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COLUMBIA: THE FIRST FIVE FLIGHTS  
ENTRY HEATING DATA SERIES  
VOLUME 2  
THE OMS POD

By S. D. Williams

May 1983



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## ERRATA

### Columbia: The First Five Flights Entry Heating Data Series

Volume 2

The OMS Pod

May 1983

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After publication and distribution of the document listed above it was observed that the numerical values of the Normal Shock Reynolds Numbers flagged on the  $h/h_{ref}$  vs.  $\alpha$  plots were incorrectly labeled. Although the flagged values were correct with respect to time and  $\alpha$  the freestream values instead of the normal shock values were printed. The analyst can obtain the correct value for wind tunnel conditions by multiplying the stated values by 0.1121 or by using the values shown in the following table. This error is consistent for Volumes 2 through 6. The author regrets any inconvenience this has caused for the serious researcher.

#### Correlation Between Free Stream and Normal Shock Reynolds Numbers at Wind Tunnel Conditions

0.0175 Scale $Re_{\infty} / ft \times 10^6$	107 Ft. Length $Re_{\infty} \times 10^7$	107 Ft. Length $Re_{NS} \times 10^5$
0.50	0.936	1.050
1.00	1.873	2.099
1.50	2.809	3.149
2.00	3.745	4.198
2.50	4.681	5.248
3.00	5.618	6.297
3.50	6.554	7.347
3.70	6.928	7.767

## DISCUSSION:

Over 2,000 design flight instruments (DFI) were installed on Columbia with the majority of the DFI flight data recorded during ascent and entry (Ref 1). Additional real-time instrumentation was used to continuously monitor the thermal subsystems during each flight. Successful completion of the first five flights of the Space Shuttle Orbiter has provided sufficient data from radiometers, thermocouples, and pressure transducers to appraise the aerothermodynamic/TPS performance.

The entry heating presented in this report is restricted to the OMS Pod, see Fig. 1. A tabulation of the orbiter X, Y, Z coordinates for each instrument can be found in Table I. The data is segregated into two regimes: long range, which covers a majority of the flight data that is of interest; and short range, which shows the response during special maneuvers with respect to changes in angle-of-attack. This data is further subdivided into four Appendices:

- Appendix A: Correlation Parameters - Long Range
- Appendix B: Flight Data - Long Range
- Appendix C: Correlation Parameters - Short Range
- Appendix D: Flight Data - Short Range

As an aid to the reader, the page numbers for the specific correlation parameters and flight data for each Appendix can be found in Tables II through V.

The surface heating and temperature data presented in this volume is based on the thermal analysis at each individual location via the JSC NONLIN/INVERSE computer program, Ref. 2. Values of angle-of-attack and the derived free stream Mach number were obtained from the JSC/MPAD Best Estimated Trajectory (BET) data tapes for each flight. The corresponding data values for Normal Shock Reynolds number (Ref. 3), reference heating rate, reference film coefficient, and total enthalpy were obtained via the MINIVER computer program (Ref. 4). Values of  $h/h_{ref}$  were computed using a recovery enthalpy of  $0.9H_T$ . At wind tunnel conditions, March 8, (Ref. 5) the normal shock Reynolds number is 0.1121 times the Reynolds number based on free-stream parameters.

All heating rates were calculated with a view factor of 1. The surface emissivity of V07T9219A was assumed to be 0.85. The surface emissivity of all other instruments was assumed to be 0.80. All heating rates compared to flight parameters ( $\alpha$ ,  $M_\infty$ , and  $Re_{NS}$ ) are presented on a log scale with imposed limits of  $10^{-3} \leq h/h_{ref} \leq 1$ .

As an aid for interpreting this data flag events are superimposed on the plots. For the  $\alpha$  vs.  $h/h_{ref}$  plots the values of  $Re_{NS}$  corresponding to wind tunnel data values are denoted. For the  $M_\infty$  vs.  $h/h_{ref}$  and  $Re_{NS}$  vs.  $h/h_{ref}$  plots values of  $\alpha$  (latest in time occurrence) are denoted.

The DFI data is available throughout the entire trajectory for STS-2, STS-3, and STS-5. Due to DFI data recorder errors or malfunctions only limited entry data is available for STS-1 and STS-4.

Entry heating data for other vehicle areas is presented in additional volumes. Volume 1: An Overview, see Ref. 6, contains the underlying assumptions, detailed trajectory information, and pertinent information for the integration of all subsequent volumes. In order to provide an adequate overview of the entry heating Volume 1 will be the last released publication in this series of reports.

#### REFERENCES:

1. Smith, J. A., STS-3 Structural & Aerodynamic Pressure and Aerothermodynamics & Thermal Protection System Measurement Locations, NASA JSC 17889, January 15, 1982.
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5. Hudson, D. G., and Nutt, K. W., Space Shuttle Orbital Maneuvering System POD Heating Test at Mach Number 8, AEDC-TSR-80-V2, Arnold Engineering Development Center, Arnold Air Force Station, Tennessee, January 1980.
6. Williams, S. D., Columbia: The First Five Flights Entry Heating Data Series, Volume 1, An Overview, To be published.

FIGURE 1A.- OMS POD - SIDE VIEW

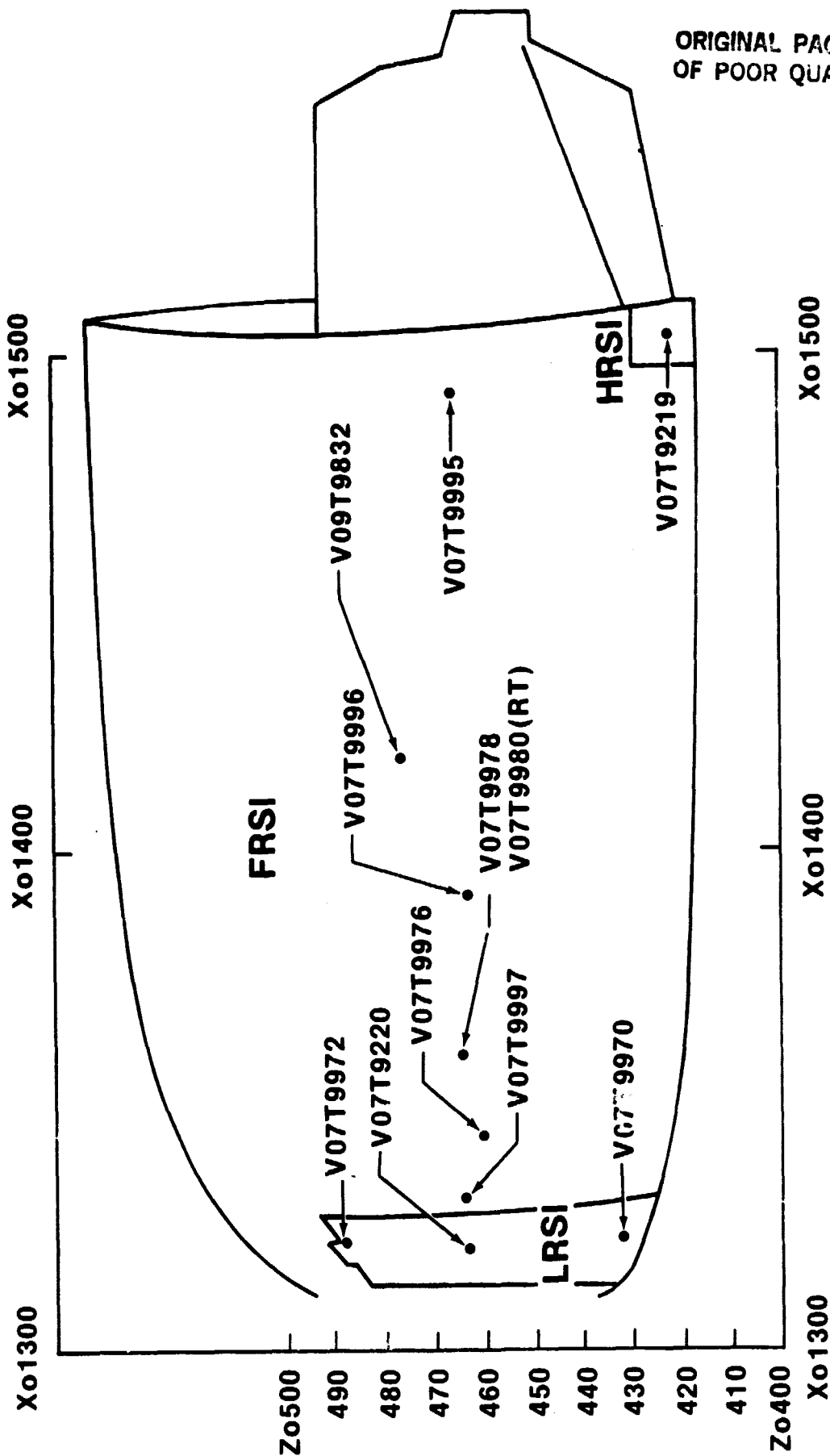


FIGURE 1B.- OMS POD - TOP VIEW

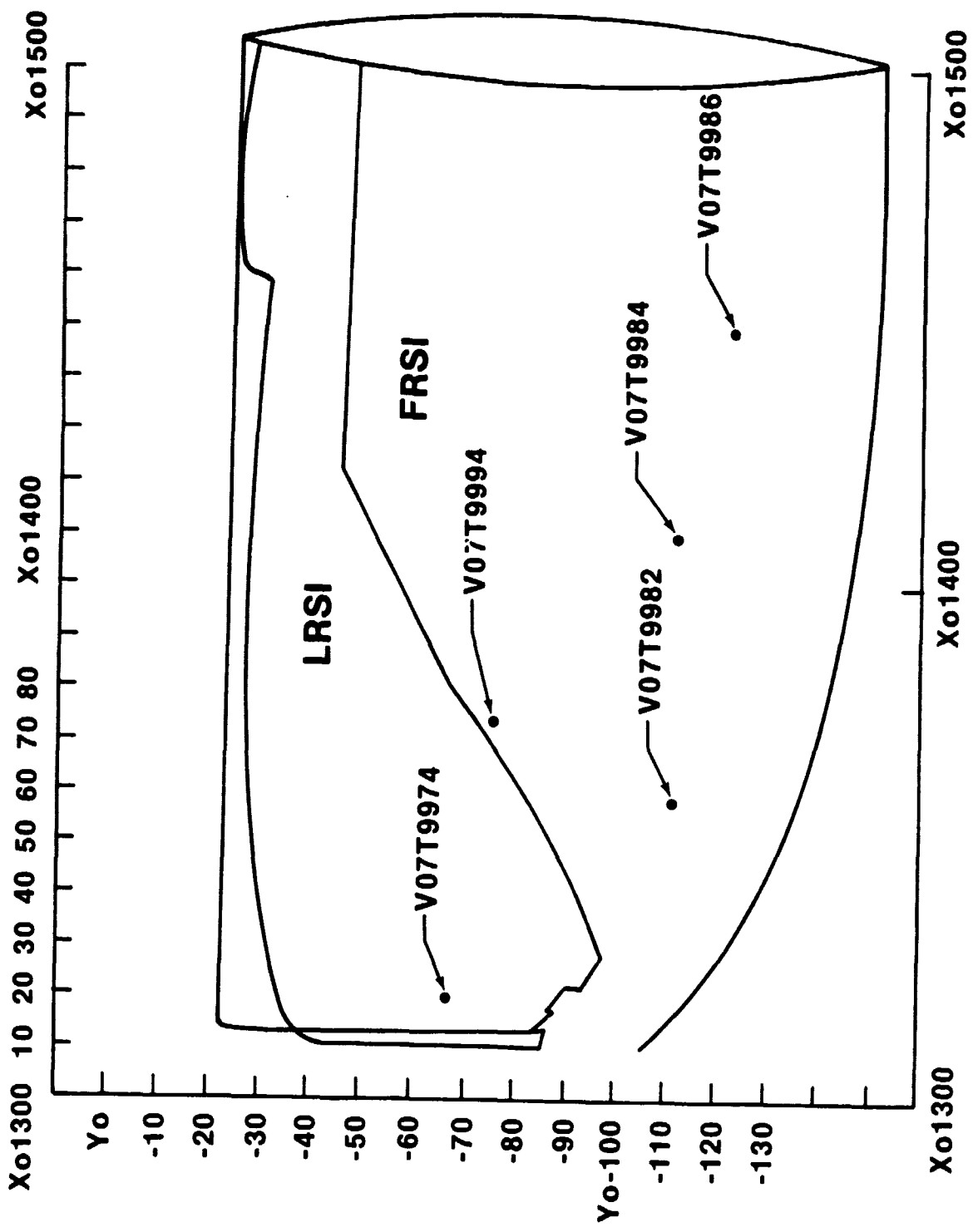


TABLE I  
OMS POD COORDINATES

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Mid	X/Lp	X,L	Xo	Yo	Zo
V07T9219A	0.739	0.986	1502.0	LH	422.0
9220	0.039	0.845	1321.0	LH	464.0
9970	0.050	0.847	1323.8	-109.5	432.3
9972	0.050	0.847	1323.8	-98.2	488.3
9974	0.042	0.946	1321.9	-67.5	507.3
9976	0.122	0.862	1342.5	-128.5	462.6
9978	0.188	0.875	1359.6	-135.1	463.1
9980	0.188	0.875	1359.6	+135.1	463.1
9982	0.190	0.875	1360.1	-111.3	501.0
9984	0.386	0.915	1410.8	-111.4	507.8
9986	0.541	0.946	1450.8	-122.1	511.4
9994	0.248	0.887	1375.0	-75.8	530.6
9995	0.692	0.977	1490.0	-150.7	466.4
9996	0.309	0.900	1391.0	-142.9	465.0
9997	0.079	0.853	1331.5	-122.9	461.5
V09T9832	0.422	0.922	1420.0	-144.3	476.9



TABLE II  
PAGE NUMBERS FOR APPENDIX A:  
CORRELATION PARAMETERS - LONG RANGE

FLIGHT PARAMETER	STS-FLIGHT				
	STS-1	STS-2	STS-3	STS-4	STS-5
$\alpha$	1	2	3	4	5
M	6	7	8	9	10
Re <sup>∞</sup>	11	12	13	14	15
NS	16	17	18	19	20
$\alpha$	21	22	23	24	25
M <sup>∞</sup>	26	27	28	29	30
q	31	32	33	34	35
ref	36	37	38	39	40
q	41	42	43	44	45
ref	46	47	48	49	50
q	51	52	53	54	55
ref	56	57	58	59	60
h	61	62	63	64	65
ref	66	67	68	69	70
h					
ref					

TABLE III  
PAGE NUMBERS FOR APPENDIX B:  
FLIGHT DATA - LONG RANGE

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				STS - Flight				
Measurement				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9219A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	NA	1	2	3
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	NA	4	5	6
	- h/h <sub>ref</sub>	vs	$Re_{NS}$	NA	NA	7	8	9
	- q <sub>conv</sub>	vs	t	NA	NA	10	11	12
	- T <sub>s</sub>	vs	t	NA	NA	13	14	15
V07T9220A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	16	17	18	19
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	20	21	22	23
	- h/h <sub>ref</sub>	vs	$Re_{NS}$	NA	24	25	26	27
	- q <sub>conv</sub>	vs	t	NA	28	29	30	31
	- T <sub>s</sub>	vs	t	NA	32	33	34	35
V07T9970A	- h/h <sub>ref</sub>	vs	$\alpha$	36	37	38	39	40
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	41	42	43	44	45
	- h/h <sub>ref</sub>	vs	$Re_{NS}$	46	47	48	49	50
	- q <sub>conv</sub>	vs	t	51	52	53	54	55
	- T <sub>s</sub>	vs	t	56	57	58	59	60
V07T9972A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	61	62	63	NA
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	64	65	66	NA
	- h/h <sub>ref</sub>	vs	$Re_{NS}$	NA	67	68	69	NA
	- q <sub>conv</sub>	vs	t	NA	70	71	72	NA
	- T <sub>s</sub>	vs	t	NA	73	74	75	NA
V07T9974A	- h/h <sub>ref</sub>	vs	$\alpha$	76	NA	NA	77	78
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	79	NA	NA	80	81
	- h/h <sub>ref</sub>	vs	$Re_{NS}$	82	NA	NA	83	84
	- q <sub>conv</sub>	vs	t	85	NA	NA	86	87
	- T <sub>s</sub>	vs	t	88	NA	NA	89	90
T07T9976A	- h/h <sub>ref</sub>	vs	$\alpha$	91	92	93	94	95
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	96	97	98	99	100
	- h/h <sub>ref</sub>	vs	$Re_{NS}$	101	102	103	104	105
	- q <sub>conv</sub>	vs	t	106	107	108	109	110
	- T <sub>s</sub>	vs	t	111	112	113	114	115

TABLE III (Cont)

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Measurement	STS - Flight						
	STS-1	STS-2	STS-3	STS-4	STS-5		
V07T9978A - h/h <sub>ref</sub>	vs	$\alpha$	116	117	118	119	120
- h/h <sub>ref</sub>	vs	$M_{\infty}$	121	122	123	124	125
- h/h <sub>ref</sub>	vs	$Re_{NS}$	126	127	128	129	130
- q <sub>conv</sub>	vs	t	131	132	133	134	135
- T <sub>s</sub>	vs	t	136	137	138	139	140
V07T9980A - h/h <sub>ref</sub>	vs	$\alpha$	141	142	143	144	145
- h/h <sub>ref</sub>	vs	$M_{\infty}$	146	147	148	149	150
- h/h <sub>ref</sub>	vs	$Re_{NS}$	151	152	153	154	155
- q <sub>conv</sub>	vs	t	156	157	158	159	160
- T <sub>s</sub>	vs	t	161	162	163	164	165
V07T9982A - h/h <sub>ref</sub>	vs	$\alpha$	166	167	168	169	170
- h/h <sub>ref</sub>	vs	$M_{\infty}$	171	172	173	174	175
- h/h <sub>ref</sub>	vs	$Re_{NS}$	176	177	178	179	180
- q <sub>conv</sub>	vs	t	181	182	183	184	185
- T <sub>s</sub>	vs	t	186	187	188	189	190
V07T9984A - h/h <sub>ref</sub>	vs	$\alpha$	191	192	193	194	195
- h/h <sub>ref</sub>	vs	$M_{\infty}$	196	197	198	199	200
- h/h <sub>ref</sub>	vs	$Re_{NS}$	201	202	203	204	205
- q <sub>conv</sub>	vs	t	206	207	208	209	210
- T <sub>s</sub>	vs	t	211	212	213	214	215
V07T9985A - h/h <sub>ref</sub>	vs	$\alpha$	216	217	218	219	220
- h/h <sub>ref</sub>	vs	$M_{\infty}$	221	222	223	224	225
- h/h <sub>ref</sub>	vs	$Re_{NS}$	226	227	228	229	230
- q <sub>conv</sub>	vs	t	231	232	233	234	235
- T <sub>s</sub>	vs	t	236	237	238	239	240
V07T9994A - h/h <sub>ref</sub>	vs	$\alpha$	241	242	243	244	245
- h/h <sub>ref</sub>	vs	$M_{\infty}$	246	247	248	249	250
- h/h <sub>ref</sub>	vs	$Re_{NS}$	251	252	253	254	255
- q <sub>conv</sub>	vs	t	256	257	258	259	260
- T <sub>s</sub>	vs	t	261	262	263	264	265
V07T9995A - h/h <sub>ref</sub>	vs	$\alpha$	266	267	268	269	270
- h/h <sub>ref</sub>	vs	$M_{\infty}$	271	272	273	274	275
- h/h <sub>ref</sub>	vs	$Re_{NS}$	276	277	278	279	280
- q <sub>conv</sub>	vs	t	281	282	283	284	285
- T <sub>s</sub>	vs	t	286	287	288	289	290

TABLE III (Cont)

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Measurement	STS - Flight					
	STS-1	STS-2	STS-3	STS-4	STS-5	
V07T9996A - h/h <sub>ref</sub>	vs $\alpha$	291	292	293	294	295
- h/h <sub>ref</sub>	vs $M$	296	297	298	299	300
- h/h <sub>ref</sub>	vs $Re^{\infty}_{NS}$	301	302	303	304	305
- q <sub>conv</sub>	vs t	306	307	308	309	310
- T <sub>s</sub>	vs t	311	312	313	314	315
V07T9997A - h/h <sub>ref</sub>	vs $\alpha$	316	317	318	319	320
- h/h <sub>ref</sub>	vs $M$	321	322	323	324	325
- h/h <sub>ref</sub>	vs $Re^{\infty}_{NS}$	326	327	328	329	330
- q <sub>conv</sub>	vs t	331	332	333	334	335
- T <sub>s</sub>	vs t	336	337	338	339	340
V09T9832A - h/h <sub>ref</sub>	vs $\alpha$	341	342	343	344	345
- h/h <sub>ref</sub>	vs $M_{\infty}$	346	347	348	349	350
- h/h <sub>ref</sub>	vs $Re^{\infty}_{NS}$	351	352	353	354	355
- q <sub>conv</sub>	vs t	356	357	358	359	360
- T <sub>s</sub>	vs t	361	362	363	364	365

TABLE IV

PAGE NUMBERS FOR APPENDIX C:  
 CORRELATION PARAMETERS - SHORT RANGE ORIGINAL PAGE IS  
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Flight Parameter			STS - Flight				
			STS-1	STS-2	STS-3	STS-4	STS-5
$\alpha$	vs	t	NA	1	2	3	4
$M_{\infty}$	vs	t	NA	5	6	7	8
$Re_{NS}$	vs	t	NA	9	10	11	12
$\alpha$	vs	$M_{\infty}$	NA	13	14	15	16
$\alpha$	vs	$Re_{NS}$	NA	17	18	19	20
$M_{\infty}$	vs	$Re_{NS}$	NA	21	22	23	24
$q_{ref}$	vs	t	NA	25	26	27	28
$q_{ref}$	vs	$\alpha$	NA	29	30	31	32
$q_{ref}$	vs	$M_{\infty}$	NA	33	34	35	36
$q_{ref}$	vs	$Re_{NS}$	NA	37	38	39	40
$h_{ref}$	vs	t	NA	41	42	43	44
$h_{ref}$	vs	$\alpha$	NA	45	46	47	48
$h_{ref}$	vs	$M_{\infty}$	NA	49	50	51	52
$h_{ref}$	vs	$Re_{NS}$	NA	53	54	55	56

TABLE V

PAGE NUMBERS FOR APPENDIX D:

FLIGHT DATA - SHORT RANGE

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Measurement	STS - Flight						
	STS-1	STS-2	STS-3	STS-4	STS-5		
V07T9219A - h/h <sub>ref</sub>	vs	$\alpha$	NA	NA	1	2	3
- h/h <sub>ref</sub>	vs	M	NA	NA	4	5	6
- h/h <sub>ref</sub>	vs	Re <sup>NS</sup>	NA	NA	7	8	9
- q <sub>conv</sub>	vs	t	NA	NA	10	11	12
- T <sub>s</sub>	vs	t	NA	NA	13	14	15
V07T9220A - h/h <sub>ref</sub>	vs	$\alpha$	NA	16	17	18	19
- h/h <sub>ref</sub>	vs	M	NA	20	21	22	23
- h/h <sub>ref</sub>	vs	Re <sup>NS</sup>	NA	24	25	26	27
- q <sub>conv</sub>	vs	t	NA	28	29	30	31
- T <sub>s</sub>	vs	t	NA	32	33	34	35
V07T9970A - h/h <sub>ref</sub>	vs	$\alpha$	NA	36	37	38	39
- h/h <sub>ref</sub>	vs	M <sub>∞</sub>	NA	40	41	42	43
- h/h <sub>ref</sub>	vs	Re <sup>NS</sup>	NA	44	45	46	47
- q <sub>conv</sub>	vs	t	NA	48	49	50	51
- T <sub>s</sub>	vs	t	NA	52	53	54	55
V07T9972A - h/h <sub>ref</sub>	vs	$\alpha$	NA	56	57	58	NA
- h/h <sub>ref</sub>	vs	M <sub>∞</sub>	NA	59	60	61	NA
- h/h <sub>ref</sub>	vs	Re <sup>NS</sup>	NA	62	63	64	NA
- q <sub>conv</sub>	vs	t	NA	65	66	67	NA
- T <sub>s</sub>	vs	t	NA	68	69	70	NA
V07T9974A - h/h <sub>ref</sub>	vs	$\alpha$	NA	NA	NA	NA	NA
- h/h <sub>ref</sub>	vs	M	NA	NA	NA	NA	NA
- h/h <sub>ref</sub>	vs	Re <sup>NS</sup>	NA	NA	NA	NA	NA
- q <sub>conv</sub>	vs	t	NA	NA	NA	NA	NA
- T <sub>s</sub>	vs	t	NA	NA	NA	NA	NA
V07T9976A - h/h <sub>ref</sub>	vs	$\alpha$	NA	71	72	73	74
- h/h <sub>ref</sub>	vs	M	NA	75	76	77	78
- h/h <sub>ref</sub>	vs	Re <sup>NS</sup>	NA	79	80	81	82
- q <sub>conv</sub>	vs	t	NA	83	84	85	86
- T <sub>s</sub>	vs	t	NA	87	88	89	90

TABLE V (Cont)

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## STS - Flight

Measurement				STS-1	STS-2	STS-3	STS-4	STS-5
V07T9978A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	91	92	93	94
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	95	96	97	98
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	99	100	101	102
	- q <sub>conv</sub>	vs	t	NA	103	104	105	106
	- T <sub>s</sub>	vs	t	NA	107	108	109	110
V07T9980A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	111	112	113	114
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	115	116	117	118
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	119	120	121	122
	- q <sub>conv</sub>	vs	t	NA	123	124	125	126
	- T <sub>s</sub>	vs	t	NA	127	128	129	130
V07T9982A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	131	132	133	134
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	135	136	137	138
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	139	140	141	142
	- q <sub>conv</sub>	vs	t	NA	143	144	145	146
	- T <sub>s</sub>	vs	t	NA	147	148	149	150
V07T9984A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	151	152	153	154
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	155	156	157	158
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	159	160	161	162
	- q <sub>conv</sub>	vs	t	NA	163	164	165	166
	- T <sub>s</sub>	vs	t	NA	167	168	169	170
V07T9986A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	171	172	173	174
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	175	176	177	178
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	179	180	181	182
	- q <sub>conv</sub>	vs	t	NA	183	184	185	186
	- T <sub>s</sub>	vs	t	NA	187	188	189	190
V07T9994A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	191	192	193	194
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	195	196	197	198
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	199	200	201	202
	- q <sub>conv</sub>	vs	t	NA	203	204	205	206
	- T <sub>s</sub>	vs	t	NA	207	208	209	210
V07T9995A	- h/h <sub>ref</sub>	vs	$\alpha$	NA	211	212	213	214
	- h/h <sub>ref</sub>	vs	$M_{\infty}$	NA	215	216	217	218
	- h/h <sub>ref</sub>	vs	$Re_{\infty}^{NS}$	NA	219	220	221	222
	- q <sub>conv</sub>	vs	t	NA	223	224	225	226
	- T <sub>s</sub>	vs	t	NA	227	228	229	230

TABLE V (Cont)

Measurement	STS - Flight						
	STS-1	STS-2	STS-3	STS-4	STS-5		
V07T9996A - $h/h_{ref}$	vs	$\alpha$	NA	231	232	233	234
- $h/h_{ref}$	vs	$M_{\infty}$	NA	235	236	237	238
- $h/h_{ref}$	vs	$Re_{\infty}^{NS}$	NA	239	240	241	242
- $q_{conv}$	vs	t	NA	243	244	245	246
- $T_s$	vs	t	NA	247	248	249	250
V07T9997A - $h/h_{ref}$	vs	$\alpha$	NA	251	252	253	254
- $h/h_{ref}$	vs	$M_{\infty}$	NA	255	256	257	258
- $h/h_{ref}$	vs	$Re_{\infty}^{NS}$	NA	259	260	261	262
- $q_{conv}$	vs	t	NA	263	264	265	266
- $T_s$	vs	t	NA	267	268	269	270
V09T9832A - $h/h_{ref}$	vs	$\alpha$	NA	271	272	273	274
- $n/h_{ref}$	vs	$M_{\infty}$	NA	275	276	277	278
- $h/h_{ref}$	vs	$Re_{\infty}^{NS}$	NA	279	280	281	282
- $q_{conv}$	vs	t	NA	283	284	285	286
- $T_s$	vs	t	NA	287	288	289	290

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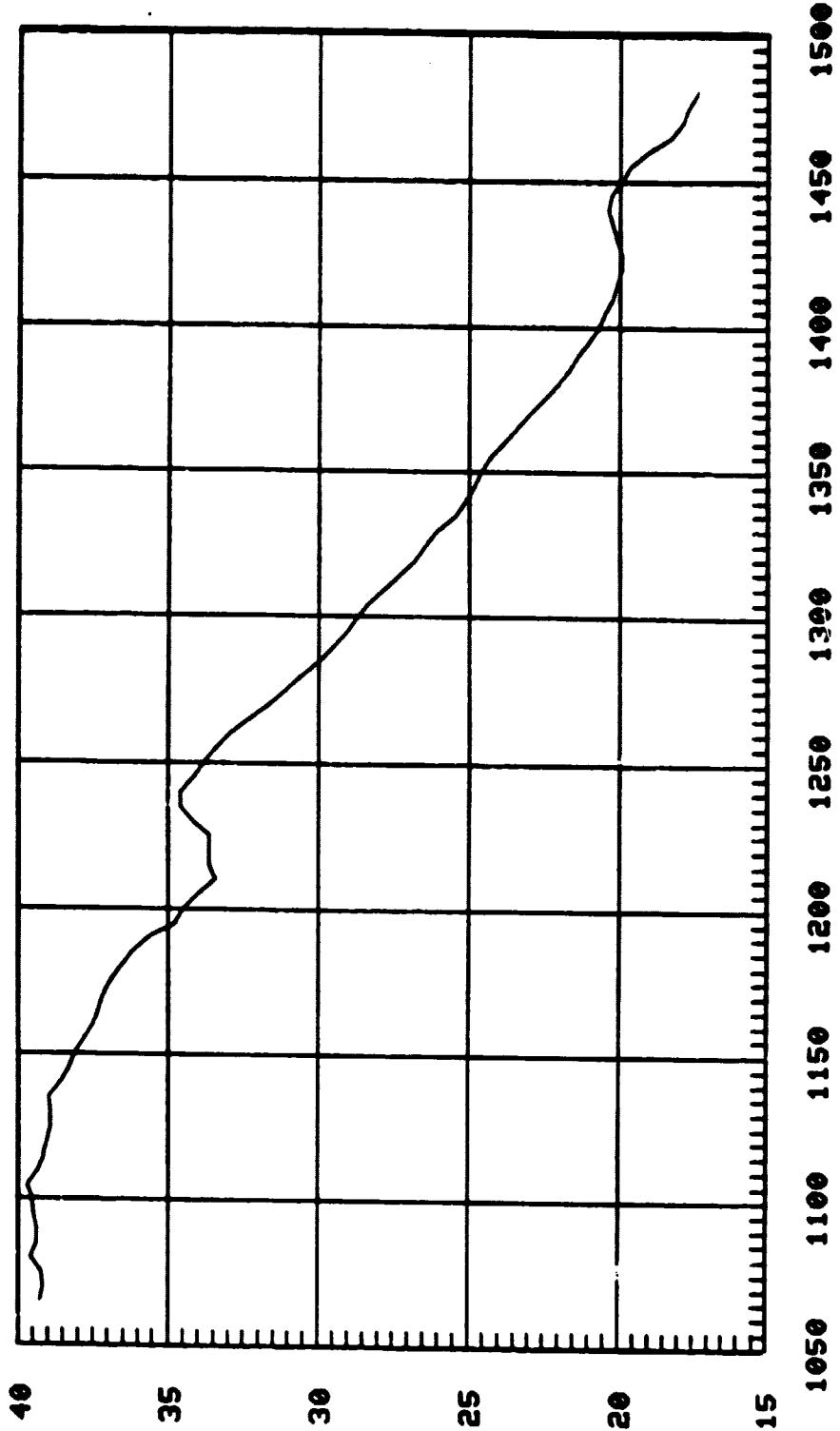
**APPENDIX A**

**CORRELATION PARAMETERS - LONG RANGE**

# STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

1065-1400 SEC

STS-1



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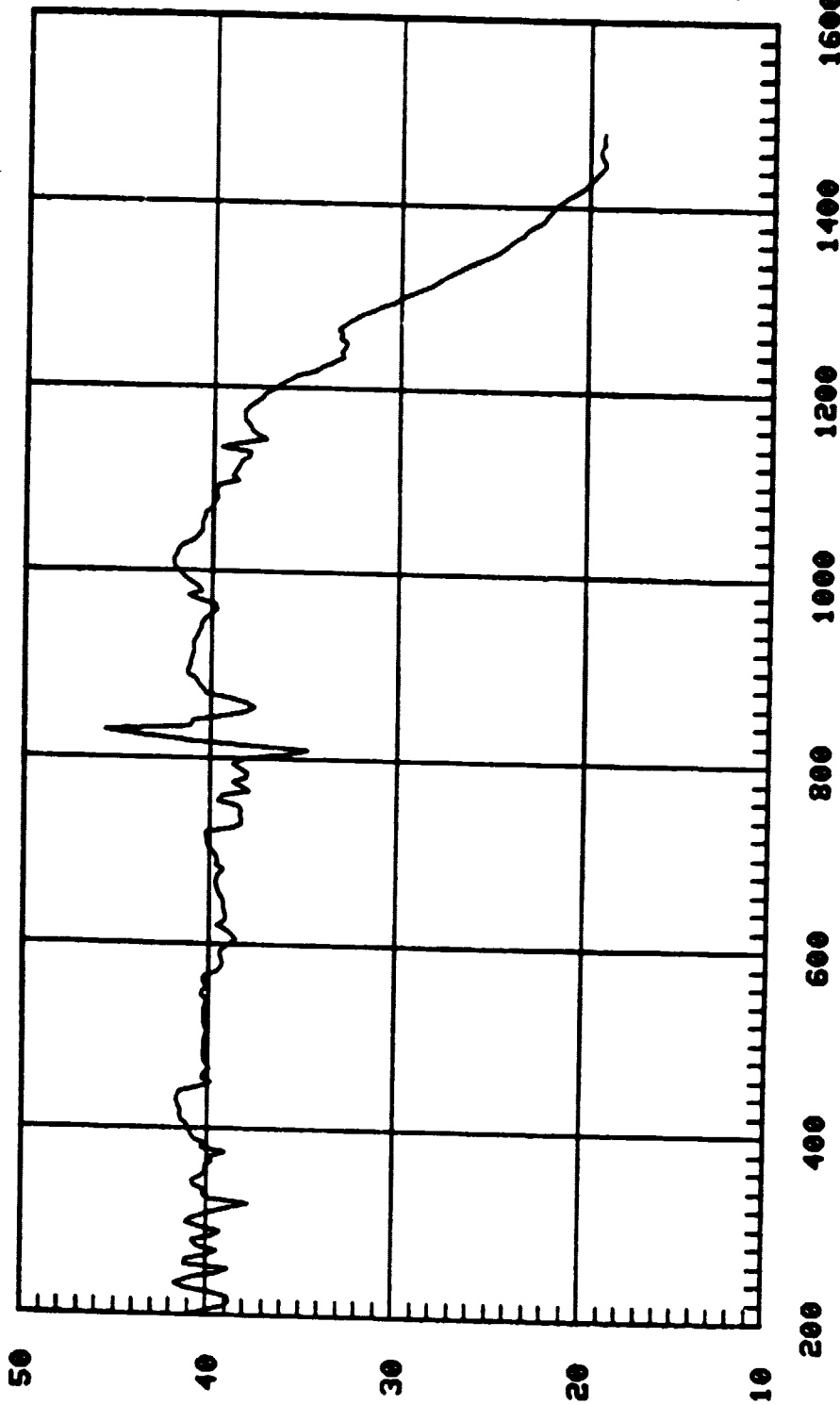
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-2 200-1480 SEC



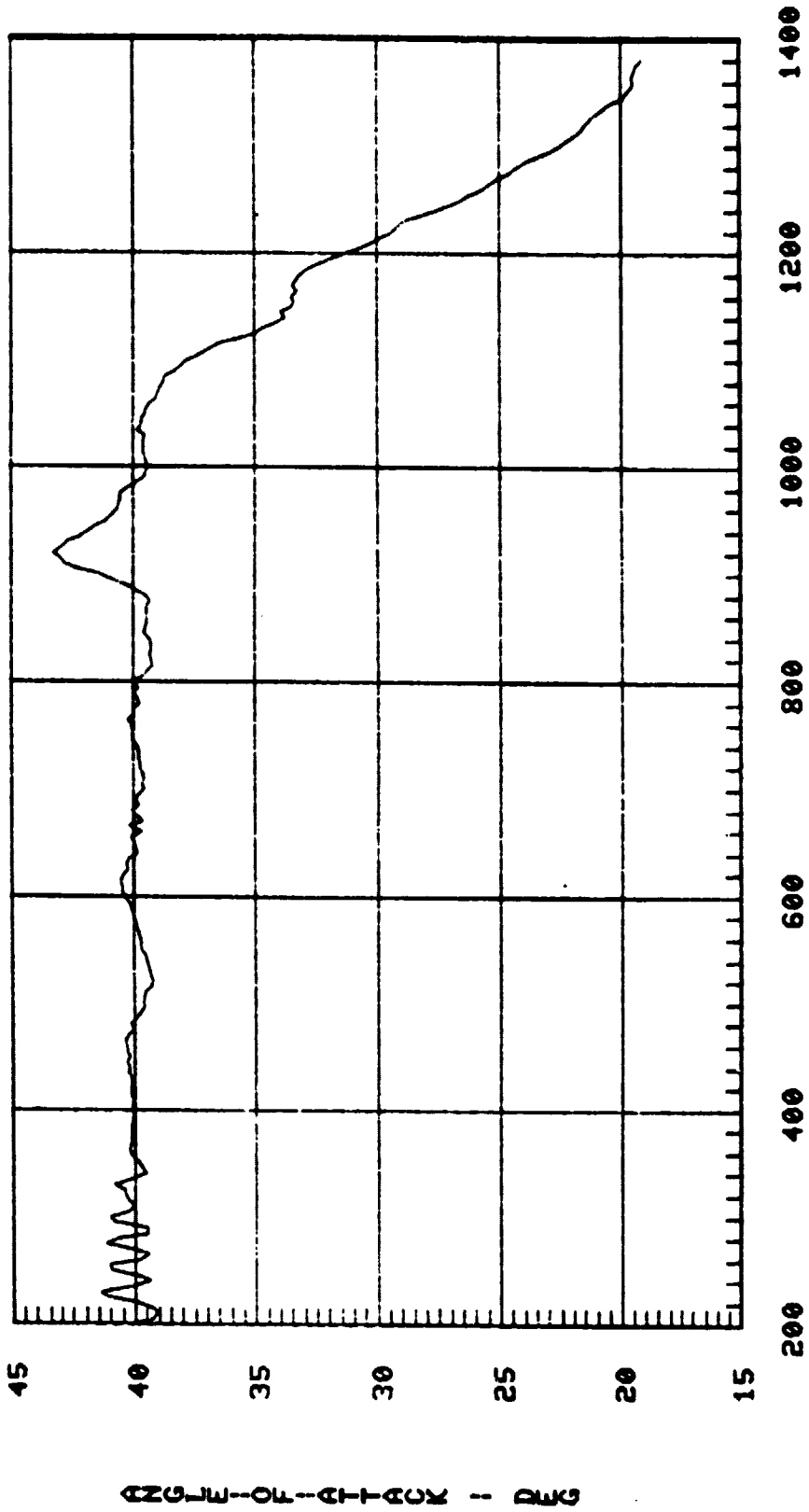
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-3  
200-1380 SEC

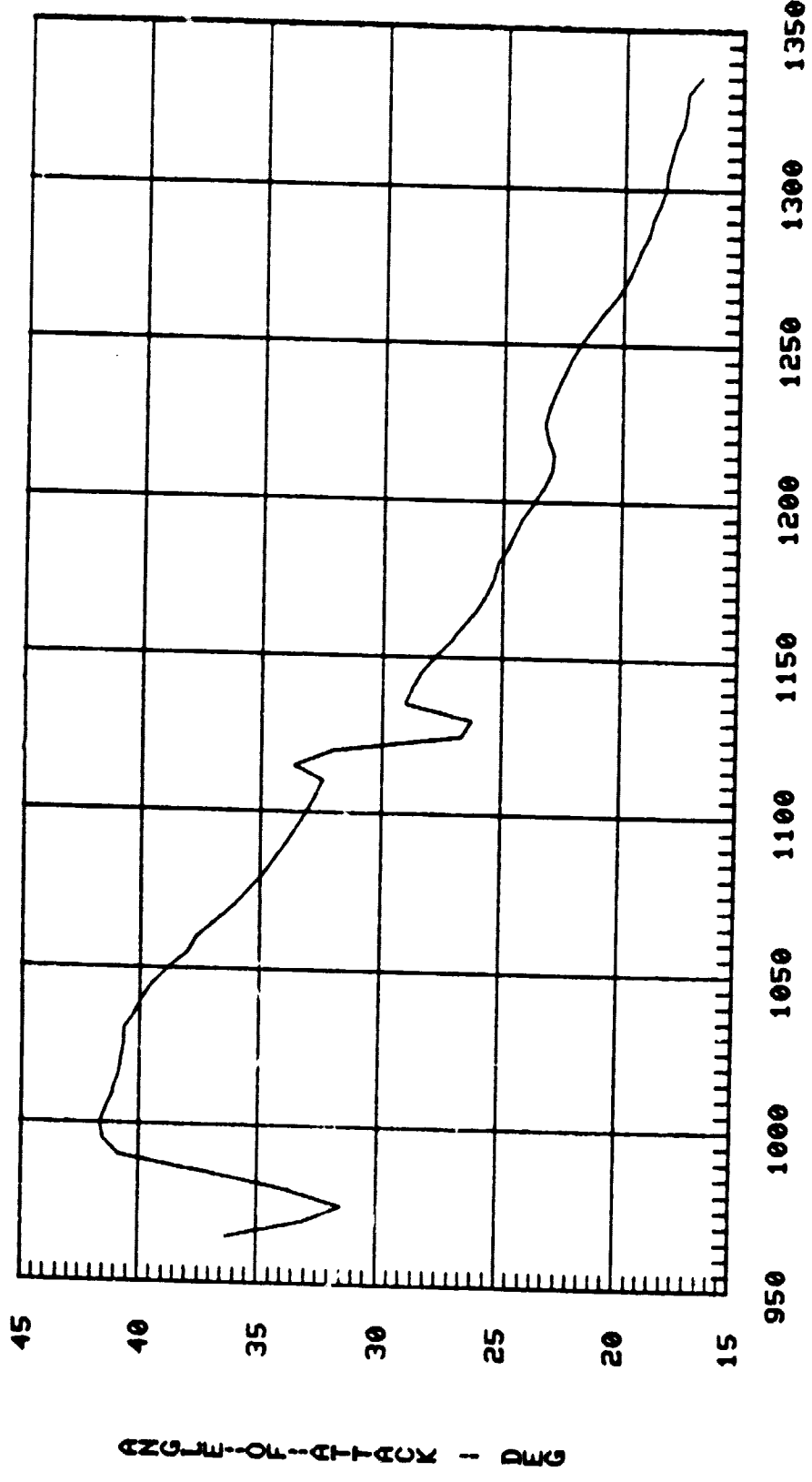


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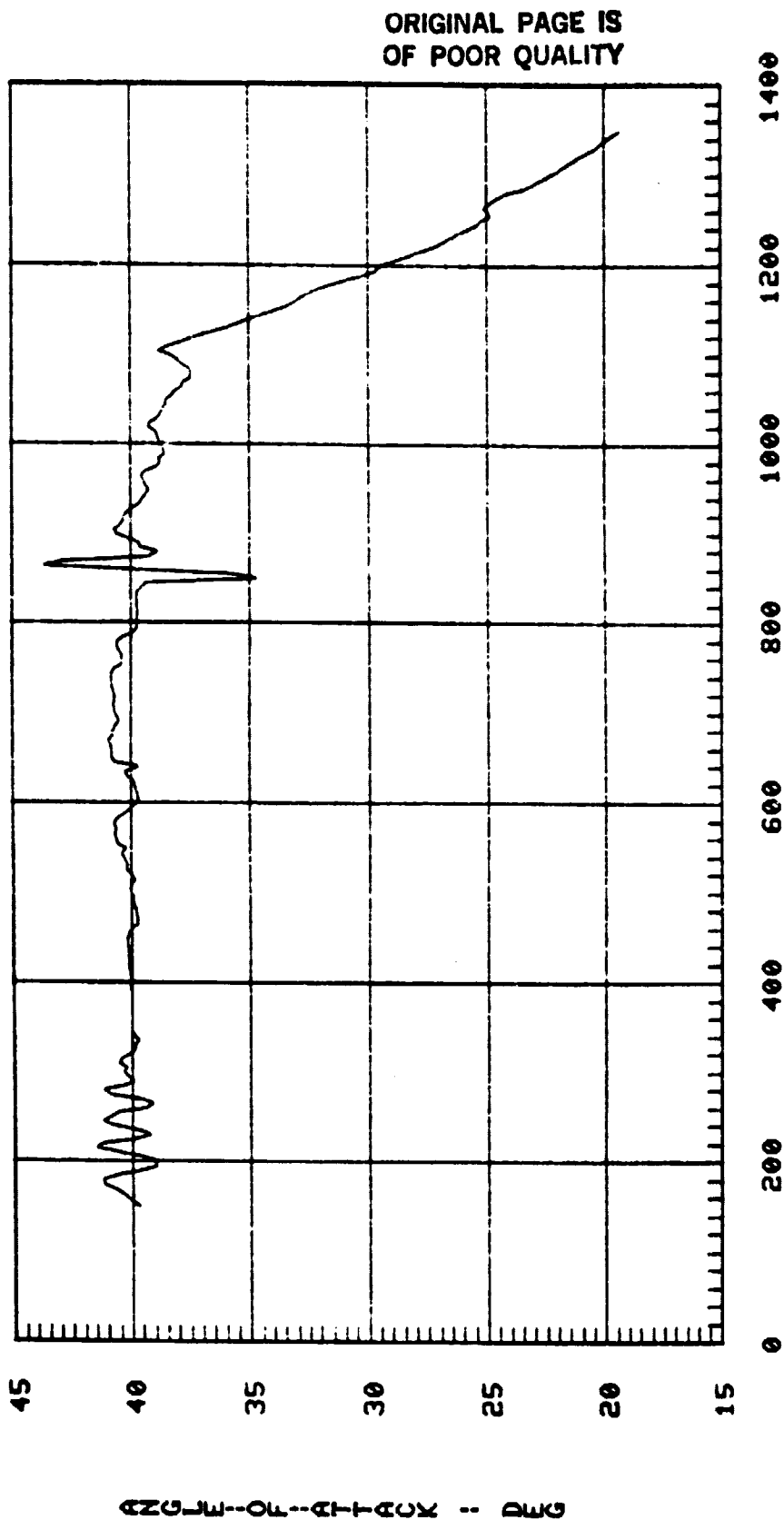
STS-4 \_\_\_\_\_ 965-1335 SEC



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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON  
STS-5  
150-1350 SEC

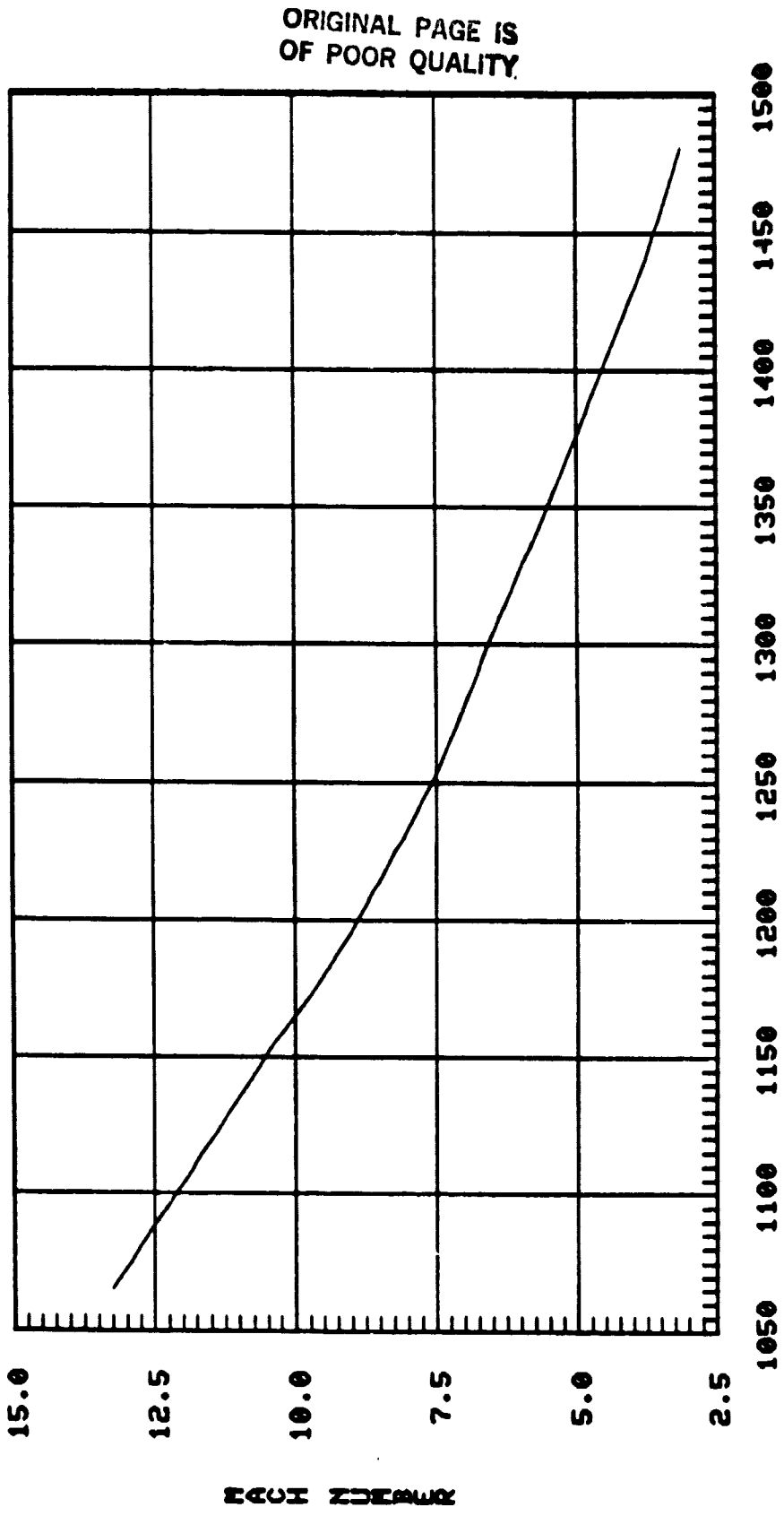


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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

1065-1480 SEC

STS-1

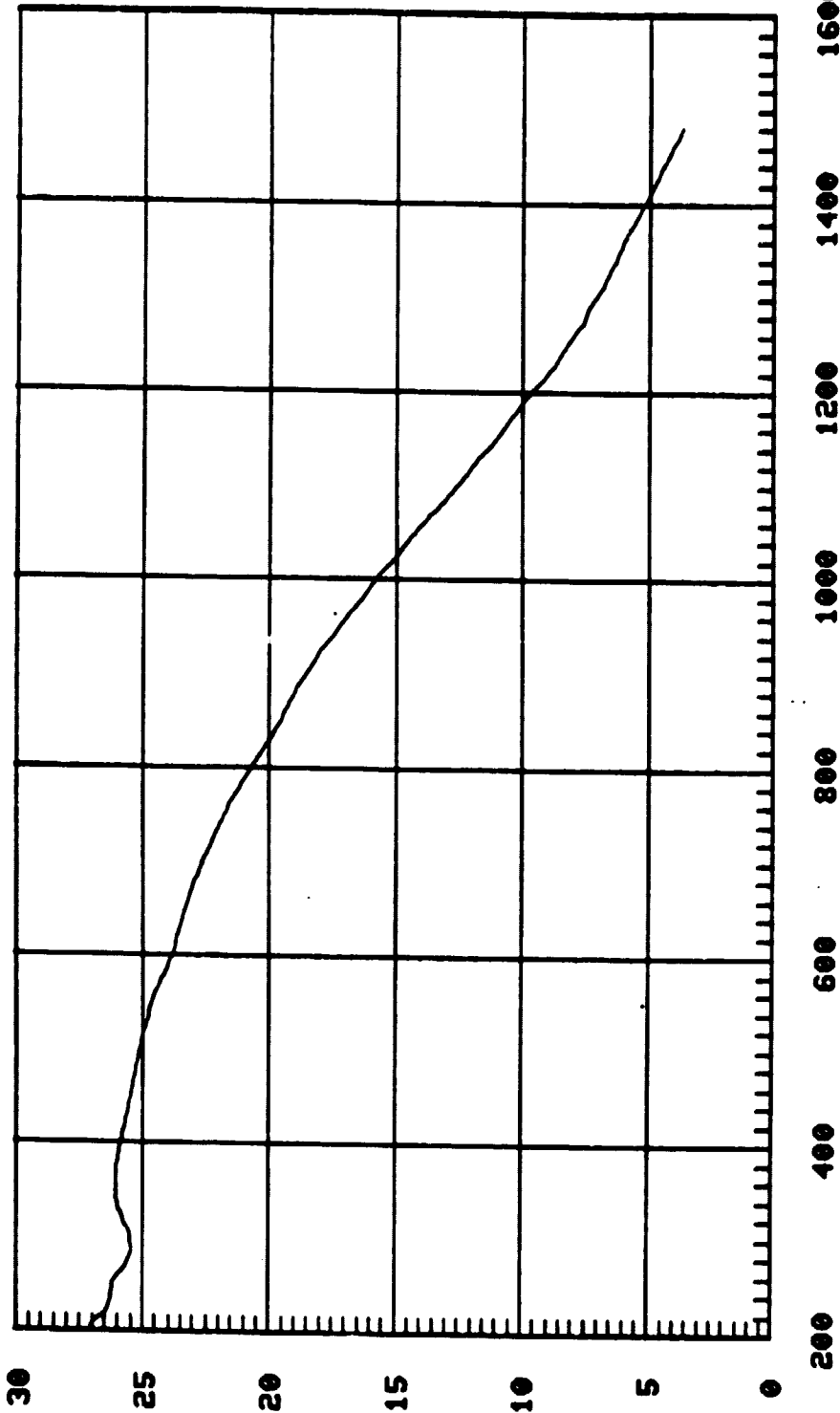


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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

200-1400 SEC

STS-2



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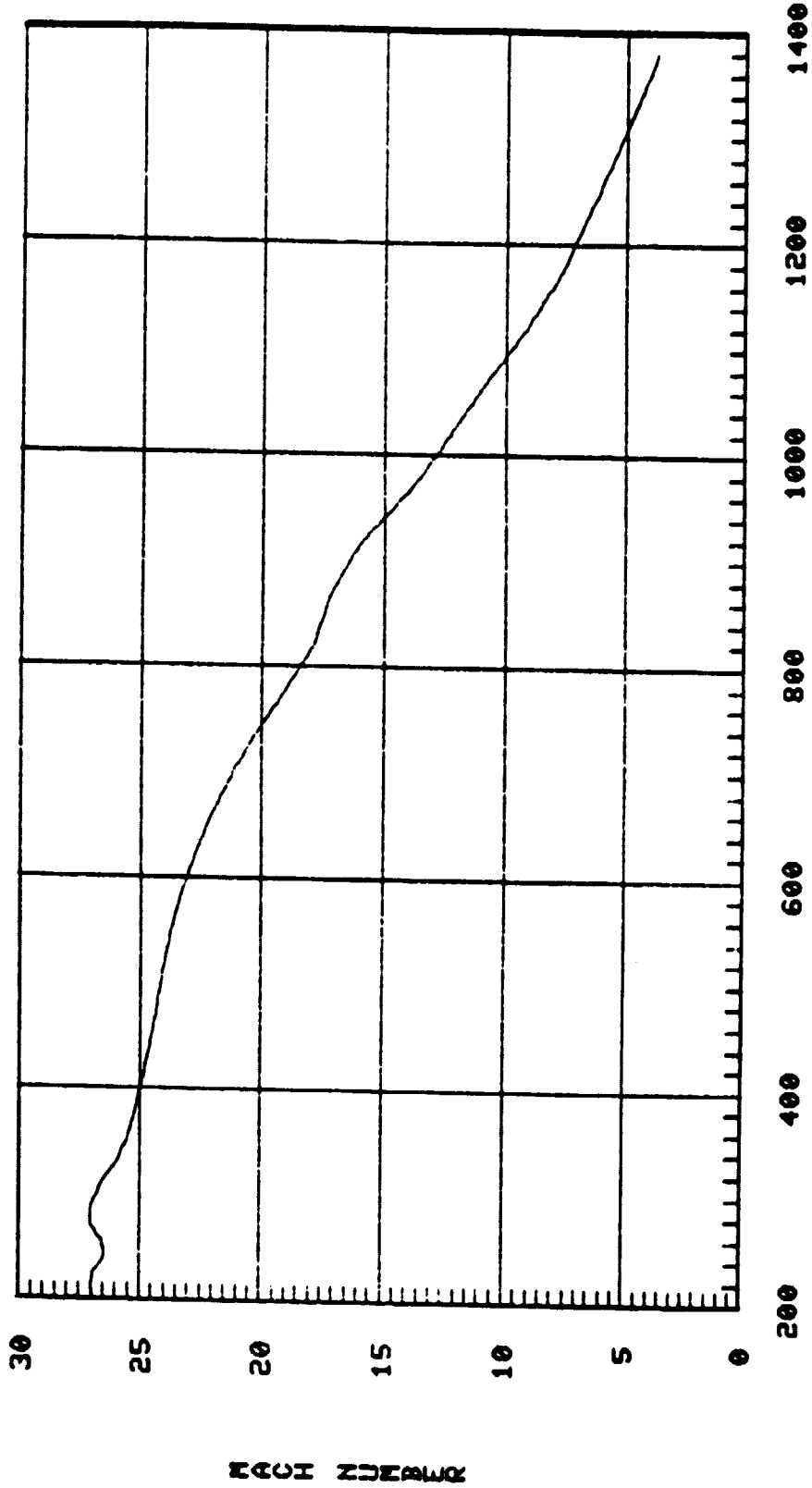
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-3 200-1380 SEC

STS-3



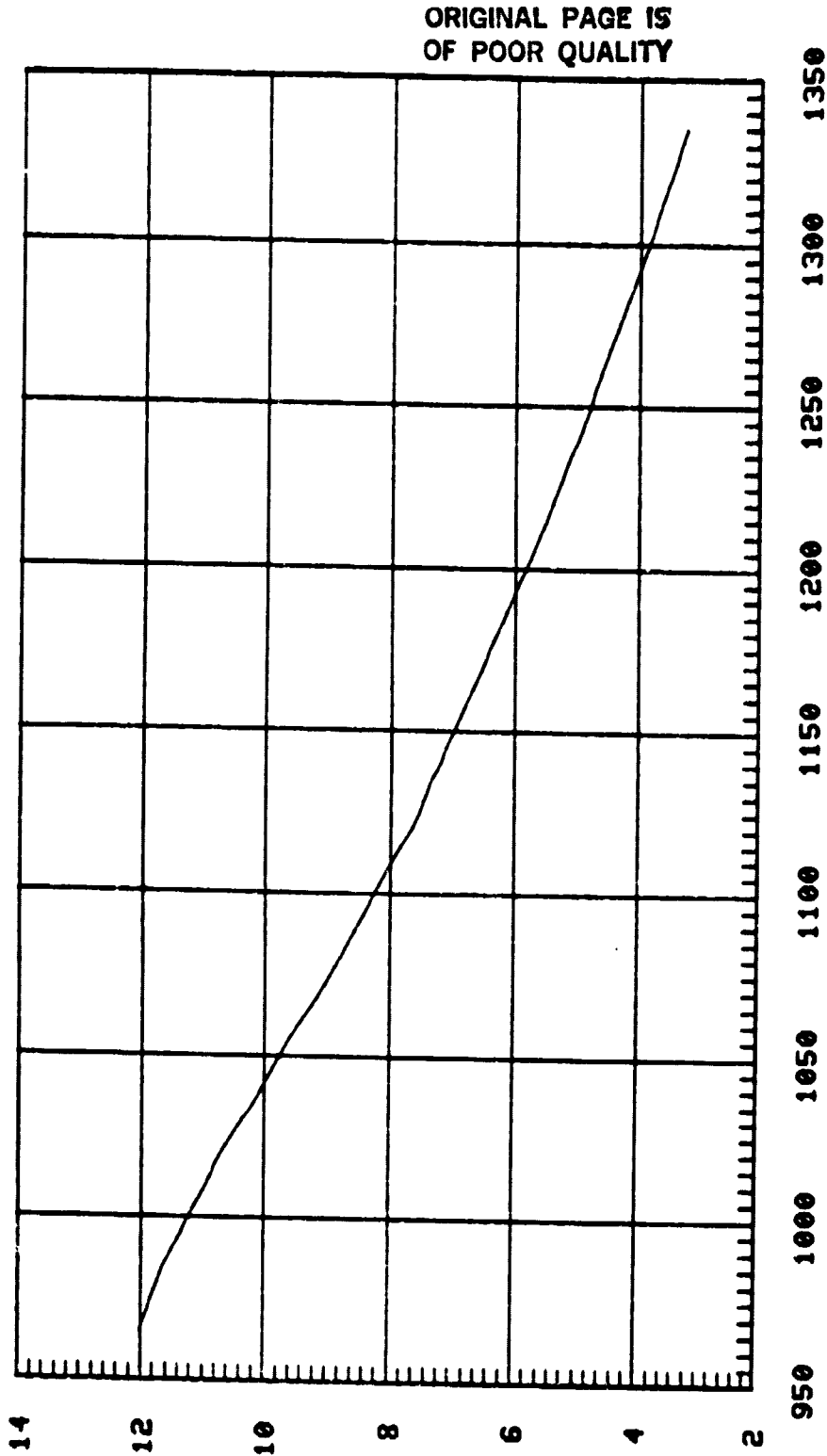
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965-1335 SEC

STS-4



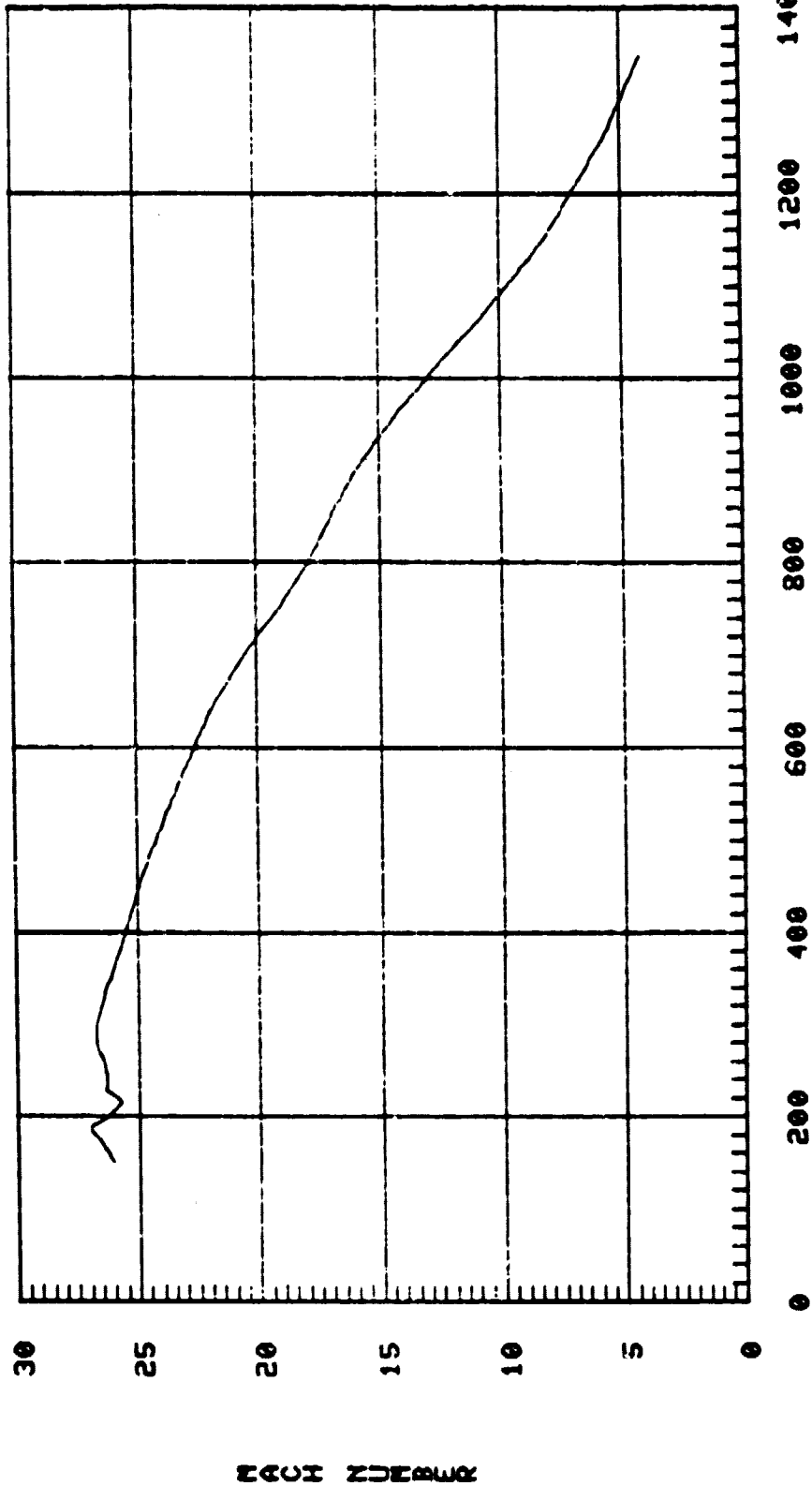
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-5  
150-1350 SEC

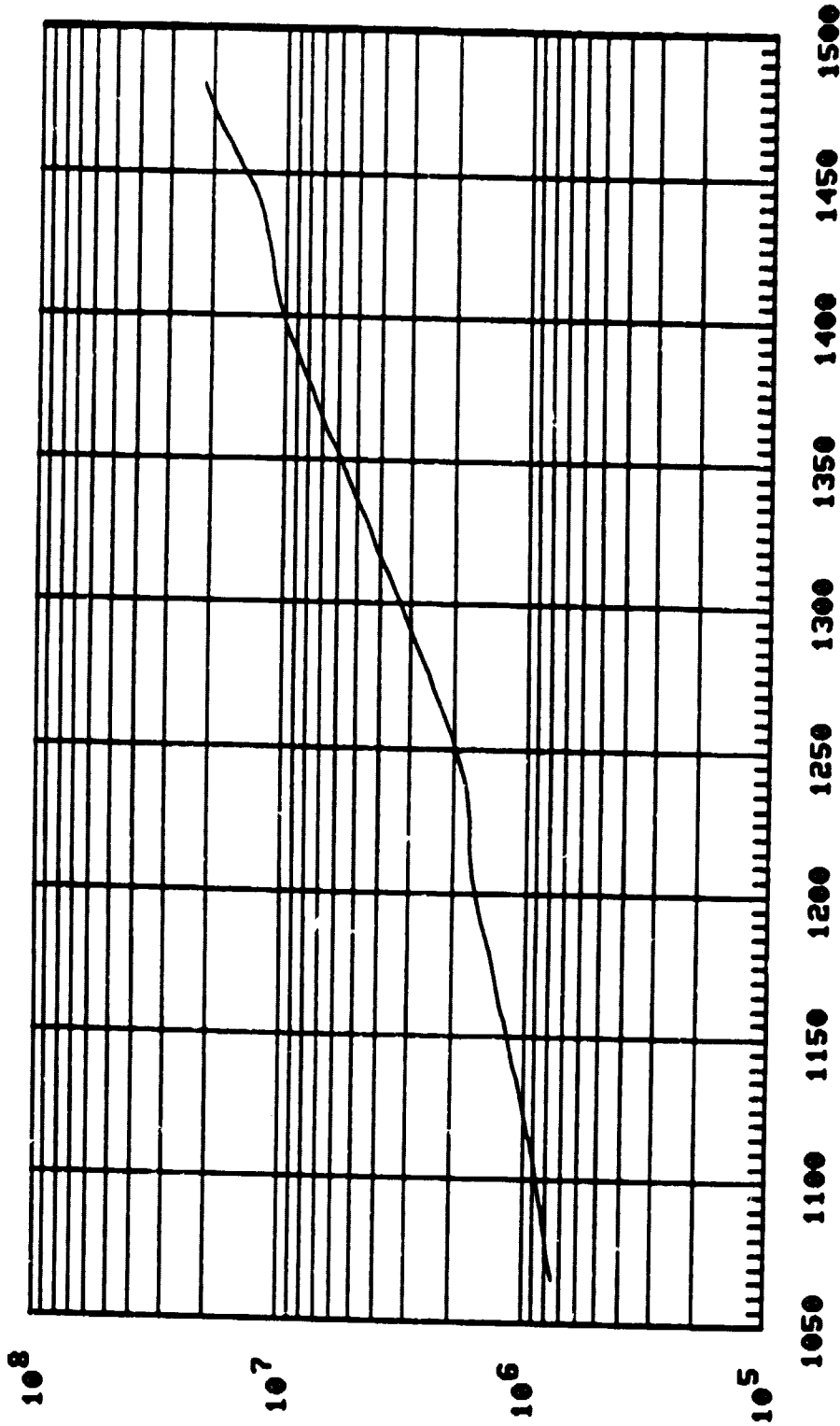


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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-1 1065-1400 SEC



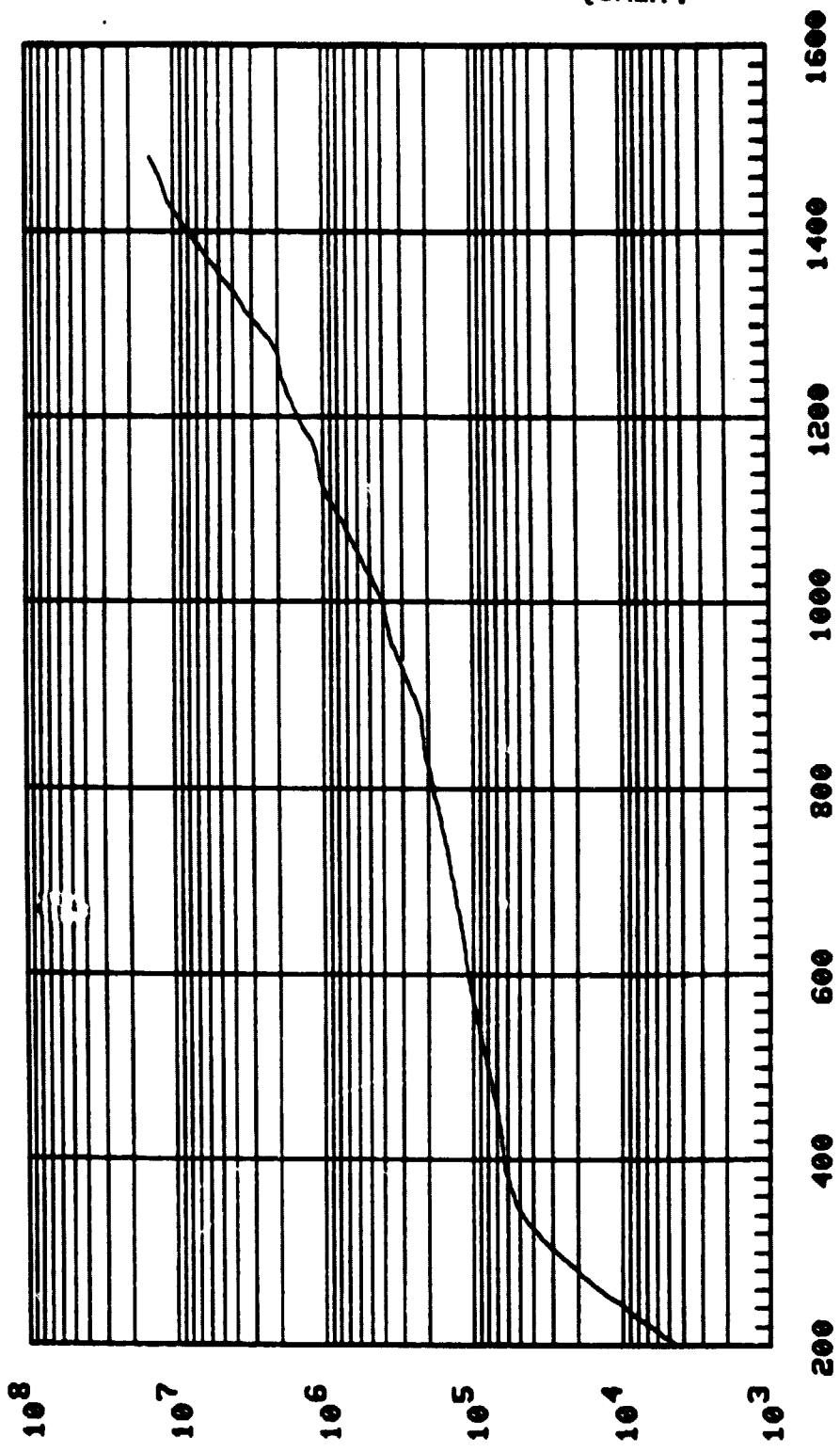
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STS-2 200-1480 SEC

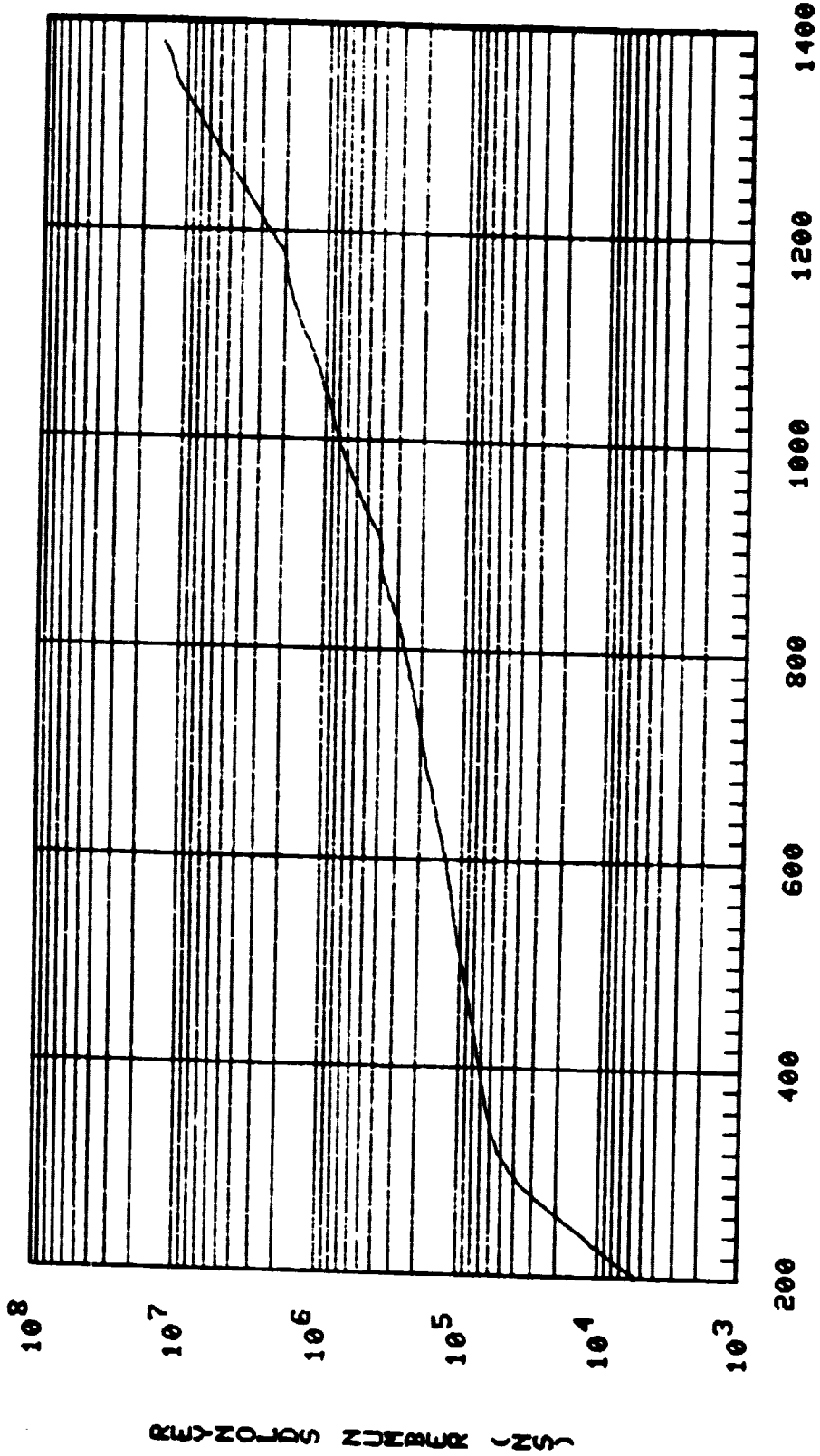


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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-3 200-1380 SEC



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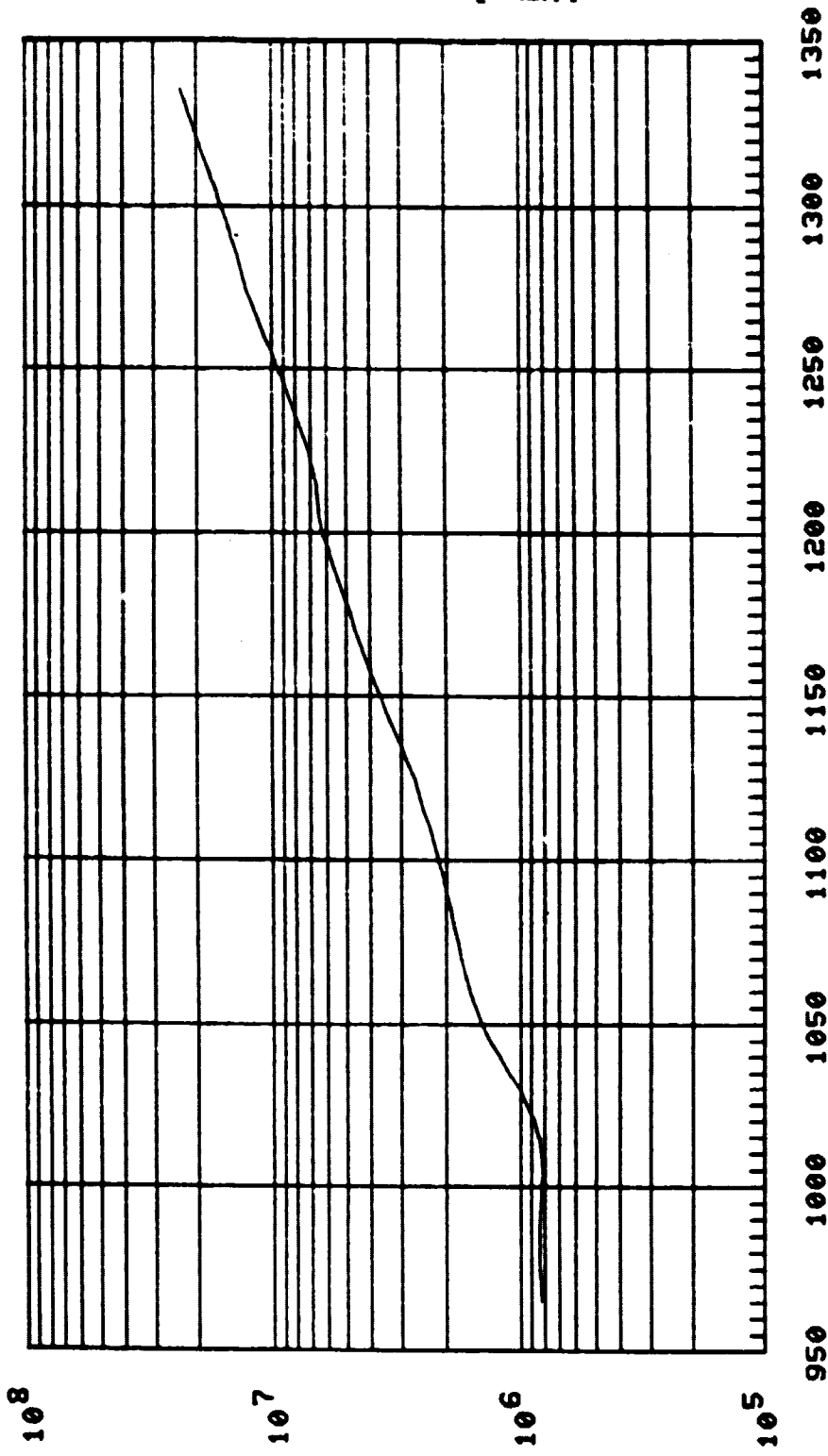
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965-1335 SEC

STS-4

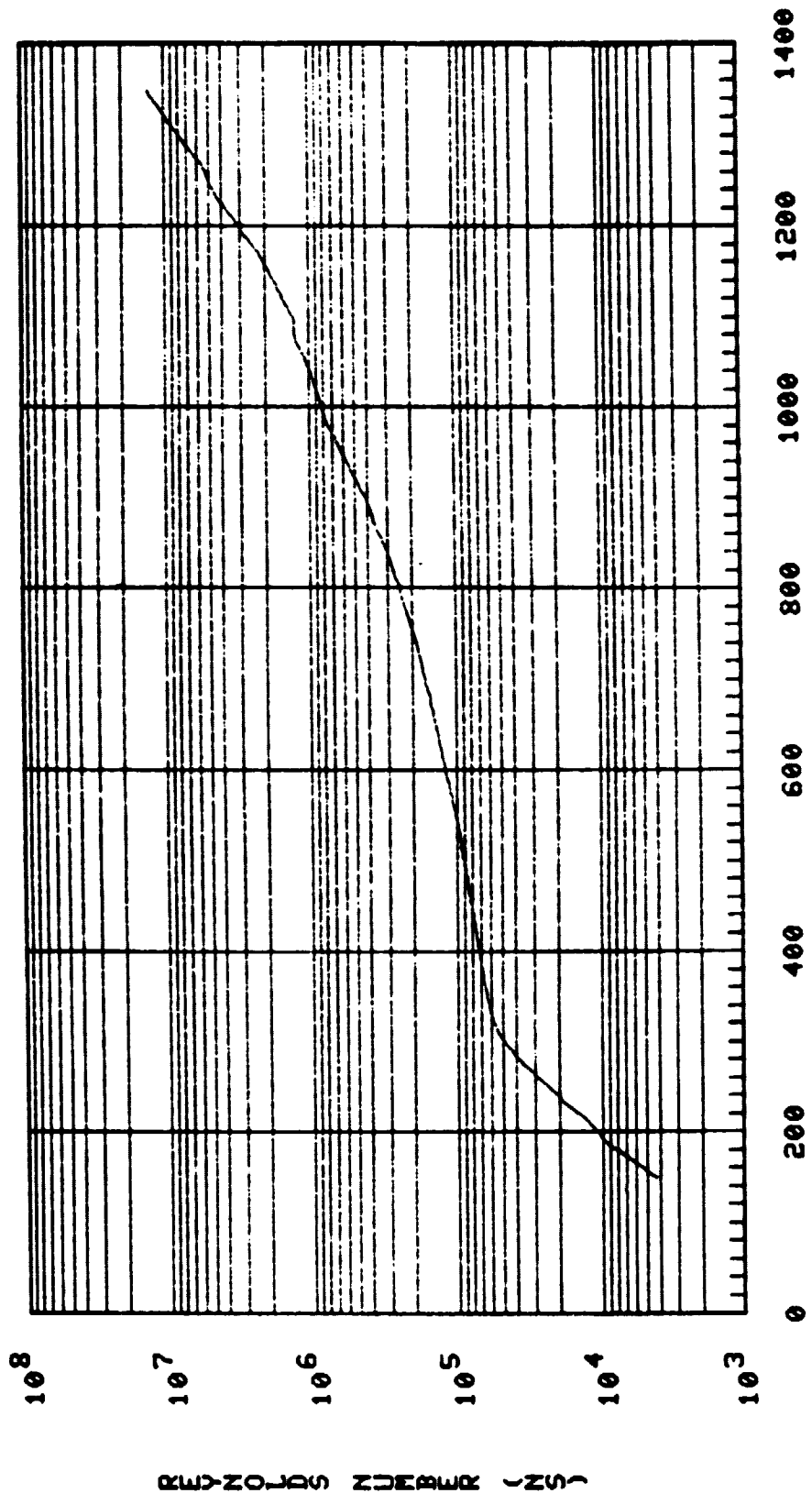


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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON  
STS-5 150-1350 SEC

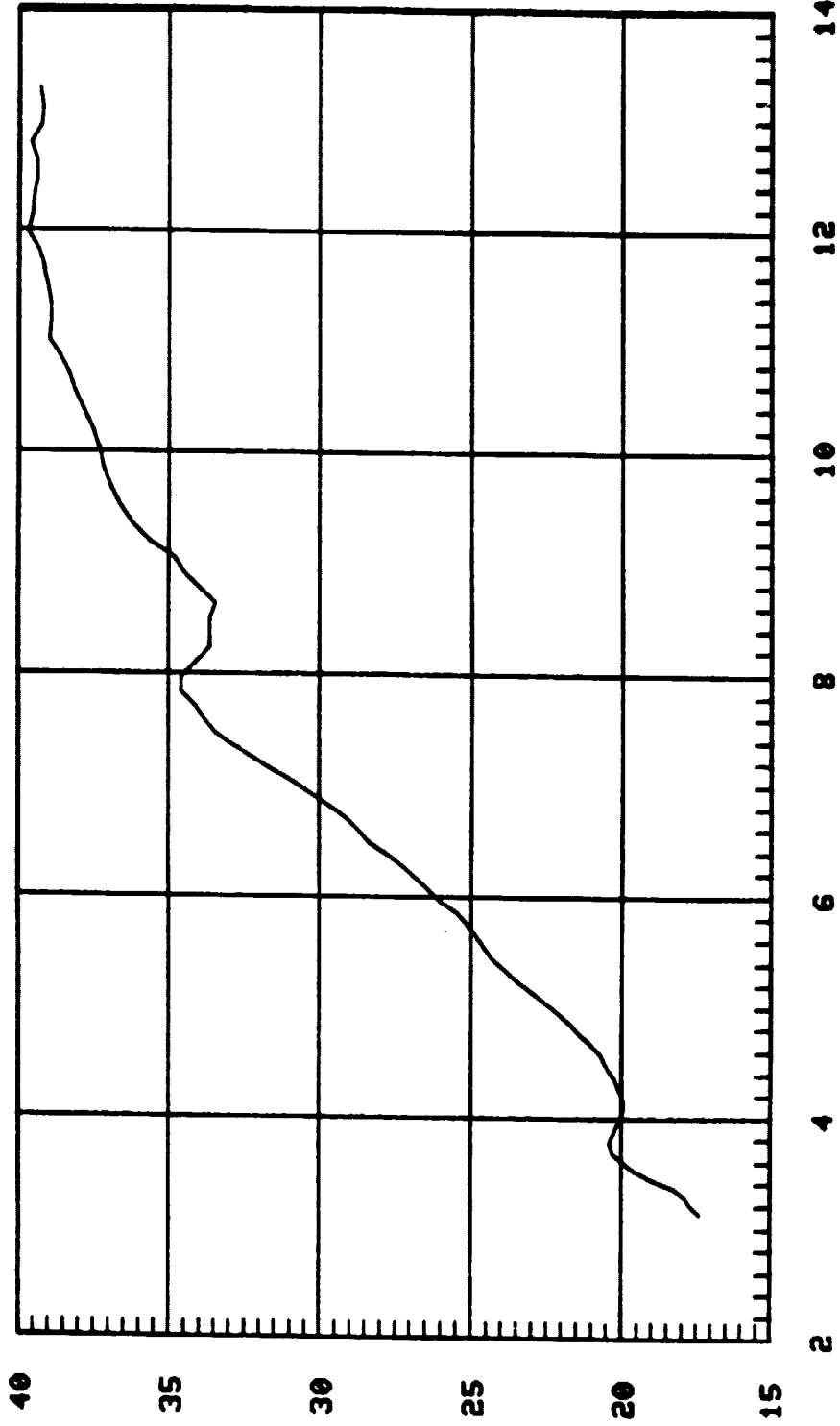


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STS-1 1065-1480 SEC



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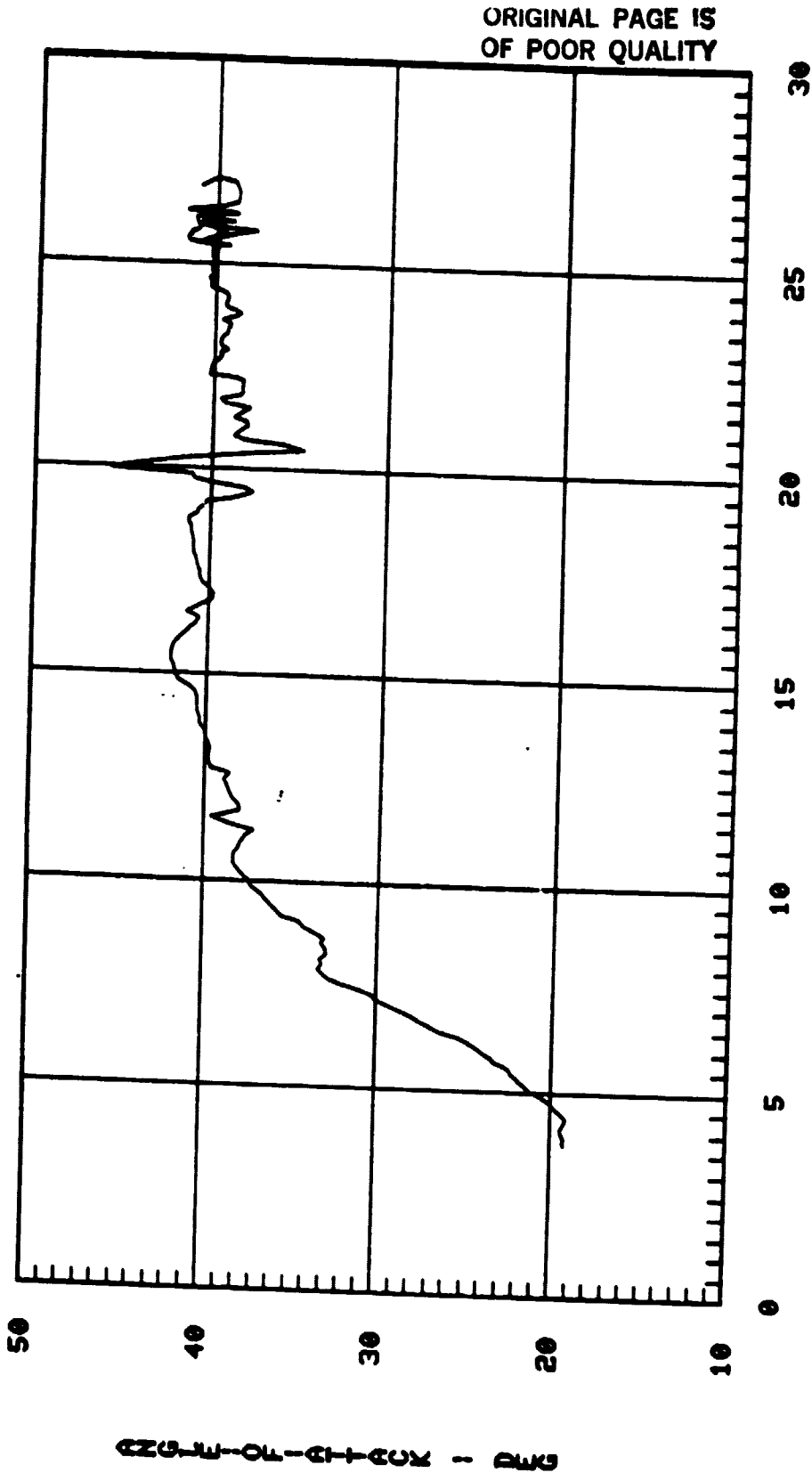
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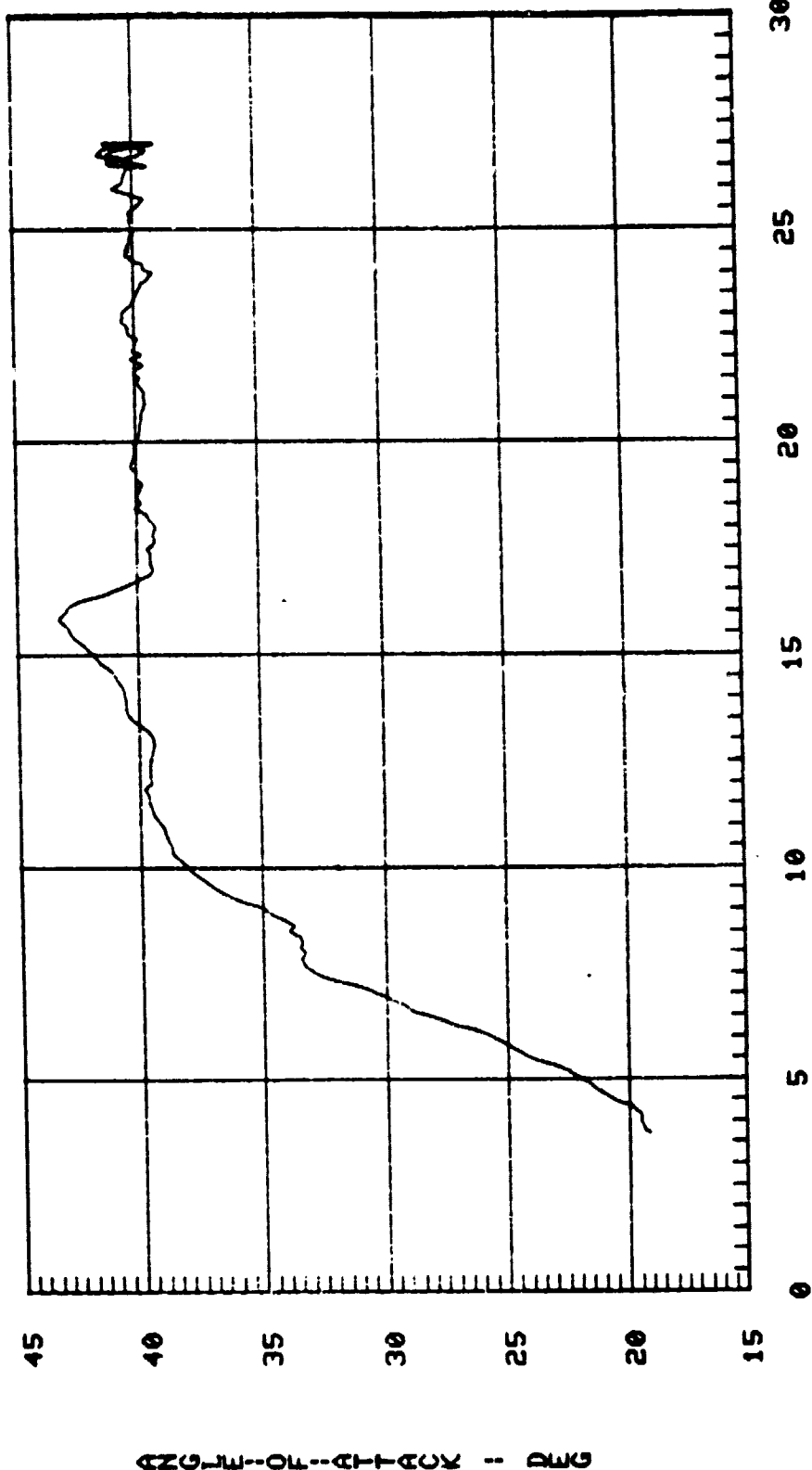


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STS-3



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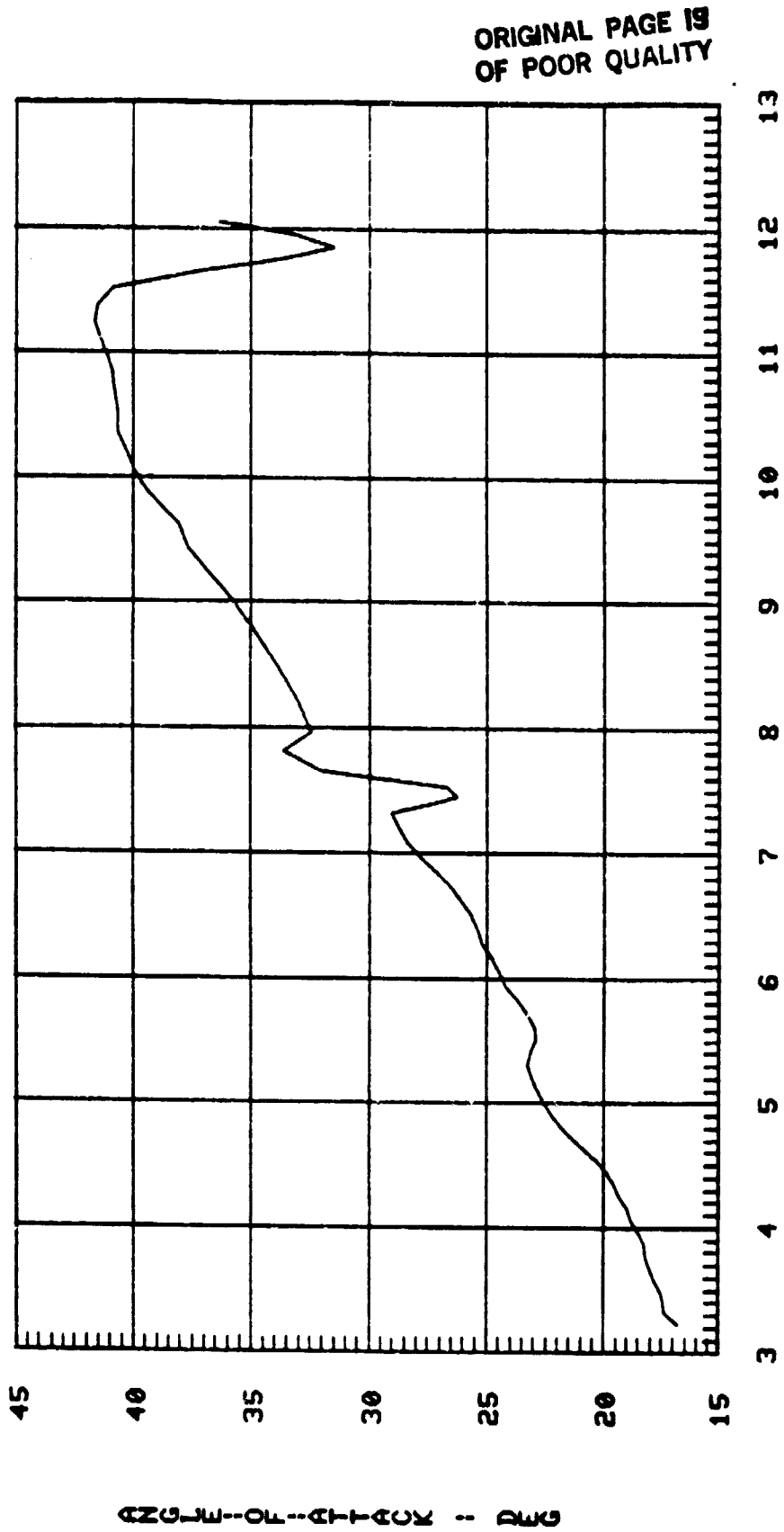
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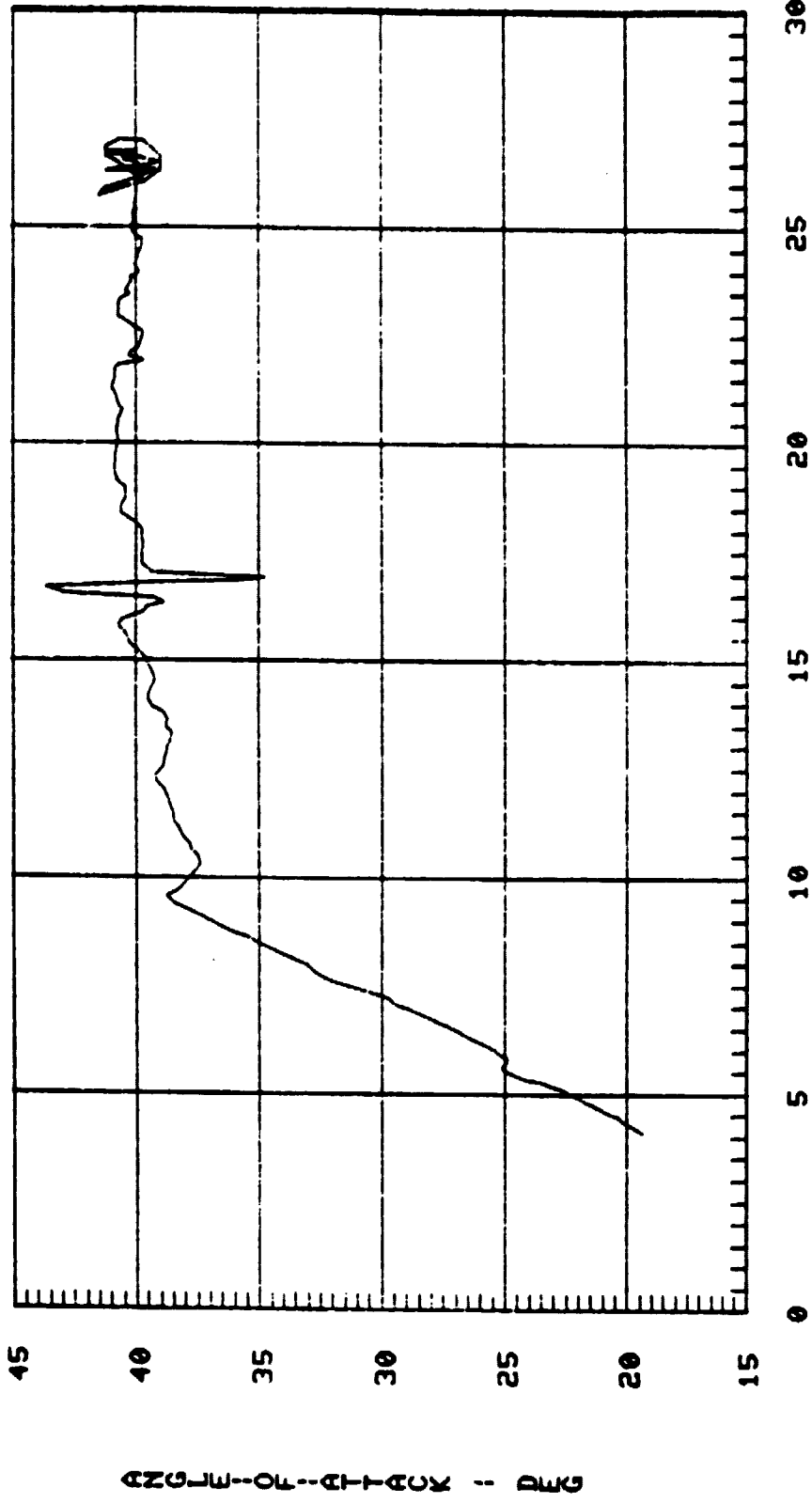
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STS-5 156-1350 SEC



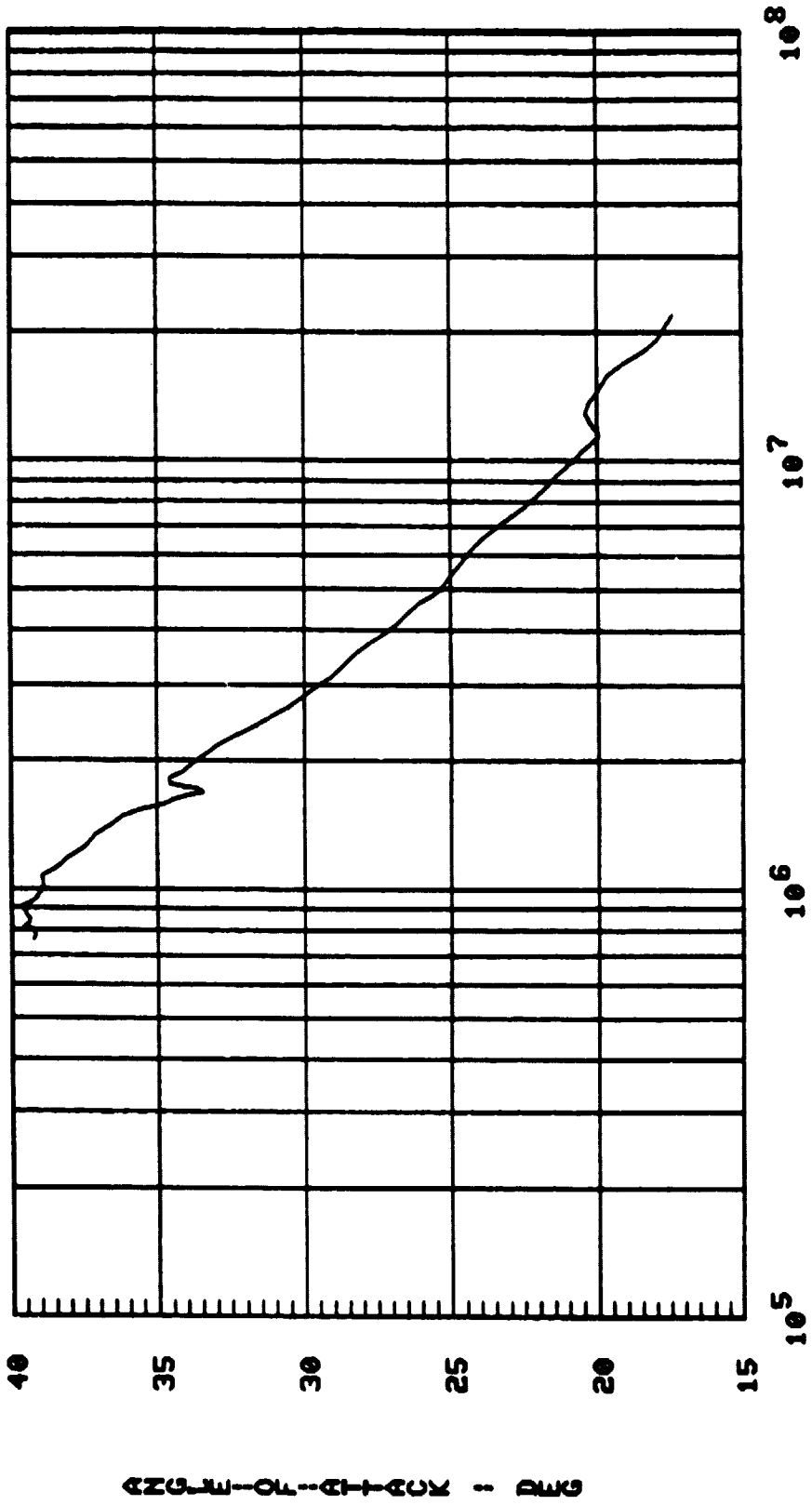
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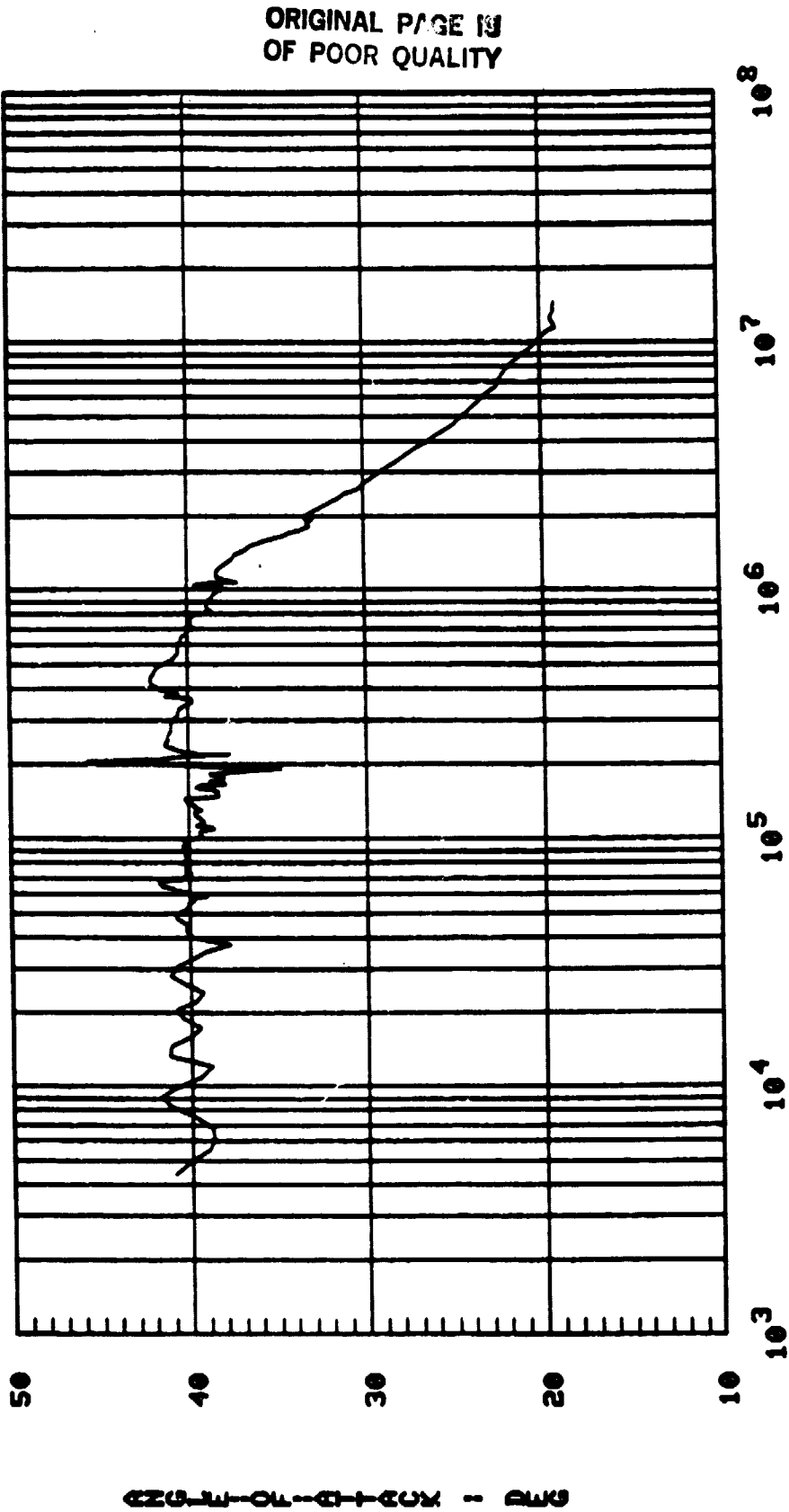
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STS-2



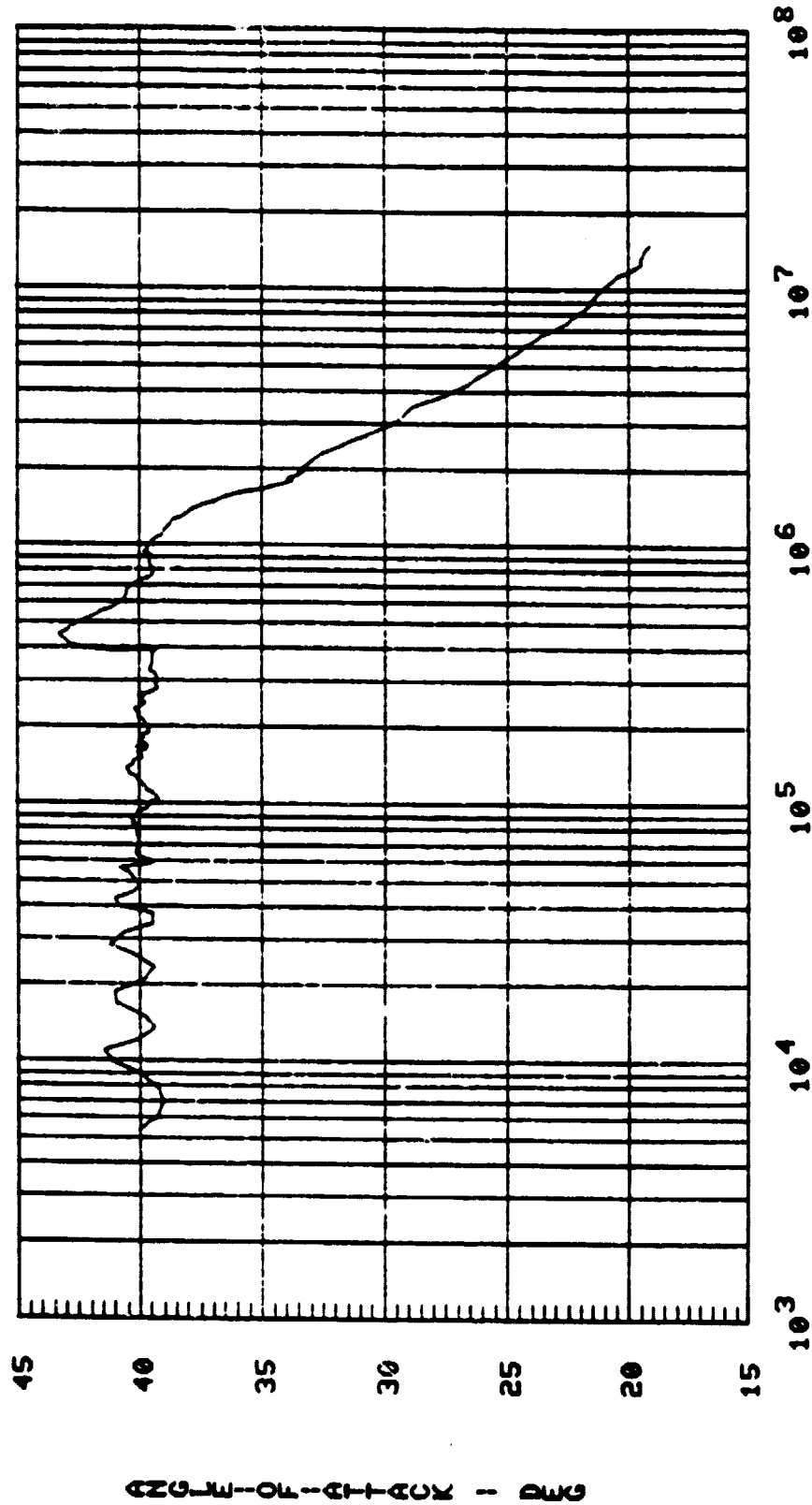
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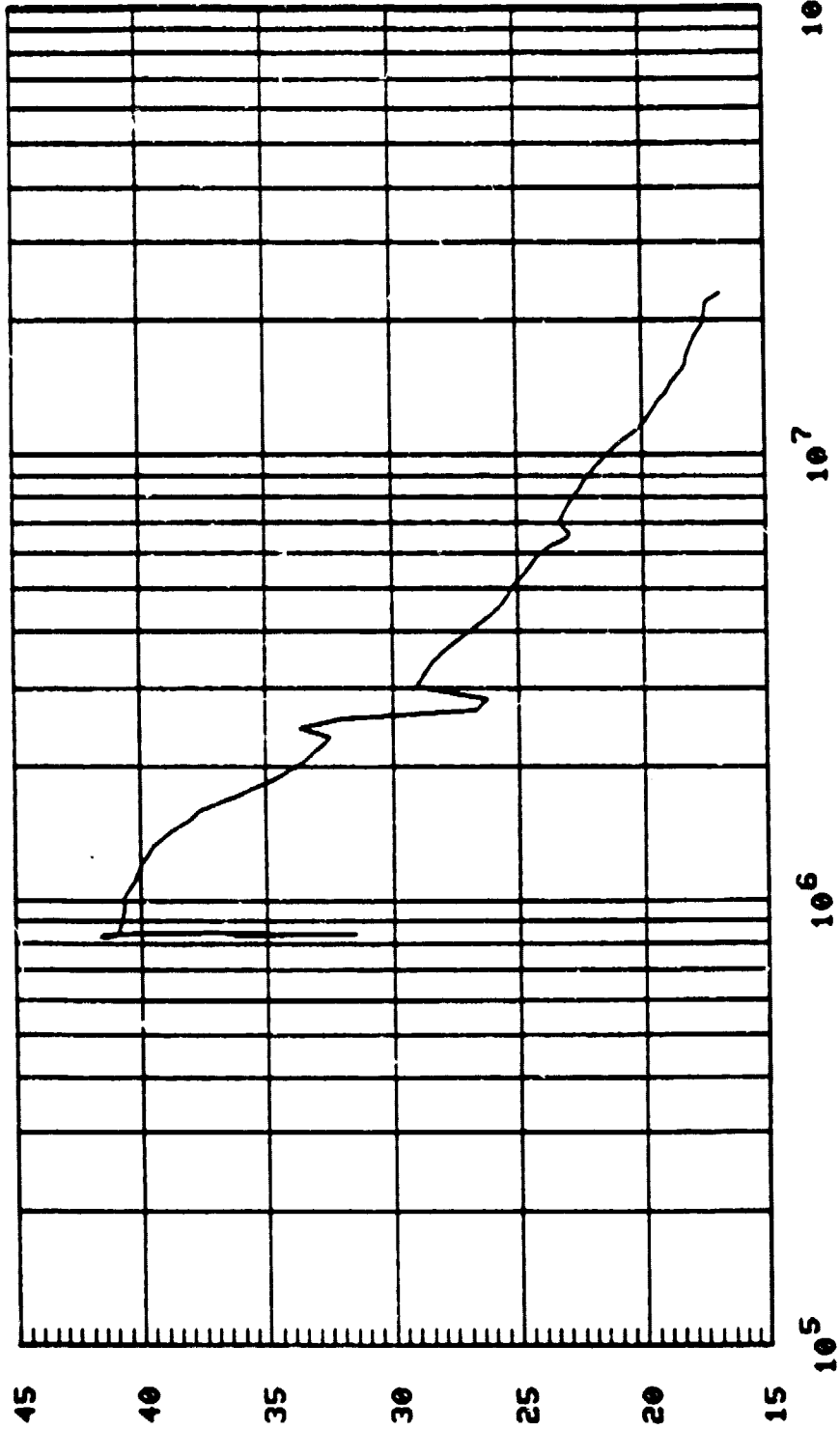
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965-1335 SEC

STS-4



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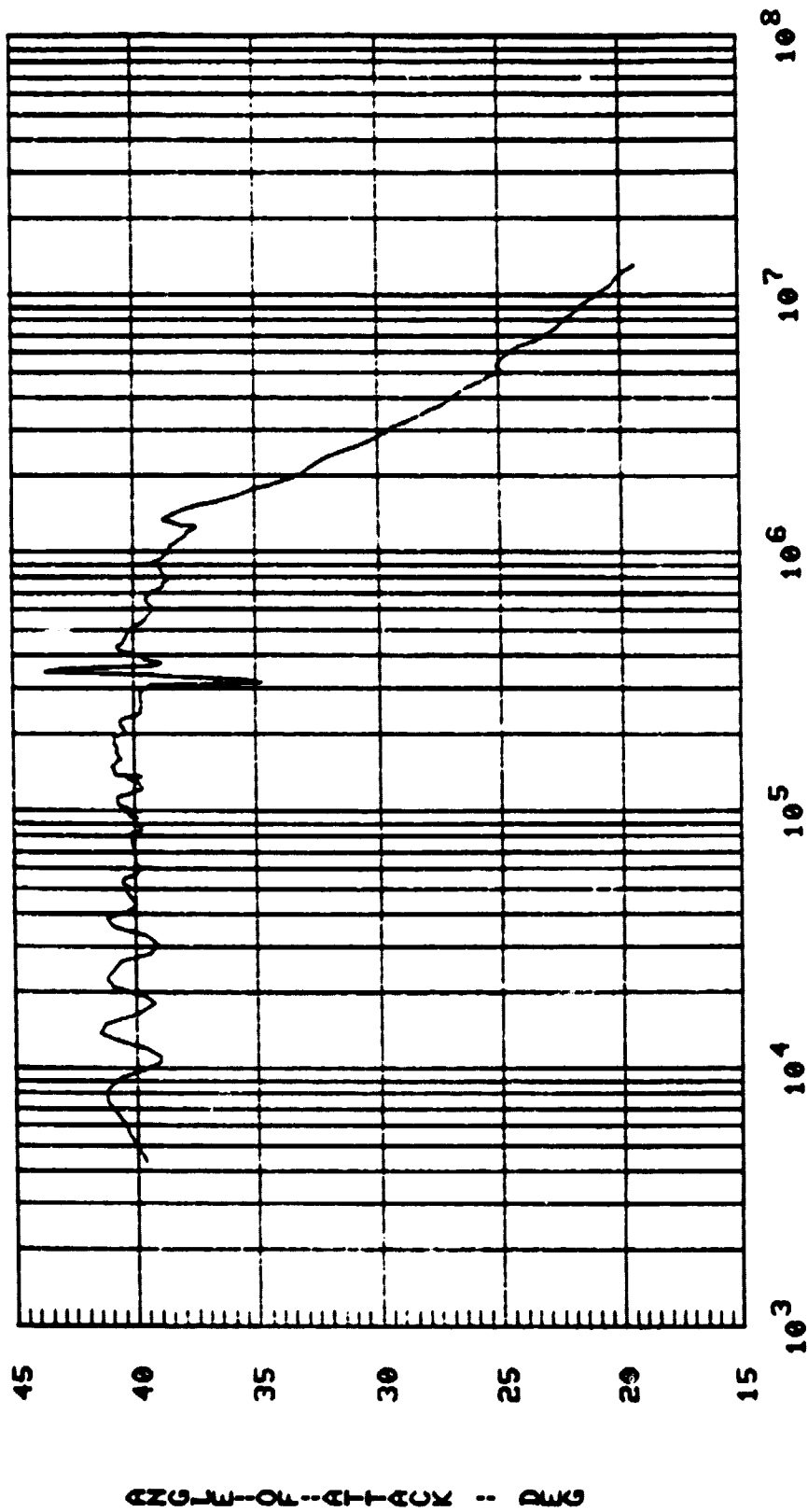
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150-1350 SEC

STS-5



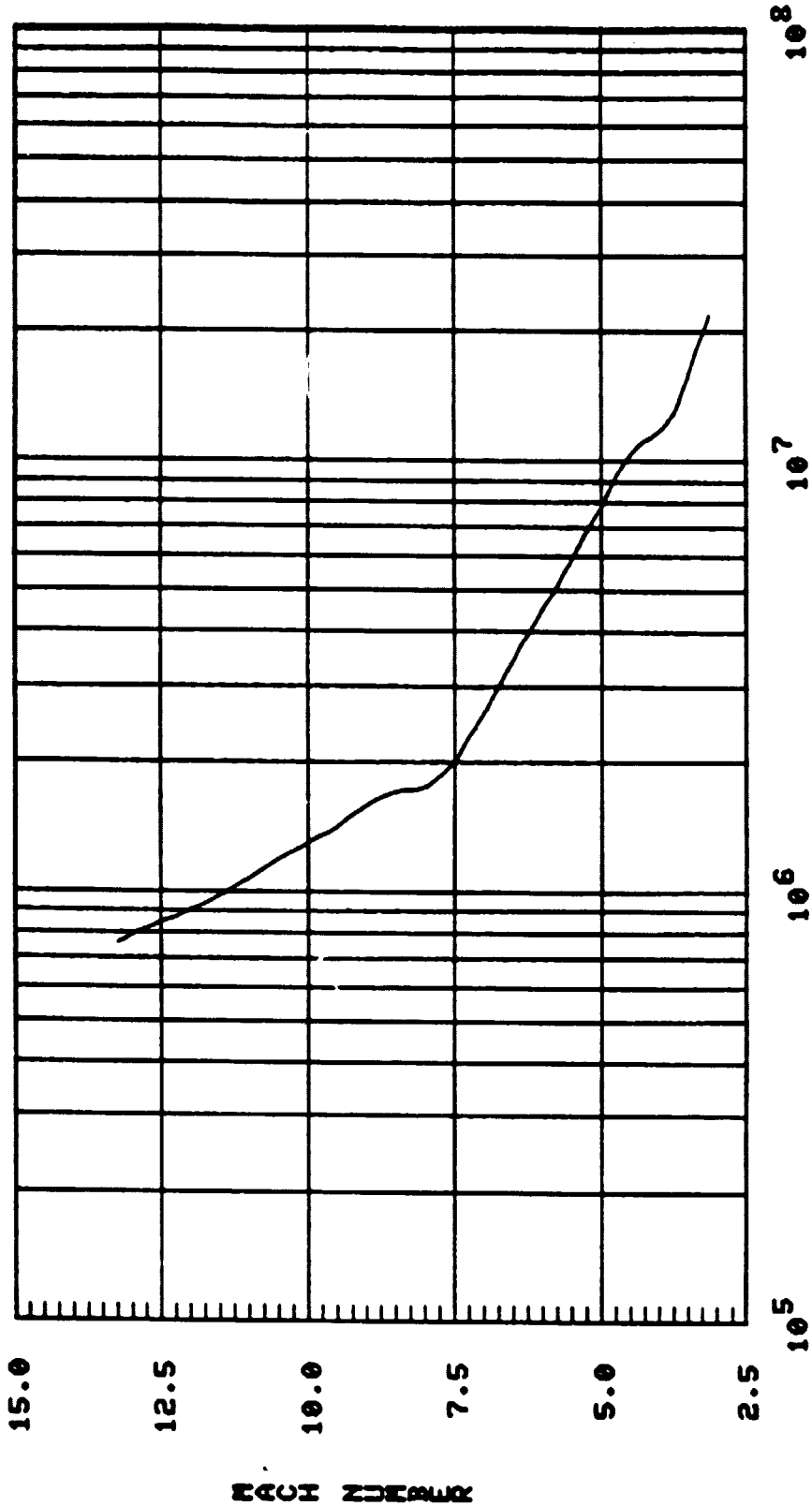
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STS-1 1065-1480 SEC



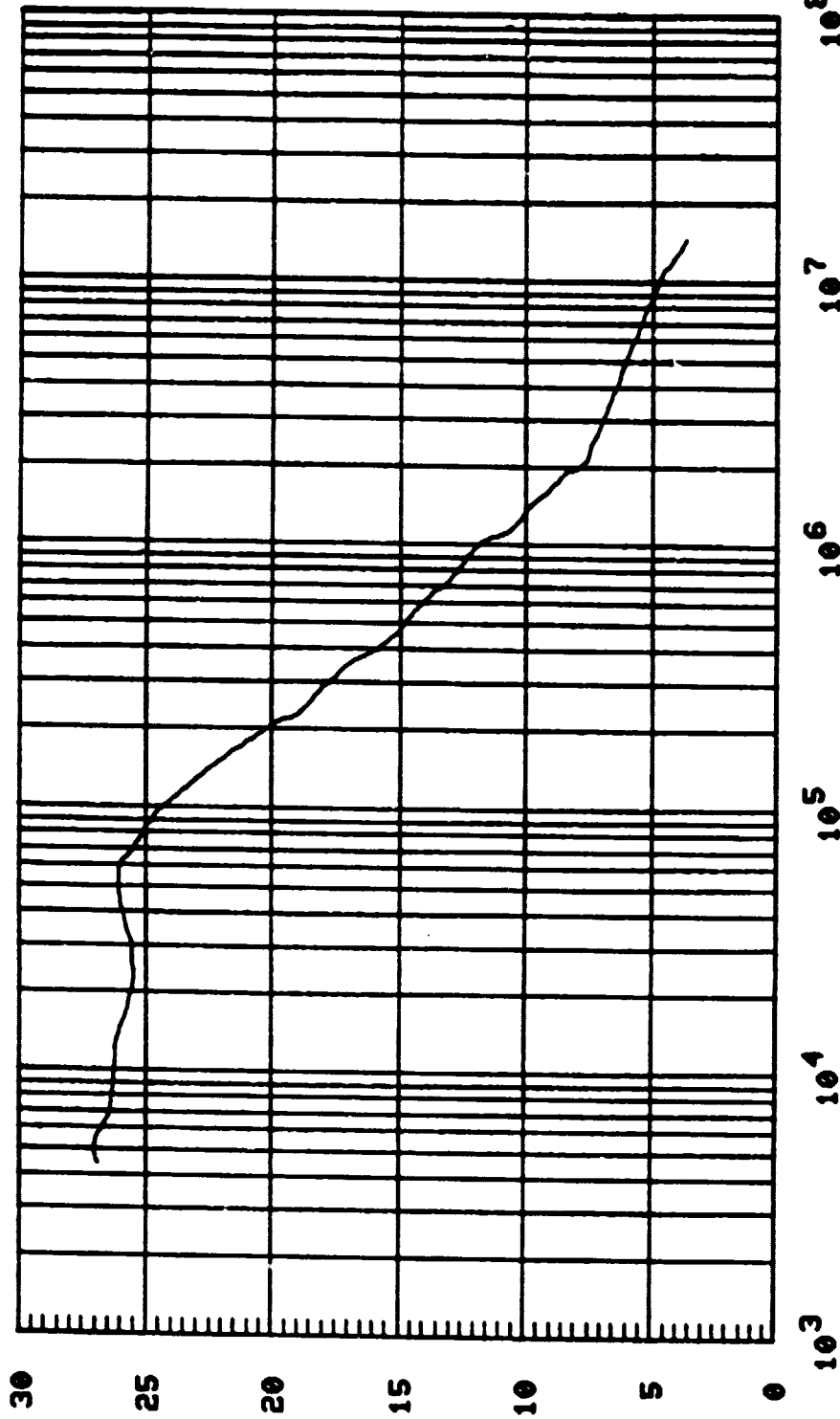
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200-1400 SEC

STS-2



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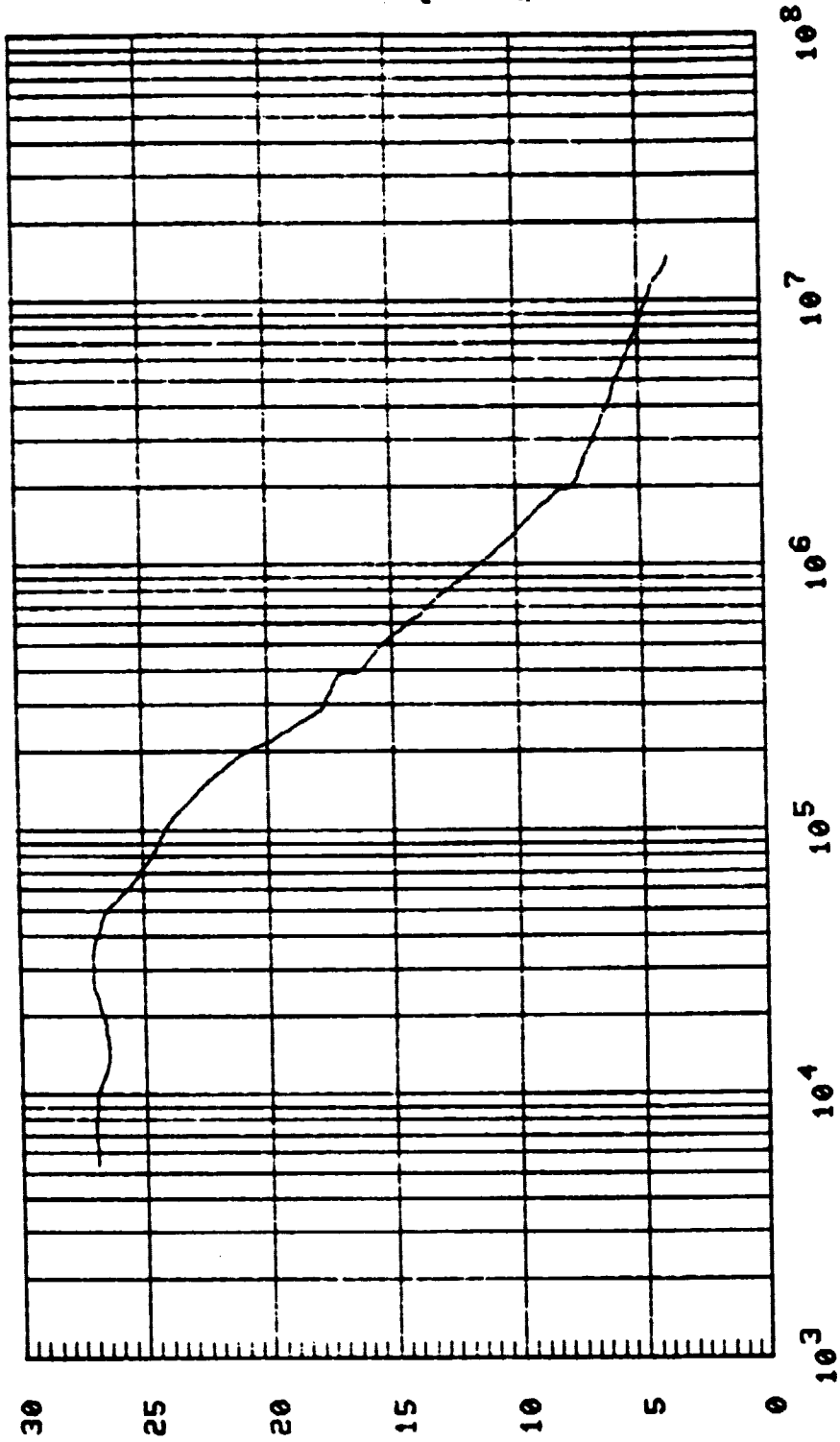
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200-1380 SEC

STS-3



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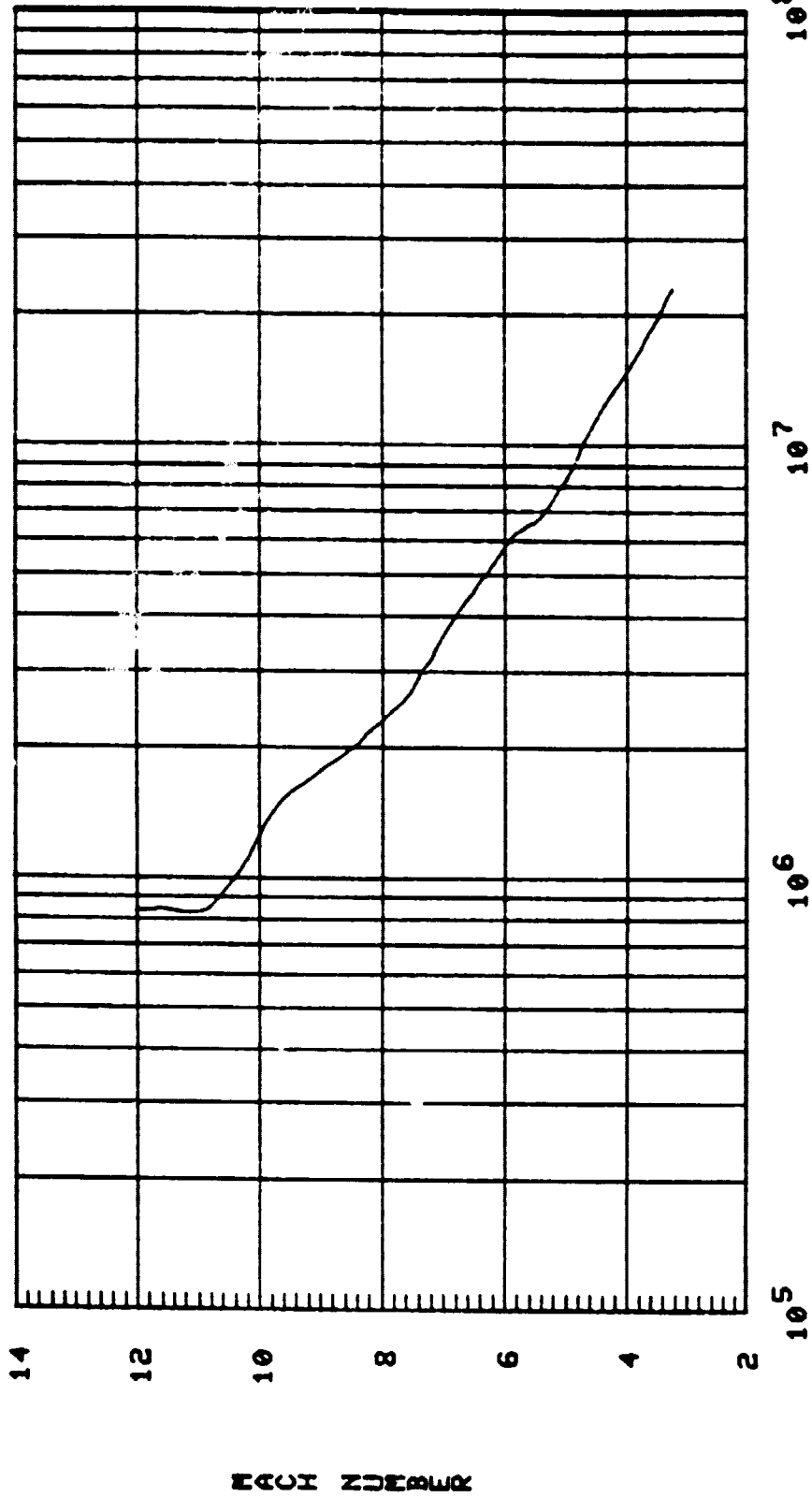
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965-1335 SEC

STS-4



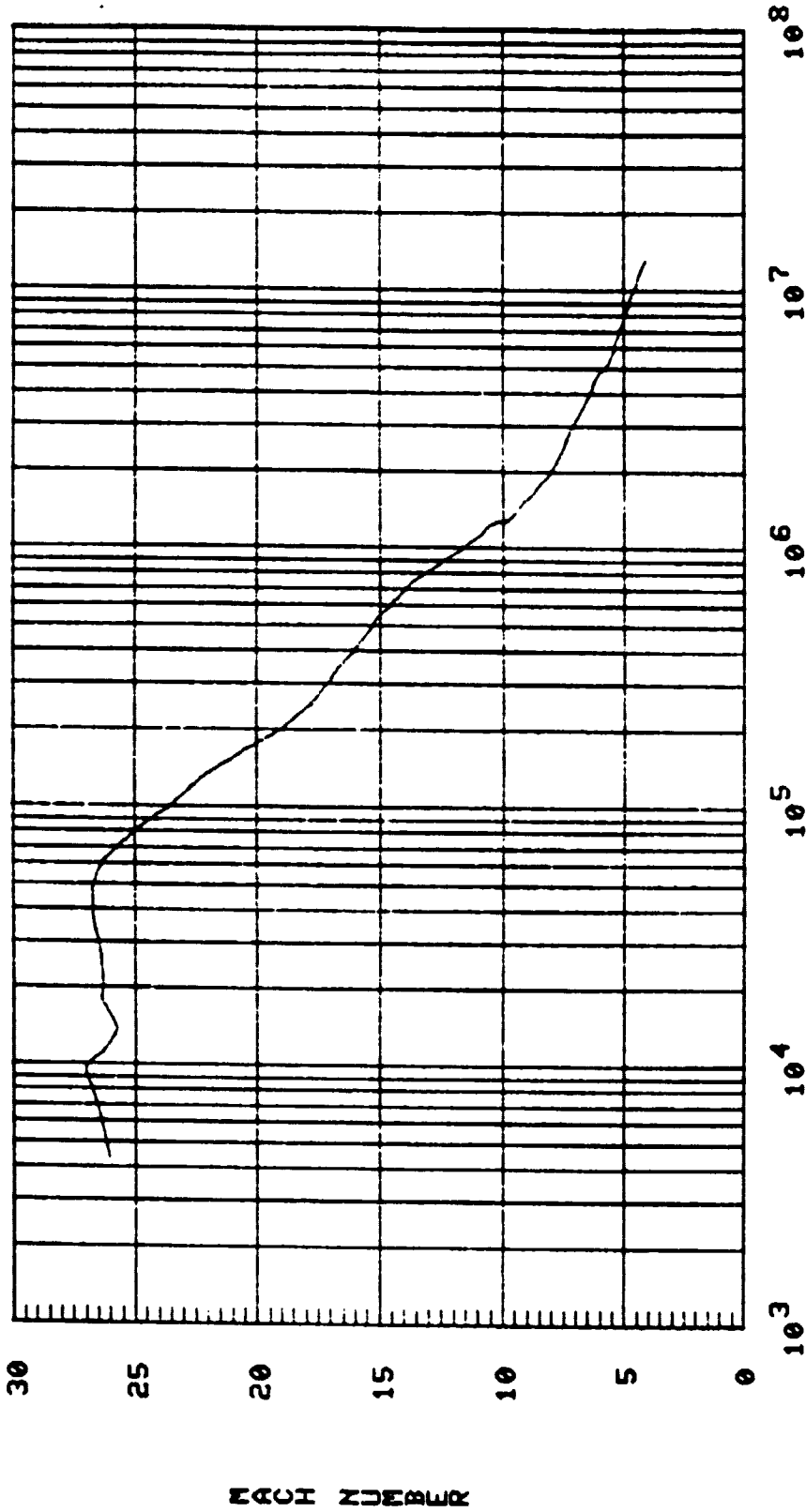
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150-1350 SEC

STS-5

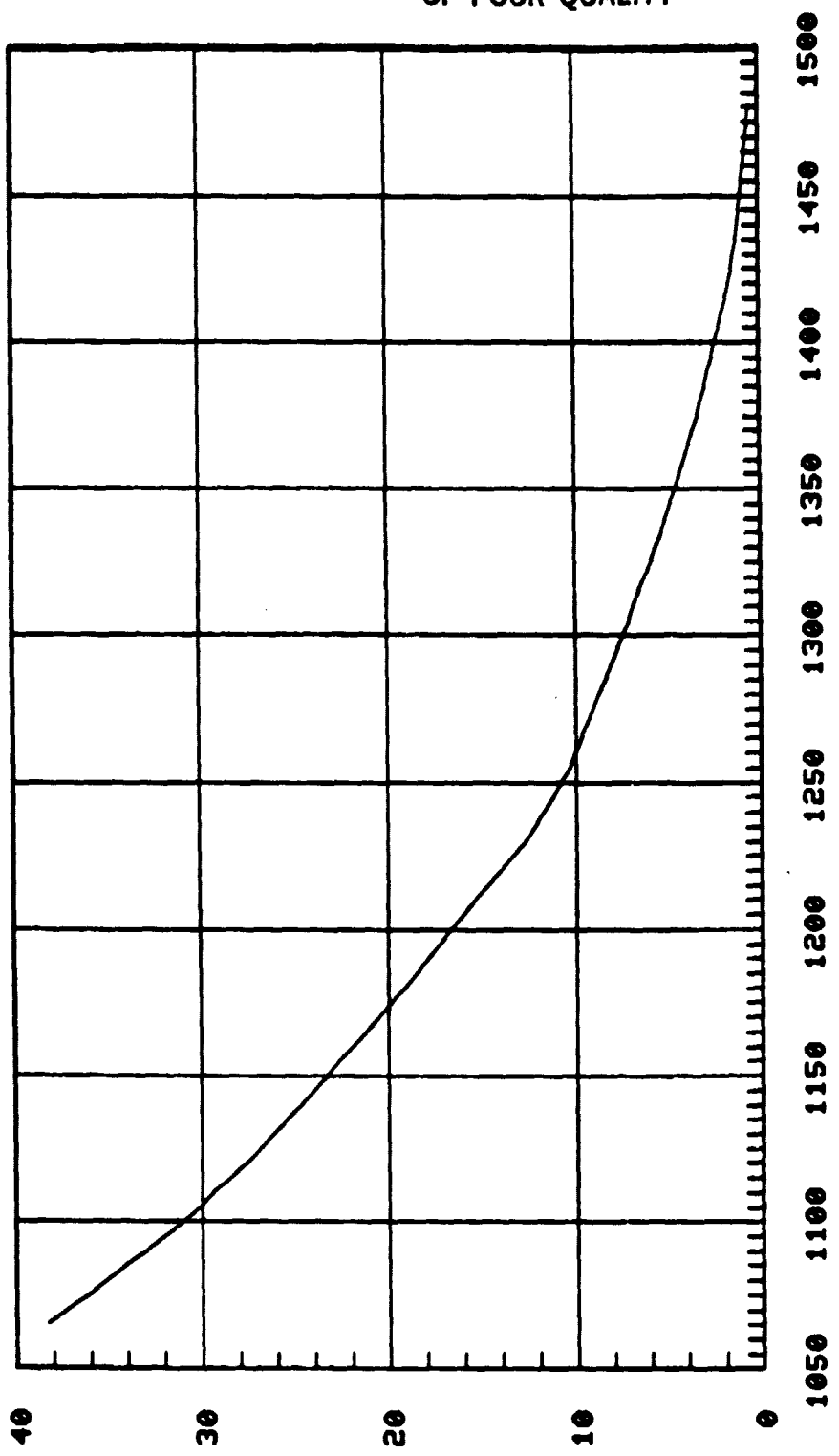


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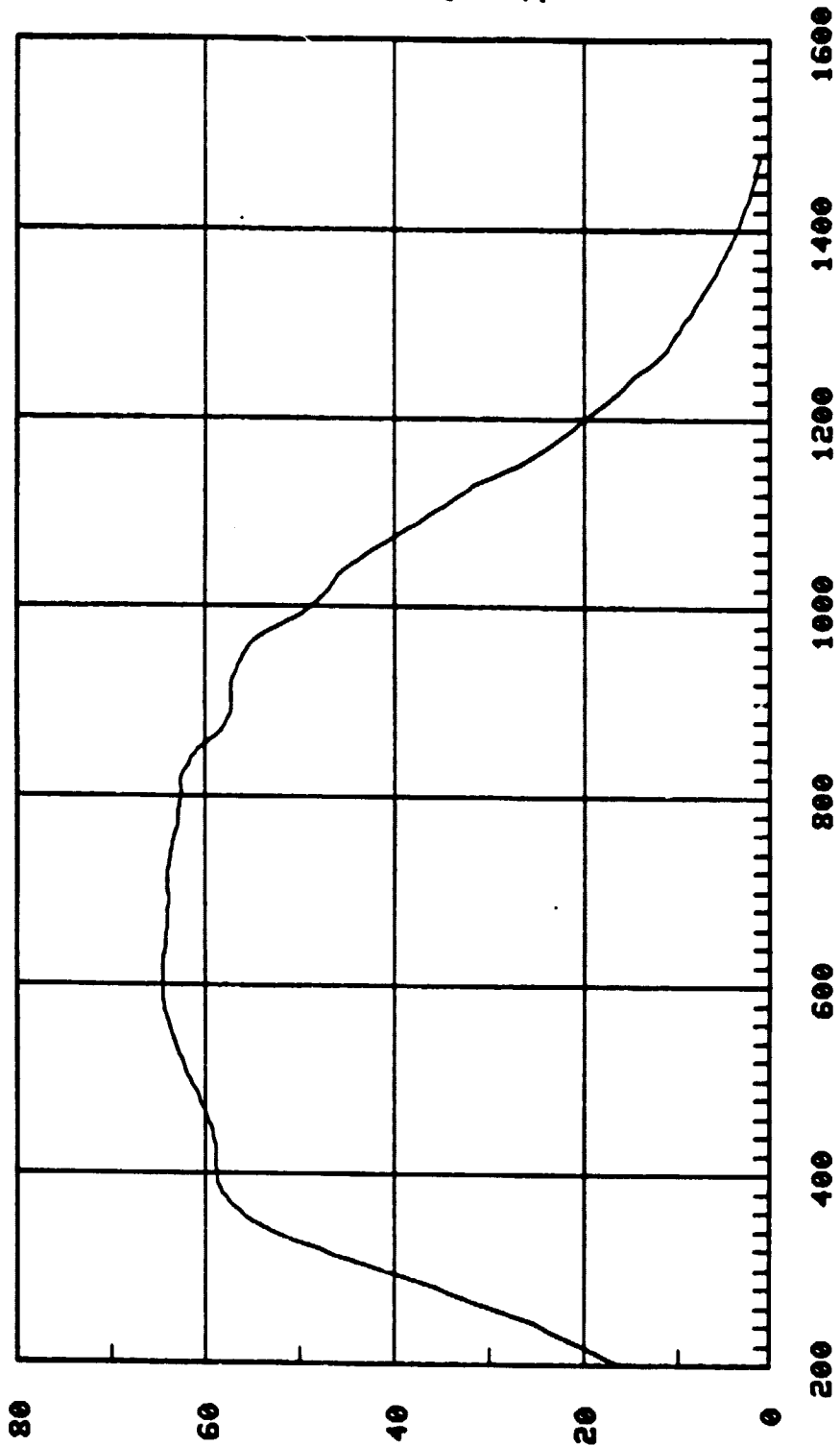
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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

OREF



TIME - SECONDS

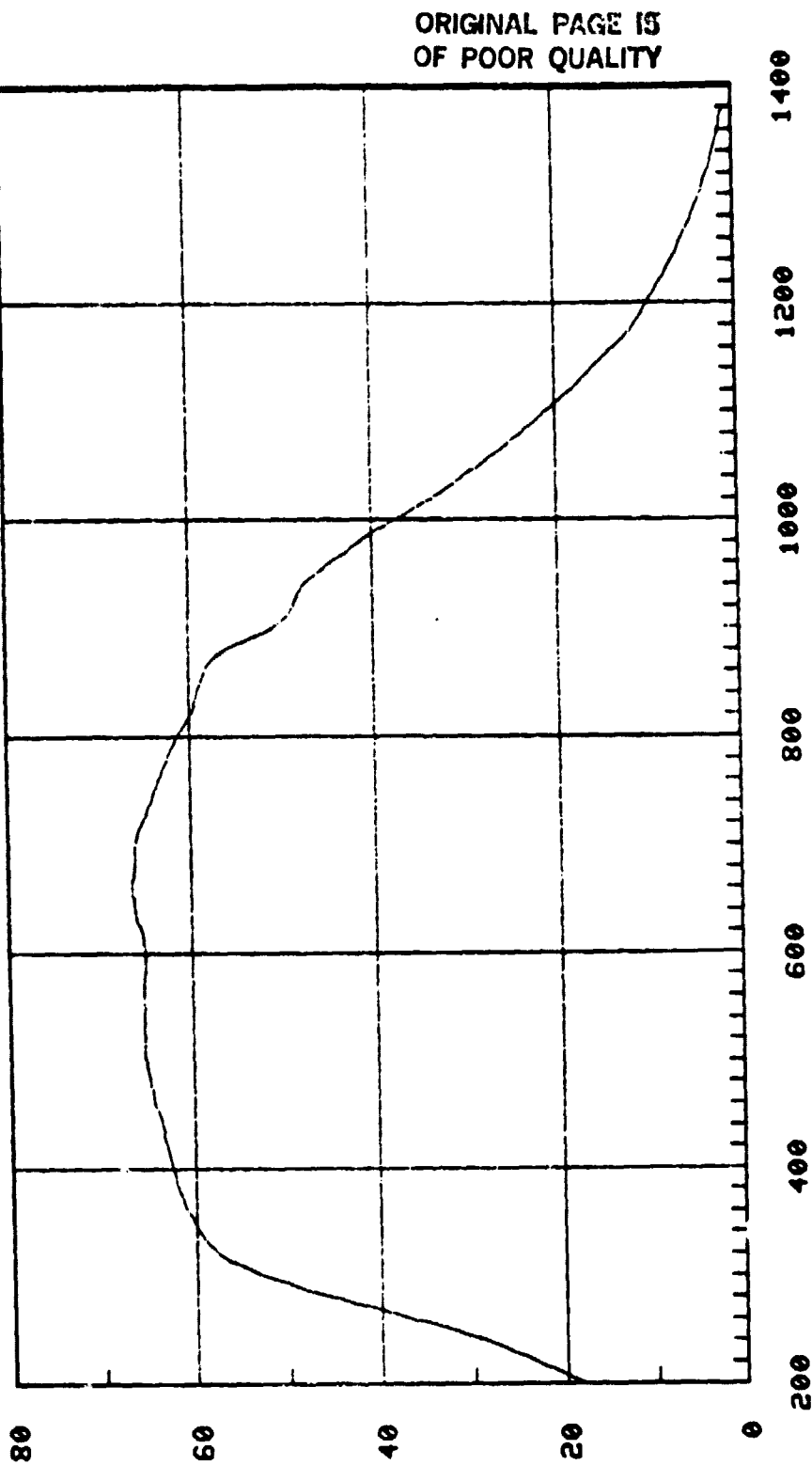
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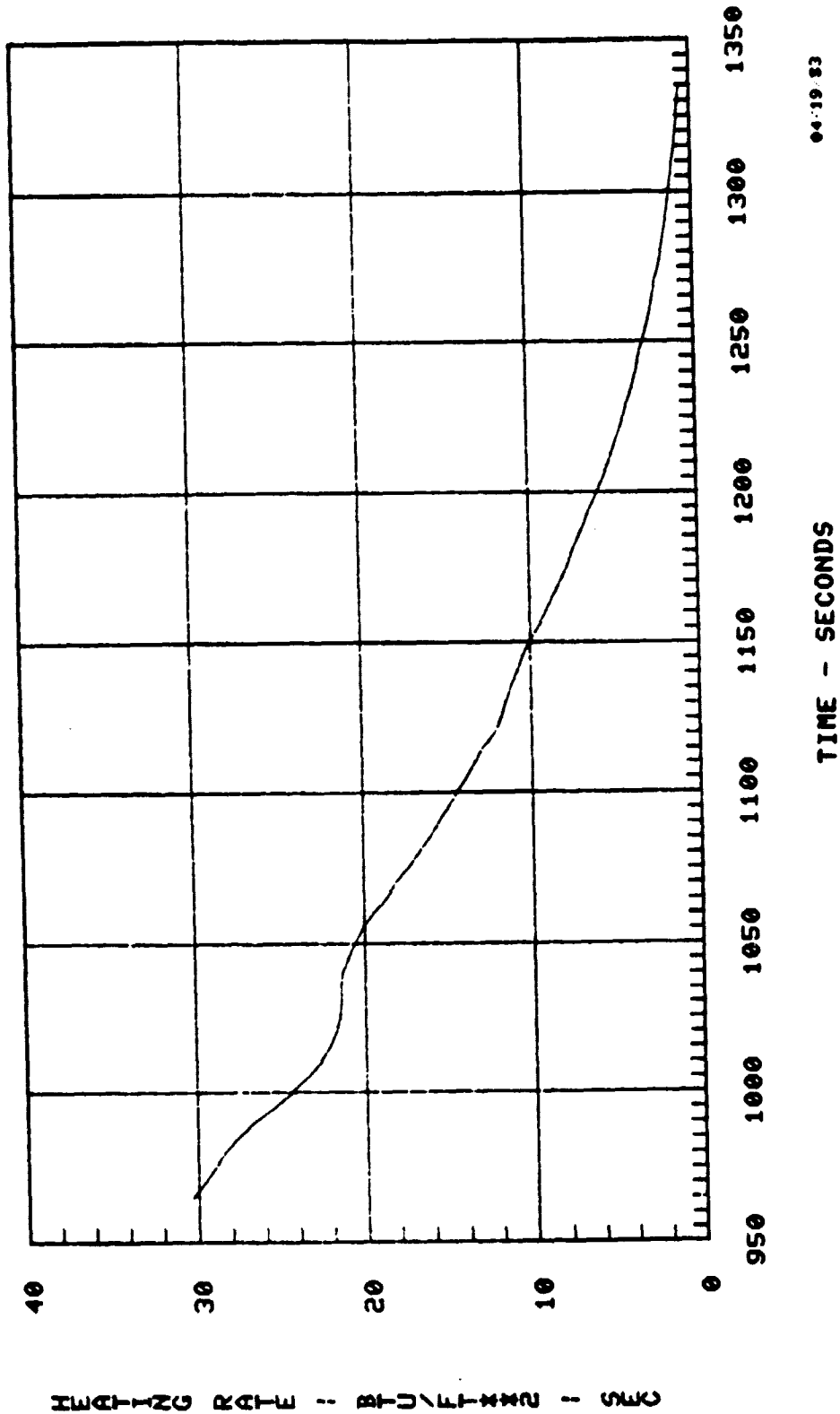
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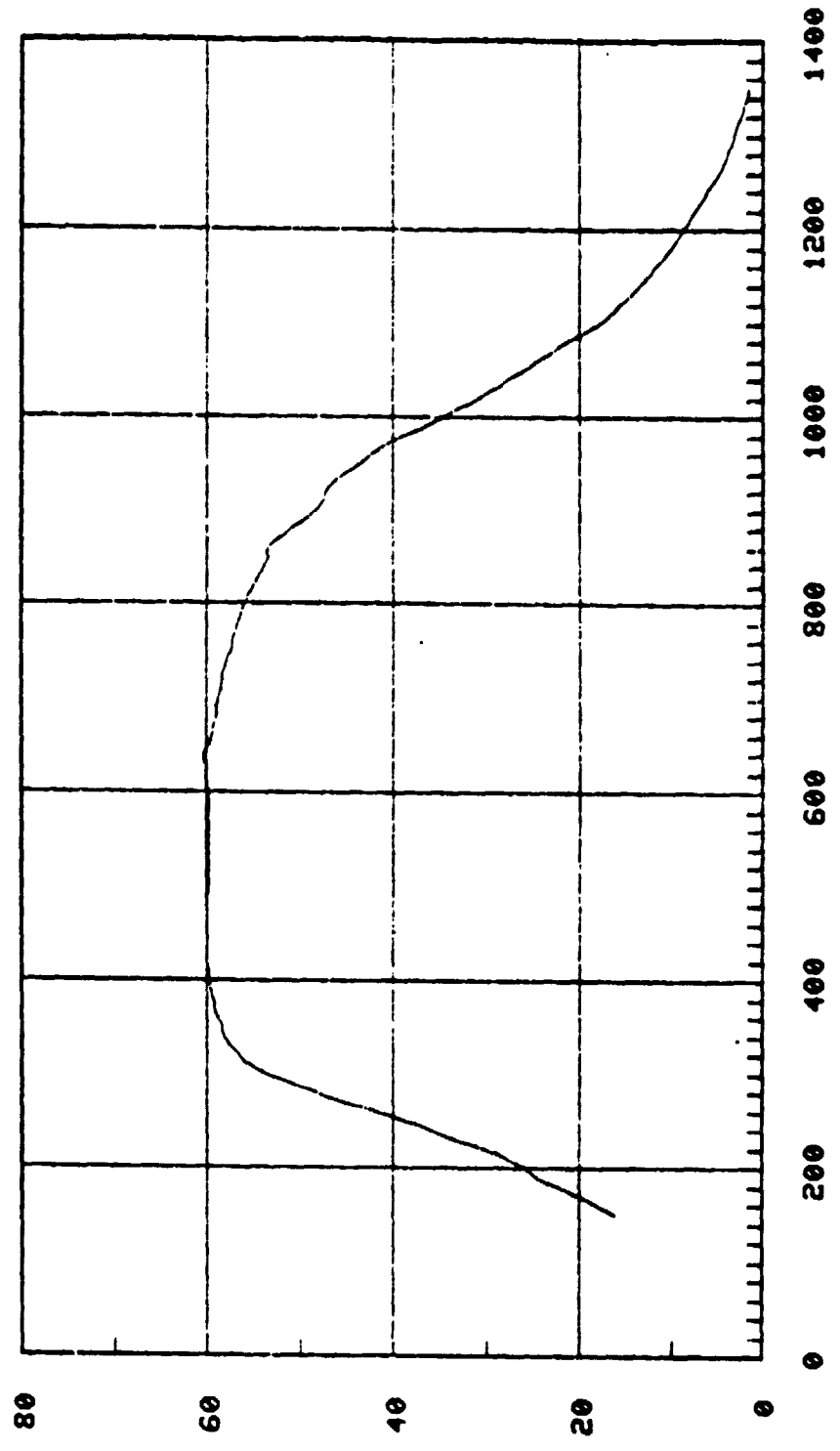
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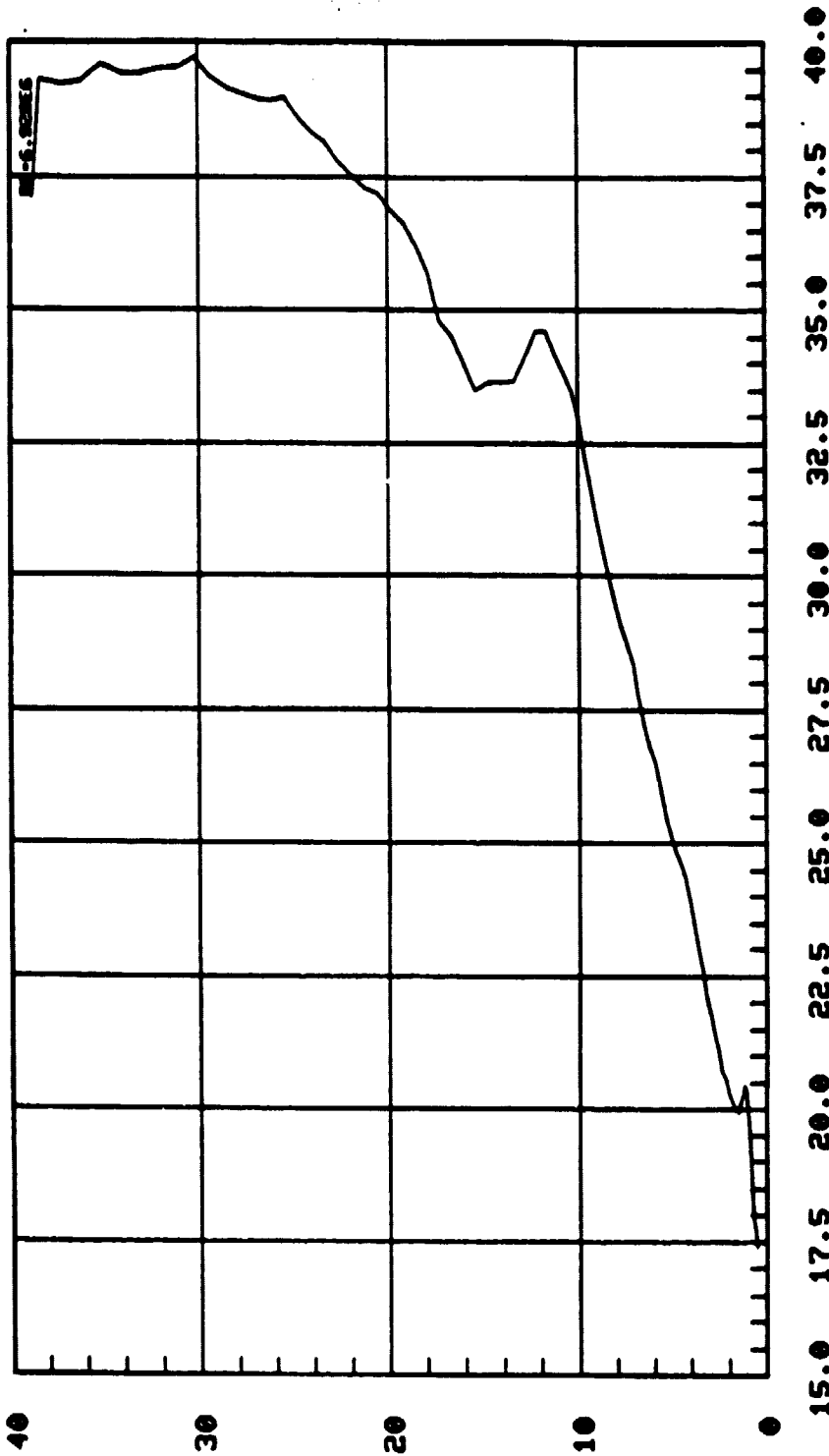
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STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

1065-1400 SEC

OREF



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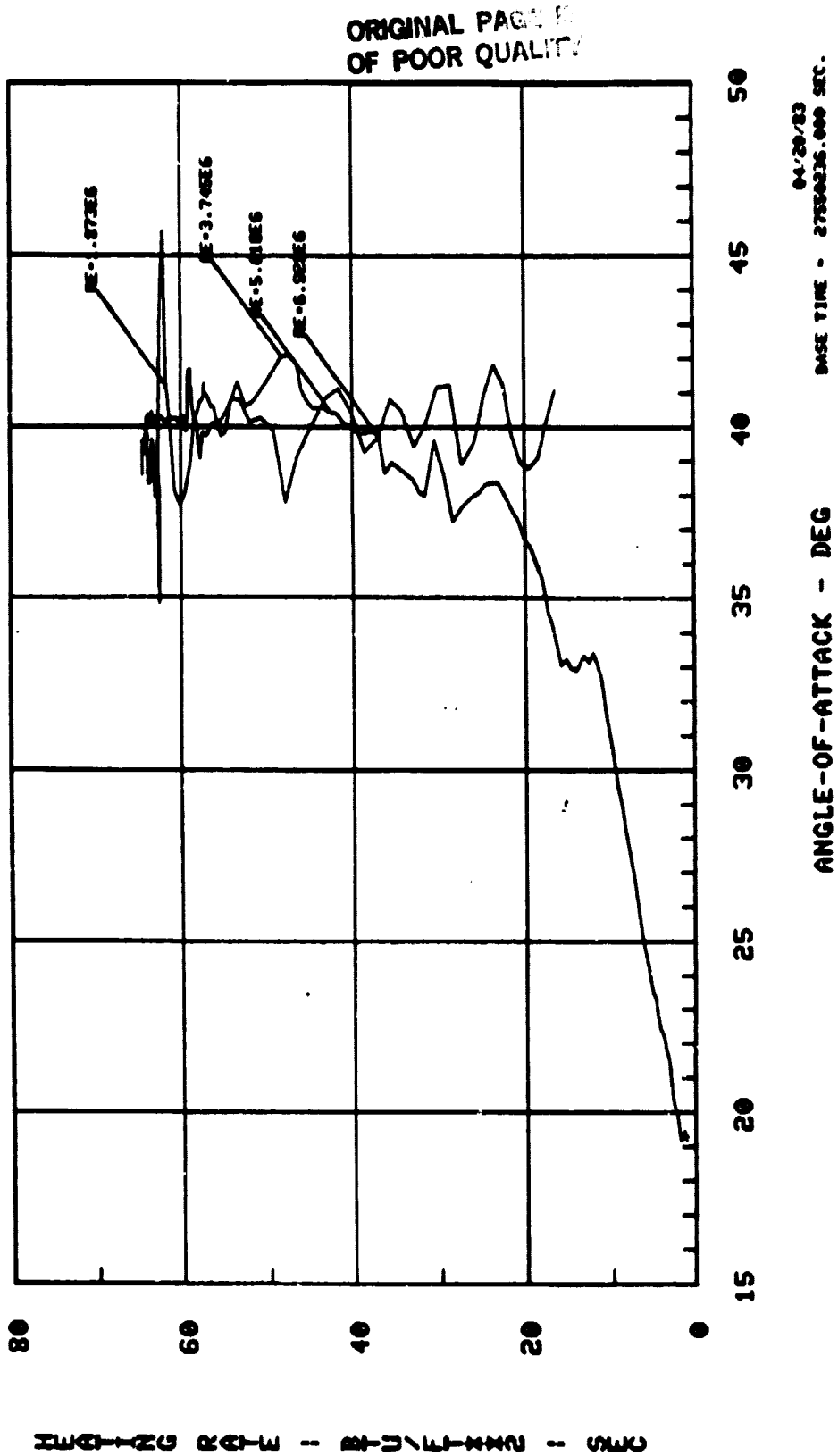
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200-1400 SEC

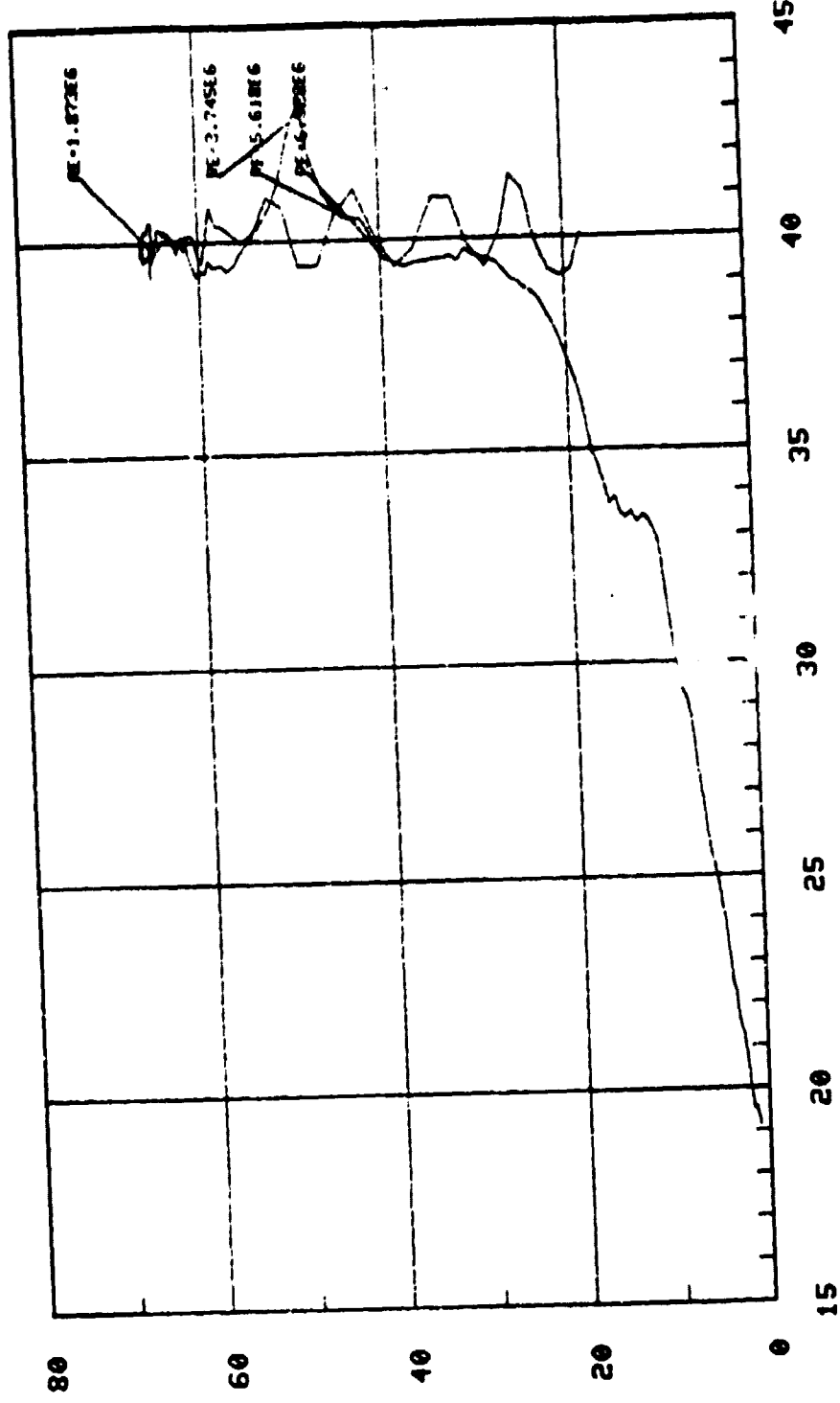
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200-1388 SEC

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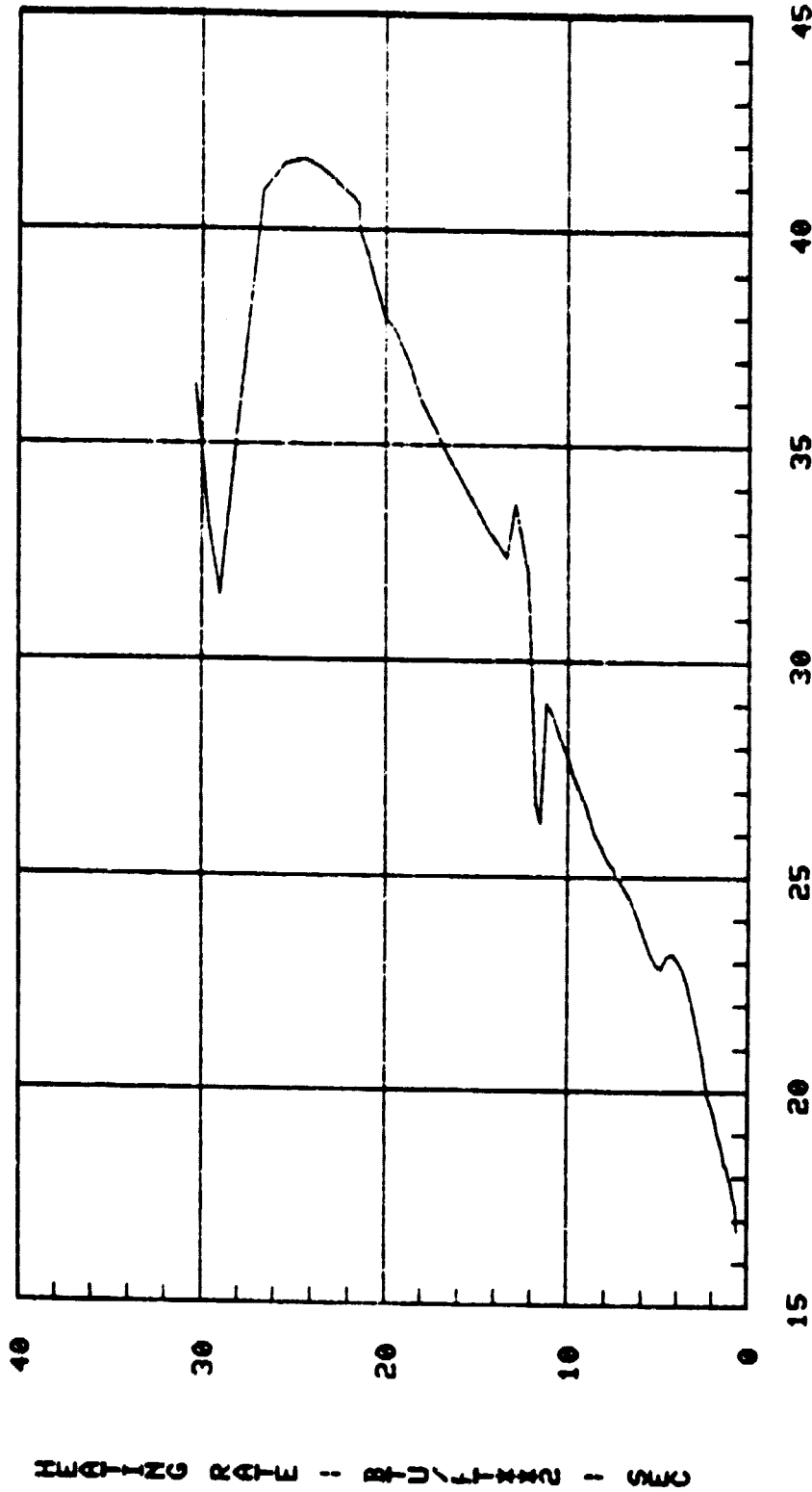
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

965-1335 SEC

OREF



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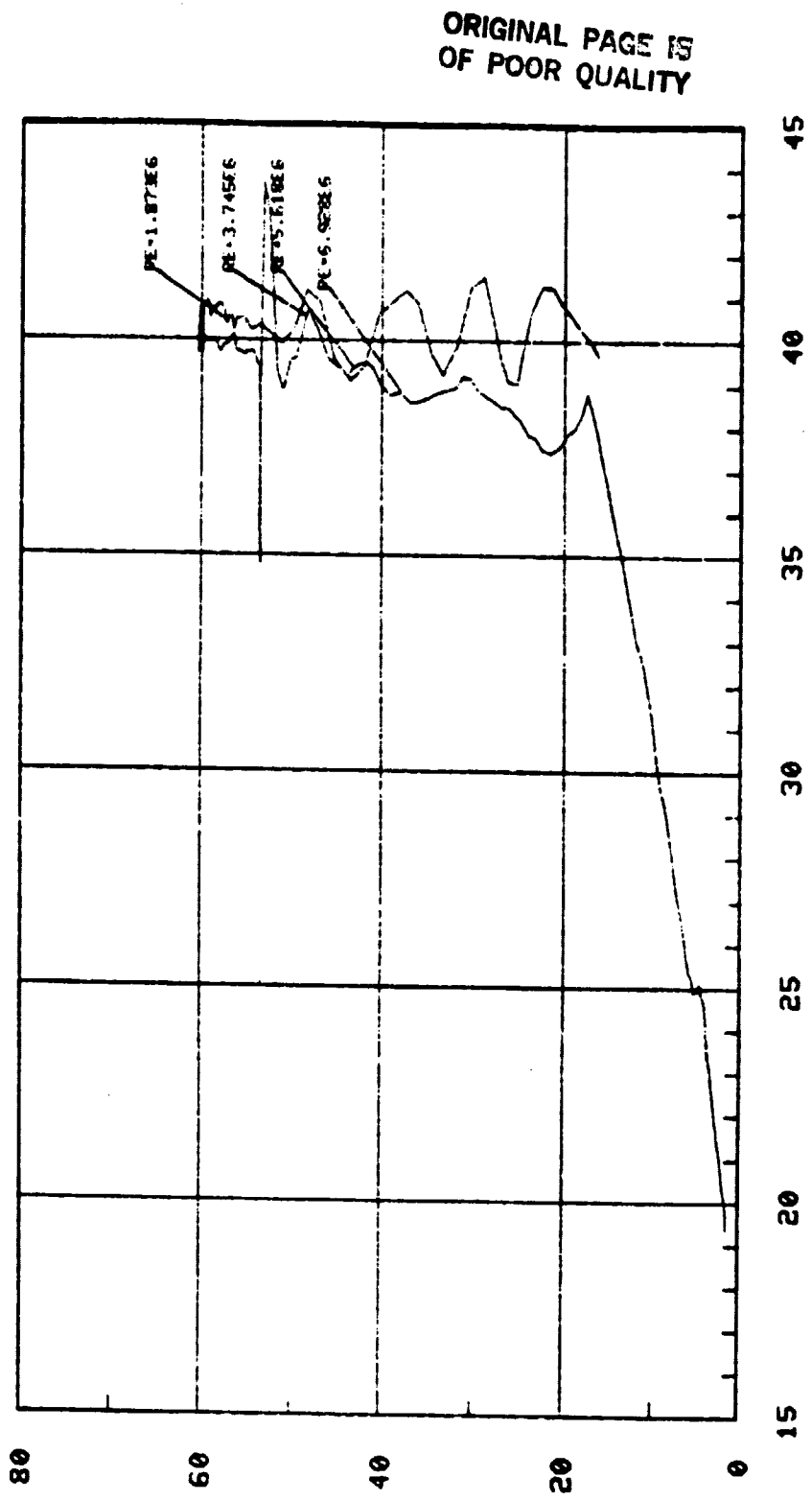
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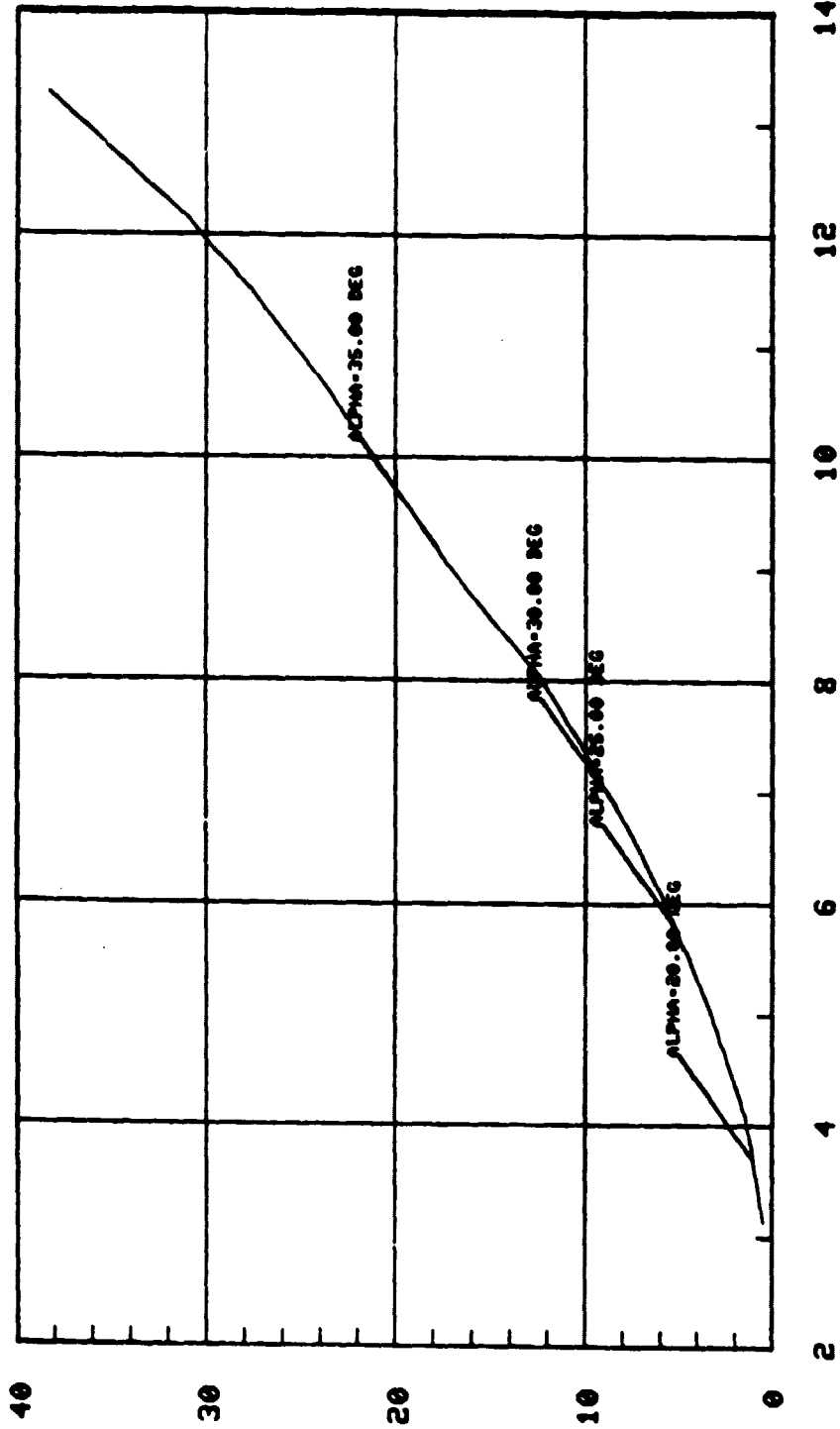
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1065-1480 SEC

OREF



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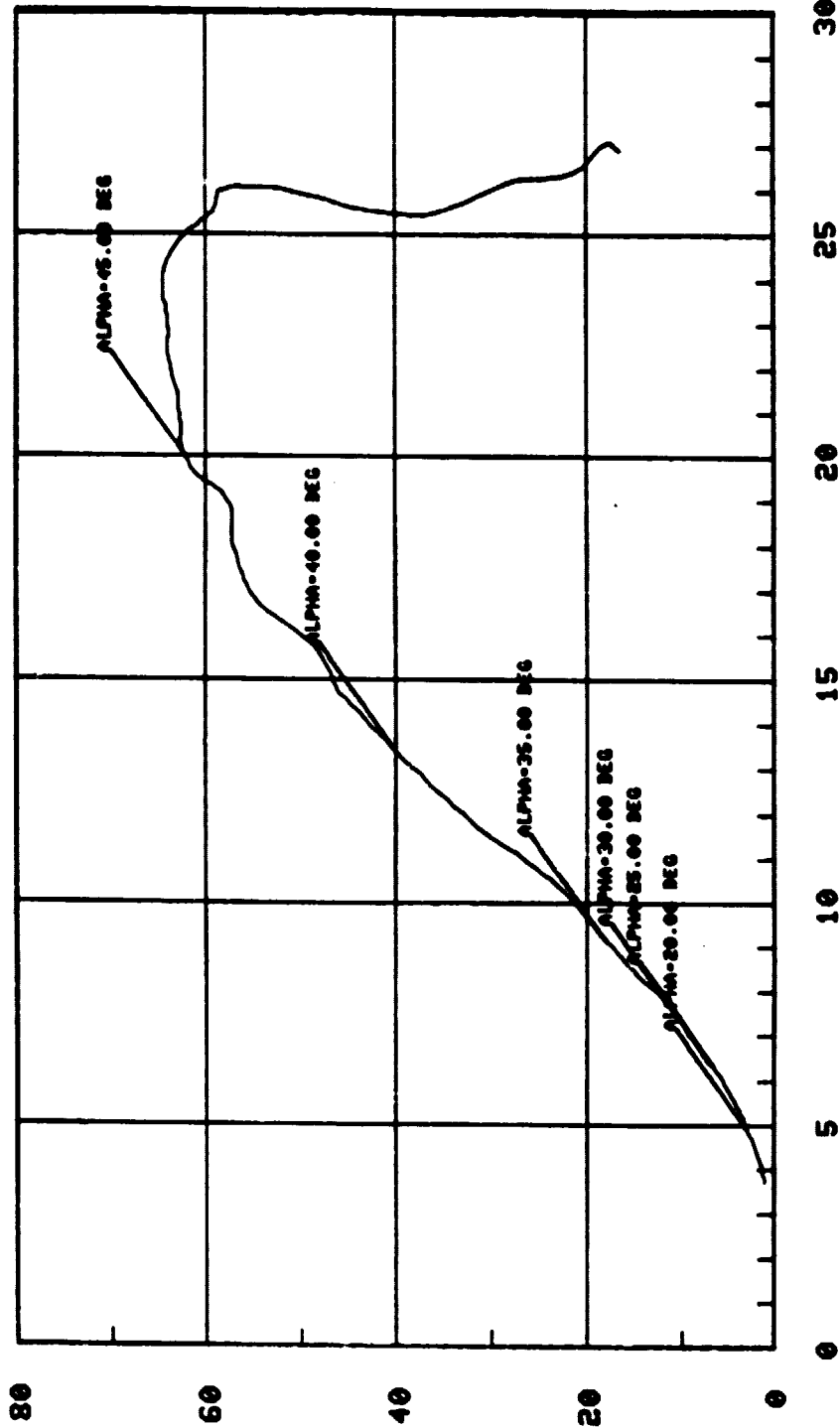
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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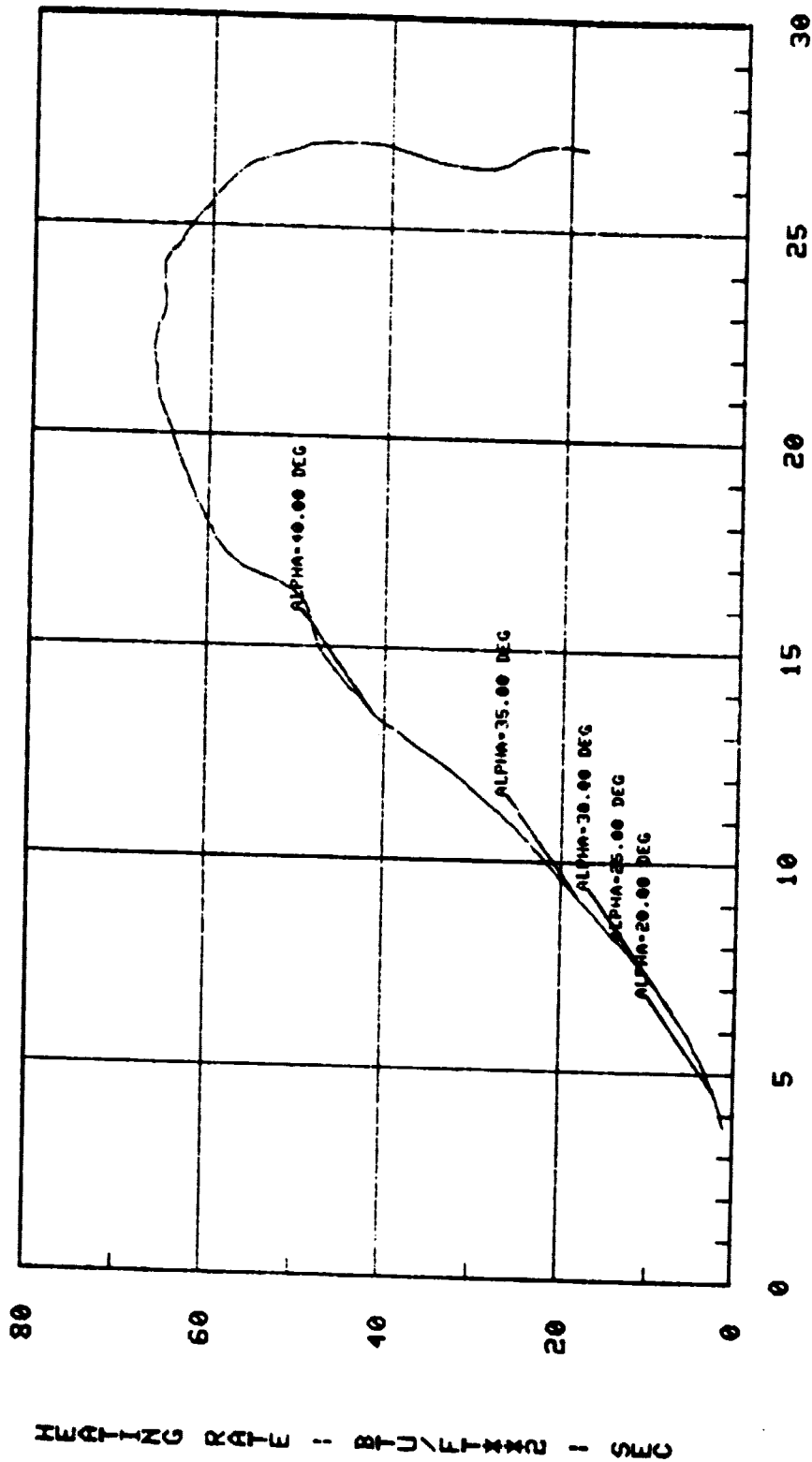
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200-1380 SEC

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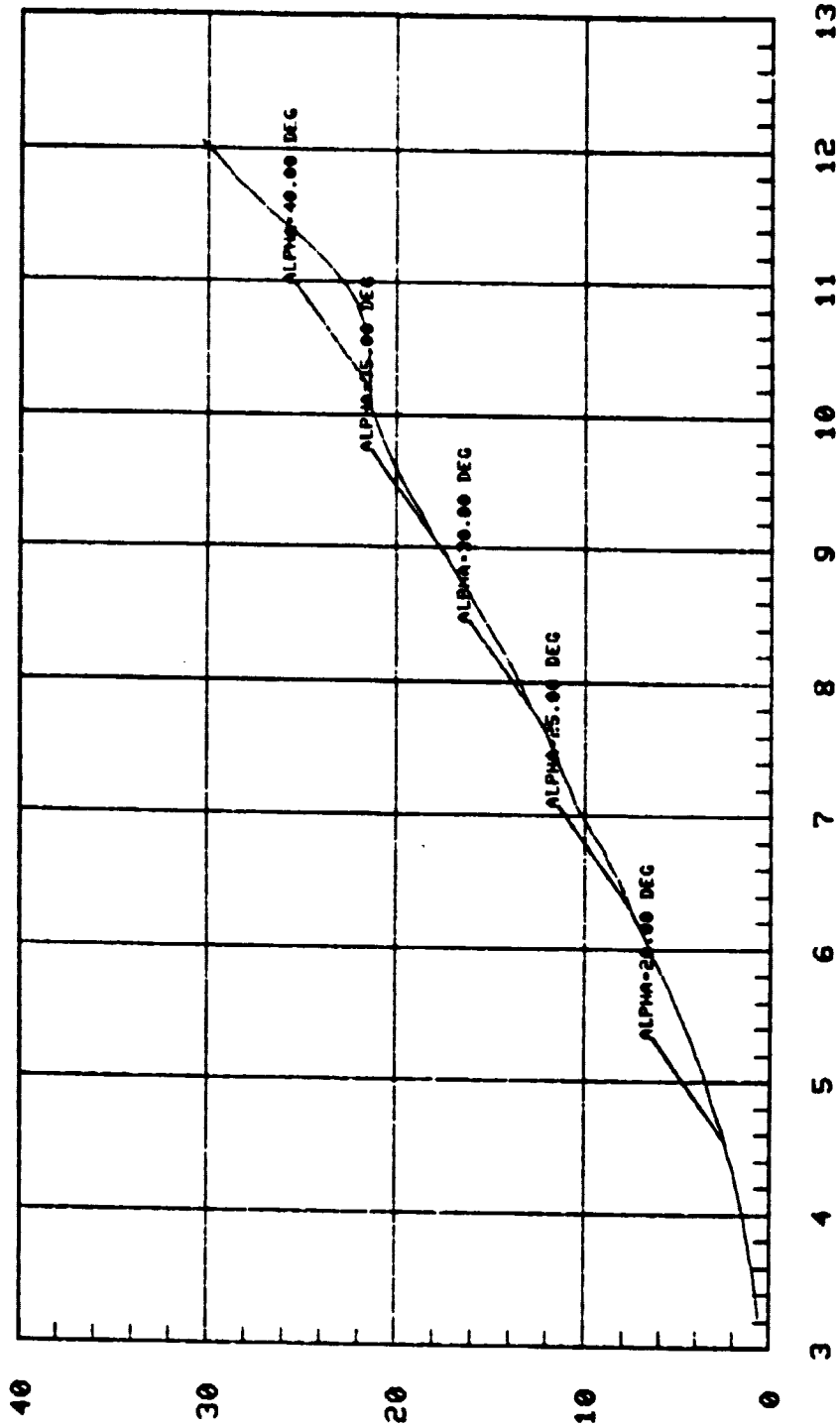
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

965-1335 SEC

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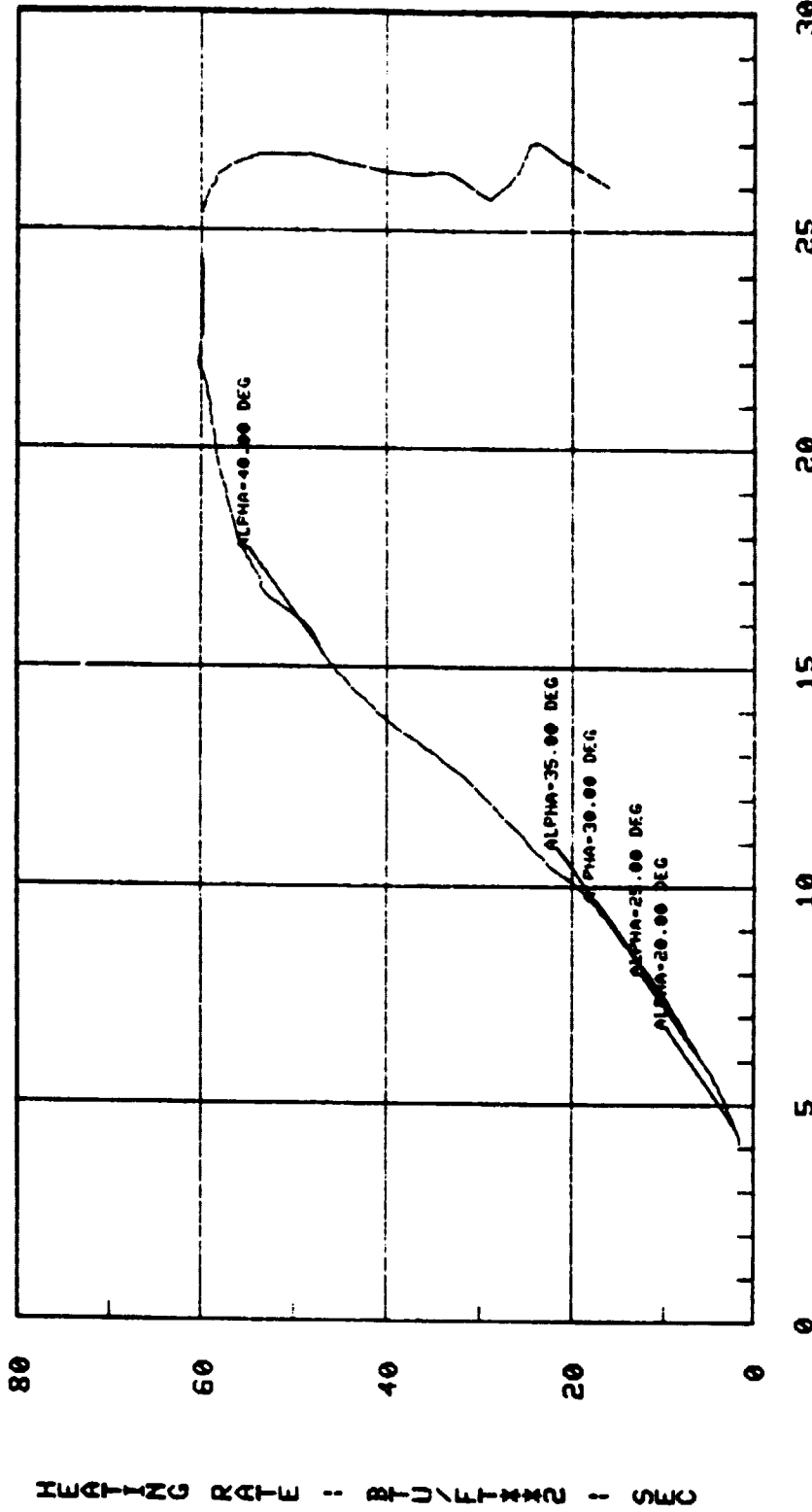
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150-1350 SEC

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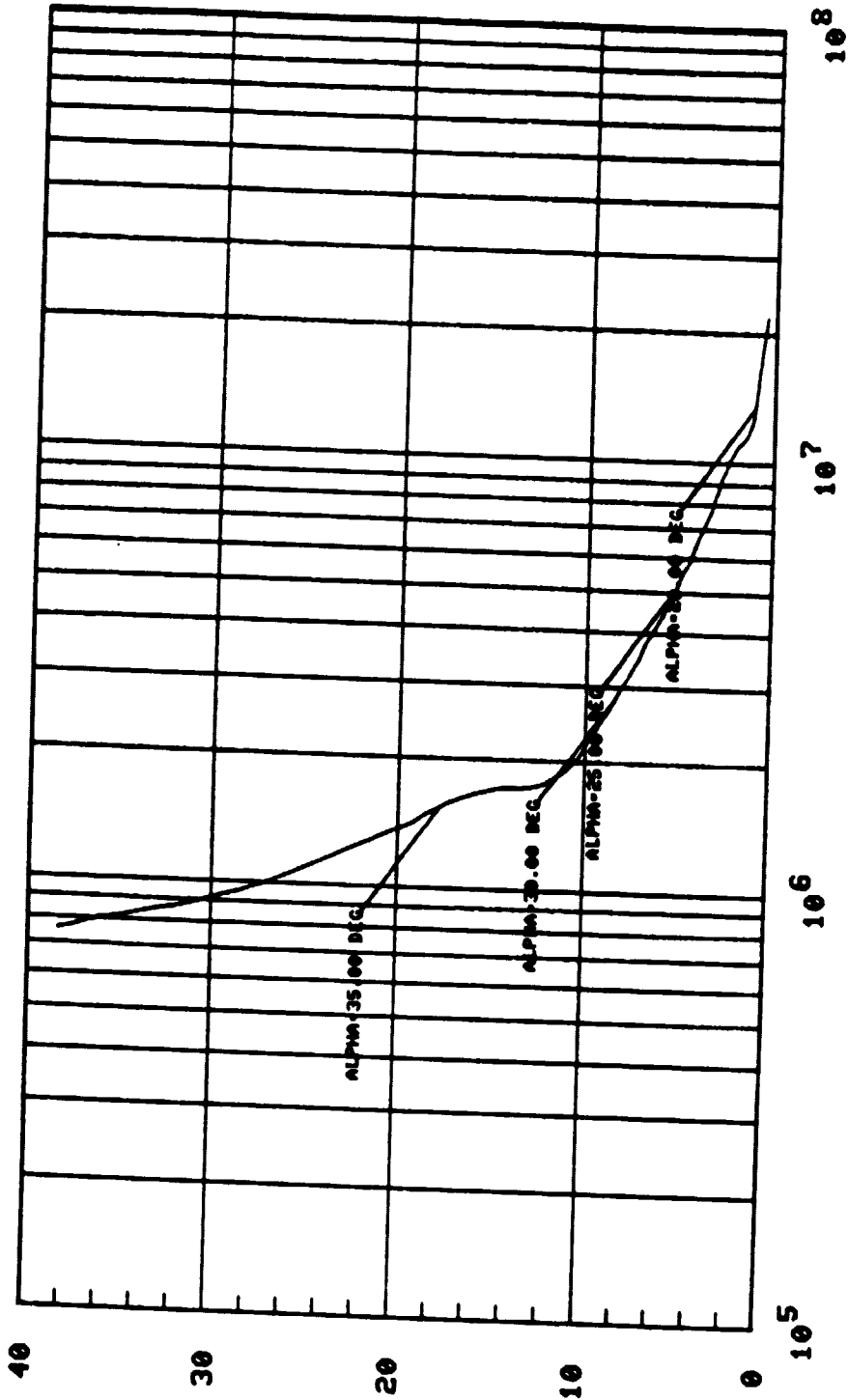
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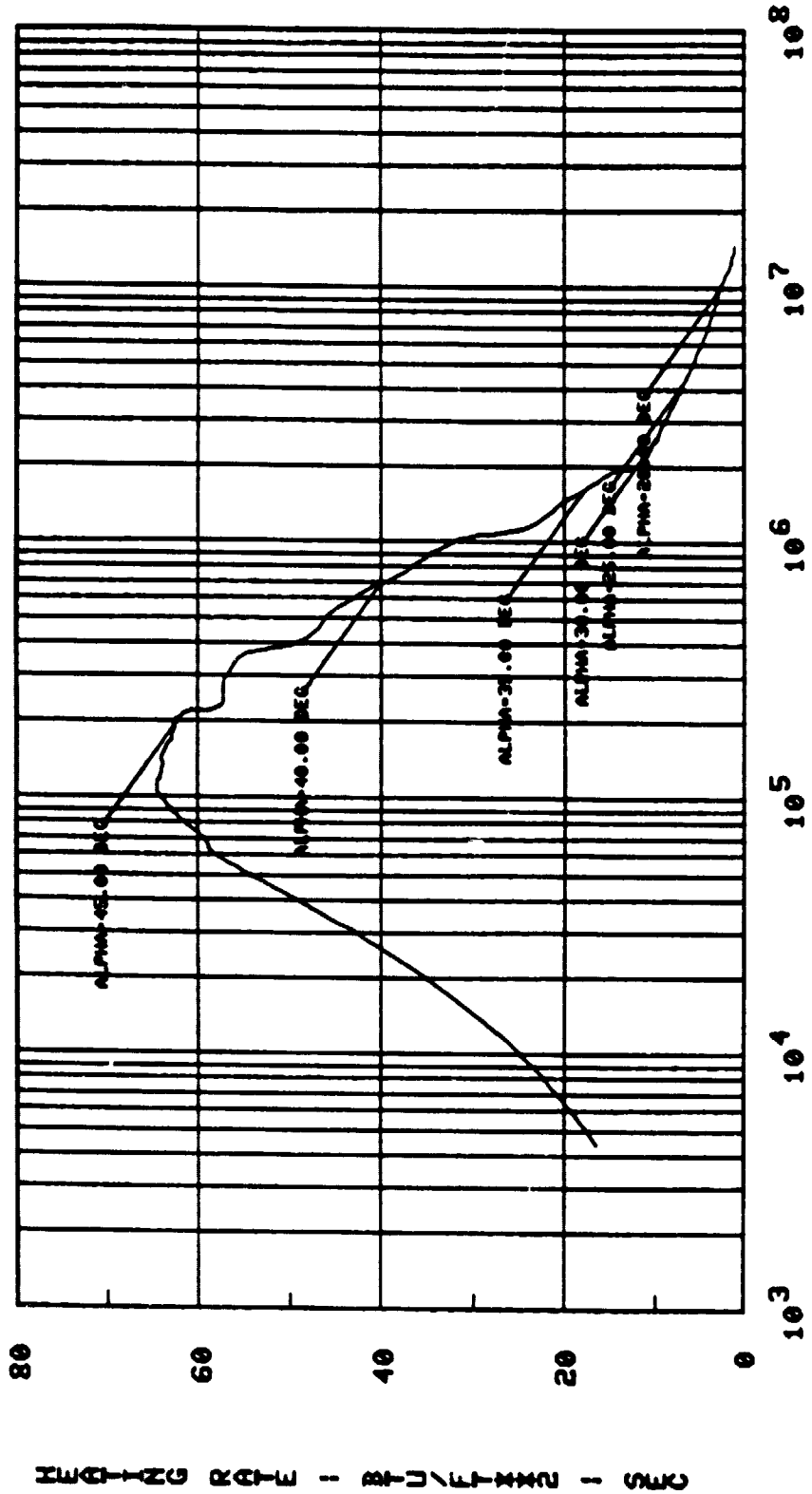
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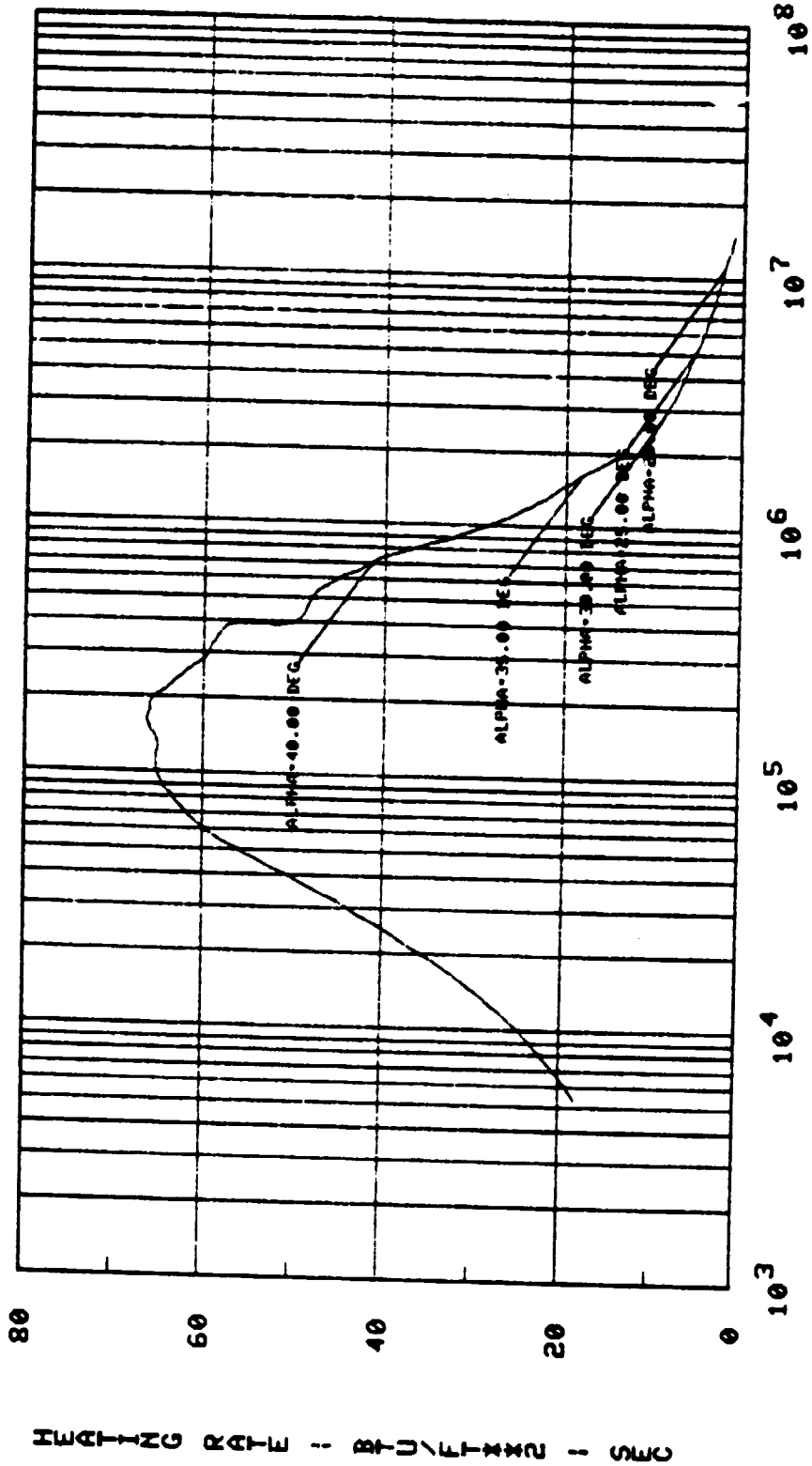


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REYNOLDS NUMBER (NS)



STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

OPEF 200-1380 SEC



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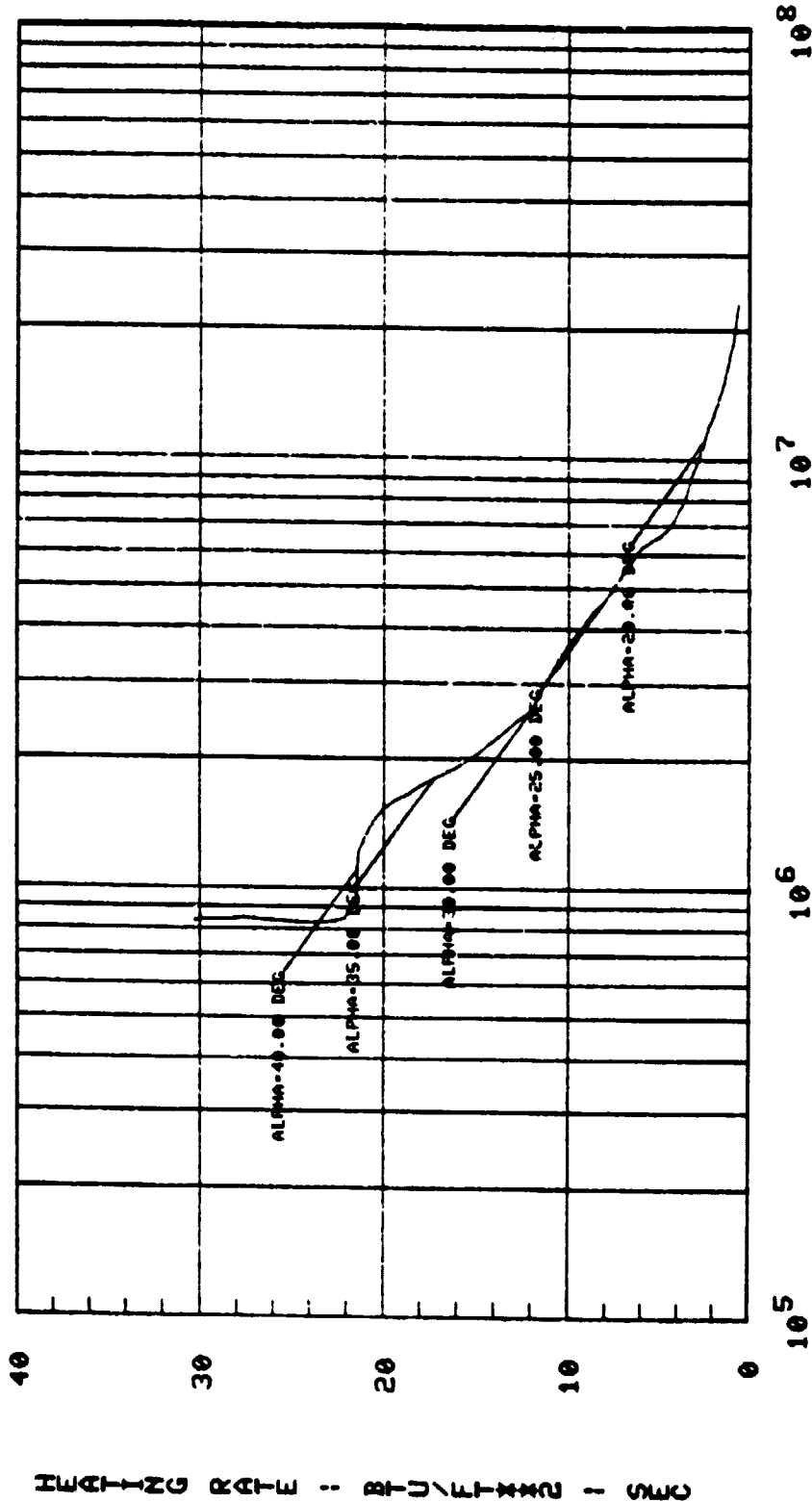
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REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

965-1335 SEC

QREF

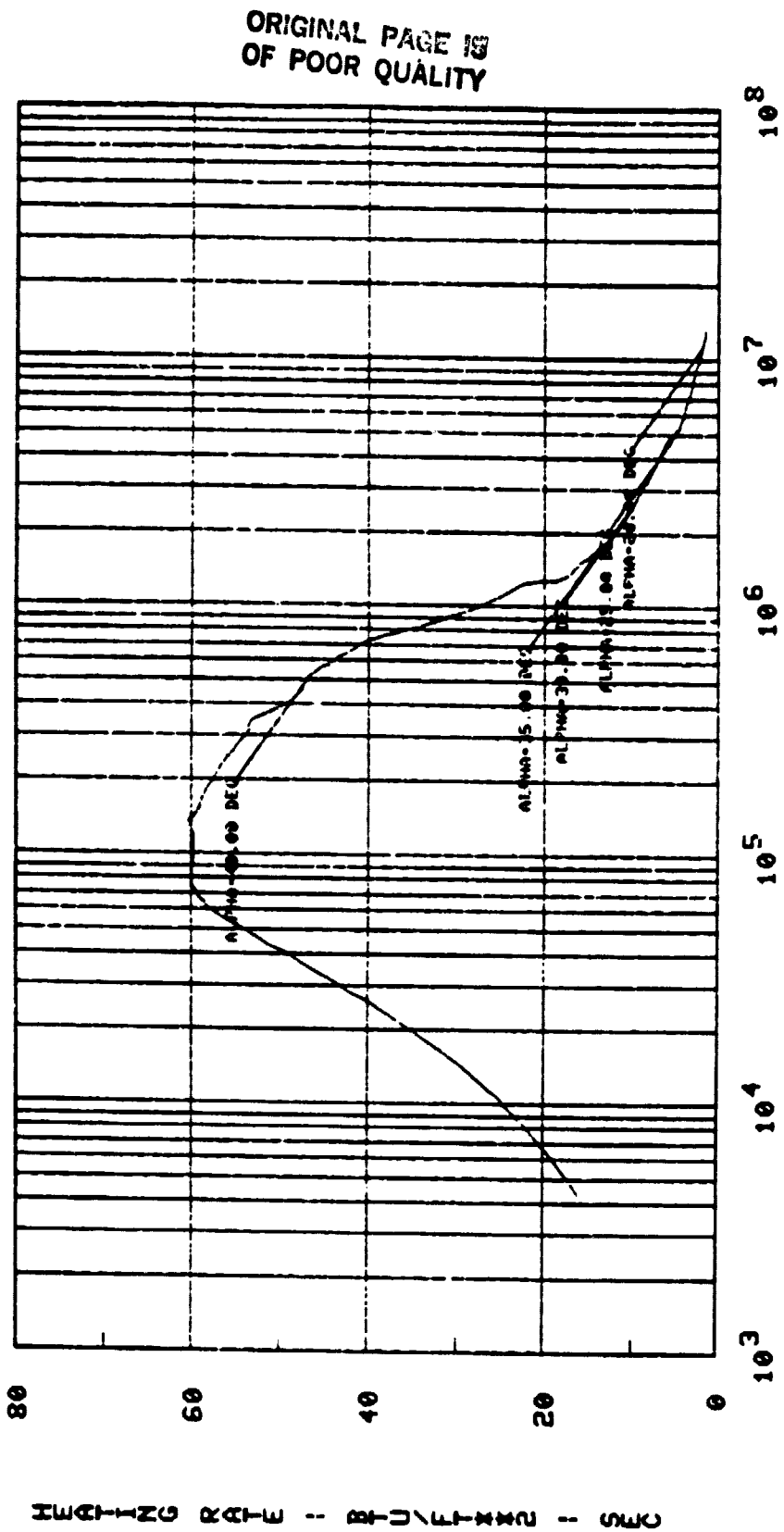


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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

REF \_\_\_\_\_ 150-1350 SEC



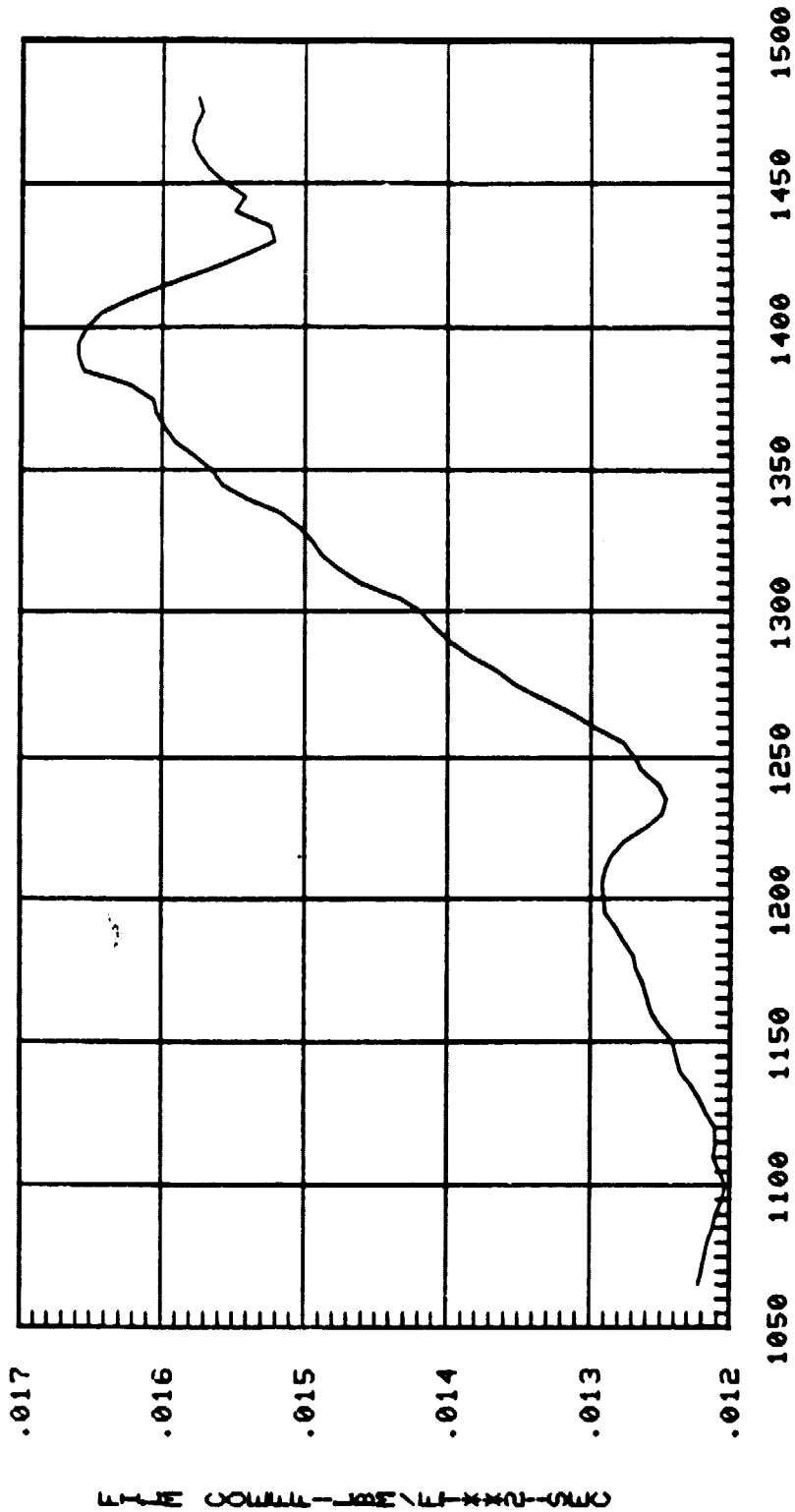
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REYNOLDS NUMBER (NS)

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\_\_\_\_\_ MREF



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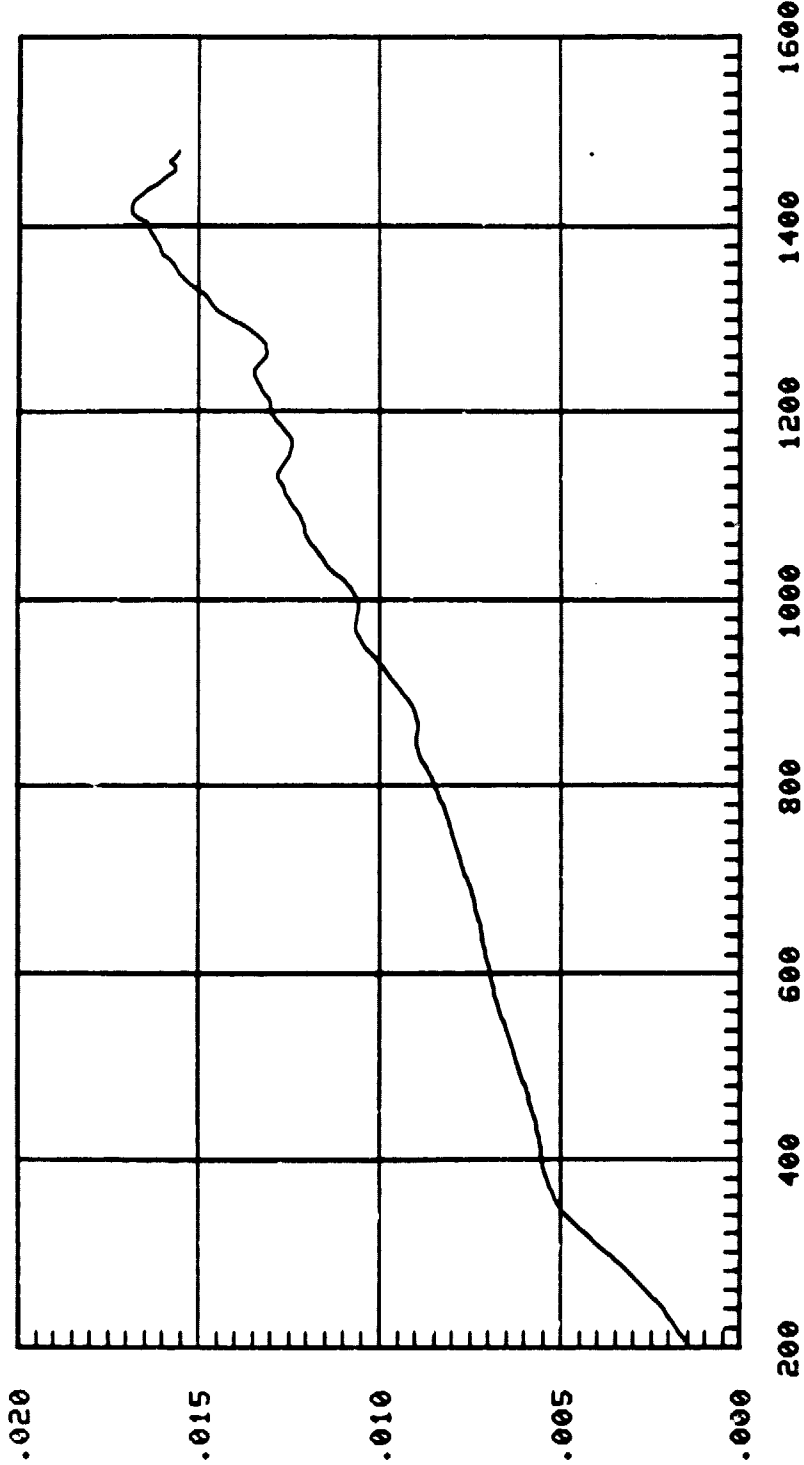
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04/21/83

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04/21/83

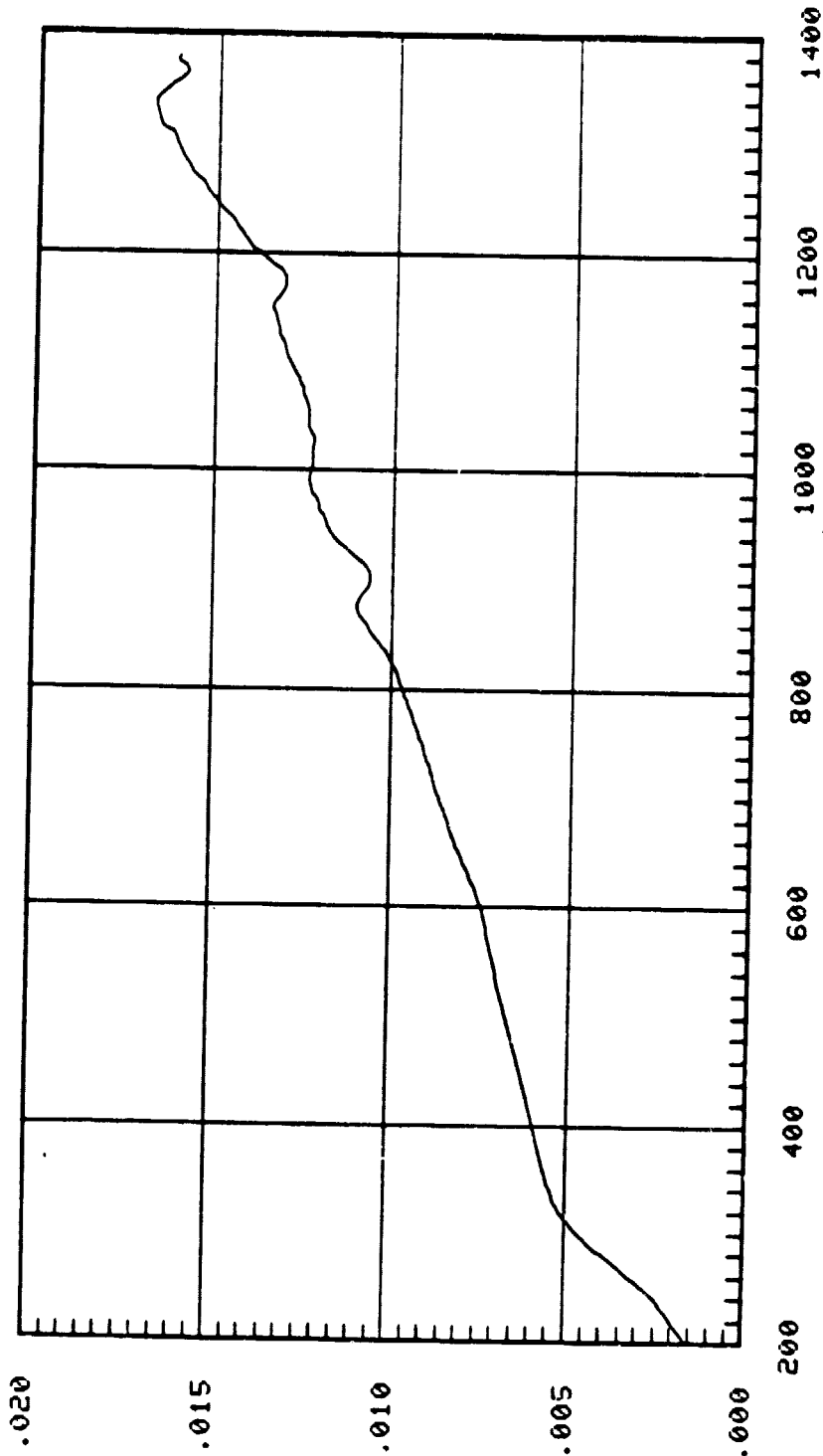
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JMS POD - FLIGHT PARAMETER COMPARISON

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STS-3 - 107 FT LENGTH OMS POD - FLIGHT PARAMETER COMPARISON

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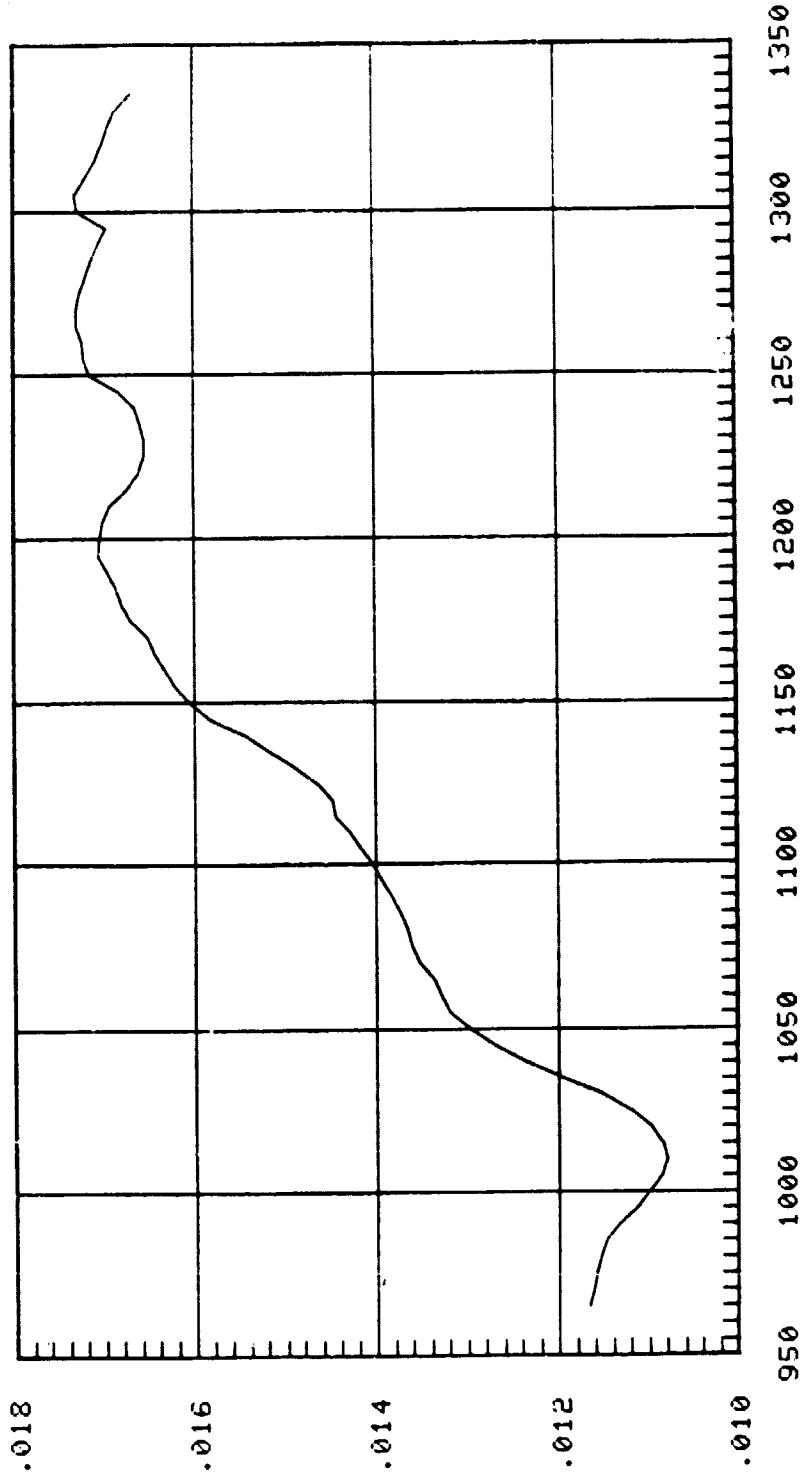
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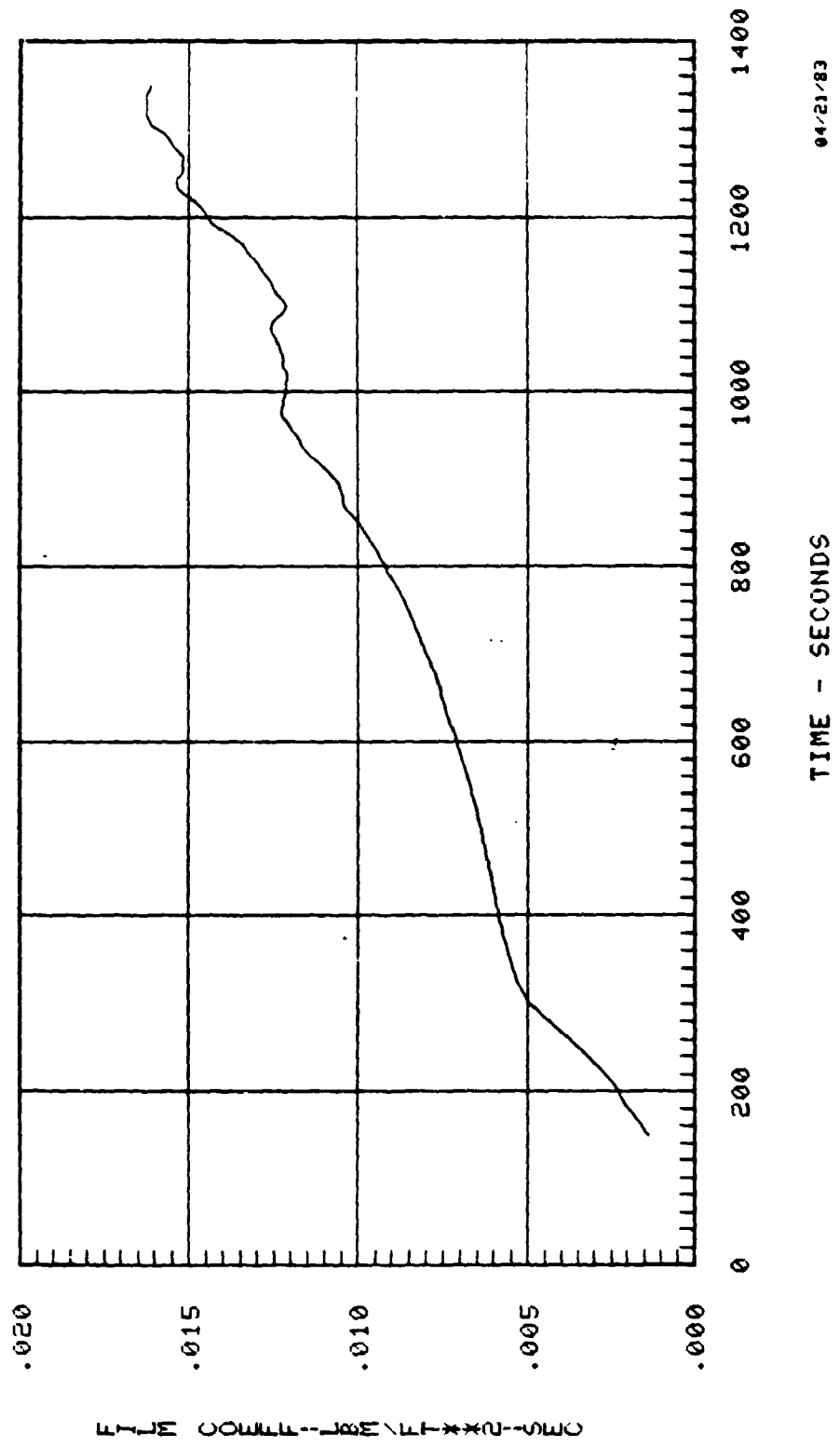
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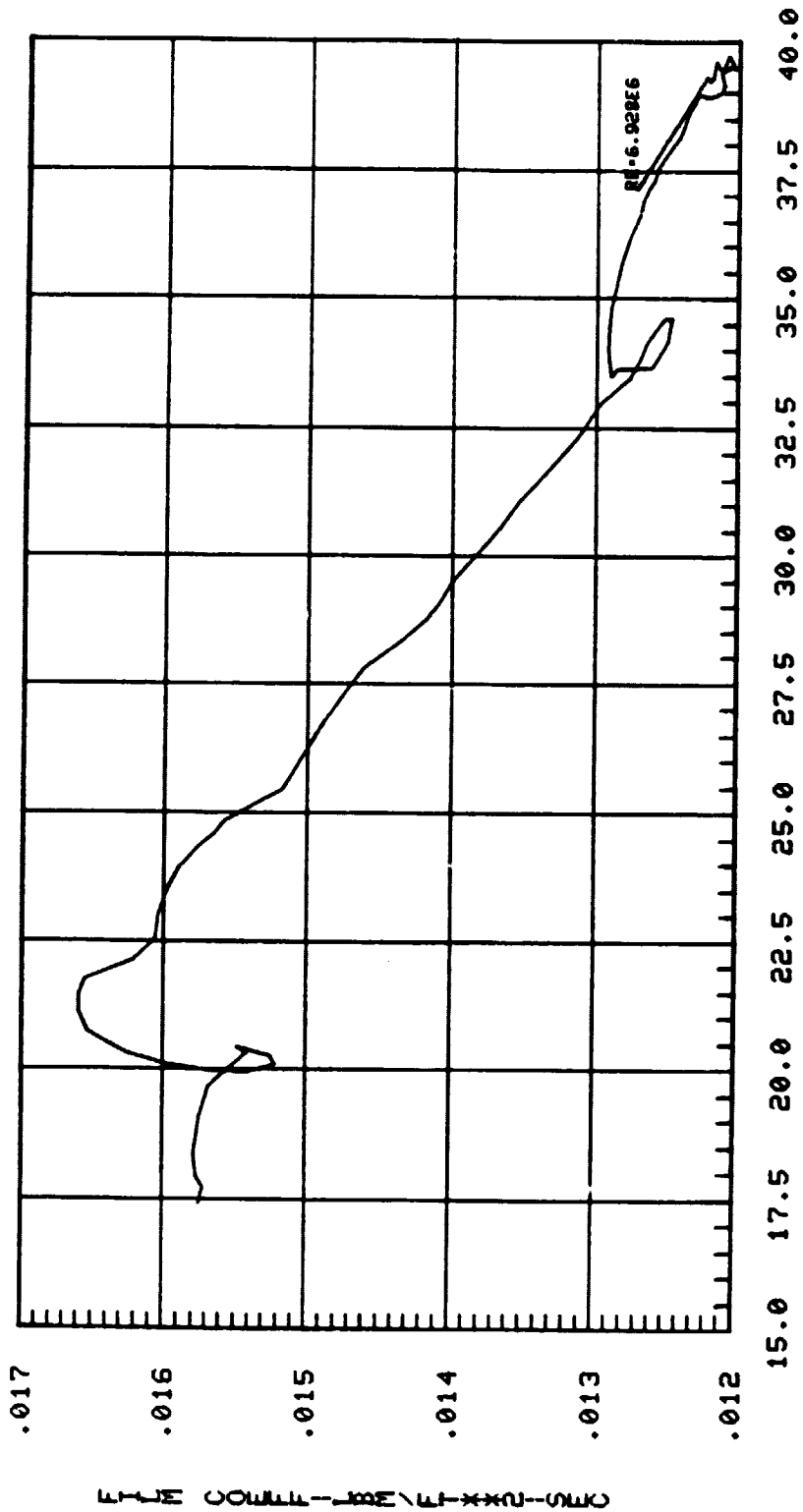
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1065-1480 SEC

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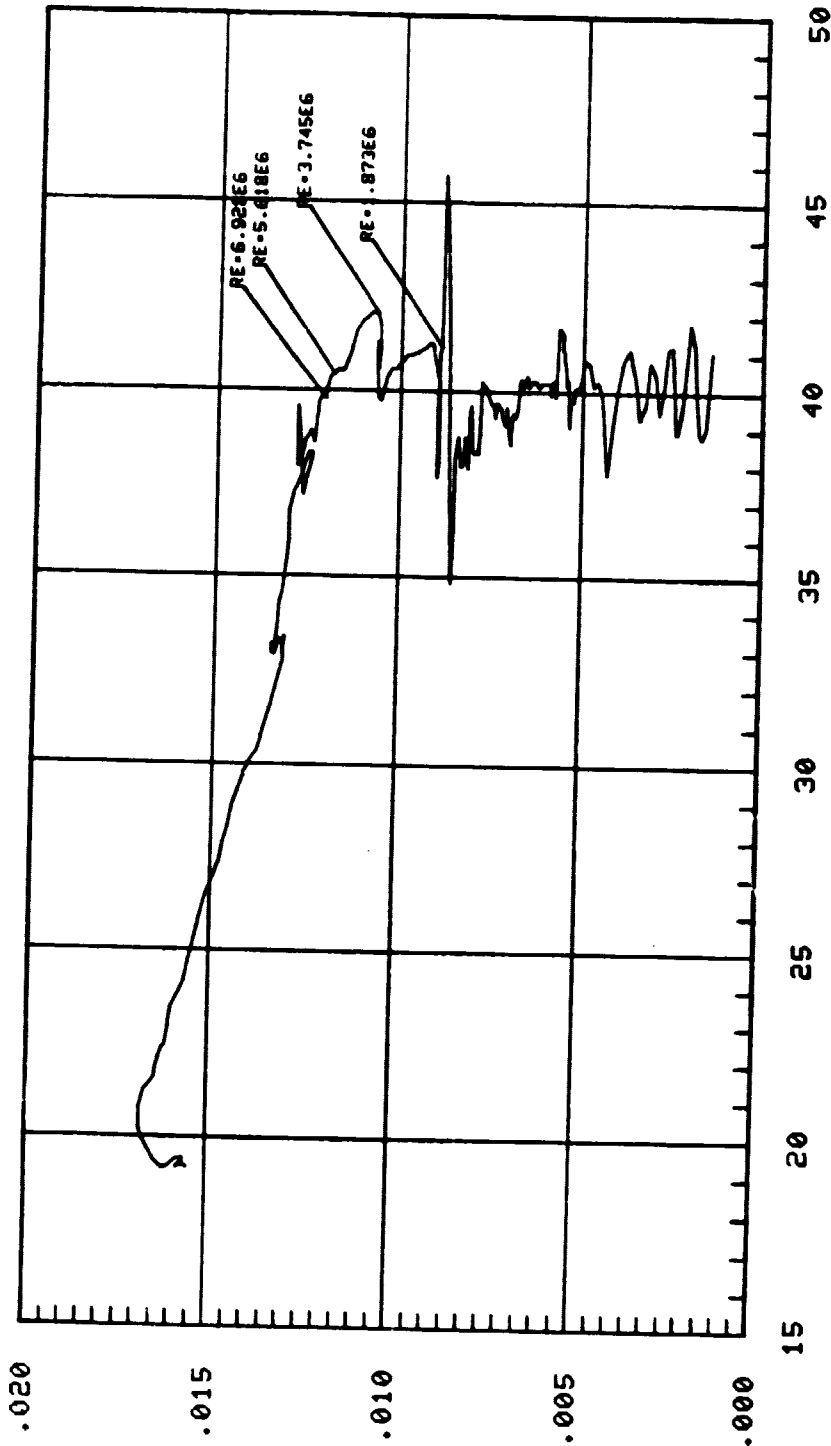
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ANGLE-OF-ATTACK - DEG

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200-1480 SEC

MREF



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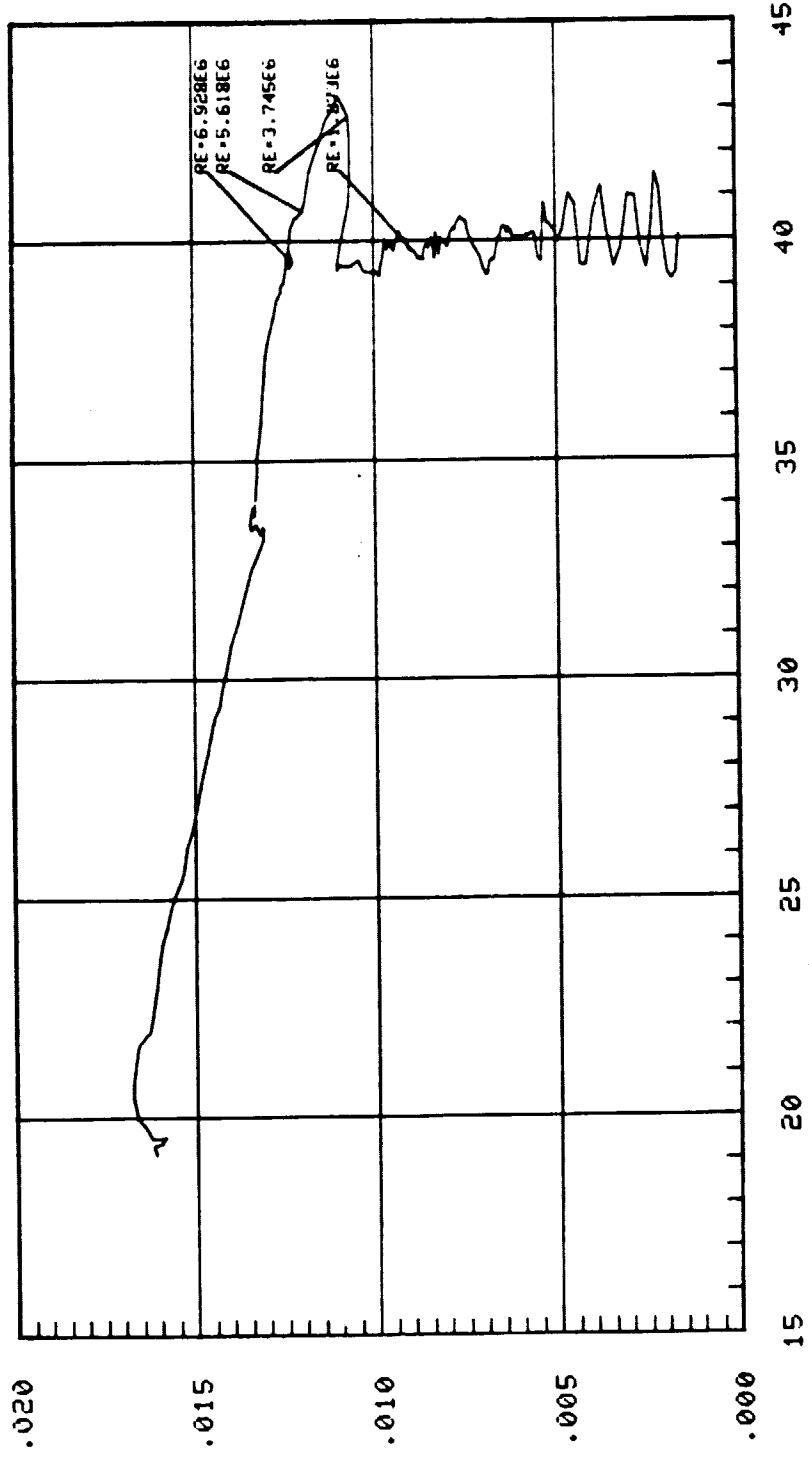
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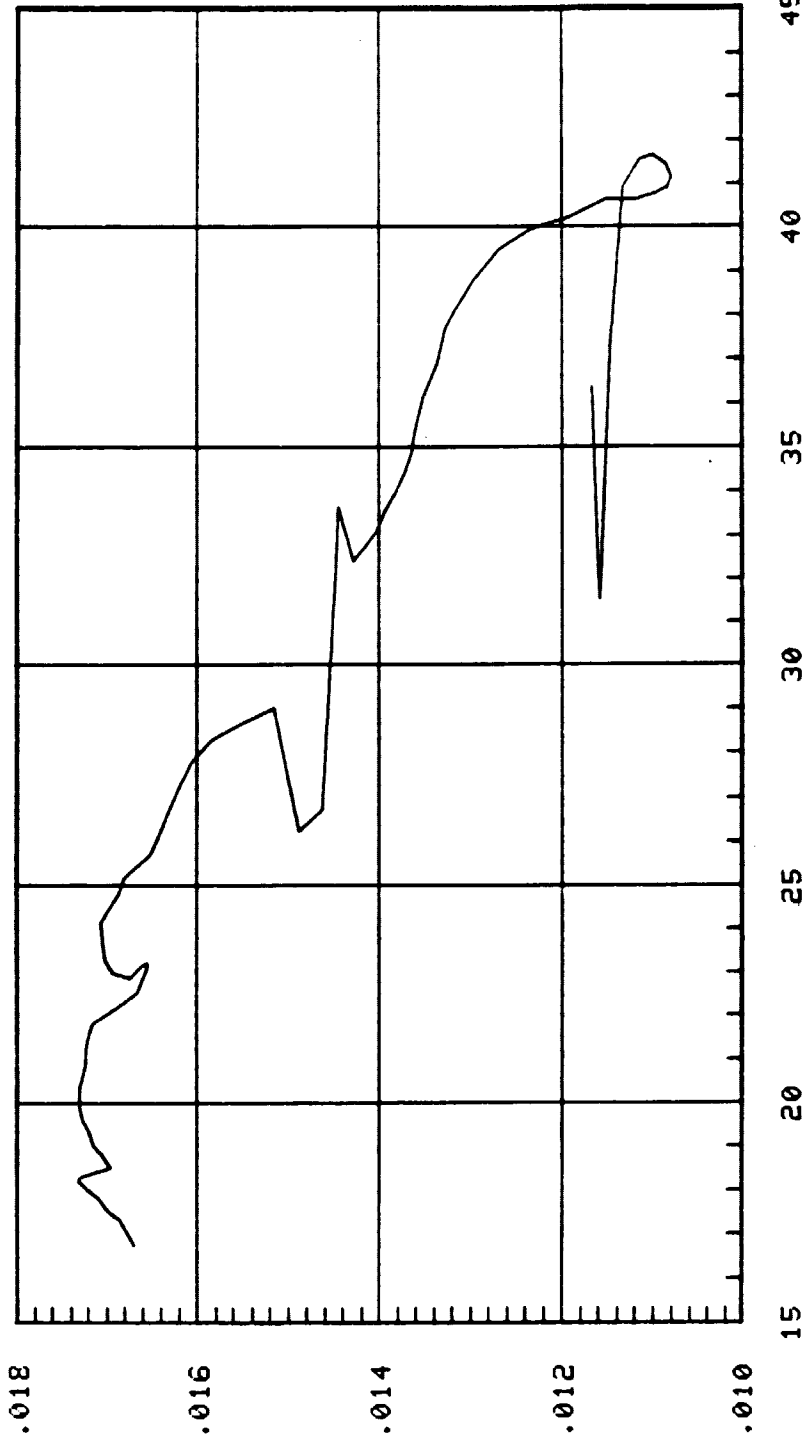


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965-1335 SEC

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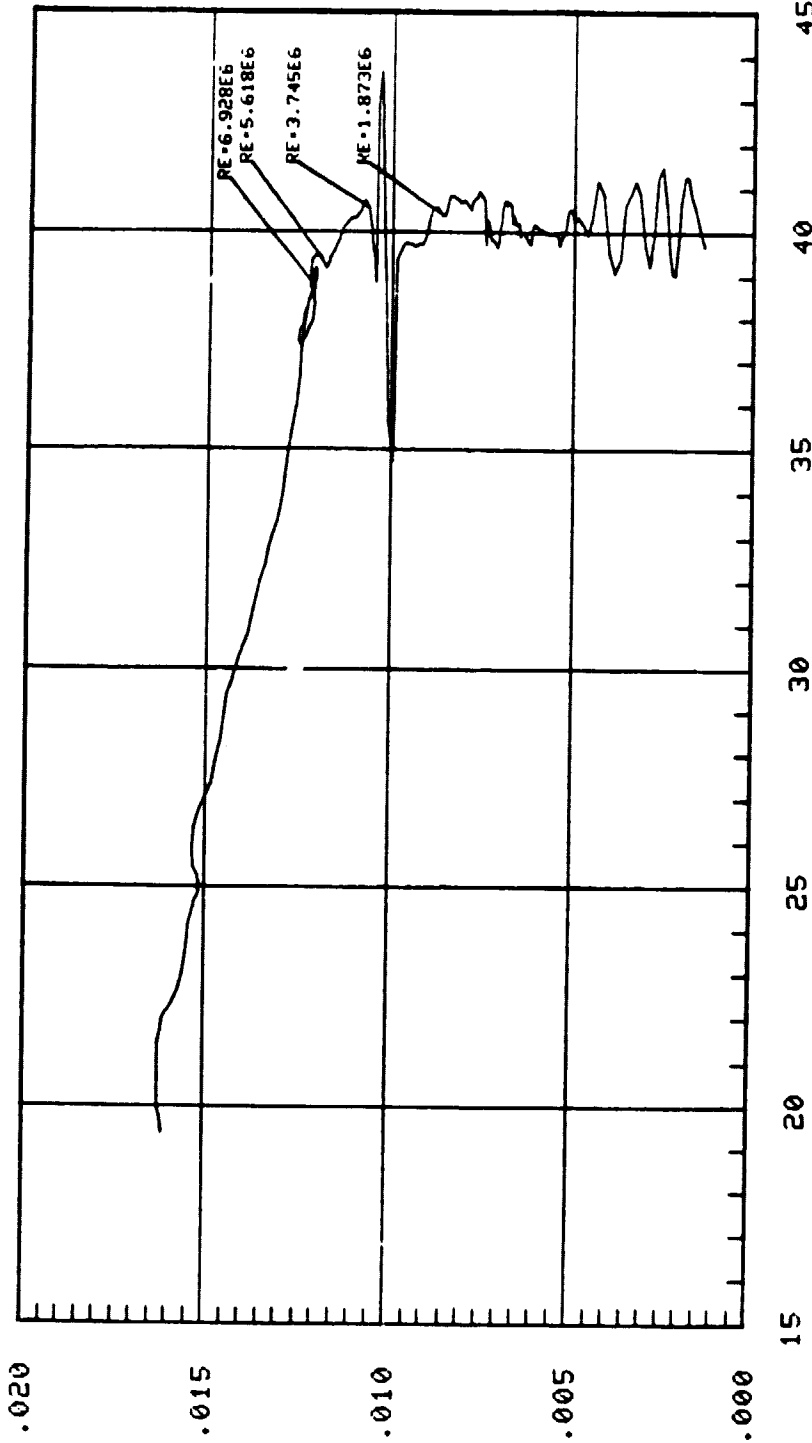
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ST5-5 107 FT LENGTH OMS POD / FLIGHT PAPHMETER COMPARISON

150-1350 SEC

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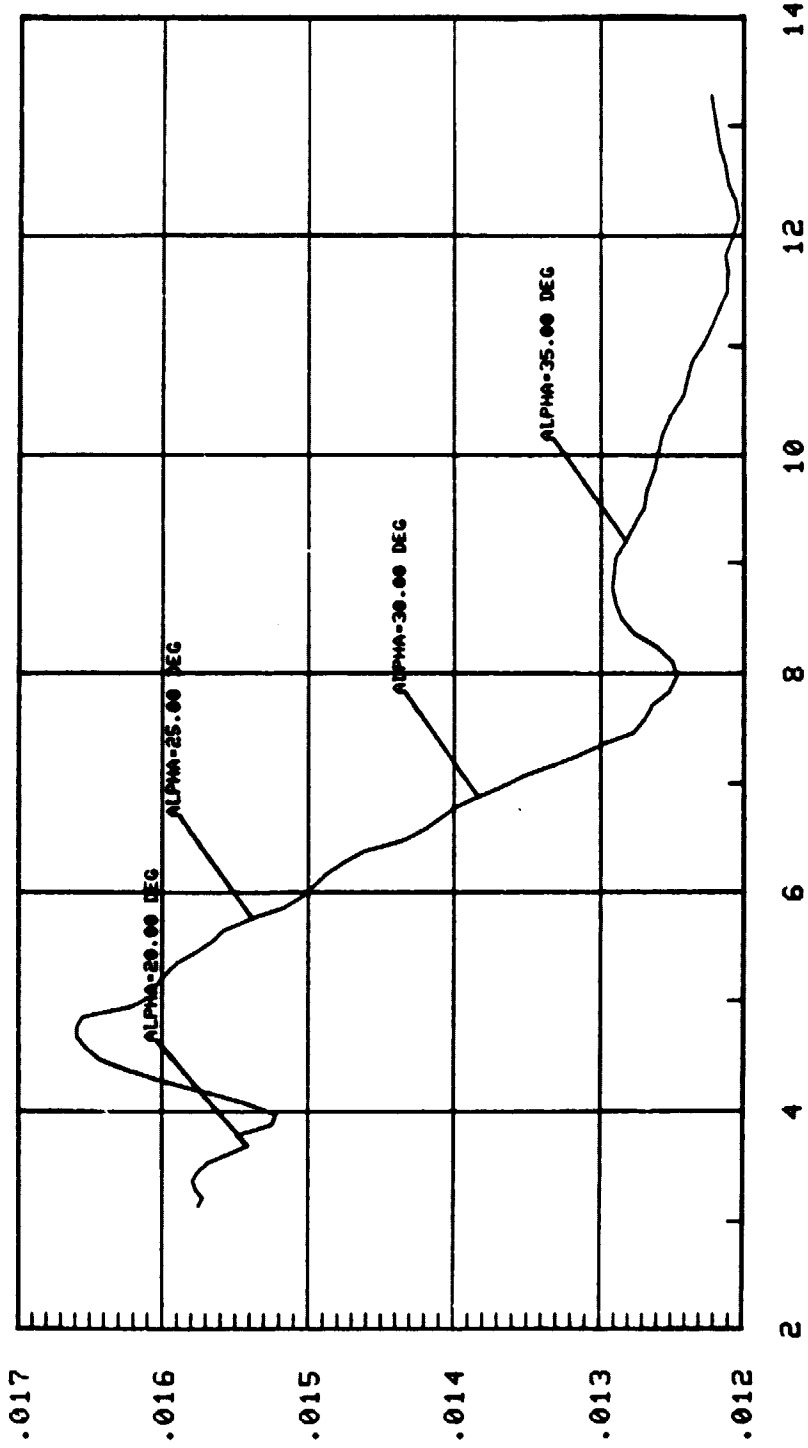


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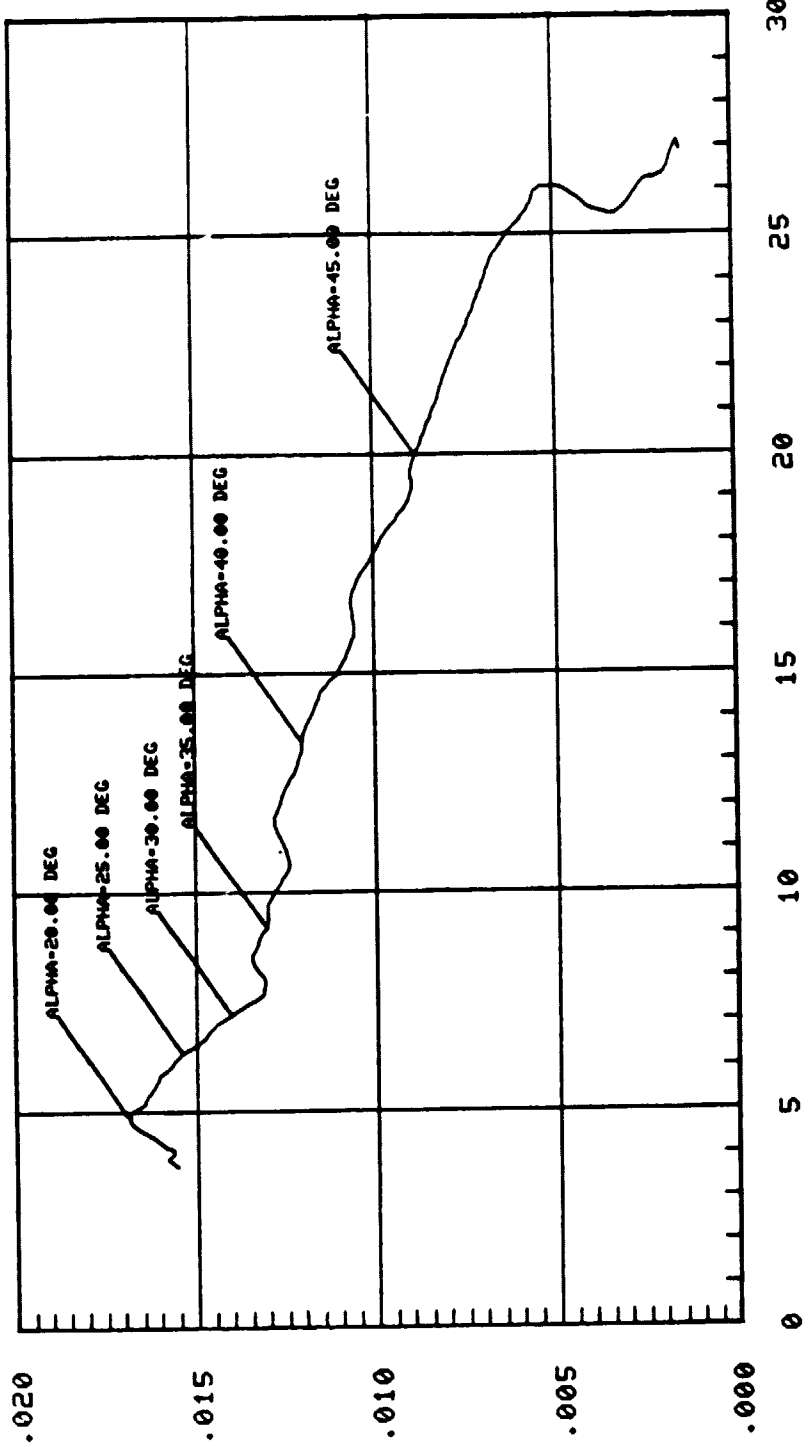
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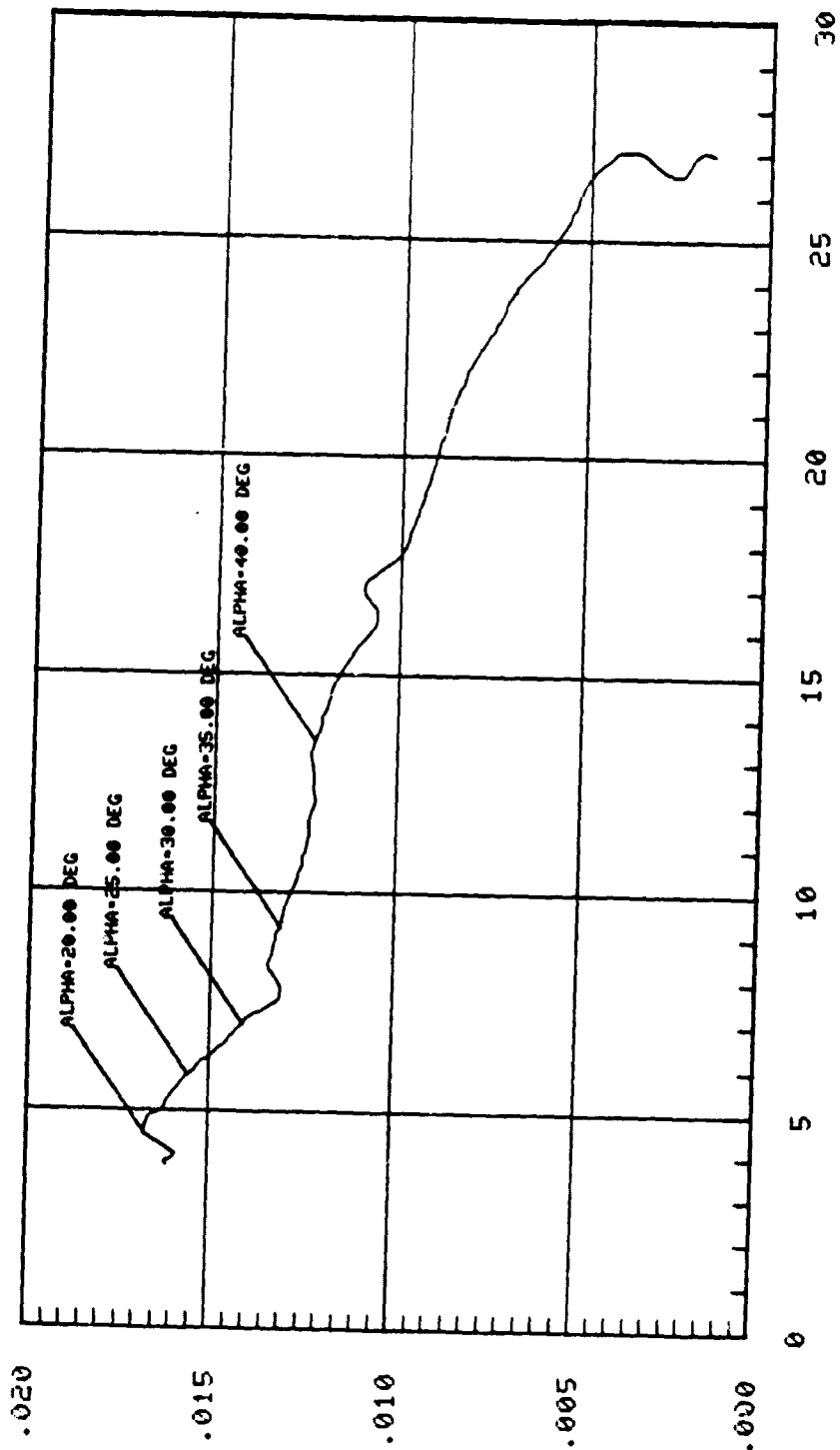
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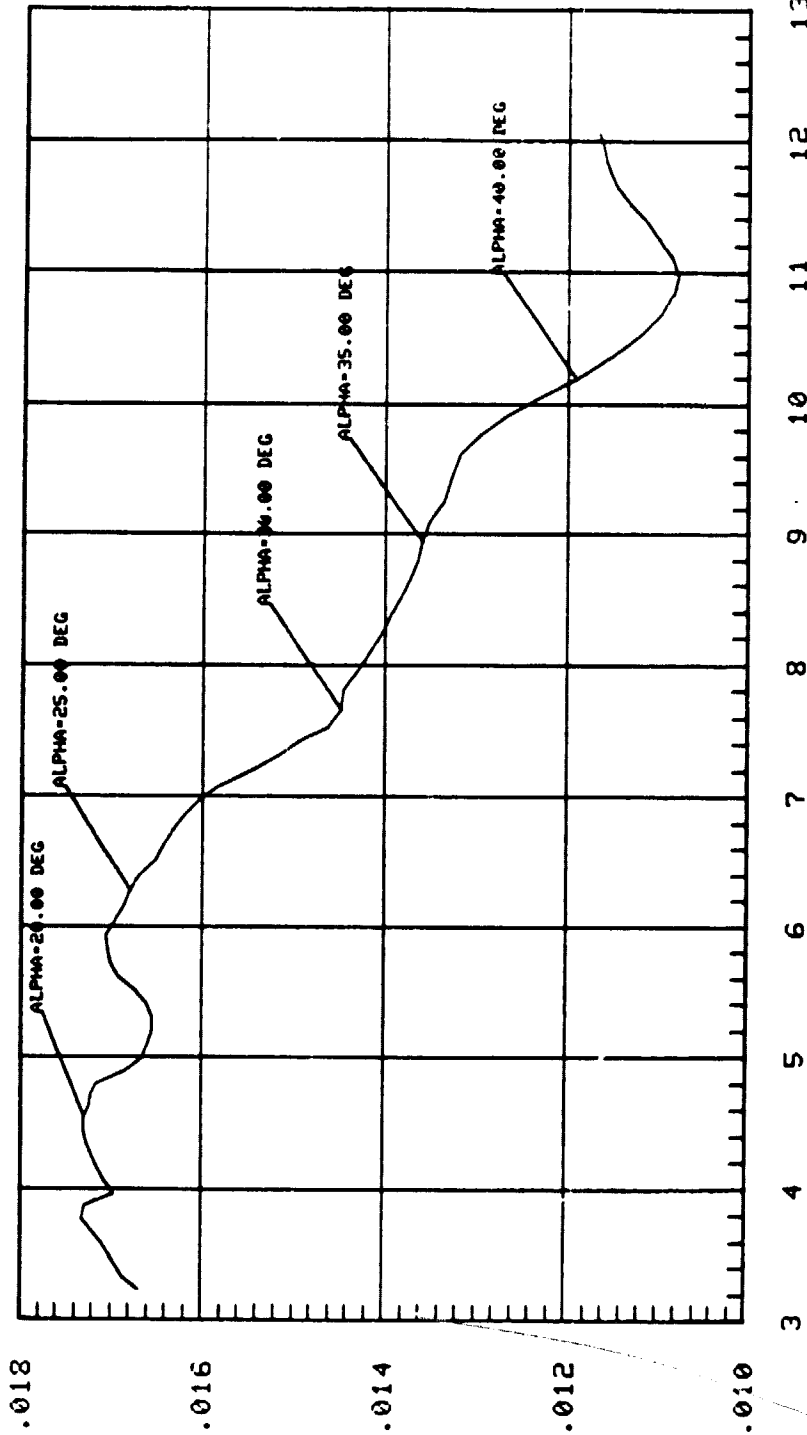


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965-1335 SEC

MREF



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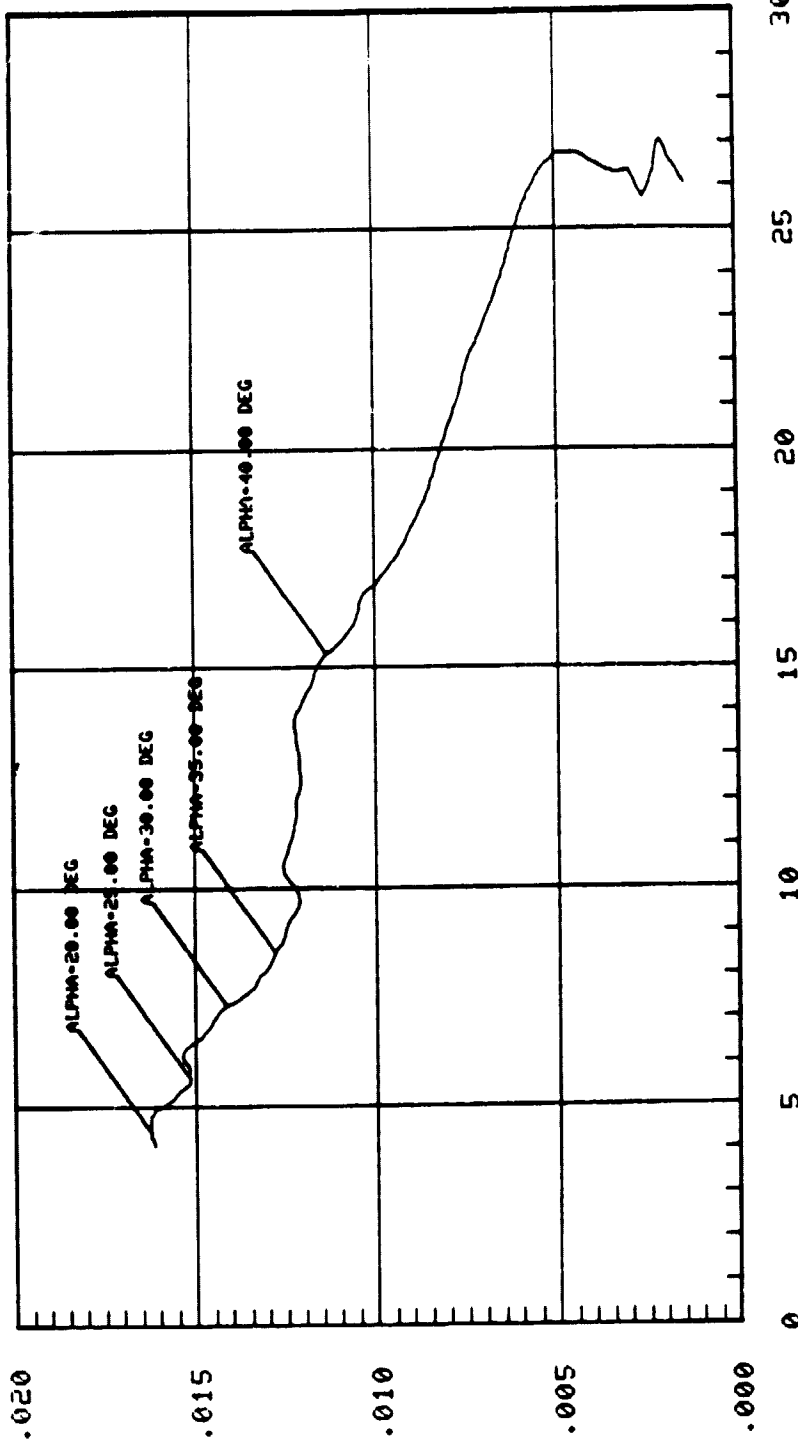
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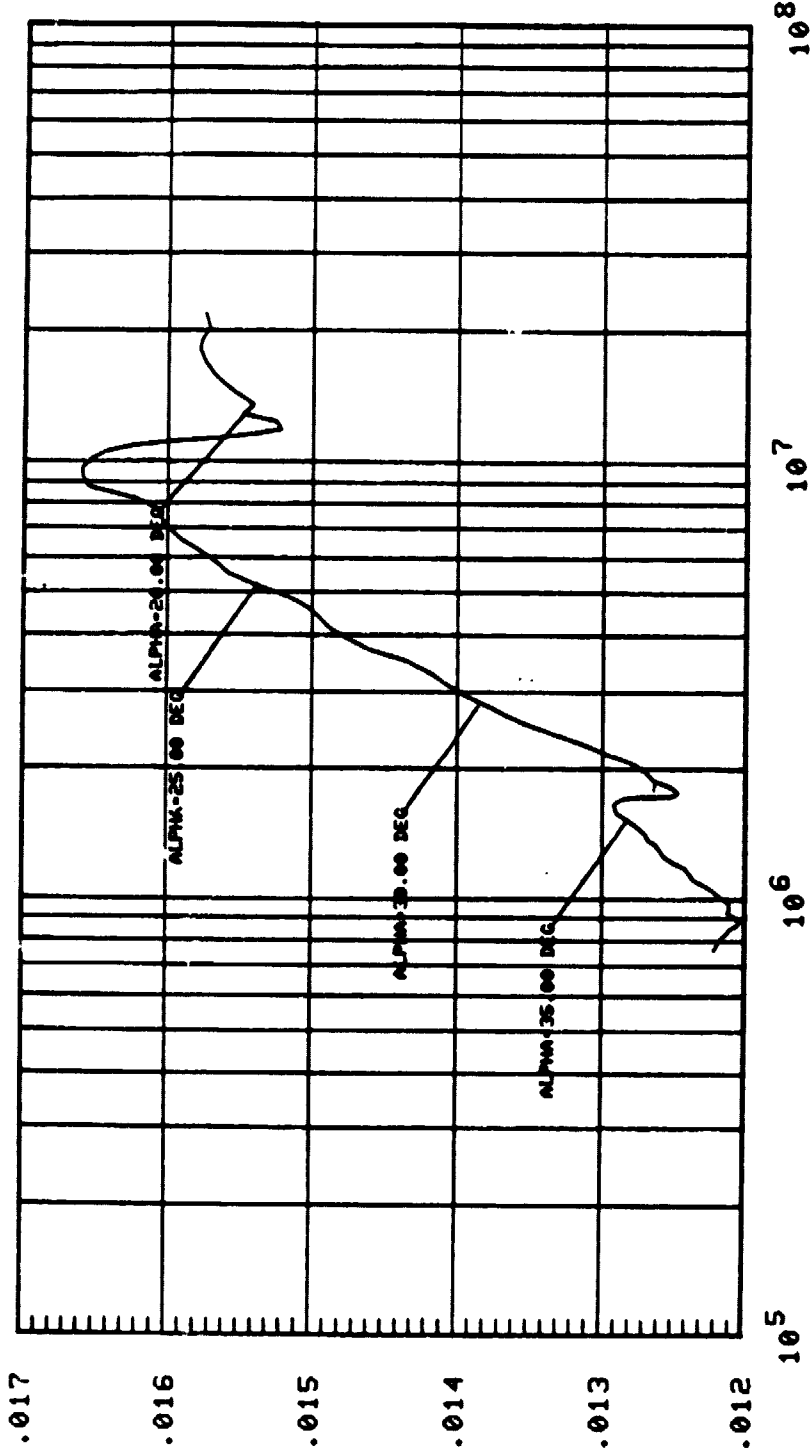
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REF \_\_\_\_\_ 1065-1480 SEC



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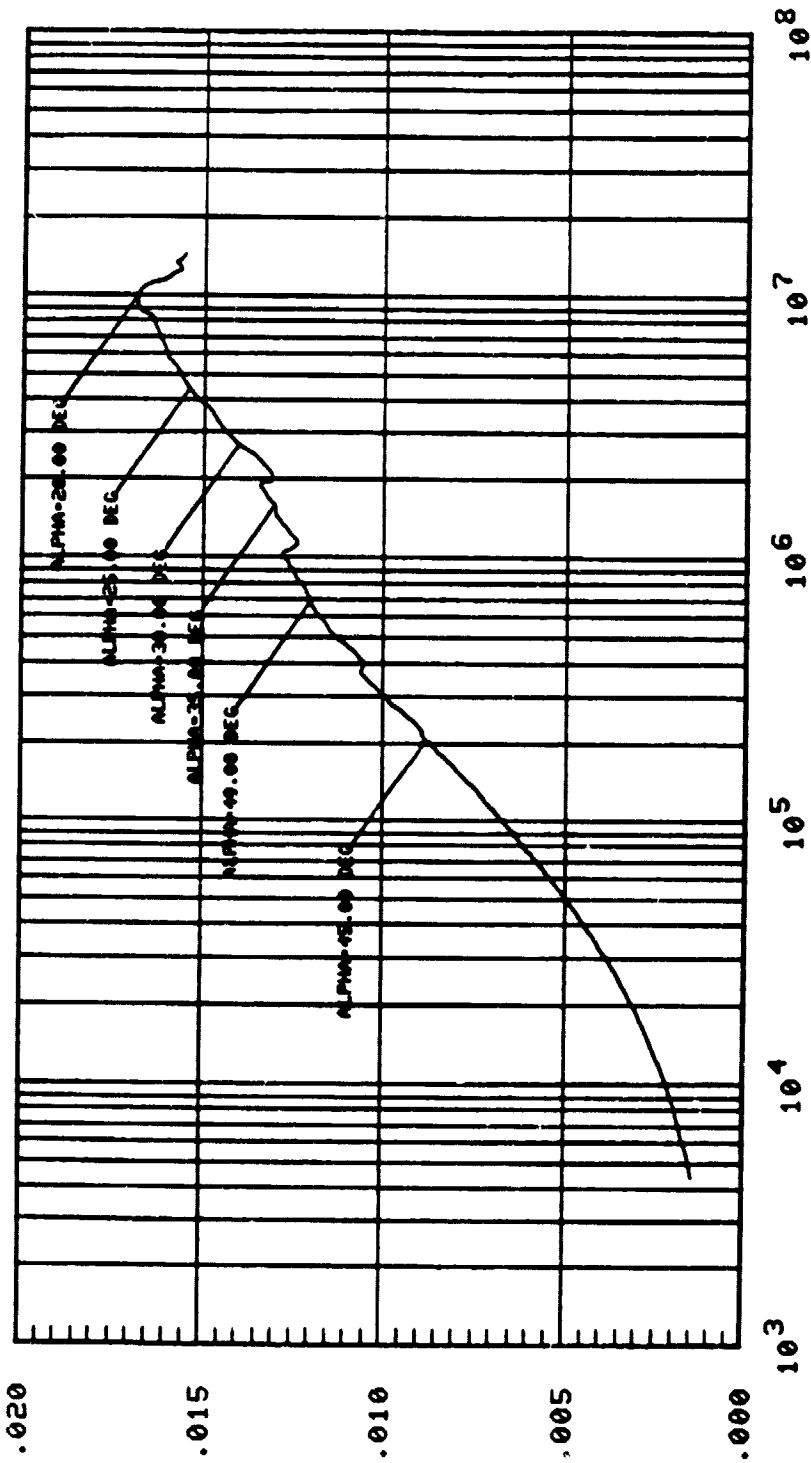
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ST5-2 (107 FT LENGTH CMS FOD) FLIGHT PARAMETER COMPARISON

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FORM COMPLETION INSTRUCTIONS

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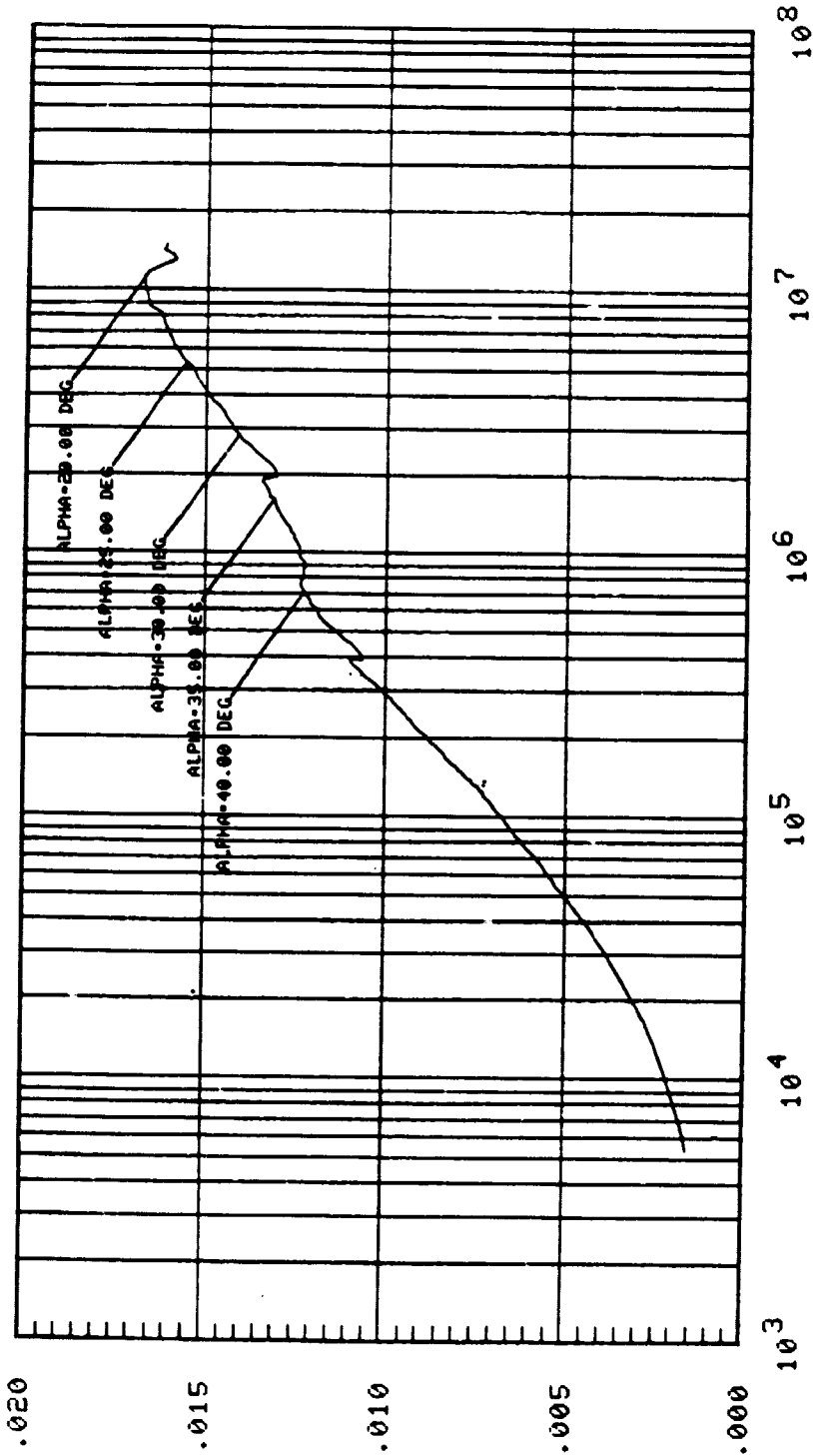
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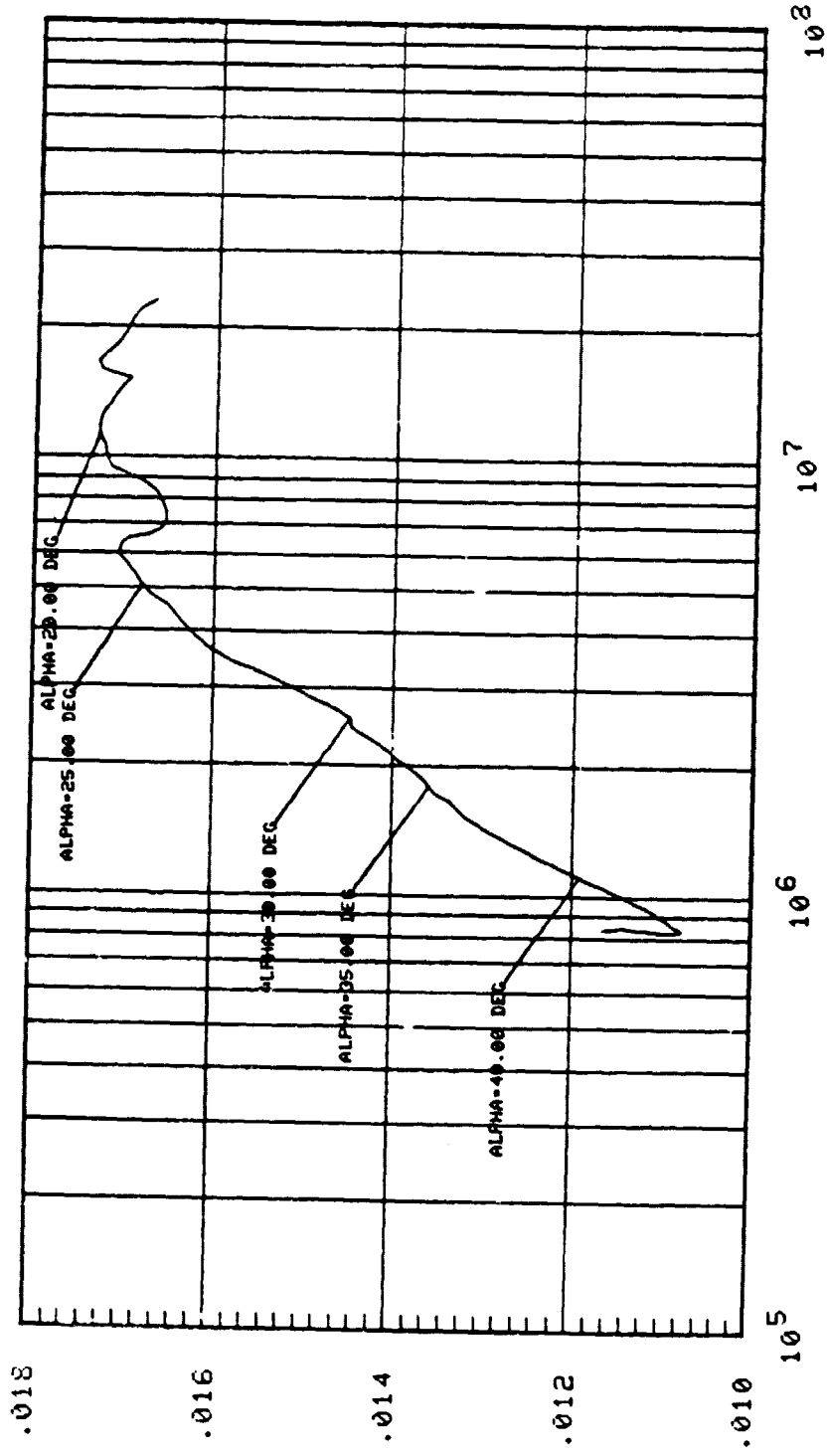
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REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH) OMS POD - FLIGHT PARAMETER COMPARISON

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965-1335 SEC



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**APPENDIX B**

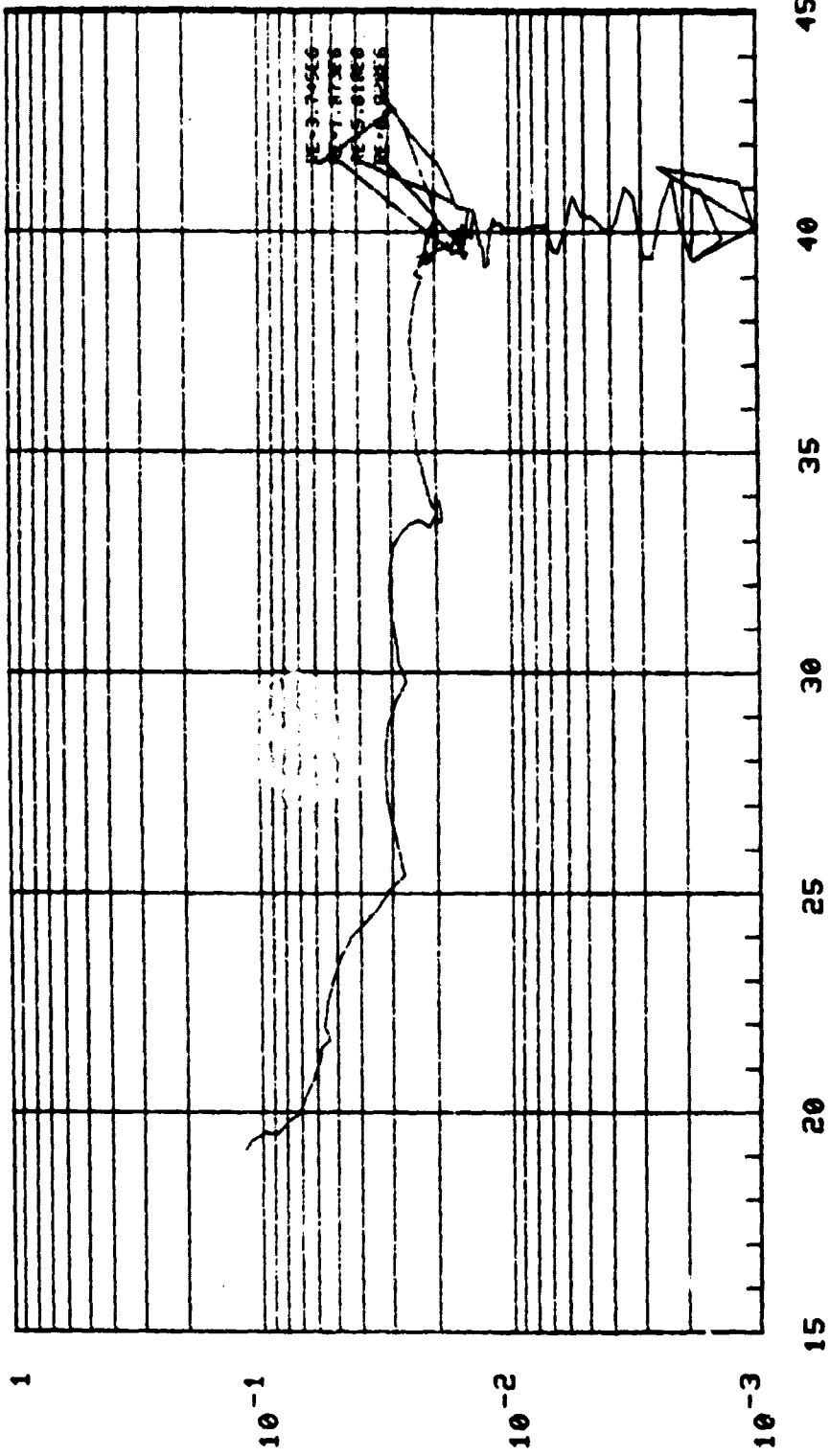
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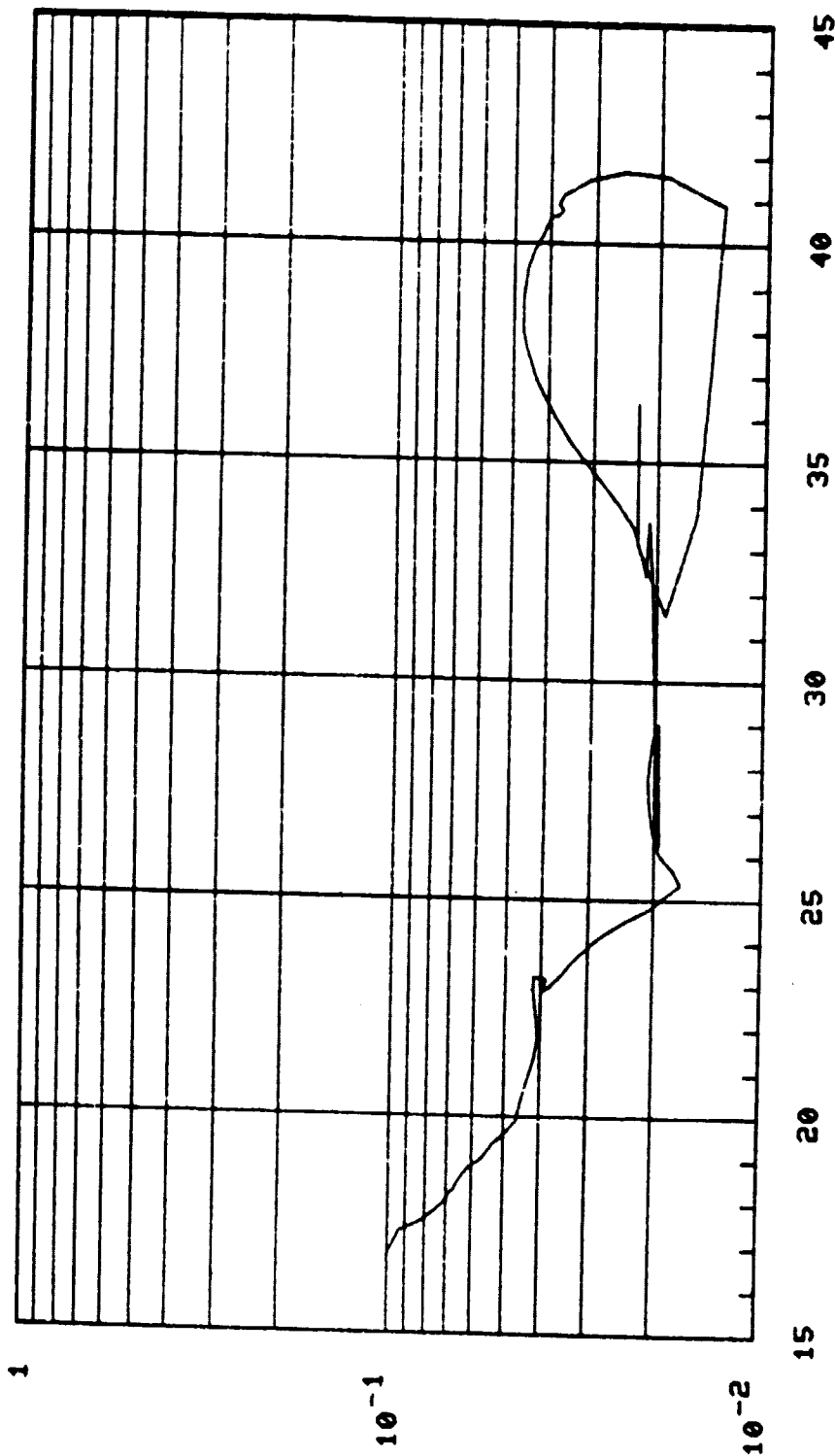


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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9219A/H-REF 965-1335 SEC



TIME CORRECTION - H/H-REF

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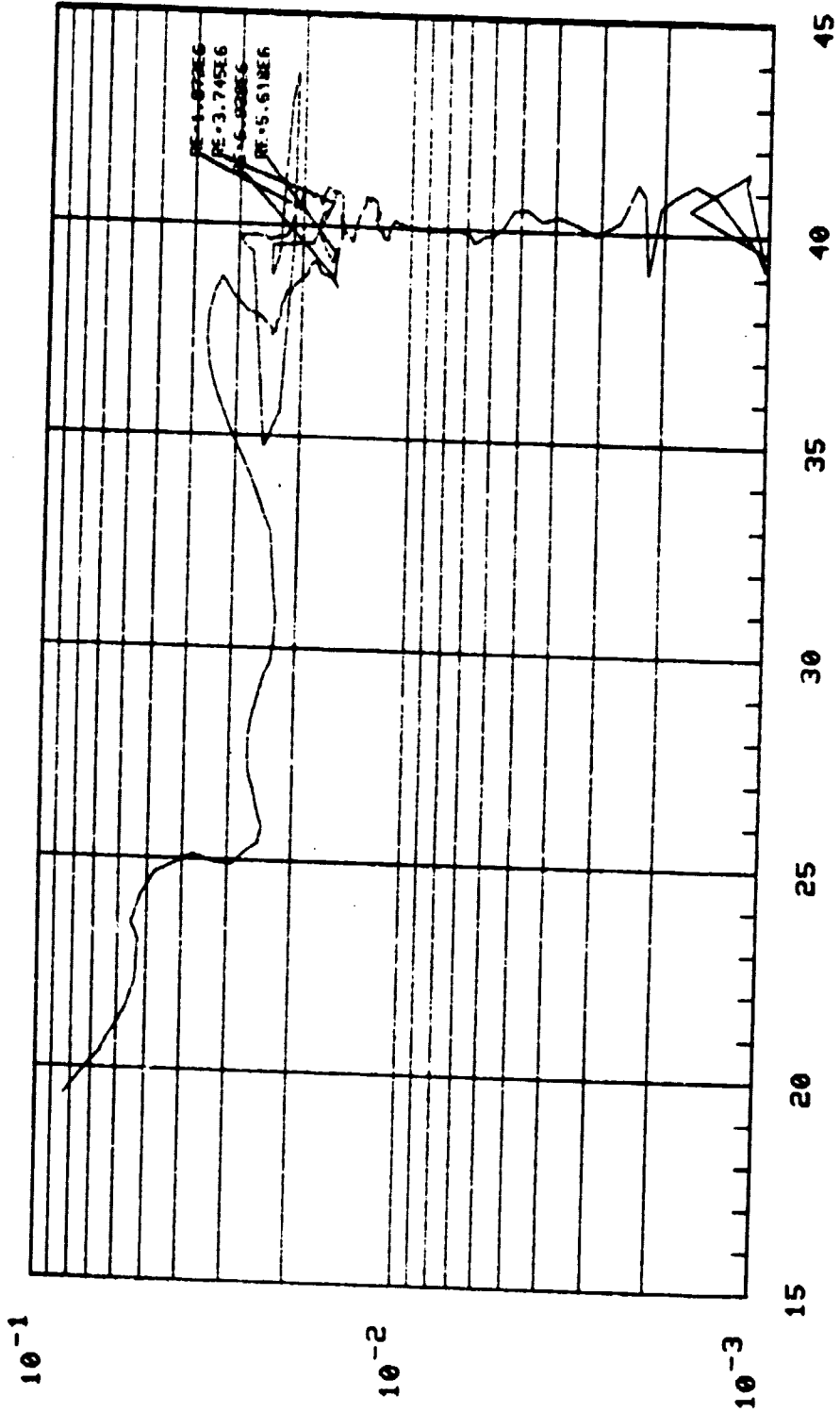
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U07T9219A/H-REF 150-1350 SEC



U07T9219A/H-REF

B-3

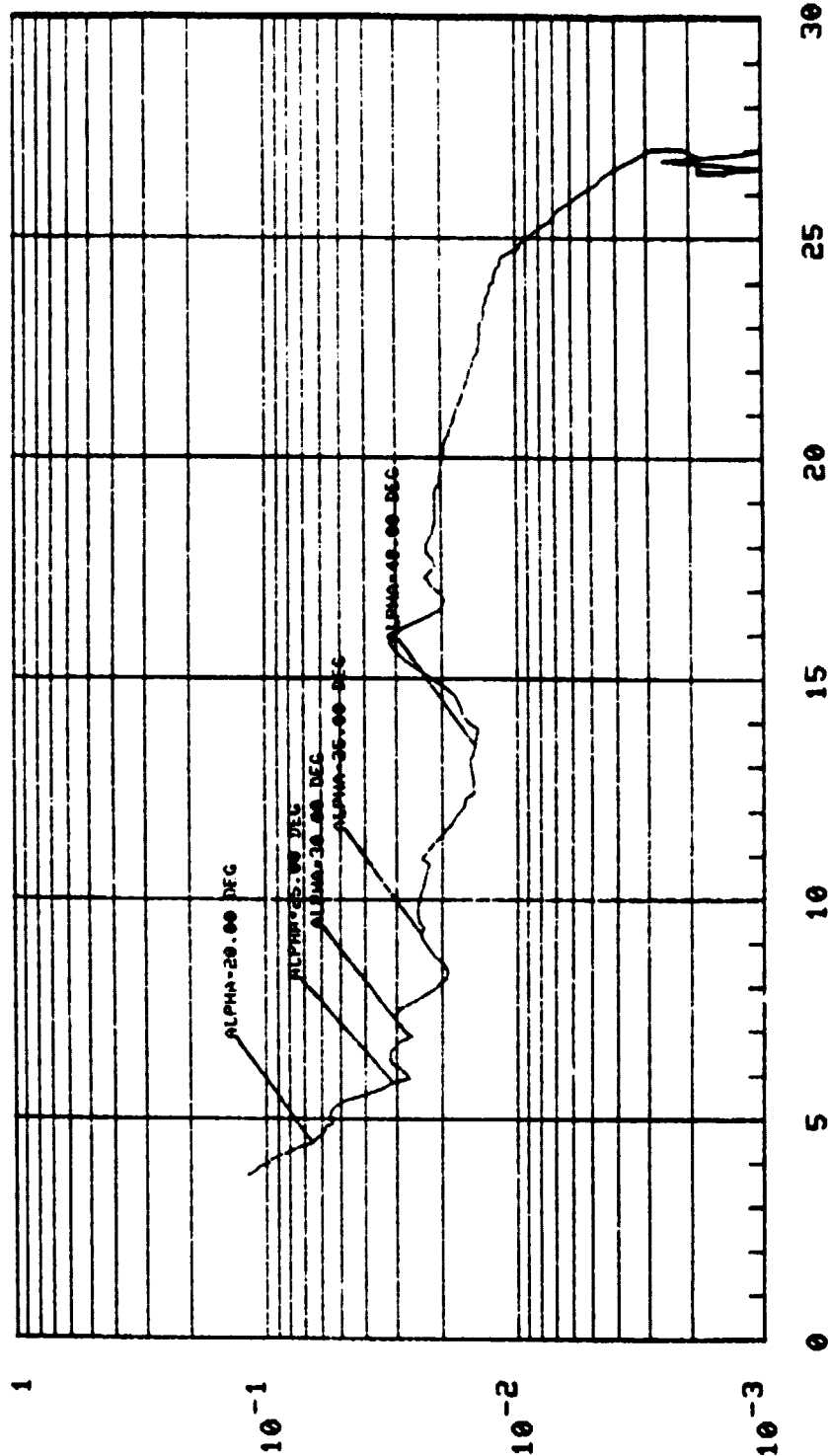
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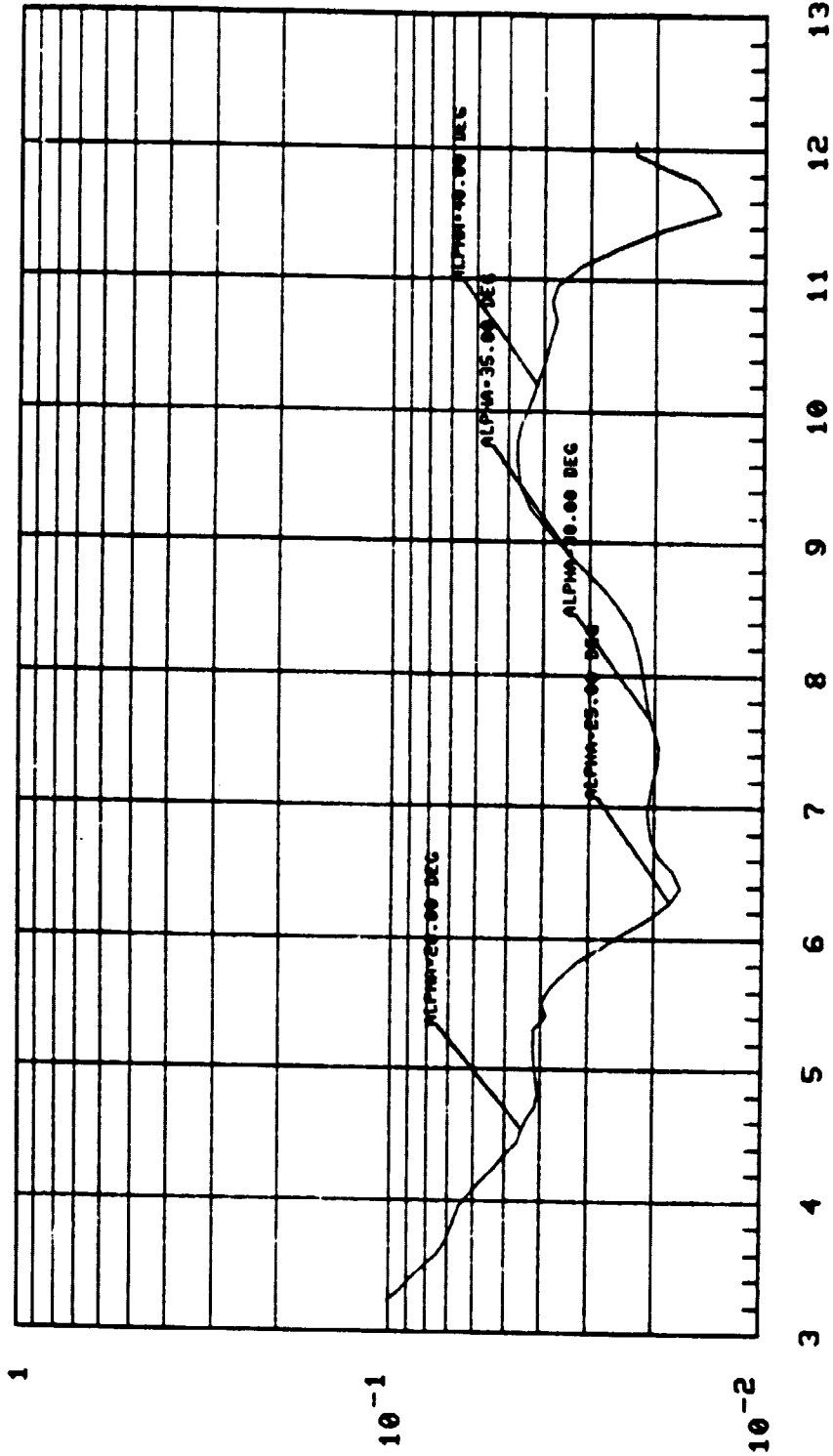
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9219A/H-REF 965-1335 SEC



TIME CORRECTION - H/I-REF

B-5

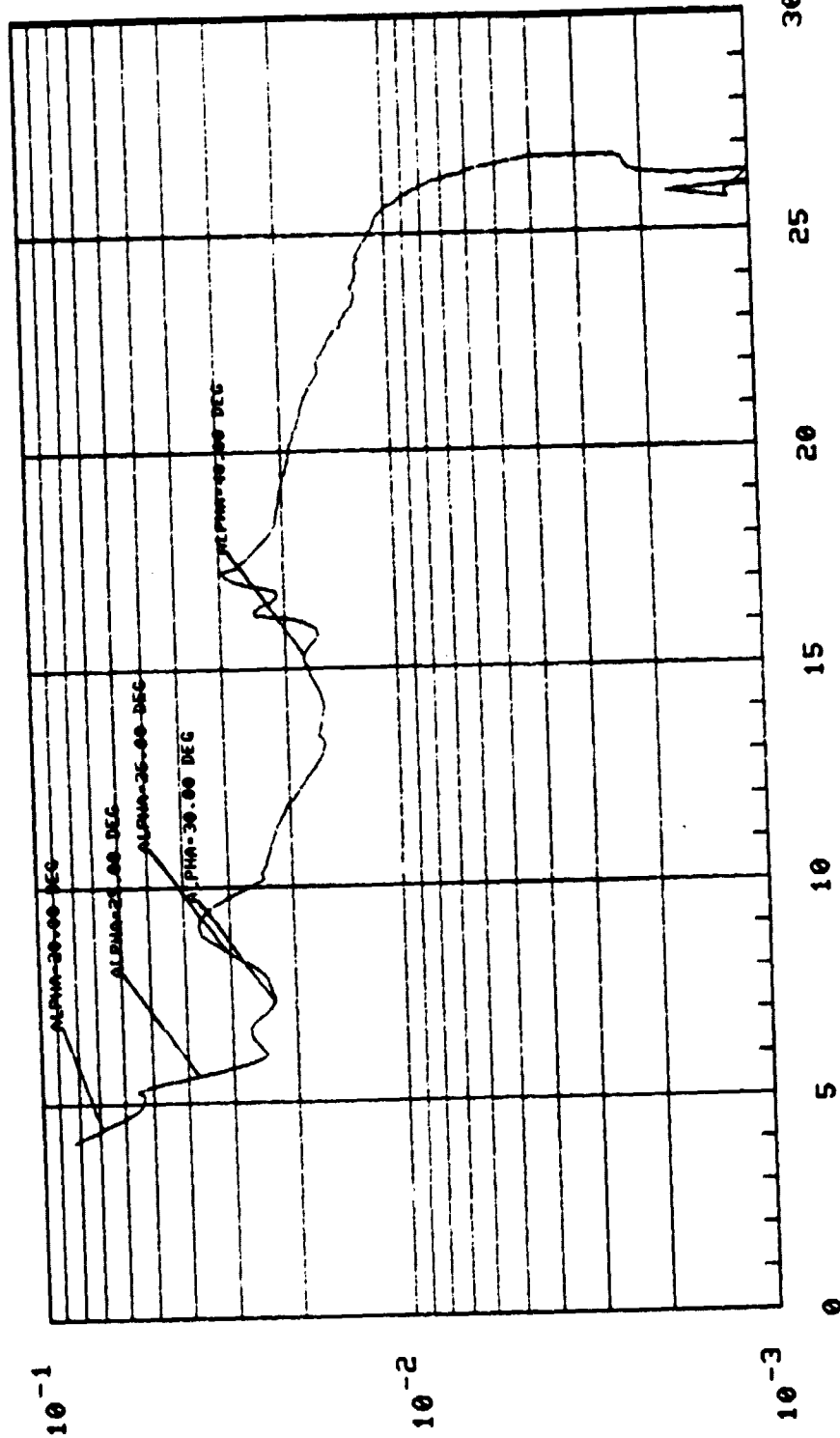
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U07T9219A/H-REF 150-1350 SEC



FLIGHT PARAMETER COMPARISON

B-6

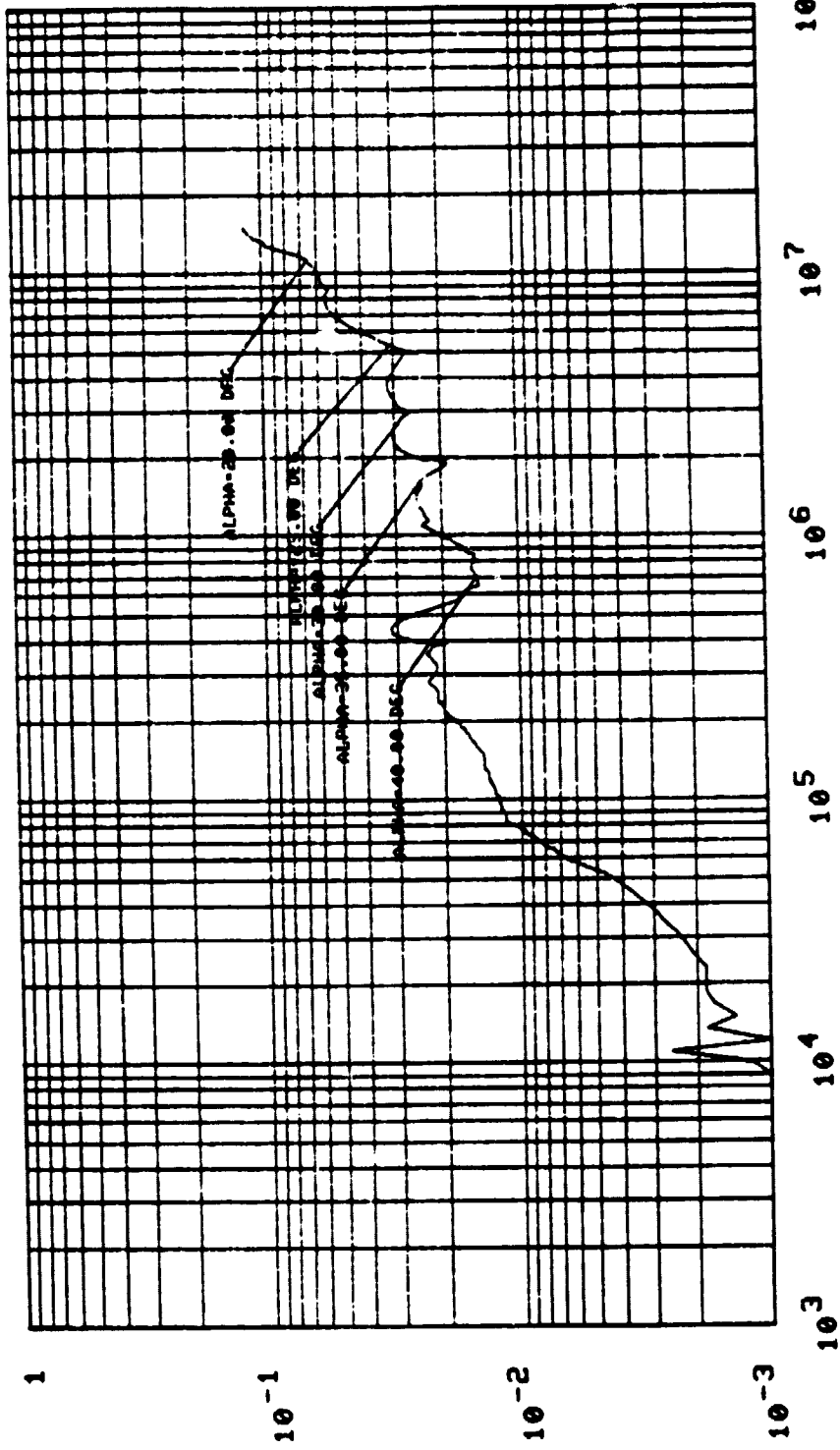
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9219A/H-REF 200-1380 SEC



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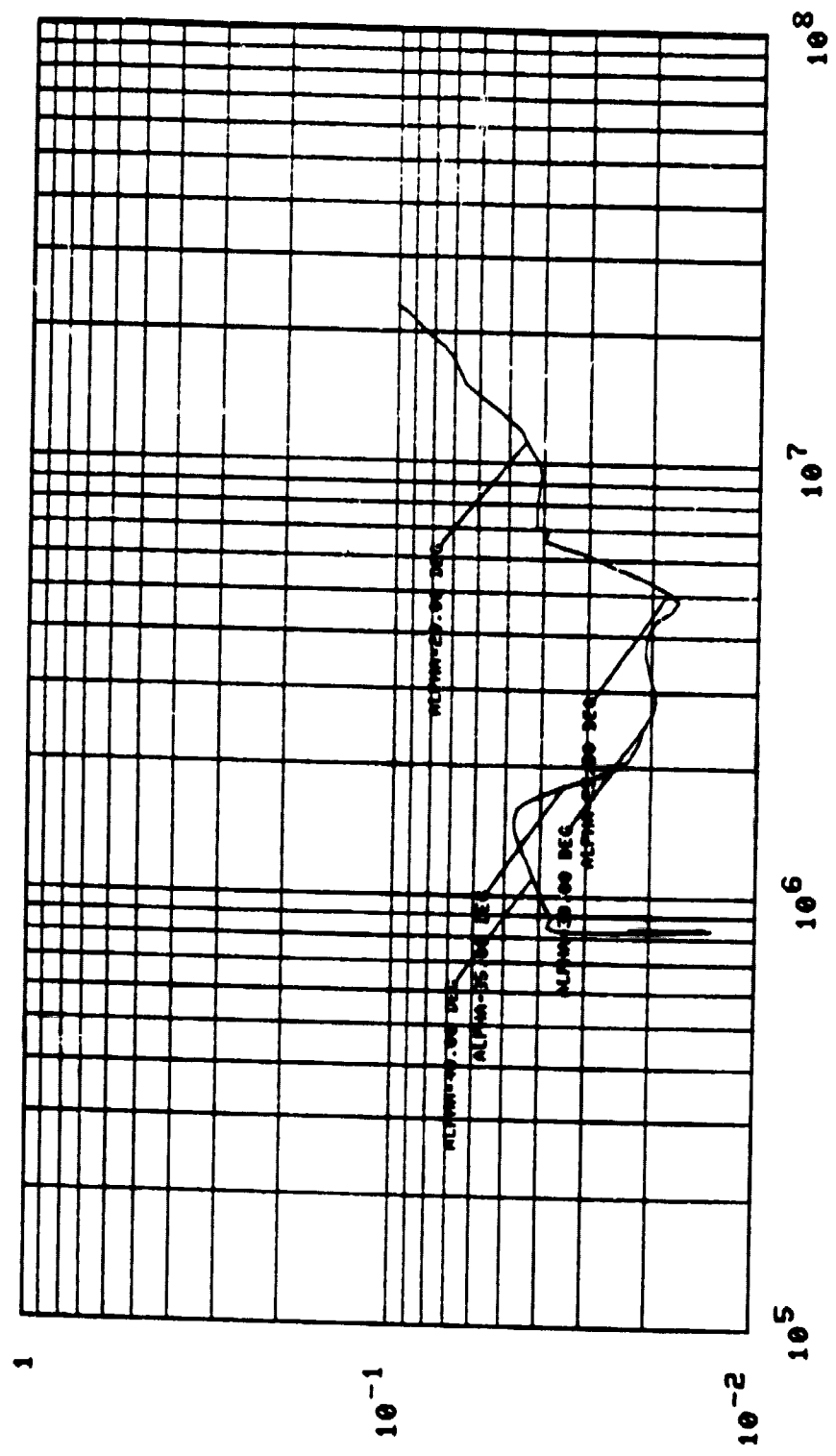
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REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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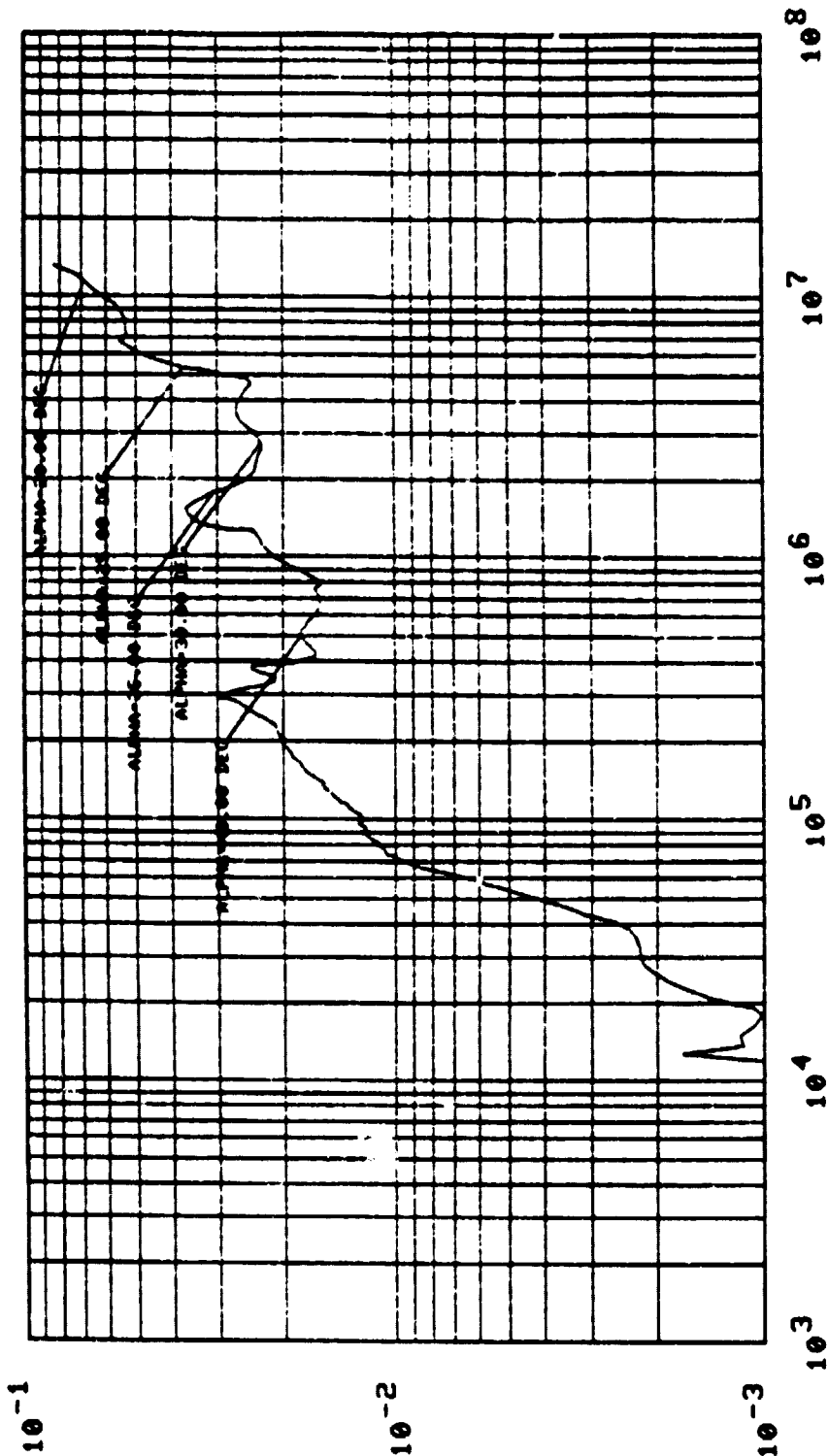


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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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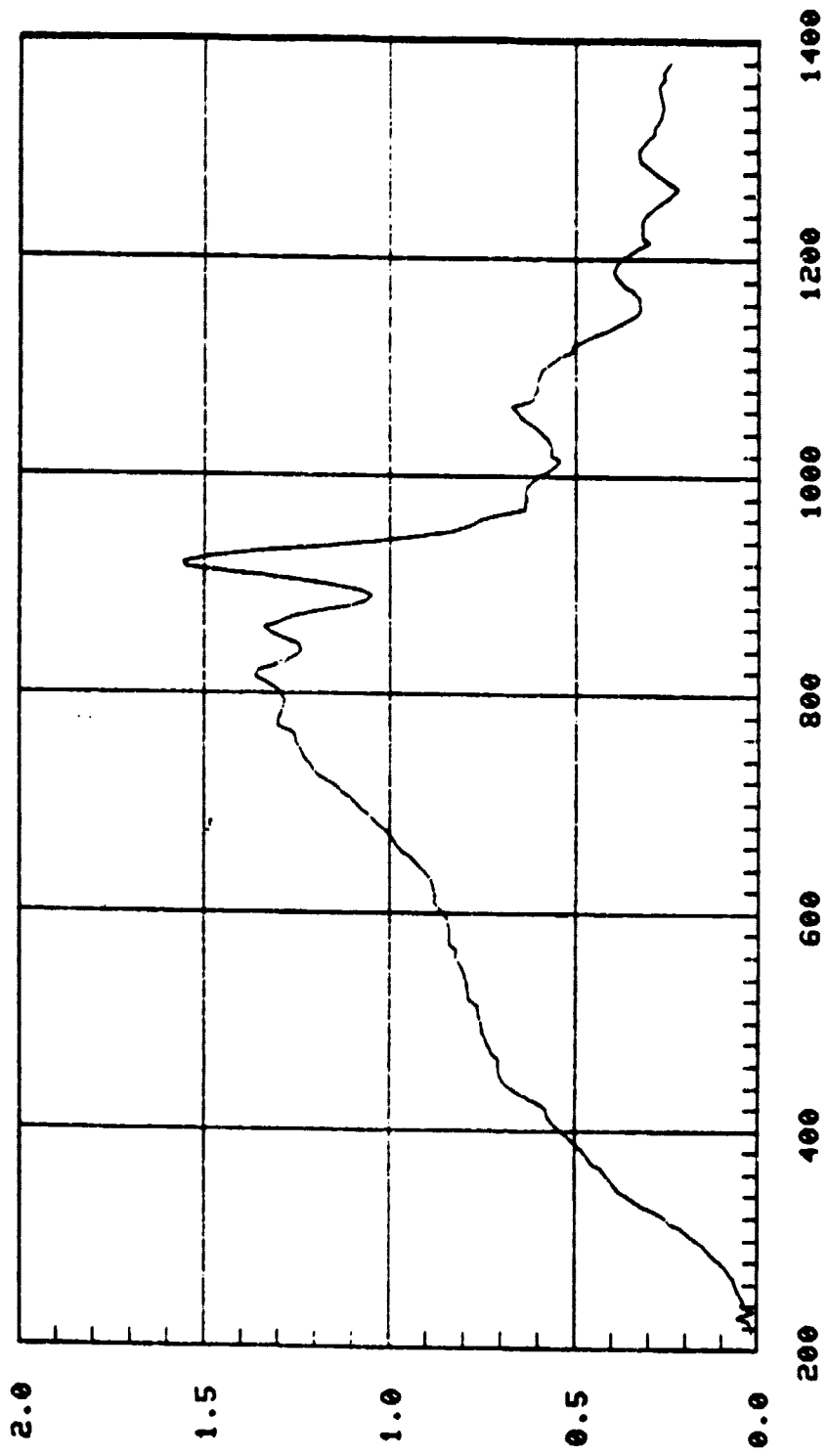
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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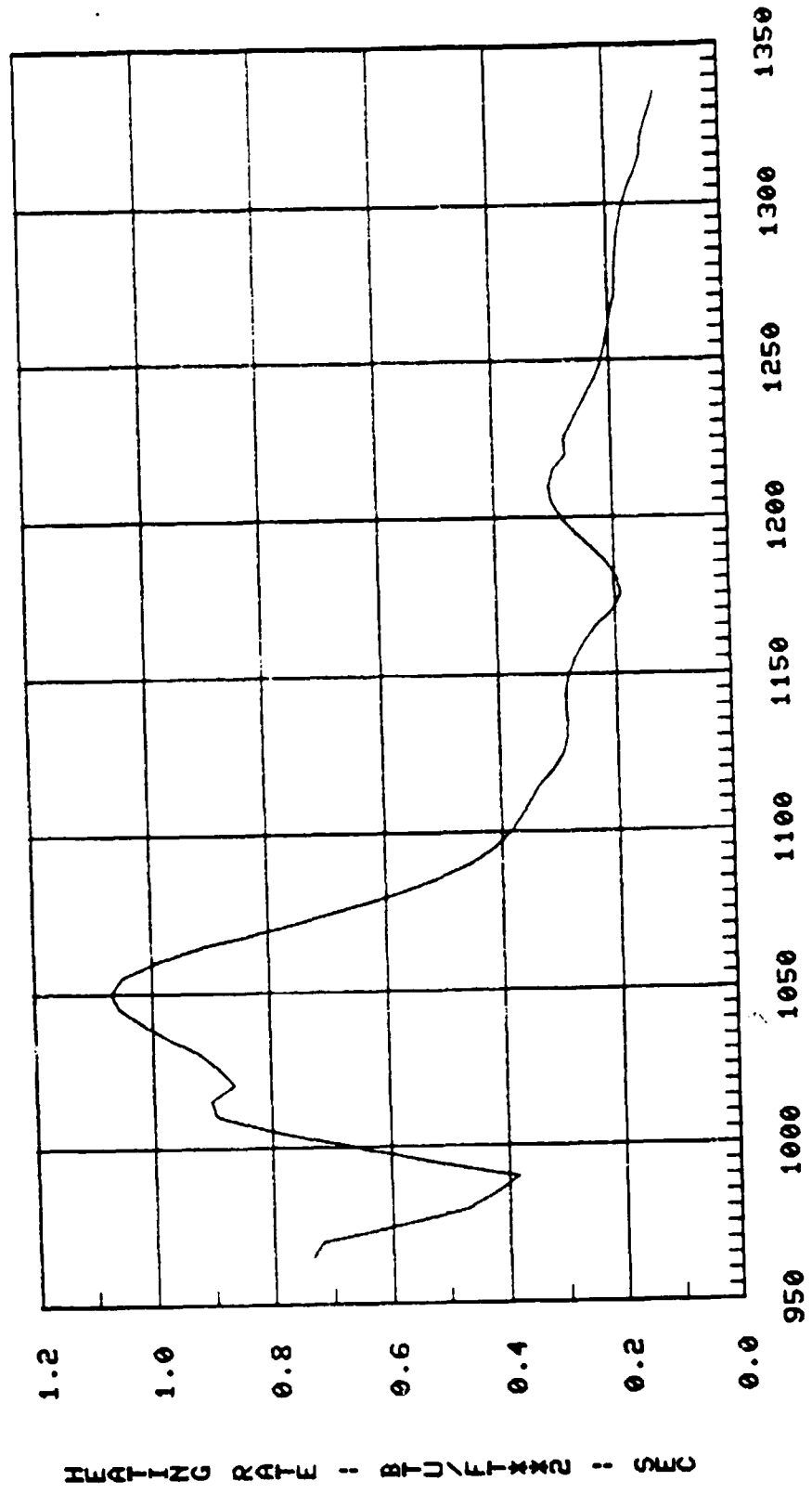
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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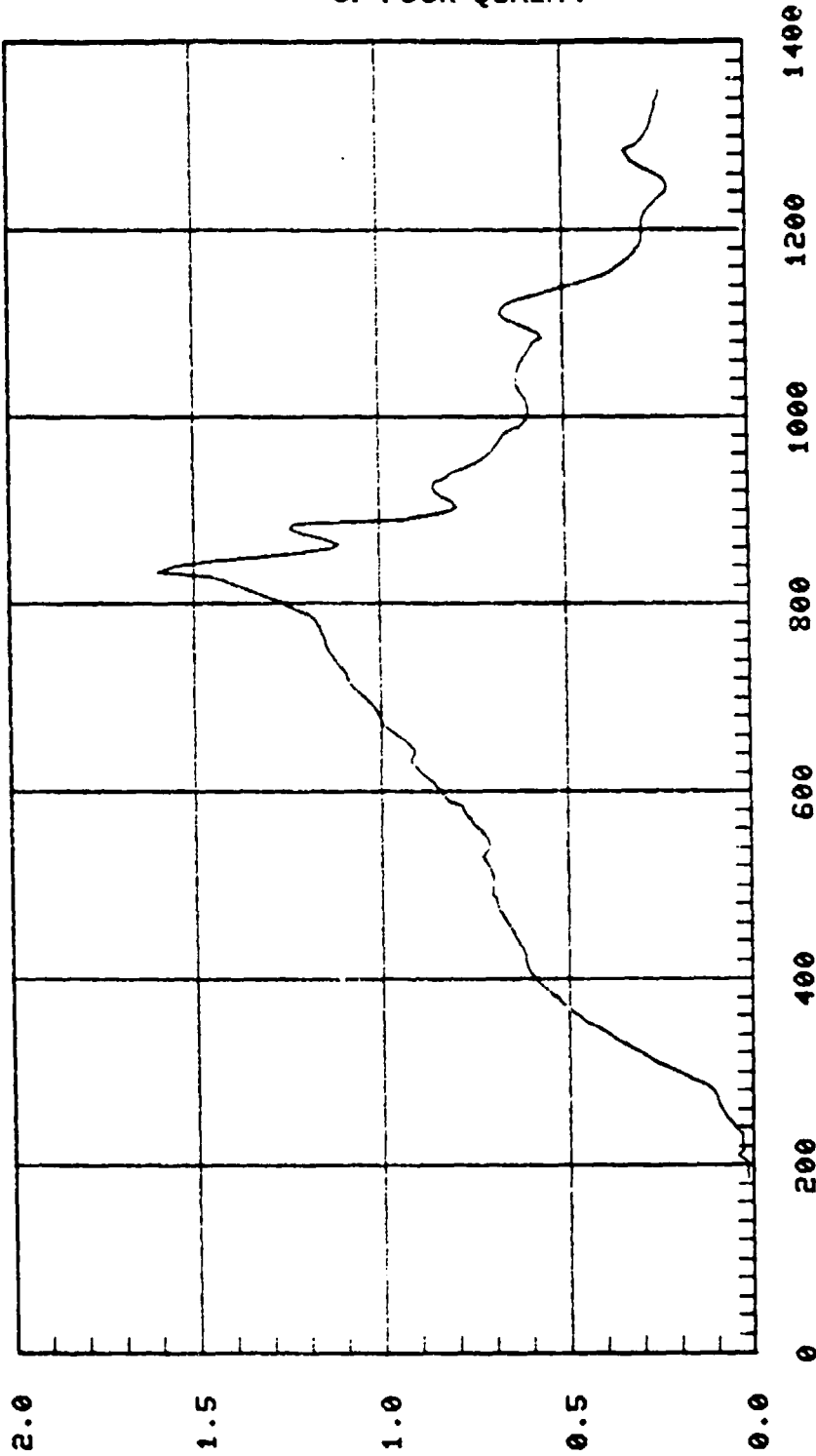
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TIME - SECONDS

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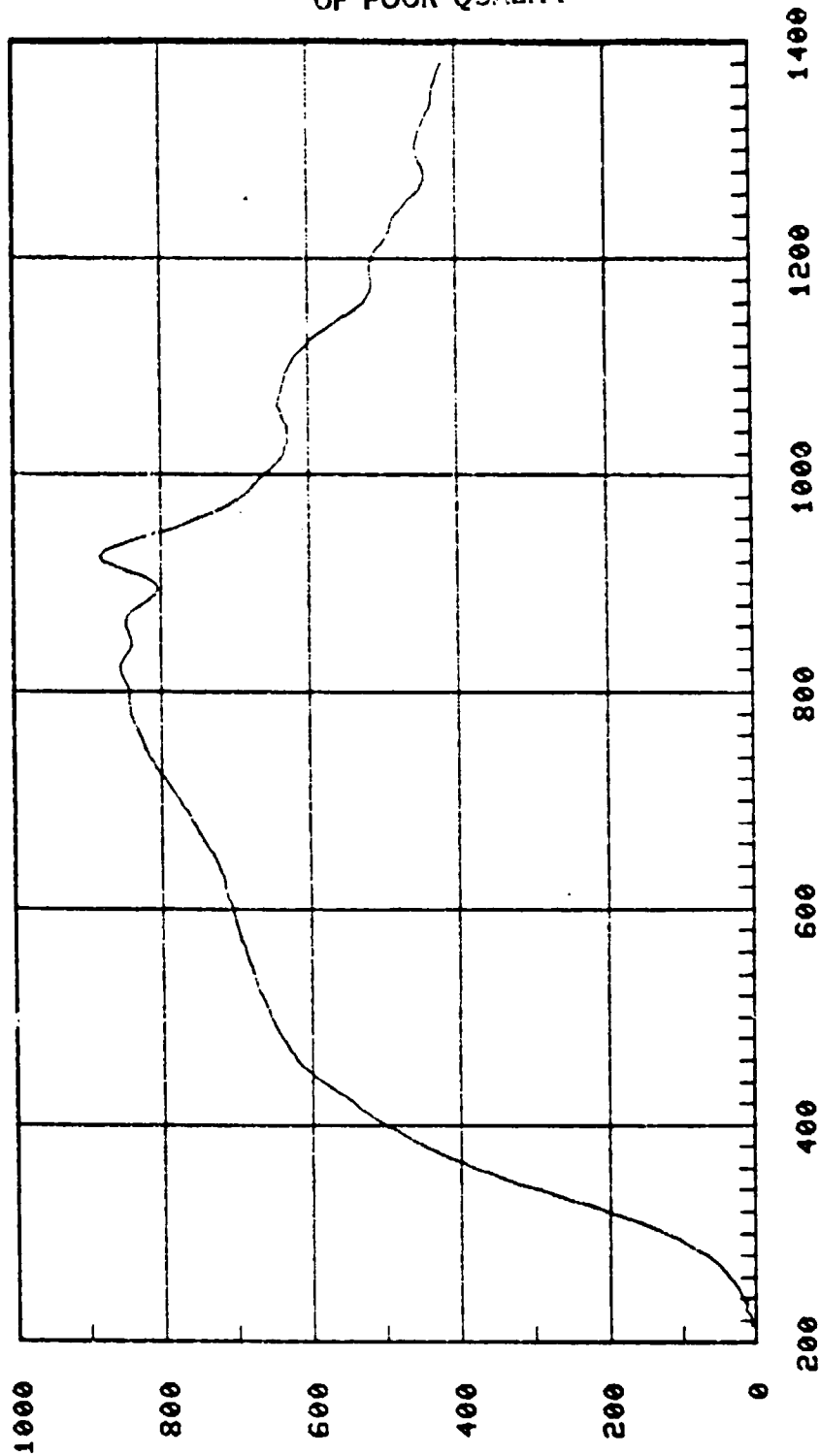
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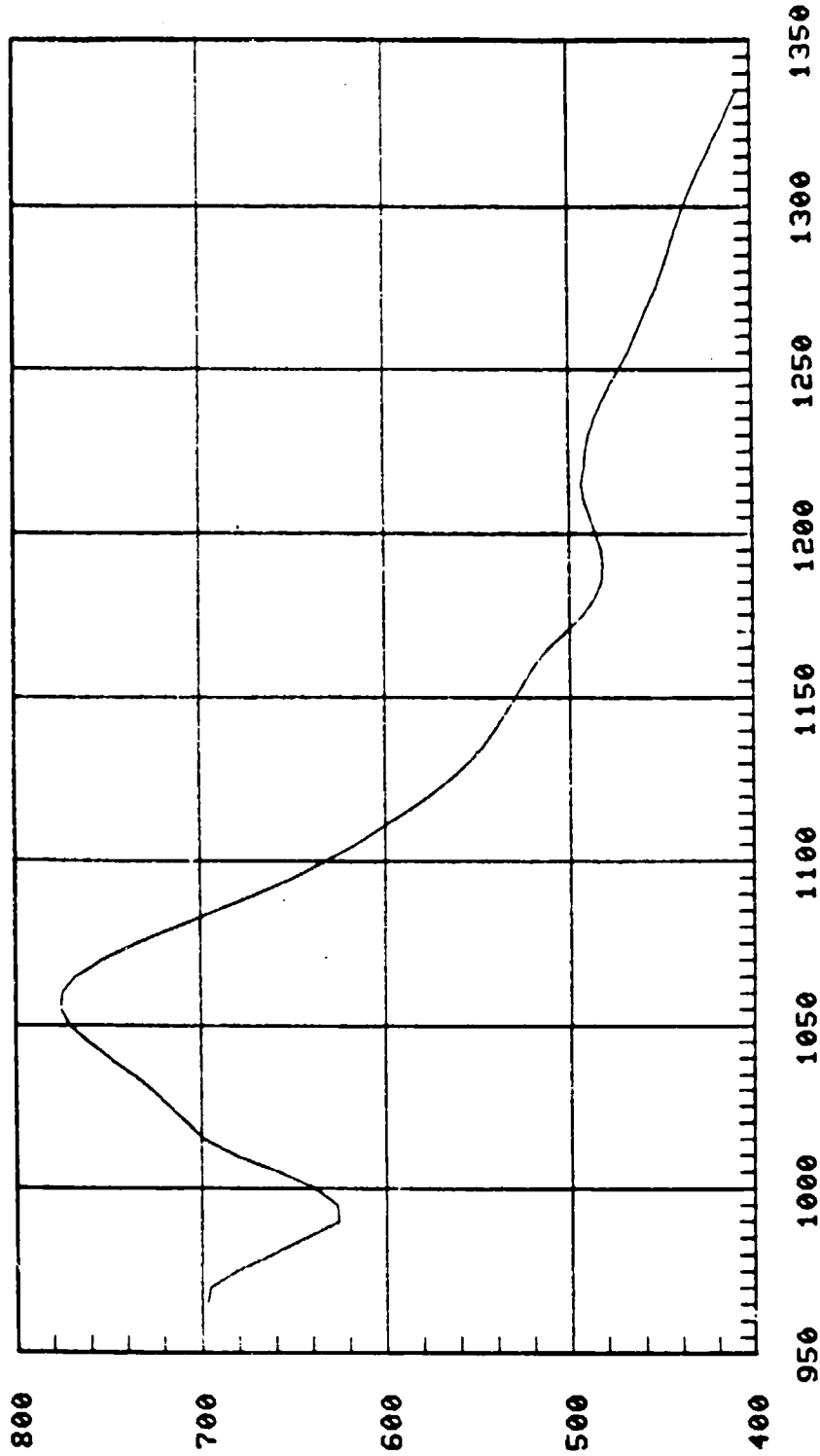
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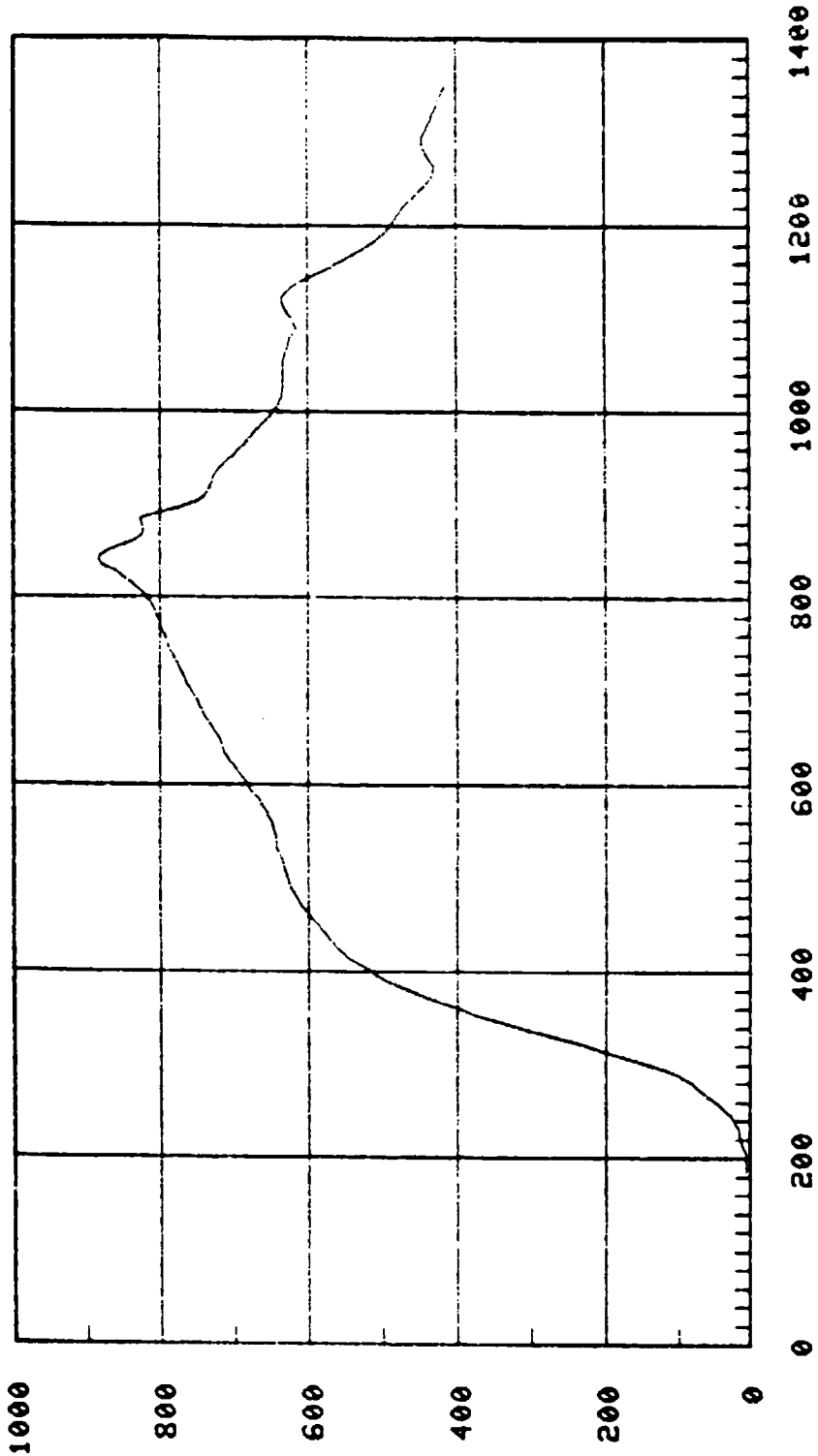
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POWERWAKE-DRW -- F

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PARAMETER -- F

B-15

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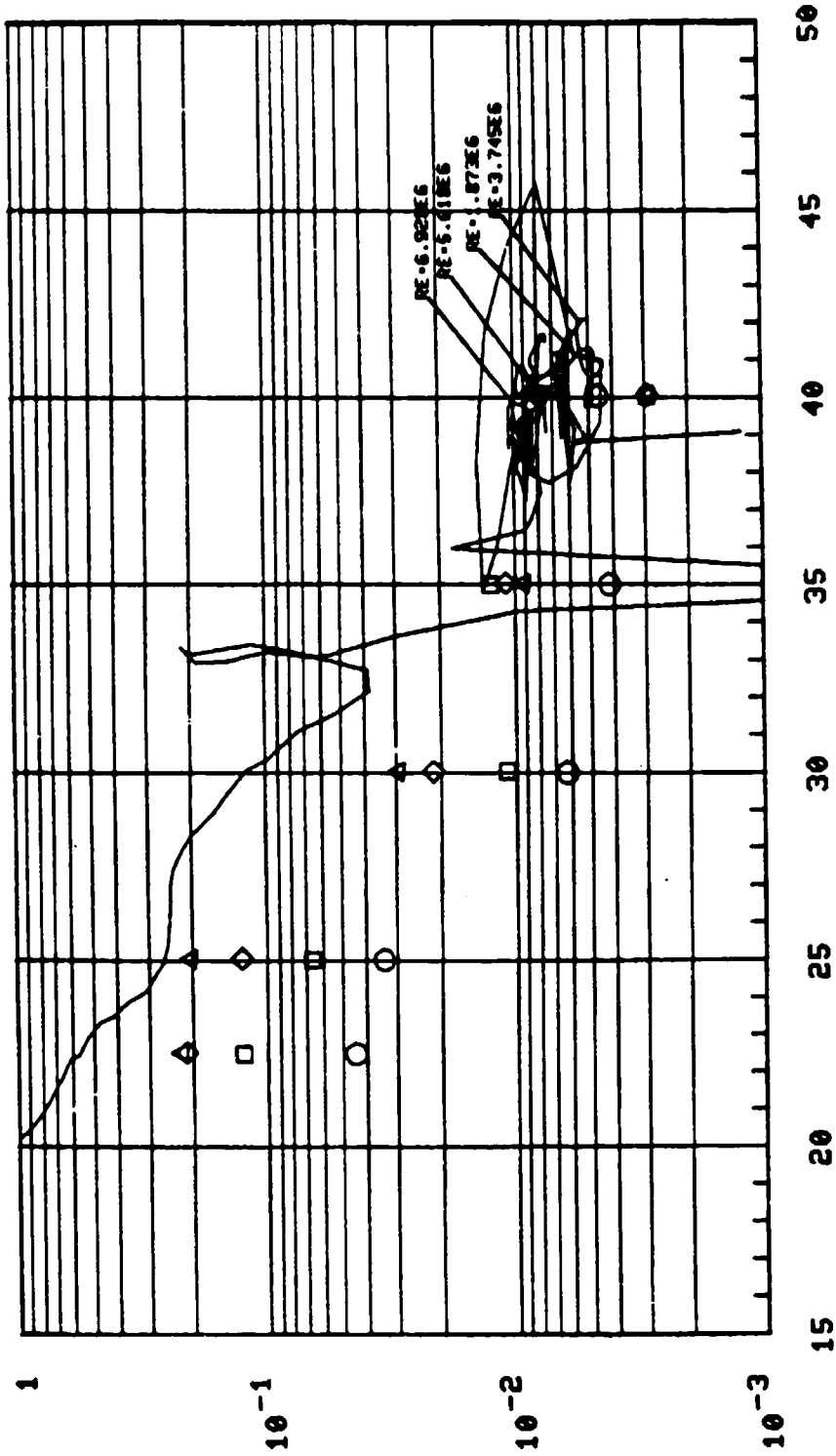
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- AF 0.0175 SCALE RE - 3.7 E06



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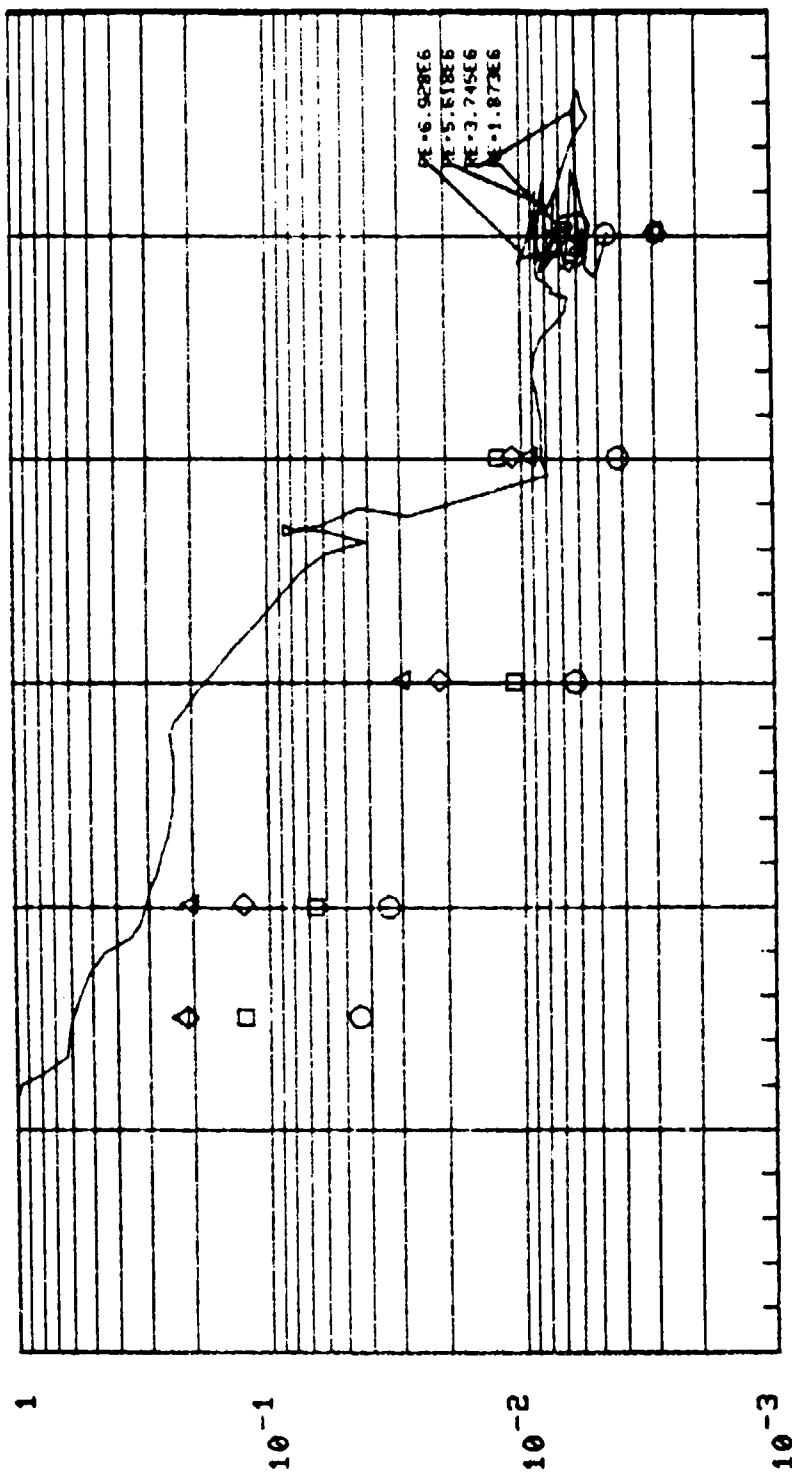


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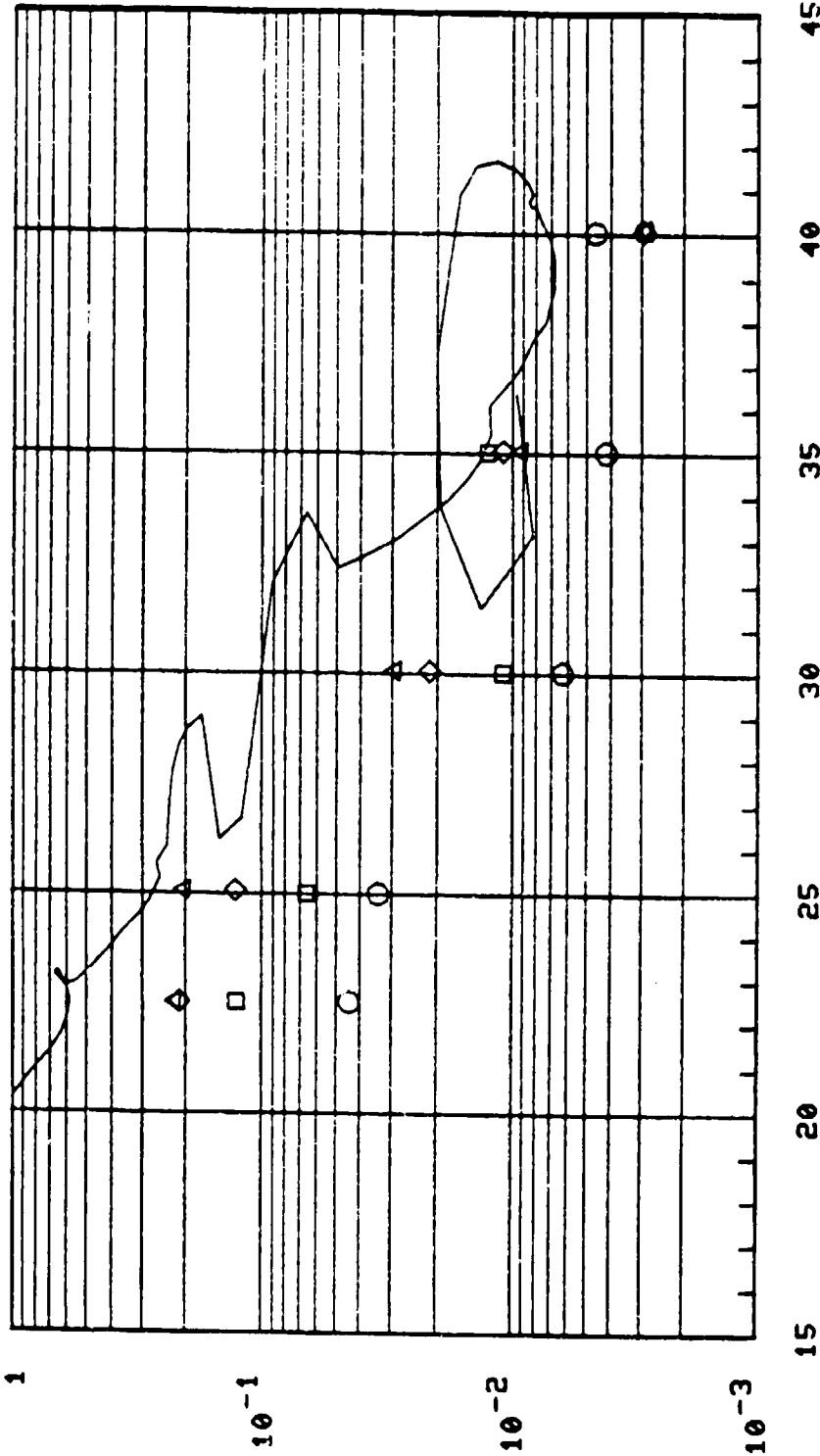
ANGLE-OF-ATTACK - DEG

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 AF 0.0175 SCALE RE - 3.0 E06  
 AF 0.0175 SCALE RE - 3.7 E06

U07T9220A/H-01F 965-1335 SEC

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FLIGHT PARAMETER COMPARISON

B-18

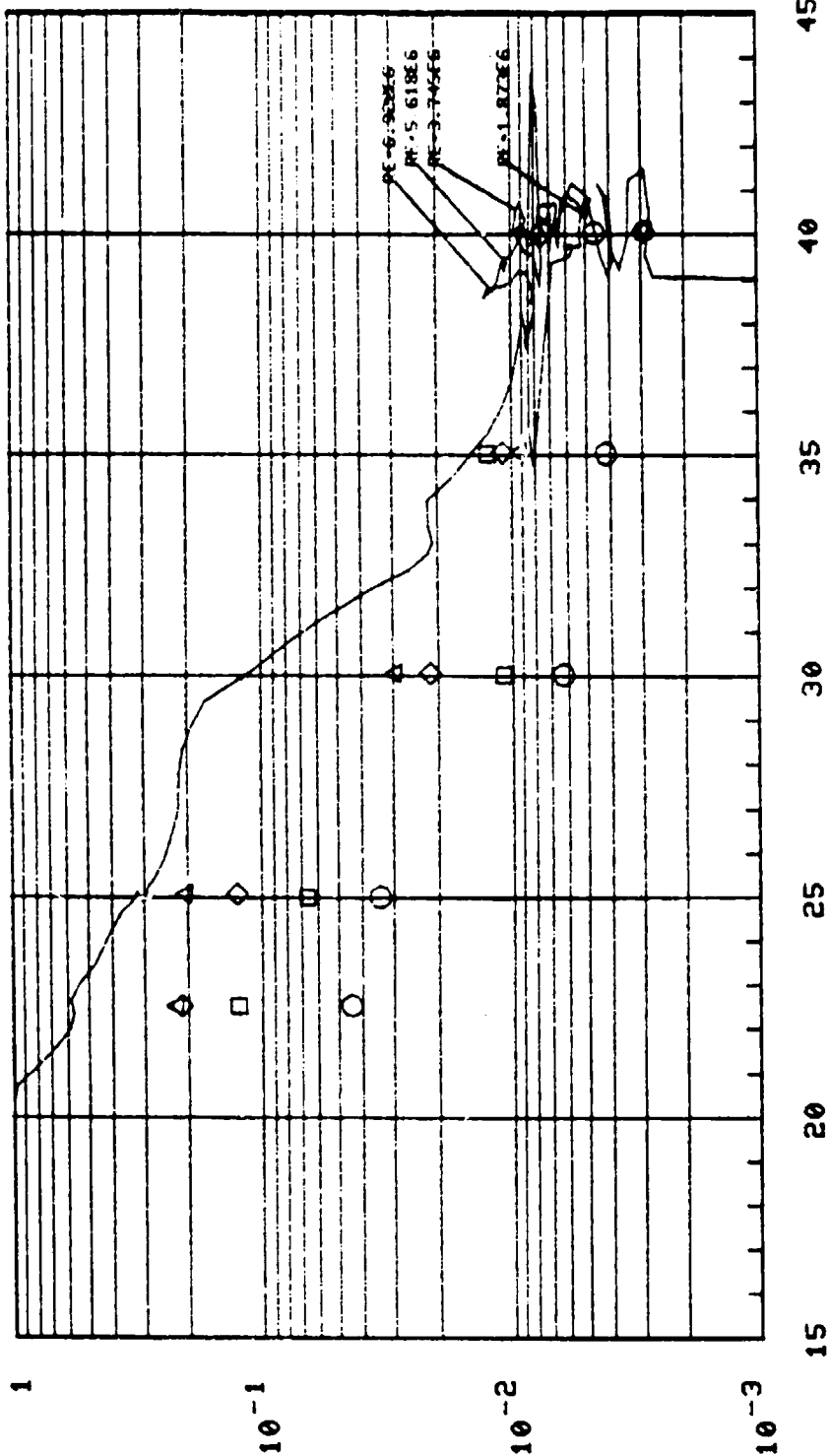
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U0779220A/H-REF 150-1350 SEC

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- AF 0.0175 SCALE RE = 2.0 E06
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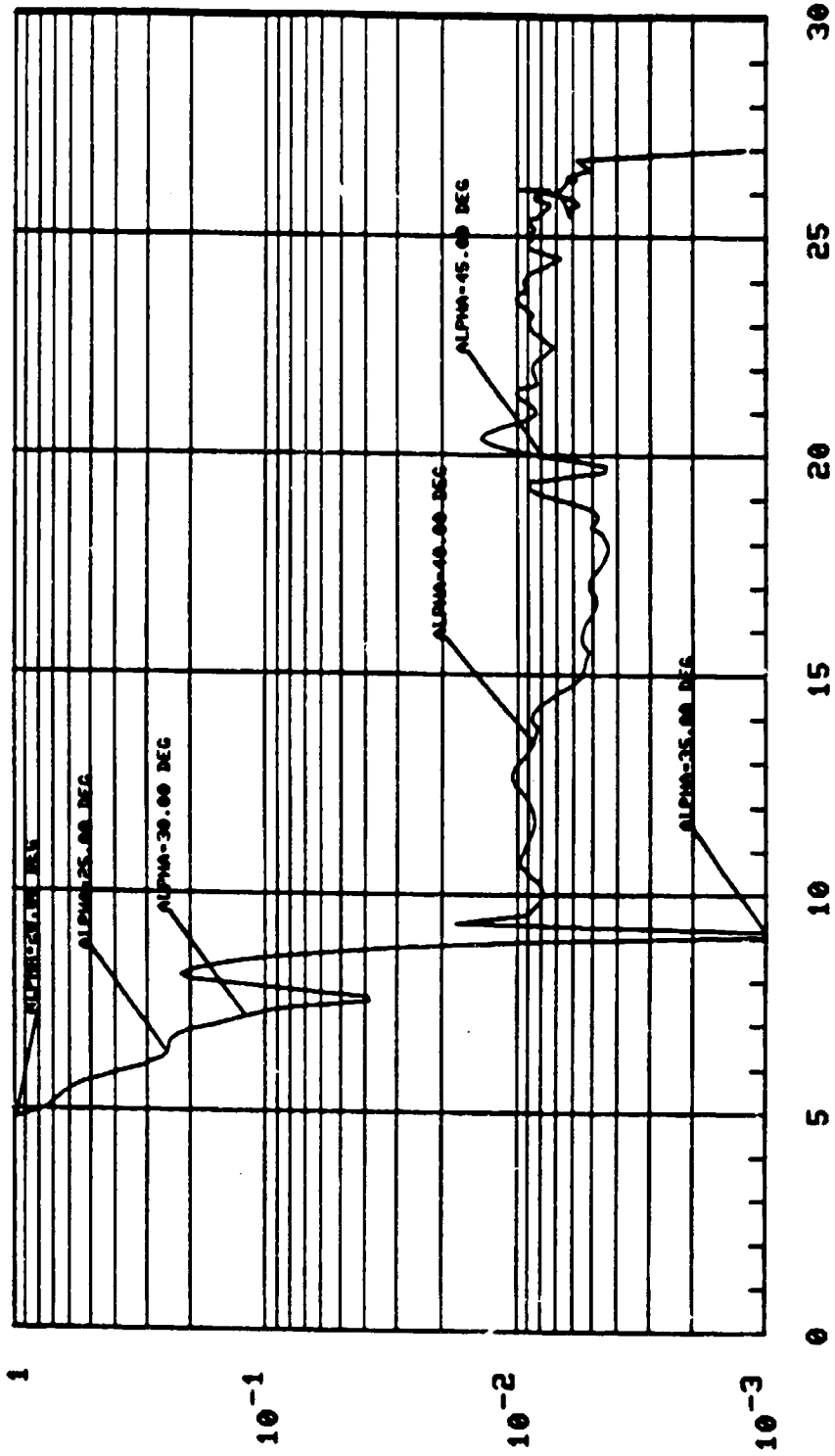
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TIME CORRECTED - H-T-Q-REF

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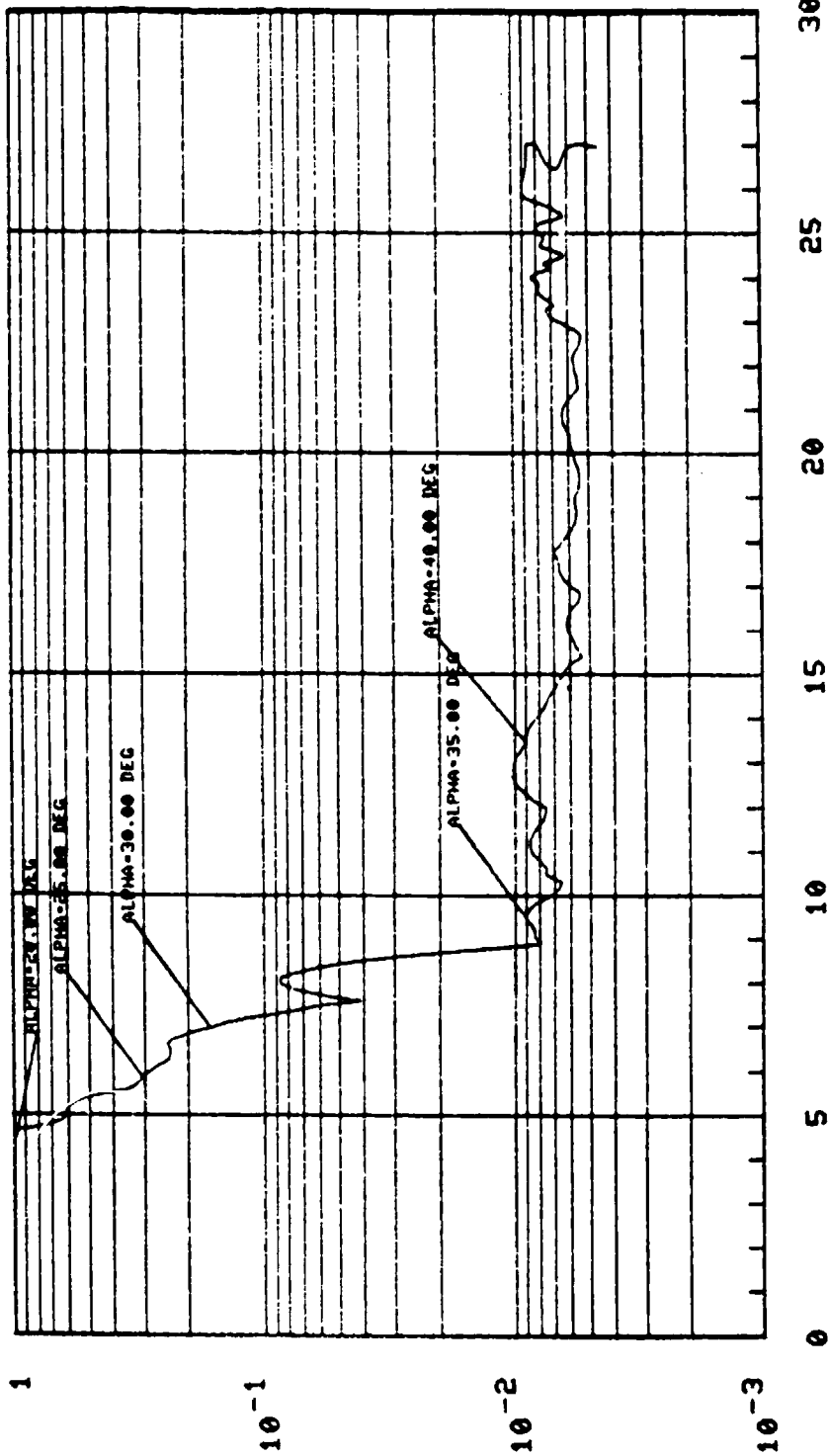
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FLIGHT COUNTS - H/H-REF

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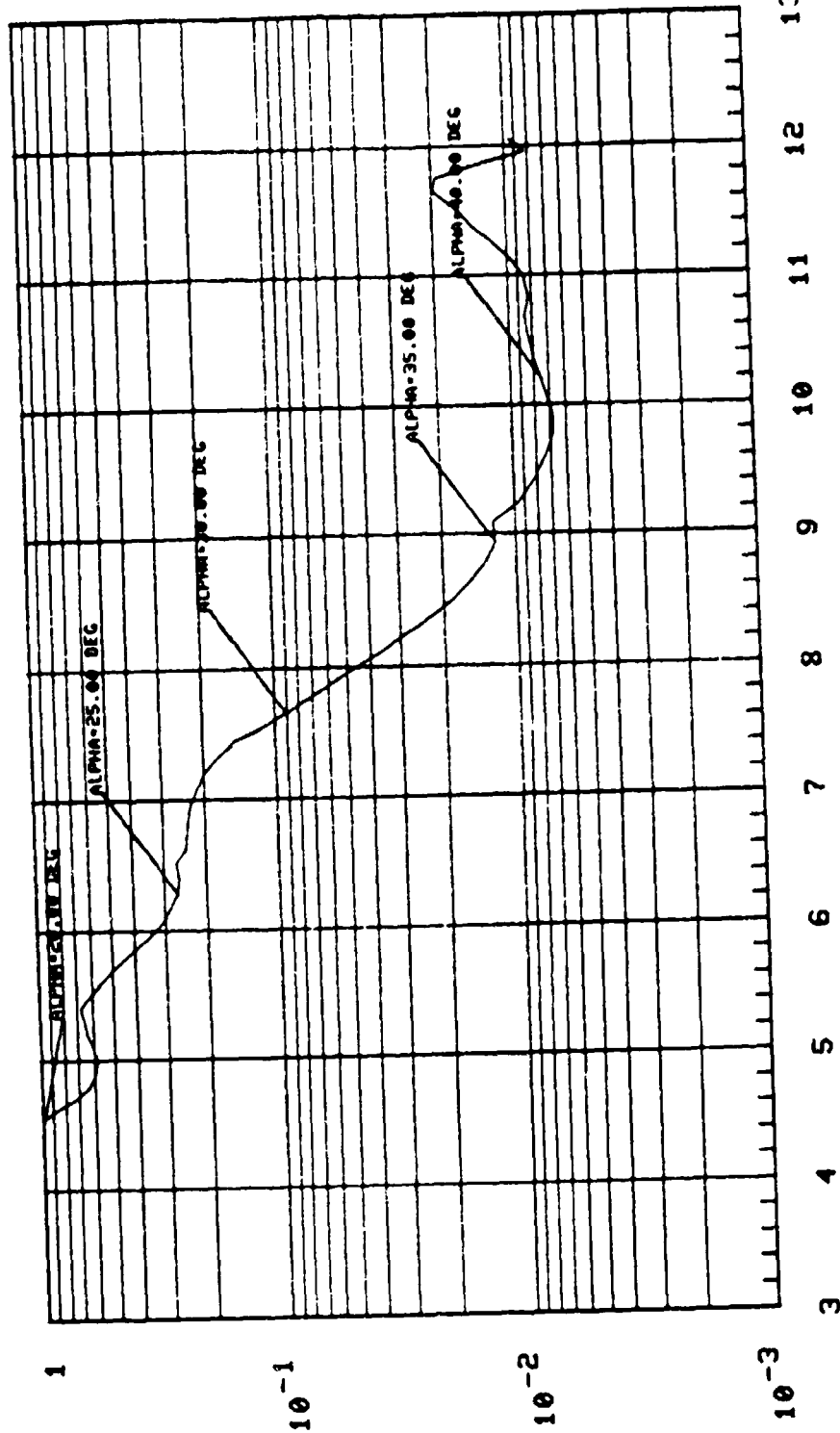
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U07T9220A/H-REF 965-1335 SEC



TIME COEFF -- H/H-REF

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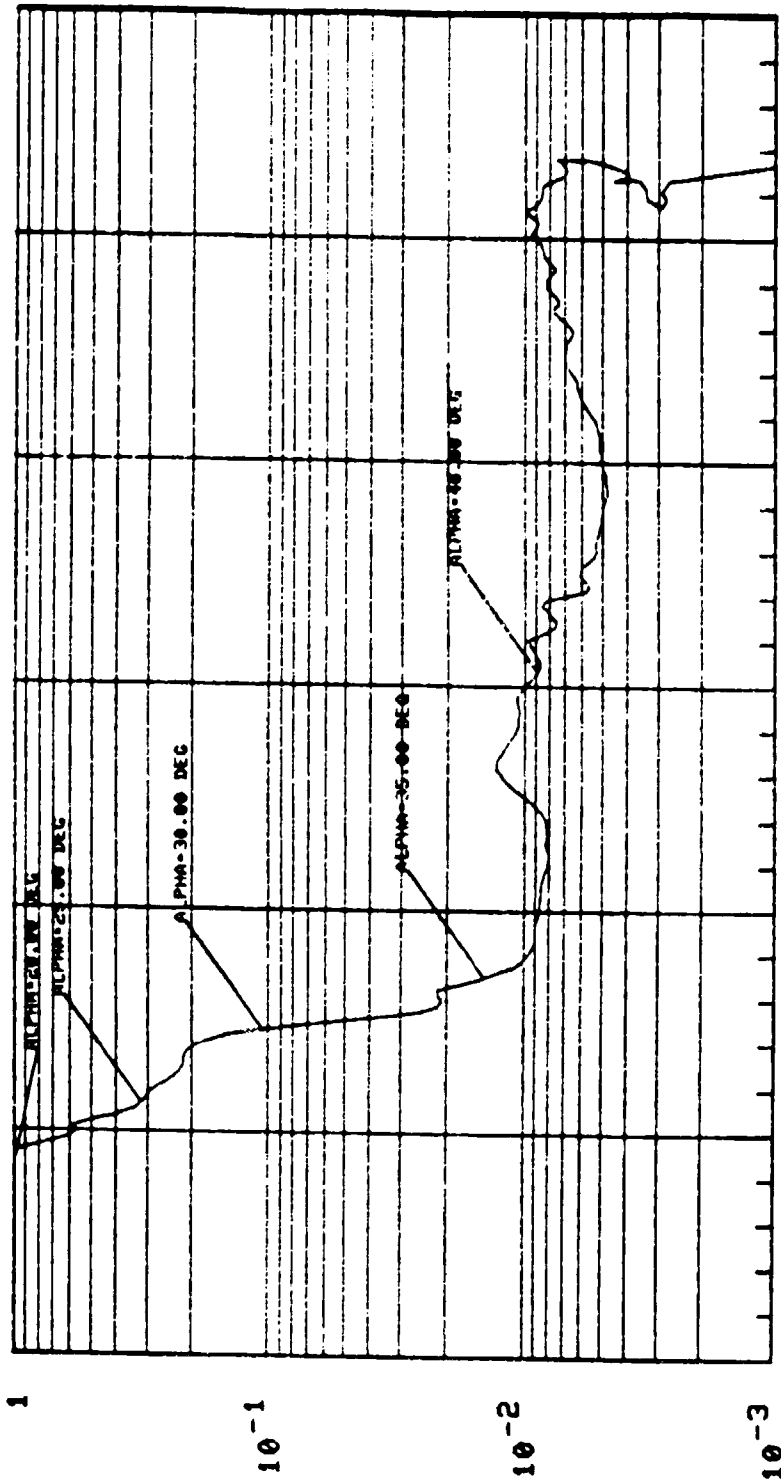
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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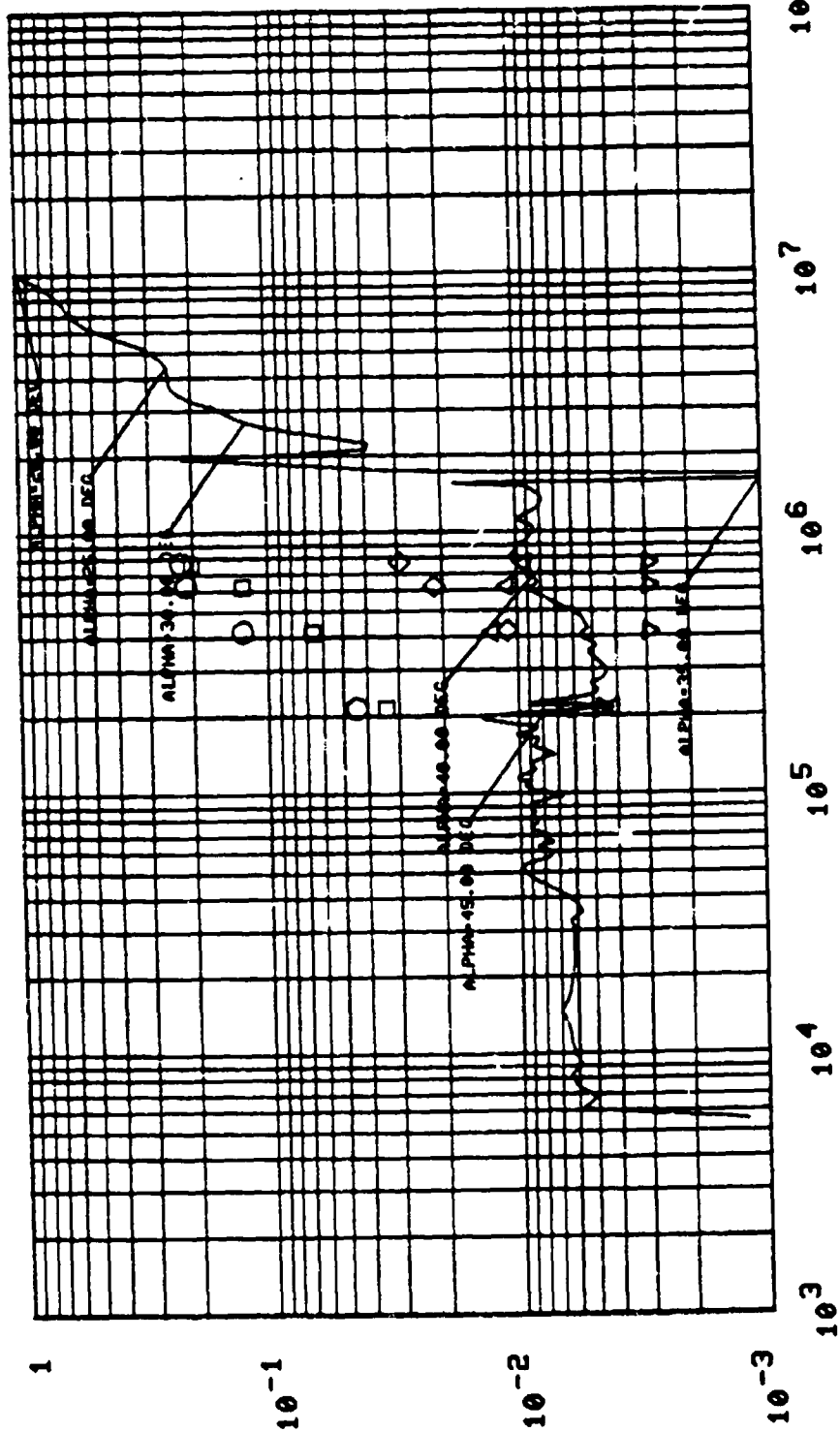
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- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF. - H/H-REF

REYNOLDS NUMBER (NS)

