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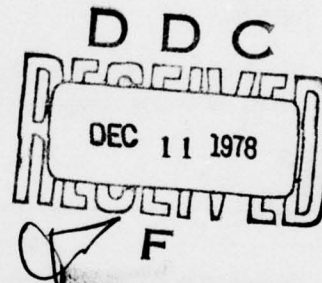
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**INTERACTIONAL AERODYNAMICS OF THE SINGLE
ROTOR HELICOPTER CONFIGURATION**

**VOLUME VIII-C - Frequency Analyses of Wake Single Film
Data, Hubcaps and Air Ejectors**

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APPLIED TECHNOLOGY LABORATORY POSITION STATEMENT

In 1975 a wind tunnel test program was conducted in the Boeing-Vertol 20-foot V/STOL Wind Tunnel on a 1/5th-scale UTTAS model to investigate and find solutions for several aerodynamic problems encountered during the UTTAS flight-testing. Specifically, these tests focused upon (a) the structure of the hub/rotor wake in the vicinity of the empennage, (b) the formulation of the ground vortex and its relation to hub loads and fuselage loads during transition, and (c) the occurrence of vibratory air pressures from the blade passing over the fuselage. Only portions of the above-mentioned wind tunnel test data were reduced and analyzed in addressing the flight-test problems of the UTTAS aircraft.

Under Contract DAAJ02-77-C-0020, Boeing-Vertol completed analyses on the data to understand more completely the aerodynamic interactions that are involved and to formulate instructions for the guidance of designers in these respects. The results of these studies are applicable to all existing and future single-rotor/tail rotor helicopters. The data have been segregated according to aerodynamic interactions and associated phenomena/problem areas. From this body of knowledge, a generalized set of design guidelines meaningful to the single-rotor helicopter design concept formulation were developed and are included in these reports.

Mr. Robert P. Smith of the Aeronautical Technology Division, Aeromechanics Technical Area, served as project engineer for this effort.

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PREFACE

The entire report describing the investigation of **INTERACTIONAL AERODYNAMICS OF THE SINGLE-ROTOR HELICOPTER CONFIGURATION** comprises eight numbered volumes bound as 33 separate documents. The complete list of these documents is as follows:

Volume I, Final Report

Volume II, Harmonic Analyses of Airframe Surface Pressure Data

- A - Runs 7-14, Forward Section
- B - Runs 7-14, Mid Section
- C - Runs 7-14, Aft Section
- D - Runs 15-22, Forward Section
- E - Runs 15-22, Mid Section
- F - Runs 15-22, Aft Section
- G - Runs 23-33, Forward Section
- H - Runs 23-33, Mid Section
- I - Runs 23-33, Aft Section

Volume III, Flow Angle and Velocity Wake Profiles in Low-Frequency Band

- A - Basic Investigations and Hubcap Variations
- B - Air Ejector Systems and Other Devices

Volume IV, One-Third Octave Band Spectrograms of Wake Split-Film Data

- A - Buildup to Baseline
- B - Basic Configuration Wake Explorations
- C - Solid Hubcaps
- D - Open Hubcaps
- E - Air Ejectors
- F - Air Ejectors With Hubcaps; Wings
- G - Fairings and Surface Devices

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Volume V, Harmonic Analyses of Hub Wake

Volume VI, One-Third Octave Band Spectrograms of Wake Single Film Data

- A - Buildup to Baseline
- B - Basic Configuration Wake Exploration
- C - Hubcaps and Air Ejectors

Volume VII, Frequency Analyses of Wake Split-Film Data

- A - Buildup to Baseline
- B - Basic Configuration Wake Explorations
- C - Solid Hubcaps

- D - Open Hubcaps
- E - Air Ejectors
- F - Air Ejectors With Hubcaps; Wings
- G - Fairings and Surface Devices

Volume VIII, Frequency Analyses of Wake Single Film Data

- A - Buildup to Baseline
- B - Basic Configuration Wake Exploration
- C - Hubcaps and Air Ejectors

This volume is



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INTRODUCTION

Volume VIII is similar in its format to Volume VII, presenting machine plotted spectrograms. Here the velocity data from the single film outboard transducers is considered in contrast to the split film data of Volume VII which gave flow angle information as well as velocity. The data analysis here was conducted for a limited number of test runs as it is of secondary interest. The runs are the same as for the harmonic analysis of Volume V.

