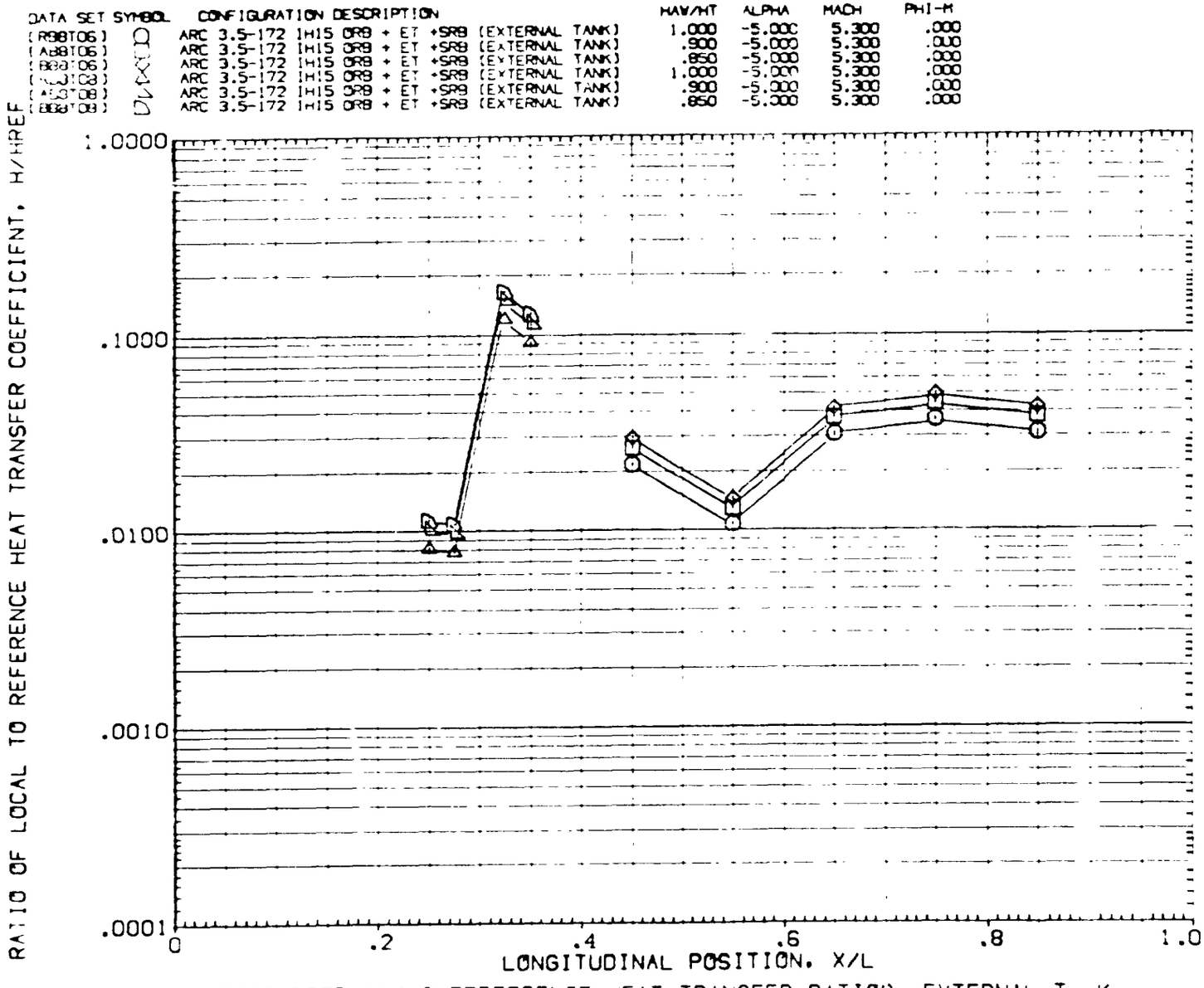


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.952 MACH = 5.300 PHI = 90.000

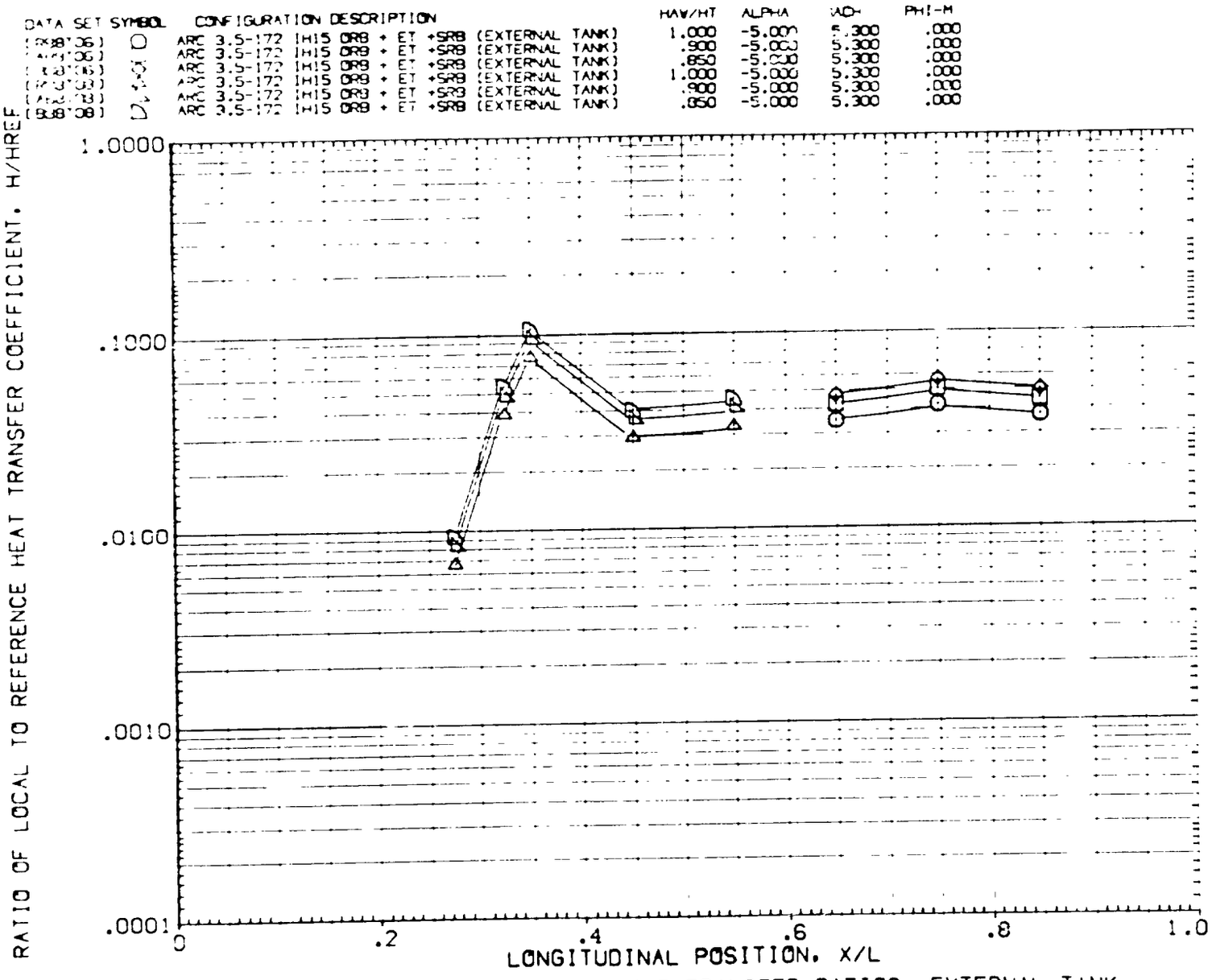


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.952 MACH = 5.300 PHI = 112.500

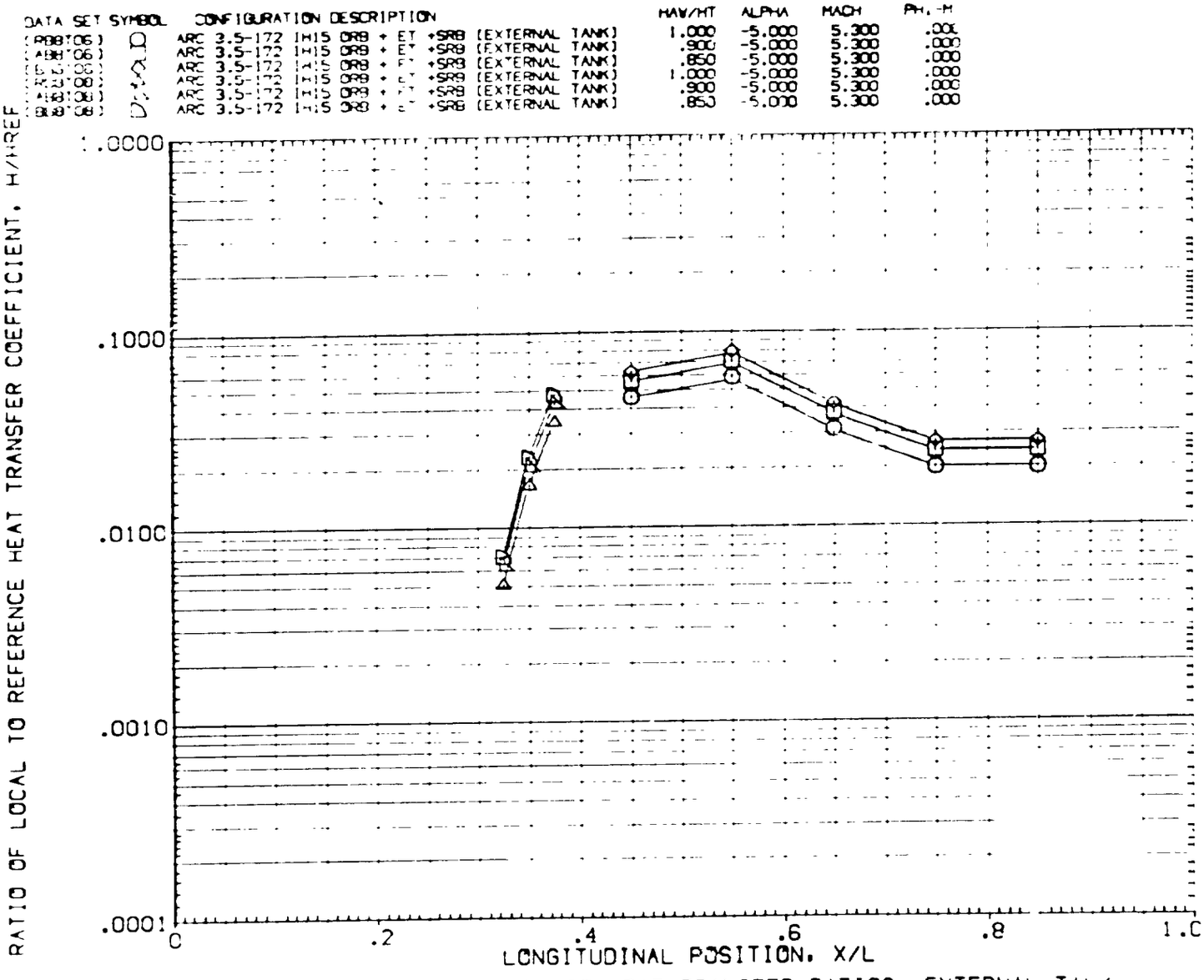


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.952 M∞ = 5.300 PHI = 135.000

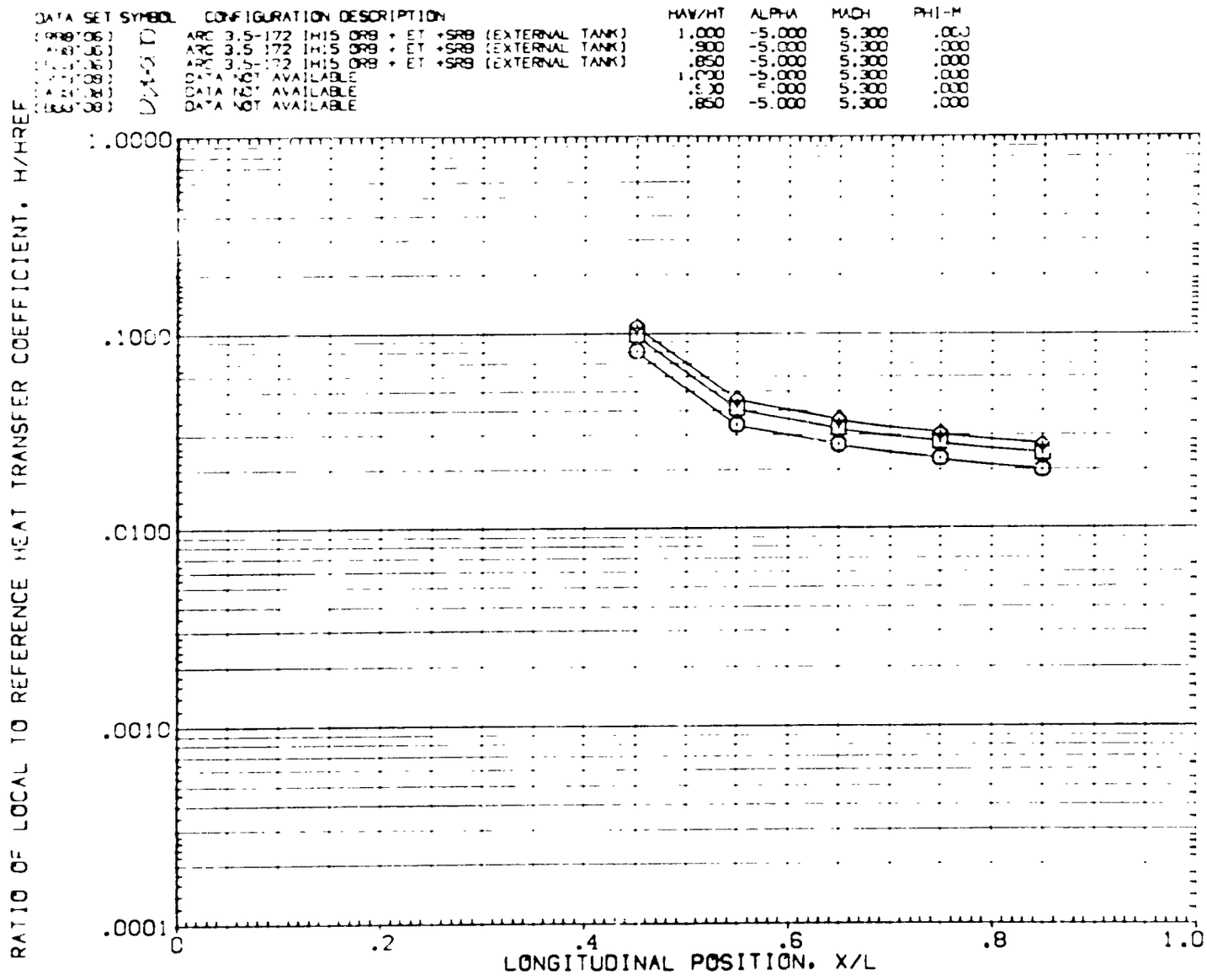


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 1.952 MACH = 5.300 PHI = 157.500

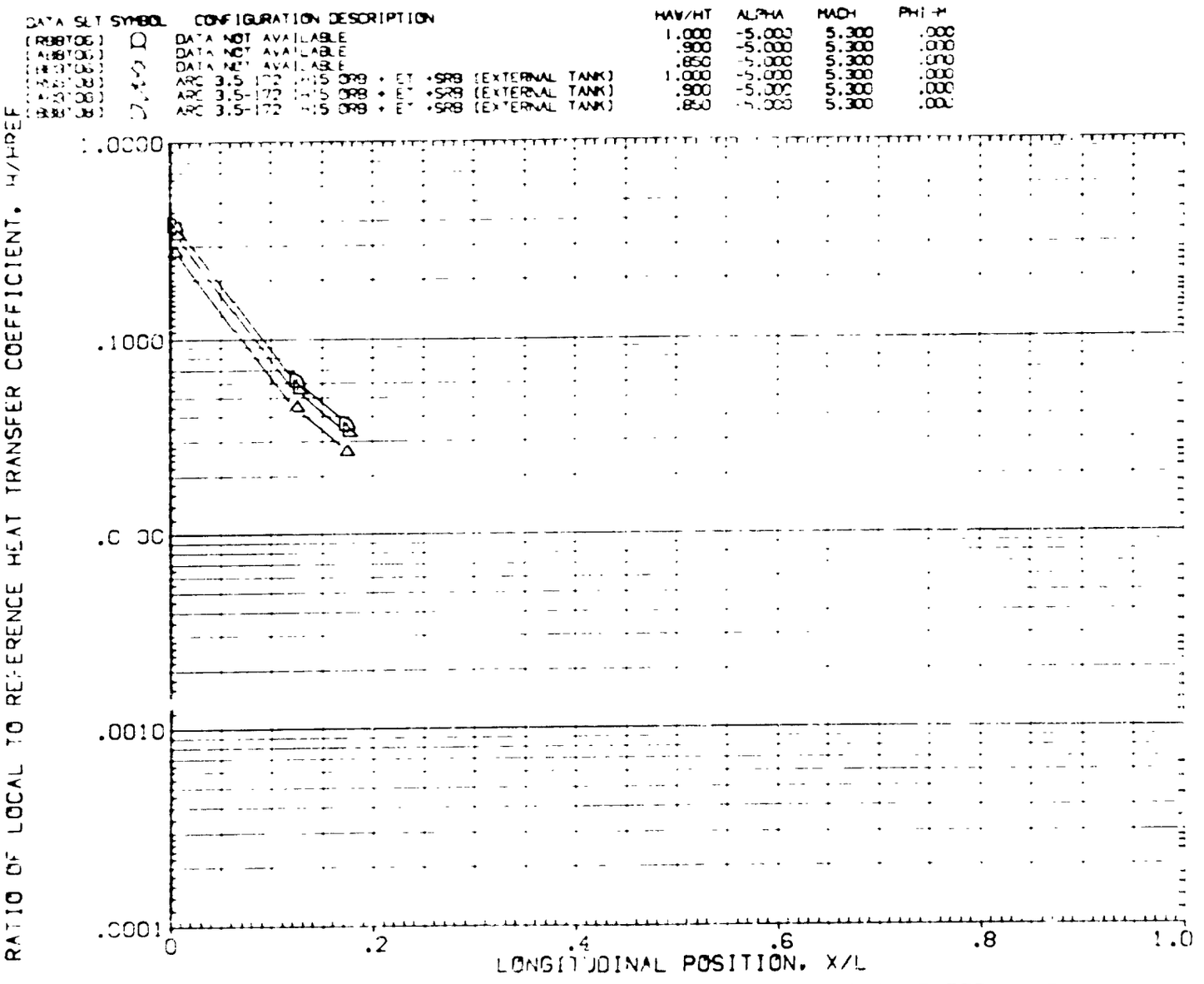


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

R[illegible] 1.95[illegible] MAC[illegible] = 5.300 PHI = 180.000

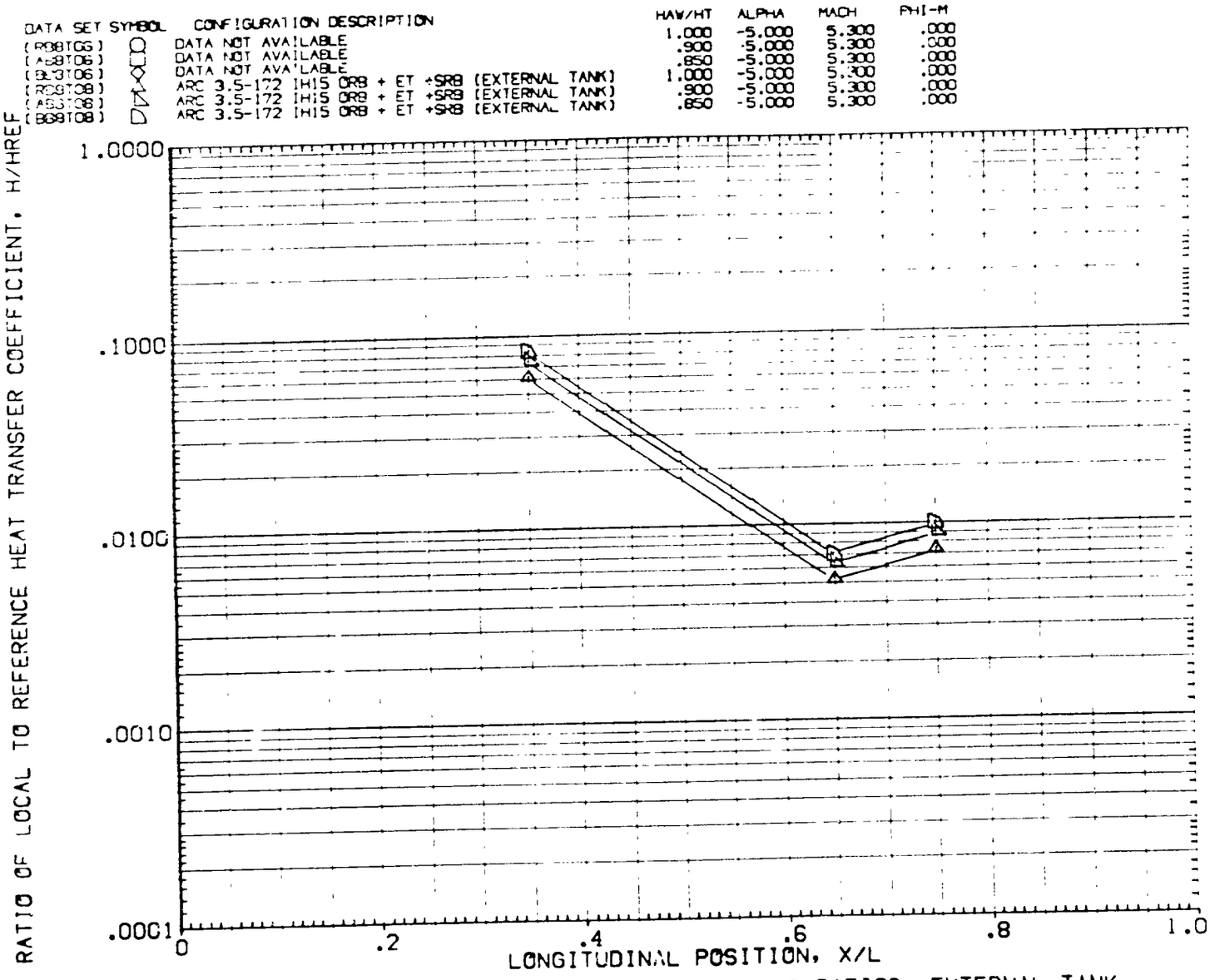


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.570 MACH = 5.300 PHI = 67.500

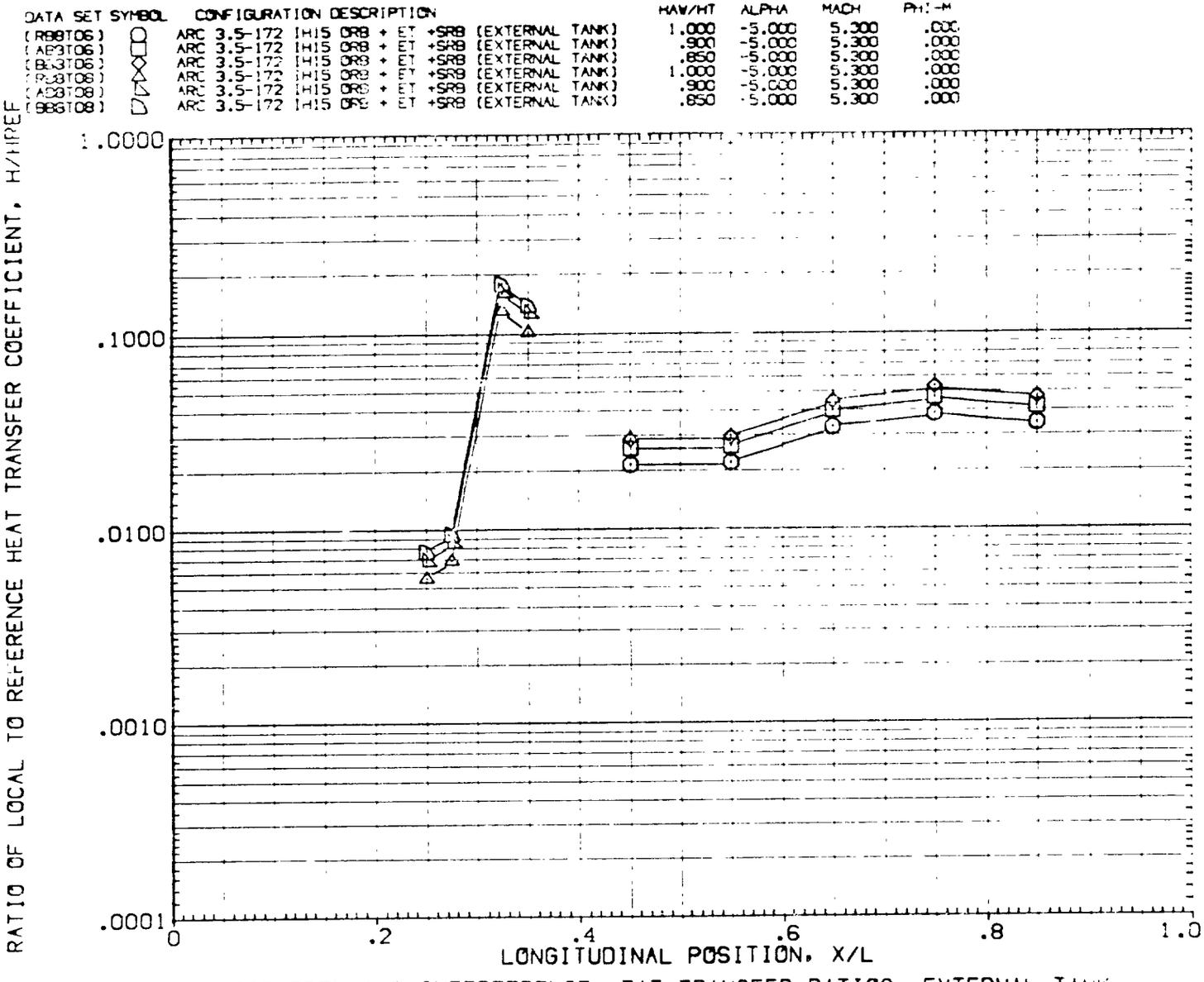


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.570 MACH = 5.300 PHI = 90.000

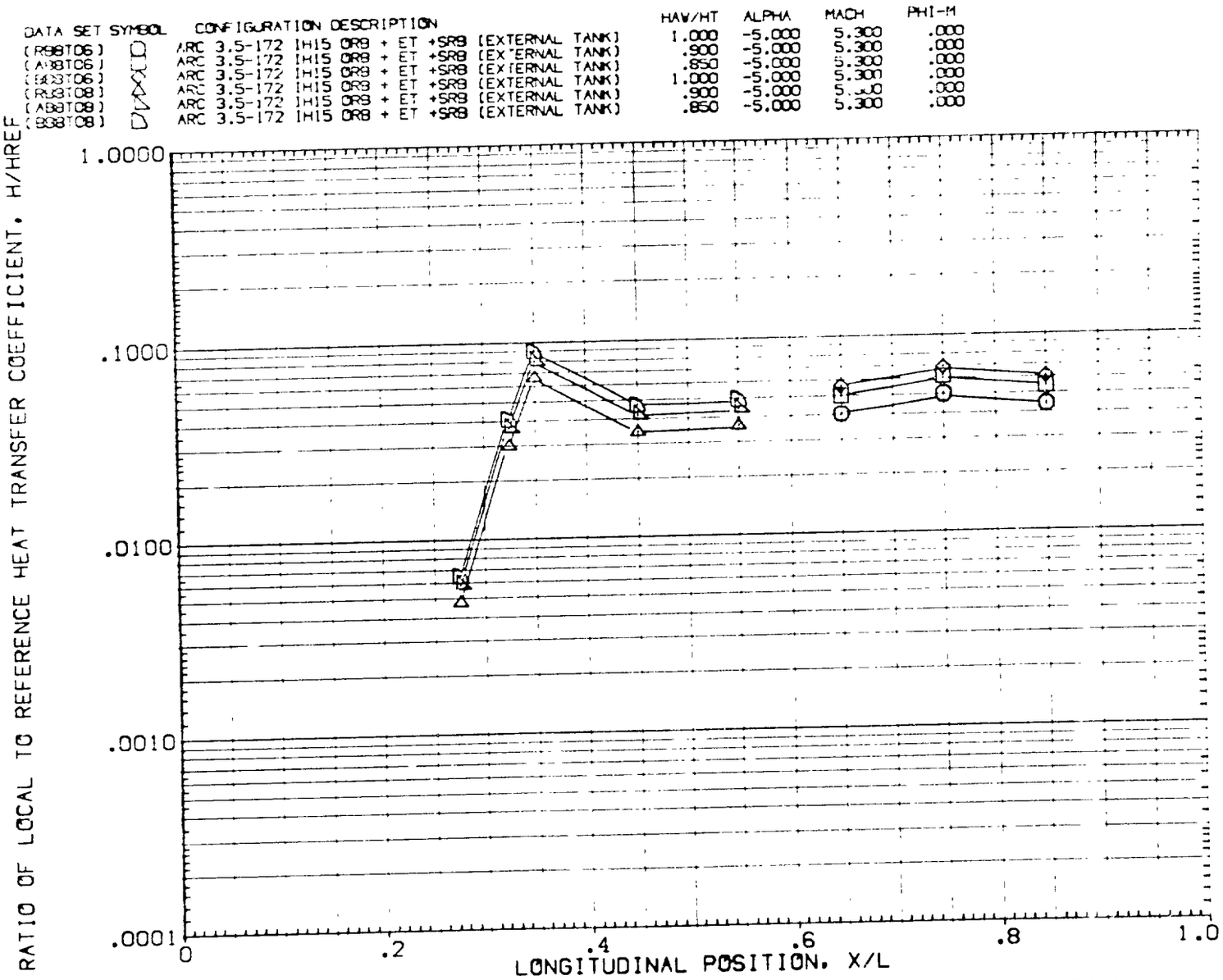


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.570 MACH = 5.300 PHI = 112.500