BASE TIME - 27550236.000 SEC.  
04/20/83

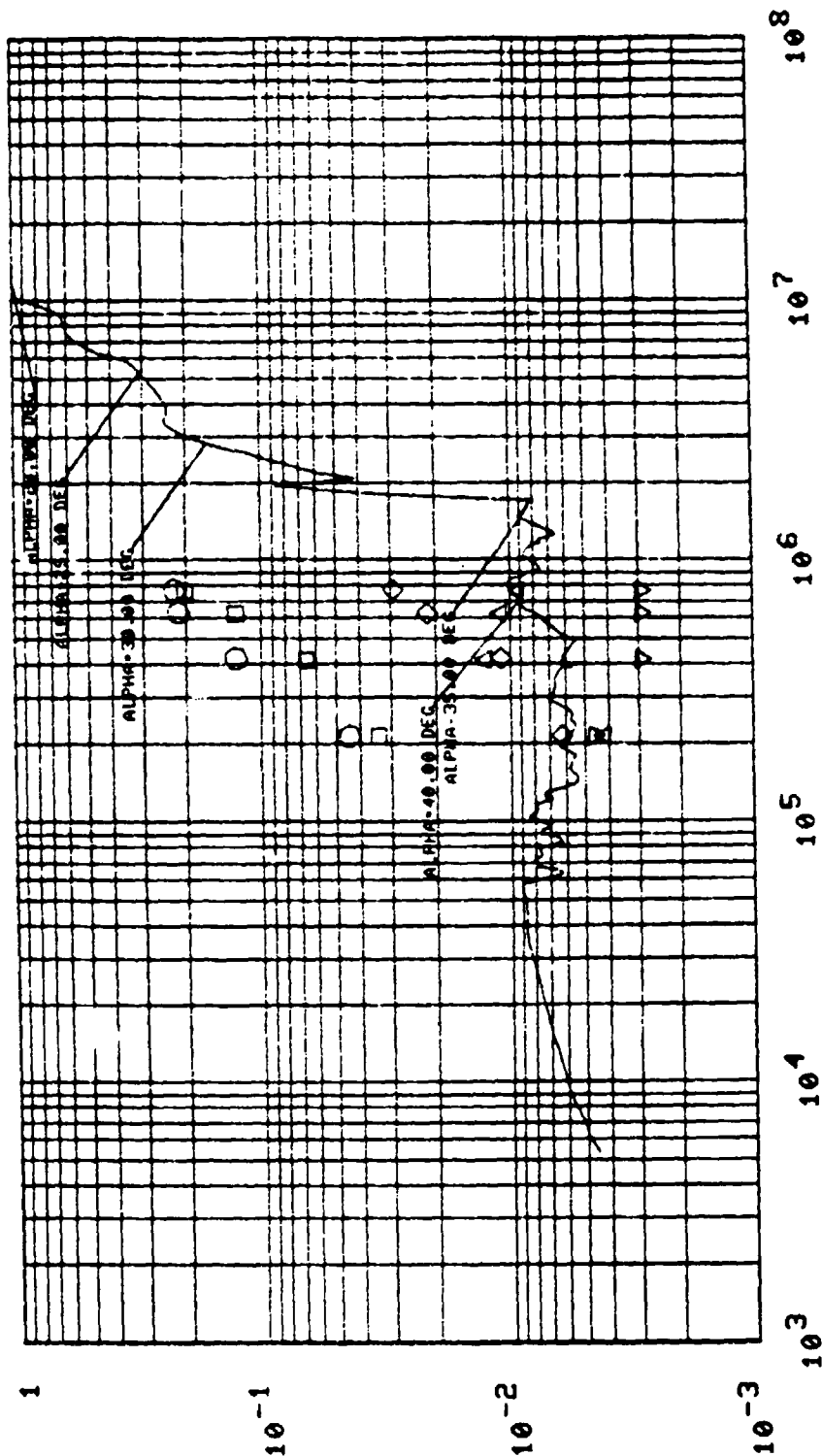


STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9220A/H-REF 200-1380 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

□ ○ △



FLIGHT PARAMETER - H/H-REF

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04/19 83  
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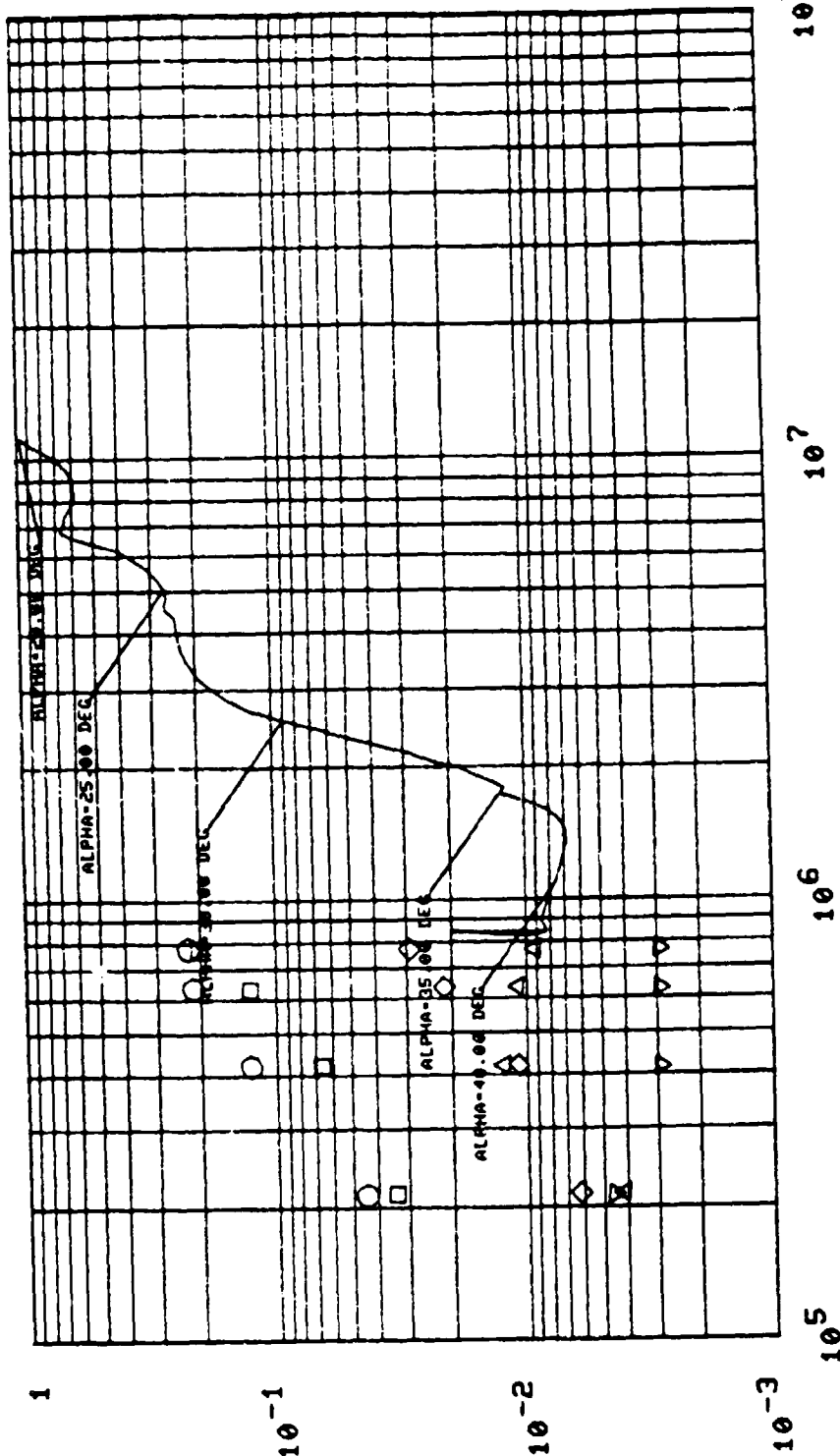
REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9220A/H-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
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○ □ ◇ △



04.19/83  
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REYNOLDS NUMBER (NS)

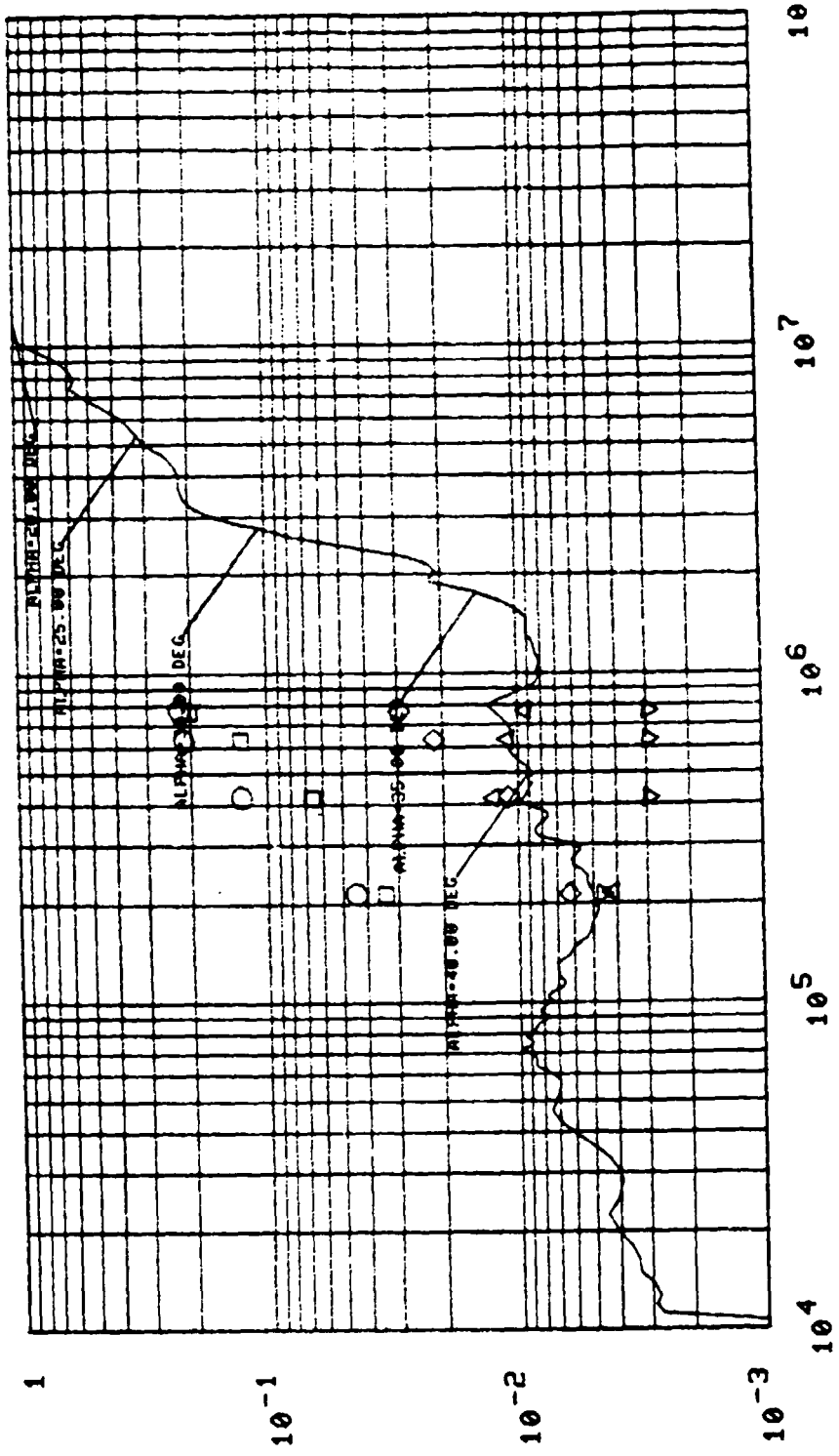
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# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779220A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
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○ □ △ ▽



FORCE COEFFICIENT -- H/H-RUN

REYNOLDS NUMBER (NS)

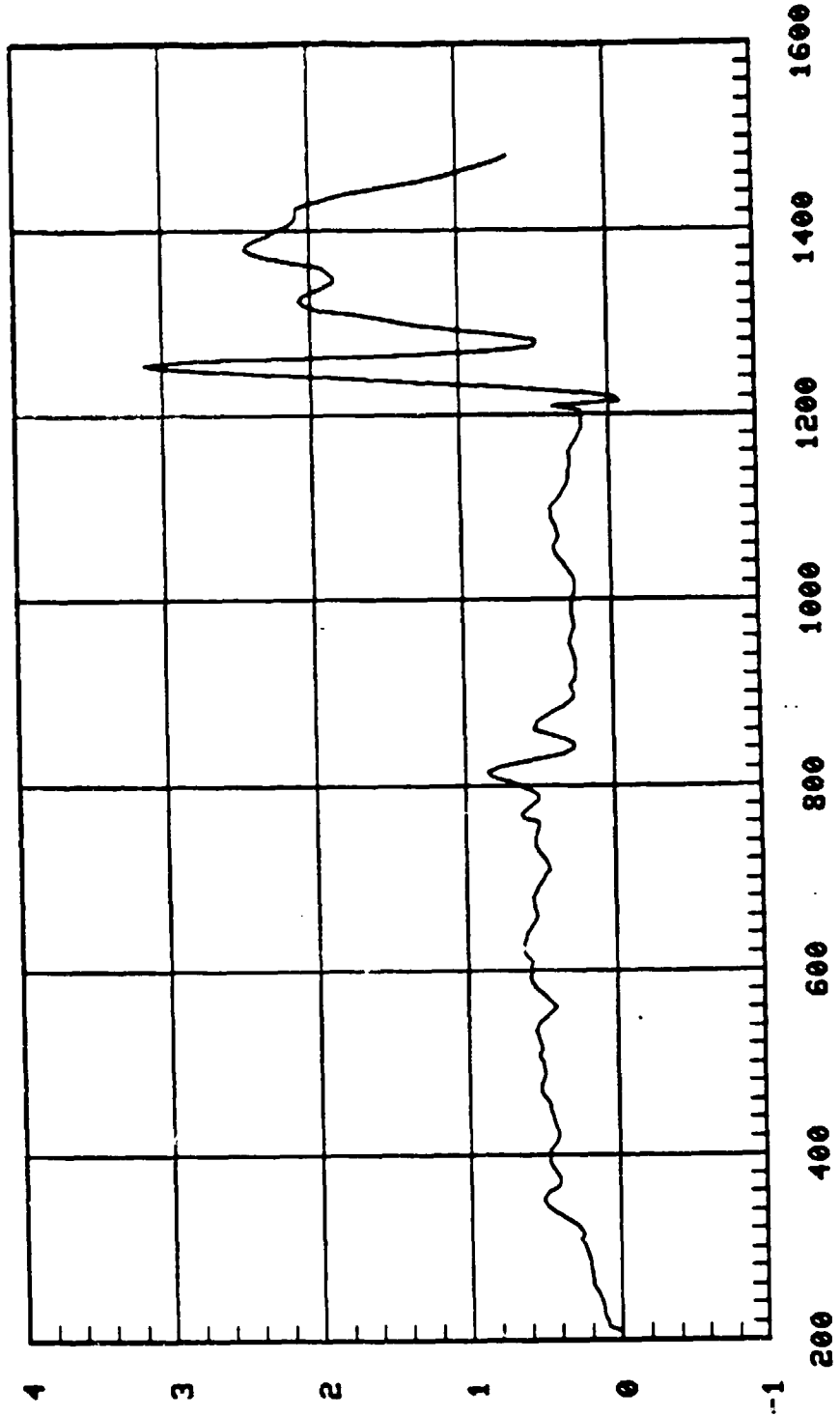
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04.18.93

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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779220A



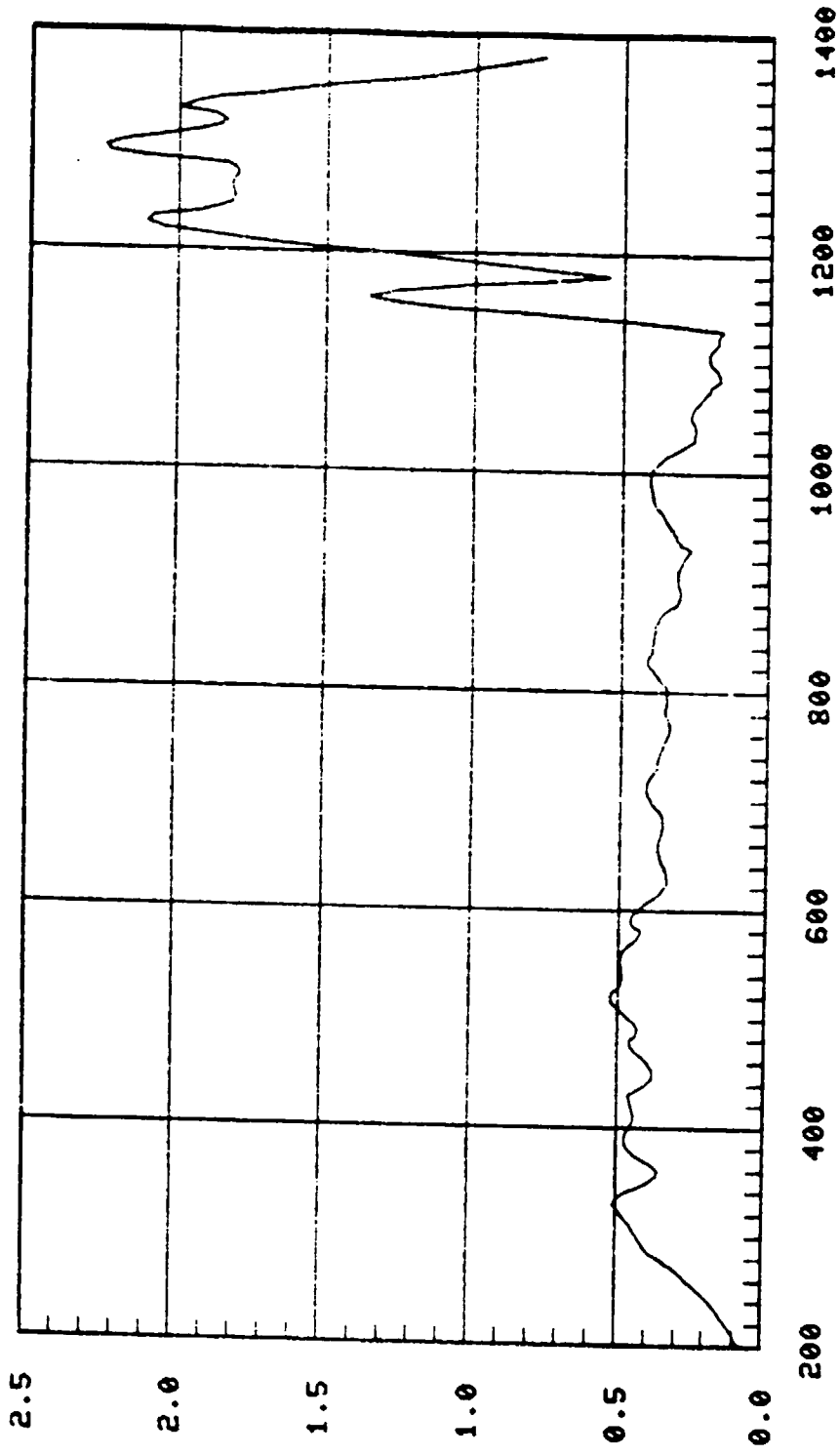
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TIME - SECONDS

HEATING RATE - BUJLETTING - SEC

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719220A



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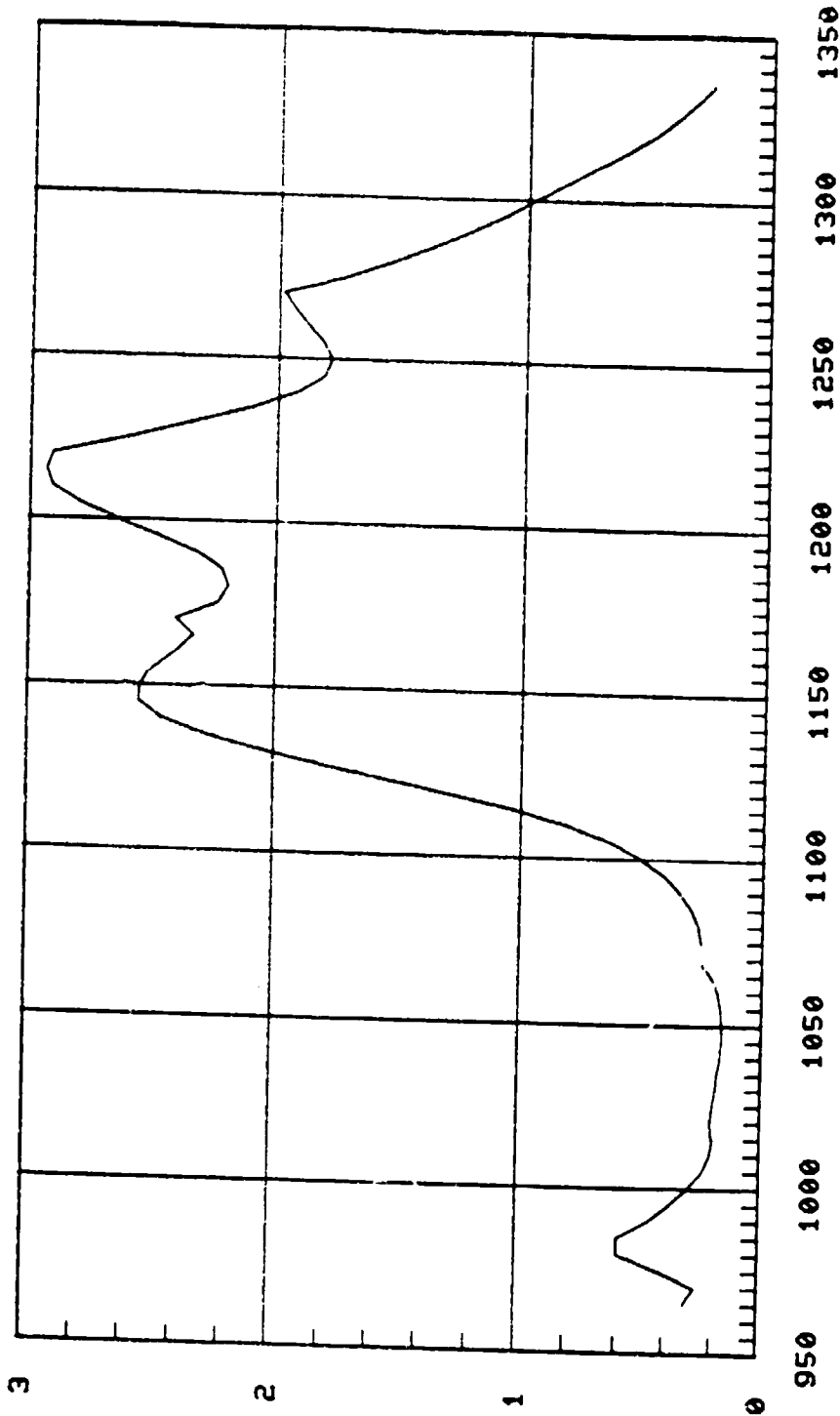
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TIME - SECONDS

04-19 83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9220A



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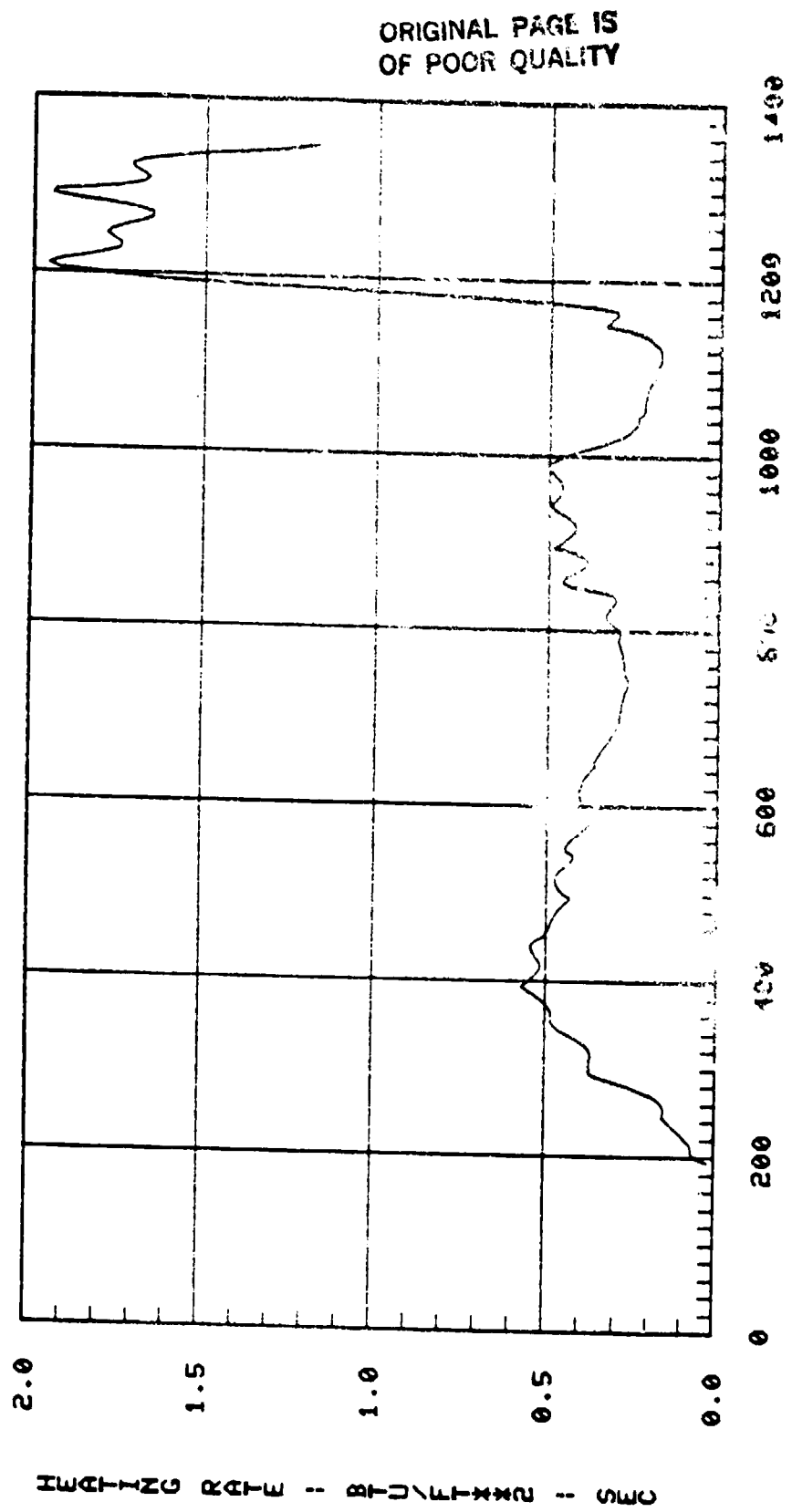
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TIME - SECONDS

04.19.83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U87T9220A



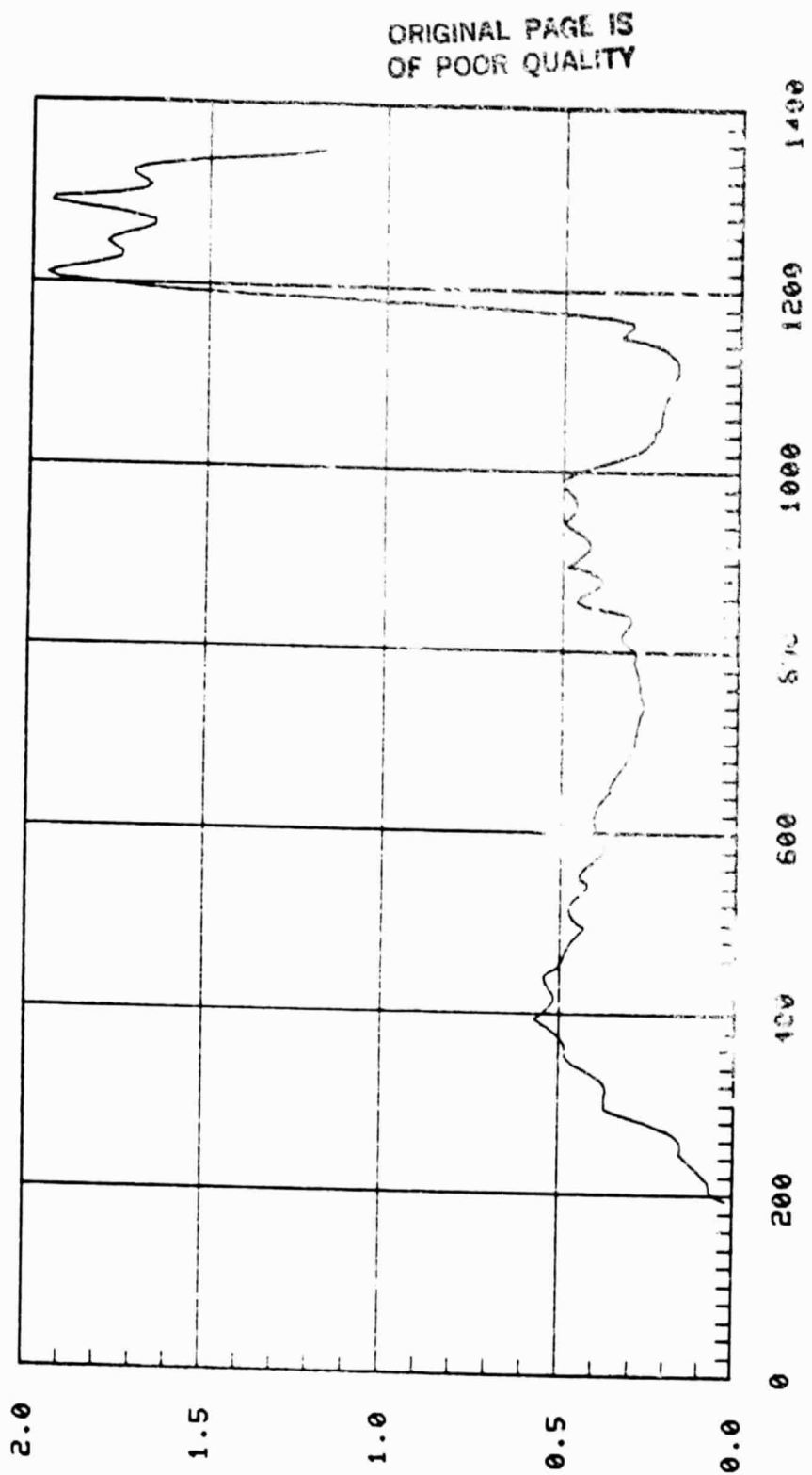
TIME - SECONDS

9-15-77

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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U97T9220A



TIME - SECS

4-18

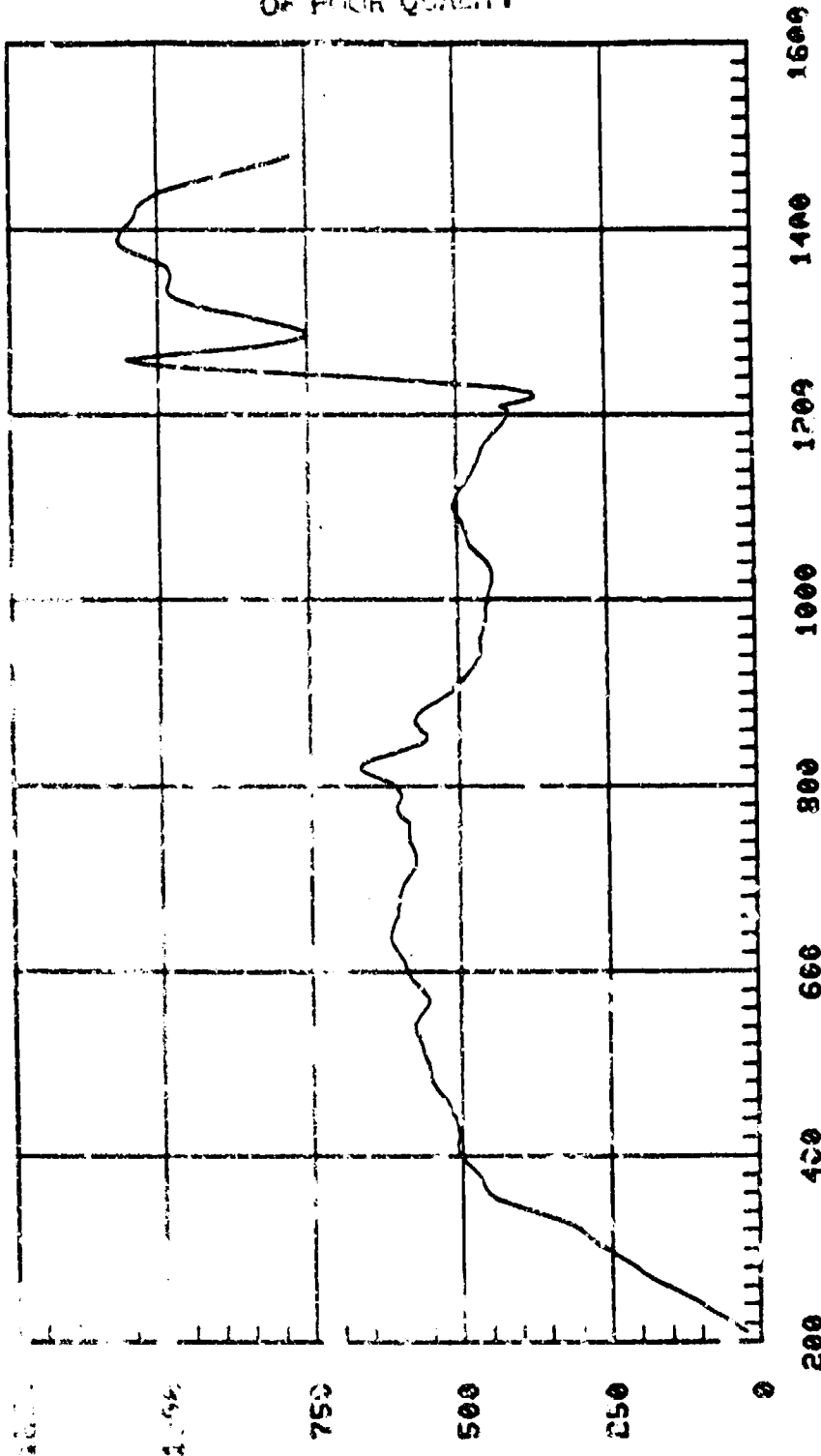
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ST-100 (C) ... FLIGHT PARAMETERS COMPASSION

66719220A



TIME - SECONDS

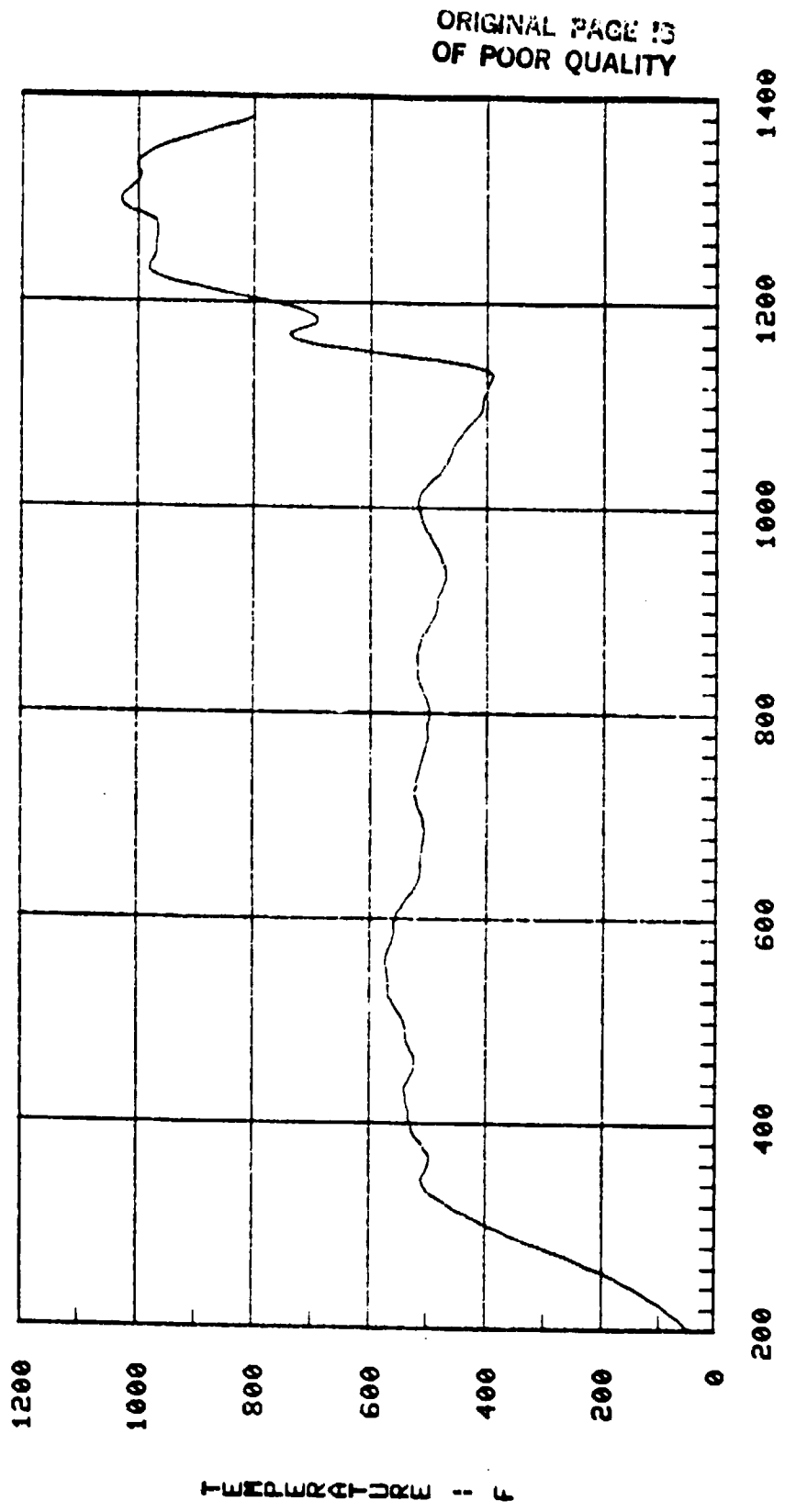
04/20/83

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10/20

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719220A



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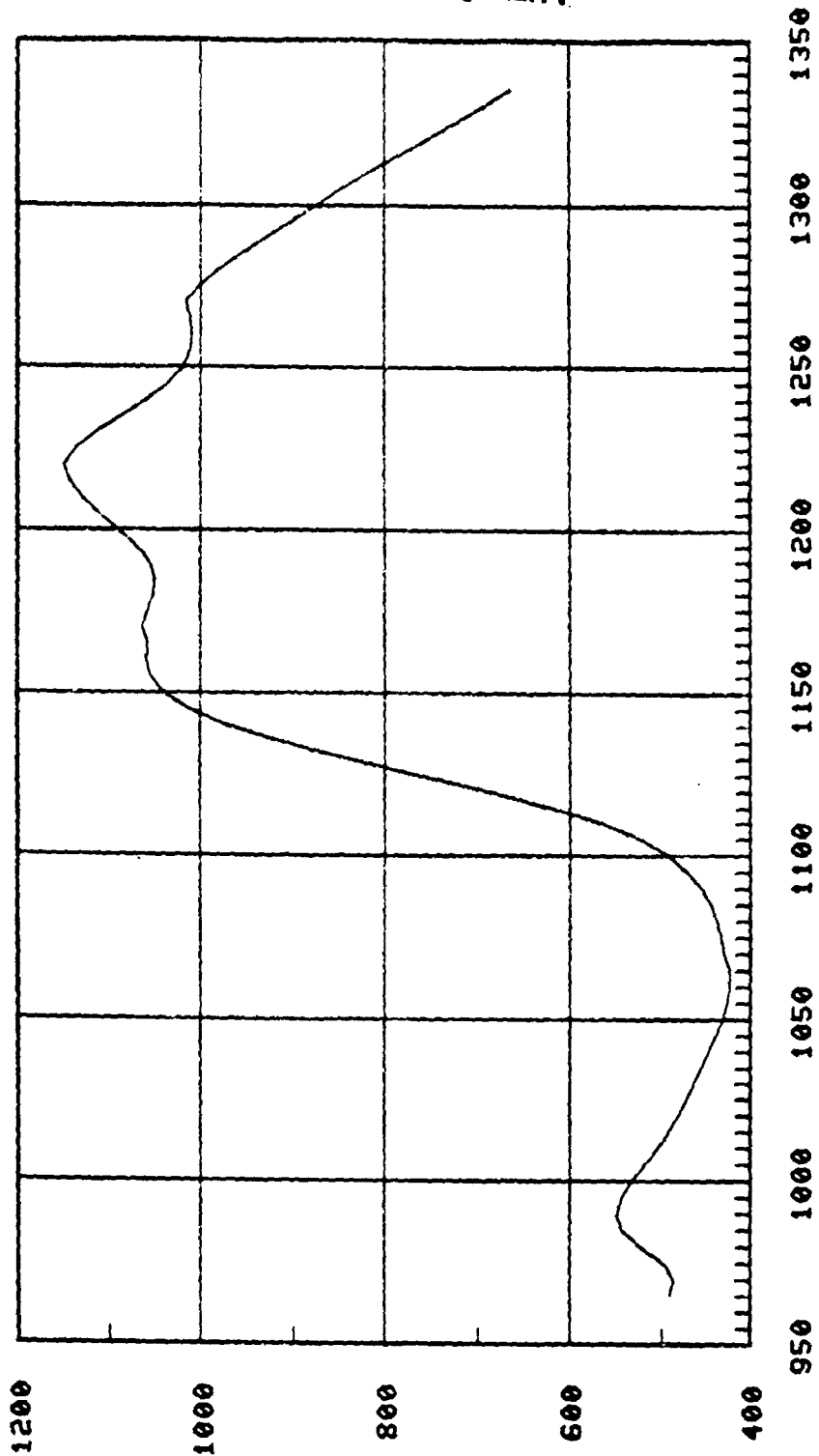
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TIME - SECONDS

04 19 53

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719220A



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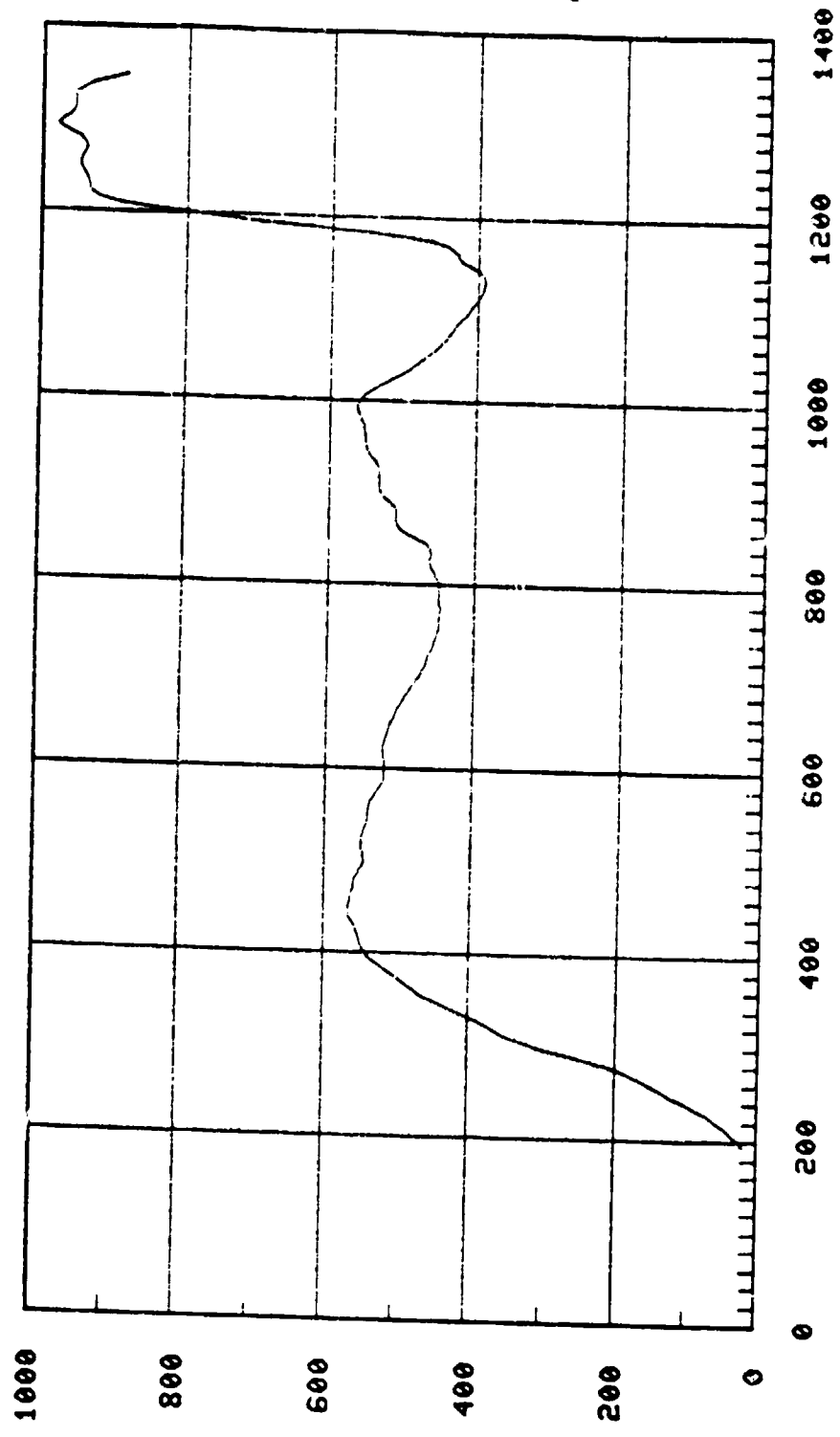
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TIME - SECONDS

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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9220A



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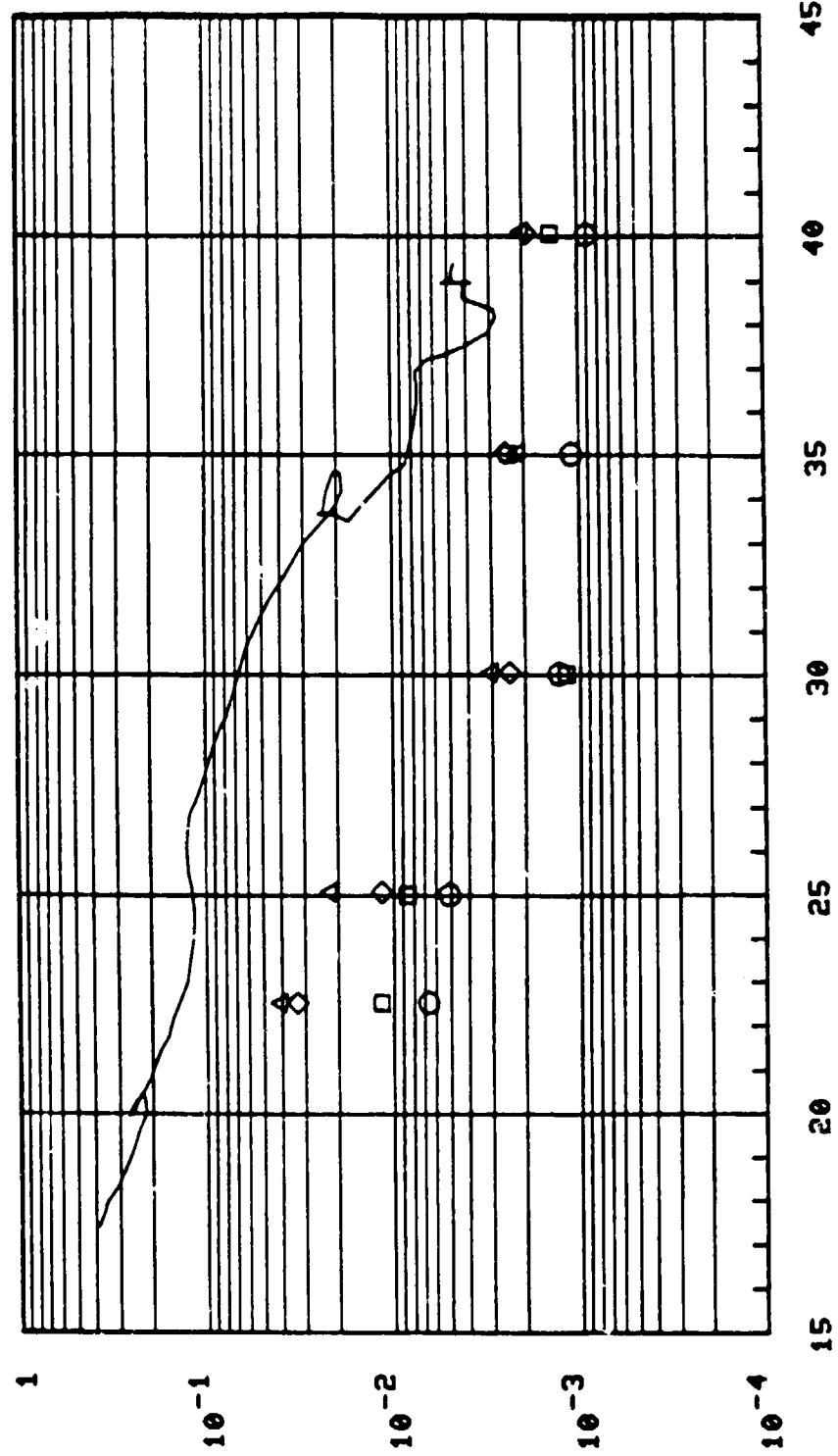
TIME - SECONDS

04-18-83

PARAMETER -- F

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

○ ——— U07T9970A/H-REF 1065-1480 SEC  
 □ ——— AF 0.0175 SCALE RE - 1.0 E06  
 ◇ ——— AF 0.0175 SCALE RE - 2.0 E06  
 △ ——— AF 0.0175 SCALE RE - 3.0 E06  
 × ——— AF 0.0175 SCALE RE - 3.7 E06



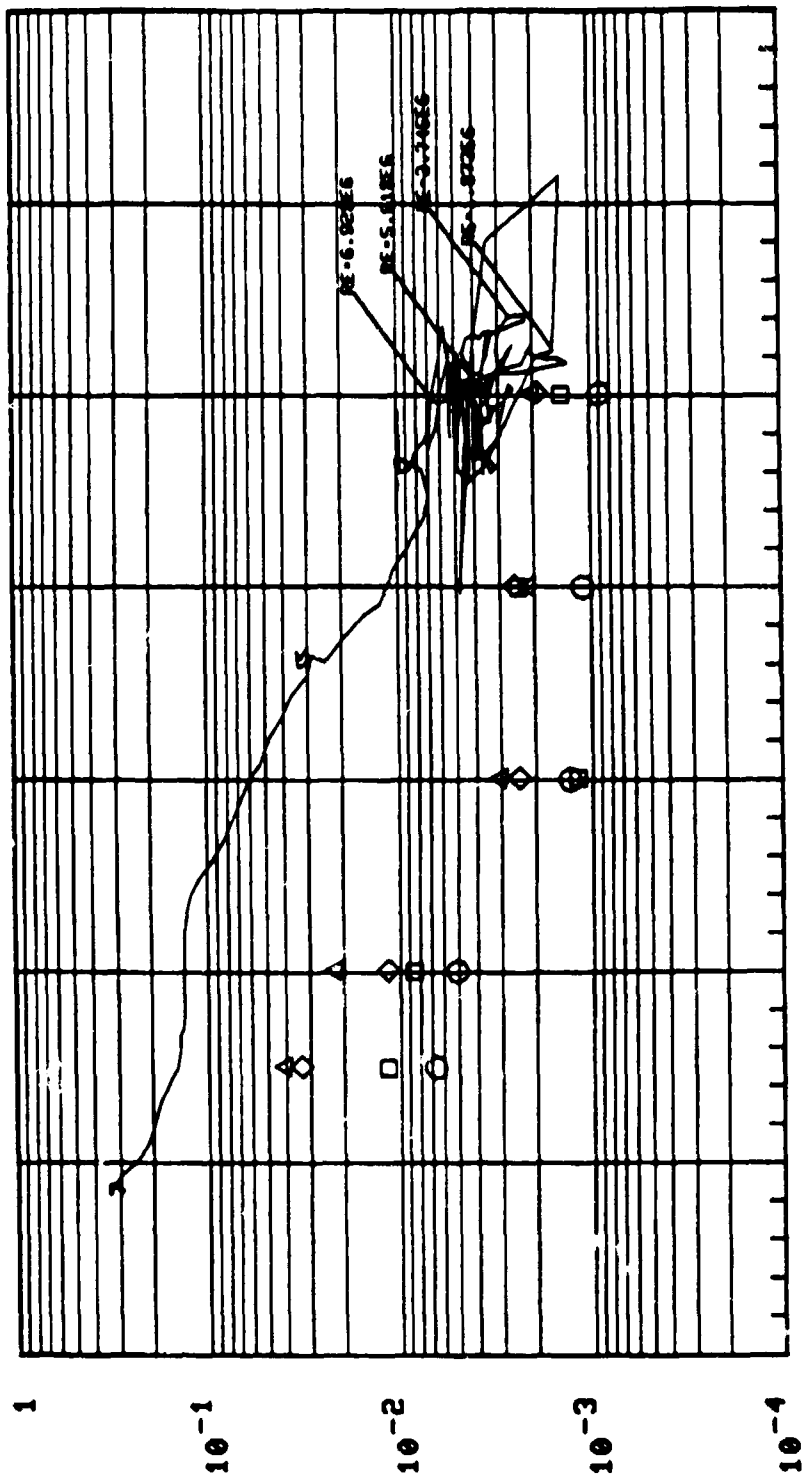
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 04/20/63

U07T9970A/H-REF

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779970A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



FILM COVER : H/H-REF

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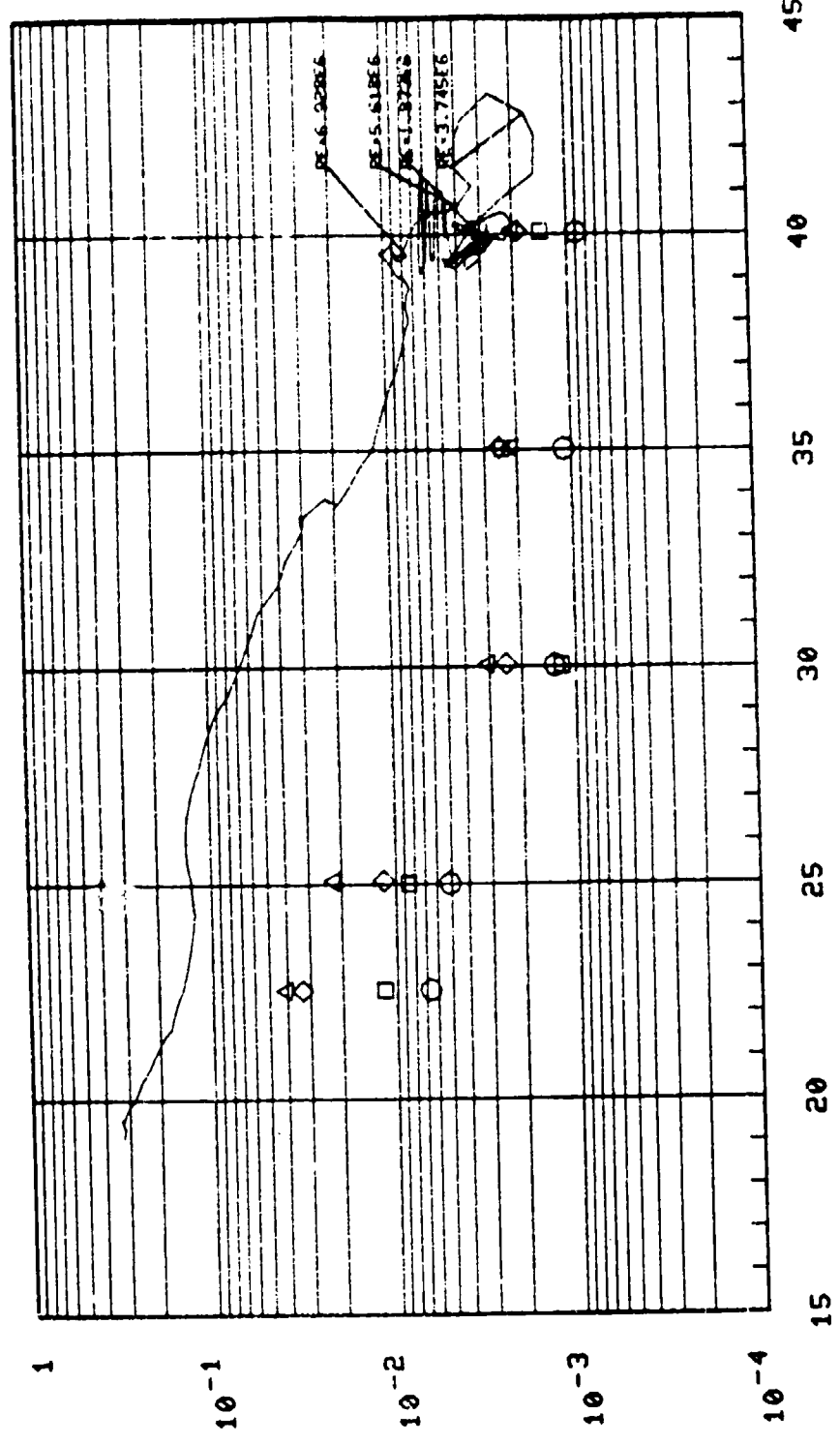
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779970A/H-REF 200-1380 SEC

- AF 0.0175 SCALE RE • 1.0 E06
- AF 0.0175 SCALE RE • 2.0 E06
- AF 0.0175 SCALE RE • 3.0 E06
- AF 0.0175 SCALE RE • 3.7 E06

□ ◇



FILM COEFF - H/H-REF

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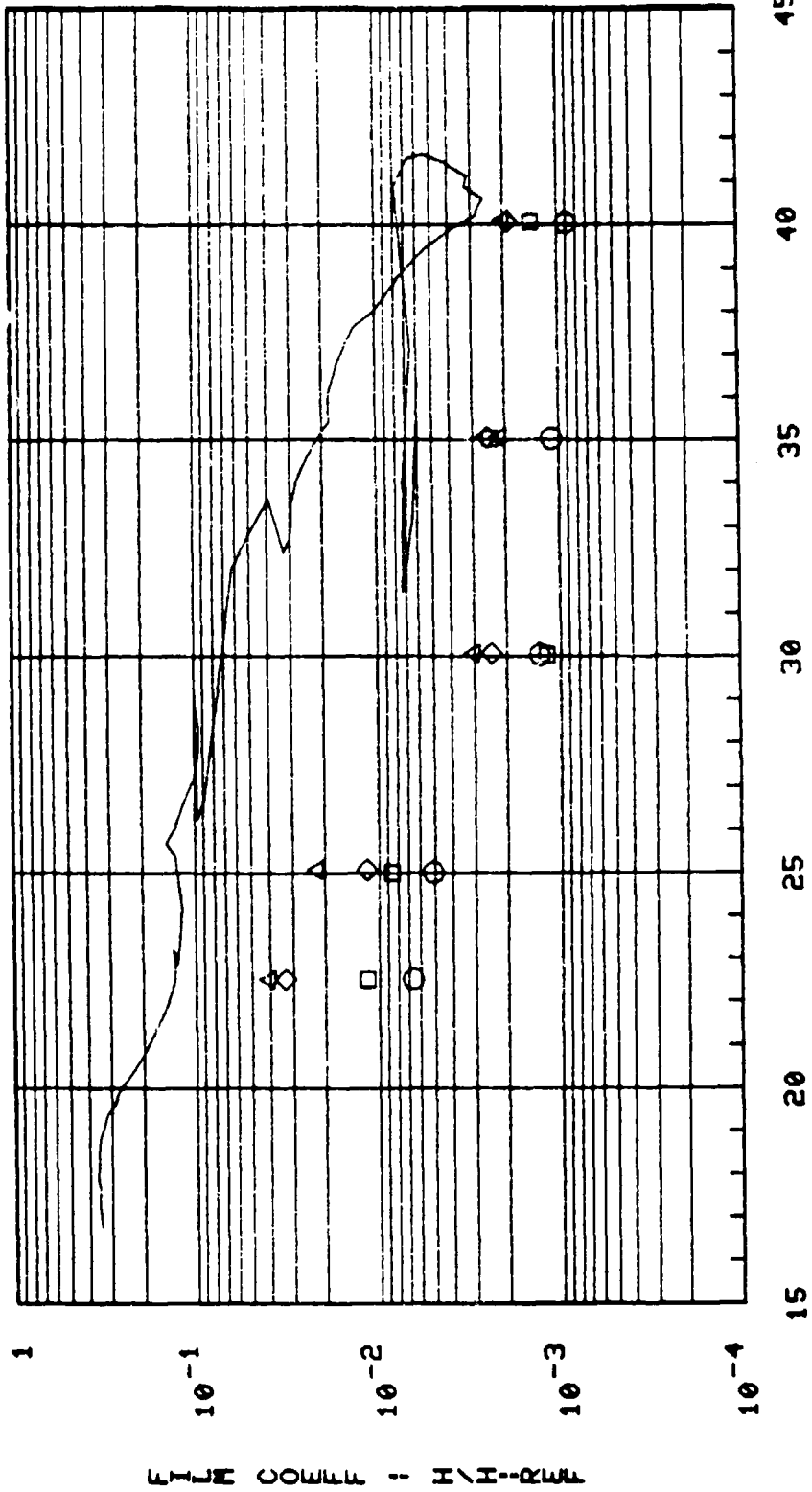
04.19.83  
 BASE TIME • 0774584.000 SEC  
 ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A/H-REF 965-1335 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06

□ ◇



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04/19 83  
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ANGLE-OF-ATTACK - DEG

FILM COEFF. - H/H-REF



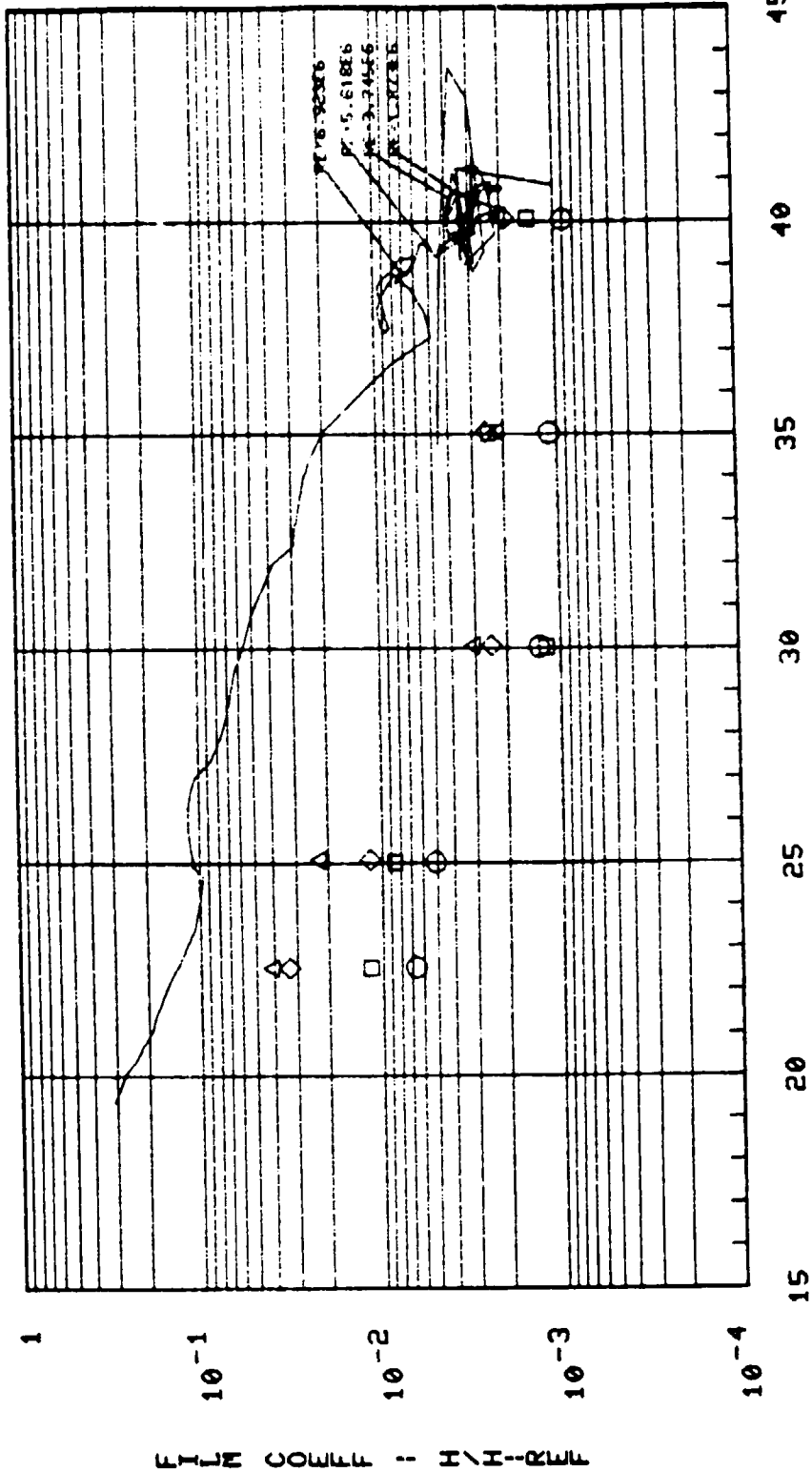
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A/H-REF 150-1350 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06

○ ○ ◇

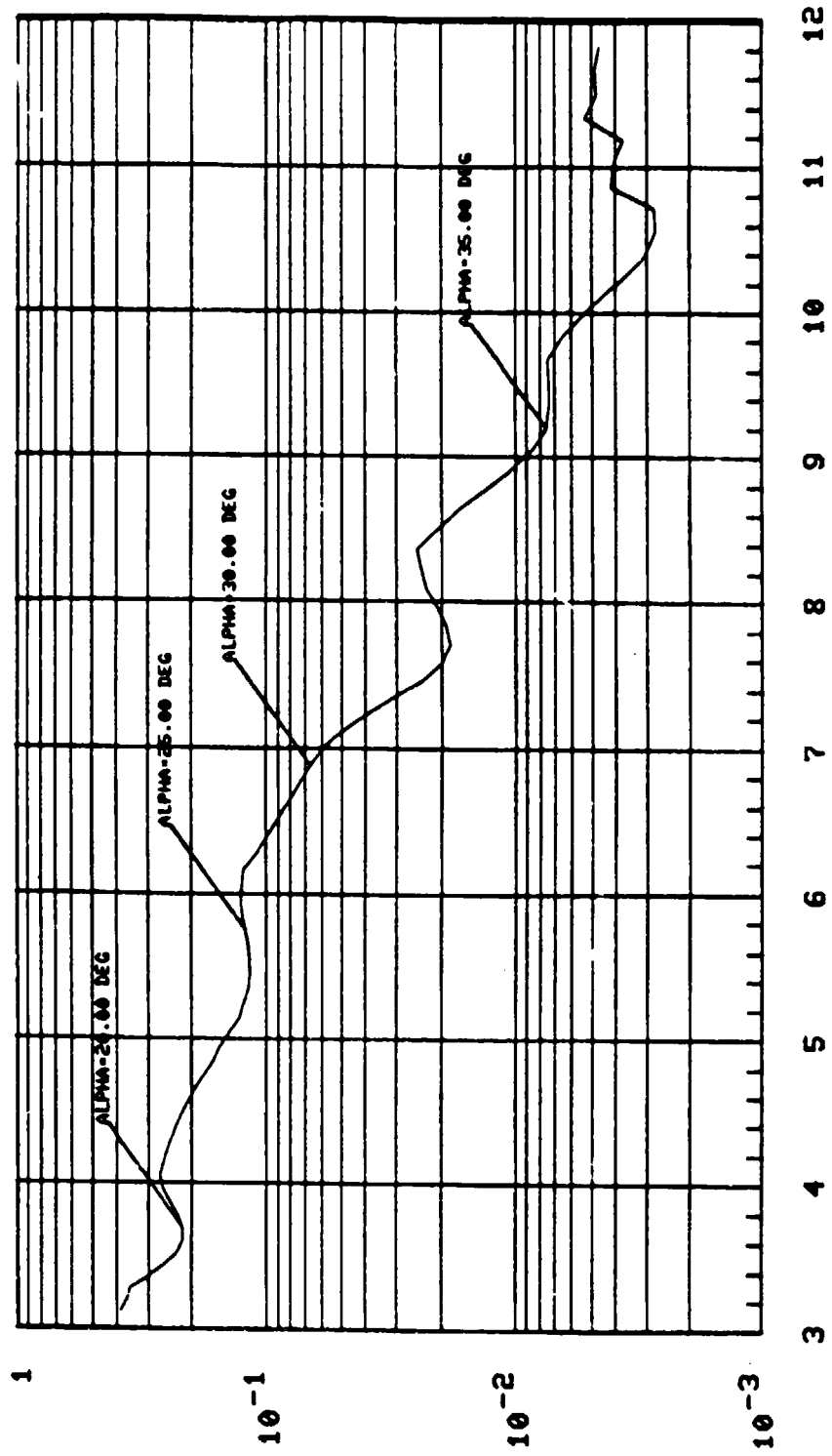


04 18-83  
BASE TIME \* 27698591.000 SEC.

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A/H-REF 1065-1480 SEC

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FILE CODE - H/H-REF

B-41

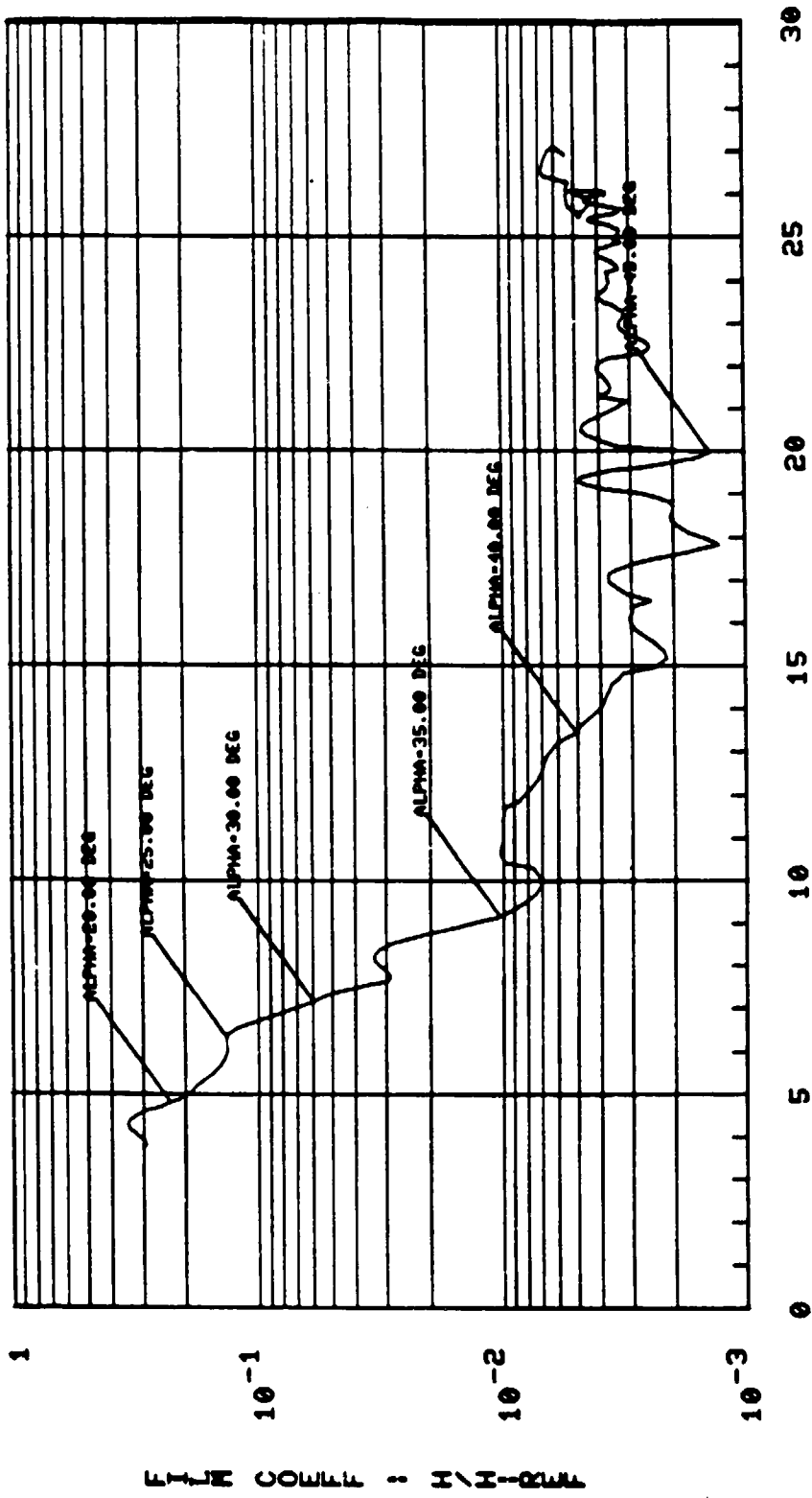
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MACH NUMBER

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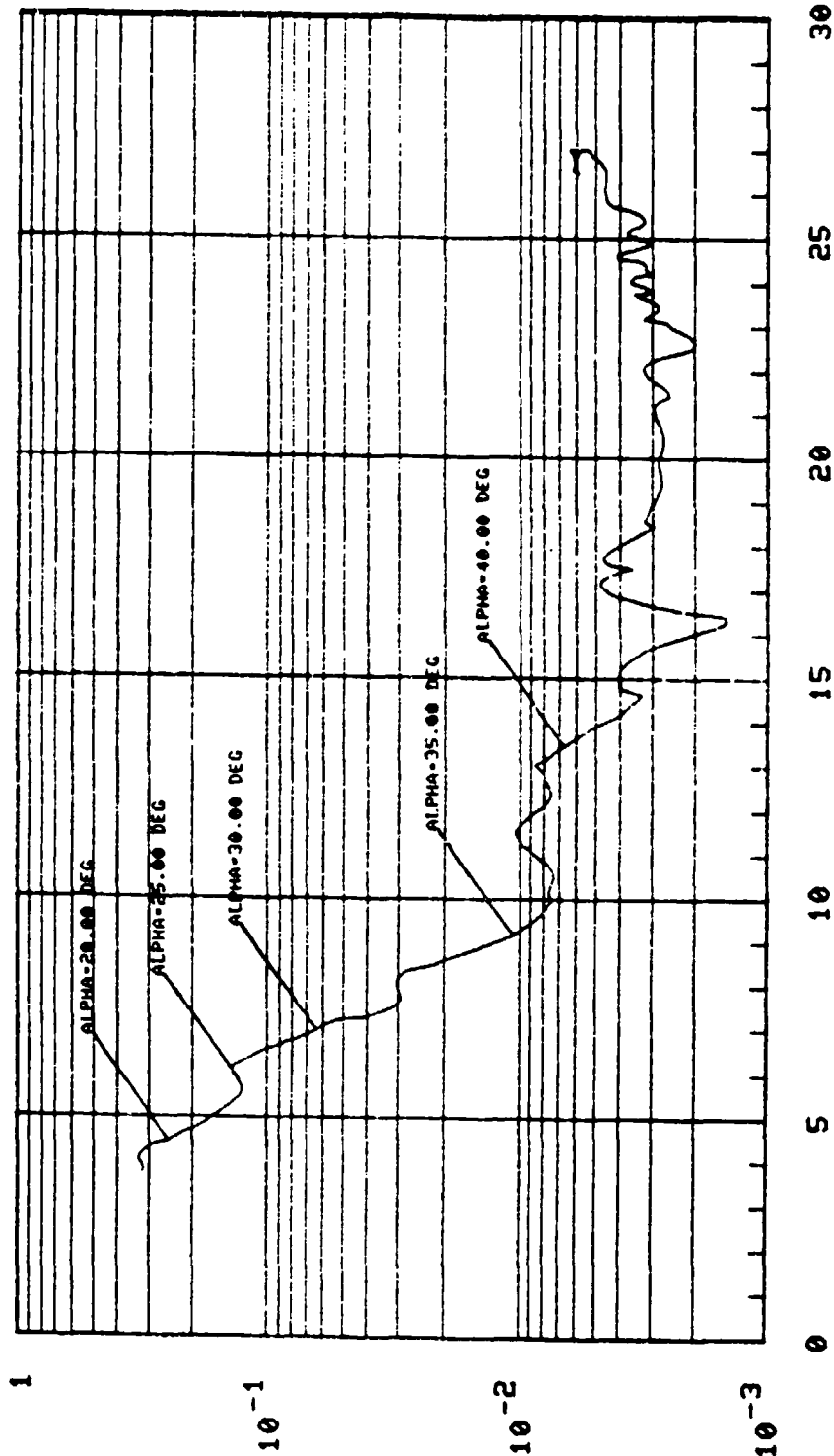
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U0719970A/H-PEF 200-1380 SEC



FLIGHT PARAMETER COMPARISON

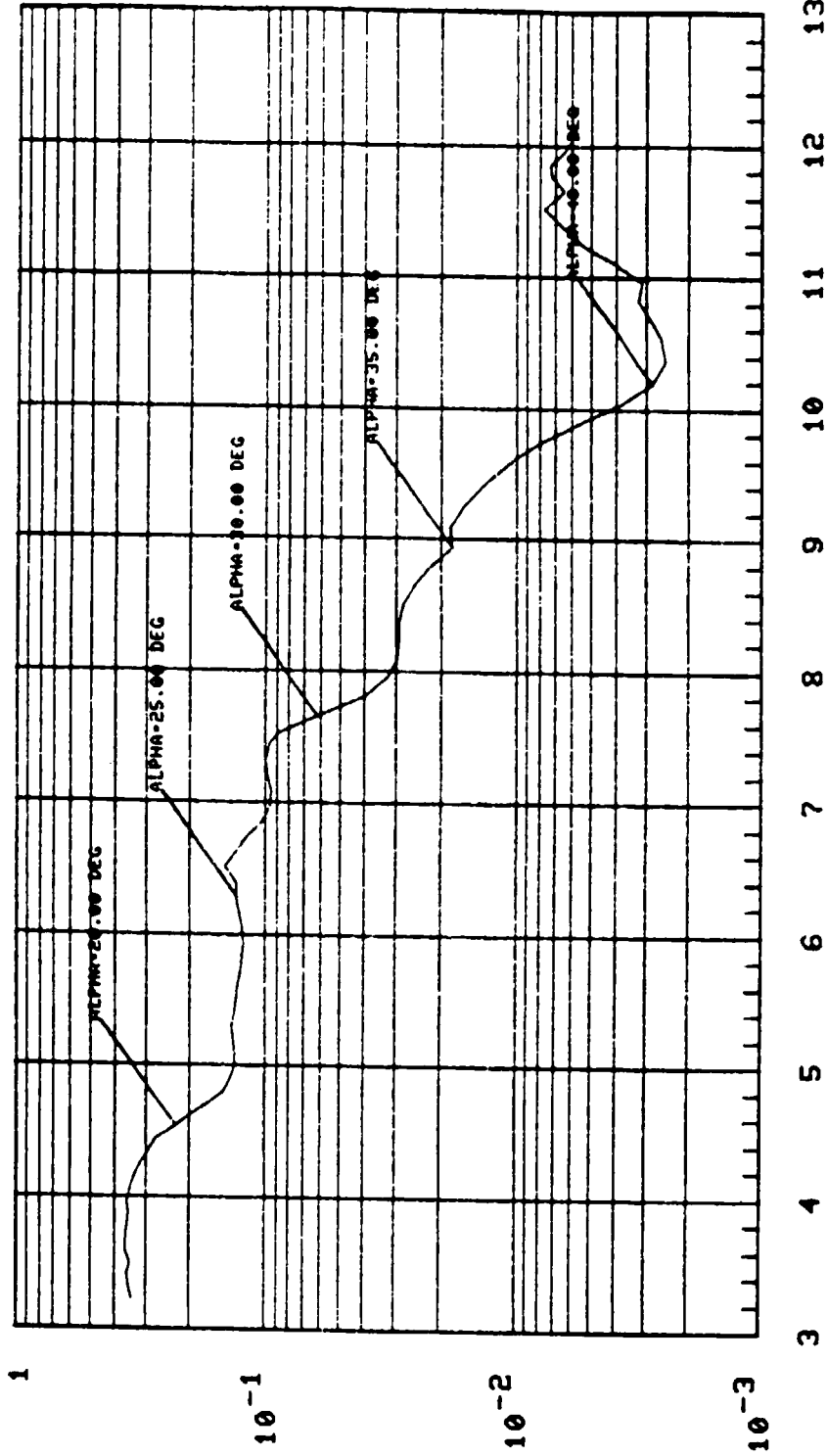
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U87T9978A/H-REF 965-1335 SEC



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B-44

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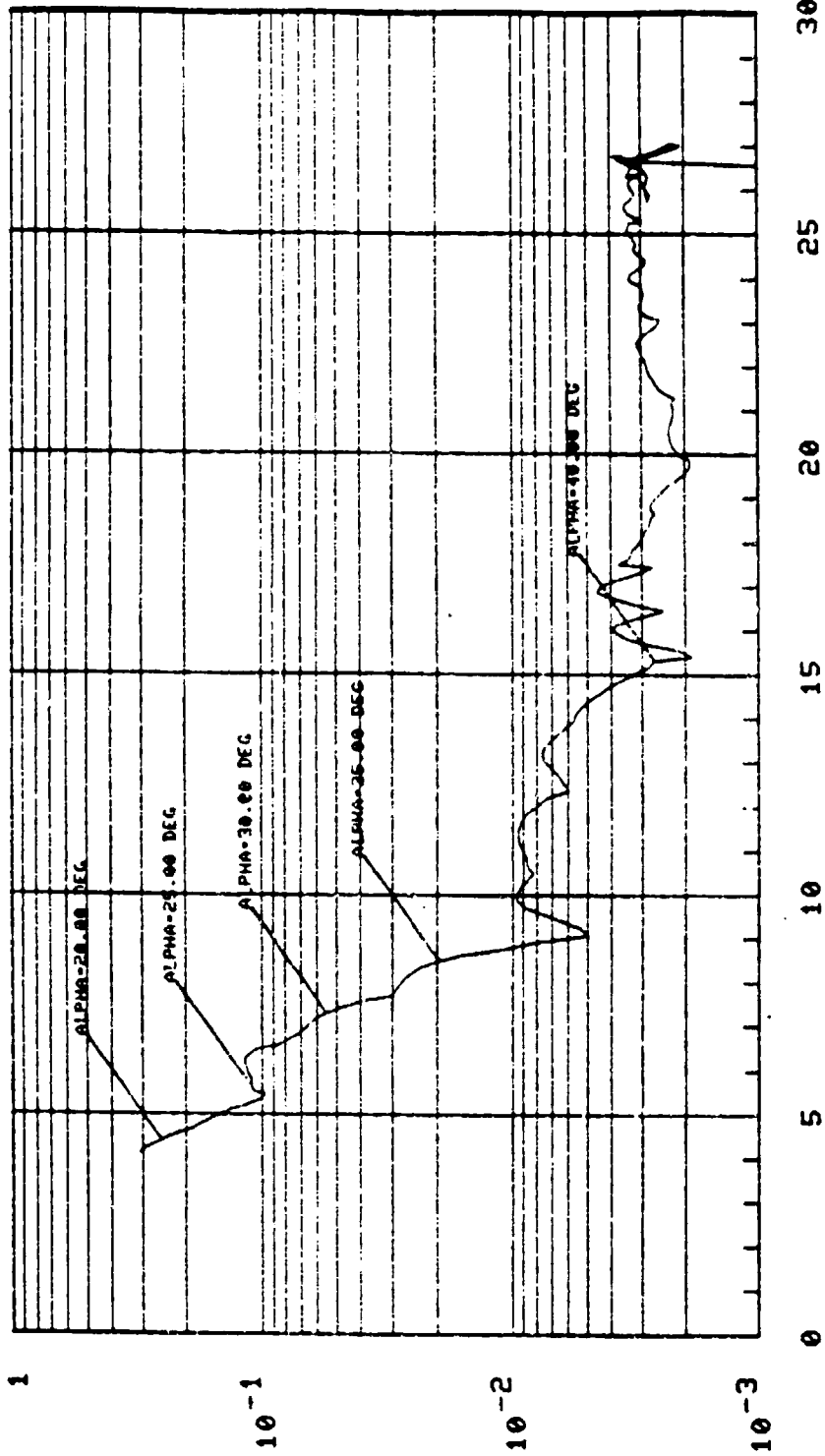
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MACH NUMBER

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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B-45

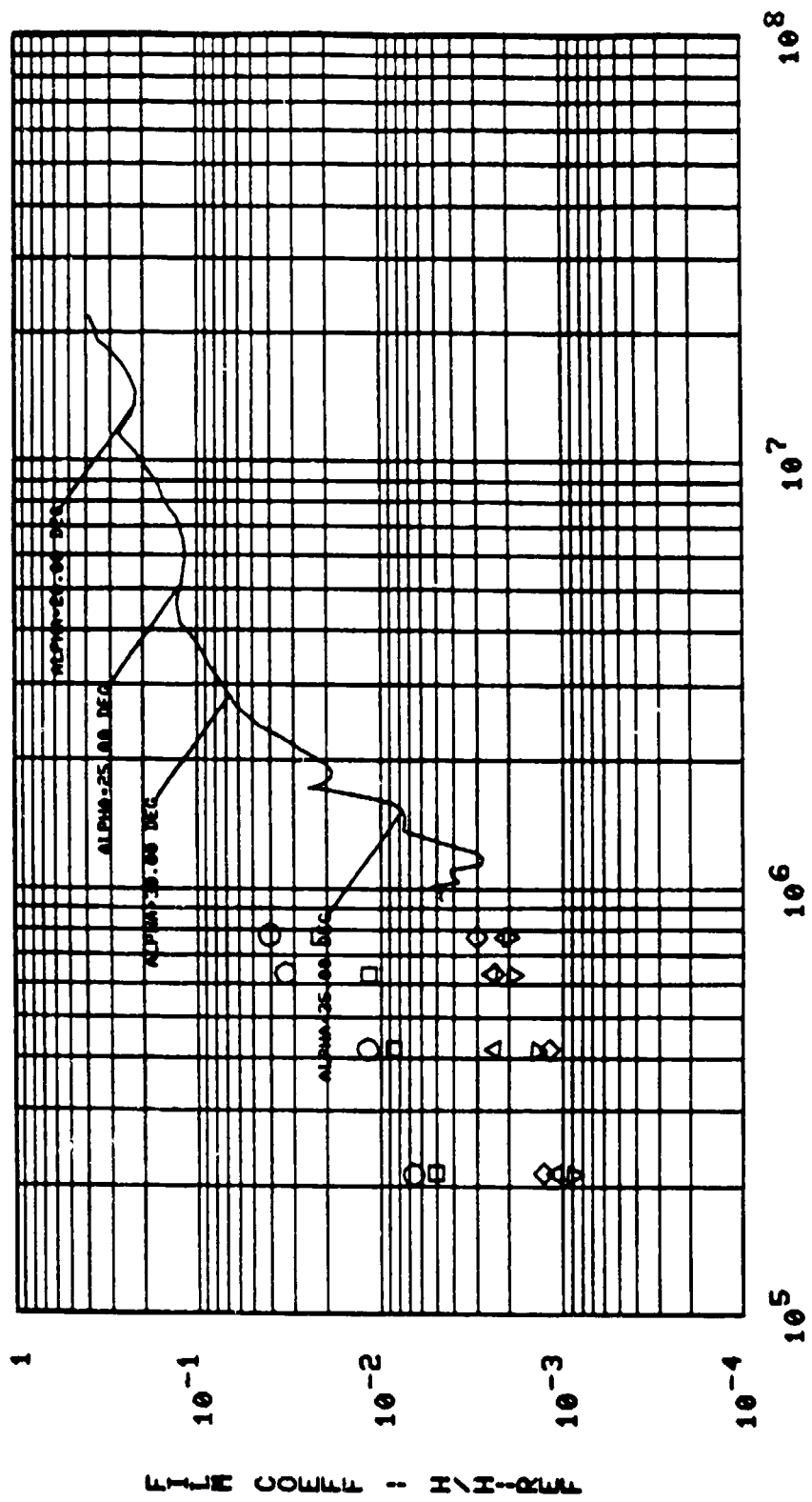
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MACH NUMBER

# STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9970A/H-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF - H/H-REF

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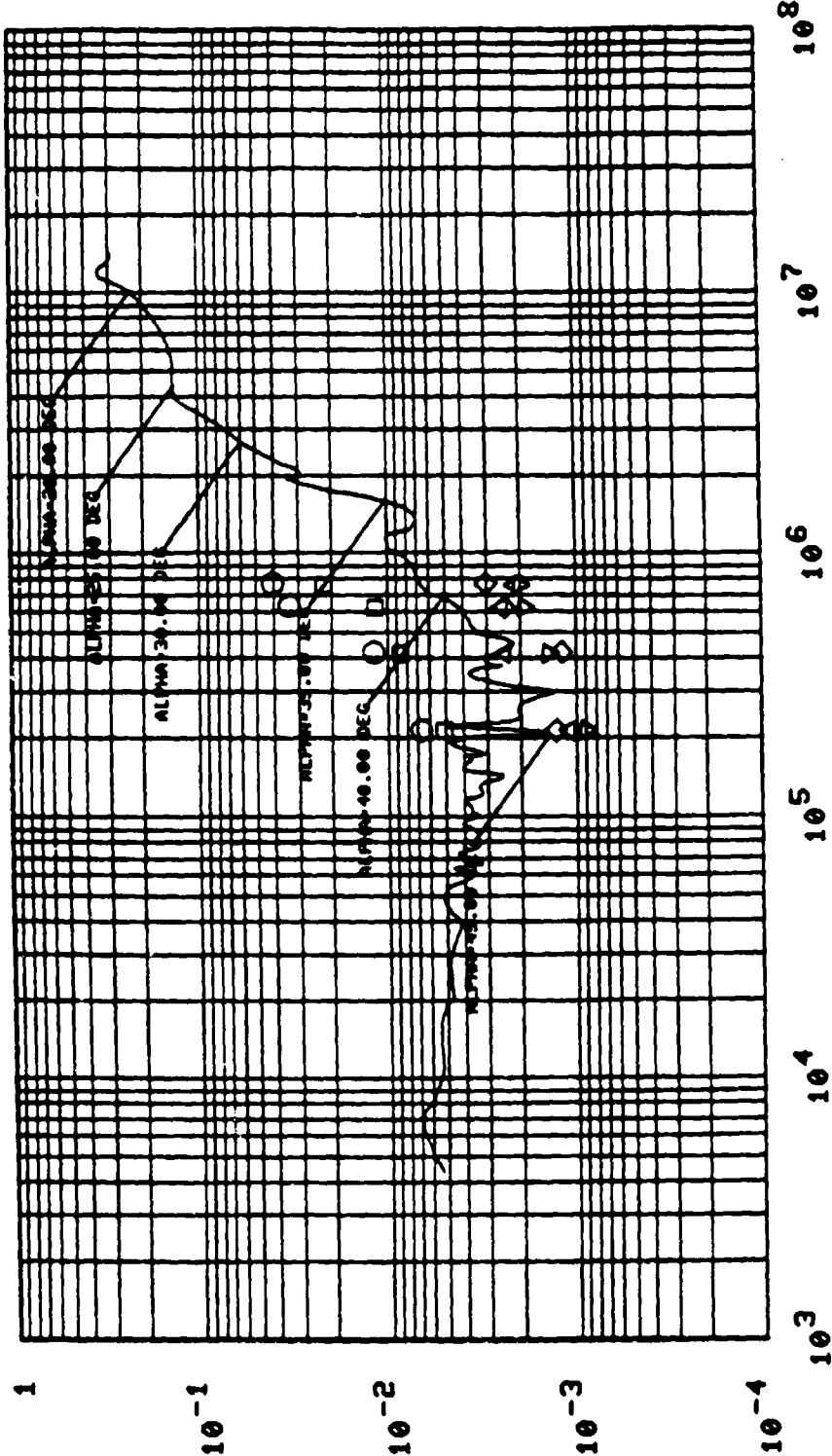
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REYNOLDS NUMBER (NS)

# STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



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04/20/83  
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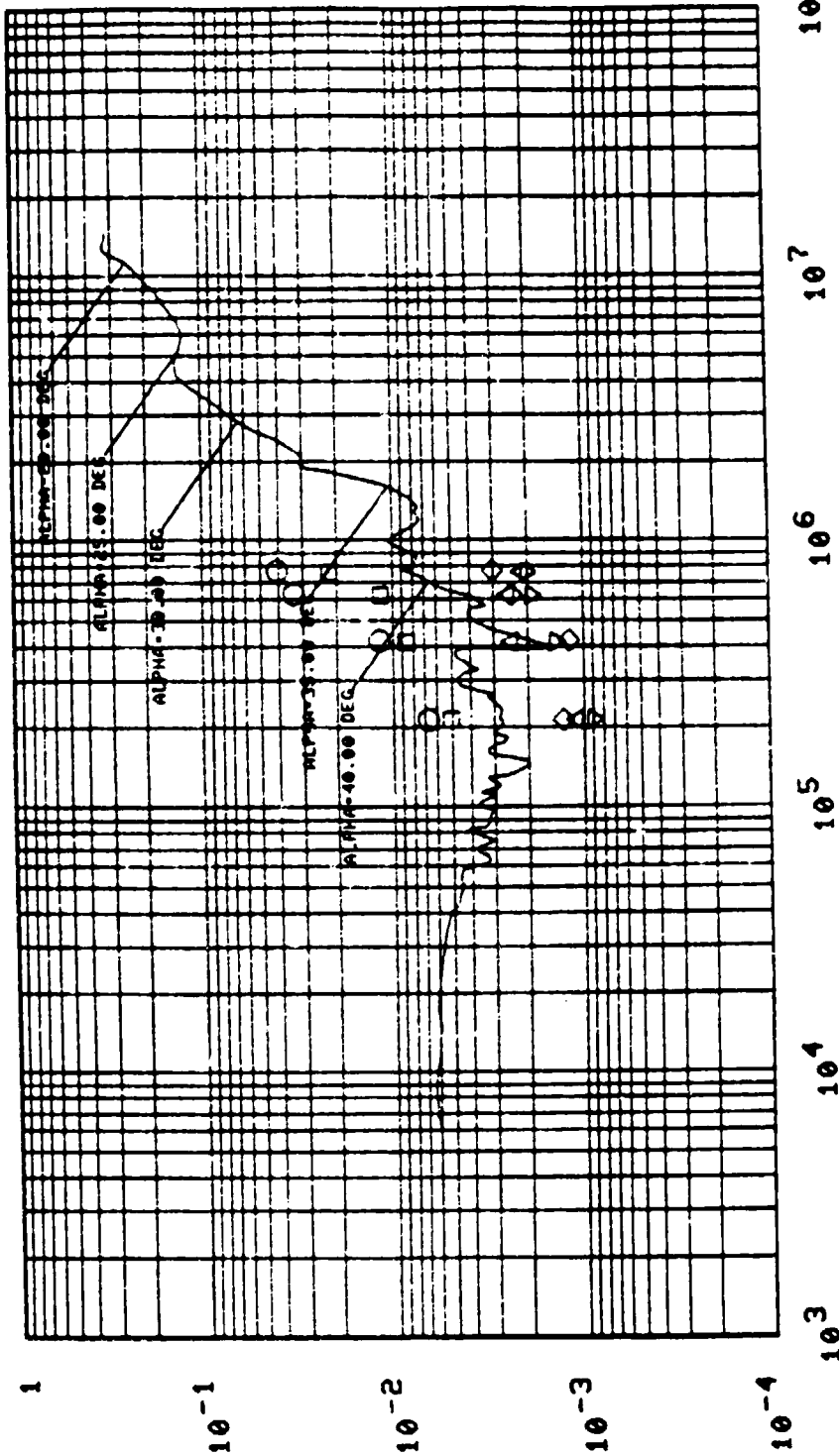
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- AF ALPHA - 25.0 DEGREES
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- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF - H/H-REF

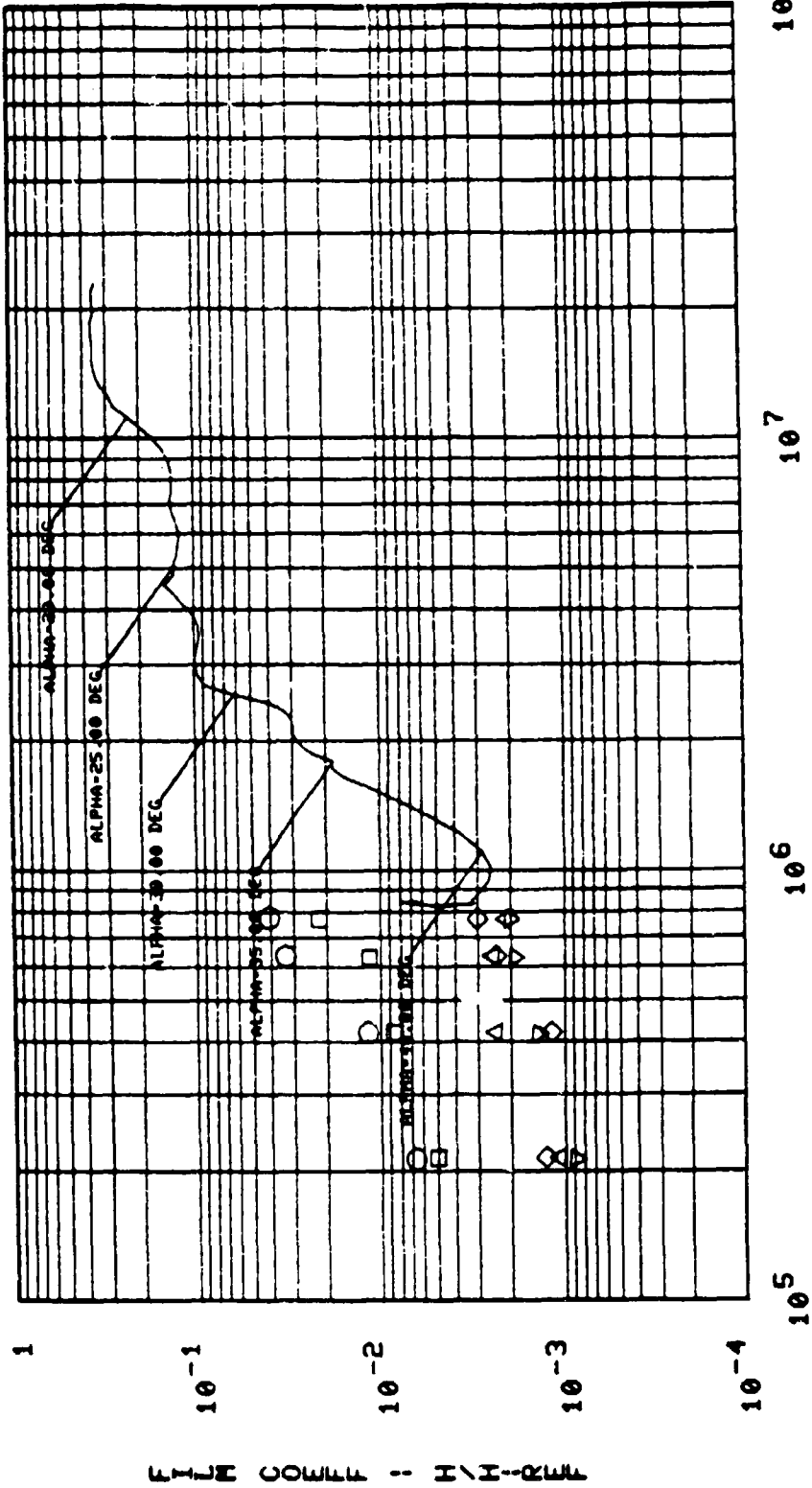
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04.19.83  
BASE TIME - 07745684.000 SEC.  
REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9970A/M-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
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- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FLIGHT COEFFICIENT - H/H-REF

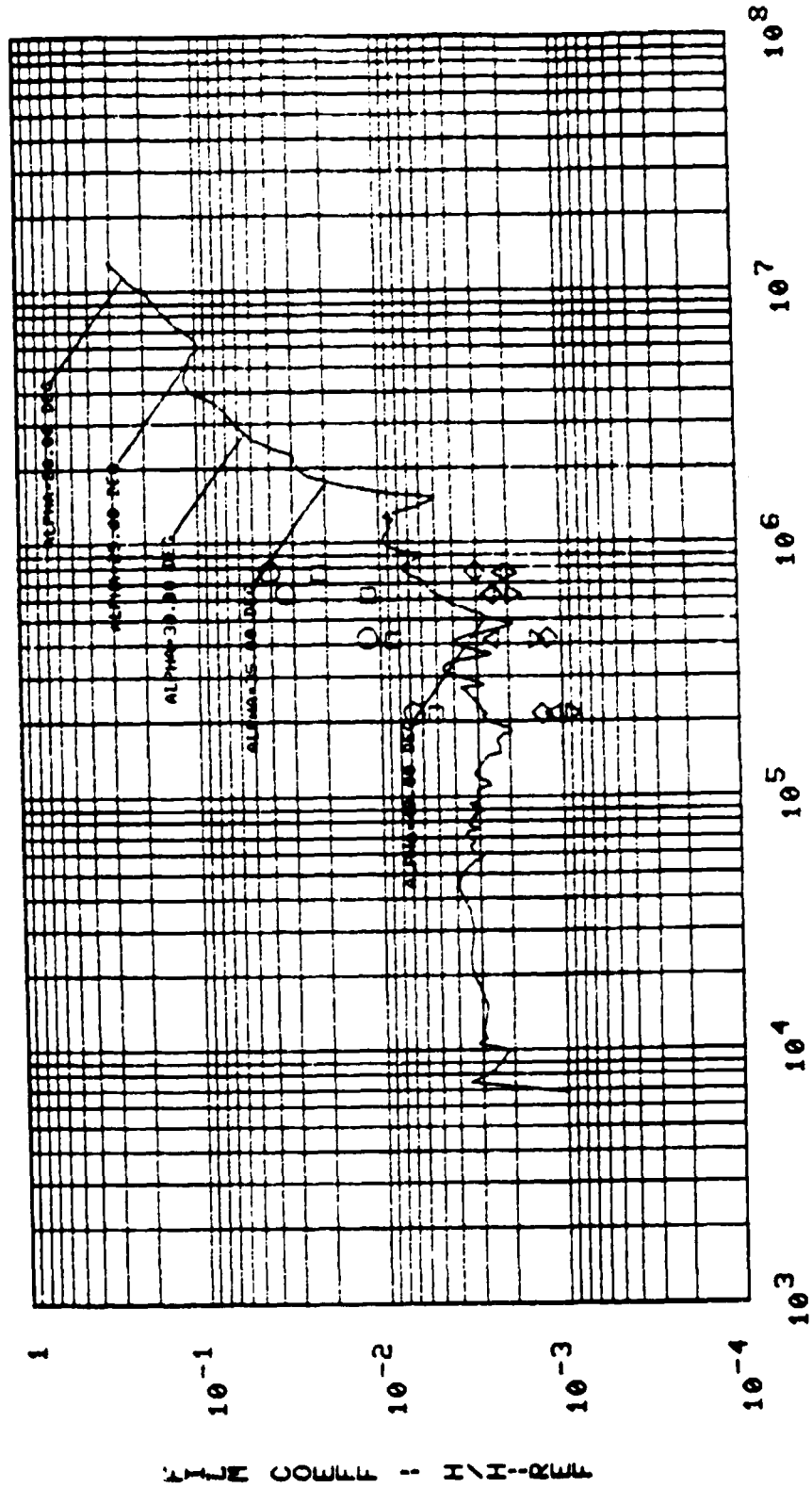
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REYNOLDS NUMBER (NS)

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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- AF ALPHA - 40.0 DEGREES



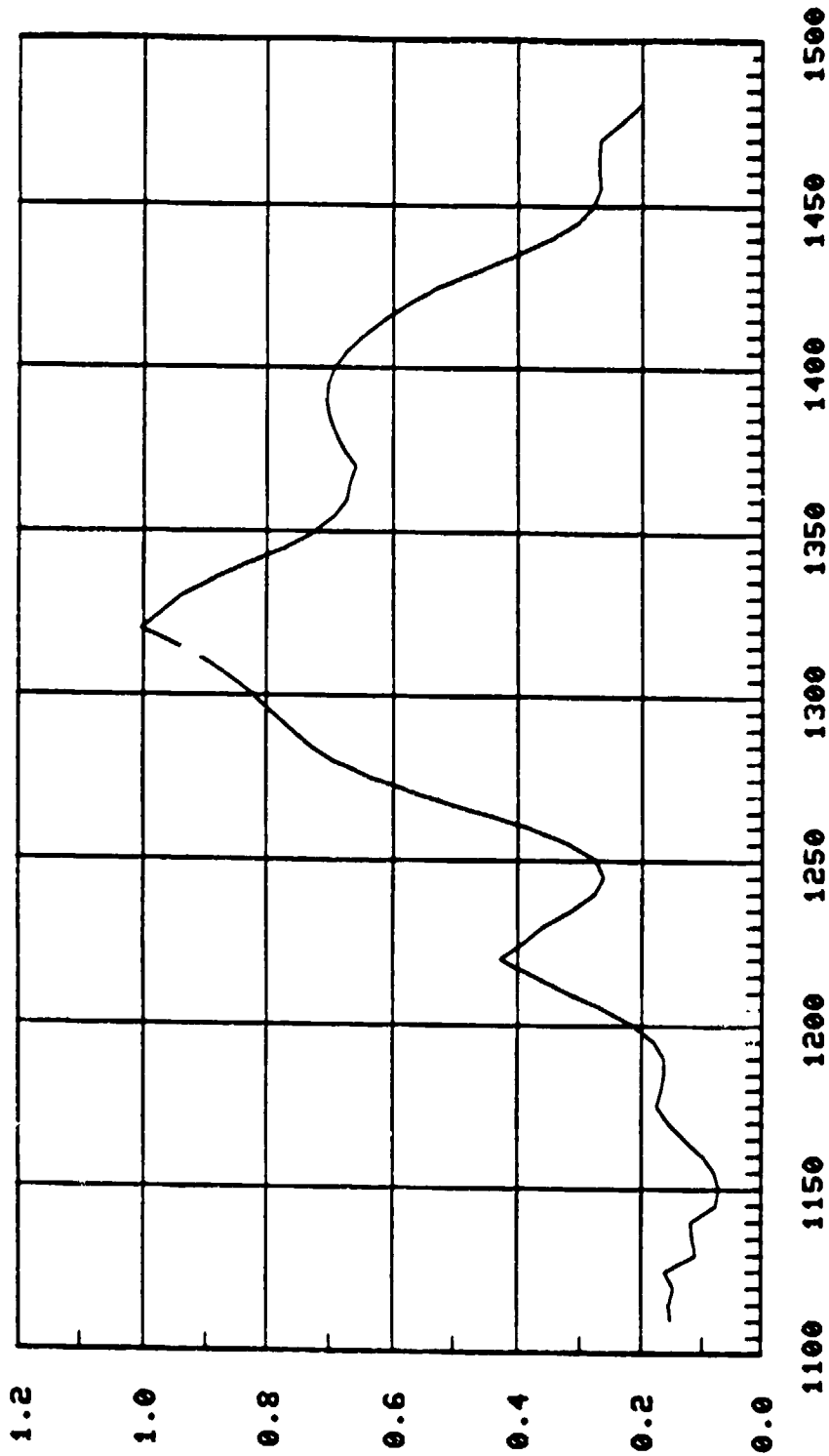
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04.13.53

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719970A



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HEATING RATE - BTU/FT^2/SEC

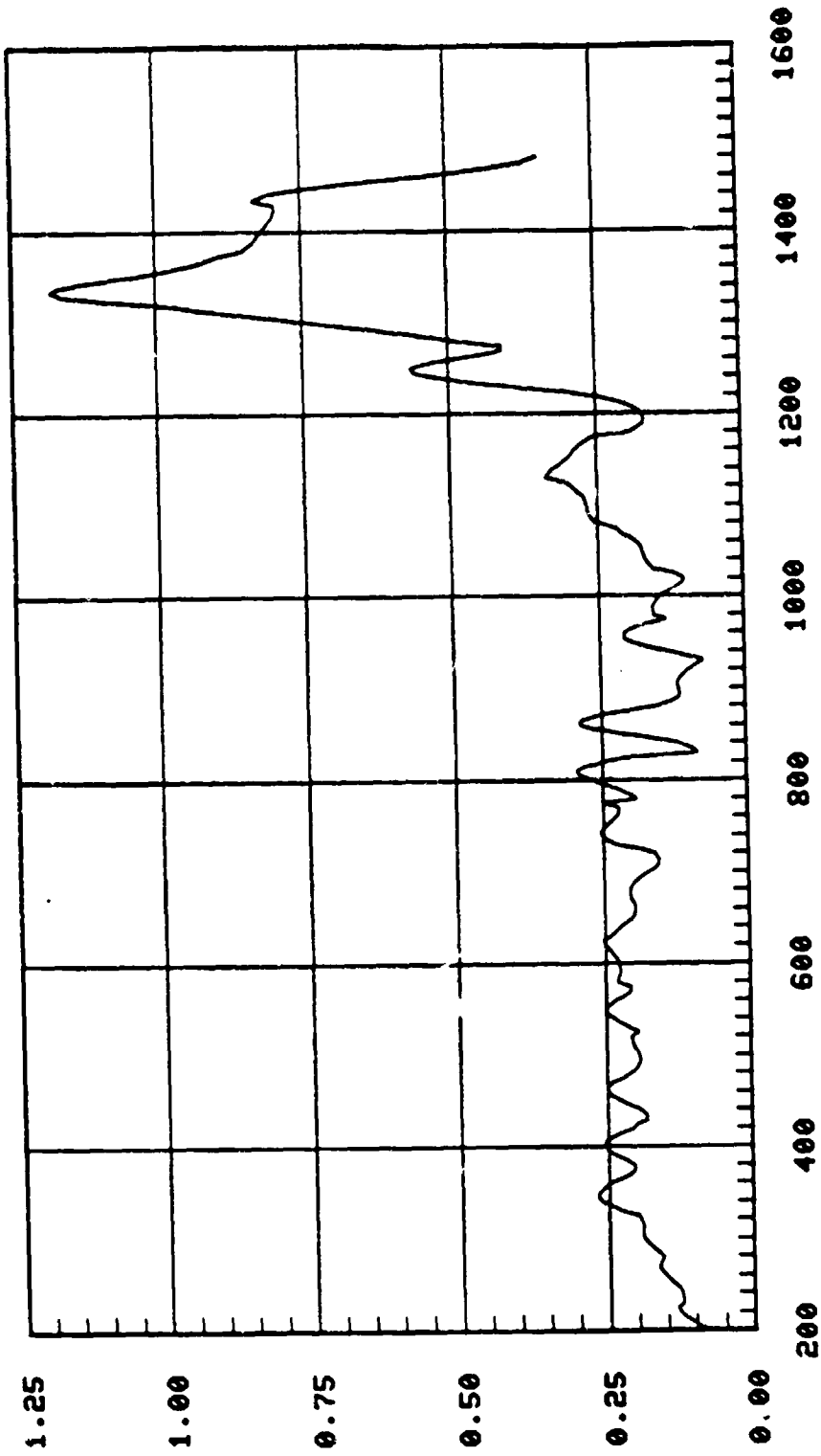
B-51

TIME - SECONDS

04/20/83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9970A



HEATING RATE :: BTU/FT<sup>2</sup>/SEC :: SEC

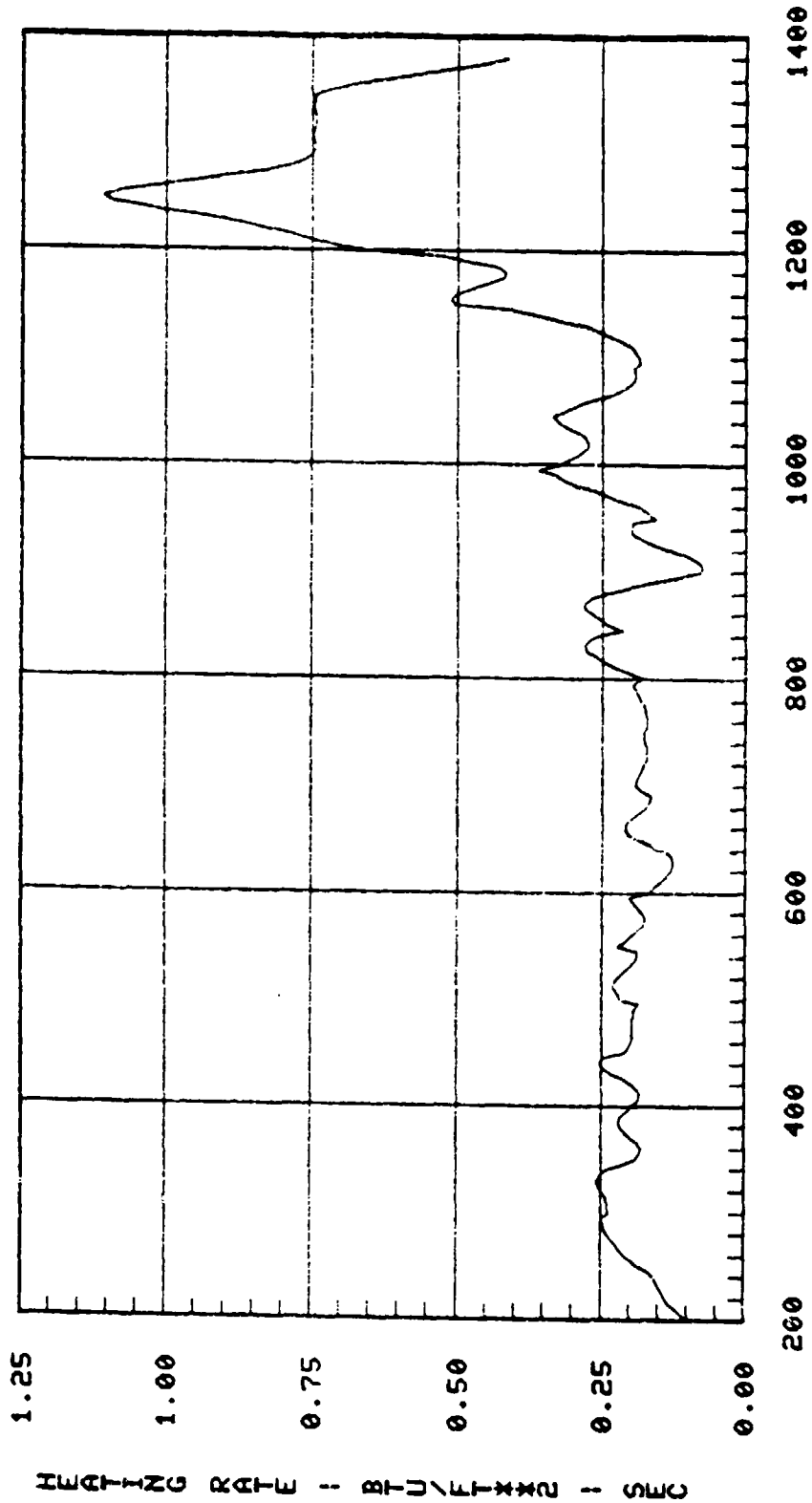
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04/20/83

TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07TS970A



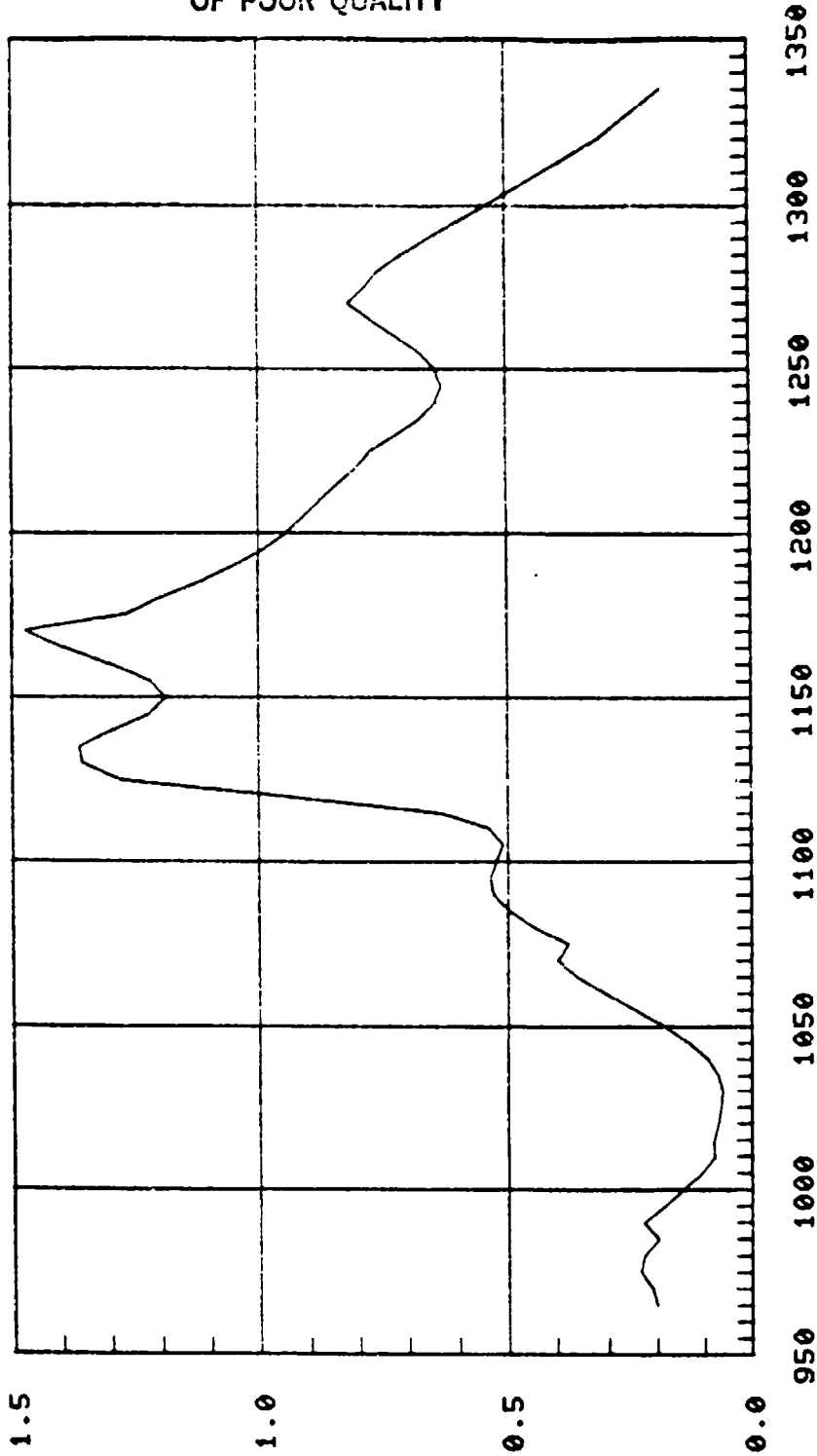
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TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A



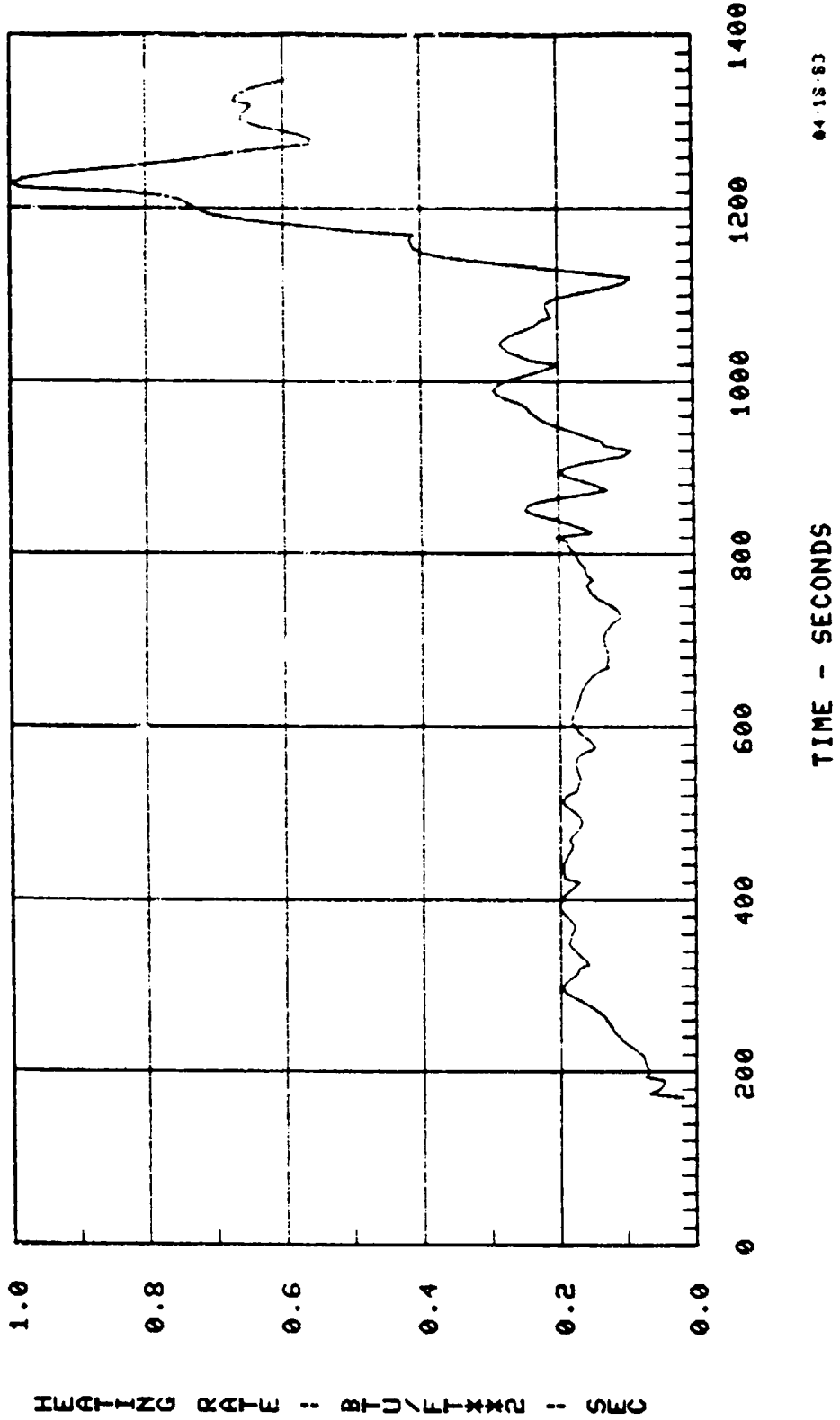
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TIME - SECONDS

04-19-83

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U07T9570A

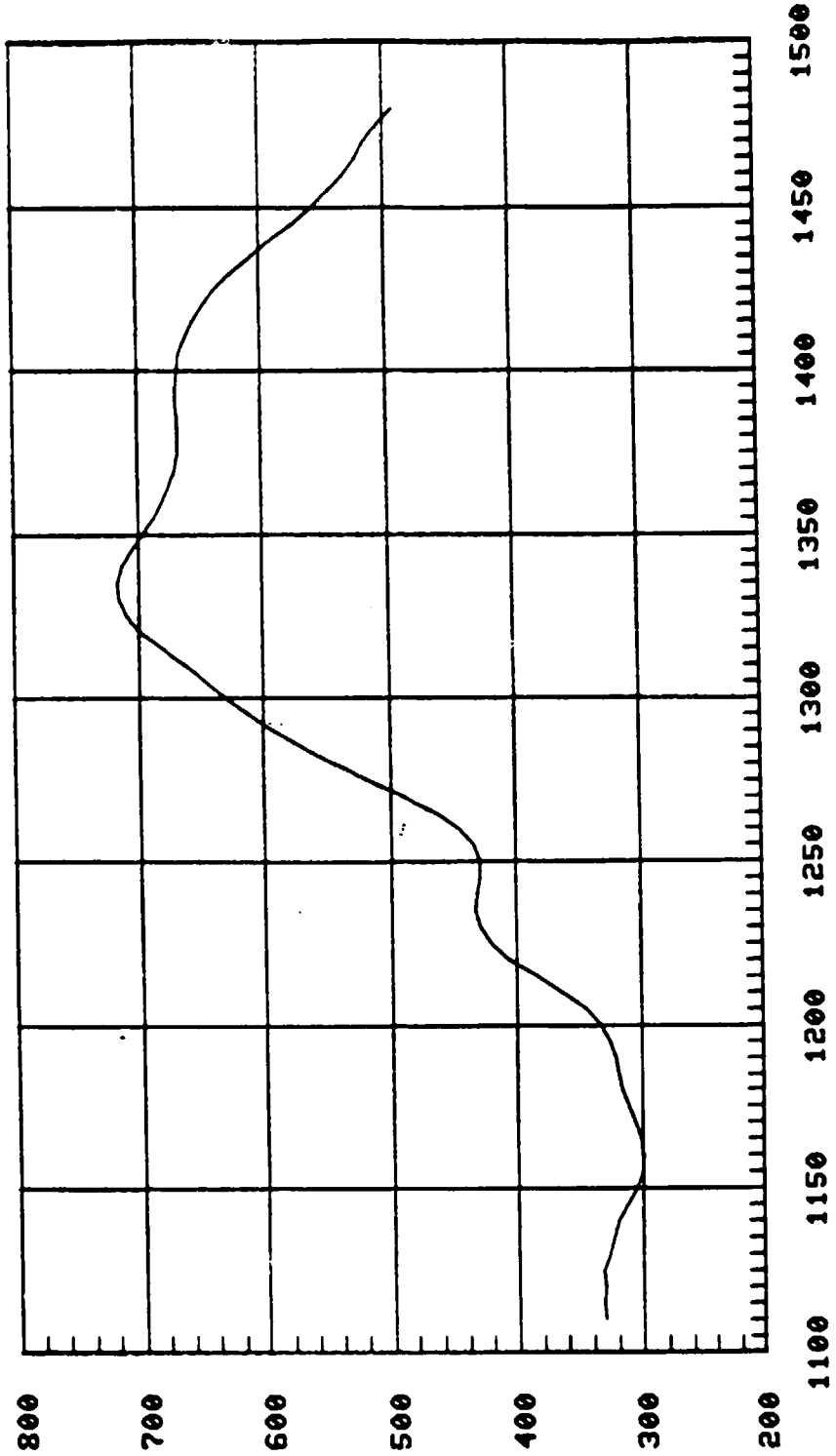




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STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719970A



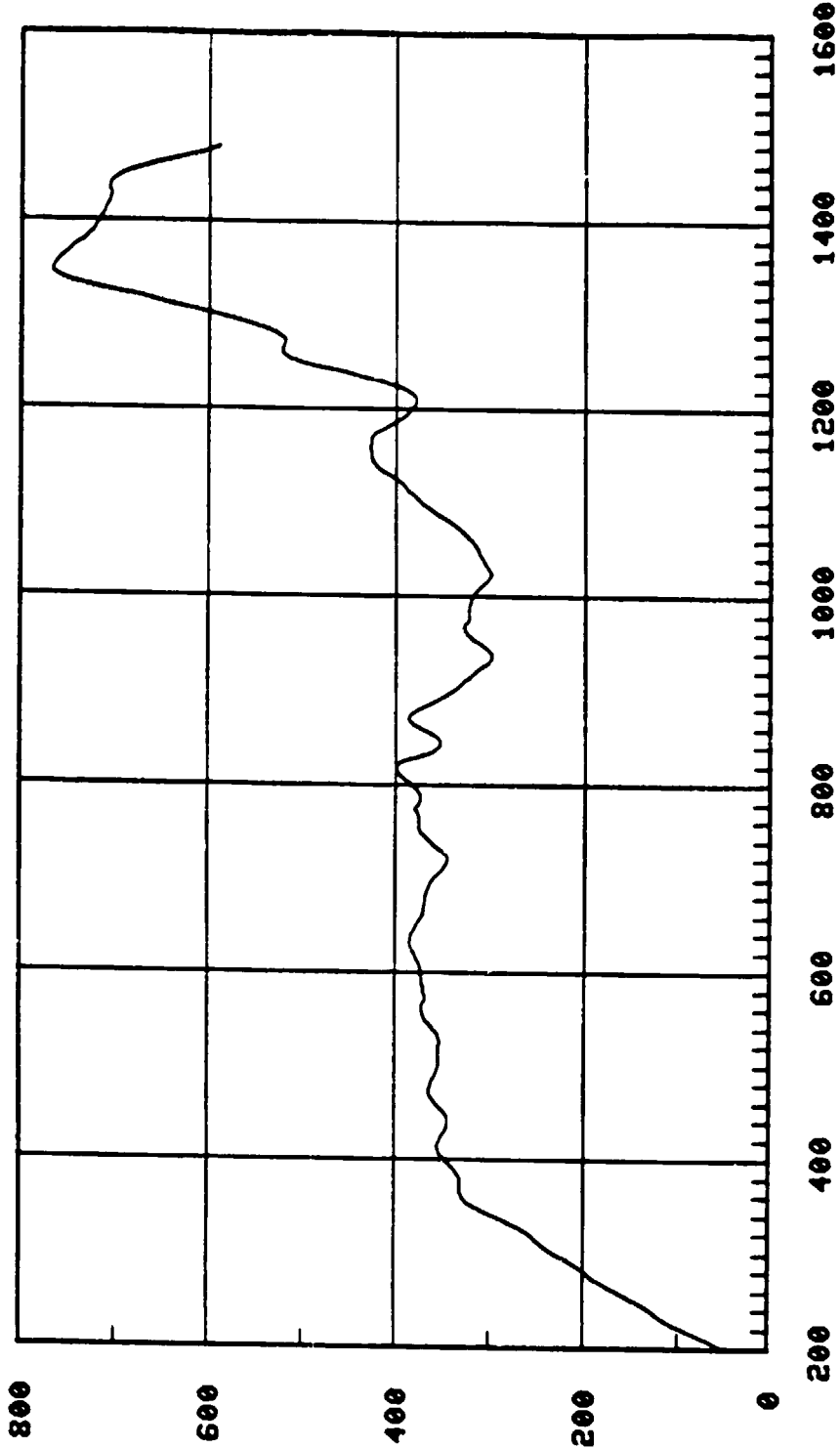
04/20/83

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PARAMETER

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A



HEIGHT - FEET

B-57

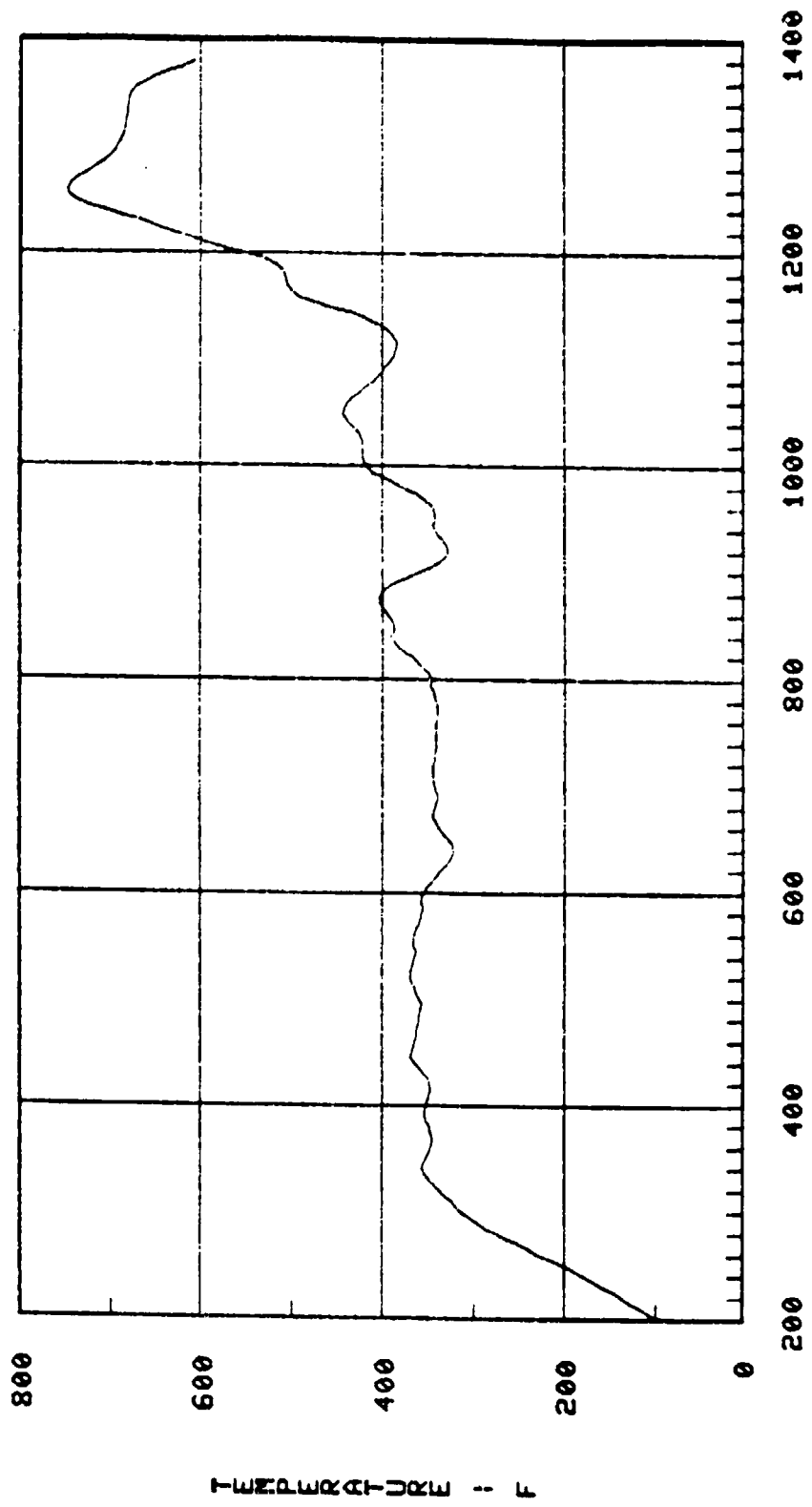
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TIME - SECONDS

04/20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T5970A



TEMPERATURE -- F

B-58

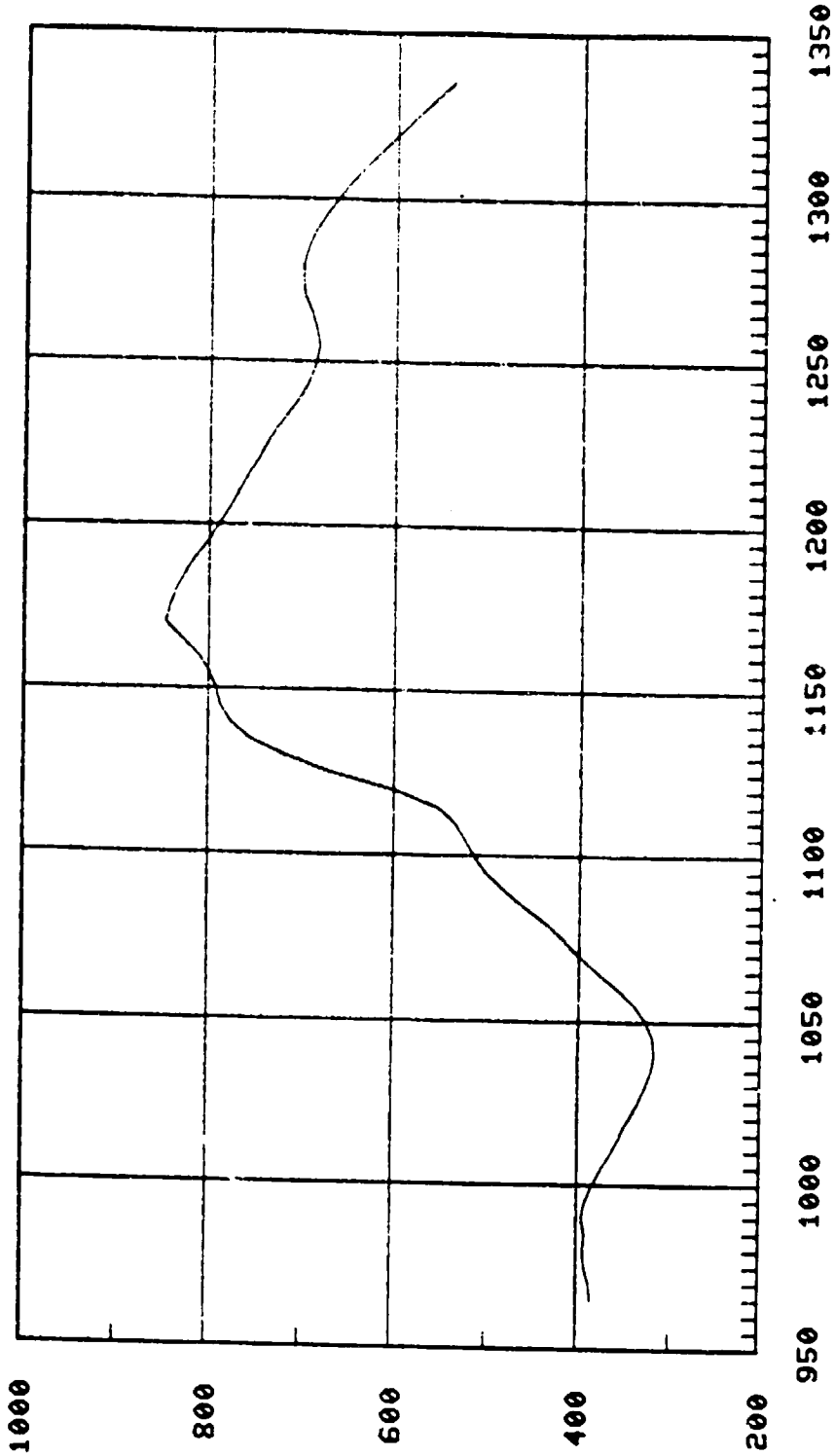
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TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A



TEMPERATURE -- F

B-59

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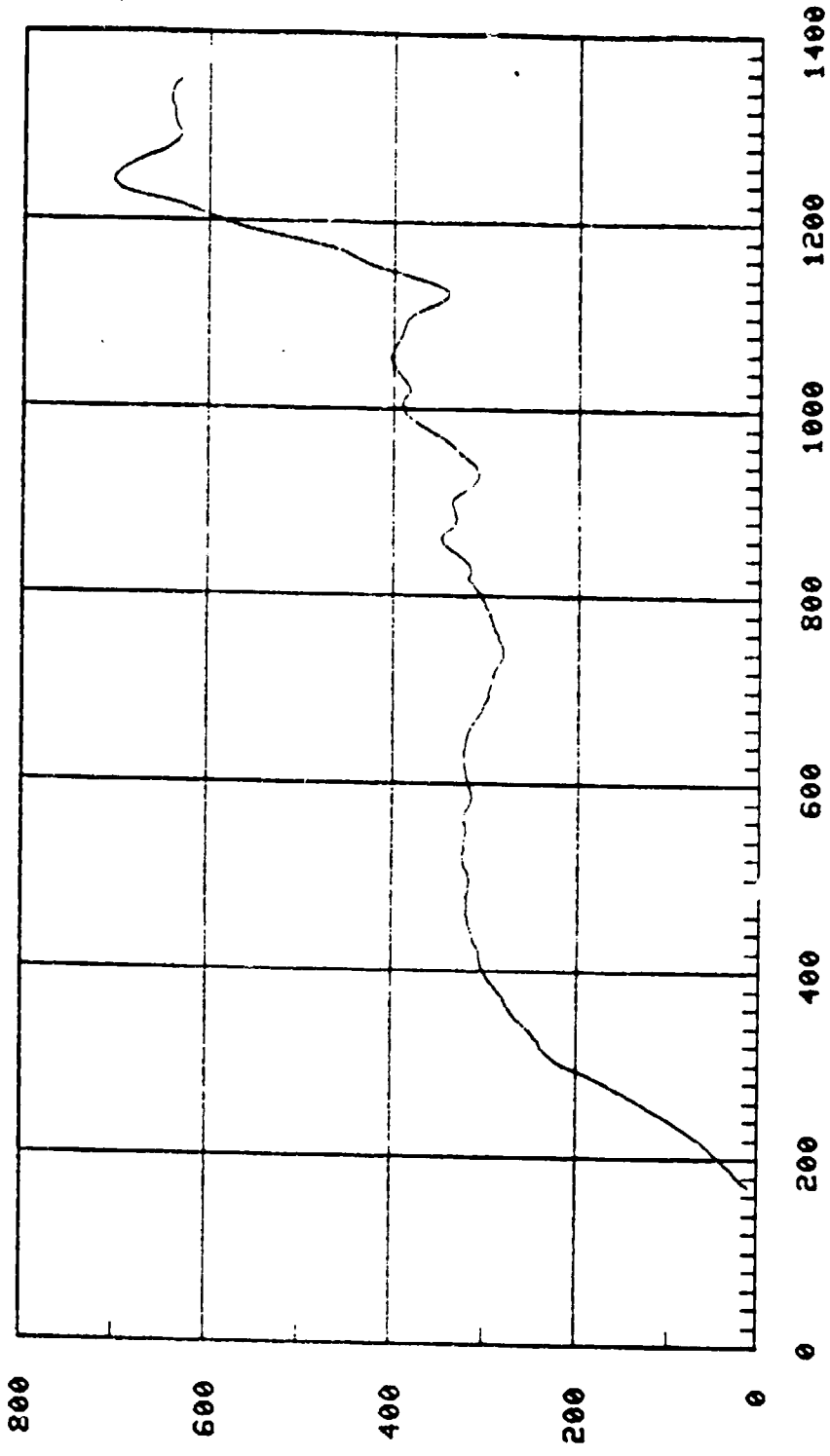
TIME - SECONDS

04 19 83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A

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FUELERGT-DKW -- F

B-60

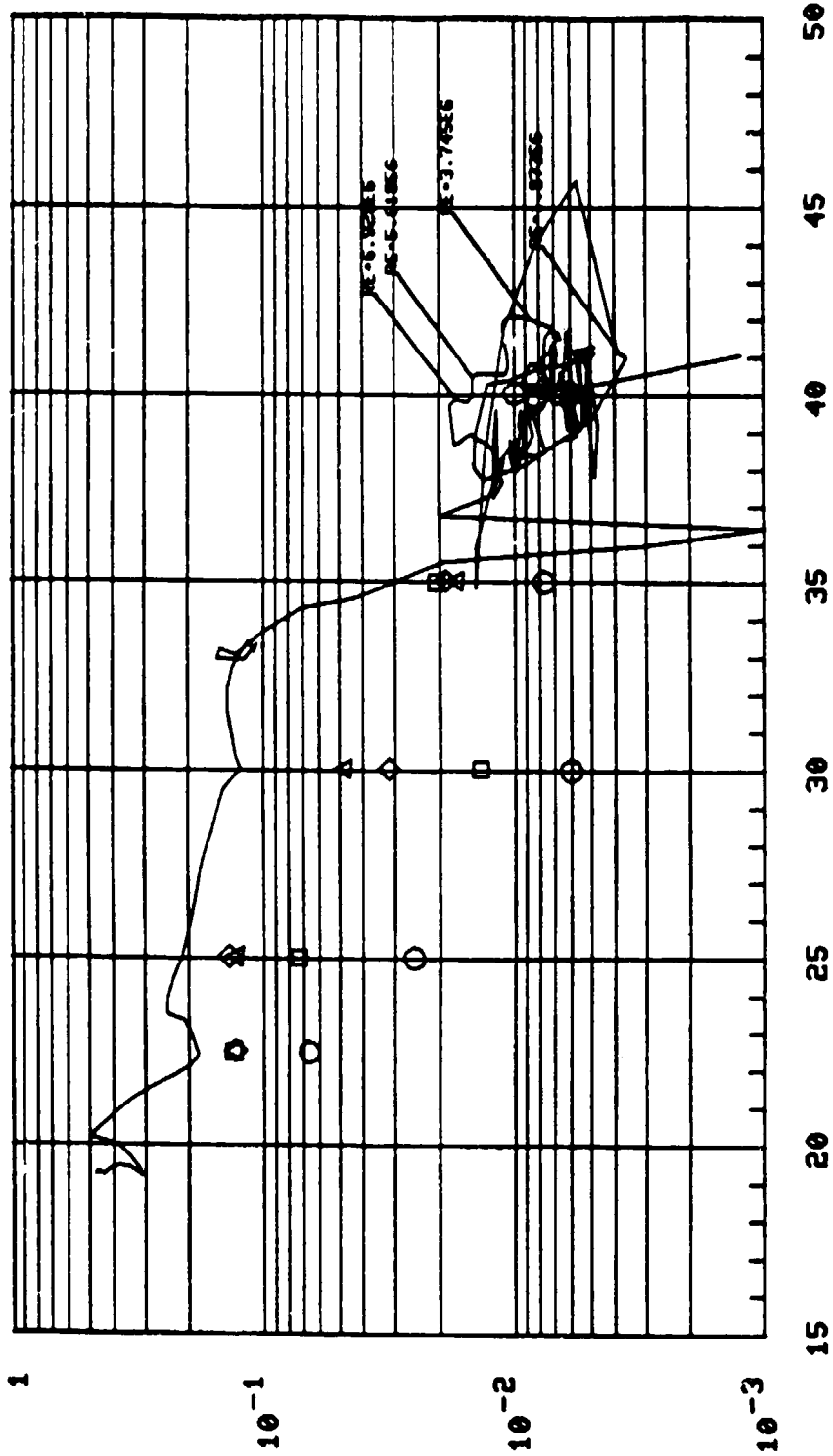
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04.13.83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719972A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



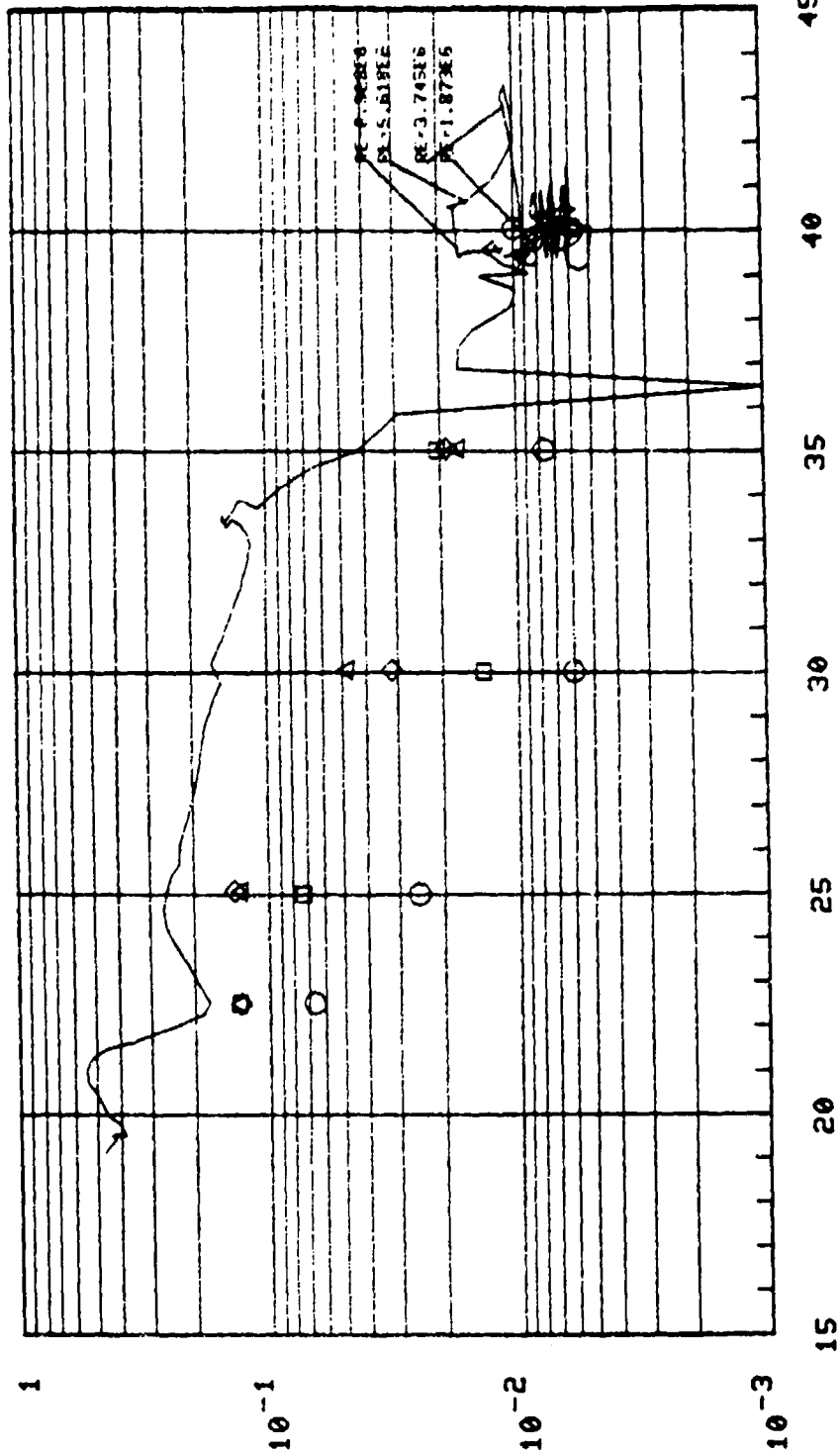
CL - H/H-REF

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779972A/H-REF 200-1380 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06

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FILM COEFF - H/H-REF

B-62

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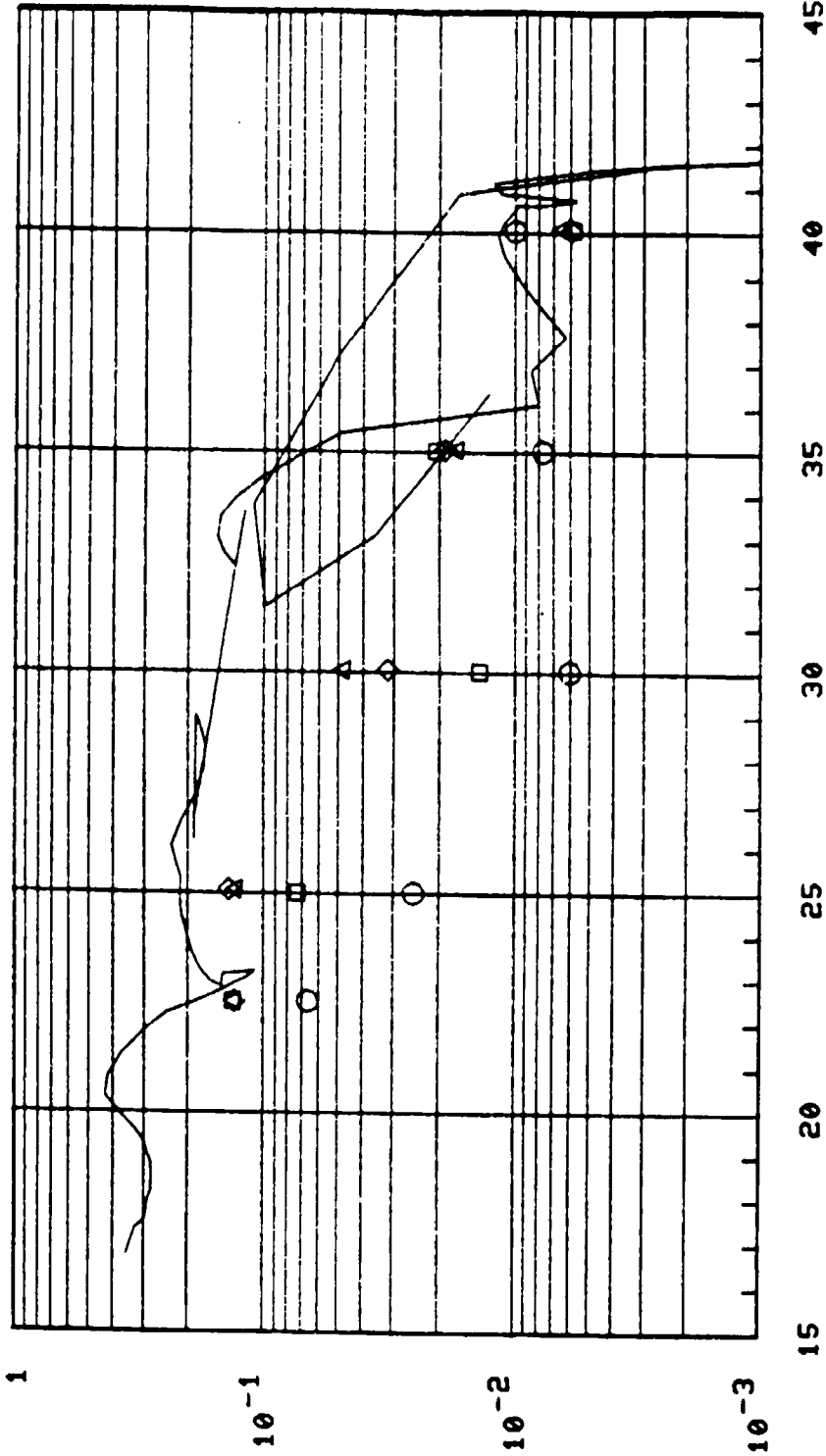
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ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9972A/M-REF 965-1335 SEC

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- AF 0.0175 SCALE RE - 2.0 E06
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U07T9972A/M-REF

B-63

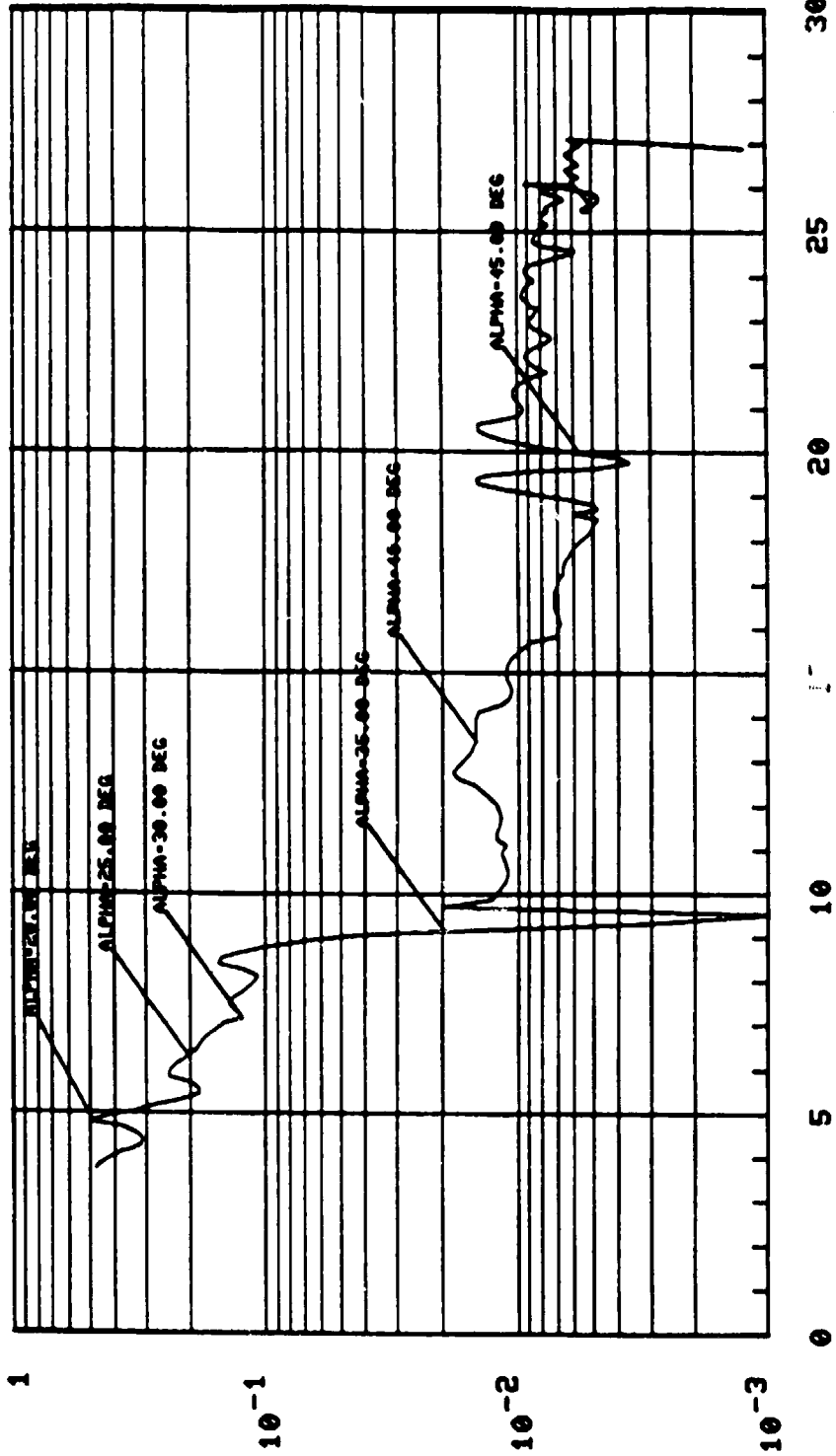
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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9972A/H-REF 200-1480 SEC



FLIGHT PARAMETER COMPARISON

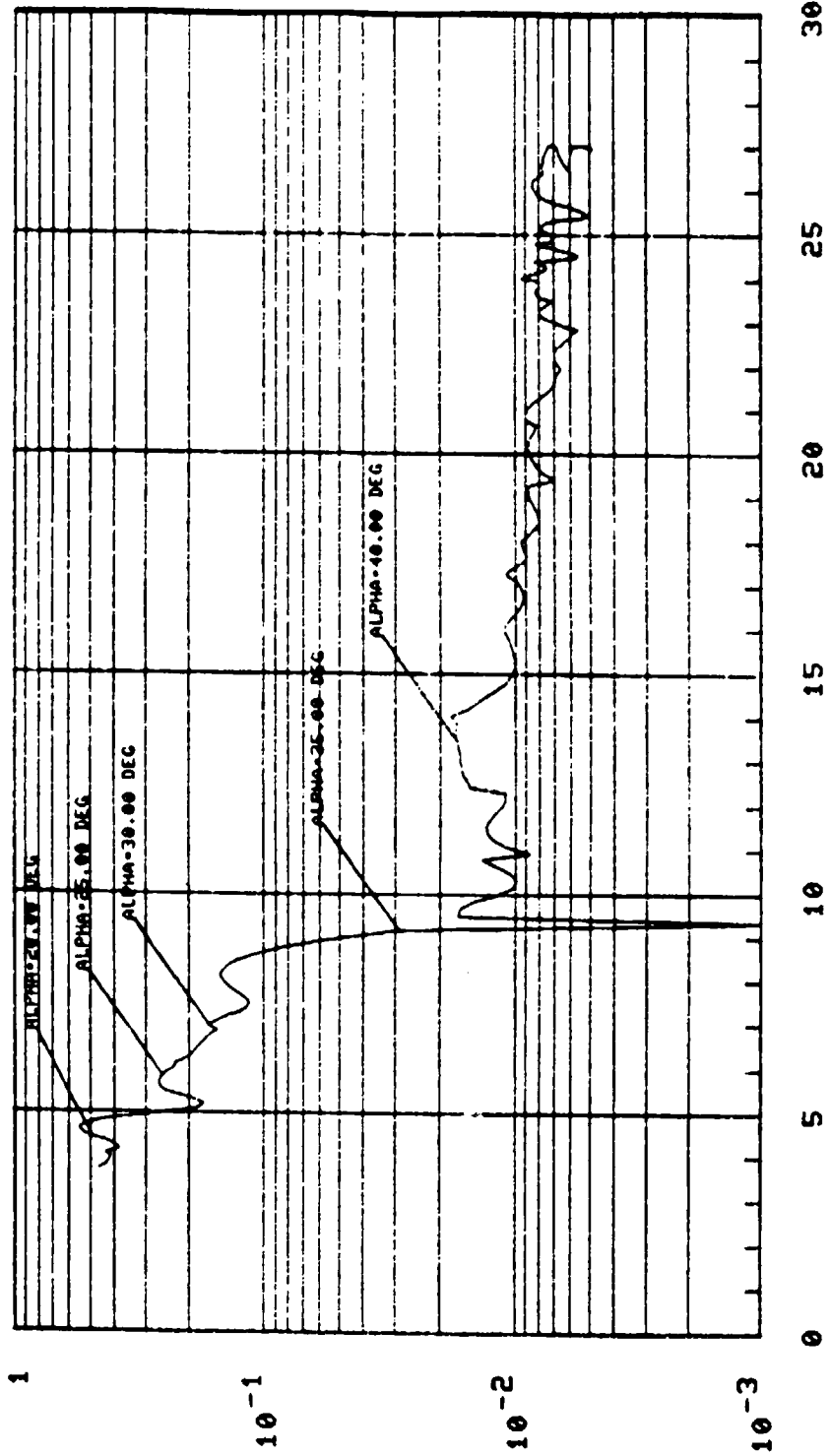
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04/20/83  
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MACH NUMBER

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

UET79372A/M-REF 200-1380 SEC



FILM COEFF -- MACH

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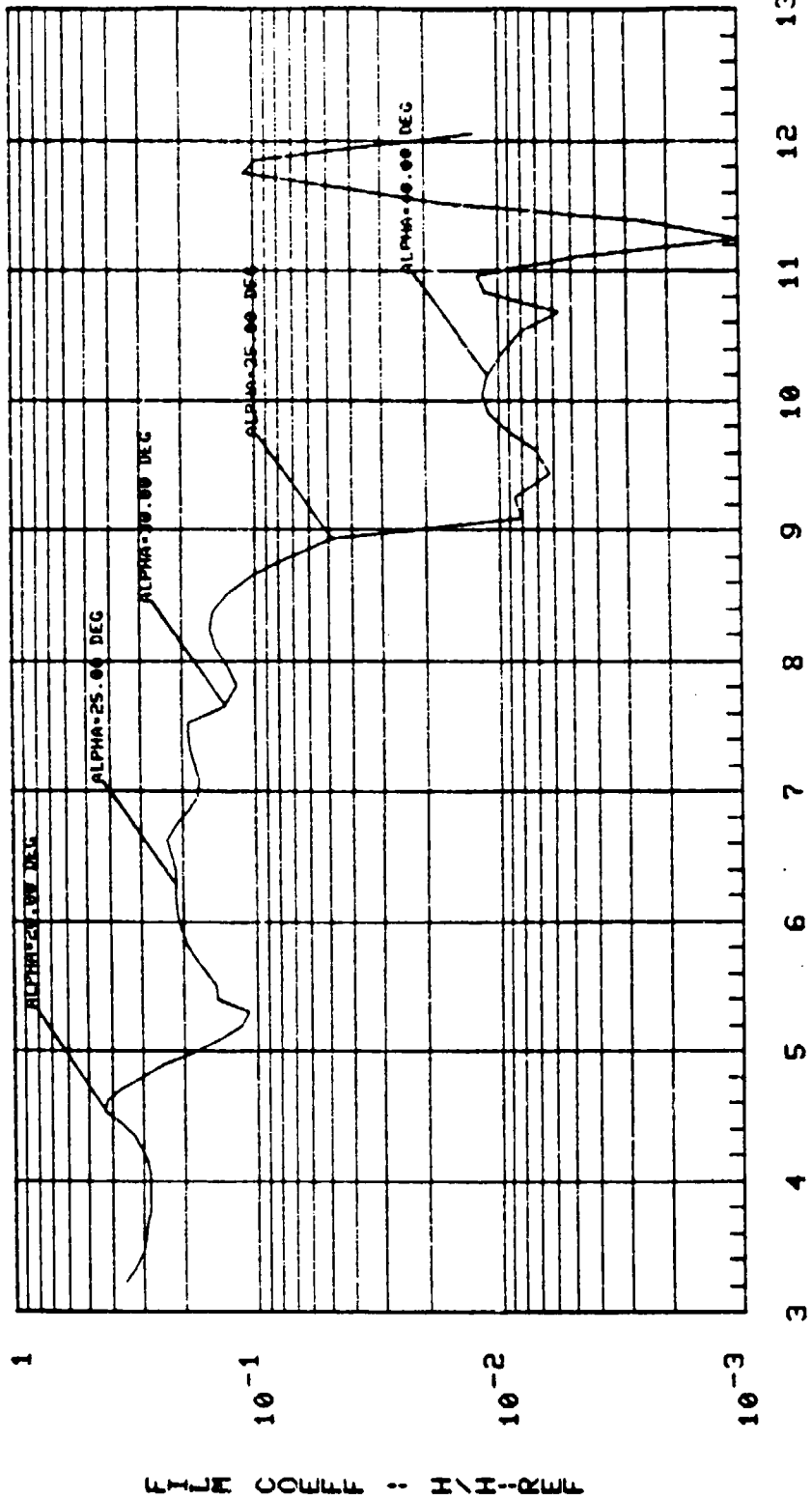
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9872A/H-REF 965-1335 SEC

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04/19/83  
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MACH NUMBER

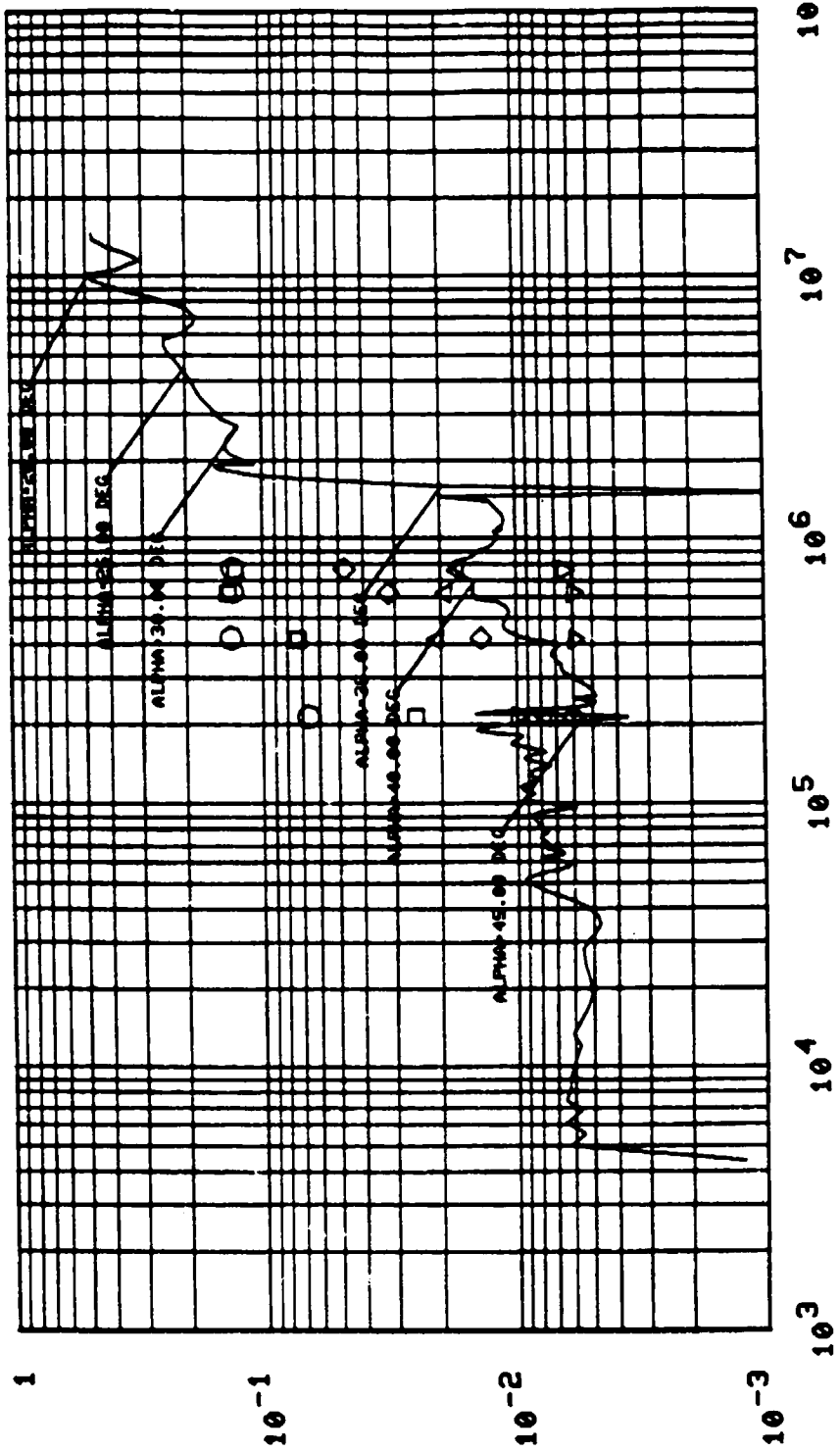
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9972A/H-REF 200-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ △



LIFT COEFF - H/H-REF

B-67

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04/20/83  
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REYNOLDS NUMBER (NS)

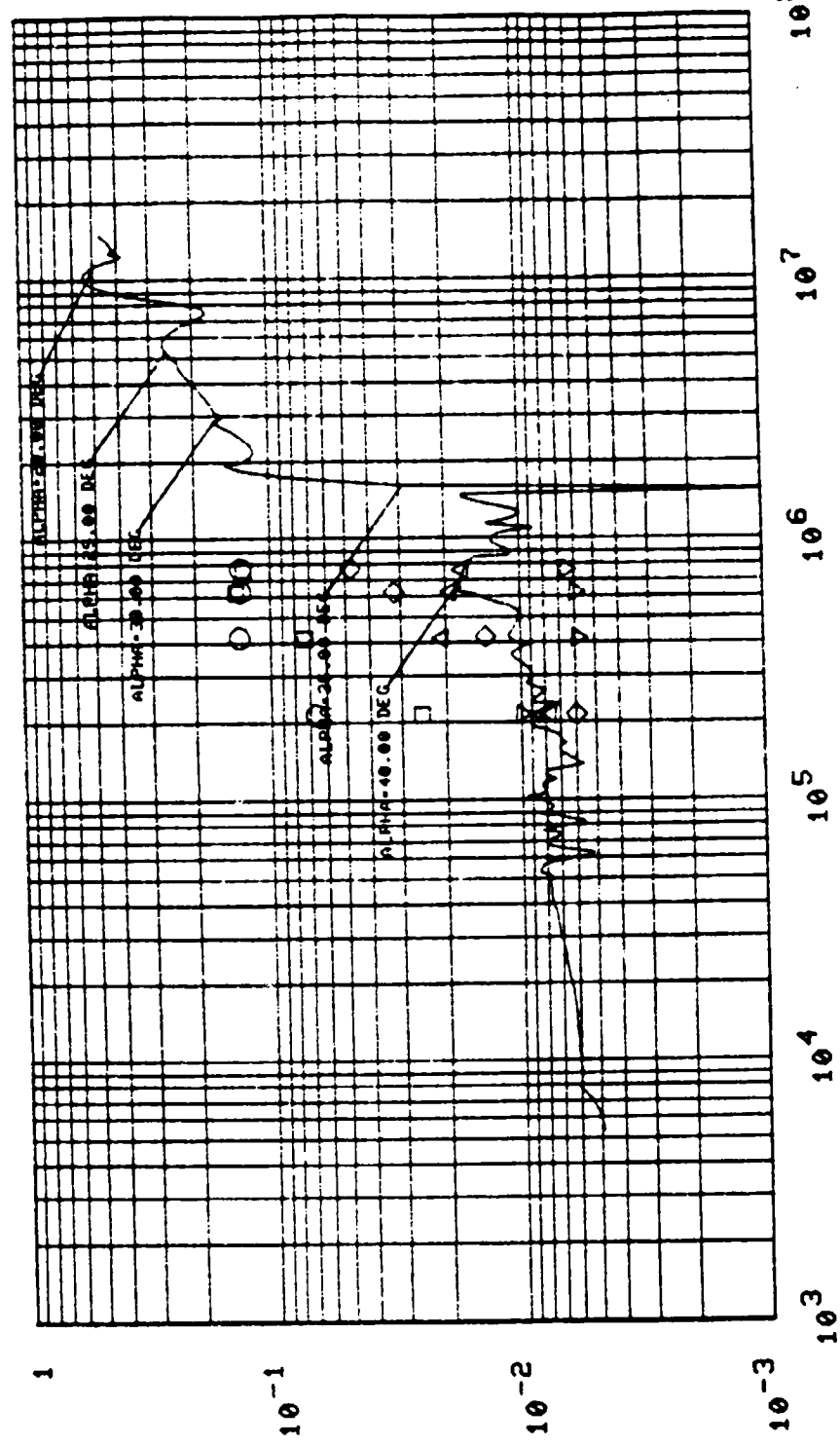
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9972A/H-REF 200-1380 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
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□ ○ △



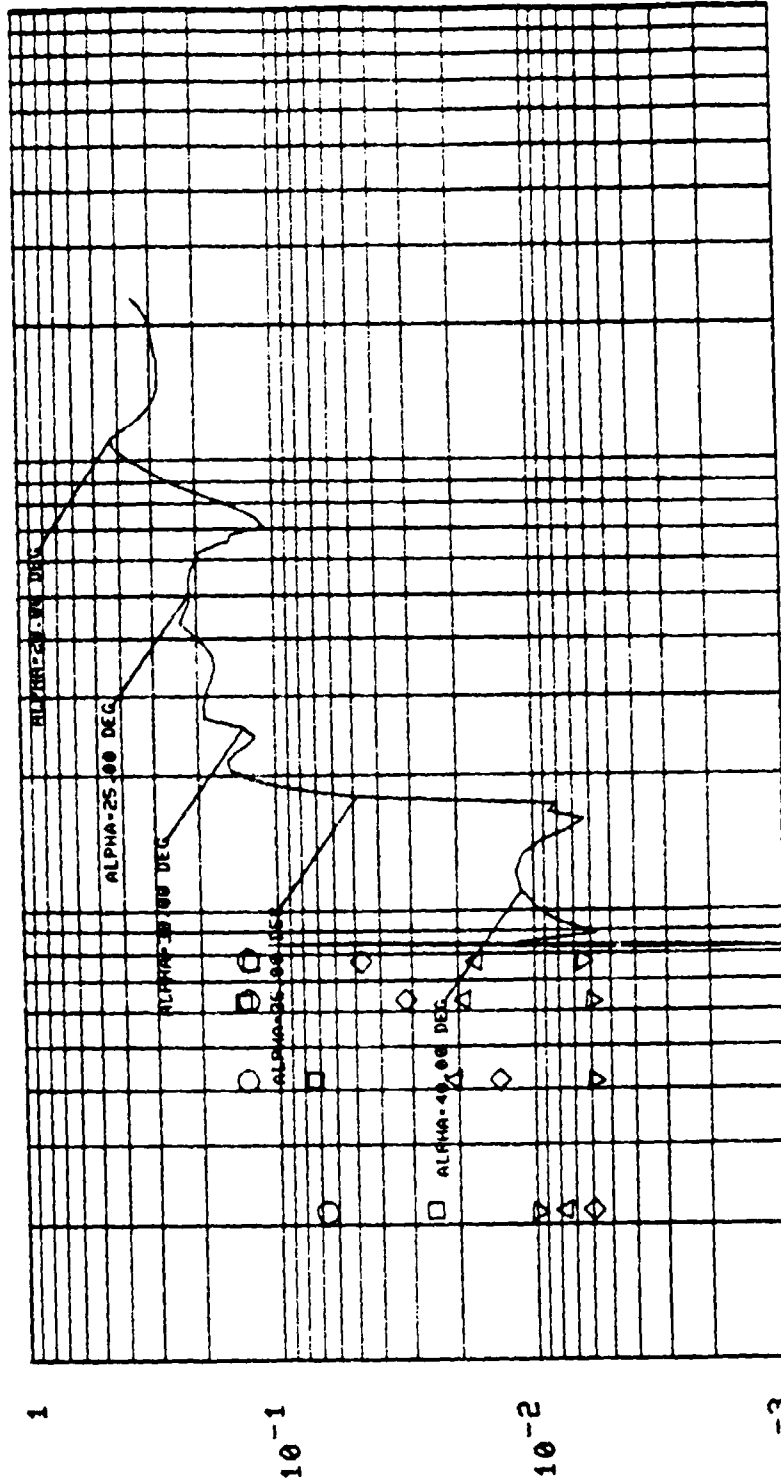
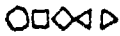
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LIFE COWELL -- H/H-REF

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U07T9972A/H-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
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FORCE COEFF - H/H-REF

B-69

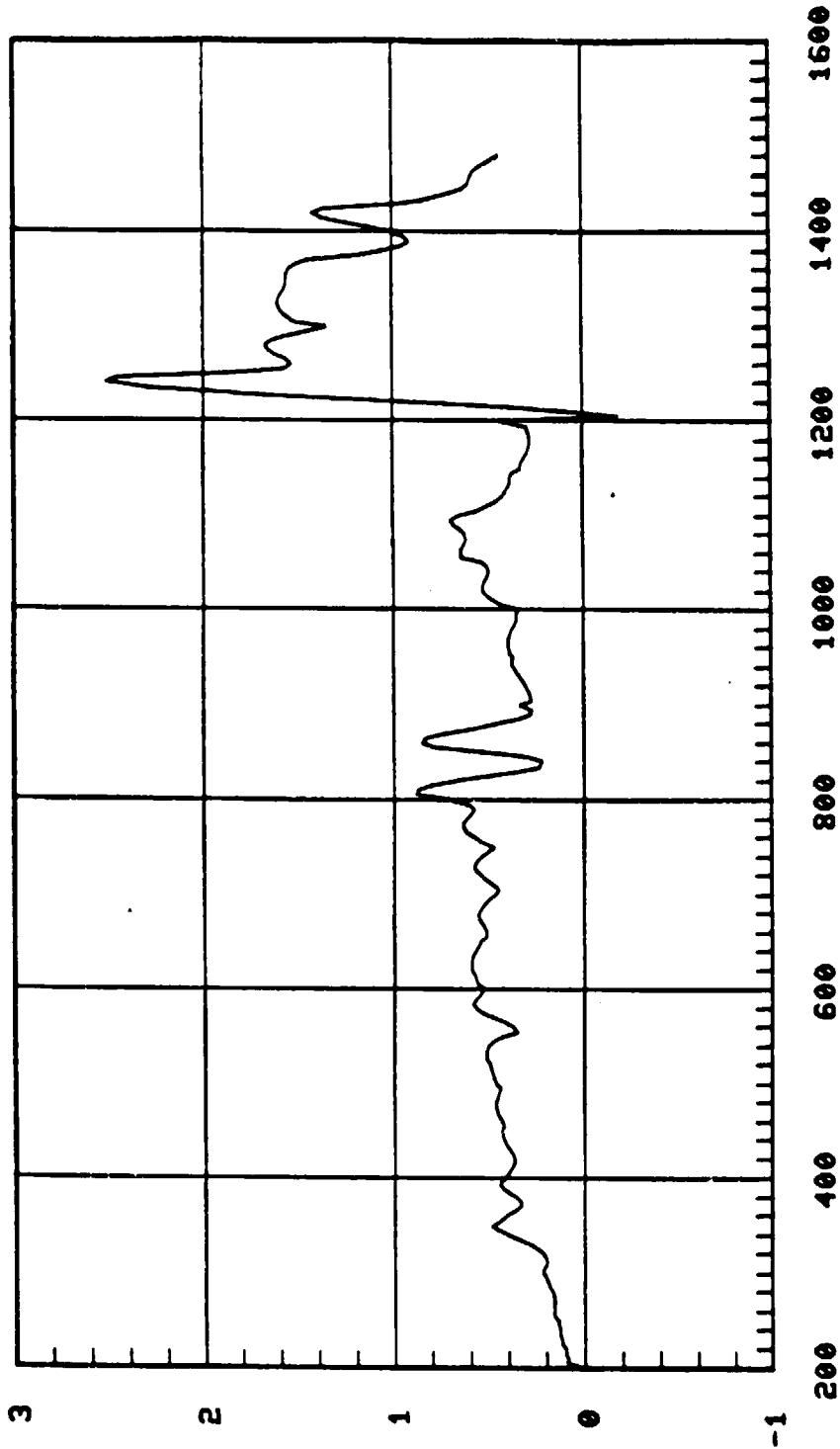
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REYNOLDS NUMBER (NS)

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9972A



OMS - PERCENTAGE - SECS

B-70

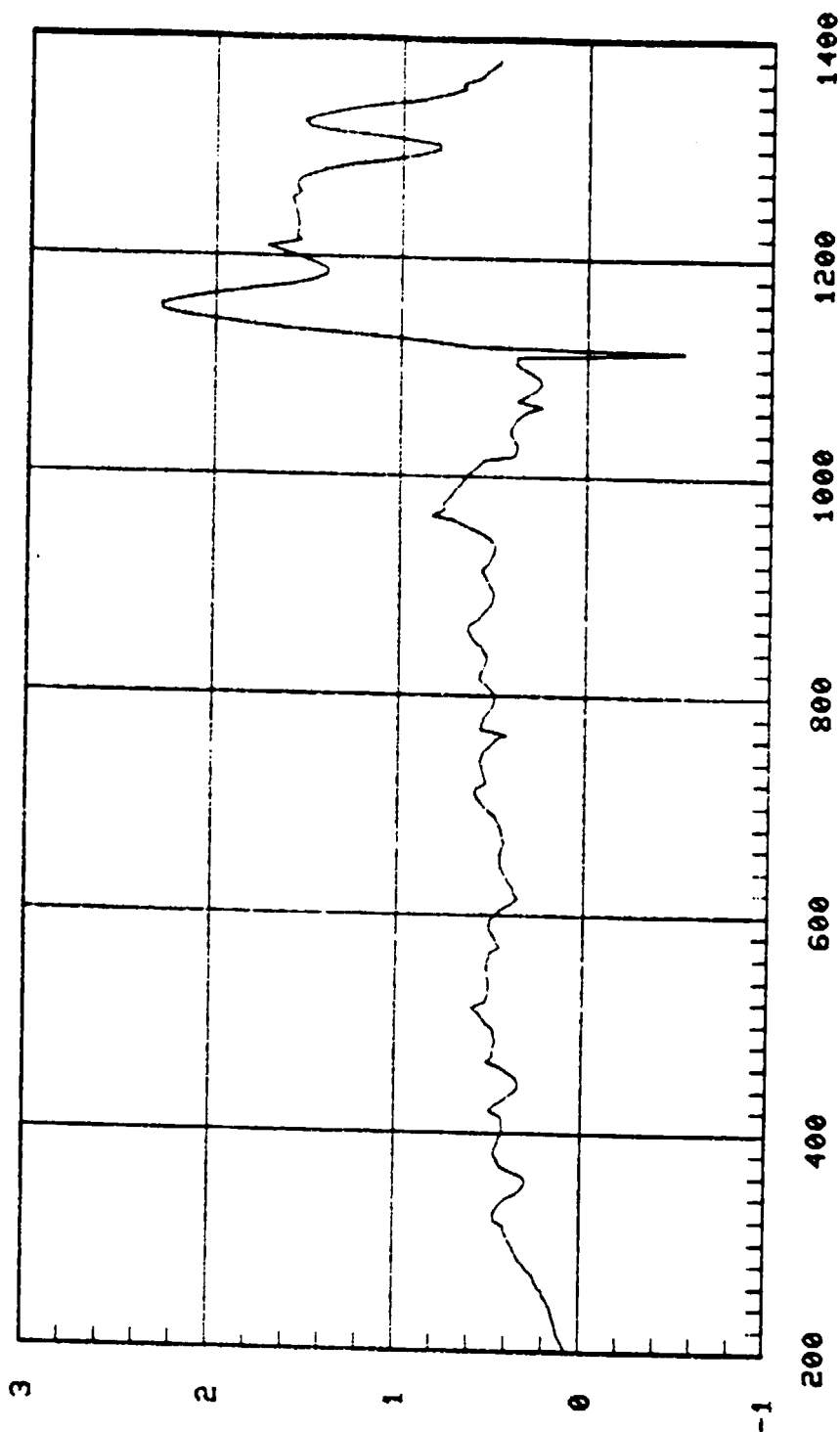
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04/20/83

TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719972A



HEATING RATE -- BTU/FT\*HR\*IN -- SEC

B-71

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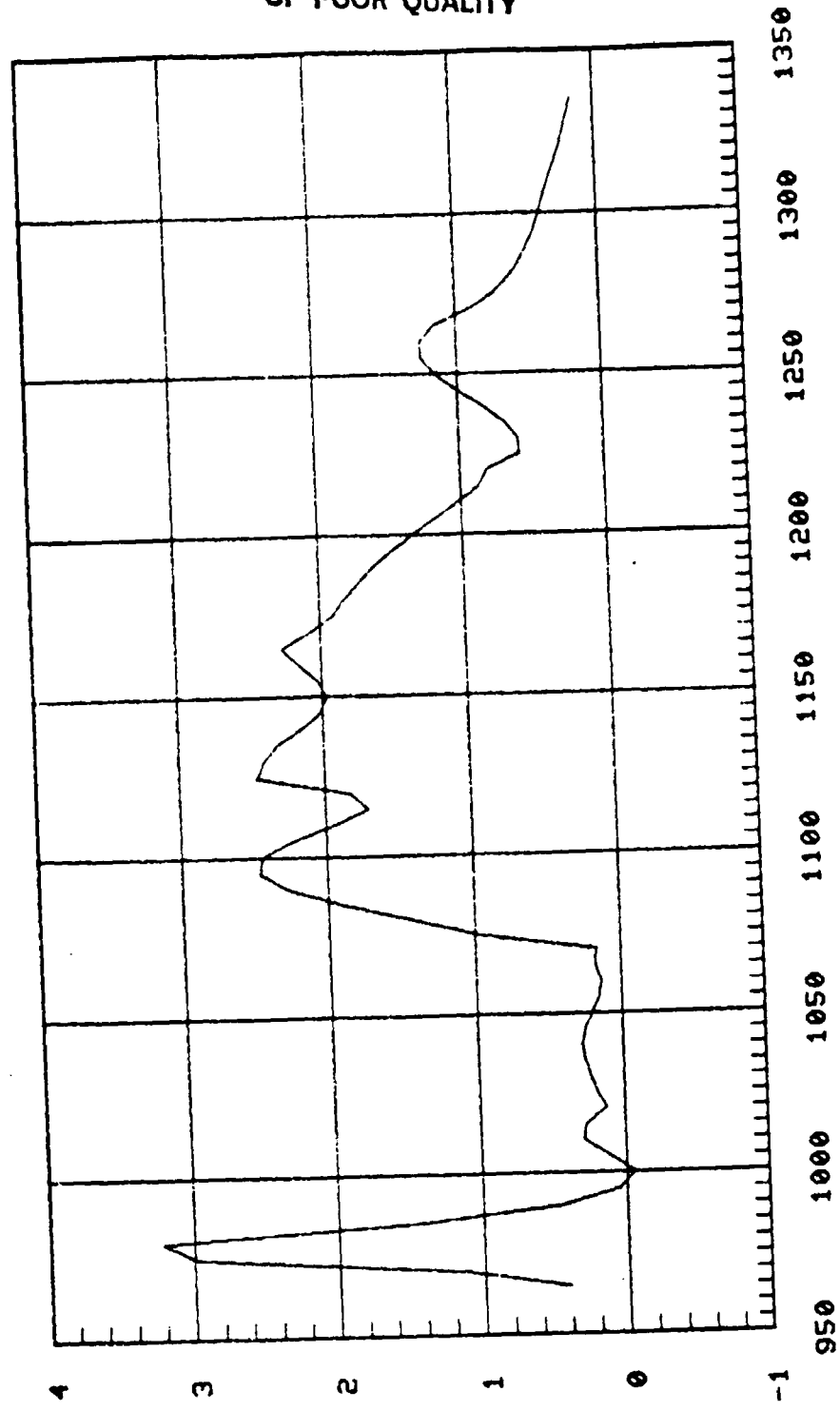
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9972A



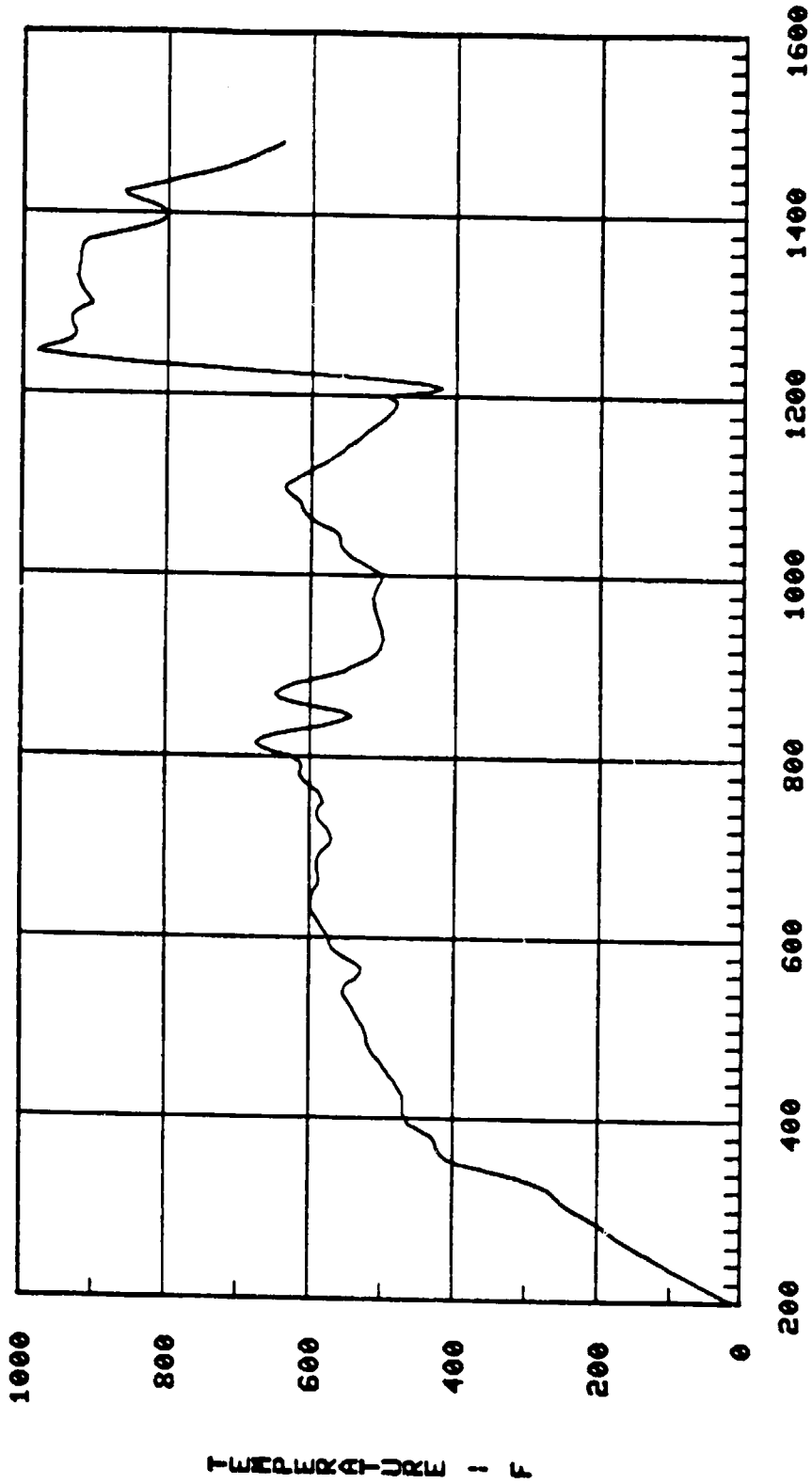
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TIME - SECONDS

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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9972A



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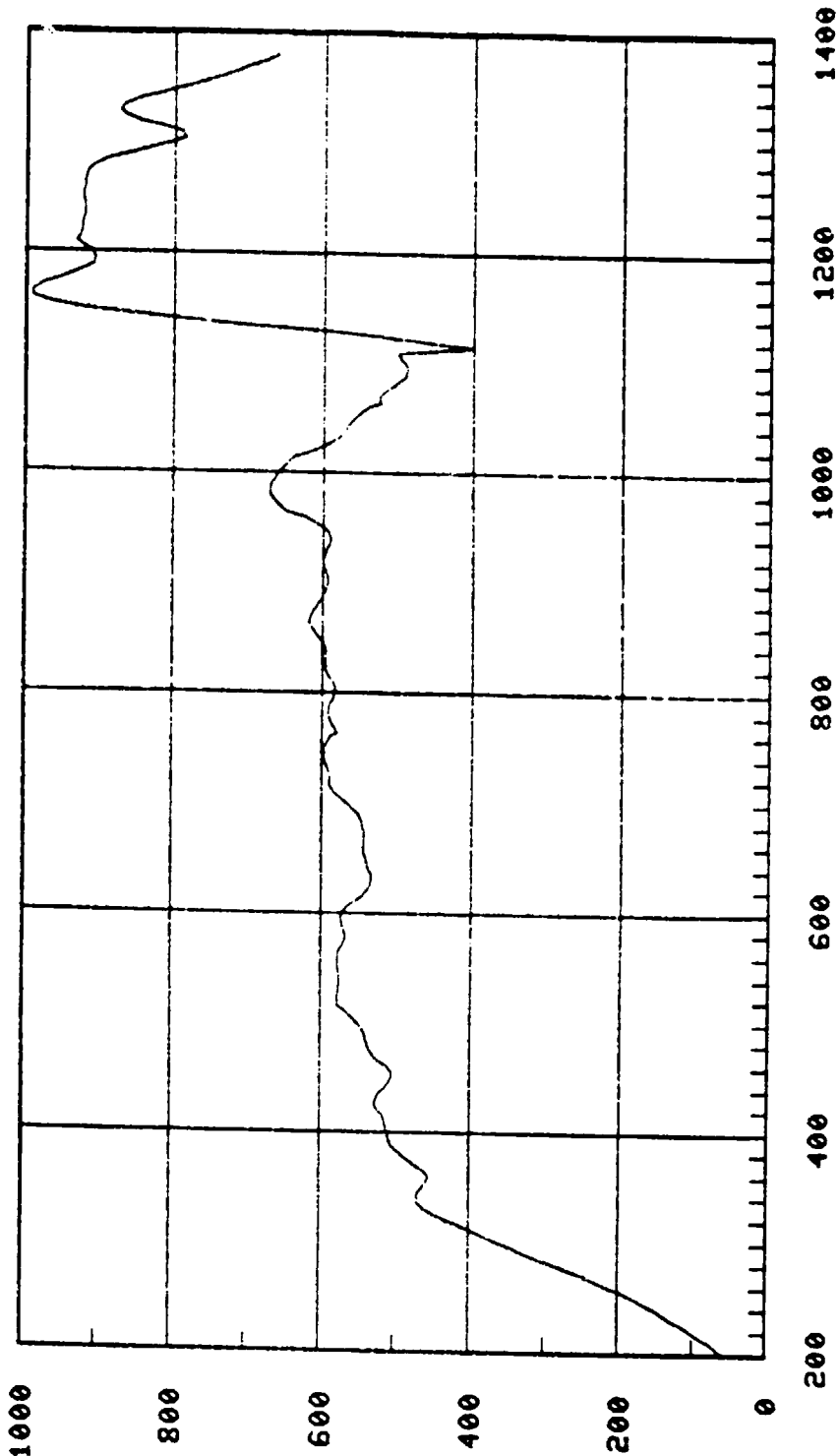
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TEMPERATURE - F

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U07T59724



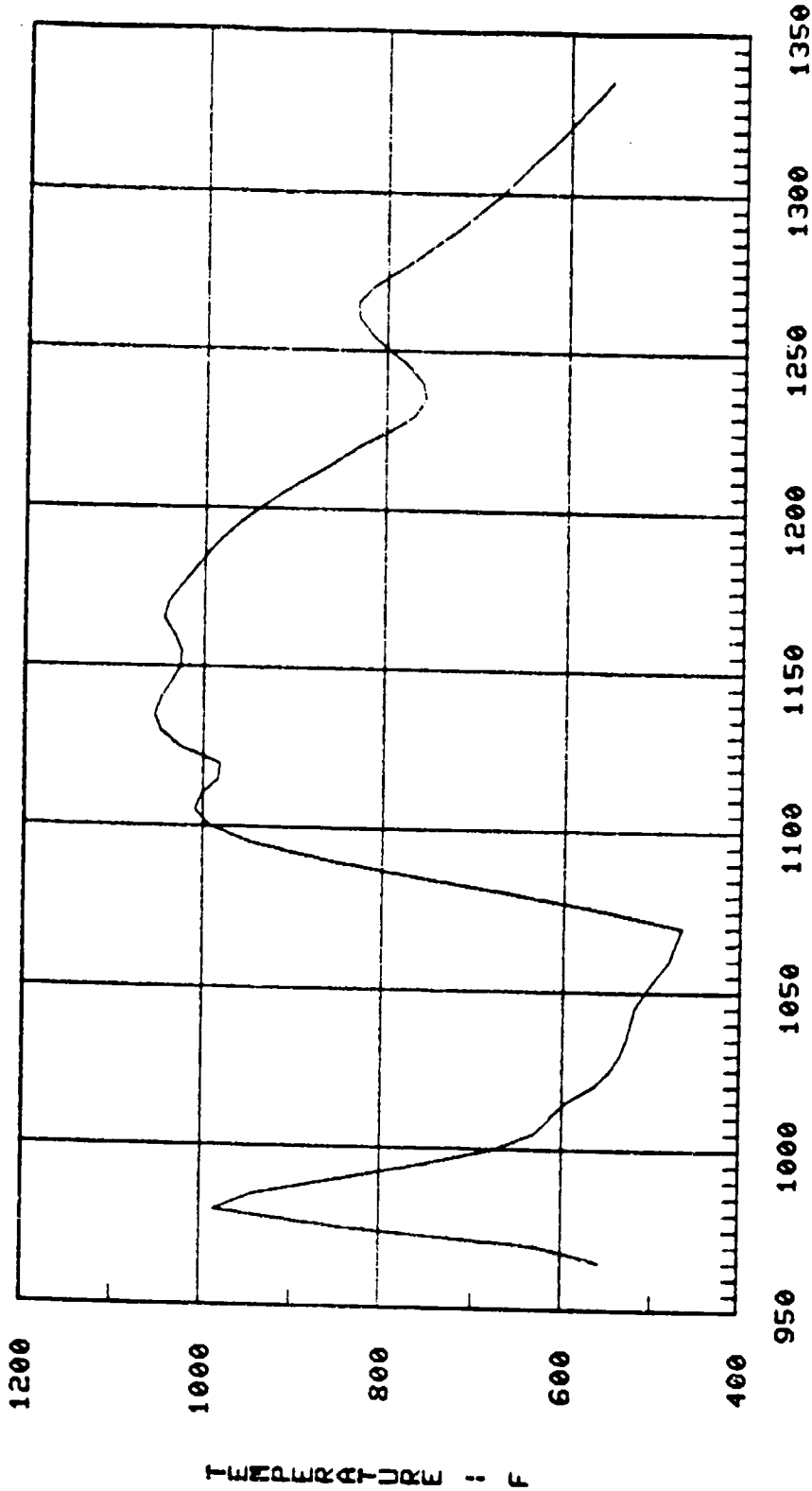
TIME - SECONDS

04 19 83

TEMPERATURE -- F

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719972A



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TEMPERATURE -- F

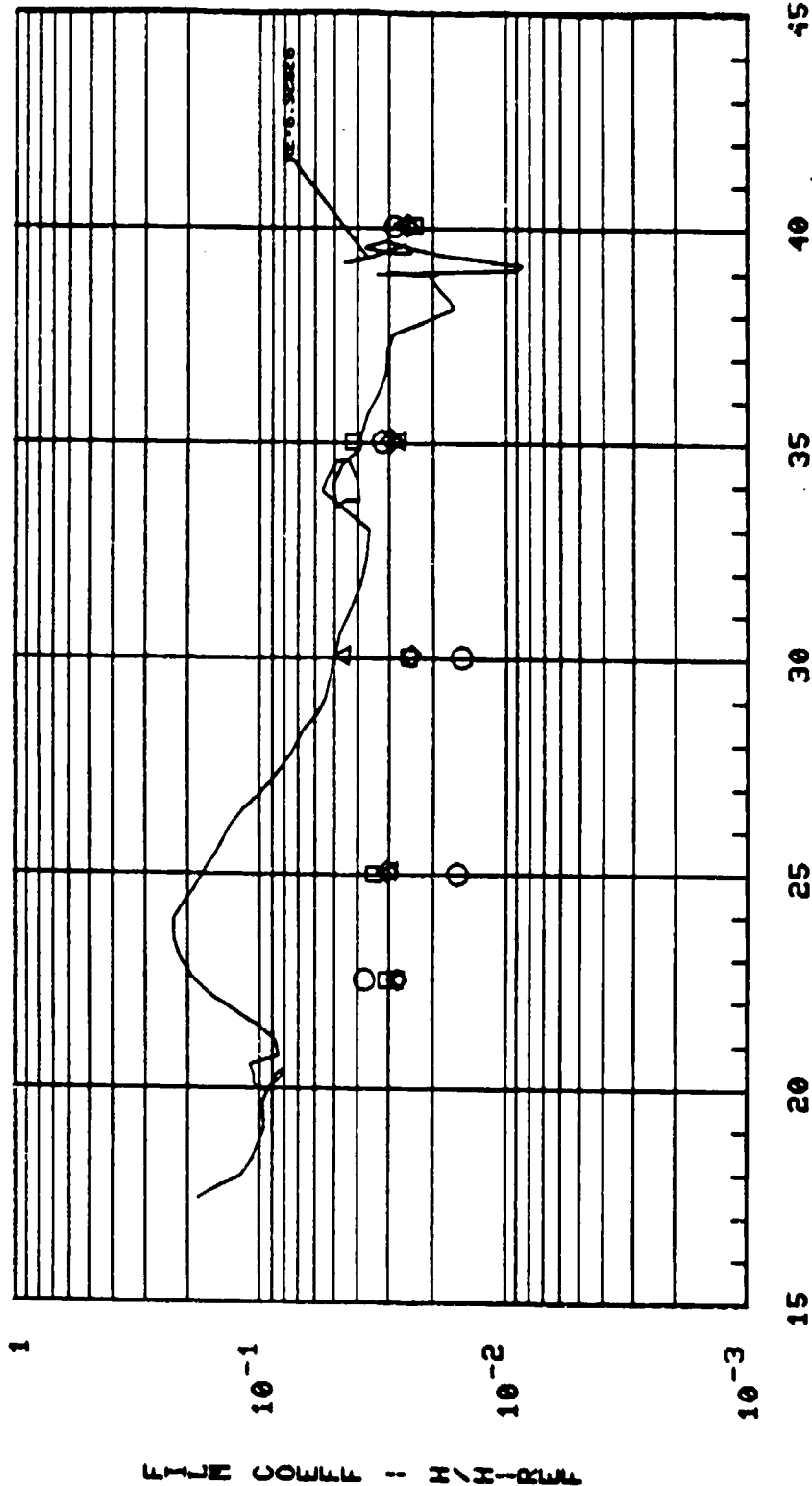
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AF 0.0175 SCALE RE - 1.0 E06  
 AF 0.0175 SCALE RE - 2.0 E06  
 AF 0.0175 SCALE RE - 3.0 E06  
 AF 0.0175 SCALE RE - 3.7 E06

○ □ △

\_\_\_\_\_ U07T9974A/N-REF 1065-1480 SEC

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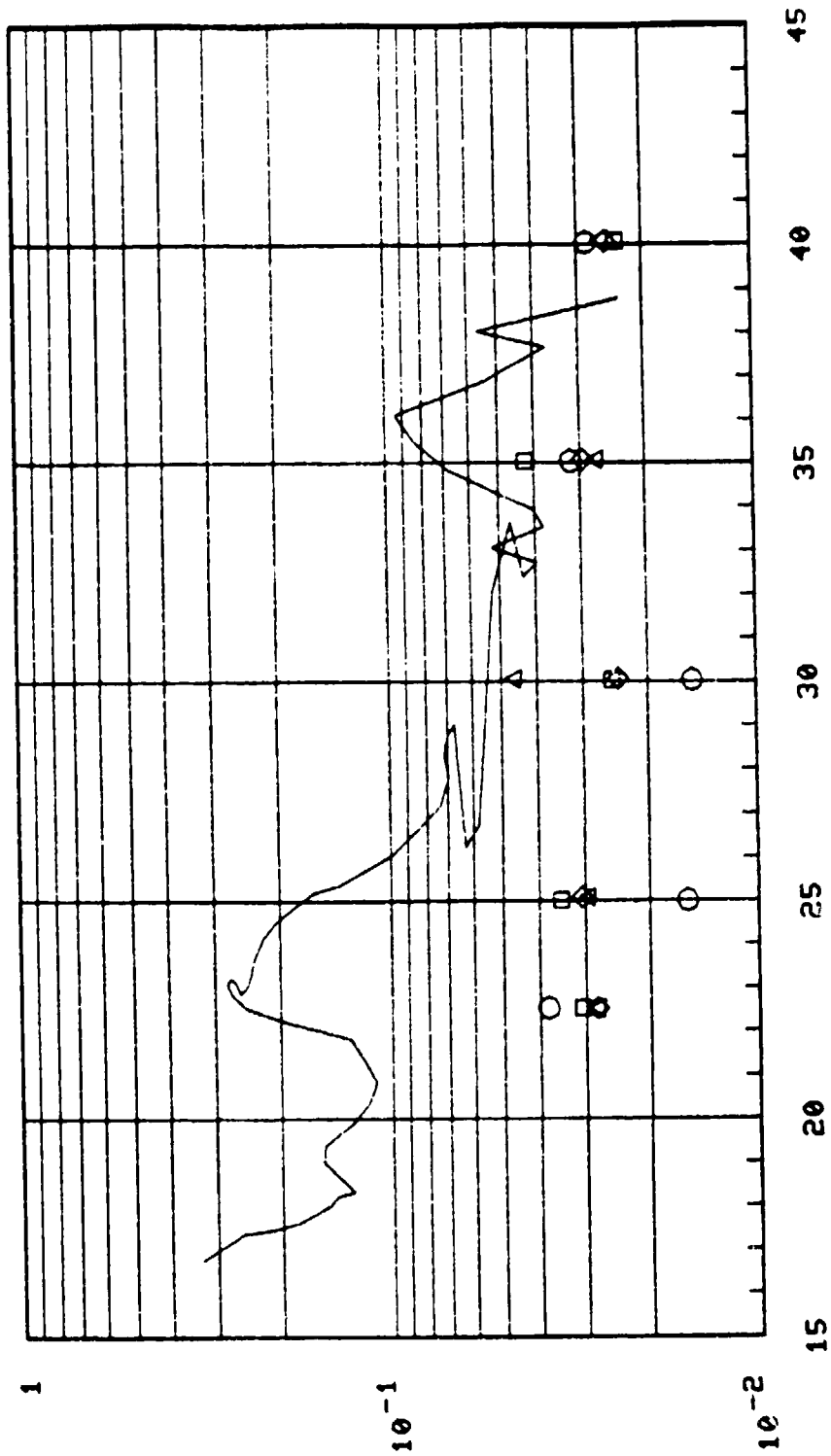
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07799746/M-REF 965-1335 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

○ □ ×



REF--REF -- COME LINE

B-77

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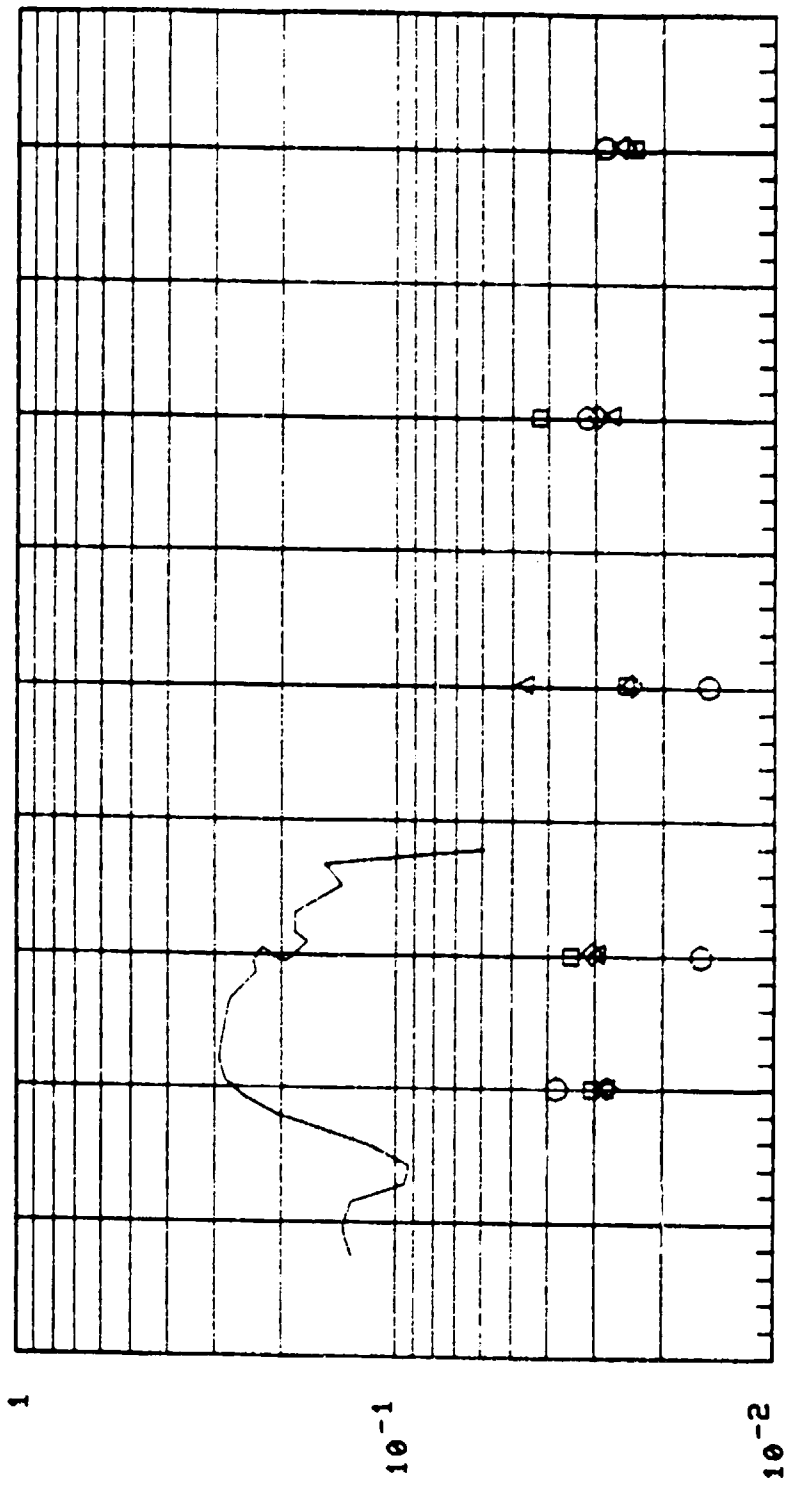
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9974A/H-REF 150-1350 SEC

AF 0.0175 SCALE RE - 1.0 E06  
 AF 0.0175 SCALE RE - 2.0 E06  
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 AF 0.0175 SCALE RE - 3.7 E06

□ ○ ◇ ×



LINE COVER - H/H-RULE

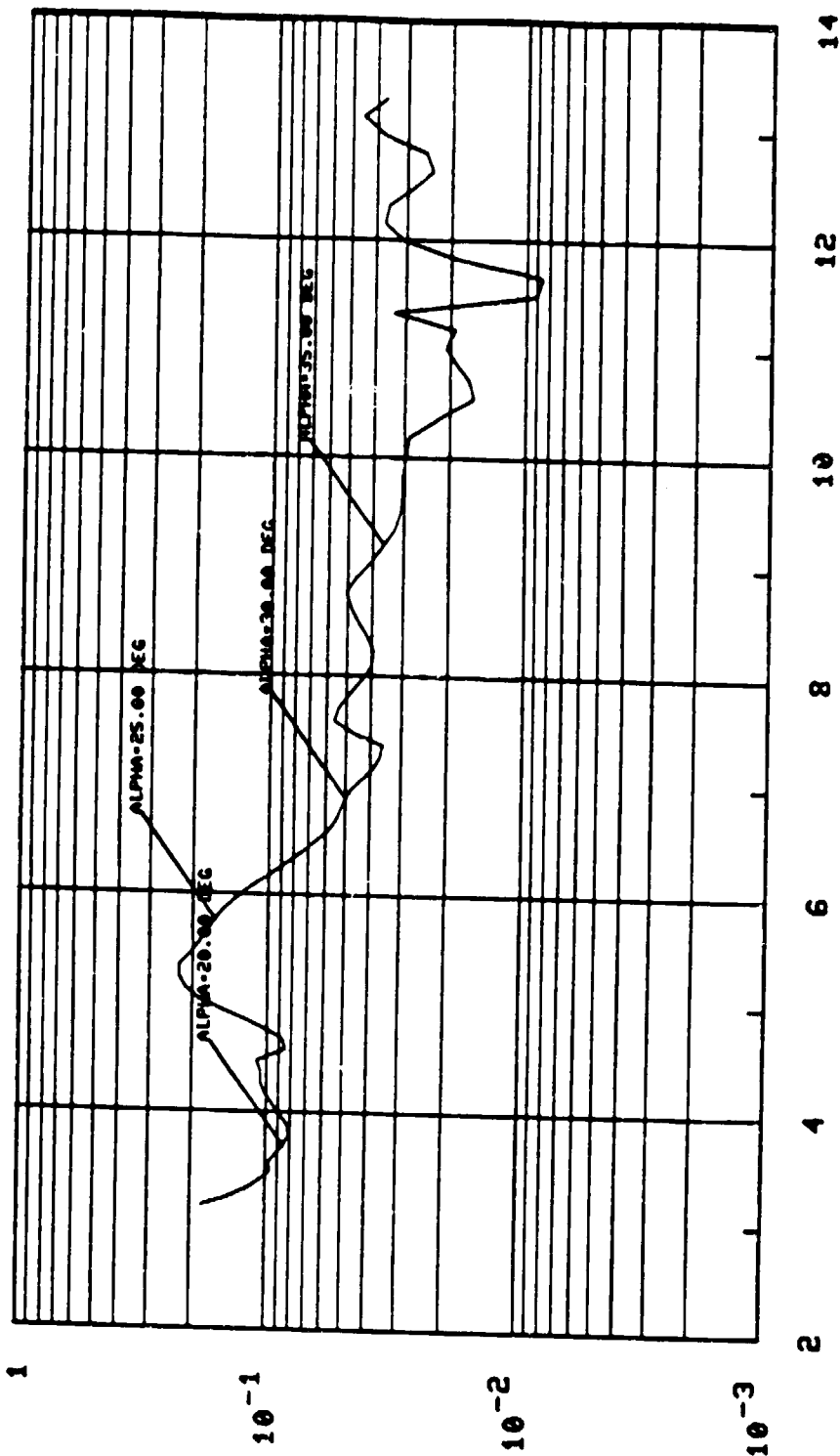
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ANGLE-OF-ATTACK - DEG

04.18.83  
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# STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U8779974A/N-REF 1065-1480 SEC



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LIFT COEFF - H/H-REF

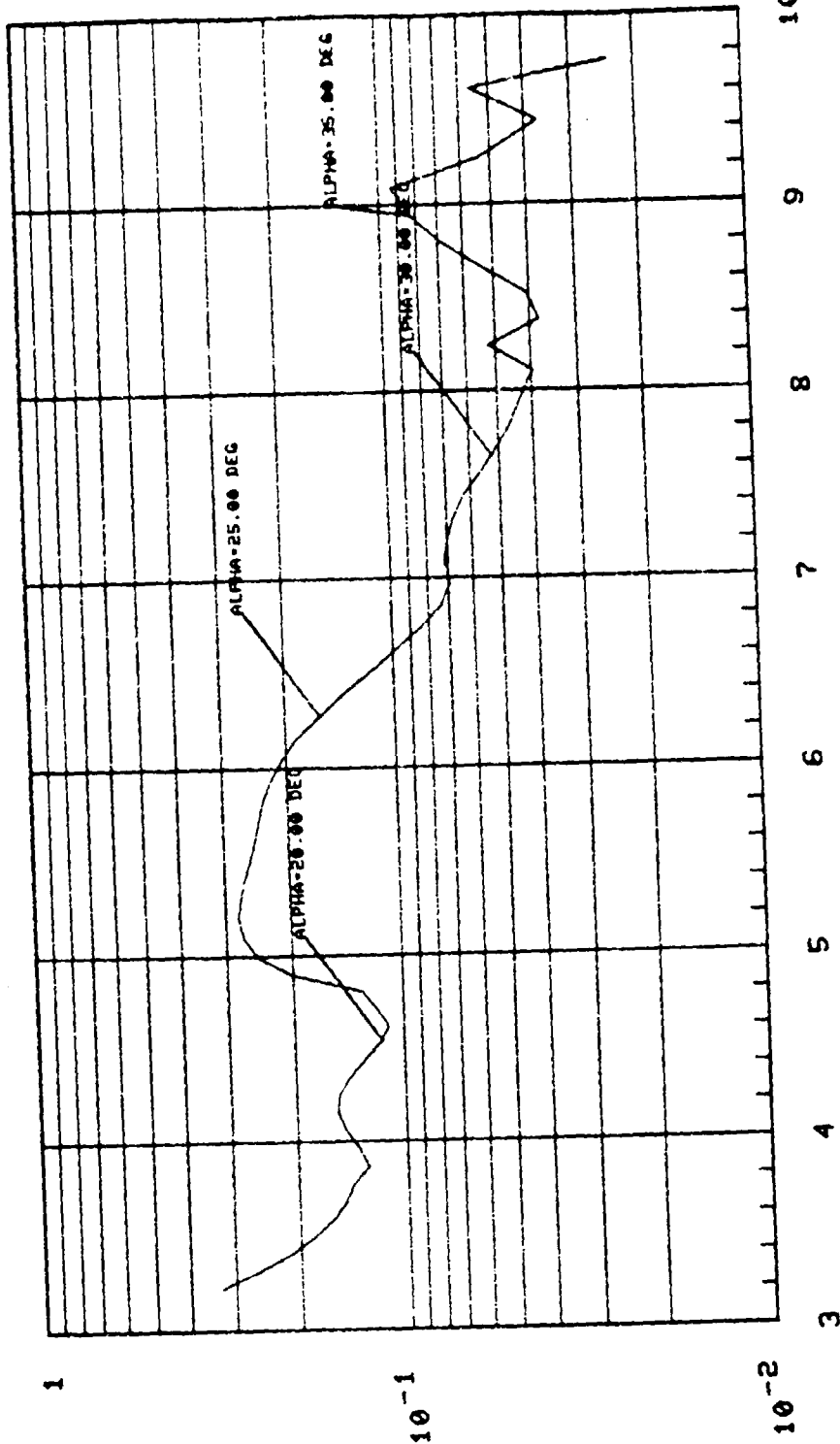
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MACH NUMBER



STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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LEWIS CORNELL -- HX-RWLL

B-80

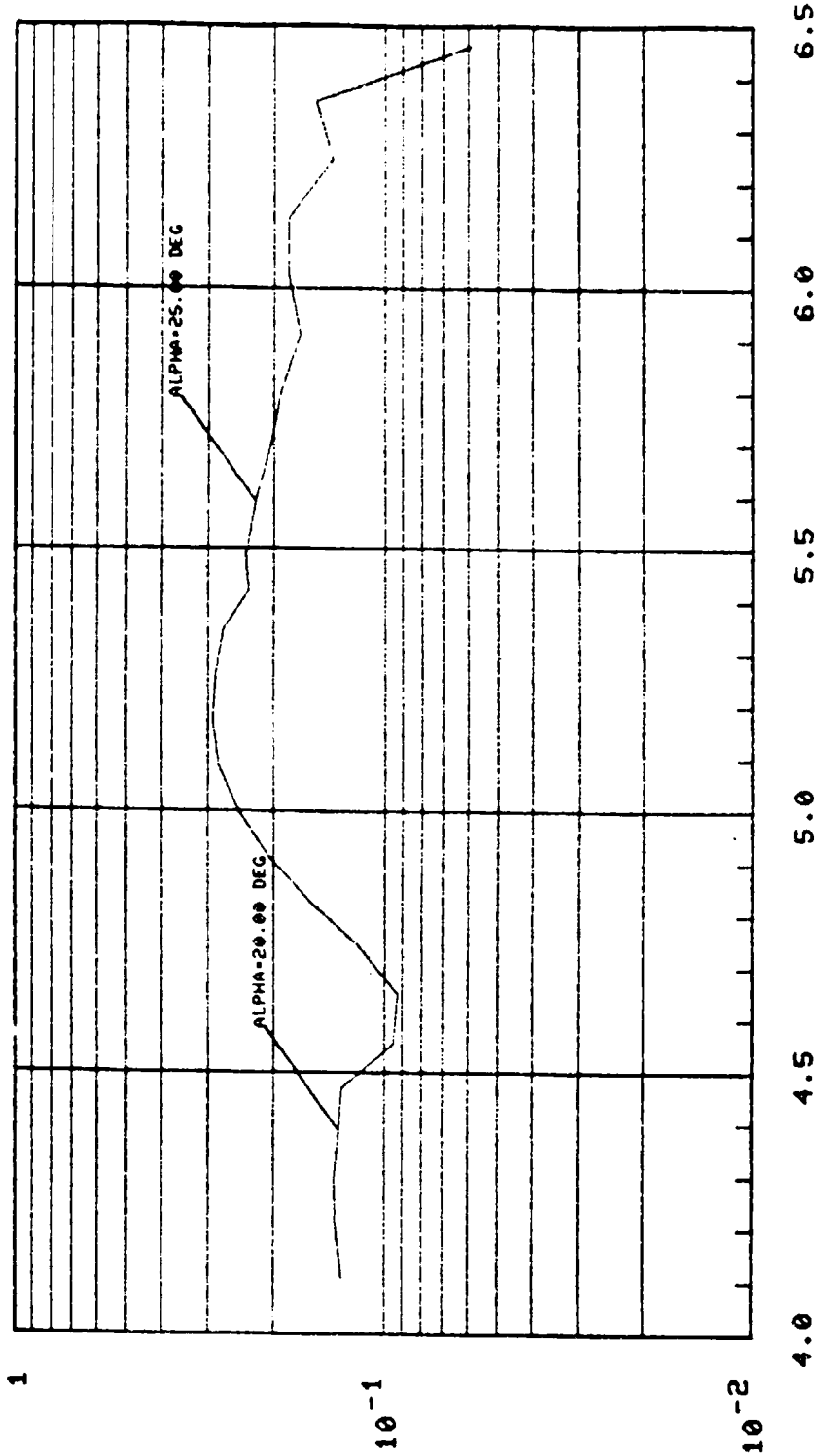
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MACH NUMBER

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9974A/H-REF 150-1350 SEC



FILE COVER - H-I-RUL

B-81

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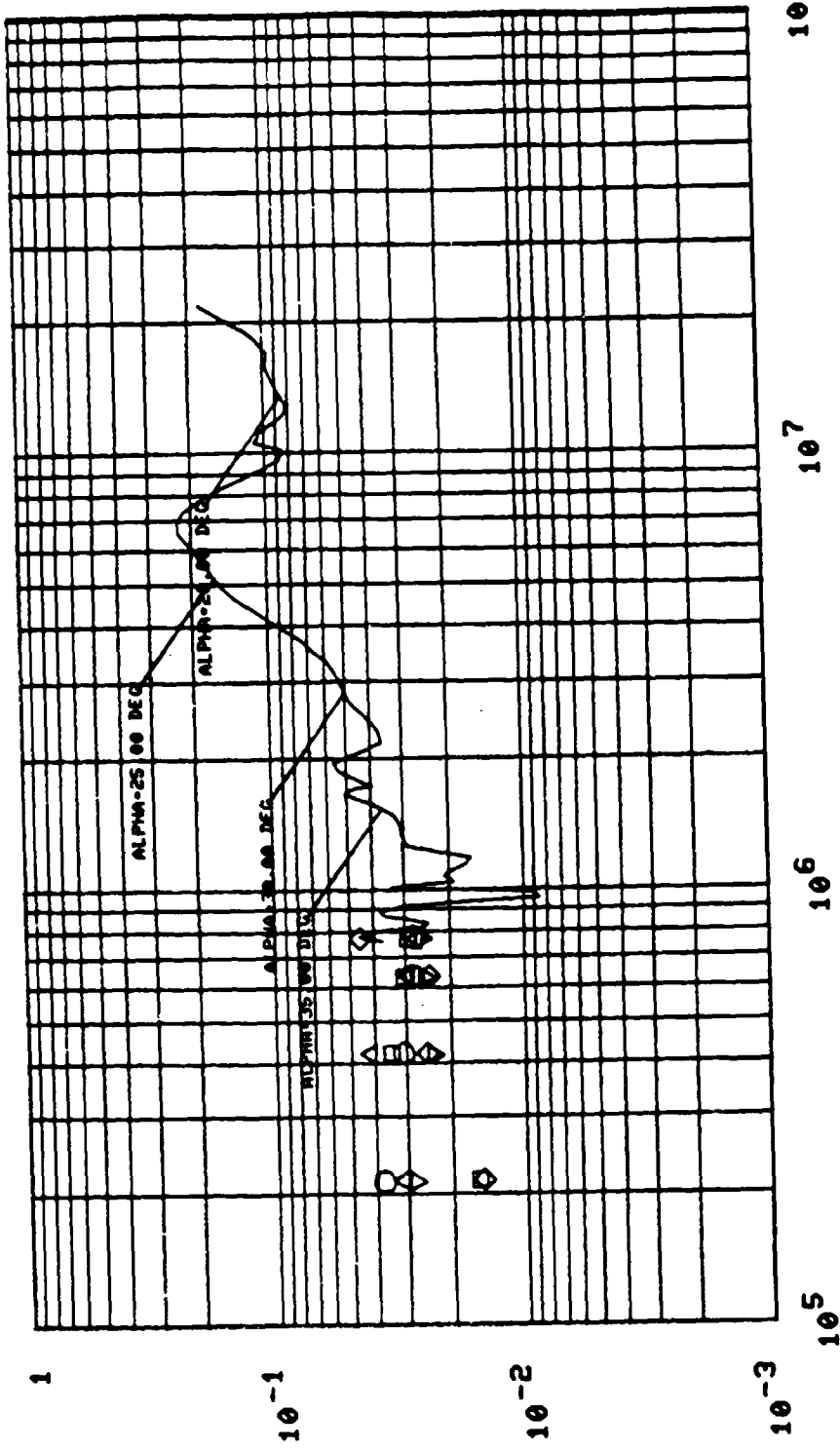
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- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

□ ◇ △



FORCE COEFFICIENT - C<sub>f</sub> - REF

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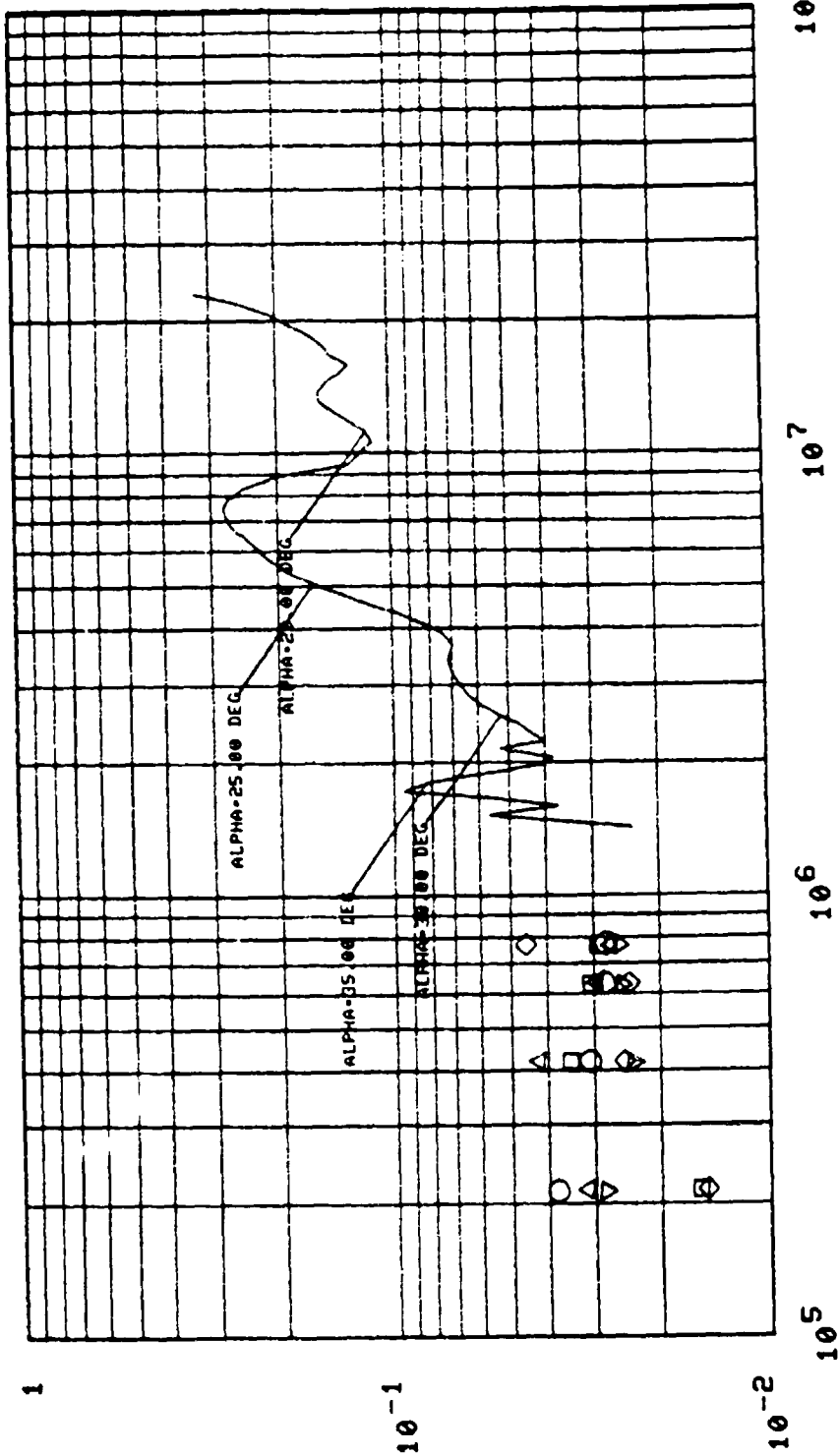
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REYNOLDS NUMBER (NS)

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U07T9974A/M-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



TIME CORRECTION -- IN--REAR

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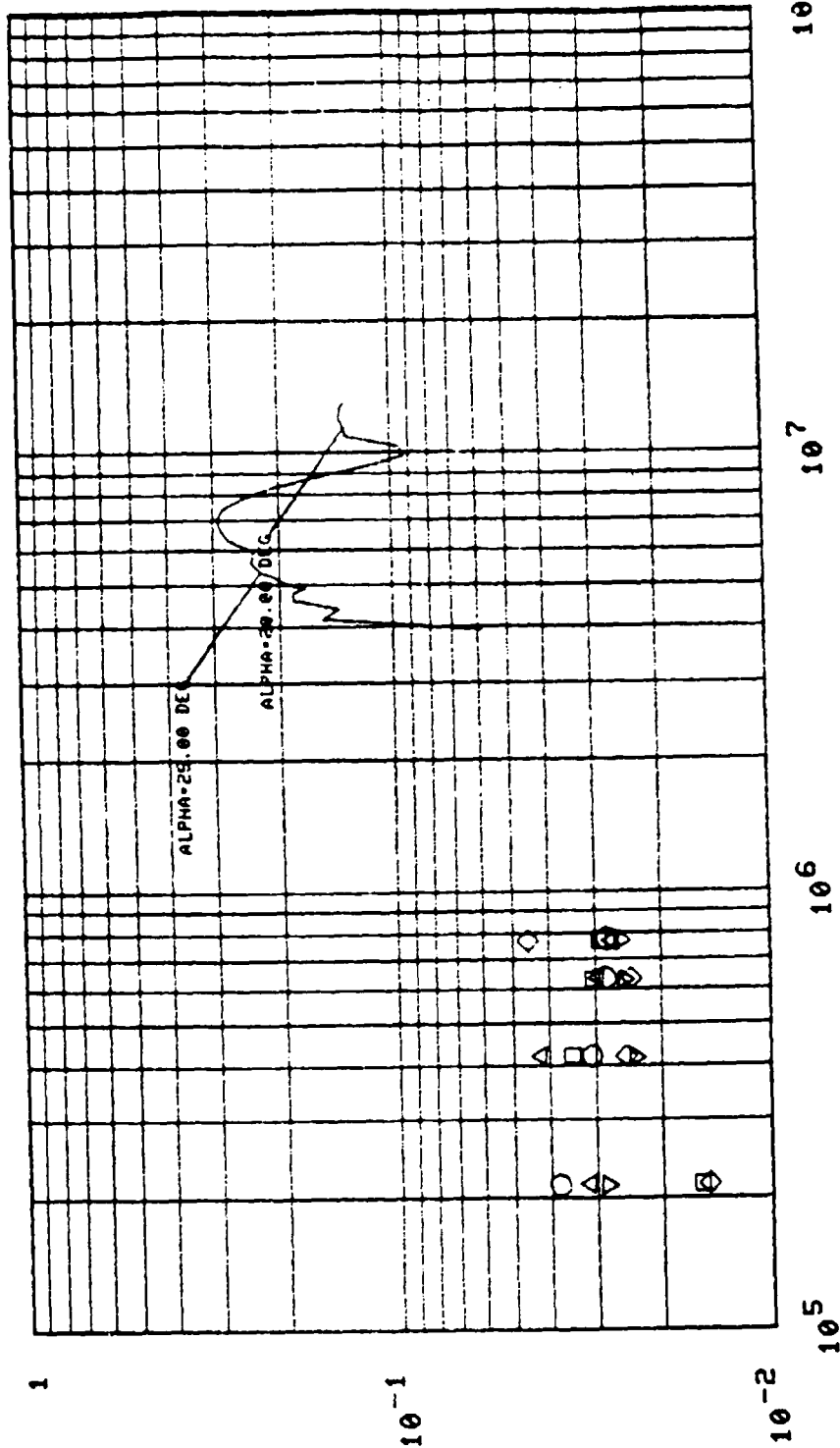
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REYNOLDS NUMBER (NS)

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U07T9974A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
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- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FORCE COEFF - H/H-REF

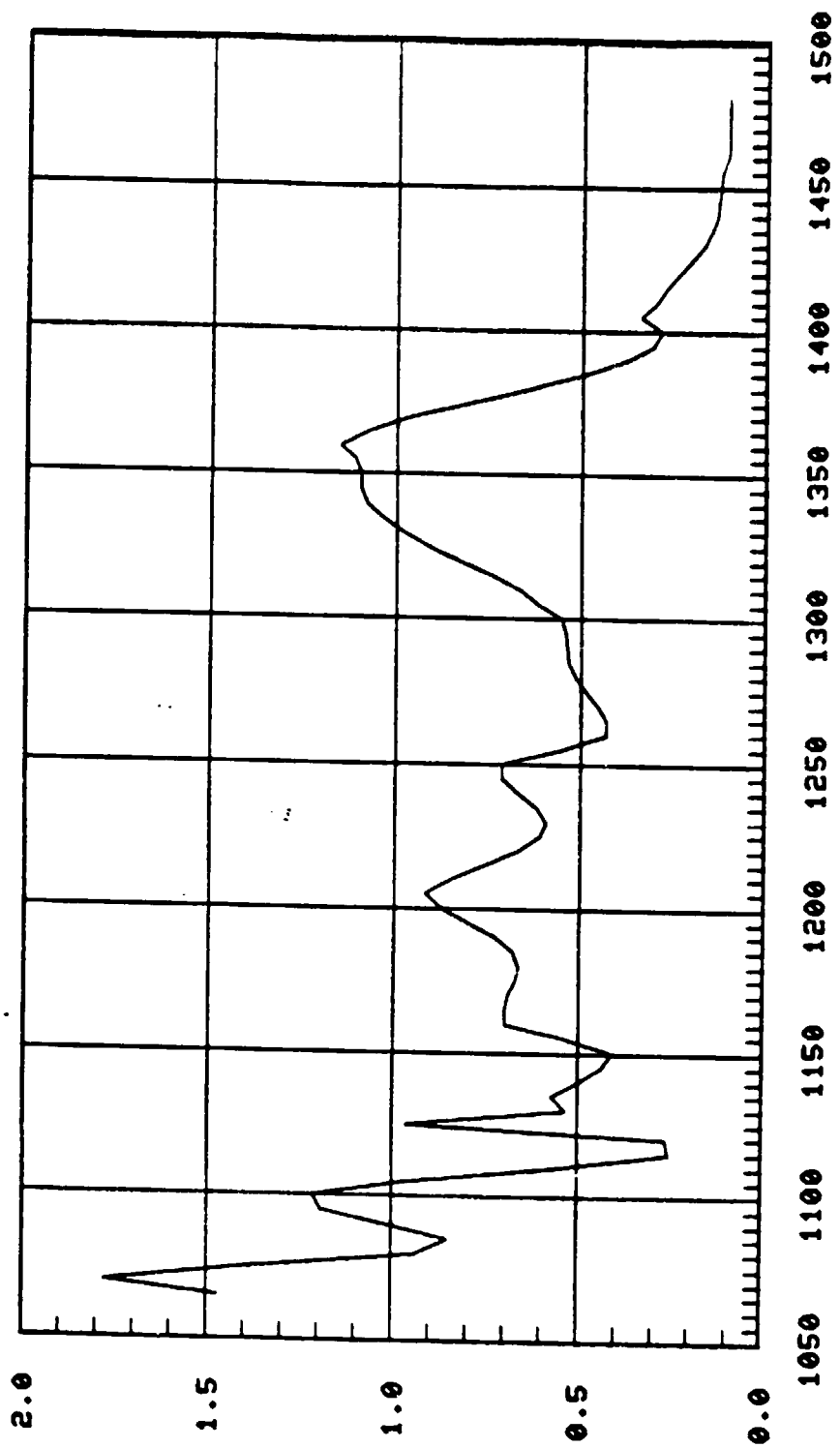
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BASE TIME - 27698591.000 SEC.

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U6779974A



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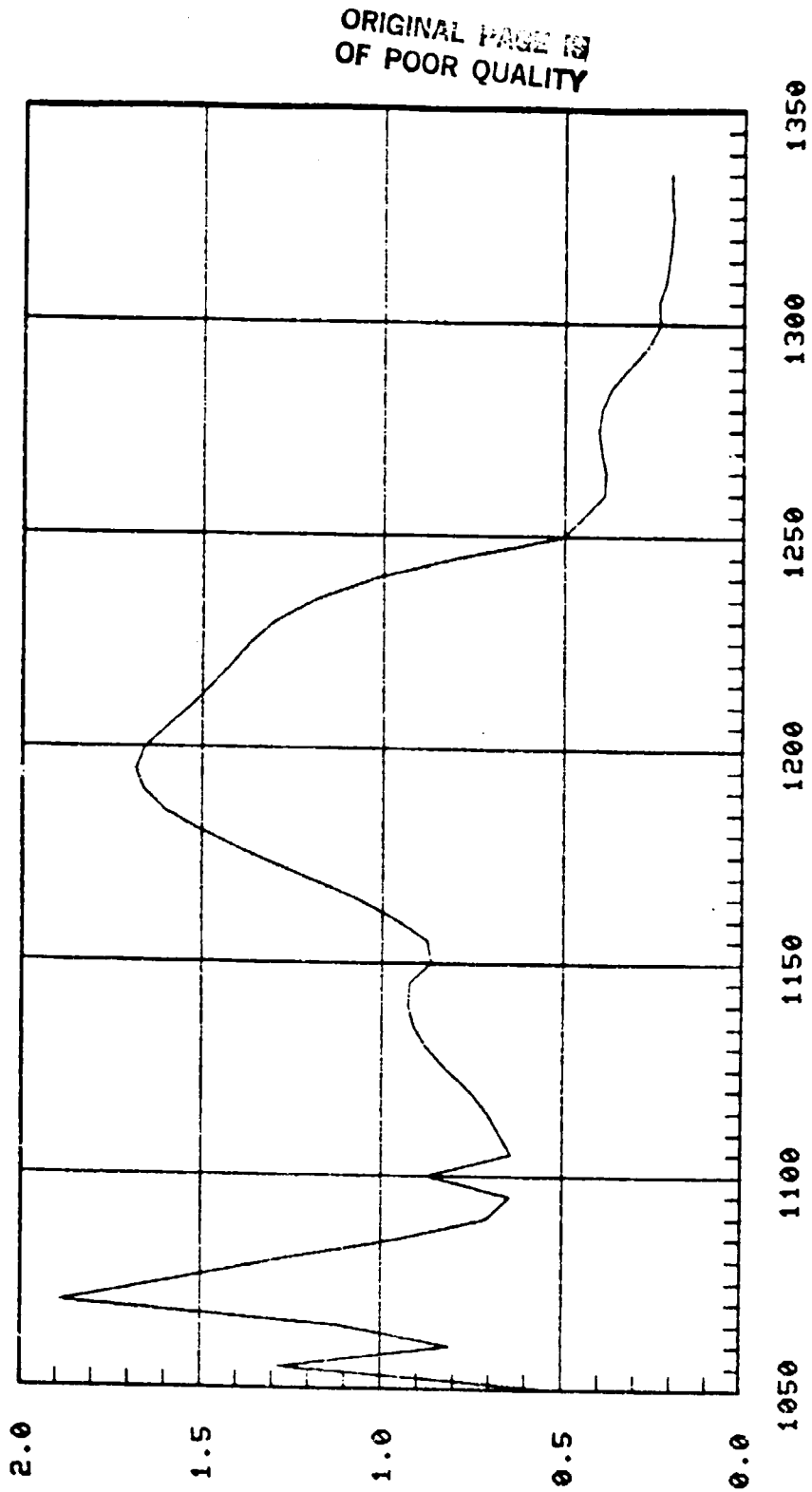
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TIME - SECONDS

04/20/83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T99741



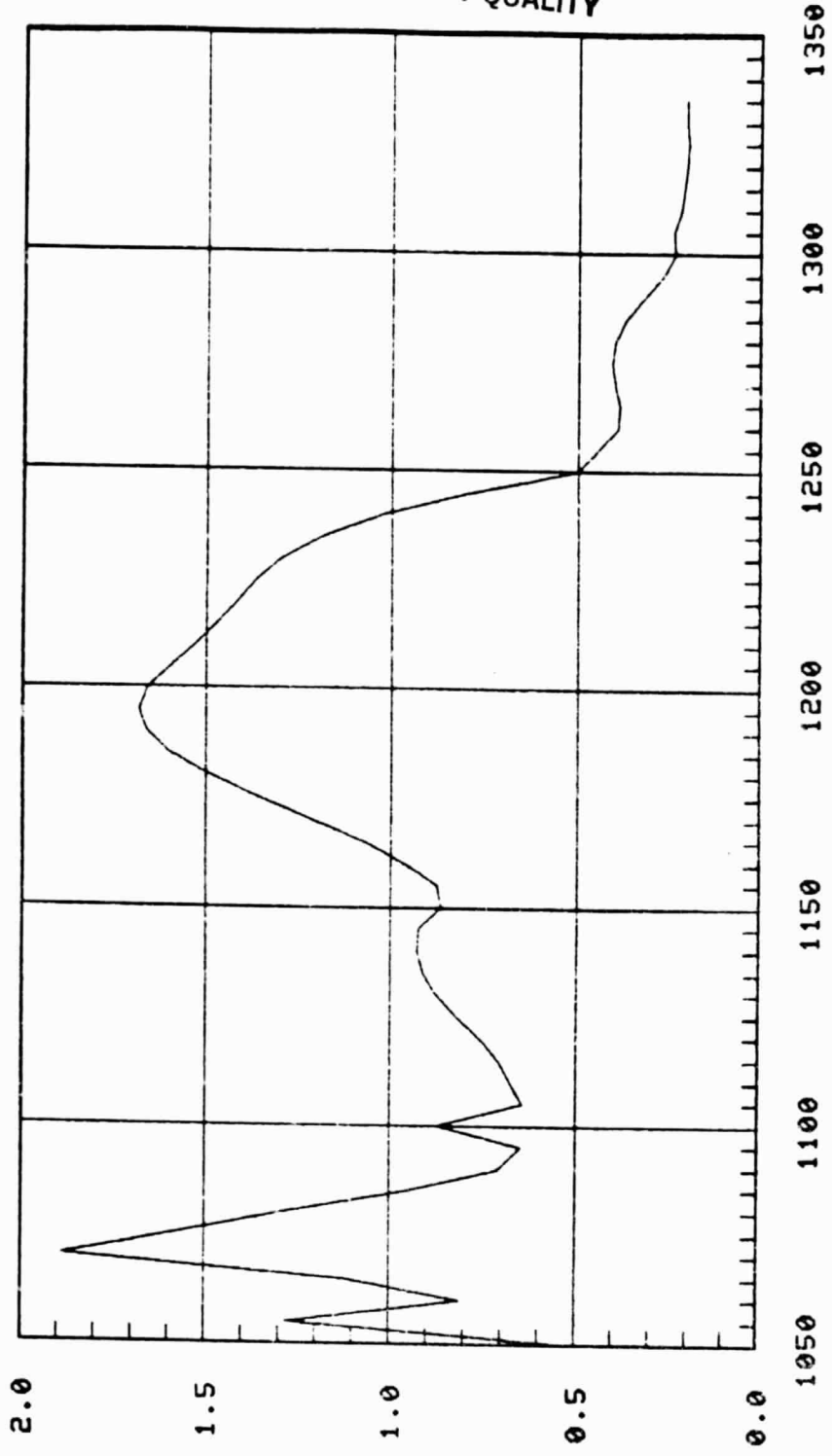
OMS - ROLLING RATE (BT/FT/SEC)

TIME - SECONDS

04 19 83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T99741



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HEATING RATE -- BTU/FT\*\*2 -- SEC

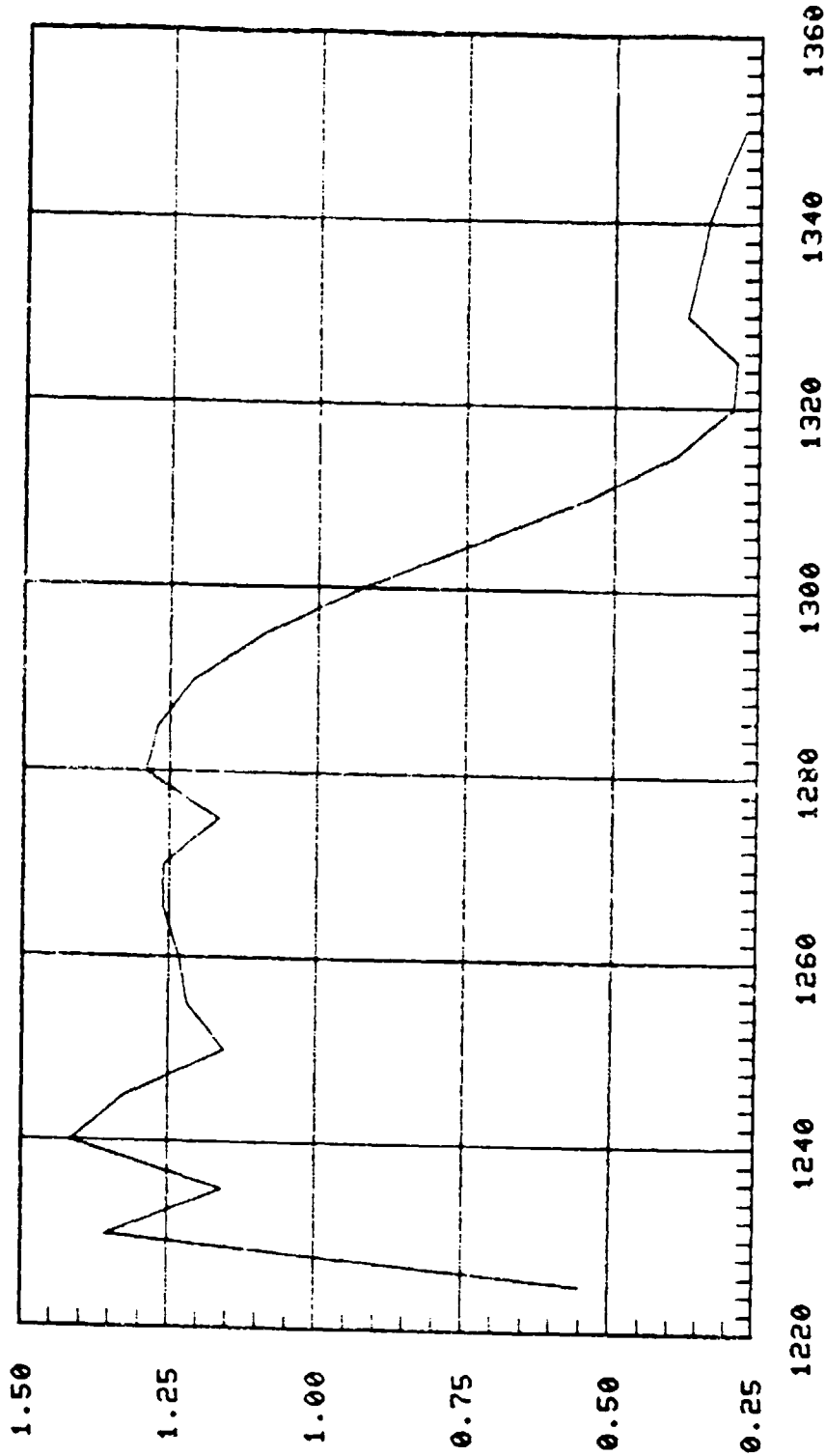
TIME - SECONDS

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STS-5 (107 FT LENGTH OMS FOD) FLIGHT PARAMETER COMPARISON

0079971A



REACTING RATE -- OMS

B-07

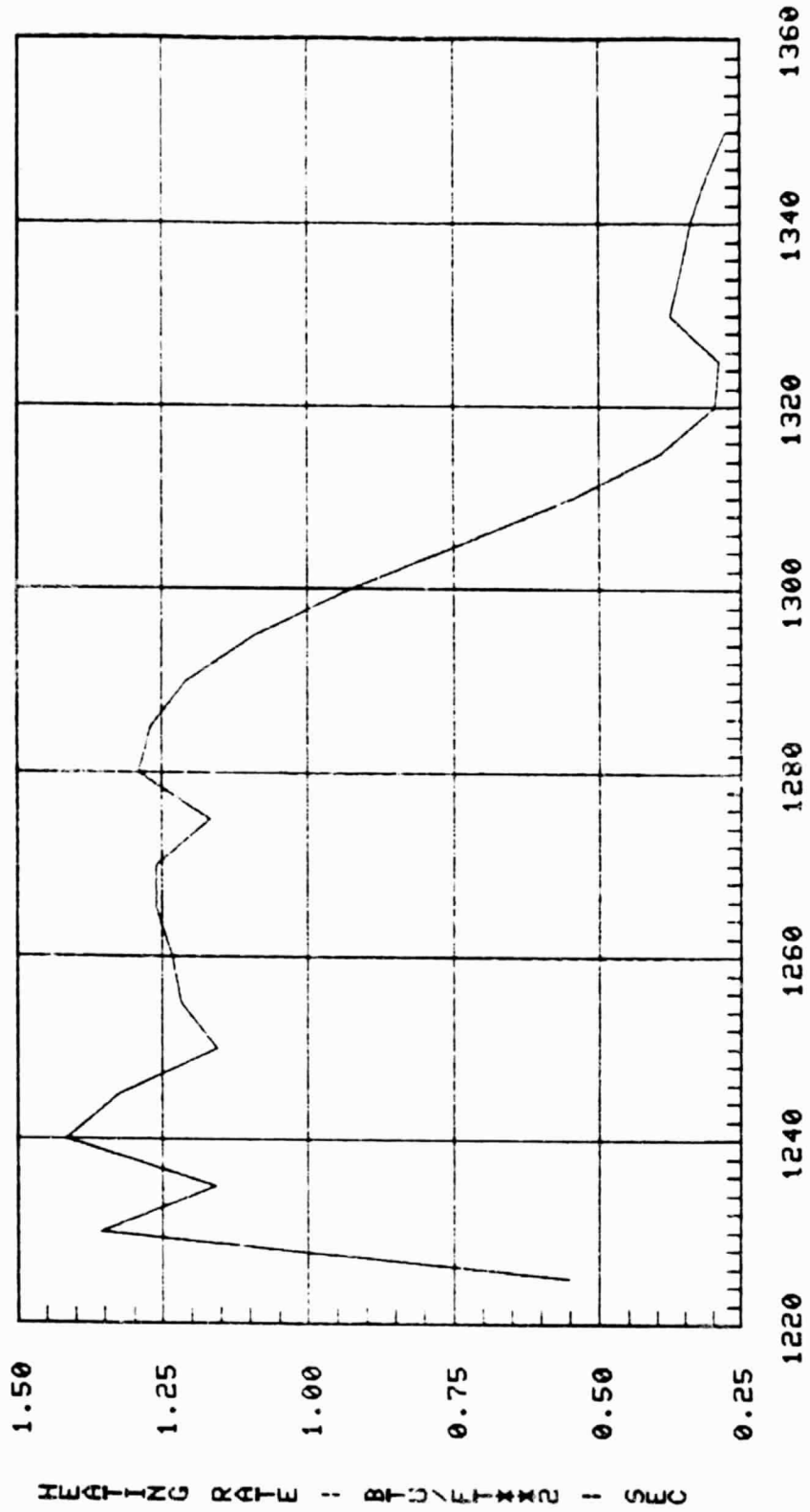
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TIME - SECONDS

04/15 53

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719974A



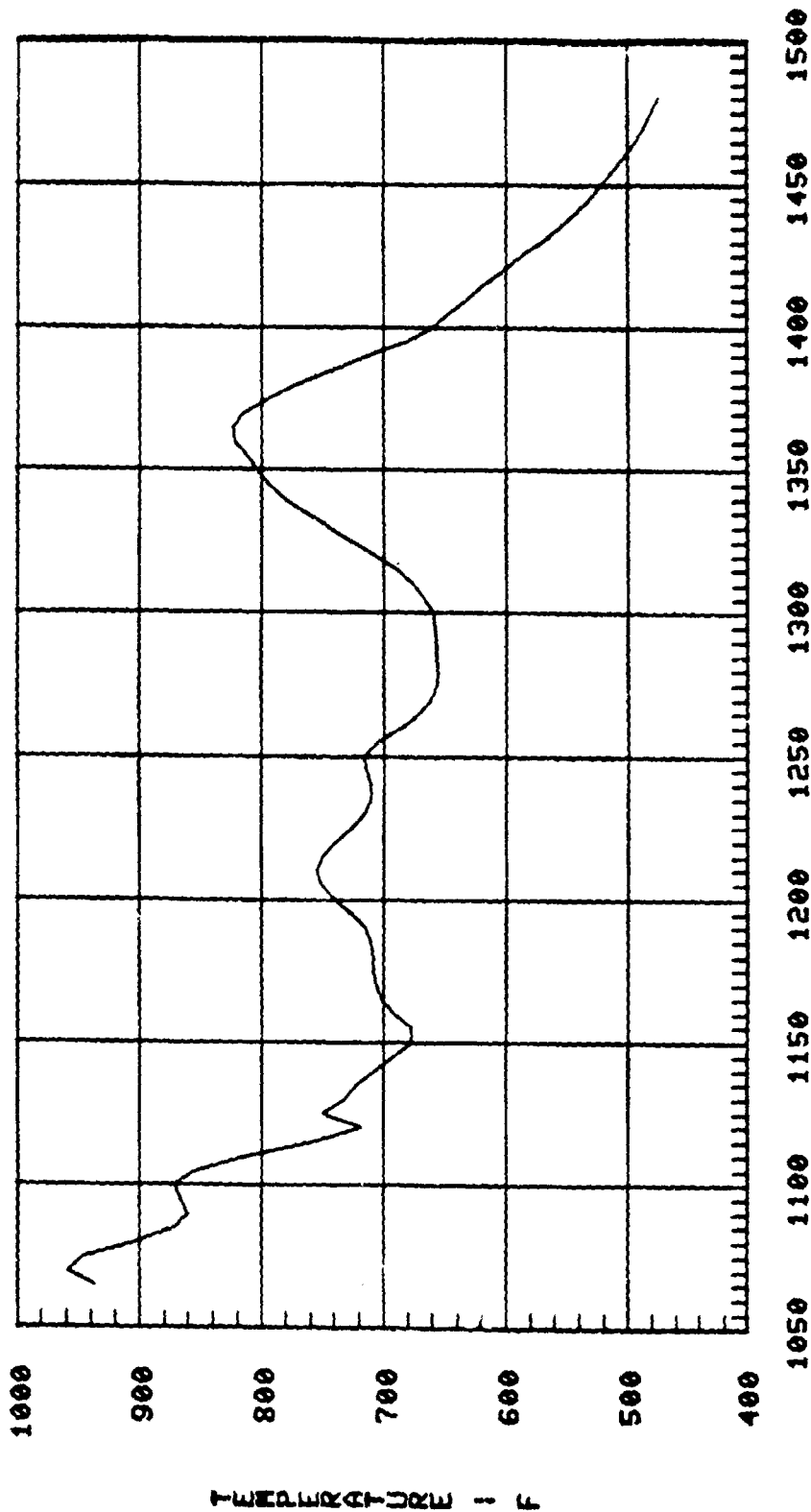
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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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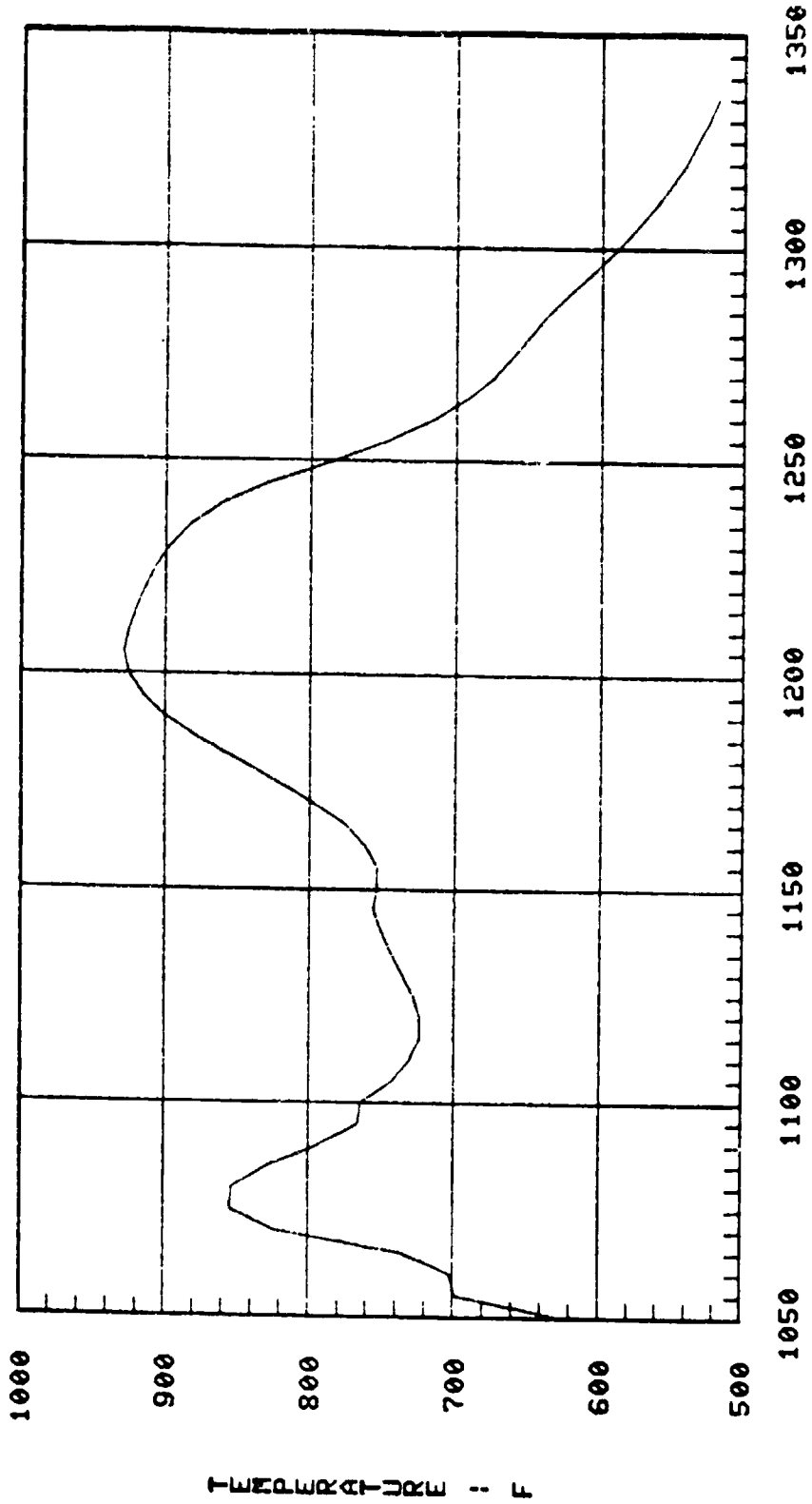
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04/20/83

TEMPERATURE - F

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9974A



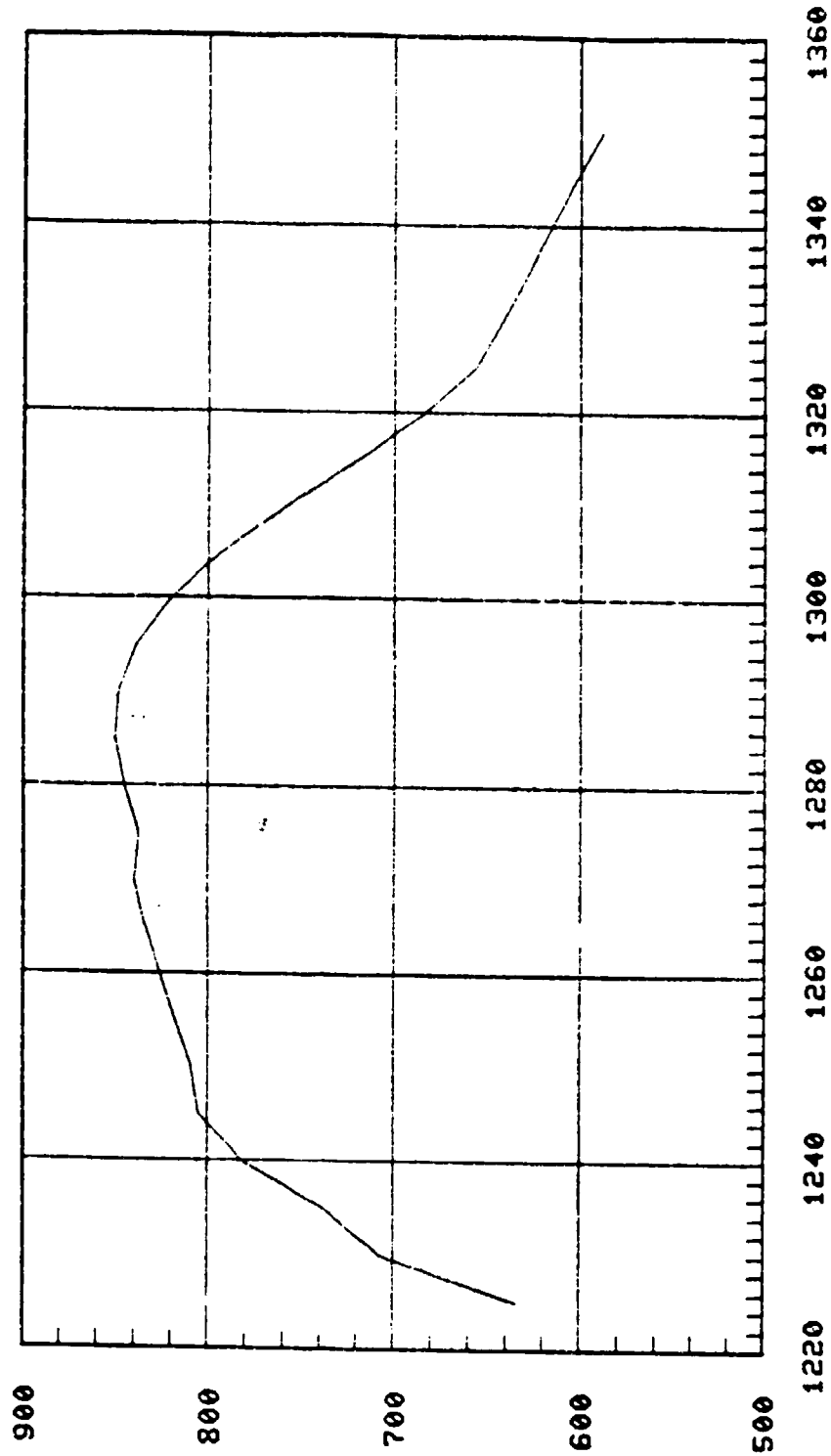
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TEMPERATURE -- F

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9974A



FUELFLOWRATE -- F

B-90

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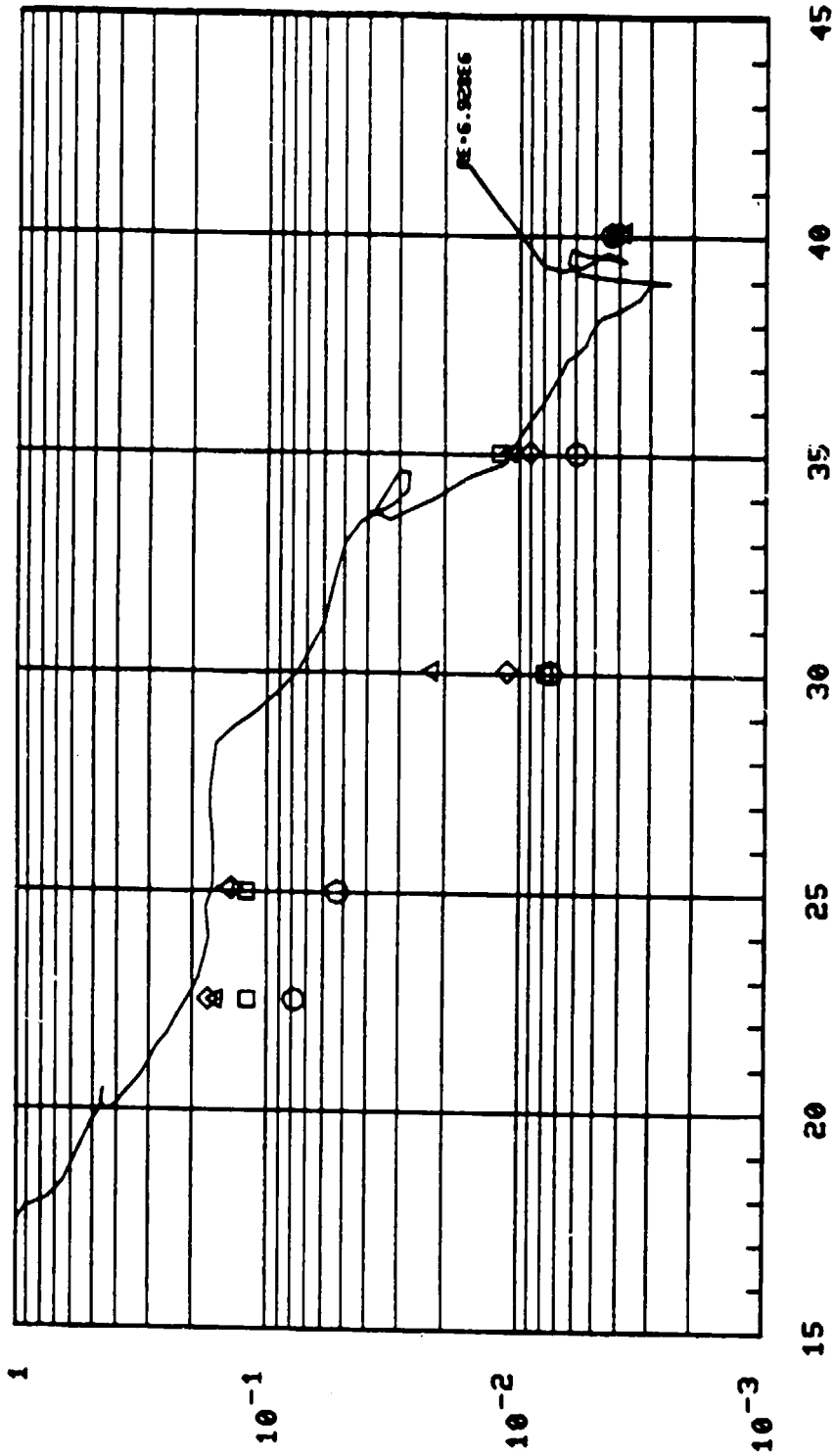
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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

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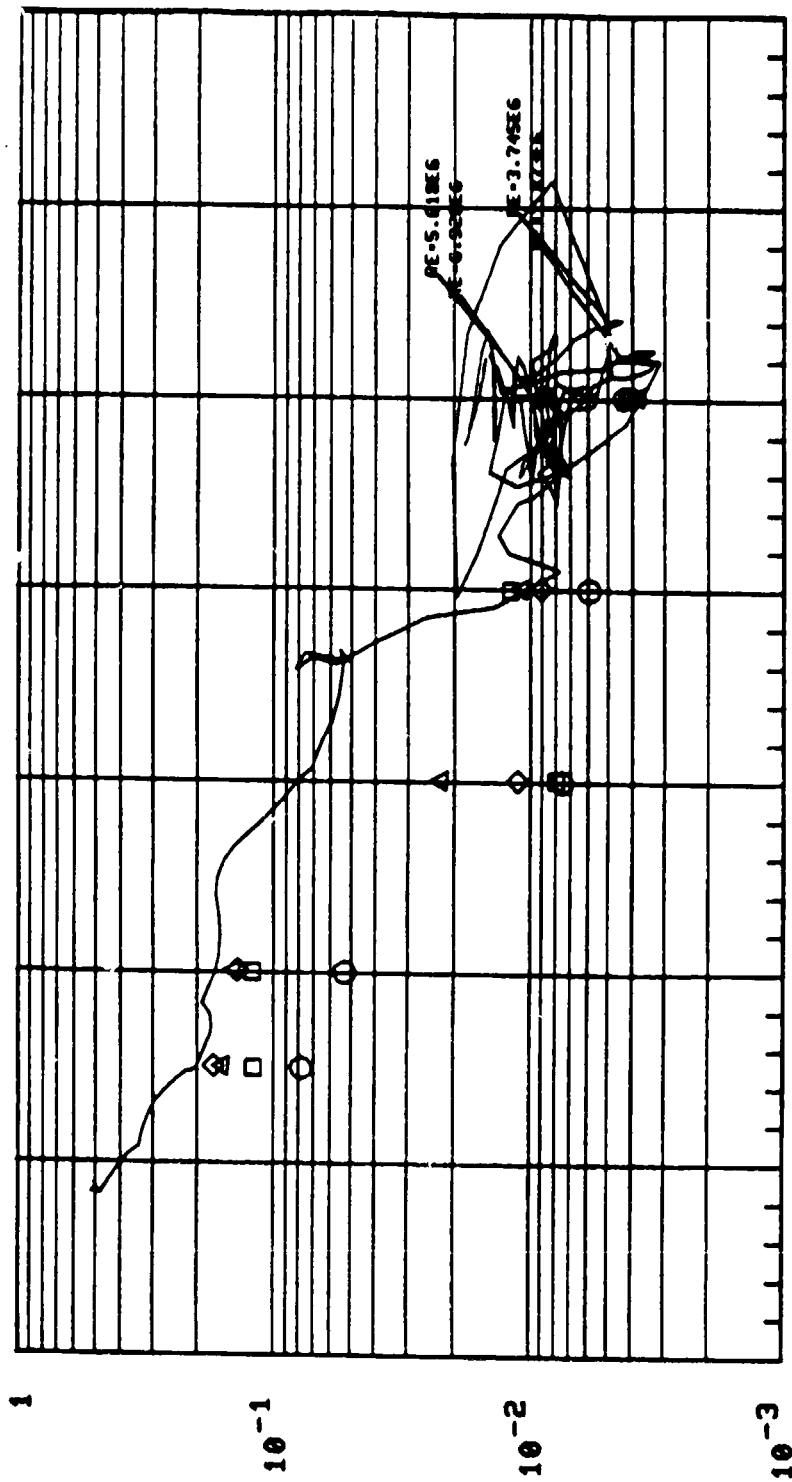
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TIME COUNT - H/N-REF

# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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 AF 0.0175 SCALE RE - 2.0 E06  
 AF 0.0175 SCALE RE - 3.0 E06  
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\_\_\_\_\_ U07T9976A/H-REF 200-1480 SEC



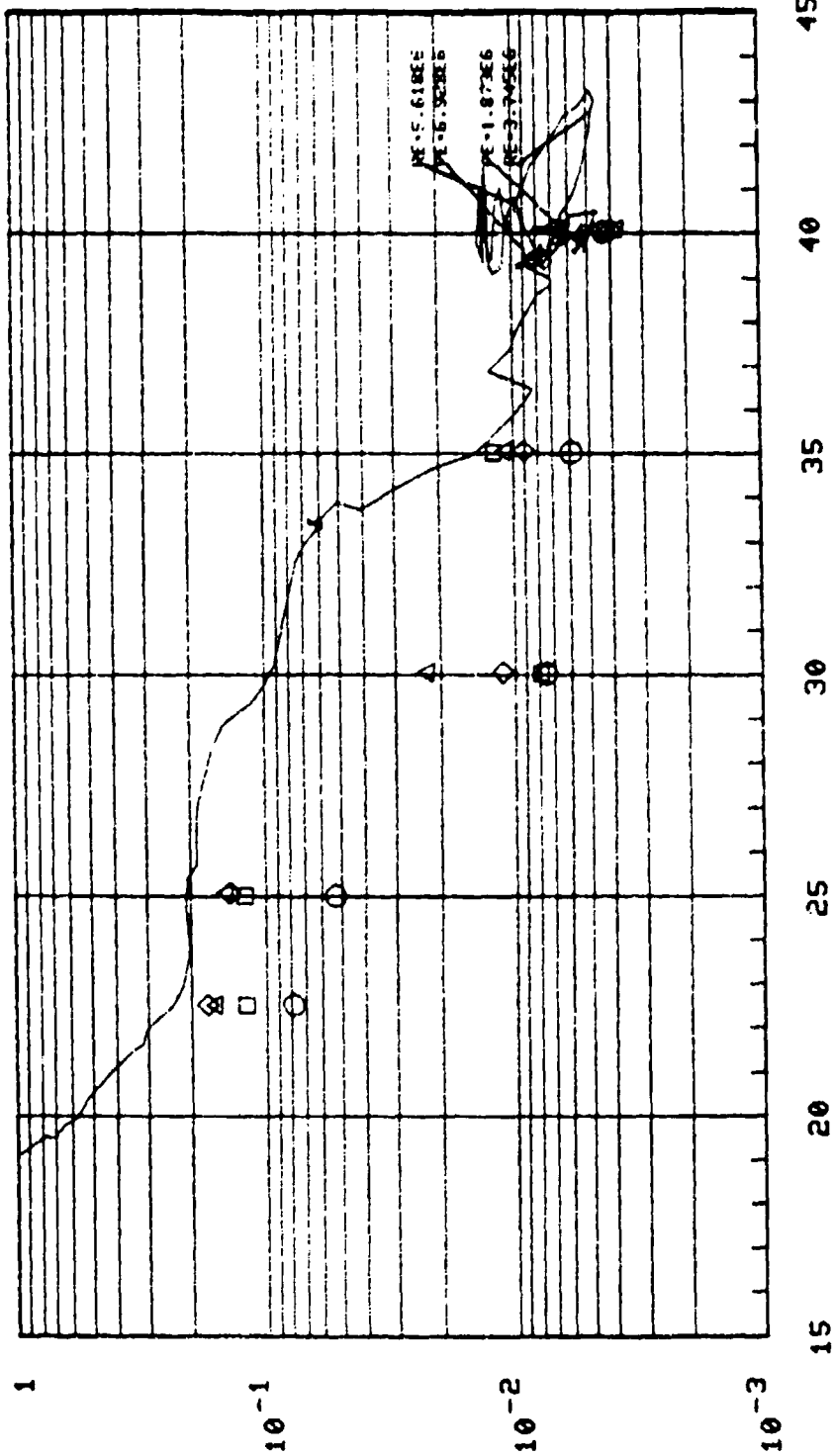
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779976A/H-REF 200-1320 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
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- AF 0.0175 SCALE RE - 3.7 E06

□ ○ ×



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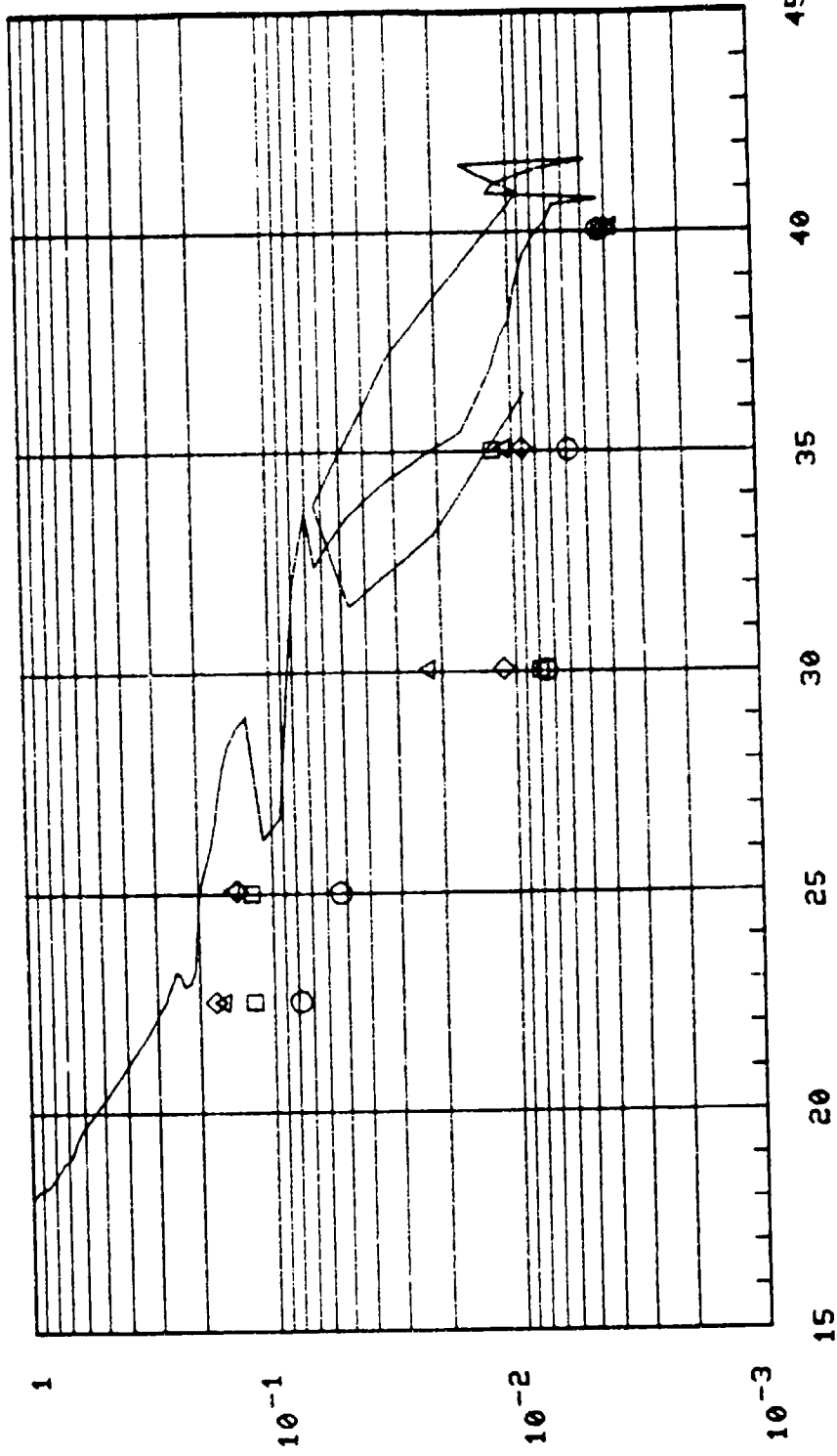
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A/H-REF 965-1335 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



FILM COVER -- H/H--REF

B-94

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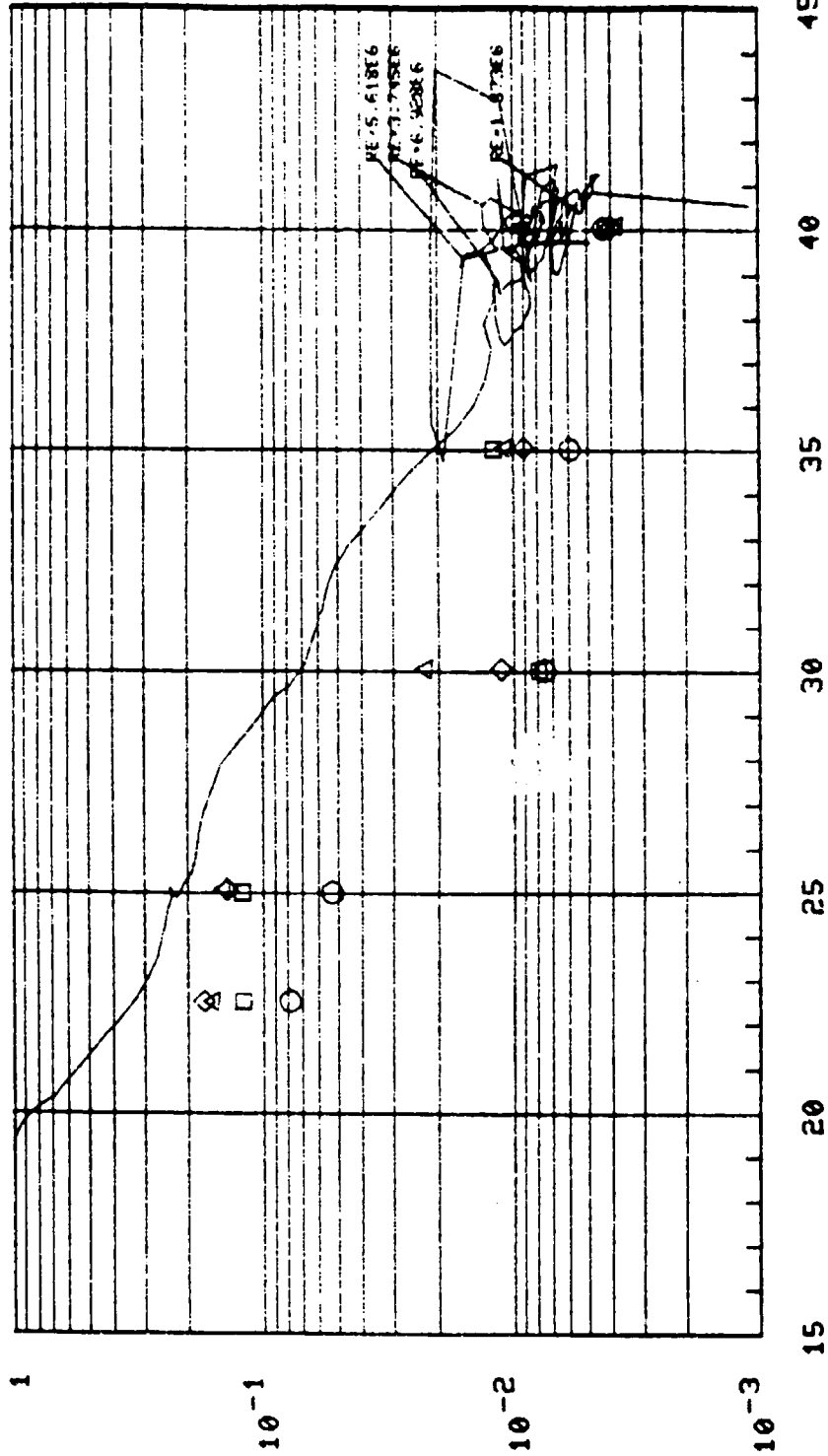
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 AF 0.0175 SCALE RE - 3.0 E06  
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□ ○ ×

U0779976A/H-REF

150-1350 SEC



FILE COVER - H/H-REF

B-95

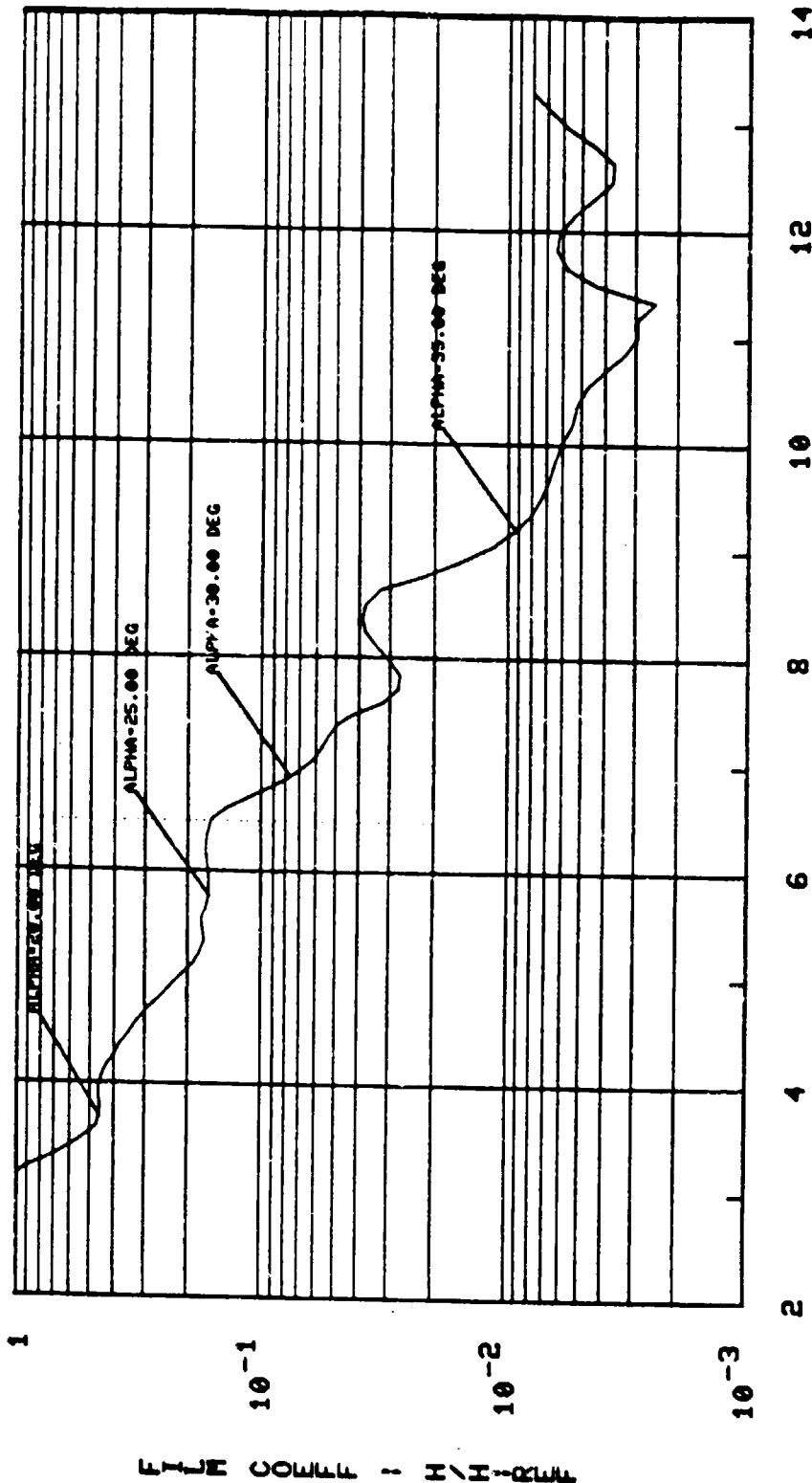
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ANGLE-OF-ATTACK - DEG

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A/H-REF 1065-1480 SEC



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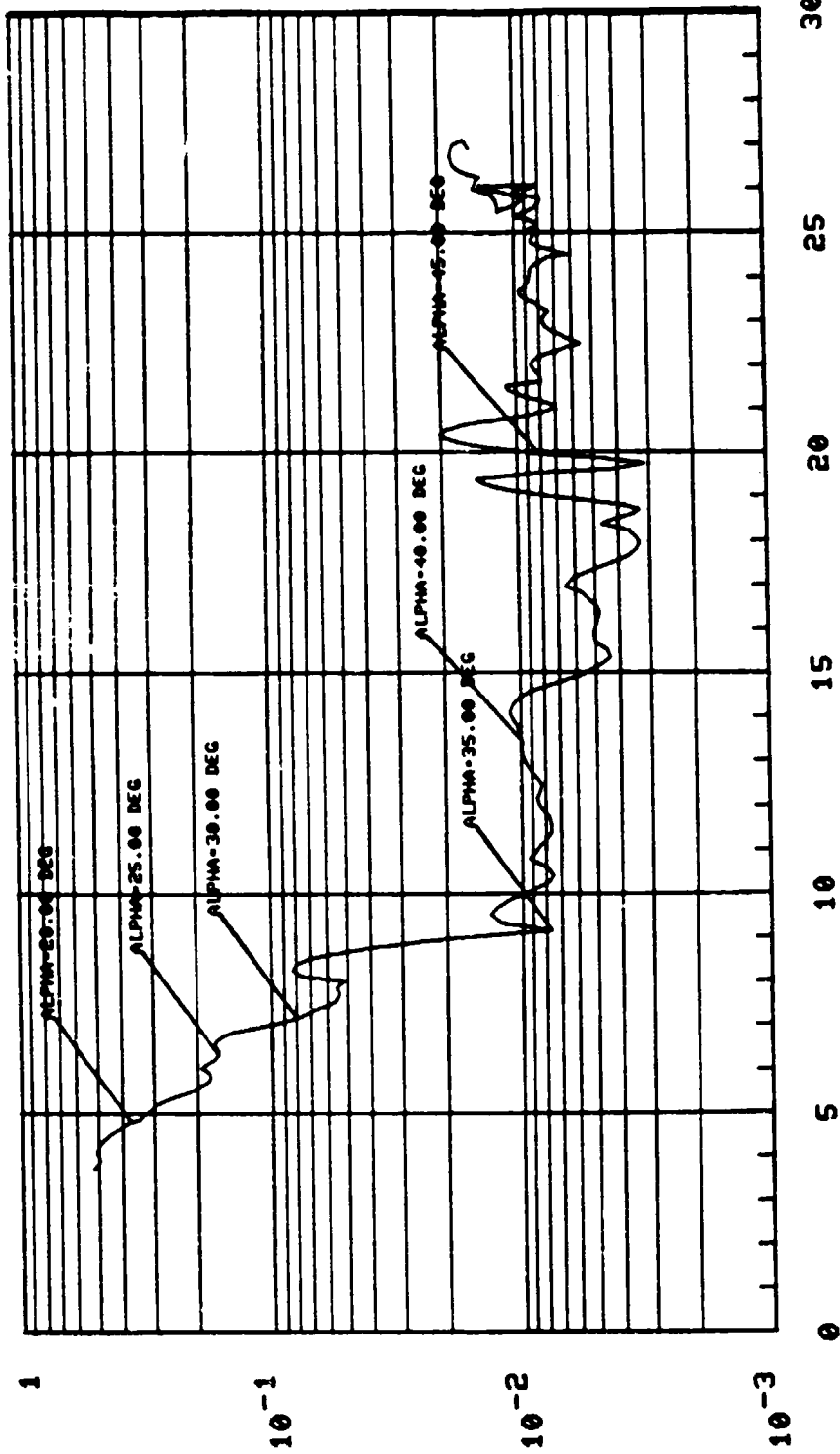
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MACH NUMBER

FLIGHT COEFF - H/H-REF

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779976A/H-REF 200-1480 SEC



L/H-REF - H/H-REF

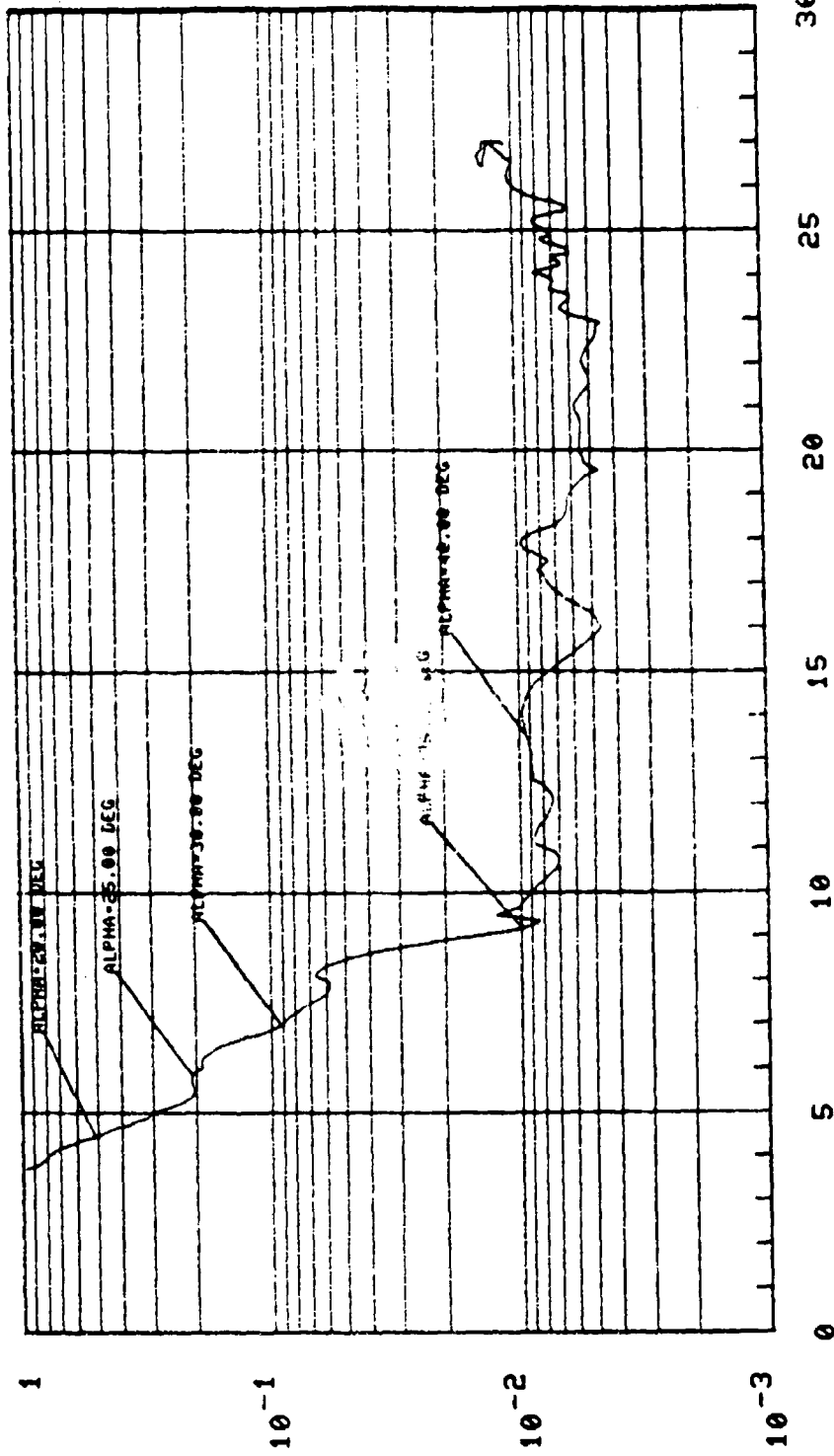
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

V07T976A/H-REF 200-1380 SEC



FLIGHT PARAMETER - H/I-REF

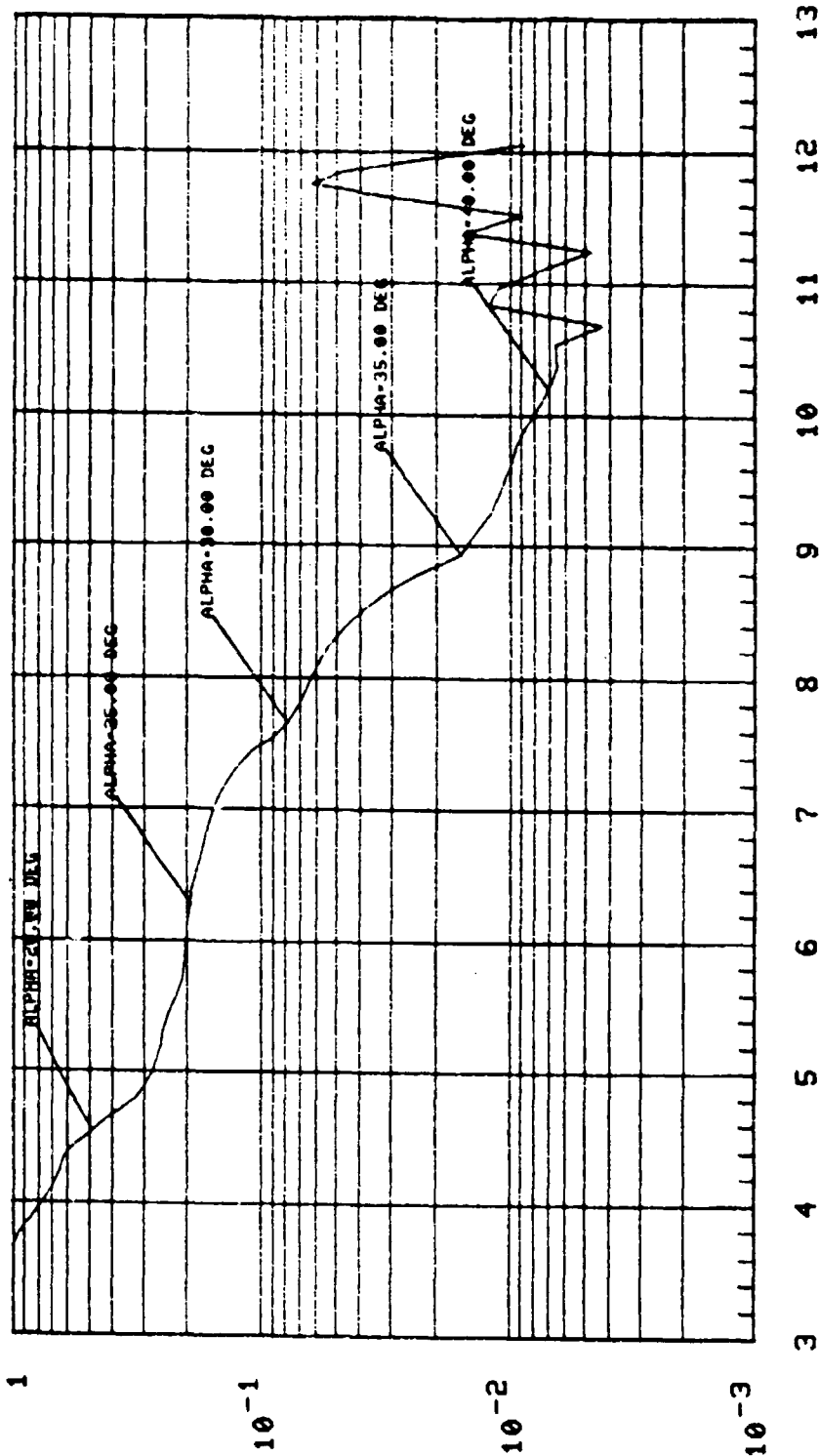
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719976A/H-REF 965-1335 SEC



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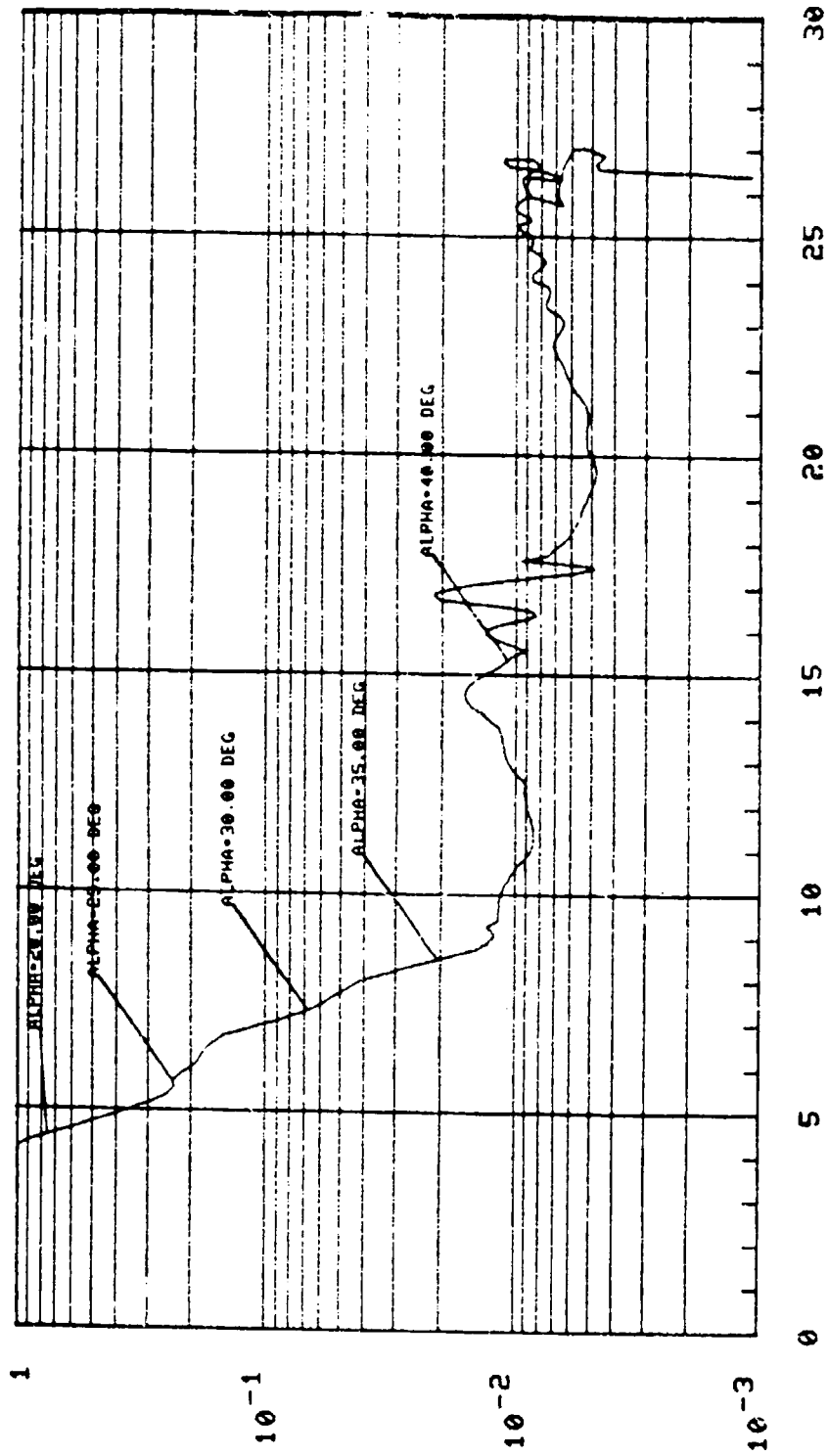
MACH NUMBER

LINE COVER - H/H-KRM

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779976A/H-REF 150-1350 SEC

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LIFT COEFF -- H/H-REF

MACH NUMBER

04-18-83

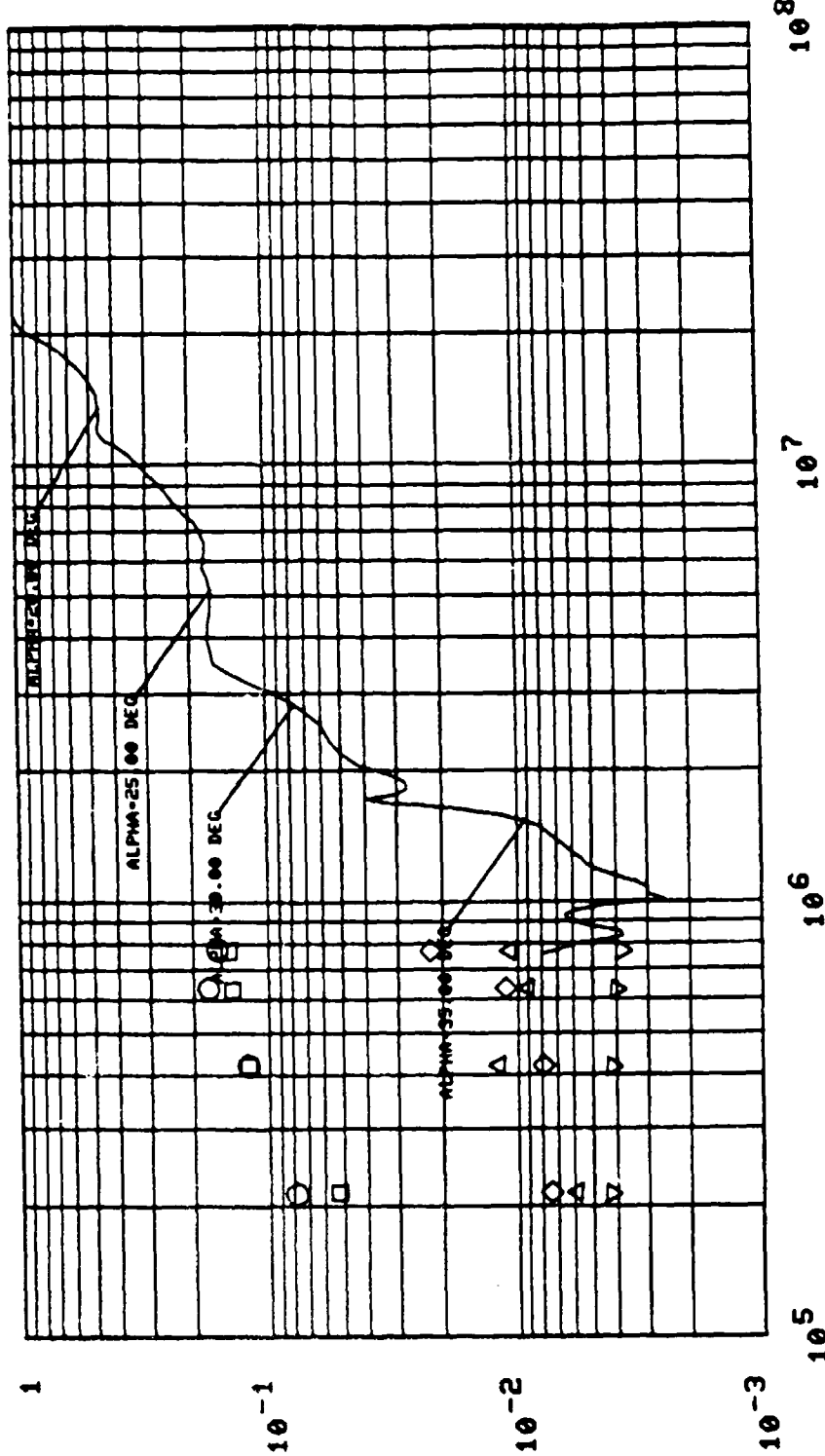
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U0779976A/H-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ ◇ ▽



FILE CODE -- H/H-REF

B-101

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REYNOLDS NUMBER (NS)

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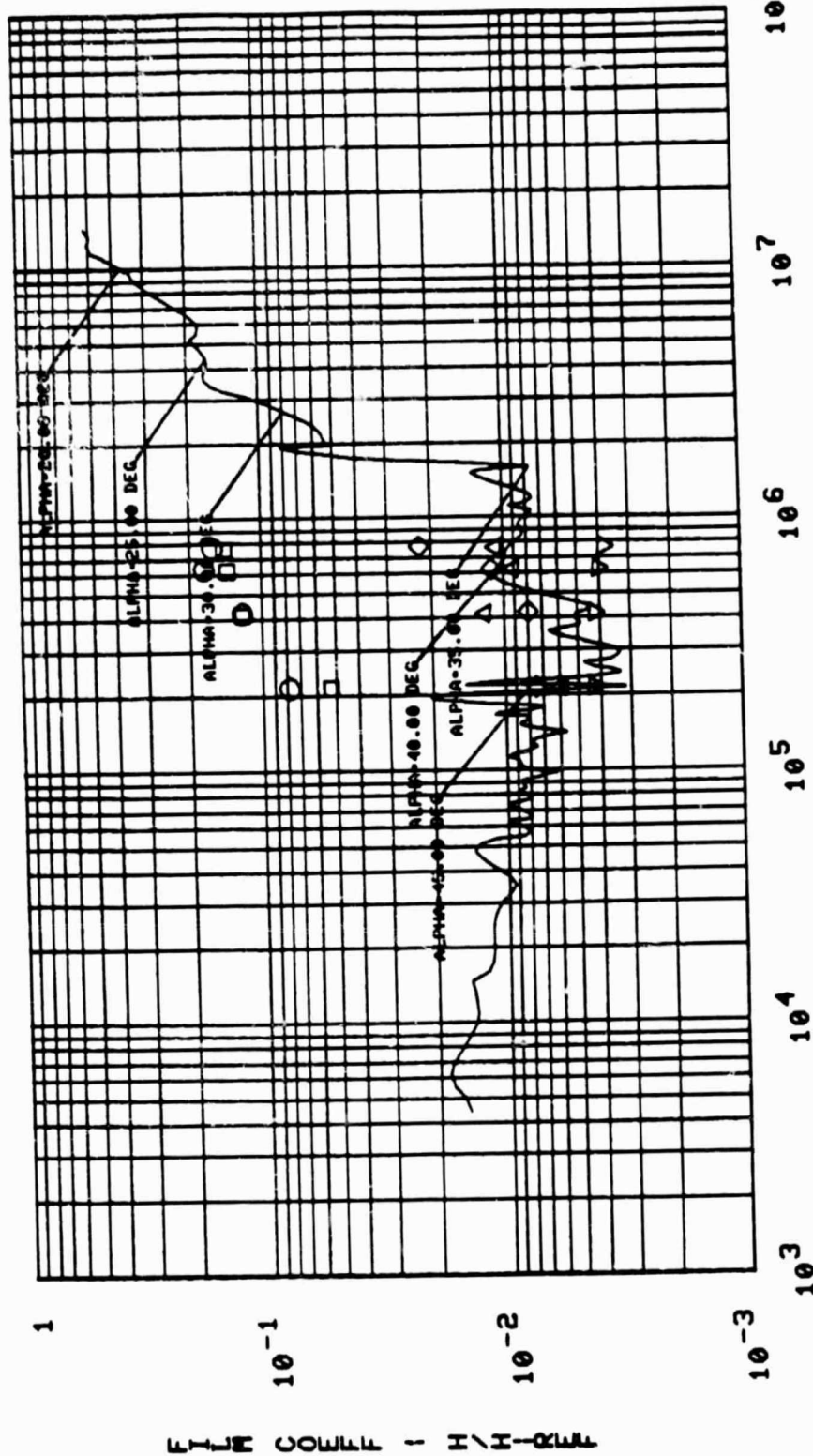


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U07T9976A/H-REF 200-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
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FILM COEFF - H/H-REF

04/20/83  
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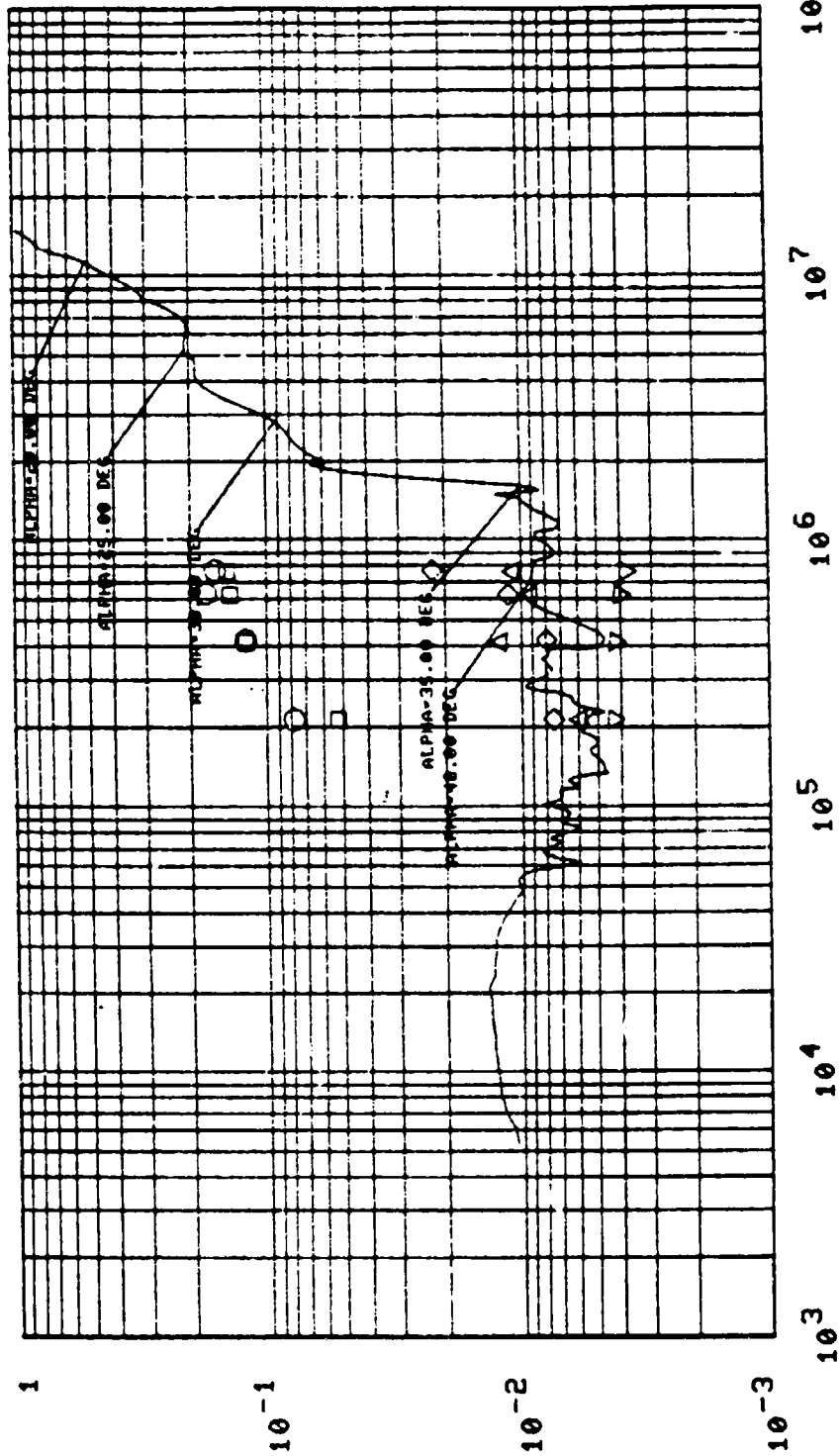
REYNOLDS NUMBER (NS)

# STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
- AF ALPHA = 30.0 DEGREES
- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES

U87T9976A/H-REF 200-1380 SEC

○ □ × △



REF FROM 107

B-103

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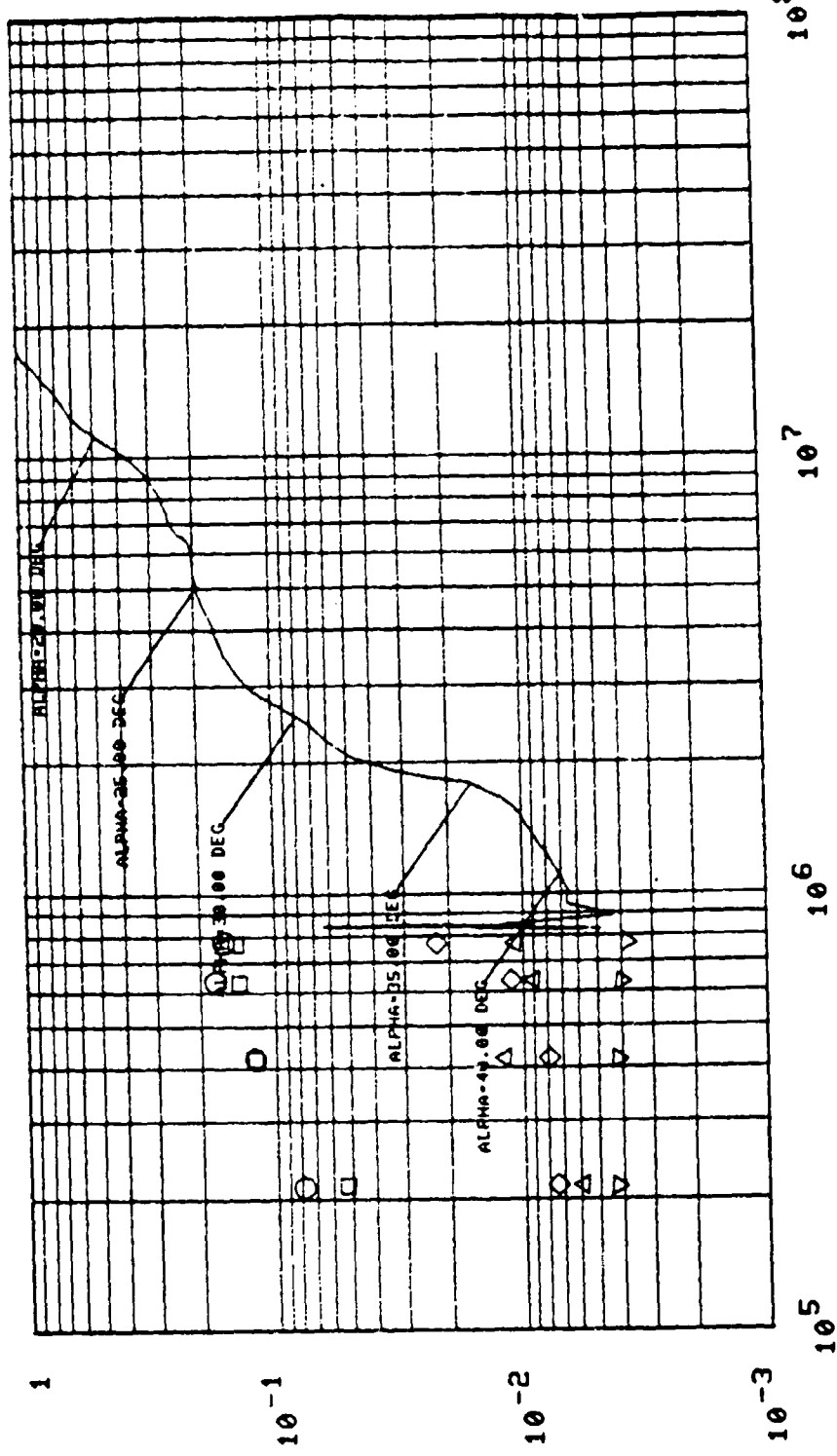
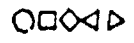
04 19 53  
BASE TIME - 07745684.000 SEC.

REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9976A/H-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



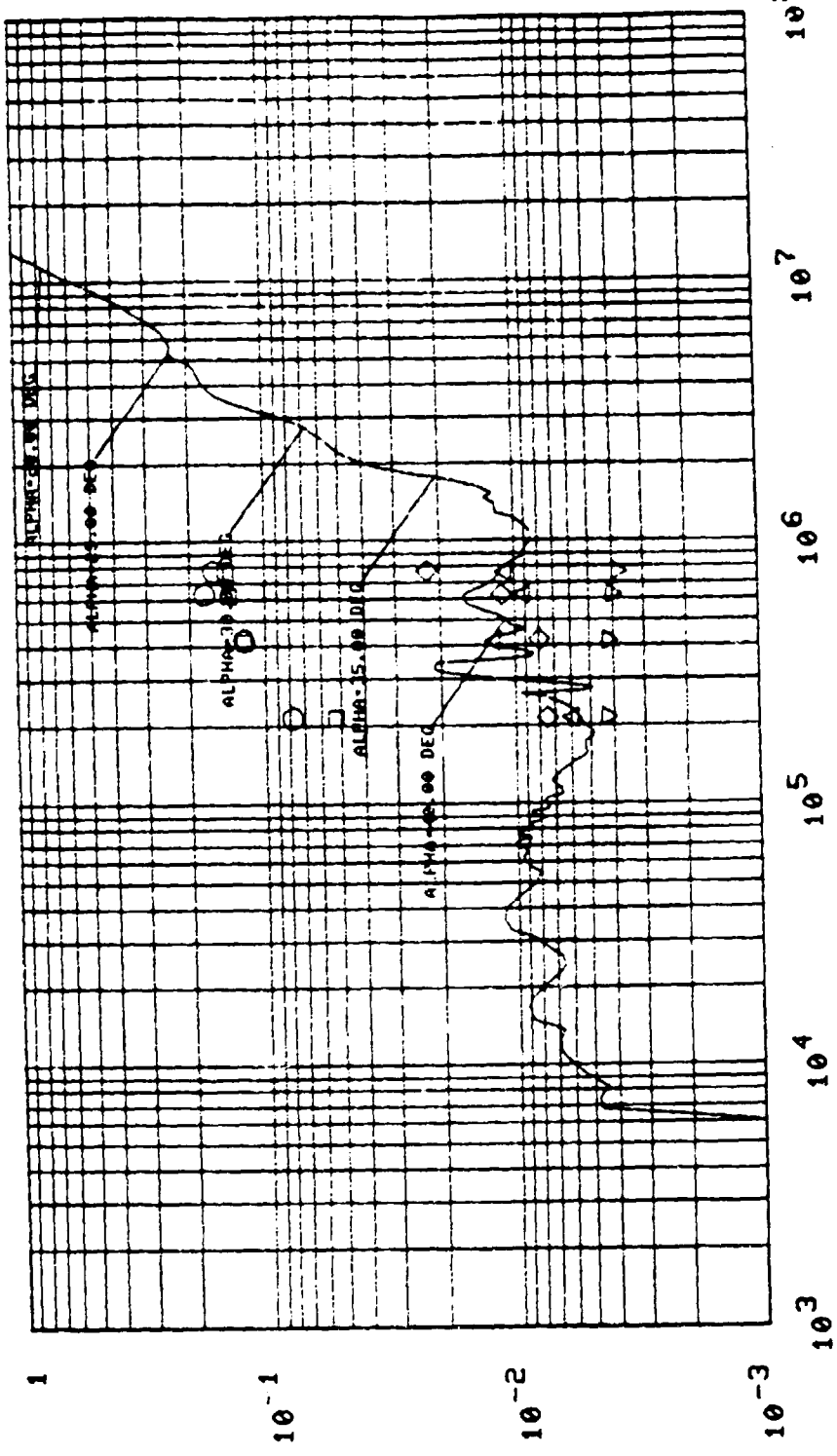
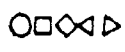
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REYNOLDS NUMBER (NS)      BASE TIME - 16040423.000 SEC.      04.12.83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719976A/H-REF 150-1350 SEC

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
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- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES



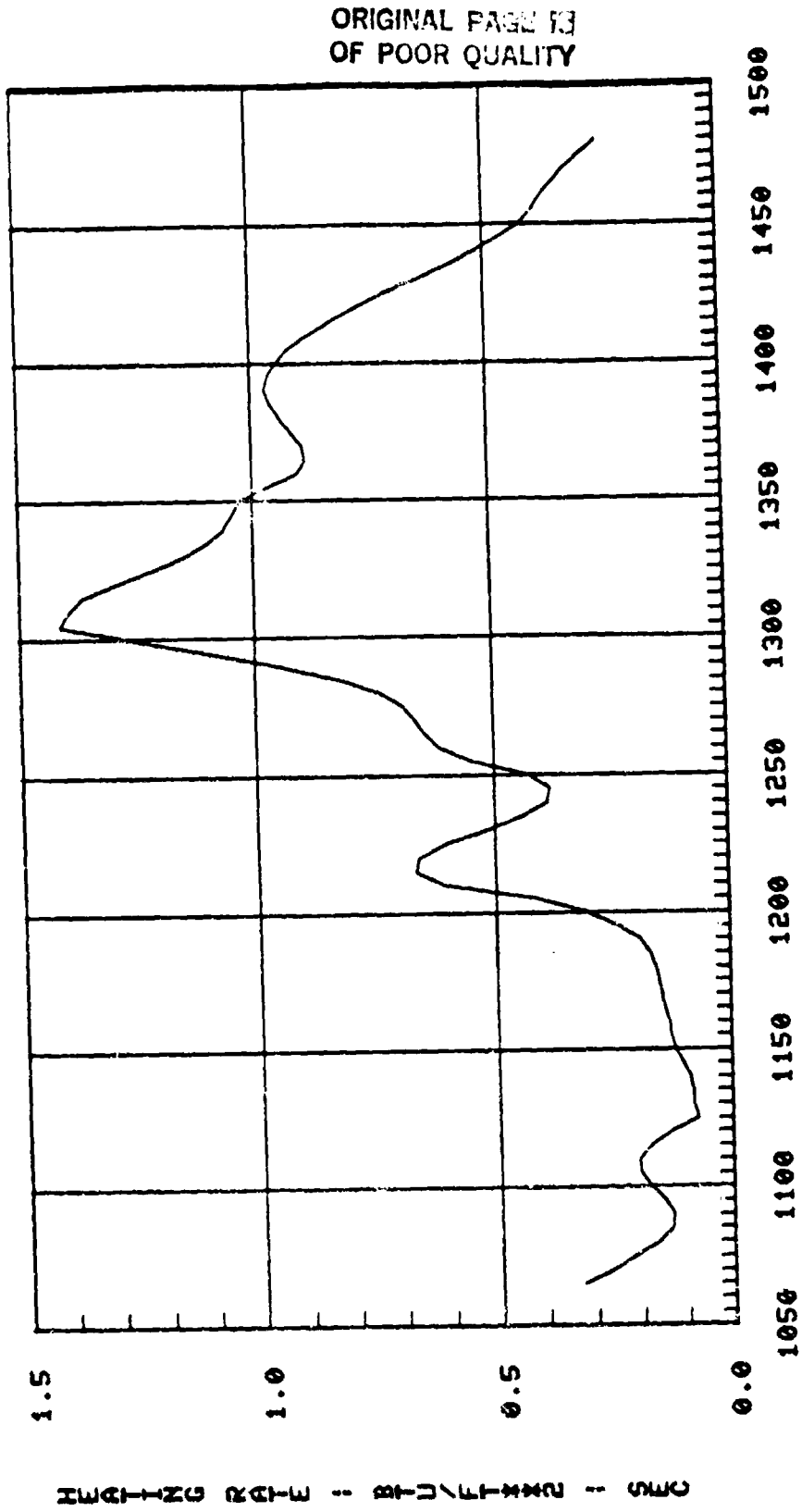
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04-18 83  
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REYNOLDS NUMBER (NS)

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A

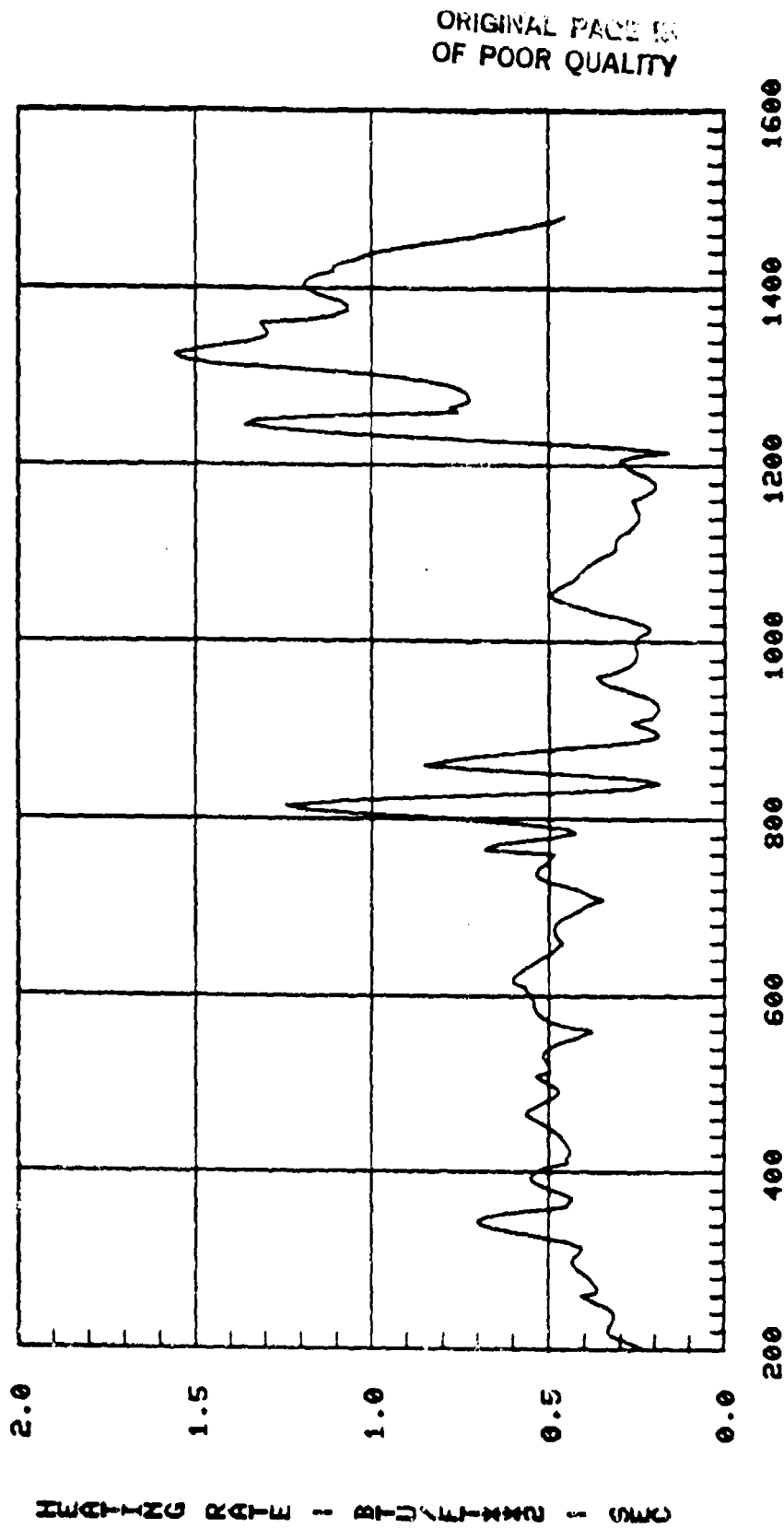


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04/20/83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719976A



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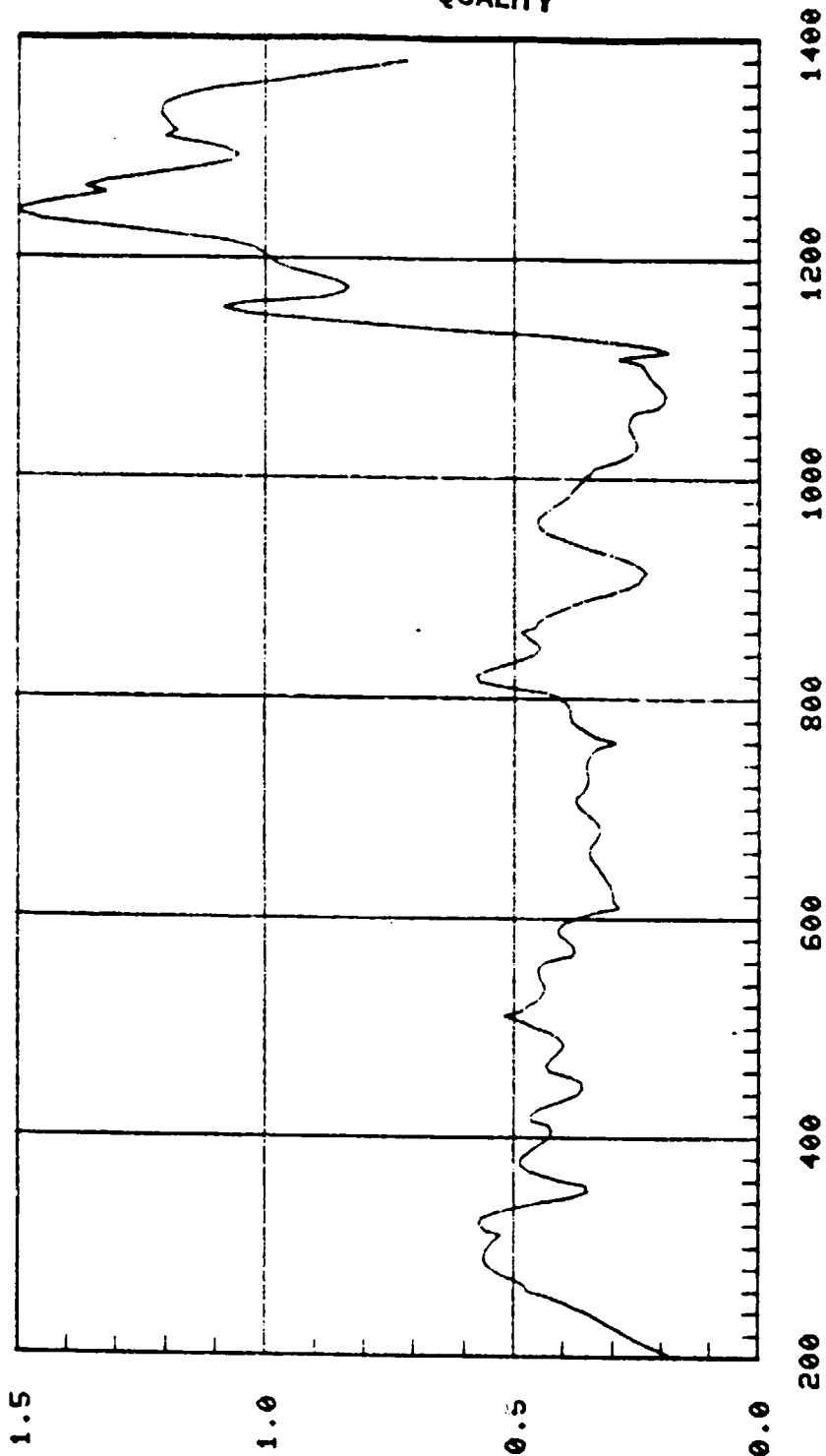
04/20/83

TIME - SECONDS

HEATING RATE - BTU/FT/HR

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A



HEATING RATE -- BTU/FT<sup>2</sup>/SEC -- SEC

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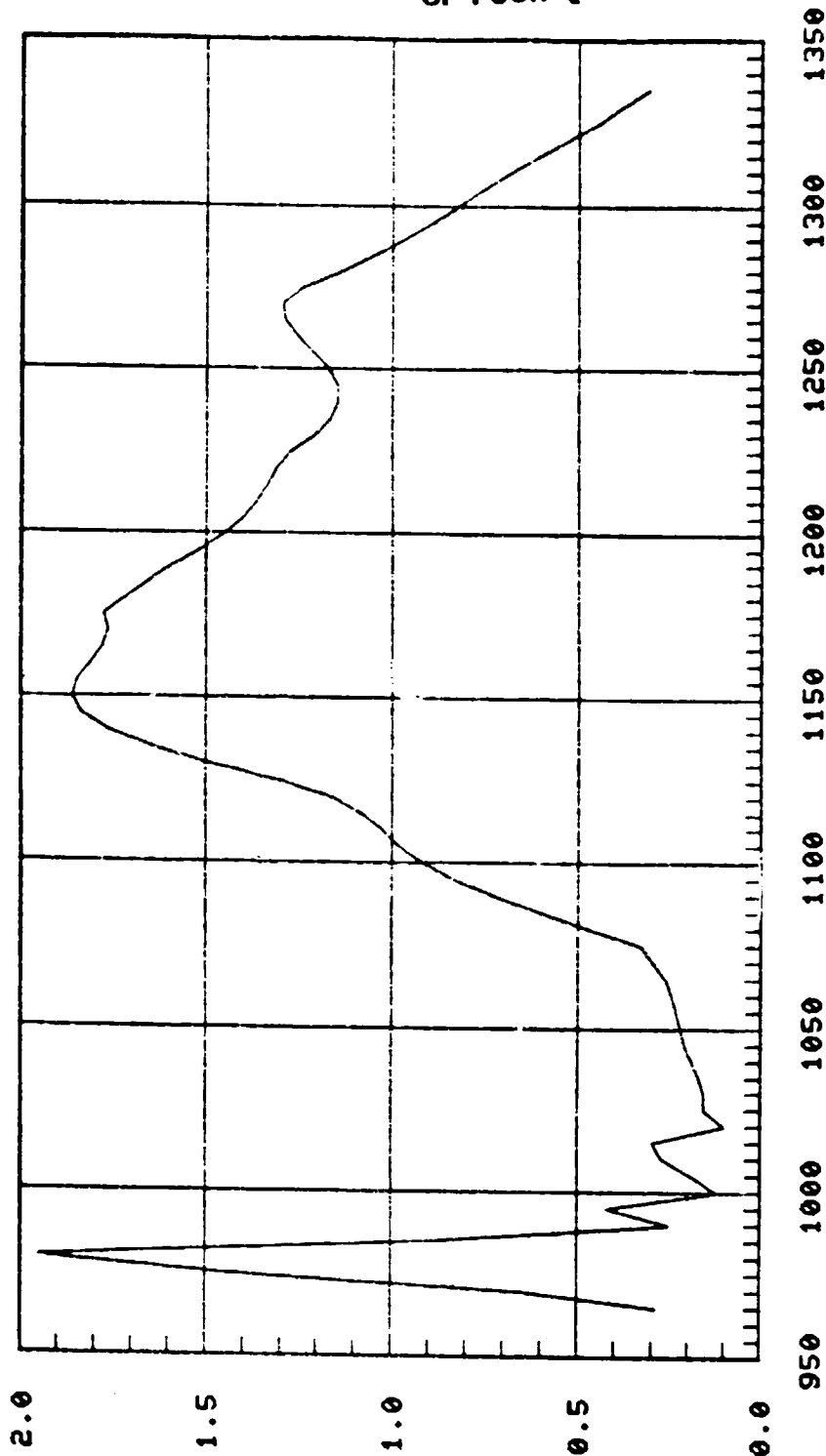
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TIME -- SECONDS

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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A



HEATING RATE -- BTU/FT<sup>2</sup>\*SEC -- SWG

B-109

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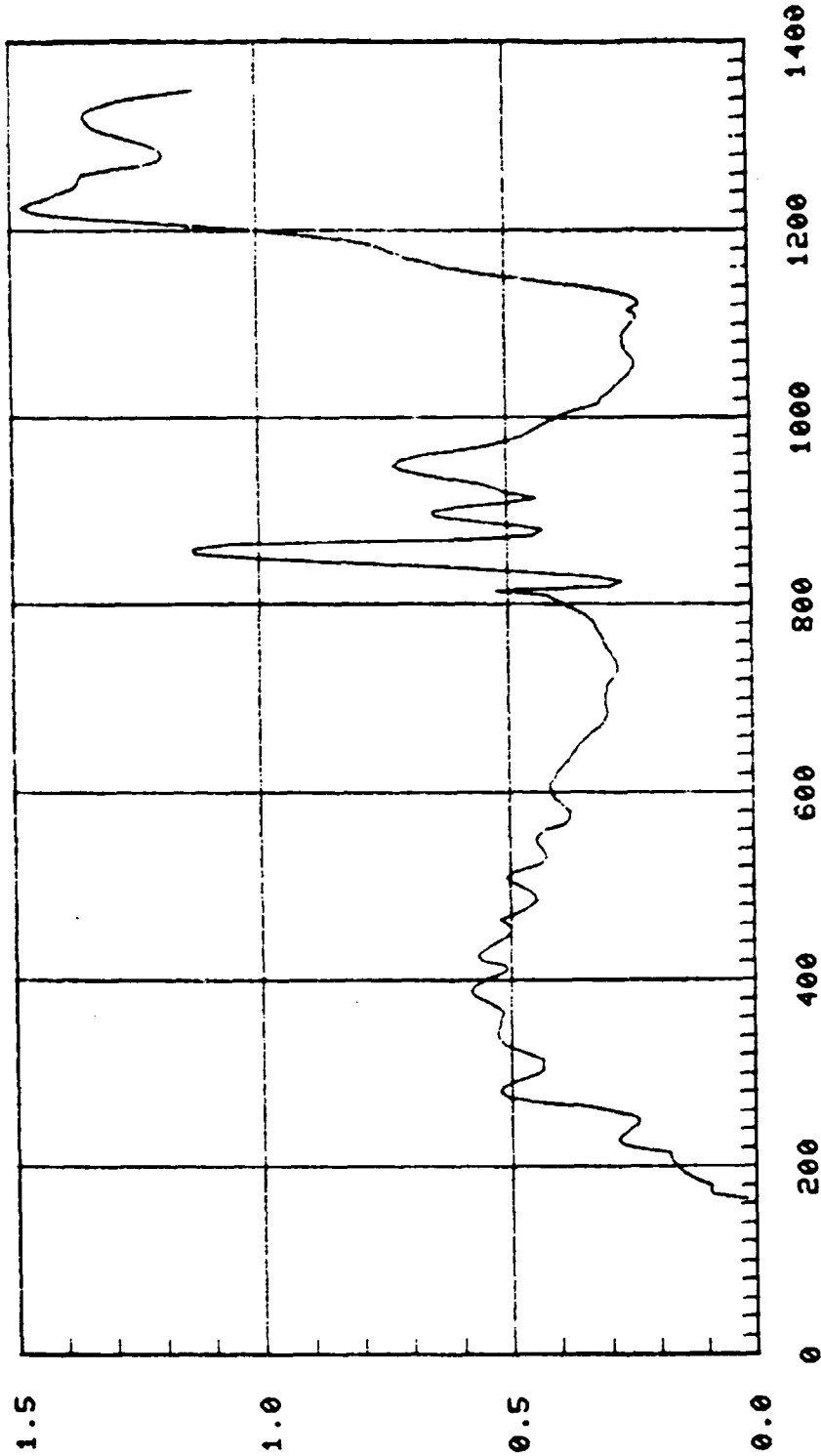
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04-19-83



STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07TS976A



HEATING RATE -- BTU/FT\*2 -- SEC

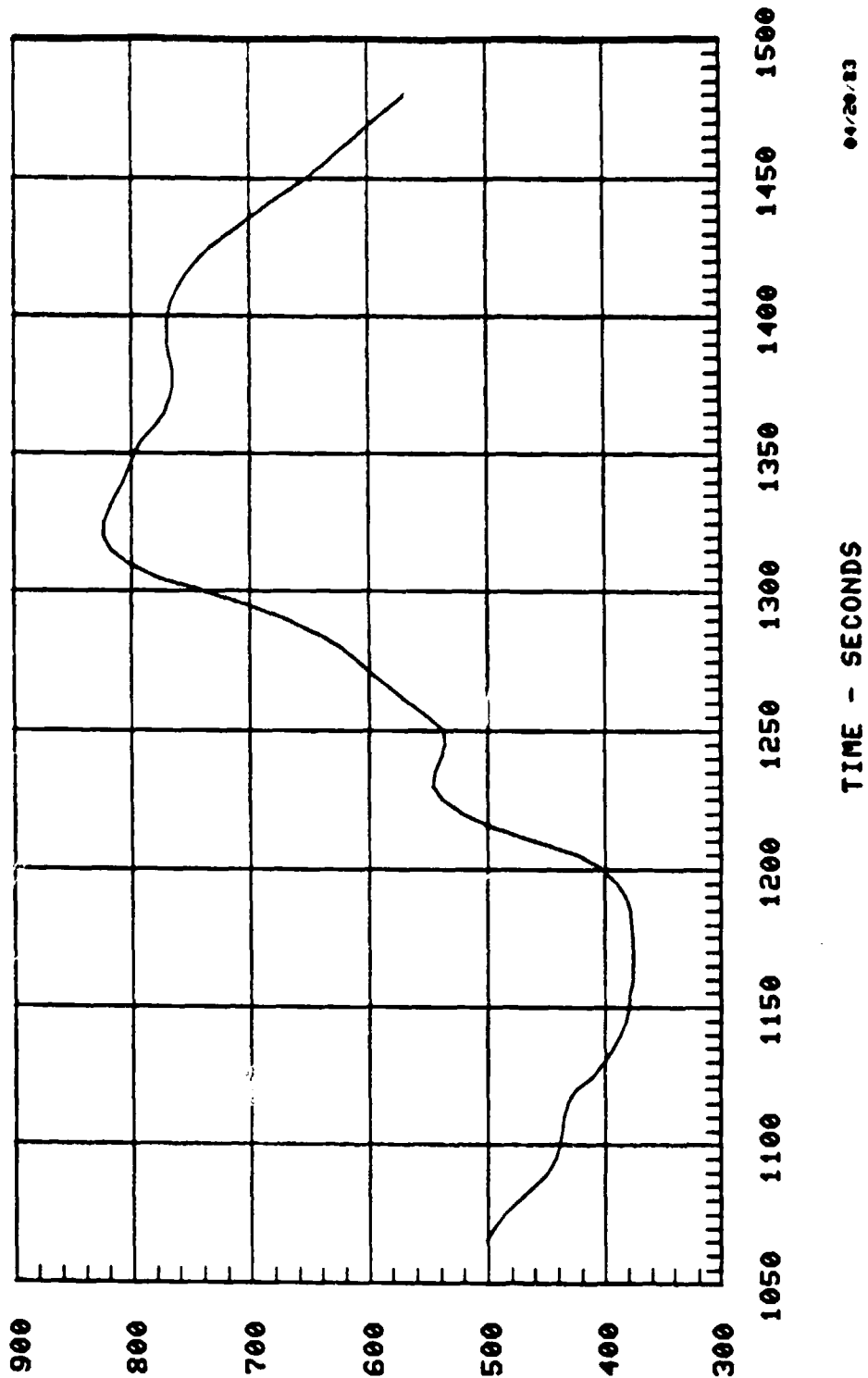
TIME - SECONDS

04 15 83

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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A



TEMPERATURE - F

B-111

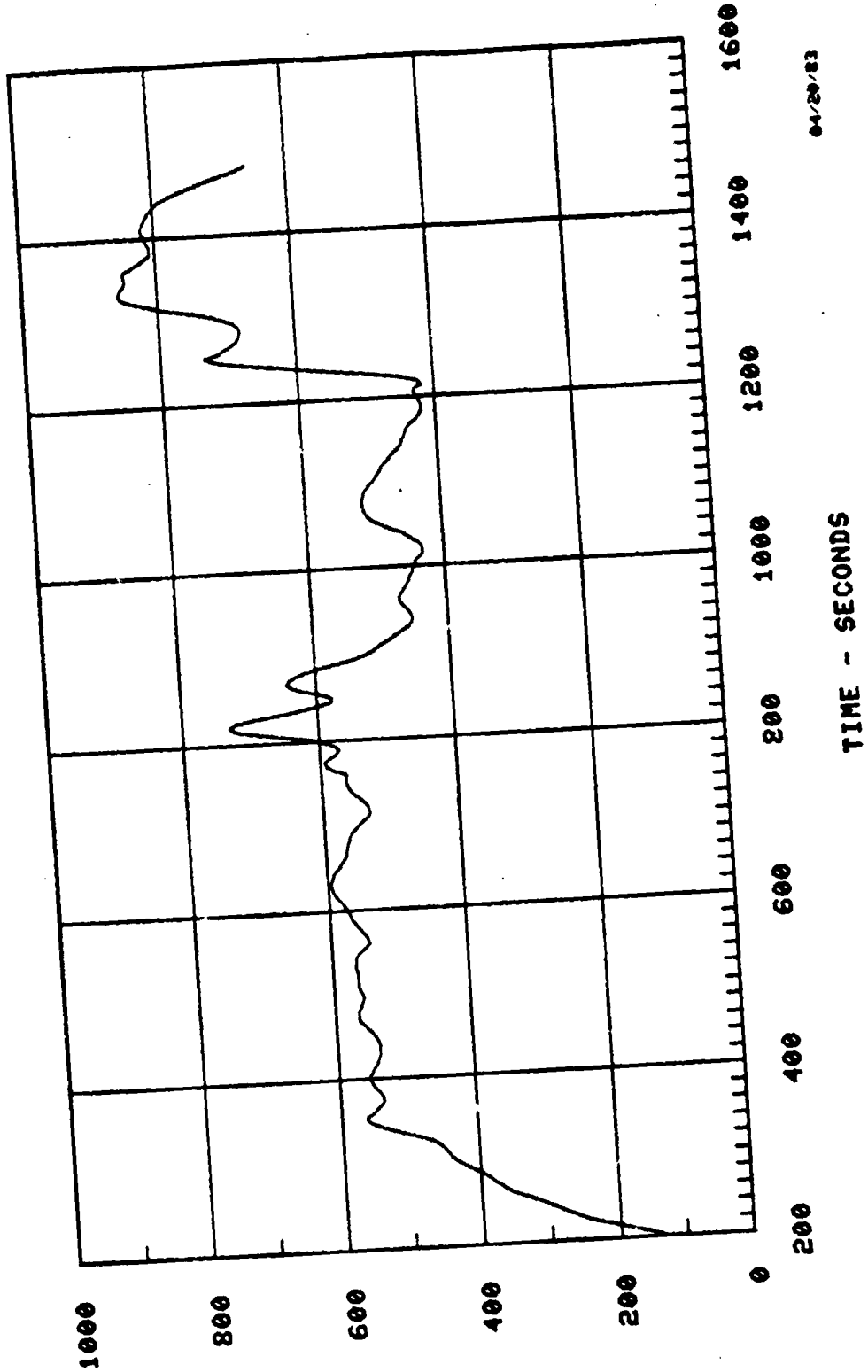
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TIME - SECONDS

04/20/83

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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON  
U0719976A



04/20/83

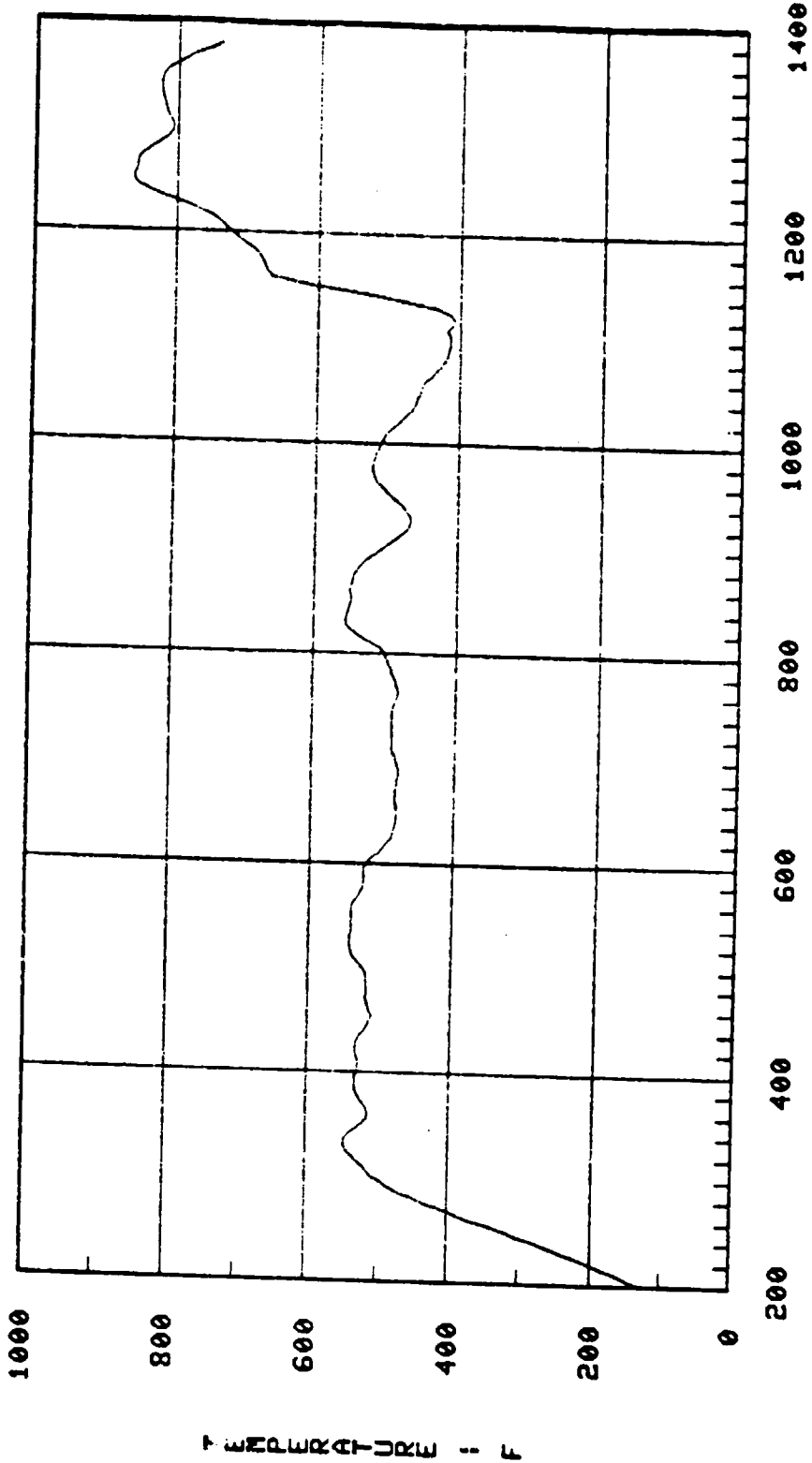
TIME - SECONDS

STRUCTURE - F

B-112

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U87T9976A



TEMPERATURE -- F

B-113

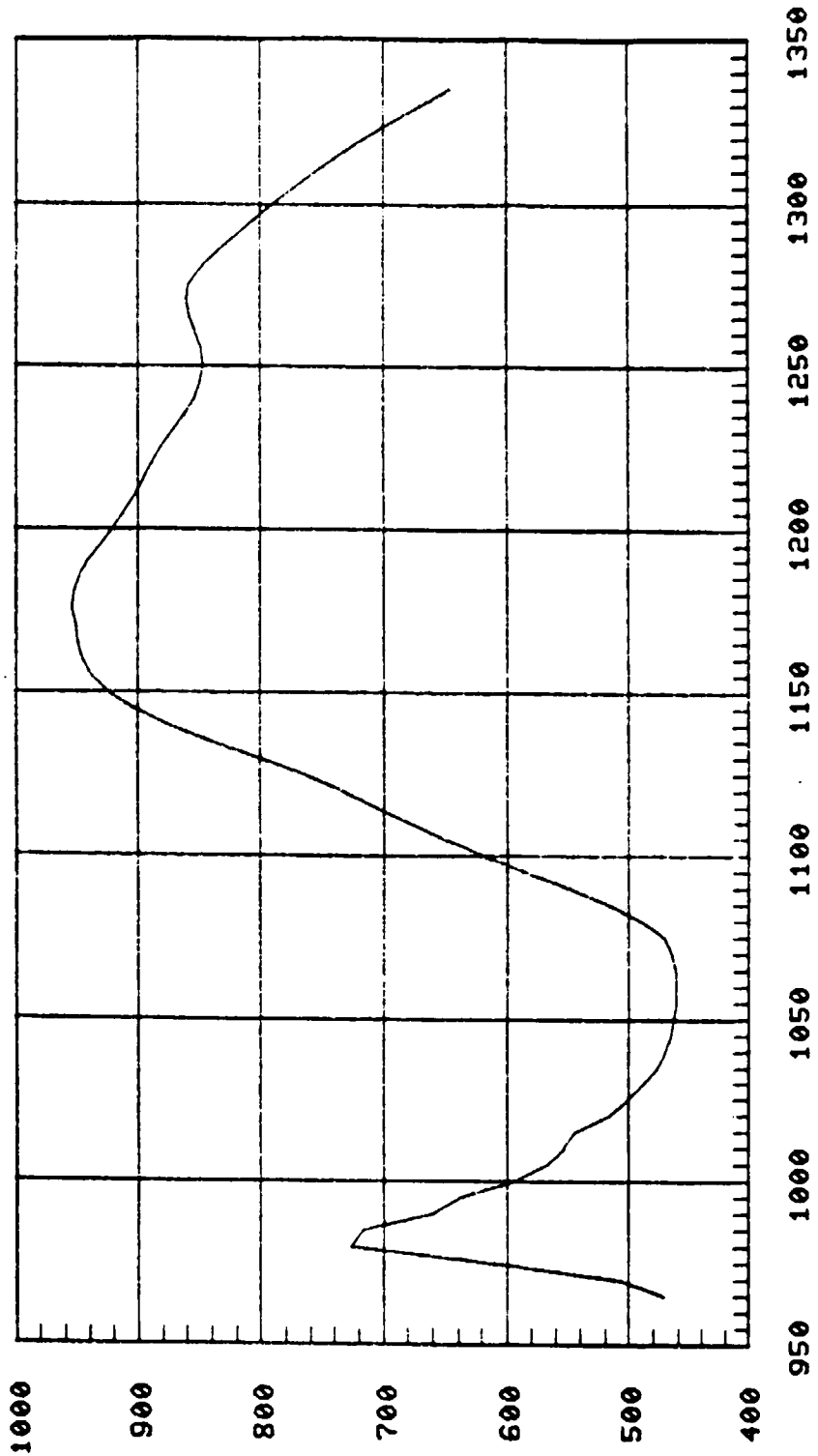
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TIME - SECONDS

04-19-53

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9976A



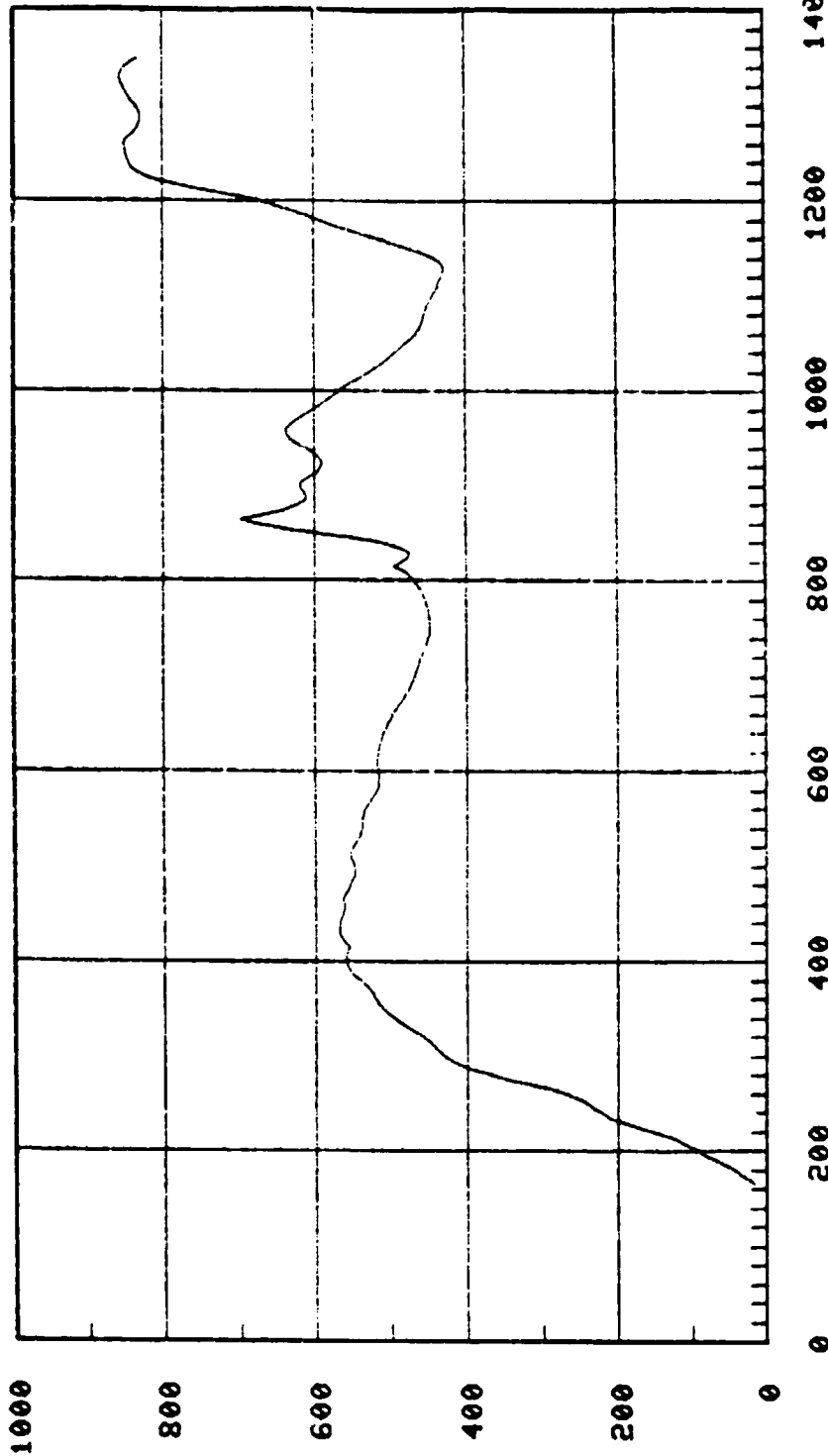
TIME - SECONDS

0019 S3

FUEL FLOW RATE - F

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719976A



FUELWEIGHT-DRAW -- L

B-115

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04-18 83

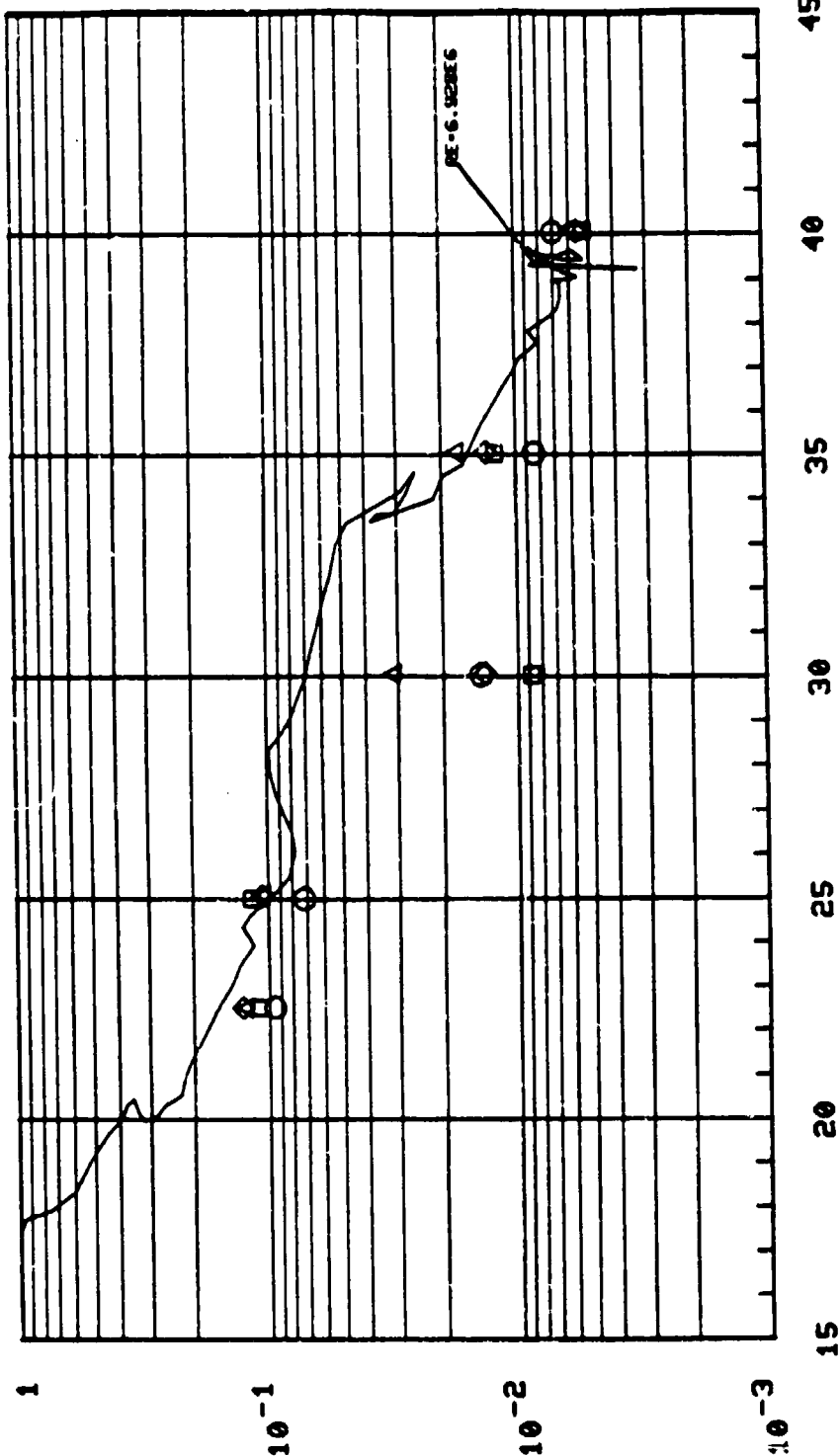
TIME - SECONDS

# STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 1065-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

□ ○ △



TIME SCALE - H-H-REF

B-116

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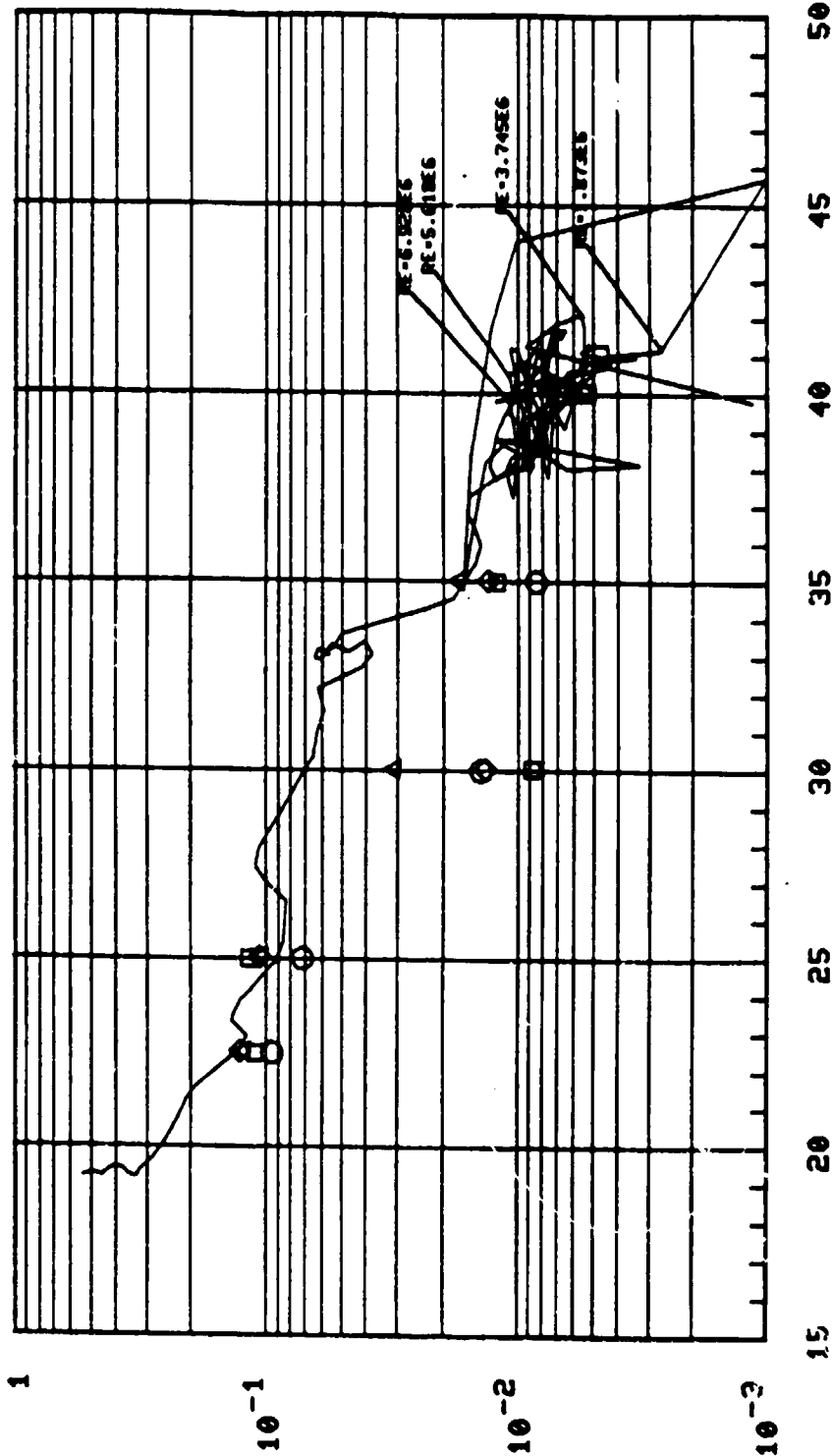
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ANGLE-OF-ATTACK - DEG

# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9078A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



FLIGHT COEFF - H/H-REF

B-117

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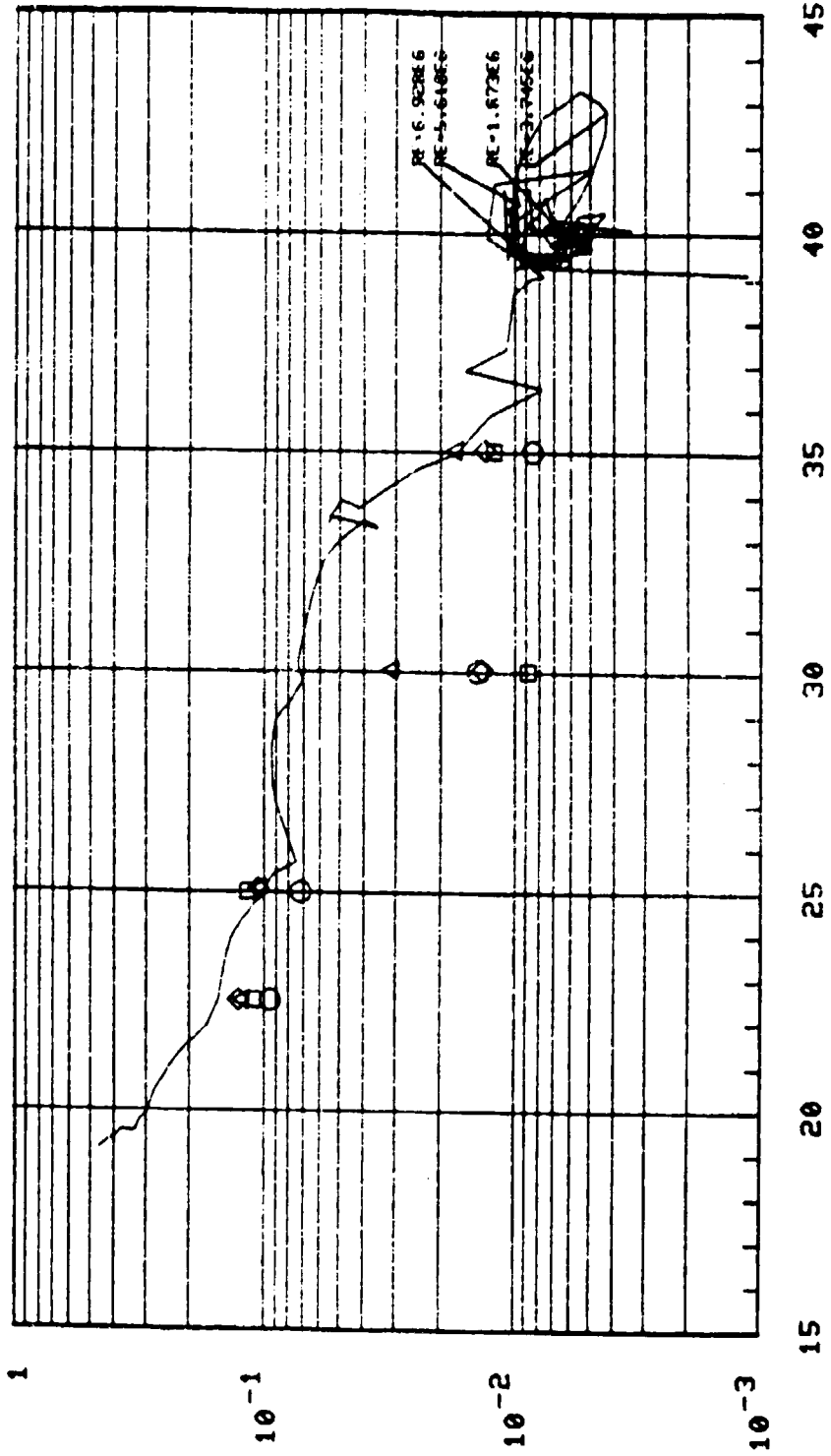


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# STS-3 (107 FT LENGTH OMS ROD ) FLIGHT PARAMETER COMPARISON

U0715978A/M-REF 200-1380 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
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FILE CODE - H/N-REF

04.19.83  
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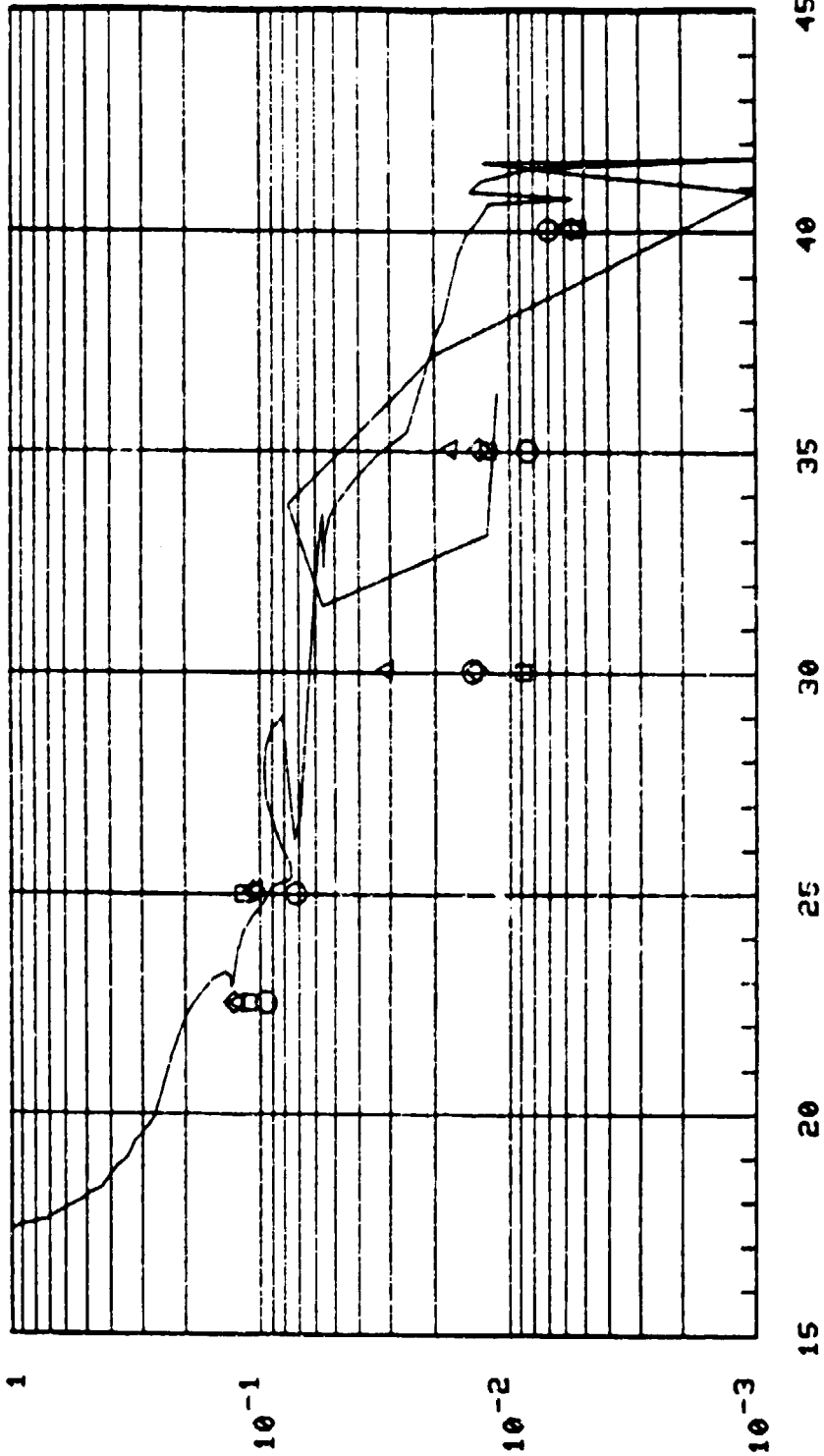
ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 965-1335 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

○ □ △



U07T9978A/H-REF

B-119

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04 19 83  
BASE TIME - 1600023.000 SEC.