The sub-volumes of Volume VIII display data derived from the following test runs:

Volume VIII-A	-	149, 150, 160, 156, 158, 159
Volume VIII-B	-	111, 119, 121, 135, 136
Volume VIII-C	-	188, 211, 168, 167, 194, 161, 154, 172, 174, 176, 203, 205, 197

These runs follow the order of the logical arrangement of the Outline of Wake Investigations, Table 1, from which they have been selected. The Table I outline and other material is included for reference and as context to the work of each sub-volume. Table 2, the List of Test Runs, arranges the runs in numerical order and gives pertinent text parameters.

The Index of Rake Positions, Table 3, lists the hot film transducer rake positions in the model coordinate system for each run and its test points. The main feature of Table 3 is the indexing of the test point number to the model water line station and butt line as it varied from run to run. The table groups the runs as they shared the indexing correspondence of point with position. It is emphasized that the runs in a group do not necessarily all share the same number of test points but they do have same correspondence within their respective ranges of test points.

The orientation of rake is shown pictorially in Figures 1 through 6 for the various test runs. Figure 7 presents a scaled drawing of the model with reference to the three-axis coordinate system.

TABLE 1			
OUTLINE OF WAKE INVESTIGATIONS			
Description	Configuration Code	Run No.	Base-line
<u>Build-up to Baseline</u>			
1. Nacelles removed	$K_{13}+H_1-N$	149	150
2. Blades off, rotating hub	$K_{13}-M+H_{1.0}$	160	156
3. " " , non-rotating hub	$K_{13}-M+H_{1.0}$	158	156
4. " " , hub off	$K_{13}-M-H_{1.0}$	159	156
<u>Basic Configuration</u>			
<u>1. Wake Explorations near Empennage</u>			
(a) 15" Long. + traverse at T/R C.L.	K_{11}	111	---
(b) 9" Vert. + " above T/R "	"	112	---
(c) 2" " " in vortex	"	113	---
(d) 8" " " (continue 112)	"	114	---
(e) 13" " " behind stab.	"	115	---
(f) Lateral traverse, left stab. (One T.P. only)	"	116	---
(g) Same continued	"	117	---
(h) Same continued (One T.P. only)	"	118	---
(i) Lateral traverse right stab.	"	119	---
(j) T/R effect on wake	$K_{11}+T_2^0$	121	115
<u>2. Climb/Descent Studies</u>			
(a) Climb 900 FPM	K_{11}	135	---
(b) Descent 800 FPM	"	136	---
<u>Effect Of Hub Caps</u>			
<u>1. Solid Caps on Canister</u>			
(a) 7.6" diam. 2.17" ht. soft Pitch Arms	$K_{11}-H_{1.0}+H_{1.2}$	137	136
(b) 7.6" diam. 2.17" ht. stiff Pitch Arms	$K_{13}+H_{1.2}$	153	156
(b) 7.6" diam. 2.45" ht. flt. test config.	$K_{13}+H_{1.2.1}+I_1+E_{1.0}$	207	188

TABLE 1 (CONTINUED)

OUTLINE OF WAKE INVESTIGATIONS

Description	Configuration Code*	Run No.	Base-line
<u>Effect of Hub Caps (Continued)</u>			
<u>2. Solid Caps Raised Above Canister</u>			
(a) 7.6" diam. 2.45" ht. 70" depth, .55 gap	H _{1.2.2} +I ₁ +E _{1.0}	208	188
(b) 10.0" diam. 3.25" ht. 1.55" depth, .50" gap	H _{1.8.1} +I ₁ +E _{1.0}	189	188
(c) 10.0" diam. 4.125" ht. 2.05" depth, .875" gap	H _{1.8.2} +I ₁ +E _{1.0}	190	188
(d) Repeat of 189	" " "	210	188
<u>3. Open Caps Without Underbody</u>			
(a) 10.0" diam. 1.25" gap, blades	H _{1.0.2} +I ₁ +E _{1.0}	193	188/166
(b) " " " gap, no blades	H _{1.0.1} -M ₁	166	158
(c) " " 2.05" gap, blades	H _{1.14.1} +I ₁ +E _{1.0}	211	188
(d) " " 1.75" gap, no blades	H _{1.0.1} -M	165	158
(e) " " 1.87" gap, blades	H _{1.0.3} +I ₁ +E _{1.0}	191	188
(f) 16" diam. 2.00" gap, blades	H _{1.7.1}	168	156/167
(g) " " " gap, no blades	H _{1.7.1} -M	167	158
(h) " " 4.00" gap, blades	H _{1.7.2}	169	156
<u>4. Open Caps with Underbody</u>			
(a) 7.6" diam. 1.25" gap	H _{1.11.1} +I ₂ +E _{1.0}	194	188
(b) " " " "	H _{1.11.1} +I ₂ +E _{4.0}	198	188
(c) " " " " center post	H _{1.11.2} +I ₂	202	194
(d) 10.0" diam. .5" gap, no blades	H _{1.5.1} -M	164	158
(e) " " 1.25" gap, no blades	H _{1.5.2} -M	161	158
(f) " " 2.0" gap, no blades	H _{1.5.4} -M	163	158
(g) " " 4.0" gap, no blades	H _{1.5.3} -M	162	158
(h) " " 1.25" gap	H _{1.5.2}	154	156/161
*Basic Code is K13.			