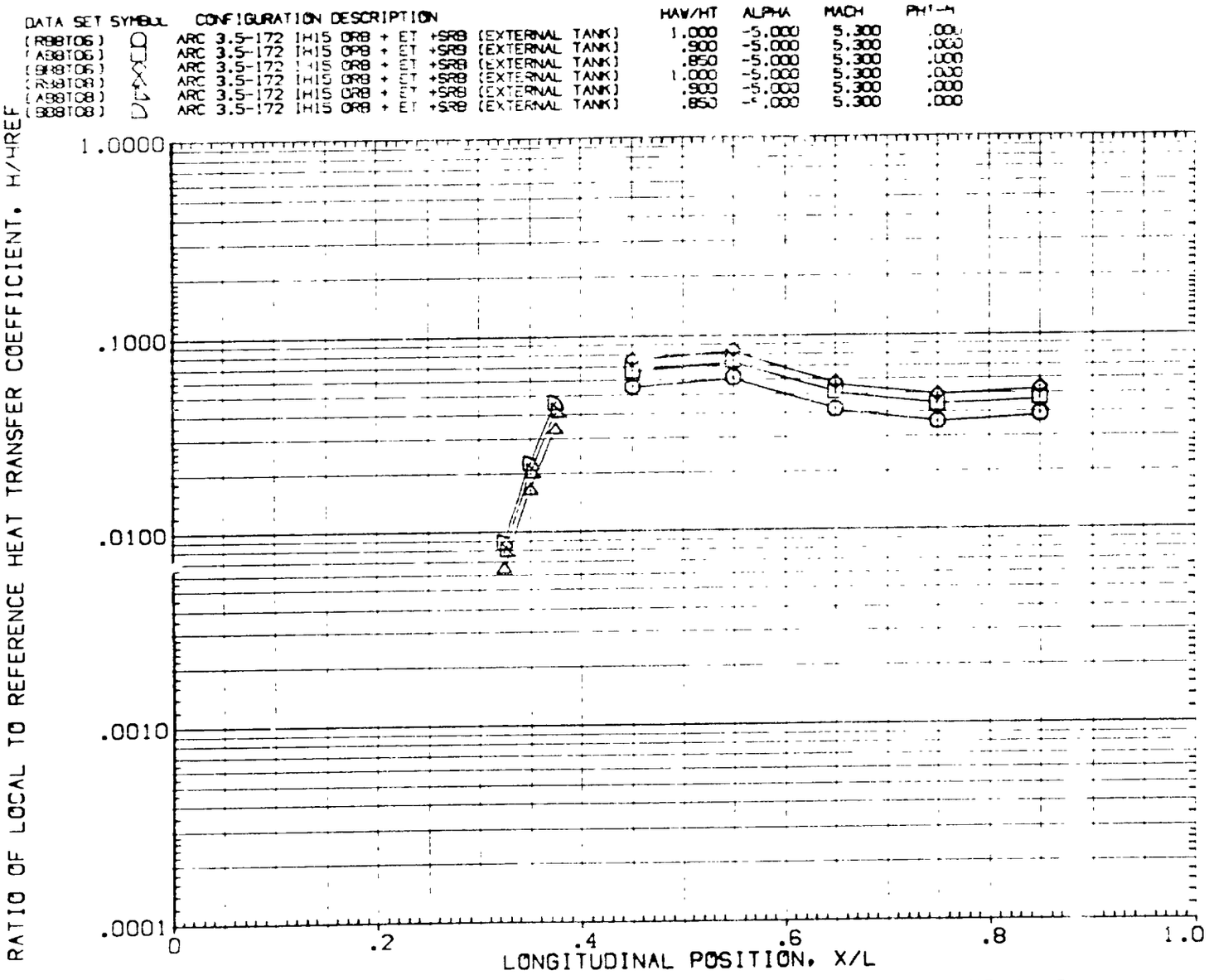


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK

RN/L = 4.570 MACH = 5.300 PHI = 135.000

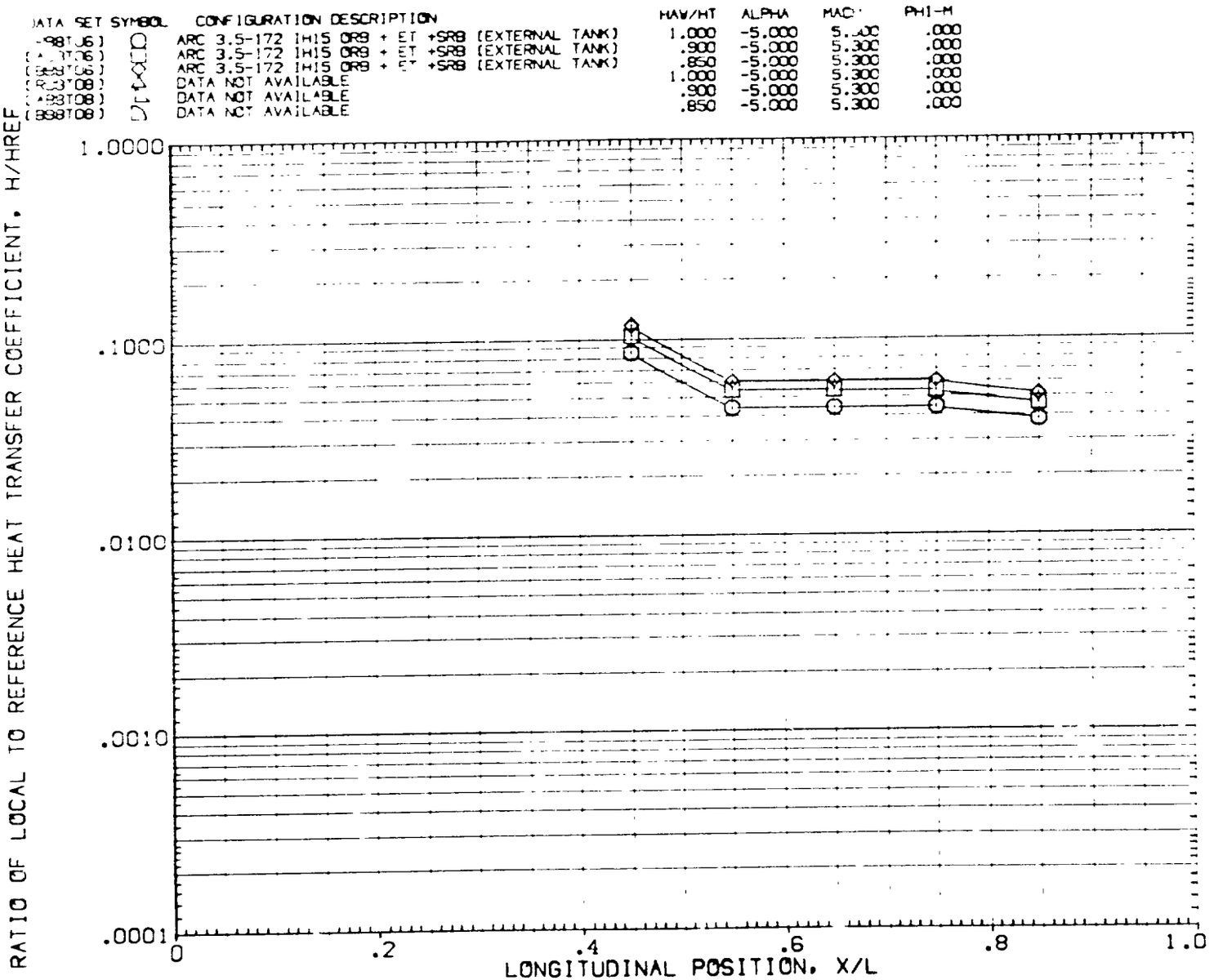


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.570 MACH = 5.300 PHI = 157.500

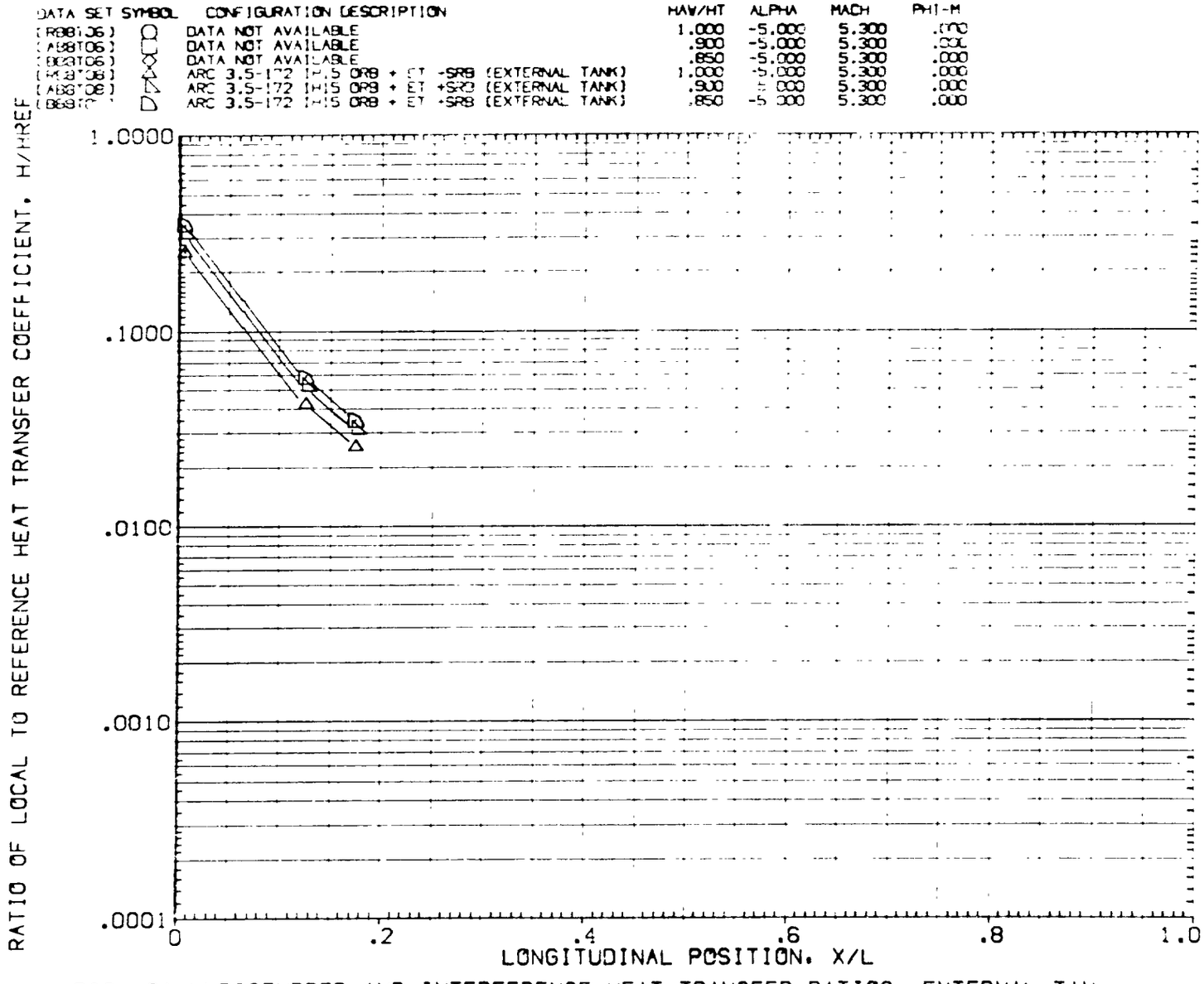


FIG. 31 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, EXTERNAL TANK.

RN/L = 4.570 MACH = 5.300 PHI = 180.000

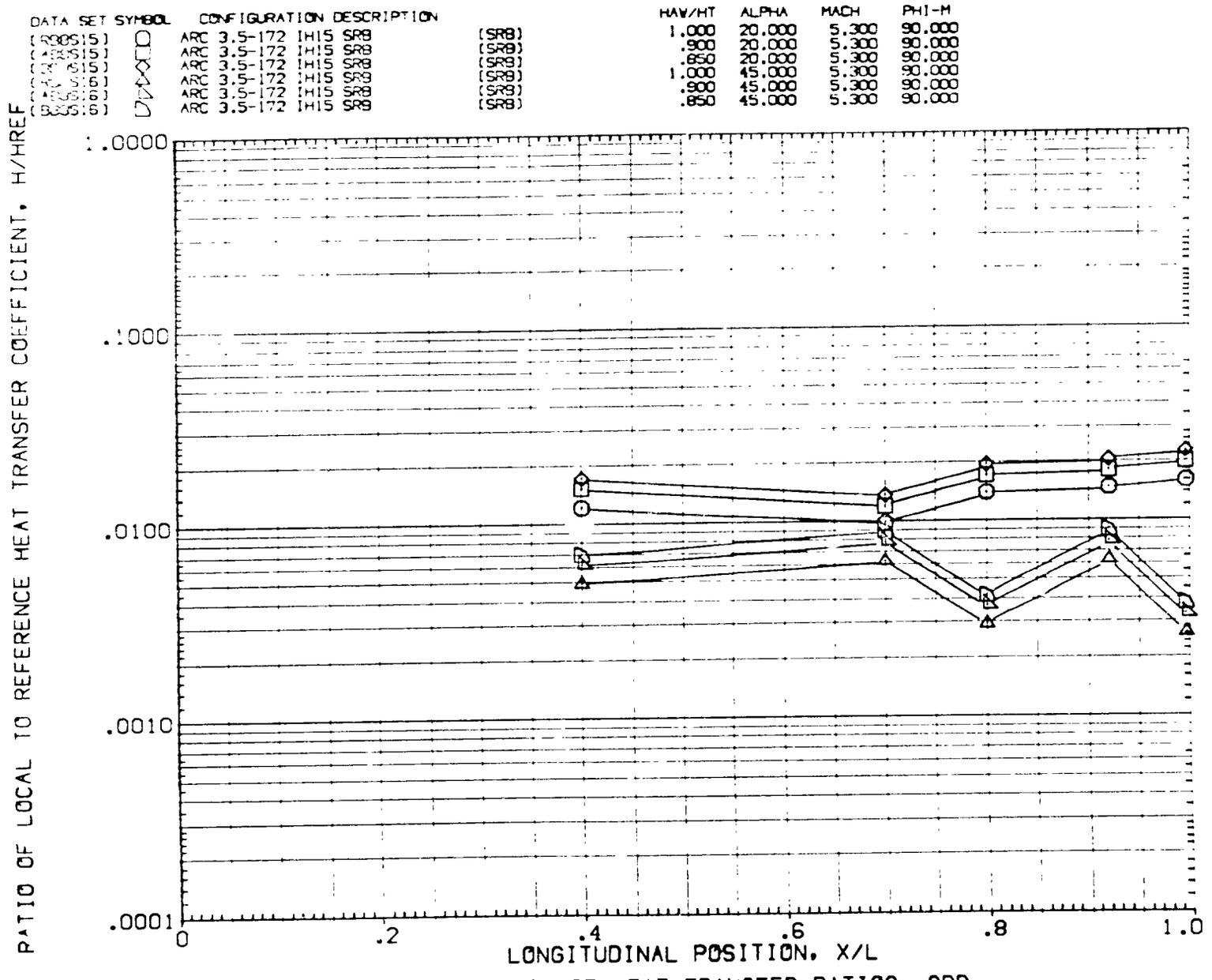


FIG. 32 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.304 MACH = 5.300 PHI = 90.000

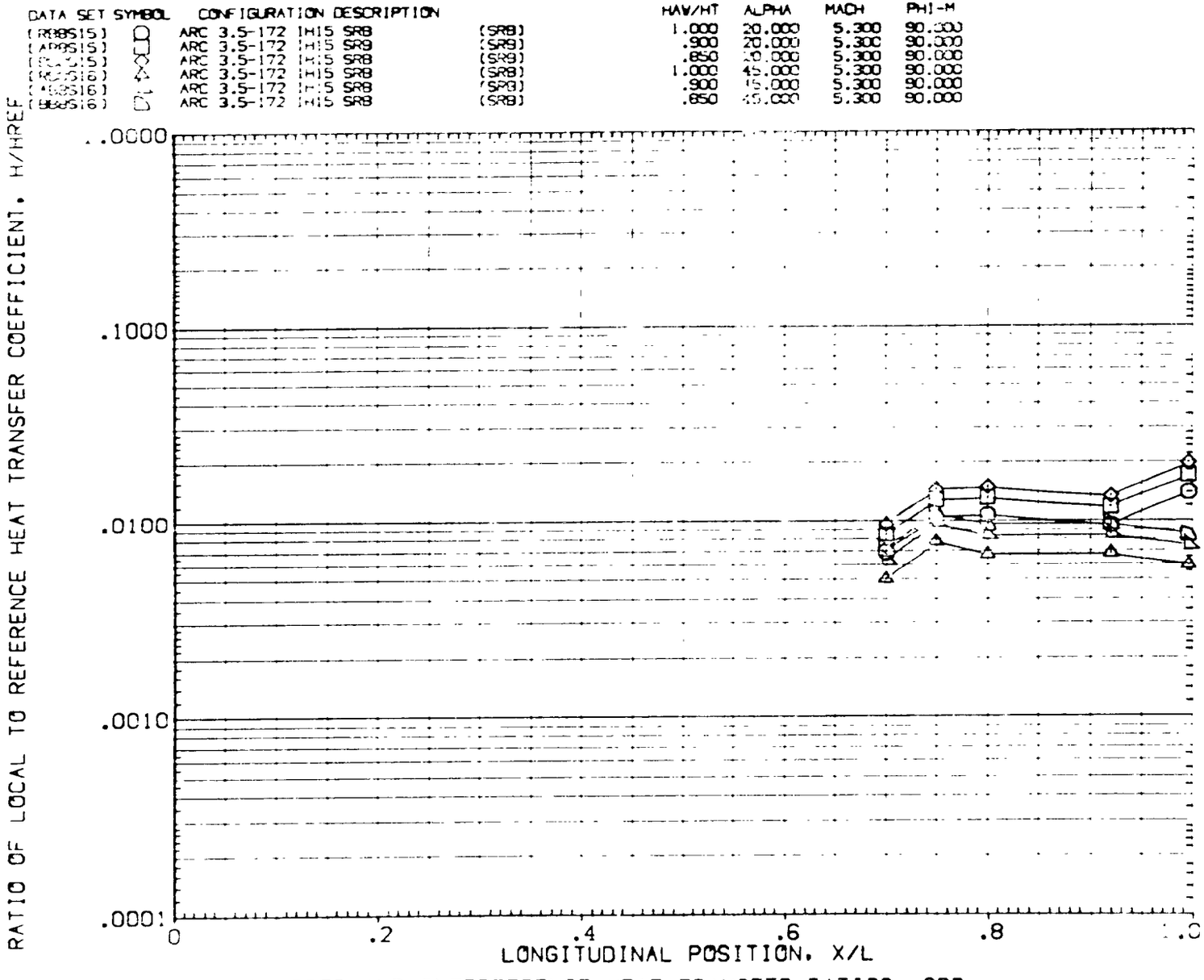


FIG. 32 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.304 MACH = 5.300 PHI = 135.000

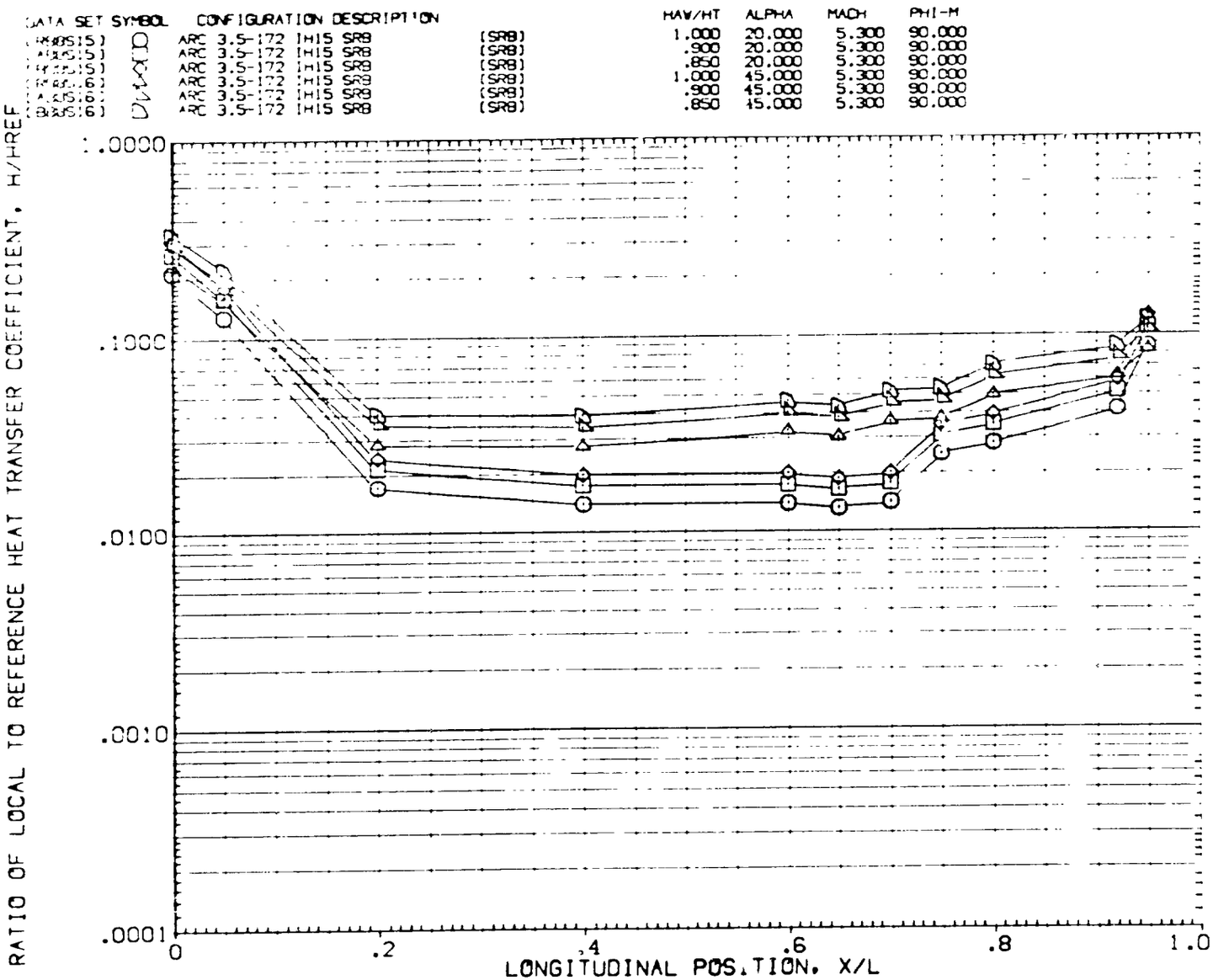


FIG. 32 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.304 MACH = 5.300 PHI = 180.000

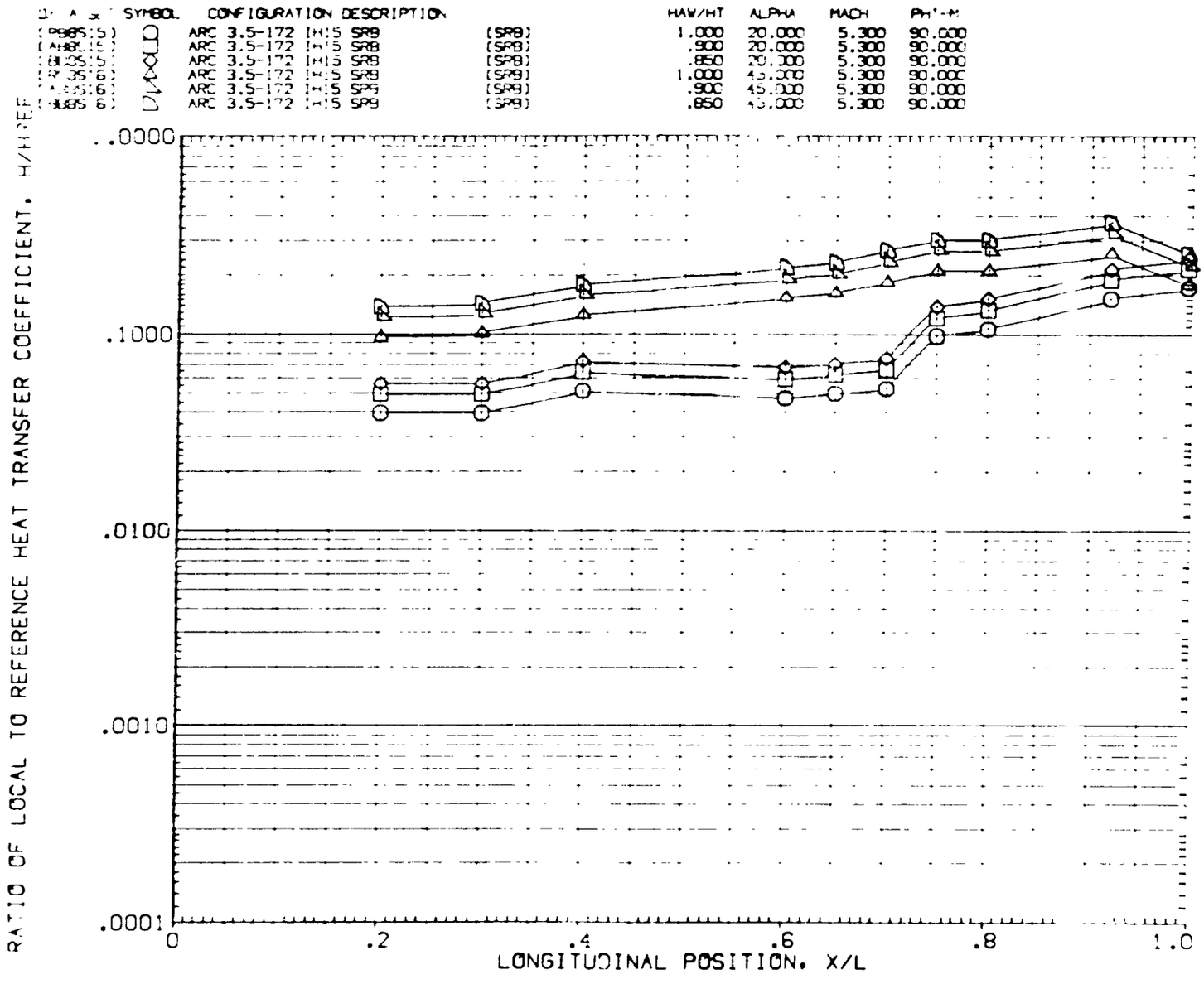


FIG. 32 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.304 MACH = 5.300 PHI = 225.000

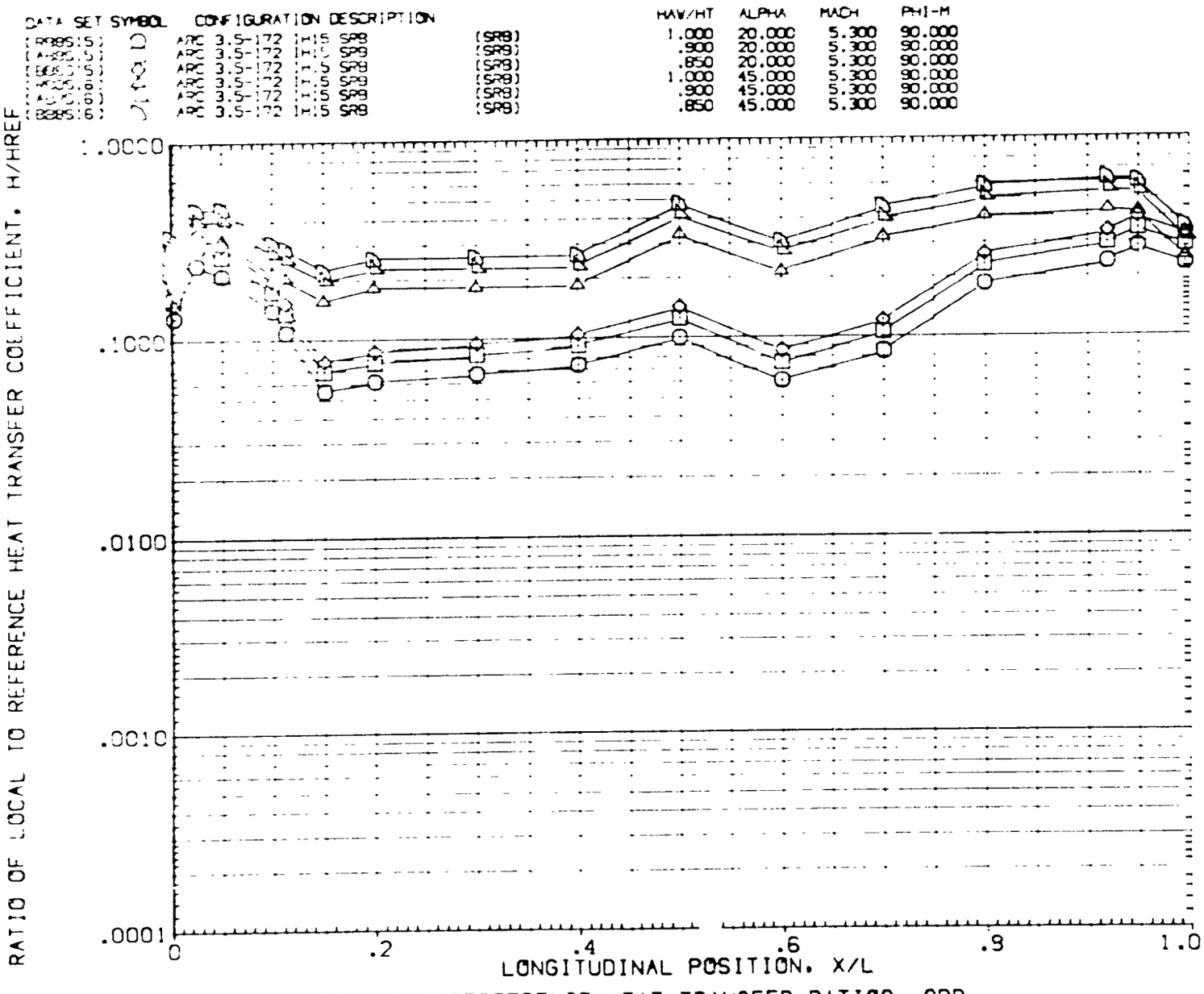


FIG. 32 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.304 MACH = 5.300 PHI = 270.000

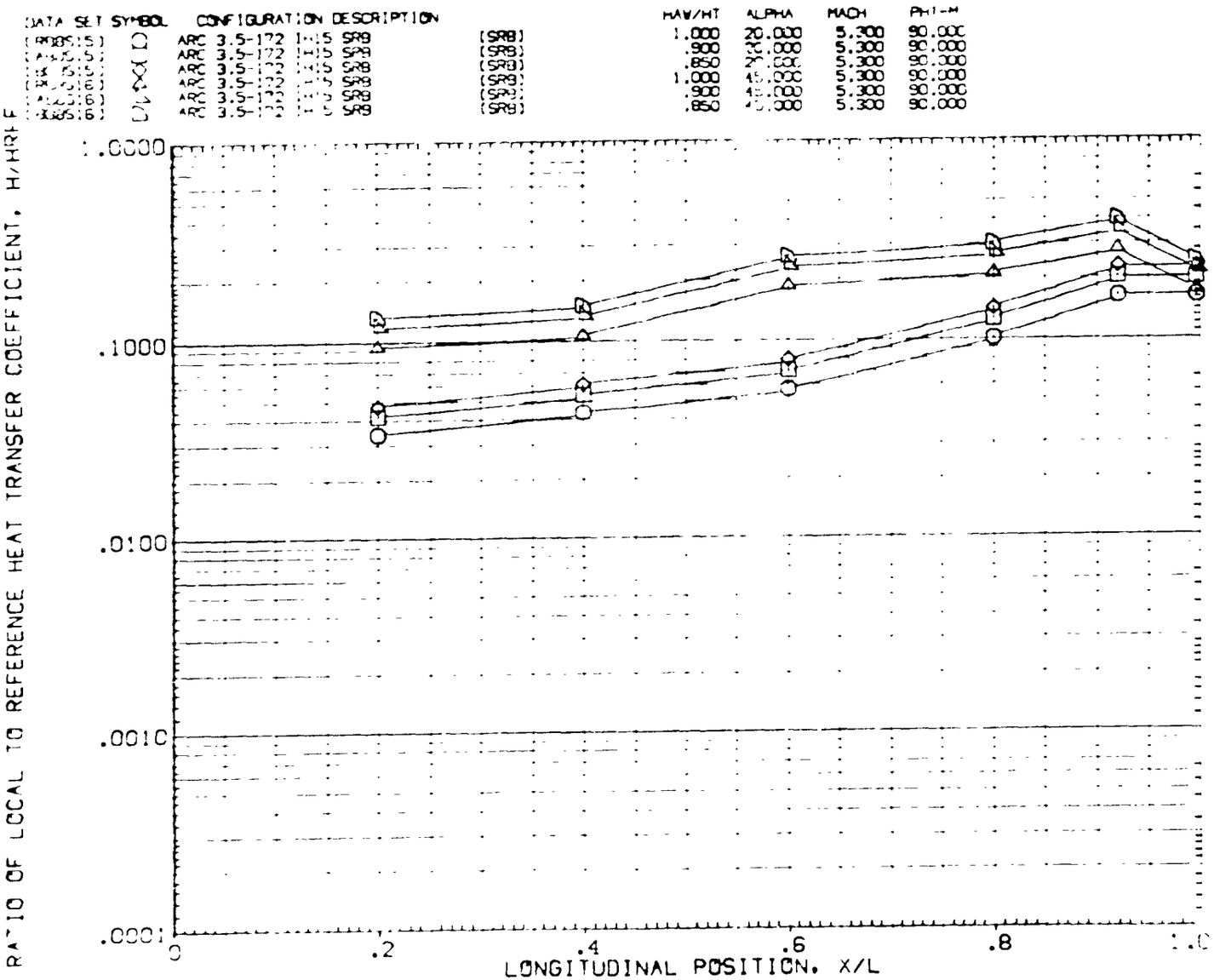


FIG. 32 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.300 [illegible] = 5.300 PHI = 315.000