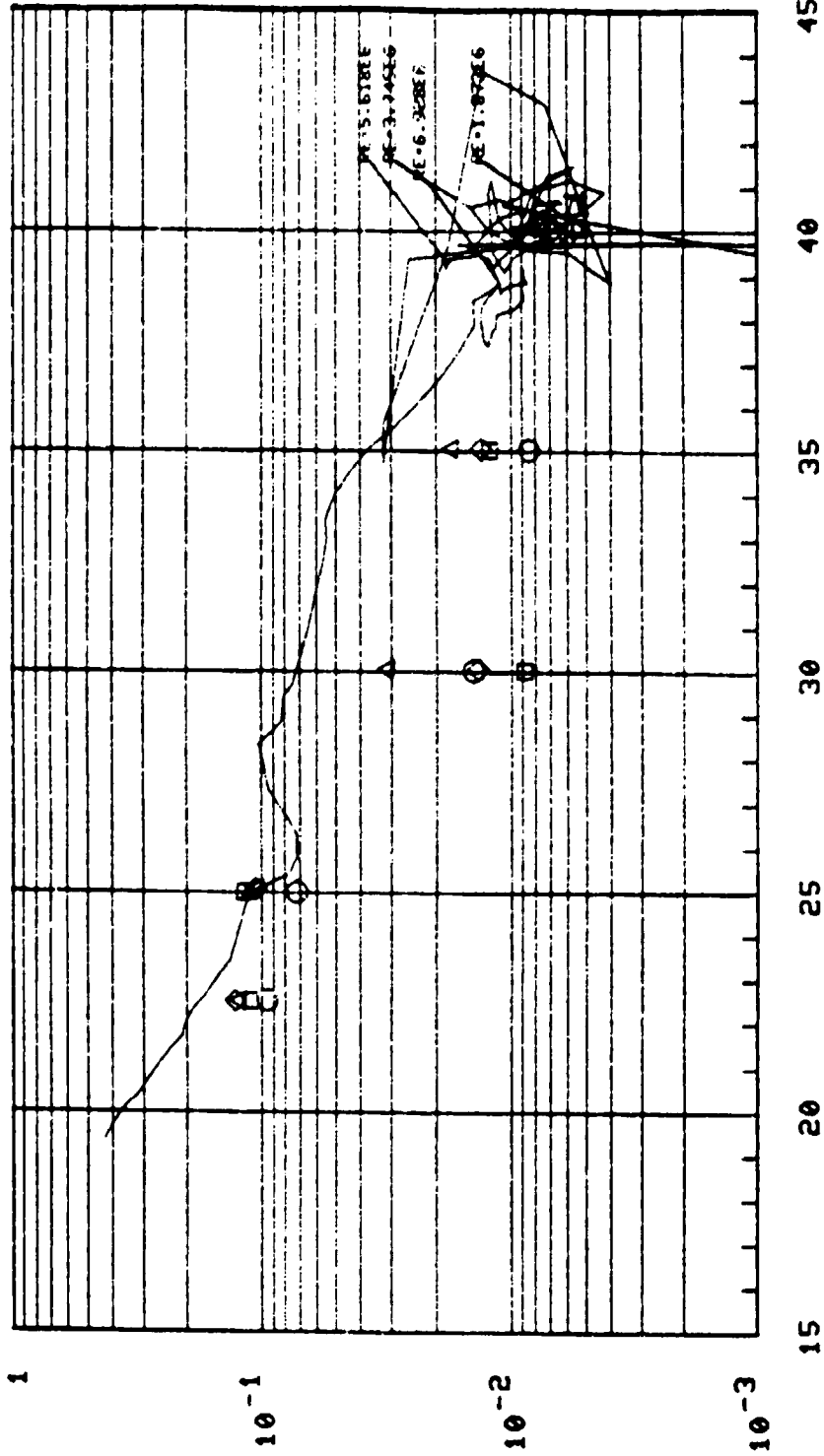
ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U077578A/H-REF 150-1350 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06

○ □ ×



U077578A/H-REF

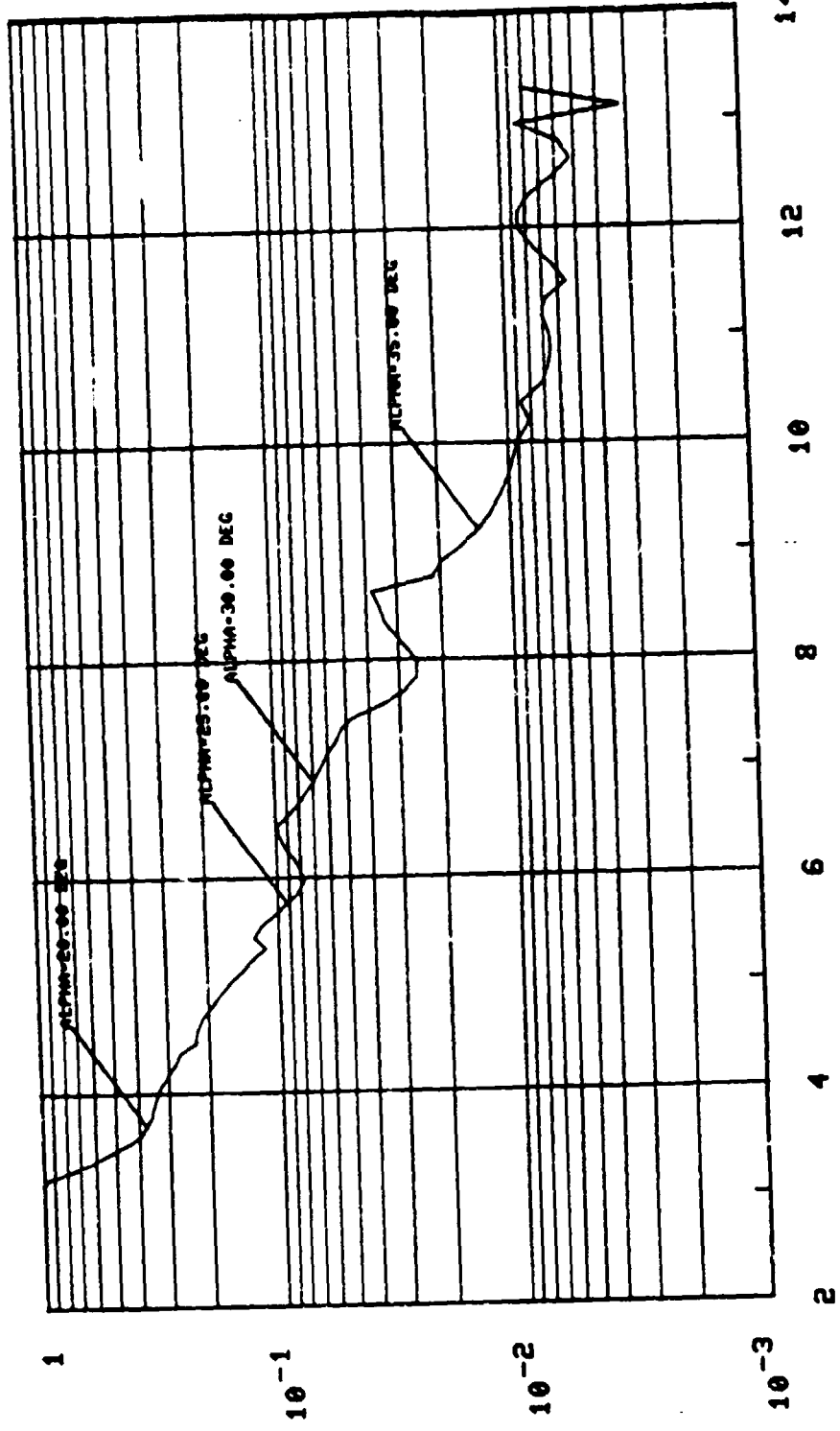
B-120

04-18-83  
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# STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 1065-1480 SEC

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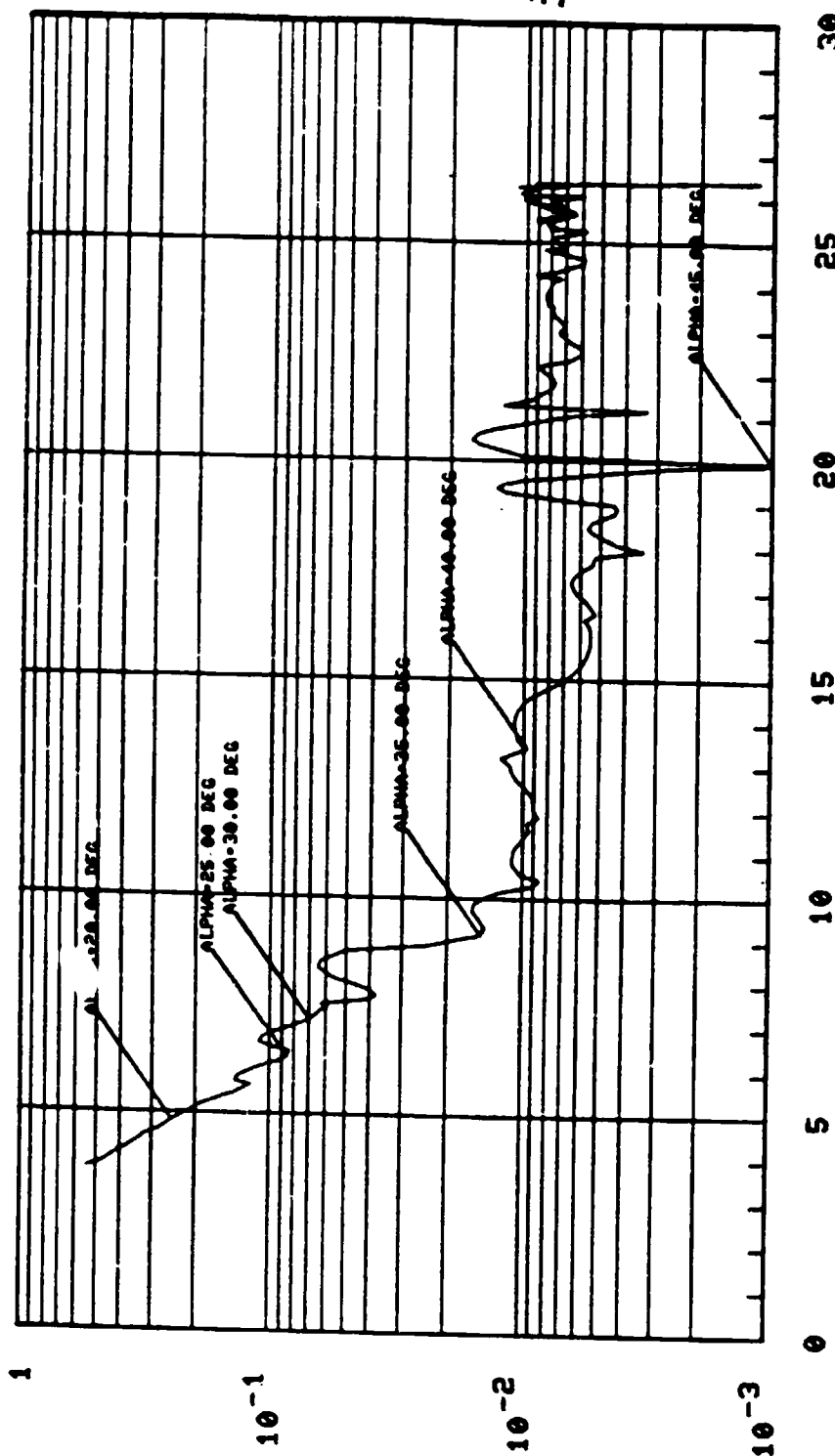


04/29/83  
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LINE COEFF - H/H-REF

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779978A/H-REF 200-1480 SEC



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TIME CORRECTION - INITIAL

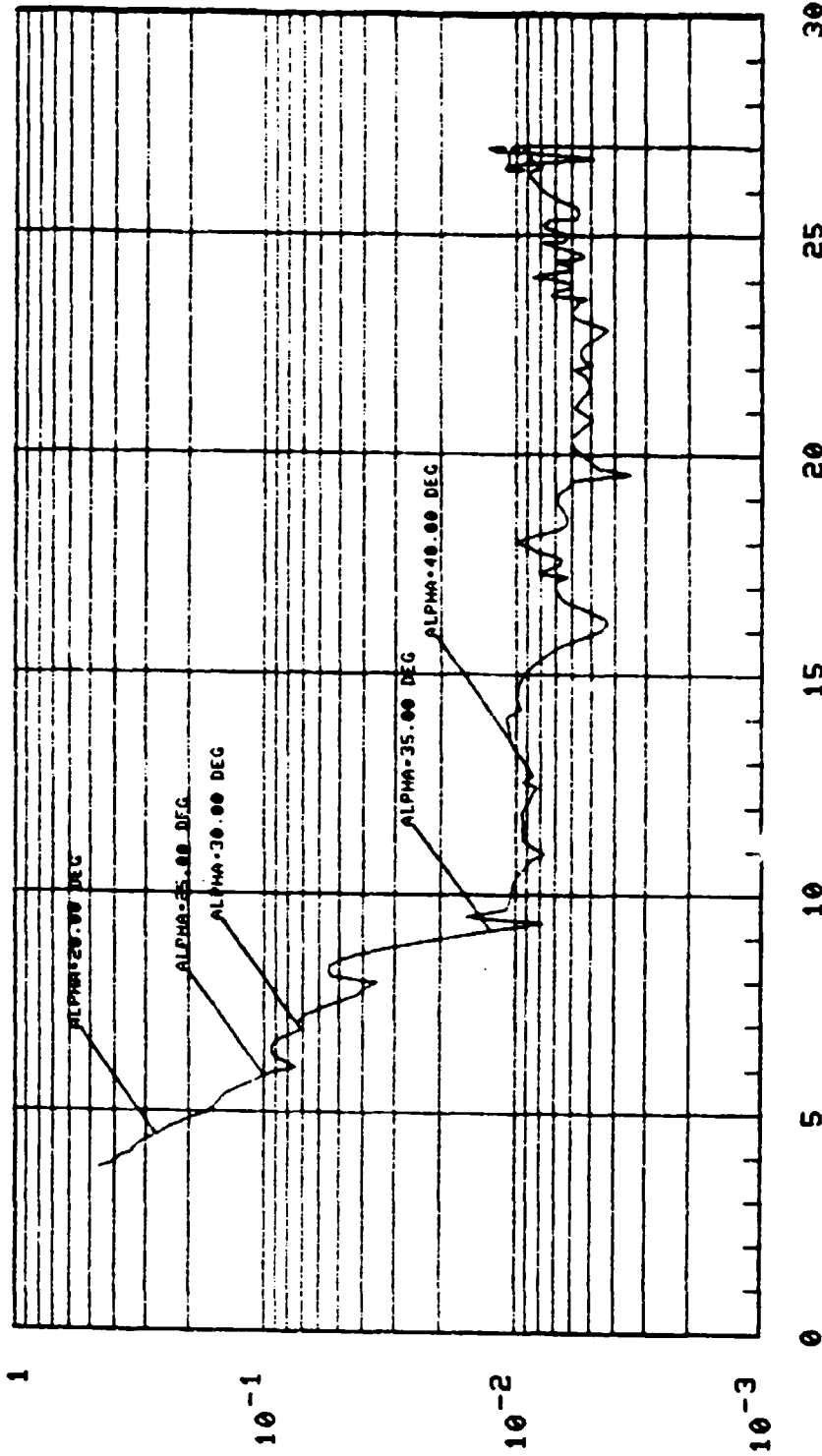
B-122

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MACH NUMBER

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719978A/H-REF 200-1380 SEC



ENGINE COVER -- H/H-REF

B-123

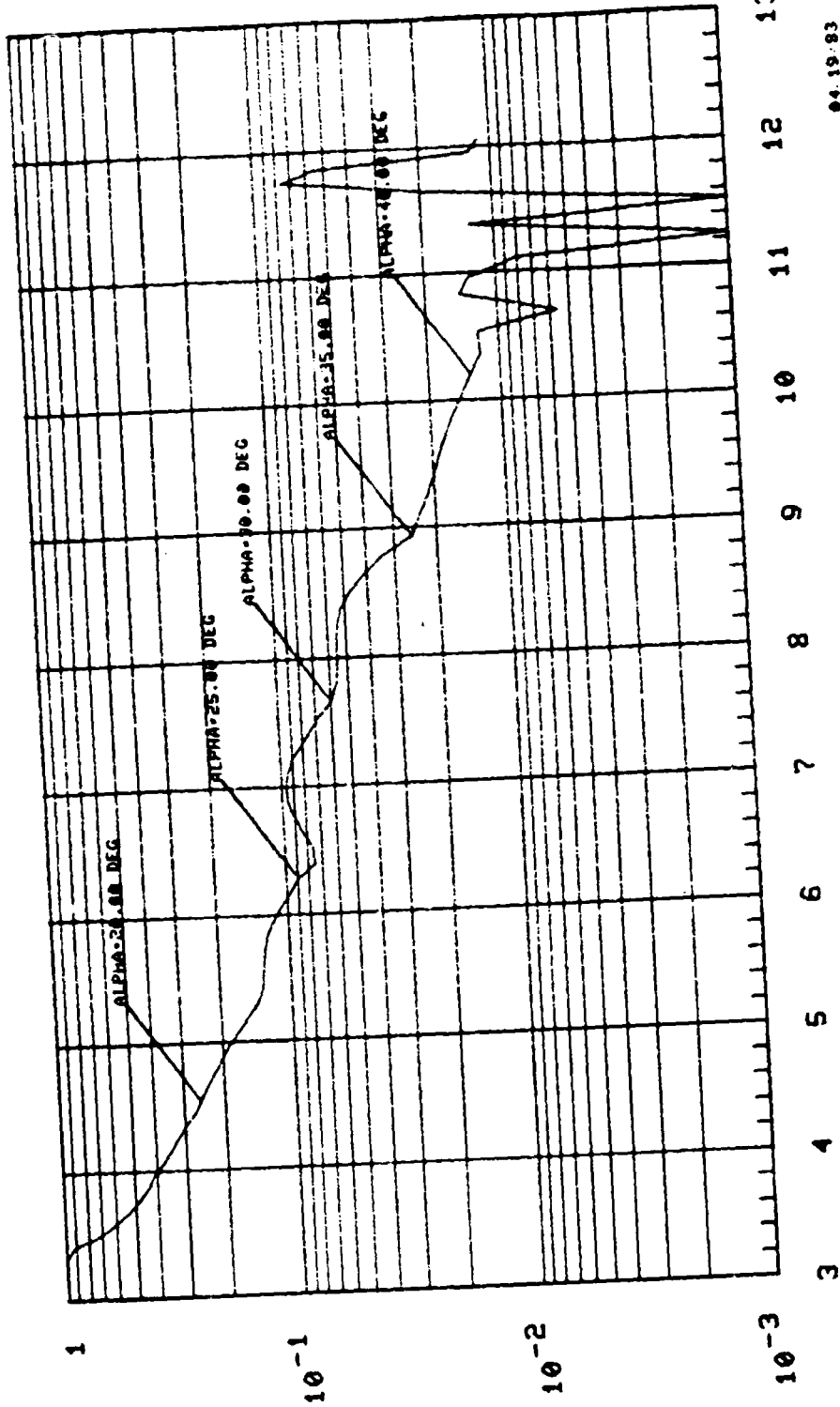
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04/19/83  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 965-1335 SEC



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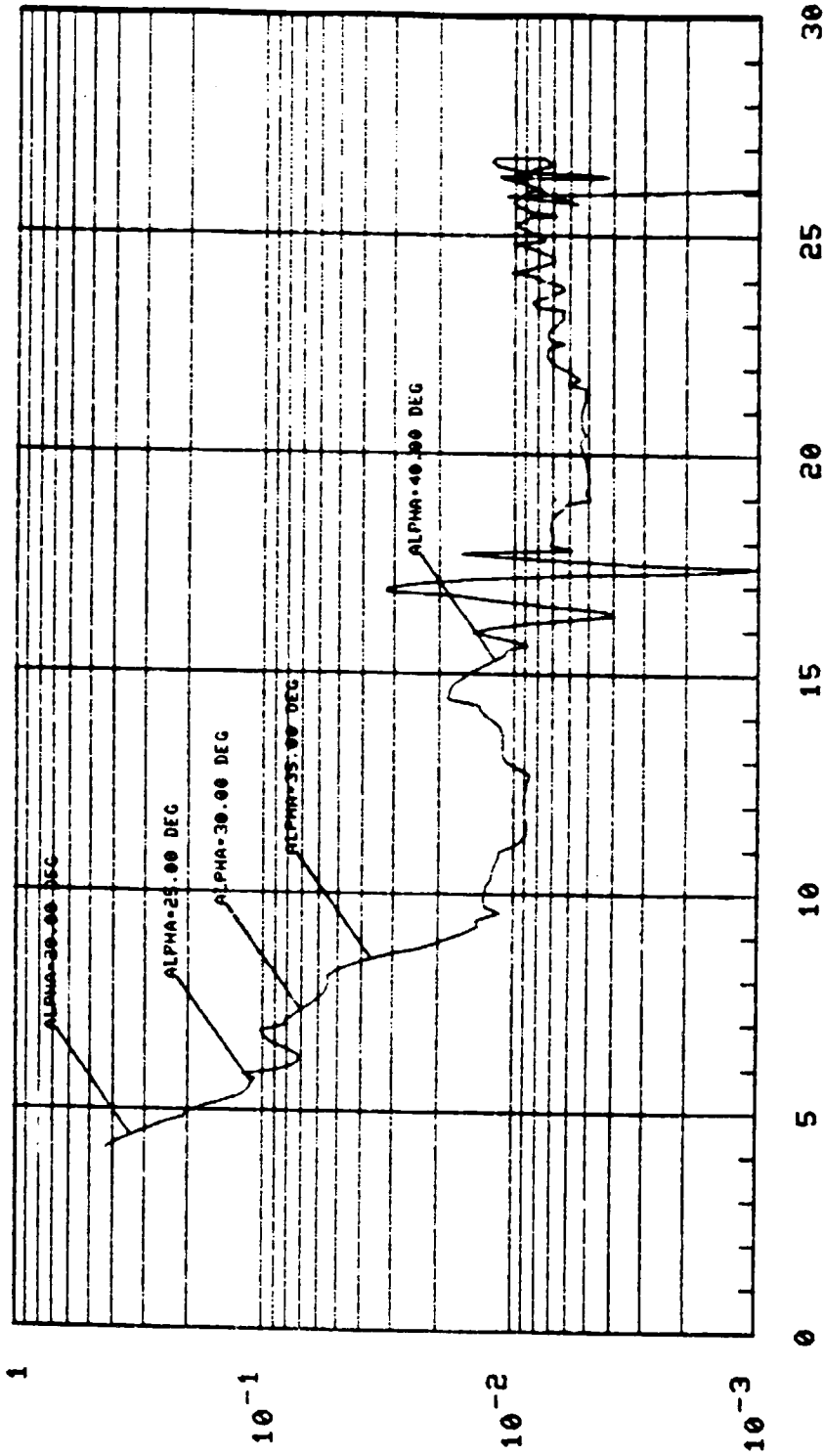
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MACH NUMBER

EMME COWELL - H/H-RWLL

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 150-1350 SEC



FLIGHT COEFF - H/H-REF

B-125

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MACH NUMBER

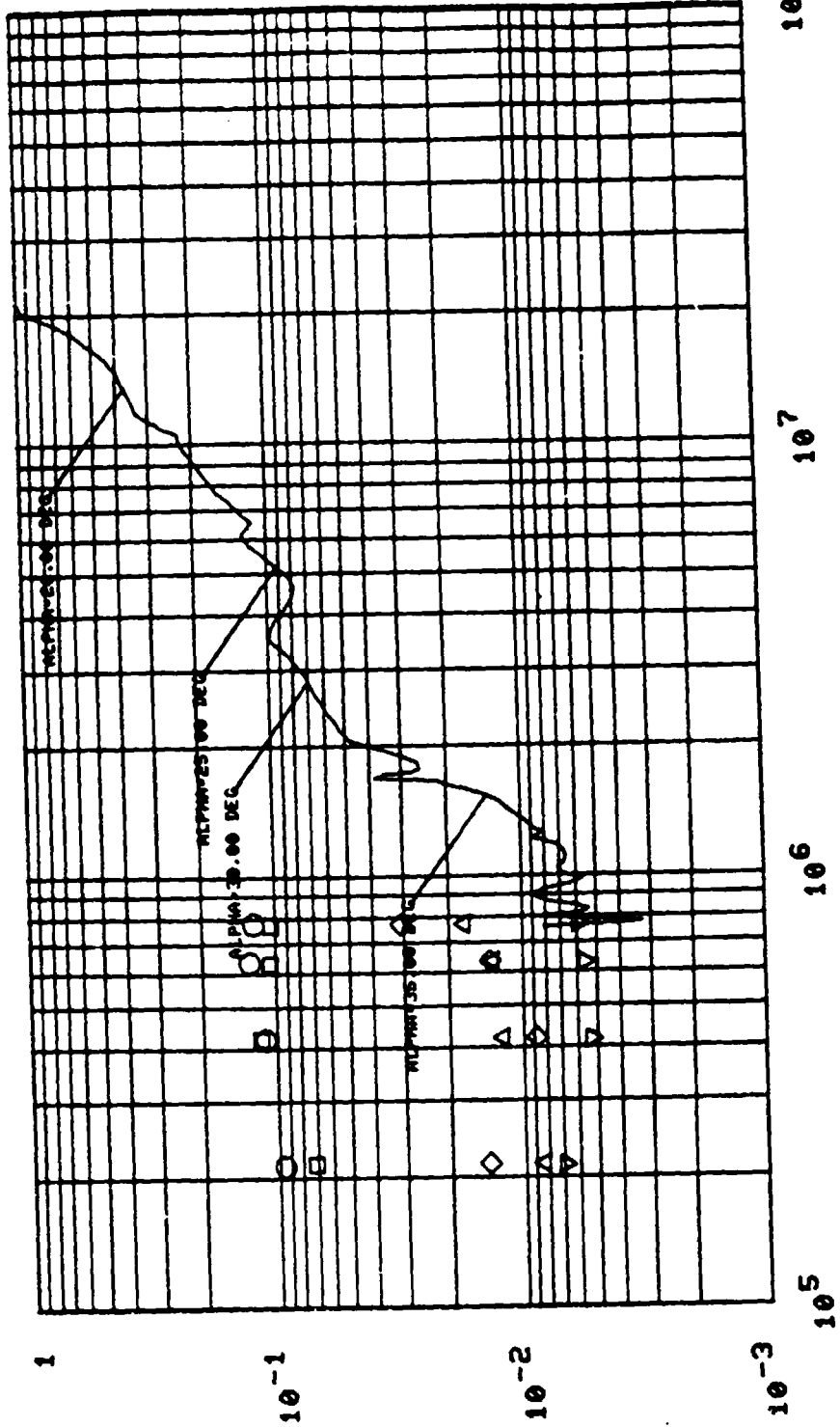


STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779978A/H-REF 1065-1480 CTC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ △ ▽



REYNOLDS NUMBER (NS)

BASE TIME - 00049744.000 SEC.

04/20/83

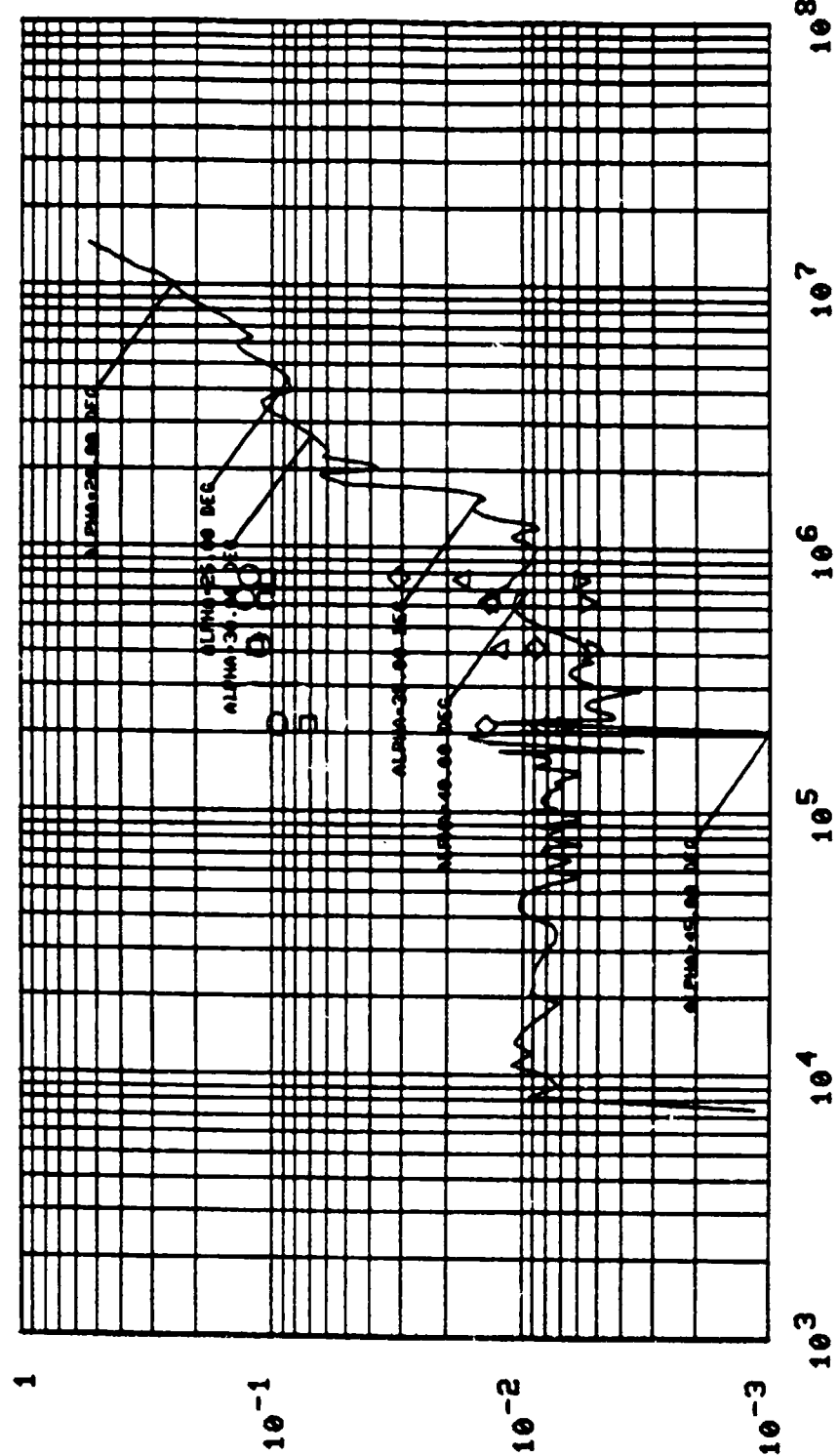
WAVE COEFFICIENT - H/T-RATIO

# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

U0719978A/M-REF 200-1480 SEC

□ ◇ △



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04/20/83  
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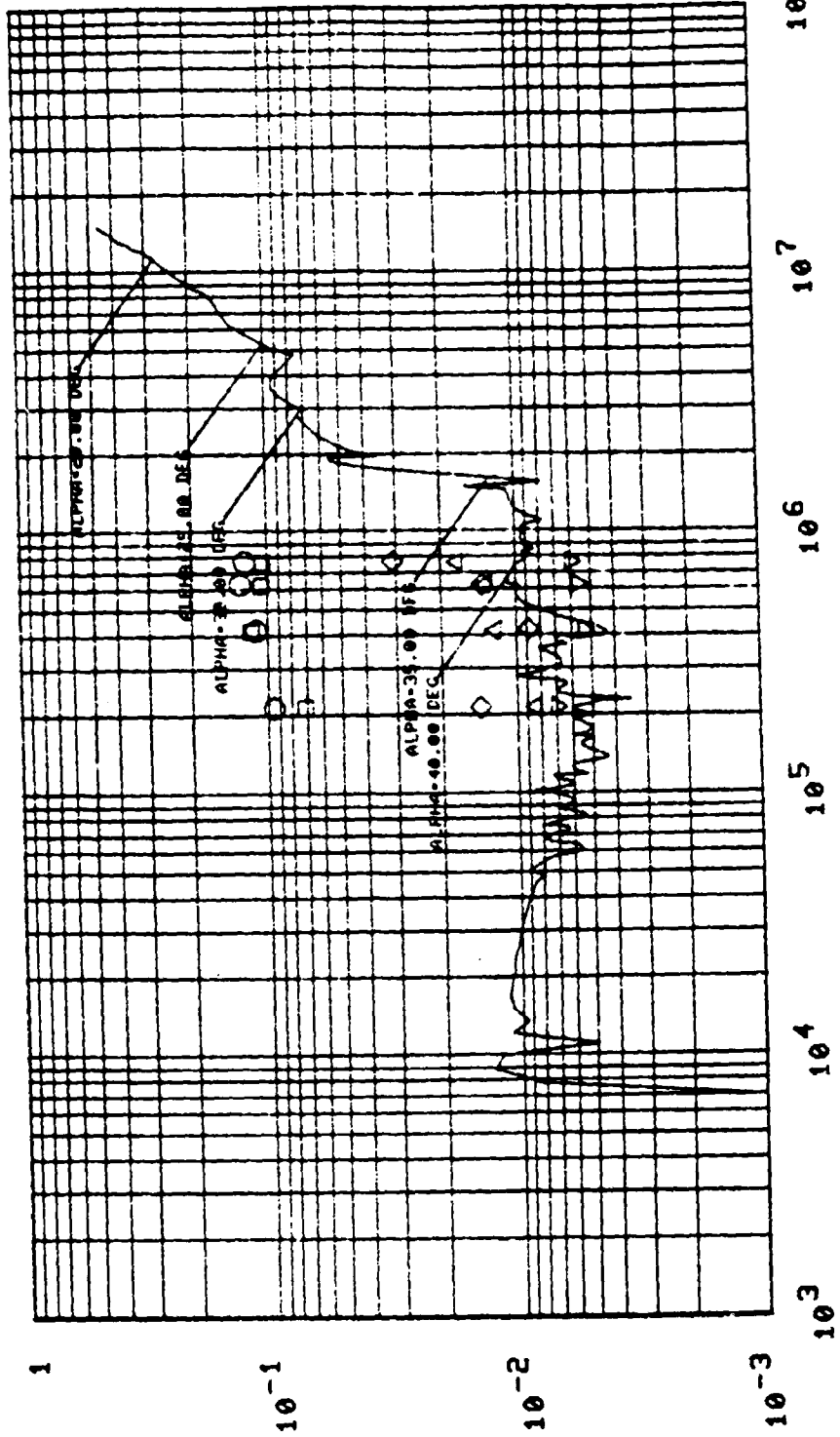
REYNOLDS NUMBER (NS)

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779978A/H-REF 200-1380 SEC

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
- AF ALPHA = 30.0 DEGREES
- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES

□ ○ ◇ △



FLIGHT COEFFICIENT - H-1-REF

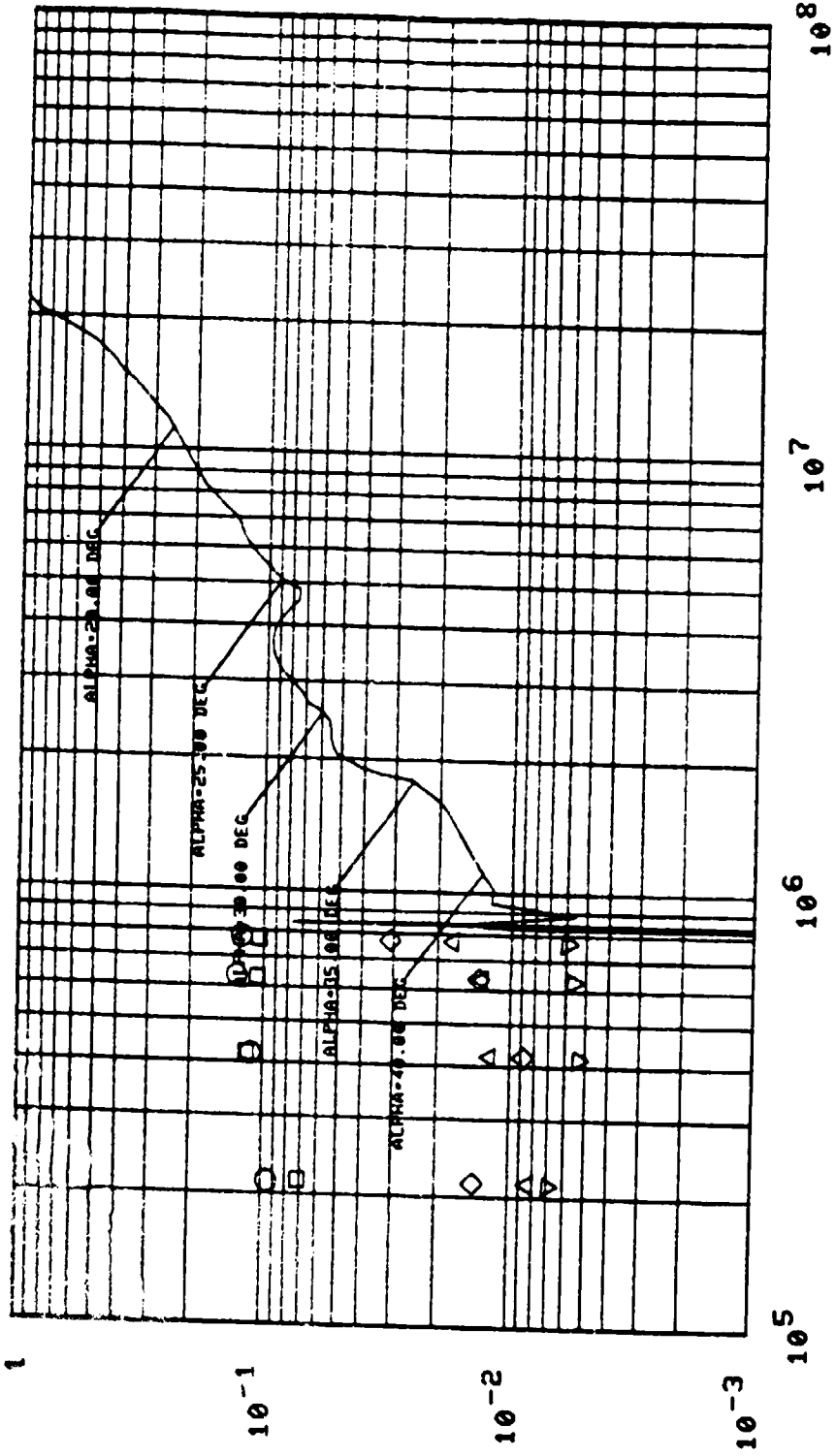
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REYNOLDS NUMBER (NS)      BASE TIME - 07745684.000 SEC.      04.19.83

STS-4 (SQ) FT LENGTH OMS FOD ) FLIGHT PARAMETER COMPARISON

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
- △ AF ALPHA = 30.0 DEGREES
- ◇ AF ALPHA = 35.0 DEGREES
- ▽ AF ALPHA = 40.0 DEGREES

U8779 TSA M-REF 965-13.75 SEC



TIME COEFF - H/H-REF

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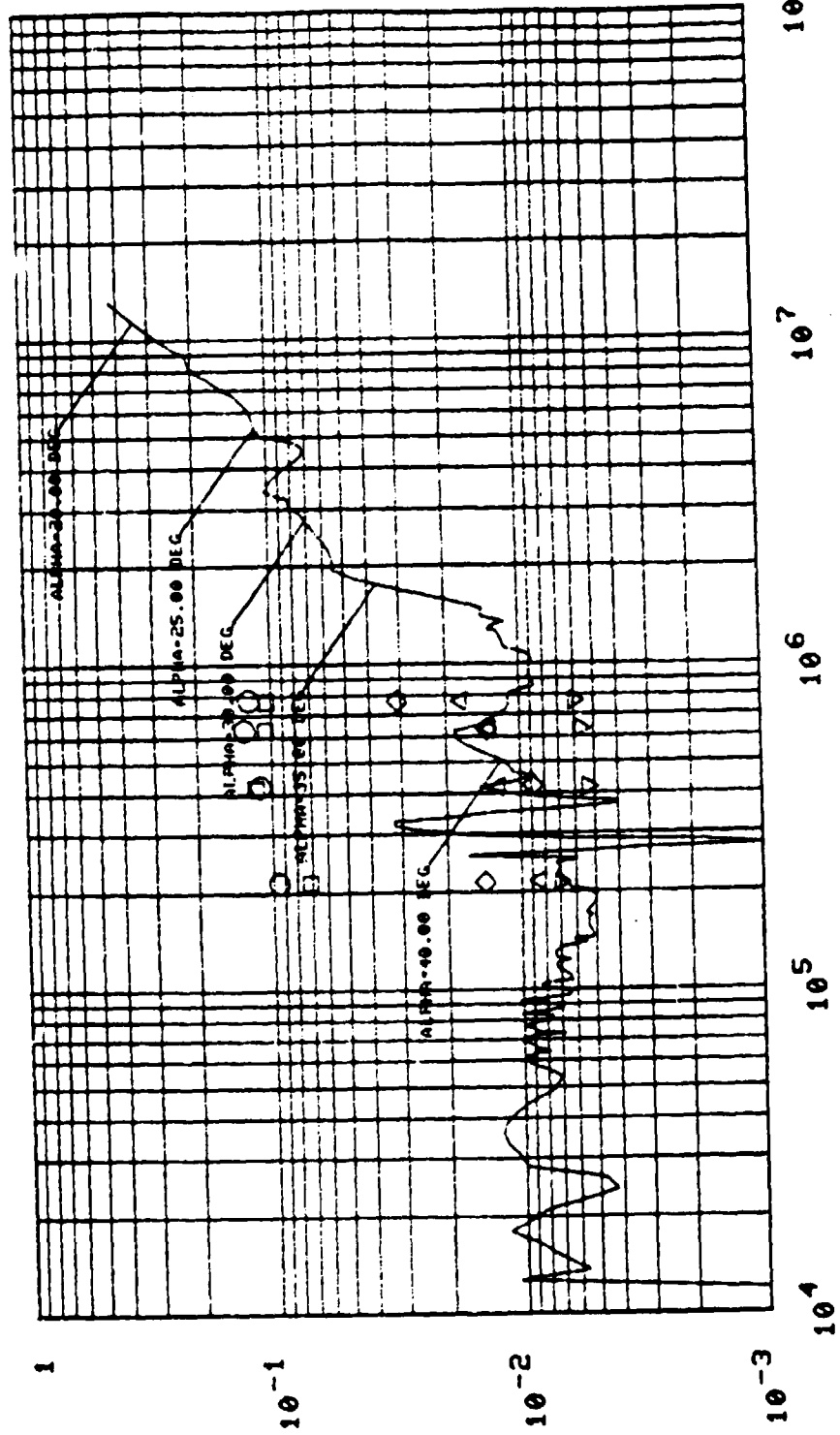
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
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- AF ALPHA - 40.0 DEGREES

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FILM COEFF - H/H-REF

B-130

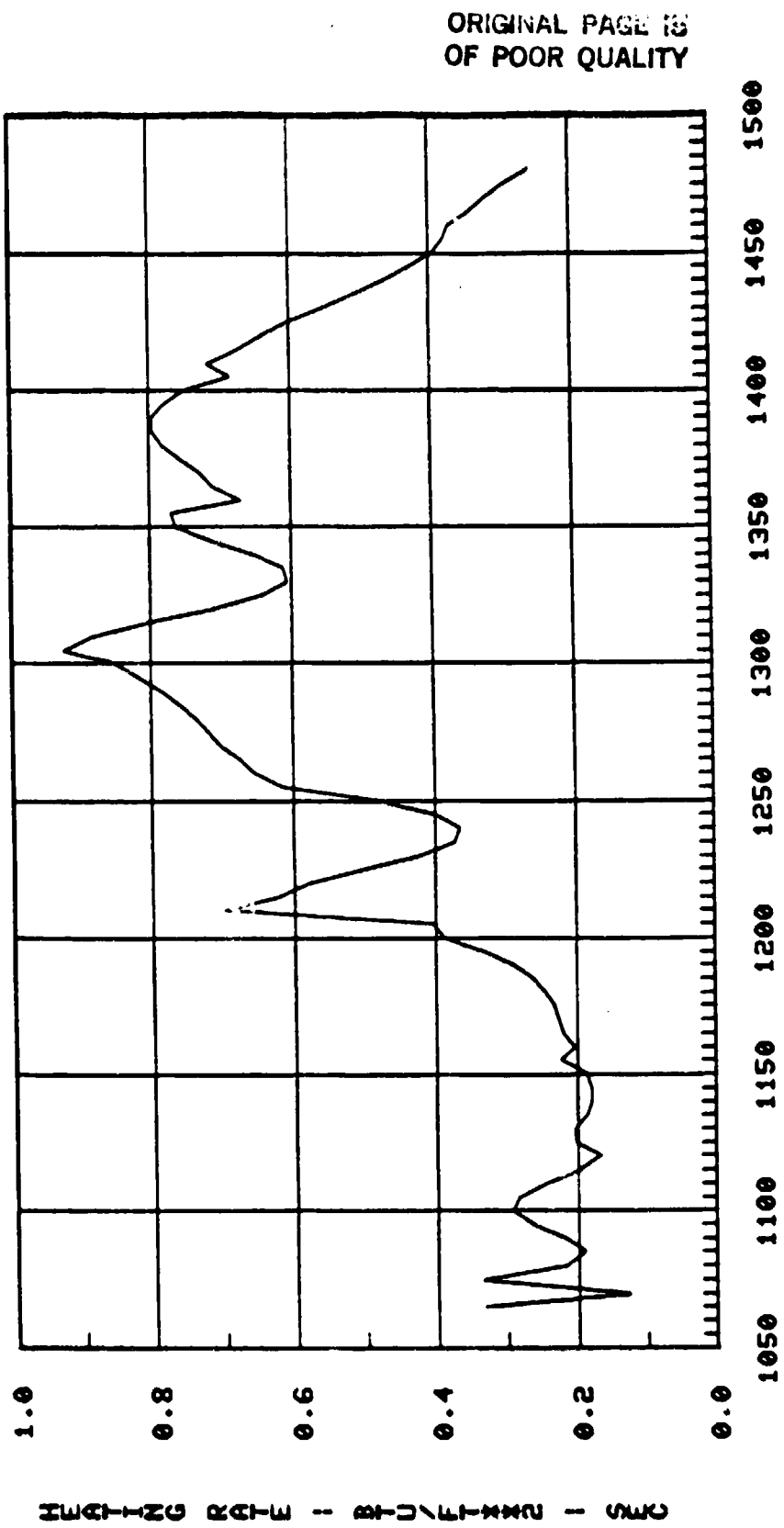
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REYNOLDS NUMBER (NS)

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719978A



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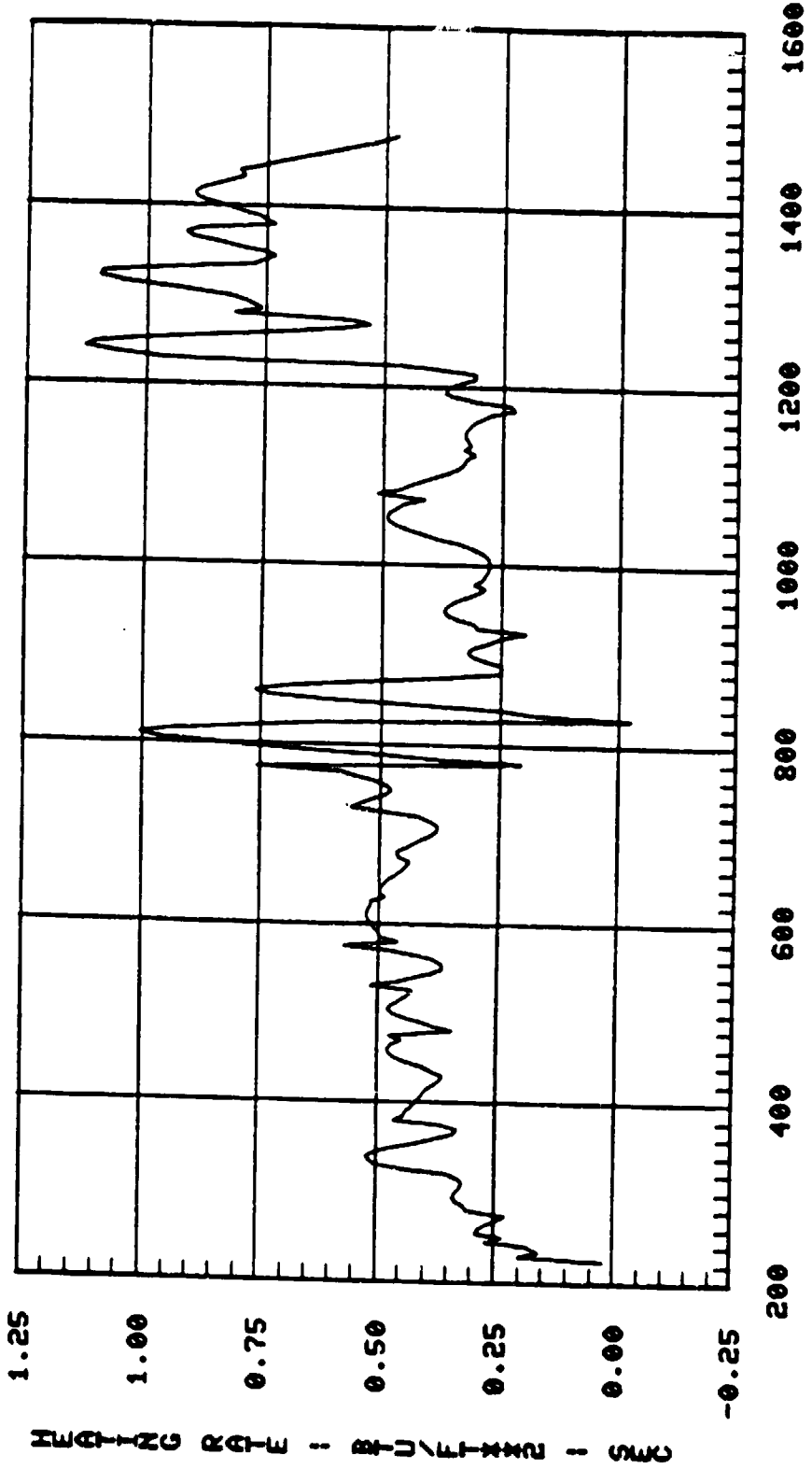
04/20/83

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HEATING RATE - BTU/FT\*HR - SEC

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719978A

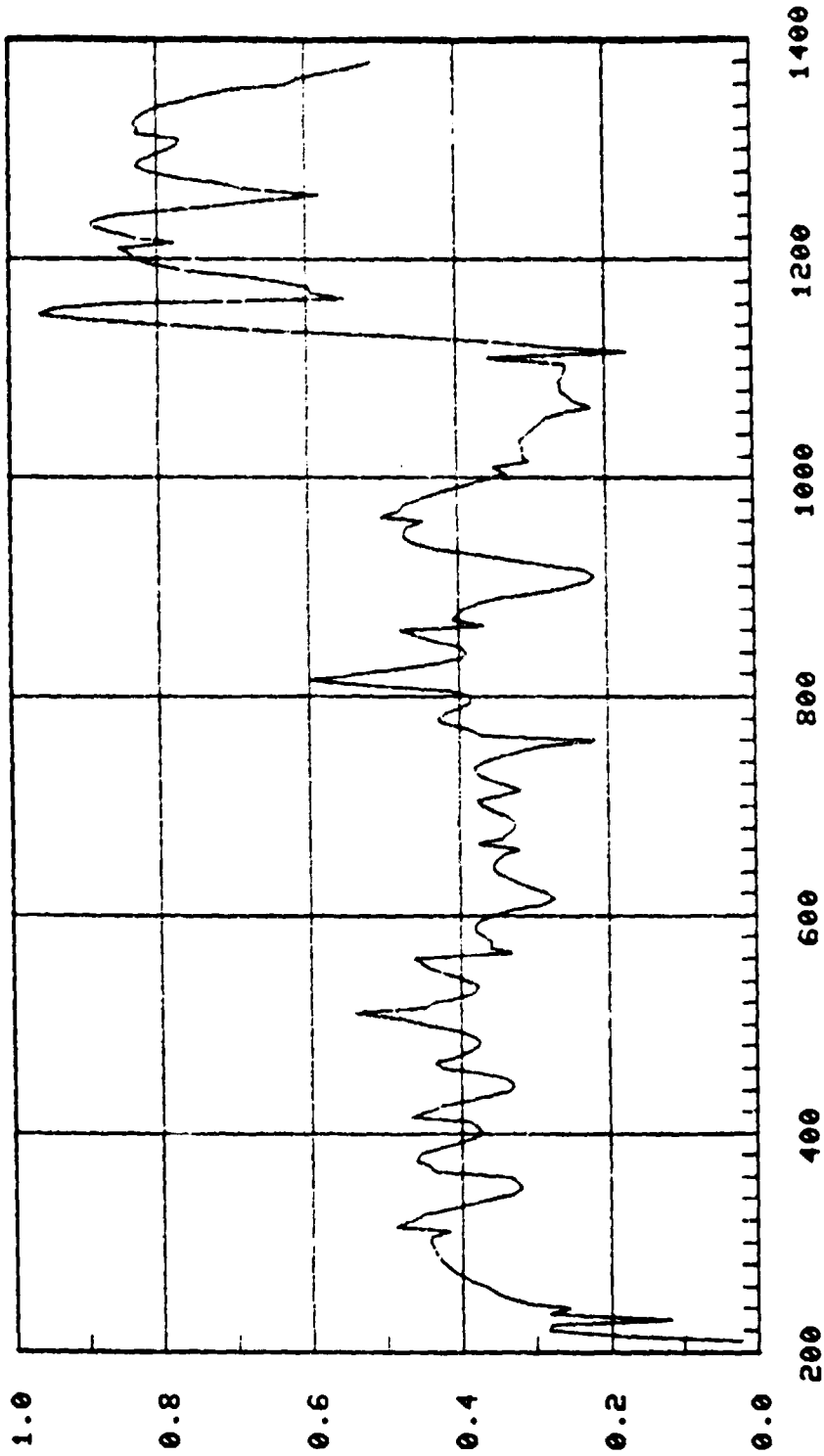


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HEATING RATE - BTU/FT-HRS - SEC

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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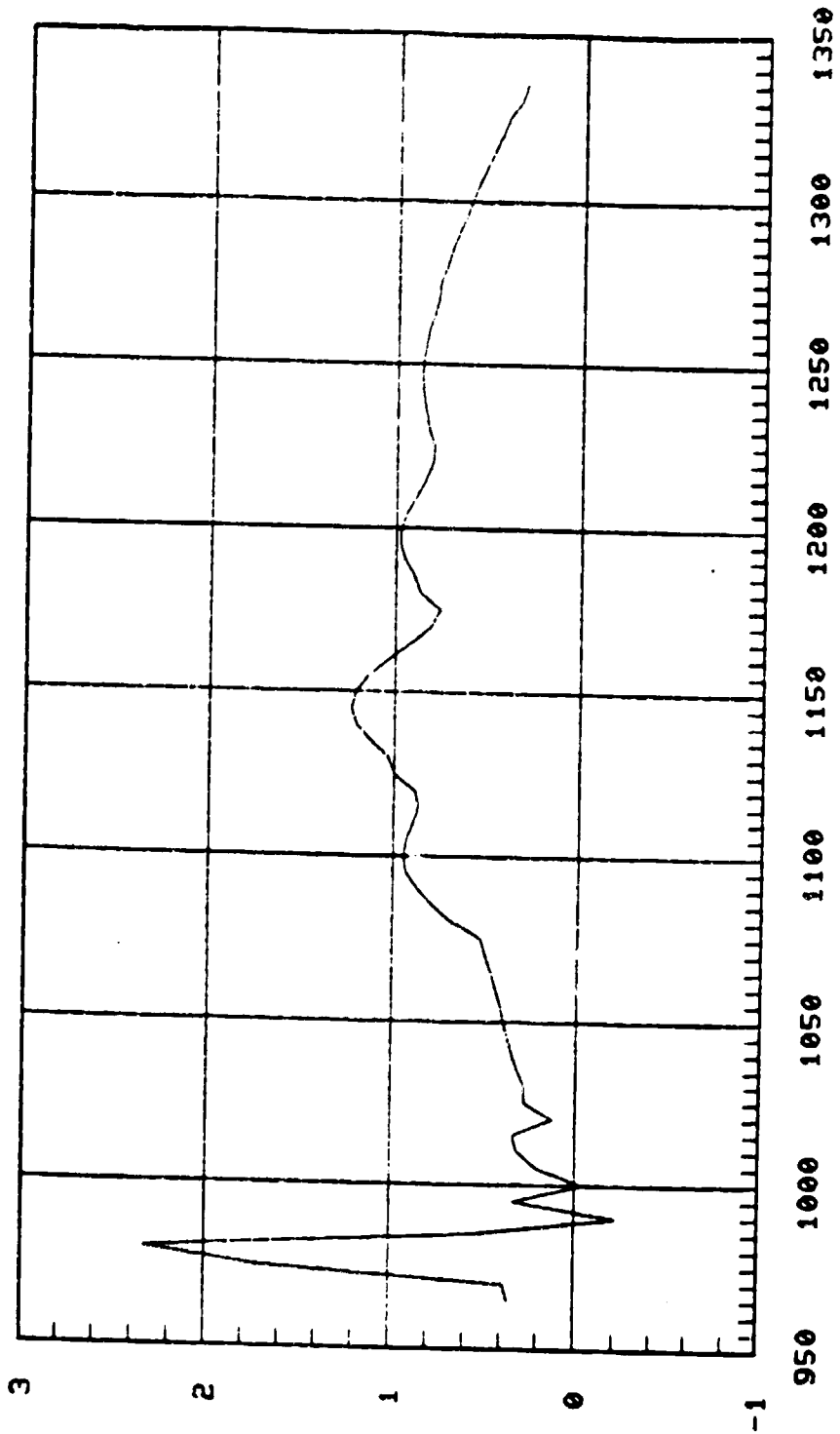
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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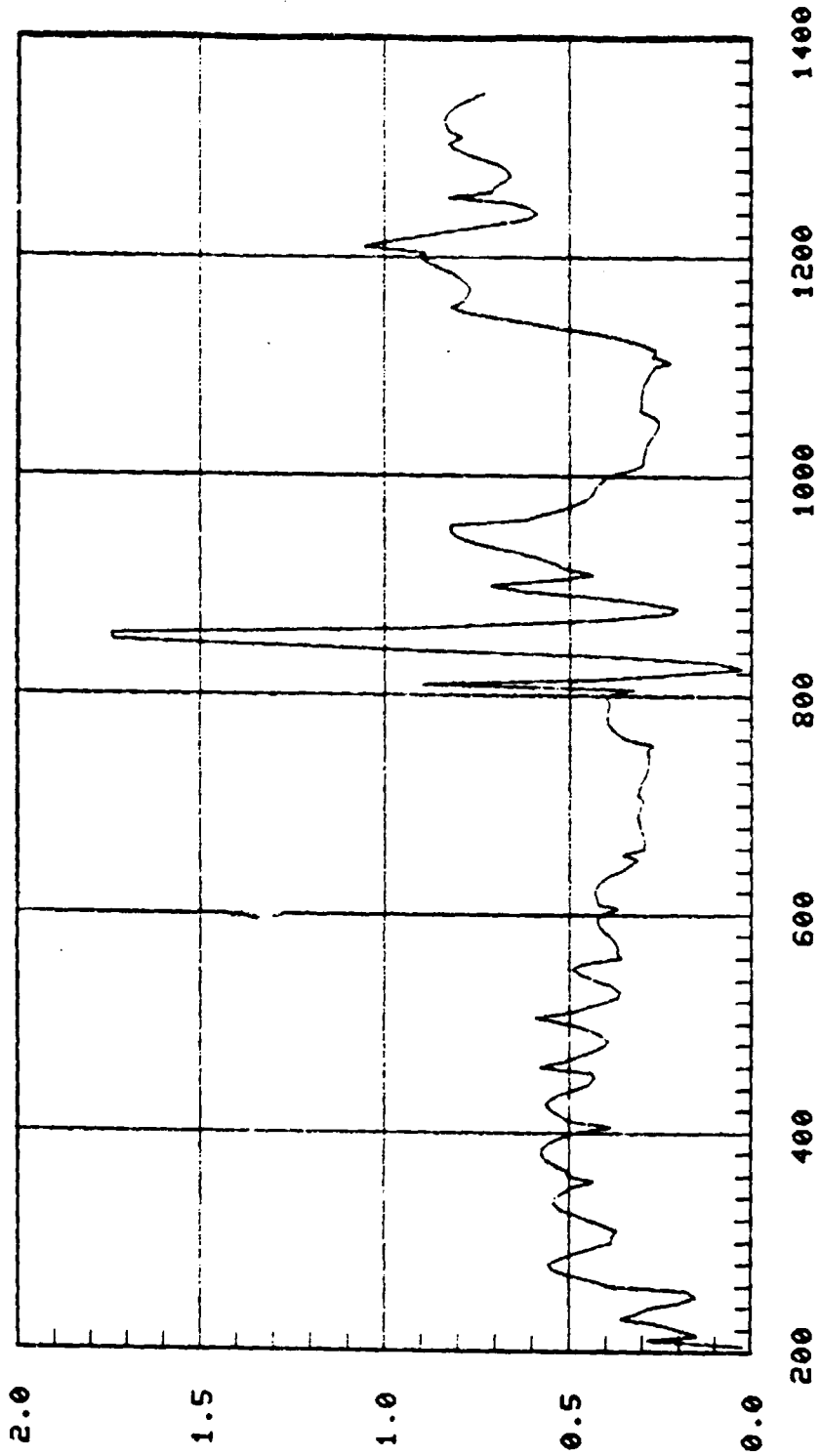


HEATING RATE -- BT/D/FT<sup>2</sup> -- SWC

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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719978A



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TIME - SECONDS

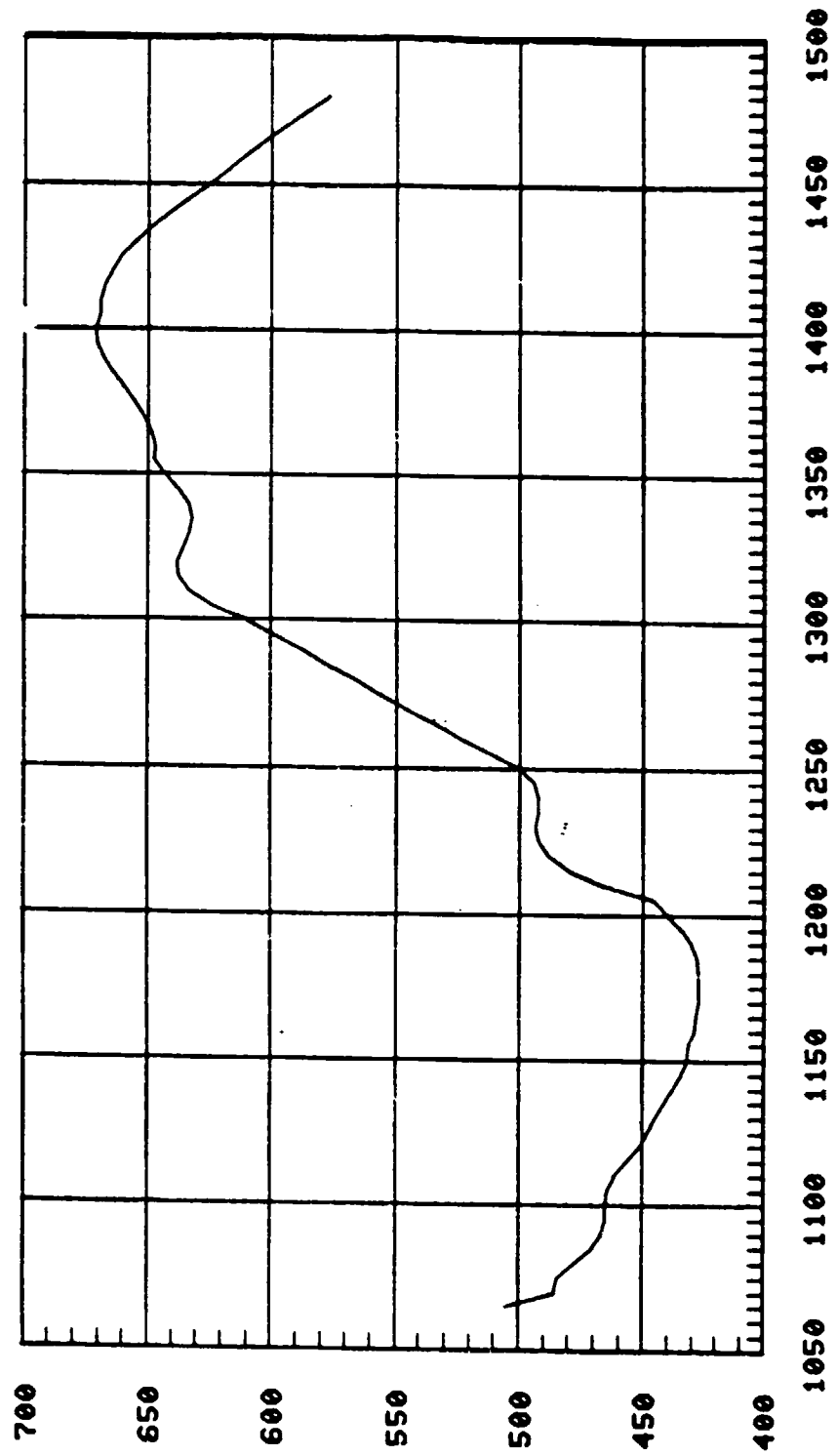
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HEATING RATE - BTU/FT\*HR - SEC

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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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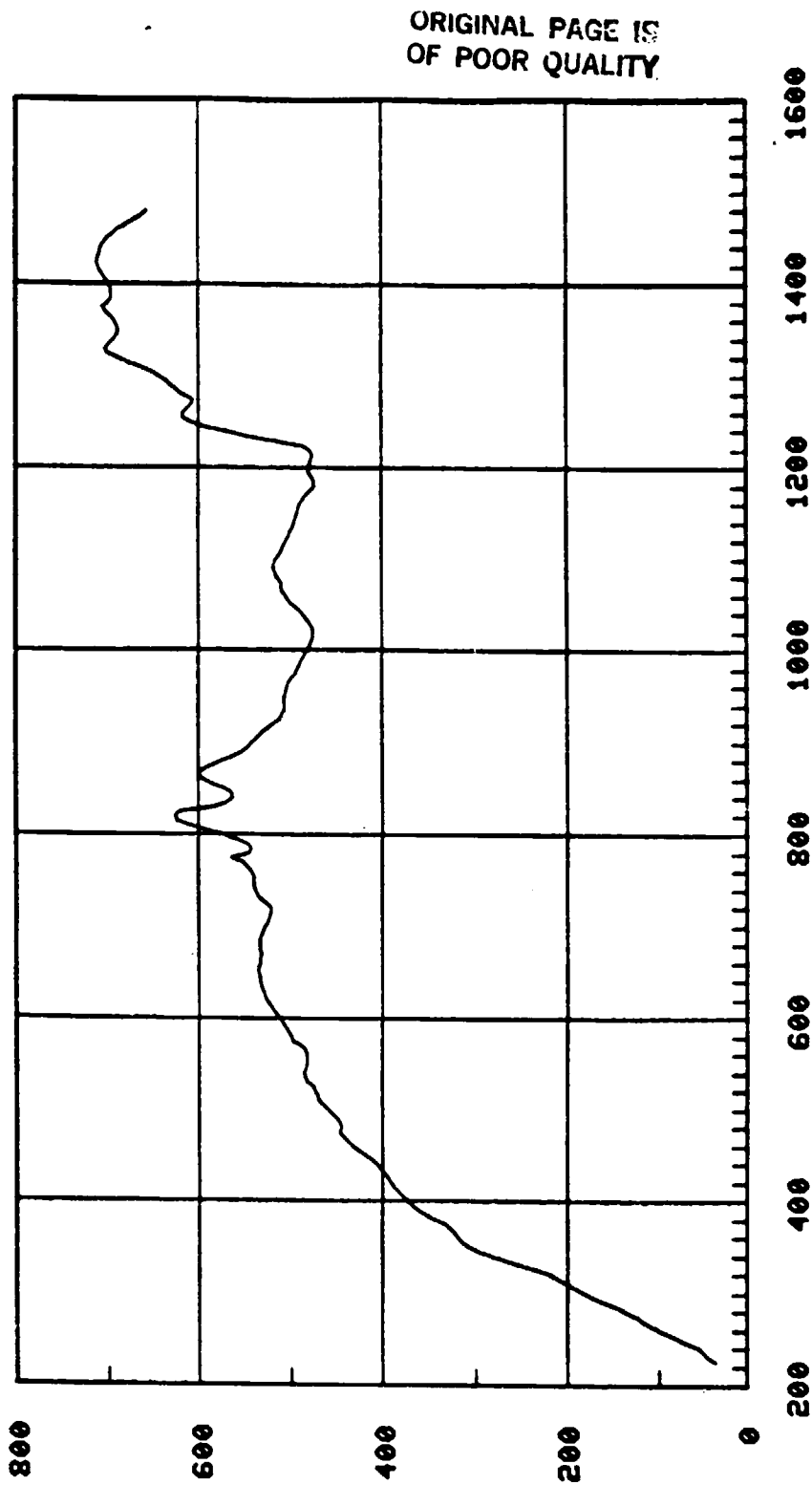
TIME - SECONDS

04/20/83

TEMPERATURE - F

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A



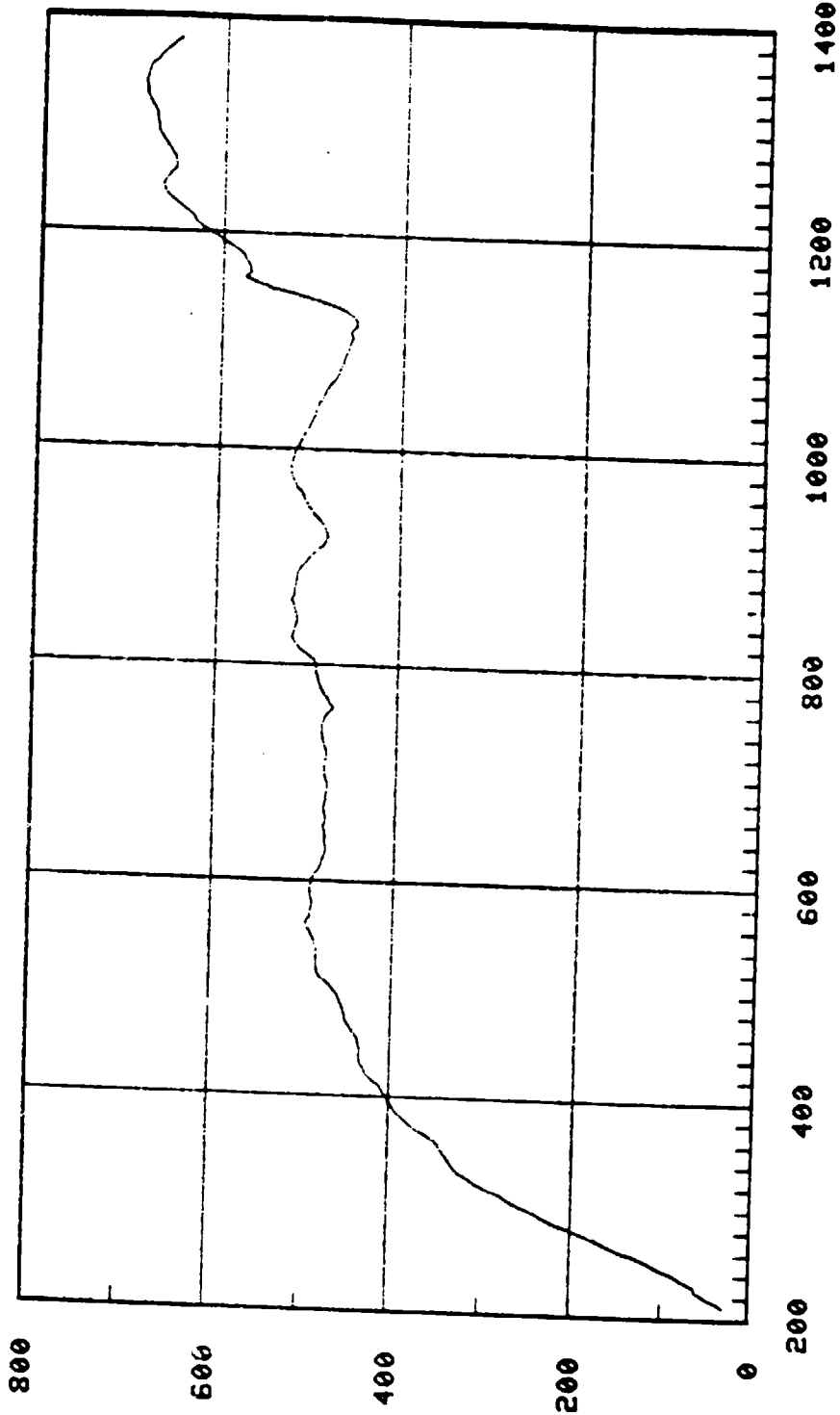
TIME - SECONDS

04/20/83

FUELWEIGHT - L

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U6719978A

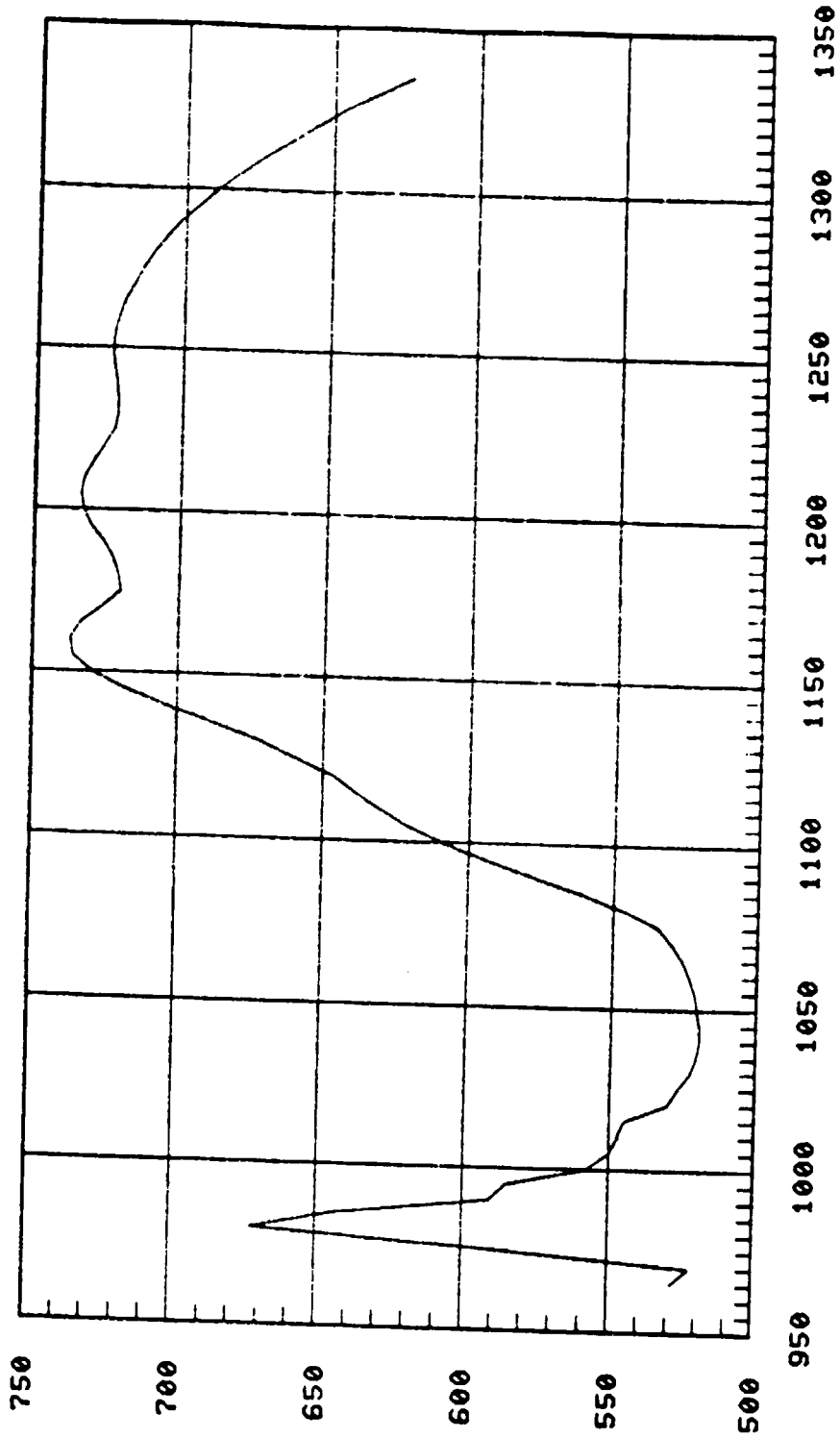


F -- FREQUENCY

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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719978A



TEMPERATURE - F

B-139

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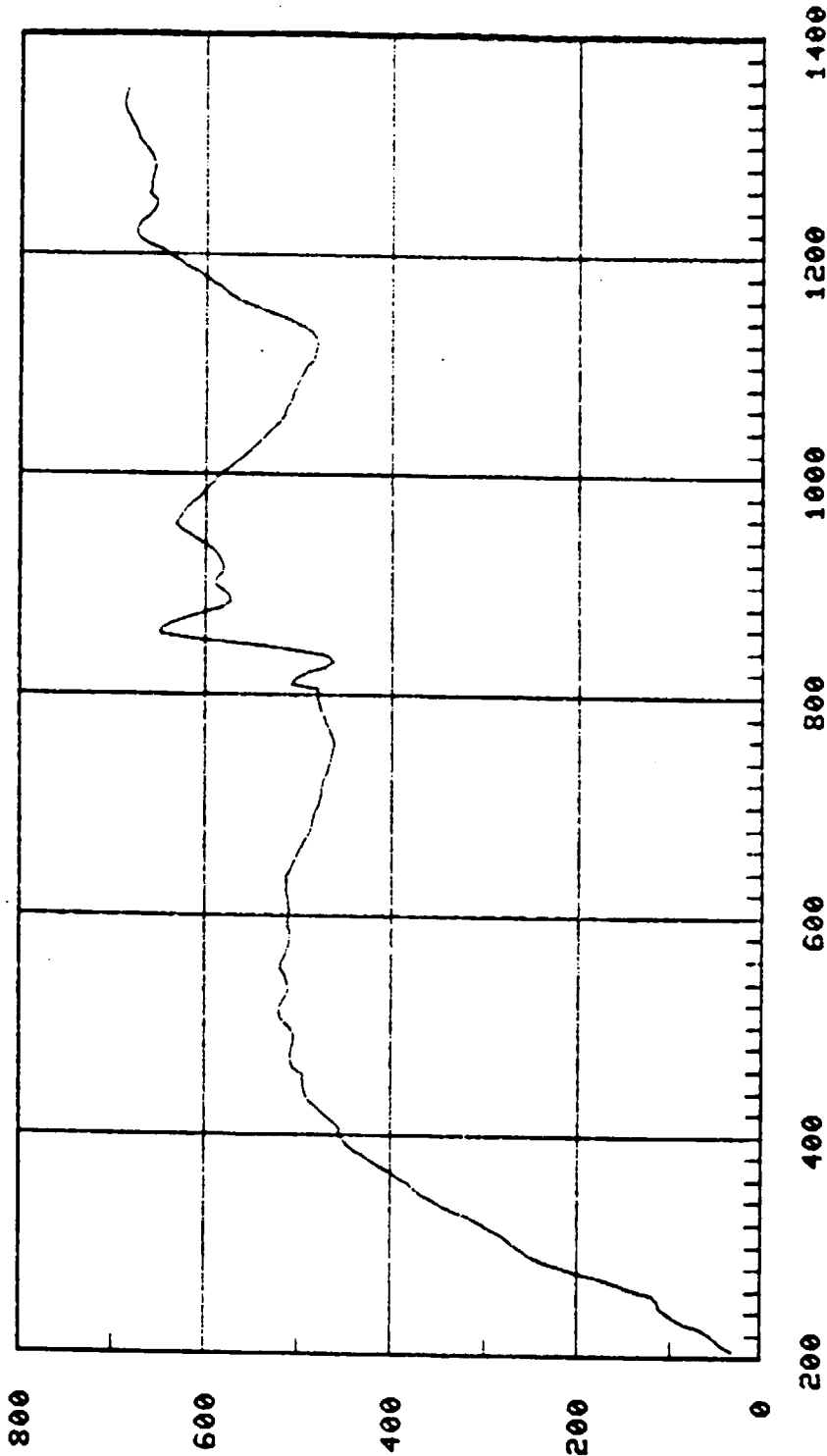
TIME - SECONDS

04 19 83

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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U87T9978A



TIME - SECONDS

04 18 83

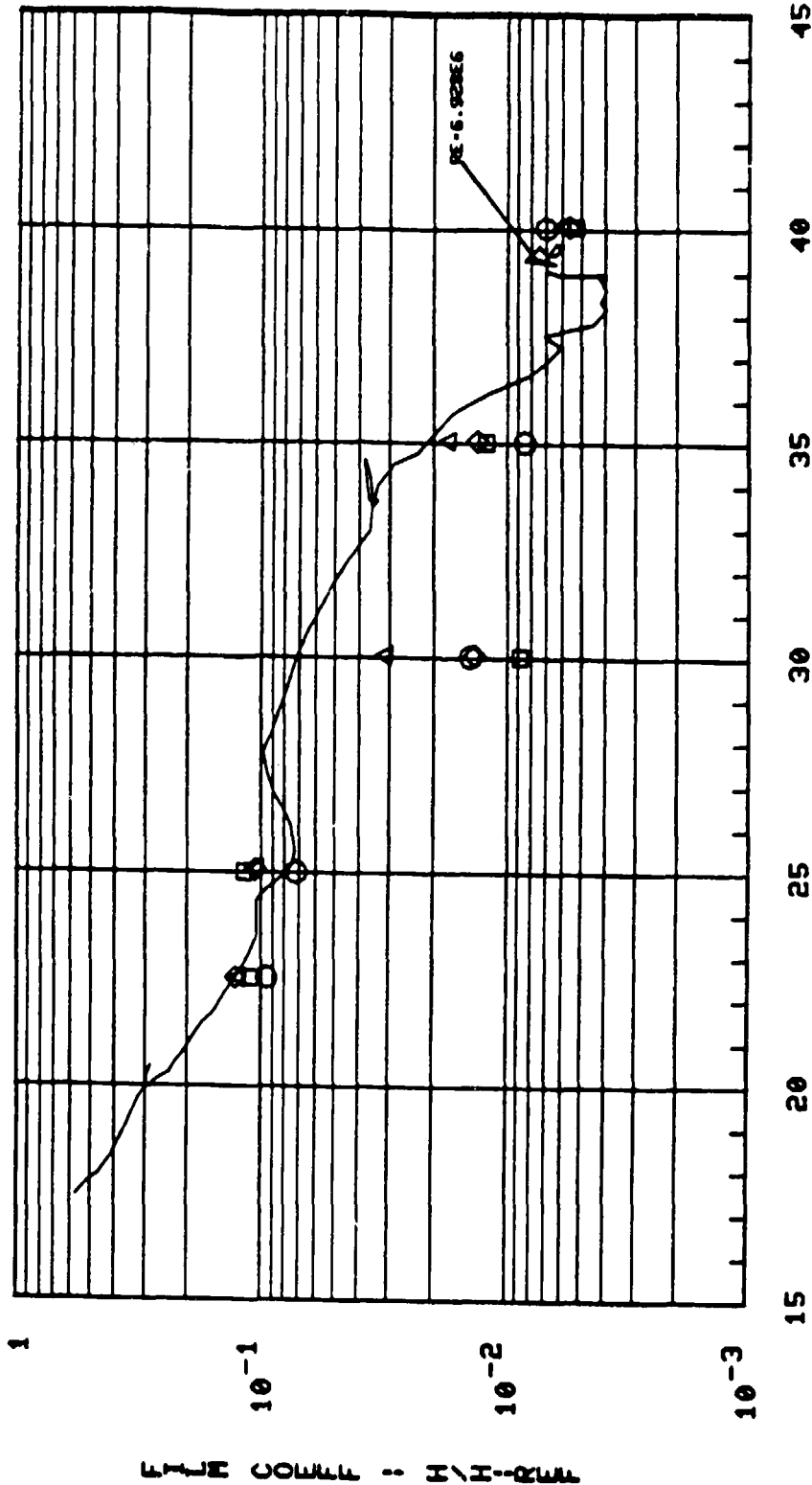
F -- PARAMETER

B-140

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

○ AF 0.0175 SCALE RE - 1.0 E06  
 □ AF 0.0175 SCALE RE - 2.0 E06  
 ⊗ AF 0.0175 SCALE RE - 3.0 E06  
 ⊗ AF 0.0175 SCALE RE - 3.7 E06

\_\_\_\_\_ U0779980A/H-REF 1065-1480 SEC



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04/20/83  
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ANGLE-OF-ATTACK - DEG

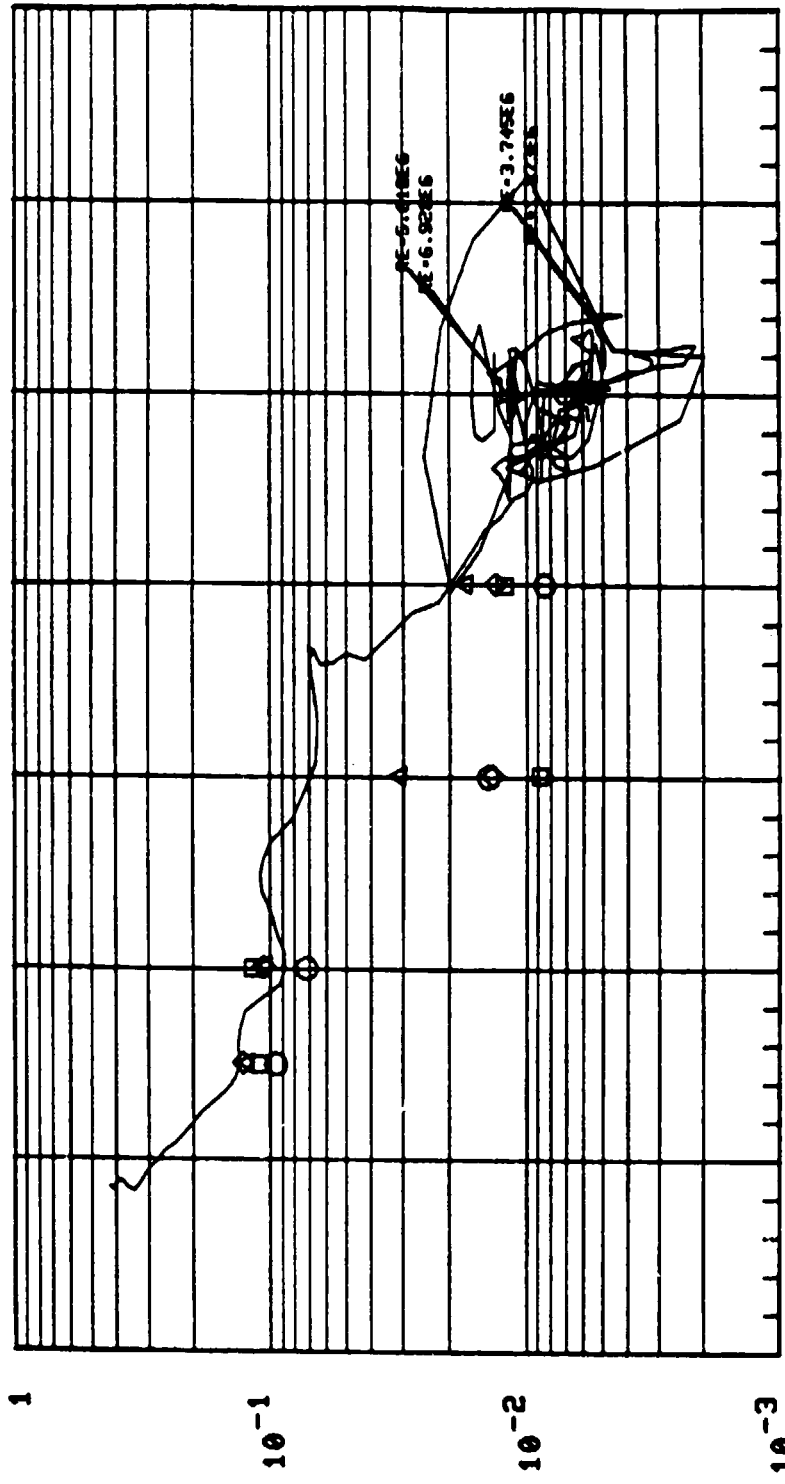


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# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



15 20 25 30 35 40 45 50

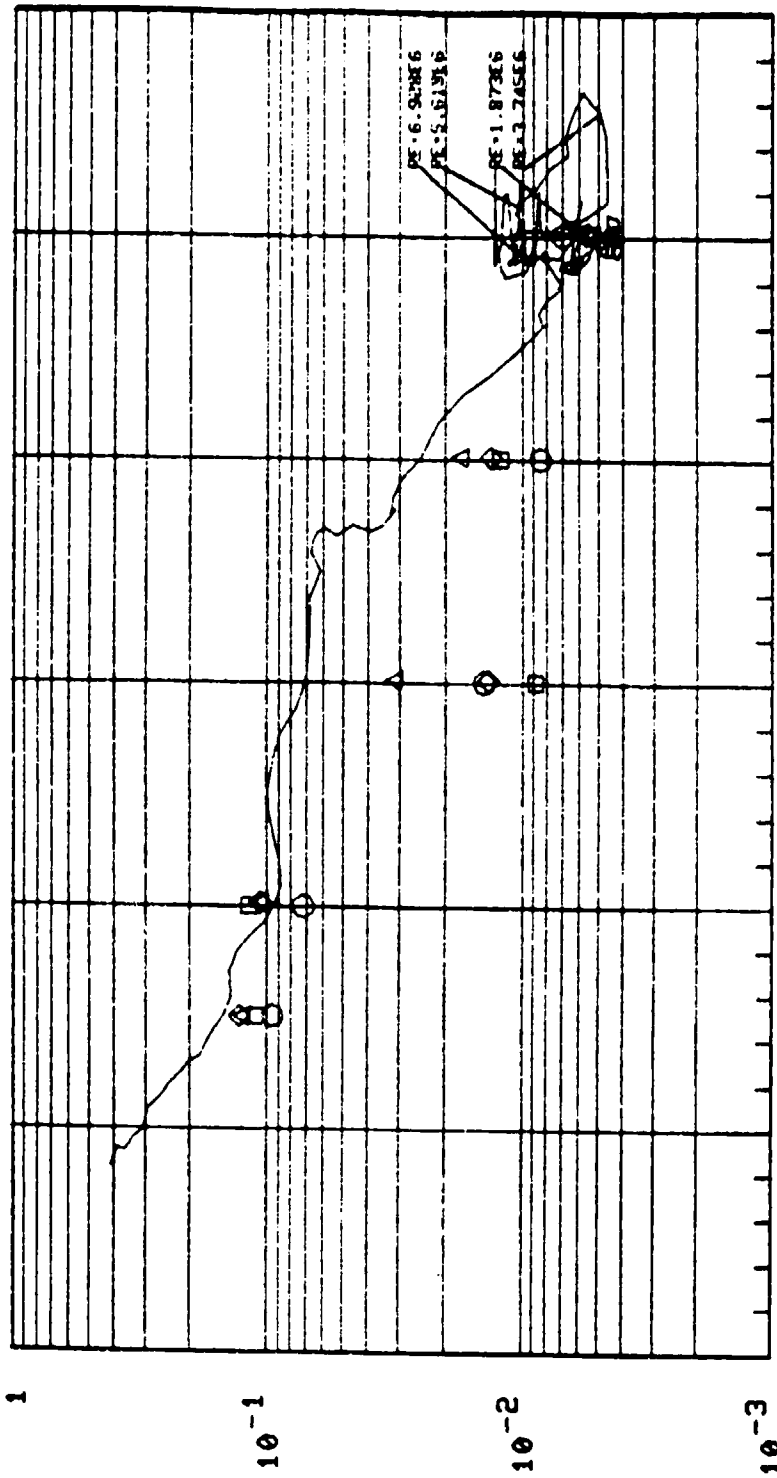
FLIGHT PARAMETER - H/H-REF

ANGLE-OF-ATTACK - DEG      04/20/83      BASE TIME - 27550236.000 SEC.

# STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 200-1380 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06



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FLIGHT CORE H/H-REF

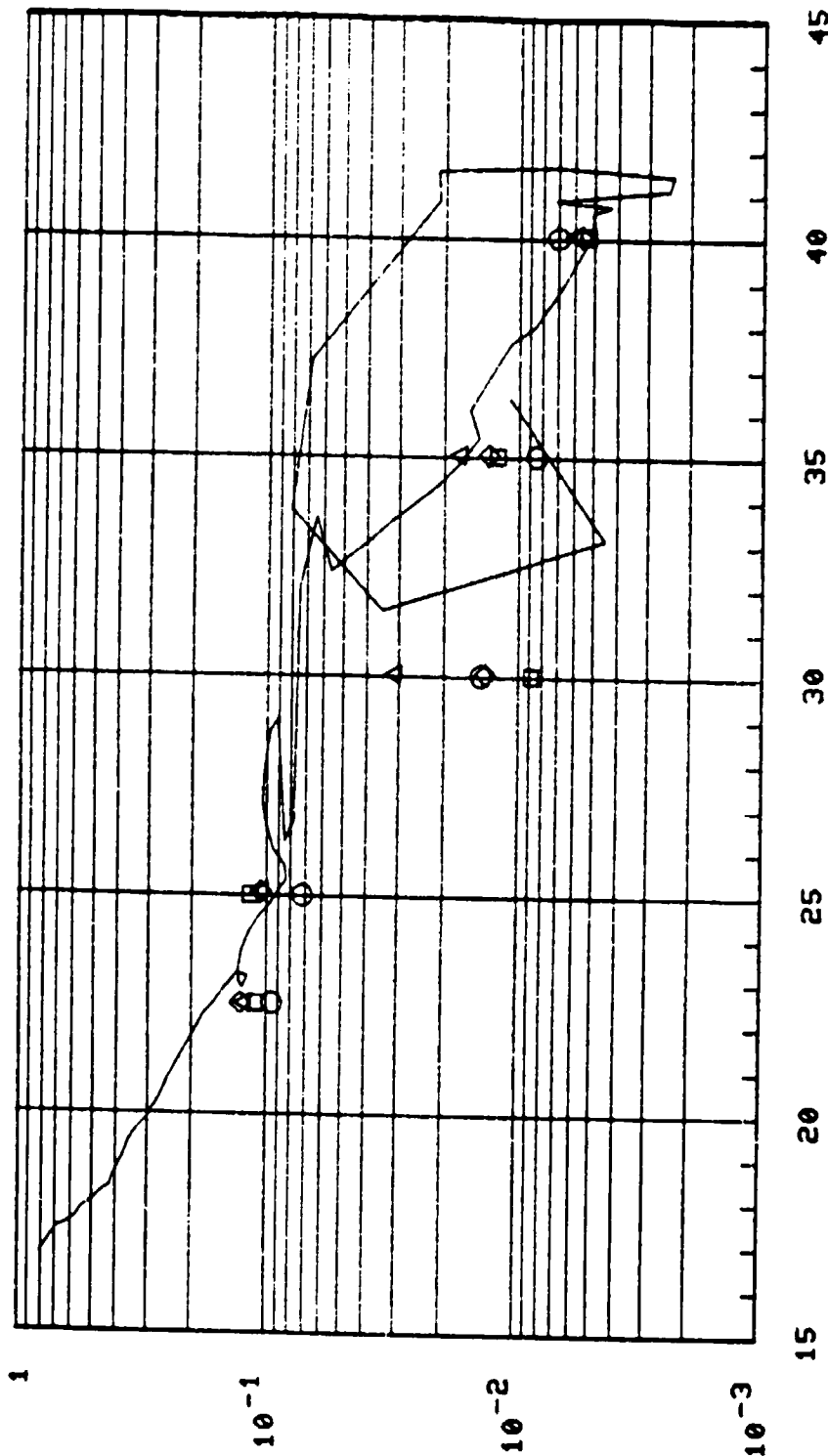
B-143

ANGLE-OF-ATTACK - DEG      BASE TIME \* 07745684.000 SEC      04.19.83

# STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- ◇ AF 0.0175 SCALE RE - 3.0 E06
- × AF 0.0175 SCALE RE - 3.7 E06

U0779980A/H-REF 965-1335 SEC



REF-H-REF

B-144

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04/19/83  
BASE TIME - 1604023.000 SEC.

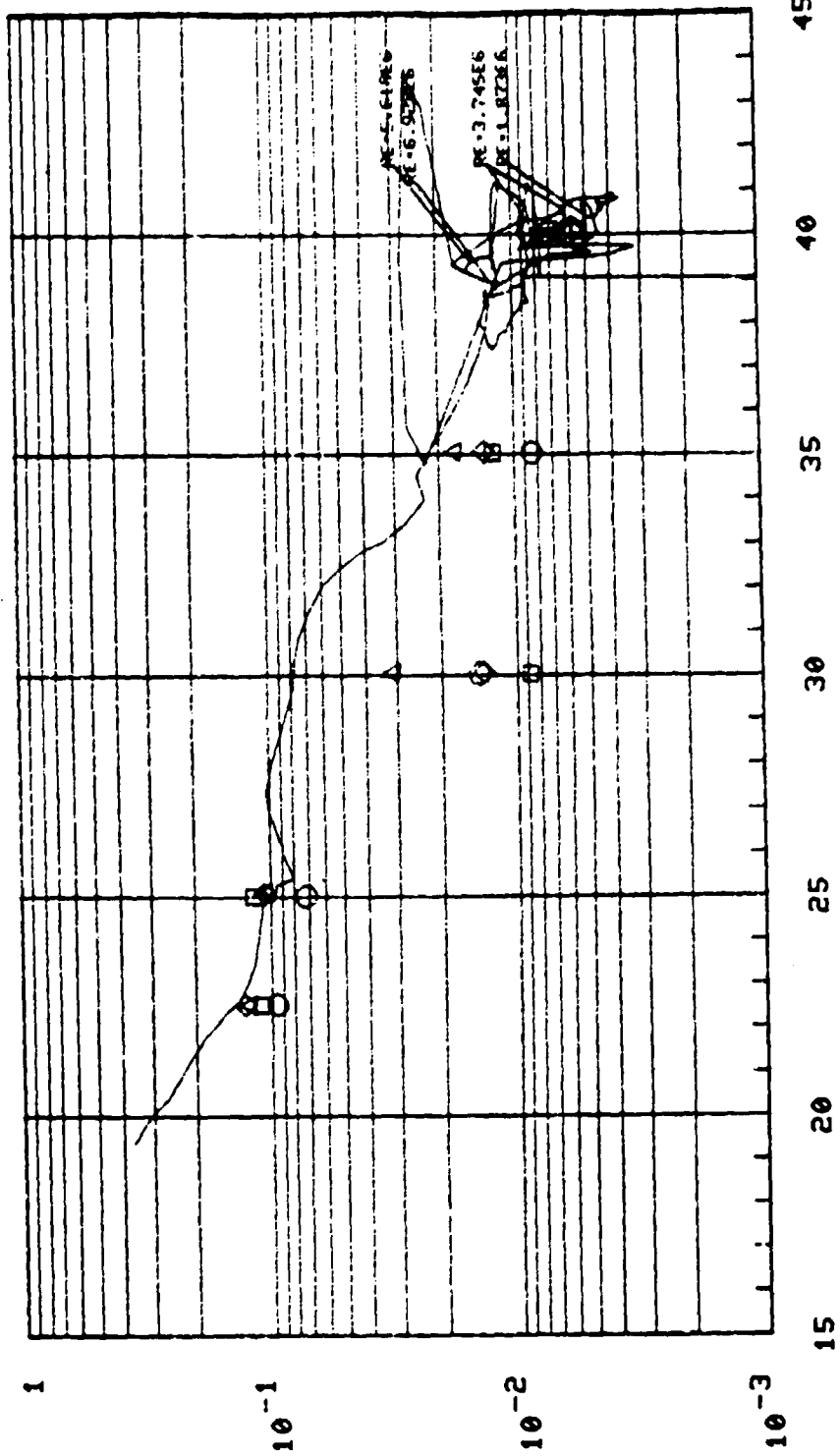
ANGLE-OF-ATTACK - DEG

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719980A/H-REF 150-1350 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

○ ○ ×



ORIGINAL PAGE  
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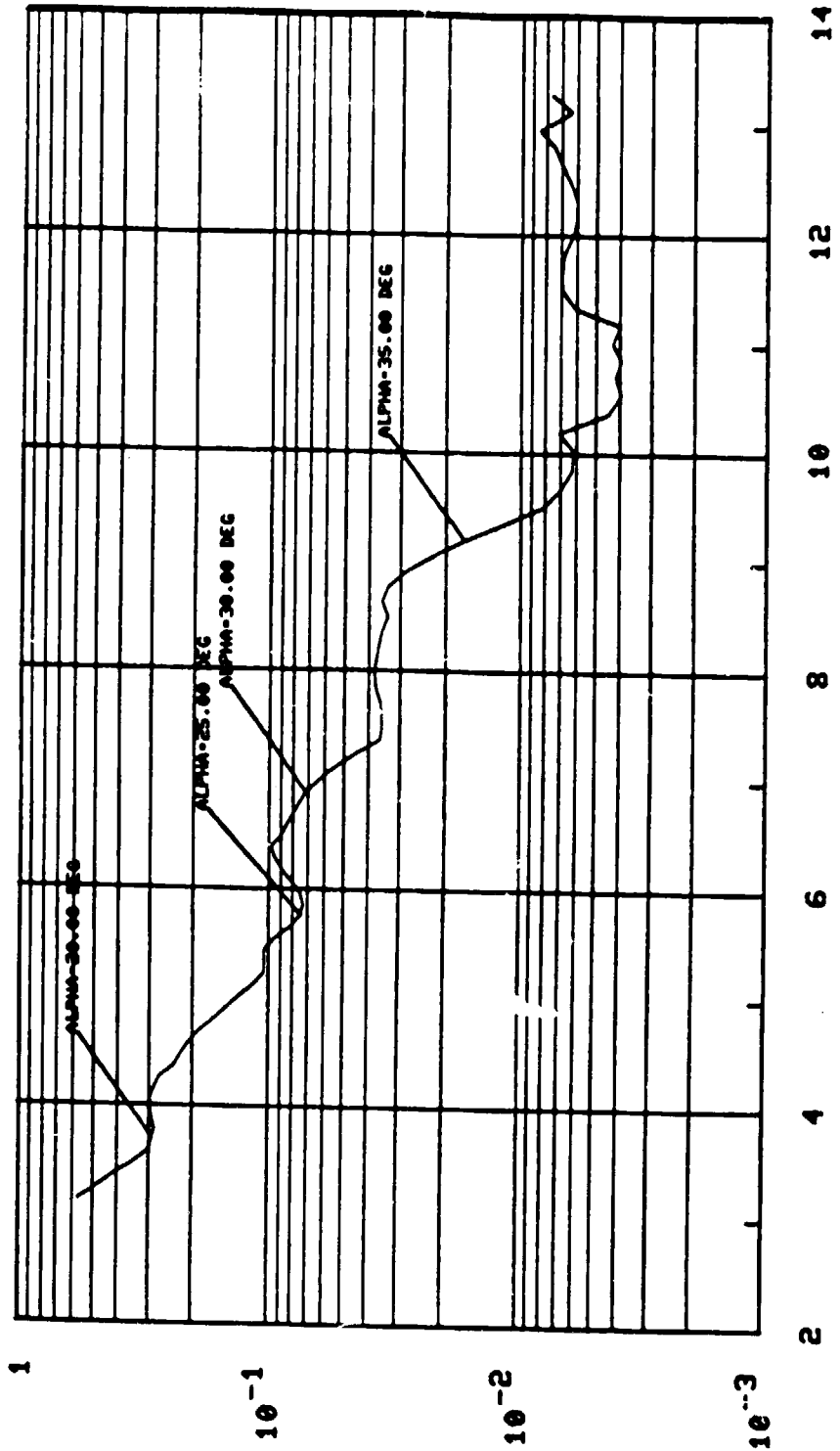
94.19.83  
BASE TIME - 27698591.000 SEC

FILM COVER -- H/H-REF

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 1065-1480 SEC

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FLIGHT PARAMETER COMPARISON

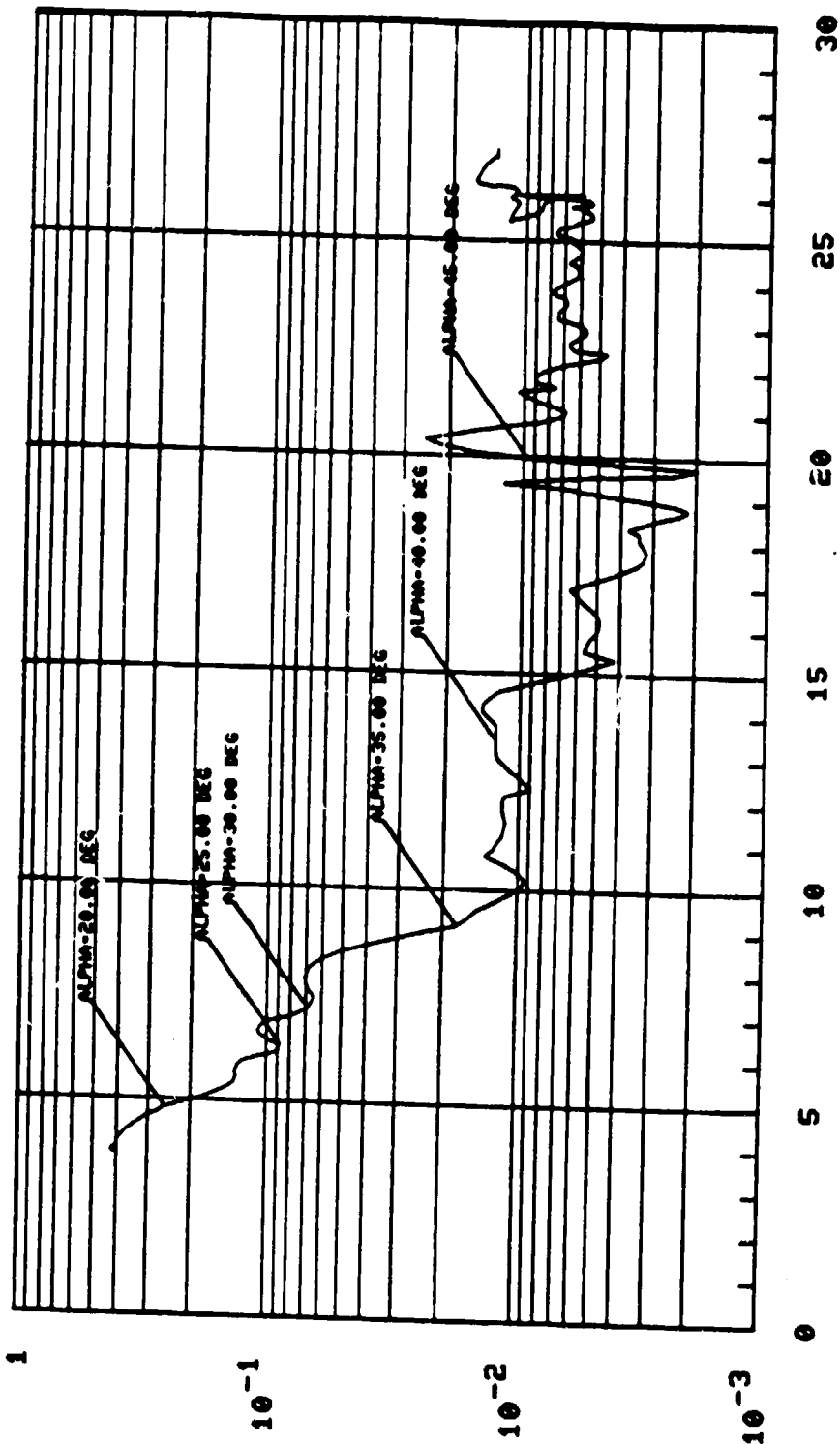
B-146

04/20/83  
BASE TIME - 00049744.000 SEC.

MACH NUMBER

# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 200-1480 SEC



FILM COEFF : H/H-REF

B-147

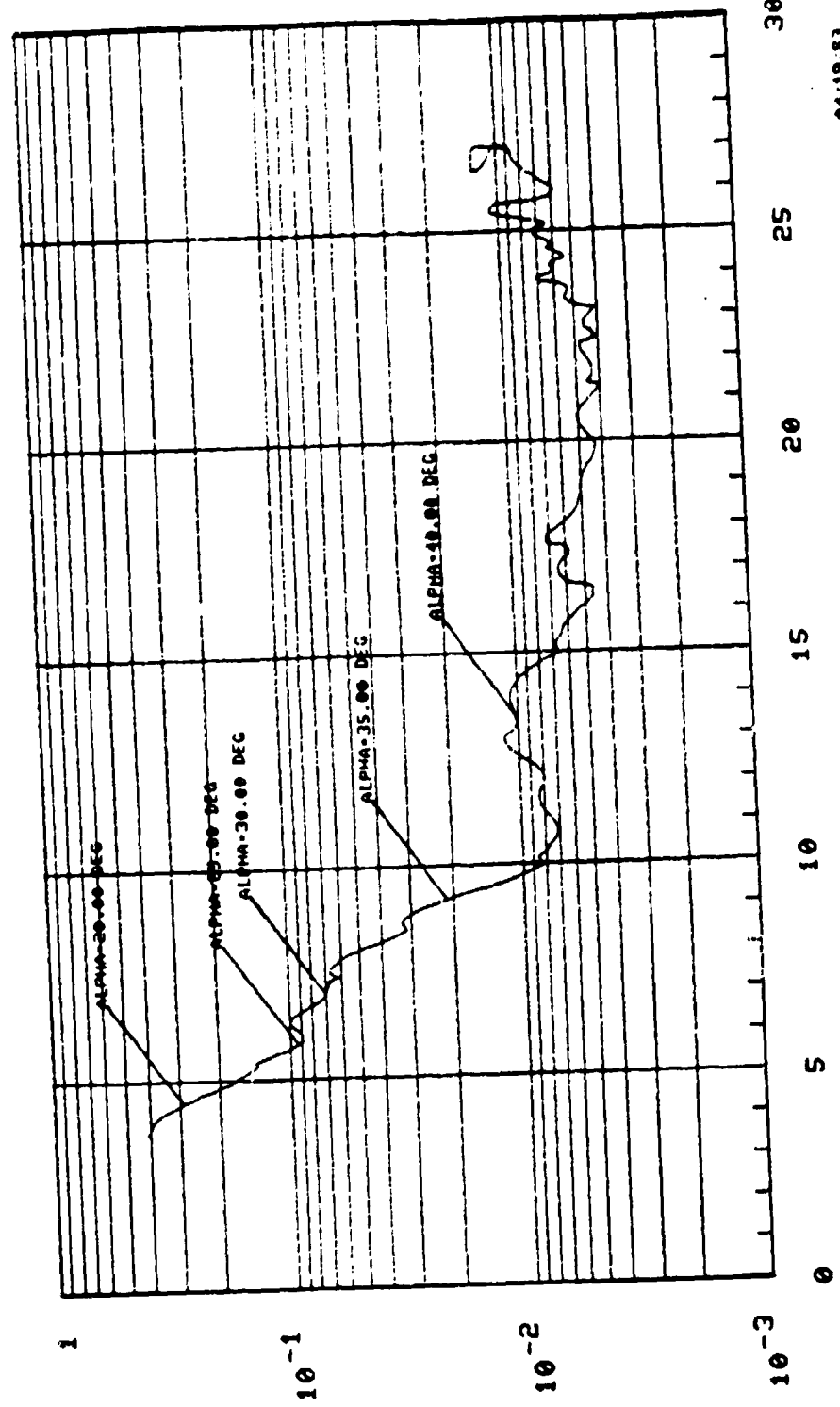
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04/20/83  
BASE TIME - 27550236.000 SEC.

MACH NUMBER

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 200-1380 SEC



LINE COVER - H/H-REF

B-148

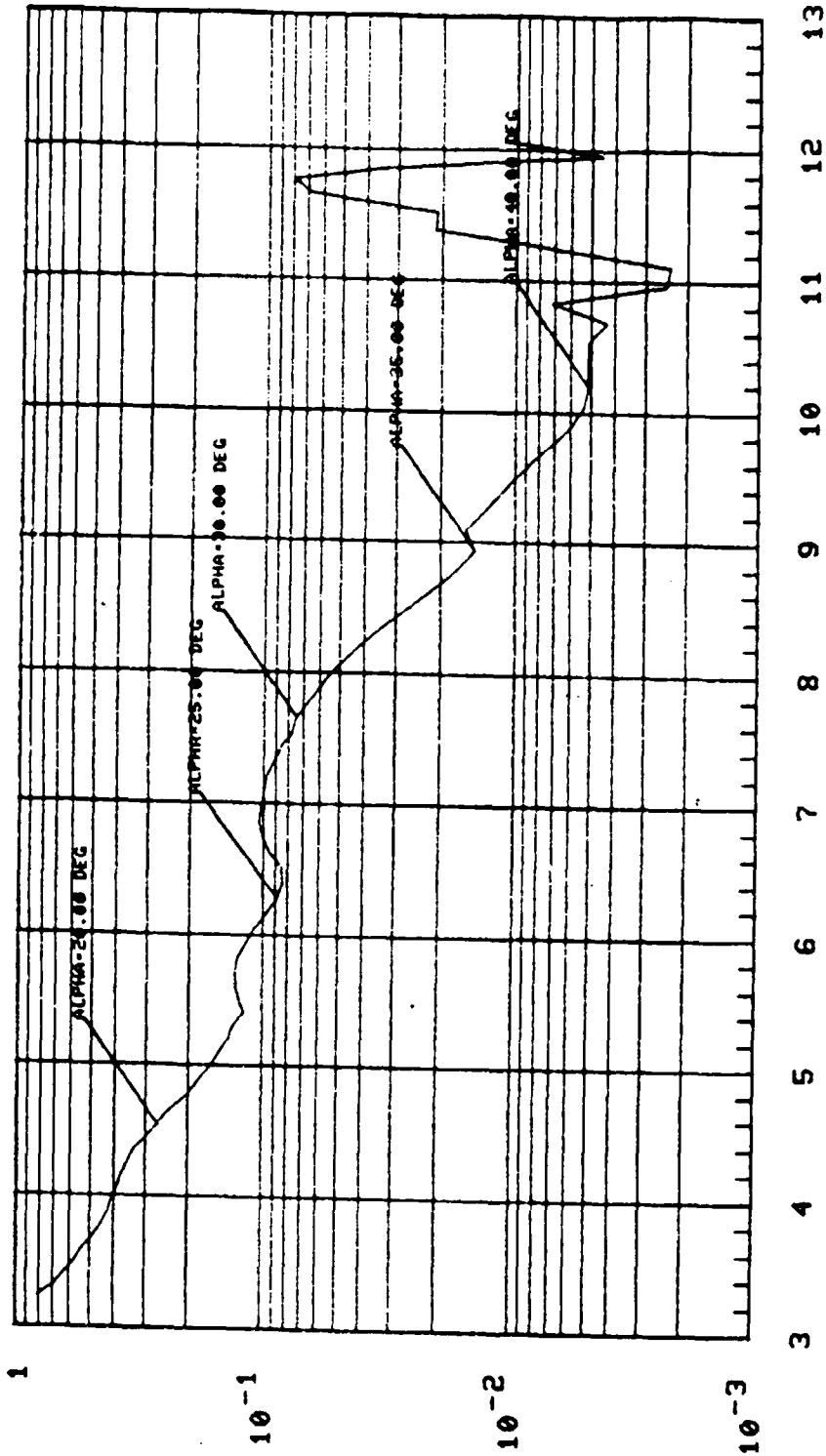
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MACH NUMBER

04:19:83  
BASE TIME - 07745284.000 SEC

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 965-1335 SEC



FLIGHT COEFF -- H/H-REF

B-149

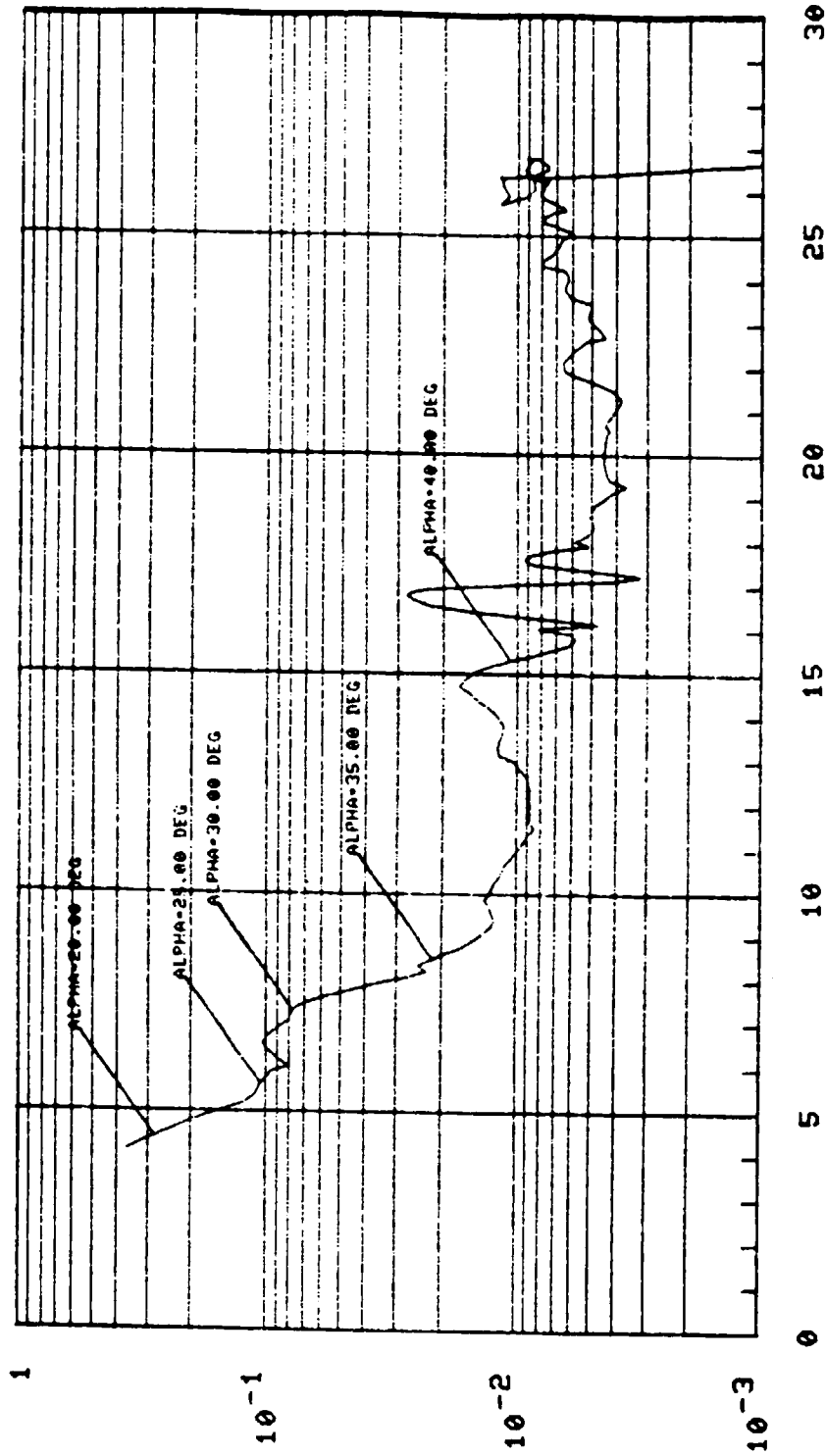
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MACH NUMBER 04.19.83  
BASE TIME - 1604023.000 SEC.



STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9800/H-REF 150-1350 SEC



FLIGHT COVER - H/H-REF

8-150

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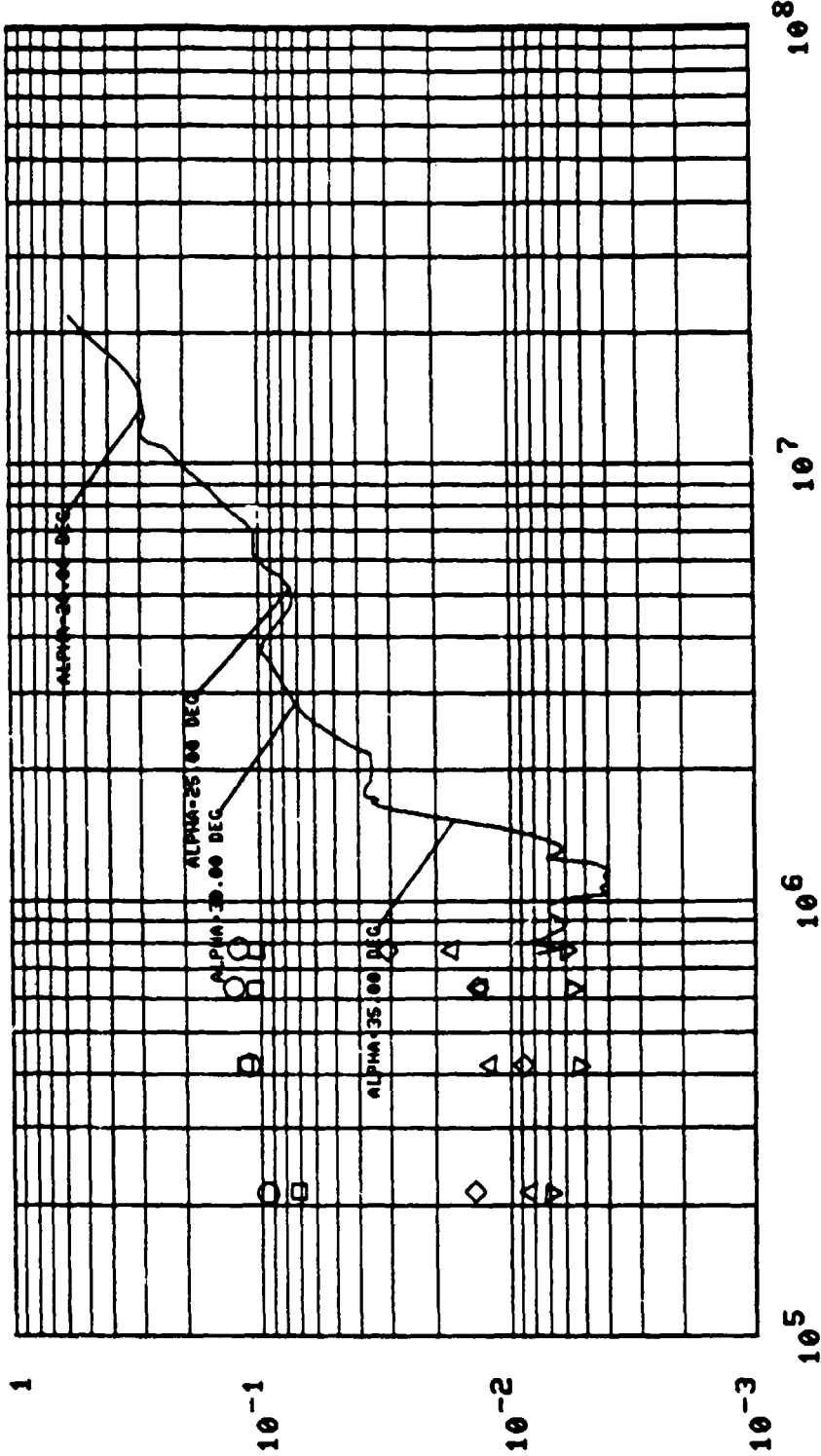
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BASE TIME - 27695591.000 SEC.

MACH NUMBER

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



TIME COEFF - H/H-REF

04/20/83  
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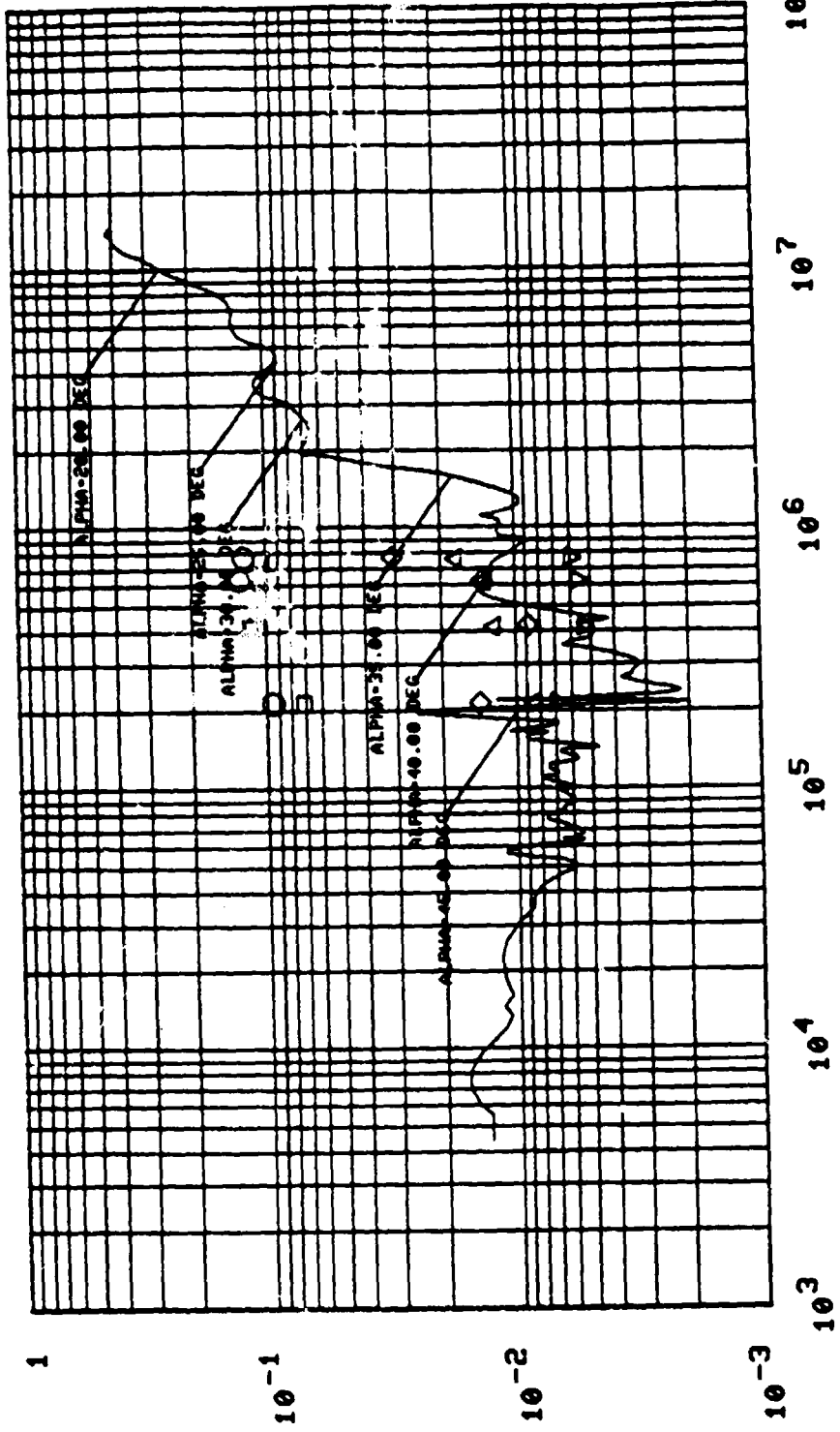
REYNOLDS NUMBER (NS)

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U07T9980A/N-REF 200-1480 SEC

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- AF ALPHA = 25.0 DEGREES
- AF ALPHA = 30.0 DEGREES
- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES

□ ◇ △



FILE COVER - H/H-REF

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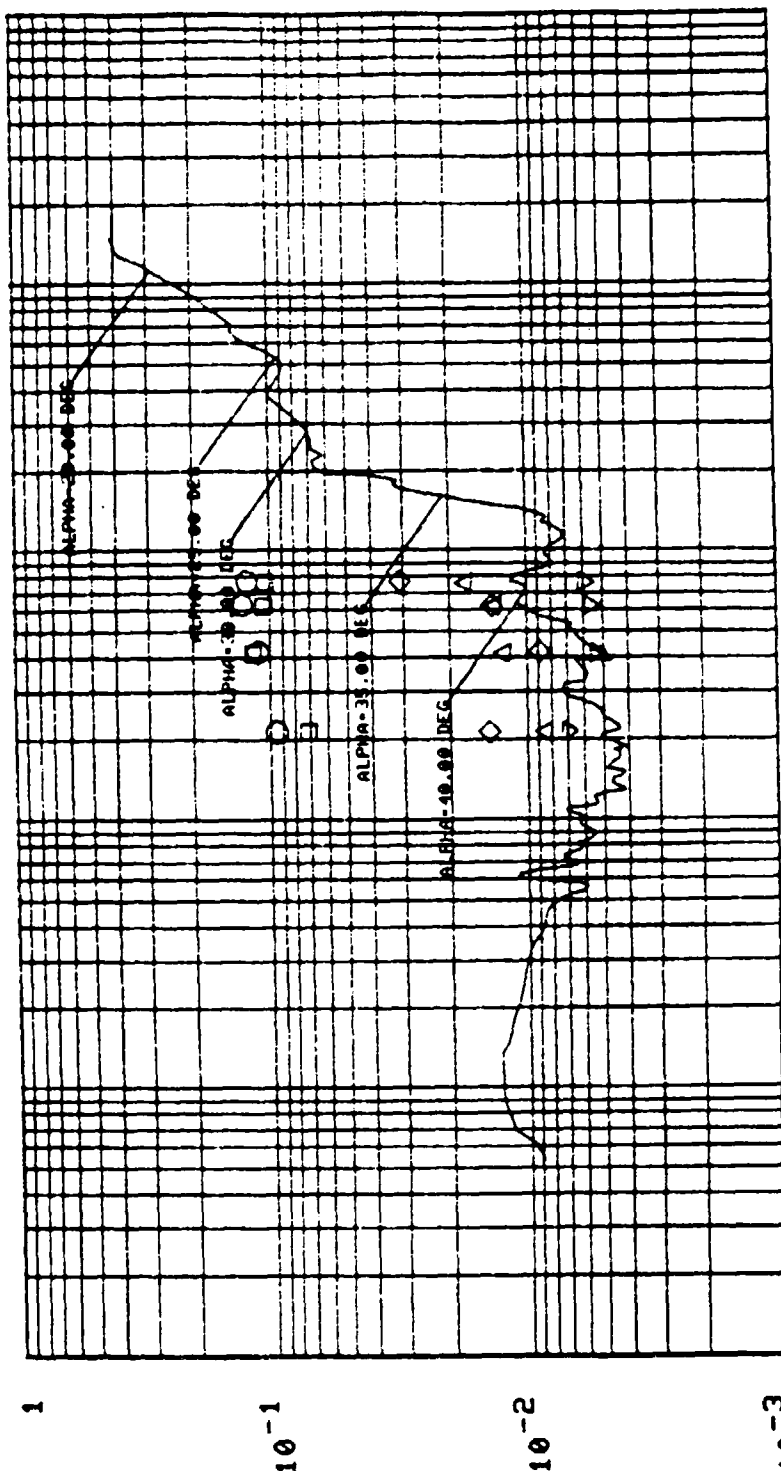
04/20/83  
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REYNOLDS NUMBER (NS)

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 200-1380 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF - H/H-REF

8-153

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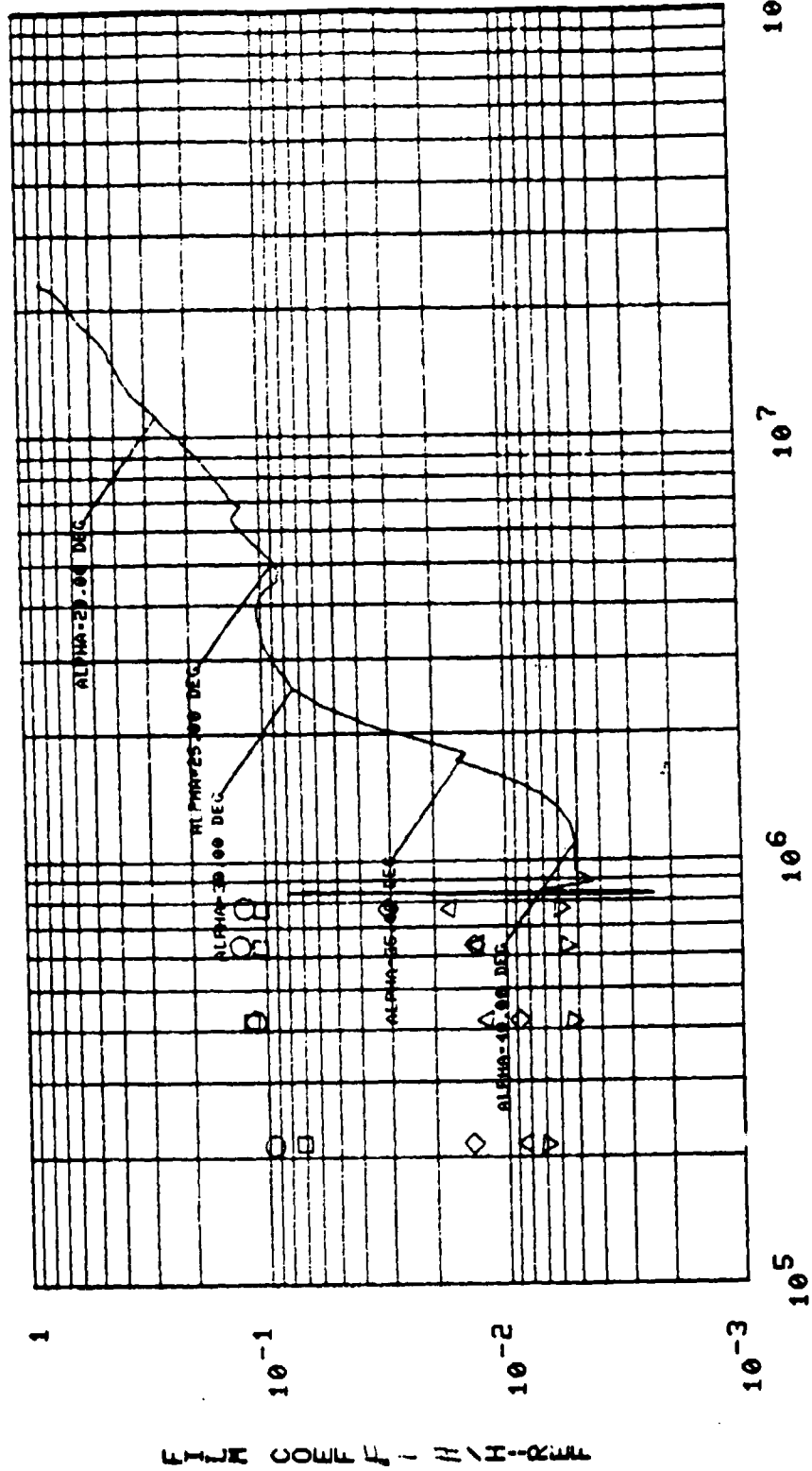
REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779980A/H-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ △



04/19/83  
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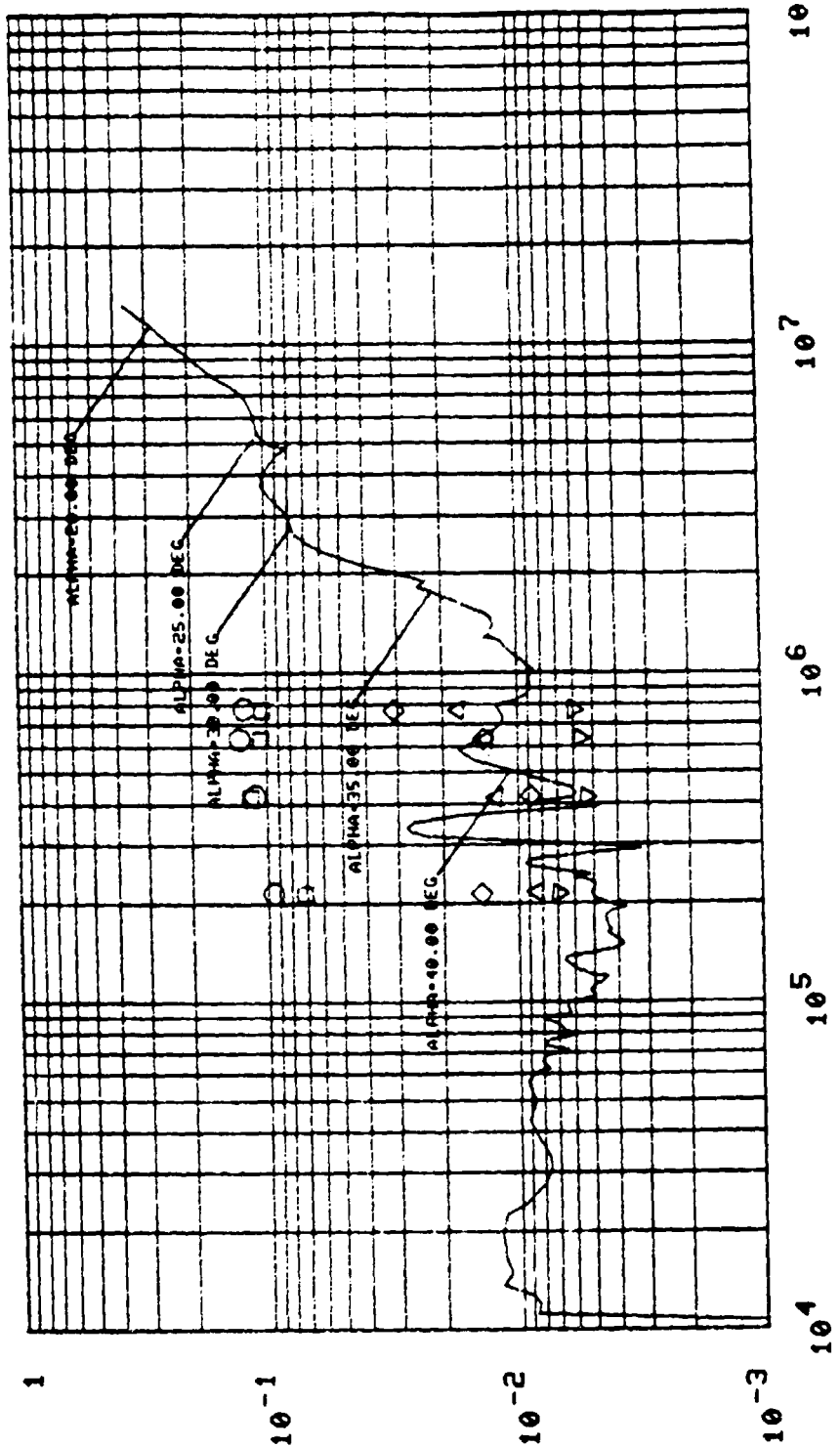
REYNOLDS NUMBER (NS)

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719980A/H-REF 150-1350 SEC

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- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ ◇ △



FILM COEFF -- H/H-REF

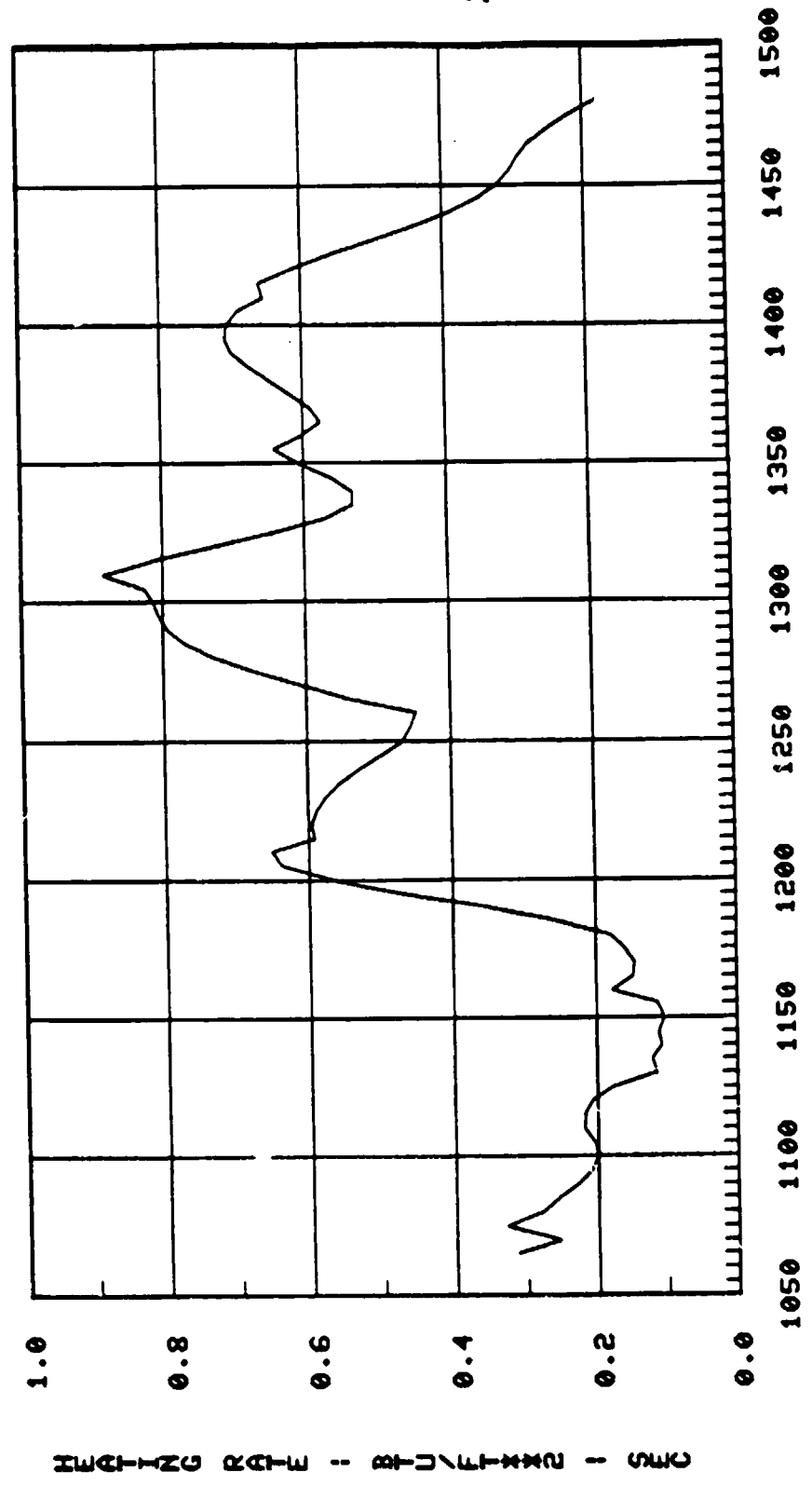
B-155

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REYNOLDS NUMBER (NS)      BASE TIME - 27698591.000 SEC      04-18-83

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U071988A

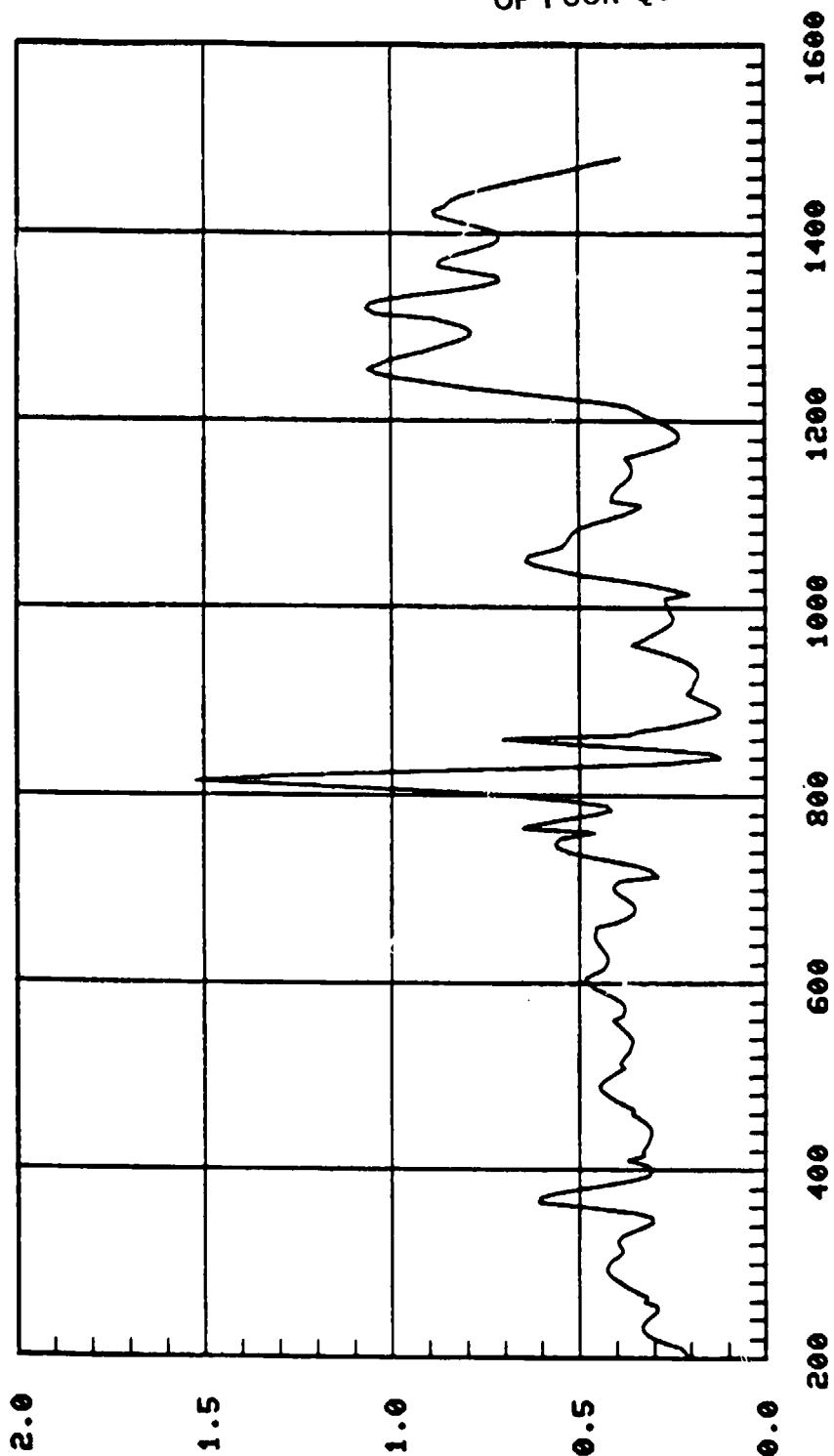


RECTING RATE -- BTU/FT-HRS - SEC

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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077988A



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04/20/83

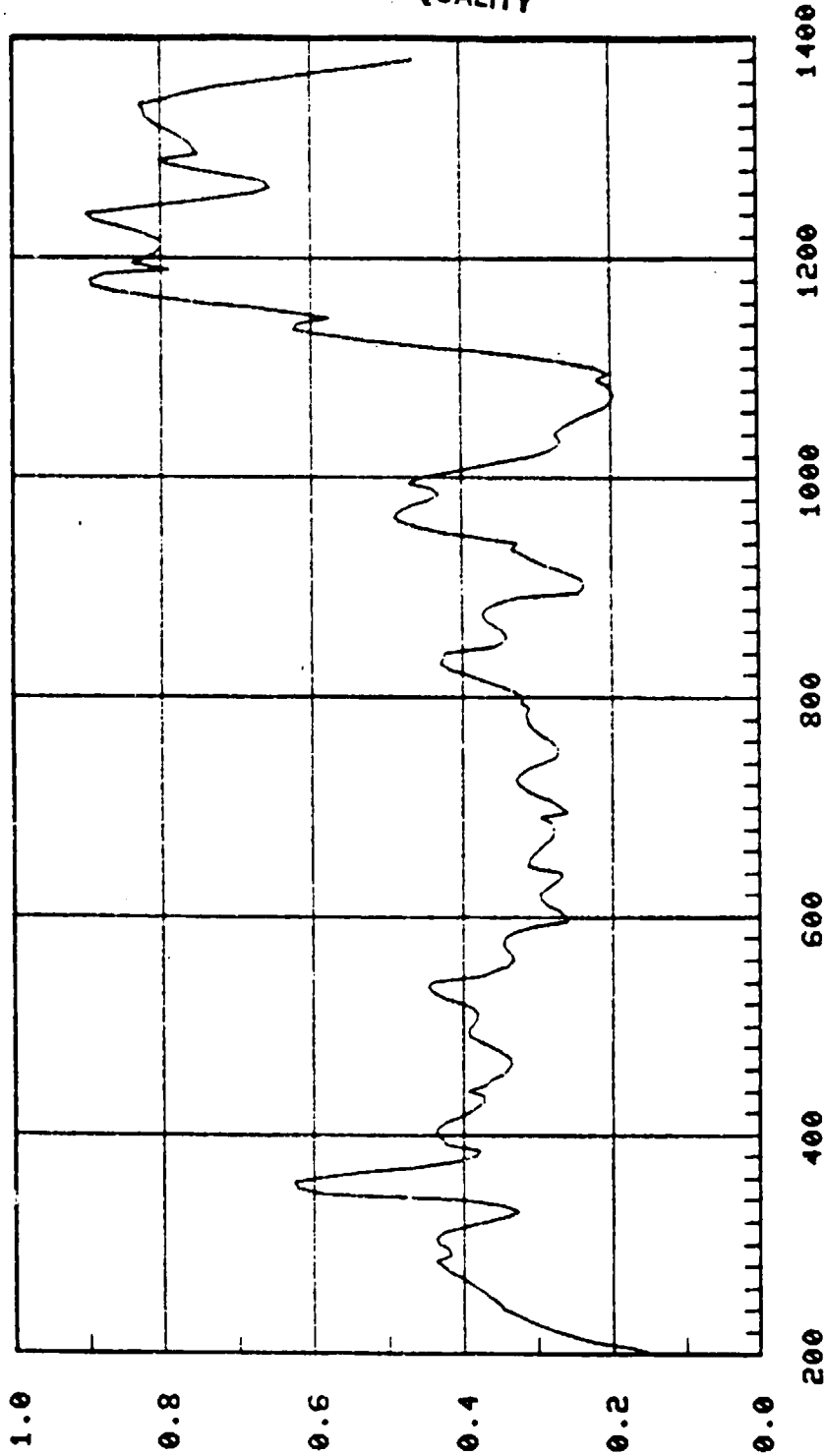
TIME - SECONDS

HEATING RATE : BTU/FT-HRS : SEC



STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A



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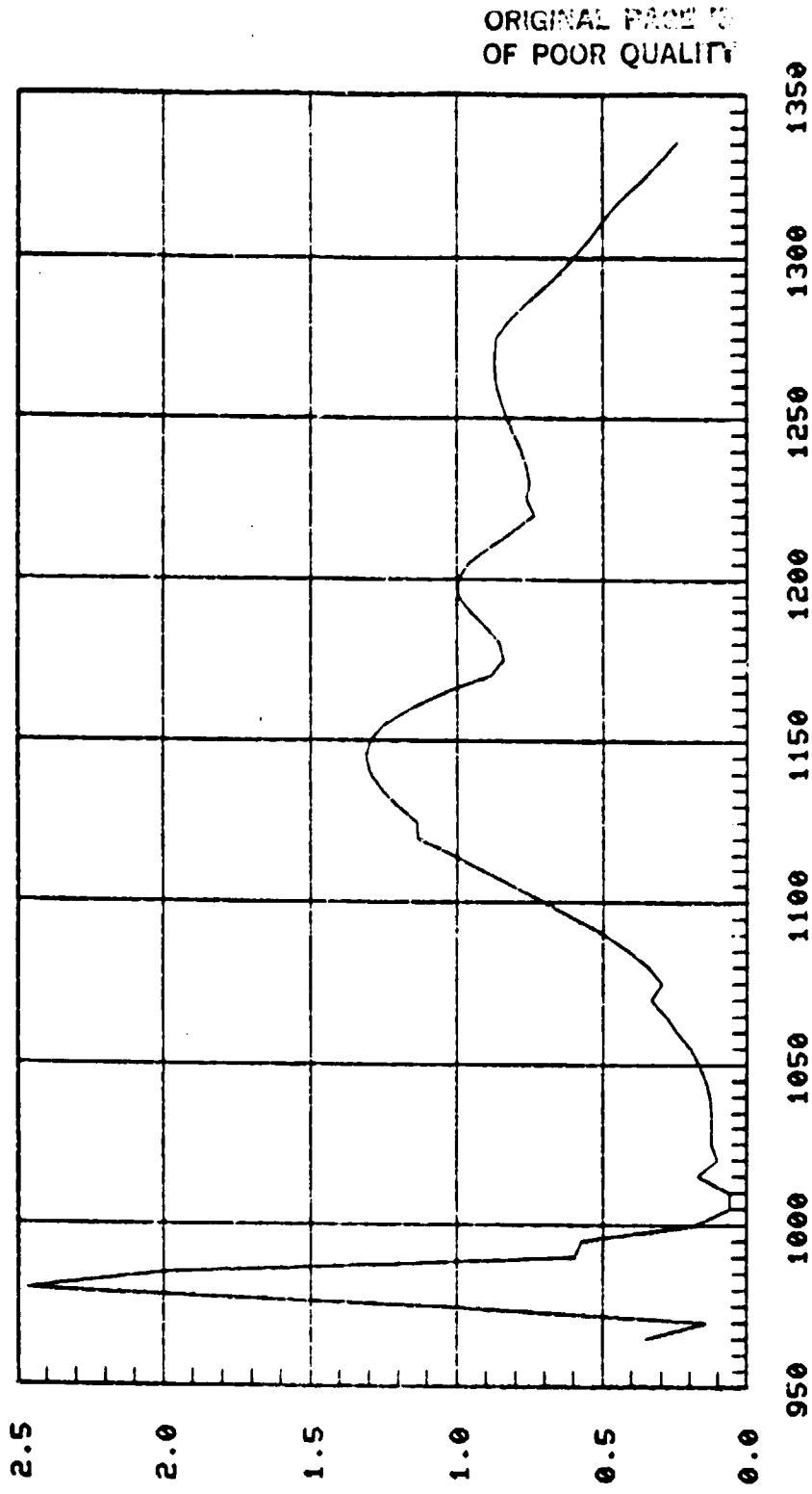
04 19 83

TIME - SECONDS

HEATING RATE -- BTU/FT\*HR -- SEC

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719980A



HEATING RATE - BTU/FT\*HR - SEC

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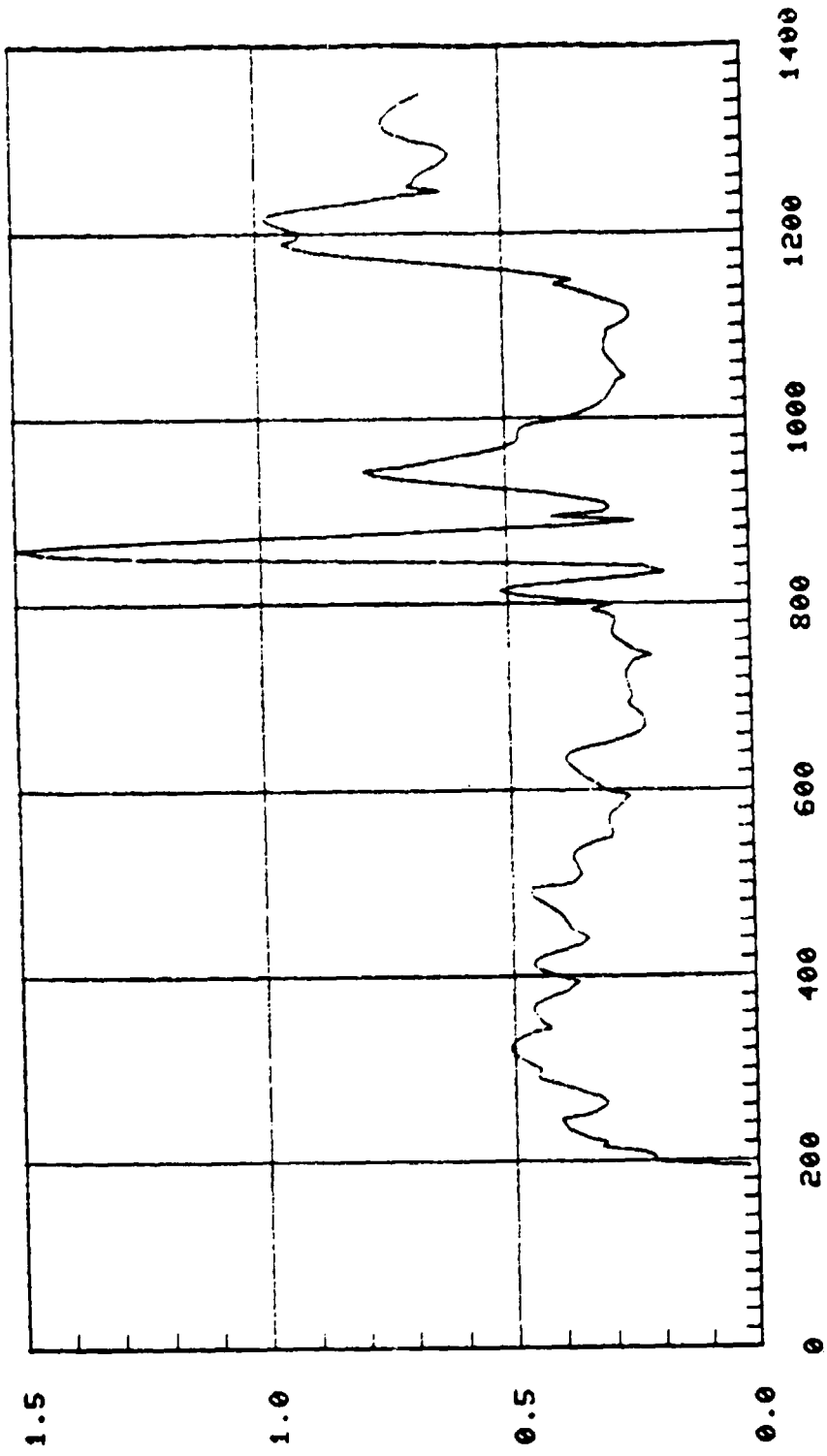
TIME - SECONDS

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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

0677988A



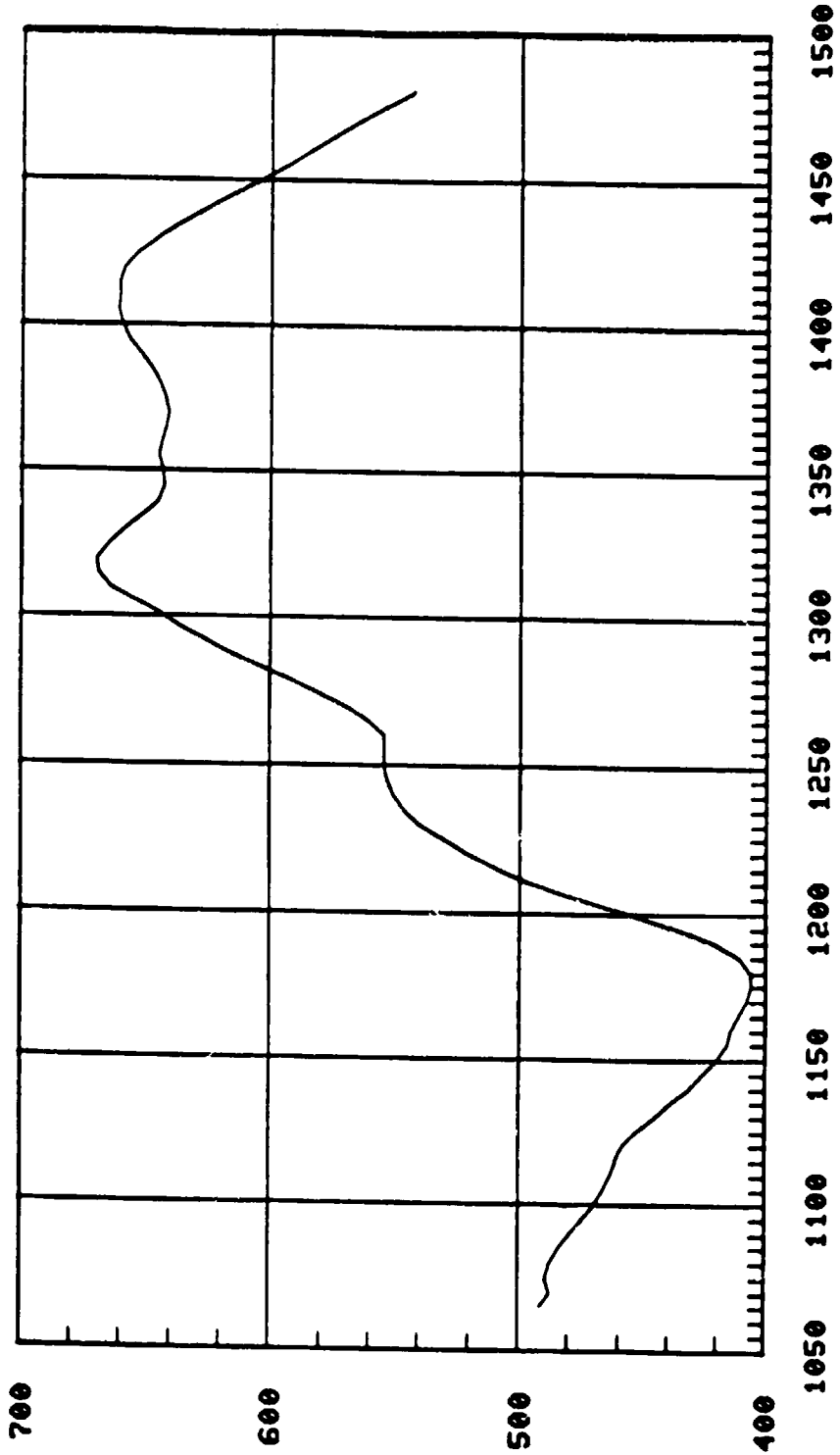
04/18/83

TIME - SECONDS

HEATING RATE -- BTU/FT-SEC -- SEC

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U677980A



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FEET-POD - F

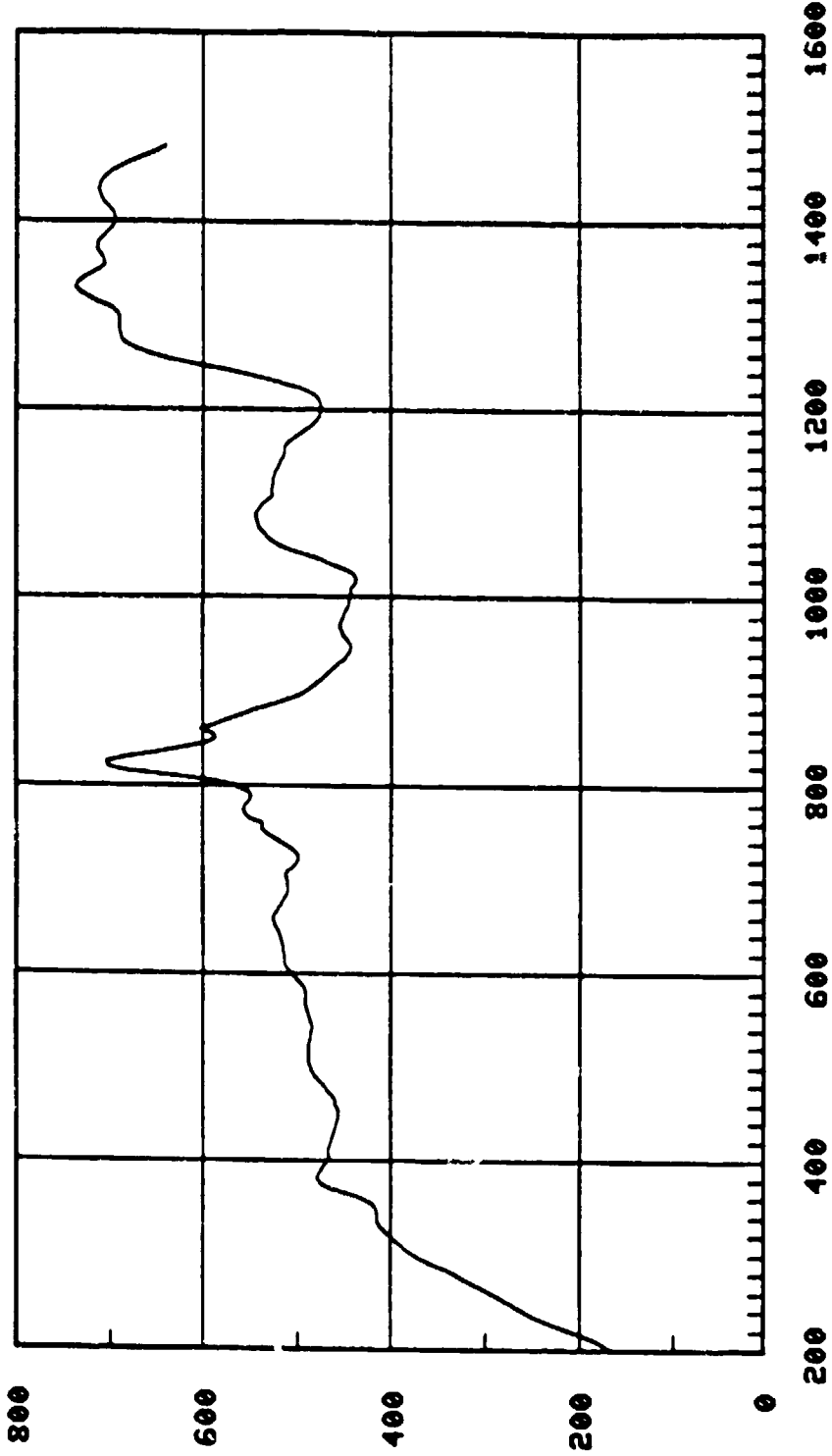
3-101

TIME - SECONDS

04/20/83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A



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04/20/33

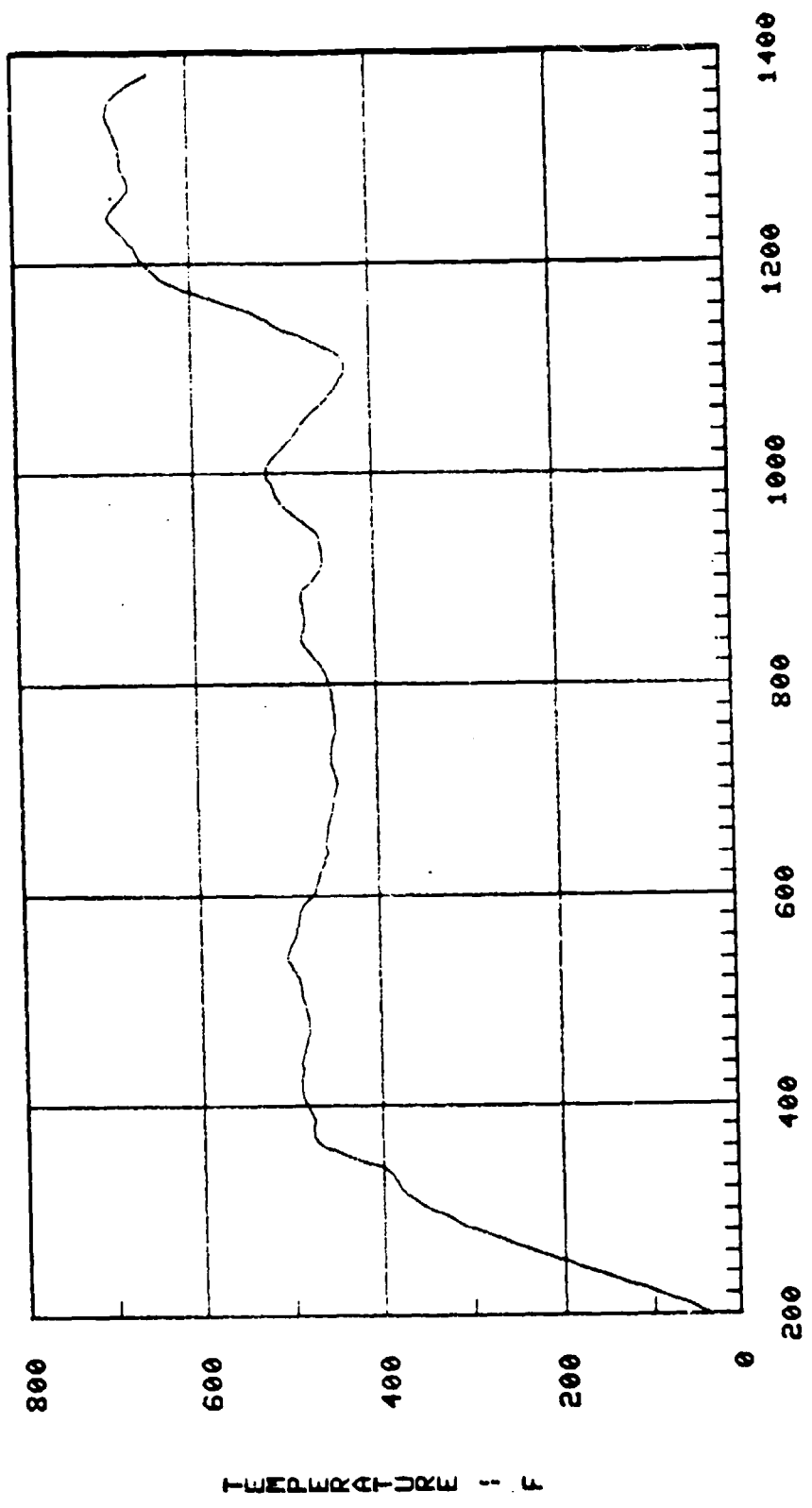
TIME - SECONDS

F - MDC-1307BDM-1

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U67199804

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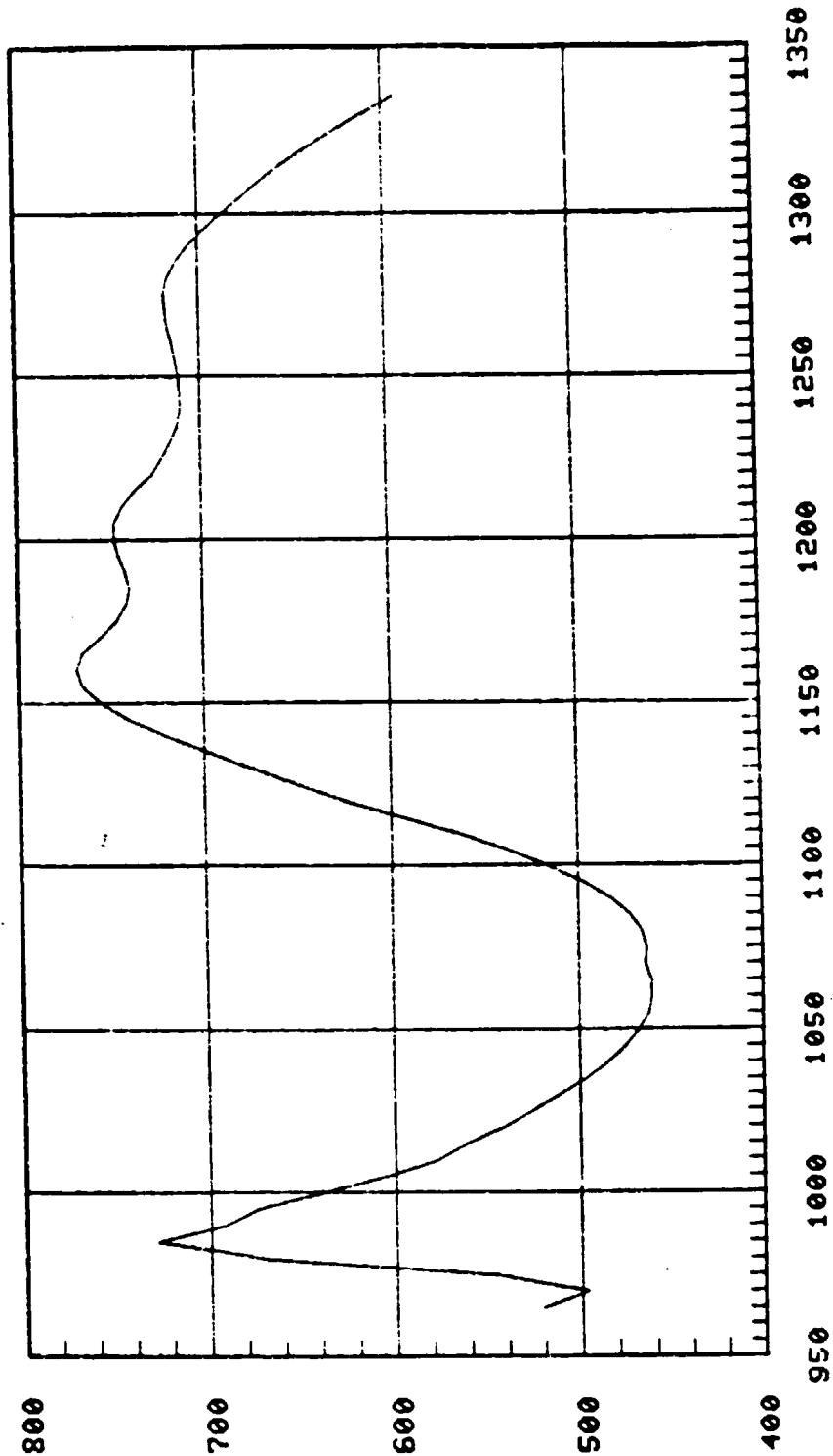
04-19-83

TIME - SECONDS

TEMPERATURE - F

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719980A



FREQUENCY - Hz

B-164

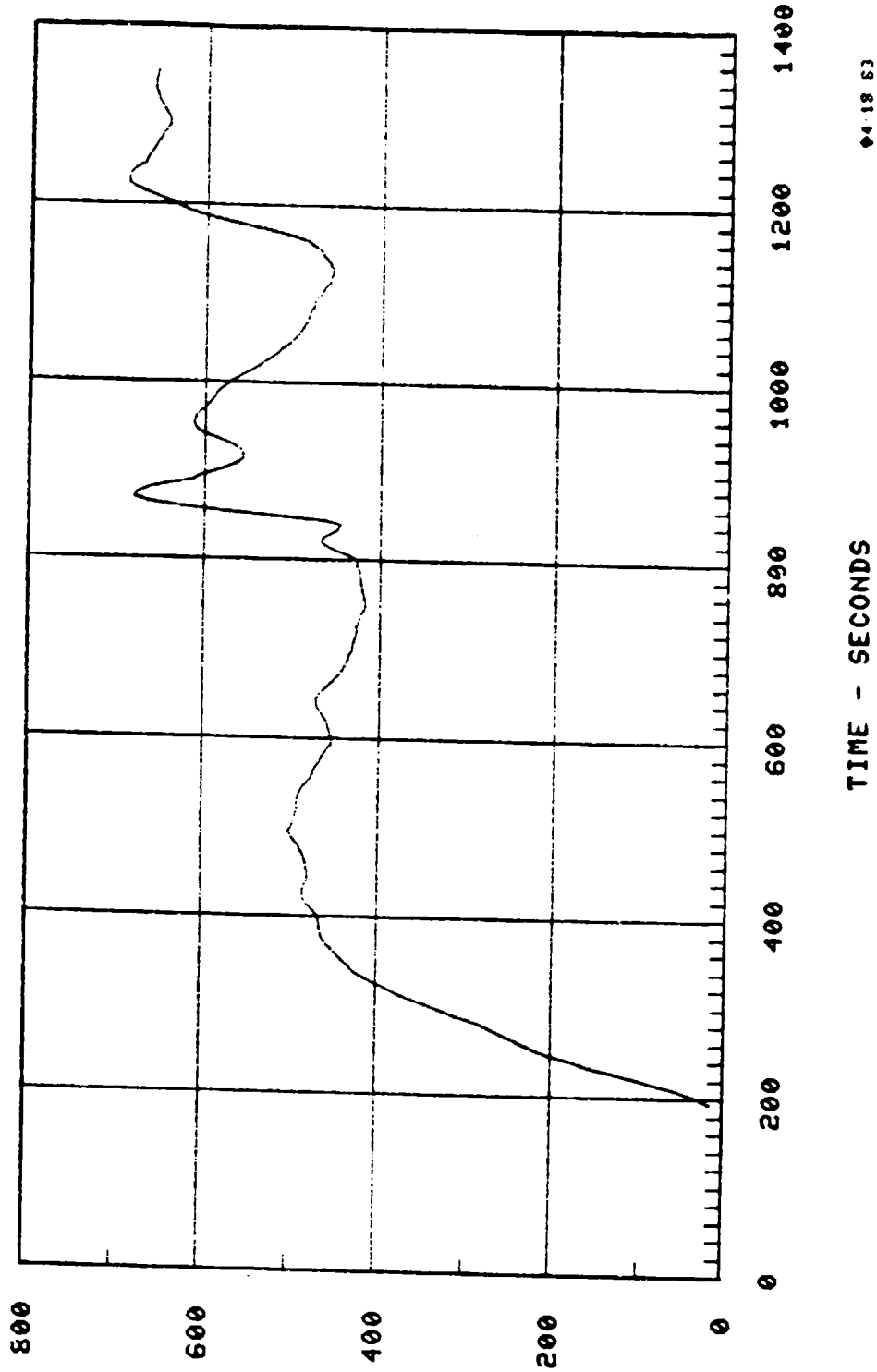
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04-19-83

TIME - SECONDS

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071998EA



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FEEDBACK CURRENT -- F

B-165

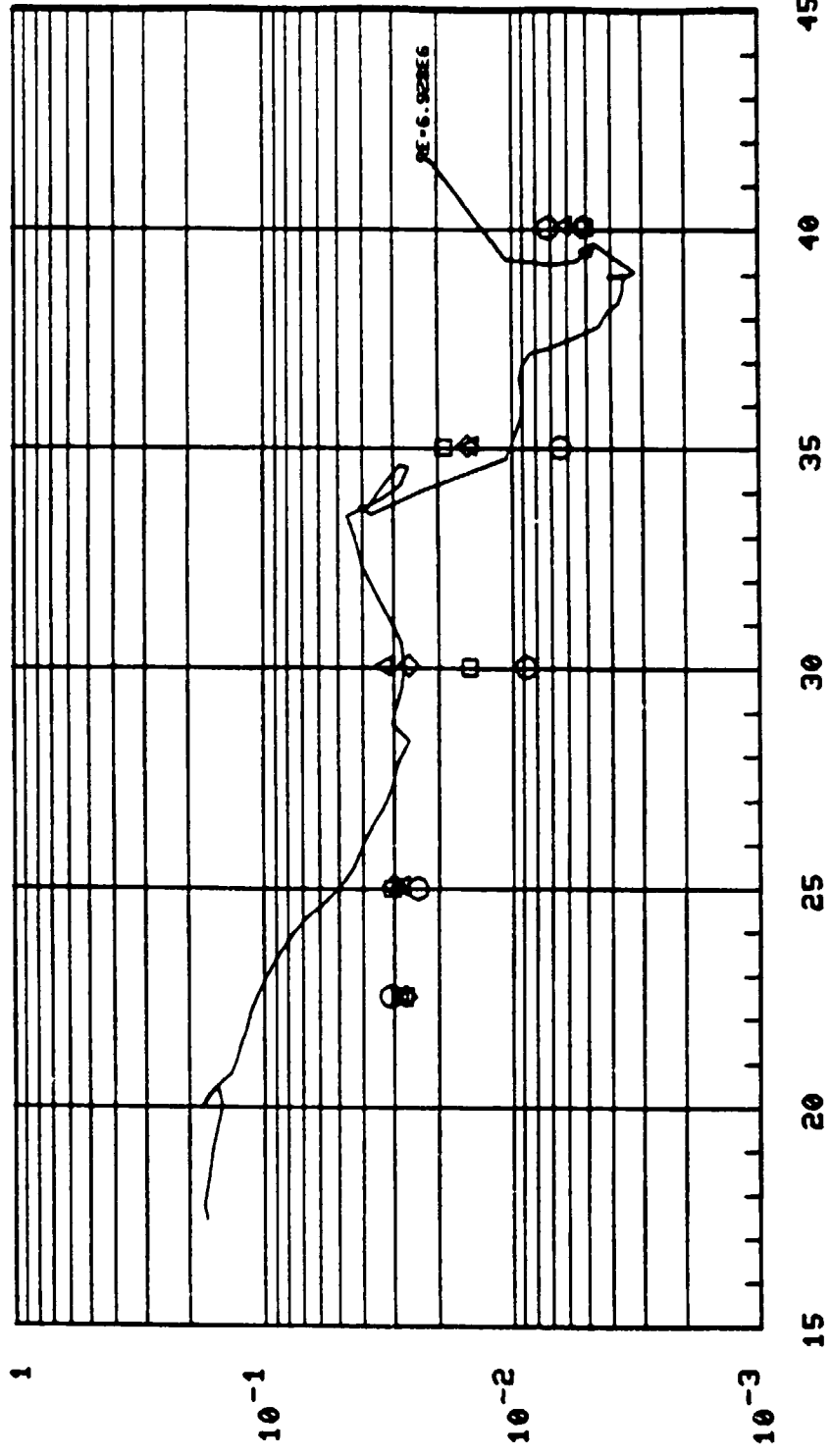
04 18 63



STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 1065-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



FORCE COEFFICIENT - H/H-REF

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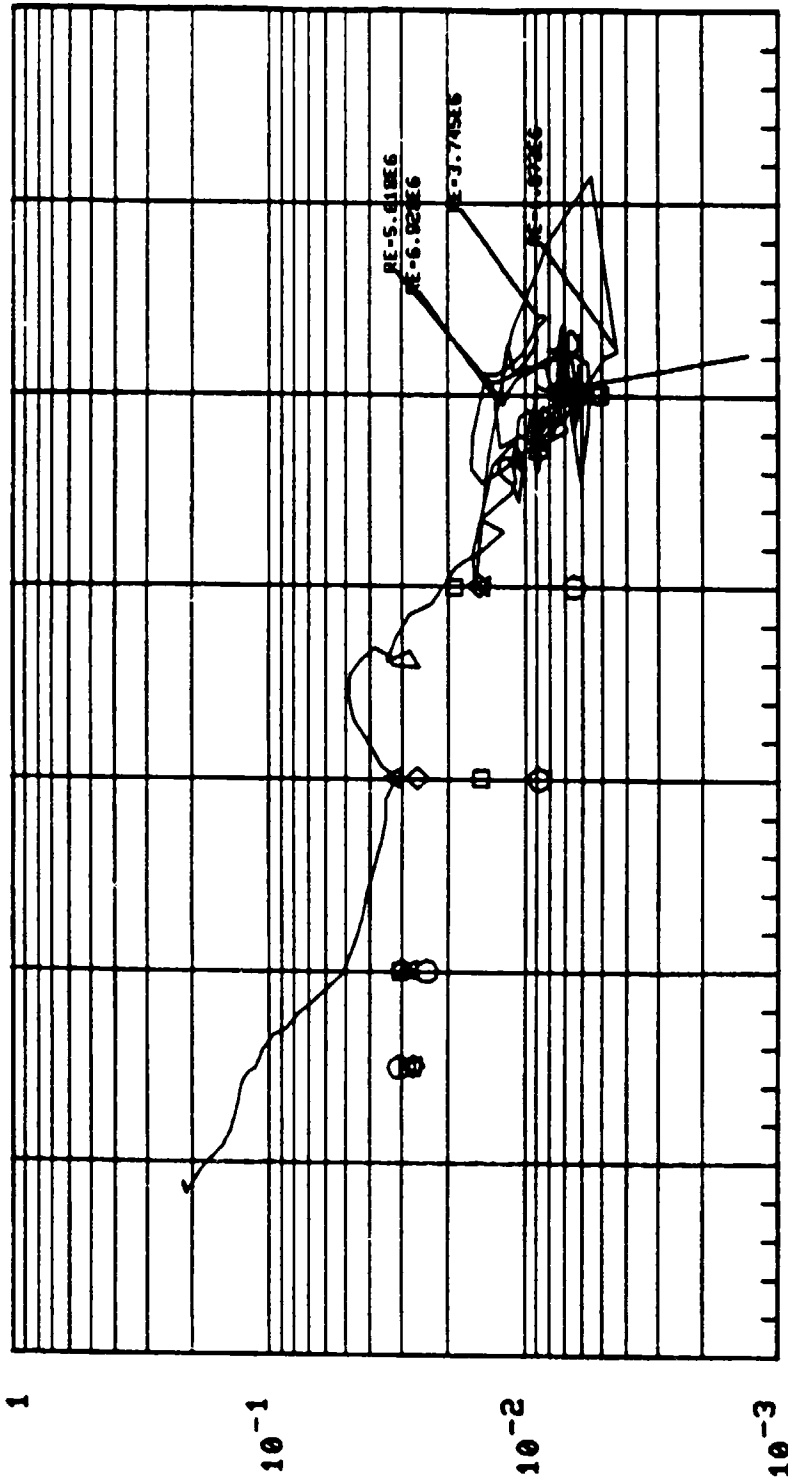
04/20/83  
BASE TIME - 09045744.000 SEC.

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

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U07T9982A/H-REF

B-167

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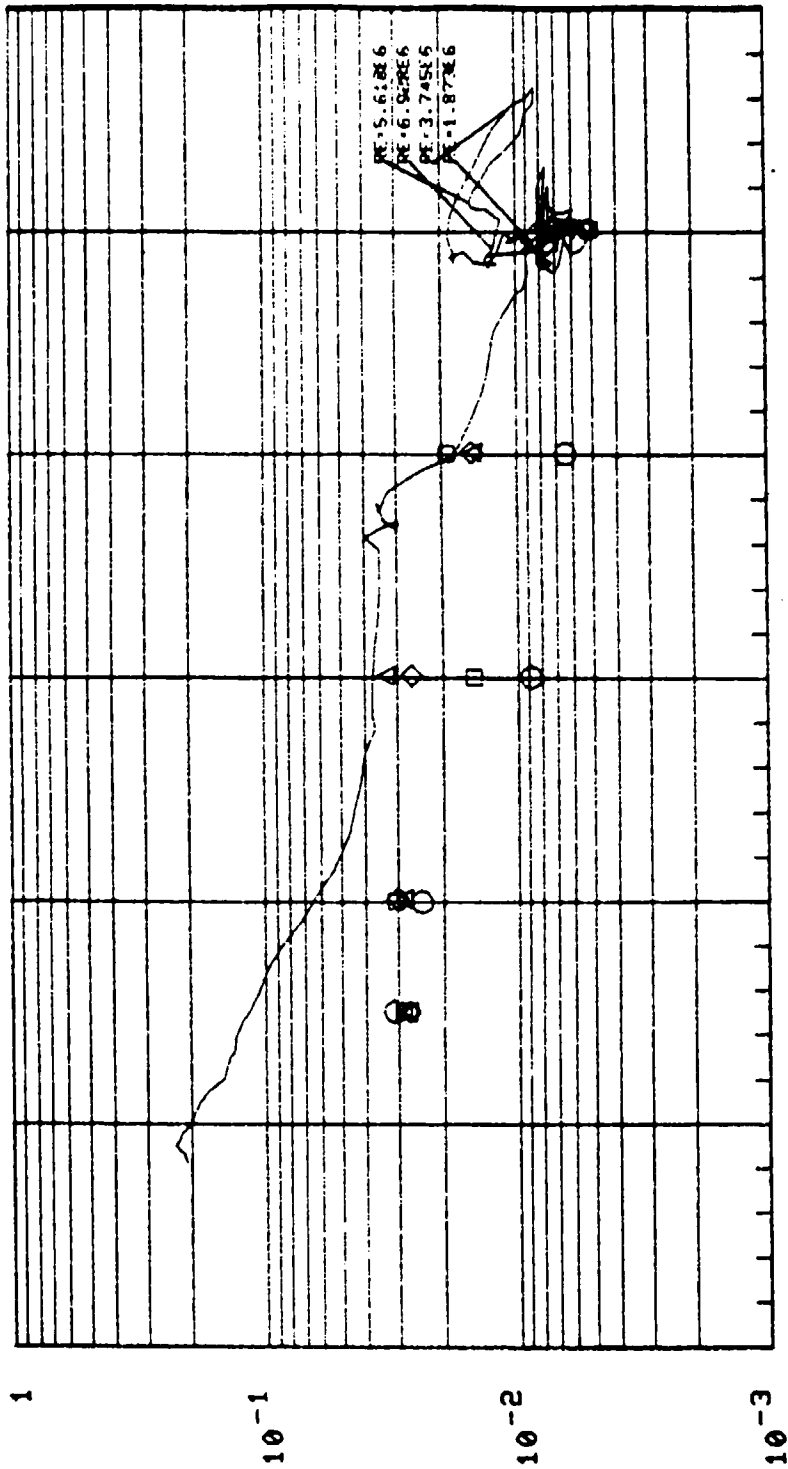
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ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 200-1380 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06

□ □ ◇



FLIGHT CONTROL - H/H-REF

B-168

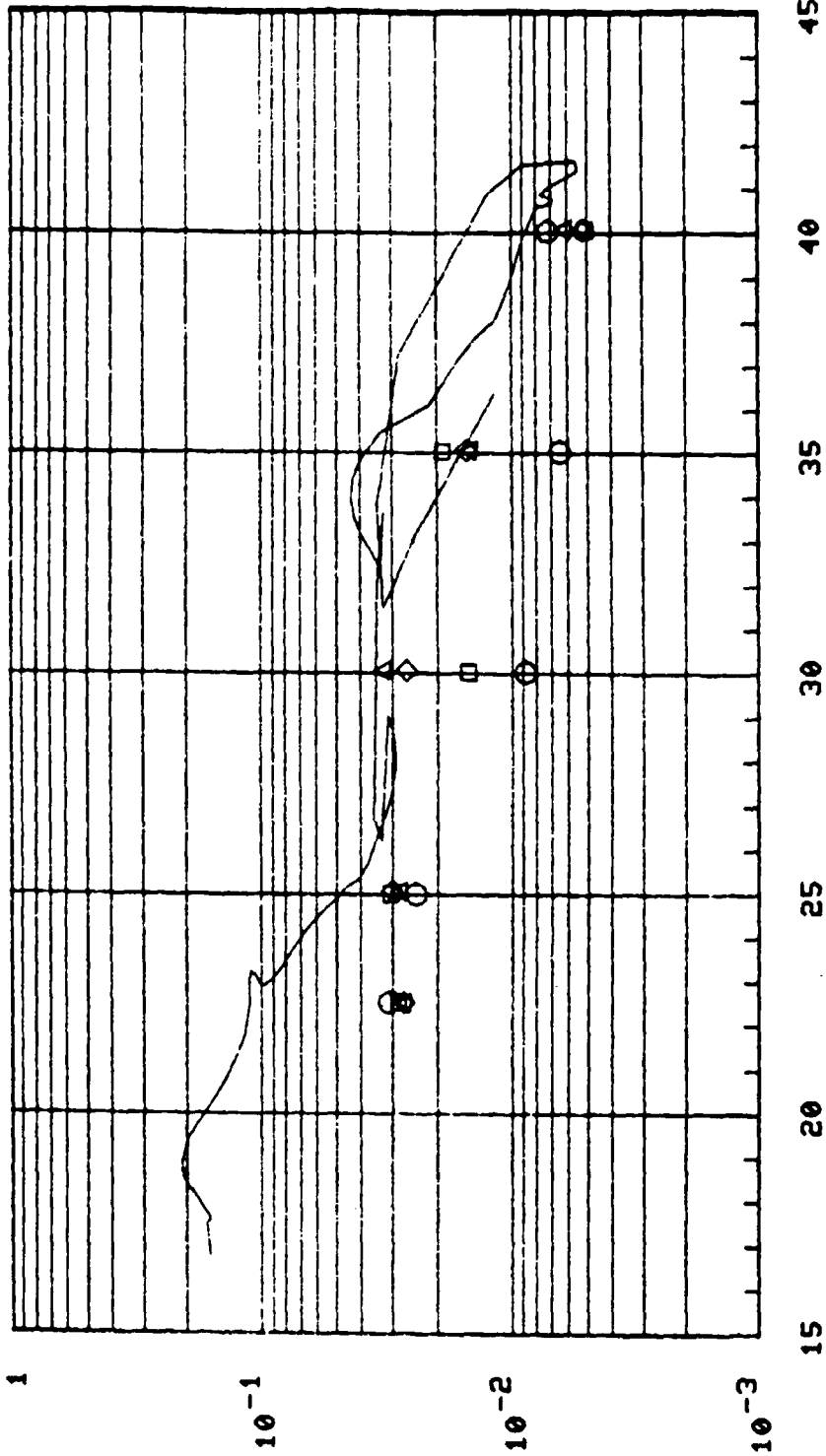
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04-19-83  
BASE TIME - 0774584.000 SEC

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779982A/N-REF 965-1335 SEC

○ AF 0.0175 SCALE RE - 1.0 E06  
 □ AF 0.0175 SCALE RE - 2.0 E06  
 ◇ AF 0.0175 SCALE RE - 3.0 E06  
 × AF 0.0175 SCALE RE - 3.7 E06



FILM COVER - H/H-RWL

B-169

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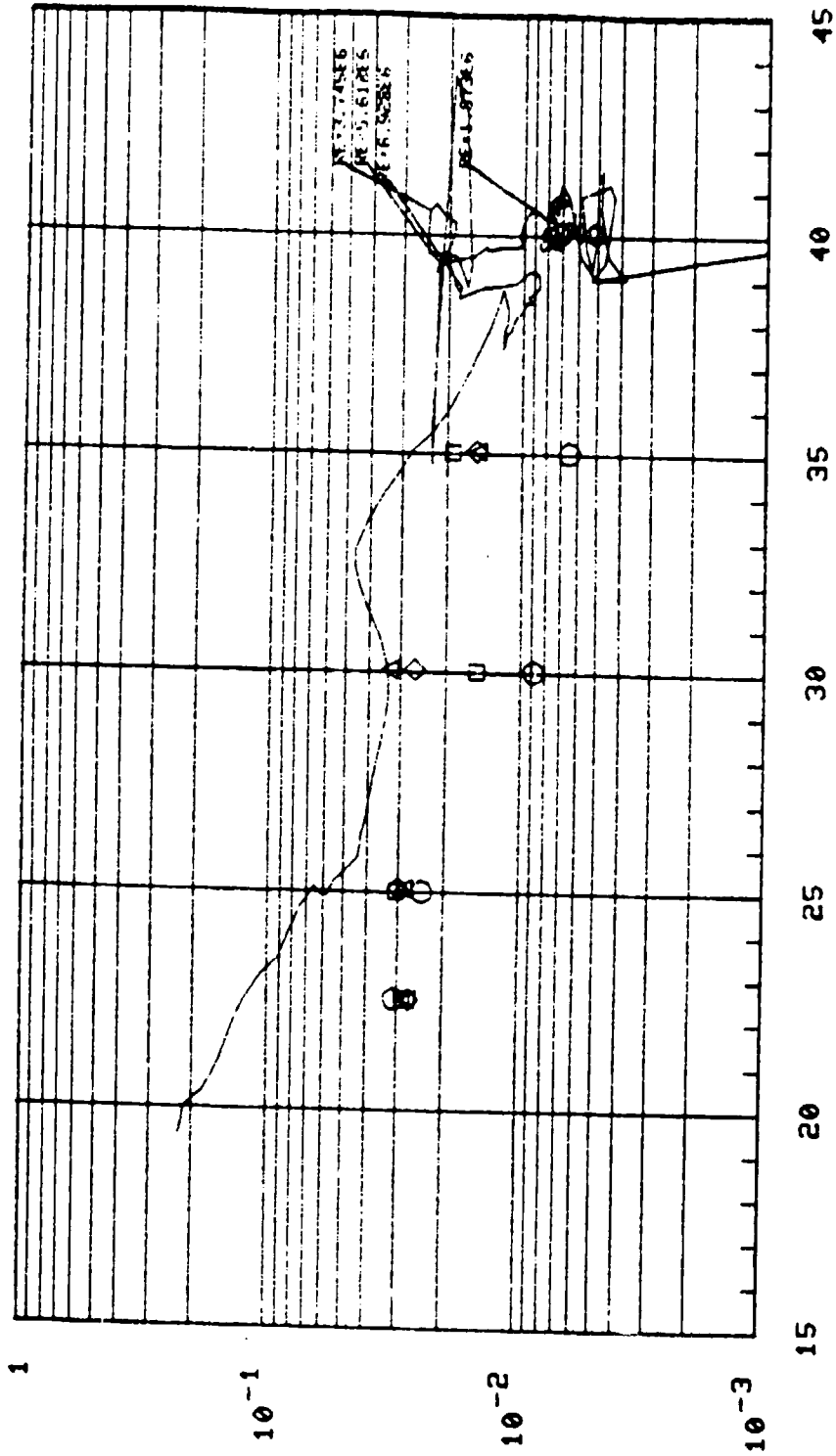
04-19 83  
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ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE - 1.0 E06  
 AF 0.0175 SCALE RE - 2.0 E06  
 AF 0.0175 SCALE RE - 3.0 E06  
 AF 0.0175 SCALE RE - 3.7 E06

○ □ ◇  
 ○ □ ◇

----- V07T9982A/H-REF 150-1350 SEC



FILM COEFFICIENT -- H/H-REF

B-170

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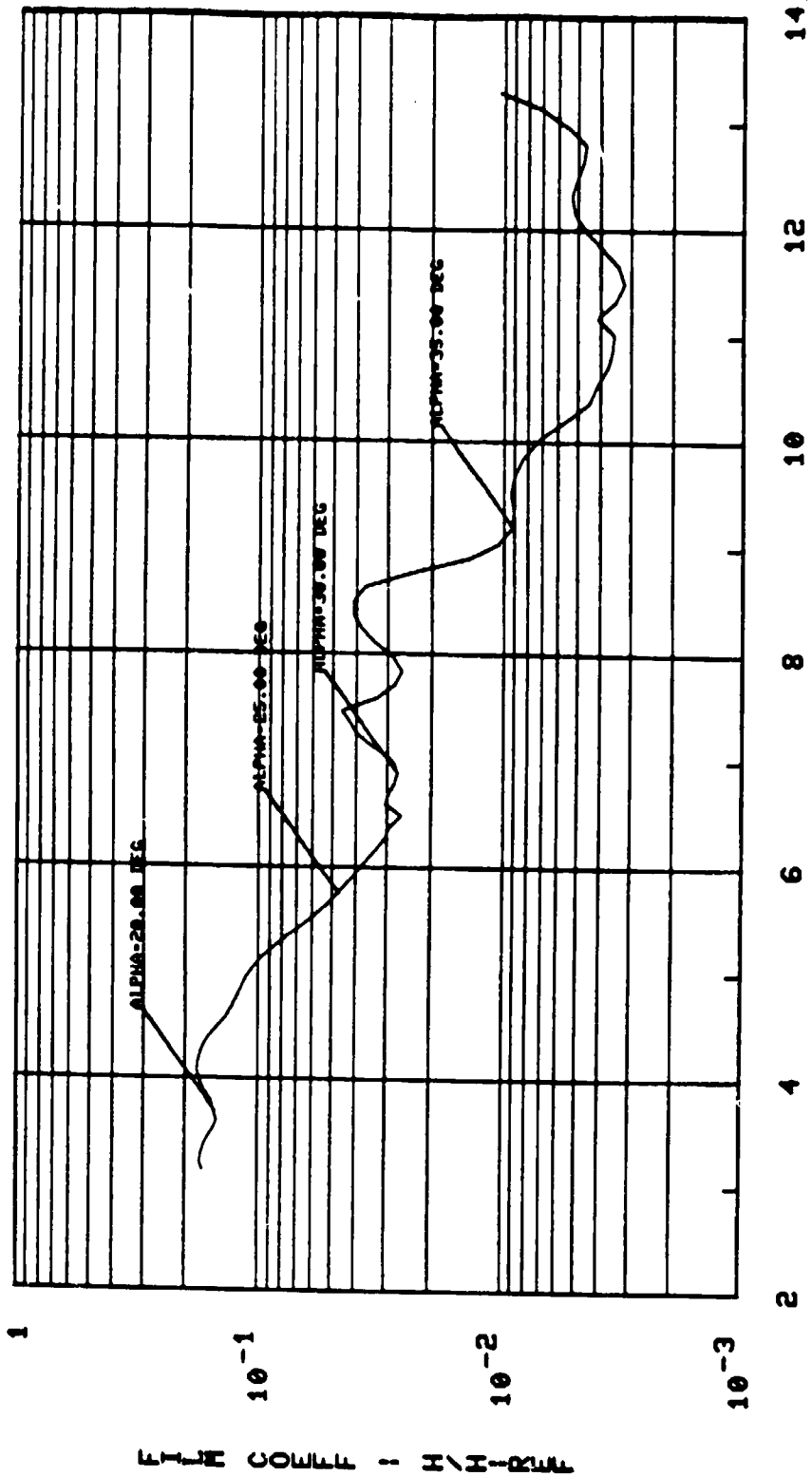
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ANGLE-OF-ATTACK - DEG

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/N-REF 1065-1480 SEC

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BASE TIME - 0000744.000 SEC.

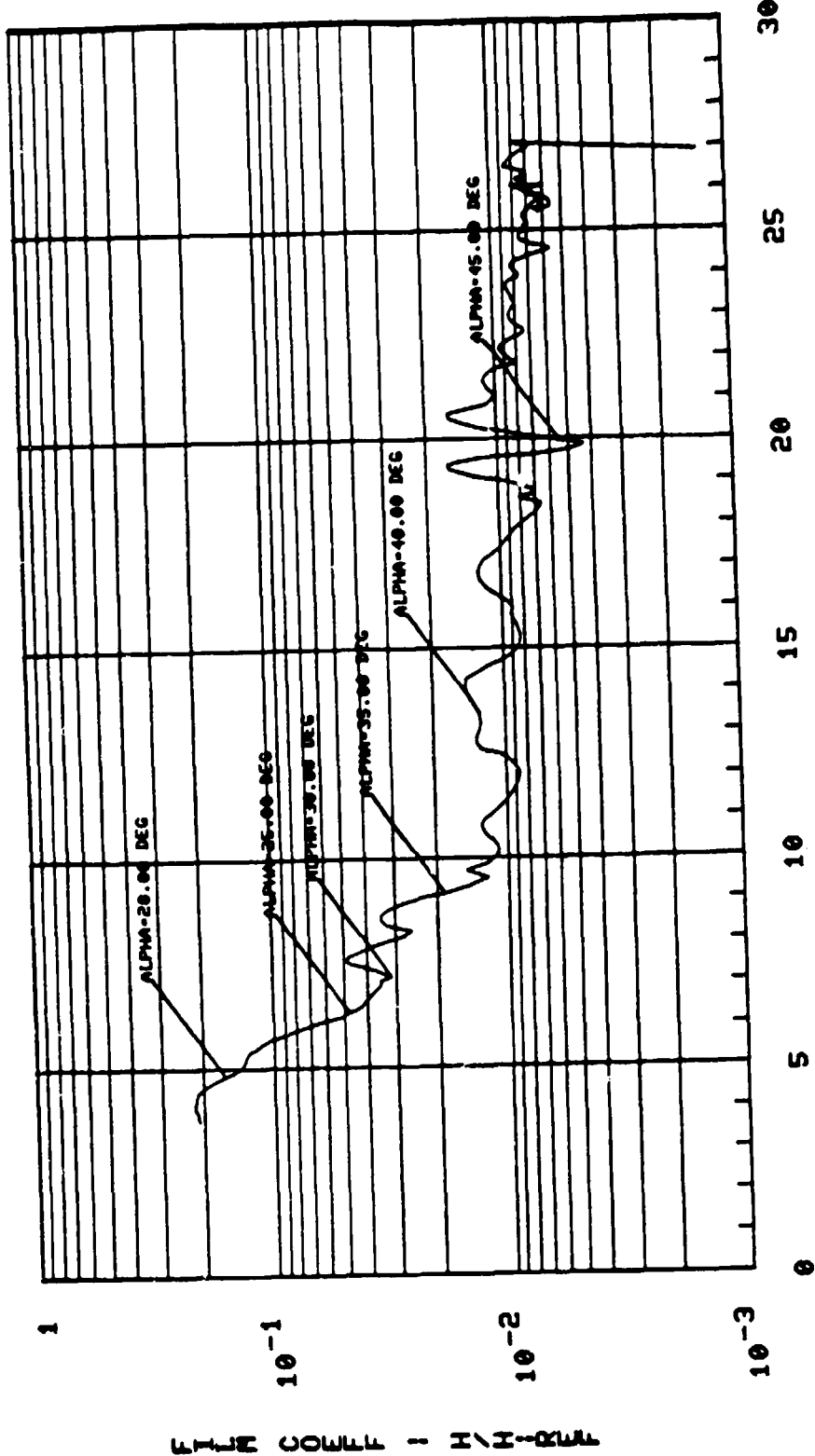
04/20/83

TIME COEFF - H/H-REF

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071982A/N-REF 200-1480 SEC

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04/20/83  
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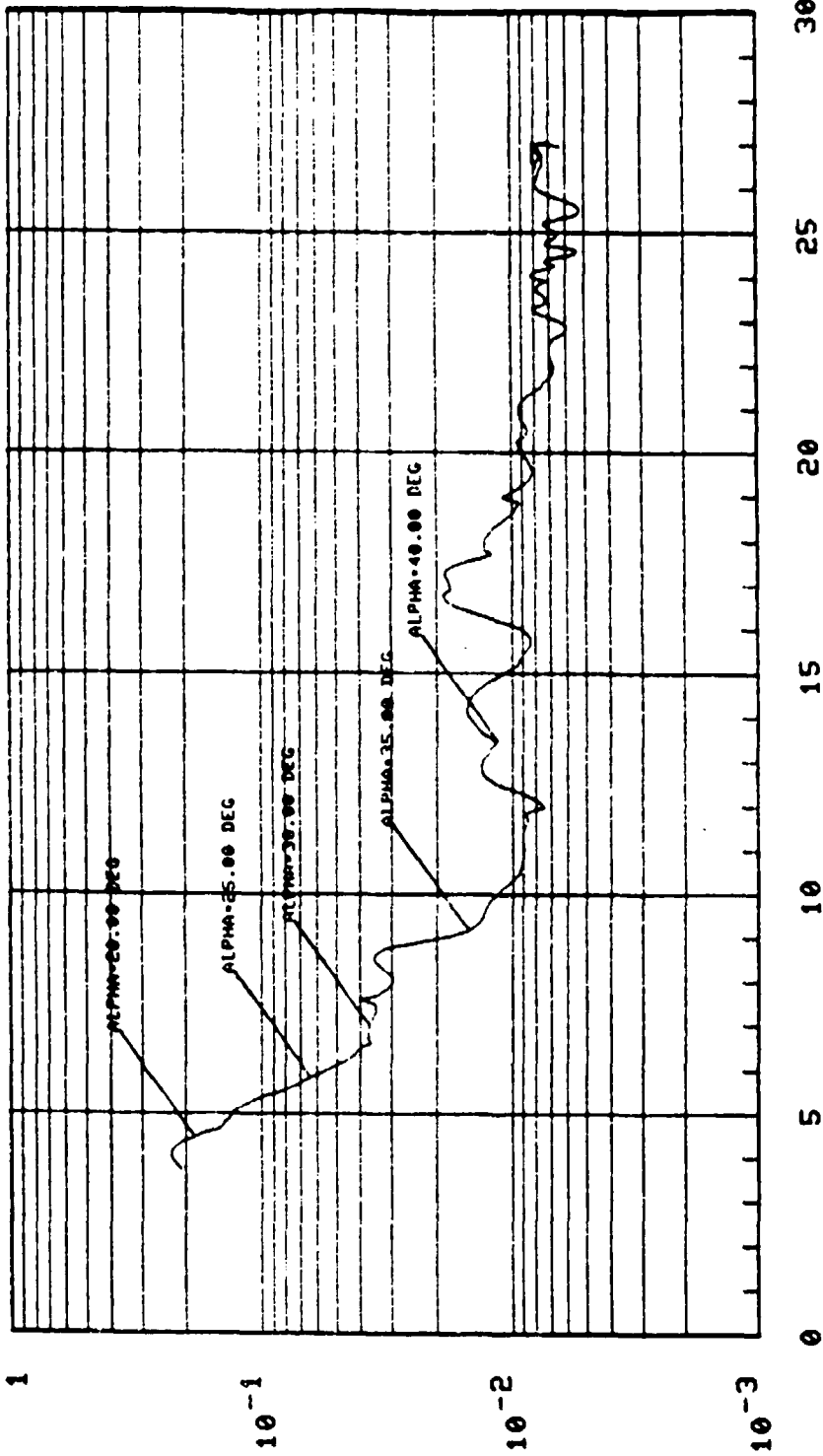
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FILE COVER - H/H-RUL

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0773982A/H-REF 200-1380 SEC

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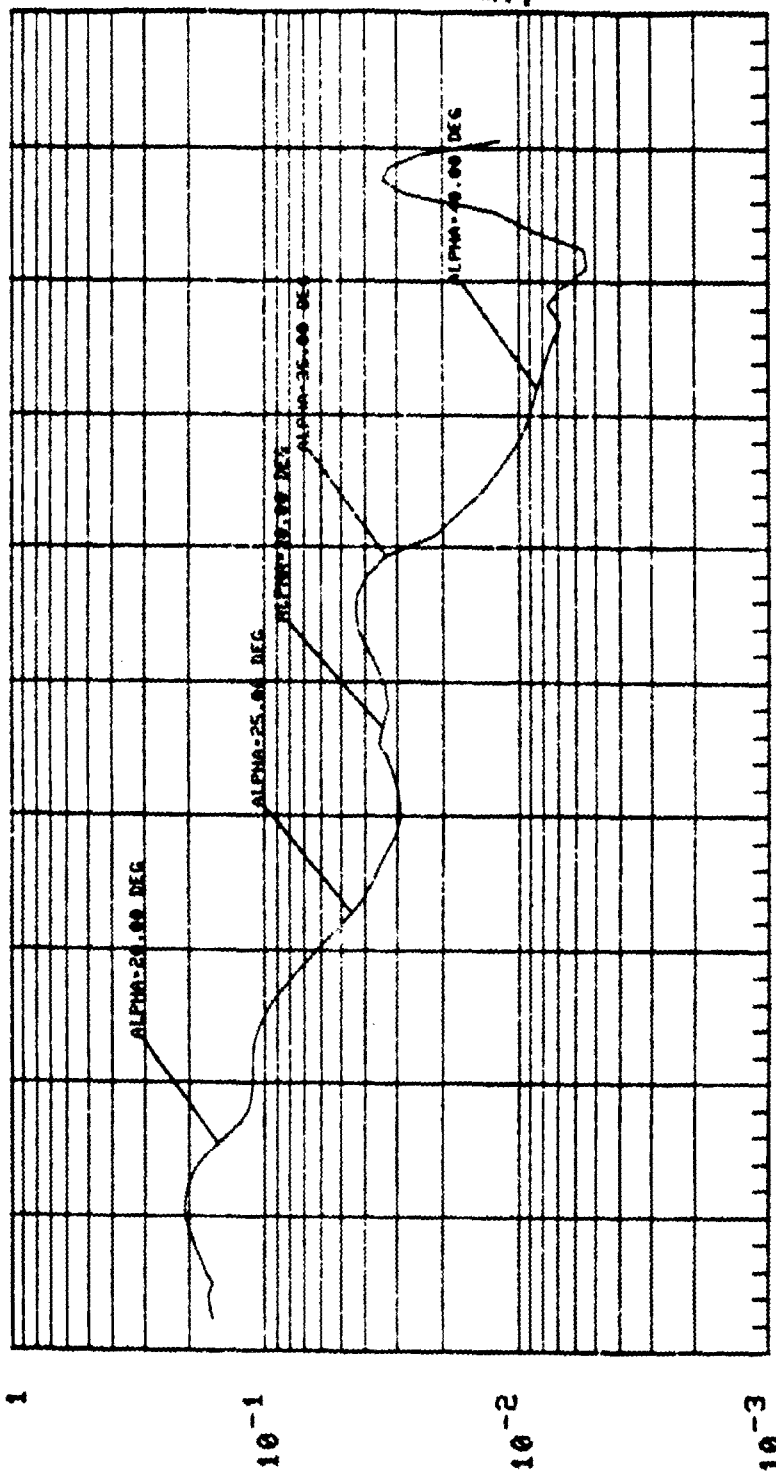
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MACH NUMBER



STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719982A/M-DEF 965-1335 SEC



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LINE COVER - H/H-KUM

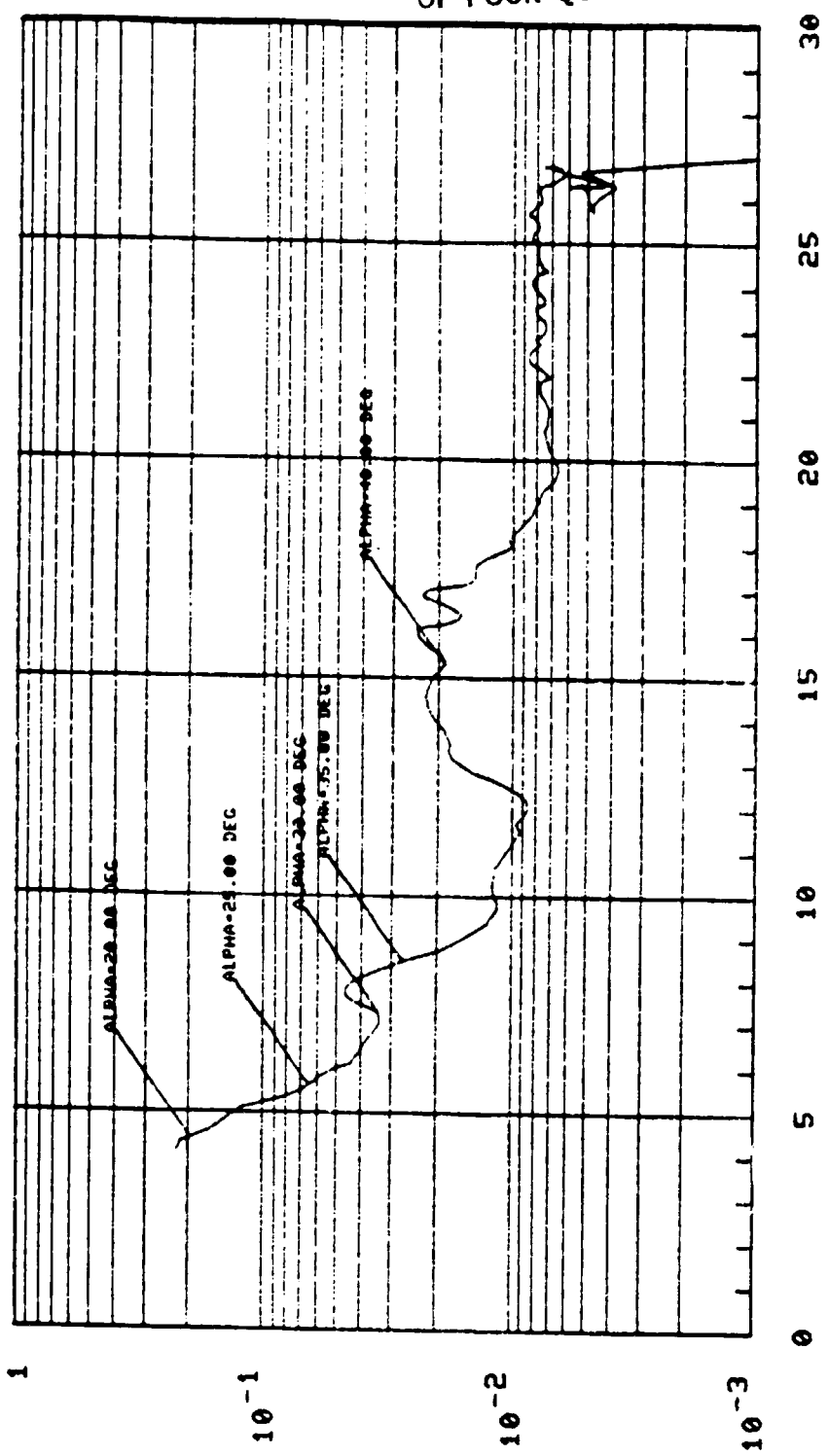
04/19/83

MACH NUMBER

BASE TIME - 1000023.000 SEC.

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T982A/M-REF 150-1750 SEC



TIME COEFF - H/H-REF

B-175

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04 18 83  
BASE TIME - 27098591.000 SEC.

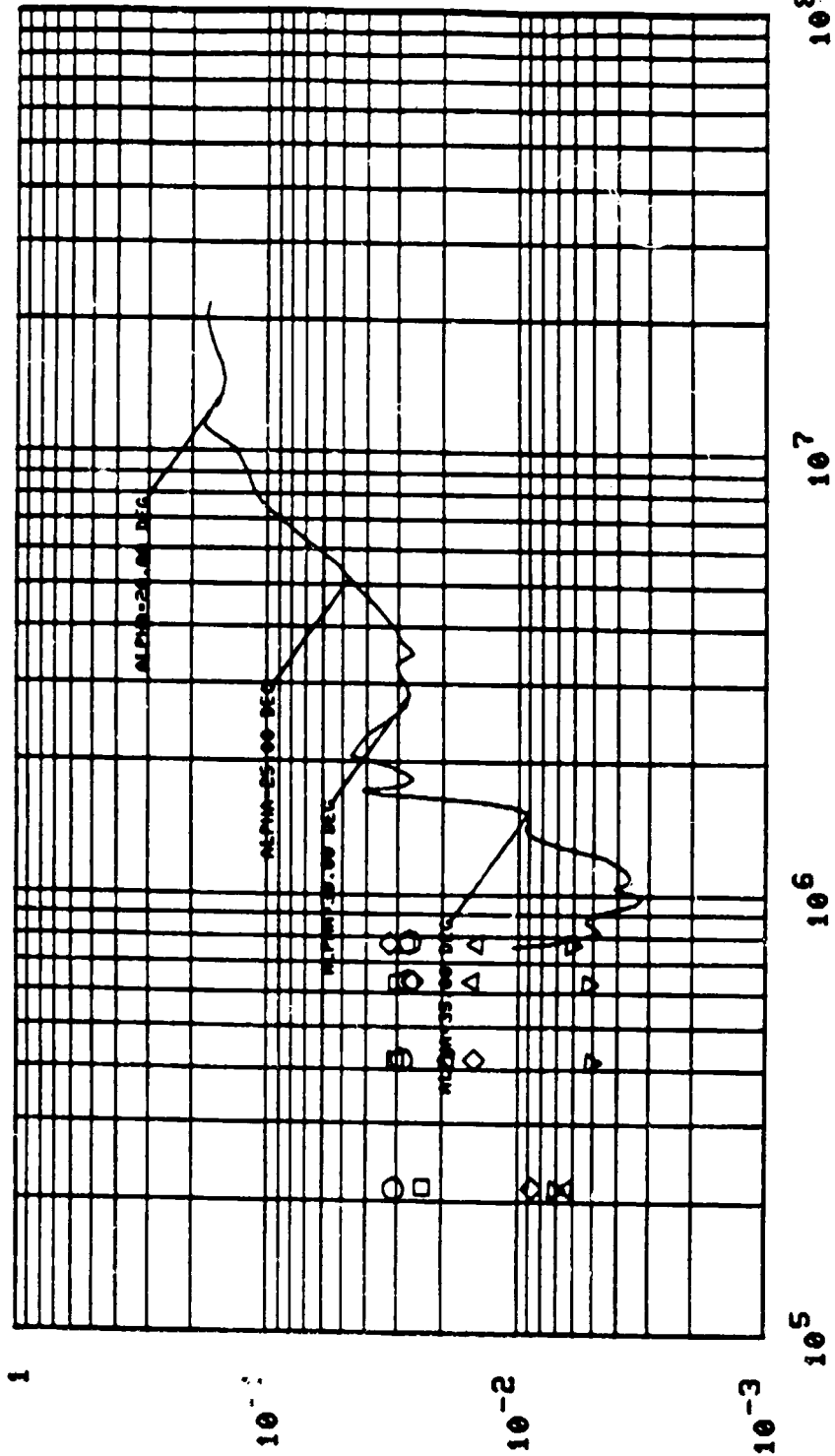
MACH NUMBER

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ U077982A/M-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

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04/20/83  
BASE TIME - 09045744.000 SEC.

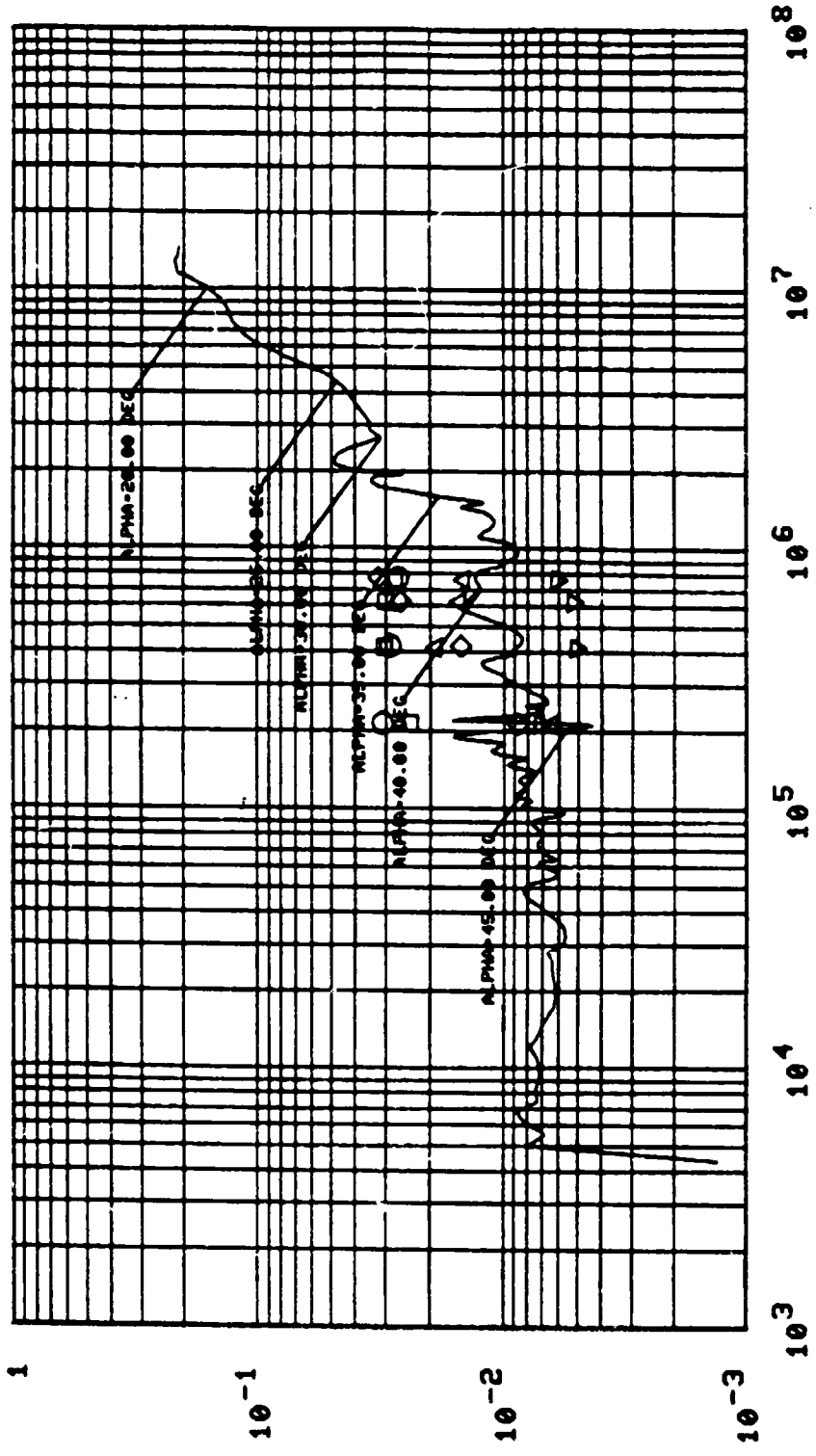
REYNOLDS NUMBER (NS)

TIME COEFF - 1/N-2/EL

# STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

U0719982A/H-REF 200-1480 SEC



LIFT COEFF - H/H-RUN

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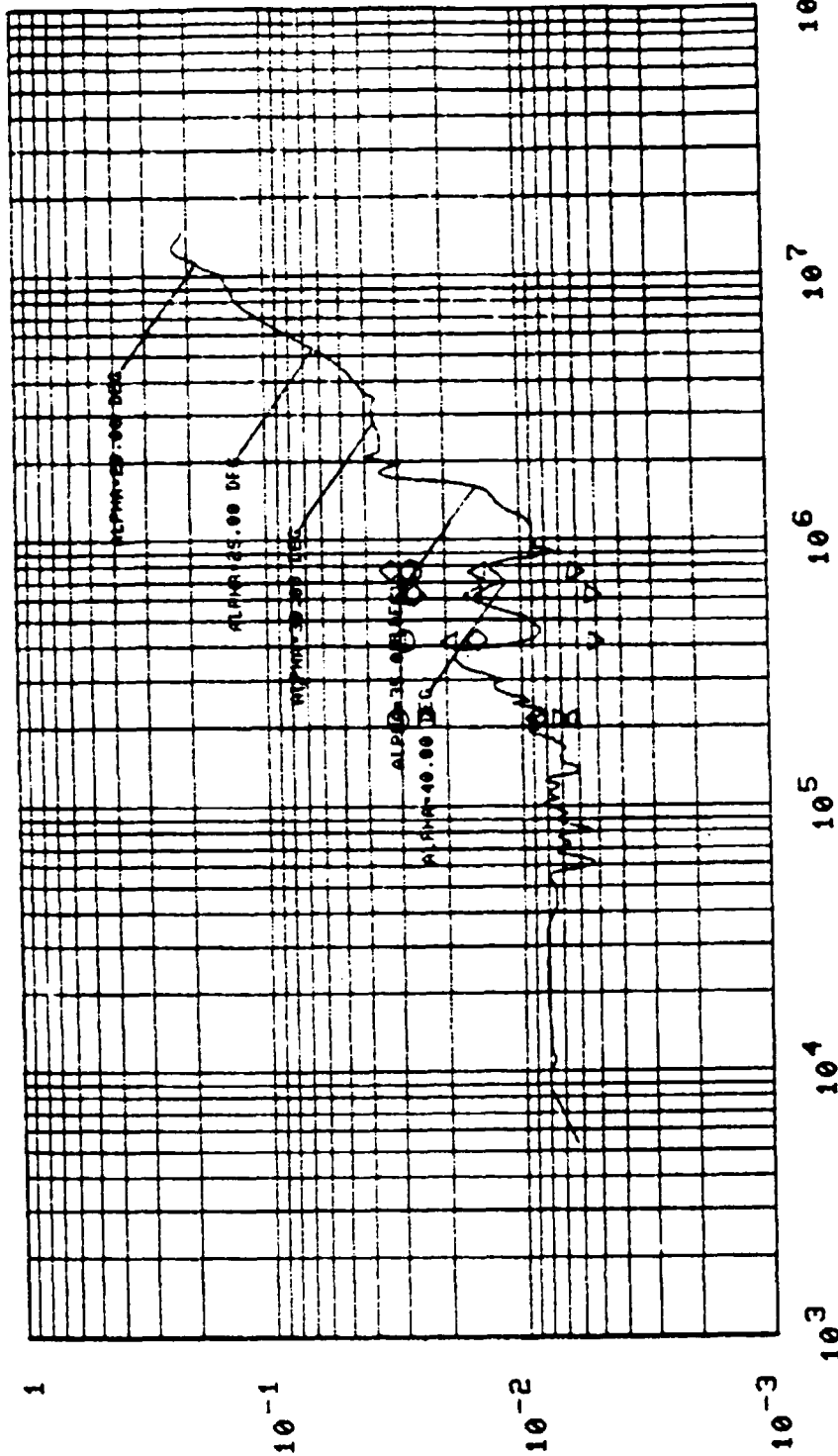
REYNOLDS NUMBER (NS)      04/20/83  
 BASE TIME - 27550236.000 SEC.

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 200-1380 SEC

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
- AF ALPHA = 30.0 DEGREES
- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES

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FILE CODE -- H-REF

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B-178

04.19.83  
BASE TIME = 07:45:34.000 SEC.

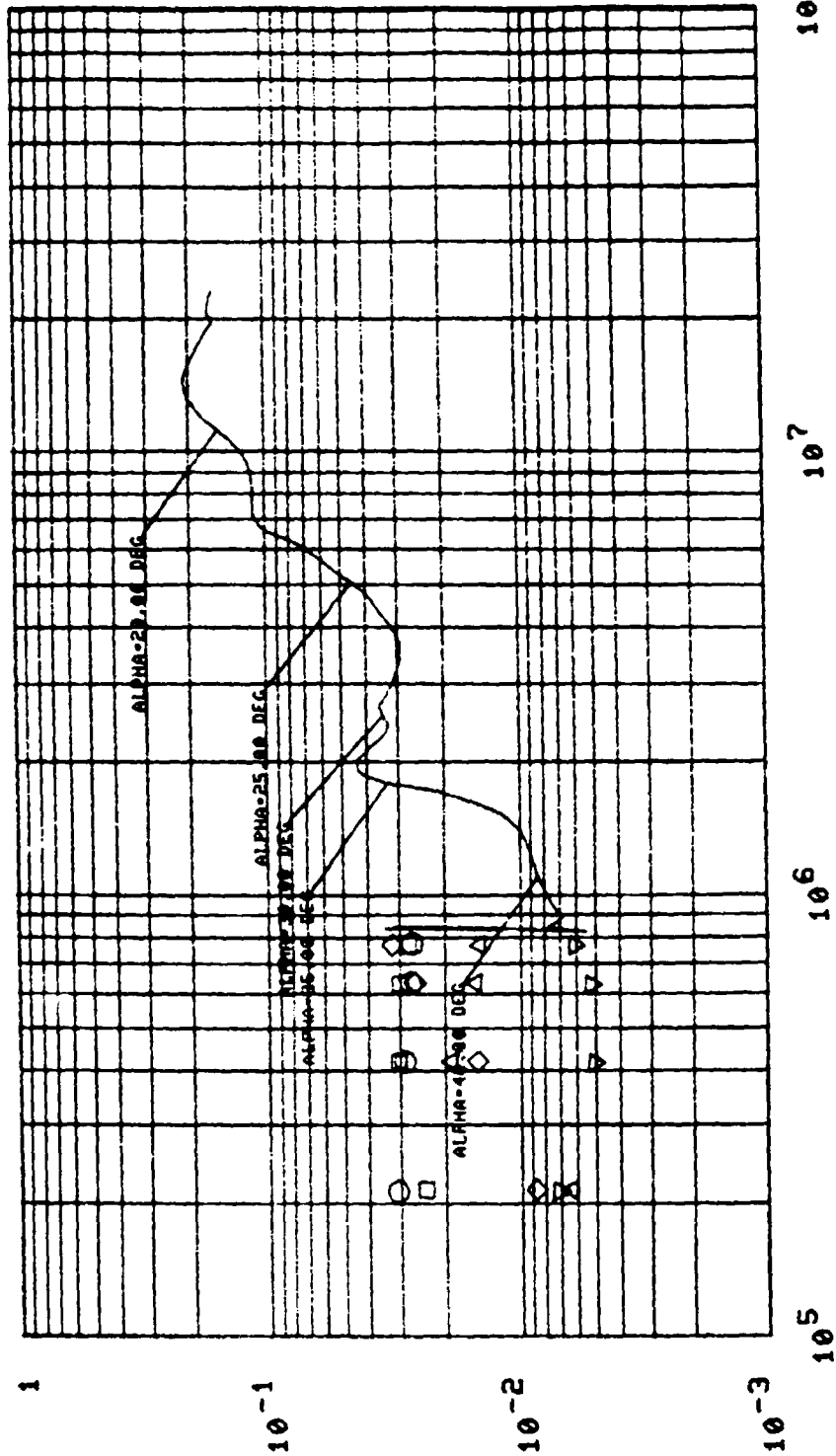
REYNOLDS NUMBER (NS)

# STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ ◇ △

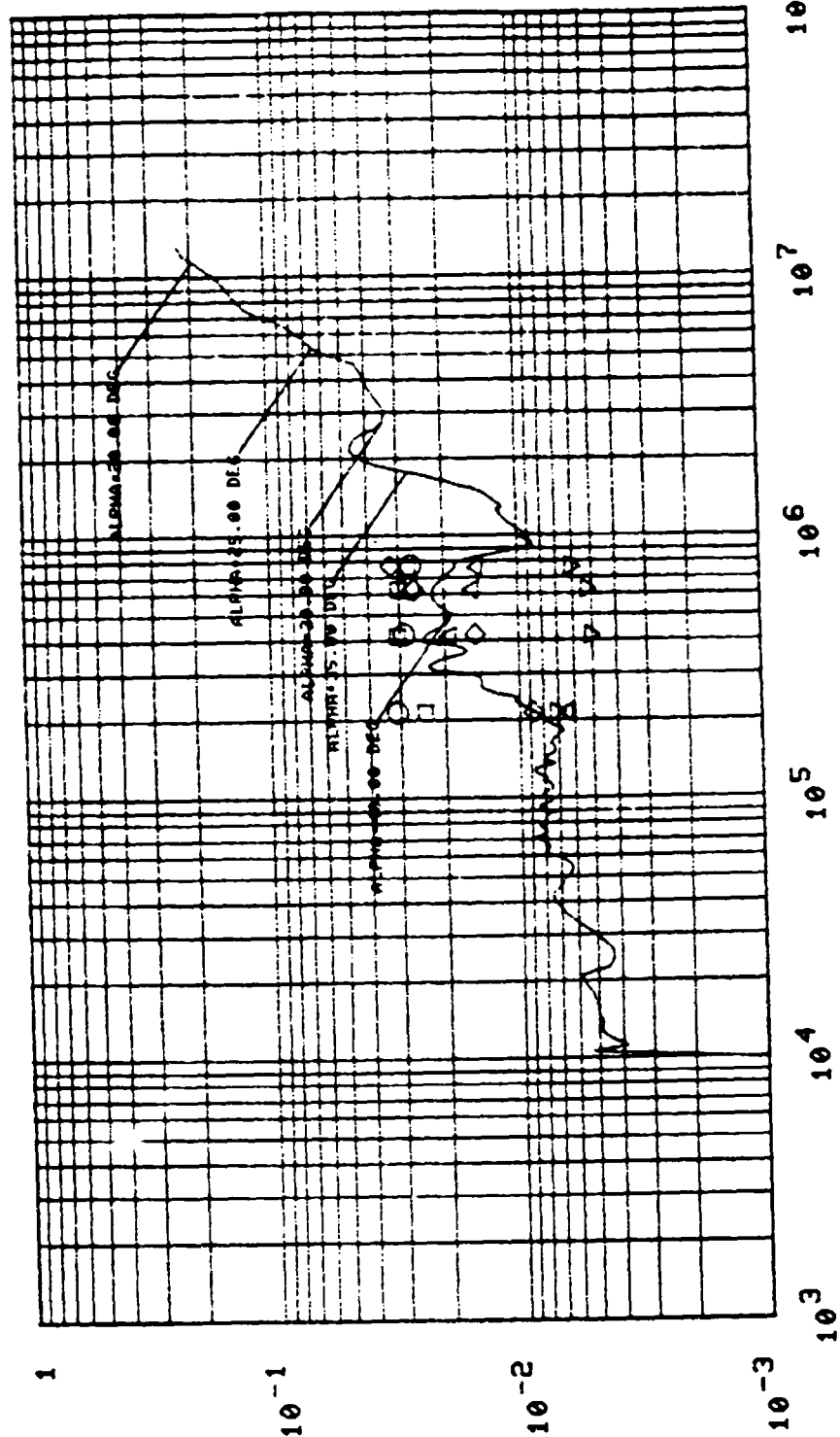


TIME COEFFICIENT - H/H-REF

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



TIME COEFF - H/H-REF

B-180

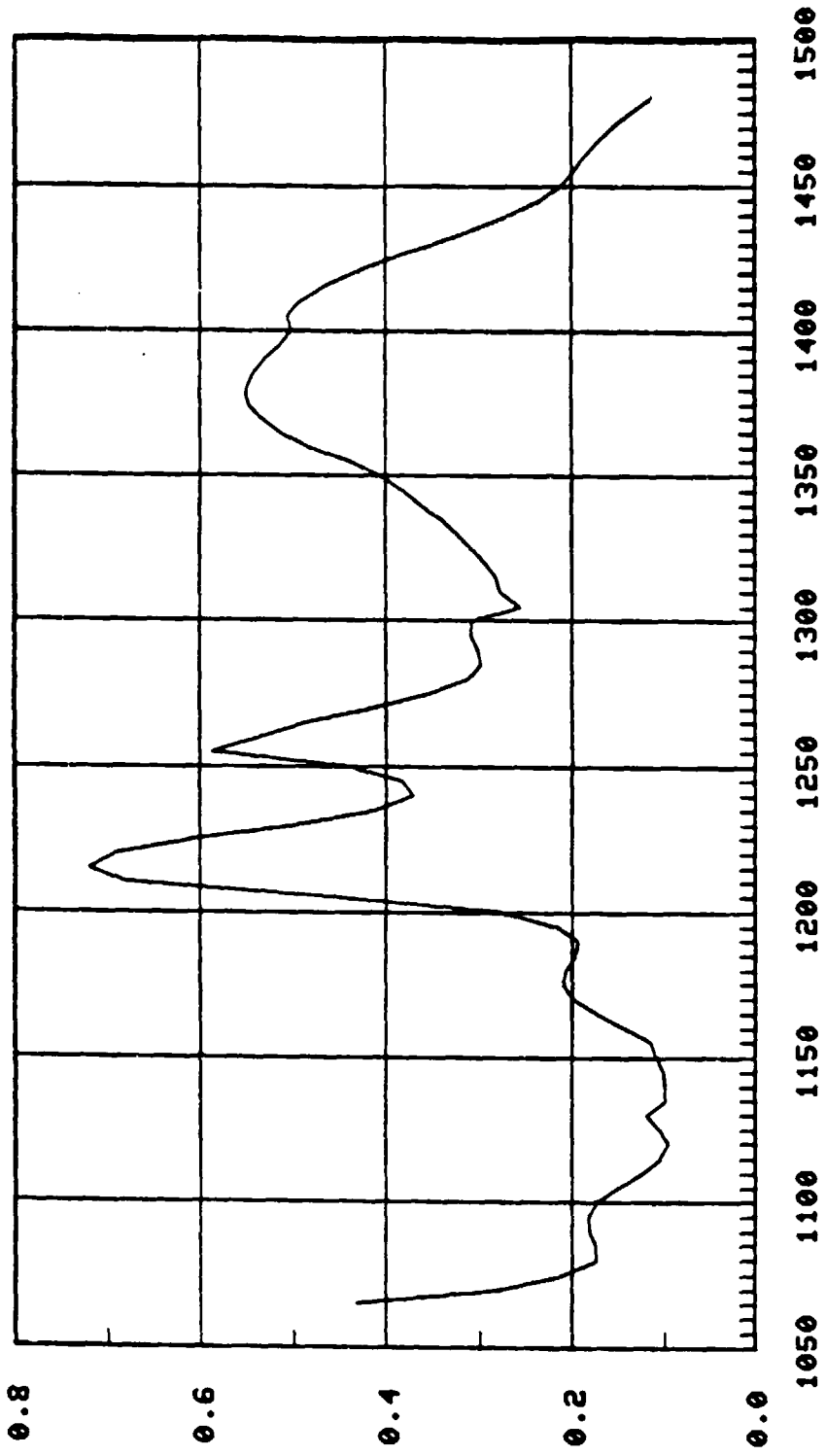
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04/18/83  
BASE TIME - 27695591.000 SEC.

REYNOLDS NUMBER (NS)

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779982A

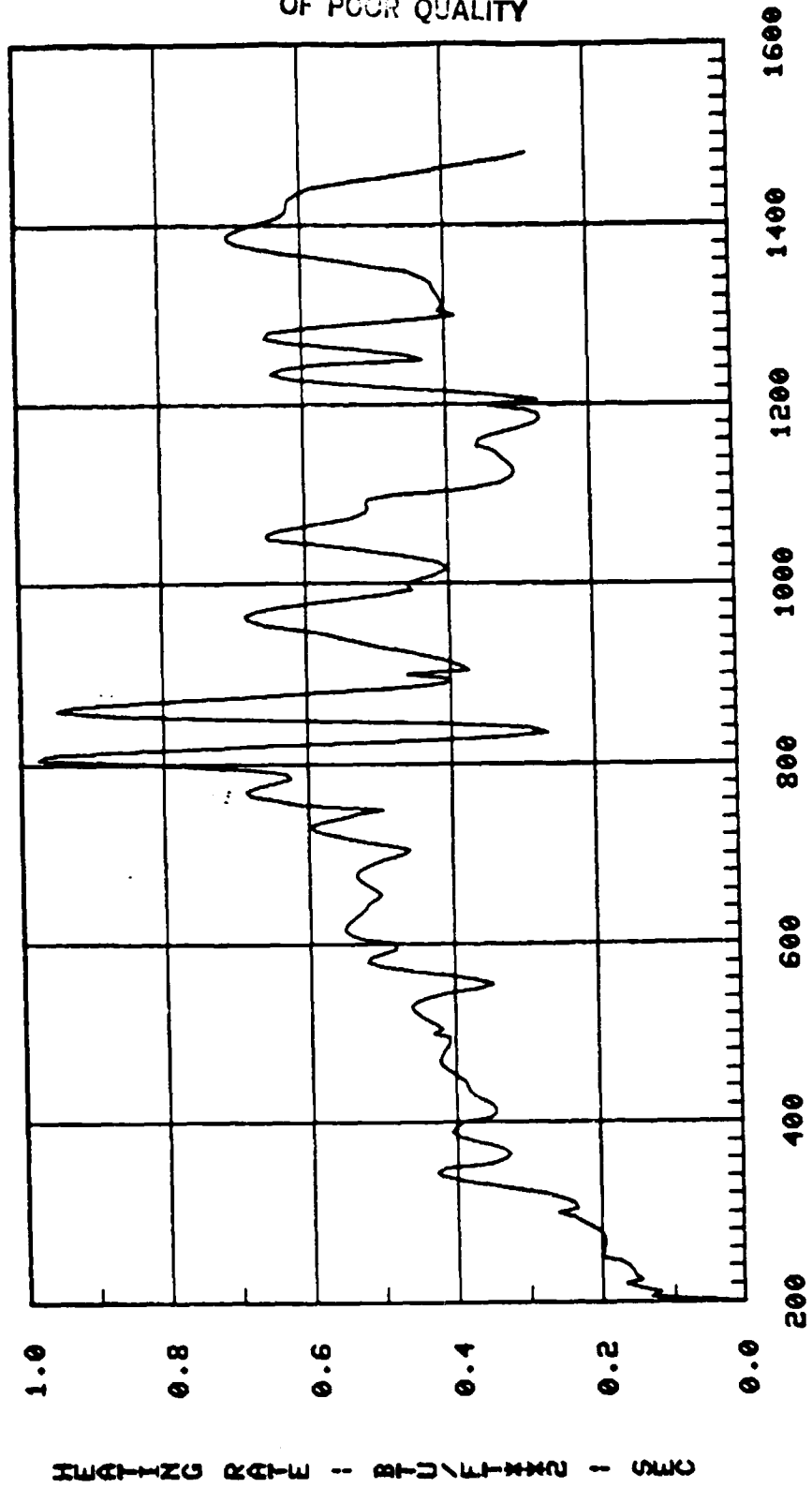


HEATING RATE - BTU/FT-HRS - SWC



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U671982A



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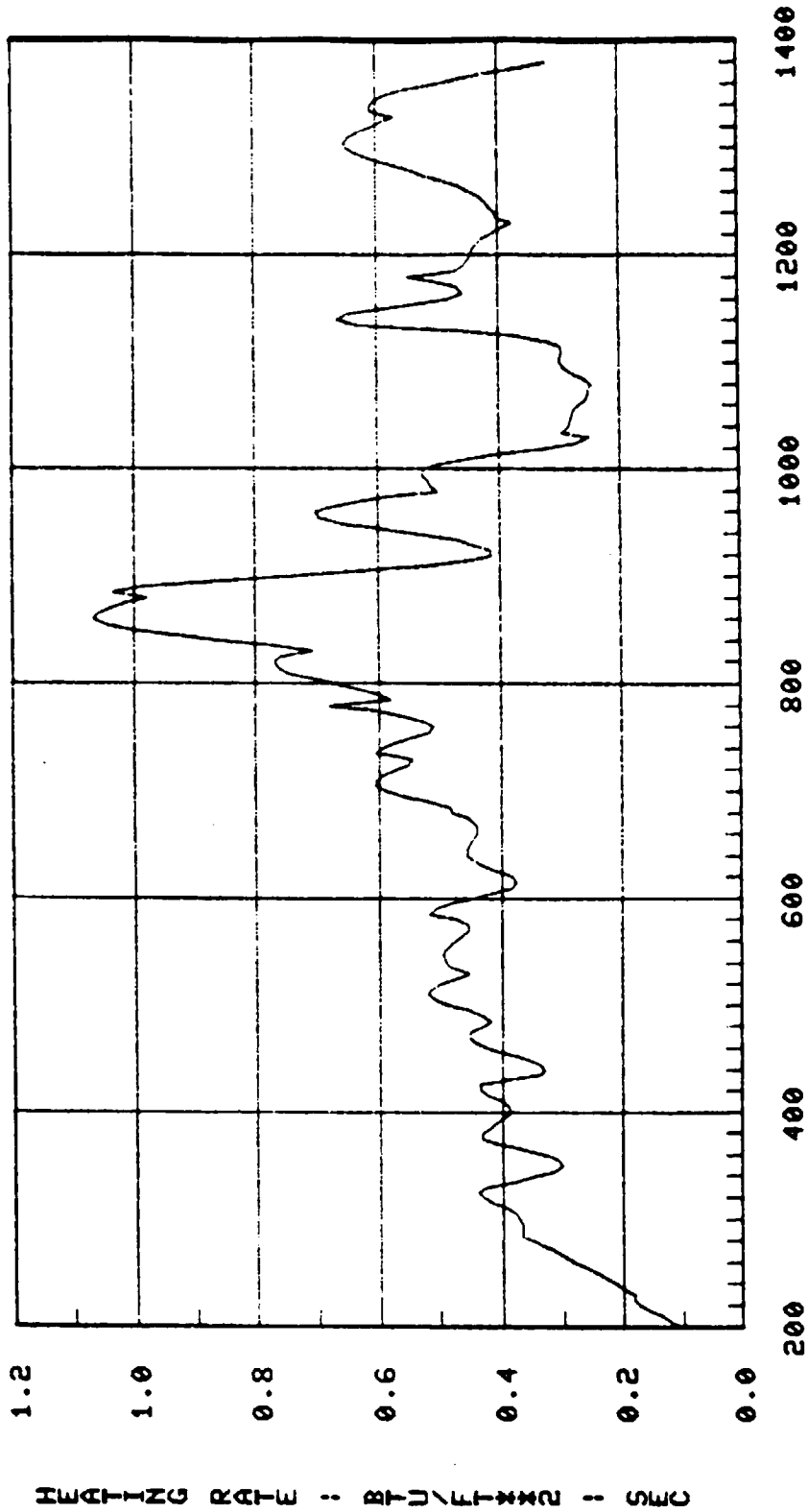
04/20/83

TIME - SECONDS

HEATING RATE - BTU/FT/HR - SEC

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

V07T9982A



HEATING RATE :: BTU/FT\*\*2 :: SEC

B-183

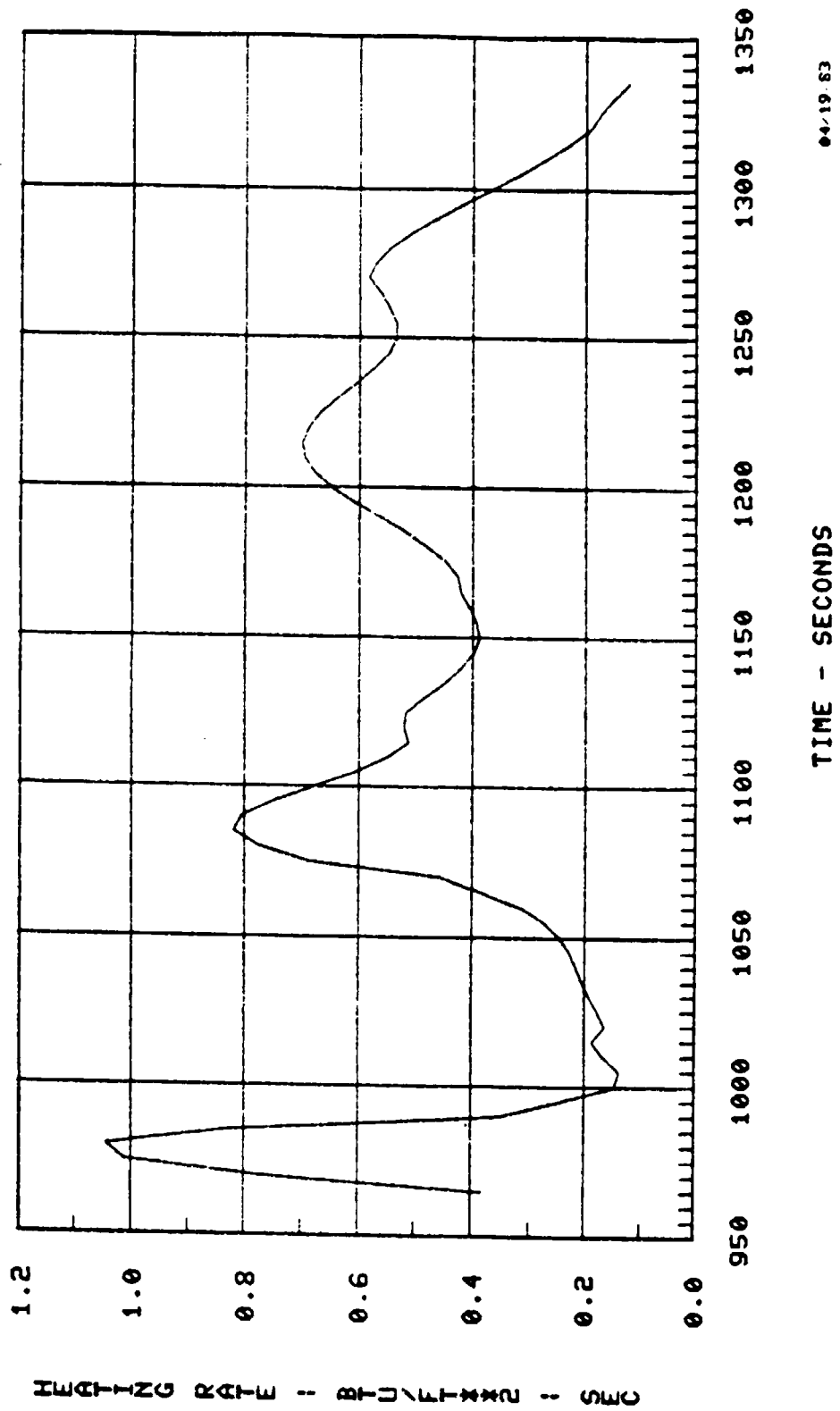
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TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

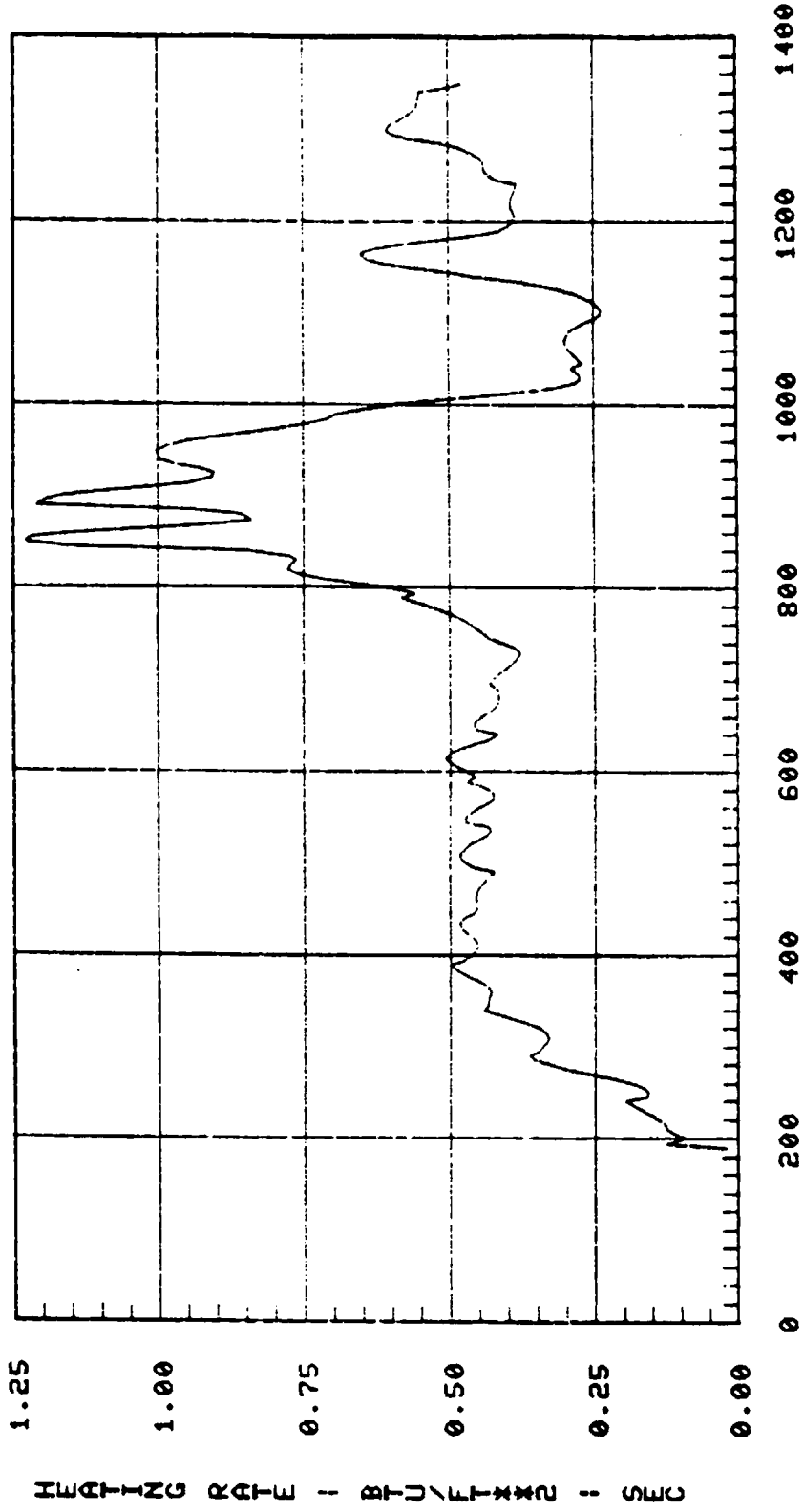
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ORIGINAL DRAWING  
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U677982A



HEATING RATE - BTU/FT\*\*2 - SEC

B-185

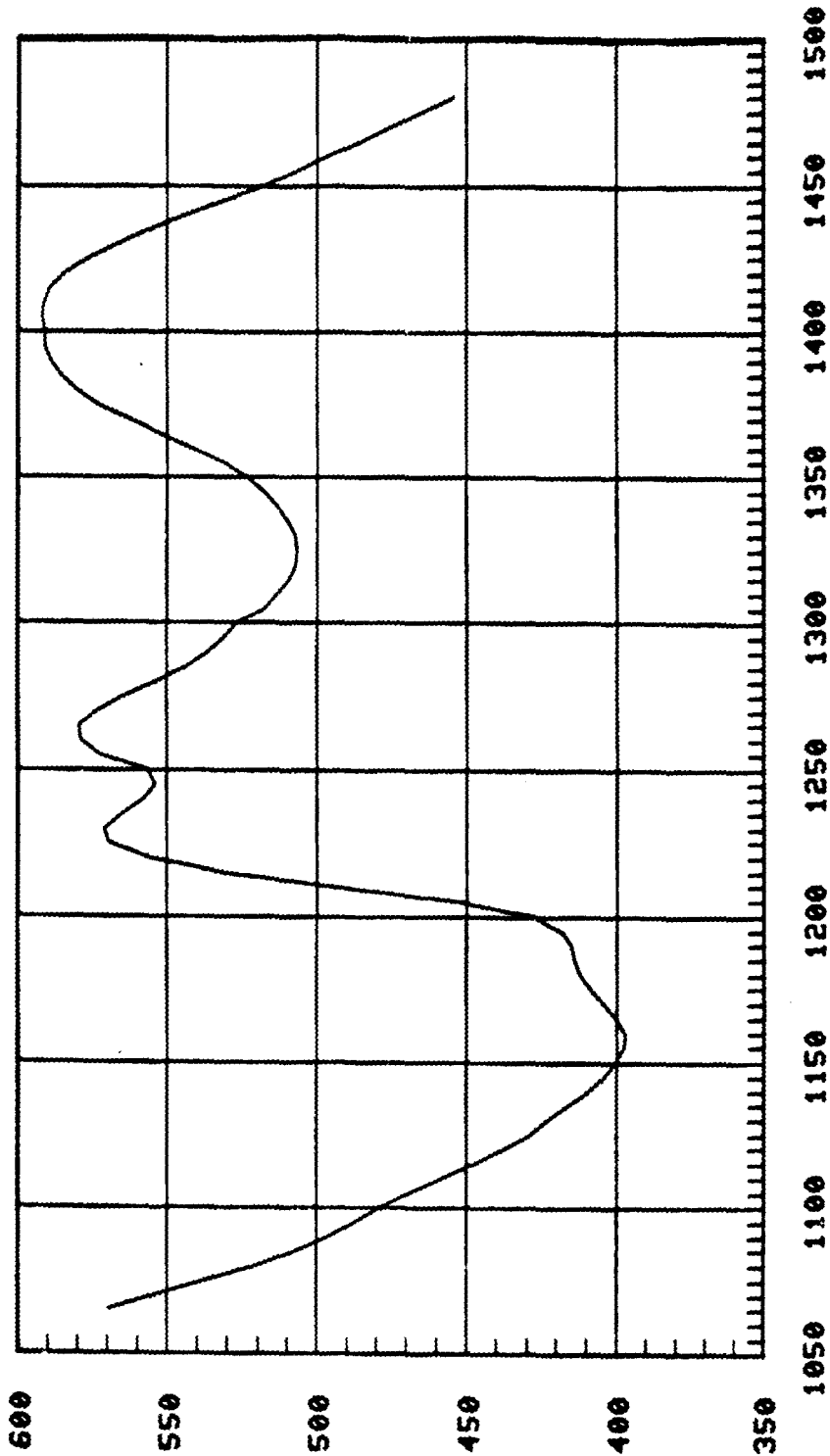
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TIME - SECONDS

04-15-53

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A



FUELWEIGHT (LBS) - F

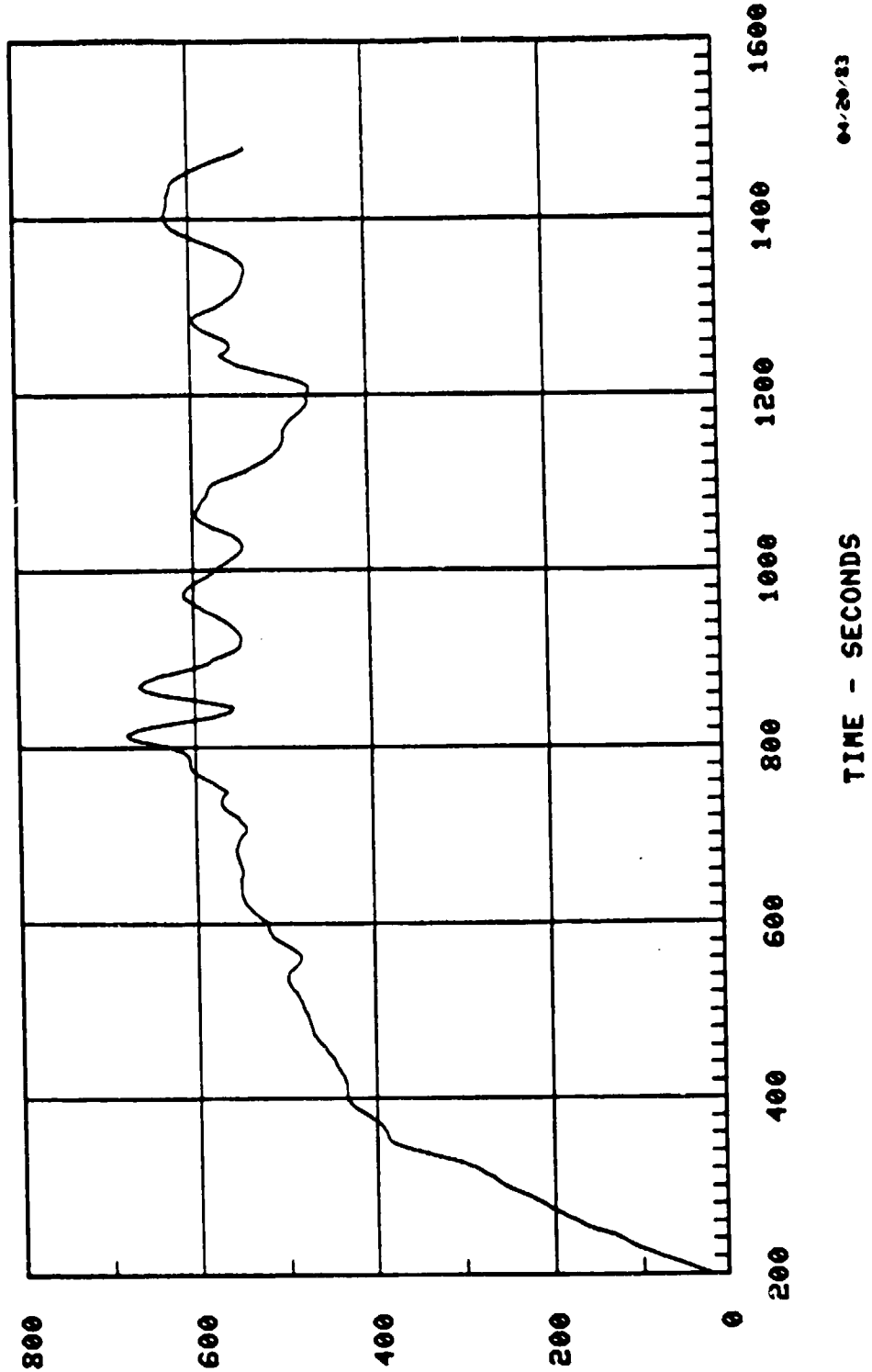
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TIME - SECONDS

04-20-83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779982A



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04/20/83

TIME - SECONDS

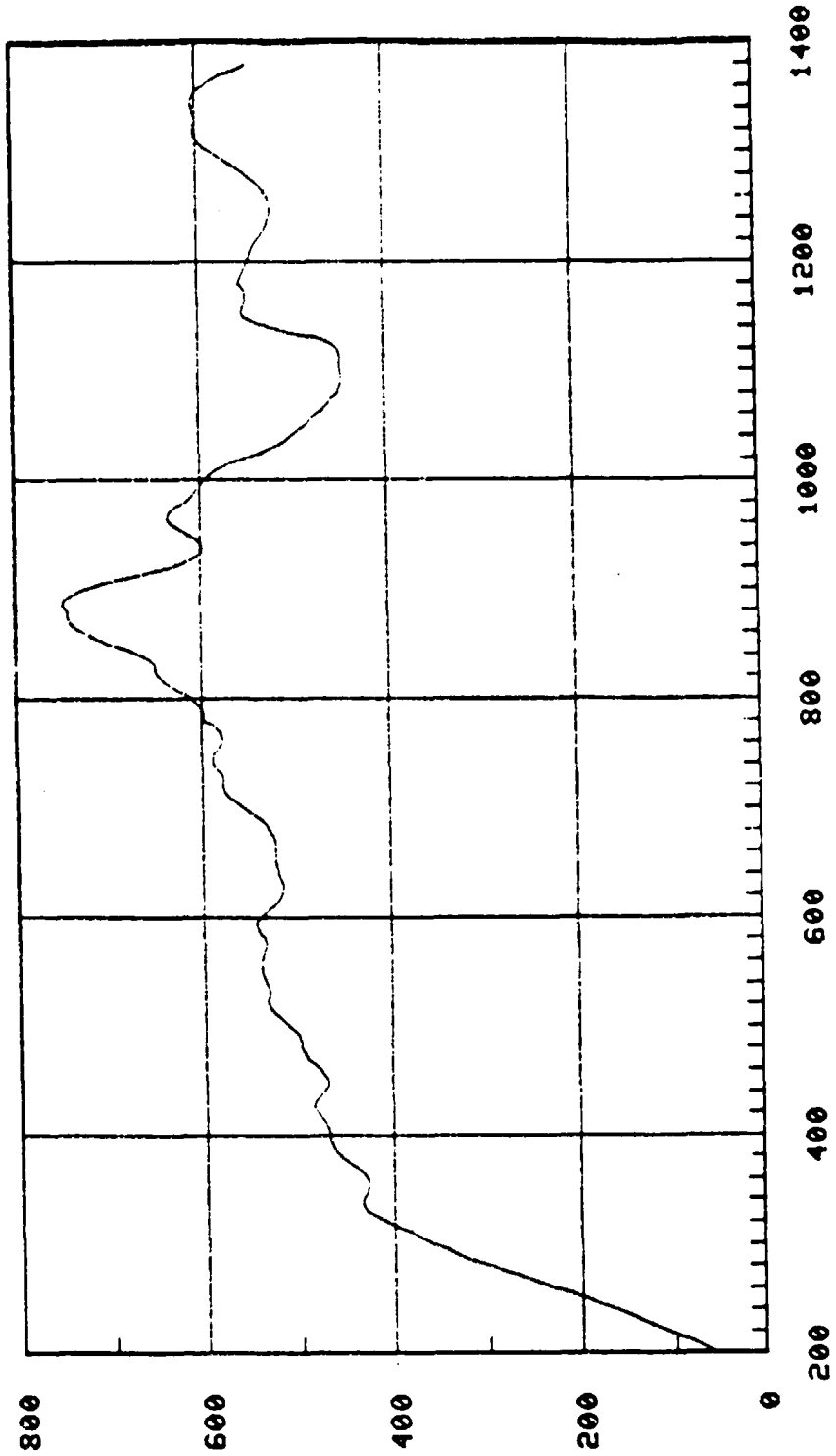
F - FREQUENCY

B-187

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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9982A



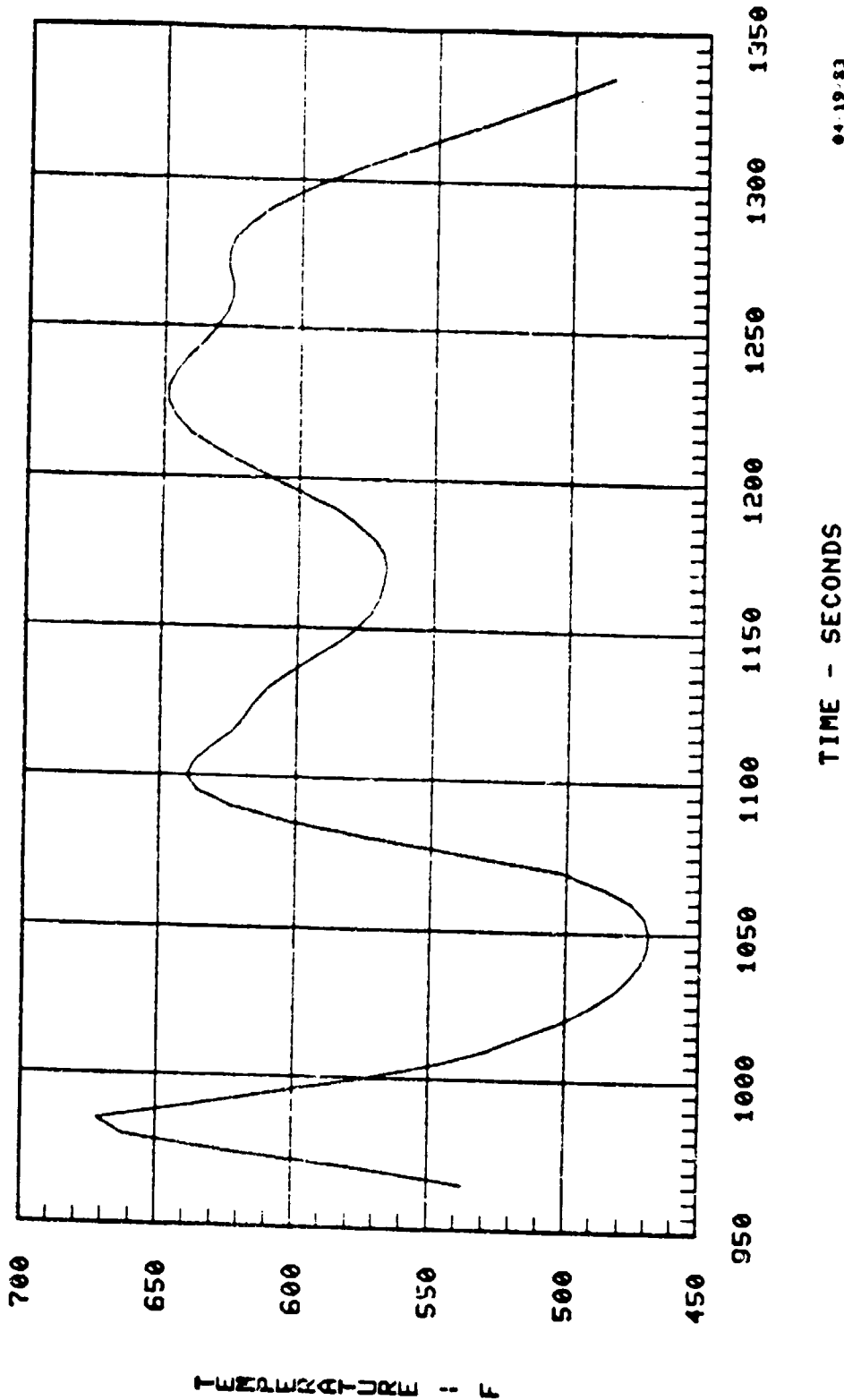
04 19 83

TIME - SECONDS

FREQUENCY - Hz

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9982A

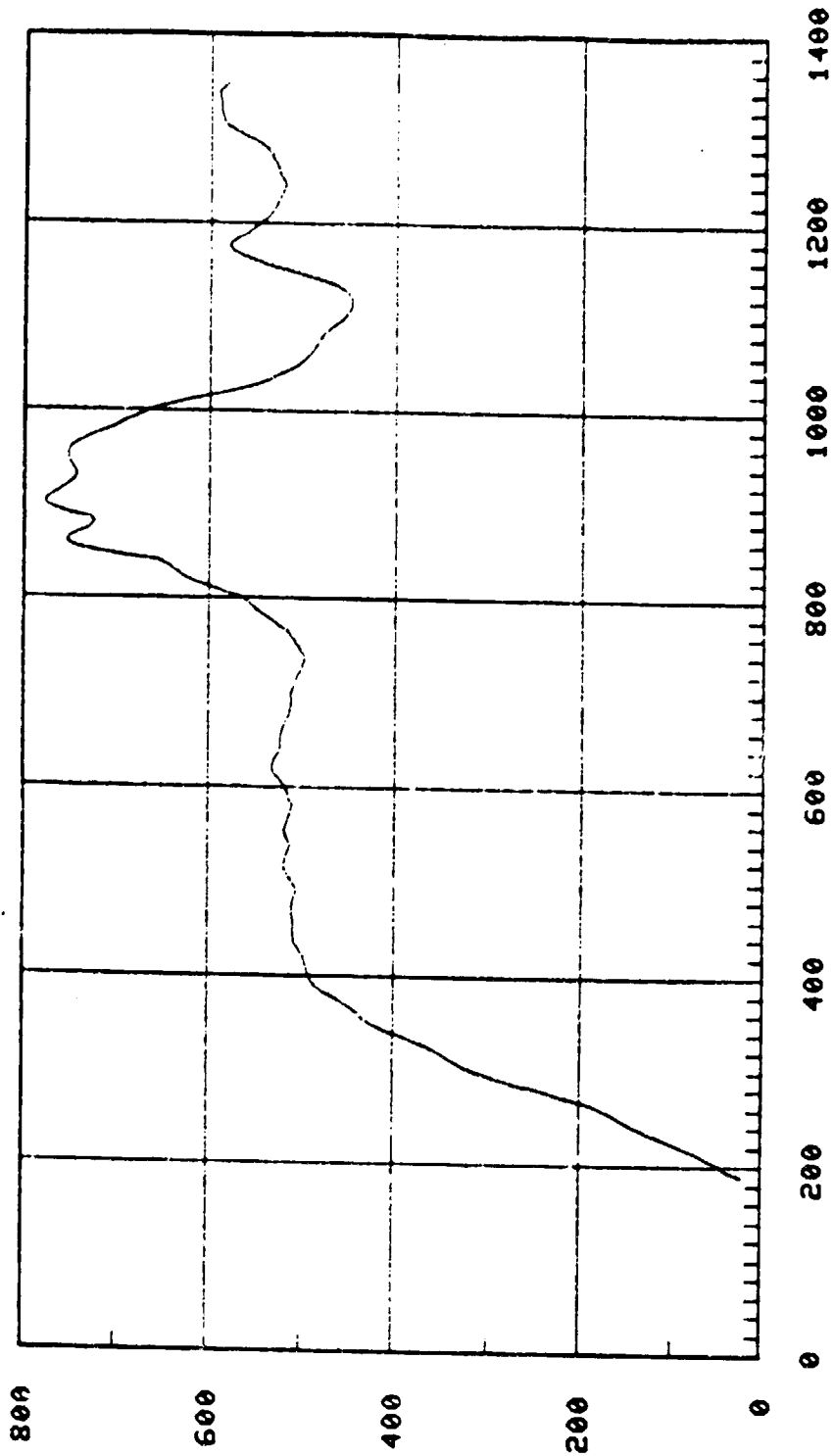


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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U077992A



PERCENTAGE -- F

B-190

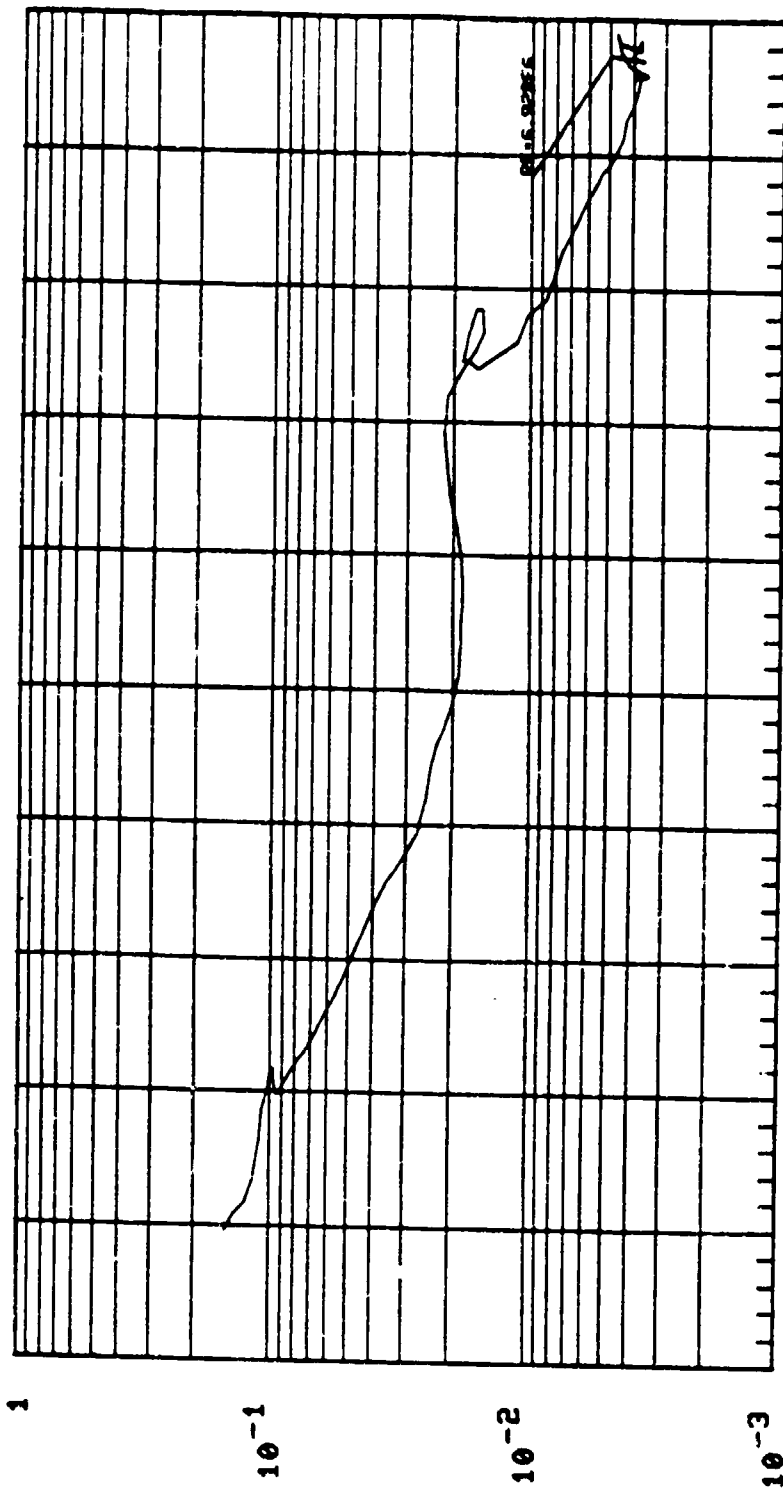
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TIME - SECONDS

04 18 83

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V07T9984A/N-REF 1065-1480 SEC



FLIGHT POWER - H/H-RUN

B-191

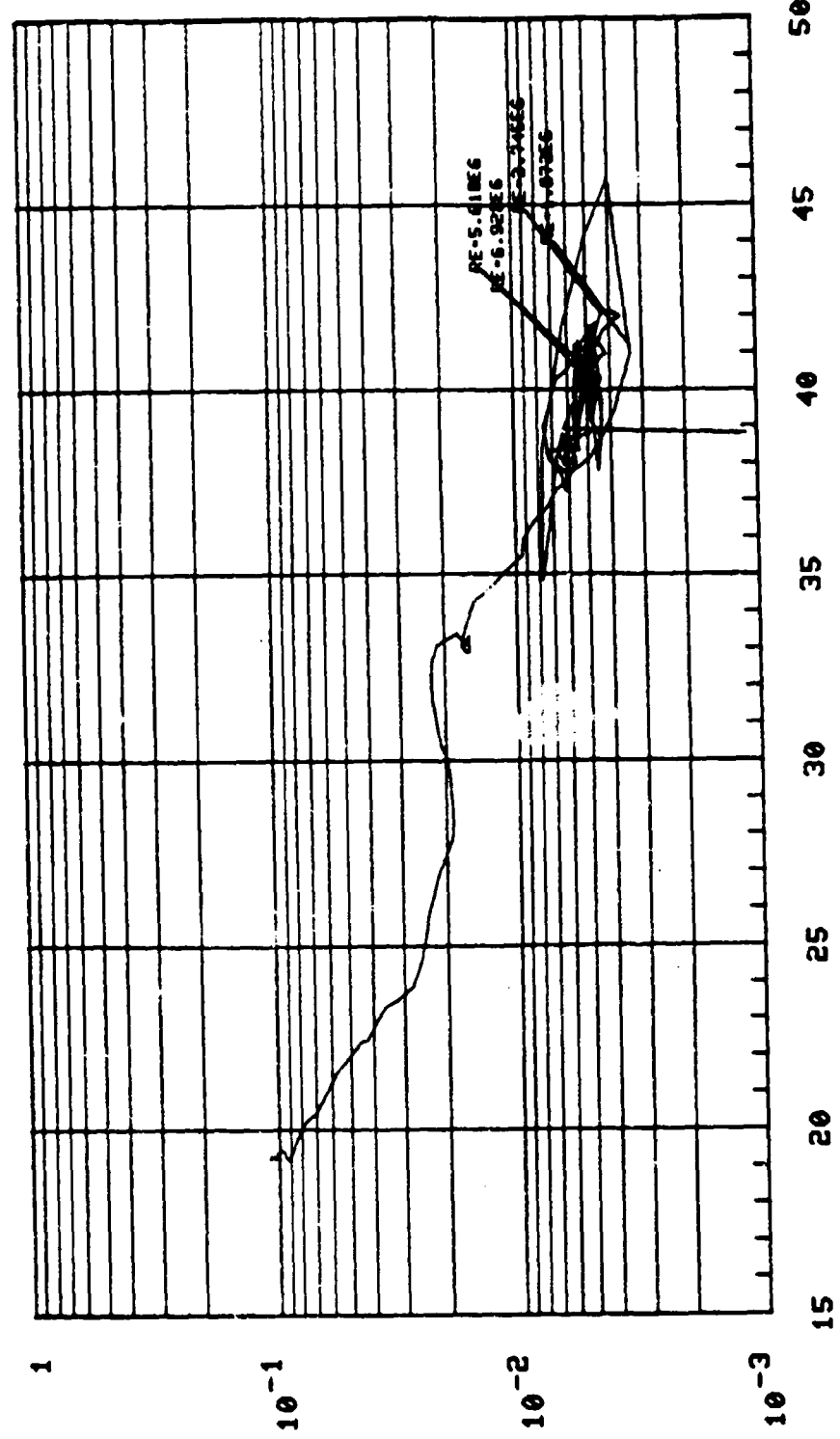
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04/20/83  
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A/H-REF 200-1480 SEC

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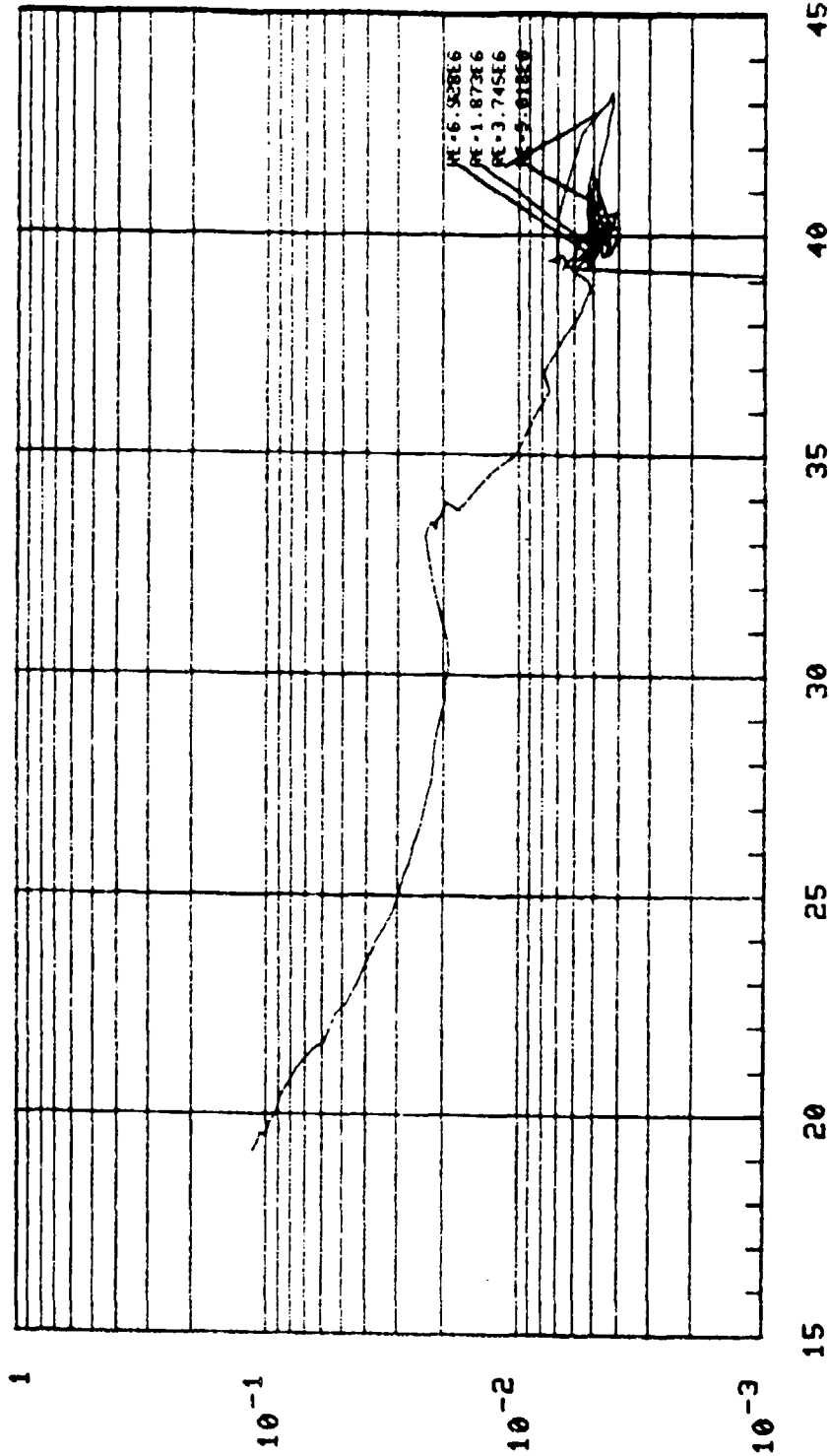
U07T9984A/H-REF

B-192

ANGLE-OF-ATTACK - DEG  
BASE TIME - 27550236.000 SEC.  
04/20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9884A/H-REF 200-1380 SEC



LINE POWER - H/H-REF

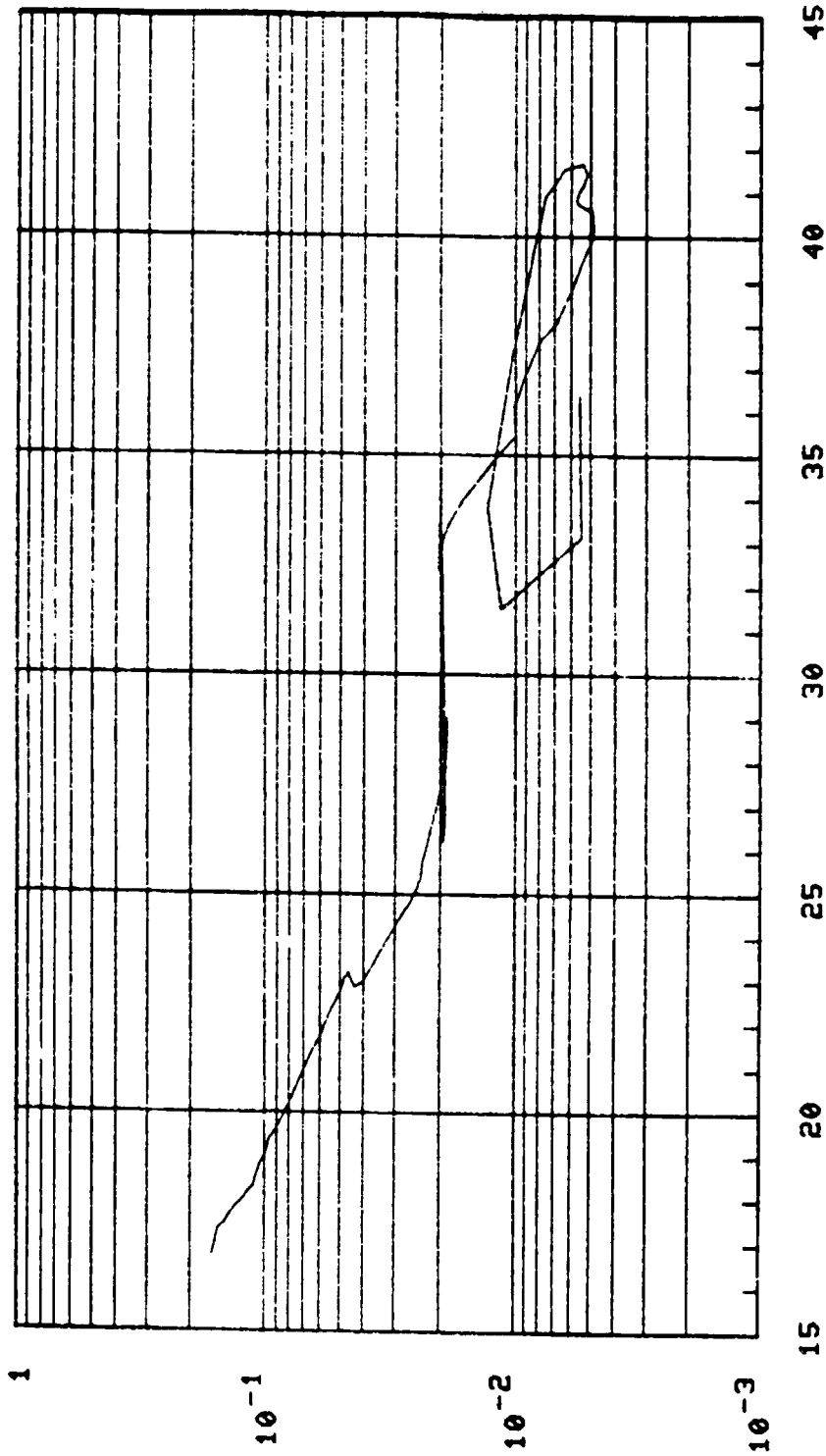
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04:19:33  
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ANGLE-OF-ATTACK - DEG

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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9984A/H-REF 965-1335 SEC

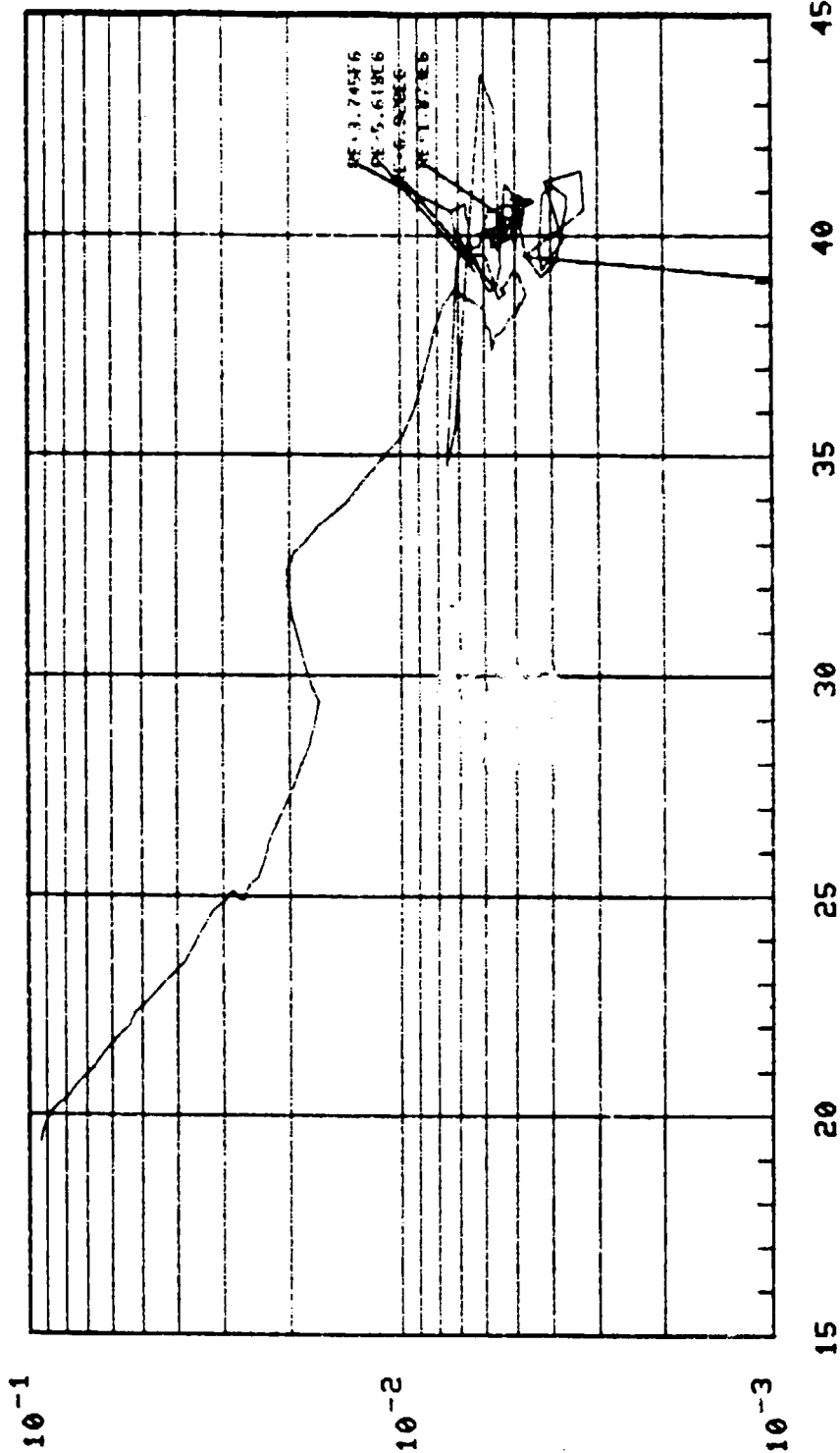


TIME COVERED -- H/H-R/W

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ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719984A/H-REF 150-1350 SEC



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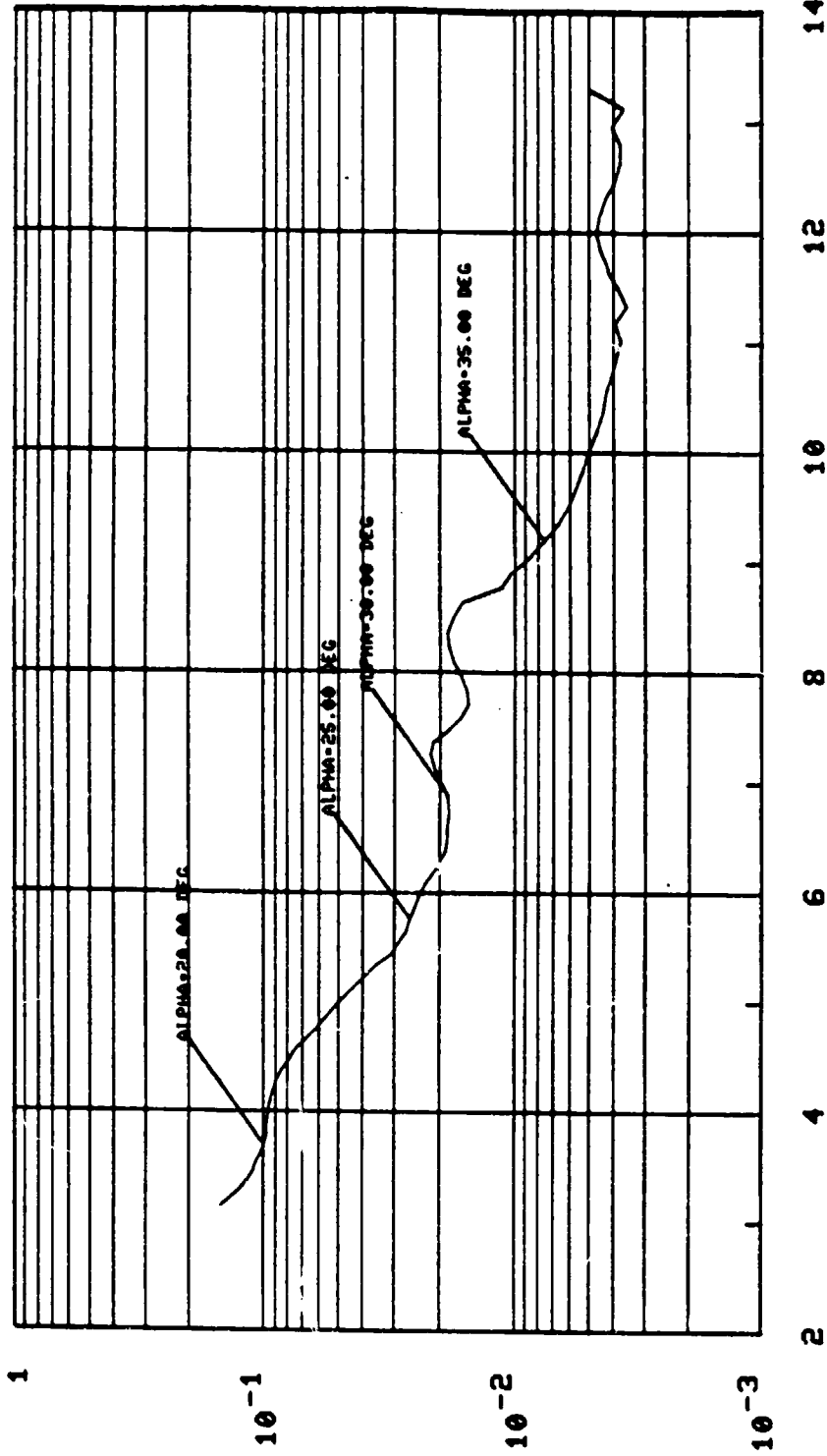
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TIME SCALE - 1:1--2000

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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FLIGHT POWER - H/H-REF

B-196

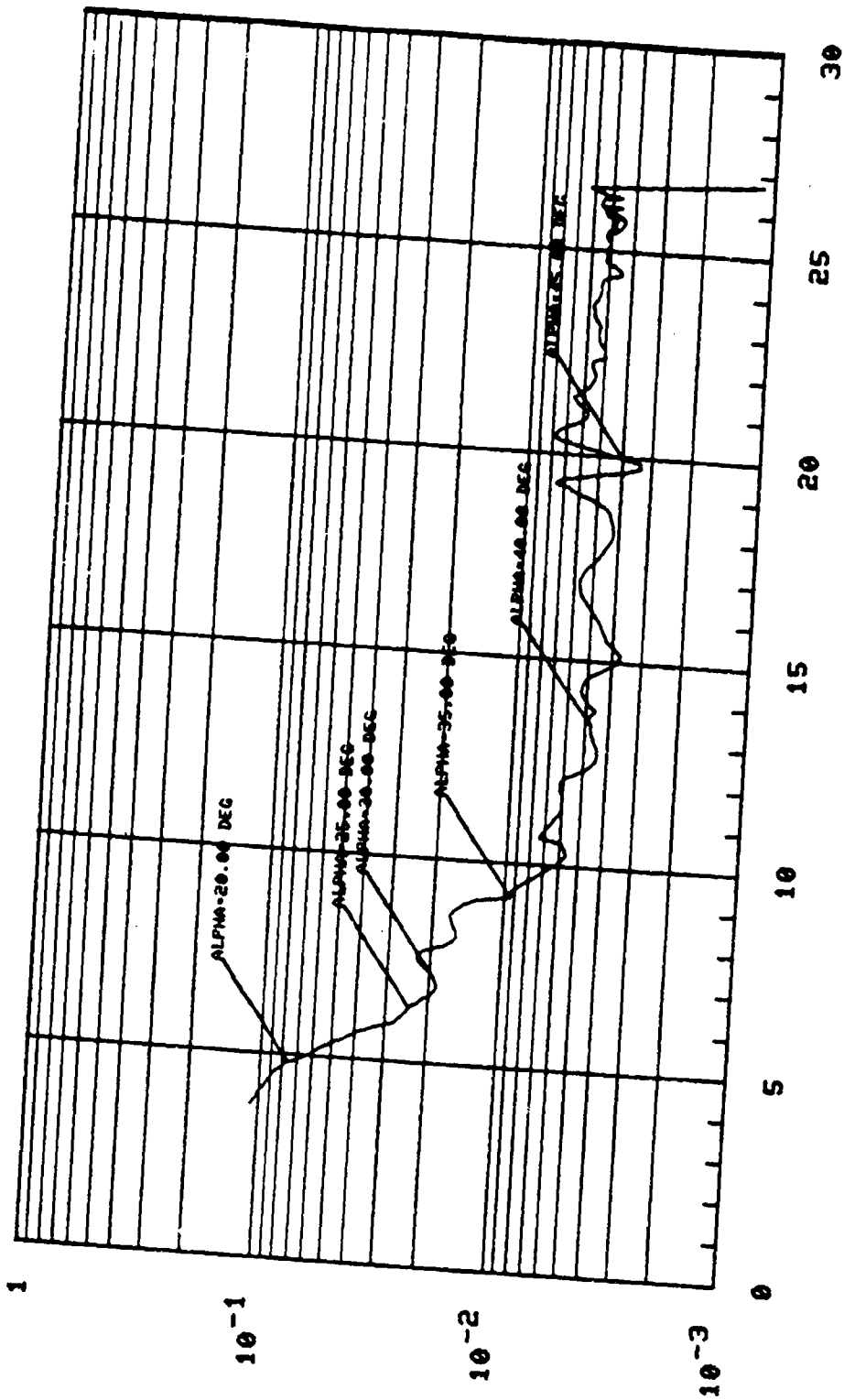
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A/H-REF 200-1480 SEC

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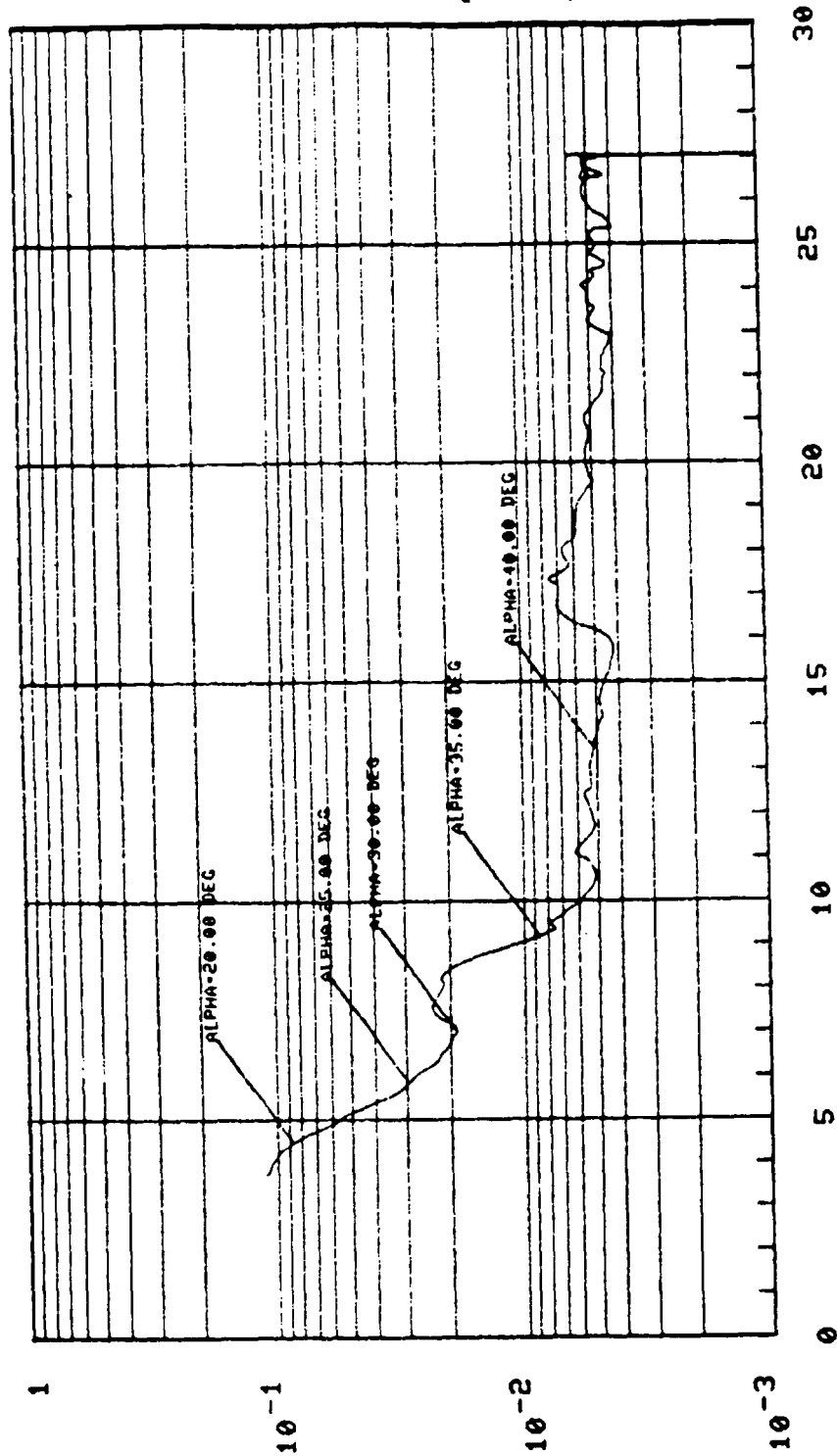
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U07T9984A/H-REF



STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9584A/H-REF 200-1380 SEC



U07T9584A/H-REF

B-198

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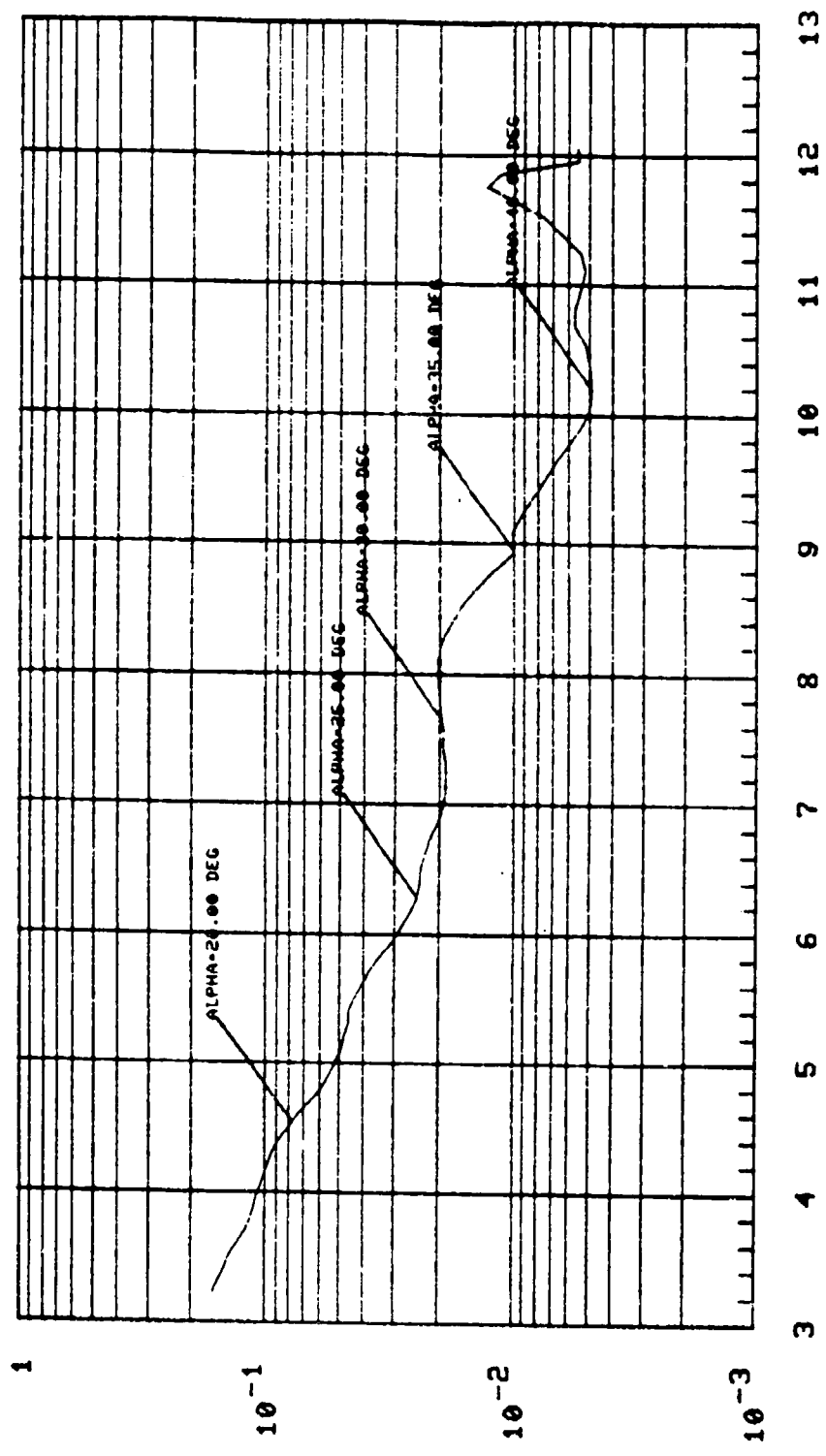
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04 19 83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A/H-REF 965-1335 SEC

ORIGINAL PAGE 15  
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ENGINE COWEL -- H/H-REF

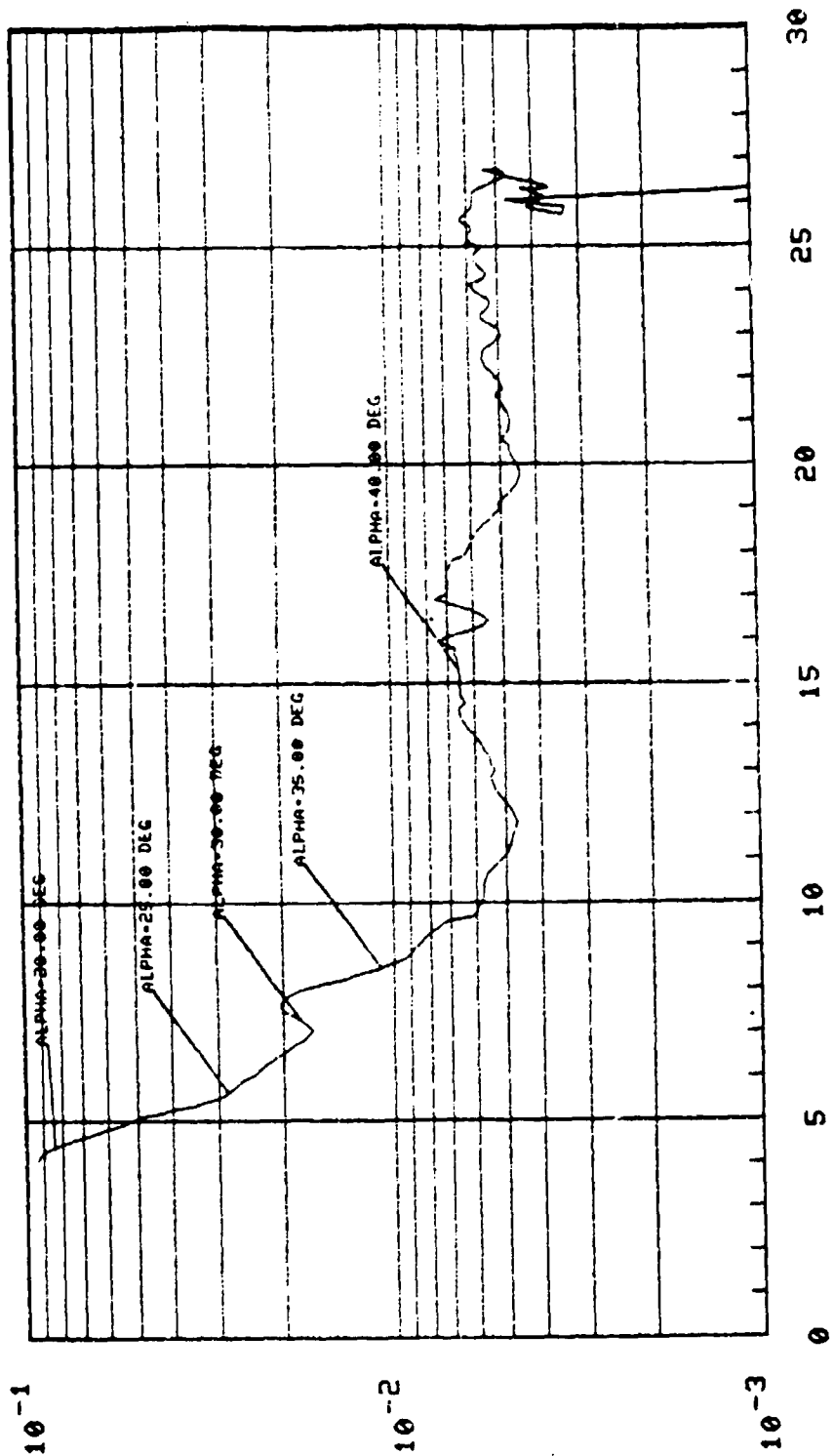
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04-19-83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779984A/H-REF 150-1350 SEC

ORIGINAL PAGE IS  
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LIFT COEFF :: H/H-REF

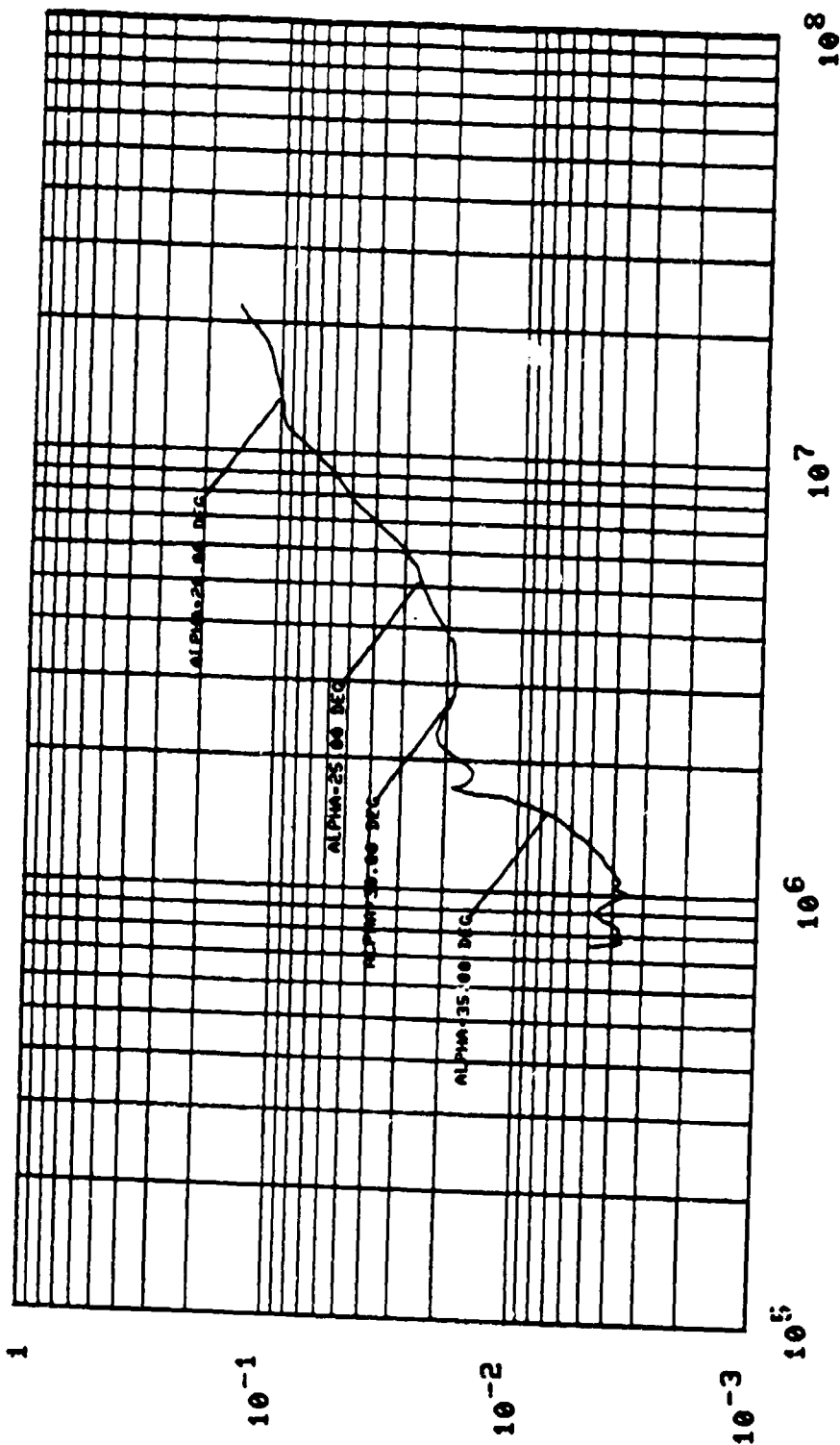
B-200

MACH NUMBER

04-18-83  
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# STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A/N-REF 1065-1480 SEC



WAVE NUMBER - H/DUAL

B-201

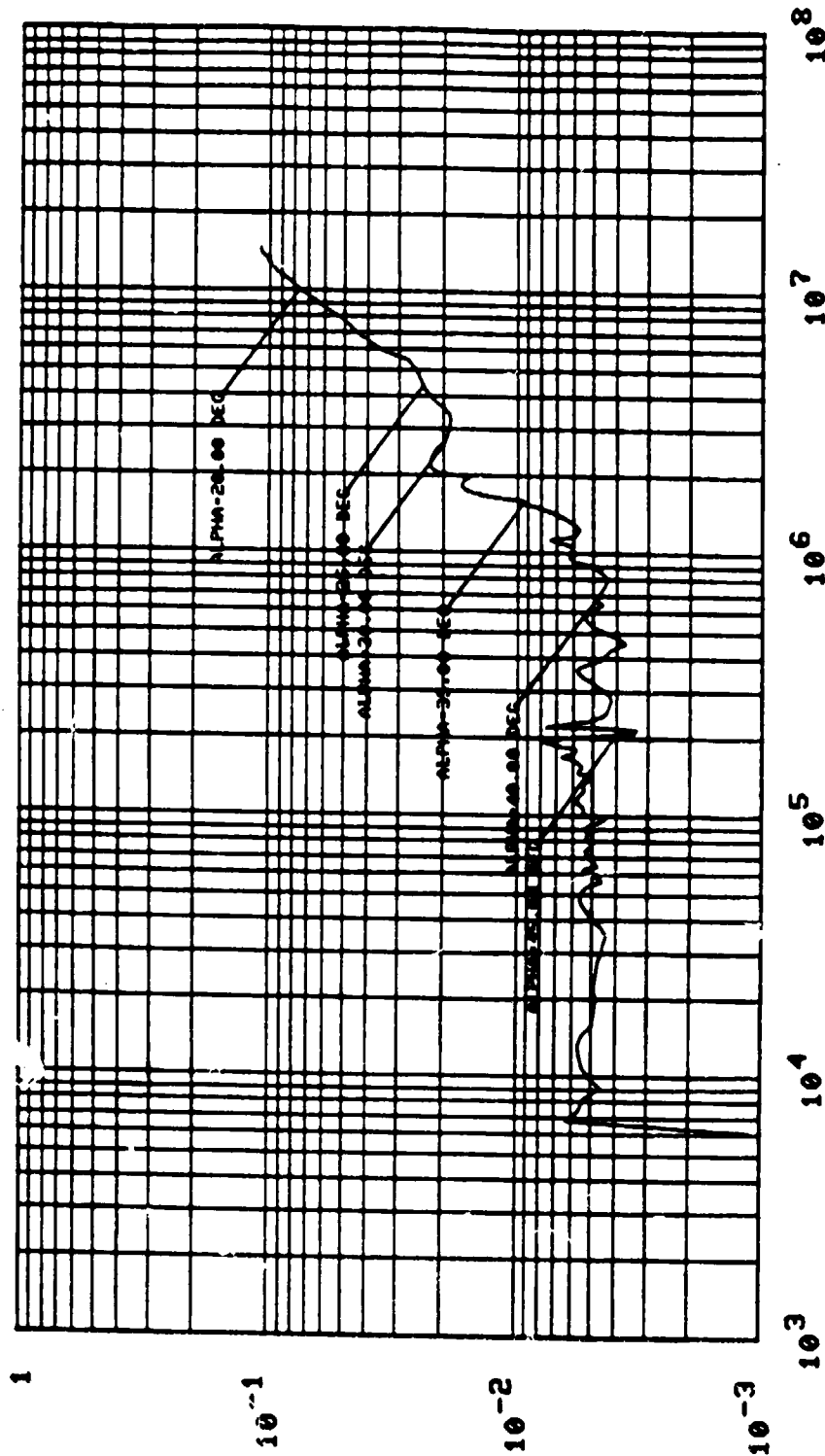
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REYNOLDS NUMBER (NS)

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A/H-REF 200-1480 SEC



FLIGHT COEFF - H/H-REF

8-202

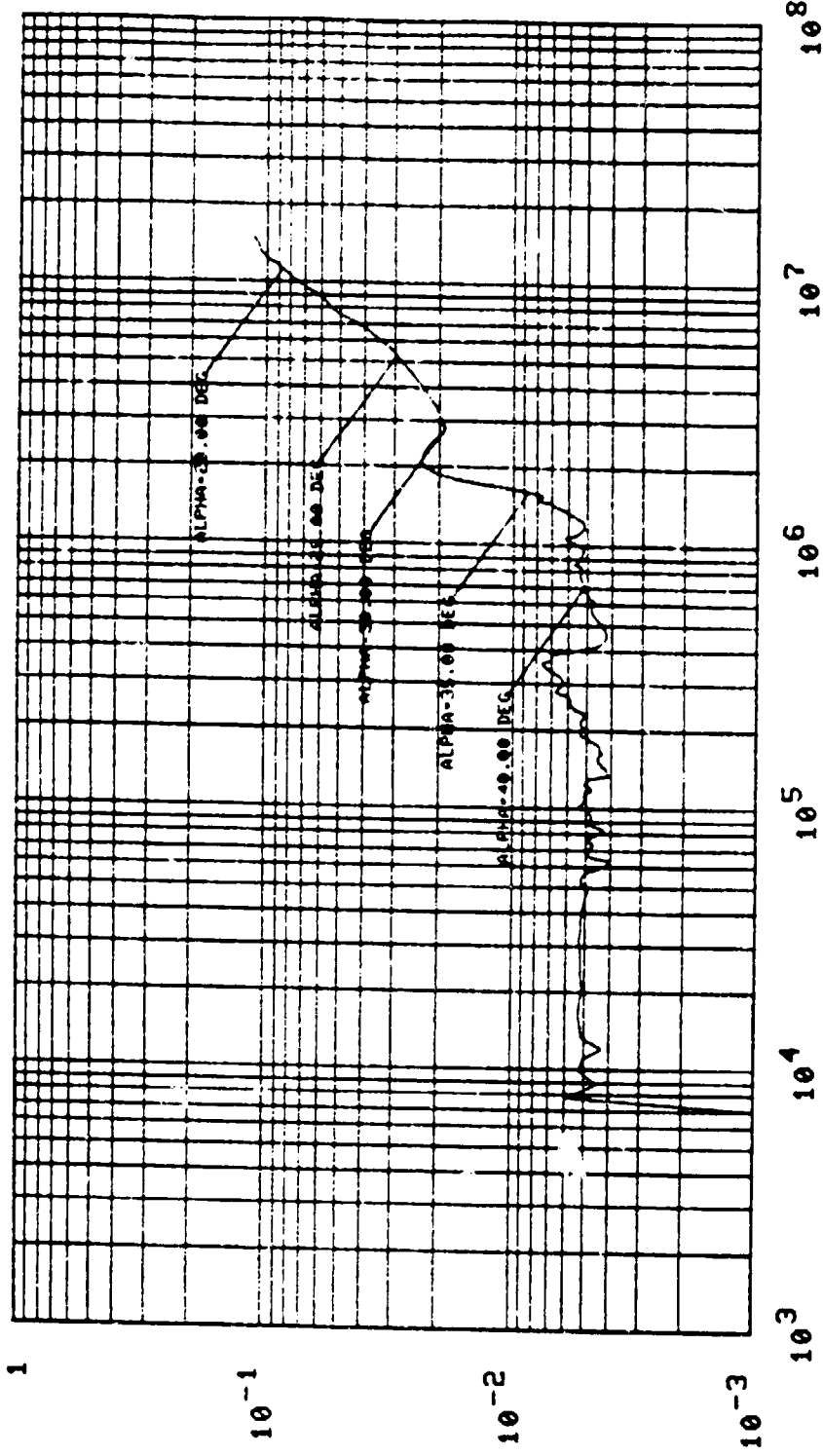
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04/20/83  
BASE TIME - 27550235.000 SEC.

REYNOLDS NUMBER (NS)

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077984A/H-REF 200-1380 SEC



TIME COEFF -- H/H-REF

B-203

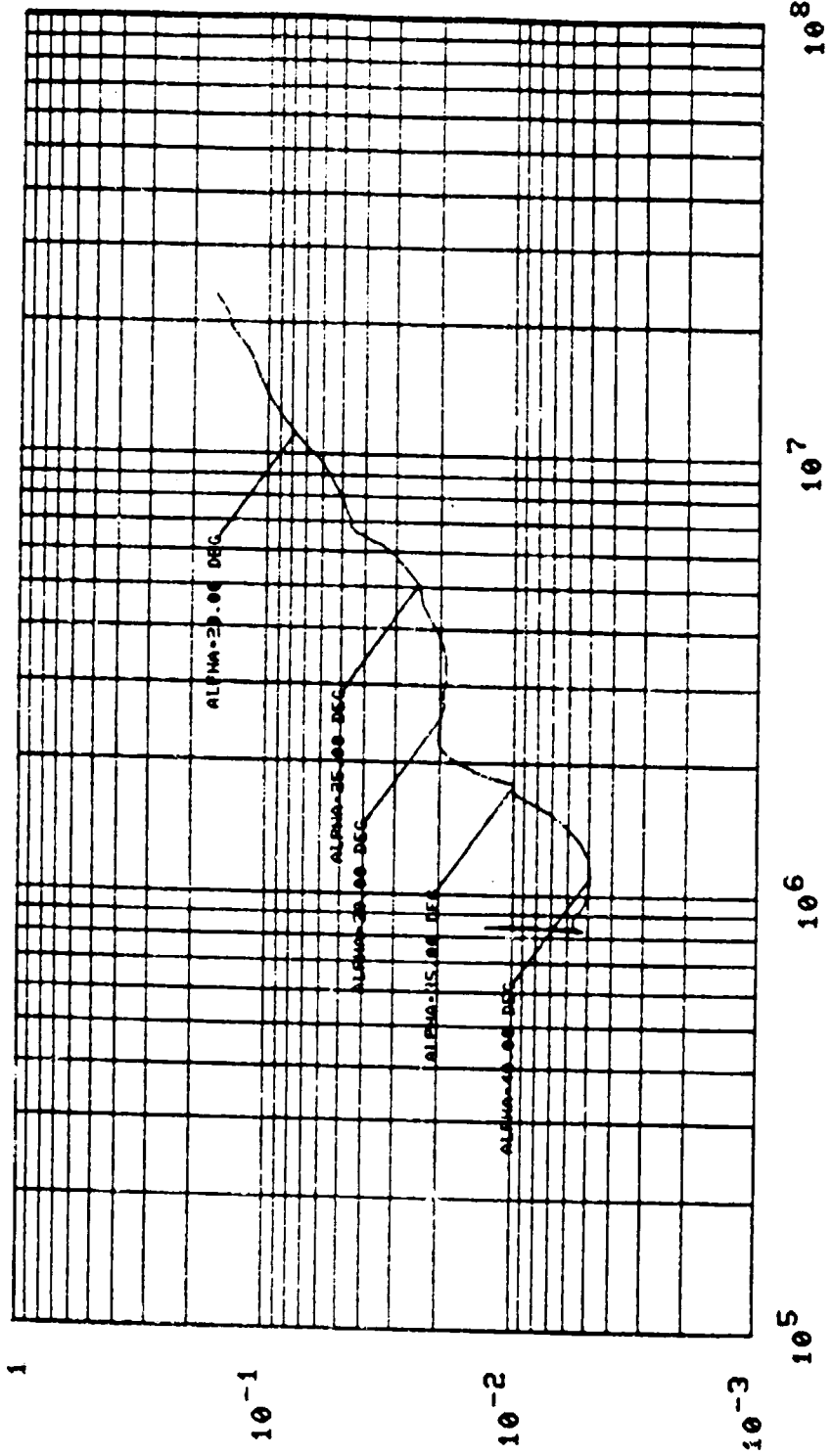
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BASE TIME - 0774584.000 SEC.

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779984A/H-REF 965-1335 SEC

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TIME COEFF - H/H-REF

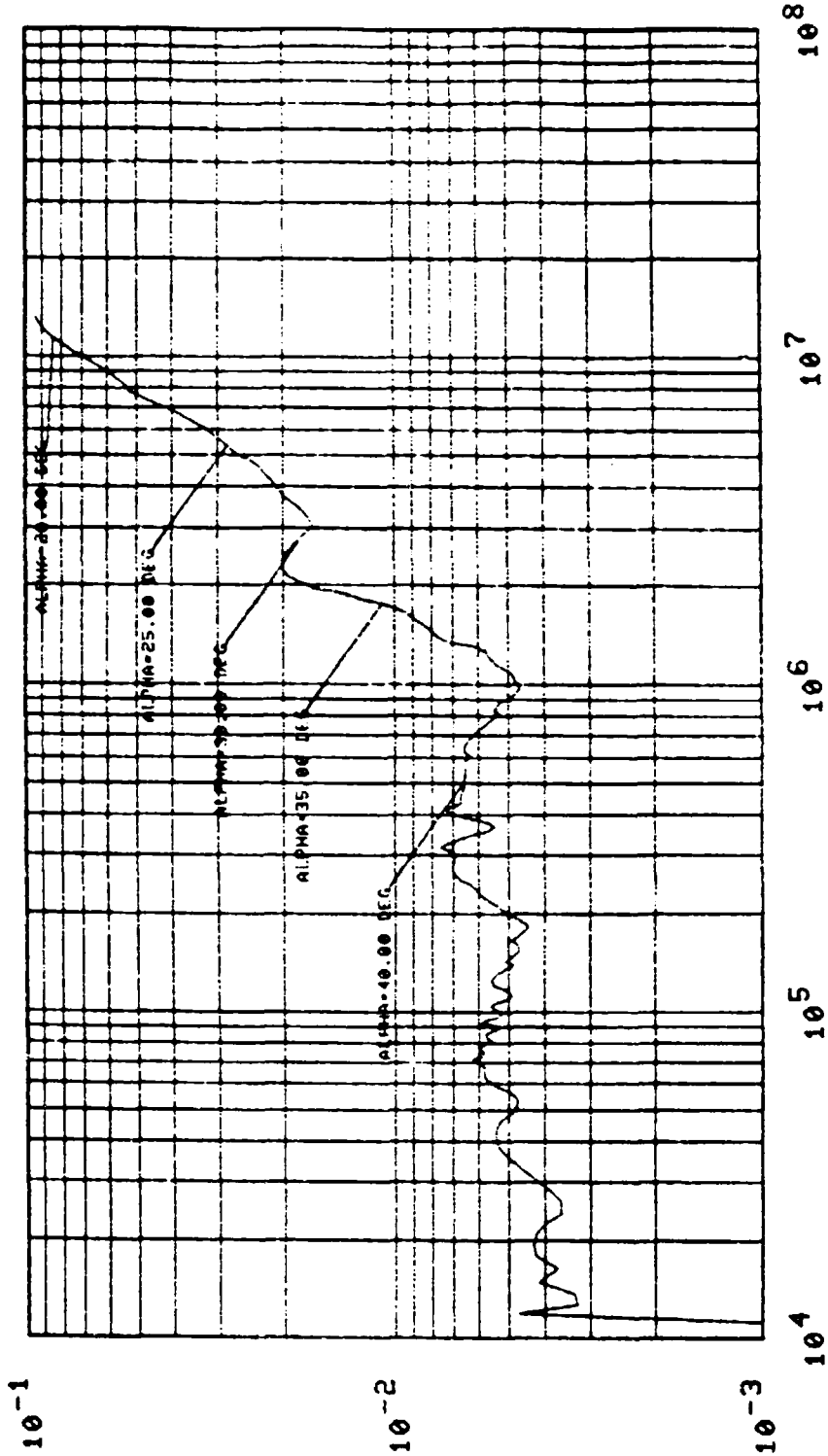
B-204

04.19.83  
BASE TIME - 1604023.000 SEC.

REYNOLDS NUMBER (NS)

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A/H-REF 150-1350 SEC



TIME CORRECTION - 1/1-2000

8-205

C-4

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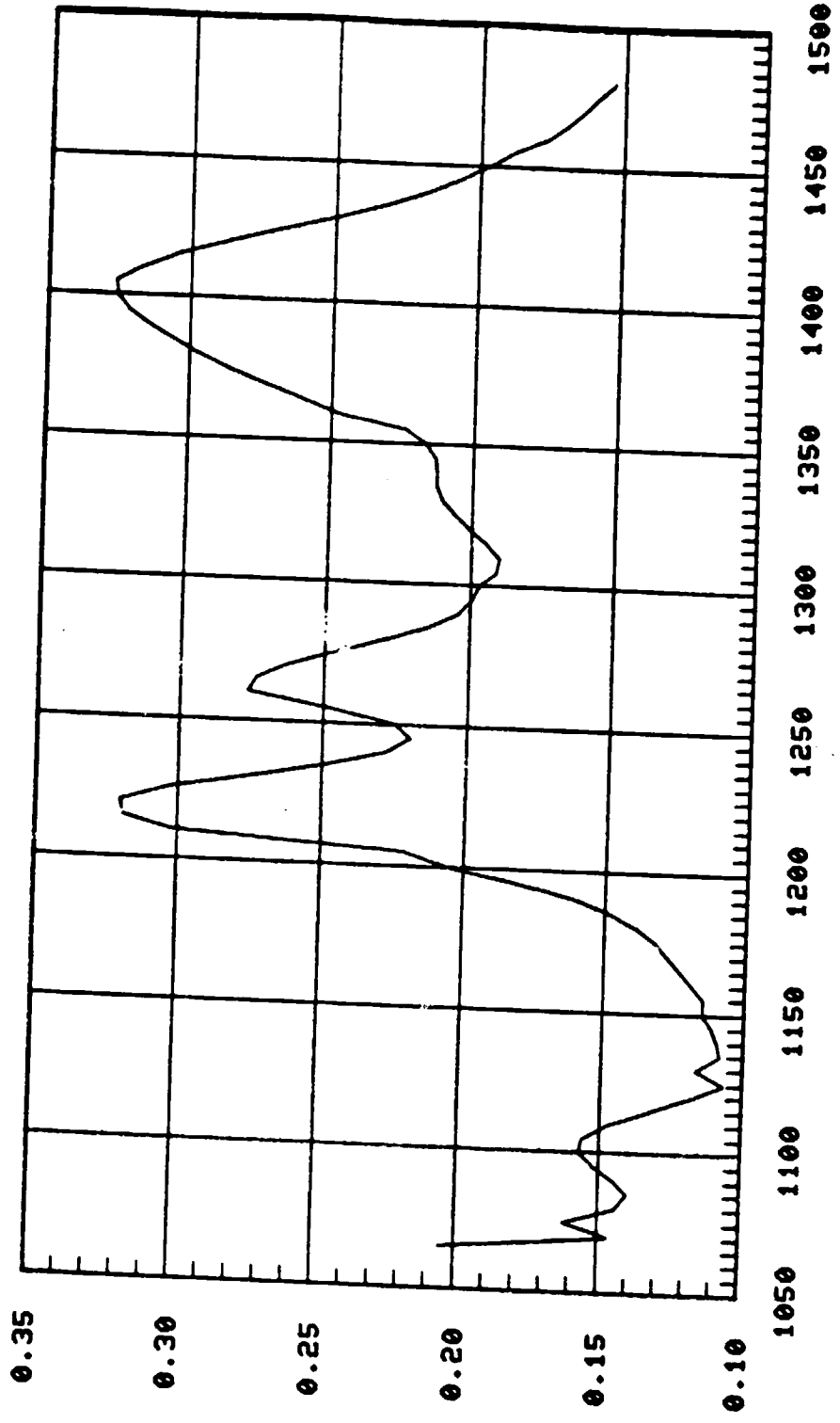
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REYNOLDS NUMBER (NS)



STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719984A



RECTIFYING RATE - BT/J/L/T/M/S - SEC

B-206

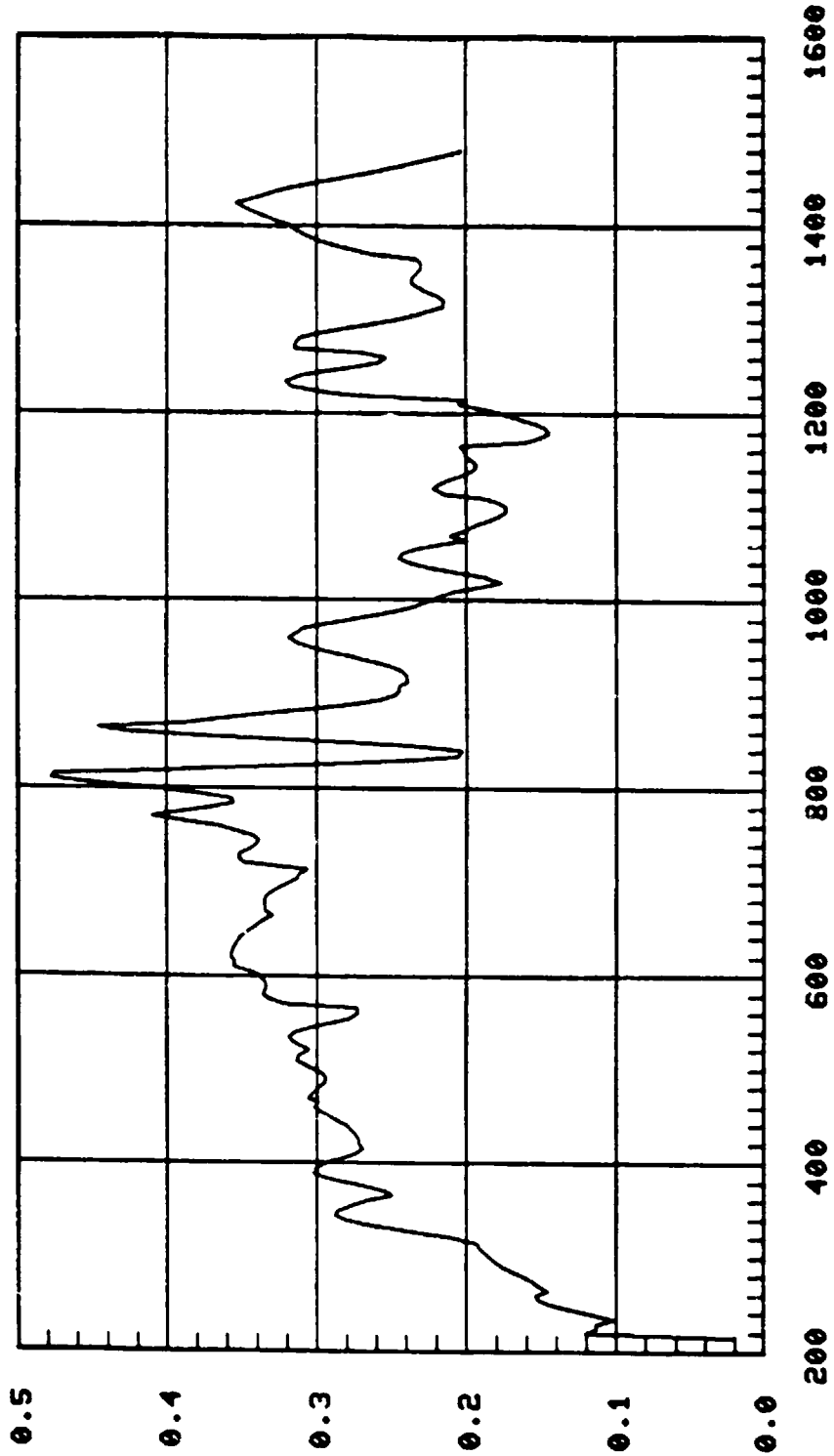
TIME - SECONDS

04/20/83

ORIGINAL PAGE 13  
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779984A



HEATING RATE : BTU/FT-HRS : SWG

B-207

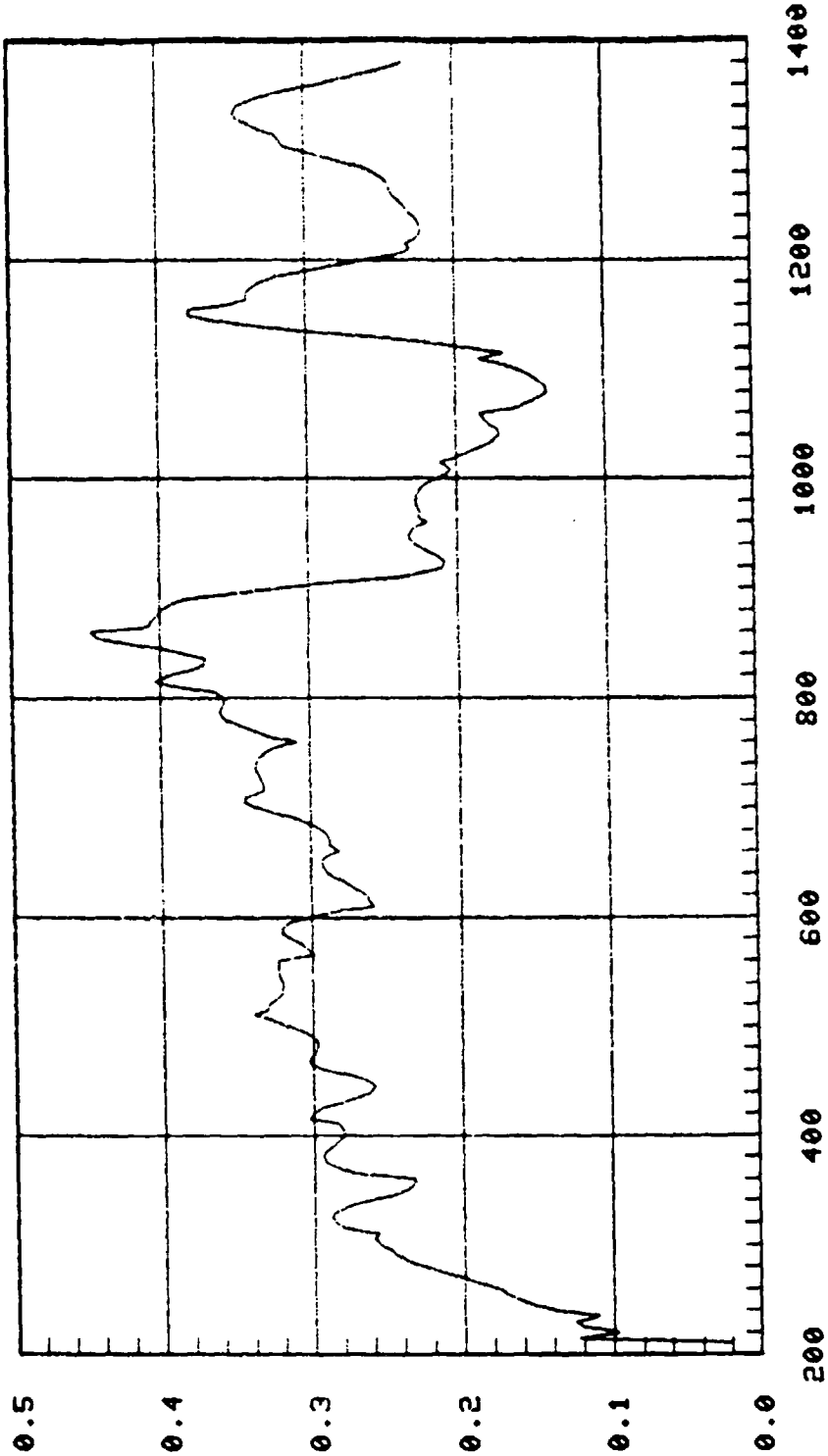
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TIME - SECONDS

04/20/83

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719984A



HEATING RATE -- BTU/FT^2\*SEC

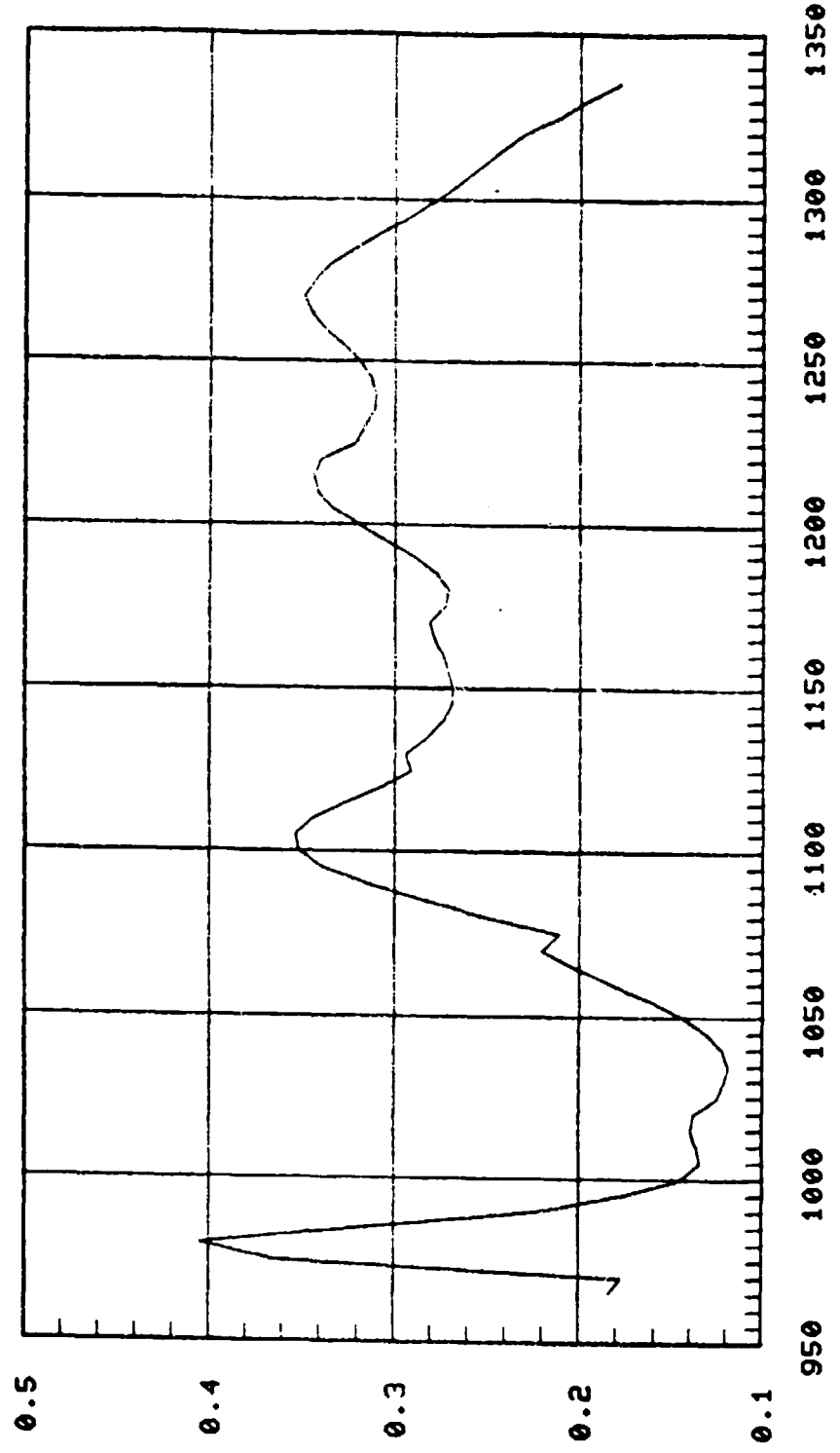
B-208

TIME - SECONDS

04.19.83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T99844



HEATING RATE -- BTU/FT<sup>2</sup>\*SEC -- SWG

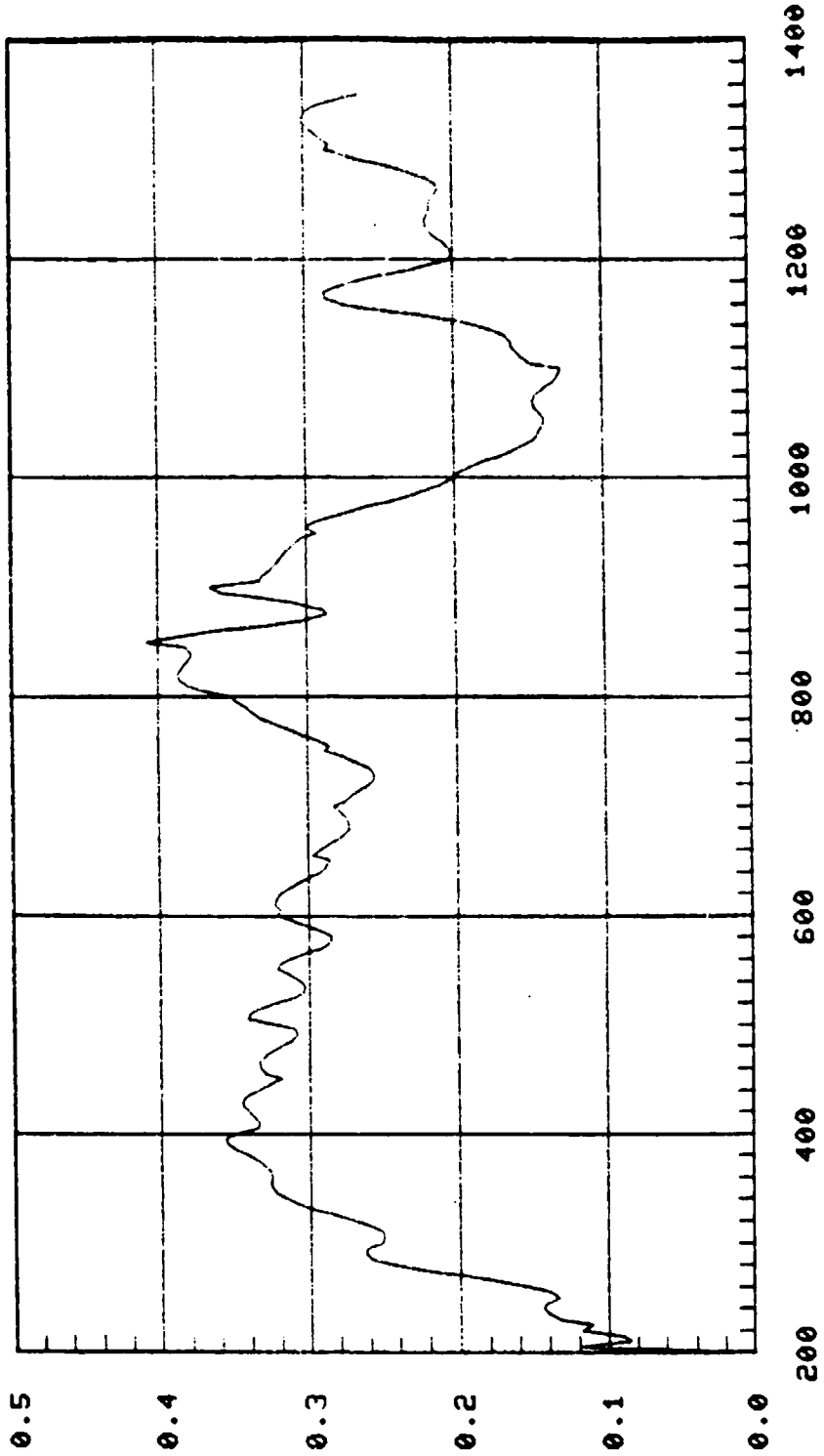
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TIME - SECONDS

04.19.83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9984A



HEATING RATE -- BTU/FT\*MS - SEC

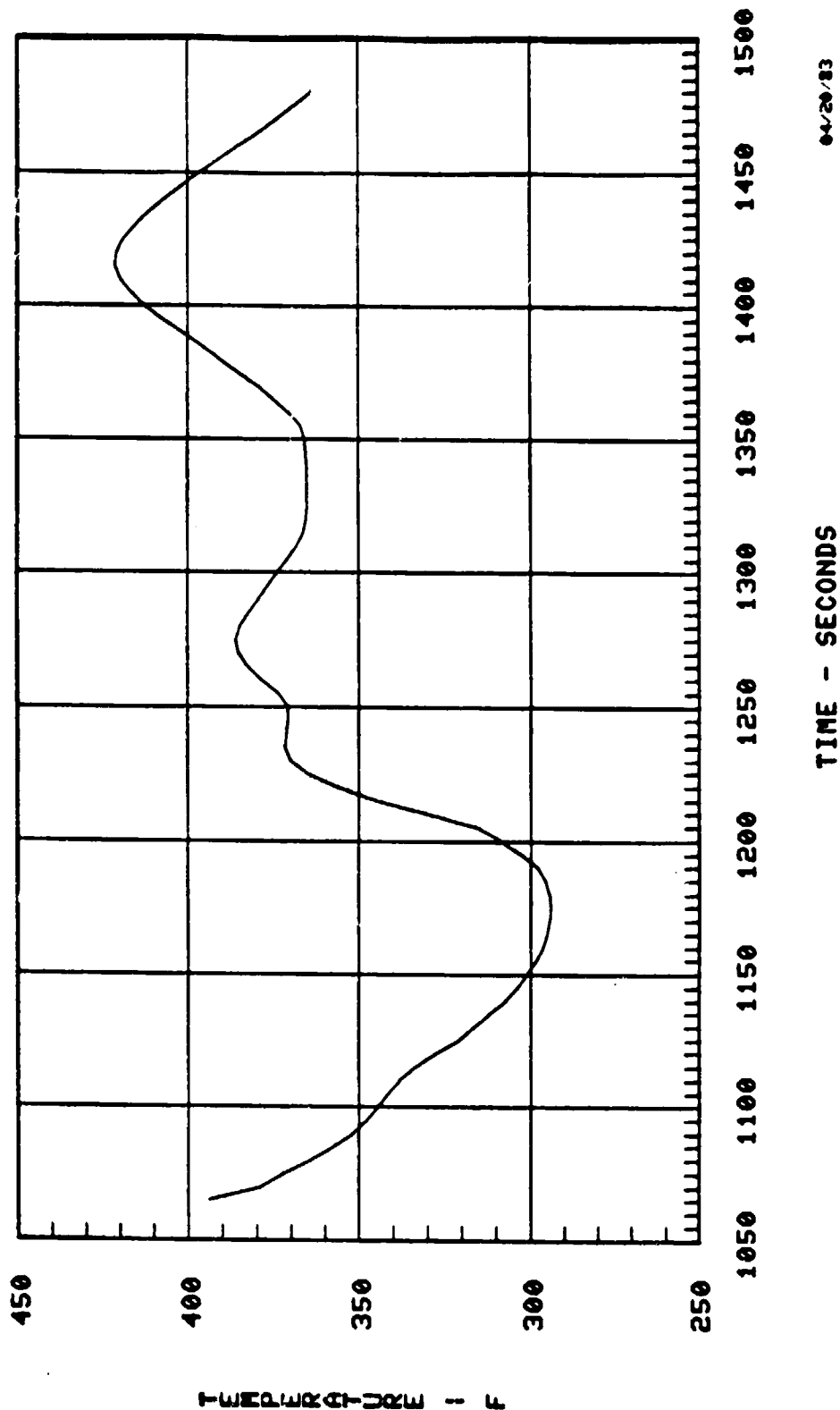
B-210

TIME - SECONDS

04 15 '83

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779984A



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04/20/83

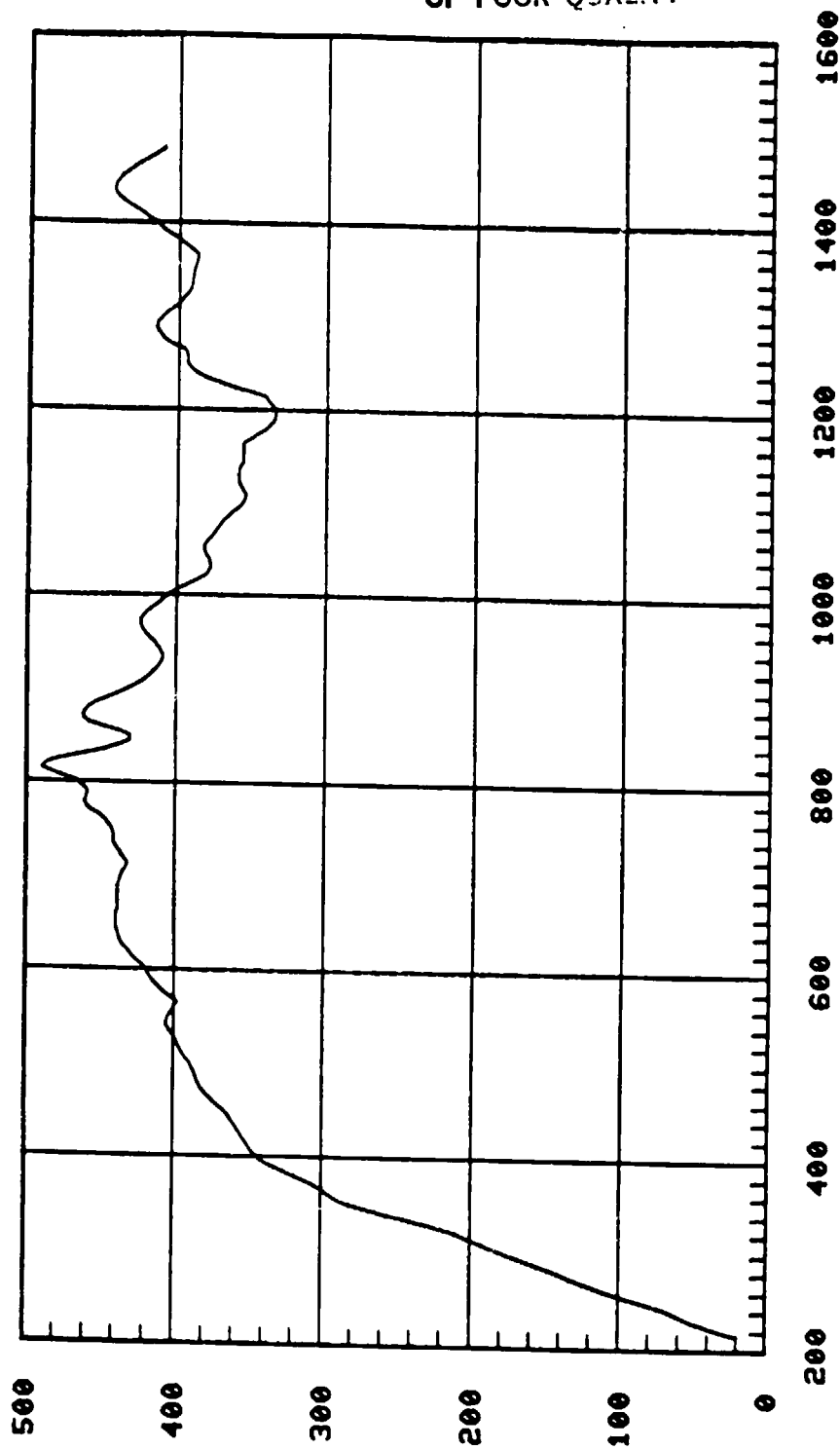
TIME - SECONDS

TEMPERATURE - F

B-211

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9984A



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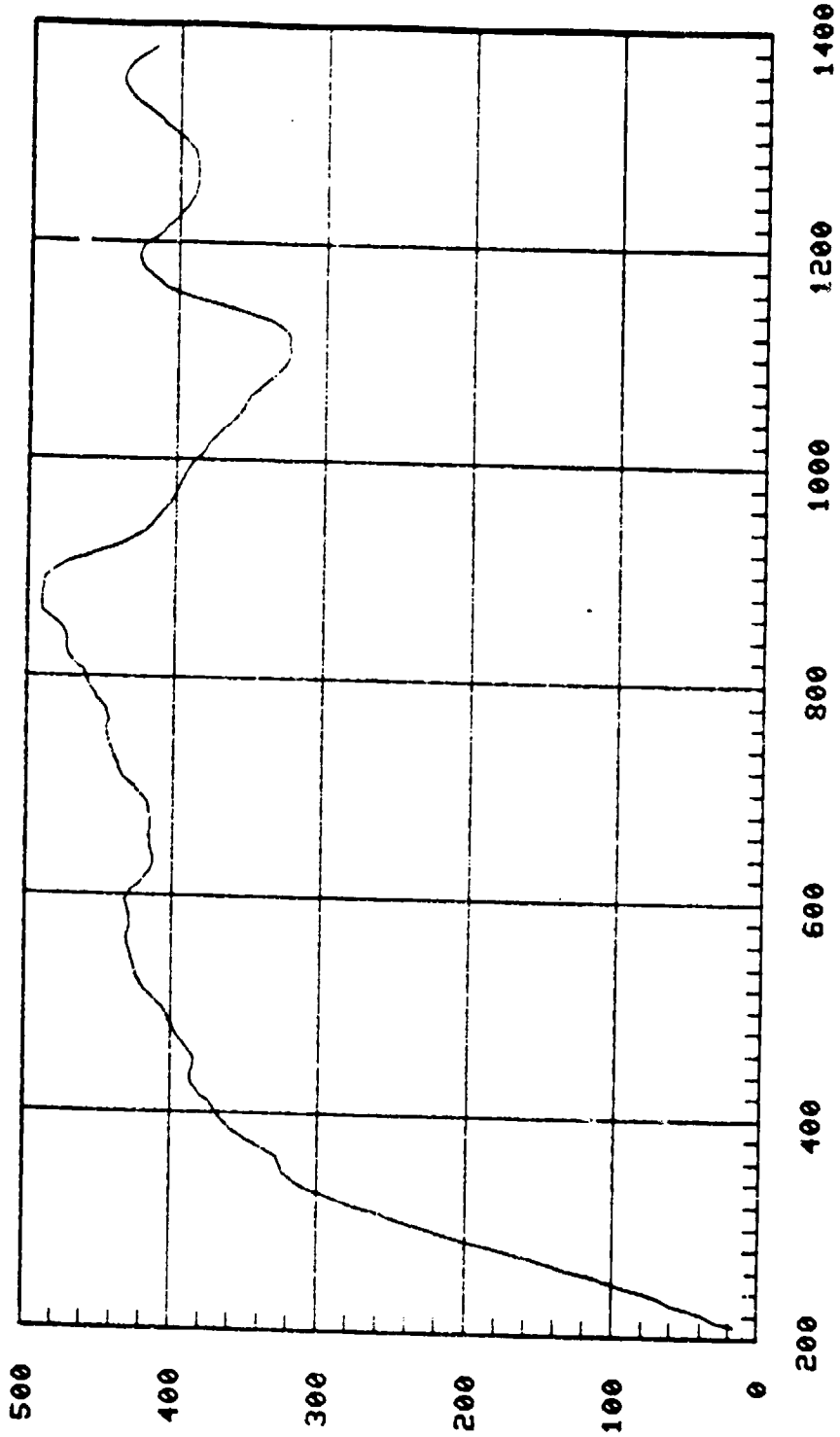
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TIME - SECONDS

04. 20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U075924A



TEMPERATURE -- F

B-213

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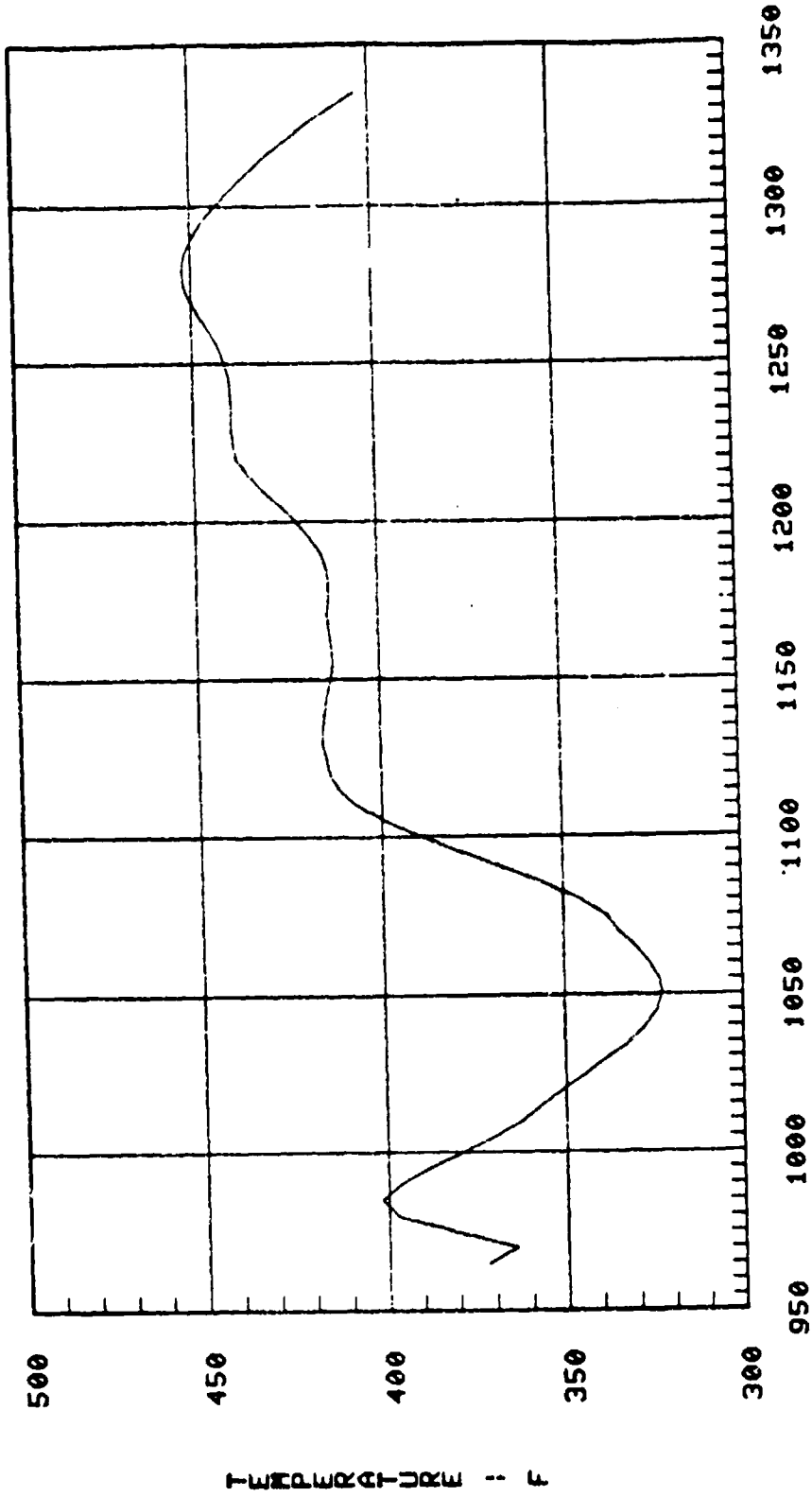
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9584A



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04-19-83

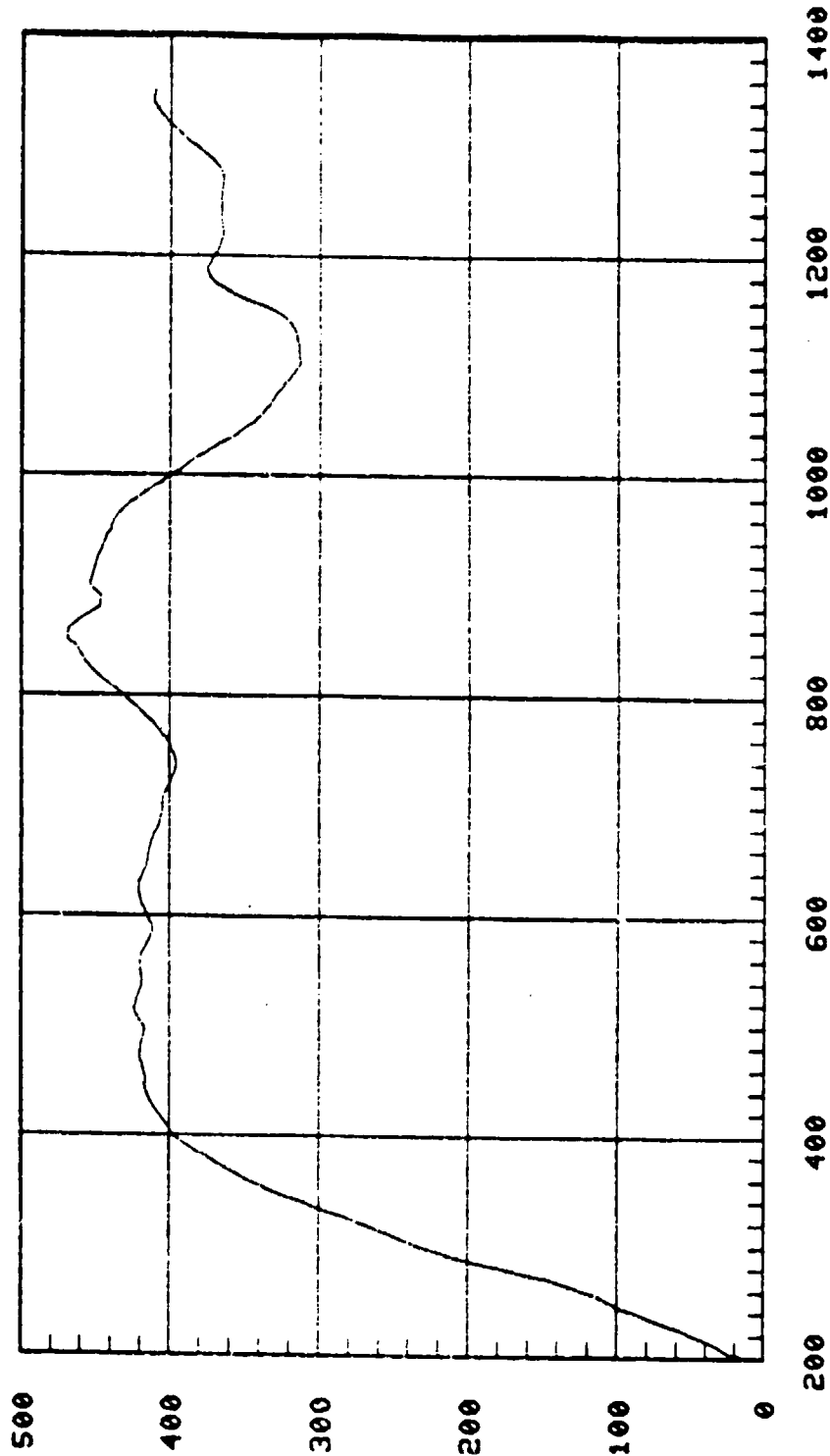
TIME - SECONDS

TEMPERATURE -- F

B-214

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

06719984A



FUEL FLOW RATE

B-215

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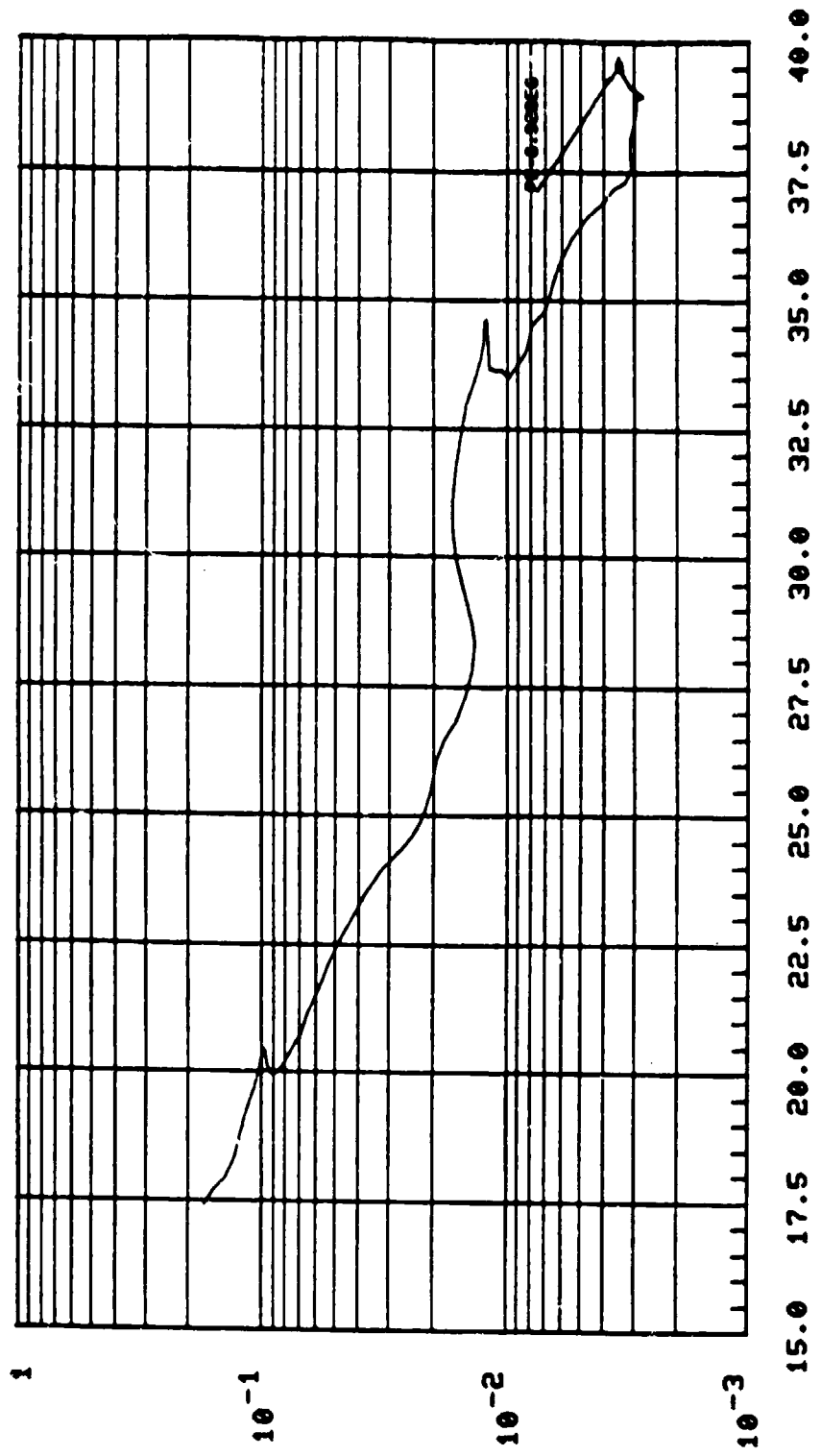
TIME - SECONDS

04-13-53

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779986A/H-REF 1065-1480 SEC

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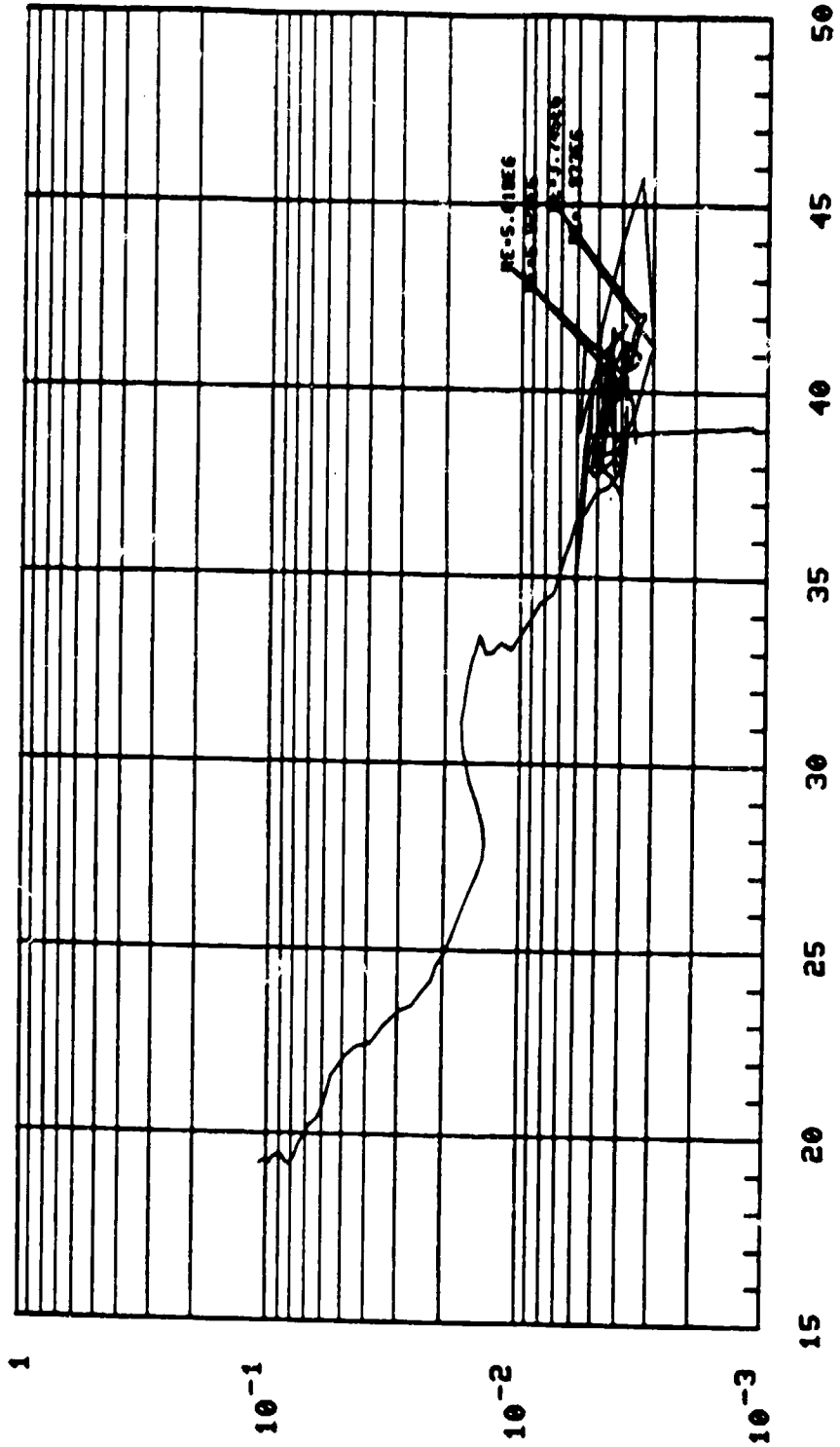


ANGLE-OF-ATTACK - DEG      BASE TIME - 00049744.000 SEC.      04/20/33

LINE COVER - H/T-RUL

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077986A/H-REF 200-1480 SEC



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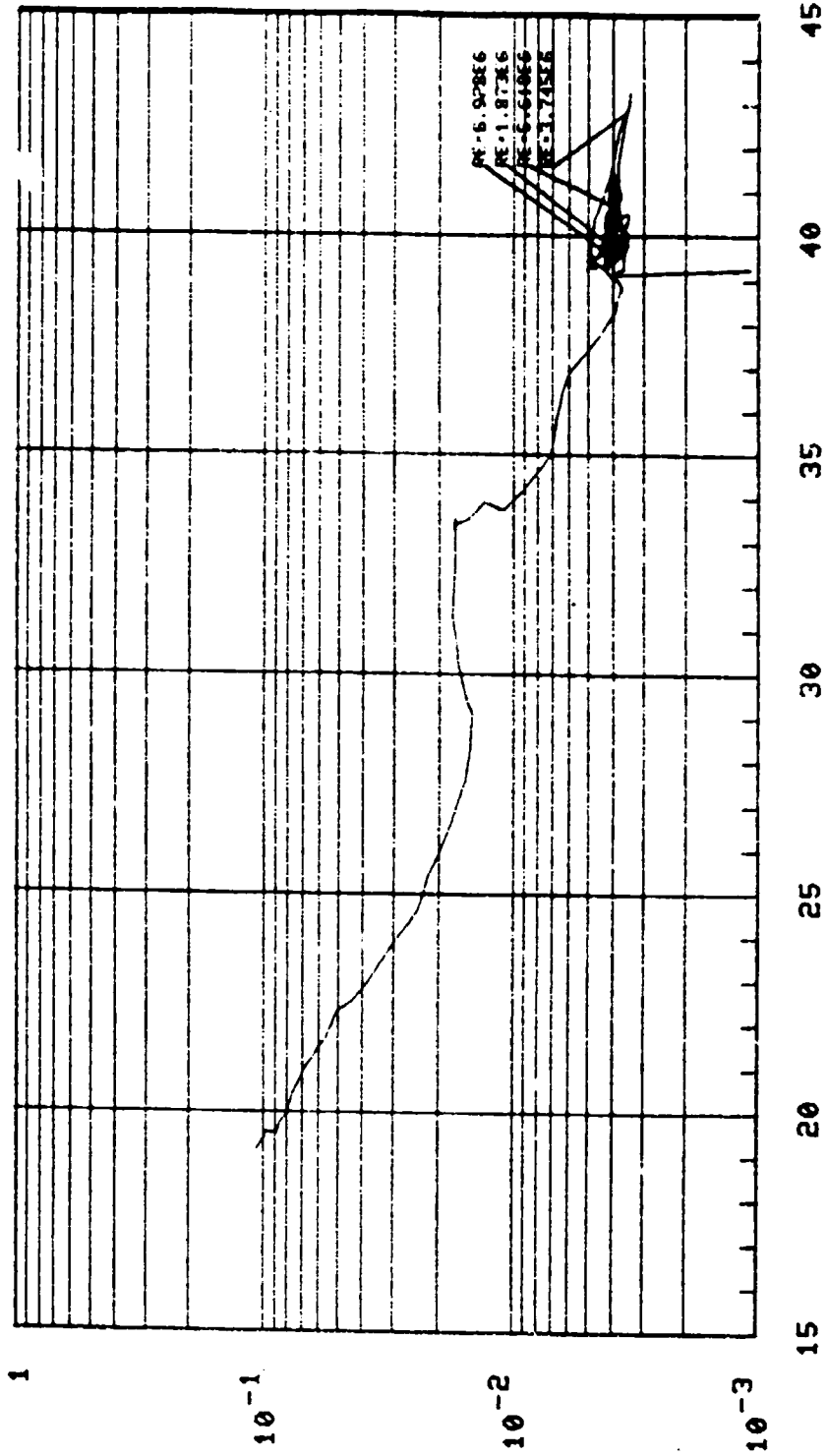
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ANGLE-OF-ATTACK - DEG

TIME CORRELATION - H/H-BLUE

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779986A/H-REF 200-1380 SEC

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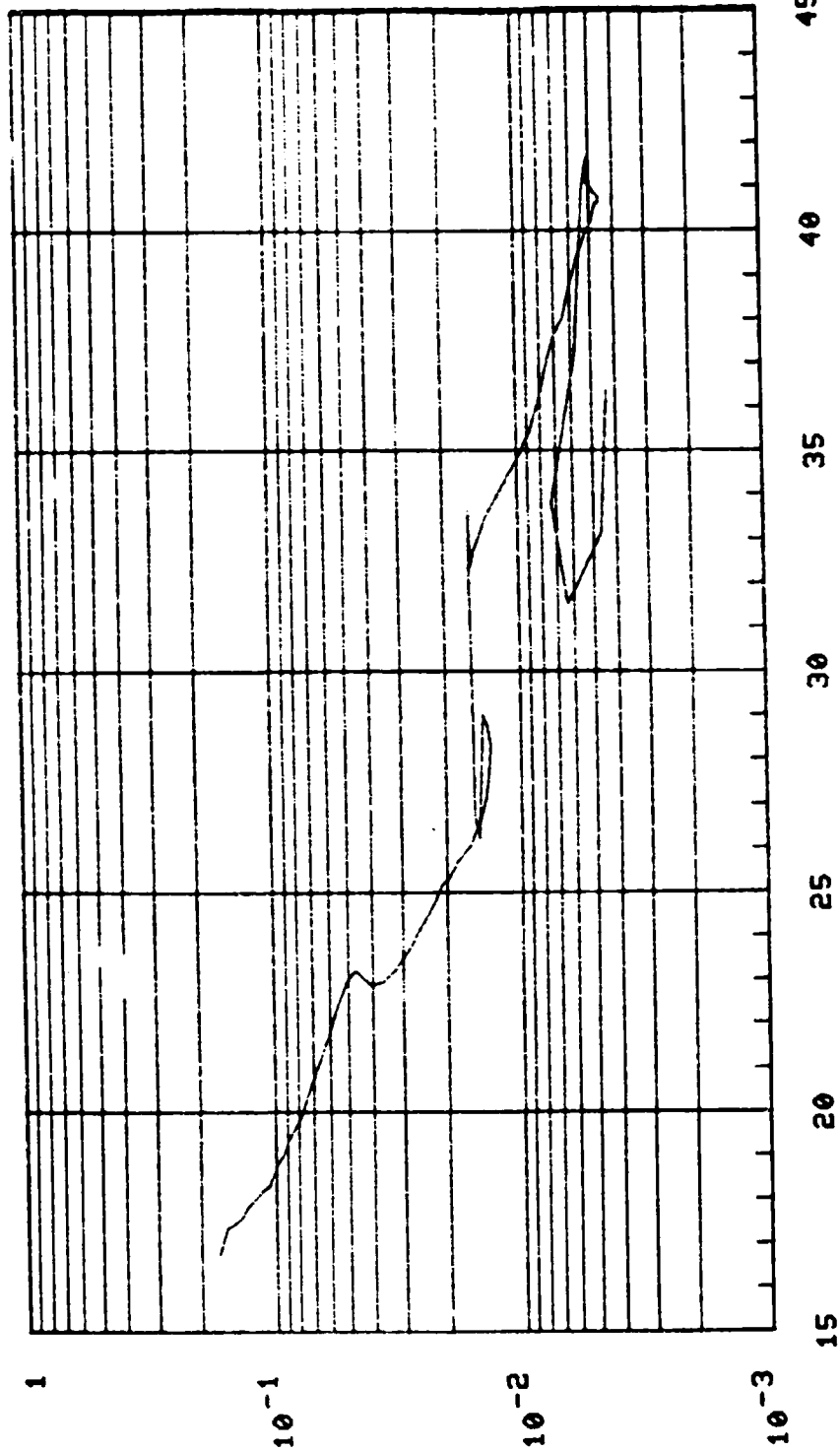


ANGLE-OF-ATTACK - DEG      BASE TIME - 07745684.000 SEC.      04/19/83

FILE COEFF -- H/H-RULE

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U87T9986A/H-REF 965-1335 SEC



TIME COEFF - H/H-REF

B-219

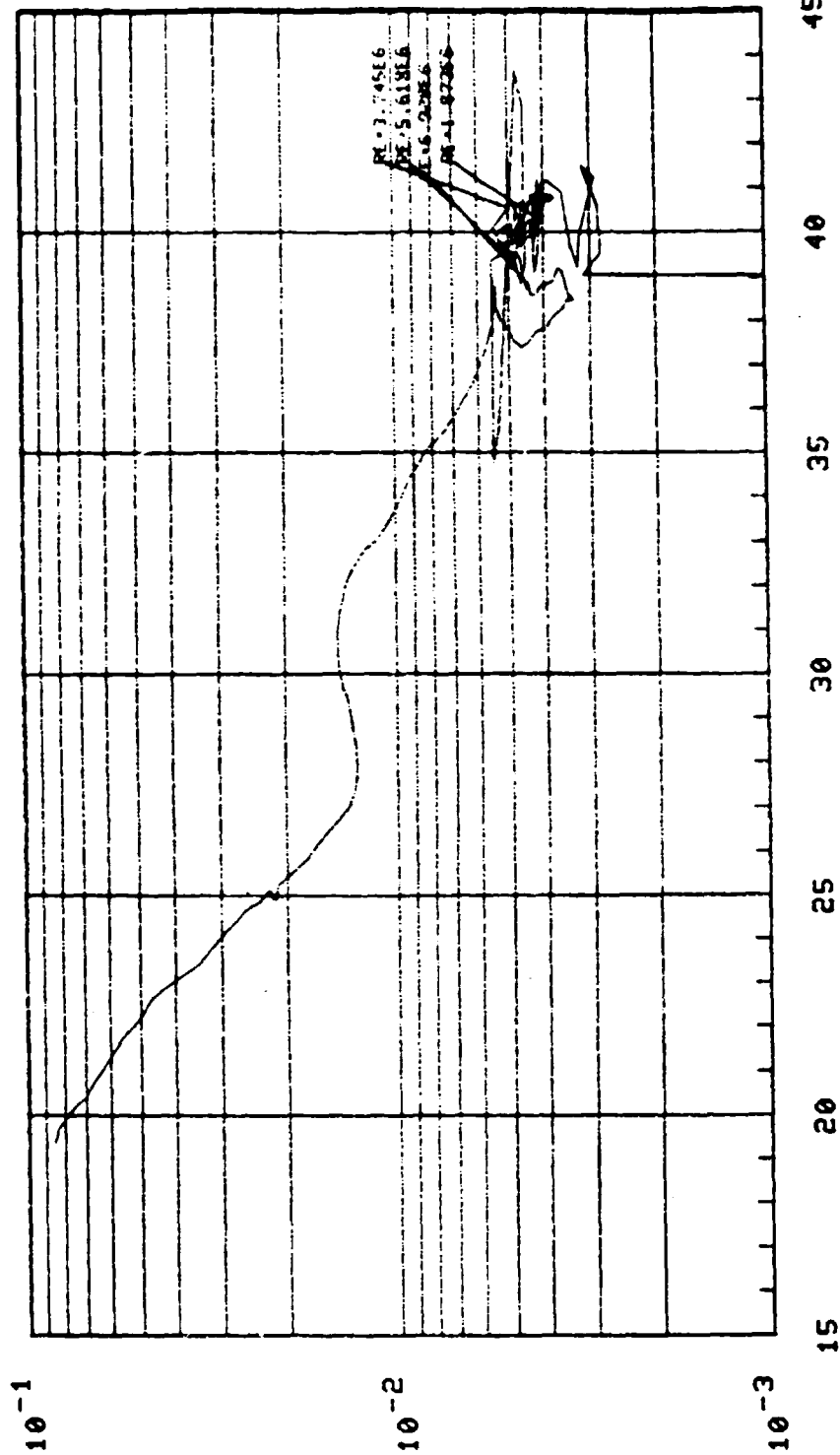
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04/19/83  
BASE TIME - 16040423.000 SEC.

ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T998EA/M-REF 150-1350 SEC



TIME CORRECTION - 1/11-0211

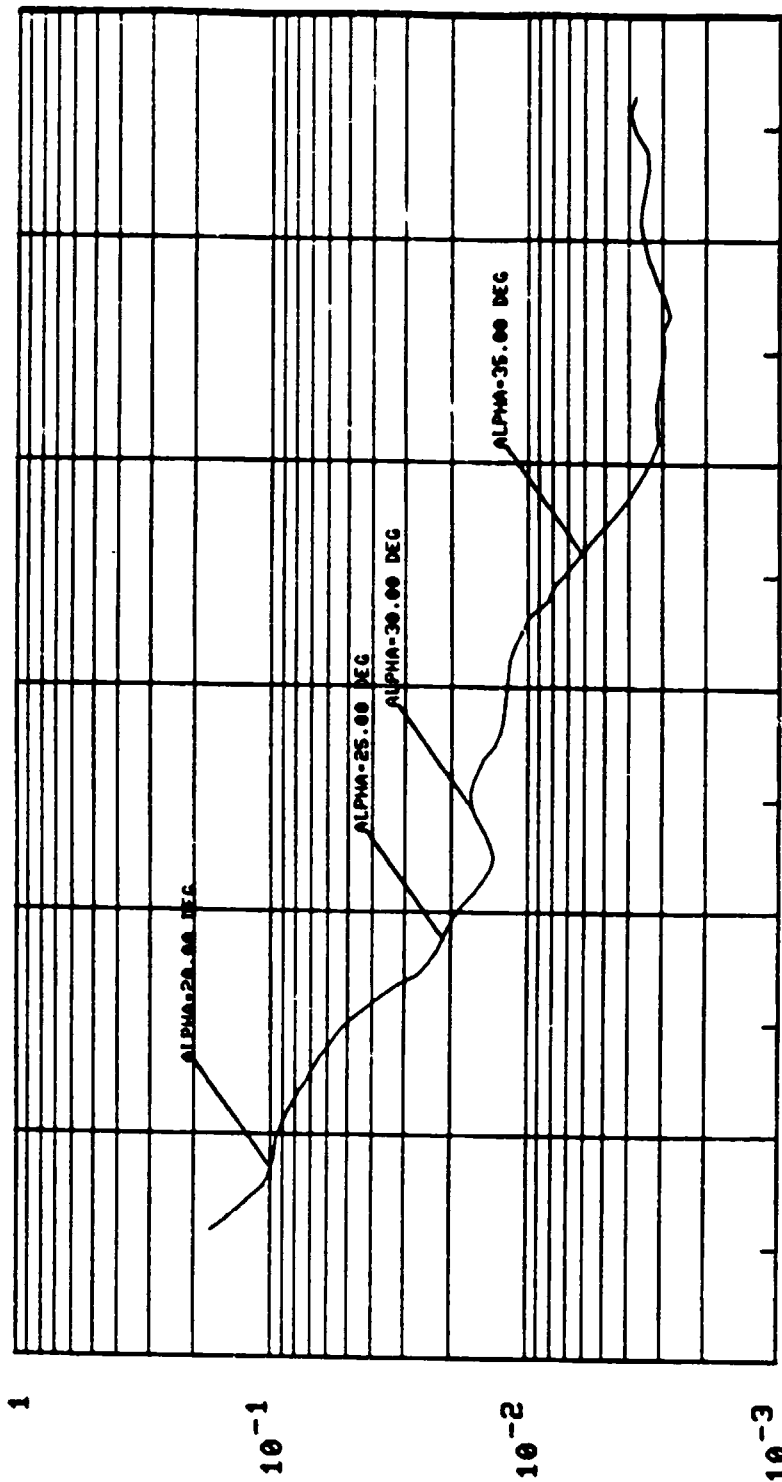
B-220

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ANGLE-OF-ATTACK - DEG      BASE TIME - 2709591.000 SEC      04.18.53

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U079986A/H-REF 1065-1480 SEC



TIME CORRECTION - INTERNAL

B-221

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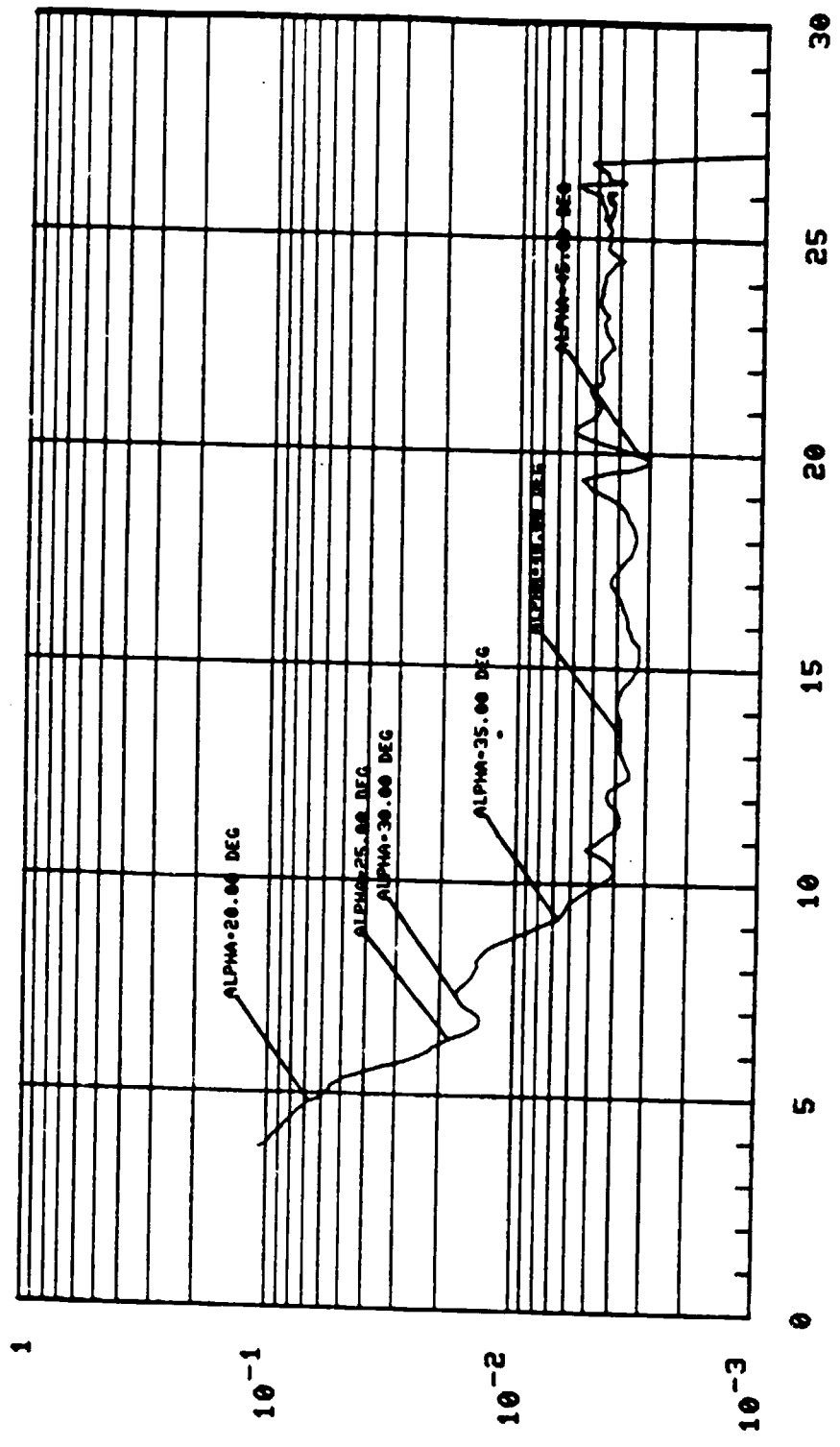
MACH NUMBER



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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FILE CODE - H/H-REF

B-222

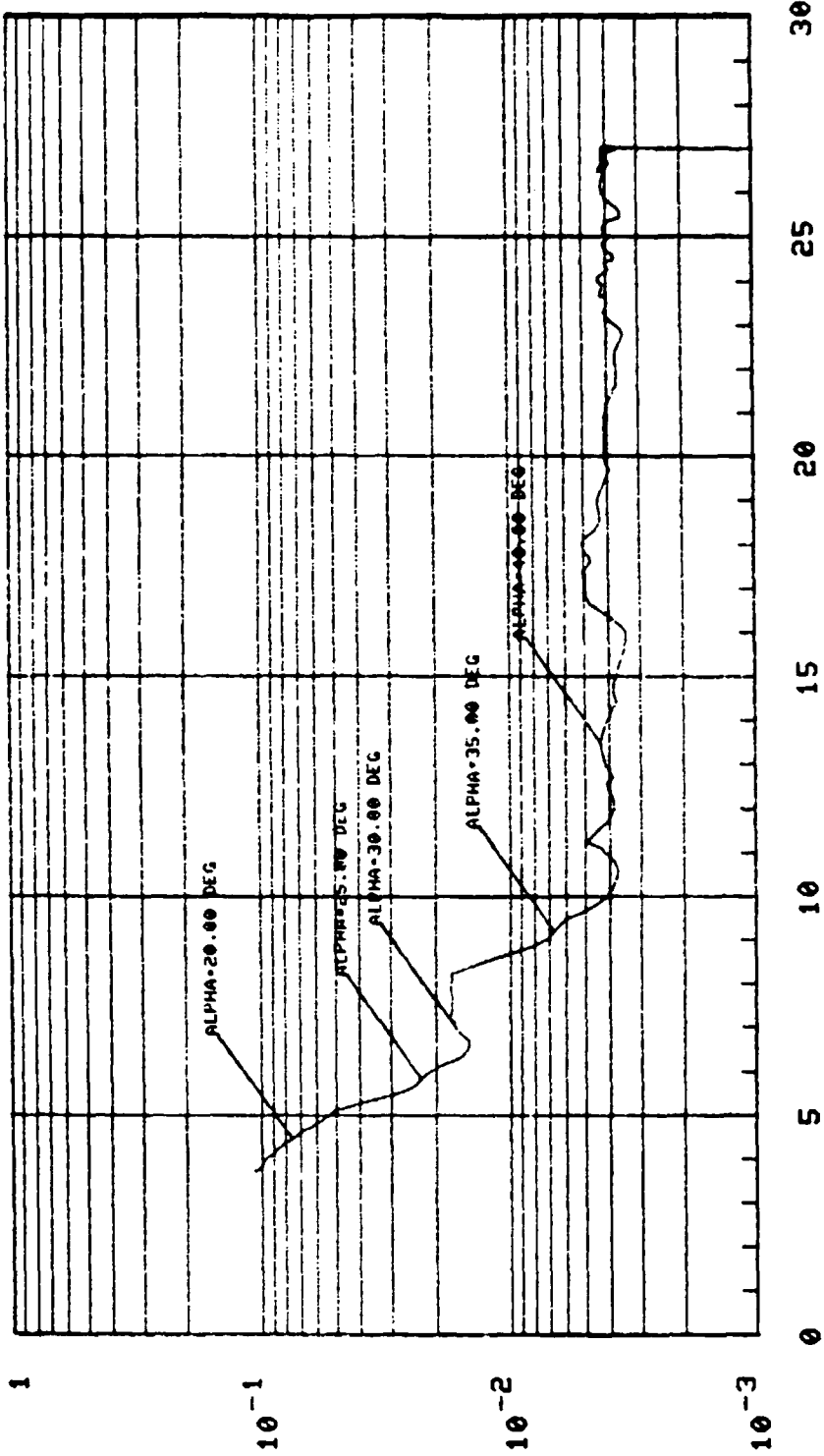
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U07T986A/H-REF 200-1380 SEC

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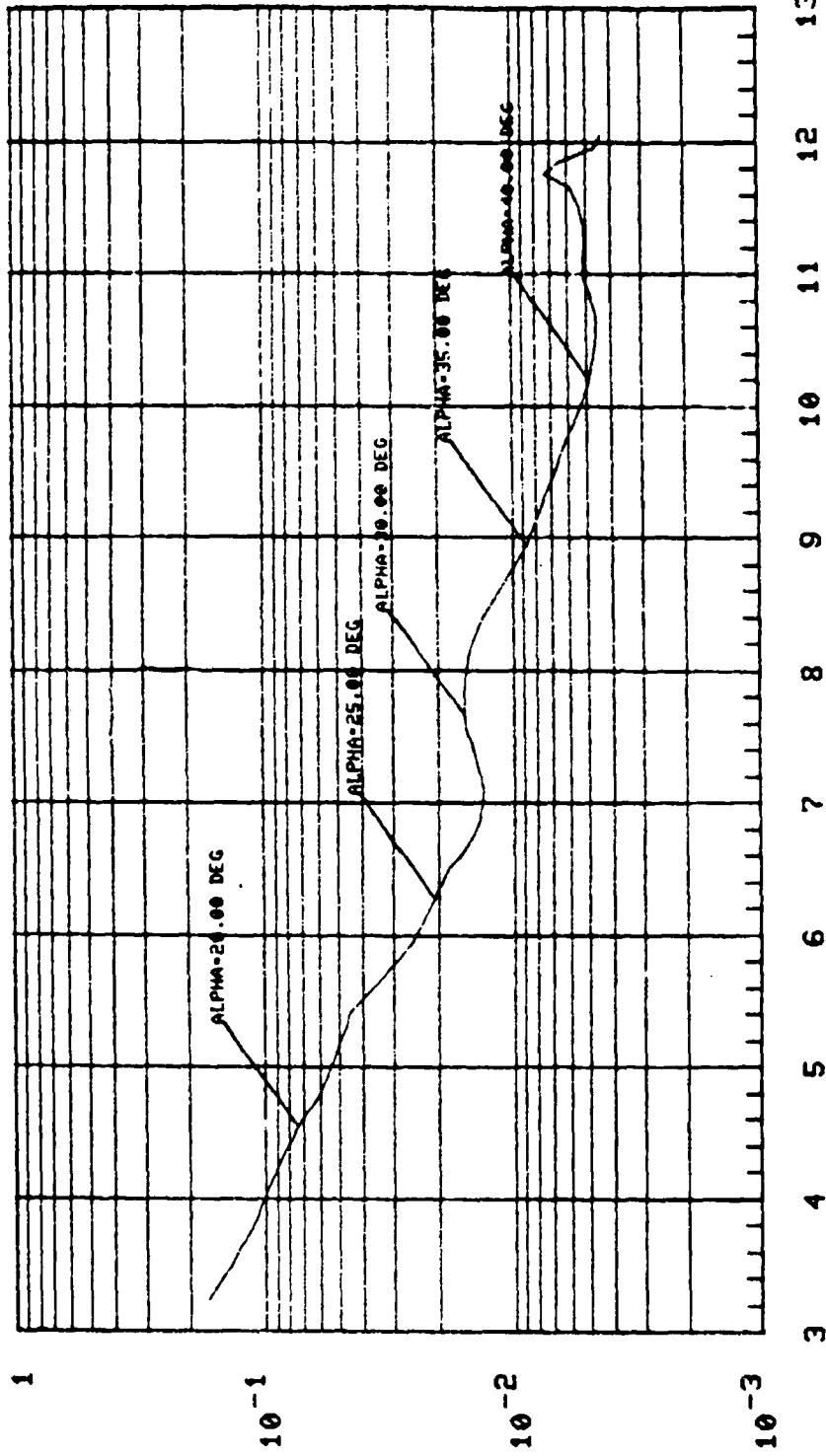
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779986A/H-REF 965-1335 SEC



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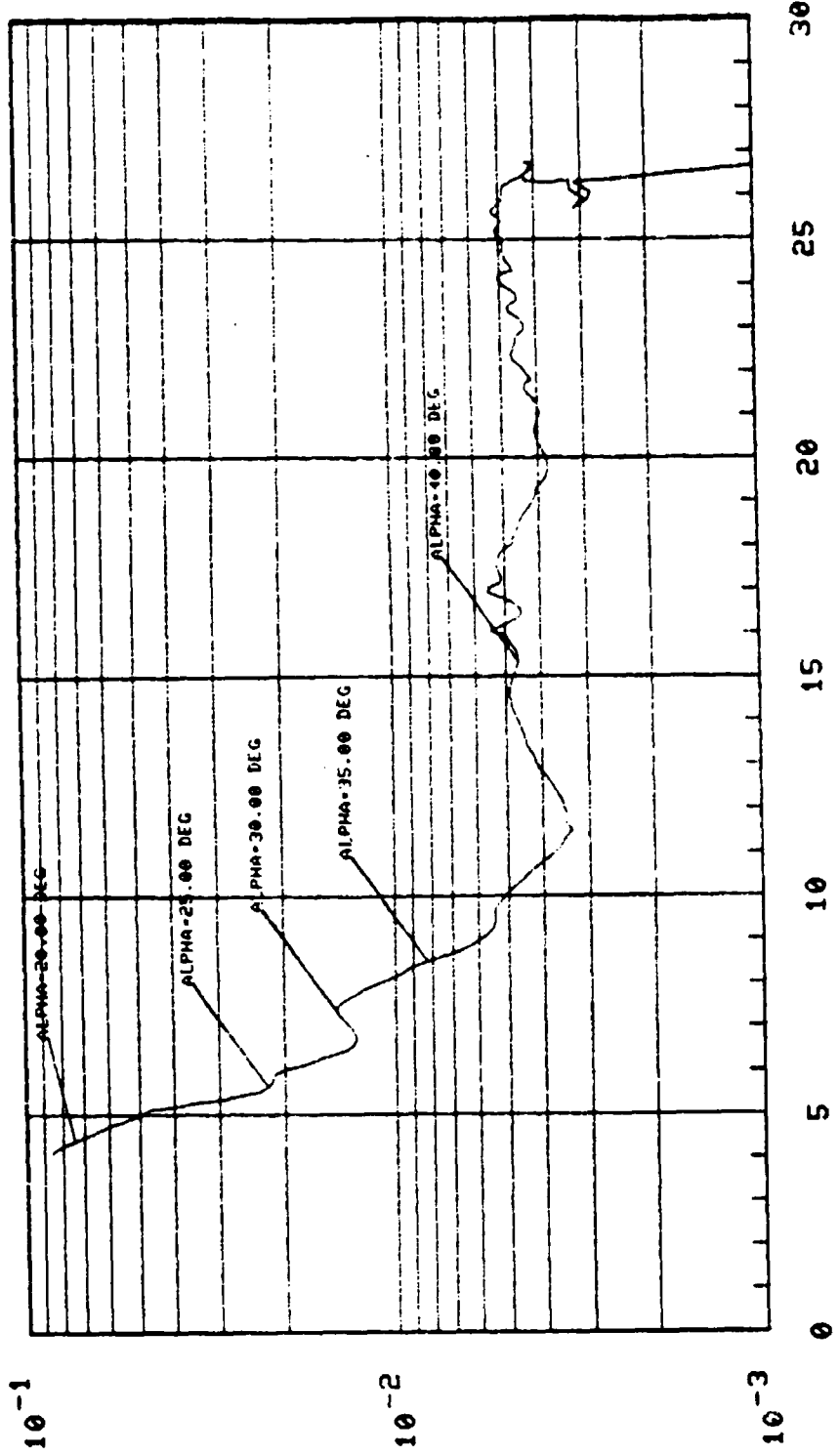
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U0779986A/H-REF

# STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T986A/H-REF 150-1350 SEC

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04 18 83  
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MACH NUMBER

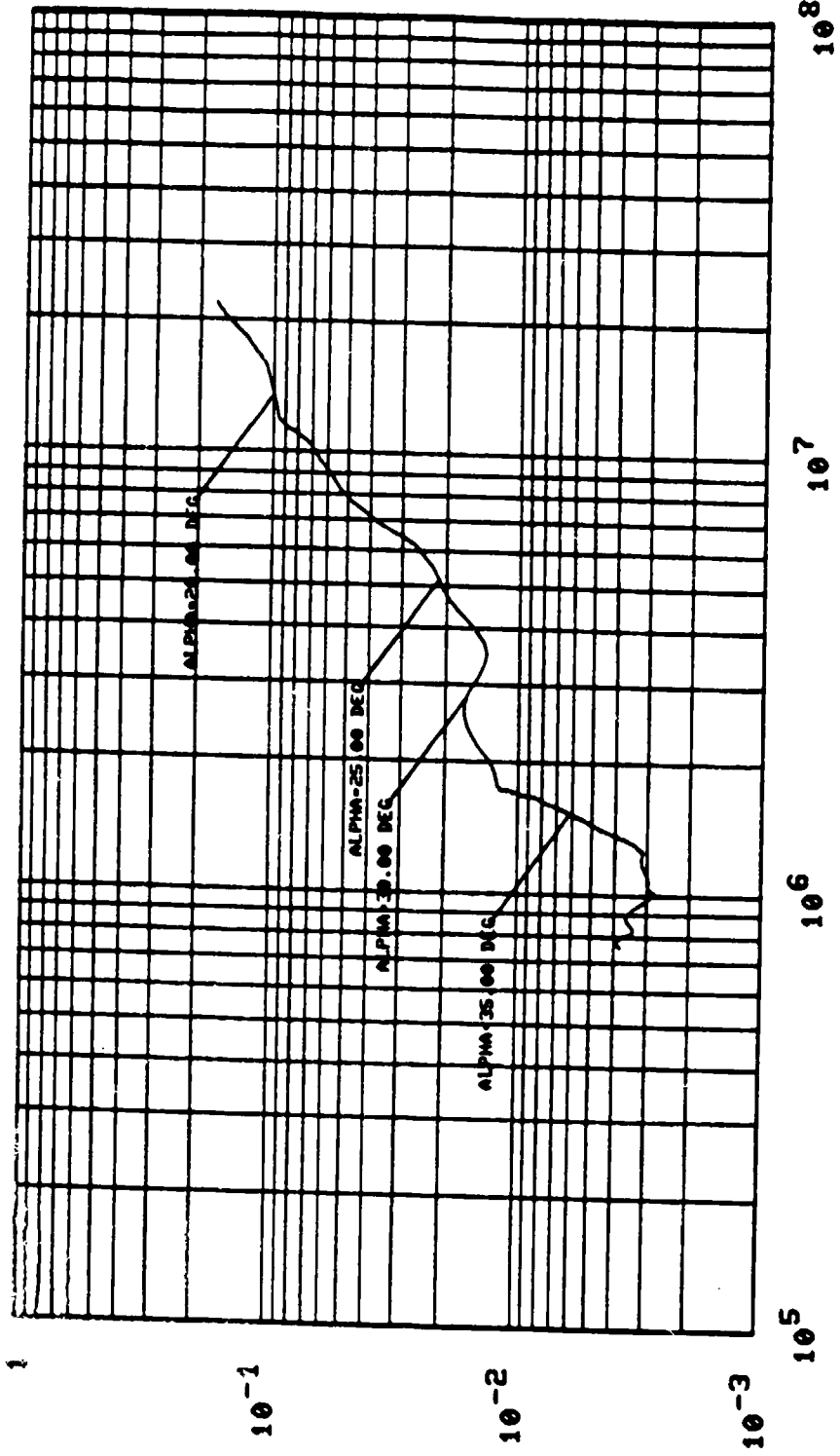
TIME COVERED : H/H-RUN

B-225

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9986A/H-REF 1065-1460 SEC

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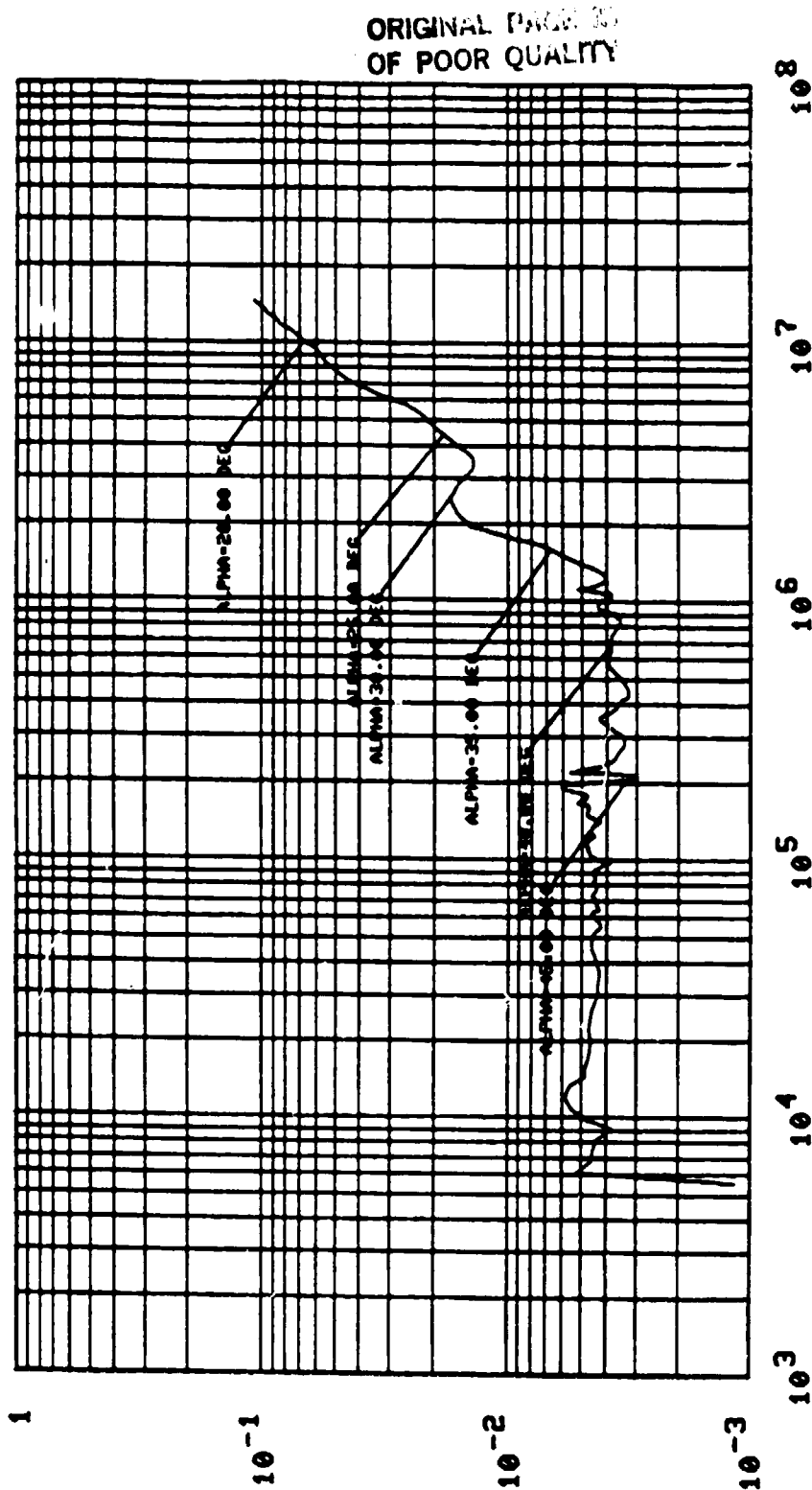
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REYNOLDS NUMBER (NS)

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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9986A/H-REF 200-1480 SEC



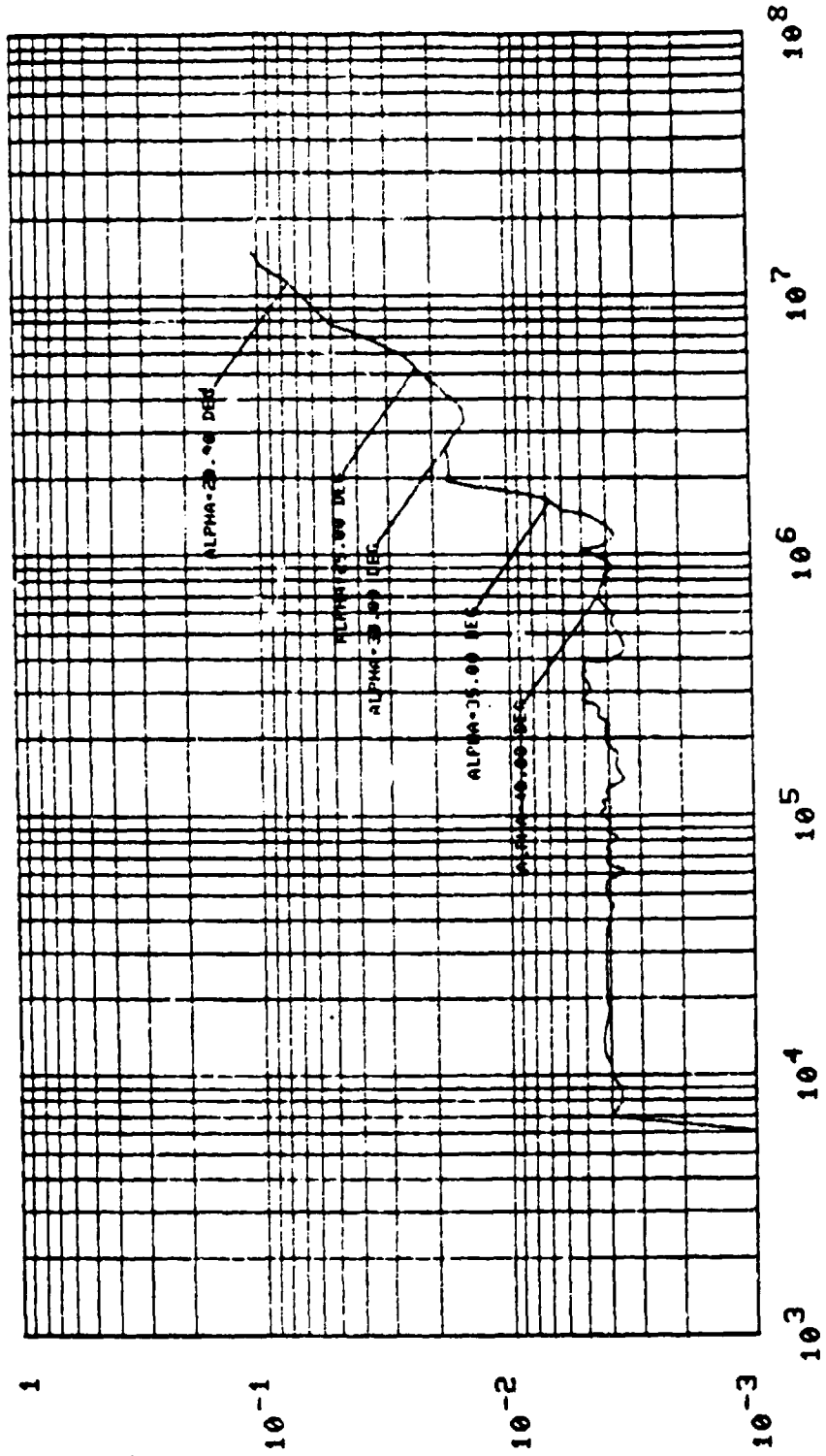
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BASE TIME - 23550236.000 SEC.

REYNOLDS NUMBER (NS)

LIFE COWELL - H/H-RVAL

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T986A/H-DEF 200-1380 SEC



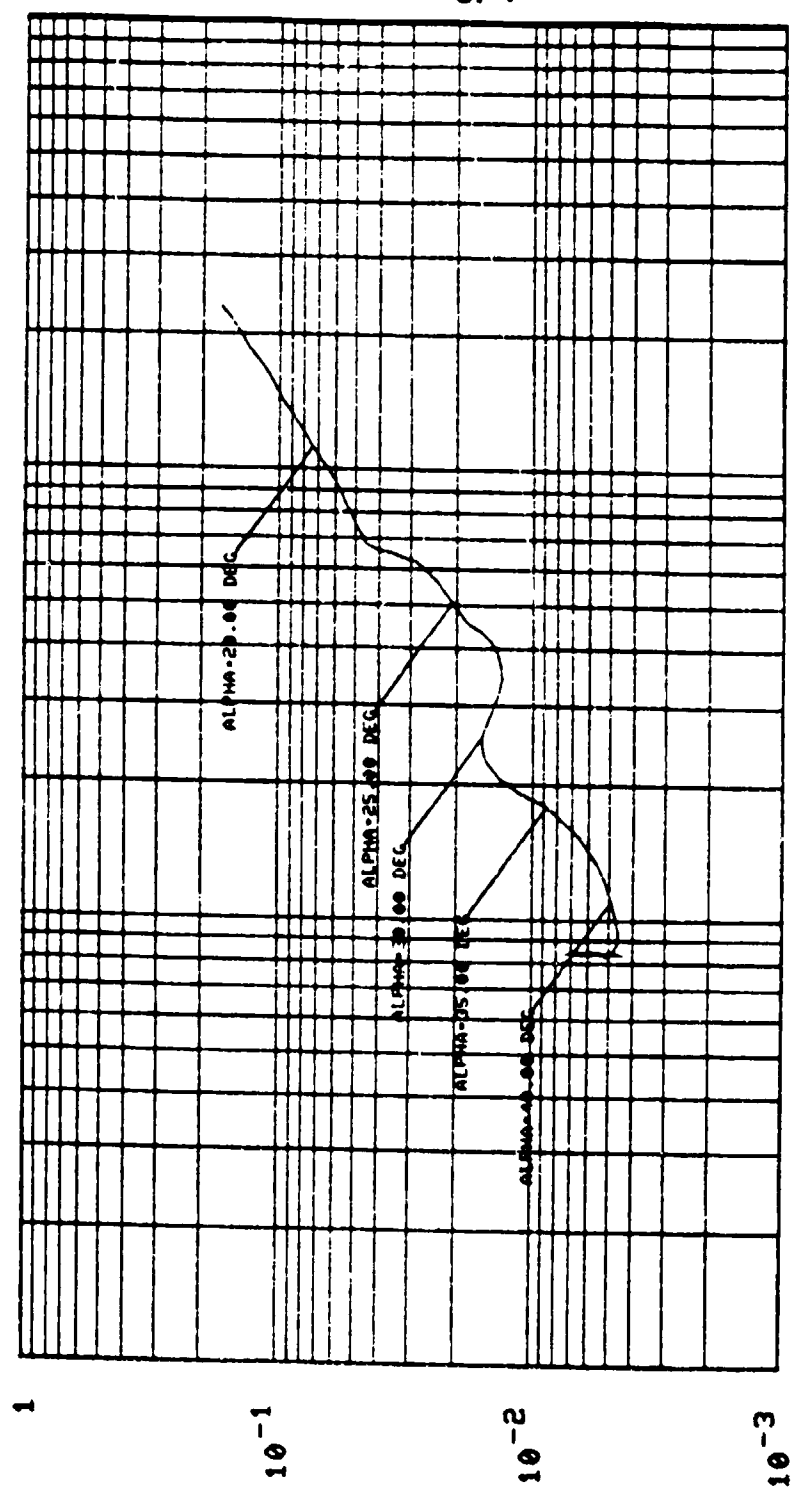
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BASE TIME - 0774584.000 SEC.

REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9986A/H-REF 965-1335 SEC



TIME COEFF - H/H-REF

B-229

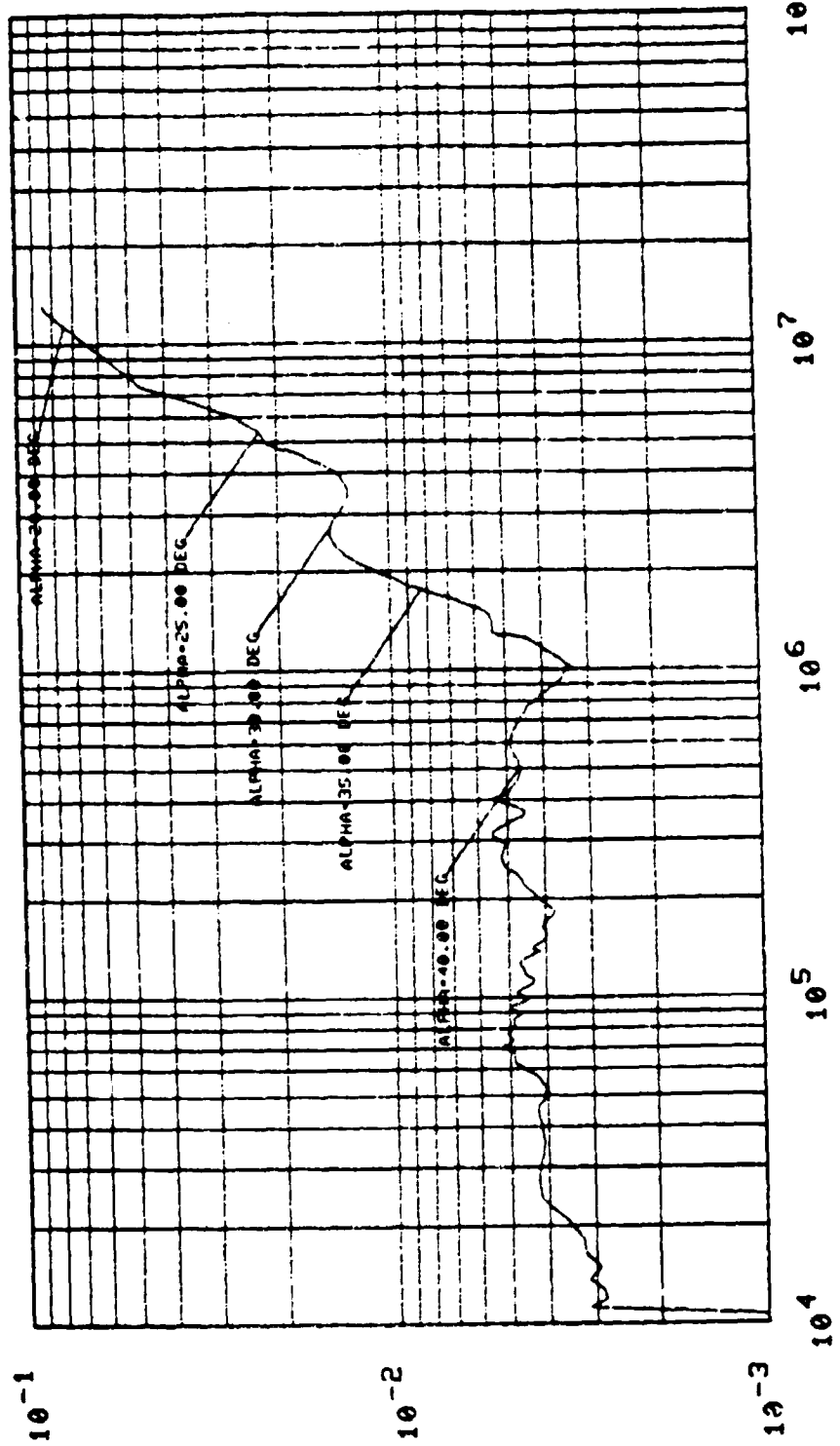
ORIGINAL PAGE IS  
OF POOR QUALITY

REYNOLDS NUMBER (NS)      BASE TIME - 1600023.000 SEC.      04/19/83



STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779086A/H-REF 150-1350 SEC



TIME CORRECTION - IN-ORBIT

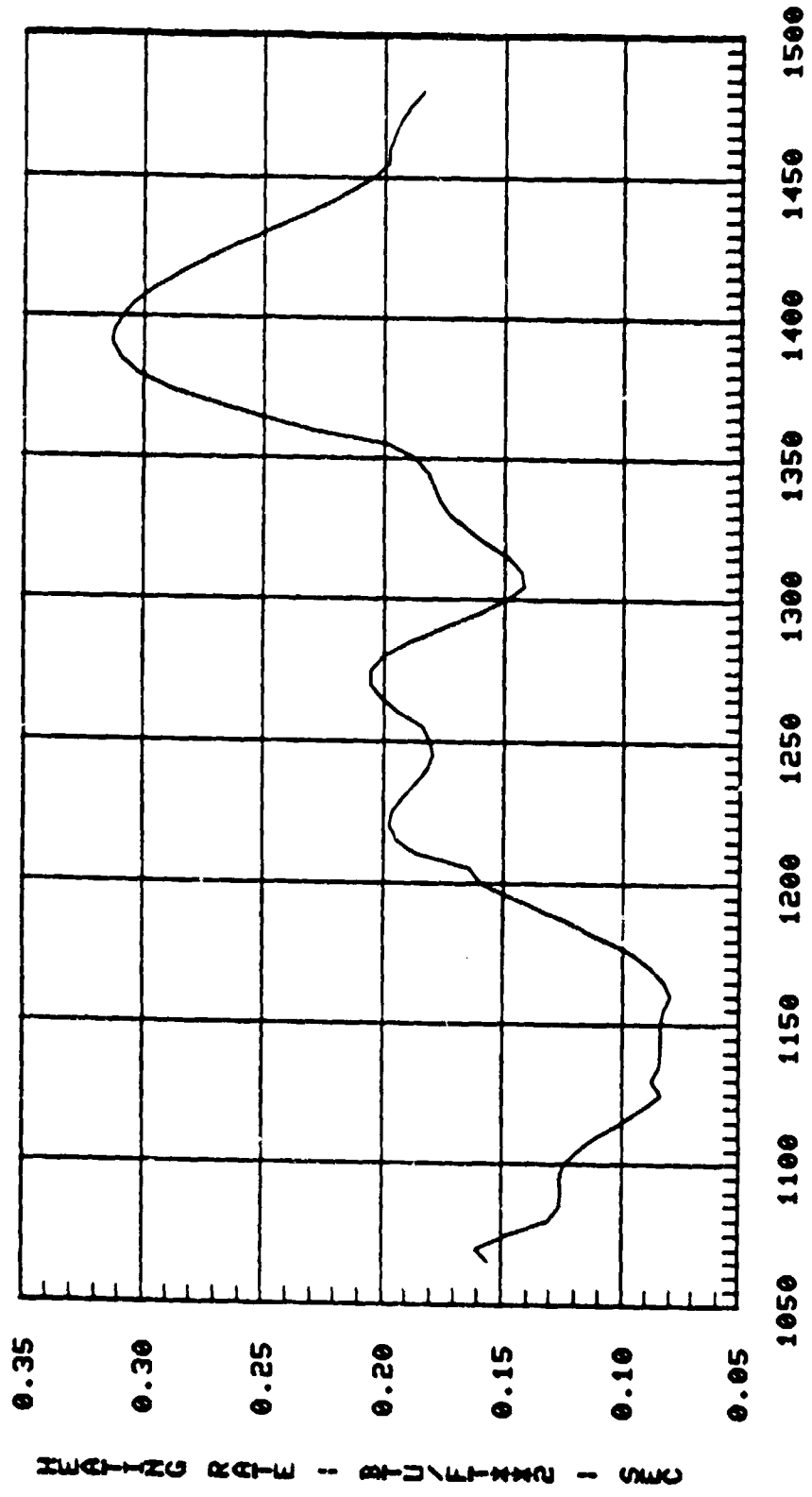
B-230

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REYNOLDS NUMBER (NS)      04.12.83  
BASE TIME - 27698591.000 SEC.

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071986A

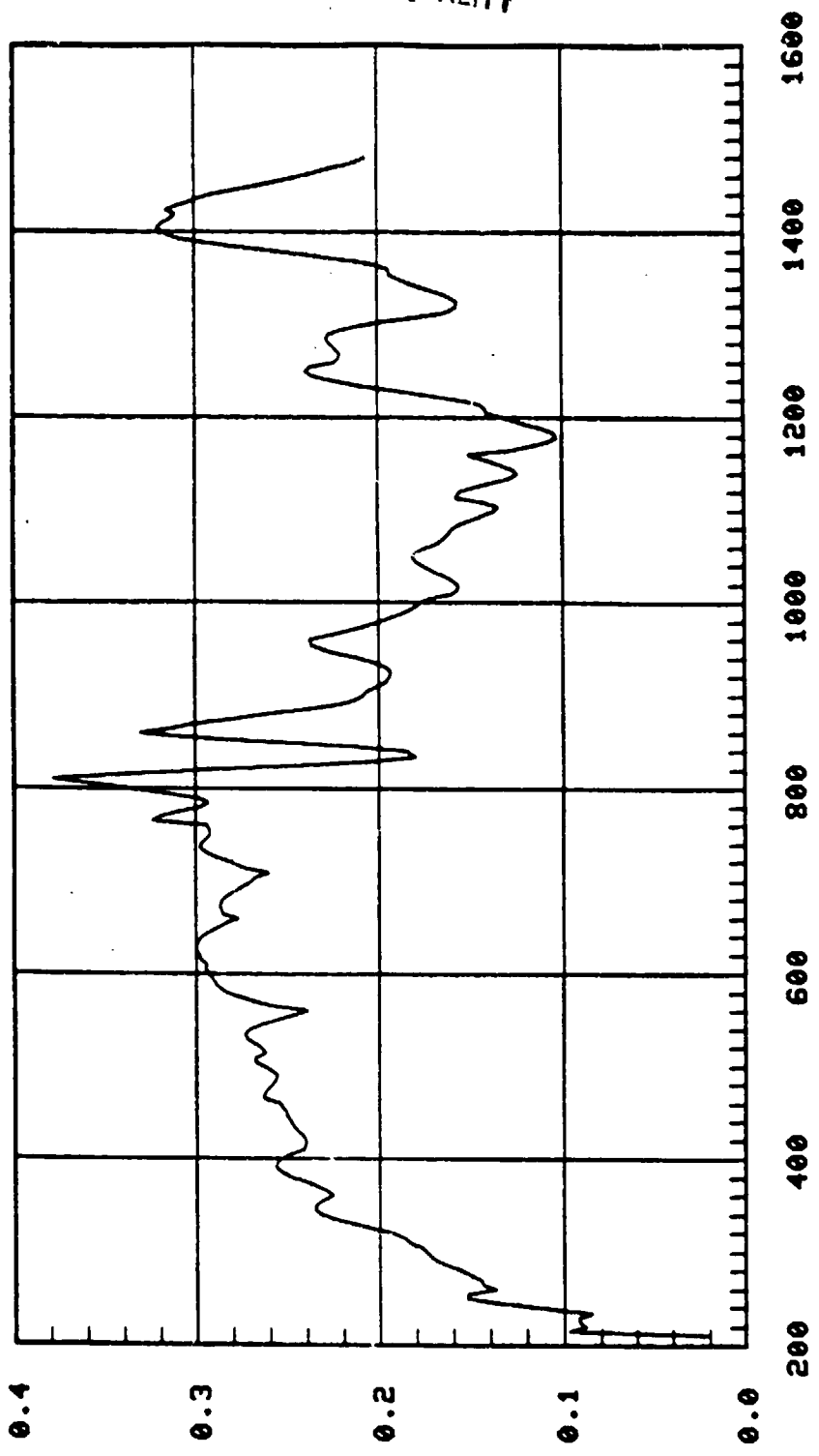


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OF POOR QUALITY

TIME - SECONDS 04/20/83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ U07T986A



HEATING RATE - BTU/FT-HRS - SEC

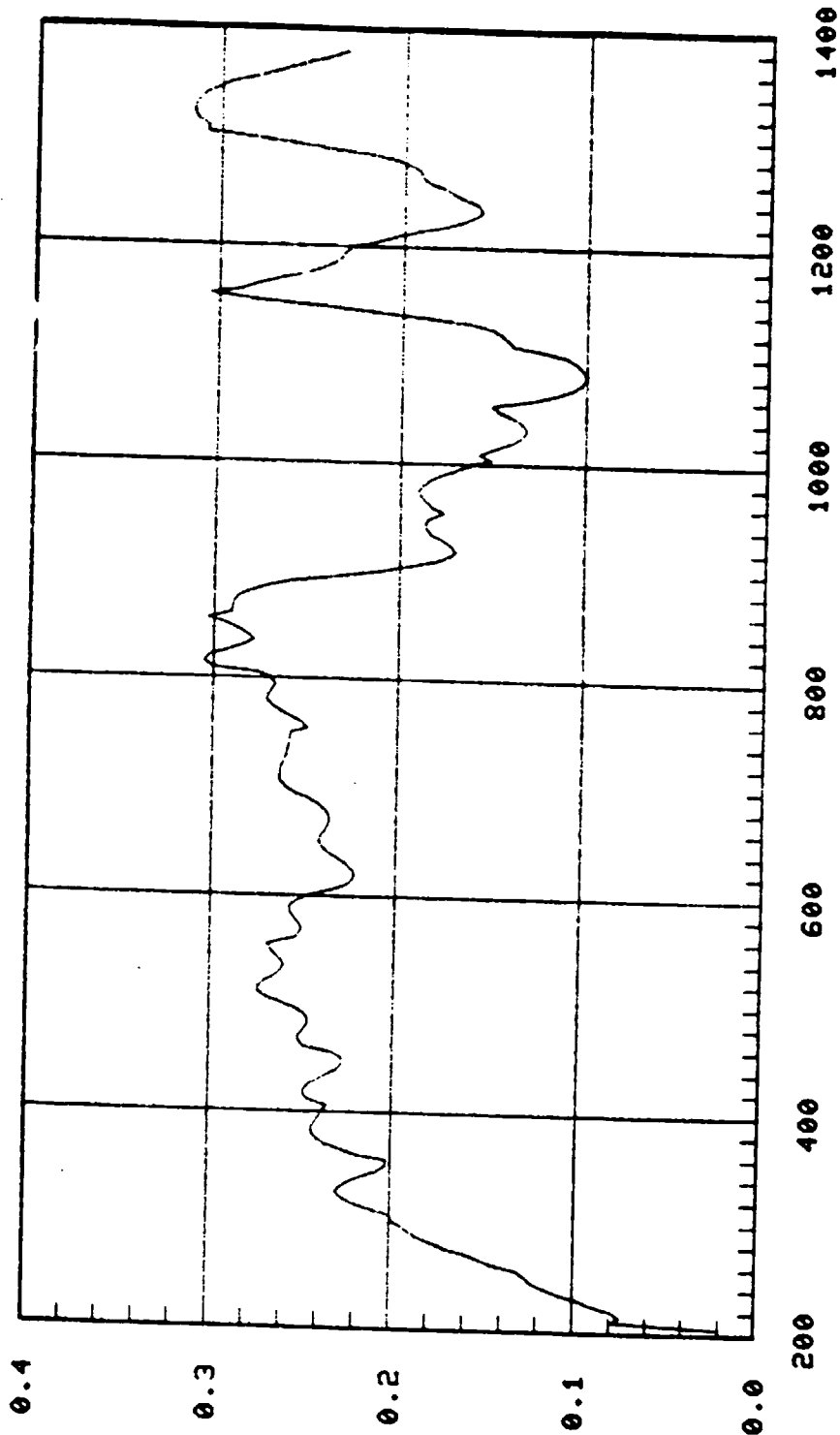
B-232

ORIGINAL PRINT IS  
OF POOR QUALITY

TIME - SECONDS 04/29/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9986A



HEATING RATE -- BTU/FT<sup>2</sup>/SEC

B-233

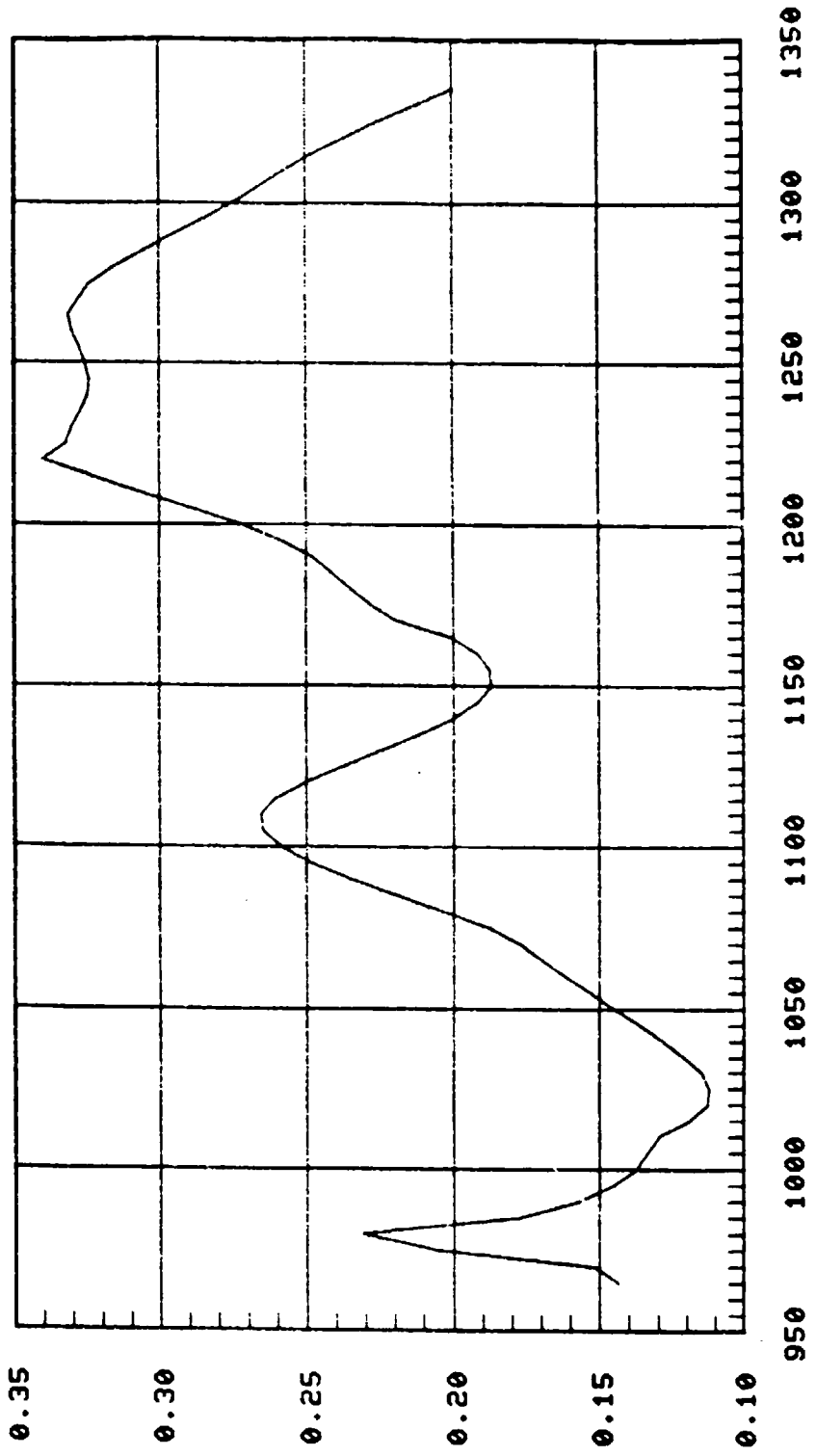
ORIGINAL PAGE IS  
OF POOR QUALITY

TIME - SECONDS

04/19/83

ST5-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779986A



HEATING RATE -- BTU/FT\*HR -- SEC

B-234

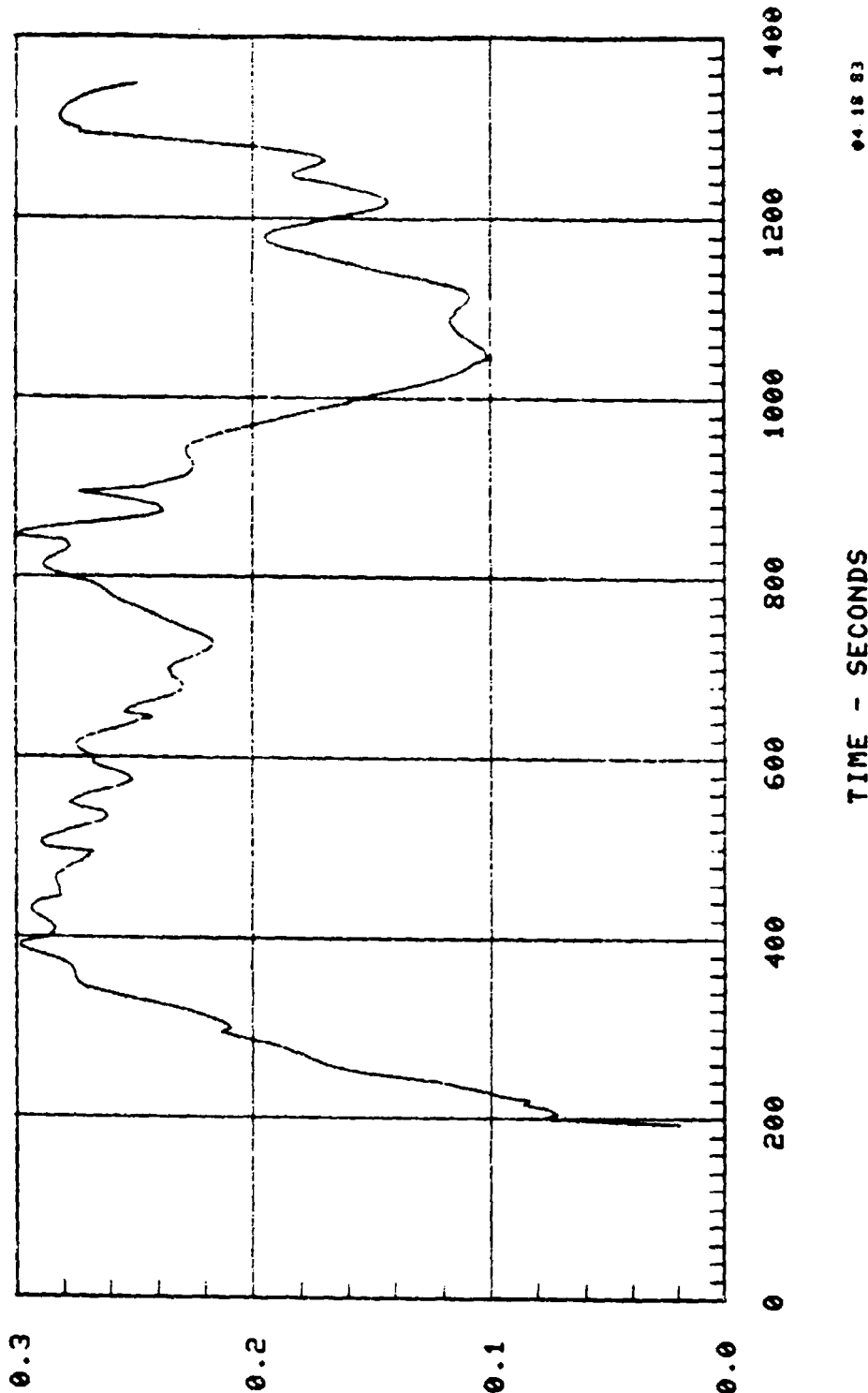
ORIGINAL PAGE IS  
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TIME - SECONDS

04/19/83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

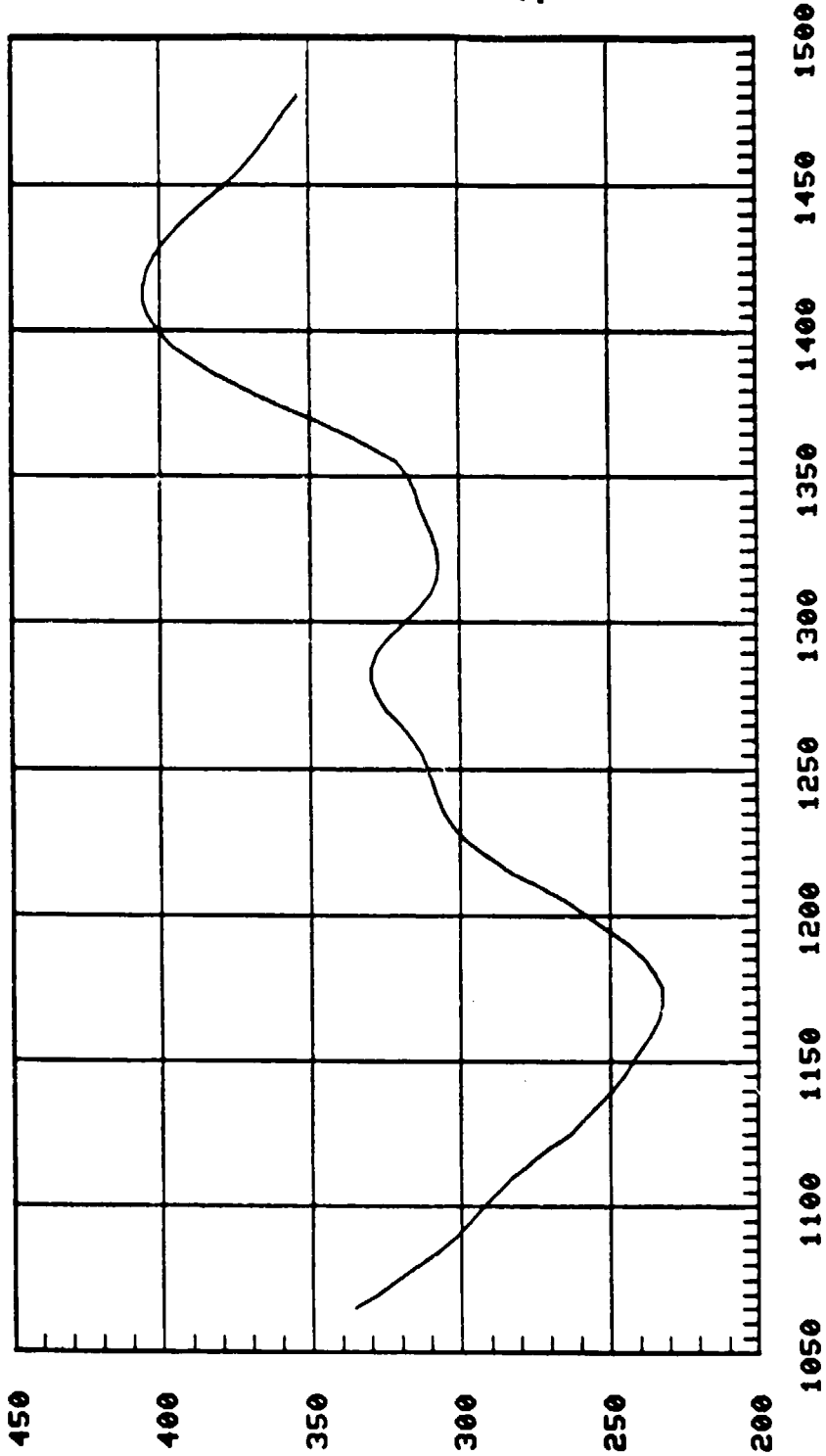
U07T598EA



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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779986A



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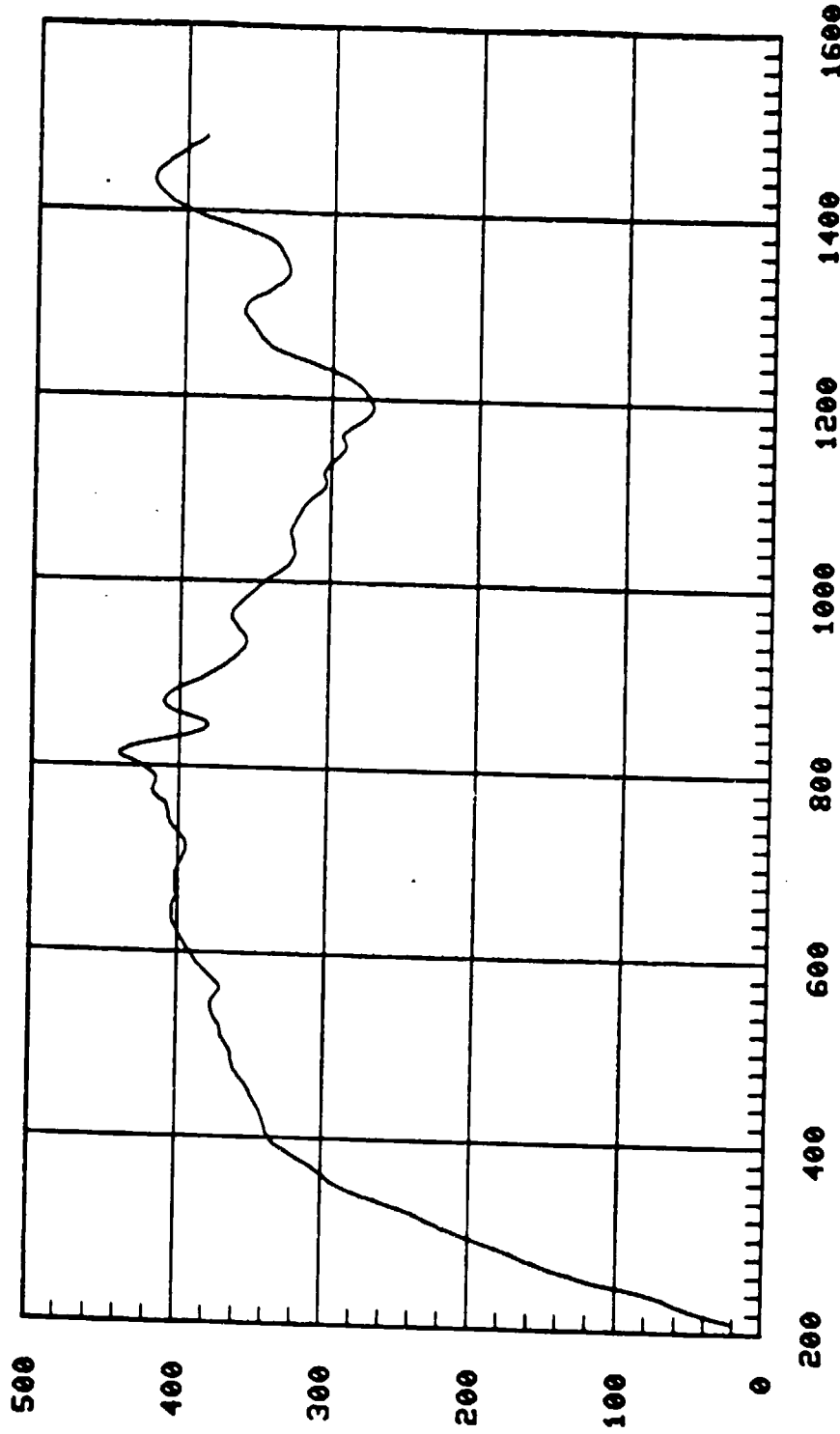
TEMPERATURE - F

TIME - SECONDS

04/20/83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0719986A



FUELWEIGHT-DOWN - F

B-237

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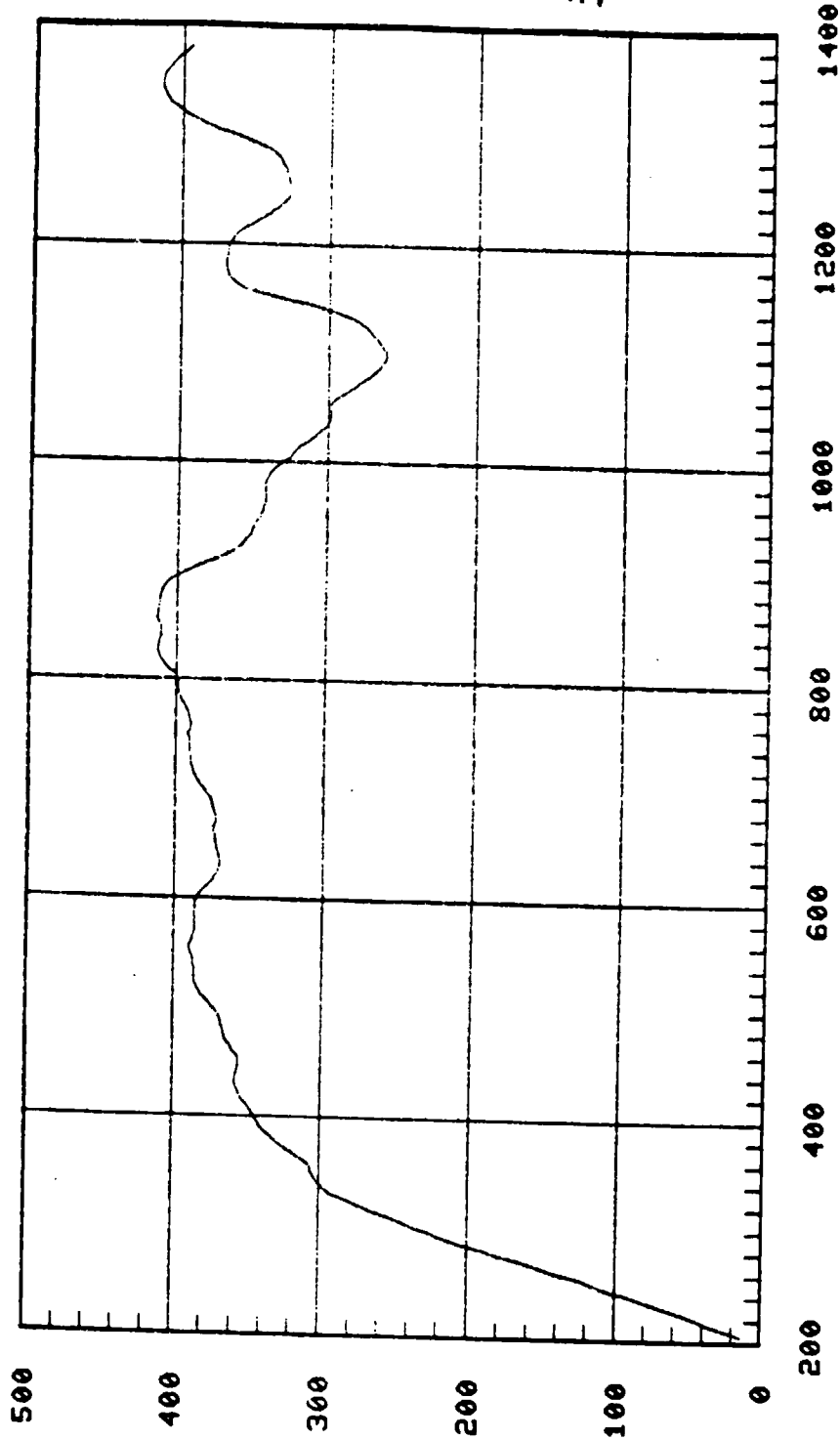
TIME - SECONDS

04/20/83



STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

10779986A



TEMPERATURE -- F

B-238

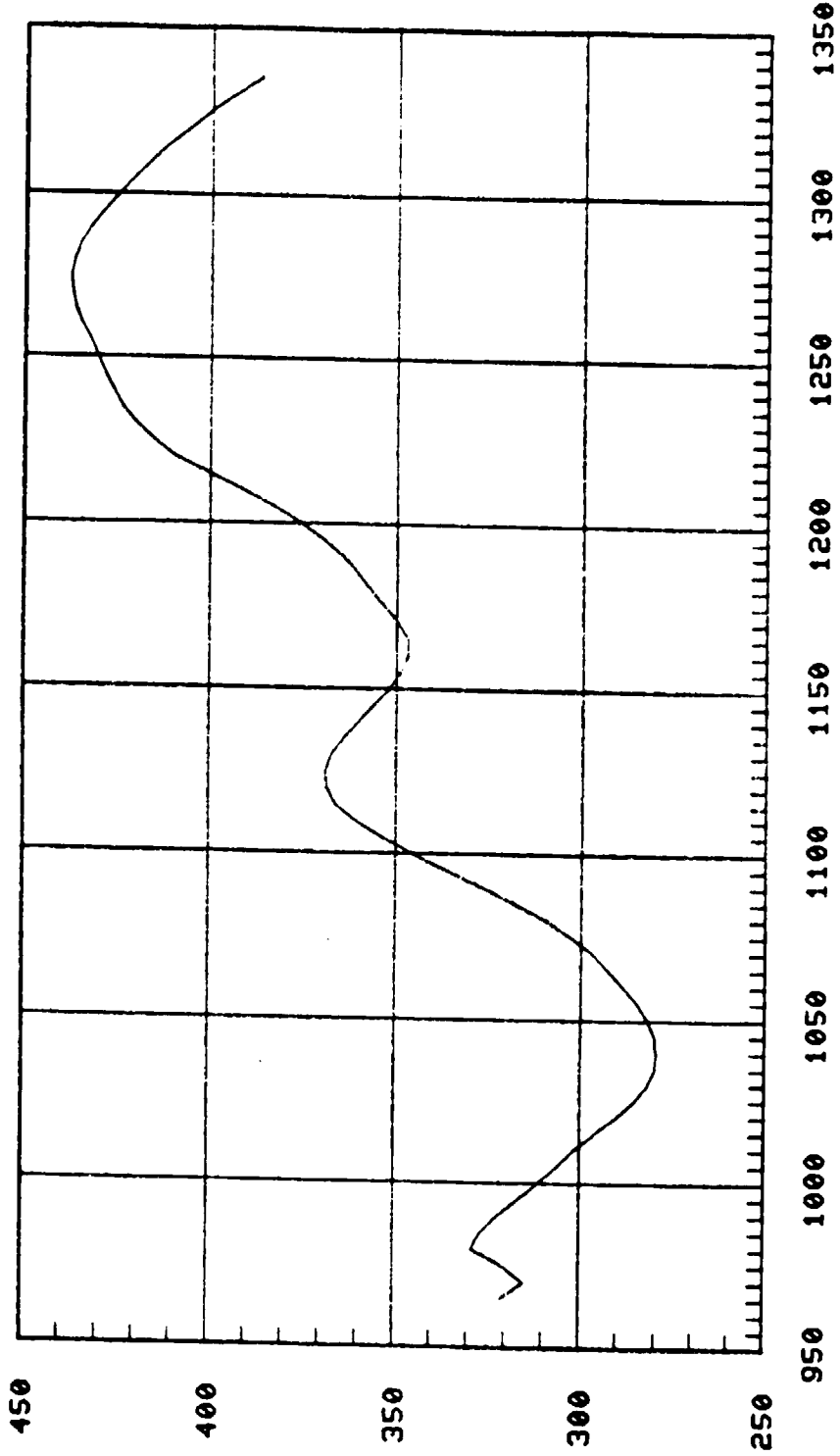
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TIME - SECONDS

04 19:53

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T5986A



PARAMETER -- F

B-239

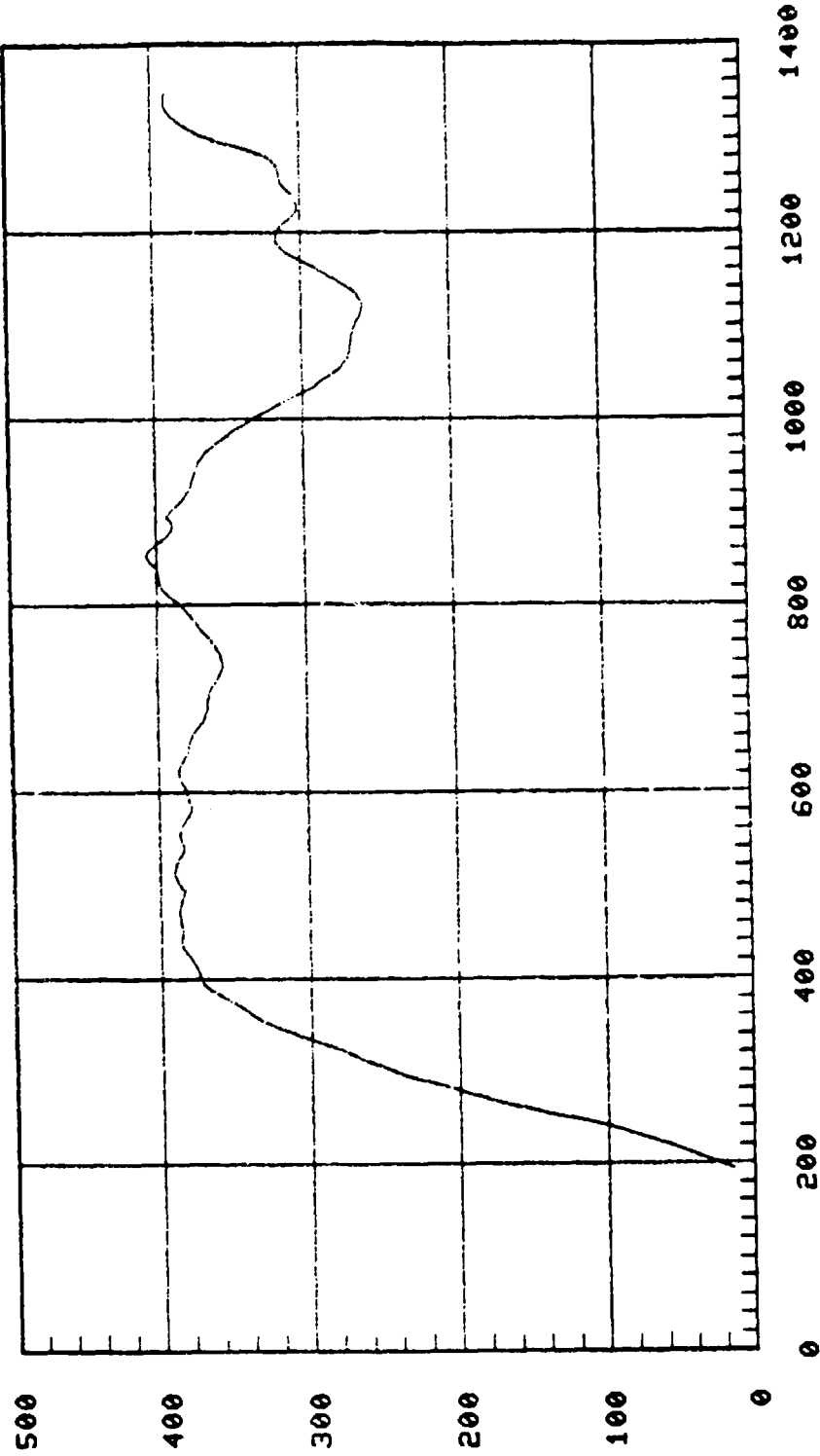
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TIME - SECONDS

04.19.83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0775986A



04 18 53

TIME - SECONDS

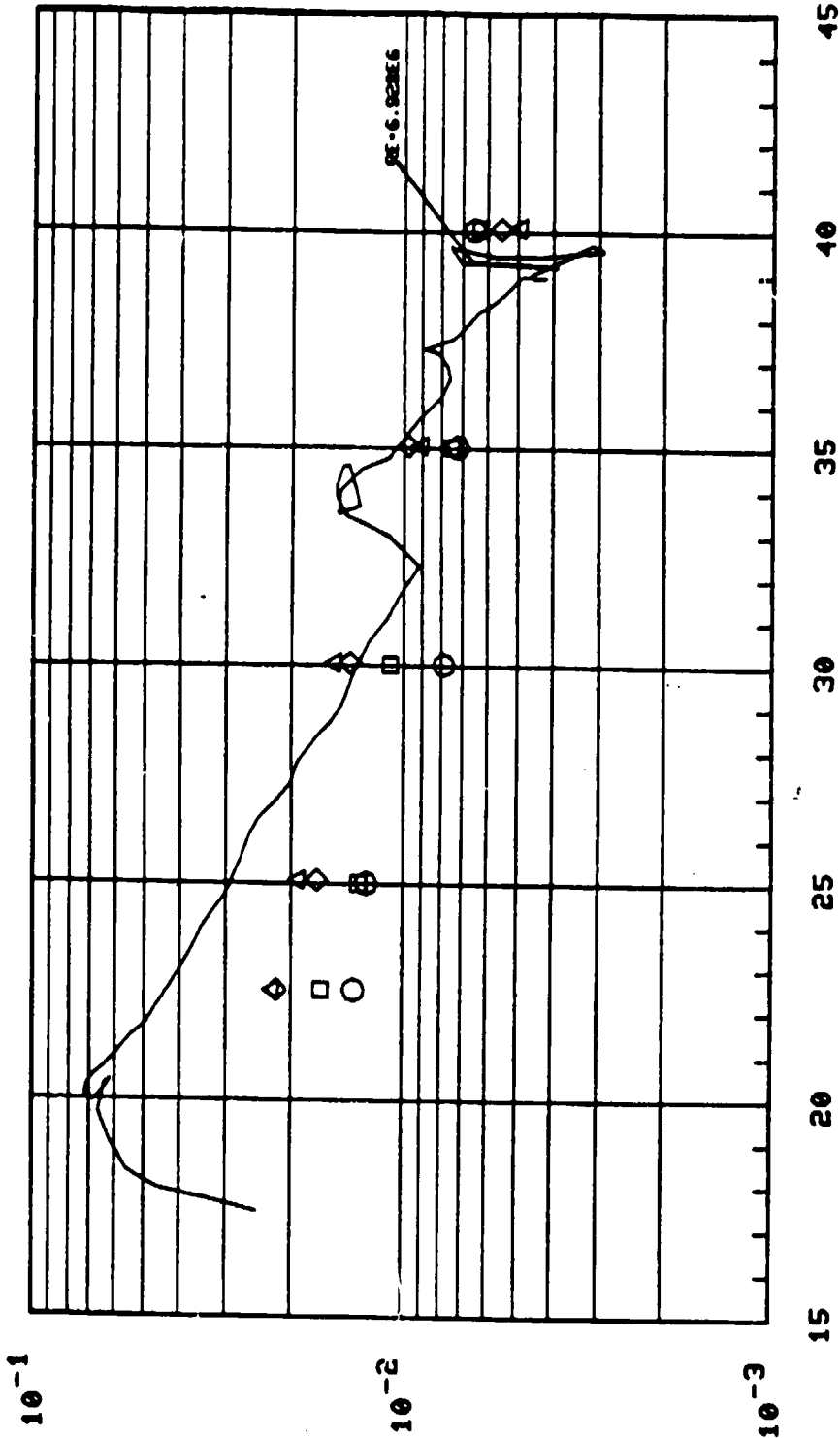
TEMPERATURE - F

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779994R/H-REF 1065-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

○ □ ◇



REF - 6.928E6

B-241

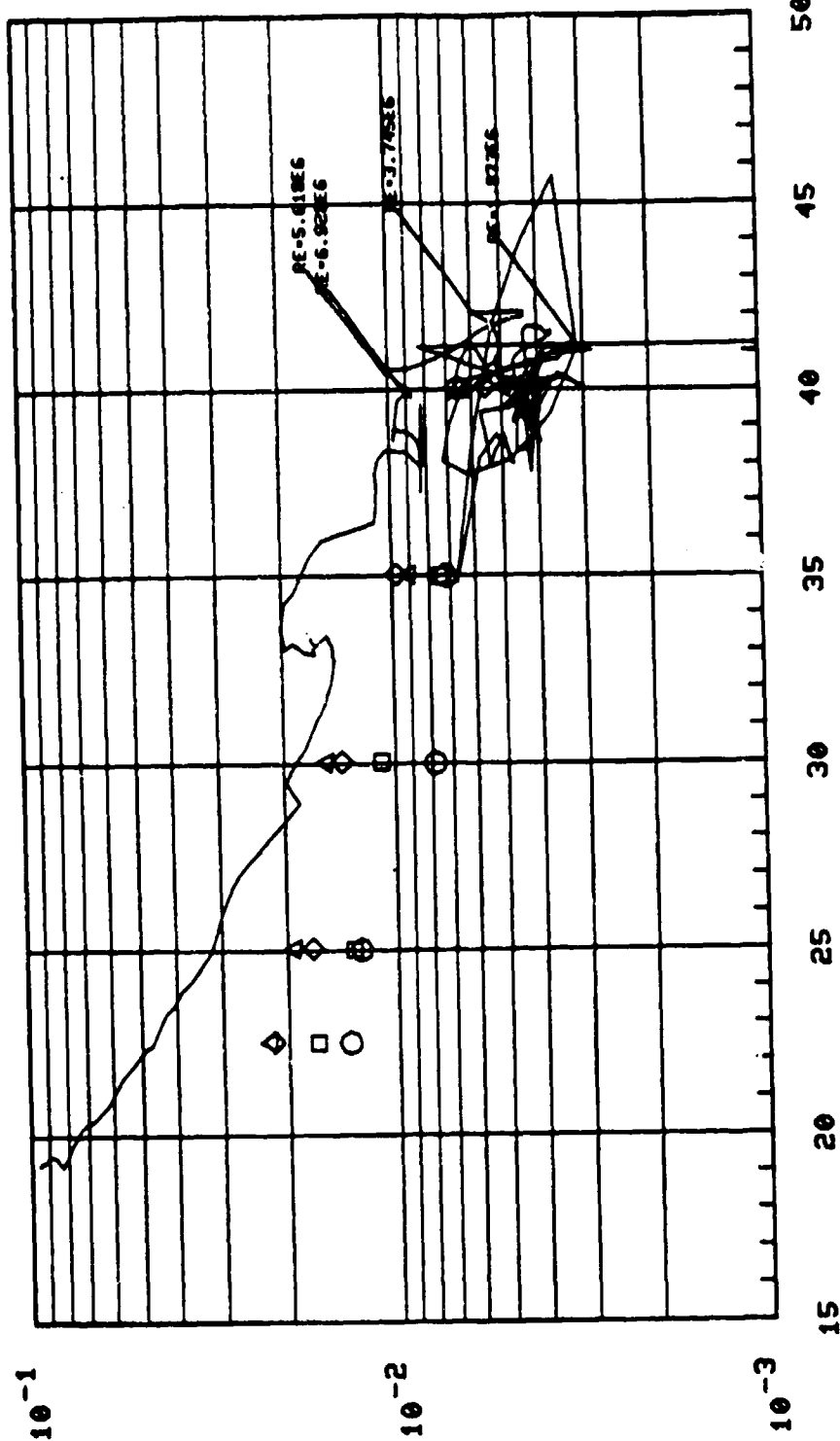
04/20/83  
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# STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9994A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

□ ◇ ○



FLIGHT COMPARISON - H/H-REF

B-242

ORIGINAL PAGE 19  
OF POOR QUALITY

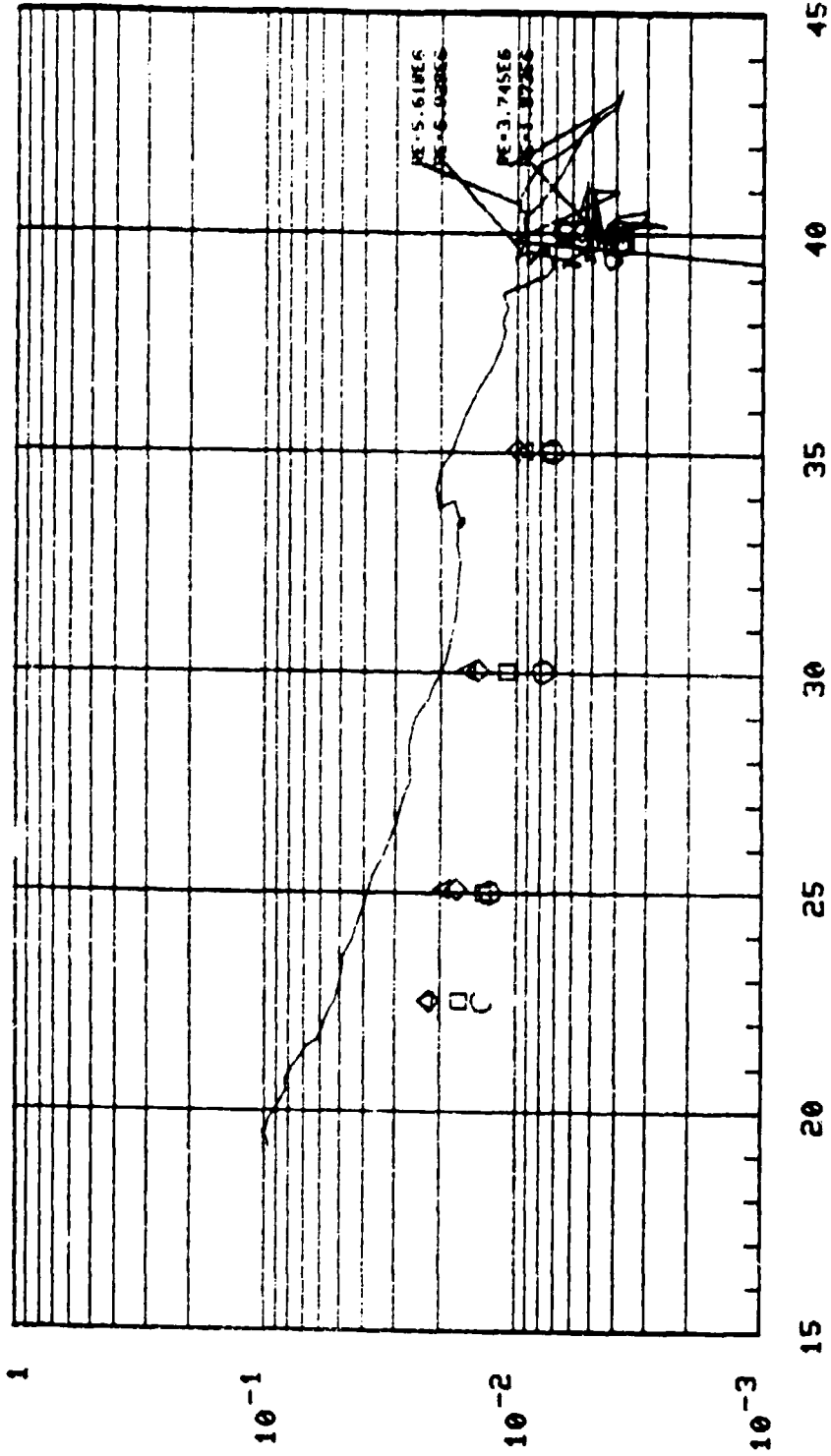
04/20/83  
BASE TIME - 27550236.000 SEC.  
ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

AF 0.01 SCALE RE \* 1.0 E06  
 AF 0.0175 SCALE RE \* 2.0 E06  
 AF 0.0175 SCALE RE \* 3.0 E06  
 AF 0.0175 SCALE RE \* 3.7 E06

U079994A/H-REF 200-1300 SEC

□ ○ ◇



FILM COVER -- H/H-REF

B-243

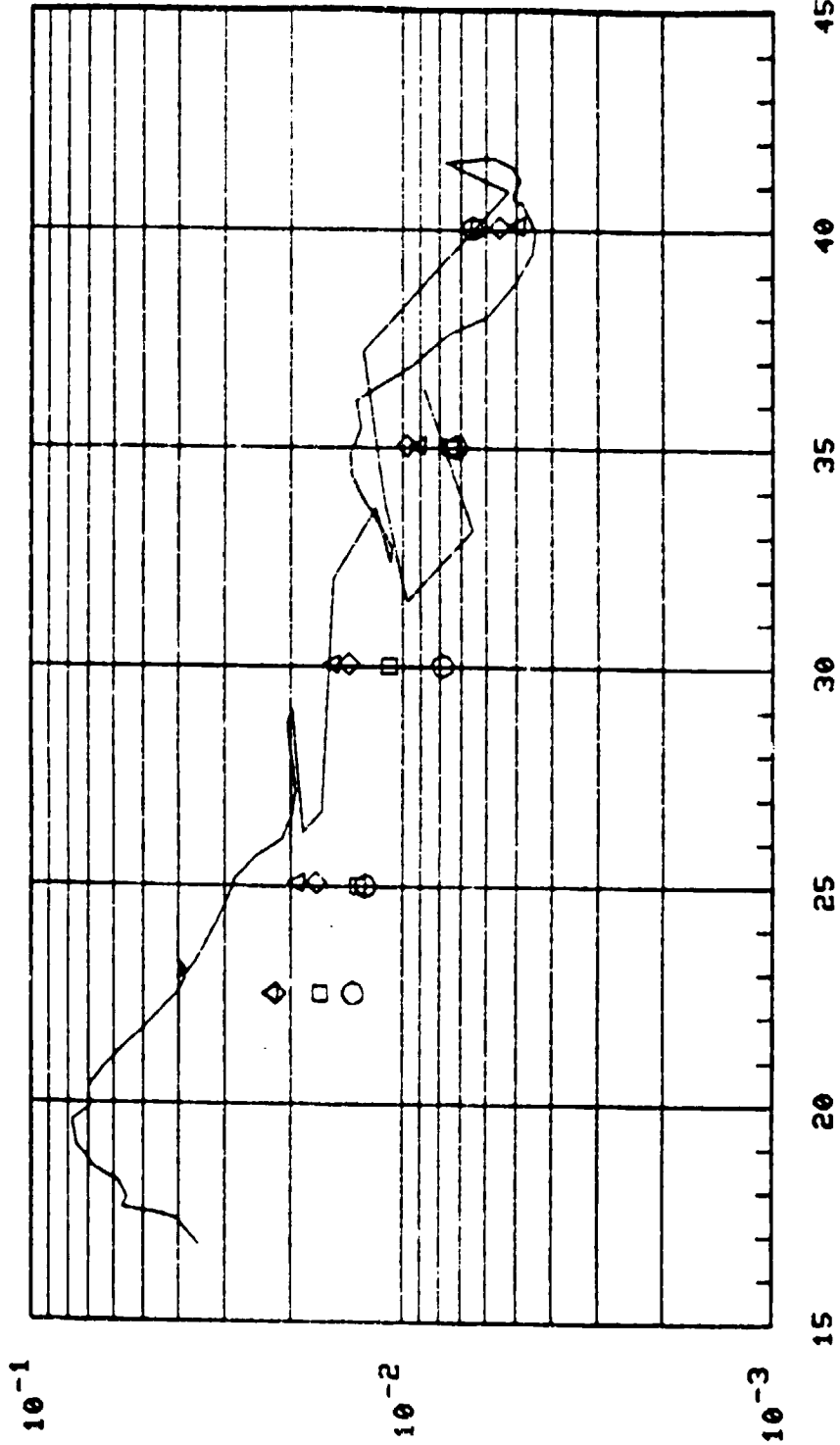
ORIGINAL PAGE 19  
 OF POOR QUALITY

04:19:83  
 BASE TIME \* 0774564.000 SEC.  
 ANGLE-OF-ATTACK - DEG

# STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9994A/H-REF 565-1335 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



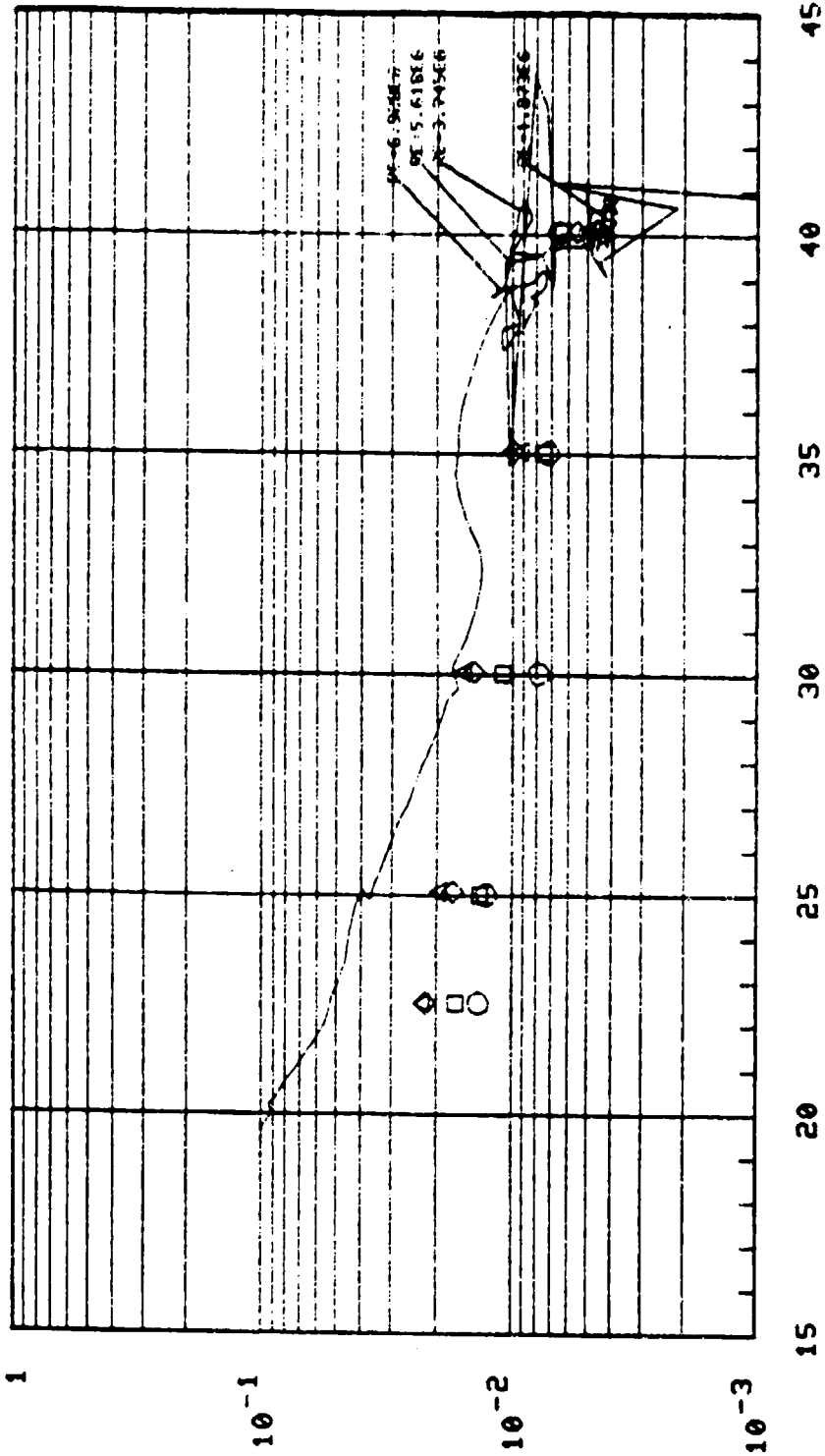
TIME COEFFICIENT - H/I-244

B-244

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9994A/H-REF 150-1350 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06



FILM COUNT - H-REF

B-245

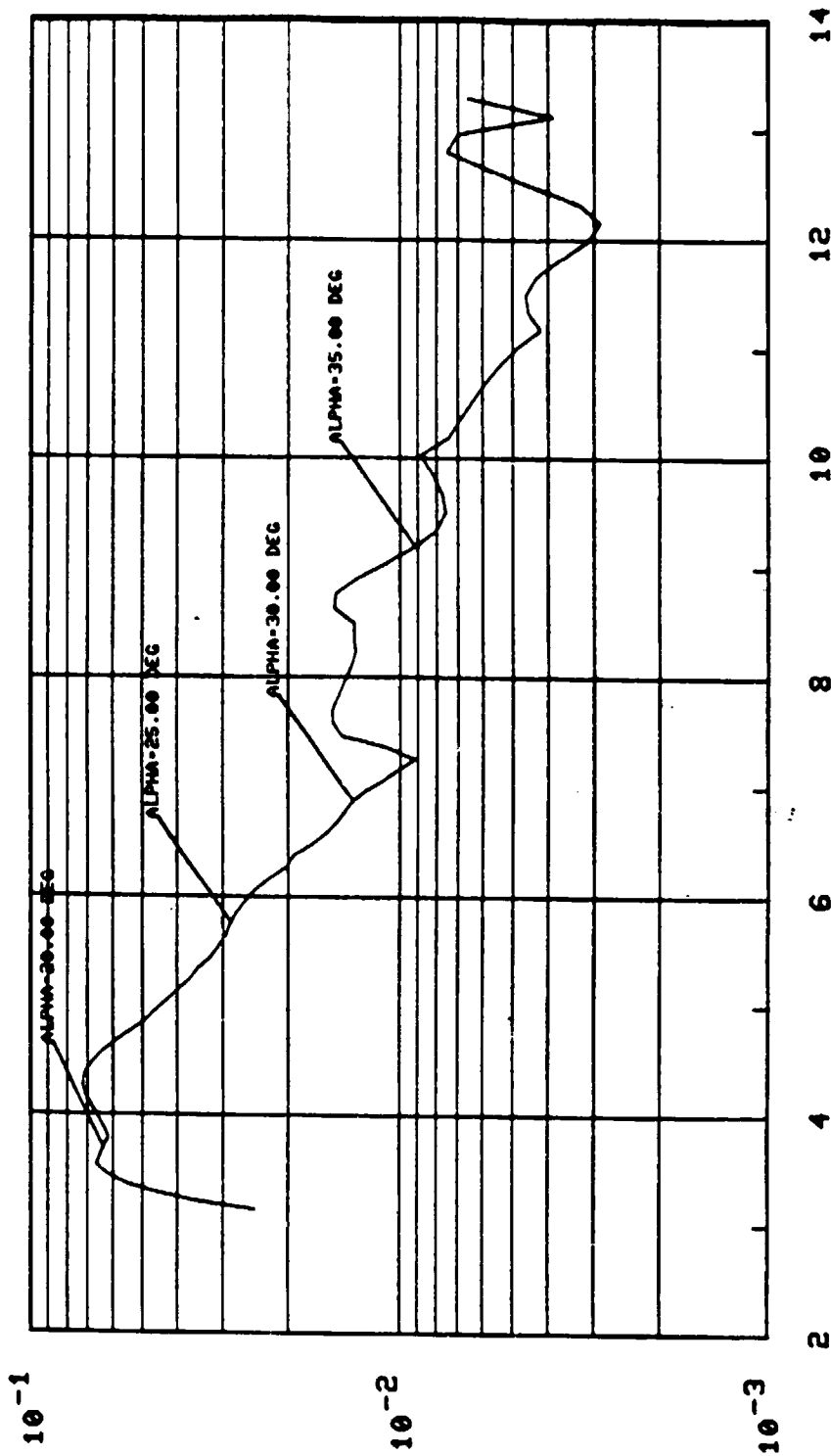
ORIGINAL PAGE 19  
OF POOR QUALITY

ANGLE-OF-ATTACK - DEG      BASE TIME - 27698591.000 SEC      04 15 83



STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9994A/H-REF 1065-1480 SEC



FLIGHT COEFF : H/H-REF

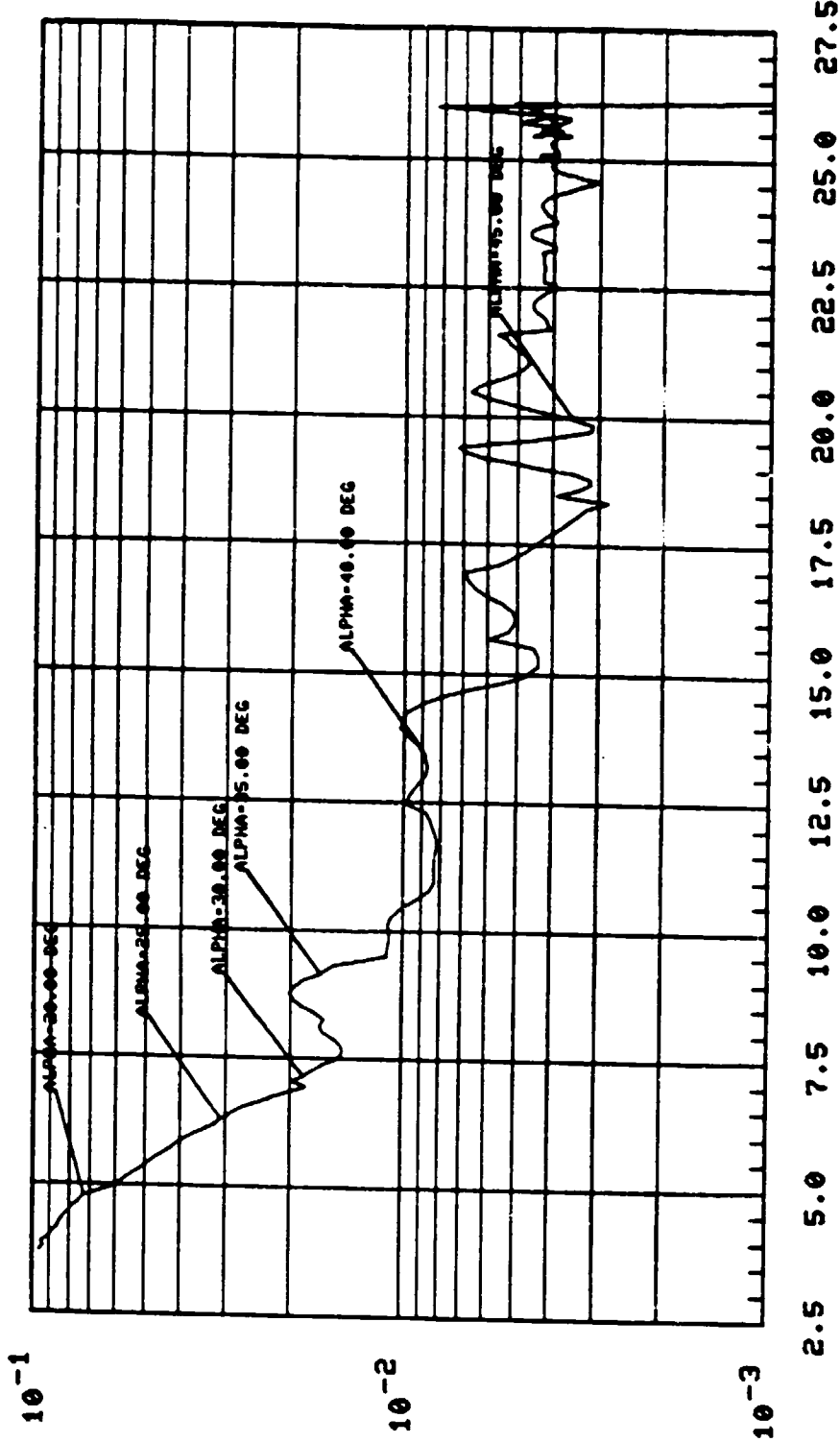
B-246

04/20/83  
BASE TIME - 0909749.000 SEC.

MACH NUMBER

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A/H-REF 200-1480 SEC



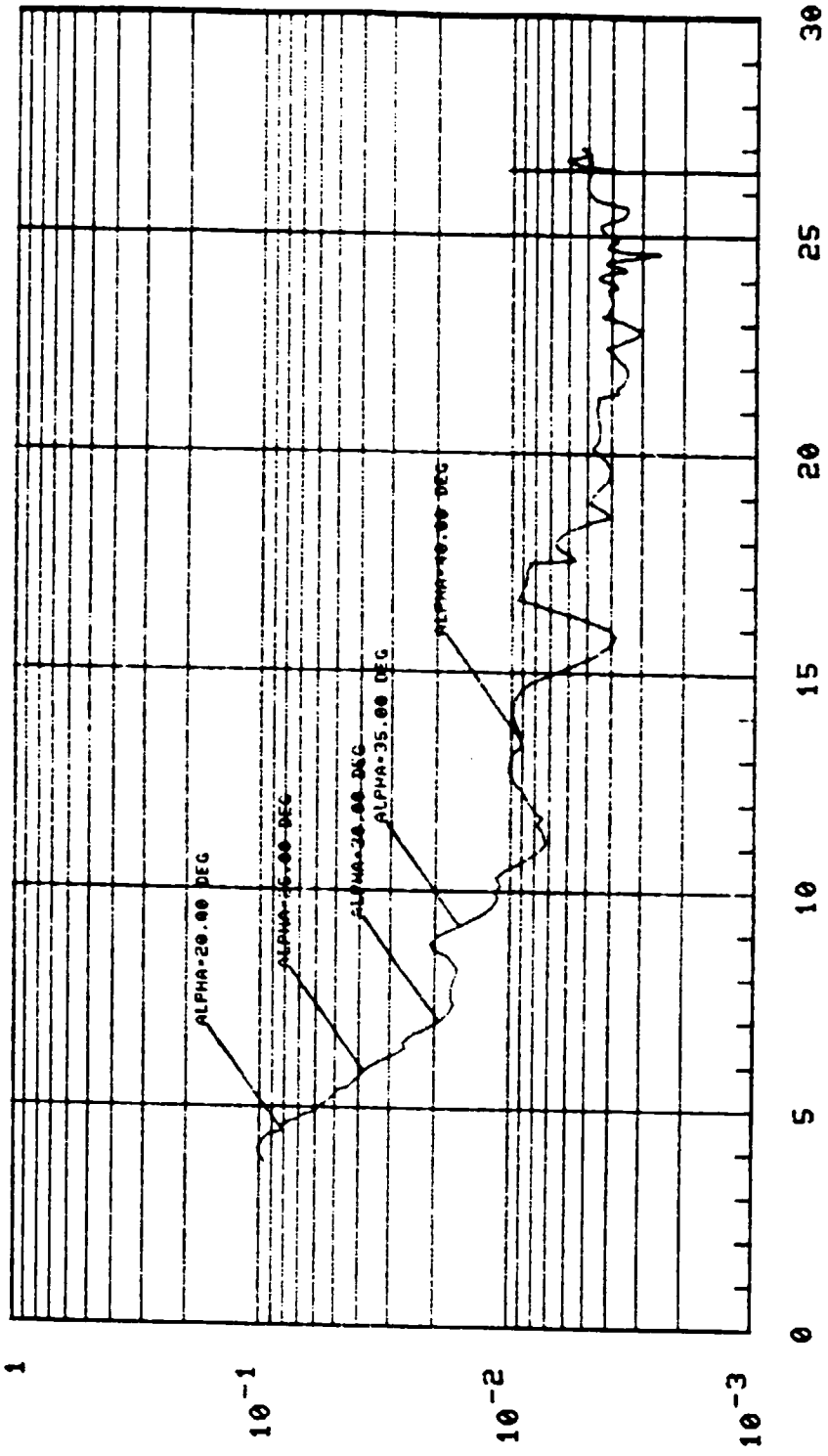
FILE CODE - H-REF

ORIGINAL PAGE IS  
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MACH NUMBER  
04/20/83  
BASE TIME - 27550236.000 SEC.

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719994A/H-REF 200-1380 SEC



U0719994A/H-REF

B-248

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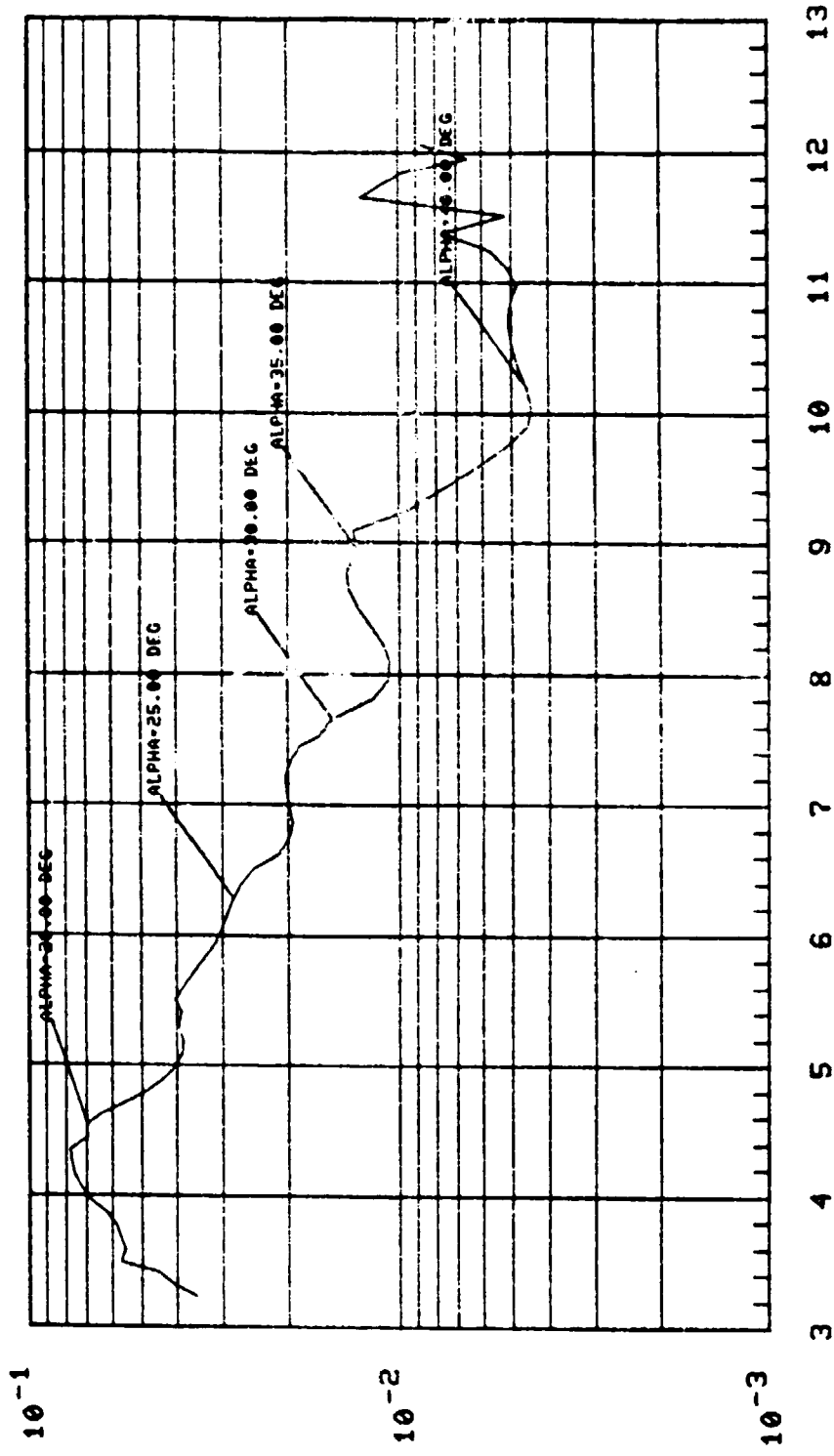
04-19-83  
BASE TIME - 07745684.000 SEC.

MACH NUMBER

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994/H-REF 565-1335 SEC

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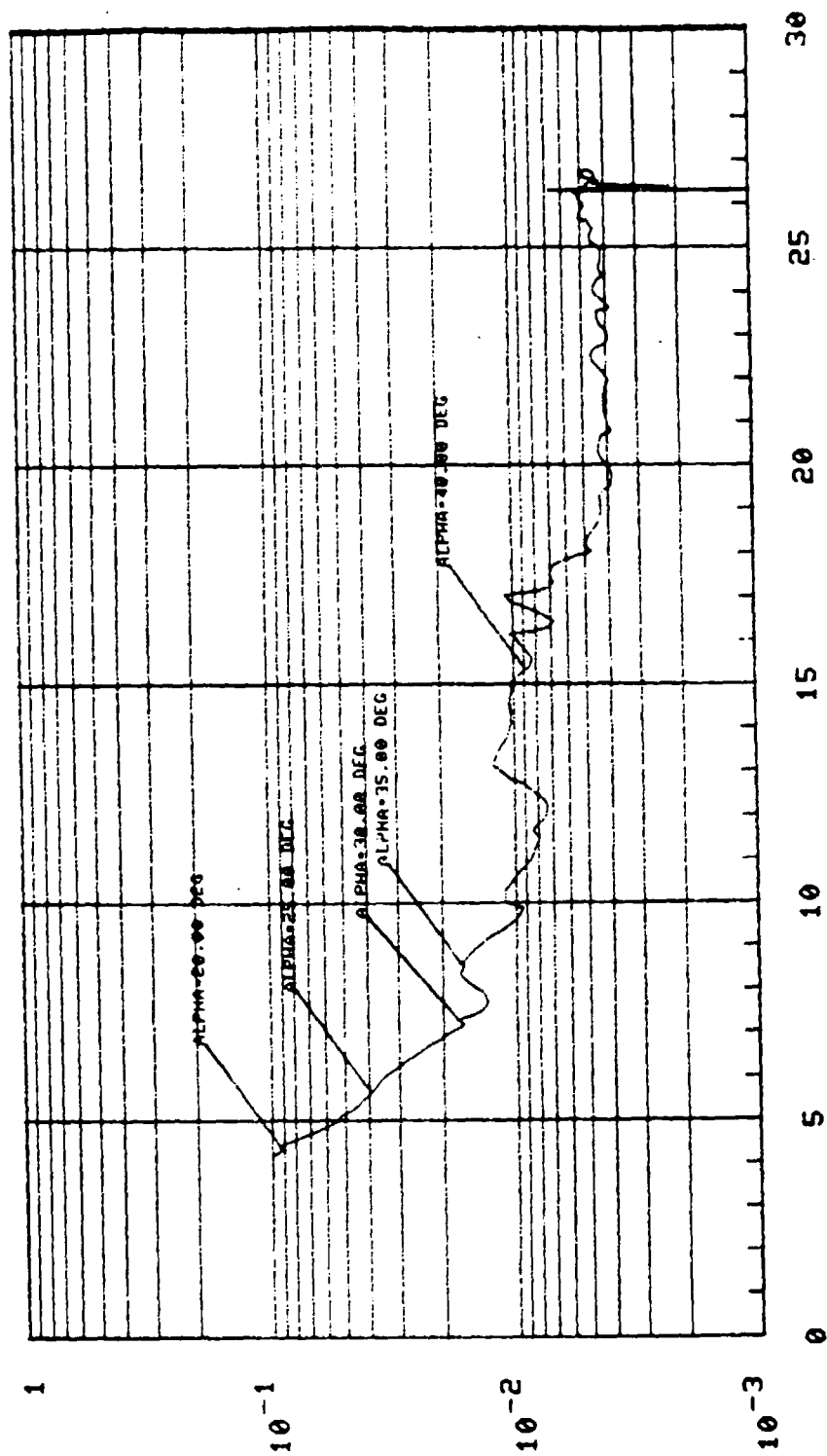
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MACH NUMBER

LINE CODES - H/H-REF

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T99944/H-REF 150-1350 SEC



FILM COEFF -- H/H-REF

B-250

ORIGINAL PAGE 19  
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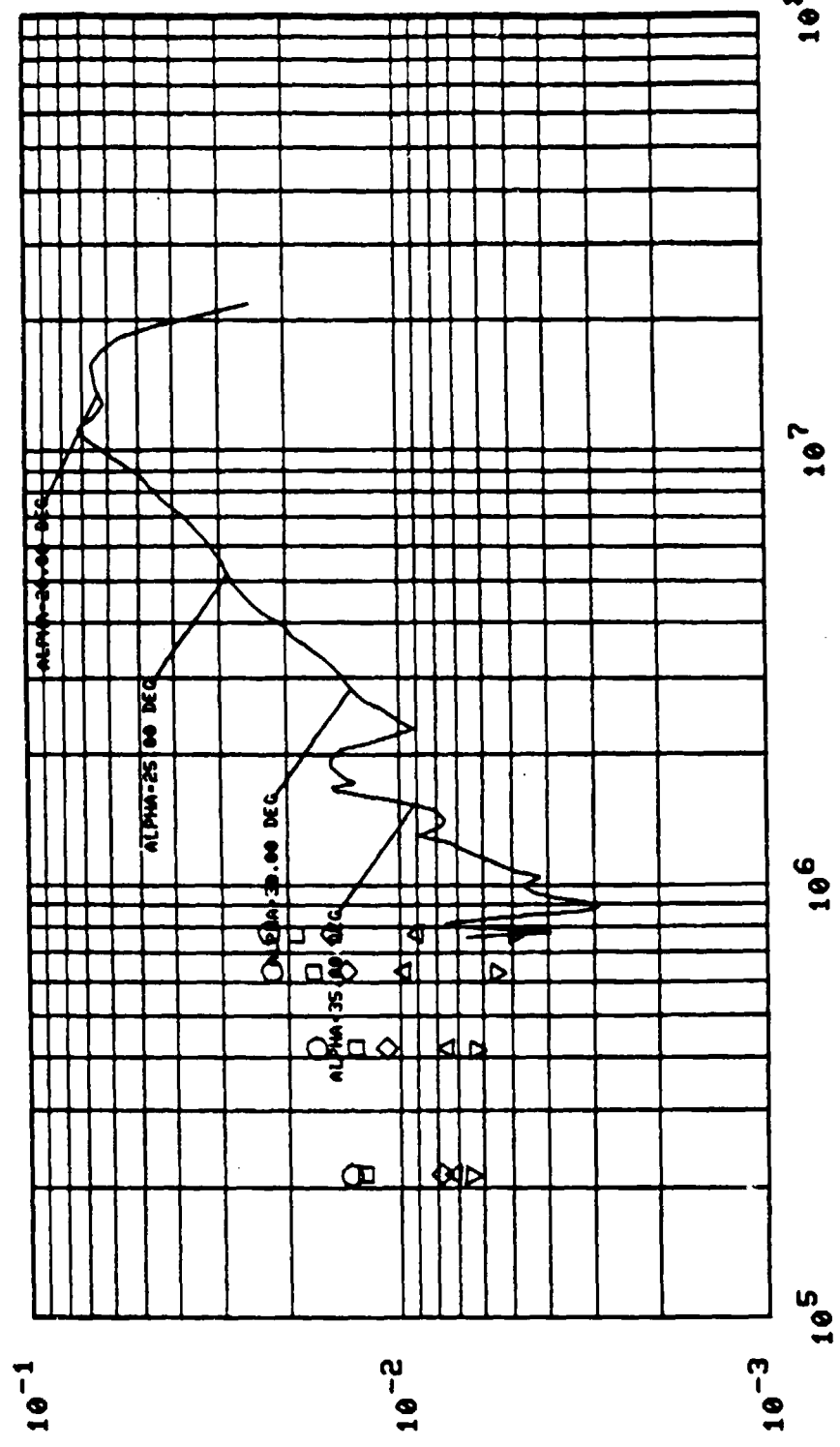
04-19-83  
BASE TIME - 2798591.000 SEC.

MACH NUMBER

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A/N-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



LIFT COEFFICIENT - H/I-REF

B-251

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REYNOLDS NUMBER (NS)      04/20/83      BASE TIME - 09049741.000 SEC.

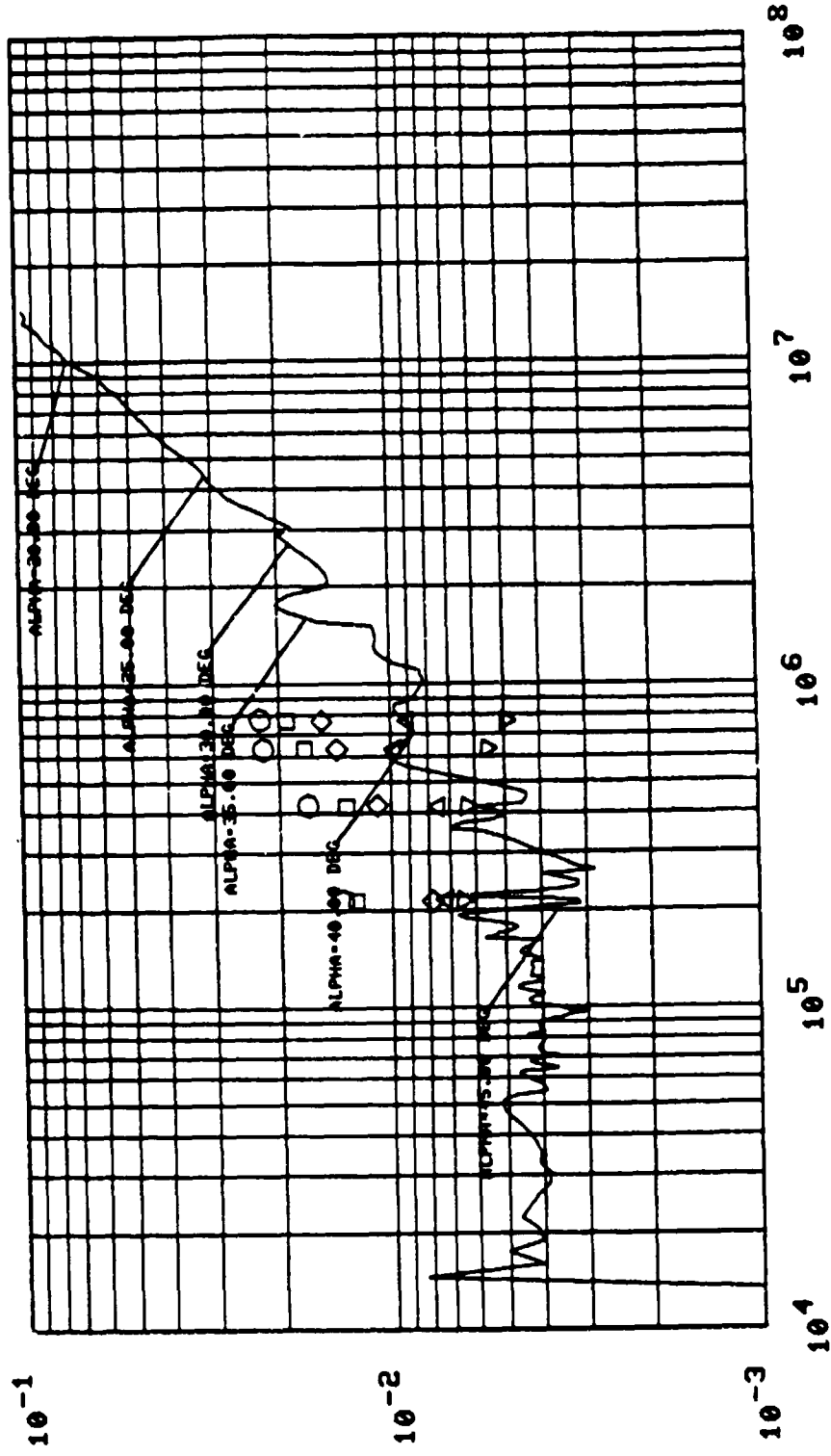
ORIGINAL PAGE IS  
OF POOR QUALITY

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A/H-KEF 200-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

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FLIGHT COEFFICIENT - H/1000

REYNOLDS NUMBER (NS)

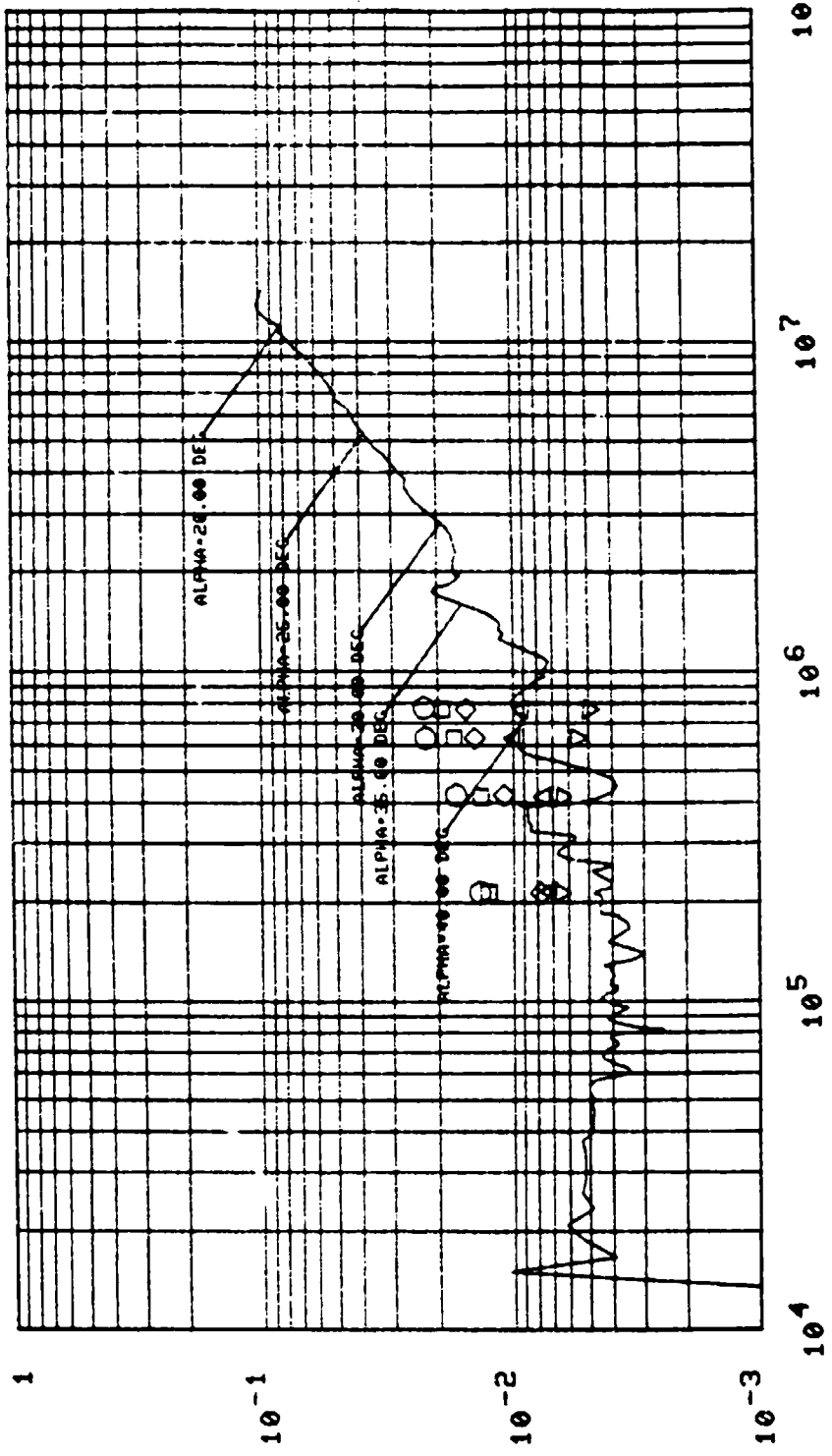
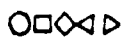
04/20/83

BASE TIME - 27550236.000 SEC.

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779994A/H-REF 200-1320 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF - H/H-REF

B-253

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04.19.53  
BASE TIME - 07745684.000 SEC.

REYNOLDS NUMBER (NS)

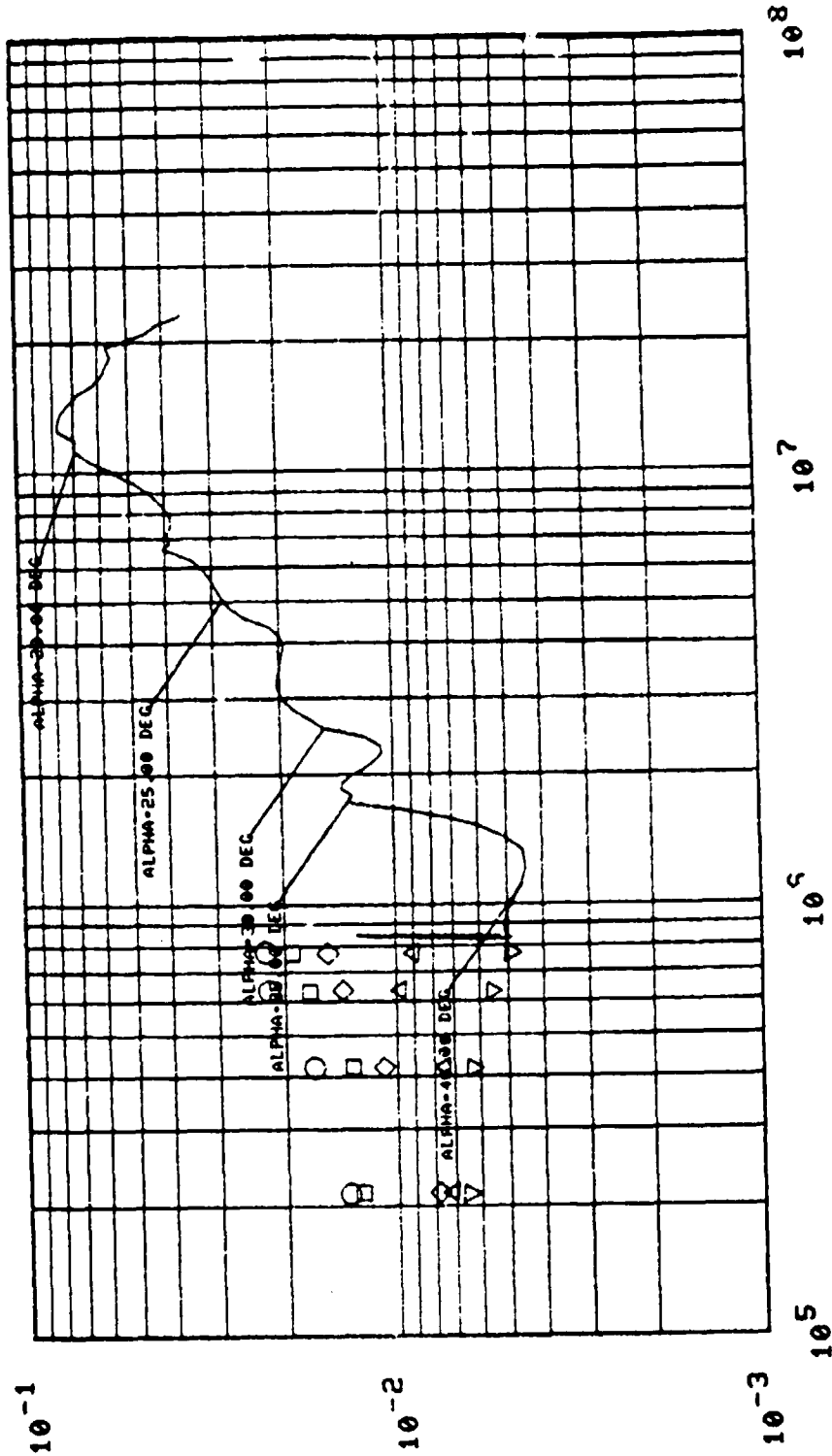


# STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A/H-REF 965-1395 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

□ ◇ △



U07T9994A/H-REF

ORIGINAL PAGE 13  
OF POOR QUALITY

B-254

REYNOLDS NUMBER (NS)

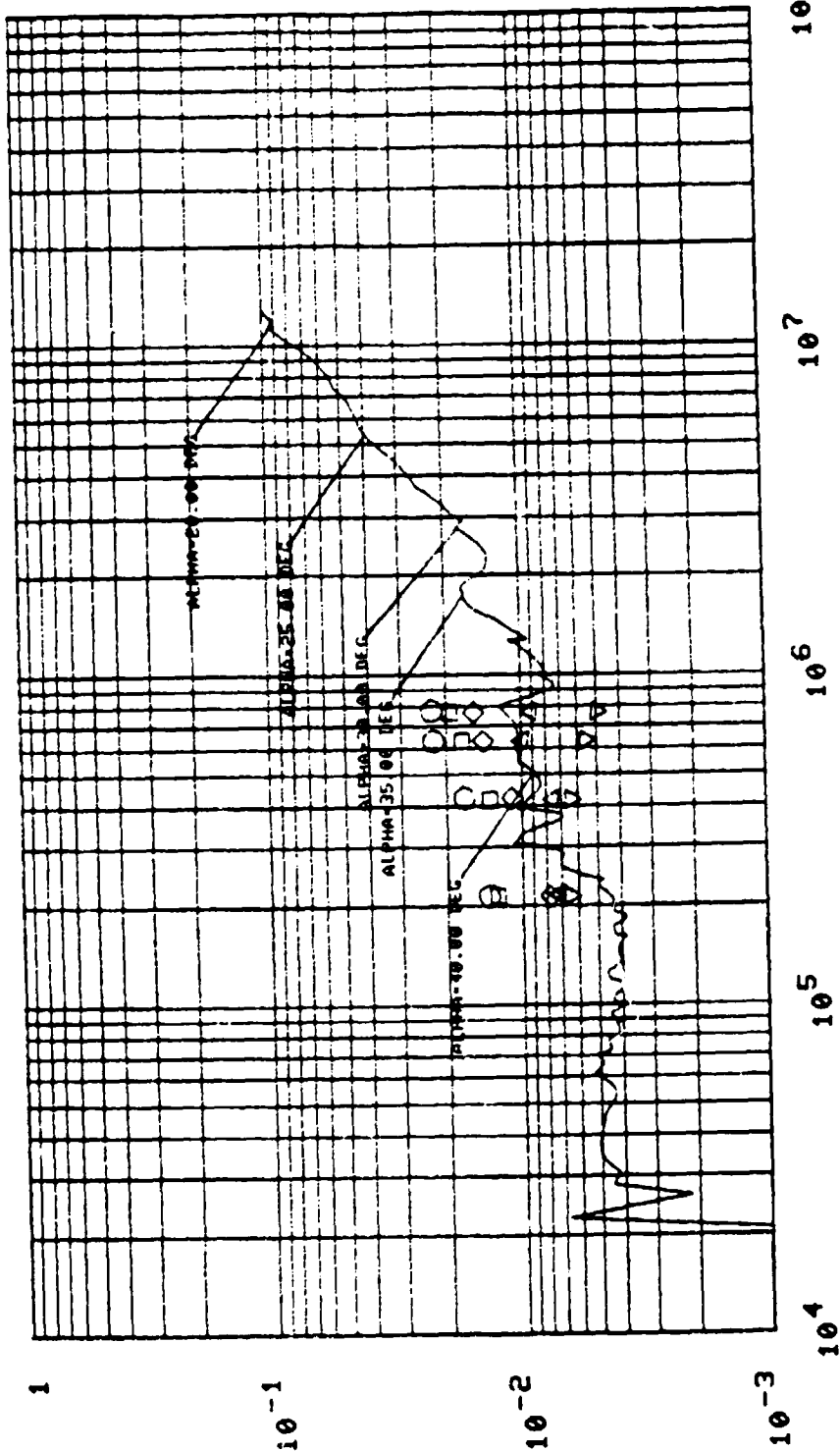
BASE TIME - 1600023.000 SEC.

04/19/83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779994A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF - H/H-REF

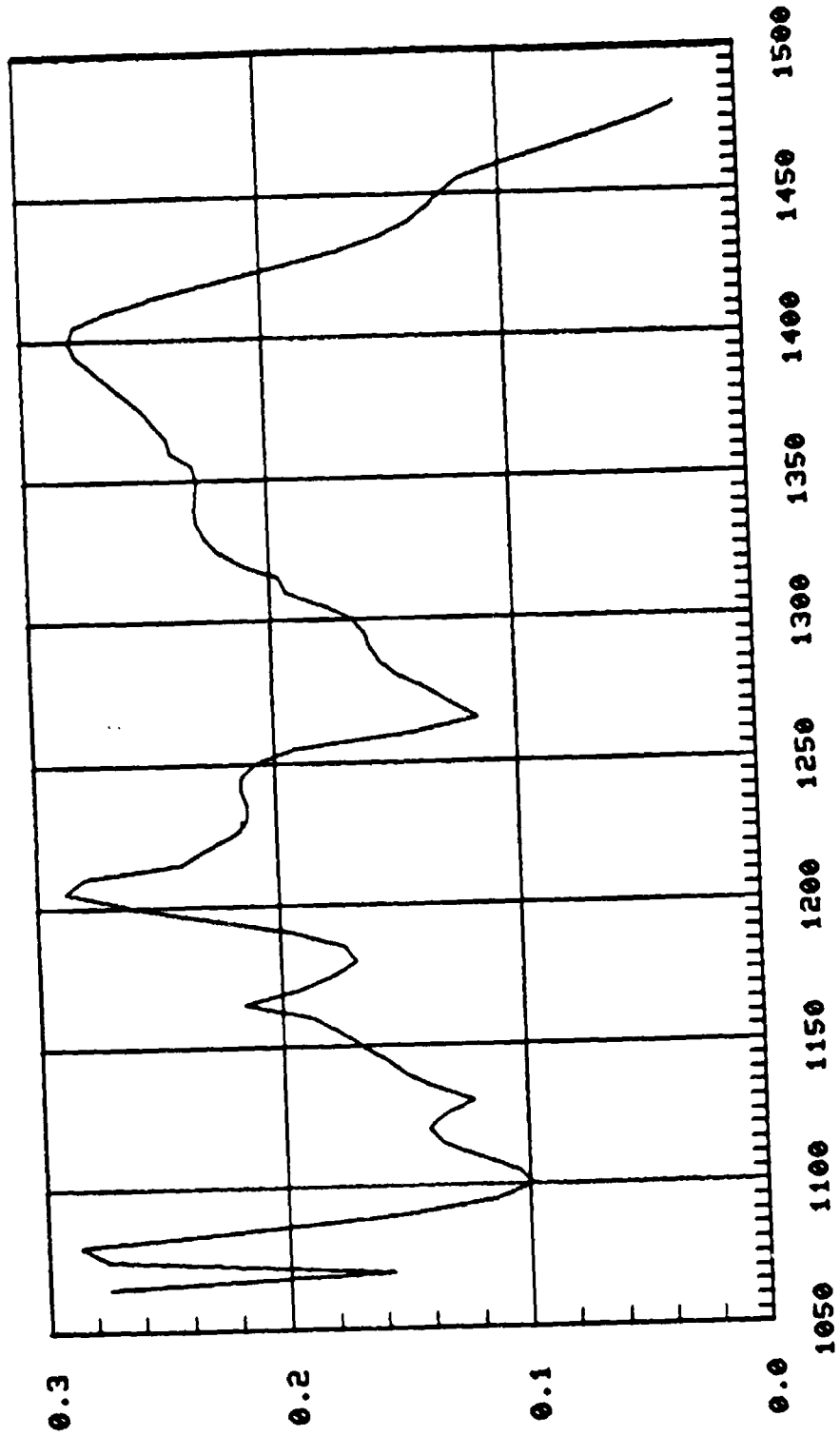
04-15-83

REYNOLDS NUMBER (NS)

BASE TIME - 27698591.000 SEC.

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A



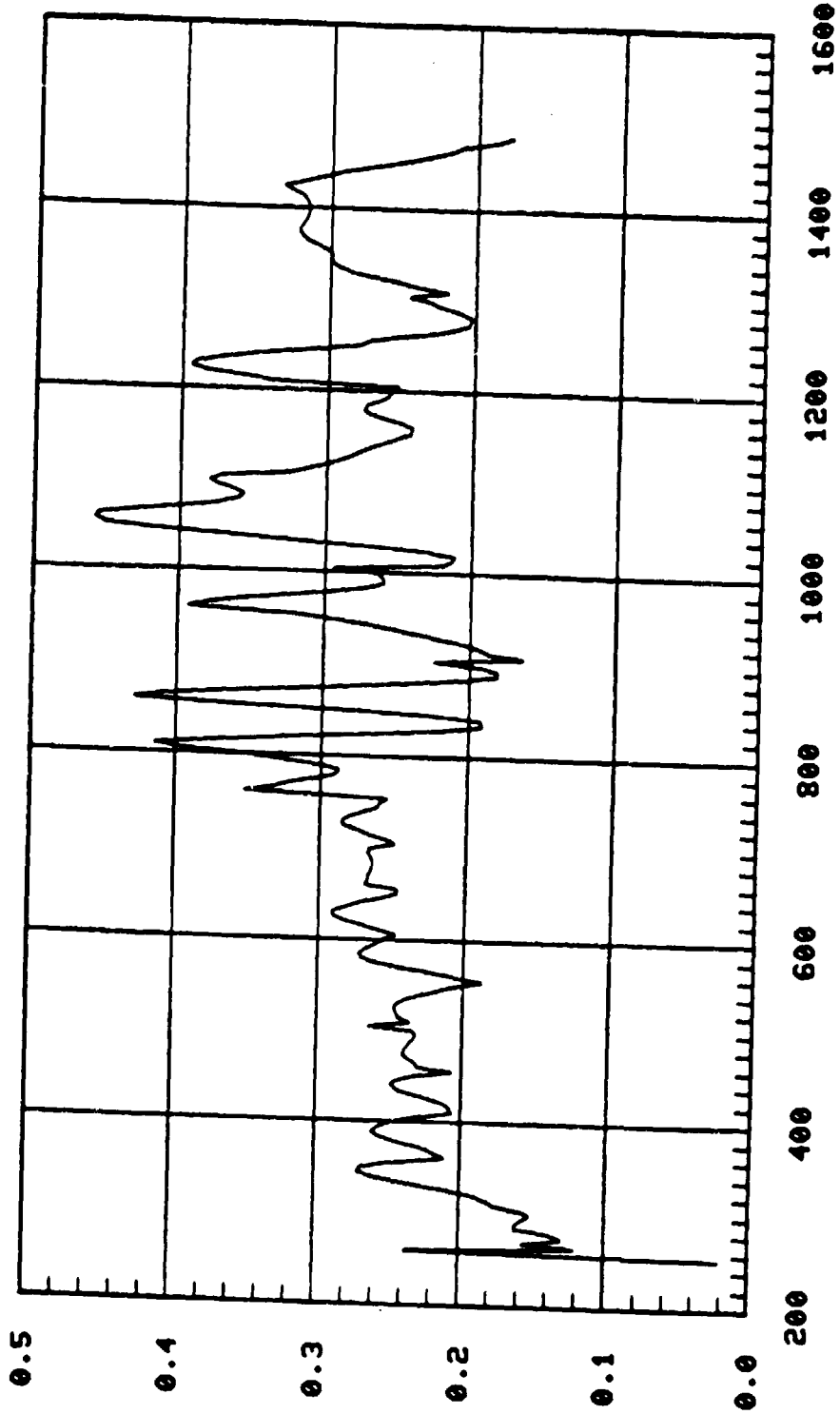
HEATING RATE - BTU/FT-HR - OMS

04/20/83

TIME - SECONDS

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A



REACTING RATE - BT/DIV/HR - SEC

B-257

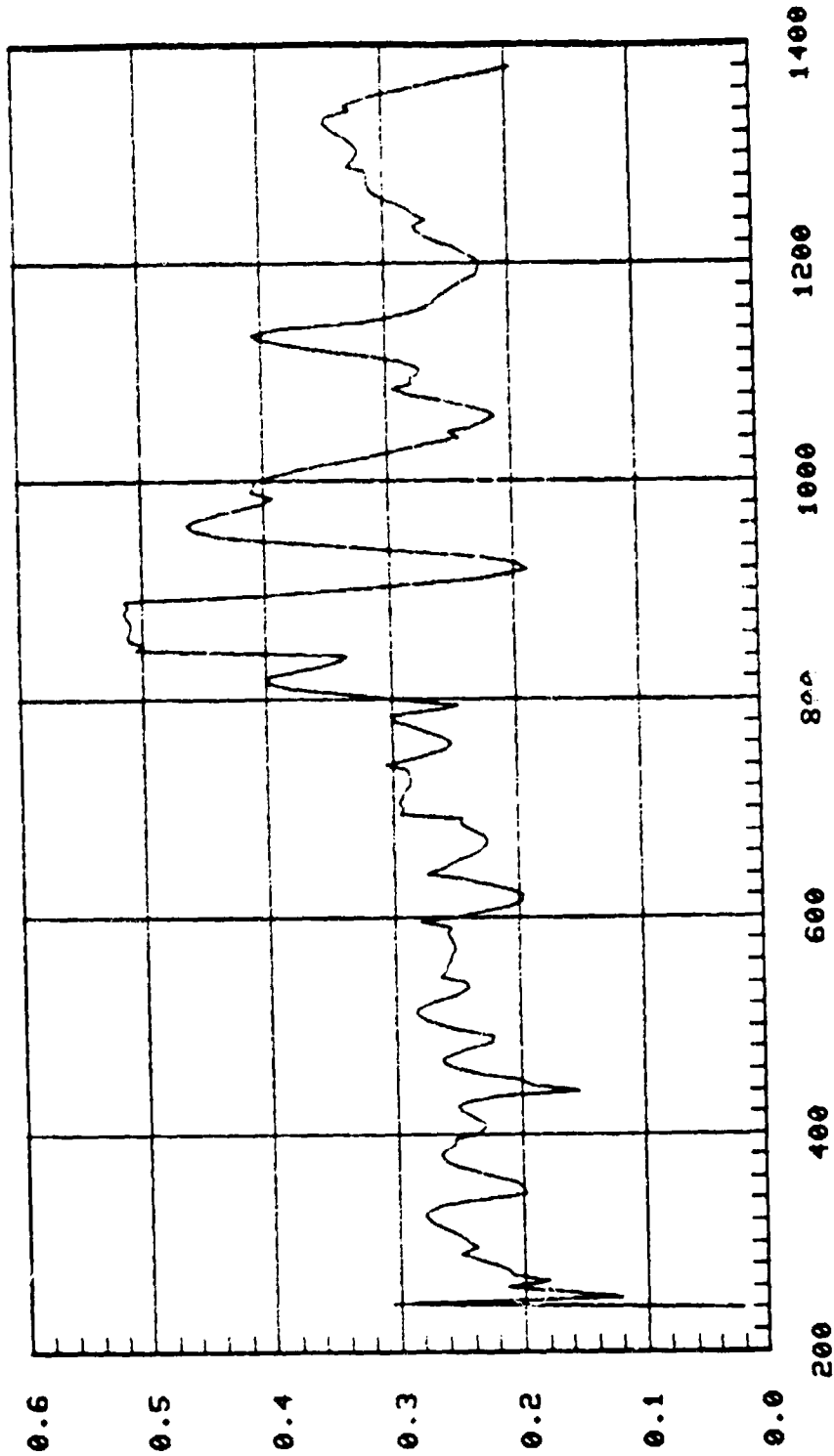
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TIME - SECONDS

04/20/83

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U67T9994A



HEATING RATE : BTU/FT<sup>2</sup> : SEC

B-258

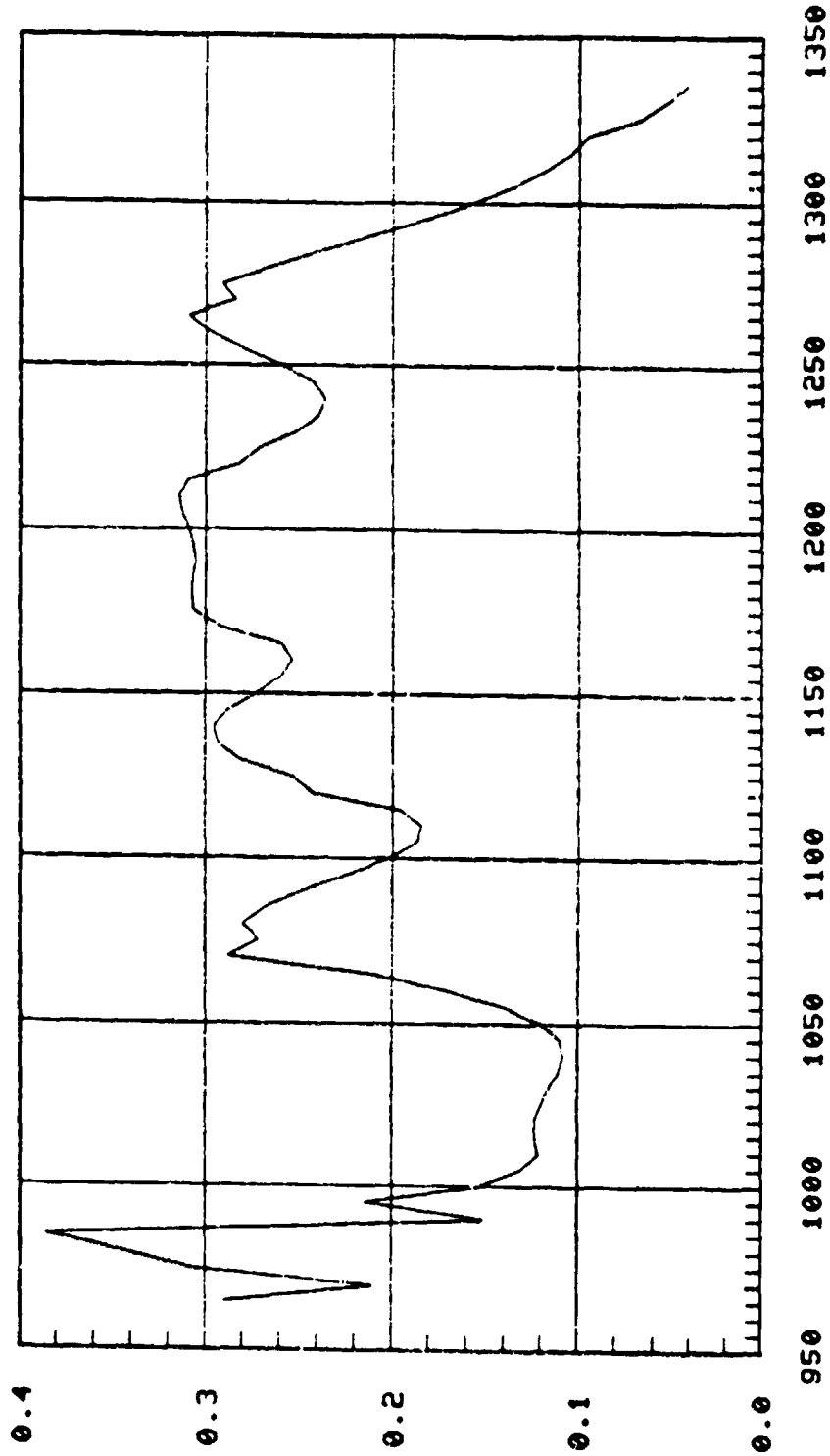
ORIGINAL PAGE IS  
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60-19 83

TIME - SECONDS

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

0279594A



HEATING RATE - BTU/FT<sup>2</sup>·SEC

B-259

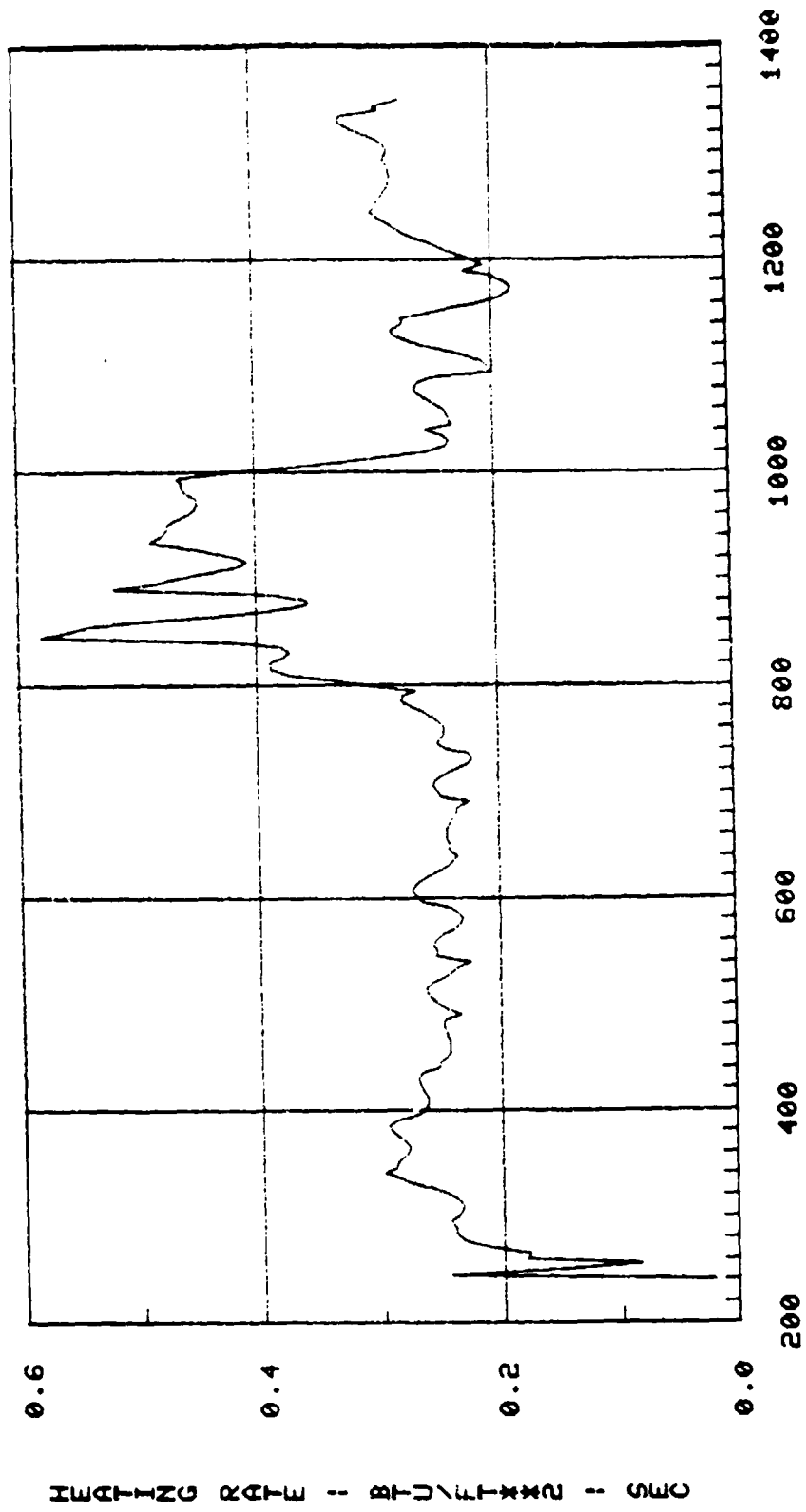
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TIME - SECONDS

04-19-53

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719994A



HEATING RATE - BTU/FT<sup>2</sup>/SEC

B-260

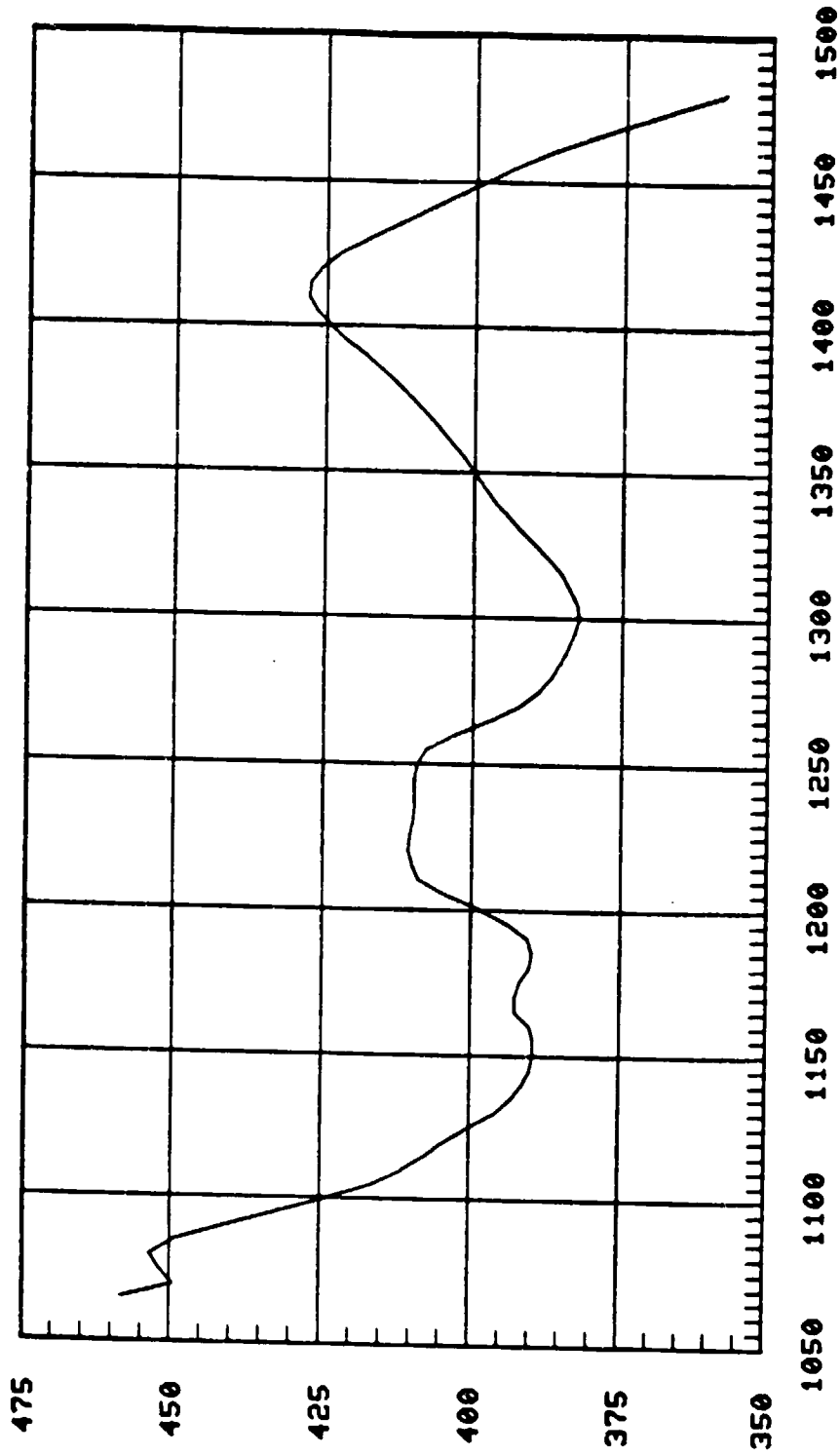
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04 15 83

TIME - SECONDS

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U6779994A



TEMPERATURE -- F

B-261

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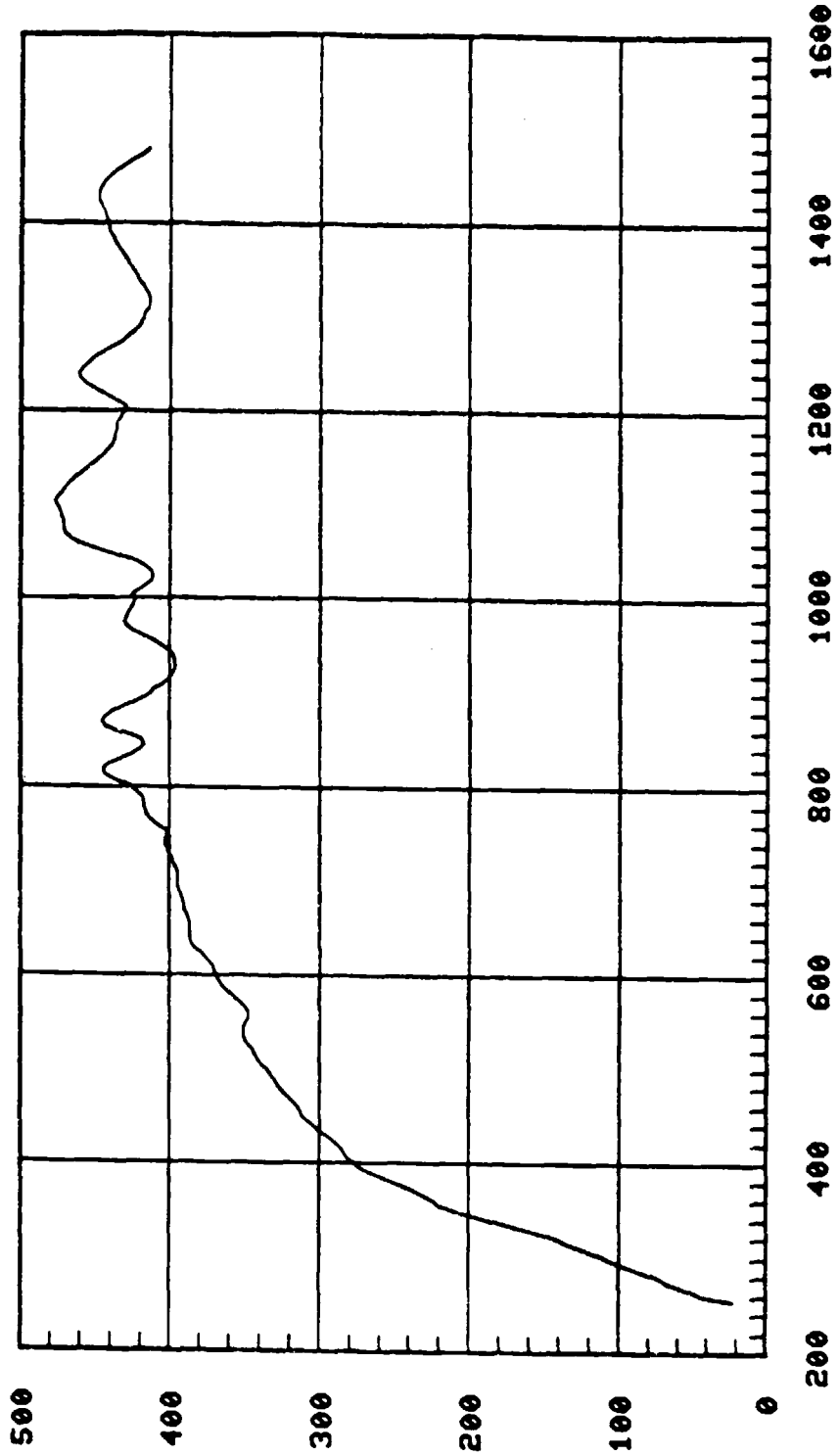
TIME - SECONDS

04-20-83



STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9994A



TIME - SECONDS

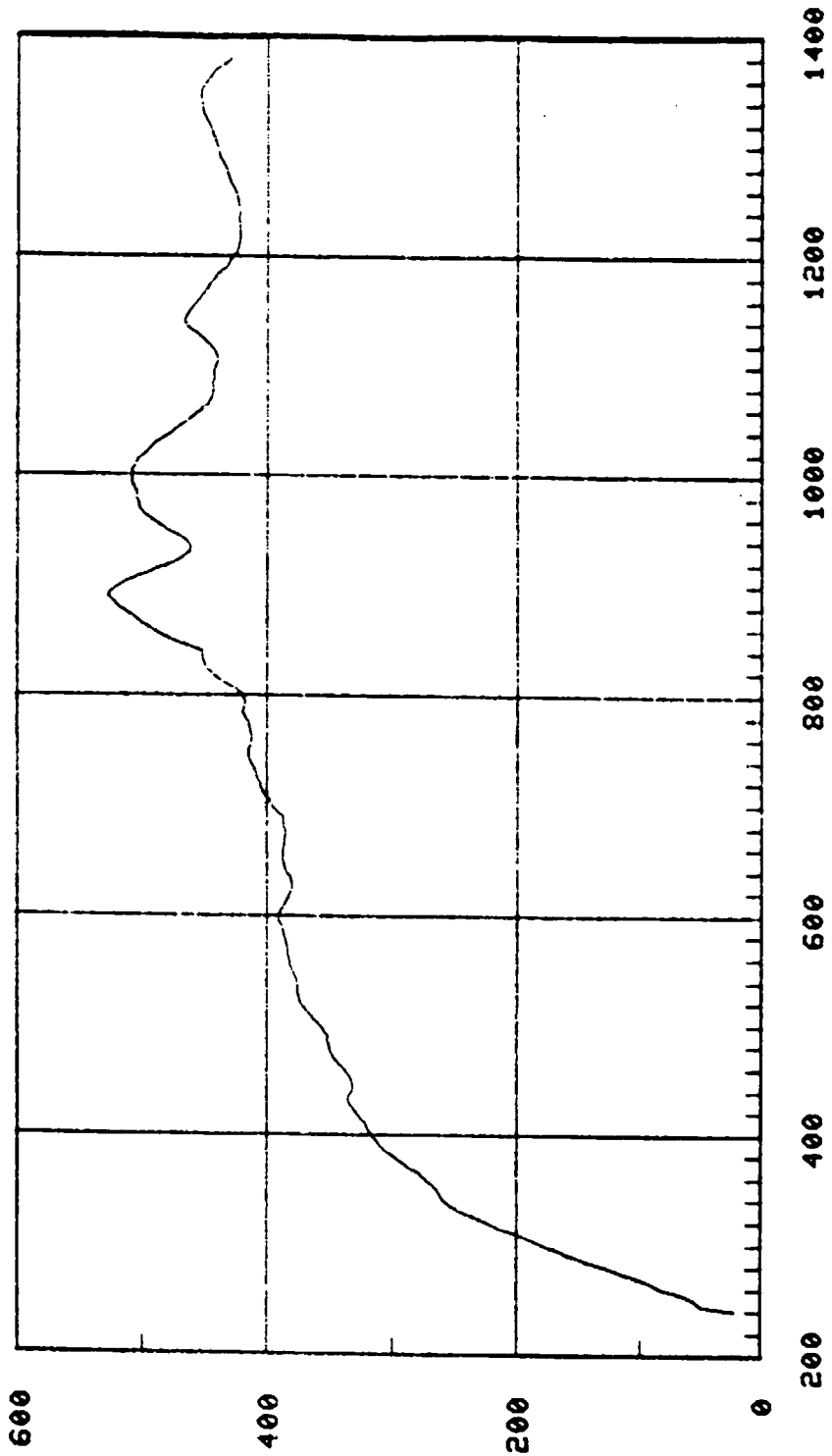
04/20/83

F - PARAMETER

B-262

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07709940



PARAMETER -- F

B-263

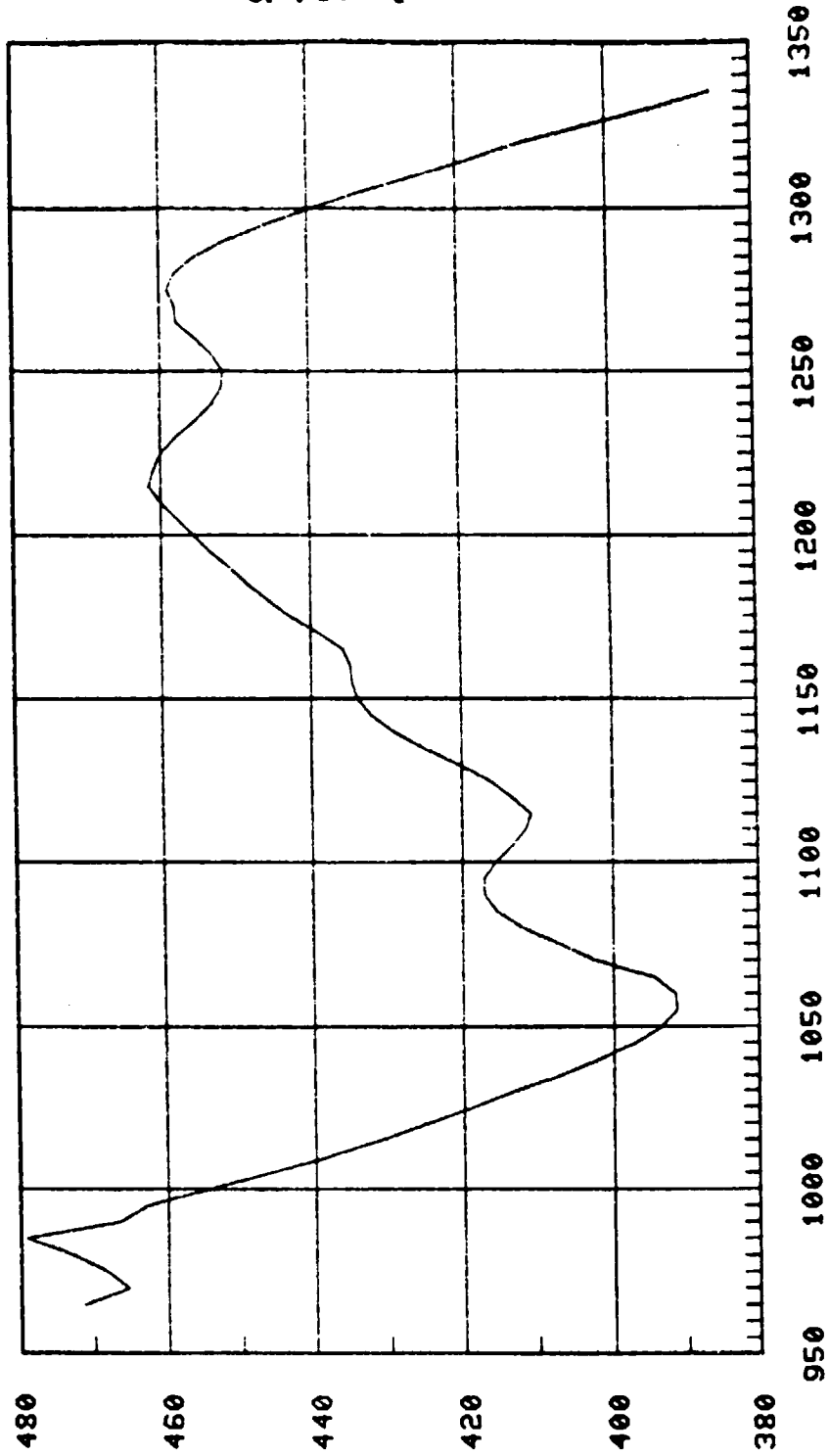
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TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9994A



FEEDBACK - F

B-264

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OF POOR QUALITY

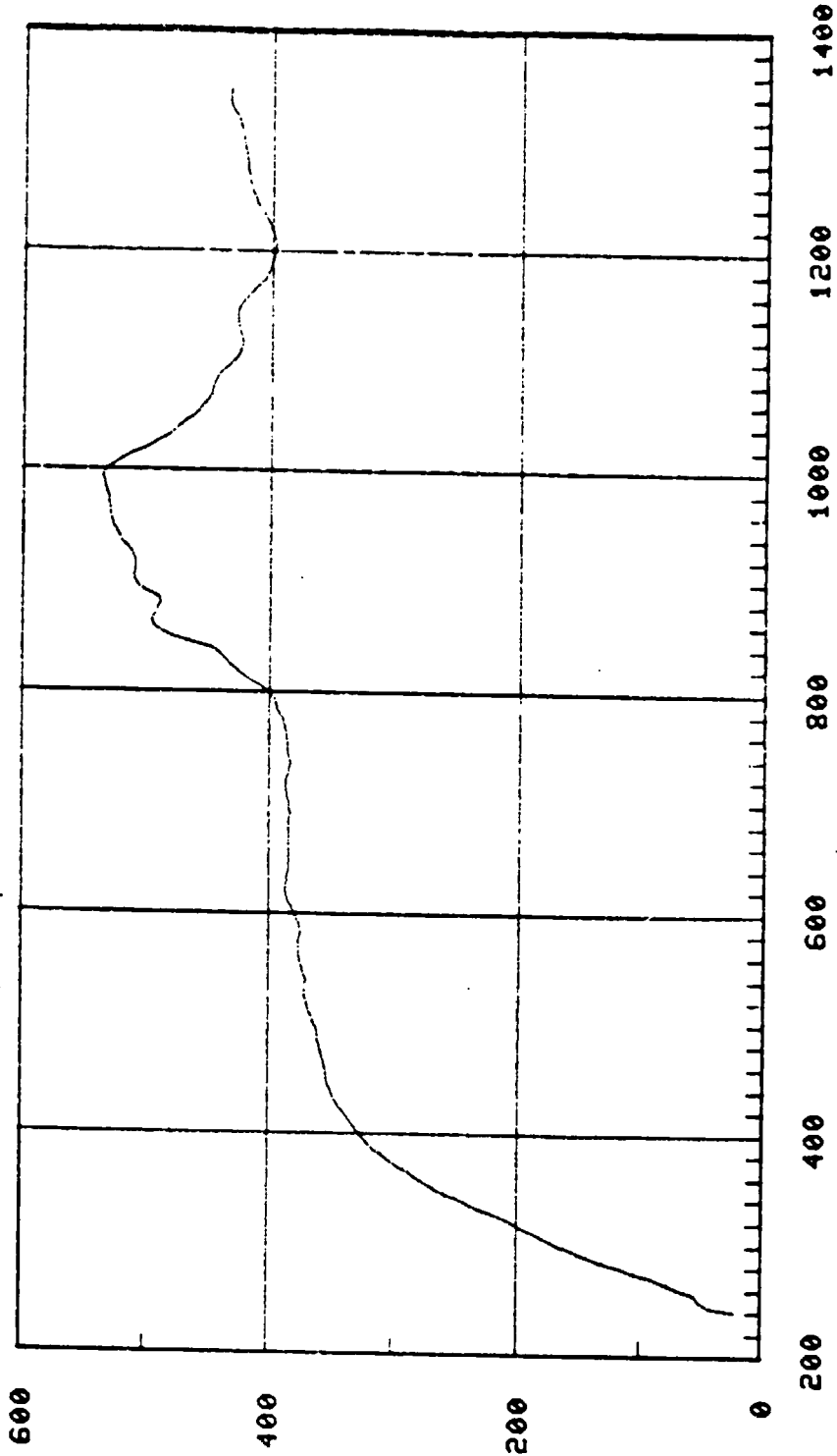
TIME - SECONDS

04-19-83

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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719994A



TEMPERATURE - F

B-265

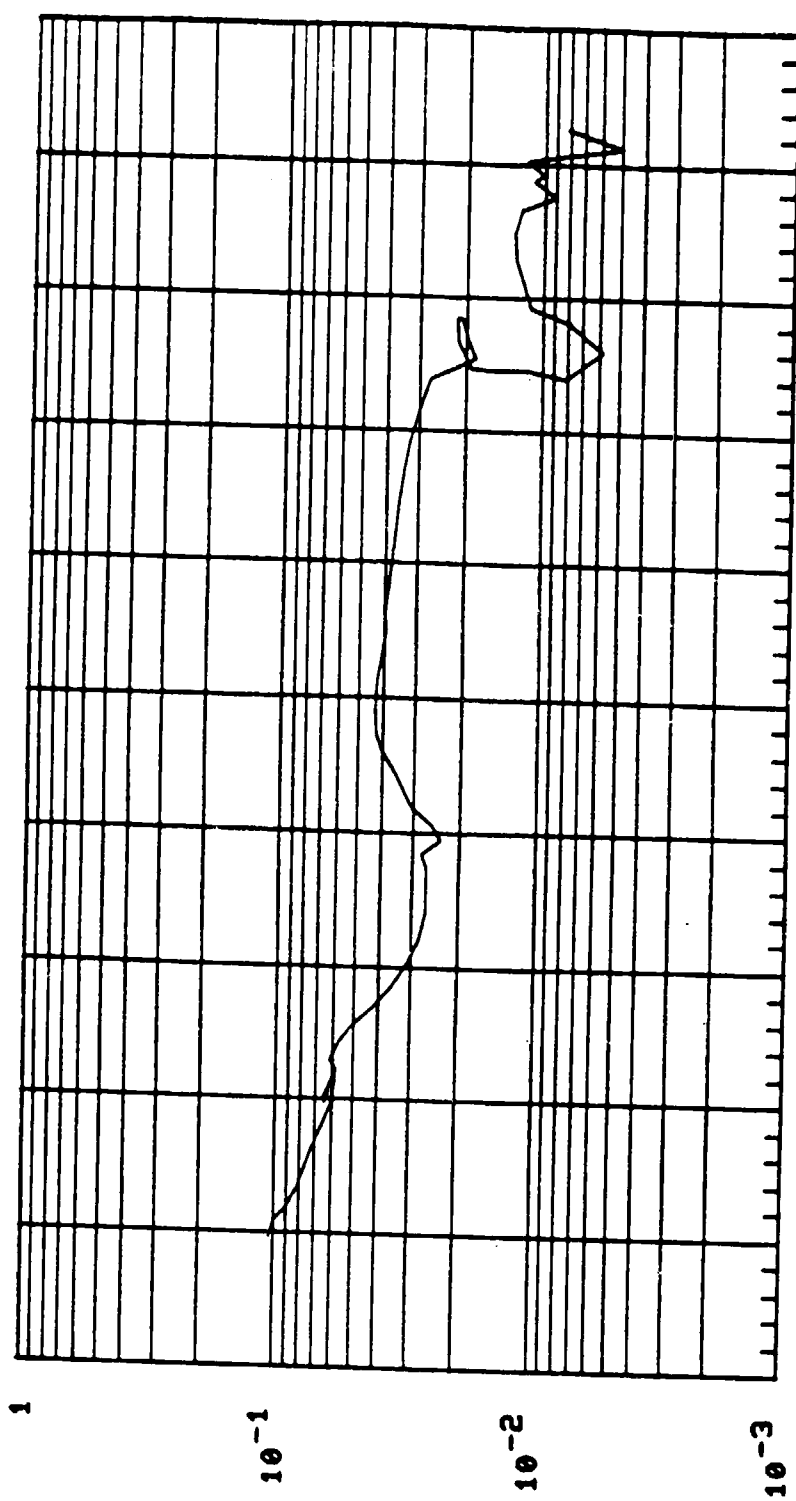
TIME - SECONDS

04.18.83

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A/H-REF 1065-1480 SEC

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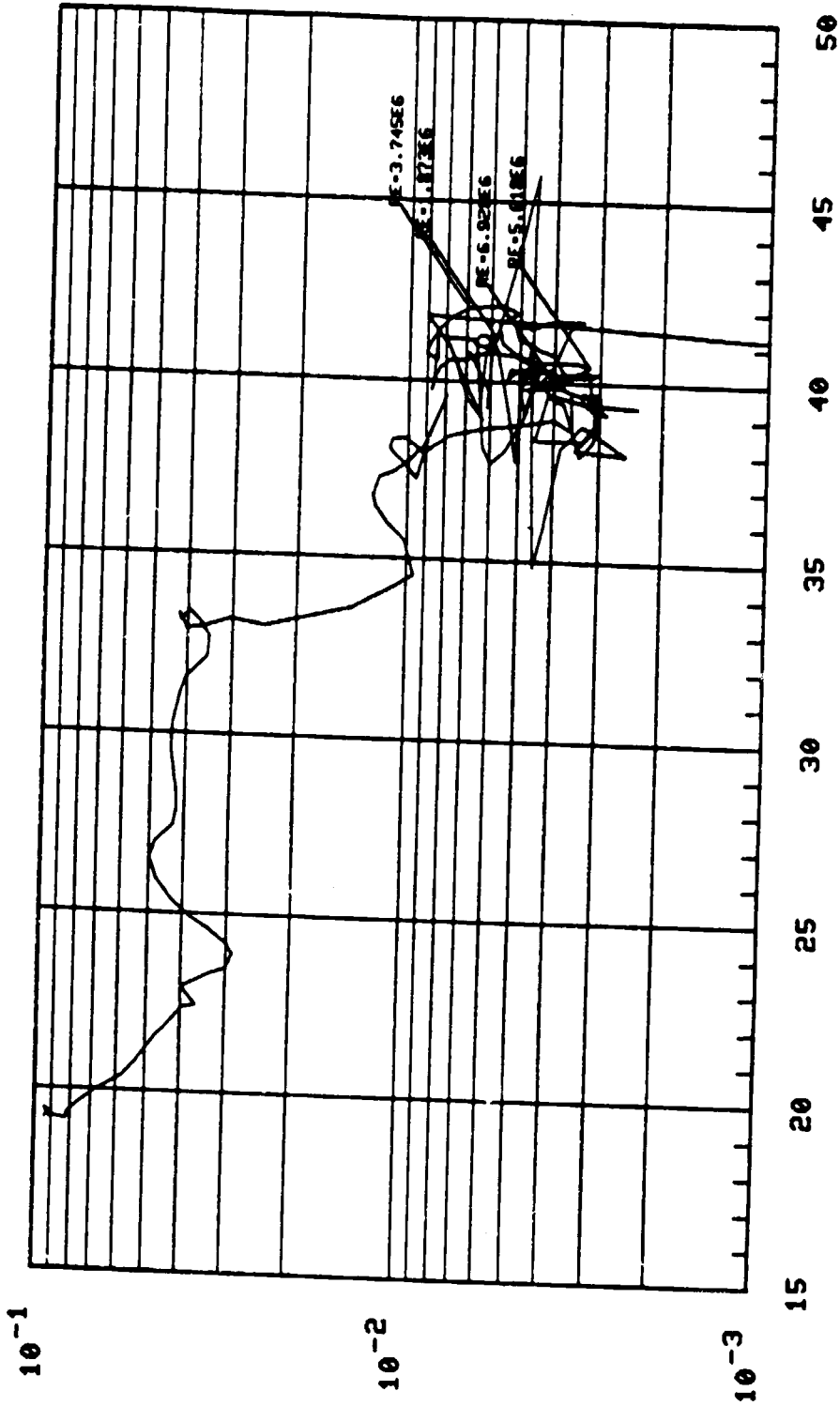
TIME CORRECTION -- H/T-RATE

B-266

04/20/83  
BASE TIME - 09045744.000 SEC.  
ANGLE-OF-ATTACK - DEG

# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071995A/H-REF 200-1480 SEC



U071995A/H-REF

B-267

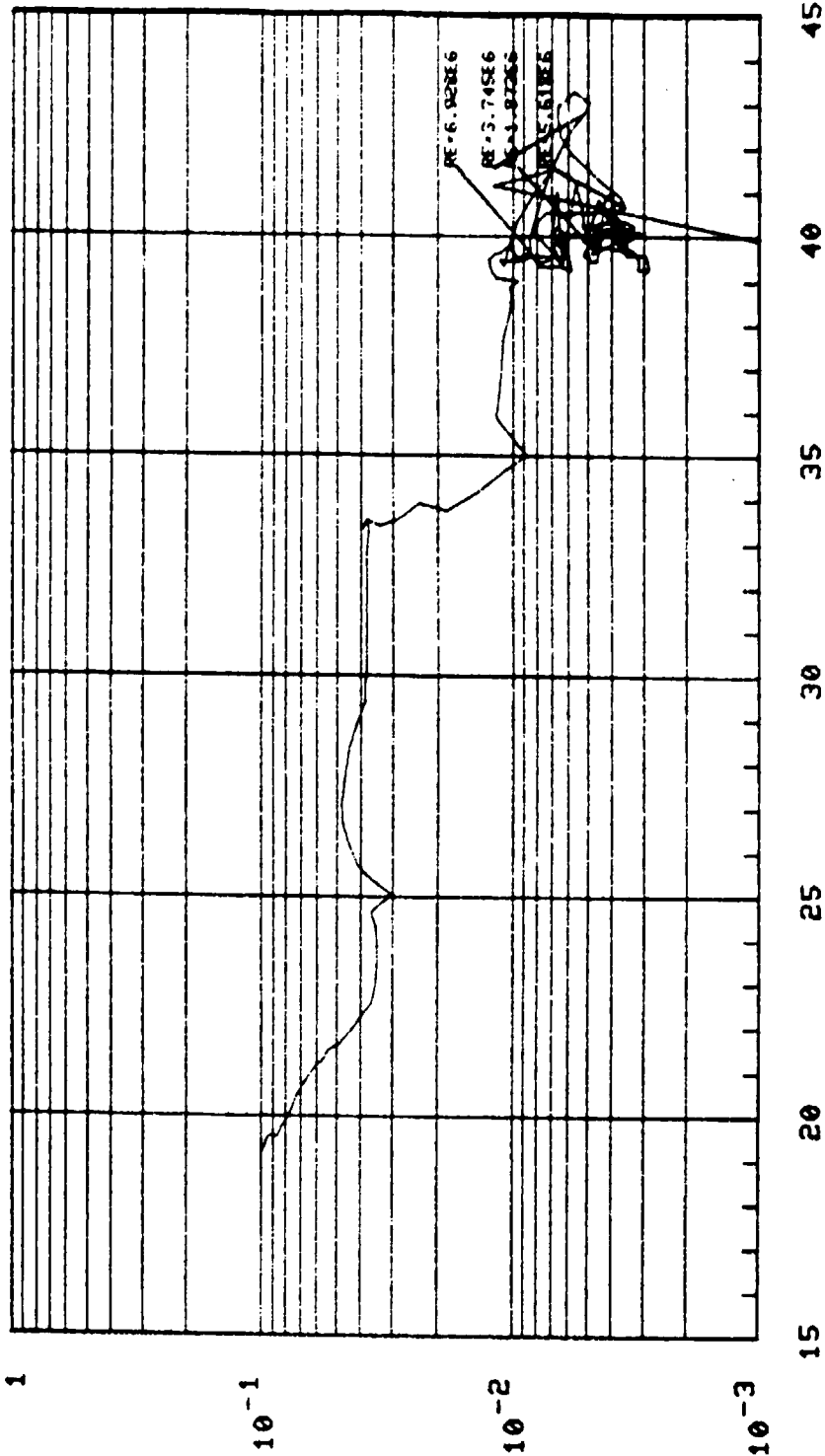
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04/20/83  
BASE TIME - 27550236.000 SEC.

ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071995A/H-REF 200-1380 SEC



LINE COVER -- H/H-REF

B-268

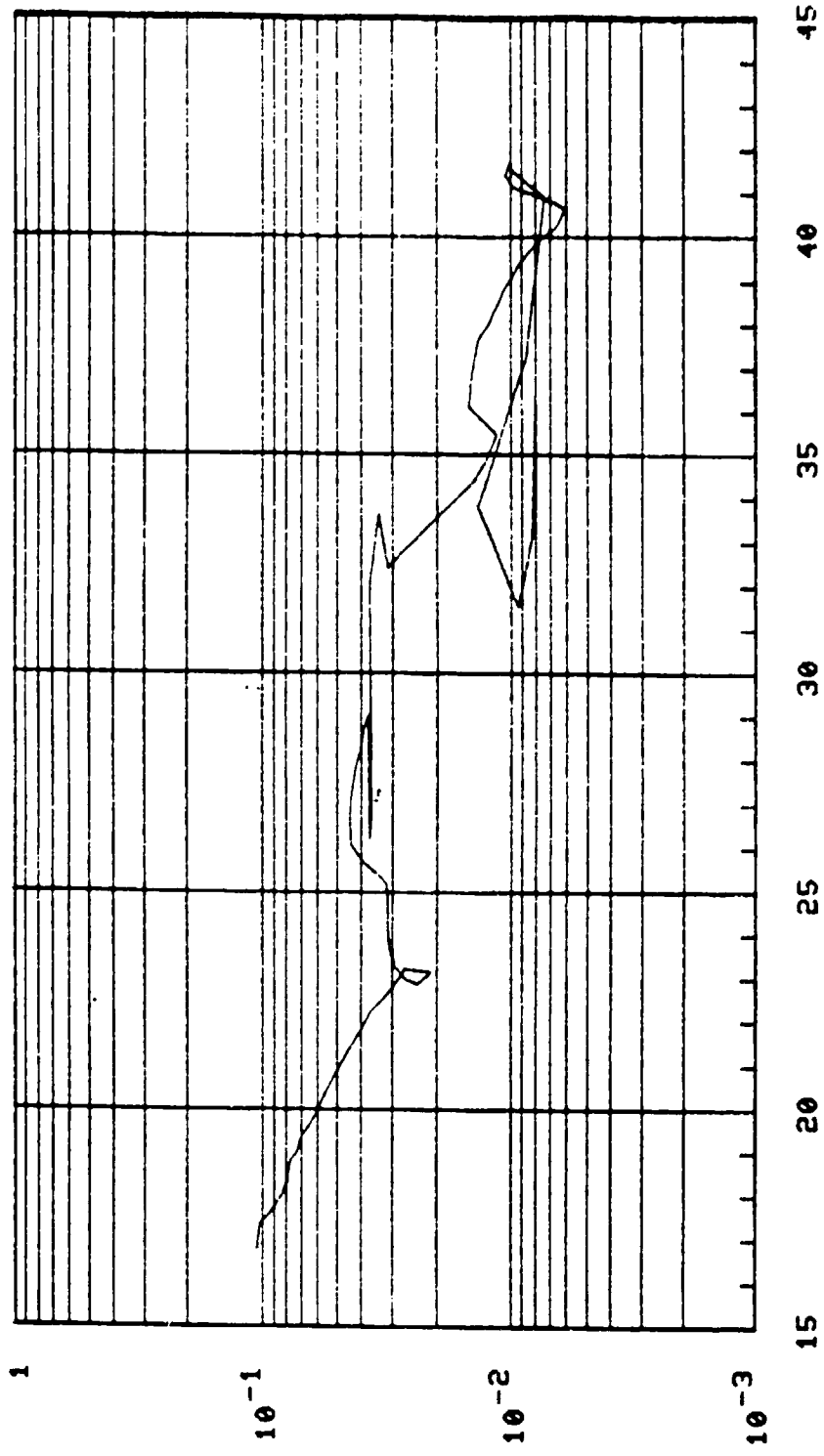
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04-13-83  
BASE TIME - 0774567.000 SEC.  
ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A/H-REF 965-1335 SEC

ORIGINAL PAGE 13  
OF POOR QUALITY



FILE CODE -- H/H-REF

B-269

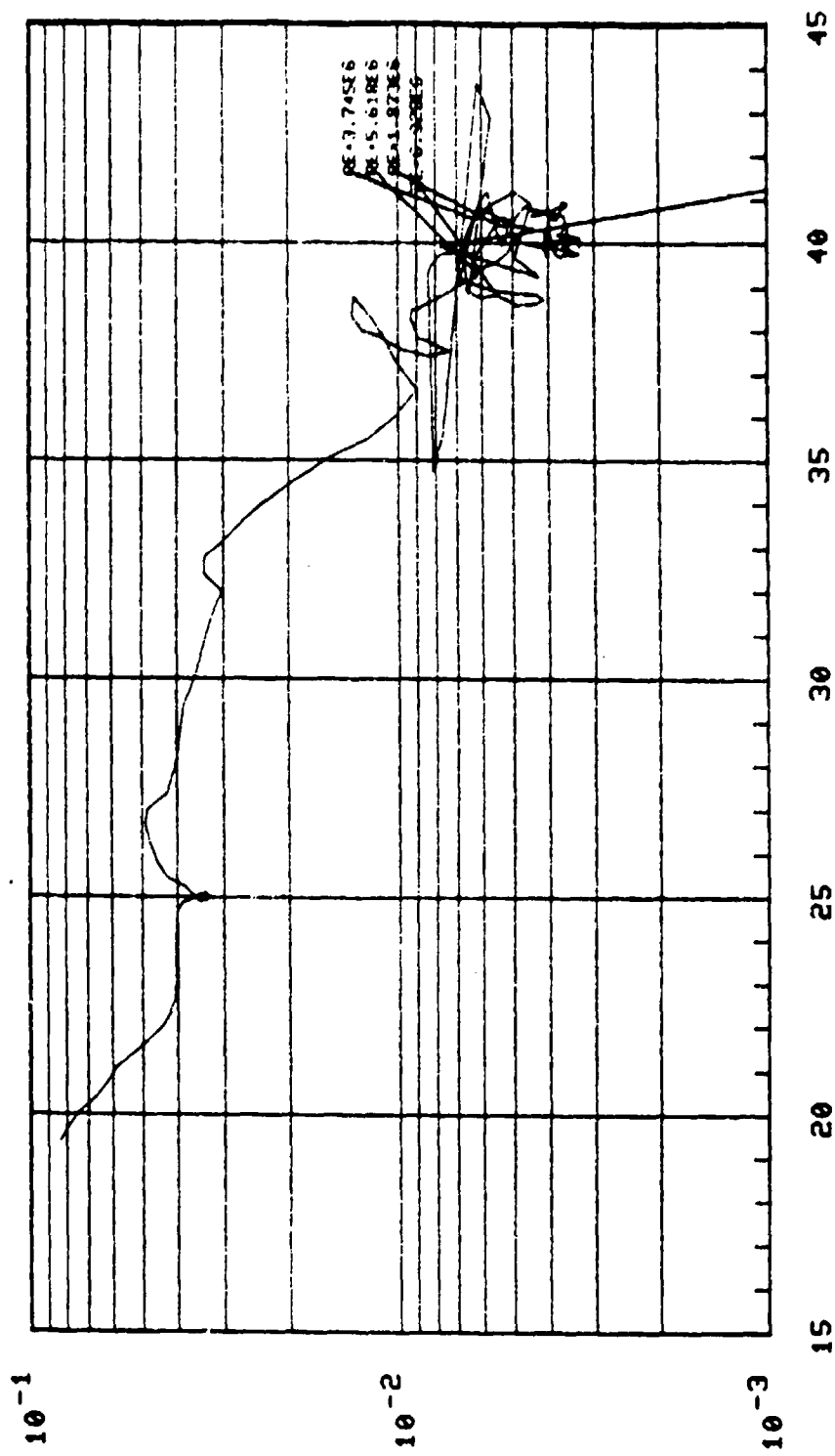
04.19.83  
BASE TIME - 1000023.000 SEC  
ANGLE-OF-ATTACK - DEG



STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9995A/H-REF 150-1350 SEC

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04-19-82  
BASE TIME - 2760591.000 SEC.

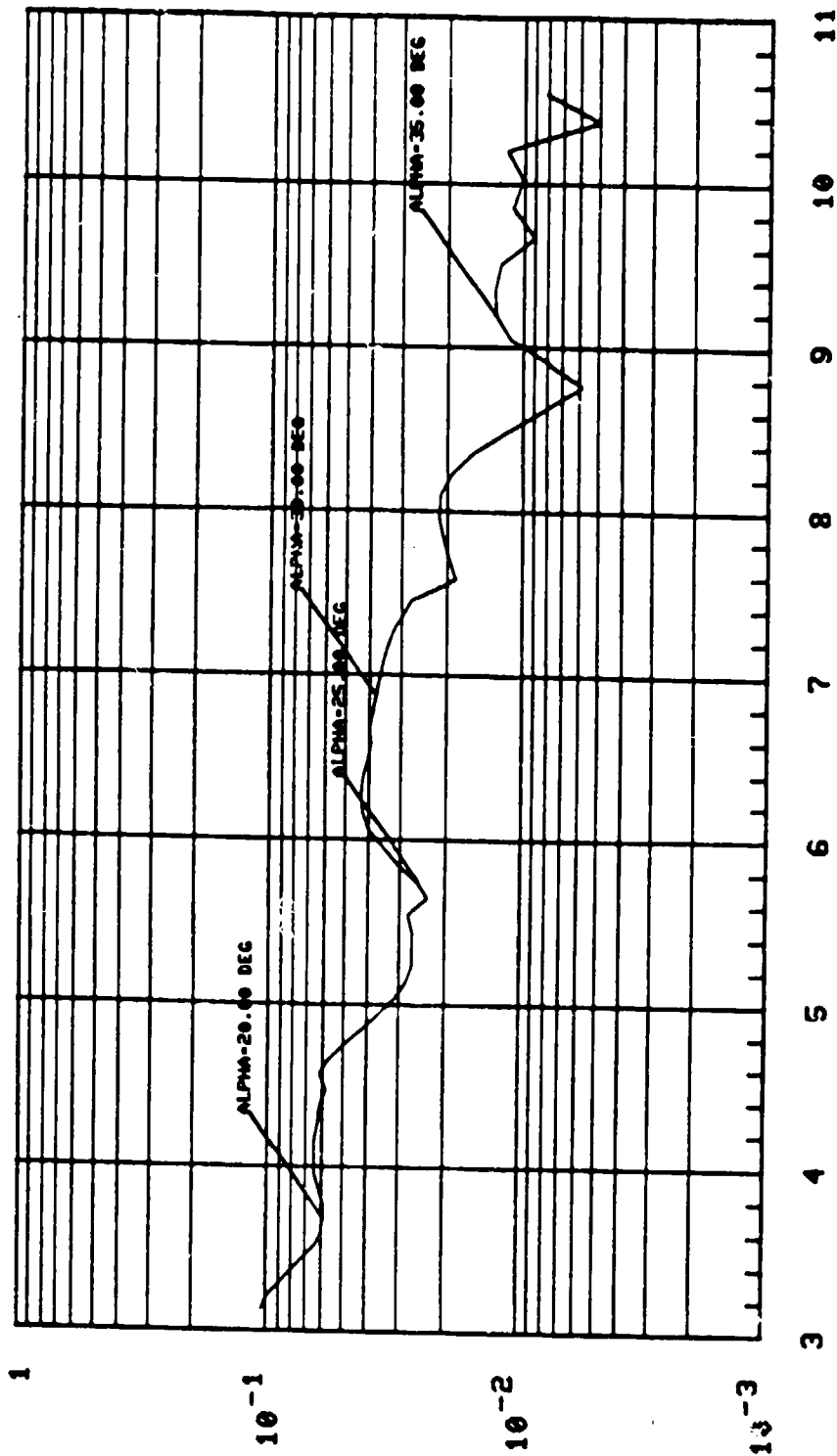
ANGLE-OF-ATTACK - DEG

FILE COVER - H/H-REF

B-270

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T995A/N-REF 1065-1480 SEC



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EDGE CORREL - H/H-REF

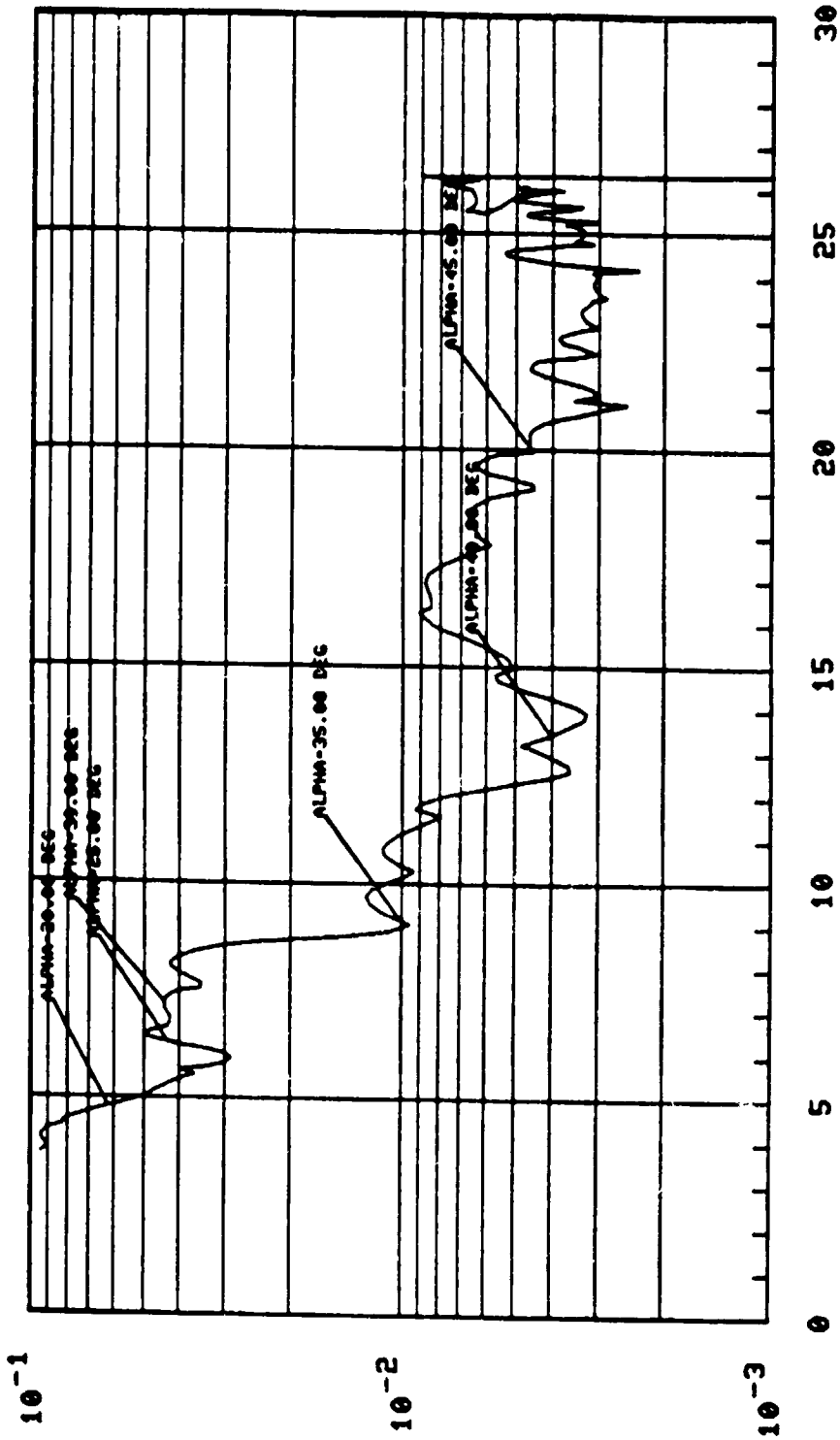
8-271

04/20/83  
BASE TIME - 090-0744.000 SEC.

MACH NUMBER

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077995A/H-REF 200-1480 SEC



FILE COVER - H/H-QUAL

B-272

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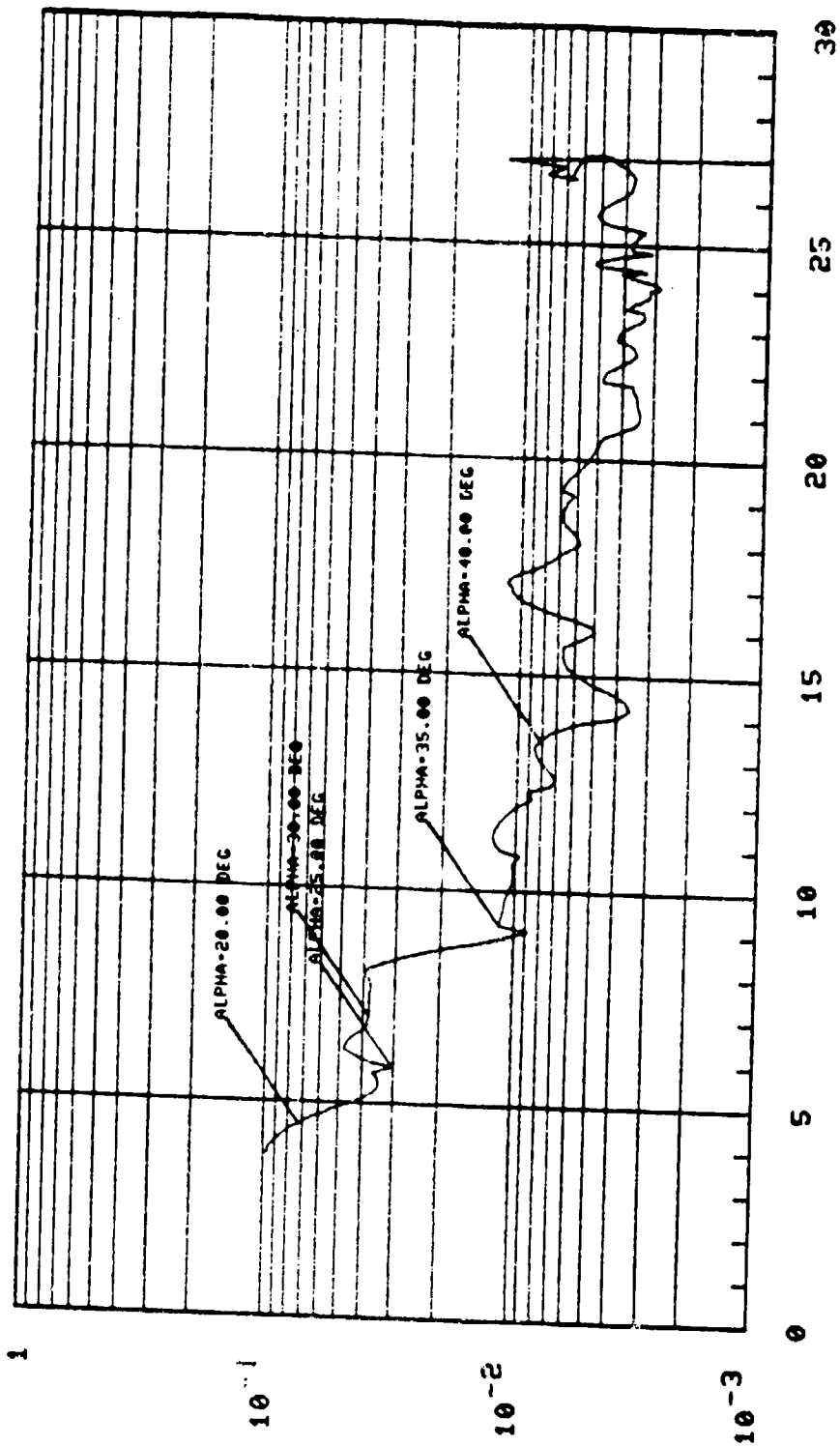
MACH NUMBER

BASE TIME - 27550236.000 SEC.  
04/20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U079995A/N-REF 200-1380 SEC

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MACH NUMBER

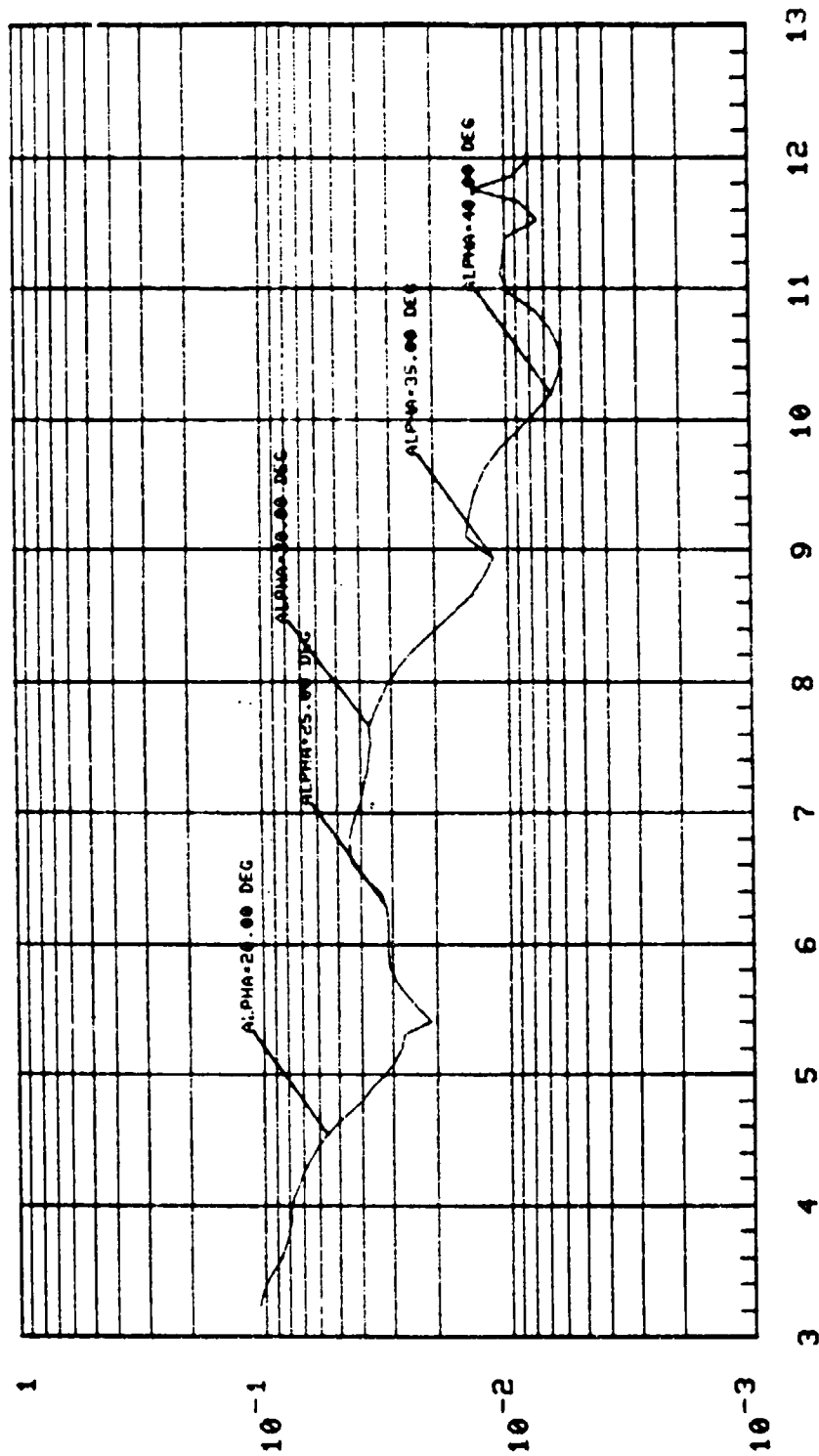
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TIME COVERED -- 11:11-12:11

B-273

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9995A/M-REF 965-1335 SEC



TYPE COVER : H/H-RWLL

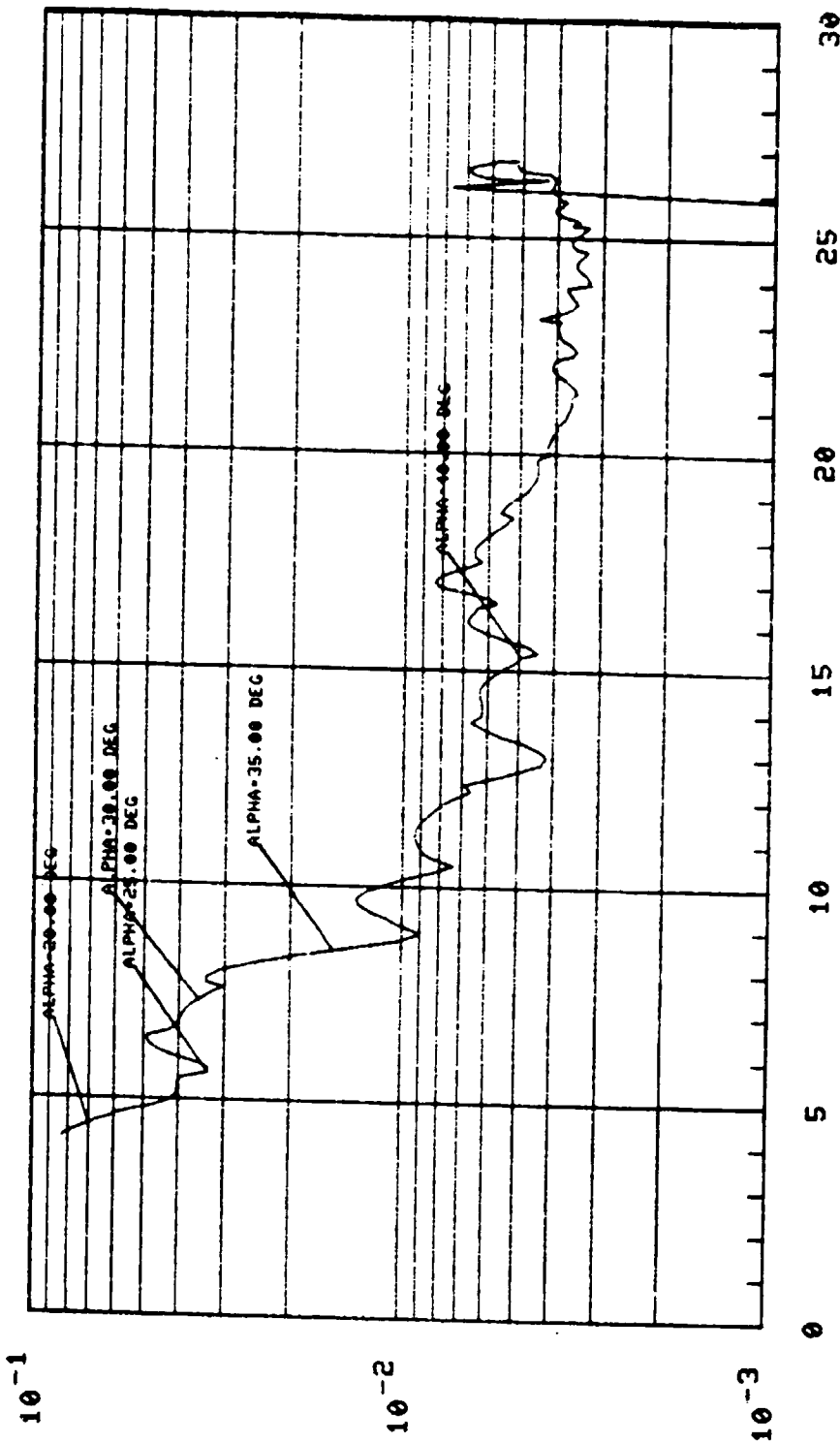
B-274

ORIGINAL PAGE 19  
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MACH NUMBER  
BASE TIME - 1004023.000 SEC  
04-19 83

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T995A/H-REF 150-1350 SEC



U07T995A/H-REF

B-275

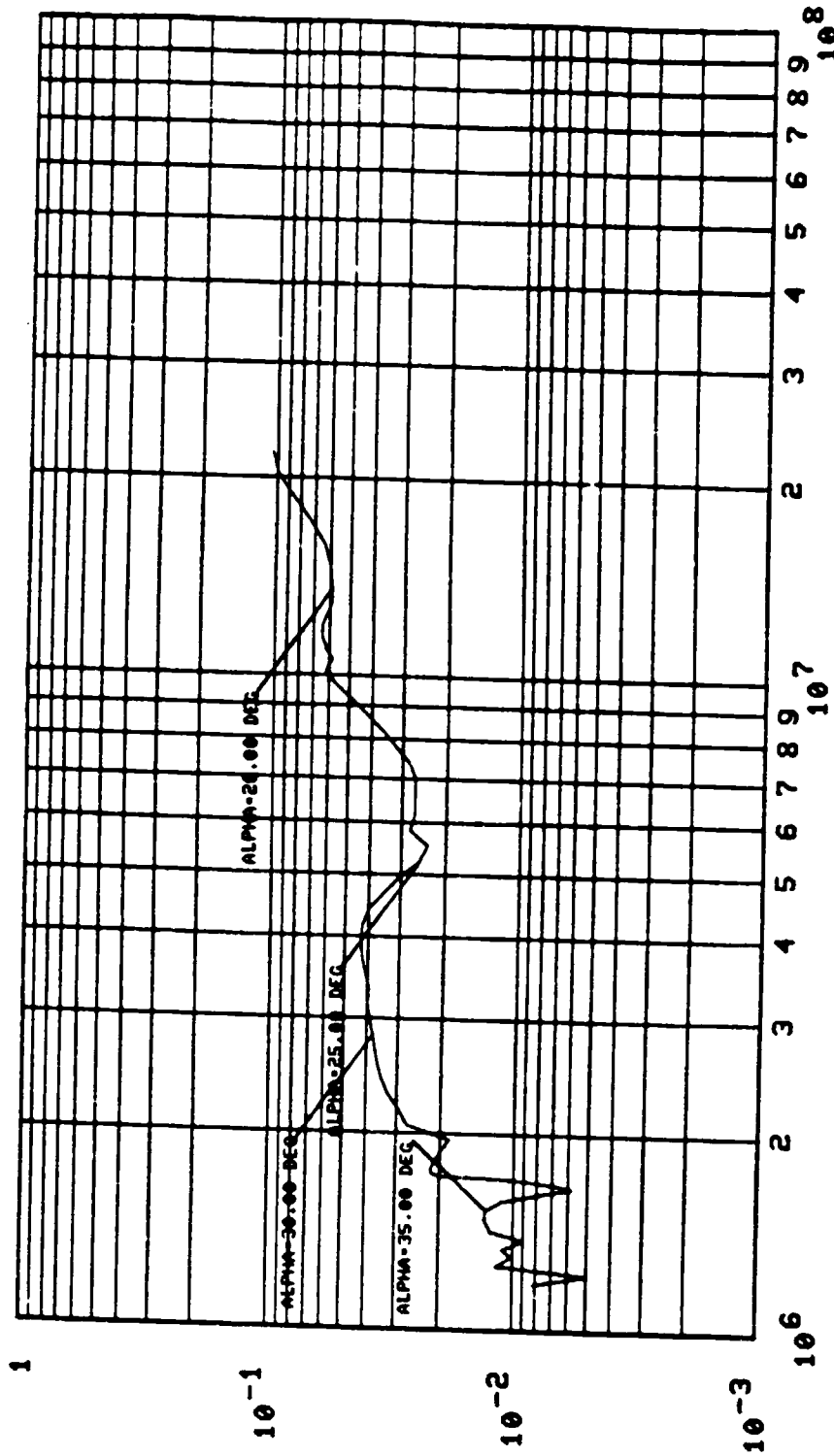
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04 19 53  
BASE TIME - 27855591.000 SEC.

MACH NUMBER

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A/H-REF 1065-1480 SEC



FILM COEFFICIENT - H/H-QUAL

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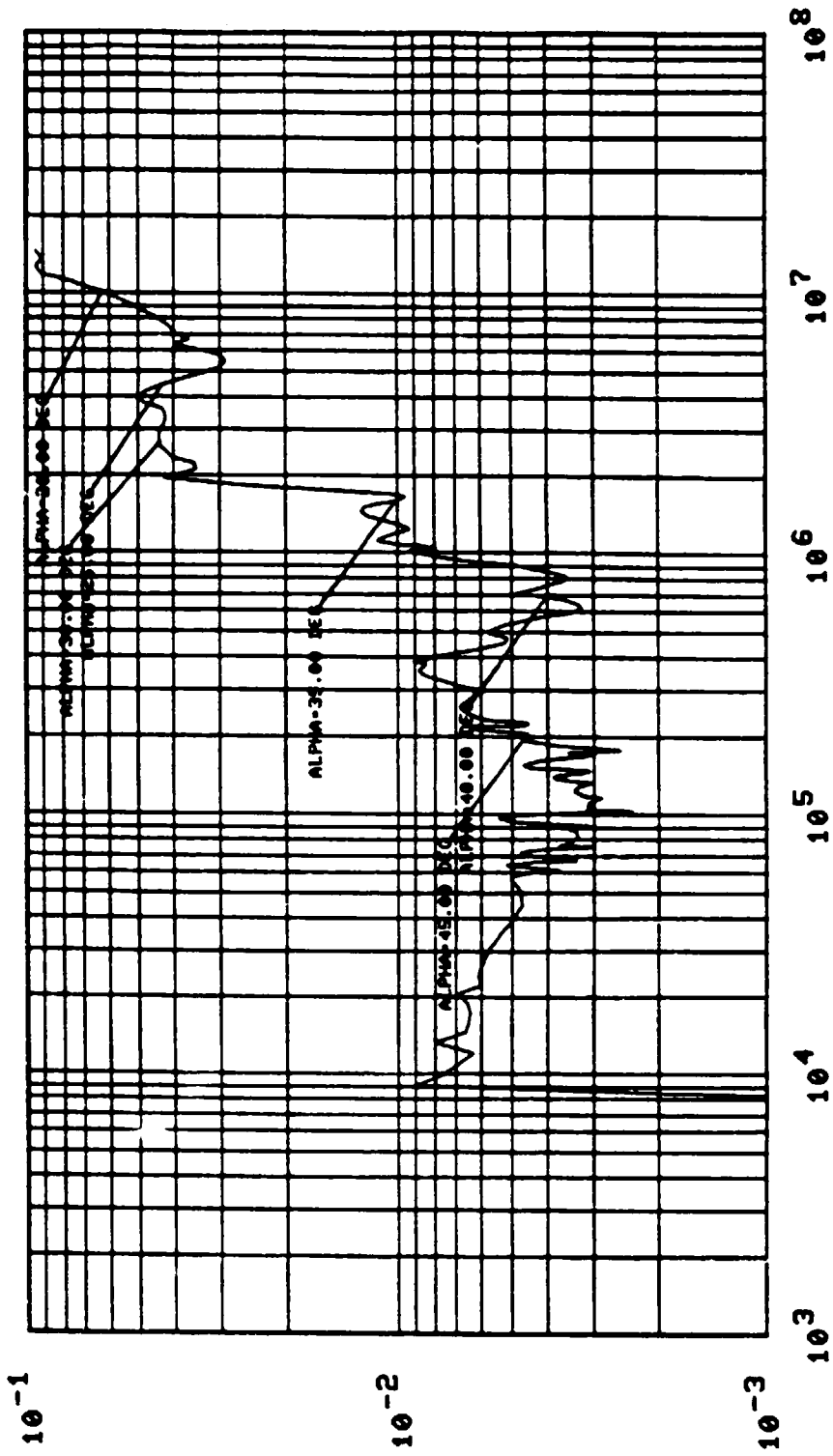
B-276

04/20/83  
BASE TIME - 00040744.000 SEC.

REYNOLDS NUMBER (NS)

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T995A/H-REF 200-1480 SEC



TIME CORRECTION - H/2-2222

B-277

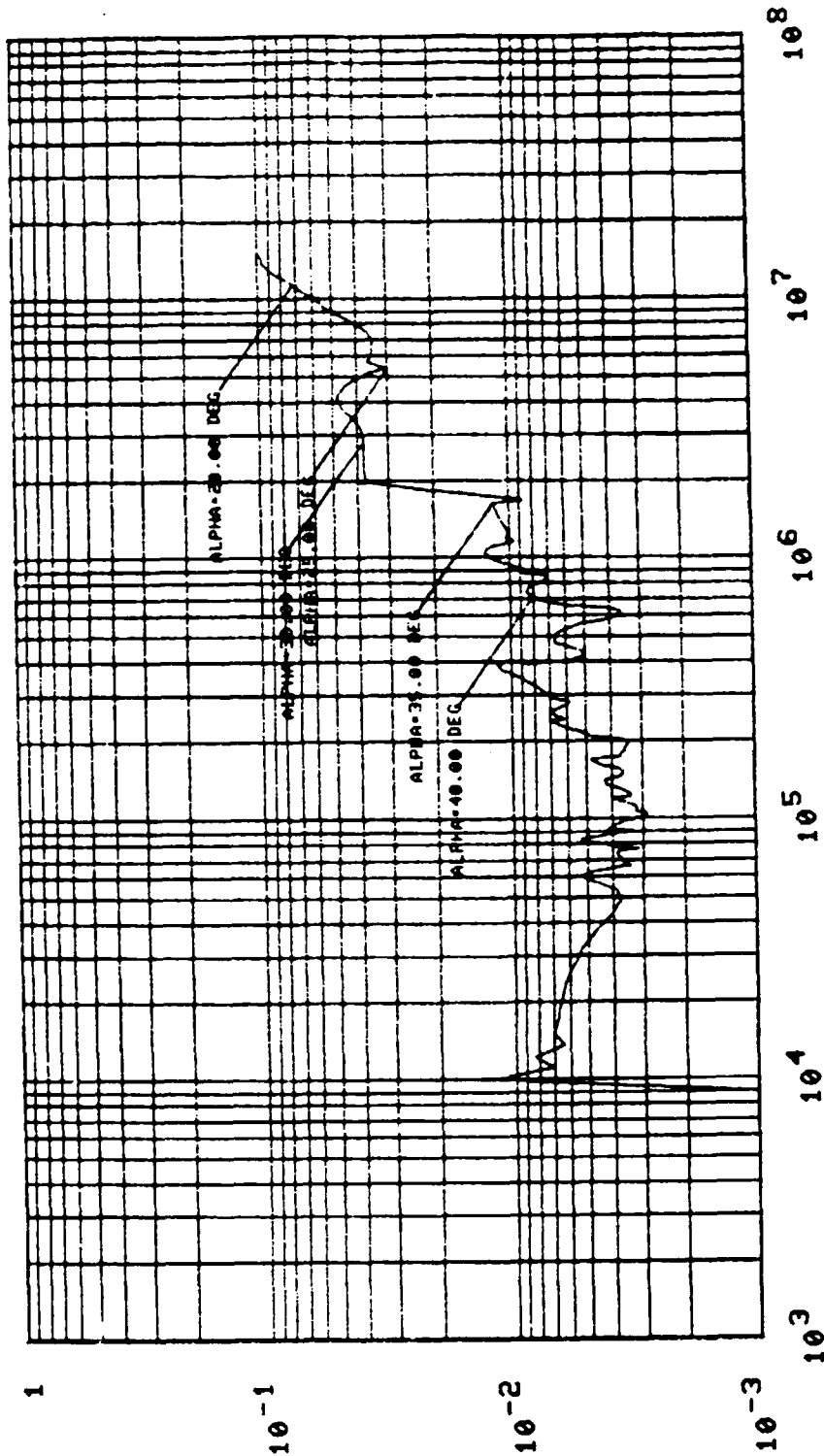
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BASE TIME - 2755235.000 SEC.



STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U077995A/H-REF 200-1380 SEC



TIME CORREL -- H/H-RATE

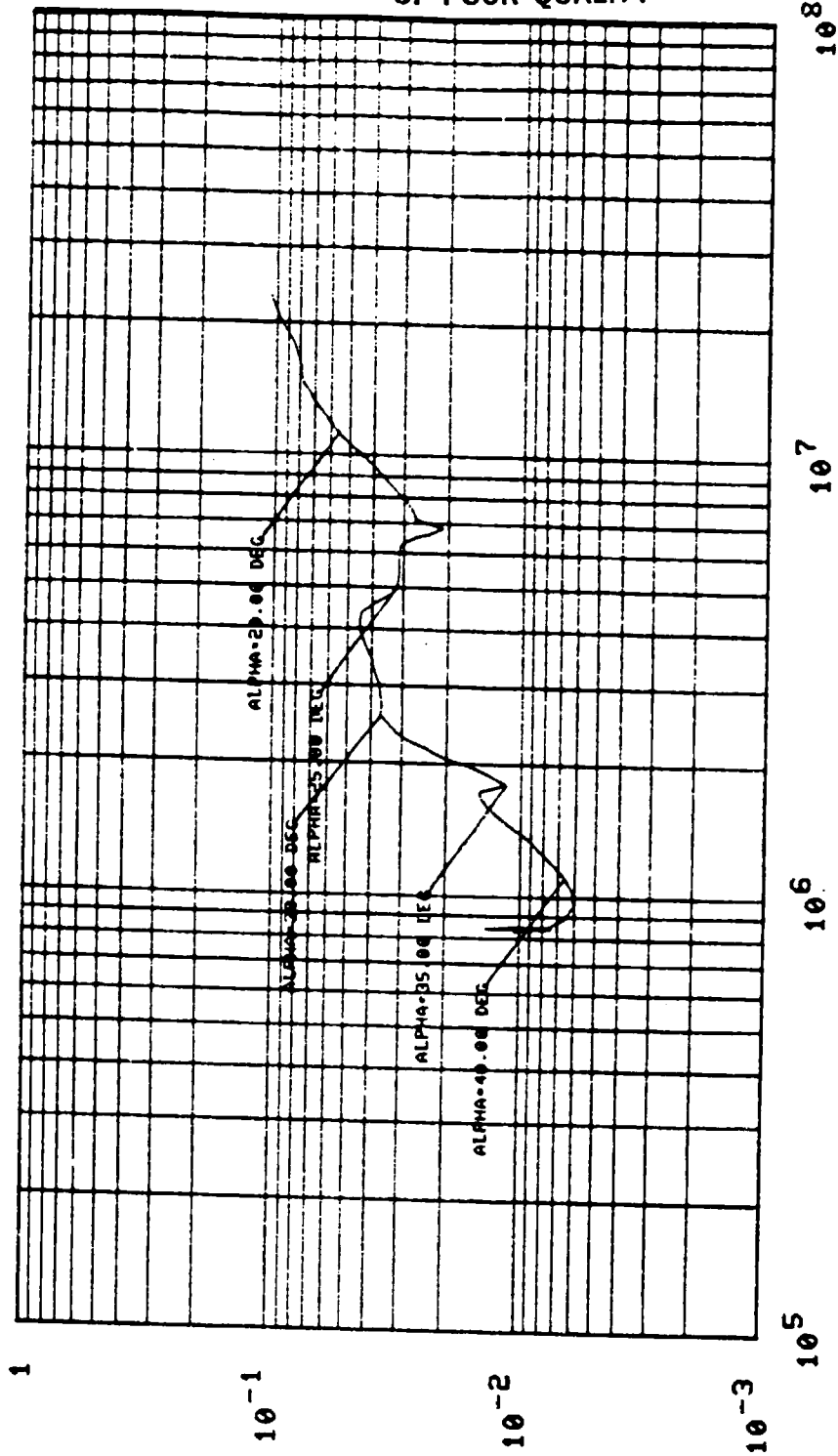
B-278

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REYNOLDS NUMBER (NS) 04.19 83  
BASE TIME - 07745684.000 SEC.

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U071995A/H-REF 965-1335 SEC



TIME COVERED - H-H-RMM

B-279

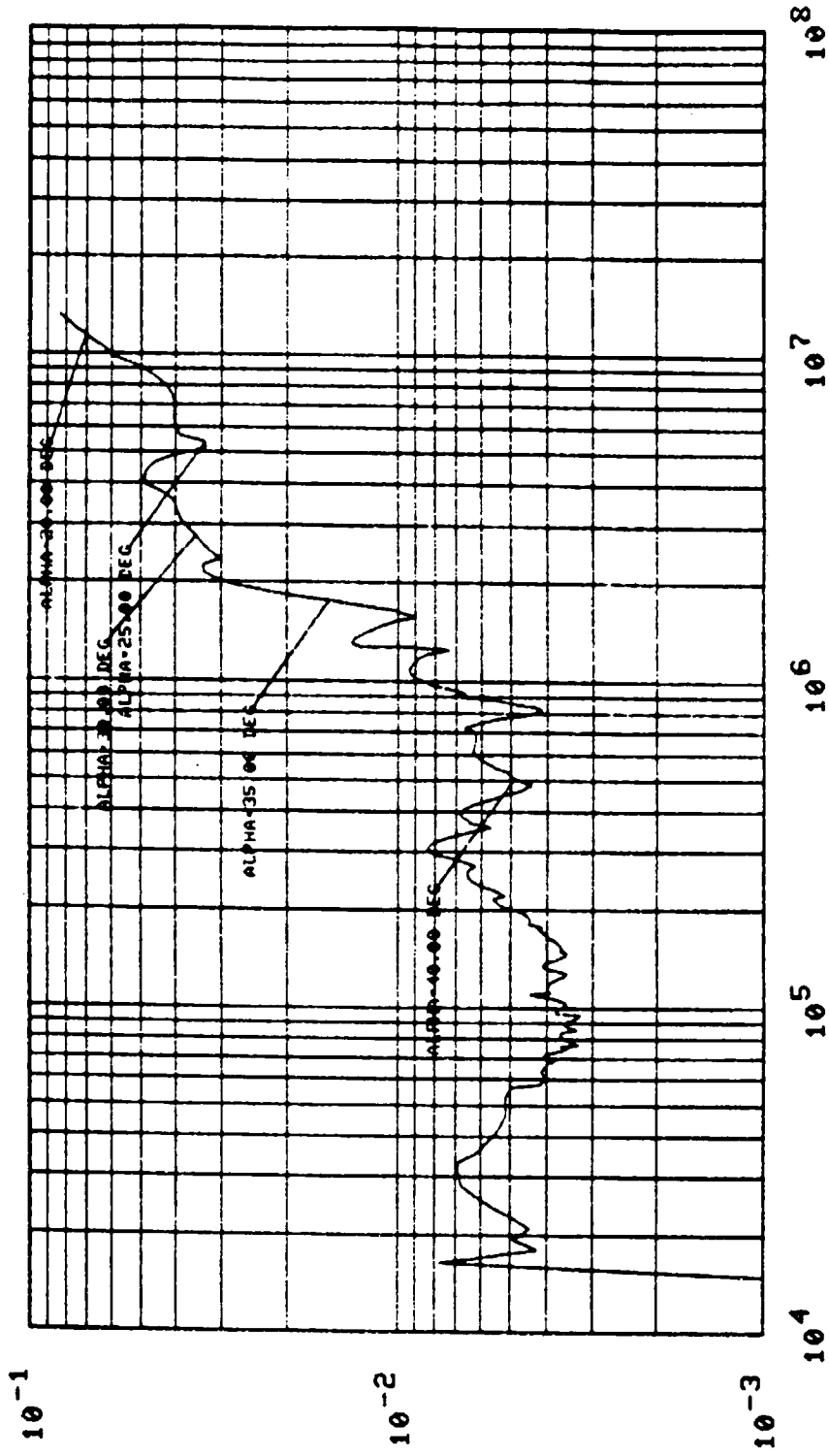
ORIGINAL PAGE 19  
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04 19 83  
BASE TIME - 1604023.000 SEC

REYNOLDS NUMBER (NS)

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9955A/H-REF 150-1350 SEC



FILM CORRECTION -- H-REF

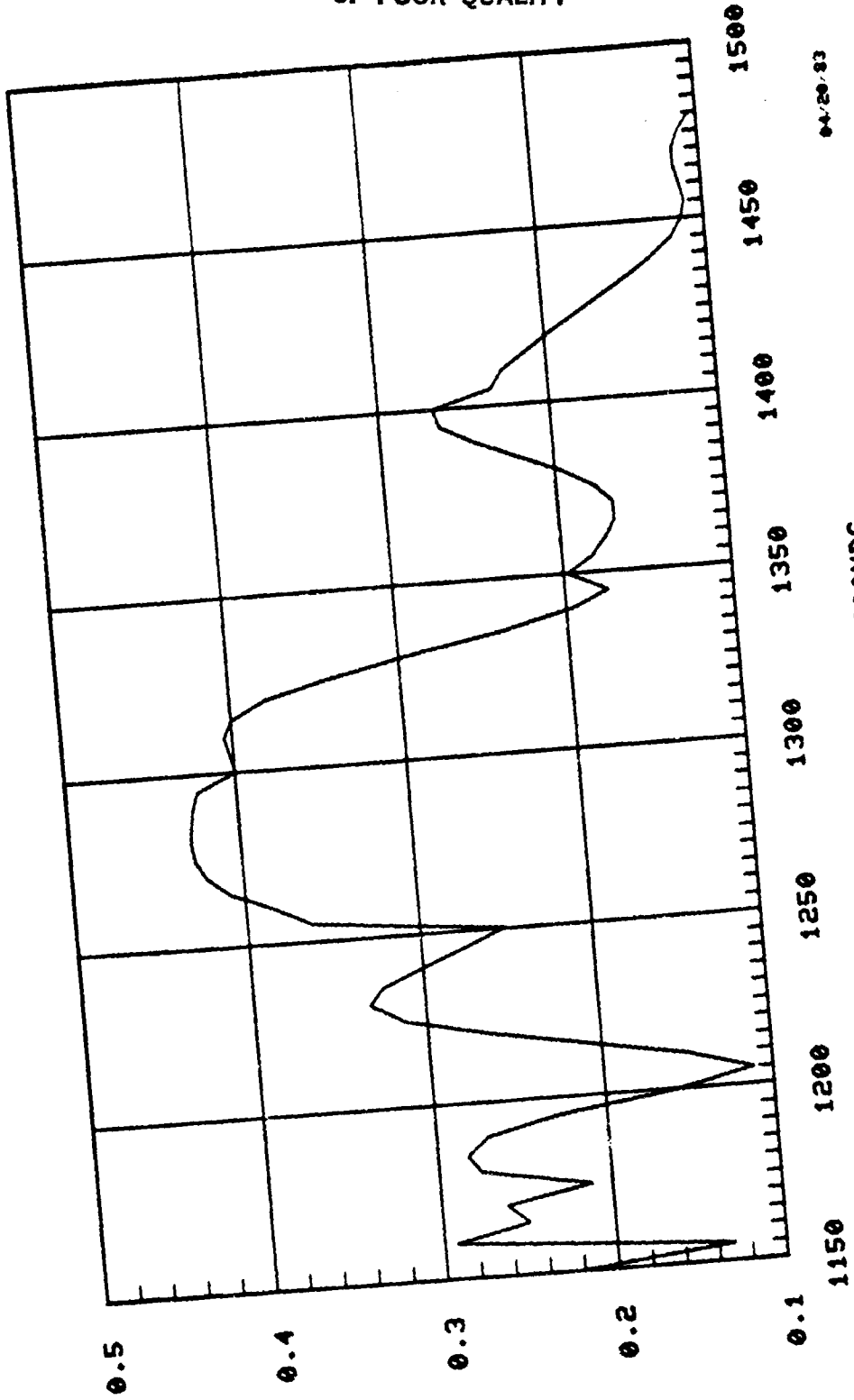
B-280

04.19.83  
BASE TIME - 27685591.000 SEC.

REYNOLDS NUMBER (NS)

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON  
 U67T995A

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TIME - SECONDS

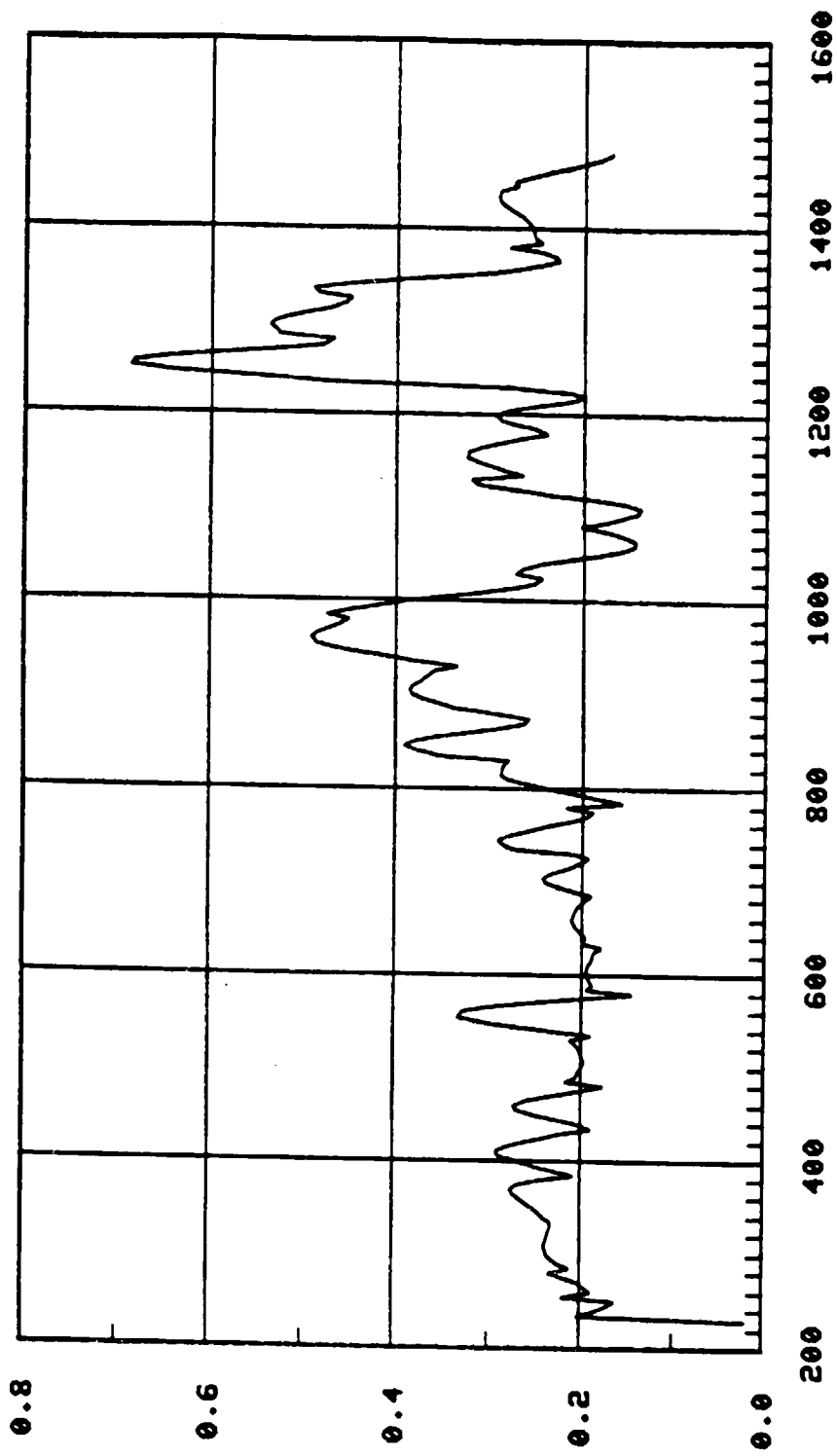
04-20-83

FLIGHTING RATE - BULLETINS - 500

B-281

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U677995A



RECTIFYING RATE - B-DUTY-KMS - SWG

B-282

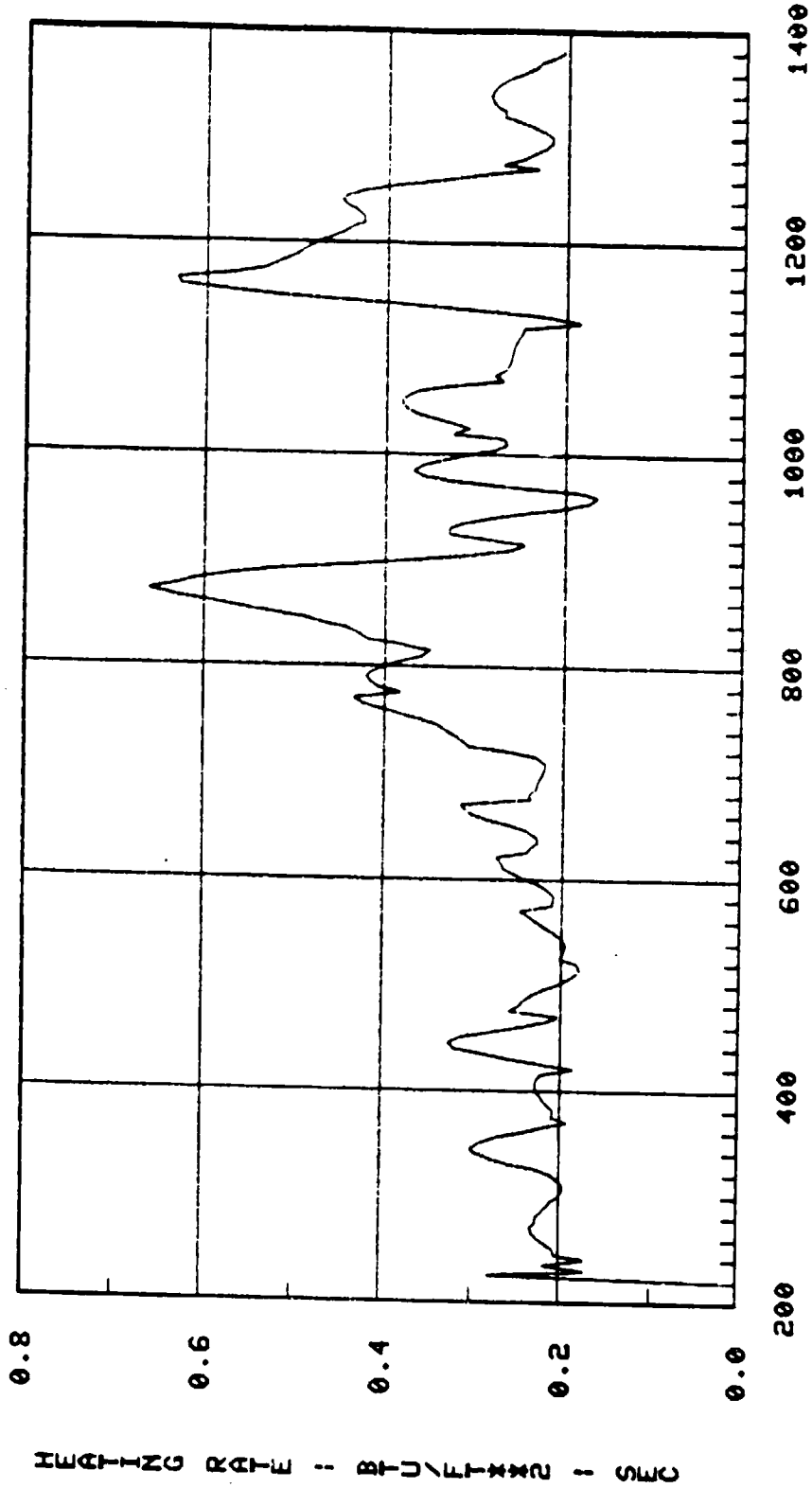
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TIME - SECONDS

04/20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A



HEATING RATE -- BTU/FT<sup>2</sup>/MS -- SEC

B-283

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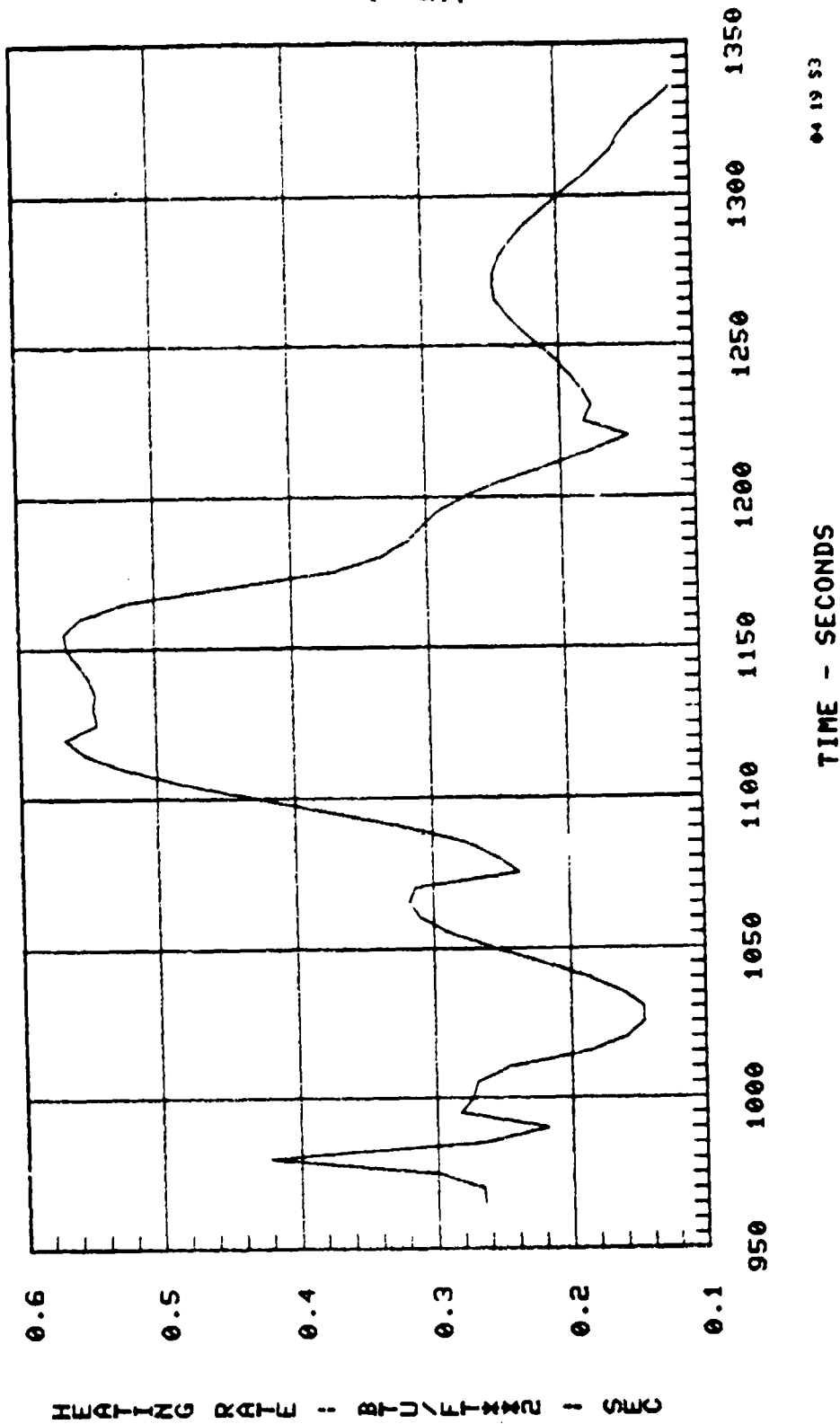
TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071995A

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04 19 53

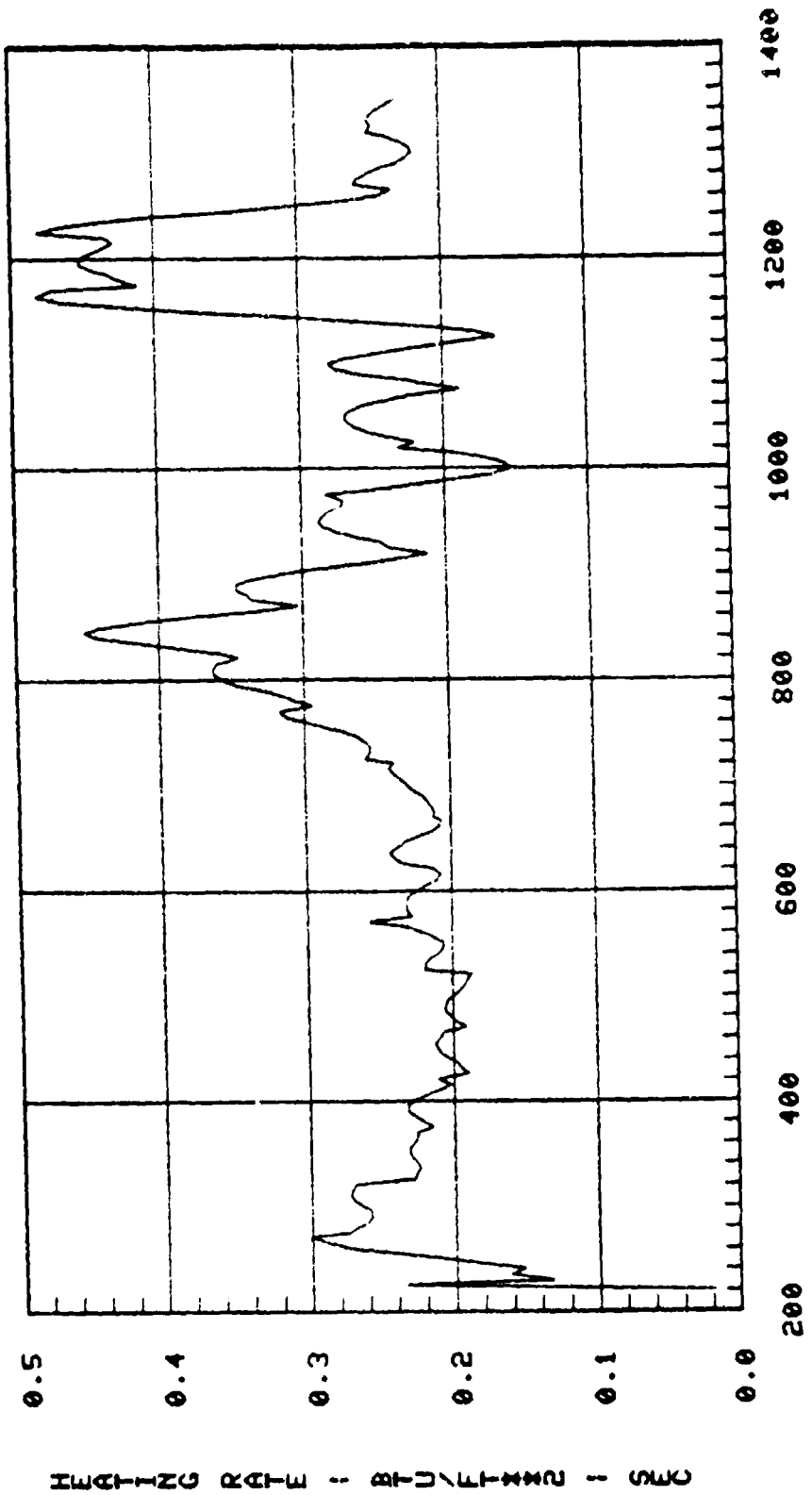
TIME - SECONDS

HEATING RATE - BTU/FT-MIN - SEC

B-284

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077995A

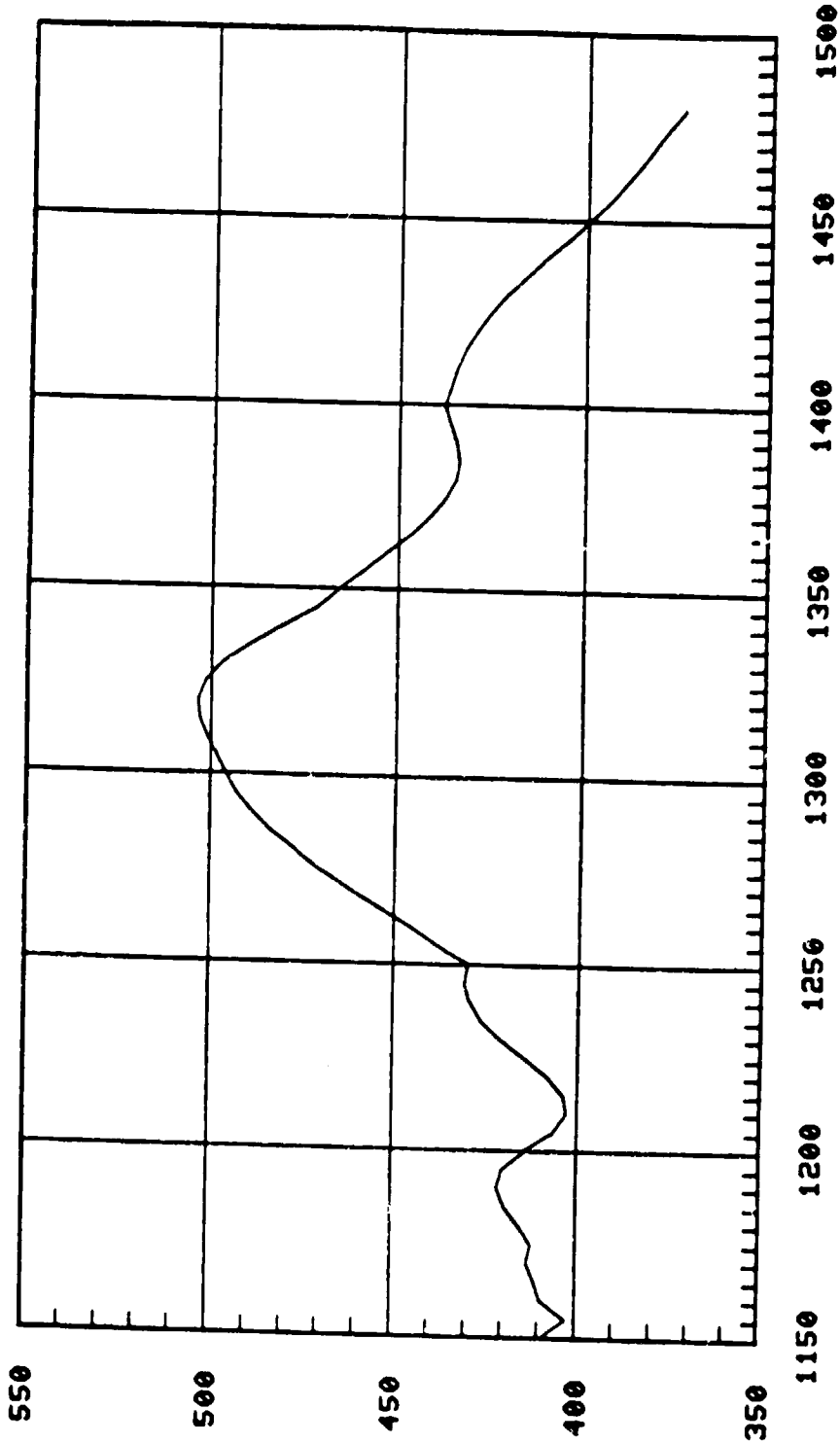


TIME - SECONDS 04 19 53



STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071995A



TEMPERATURE - F

B-286

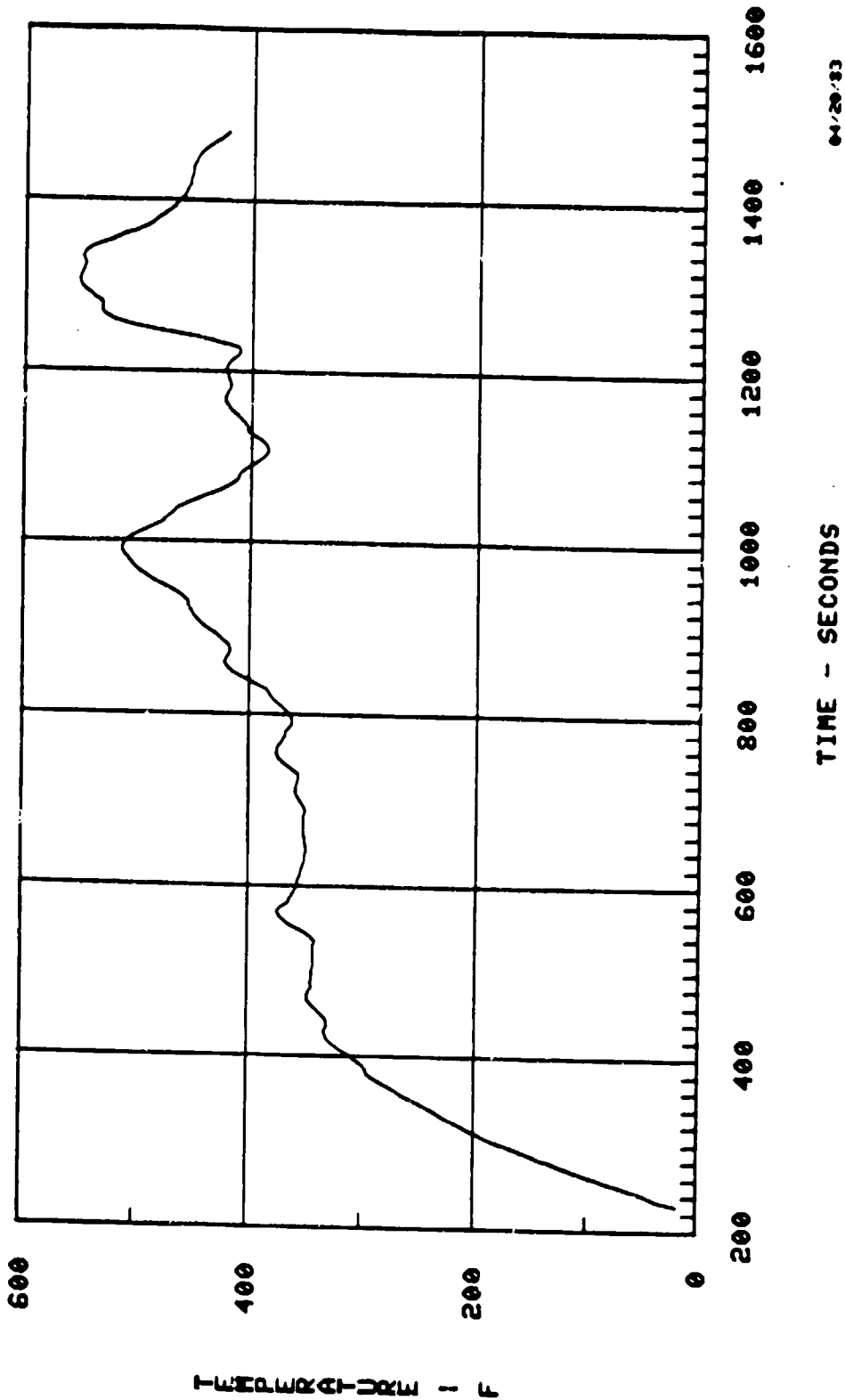
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TIME - SECONDS

04/20/83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

1/97T9955A



1/97T9955A

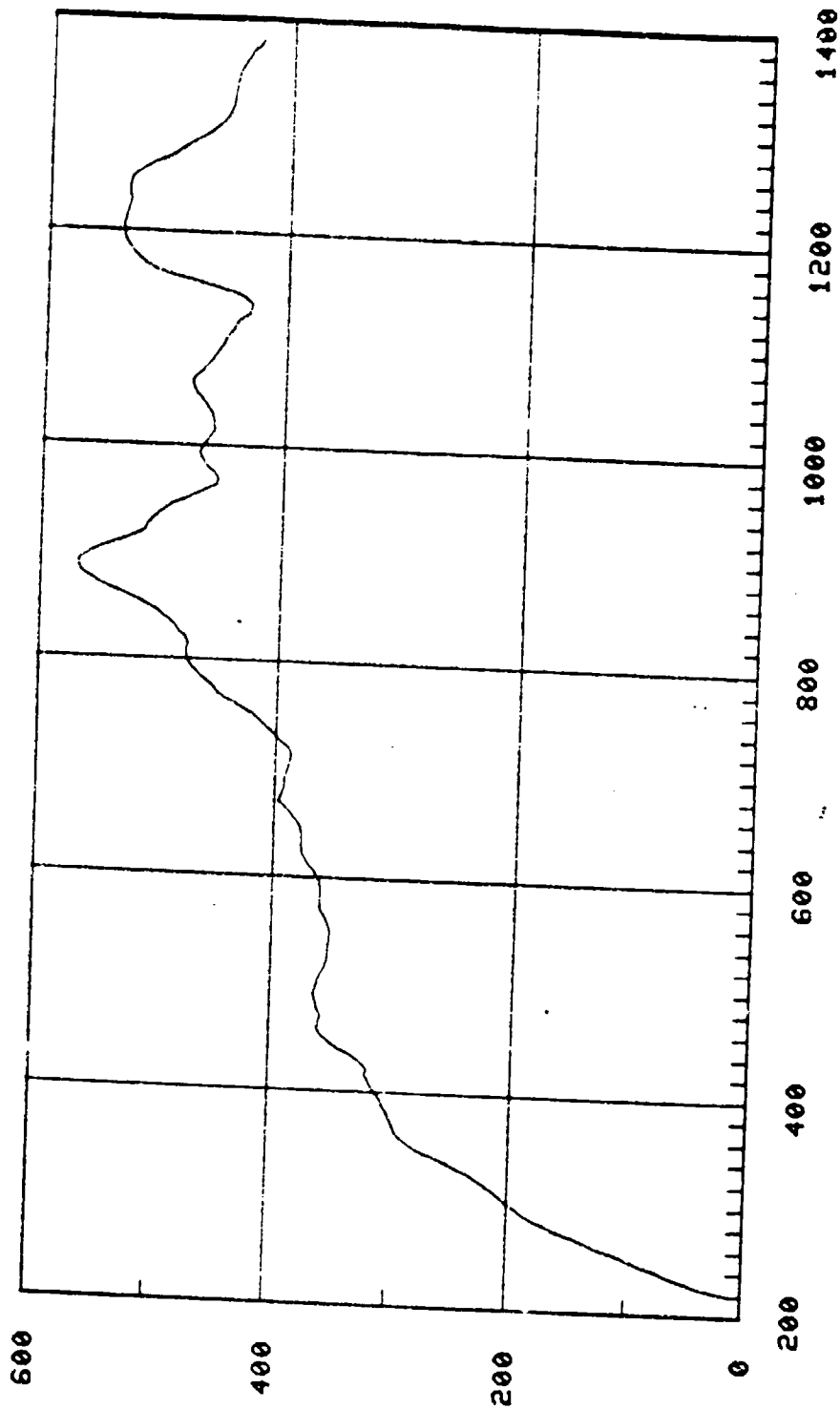
B-287

ORIGINAL PRINTED  
OF POOR QUALITY

04/20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A



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FUELWEIGHT-DOW -- F

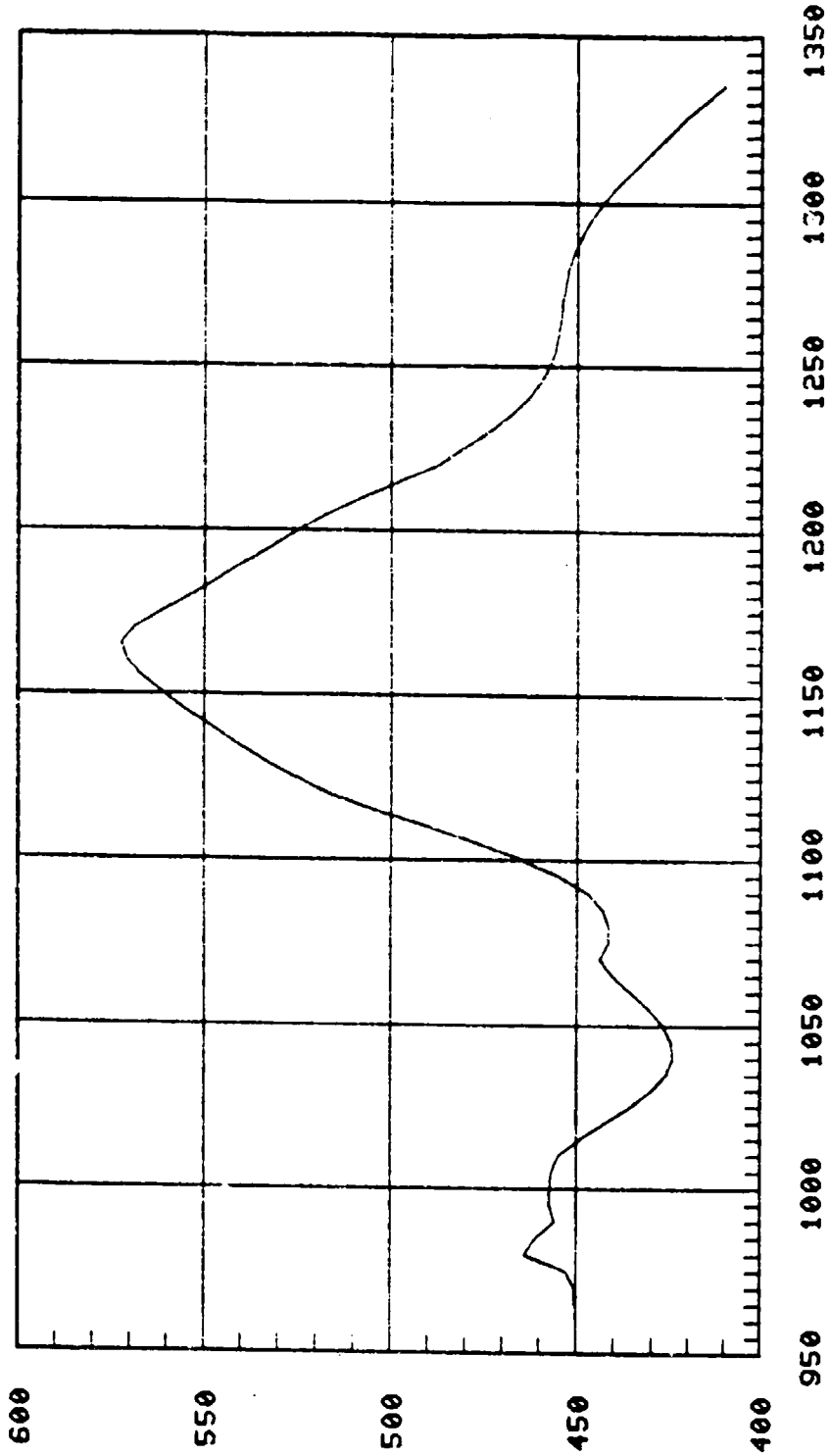
B-238

TIME - SECONDS

04 19 83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A



TEMPERATURE -- F

B-289

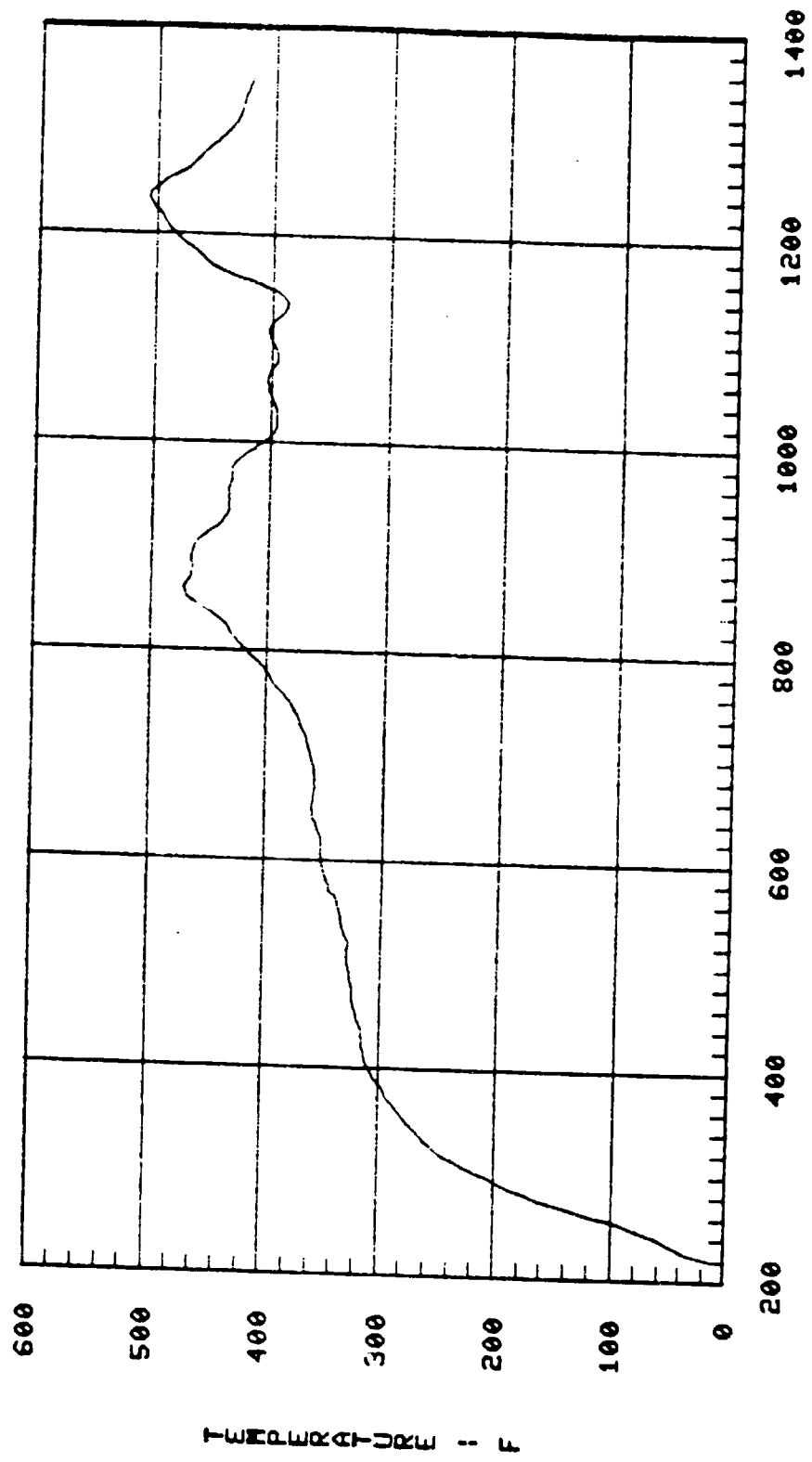
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TIME - SECONDS

04 19 83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U6779955A



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TEMPERATURE - F

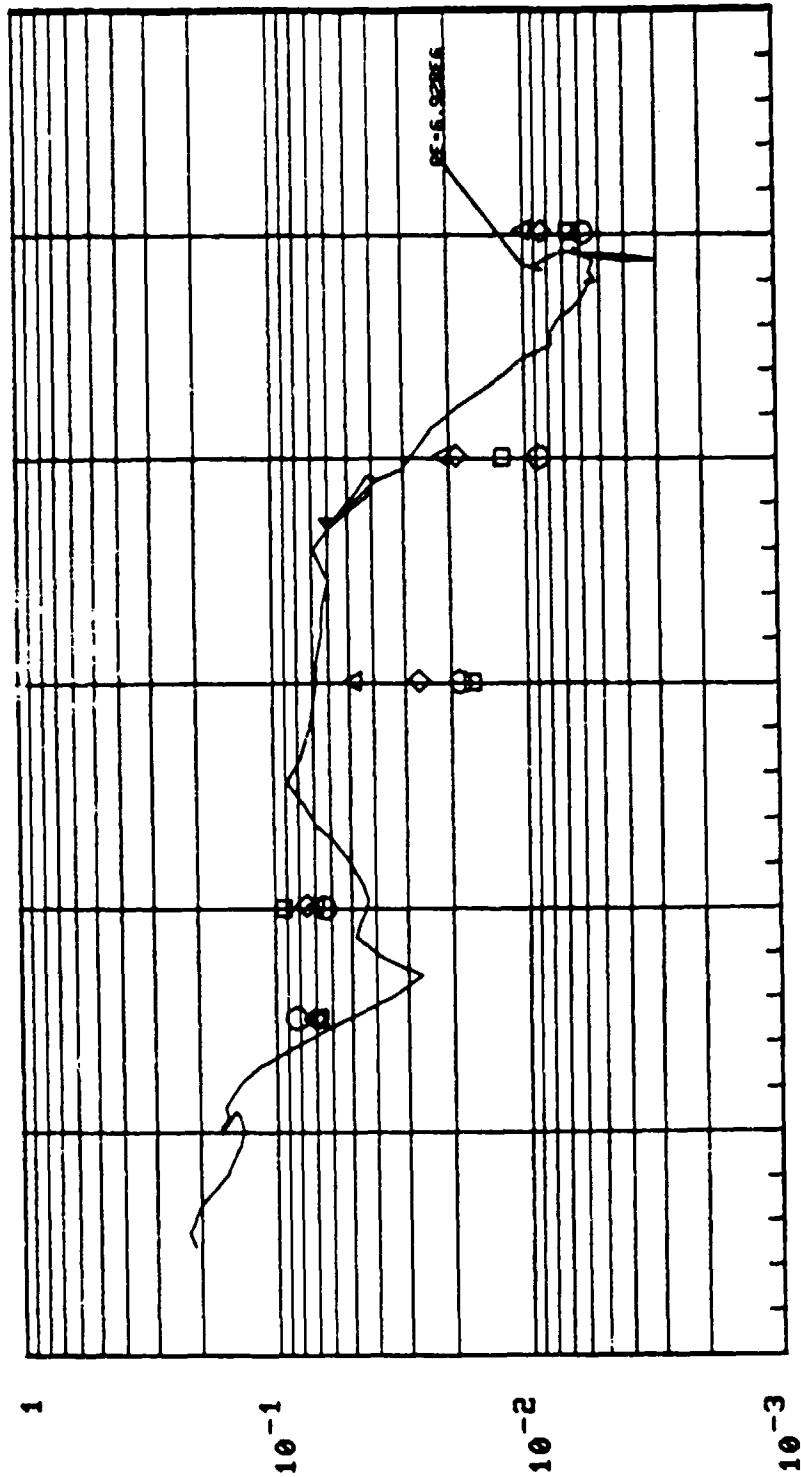
TIME - SECONDS

04 19 83

# STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9996A/H-REF 1065-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



CRIP...  
OF POOR QUALITY

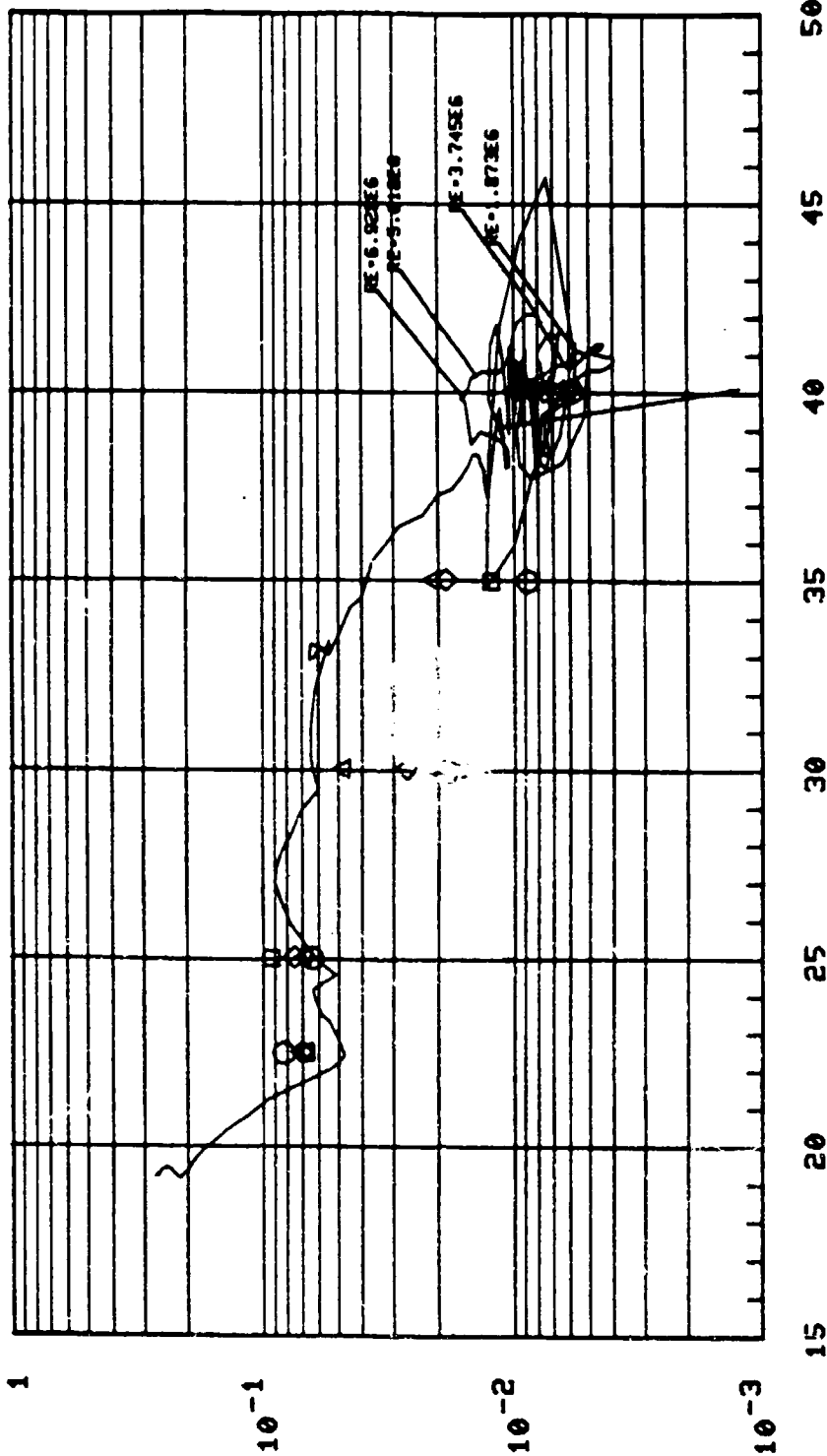
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04/20/83  
BASE TIME - 09049744.000 SEC.  
ANGLE-OF-ATTACK - DEG

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719996A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



04/20/73  
BASE TIME - 27550235.000 SEC.  
ANGLE-OF-ATTACK - DEG

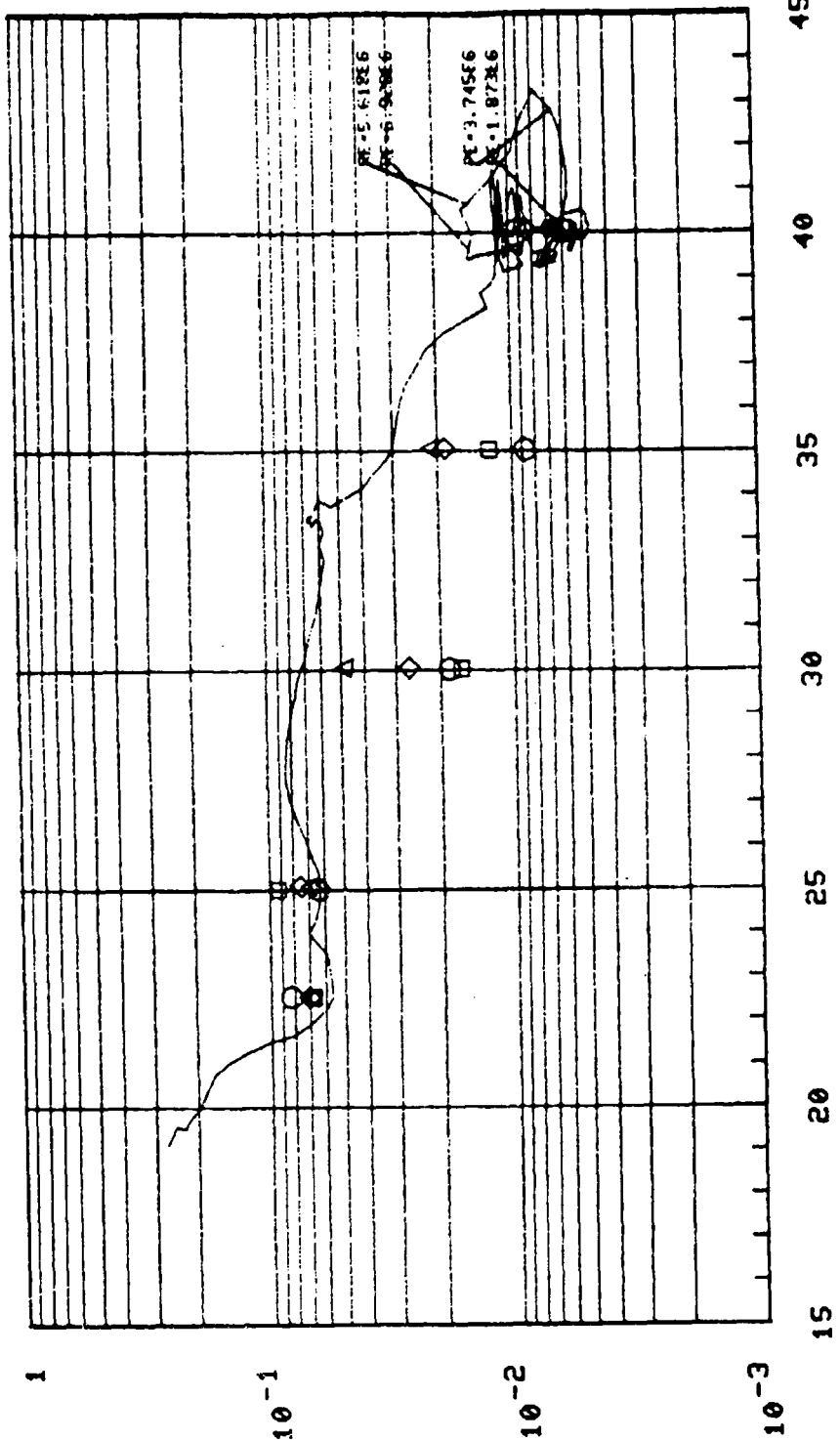
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TIME CORRECTION - H/H-CORRECTION

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779996A/H-REF 200-1380 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06



FLIGHT COEFFICIENT - H/H-REF

B-293

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ANGLE-OF-ATTACK - DEG  
 BASE TIME \* 07745684.000 SEC.  
 04/19/83

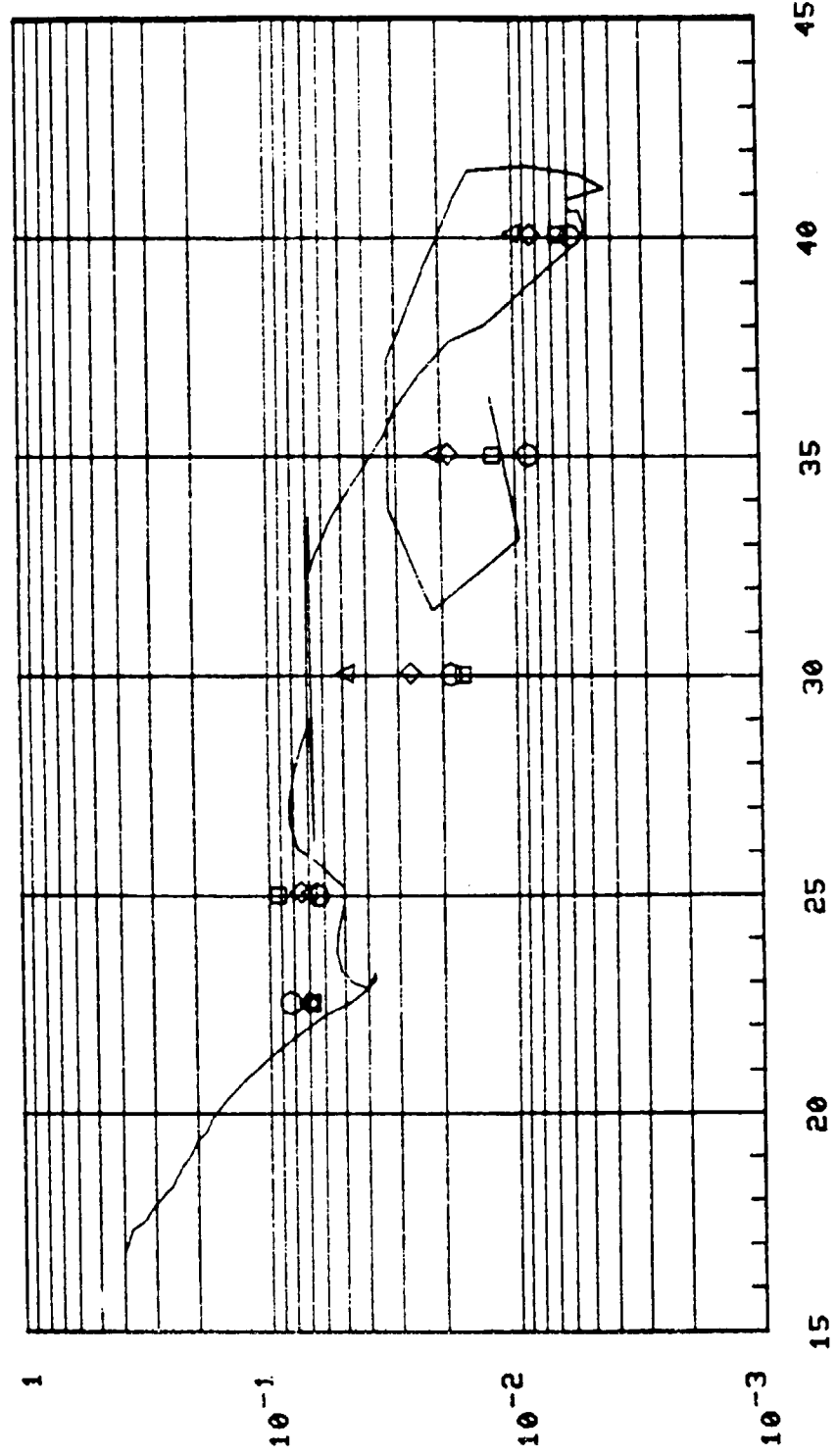


STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE • 1.0 E06  
 AF 0.0175 SCALE RE • 2.0 E06  
 AF 0.0175 SCALE RE • 3.0 E06  
 AF 0.0175 SCALE RE • 3.7 E06

○ □ ×

U07T9996A/H-REF 965-1335 SEC



U07T9996A/H-REF

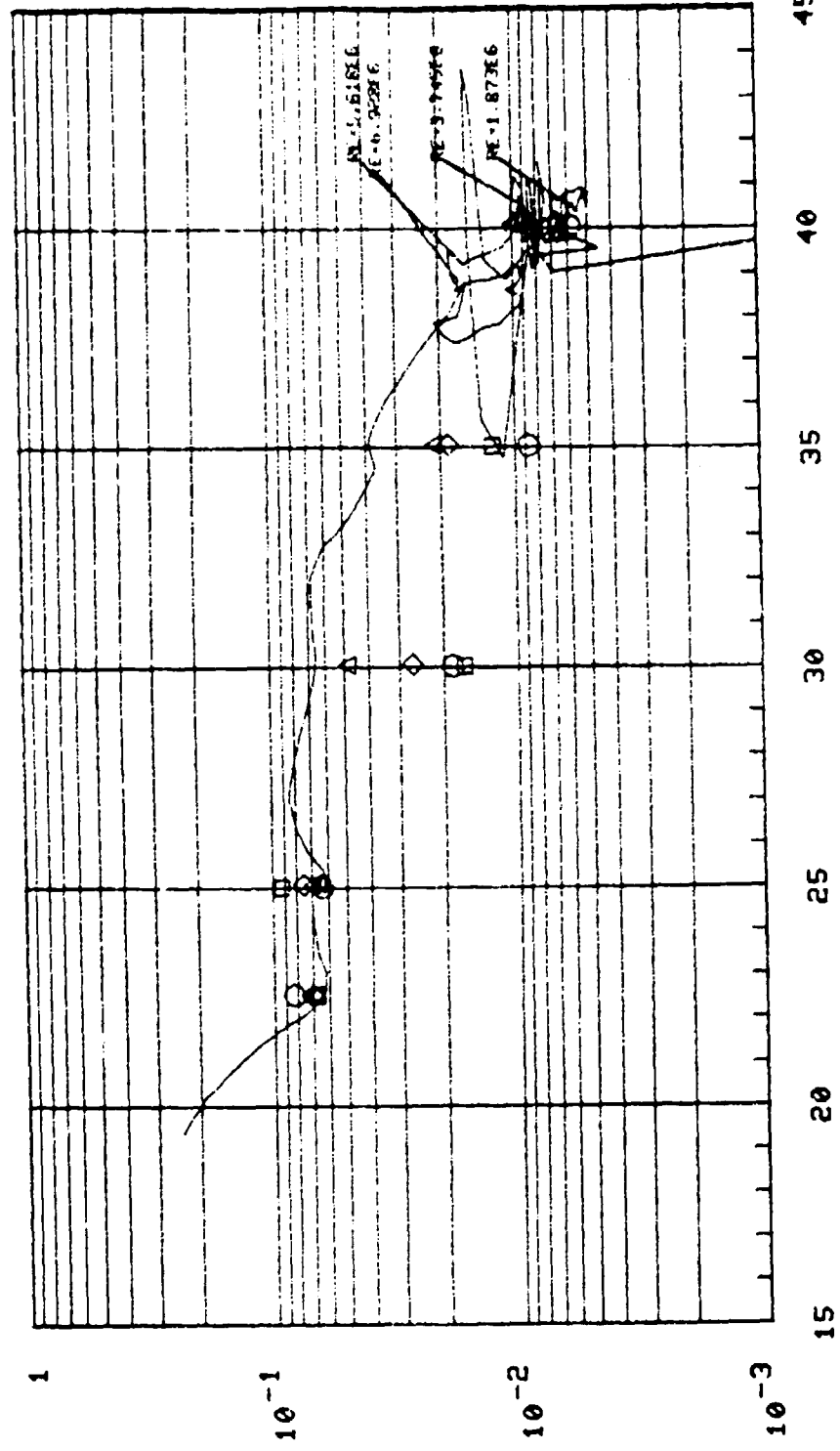
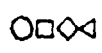
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04.19.83  
 BASE TIME • 1600423.000 SEC.

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9995A/H-REF 150-1350 SEC

- AF 0.0175 SCALE RE = 1.0 E06
- AF 0.0175 SCALE RE = 2.0 E06
- AF 0.0175 SCALE RE = 3.0 E06
- AF 0.0175 SCALE RE = 3.7 E06



LIFT COEFF - H/H-RUL

B-295

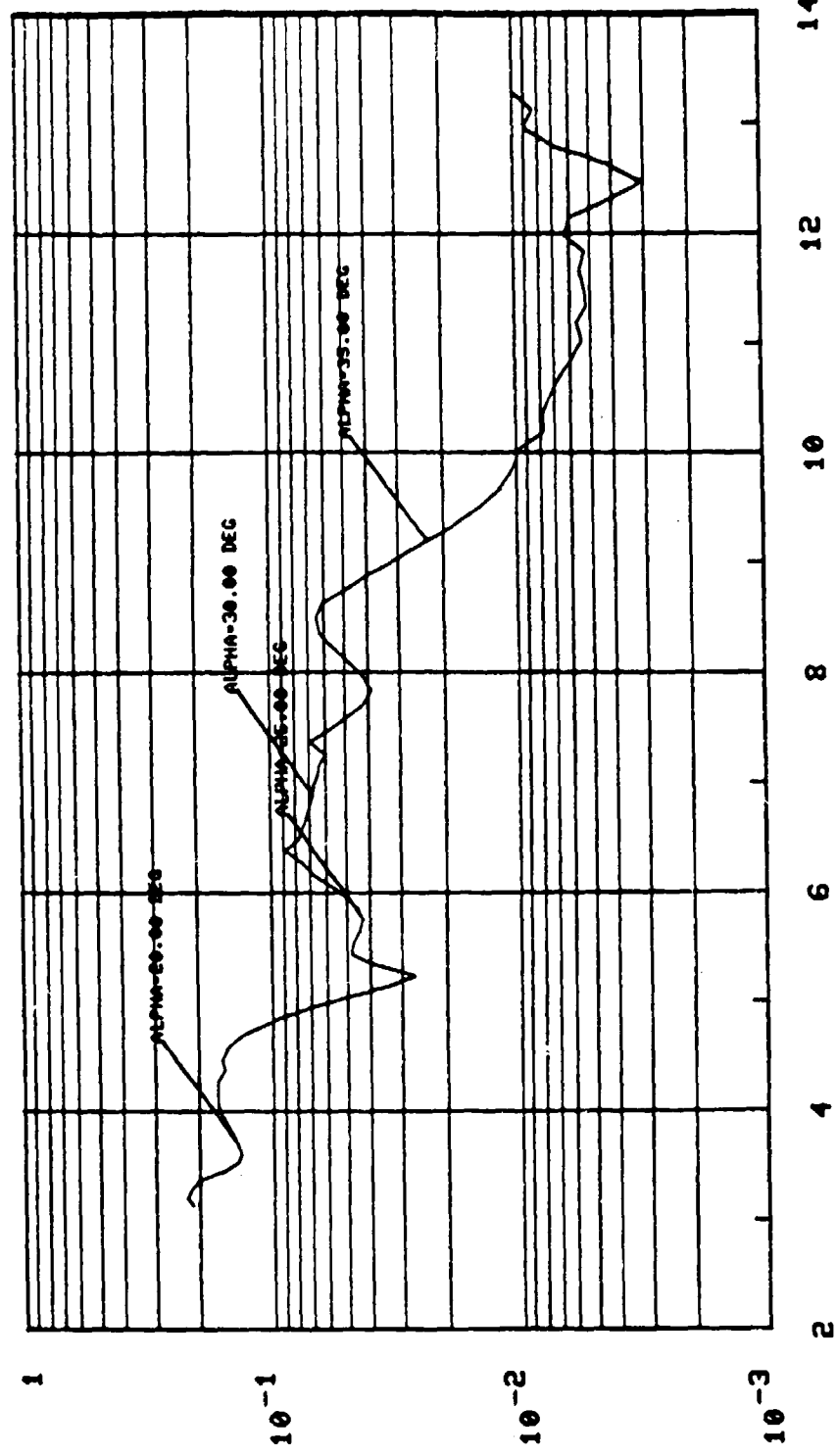
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04-16-83  
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ANGLE-OF-ATTACK - DEG

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077996A/H-REF 1065-1480 SEC



FLIGHT PARAMETER - H/REF

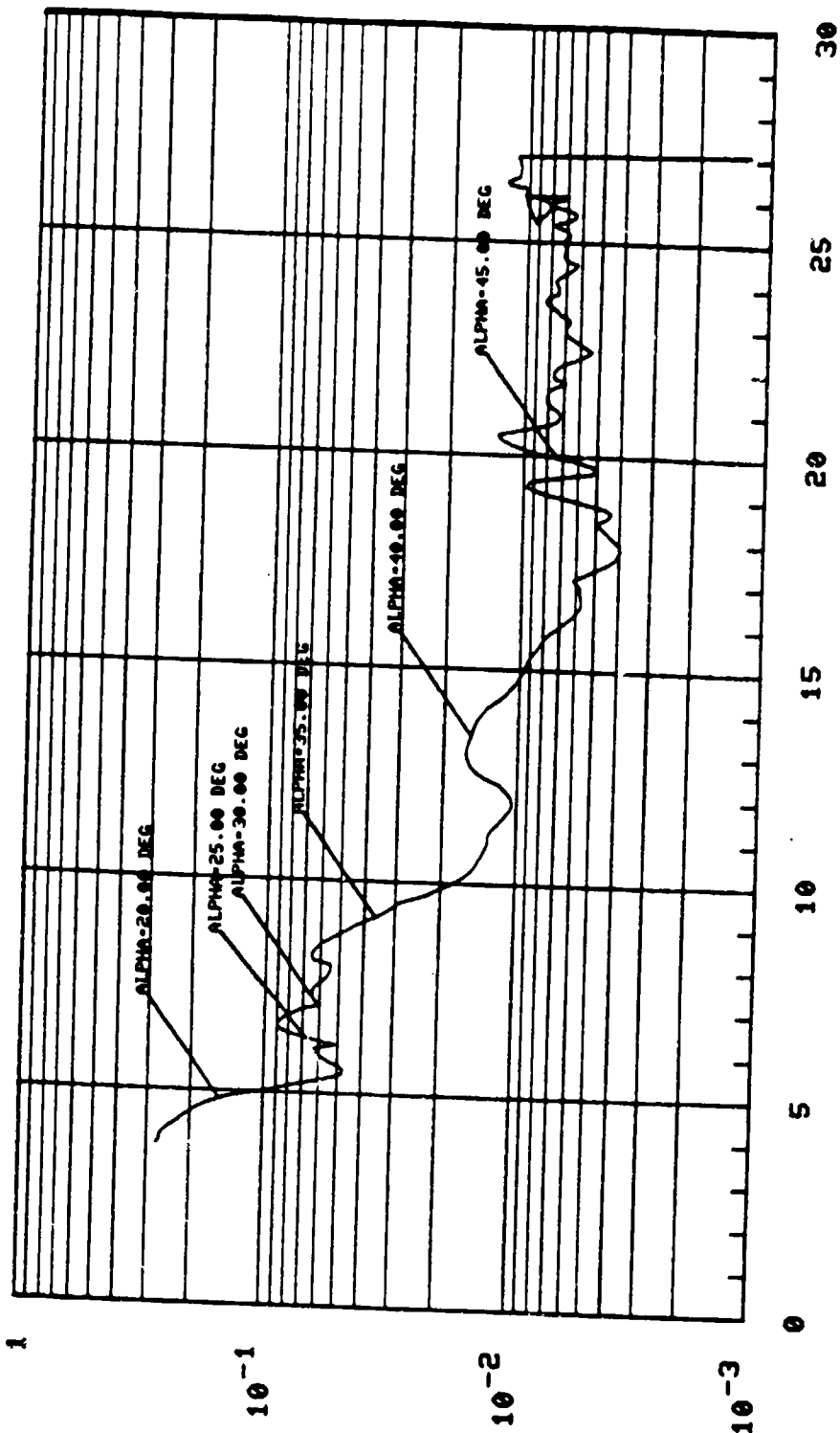
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04/20/83  
BASE TIME - 00049744.000 SEC.  
MACH NUMBER

# STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T996A/H-REF 200-1480 SEC

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FILM COEFF : H/H-REF

B-297

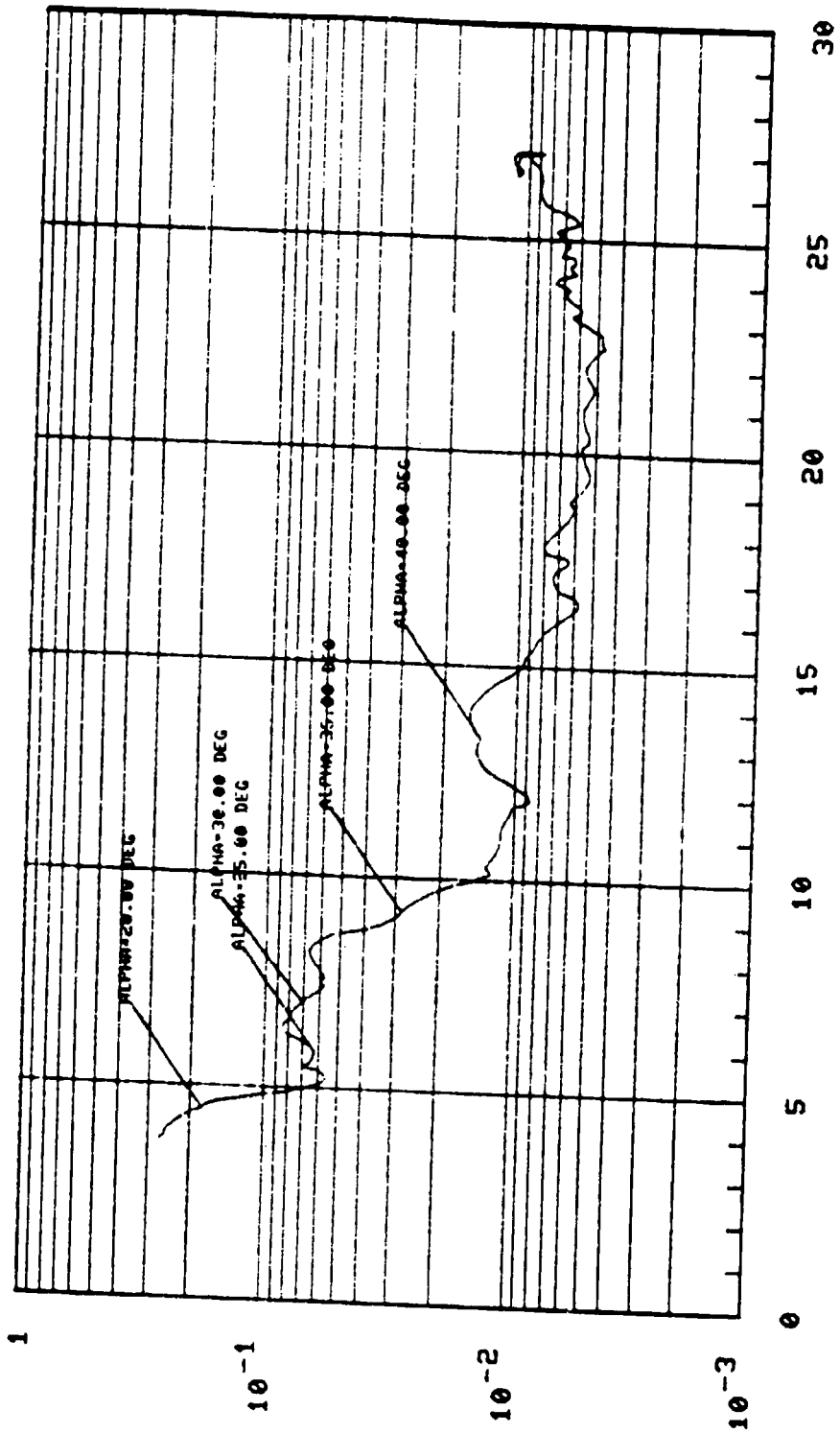
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04/20/83  
BASE TIME - 27550236.000 SEC.

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U2719956A/H-REF 200-1380 SEC

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LINE COVER - I-I-RWL

B-298

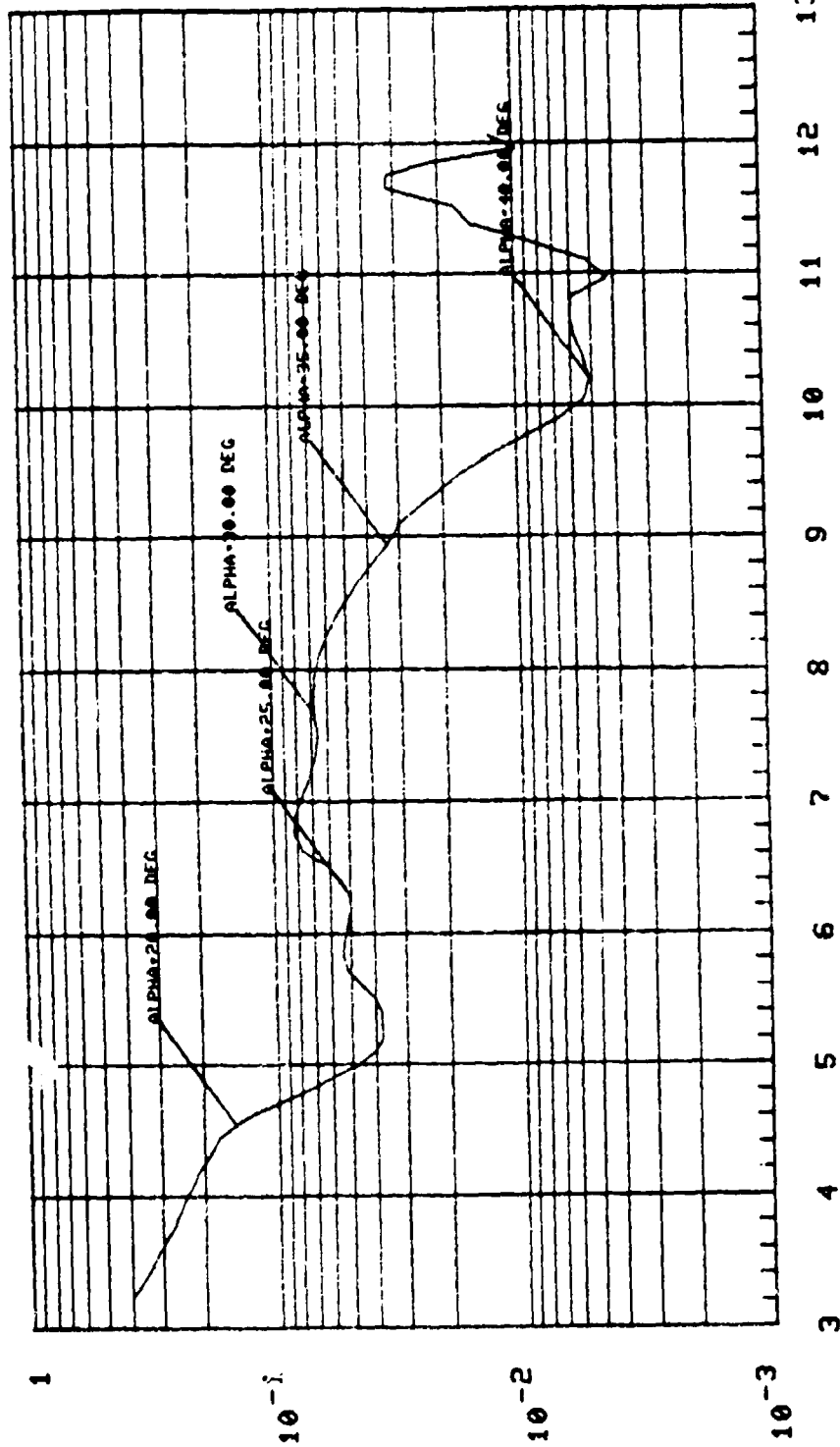
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0715996A/H-REF 965-1335 SEC

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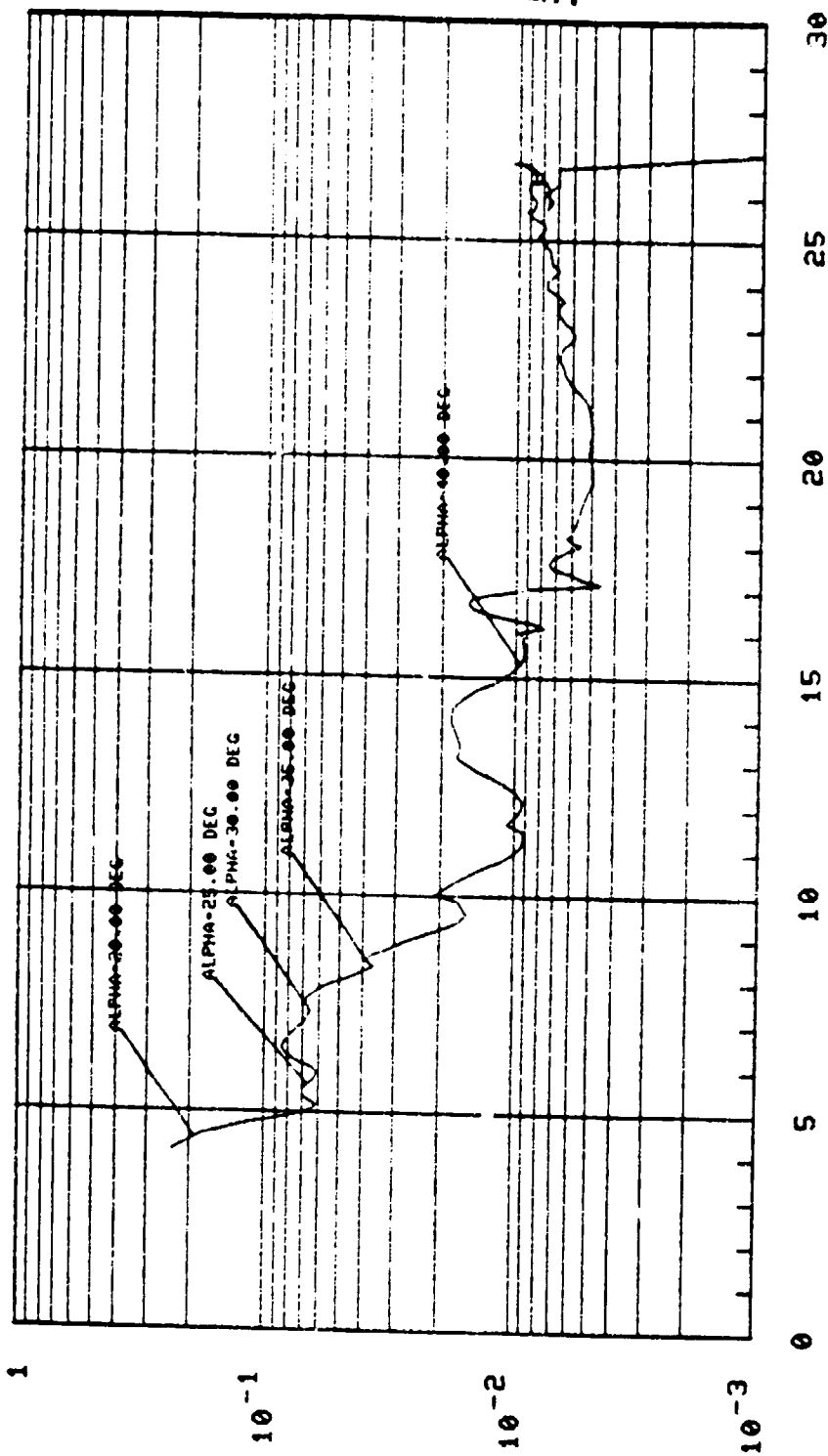
LINE COVER - H-H-REF

MACH NUMBER

04-19-83  
BASE TIME - 1600023.000 SEC.

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9996A/H-REF 150-1350 SEC



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EMERGENCY -- H/H-REF

B-300

04/18/53  
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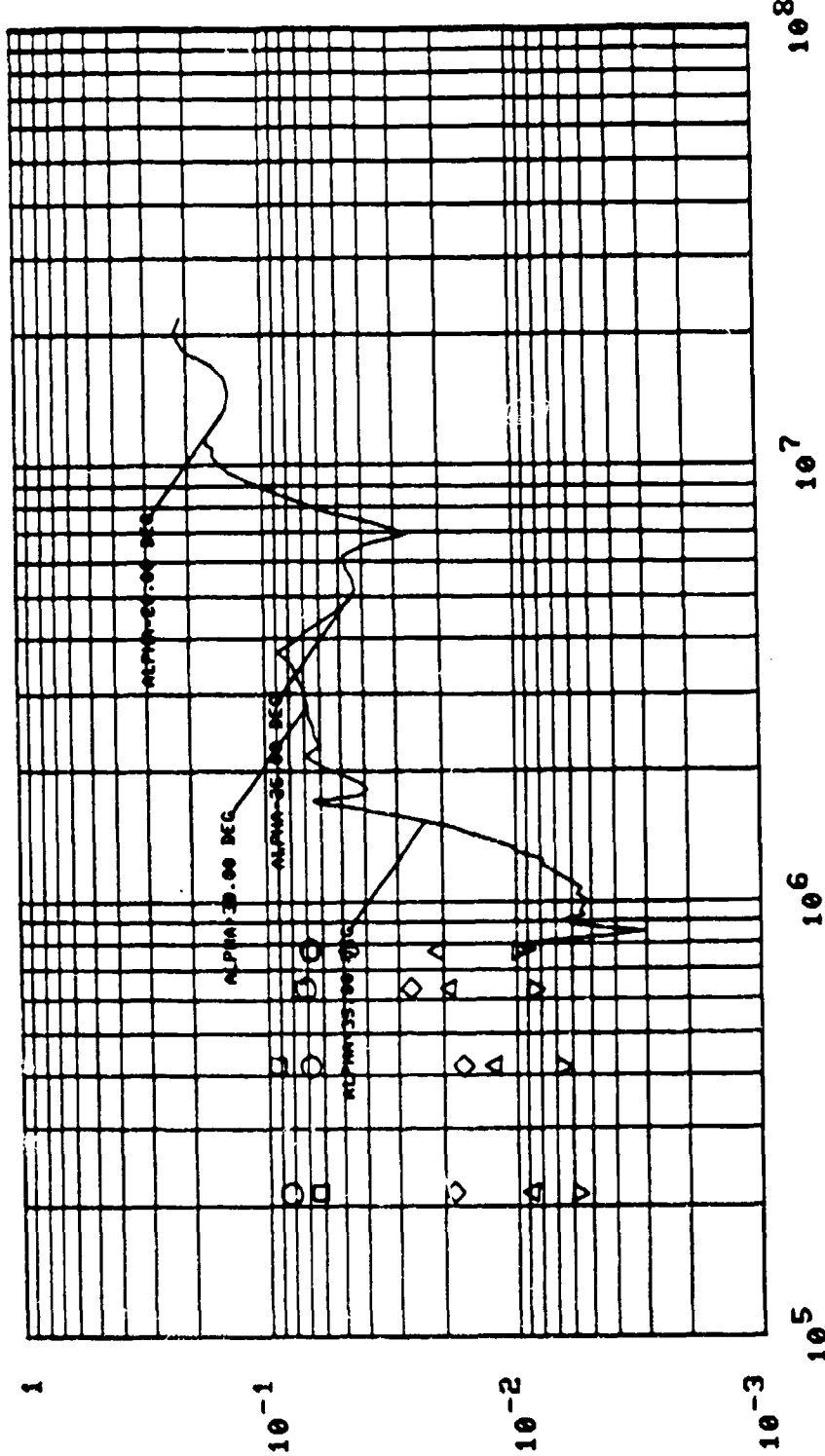
MACH NUMBER

STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T996A/M-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

□ ○ ◇ ▼



LIFT COEFF - H/H-REF

ORIGINAL DRAWING OF POOR QUALITY

04/20/83  
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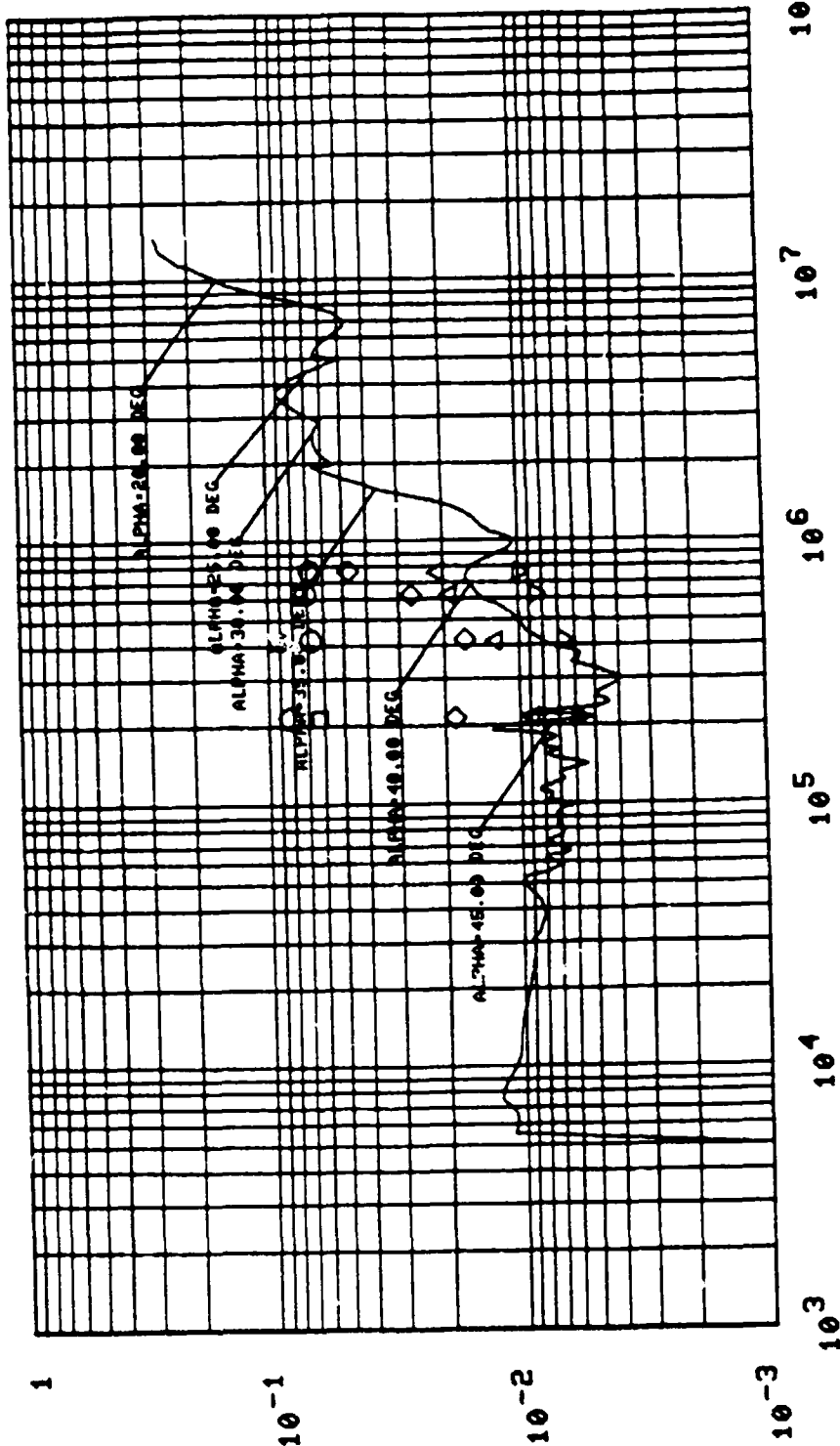
REYNOLDS NUMBER (NS)



STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U87T9996A/H-REF 200-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FLIGHT POWER - H/H-REF

REYNOLDS NUMBER (NS)

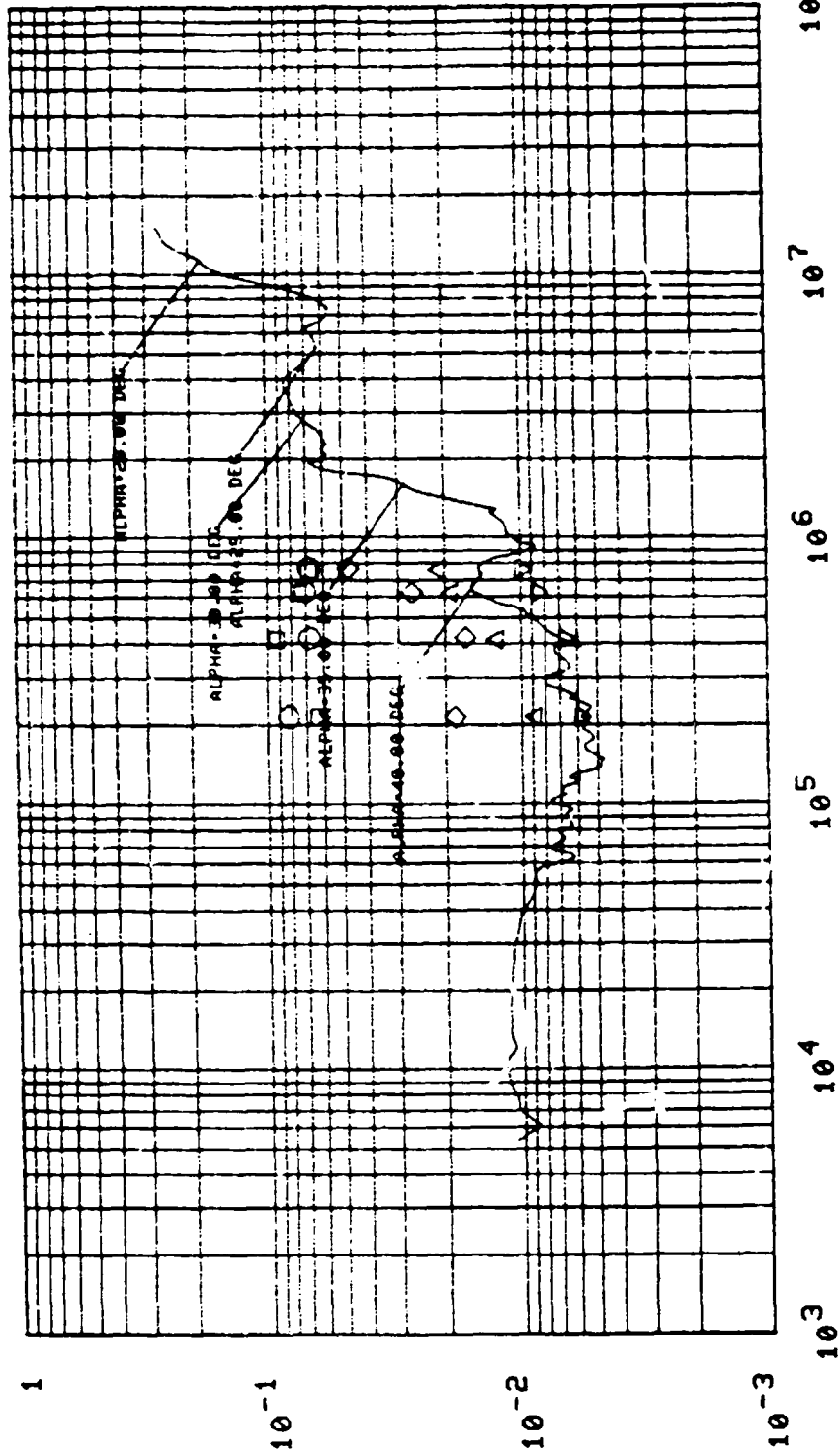
04/20/83  
BASE TIME - 27550236.000 SEC.

C-5

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779956A/H-REF 200-1380 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FILM COEFF - H-H-REF

04-19-83

BASE TIME - 07745684.000 SEC.

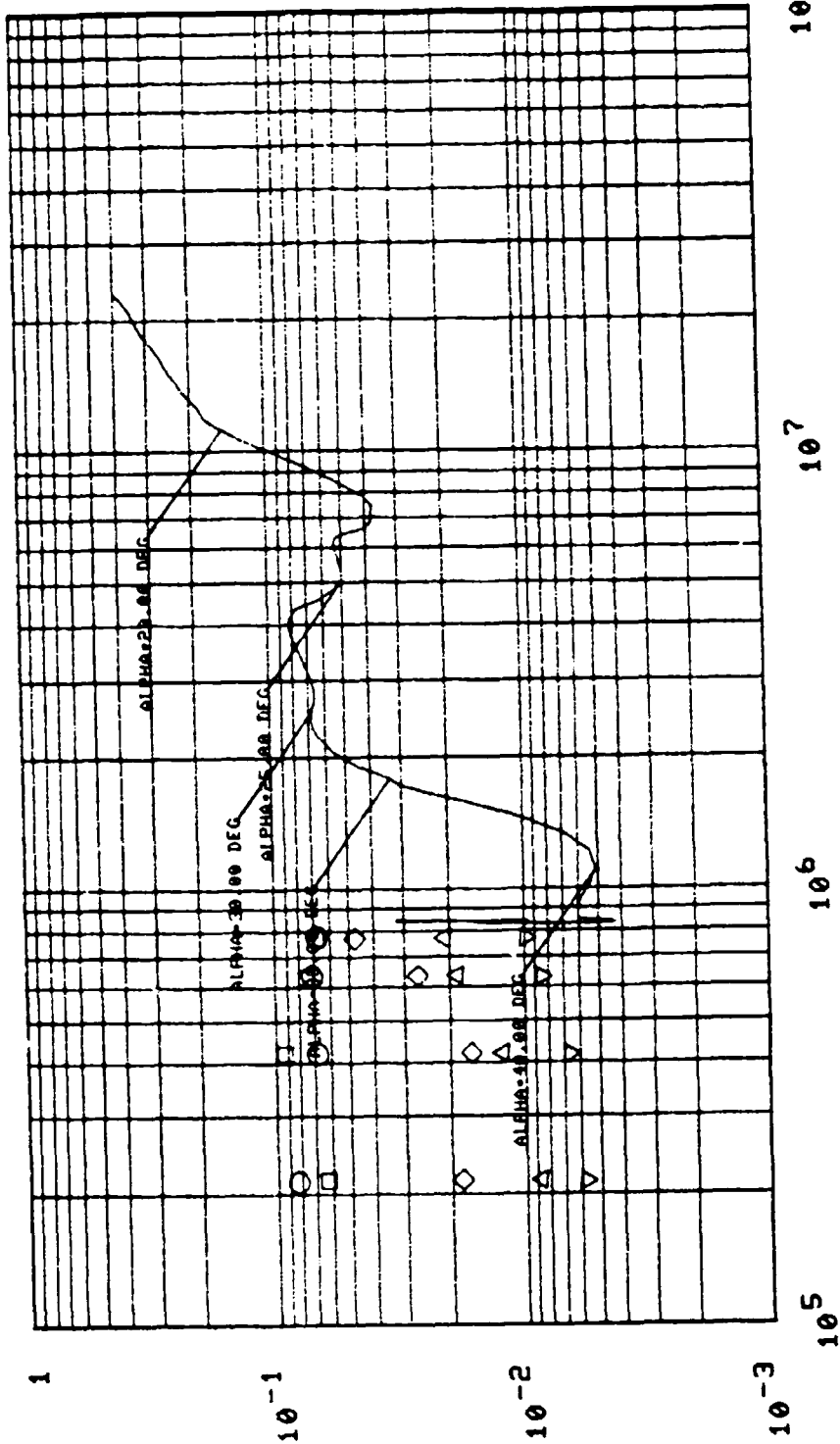
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9996A/H-REF 965-1335 SEC

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
- AF ALPHA = 30.0 DEGREES
- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES

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REYNOLDS NUMBER (NS)

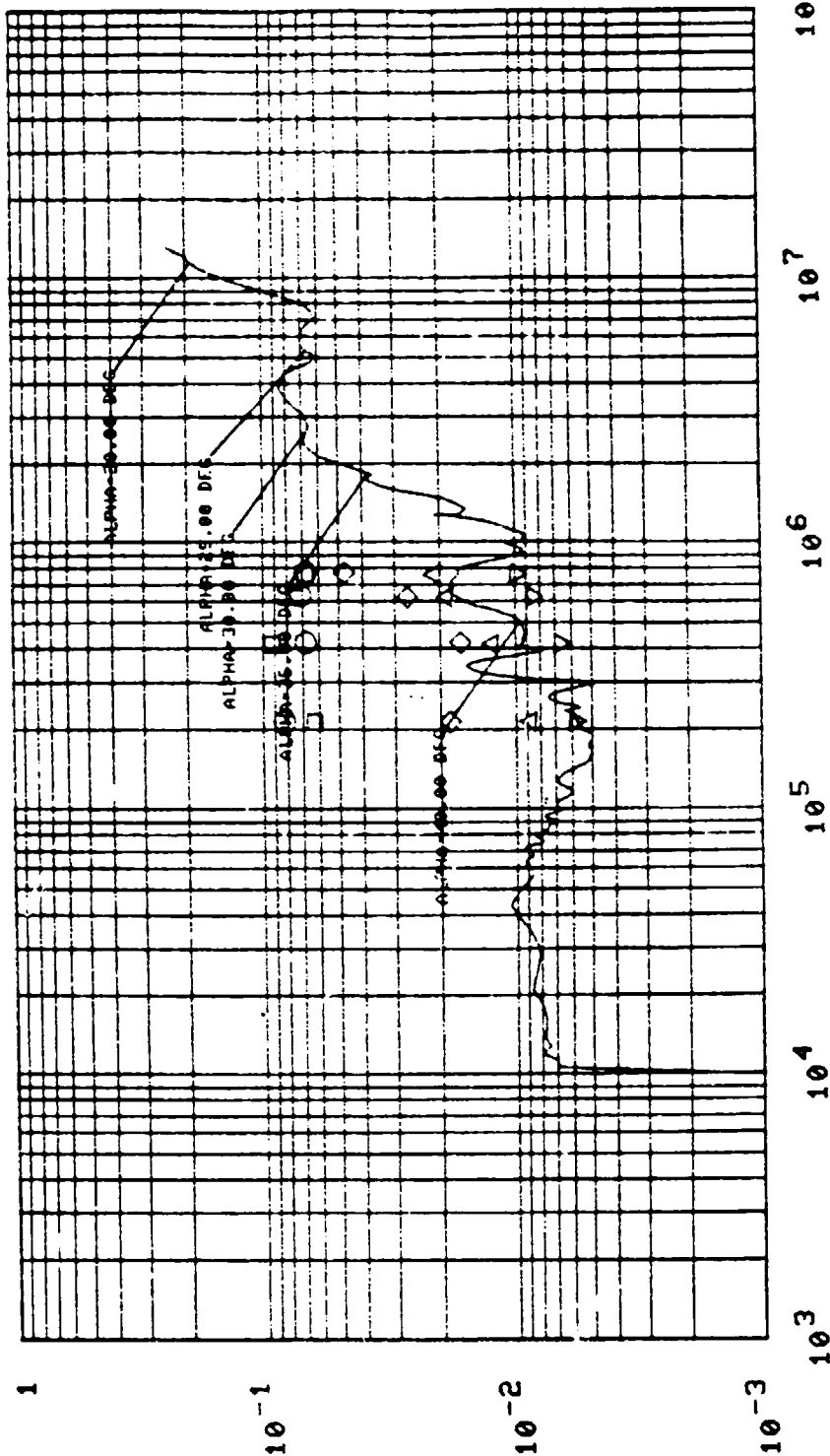
BASE TIME = 1604023.000 SEC

04-19-83

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U0779996A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

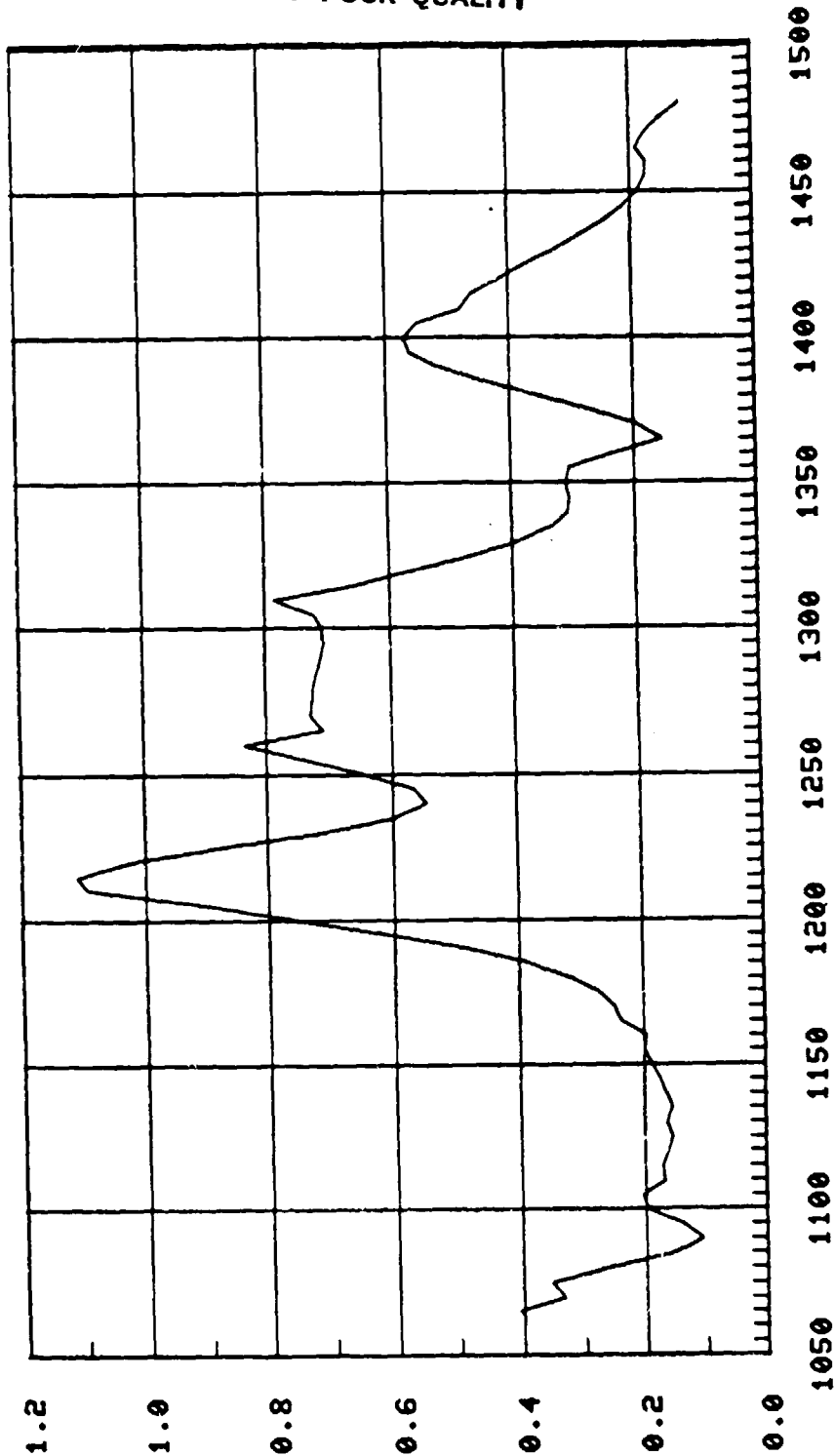


FILM COUNT RATE - H/H-REF

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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T995A



HEATING RATE - BTU/FT-MIN - SEC

B-306

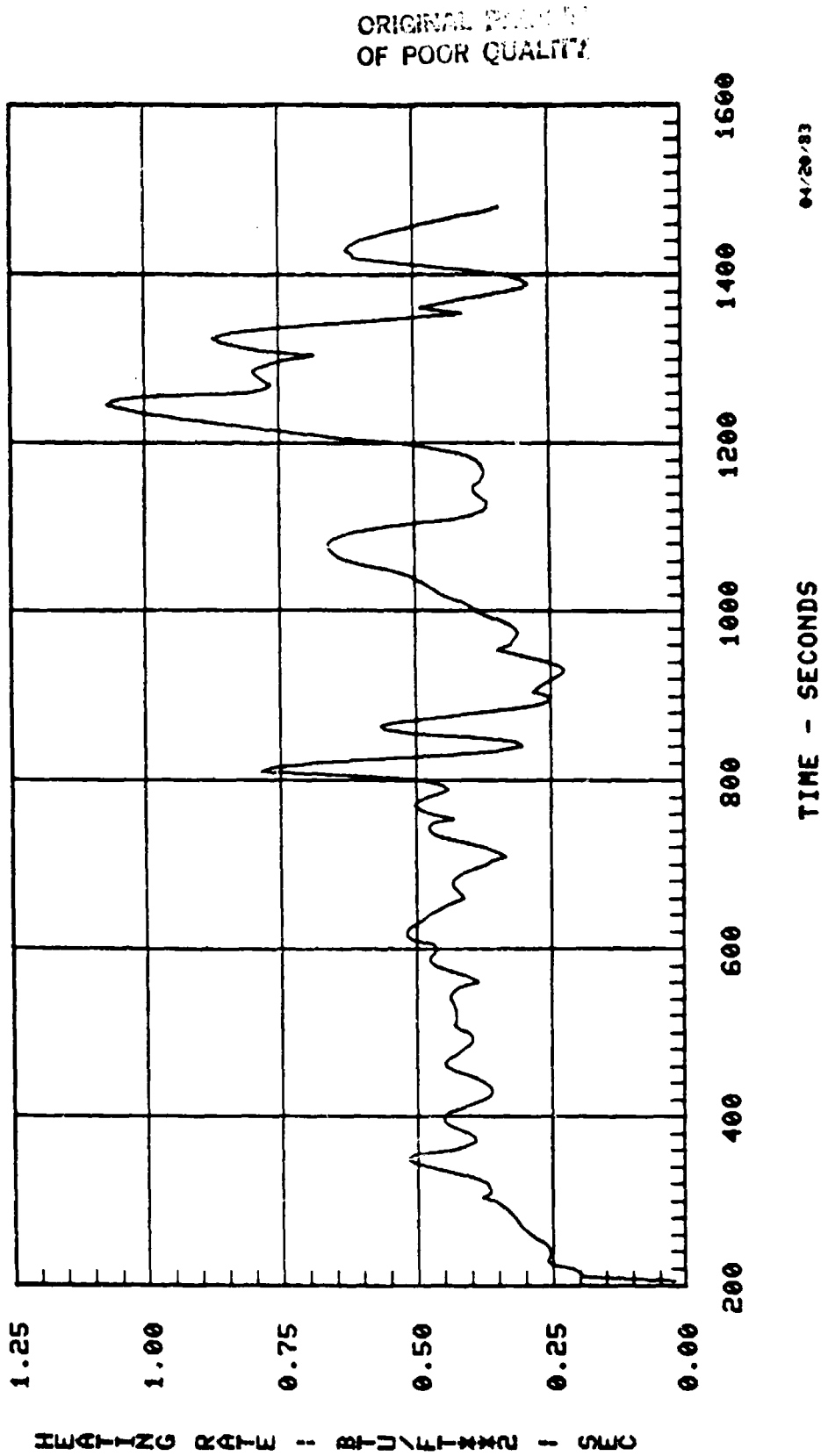
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TIME - SECONDS

04/20/83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

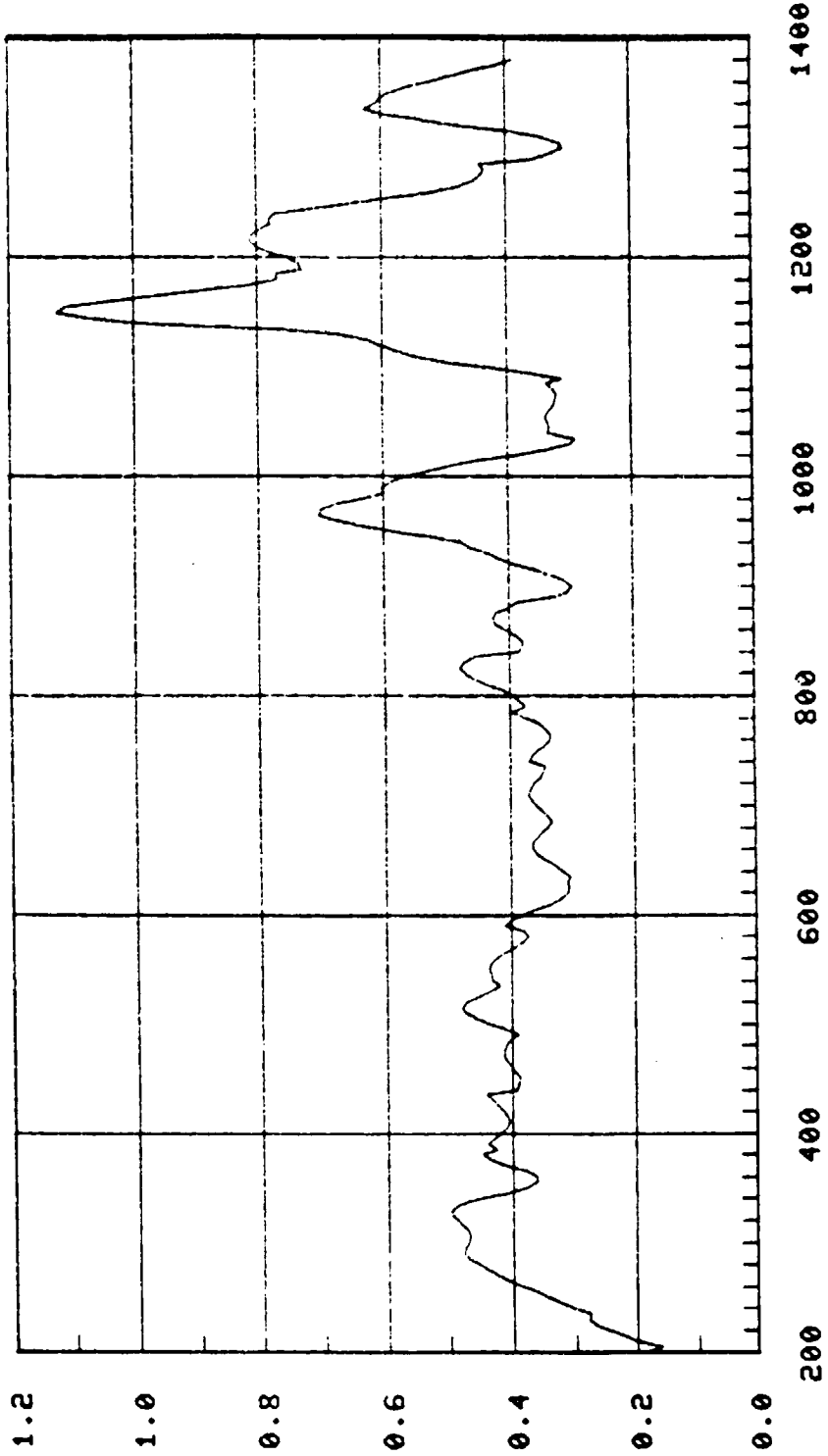
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T595EA



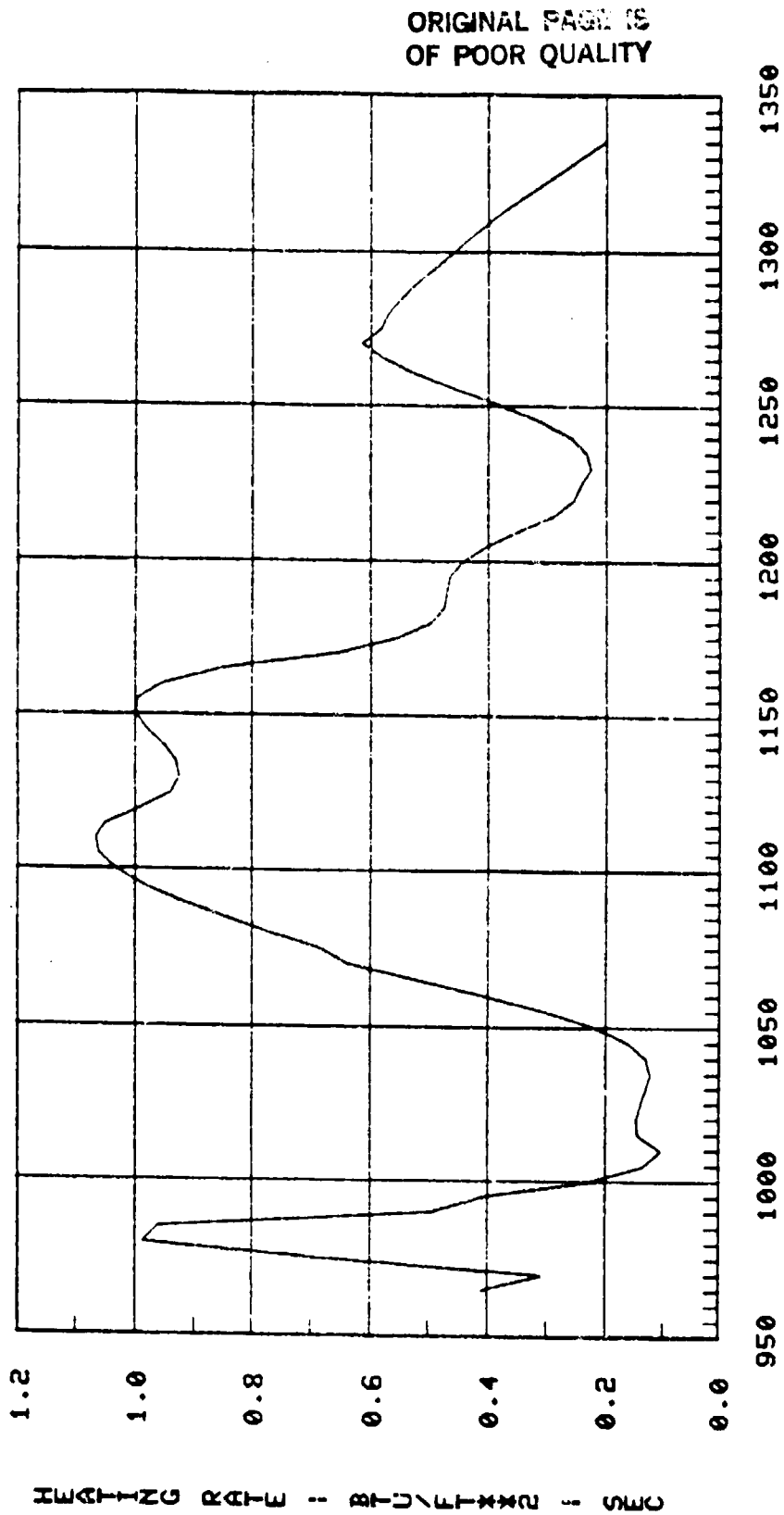
ELECTING RATE -- BUJLETKS -- SEC

TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07TS996A



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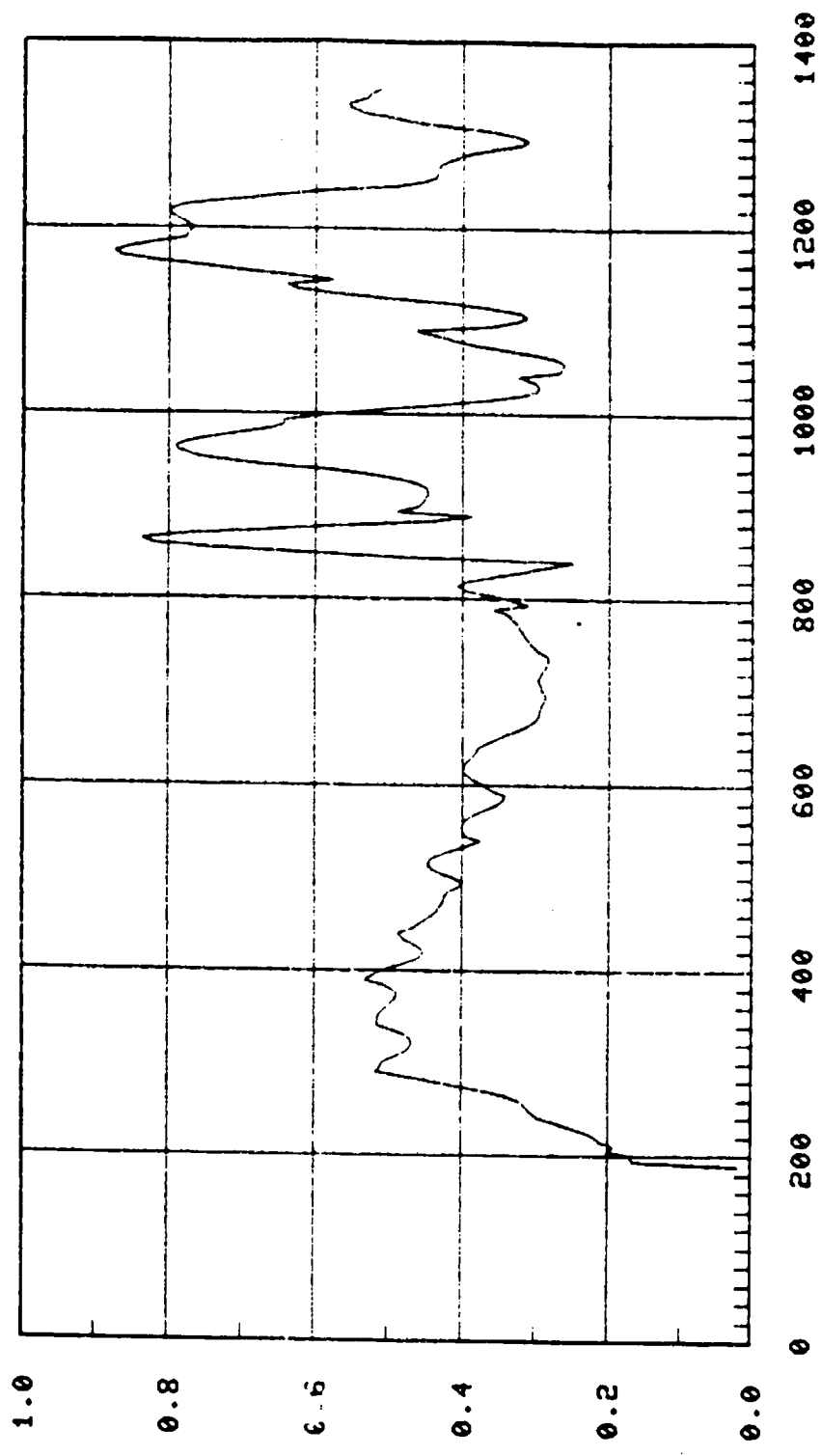
TIME - SECONDS

04 19 83



STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9996A



HEATING RATE -- BTU/FT\*HR -- SEC

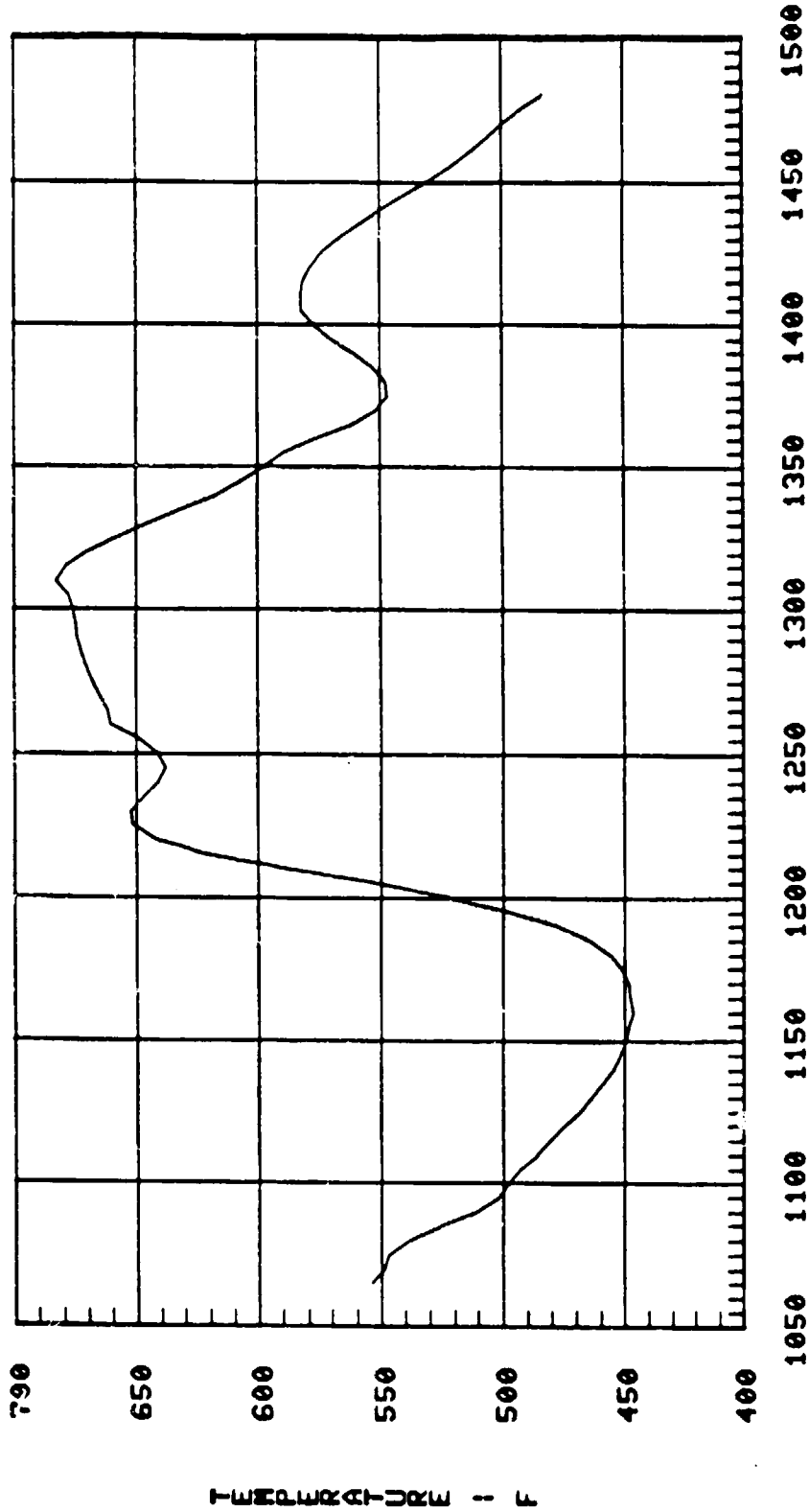
ORIGINAL RECORDING  
OF POOR QUALITY

TIME - SECONDS

04-18-53

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9996A



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04-20-83

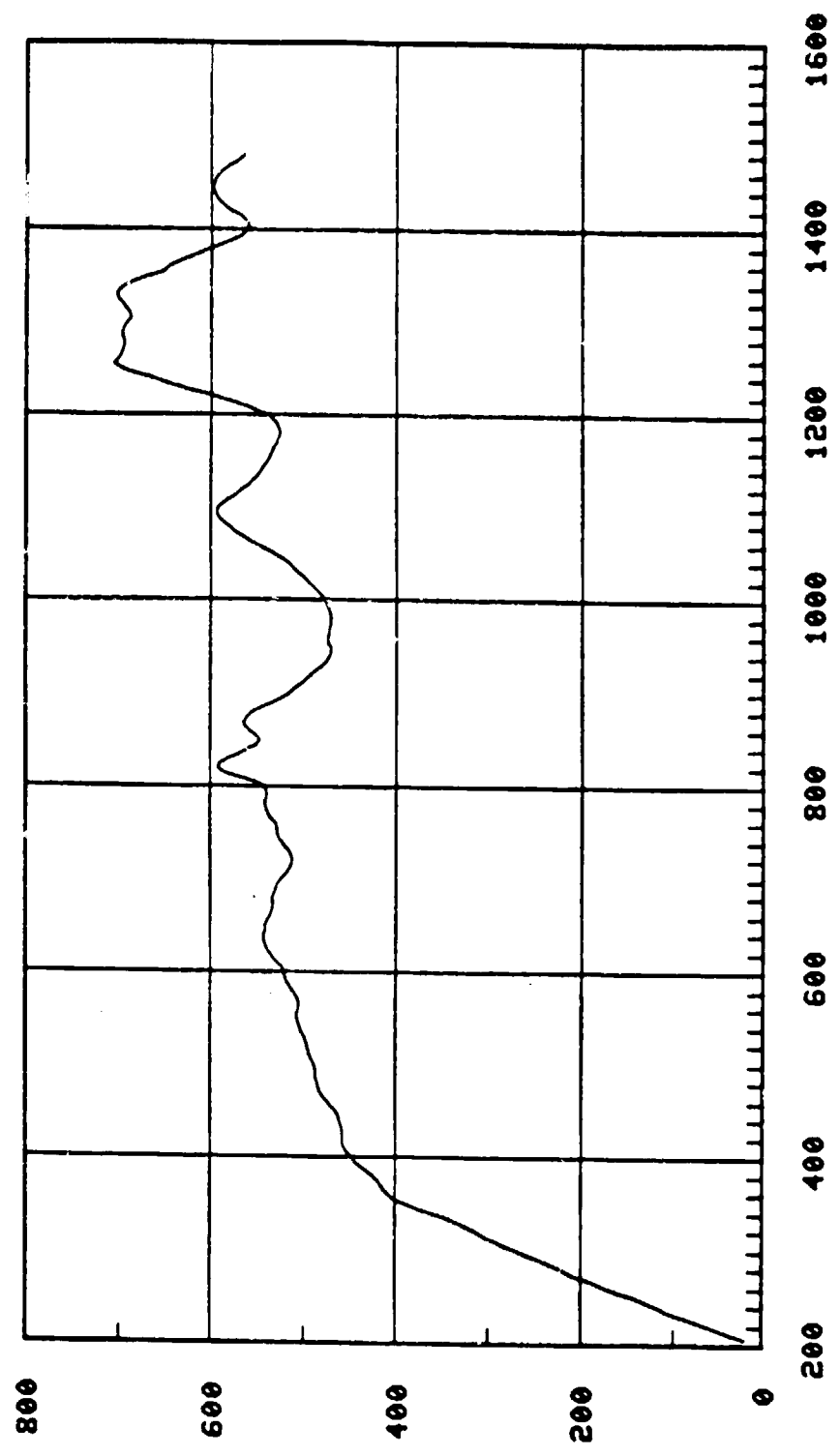
TIME - SECONDS

TEMPERATURE - F

B-311

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U071996A



TIME - SECONDS 04-20-83

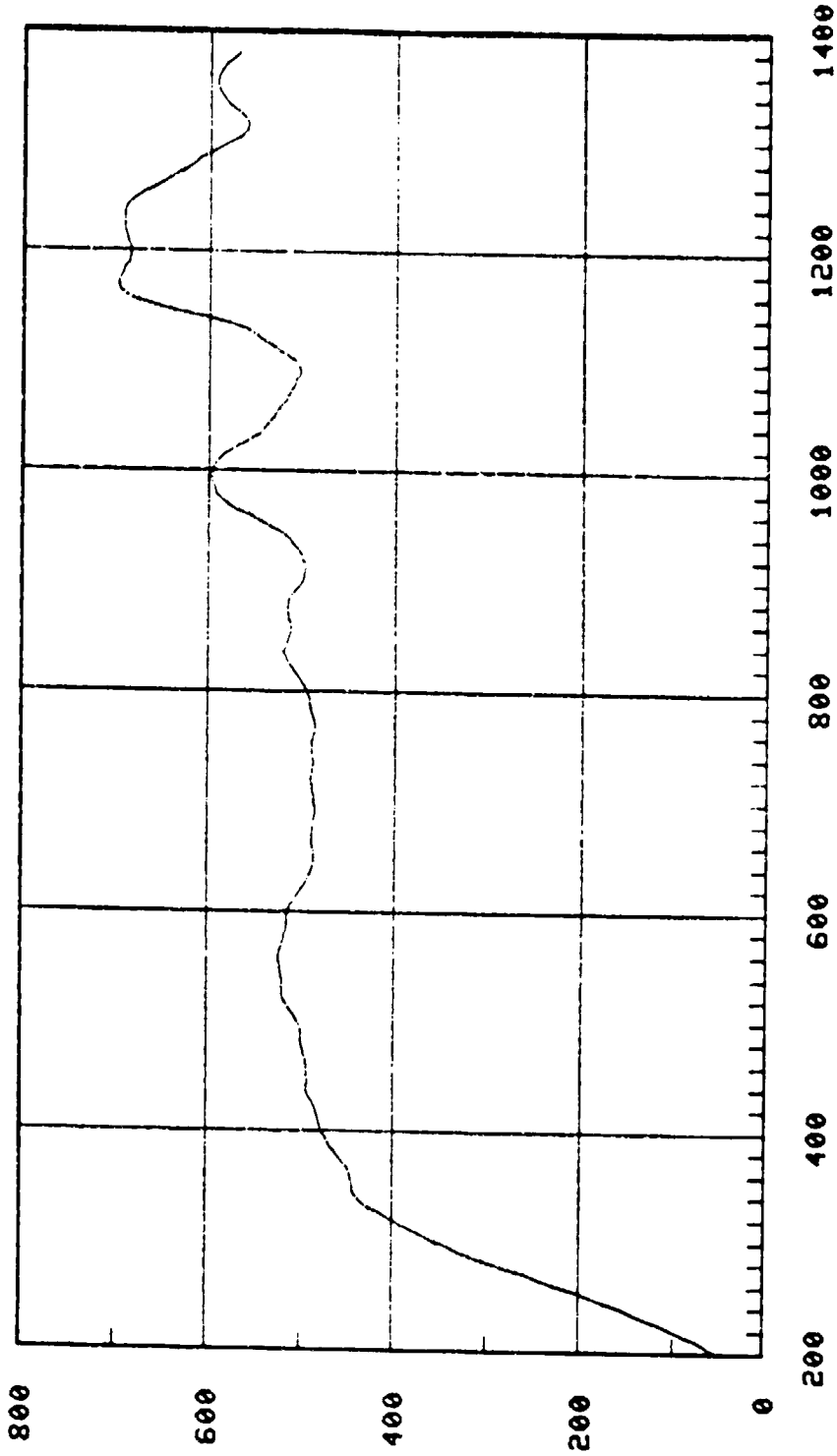
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1 - PARAMETER

B-312

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9996A



ORIGINAL PAGES  
OF POOR QUALITY

TIME - SECONDS

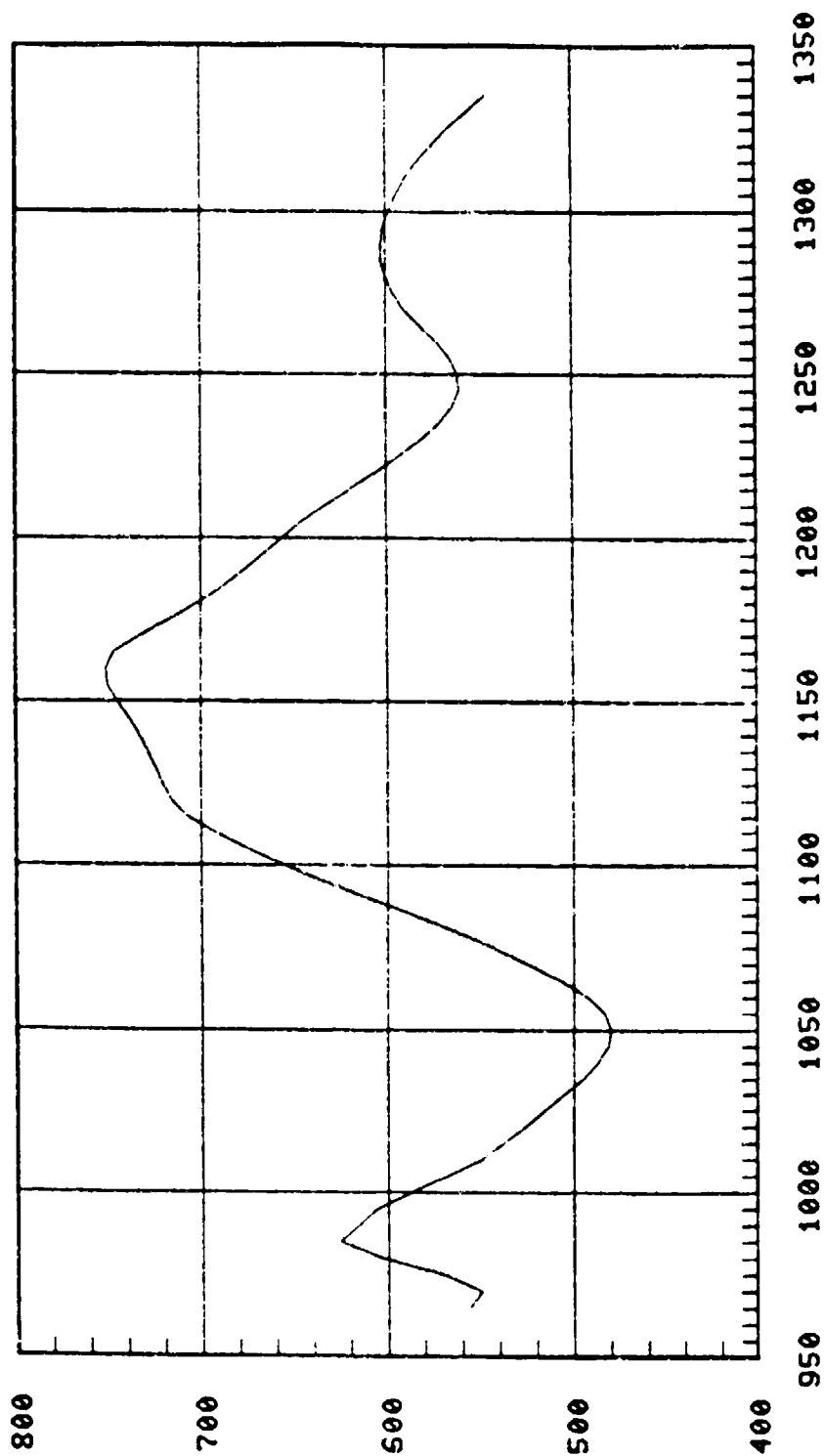
04 19 83

FEEDBACK - DB

B-313

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U8775956A



ORIGINAL RECORD  
OF POOR QUALITY

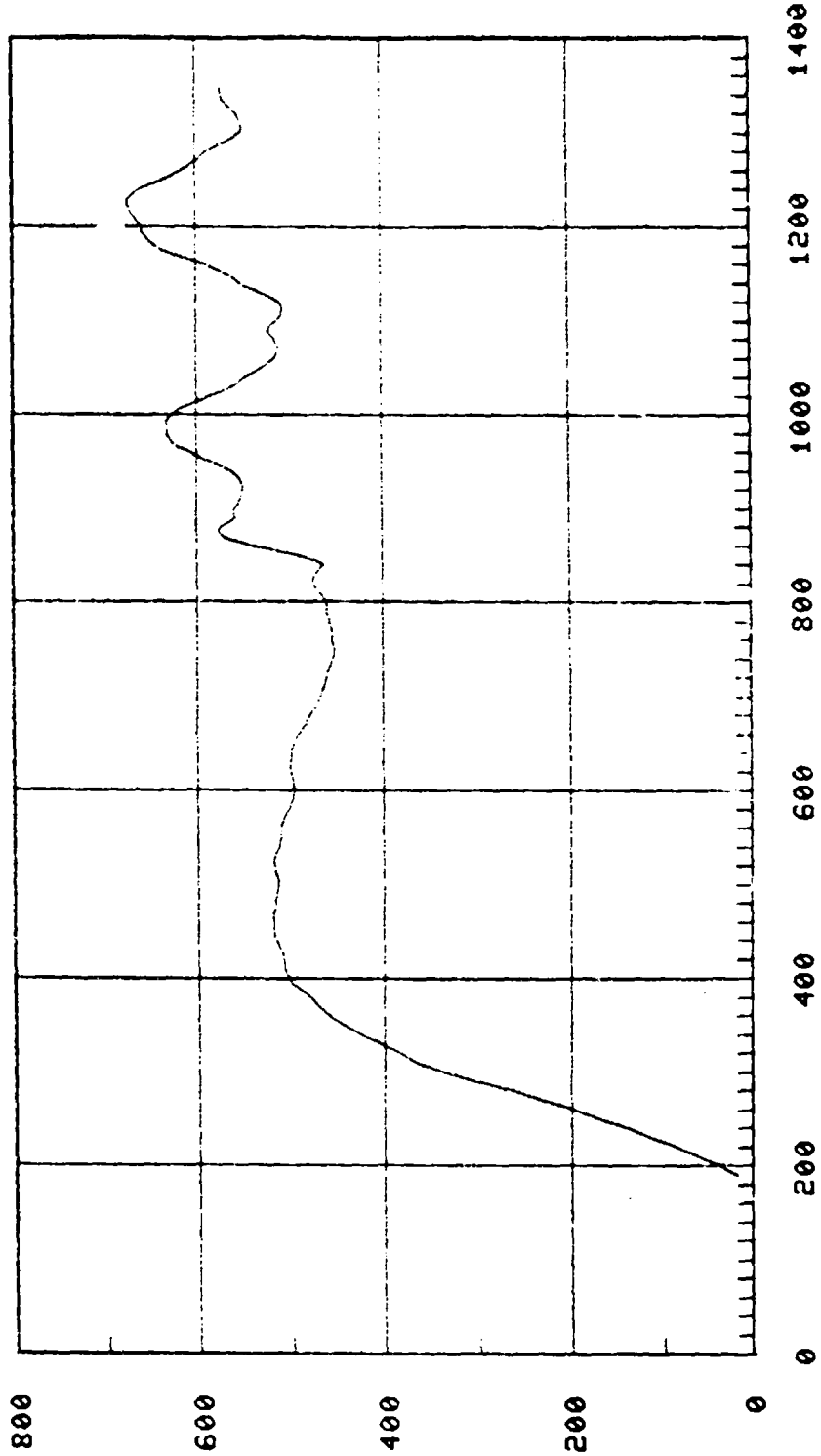
TEMPERATURE -- F

TIME - SECONDS

04:19 83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U87T9956A



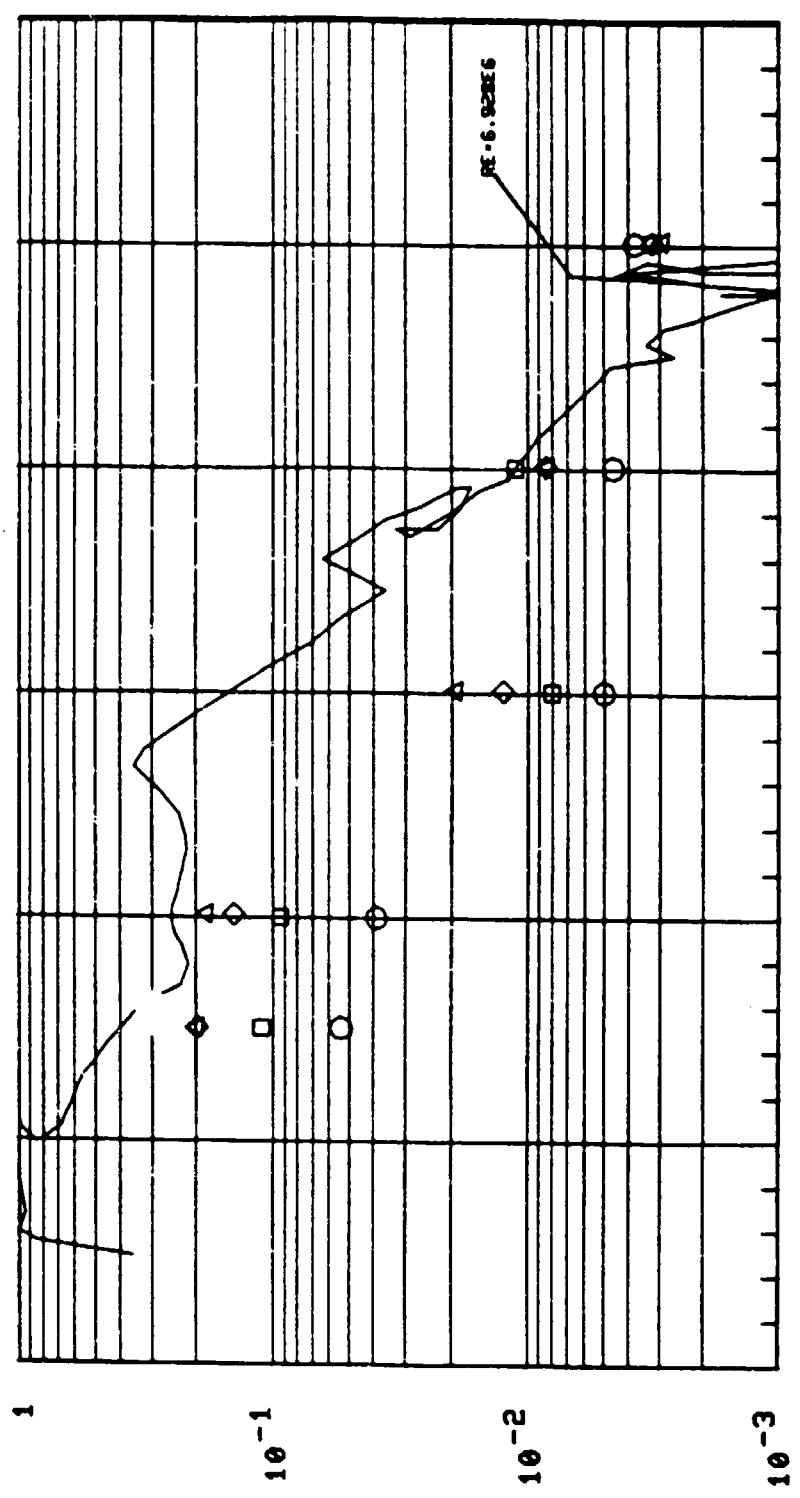
04 18 '83

TIME - SECONDS

TEMPERATURE -- F

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

○ □ ◇   
 AF 0.0175 SCALE RE - 1.0 E06   
 AF 0.0175 SCALE RE - 2.0 E06   
 AF 0.0175 SCALE RE - 3.0 E06   
 AF 0.0175 SCALE RE - 3.7 E06



EDGE COVER - H/H-RVAL

ORIGINAL PAGE IS  
OF POOR QUALITY

3-316

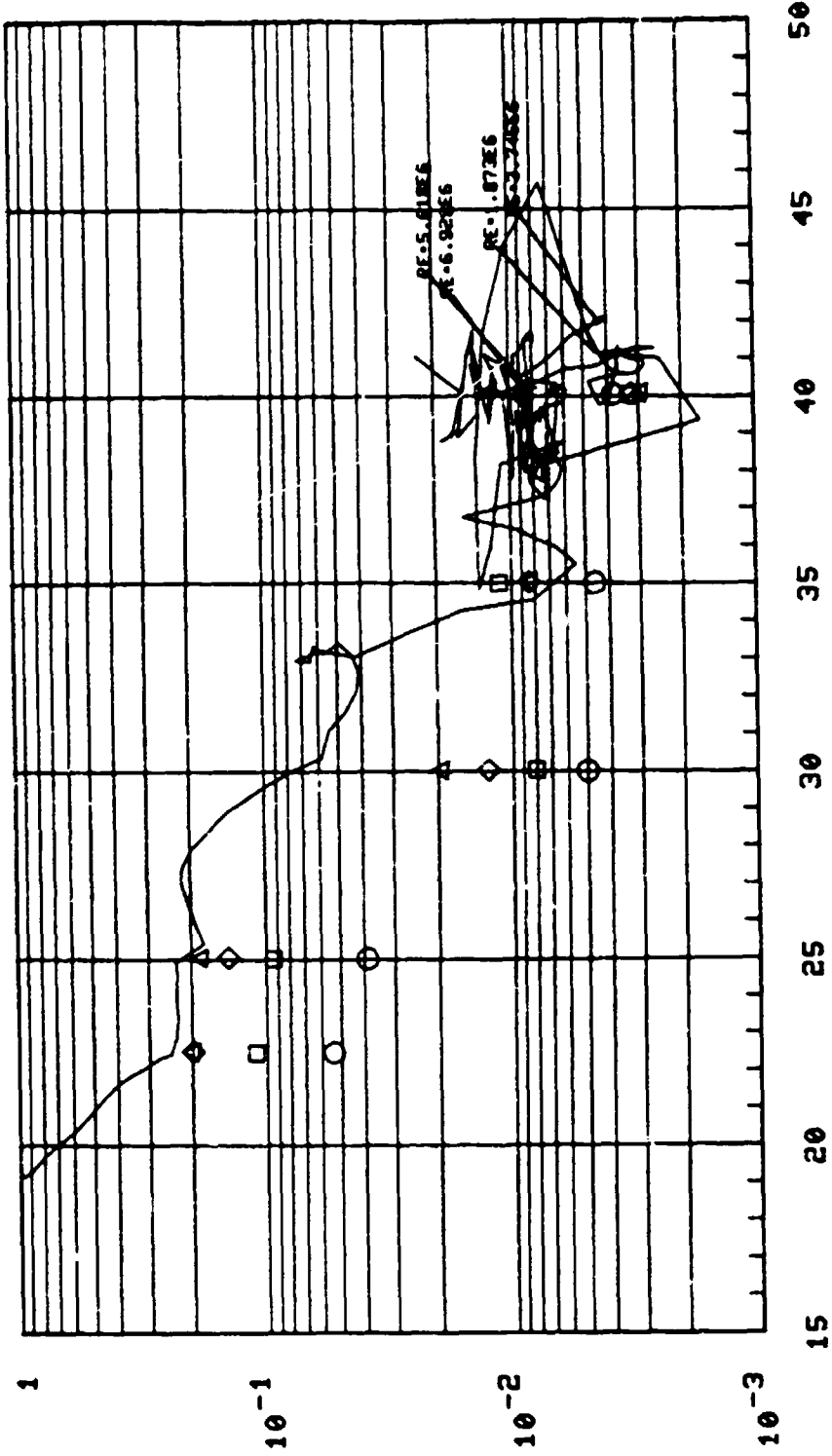
ANGLE-OF-ATTACK - DEG   
 BASE TIME - 05049744.000 SEC.   
 04/20/83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779997A/H-REF 200-1480 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06

□ ○



FILM COEFF - H/M-REF

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B-317

04/20/83  
BASE TIME - 27550236.000 SEC.