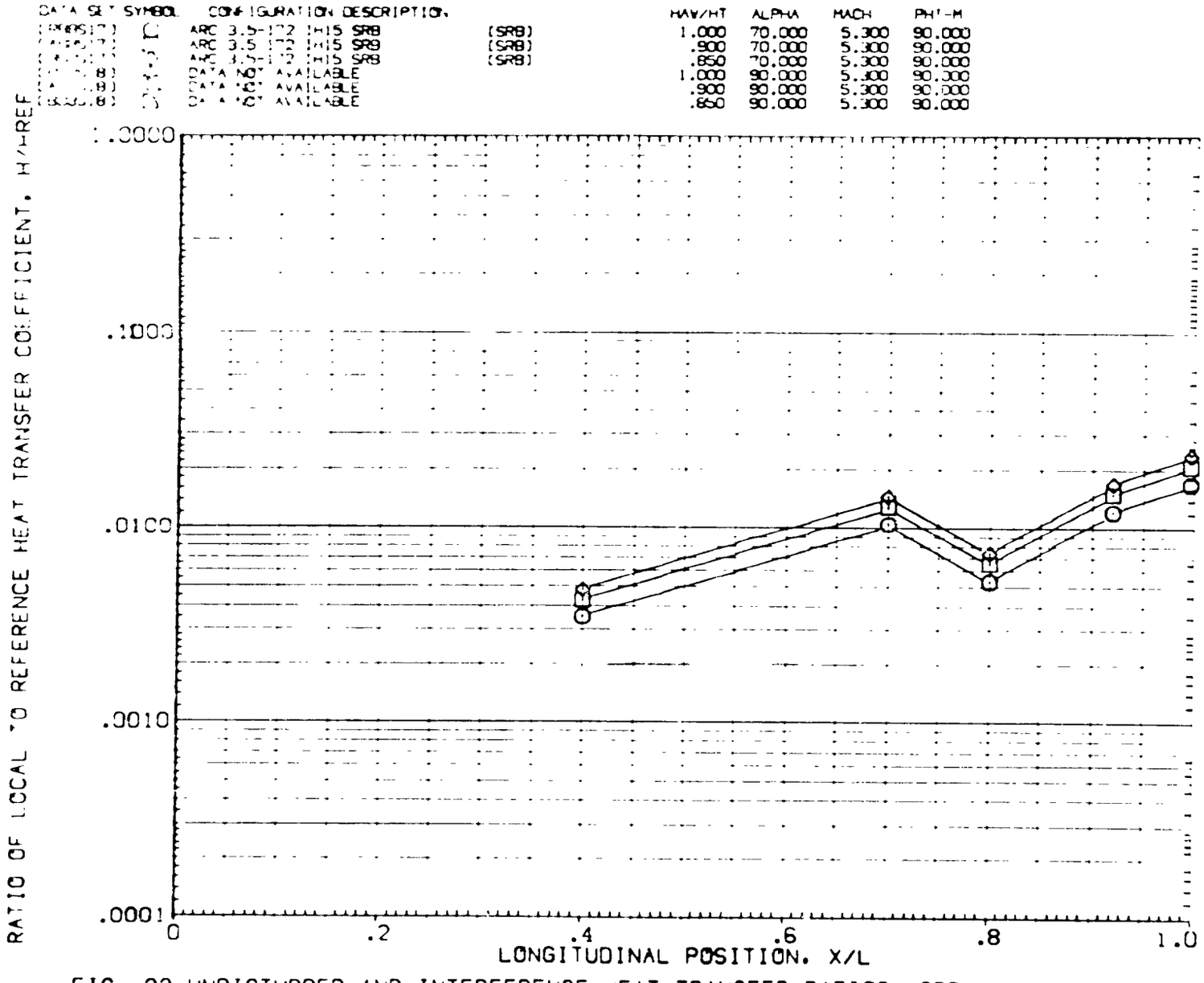


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.926 MACH = 5.300 PHI = 90.000

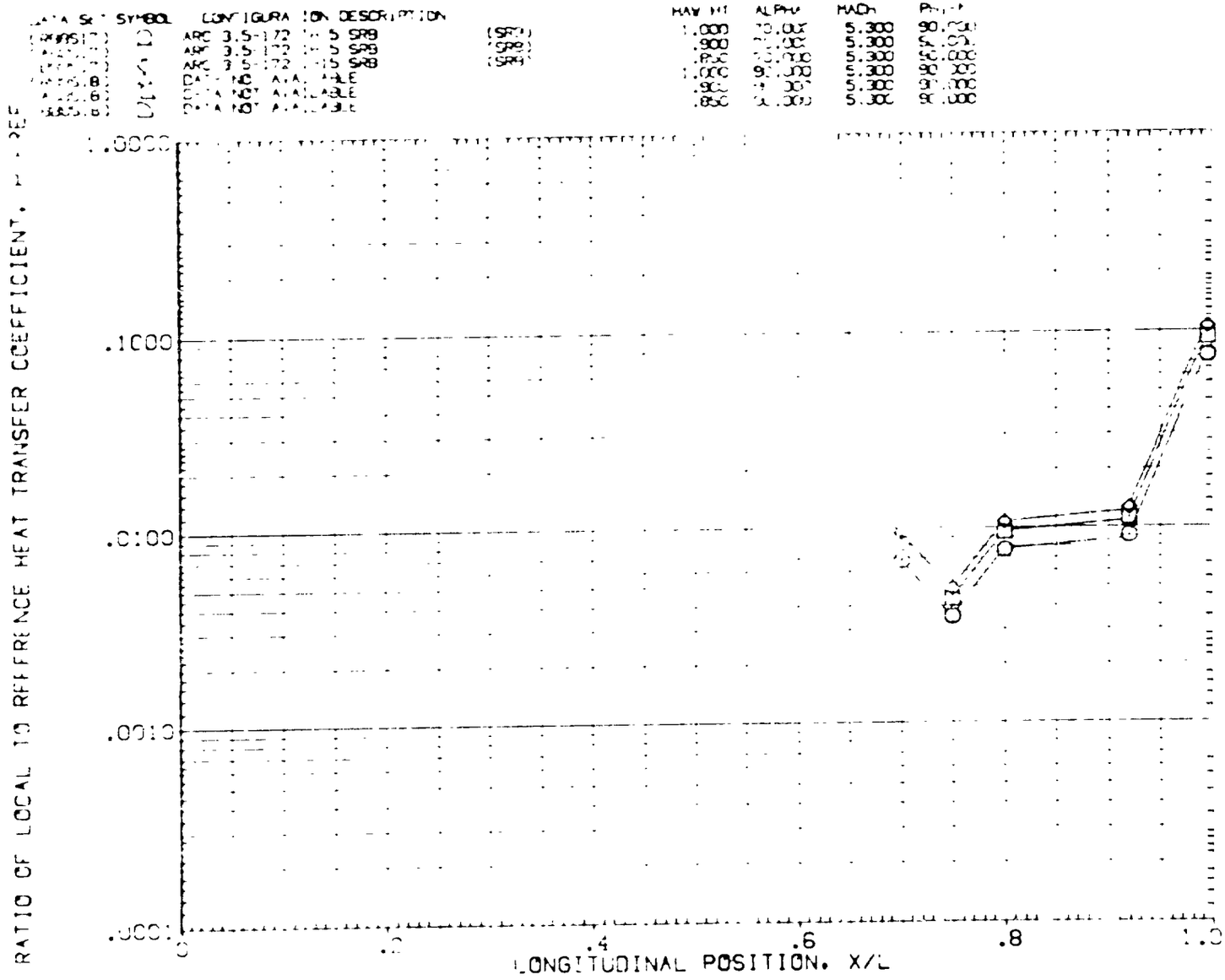


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.926 MACH = 5.300 PHI = 135.000

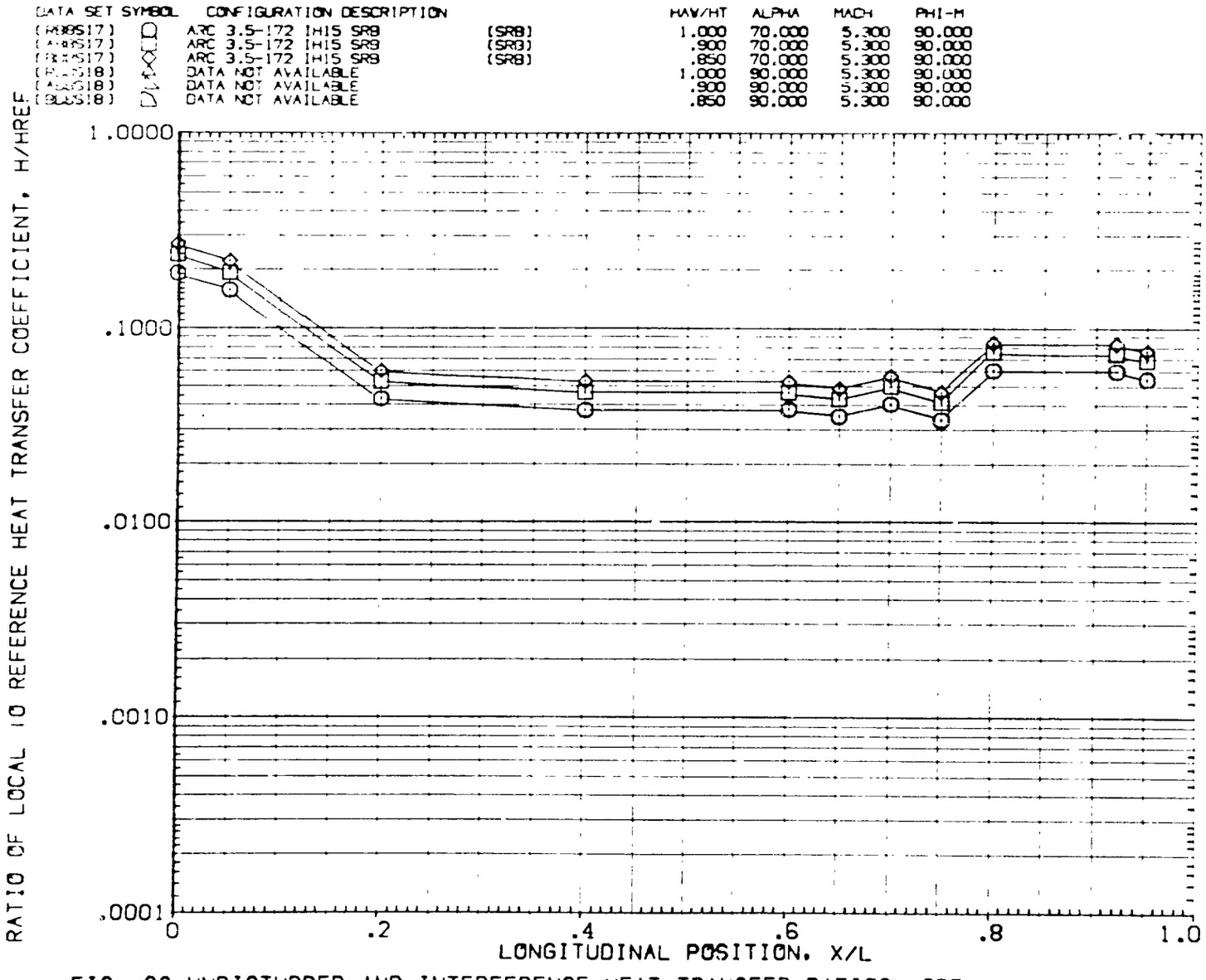


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.926 MACH = 5.300 PHI = 180.000

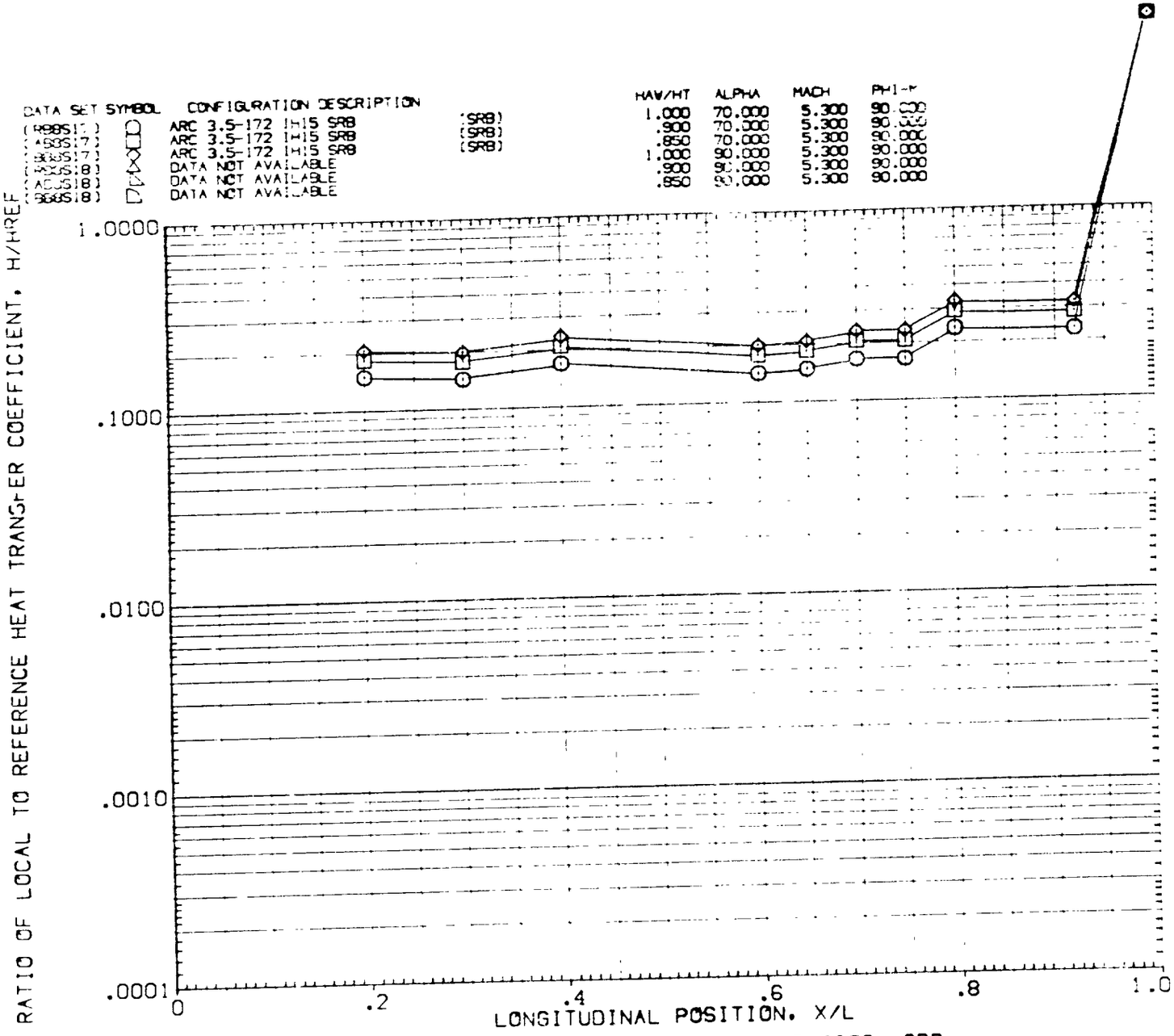


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.926 MACH = 5.300 PHI = 225.000

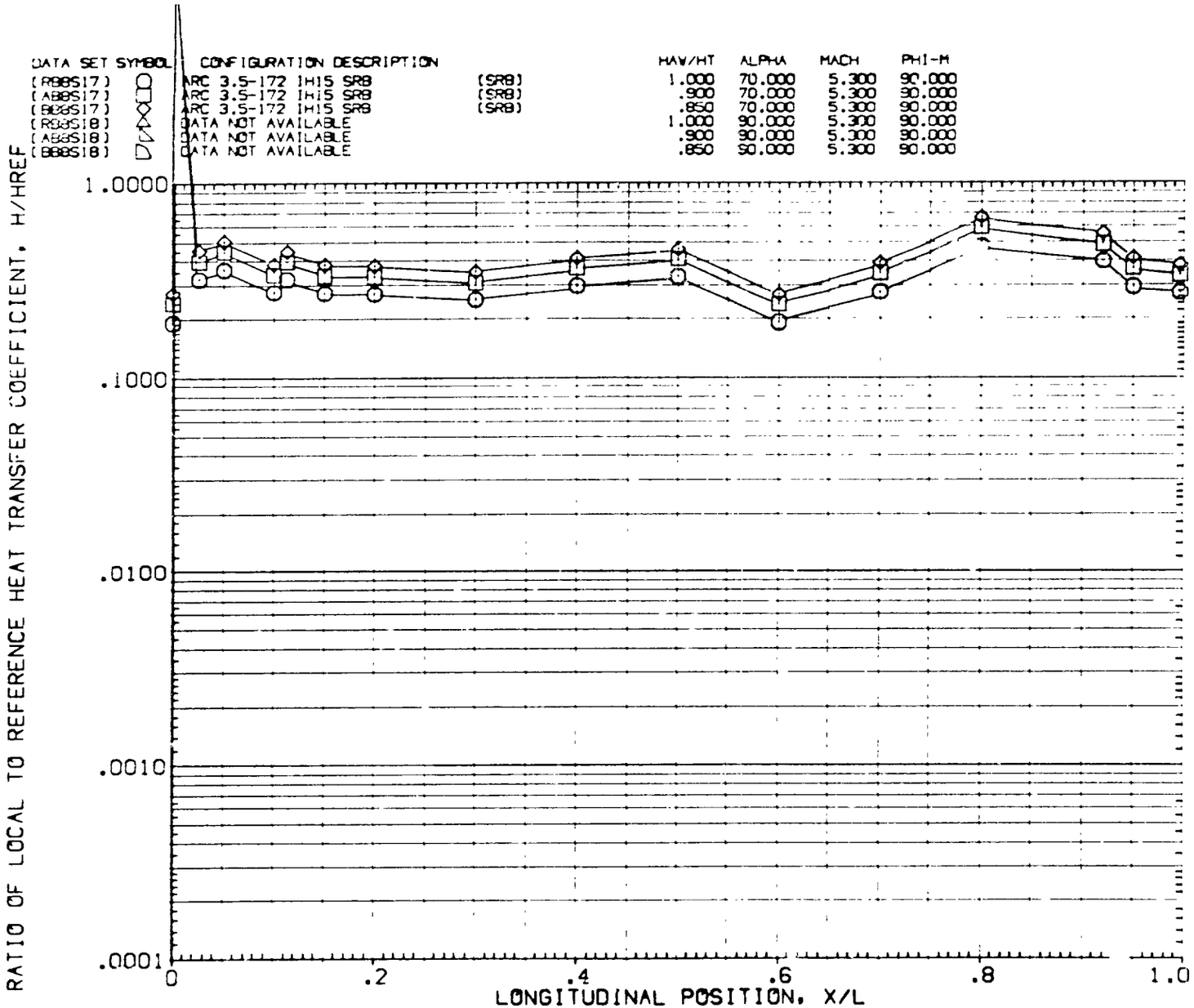


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.926 MACH = 5.300 PHI = 270.000

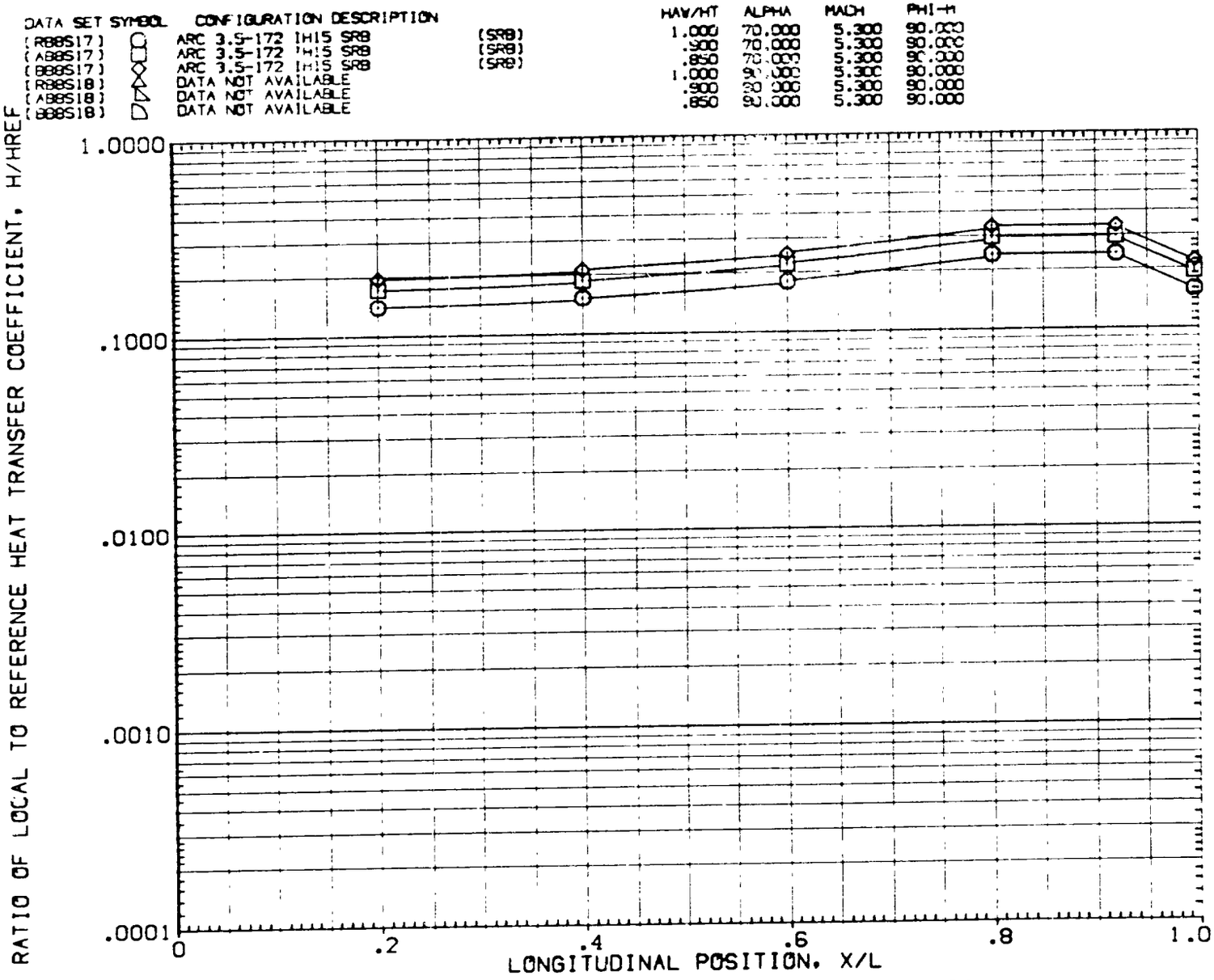


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 4.926 MACH = 5.300 PHI = 315.000

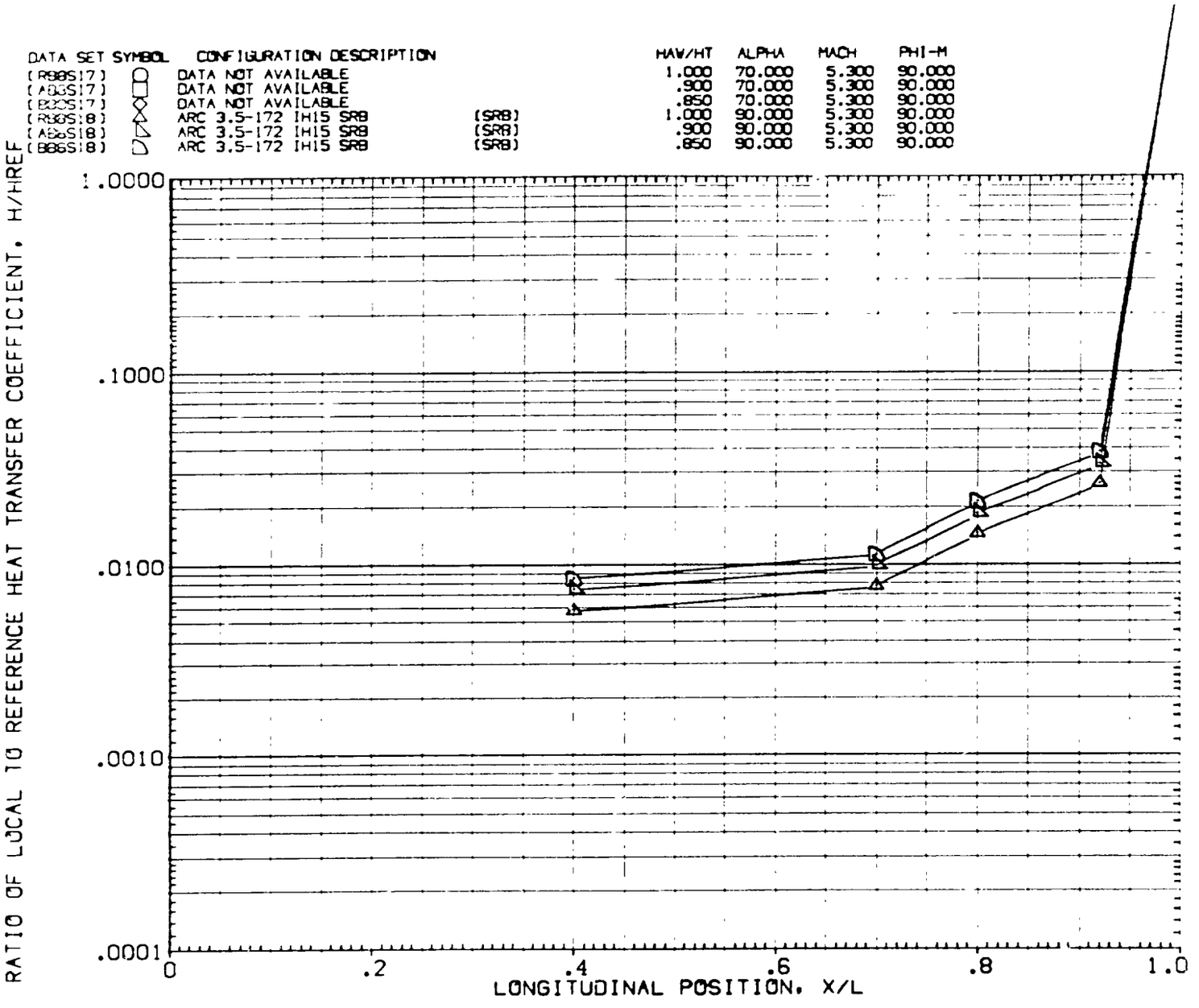


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.872 MACH = 5.300 PHI = 90.000

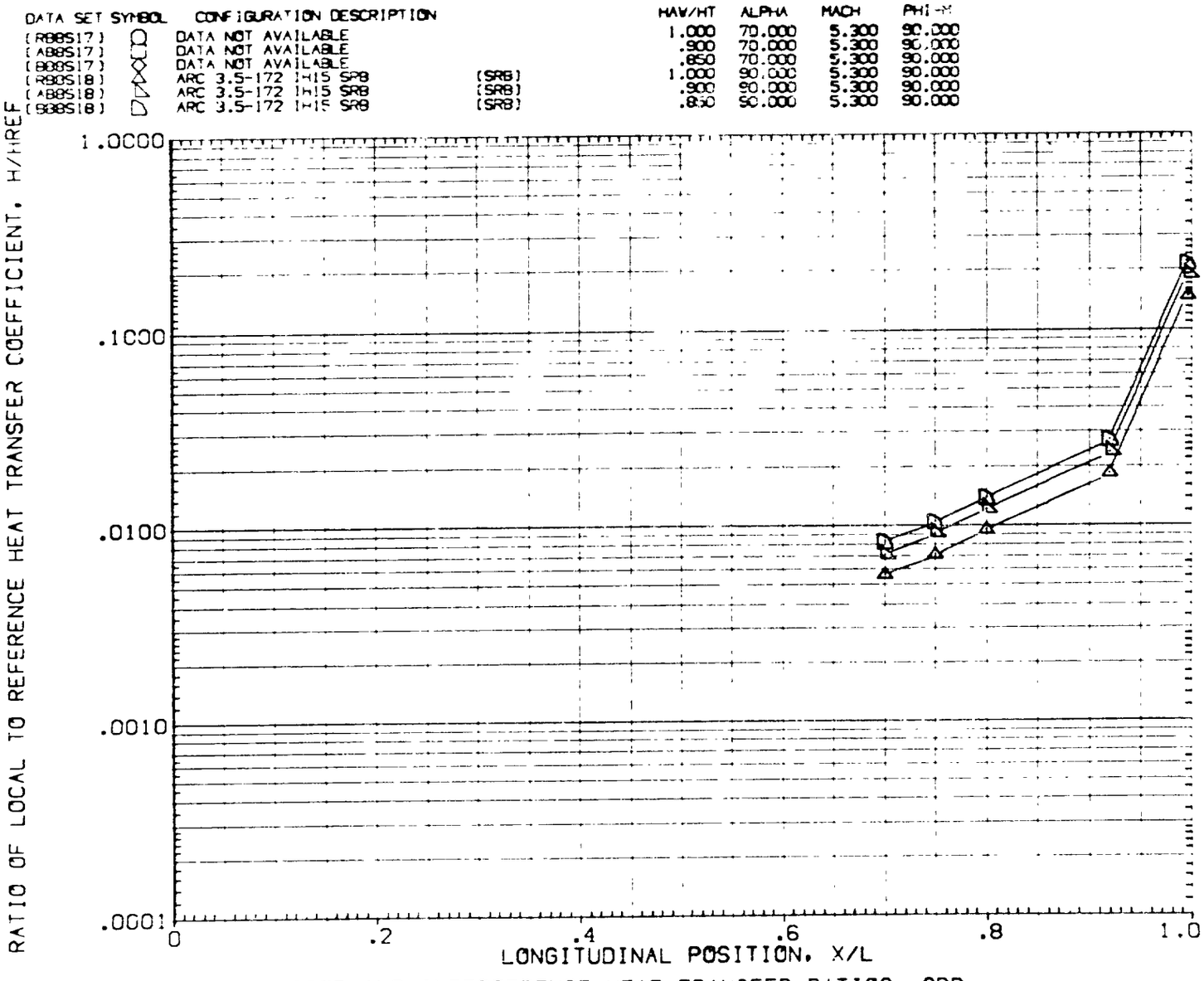


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.872 MACH = 5.300 PHI = 135.000

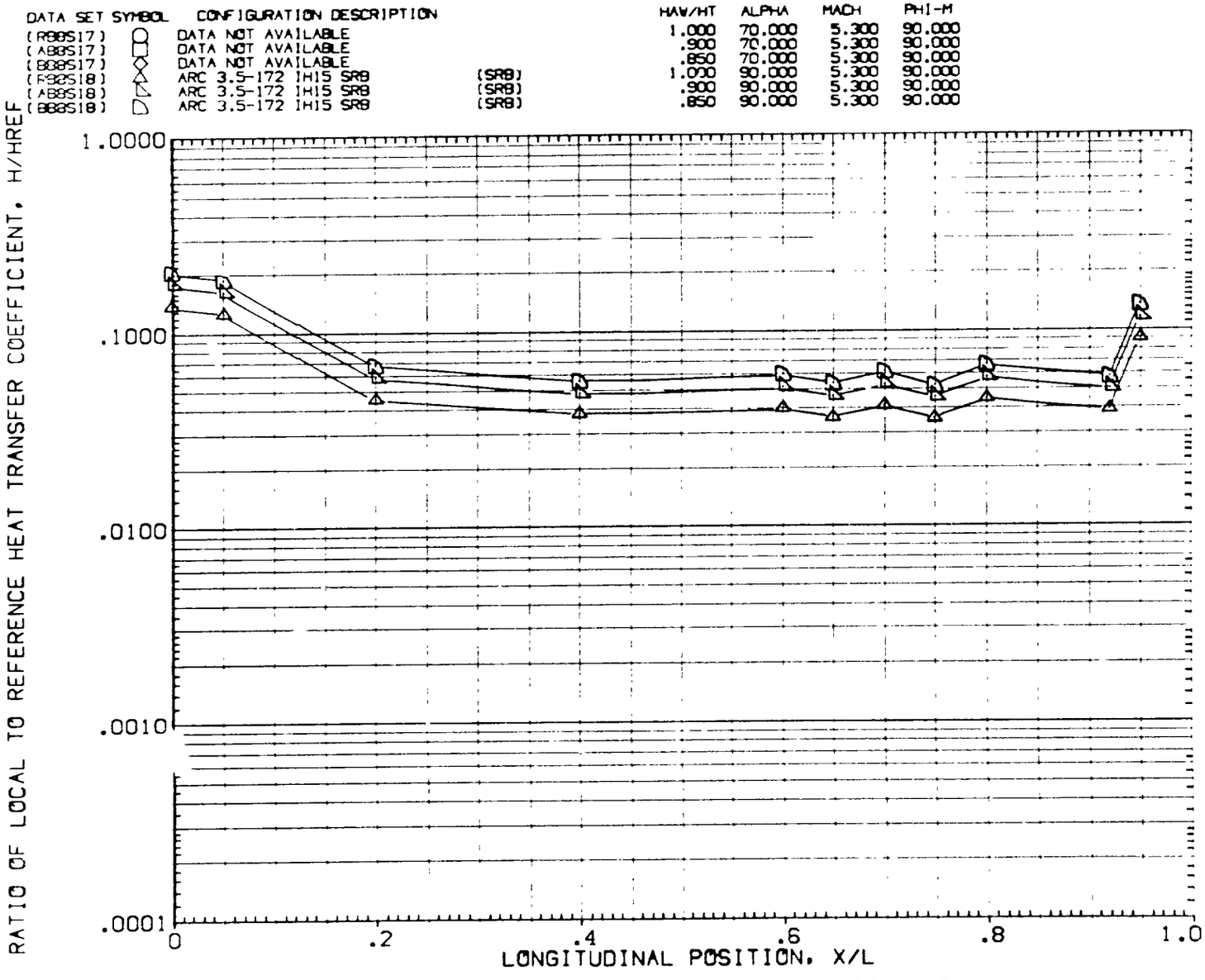


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.872 MACH = 5.300 PHI = 180.000

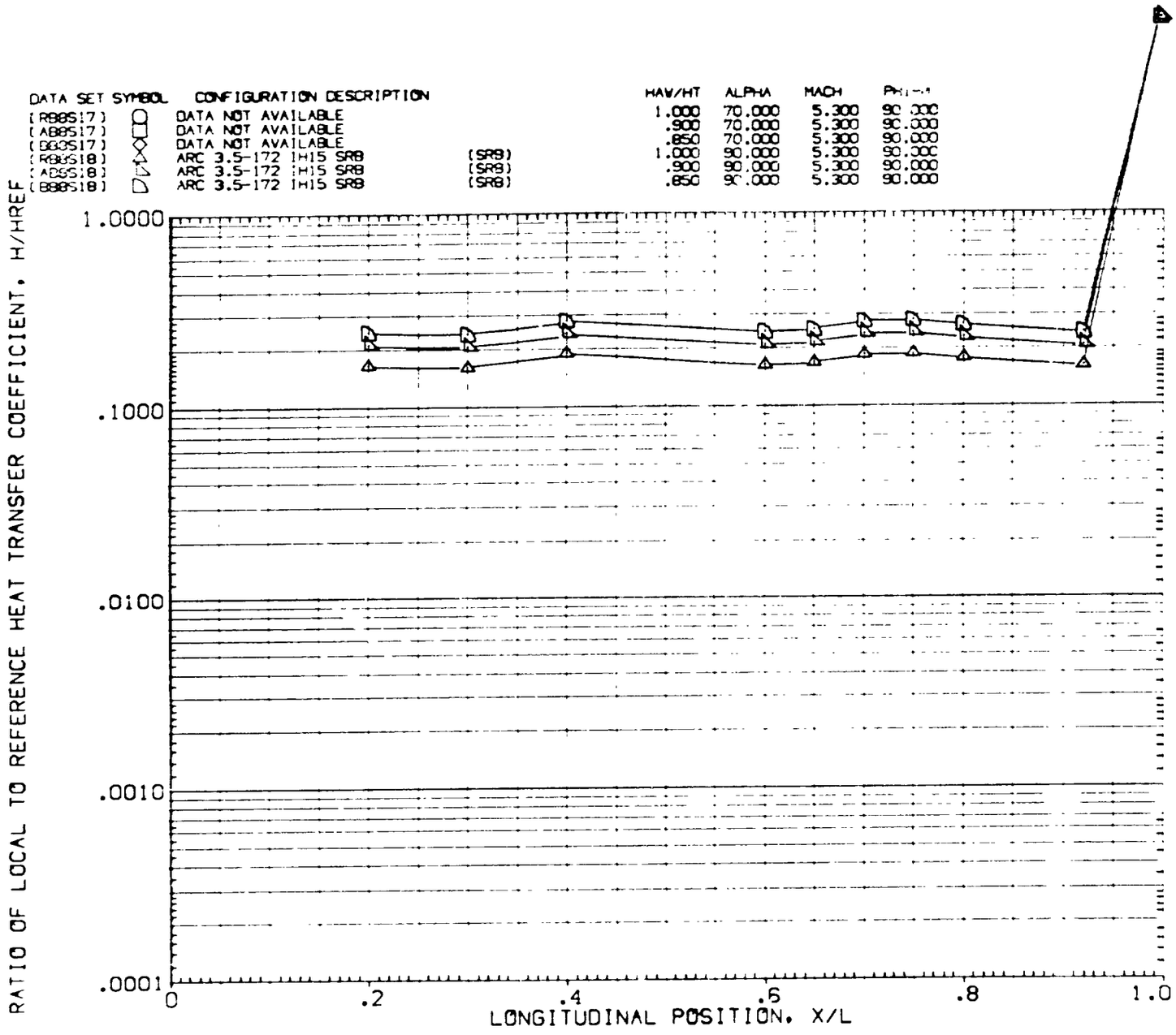


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.872 MACH = 5.300 PHI = 225.000

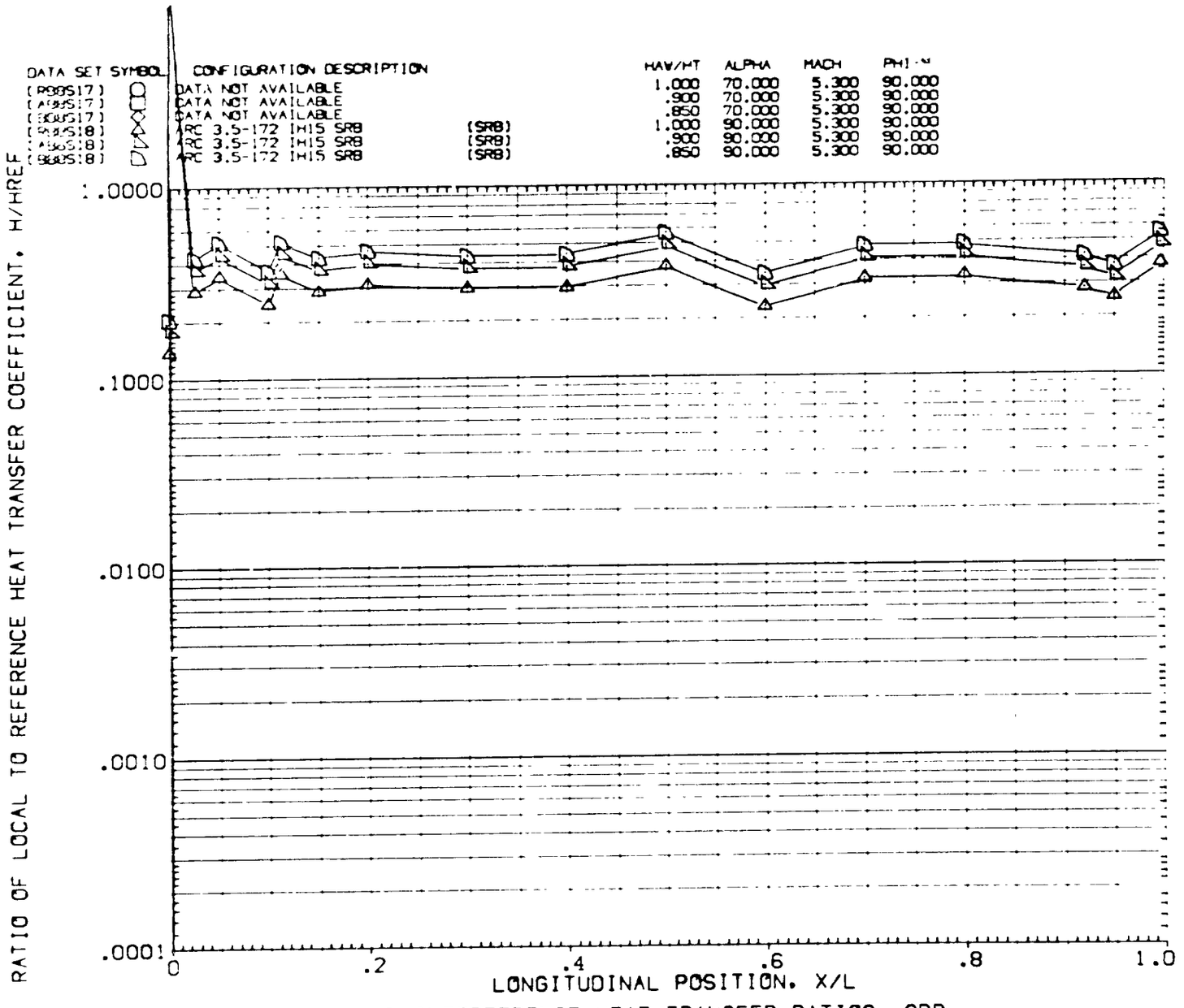


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.872 MACH = 5.300 PHI = 270.000

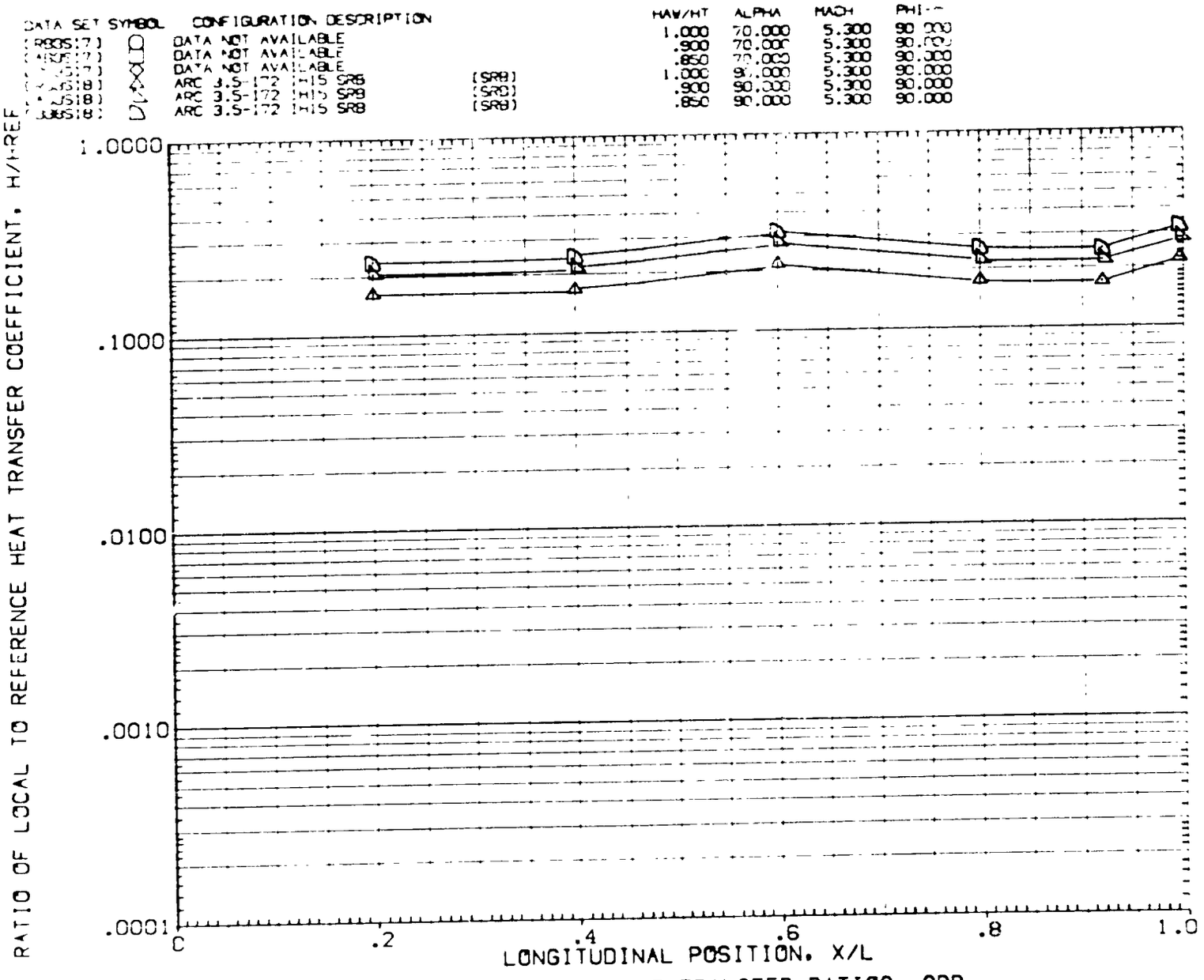


FIG. 33 UNDISTURBED AND INTERFERENCE HEAT TRANSFER RATIOS, SRB.

RN/L = 5.872 MACH = 5.300 PHI = 315.000

APPENDIX

TABULATED SOURCE DATA

Tabulations of plotted data are available on request from Data Management Services.

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (RB8B01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 956.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HA/HT = 1.000

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.226 RHOVEL = .301

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.068	.0220	
.125	.0137	
.175	.0090	
.250	.0074	
.300	.0069	
.350		.0117
.400	.0059	.0129
.500		.0110
.600	.0056	.0105
.700	.0049	.0087
.800	.0045	.0068
.900	.0037	.0051
1.000	.0040	.0043
1.025	.0039	

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.068	.0014	
.125	.0009	
.175	.0006	
.250	.0005	
.300	.0004	
.350		.0005
.400	.0004	.0006
.500		.0006
.600	.0005	.0005
.700	.0005	.0004
.800	.0004	.0004
.900	.0004	.0003
1.000	.0005	.0003
1.025	.0004	

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (RB8B32) (20 AUG 74)

REFERENCE DATA

SREF = 2690.3000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8130 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0360

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .000

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.050	.0065	
.125	.0040	
.175	.0026	
.250	.0021	
.300	.0022	
.350		.0020
.400	.0030	.0025
.500		.0047
.600	.0042	.0090
.700	.0035	.0112
.800	.0029	.0098
.900	.0029	.0072
1.000	.0030	.0055
1.029	.0030	

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.050	.0062	
.125	.0037	
.175	.0025	
.250	.0018	
.300	.0025	
.350		.0022
.400	.0042	.0047
.500		.0118
.600	.0072	.0124
.700	.0072	.0096
.800	.0065	.0073
.900	.0052	.0050
1.000	.0048	.0040
1.029	.0043	

ARC 3.5-1/2 IH15 ORB + ET (ORBITER BODY) (RB8B03) (20 AUG 74)

REFERENCE DATA

SREF = 2690.3000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8130 IN. YMRP = .0000 IN.
BREF = 930.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAM/HT = 1.000

AM/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 H1 = 218.677 RHOVEL = .716

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0181	
.125	.0067	
.175	.0166	
.250	.0123	
.300	.43	
.350		.0161
.400	. .59	.0177
.500		.0154
.600	.0150	.012
.700	.0135	.0096
.800	.0105	.0068
.900	.0047	.0045
1.000	.0024	.0032
1.025	.0021	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY) (RB8805) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 939.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 Mnl-M = .000
HAW/HT = 1.000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0295	
.125	.0191	
.175	.0059	
.250	.0259	
.300	.0255	
.350		.0222
.400	.0235	.0247
.500		.0311
.600	.0305	.0239
.700	.0246	.0205
.800	.0172	.0144
.900	.0073	.0058
1.000	.0018	.0029
1.025	.0022	

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0258	
.125	.0170	
.175	.0071	
.250	.0272	
.300	.0383	
.350		.0248
.400	.0418	.0447
.500		.0492
.600	.0384	.0421
.700	.0275	.0332
.800	.0176	.0208
.900	.0081	.0050
1.000	.0041	.0040
1.025	.0048	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BOD1) (RB8B06 , 20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
MAW/MT = 1.000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.590 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE K/HREF

Y	.0000	.4150
X/L		
.088	.0220	
.125	.0211	
.175	.0115	
.250	.0233	
.300	.0189	
.350		.0228
.400	.0150	.0247
.500		.0264
.600	.0226	.0233
.700	.0208	.0204
.800	.0157	.0149
.900	.0056	.0088
1.000	.0018	.0017
1.025	.0020	

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE K/HREF

Y	.0000	.4150
X/L		
.088	.0199	
.125	.0190	
.175	.0102	
.250	.0228	
.300	.0174	
.350		.0229
.400	.0148	.0328
.500		.0417
.600	.0239	.0404
.700	.0212	.0319
.800	.0162	.0223
.900	.0069	.0132
1.000	.0033	.0037
1.025	.0038	

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (RB8W01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 938.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .30.

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0316	
.200		.0375	
.225	.0253		
.250	.0294		.0494
.300	.0276	.0288	.0425
.400	.0252	.0260	.0367
.500	.0214	.0225	.0300
.600	.0164	.0188	.0262
.700	.0137	.0132	.0213
.800		.0125	.0175
.850			.0139
.875		.0088	
.900	.0076		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .76

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0020	
.200		.0026	
.225	.0015		
.250	.0017		.0035
.300	.0016	.0021	.0031
.400	.0015	.0020	.0027
.500	.0013	.0018	.0023
.600	.0011	.0015	.0020
.700	.0009	.0013	.0016
.800		.0010	.0012
.850			.0010
.875		.0006	
.900	.0005		

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (RB8W02) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.030

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

2Y/B	.4000	.6000	.8000
X/C			
.175		.0089	
.200		.0123	
.225	.0045		
.250	.0044		.0165
.300	.0041	.0092	.0141
.400	.0029	.0080	.0128
.500	.0022	.0071	.0096
.600	.0016	.0056	.0082
.700	.0014	.0047	.0066
.800		.0038	.0054
.850			.0043
.875		.0015	
.900	.0010		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

2Y/B	.4000	.6000	.8000
X/C			
.175		.0082	
.200		.0116	
.225	.0033		
.250	.0031		.0161
.300	.0029	.0091	.0140
.400	.0024	.0084	.0115
.500	.0026	.0083	.0101
.600	.0025	.0070	.0086
.700	.0022	.0057	.0069
.800		.0042	.0053
.850			.0043
.875		.0032	
.900	.0023		

ARC 3.5-172 IH15 ORB + ET (ORBITER WING) (RB8W03) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 4.332 MACH (1) = 5.300 FO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0261	
.200		.0331	
.225	.0227		
.250	.0260		.0587
.300	.0235	.0255	.0488
.400	.0206	.0231	.0495
.500	.0170	.0212	.0392
.600	.0125	.0176	.0352
.700	.0106	.0153	.0293
.800		.0122	.0231
.850			.0178
.875		.0085	
.900	.0067		

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING) (RB8W05) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8103 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = 1.000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 H1 = 318.311 RHOVEL = .30[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0235	
.200		.0317	
.225	.0203		
.250	.0239		.0457
.300	.0237	.0255	.0411
.400	.0213	.0224	.0378
.500	.0195	.0189	.0307
.600	.0154	.0168	.0263
.700	.0148	.0158	.0211
.800		.0137	.0166
.850			.0130
.875		.0105	
.900	.0142		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 H1 = 314.301 RHOVEL = .72[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0214	
.200		.0293	
.225	.0310		
.250	.0352		.0450
.300	.0321	.0235	.0393
.400	.0270	.0259	.0751
.500	.0228	.0287	.0287
.600	.0179	.0297	.0245
.700	.0212	.0265	.0199
.800		.0217	.0156
.850			.0125
.875		.0191	
.900	.0155		

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING) (RB8W06) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0246	
.200		.0337	
.225	.0219		
.250	.0235		.0399
.300	.0236	.0292	.0353
.400	.0201	.0291	.0314
.500	.0241	.0250	.0255
.600	.0234	.0205	.0213
.700	.0217	.0166	.0177
.800		.0137	.0140
.850			.0110
.875		.0101	
.900	.0145		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z /B	.4000	.6000	.8000
X/C			
.175		.0224	
.200		.0306	
.225	.0224		
.250	.0250		.0402
.300	.0246	.0255	.0364
.400	.0228	.0295	.0325
.500	.0279	.0307	.0269
.600	.0291	.0306	.0224
.700	.0288	.0263	.0178
.800		.0208	.0135
.850			.0107
.875		.0145	
.900	.0185		

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (RB8S07) (20 AUG 74)

REFERENCE DATA

BREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .320

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.2108		.2108	
.002					.1494	
.025					.2293	
.050			.1266		.1373	
.100					.0574	
.112					.0767	
.150					.0736	
.200			.0383	.0335	.0330	.0256
.300				.0165	.0165	
.400	.0130		.0173	.0450	.0255	.0127
.500					.0315	
.600			.0403	.0414	.0379	.0174
.650			.0405	.0455		
.700	.0221	.0270	.0403	.0443	.0214	
.750		.0290	.0422	.0473		
.800	.0353	.0453	.0634	.0619	.0373	.0228
.920	.0385	.0481	.0529	.0224	.0125	.0227
.950			.0654		.0147	
.996	.0534	.0689		.0192	.0180	.0229

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .714

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			9.9900		9.9900	
.002					.1509	
.025					.2174	
.050			.1228		.1321	
.100					.0549	
.112					.0786	
.150					.0801	
.200			.0516	.0414	.0354	.0213
.300				.0189	.0123	
.400	.0152		.0221	.0368	.0249	.0101
.500					.0461	

ARC 3.5-1/2 IH15 ORB + ET +SRB (SRB) (RB8S07)

RN/L (2) = 4.311 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.600			.0455	.0457	.0280	.0212
.650			.0406	.0493		
.700	.0264	.0342	.0386	.0528	.0368	
.750		.0408	.0476	.0612		
.800	.0413	.0518	.0650	.0727	.0647	.0276
.920	.0360	.0485	.0558	.0327	.0125	.0207
.950			.0745		.0148	
.998	.0688	.0771		.0282	.0159	.0192

ASC * 5-172 IH15 ORB + ET +SRB (SRB) (RB8508) (20 AUG 74)

REFERENCE DATA

SREF = 2890.000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 2.225 MACH (1) = 5.300 PO = 133.442 TO = 1174 .0 HT = 285.439 RHOVEL = .331

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.3123		.3123	
.002					.1209	
.025					.2340	
.050			.1638		.1373	
.100					.0638	
.112					.0955	
.150					.0812	
.200			.0281	.0688	.0370	.0122
.300				.0341	.0165	
.400	.0099		.0338	.0347	.0337	.0055
.500					.0506	
.600			.0448	.0422	.0293	.0148
.650			.0379	.0418		
.700	.0109	.0227	.0408	.0388	.0350	
.750		.0275	.0480	.0521		
.800	.0105	.0524	.0832	.0760	.0656	.0185
.900	.0127	.0393	.0649	.0368	.0126	.0151
.950			.0734		.0183	
.996	.0313	.0444		.0351	.0252	.0181

RN/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.21[illegible] HT = 301.186 RHOVEL = .73

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.1928		.1928	
.002					9.9900	
.025					.2117	
.050			.1526		.1264	
.100					.0618	
.112					.0799	
.150					.0837	
.200			.0314	.0673	.0333	.0116
.300				.0359	.0141	
.400	.0131		.0357	.0430	.0230	.0051
.500					.0561	

ARC 3.5-172 IH15 ORB + ET +SRB (SSB) (RB8508)

RN/L (2) = 4.713 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.600			.0555	.0625	.0331	.0209
.650			.0473	.0626		
.700	.0112	.0289	.0442	.0613	.0433	
.750		.0317	.0560	.0725		
.800	.0119	.0448	.0902	.0865	.0735	.0210
.920	.0126	.0415	.0642	.0415	.0113	.0182
.950			.0646		.0155	
.996	.0918	.0575		.0405	.0175	.0207

ARC 3.5-172 IH15 SRB (SRB) (B8513) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 956.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.687 MACH (1) = 5.300 PO = 153.442 TO = 1397.700 HT = 342.751 RHOVEL = .299

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2853		.2853	
.002					.1363	
.025					.1837	
.050			.1097		.1141	
.100					.0678	
.112					.0511	
.150					.0158	
.200			.0128	.0129	.0137	.0093
.300				.0113	.0113	
.400	.0073		.0100	.0109	.0108	.0086
.500					.0136	
.600			.0091	.0092	.0082	.0092
.650			.0079	.0099		
.700	.0037	.0043	.0047	.0066	.0084	
.750		.0032	.0059	.0058		
.800	.0027	.0039	.0041	.0043	.0048	.0032
.925	.0065	.0060	.0069	.0060	.0063	.0061
.950			.0174		.0122	
.996	.0304	.0327		.0298	.0332	.0277

RN/L (2) = 4.634 MACH (1) = 5.300 PO = 351.487 TO = 1247.410 HT = 304.045 RHOVEL = .738

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2542		.2542	
.002					.1223	
.025					.1724	
.050			.1006		.1022	
.100					.0621	
.112					.0466	
.150					.0144	
.200			.0115	.0113	.0114	.0073
.300				.0099	.0090	
.400	.0061		.0089	.0100	.0092	.0073
.[illegible]					.0122	

ARC 3.5-172 IH15 SRB (SRB) (RB8513)

RN/L (2) = 4.834 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.,.0000135,.0000180,.0000225,.0000270,.0000315,.0000

M/L						
.800			.0082	.0092	.0080	.0095
.850			.0066	.0096		
.900	.0026	.0019	.0055	.0061	.0085	
.950		.0052	.0059	.0073		
000	.0100	.0104	.0099	.0139	.0135	.0106
.920	.0291	.0278	.0301	.0312	.0387	.0393
.950			.0858		.0868	
.996	.0729	.0905		.0802	.0899	.0749

ARC 3.5-172 IH15 SRB (SRB) (RBB514) (23 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 2.138 MACH (1) = 5.300 PO = 151.245 TO = 1193.390 HT = 290.290 RHOVEL = .32.

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

X/L	PHI 90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
.000			.2618		.2618	
.002					.1157	
.025					.1776	
.050			.1335		.1036	
.100					.0655	
.112					.0481	
.150					.0144	
.200			.0211	.0176	.0130	.0056
.300				.0206	.0132	
.400	.0127		.0238	.0228	.0154	.0045
.500					.0135	
.600			.0236	.0202	.0033	.0062
.650			.0224	.0217		
.700	.0056	.0203	.0221	.0194	.0064	
.750		.0175	.0218	.0164		
.800	.0077	.0250	.0314	.0227	.0104	.0106
.920	.0130	.0302	.0449	.0383	.0103	.0137
.950			.1042		.0493	
.996	.0506	.0669		.0594	.0573	.0208

RN/L (2) = 5.469 MACH (1) = 5.300 PO = 351.853 TO = 1123.620 HT = 272.646 RHOVEL = .77.