ANGLE-OF-ATTACK - DEG

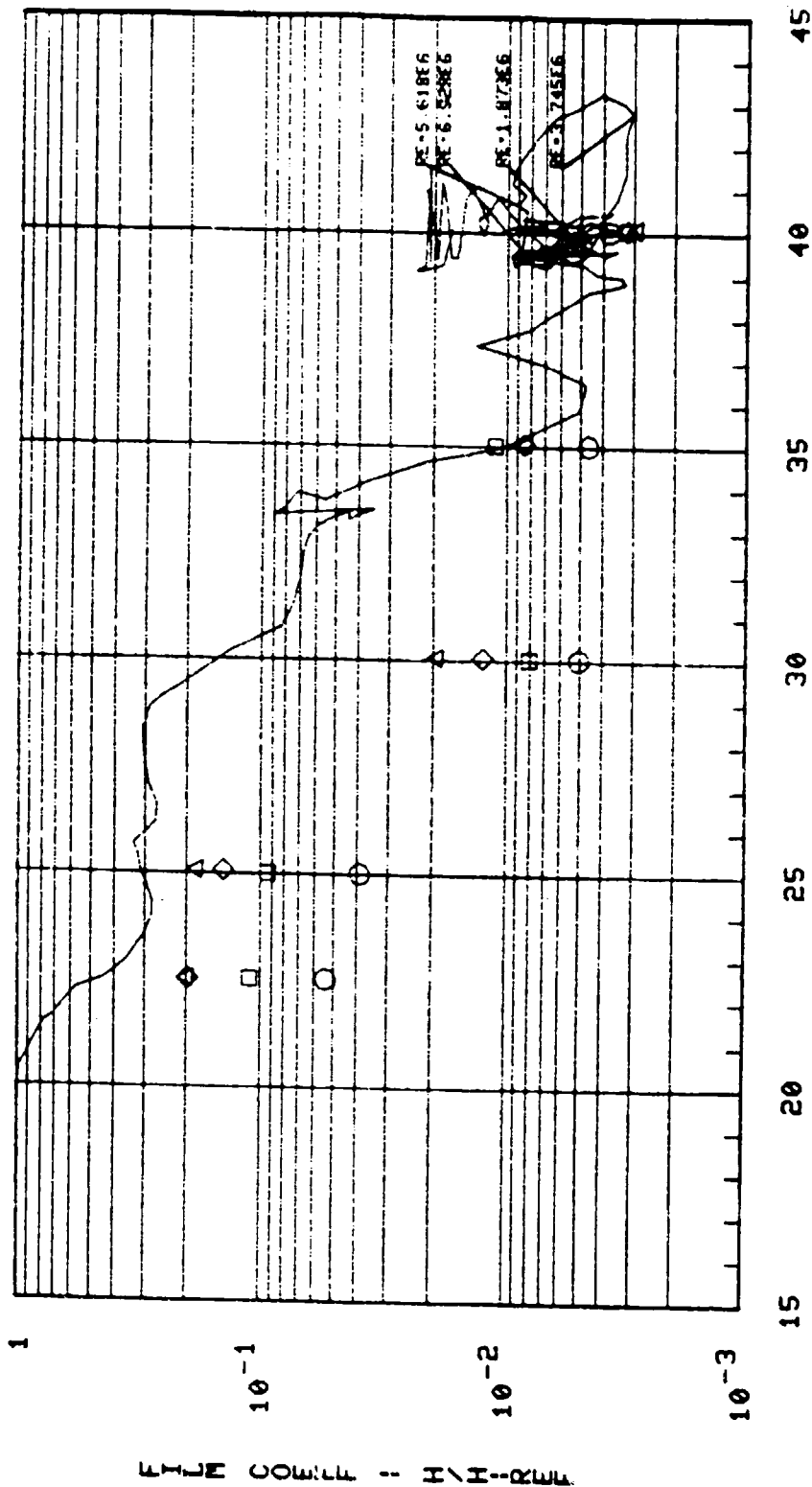


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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE \* 1.0 E06  
 AF 0.0175 SCALE RE \* 2.0 E05  
 AF 0.0175 SCALE RE \* 3.0 E06  
 AF 0.0175 SCALE RE \* 3.7 E06

○ □ ◇



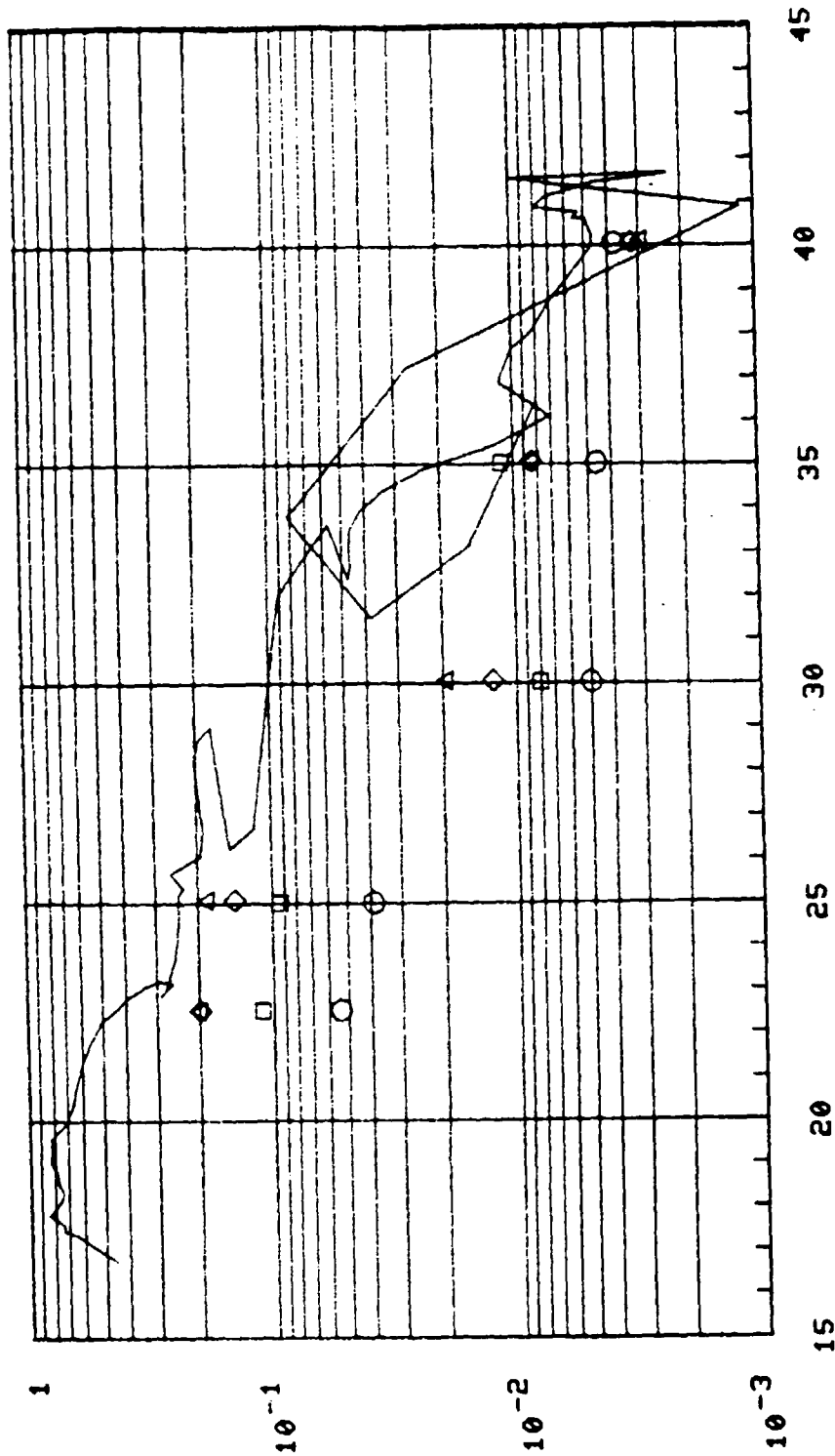
ANGLE-OF-ATTACK - DEG  
 BASE TIME \* 07745684.000 SEC.  
 04.19.83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A/H-REF 965-1335 SEC

AF 0.0175 SCALE RE - 1.0 E06  
AF 0.0175 SCALE RE - 2.0 E06  
AF 0.0175 SCALE RE - 3.0 E06  
AF 0.0175 SCALE RE - 3.7 E06

□ ○ ×



FRM-M

04 19 83  
BASE TIME - 1604023.000 SEC.

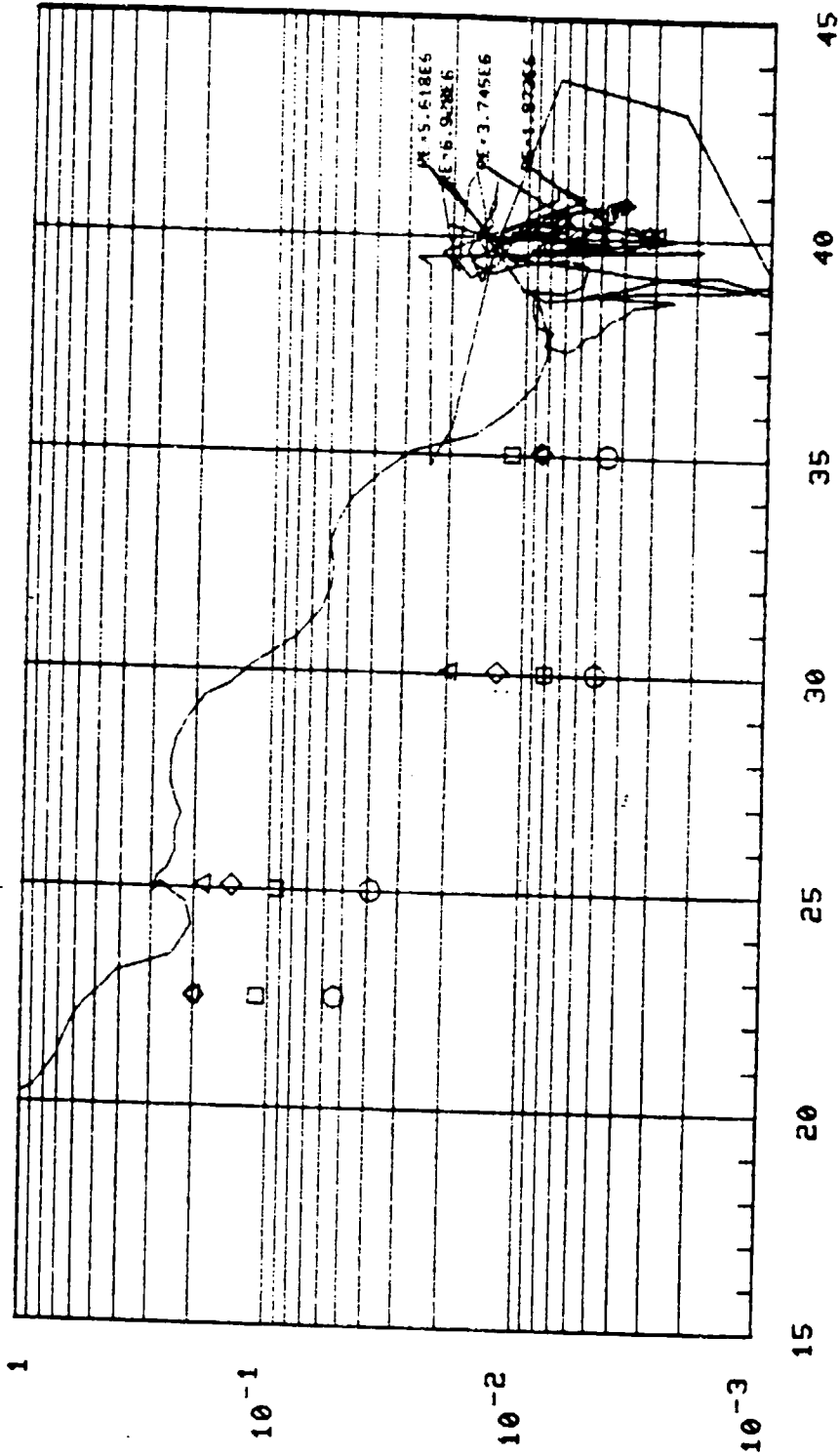
ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE - 1.0 E06  
 MF 0.0175 SCALE RE - 2.0 E06  
 AF 0.0175 SCALE RE - 3.0 E06  
 AF 0.0175 SCALE RE - 3.7 E06

○ □ ×

U07T9997A/H-REF 150-1350 SEC



FILM COVER - H/H-REF

B-320

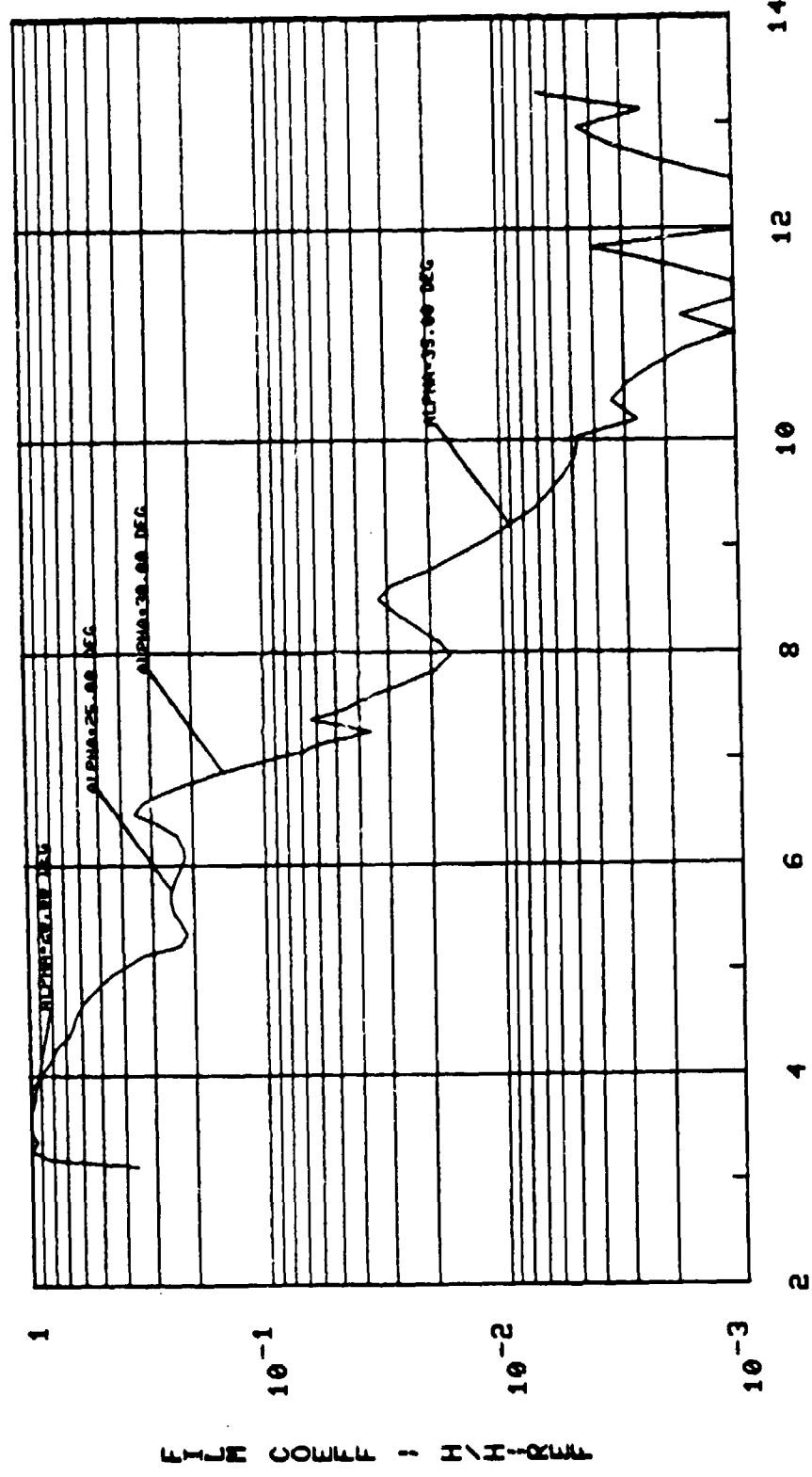
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ANGLE-OF-ATTACK - DEG  
 BASE TIME - 27698591.000 SEC.  
 04/18/53

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A/H-REF 1065-1480 SEC

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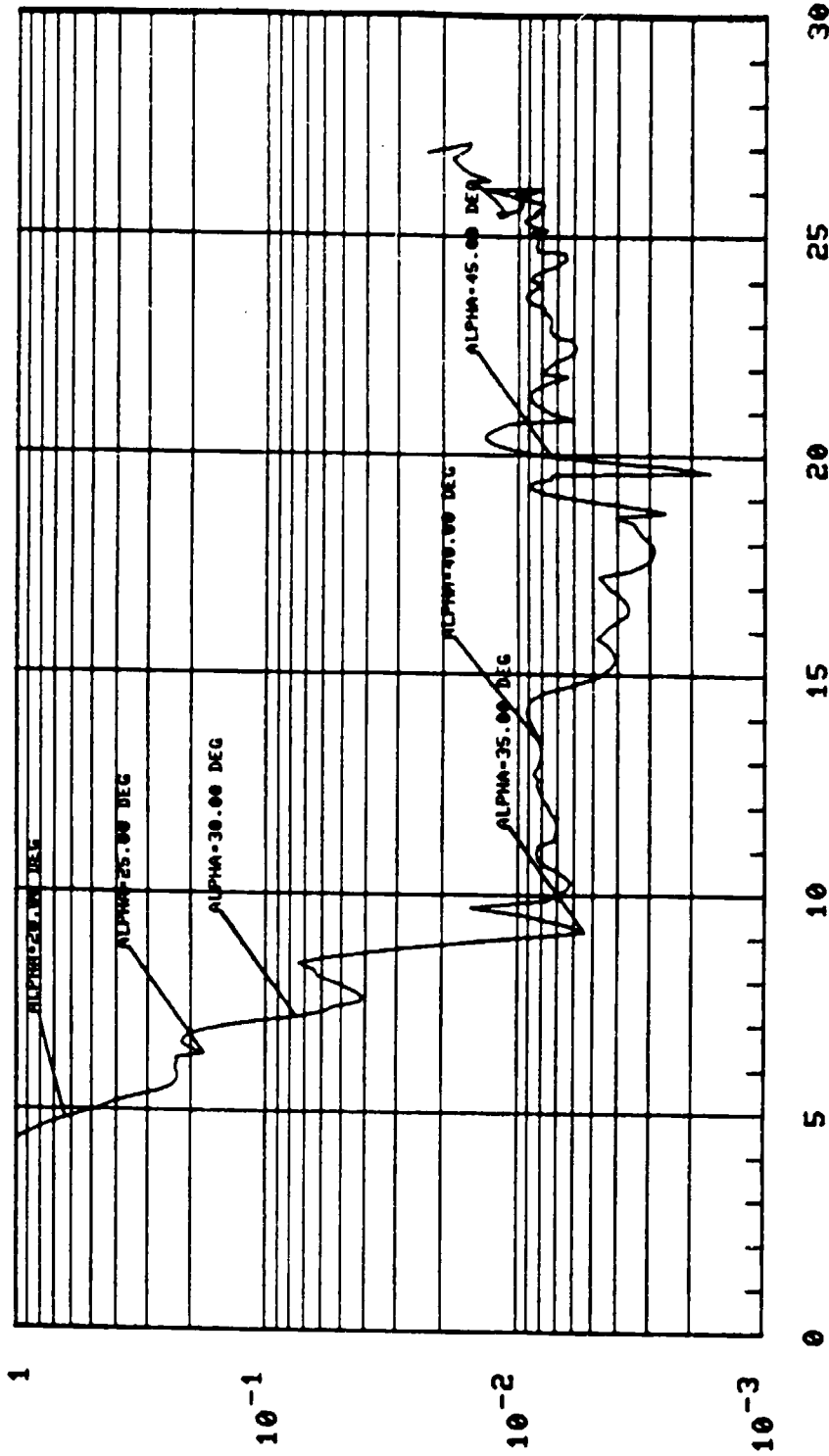


04/20/83  
BASE TIME - 09049744.000 SEC.

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U87T997A/H-REF 200-1480 SEC

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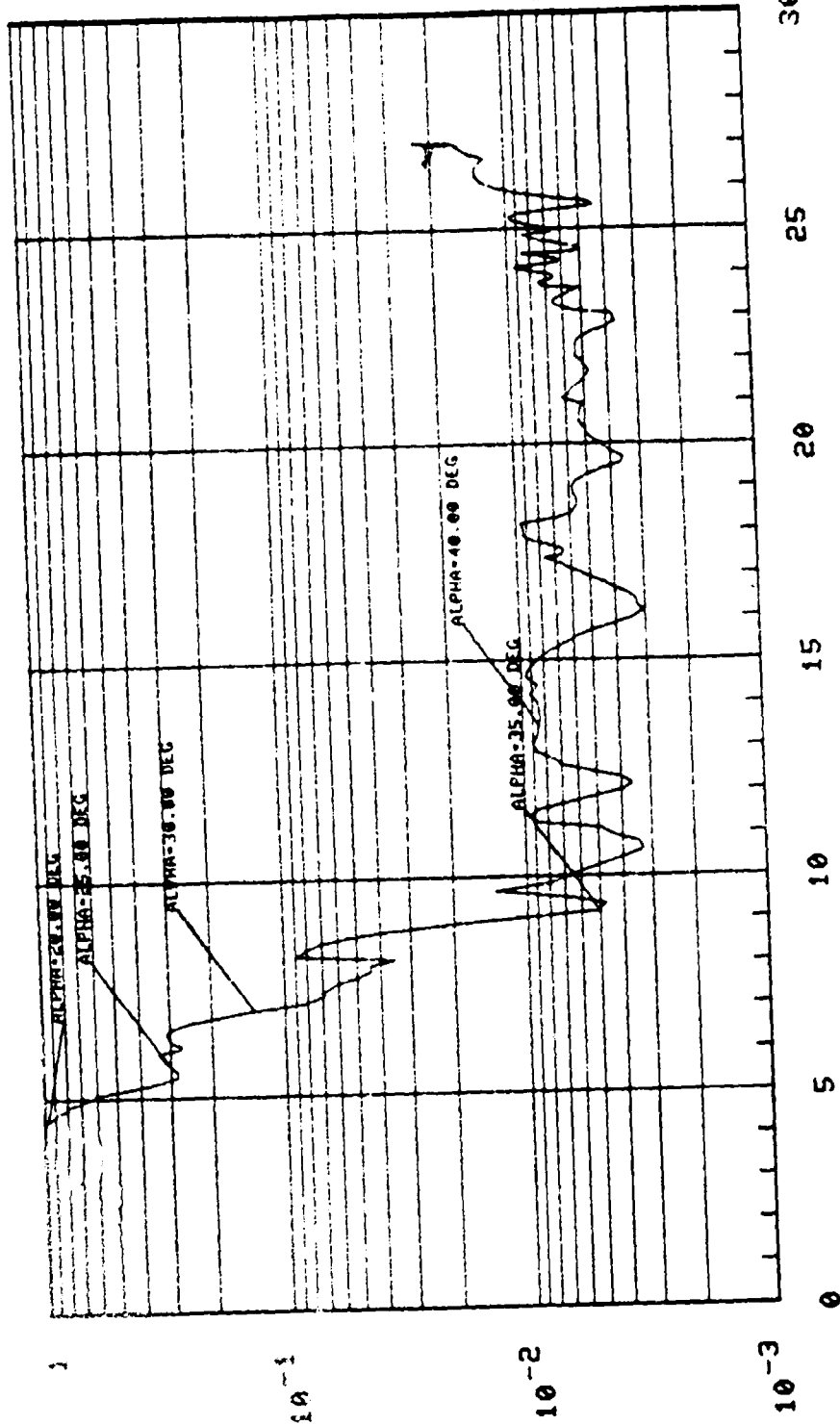


04/20/83  
BASE TIME - 27550235.000 SEC.

MACH NUMBER

GTS-3 (167 CF LENGTH CMS POD ) FLIGHT PARAMETER COMPARISON

U87T997A/H-REF 284-1380 STD



FILE COMPLE -- H/H--REF

B-323

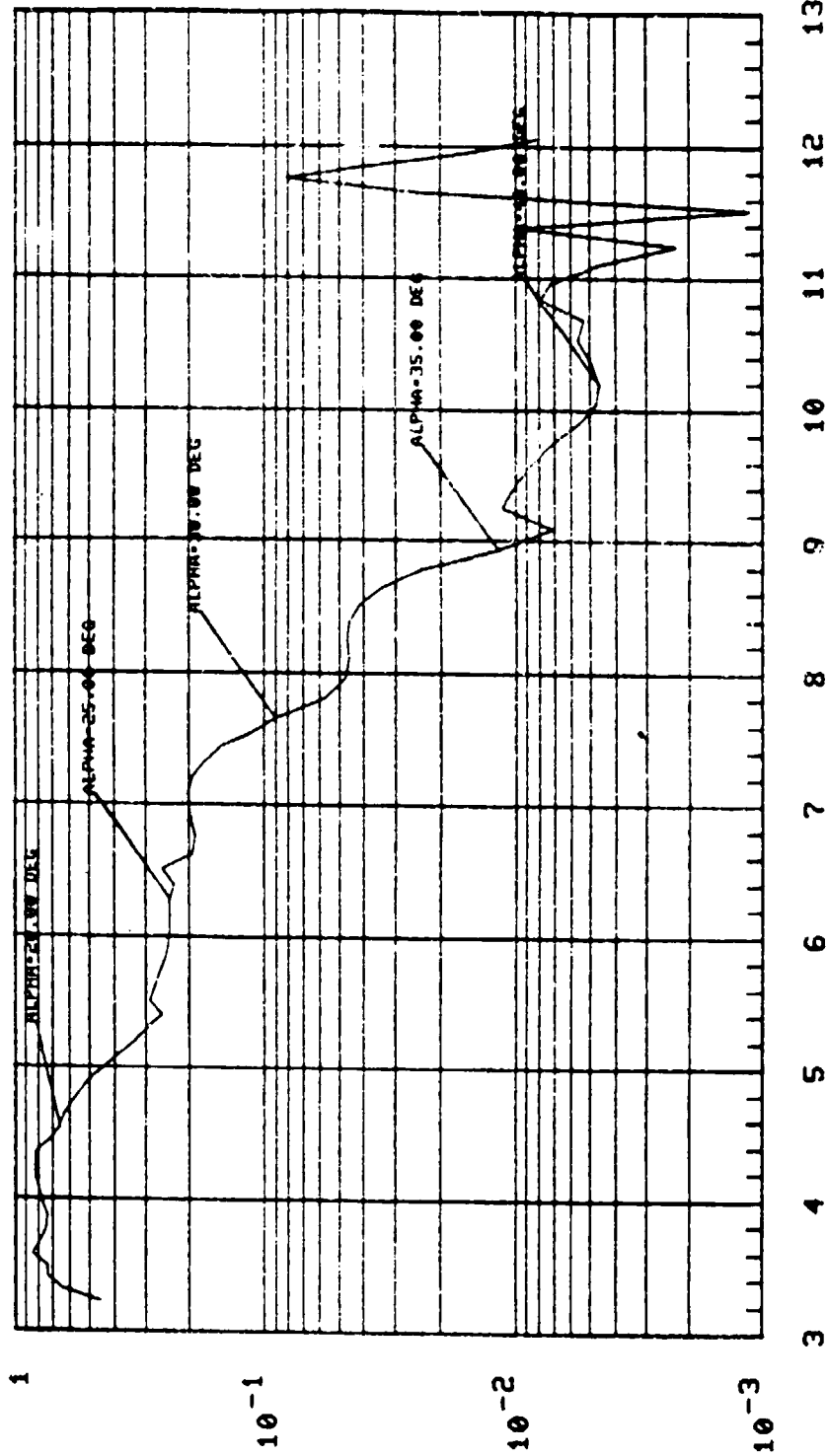
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04.19.83  
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077997A/H-REF 965-1335 SEC



ORIGINAL PARAMETER  
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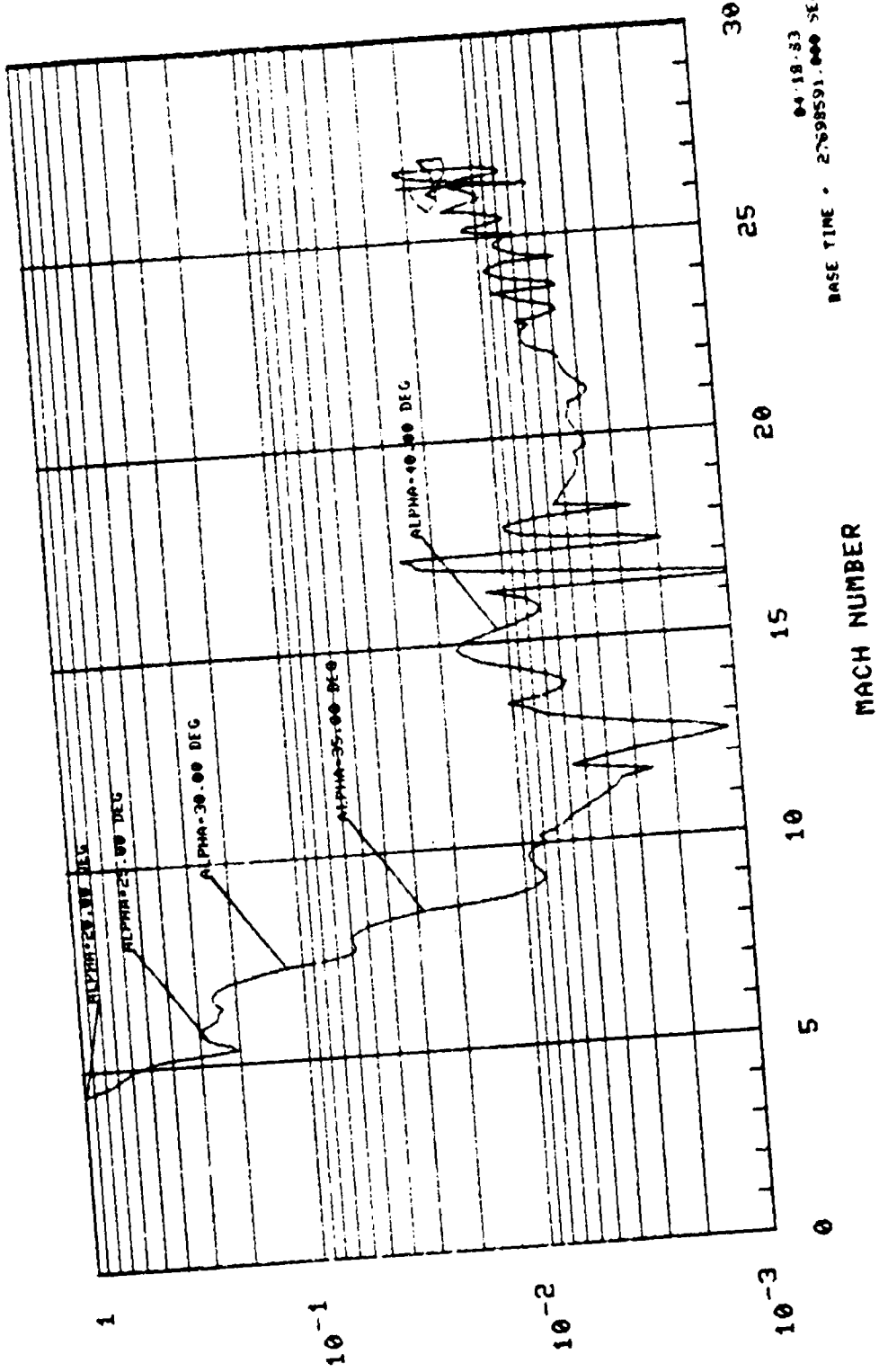
FLIGHT CODEL - H/H-REF

B-324

04-19-83  
BASE TIME - 1600023.000 SEC.

MACH NUMBER

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON  
U0779997A/H-REF 150-1350 SEC



BASE TIME - 27698591.000 SEC  
04.18.83

U0779997A/H-REF

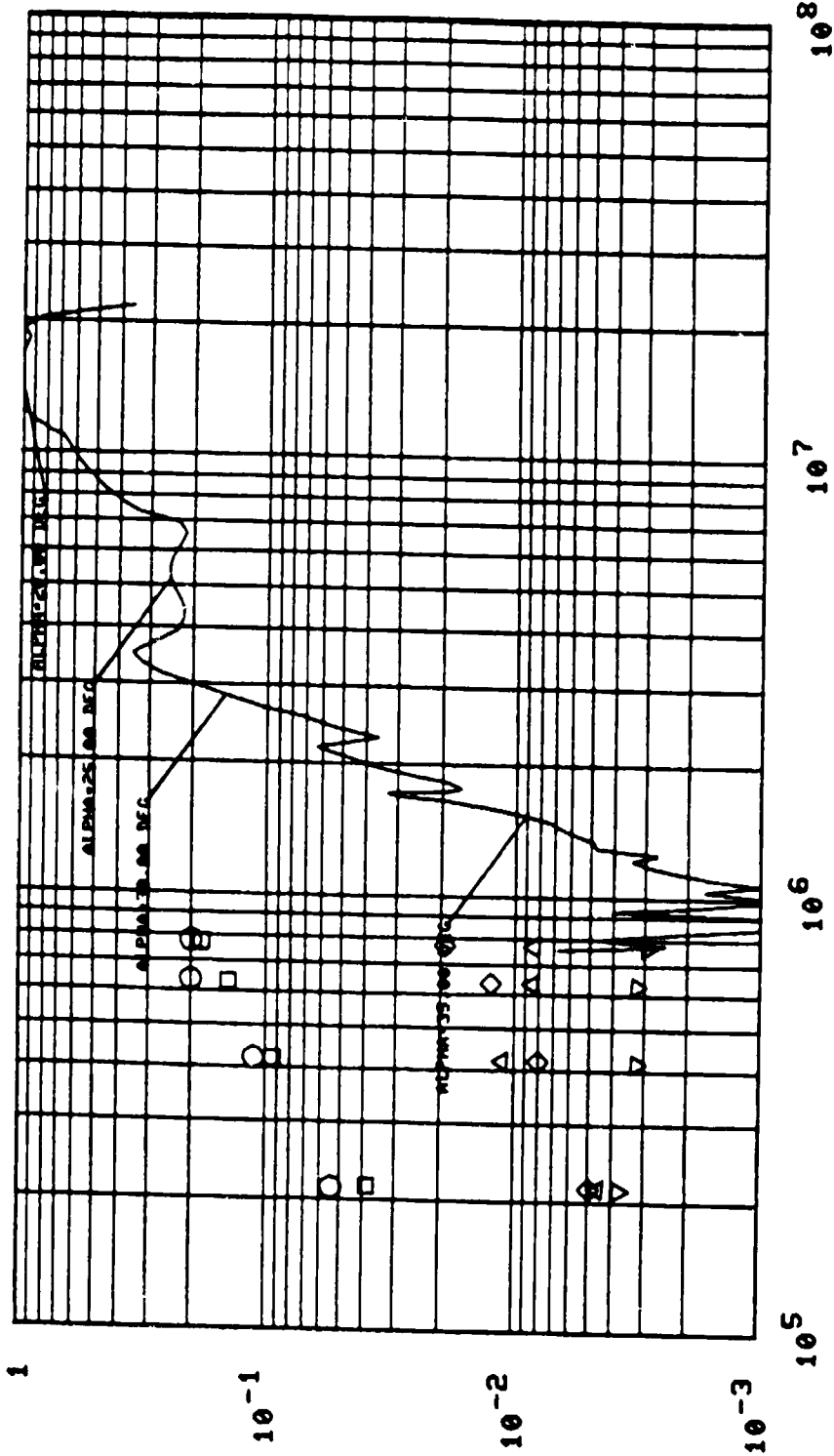


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# STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9997A/H-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- ◇ AF ALPHA - 30.0 DEGREES
- ▽ AF ALPHA - 35.0 DEGREES
- △ AF ALPHA - 40.0 DEGREES



04/20/83  
BASE TIME - 00049744.000 SEC.

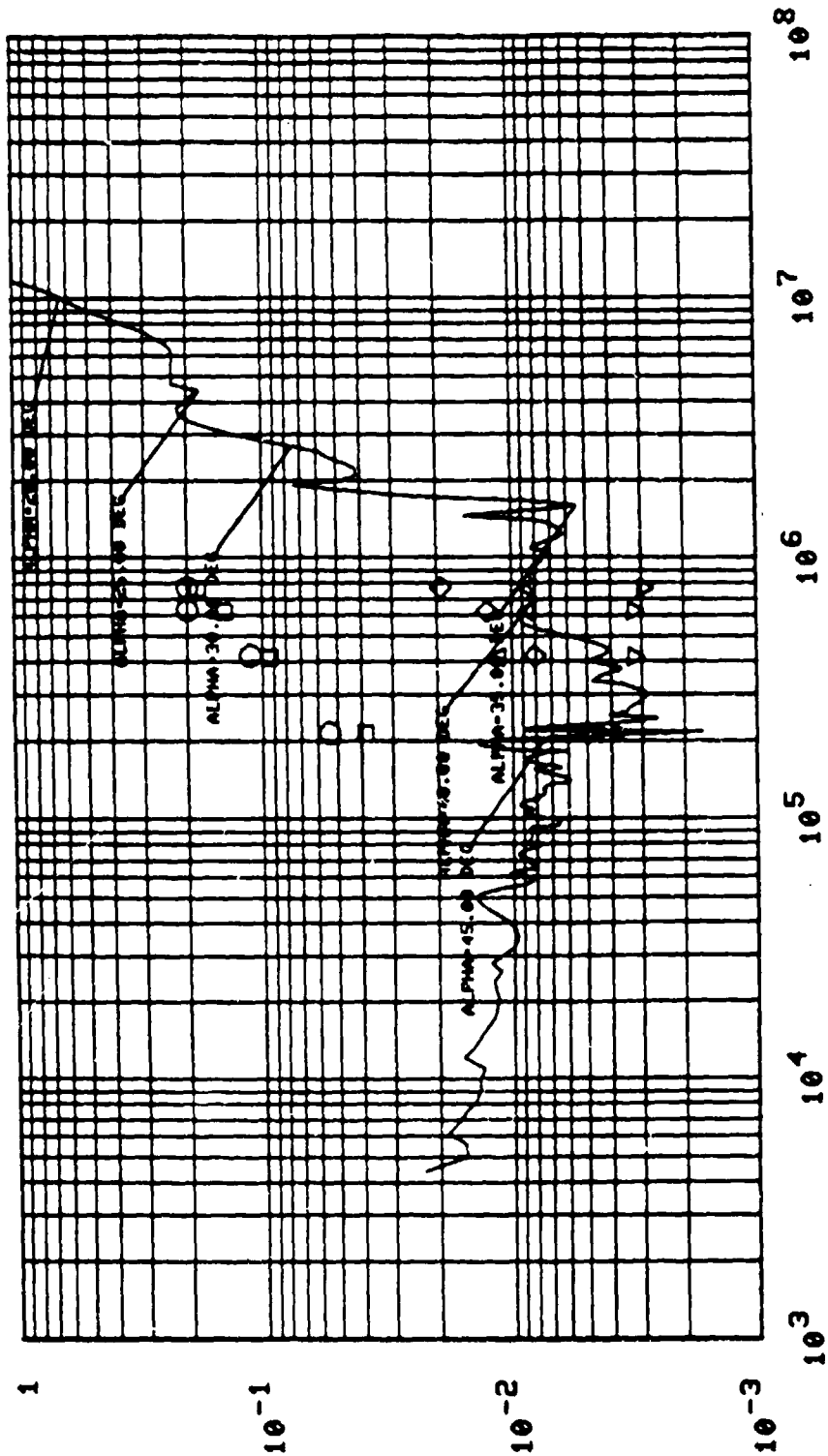
REYNOLDS NUMBER (NS)

U07T9997A/H-REF

# STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

U07T9997A/H-REF 200-148A SEC



FLIGHT PARAMETER COMPARISON - H/H-REF

B-327

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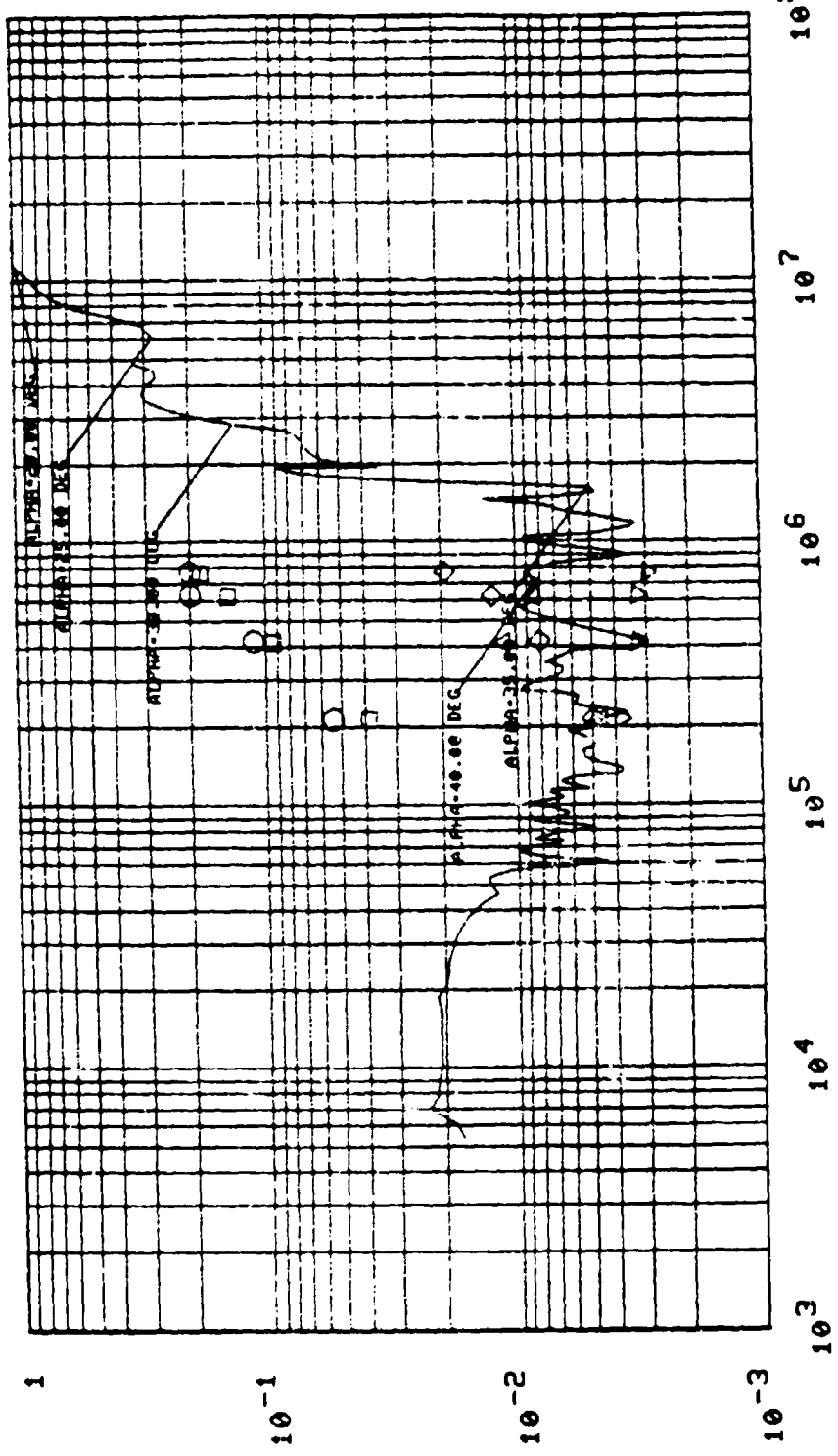
REYNOLDS NUMBER (NS) 04-20-83  
BASE TIME - 27550236.000 SEC.

ORIGINAL RECORD  
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# STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9997A/H-REF 200-1380 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



FRICTION COEFFICIENT - H-REF

04.19.83  
BASE TIME - 07745684.000 SEC

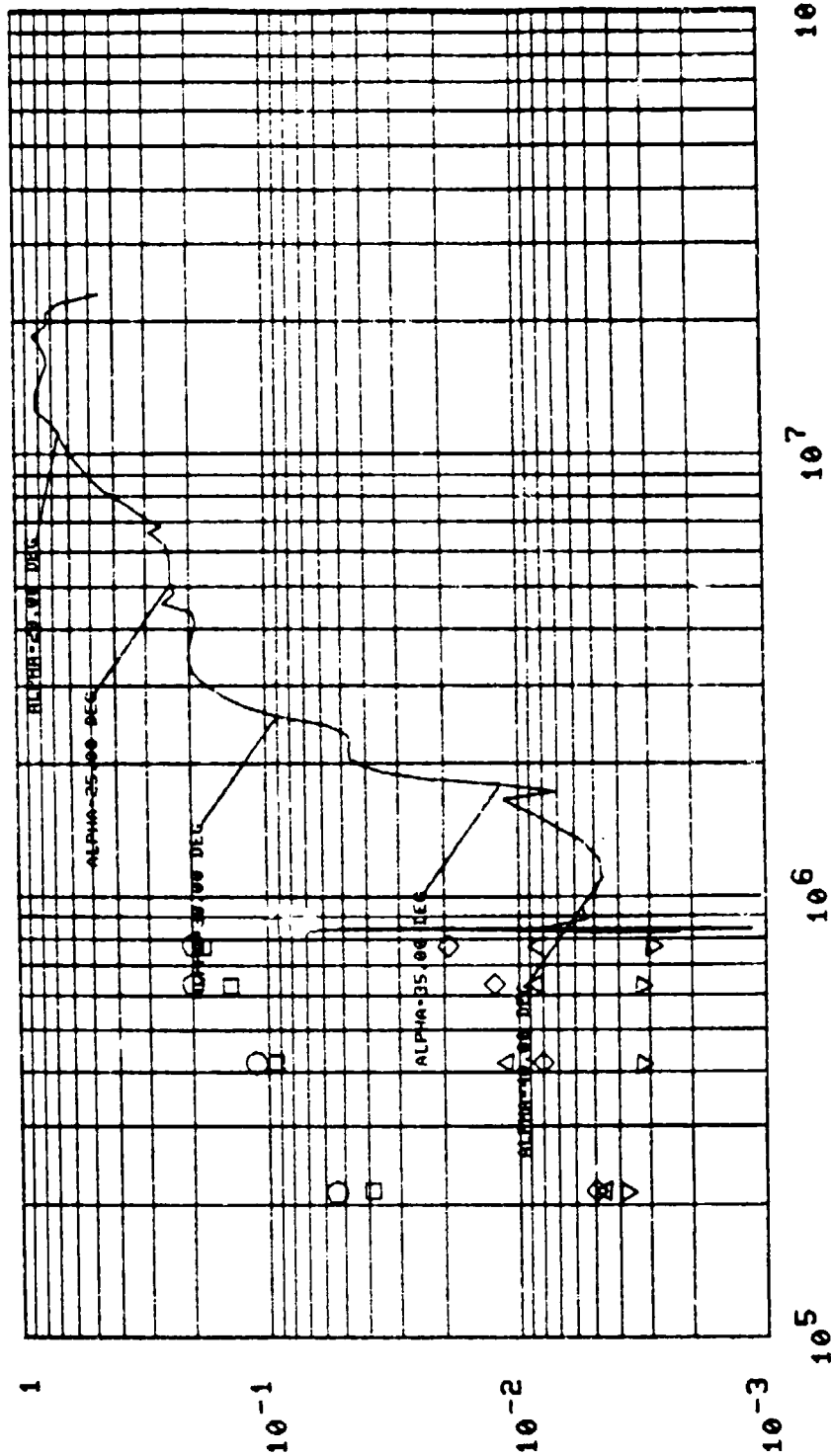
REYNOLDS NUMBER (NS)

# STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0715997A/H-REF 965-1335 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ ◇ △



REF: H-REF 965-1335 SEC

B-329

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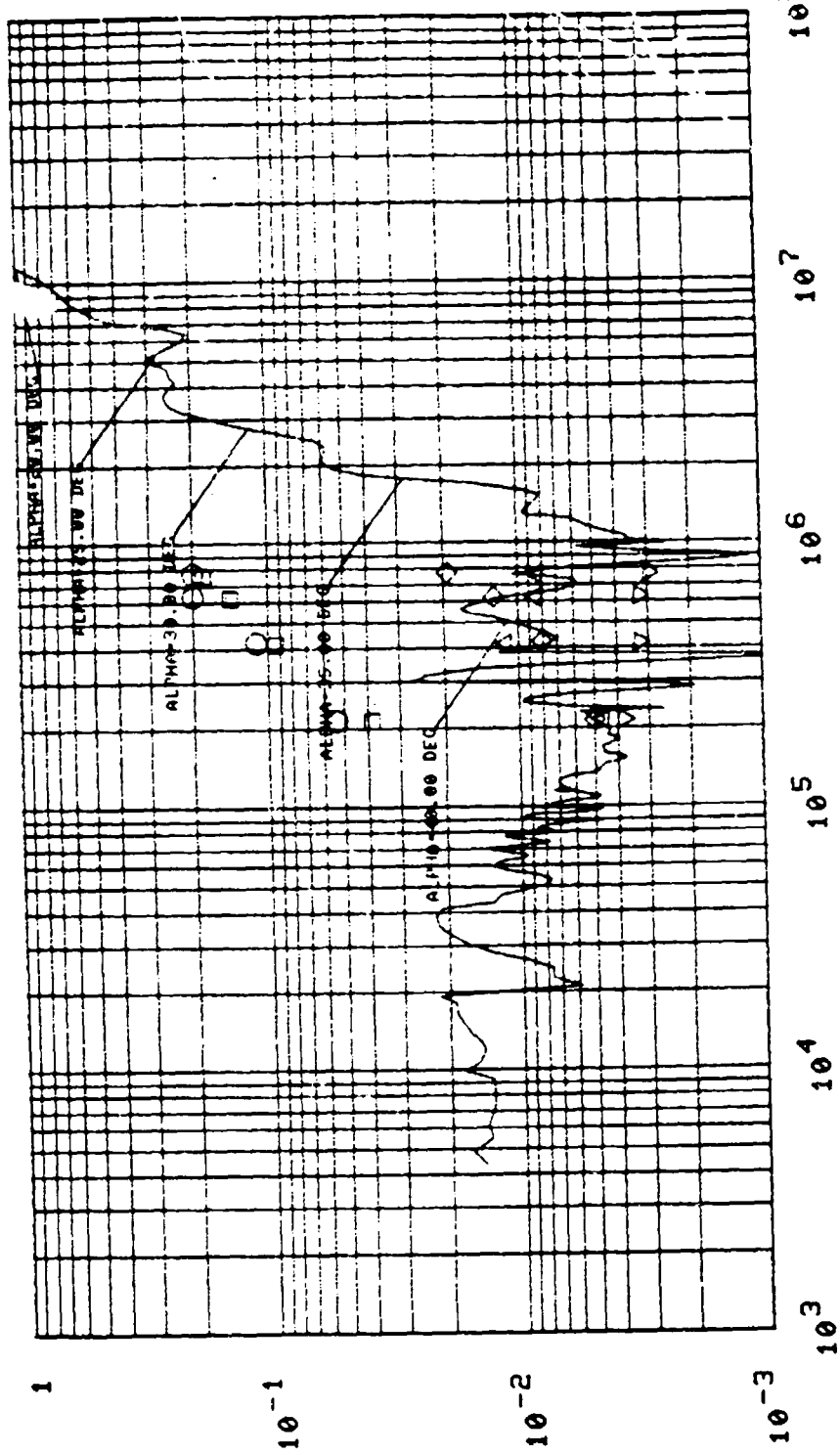
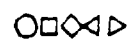
04-19 83  
BASE TIME - 1604023.000 SEC.

REYNOLDS NUMBER (NS)

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U6779997A/M-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



PRESSURE COEFFICIENT - REFERENCE

ORIGINAL PAGE IS  
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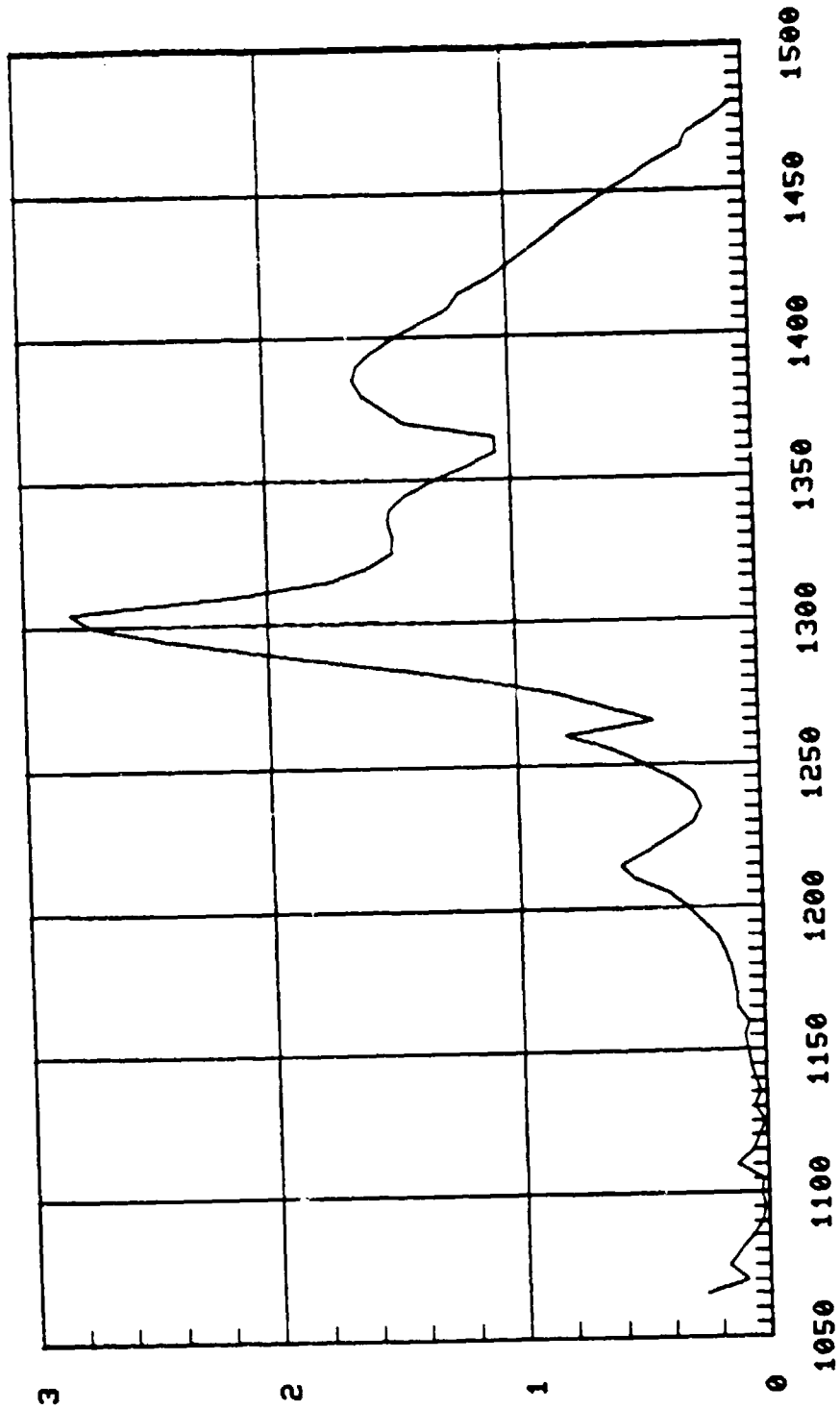
B-330

REYNOLDS NUMBER (NS) 10<sup>3</sup> 10<sup>4</sup> 10<sup>5</sup> 10<sup>6</sup> 10<sup>7</sup> 10<sup>8</sup>

04 18 83  
BASE TIME - 27698591.000 SEC.

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



HEATING RATE -- BTU/FT-HRS -- SWC

B-331

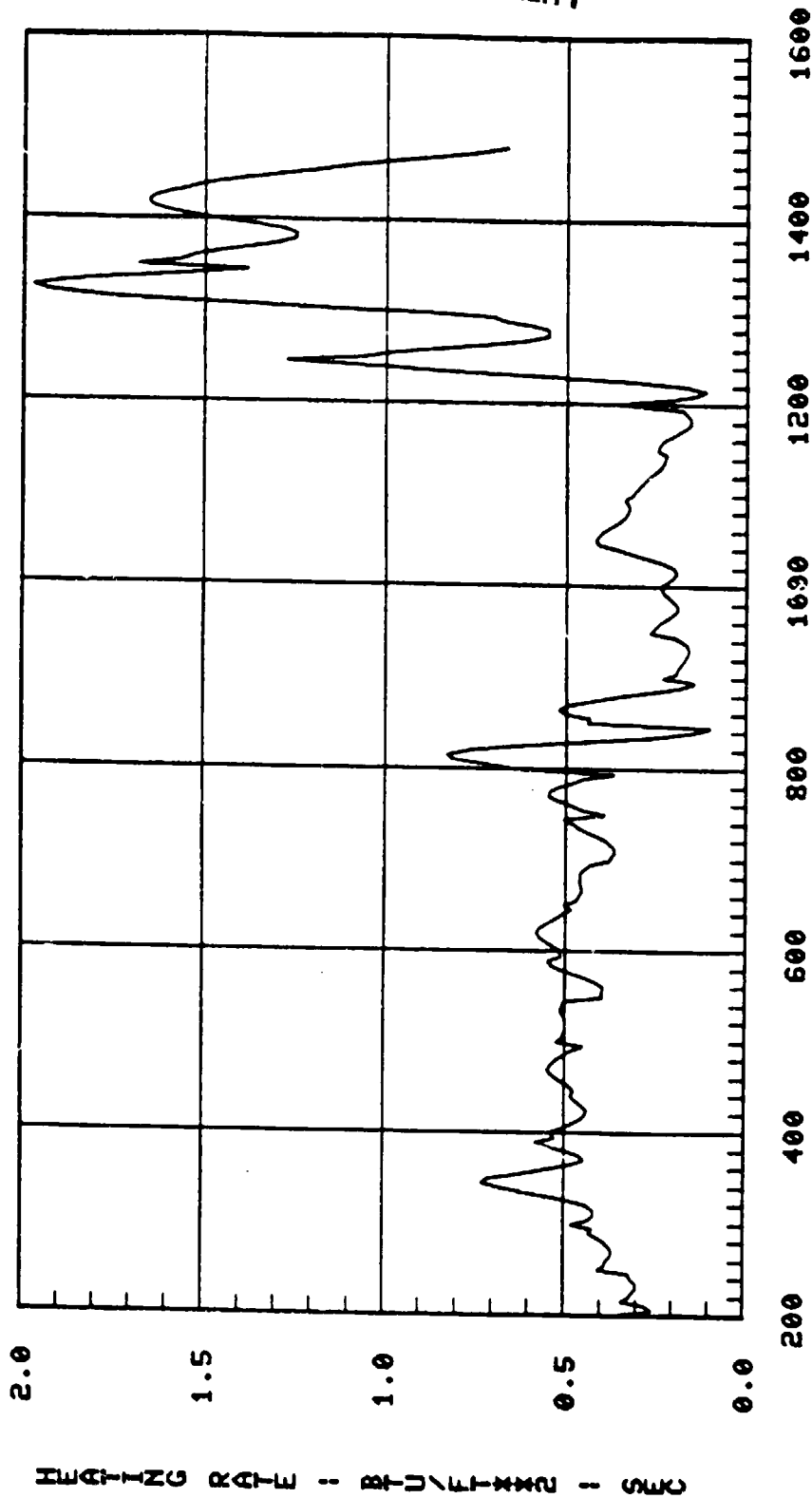
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04/20/83

TIME - SECONDS

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719997A



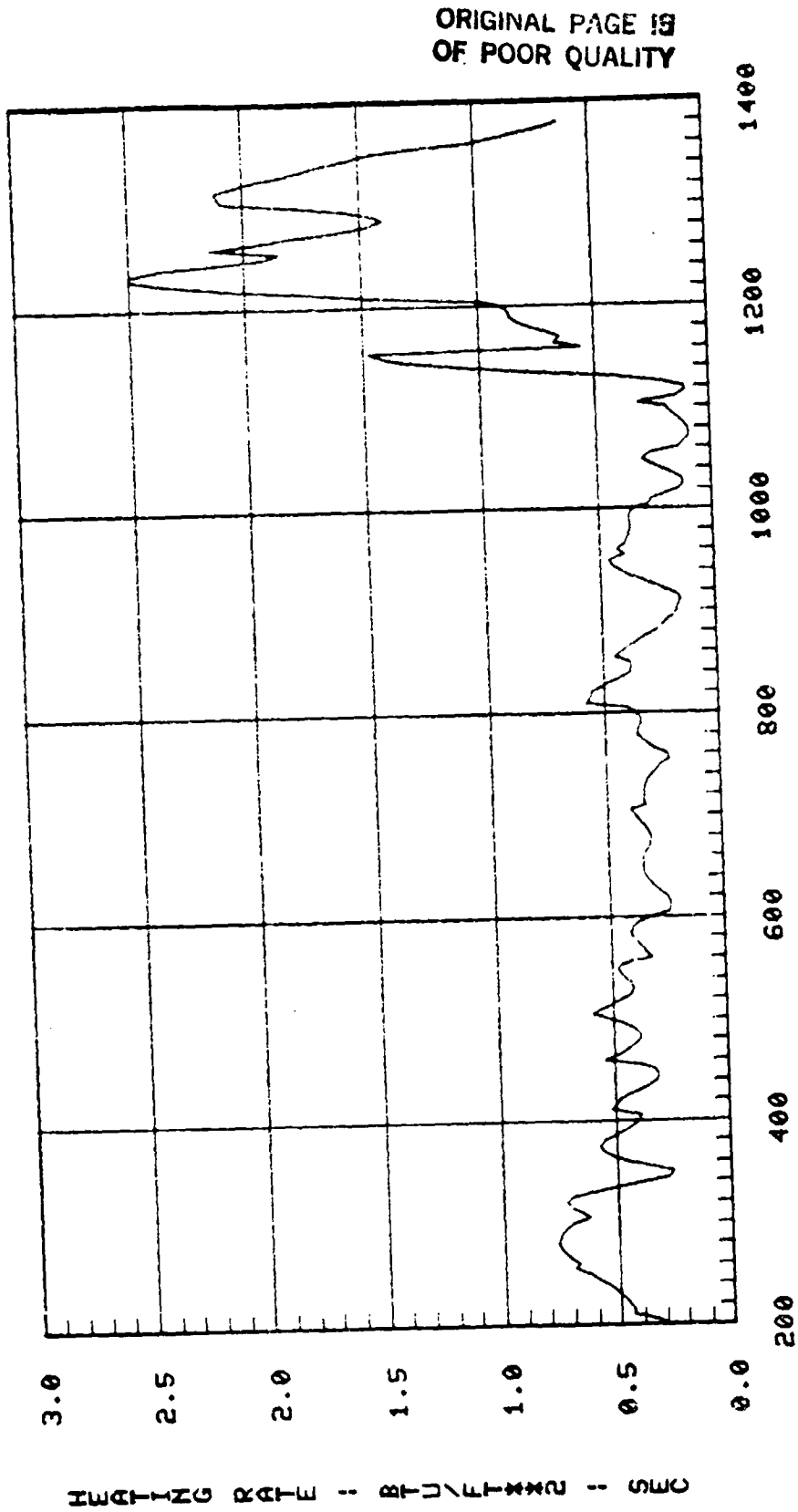
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TIME - SECONDS

04/20/93

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



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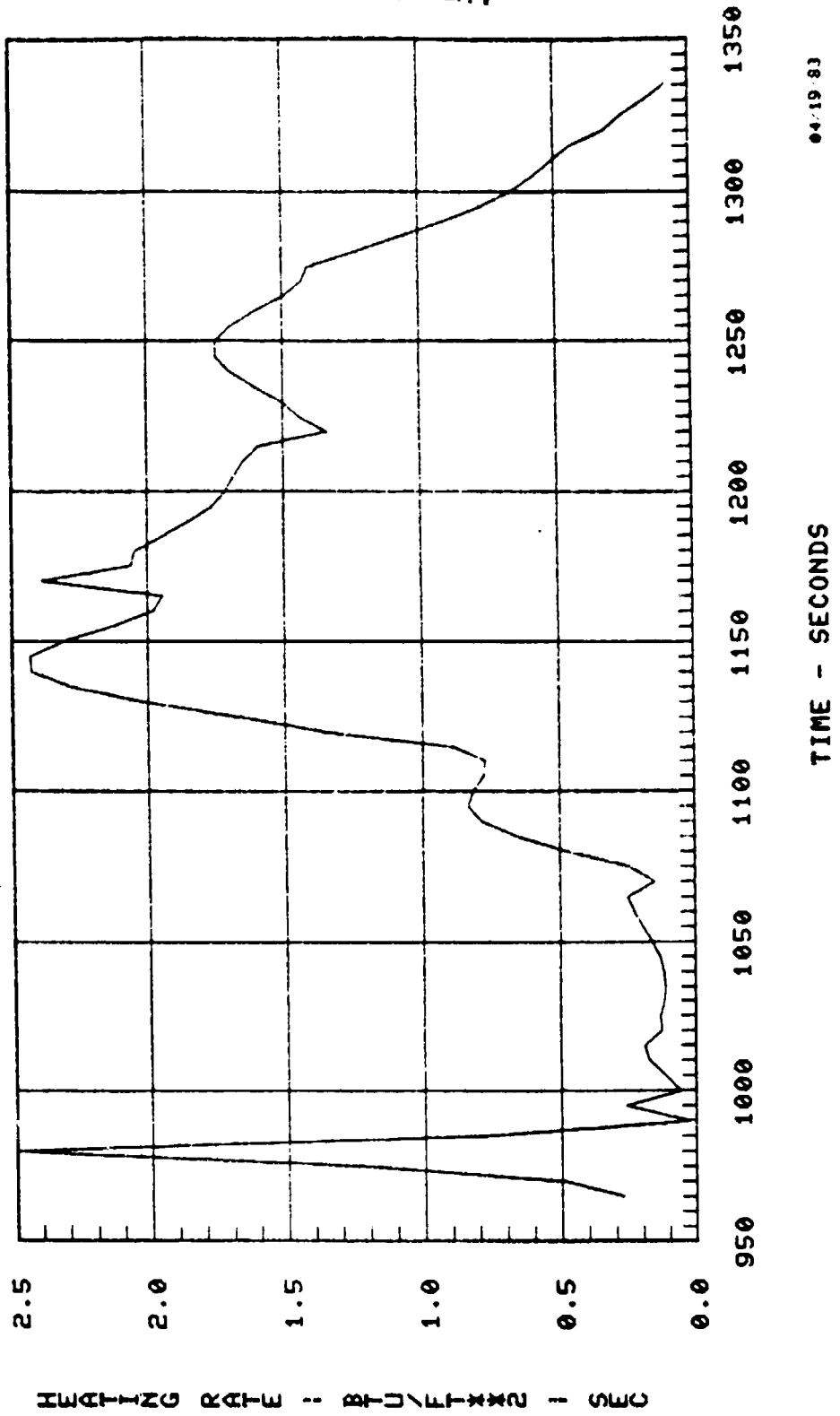
04 19 83

TIME - SECONDS



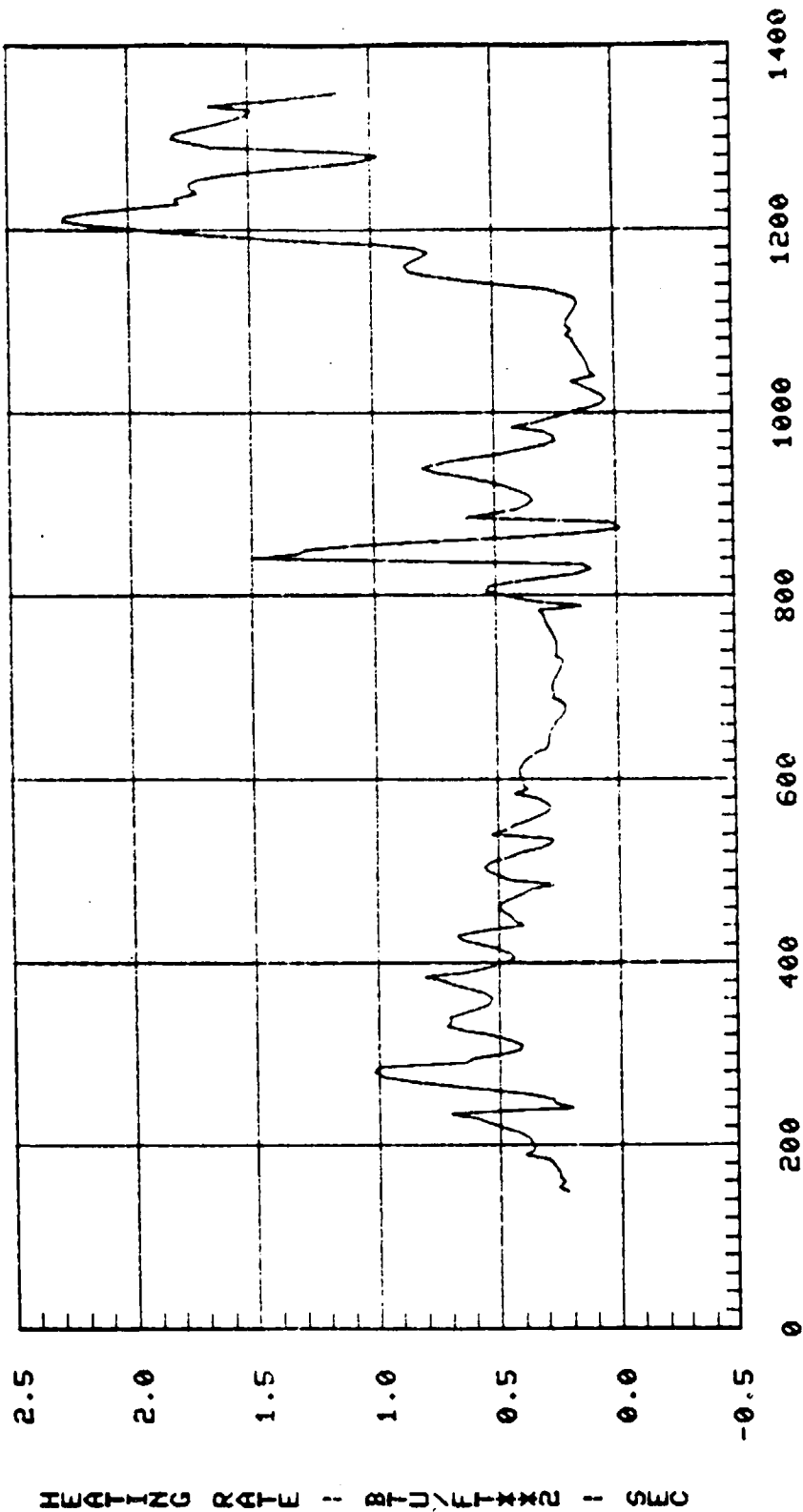
STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



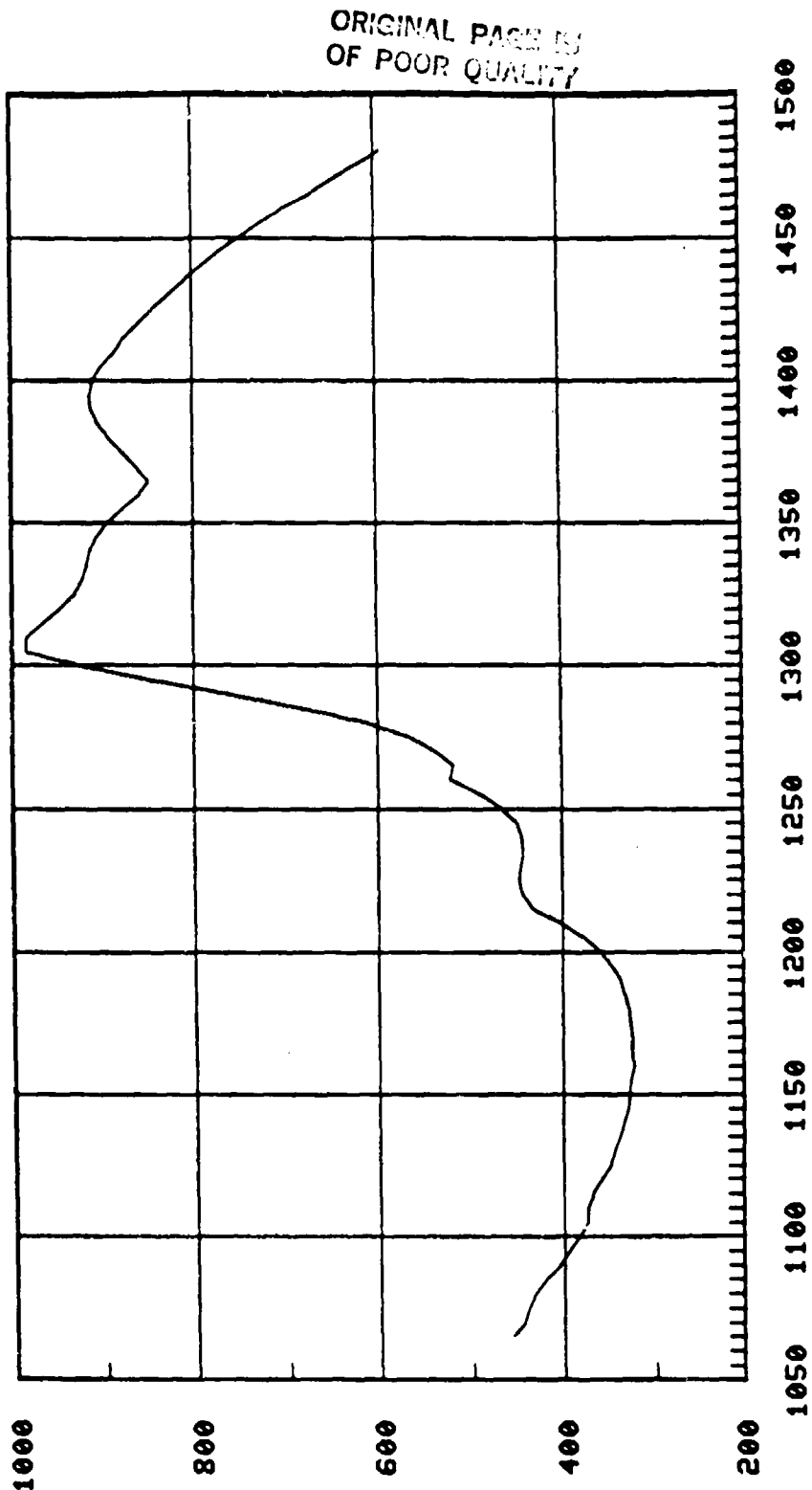
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04.18 S3

TIME - SECONDS

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



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1 - MECHANICAL

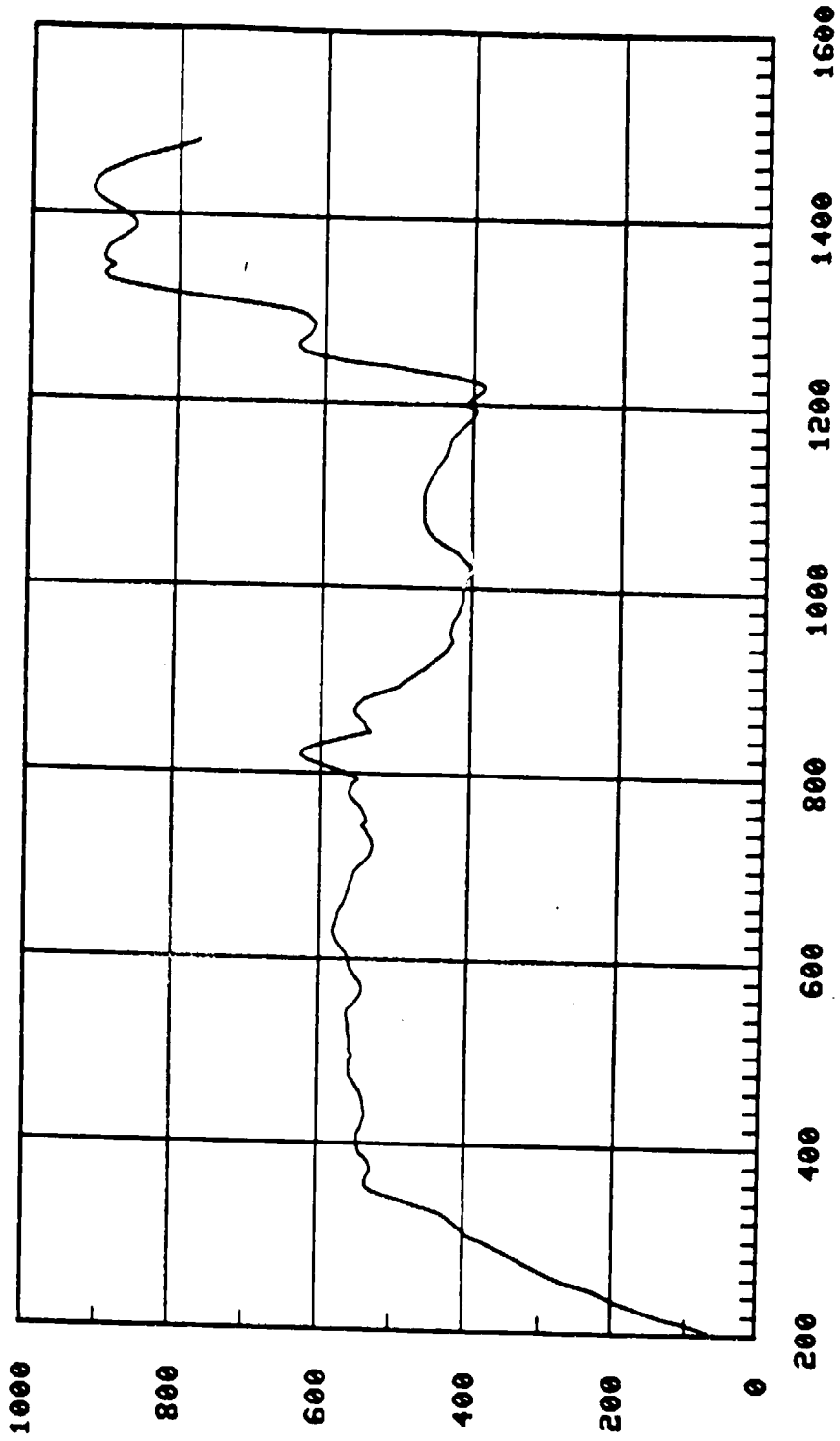
B-336

04/20/83

TIME - SECONDS

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



F -- P

B-337

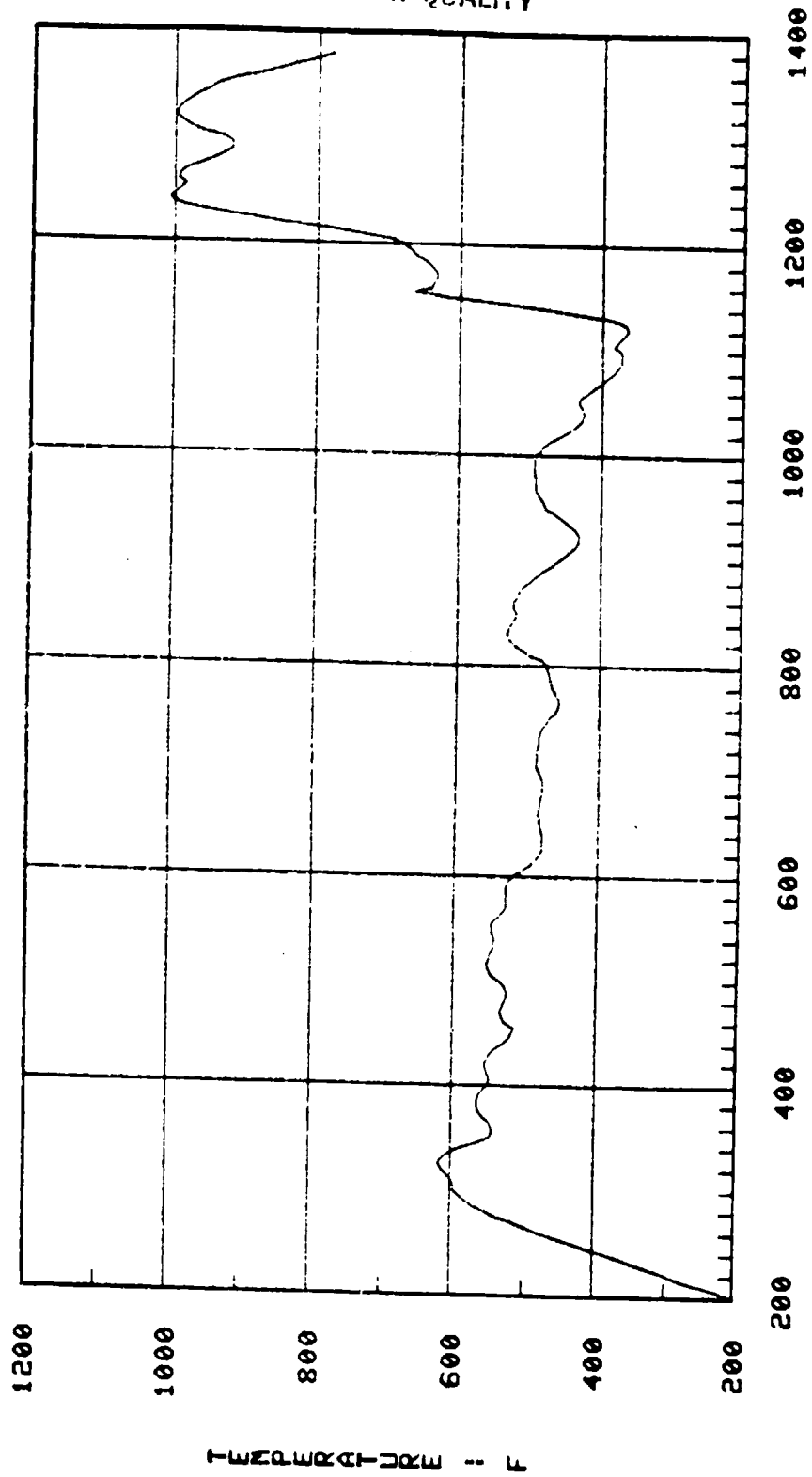
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04/20/83

TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U67T9997A



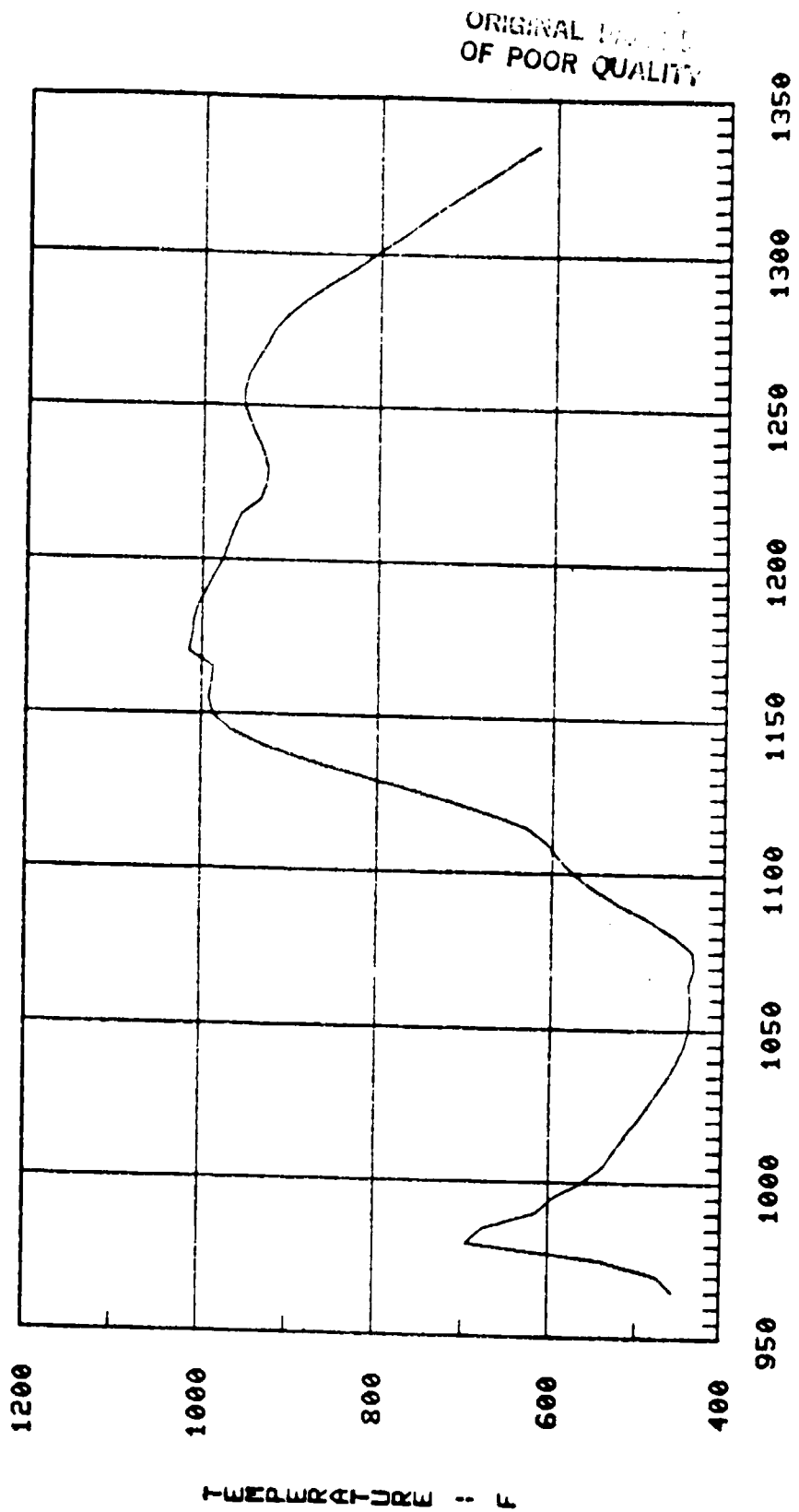
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04-19-83

TIME - SECONDS

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



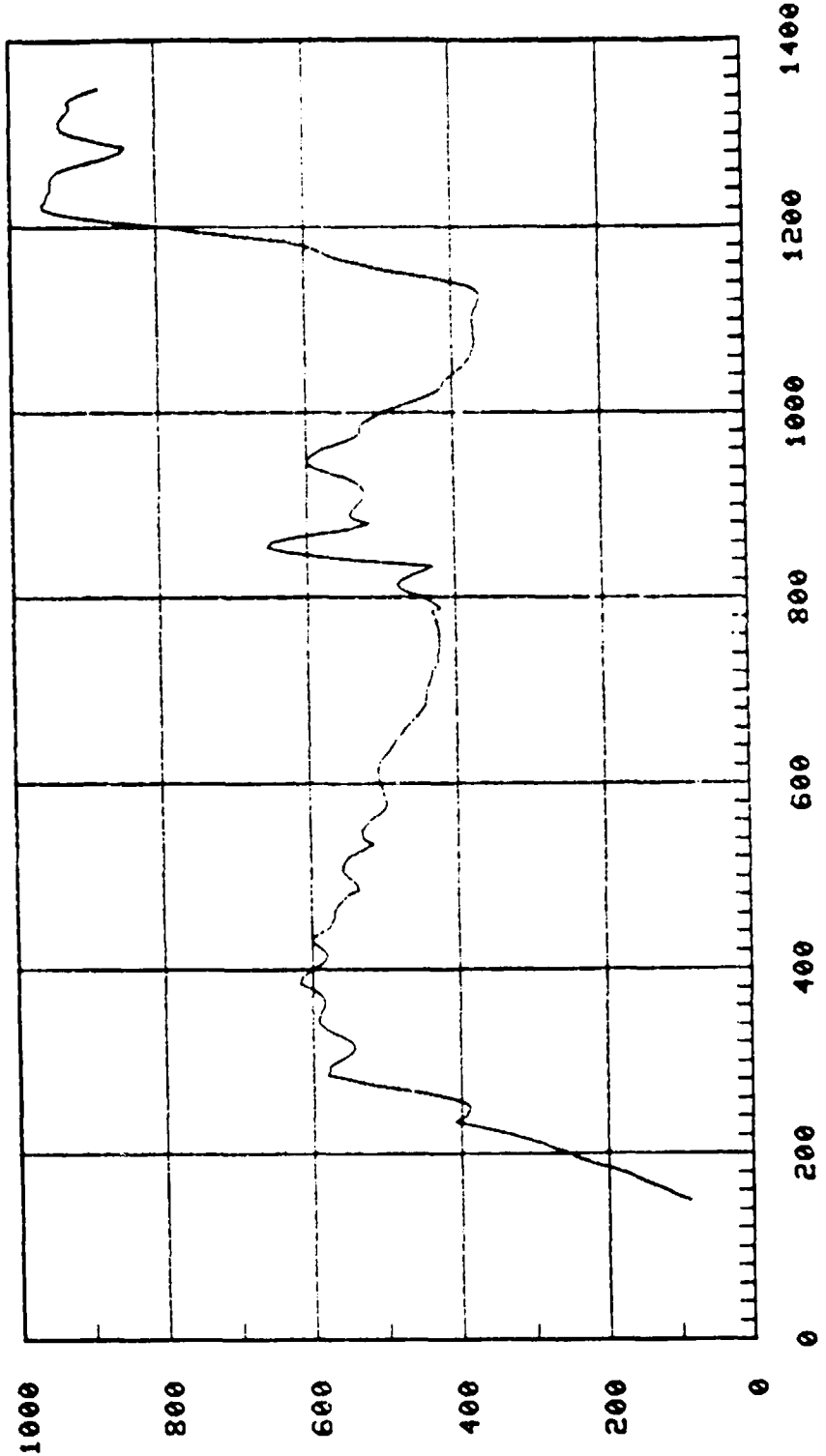
TIME - SECONDS

04 19 83

TEMPERATURE - F

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

08779957A



F - PARAMETER

B-340

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OF POOR QUALITY

08779957A

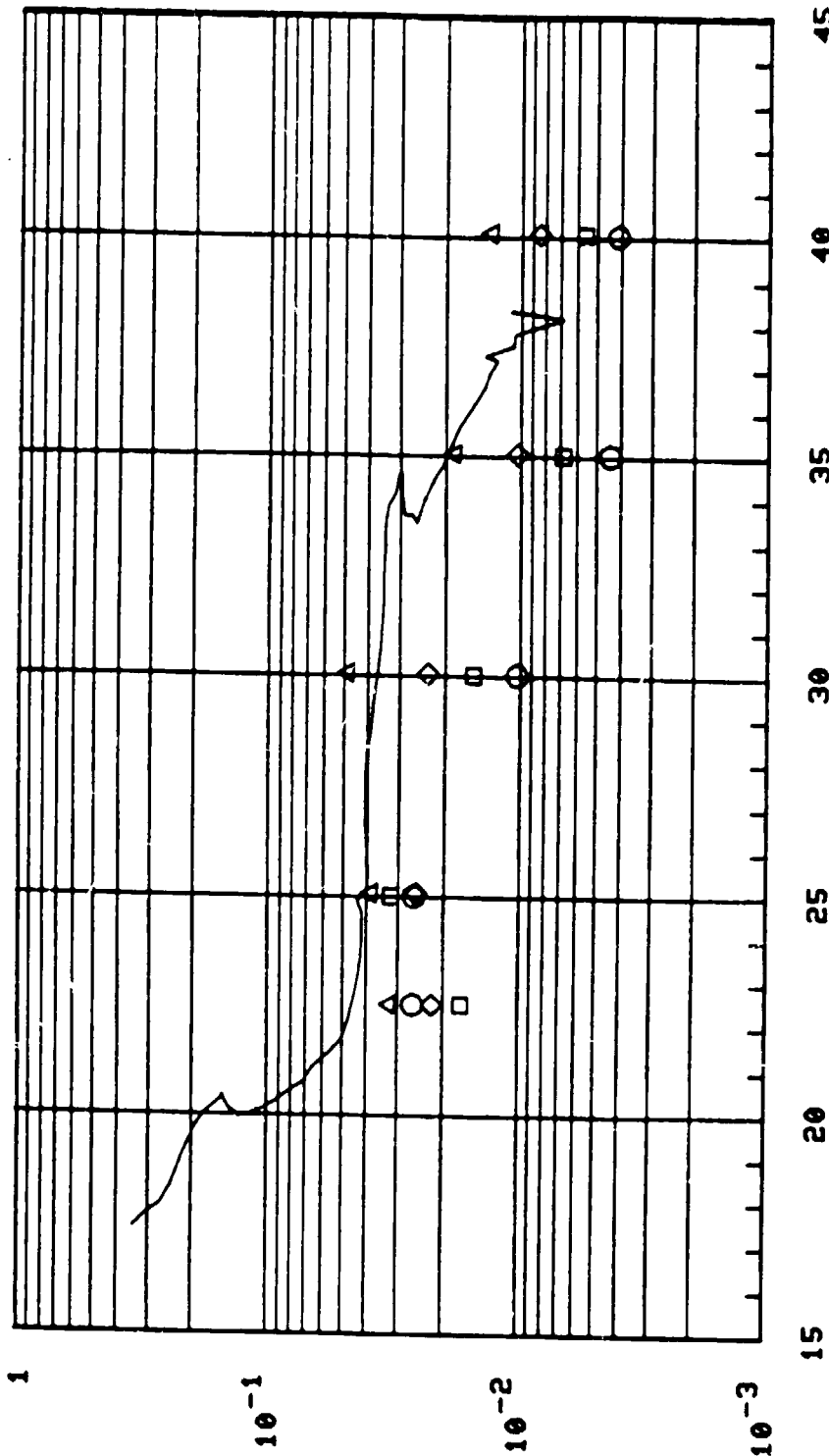
TIME - SECONDS

# STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE • 1.0 E06  
 AF 0.0175 SCALE RE • 2.0 E06  
 AF 0.0175 SCALE RE • 3.0 E06  
 AF 0.0175 SCALE RE • 3.7 E06

○  
 □  
 ◇

U09T9832A/H-REF 1065-1480 SEC



U09T9832A/H-REF 1065-1480 SEC

B-341

ORIGINAL PAGE IS  
OF POOR QUALITY

04/20/83  
BASE TIME • 09049744.000 SEC.

ANGLE-OF-ATTACK - DEG

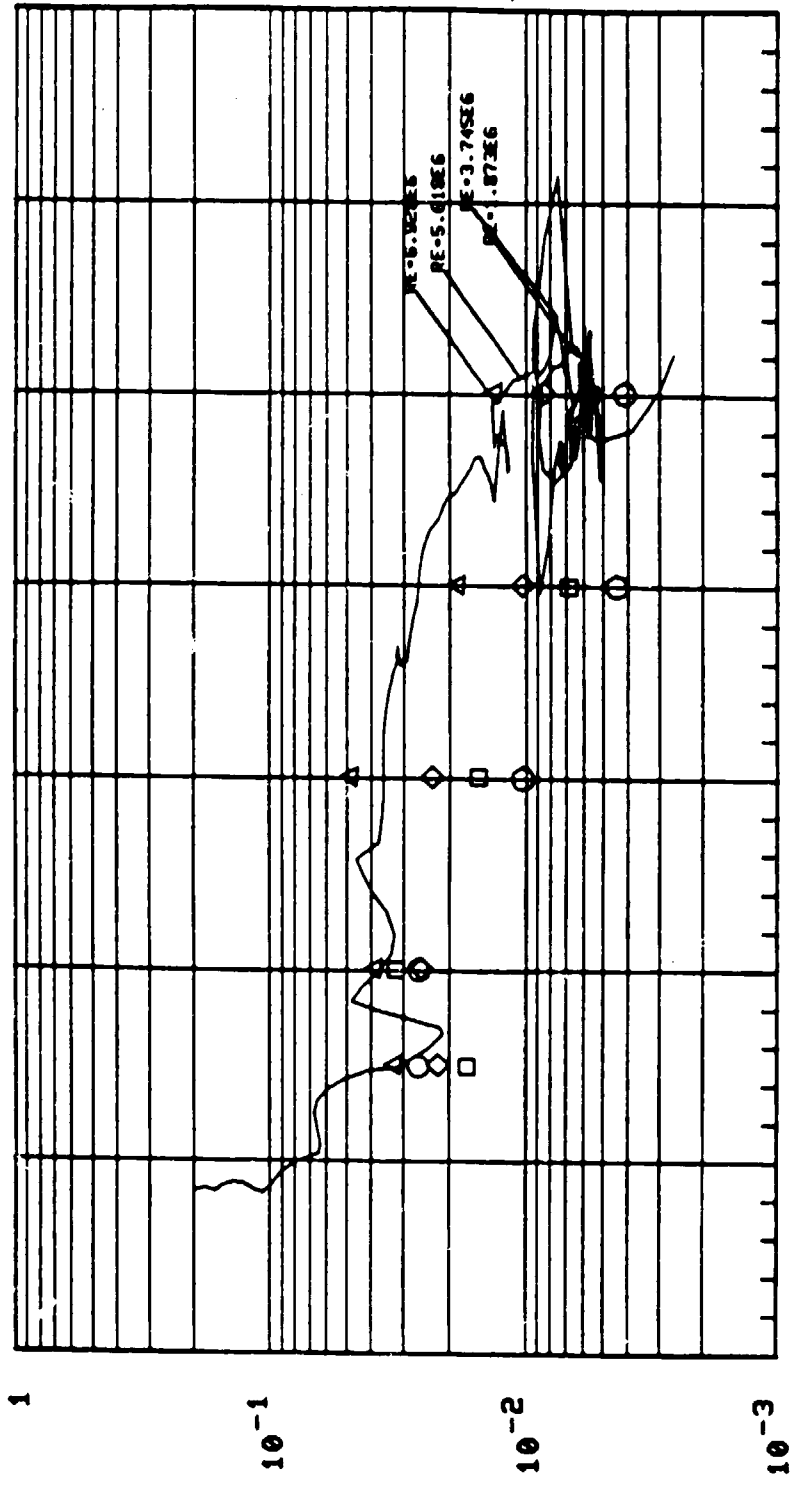


STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE - 1.0 E06  
 AF 0.0175 SCALE RE - 2.0 E06  
 AF 0.0175 SCALE RE - 3.0 E06  
 AF 0.0175 SCALE RE - 3.7 E06

○ □ ×

\_\_\_\_\_ U09T9832A/H-REF 200-1480 SEC



LINE COMPLE - H/H-REF

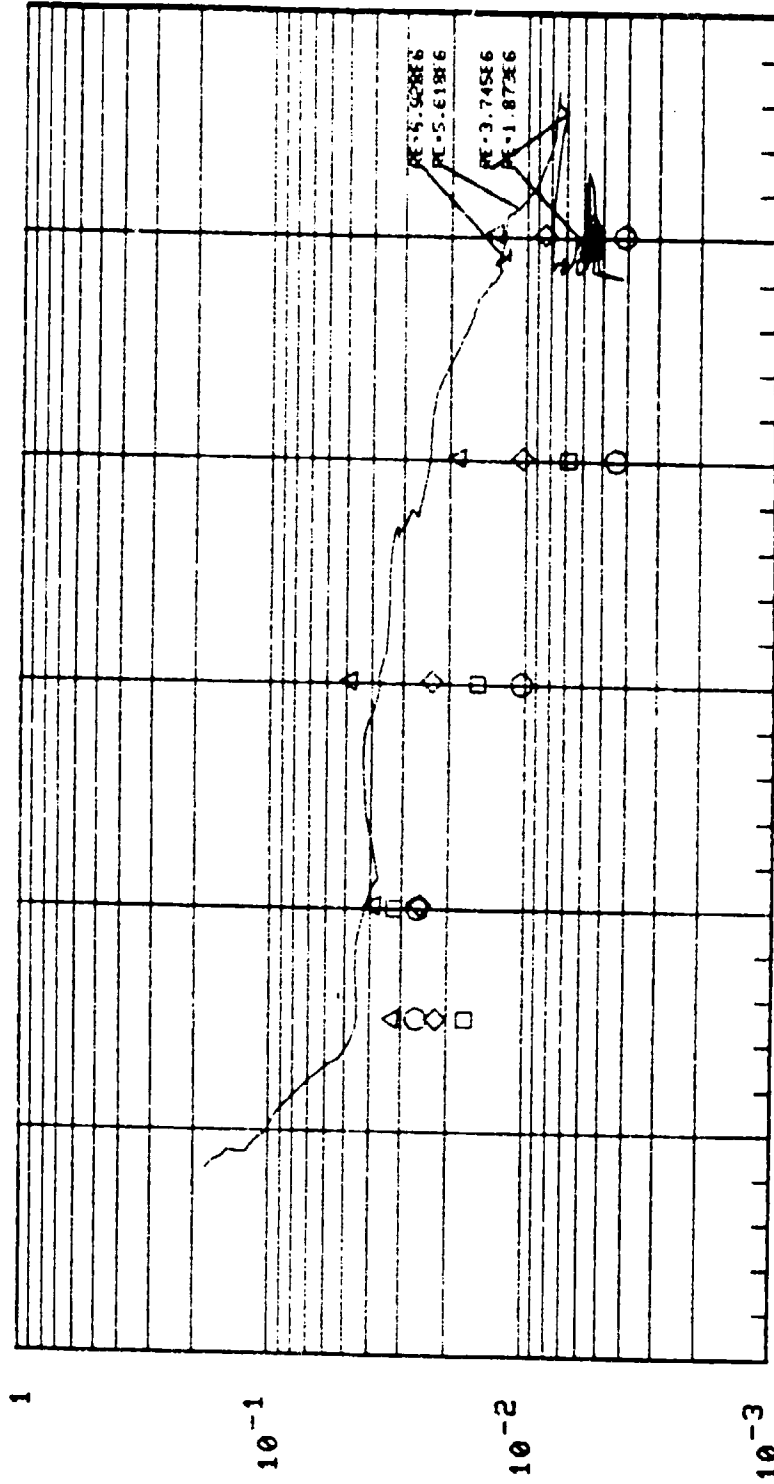
B-342

ANGLE-OF-ATTACK - DEG  
 BASE TIME - 27550236.000 SEC.  
 04/20/83

# STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 200-1380 SEC

- AF 0.0175 SCALE RE - 1.0 E06
- AF 0.0175 SCALE RE - 2.0 E06
- AF 0.0175 SCALE RE - 3.0 E06
- AF 0.0175 SCALE RE - 3.7 E06



TIME SCALE - H/H-REF

B-343

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04.19.83  
BASE TIME - 07745684.000 SEC.

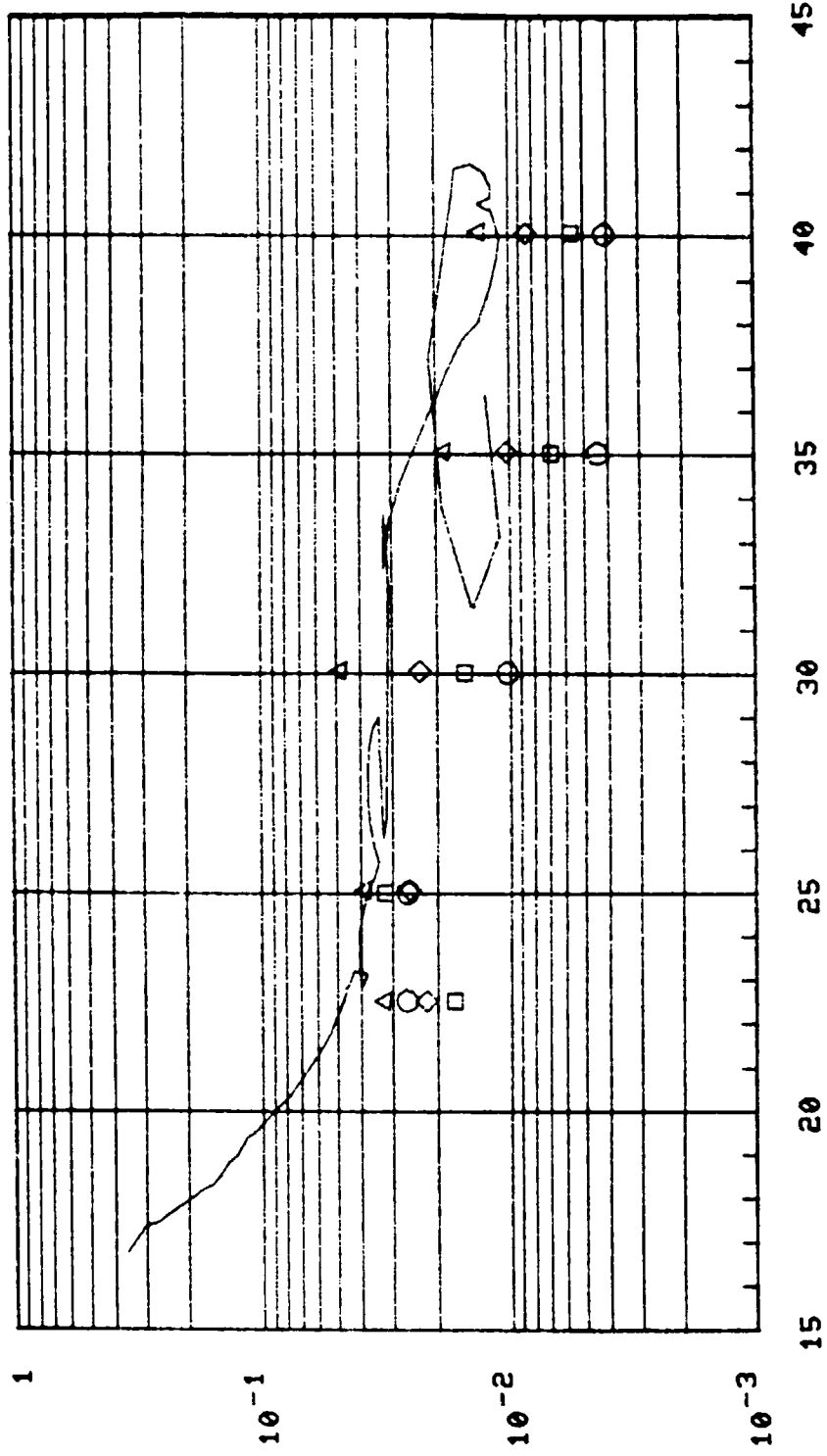
ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

AF 0.0175 SCALE RE • 1.0 E06  
 AF 0.0175 SCALE RE • 2.0 E06  
 AF 0.0175 SCALE RE • 3.0 E06  
 AF 0.0175 SCALE RE • 3.7 E06

□ ○ ◇

U09T9832A/H-REF 965-1335 SEC



FILM POWER - H/H-RWL

B-344

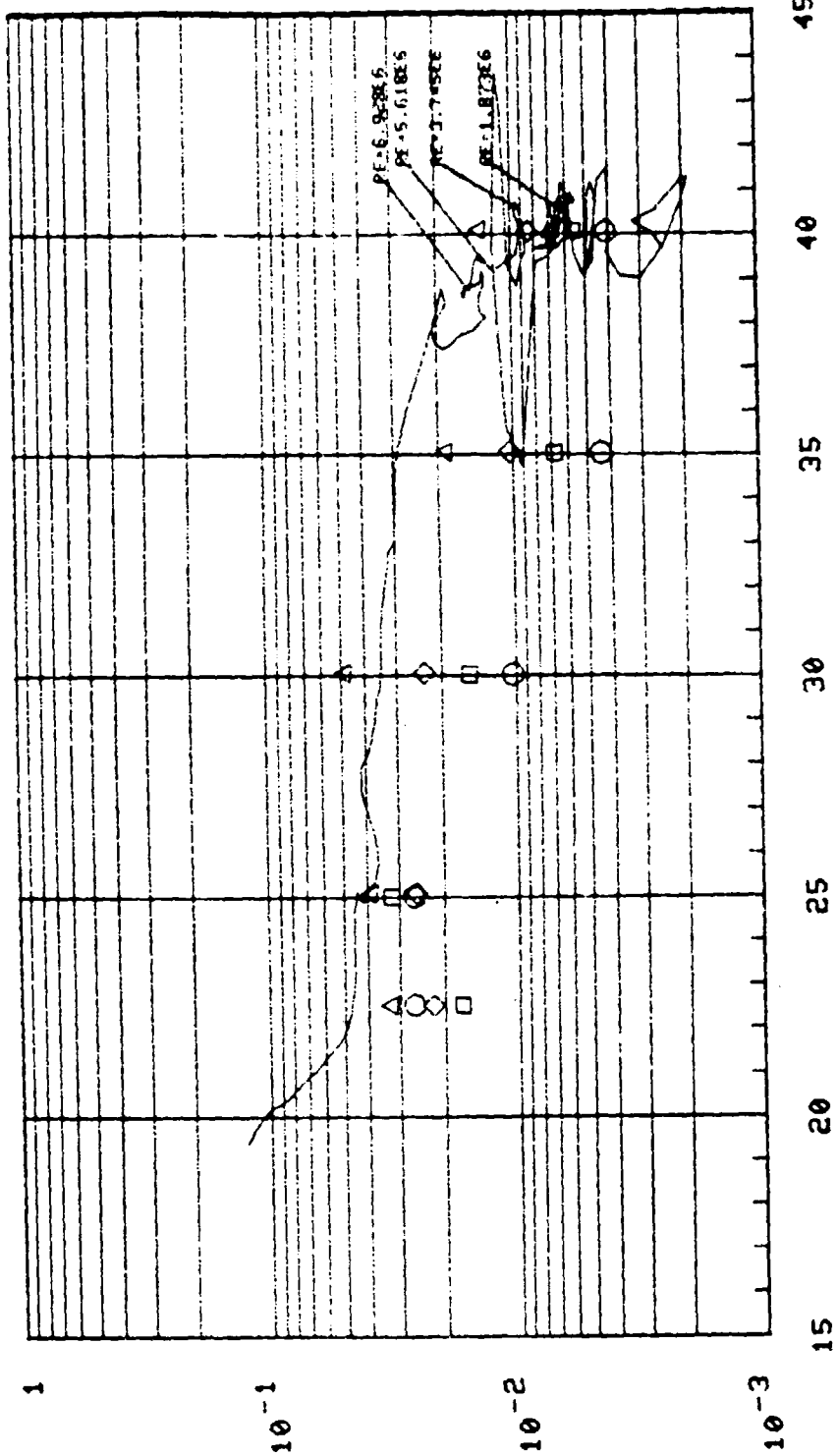
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04:19:23  
 BASE TIME • 1600423.000 SEC.  
 ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U99T9832A/H-REF 150-1350 SEC

- AF 0.0175 SCALE RE \* 1.0 E06
- AF 0.0175 SCALE RE \* 2.0 E06
- AF 0.0175 SCALE RE \* 3.0 E06
- AF 0.0175 SCALE RE \* 3.7 E06

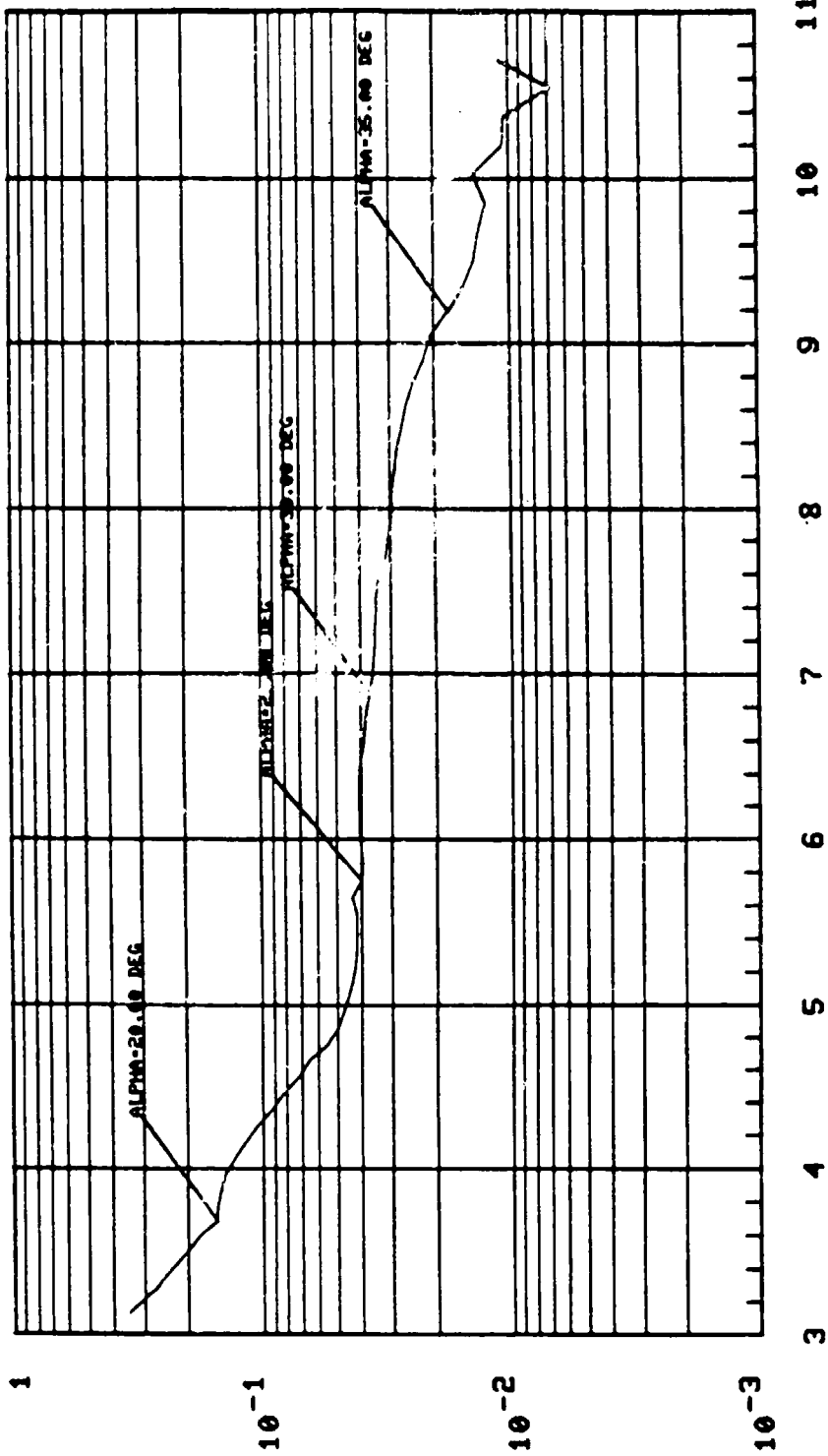


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STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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04/20/83  
BASE TIME - 00049744.000 SEC.

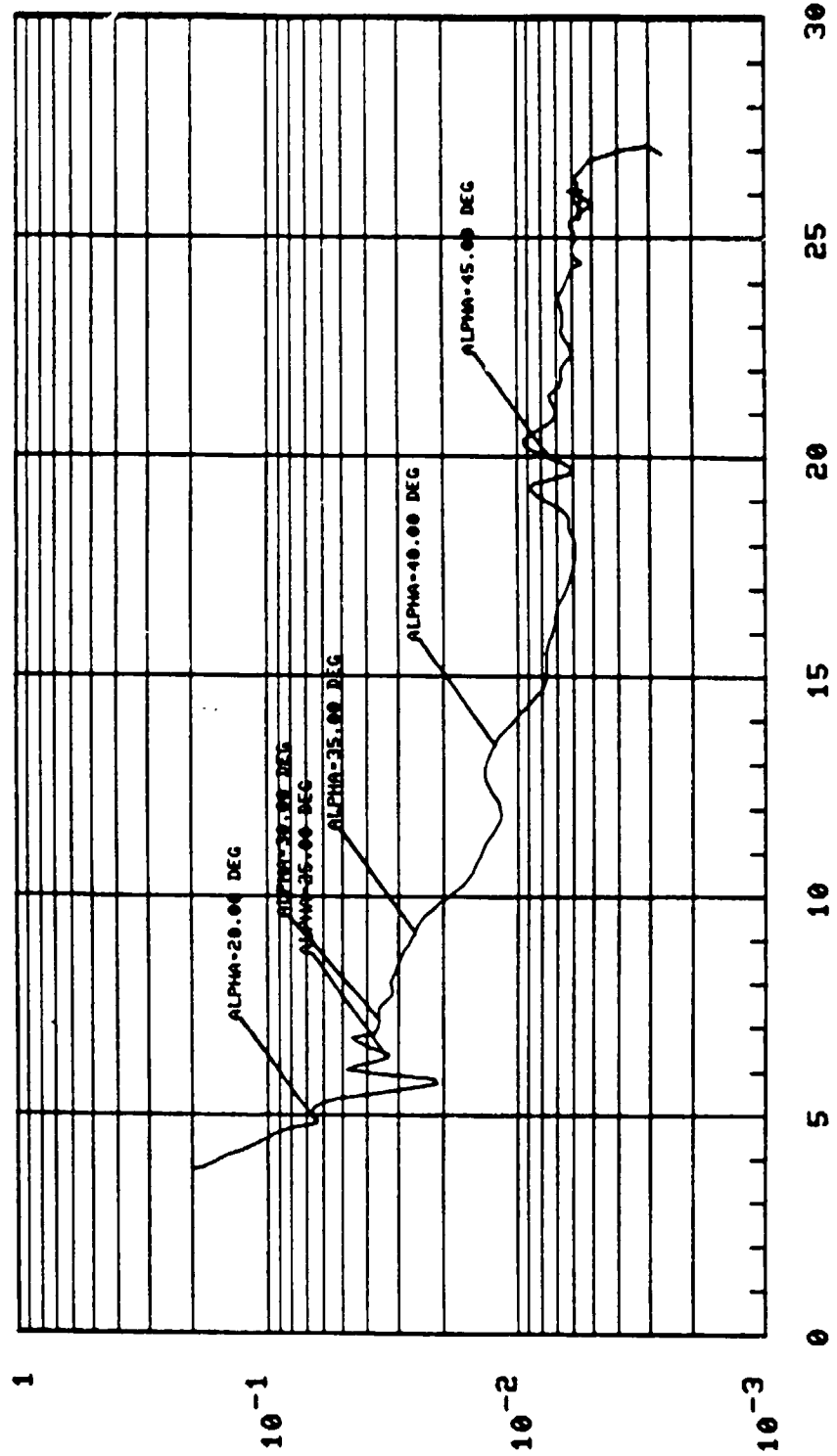
MACH NUMBER

TIME CORRECTION - INITIAL

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A/M-REF 200-1480 SEC

ORIGINAL PLOTS  
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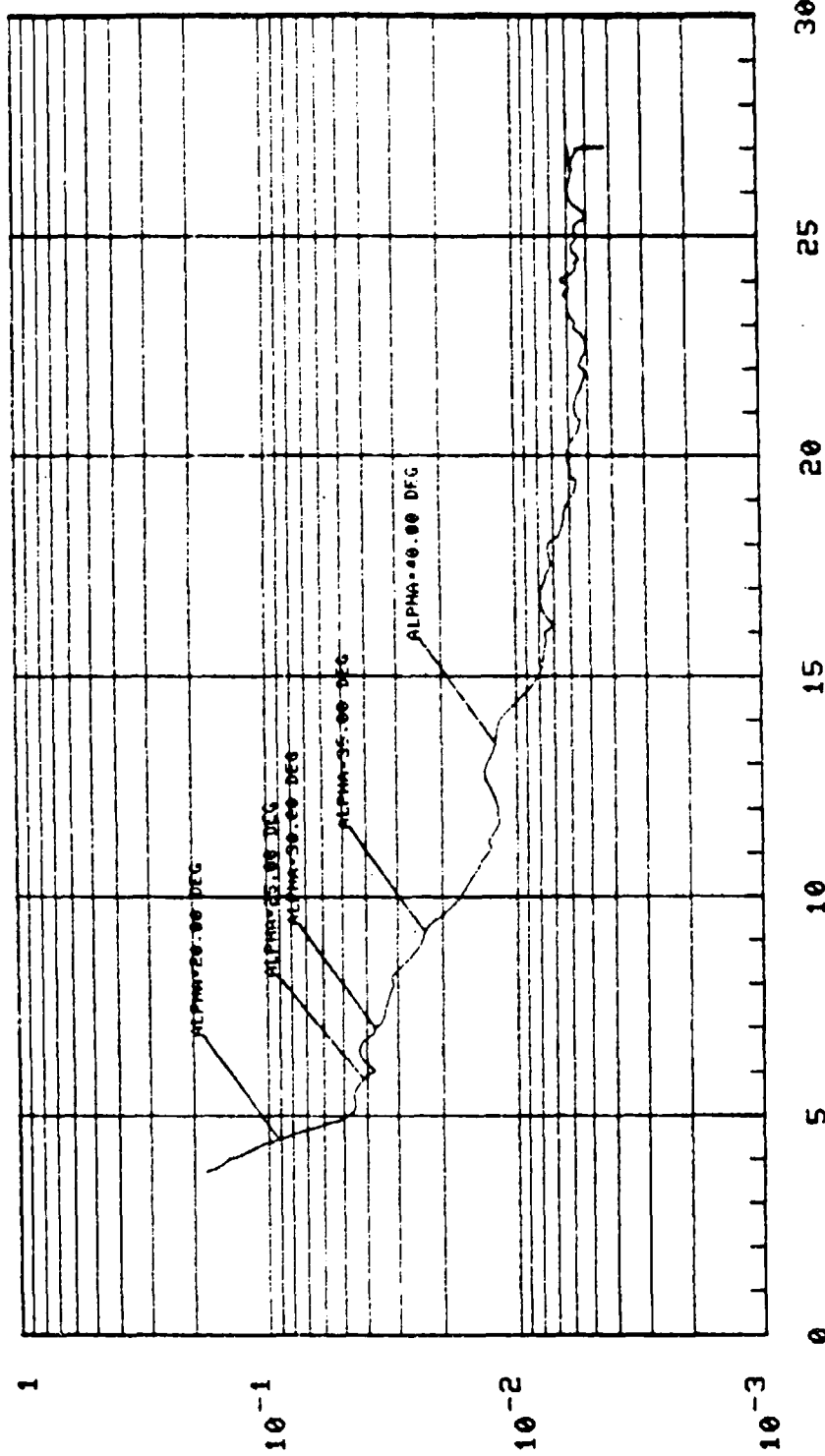
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MACH NUMBER

U09T9832A/M-REF

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 200-1380 SEC



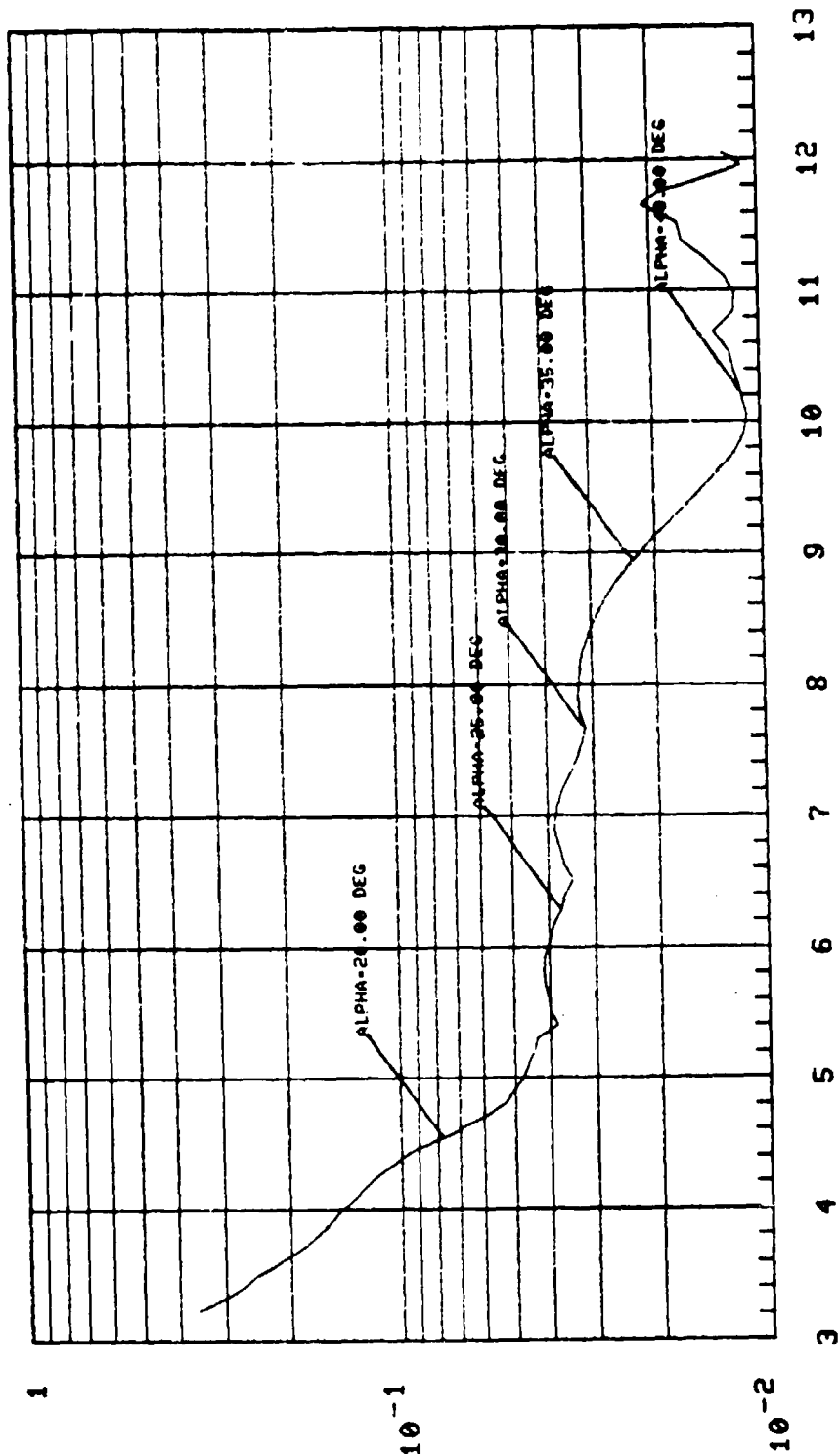
04.19.83  
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 MACH NUMBER

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U09T9832A/H-REF

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 965-1335 SEC



LINE COVER : H-I-REF

B-349

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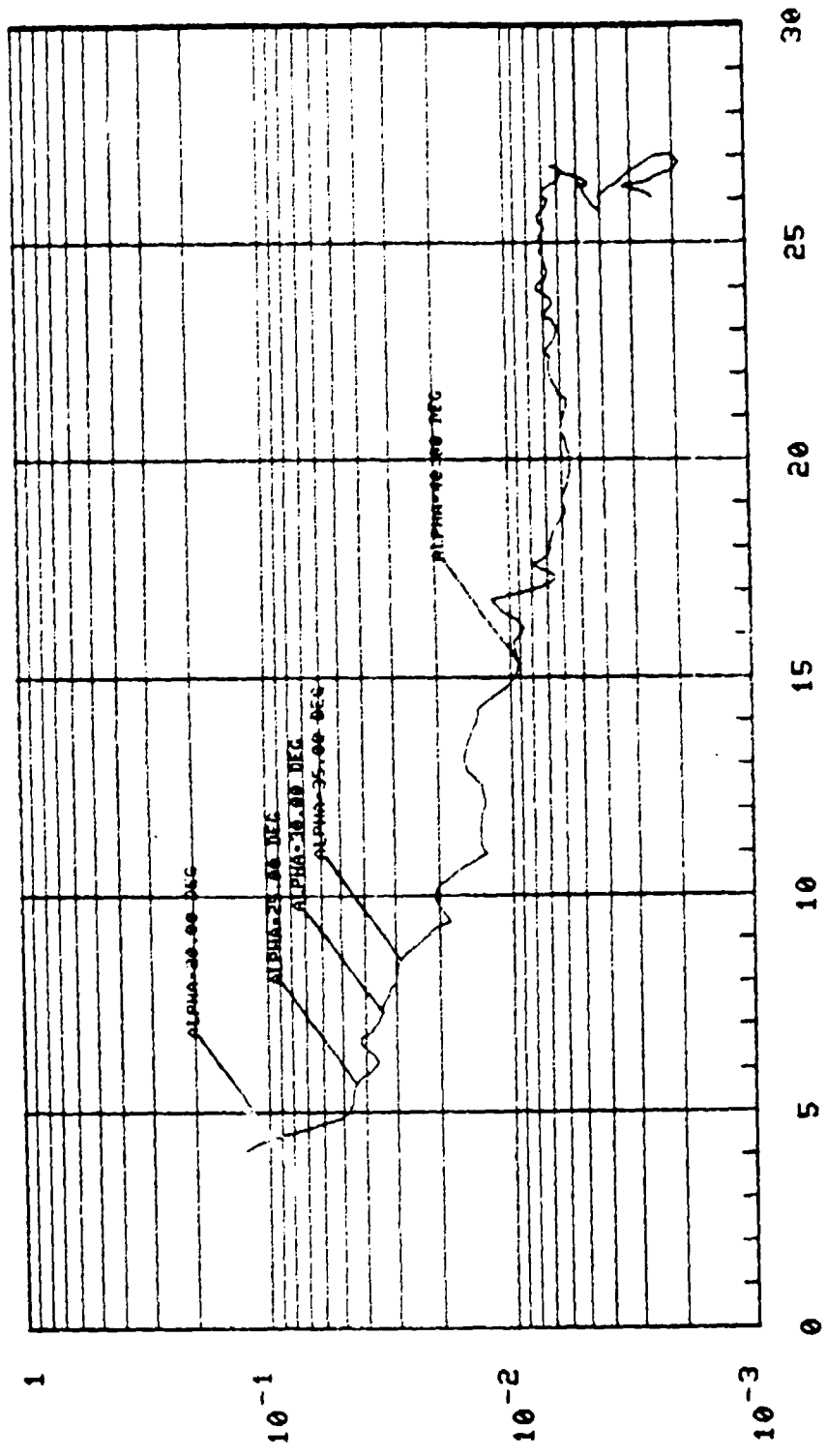
04.19.83  
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MARCH NUMBER



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# STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9332A/H-REF 150-1350 SEC



04.18 83  
BASE TIME - 27698591.000 SEC.

MACH NUMBER

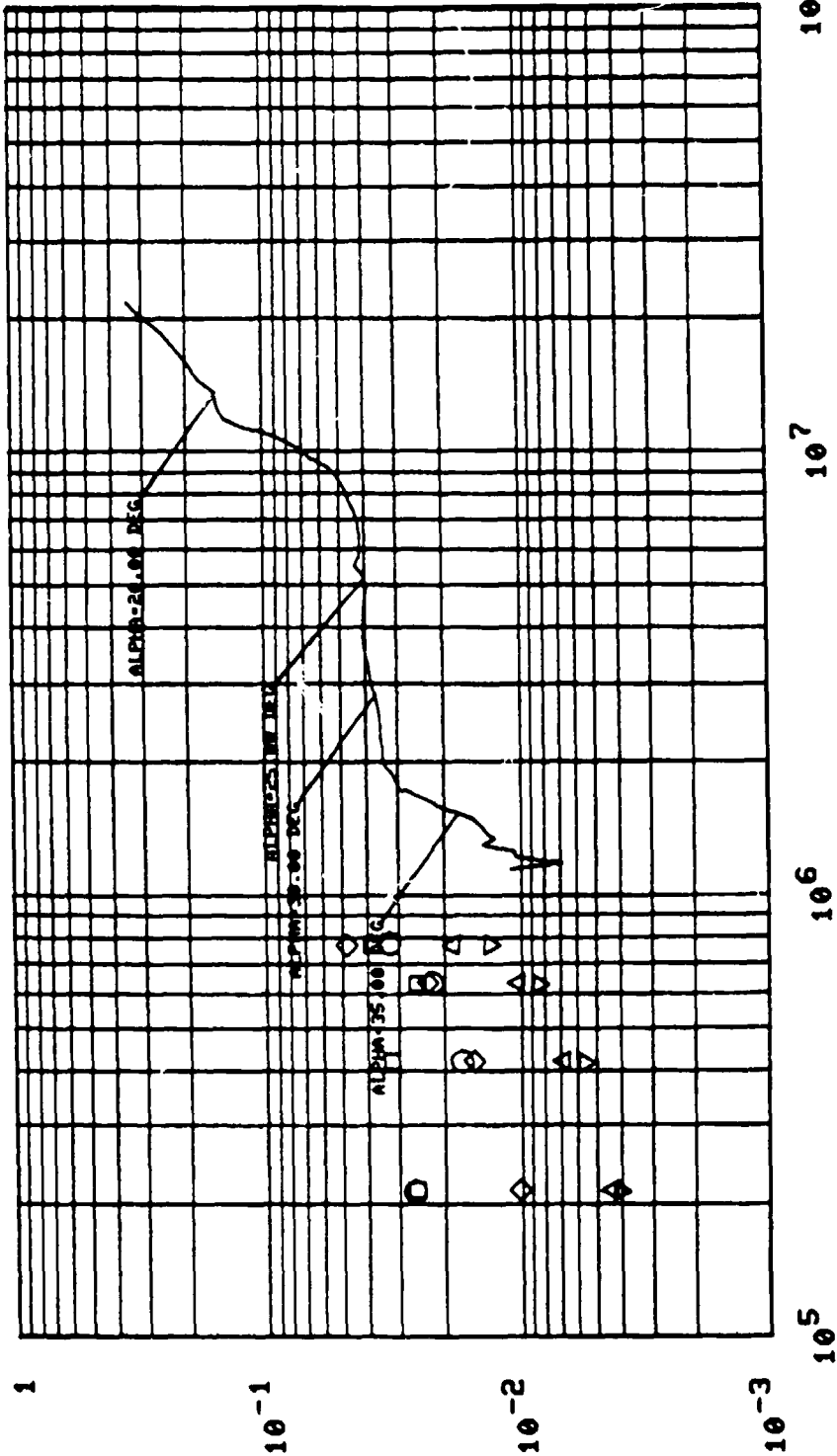
FILM COEFF - H/H-REF

# STS-1 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A/N-REF 1065-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

○ □ △



FLIGHT COEFFICIENT - H/H-REF

B-351

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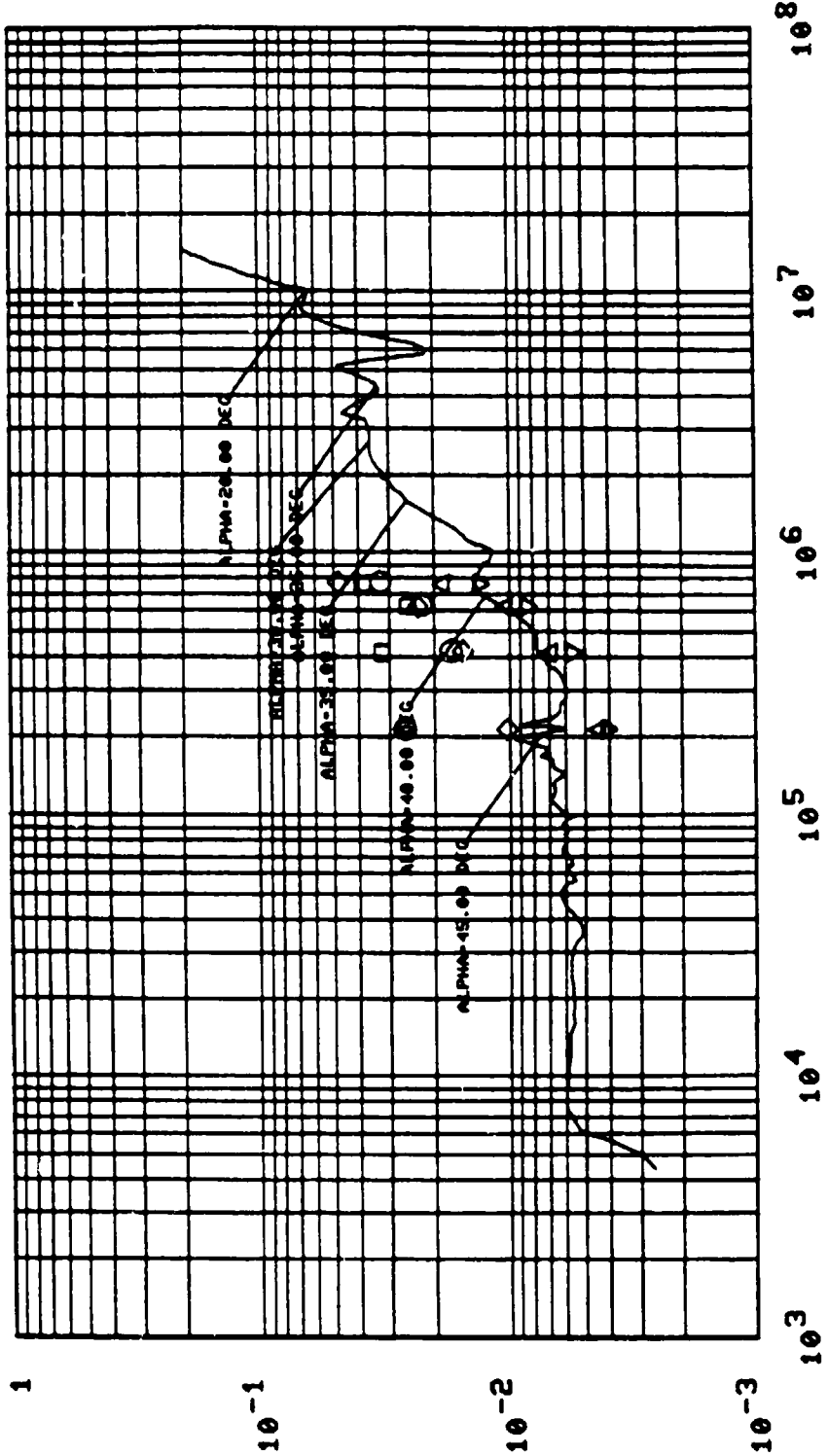
04/20/83  
BASE TIME - 09049744.000 SEC.

REYNOLDS NUMBER (NS)

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U99T9832A/H-REF 200-1480 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES



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U99T9832A/H-REF

B-352

04/20 83  
BASE TIME - 27550235.000 SEC.

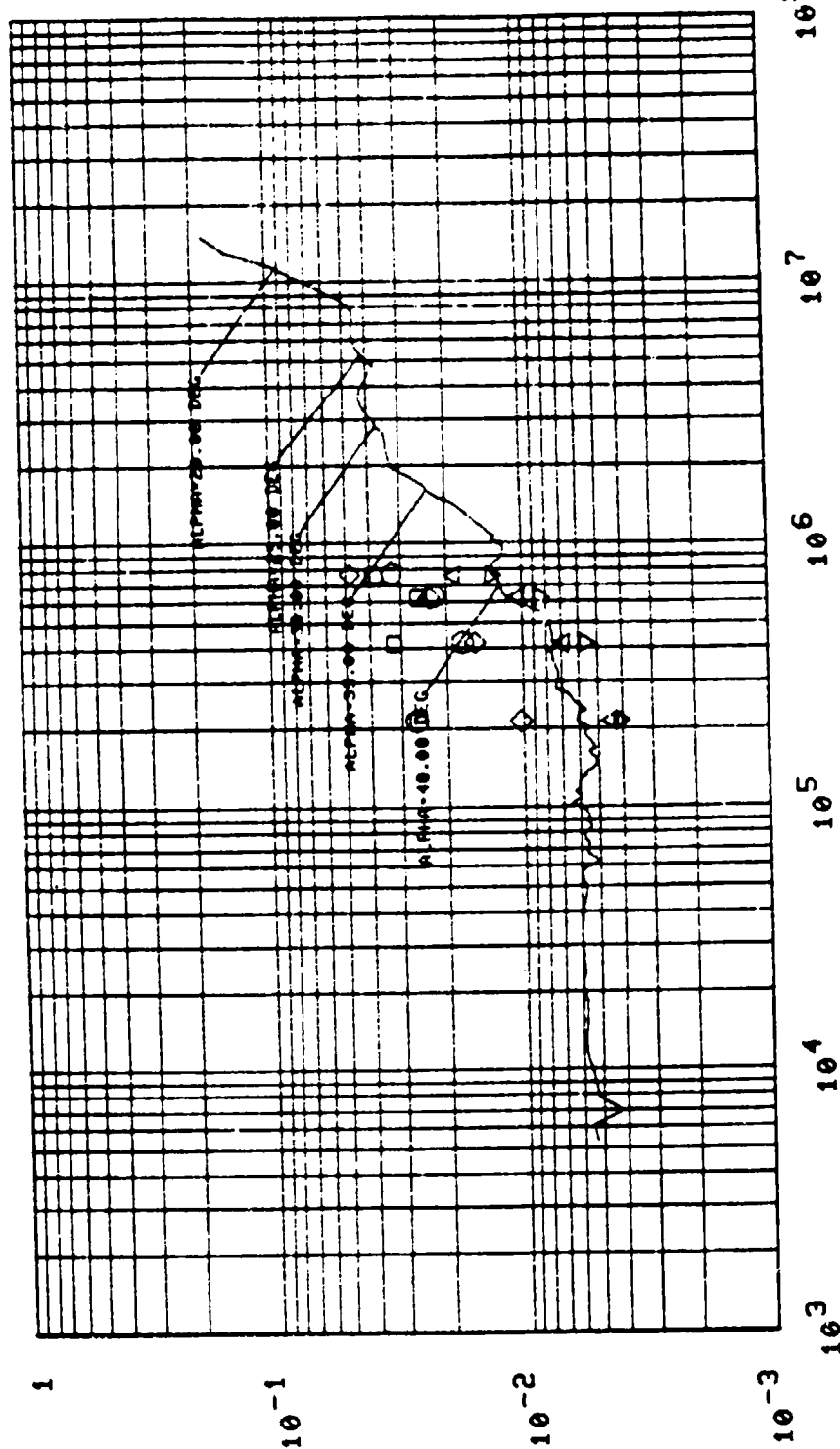
REYNOLDS NUMBER (NS)

# STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 200-1380 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
- AF ALPHA - 30.0 DEGREES
- AF ALPHA - 35.0 DEGREES
- AF ALPHA - 40.0 DEGREES

□ ○ ◇ △



FLIGHT COEFF - H/H-REF

ORIGINAL FACSIMILE  
OF POOR QUALITY

04 19 93  
BASE TIME - 07745684.000 SEC

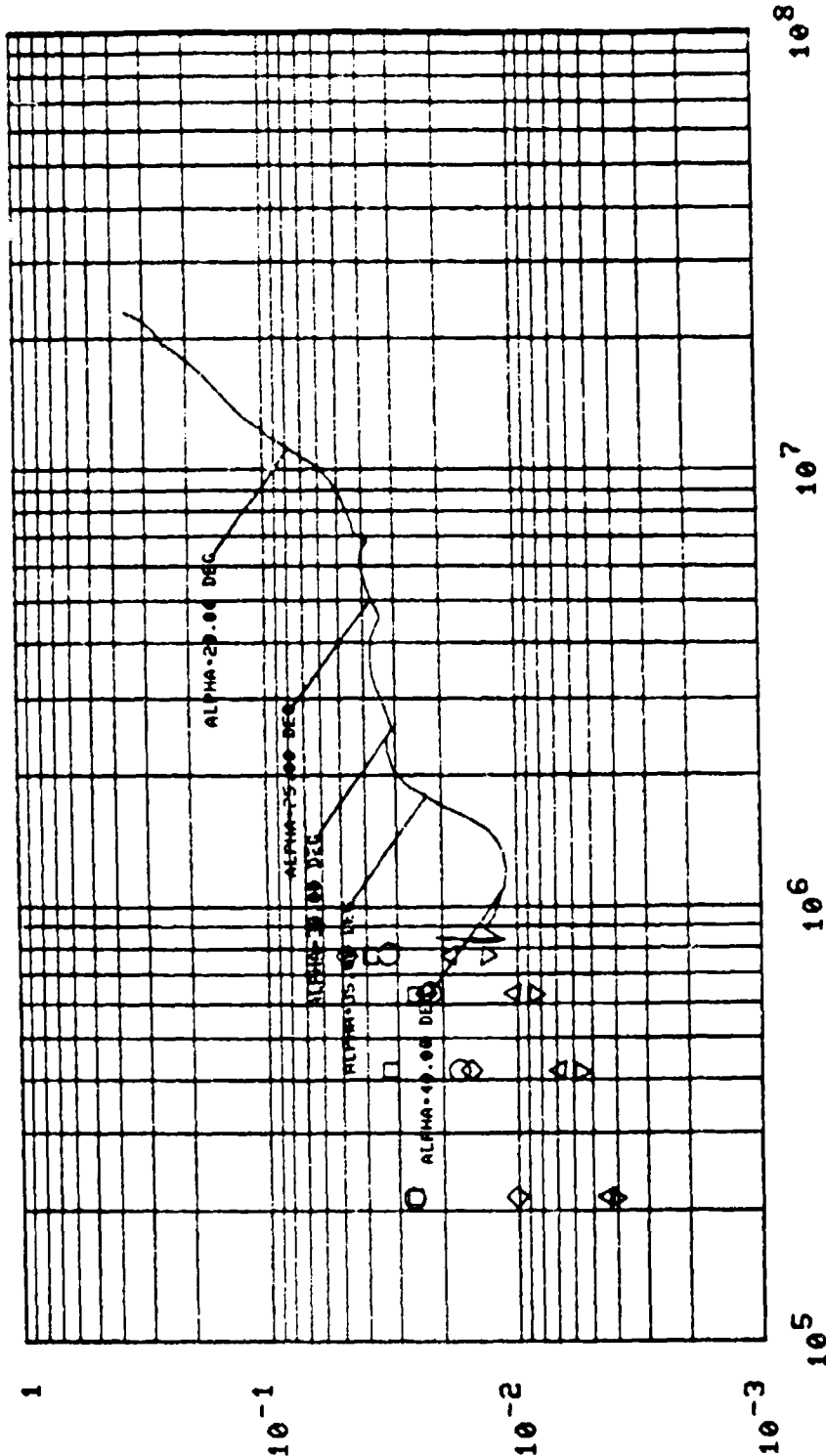
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A/H-PEF 565-1335 SEC

- AF ALPHA = 22.5 DEGREES
- AF ALPHA = 25.0 DEGREES
- AF ALPHA = 30.0 DEGREES
- AF ALPHA = 35.0 DEGREES
- AF ALPHA = 40.0 DEGREES



FILM COEFF - H/R-2222

04-19-83

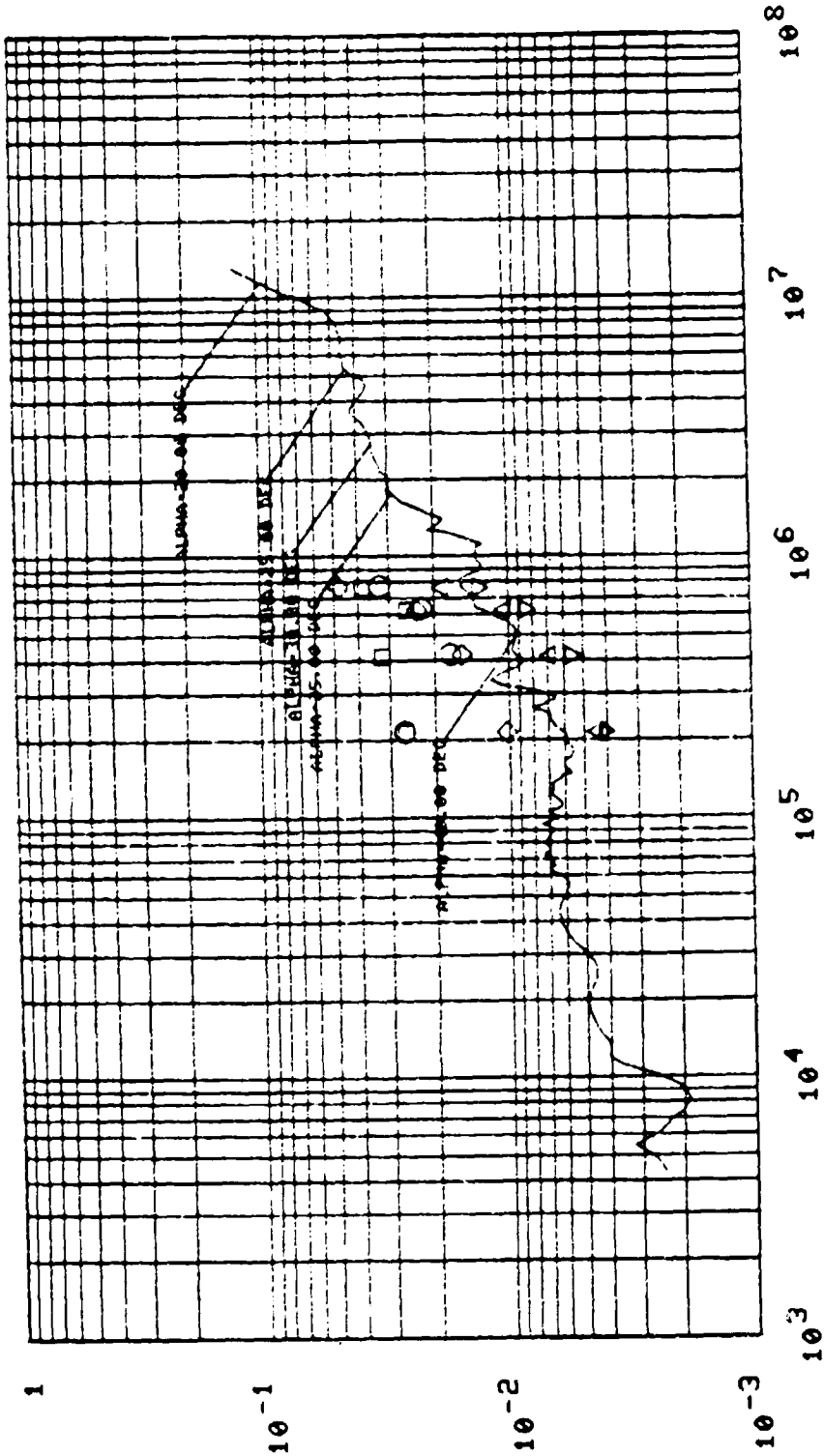
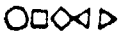
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REYNOLDS NUMBER (NS)

# STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 150-1350 SEC

- AF ALPHA - 22.5 DEGREES
- AF ALPHA - 25.0 DEGREES
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- AF ALPHA - 40.6 DEGREES



FILM COUNT RATE - H/H-REF

B-355

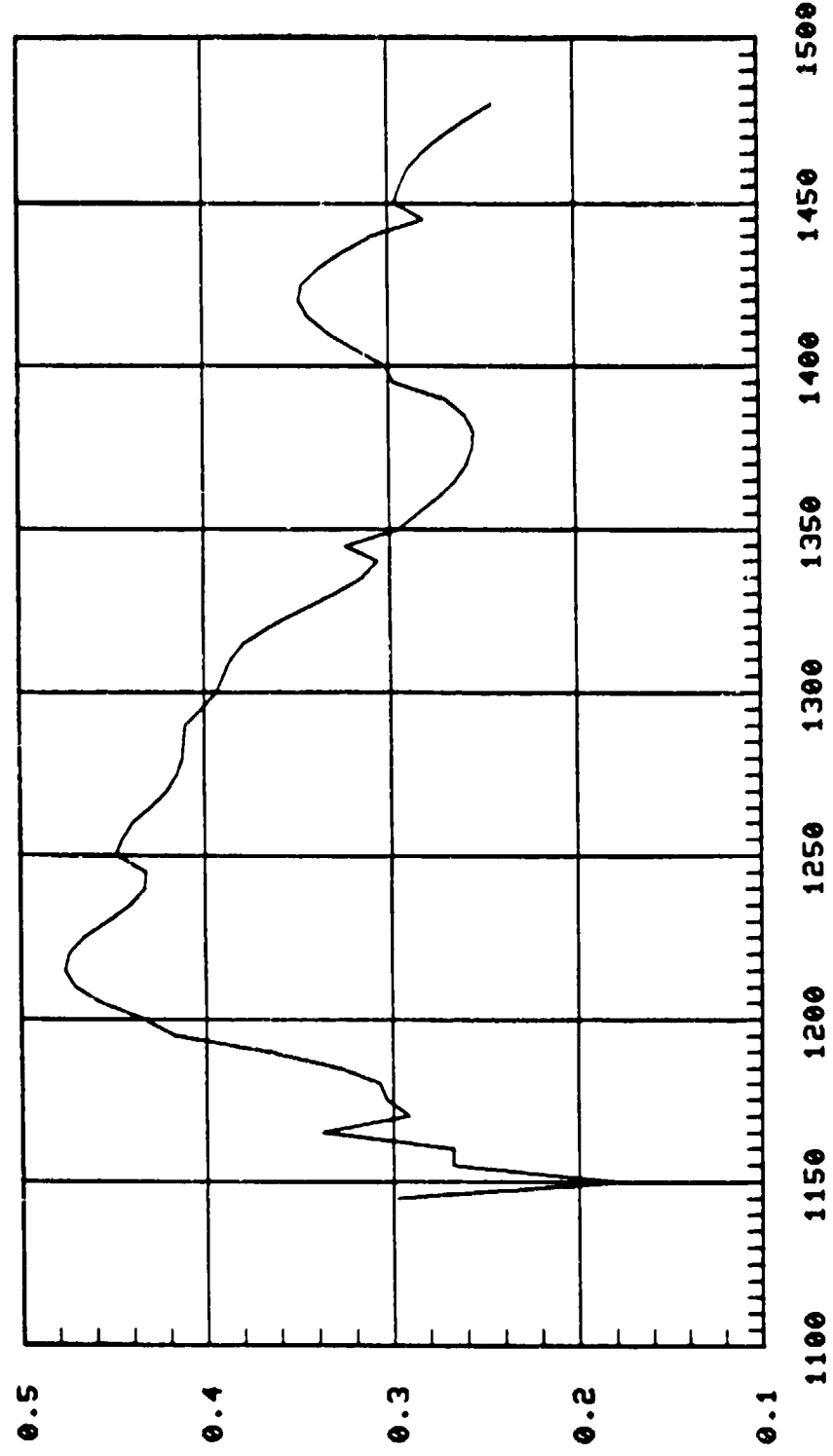
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04 15 83  
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REYNOLDS NUMBER (NS)

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A

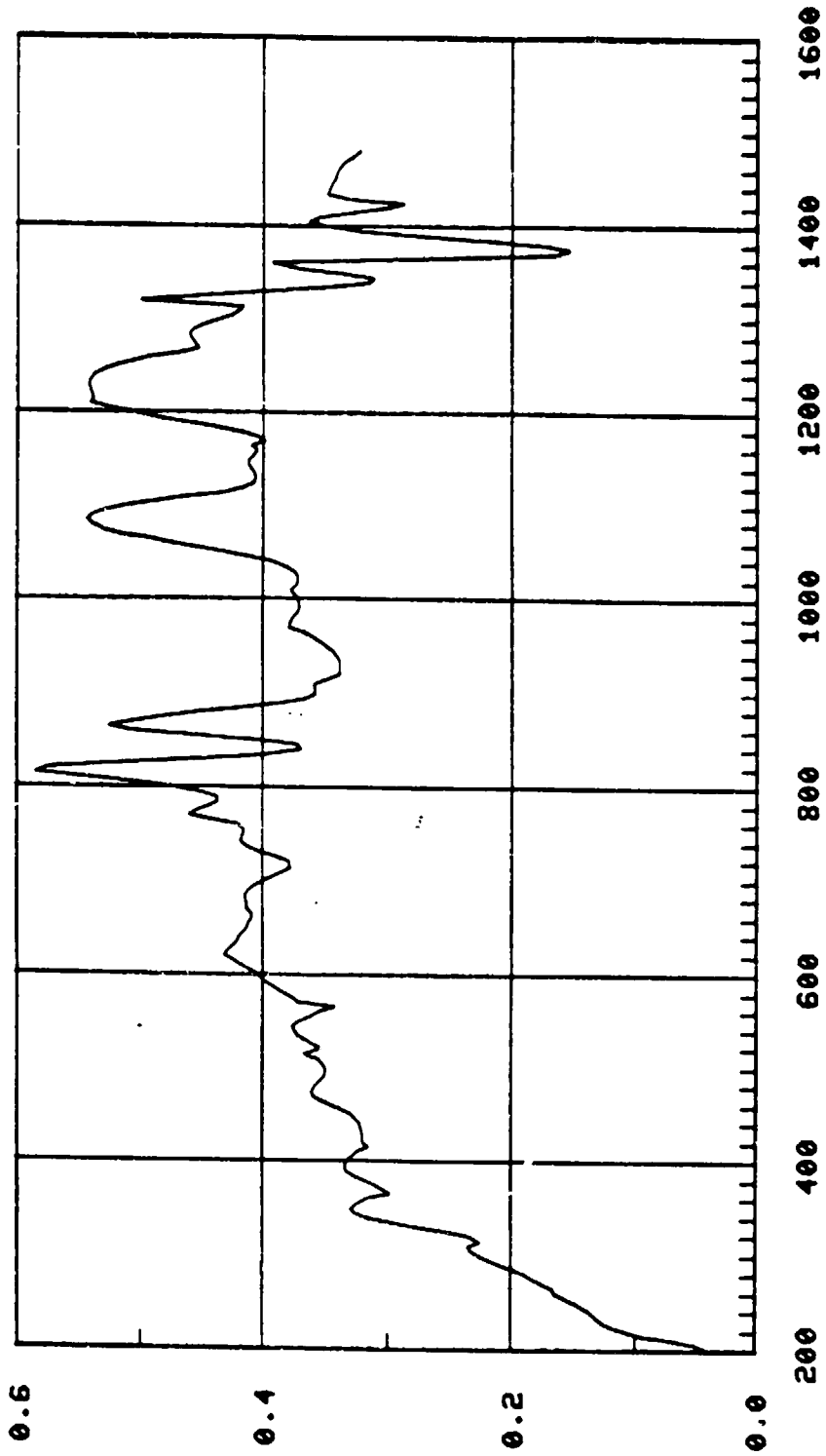


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HEATING RATE : BTU/FT\*HR : SEC

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A



HEATING RATE : BTU/FT\*HR : SEC

B-357

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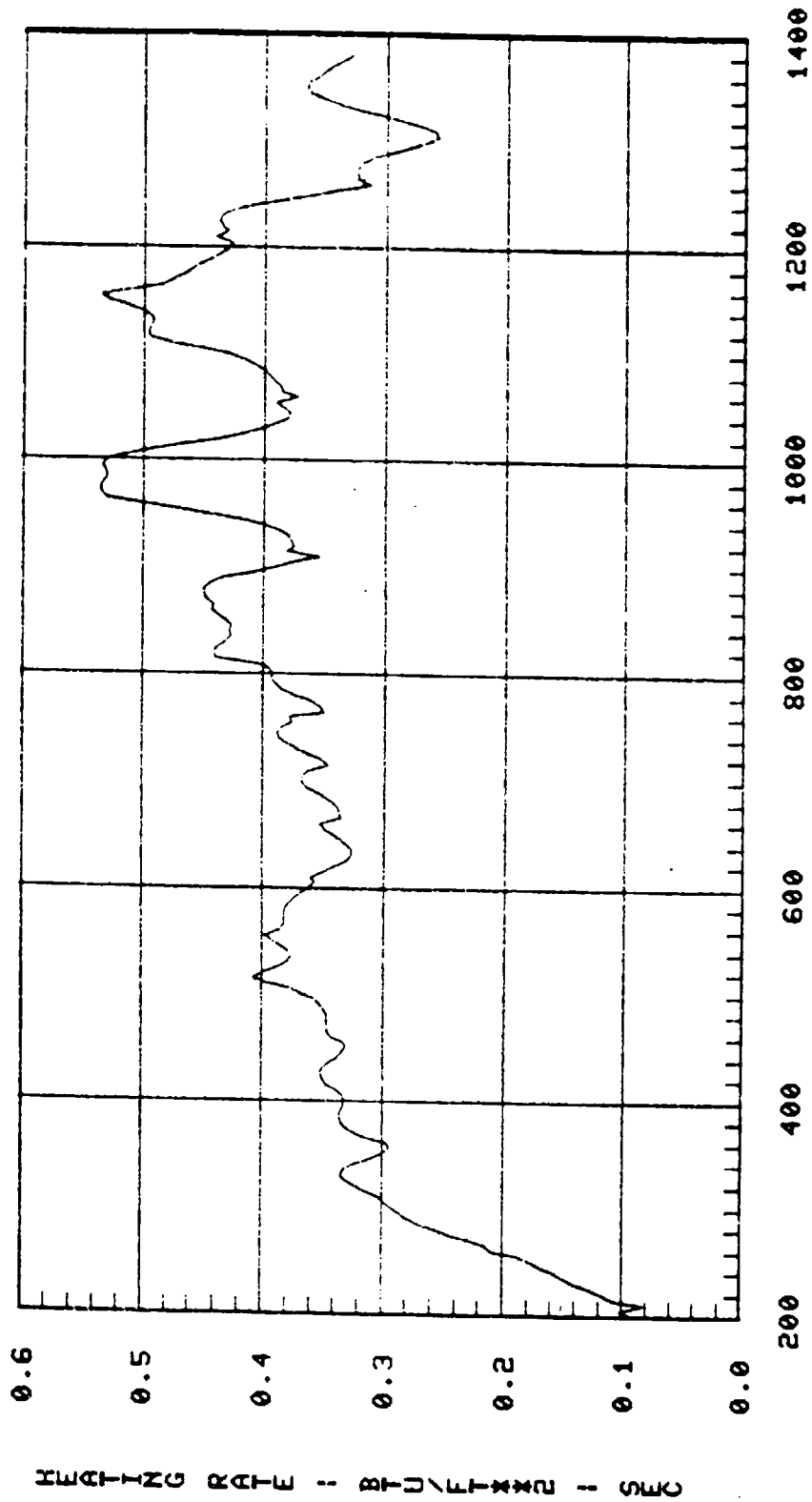
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TIME - SECONDS



STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A



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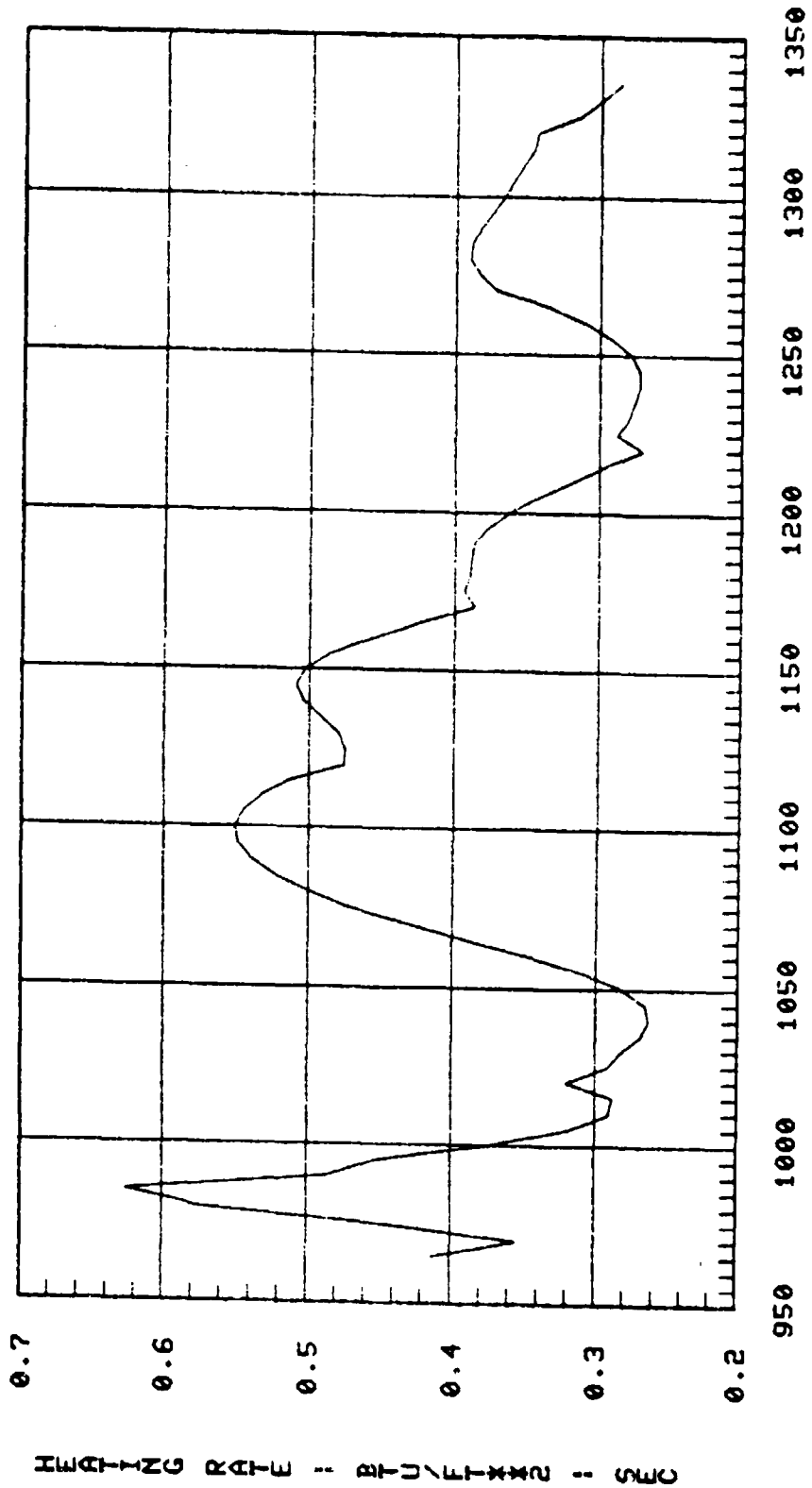
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TIME - SECONDS

04-19-83

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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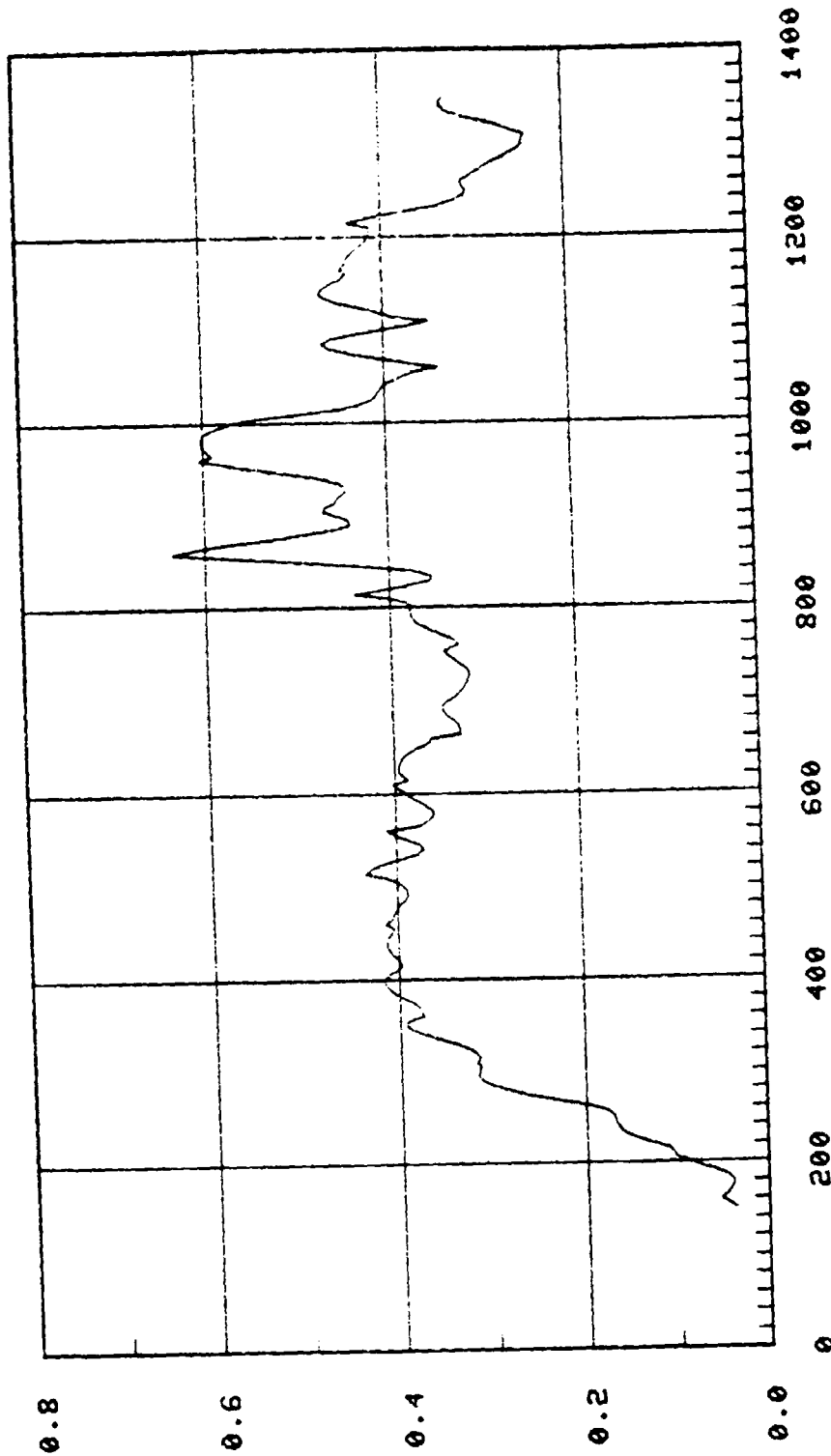
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TIME - SECONDS

04-19-83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A



HEATING RATE -- BTU/FT\*HR -- SEC

B-360

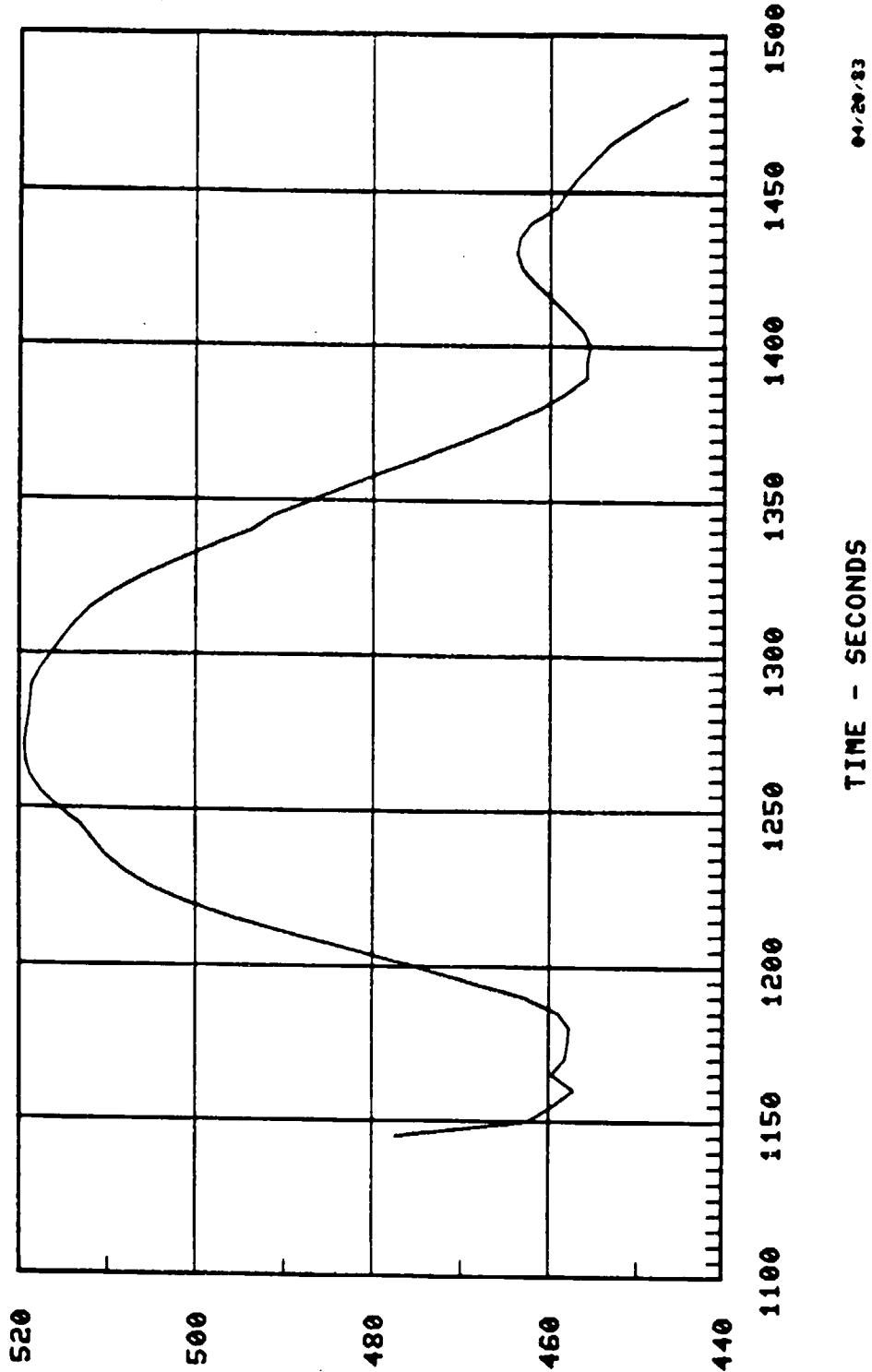
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TIME - SECONDS

STS-1 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A



TEMPERATURE - F

B-361

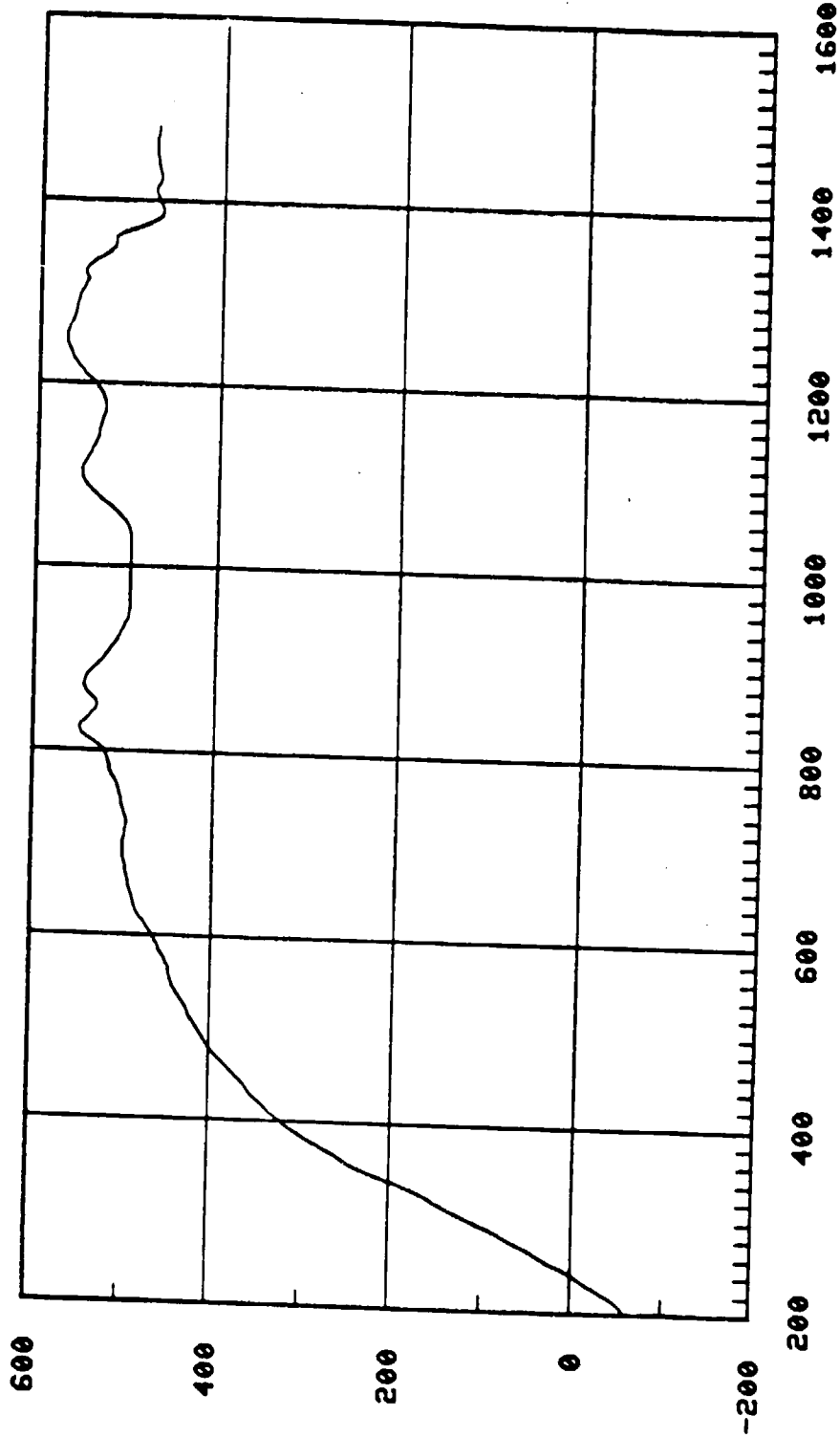
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A



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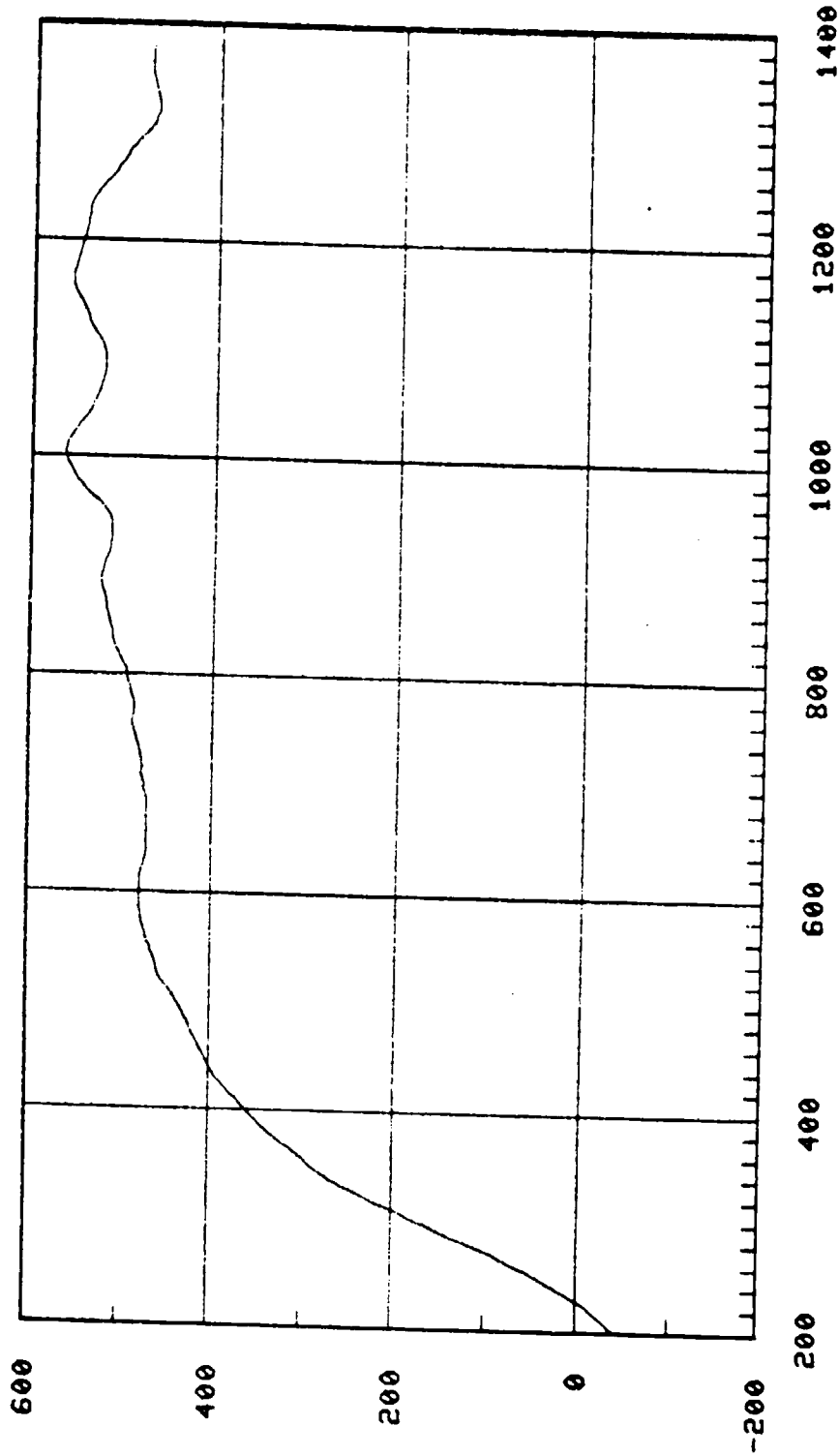
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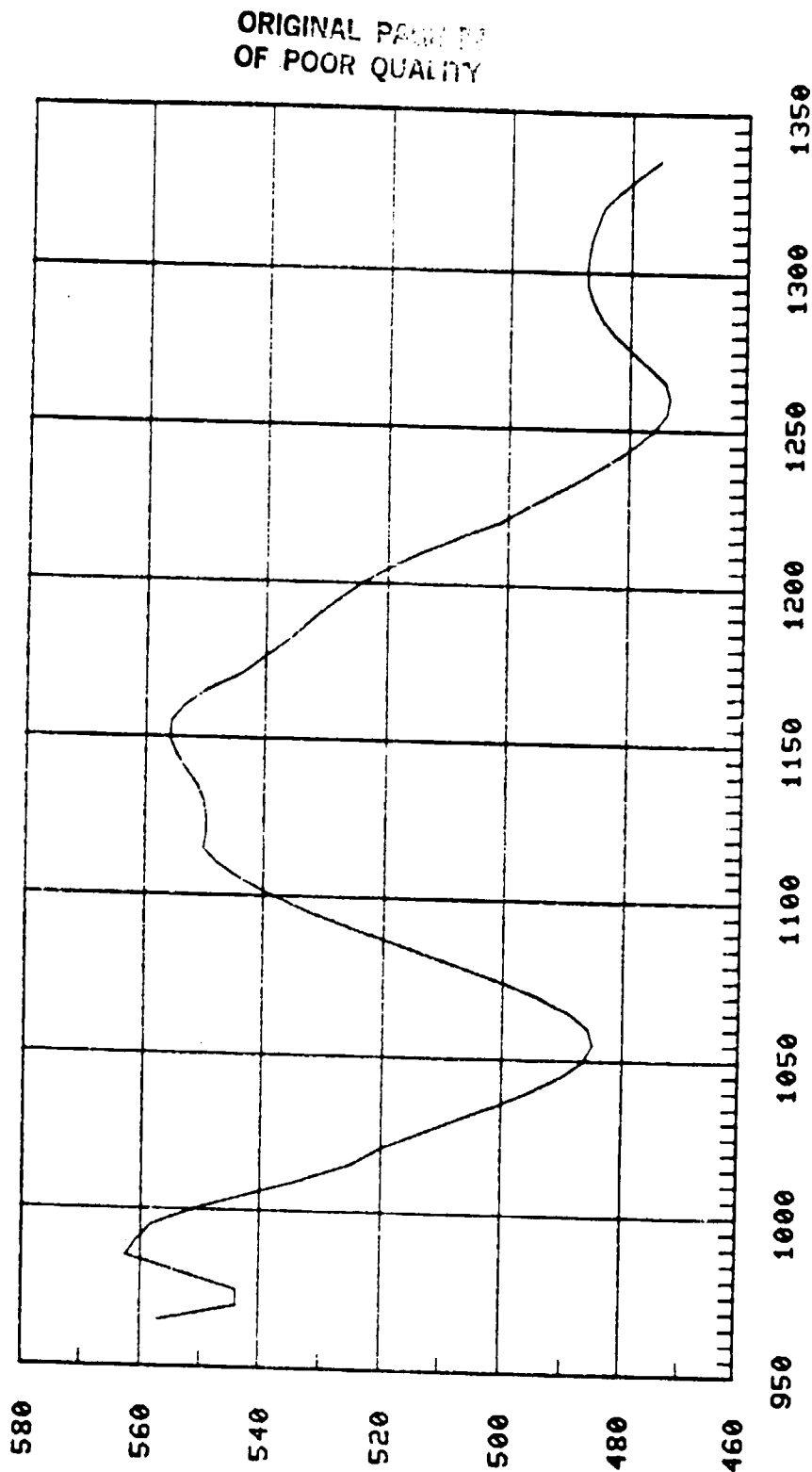
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FEET-PODS -- F

B-363

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ 00979832A



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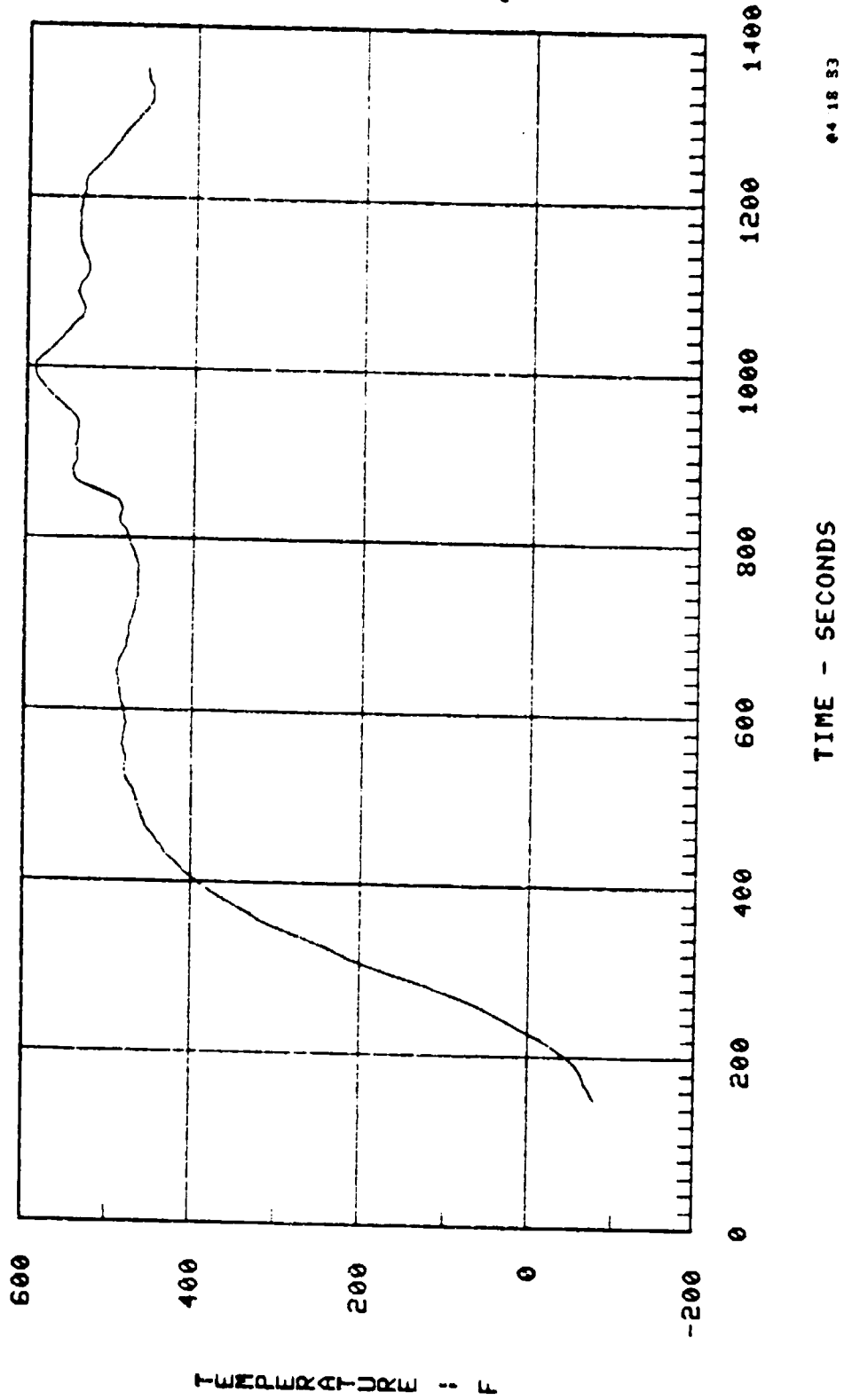
B-364

TIME - SECONDS

04/19 83

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U09T9832A



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TIME - SECONDS

FUEL FLOW RATE - F

B-365

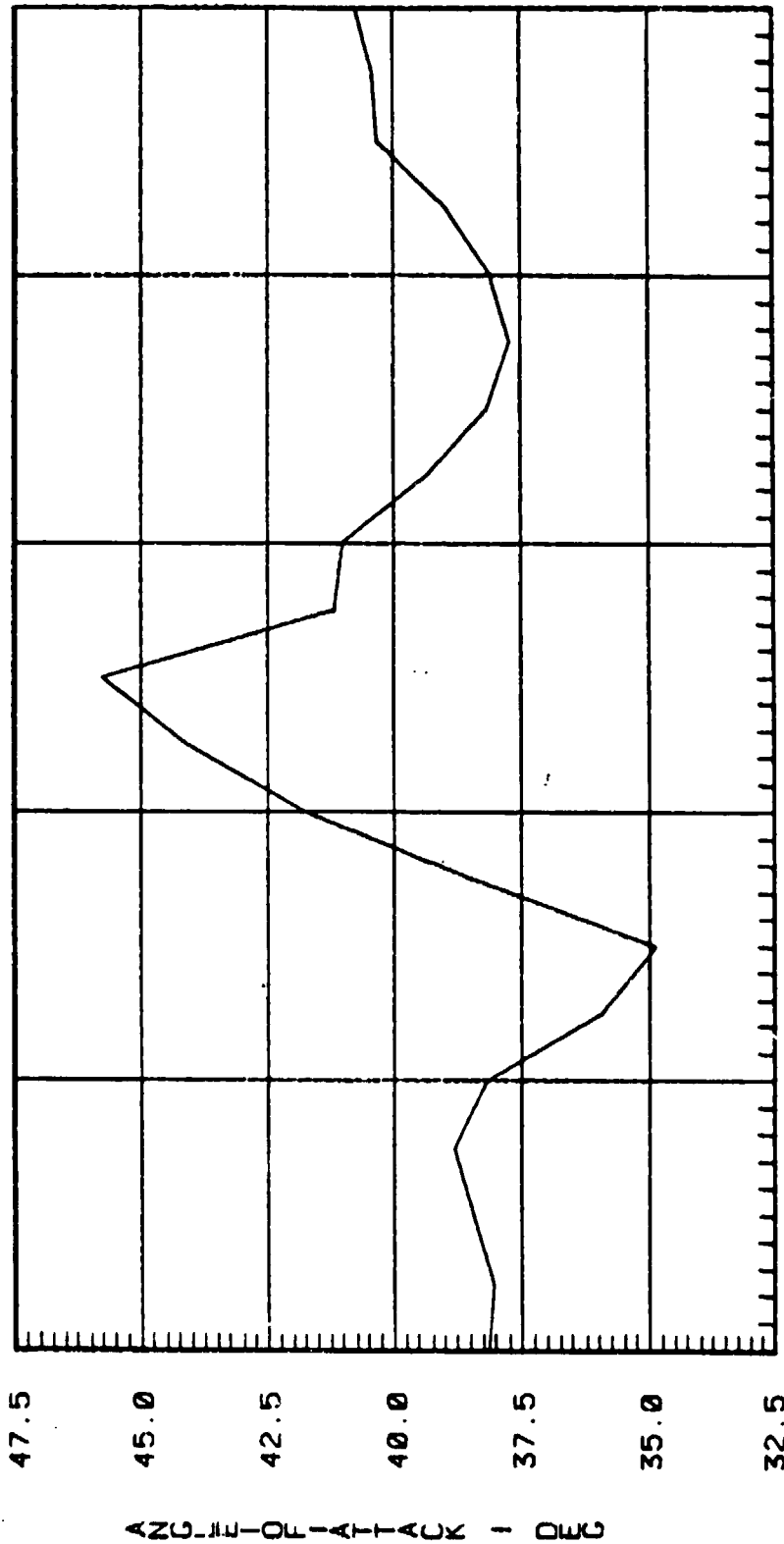


APPENDIX C  
CORRELATION PARAMETERS - SHORT RANGE

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700- 000 SEC

STS-2



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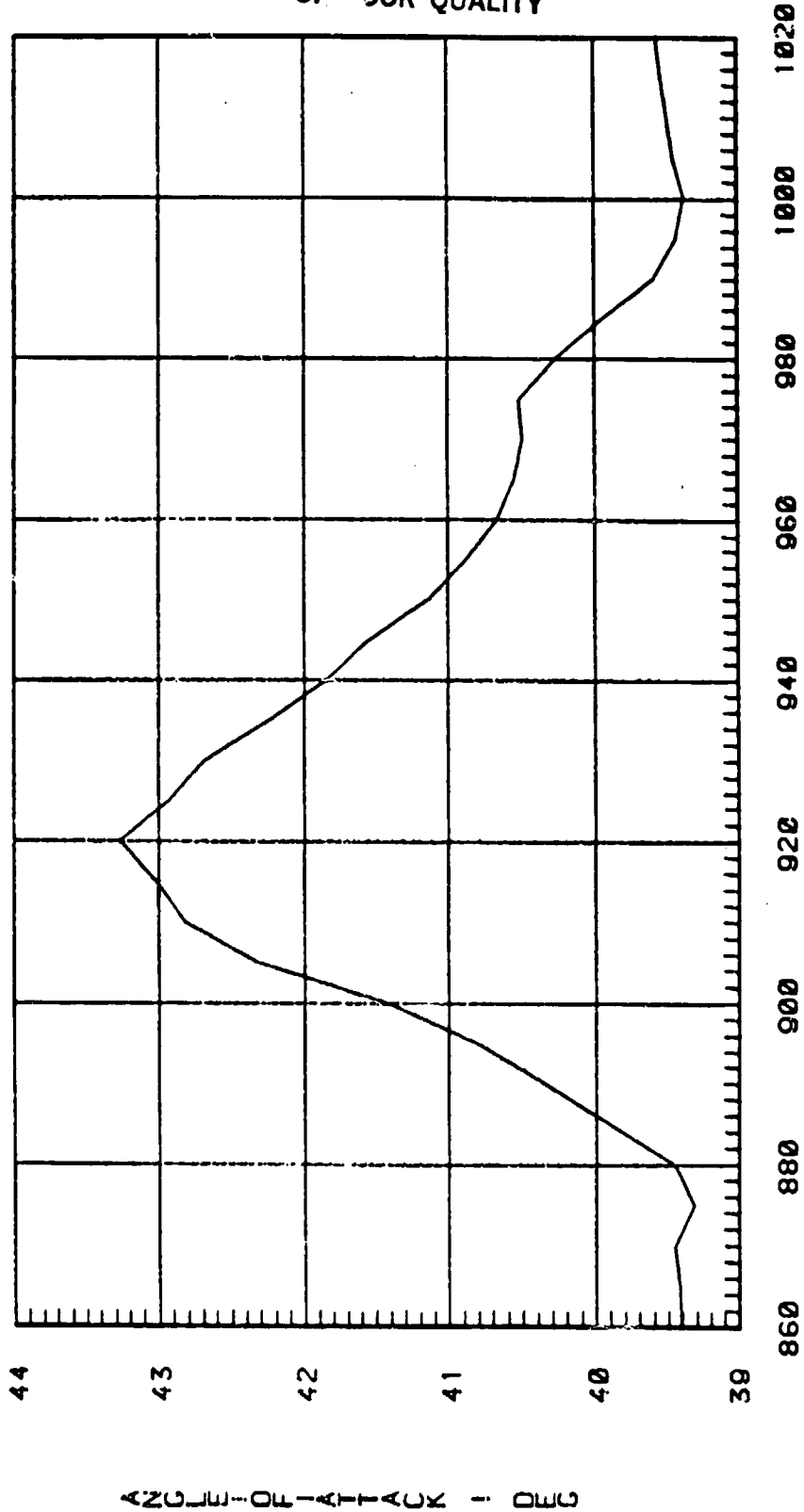
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TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

STS-3  
868-1828 SEC

STS-3



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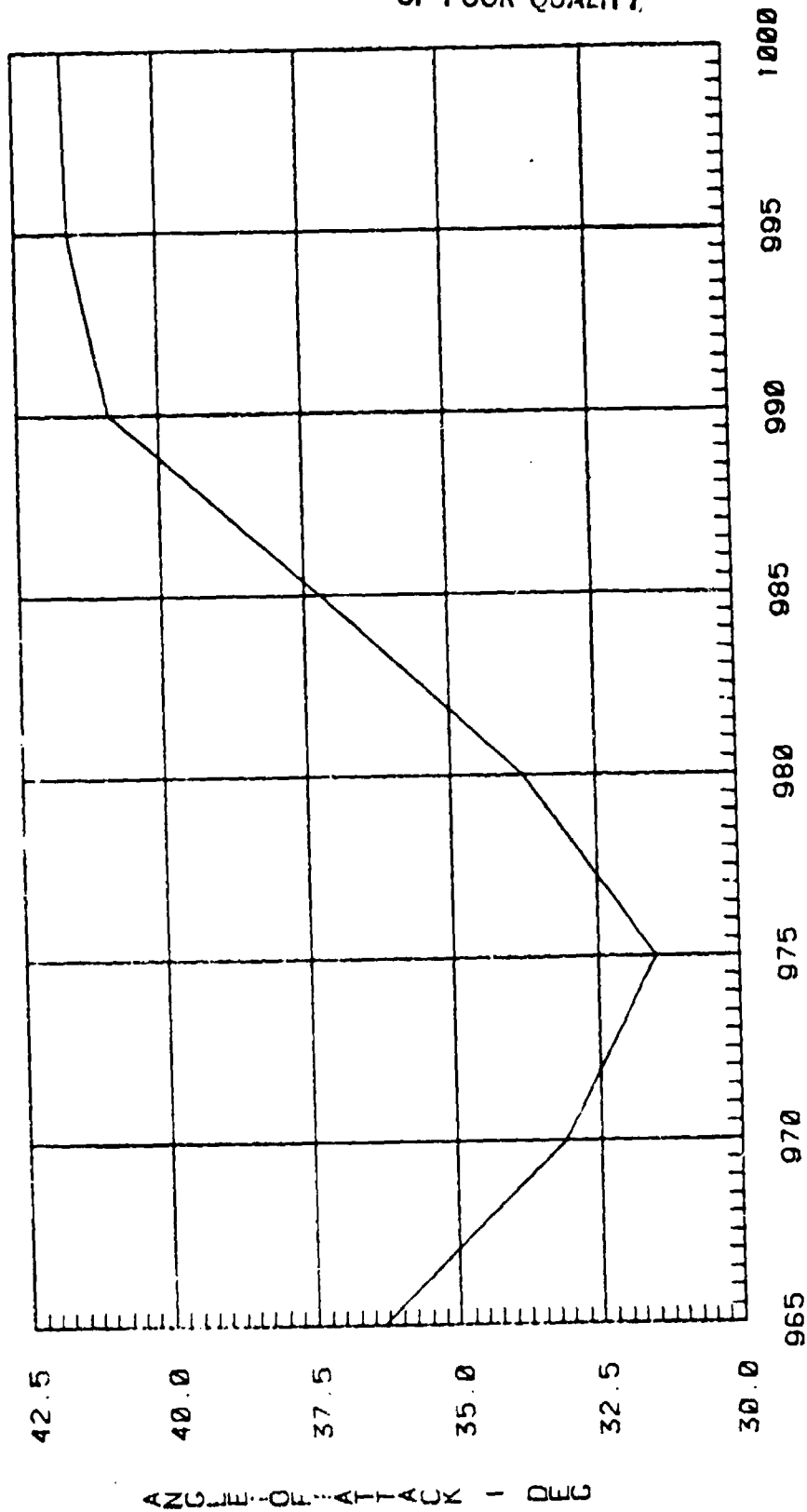
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ANGLE OF ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

875-4  
095-1000 SEC



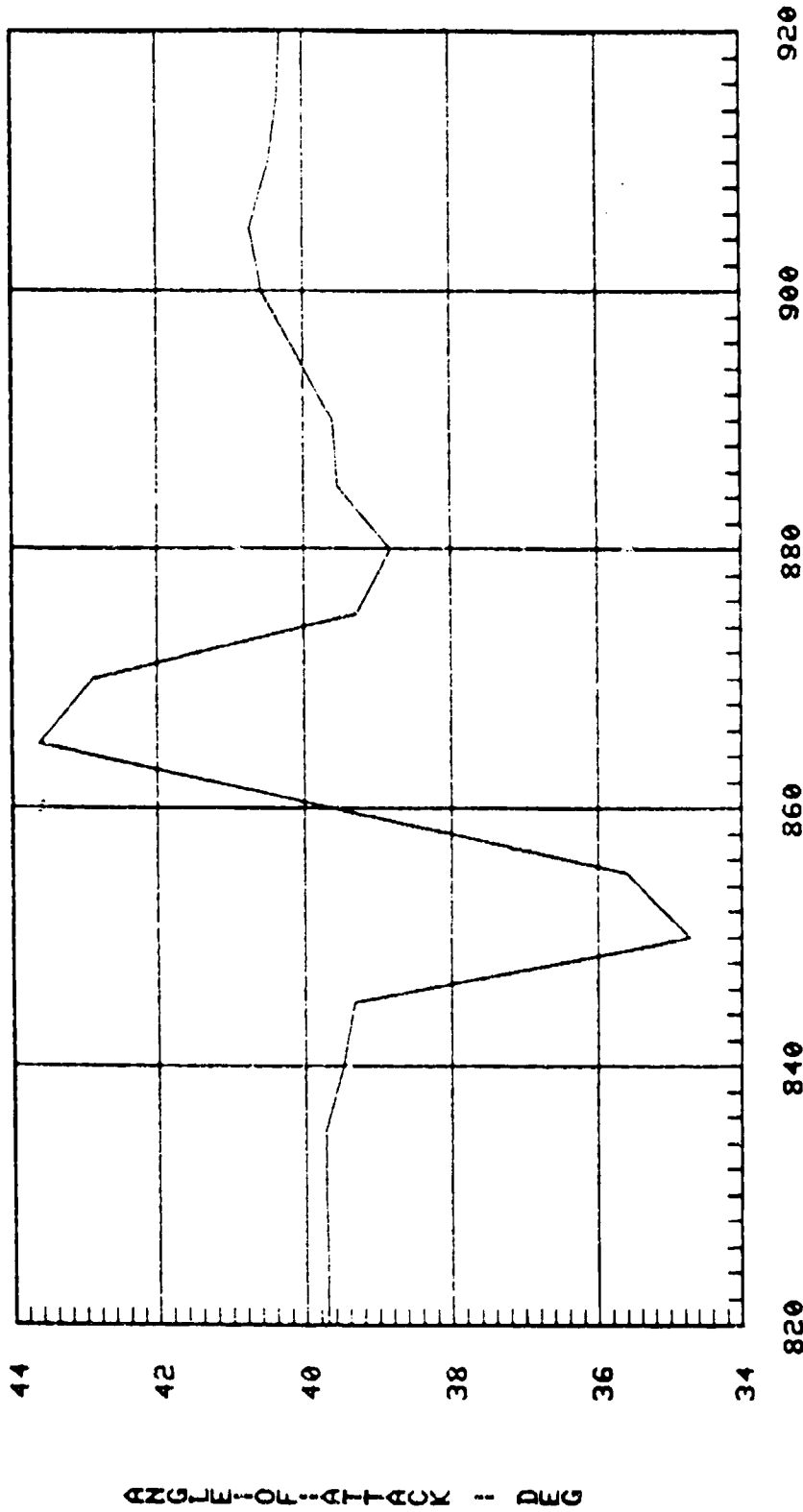
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STS-5 (10? FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

820- 920 SEC

STS-5



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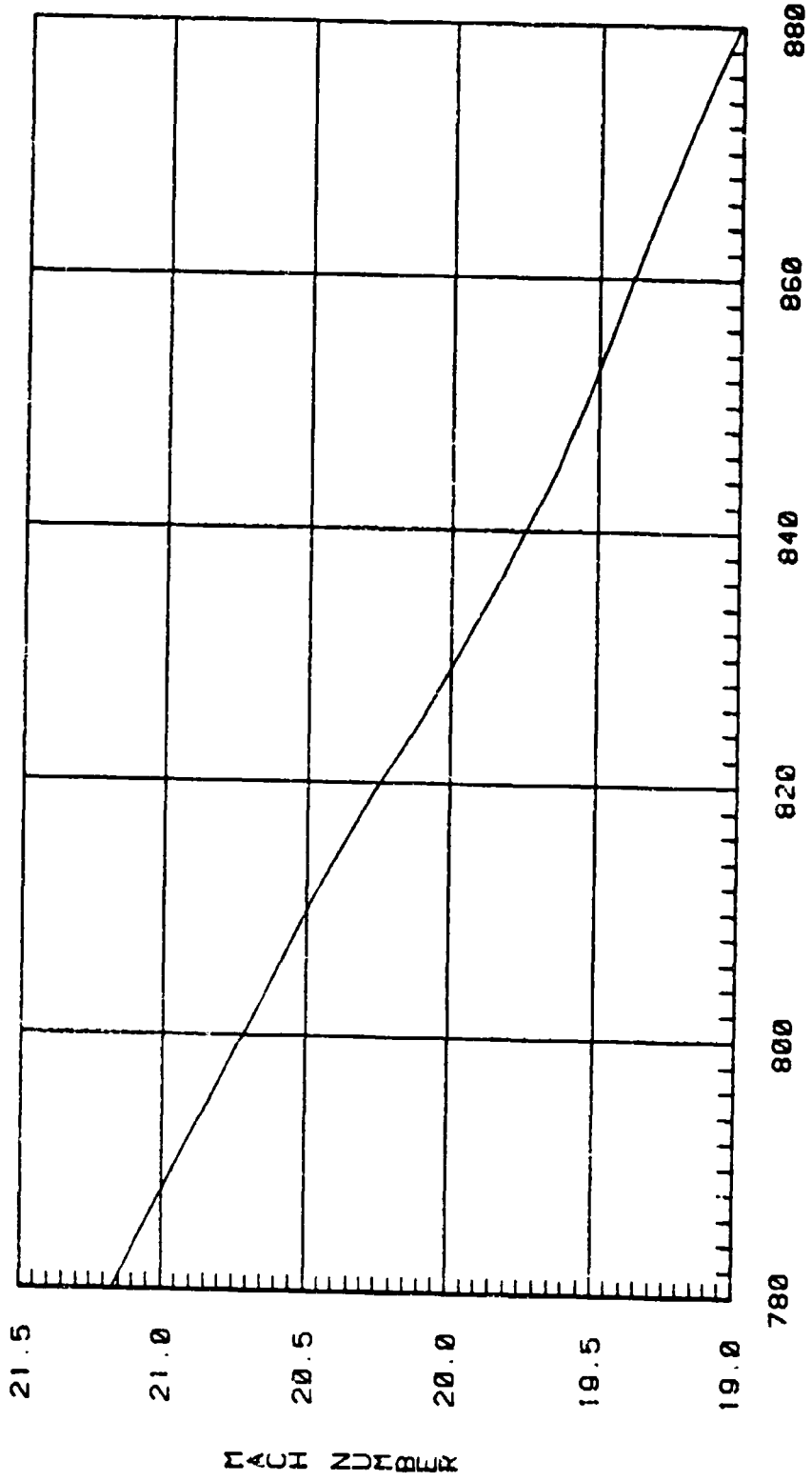
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700-000 SEC

STS-2



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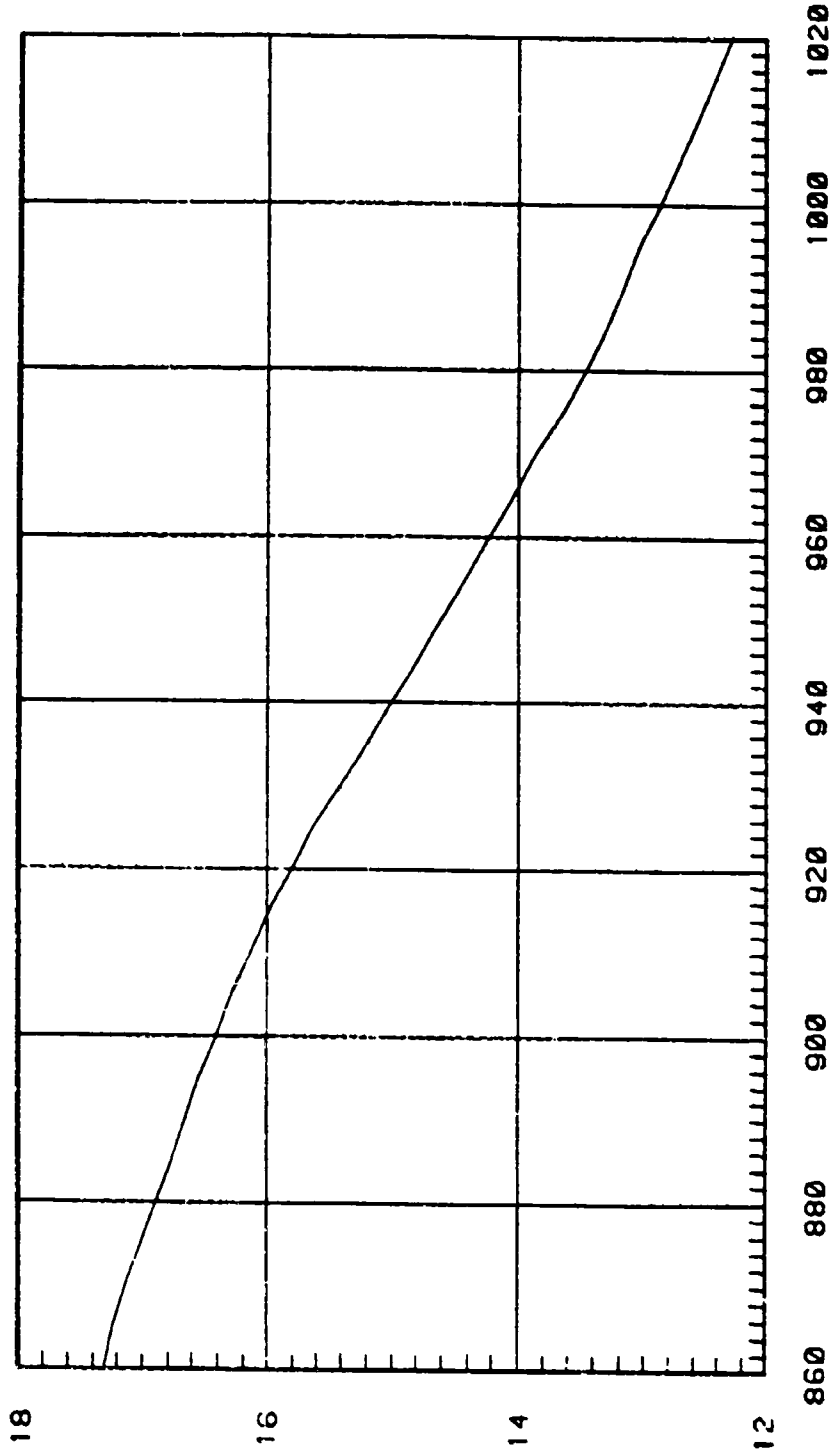
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STS-3  
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STS-3



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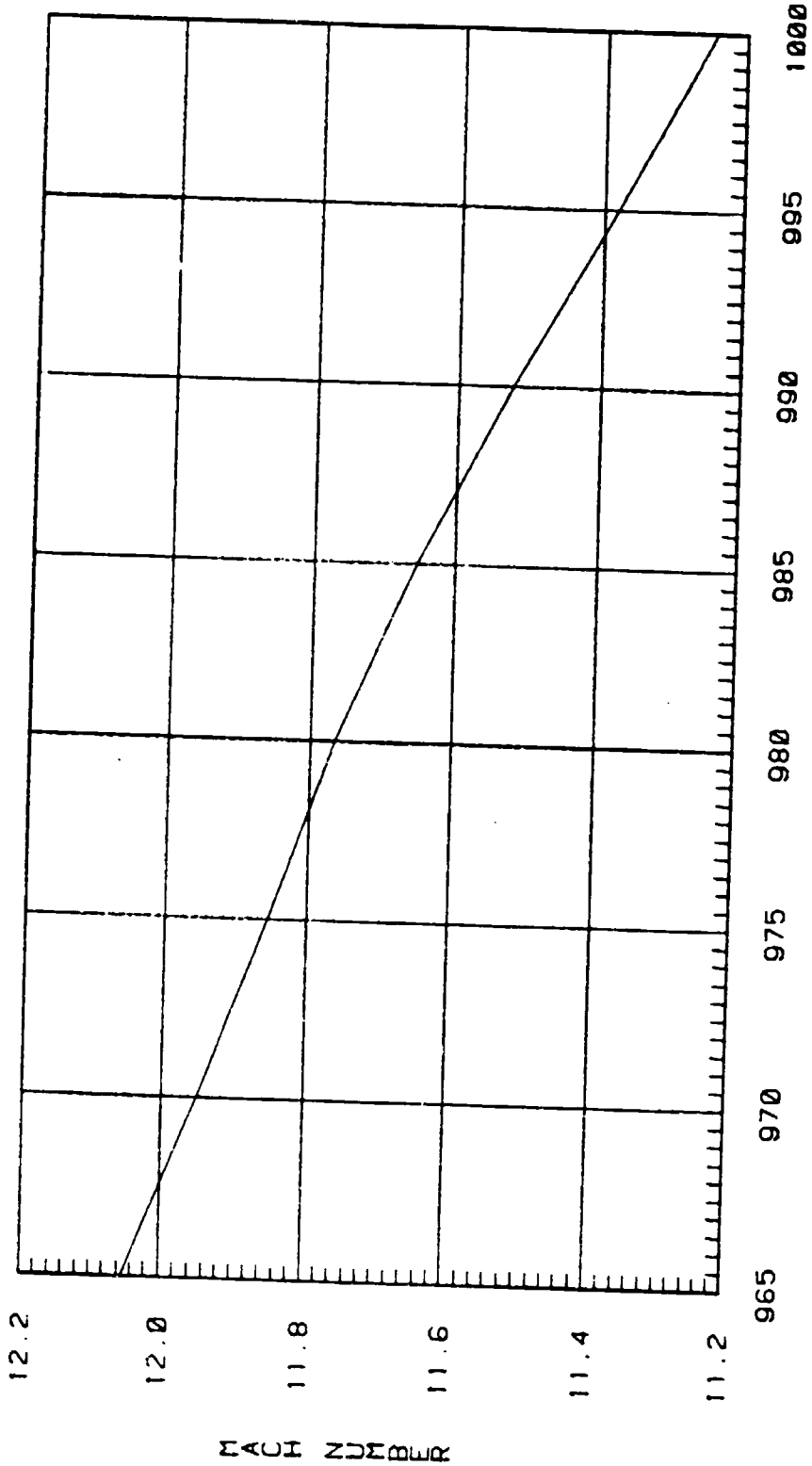
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005-1000 SEC

STS-4



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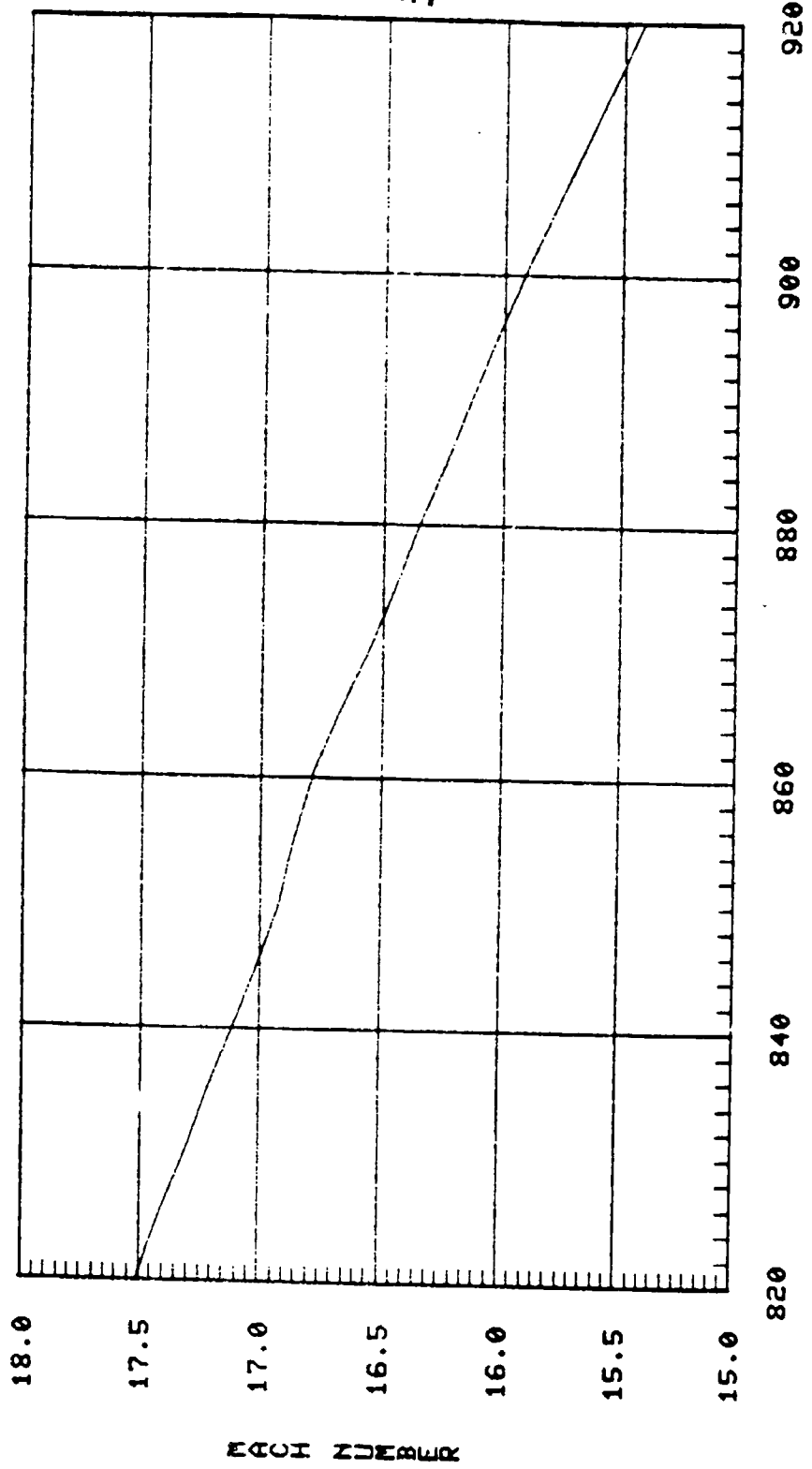
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TIME - SECONDS



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320- 920 SEC



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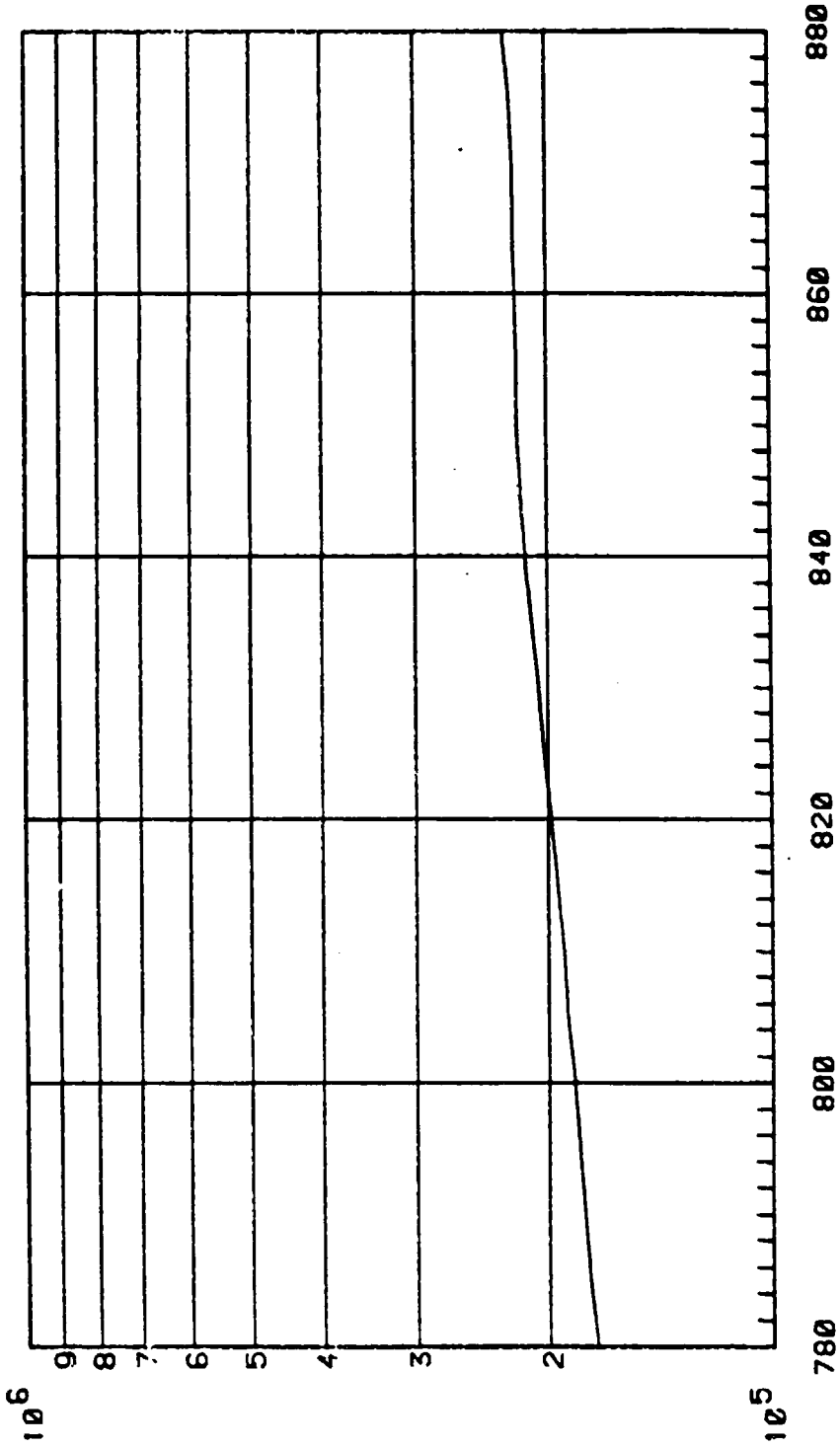
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TIME - SECONDS

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STS-2 700-000 SEC

STS-2



REYNOLDS NUMBER (NS)

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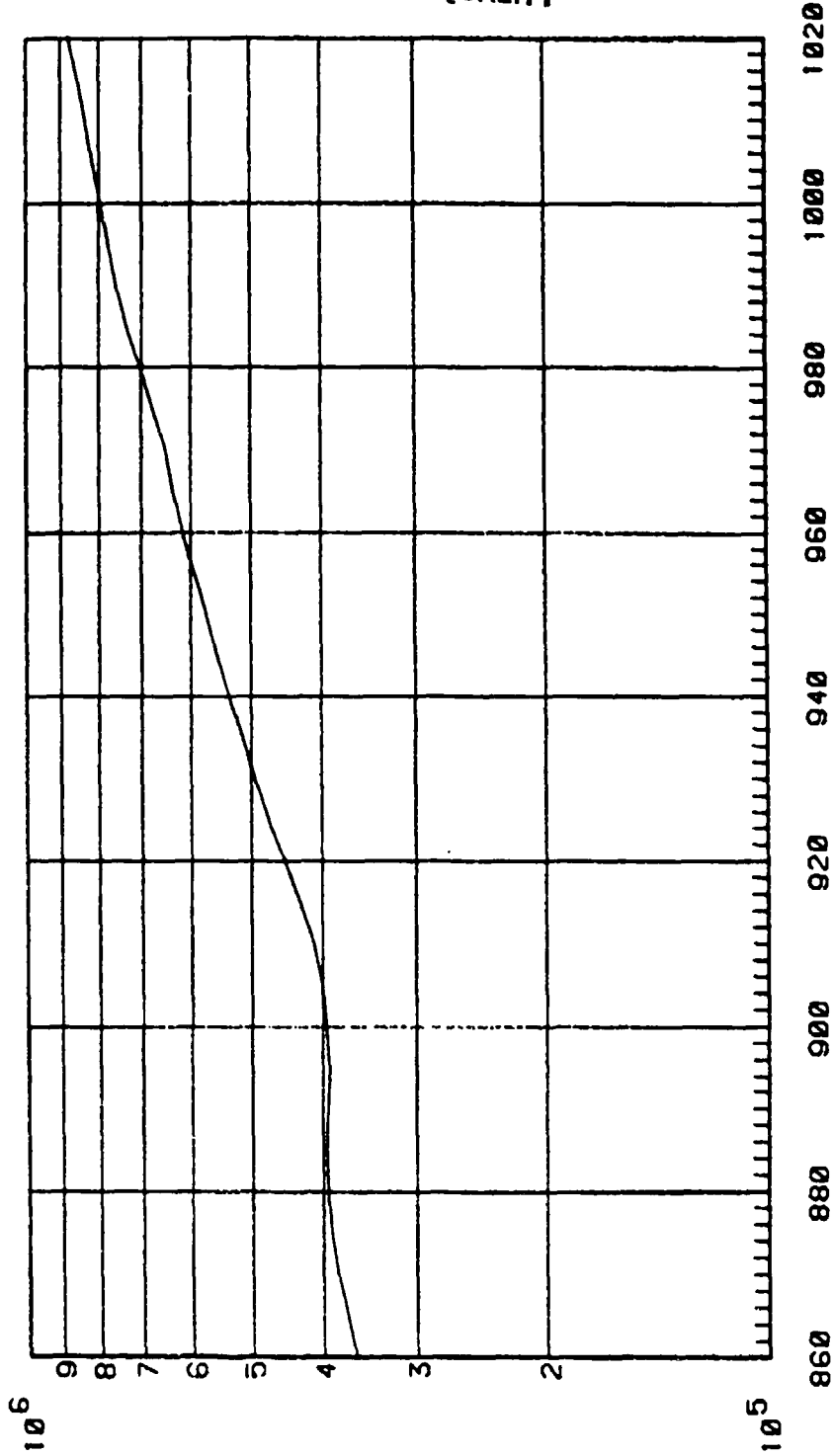
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000-1020 SEC

STS-3



REYNOLDS NUMBER (NS)

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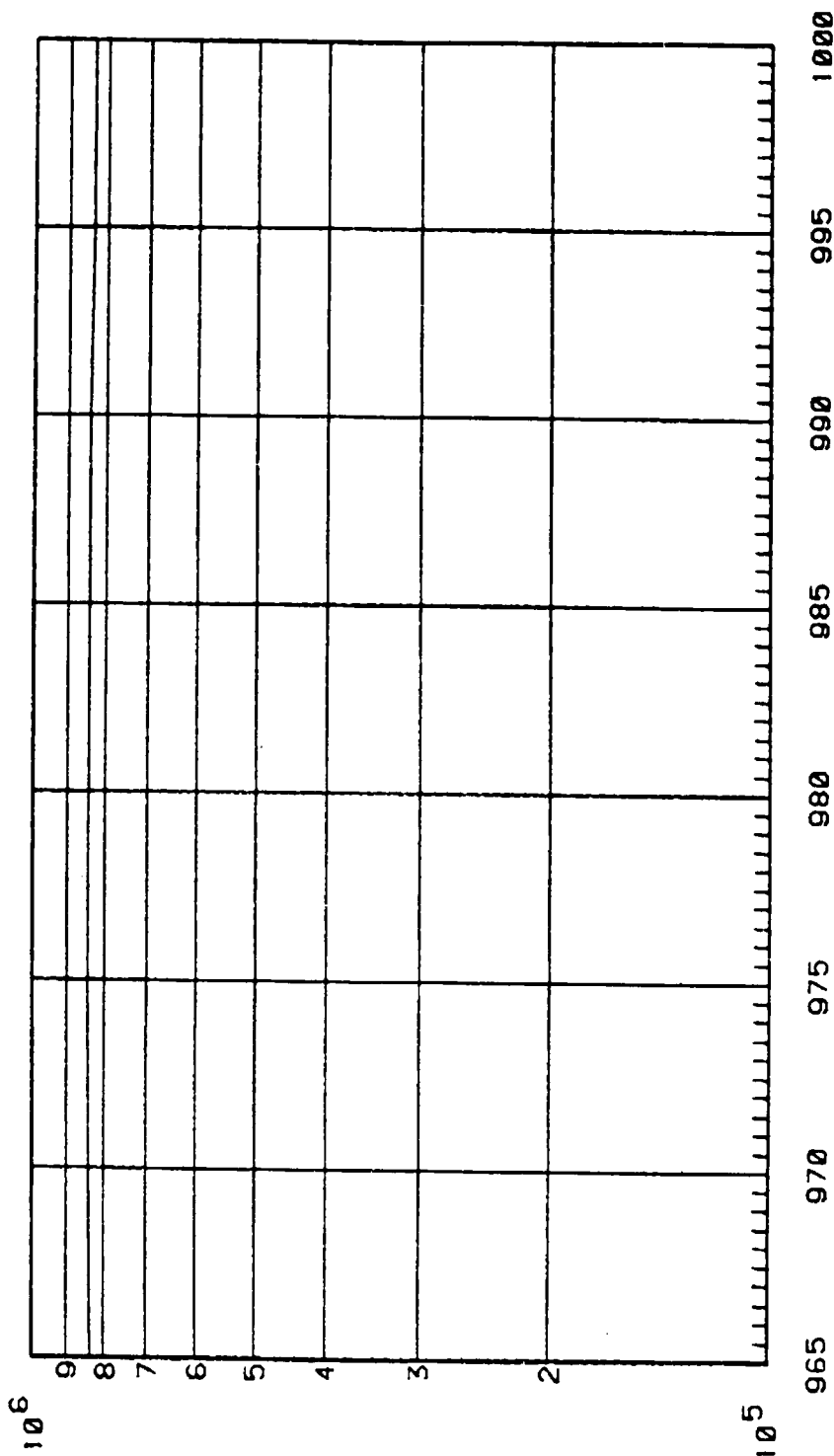
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STS-4

005-1000 SEC



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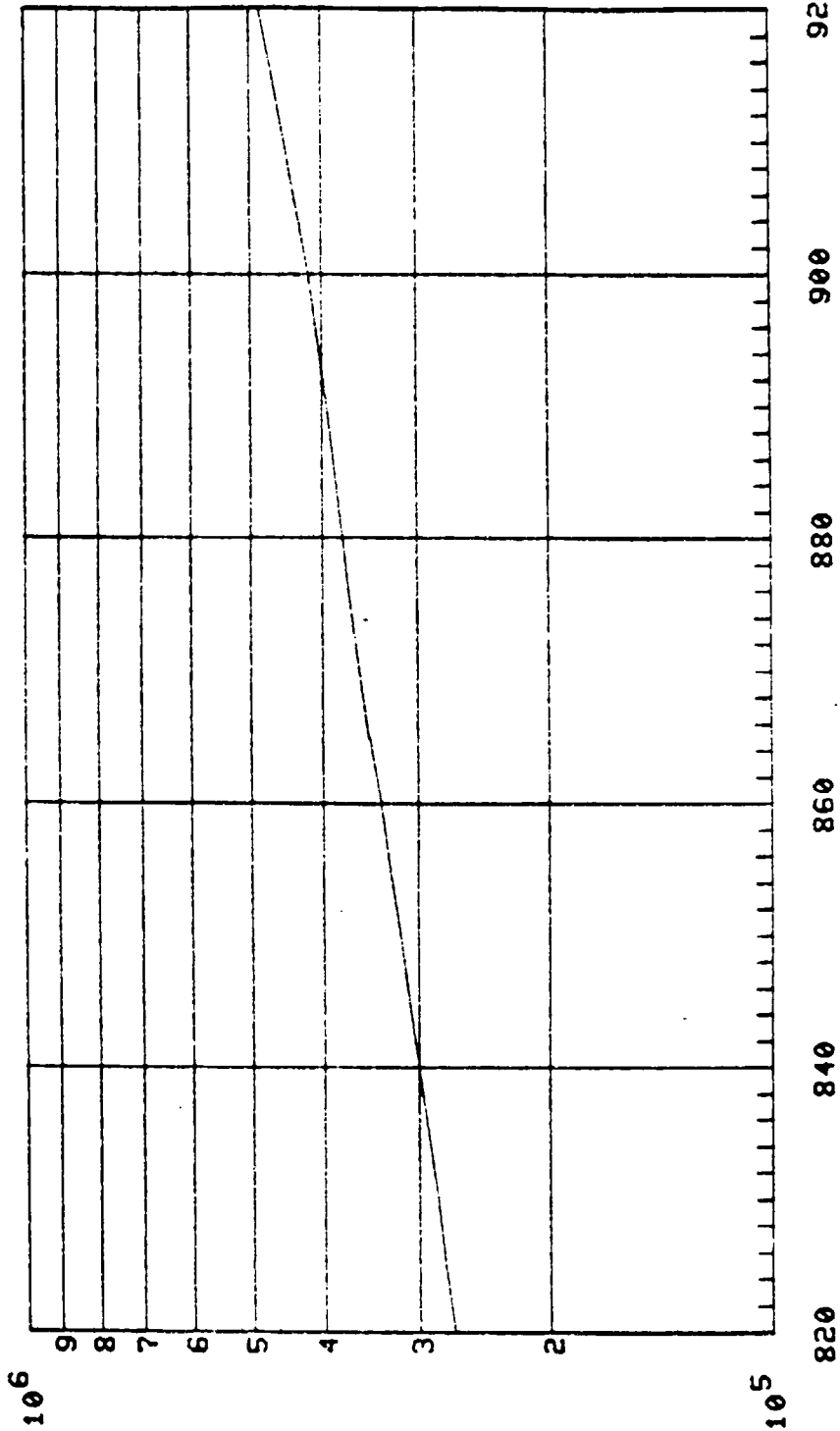
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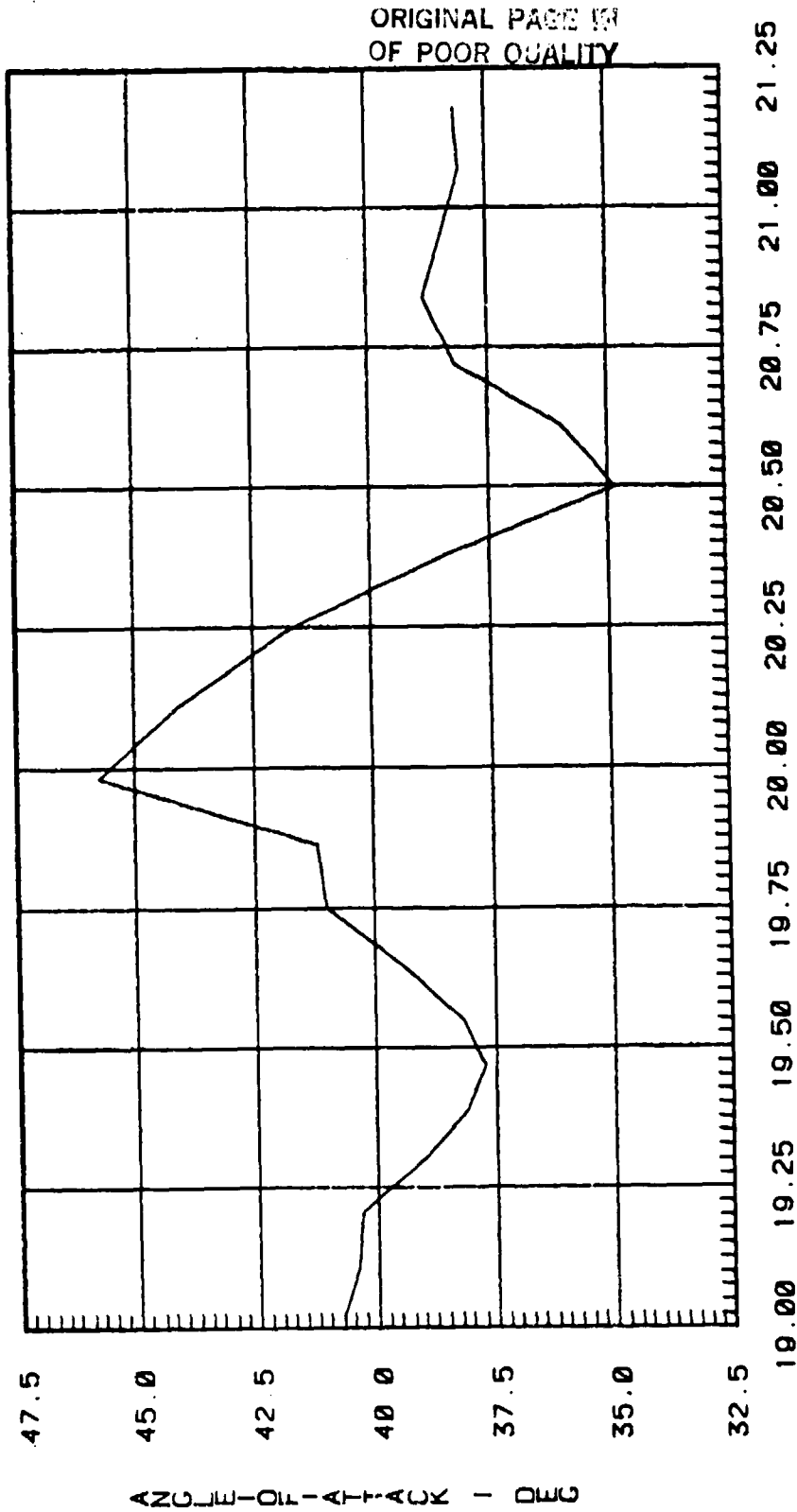
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STS-2



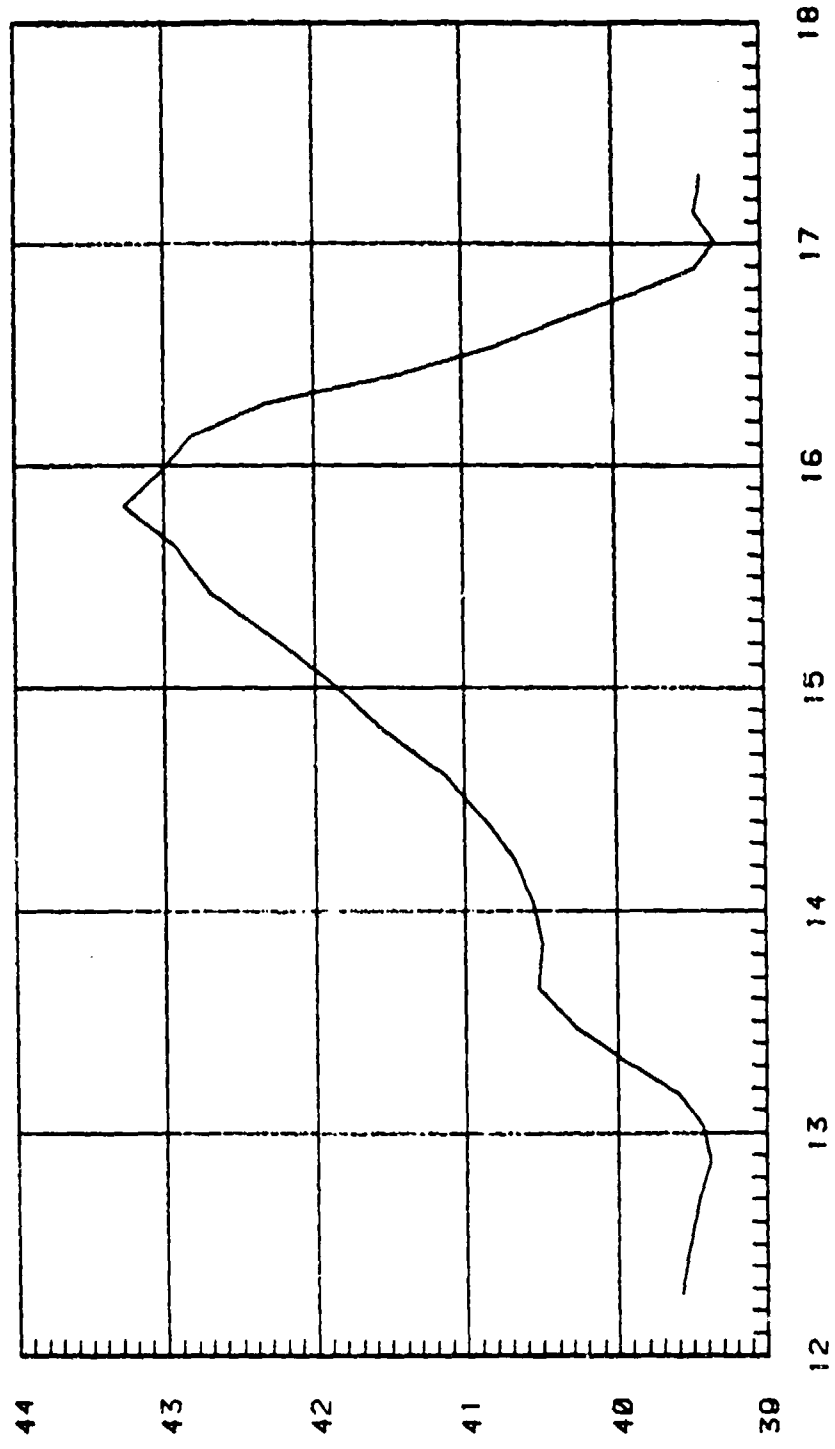
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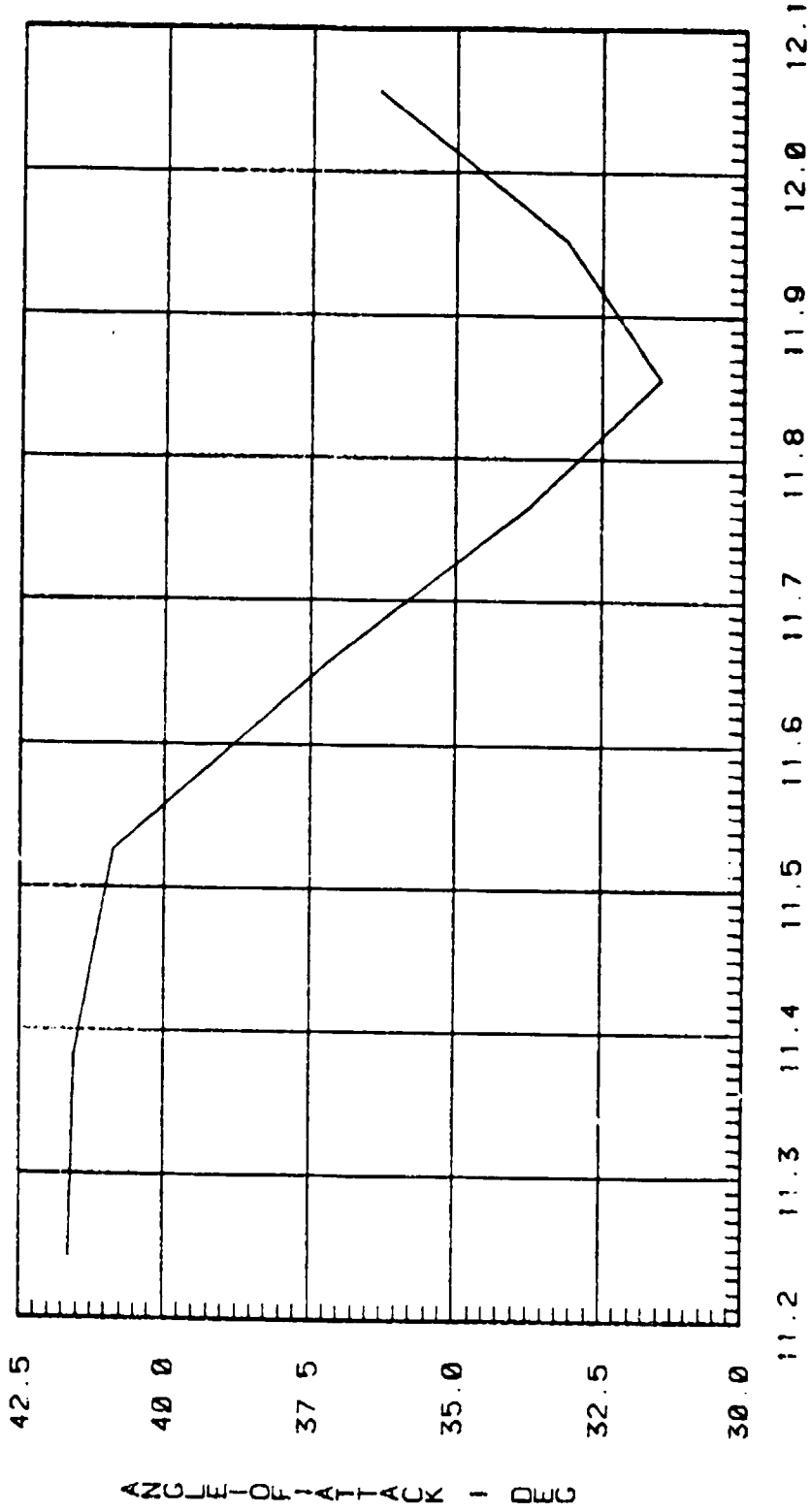
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STS-4



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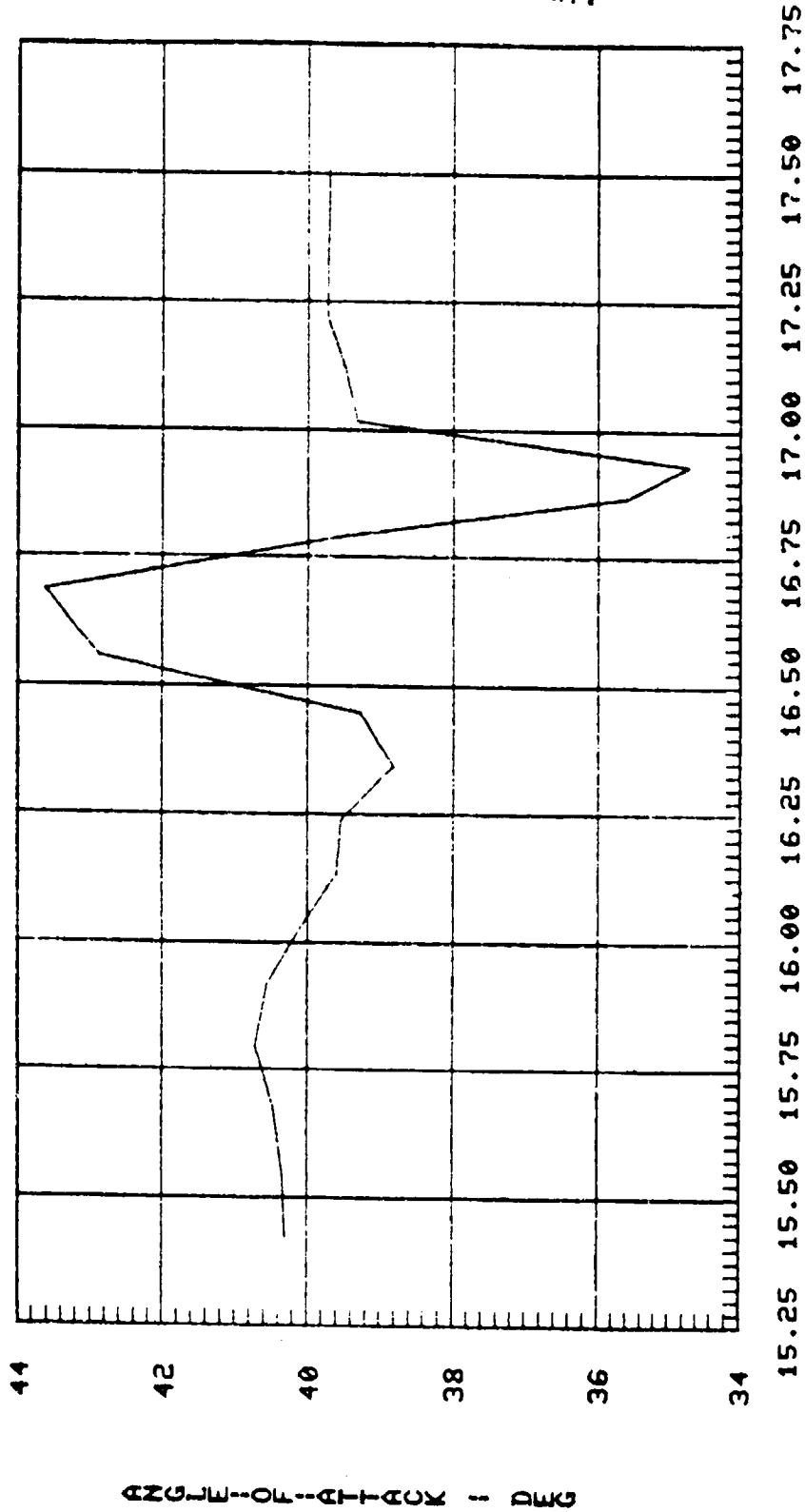
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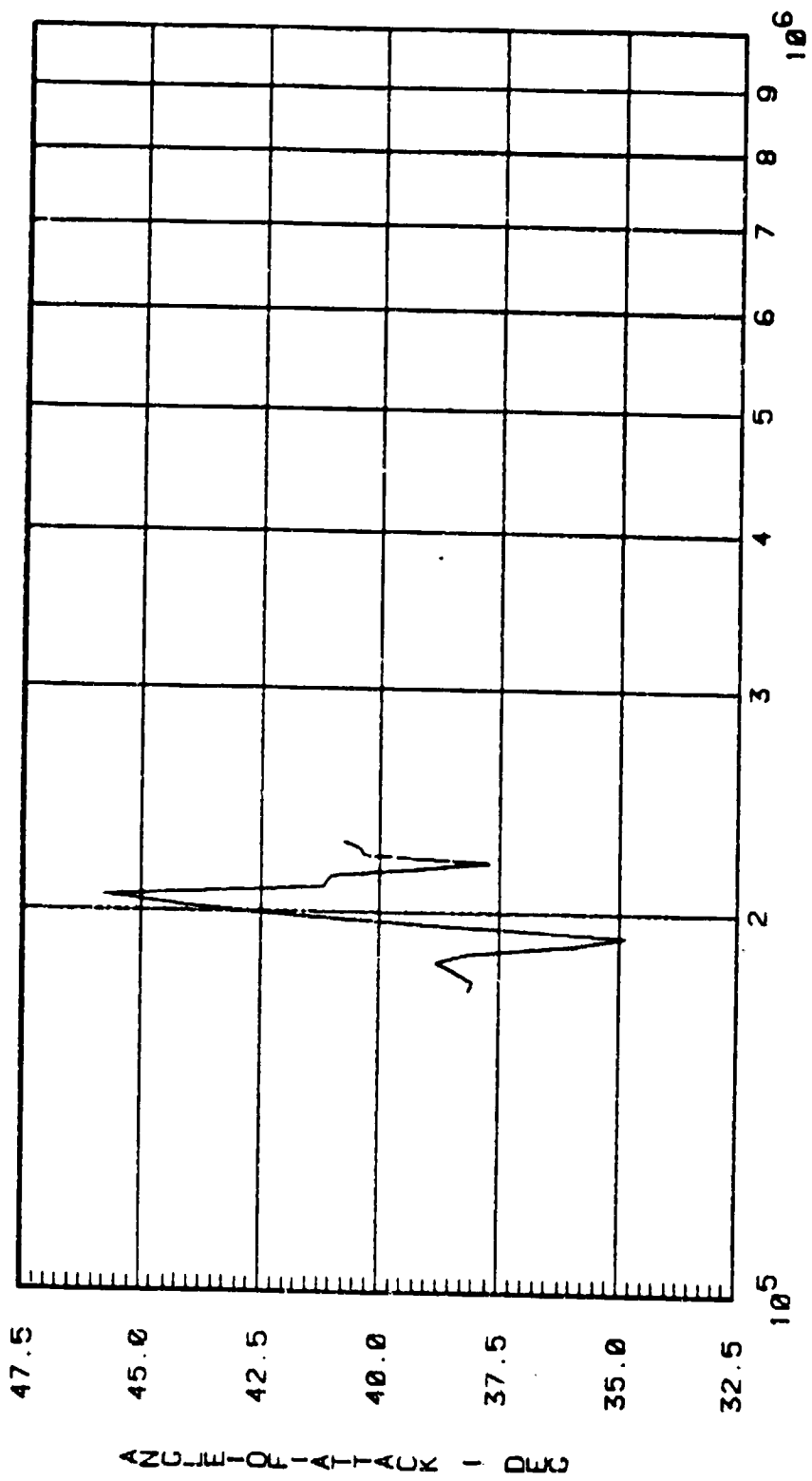
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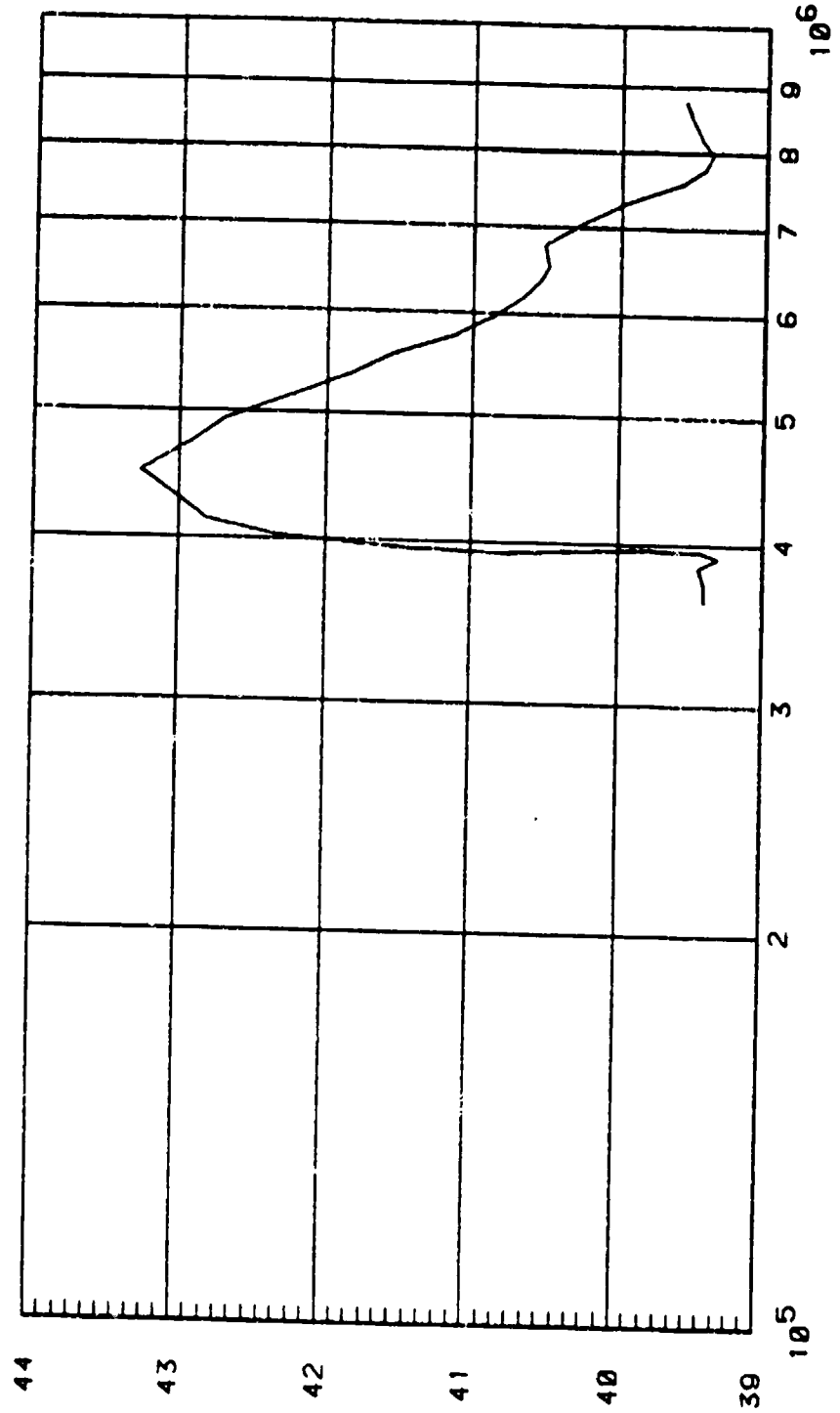


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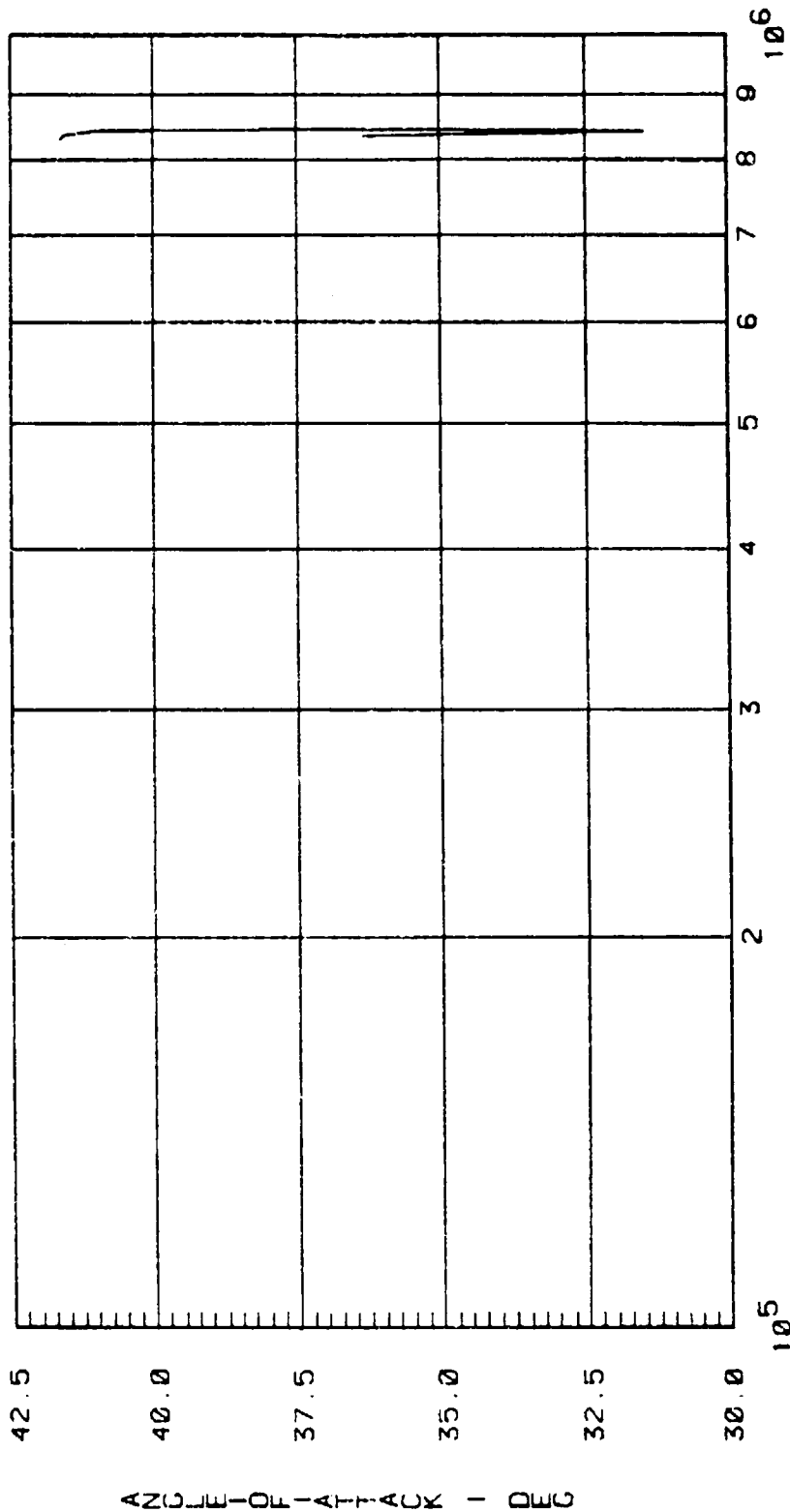
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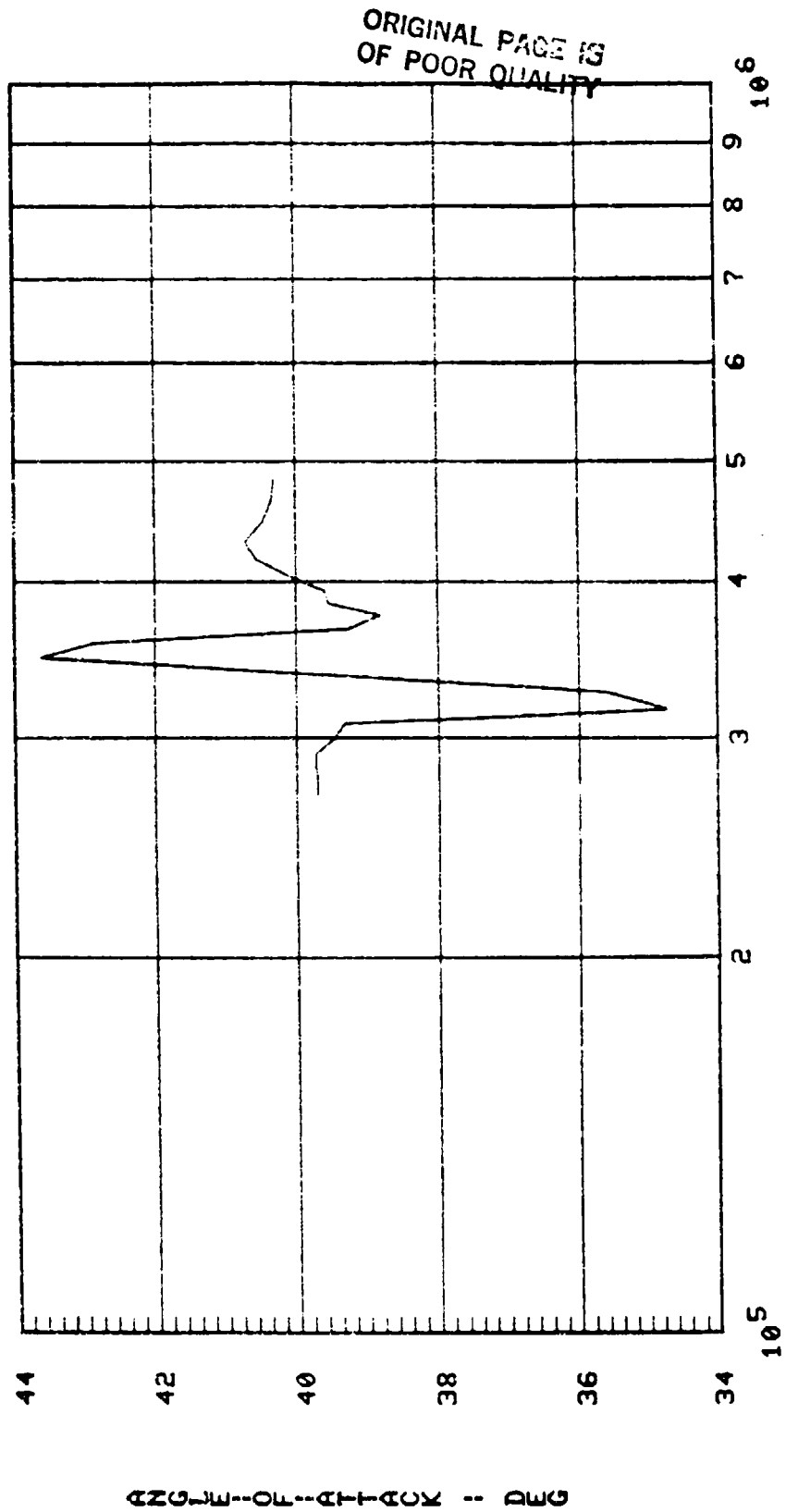
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820- 920 SEC

STS-5



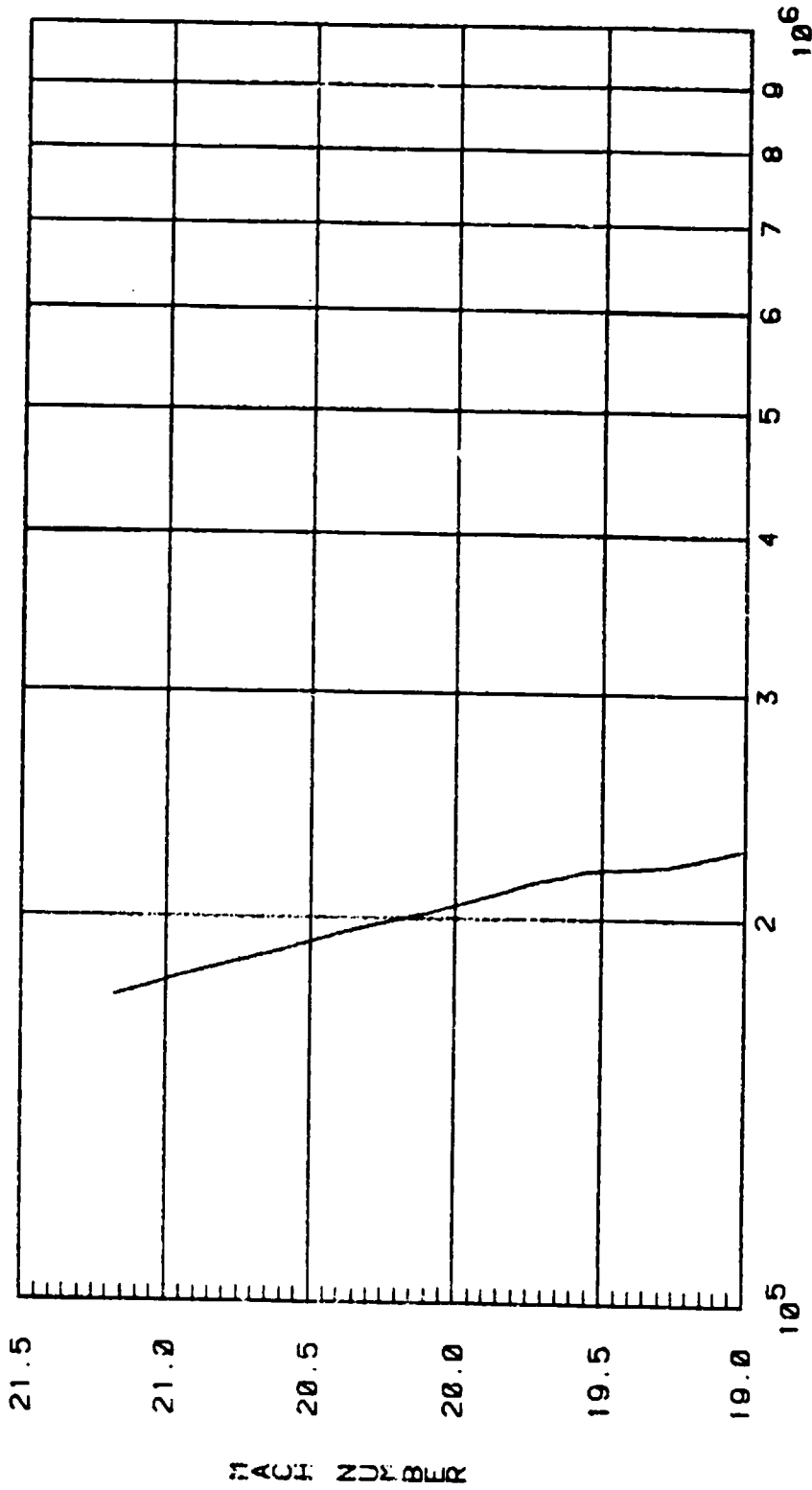
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700- 000 SEC

STS-2



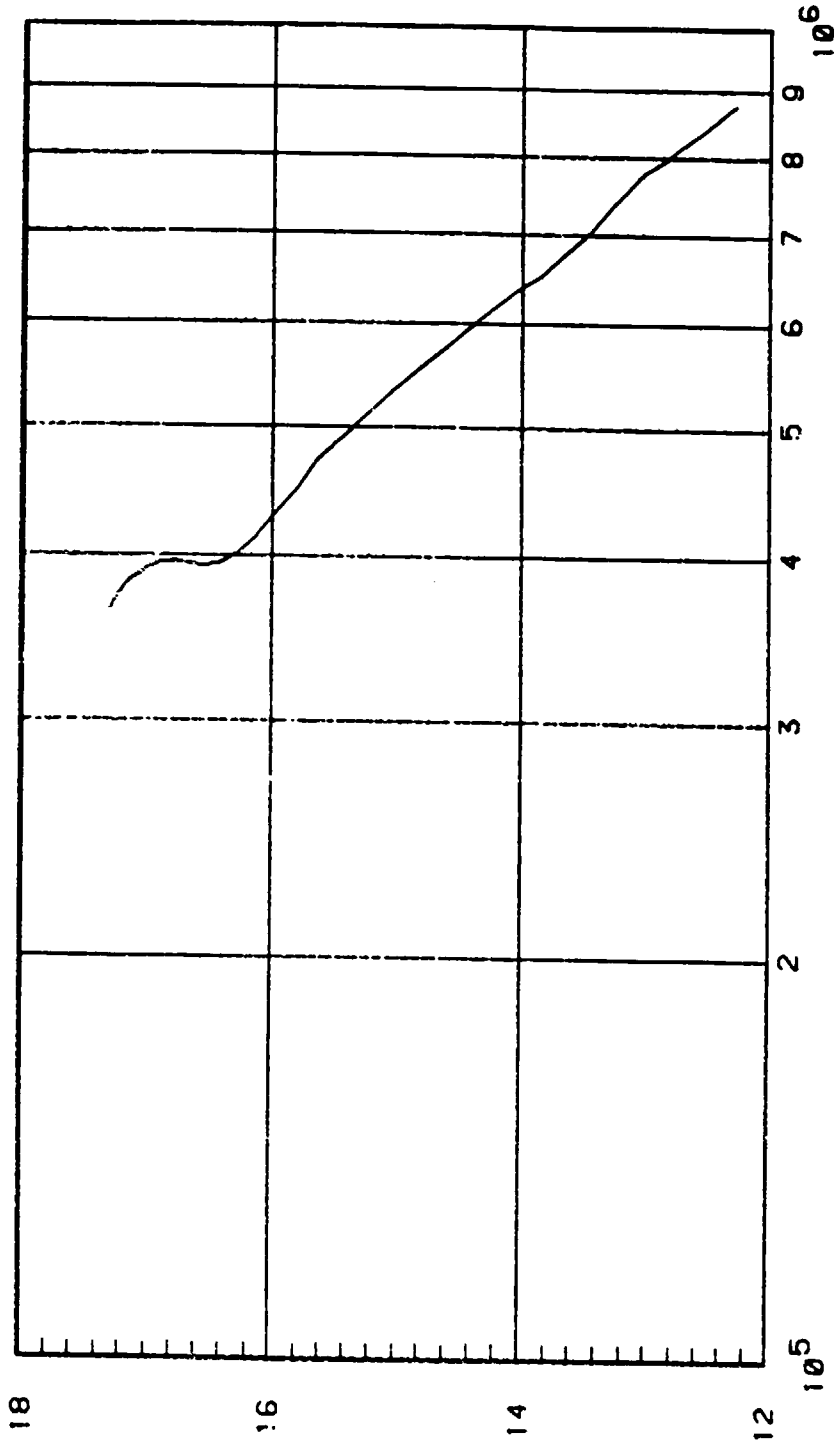
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STS-3  
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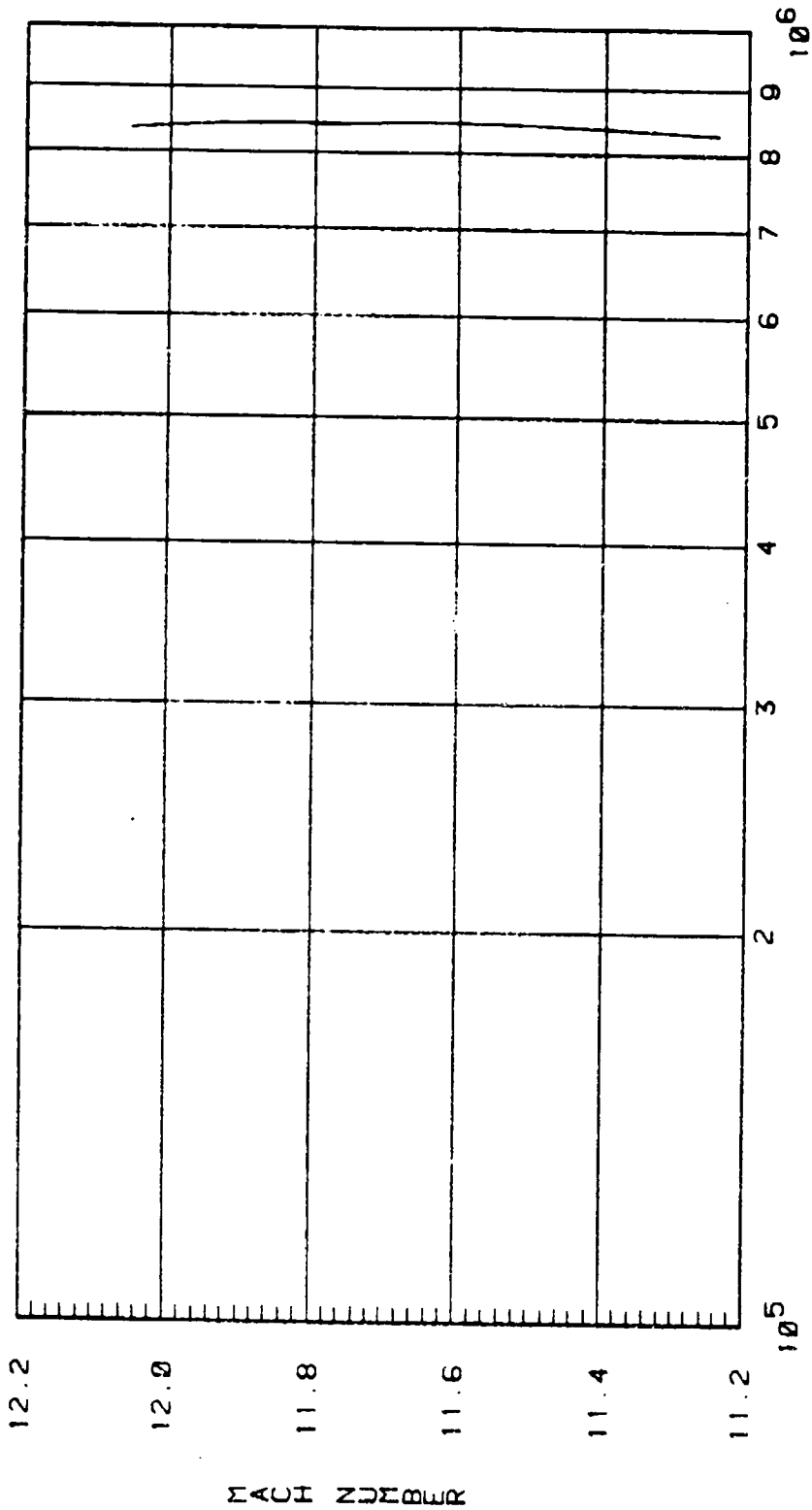
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STS-4



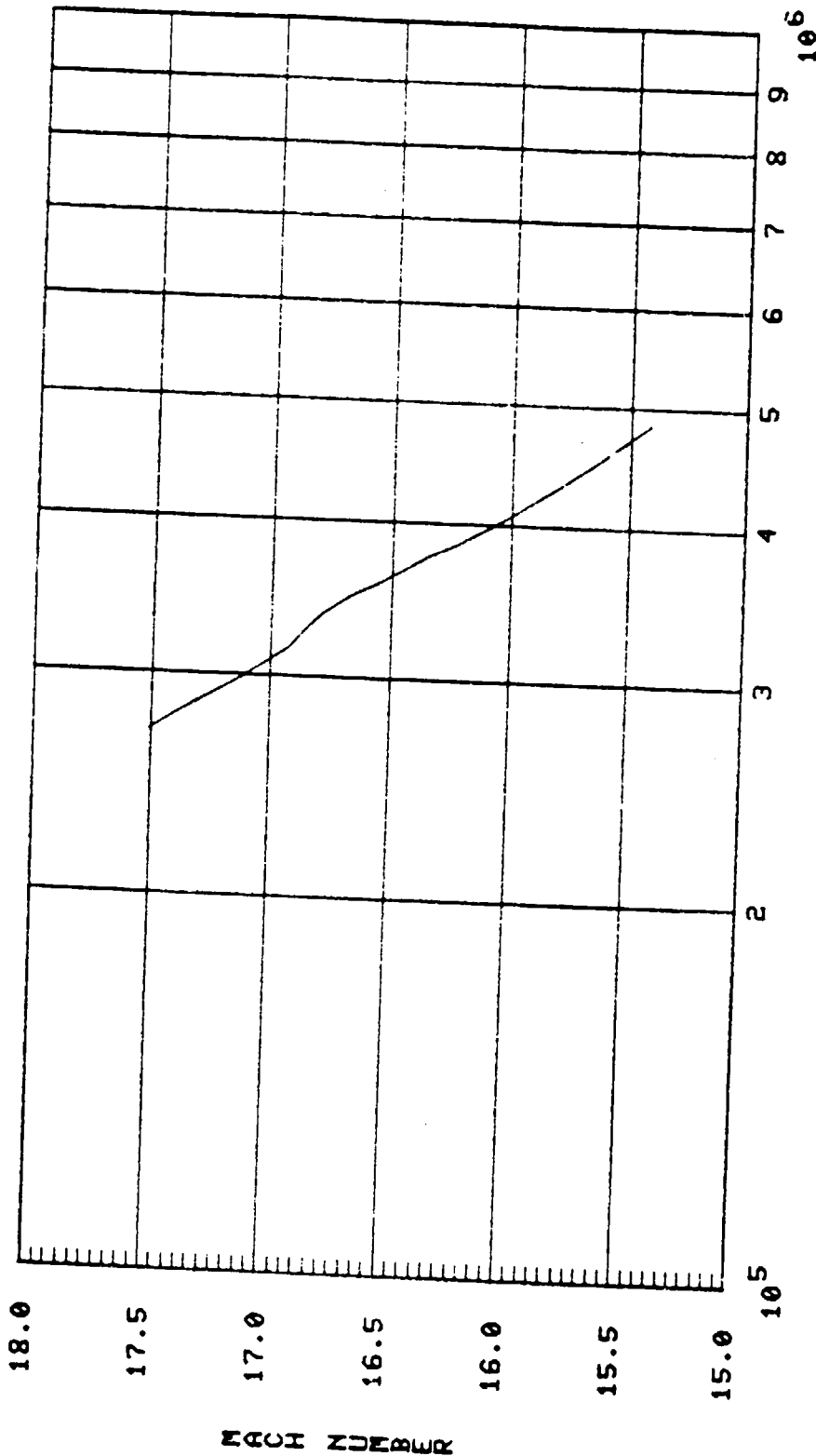
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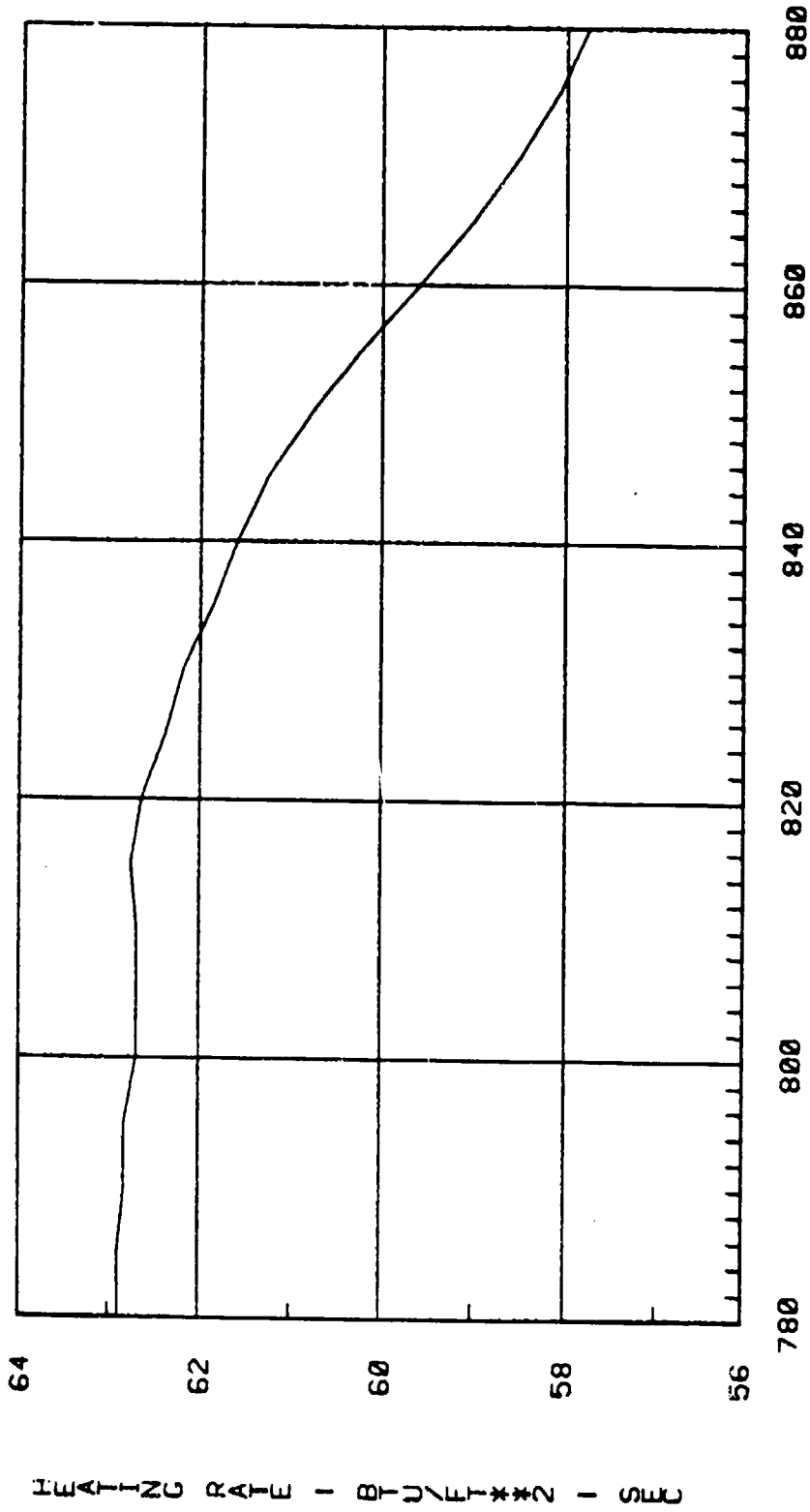
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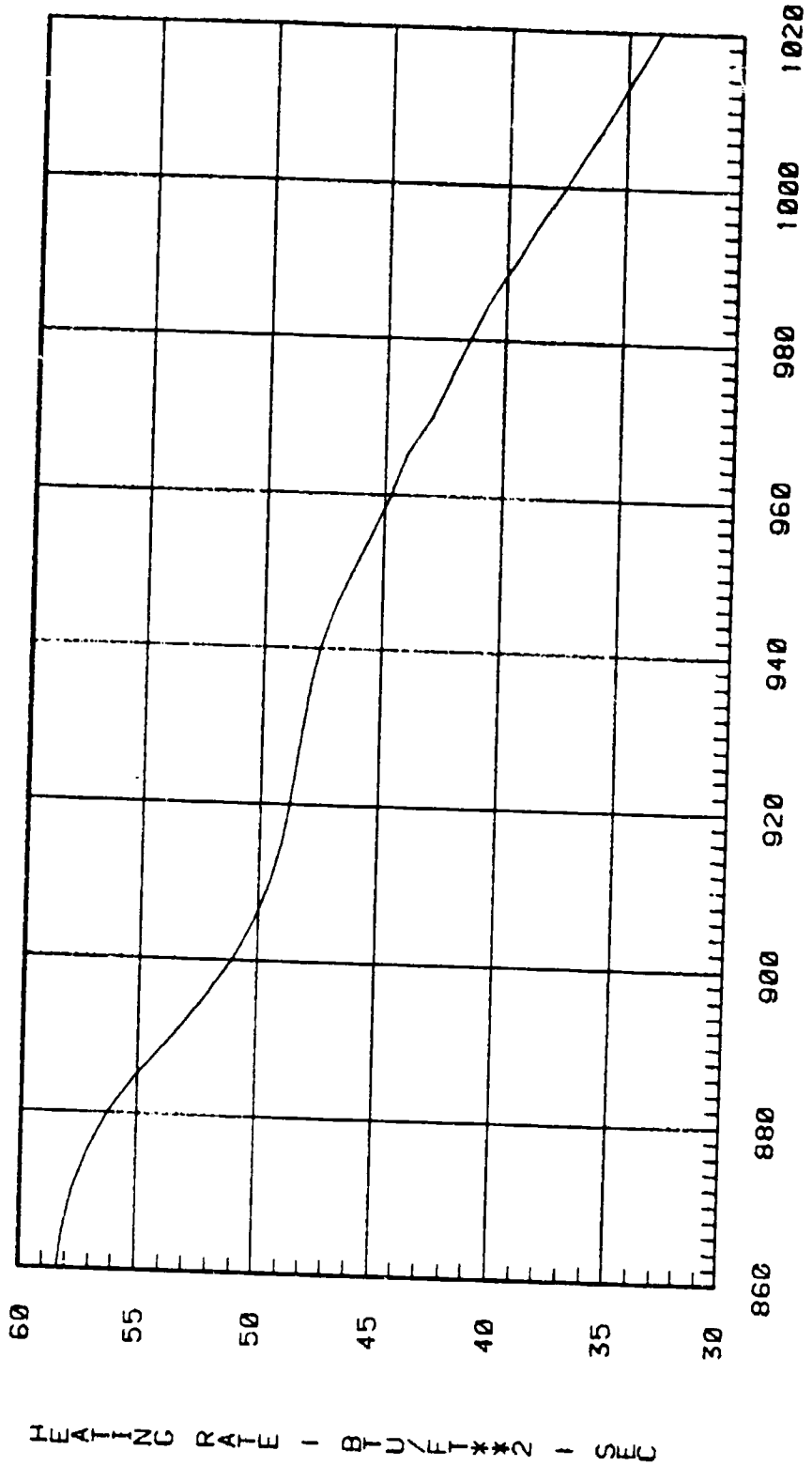
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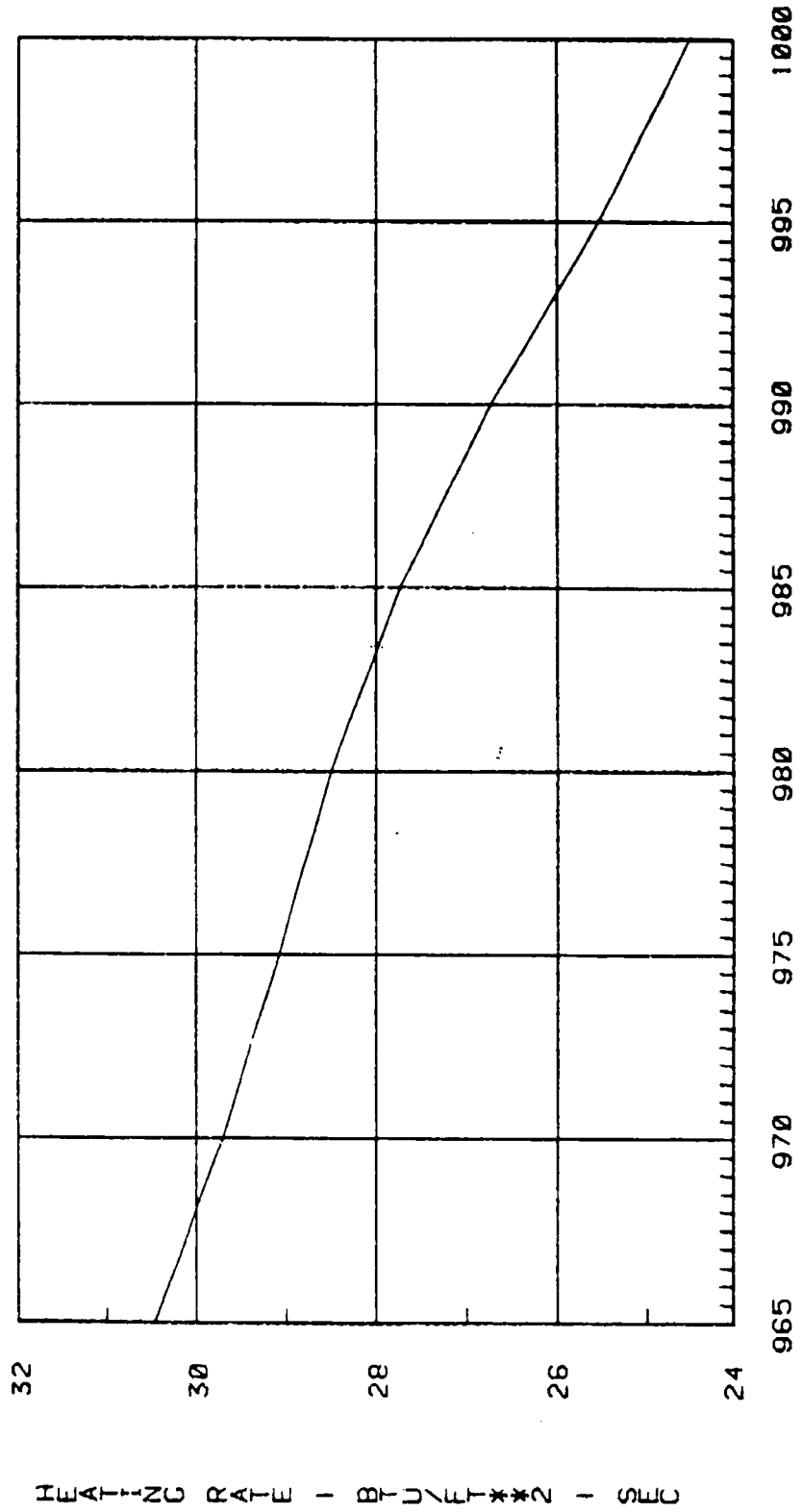
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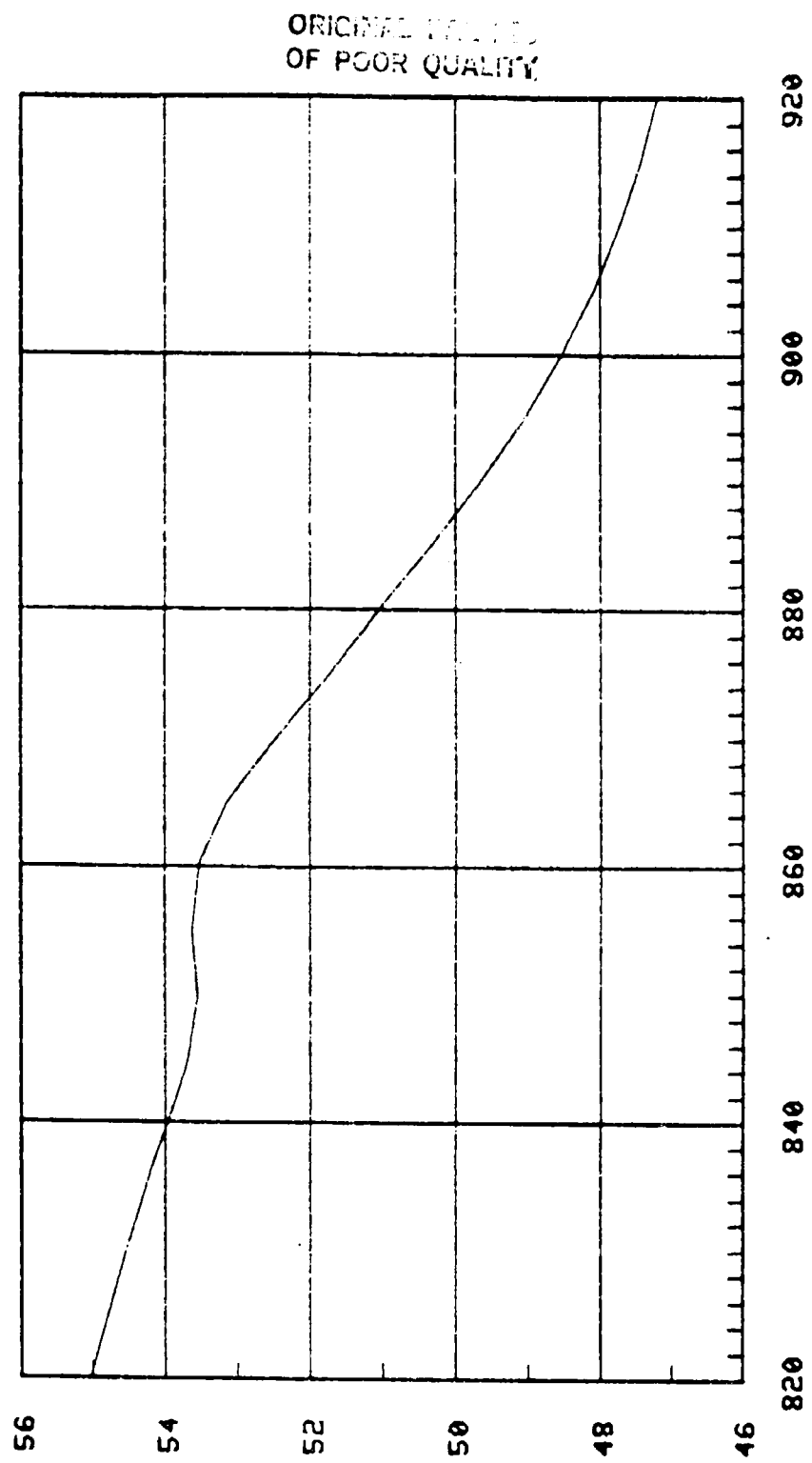


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\_\_\_\_\_ OPEF



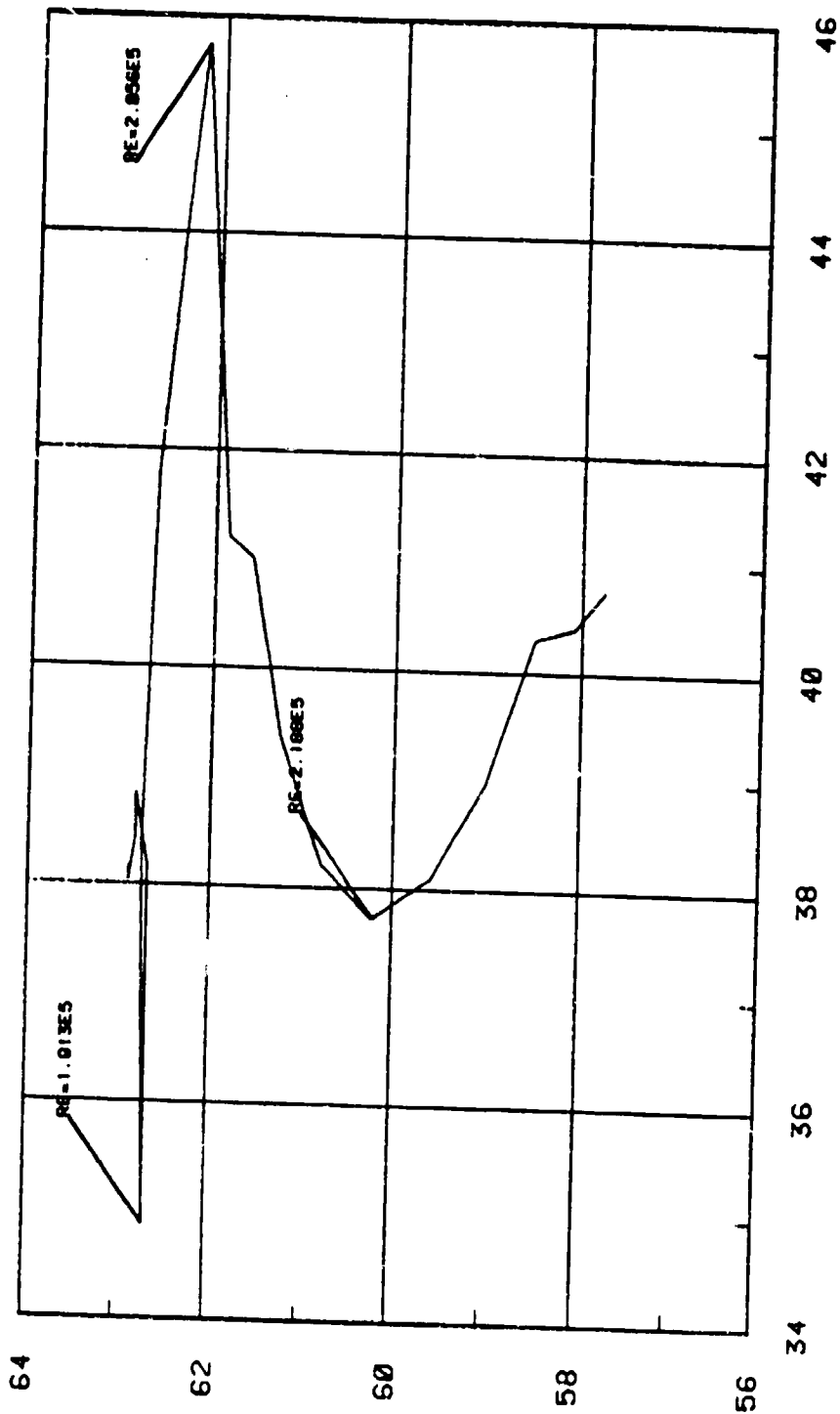
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OMEF



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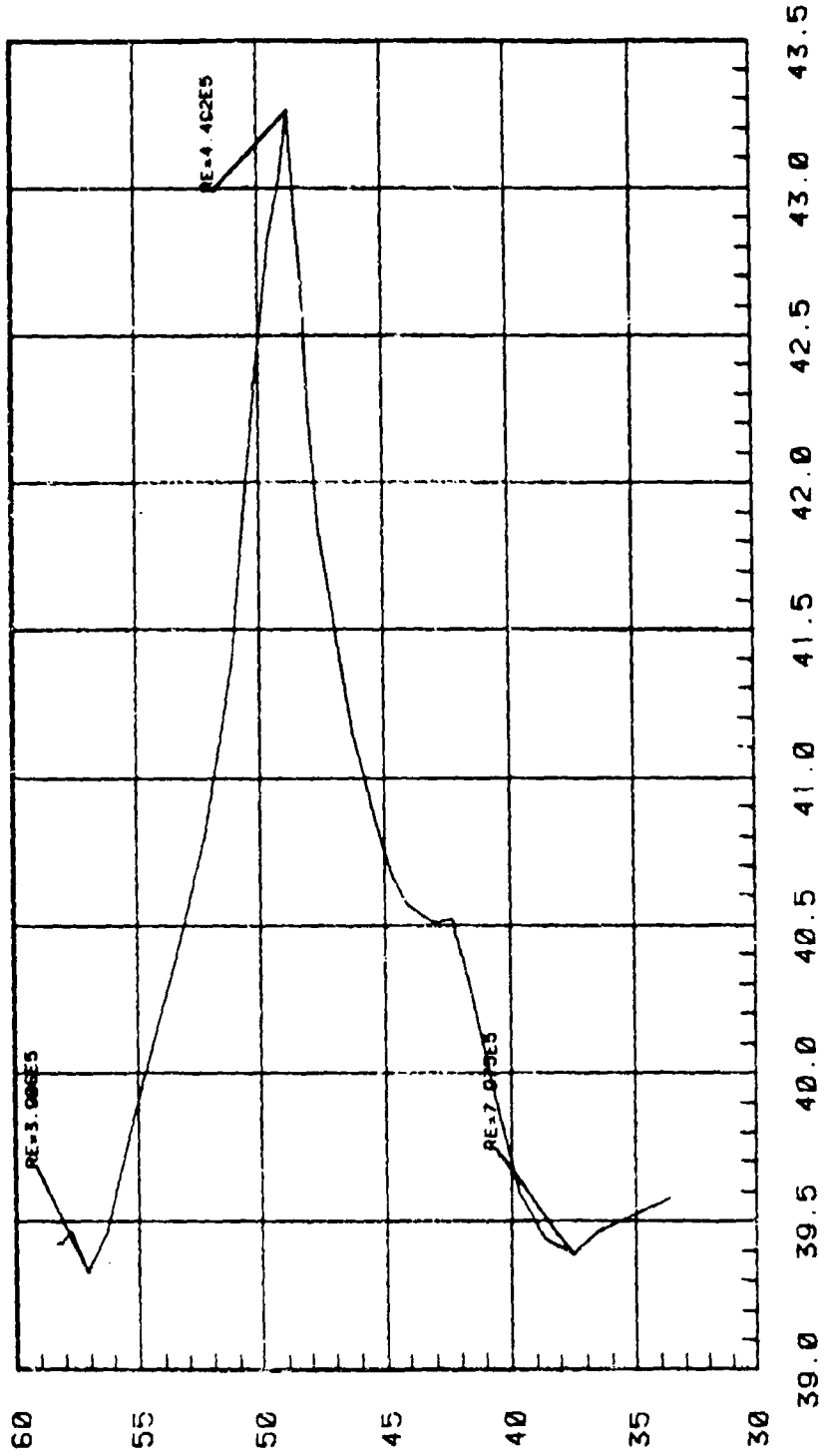
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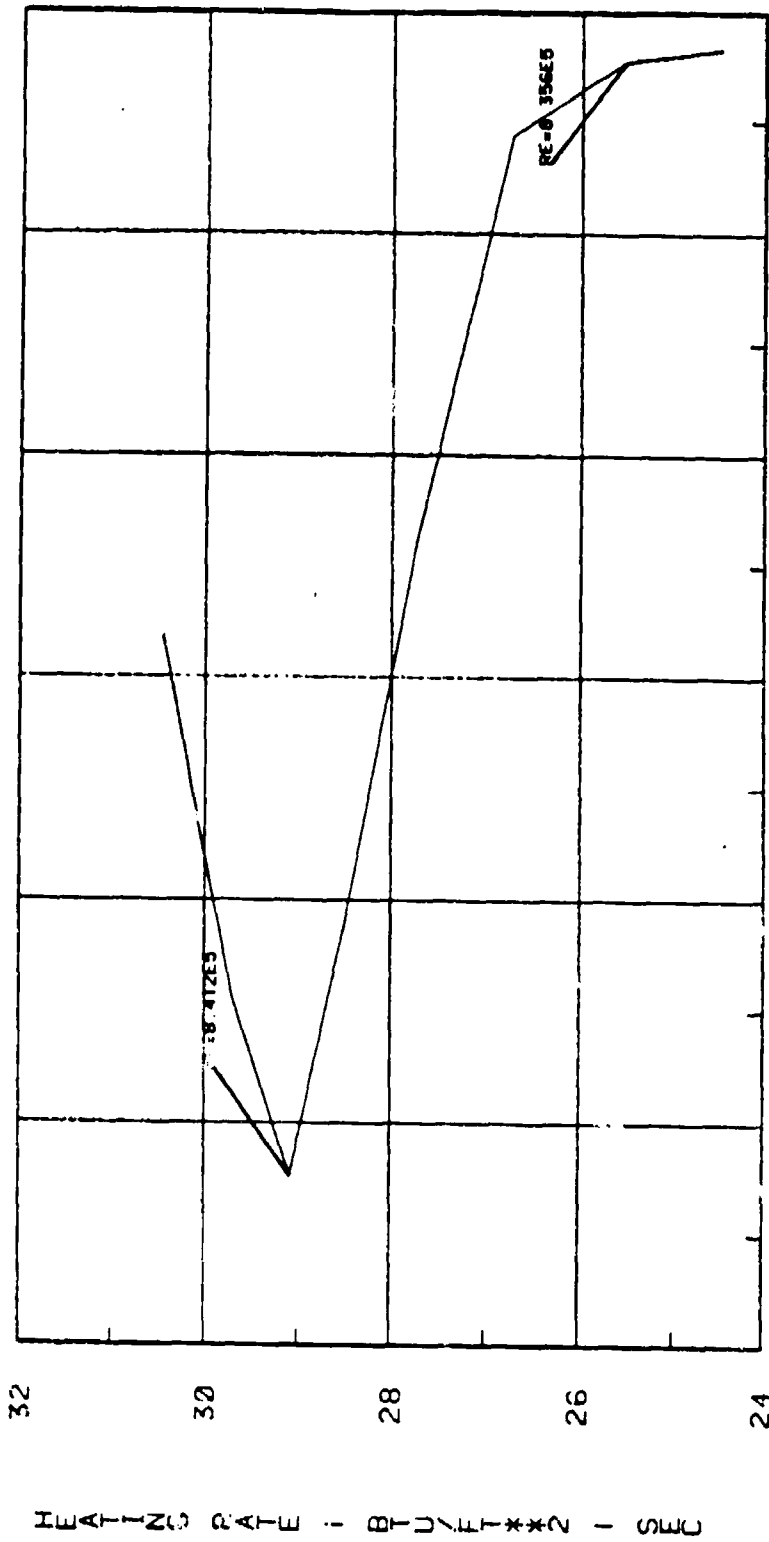
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ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

068-1000 SEC

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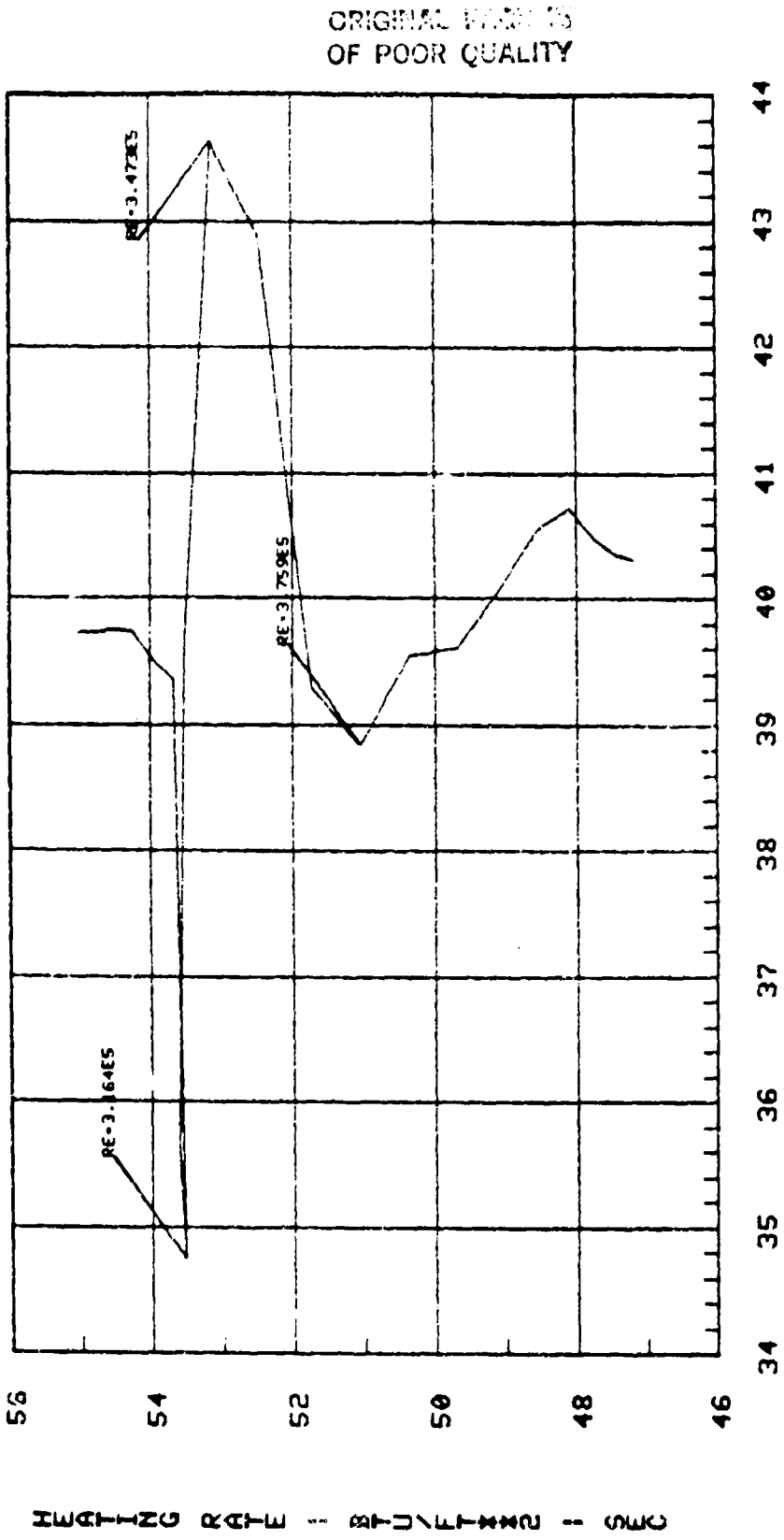
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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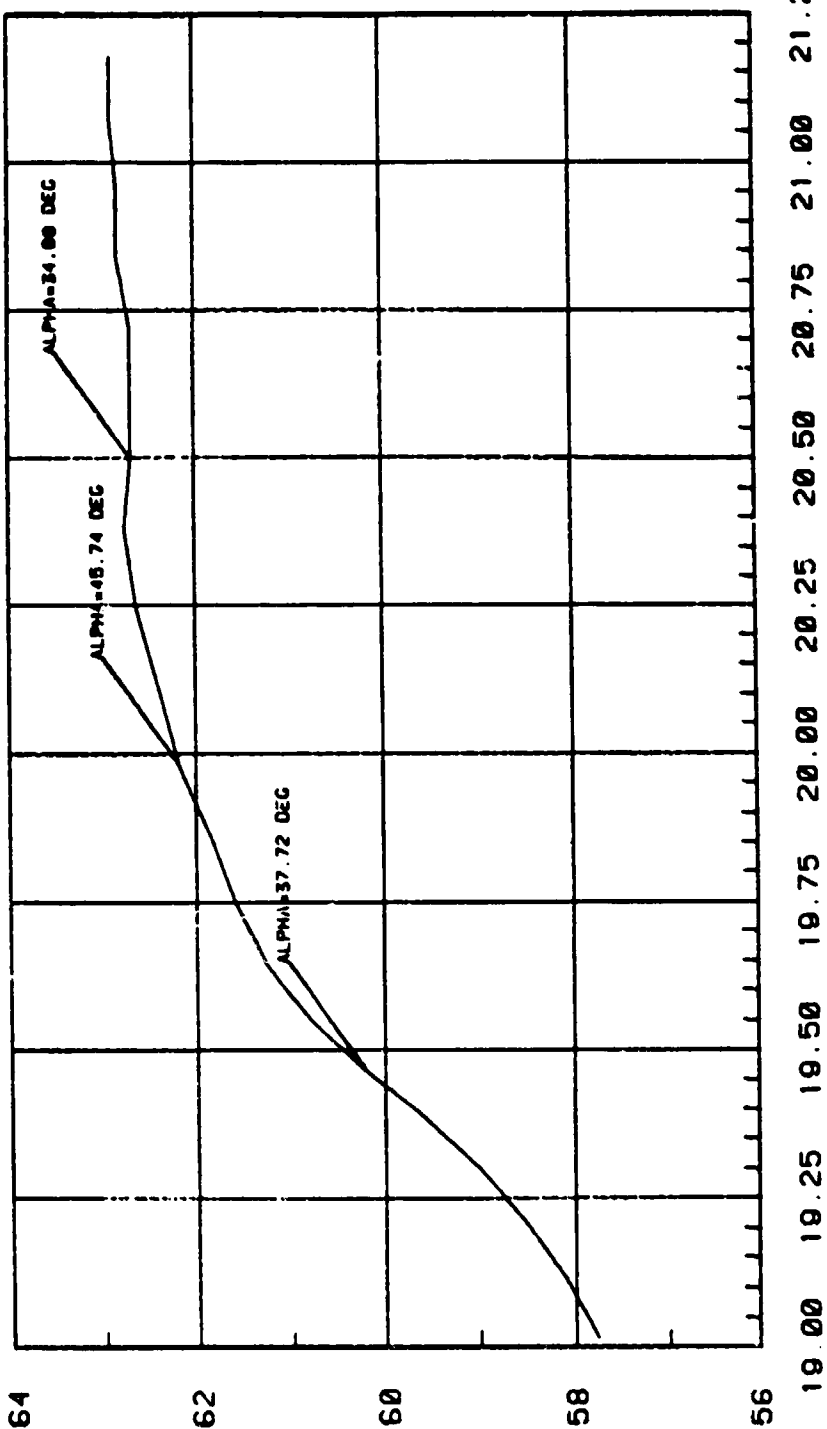
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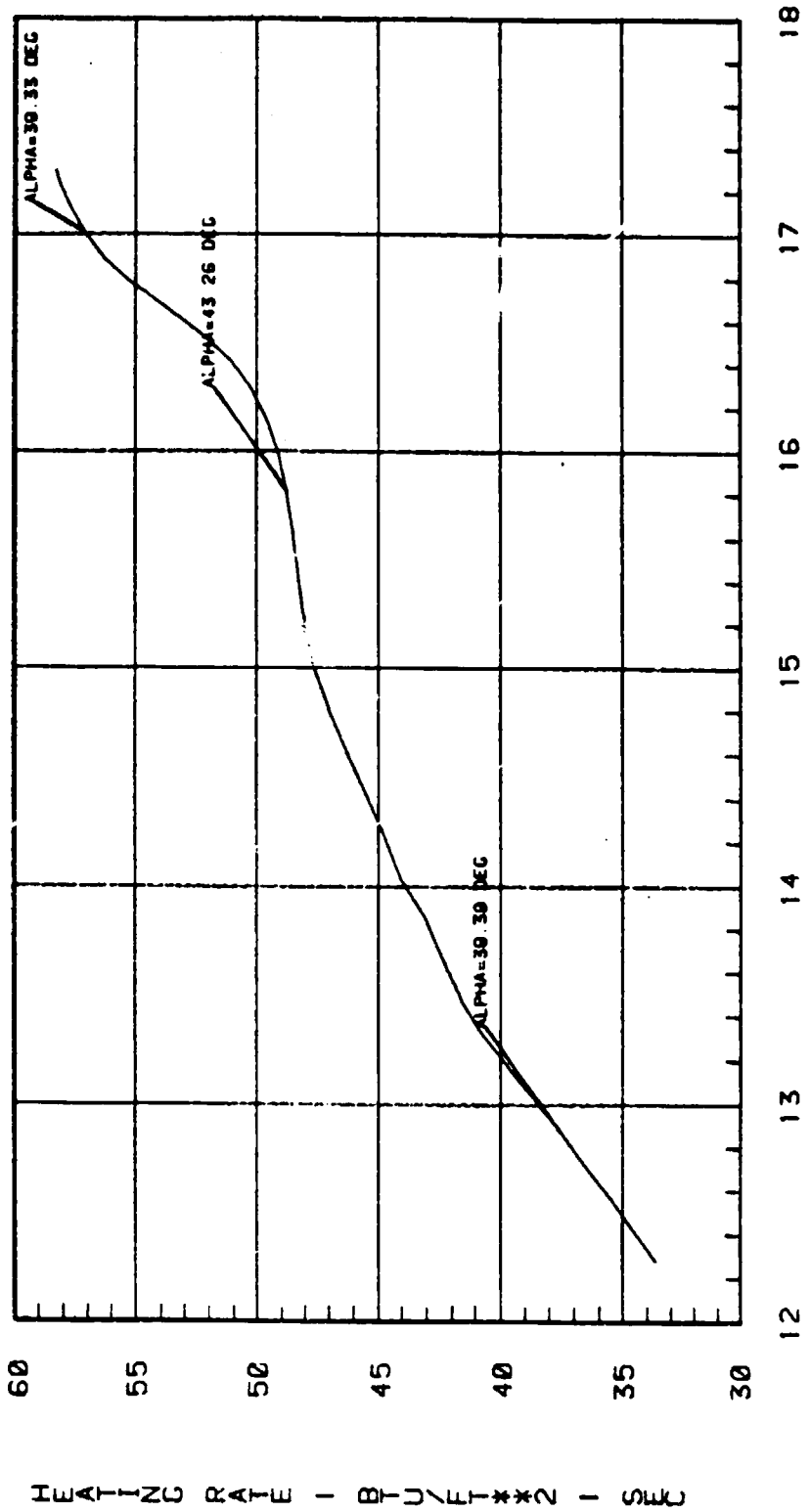
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

988-1828 SEC

ORF

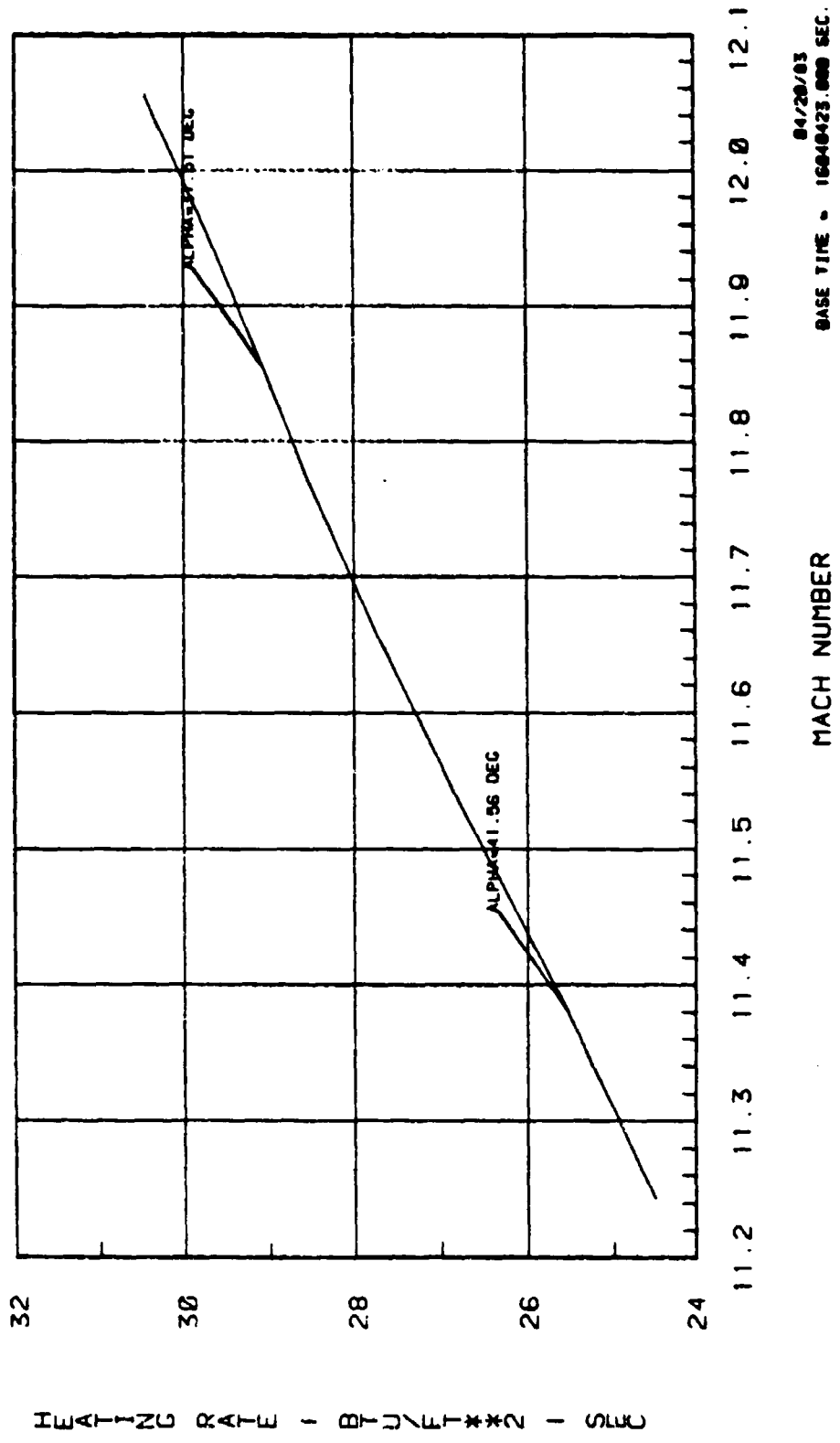


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OREF \_\_\_\_\_ 000-1000 SEC



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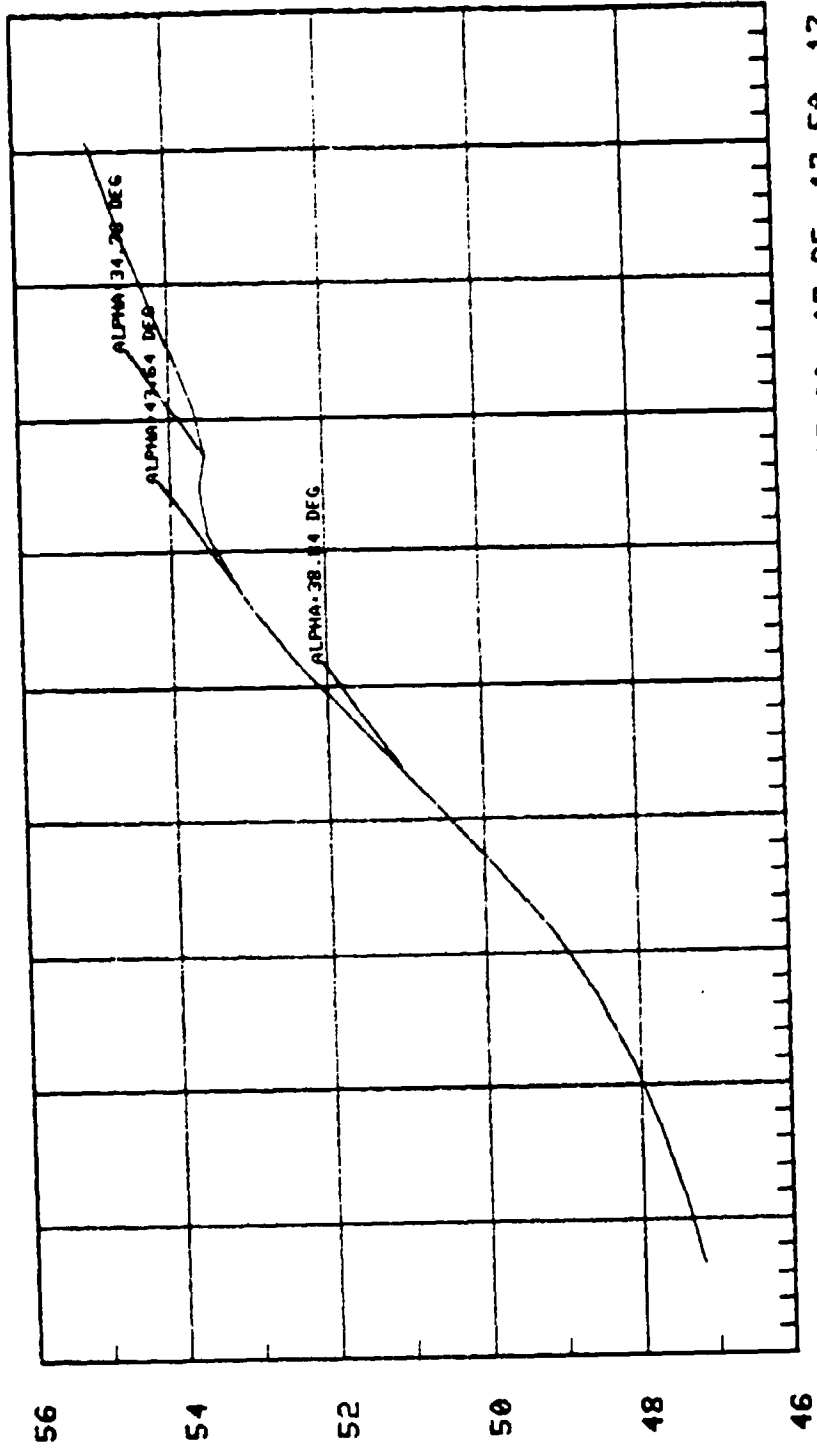
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

820- 920 SEC

OREF

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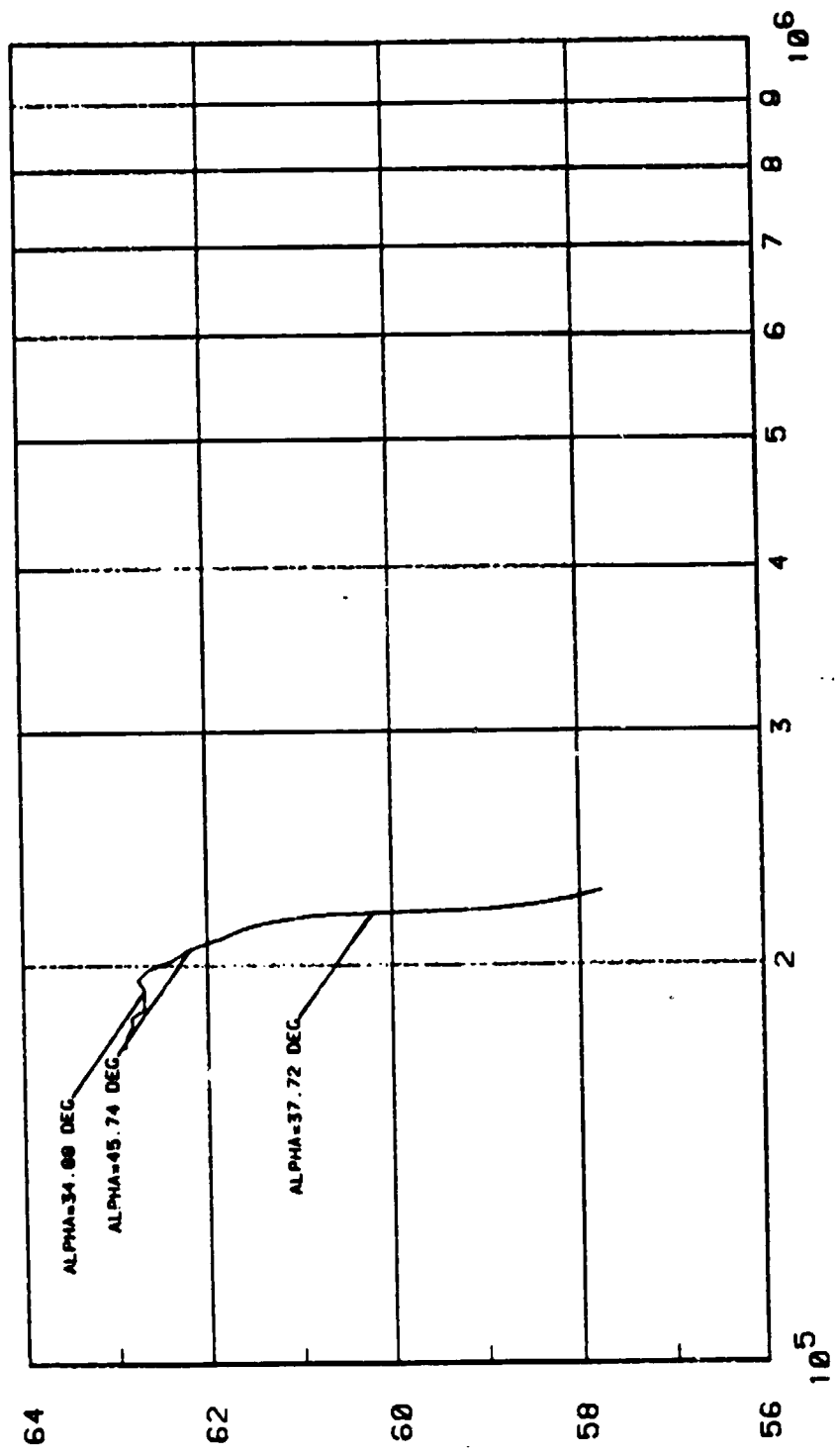
MACH NUMBER

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04.20 83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

700-000 SEC

ORF



HEATING RATE - BTU/FT\*\*2 - SEC

04/20/83

BASE TIME = 27000000.000 SEC

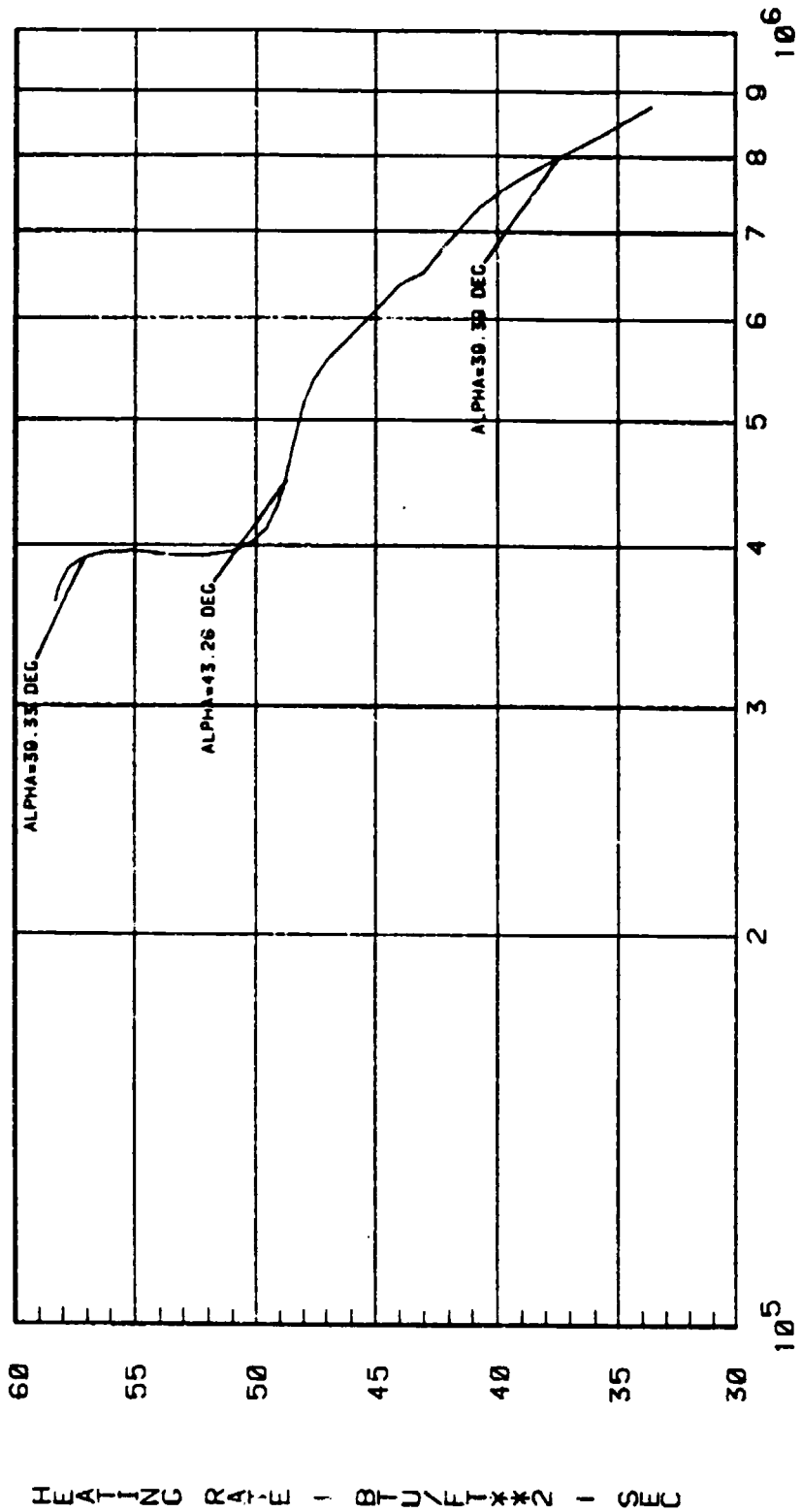
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

060-1020 SEC

OREF



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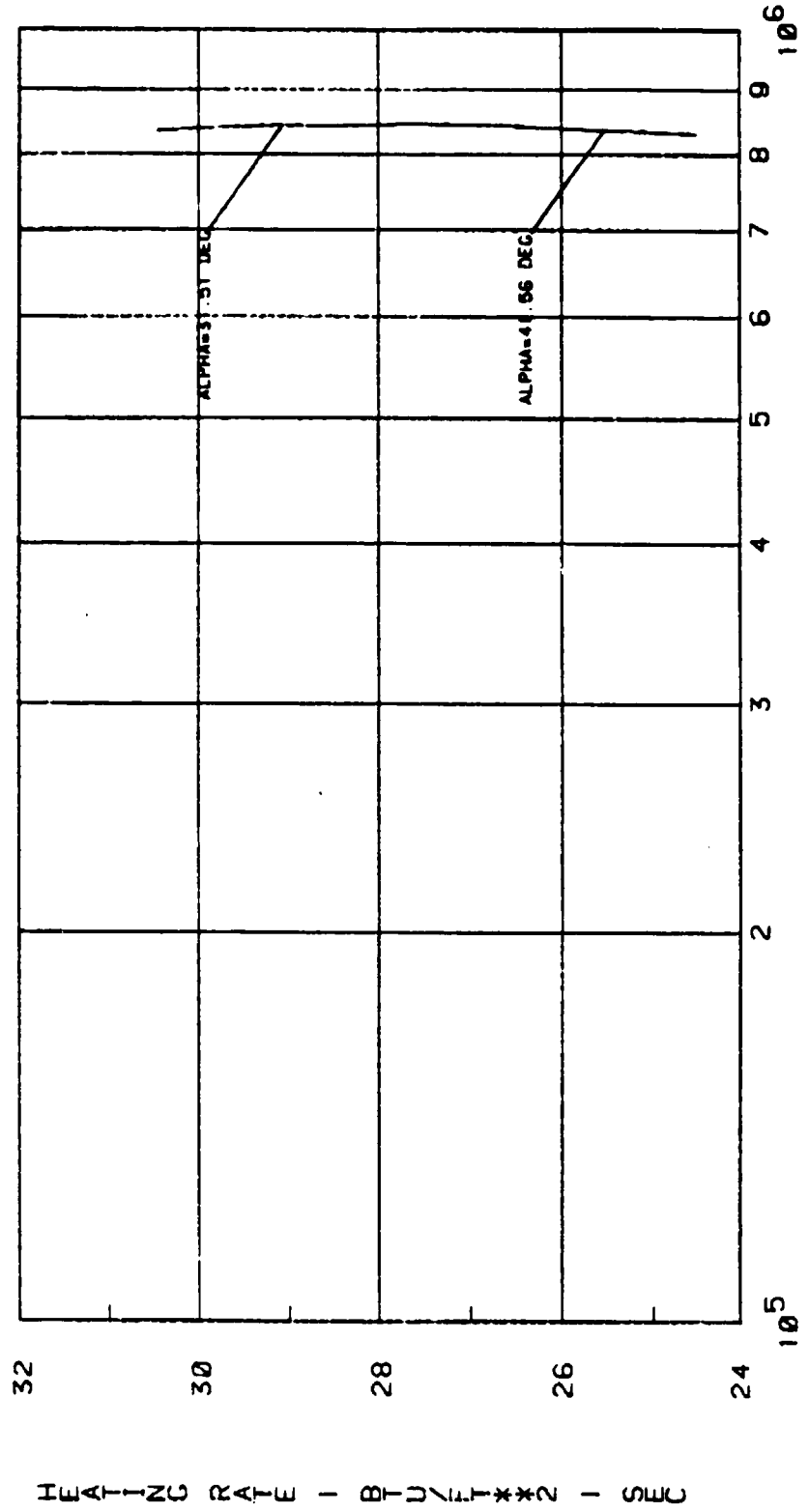
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REYNOLDS NUMBER (NS)

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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

REF ———— DREF 000-1000 SEC



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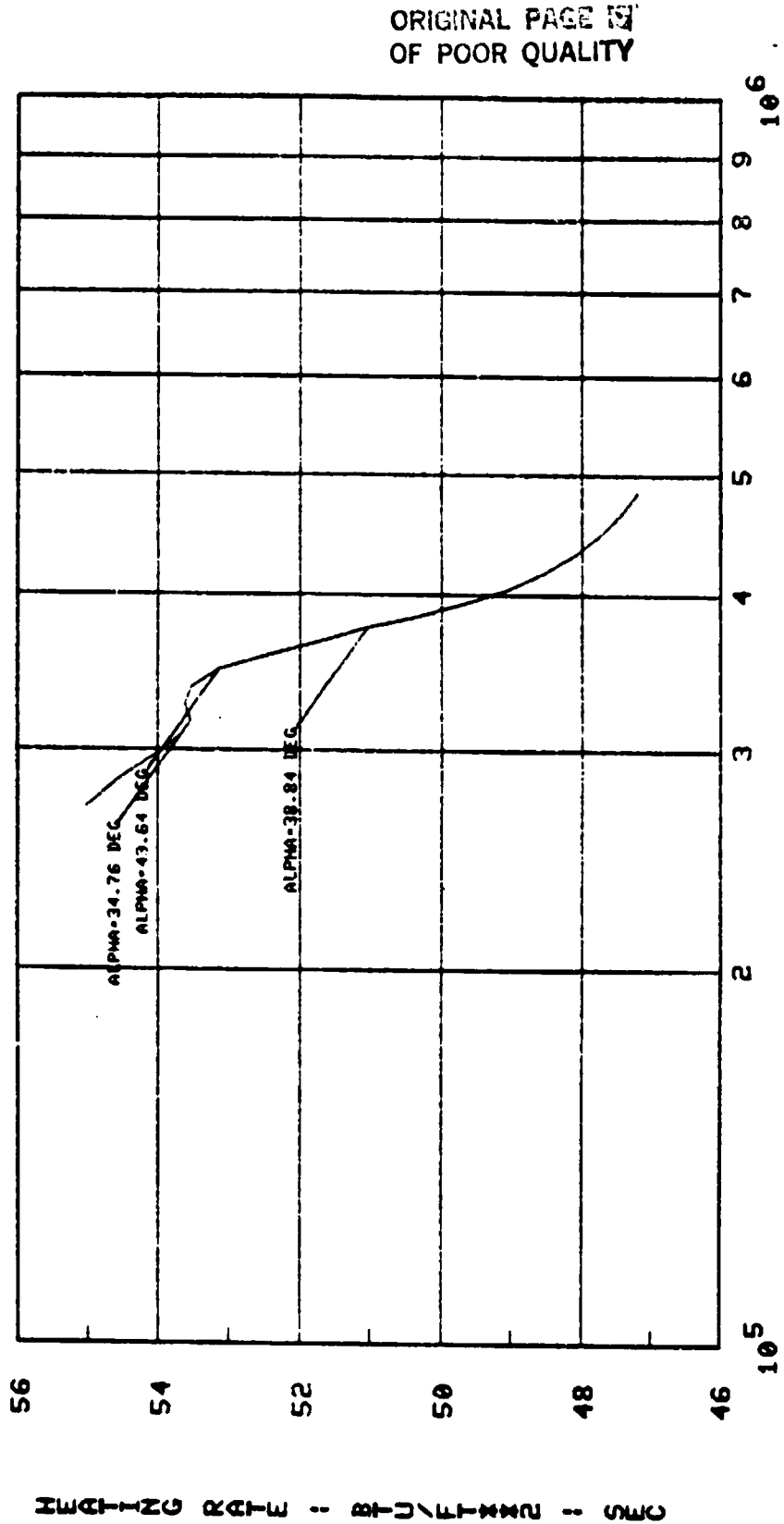
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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

820-920 SEC

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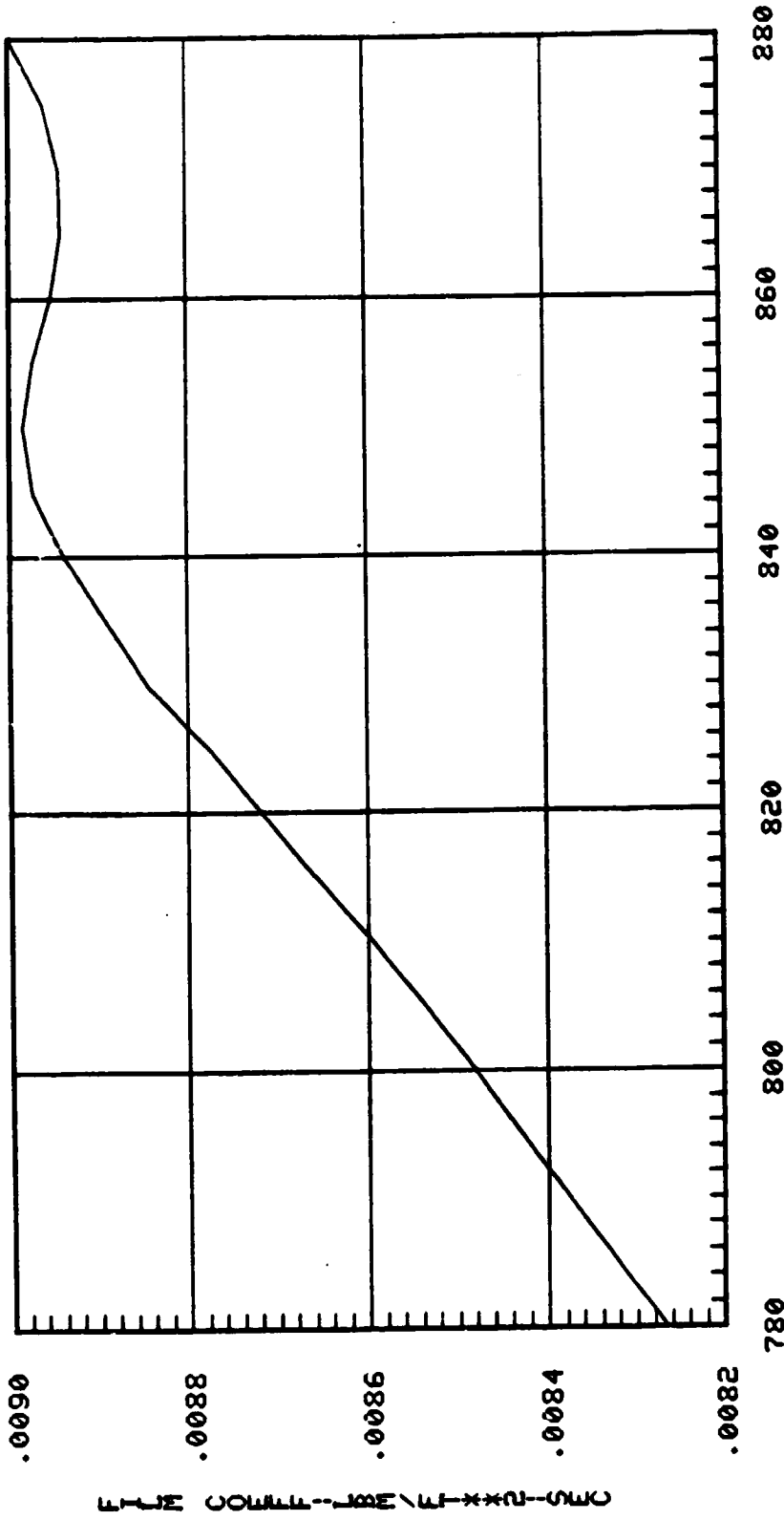
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04.20.83

STS-2 (107 FT LENGTH) OMS POD - FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ WREF

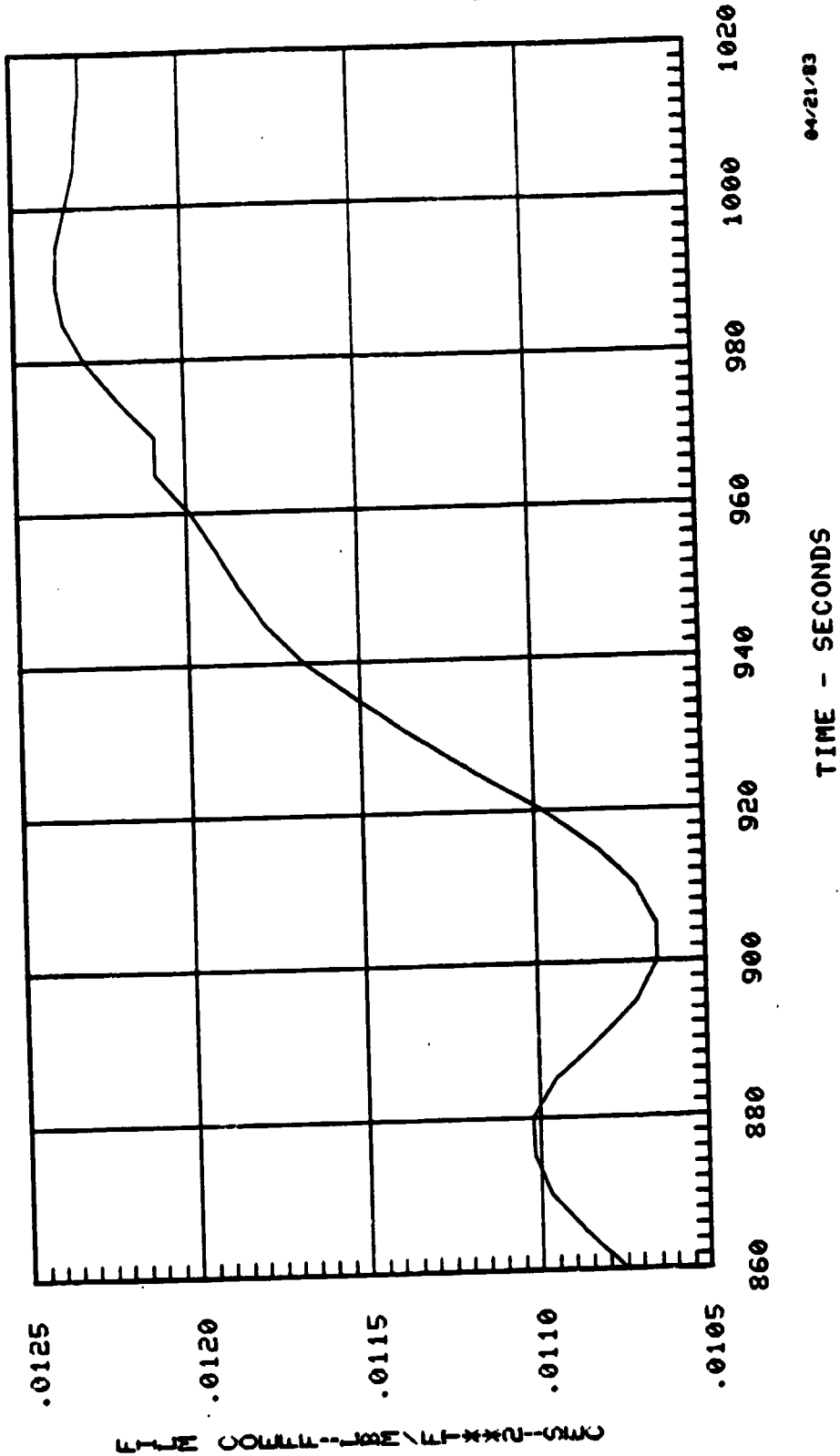


04/21/83

TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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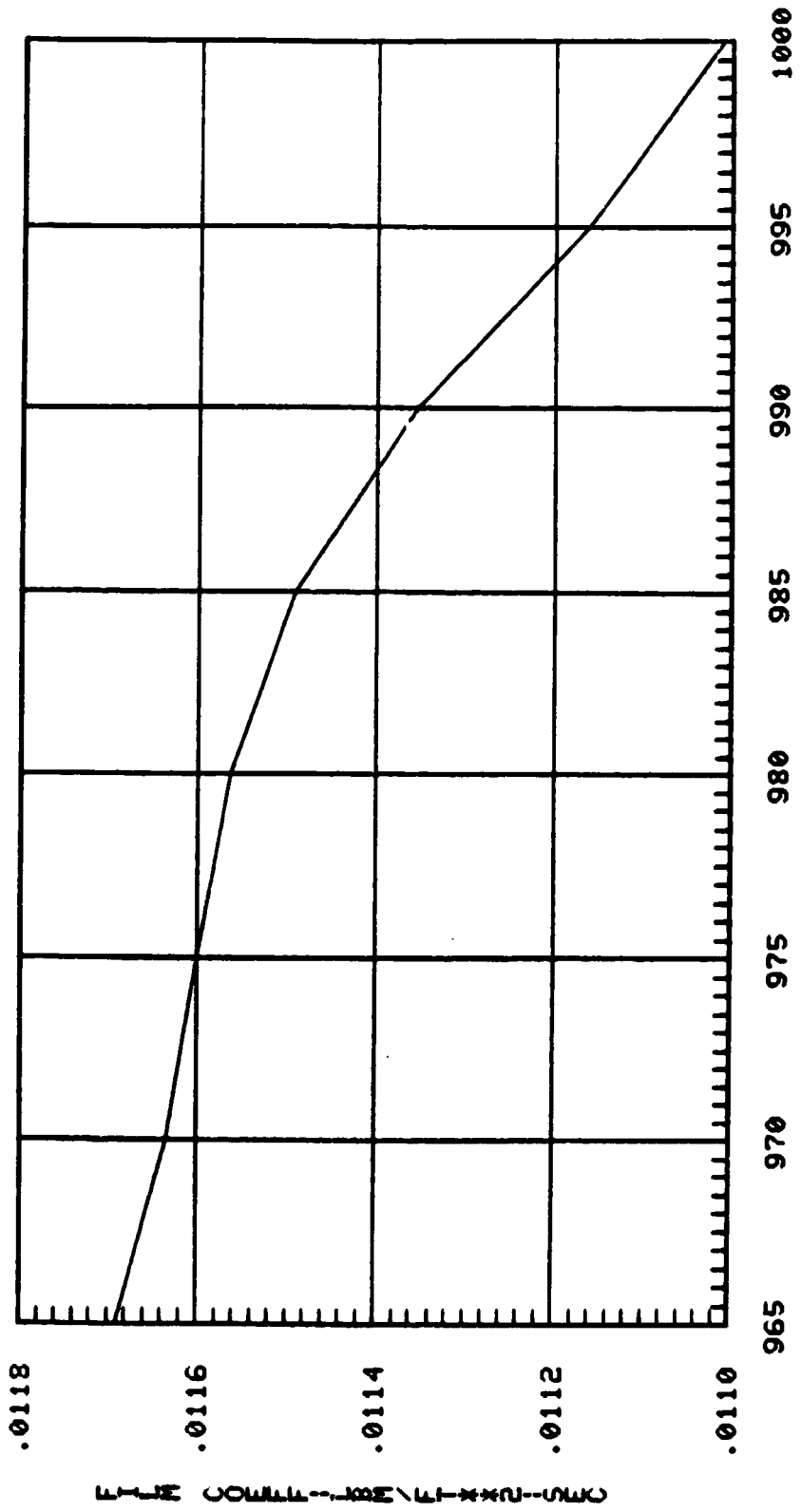
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04/21/83

TIME - SECONDS

STS-4 (107 FT LENGTH) OMS POD - FLIGHT PARAMETER COMPARISON

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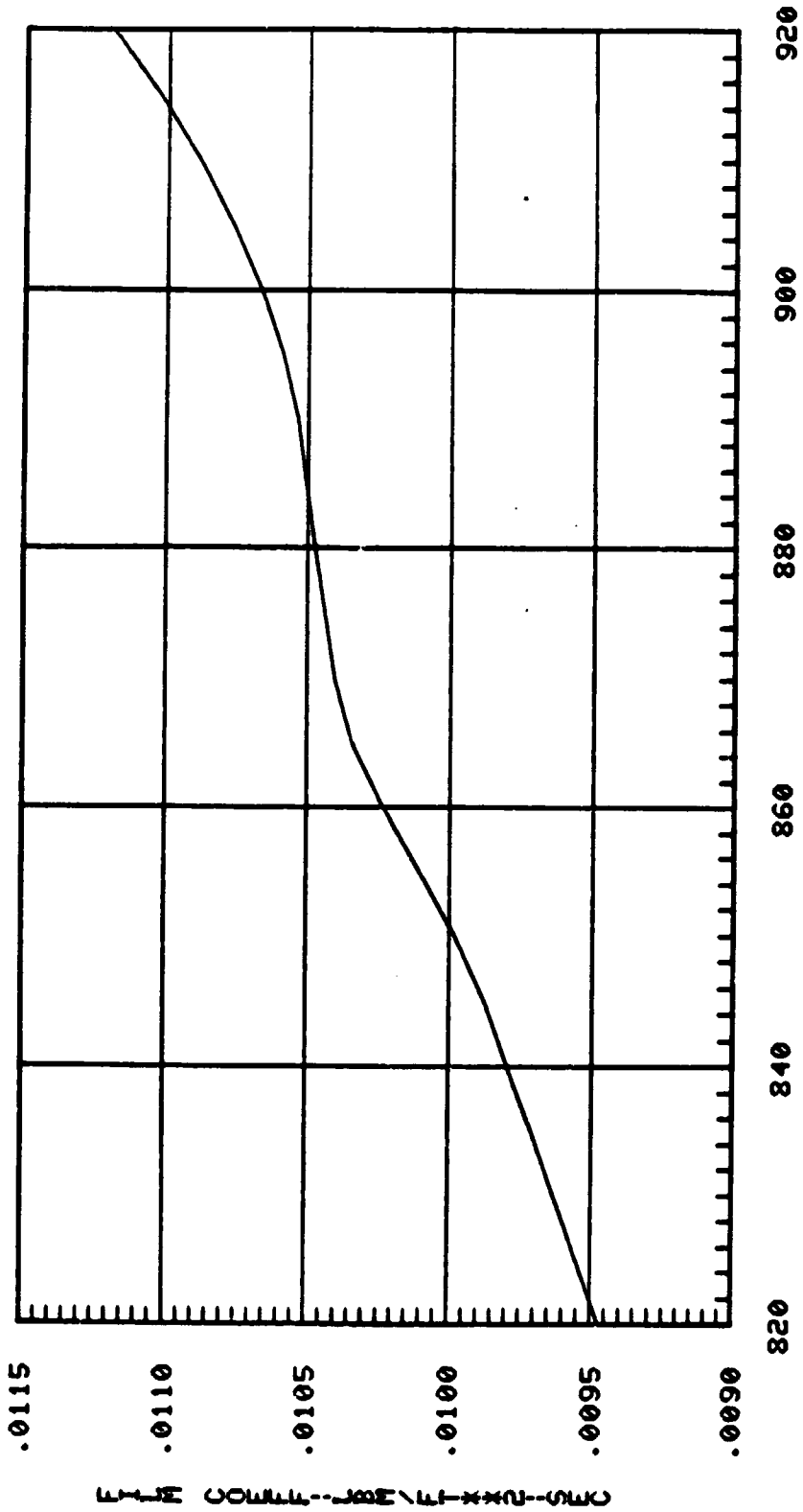


TIME - SECONDS

04/21/83

STS-5 107 FT LENGTH OMS POD - FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ REF



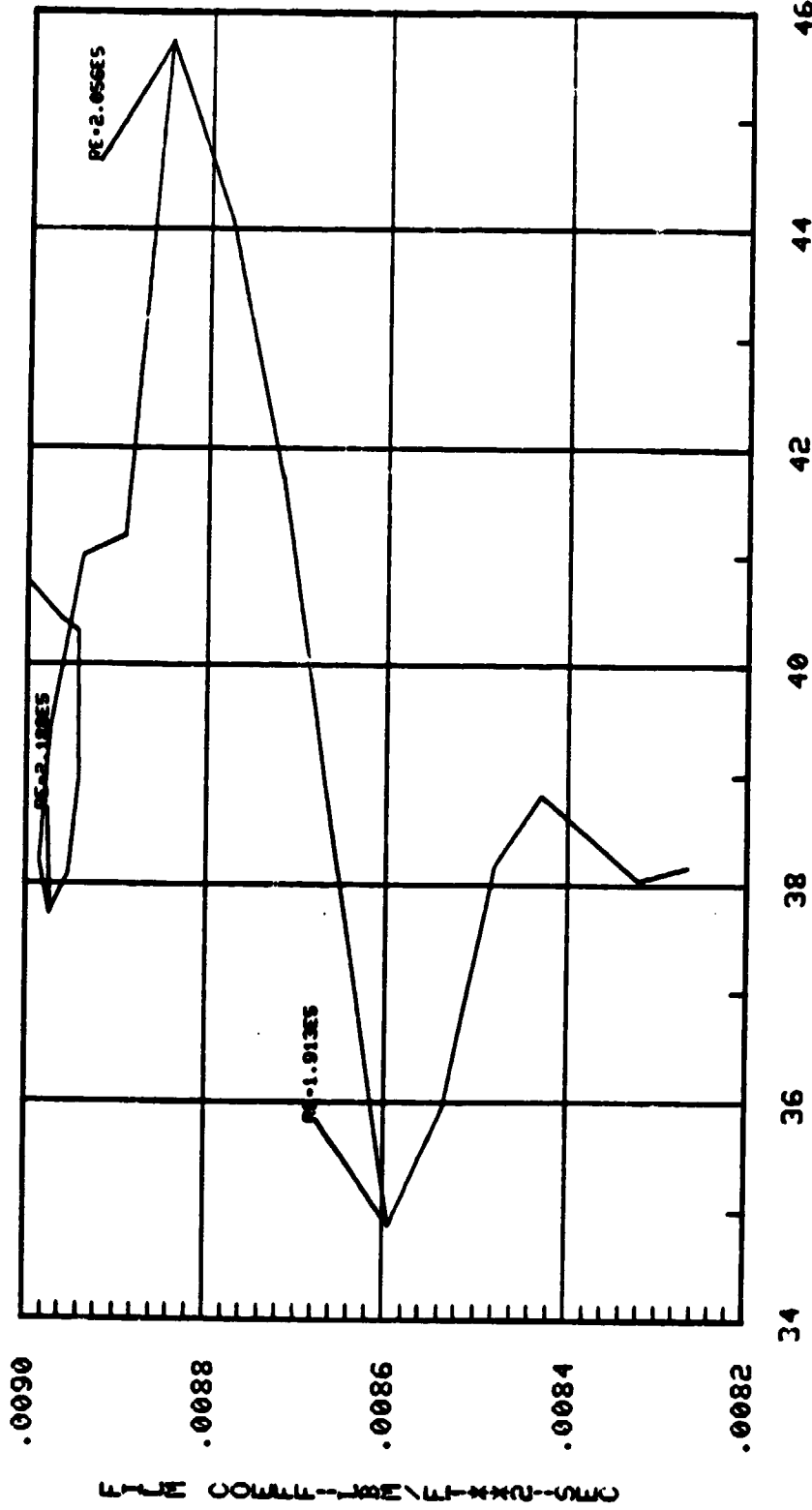
04/21/83

TIME - SECONDS

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

700- 280 SEC

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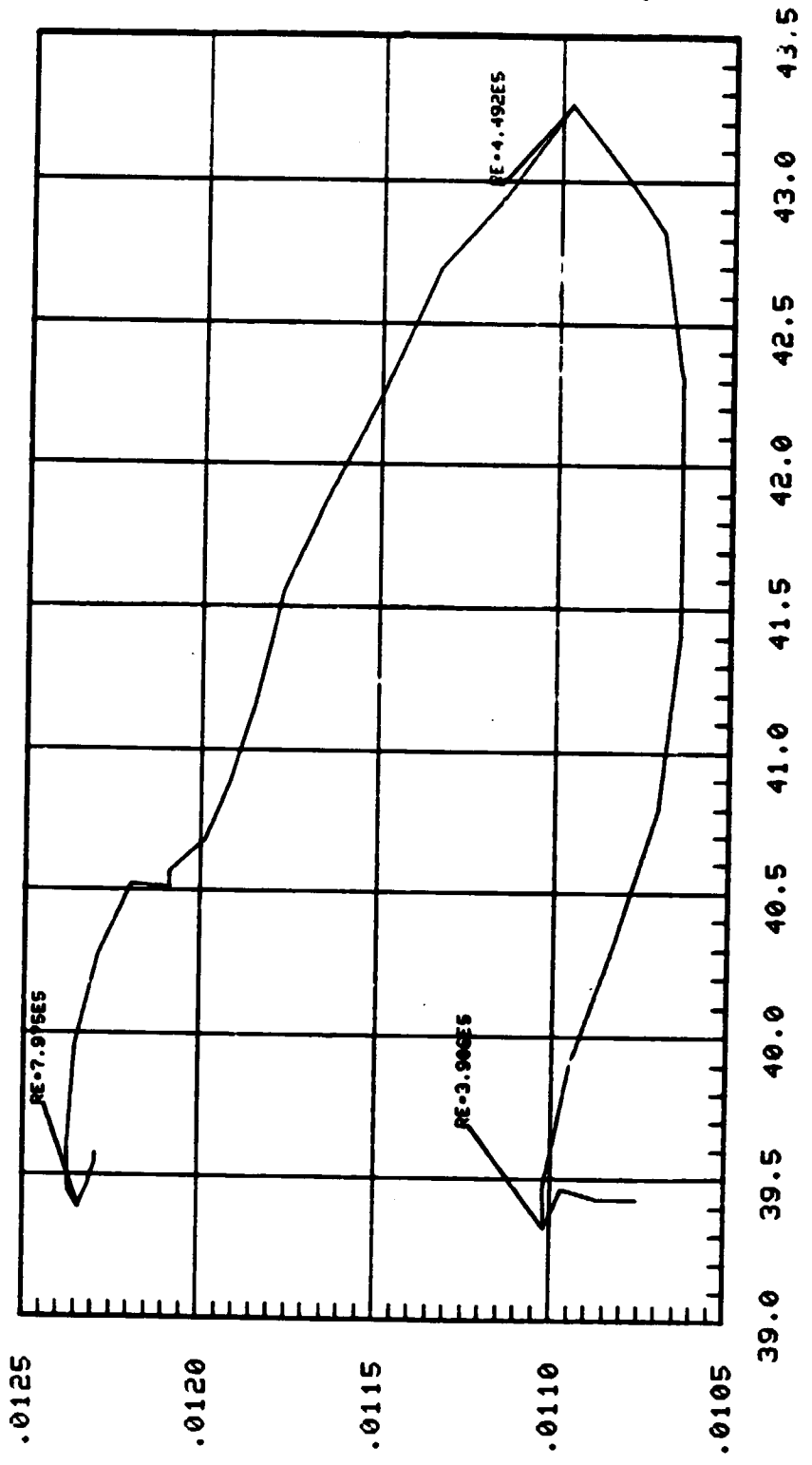
ANGLE-OF-ATTACK - DEG

OMS CURRENT (AMPS) VS ANGLE-OF-ATTACK (DEG)

STS-3 (107 FT LENGTH OMS POD - FLIGHT PARAMETER COMPARISON)

860-1020 SEC

MREF



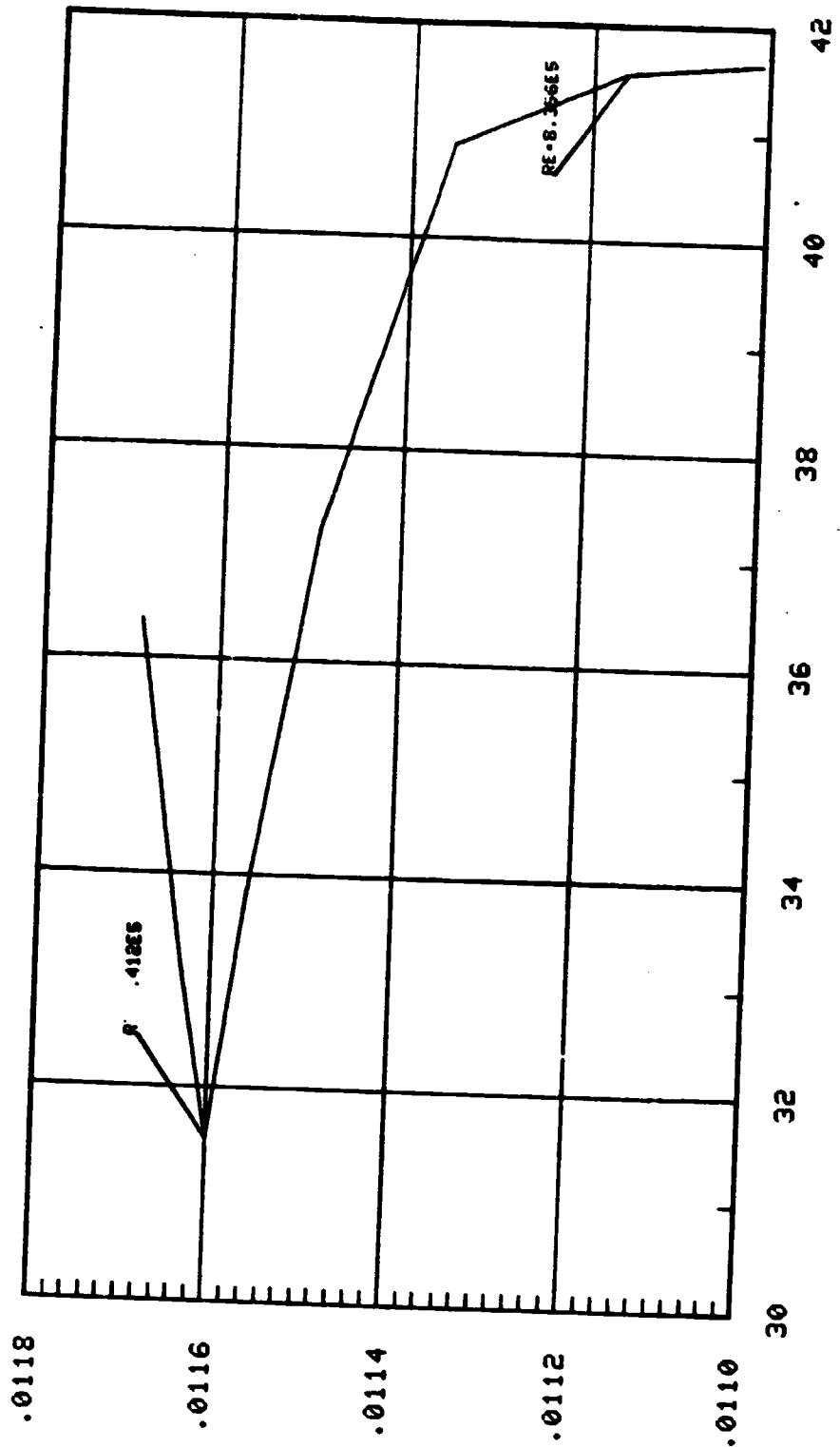
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04/21/83  
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ANGLE-OF-ATTACK - DEG

OMS-1XX-17 Error (MFT)

ORIGINAL PAGE IS  
OF POOR QUALITY

STS-4 107 FT LENGTH OMS POD - FLIGHT PARAMETER COMPARISON  
----- MREF 965-1000 SEC



ANGLE-OF-ATTACK - DEG  
BASE TIME - 1604423.000 SEC.  
04/21/83

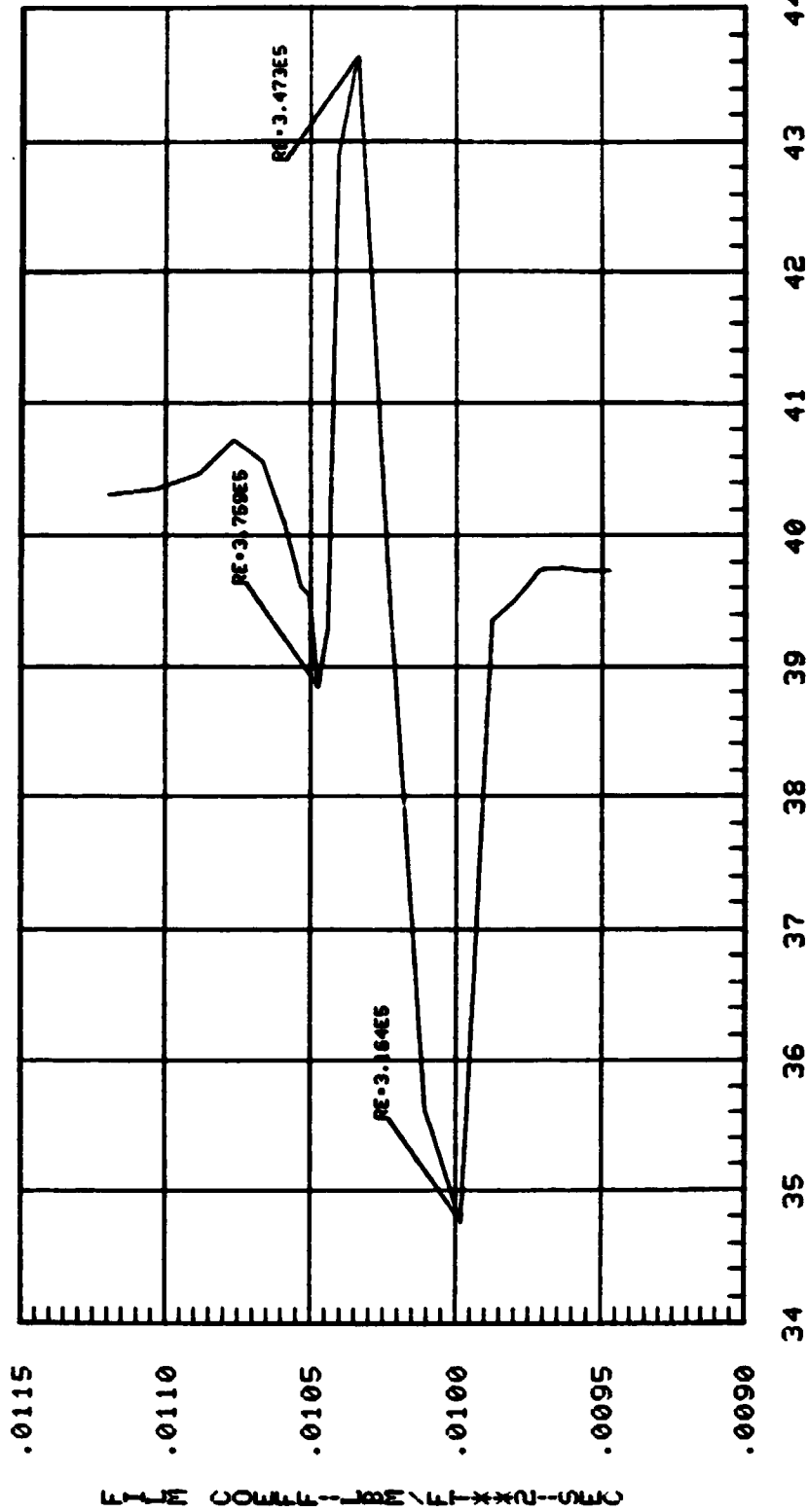
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STS-5 (107 FT LENGTH) OMS POD - FLIGHT PARAMETER COMPARISON

820- 920 SEC

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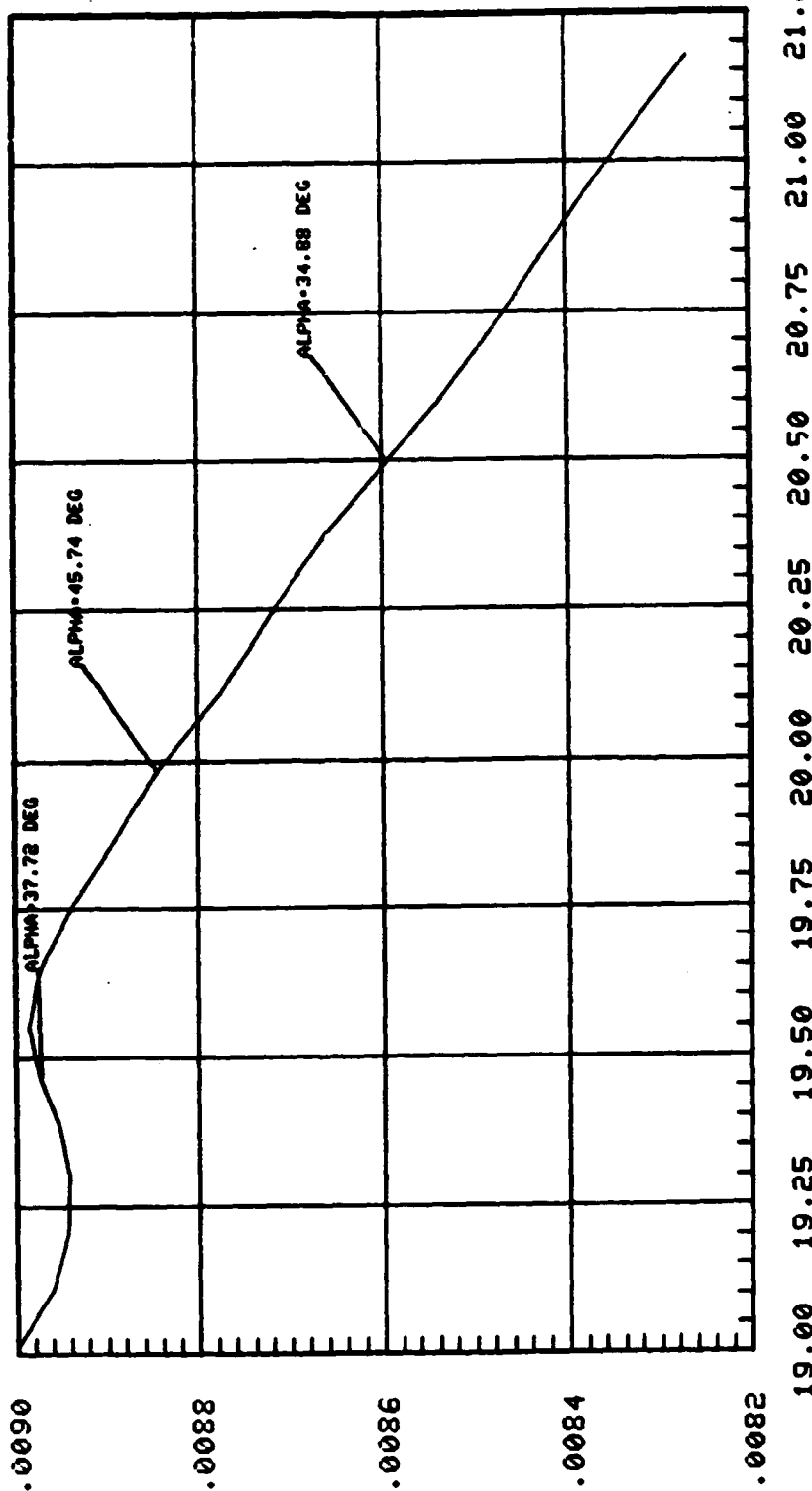
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 ANGLE-OF-ATTACK - DEG

STS-2 (107 FT LENGTH QMS POD) - FLIGHT PARAMETER COMPARISON

780-880 SEC

MREF



QMS-20-17-3MREF-11-11-80

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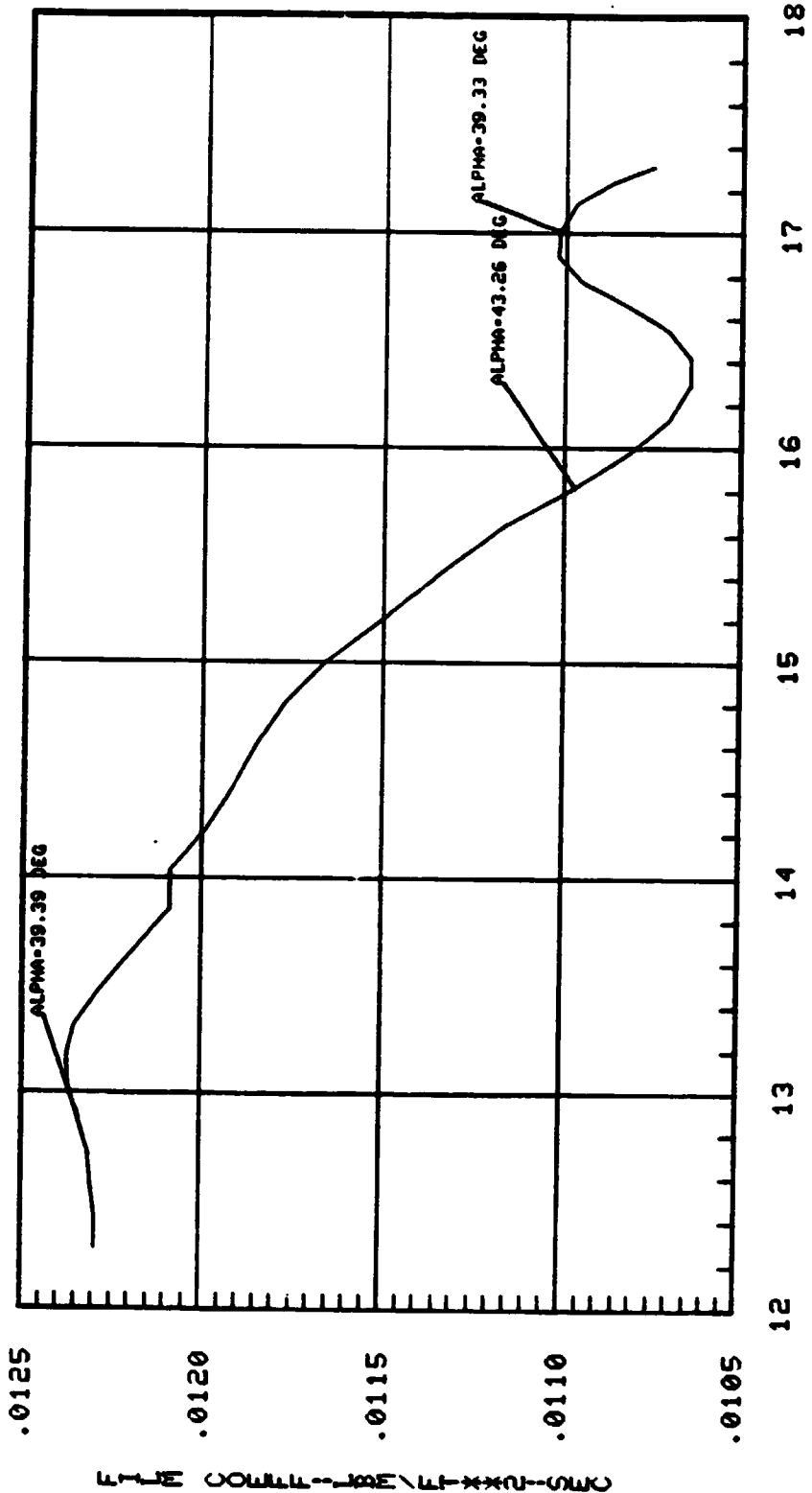
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MACH NUMBER

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860-1020 SEC

MREF



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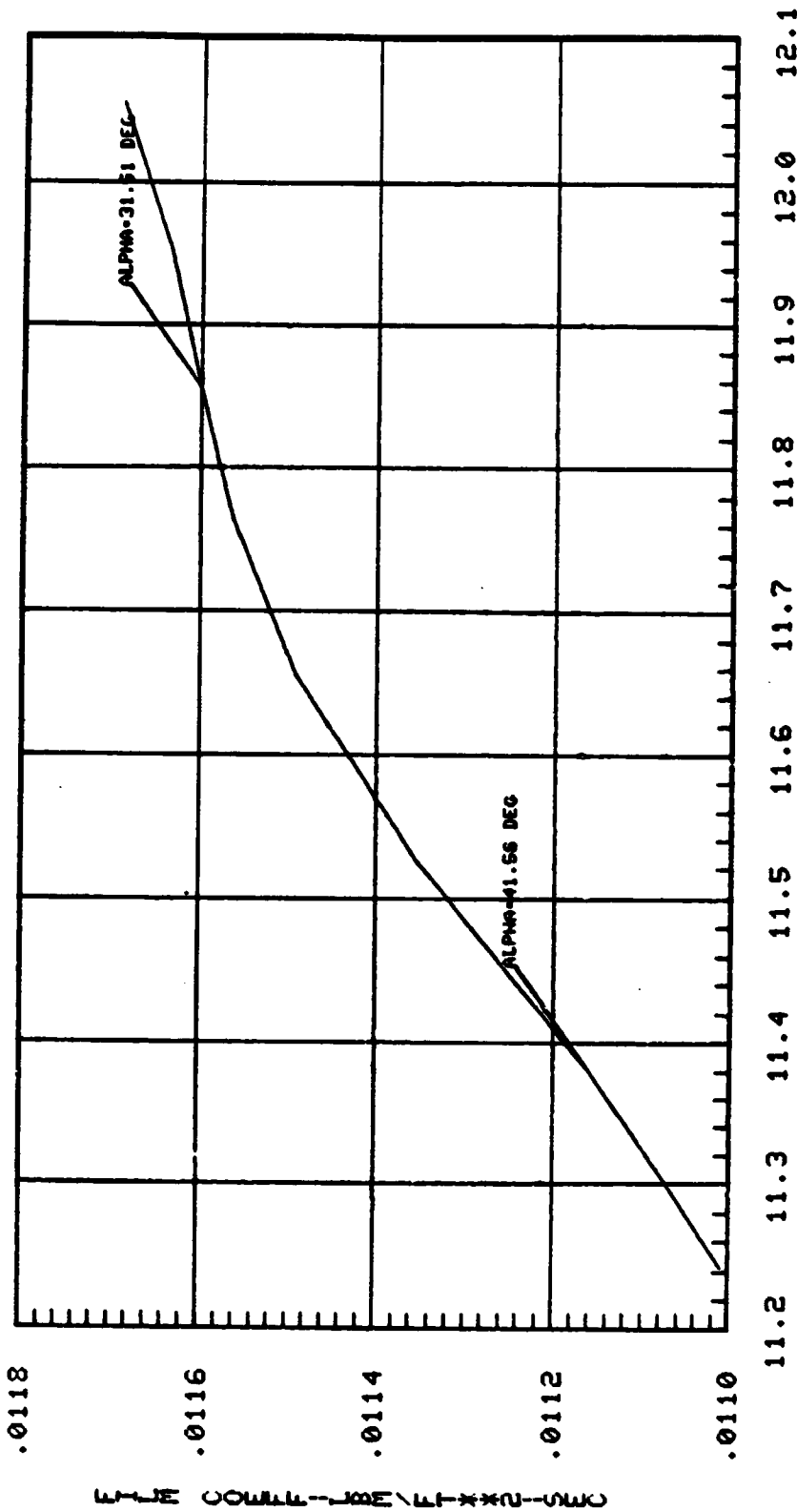
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965-1000 SEC

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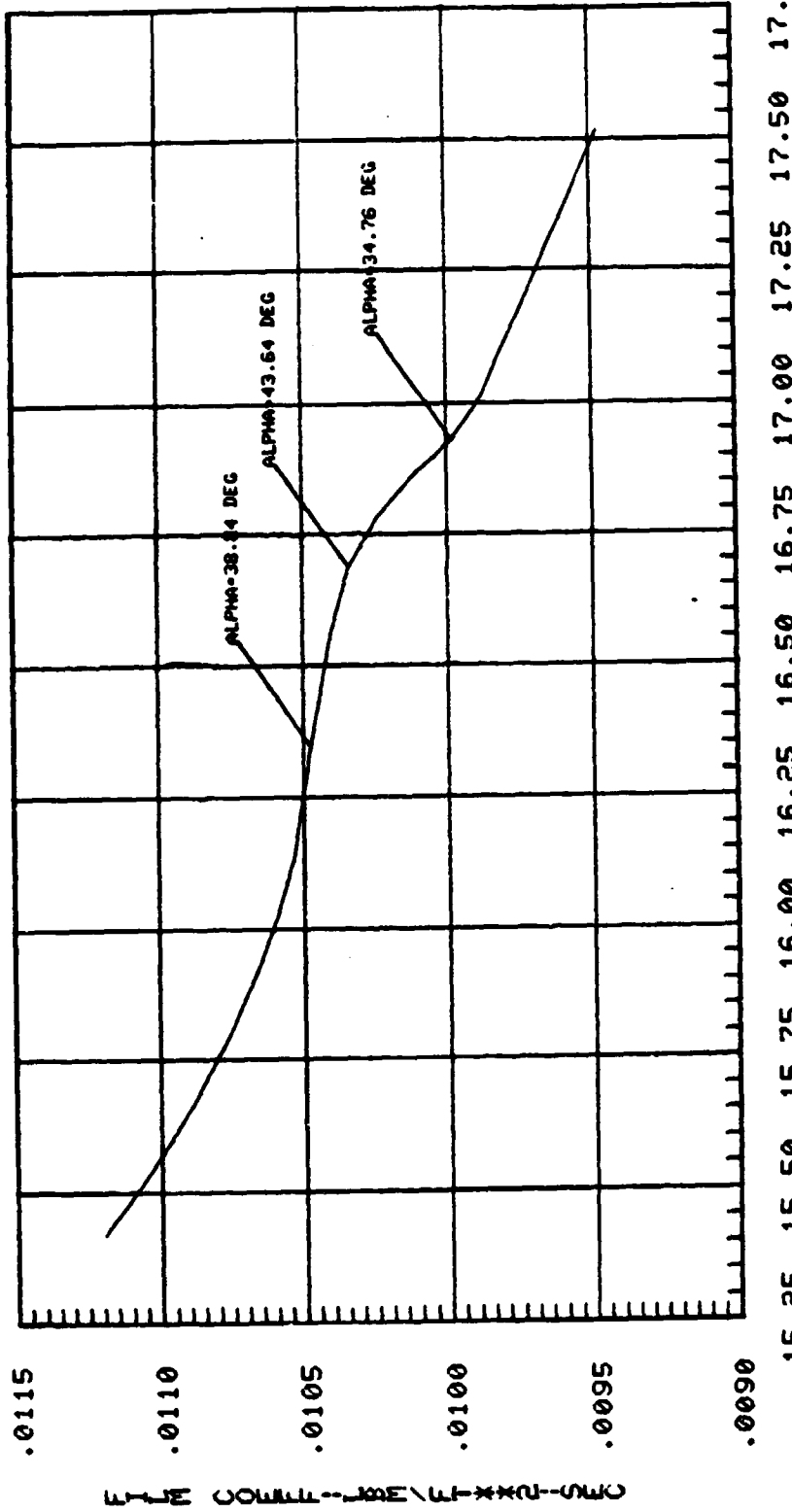


OMS-2\*\*\*17/18/19 PARAMETER

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

820- 920 SEC

HREF



04/21/83  
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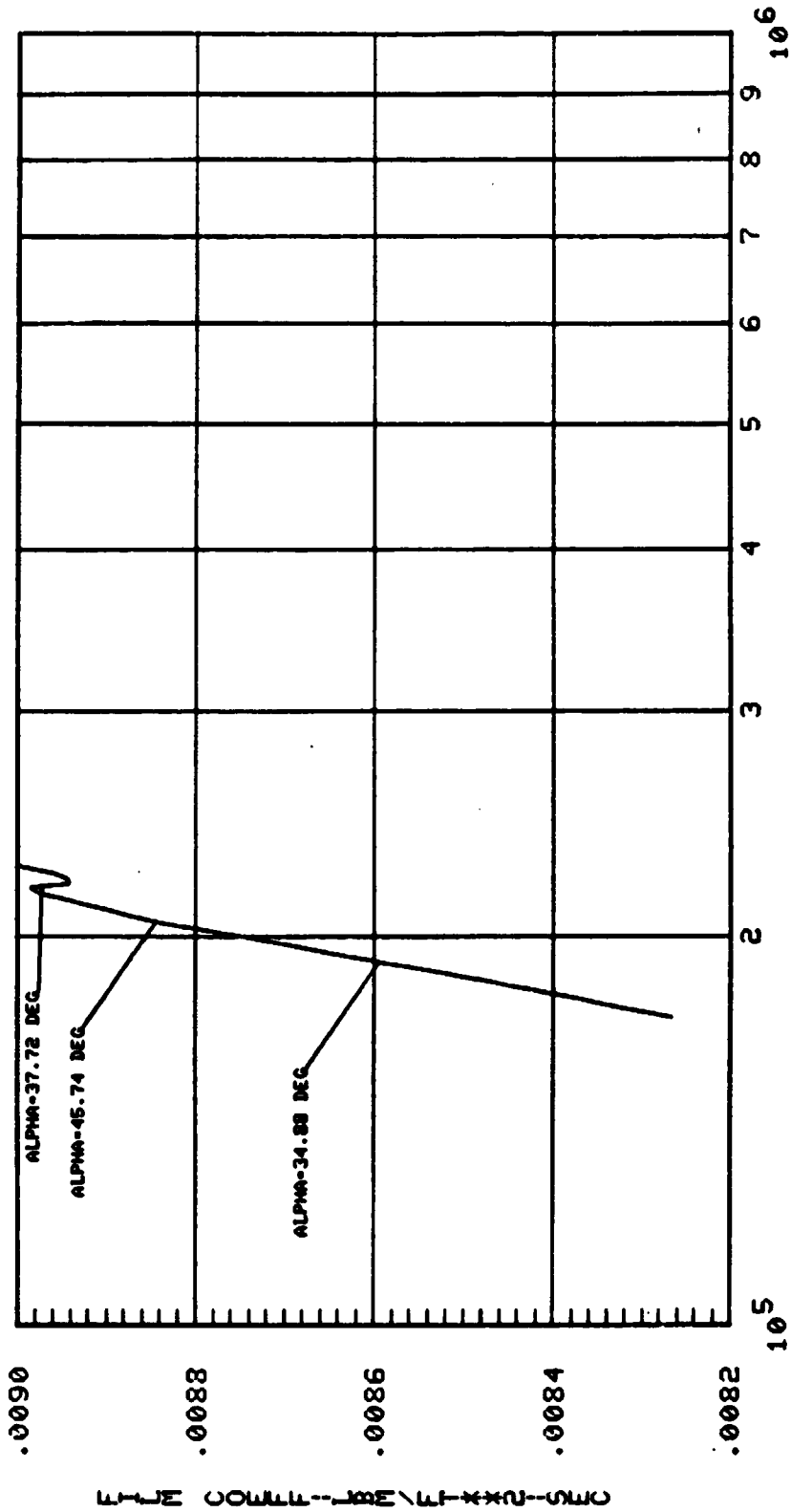
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OF POOR QUALITY

STS-2 (107 FT LENGTH ONE POD) FLIGHT PARAMETER COMPARISON

780-880 SEC

HREF



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04/21/83  
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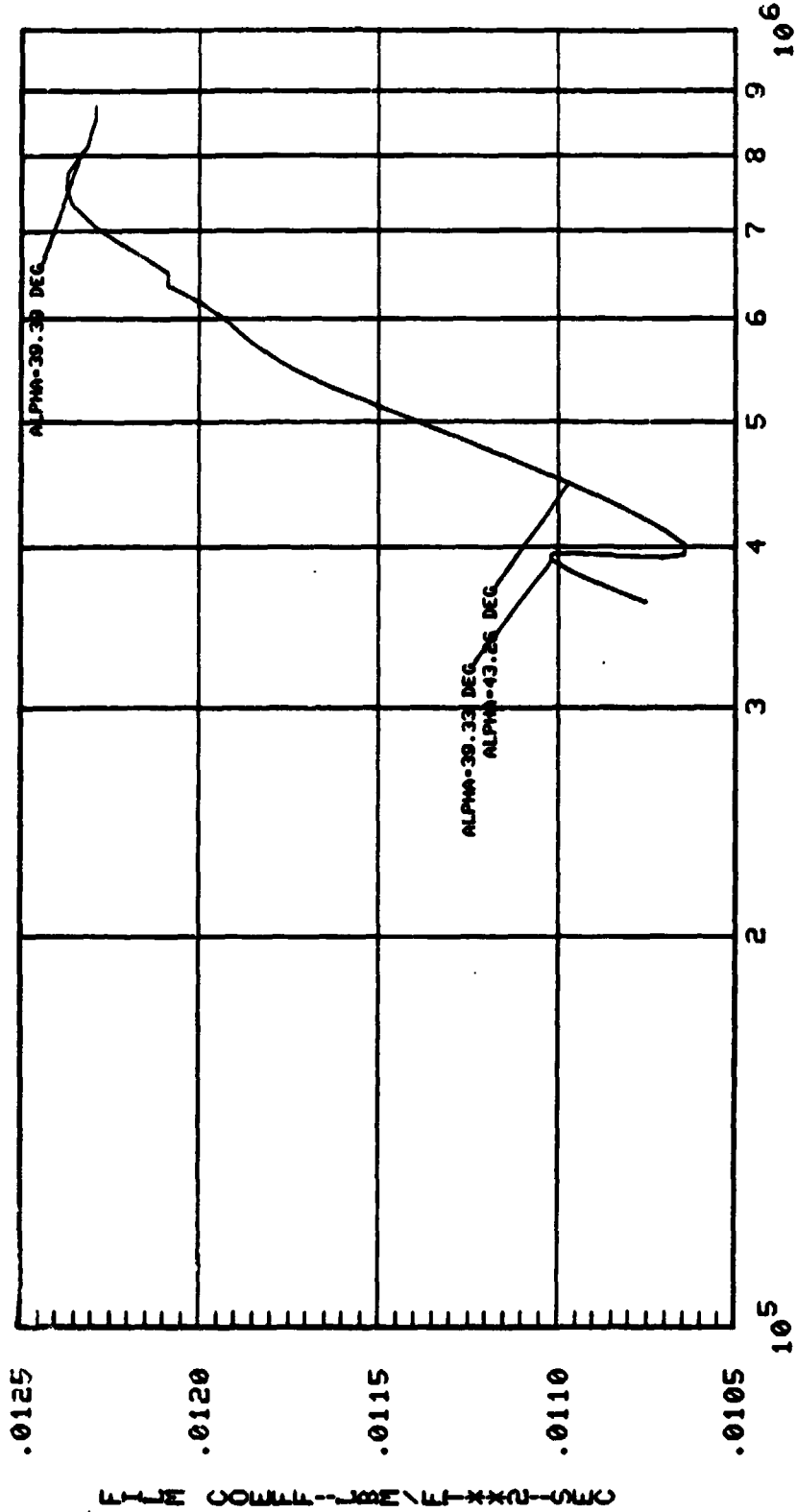
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860-1020 SEC

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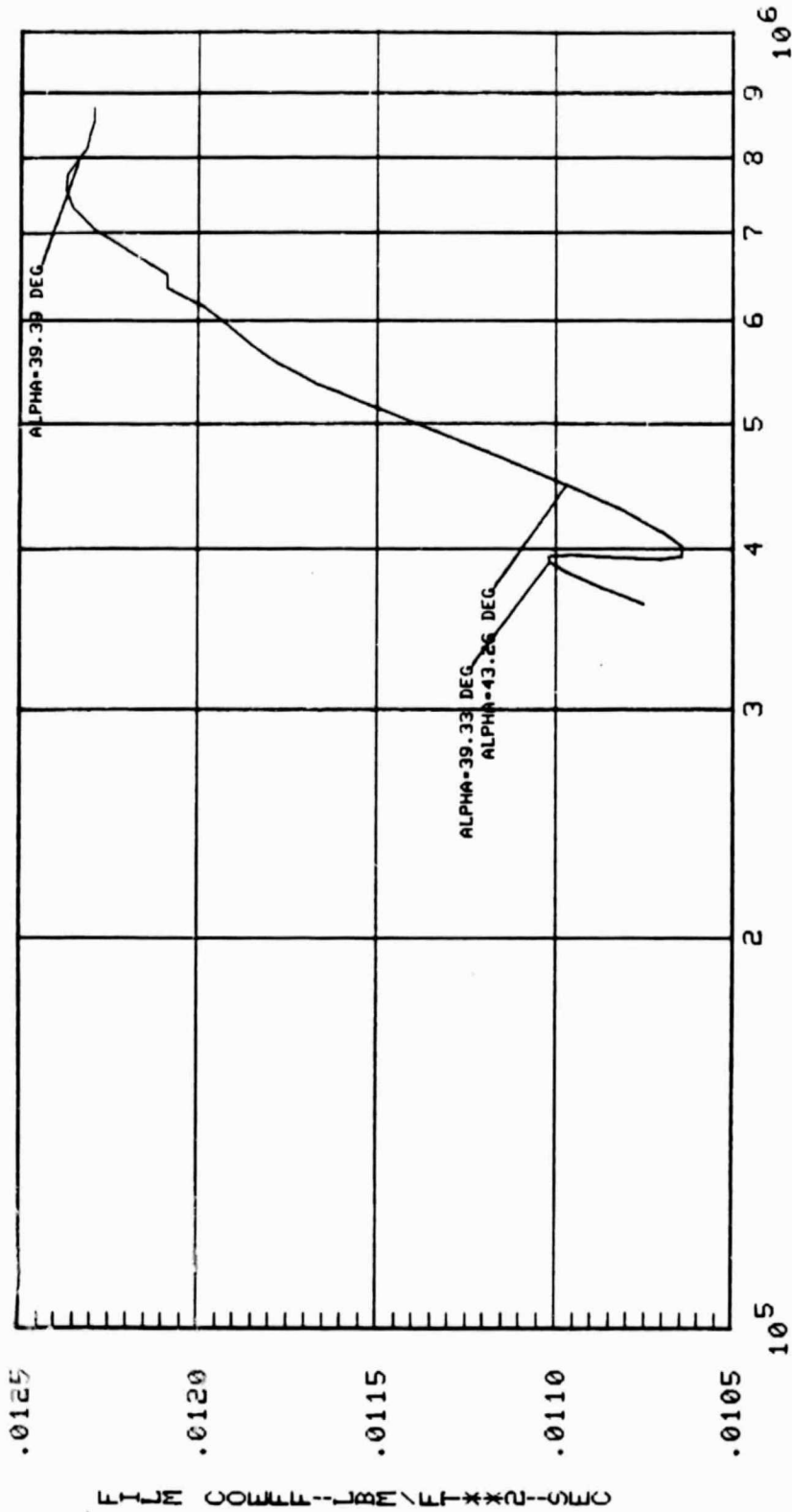
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04/21/83

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860-1020 SEC

HREF



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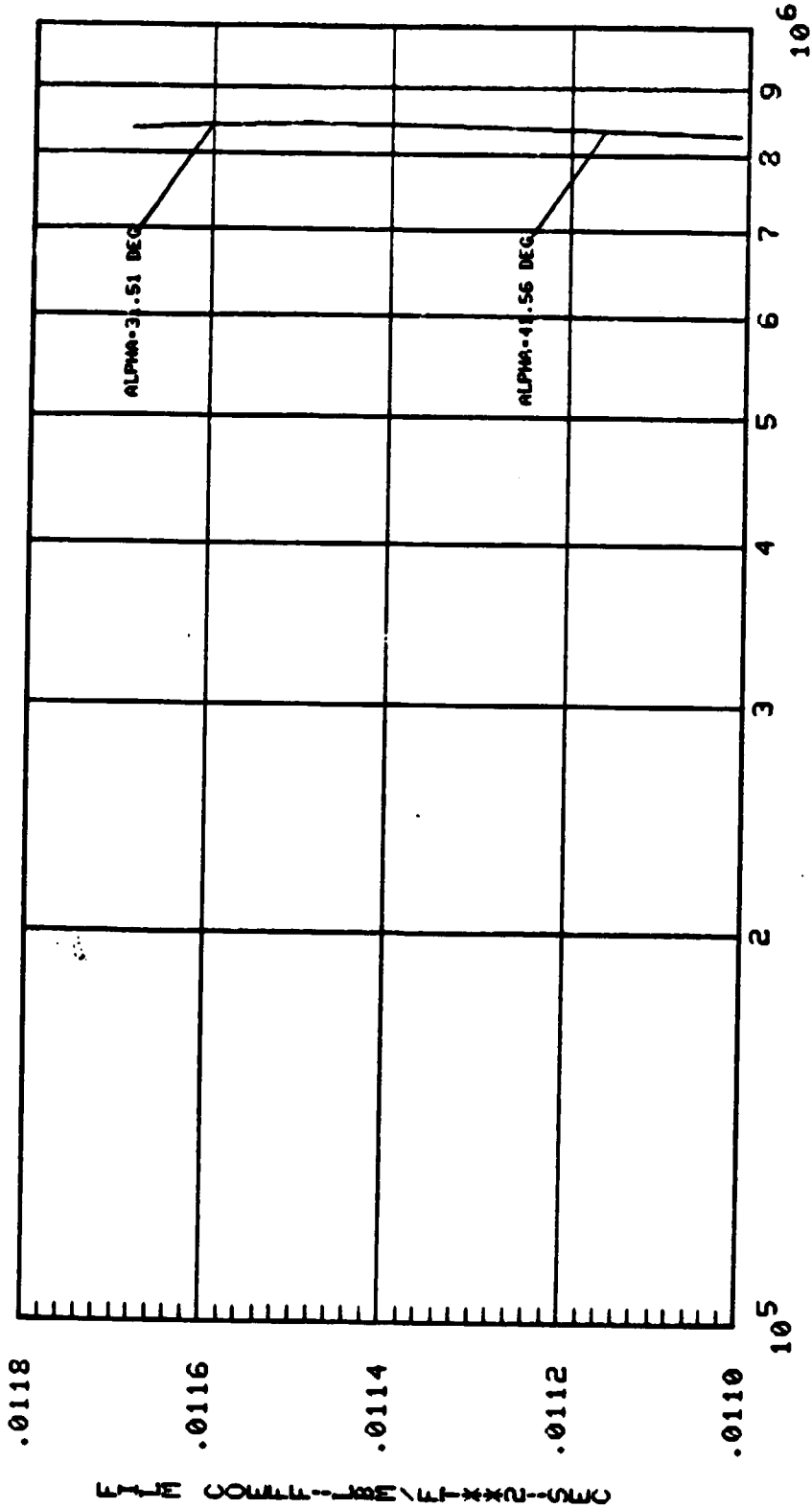
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REYNOLDS NUMBER (NS)



STS-4 - 107 FT LENGTH OMS POD - FLIGHT PARAMETER COMPARISON

REF \_\_\_\_\_ 965-1000 SEC



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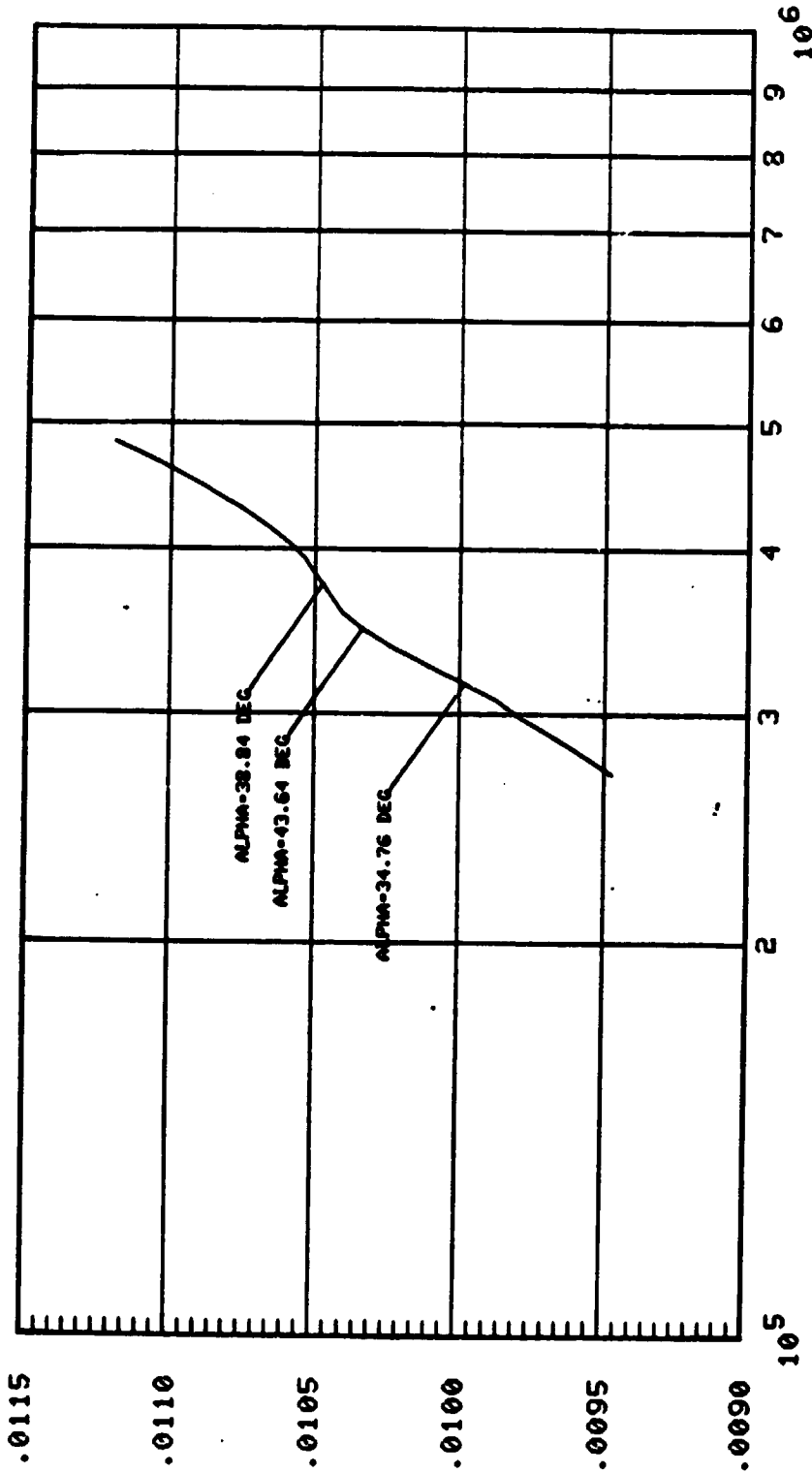
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STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

820- 920 SEC

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OMTS--NXX--17--30P--1--JREF--COM--17--17

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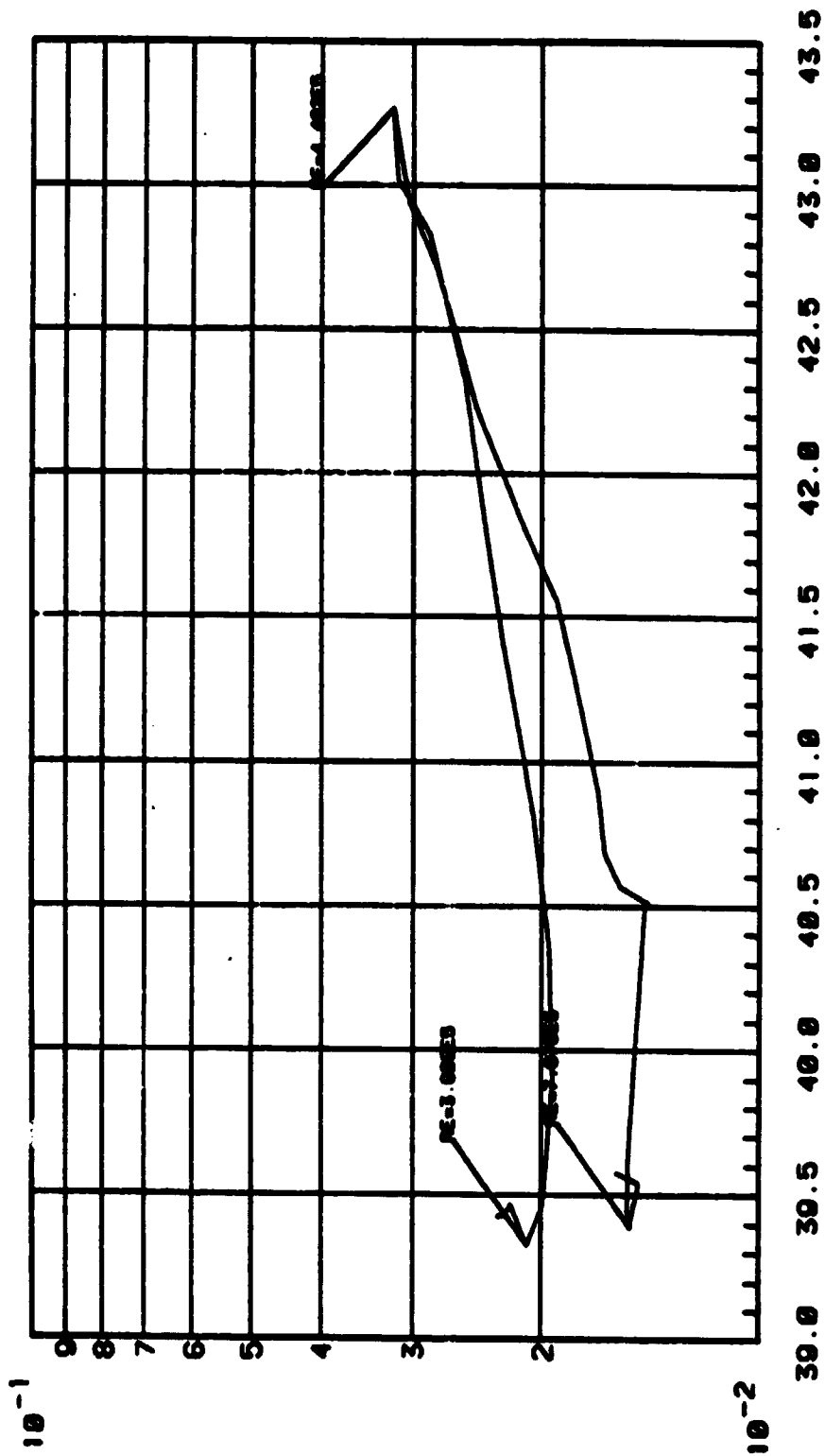
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**APPENDIX D**

**FLIGHT DATA - SHORT RANGE**

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

————— VERTICALLY-REF 000-1000 SEC

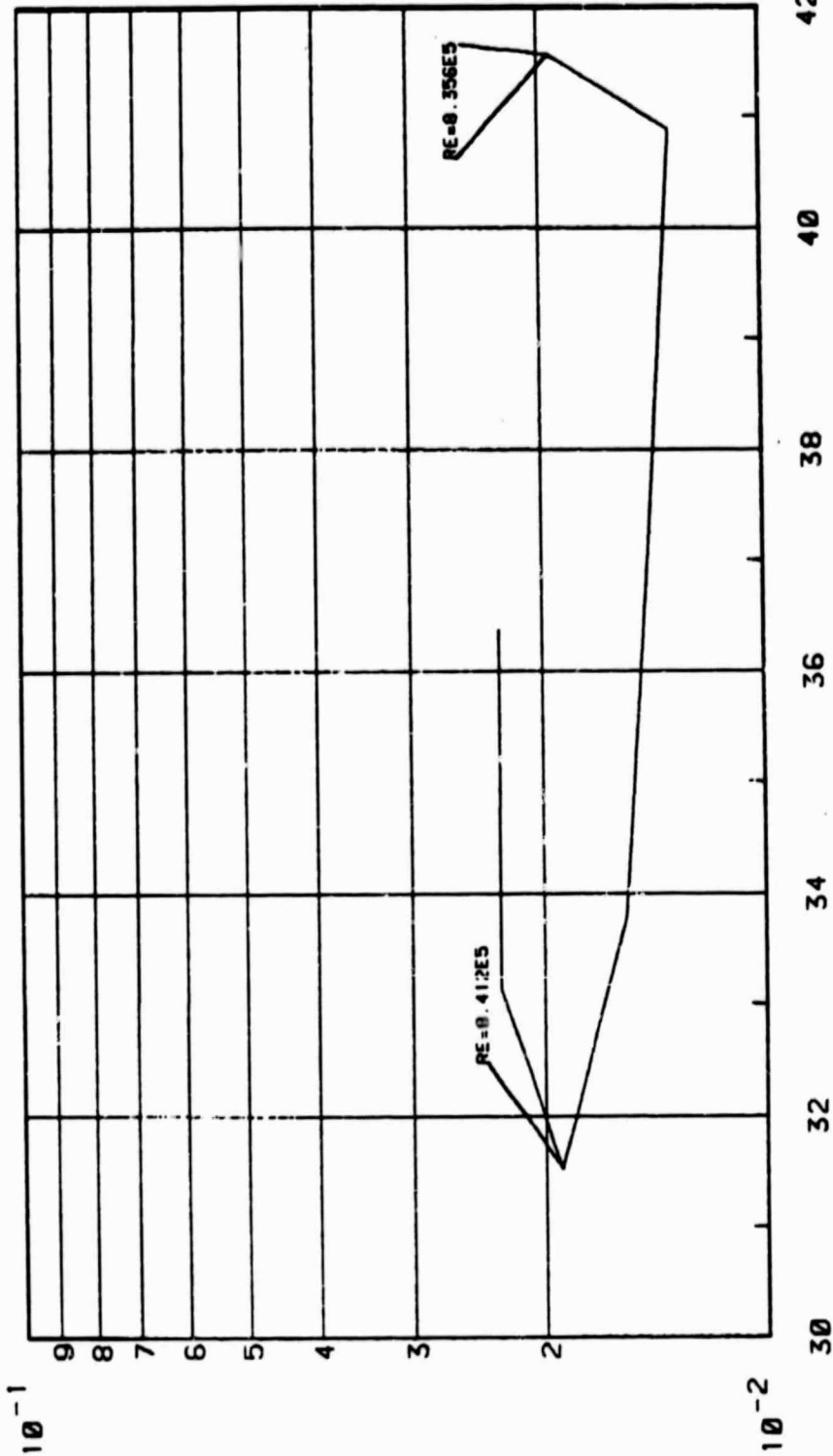


01/20/03  
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ANGLE-OF-ATTACK - DEG

TIME SCALE - HOURS

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB770210A/H-REF 000-1000 SEC



LIFT COEFF - H/H-REF

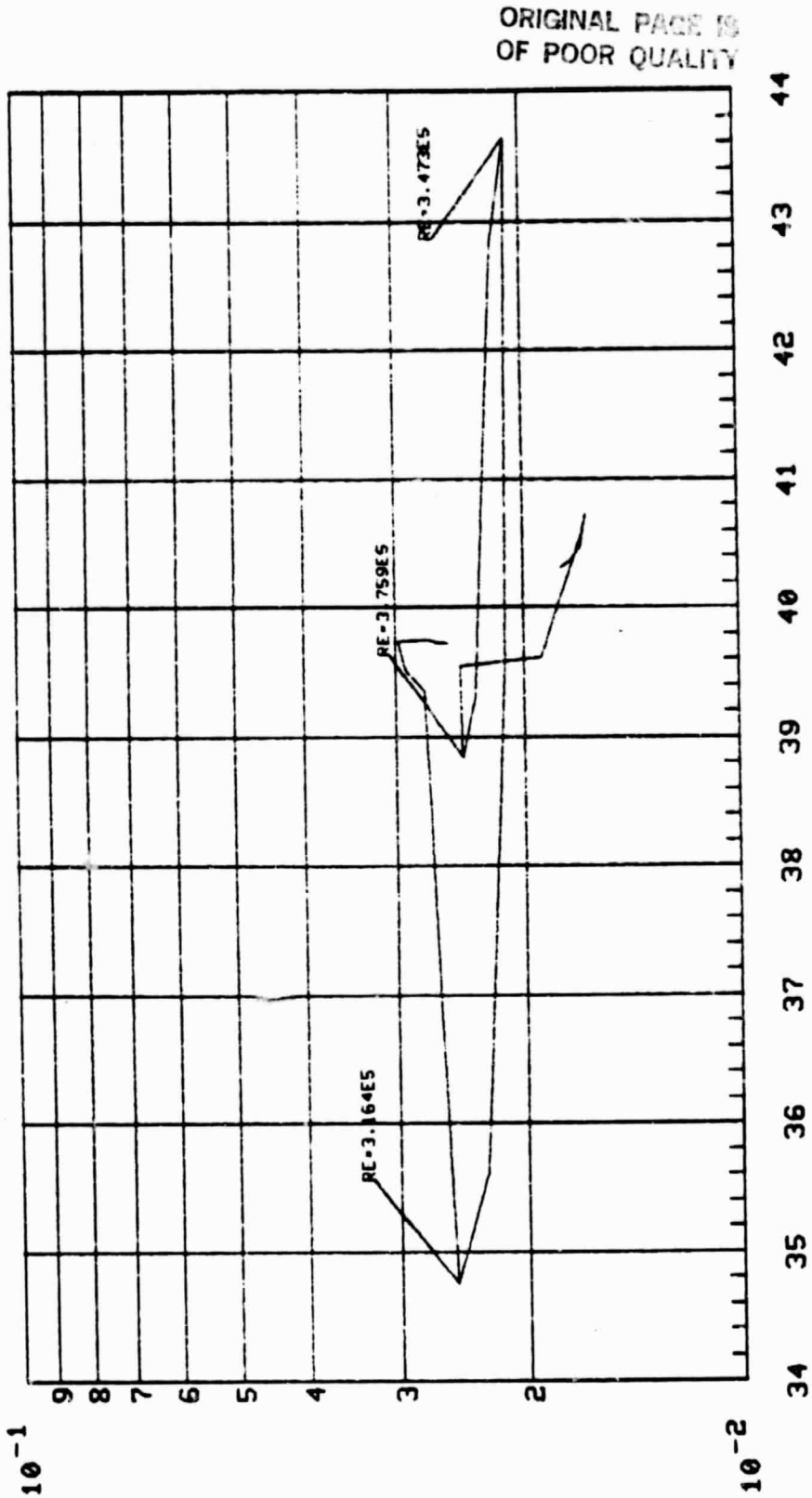
D-2

ORIGINAL PAGE IS  
OF POOR QUALITY

04/28/83  
BASE TIME = 16040423.000 SEC  
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# STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9219A/H-REF 820- 920 SEC

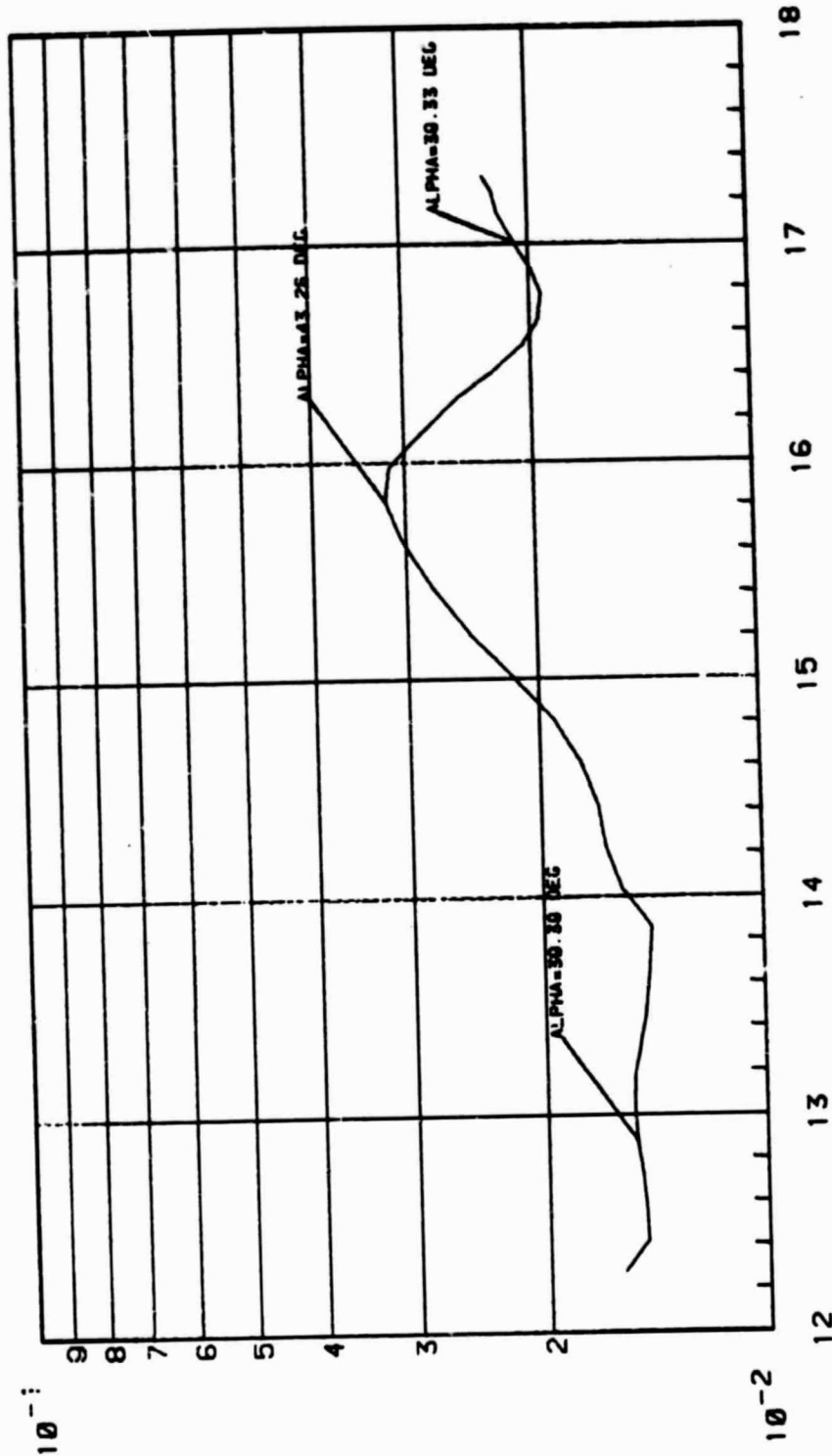


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ANGLE-OF-ATTACK - DEG

FILM SOURCE -- H/H-RATE

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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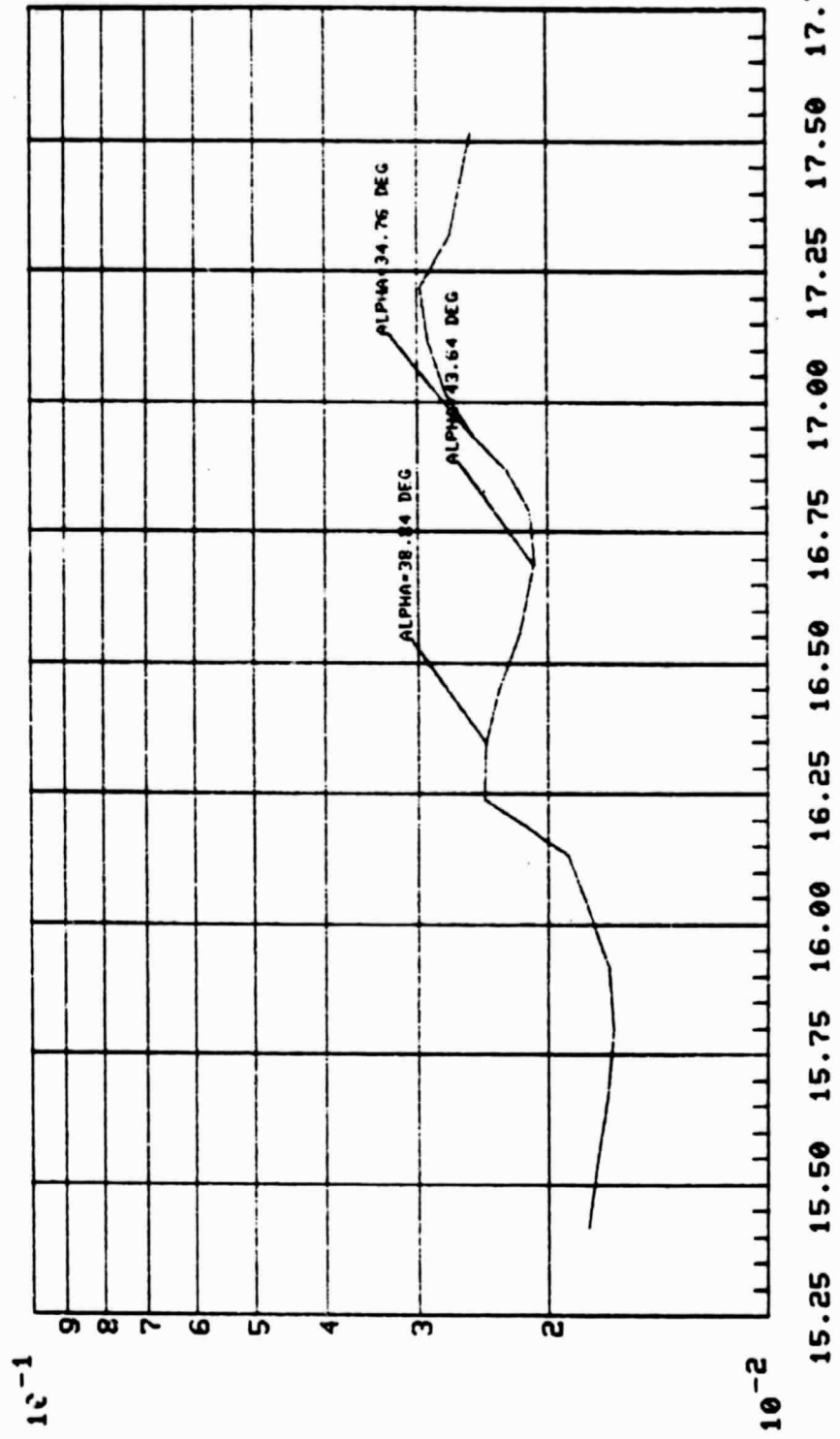


FLIGHT COMPARISON - H/H-REF

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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FILM COEFF -- H/H-REF

D-5

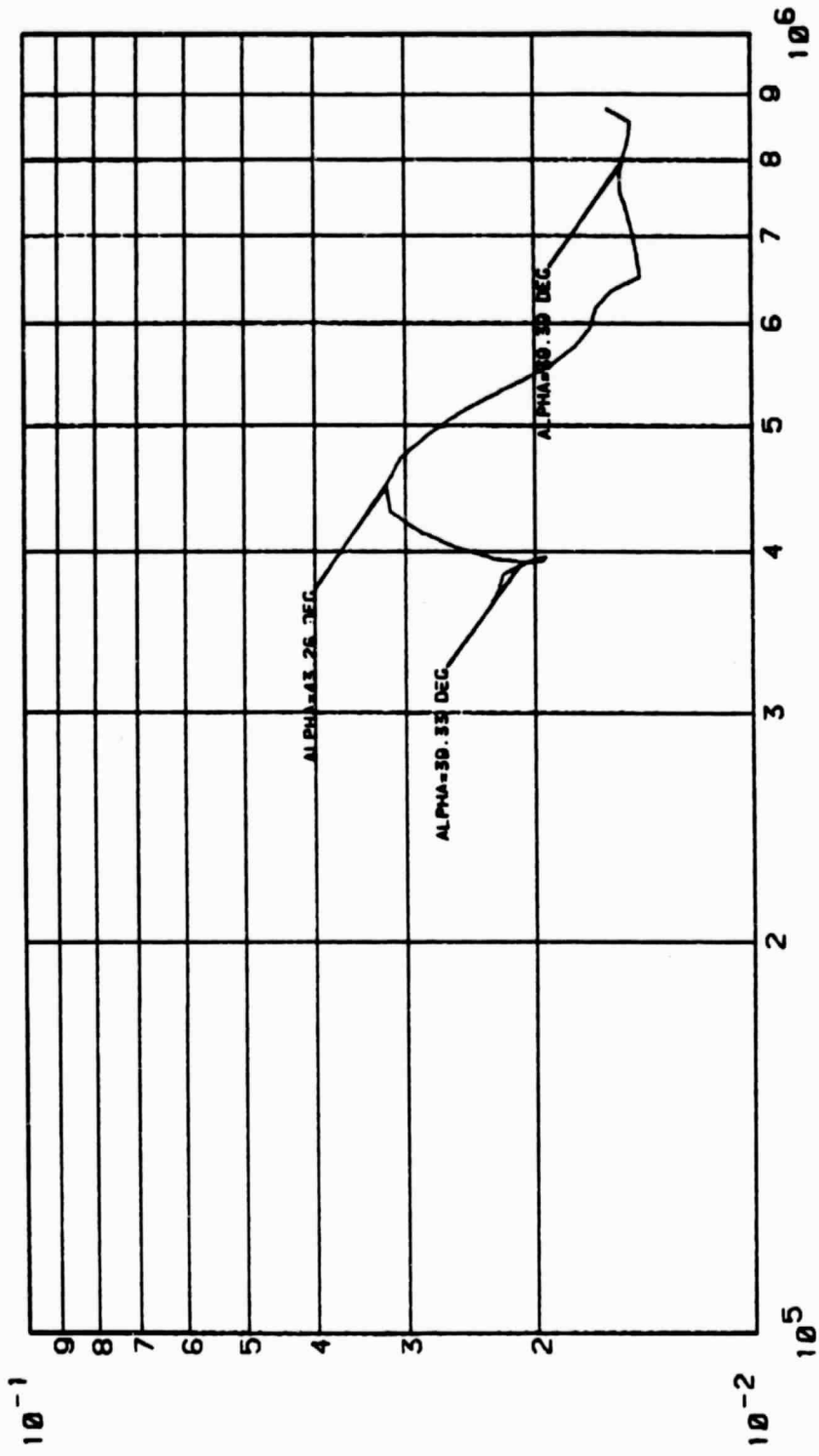
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MACH NUMBER



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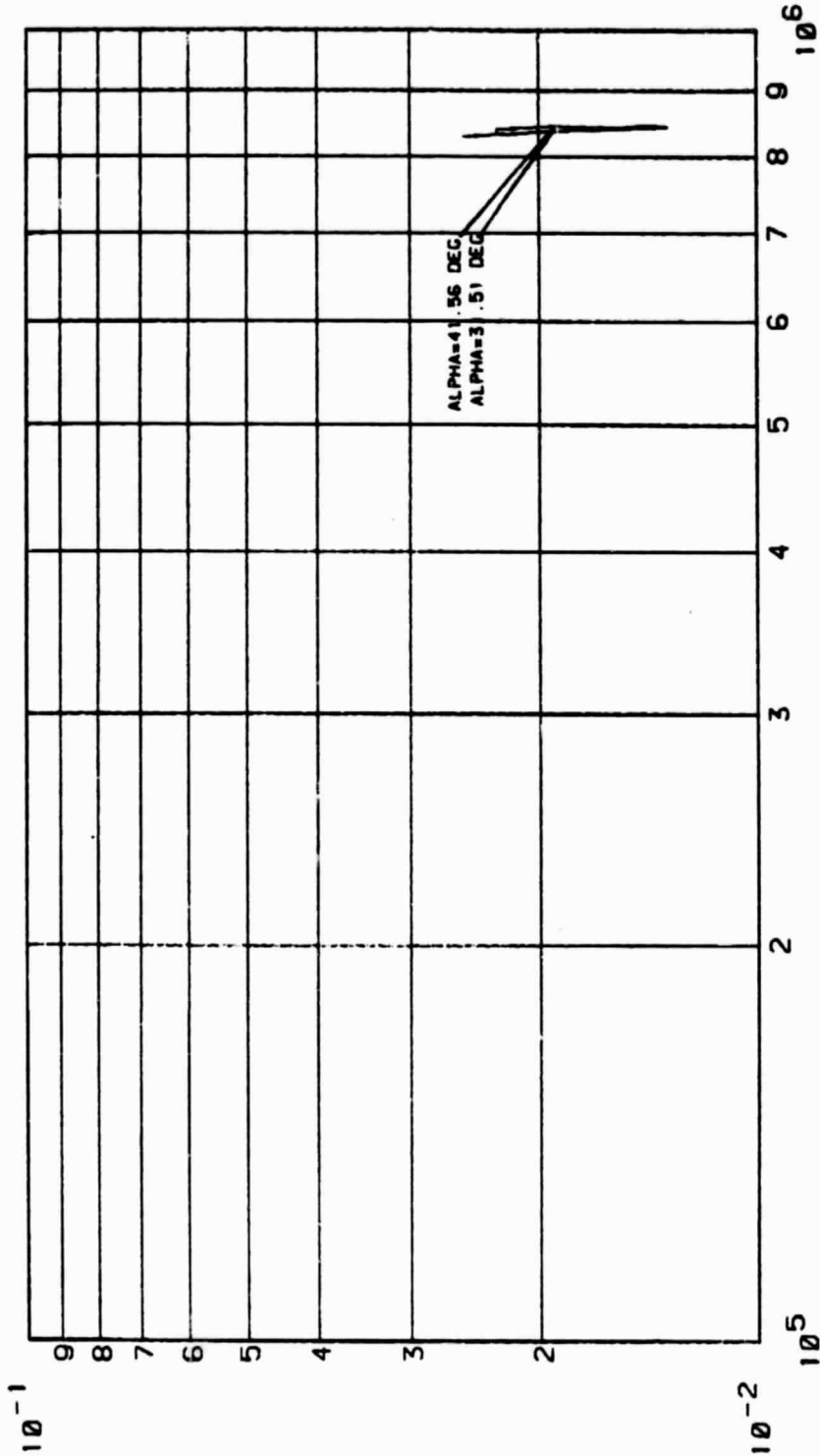
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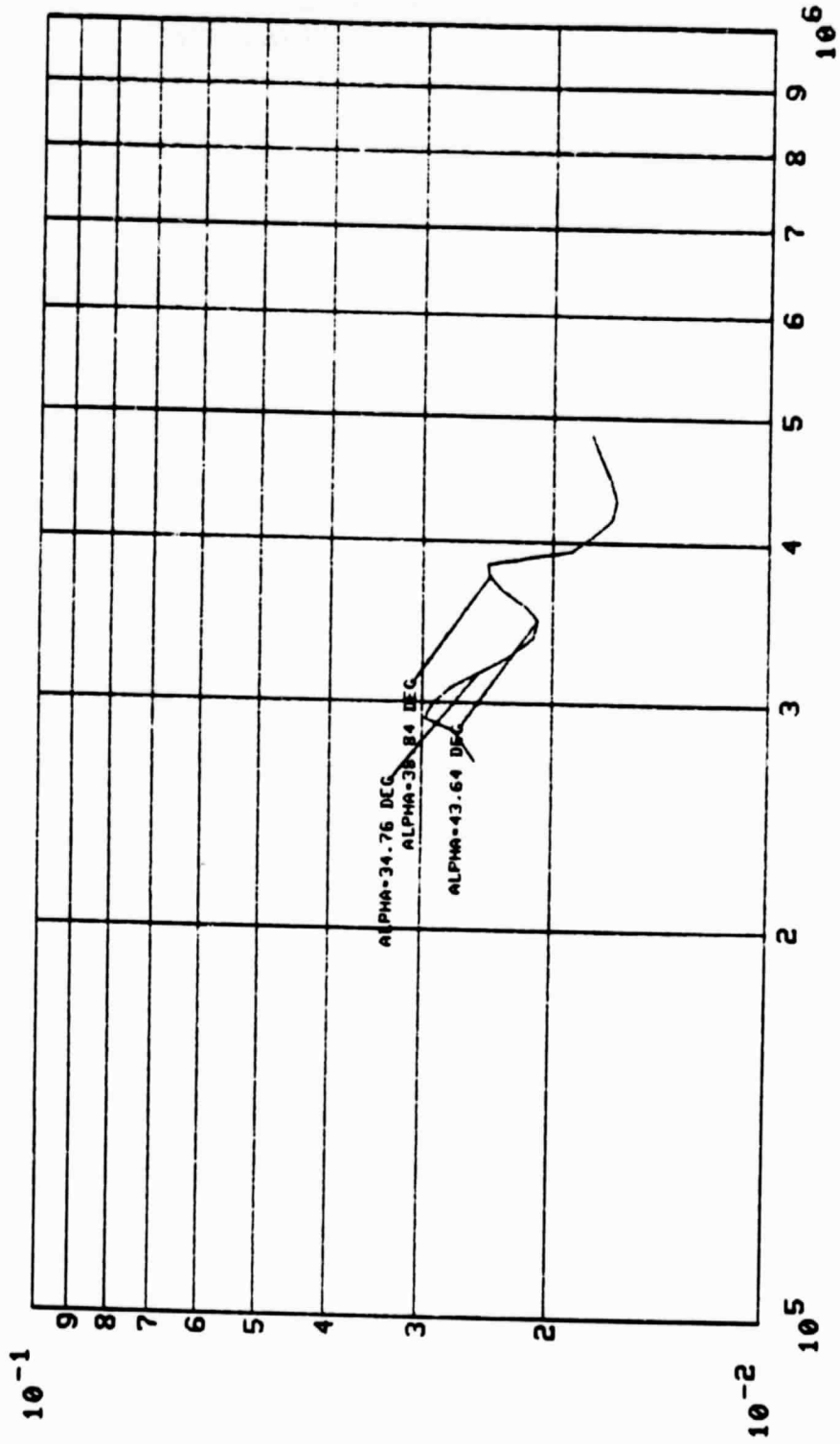
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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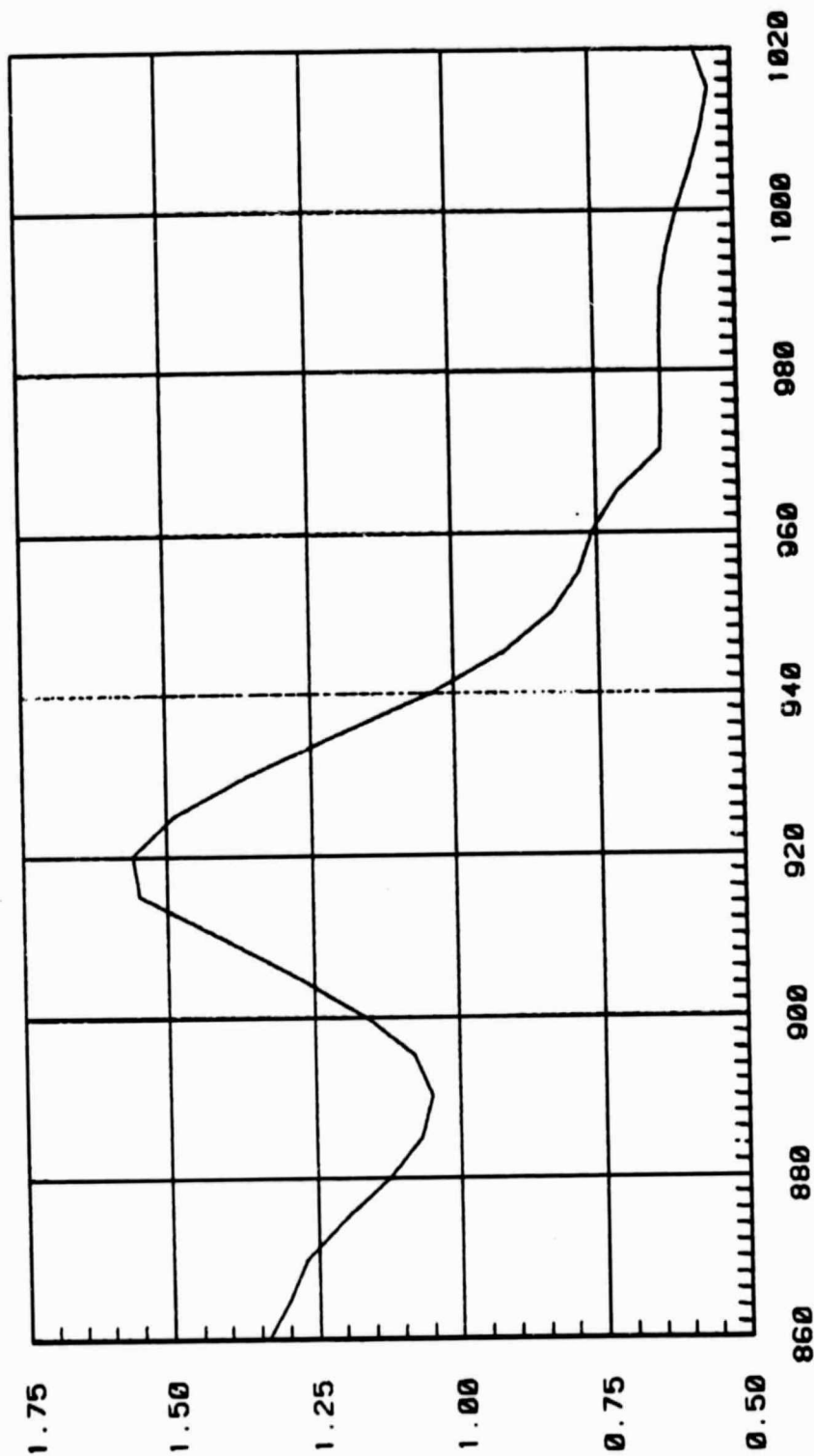
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VS7T0210A



HEATING RATE - BTU/FT\*\*2 - SEC

D-10

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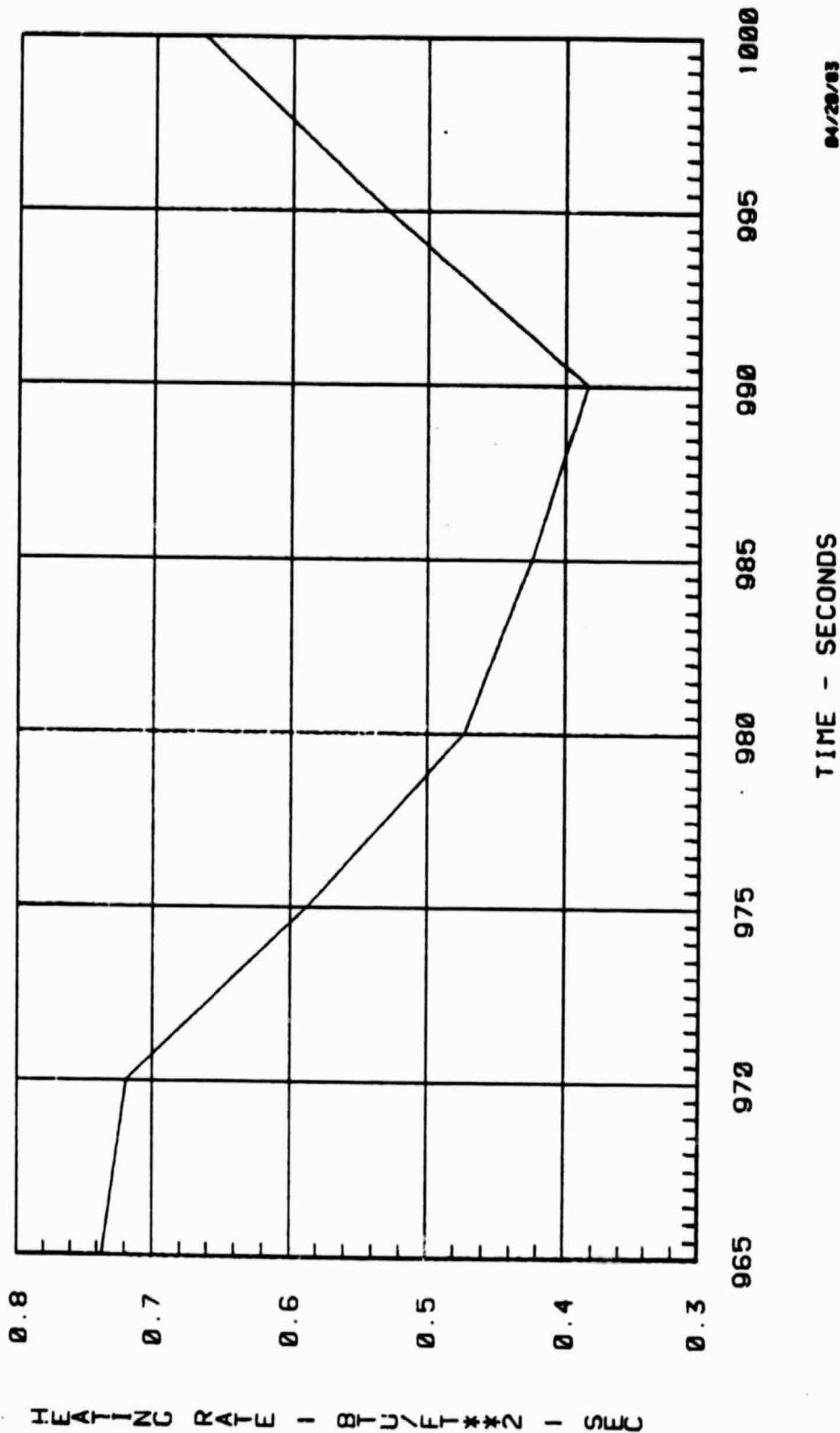
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04/20/03

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V87T0210A

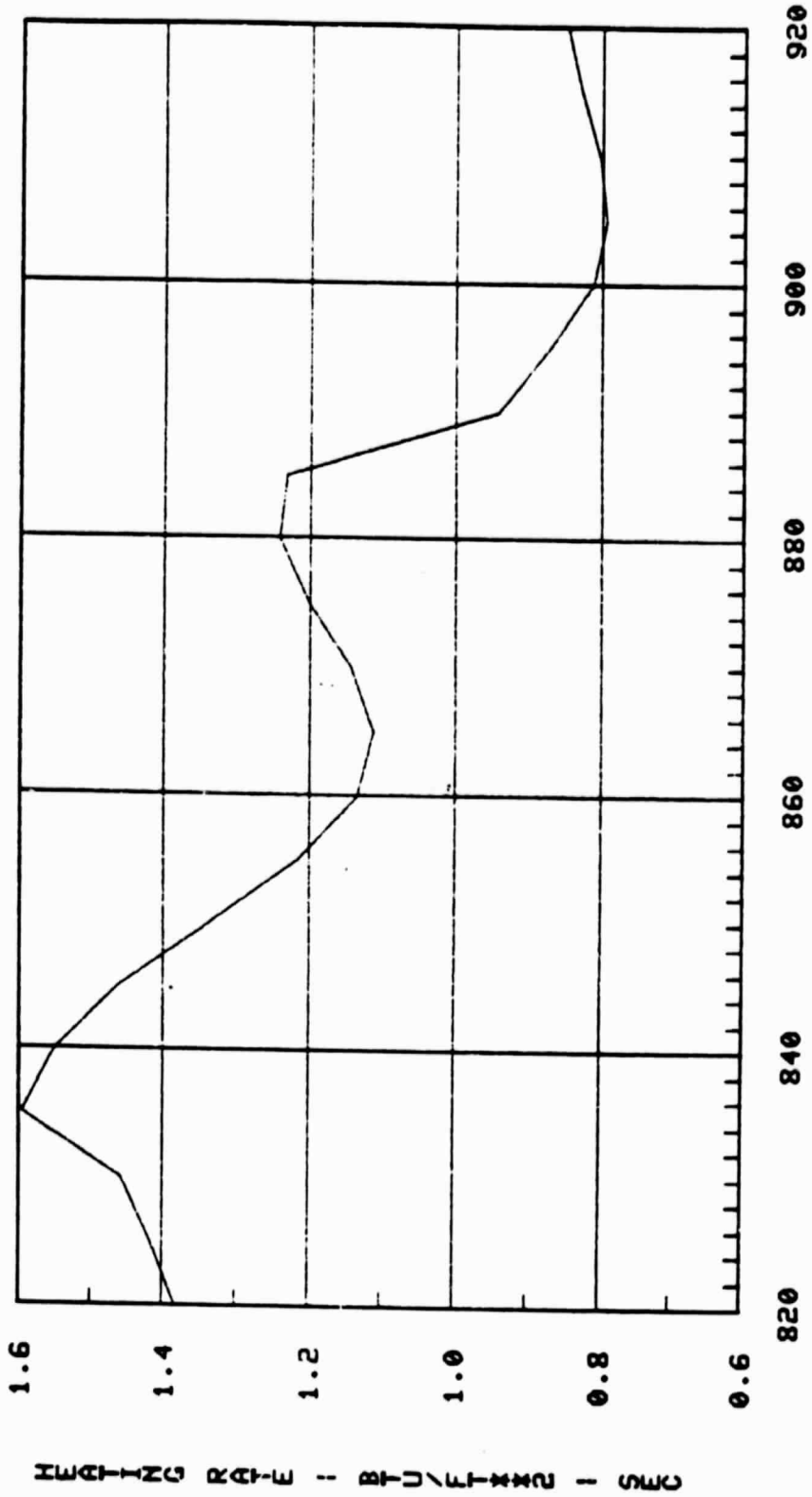
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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HEATING RATE - BTU/FT\*HR - SEC

D-12

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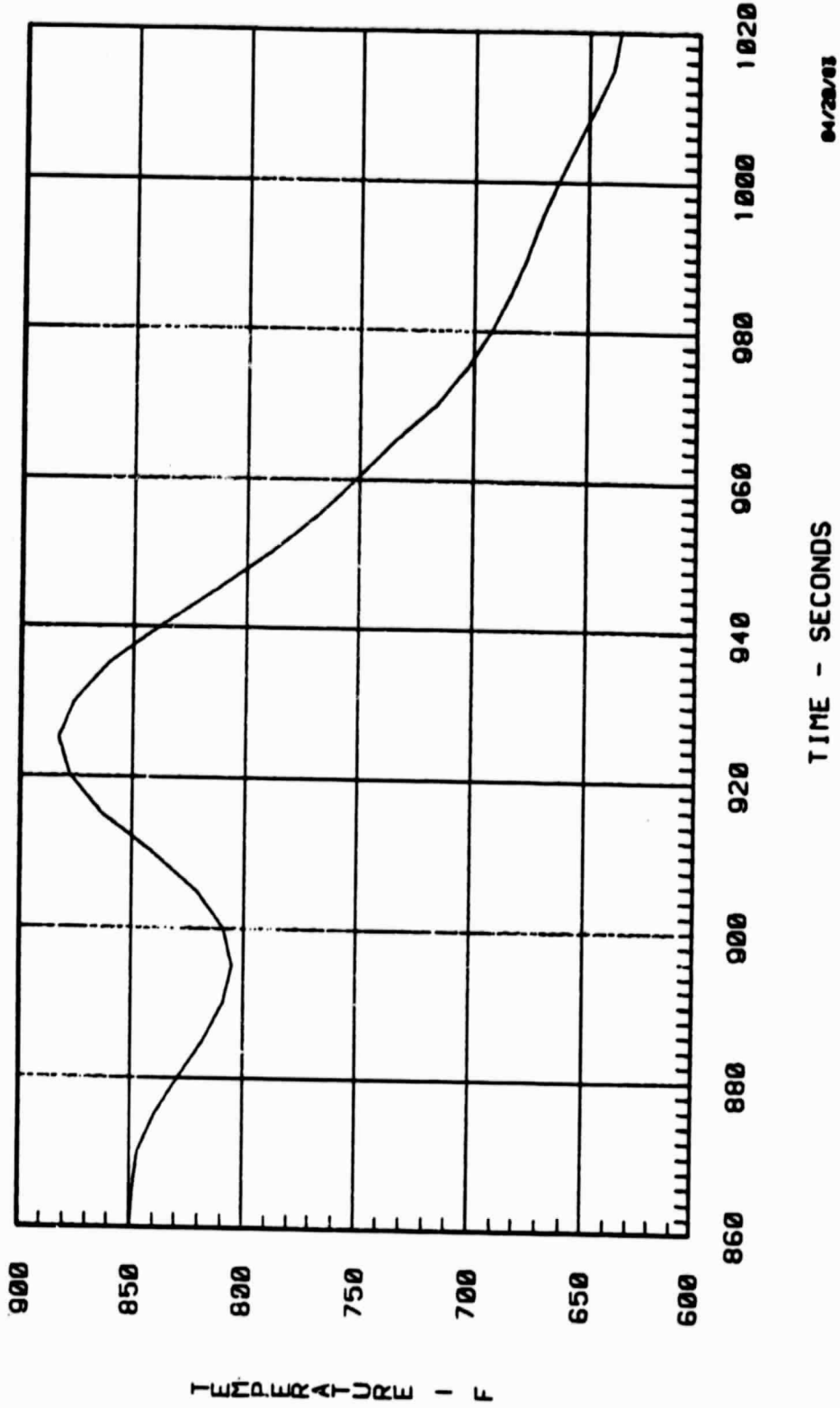
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04-20-53

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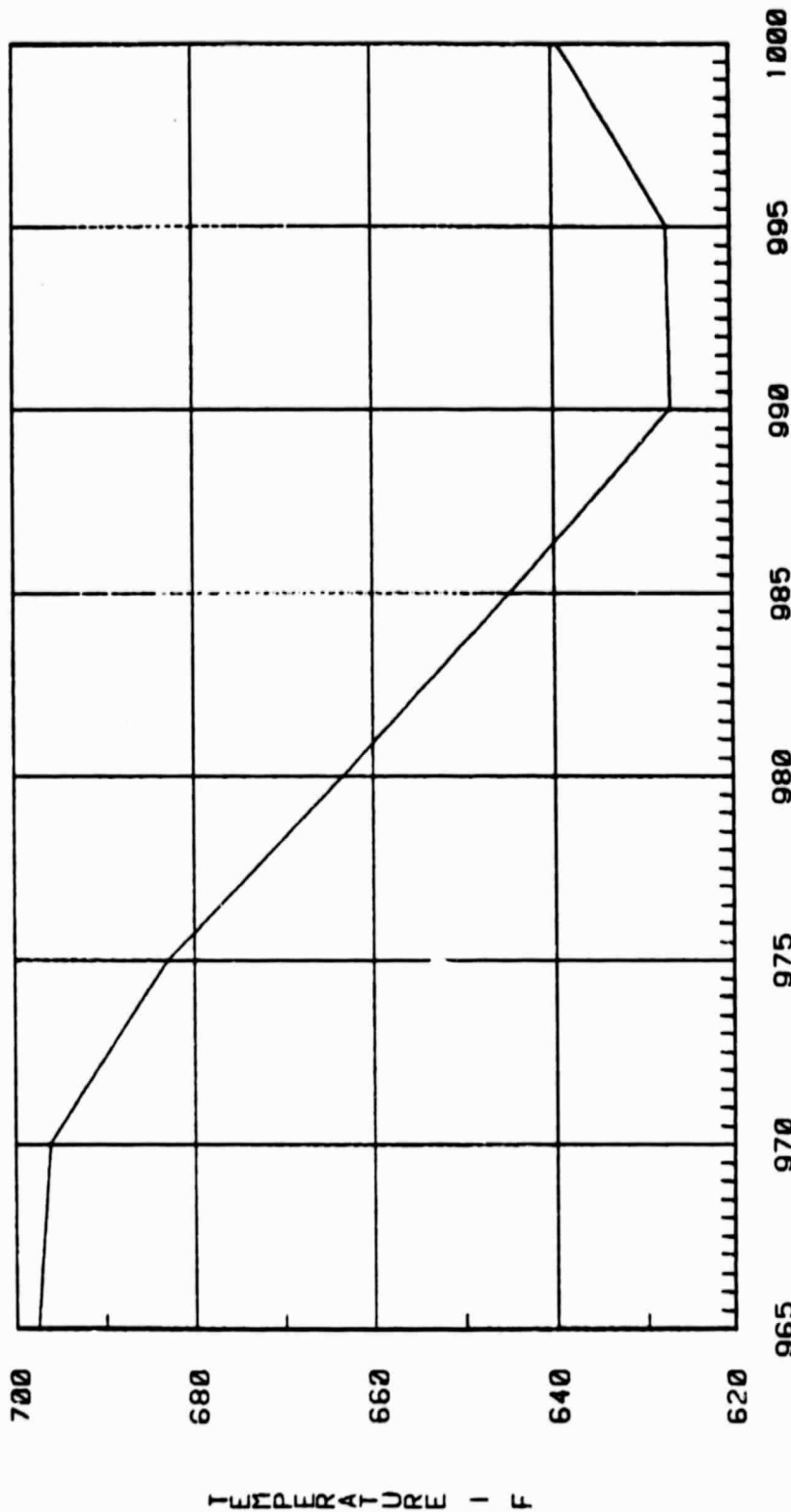
TIME - SECONDS

TEMPERATURE - F

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04/28/83

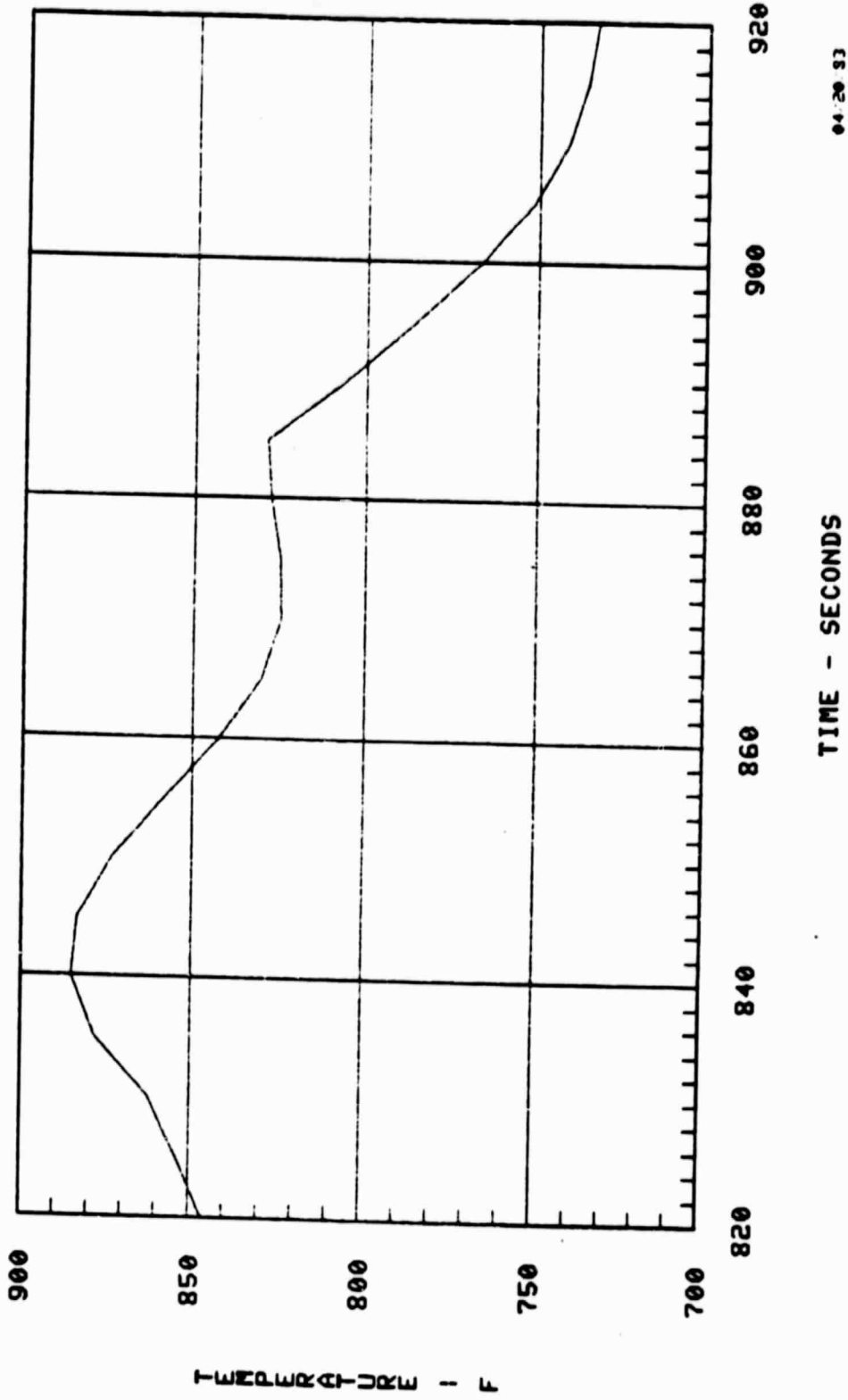
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

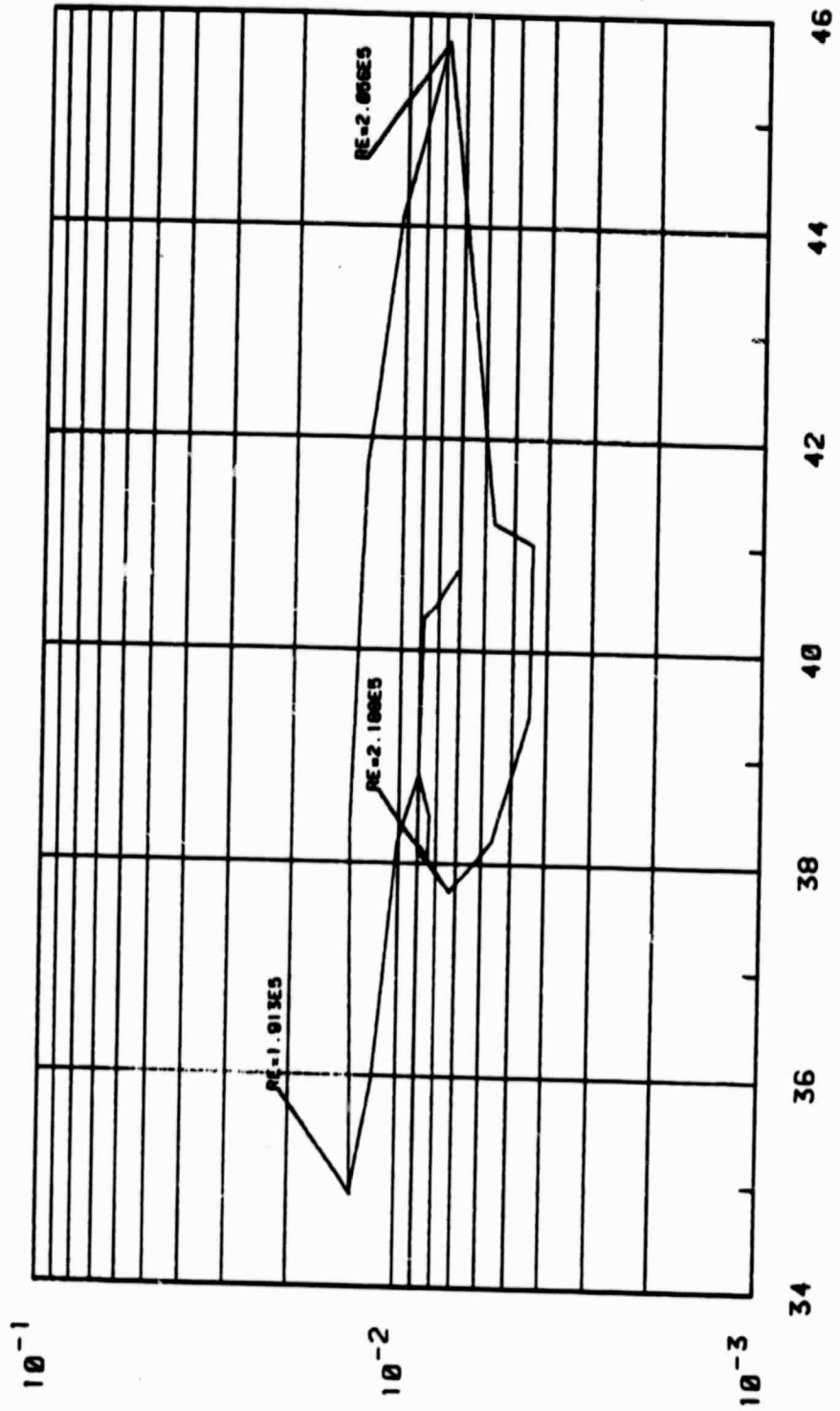
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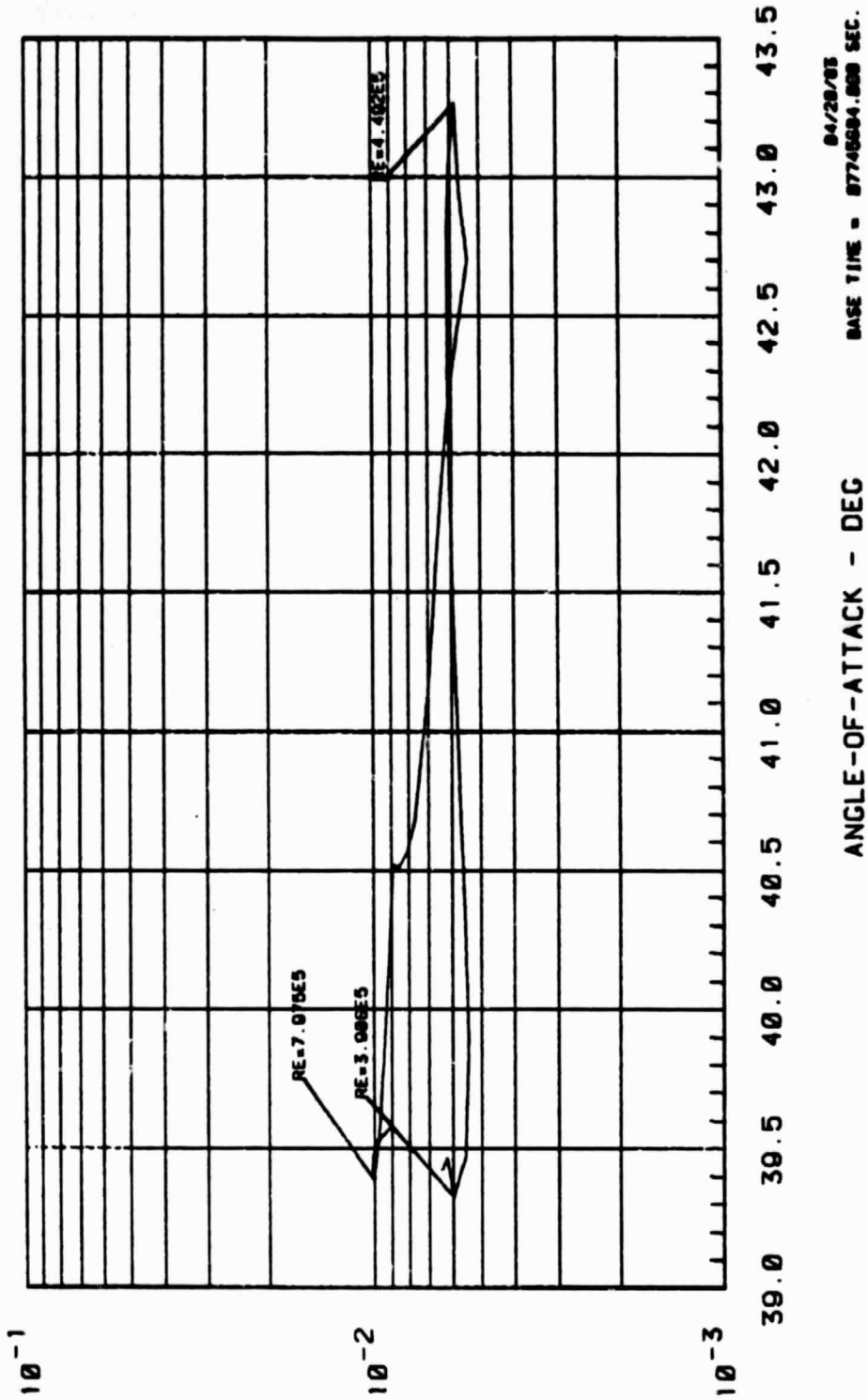
ANGLE-OF-ATTACK - DEG

FLIGHT COEFF - H/I-RUN

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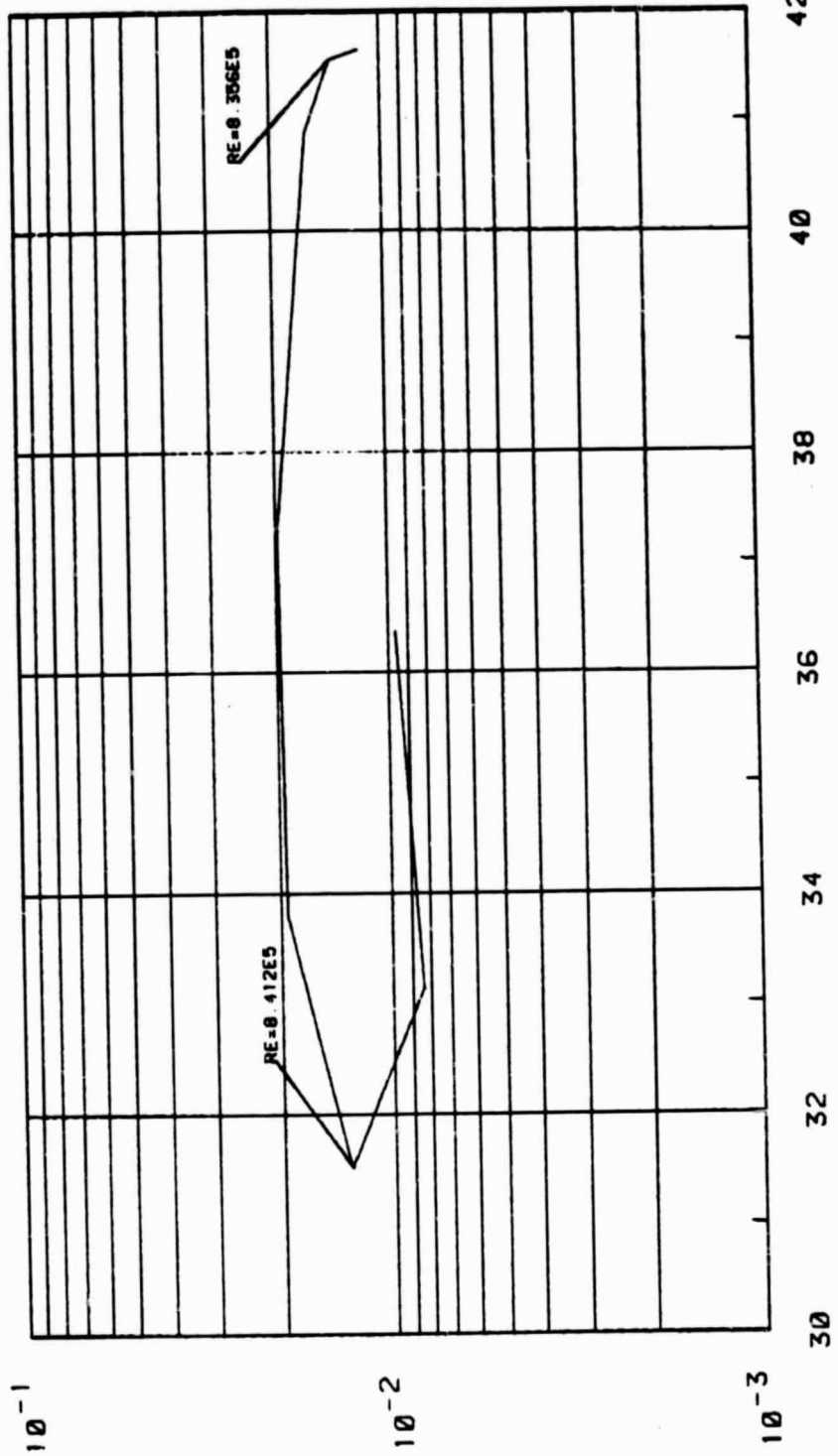


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MINI-MAX - I/I-REF

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VB7T0220A/N-REF 965-1000 SEC



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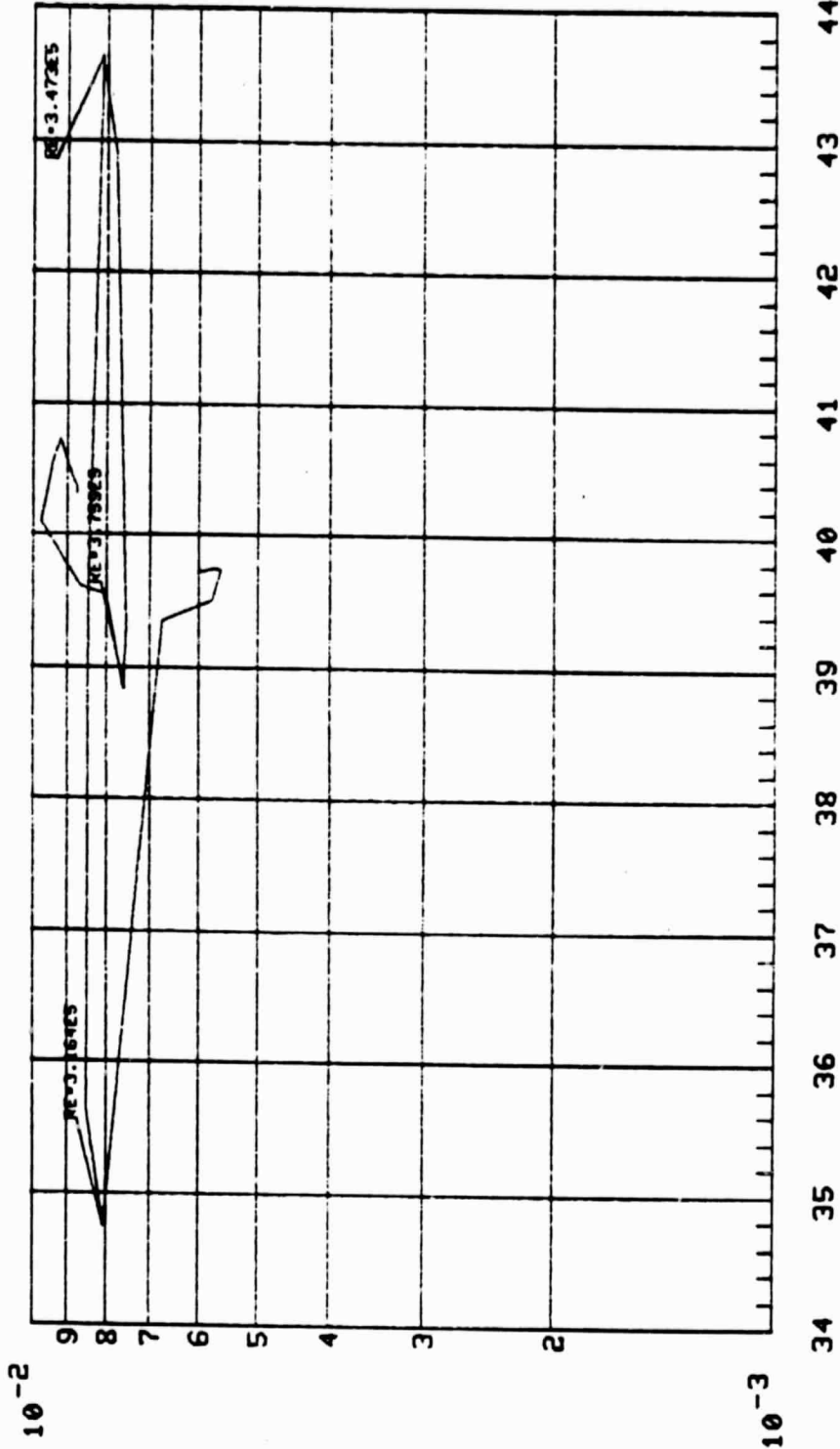
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 ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9220A/H-REF 820- 920 SEC

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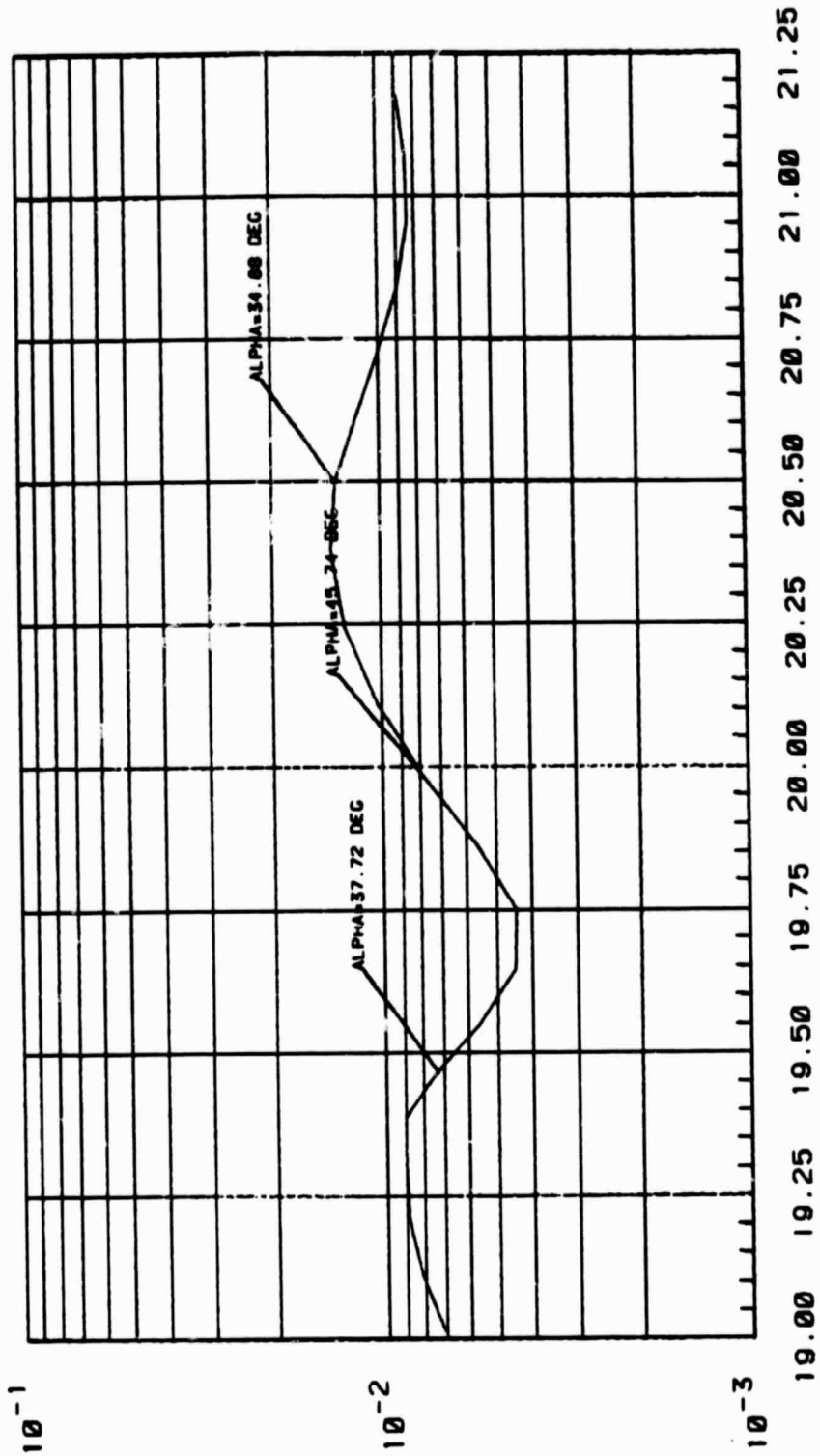
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FILE CODE -- H/H-REF

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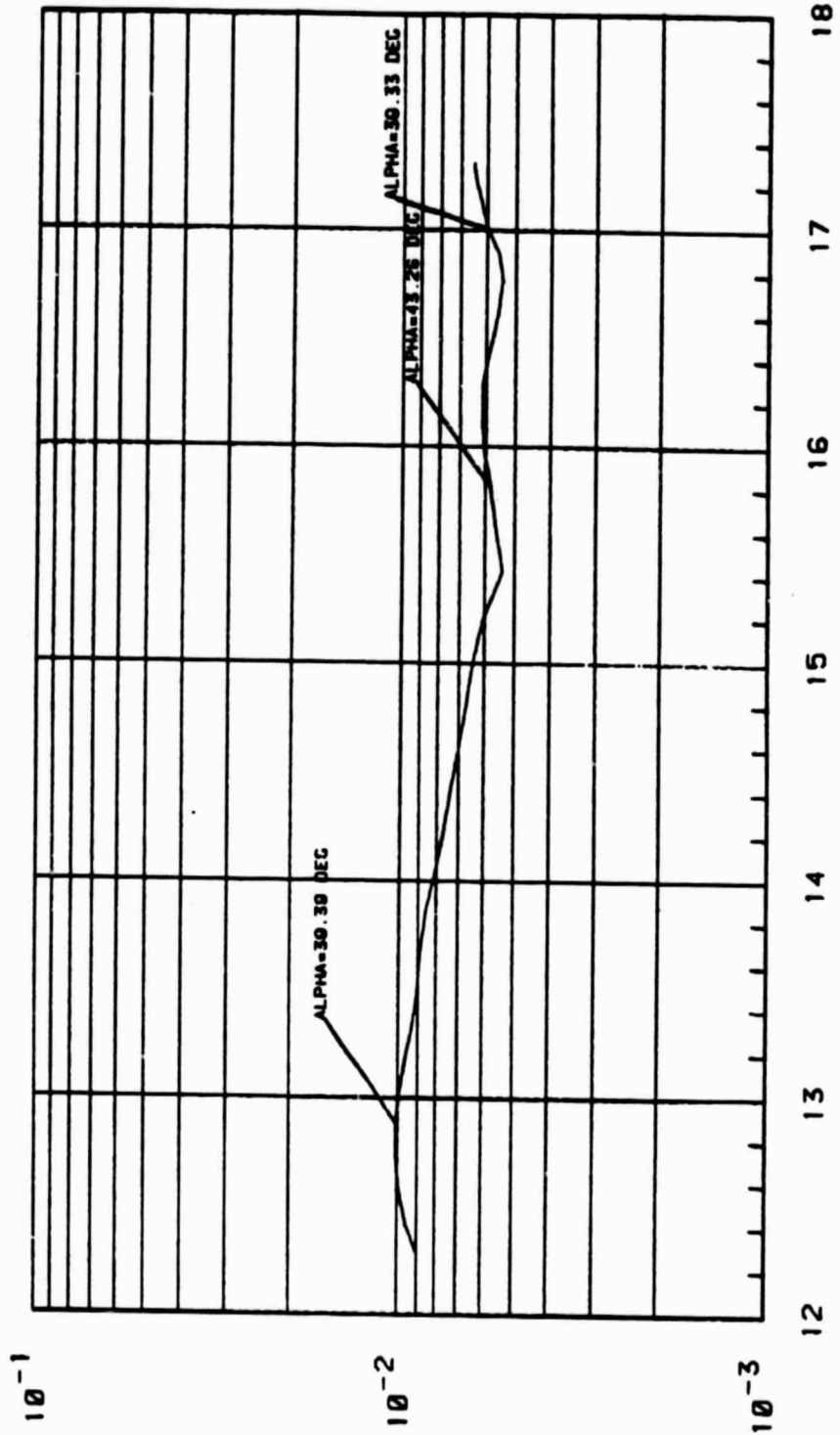
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FLIGHT COEFF - H/H-RUL

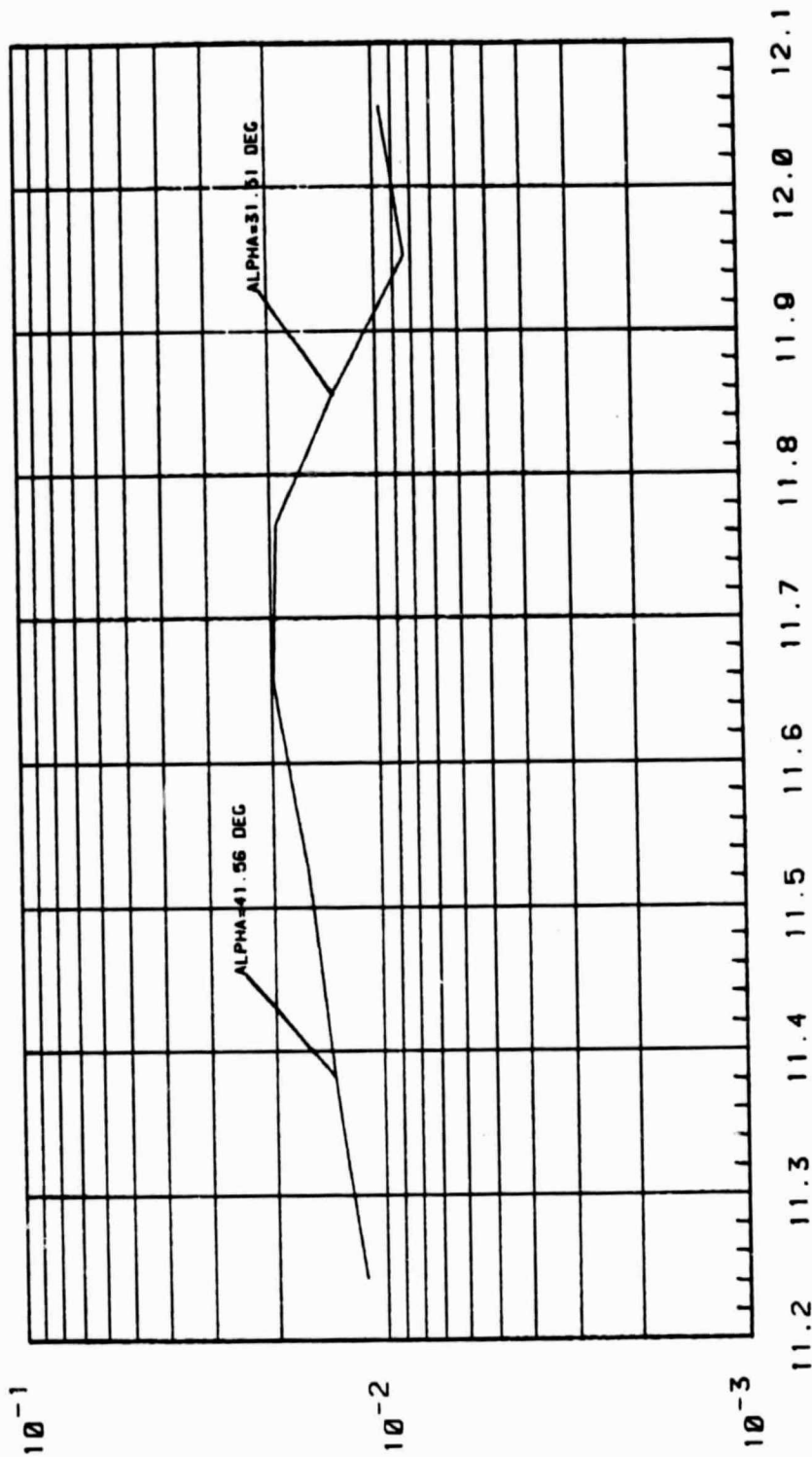
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MACH NUMBER

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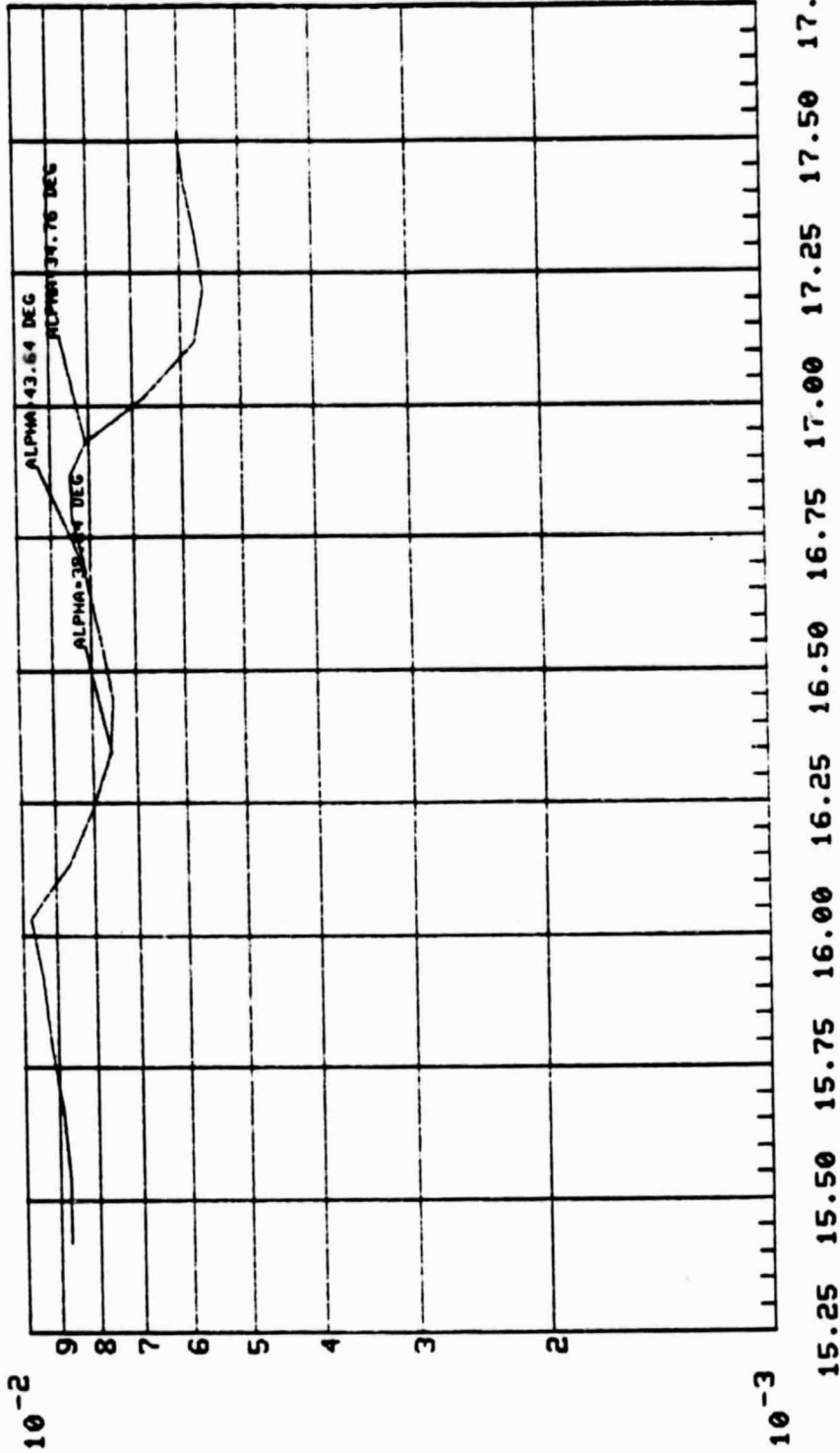
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D-23

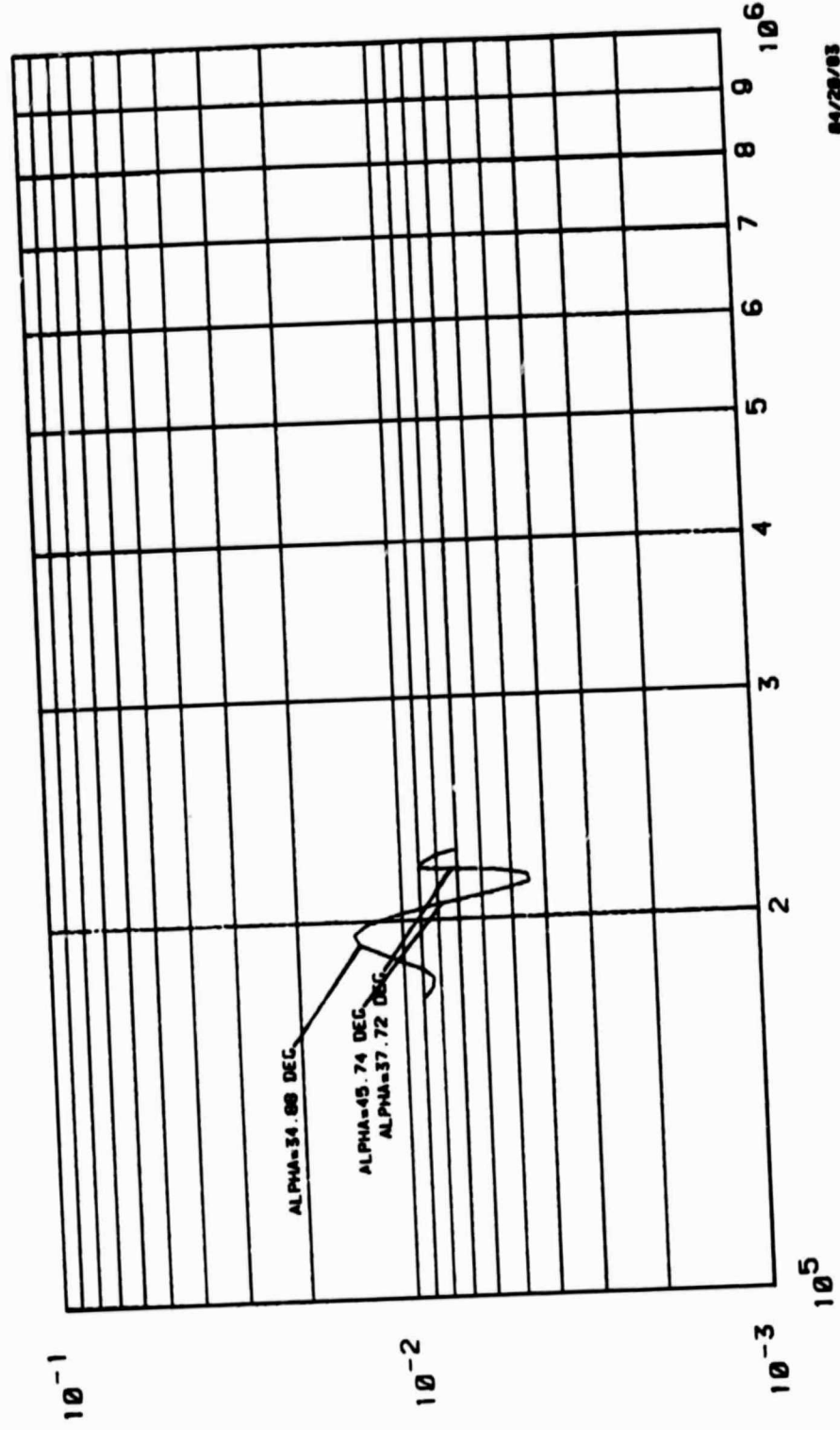
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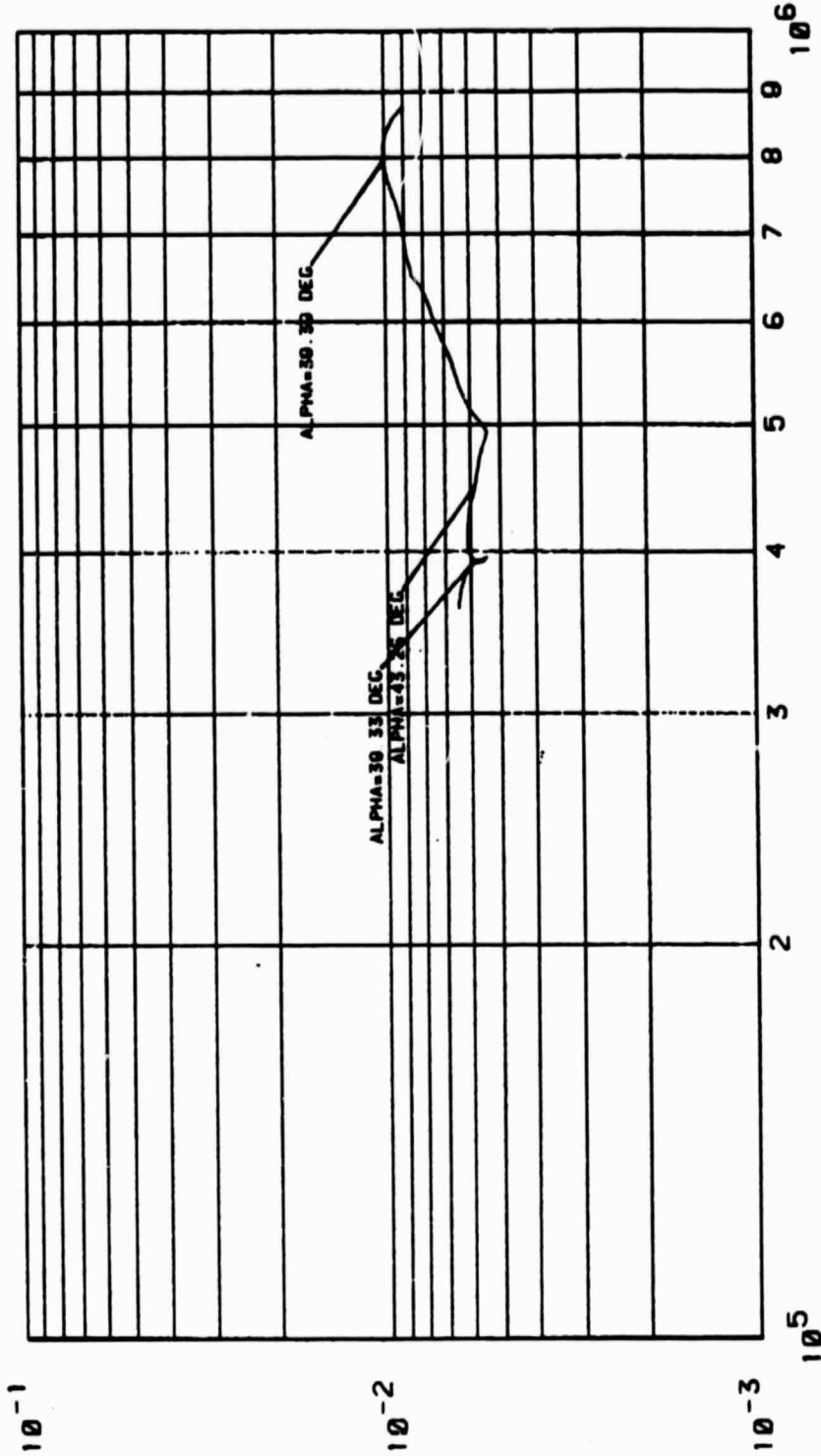


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F-111 COEFF - H/H-RULE

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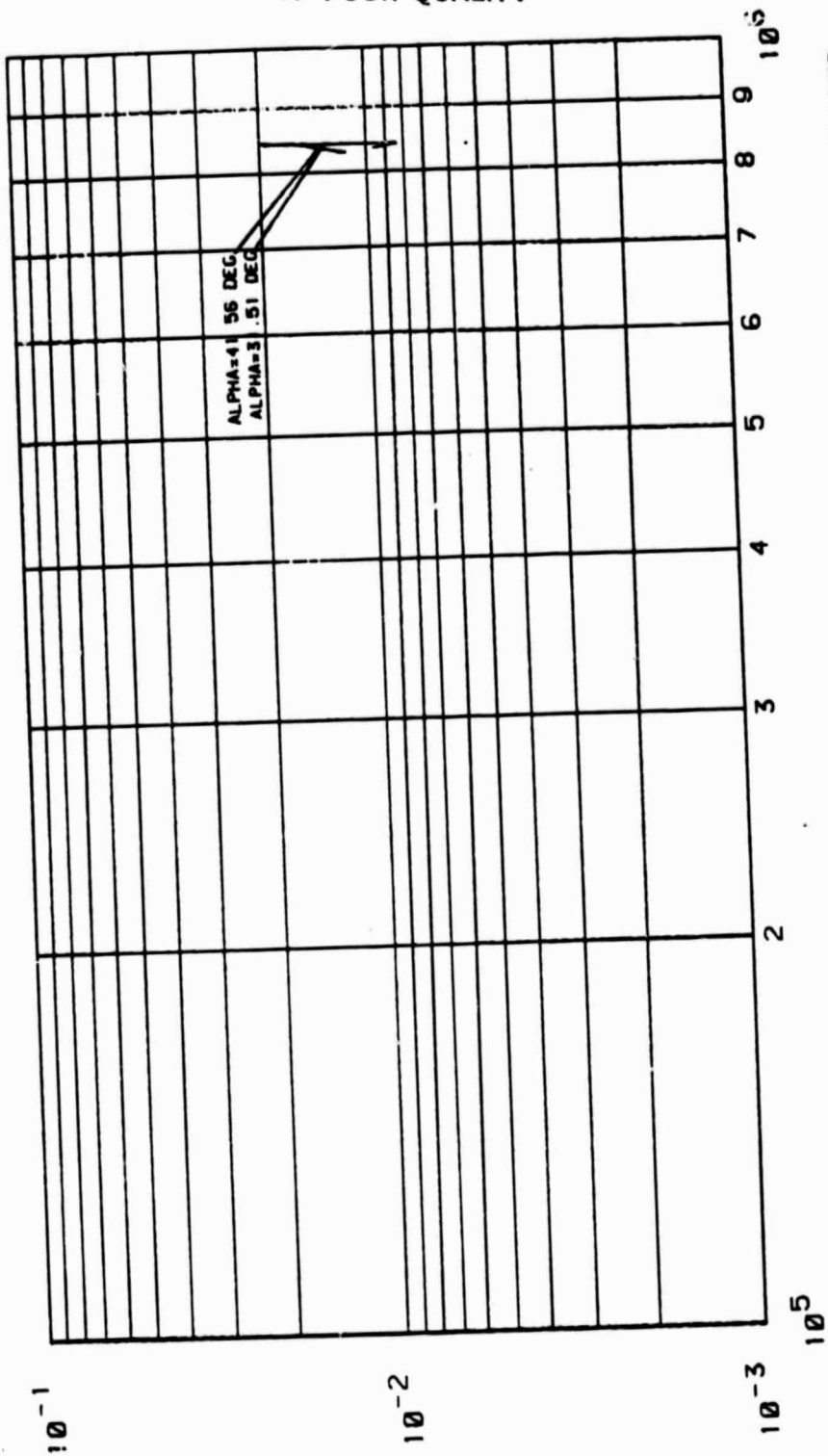
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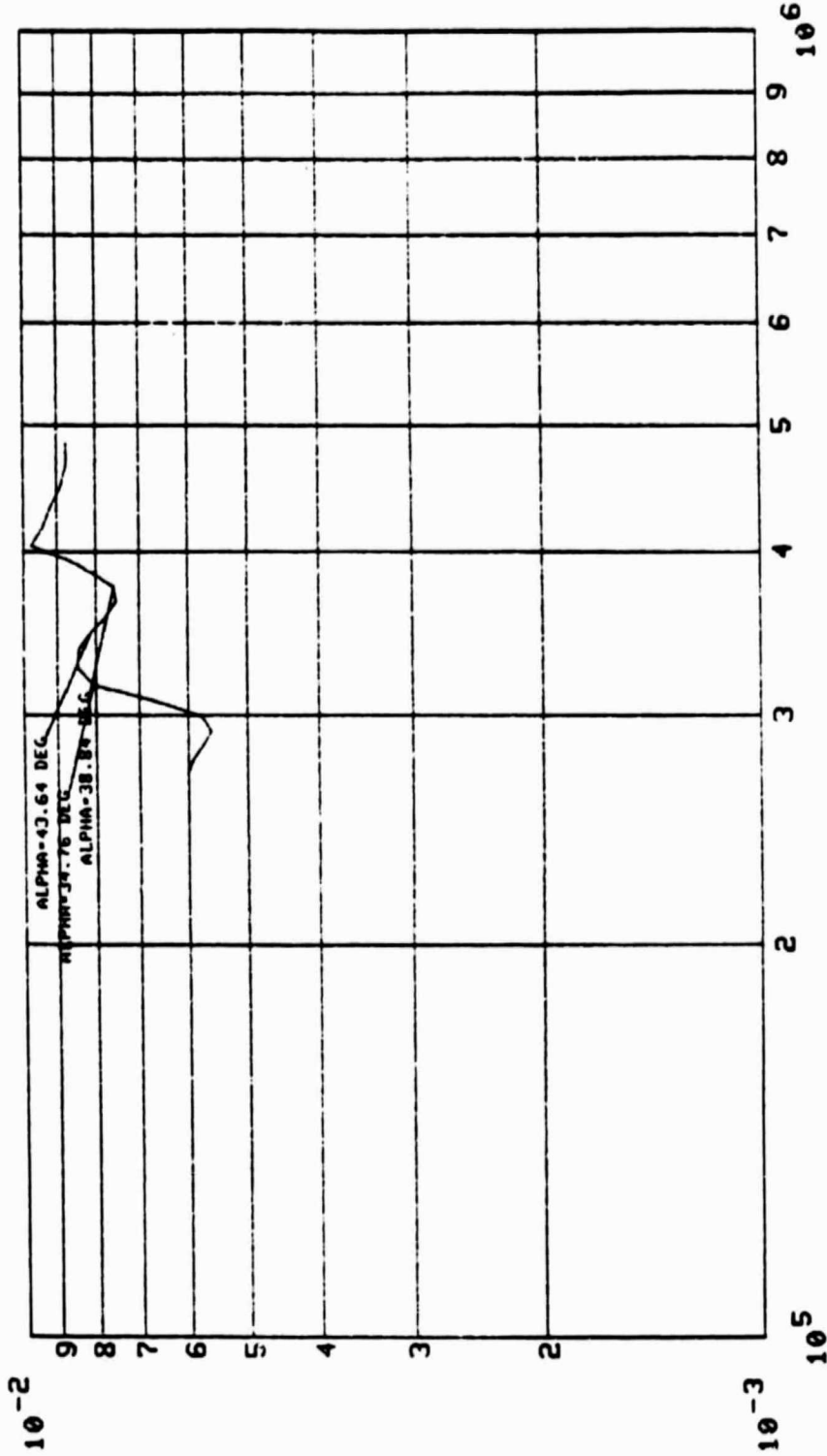


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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9220A/H-REF 820-920 SEC



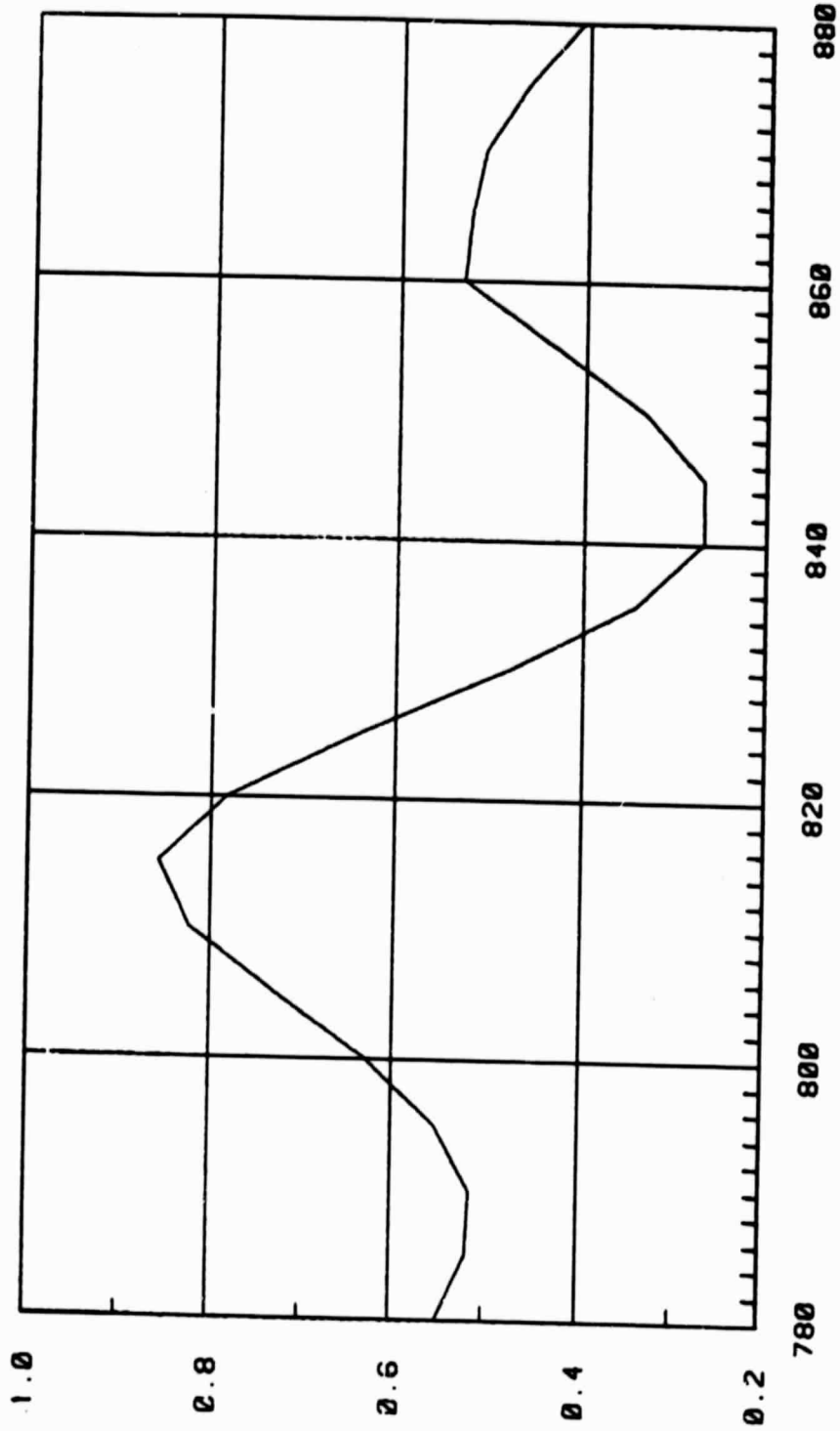
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REYNOLDS NUMBER (NS) 04-20-83  
BASE TIME - 27698591.000 SEC.

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0220A



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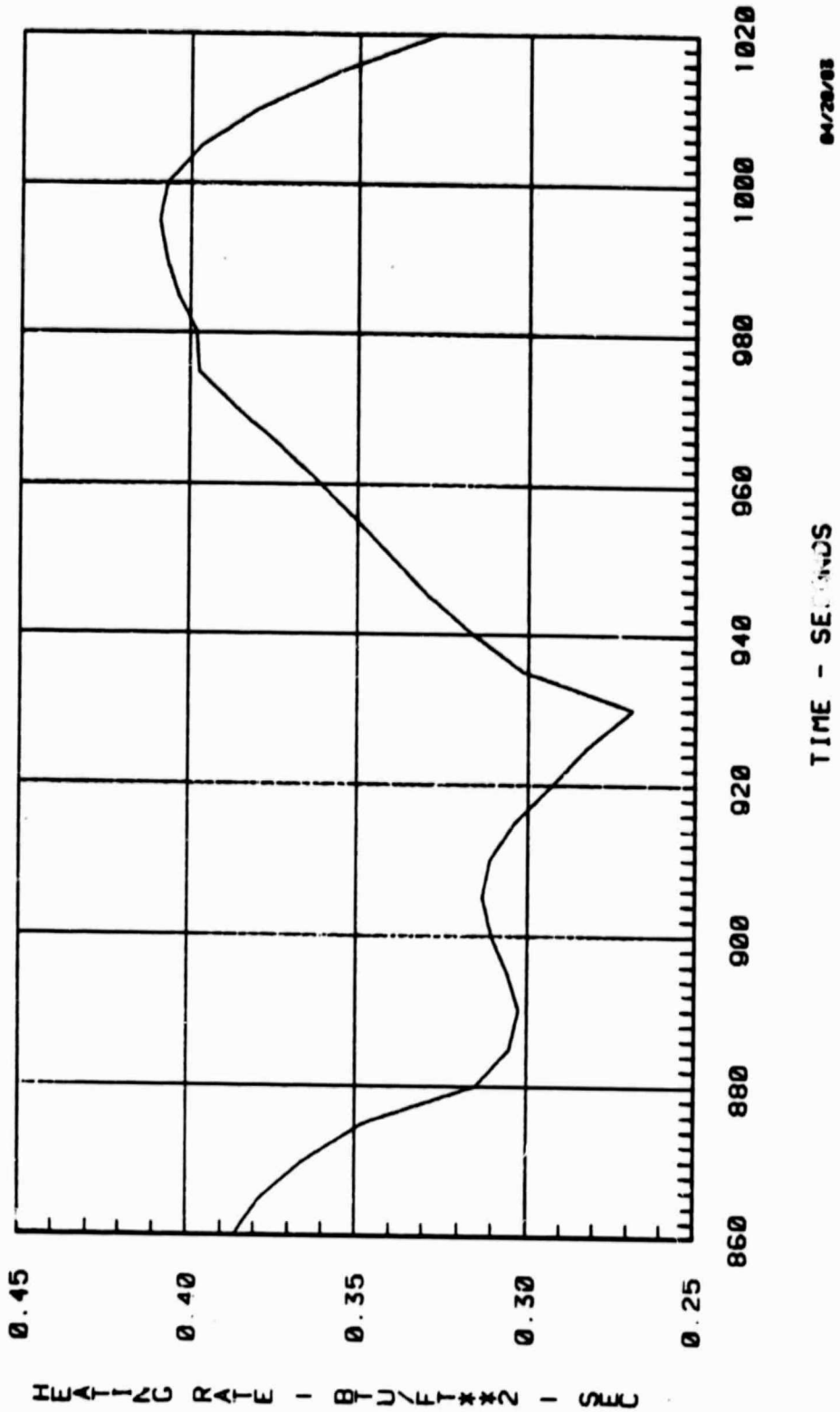
HEATING RATE - BT/JUET\*\*2 - SWU

TIME - SECONDS

04/20/88

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0228A

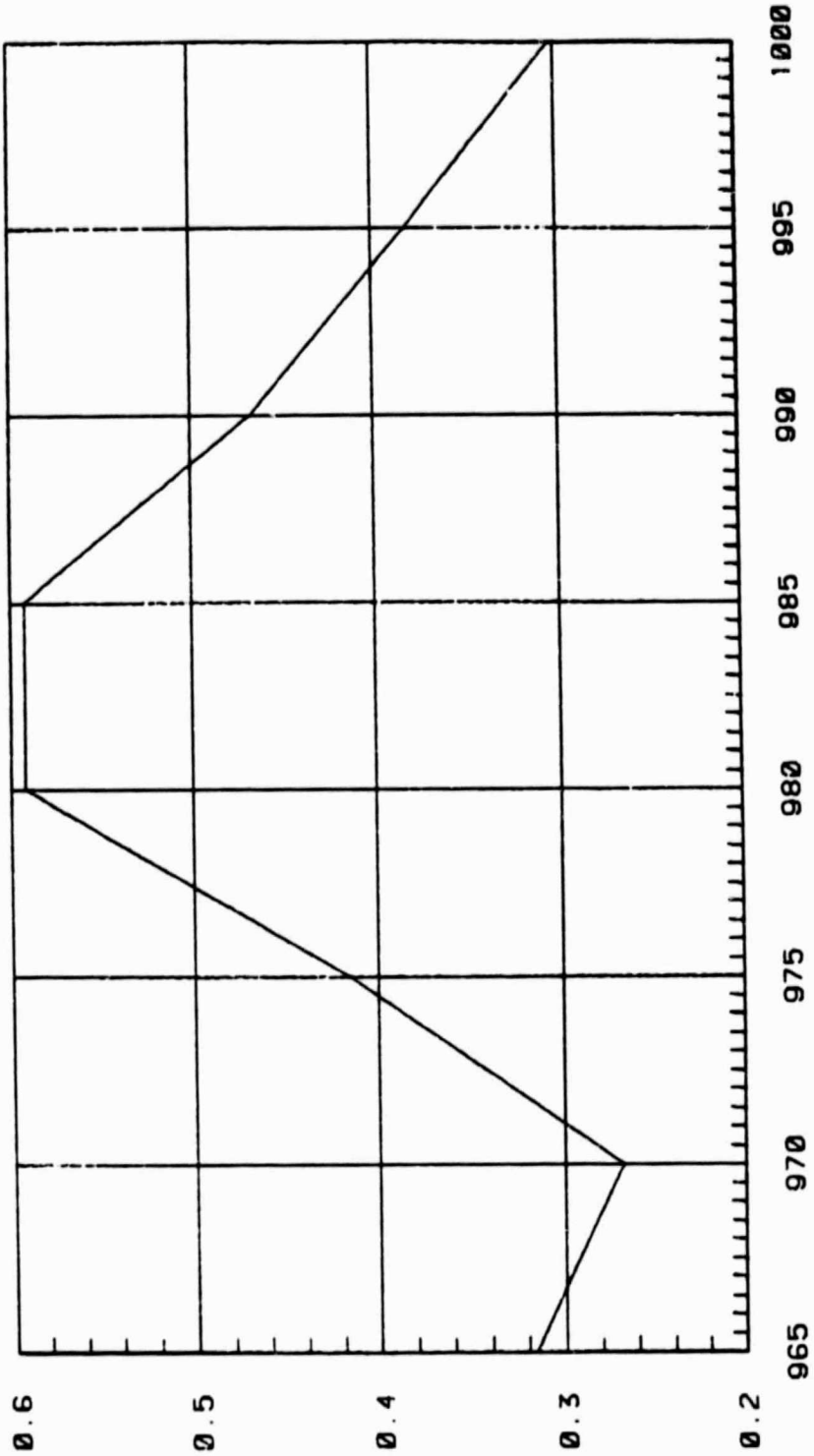


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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

\_\_\_\_ V87T0228A



04/20/83

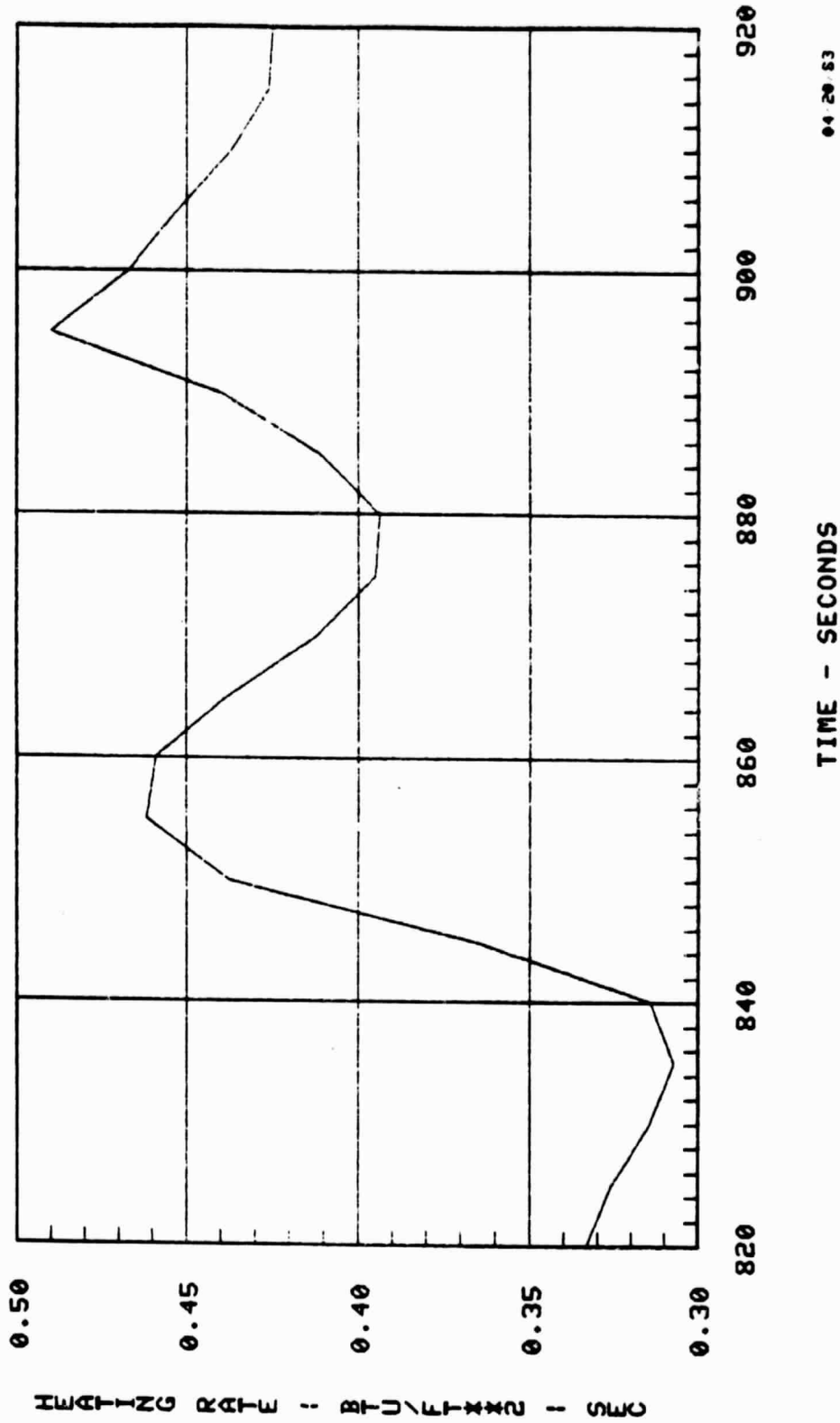
TIME - SECONDS

HEATING RATE - BTU/FT\*\*2 - SEC



STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719220A



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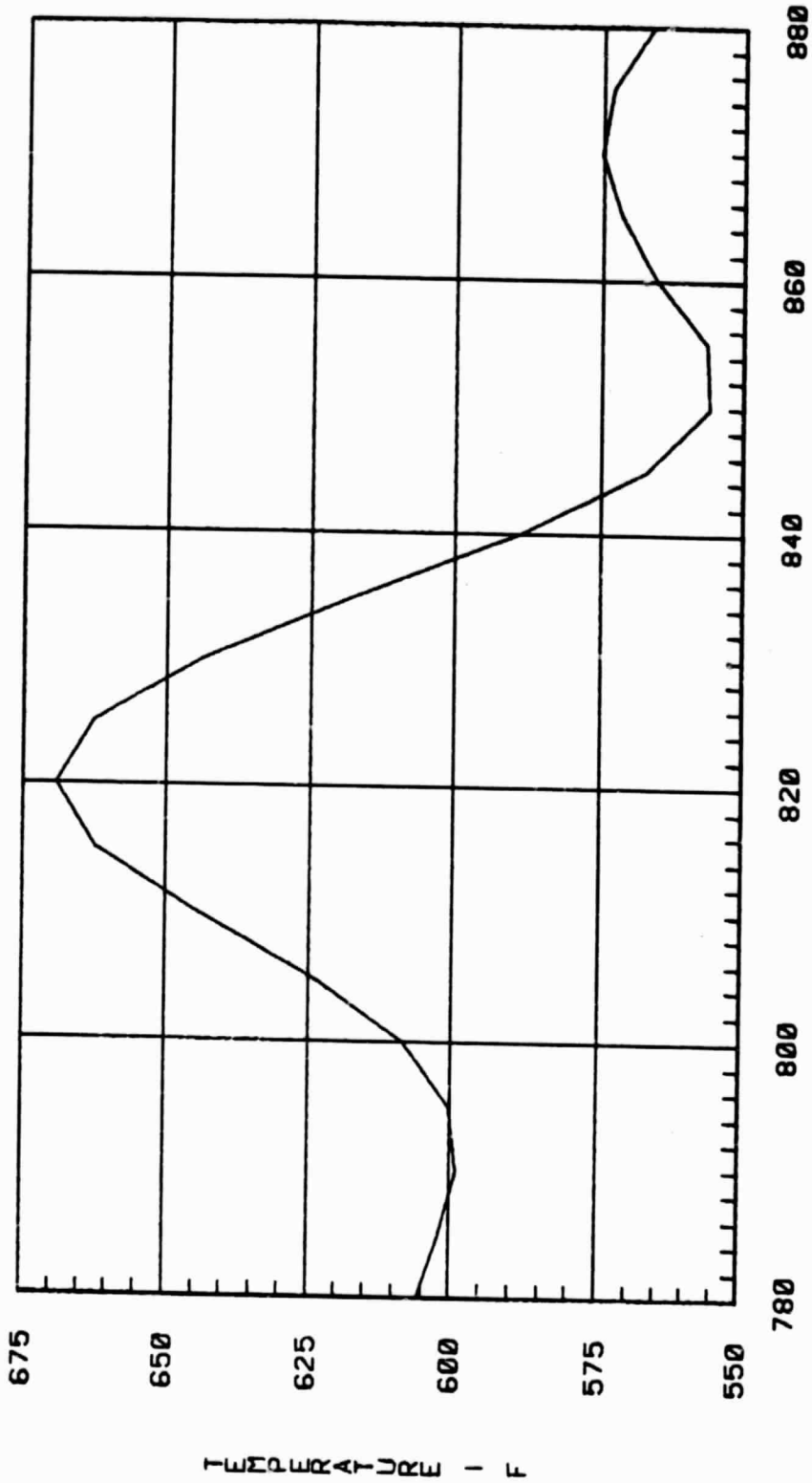
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04 20 83

HEATING RATE - BTU/FT<sup>2</sup>/SEC

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V87T0228A



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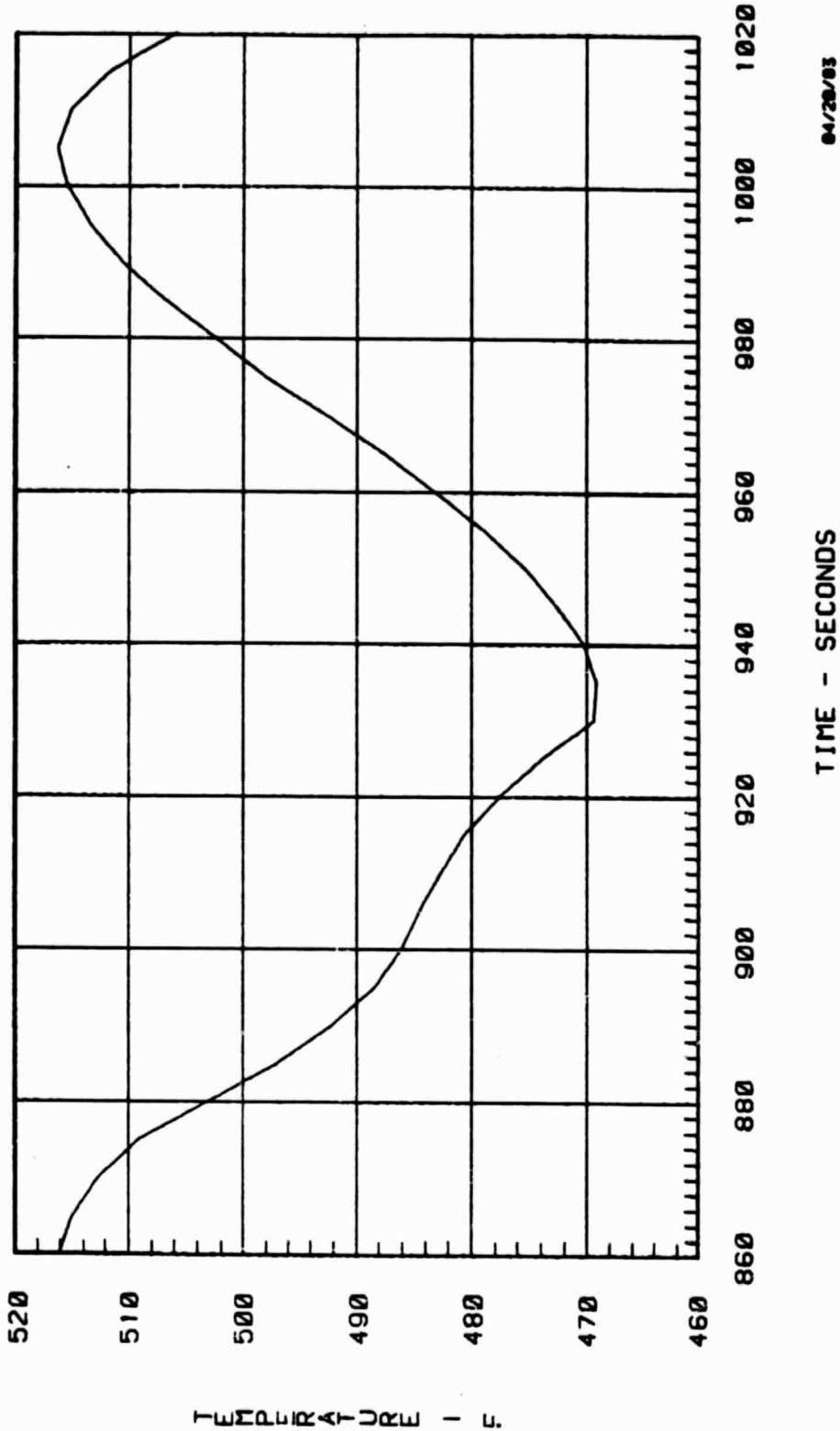
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04/28/03

TEMPERATURE - F

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770228A

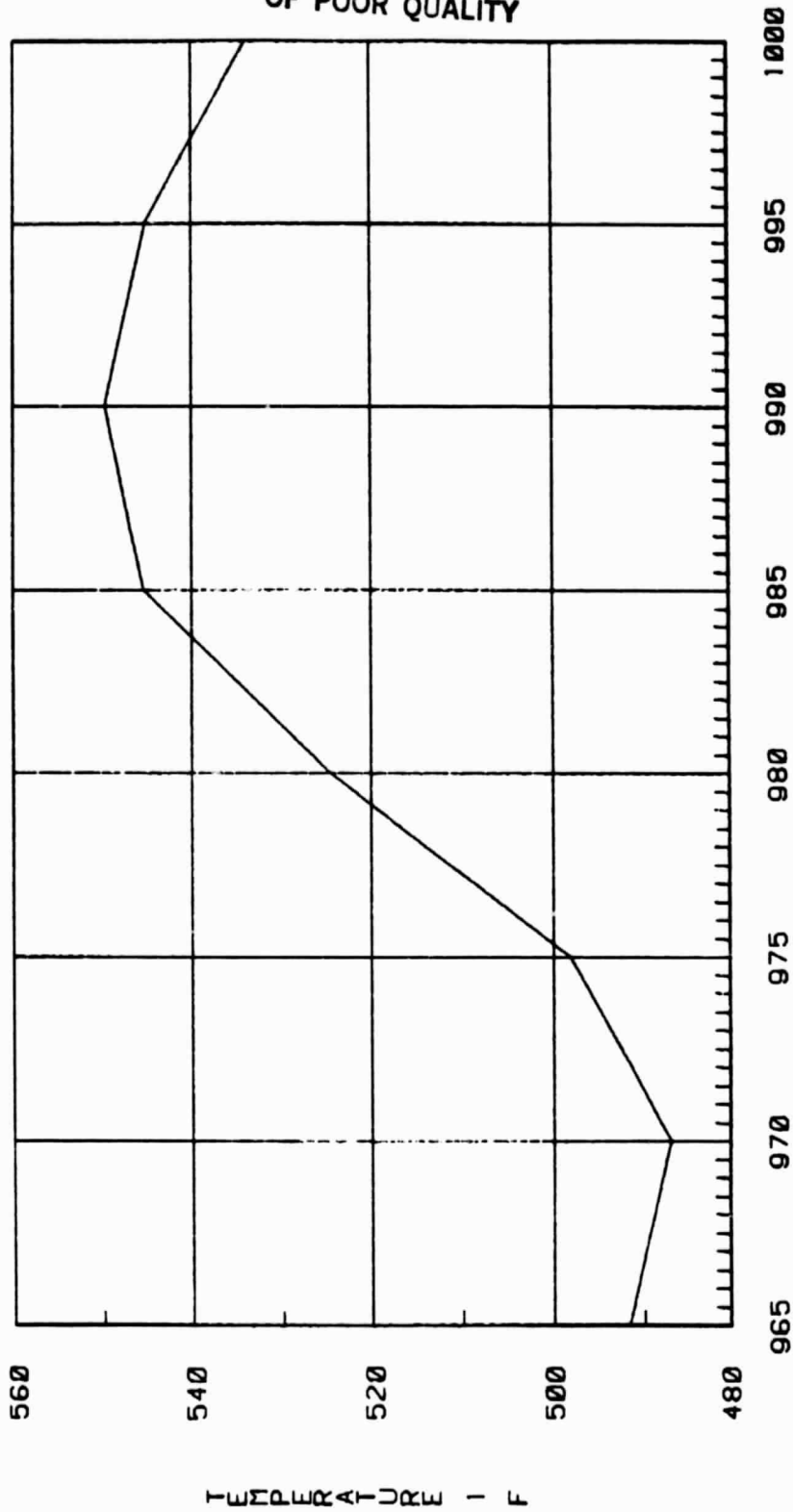


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04/28/83

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0220A



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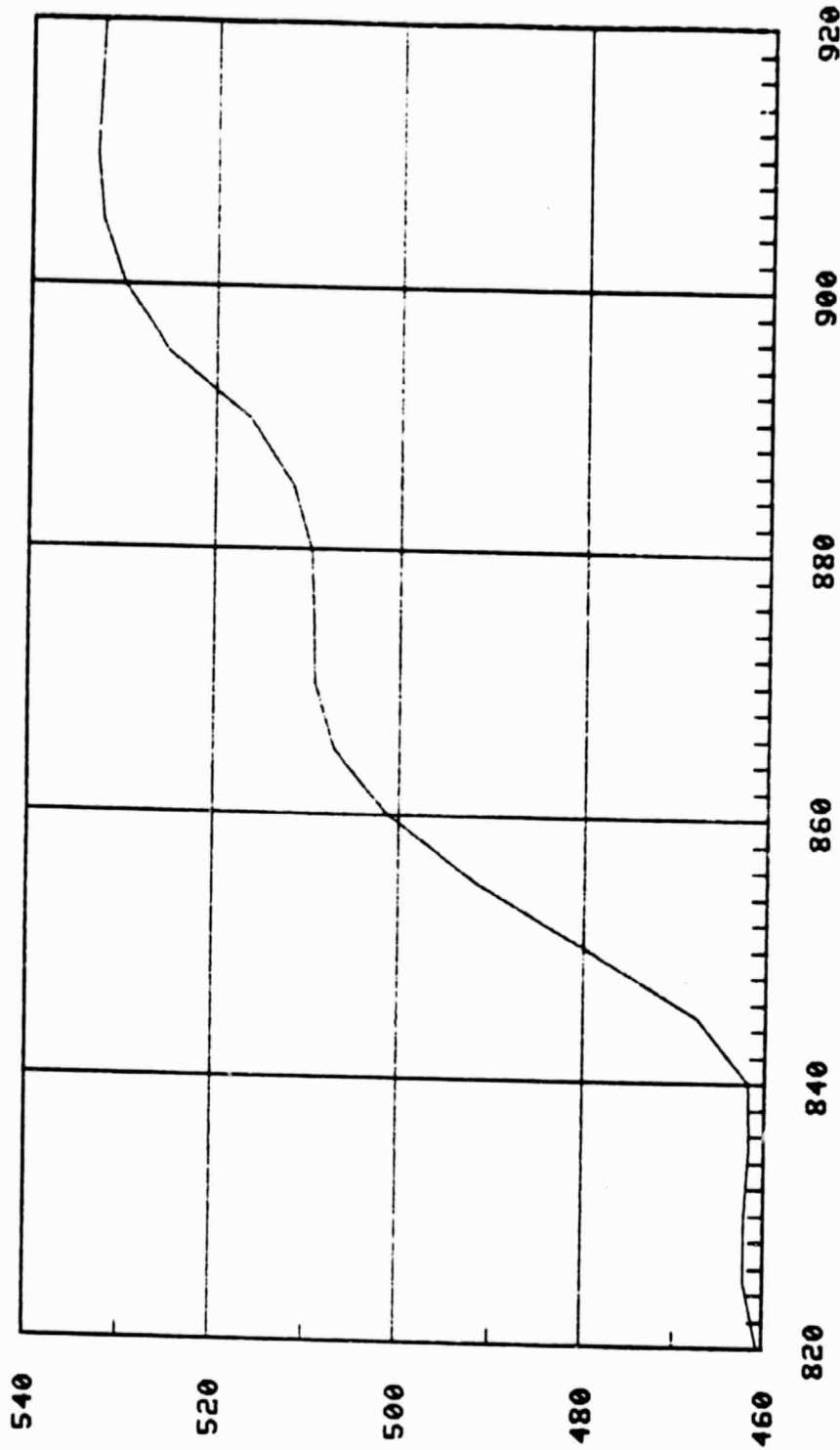
04/20/83

TIME - SECONDS

TEMPERATURE - F

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0719220A



TEMPERATURE -- F

D-35

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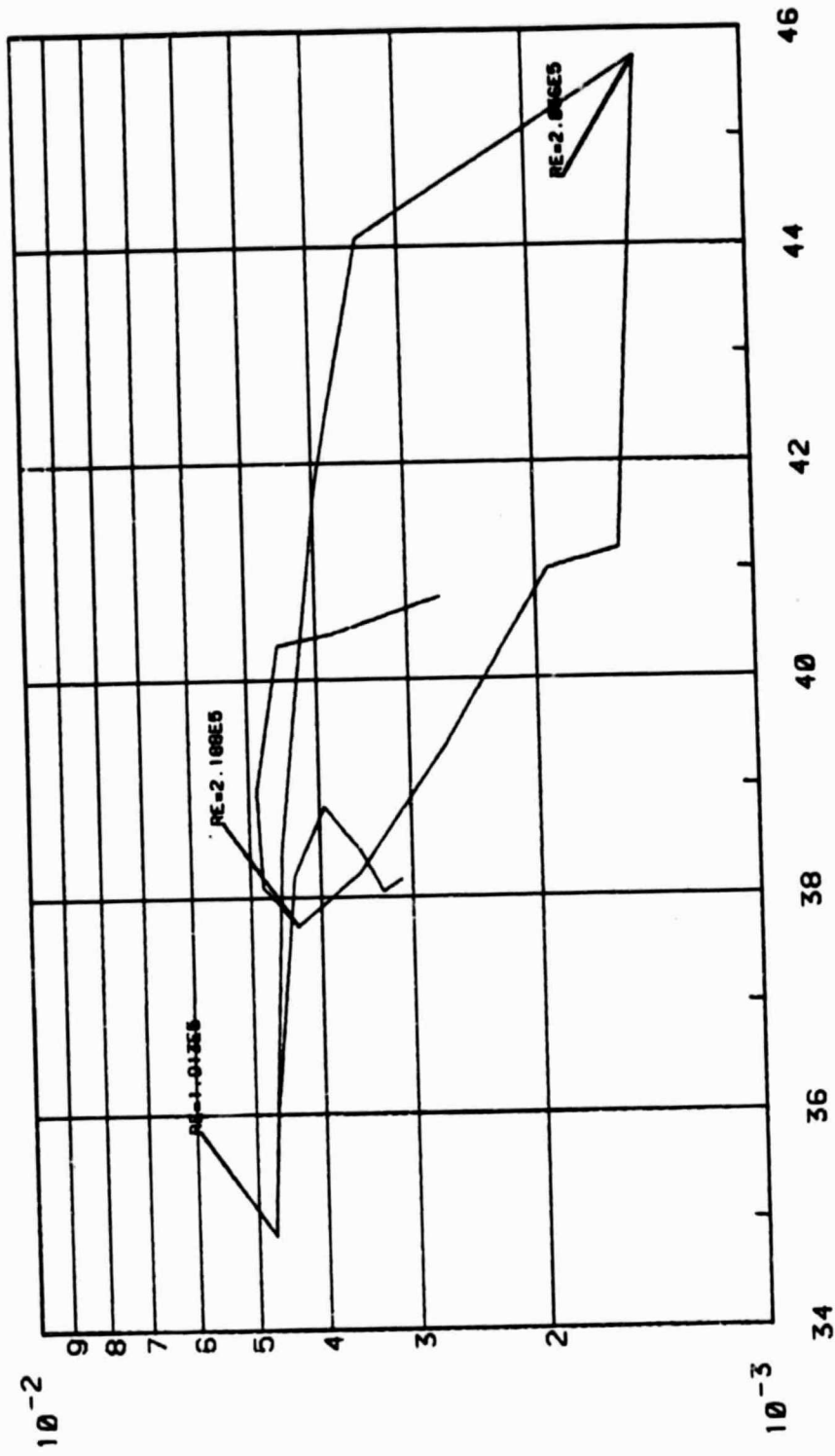
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V071007BA/H-REF 700- 000 SEC

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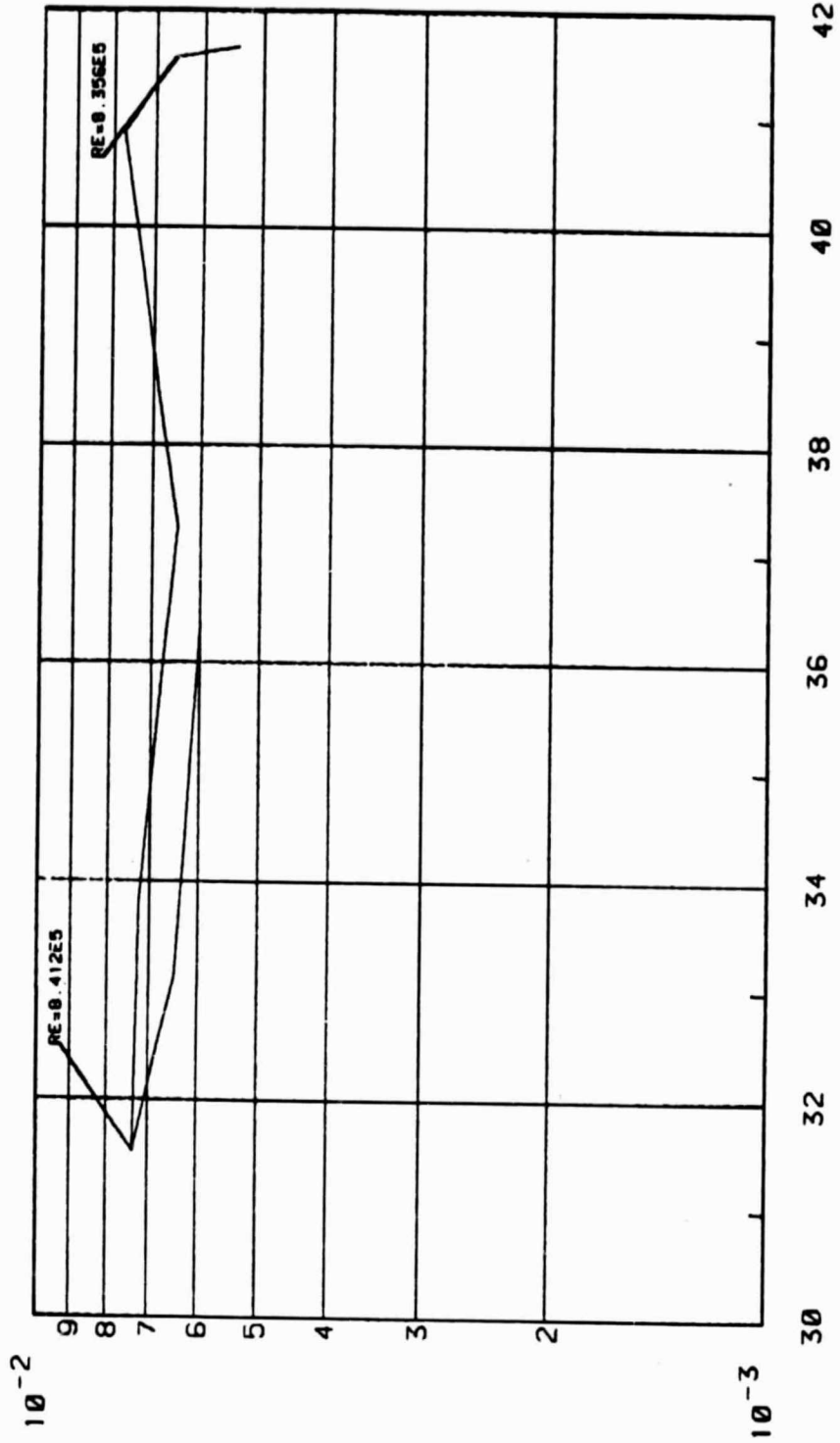


04/28/83  
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ANGLE-OF-ATTACK - DEG

FLIGHT CONTROL - I/I-REF

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V87T0078A/H-REF 005-1000 SEC



FLIGHT COEFFICIENT - H-T-REF

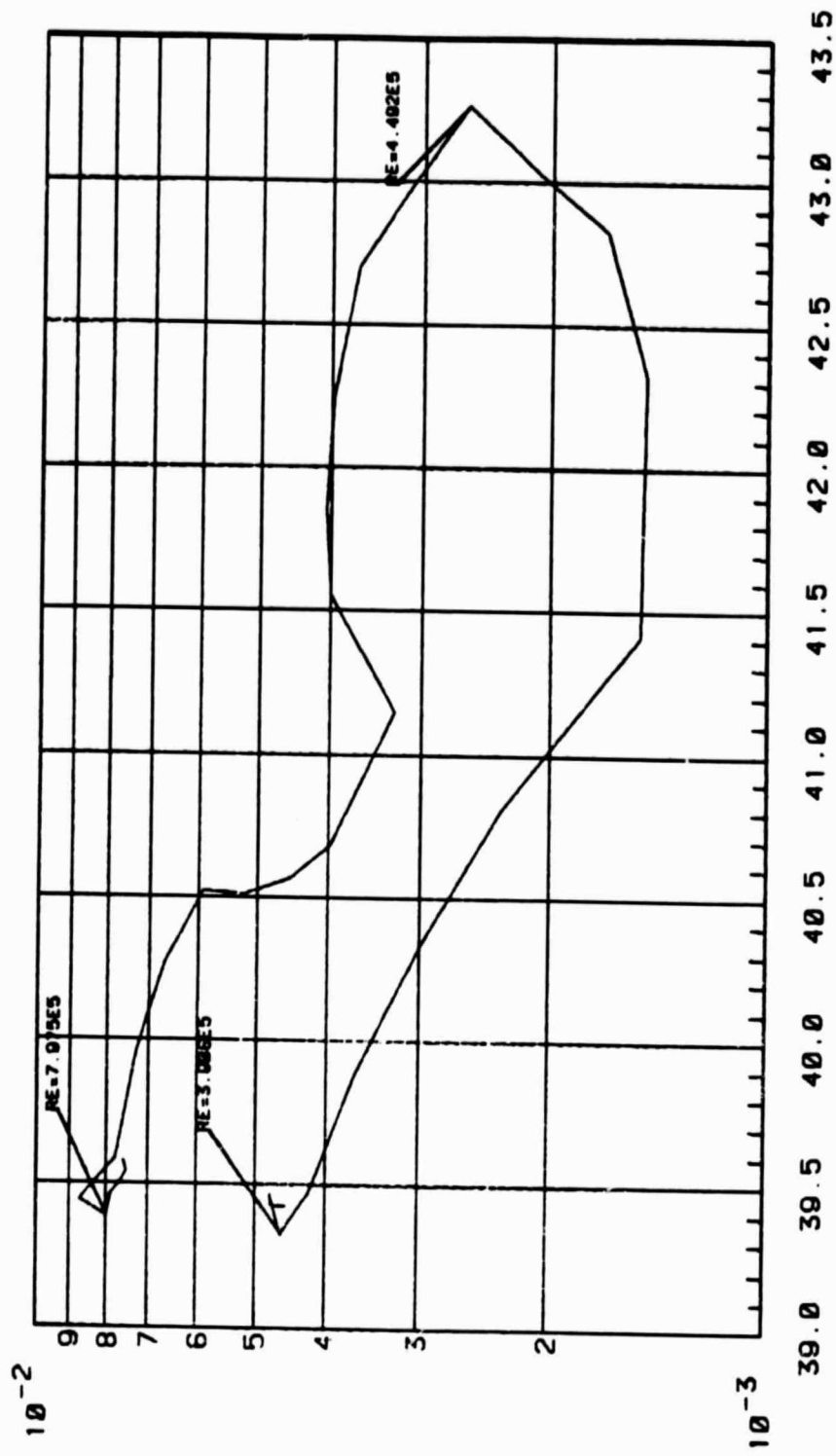
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04/28/83  
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB710070A/H-REF 000-1020 SEC

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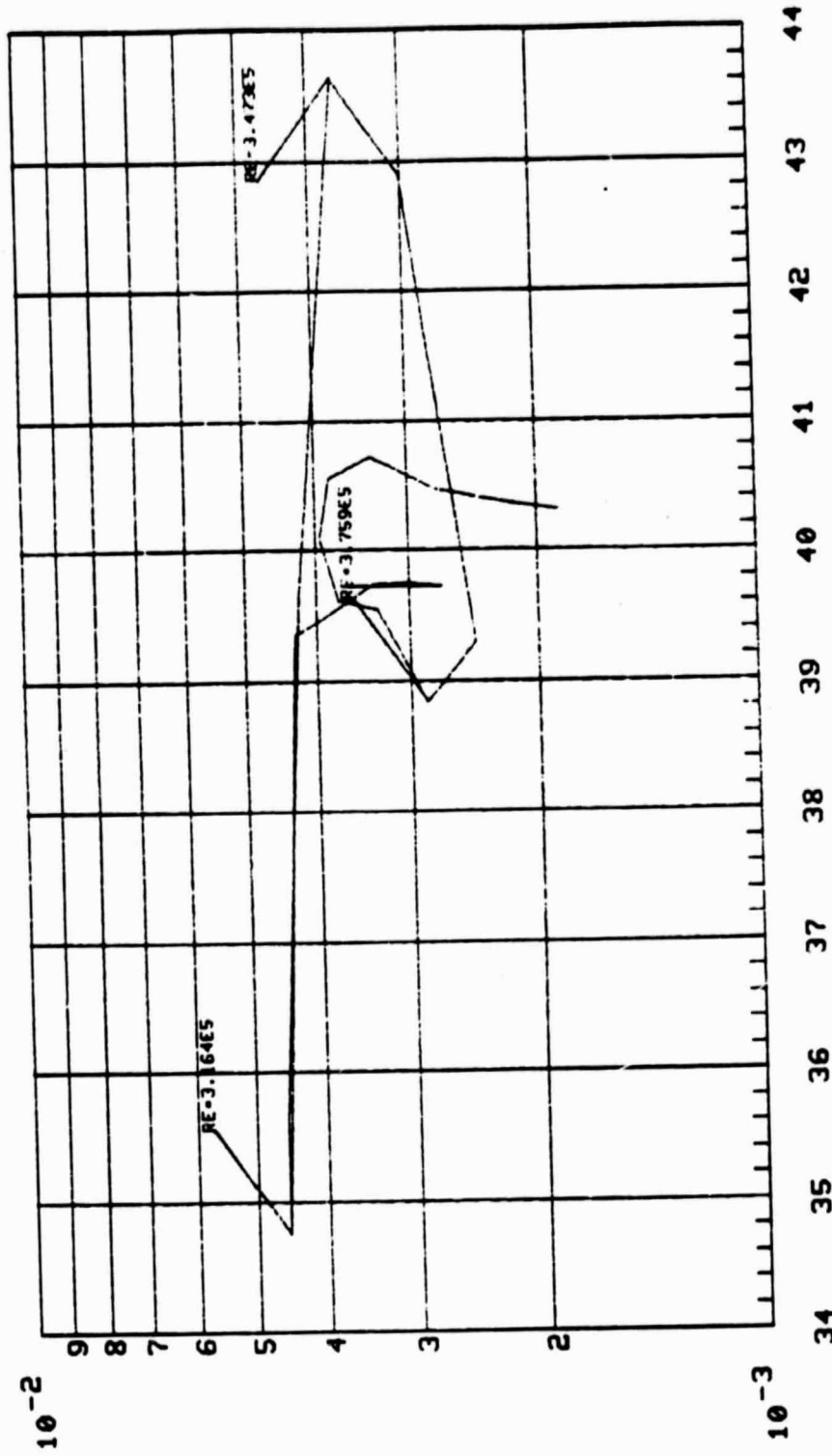
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ANGLE-OF-ATTACK - DEG

FLIGHT PARAMETER COMPARISON



STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9370A/H-REF 820- 920 SEC



FILM COEFF - H/H-REF

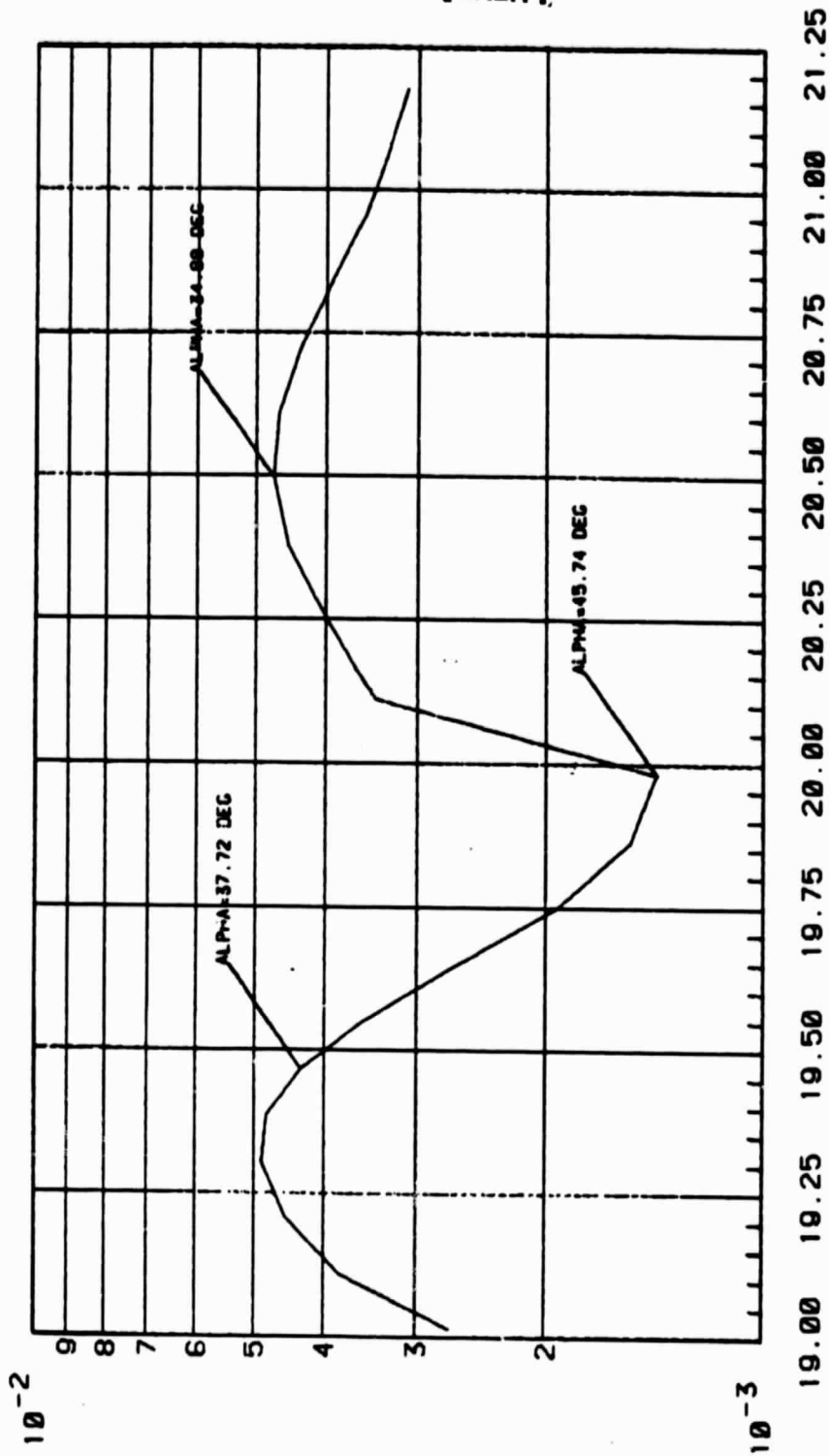
D-39

04.20.83  
BASE TIME - 27698591.000 SEC.

OF POOR QUALITY

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB710078A/H-REF 700-000 SEC



FLIGHT COMPLETION - H/H-REF

D-40

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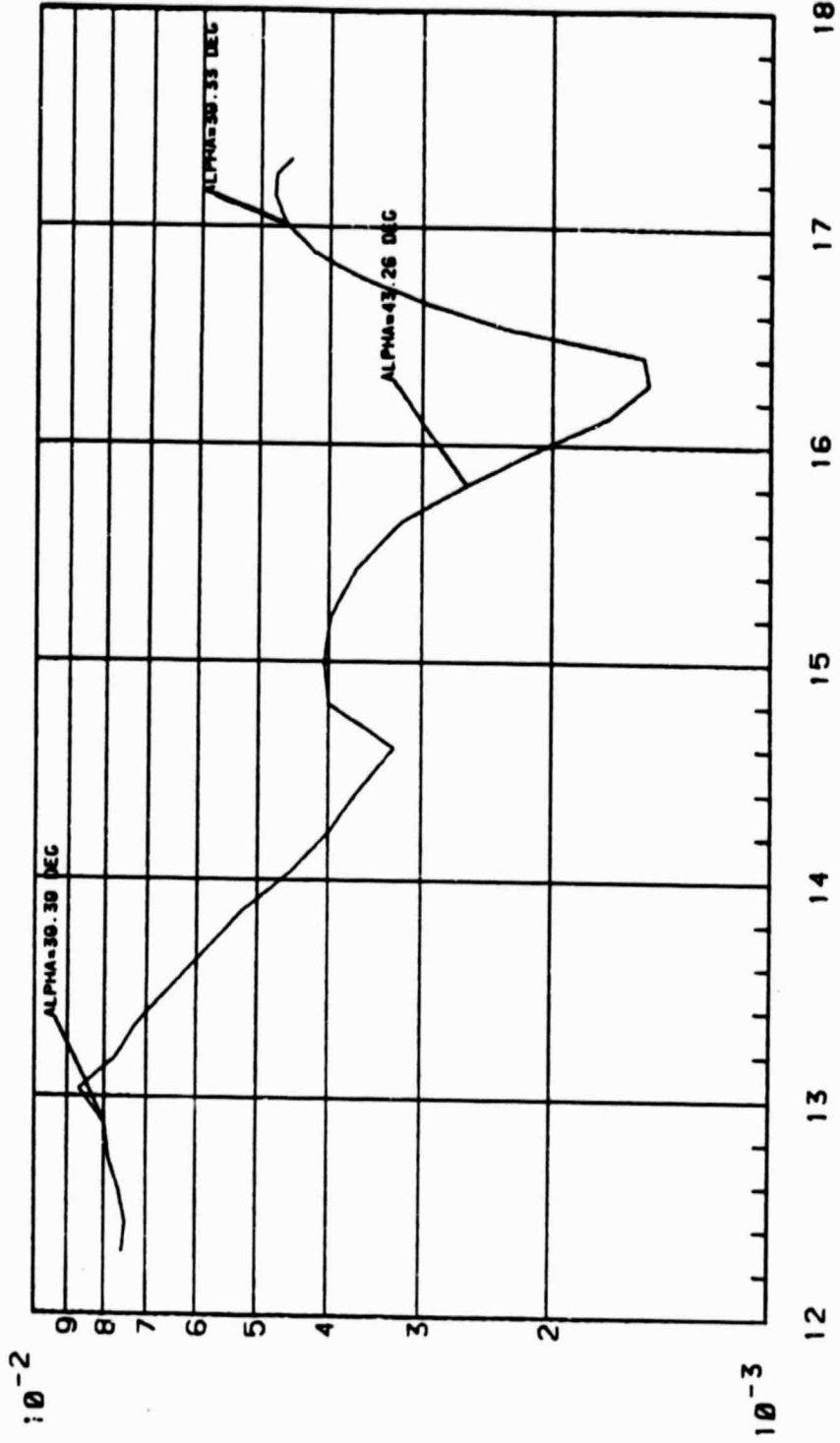
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MACH NUMBER

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB71007BA/N-REF 008-1028 SEC

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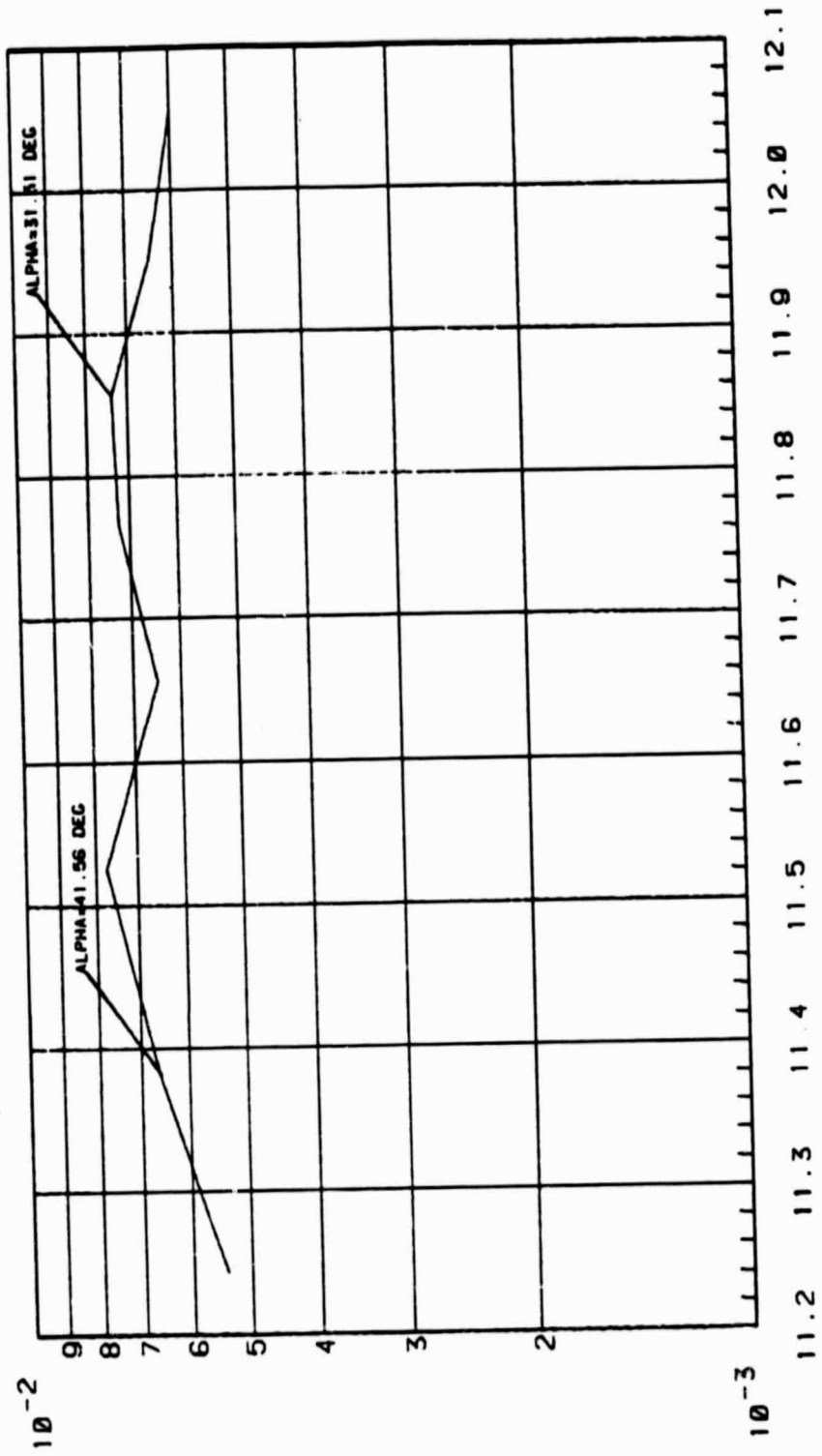


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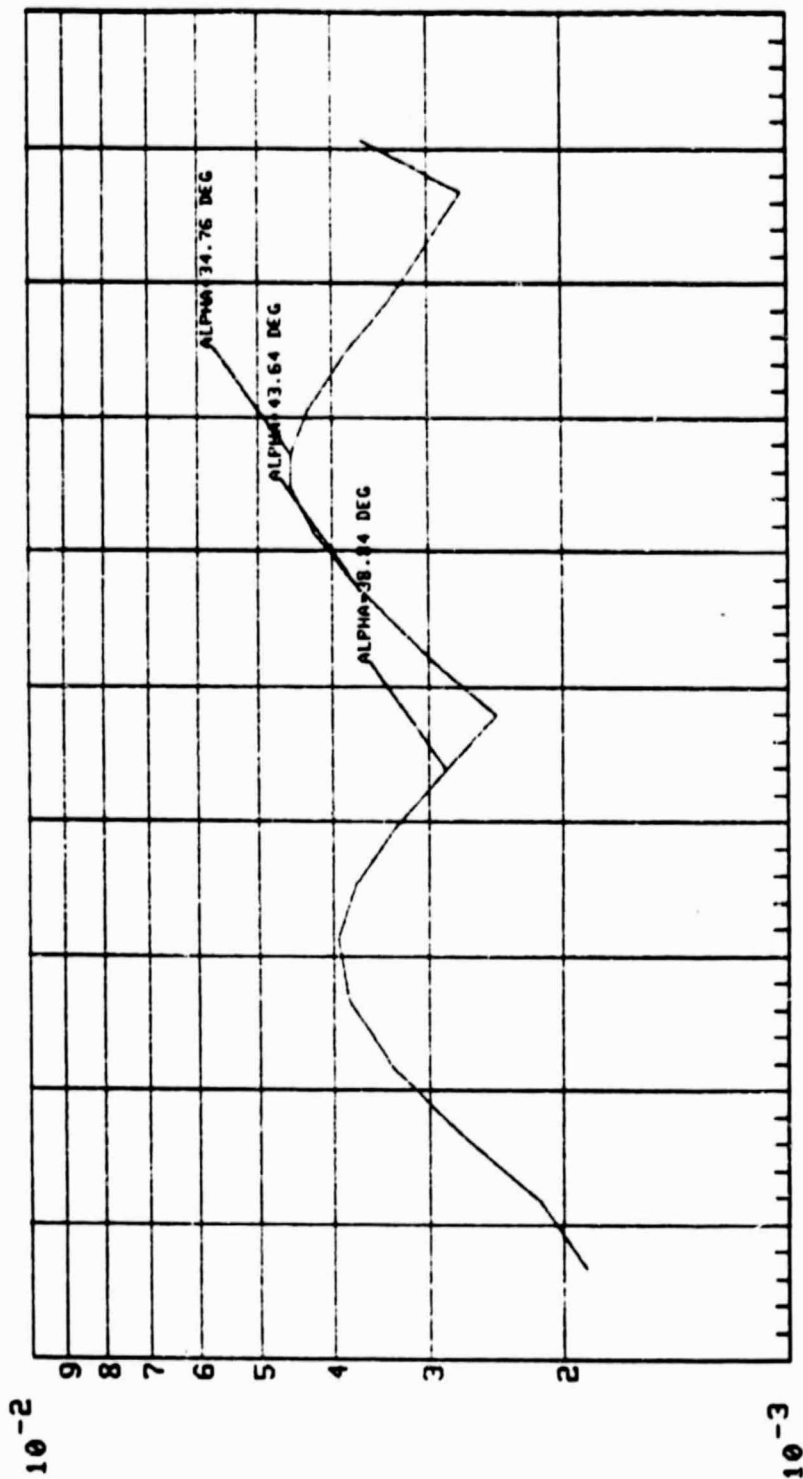
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MACH NUMBER

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A/H-REF 820- 920 SEC



FILM COEFF - H/H-REF

D-43

OF POOR QUALITY

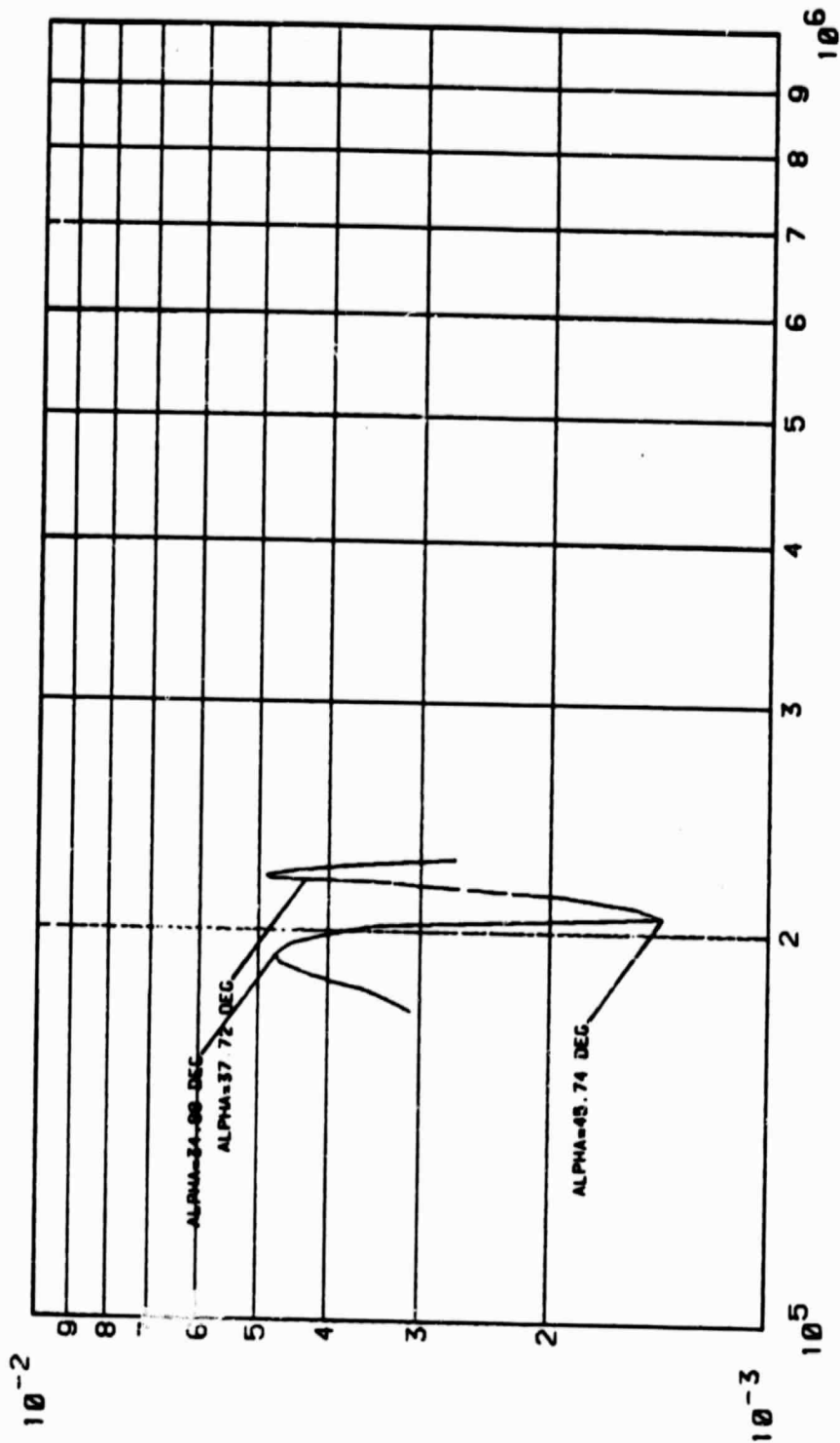
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MACH NUMBER

04/20/83  
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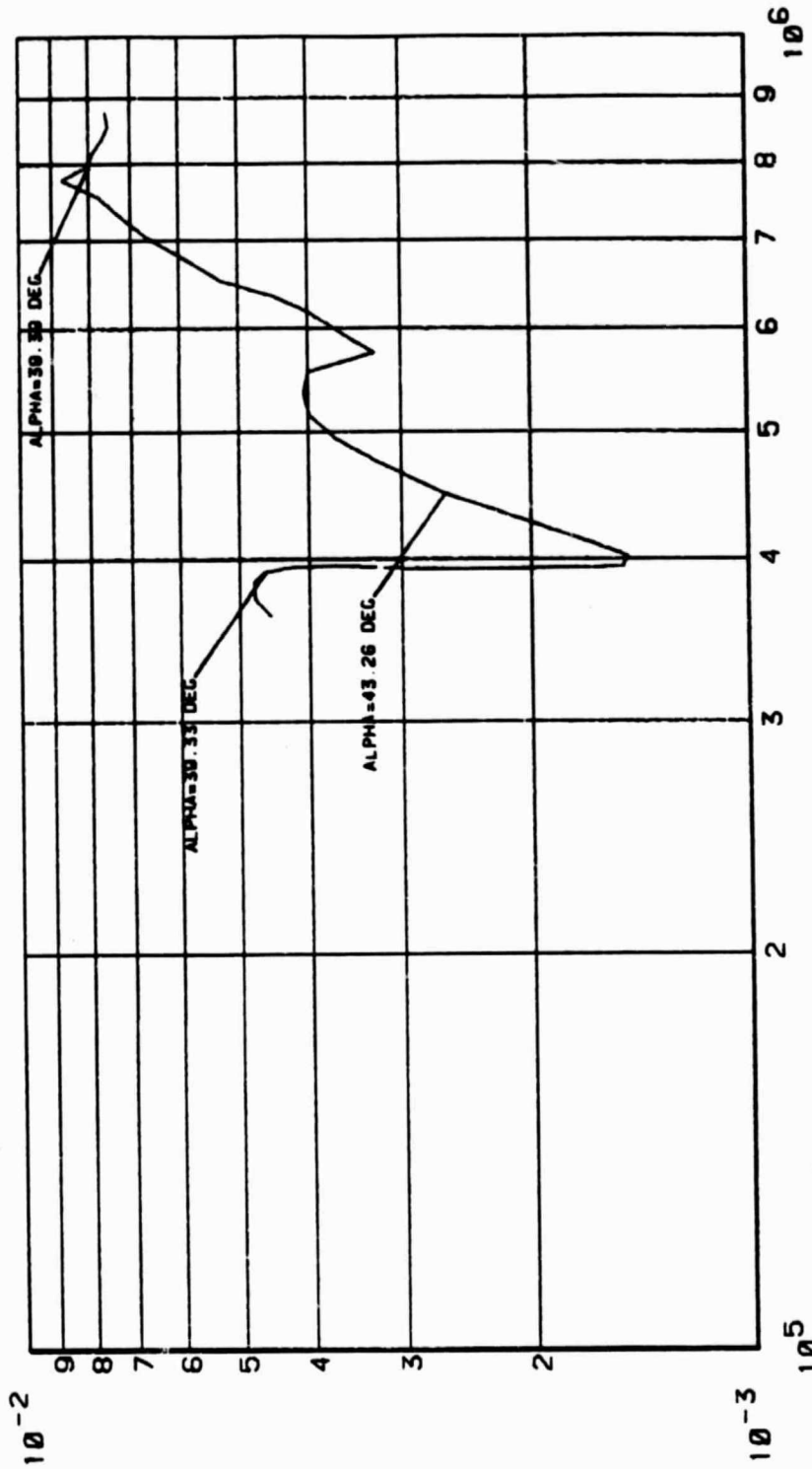
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REYNOLDS NUMBER (NS)

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V87T007BA/H-REF 050-1029 SEC



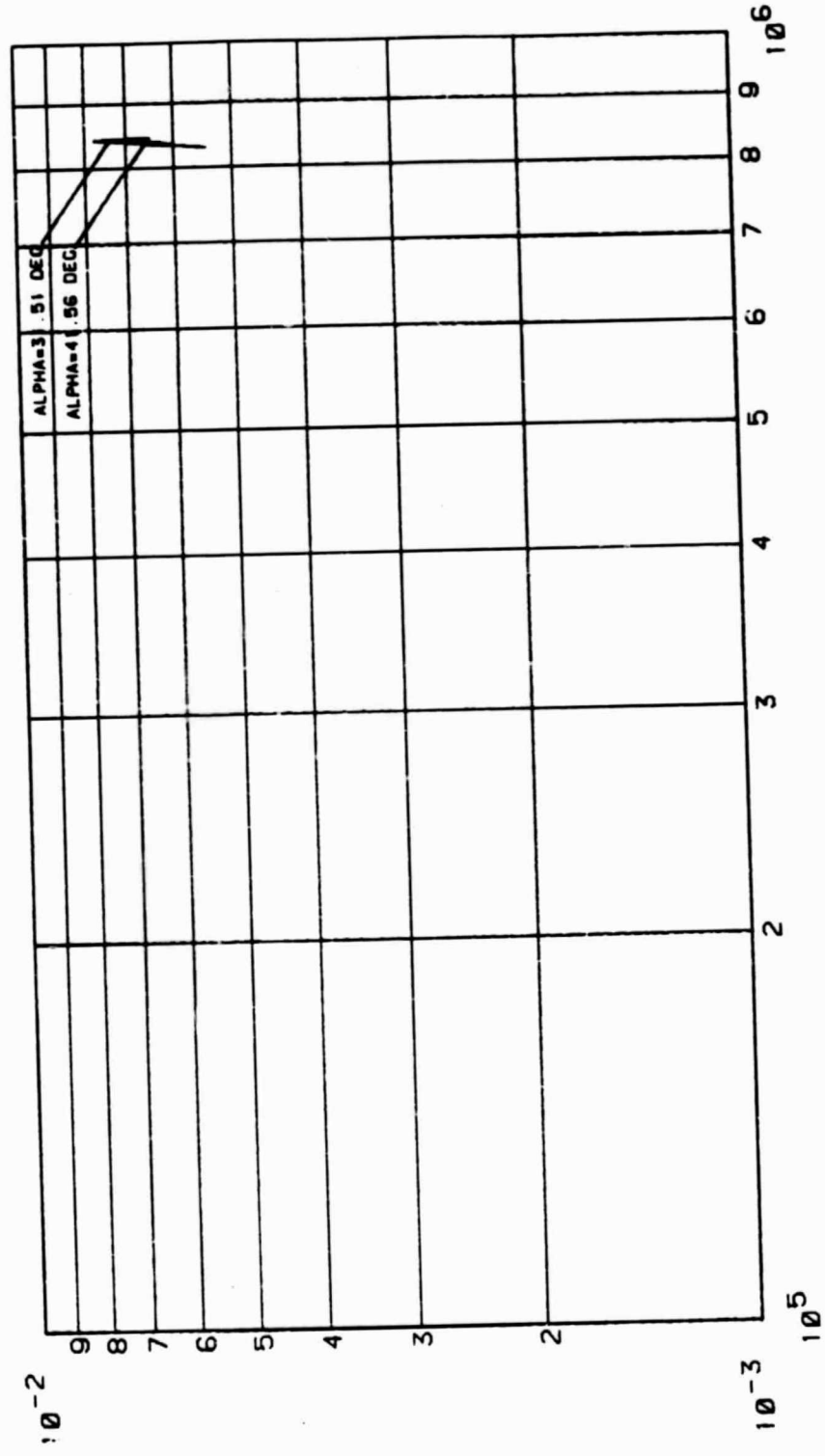
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D-45

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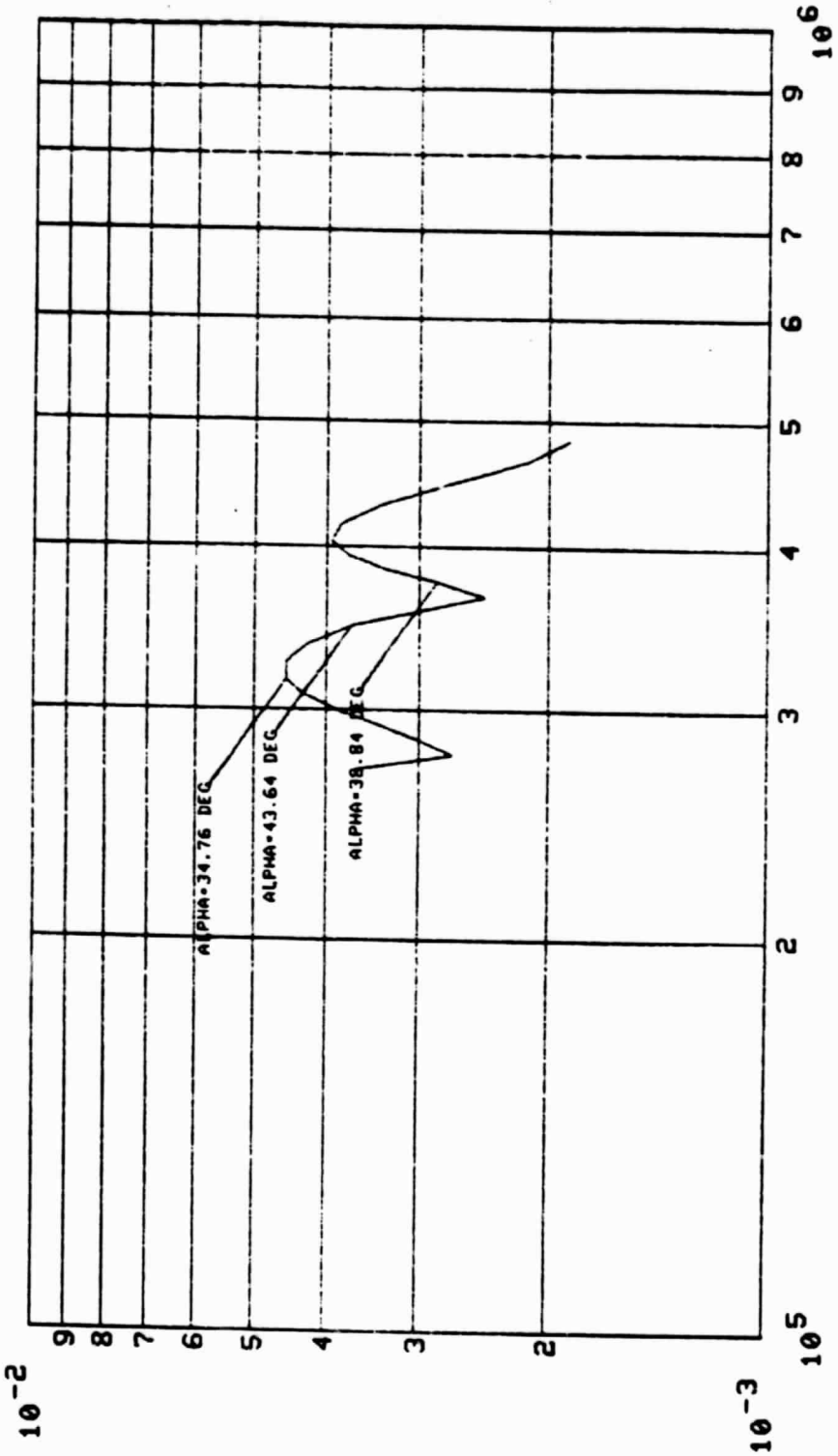
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# STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A/H-REF 820- 920 SEC



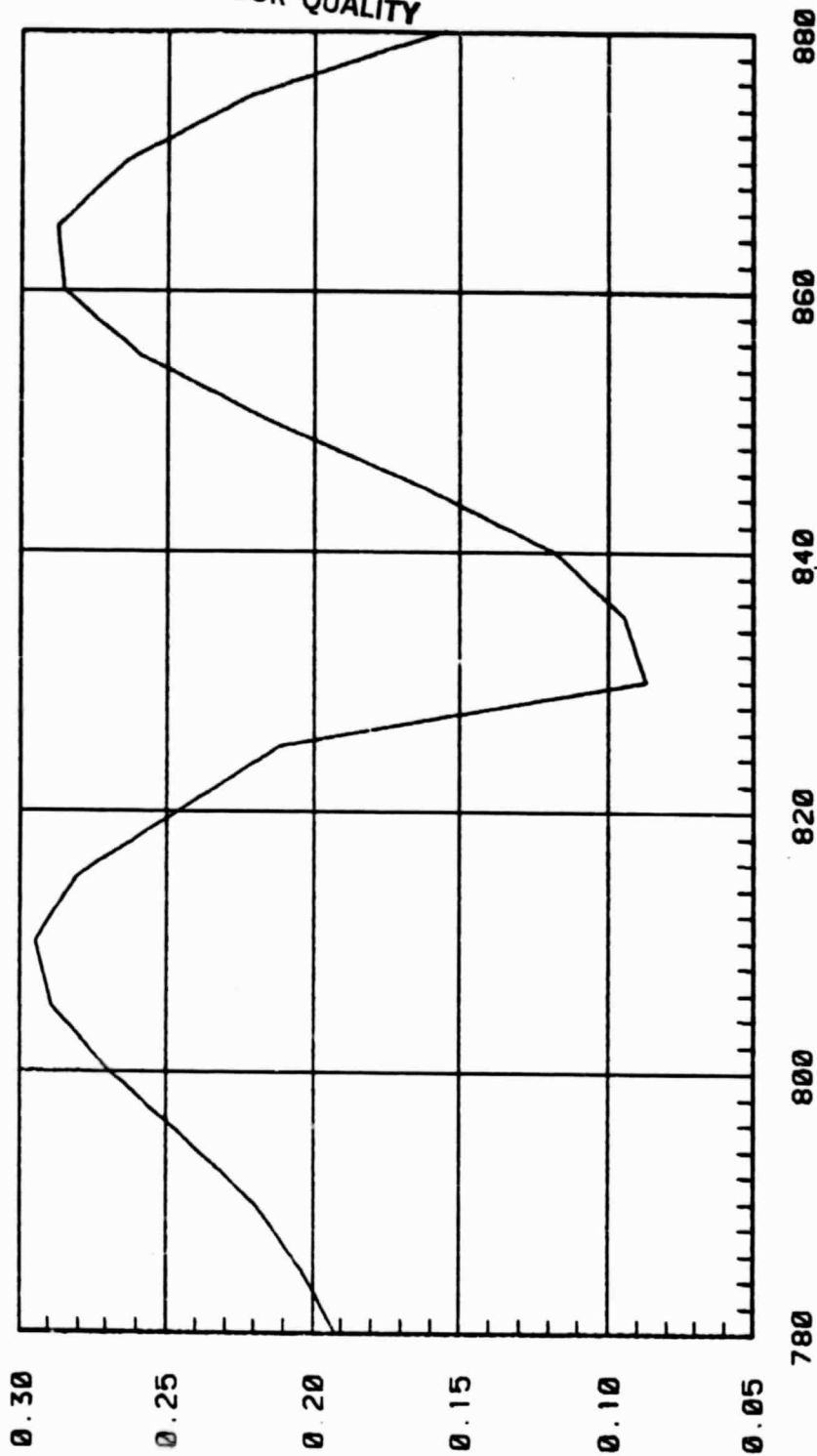
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FLIGHT PARAMETER COMPARISON

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_ V871007BA



HEATING RATE - BTU/FT\*\*2 - SEC

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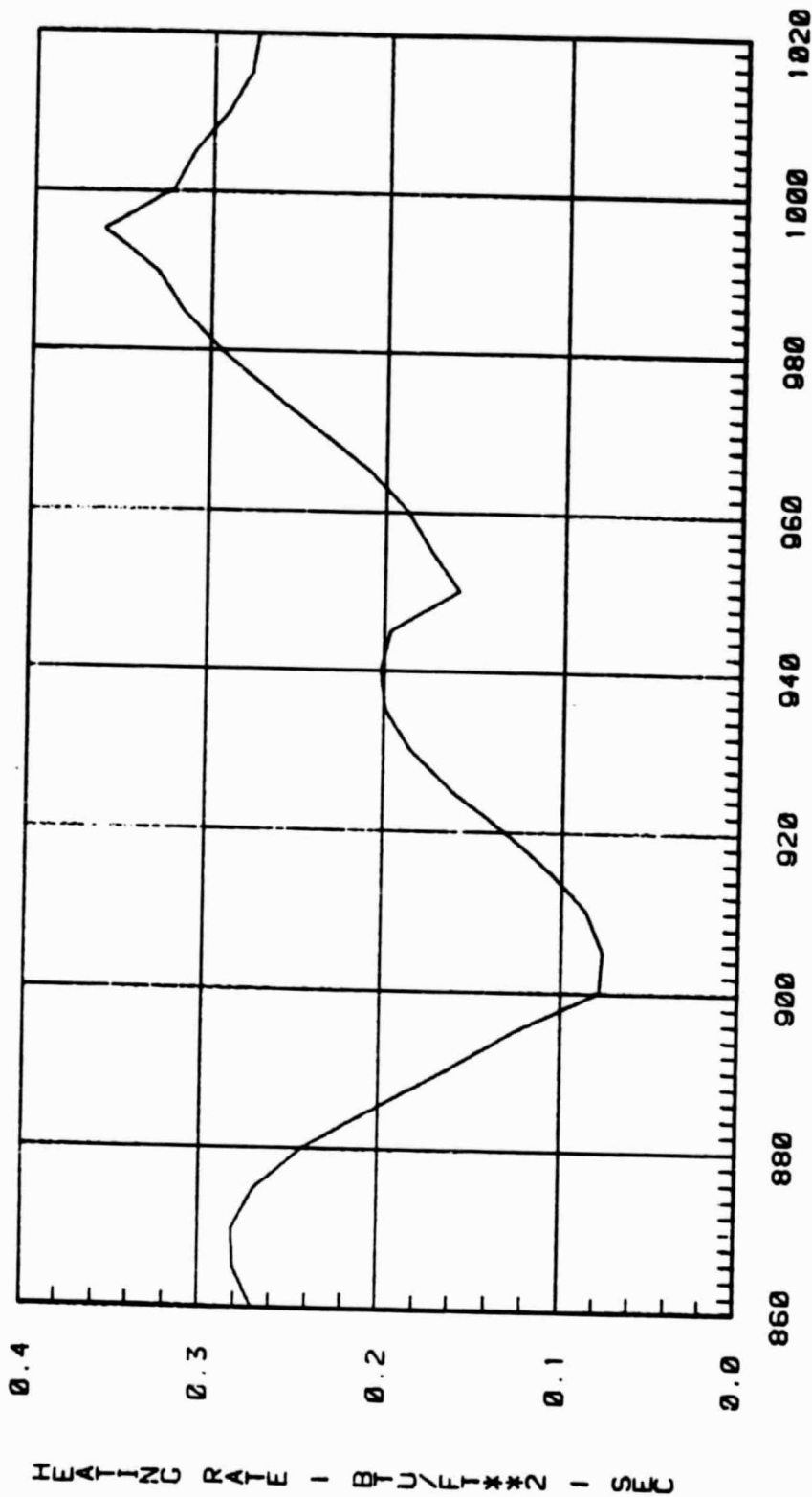
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04/20/83

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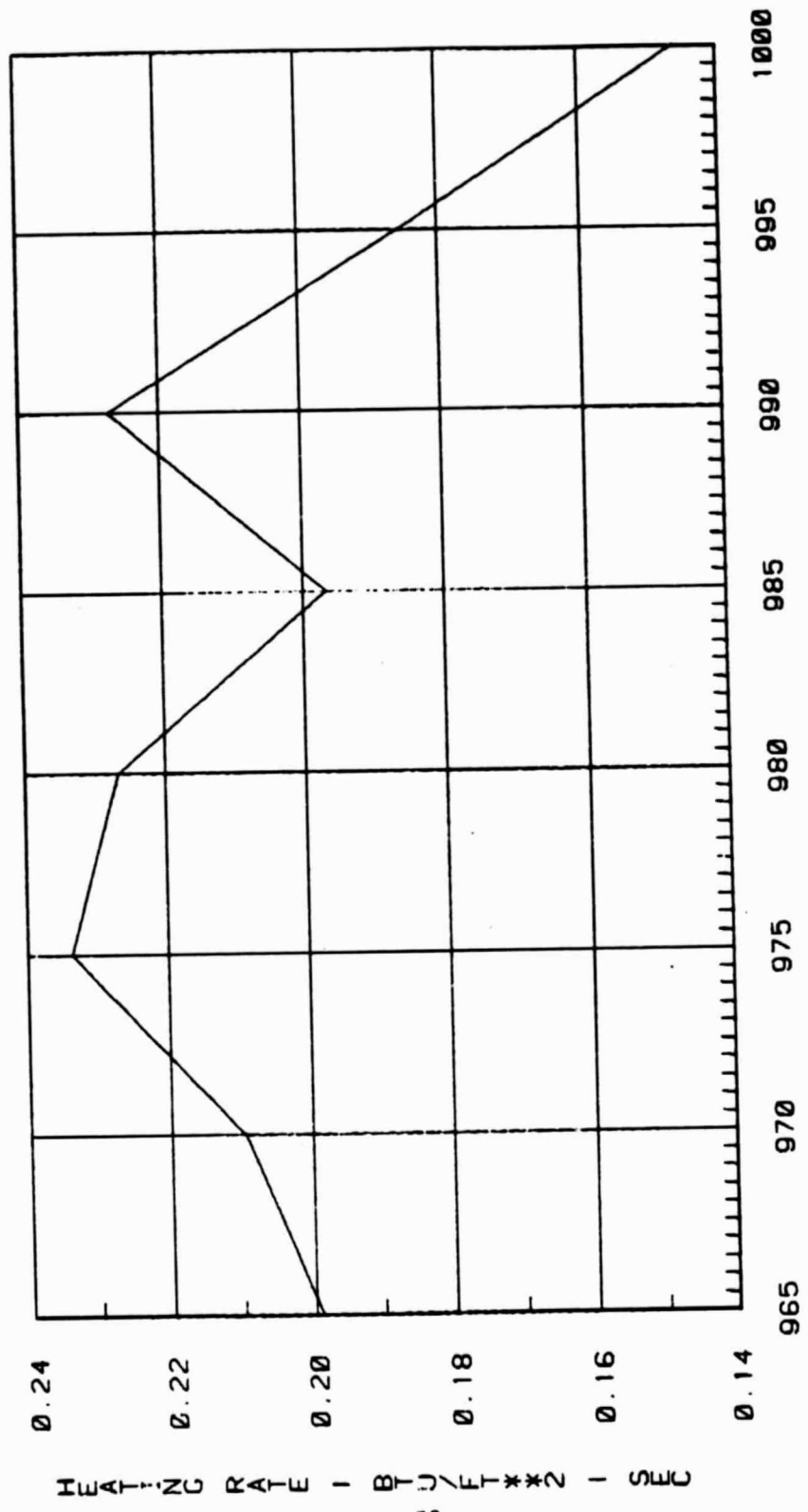
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04/28/83

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB710078A



HEATING RATE - BTU/FT\*\*2 - SEC

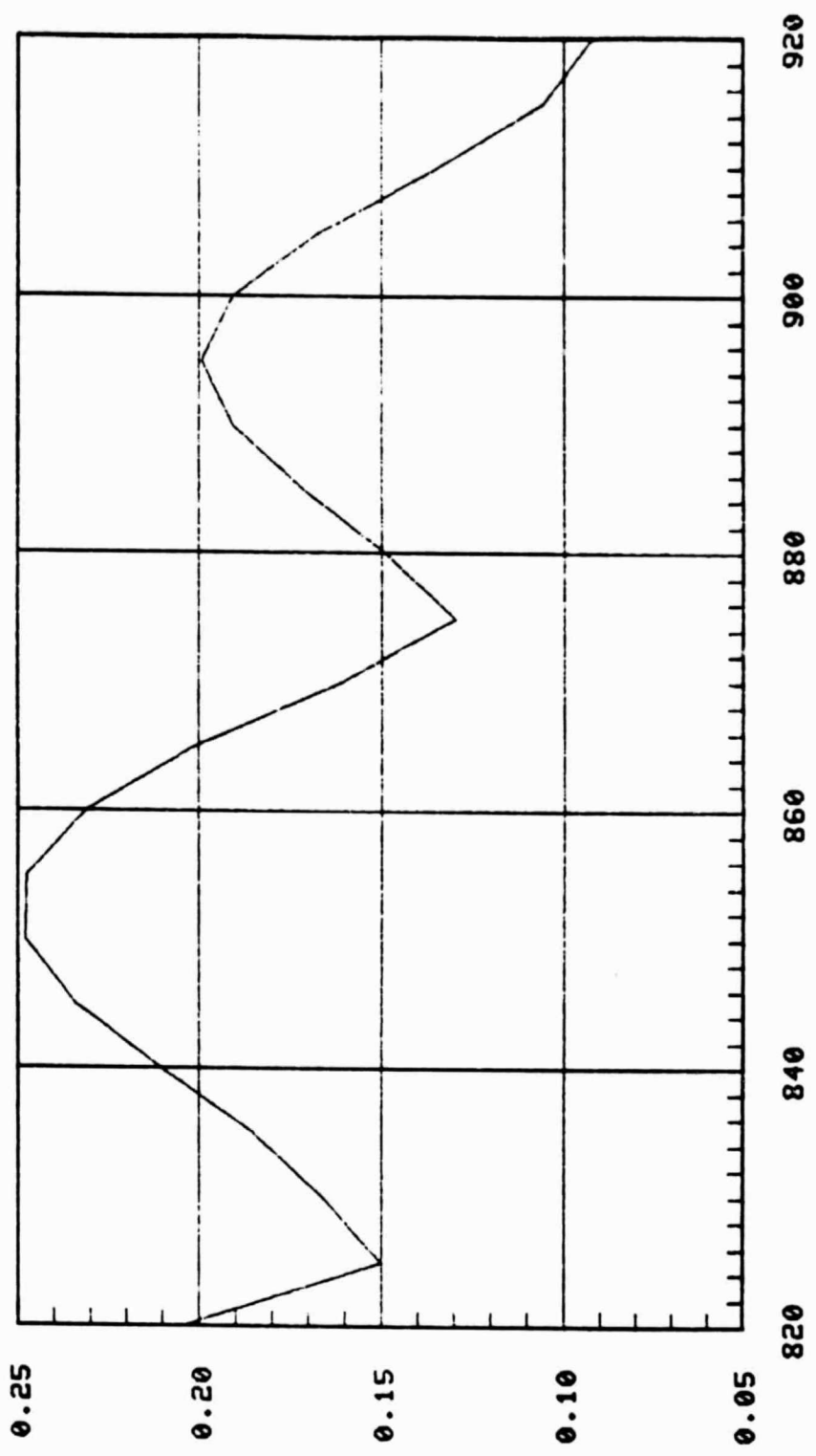
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04/20/83

TIME - SECONDS

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9970A



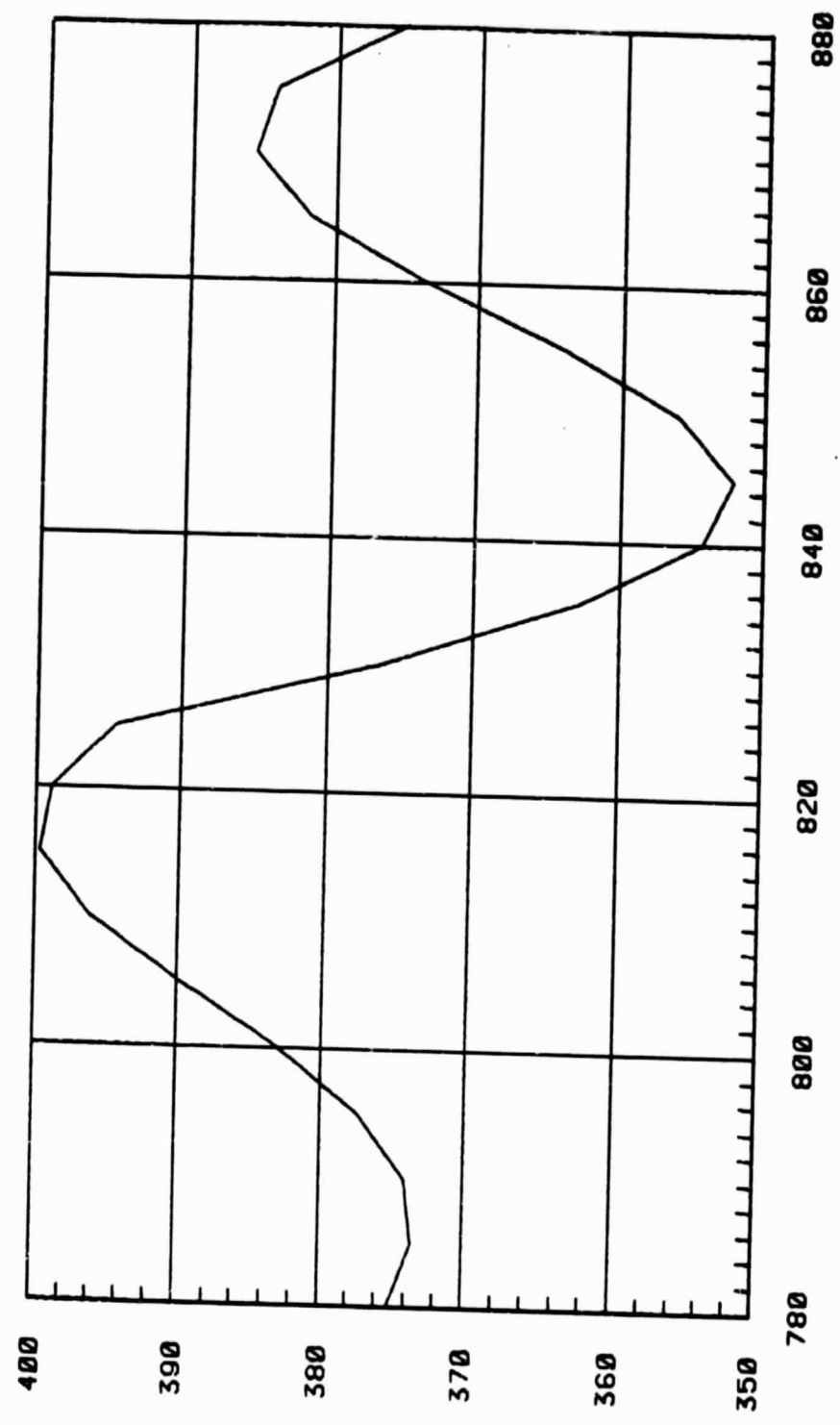
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TIME - SECONDS

04/20/83

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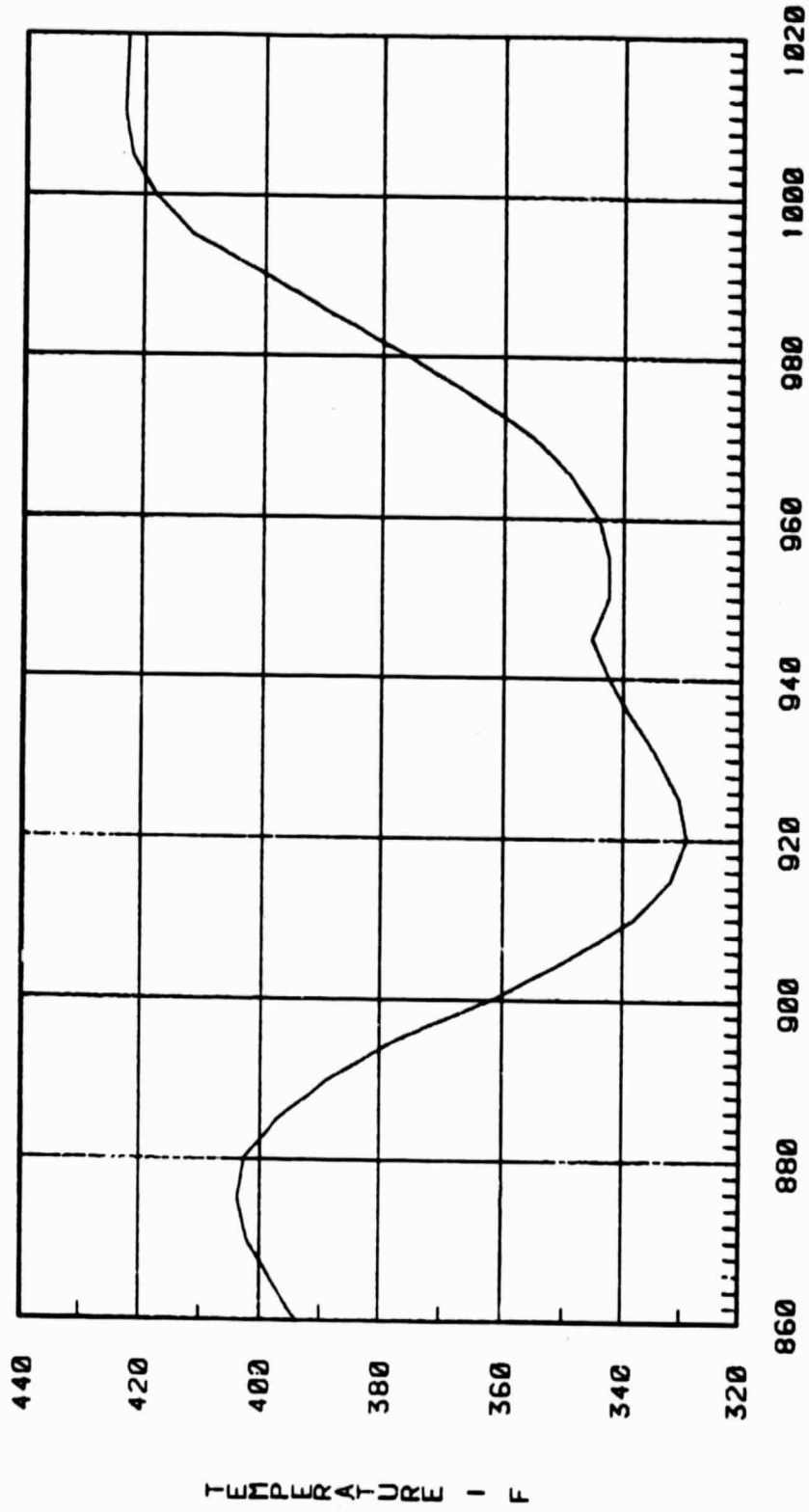
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TIME - SECONDS

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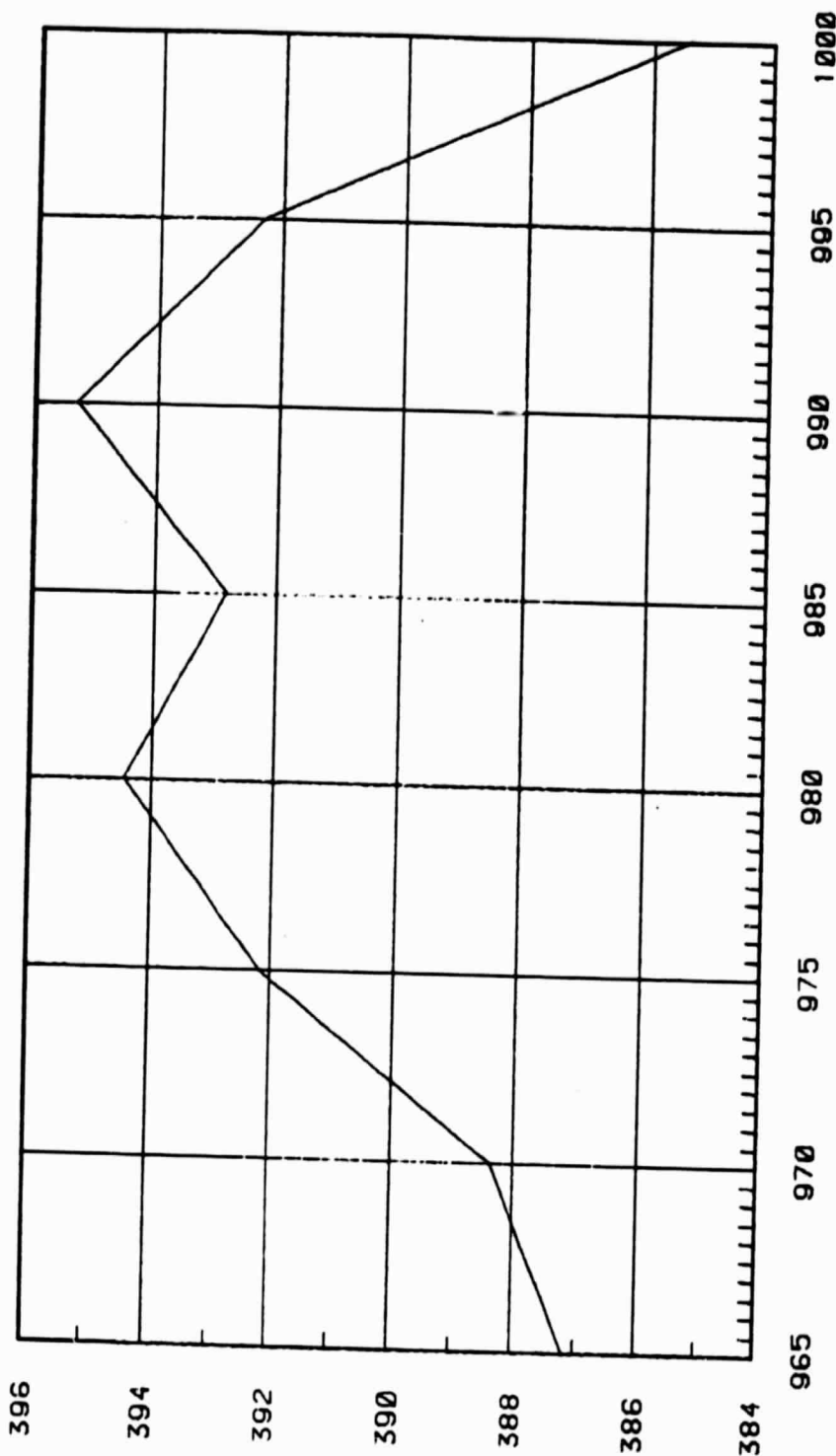


TIME - SECONDS

94/20/83

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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON  
V87T0078A



TEMPERATURE - F

D-54

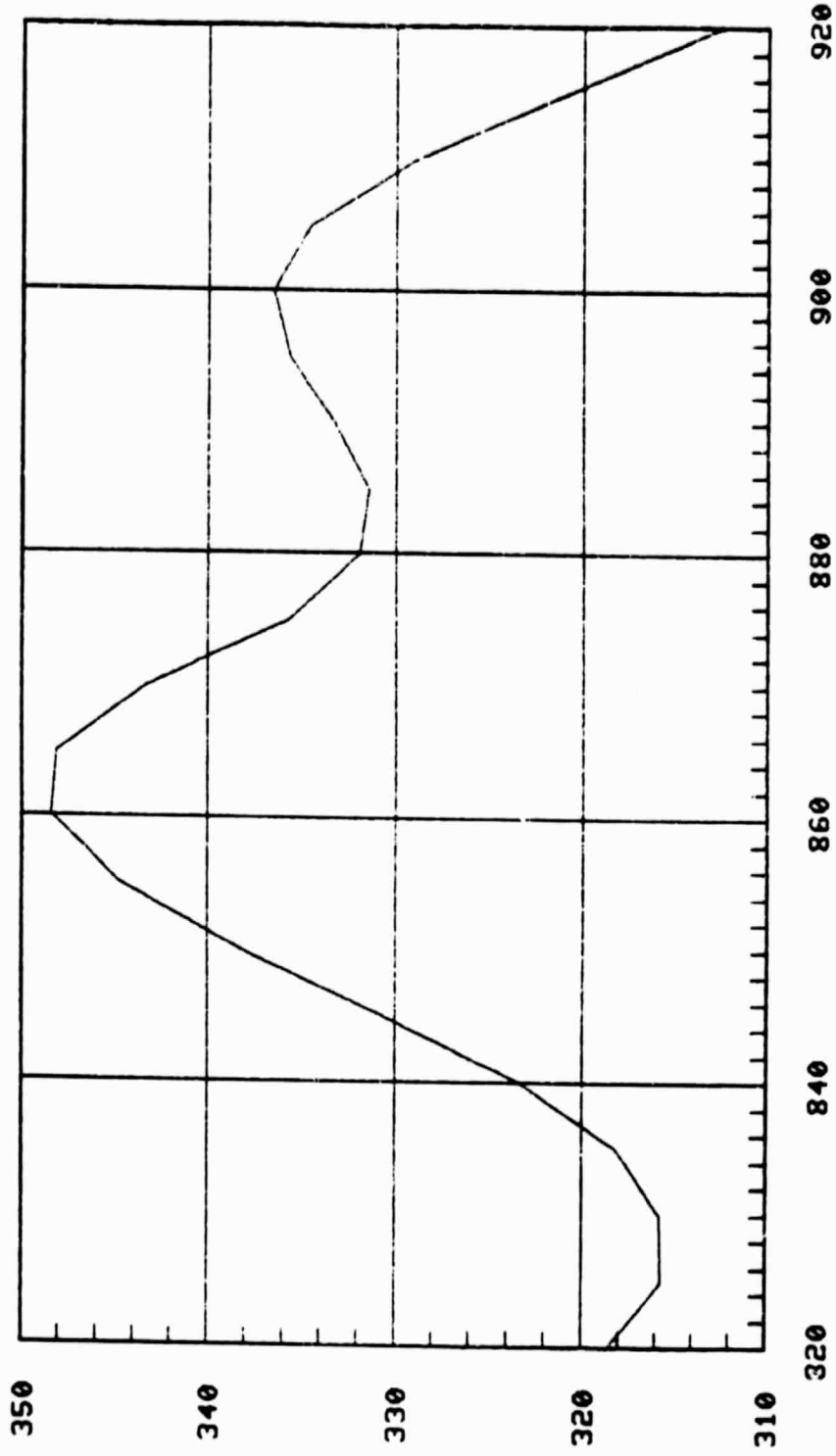
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U07T9970A



TEMPERATURE - F

D-55

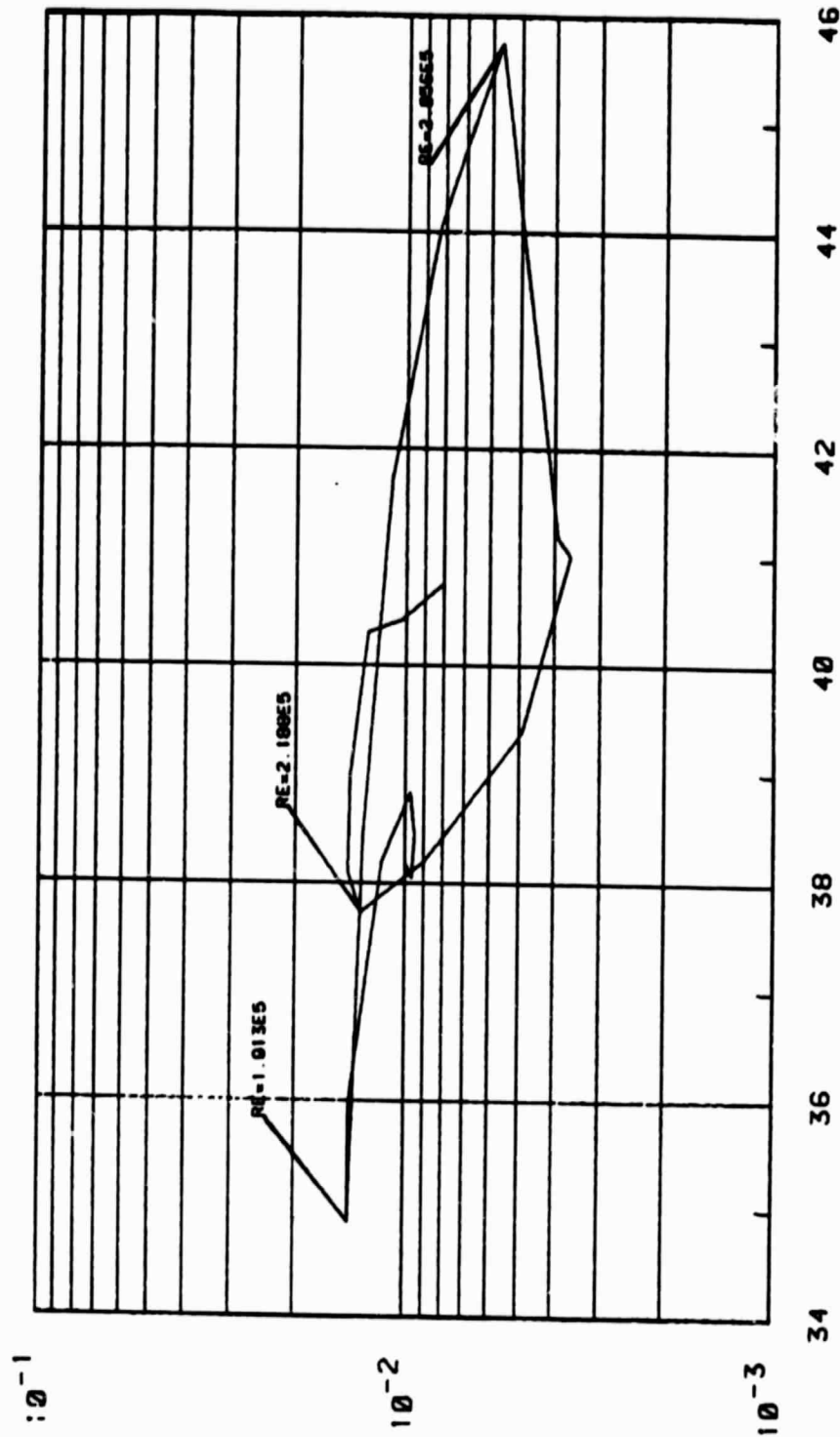
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TIME - SECONDS

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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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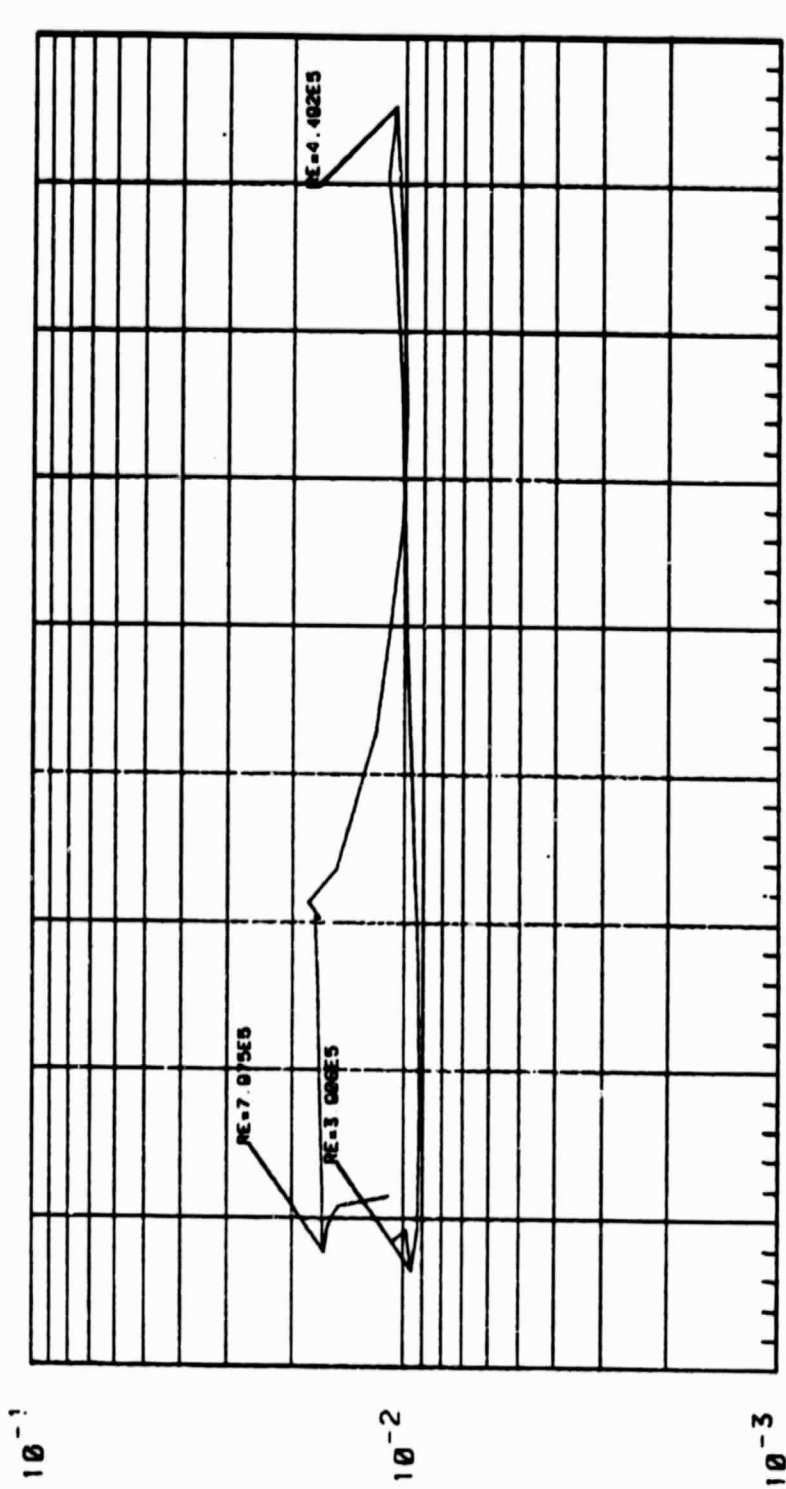
FIELD CORRECTION - H/H-REF

D-56

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ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

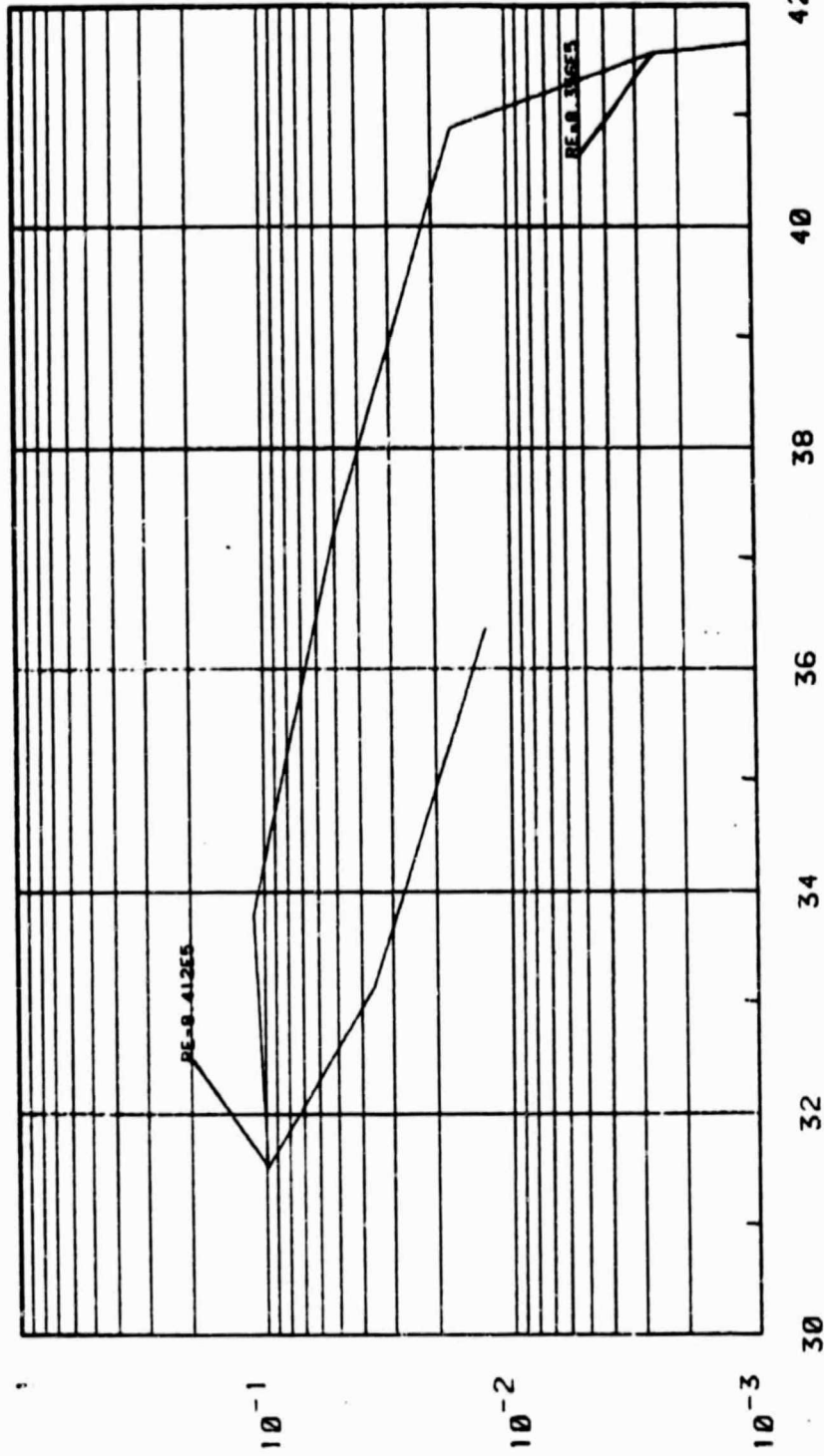
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FLIGHT COEFF - INT-RWU

04/20/83  
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 ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON  
\_\_\_\_\_ V07T0072A/H-REF 005-1000 SEC



FLIGHT COMPARISON - H/H-REF

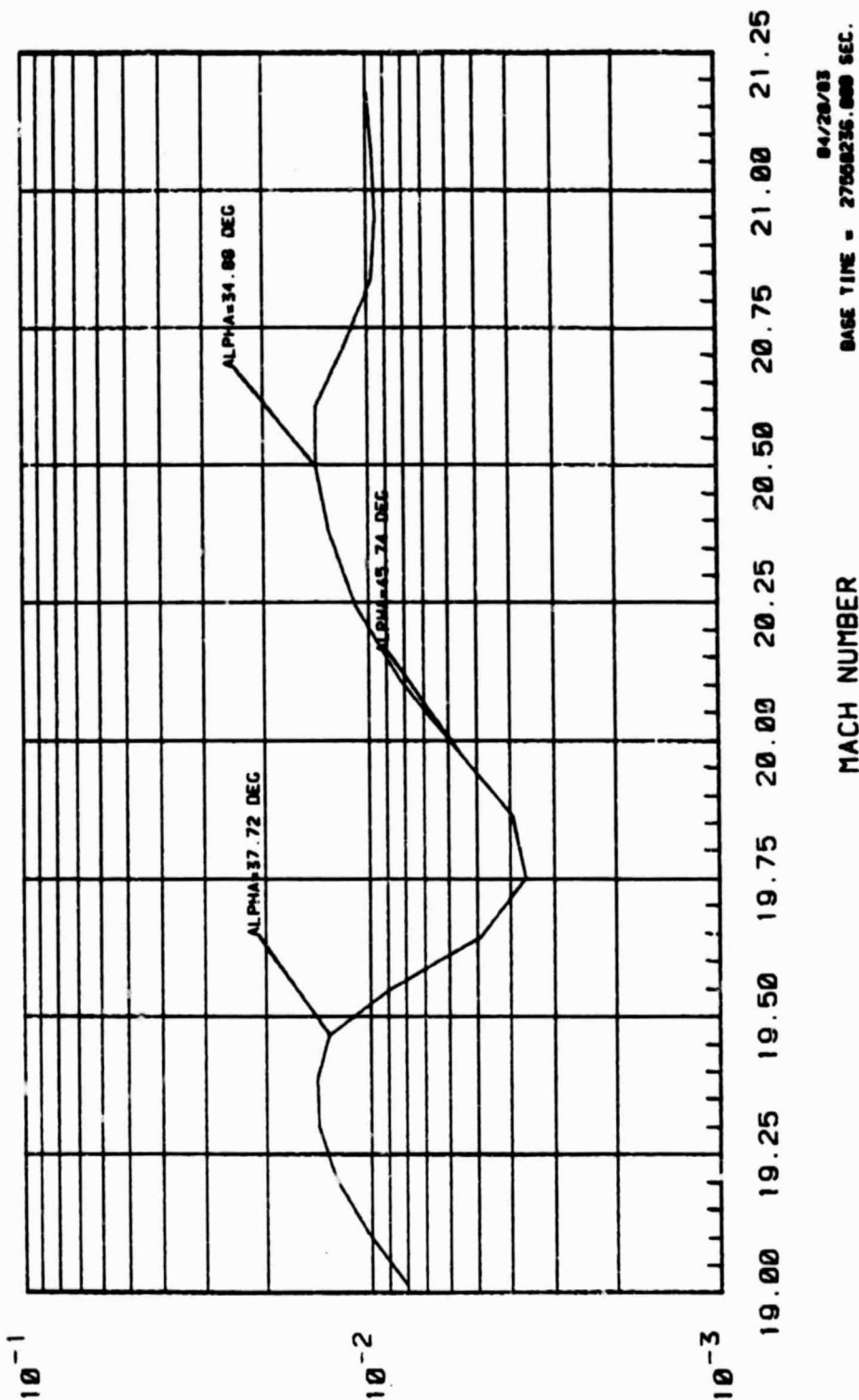
D-58

84/20/83  
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ANGLE - OF - ATTACK - DEG

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V87T0072A/N-REF 700-000 SEC

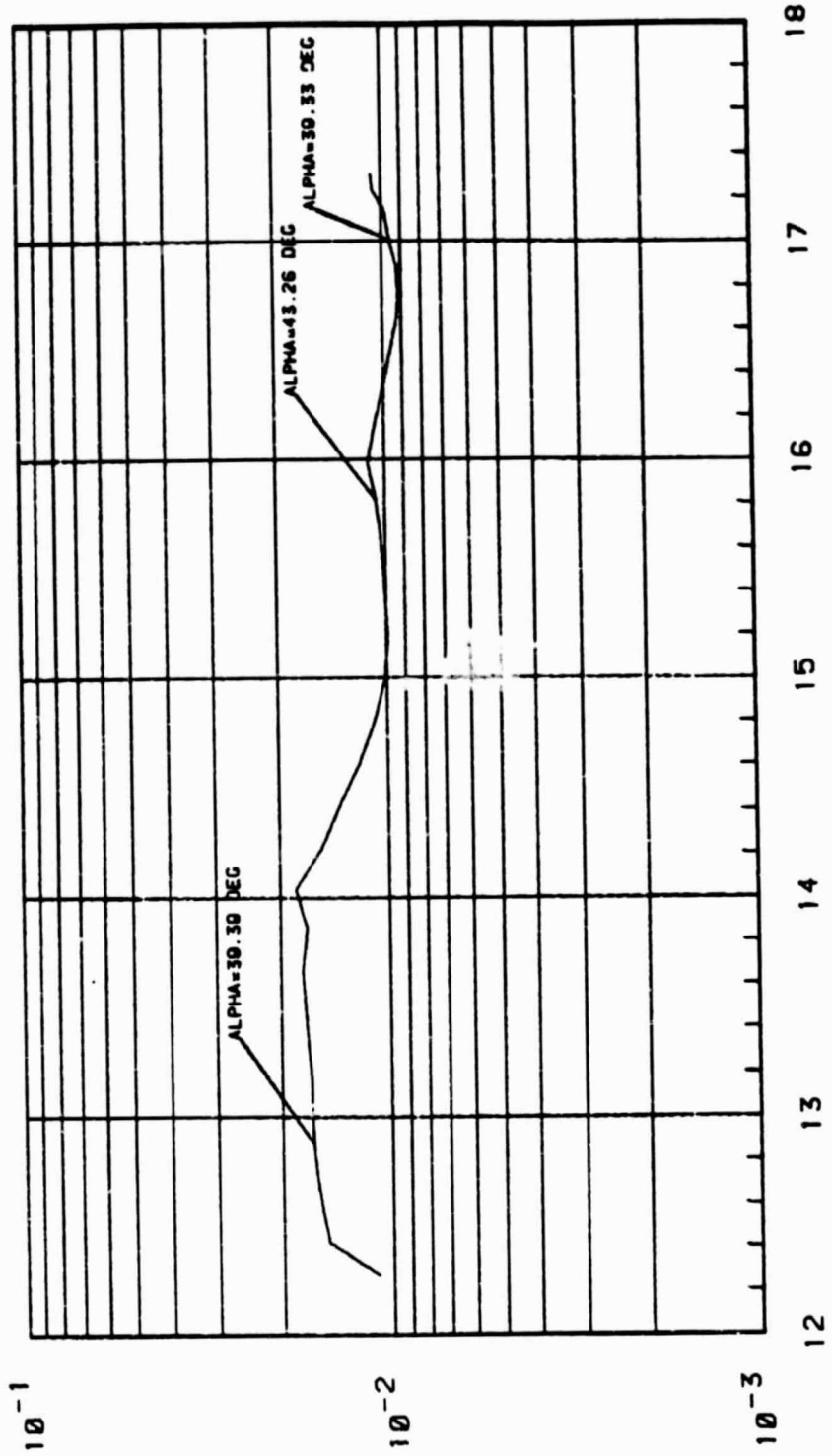
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FLIGHT COMPARE - N-REF

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB710072A/H-REF 669-1029 SEC



FILM COEFF | H/I-REF

D-60

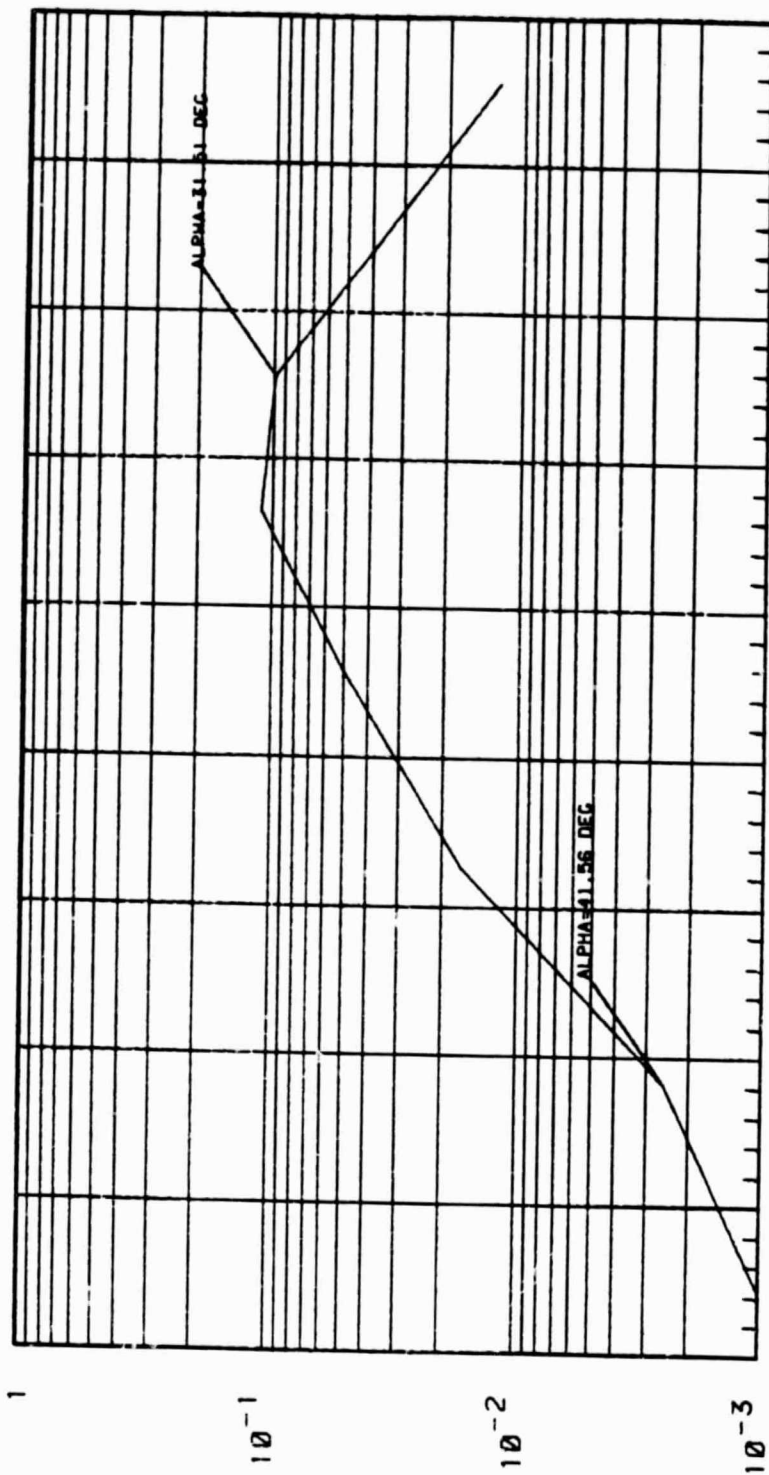
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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FLIGHT COMPARISON - H/H-REF

D-67

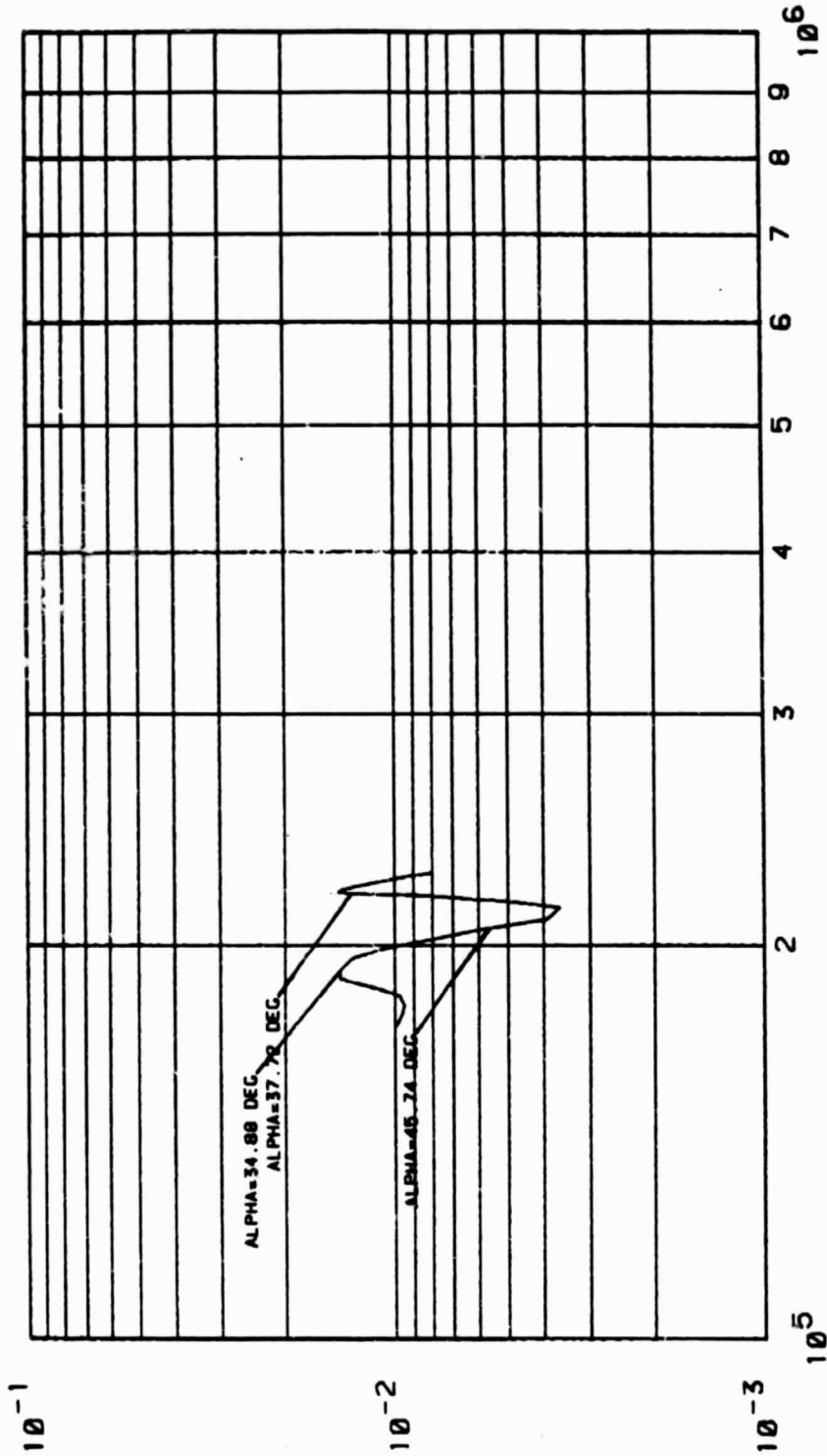
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MACH NUMBER

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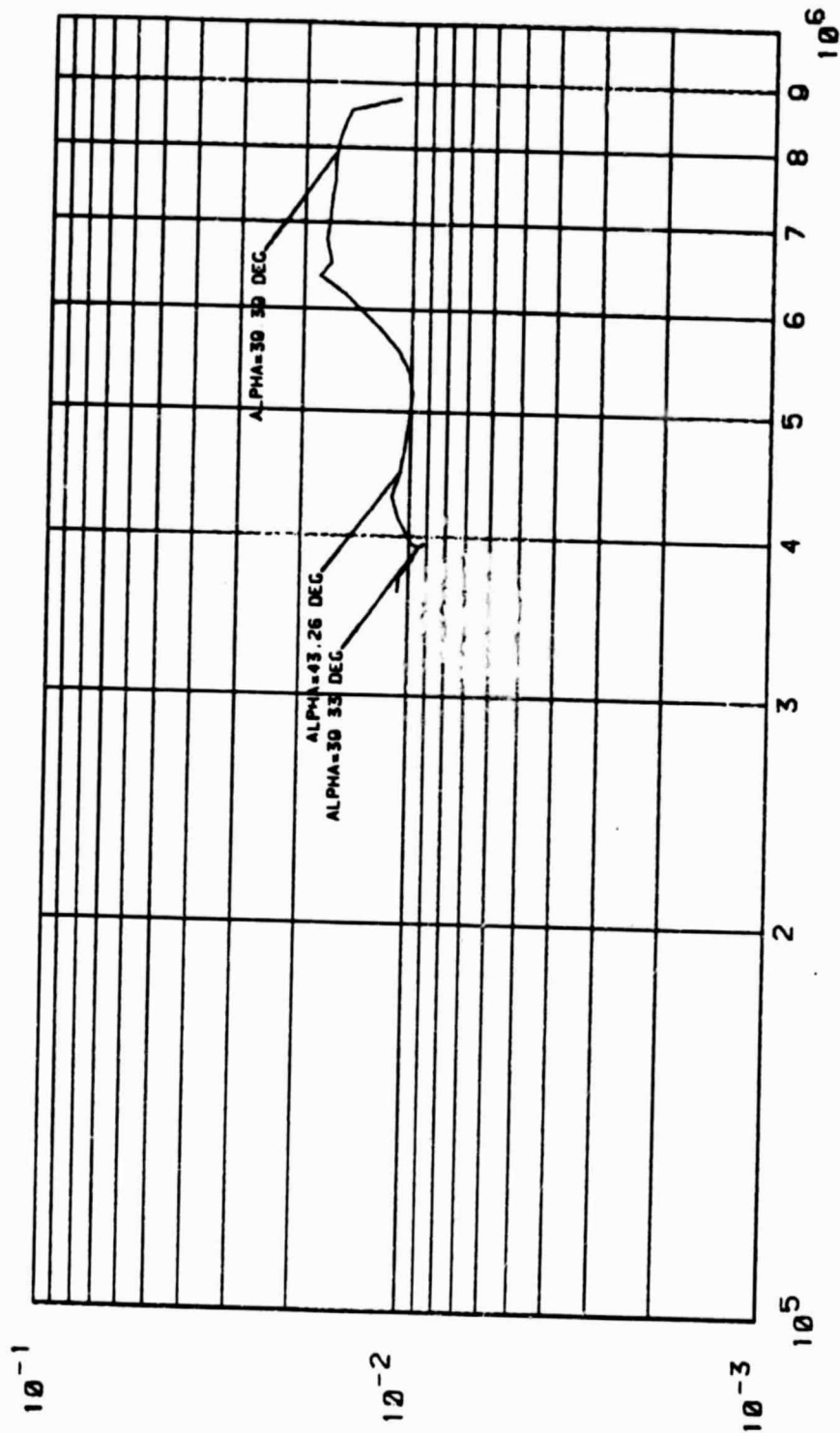
FLIGHT PARAMETER - H-REF



STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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REYNOLDS NUMBER (NS)

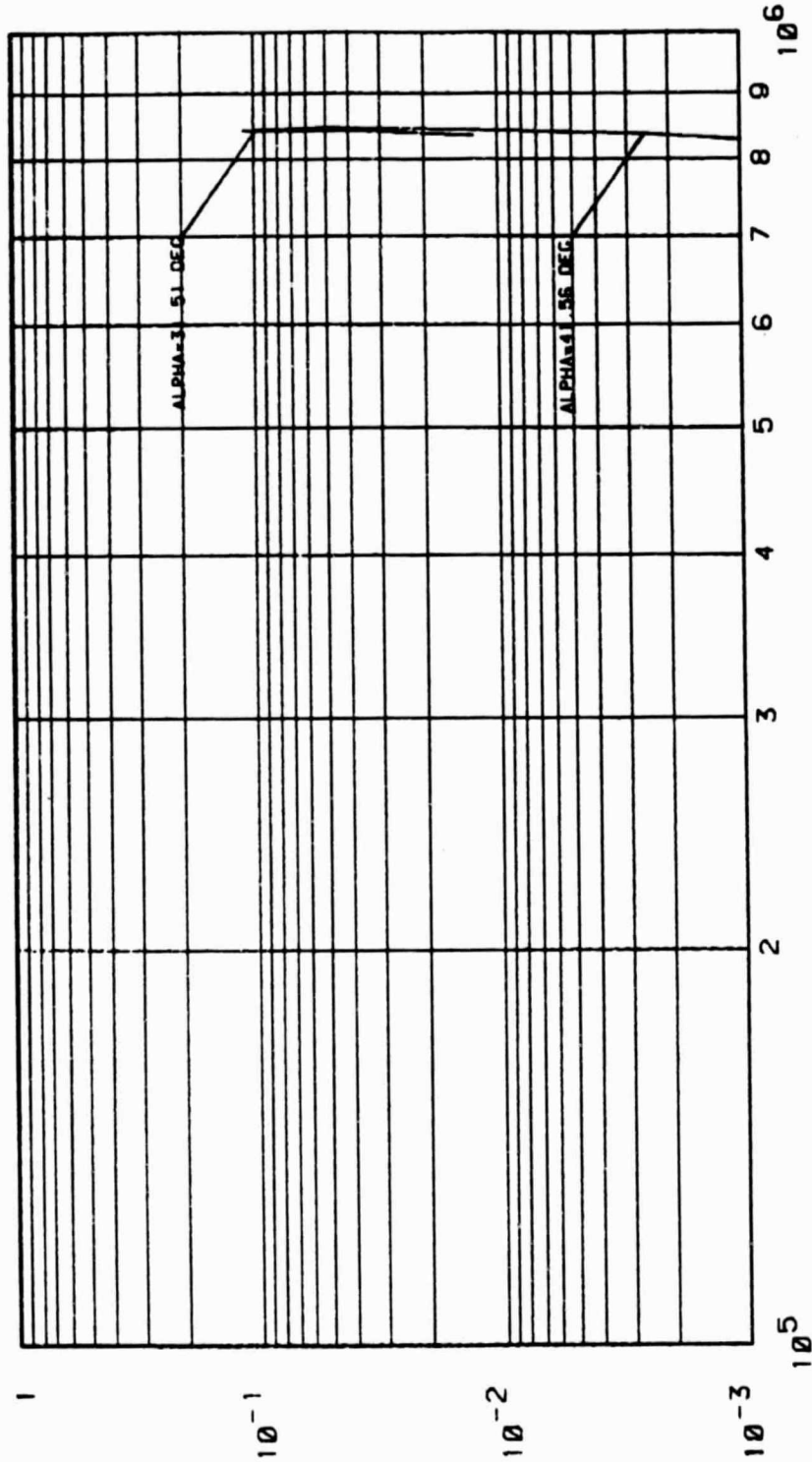
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04/20/83

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FLIGHT PROFILE - H/H-REF

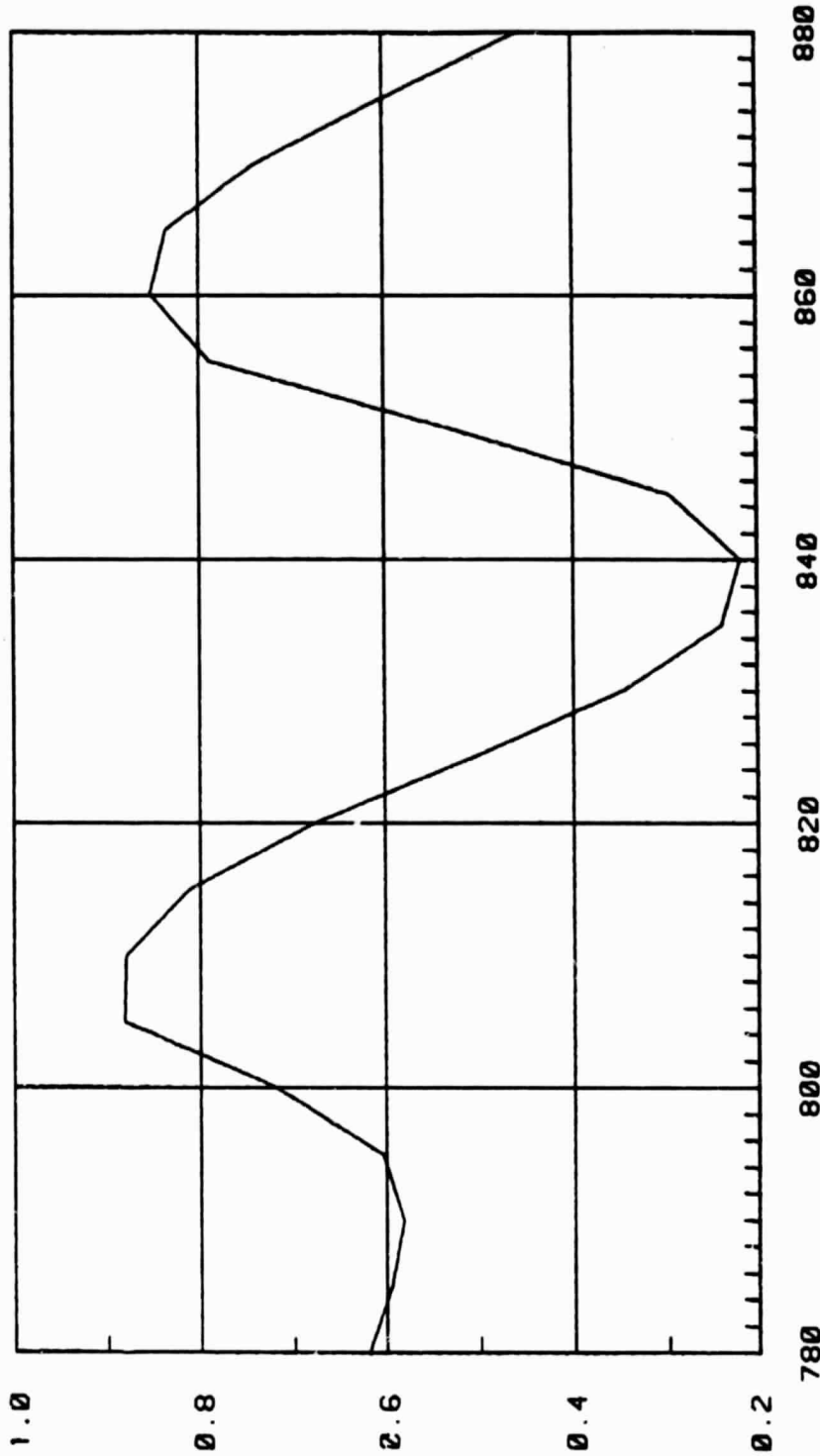
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REYNOLDS NUMBER (NS)

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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770072A



HEATING RATE - BTU/FT\*\*2 - SEC

D-65

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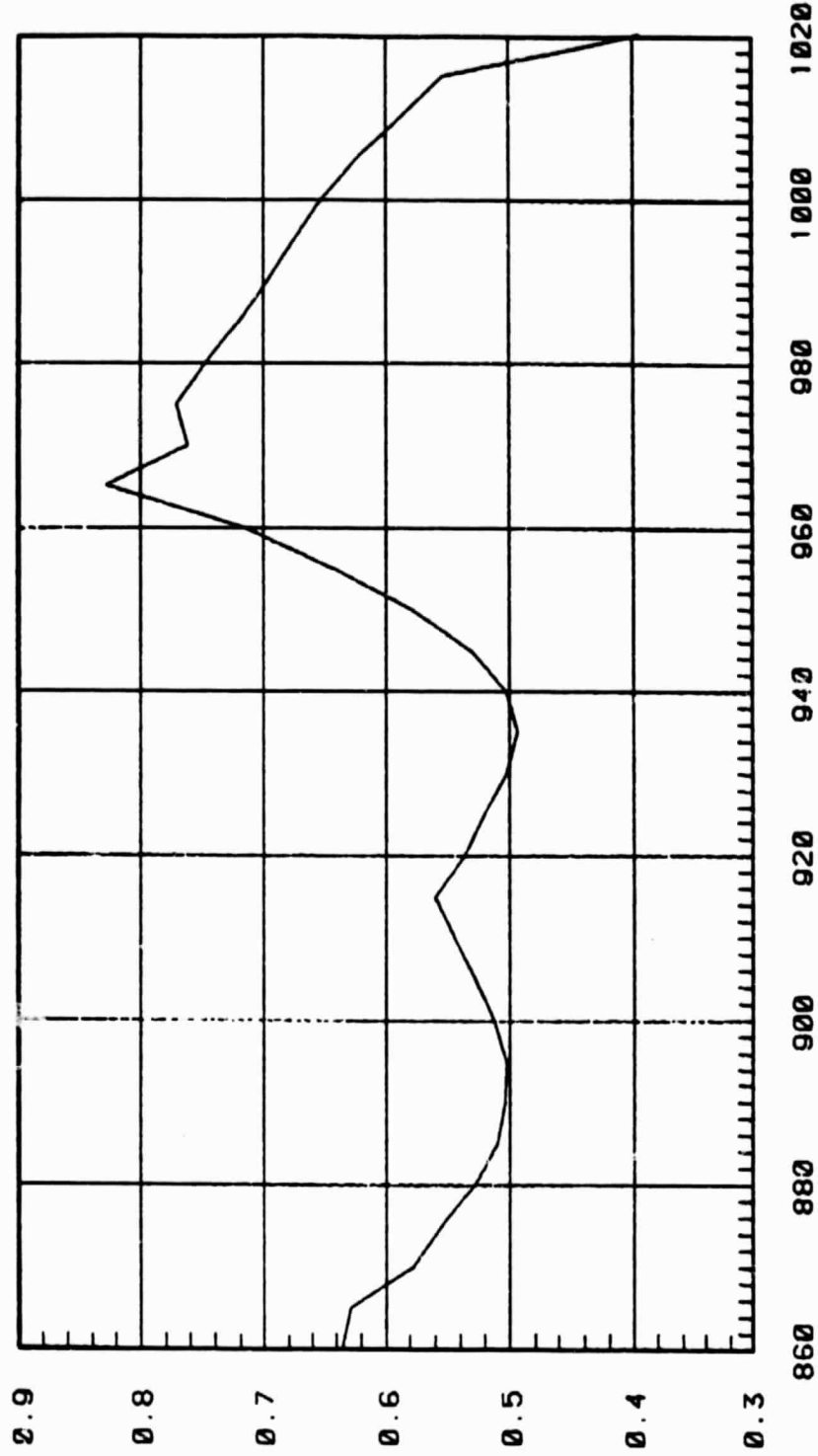
04/29/83

TIME - SECONDS

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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V87T0072A



TIME - SECONDS

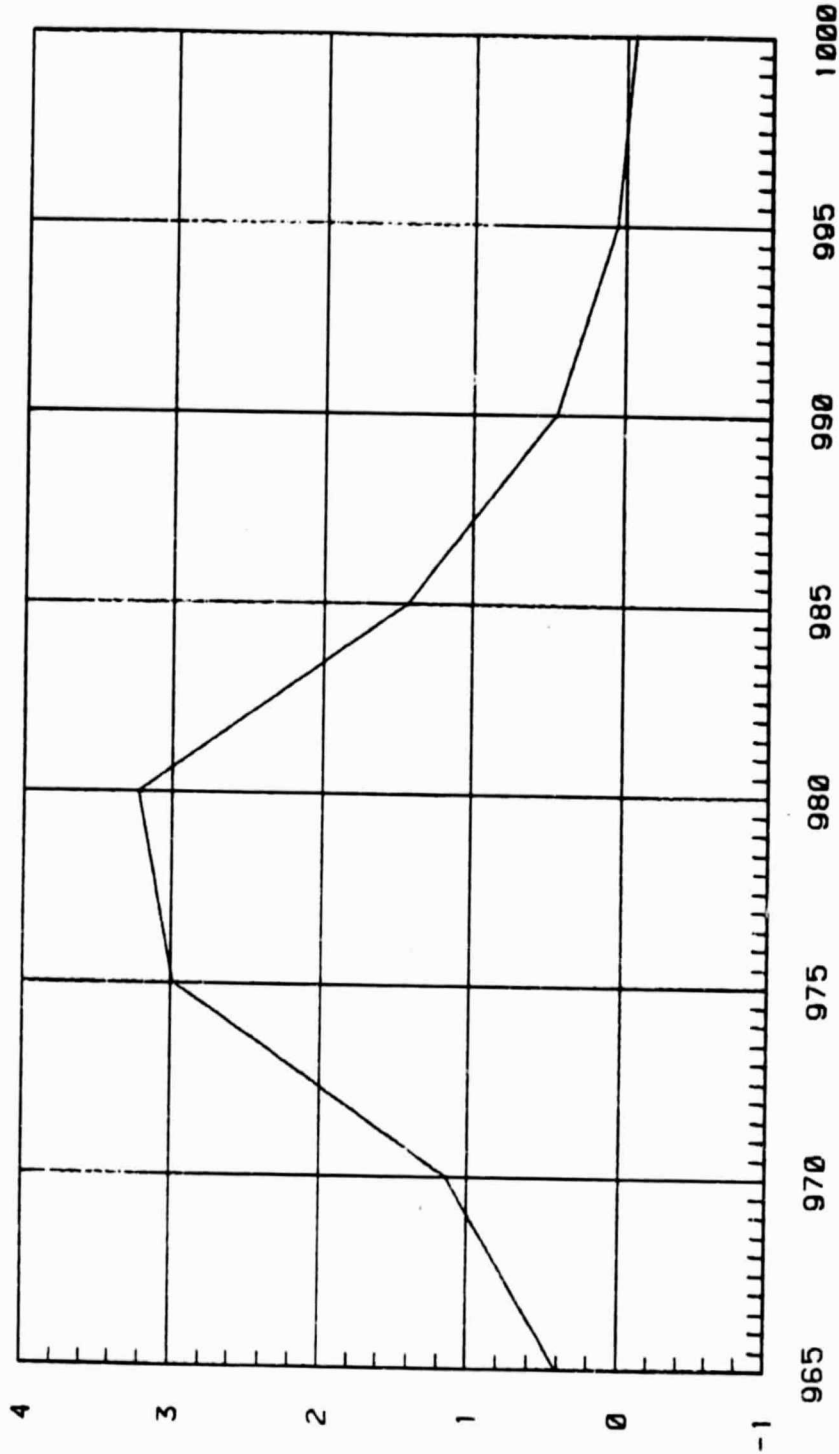
04/28/83

HEATING RATE - BTU/LI\*\*2 - SEC

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VS776072A

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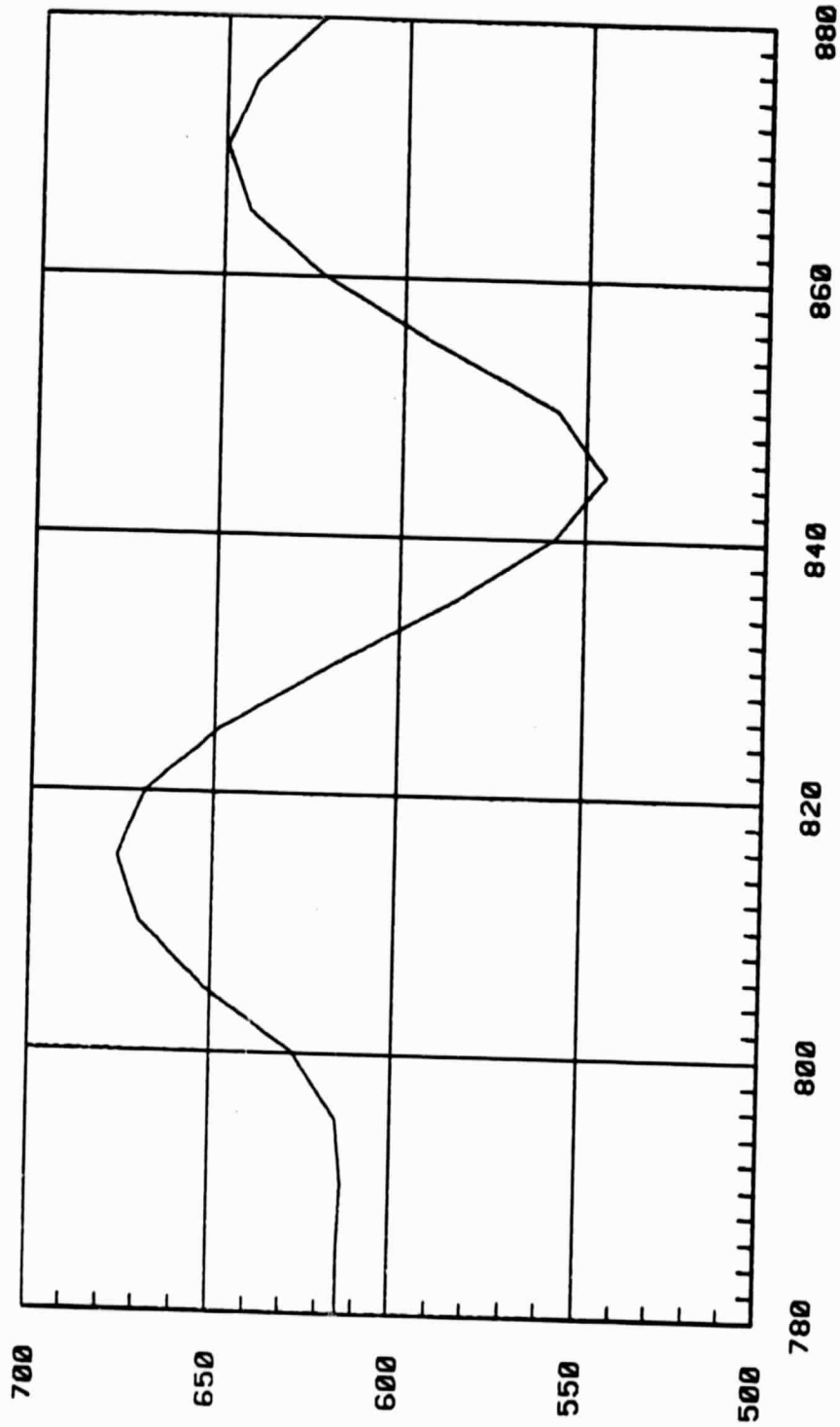
TIME - SECONDS

04/28/83

HEATING RATE - BTU/FT\*\*2 / SEC

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8710072A



TEMPERATURE - F

D-68

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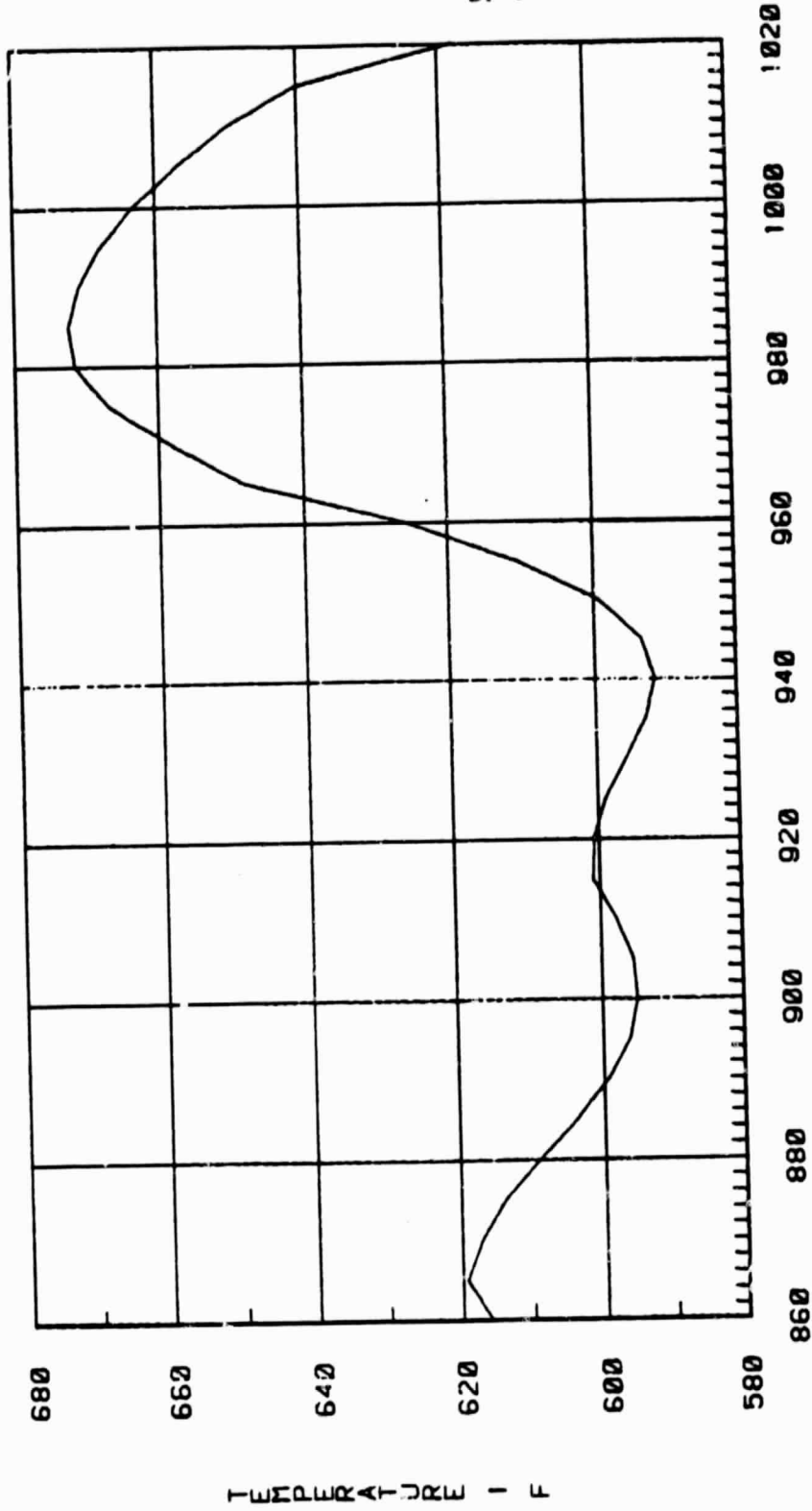
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04/28/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8710072A

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04/28/03

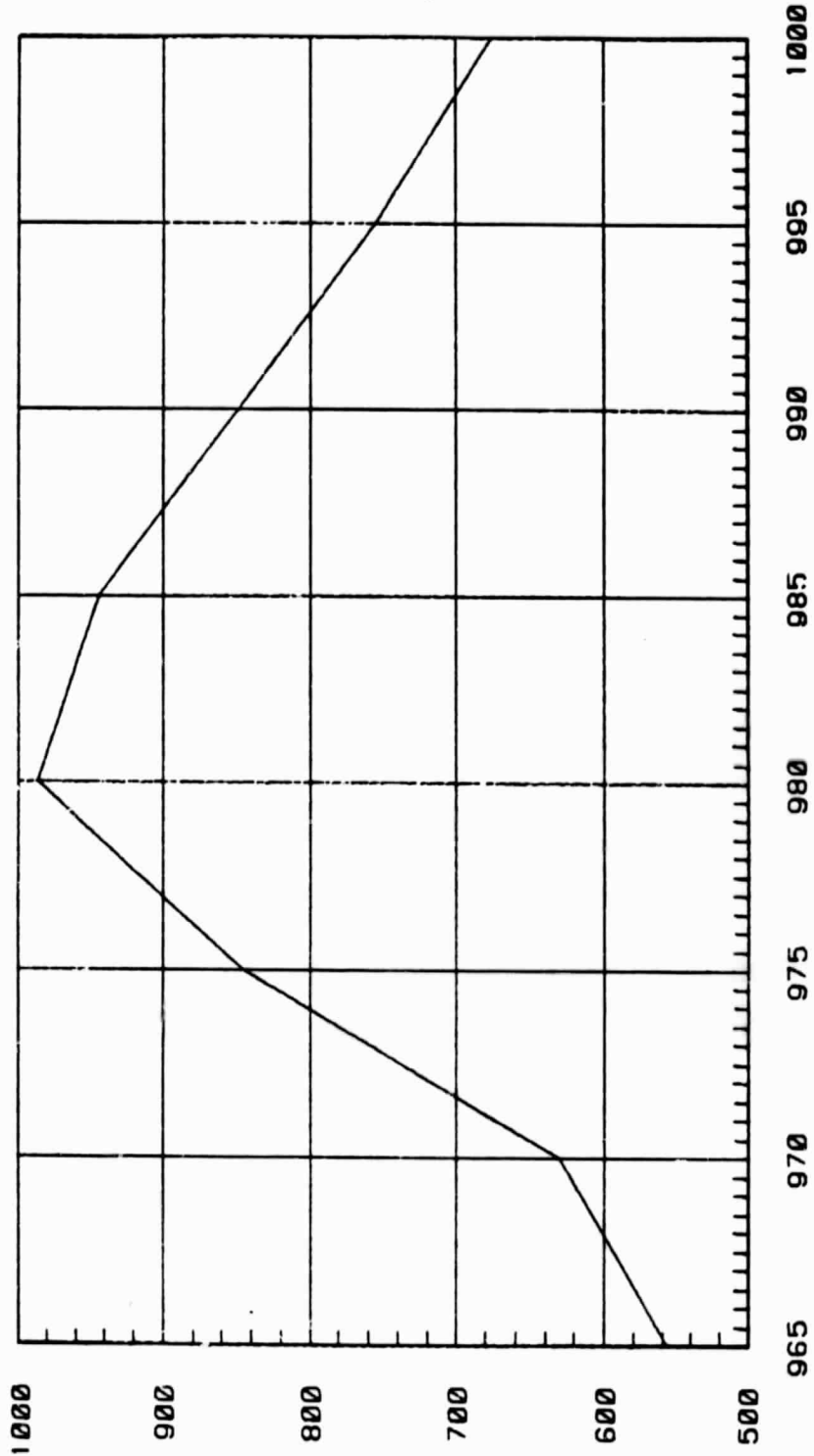
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TEMPERATURE - F

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VS770072A

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TEMPERATURE - F

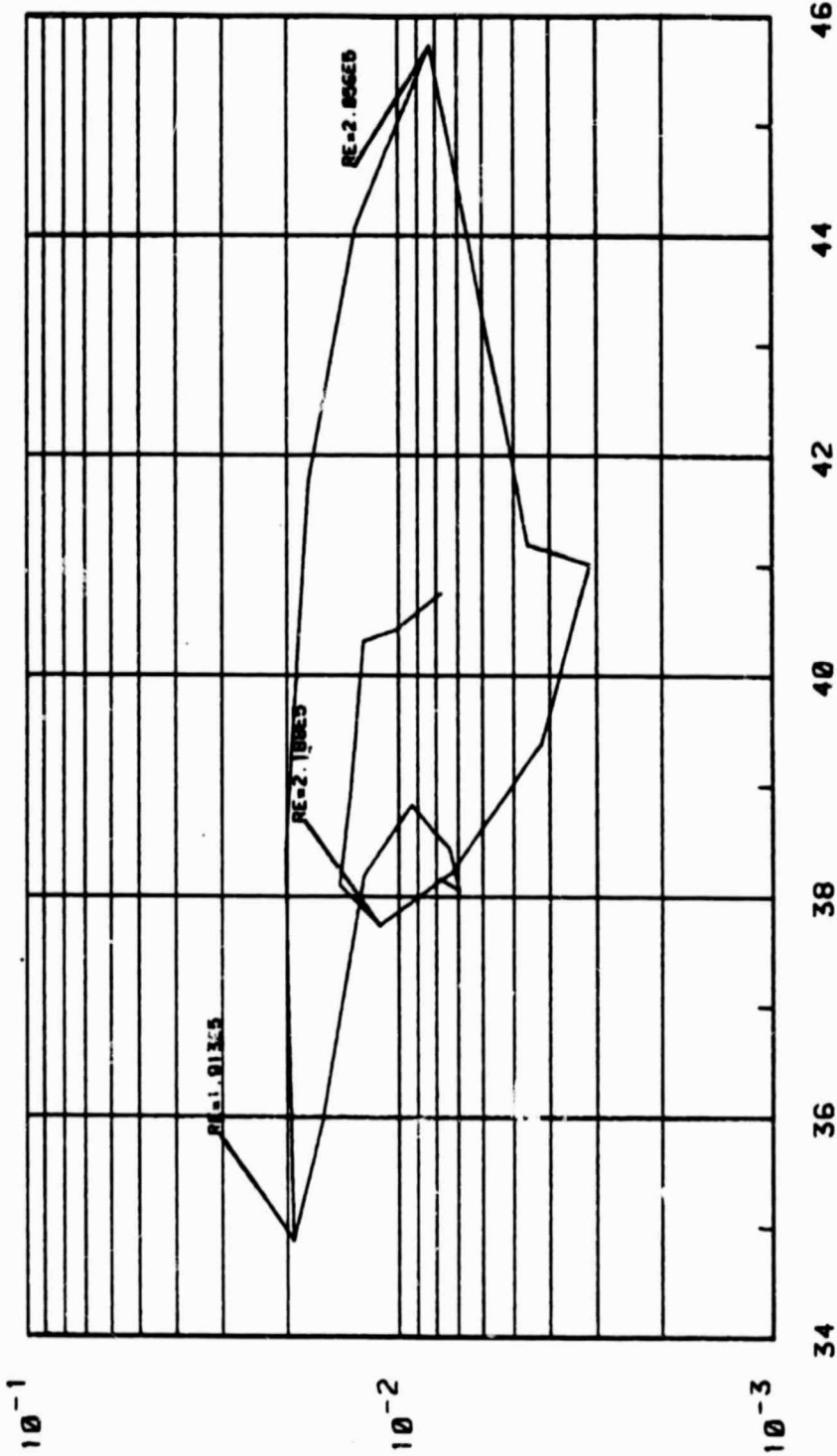
TIME - SECONDS

04/28/83



STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB710078A/H-REF 700-000 SEC



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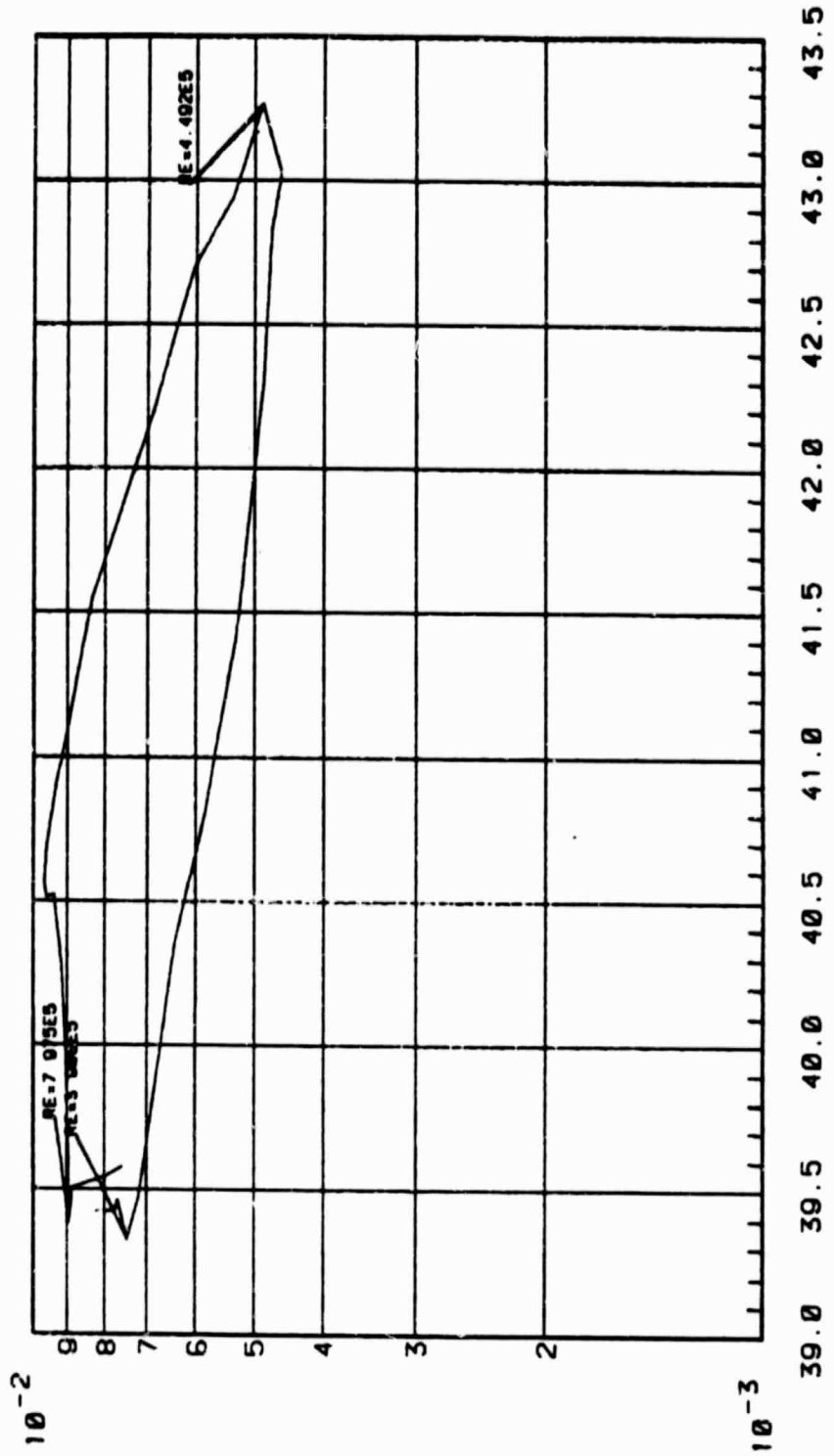
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FLIGHT PARAMETER COMPARISON

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

———— V87T0078A/H-REF 800-1028 SEC

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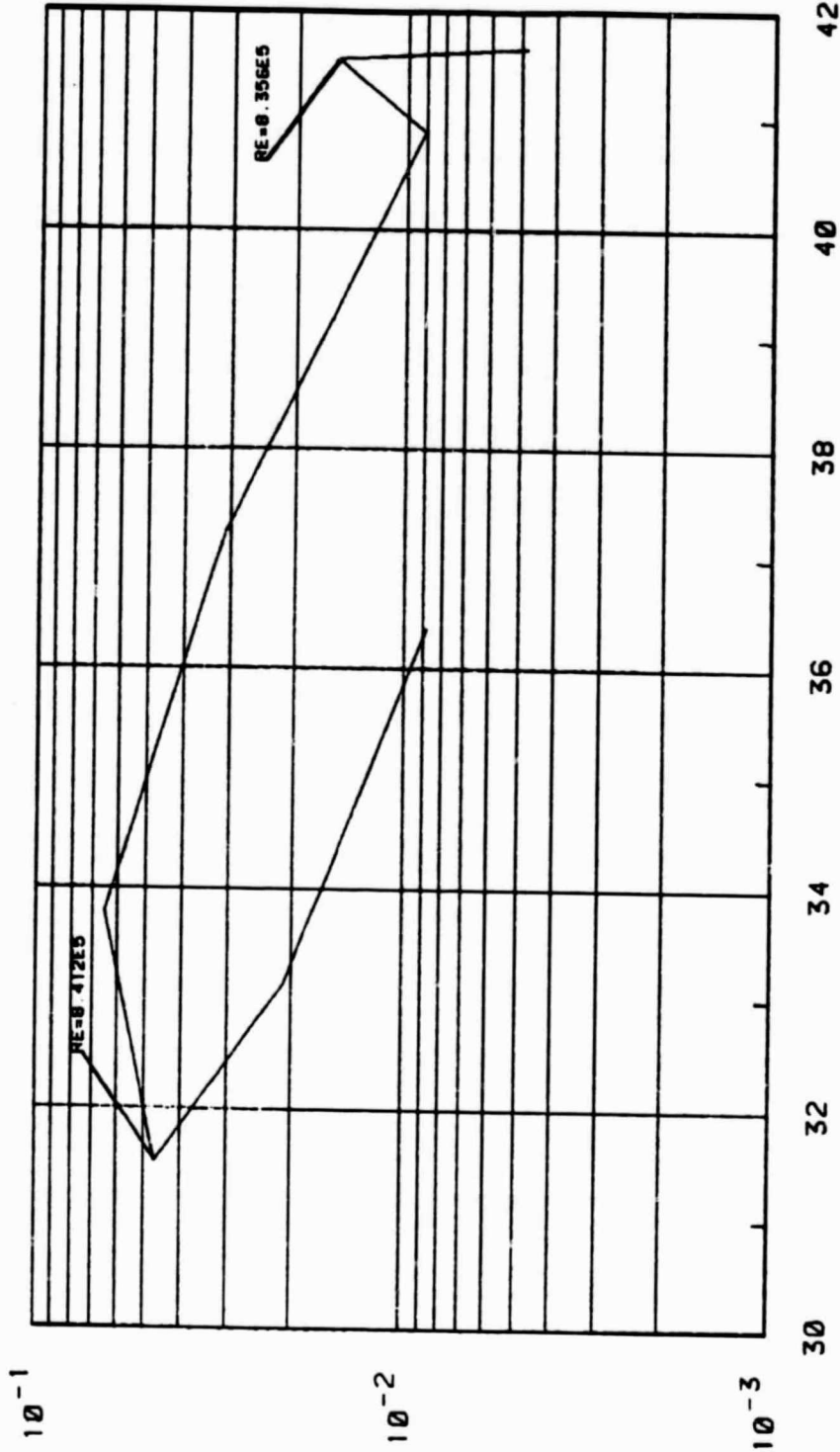
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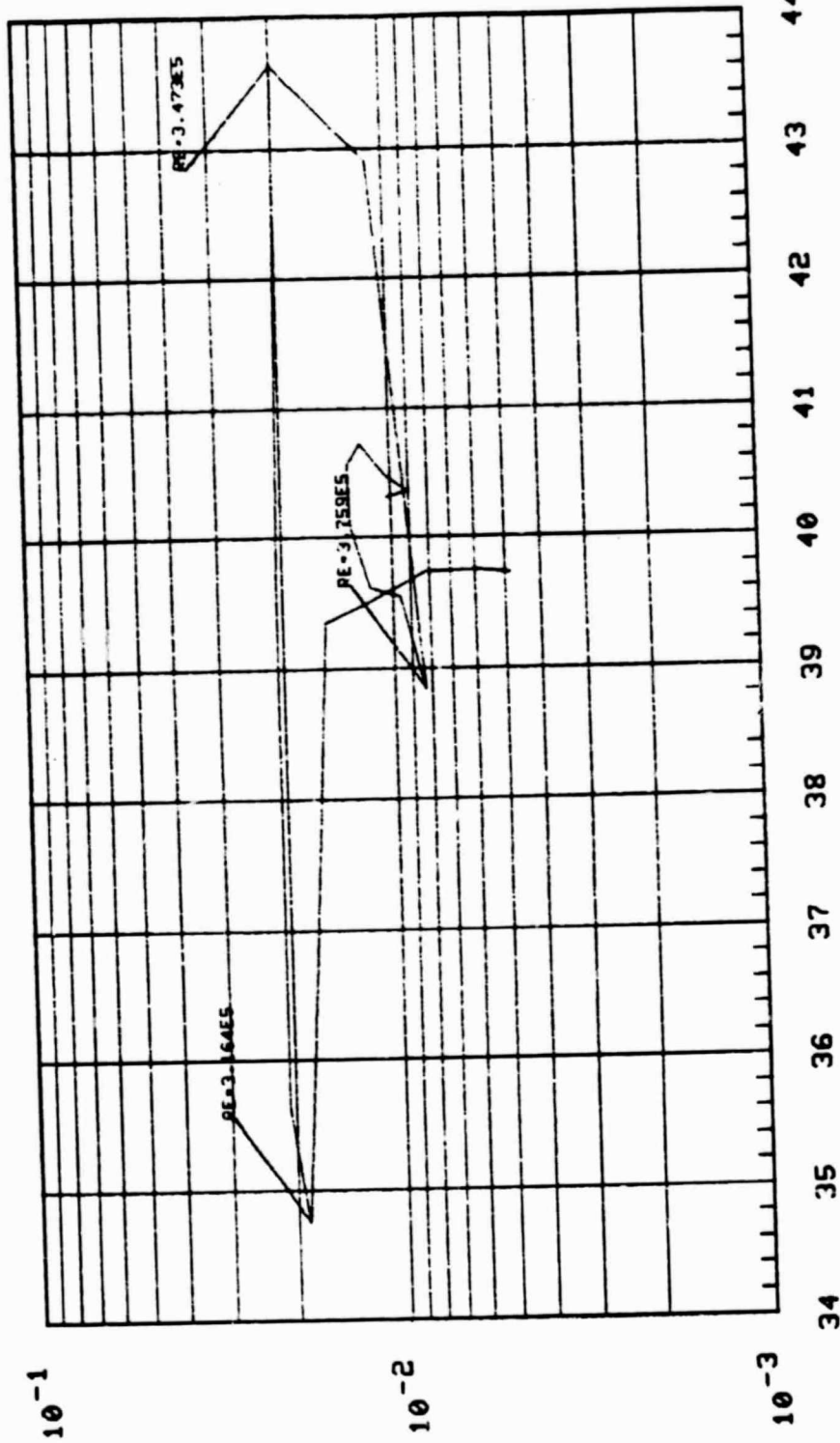
D-73

04/29/83  
BASE TIME = 1604023.000 SEC.  
ANGLE-OF-ATTACK - DEG

C-7

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A/H-REF 820- 920 SEC



U07T9976A/H-REF

D-74

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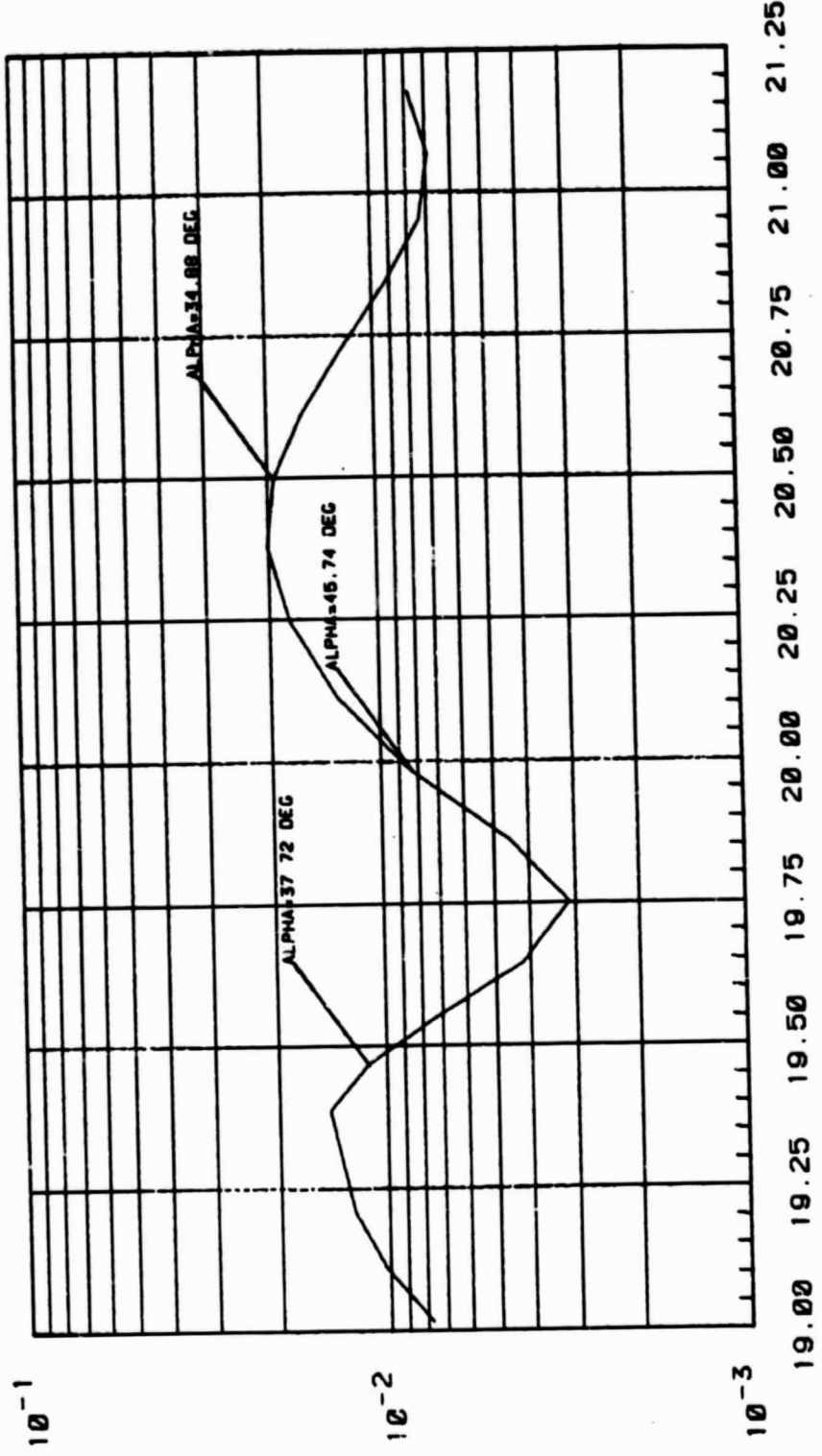
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ANGLE-OF-ATTACK - DEG

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V8770070A/H-REF 700-000 SEC

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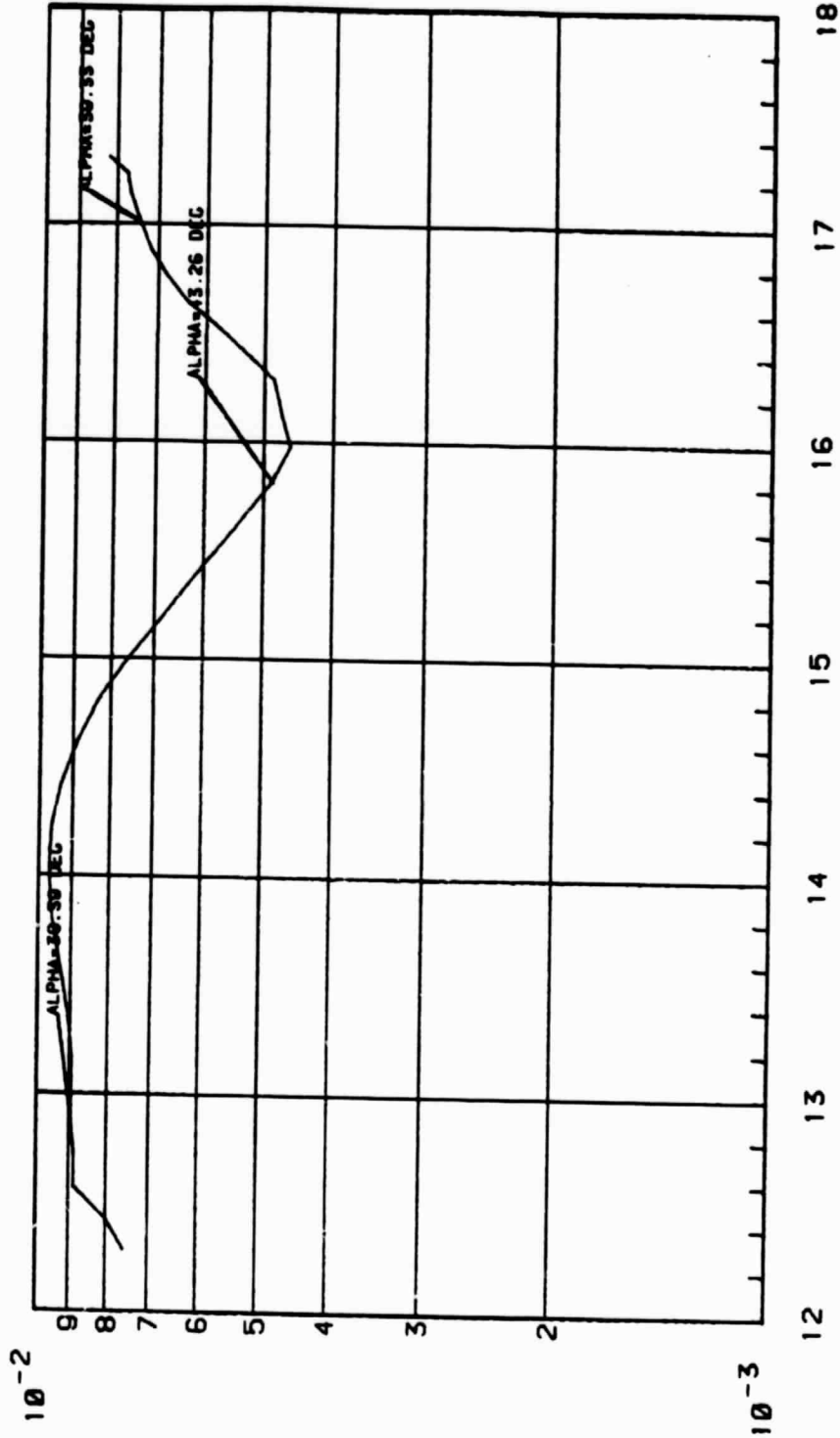


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MACH NUMBER

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FLIGHT COMPARISON - I/I-REF

D-76

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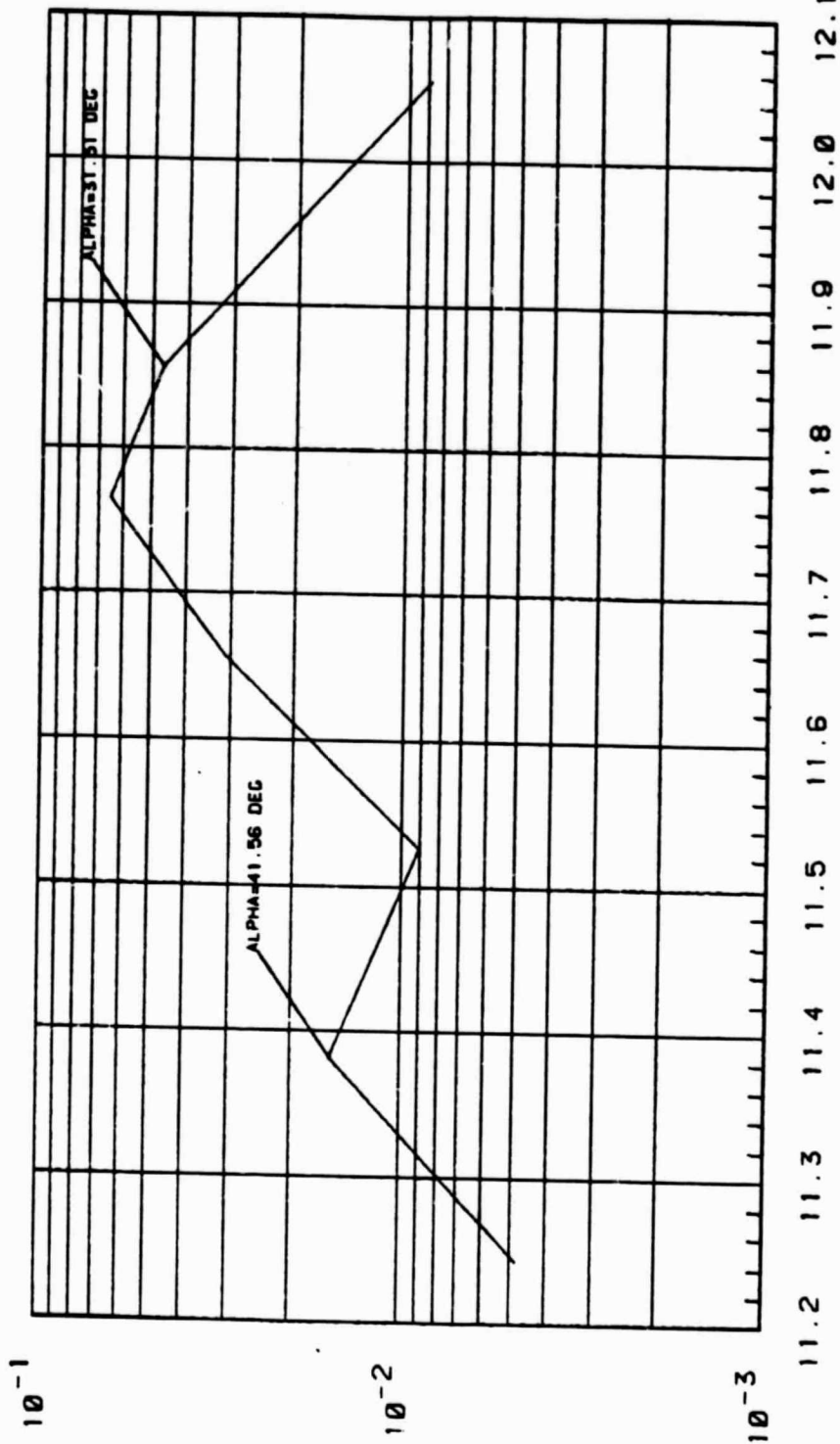
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MACH NUMBER

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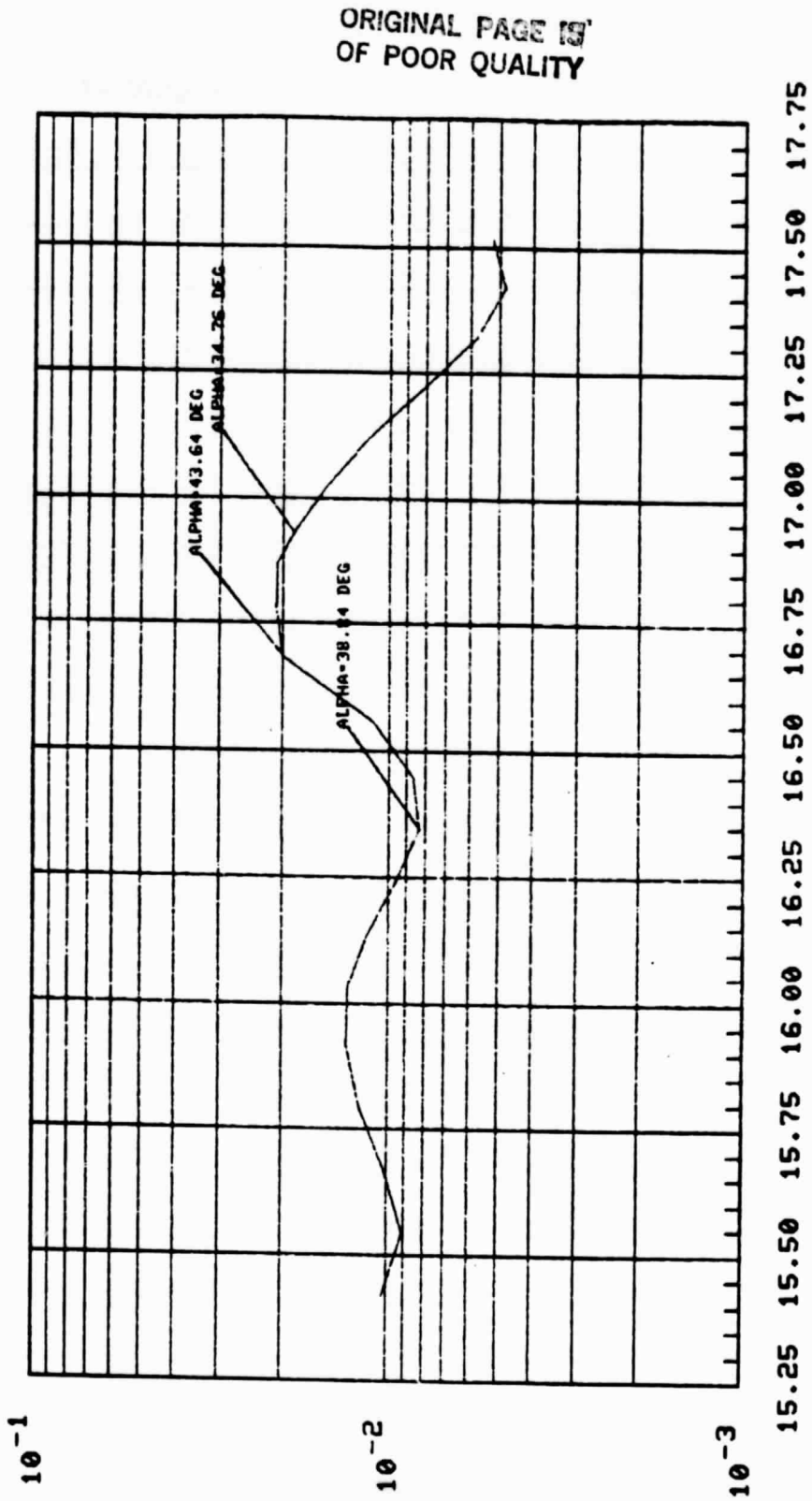
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D-77

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9976A/H-REF 820- 920 SEC



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D-78

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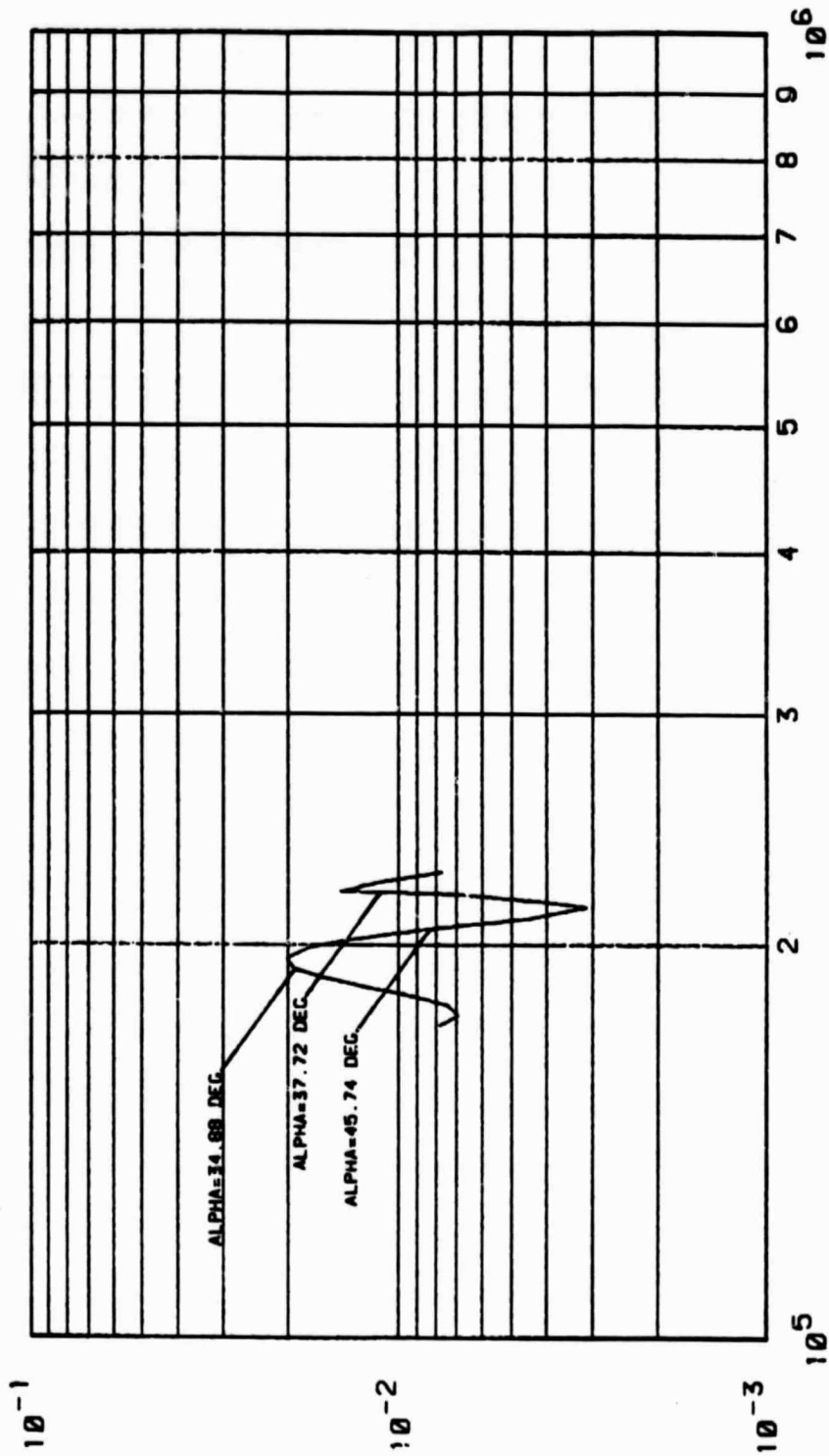
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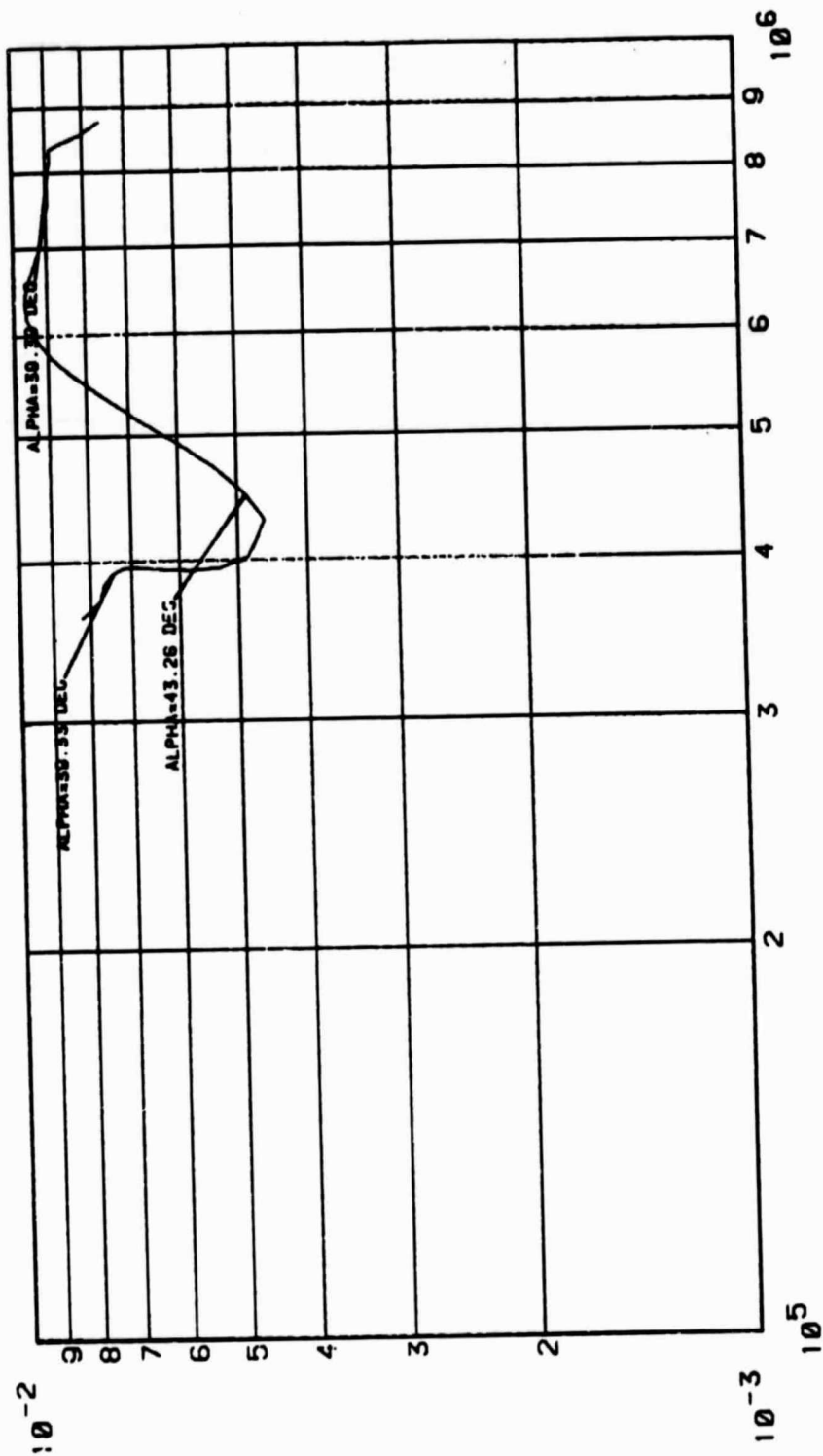
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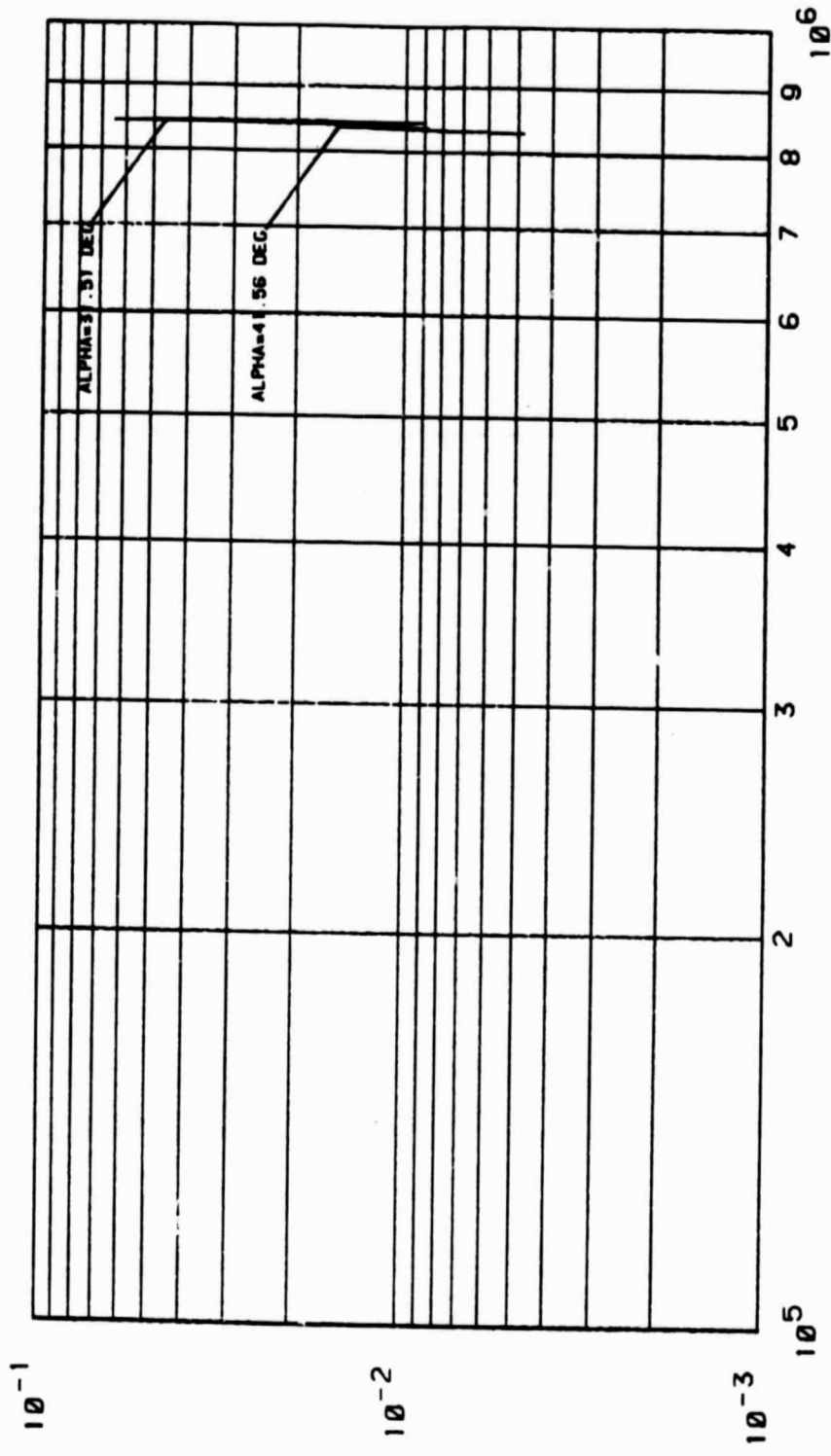
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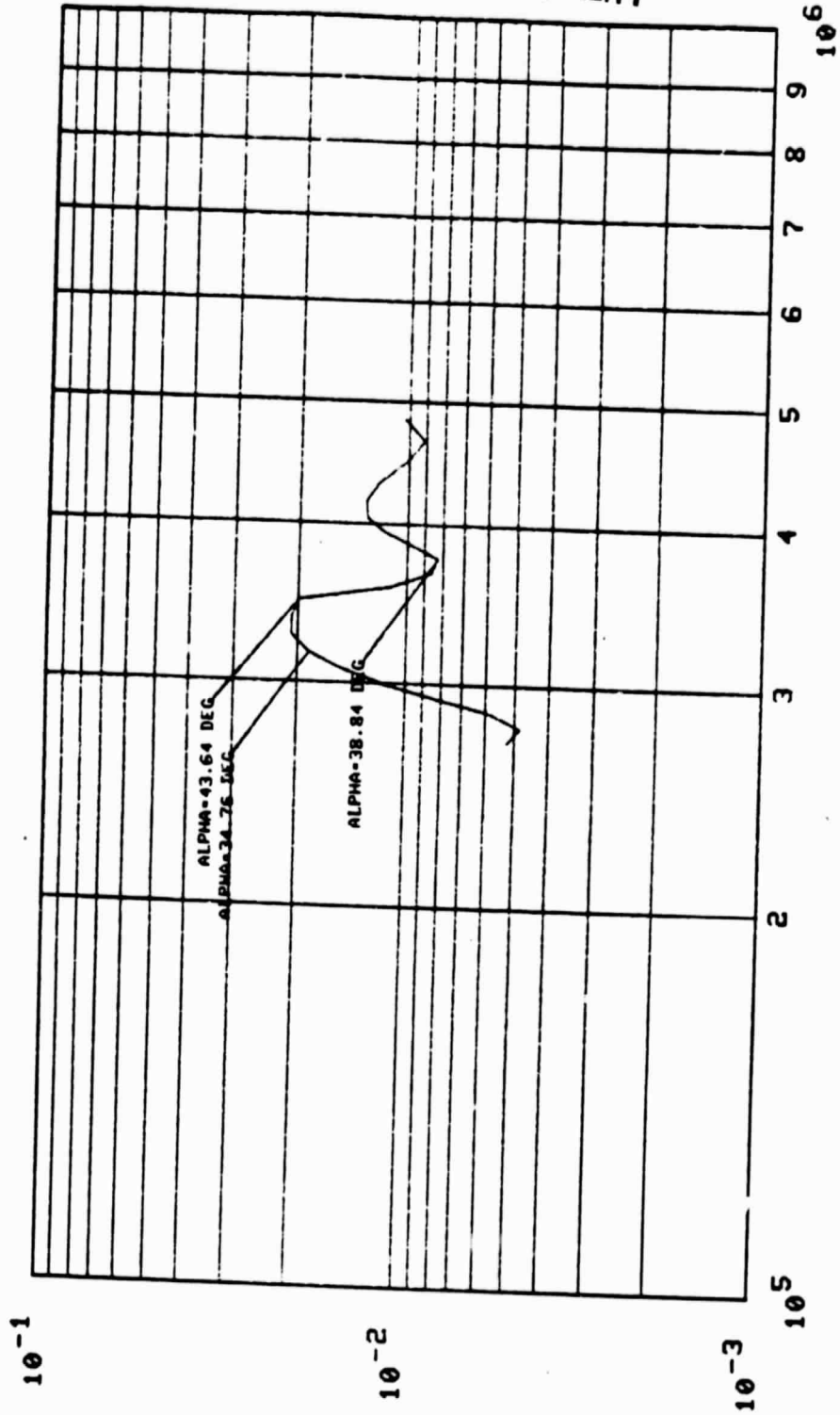
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D-82

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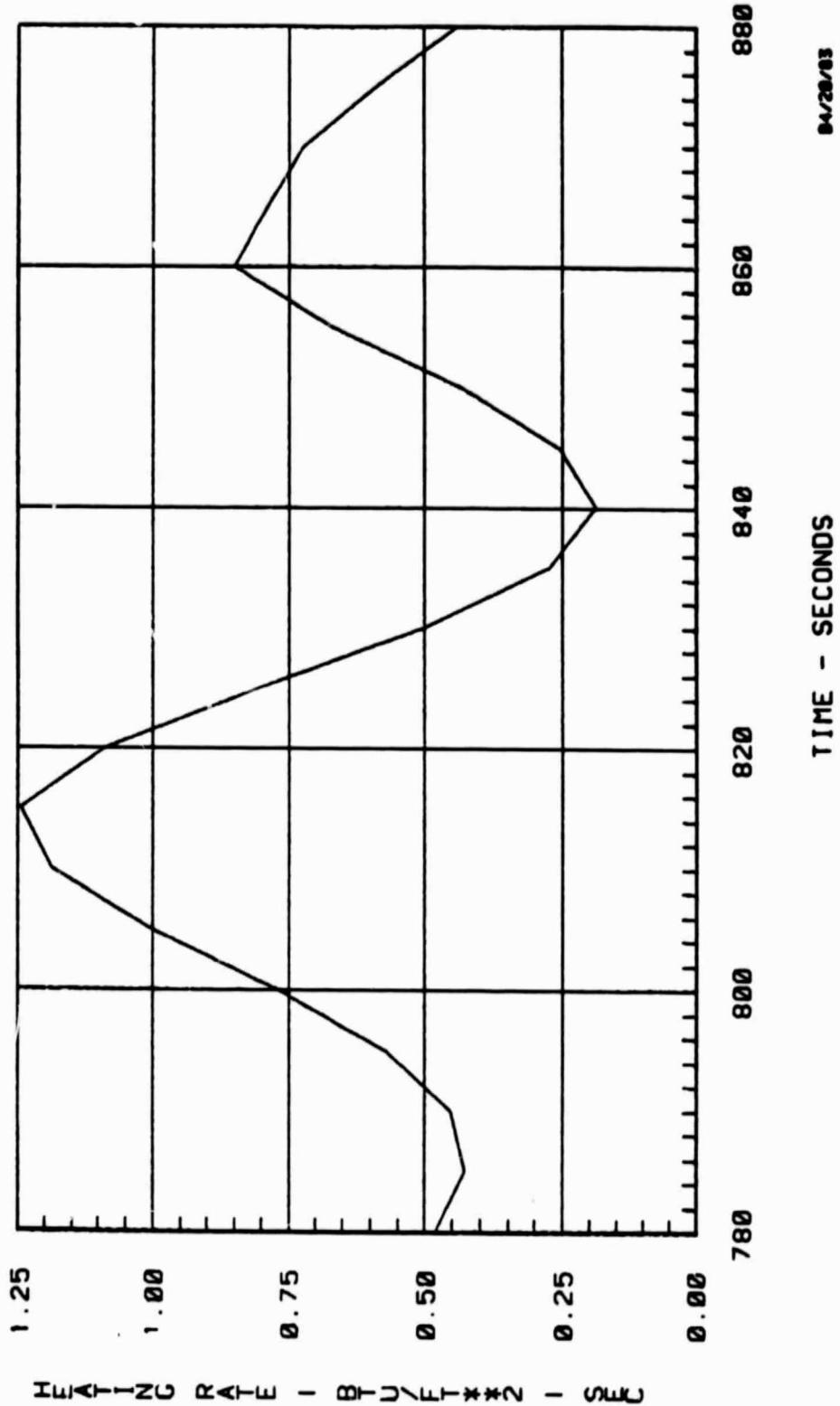
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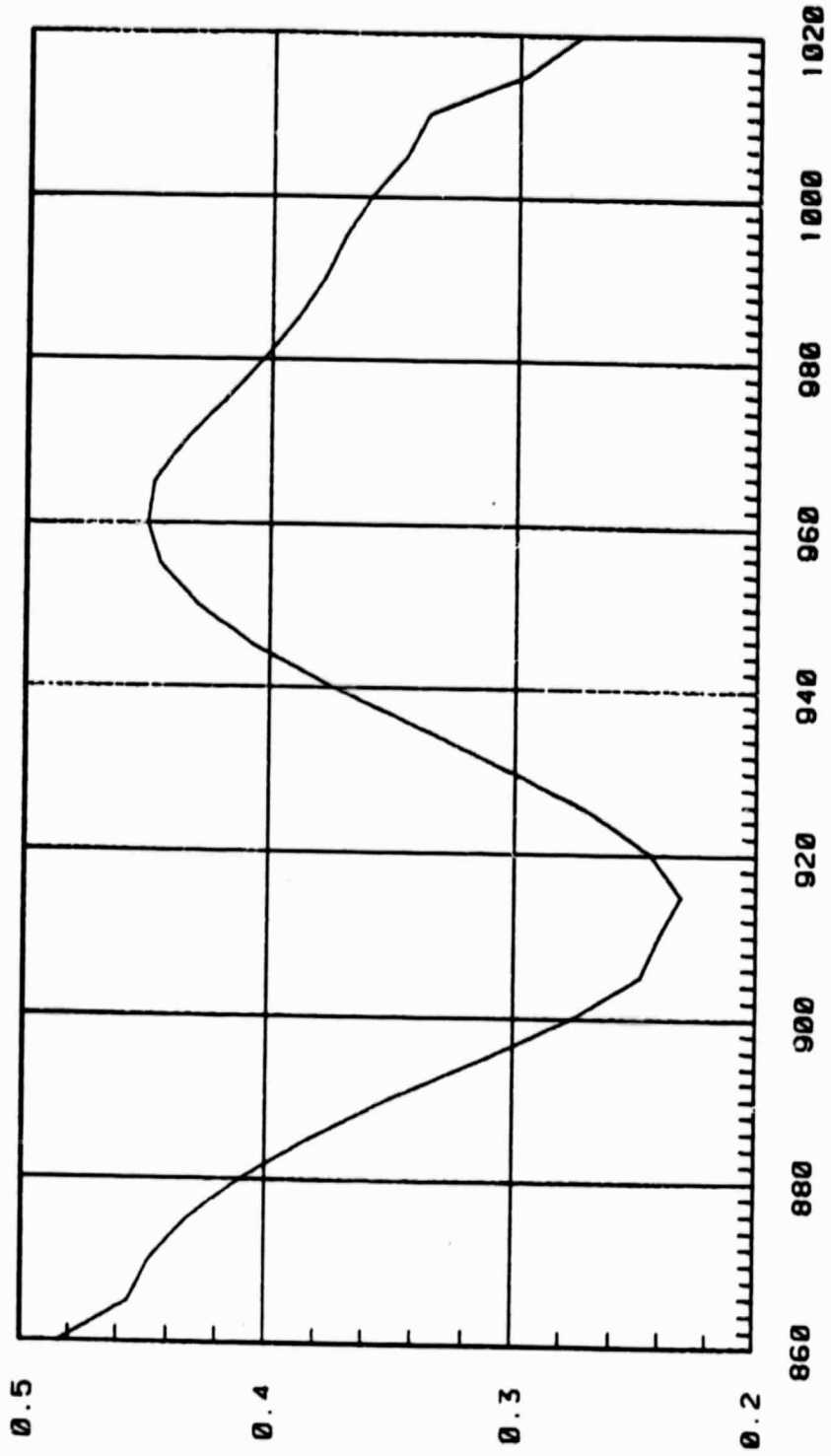
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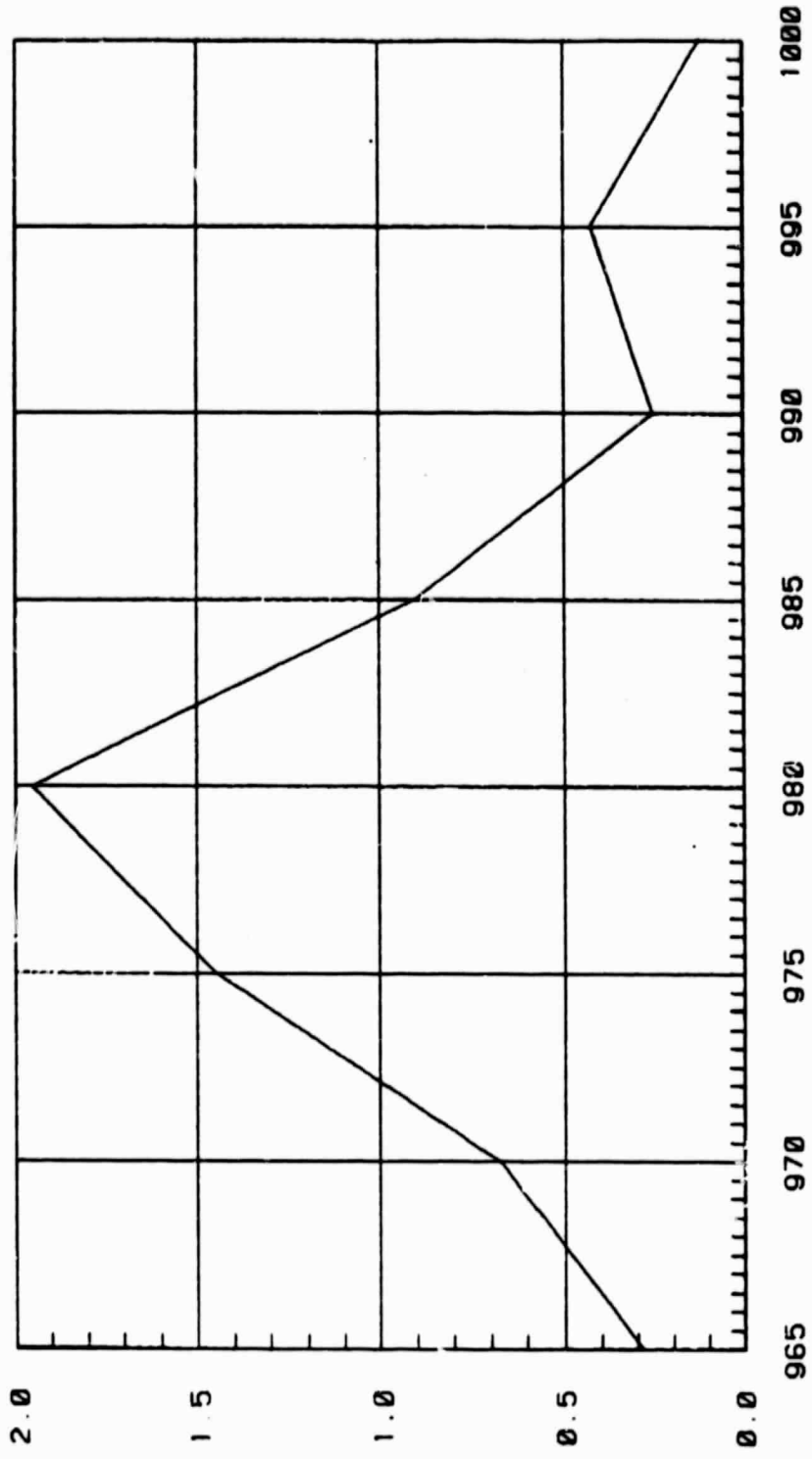
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04/20/83

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HEATING RATE - BTU/LF\*\*2 - SEC

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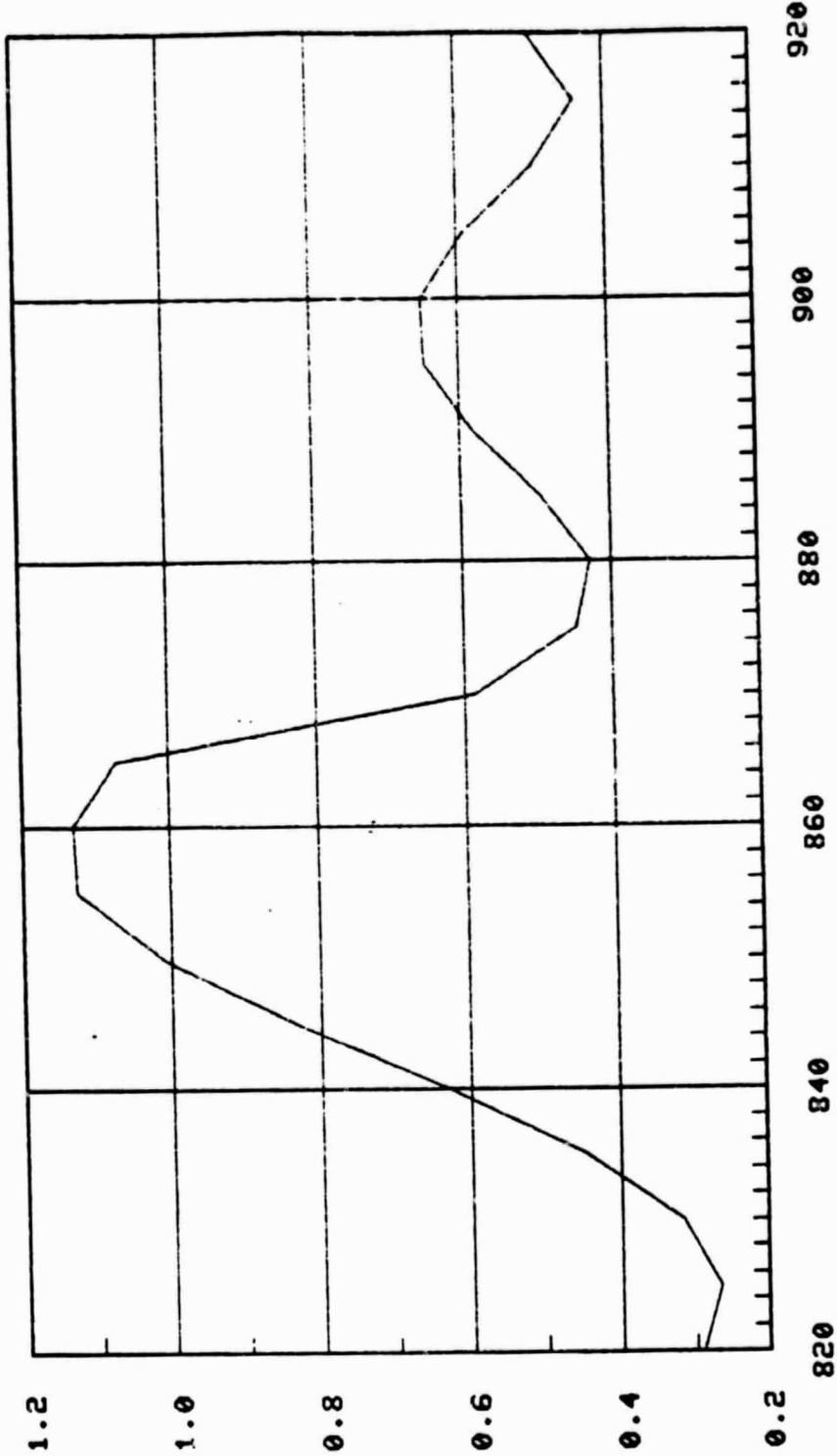
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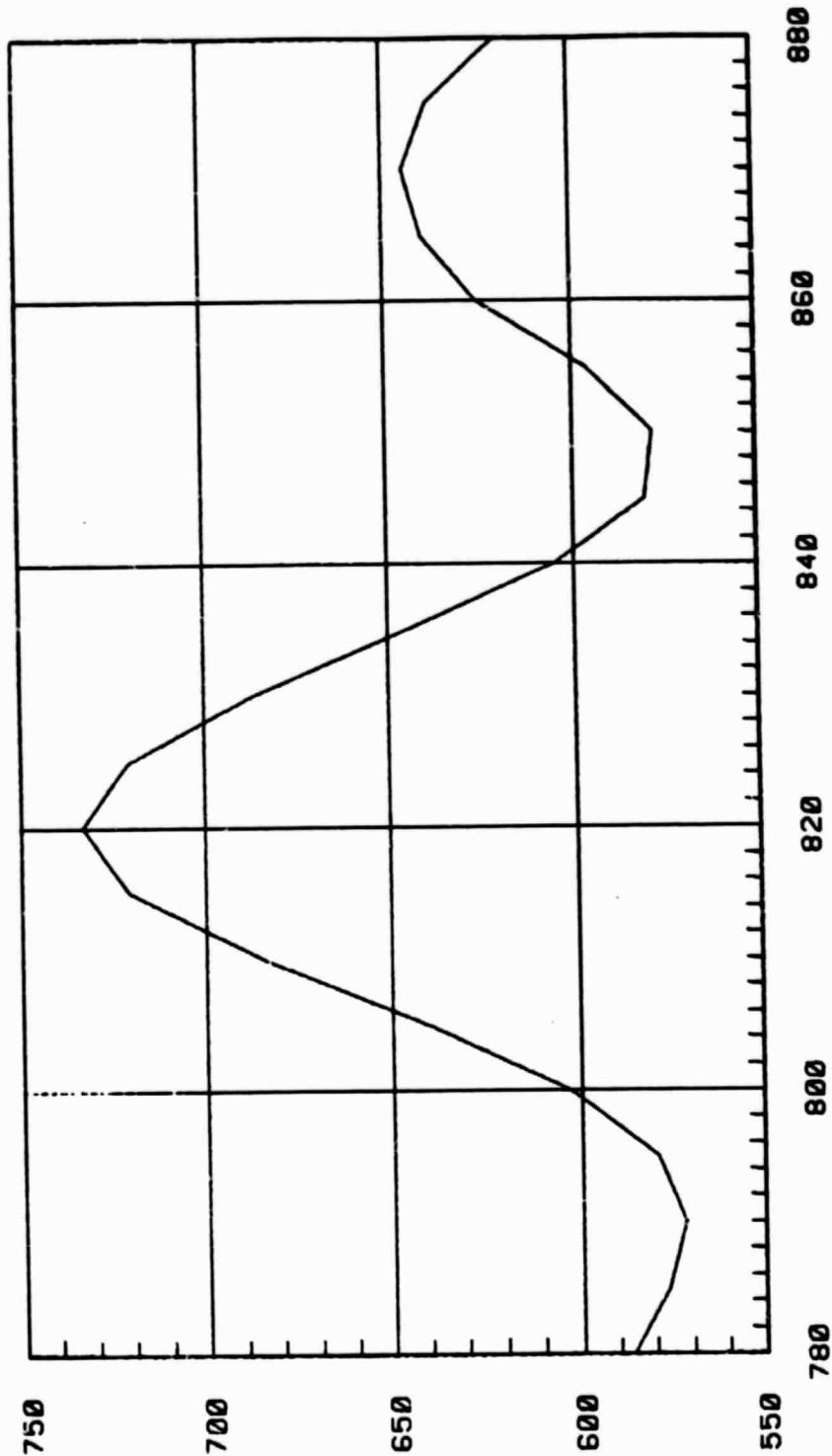
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TEMPERATURE - F

D-37

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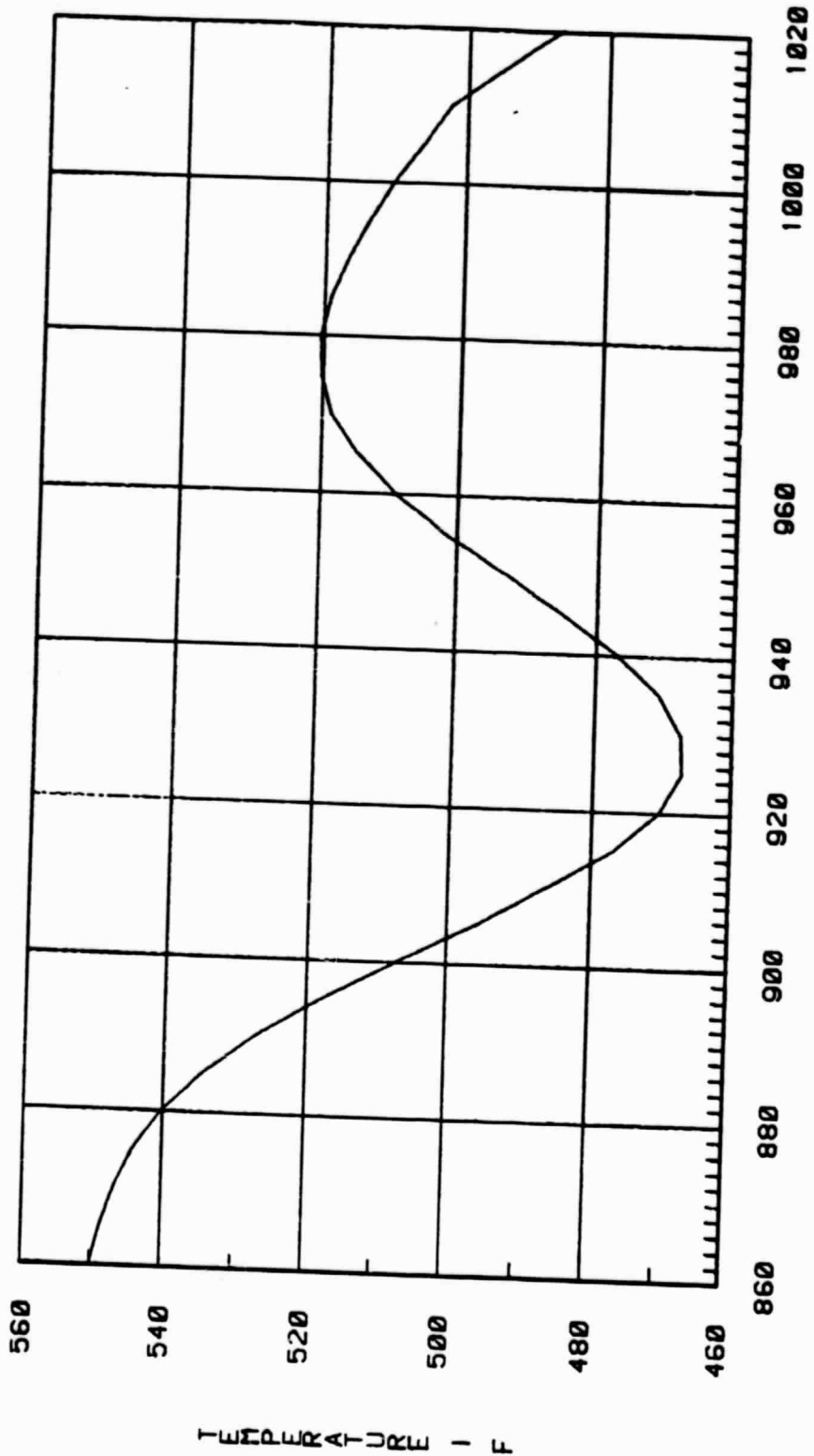
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TIME - SECONDS

04/20/03

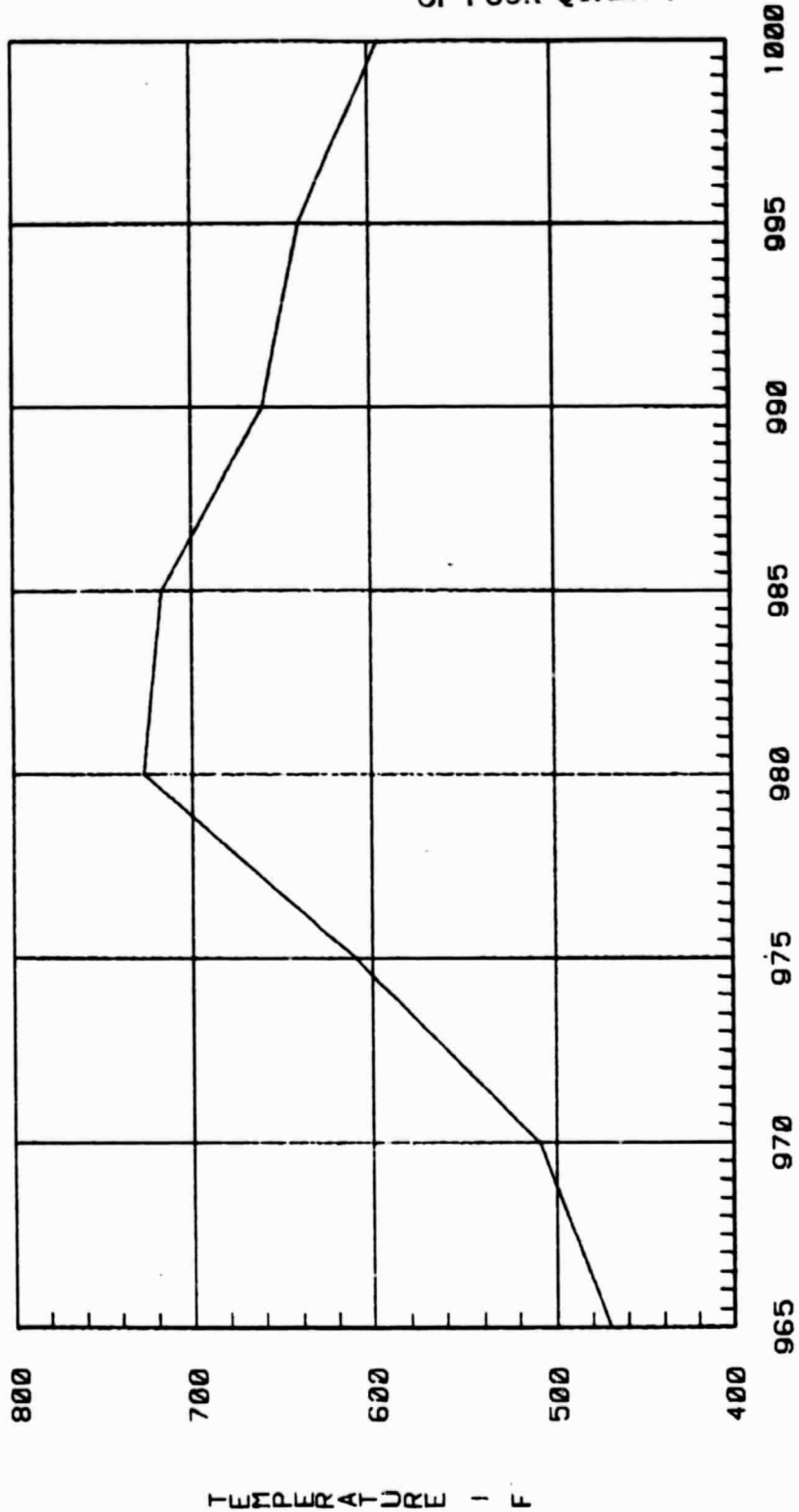
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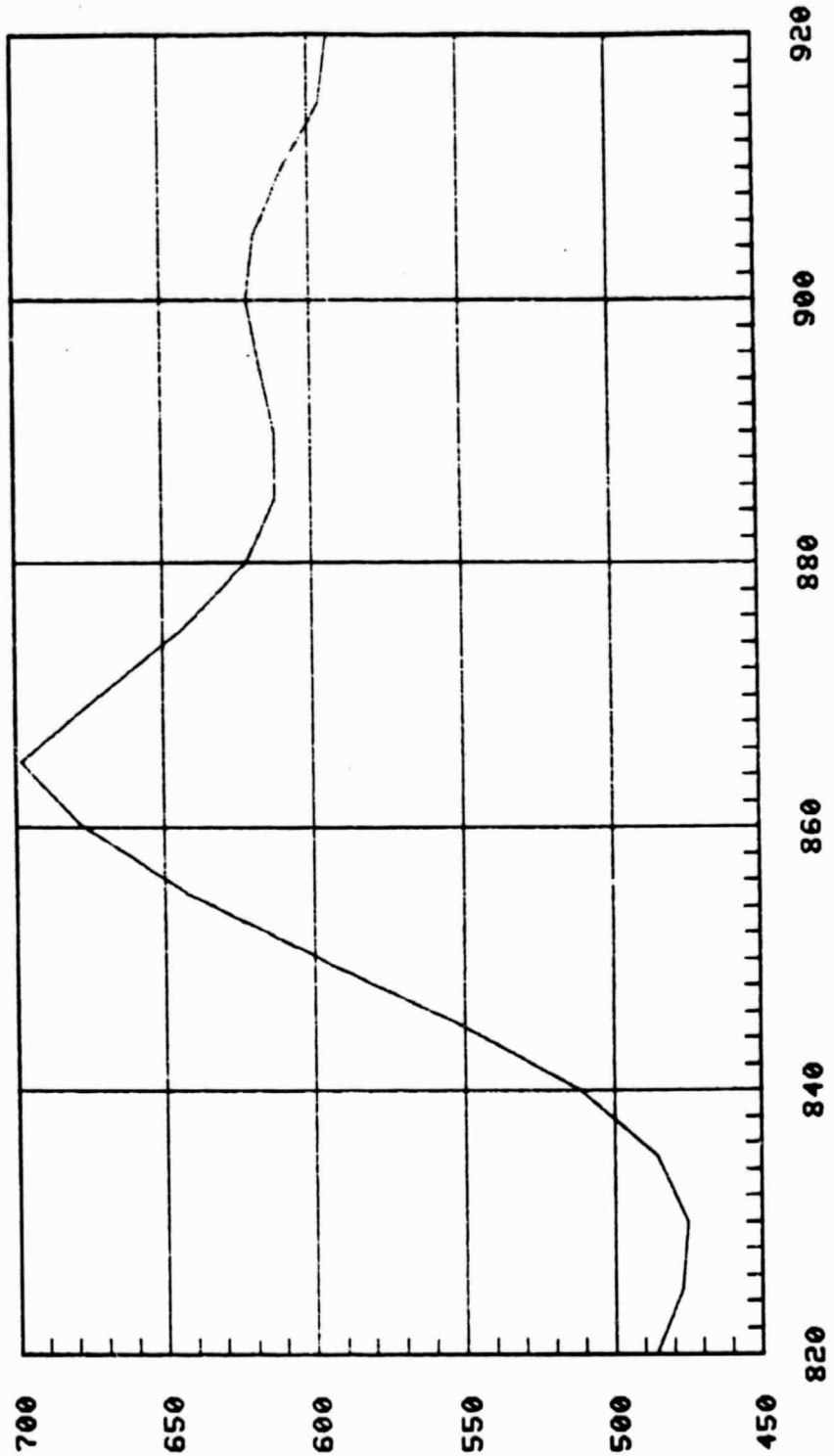
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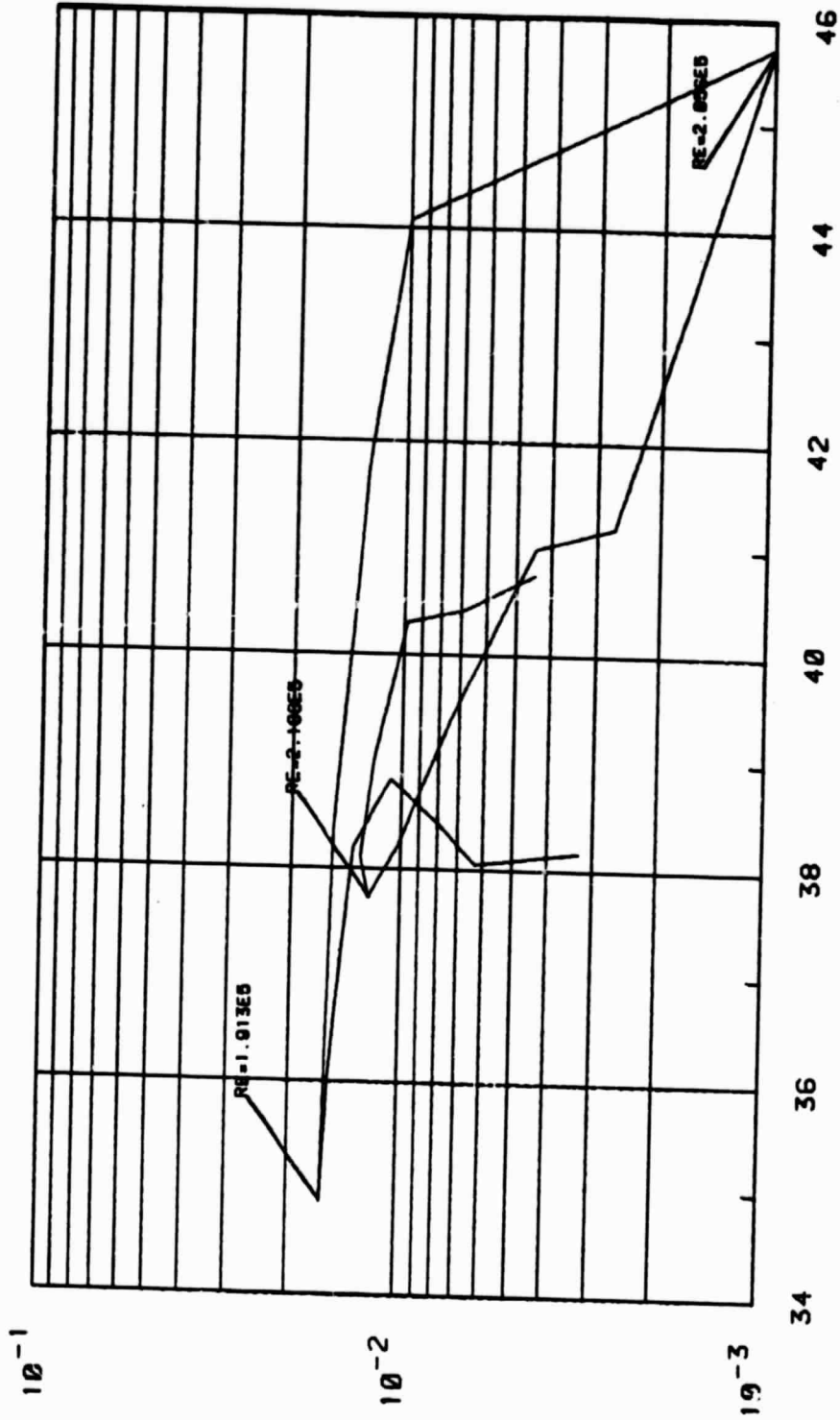
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D-90