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

X/L	PHI 90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
.000			.2341		.2341	
.002					.1176	
.025					.1571	
.050			.1192		.0925	
.100					.0534	
.112					.0438	
.150					.0129	
.200			.0199	.0173	[illegible]	.0046
.300				.0214	.0129	
.400	.0125		.0242	.0239	.0153	.0049
[illegible]					.0134	

ARC 3.5-172 IH15 SRB (SRB) (RB8514)

RN/L (2) = 5.469 MACH (1) = 5.300

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.600			.0237	.0207	.0098	.0026
.650			.0212	.0219		
.700	.0050	.0182	.0205	.0187	.0071	
.750		.0253	.0339	.0274		
.800	.0126	.0318	.0456	.0352	.0140	.0154
.920	.0338	.0569	.0813	.0767	.0513	.0318
.950			.1248		.0937	
.996	.0684	.0952		.0881	.0769	.0521

ARC 3.5-172 IH15 SRB (SRB) (RB8S15) (20 AUG 74)

REFERENCE DATA

SREF = 2090.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 20.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = 1.000

RN/L (1) = 5.304 MACH (1) = 5.300 PO = 350.938 TO = 1143.860 HT = 277.751 RHOVEL = .769

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.2140		.2140	
.002					.1298	
.025					.2090	
.050			.1276		.2114	
.100					.1401	
.112					.1088	
.150					.0554	
.200			.0171	.0398	.0617	.0339
.300				.0395	.0667	
.400	.0122		.0139	.0513	.0737	.0433
.500					.1000	
.600			.0140	.0477	.0634	.0569
.650			.0132	.0500		
.700	.0097	.0068	.0141	.0533	.0850	
.750		.0104	.0249	.0977		
.800	.0139	.0107	.0281	.1074	.1847	.1011
.920	.0146	.0095	.0416	.1529	.2386	.1644
.950			.0873		.2818	
.936	.0161	.0139		.1735	.2316	.1629

ARC 3.5-172 IH15 SRB (SRB) (RB8S16) (20 AUG 74)

REFERENCE DATA

BREF = 2890.3000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 45.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAM/HT = 1.000

RN/L (1) = 5.559 MACH (1) = 5.300 PO = 351.670 TO = 1111.580 HT = 269.615 RHOVEL = .783

SECTION (1)41-013 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.2338		.2338	
.002					.1502	
.025					.3189	
.050			.1544		.3216	
.100					.2180	
.112					.2030	
.150					.1579	
.200			.0286	.0973	.1816	.0941
.300				.1013	.1833	
.400	.0049		.0277	.1263	.1856	.1066
.500					.3327	
.600			.0325	.1549	.2164	.1874
.650			.0304	.1630		
.700	.0063	.0050	.0366	.1859	.3203	
.750		.0078	.0375	.2130		
.800	.0029	.0067	.0495	.2113	.4061	.2147
.920	.0063	.0068	.0613	.2598	.4375	.2807
.950			.0836		.4244	
.996	.0026	.0059		.1796	.2538	.1740

ARC 3.5-172 IH15 SRB (SRB) (RB8S17) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 70.000 BETA = .0
MACH = 5.300 PHI-A = 90.000
HAW/HT = 1.000

RN/L (1) = 4.926 MACH (1) = 5.300 PO = 353.867 TO = 1205.180 HT = 293.284 RHOVEL = .752

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.1932		.1932	
.025					.3210	
.050			.1569		.3598	
.100					.2764	
.112					.3198	
.150					.2736	
.200			.0432	.1501	.2693	.1410
.300				.1445	.2509	
.400	.0035		.0377	.1707	.2962	.1529
.500					.3294	
.600			.0381	.1433	.1932	.1800
.650			.0349	.1496		
.700	.0105	.0068	.0408	.1667	.2772	
.750		.0035	.0337	.1669		
.800	.0053	.0077	.0611	.2374	.4745	.2414
.920	.0122	.0090	.0597	.2307	.3939	.2410
.950			.0547		.2931	
.996	.0169	.0754			.2712	.1597

ARC 3.5-172 IH15 SRB (SRB) (RB8518) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8190 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 90.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = 1.000

RN/L (1) = 5.872 MACH (1) = 5.300 FO = 353.135 TO = 1076.200 HT = 260.731 RHOVEL = .800

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.1389		.1389	
.025					.2883	
.050			.1254		.3457	
.100					.2473	
.112					.3526	
.150					.2897	
.200			.0456	.1665	.3130	.1625
.300				.1615	.2949	
.400	.0058		.0379	.1892	.2958	.1687
.500					.3002	
.600			.0403	.1631	.2317	.2188
.650			.0362	.1686		
.700	.0077	.0056	.0414	.1845	.3233	
.750		.0071	.0354	.1877		
.800	.0145	.0095	.0449	.1788	.3290	.1752
.920	.0261	.0184	.0390	.1614	.2799	.1711
.950			.0908		.2497	
.996	9.9900	.1460			.3719	.2213

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (RB8C01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1350			
1.251			.1500	
1.272	.1879			
1.305		.1768		
1.334	.2095			
1.358		.1897		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.0222			
1.251			.0223	
1.272	.0315			
1.305		.0266		
1.334	.0339			
1.358		.0288		

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (RB8C02) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1813			
1.251			.1898	
1.272	.2426			
1.305			.2111	
1.334	.2637			
1.358		.2275		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2449			
1.251			.2445	
1.272	.3177			
1.305			.2581	
1.334	.3341			
1.358		.2809		

ARC 3.5-172 IH15 ORB + ET (WINDSHIELD) (RB8C03) ((AUG 74))

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1817			
1.251				.1877
1.272	.2425			
1.305			.2111	
1.334	.2603			
1.358		.2254		

ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD) (588C05) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y / X	.0470	.1780	.1960	.2130
1.210	.1422			
1.251				.1543
1.272	.1966			
1.305			.1800	
1.334	.2159			
1.358		.1954		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y / X	.0470	.1780	.1960	.2130
1.210	.2043			
1.251				.2353
1.272	.2752			
1.305			.2464	
1.334	.2837			
1.358		.2693		

DATE 05 SEP 74 TABULATED DATA LISTING FOR IH15 (ARC 3.5-172)

ARC 3.5-172 IH15 SRB + ET +SRB (WINDSHIELD) (RB&C06) (20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 976.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.0000

RN/L (1) = 1.952 MACH (1) = 5.300 FO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1592			
1.251			.1736	
1.272	.2200			
1.305			.2042	
1.334	.2404			
1.358		.2180		

RN/L (2) = 4.570 MACH (1) = 5.300 FO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .753

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2296			
1.251			.2440	
1.272	.3003			
1.305			.2690	
1.334	.3070			
1.358		.2818		

ARC 3.5-172 IH15 ORB + ET (EXTERNAL TANK) (RB8103) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 996.6420 IN. ZMRP = .0000 IN.
SCALE = .1363

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
H&W/HT = 1.000

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.500 HT = 318.677 RHOVEL = .716

SECTION (1141-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L

.450	.0034		.0294	.0609
.550	.0202		.0275	.0231
.650	.0215	.0201	.0161	.0213
.750	.0180	.0122	.0151	.0213
.850	.0158	.0128	.0199	.0219

ARC 3.5-1.2 Ih15 ORB + ET (EXTERNAL TANK) (RB8104) (2) AUG (4)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.35) PHI-N = .000
HAW/HT = 1.0)

RN/L (1/ = 4.781 MACH (1) = 5.300 FO = 352.403 TO = 1225.090 HT = 298.350 RHOVEL = .742

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

X/L								
.000								.3135
.010								.1933
.020								.1284
.040								.1112
.060								.0884
.080								.0712
.100								.0554
.150								.0270
.200				.0101				.0132
.300			.0080	.0062	.0059			.0072
.350								.0047
.375								.0128
.400	.0046	.0048	.0052	.0054	.0047	.0047	.0179	.0161
.425								.0970
.450								.0511
.475								.0302
.500		.0040	.0026	.0046	.0142	.0241	.0425	.0222
.525								.0189
.550								.0219
.575								.0309
.600	.0020	.0022	.0066	.0146	.0206	.0257	.0268	.0297
.650								.0242
.675								.0253
.700		.0056	.0136	.0214	.0195	.0229	.0226	.0233
.750								.0252
.800	.0019	.0098	.0195	.0177	.0222	.0214	.0231	.0265
.850								.0243
.900		.0152	.0225	.0186	.0218	.0201	.0218	.0217
.935								.0125
.975								.0166

ARC 3.5-1 2 1H15 ORB + ET +SRB (EXTERNAL TANK) (RB810*) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6800 IN. ZMRP = .0000 IN.
SCALE = .0

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.30 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.120 HT = 318.311 RHOVEL = .305

SECTION (1)41-0TS DEPENDENT VARIABLE H/HREF

PHI 90.0000 112.5000 135.0000 157.5000

X/L				
.450	.0198		.0288	.0821
.550	.0172		.0465	.0342
.650	.0149	.0269	.0287	3.5
.750	.0142	.0256	.0137	.0241
.850	.0327	.0262	.0163	.0212

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-0TS DEPENDENT VARIABLE H/HREF

PHI 90.0000 112.5000 135.0000 157.5000

X/L				
.450	.0177		.0375	.0853
.550	.0145		.0539	.0346
.650	.0305	.0242	.0359	.0425
.750	.0346	.0290	.0297	.0418
.850	.0366	.0365	.0221	.0299

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8TC6) (20 AUG 74)

REFERENCE DATA

BREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6100 IN. YMRP = .0000 IN.
BREF = 936.6625 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
MAC/HT = 1.000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HI = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

R/L
.450 .0217 .0461 .0807
.550 .0106 .0585 .0859
.650 .0307 .0350 .0312 .0270
.750 .0365 .0420 .0199 .022
.830 .0315 .0371 .0199 .0199

RN/L (2) = 4.970 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HI = 307.600 RHOVEL = .73

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

R/L
.450 .0212 .0550 .0857
.550 .0216 .0616 .0443
.650 .0329 .0409 .0421 .0445
.750 .0386 .0502 .0361 .0440
.850 .0343 .0444 .0391 .0378

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8107) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .2[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					.2543
.125					.0324
.175					.0187
.250		.0053			
.275		.0060	.0028		
.325		.1113	.0423	.0045	
.350	.0707	.0767	.0693	.0115	
.375				.0177	
.450			.0113		
.550			.0123		
.650	.0111				
.750	0093				

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .714

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					.2458
.125					.0326
.175					.0186
.250		.0046			
.275		.0060	.0031		
.325		.1148	.0352	.0051	
.350	.0738	.0845	.0622	.0122	
.375				.0202	
.450			.0154		
.550			.0239		
.650	.0128				
.750	.0167				

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8T08) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 2.225 MACH (1) = 5.300 PO = 153.442 TO = 1174.260 HT = 285.439 RHOVEL = .331

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					.2789
.125					.0447
.175					.0268
.250		.0081			
.275		.0078	.0068		
.325		.1201	.0393	.0051	
.350	.0566	.0916	.0772	.0164	
.375				.0346	
.450			.0294		
.550			.0331		
.650	.0035				
.750	.0072				

RN/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 HT = 301.186 RHOVEL = .738

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					.2554
.125					.0423
.175					.0255
.250		.0056			
.275		.0069	.0048		
.325		.1319	.0302	.0064	
.350	.0612	.1026	.0656	.0164	
.375				.0336	
.450			.0345		
.550			.0362		
.650	.0052				
.750	.0074				

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8109) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
CREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.804 MACH (1) = 5.300 PO = 150.696 TO = 1325.300 HT = 324.022 RHOVEL = .30?

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.3812
.010								.2267
.020								.1473
.040								.1254
.060								.0963
.080								.0740
.100								.0551
.150								.0269
.200				.0131				.0150
.300			.0104	.0623	.0181			.0036
.350								.0056
.375								.0112
.400	.0030	.0320	.0266	.0384	.0283	.0235	.0207	.0612
.425								.1103
.450								.0602
.475								.0360
.500		.0318	.0094	.0086	.0093	.0392	.0639	.0252
.525								.0227
.550								.0117
.575								.0126
.600	.0213	.0194	.0081	.0227	.0167	.0413	.0391	.0185
.650								.0258
.675								.0274
.700		.0133	.0111	.0160	.0291	.0261	.0269	.0296
.750								.0308
.800	.0146	.0147	.0110	.0263	.0342	.0171	.0259	.0307
.850								.0232
.900		.0155	.0147	.0324	.0360	.0128	.0187	.0219
.935								.0126
.975								.0032

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8109)

RN/L (2) = 4.652 MACH (1) = 5.300 PO = 352.769 TO = 1247.200 H1 = 303.991 RHOVEL = .735

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

X/L								
.000								.3244
.010								.1966
.020								.1292
.040								.1104
.060								.0843
.080								.0650
.100								.0476
.150								.0228
.200				.0106				.0125
.300			.0091	.0619	.0188			.0041
.350								.0070
.375								.0126
.400	.0050	.0257	.0261	.0331	.0293	.0245	.0272	.0527
.425								.1226
.450								.0704
.475								.0436
.500		.0269	.0108	.0077	.0184	.0435	.0642	.0345
.525								.0315
.550								.0375
.575								.0280
.600	.0228	.0168	.0103	.0175	.0268	.0401	.0404	.0490
.650								.0526
.675								.0421
.700		.0144	.0163	.0209	.0294	.0326	.0395	.0456
.750								.0402
.800	.0174	.0179	.0188	.0243	.0410	.0254	.0289	.0361
.850								.0307
.900		.0216	.0195	.0305	.0383	.0213	.0202	.0245
.935								.0132
.975								.0022

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8110) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 938.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 2.009 MACH (1) = 5.300 PO = 156.004 TO = 1265.870 HT = 308.762 RHOVEL = .322

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.3394
.010								.2239
.020								.1548
.040								.1340
.060								.1062
.080								.0831
.100								.0625
.150								.0326
.200				.0113				.0196
.300			.0089	.0585	.0310			.0106
.350								.0077
.375								.0169
.400	.0049	.0161	.0173	.0298	.0338	.0464	.0469	.0736
.425								.1178
.450								.0539
.475								.0322
.500		.0138	.0039	.0090	.0115	.0470	.0594	.0248
.525								.0208
.550								.01
.575								.01
.600	.0167	.0074	.0026	.0109	.0415	.0394	.0396	.0182
.650								.01
.6 5								.0213
.700		.0085	.0039	.0160	.0415	.0263	.0259	.0227
.750								.0239
.800	.0198	.0134	.0057	.0171	.0416	.0305	.0207	.0246
.850								.0234
.900		.0140	.0220	.0361	.0376	.0269	.0170	.0132
.935								.0112
.975								.0040

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (RB8110)

RN/L (2) = 4.771 MACH (1) = 5.300 PO = 352.036 TO = 1225.870 HT = 298.551 RHOVEL = .741

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
R/L								
.000								9.9900
.010								.2110
.020								.1497
.040								.1261
.060								.0990
.080								.0775
.100								.0589
.150								.0310
.200				.0099				.0178
.300			.0023	.0596	.0387			.0108
.350								.0104
.375								.0206
.400	.0103	.0157	.0180	.0268	.0408	.0480	.0434	.0776
.425								.1368
.450								.0769
.475								.0466
.500		.0134	.0034	.0092	.0240	.0541	.0655	.0379
.525								.0364
.550								.0468
.575								.0529
.600	.0202	.0085	.0039	.0115	.0361	.0428	.0539	.0546
.650								.0473
.675								.0498
.700		.0135	.0051	.0150	.0475	.0342	.0414	.0538
.750								.0445
.800	.0204	.0154	.0088	.0155	.0492	.0411	.0349	.0438
.850								.0391
.900		.0163	.0210	.0221	.0437	.0324	.0303	.0316
.935								.0173
.975								.0030

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (RB8T111) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = 1.000

RN/L (1) = 1.982 MACH (1) = 5.300 PO = 154.357 TO = 1268.500 HT = 309.436 RHOVEL = .318

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.3647
.010								.2133
.020								.1379
.040								.1171
.060								.0893
.080								.0685
.100								.0501
.150								.0242
.200				.0117				.0130
.300			.0069	.0073	.0069			.0072
.350								.0063
.375								.0064
.400	.0068	.0067	.0064	.0068	.0063	.0059	.0058	.0058
.425								.0057
.450								.0050
.475								.0050
.500		.0062	.0058	.0057	.0051	.0050	.0053	.0047
.525								.0052
.550								.0049
.575								.0051
.600	.0052	.0055	.0052	.0049	.0043	.0039	.0052	.0052
.650								.0044
.675								.0041
.700		.0055	.0045	.0043	.0036	.0065	.0042	.0045
.750								.0044
.800	.0046	.0045	.0047	.0045	.0043	.0039	.0042	.0047
.850								.0039
.900		.0047	.0046	.0042	.0041	.0039	.0040	.0037
.935								.0032
.975								.0011

ARC 3.5-172 IH15 E1 (EXTERNAL TANK) (RB8111)

RN/L (2) = 4.674 MACH (1) = 5.300 PO = 350.389 TO = 1238.190 H1 = 301.691 RHOVEL = .72

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								9.9900
.010								9.9900
.020								.1285
.040								.1120
.060								.0865
.080								.0675
.100								.0506
.150								.0250
.200				.0117				.0135
.300			.0069	.0066	.0063			.0074
.350								.0066
.375								.0064
.400	.0063	.0058	.0058	.0058	.0055	.0052	.0060	.0064
.425								.0058
.450								.0059
.475								.0057
.500		.0050	.0049	.0045	.0046	.0040	.0057	.0059
.525								.0057
.550								.0056
.575								.0056
.600	.0056	.0046	.0042	.0039	.0040	.0034	.0056	.0054
.650								.0058
.675								.0058
.700		.0040	.0039	.0034	.0032	.0034	.0056	.0061
.750								.0059
.800	.0065	.0042	.0040	.0035	.0033	.0042	.0068	.0060
.850								.0063
.900		.0047	.0038	.0033	.0039	.0047	.0075	.0062
.935								.0050
.975								.0006

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (RB8112) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = 1.000

RN/L (1) = 2.021 MACH (1) = 5.300 PO = 151.611 TO = 1238.660 H1 = 301.810 RHOVEL = .3

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.3645
.010								.2368
.020								.1626
.040								.1412
.060								.1109
.080								.0869
.100								9.9900
.150								.0334
.200				.0120				.0193
.300			.0059	.0075	.0089			.0129
.350								.0122
.375								.0125
.400	.0018	.0039	.0055	.0079	.0091	.0105	.0115	.0126
.425								.0120
.450								.0117
.475								.0123
.500		.0035	.0056	.0071	.0094	.0103	.0123	.0123
.525								.0120
.550								.0120
.575								.0122
.600	.0022	.0030	.0050	.0070	.0086	.0106	.0124	.0123
.650								.0130
.675								.0126
.700		.0024	.0048	.0062	.0082	.0102	.0119	.0131
.750								.0127
.800	.0057	.0022	.0038	.0067	.0093	.0112	.0130	.0134
.850								.0139
.900		.0024	.0035	.0070	.0092	.0105	.0133	.0135
.935								.0104
.975								.0013

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (RB8112)

RN/L (2) = 5.266 MACH (1) = 5.300 PO = 351.304 TO = 1149.840 H1 = 279.260 RHOVEL = .7

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.3160
.010								.2085
.020								.1447
.040								.1259
.060								.1020
.080								.0854
.100								9.9900
.150								.0375
.200				.0113				.0206
.300			.0057	.0067	.0086			.0172
.350								.0191
.375								.0223
.400	.0013	.0039	.0050	.0068	.0086	.0133	.0280	.0224
.425								.0222
.450								.0234
.475								.0240
.500		.0030	.0054	.0063	.0101	.0213	.0301	.0261
.525								.0246
.550								.0243
.575								.0252
.600	.0031	.0025	.0049	.0071	.0147	.0272	.0279	.0274
.650								.0262
.675								.0263
.700		.0021	.0050	.0109	.0182	.0229	.0251	.0262
.750								.0259
.800	.0083	.0018	.0066	.0146	.0191	.0223	.0260	.0264
.850								.0276
.900		.0050	.0104	.0146	.0181	.0203	.0250	.0264
.935								.0176
.975								.0212

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (AP88D1) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0360

PARAMETRIC DATA

ALPHA = .00 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .3

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0264	
.125	.0165	
.175	.0108	
.250	.0089	
.300	.0083	
.350		.0140
.400	.0071	.0154
.500		.0131
.600	.0067	.0126
.700	.0059	.0104
.800	.0051	.0082
.900	.0044	.0061
1.000	.0047	.0051
1.025	.0046	

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .7

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0018	
.125	.001	
.175	.0	
.250	.0	
.300	.0	
.350		.0006
.400	.0005	.0008
.500		.0007
.600	.0006	.0006
.700	.0006	.0006
.800	.0006	.0006
.900	.0006	.0006
1.000	.0006	.0007
1.025	.0006	

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (AB8B02) (20 AUG 74)

REFERENCE DATA

BREF = 2690.0000 Sq.Ft. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6620 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAWUHT = .900

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0081	
.125	.0050	
.175	.0032	
.250	.0026	
.300	.0027	
.350		.0025
.400	.0038	.0032
.500		.0058
.600	.0052	.0112
.700	.0043	.0139
.800	.0036	.0121
.900	.0036	.0090
1.000	.0037	.0068
1.025	.0038	

RN/L (2) = 6.151 MACH (1) = 5.300 PO = 350.341 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0080	
.125	.0048	
.175	.0029	
.250	.0024	
.300	.0025	
.350		.0029
.400	.0034	.0051
.500		.0153
.600	.0095	.0161
.700	.0074	.0124
.800	.0059	.0094
.900	.0048	.0065
1.000	.0042	.0052
1.025	.0038	

ASC 3.5-1/2 IH15 ORB + ET (ORBITER BODY) (AB8B03) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .016

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 GAM-M = .000
HAW/H1 = .900

RN/L (1) = 4.332 MACH (1) = 5.300 PC = 352.769 TO = 1304.520 H1 = 318.677 RHOVEL = .716

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.068	.0194	
.125	.0081	
.175	.0225	
.250	.0269	
.300	.0173	
.350		.0195
.400	.0192	.0214
.500		.0186
.600	.0181	.0146
.700	.0163	.0116
.800	.0126	.0082
.900	.0057	.0055
1.000	.0029	.0039
1.025	.0025	

ARC 3.5-172 1H15 LKB + ET +SRB (ORBITER BODY) (AB8035) [illegible] AUG 74

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6800 IN. ZMRP = .0000 IN.
SCALE = .0100

PARAMETRIC DATA

ALPHA = [illegible] BETA = .000
MACH = 5.3 PHI-M = [illegible]
HAW/HT = [illegible]

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 313.311 RHOVEL = .3[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0357	
.125	.0231	
.175	.0071	
.250	.0314	
.300	.0328	
.350		.0268
.400	.0284	.0299
.500		.0377
.600	.0370	.0289
.700	.0298	.0247
.800	.0208	.0174
.900	.0088	.0070
1.000	.0022	.0036
1.025	.0026	

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.501 RHOVEL = .72

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0313	
.125	.0208	
.175	.0086	
.250	[illegible]29	
.300	[illegible]65	
.350		.0500
.400	.0508	.0543
.500		.0597
.600	.0441	.0511
.700	[illegible]	.0402
.800	[illegible]14	[illegible]
.900	[illegible]	[illegible]
1.000	[illegible]	[illegible]79
1.025	[illegible]8	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BOD1) (AB8B06) (20 AUG 74)

REFERENCE DATA

SREF = 890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6920 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI M = .000
HAW/HT = .900

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .311

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0267	
.125	.0257	
.175	.0139	
.250	.0283	
.300	.0230	
.350		.0275
.400	.0183	.0301
.500		.0321
.600	.0274	.0293
.700	.0252	.0248
.800	.0190	.0182
.900	.0068	.0107
1.000	.0022	.0021
1.025	.0024	

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .73.

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0243	
.125	.0232	
.175	.0124	
.250	.0279	
.300	.0213	
.350		.0279
.400	.0180	.0400
.500		.0509
.600	.0291	.0492
.700	.0258	.0388
.800	.0198	.0277
.900	.0083	.0160
1.000	.0041	.0046
1.025	.0046	

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (AB8W01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0379	
.200		.0450	
.225	.0302		
.250	.0352		.0592
.300	.0331	.0345	.0510
.400	.0302	.0312	.0440
.500	.0256	.0270	.0360
.600	.0196	.0226	.0314
.700	.0163	.0160	.0256
.800		.0150	.0210
.850			.0166
.875		.0105	
.900	.0091		

RN/L (2) = 7.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .761

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0026	
.200		.0032	
.225	.0019		
.250	.0021		.0044
.300	.0020	.0026	.0038
.400	.0019	.0025	.0034
.500	.0017	.0022	.0029
.600	.0013	.0019	.0025
.700	.0011	.0017	.0020
.800		.0013	.0015
.850			.0013
.875		.0007	
.900	.0006		

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (AB8W02) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .32

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

2Y/B	.4000	.6000	.8000
X/C			
.175		.0111	
.200		.0153	
.225	.0056		
.250	.0055		.0205
.300	.0050	.0114	.0175
.400	.0036	.0099	.0158
.500	.0028	.0088	.0119
.600	.0019	.0070	.0101
.700	.0018	.0058	.0082
.800		.0047	.0067
.850			.0054
.875		.0019	
.900	.0013		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .8

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

2Y/B	.4000	.6000	.8000
X/C			
.175		.0107	
.200		.0150	
.225	.0042		
.250	.0040		.0209
.300	.0037	.0117	.0182
.400	.0031	.0108	.0149
.500	.0033	.0108	.0132
.600	.0032	.0090	.0111
.700	.0029	.0074	.0090
.800		.0055	.0069
.850			.0056
.875		.0041	
.900	.0030		

ARC 3.5-172 IH15 ORB + ET (ORBITER WING) (AB8W03) (29 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0315	
.200		.0400	
.225	.0274		
.250	.0314		.0710
.300	.0283	.0308	.0590
.400	.0249	.0279	.0598
.500	.0205	.0256	.0474
.600	.0151	.0213	.0425
.700	.0128	.0181	.0343
.800		.0148	.0279
.85?			.0215
.875		.0103	
.900	.0081		

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING) (AB8W05) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HI = 318.311 RHOVEL = .30

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0284	
.200		.0384	
.225	.0245		
.250	.0289		.0553
.300	.0287	.0309	.0497
.400	.0257	.0271	.0458
.500	.0236	.0229	.0371
.600	.0181	.0203	.0318
.700	.0179	.0191	.0255
.800		.0166	.0201
.850			.0158
.875		.0127	
.900	0171		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HI = 314.301 RHOVEL = .72

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0260	
.200		.0355	
.225	.0378		
.250	.0427		.0545
.300	.0389	.0285	.0477
.400	.0328	.0314	.0425
.500	.0273	.0347	.0348
.600	.0216	.0360	.0297
.700	.0257	.0321	.0241
.800		.0262	.0189
.850			.0151
.875		.0232	
.900	.0188		

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING) (AB8W06) (9 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8190 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .31(

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0300	
.200		.0410	
.225	.0267		
.250	.0285		.0485
.300	.0287	.0355	.0430
.400	.0244	.0354	.0382
.500	.0293	.0304	.0311
.600	.0285	.0249	.0260
.700	.0264	.0202	.0215
.800		.0166	.0171
.850			.0134
.875		0123	
.900	.0176		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .73.

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0273	
.200		.0372	
.225	.0272		
.250	.0304		.0490
.300	.0300	.0310	.0444
.400	.0278	.0359	.0397
.500	.0340	.0373	.0328
.600	.0354	.0373	.0273
.700	.0350	.0319	.0217
.800		.0253	.0165
.850			.0131
.875		.0177	
.900	.0222		

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (AB8SD7) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .32

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2558		.2558	
.002					.1812	
.025					.2782	
.050			.1535		.1665	
.100					.0695	
.112					.0928	
.150					.0889	
.200			.0464	.0405	.0398	.0310
.300				.0200	.0200	
.400	.0158		.0209	.0544	.0309	.0154
.500					.0381	
.600			.0488	.0501	.0217	.0210
.650			.0490	.0549		
.700	.0267	.0327	.0487	.0536	.0259	
.750		.0351	.0510	.0571		
.800	.0426	.0547	.0755	.0749	.0451	.0276
.920	.0466	.0582	.0641	.0271	.0152	.02[illegible]
.950			.0792		.017	
.996	.0646	.0834		.0232	.0218	.0277

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .71

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			9.9900		9.9900	
.002					.1846	
.025					.2442	
.050			.1501		.1615	
.100					.0667	
.112					.0954	
.150					.0969	
.200			.0383	.0500	.0403	.0258
.300				.0228	.0148	
.400	.0184		.0267	.0445	.0301	.0122
.500					.0557	

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (AB85O7)

RN/L (2) = 4.311 MACH (1) = 5.300

SECTION (1)41-O78 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.600			.0550	.0552	.0338	.0256
.650			.0491	.0595		
.700	.0318	.0414	.0466	.0637	.0445	
.750		.0493	.0575	.0739		
.800	.0498	.0625	.0785	.0878	.0781	.0333
.820	.0436	.0587	.0676	.0397	.0152	.0251
.850			.0903		.0179	
.900	.0832	.0934		.0341	.0192	.0232

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (AB8S08) 20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0080

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 2.225 MACH (1) = 5.300 PO = 153.442 TO = 1174.260 HT = 285.439 RHOVEL = .331

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.3858		.3858	
.002					.1494	
.025					.2891	
.050			.2021		.1694	
.100					.0785	
.112					.1174	
.150					.0996	
.200			.0346	.0847	.0454	.0150
.300				.0419	.0202	
.400	.0121		.0415	.0426	.0414	.0067
.500					.0620	
.600			.0550	.0518	.0359	.0182
.650			.0466	.0513		
.700	.0134	.0279	.0500	.0477	.0429	
.750		.0338	.0590	.0639		
.800	.0129	.0643	.1022	.0932	.0805	.0227
.920	.0156	.0483	.0798	.0453	.0155	.0186
.950			.0903		.0201	
.996	.0384	.0546		.0432	.0249	.0223

RN/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 HT = 301.186 RHOVEL = .738

SECTION (1)41-OTS YEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	90.0000	225.0000	270.0000	315.0000
X/L						
.000			.2378		.2378	
.002					9.9900	
.025					.2612	
.050			.1879		.1558	
.100					.0757	
.112					.0977	
.150					.1009	
.200			.0383	.0821	.0406	.0141
.300				.0437	.0172	
.400	.0159		.0435	.0488	.0280	.0062
.500					.0683	

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (AB8S08)

RN/L (2) = 4.713 MACH (1) = 5.300

SECTION (1)41-0"S DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.600			.0677	.0761	.0403	.0254
.650			.0576	.0762		
.700	.0137	.0352	.0538	.0746	.0527	
.750		.0386	.0682	.0882		
.800	.0145	.0545	.1099	.1053	.0895	.0256
.920	.0154	.0506	.0784	.0507	.0138	.0222
.950			.1033		.0190	
.996	.0388	.0702		.0494	.0214	.0253

ARC 3.5-172 IH15 SRB (SRB) (AB8S13) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 935.6620 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M .000
HAW/H1 = .900

RN/L (1) = 1.687 MACH (1) = 5.300 PO = 153.442 TO = 1397.700 H1 = 342.751 RHOVEL = .29

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.3417		.3417	
.002					.1632	
.025					.2273	
.050			.1313		.1366	
.100					.0811	
.112					.0611	
.150					.0189	
.200			.0153	.0154	.0164	.0111
.300				.0134	.0135	
.400	.0068		.0119	.0130	.0129	.0103
.500					.0162	
.600			3108	.0109	.0096	.0110
.650			0094	.0119		
.700	.0045	.0051	.0056	.0078	.0100	
.750		.0038	.0047	.0046		
.800	.0032	.0047	.0047	.0051	.0058	.0038
.920	.0078	.0072	.0082	.0071	.0075	.0073
.950			.0207		.0146	
.996	.0383	.0390		.0356	.0397	.0331

RN/L (2) = 4.834 MACH (1) = 5.300 PO = 351.487 TO = 1247.410 H1 = 304.045 RHOVEL = .73

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.3129		.3129	
.002					.1504	
.025					.2123	
.050			.1236		.1257	
.100					.0760	
.112					.0570	
.150					.0176	
.200			.0140	.0136	.0140	.0089
.300				.0121	.0110	
.400	.0074		.0108	.0122	.0112	.0090
.500					.0149	

ARC 3.5-172 IH15 SRB (SRB) (AB8S13)

RN/L (2) = 4.654 MACH (1) = 5.300

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.600			.0100	.0113	.0099	.0117
.650			.0080	.0117		
.700	.0032	.0023	.0040	.0077	.0104	
.750		.0064	.0072	.0089		
.800	.0121	.0126	.0120	.0133	.0166	.0129
.925	.0354	.0339	.0367	.0381	.0474	.0480
.950			.1047		.1062	
.996	.0889	.1103		.0980	.1038	.0915

ARC 3.5-172 IH15 SRB (SRB) (AB8514) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-N = .000
HAW/HT = .900

RN/L (1) = 2.138 MACH (1) = 5.300 PO = 151.245 TO = 1193.390 HT = 290.290 RHOVEL = .323

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.3234		.3238	
.002					.1431	
.025					.2148	
.050			.1650		.1281	
.075					.0908	
.112					.0593	
.150					.0178	
.200			.0260	.0217	.0160	.0068
.300				.0255	.0163	
.400	.0156		.0293	.0280	.0189	.0055
.500					.0240	
.600			.0291	.0249	.0114	.0076
.650			.0276	.0267		
.700	.0088	.0249	.0272	.0239	.0079	
.750		.0215	.0268	.0202		
.800	.0095	.0307	.0387	.0279	.0128	.0130
.925	.0159	.0371	.0552	.0469	.0226	.0169
.950			.1283		.0608	
.998	.0823	.0823		.0732	.0705	.0256

RN/L (2) = 5.489 MACH (1) = 5.300 PO = 351.853 TO = 1123.620 HT = 272.646 RHOVEL = .778

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2944		.2944	
.002					.1353	
.025					.1977	
.050			.1495		.1162	
.100					.0742	
.112					.0547	
.150					.0160	
.200			.0248	.0216	.0133	.0057
.300				.0267	.0161	
.400	.0159		.0301	.0298	.0191	.0061
.900					.0242	

ARC 3.5-172 IM15 SRB (SRB) (AB8S14)

RN/L (2) = 5.400 MACH (1) = 5.300

SECTION (1)41-0T8 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.600			.0295	.0259	.0123	.0033
.650			.0264	.0273		
.700	.0062	.0226	.0255	.0233	.0089	
.750		.0314	.0422	.0341		
.800	.0157	.0395	.0568	.0438	.0175	.0192
.920	.0420	.0738	.1012	.0957	.0642	.0398
.950			.1554		.1171	
.996	.0852	.1185		.1099	.0960	.0650

ARC 3.5-172 IH15 SRB (SRB) (AB8S15) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 20.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = .900

RN/L (1) = 5.304 MACH (1) = 5.300 PO = 350.938 TO = 1143.860 HT = 277.751 RHOVEL = .769

SECTION (1)41-075 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.2677		.2677	
.002					.1622	
.025					.2991	
.050			.1596		.2643	
.100					.1741	
.112					.1351	
.150					.0687	
.200			.0213	.0494	.0765	.0419
.300				.0491	.0828	
.400	.0151		.0172	.0638	.0915	.0536
.500					.1244	
.600			.0174	.0594	.0751	.0705
.650			.0164	.0622		
.700	.0120	.0085	.0175	.0663	.1057	
.750		.0128	.0308	.1215		
.800	.0172	.0132	.0349	.1336	.2296	.1252
.920	.0181	.0118	.0517	.1902	.2966	.2038
.950			.1086		.3503	
.998	.0199	.0172		.2156	.2874	.2018

ARC 3.5-172 IH15 SRB (SRB) (AB8S16) (20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 45.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
MAW/MT = .900

RN/L (1) = 5.359 MACH (1) = 5.300 PO = 351.670 TO = 1111.580 HT = 269.615 RHOVEL = .783

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2943		.2943	
.002					.1888	
.025					.4016	
.050			.1943		.4045	
.100					.2728	
.112					.2537	
.150					.1971	
.200			.0358	.1218	.2269	.1172
.300				.1268	.2292	
.400	.0061		.0346	.1583	.2319	.1329
.500					.4170	
.600			.0407	.1943	.2710	.2337
.650			.0380	.2044		
.700	.0078	.0063	.0458	.2331	.4011	
.750		.0097	.0469	.2669		
.800	.0037	.0084	.0619	.2647	.5085	.2677
.920	.0078	.0085	.0767	.3246	.5480	.3506
.950			.1047		.5216	
.998	.0033	.0074		.2251	.3139	.2171