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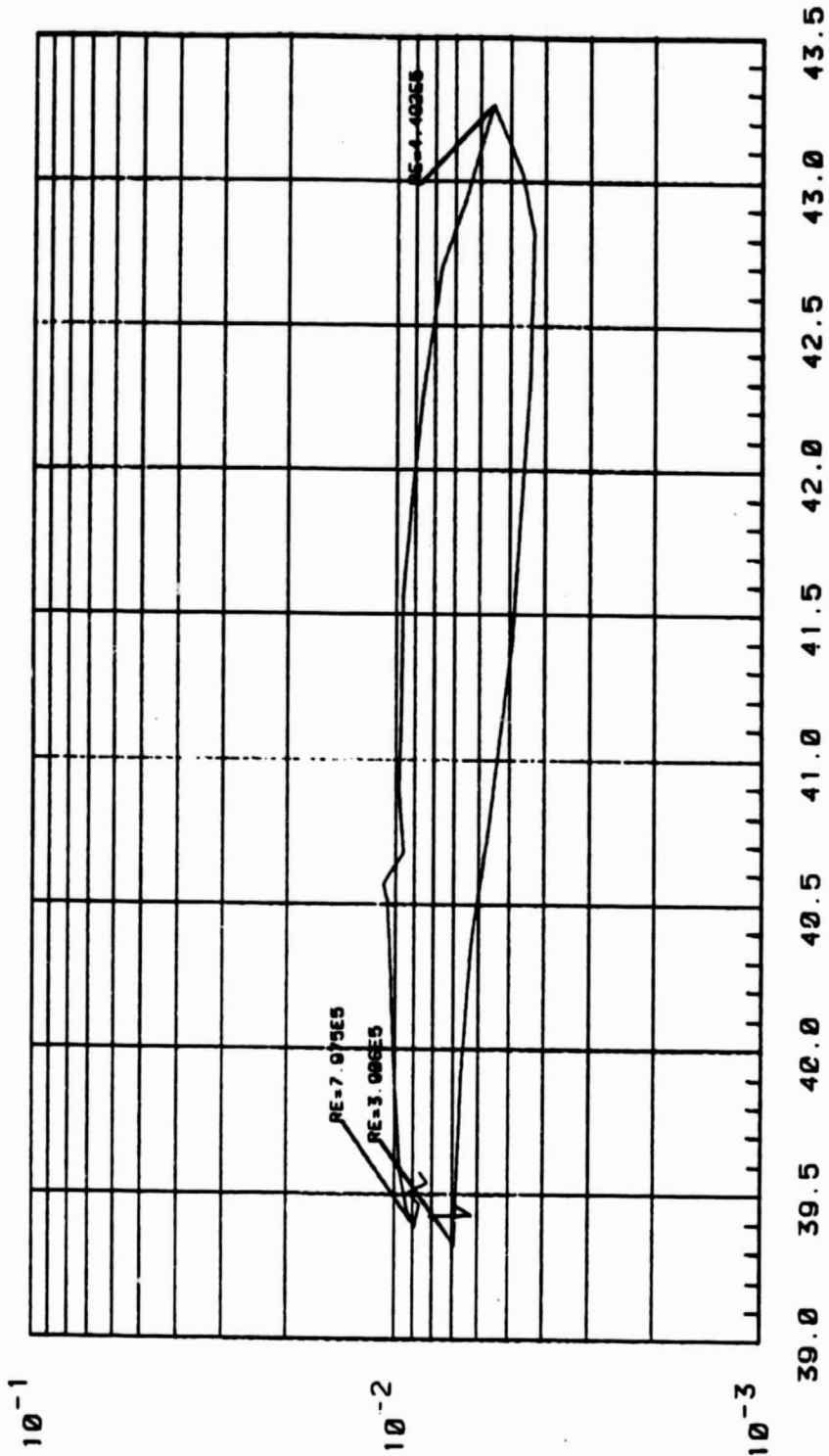
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FLIGHT PARAMETER COMPARISON

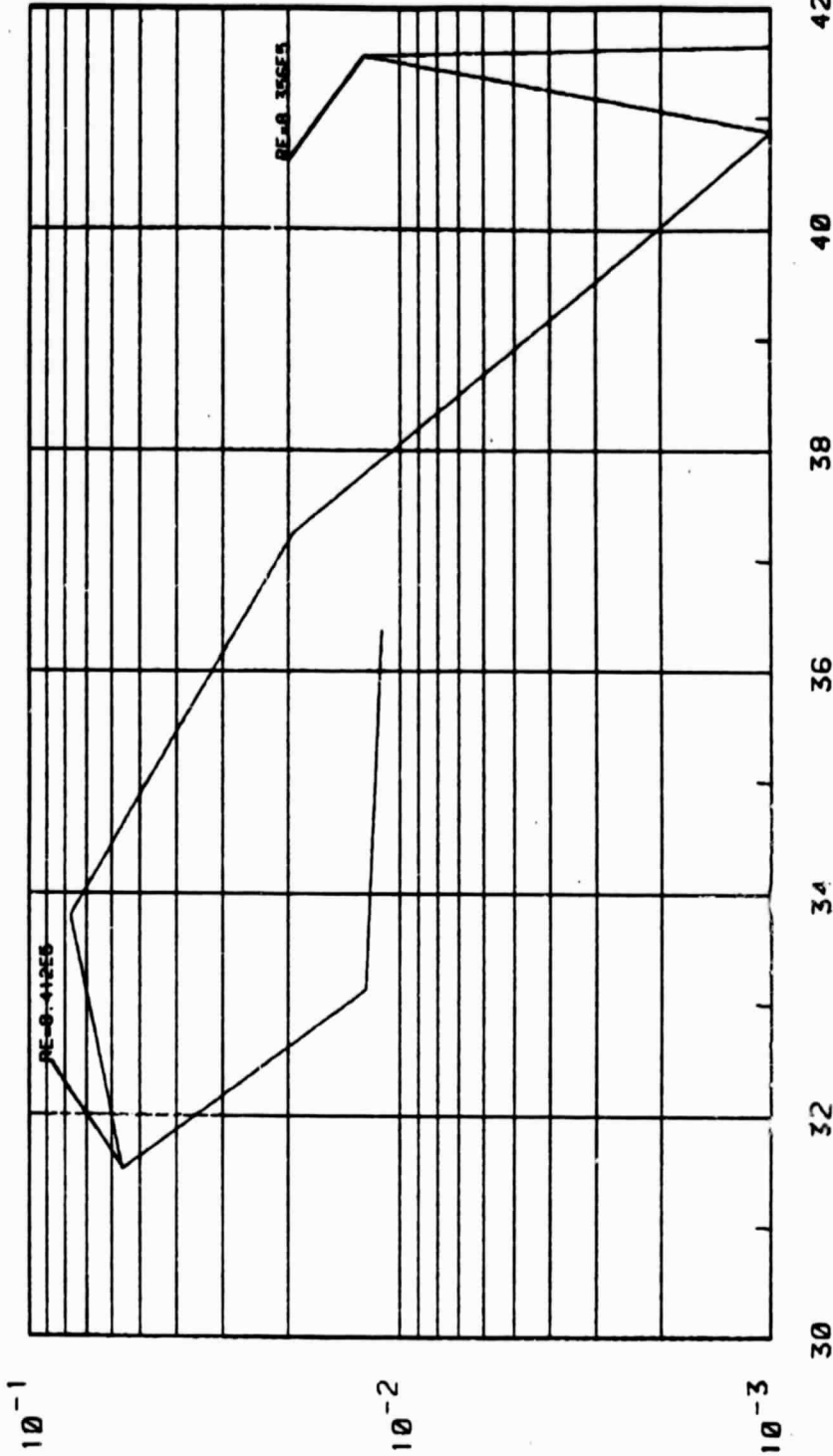
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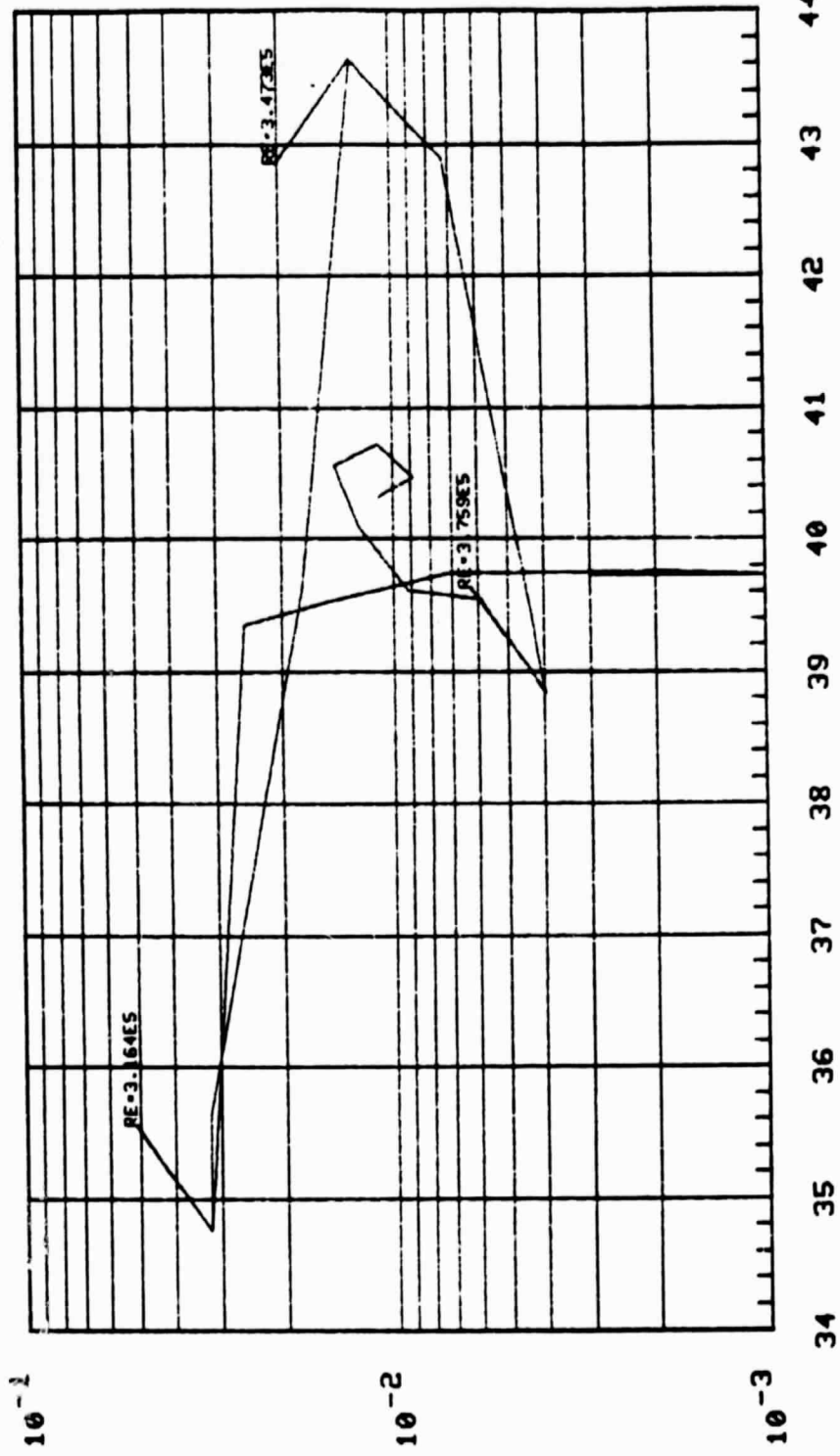
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ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A/H-REF 820- 920 SEC

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D-94

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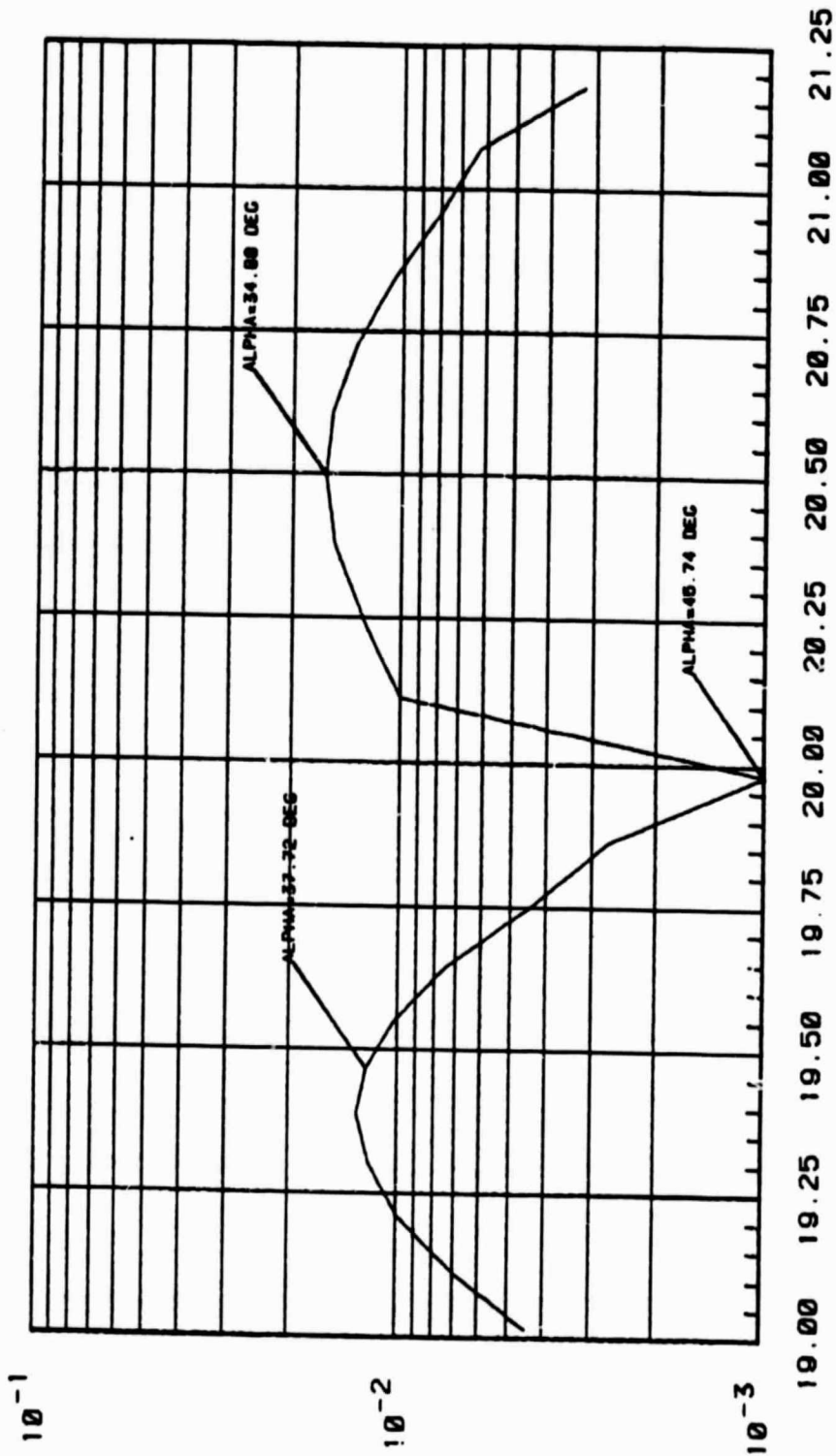
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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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D-95

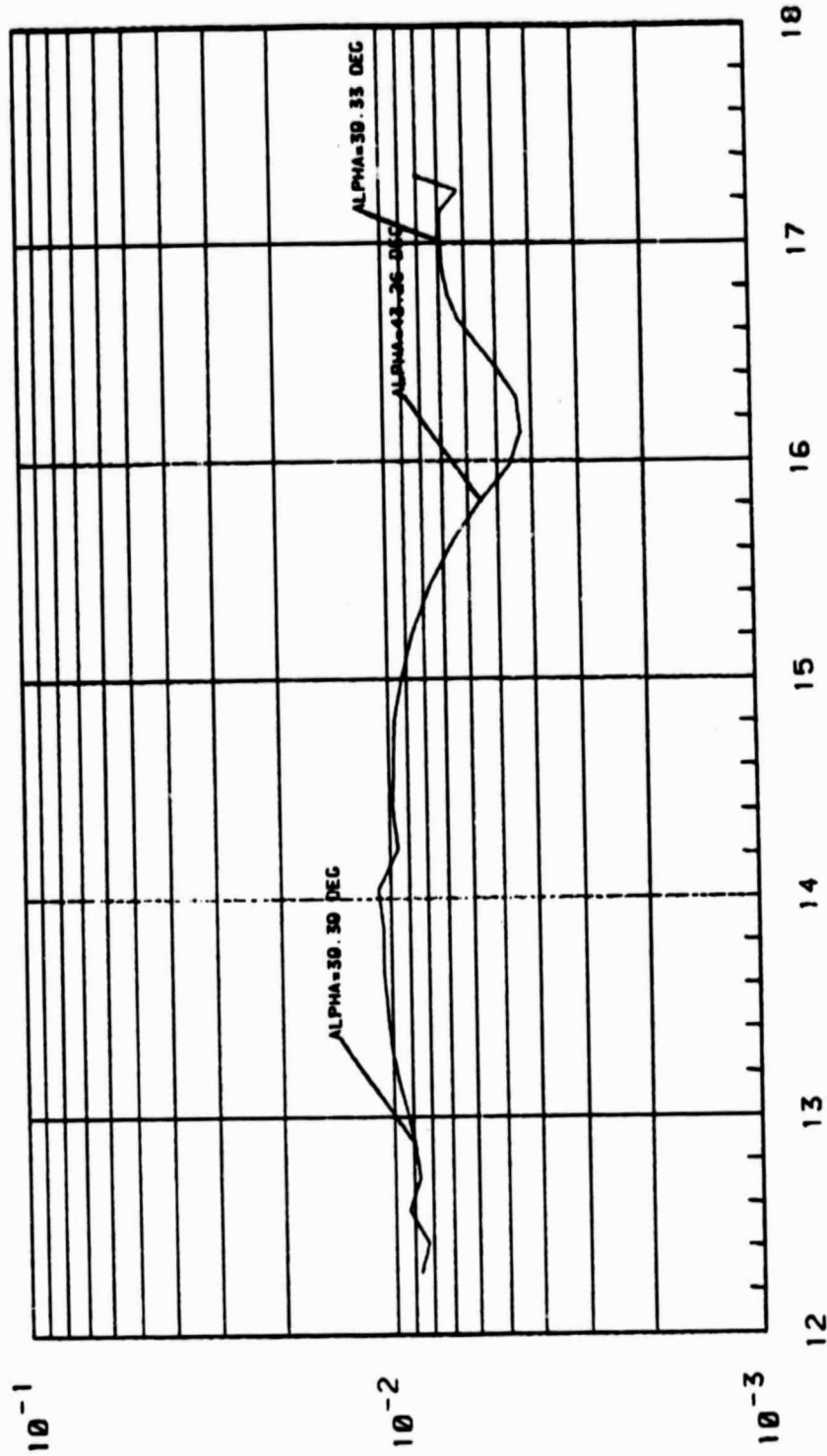
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MACH NUMBER

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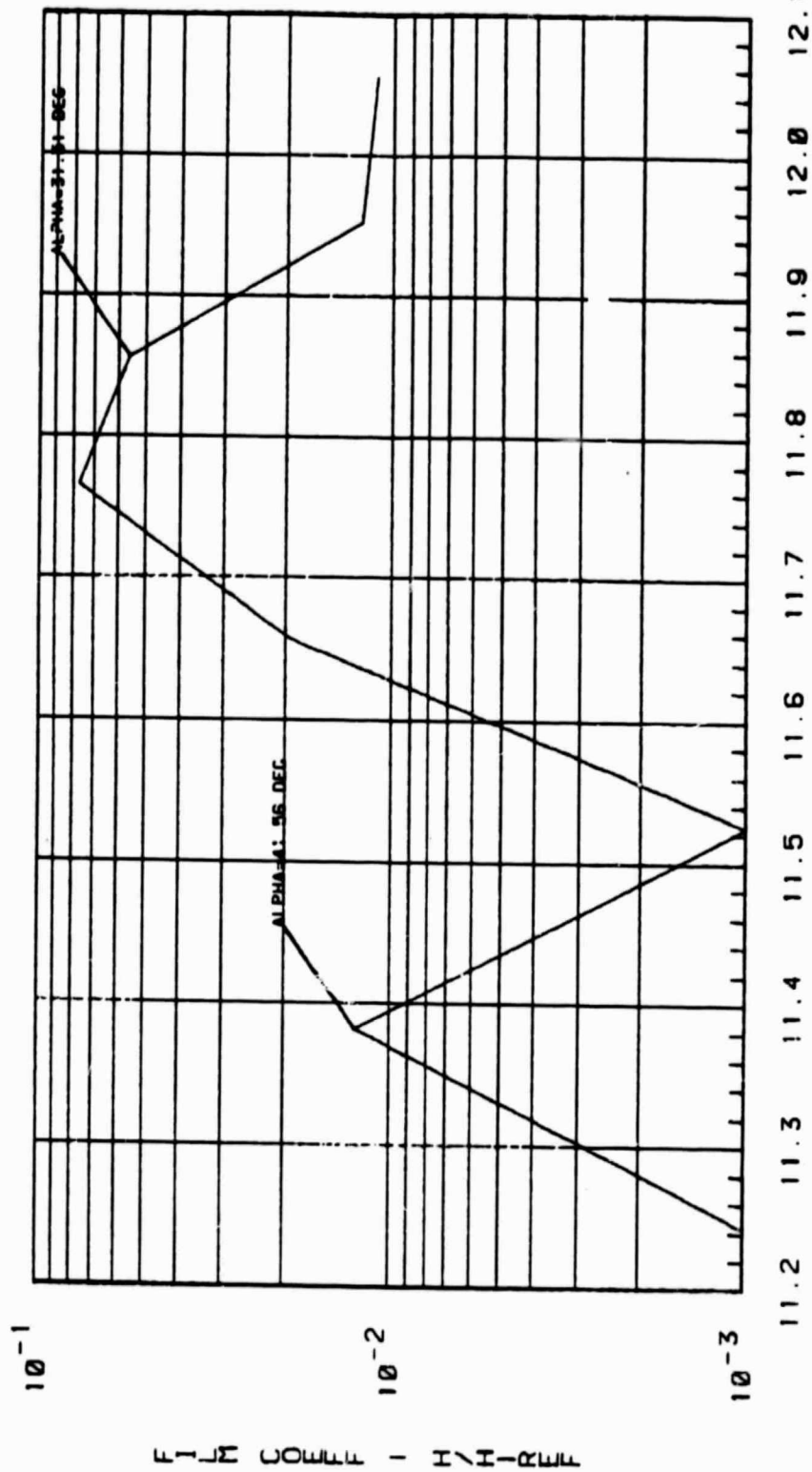
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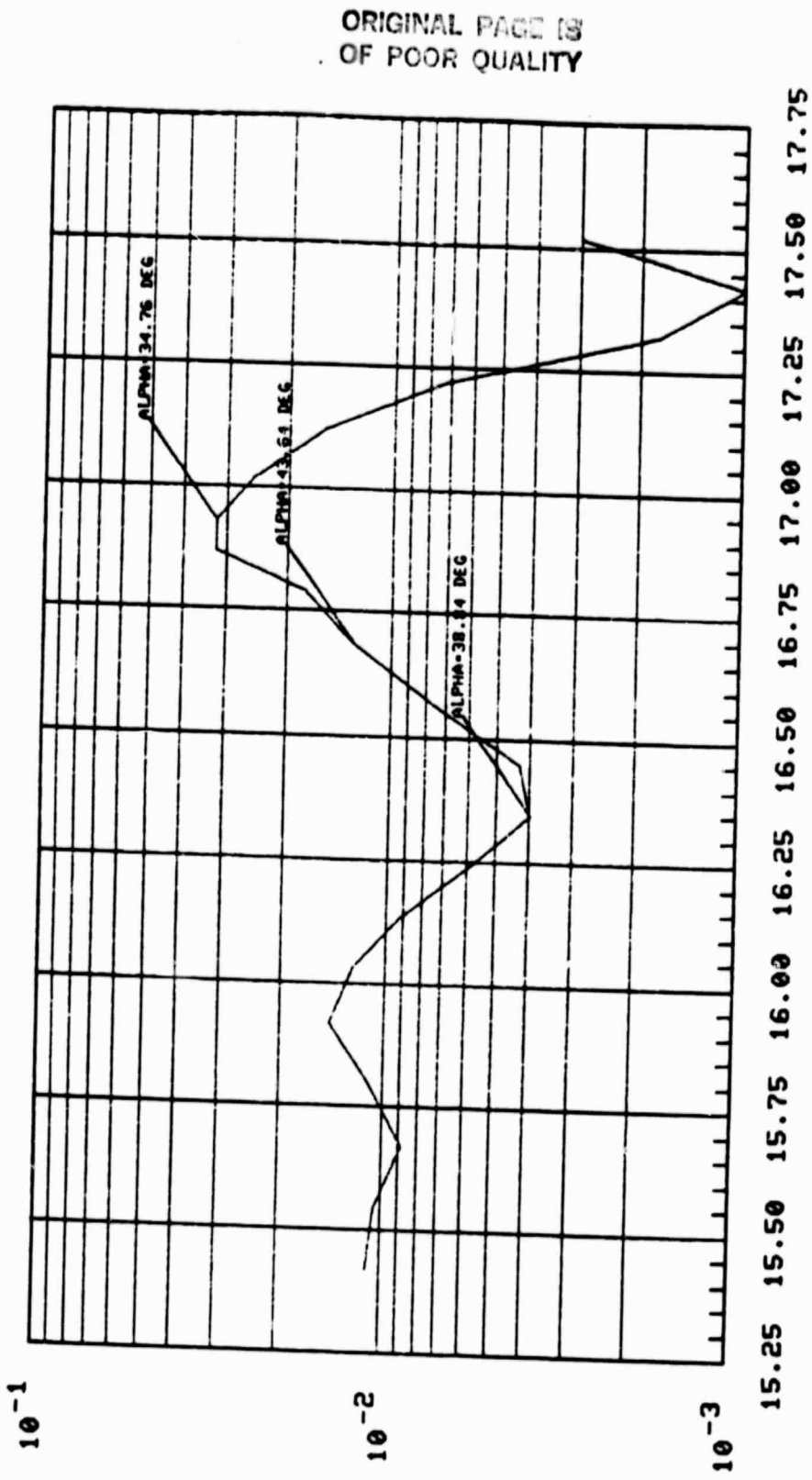
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04/20/83

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D-98

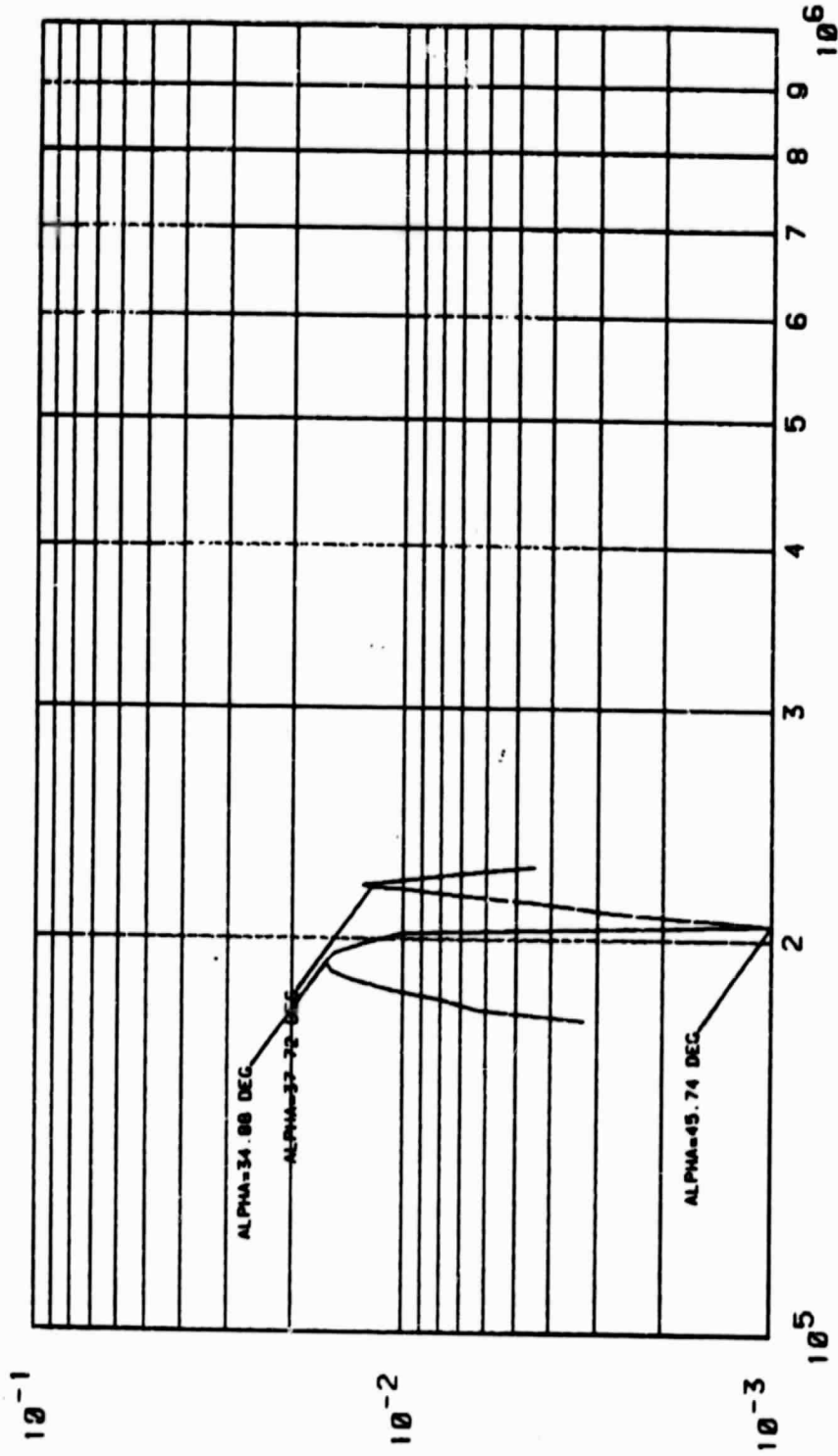
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MACH NUMBER

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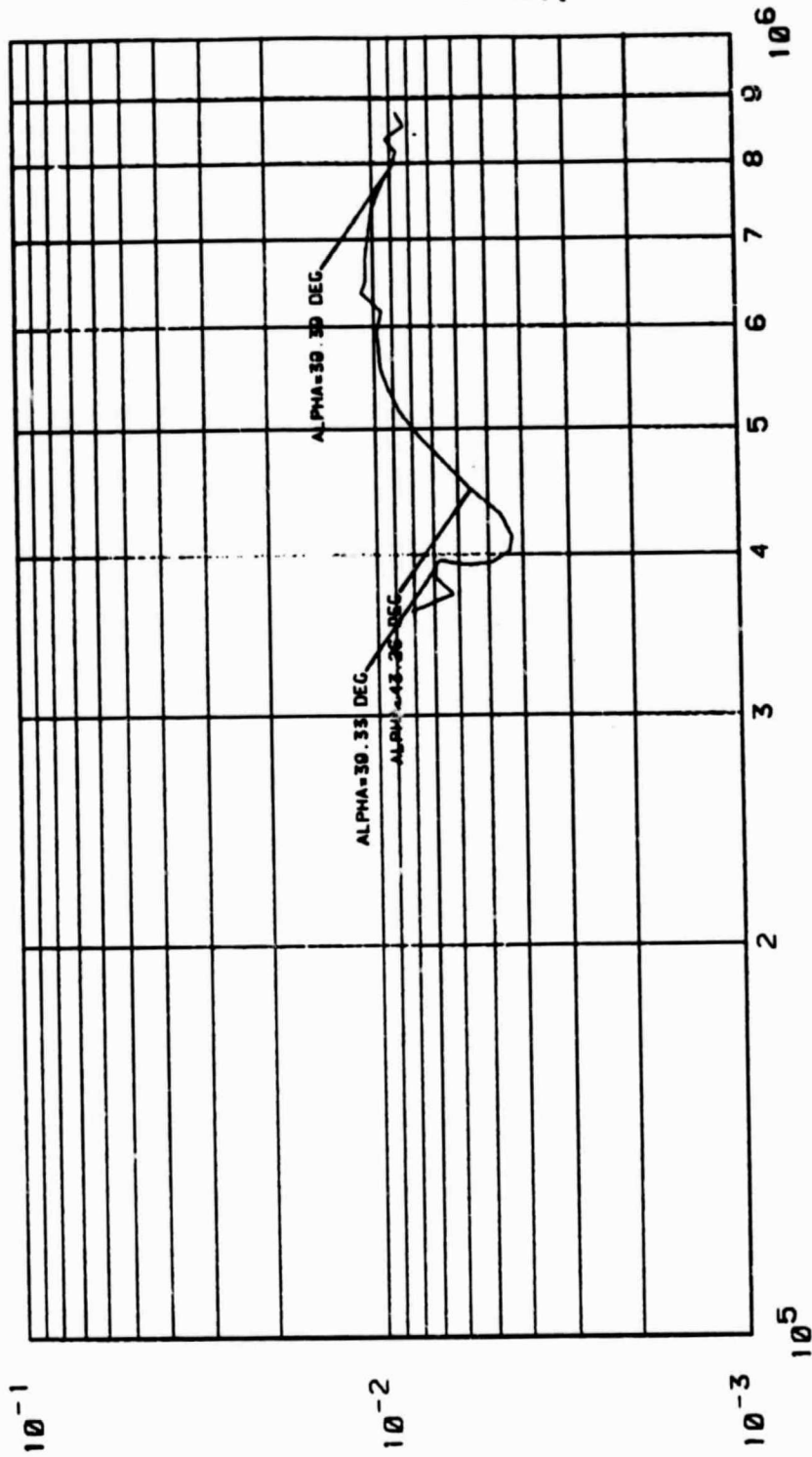
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REYNOLDS NUMBER (NS)

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VB710070A/H-REF 009-1029 SEC



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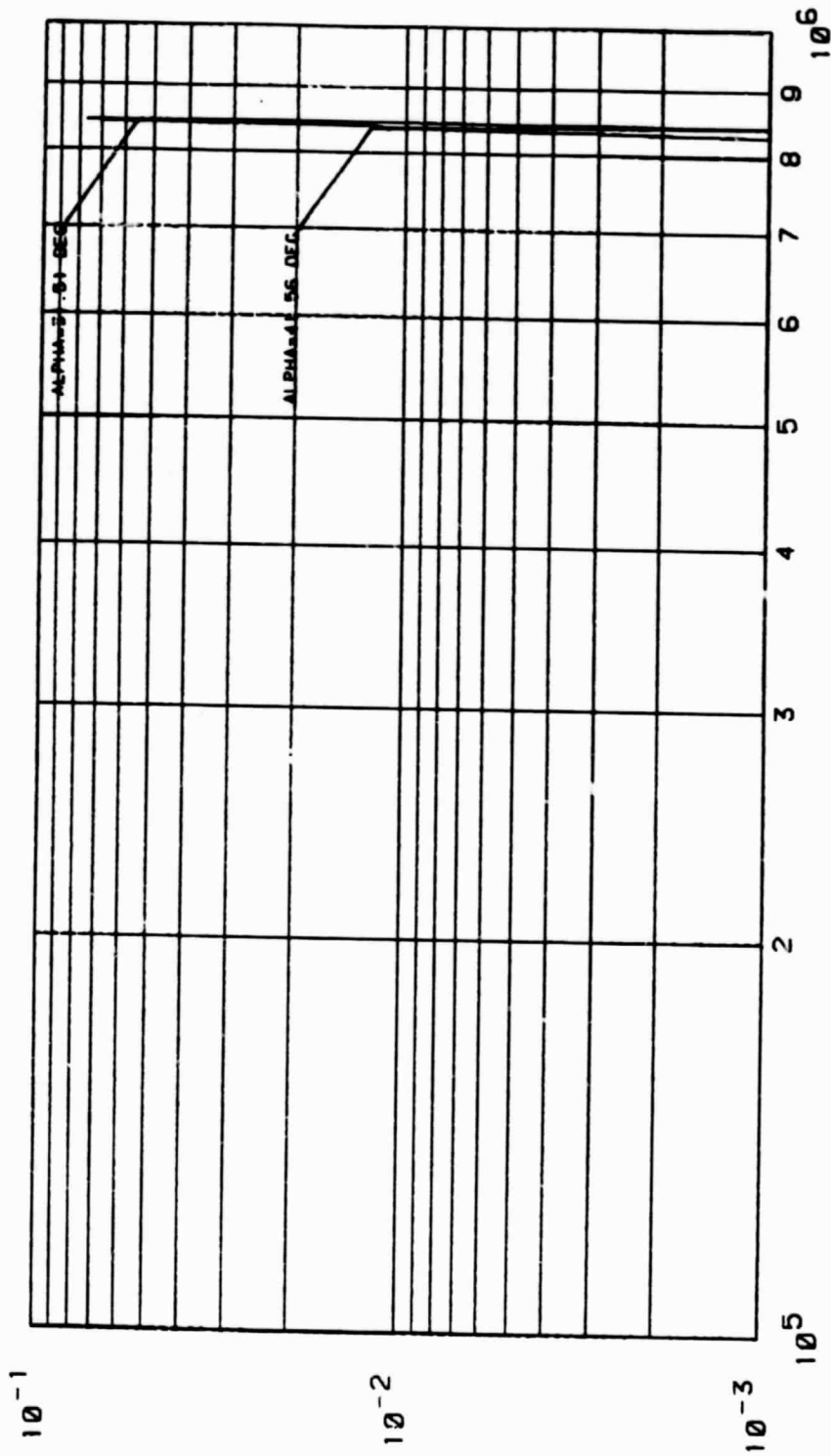
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D-101

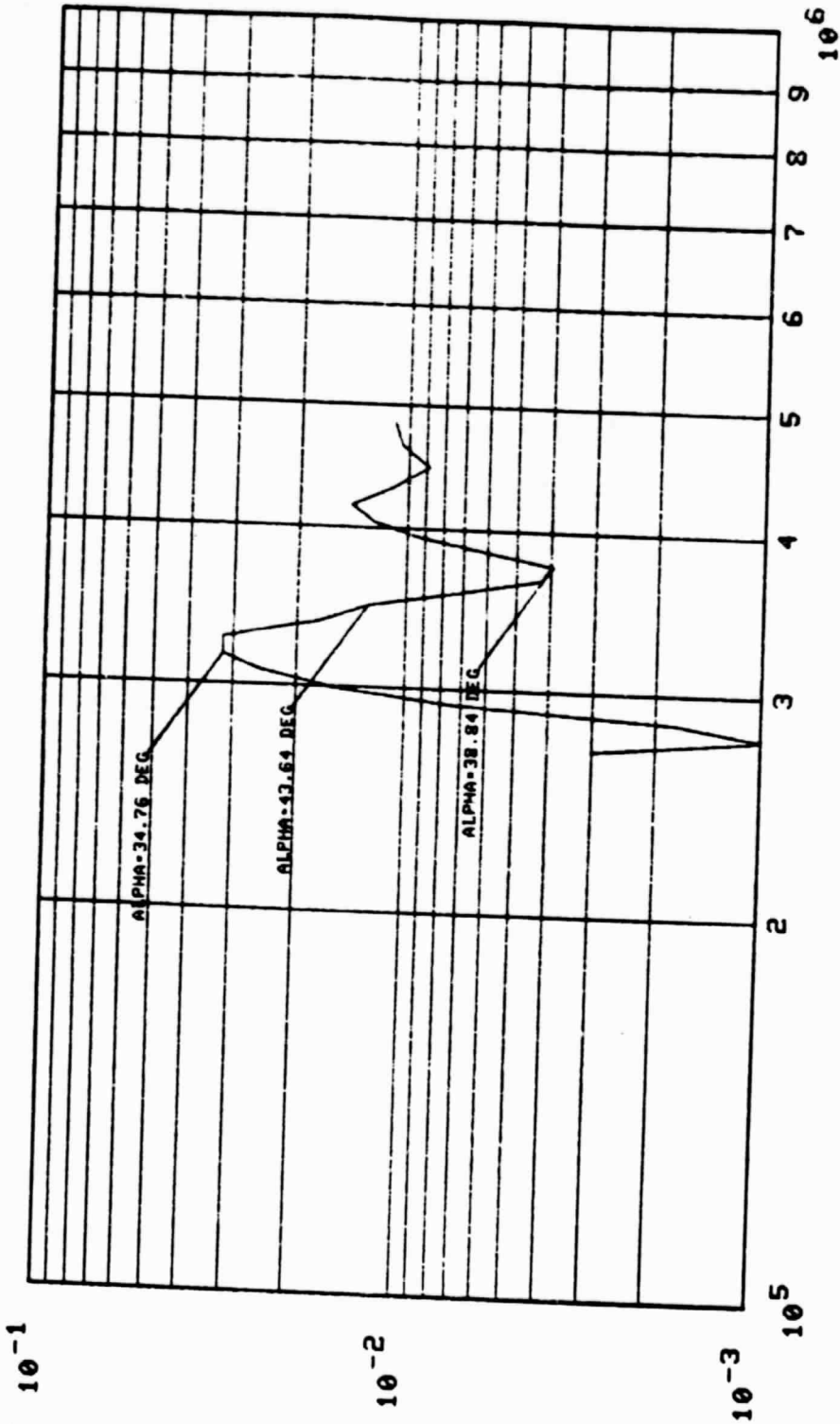
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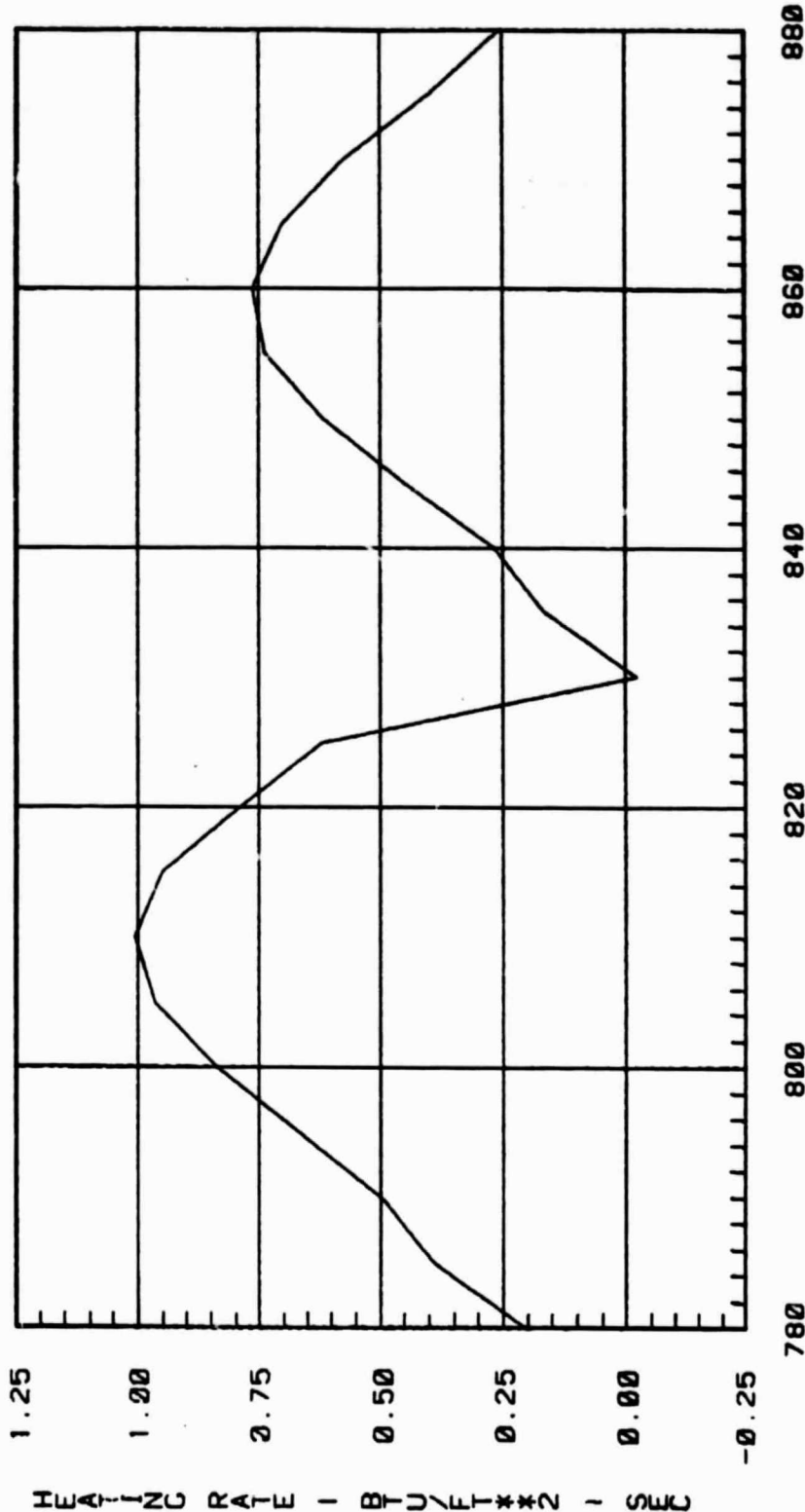
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FLIGHT PARAMETER COMPARISON



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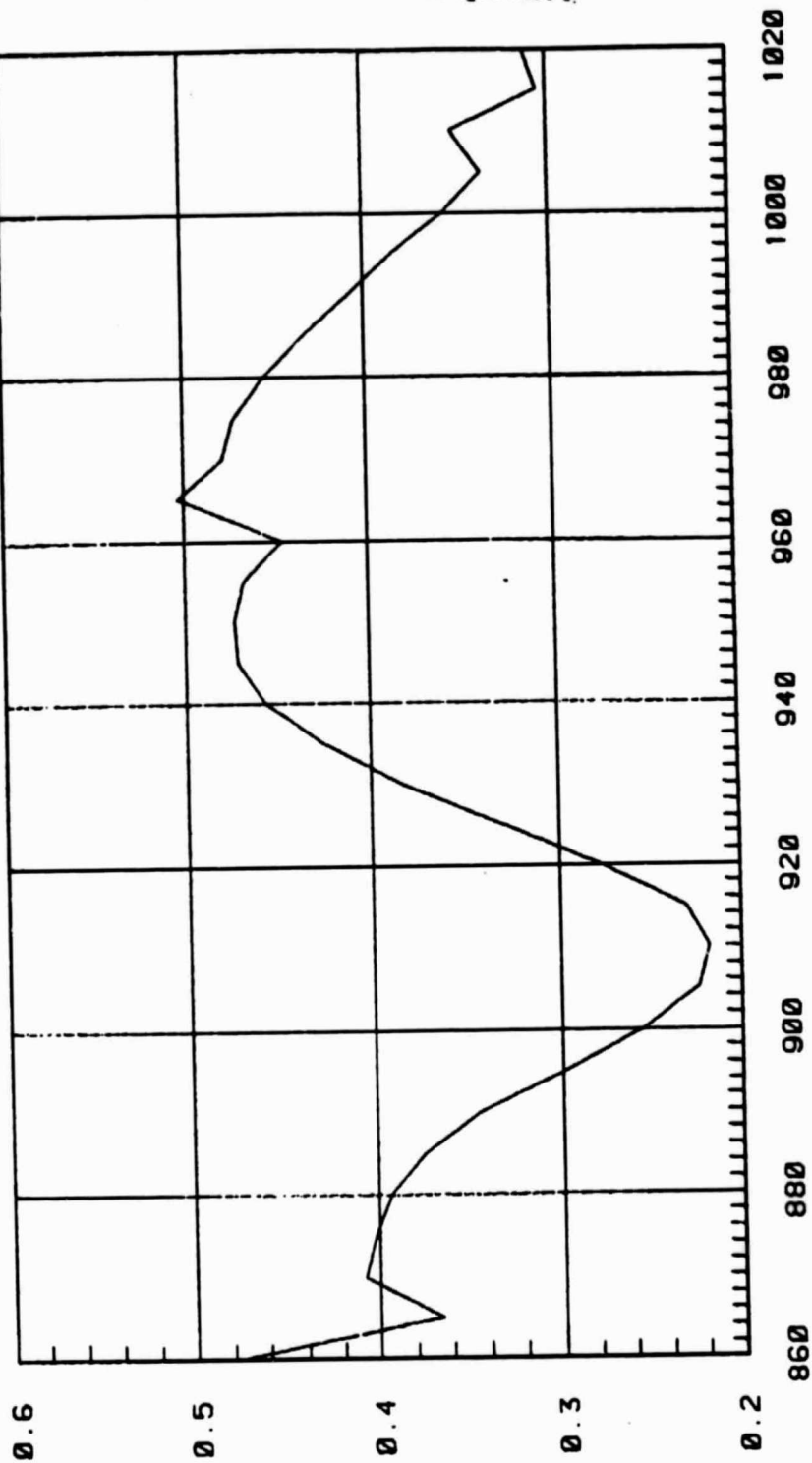
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04/20/83

HEATING RATE - BTU/FT\*\*2 - SEC

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HEATING RATE - BTU/FT\*\*2 - SEC

D-104

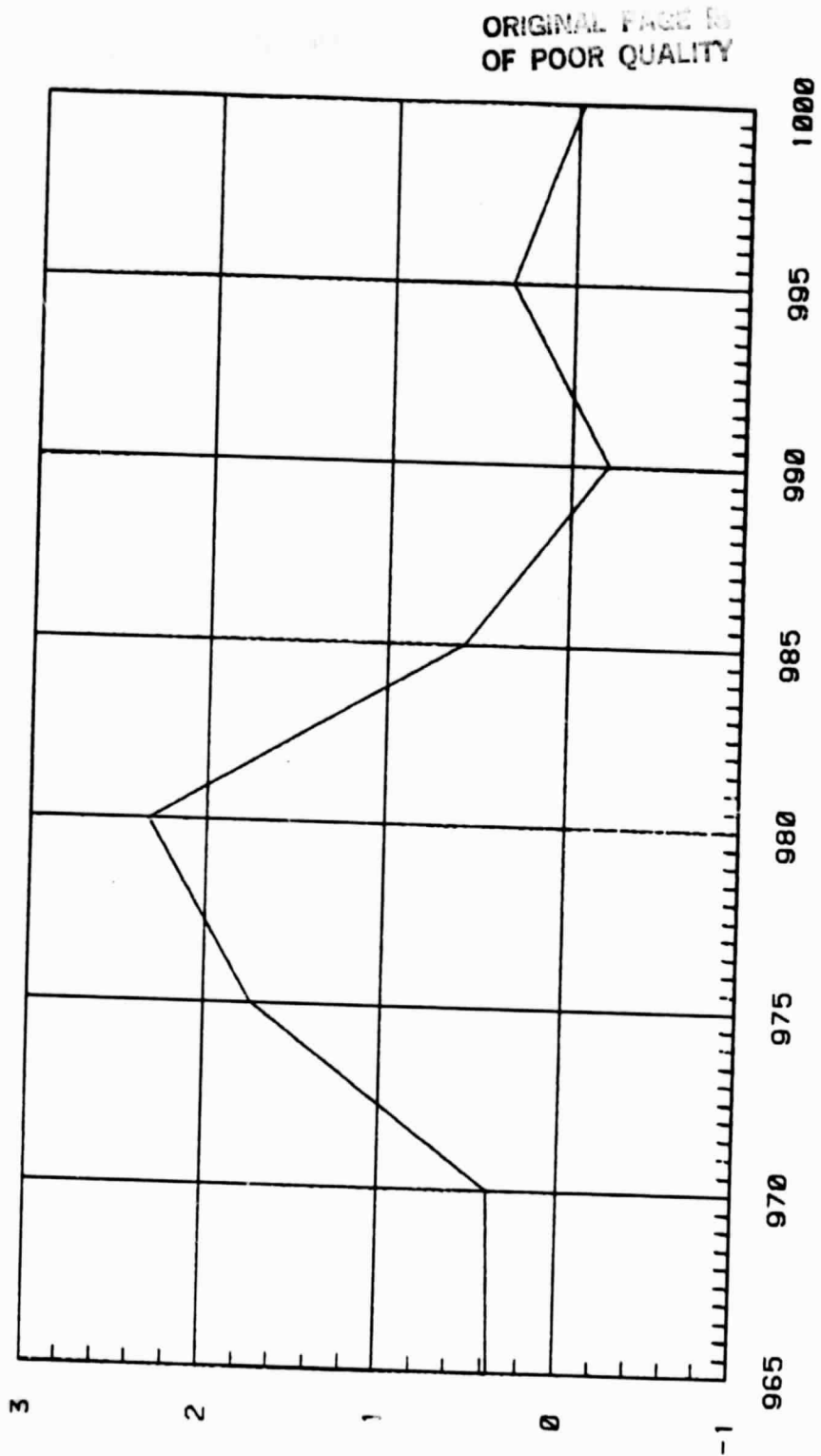
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TIME - SECONDS

04/20/93

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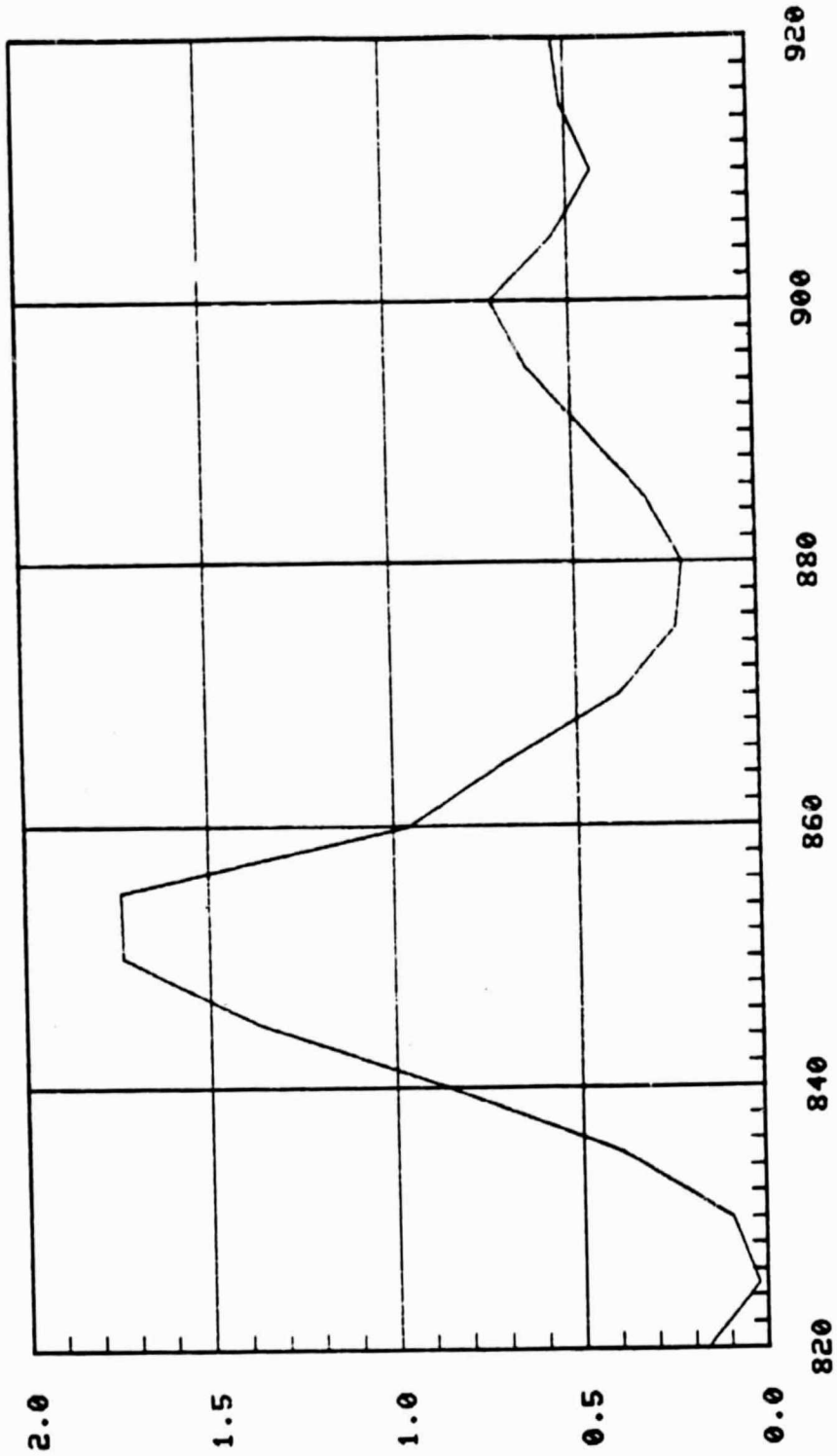
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04/20/83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9978A



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D-106

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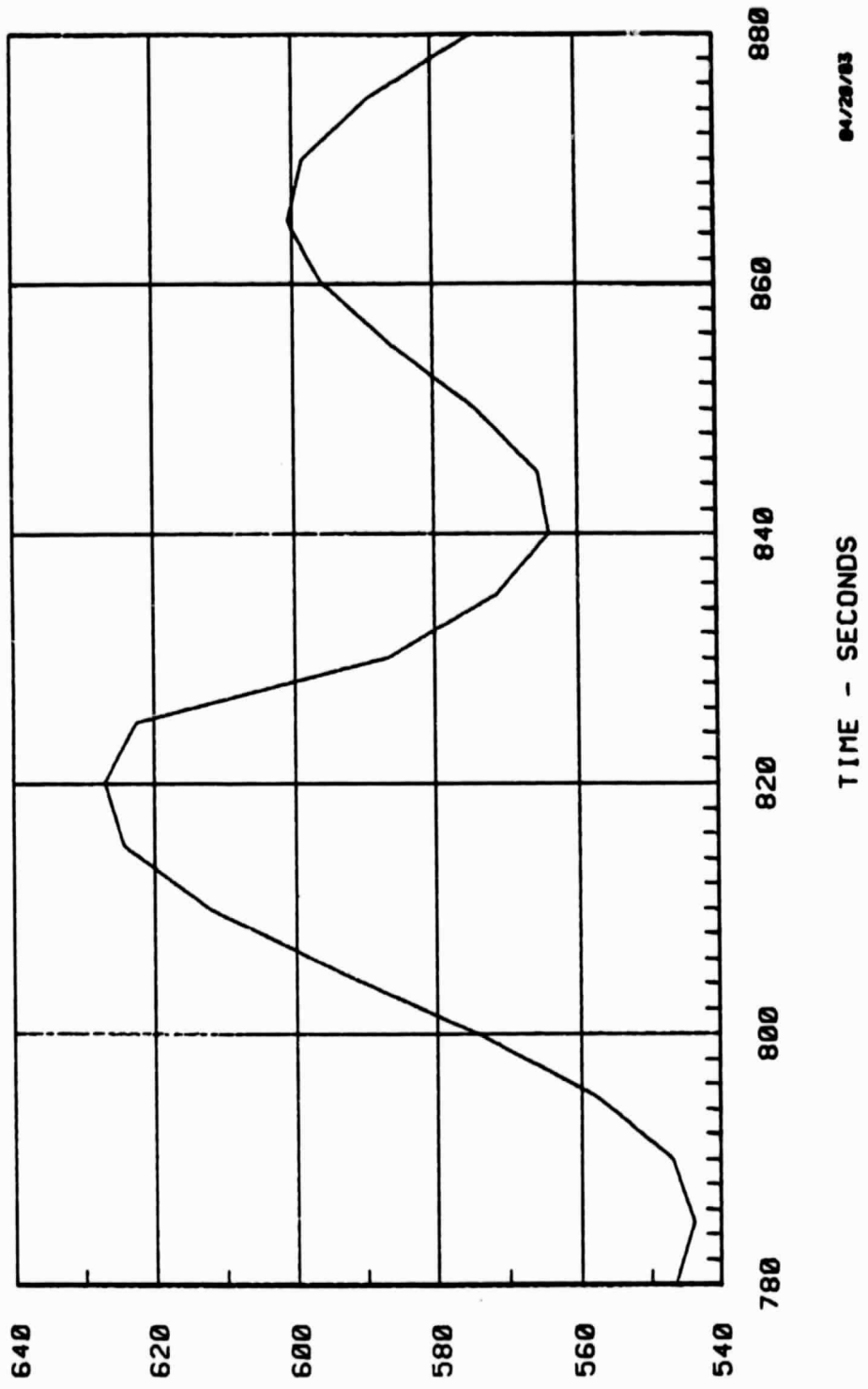
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TIME - SECONDS

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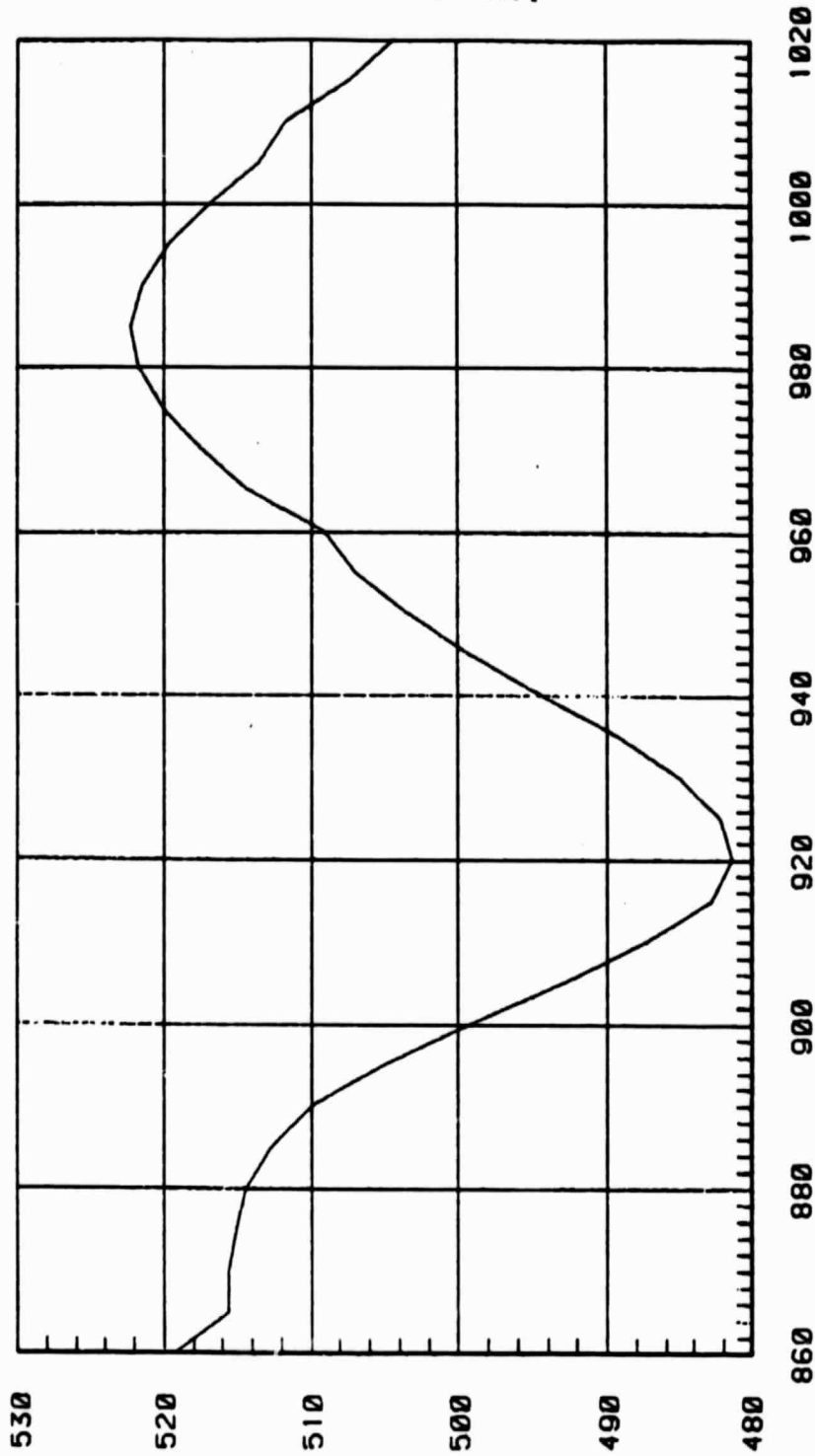
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TIME - SECONDS

04/28/83

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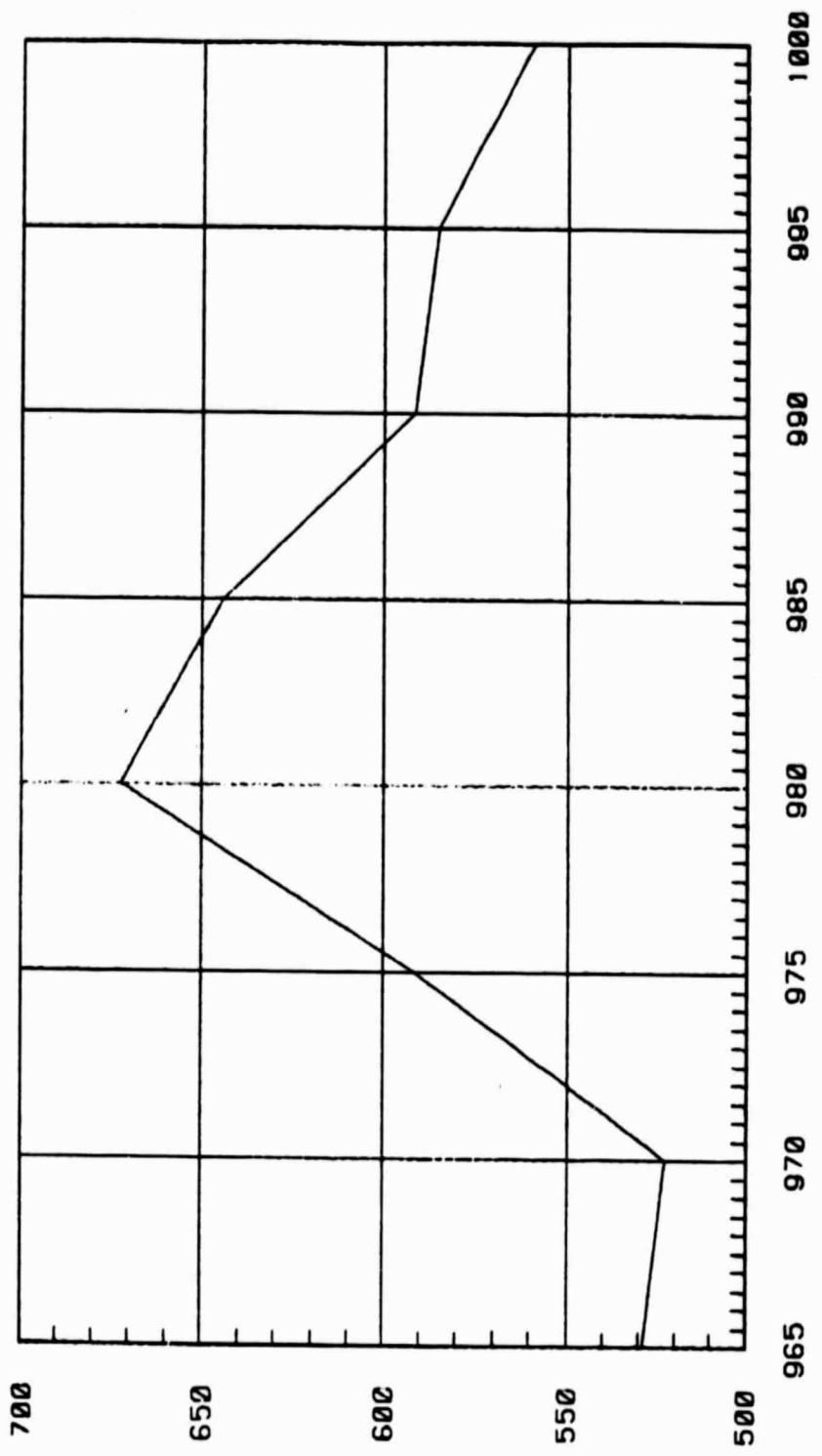
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04/28/83

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VB770078A

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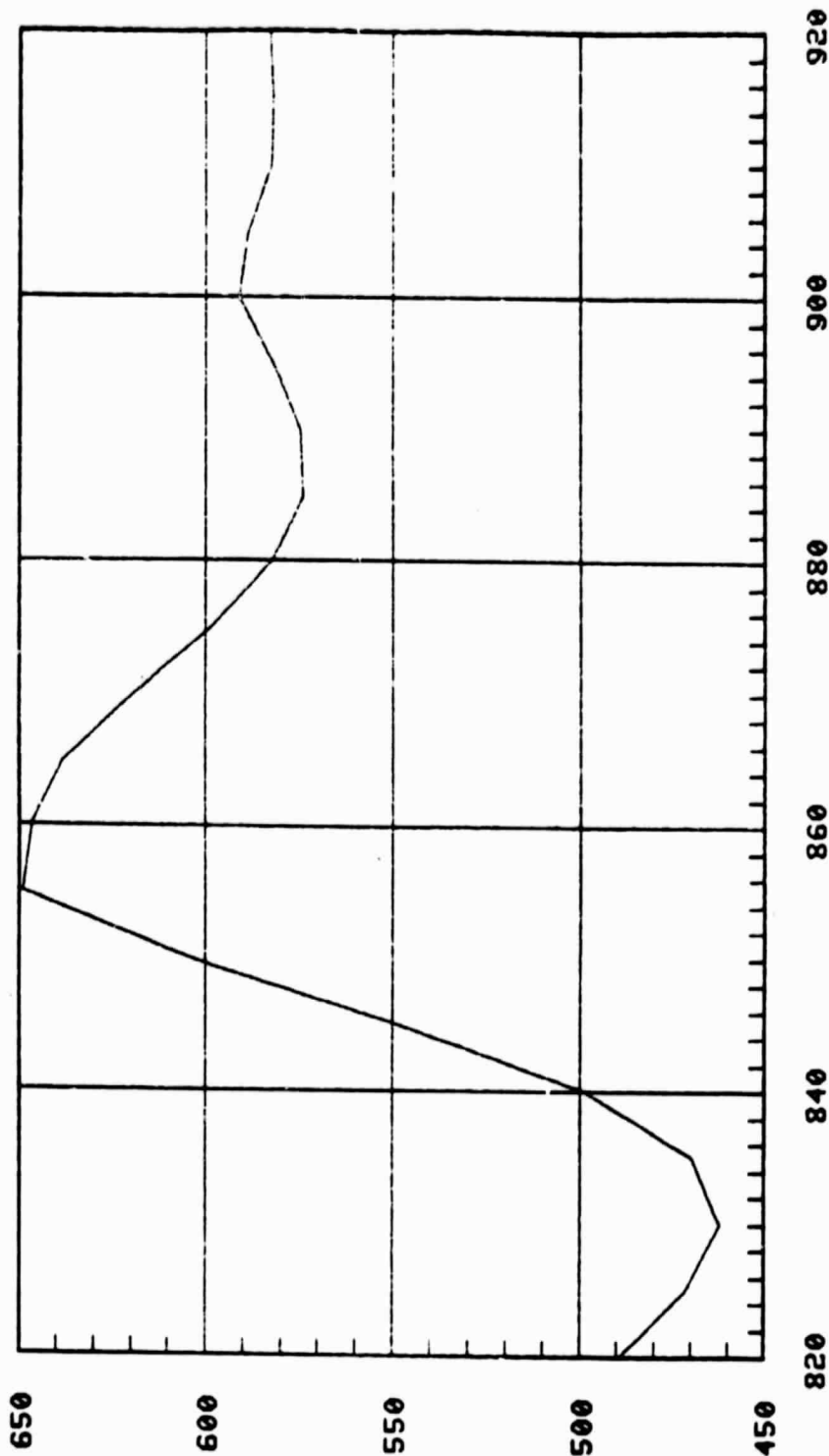
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04/20/83

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TEMPERATURE - F

D-110

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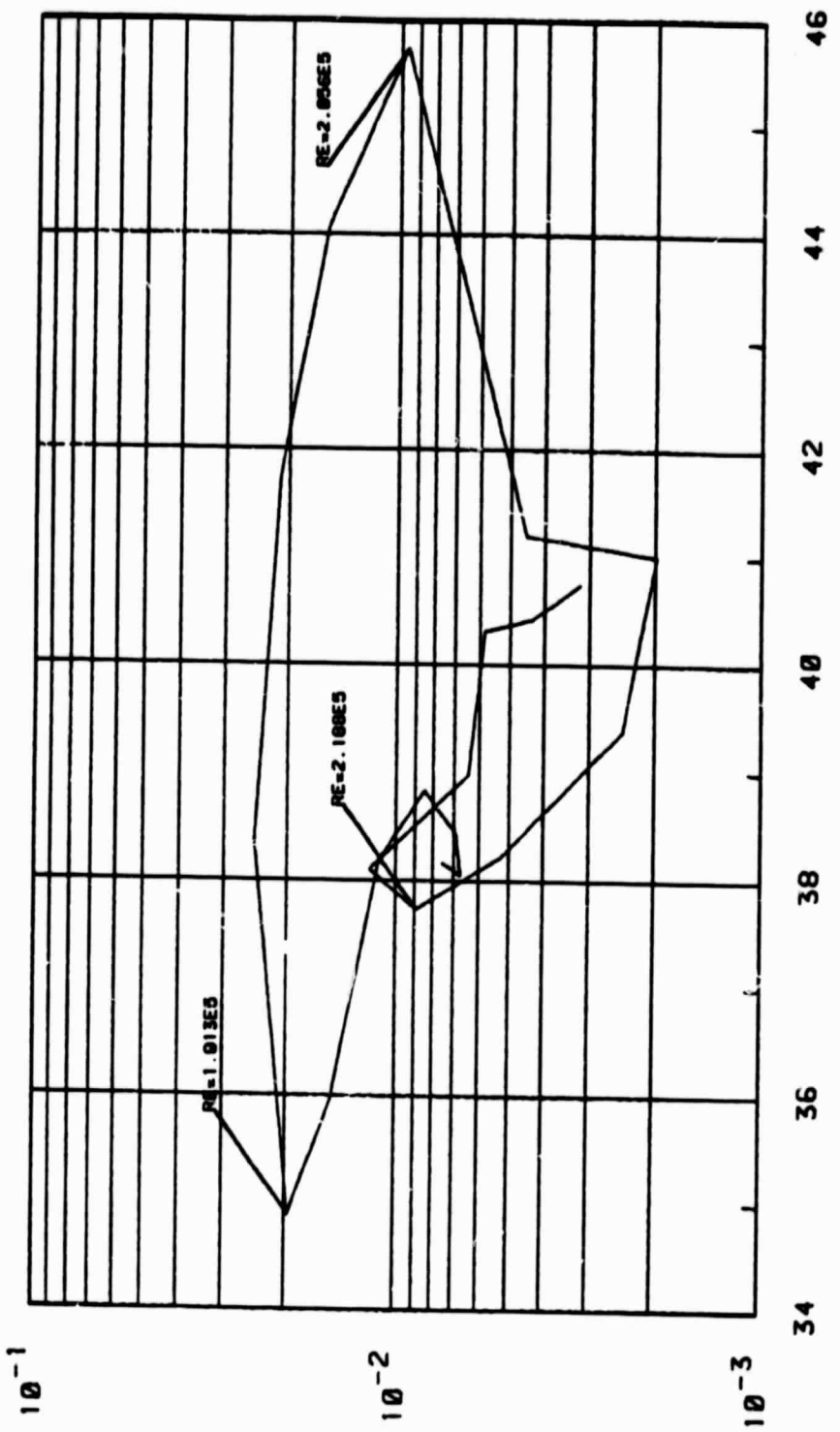
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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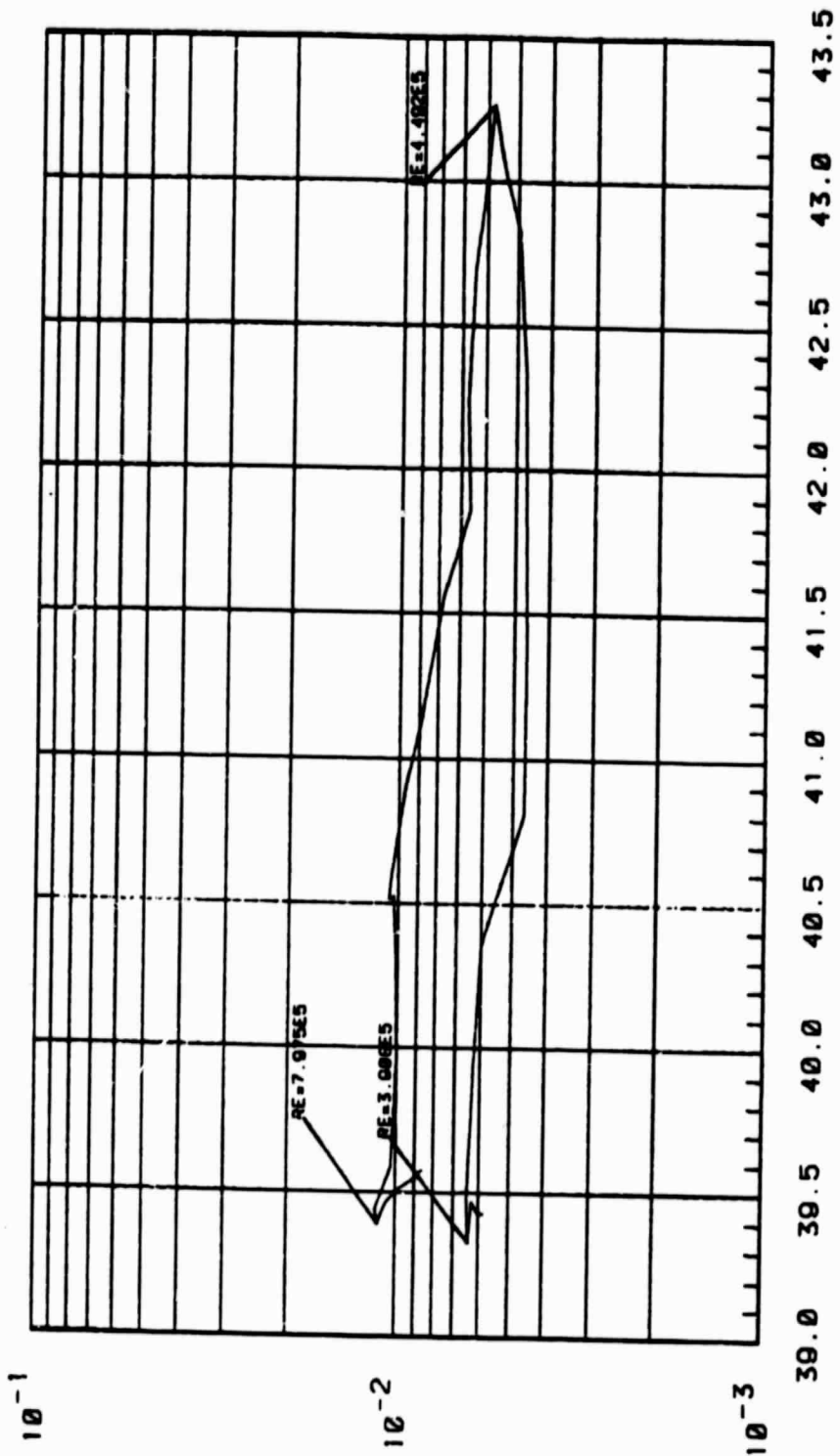
ANGLE-OF-ATTACK - DEG

ANGLE OF ATTACK - DEG

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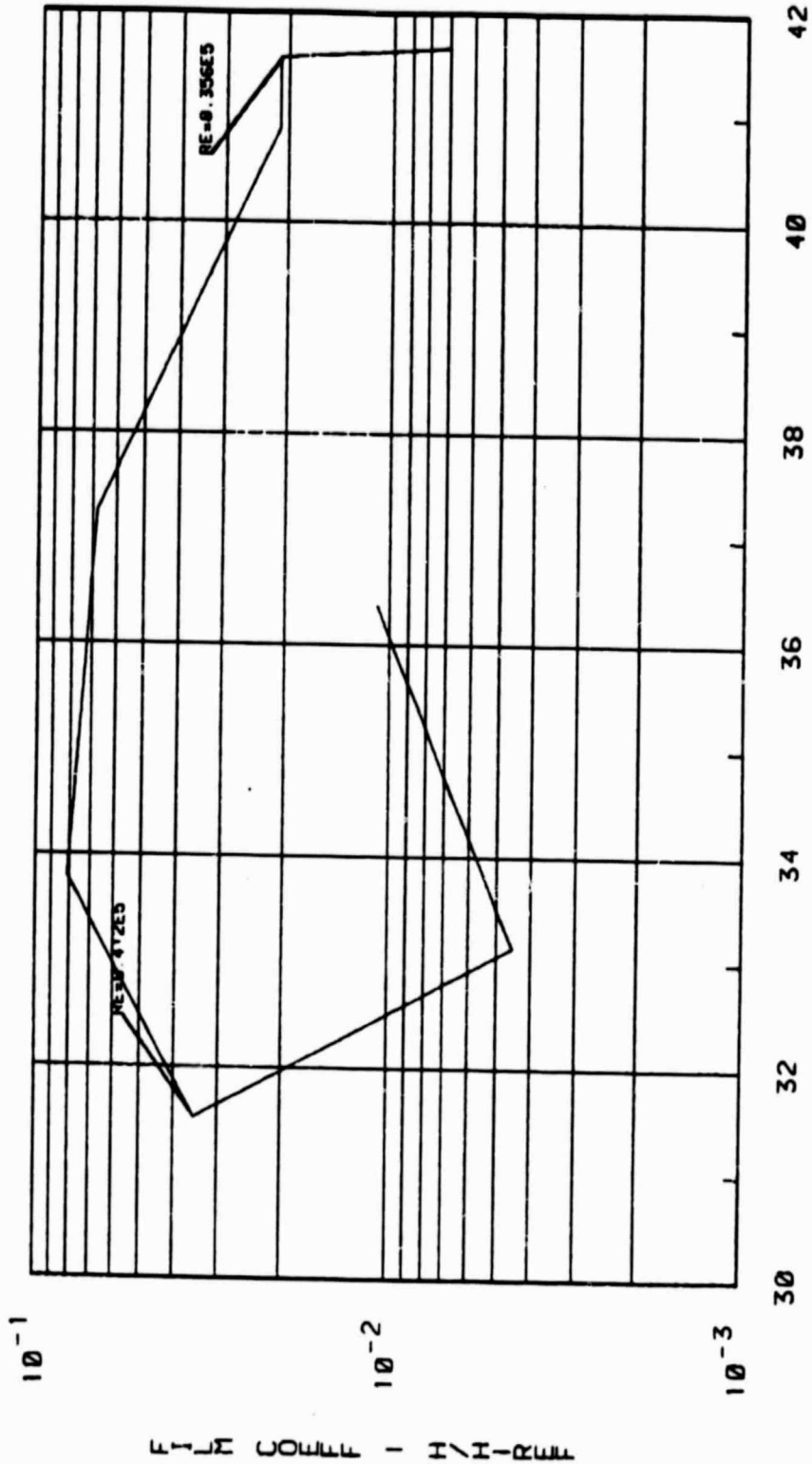


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U.S. AIR FORCE - H/H-RWLL

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770088A/H-REF 000-1000 SEC



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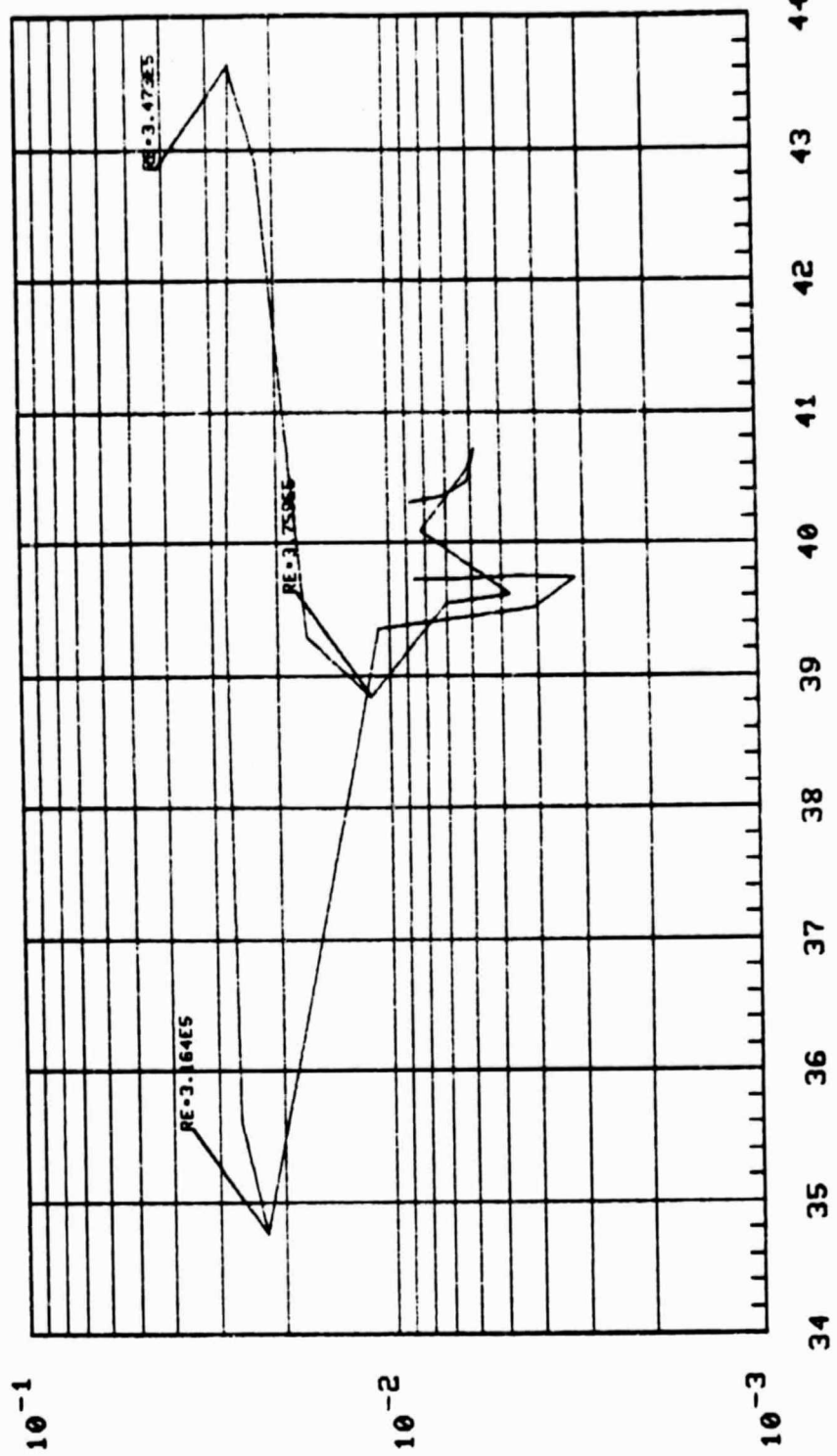
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ANGLE-OF-ATTACK - DEG

FLIGHT COEFF - H/H-REF

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U07T9980A/H-REF 820- 920 SEC



FLIGHT COEFF - H/H-REF

D-114

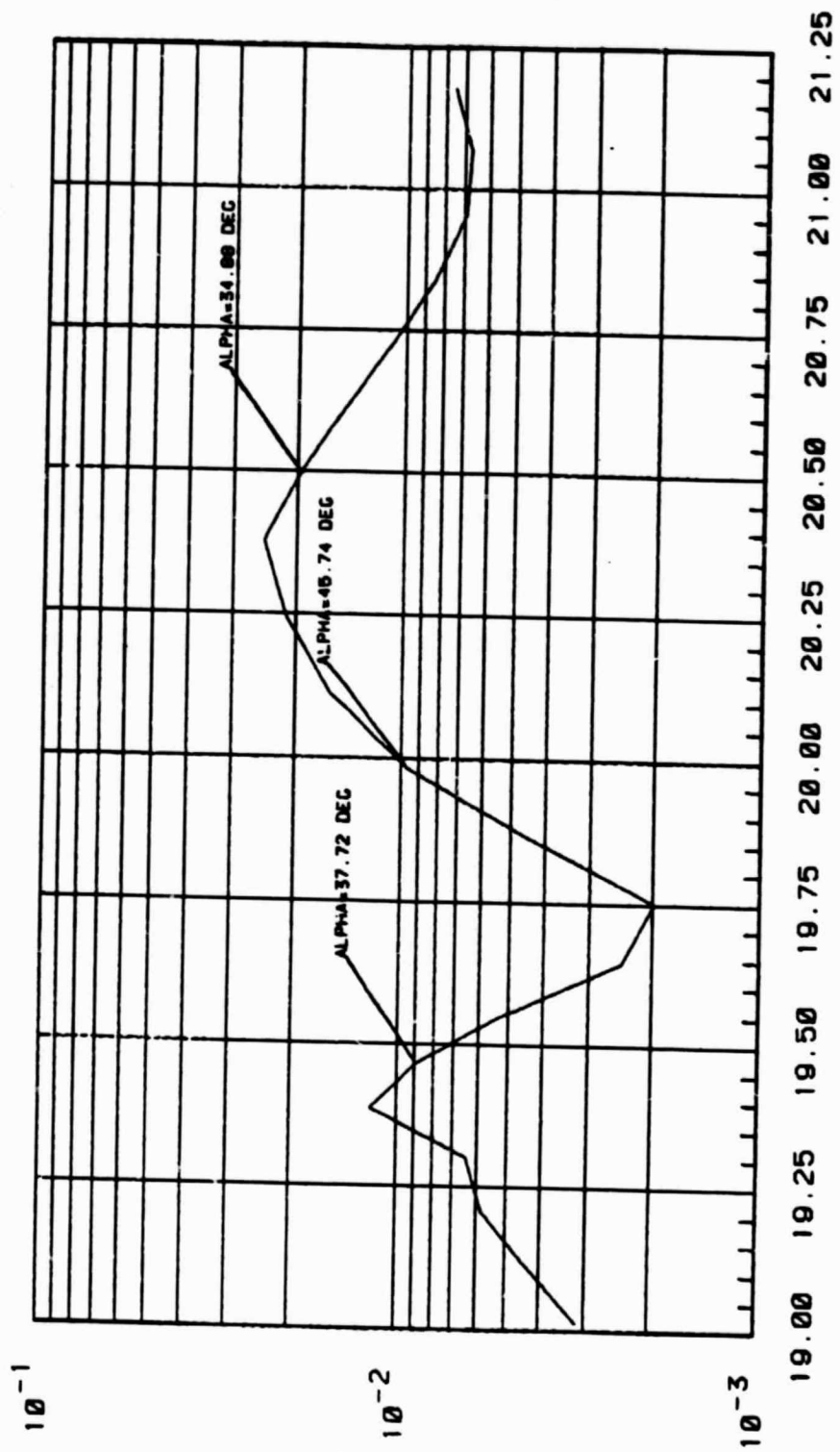
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FLIGHT COMPARISON - H/H-REF

D-115

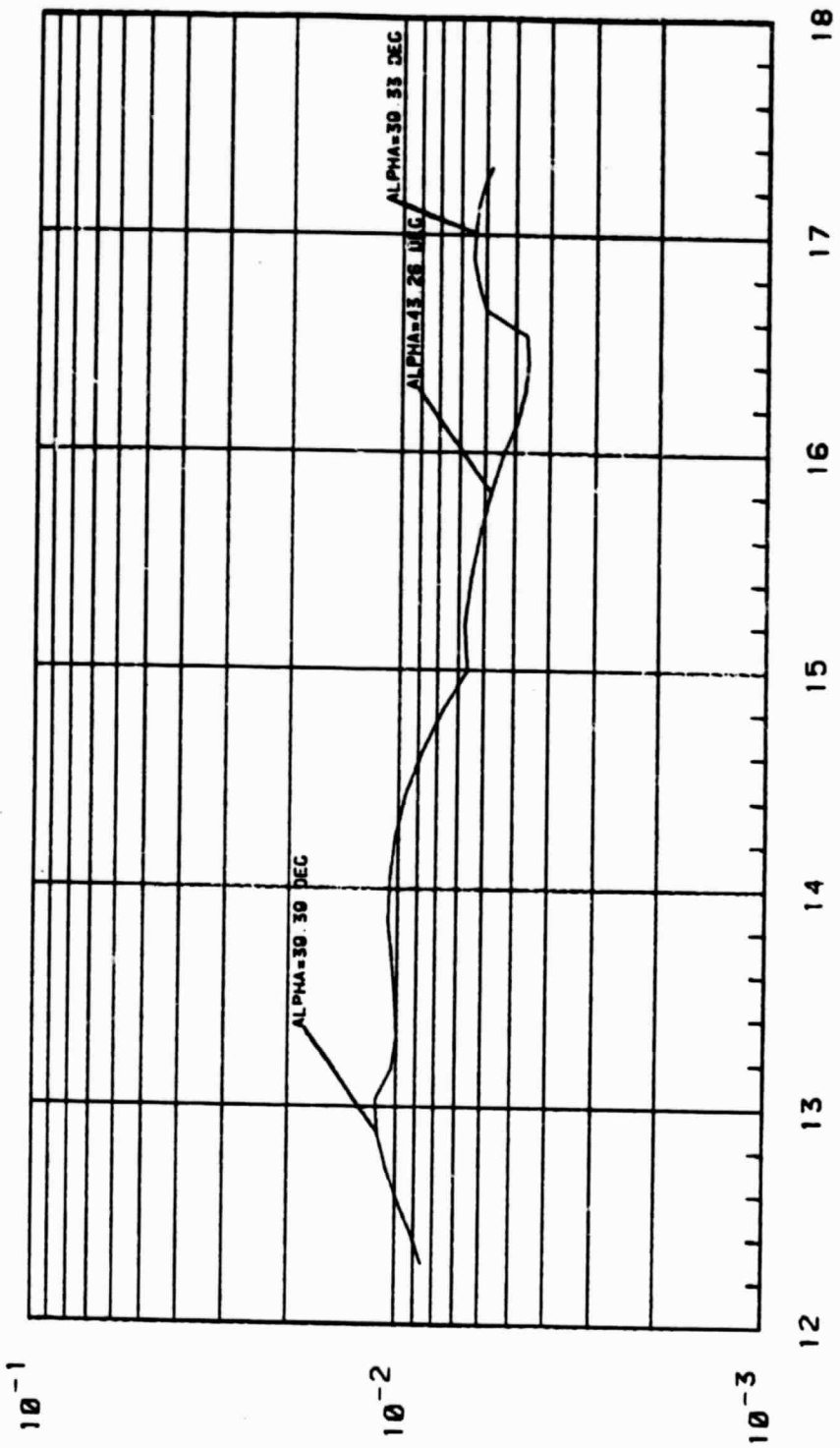
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MACH NUMBER

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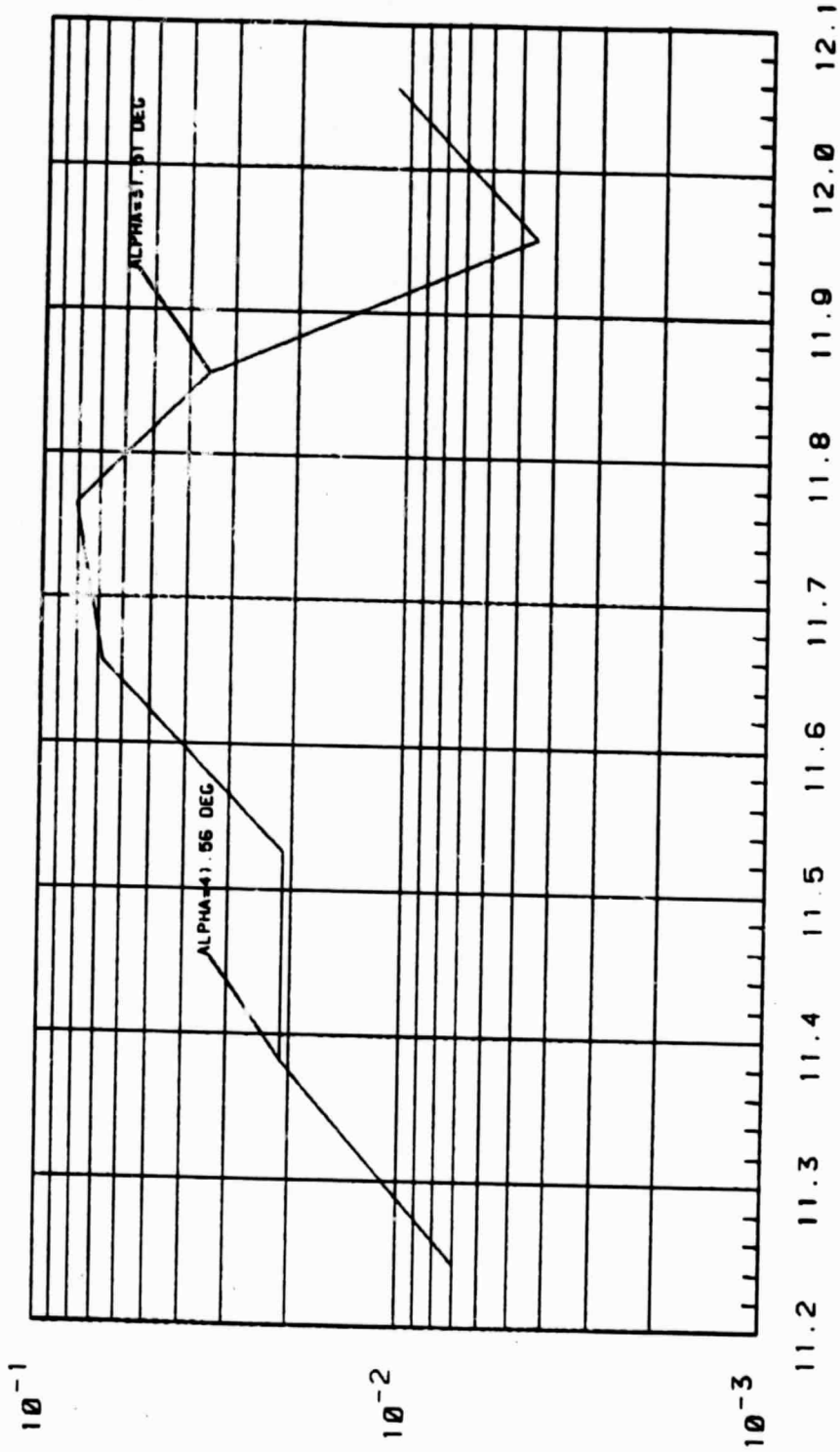
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04/20/83

FLIGHT PARAMETER COMPARISON

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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FILM COEFF - H-REF

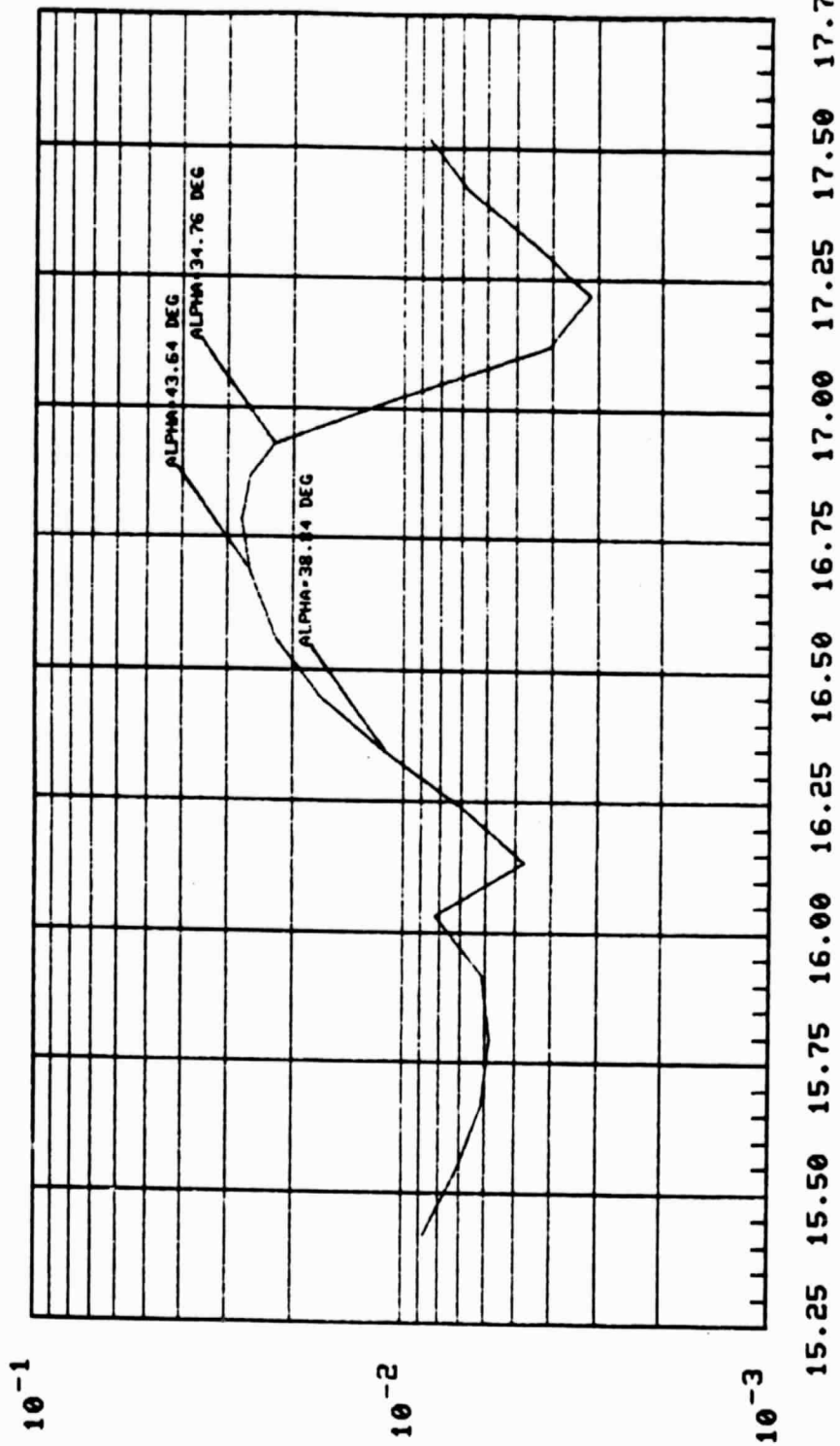
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MACH NUMBER

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U07T9980A/H-REF 820- 920 SEC



FILE CODE -- H/H-REF

D-118

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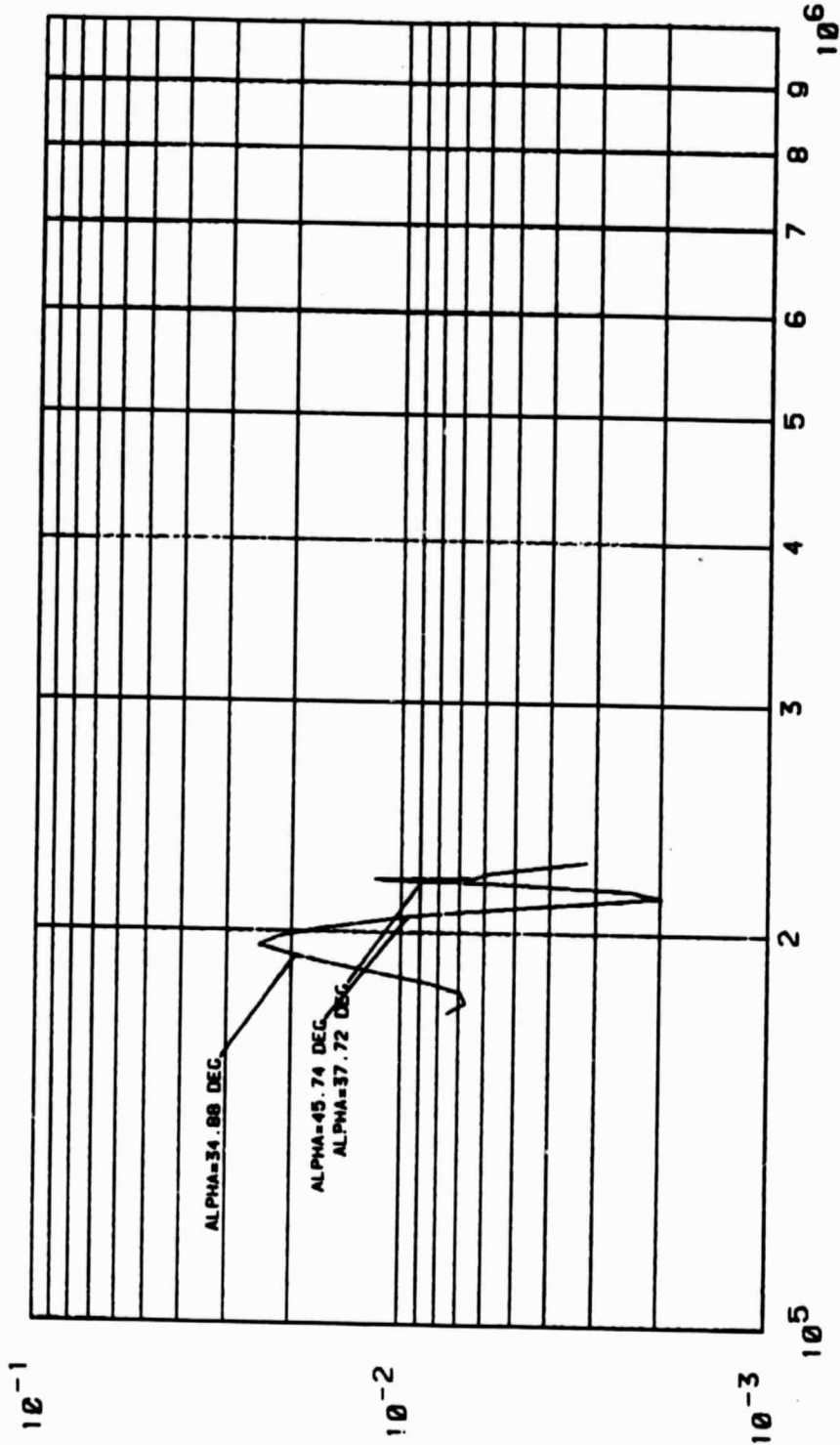
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FILM COEFF - H/H-REF

D-119

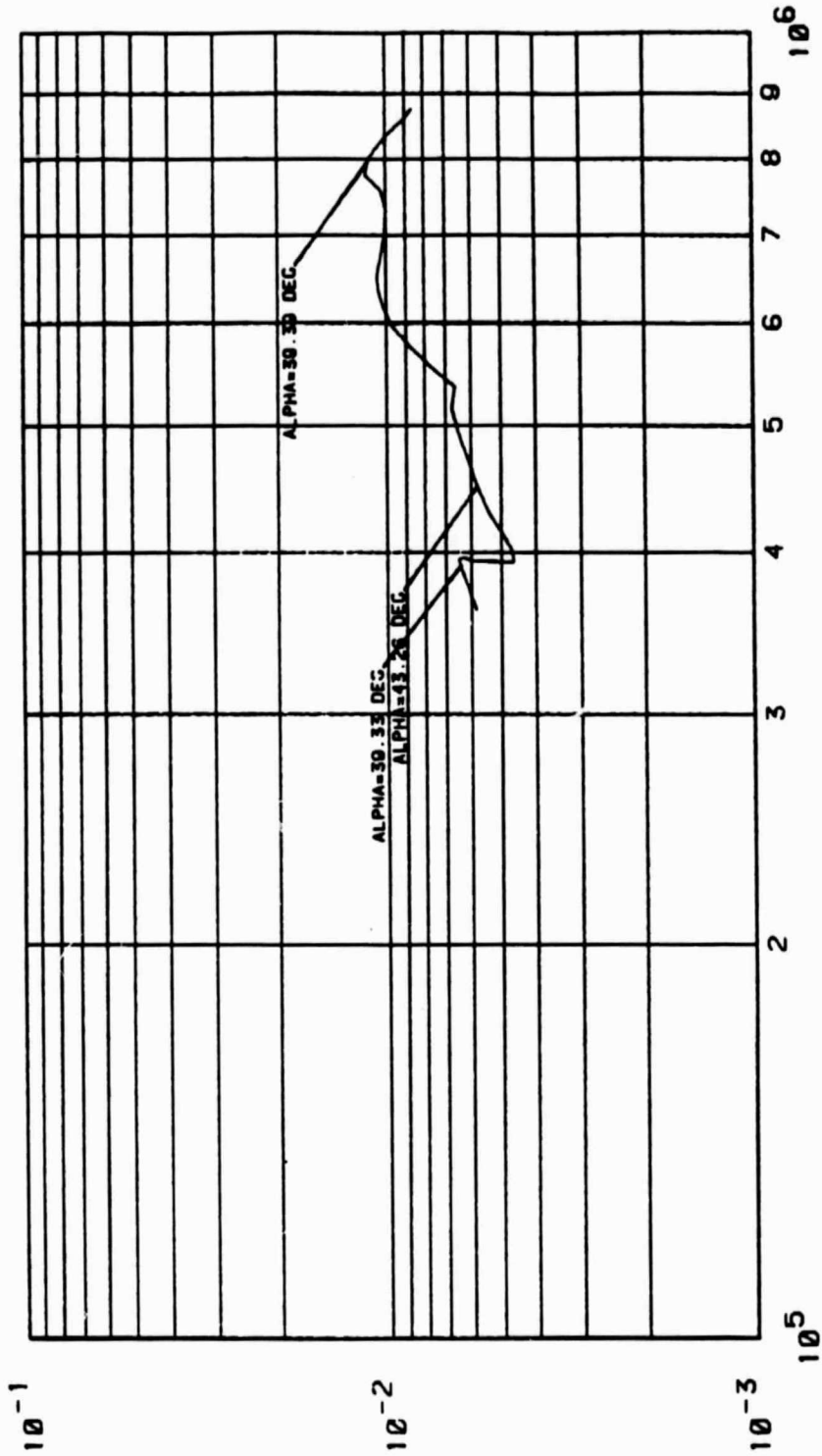
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REYNOLDS NUMBER (NS)

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F I L M C O E F F I C I E N T - H / H - R E F

D-120

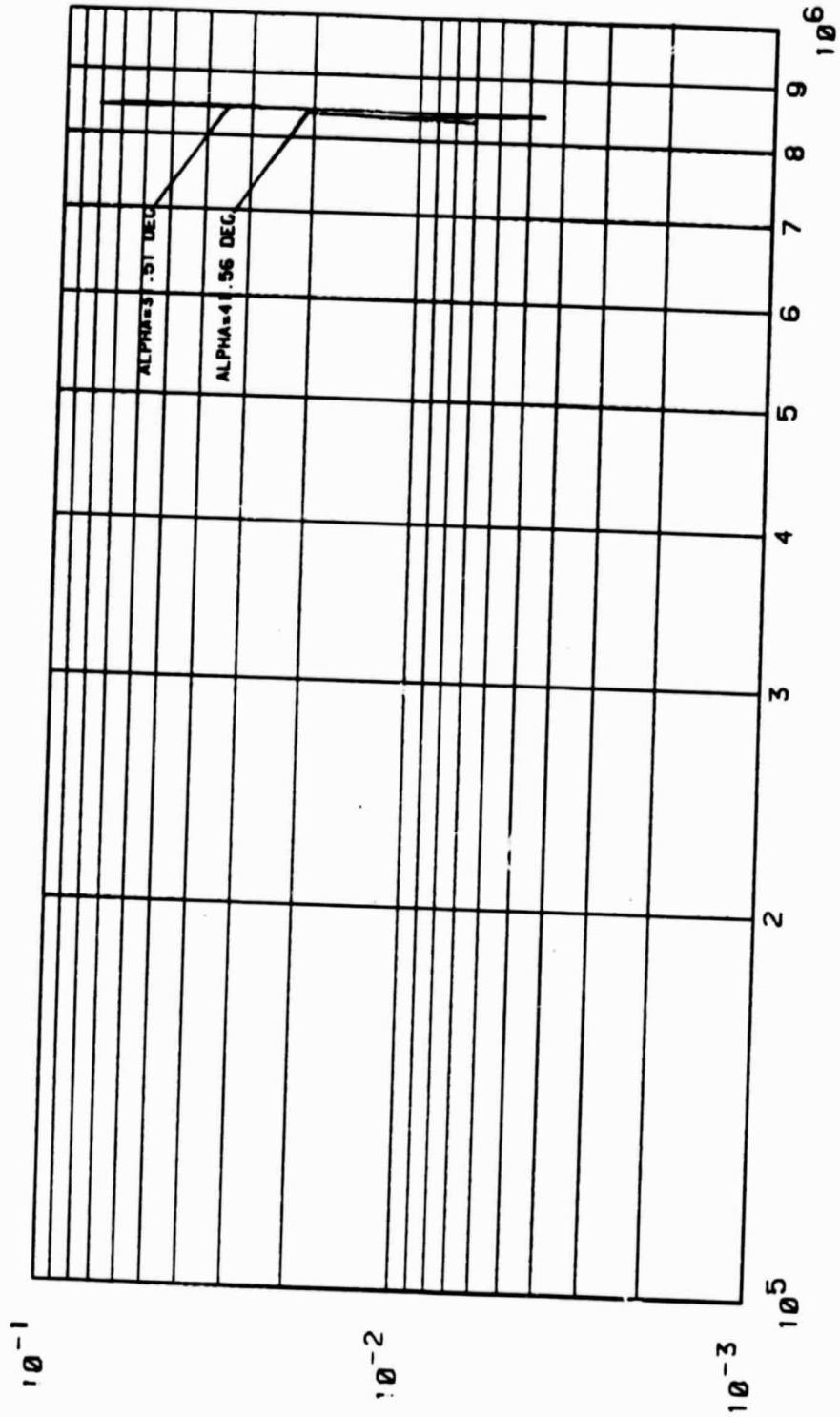
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BASE TIME = 87740694.000 SEC.

84/28/83

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770088A/H-REF 065-1888 SEC



FLIGHT PARAMETER COMPARISON - H/H-REF

D-121

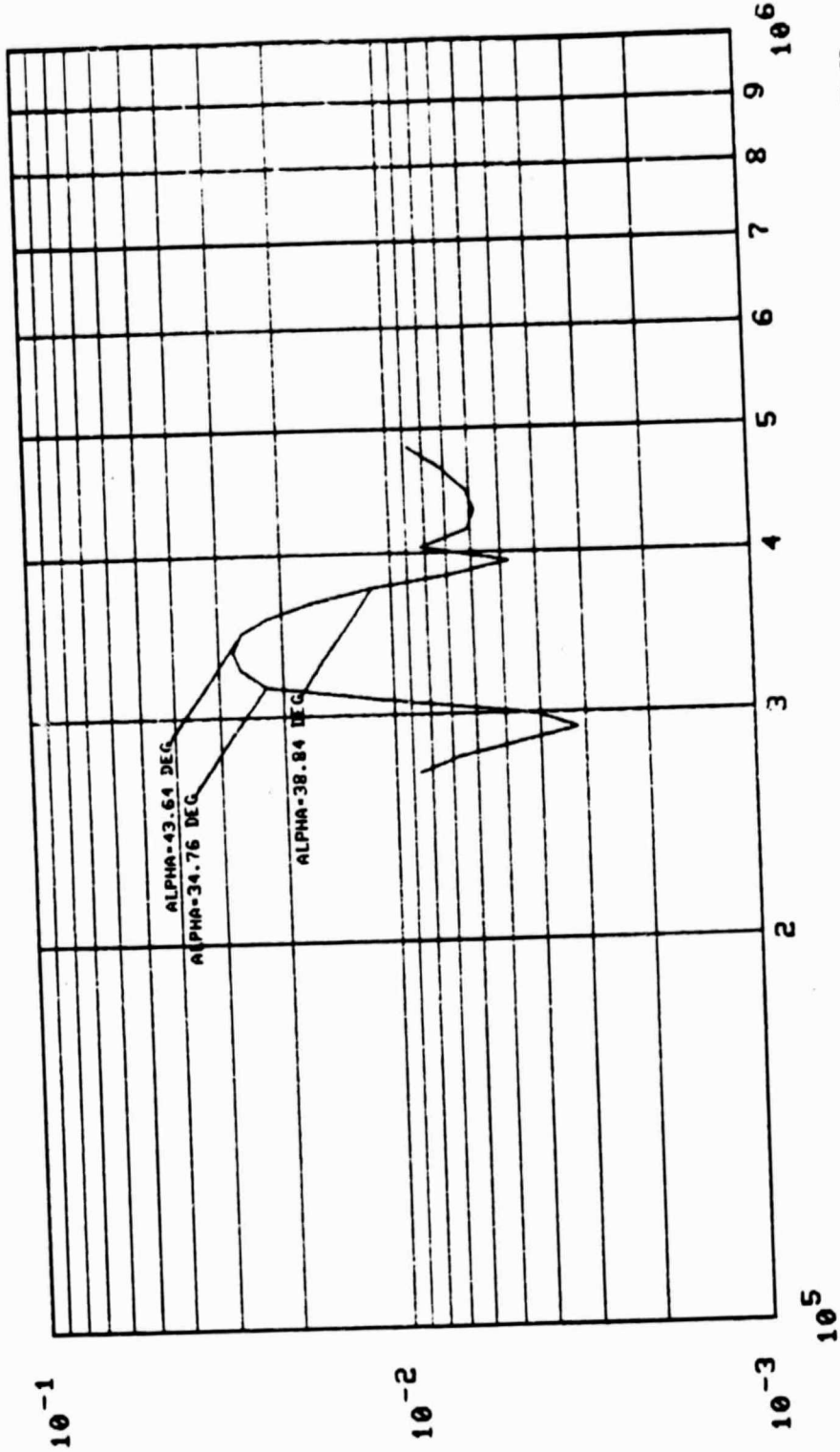
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REYNOLDS NUMBER (NS)

04/28/03  
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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A/H-REF 820- 920 SEC



FILE CODE : H/H-REF

D-122

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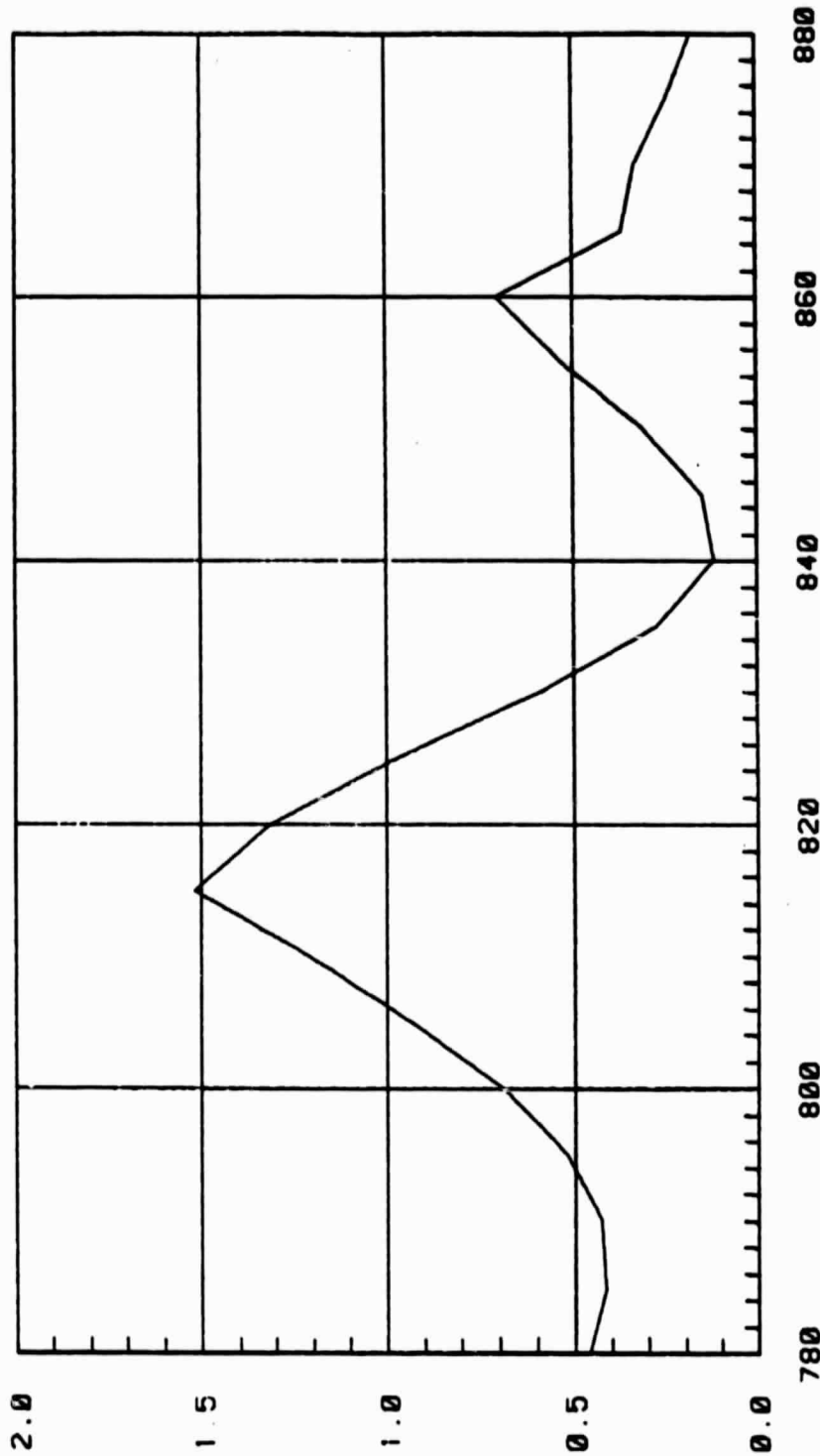
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04.20.83

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

————— V8770008A



HEATING RATE - BTU/FT\*\*2 - SEC

D-123

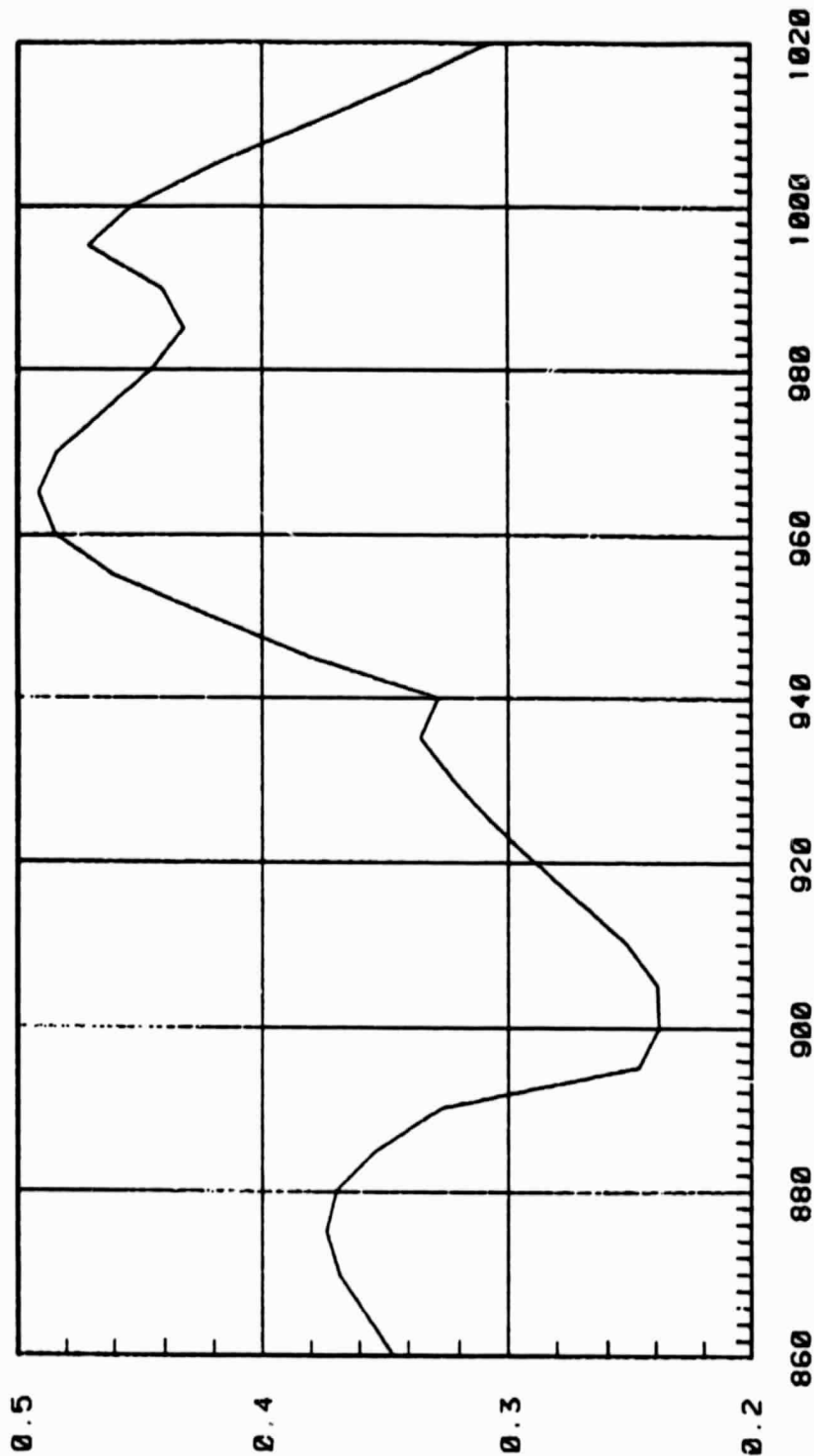
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84/28/83

TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7TC008A



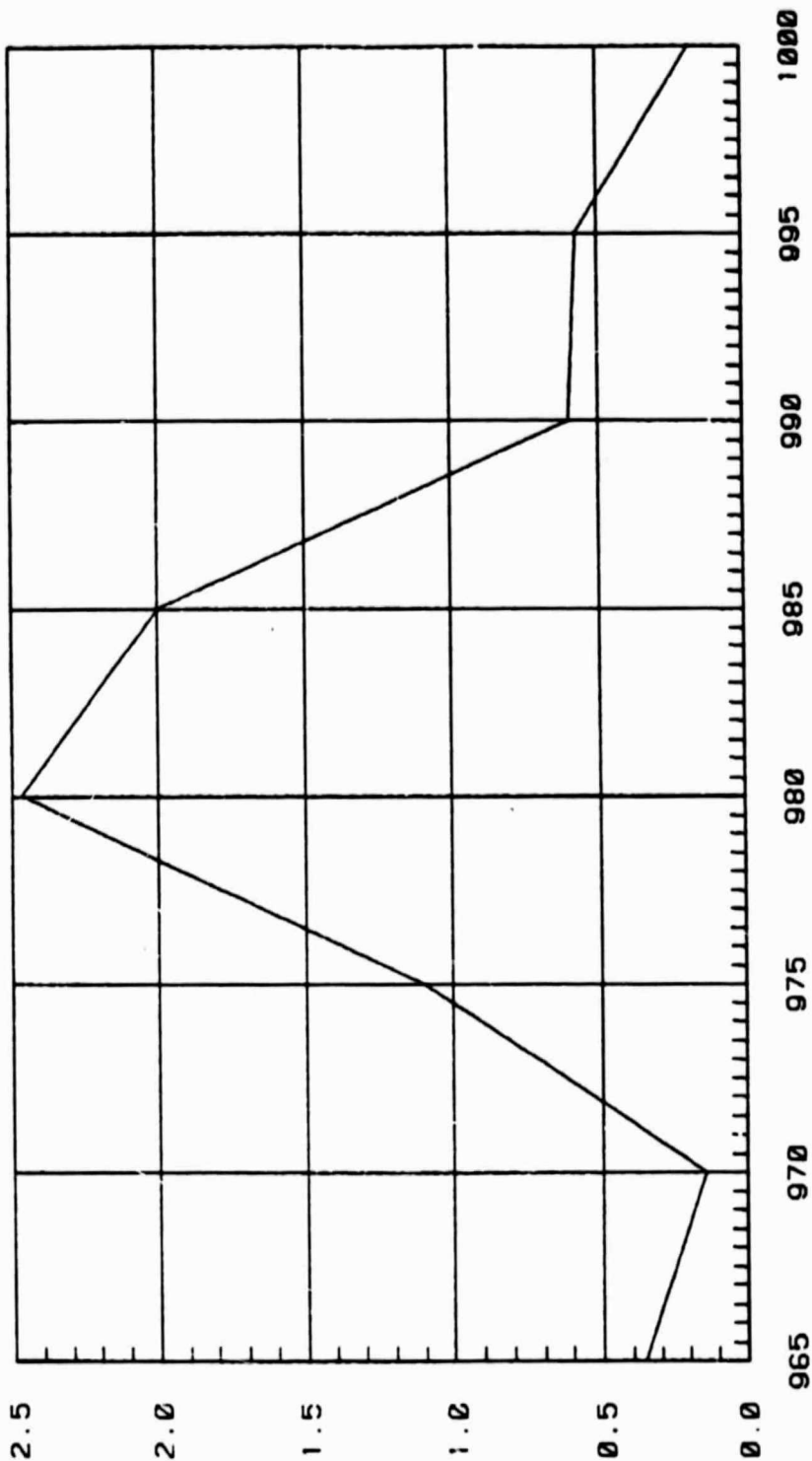
TIME - SECONDS

04/20/03

ORIGINAL PAGE 19  
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770008A



HEATING RATE - BTU/FT\*\*2 - SEC

D-125

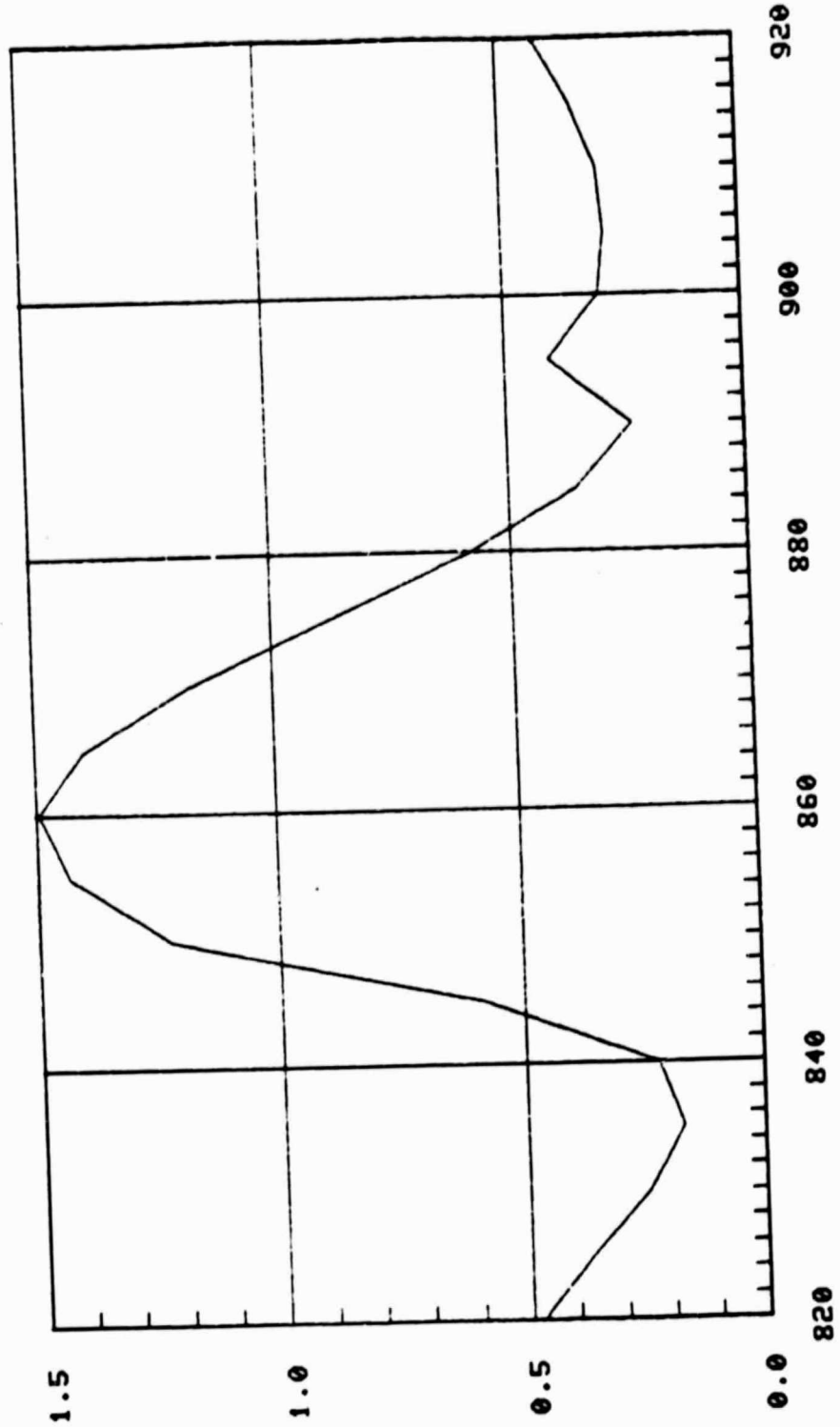
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TIME - SECONDS

04/20/83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9980A



HEATING RATE -- BTU/FT/SEC -- SEC

D-126

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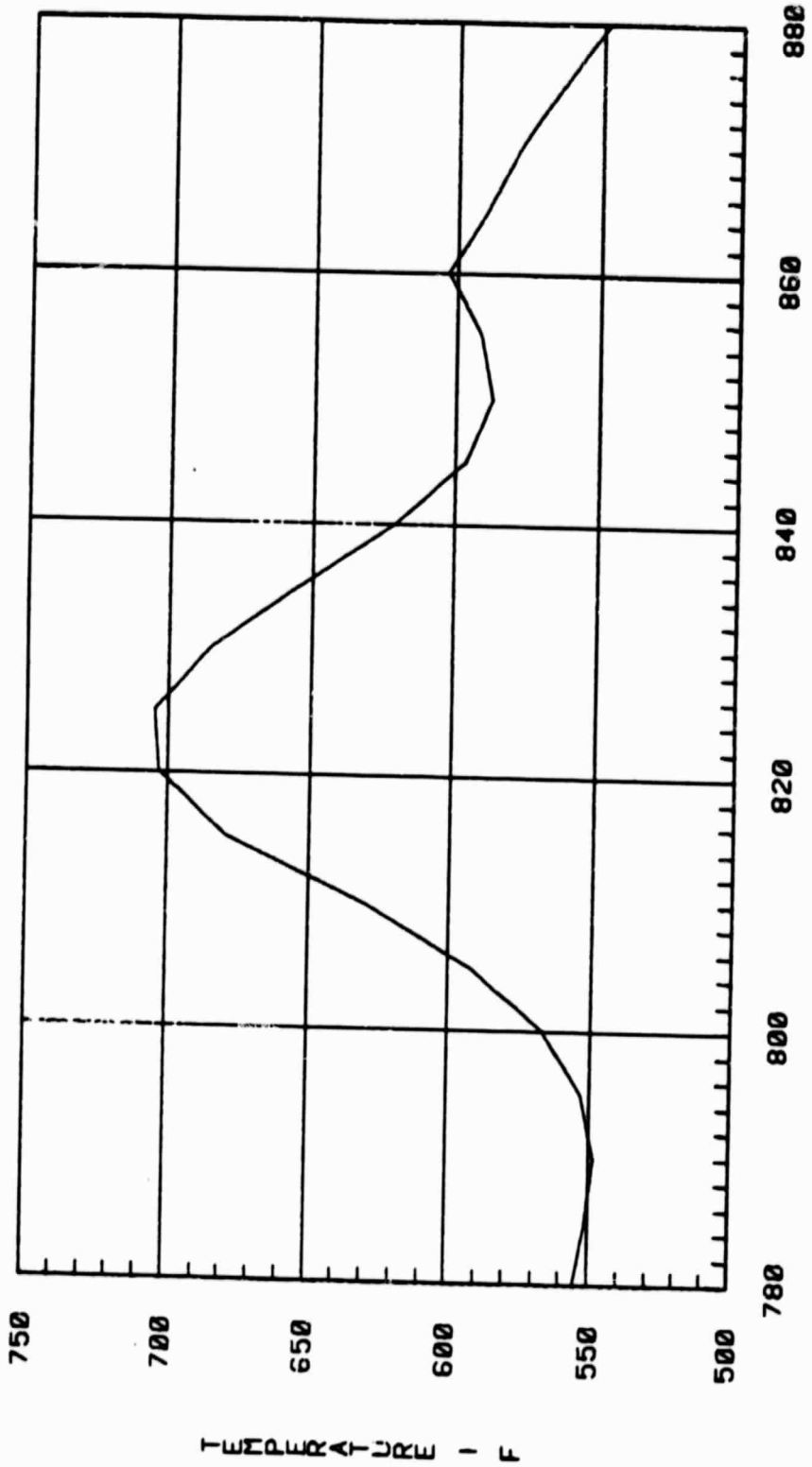
04.20.53

TIME - SECONDS



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8776000A



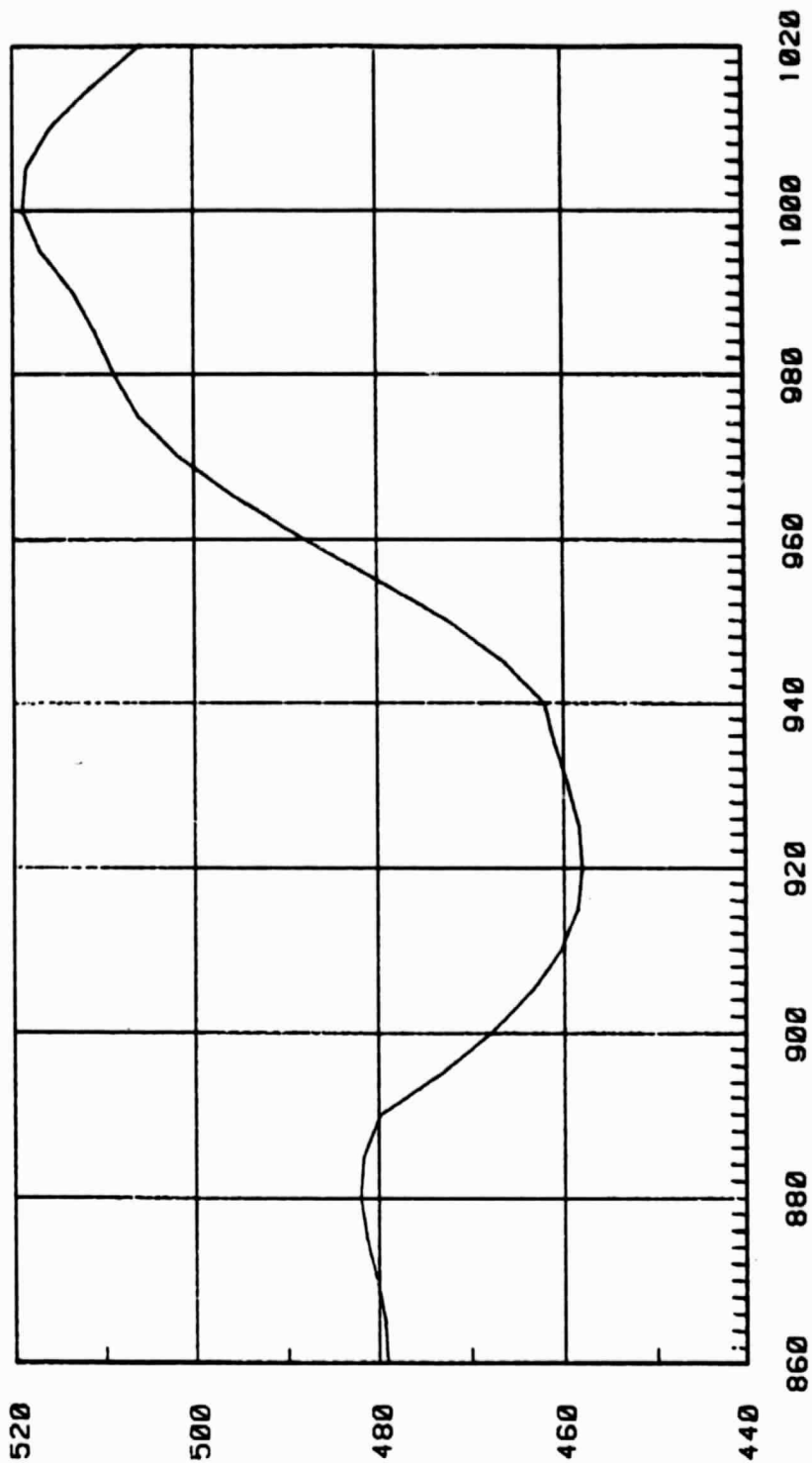
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TIME - SECONDS 84/28/93

TEMPERATURE - F

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8770088A



TEMPERATURE - F

D-128

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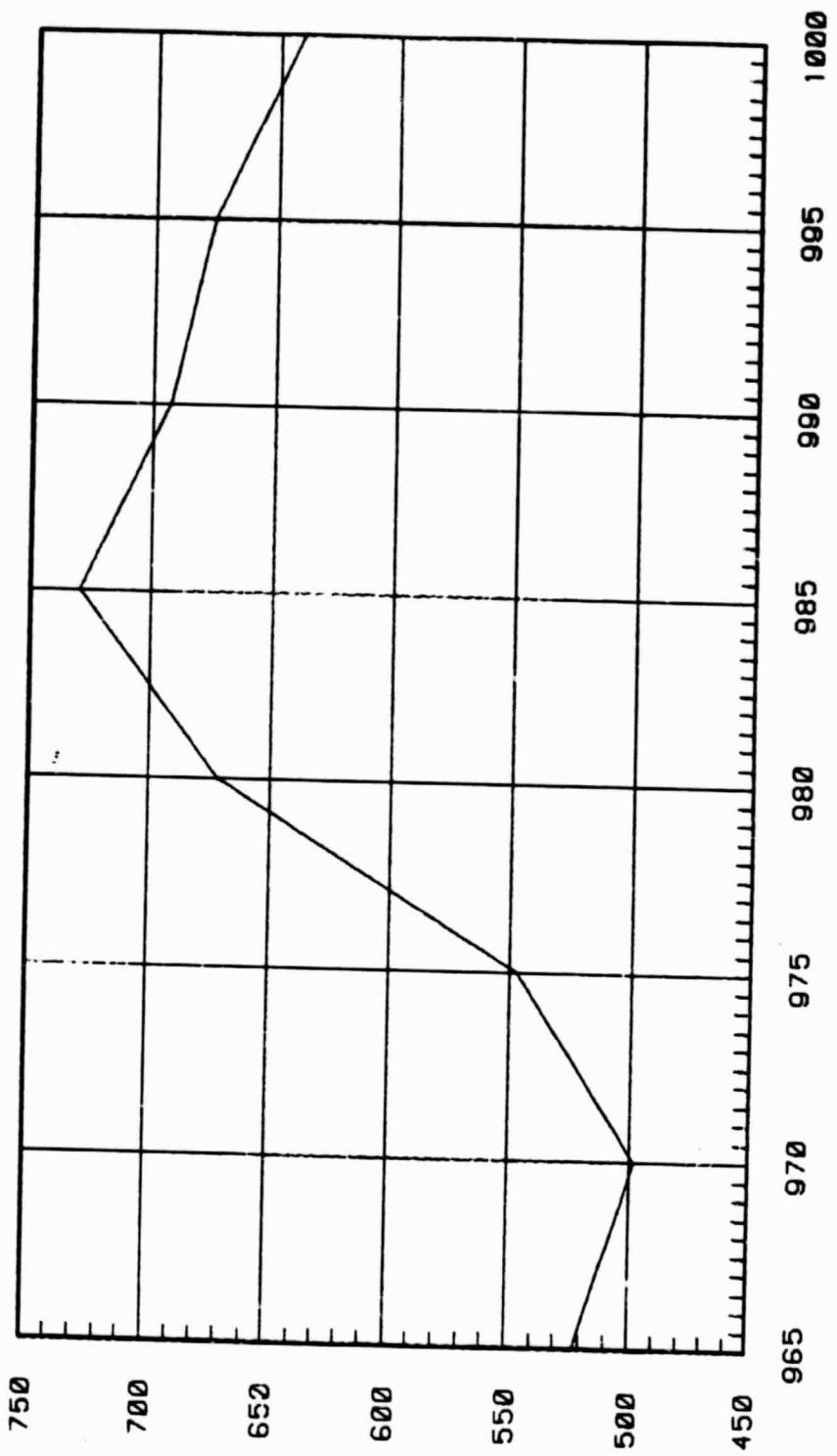
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04/28/83

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VB776088A

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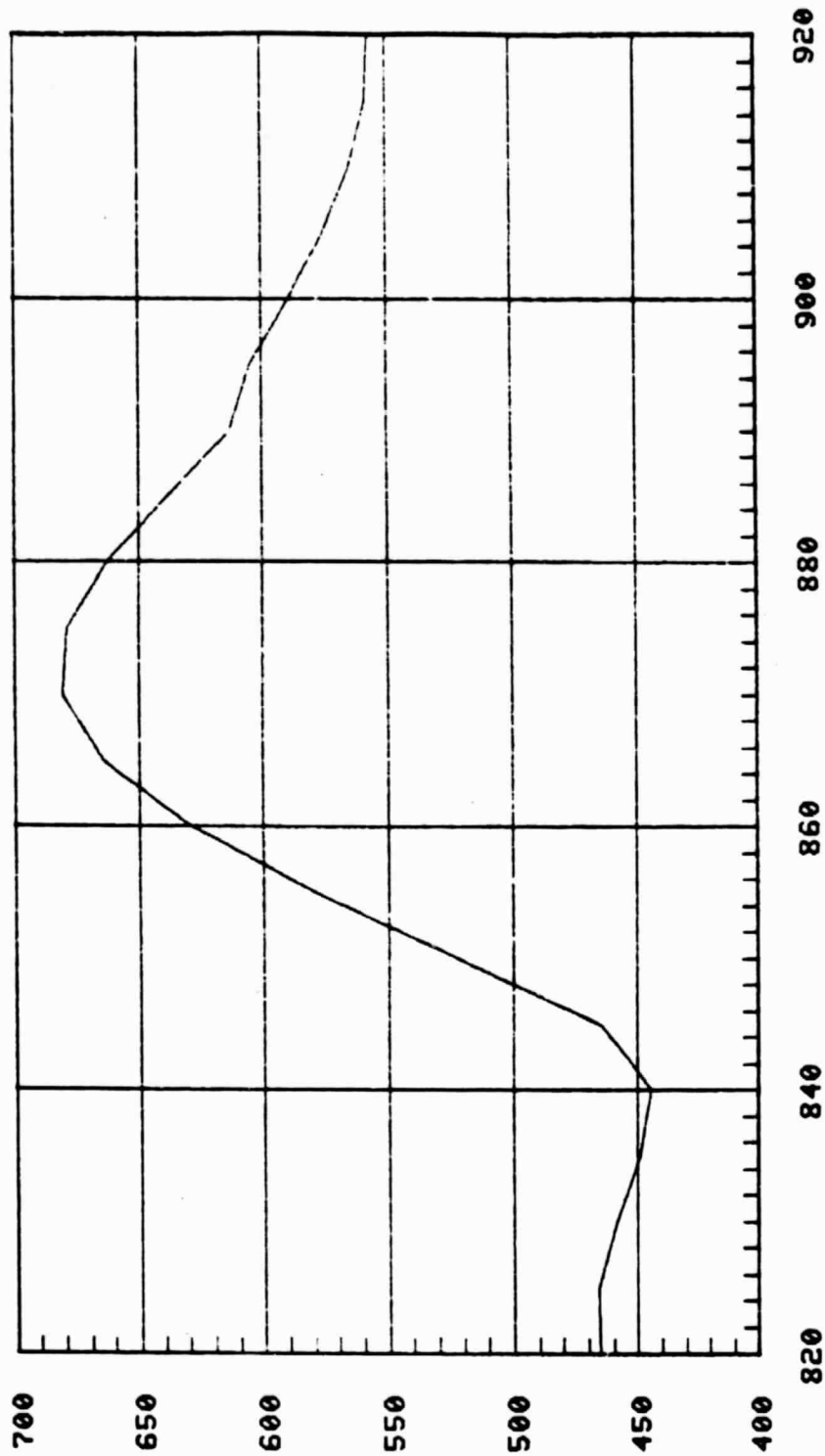
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04/29/03

TEMPERATURE - F

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779980A



TEMPERATURE - F

D-130

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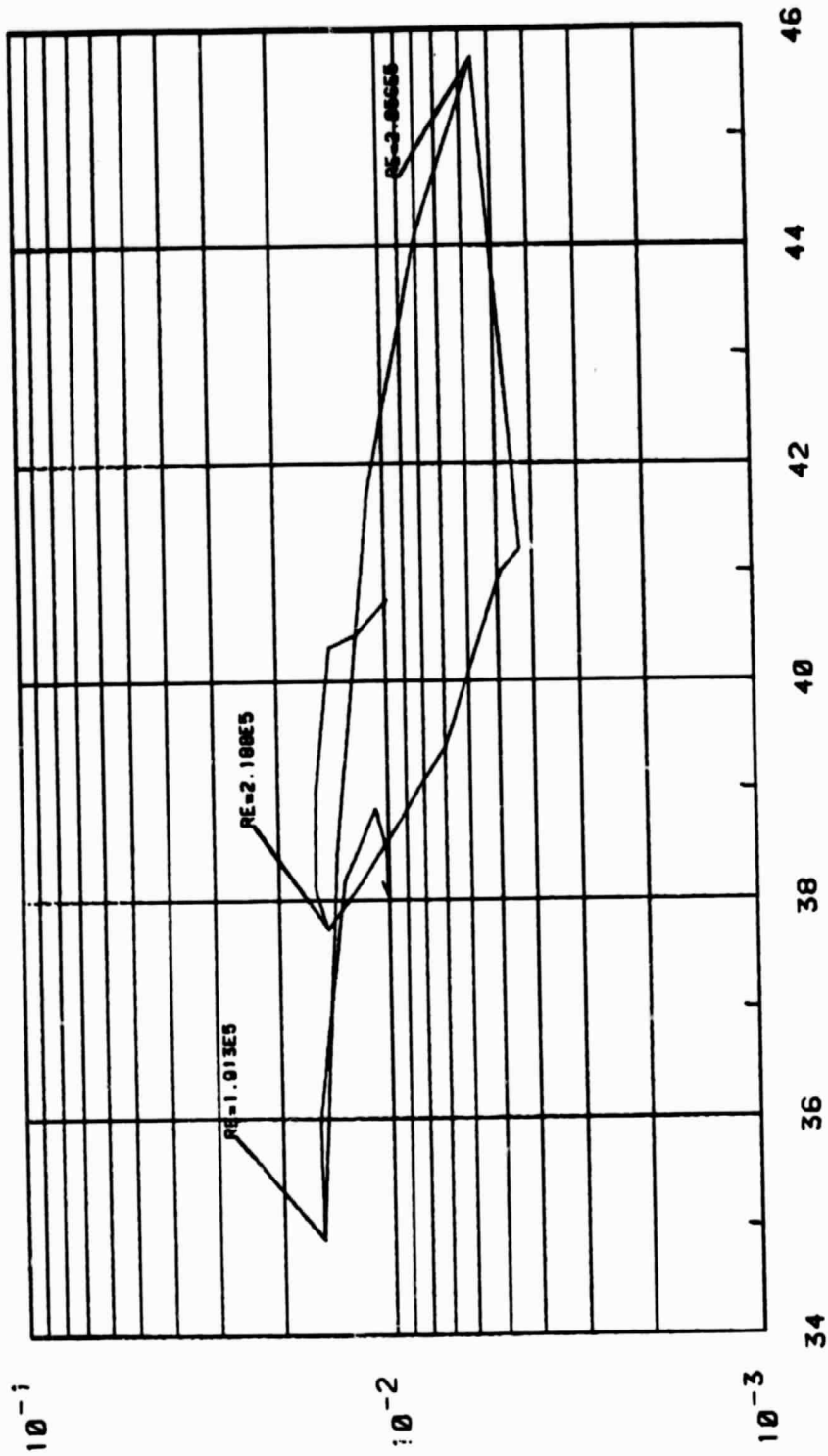
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04.20.83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0002A/H-REF 700-000 SEC

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FILM COEFF - H/H-REF

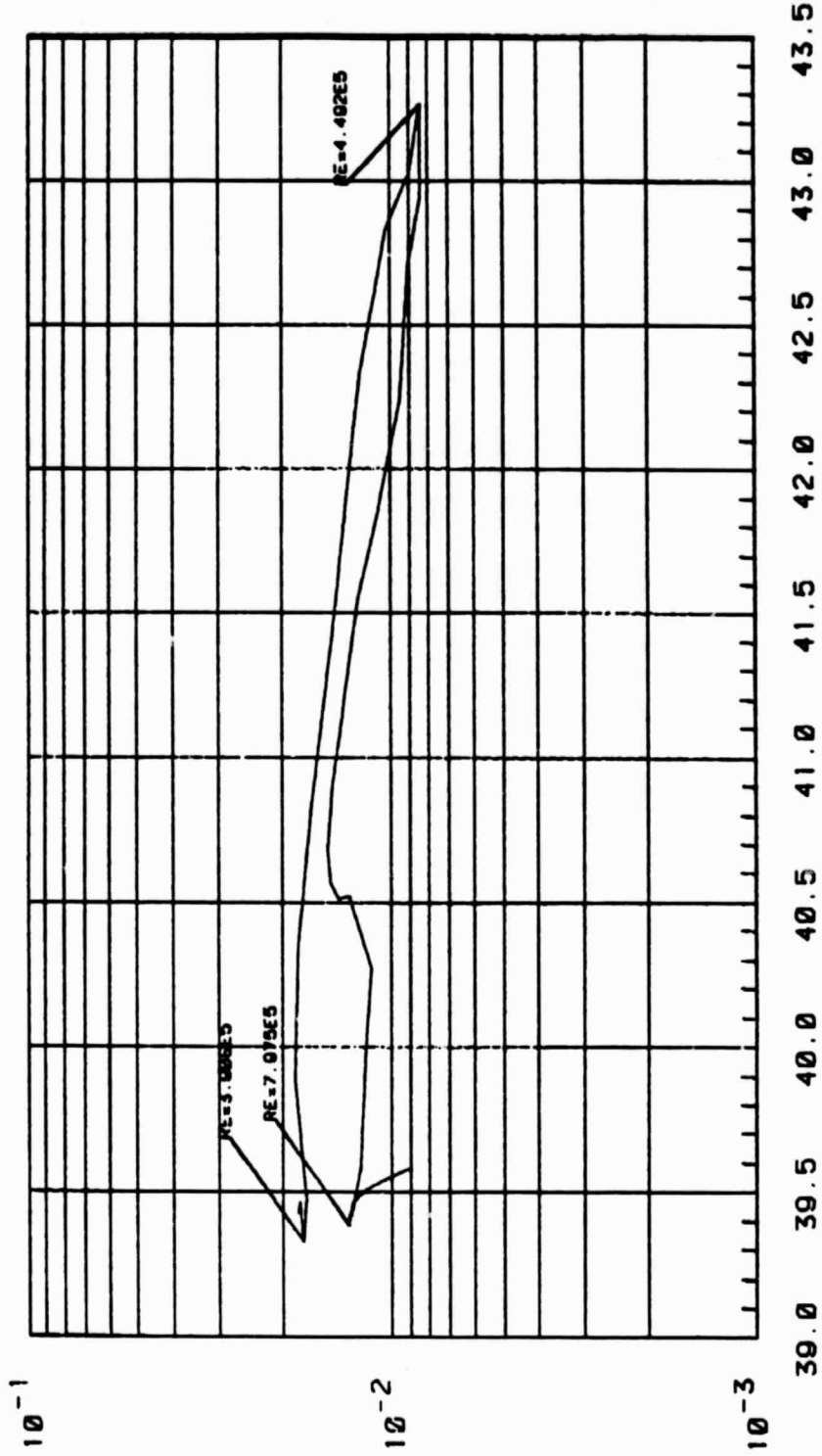
D-131

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ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8770002A/H-REF 000-1020 SEC



ORIGINAL PAGE 13  
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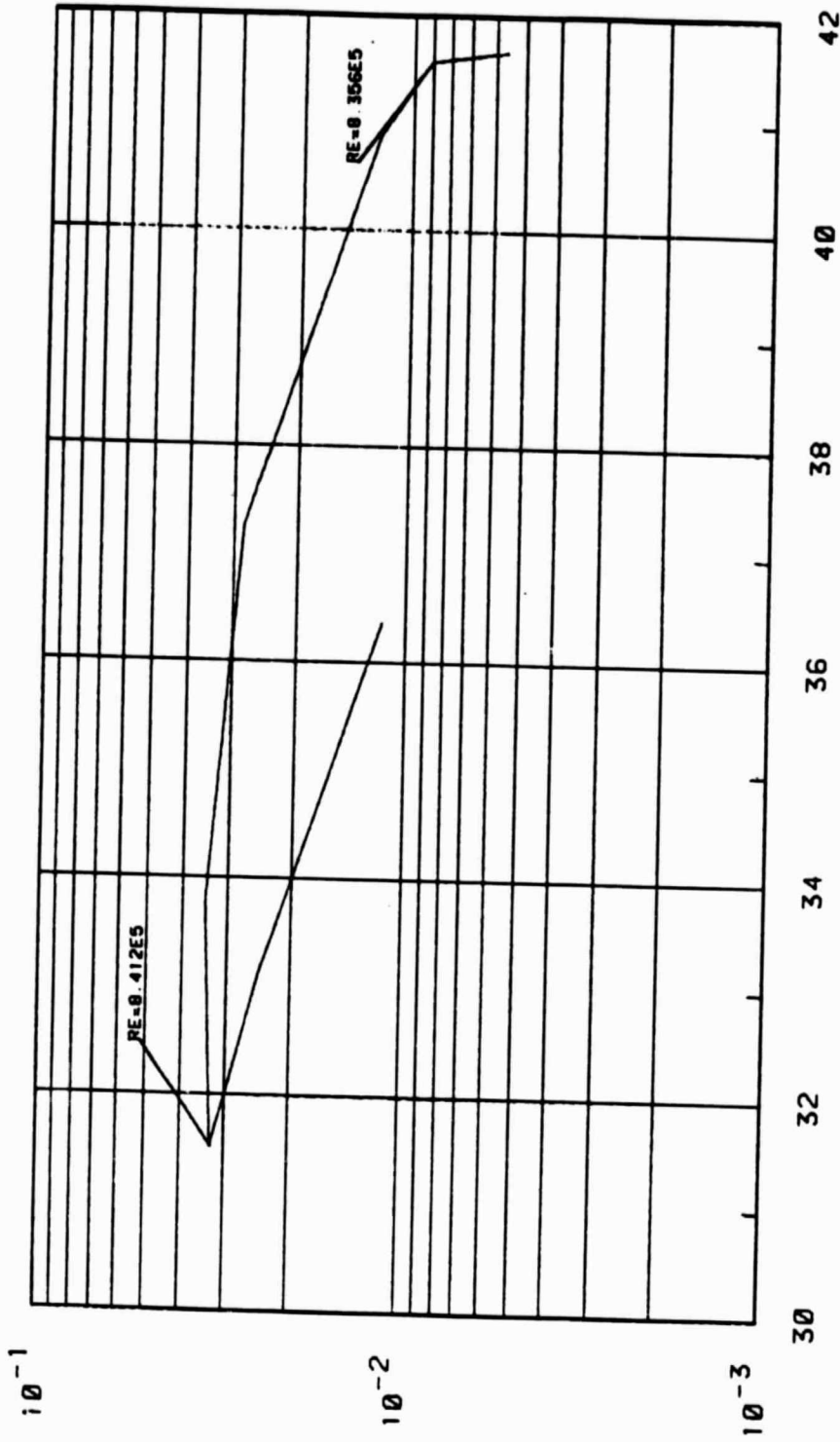
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ANGLE-OF-ATTACK - DEG

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0082A/H-REF 085-1000 SEC

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LIFT COEFF - H-REF

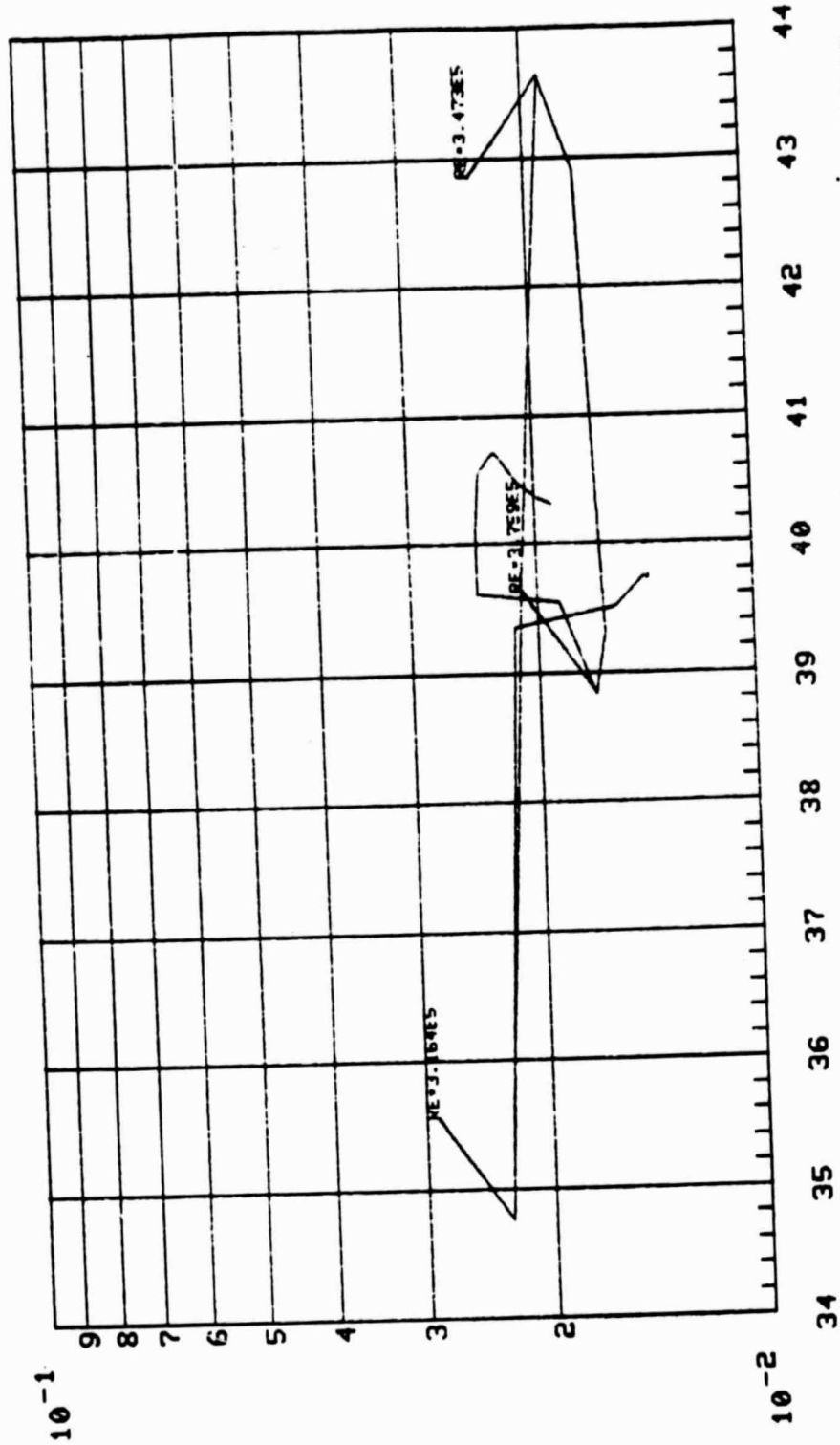
D-133

04/29/83  
BASE TIME = 16040423.800 SEC.

ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T982A/H-REF 820- 920 SEC



FLIGHT COVER - H/H-REF

D-134

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ANGLE-OF-ATTACK - DEG

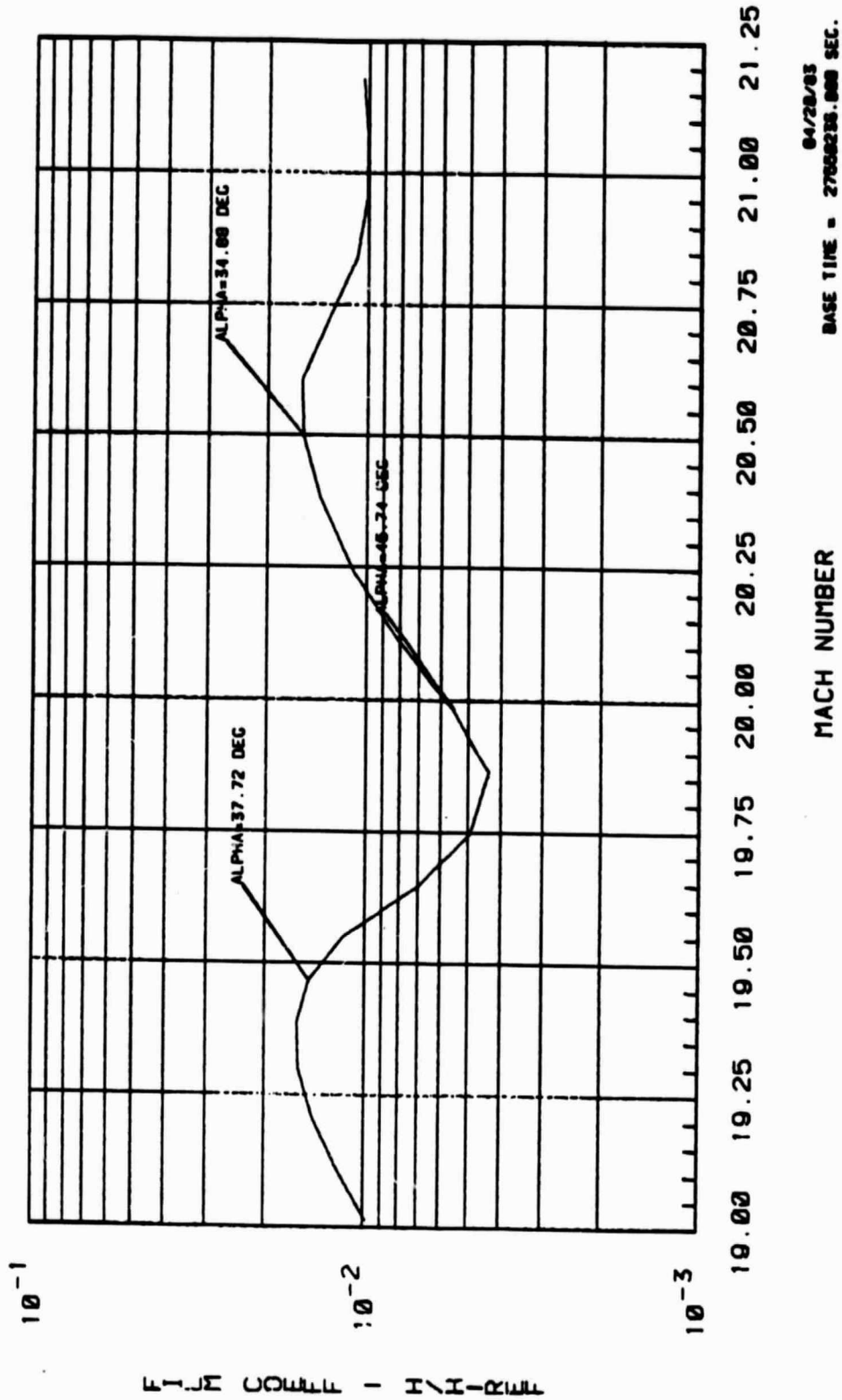
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

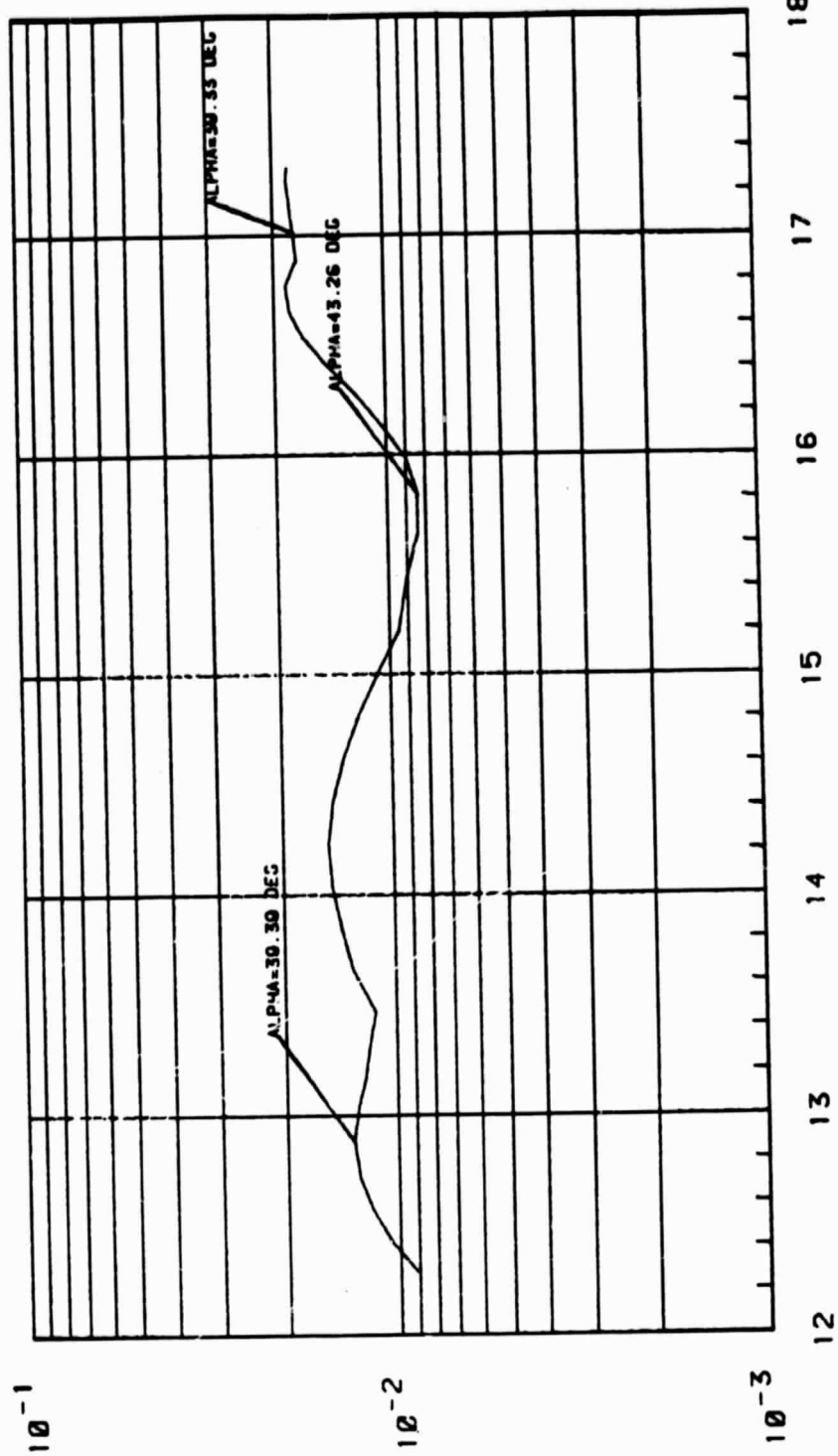
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# STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V8770082A/H-REF 068-1820 SEC



FLIGHT POWER - H/I-REF

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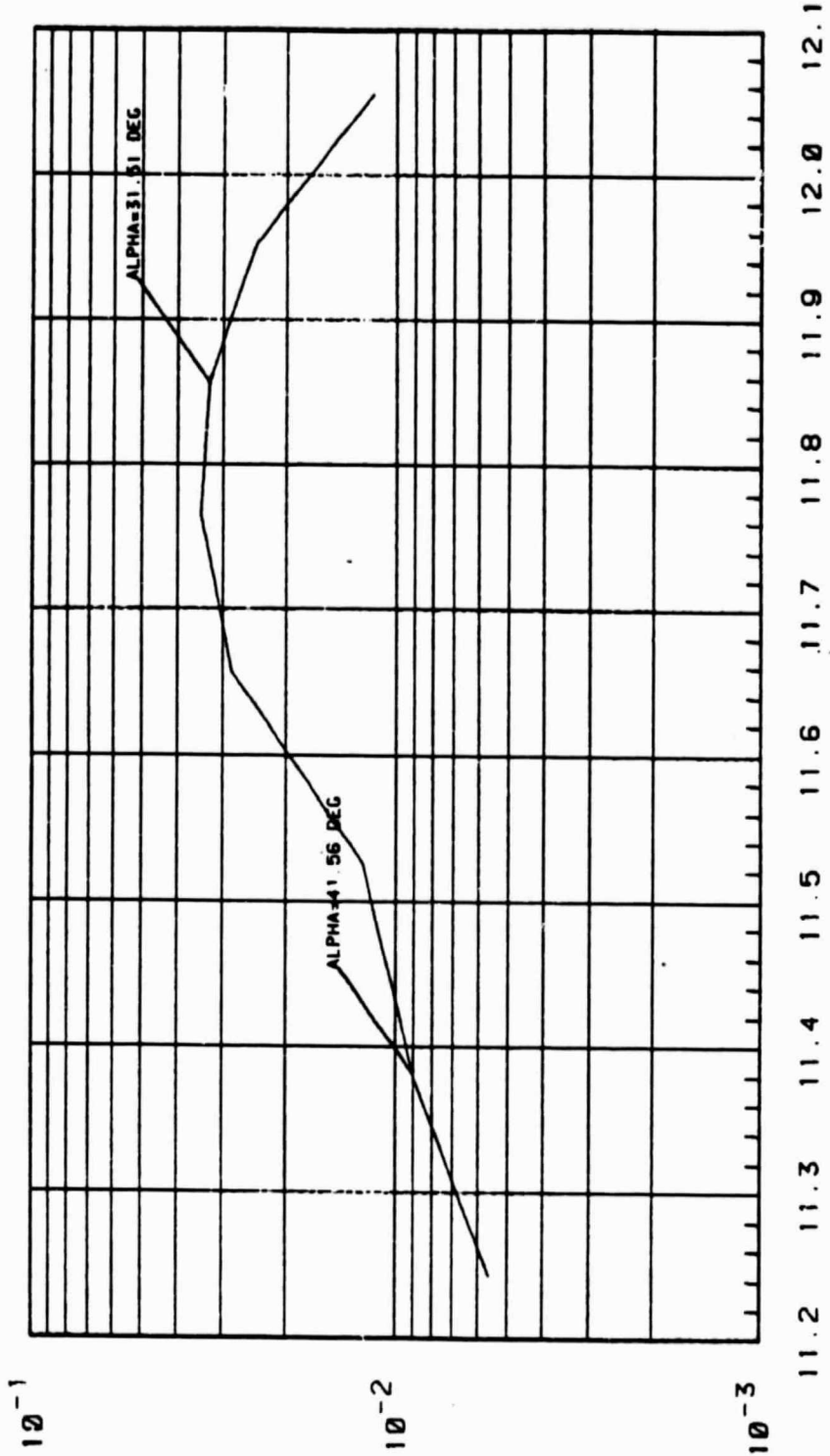
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MACH NUMBER

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T002A/H-REF 065-1000 SEC

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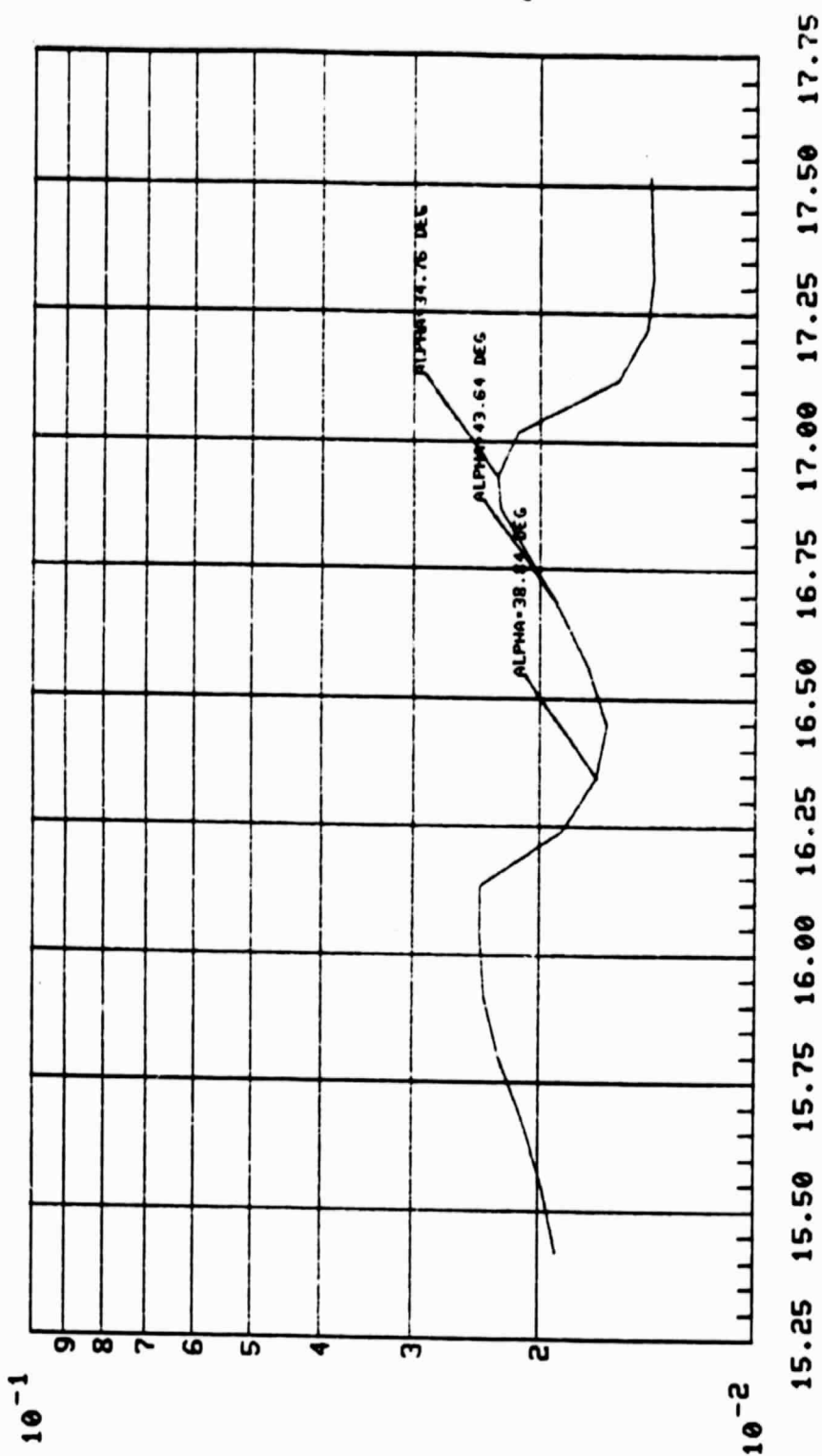


LIFT COEFFICIENT - H-REF

MACH NUMBER  
BASE TIME = 1694023.000 SEC.  
84/28/83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 820- 920 SEC



FILM POWER -- H/H-REF

D-138

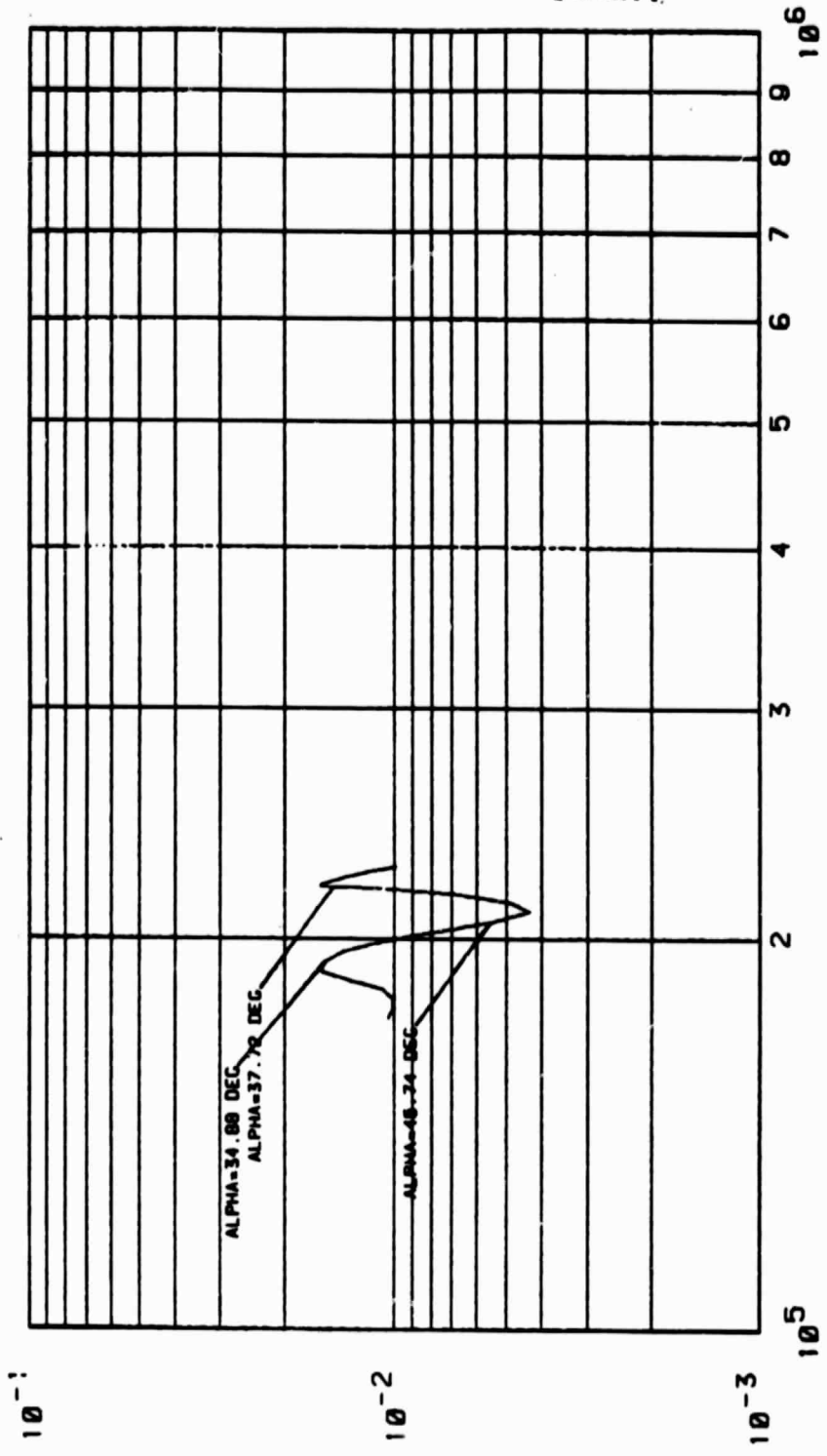
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MACH NUMBER

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB719082A/N-REF 700- 000 SEC



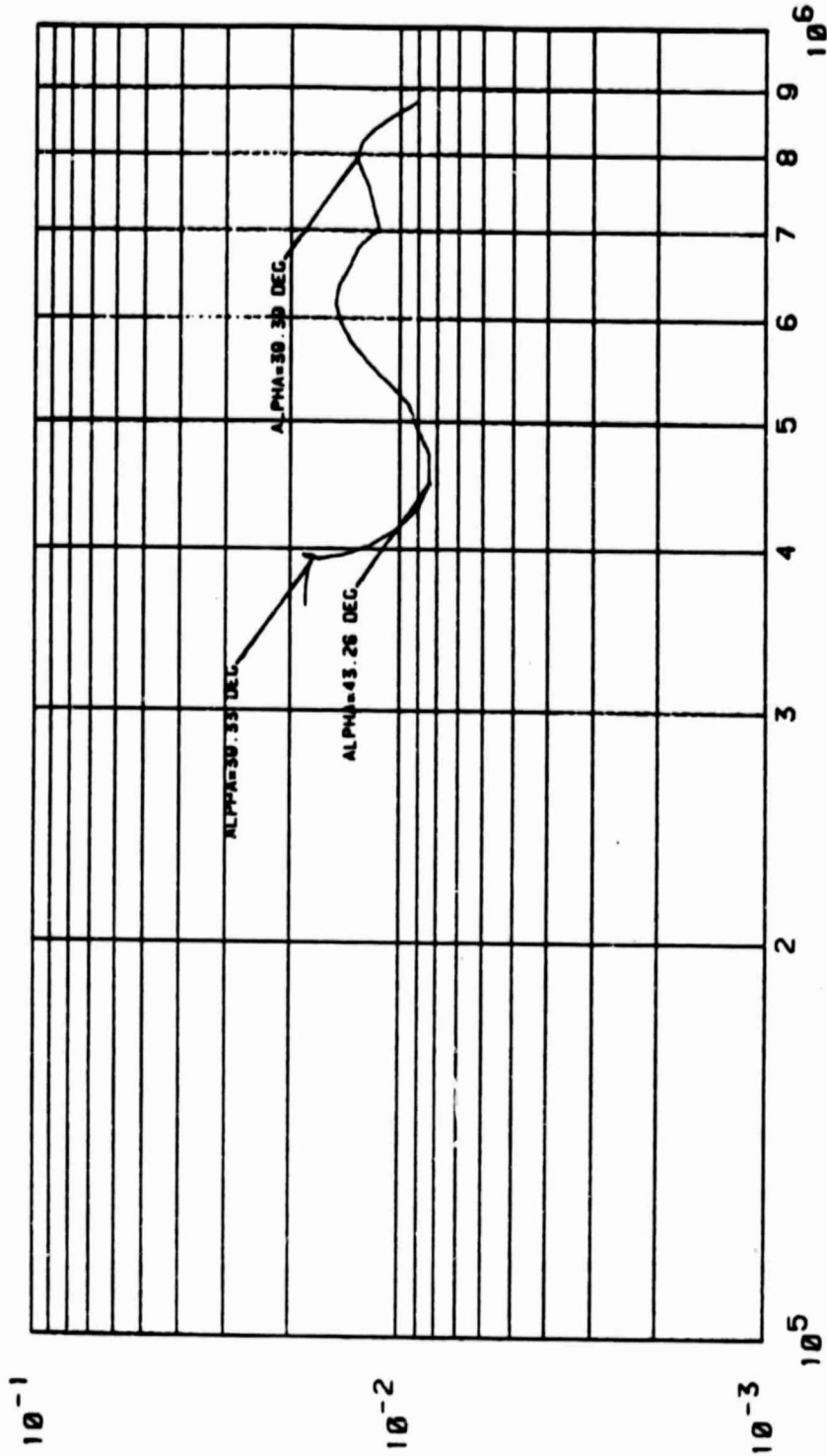
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BASE TIME = 27300230.000 SEC.

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770002A/H-REF 068-1028 SEC



FLIGHT COEFF - H-REF

D-140

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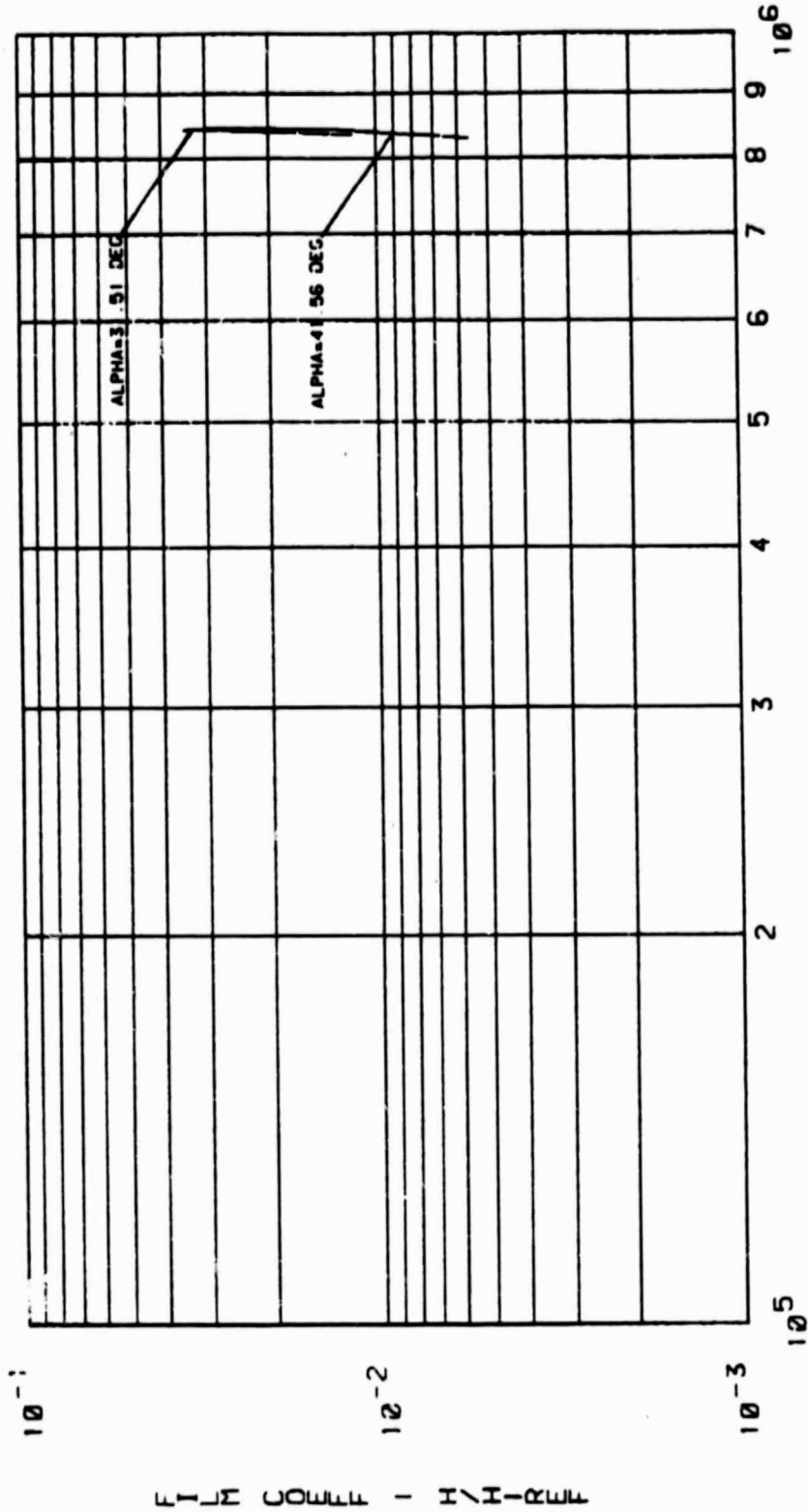
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REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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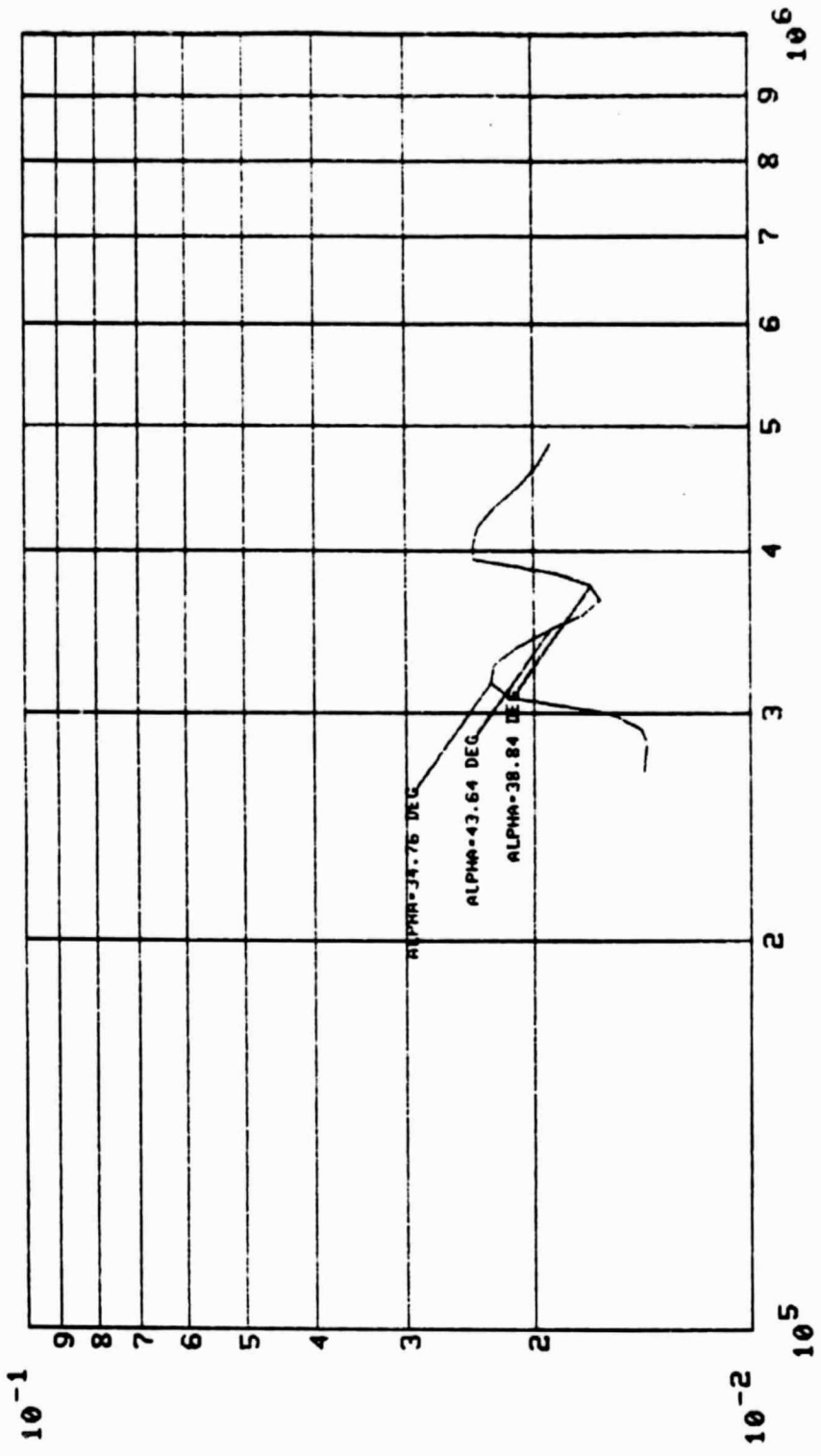
D-141

04/20/03  
BASE TIME = 10040423.000 SEC.

REYNOLDS NUMBER (NS)

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A/H-REF 820- 920 SEC



FLIGHT COEFF - H/H-REF

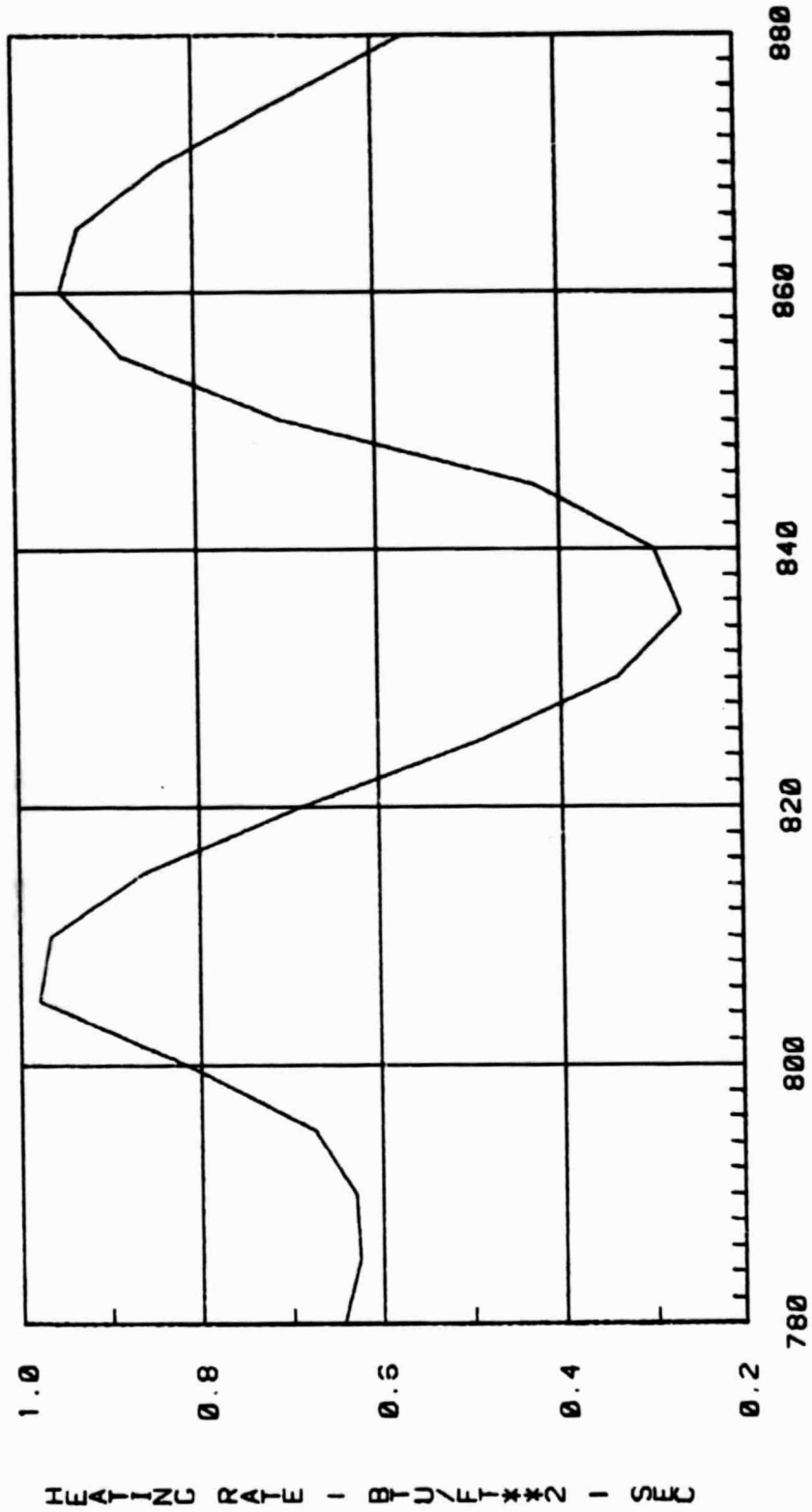
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BASE TIME - 27698591.000 SEC.



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0002A



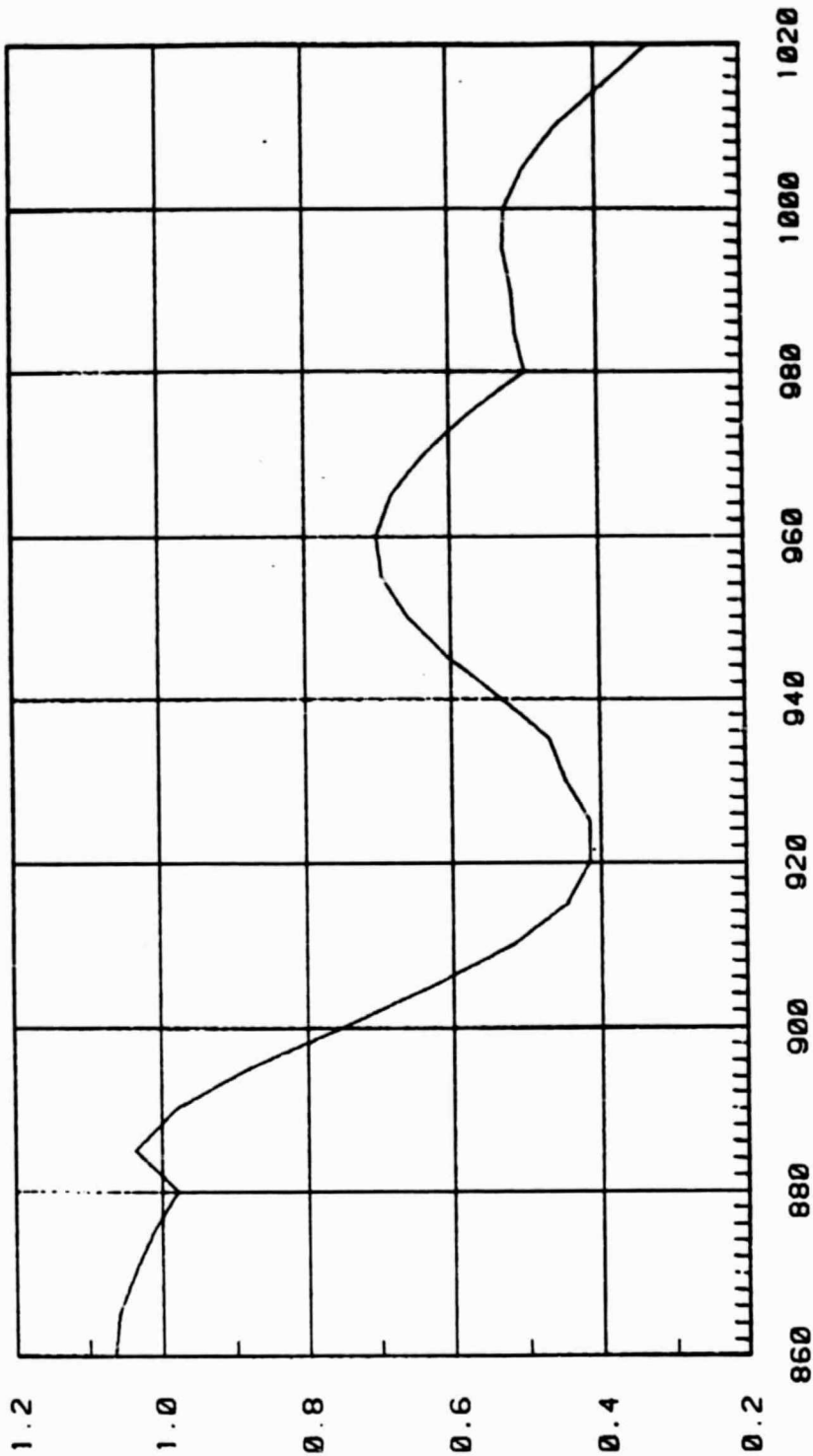
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04/29/83

TIME - SECONDS

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB710082A



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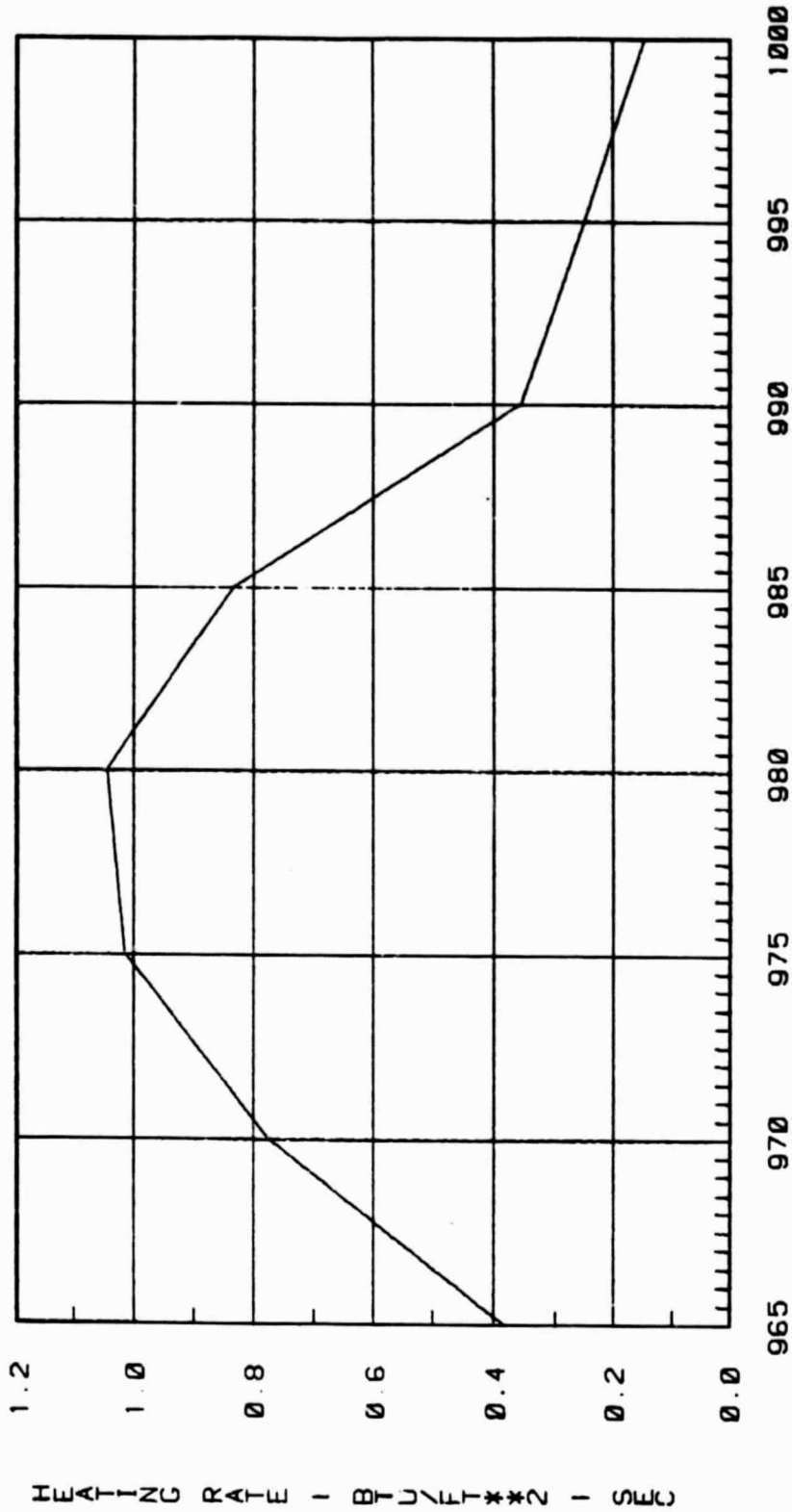
HEATING RATE - BTU/FT\*\*2 - SEC

04/28/03

TIME - SECONDS

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0082A



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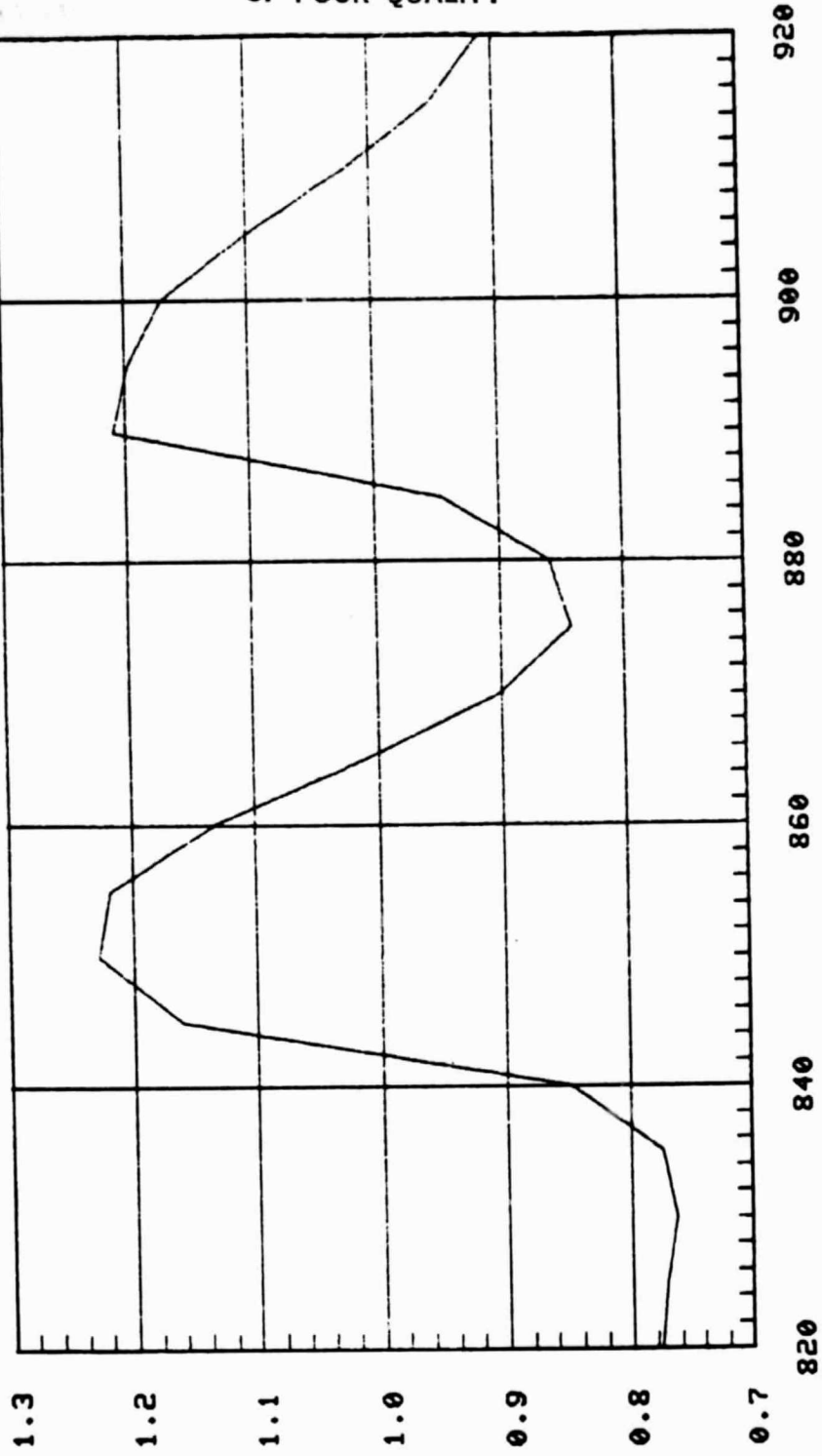
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04/28/83

HEATING RATE - BTU/FT\*\*2 - SEC

STS-5 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

U07T9982A



HEATING RATE -- BUDGETING -- SWC

D-146

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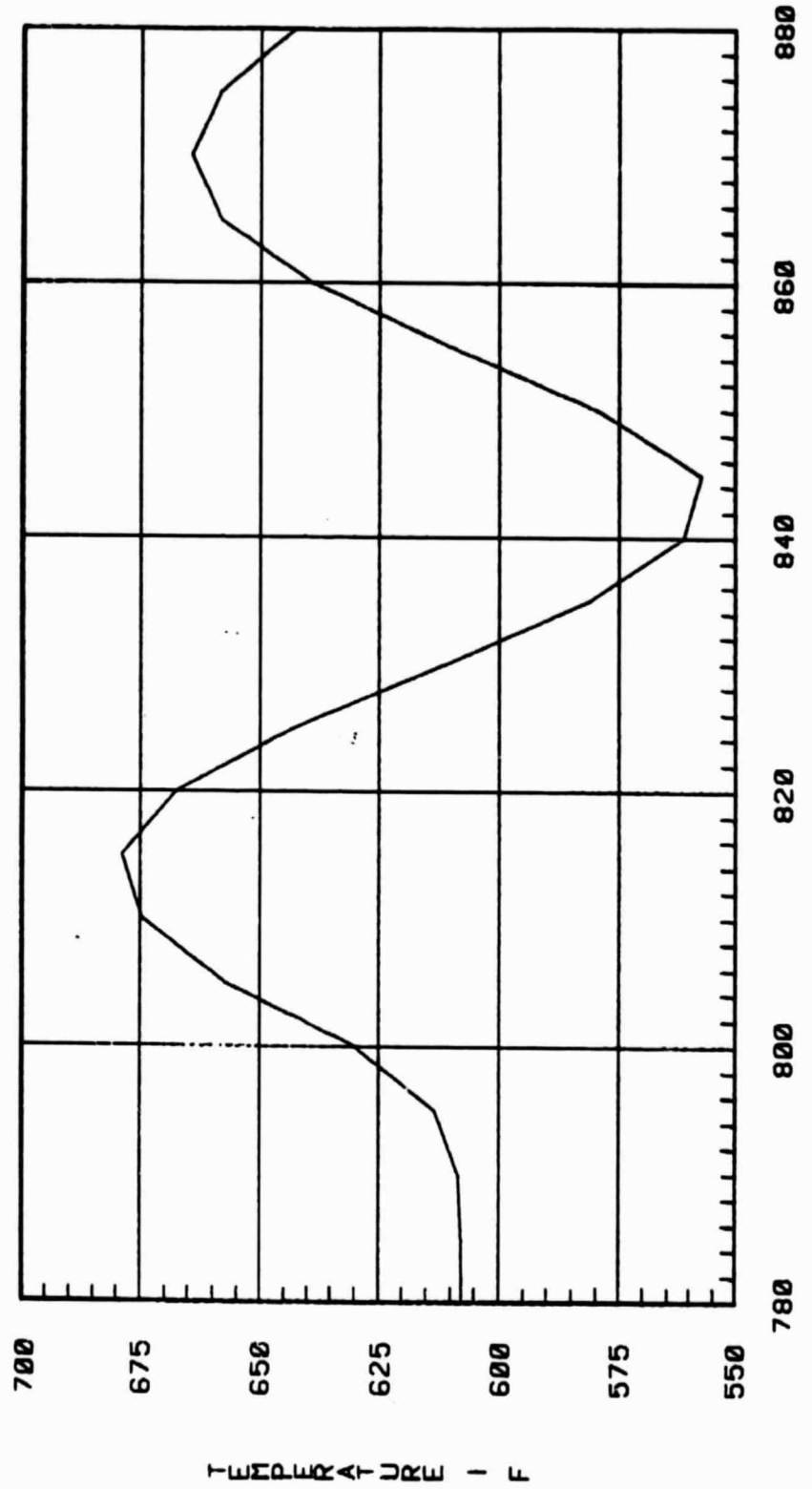
04 20 83

TIME - SECONDS

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0002A

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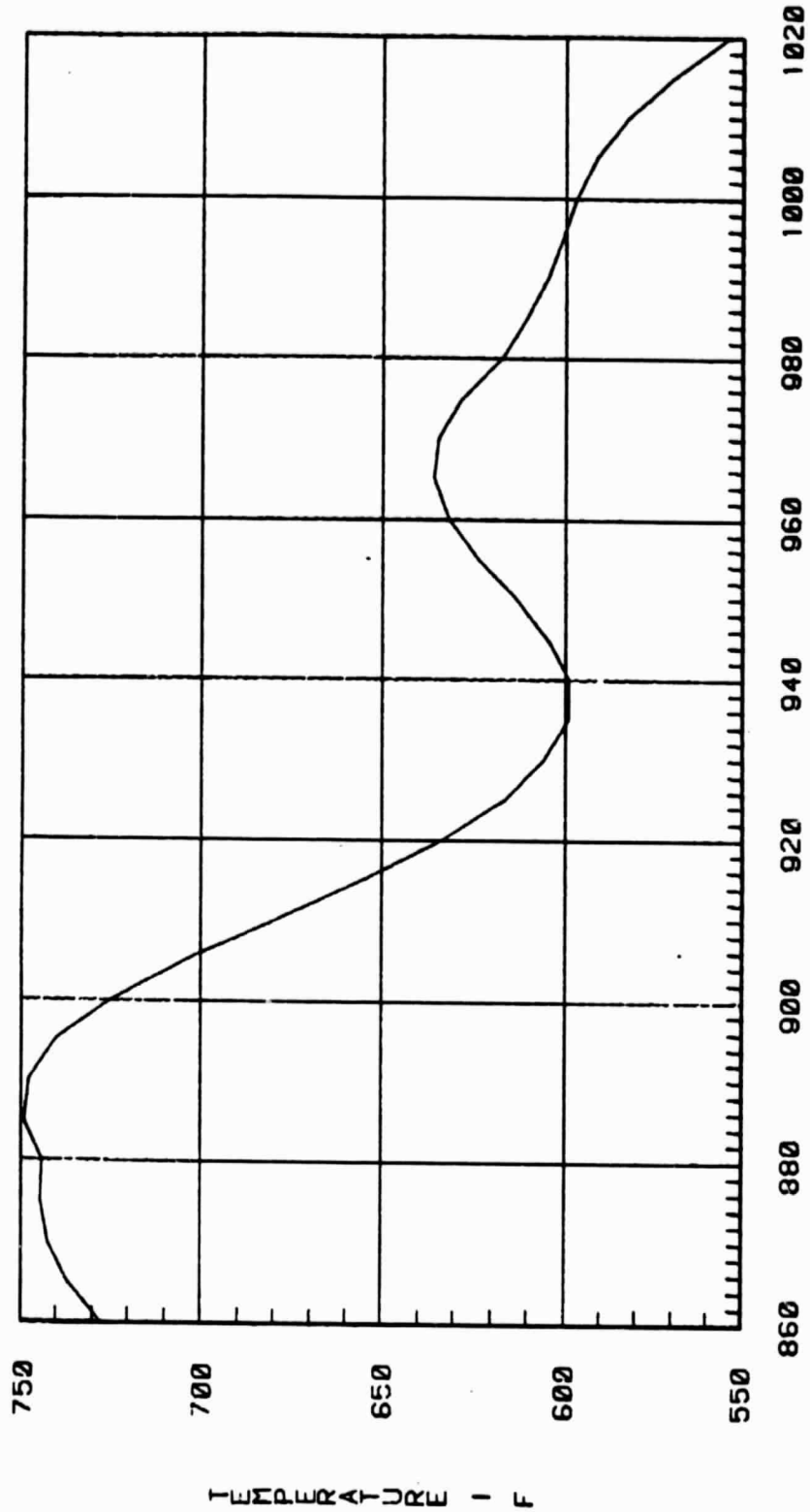


04/29/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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04/28/85

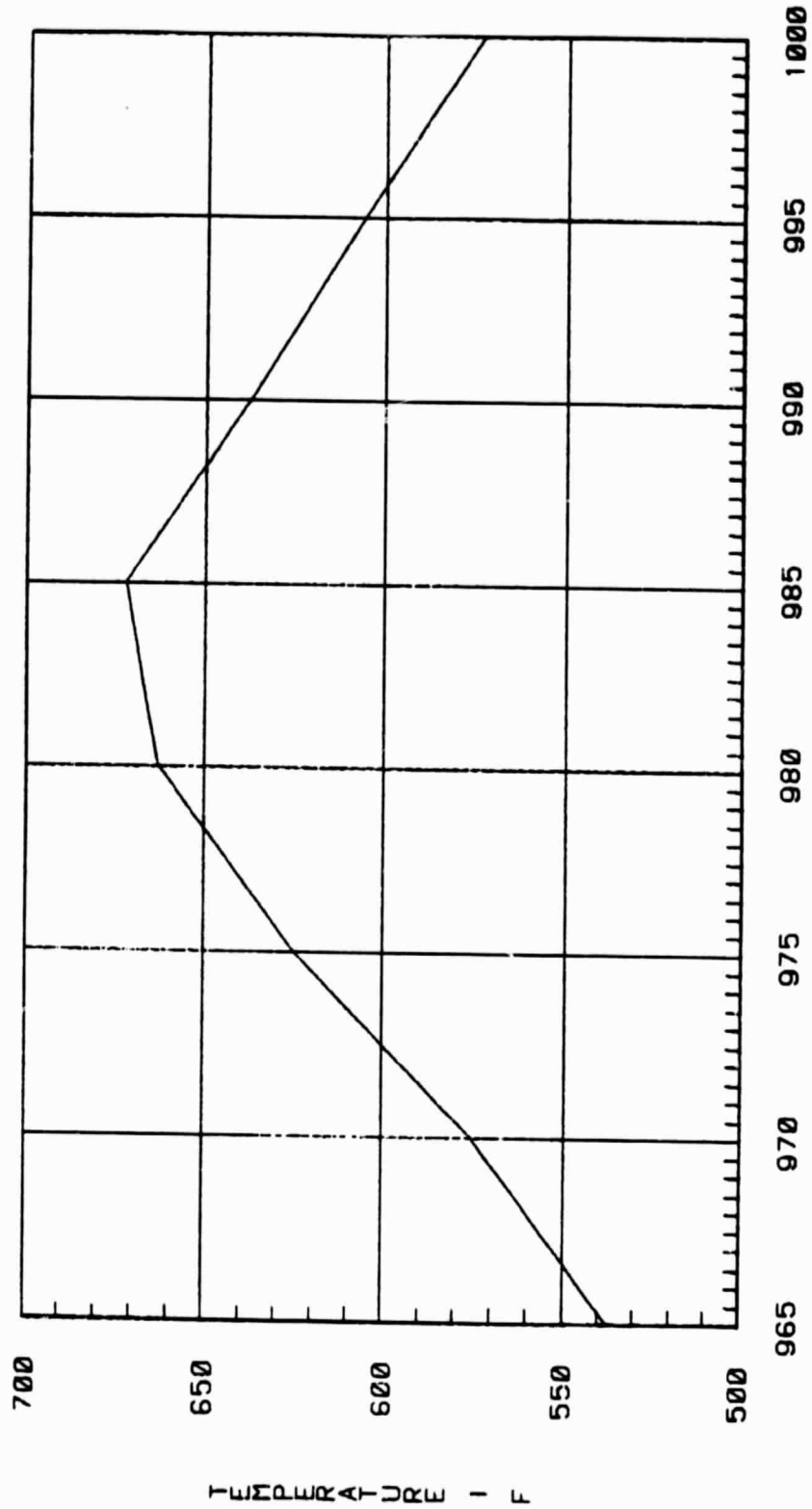
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TEMPERATURE - F

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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TIME - SECONDS

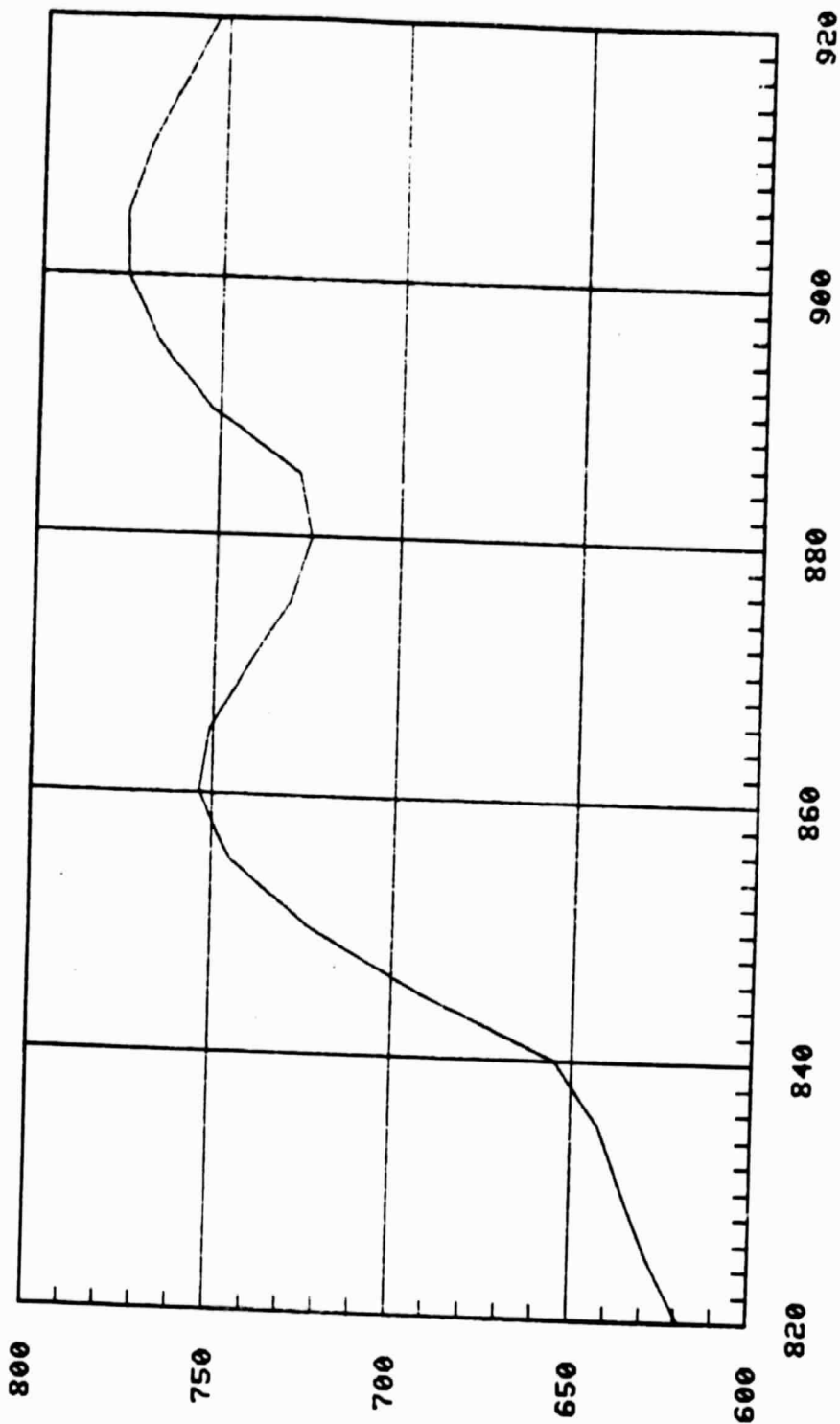
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TEMPERATURE - F

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9982A

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TIME - SECONDS

04 20 53

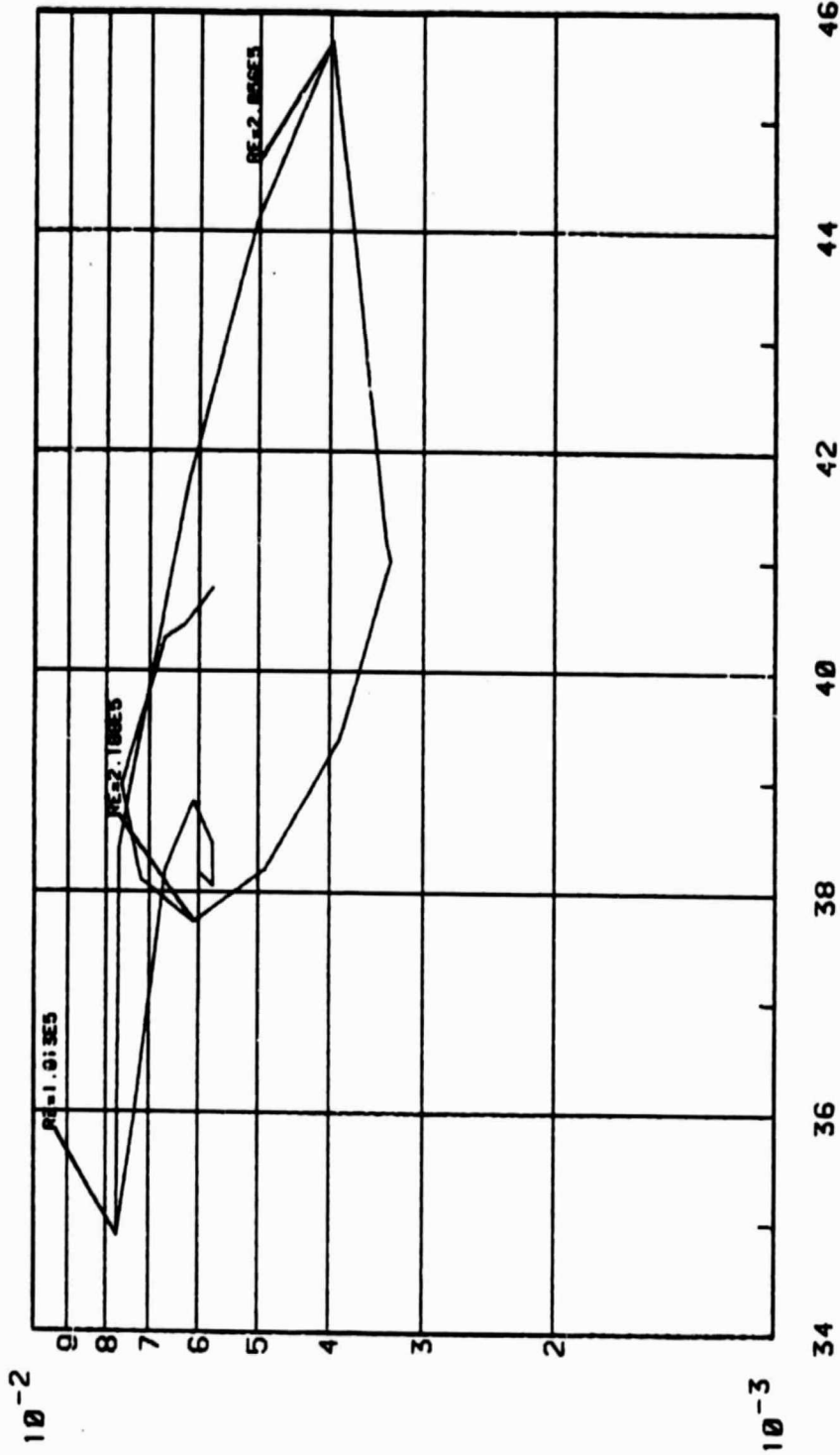
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D-150



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB770004A/H-REF 700- 000 SEC



FLIGHT COEFF - H/H-REF

D-151

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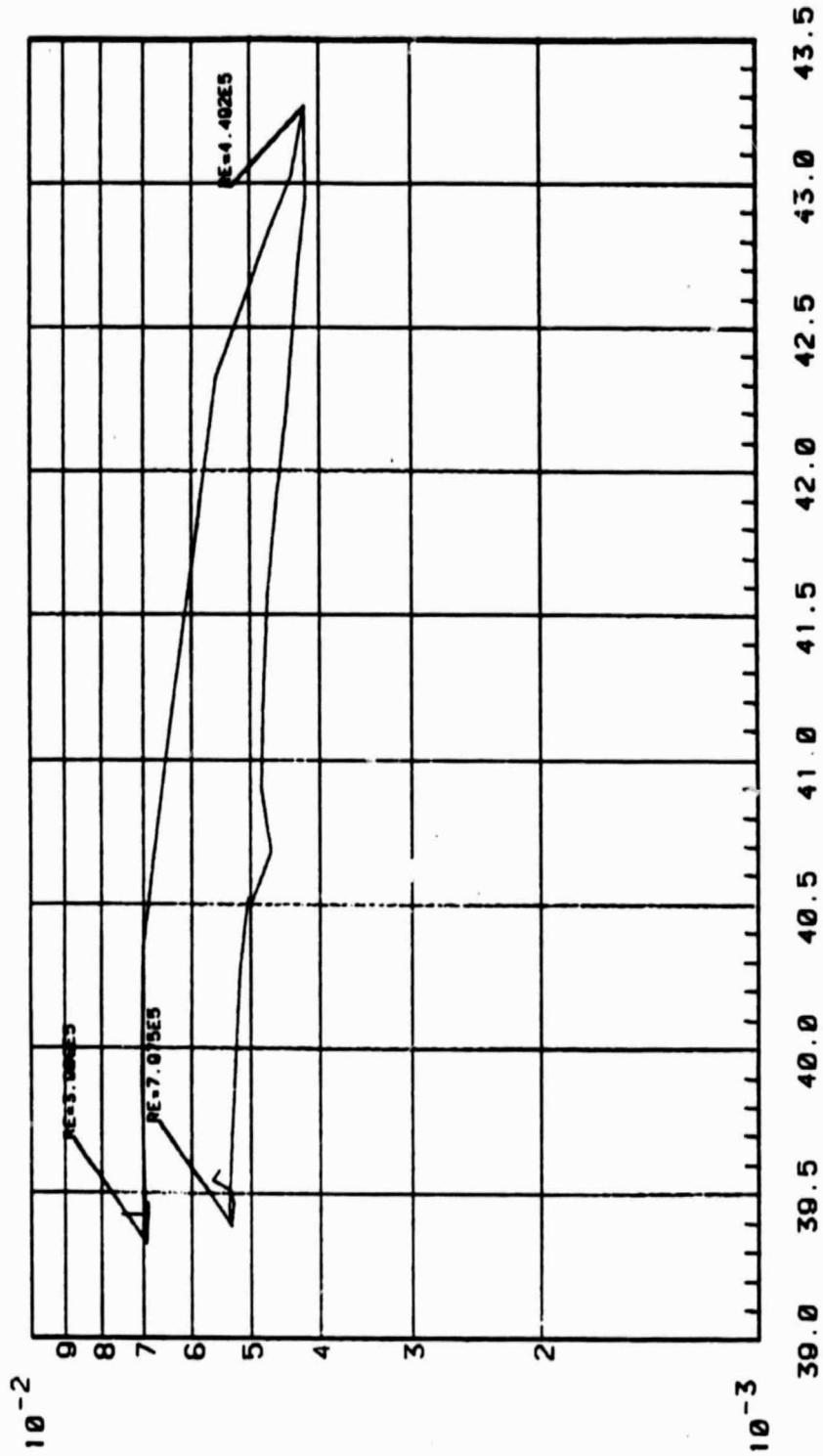
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ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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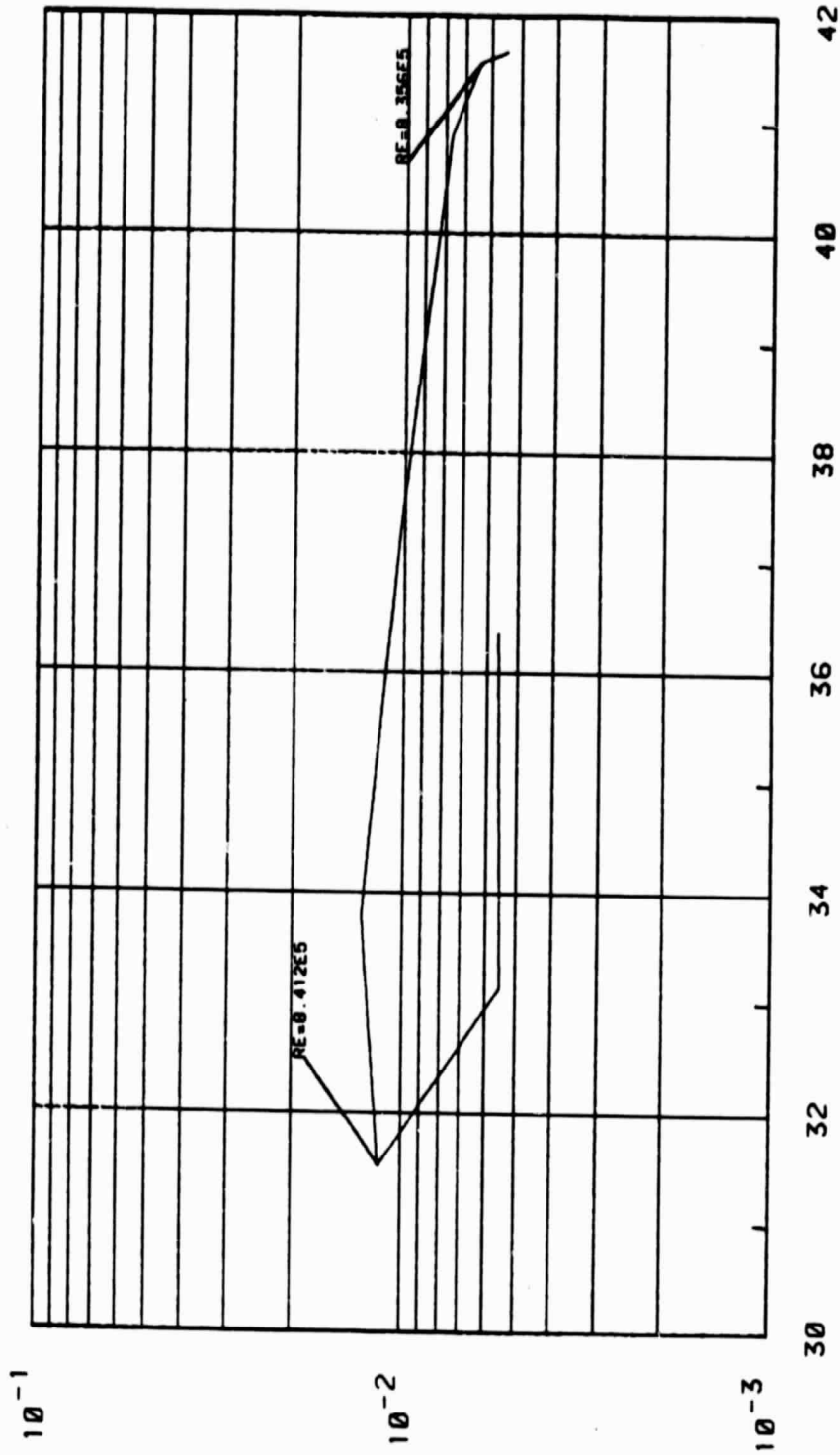
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ANGLE-OF-ATTACK - DEG

FLIGHT PARAMETER - H-REF

# STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V8770084A/N-REF 065-1000 SEC

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FILE CODE - N-REF

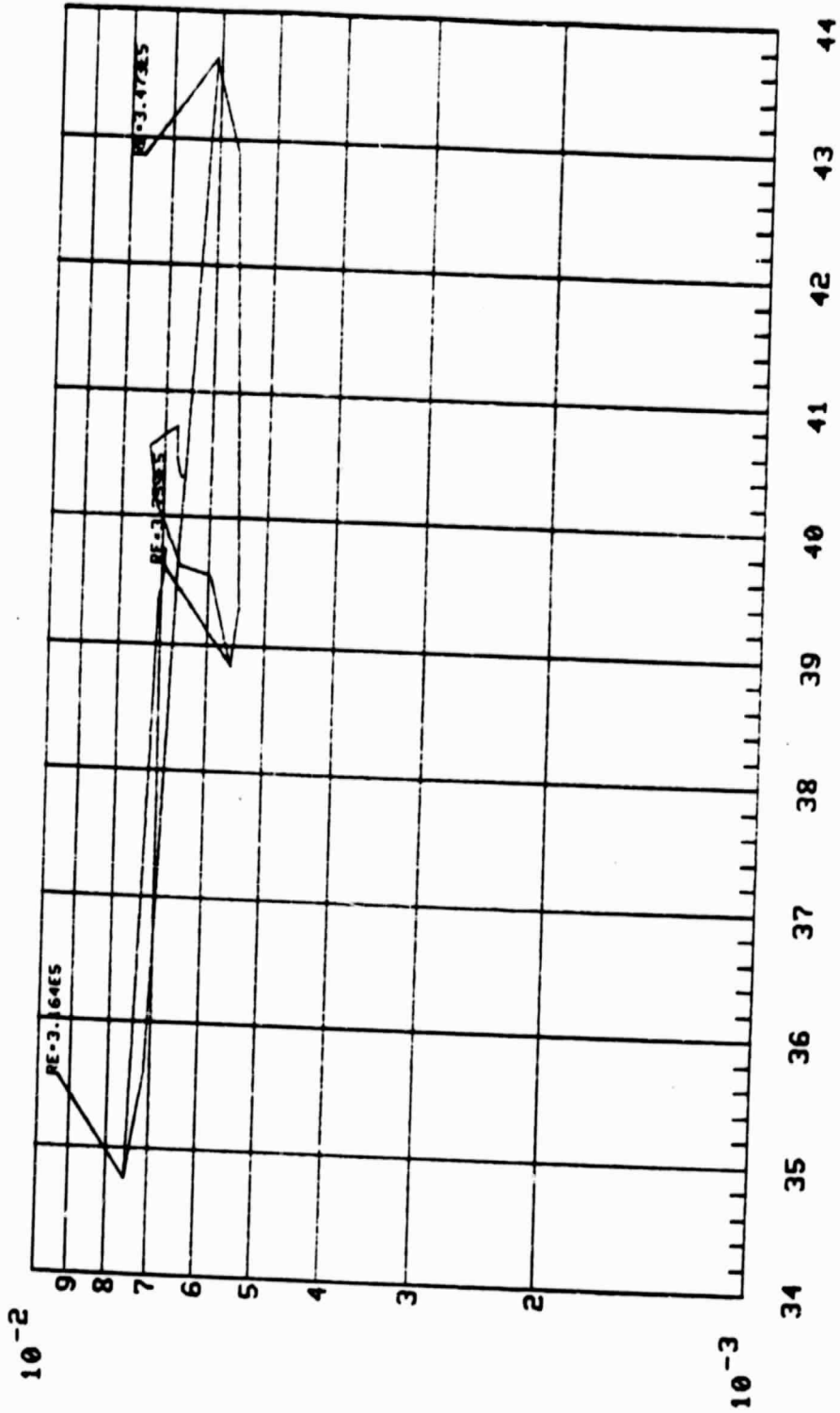
D-153

04/20/83  
BASE TIME = 10040423.000 SEC.  
ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T984A/H-REF 820- 920 SEC

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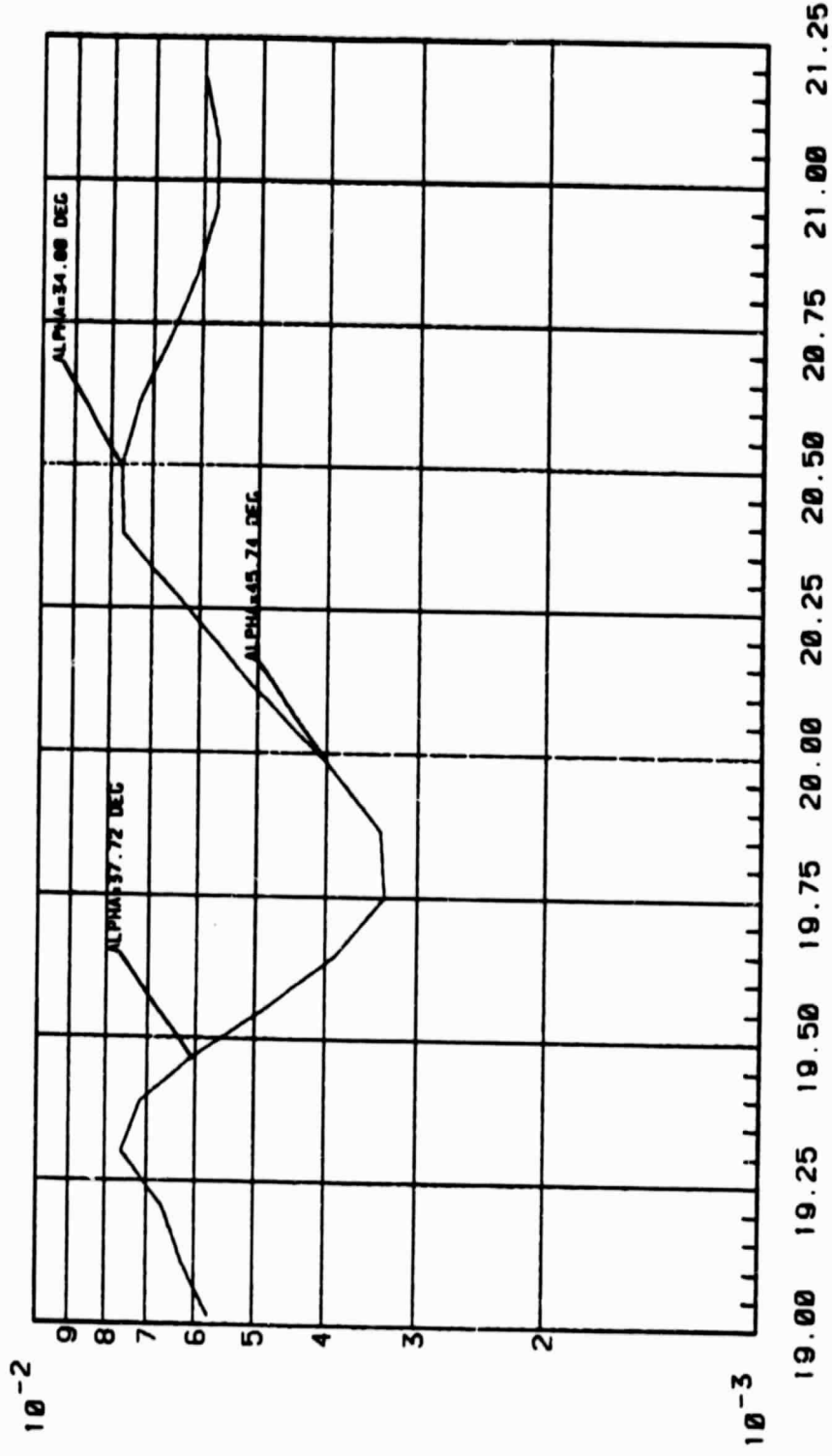


FILM COVER -- H/H-REF

ANGLE-OF-ATTACK - DEG  
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04 20 53

STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8770004/N-REF 700- 000 SEC



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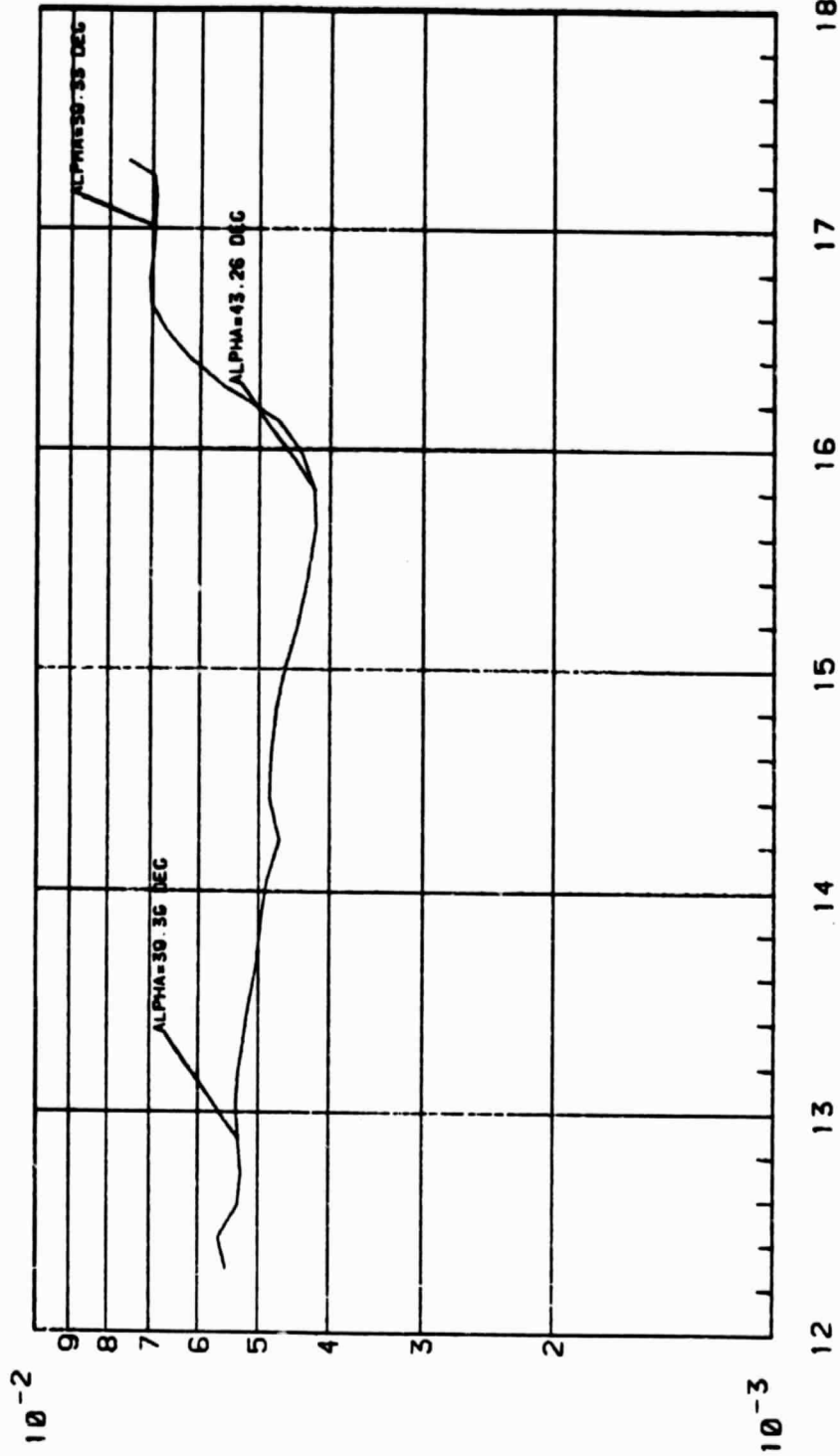
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STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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FLIGHT PARAMETER - I/H-REF

D-156

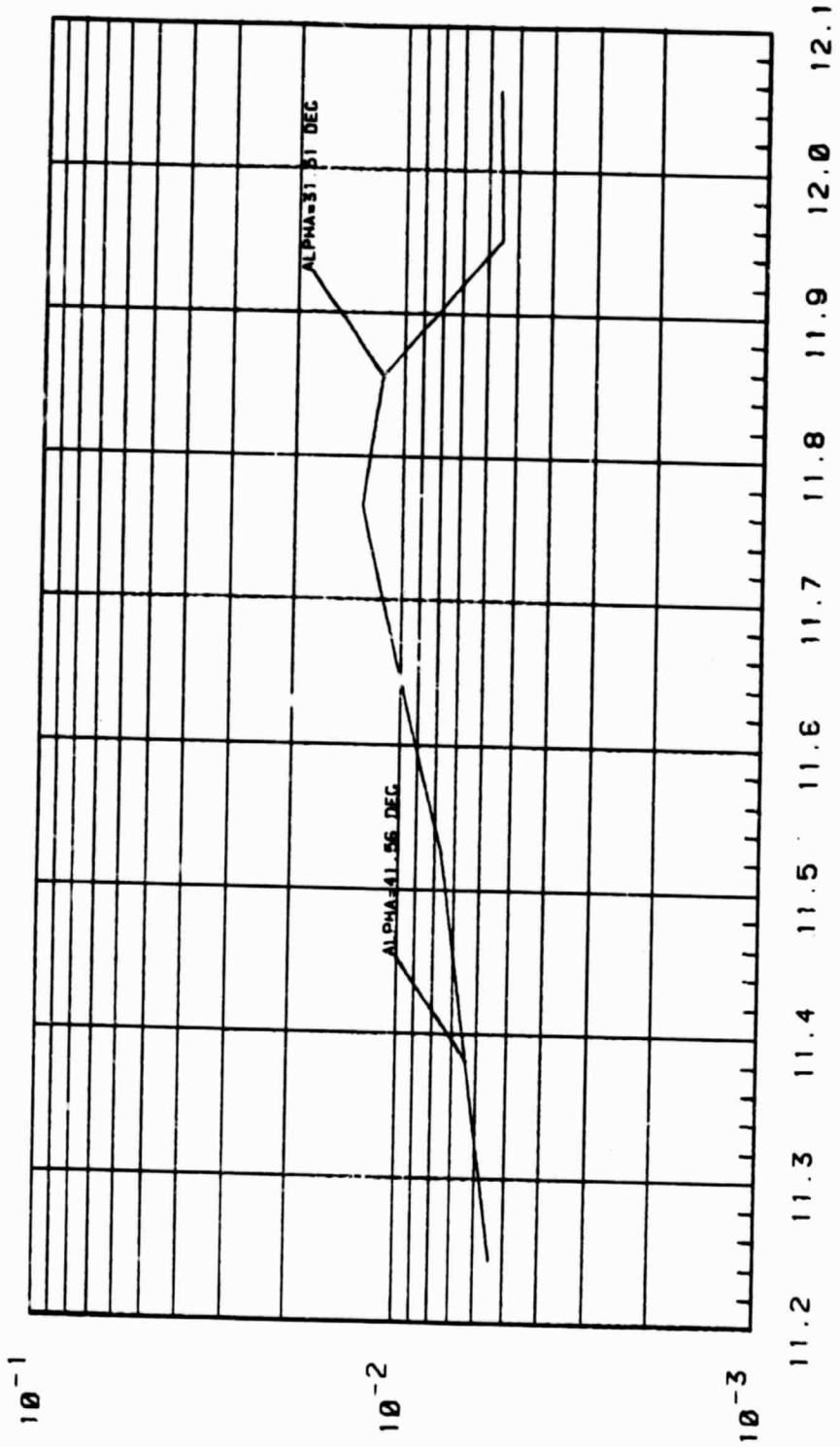
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04/26/83

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VB770004A/H-REF 965-1000 SEC

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FILE CODE - H/H-REF

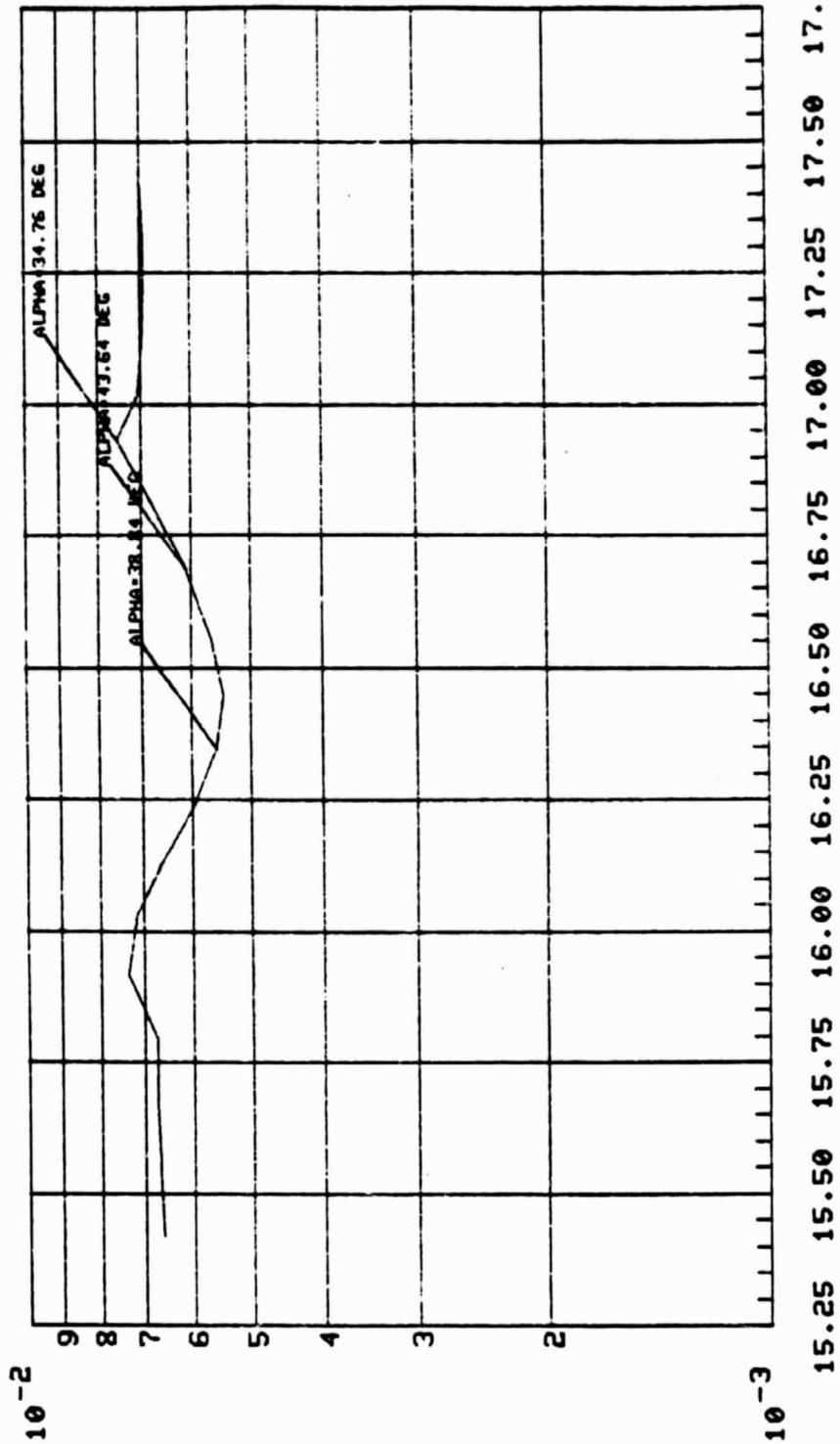
D-157

MACH NUMBER  
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04/20/03

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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ORIGINAL PAGE 19  
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LIFT COEFF - H/H-REF

MACH NUMBER

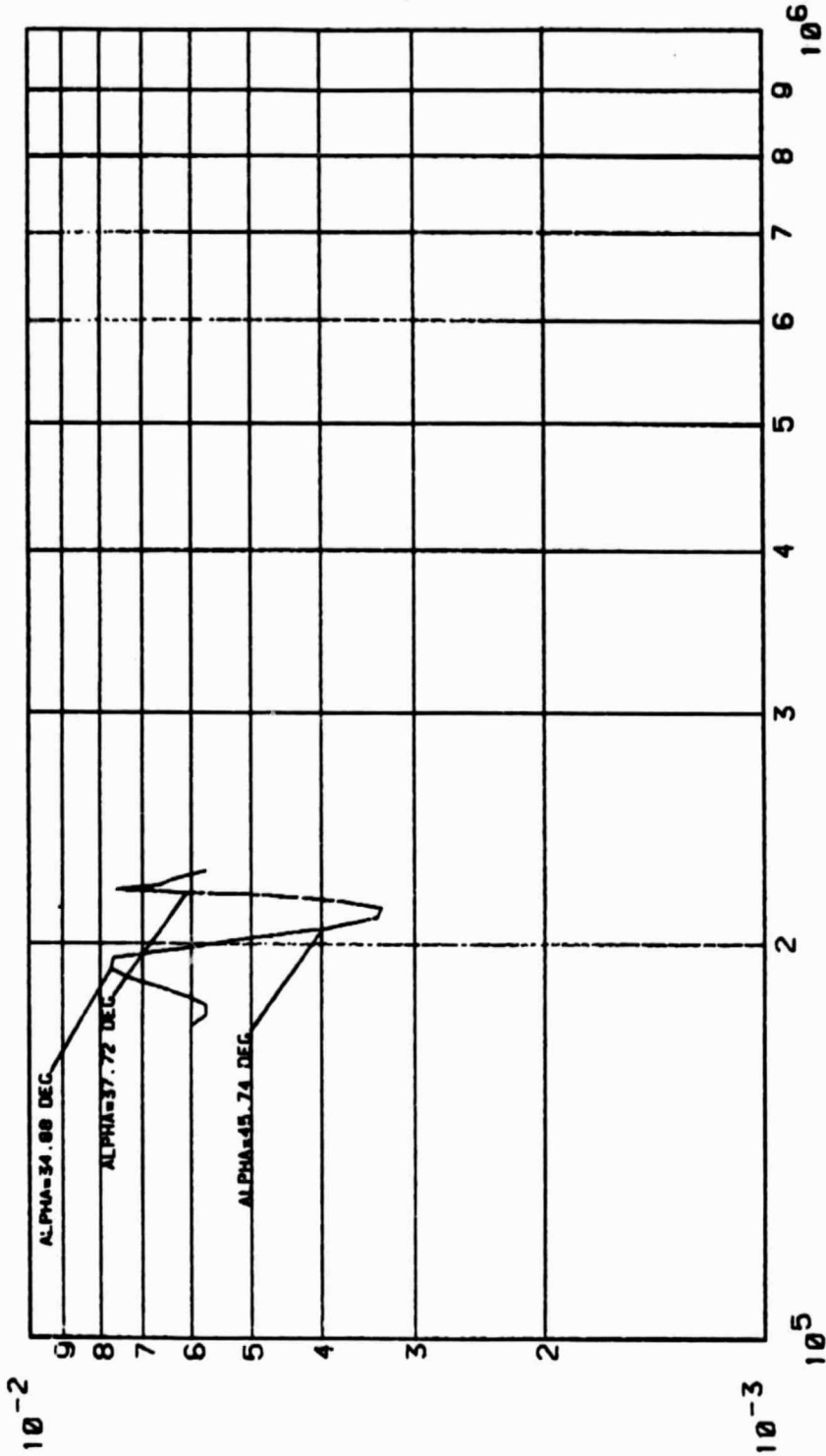
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04.20 83



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0004A/N-REF 700- 000 SEC



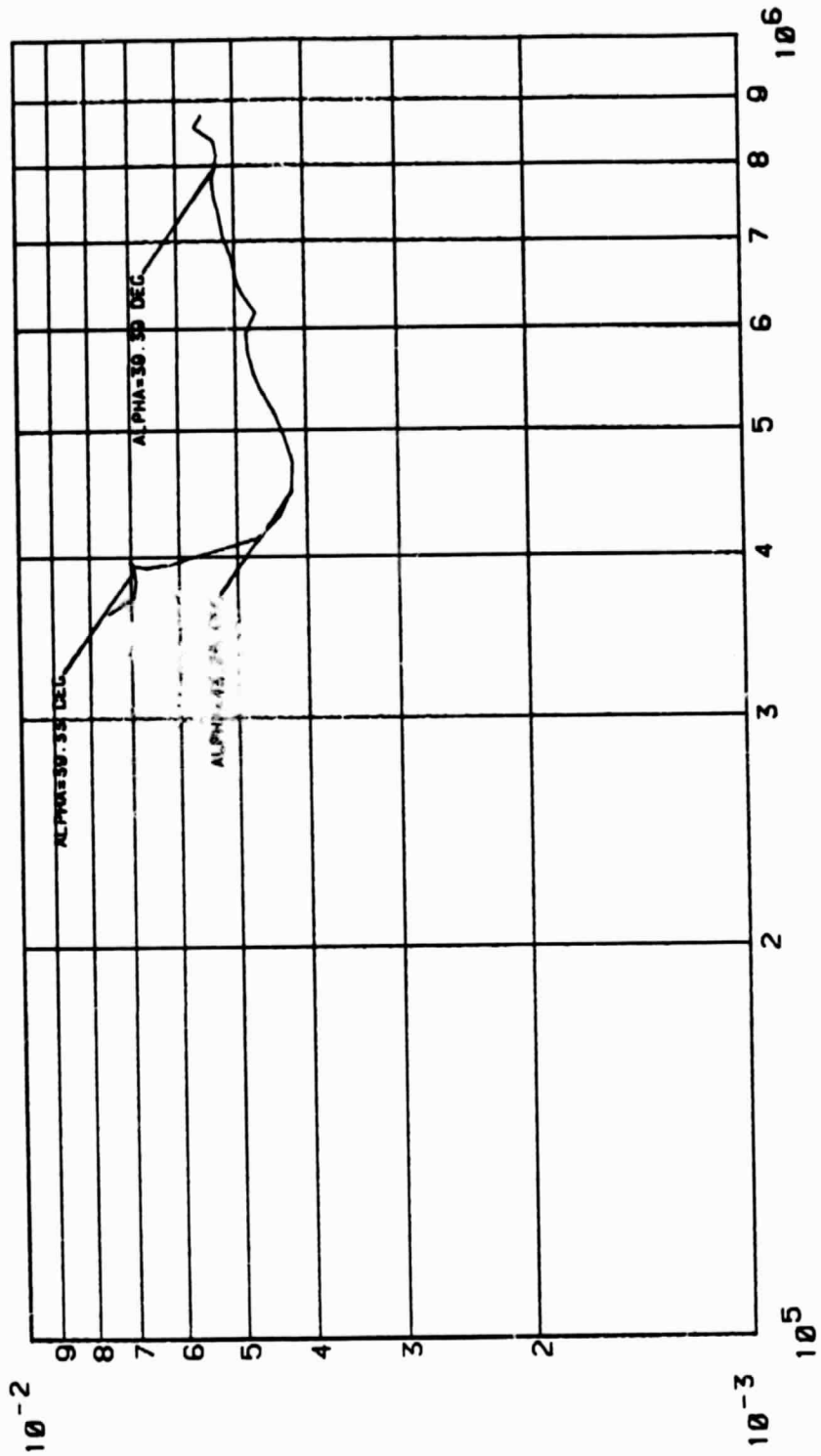
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REYNOLDS NUMBER (NS) 04/28/03  
BASE TIME = 2700235.000 SEC.

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770004A/H-REF 000-1020 SEC



LIFT COEFF - H-REF

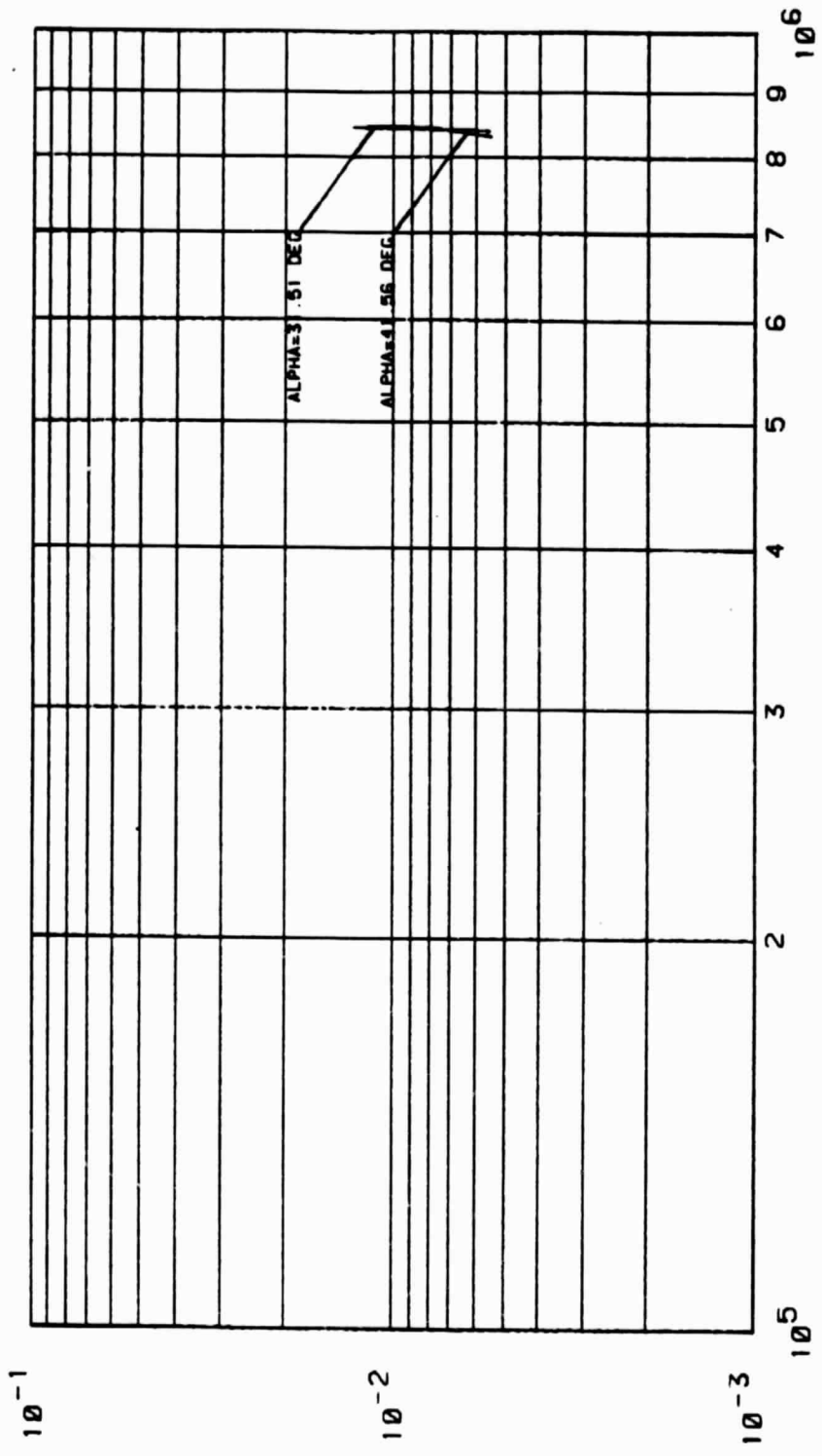
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STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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FILM COEFF - H/H-REF

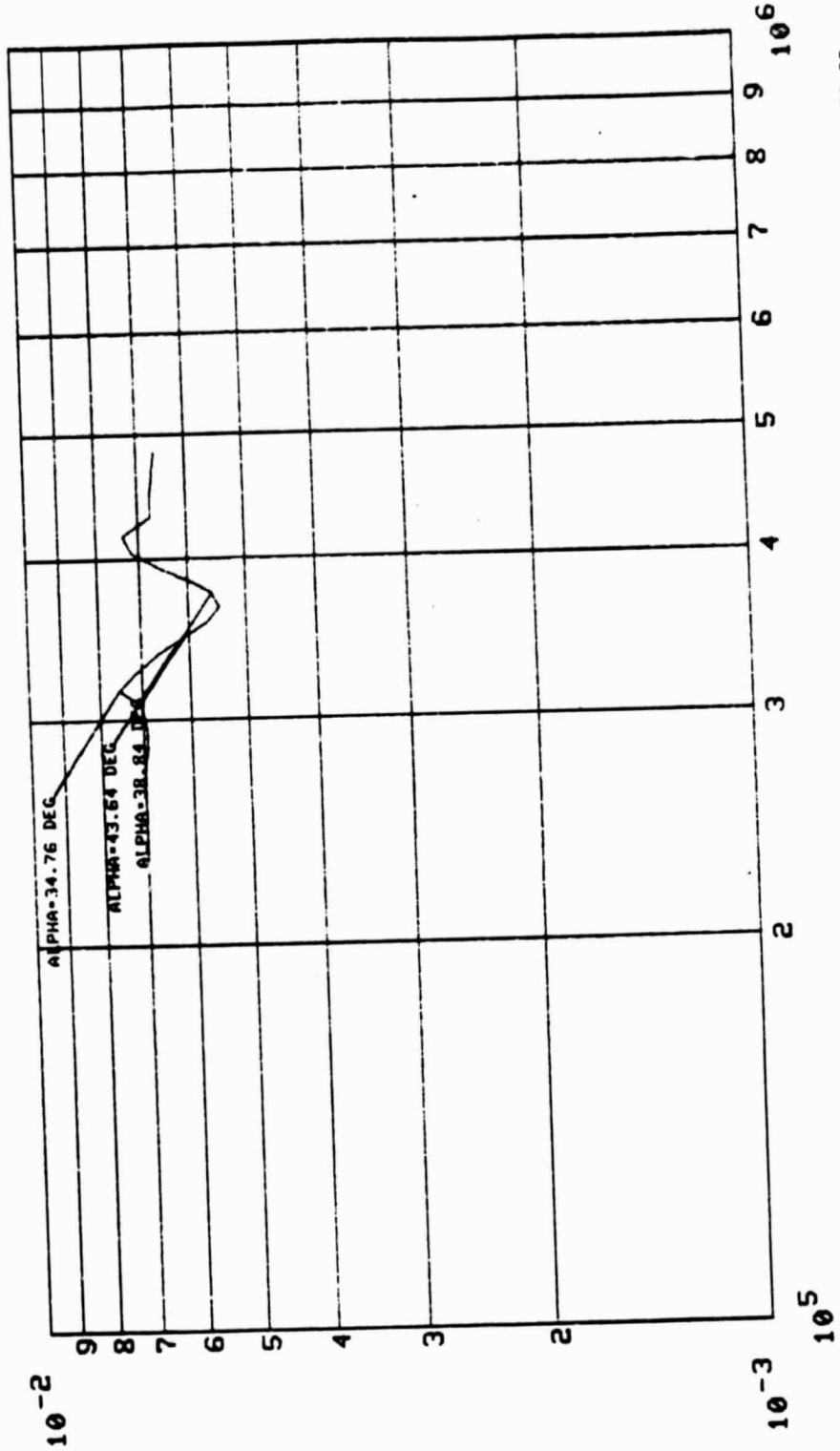
D-161

REYNOLDS NUMBER (NS) 04/20/03  
BASE TIME = 16840423.000 SEC.

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U077984A/H-REF 820- 920 SEC

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FILM COEFF -- H/H-REF

D-162

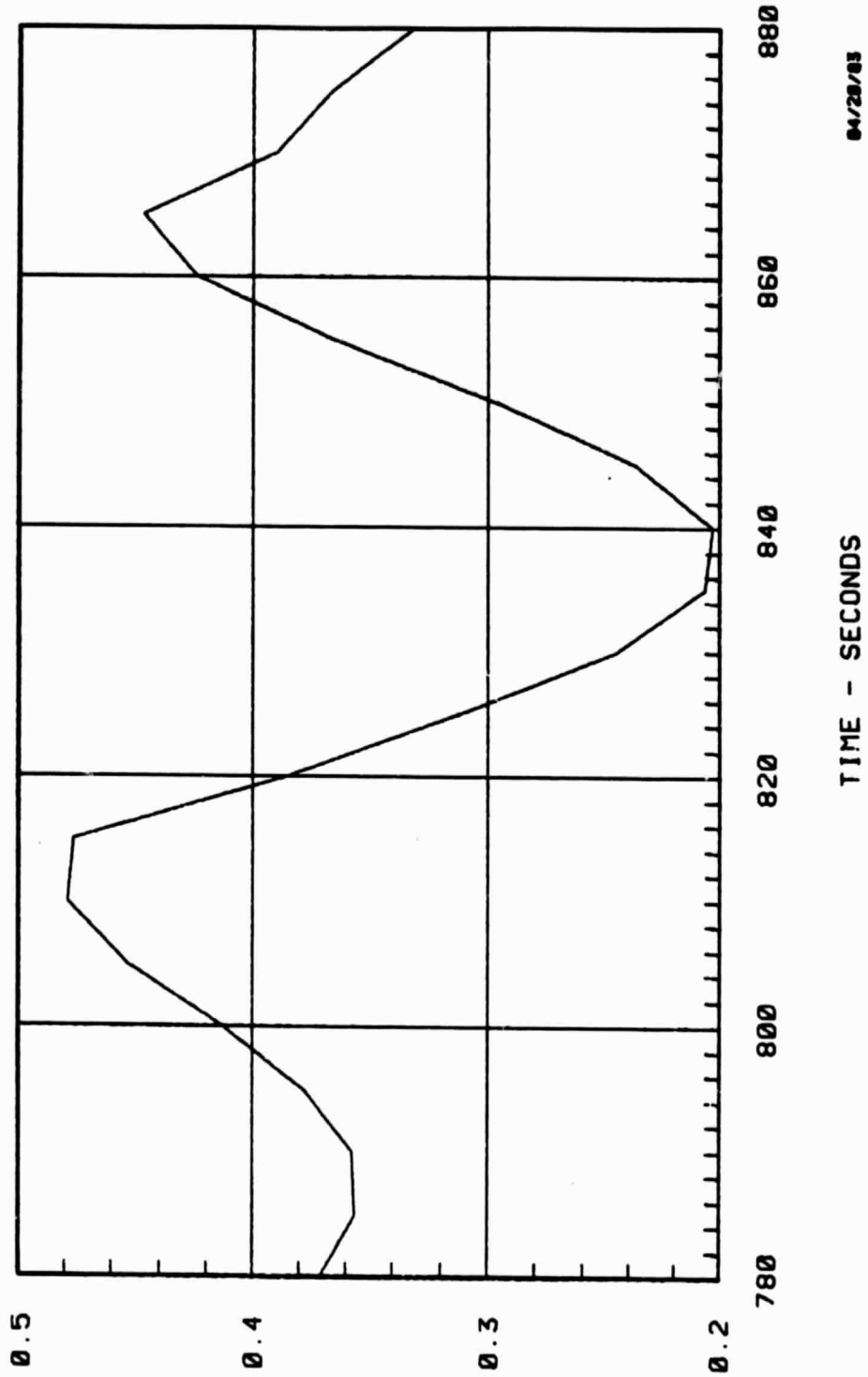
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04.20.83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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HEATING RATE - BTU/FT\*\*2 - SEC

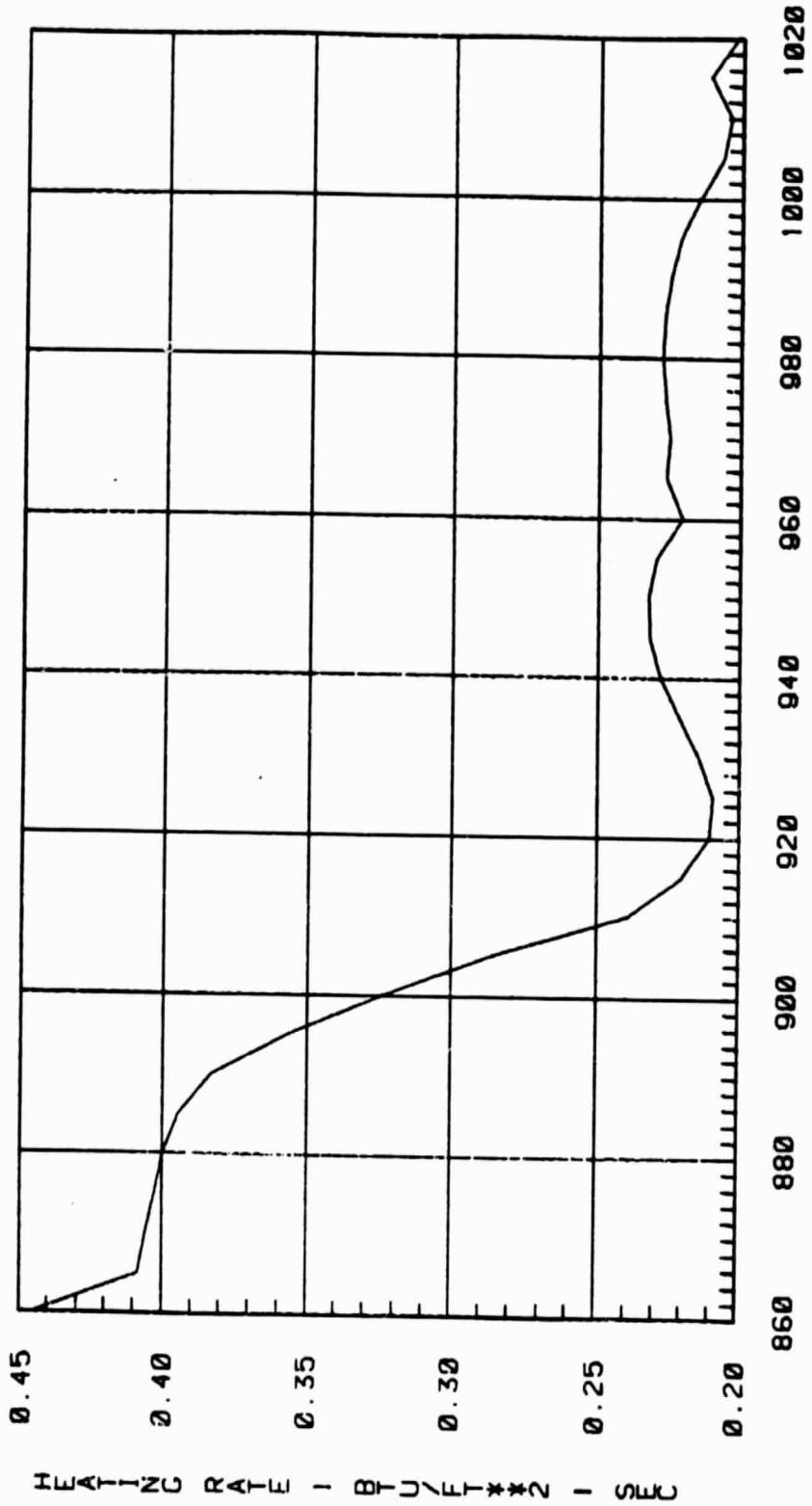
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04/28/83

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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V8710084A



TIME - SECONDS

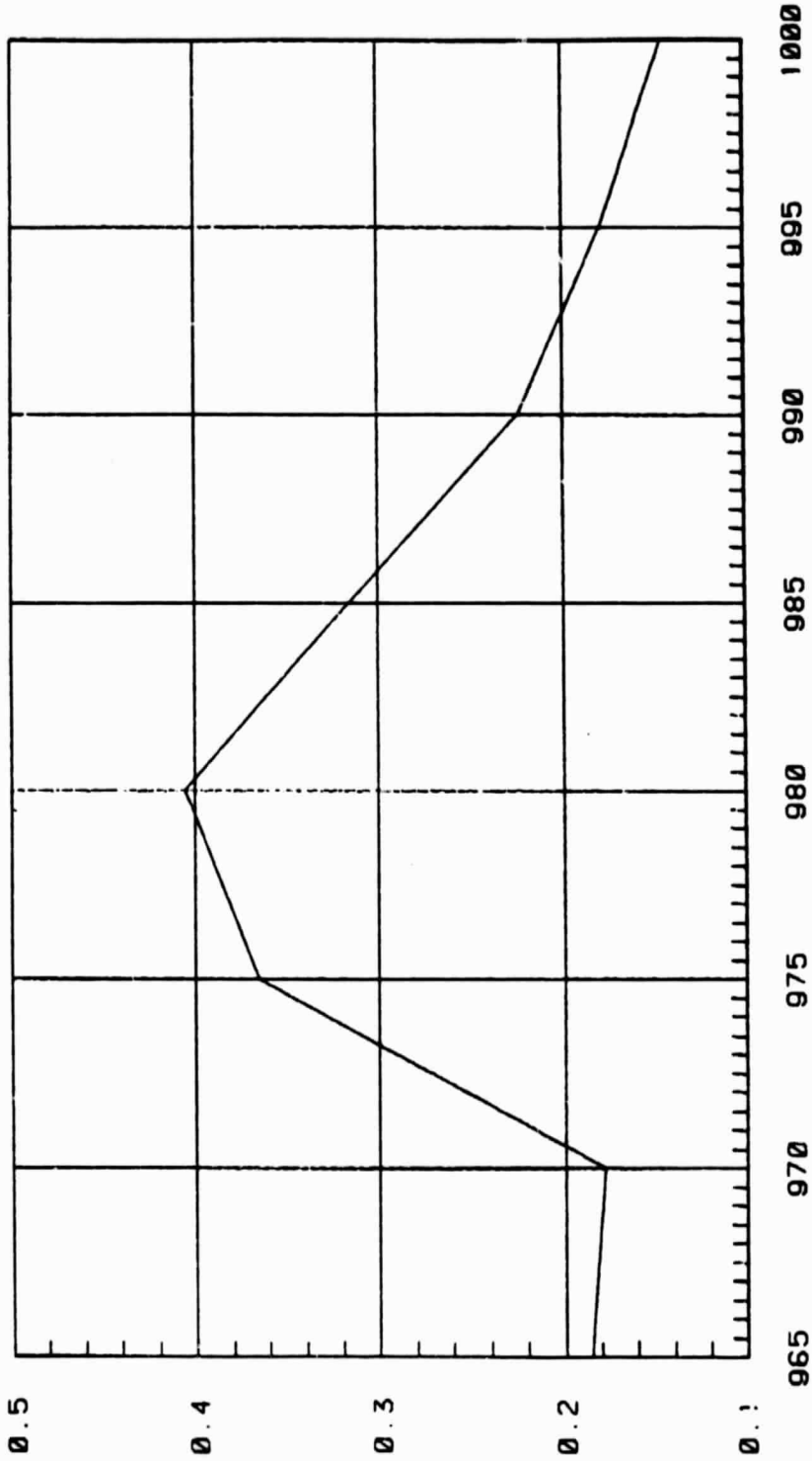
04/20/83

HEATING RATE - BTU/FT\*\*2 - SEC

D-164

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB770004A



HEATING RATE - BTU/FT\*\*2 - SEC

D-165

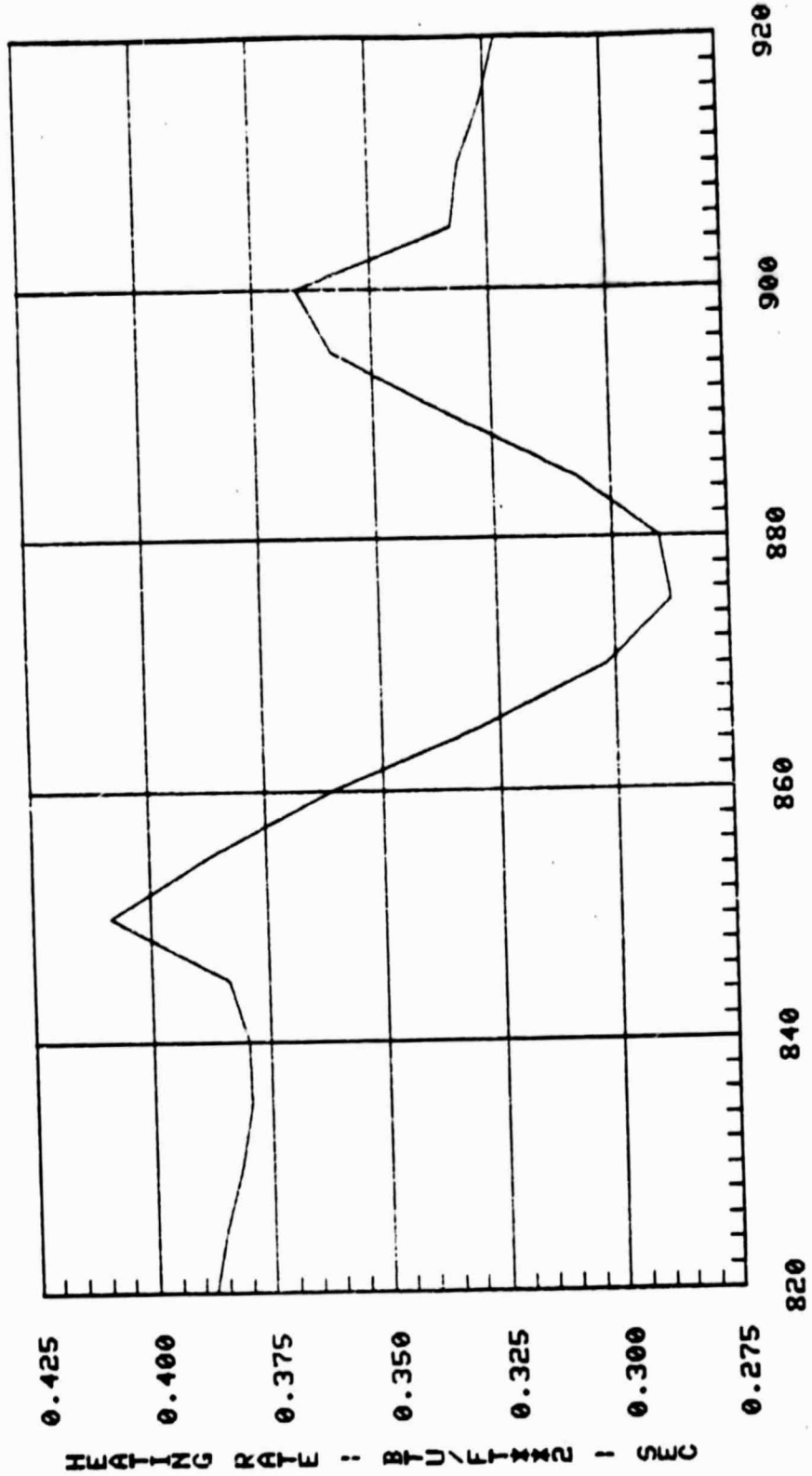
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TIME - SECONDS

04/28/63

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U0779984A



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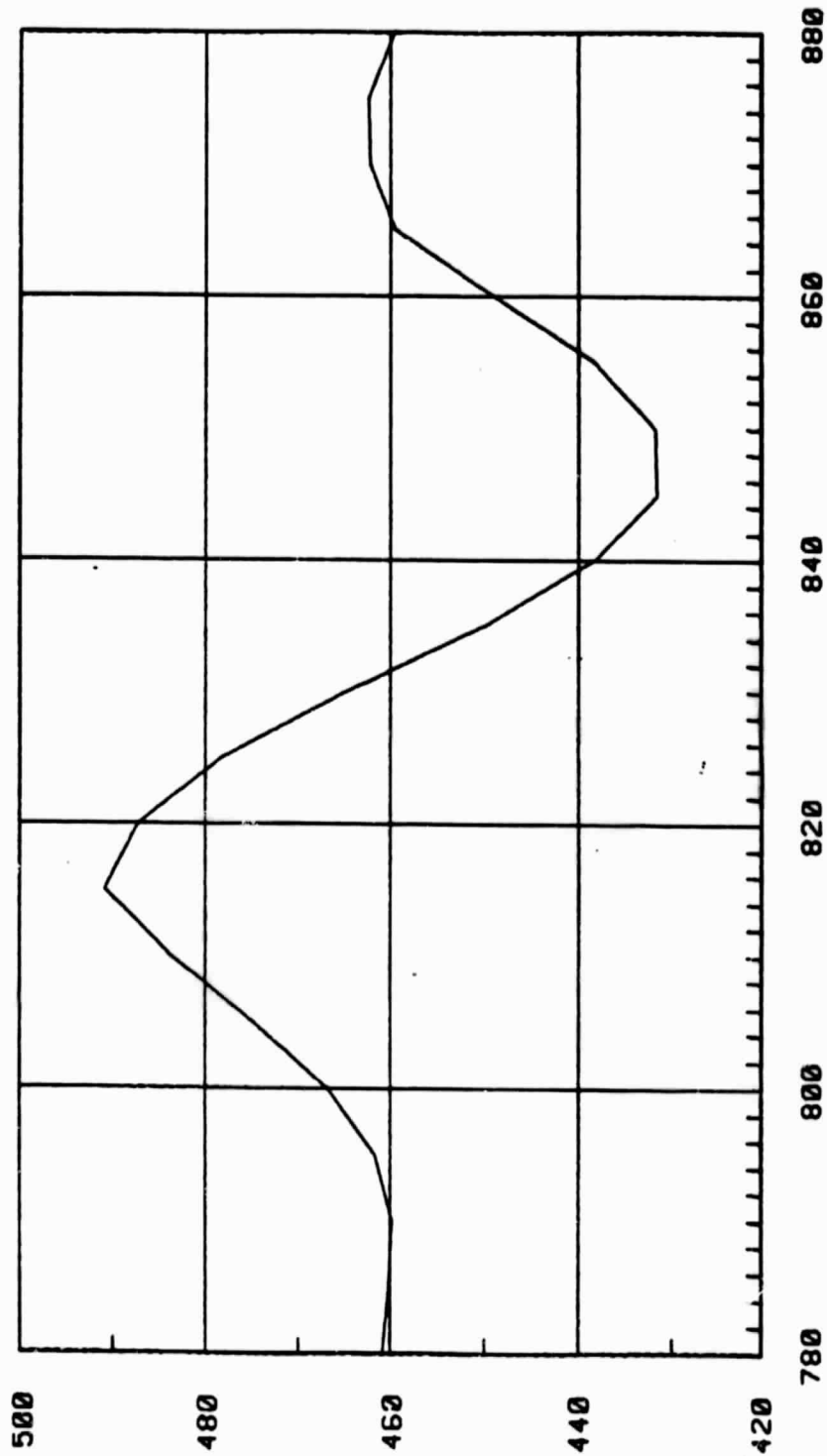
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TIME - SECONDS



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0004A



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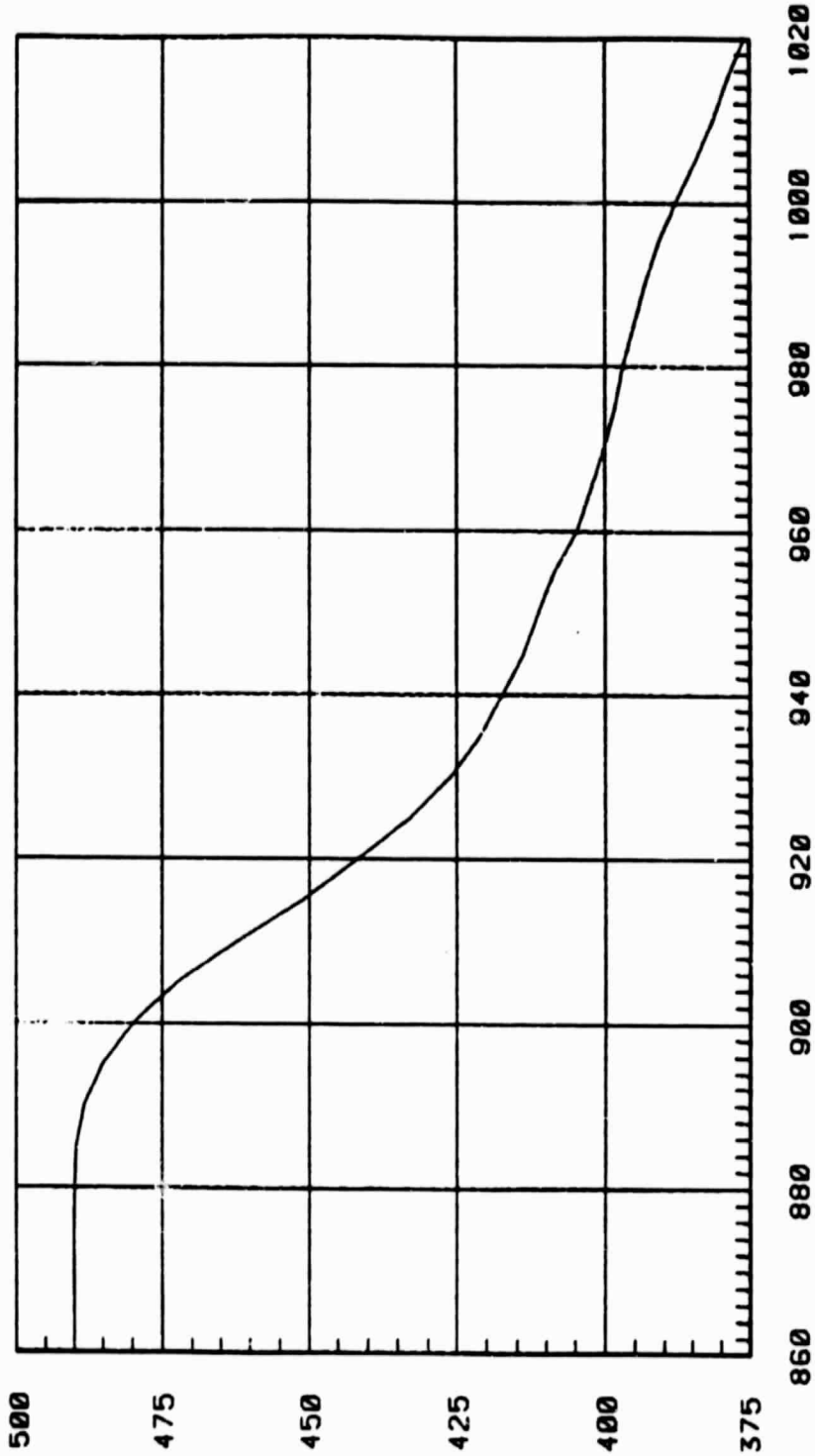
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04/20/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB770004A

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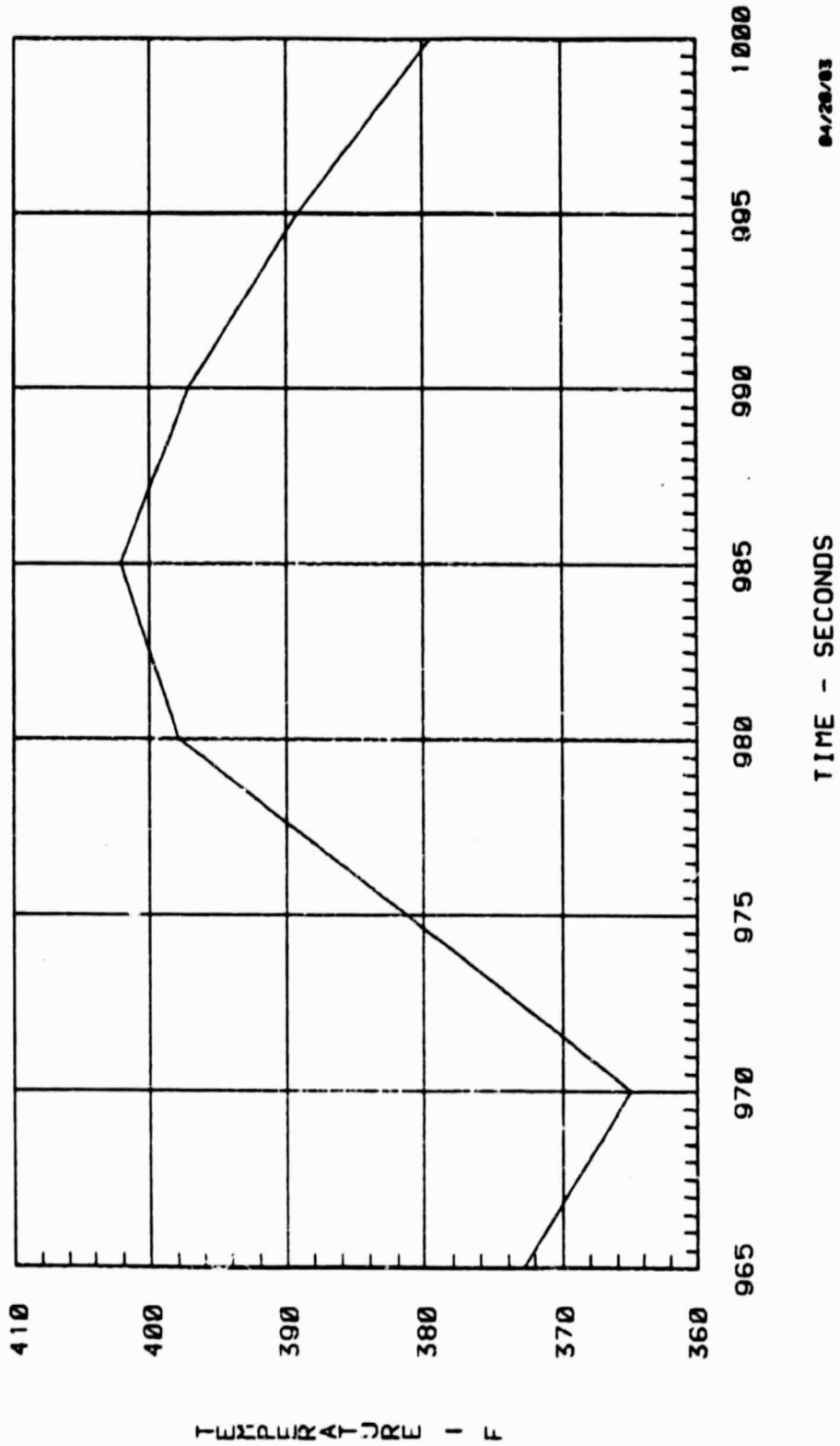
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04/20/83

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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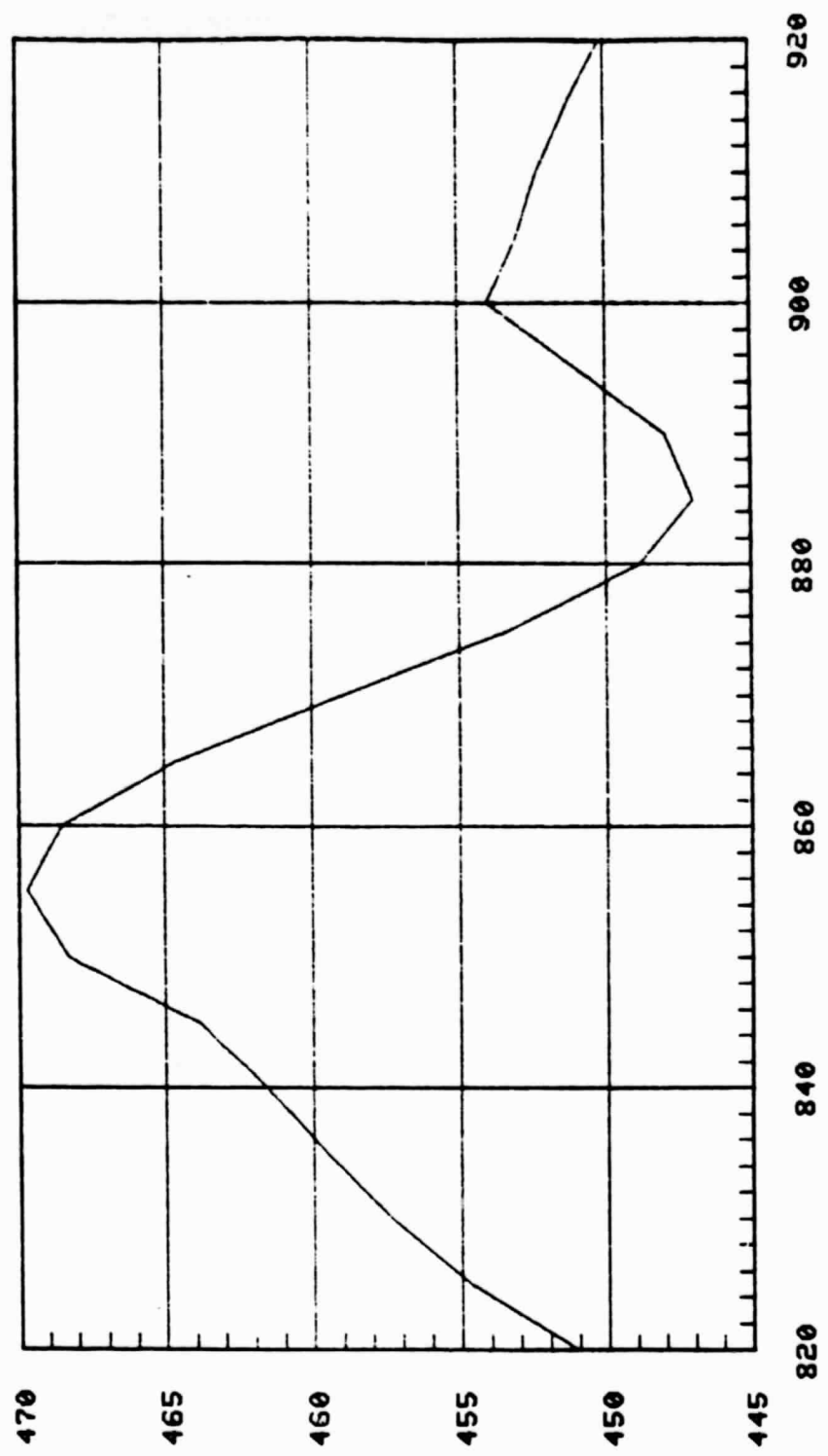
04/28/83

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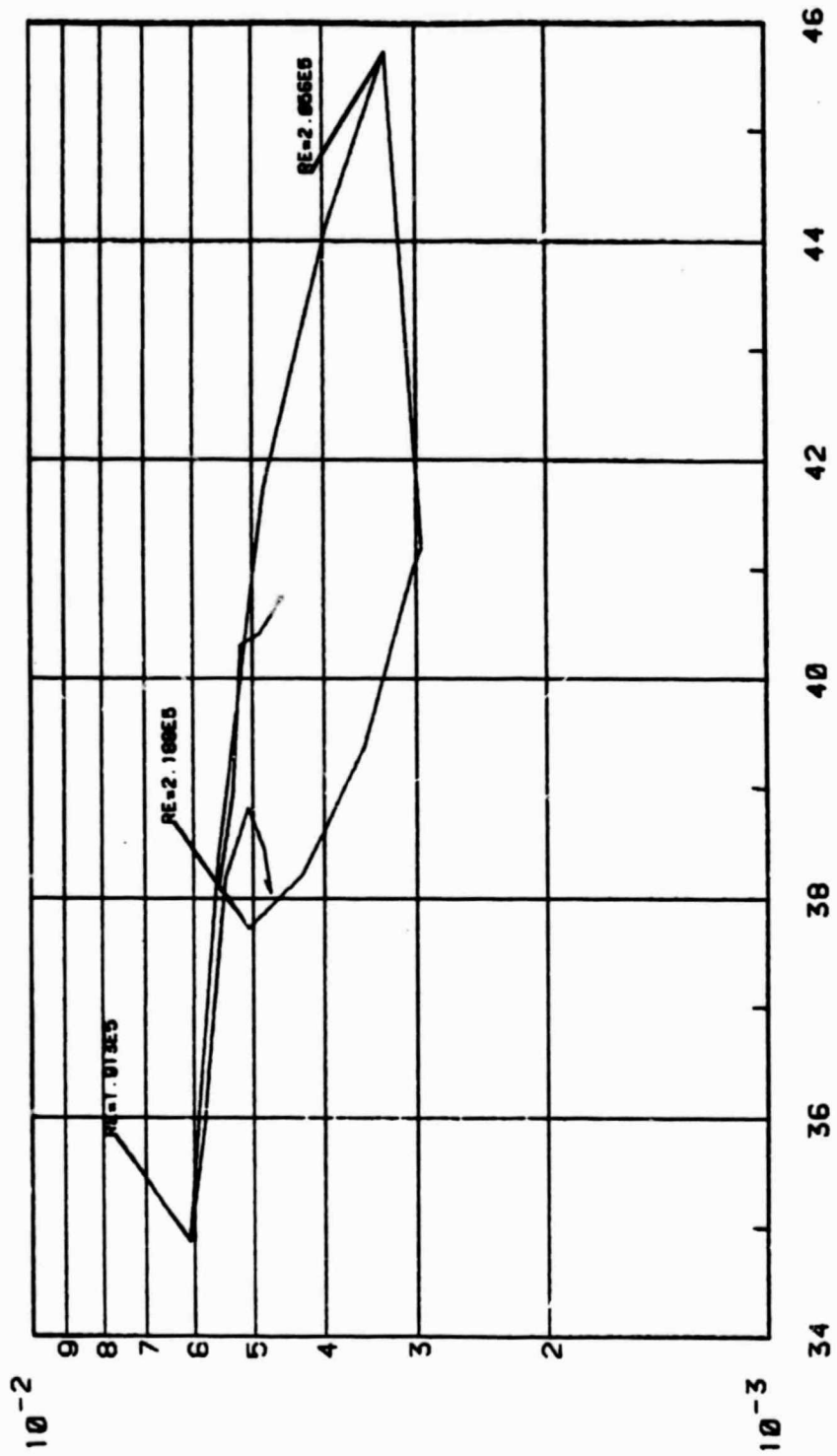
D-170

C-8

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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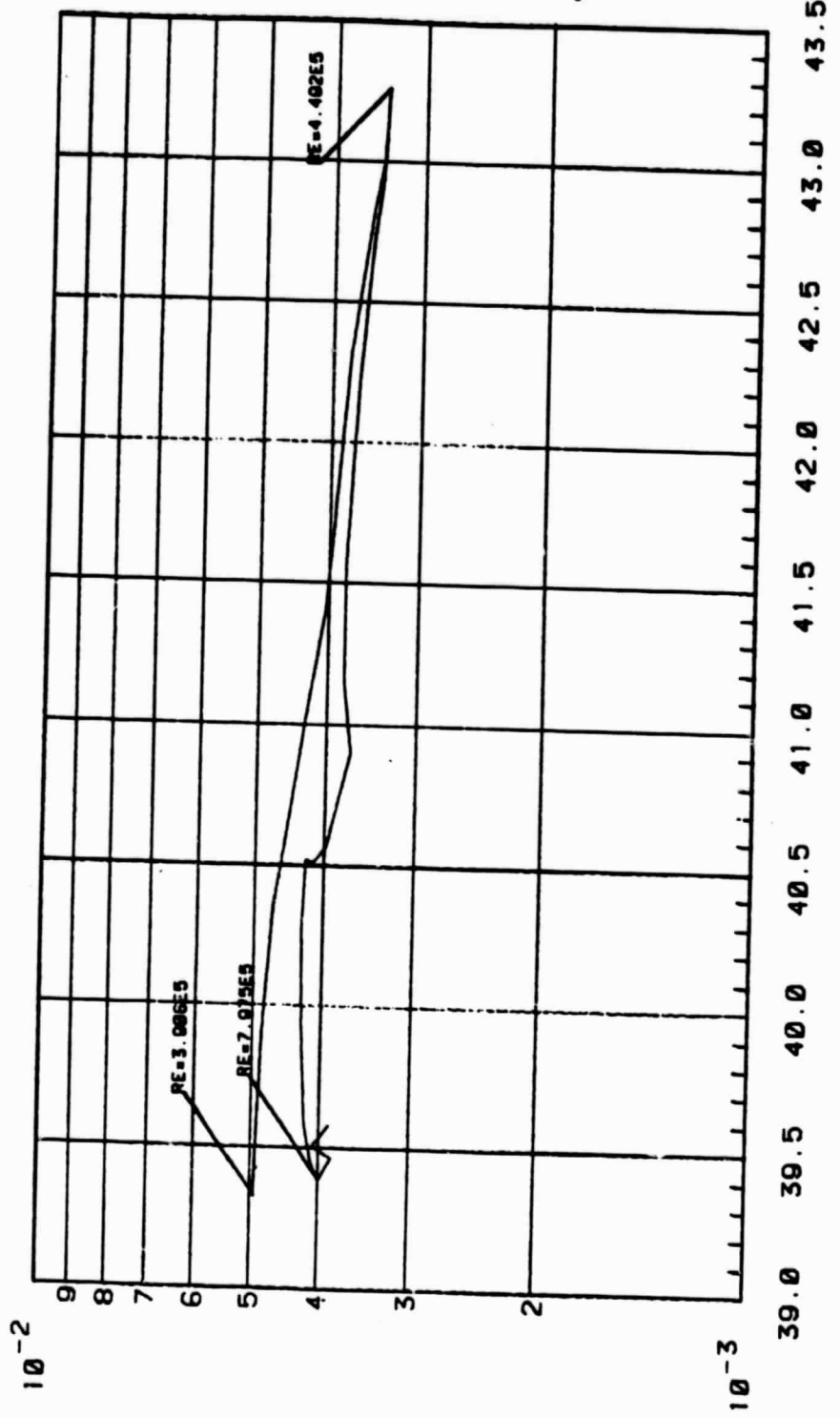
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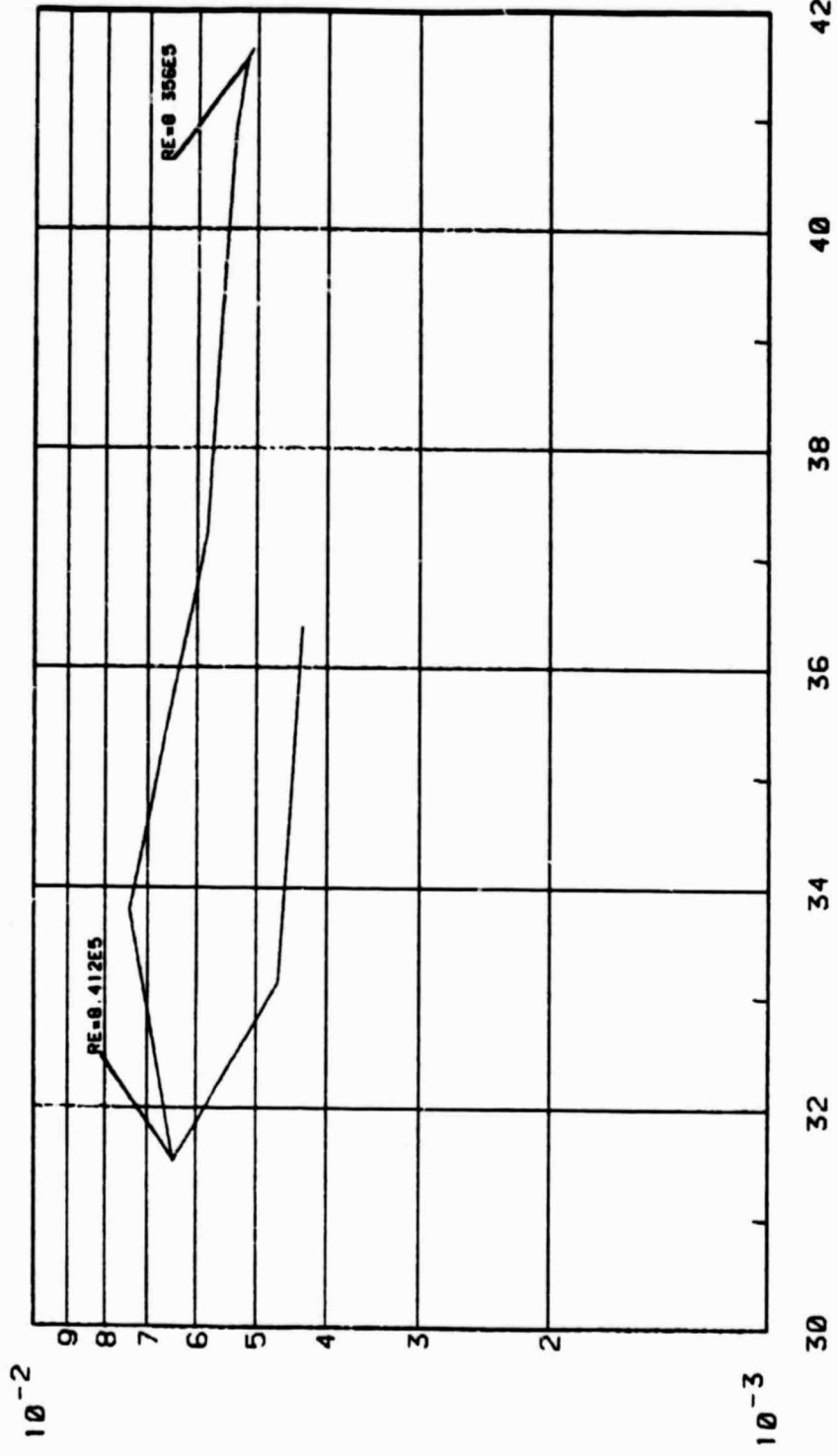
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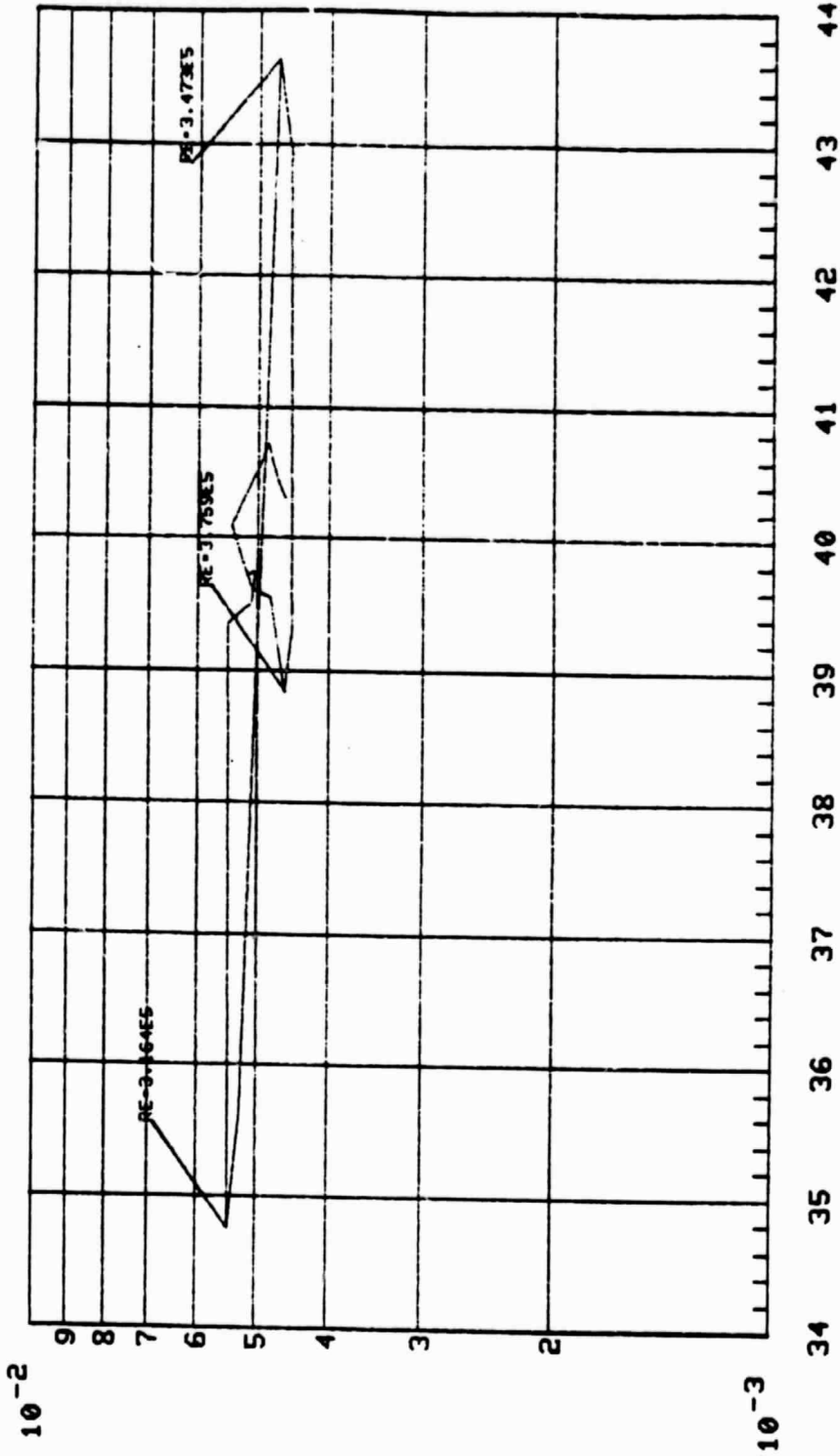
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U07T9986A/H-REF 820 - 920 SEC



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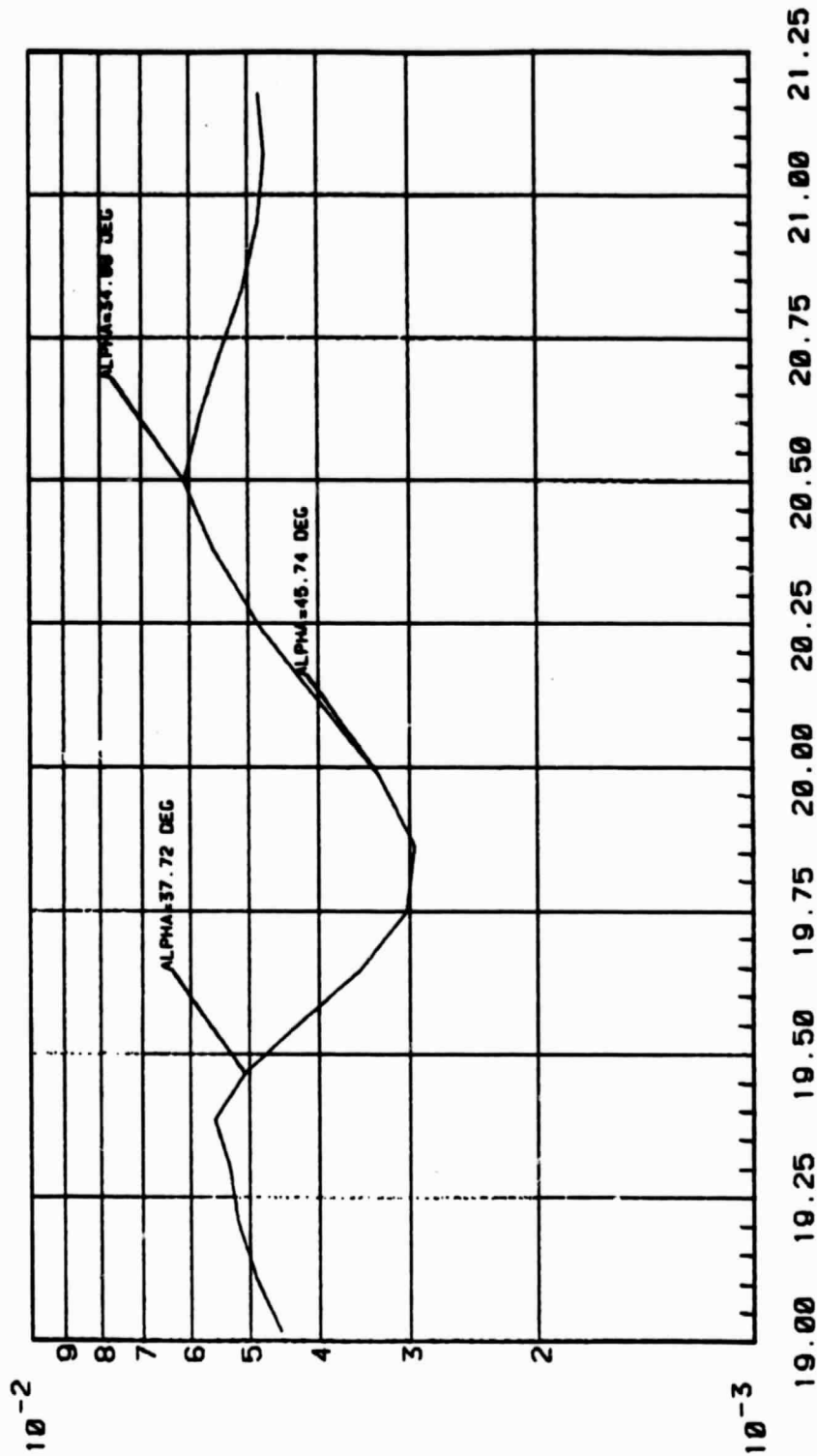
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04-20-83



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VB770008A/H-REF 700- 000 SEC



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D-175

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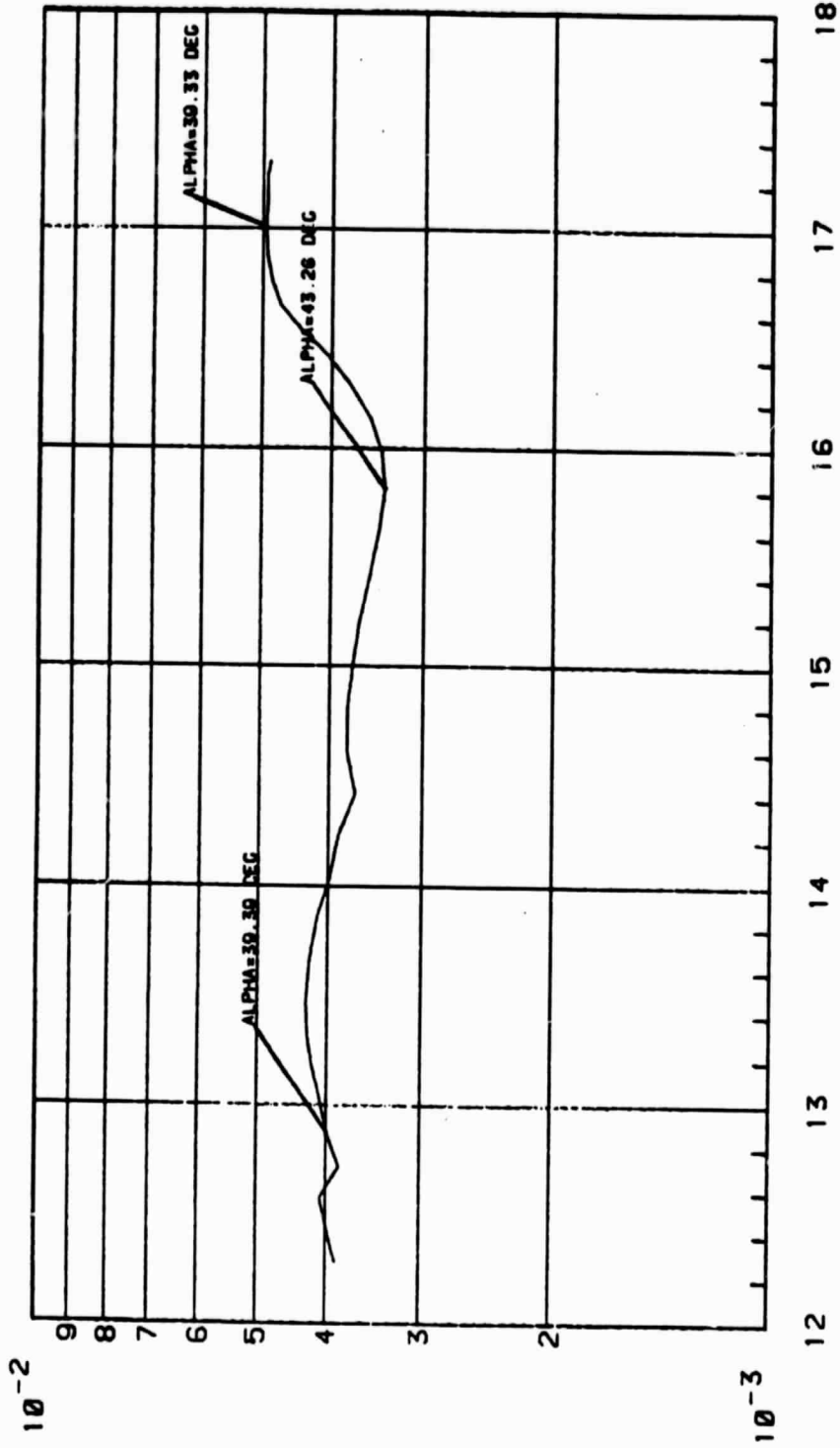
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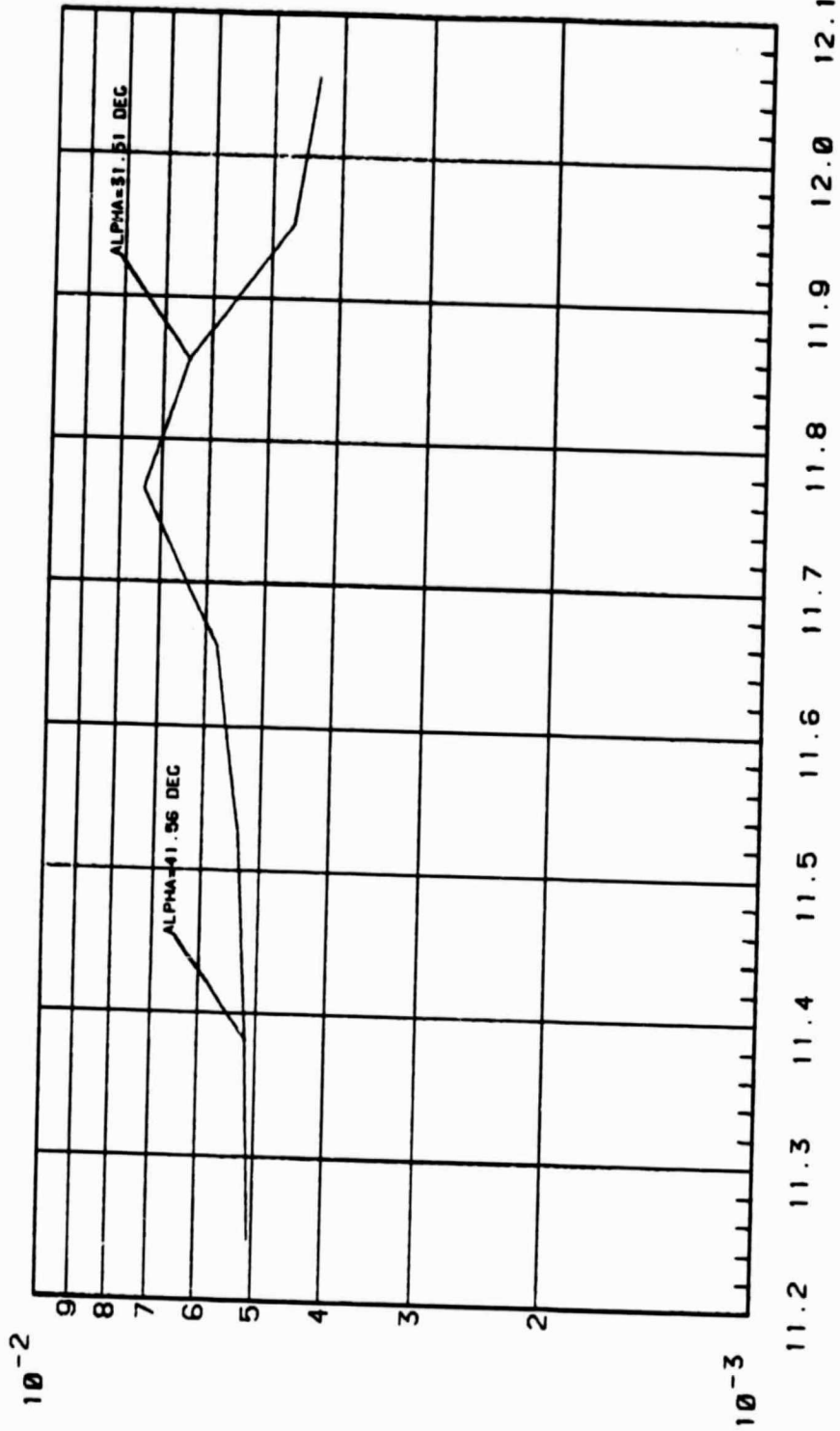
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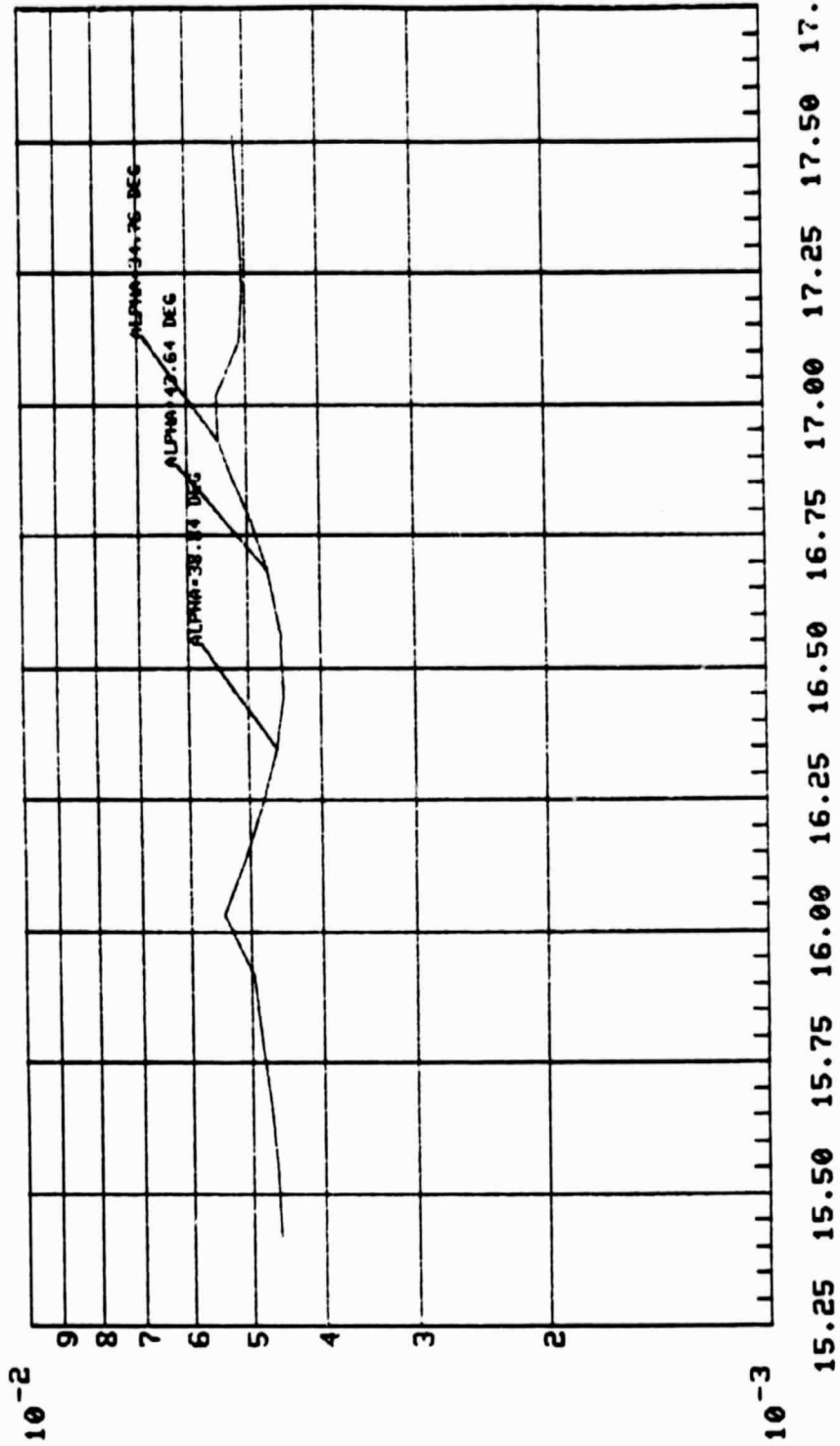
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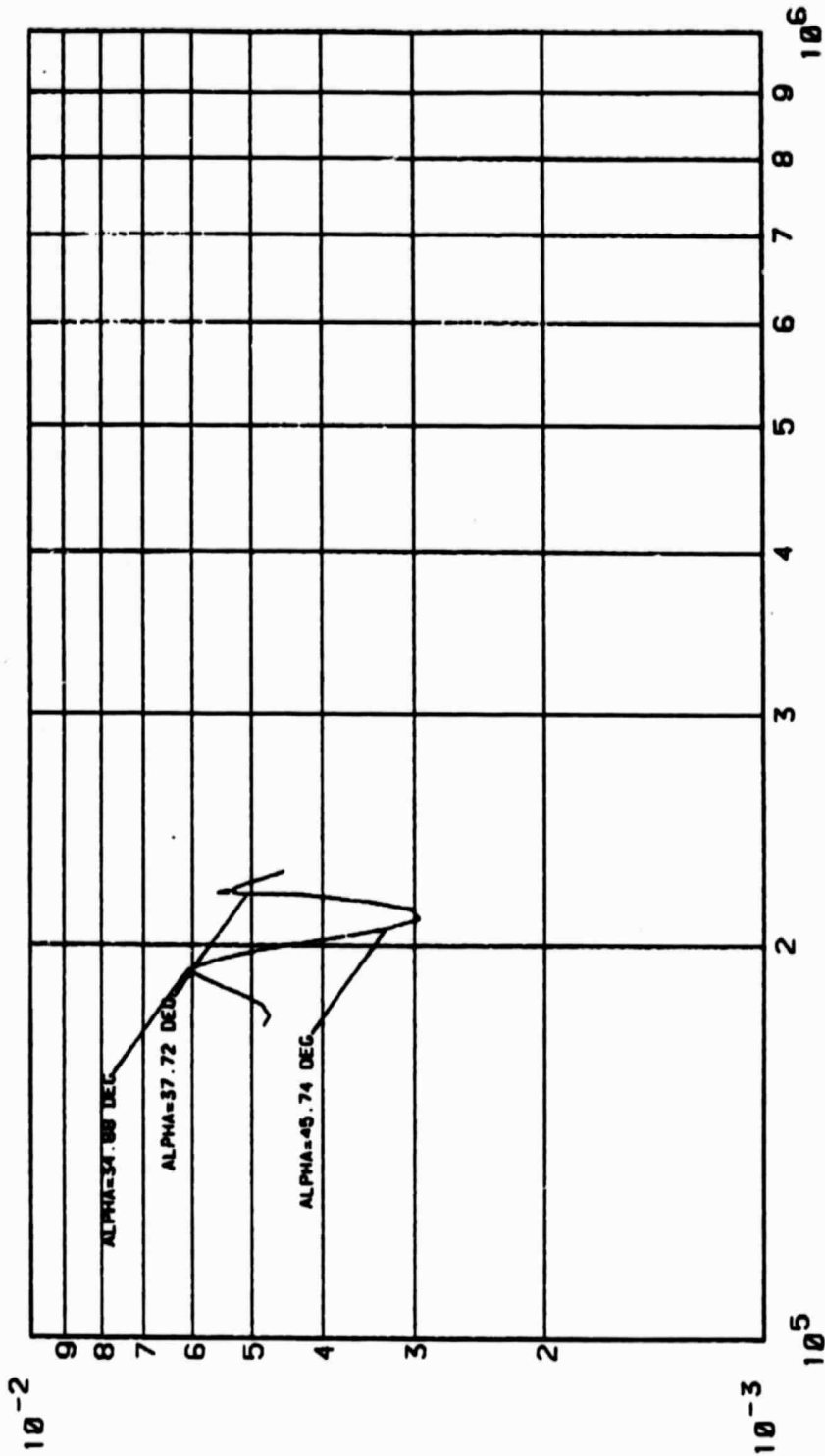
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D-179

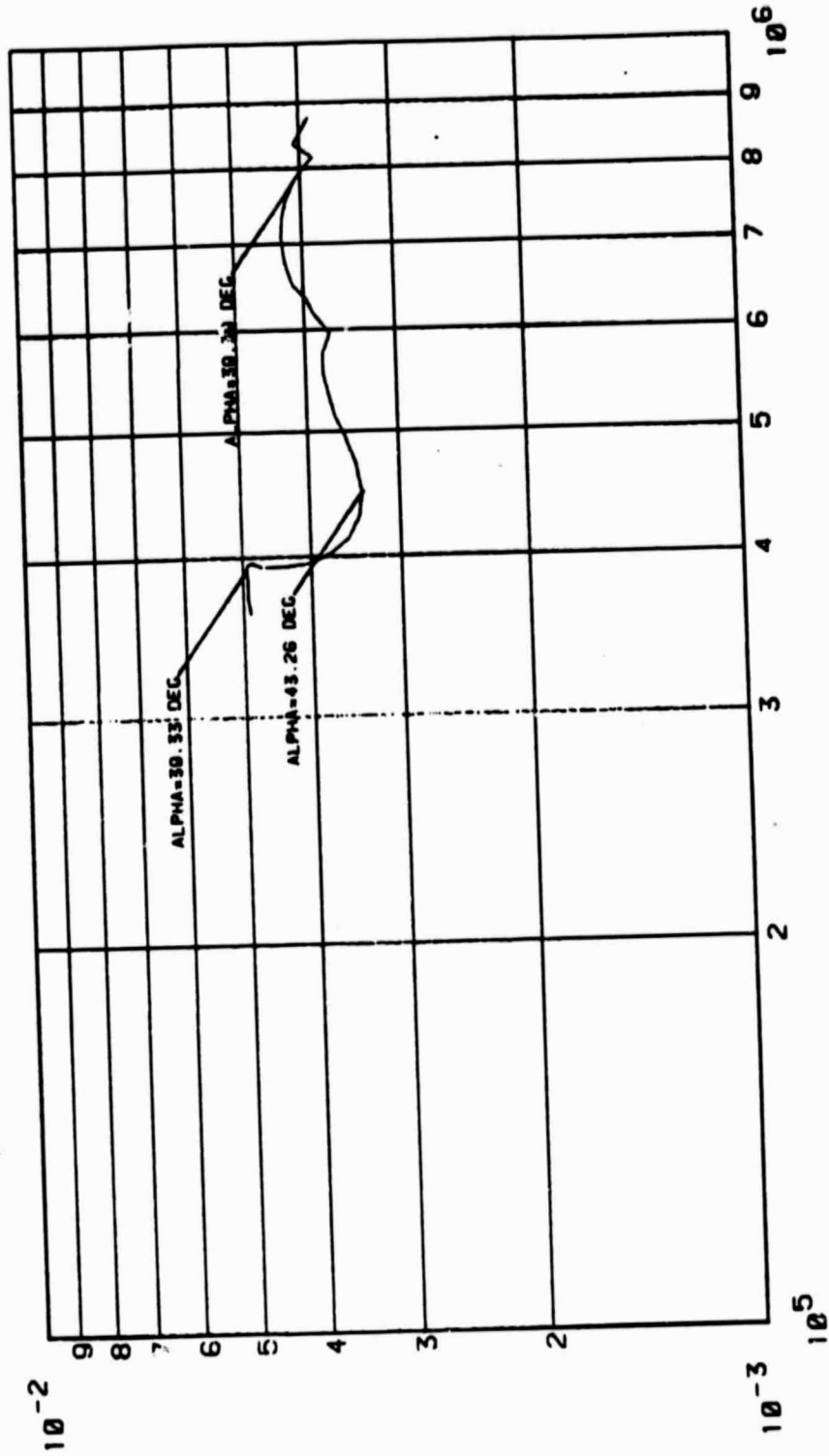
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REYNOLDS NUMBER (NS)

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FLIGHT PARAMETER - I/N-REF

D-180

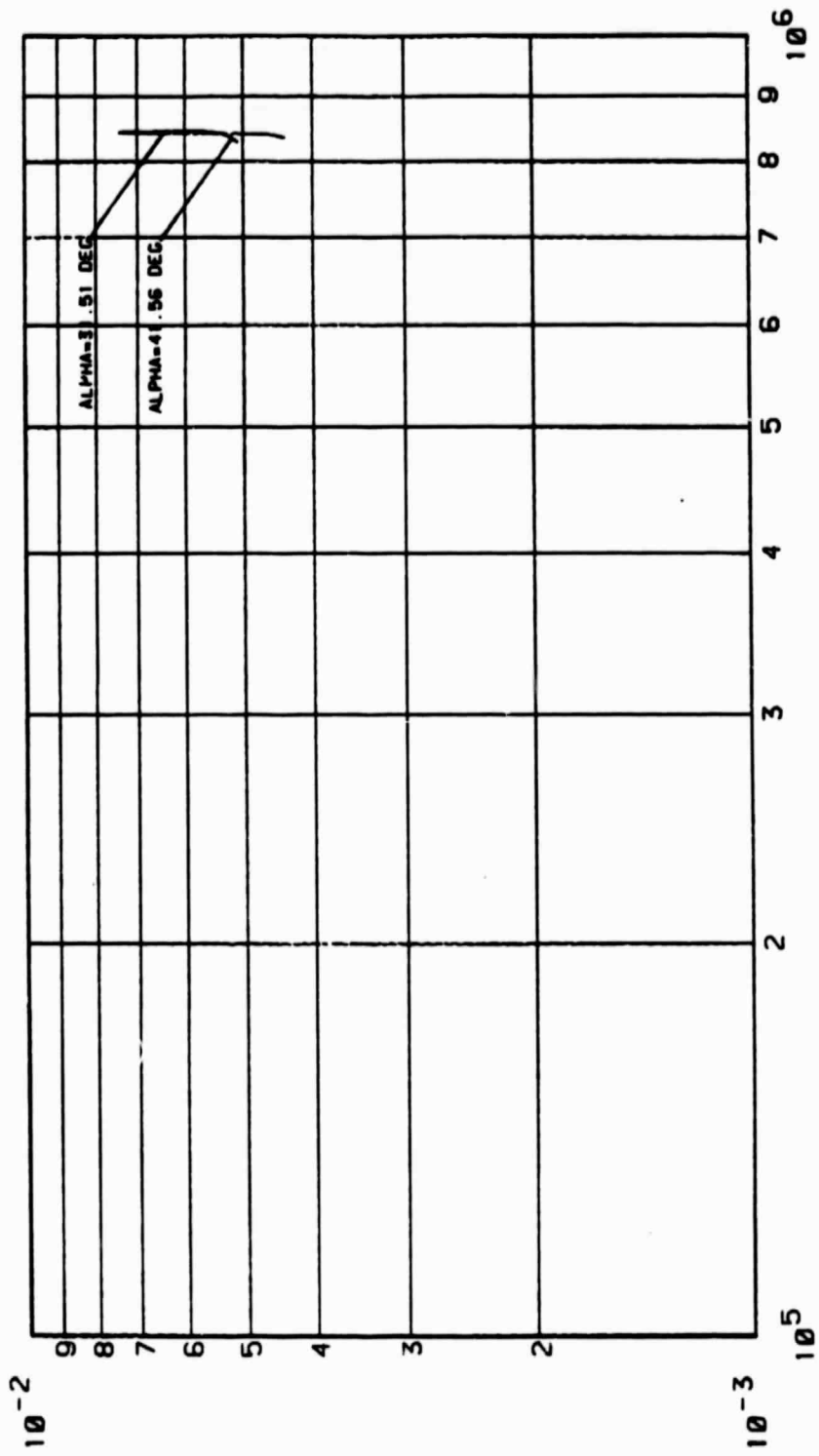
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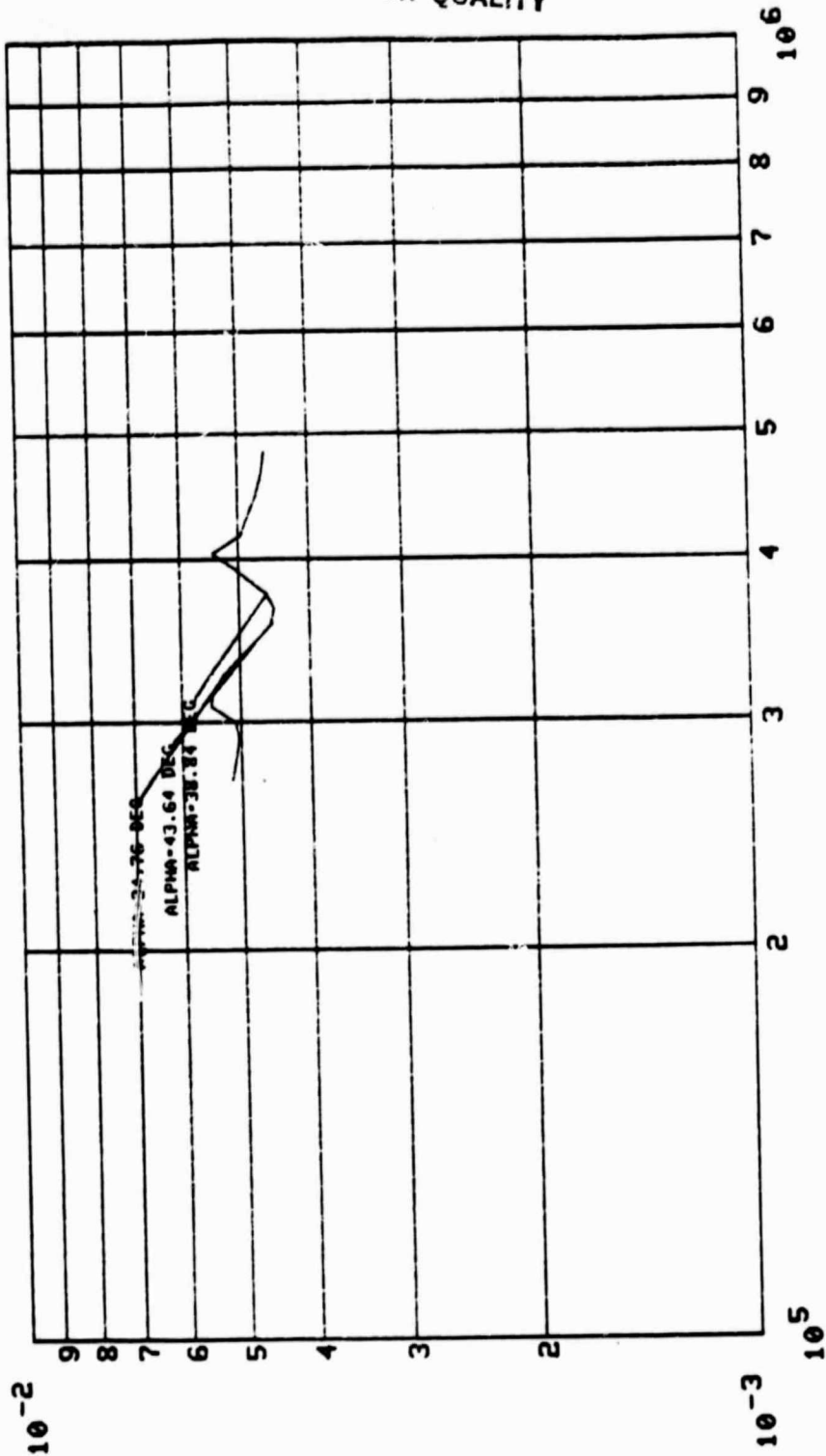


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D-182

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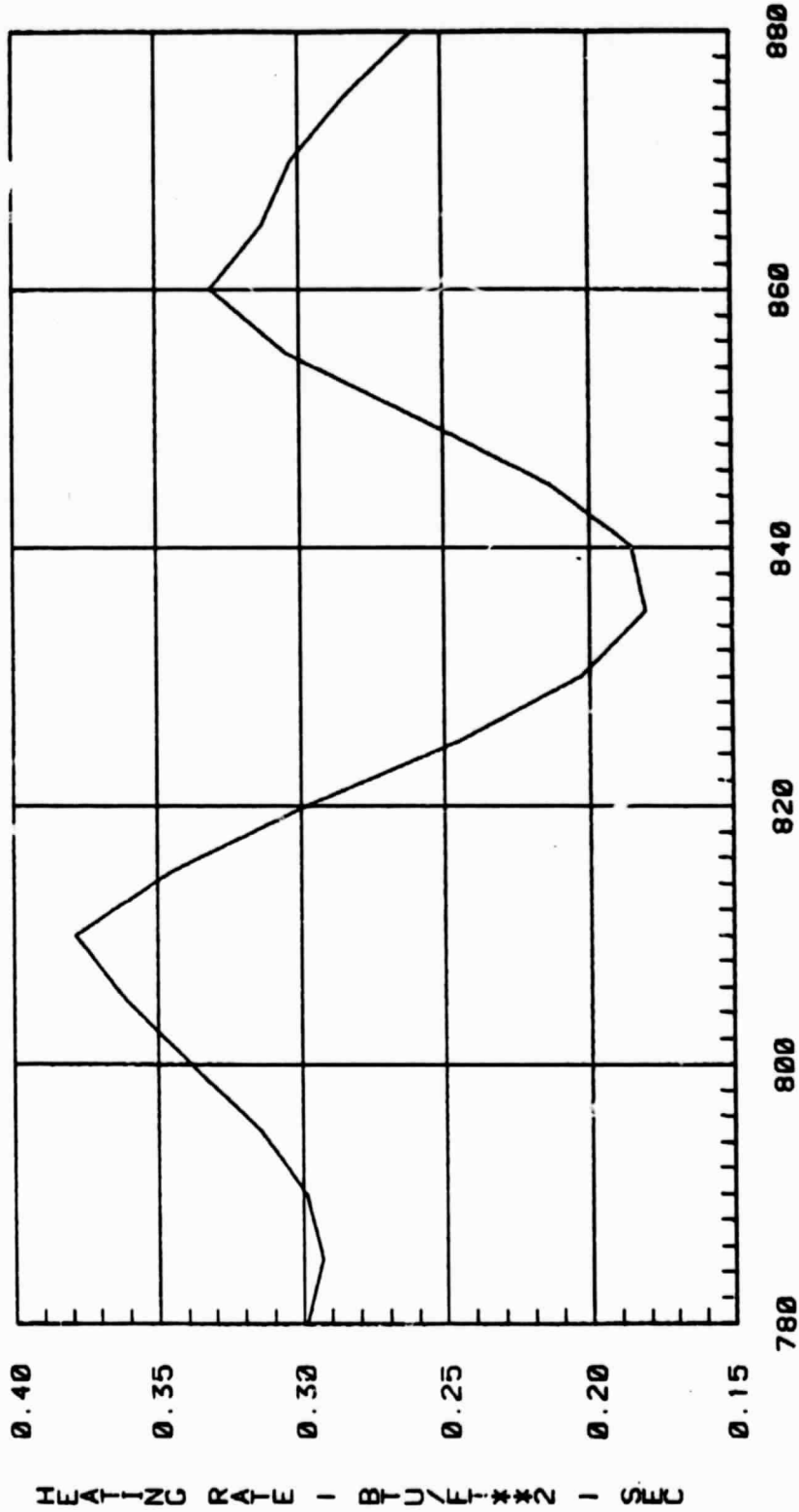
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04-20-83



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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HEATING RATE - BTU/FT\*\*2 / SEC

D-183

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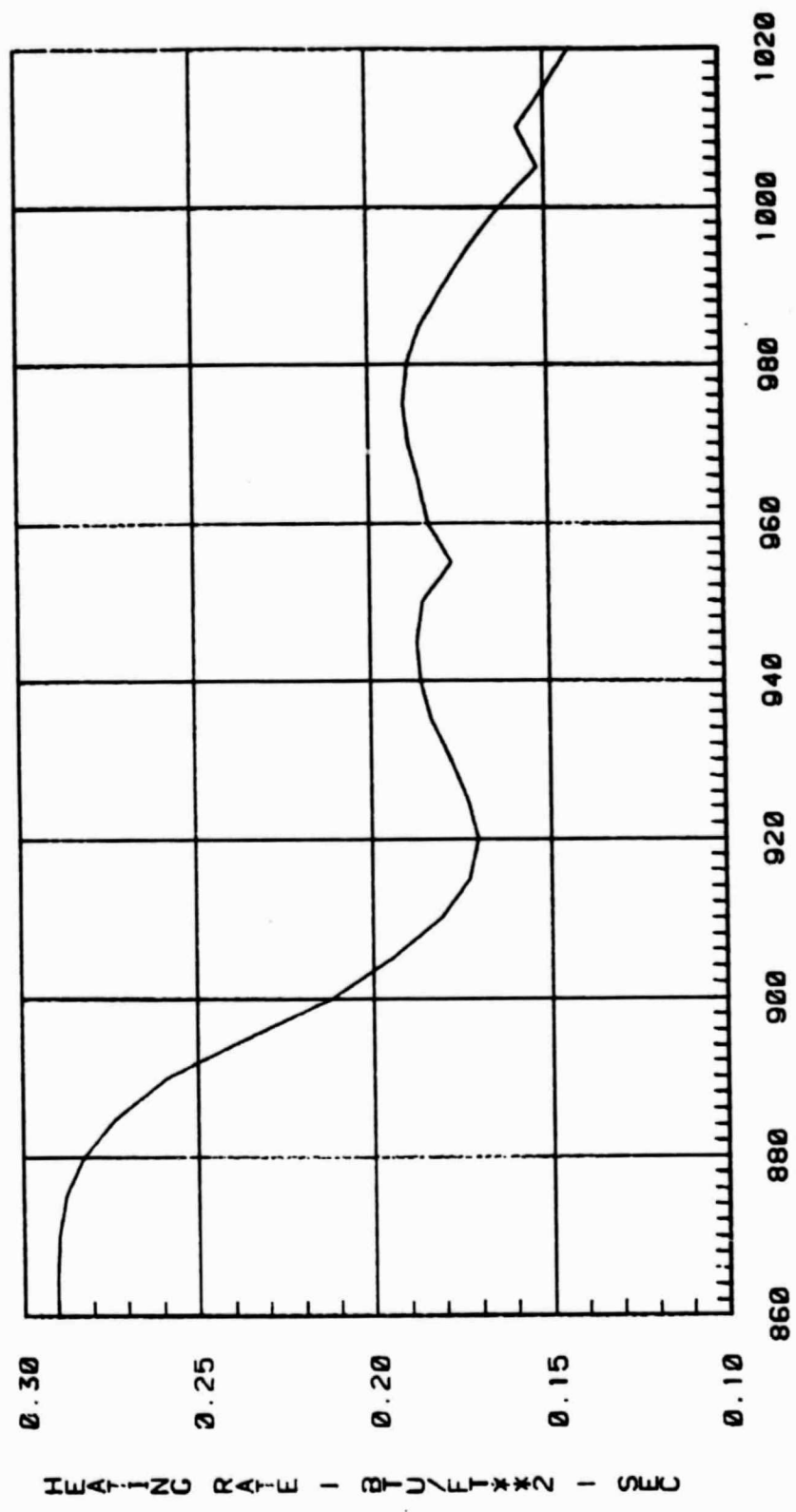
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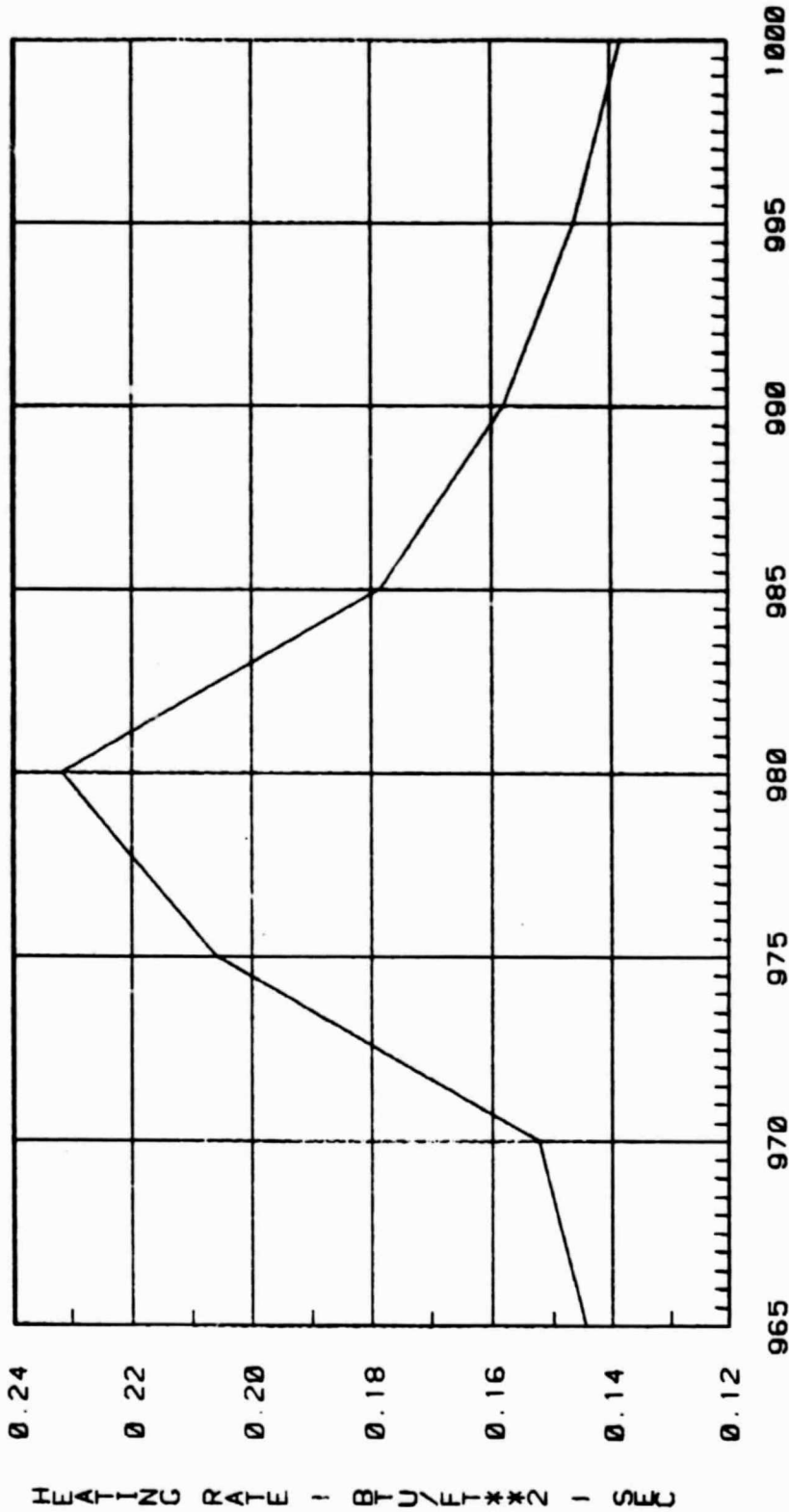
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TIME - SECONDS 04/28/83

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04/28/83

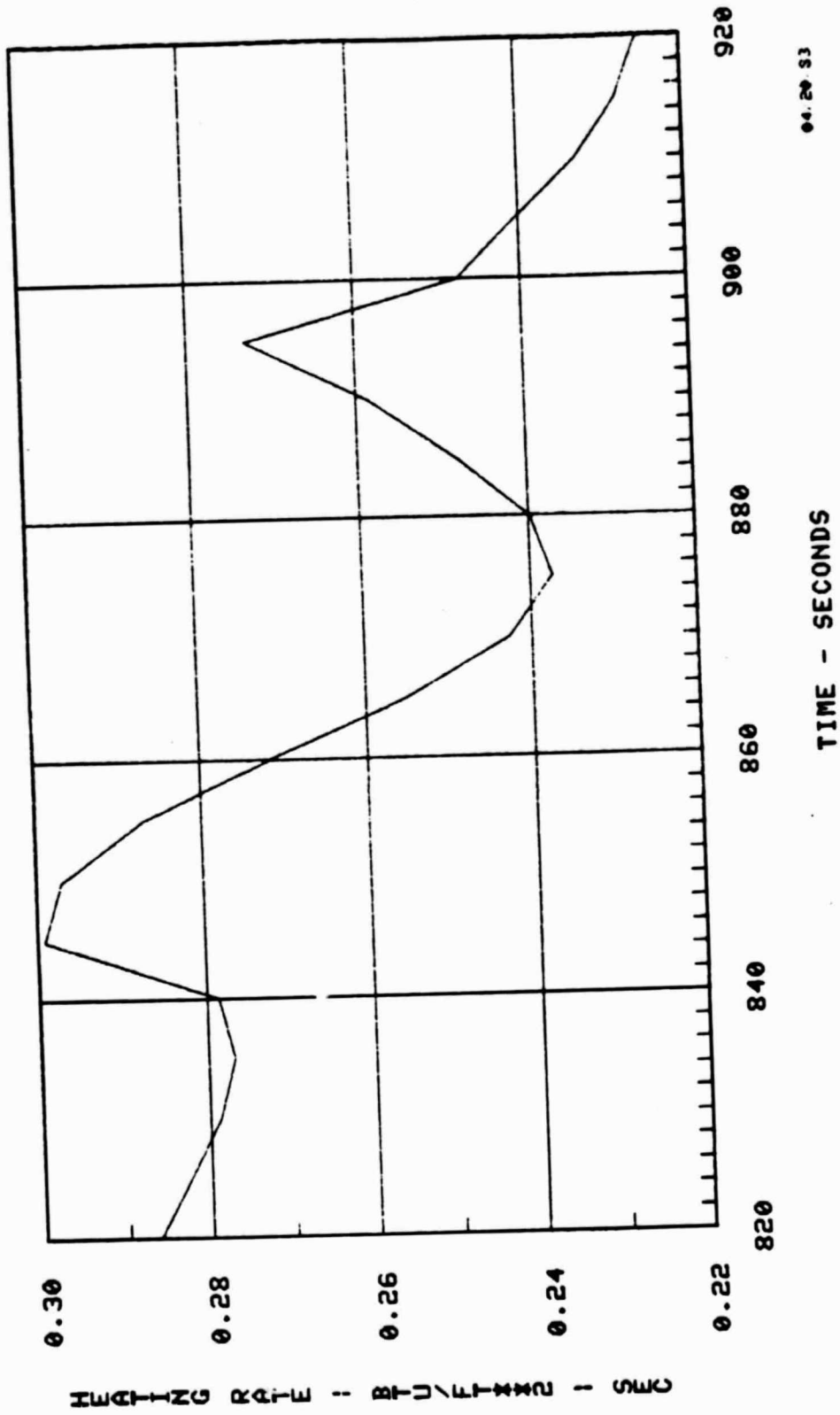
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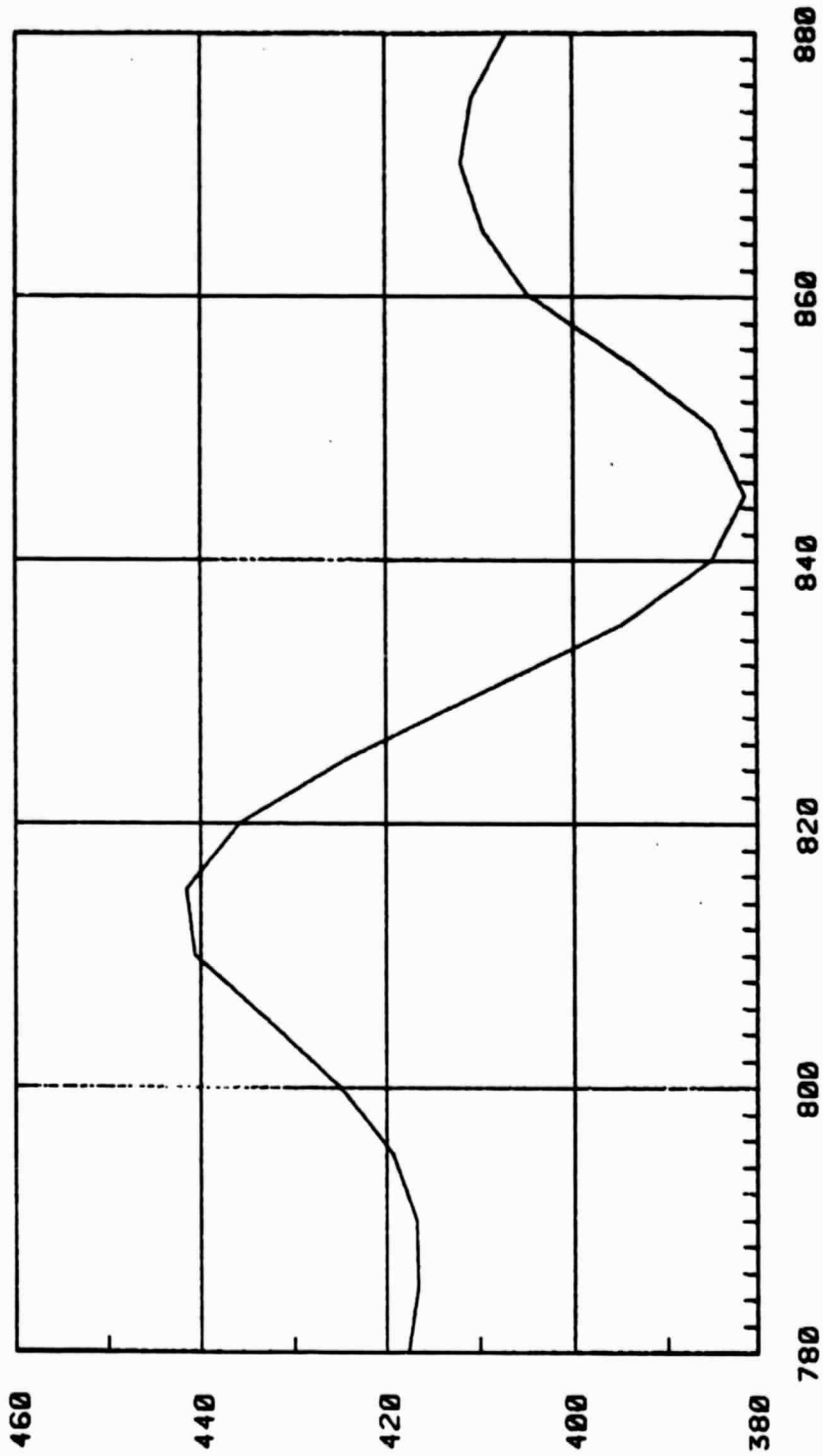


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TIME - SECONDS

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D-187

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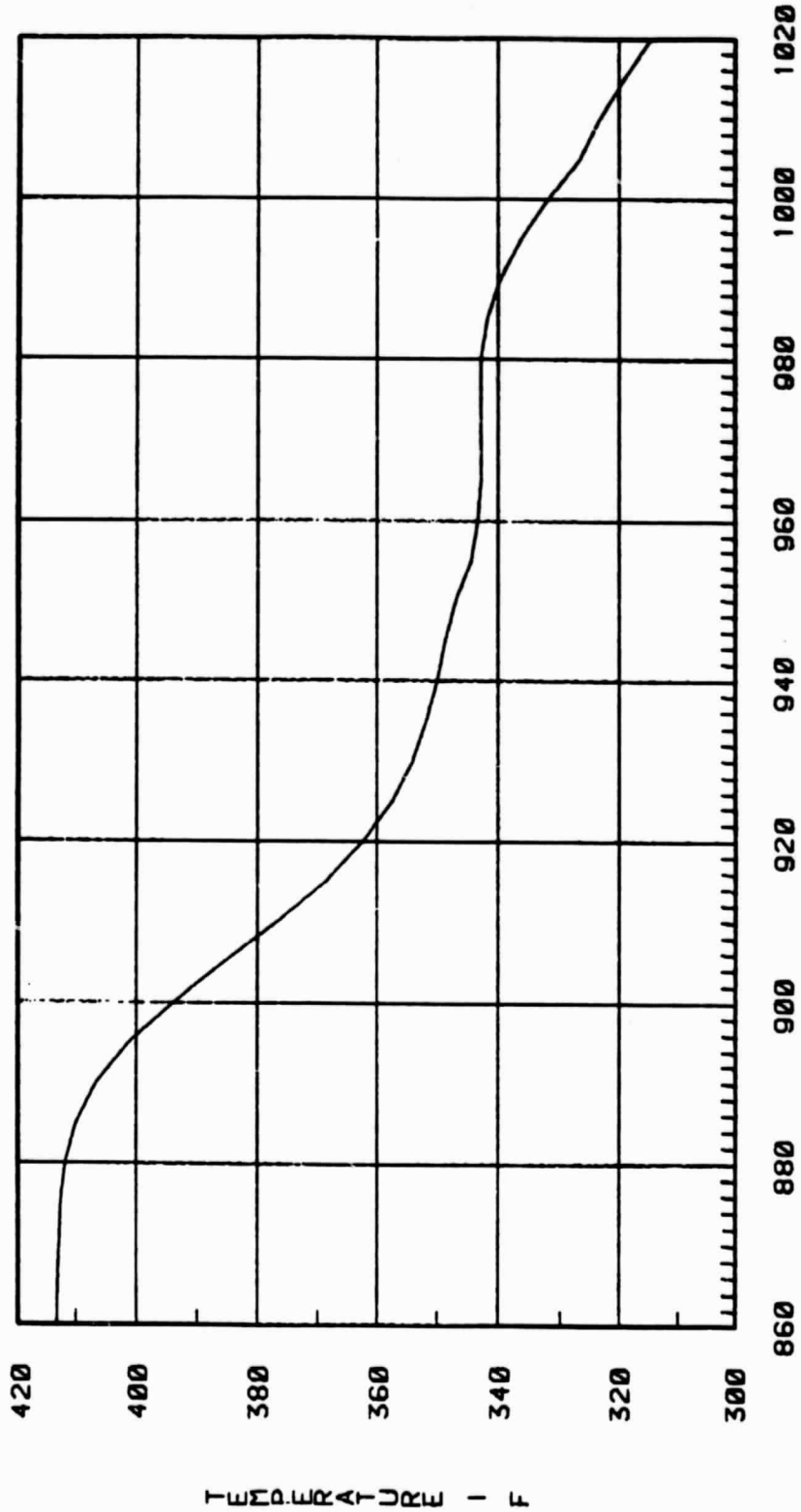
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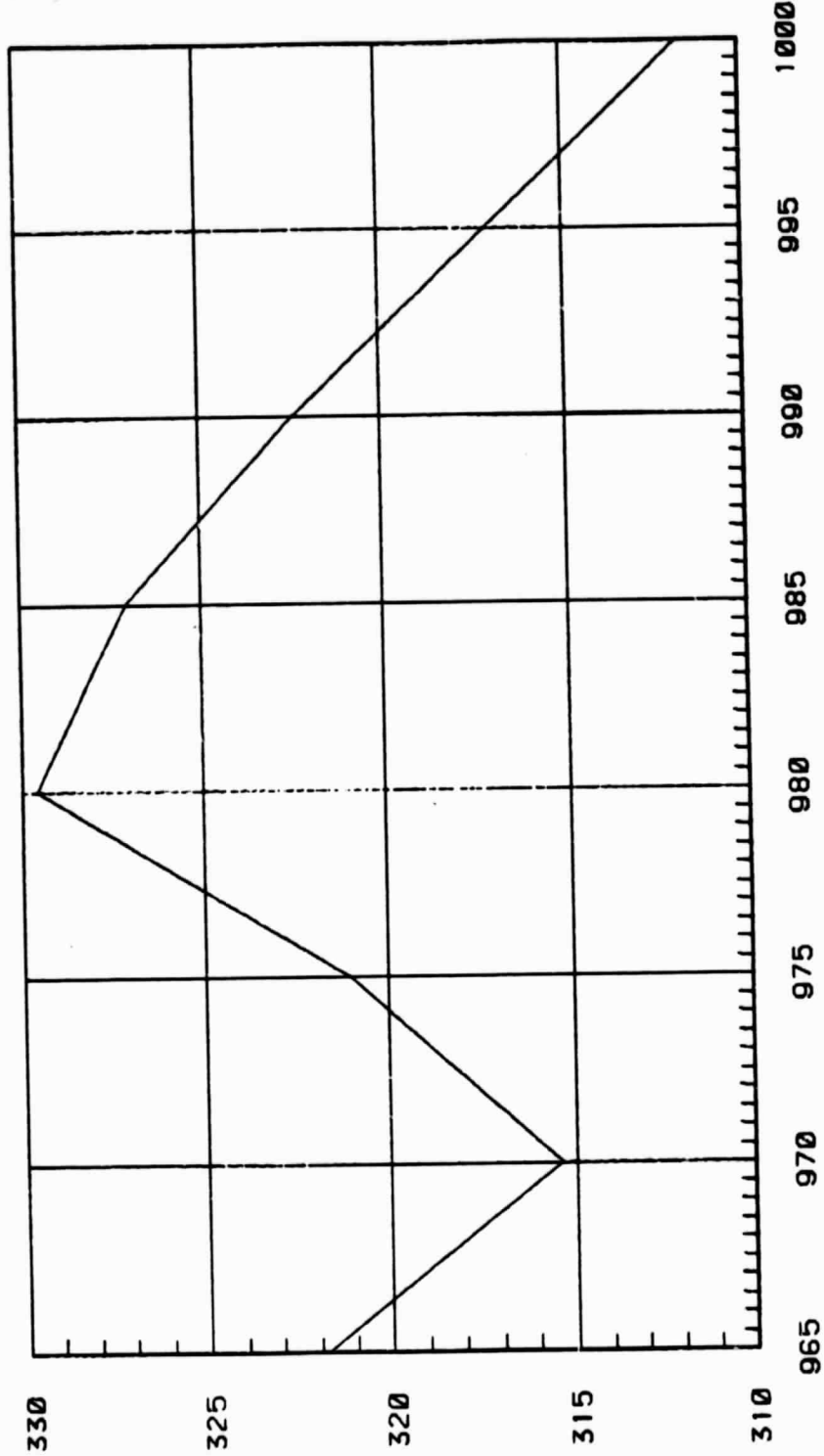
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TIME - SECONDS

TEMPERATURE - F

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VS7T0086A



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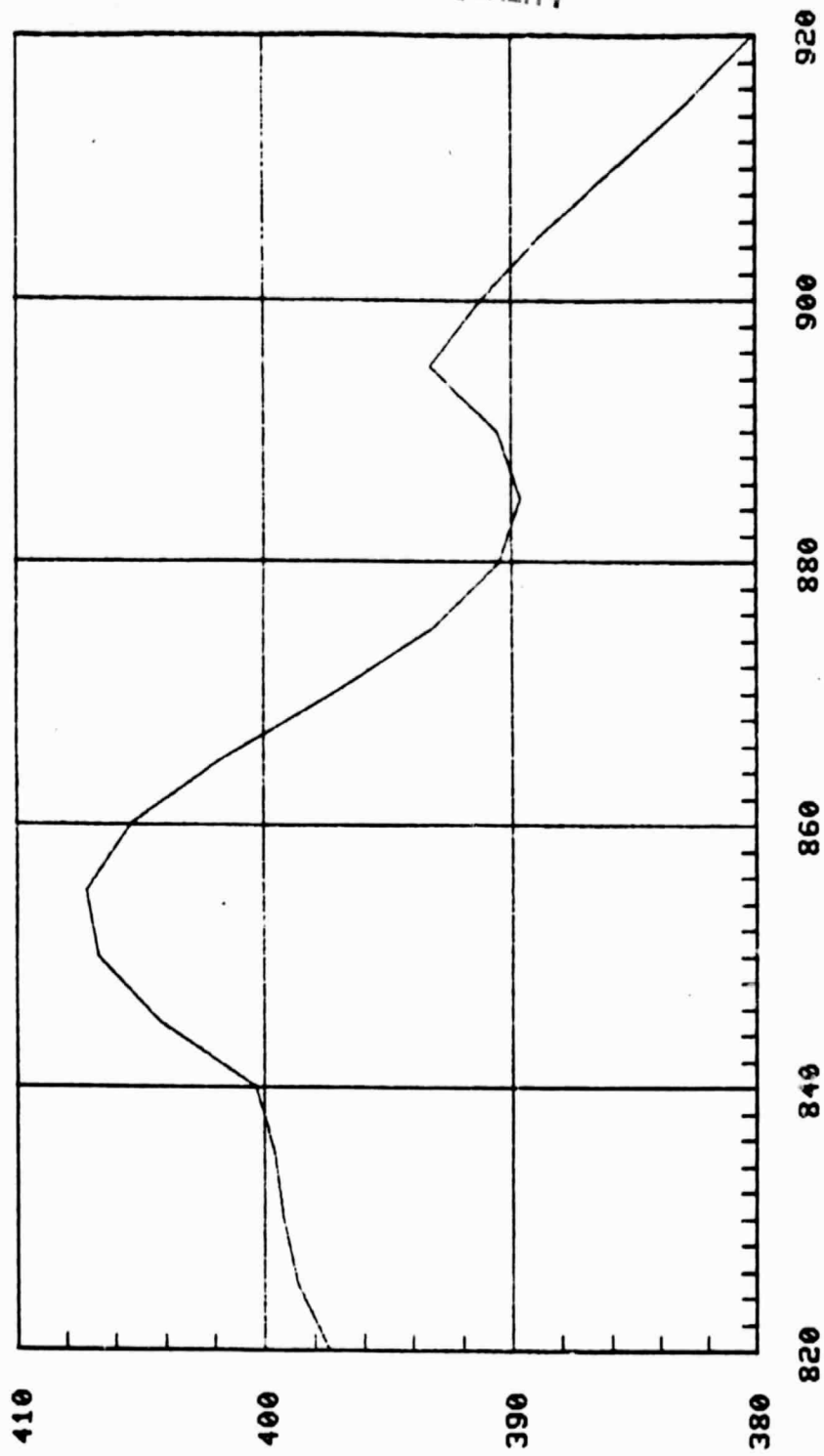
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04/20/03