ARC 3.5-172 IH15 SRB (SRB) (AB8S17) (20 AUG 74)

REFERENCE DATA

SREF = 2090.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 70.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = .900

RN/L (1) = 4.926 MACH (1) = 5.300 PO = 353.867 TO = 1205.180 HT = 293.284 RHOVEL = .752

SECTION (1)41-013 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2391		.2391	
.025					.3974	
.050			.1941		.4451	
.100					.3406	
.112					.3937	
.150					.3367	
.200			.0531	.1850	.3316	.1732
.300				.1782	.3090	
.400	.0043		.0464	.2106	.3651	.1878
.500					.4067	
.600			.0470	.1770	.2384	.2212
.650			.0431	.1847		
.700	.0128	.0084	.0502	.2058	.3418	
.750		.0043	.0415	.2059		
.800	.0065	.0095	.0752	.2929	.5851	.2963
.920	.0150	.0111	.0736	.2848	.4856	.2961
.950			.0675		.3613	
.998	.0208	.0929			.3341	.1961

ARC 3.5-172 IH15 SRB (SRB) (AB8S18) ( ) AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 90.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = .900

RN/L (1) = 5.872 MACH (1) = 5.300 PO = 353.135 TO = 1076.200 HT = 260.731 RHOVEL = .800

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270. 000315.0000

R/L						
.000			.1763		.1783	
.025					.3703	
.050			.1608		.4436	
.100					.3158	
.112					.4498	
.150					.3691	
.200			.0587	.2126	.3990	.2064
.300				.2064	.3759	
.400	.0074		.0484	.2418	.3774	.2142
.500					.4861	
.600			.0514	.2087	.2959	.2780
.650			.0462	.2156		
.700	.0098	.0071	.0525	.2360	.4129	
.750		.0090	.0452	.2400		
.800	.0184	.0121	.0573	.2285	.4201	.2223
.920	.0332	.0235	.0498	.2065	.3574	.2176
.950			.1161		.3189	
.996	9.9900	.1865			.4743	.2813

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (AB8C01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.764 MACH 1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .30

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1617			
1.251			.1796	
1.272	.2251			
1.305			.2118	
1.334	.2509			
1.358		.2272		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.0274			
1.251			.0276	
1.272	.0390			
1.305			.0329	
1.334	.0420			
1.358		.0356		

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (AB8C02) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2218			
1.251			.2322	
1.272	.2969			
1.305		.2582		
1.334	.3227			
1.358		.2784		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .80[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.3109			
1.251			.3102	
1.272	.4034			
1.305		.3276		
1.334	.4244			
1.358		.3567		

ARC 3.5-172 IH15 ORB + E1 (WINDSHIELD) (AB8C03) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 938.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = .900

RN/L (1) = 4.032 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 H1 = 318.677 RHOVEL = .716

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2192			
1.251				.2264
1.272	.2927			
1.305			.2546	
1.334	.3142			
1.358		.2719		

ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD) (AB8C05) (20 AUG 74)

REFERENCE DATA

SREF = 2980.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.8620 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1980	.2130
X				
1.210	.1720			
1.251			.1886	
1.272	.2378			
1.305			.2178	
1.334	.2812			
1.358		.2363		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1980	.2130
X				
1.210	.2473			
1.251			.2848	
1.272	.3332			
1.305			.2983	
1.334	.3435			
1.358		.3280		

ARC 3.5-1/2 IH15 ORB + ET +SRB (WINDSHIELD) (AB8C06) (20 AUG 74)

REFERENCE DATA

SREF = 8690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1934			
1.251				.2109
1.272	.2673			
1.305			.2481	
1.334	.2921			
1.358		.2648		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .75

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2795			
1.251				.2971
1.272	.3657			
1.305			.3275	
1.334	.3740			
1.358		.3432		

ARC 3.5-172 IH15 ORB + ET (EXTERNAL TANK) (AB8103) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAWHT = .900

RN/L (1) = 4.332 MACH (1) = 5.300 FO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L				
.450	.0041		.0356	.0737
.550	.0244		.0333	.0279
.650	.0260	.0243	.0194	.0258
.750	.0217	.0148	.0182	.0257
.850	.0190	.0154	.0240	.0265

ARC 3.5-172 IH15 ORB + ET (EXTERNAL TANK) (AB8104) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 DELTA-M .000
DAMPING = .000

RN/L (1) = 4.781 MACH (1) = 5.300 PO = 352.403 TO = 1225.000 H1 = 298.350 REVEL = .74

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

R/L								
.000								.3864
.010								.2379
.020								.1578
.040								.1367
.060								.1185
.080								.0873
.100								.0682
.150								.0330
.200				.0123				.0162
.300			.0074	.0076	.0073			.0098
.350								.0058
.375								.0057
.400	.0058	.0059	.0063	.0066	.0058	.0058	.0219	.0931
.425								.1187
.450								.0635
.475								.0767
.500		.0049	.0032	.0056	.0173	.0295	.0520	.0272
.525								.0231
.550								.0268
.575								.0377
.600	.0024	.0027	.0081	.0182	.0252	.0314	.0327	.0359
.650								.0334
.675								.0313
.700		.0068	.0166	.0262	.0239	.0280	.0277	.0359
.750								.0309
.800	.0024	.0120	.0239	.0216	.0271	.0262	.0283	.0324
.850								.0305
.900		.0186	.0278	.0228	.0267	.0246	.0267	.0265
.935								.0253
.975								.0281

ARC 3.5-172 IH15 OMB + E1 +SRB (EXTERNAL TANK) (AB8105) . 30 AUG)

REFERENCE DATA

SREF = 2090.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 938.6025 IN. ZMRP = .0000 IN.
SCALE = .0360

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
MAW/M1 = .9 .

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 H1 = 318.311 RHOVEL = .30

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L
.450 .0239 .0348 .0993
.550 .0208 .0562 .0413
.650 .0233 .0325 .0347 .0368
.750 .0353 .0310 .0225 .0292
.850 .0395 .0317 .0197 .0256

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 H1 = 314.301 RHOVEL = .72

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L
.450 .0215 .0454 .1034
.550 .0176 .0652 .0469
.650 .0369 .0293 .0435 .0515
.750 .0419 .0352 .0360 .0494
.850 .0443 .0441 .0268 .0362

ARC 3.5-1/2 IH15 ORB + ET +SRB (EXTERNAL TANK) (ABBTJ6) (20 AUG 74)

REFERENCE DATA

SREF = 2690. [illegible] SQ.FT. XMRP = [illegible] IN.
LREF = 474.8[illegible] IN. YMRP = [illegible] IN.
BREF = 9[illegible]8.6[illegible] IN. ZMRP = [illegible] IN.
SCALE = [illegible]

PARAMETRIC DATA

ALPHA = -5.[illegible] BETA = [illegible]
MACH = 5.[illegible] [illegible] = [illegible]
HAW/HT = [illegible]

RN/L (1) = 1.95[illegible] MACH (1) = 5.3[illegible] PO = 153.625 TO = 1276.58[illegible] HT = [illegible]1.5[illegible]6 RHOVEL = .31[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.[illegible] 112.5[illegible]0135.[illegible]0157.5000

X/L				
.450	.[illegible]264		.[illegible]560	.0380
.55[illegible]	.[illegible]12[illegible]		[illegible]711	.[illegible]411
.6[illegible]	.[illegible]373	.0429	.[illegible]379	.[illegible]326
.7[illegible]	.[illegible]443	.05[illegible]9	.[illegible]24[illegible]	.[illegible]276
.8[illegible]	.[illegible]	.04[illegible]0	.[illegible]41	.[illegible]42

RN/L (2) = 4.57[illegible] MACH (1) = 5.300 PO = 352.769 TO = 1261.33[illegible] HT = 3[illegible].600 RHOVEL = .7[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L				
.450	.0258		.0671	.1041
.5[illegible]	.[illegible]265		.0751	.0543
.650	.[illegible]47[illegible]	.0498	.0513	.0543
.750	.047[illegible]	.0611	.0441	.0557
.850	.[illegible]418	.0541	.0476	.0461

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (AB8107) (20 AUG '74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 956.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .820

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 67.5000 90.0000112.5000135.0000180.0000

X/L				
.005				.3080
.125				.0392
.175				.0226
.250		.0064		
.275		.0073	.0034	
.325		.1346	.0512	.0055
.350	.0855	.0927	.0838	.0139
.375				.0214
.450			.0137	
.550			.0148	
.650	.0134			
.750	.0113			

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .71[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 67.5000 90.0000112.5000135.0000180.0000

X/L				
.005				.3003
.125				.0395
.175				.0225
.250		.0056		
.275		.0073	.0037	
.325		.1390	.0426	.0081
.350	.0894	.1022	.0752	.0148
.375				.0245
.450			.0186	
.550			.0289	
.650	.0154			
.750	.0201			

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (AB8108) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 2.225 MACH (1) = 5.300 PO = 153.442 TO = 1174.260 HT = 305.439 RHOVEL = .3[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 67.5000 90.0000112.5000135.0000180.0000

X/L				
.005				.3444
.125				.0550
.175				.0329
.250		.0100		
.275		.0096	.0083	
.325		.1476	.0482	.0062
.350	.0696	.1125	.0948	.0201
.375				.0426
.450			.0361	
.550			.0407	
.650	.0043			
.750	.0089			

RN/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 HT = 301.186 RHOVEL = .7[illegible]

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 67.5000 90.0000112.5000135.0000180.0000

X/L				
.005				.3145
.125				.0518
.175				.0311
.250		.0068		
.275		.0085	.0058	
.325		.1612	.0369	.0078
.350	.0748	.1254	.0801	.0200
.375				.0410
.450			.0421	
.550			.0442	
.650	.0064			
.750	.0090			

ARC 3.5-172 IM15 ORB + ET +SRB (EXTERNAL TANK) (AB8109) (29 A G 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8130 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.804 MACH (1) = 5.300 PO = 150.696 TO = 1325.300 HT = 324.022 RHOVEL = .303

SECTION (1)41-075 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.4602
.010								.2734
.020								.1775
.040								.1511
.060								.1160
.080								.0891
.100								.0663
.150								.0323
.200				.0157				.0181
.300			.0125	.0749	.0218			.0044
.350								.0068
.375								.0134
.400	.0035	.0385	.0319	.0461	.0340	.0282	.0249	.0735
.425								.1325
.450								.0724
.475								.0433
.500		.0383	.0113	0104	.0112	.0471	.0768	.0303
.525								.0273
.550								.0141
.575								.0151
.600	.0256	.0233	.0097	.0273	.0201	.0496	.0470	.0223
.650								.0310
.675								.0329
.700		.0160	.0134	.0192	.0350	.0314	.0324	.0356
.750								.0371
.800	.0176	.0176	.0132	.0316	.0411	.0295	.0311	.0369
.850								.0339
.900		.0187	.0177	.0389	.0432	.0153	.0225	.0263
.935								.0152
.975								.0039

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (AB8109)

RN/L (2) = 4.652 MACH (1) = 5.300 PO = 352.769 TO = 1247.200 HT = 303.991 RHOVEL = .73

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.3980
.010								.2409
.020								.1580
.040								.1353
.060								.1030
.080								.0794
.100								.0581
.150								.0278
.200				.0130				.0152
.300			.0111	.0755	.0230			.0050
.350								.0036
.375								.0154
.400	.3061	.0313	.0318	.0404	.0356	.0299	.0332	.0642
.425								.1494
.450								.0858
.475								.0531
.500		.0328	.0131	.0094	.0224	.0530	.0782	.0420
.525								.0385
.550								.0457
.575								.0352
.600	.0278	.0205	.0125	.0213	.0326	.0489	.0492	.0585
.650								.0642
.675								.0513
.700		.0175	.0199	.0254	.0357	.0397	.0481	.0556
.750								.0491
.800	.0212	.0218	.0228	.0296	.0498	.0309	.0353	.0441
.850								.0375
.900		.0283	.0238	.0371	.0465	.0259	.0246	.0298
.935								.0161
.975								.0026

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (AB8110) (20 AUG 74)

REFERENCE DATA

BREF =	2690.0000 SQ.FT.	XMRP =	.0000 IN.		
LREF =	474.8100 IN.	YMRP =	.0000 IN.		
BREF =	936.6820 IN.	ZMRP =	.0000 IN.		
SCALE =	.0060				

PARAMETRIC DATA

ALPHA =	-5.000	BETA =	.000
MACH =	5.300	PHI-M =	.000
HAW/HT =	.900		

RN/L (1) = 2.009 MACH (1) = 5.300 FO = 156.004 TO = 1265.870 HT = 308.762 RHOVEL = .322

SECTION (1)41-075 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
R/L								
.000								.4142
.010								.2730
.020								.1887
.040								.1633
.060								.1293
.080								.1012
.100								.0760
.150								.0397
.200				.0138				.0227
.300			.0109	.0712	.0376			.0129
.350								.0094
.375								.0205
.400	.0039	.0198	.0211	.0362	.0411	.0564	.0571	.0096
.425								.1434
.450								.0718
.475								.0392
.500		.0168	.0048	.0110	.0140	.0572	.0723	.0302
.525								.0254
.550								.0220
.575								.0211
.600	.0203	.0090	.0031	.0133	.0505	.0479	.0482	.0222
.650								.0220
.675								.0259
.700		.0104	.0048	.0194	.0505	.0320	.0315	.0277
.750								.0291
.800	.0241	.0163	.0069	.0208	.0308	.0371	.0252	.0309
.850								.0285
.900		.0170	.0268	.0439	.0458	.0327	.0207	.0234
.935								.0136
.975								.0048

ARC 5.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (AB8110)

RN/L (2) = 4.771 MACH (1) = 5.300 PO = 352.036 TO = 1225.870 HT = 298.551 RHOVEL = .74

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
R/L								
.000								9.9900
.010								.2618
.020								.1855
.040								.1562
.060								1225
.080								.0958
.100								.0728
.150								.0382
.200				.0121				.0219
.300			.0102	.0735	.0477			.0133
.350								.0128
.375								.0253
.400	.0127	.0193	.0222	.0330	.0502	.0590	.0534	.0955
.425								.1685
.450								.0946
.475								.0574
.500		.0165	.0042	.0113	.0295	.0666	.0806	.0467
.525								.0449
.550								.0576
.575								.0651
.600	.0249	.0104	.0048	.0141	.0444	.0526	.0664	.0673
.650								.0582
.675								.0614
.700		.0166	.0063	.0184	.0584	.0421	.0510	.0663
.750								.0549
.800	.0252	.0190	.0108	.0190	.0606	.0505	.0429	.0539
.850								.0481
.900		.0201	.0258	.0272	.0538	.0398	.0373	.0389
.935								.0214
.975								.0037

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (AB8T11) (20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .900

RN/L (1) = 1.982 MACH (1) = 5.300 PO = 154.357 TO = 1268.500 HT = 309.436 RHOVEL = .318

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
R/L								
.000								.4422
.010								.2585
.020								.1671
.040								.1418
.060								.1081
.080								.0829
.100								.0607
.150								.0213
.200				.0141				.0157
.300			.0084	.0088	.0084			.0088
.350								.0076
.375								.0078
.400	.0082	.0081	.0078	.0082	.0076	.0072	.0071	.0070
.425								.0069
.450								.0061
.475								.0060
.500		.0074	.0070	.0069	.0062	.0061	.0064	.0057
.525								.0063
.550								.0059
.575								.0062
.600	.0063	.0068	.0063	.0059	.0052	.0047	.0063	.0061
.650								.0053
.675								.0074
.700		.0066	.0054	.0052	.0044	.0079	.0051	.0054
.750								.0053
.800	.0055	.0055	.0057	.0054	.0052	.0047	.0051	.0057
.850								.0047
.900		.0056	.0055	.0051	.0049	.0047	.0048	.0045
.935								.0038
.9								.0013

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (AB8111)

RN/L (2) = 4.074 MACH (1) = 5.500 PO = 350.389 TO = 1218.190 HT = 301.691 RHOVEL = .7

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

X/L								
.000								9.9900
.010								9.9900
.020								.1467
.040								.1336
.060								.1059
.080								.0833
.100								.0623
.150								.0327
.200				.0144				.0165
.300			.0085	.0081	.0078			.0090
.350								.0081
.375								.0079
.400	.0077	.0071	.0071	.0071	.0068	.0063	.0073	.0078
.425								.0071
.450								.0072
.475								.0070
.500		.0061	.0061	.0055	.0056	.0049	.0069	.0072
.525								.0073
.550								.0069
.575								.0069
.600	.0068	.0056	.0052	.0047	.0049	.0041	.0069	.0066
.650								.0070
.675								.0071
.700		.0049	.0047	.0042	.0039	.0042	.0068	.0074
.750								.0072
.800	.0080	.0051	.0049	.0042	.0041	.0051	.0083	.0074
.850								.0077
.900		.0057	.0047	.0041	.0047	.0058	.0091	.0076
.935								.0080
.975								.0088

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (AB8112) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = 1.0000

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = .900

RN/L (1) = 2.021 MACH (1) = 5.300 PO = 151.611 TO = 1238.660 H1 = 301.810 RHOVEL = .317

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

M/L								
.000								.4457
.010								.2893
.020								.1985
.040								.1724
.060								.1353
.080								.1059
.100								9.9900
.150								.0407
.200				.0146				.0234
.300			.0071	.0091	.0108			.0157
.350								.0148
.375								.0152
.400	.0022	.0047	.0067	.0096	.0111	.0128	.0140	.0153
.425								.0146
.450								.0142
.475								.0149
.500		.0043	.0069	.0087	.0115	.0126	.0150	.0150
.525								.0146
.550								.0146
.575								.0148
.600	.0028	.0036	.0061	.0085	.0104	.0129	.0151	.0150
.650								.0158
.675								.0153
.700		.0030	.0058	.0075	.0100	.0124	.0144	.0159
.750								.0154
.800	.0089	.0028	.0046	.0082	.0114	.0137	.0157	.0163
.850								.0169
.900		.0029	.0043	.0085	.0112	.0128	.0161	.0164
.935								.0127
.975								.0114

ARC 3.5-172 IH15 E1 (EXTERNAL TANK) (AB8112)

RN/L = 5.268 MACH (1) = 5.300 PO = 351.304 TO = 1149.840 H1 = 279.260 RHOVEL = .767

SECTION 1) 41-915 DEPENDENT VARIABLE H/HREF

PHI .000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

X/L								
.000								.3956
.010								.2617
.020								.1807
.040								.1571
.060								.1271
.080								.1063
.100								9.0920
.150								.0465
.200				.0139				.0355
.300			.0070	.0083	.0106			.0213
.350								.0237
.375								.0276
.400	.0016	.0048	.0063	.0085	.0107	.0165	.0347	.0277
.425								.0275
.450								.0289
.475								.0296
.500		.0037	.0067	.0078	.0125	.0265	.0373	.0323
.525								.0324
.550								.0321
.575								.0312
.600	.0039	.0031	.0080	.0088	.0182	.0300	.0346	.0315
.650								.0324
.675								.0326
.700		.0026	.0062	.0135	.0225	.0284	.0311	.0324
.750								.0320
.800	.0103	.0023	.0082	.0181	.0236	.0276	.0322	.0327
.850								.0341
.900		.0062	.0129	.0181	.0224	.0251	.0313	.0326
.935								.0317
.975								.0315

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (BB8801) 25 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
MAW/M1 = .850

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0293	
.125	.0183	
.175	.0120	
.250	.0099	
.300	.0092	
.350		.0156
.400	.0079	.0171
.500		.0145
.600	.0074	.0140
.700	.0066	.0115
.800	.0057	.0091
.900	.0048	.0068
1.000	.0053	.0057
1.025	.0051	

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .76-

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0021	
.125	.0012	
.175	.0008	
.250	.0007	
.300	.0006	
.350		.0007
.400	.0006	.0009
.500		.0008
.600	.0007	.0007
.700	.0007	.0006
.800	.0006	.0005
.900	.0006	.0005
1.000	.0007	.0004
1.025	.0005	

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (BB8B02) (20 AUG 74)

REFERENCE DATA

SREF = 2980.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8130 IN. YMRP = .0000 IN.
BREF = 936.6620 IN. ZMRP = .0000 IN.
SCALE = .0080

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
MAW/MT = .850

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0092	
.125	.0057	
.175	.0036	
.250	.0030	
.300	.0031	
.350		.0028
.400	.0043	.0036
.500		.0068
.600	.0059	.0127
.700	.0049	.0158
.800	.0041	.0138
.900	.0041	.0102
1.000	.0042	.0078
1.029	.0043	

RN/L (2) = 8.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .80

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0084	
.125	.0057	
.175	.0034	
.250	.0028	
.300	.0035	
.350		.0034
.400	.0064	.0072
.500		.0180
.600	.0109	.0188
.700	.0110	.0146
.800	.0098	.0111
.900	.0079	.0078
1.000	.0072	.0061
1.029	.0065	

ARC 3.5-172 IH15 ORB + ET (ORBITER BOD1) (BB8B03) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .0760

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PH1-M = .000
H3W/H1 = .850

HN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 H1 = 318.677 RHOVEL = .716

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.088	.0217	
.125	.0091	
.175	.0251	
.250	.0301	
.300	.0193	
.350		.0218
.400	.0215	.0239
.500		.0208
.600	.0202	.0163
.700	.0182	.0129
.800	.0141	.0091
.900	.0063	.0061
1.000	.0032	.0043
1.025	.0028	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BOD)) (BB8B05) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN. ALPHA = .000 BETA = .000
LREF = 474.8100 IN. YMRP = .0000 IN. MACH = 5.300 PHI-M = .000
BREF = 938.6420 IN. ZMRP = .0000 IN. MAN/M1 = .85.
SCALE = .0080

PARAMETRIC DATA

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 H1 = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE M/MREF

Y .0000 .4150

M/L		
.088	.0399	
.125	.0298	
.175	.0080	
.250	.0351	
.300	.0344	
.350		.0300
.400	.0318	.0334
.500		.0421
.600	.0413	.0323
.700	.0333	.0276
.800	.0232	.0195
.900	.0098	.0079
1.000	.0024	.0040
1.025	.0030	

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 H1 = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE M/MREF

Y .0000 .4150

M/L		
.088	.0350	
.125	.0230	
.175	.0098	
.250	.0368	
.300	.0520	
.350		.0338
.400	.0566	.0807
.500		.0668
.600	.0494	.0571
.700	.0370	.0450
.800	.0239	.0281
.900	.0	.0067
1.000	.0058	.0055
1.025	.0065	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BOD1) (388806) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0000	.4150
X/L		
.068	.0299	
.125	.0288	
.175	.0156	
.250	.0317	
.300	.0257	
.350		.0308
.400	.0205	.0337
.500		.0360
.600	.0307	.0317
.700	.0283	.0278
.800	.0213	.0203
.900	.0077	.0120
1.000	.0025	.0023
1.025	.0027	

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

	.0000	.4150
X/L		
.068	.0273	
.125	.0261	
.175	.0139	
.250	.0313	
.300	.0239	
.350		.0313
.400	.0203	.0449
.500		.0572
.600	.0327	.0552
.700	.0290	.0436
.800	.0222	.0311
.900	.0094	.0181
1.000	.0046	.0051
1.025	.0052	

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (BB8W01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0421	
.200		.0500	
.225	.0334		
.250	.0391		.0658
.300	.0367	.0383	.0566
.400	.0335	.0347	.0489
.500	.0284	.0300	.0401
.600	.0218	.0251	.0349
.700	.0181	.0180	.0284
.800		.0167	.0233
.850			.0185
.875		.0117	
.900	.0101		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .782

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0029	
.200		.0037	
.225	.0022		
.250	.0024		.0050
.300	.0022	.0030	.0044
.400	.0021	.0028	.0038
.500	.0019	.0025	.0033
.600	.0015	.0022	.0028
.700	.0013	.0019	.0023
.800		.0015	.0018
.850			.0014
.875		.0009	
.900	.0007		

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (BBAW02) (23 AUG 74)

REFERENCE DATA

SREF = 2690.3000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0126	
.200		.0174	
.225	.0064		
.250	.0062		.0233
.300	.0057	.0130	.0199
.400	.0041	.0113	.0180
.500	.0031	.0100	.0136
.600	.0022	.0079	.0115
.700	.0020	.0066	.0093
.800		.0053	.0077
.850			.0061
.875		.0021	
.900	.0015		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZY/B	.4000	.6000	.8000
X/C			
.175		.0125	
.200		.0176	
.225	.0049		
.250	.0047		.0248
.300	.0044	.0138	.0214
.400	.0036	.0127	.0175
.500	.0039	.0126	.0154
.600	.0038	.0106	.0131
.700	.0034	.0086	.0105
.800		.0065	.0081
.850			.0066
.875		.0048	
.900	.0035		

ARC 3.5-172 IH15 ORB + ET (ORBITER WING) (BB8W03) (20 AUG 74)

REFERENCE DATA

SREF = 2090.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0351	
.200		.0446	
.225	.0305		
.250	.0350		.0793
.300	.0315	.0343	.0659
.400	.0277	.0311	.0668
.500	.0229	.0285	.0529
.600	.0168	.0237	.0475
.700	.0143	.0202	.0382
.800		.0165	.0312
.850			.0240
.875		.0115	
.900	.0091		

ARC 3.5-172 IH15 ORB + ET +SAB (ORBITER WING) (BB8W05) (20 SEP 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6870 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZV/B	.4000	.6000	.8000
X/C			
.175		.0317	
.200		.0429	
.225	.0274		
.250	.0323		.0618
.300	.0320	.0345	.0556
.400	.0287	.0303	.0512
.500	.0263	.0256	.0415
.600	.0208	.0226	.0356
.700	.0200	.0213	.0285
.800		.0185	.0225
.850			.0176
.875		.0142	
.900	.0191		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .72-

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

ZV/B	.4000	.6000	.8000
X/C			
.175		.0290	
.200		.0396	
.225	.0420		
.250	.0477		.0610
.300	.0434	.0319	.0533
.400	.0364	.0351	.0476
.500	.0305	.0388	.0389
.600	.0242	.0402	.0332
.700	.0287	.0358	.0270
.800		.0293	.0212
.850			.0169
.875		.0259	
.900	.0210		

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING) (BB8W06) (20 AUG 74)

REFERENCE DATA

BREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 6.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0336	
.200		.0460	
.225	.0299		
.250	.0320		.0544
.300	.0321	.0397	.0482
.400	.0273	.0397	.0428
.500	.0328	.0341	.0348
.600	.0319	.0279	.0291
.700	.0296	.0227	.0241
.800		.0186	.0192
.850			.0150
.875		.0138	
.900	.0197		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Z/B	.4000	.6000	.8000
X/C			
.175		.0306	
.200		.0418	
.225	.0305		
.250	.0341		.0551
.300	.0336	.0348	.0499
.400	.0311	.0403	.0445
.500	.0381	.0419	.0368
.600	.0397	.0418	.0307
.700	.0392	.0358	.0244
.800		.0283	.0185
.850			.0147
.875		.0198	
.900	.0249		

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (BB8S07) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .320

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			.2863		.2863	
.002					.2028	
.025					.3114	
.050			.1717		.1863	
.100					.0777	
.112					.1036	
.150					.0993	
.200			.0518	.0452	.0445	.0346
.300				.0223	.0223	
.400	.0176		.0234	.0607	.0345	.0172
.500					.0425	
.600			.0545	.0559	.0242	.0235
.650			.0547	.0614		
.700	.0298	.0365	.0544	.0598	.0289	
.750		.0393	.0569	.0638		
.800	.0476	.0611	.0843	.0836	.0504	.0309
.920	.0520	.0651	.0716	.0302	.0170	.0308
.950			.0885		.0199	
.996	.0722	.09		.0260	.0243	.0310

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .714

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			9.9900		9.9900	
.002					.2079	
.025					.2603	
.050			.1688		.1817	
.100					.0748	
.112					.1068	
.150					.1083	
.200			.0428	.0358	.0450	.0288
.300				.0254	.0166	
.400	.0205		.0298	.0498	.0335	.0136
.500					.0622	

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (B88S07)

RN/L (2) = 4.311 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.600			.0614	.0615	.0378	.0286
.650			.0548	.0684		
.700	.0355	.0481	.0519	.0710	.0496	
.750		.0550	.0641	.0824		
.800	.0355	.0698	.0875	.0979	.0871	.0372
.920	.0486	.0855	.0755	.0444	.0170	.0281
.950			.1011		.0201	
.996	.0930	.1044		.0382	.0215	.0260

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (B8850B) (20 AUG 74)

REFERENCE DATA

BREF = 20 .0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 336.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
MAN/H1 = .853

R/L (1) = 2.225 MACH (1) = 5.300 PO = 153.442 TO = 1174.260 H1 = 285.439 RHOVEL = .33.

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.4372		.4372	
.002					.1692	
.025					.3276	
.050			.2289		.1919	
.100					.0888	
.112					.1326	
.150					.1124	
.200			.0390	.0953	.0512	.0170
.300				.0473	.3228	
.400	.0137		.0469	.0480	.0467	.0076
.500					.0700	
.600			.0621	.0584	.0405	.0205
.650			.0525	.0579		
.700	.0152	.0315	.0565	.0538	.0484	
.750		.0382	.0666	.0721		
.800	.0145	.0726	.1154	.1052	.0908	.0257
.825	.0176	.0545	.0901	.0511	.0175	.0210
.850			.1020		.0227	
.896	.0434	.0617		.0488	.0281	.0252

R/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 H1 = 301.186 RHOVEL = .73

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.2693		.2693	
.002					9.9900	
.025					.2959	
.050			.2125		.1763	
.100					.0853	
.112					.1100	
.150					.1133	
.200			.0430	.0922	.0456	.0158
.300				.0491	.0193	
.400	.0179		.0488	.0547	.0315	.0070
.500					.0767	

ARC 3.5-172 IH15 ORB + E1 +SRB (SRB) (BB8508)

RN/L (2) = 4.713 MACH (1) = 5.300

SECTION (1)41-018 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.630			.0760	.0854	.0452	.0285
.650			.0647	.0856		
.700	.0153	.0395	.0604	.0837	.0591	
.750		.0434	.0765	.0989		
.800	.0162	.0612	.1233	.1181	.1004	.0287
.925	.0172	.0568	.0881	.0570	.0155	.0250
.950			.1162		.0213	
.998	.0436	.0789		.0556	.0241	.0285

ARC 3.5-172 IH15 SRB (SRB) (BB8S13) (30 AUG 74)

REFERENCE DATA

SREF = 2850.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = .850

RN/L (1) = 1.887 MACH (1) = 5.300 PO = 153.443 TO = 1397.700 H1 = 342.751 RHOVEL = .299

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.3793		.3793	
.002					.1811	
.025					.2523	
.050			.1456		.1516	
.100					.0898	
.112					.0677	
.150					.0209	
.200			.0170	.0170	.0182	.0123
.300				.0149	.0150	
.400	.0097		.0132	.0144	.0143	.0114
.500					.0180	
.600			.0120	.0121	.0106	.0122
.650			.0104	.0132		
.700	.0049	.0057	.0062	.0087	.0111	
.750		.0042	.0052	.0051		
.800	.0035	.0052	.0053	.0056	.0064	.0042
.920	.0066	.0080	.0091	.0079	.0083	.0080
.950			.0229		.0162	
.998	.0402	.0432		.0394	.0440	.0367

RN/L (2) = 4.134 MACH (1) = 5.300 PO = 351.487 TO = 1247.410 H1 = 304.045 RHOVEL = .732

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.3539		.3539	
.002					.1699	
.025					.2401	
.050			.1395		.1421	
.100					.0856	
.112					.0641	
.150					.0198	
.200			.0157	.0155	.0157	.0100
.300				.0136	.0124	
.400	.0083		.0121	.0137	.0126	.0101
.500					.0168	

ARC 3.5-172 IH15 SRB (SRB) (B88S13)

AN/L (2) = 4.634 MACH (1) = 5.300

SECTION (1)41-015 DEPENDENT VARIABLE M/MREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

M/L						
.800			.0112	.0127	.0111	.0131
.850			.0090	.0132		
.900	.0035	.0026	.0045	.0083	.0117	
.950		.0071	.0081	.0100		
.800	.0138	.0141	.0135	.0150	0187	.0146
.920	.0397	.0381	.0412	.0429	.0534	.0541
.950			.1176		.1196	
.996	.0998	.1239		.1101	.1236	.1230

ARC 3.5-172 IH15 SRB (SRB) (BB8314) (3 AUG 74)

REFERENCE DATA

SAEP = 2690.0000 SQ.FT. XMRP = .0000 IN.
LAEP = 474.8100 IN. YMRP = .0000 IN.
BREP = 930.6620 IN. ZMRP = .0000 IN.
SCALE = .0080

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RNVL (1) = 2.138 MACH (1) = 5.300 PO = 151.245 TO = 1193.390 HT = 290.290 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.3674		.3674	
.002					.1623	
.025					.2437	
.050			.1870		.1453	
.100					.0914	
.112					.0671	
.150					.0201	
.200			.0293	.0245	.0181	.0078
.300				.0286	.0185	
.400	.0178		.0331	.0317	.0214	.0062
.500					.0272	
.600			.0329	.0282	.0129	.0086
.650			.0312	.0302		
.700	.0078	.0281	.0307	.0270	.0090	
.750		.0243	.0303	.0229		
.800	.0107	.0347	.0457	.0316	.0145	.0147
.925	.0180	.0419	.0624	.0331	.0256	.0192
.950			.1450		.0689	
.998	.0704	.0930		.0828	.0758	.0290

RNVL (2) = 5.489 MACH (1) = 5.300 PO = 351.853 TO = 1123.620 HT = 272.646 RHOVEL = .778

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

R/L						
.000			.3380		.3380	
.002					.1552	
.025					.2270	
.050			.1713		.1334	
.100					.0848	
.112					.0625	
.150					.0183	
.200			.0282	.0246	.0152	.0065
.300				.0304	.0184	
.400	.0178		.0342	.0340	.0218	.0070
.900					.0777	

ARC 3.5-172 IH15 SRB (SRB) (BB0514)

RN/L (2) = 3.469 MACH (1) = 3.300

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000135.0000180.0100225.0000270.0000315.0000

N/L						
.600			.0338	.0295	.0140	.0037
.650			.0500	.0312		
.700	.0071	.0257	.0291	.0266	.0101	
.750		.0357	.0480	.0389		
.800	.0178	.0449	.0647	.0500	.0200	.0220
.920	.0478	.0806	.1153	.1093	.0735	.0454
.950			.1772		.1339	
.990	.0971	.1351		.1254	.1096	.0742

ARC 3.5-172 IH15 SRB (SRB) (BB8515) (20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 20.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = .850

RN/L (1) = 5.304 MACH (1) = 5.300 PO = 350.938 TO = 1143.860 HT = 277.751 RHOVEL = .789

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.3062		.5062	
.002					.1853	
.025					.3421	
.050			.1824		.3020	
.100					.1982	
.112					.1536	
.150					.0781	
.200			.0242	.0563	.0870	.0475
.300				.0559	.0941	
.400	.0171		.0196	.0726	.1041	.0609
.500					.1417	
.600			.0198	.0676	.0855	.0800
.650			.0186	.0709		
.700	.0136	.0096	.0199	.0755	.1203	
.750		.0148	.0351	.1383		
.800	.0194	.0150	.0397	.1521	.2613	.1422
.920	.0205	.0134	.0588	.2167	.3376	.2316
.950			.1236		.3987	
.996	.0226	.0196		.2454	.3268	.2292

ARC 3.5-172 IH15 SRB (SRB) (888516) (20 AUG 74)

REFERENCE DATA

SREF =	2890.0000 SQ.FT.	XMRP =	.0000 IN.		
LREF =	474.8100 IN.	YMRP =	.0000 IN.		
BREF =	936.6820 IN.	ZMRP =	.0000 IN.		
SCALE =	.0060				

PARAMETRIC DATA

ALPHA =	45.000	BETA =	.000
MACH =	5.300	PHI-M =	90.000
HAW/HT =	.850		

RN/L (1) = 5.559 MACH (1) = 5.300 PO = 351.670 TO = 1111.580 HT = 269.615 RHOVEL = .783

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.3380		.3380	
.002					.2166	
.025					.4614	
.050			.2231		.4643	
.100					.3119	
.112					.2899	
.150					.2251	
.200			.0409	.1393	.2593	.1336
.300				.1451	.2619	
.400	.0070		.0396	.1812	.2651	.1516
.500					.4776	
.600			.0465	.2226	.3102	.2667
.650			.0434	.2341		
.700	.0089	.0072	.0523	.2669	.4590	
.750		.0111	.0537	.3056		
.800	.0042	.0096	.0708	.3030	.5819	.3054
.920	.0089	.0097	.0878	.3719	.6272	.4004
.950			.1199		.6085	
.996	.0038	.0085		.2577	.3590	2478

ARC 3.5-172 IH15 SRB (SRB) (BB8S17) (20 AUG 74)

REFERENCE DATA

SREF = 2690.3000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 70.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = .850

RN/L (1) = 4.926 MACH (1) = 5.300 PO = 353.867 TO = 1205.180 HT = 293.284 RHOVEL = .758

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.2713		.2713	
.025					.4510	
.050			.2203		.5050	
.100					.3855	
.112					.4452	
.150					.3835	
.200			.0601	.2094	.3750	.1954
.300				.2018	.3495	
.400	.0048		.0525	.2386	.4132	.2120
.500					.4607	
.600			.0532	.2006	.2699	.2497
.650			.0487	.2092		
.700	.0145	.0095	.0569	.2331	.3870	
.750		.0049	.0470	.2332		
.800	.0073	.0107	.0850	.3316	.6622	.3344
.920	.0169	.0126	.0832	.3226	.5496	.3344
.950			.0764		.4089	
.998	.0235	.1050			.3778	.2214

ARC 3.5-172 IH15 SRB (SRB) (BB8318) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6100 IN. YMRP = .0000 IN.
BREF = 930.6620 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 90.000 BETA = .000
MACH = 5.300 PHI-M = 90.000
HAW/HT = .850

RN/L (1) = 5.872 MACH (1) = 5.300 PO = 353.135 TO = 1076.200 HT = 260.731 RHOINF = .80

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			.2078		.2078	
.025					.4316	
.050			.1873		.5168	
.100					.3666	
.112					.5218	
.150					.4278	
.200			.0675	.2468	.4627	.2387
.300				.2397	.4358	
.400	.0085		.0561	.2809	.4379	.2477
.500					.5647	
.600			.0597	.2426	.3435	.3214
.650			.0536	.2506		
.700	.0113	.0082	.0614	.2743	.4792	
.750		.0105	.0524	.2789		
.800	.0212	.0140	.0665	.2654	.4876	.2569
.920	.0384	.0272	.0578	.2400	.4149	.2518
.950			.1349		.3701	
.998	9.9900	.2165			.5499	.3254

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (BB8C01) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.784 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.1794			
1.251			.1993	
1.272	.2498			
1.305			.2350	
1.334	.2785			
1.358		.2521		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.0311			
1.251			.0312	
1.272	.0442			
1.305			.0373	
1.334	.0476			
1.358		.0404		

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (BB8C02) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2497			
1.251			.2614	
1.272	.3343			
1.305		.2907		
1.334	.3633			
1.358		.3135		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-O.5 DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.3593			
1.251			.3585	
1.272	.4664			
1.305		.3785		
1.334	.4906			
1.358		.4123		

ARC 3.5-172 IH15 ORB + ET (WINDSHIELD) (BB8C03) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-013 DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2445			
1.251				.2525
1.272	.3264			
1.305			.2840	
1.334	.3505			
1.358		.3033		

ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD) (BB8C05) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .30

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y / X	.0470	.1780	.1960	.2130
1.210	.1921			
1.251				.2084
1.272	.2656			
1.305			.2430	
1.334	.2917			
1.358		.2639		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y / X	.0470	.1780	.1960	.2130
1.210	.2764			
1.251				.3183
1.272	.3725			
1.305			.3334	
1.334	.3841			
1.358		.3644		

ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD) (BB8C06) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 411.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.2168			
1.251			.2363	
1.272	.2995			
1.305		.2779		
1.334	.3273			
1.358		.2967		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

Y	.0470	.1780	.1960	.2130
X				
1.210	.3137			
1.251			.3334	
1.272	.4105			
1.305		.3675		
1.334	.4199			
1.358		.3851		

ARC 3.5-172 IN15 ORB + ET (EXTERNAL TANK) (BB8103) (20 AUG 74)

REFERENCE DATA

SREF =	2690.0000 SQ.FT.	XMRP =	.0000 IN.		
LREF =	474.8100 IN.	YMRP =	.0000 IN.		
BREF =	936.6820 IN.	ZMRP =	.0000 IN.		
SCALE =	.0060				

PARAMETRIC DATA

ALPHA =	.000	BETA =	.000
MACH =	5.300	PHI-M =	.000
HAW/HT =	.850		

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 332.769 TO = 304.520 HT = 318.677 RHOVEL = .718

SECTION (1)41-015 DEPENDENT VARIABLE: H/HREF

PHI	90.0000	112.5000	135.0000	157.5000
X/L				
.450	.0046		.0397	.0822
.550	.0273		.0372	.0312
.650	.0291	.0271	.0217	.0288
.750	.0242	.0165	.0203	.0287
.850	.0212	.0172	.0268	.0296

ARC 3.5-172 IH15 ORB + ET (EXTERNAL TANK) (888104) (20 AUG '4)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
MACH M1 = .95

RN/L (1) = 4.781 MACH (1) = 5.300 PO = 352.403 TO = 1225.090 H1 = 298.350 RHOVEL = .74

SECTION (1)41-075 DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

R/L								
.000								.4372
.010								.2690
.020								.1783
.040								.1543
.060								.1224
.080								.0985
.100								.0766
.150								.0372
.200				.0139				.0182
.300			.0083	.0085	.0082			.0099
.350								.0065
.375								.0176
.400	.0063	.0066	.0071	.0075	.0065	.0065	.0246	.1048
.425								.1336
.450								.0704
.475								.0413
.500		.0055	.0036	.0063	.0195	.0332	.0586	.0306
.525								.0260
.550								.0302
.575								.0425
.600	.0028	.0030	.0091	.0205	.0284	.0354	.0369	.0414
.650								.0331
.675								.0349
.700		.0077	.0197	.0295	.0269	.0315	.0312	.0474
.750								.0348
.800	.0027	.0135	.0269	.0243	.0305	.0295	.0319	.0365
.850								.0343
.900		.0209	.0311	.0257	.0300	.0277	.0301	.0299
.935								.0272
.975								.0231

ARC 3.5-1/2 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8105) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 938.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = .850

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 H1 = 318.311 RHOVEL = .305

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L

.450	.0287		.0388	.1108
.550	.0233		.0627	.0461
.650	.0260	.0363	.0387	.0411
.750	.0394	.0346	.0252	.0325
.850	.0441	.0353	.0220	.0286

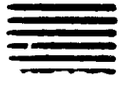
RN/L (2) = 4.437 MACH (2) = 5.300 PO = 353.867 TO = 1287.480 H1 = 314.301 RHOVEL = .724

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L

.450	.0240		.0508	.1157
.550	.0196		.0730	.0524
.650	.0413	.0328	.0487	.0576
.750	.0468	.0393	.0403	.0553
.850	.0495	.0493	.0300	.0405



ASC 3.5-172 IH15 ORB + E1 +SAB (EXTERNAL TANK) (BB8106) 25 AUG 74)

REFERENCE DATA

SREF = 2890.3000 SQ.FT. BREF = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA -5.000 BETA = .000
MACH 5.300 PHI-M = .000
MAX MI .85

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HI = 311.506 RHOVEL = .316

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L

.450	.0295		.0627	.1098
.550	.0145		.0796	.0461
.650	.0417	.0478	.0424	.0367
.750	.0495	.0570	.0270	.0311
.850	.0425	.0504	.0270	.0271

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.333 HI = 307.600 RHOVEL = .730

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI 90.0000112.5000135.0000157.5000

X/L

.450	.0290		.0754	.1170
.550	.0298		.0844	.0607
.650	.0450	.0559	.0576	.0610
.750	.0528	.0666	.0495	.0634
.850	.0469	.0607	.0535	.0516

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8107) (20 AUG 14)

EFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/H1 = .850

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 H1 = 311.023 RHOMEL = .320

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 67.5000 90.0000112.5000135.0000180.0000

R/L					
.005					.3444
.125					.0438
.175					.0253
.250		.0071			
.275		.0081	.0038		
.325		.1504	.0572	.0081	
.350	.0954	.1035	.0936	.0155	
.375				.0239	
.450			.0153		
.550			.0166		
.650	.0150				
.750	.0126				

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.588 TO = 1308.080 H1 = 319.591 RHOMEL = .714

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI 67.5000 90.0000112.5000135.0000180.0000

R/L					
.005					.3378
.125					.0442
.175					.0251
.250		.0083			
.275		.0082	.0042		
.325		.1555	.0476	.0063	
.350	.0999	.1145	.0840	.0165	
.375				.0273	
.450			.0206		
.550			.0322		
.650	.0172				
.750	.0229				

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8108) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 3.225 MACH (1) = 5.300 PO = 153.442 TO = 1174.260 HT = 285.439 RHOVEL = .331

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					.3903
.125					.0621
.175					.0372
.250		.0113			
.275		.0108	.0094		
.325		.1667	.0545	.0070	
.350	.0786	.1270	.1071	.0227	
.375				.0481	
.450			.0407		
.550			.0460		
.650	.0048				
.750	.0100				

RN/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 HT = 301.186 RHOVEL = .738

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					.3557
.125					.0583
.175					.0350
.250		.0077			
.275		.0095	.0066		
.325		.1814	.0415	.0088	
.350	.0842	.1409	.0901	.0225	
.375				.0460	
.450			.0473		
.550			.0496		
.650	.0071				
.750	.0101				

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8109) (20 AUG 74)

REFERENCE DATA

SREF = 2990.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.804 MACH (1) = 5.300 PO = 150.696 TO = 1325.300 HT = 324.022 RHOVEL = .303

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.5133
.010								.3049
.020								.1978
.040								.1683
.060								.1292
.080								.0992
.100								.0738
.150								.0360
.200				.0175				.0201
.300			.0139	.0833	.0242			.0048
.350								.0075
.375								.0149
.400	.0039	.0428	.0355	.0513	.0378	.0313	.0277	.0818
.425								.1474
.450								.0805
.475								.0482
.500		.0426	.0125	.0115	.0125	.0524	.0854	.0337
.525								.0304
.550								.0157
.575								.0168
.600	.0285	.0260	.0109	.0303	.0223	.0551	.0523	.0248
.650								.0345
.675								.0366
.700		.0178	.0149	.0214	.0389	.0349	.0360	.0396
.750								.0412
.800	.0198	.0198	.0147	.0351	.0456	.0228	.0346	.0410
.850								.0378
.900		.0208	.0197	.0433	.0481	.0170	.0250	.0293
.935								.0169
.975								.0043

ARC 3 5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8T09)

RN/L (2) = 4.652 MACH (1) = 5.300 PO = 352.769 TO = 1247.200 HT = 303.991 RHOVEL = .73

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.4489
.010								.2715
.020								.1779
.040								.1530
.060								.1158
.080								.0832
.100								.0653
.150								.0313
.200				.0145				.0171
.300			.0124	.0848	.0258			.0056
.350								.0036
.375								.0173
.400	.0068	.0351	.0357	.0453	.0400	.0335	.0372	.0720
.425								.1678
.450								.0864
.475								.0536
.500		.0369	.0147	.0105	.0251	.0595	.0878	.0472
.525								.0432
.550								.0513
.575								.0705
.600	.0313	.0230	.0141	.0239	.0365	.0549	.0552	.0747
.650								.0721
.675								.0677
.700		.0197	.0223	.0285	.0401	.0445	.0540	.0525
.750								.0551
.800	.0238	.0245	.0256	.0332	.0559	.0346	.0396	.0435
.850								.0421
.900		.0296	.0267	.0417	.0522	.0290	.0276	.0735
.935								.0181
.975								.0029

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8T10) (20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 2.009 MACH (1) = 5.300 PO = 156.004 TO = 1265.870 HT = 308.762 RHOVEL = .322

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.3000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.4655
.010								.3067
.020								.2119
.040								.1834
.060								.1452
.080								.1135
.100								.0853
.150								.0445
.200				.0154				.0254
.300			.0122	.0798	.0424			.0144
.350								.0105
.375								.0230
.400	.0067	.0220	.0236	.0405	.0461	.0632	.0640	.1005
.425								.1609
.450								.0805
.475								.0440
.500		.0188	.0054	.0123	.0157	.0642	.0811	.0339
.525								.0285
.550								.0247
.575								.0237
.600	.0228	.0101	.0035	.0149	.0566	.0557	.0541	.0249
.650								.0247
.675								.0291
.700		.0116	.0053	.0217	.0566	.0359	.0353	.0311
.750								.0326
.800	.0271	.0183	.0077	.0233	.0569	.0416	.0283	.0337
.850								.0320
.900		.0190	.0300	.0492	.0513	.0366	.0232	.0262
.935								.0153
.975								.0054

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (8B8110)

RN/L (2) = 4.771 MACH (1) = 5.300 PO = 352.036 TO = 1225.870 HT = 298.551 RHOVEL = .74

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								9.9900
.010								.2976
.020								.2106
.040								.1774
.060								.1390
.080								.1087
.100								.0825
.150								.0432
.200				.0137				.0247
.300			.0116	.0832	.0540			.0151
.350								.0144
.375								.0286
.400	.0144	.0219	.0251	.0373	.0568	.0667	.0604	.1080
.425								.1905
.450								.1070
.475								.0649
.500		.0186	.0047	.0127	.0333	.0753	.0911	.0528
.525								.0508
.550								.0651
.575								.0736
.600	.0282	.0118	.0054	.0160	.0502	.0595	.0750	.0761
.650								.0659
.675								.0694
.700		.0188	.0071	.0208	.0660	.0476	.0577	.0750
.750								.0621
.800	.0285	.0215	.0122	.0215	.0684	.0571	.0485	.0610
.850								.0544
.900		.0227	.0292	.0307	.0608	.0450	.0421	.0440
.935								.0242
.975								.0142

ARC 3.5-1/2 IH15 ET (EXTERNAL TANK) (BB8T111) (20 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 1.982 MACH (1) = 5.300 PO = 154.357 TO = 1268.500 HT = 309.436 RHOVEL = .31

SECTION (1)41-015 DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.4948
.010								.2891
.020								.1868
.040								.1586
.060								.1208
.080								.0926
.100								.0678
.150								.0326
.200				.0158				.0175
.300			.0094	.0098	.0093			.0098
.350								.0084
.375								.0087
.400	.0092	.0080	.0087	.0092	.0085	.0080	.0079	.0078
.425								.0077
.450								.0068
.475								.0068
.500		.0083	.0078	.0077	.0070	.0068	.0072	.0064
.525								.0070
.550								.0065
.575								.0069
.600	.0070	.0074	.0070	.0066	.0058	.0053	.0071	.0062
.650								.0059
.675								.0082
.700		.0074	.0060	.0058	.0049	.0088	.0057	.0060
.750								.0060
.800	.0062	.0061	.0064	.0061	.0058	.0053	.0057	.0063
.850								.0052
.900		.0063	.0062	.0057	.0055	.0053	.0054	.0050
.935								.0043
.975								.0015

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (BB8111)

RN/L (2) = 4.874 MACH (1) = 5.300 PO = 350.389 TO = 1238.190 HT = 301.691 RHOVEL = .??

[illegible] (1)41-015 DEPENDENT VARIABLE H/HREF

PHI .0000 45.0000 67.5000 90.0000112.5000135.0000157.5000180.0000

R/L								
.000								9.9900
.010								9.9900
.020								.1578
.040								.1573
.060								.1211
.080								.0944
.100								.0705
.150								.0346
.200				.0162				.0186
.300			.0096	.0092	.0088			.0102
.350								.0090
.375								.0088
.400	.0086	.0080	.0080	.0080	.0077	.0072	.0082	.0087
.425								.0080
.450								.0081
.475								.0079
.500		.0069	.0068	.0062	.0063	.0056	.0078	.0081
.525								.0079
.550								.0077
.575								.0077
.600	.0077	.0063	.0058	.0053	.0055	.0047	.0077	.0074
.650								.0079
.675								.0080
.700		.0055	.0053	.0047	.0044	.0047	.0077	.0083
.750								.0081
.800	.0089	.0058	.0055	.0048	.0046	.0057	.0094	.0083
.850								.0086
.900		.0064	.0052	.0046	.0053	.0065	.0102	.0095
.935								.0098
.975								. [illegible]

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (BB8112) (20 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8130 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000
HAW/HT = .850

RN/L (1) = 2.021 MACH (1) = 5.300 PO = 151.611 TO = 1238.660 HT = 301.810 RHOVEL = .317

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.5016
.010								.3254
.020								.2231
.040								.1937
.060								.1519
.080								.1190
.100								9.9900
.150								.0456
.200				.0164				.0263
.300			.0080	.0102	.0121			.0176
.350								.0166
.375								.0171
.400	.0025	.0053	.0075	.0108	.0124	.0144	.0157	.0172
.425								.0163
.450								.0159
.475								.0167
.500		.0048	.0077	.0097	.0129	.0141	.0168	.0168
.525								.0164
.550								.0164
.575								.0166
.600	.0029	.0040	.0069	.0096	.0117	.0144	.0170	.0168
.650								.0177
.675								.0171
.700		.0033	.0065	.0084	.0112	.0139	.0162	.0178
.750								.0172
.800	.0078	.0030	.0052	.0092	.0127	.0153	.0177	.0182
.850								.0189
.900		.0033	.0048	.0095	.0126	.0143	.0181	.0184
.935								.0142
.975								.0018

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (BB8112)

RNVL (2) = 5.268 MACH (1) = 5.300 PO = 351.304 TO = 1149.840 HI = 279.260 RHOVEL = .167

SECTION (1)41-OTS DEPENDENT VARIABLE H/HREF

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								.4527
.010								.2980
.020								.2064
.040								.1793
.060								.1449
.080								.1212
.100								9.9990
.150								.0528
.200				.0158				.0269
.300			.0080	.0095	.0121			.0241
.350								.0268
.375								.0313
.400	.0018	.0054	.0071	.0096	.0122	.0187	.0394	.0314
.425								.0312
.450								.0328
.475								.0336
.500		.0042	.0076	.0089	.0142	.0300	.0423	.0366
.525								.0345
.550								.0341
.575								.0354
.600	.0044	.0035	.0069	.0100	.0207	.0340	.0393	.0357
.650								.0367
.675								.0369
.700		.0029	.0070	.0153	.0255	.0322	.0353	.0368
.750								.0363
.800	.0117	.0026	.0093	.0206	.0268	.0313	.0366	.0371
.850								.0387
.900		.0070	.0146	.0206	.0254	.0285	.0351	.0369
.935								.0247
.975								.0017

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (QB8B01) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.088	67.4130	
.125	67.5115	
.175	67.6776	
.250	67.6289	
.300	67.5422	
.350		67.4603
.400	67.5101	67.4373
.500		68.3761
.600	67.7844	67.8121
.700	67.9287	67.9587
.800	68.0186	68.1284
.900	68.1092	68.1880
1.000	68.0194	68.0791
1.025	67.9687	

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.088	70.0883	
.125	70.2045	
.175	70.3878	
.250	70.3732	
.300	70.3118	
.350		70.2313
.400	70.2808	70.1781
.500		70.2899
.600	70.5374	70.5043
.700	70.6822	70.6550
.800	70.7671	70.7848
.900	70.7671	70.7666
1.000	70.5145	70.5449
1.025	70.4280	

ARC 3.5-172 IH15 ORBITER (ORBITER BODY) (QB8B02) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.088	49.7071	
.125	49.7286	
.175	49.7712	
.250	49.7389	
.300	49.7123	
.350		49.6862
.400	49.7093	49.6773
.500		49.7153
.600	49.7868	49.7929
.700	49.8269	49.8364
.800	49.8508	49.9028
.900	49.8873	49.9322
1.000	49.8838	49.9069
1.025	49.8762	

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.088	55.4631	
.125	55.5420	
.175	55.6654	
.250	55.6260	
.300	55.5727	
.350		55.4937
.400	55.5435	55.4559
.500		55.5420
.600	55.7243	55.7090
.700	55.8304	55.8056
.800	55.8989	55.9301
.900	55.9217	55.9371
1.000	55.7740	55.7343
1.025	55.7184	

ARC 3.5-172 IH15 ORB + ET (ORBITER BODY) (QB8803) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

PN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.088	94.9048	
.125	95.0985	
.175	95.5571	
.250	95.3943	
.300	95.2576	
.350		95.5372
.400	94.9651	95.2563
.500		95.5019
.600	95.5024	95.8950
.700	95.7797	96.0534
.800	96.1680	96.4551
.900	96.6804	96.6640
1.000	96.1308	96.2424
1.025	95.9751	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY) (0B6B05) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.6130 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0000	.4150
X/L		
.088	61.7595	
.125	61.8031	
.175	61.9294	
.250	61.8550	
.300	61.8286	
.350		61.8720
.400	61.7566	61.7741
.500		61.8352
.600	61.9194	61.9308
.700	61.9728	61.9587
.800	62.0717	62.0524
.900	62.2020	62.0872
1.000	62.1085	62.0481
1.025	62.0809	

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.667 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0000	.4150
X/L		
.088	92.3343	
.125	92.3338	
.175	92.3395	
.250	92.7101	
.300	92.5927	
.350		92.6325
.400	92.3795	92.5258
.500		92.6490
.600	92.7358	92.8945
.700	92.8753	92.9302
.800	93.1456	93.1951
.900	93.5234	93.4188
1.000	93.3762	93.3356
1.025	93.1693	

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER BODY) (QB8B06) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.000	59.8215	
.125	59.8663	
.175	59.9788	
.250	59.9088	
.300	59.8678	
.350		59.9187
.400	59.8097	59.8137
.500		59.8377
.600	59.9242	59.9187
.700	59.9754	59.9247
.800	60.0567	60.0055
.900	60.2082	60.0405
1.000	60.1369	60.0497
1.025	60.1189	

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1291.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y .0000 .4150

X/L		
.000	87.7116	
.125	87.8819	
.175	88.2344	
.250	87.9613	
.300	87.8349	
.350		88.2770
.400	87.5753	87.8893
.500		88.0424
.600	88.0847	88.3772
.700	88.2854	88.5276
.800	88.5355	88.5032
.900	88.9442	88.9727
1.000	88.6549	88.7962
1.025	88.5245	

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (0B8WD1) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

ZY/B	.4000	.6000	.8000
X/C			
.175		67.4818	
.200		67.4033	
.225	69.3089		
.250	68.0584		67.2634
.300	68.0942	67.4555	67.2791
.400	68.1691	67.5102	67.3213
.500	68.2355	67.5257	67.2575
.600	68.2937	67.5422	67.2968
.700	68.3044	63.7838	67.3115
.800		67.5455	67.2811
.850			67.3117
.875		67.5525	
.900	68.3323		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

ZY/B	.4000	.6000	.8000
X/C			
.175		70.5069	
.200		70.4269	
.225	70.6187		
.250	70.6116		70.1042
.300	70.6231	70.4436	70.0952
.400	70.6666	70.4831	70.1374
.500	70.7207	70.4846	70.0898
.600	70.7669	70.5102	70.1000
.700	70.7664	70.4933	70.1176
.800		70.4753	70.0912
.850			70.1301
.875		70.4899	
.900	70.7170		

ARC 3.5-172 IH15 ORBITER (ORBITER WING) (QB8W02) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

ZY/B	.4000	.6000	.8000
X/C			
.175		49.9018	
.200		49.8709	
.225	49.8722		
.250	49.8652		49.8498
.300	49.8903	49.8958	49.8401
.400	49.9024	49.9081	49.8812
.500	49.9281	49.9209	49.8604
.600	49.9609	49.9279	49.8739
.700	49.9691	49.9340	49.8683
.800		49.9297	49.8620
.850			49.8741
.875		49.9400	
.900	49.9813		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

ZY/B	.4000	.6000	.8000
X/C			
.175		55.7459	
.200		55.6722	
.225	55.8040		
.250	55.7999		55.4629
.300	55.8194	55.7080	55.4680
.400	55.8535	55.7437	55.4992
.500	55.9009	55.7516	55.4691
.600	55.9392	55.7762	55.4883
.700	55.9388	55.7663	55.4954
.800		55.7527	55.4797
.850			55.5064
.875		55.7773	
.900	55.9237		

ARC 3.5-172 IH15 ORB + ET (ORBITER WING) (Q88W03) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 KNOVEL = .716

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

2Y/B	.4000	.6000	.8000
X/C			
.175		96.1069	
.200		95.8941	
.225	96.3930		
.250	96.3252		95.3145
.300	96.4697	95.9879	95.3475
.400	96.8394	96.1326	95.3493
.500	96.8065	96.1631	95.4349
.600	96.7759	96.2823	95.4909
.700	96.7541	96.4648	95.5553
.800		96.4728	95.4538
.850			95.6224
.875		96.4281	
.900	96.7377		

ARC 3.5-172 IH15 ORB + ET +SRB (ORBITER WING) (QB8W05) (19 AUG 74)

REFERENCE DATA

SREF = 2690.00 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = 000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

2Y/B	.4000	.6000	.8000
X/C			
.175		61.8269	
.200		61.8088	
.225	62.0159		
.250	61.9920		61.6175
.300	62.1243	61.8275	61.6216
.400	62.1392	61.8720	61.6327
.500	62.1010	61.8809	61.6717
.600	62.0731	61.9136	61.6734
.700	62.0521	61.9314	61.6757
.800		61.9504	61.5362
.850			61.7248
.875		61.9294	
.900	62.0443		

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

2Y/B	.4000	.6000	.8000
X/C			
.175		93.3362	
.200		93.2154	
.225	93.4846		
.250	93.4537		92.7435
.300	93.5486	93.2577	92.7625
.400	93.9289	93.3402	92.7638
.500	93.8196	93.3645	92.8752
.600	93.7661	93.4479	92.8923
.700	93.6909	93.6352	92.9192
.800		93.5981	92.8413
.850			92.9866
.875		93.5098	
.900	93.6487		

J-172 IH15 ORB + ET +SRB (ORBITER WING) (@BoeJ6) : 19 A. 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8190 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

ZY/B	.4000	.6000	.8000
X/C			
.175		59.7117	
.200		59.6993	
.225	59.9297		
.250	59.9247		59.5181
.300	60.0388	59.7106	59.5201
.400	60.0286	59.7452	59.5227
.500	59.9852	59.7504	59.5712
.600	59.9534	59.8019	59.5902
.700	59.9427	59.8149	59.5824
.800		59.8322	59.552[illegible]
.850			59.6396
.875		59.8123	
.900	59.9513		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

ZY/B	.4000	.6000	.8000
X/C			
.175		88.9013	
.200		88.7262	
.225	88.9517		
.250	88.9534		88.2318
.300	89.0603	88.7927	88.2445
.400	89.5650	88.9052	88.2462
.500	89.4626	88.9390	88.3480
.600	89.3968	89.0371	88.3877
.700	89.3309	89.2796	88.4310
.800		89.2362	88.3493
.850			88.5123
.875		89.1305	
.900	89.2625		

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (QB8S07) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .320

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			60.6735		60.6735	
.002					60.7322	
.025					60.6615	
.050			60.7948		60.8633	
.100					61.4438	
.112					61.6120	
.150					61.8125	
.200			61.5625	61.7212	61.8387	61.6031
.300				61.7326	61.8092	
.400	61.4326		61.5999	61.7500	61.7294	61.5299
.500					61.7812	
.600			61.6028	61.7385	61.8452	61.5399
.650			61.6064	61.7547		
.700	61.5440	61.5243	61.6976	61.7512	61.8408	
.750		61.5472	61.7739	61.7500		
.800	61.6796	61.5581	61.7206	61.7500	61.8797	61.5137
.920	61.5734	61.4332	61.4870	61.3236	61.2761	61.0767
.950			61.3451		61.1989	
.996	61.4408	61.3184		61.2253	61.1599	61.0418