TIME - SECONDS

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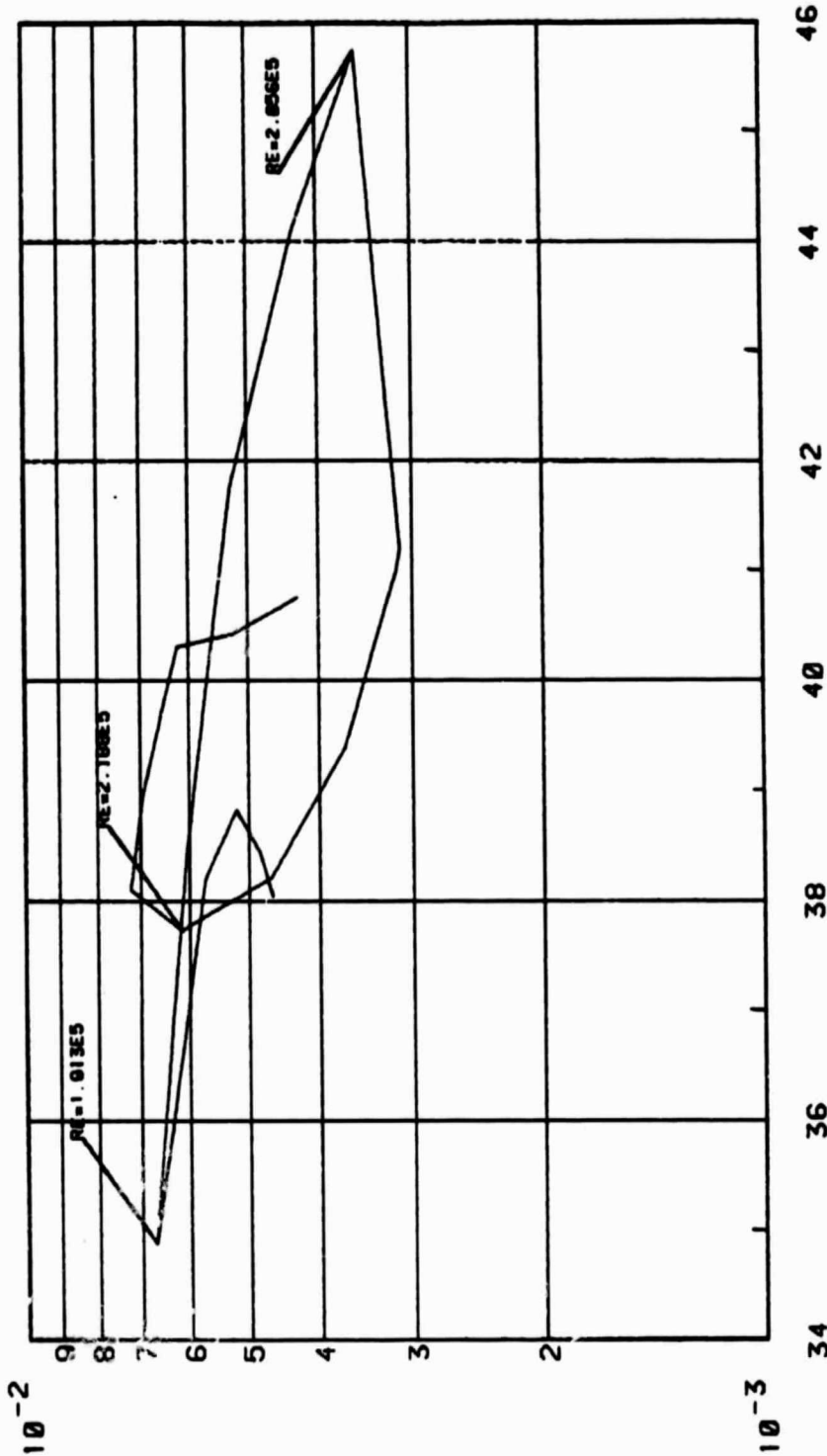
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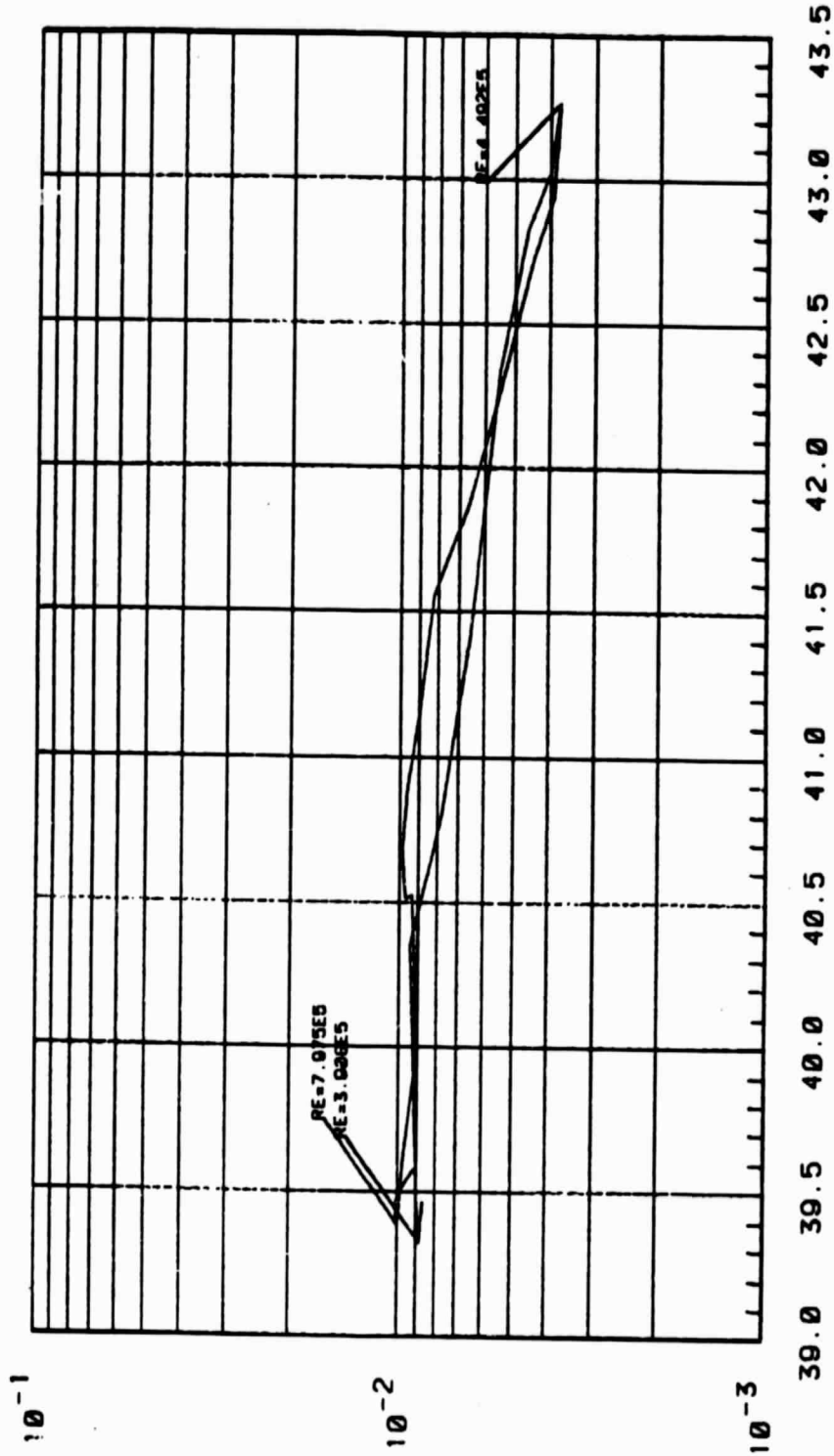
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FILE CORRE - I/I-RWF

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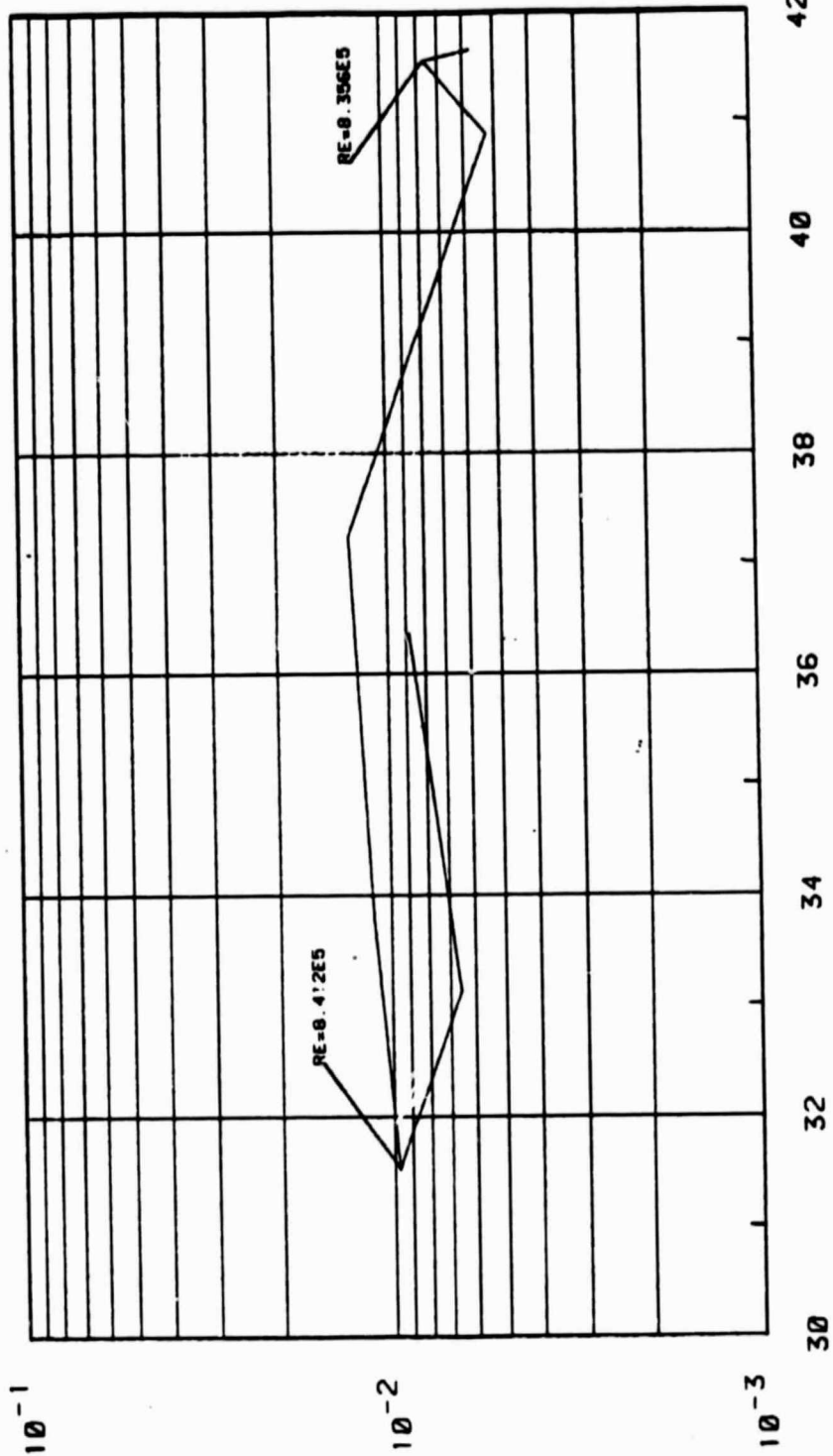
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FLIGHT PARAMETER COMPARISON

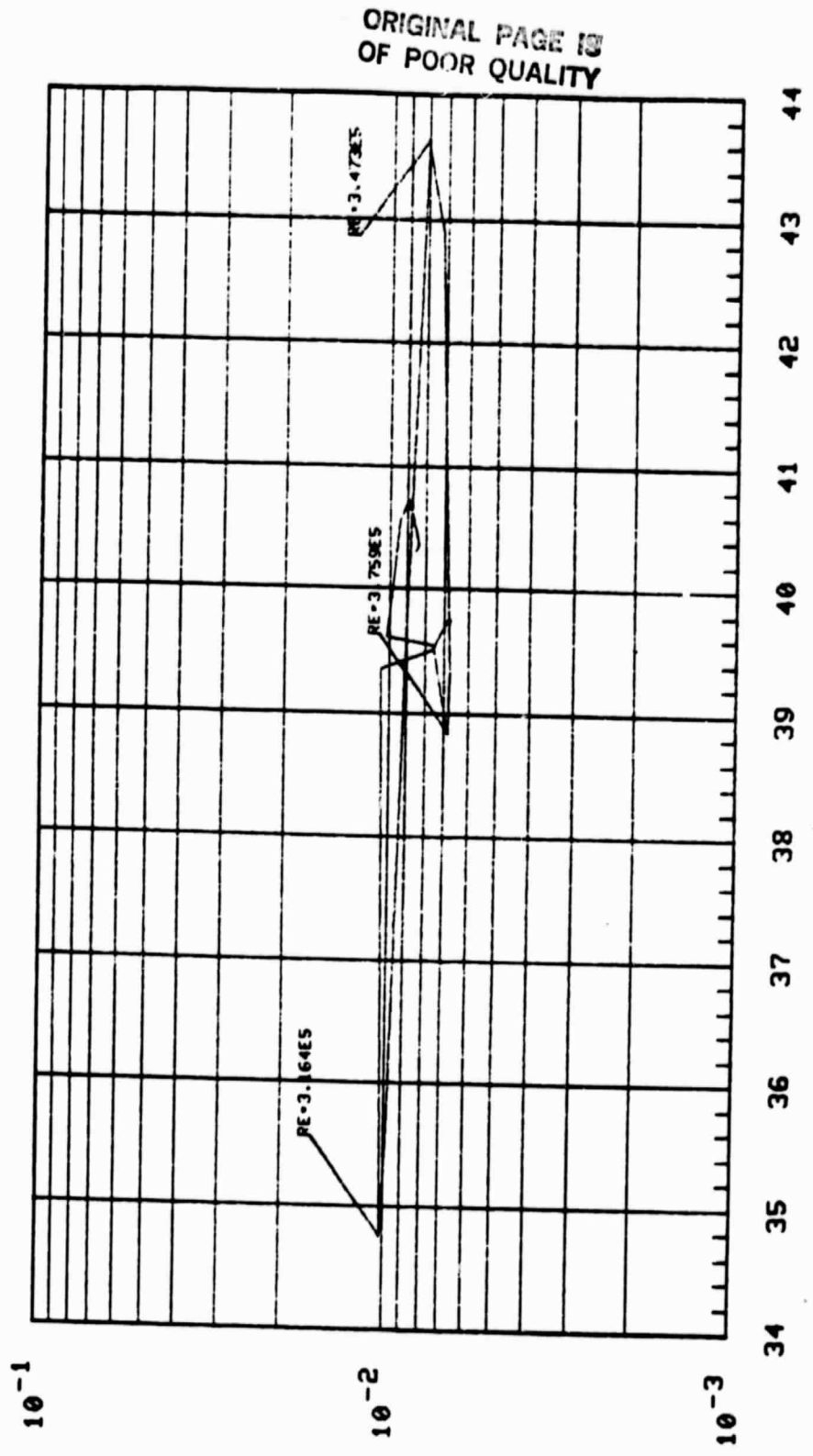
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U07T9994A/H-REF 820- 920 SEC



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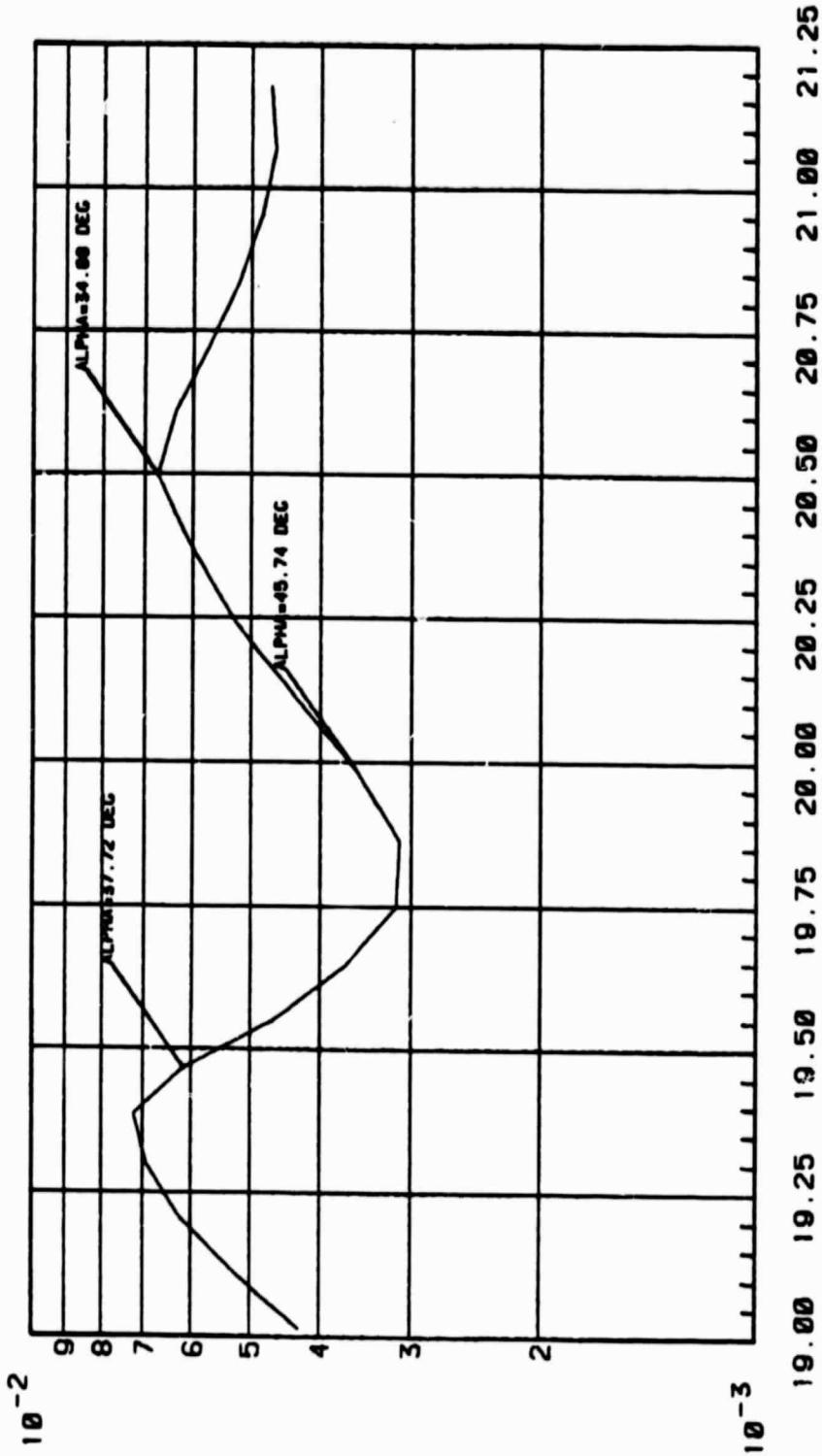
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 ANGLE-OF-ATTACK - DEG

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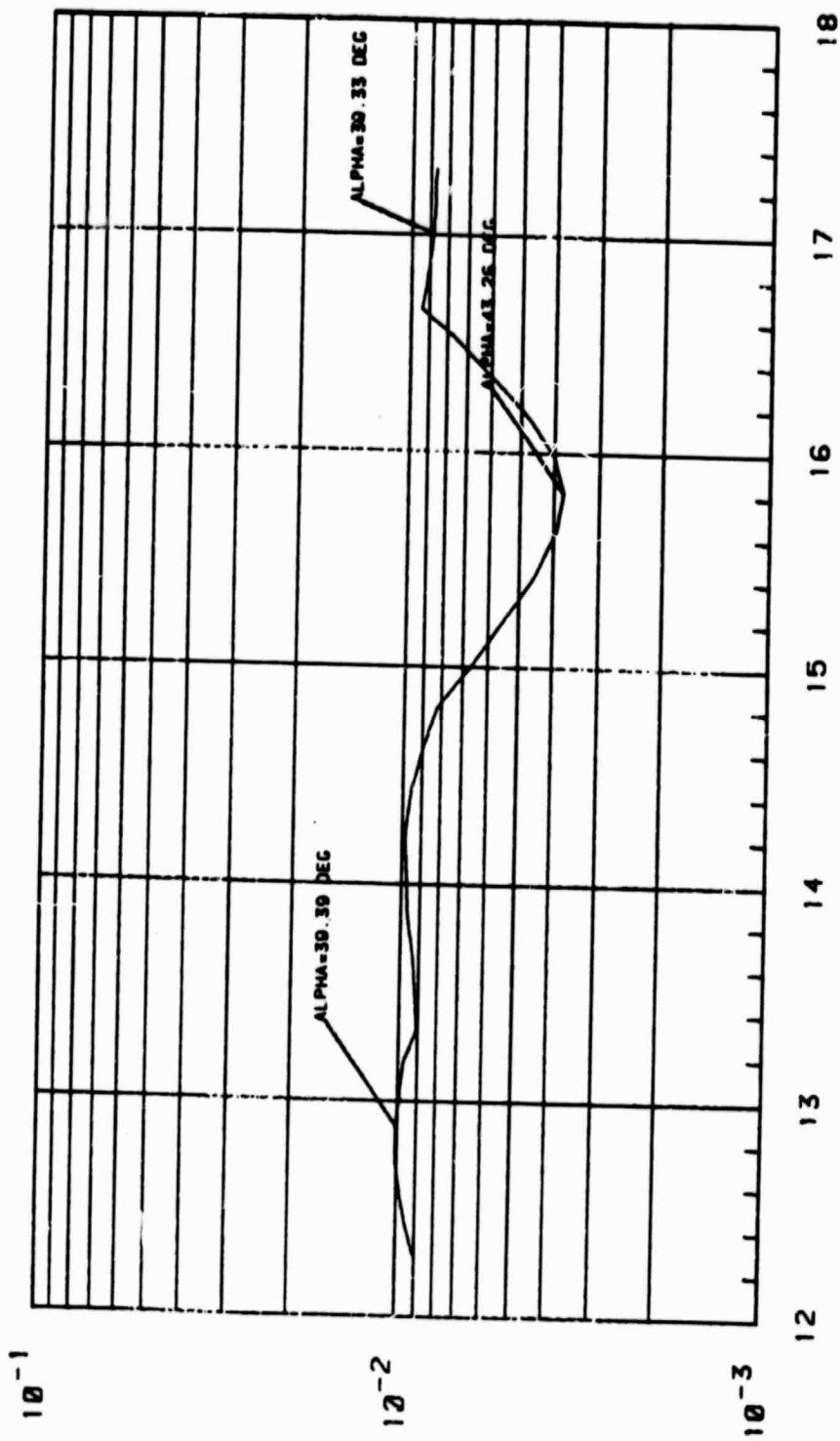
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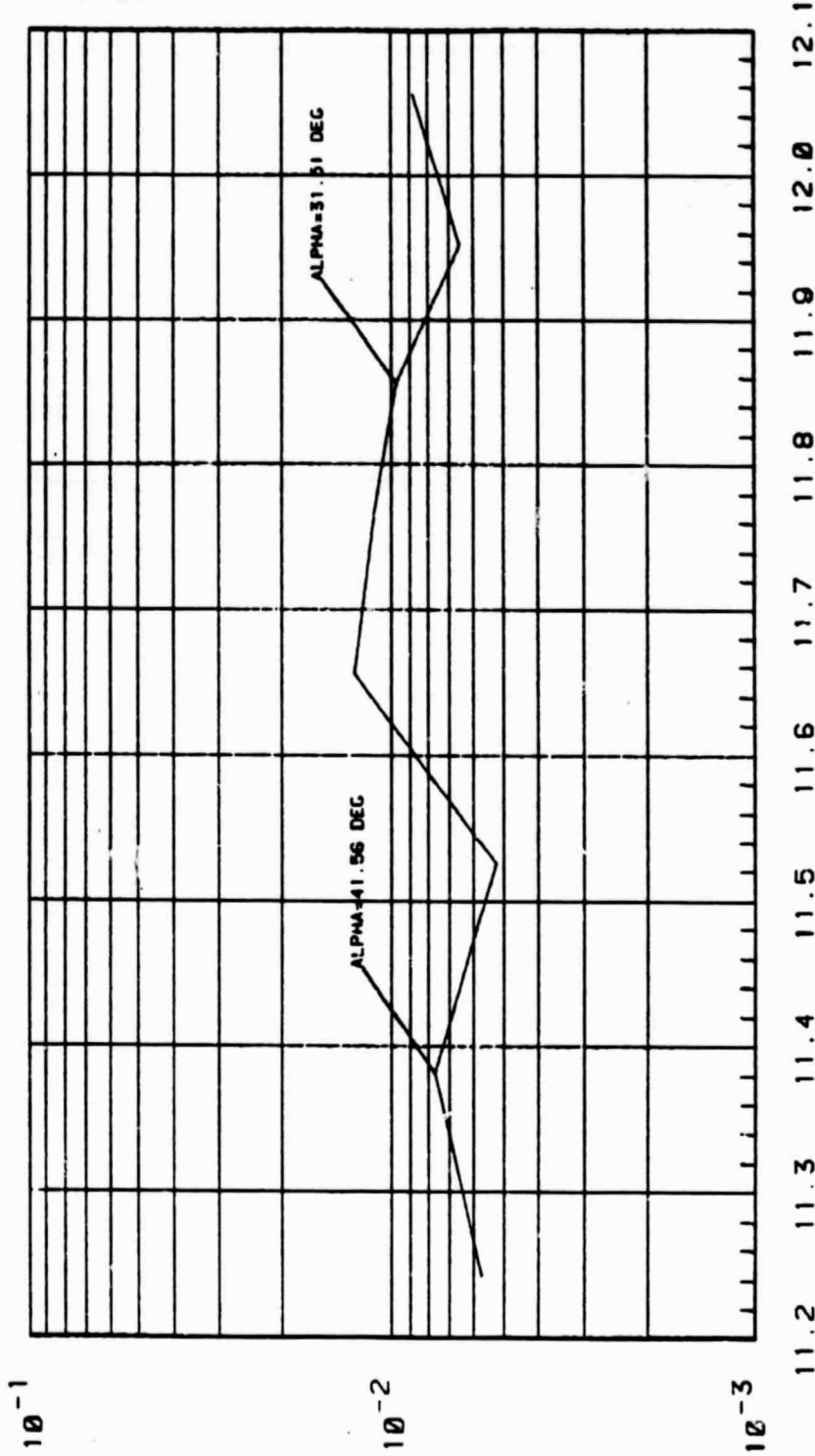
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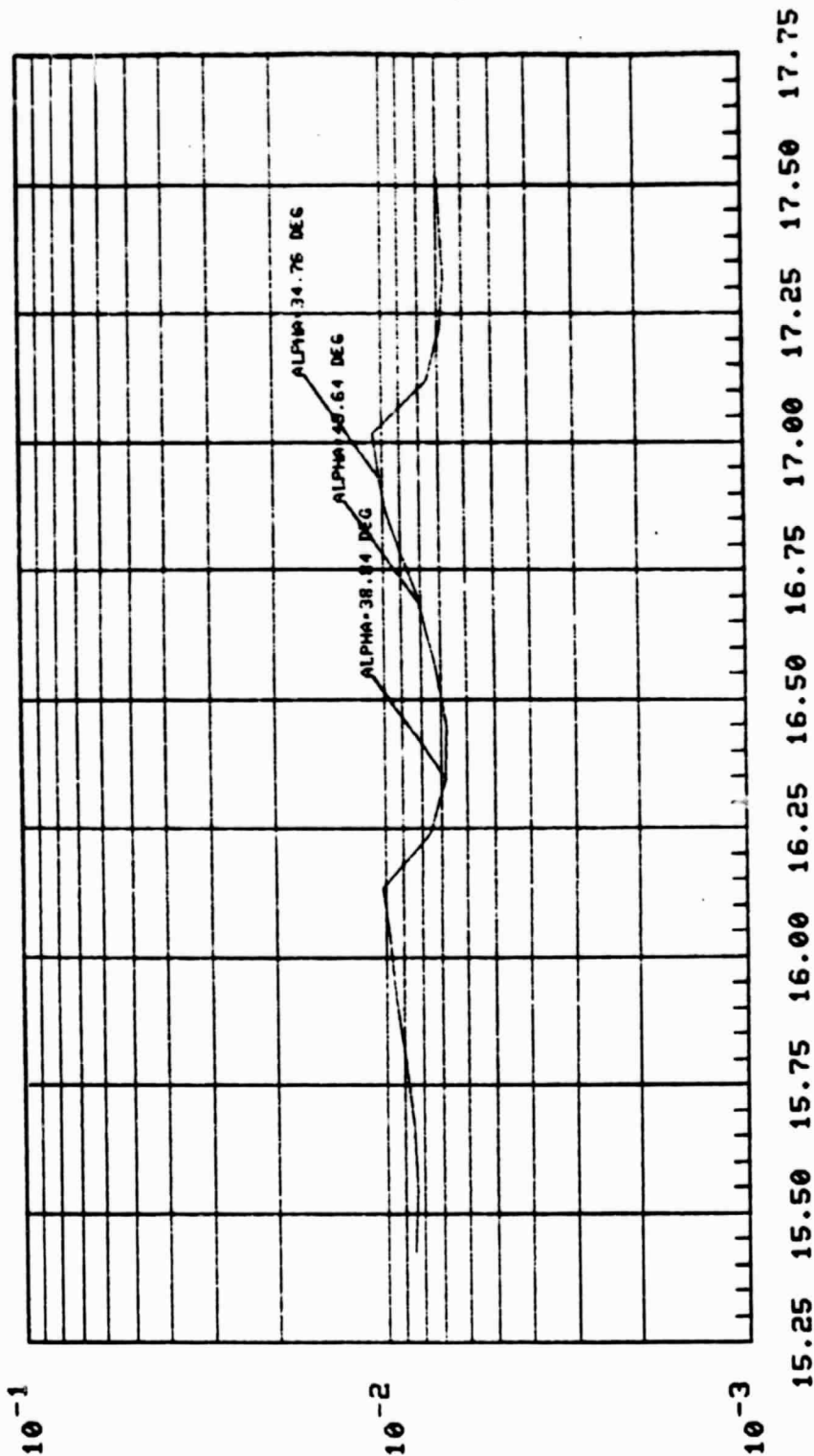
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LIFT COEFF - H/H-REF

D-198

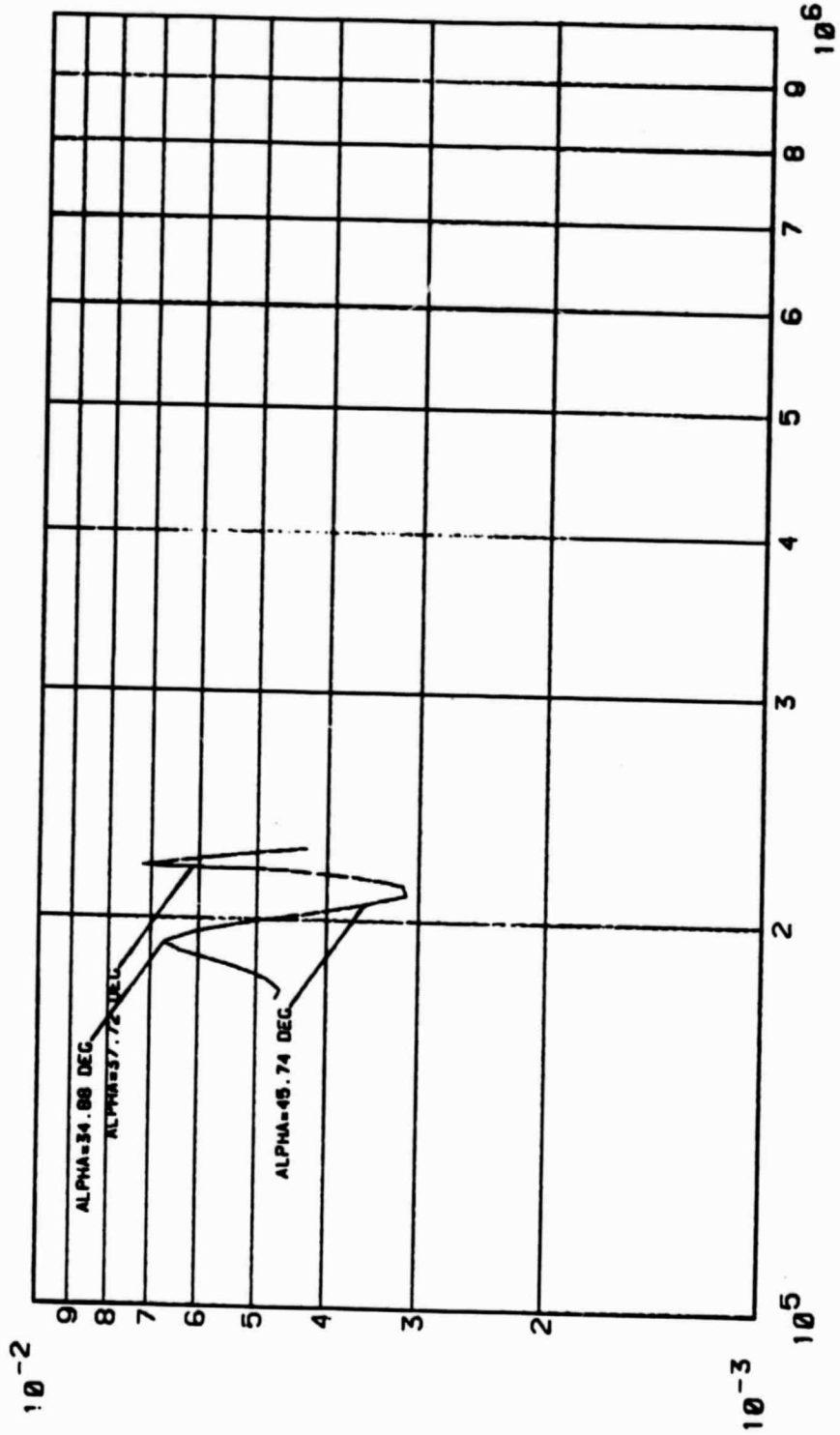
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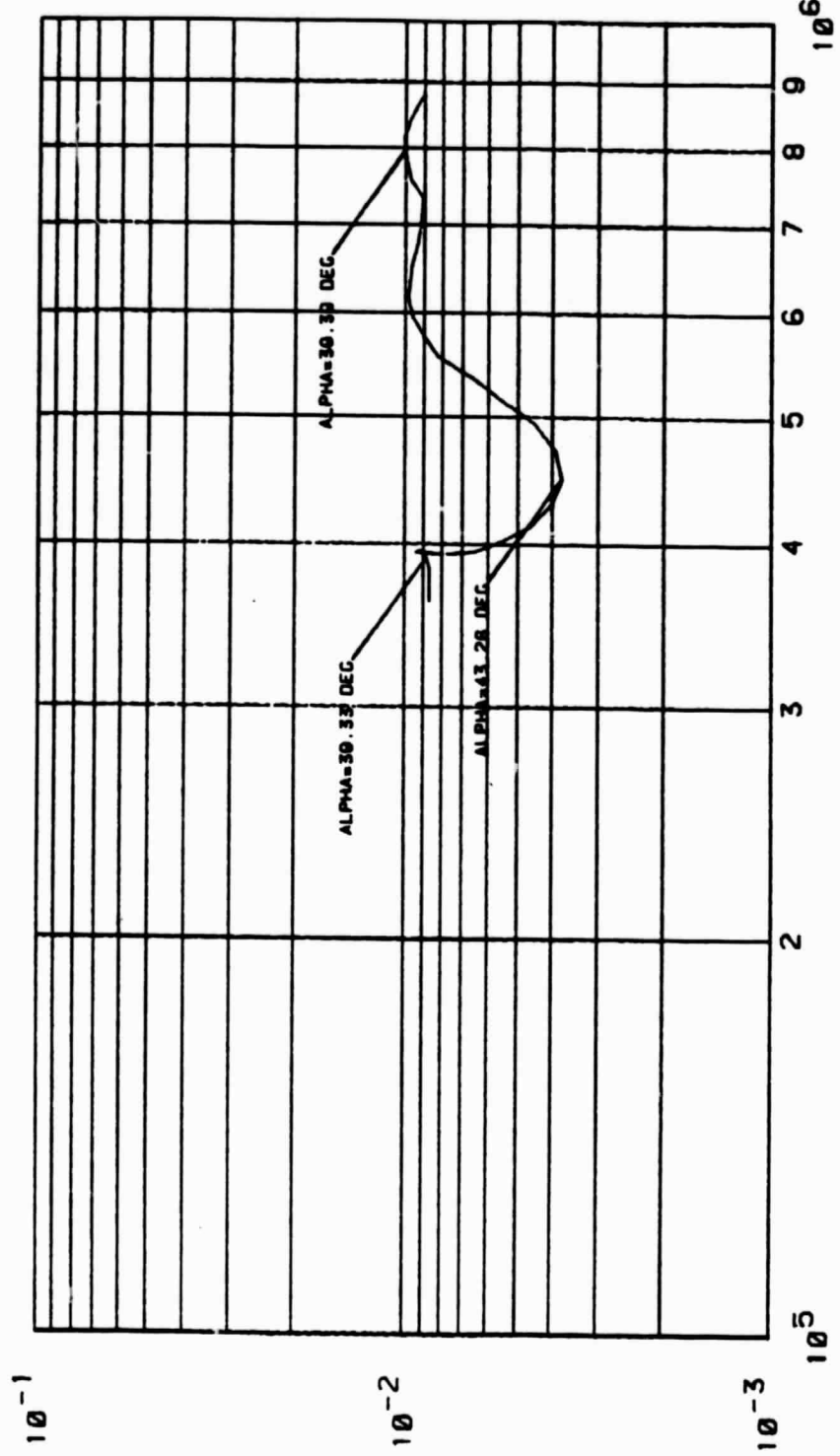
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VS7T0004A/H-REF

D-200

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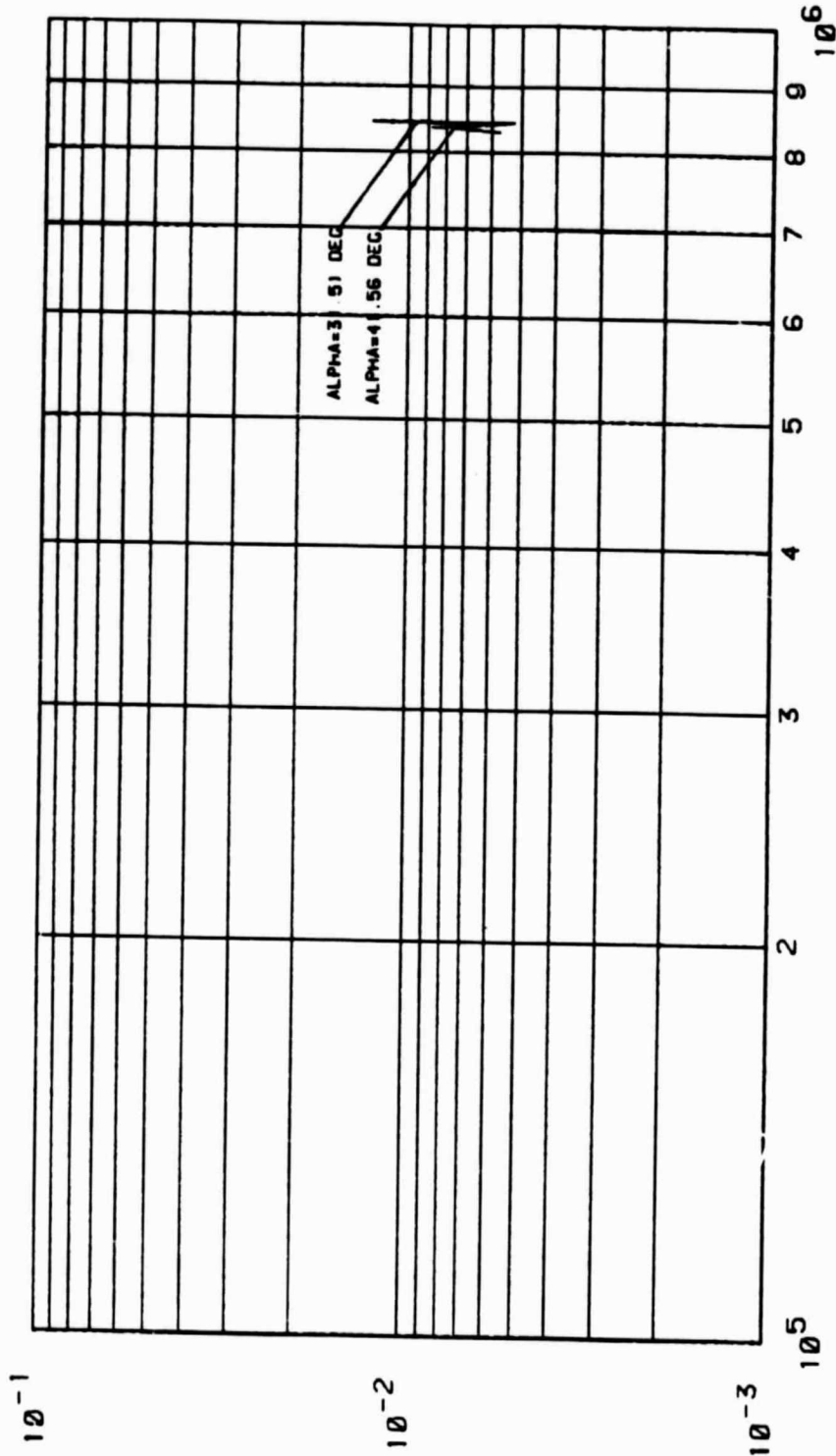
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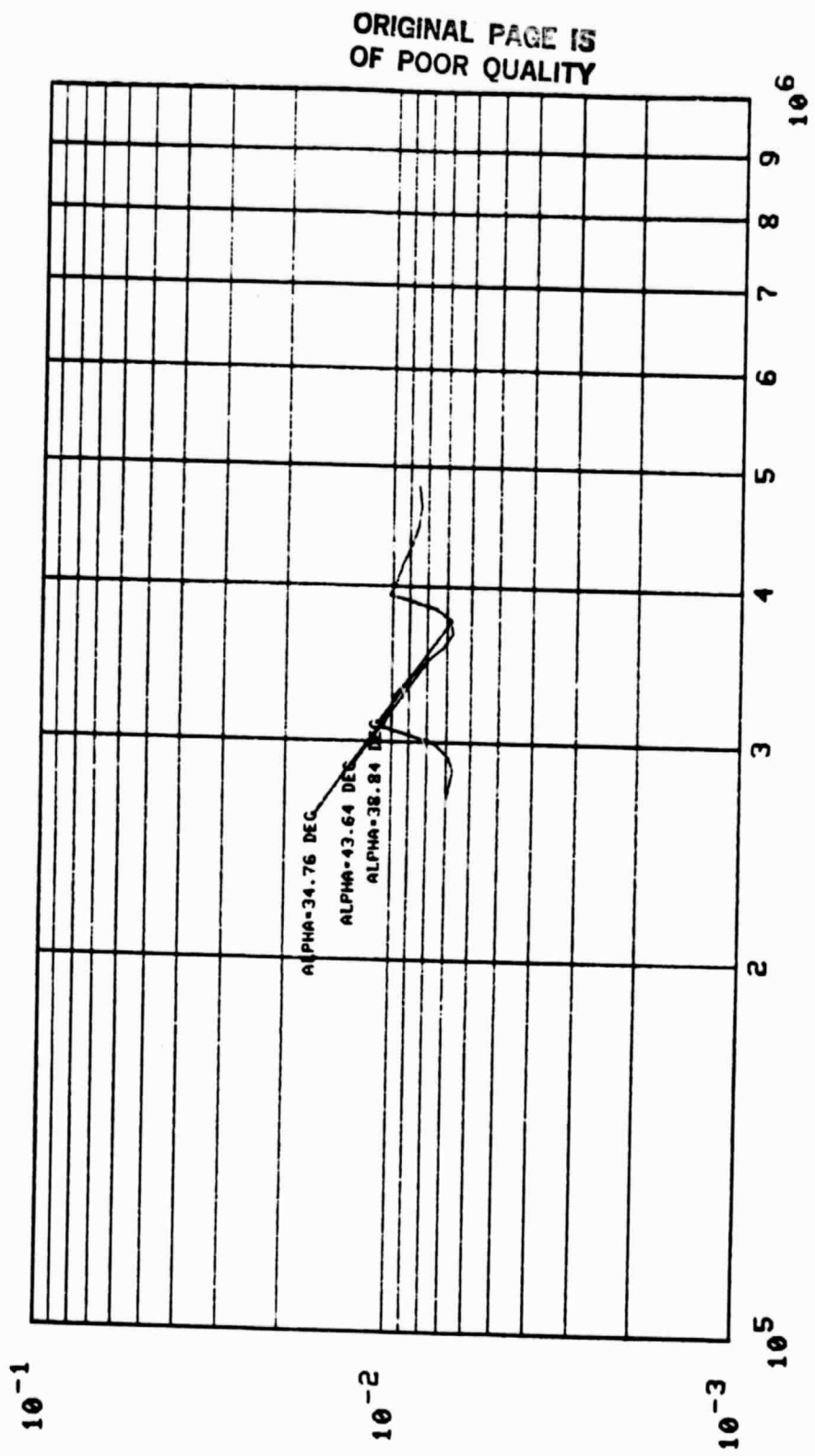
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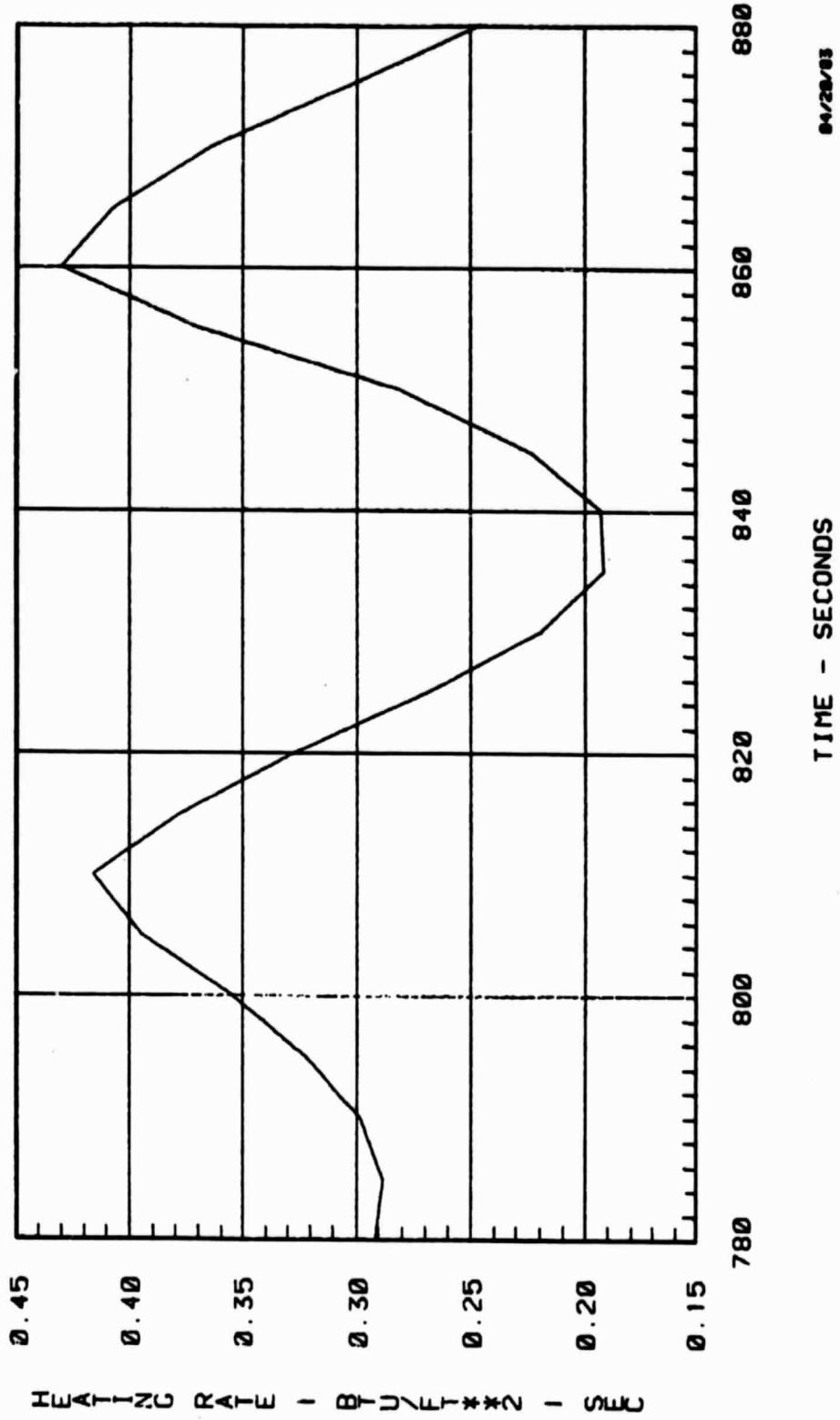
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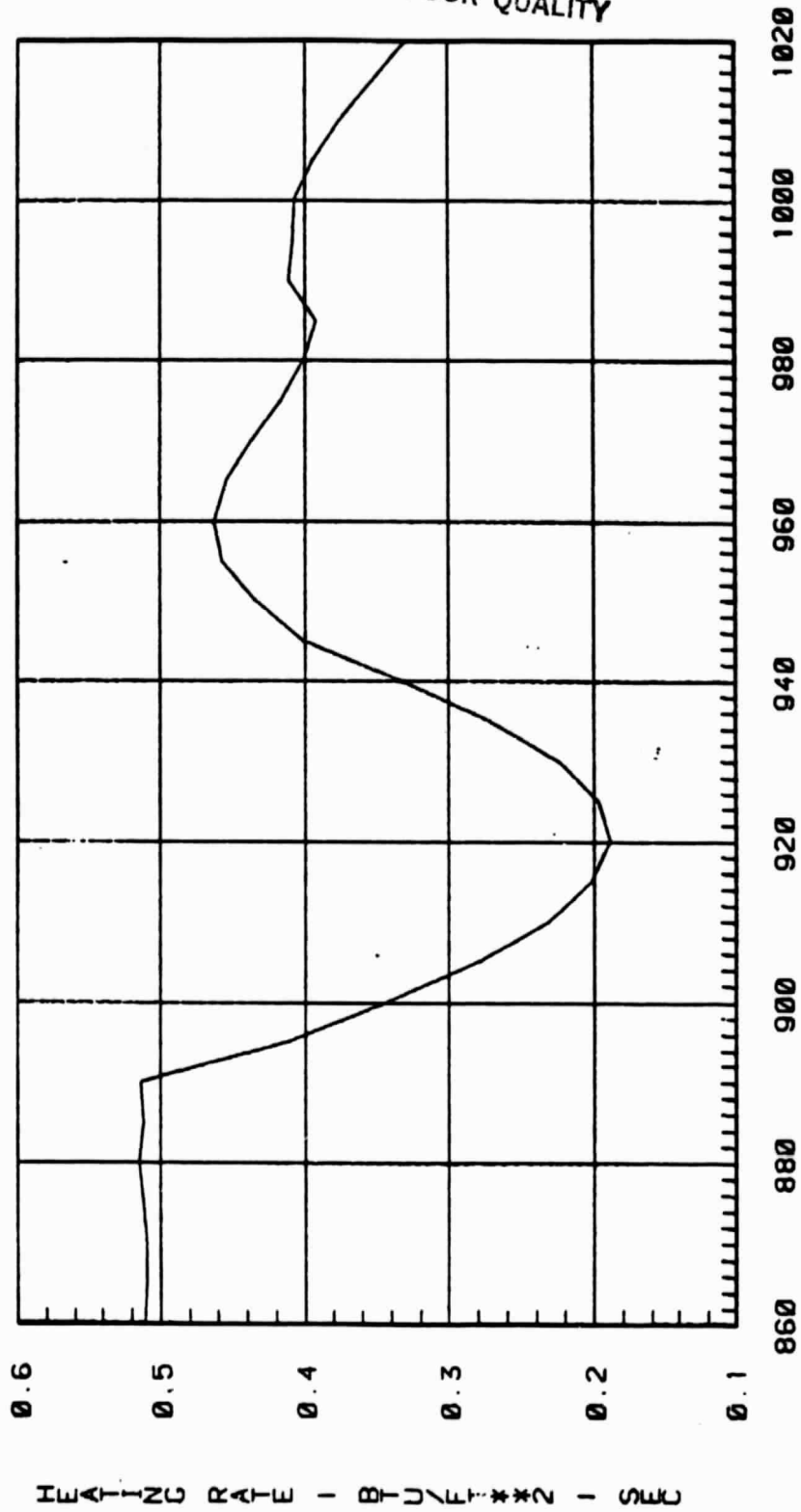
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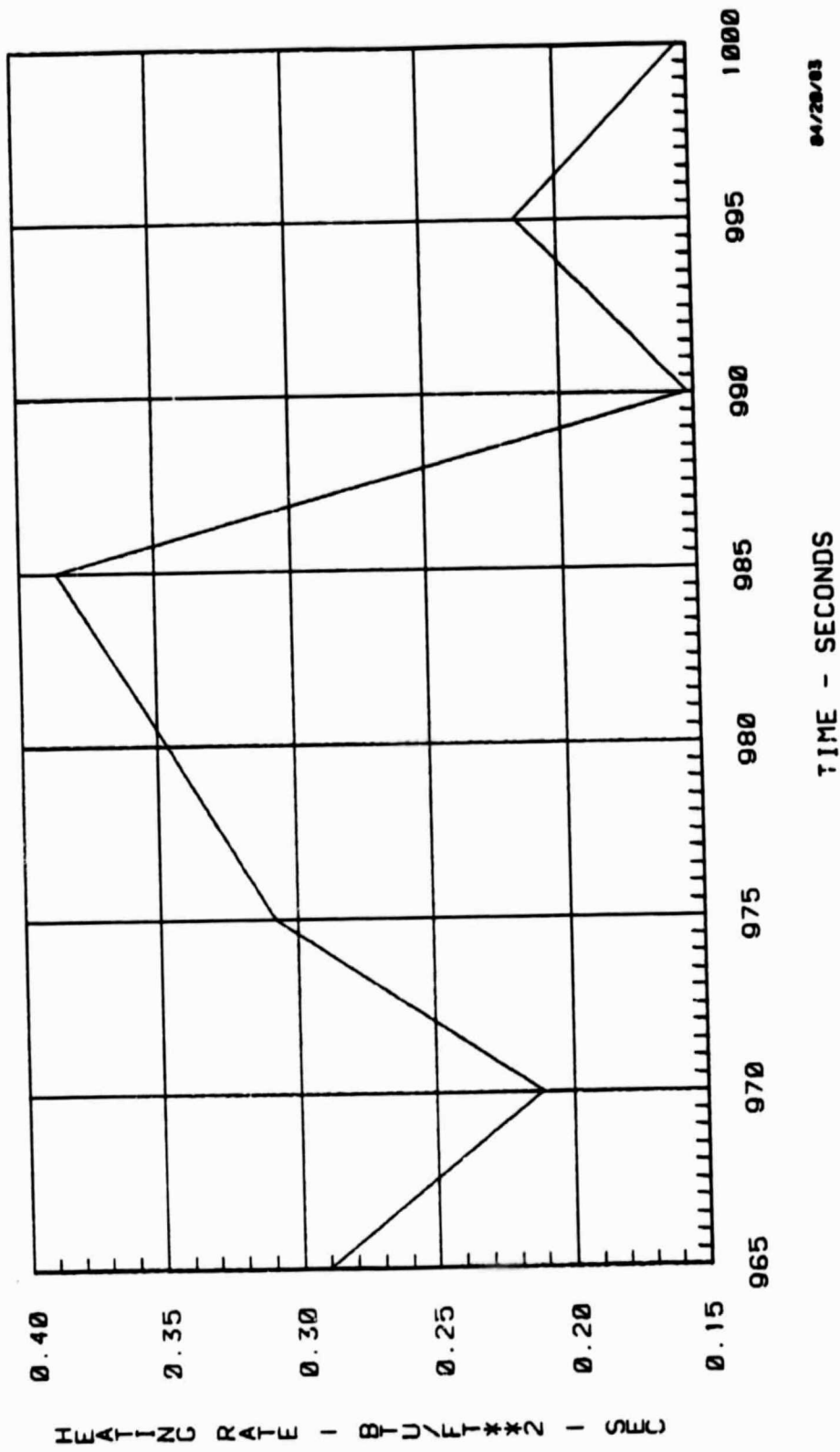
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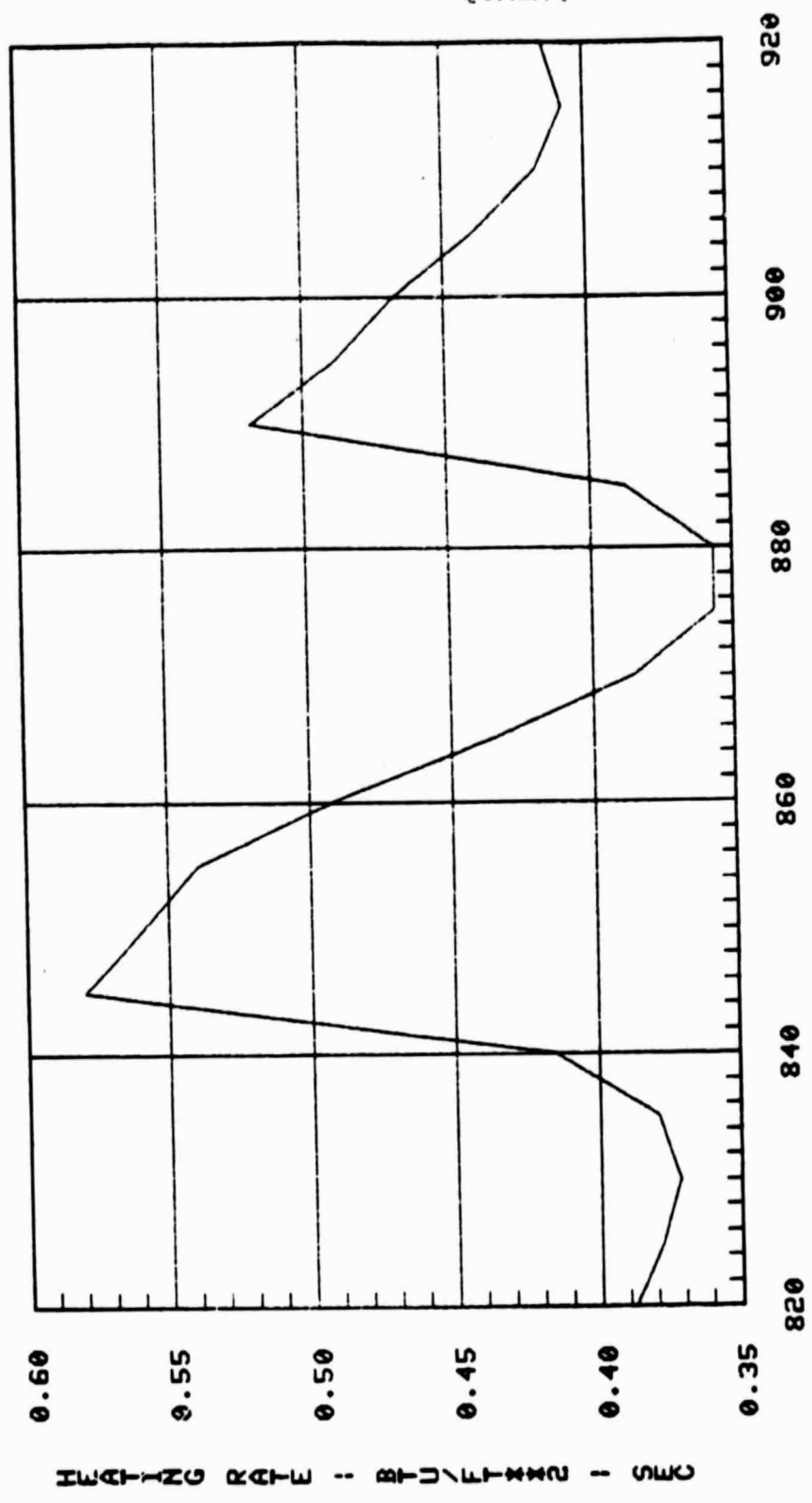
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TIME - SECONDS

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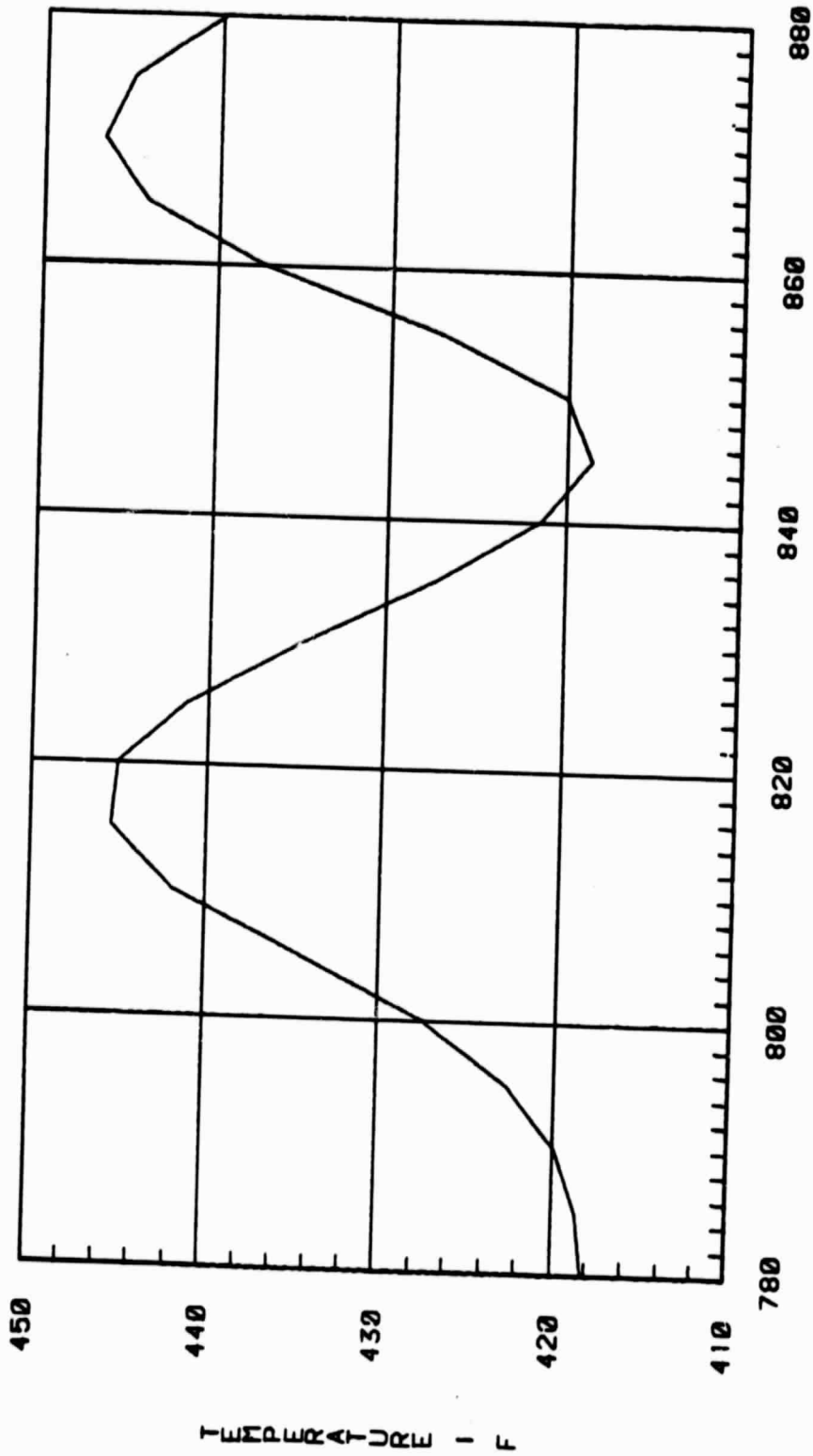
D-206



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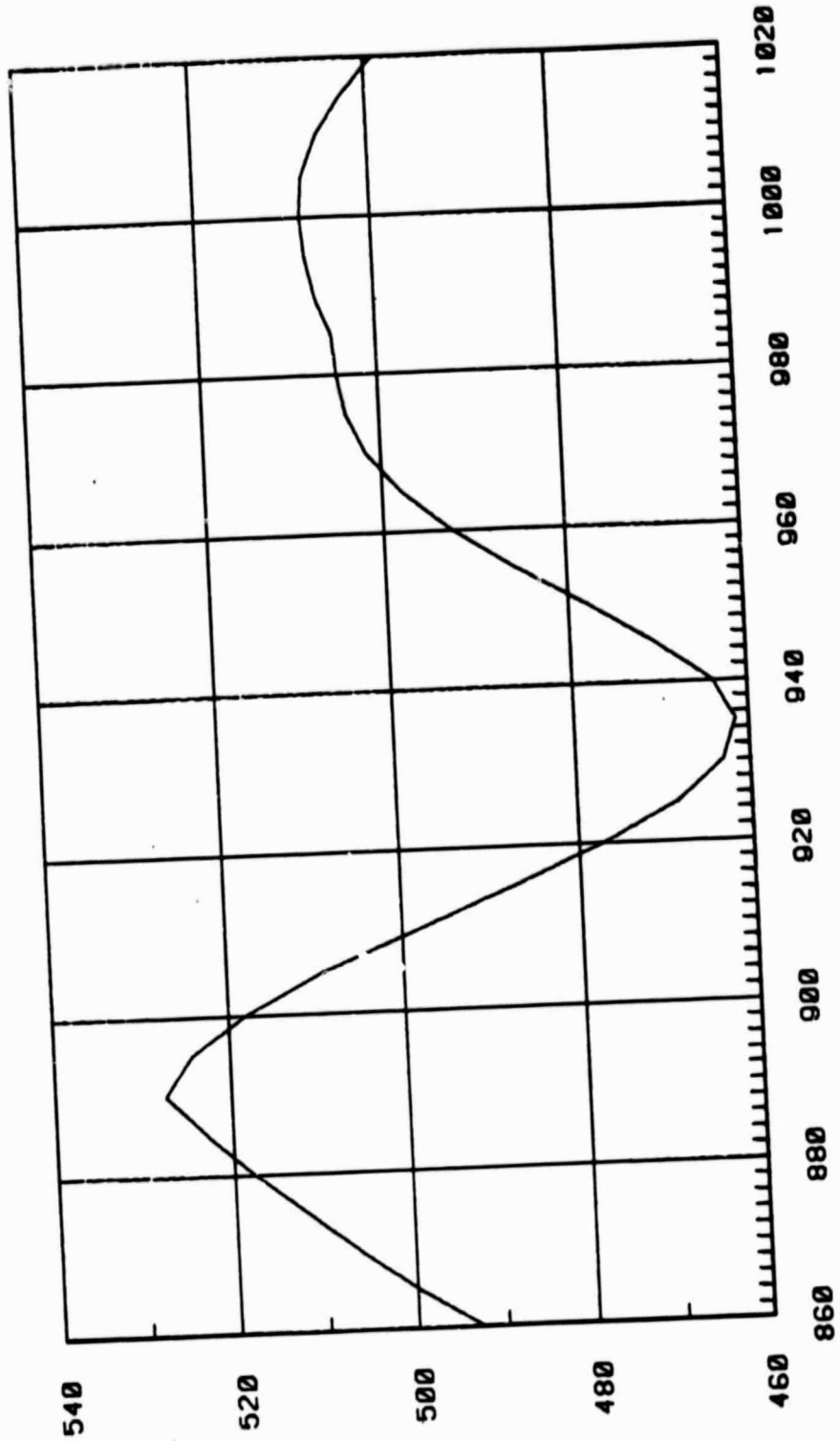
04/20/93

TEMPERATURE - F

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VB770004A

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04/20/03

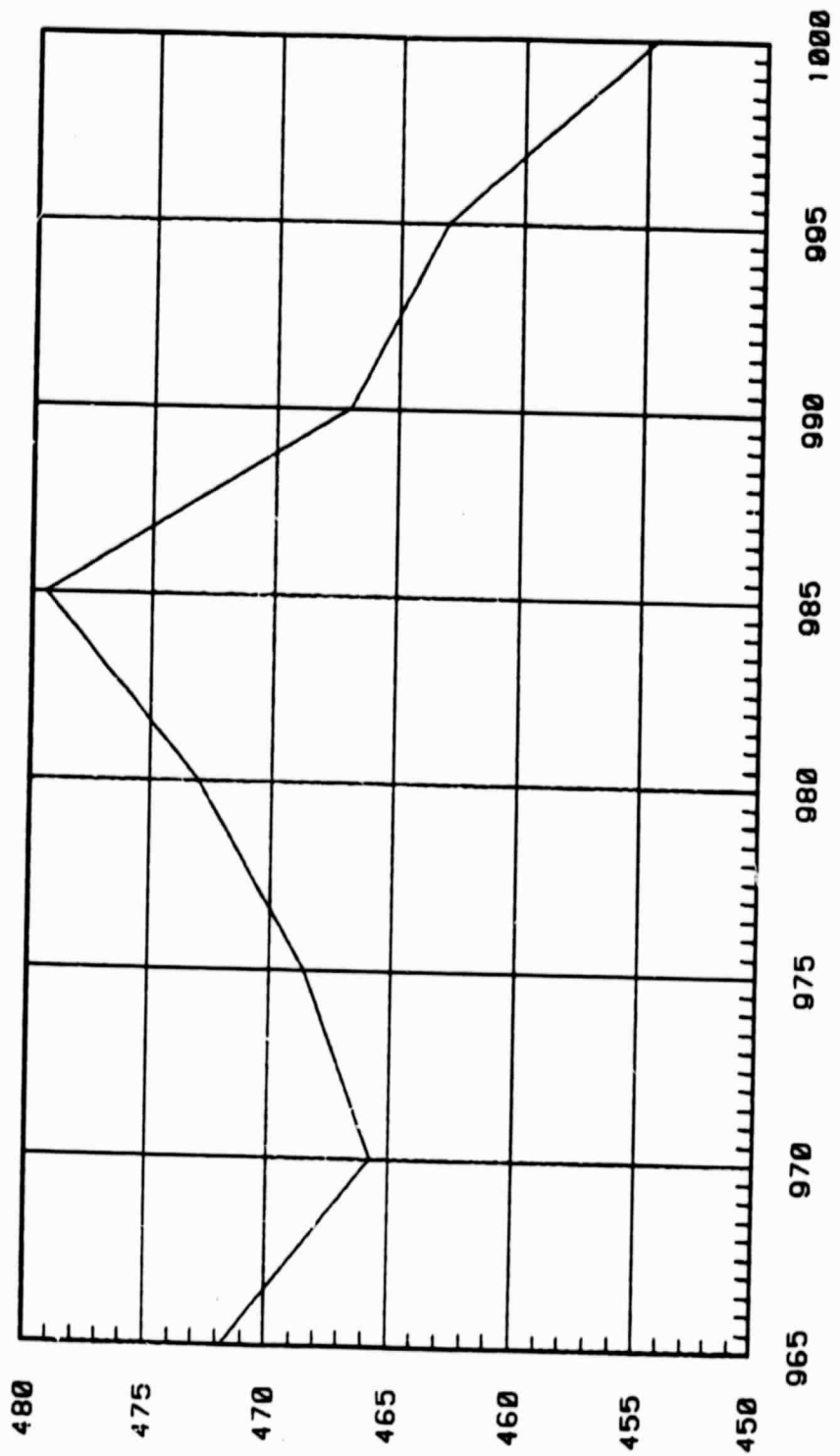
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770004A

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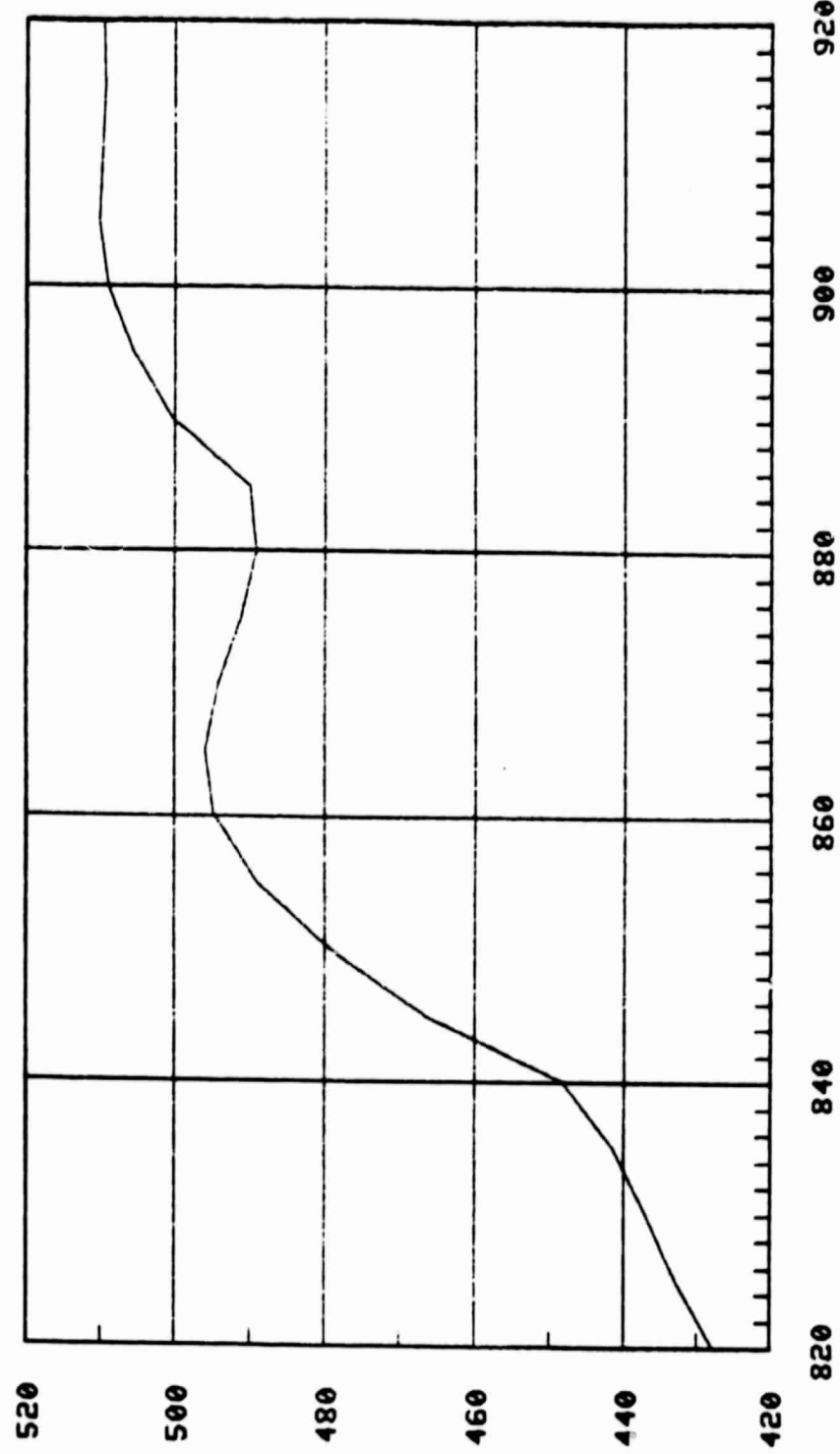
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04/20/83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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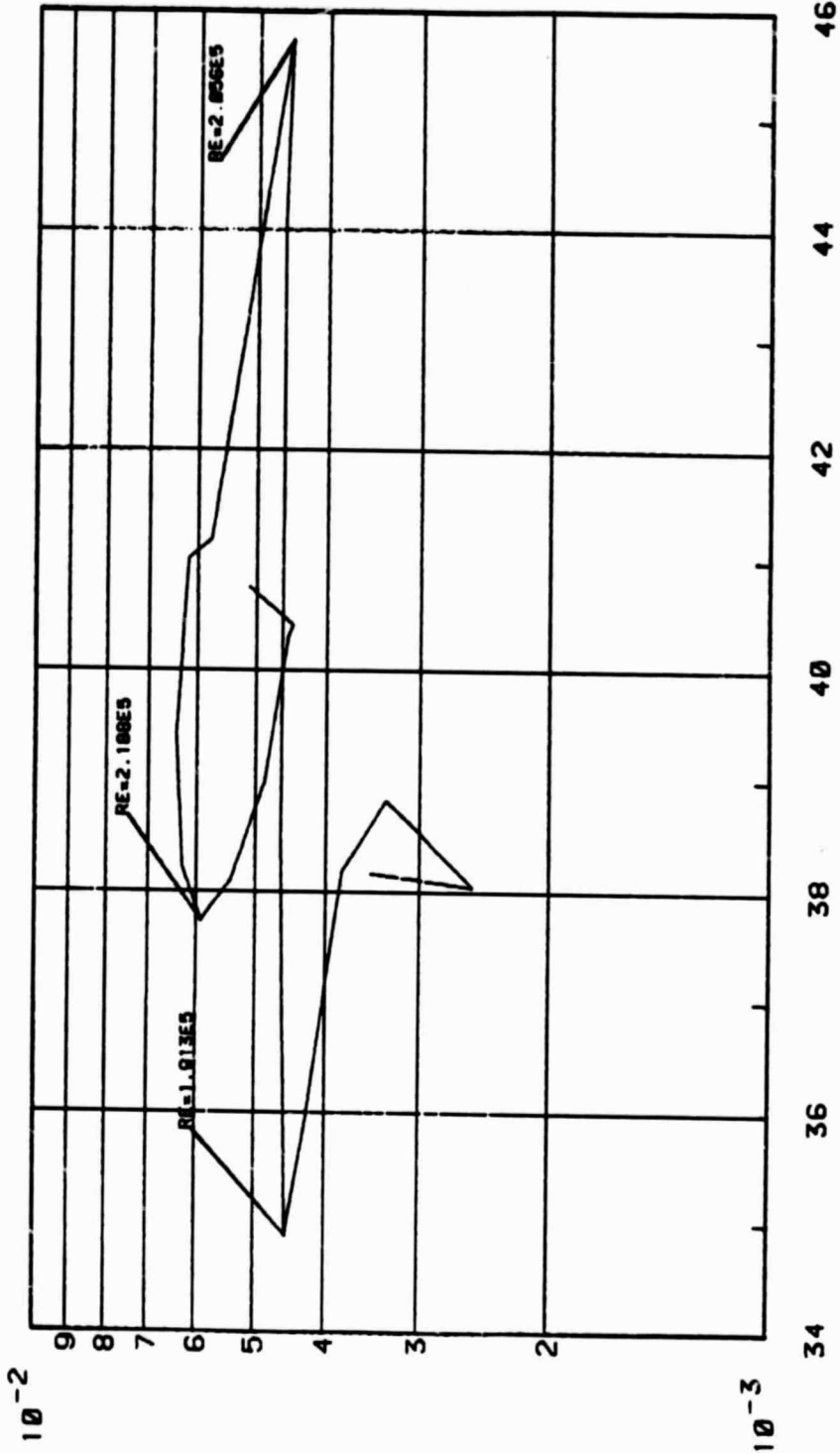
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04-20-83

D-210

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VB7T0000A/H-REF 700- 000 SEC



FLIGHT POWER - W

D-211

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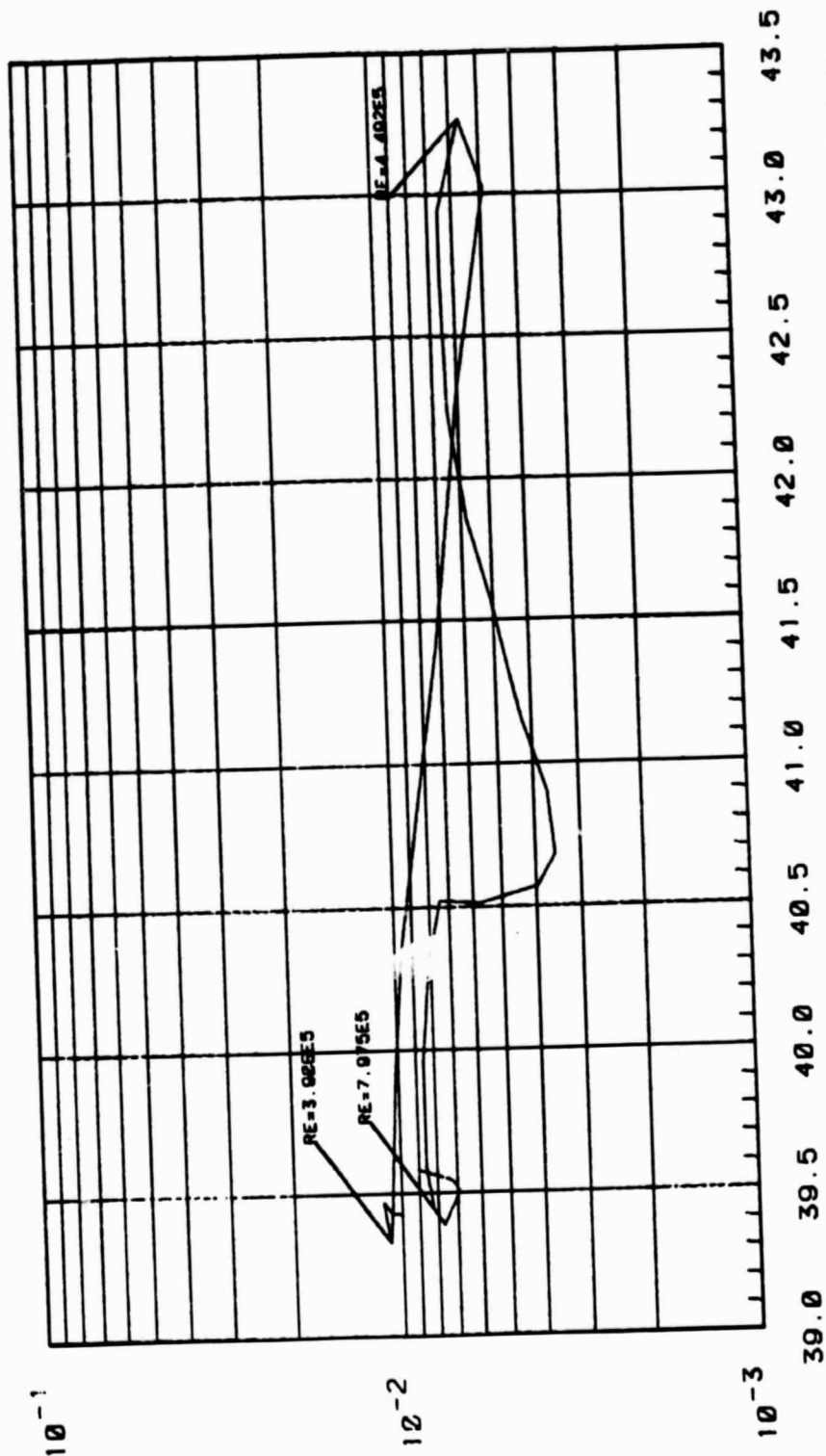
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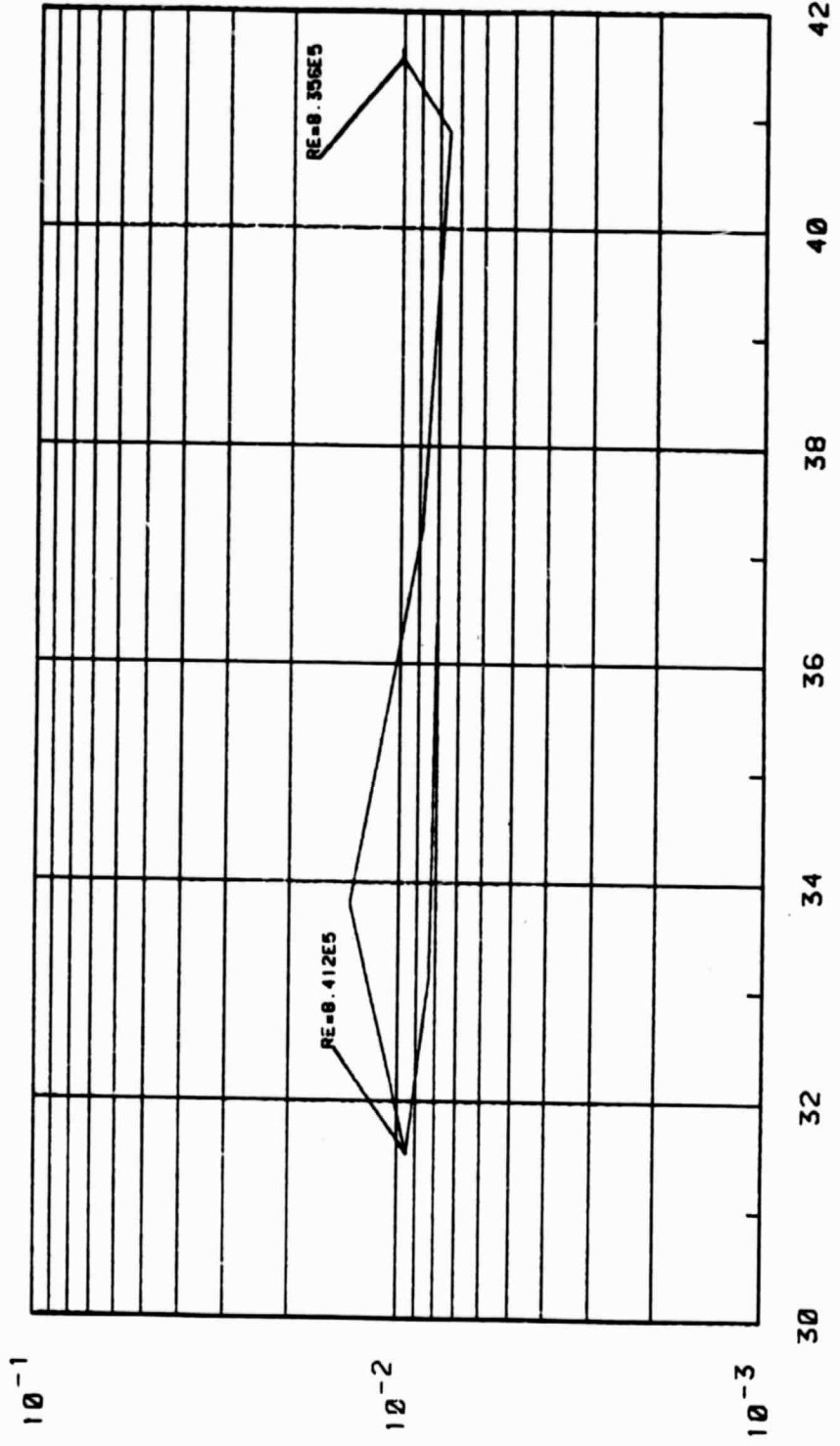
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ANGLE-OF-ATTACK - DEG

EFFECTIVE POWER - IN-REF

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB710000A/H-REF 060-1000 SEC

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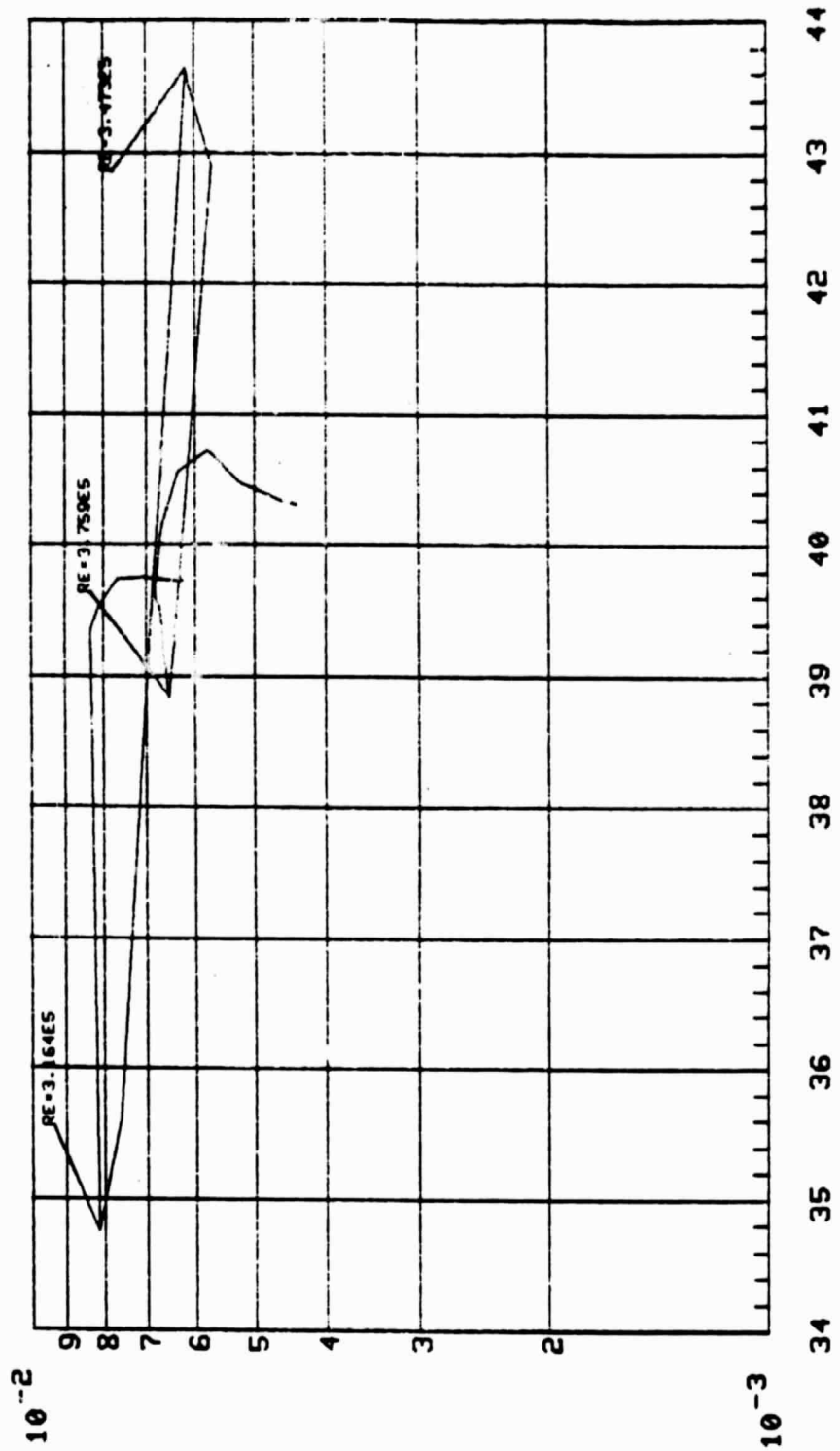


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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9995A/H-REF 820- 920 SEC



ANGLE-OF-ATTACK - DEG

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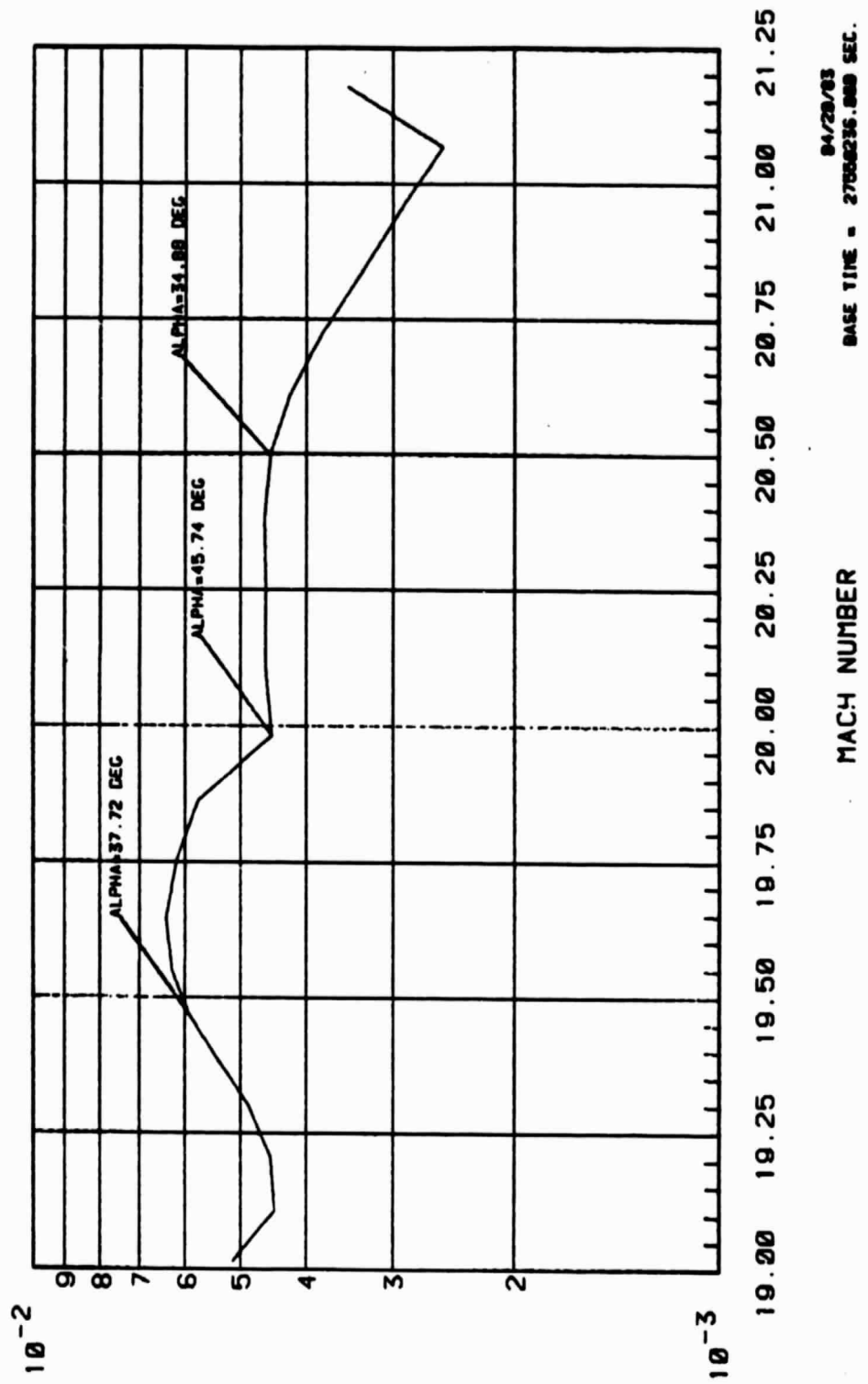
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STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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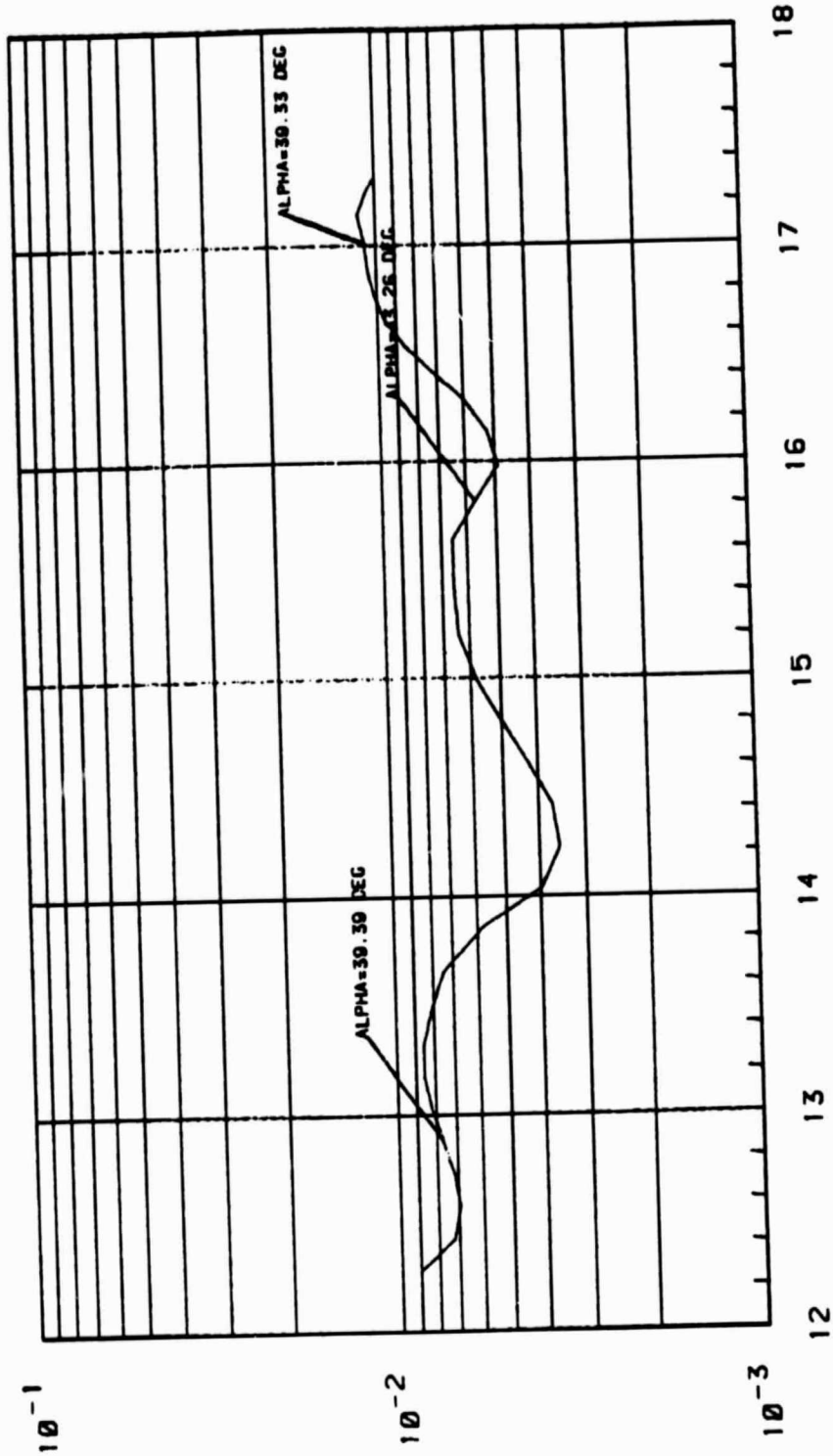


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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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LIFT COEFF - H-REF

D-216

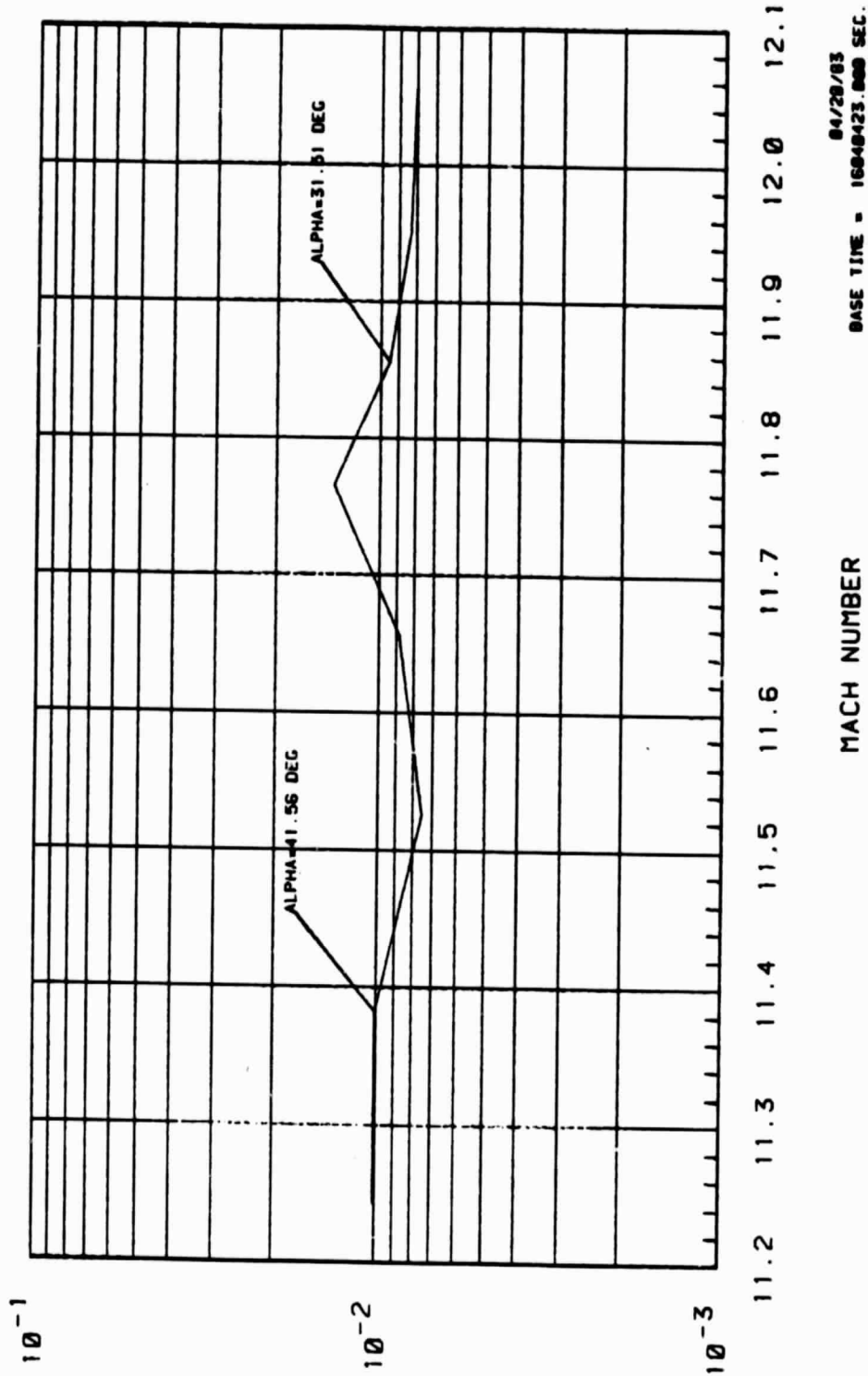
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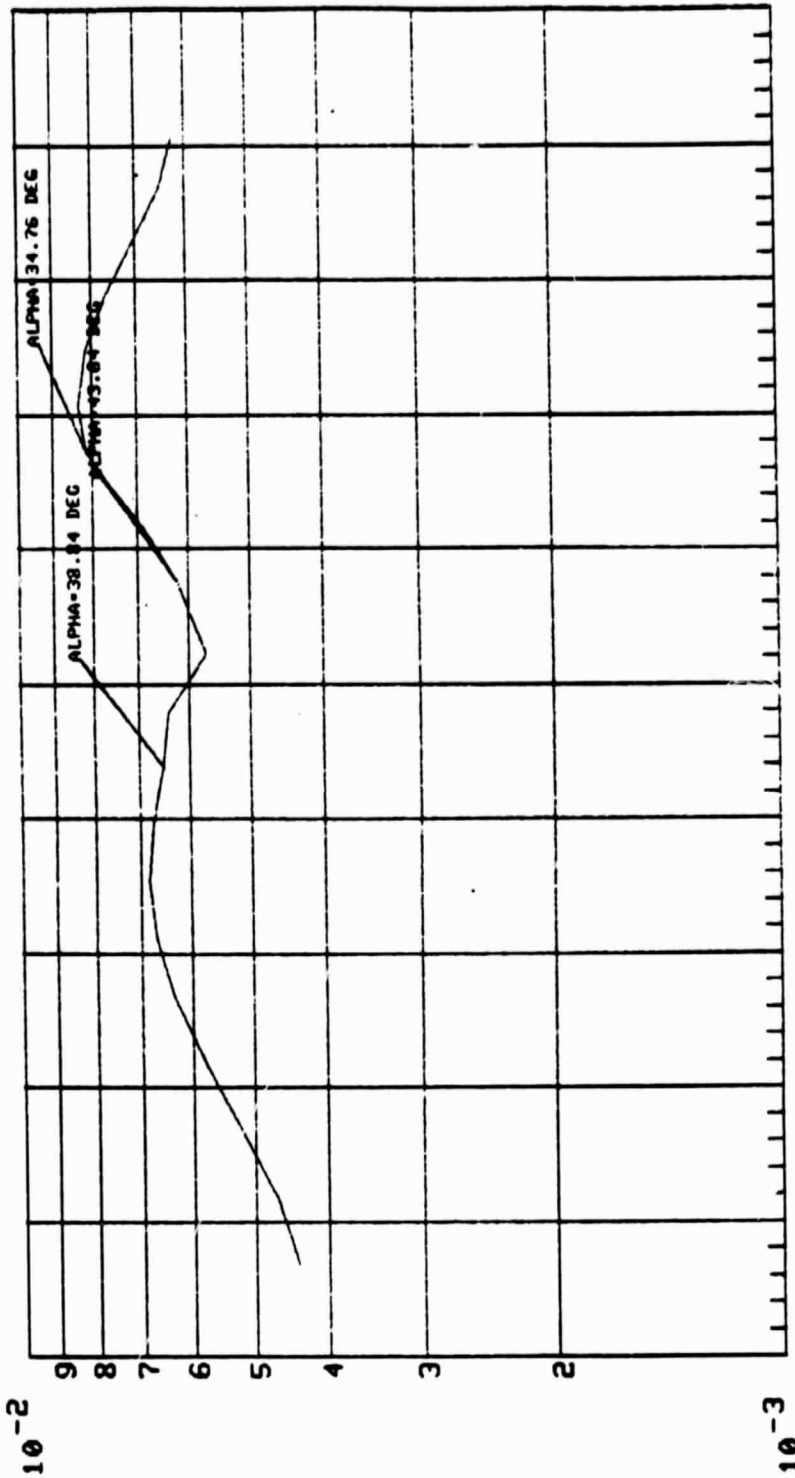
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MACH NUMBER

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U07T9995A/H-REF 820- 920 SEC



FILM COEFF - H/H-REF

D-218

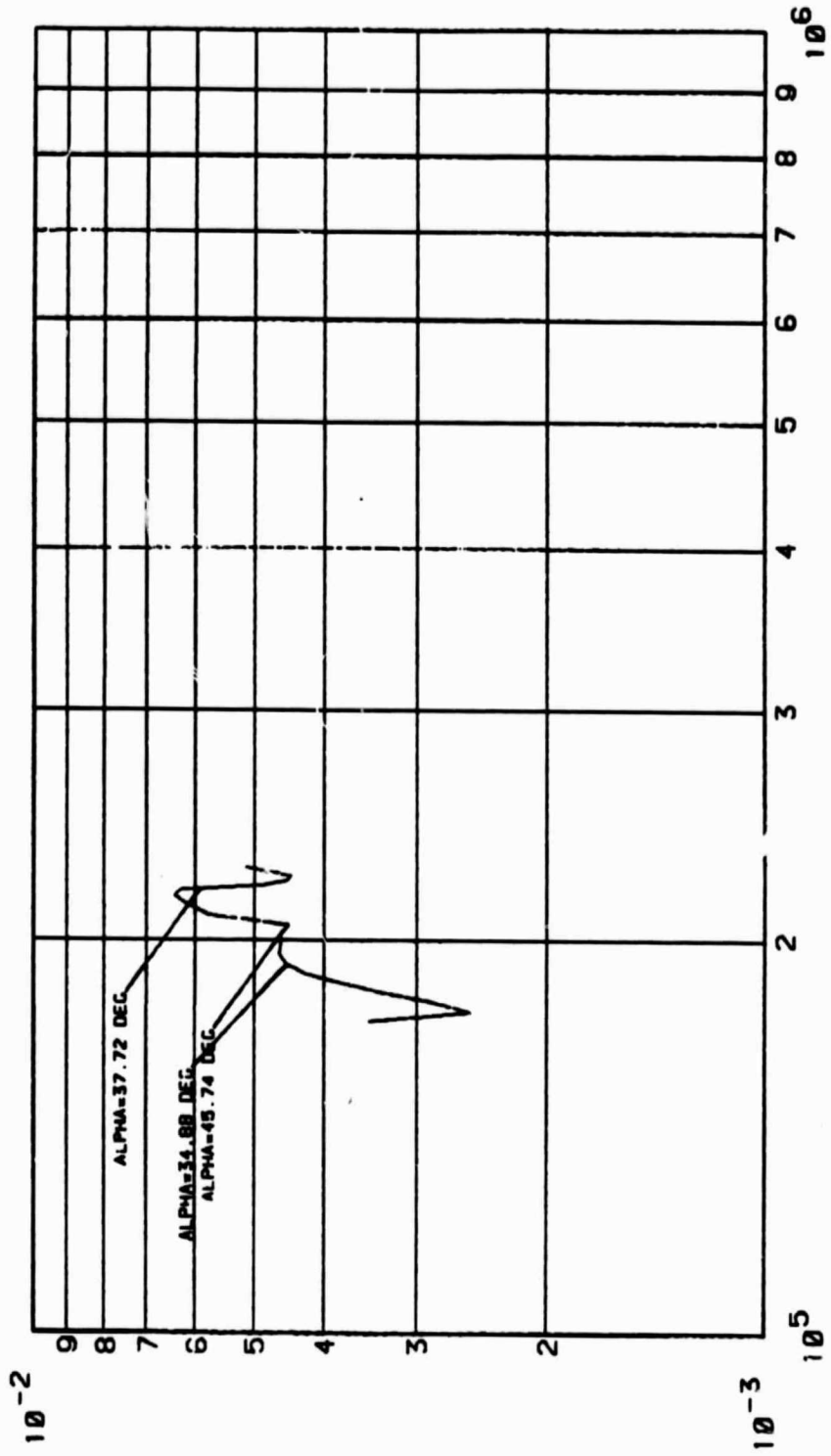
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MACH NUMBER

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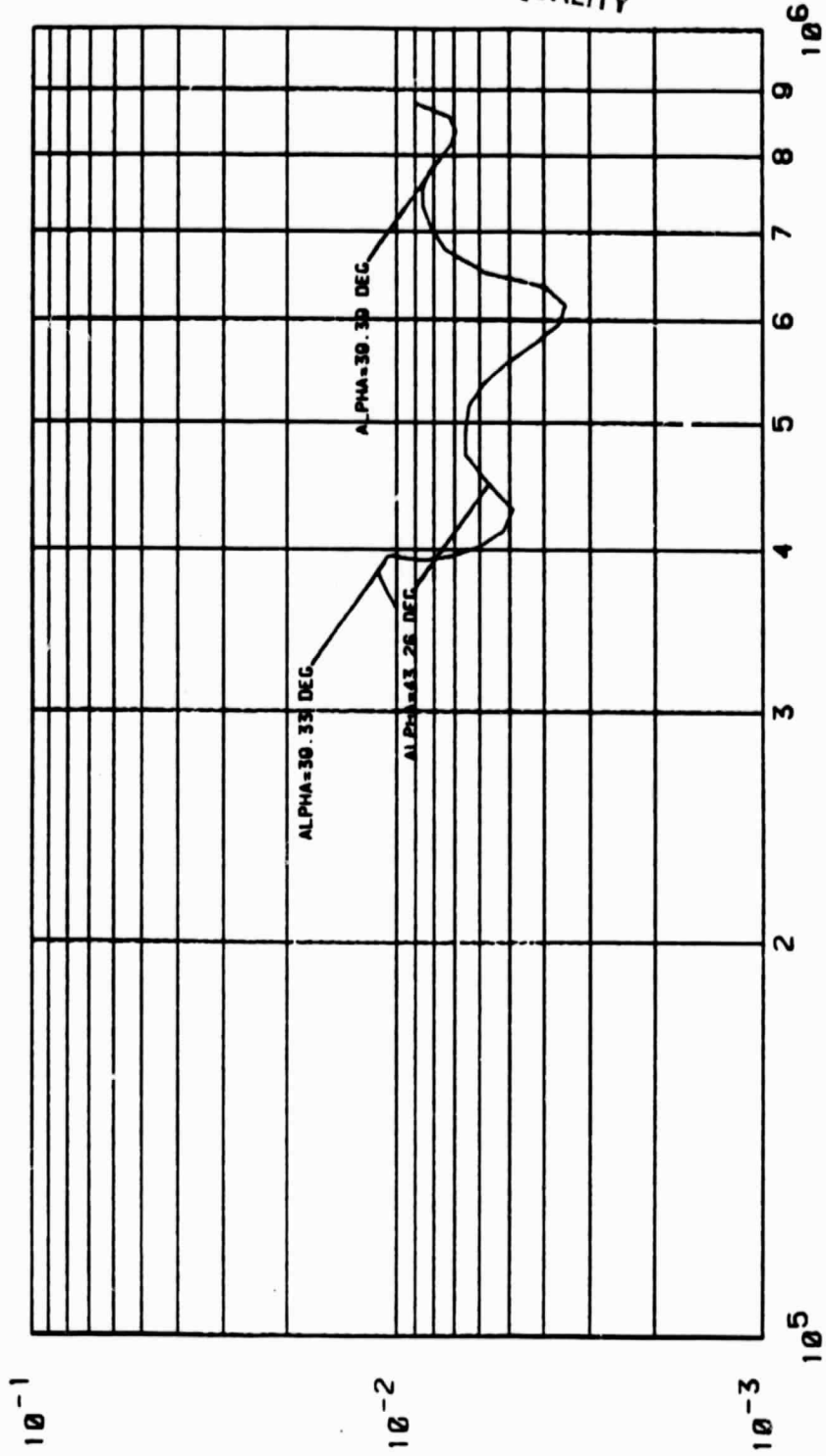
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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D-220

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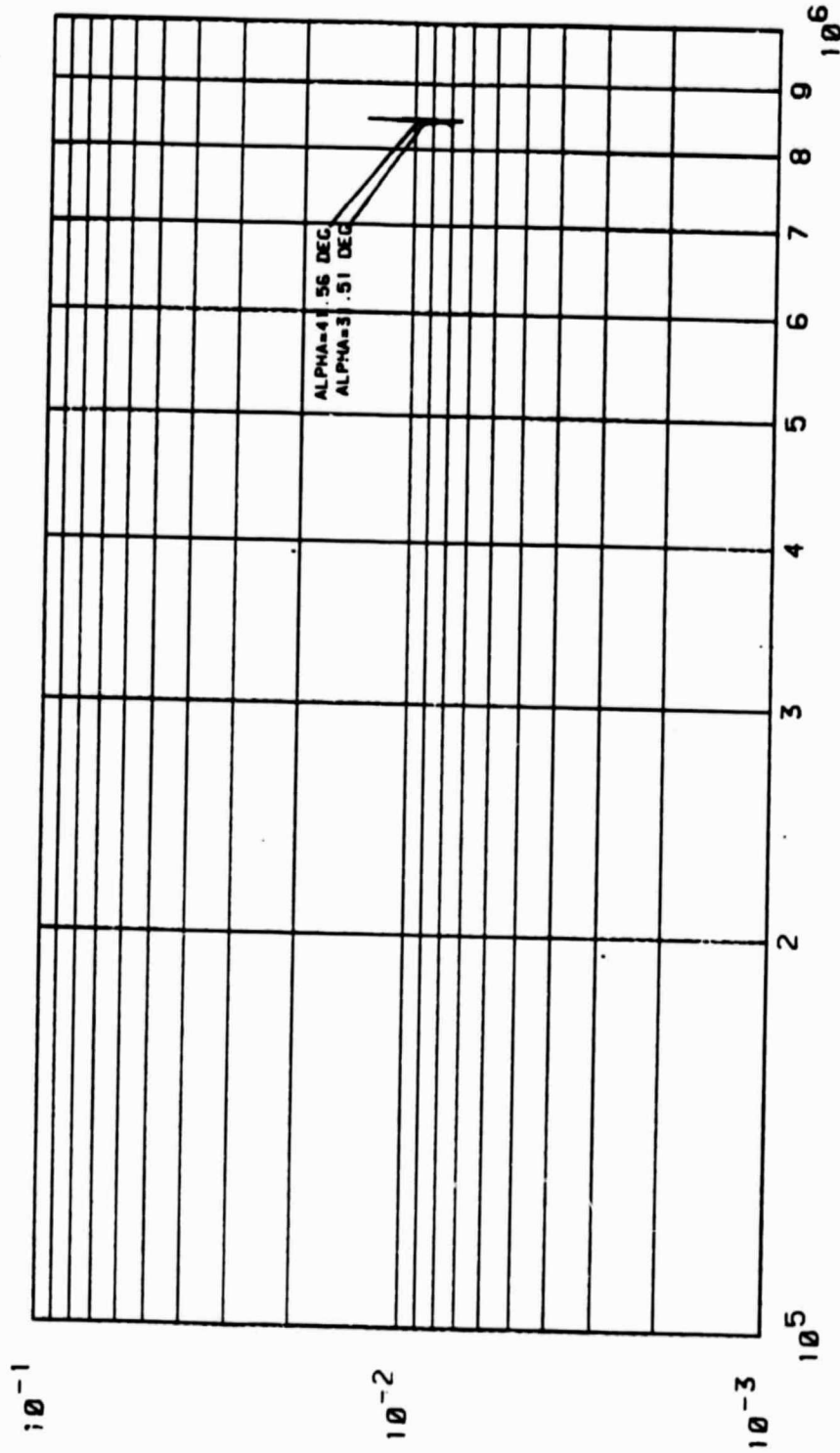
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D-221

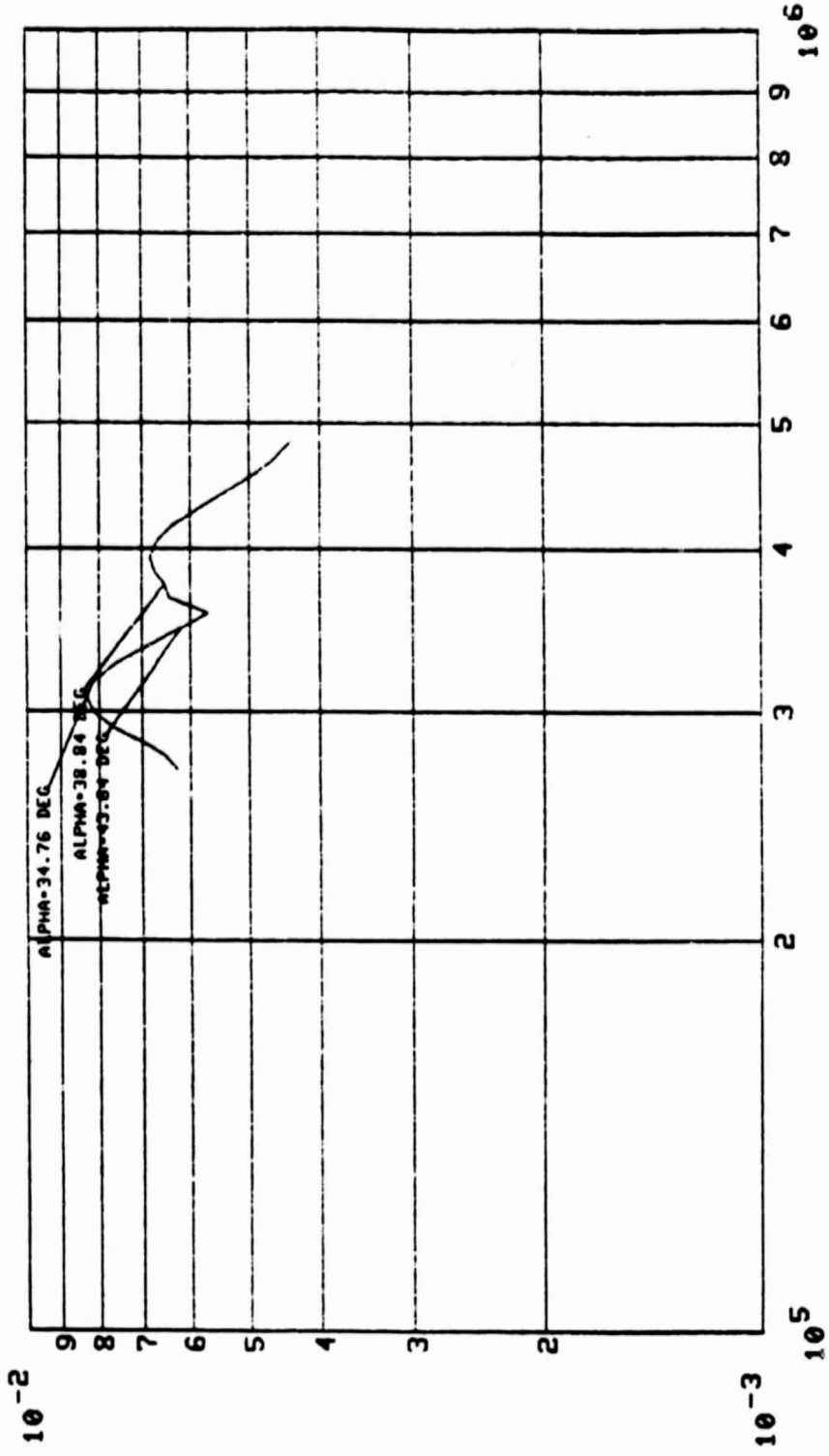
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04/20/83

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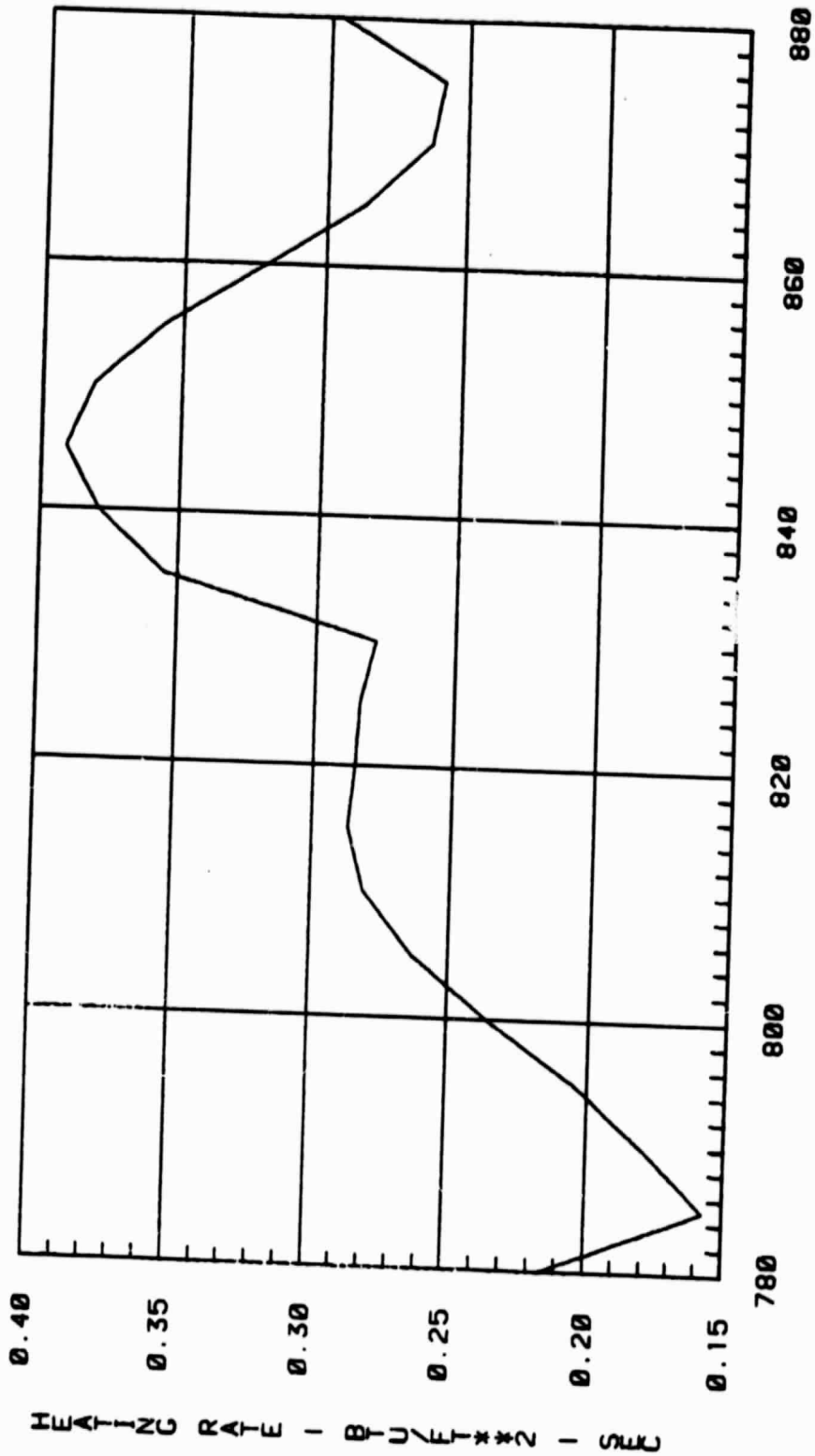
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VB776008A



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D-223

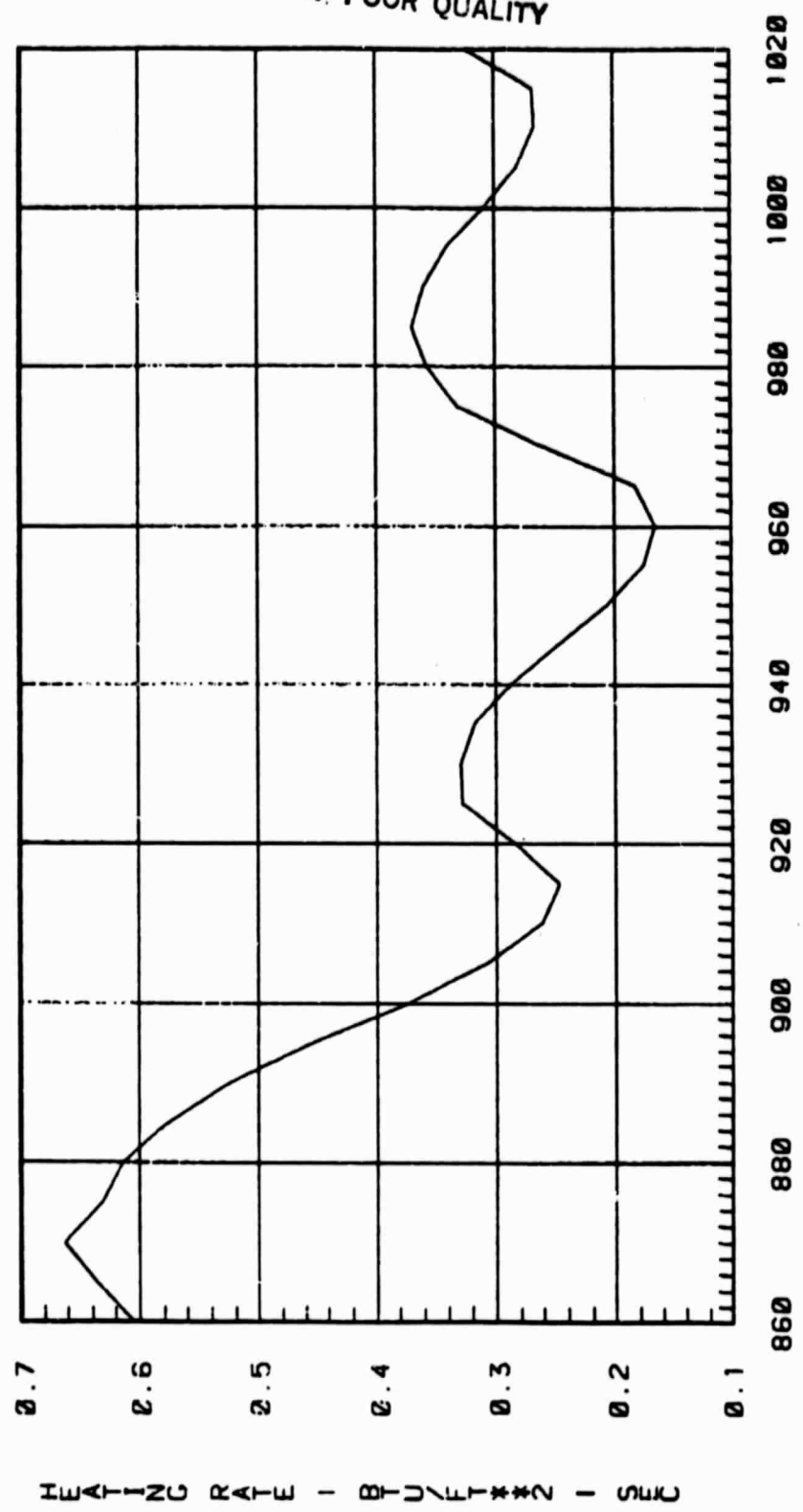
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04/28/83

STS-3 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0000A



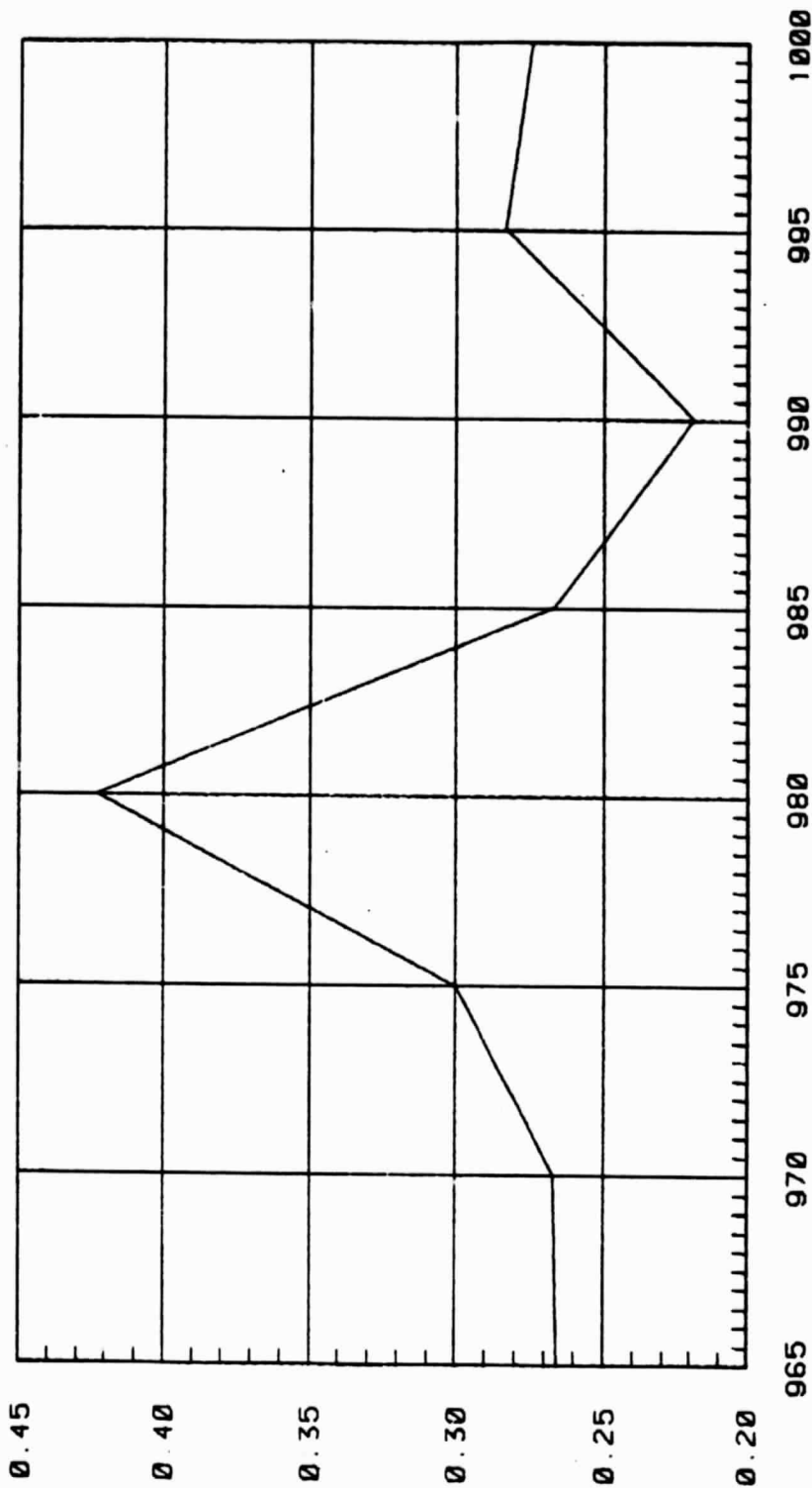
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VS770005A



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D-225

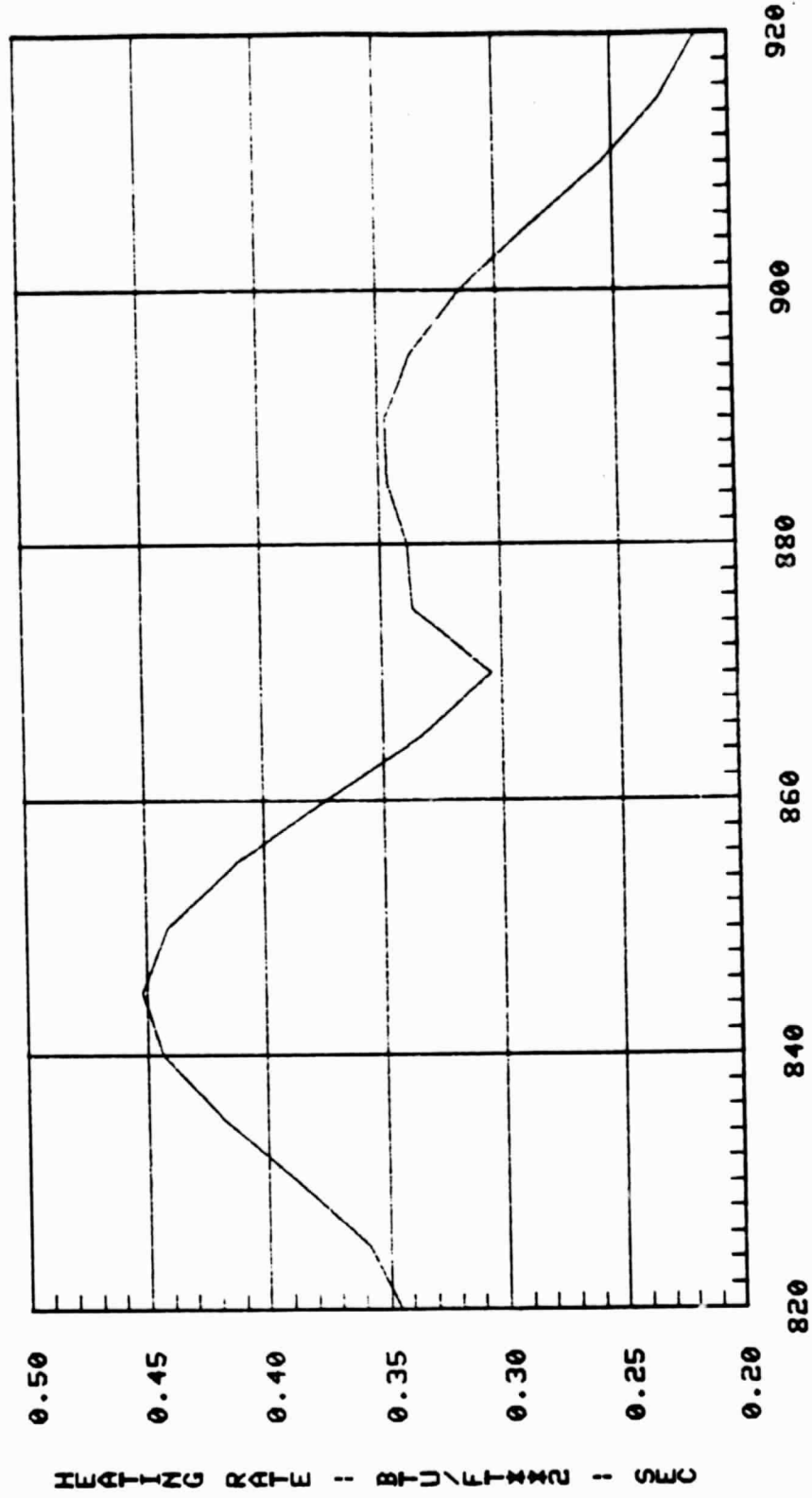
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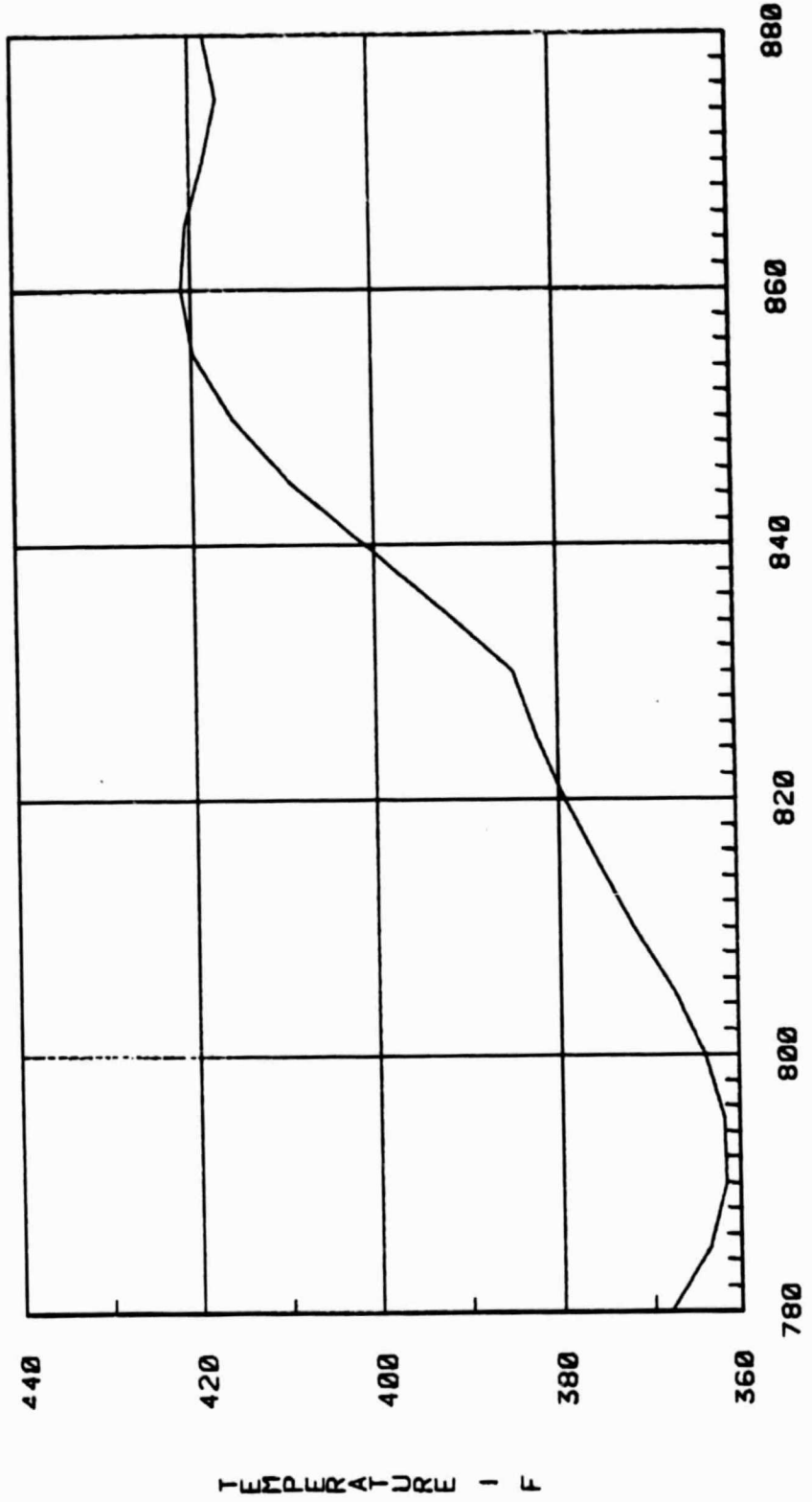
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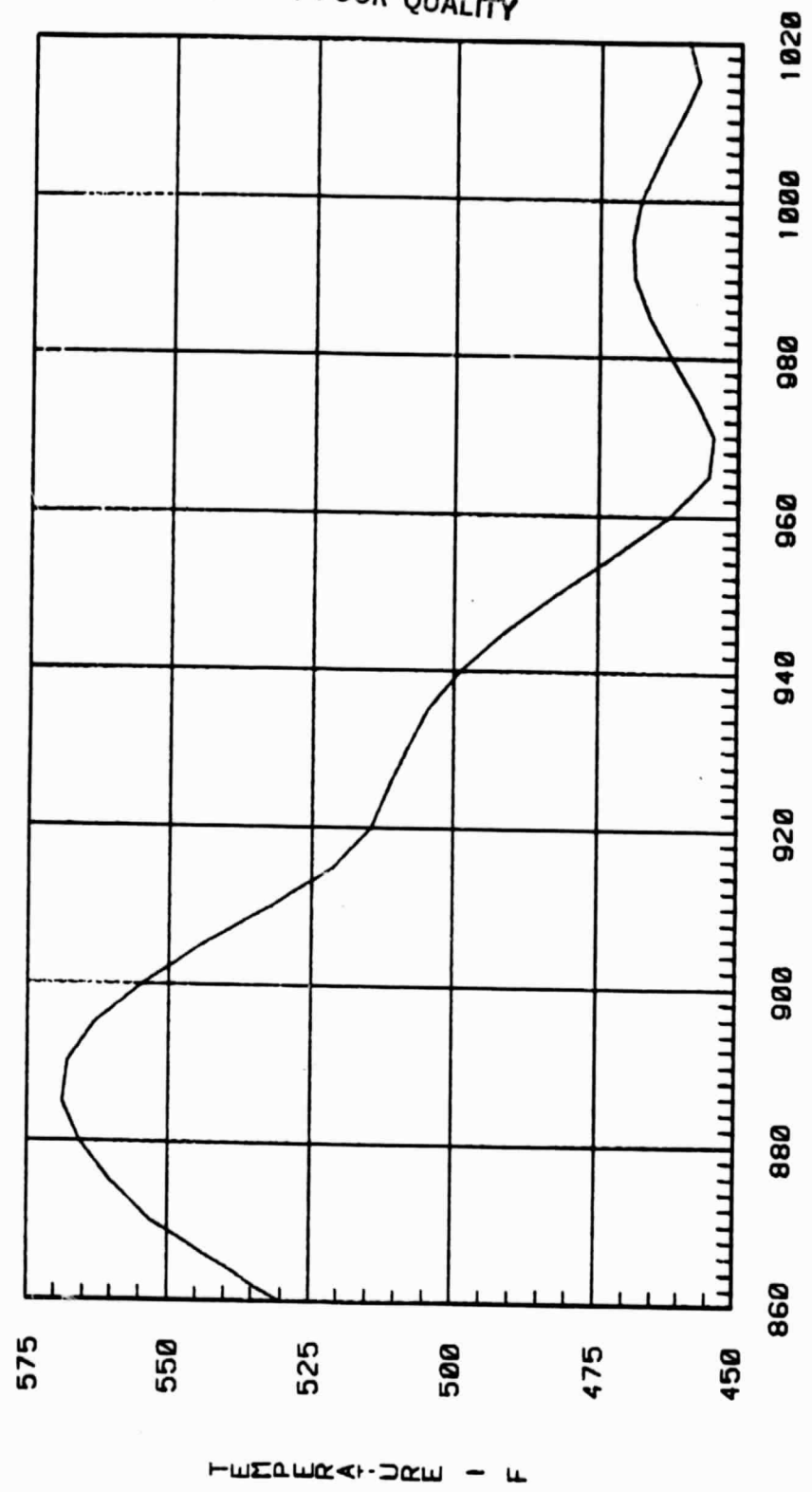
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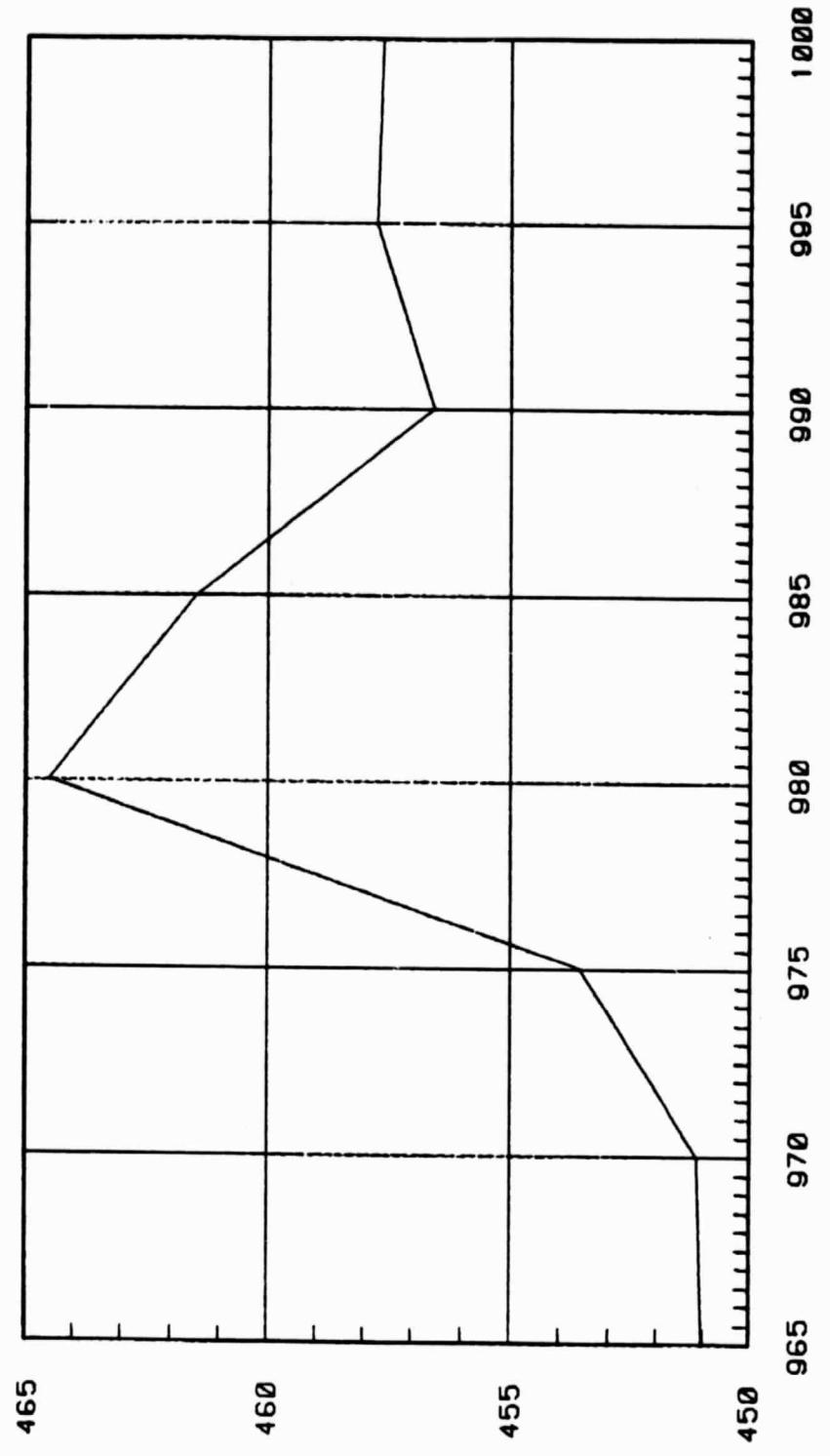
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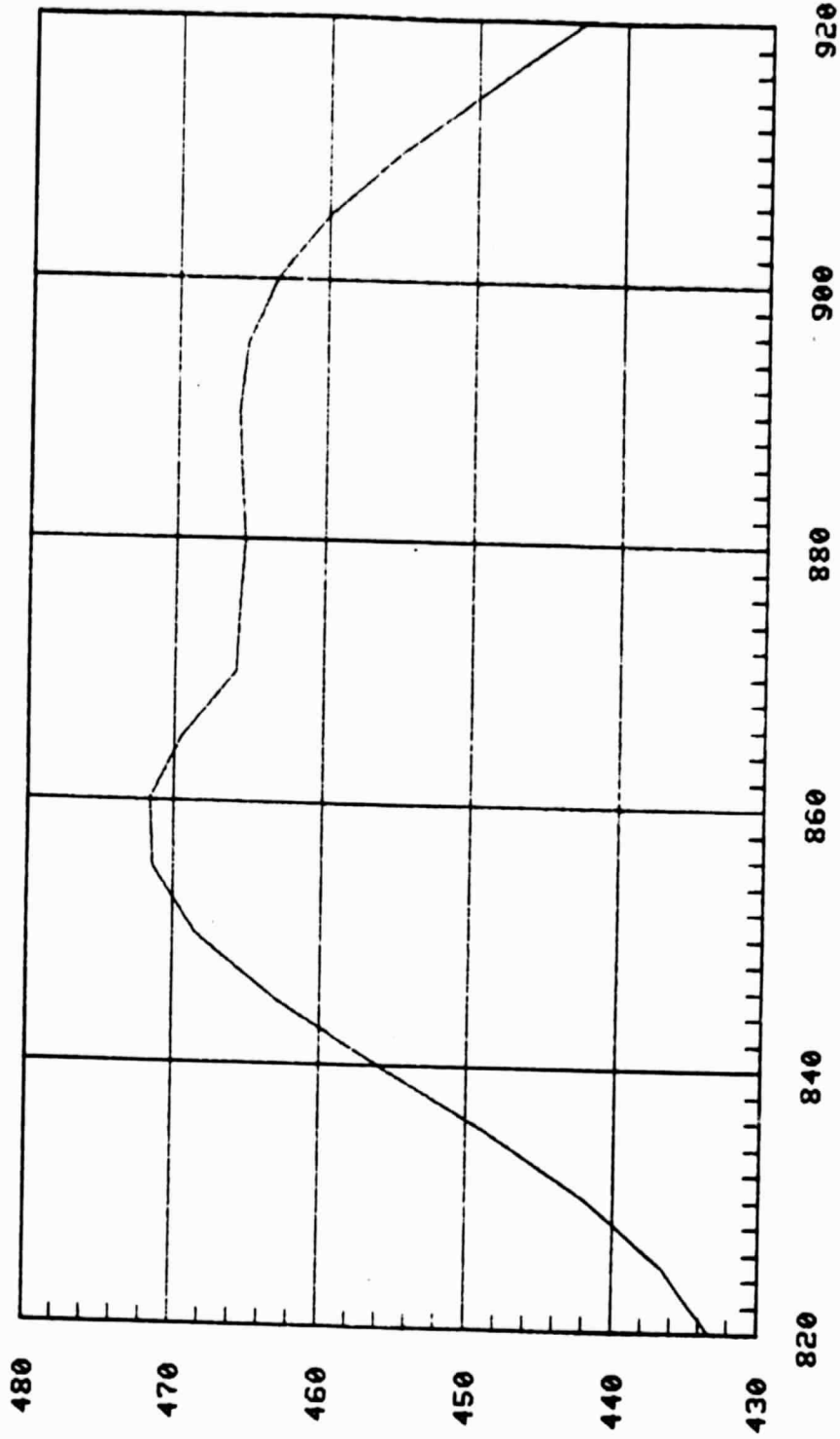
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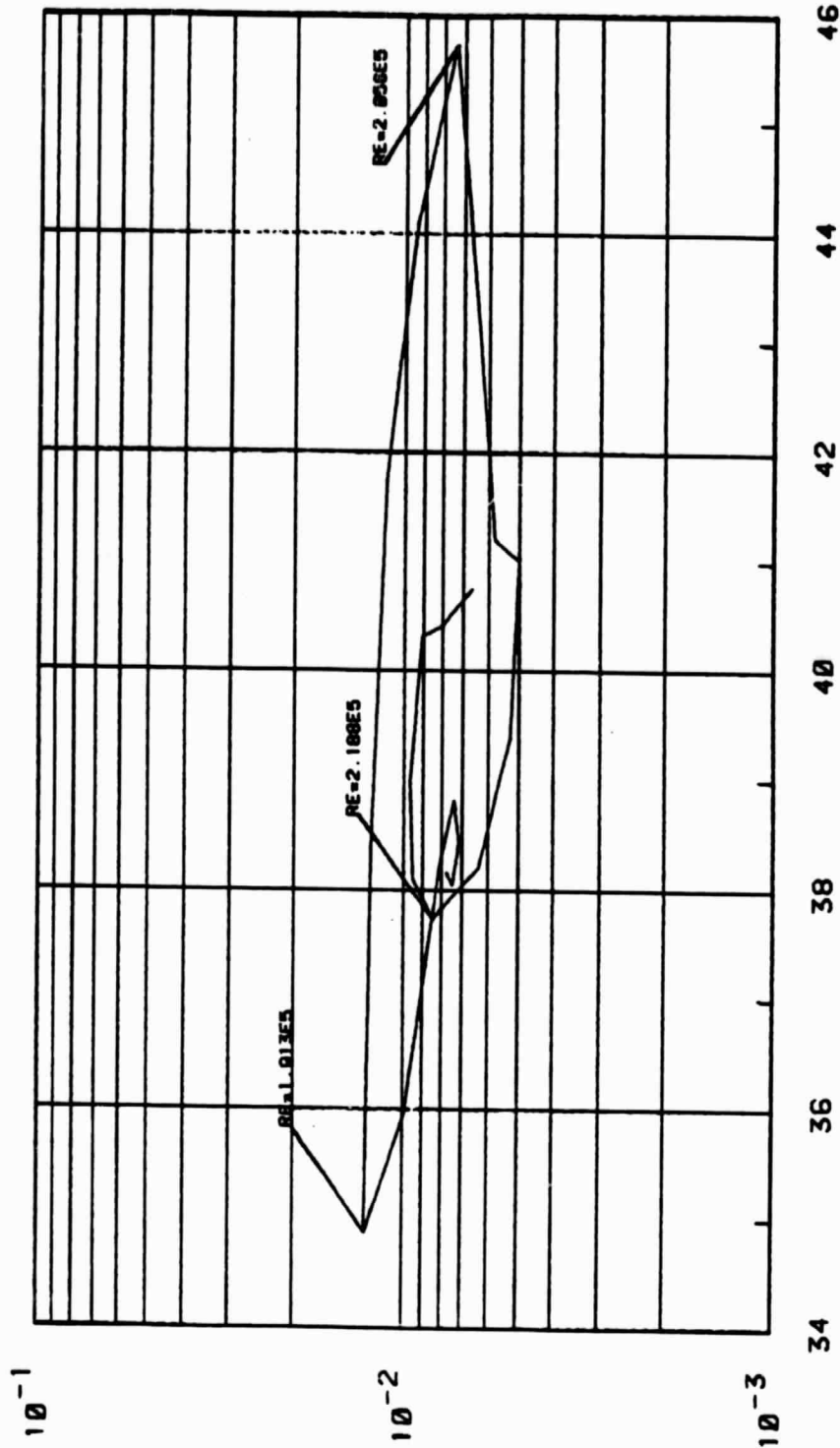
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VS770000A/M-REF 700-000 SEC



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D-231

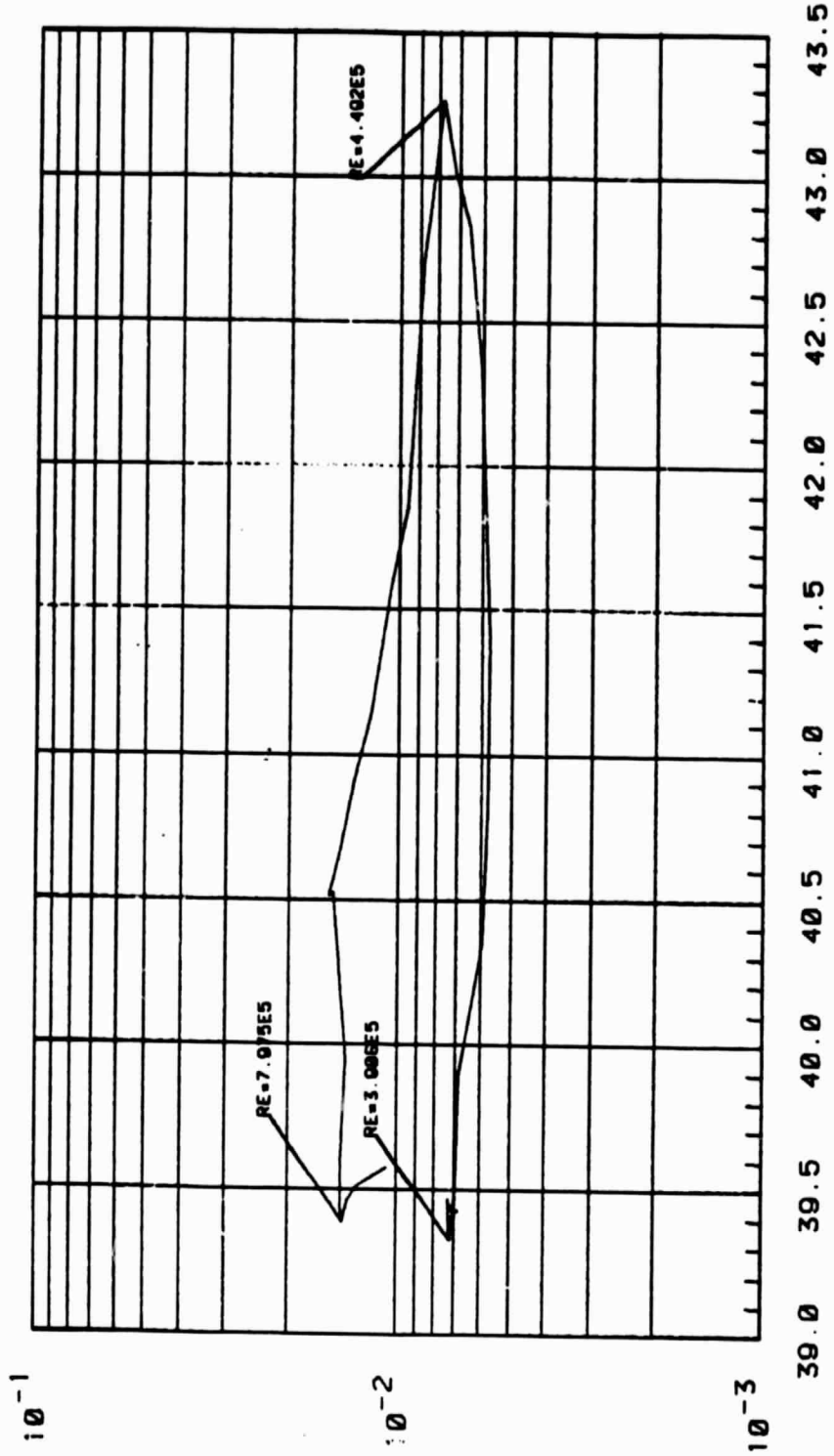
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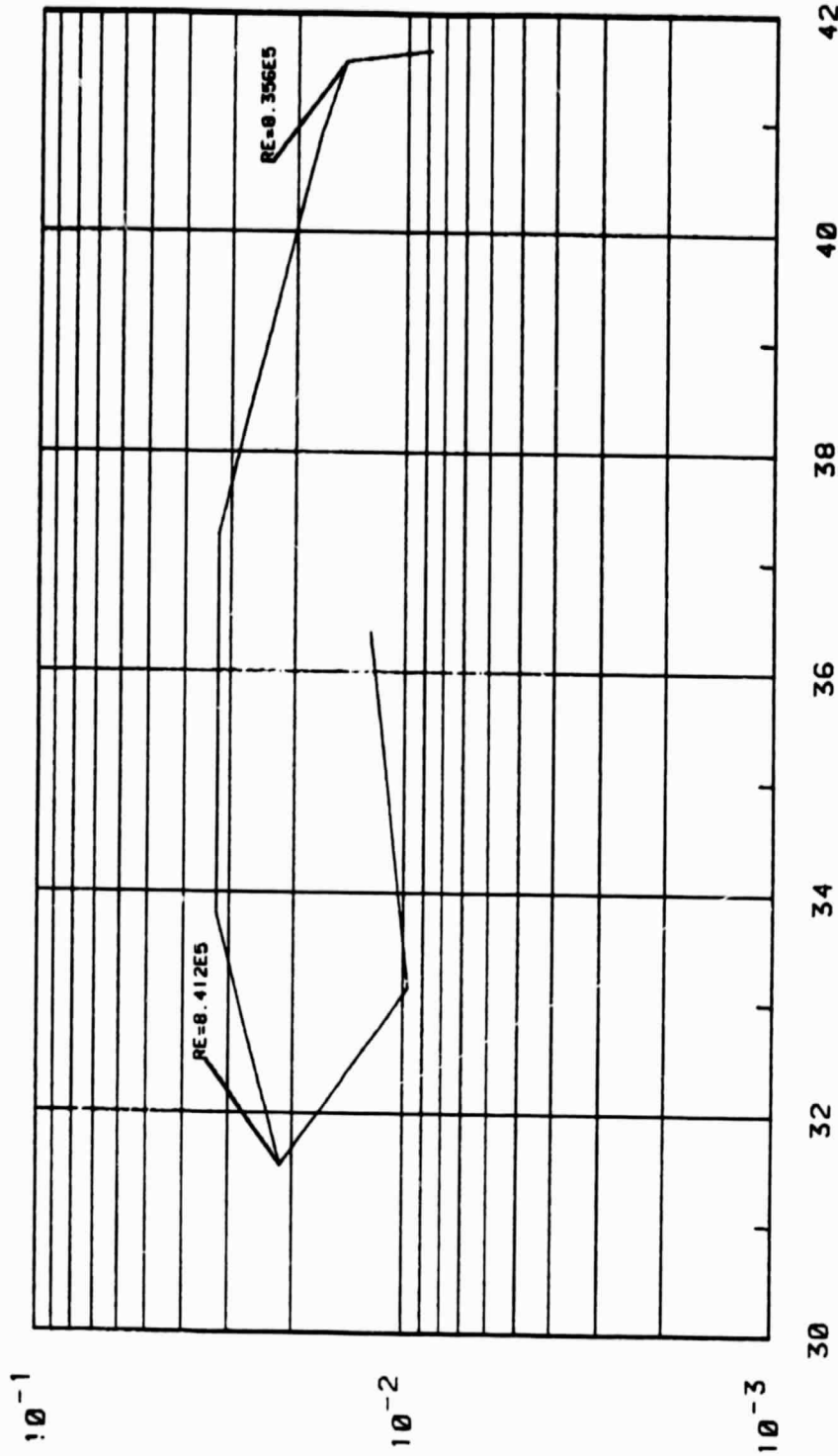
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FLIGHT PARAMETER COMPARISON

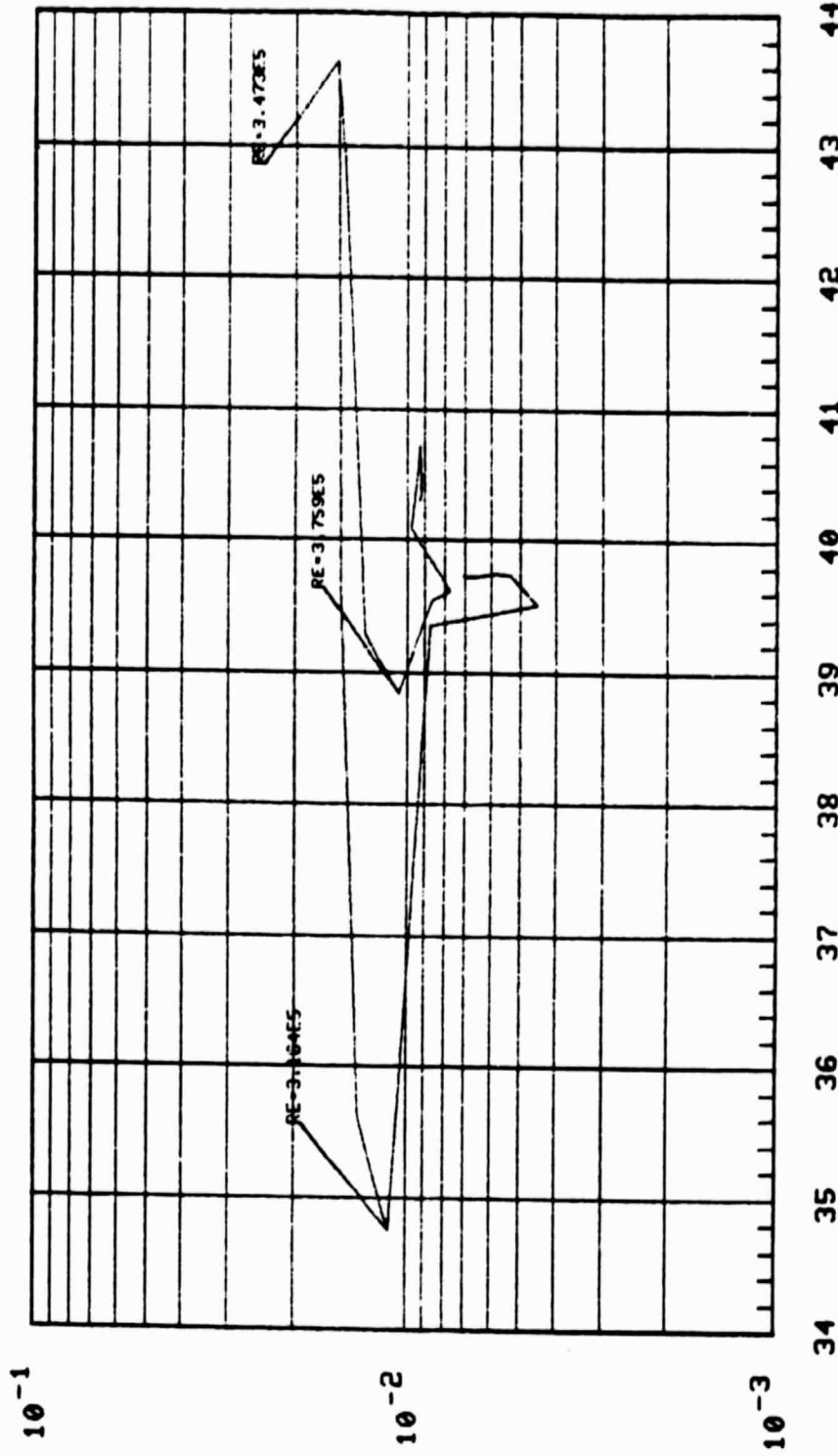
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U07T9996A/H-REF 820- 920 SEC



LINE COVER - H/H-RUN

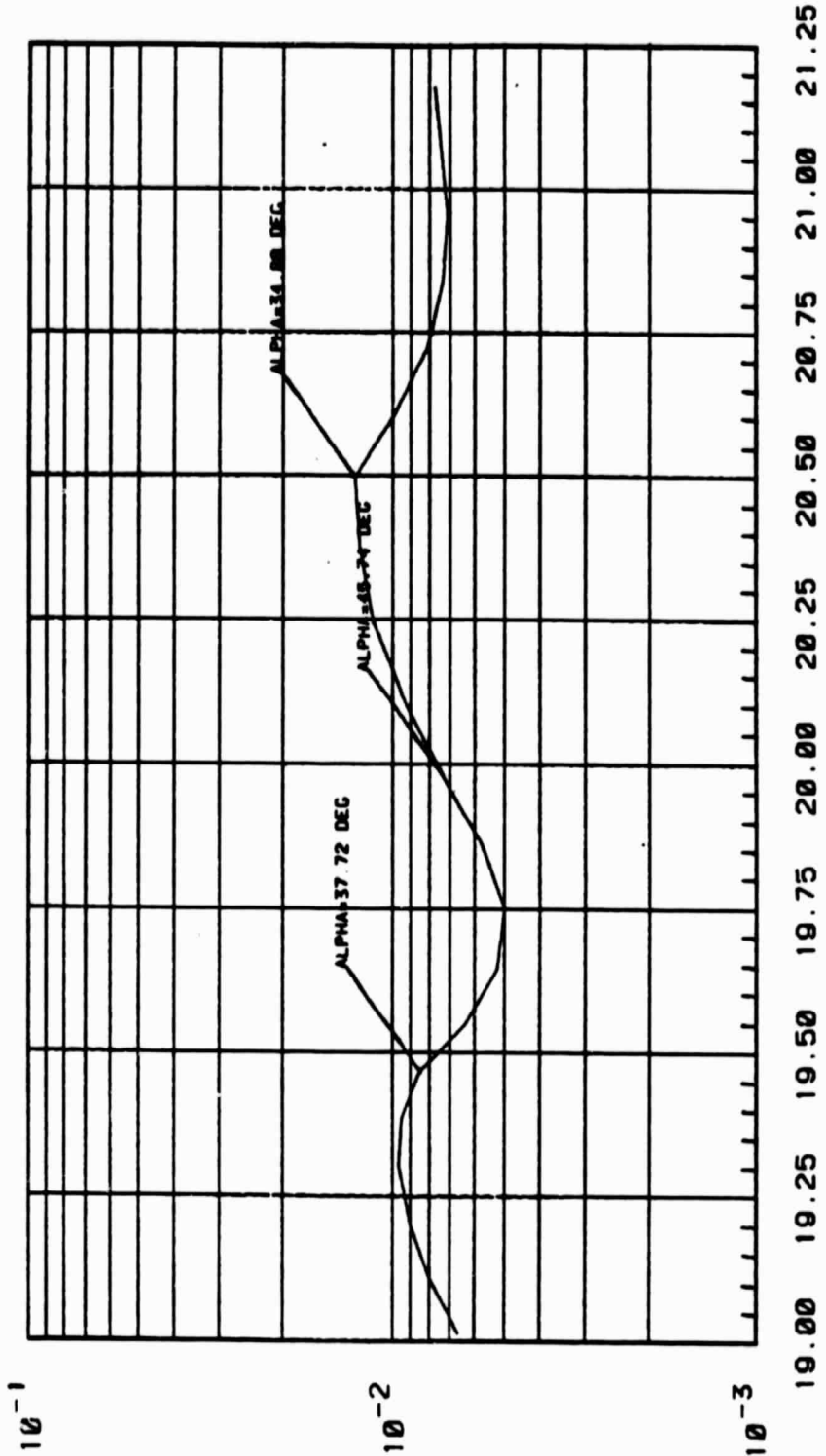
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D-235

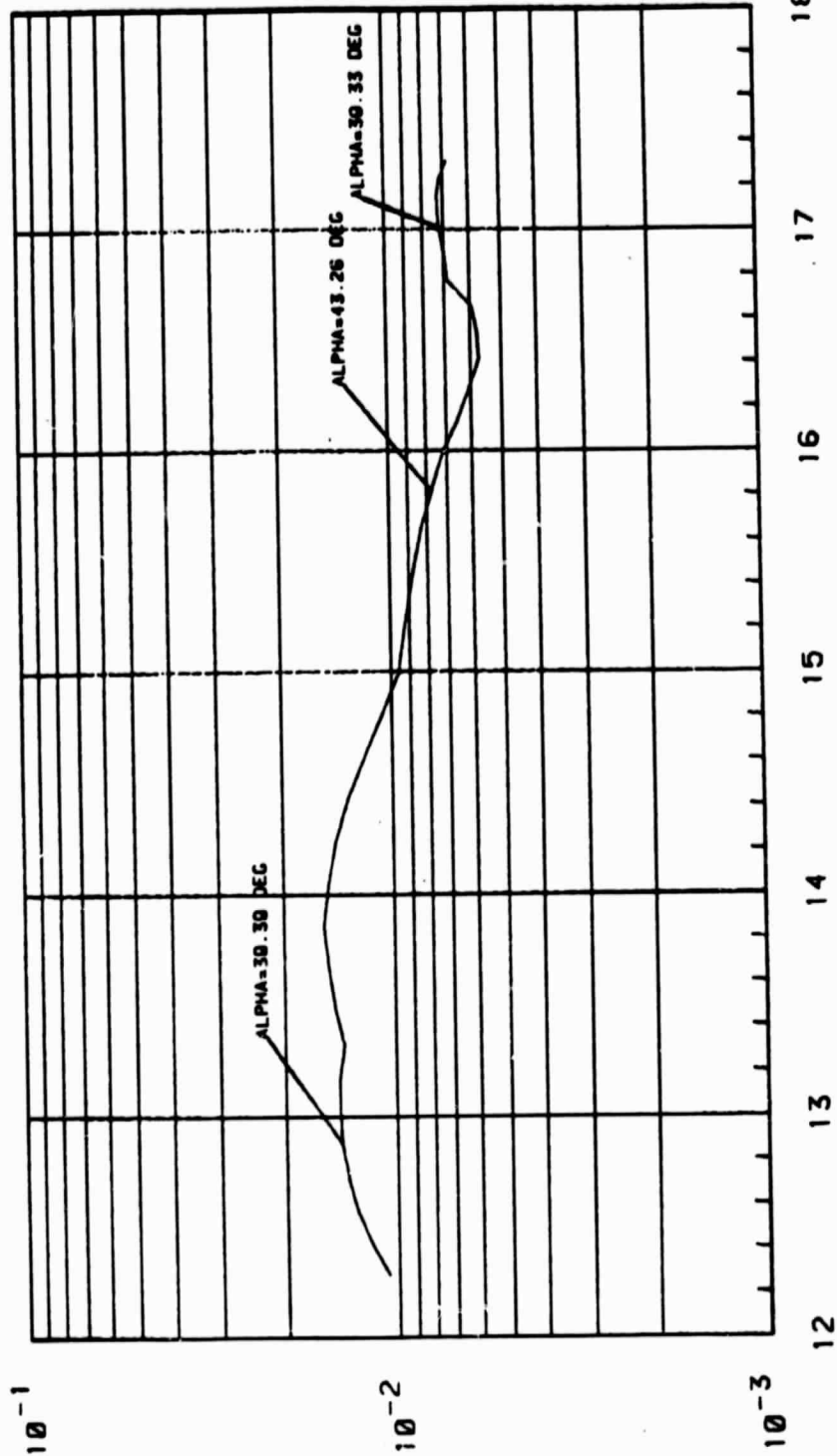
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MACH NUMBER

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V8770000A/N-REF 060-1020 SEC



V8770000A/N-REF

D-236

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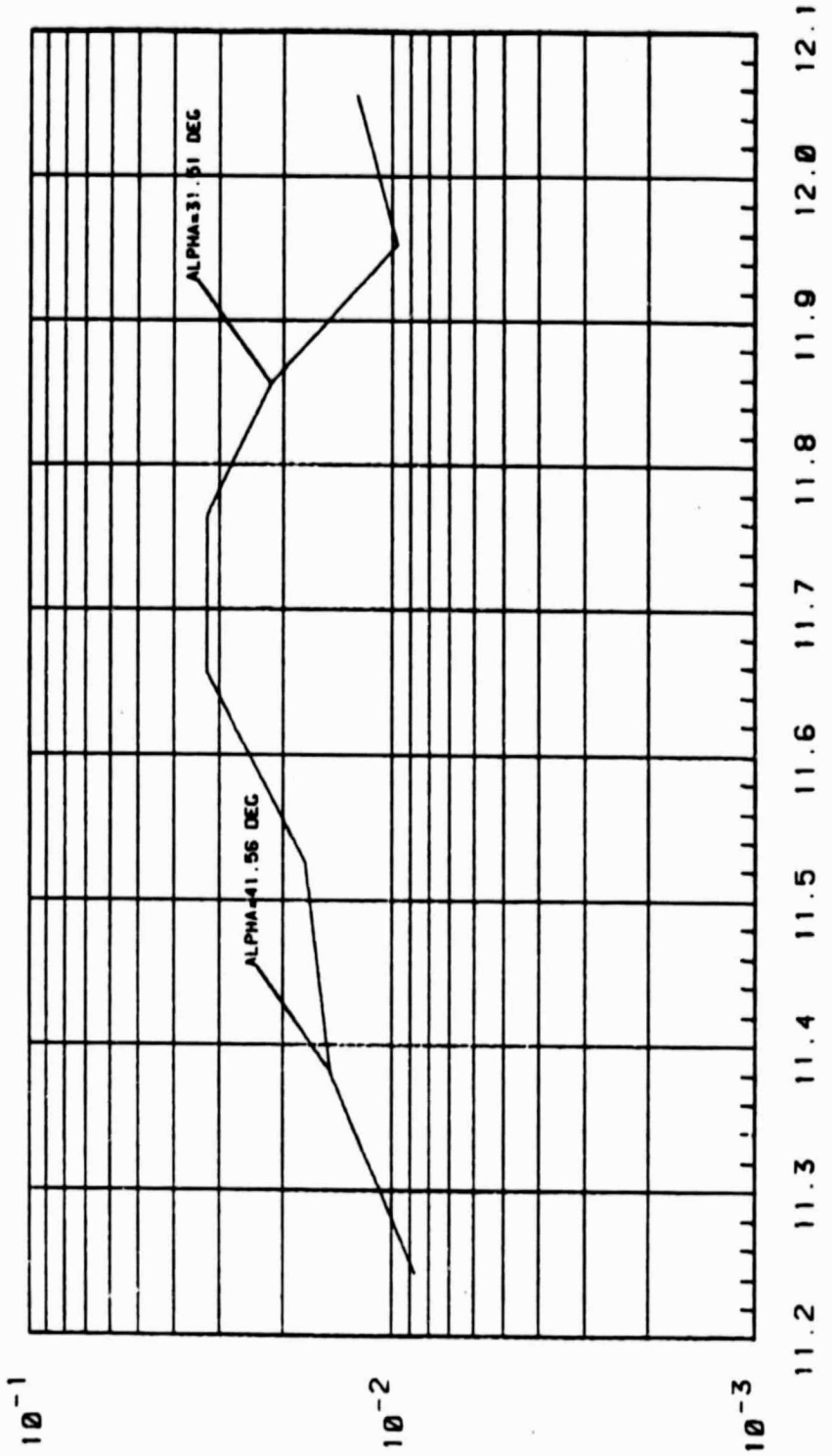
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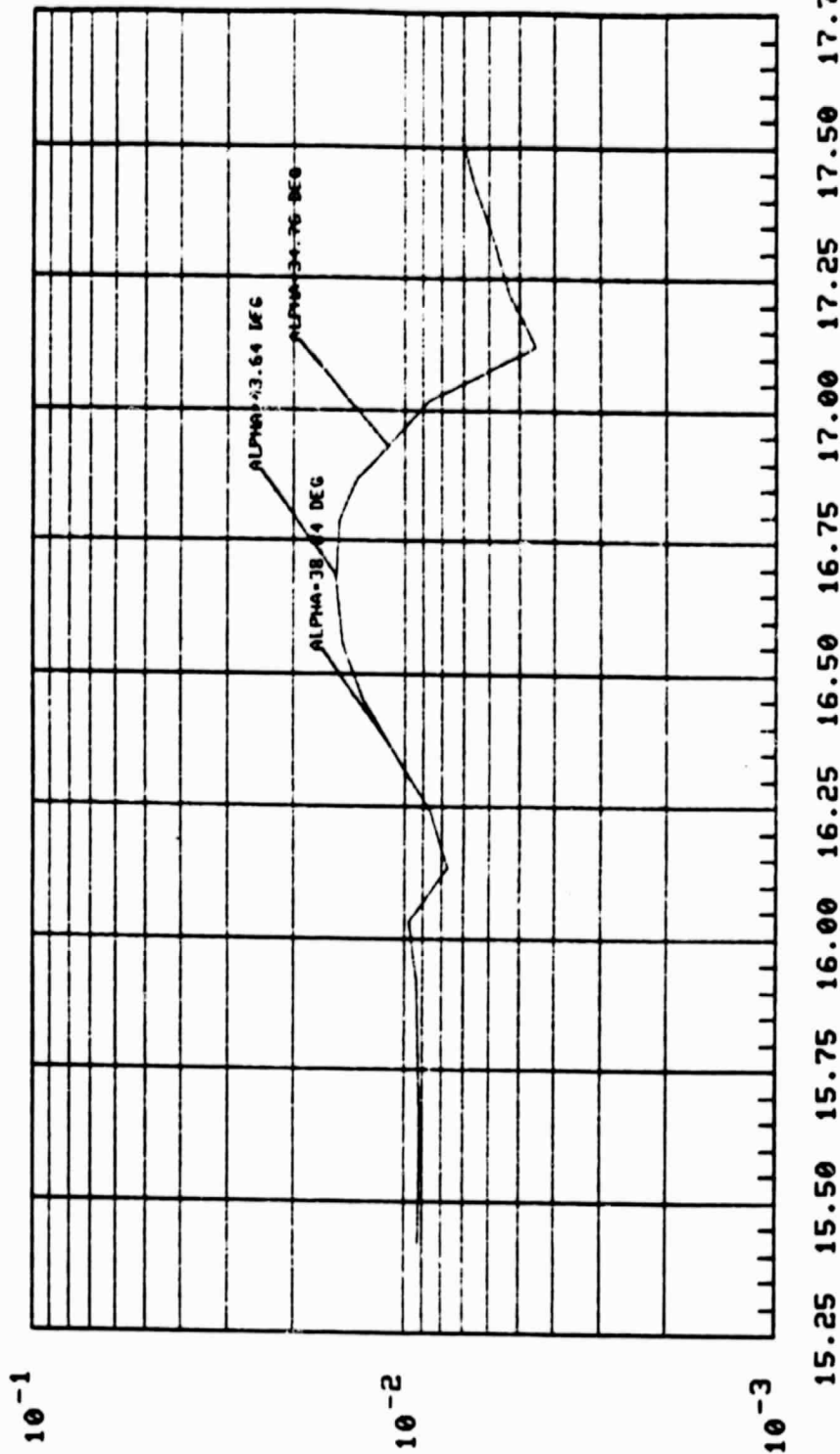
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D-238

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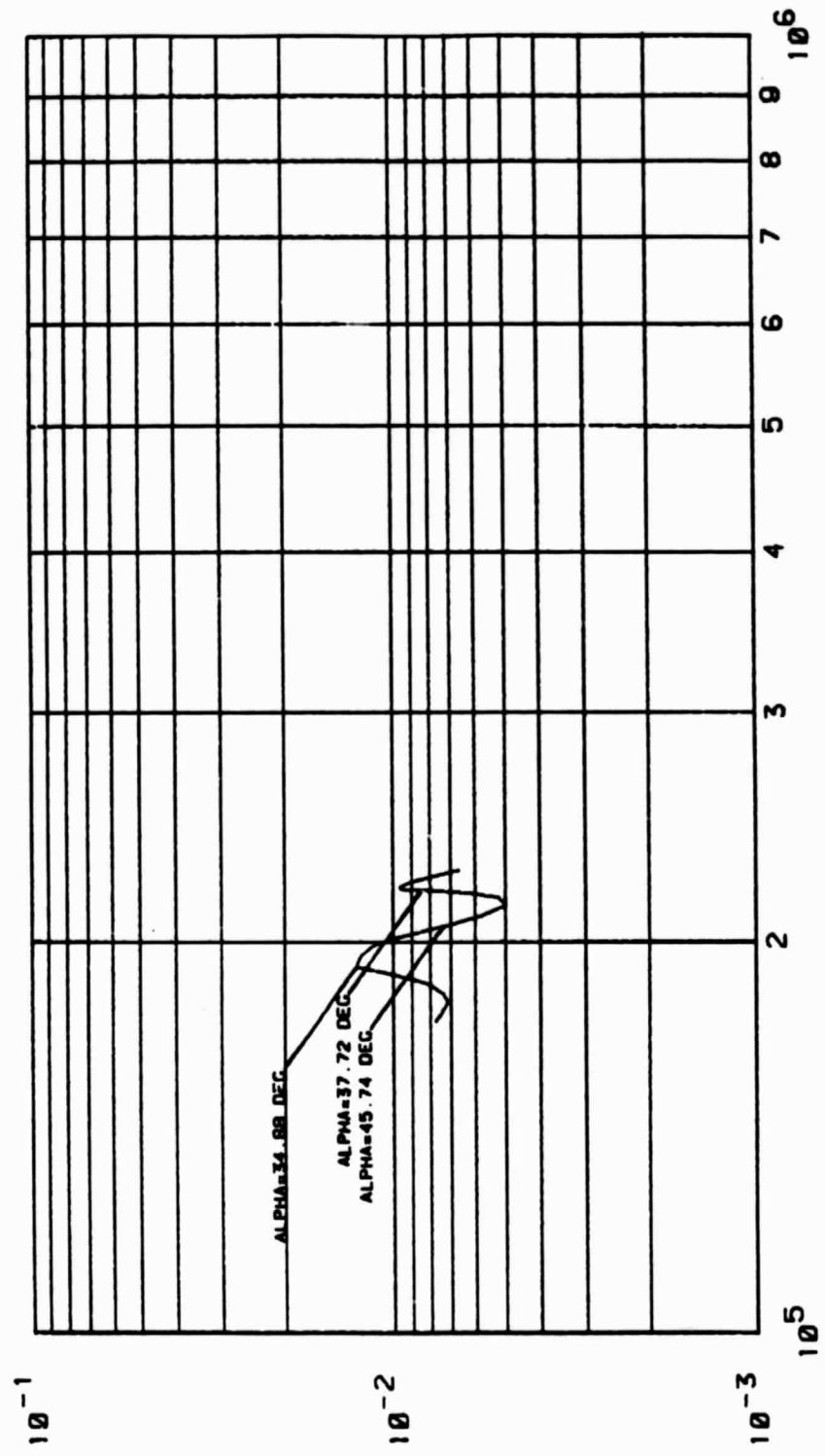
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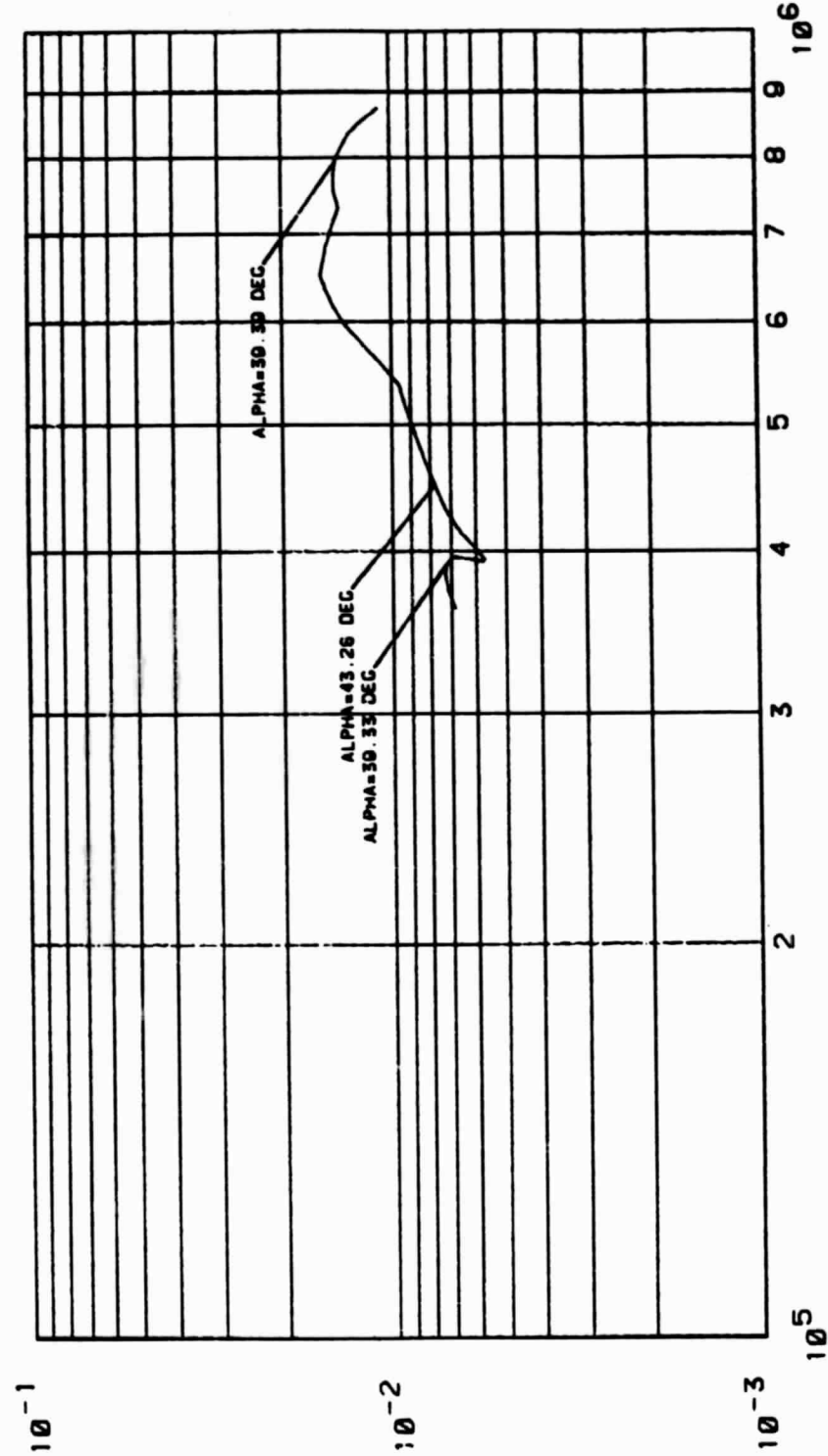
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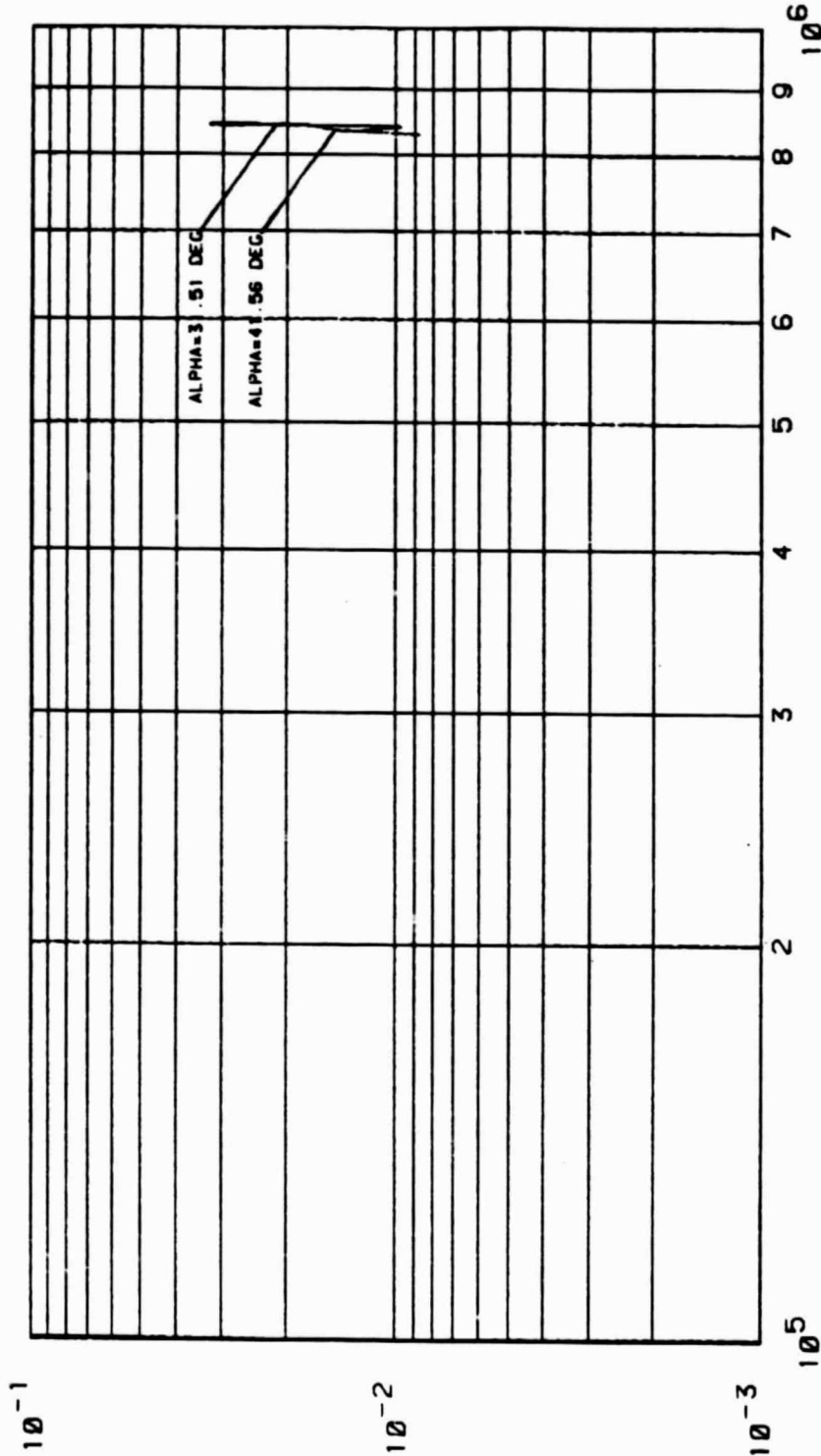
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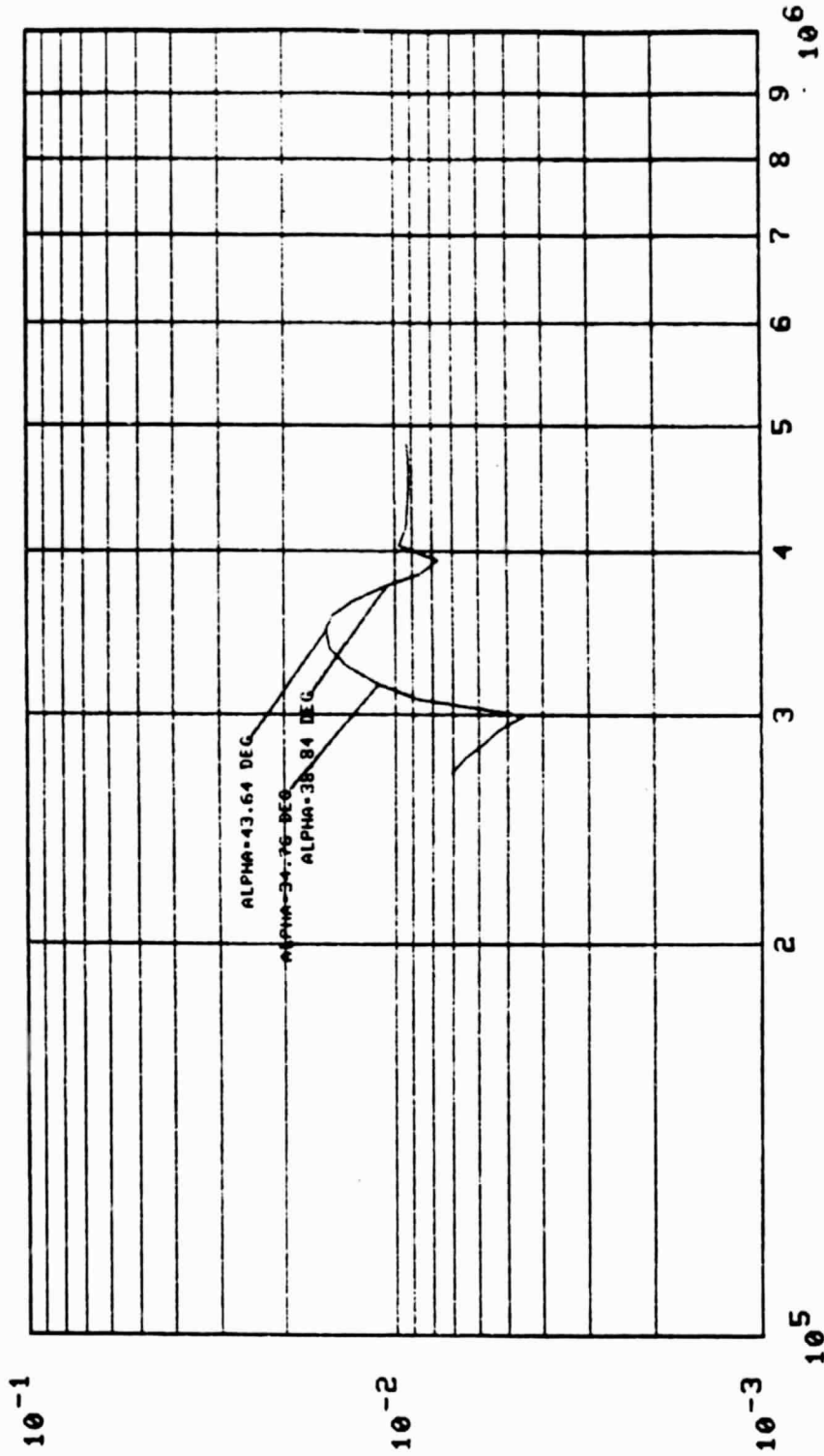


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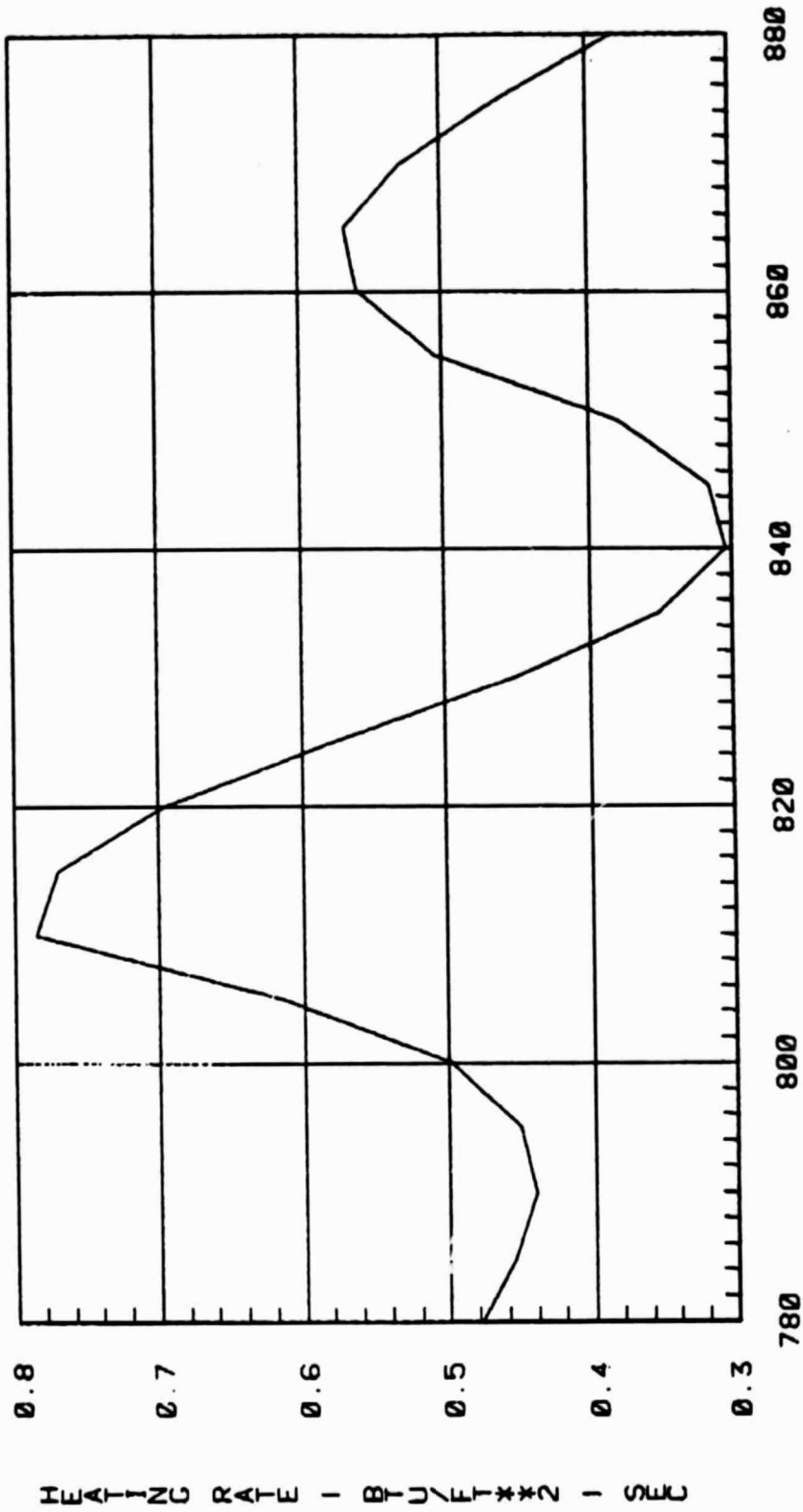
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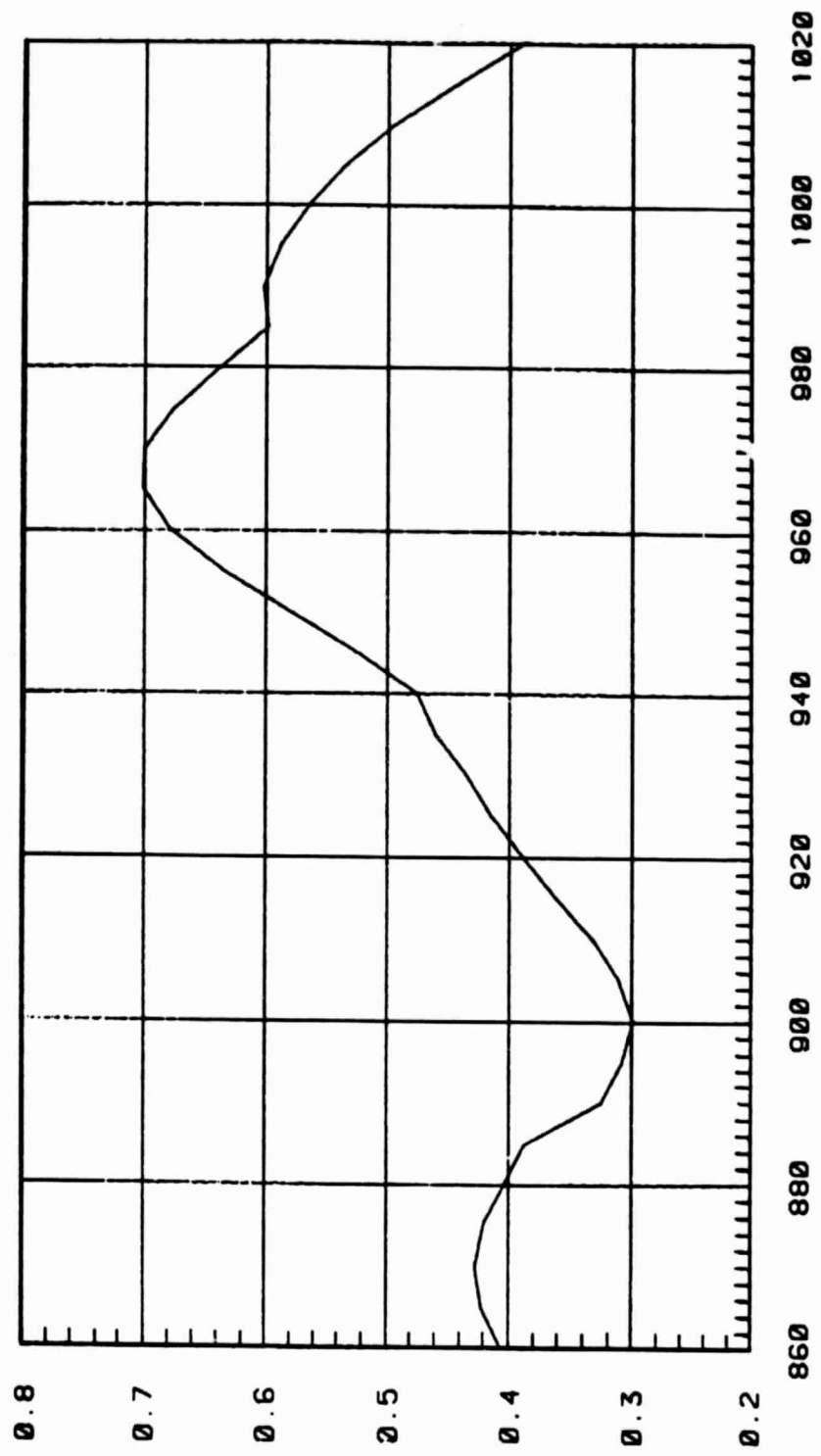
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TIME - SECONDS

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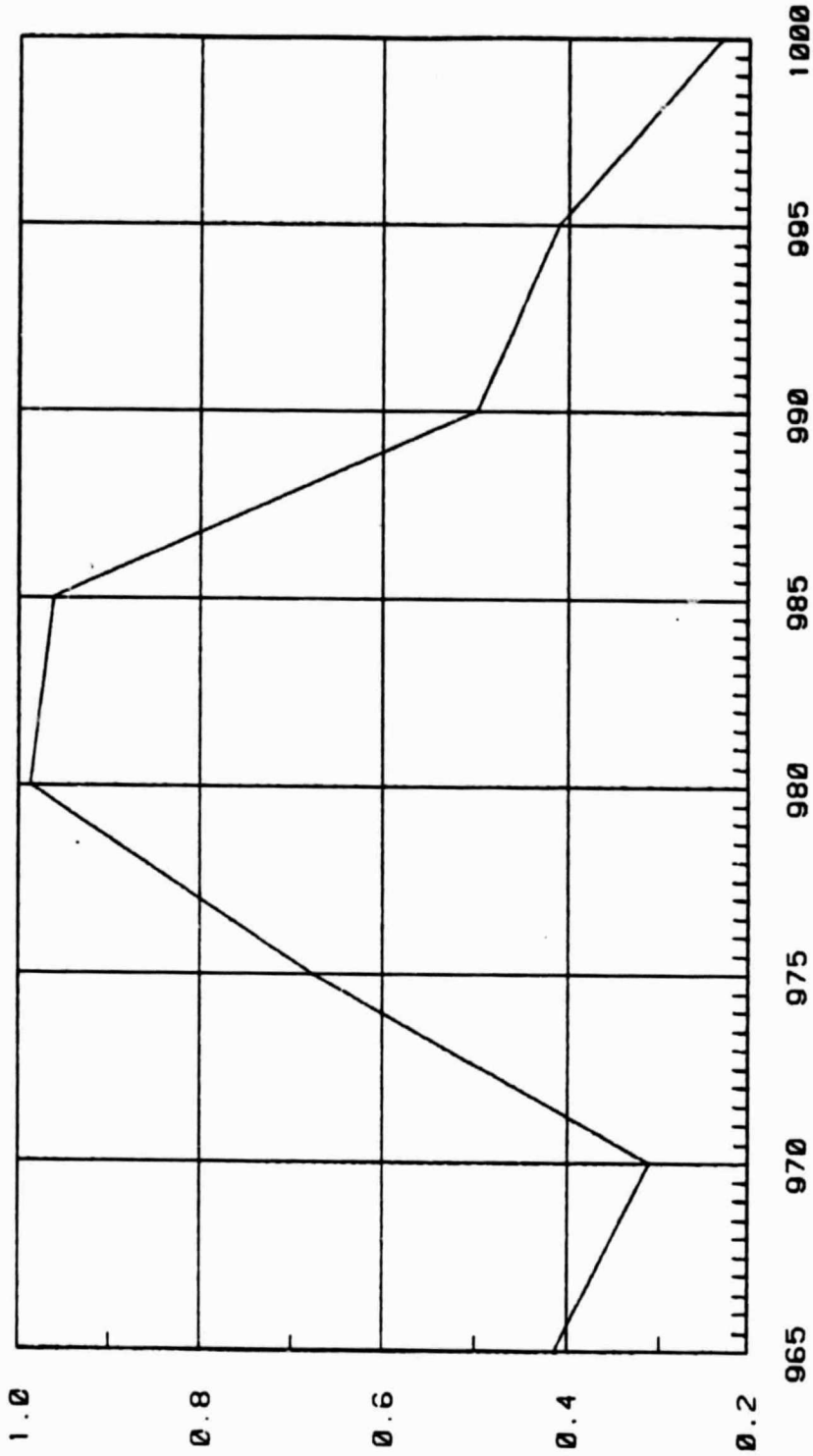
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VB7T0006A

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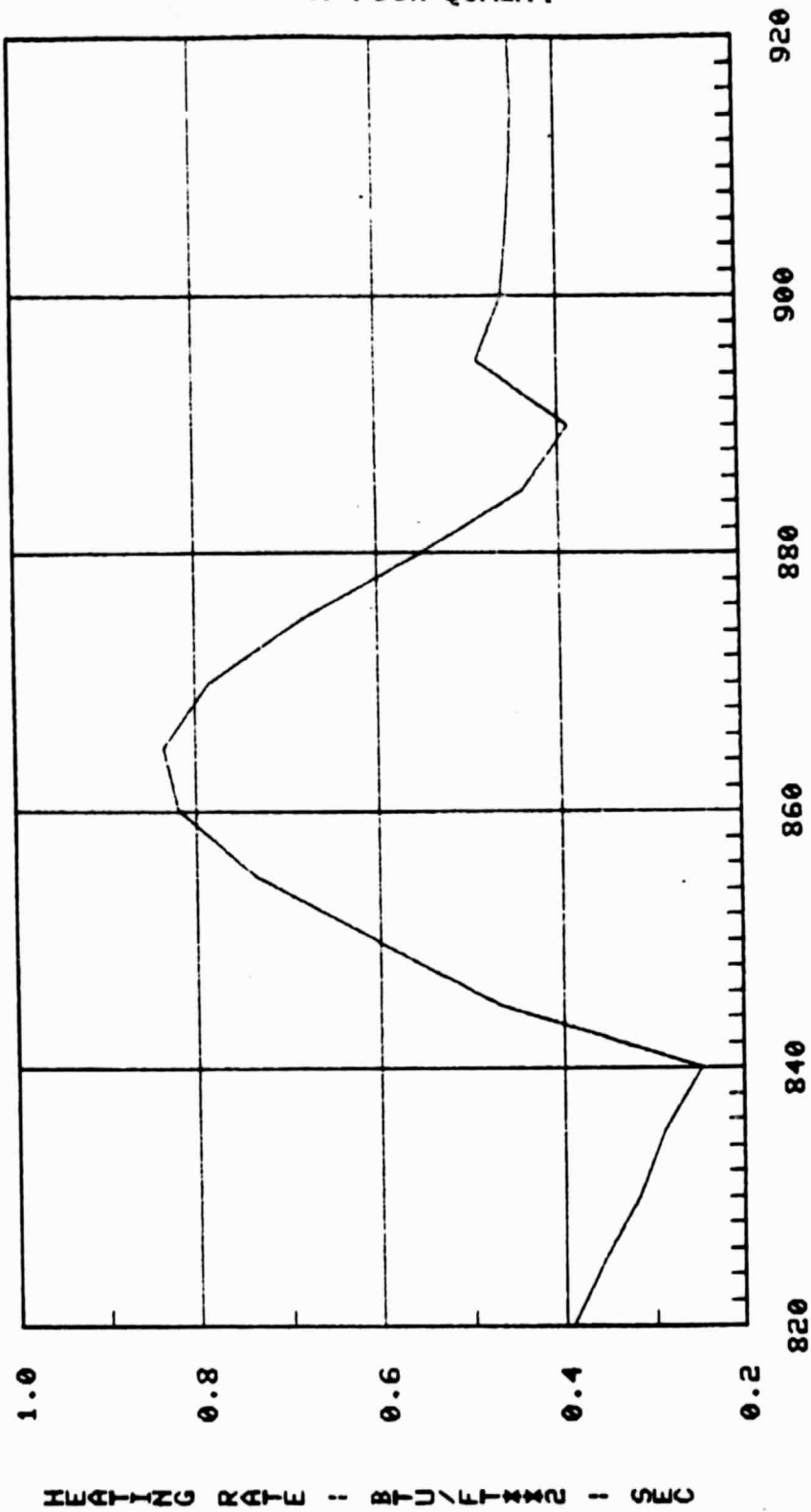
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TIME - SECONDS

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U071996A



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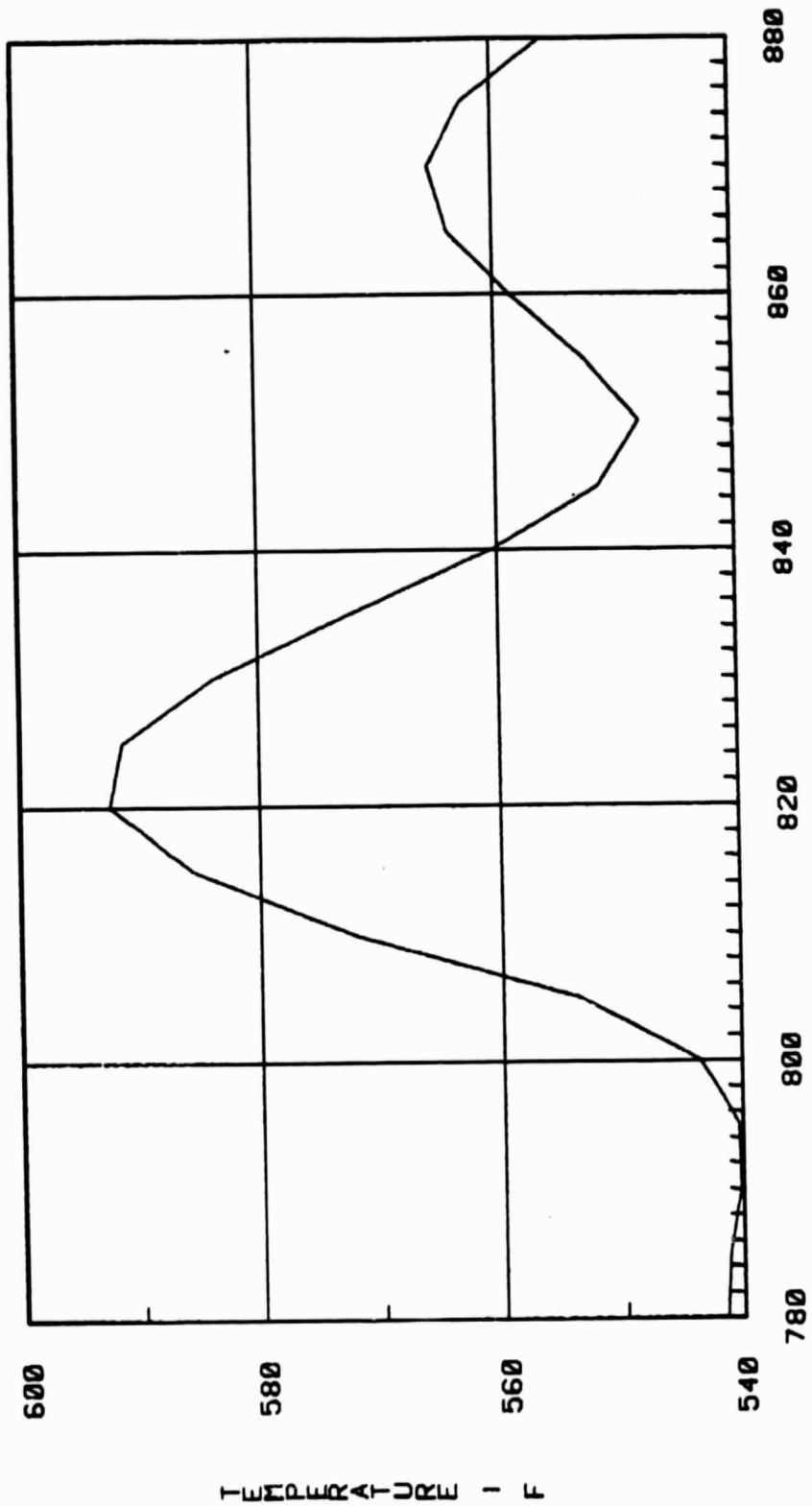
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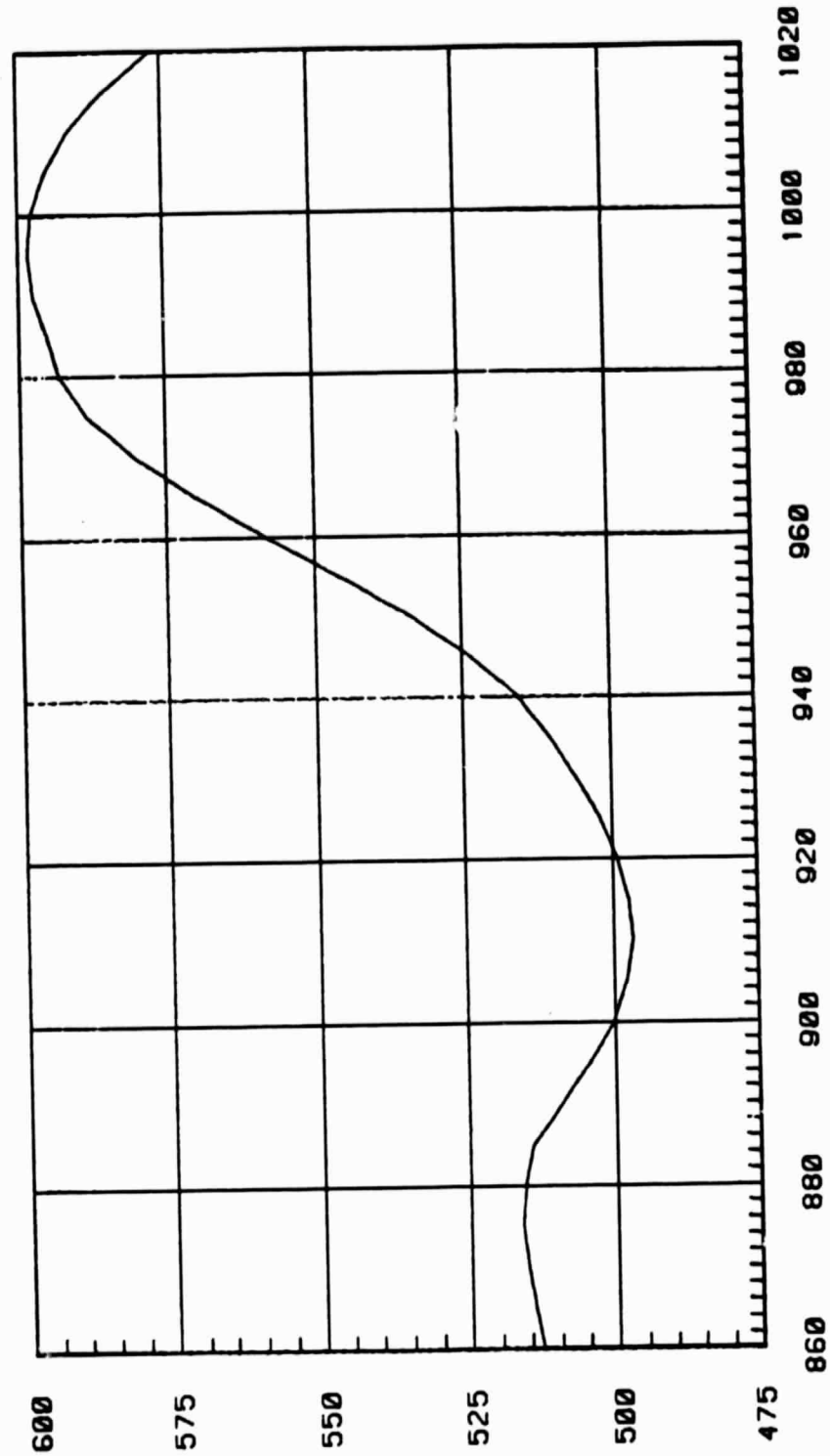
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04/28/81

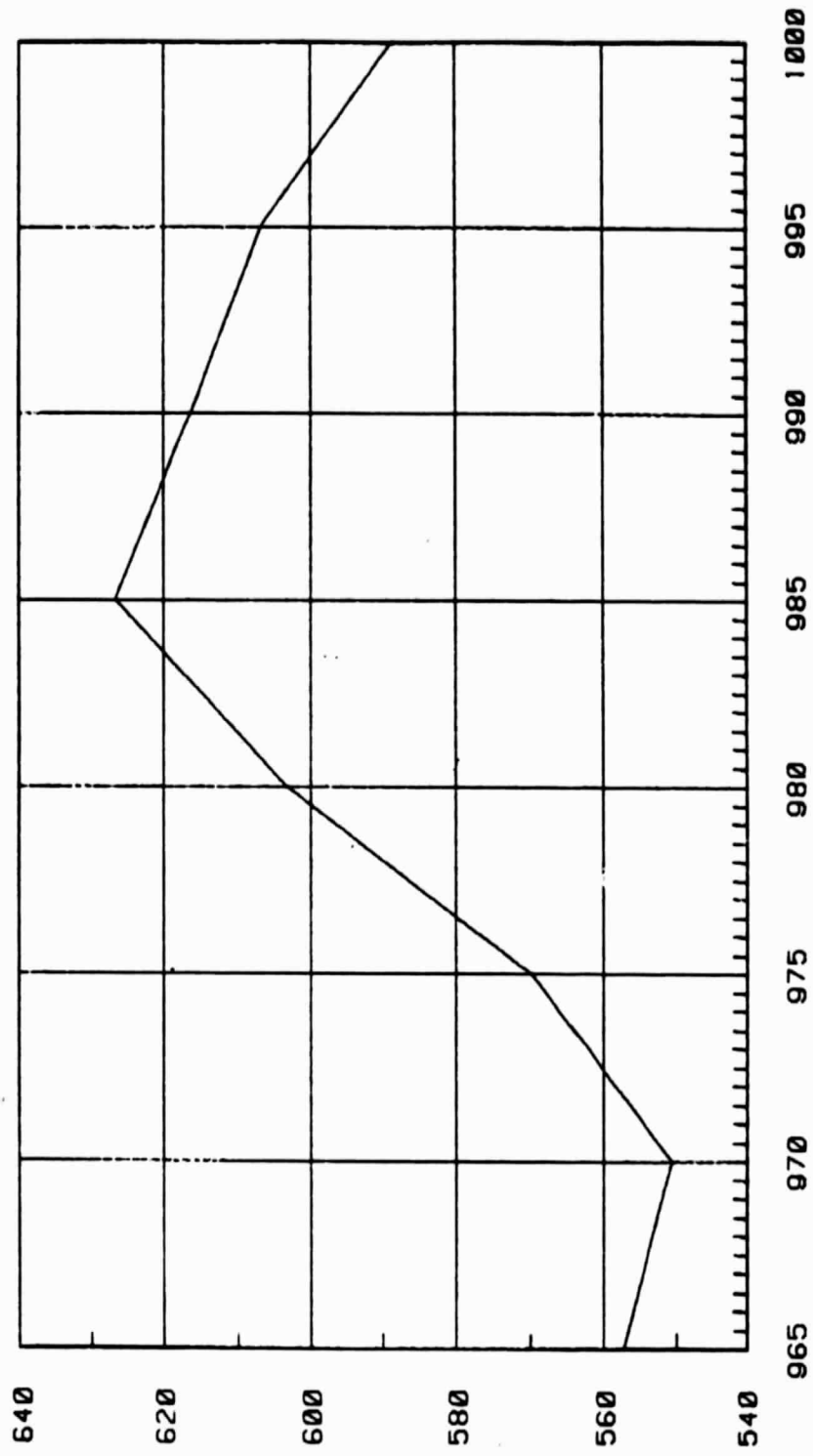
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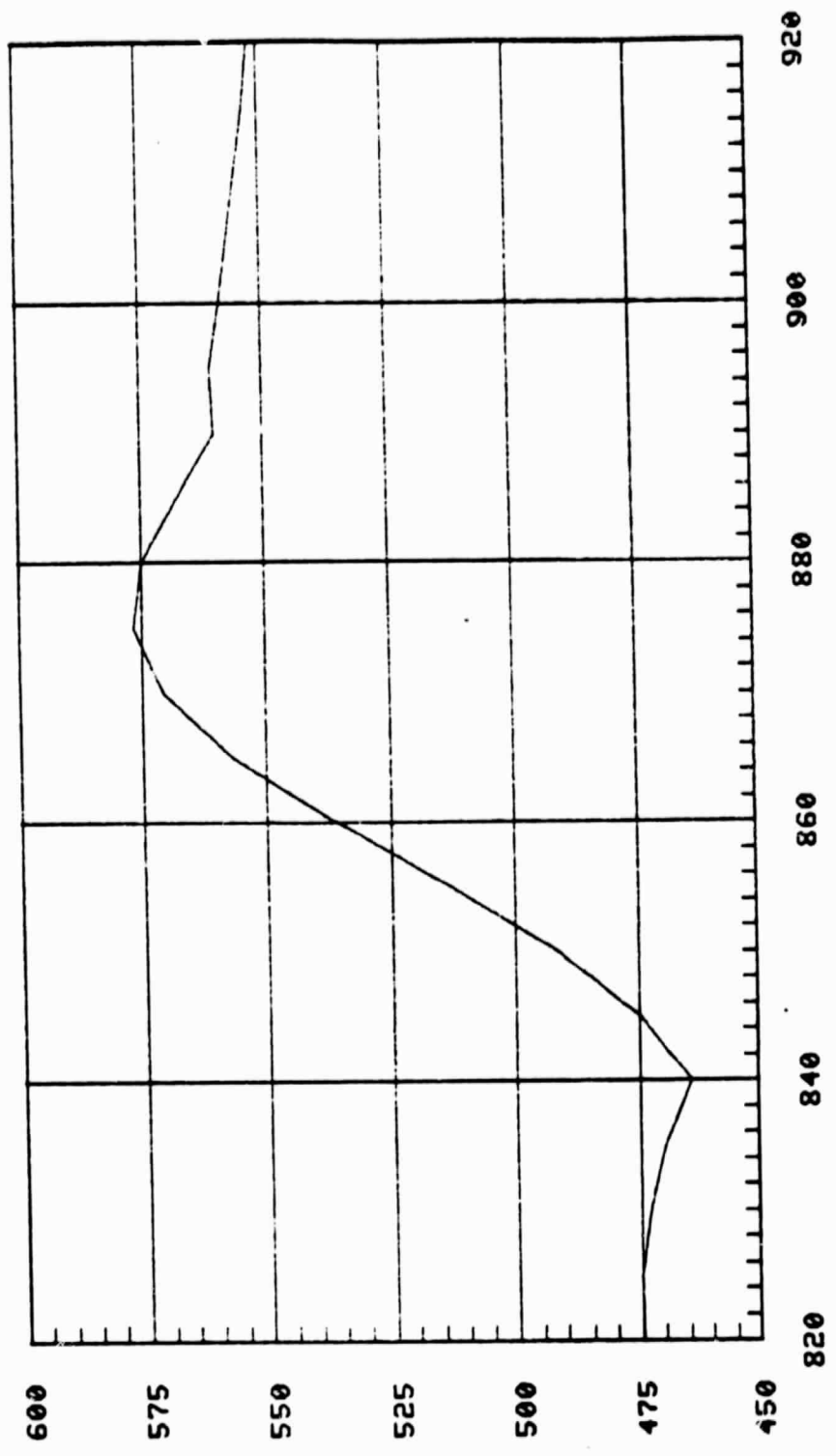
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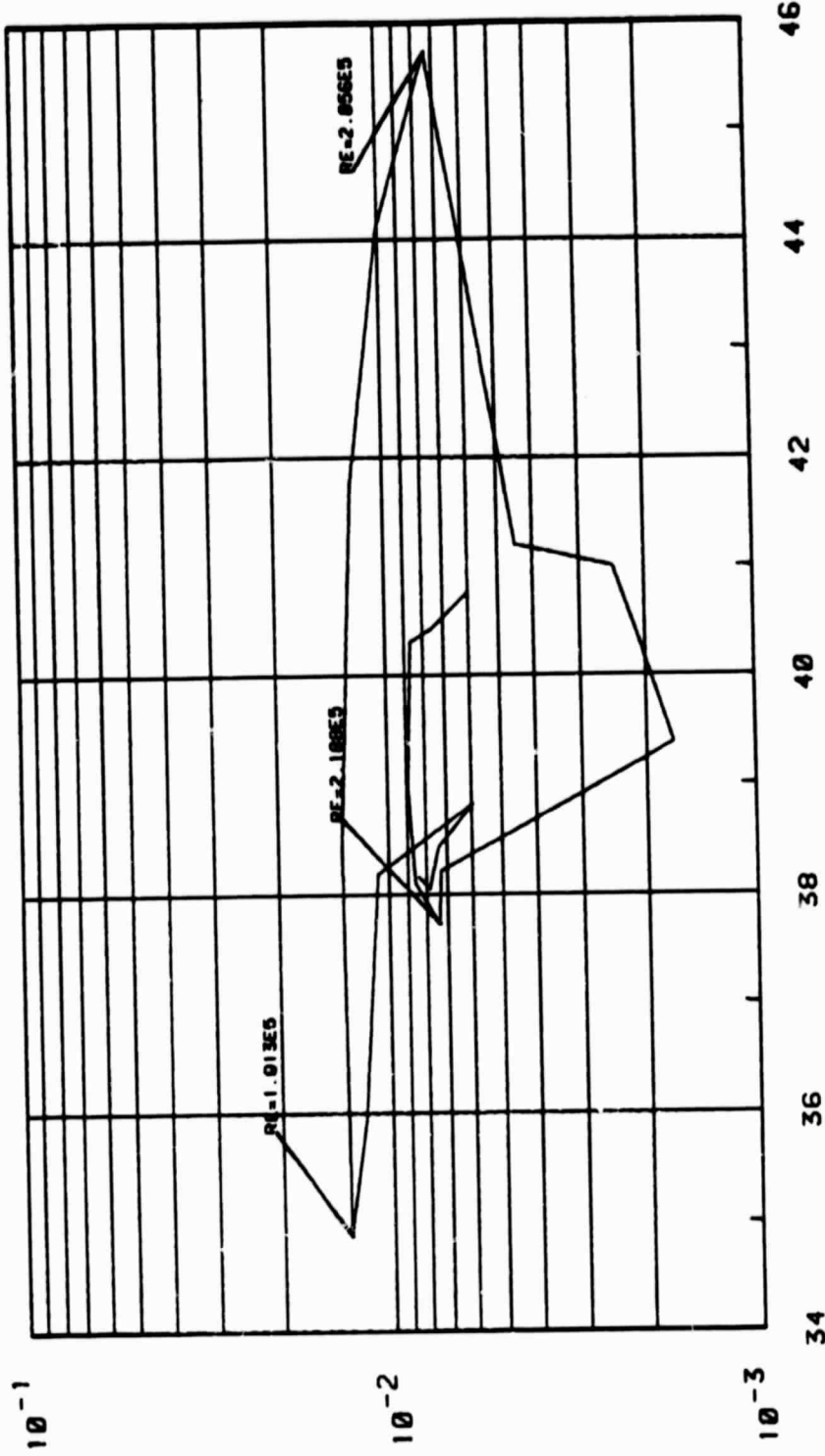
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D-250

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VB770007A/N-REF 700-000 SEC



FLIGHT PARAMETER COMPARISON - H/H-REF

D-251

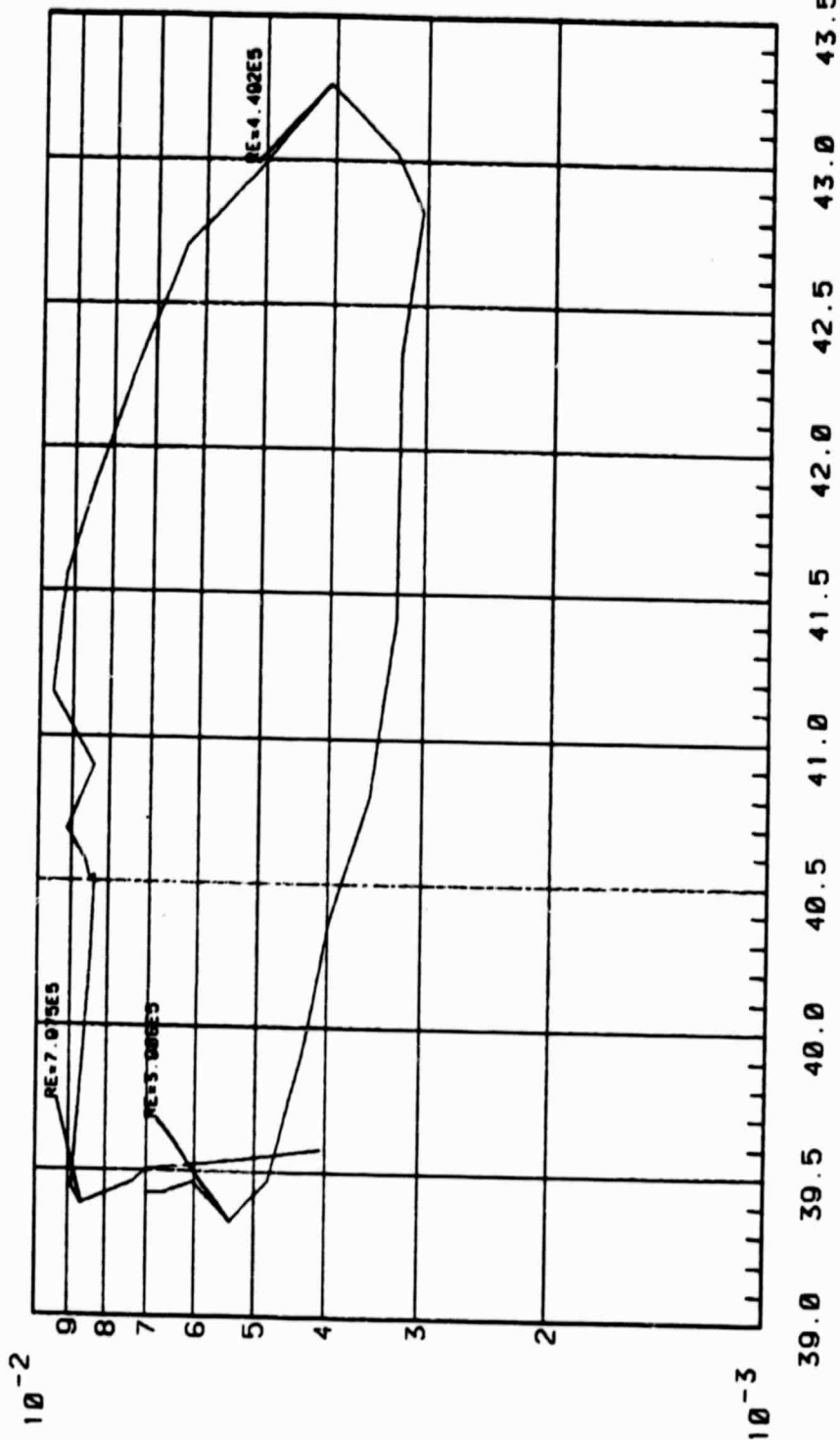
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04/28/83  
BASE TIME = 27000236.000 SEC.

ANGLE-OF-ATTACK - DEG

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0007A/H-REF 860-1020 SEC



FILM COEFF - H/H-REF

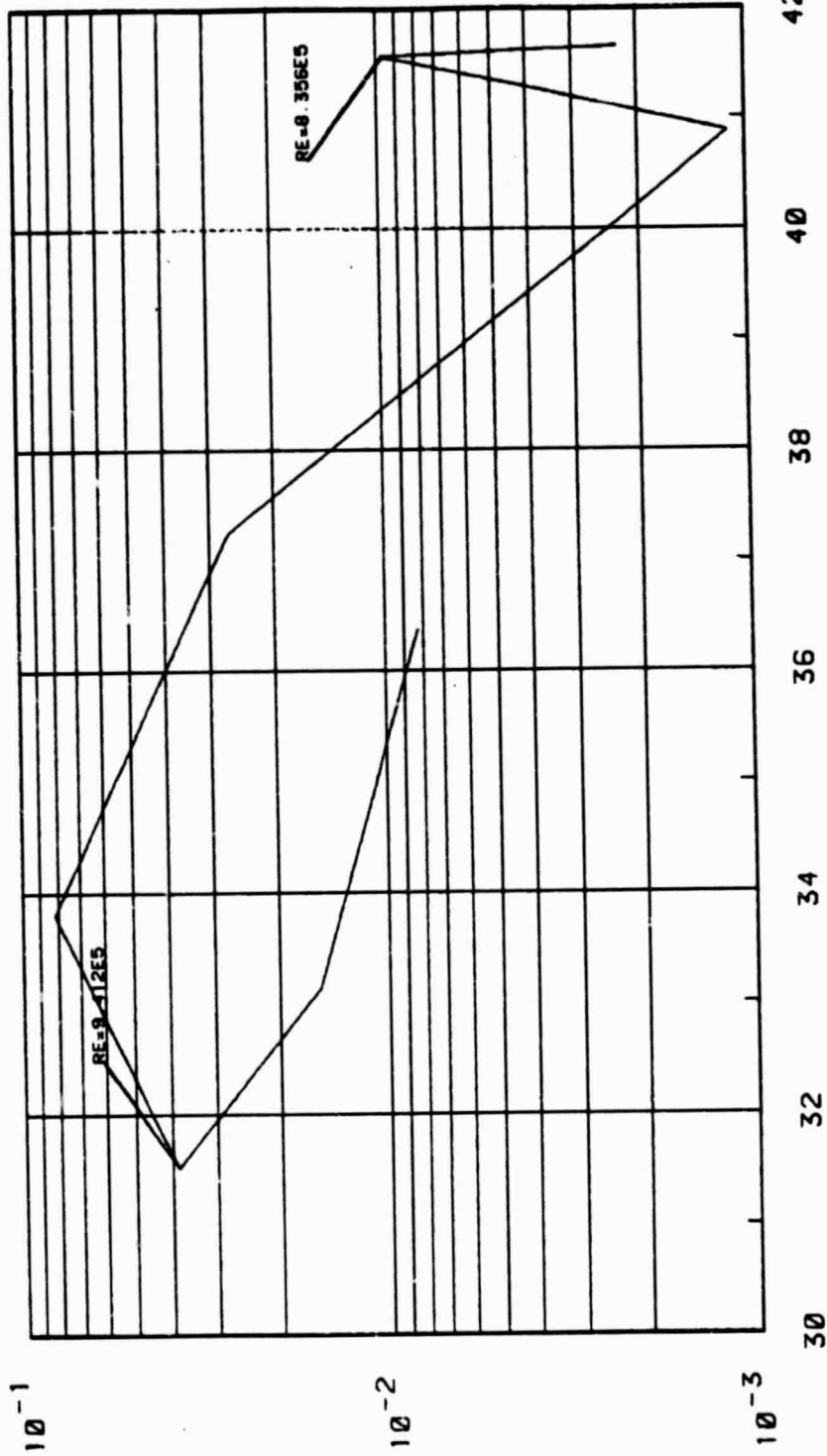
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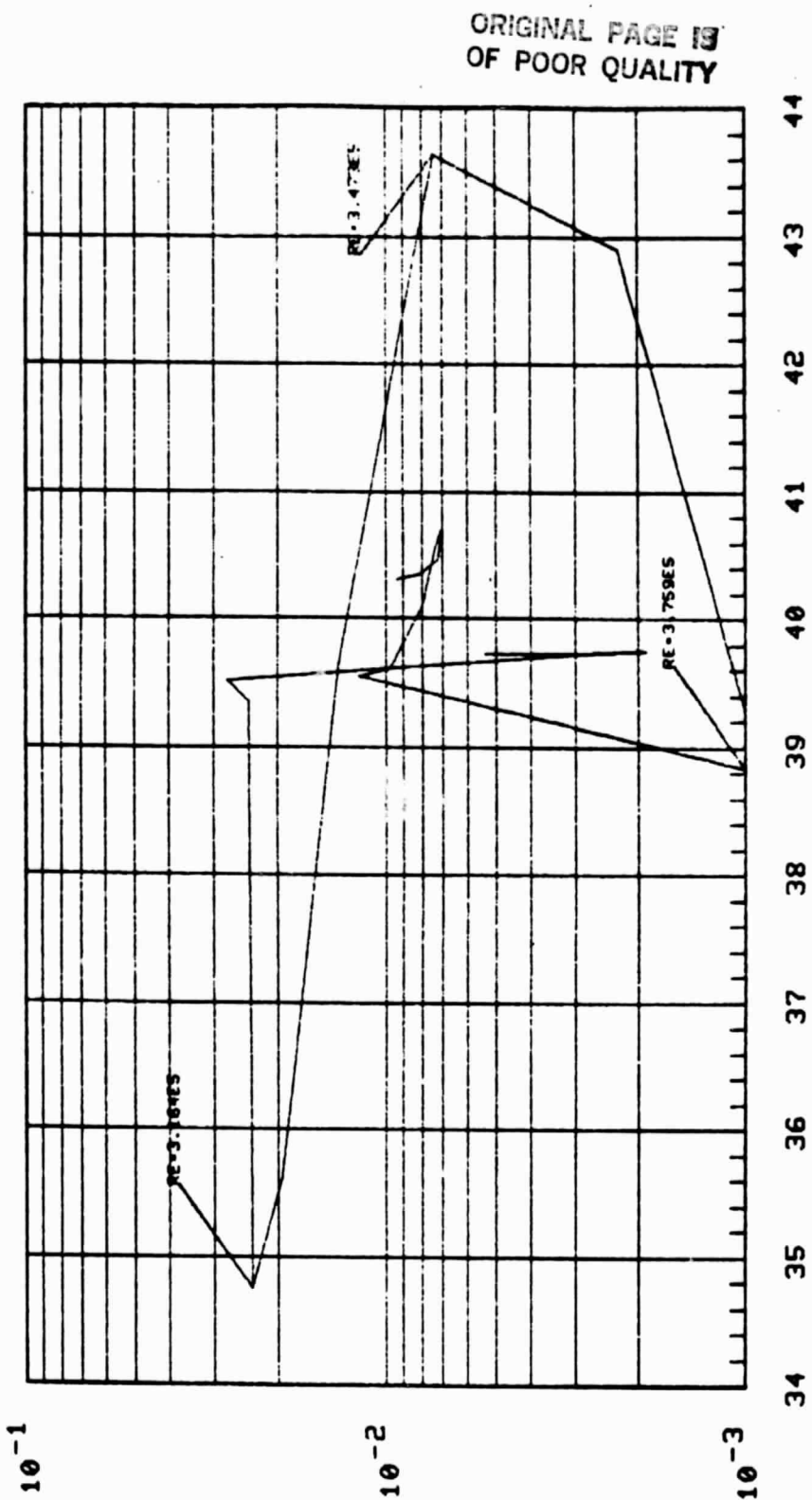
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ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A/H-REF 820- 920 SEC



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LIFT COEFF - H/H-RULE

D-254

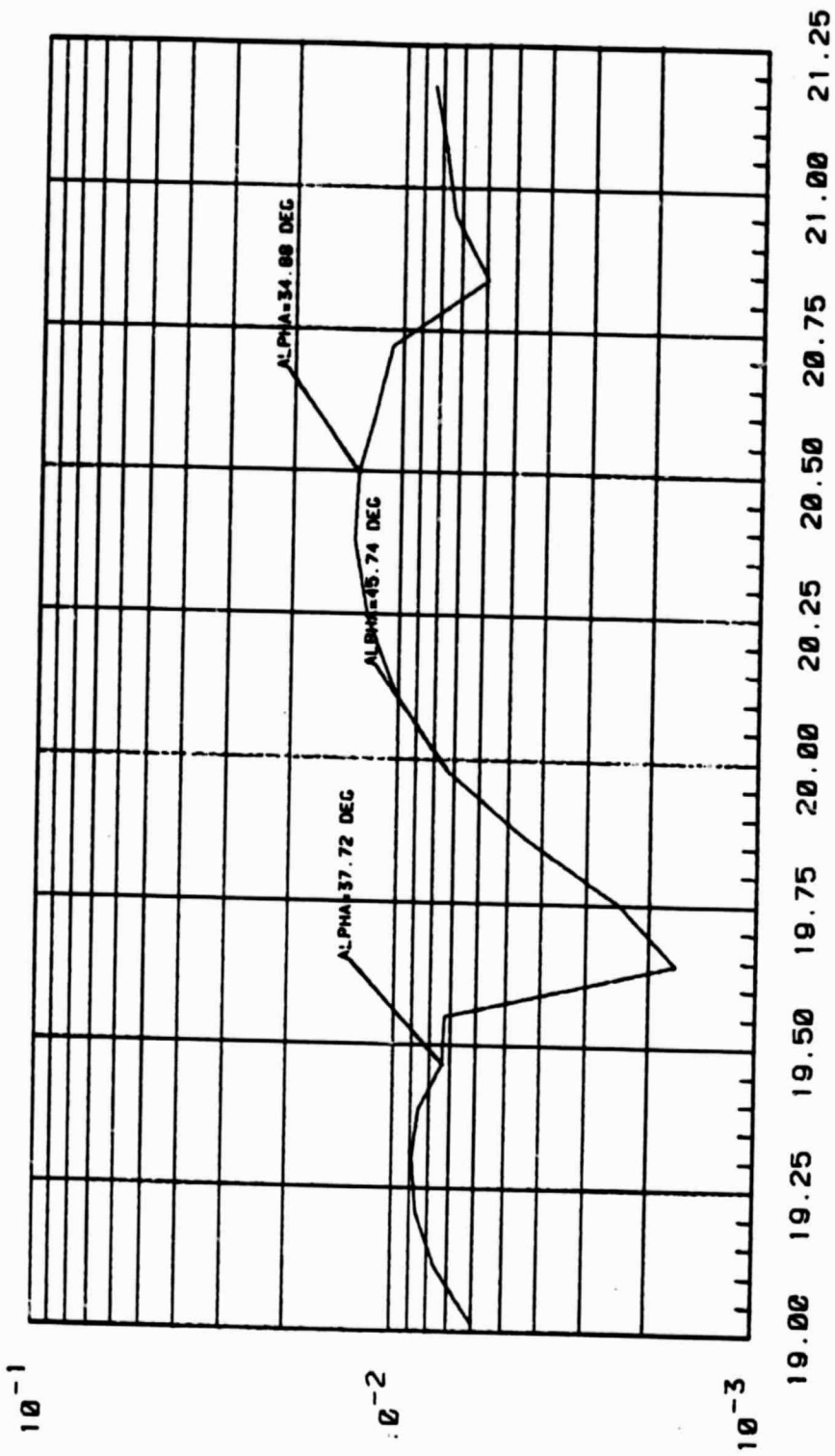
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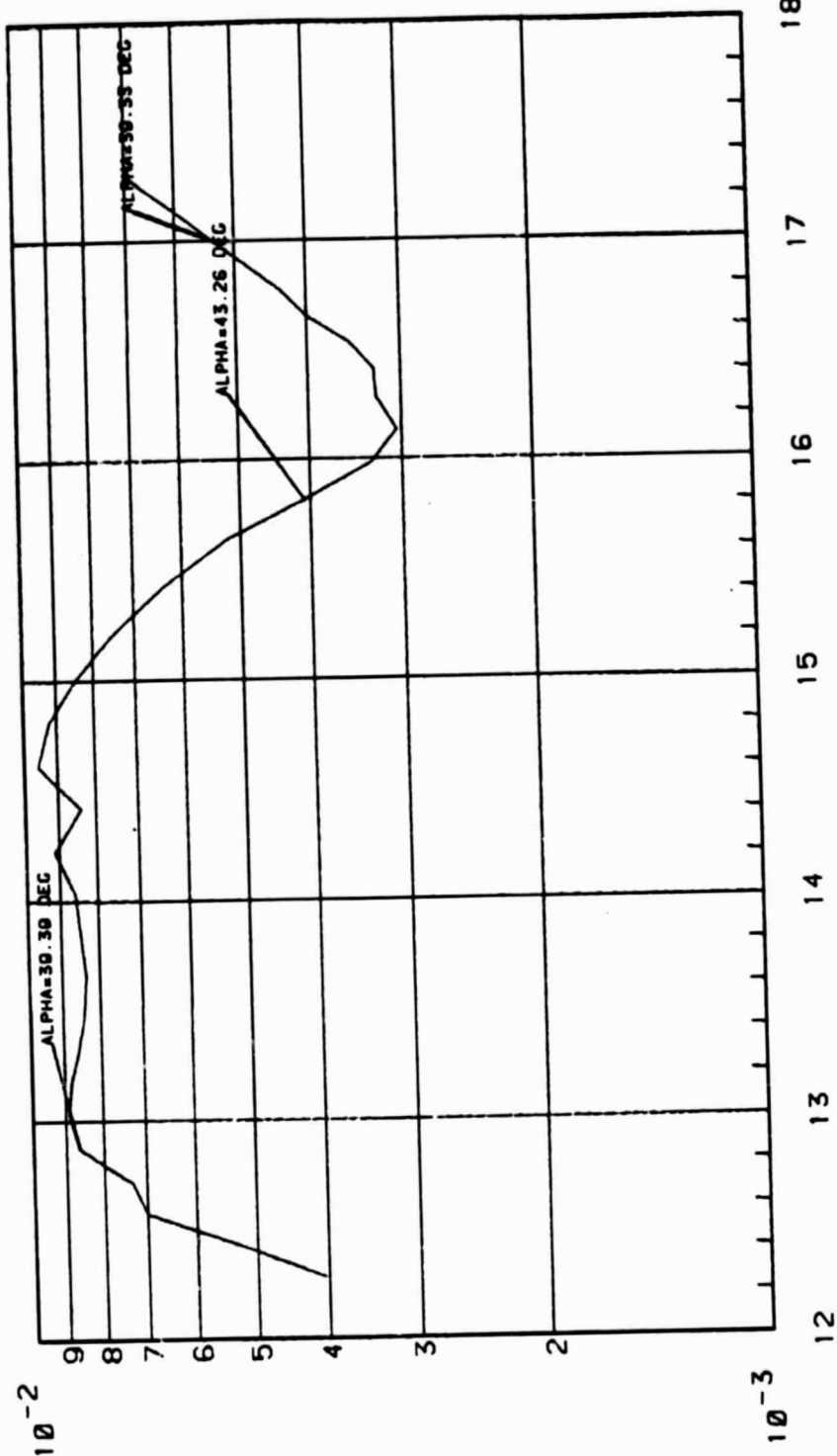
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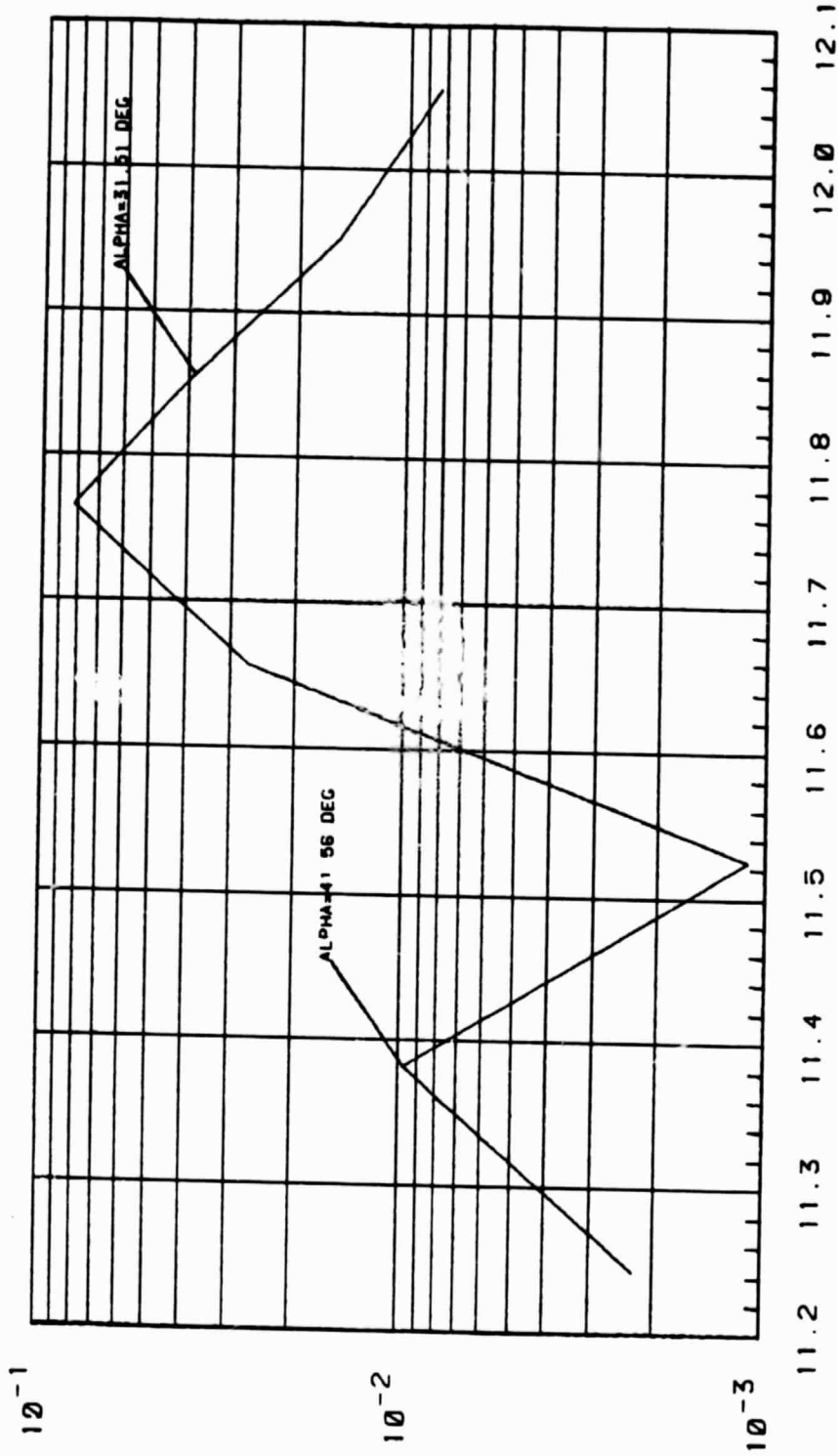
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MACH NUMBER

FLIGHT POWER - H/I-REF

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VS770007A/H-REF 065-1000 SEC



FILM COEFF - H-I-REF

D-257

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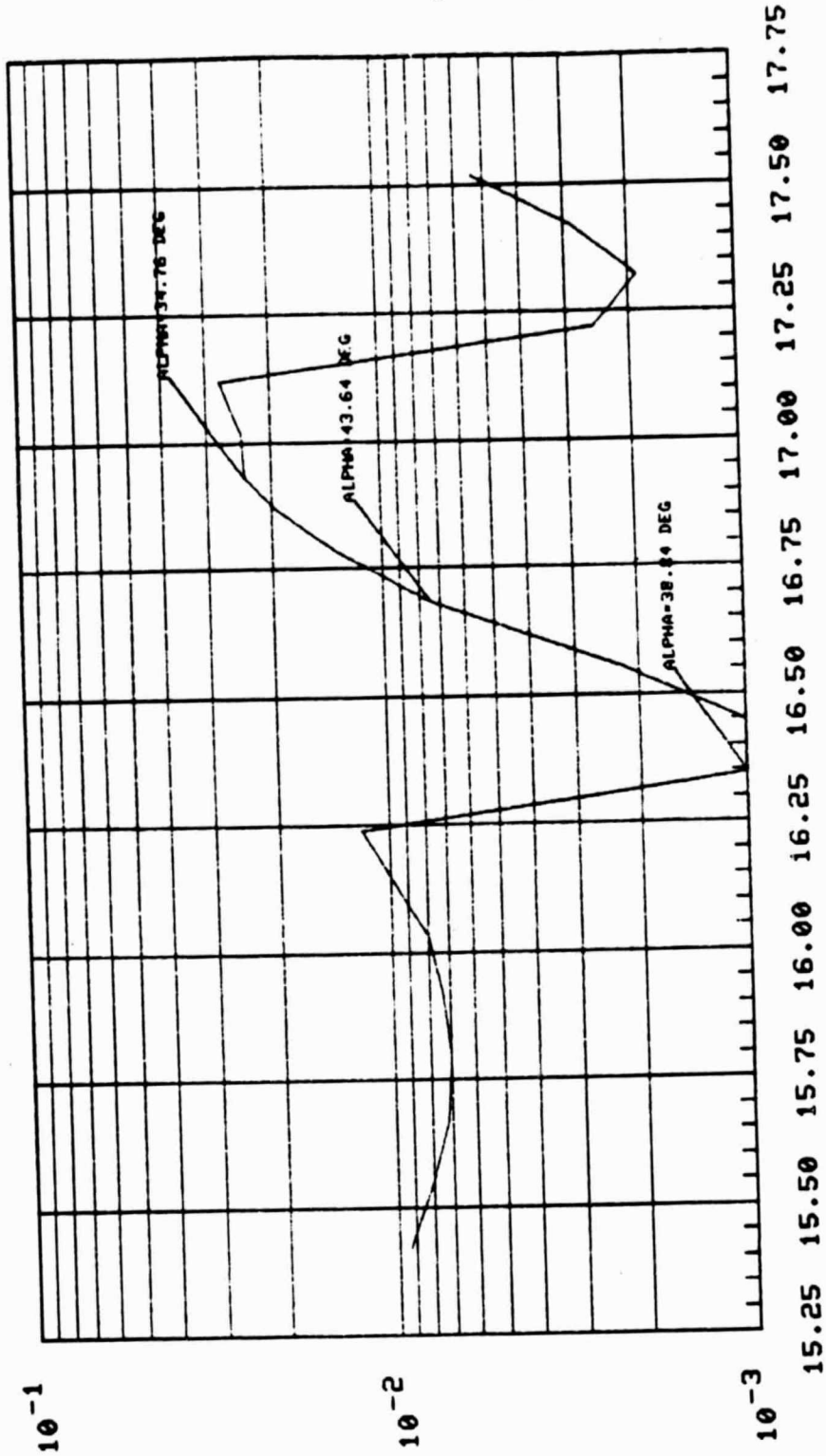
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04-20-83  
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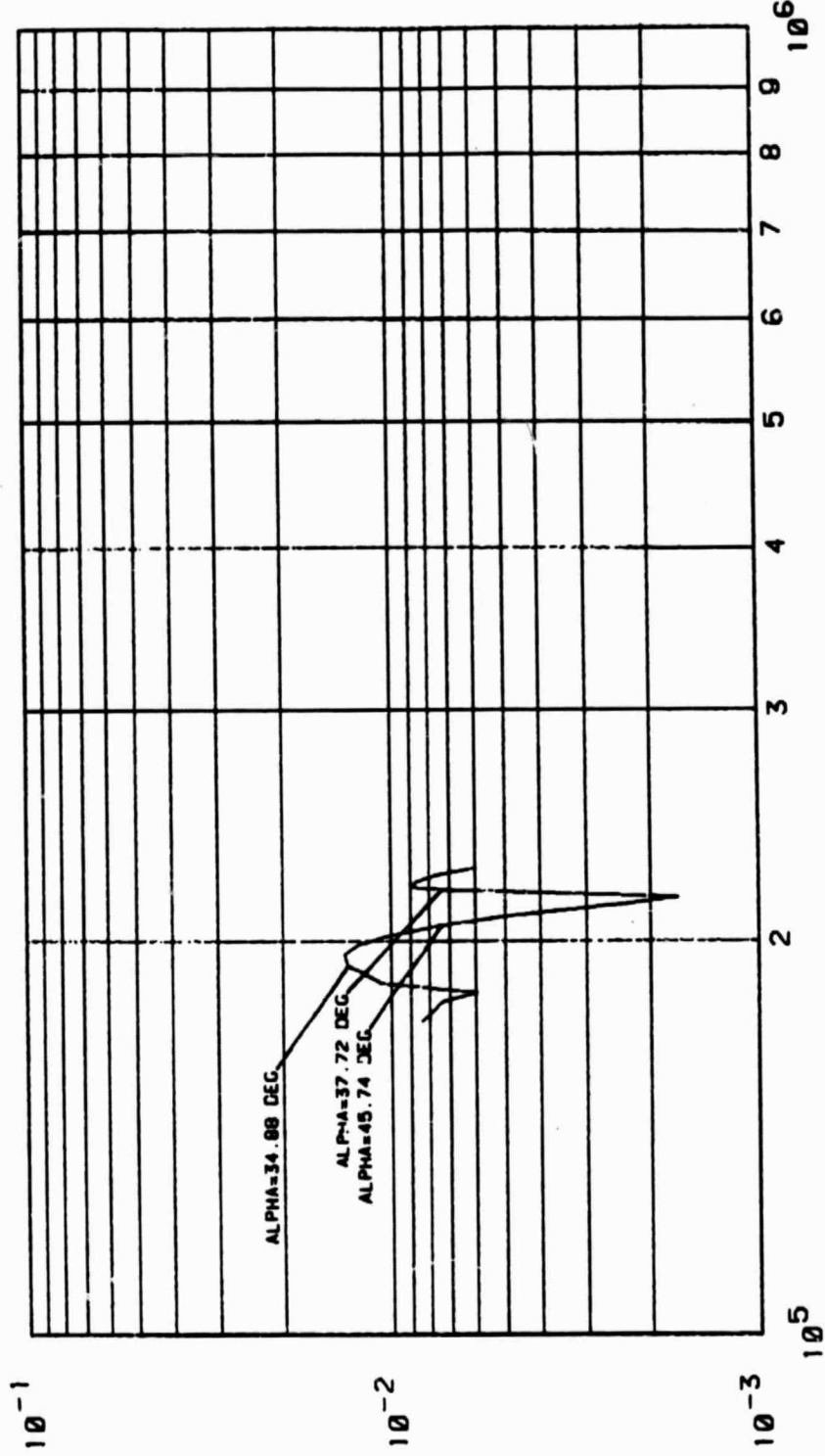
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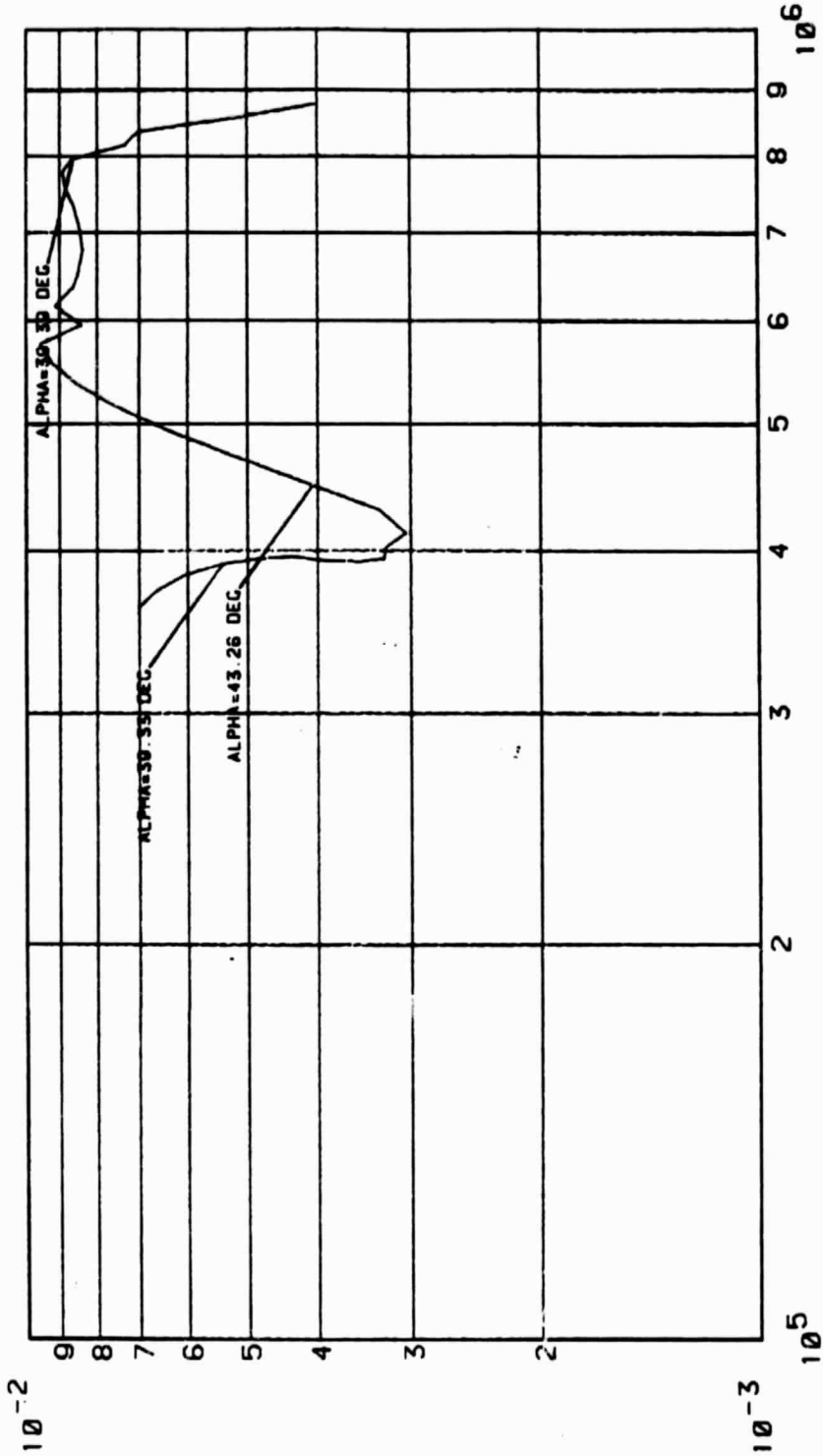


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REYNOLDS NUMBER (NS)      BASE TIME = 2700236.000 SEC.      04/28/83

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB710007A/H-REF 068-1828 SEC



FLIGHT COMPARISON - H/H-REF

D-260

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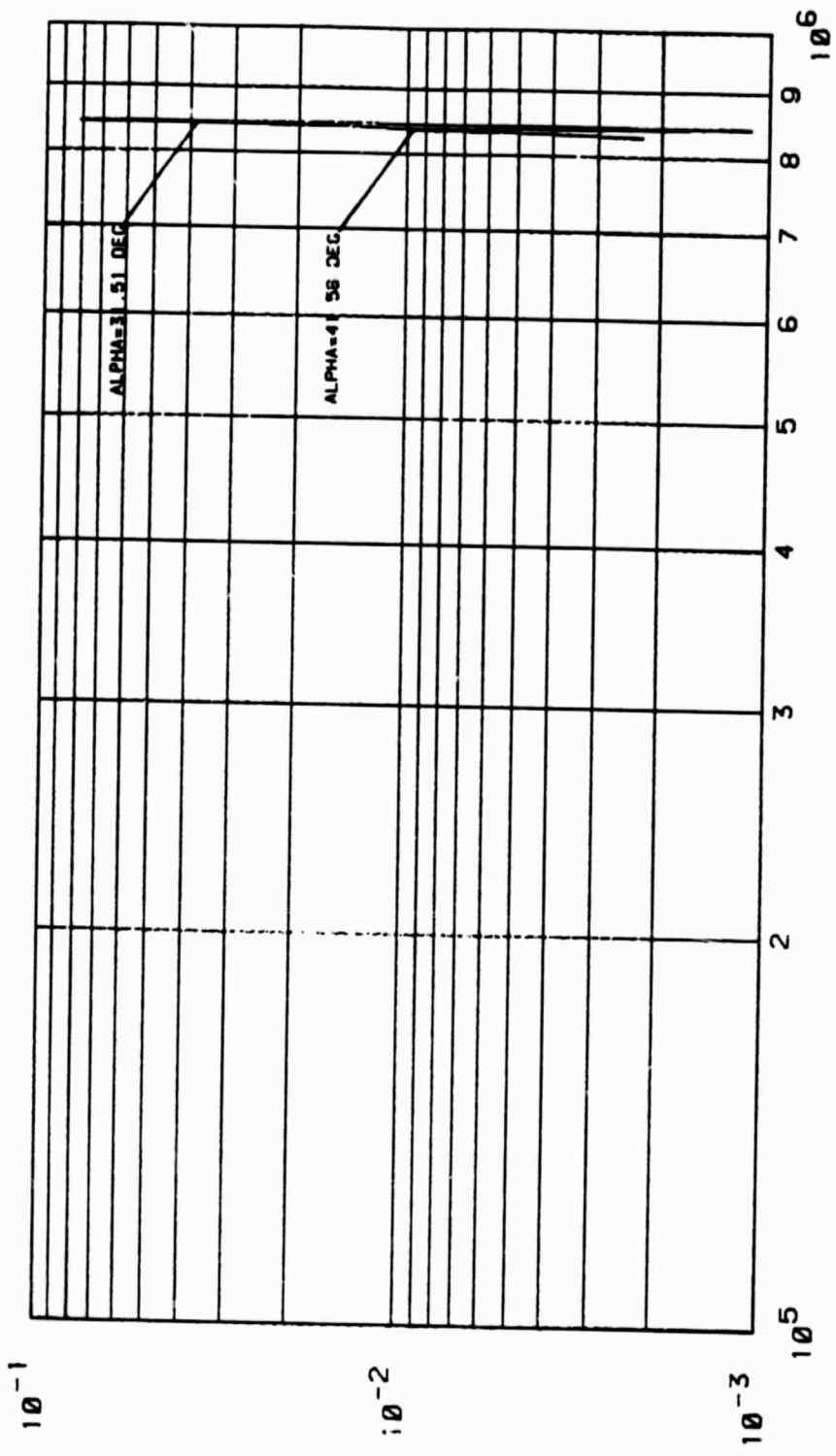
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REYNOLDS NUMBER (NS)

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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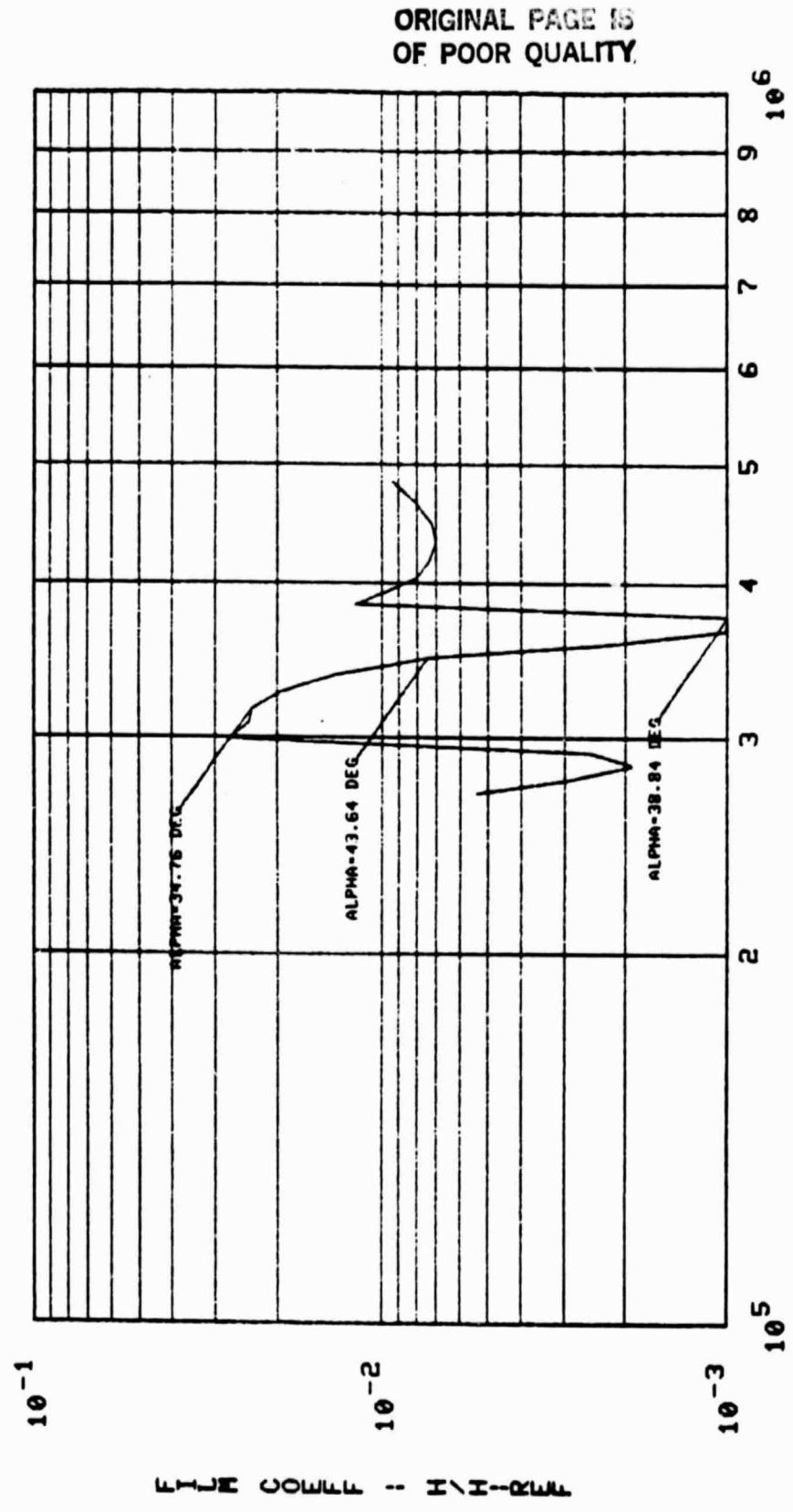
FLIGHT COMPARISON - H/H-REF

D-261

REYNOLDS NUMBER (NS) 04/20/83  
BASE TIME = 16040423.000 SEC.

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A/H-REF 820- 920 SEC



FILM COEFF - H/H-REF

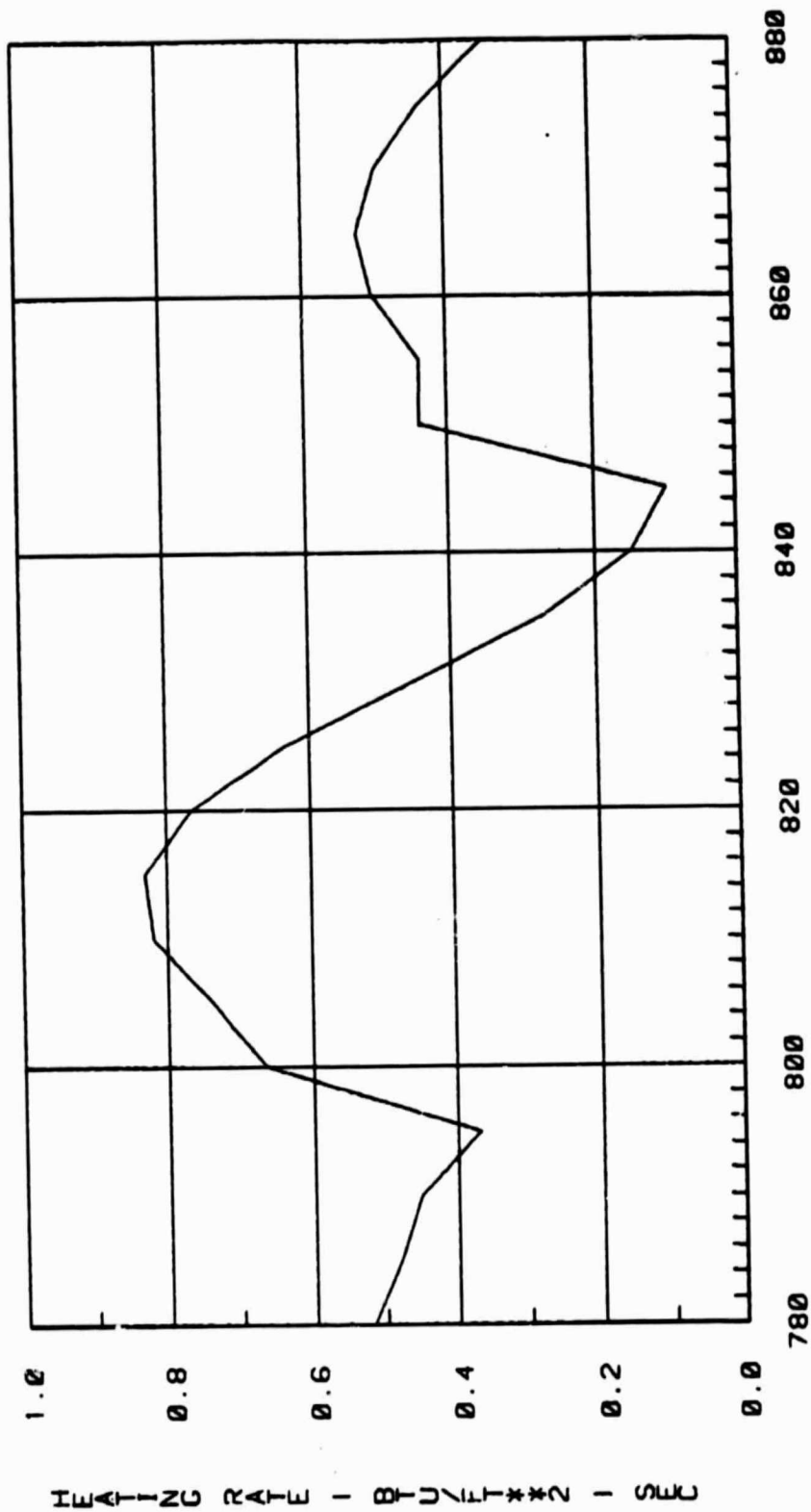
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REYNOLDS NUMBER (NS) 04.20 83 BASE TIME - 2755591.000 SEC.



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

VB7T0007A



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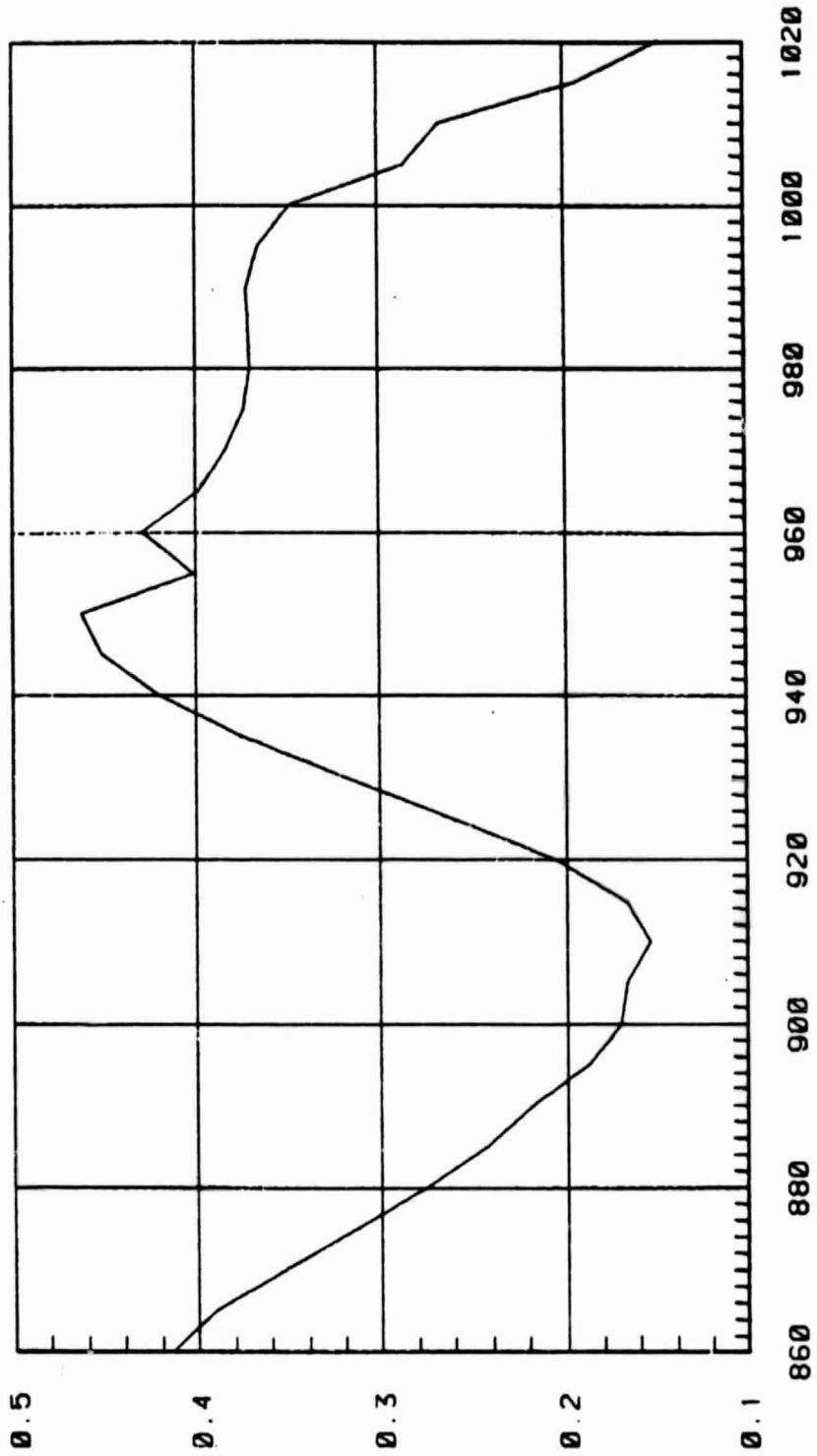
84/28/83

TIME - SECONDS

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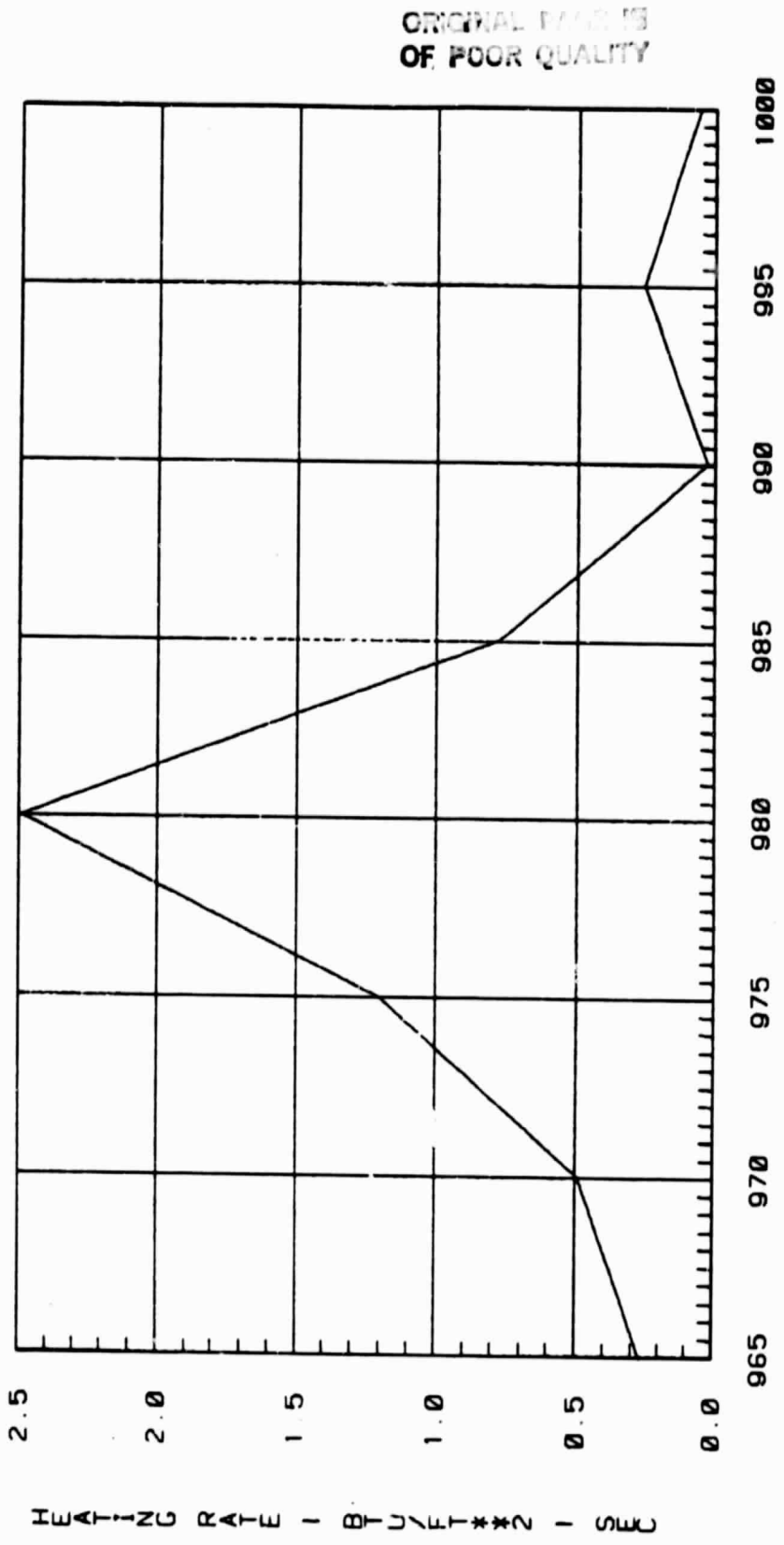
HEATING RATE - BTU/FT\*\*2 - SEC

TIME - SECONDS

04/28/83

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB7T0007A



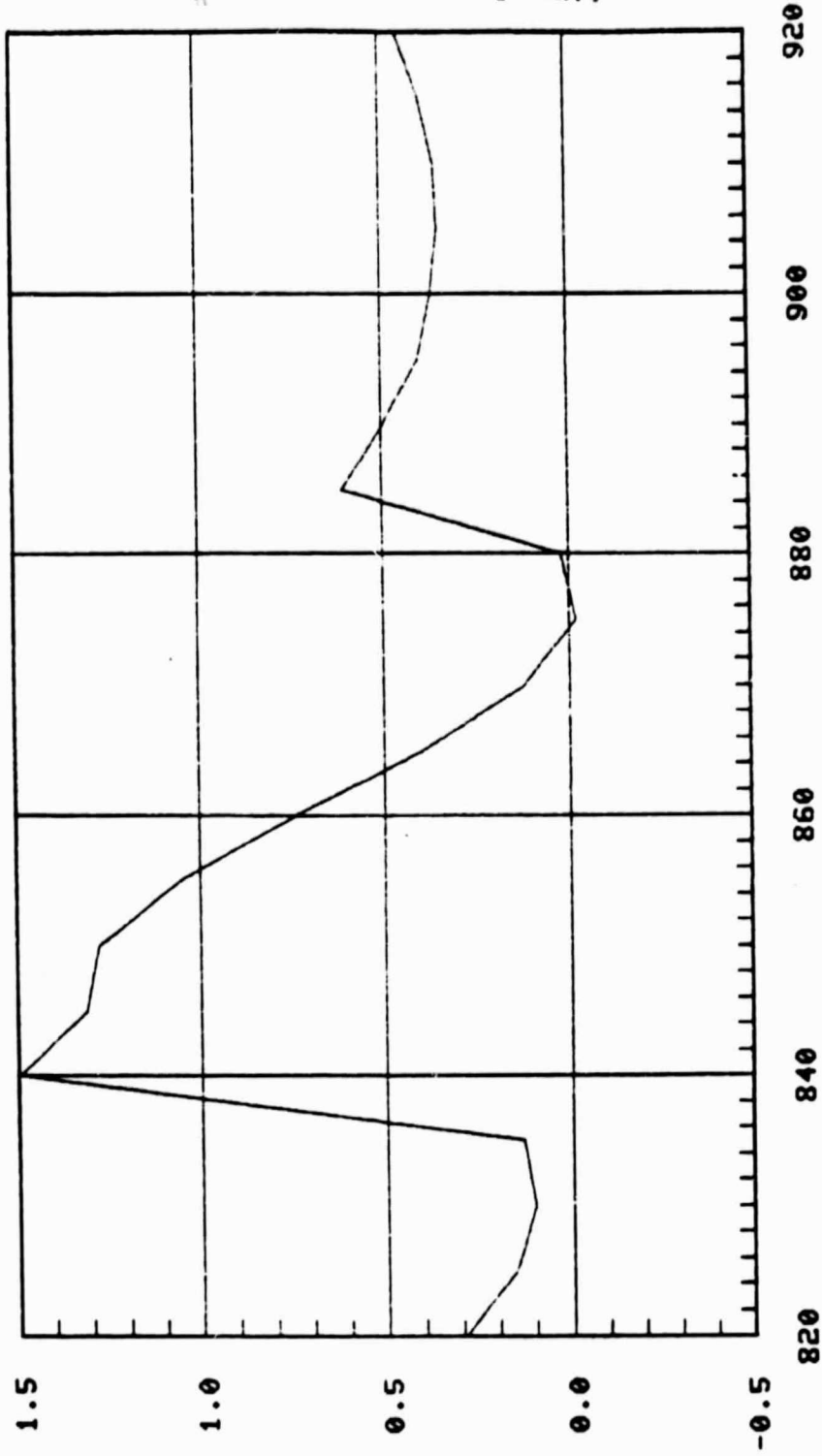
TIME - SECONDS

04/20/83

HEATING RATE - BTU/FT\*\*2 - SEC

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



HEATING RATE - BTU/FT\*HR - SEC

D-266

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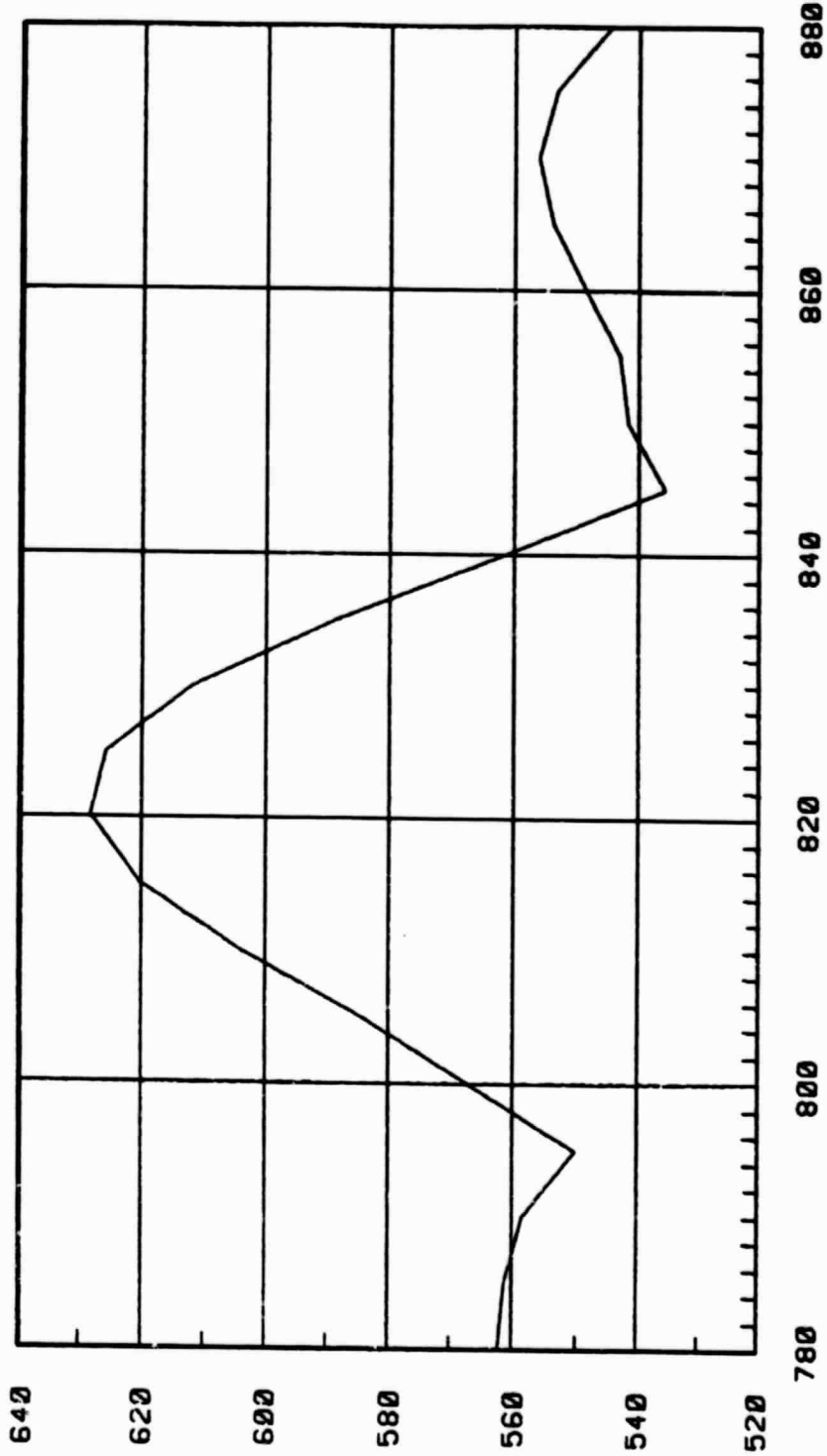
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TIME - SECONDS

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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04/20/83

TIME - SECONDS

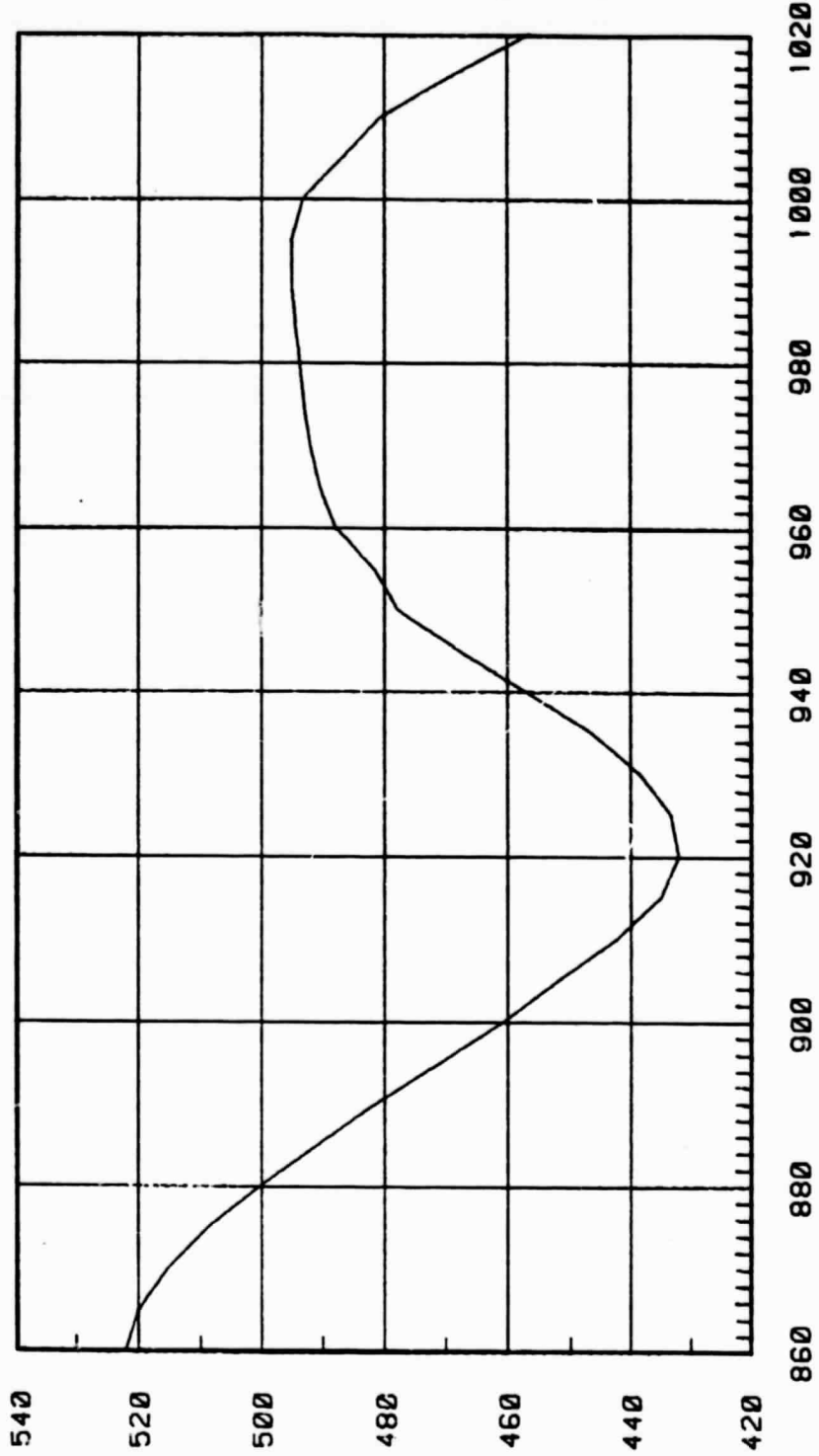
TEMPERATURE - F

D-267

C-9

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770007A



TEMPERATURE - F

D-268

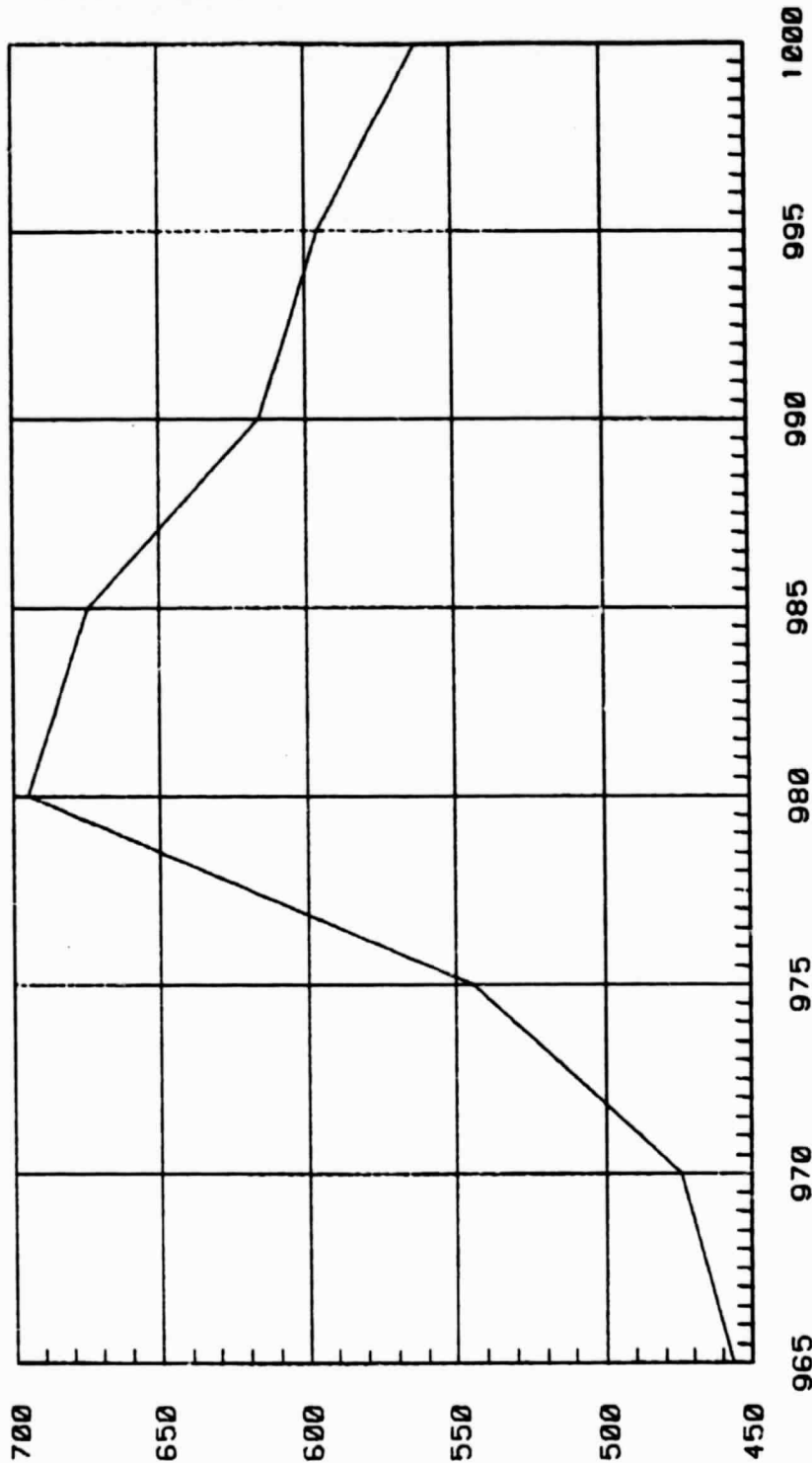
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TIME - SECONDS

04/20/03

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB770007A



TEMPERATURE - F

D-269

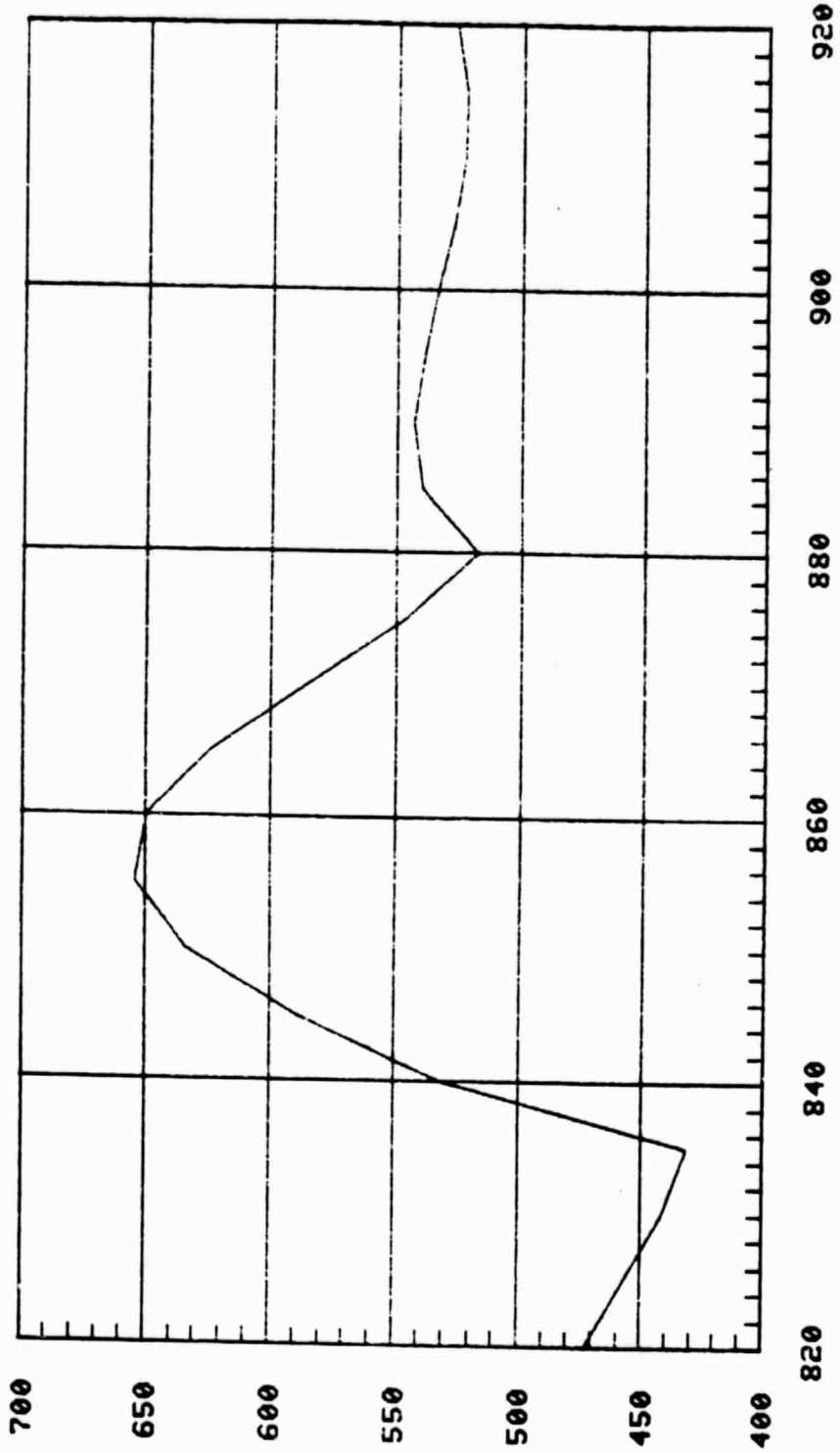
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TIME - SECONDS

04/20/03

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U07T9997A



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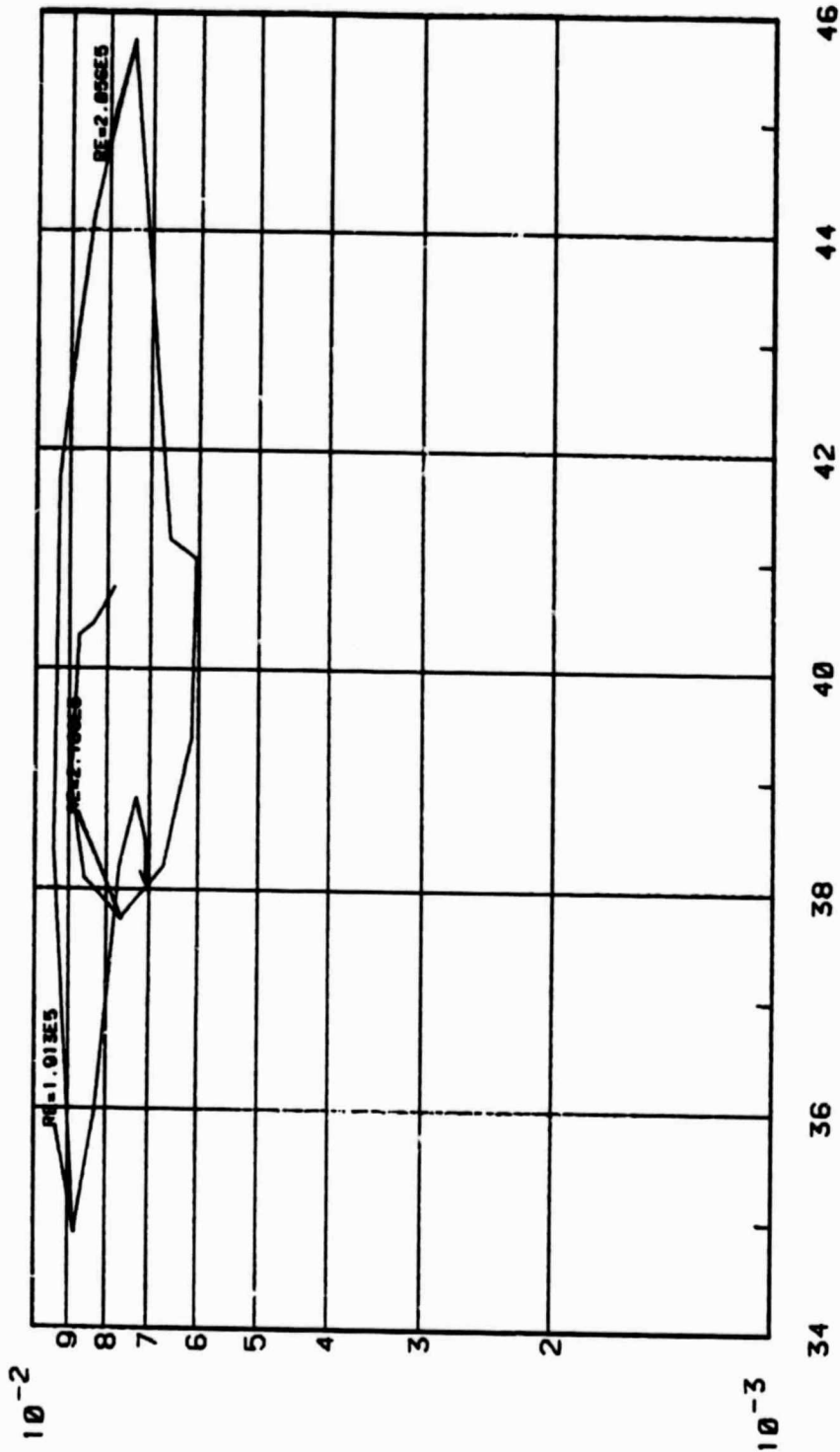
D-270

TIME - SECONDS 04 20 53



STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VS010032A/H-REF 700-000 SEC



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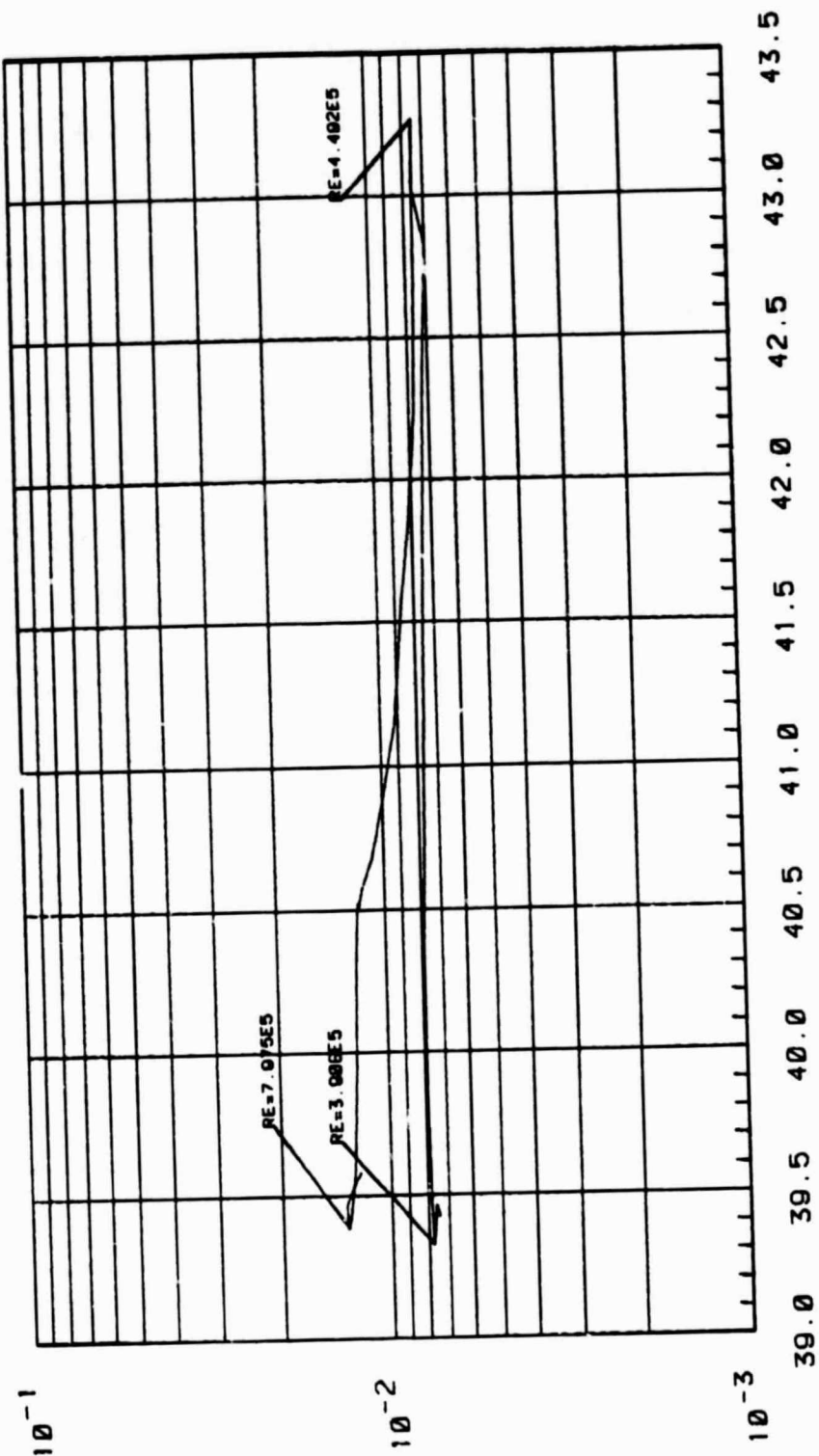
ANGLE-OF-ATTACK - DEG

FILE CONTROL - I/I-REF

D-271

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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON  
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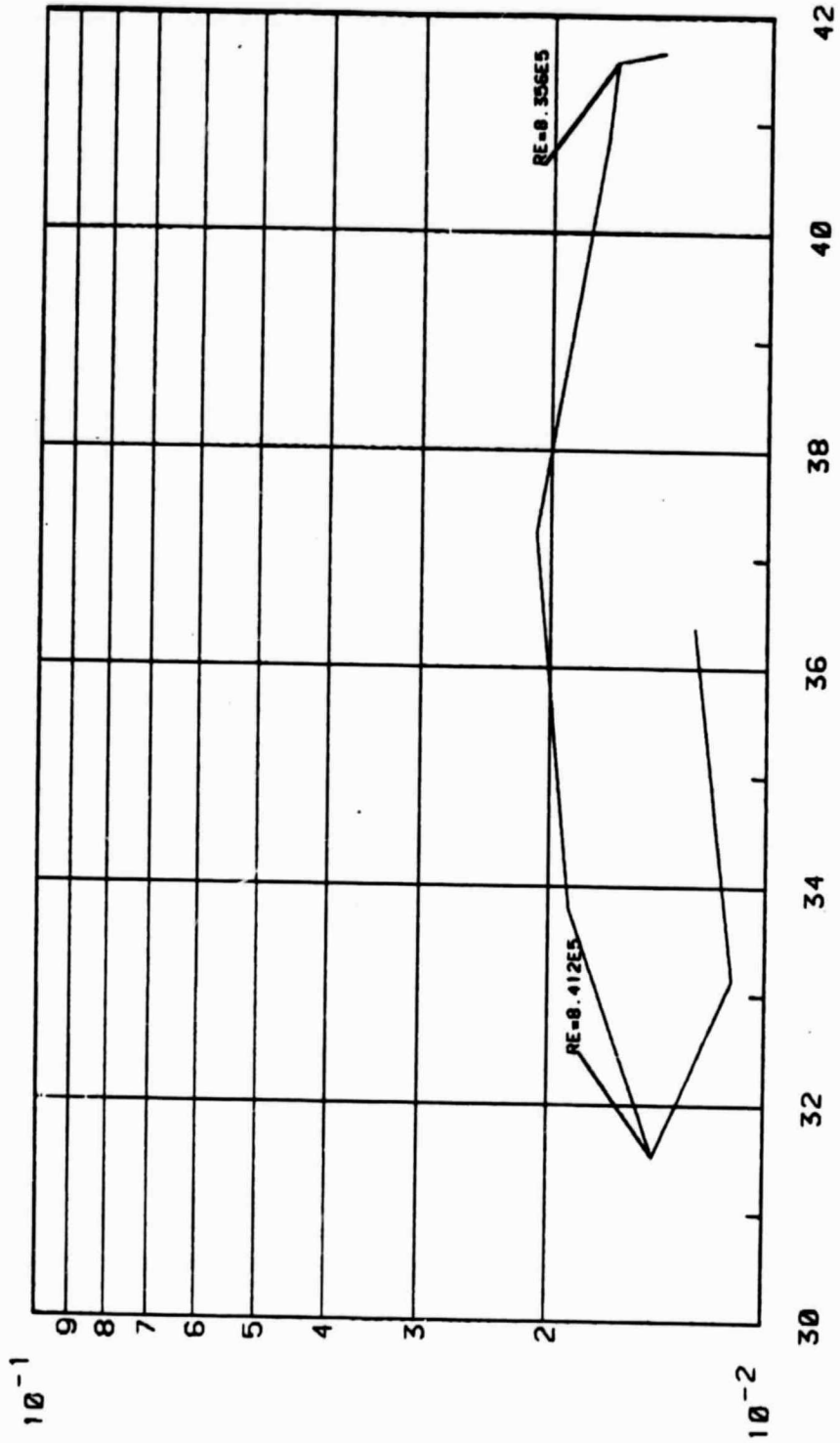


84/28/83  
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ANGLE-OF-ATTACK - DEG

FLIGHT COEFFICIENT - INT-RULE

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VB0T0032A/H-REF 000-1000 SEC



LIFT COEFF - H/H-REF

D-273

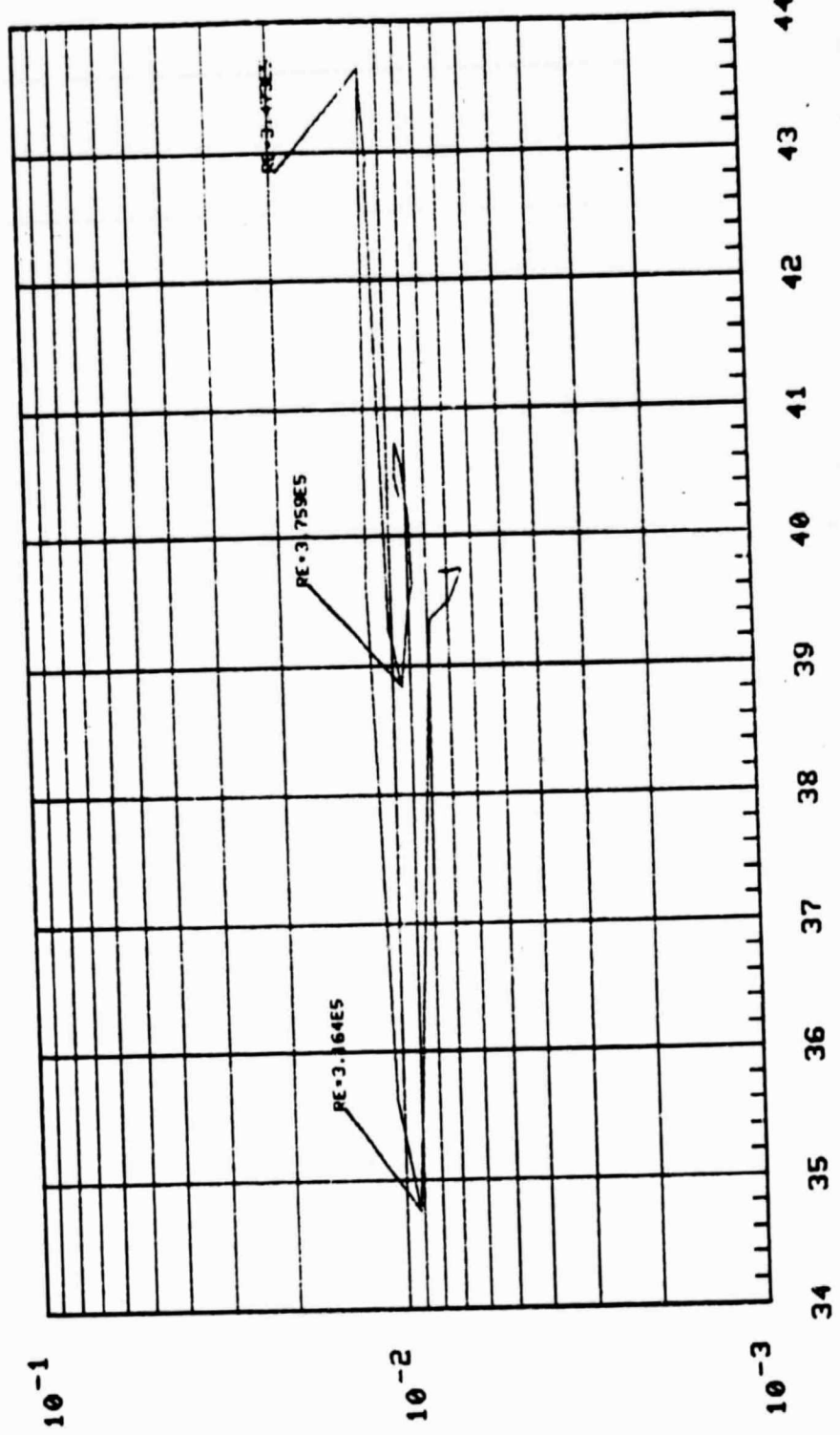
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ANGLE-OF-ATTACK - DEG

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 820 - 920 SEC

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FILM COVER -- H/H-RWLL

D-274

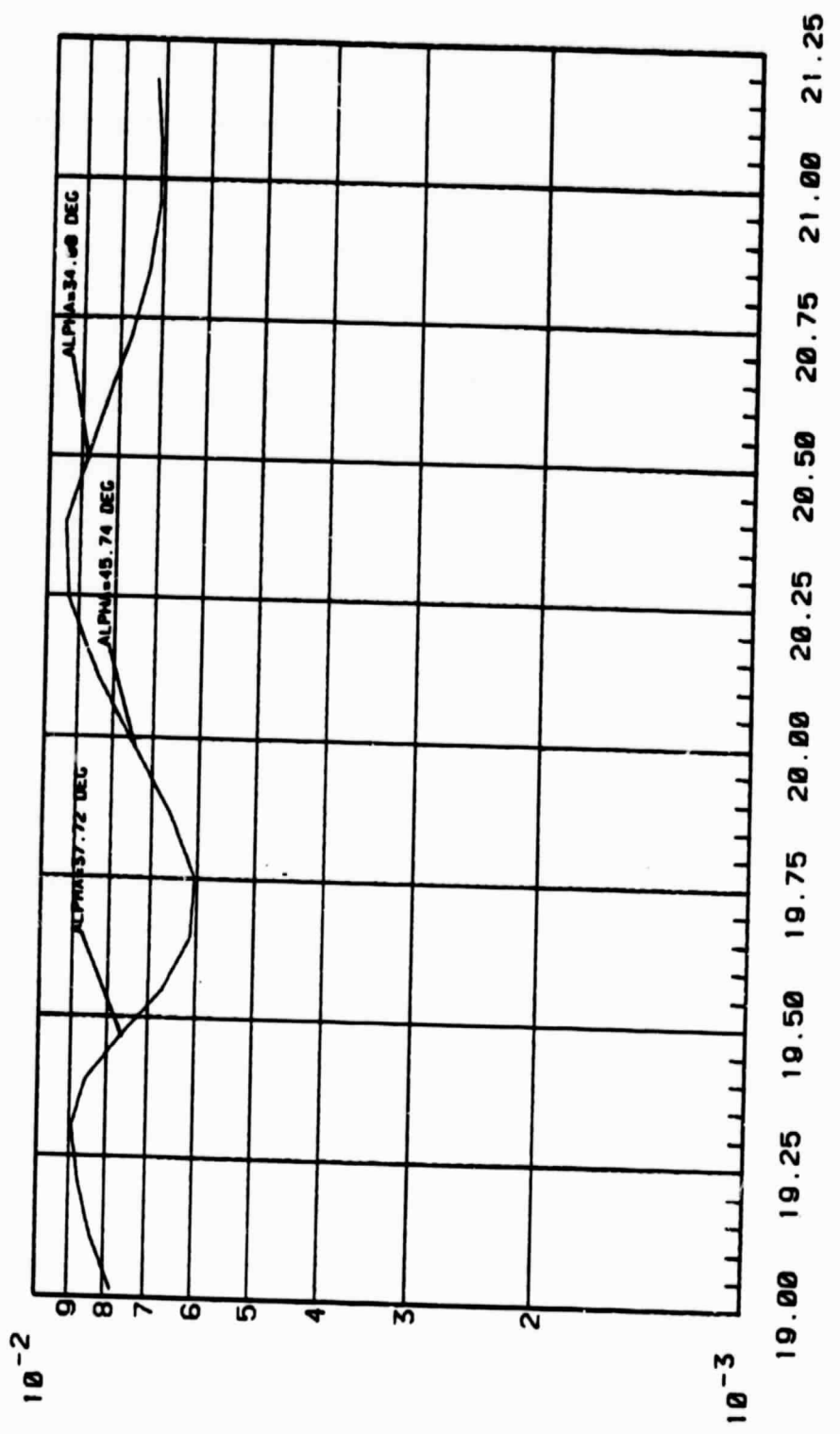
ANGLE-OF-ATTACK - DEG

BASE TIME - 27000591.000 SEC  
04-20-83

STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V80T0812A/H-REF 700-000 SEC

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MACH NUMBER

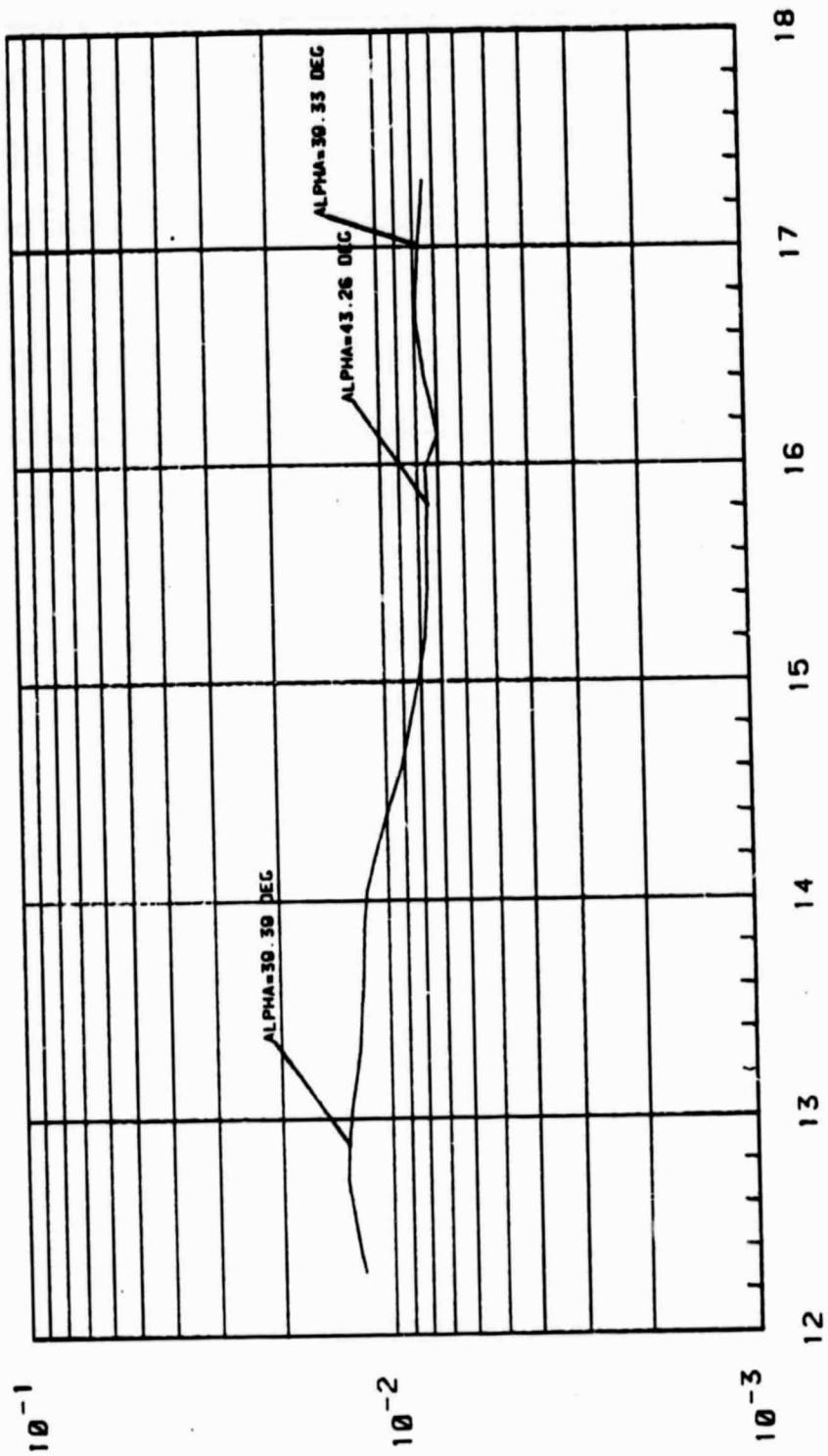
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D-275

# STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V80T0832A/H-REF 068-1828 SEC

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04/28/83  
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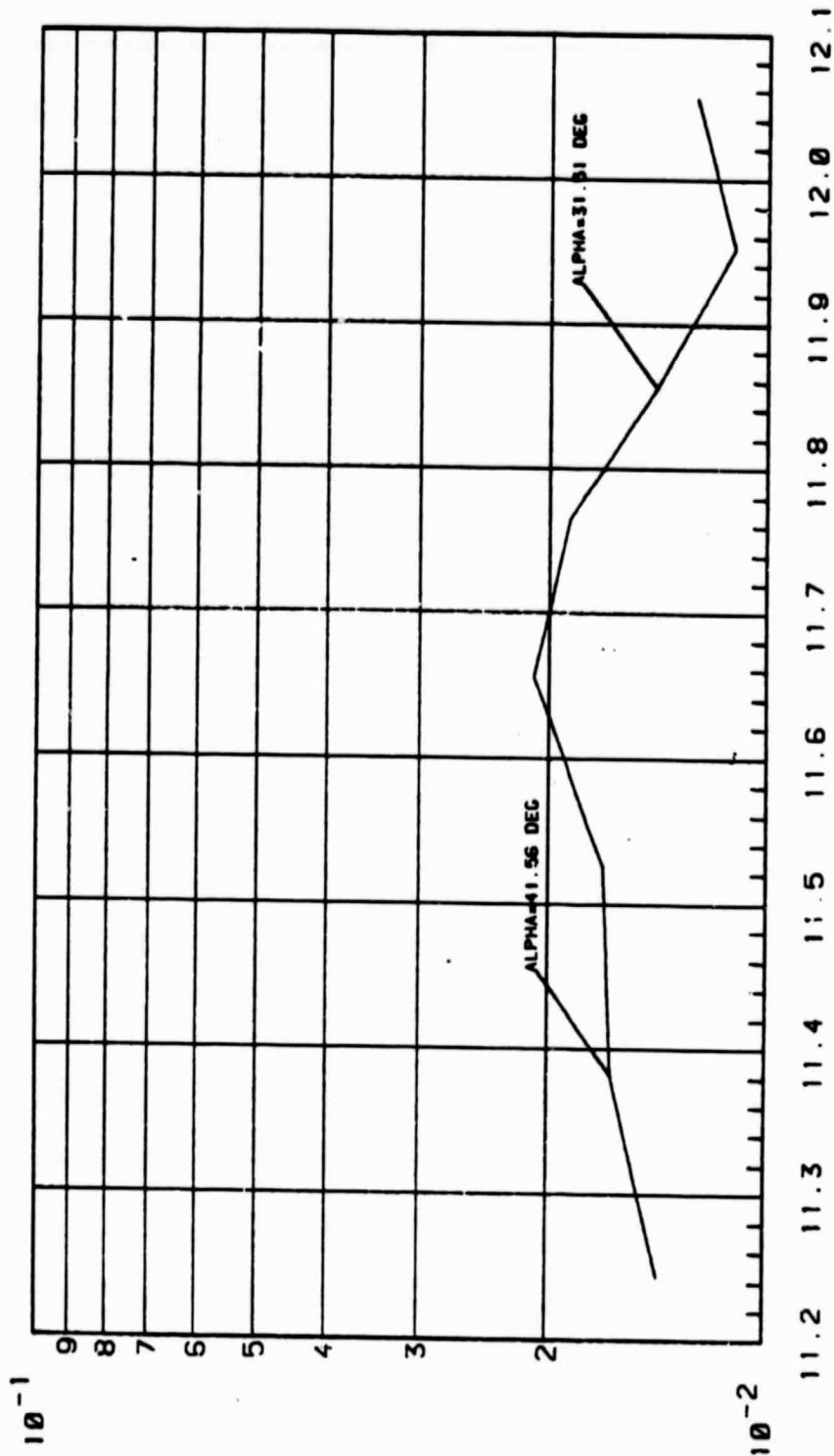
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FILE CODE - I/H-REF

STS-4 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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FLIGHT COEFF - H/H-REF

D-277

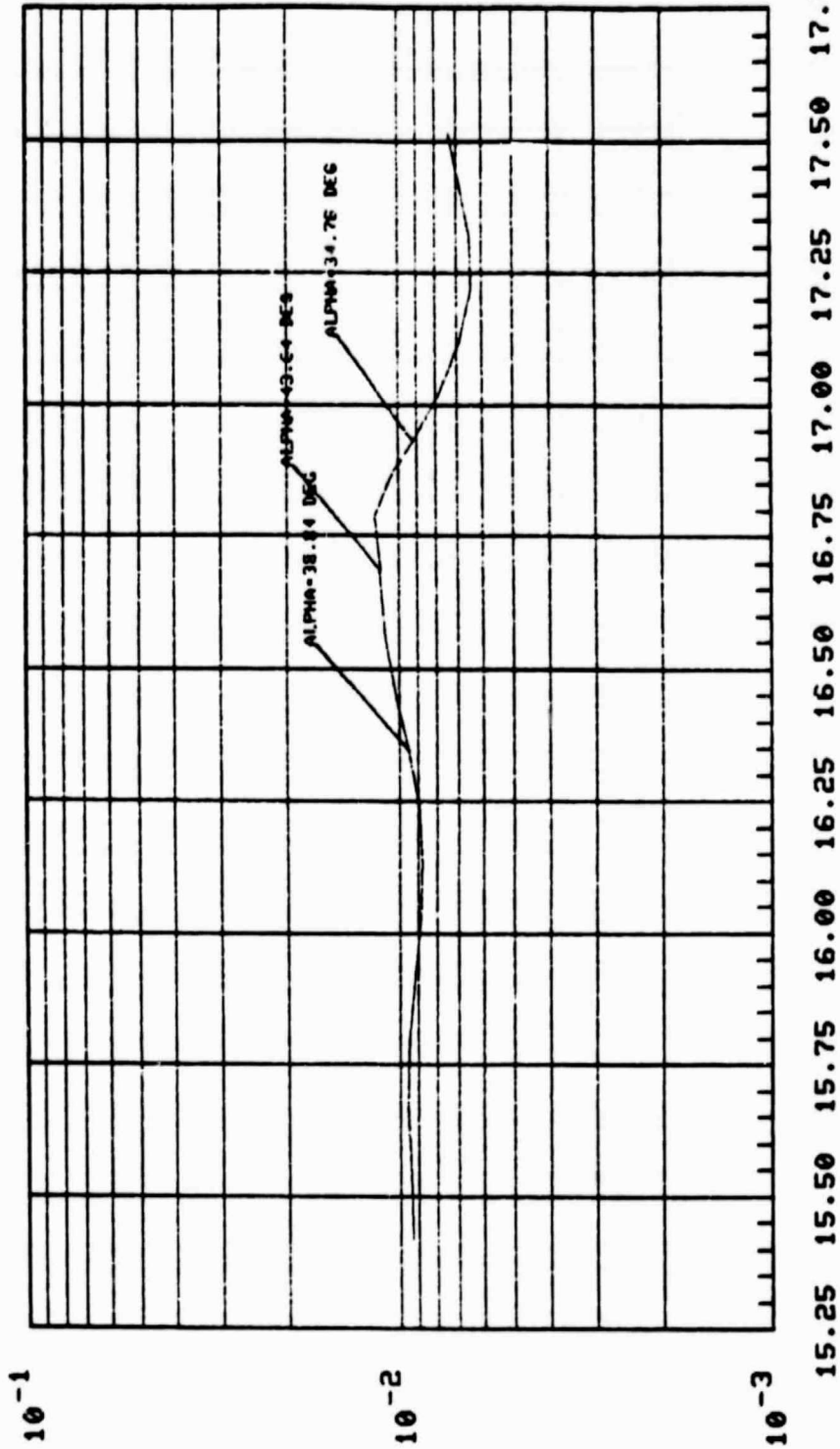
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MACH NUMBER

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 820- 920 SEC

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04/20/83  
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MACH NUMBER

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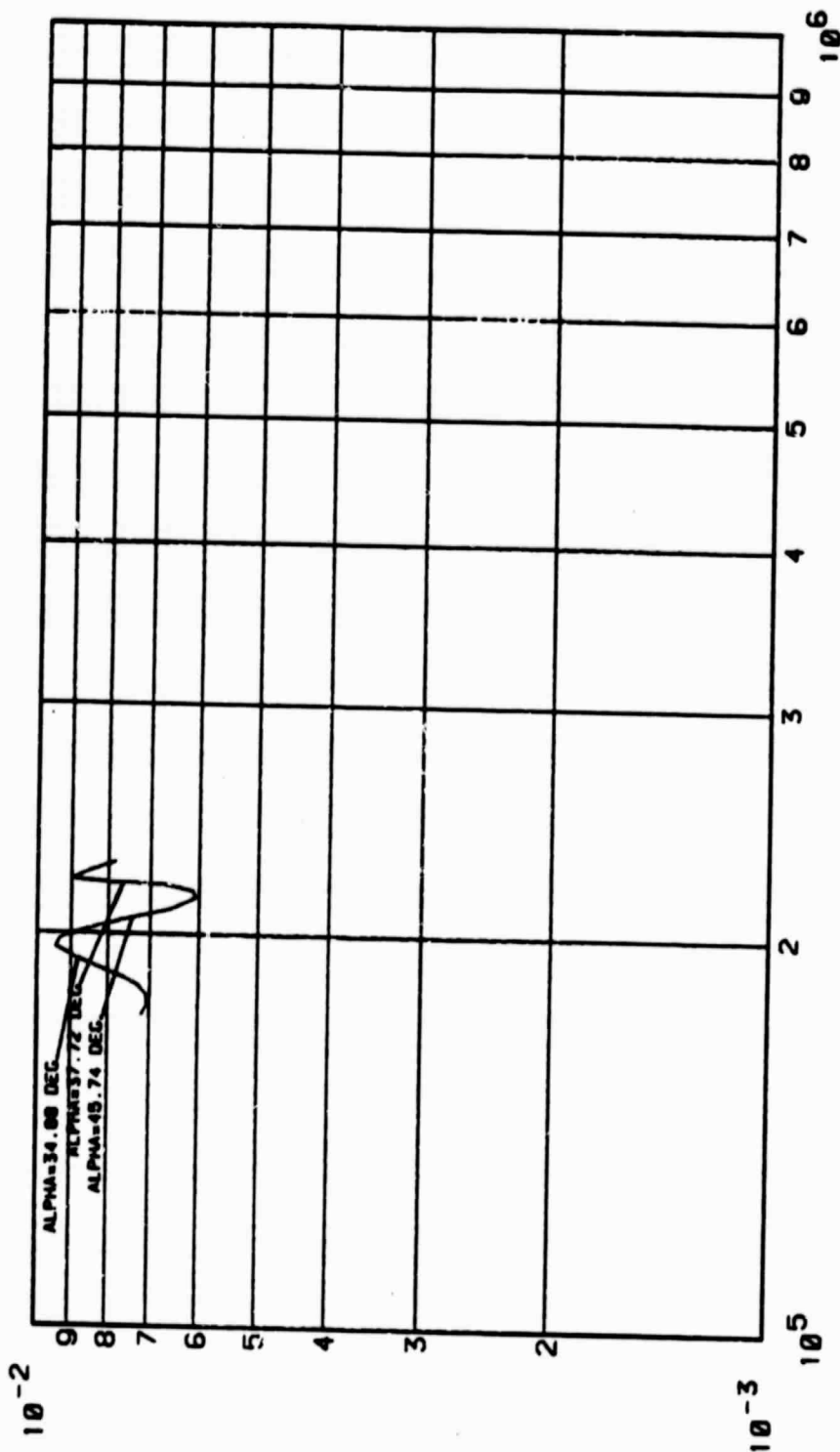
D-278



STS-2 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

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BASE TIME = 27000285.000 SEC.

REYNOLDS NUMBER (NS)

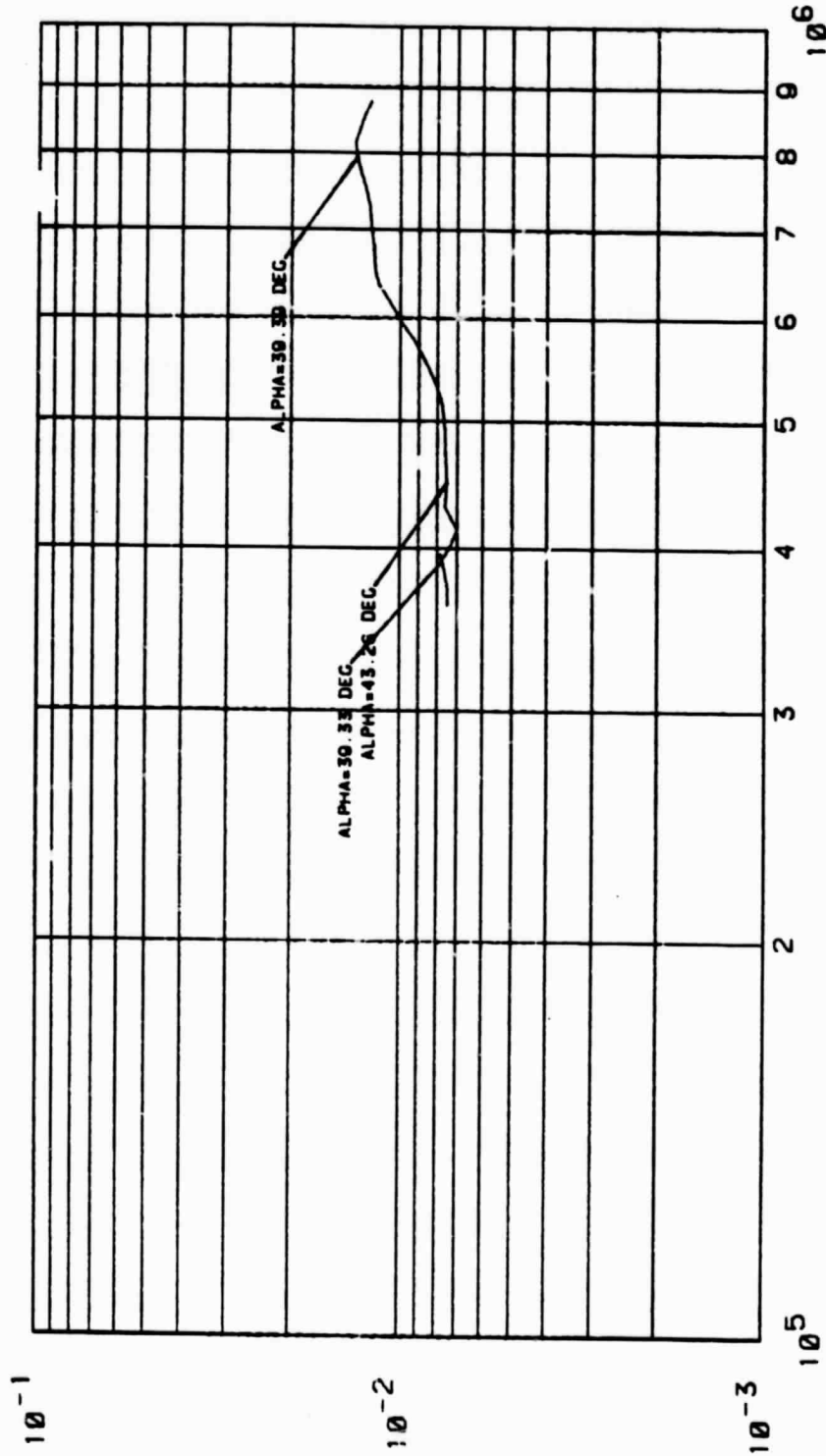
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D-279

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VSST0032A/H-REF 888-1828 SEC

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FLIGHT COEFFICIENT - H/H-REF

D-280

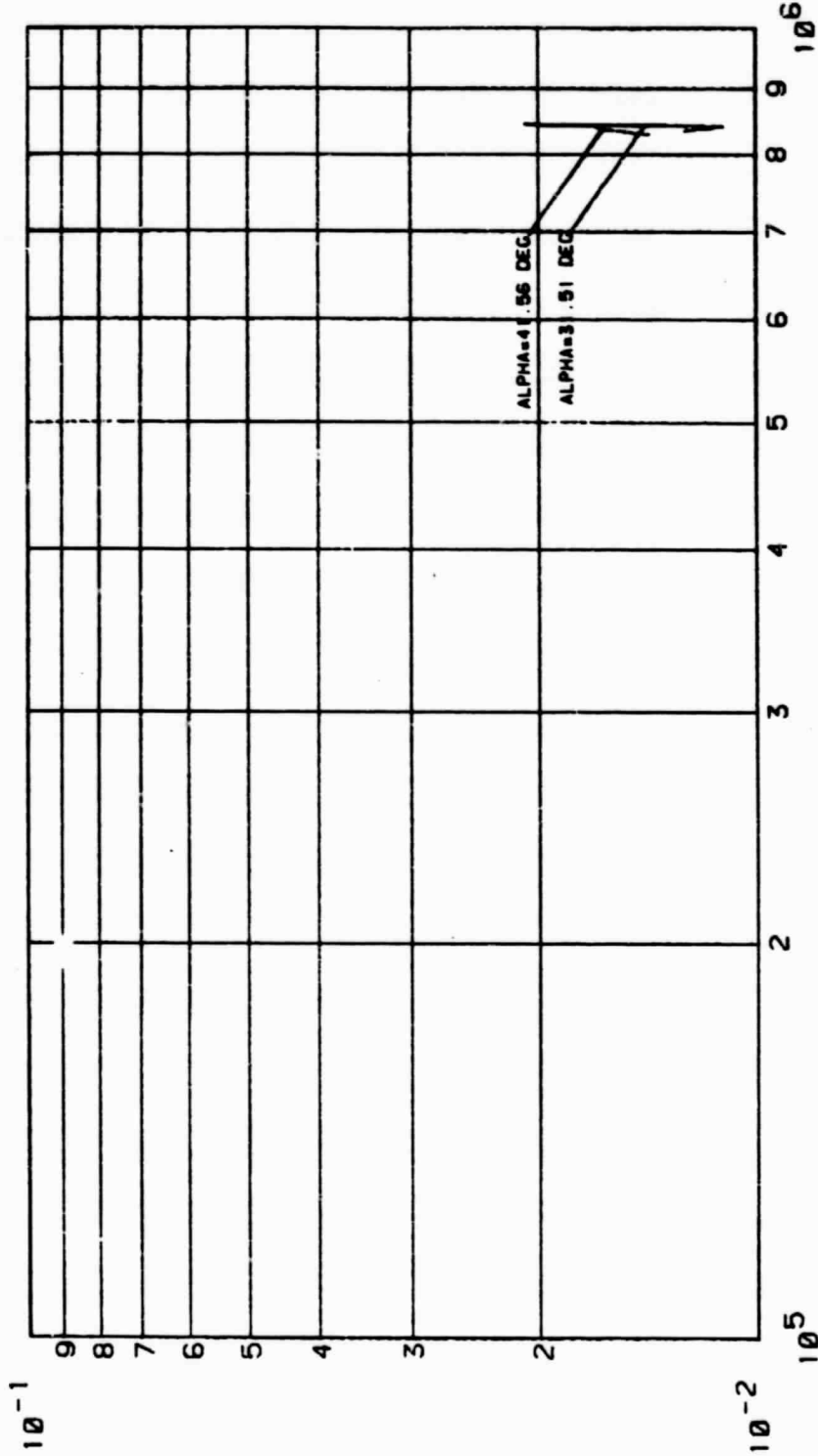
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04/20/83

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VB070032A/H-REF 005-1000 SEC



FILM COEFF - H-REF

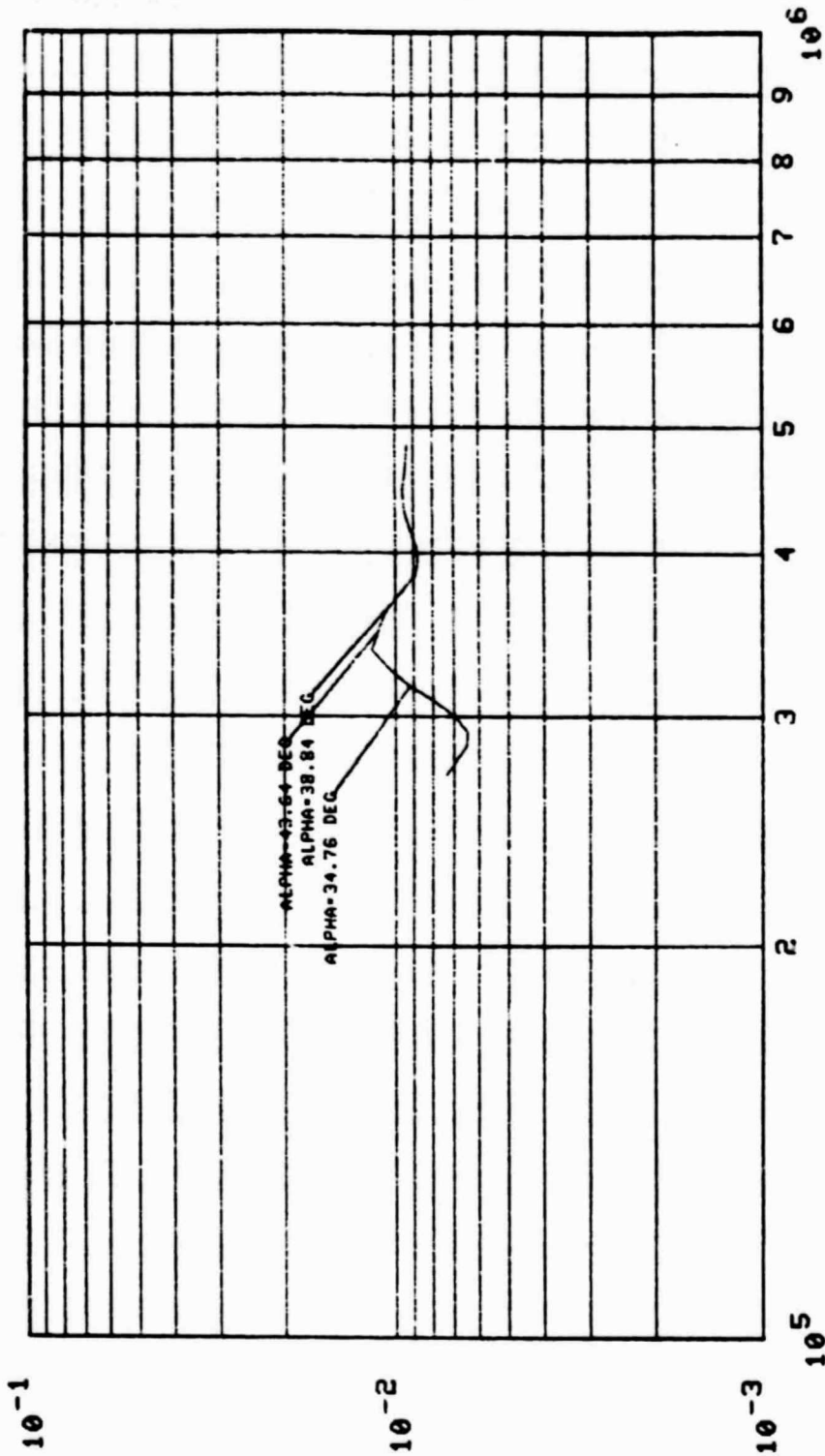
D-281

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STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A/H-REF 820- 920 SEC



FLIGHT COVER - H/H-REF

D-282

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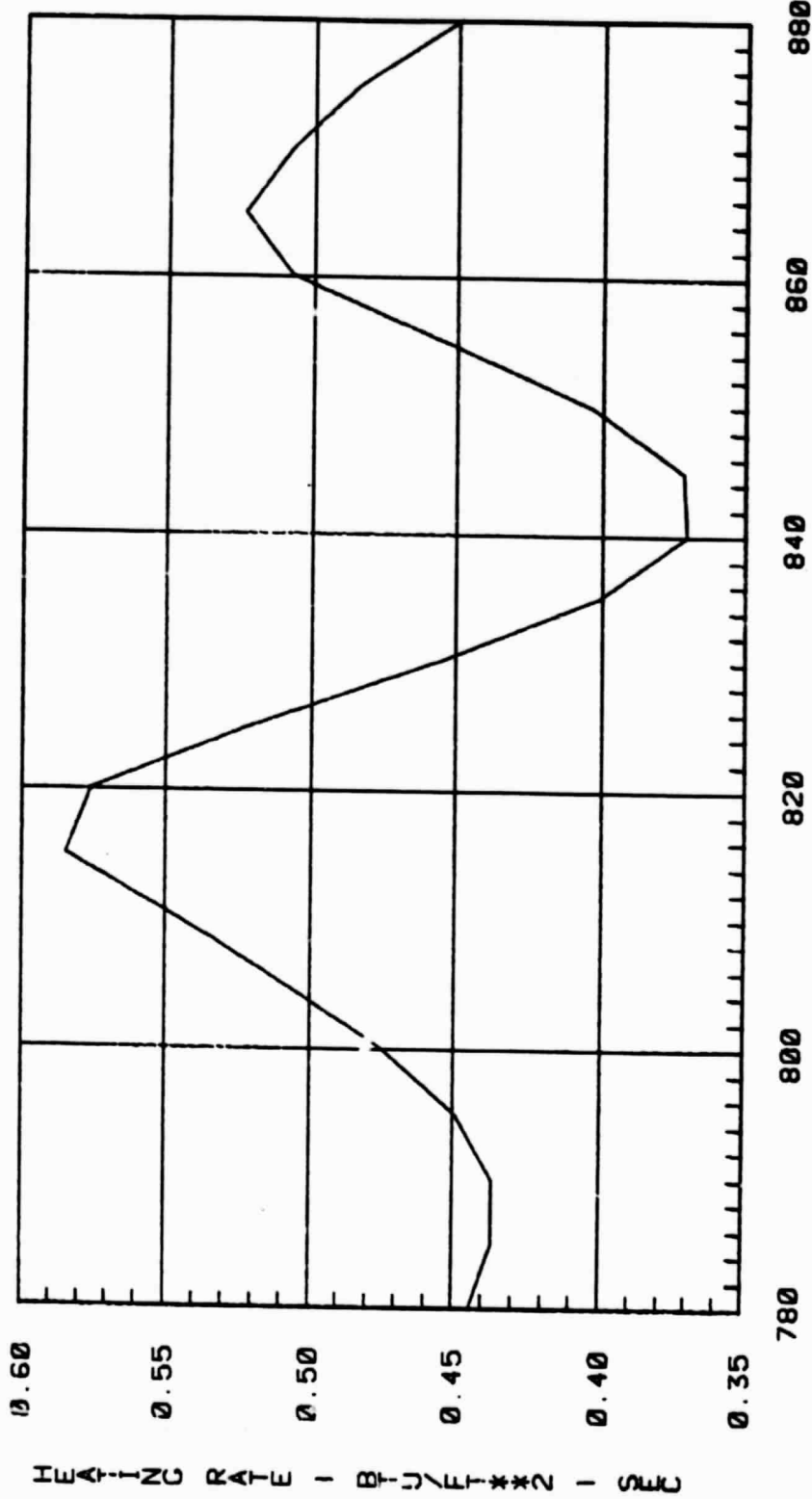
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04/20/53

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V8076032A



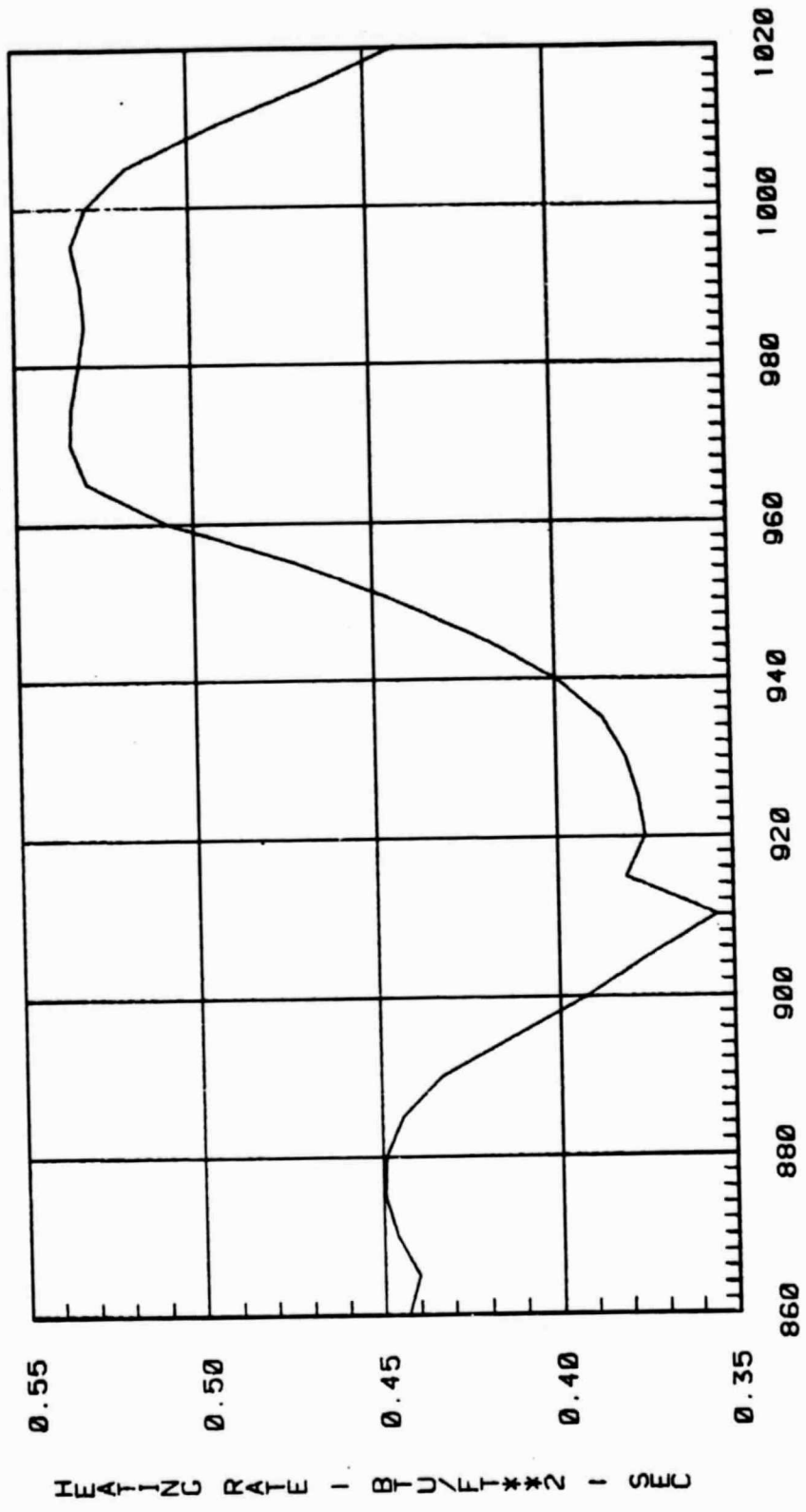
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STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V80T082A

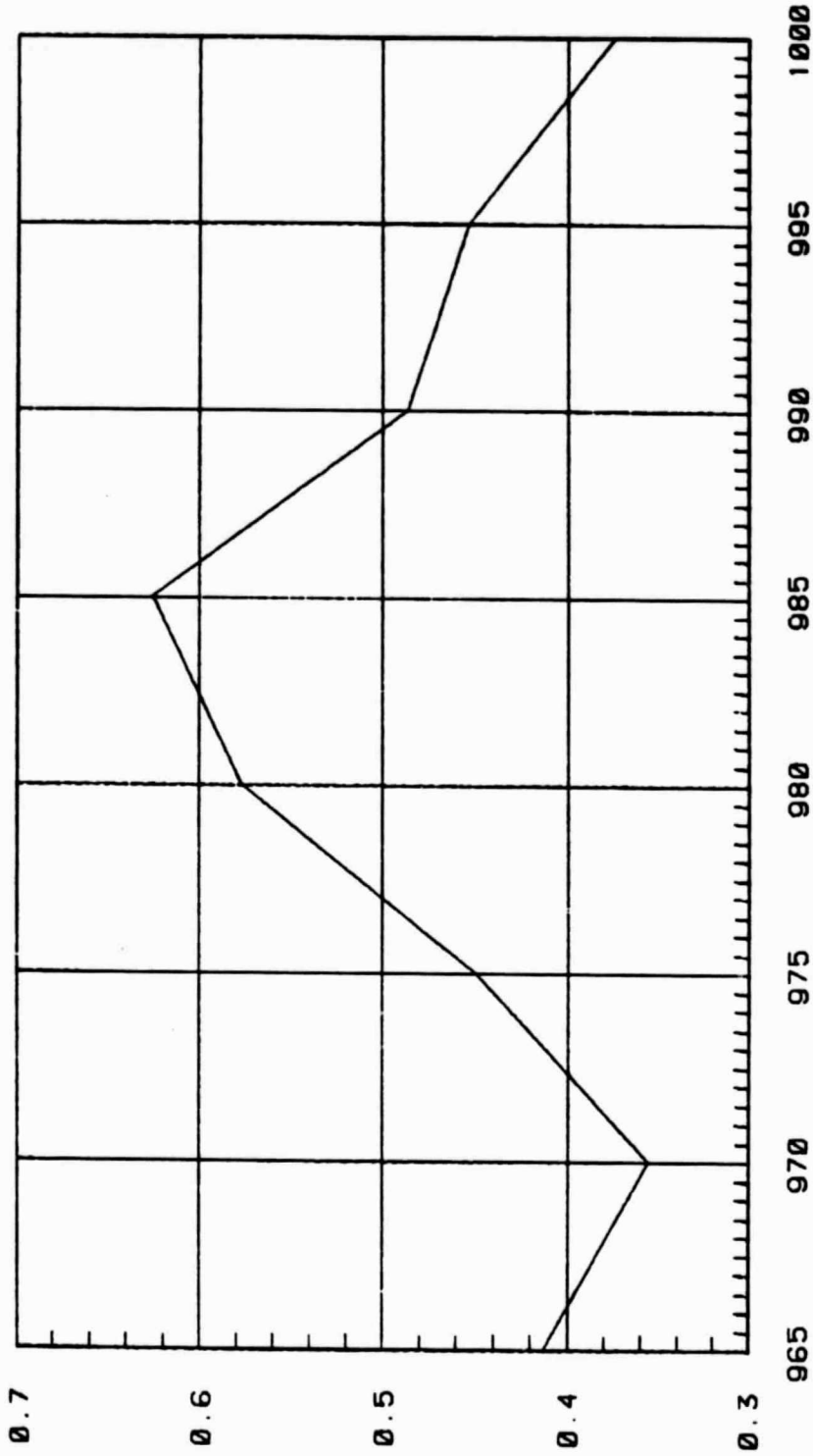


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TIME - SECONDS 04/28/03

STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

VSST0032A



HEATING RATE - BTU/FT\*\*2 - SWC

D-285

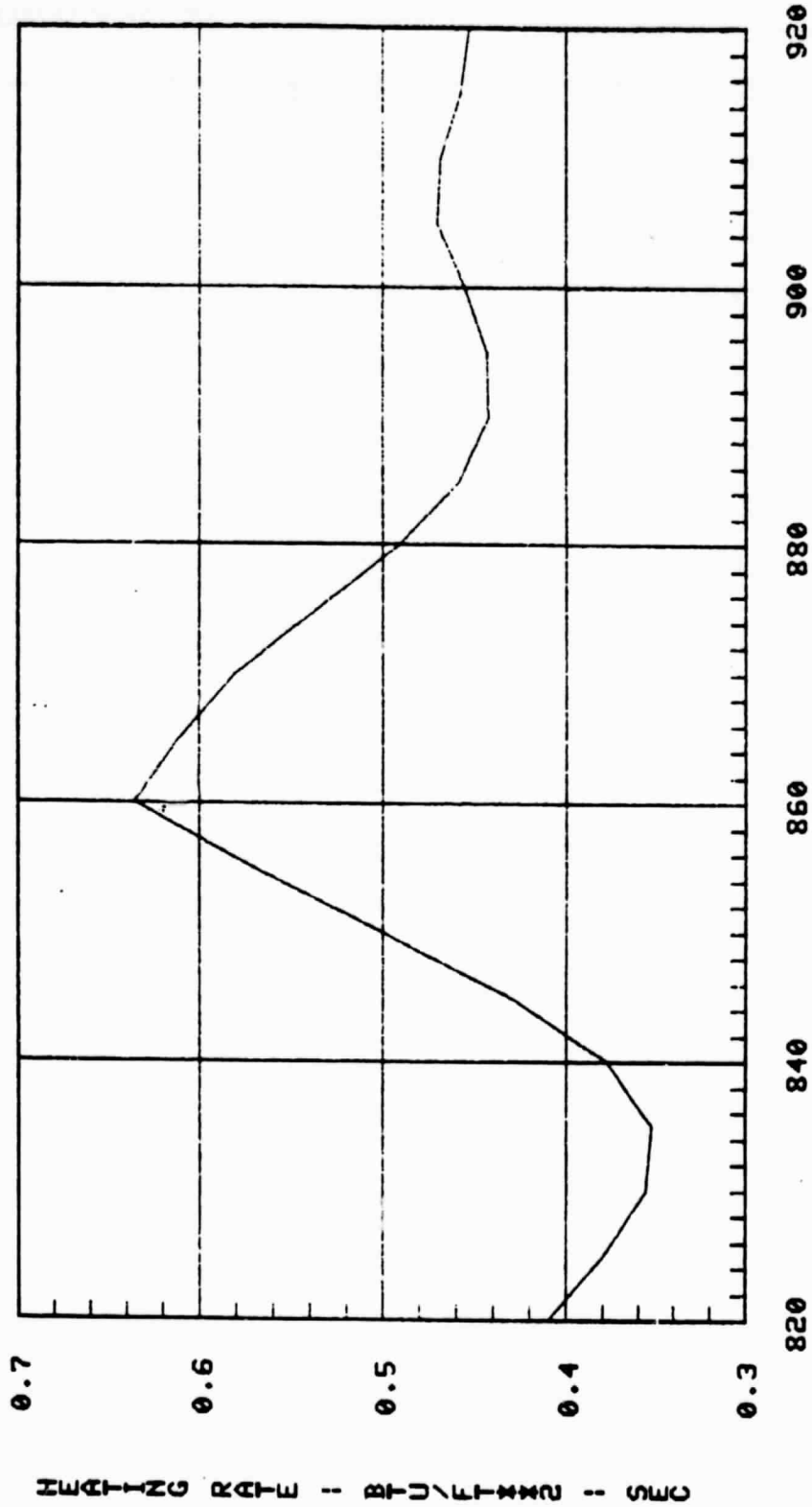
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04/29/83

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

\_\_\_\_\_ V09T9832A



HEATING RATE -- BTU/FT<sup>2</sup>/SEC -- SEC

D-286

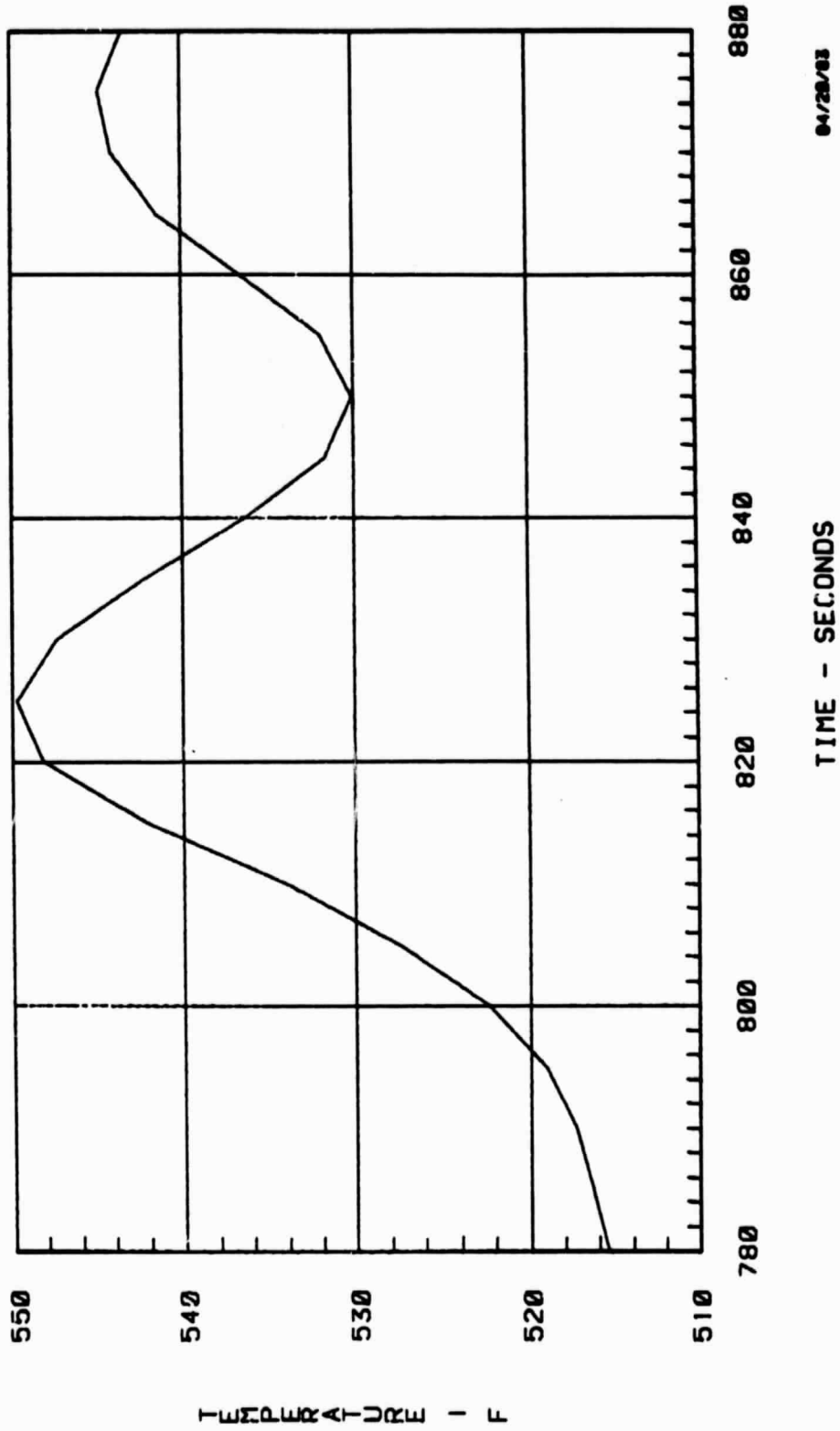
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STS-2 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON  
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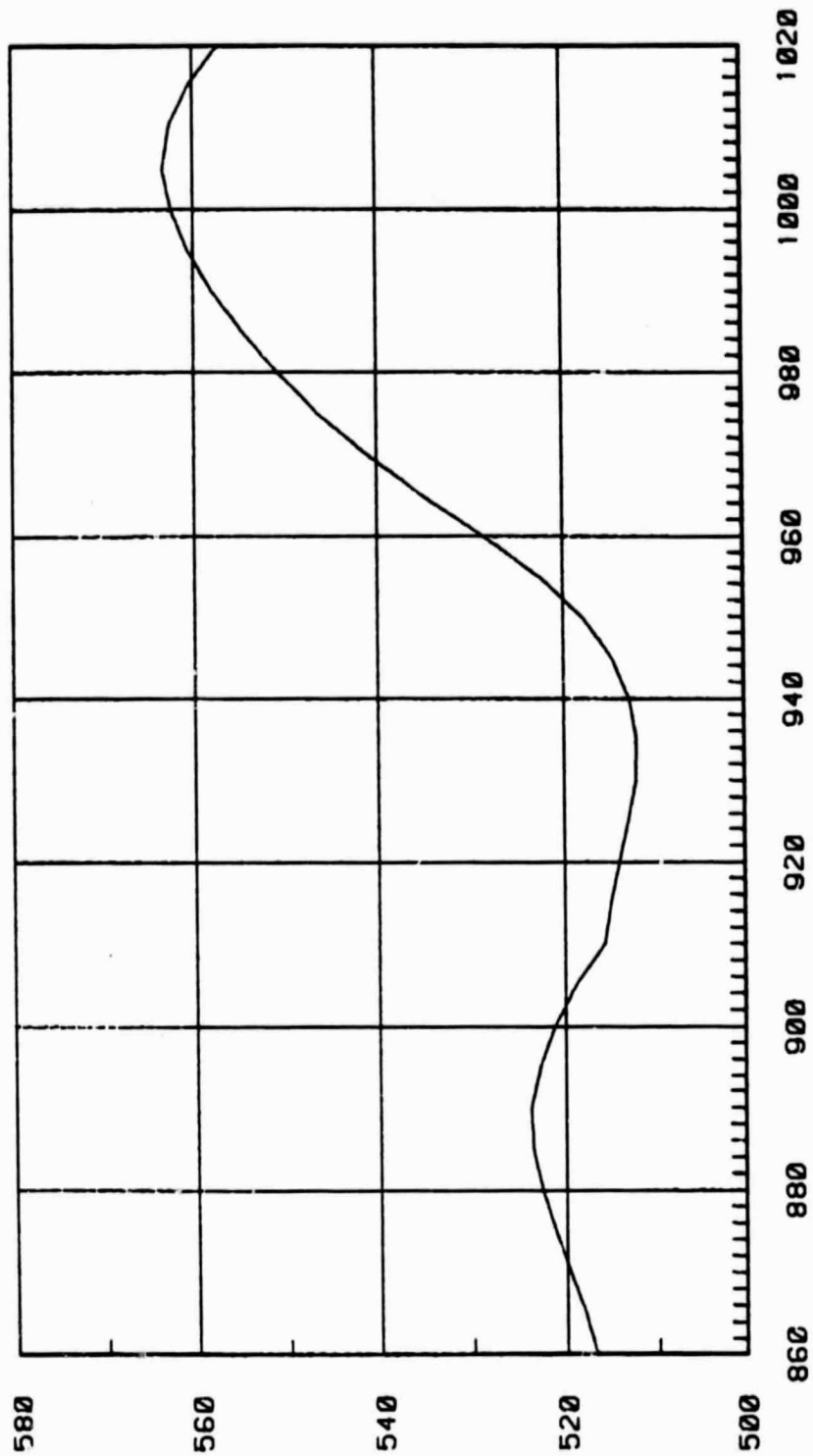
04/28/83

TEMPERATURE - F

D-287

STS-3 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

V80T0032A



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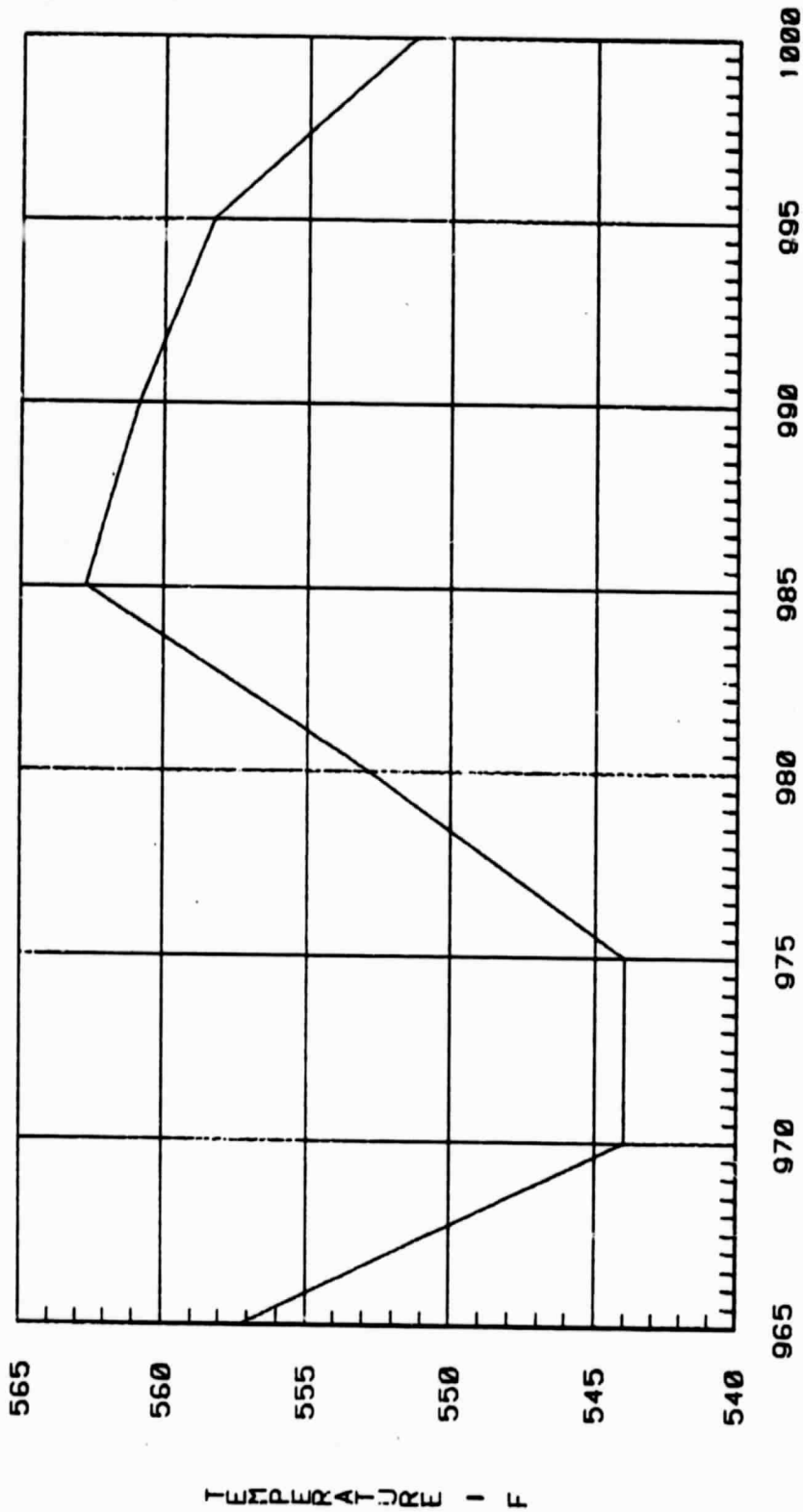
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STS-4 (107 FT LENGTH OMS POD) FLIGHT PARAMETER COMPARISON

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04/20/83

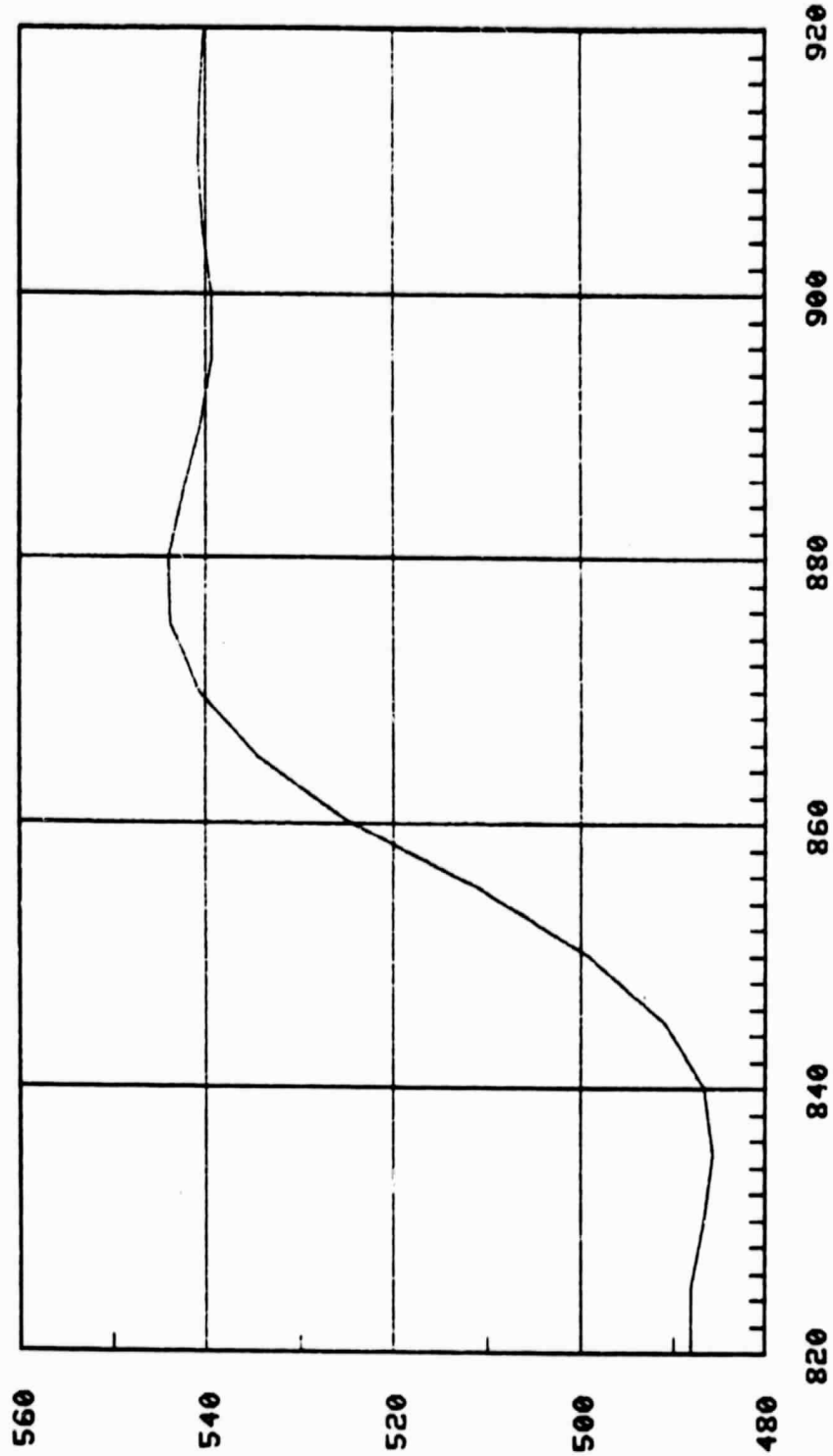
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D-289

STS-5 (107 FT LENGTH OMS POD ) FLIGHT PARAMETER COMPARISON

U09T9832A

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TIME - SECONDS

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TEMPERATURE - F

D-290