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .714

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			9.9900		9.9900	
.002					90.2333	
.025					152.6220	
.050			90.8793		90.5525	
.100					93.0244	
.112					93.6951	
.150					95.1497	
.200			95.1549	95.5615	95.5593	95.6514
.300				95.8908	96.0002	
.400	96.0002		95.5985	95.9958	96.0567	96.1685
.500					96.0550	

ARC 3.5-172 IH15 ORB + E1 +SRB (SRB) (JB8507)

RN/L (2) = 4.311 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.600			95.9089	96.1579	96.3638	96.4421
.650			96.0025	96.2582		
.700	96.5244	96.0435	95.2047	96.4474	96.5443	
.750		96.1327	96.2520	96.4474		
.800	96.5554	96.0912	96.0854	96.2299	96.1199	95.9791
.920	95.8194	95.2068	94.7754	94.2267	93.8047	93.8541
.950			94.3300		93.7060	
.996	95.2574	94.7930		94.3423	94.3195	94.2499

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (QB8908) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6825 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.225 MACH (1) = 5.300 PO = 153.442 TO = 1174.260 HT = 285.439 RHOVEL .331

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			50.6402		50.6402	
.002					50.7202	
.025					50.6599	
.050			50.8658		50.8212	
.100					51.5856	
.112					51.7963	
.150					52.1331	
.200			51.9293	52.0964	52.1591	52.0979
.300				52.1383	52.2120	
.400	51.9521		51.9596	52.1441	52.1843	52.1074
.500					52.1837	
.600			52.0112	52.1265	52.2412	52.1253
.650			52.0147	52.1467		
.700	52.0415	51.9521	52.0886	52.1308	52.2279	
.750		51.9824	52.0488	52.1438		
.800	52.0984	52.0115	52.0378	52.1253	52.1903	52.0941
.920	51.9287	51.8384	51.7523	51.6538	51.6178	51.5582
.950			51.6184		51.5781	
.996	51.8084	51.7162		51.5881	51.5628	51.5611

X/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 HT = 301.186 RHOVEL .738

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			81.7243		81.7243	
.002					9.9900	
.025					81.6130	
.050			82.3840		82.1503	
.100					84.3280	
.112					84.8956	
.150					86.1230	
.200			85.9719	86.3439	86.3943	86.4575
.300				86.5733	86.684[illegible]	
.400	86.5650		86.2360	86.5966	86.7003	86.7824
.500					86.6621	

ARC 3.5-172 IH15 ORB + ET +SRB (SRB) (QB8308)

RN/L (2) = 4.713 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.600			86.4333	86.6625	86.9007	86.9636
.650			86.5198	86.7363		
.700	86.9772	86.5382	86.6964	86.8717	87.0164	
.750		86.6269	86.7069	86.9209		
.800	87.0001	86.6445	86.6120	86.8295	86.8871	86.7925
.920	86.4553	86.0538	85.7444	85.3909	85.2147	85.1907
.950			85.3739		85.1035	
.996	85.9439	85.6539		85.3342	85.3194	85.3621

ARC 3.5-172 IH15 SRB (SRB) (QB8313) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.687 MACH (1) = 5.300 PO = 153.442 TO = 1397.700 HT = 342.751 RHOVEL = .299

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			71.0610		71.0610	
.002					71.2531	
.025					70.9979	
.050			71.5112		71.1711	
.100					71.9576	
.112					72.1438	
.150					72.2878	
.200			72.7312	72.4347	72.1636	72.1949
.300				72.3141	72.0619	
.400	72.8192		72.5441	72.1922	71.9375	71.9917
.500					71.6983	
.600			72.5027	72.0737	71.7313	71.8578
.650			72.4820	72.1226		
.700	72.7528	72.6897	72.5080	72.0804	71.7468	
.750		72.6180	72.5278	72.1285		
.800	72.6758	72.6012	72.4967	72.1901	71.8021	71.7630
.920	72.4766	72.4364	72.3431	71.9690	71.7122	71.6698
.950			72.2751		71.7171	
.996	72.2905	72.2825		72.0601	71.8416	71.8077

RN/L (2) = 4.634 MACH (1) = 5.300 PO = 351.487 TO = 1247.410 HT = 304.045 RHOVEL = .732

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			83.1438		83.1438	
.002					83.5220	
.025					83.0558	
.050			84.0560		83.4206	
.100					85.3096	
.112					85.7934	
.150					86.3367	
.200			87.3097	86.8282	86.0938	86.3532
.300				86.4948	85.9712	
.400	86.1022		87.1548	86.2748	85.7491	86.1212
.500					85.2316	

ARC 3.5-172 I-15 SRB (SRB) (JB8313)

RN/L (2) = 4.634 MACH (1) = 5.300

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.600			87.1413	86.1290	85.3729	85.8755
.650			87.1540	86.2248		
.700	88.1519	87.8161	87.1863	86.1930	85.5364	
.750		87.7021	87.3153	86.2709		
.800	87.9907	87.6581	87.2405	86.3933	85.4913	85.6788
.920	87.5071	87.2340	86.3027	86.0155	85.4470	85.5386
.950			86.7997		85.4887	
.986	86.8957	86.9036		86.4870	85.9699	86.0703

ARC 3.5-172 IH15 SRB (SRB) (080914) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.158 MACH (1) = 5.300 PO = 151.245 TO = 1193.390 HT = 290.290 RHOVEL .323

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			50.8604		50.8604	
.002					50.9843	
.025					50.8026	
.050			51.1504		50.9507	
.100					51.6595	
.112					51.8259	
.150					52.0012	
.200			52.3164	52.0453	51.9088	52.0385
.300				51.9660	51.8594	
.400	52.8128		52.1799	51.8722	51.7472	51.9247
.500					51.5353	
.600			52.1344	51.7748	51.5909	51.3407
.650			52.1332	51.9029		
.700	52.5671	52.4033	52.1472	51.7909	51.6334	
.750		52.3400	52.1734	51.8174		
.800	52.4964	52.3161	52.1423	51.8574	51.6201	51.7844
.925	52.3095	52.1700	52.0029	51.6973	51.5926	51.6811
.950			51.9509		51.5994	
.998	52.0817	52.0807		51.8670	51.7838	51.8585

RN/L (2) = 5.469 MACH (1) = 5.300 PO = 351.853 TO = 1123.620 HT = 272.646 RHOVEL .778

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			67.7553		67.7553	
.002					68.0255	
.025					67.6446	
.050			68.4643		67.9650	
.100					69.5353	
.112					69.9489	
.150					70.3968	
.200			71.1378	70.5482	70.1883	70.4119
.300				70.4279	70.0780	
.400	71.6731		70.9153	70.2477	69.8831	70.1594
.500					69.4535	

ARC 3.5-172 IH15 SRB (SRB) (888314)

RN/L (2) = 5.469 MACH (1) = 5.300

SECTION (1)41-OH3 DEPENDENT VARIABLE QDOT

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

M/L						
.800			70.8907	70.0724	69.5346	70.0173
.850			70.8725	70.1323		
.900	71.6548	71.4359	70.9062	70.0965	69.5952	
.75		71.3523	70.9797	70.1646		
.900	71.3526	71.2718	70.9088	70.2275	69.5608	69.9055
.920	71.0852	70.8855	70.5741	69.8831	69.4569	69.5969
.950			70.466		69.4702	
.996	70.3726	70.6056		70.2184	69.8831	69.9364

ARC 3.5-172 IH15 SRB (SRB) (080815) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.3820 IN. ZMRP = .0000 IN.
SCALE .0060

PARAMETRIC DATA

ALPHA = 20.000 BETA = .000
MACH = 5.300 PH,-H = 90.000

XN/L (1) = .304 MACH (1) = 5.300 PO = 350.938 TO = 1143.860 HT = 277.751 RHOVEL = .769

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI 90.0000135.0000180.0000225.0000270.0000315.0000

X/L						
.000			70.5269		70.5269	
.002					70.9168	
.025					70.4309	
.050			70.6836		70.7775	
.100					72.4241	
.112					72.8247	
.150					73.2249	
.200			72.7583	72.5214	72.9956	73.8645
.300				72.3574	72.9593	
.400	74.8880		72.5791	72.2115	72.6950	73.7345
.500					72.1754	
.600			72.8299	72.0880	72.4434	73.7025
.650			72.6575	72.1636		
.700	74.4980	73.8748	72.7234	72.2253	72.7351	
.750		73.5821	72.9041	72.3339		
.800	74.3354	73.5181	72.8183	72.3896	72.5145	73.8452
.920	74.0029	73.1787	72.5248	72.1307	72.5119	73.2746
.950			72.3384		72.5119	
.996	73.5224	72.9617		72.5119	72.9265	73.5440

ARC 3.5-172 IH15 SRB (SRB) (080516) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 45.000 BETA = .000
MACH = 5.300 PHI-M = 90.000

RN/L (1) = 5.559 MACH (1) = 5.300 PO = 351.670 TO = 1111.580 HT = 269.615 RHOVEL = .783

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			66.7859		66.7859	
.002					67.1738	
.025					66.2768	
.050			66.9040		66.9348	
.100					68.3672	
.112					68.7055	
.150					69.0008	
.200			68.6199	68.3135	68.7378	69.5937
.300				68.1186	68.6814	
.400	70.0952		68.3629	67.9342	68.6797	69.4395
.500					67.8326	
.600			68.3427	67.7769	68.6856	69.2569
.650			68.3547	67.8224		
.700	70.1446	69.3579	68.3994	67.8631	69.1328	
.750		69.2565	68.5193	67.9423		
.800	69.9974	69.1805	68.4561	68.0062	68.1302	69.3165
.920	69.8024	68.8071	68.1173	67.7148	68.1014	68.9250
.950			67.9123		68.0907	
.998	69.0840	68.5077		67.9389	68.3728	69.1103

ARC 3.5-172 IH19 SRB (SRB) (0B8017) (19 AUG 74)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 70.000 BETA = .000
MACH = 5.300 PHI-M = 90.000

RN/L (1) = 4.926 MACH (1) = 5.300 PO = 353.867 TO = 1205.180 HT = 293.284 RHOVEL = .752

SECTION (1141-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			78.5747		78.5747	
.025					78.4357	
.050			78.6057		78.6397	
.100					79.9662	
.112					80.3030	
.150					80.5544	
.200			80.2406	79.8328	80.2739	81.2683
.300				79.4800	80.2523	
.400	82.0162		80.0372	79.4919	79.9423	81.2126
.500					79.3545	
.600			79.9488	79.2733	79.6246	81.1058
.650			79.9384	79.3925		
.700	82.0180	81.2409	80.0346	79.4102	79.7384	
.750		81.3629	80.2323	79.5174		
.800	82.0210	81.1733	80.2731	79.6445	79.8328	81.3952
.920	81.8579	80.7356	79.9471	79.4314	79.8627	81.0087
.950			79.7917		79.8895	
.998	81.0619	80.2991			80.1889	81.2143

ARC 3.5-172 IH15 SRB (SRB) (SRB15B) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = 90.000 BETA = .000
MACH = 5.300 PHI-M = 90.000

RN/L (1) = 5.872 MACH (1) = 5.300 PO = 353.135 TO = 1076.200 HT = 260.731 RHOVEL = .800

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	135.0000	180.0000	225.0000	270.0000	315.0000
X/L						
.000			59.9355		59.9355	
.025					59.8563	
.050			60.0530		60.0088	
.100					61.0609	
.112					61.2989	
.150					61.5697	
.200			61.3696	61.0969	61.4349	62.2931
.300				60.9750	61.4934	
.400	52.8030		61.2171	60.8482	61.2493	62.3144
.500					60.8237	
.600			61.1079	60.6817	61.0969	62.2604
.650			61 1037	60.7311		
.700	62.6431	61.9840	61.1333	60.7535	61.1071	
.750		62.0809	61.2150	60.8165		
.800	62.6662	61.9517	61.2137	60.8841	61.1062	62.4710
.920	62.2565	61.5209	60.9209	60.6808	61.0973	62 0027
.950			60.7835		61.1037	
.996	9.9900	61.0508			61.4120	62.1787

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (Q88C01) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8190 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.764 MACH (1) = 5.300 PO = 151.428 TO = 1348.180 HT = 329.926 RHOVEL = .301

SECTION (1)41-OTS DEPENDEN VARIABLE QDOT

Y	.0470	.1780	.1960	.2130
X				
1.210	67.8706			
1.251			67.9387	
1.272	67.8425			
1.305		67.9331		
1.334	67.8208			
1.358		67.8715		

RN/L (2) = 5.214 MACH (1) = 5.300 PO = 349.474 TO = 1153.370 HT = 280.152 RHOVEL = .762

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0470	.1780	.1960	.2130
X				
1.210	74.9331			
1.251			74.9755	
1.272	74.7993			
1.305		74.9589		
1.334	74.7366			
1.358		74.8430		

ARC 3.5-172 IH15 ORBITER (WINDSHIELD) (GB8C02) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.143 MACH (1) = 5.300 PO = 150.493 TO = 1188.110 HT = 288.949 RHOVEL = .323

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0470	.1780	.1960	.2130
X				
1.210	53.0247			
1.251			53.0930	
1.272	53.0069			
1.305		53.0902		
1.334	52.9971			
1.358		53.0411		

RN/L (2) = 6.131 MACH (1) = 5.300 PO = 350.041 TO = 1040.890 HT = 251.898 RHOVEL = .808

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0470	.1780	.1960	.2130
X				
1.210	59.9222			
1.251			59.9910	
1.272	59.8288			
1.305		59.9811		
1.334	59.7870			
1.358		59.8864		

ARC 3.5-172 IH15 ORB + ET (WINDSHIELD) (QB6C03) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .718

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y / X	.0470	.1780	.1980	.2130
1.210	96.2936			
1.251			96.3540	
1.272	96.1981			
1.305		96.3434		
1.334	96.1392			
1.358		96.2495		

ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD) (0B8C05) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.2100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0470	.1780	.1960	.2130
X				
1.210	61.9869			
1.251			62.0170	
1.272	61.9584			
1.305			62.0257	
1.334	61.9426			
1.358		61.9894		

RN L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y	.0470	.1780	.1960	.2130
X				
1.210	93.4254			
1.251			93.5.[illegible]	
1.272	93.3332			
1.305			93.5044	
1.334	93.3155			
1.358		93.4488		

ARC 3.5-172 IH15 ORB + ET +SRB (WINDSHIELD) (QB8C06) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0080

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.952 MACH (1) = 5.300 PO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y / X	.0470	.1780	.1960	.2130
1.210	59.9765			
1.251			60.0055	
1.272	59.9464			
1.305		60.0095		
1.334	59.9265			
1.358		59.9814		

RN/L (2) = 4.570 MACH (1) = 5.300 PO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

Y / X	.0470	.1780	.1960	.2130
1.210	88.6864			
1.251			88.7883	
1.272	88.5805			
1.305		88.7905		
1.334	88.5250			
1.358		88.7187		

ARC 3.5-172 IH15 ORB + ET (EXTERNAL TANK) (QBAT03) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 4.332 MACH (1) = 5.300 PO = 352.769 TO = 1304.520 HT = 318.677 RHOVEL = .716

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	112.5000	135.0000	157.5000
X/L				
.450	95.1056		95.3647	95.4724
.550	95.2457		95.5156	95.5438
.650	95.4318	95.5200	95.6193	95.5849
.75	95.5359	95.5827	95.6962	95.5809
.850	95.5990	95.6873	95.6895	95.5725

ARC 3.5-172 IH15 ORB + ET (EXTERNAL TANK) (QB8T04) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 4.781 MACH (1) = 5.300 PO = 352.403 TO = 1225.090 HT = 298.350 RHOVEL = .742

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								81.2236
.010								81.7640
.020								82.2265
.040								82.4071
.060								82.7963
.080								83.0511
.100								83.2938
.150								83.7489
.200				84.1270				84.2038
.300			83.7297	83.6569	83.5746			84.2641
.350								84.1606
.375								84.1676
.400	83.6090	83.562	83.6452	83.5550	83.5498	83.7110	83.8857	84.1283
.425								84.0270
.450								84.0113
.475								83.9747
.500		83.5616	83.6713	83.5742	83.6003	83.7044	83.9490	83.9865
.525								83.9293
.550								83.9808
.575								83.9590
.600	83.3327	83.5877	83.6861	83.6813	83.6055	83.7070	83.9559	83.9260
.650								83.8325
.675								83.8905
.700		83.5894	83.7210	83.7480	83.7332	84.1366	83.9869	83.9210
.750								83.7746
.800	83.3879	83.7759	83.8526	83.8317	83.8007	83.9075	83.9145	83.7179
.850								83.8295
.900		83.7157	83.8487	83.8910	83.9045	84.0397	84.1135	83.9132
.935								83.8766
.975								84.2872

ARC 3.5-17? 'H15 ORB . ET +SRB (EXTERNAL TANK) (QBdT15) (19 AUG 74)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN. ALPHA = .000 BETA = .000
LREF = 474.8100 IN. YMRP = .0000 IN. MACH = 5.300 PHI-M = .000
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

RN/L (1) = 1.845 MACH (1) = 5.300 PO = 149.964 TO = 1303.100 HT = 318.311 RHOVEL = .305

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0	112.5000	135.0000	157.5000
X/L				
.450	62.3347		62.2063	62.0742
.550	62.3462		62.2236	62.1021
.650	62.3696	62.3324	62.2348	62.1295
.750	62.3869	62.3609	62.3033	62.1824
.850	62.4771	62.4762	62.3713	62.2414

RN/L (2) = 4.437 MACH (1) = 5.300 PO = 353.867 TO = 1287.480 HT = 314.301 RHOVEL = .724

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	112.5000	135.0000	157.5000
X/L				
.450	93.2445		93.0677	92.8012
.550	93.3813		93.1228	92.8197
.650	93.4492	93.3919	93.1413	92.8351
.750	93.4775	93.4060	93.2171	92.8483
.850	93.5924	93.5464	93.3248	92.9025

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BBBTUB) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6620 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.952 MACH (1) = 5.300 FO = 153.625 TO = 1276.580 HT = 311.506 RHOVEL = .316

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	112.5000	135.0000	157.5000
X/L				
.450	60.3044		60.2082	60.0966
.550	60.3157		60.2264	60.1213
.650	60.3351	60.3041	60.2273	60.1415
.750	60.3575	60.3259	60.2928	60.2082
.850	60.4469	60.4423	60.3685	60.2696

RN/L (2) = 4.970 MACH (1) = 5.300 FO = 352.769 TO = 1261.330 HT = 307.600 RHOVEL = .730

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	90.0000	112.5000	135.0000	157.5000
X/L				
.450	88.3327		88.1253	87.8488
.550	88.4415		88.1362	87.8527
.650	88.4992	88.4118	88.1336	87.8645
.750	88.5258	88.4000	88.1816	87.8632
.850	88.6102	88.5062	88.2488	87.9456

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (BB8T07) (19 AUG 74)

REFERENCE DATA

BREF = 2990.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.983 MACH (1) = 5.300 PO = 155.638 TO = 1274.720 HT = 311.029 RHOVEL = .320

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI 67.5000 90.0000112.5000135.0000180.0000

X/L					
.005					61.11[illegible]
.125					61.6620
.175					61.6367
.250		61.6028			
.275		61.5478	61.6167		
.325		61.6258	61.6040	61.7209	
.350	61.7709	61.6935	61.6914	61.6055	
.375				61.6846	
.450			61.7241		
.550			61.6911		
.650	61.7032				
.750	61.7041				

RN/L (2) = 4.311 MACH (1) = 5.300 PO = 352.586 TO = 1308.080 HT = 319.591 RHOVEL = .714

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI 67.5000 90.0000112.5000135.0000180.0000

X/L					
.005					90.8953
.125					94.0128
.175					94.8962
.250		94.7276			
.275		94.6232	94.8549		
.325		94.6802	95.0187	95.3735	
.350	94.8571	94.9758	95.2323	95.4633	
.375				95.5399	
.450			95.9195		
.550			96.1477		
.650	96.[illegible]580				
.750	96.1376				

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (080T08) (19 AUG 74)

REFERENCE DATA

SREF = 2041.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.8820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.225 MACH (1) = 5.300 PO = 153.[illegible] TO = 1174.260 HT = 285.439 RHOVEL = .331

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					50.7217
.125					51.5223
.175					51.6684
.250		51.7070			
.275		51.6834	51.7823		
.325		51.7716	51.8185	51.8301	
.350	51.7803	51.8944	51.8952	51.8655	
.375				51.8402	
.450			51.9763		
.550			51.9650		
.650	51.9509				
.750	51.930[illegible]				

RN/L (2) = 4.713 MACH (1) = 5.300 PO = 352.403 TO = 1236.210 HT = 301.186 RHOVEL = .738

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	67.5000	90.0000	112.5000	135.0000	180.0000
X/L					
.005					82.3302
.125					84.7985
.175					85.4071
.250		85.4403			
.275		85.2964	85.5508		
.325		85.2768	85.5984	85.8581	
.350	85.3781	85.5455	85.7566	85.9198	
.375				85.9404	
.450			86.2702		
.550			86.1794		
.650	86.4044				
.750	86.4750				

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (QB8T09) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.804 MACH (1) = 5.300 PO = 150.696 TO = 1325.300 HT = 324.022 RHOVEL = .303

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

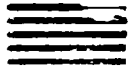
PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								63.9009
.010								64.1406
.020								64.3653
.040								64.4469
.060								64.6473
.080								64.7632
.100								64.8889
.150								65.1062
.200				65.3408				65.3338
.300			65.2313	65.1949	65.2773			65.4454
.350								65.3944
.375								65.3984
.400	65.1920	65.3035	65.4544	65.5974	65.6265	65.4874	65.3792	65.3434
.425								65.2767
.450								65.2482
.475								65.2188
.500		65.3250	65.5139	65.6274	65.6546	65.4941	65.4098	65.2246
.525								65.1894
.550								65.2161
.575								65.2074
.600	65.0155	65.2828	65.4448	65.5781	65.5682	65.4092	65.3891	65.1917
.650								65.1233
.675								65.1545
.700		65.2540	65.4343	65.5848	65.5688	65.5597	65.3644	65.2112
.750								65.1498
.800	65.0137	65.3061	65.4815	65.5977	65.5927	65.5087	65.3364	65.1233
.850								65.1978
.900		65.2825	65.4672	65.6318	65.6265	65.5574	65.4241	65.2304
.935								65.1591
.975								65.3961

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (QB8TU9)

RN/L (2) = 4.652 MACH (1) = 5.300 PO = 352.769 TO = 1247.200 HT = 303.991 RHOVEL = .735

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								84.8366
.010								85.1799
.020								85.6562
.040								85.8179
.060								86.2107
.080								86.4496
.100								86.6945
.150								87.1238
.200				87.5146				87.5540
.300			86.9847	86.7967	87.0254			87.5904
.350								87.4676
.375								87.4602
.400	87.0258	87.1903	87.3314	87.4970	87.6843	87.5404	87.4085	87.3778
.425								87.2455
.450								87.2070
.475								87.1931
.500		87.2889	87.5290	87.7089	87.8525	87.6084	87.4659	87.1833
.525								87.0936
.550								87.1523
.575								87.1334
.600	86.7687	87.3151	87.5299	87.7256	87.7642	87.5132	87.4510	87.1037
.650								87.0254
.675								37.0954
.700		87.3046	87.5580	87.7739	87.8182	87.8639	87.4698	87.1597
.750								87.0118
.800	86.7866	87.4690	87.7185	87.8880	87.9074	87.7365	87.4269	86.9703
.850								87.1046
.900		87.4256	87.6909	88.0040	88.0370	87.9109	87.6496	87.2013
.935								87.1991
.975								87.6927



ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (QB8T10) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.009 MACH (1) = 5.300 PO = 156.004 TO = 1265.870 HT = 308.762 RHOVEL = .322

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								58.5901
.010								58.7879
.020								58.9434
.040								58.9849
.060								59.1310
.080								59.2054
.100								59.2926
.150								59.4276
.200				59.7445				59.5672
.300			59.4938	59.4506	59.4879			59.4853
.350								59.4285
.375								59.4186
.400	59.3182	59.4888	59.6138	59.7352	59.7465	59.6033	59.4637	59.3977
.425								59.2975
.450								59.2842
.475								59.2434
.500		59.4661	59.6278	59.7217	59.7057	59.5453	59.4439	59.2496
.525								59.1969
.550								59.2071
.575								59.2059
.600	59.1681	59.4358	59.5616	59.6920	59.6223	59.4605	59.4006	59.1946
.650								59.1394
.675								59.1597
.700		59.4212	59.5578	59.6631	59.6269	59.6194	59.4006	59.2106
.750								59.1647
.800	59.1725	59.5182	59.6368	59.7276	59.6920	59.5759	59.4006	59.1836
.850								59.2778
.900		59.4932	59.6628	59.7824	59.7495	59.6660	59.5427	59.3167
.935								59.2911
.975								59.4736

ARC 3.5-172 IH15 ORB + ET +SRB (EXTERNAL TANK) (QB8710)

RN/L (2) = 4.771 MACH (1) = 5.300 PO = 352.036 TO = 1225.870 HT = 298.551 RHOVEL = .741

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								9.9900
.010								78.9753
.020								79.3863
.040								79.5291
.060								79.9124
.080								80.1802
.100								80.4928
.150								81.0867
.200				81.6687				81.7088
.300			81.2317	81.0049	81.1603			81.9380
.350								81.8546
.375								81.8529
.400	81.4923	81.4234	81.5552	81.6445	81.8577	81.7877	81.7213	81.8046
.425								81.6907
.450								81.6553
.475								81.6053
.500		81.4854	81.6997	81.8495	82.0196	81.8136	81.7338	81.5966
.525								81.5578
.550								81.5889
.575								81.5880
.600	81.2158	81.4910	81.7058	81.8564	81.9203	81.7239	81.6725	81.5340
.650								81.4621
.675								81.5328
.700		81.4871	81.7213	81.8905	81.9483	82.0455	81.6717	81.5708
.750								81.4044
.800	81.1801	81.6501	81.8279	81.9820	81.9950	81.8205	81.6074	81.3846
.850								81.5182
.900		81.4790	81.7377	82.0023	82.0196	81.8840	81.7580	81.5358
.935								81.4199
.975								81.6997

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (QB8T11) (19 AUG 74)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8700 IN. YMRP = .0000 IN.
BREF = 936.6820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = .000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 1.982 MACH (1) = 5.300 PO = 154.357 TO = 1268.500 HT = 309.436 RHOVEL = .318

SECTION (1)41-0°, DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								60.2413
.010								60.4435
.020								60.6054
.040								60.6522
.060								60.7818
.080								60.8307
.100								60.8799
.150								60.9922
.200				61.3002				61.1116
.300			61.0996	61.0752	61.0746			61.0776
.350								61.0746
.375								61.1057
.400	60.8706	61.0098	61.0749	61.0347	61.0479	61.0614	61.0717	61.0905
.425								61.0746
.450								61.0746
.475								61.0746
.500		61.0242	61.0896	61.0183	61.0600	61.0453	61.1204	61.0755
.525								61.0717
.550								61.0746
.575								61.0746
.600	60.7847	61.0151	61.0233	61.0198	60.9978	61.0588	61.1011	61.0746
.650								60.9990
.675								61.0183
.700		61.0174	61.0746	61.0893	61.0870	61.2068	61.0811	61.0770
.750								61.0600
.800	60.9259	61.1175	61.1366	61.1063	61.0899	61.1016	61.0767	61.0746
.850								61.1630
.900		61.1081	61.1639	61.1642	61.1639	61.1883	61.2141	61.1651
.935								61.0779
.975								61.2320

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (QB8T11)

RN/L (2) = 4.674 MACH (1) = 5.300 PO = 350.389 TO = 1238.190 HT = 301.691 RHOVEL = .735

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								9.9900
.010								9.9900
.020								126.7290
.040								80.4019
.060								80.9657
.080								81.4979
.100								82.1238
.150								83.5045
.200				84.0667				84.9146
.300			83.9914	83.9365	83.9733			86.1500
.350								86.1968
.375								86.2405
.400	85.2393	84.0035	83.8695	83.7476	83.9132	84.3953	85.1332	86.2501
.425								86.2405
.450								86.1635
.475								86.1430
.500		84.0347	83.9365	83.7757	83.9594	84.4031	85.2376	86.1129
.525								86.1094
.550								86.1968
.575								86.1229
.600	84.9359	84.1385	84.0131	84.0018	84.1779	84.7574	85.2332	86.1094
.650								86.1531
.675								86.1343
.700		84.1178	84.1277	84.2398	84.5579	84.6976	85.2376	86.1513
.750								86.0570
.800	85.4186	84.3693	84.2143	84.1645	84.2468	84.6355	85.2454	86.1094
.850								86.6461
.900		84.2840	84.3139	84.3789	84.6082	85.0471	85.6177	86.4272
.935								85.[illegible]064
.975								85.6883

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (GB8T12) (19 AUG 74)

REFERENCE DATA

SREF = 2680.0000 SQ.FT. XMRP = .0000 IN.
LREF = 474.8100 IN. YMRP = .0000 IN.
BREF = 936.8820 IN. ZMRP = .0000 IN.
SCALE = .0060

PARAMETRIC DATA

ALPHA = -5.000 BETA = .000
MACH = 5.300 PHI-M = .000

RN/L (1) = 2.021 MACH (1) = 5.300 PO = 151.611 TO = 1238.660 HT = 301.810 RHOVEL = .317

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								55.9160
.010								56.1151
.020								56.3006
.040								56.3789
.060								56.5636
.080								56.7035
.100								9.9900
.150								57.1760
.200				57.5231				57.5009
.300			57.3518	57.3232	57.3390			57.7211
.350								57.7228
.375								57.7518
.400	57.4751	57.3116	57.2770	57.2602	57.3194	57.4220	57.5492	57.7399
.425								57.7049
.450								57.6944
.475								57.6750
.500		57.3001	57.3131	57.2602	57.3102	57.4110	57.5795	57.6791
.525								57.6548
.550								57.6678
.575								57.6626
.600	57.3289	57.2810	57.2808	57.2602	57.2839	57.4191	57.5347	57.6365
.650								57.5914
.675								57.6128
.700		57.2877	57.2758	57.3035	57.3731	57.4601	57.4971	57.6417
.750								57.5981
.800	57.4772	57.3362	57.3090	57.2862	57.3168	57.3919	57.4717	57.5876
.850								57.6976
.900		57.3185	57.3442	57.3515	57.4046	57.5032	57.5798	57.6649
.935								57.5463
.975								57.6258

ARC 3.5-172 IH15 ET (EXTERNAL TANK) (0B8T12)

RN/L (2) = 5.266 MACH (1) = 5.300 PO = 351.304 TO = 1149.840 HT = 279.260 RHOVEL = .767

SECTION (1)41-OTS DEPENDENT VARIABLE QDOT

PHI	.0000	45.0000	67.5000	90.0000	112.5000	135.0000	157.5000	180.0000
X/L								
.000								70.7200
.010								71.1230
.020								71.5262
.040								71.6973
.060								72.0891
.080								72.4052
.100								9.9900
.150								73.4741
.200				74.1352				74.2192
.300			73.6930	73.6360	73.6442			74.5815
.350								74.5854
.375								74.6522
.400	73.8784	73.5837	73.5311	73.4465	73.5678	73.7975	74.1170	74.6522
.425								74.5732
.450								74.5390
.475								74.5151
.500		73.6610	73.6321	73.5220	73.5755	73.8018	74.2144	74.5004
.525								74.5312
.550								74.5559
.575								74.5268
.600	73.7884	73.6796	73.6493	73.6748	73.7863	74.1361	74.1222	74.4787
.650								74.4878
.675								74.5242
.700		73.7072	73.8318	73.9553	74.2304	74.0690	74.2144	74.5528
.750								74.4466
.800	74.2300	73.8904	73.8264	73.7863	73.7923	73.9665	74.2144	74.4770
.850								74.8171
.900		73.8779	73.9289	73.9289	74.0219	74.2547	74.4431	74.6982
.935								74.4618
.975								74.5914