TABLE 1 (CONTINUED)

OUTLINE OF WAKE INVESTIGATIONS

Description	Configuration Code*	Run No.	Base-line
<u>5. Miscellaneous Hub Covers</u>			
(a) Hub fairing 16" diam.	H _{1.3}	151	150
(b) Wham-O-Frisbee 10" diam.	H _{1.9.0} +E _{1.2}	182	181
(c) Fab. glass Frisbee 16" diam.	H _{1.9.1} +E _{1.2}	183	181
<u>Effect of Air Ejectors</u>			
1. Basic system no blowing	H _{1.0} +E _{1.0}	172	156
2. " " 40 psi	" "	173	156/172
3. " " 150 psi	" "	174	156/172
4. Wide chord shroud 40 psi	H _{1.0} +E _{2.5.1}	175	156/173
5. Wide " " 150 psi	" "	176	156/174
6. W/C shroud w. lip 40 psi	H _{1.0} +E _{3.5.2}	184	156/173
7. Same Contoured Parallel 150 psi	H _{1.0} +E _{3.5.4}	187	156/174
8. Bifurcated duct 0 psi	H _{1.0} +E _{5.0}	203	156
9. " " 40 psi	" "	204	156/203
10. " " 150 psi	" "	205	156/203
<u>Air Ejectors with Open Hub Caps with Underbodies</u>			
1. 7.6" diam. 1.25" gap, 0 psi	H _{1.11.1} +I ₂ +E _{1.0}	194	188/172
2. " " " " 20 psi	" " "	195	188
3. " " " " 40 psi	" " "	196	188/173
4. " " " " 150 psi	" " "	197	188/174
5. " " " " 0 psi	H _{1.11.1} +I ₂ +E _{4.0}	198	188/194
6. " " " " 40 psi	" " "	199	188/196
7. " " " " 150 psi	" " "	200	188/196
8. Same with center post	H _{1.11.2} +I ₂ +E _{4.6}	201	188/200
9. 10.0" diam. 2.0" gap wide ch'd. shroud (150 psi)	H _{1.5.4} +E _{2.5.1}	177	156/176
<u>Effect of Wings and Misc.</u>			
1. Wings			
(a) Nacelle-mounted stub wing	H _{1.0} +W _{1.0} +E _{1.1}	178	181
(b) Single slotted flapped wing	H _{1.0} +W _{3.0} +E _{1.0}	180	181
(c) Dougle slotted flapped wing	H _{1.0} +W _{2.0} +E _{1.0}	179	181
(d) Boom-mounted stub wing	H _{1.0} +W _{4.0}	186	156
*Basic Code is K13.			

TABLE 1 (CONTINUED)

OUTLINE OF WAKE INVESTIGATIONS

Description	Configuration Code*	Run No.	Base-line
2. Crown Fairings			
(a) Flat top behind shaft	K ₁₁ +D ₁	140	138
(b) Round top behind shaft	K ₁₁ +D ₂	141	138
(c) Extended flat top fairing	H ₁ +D ₄	170	156
(d) Flat top + 16" cap, 4" gap	H _{1.7.2} +D ₄	171	170
(e) Forward fairing/nacelle fairing	P _{1.0}	152	156
3. Surface Devices			
(a) Vortex generators	K ₁₁ +VG _{2.1}	139	138
(b) Guidevane between nacelles	K ₁₁ +FV ₁	142	138
(c) Longitudinal strakes	H _{1.5.3} +S ₄	155	156
(d) 14% porosity spoiler	K ₁₁ +X ₁	143	138
*Basic Code is K13 unless noted otherwise.			

TABLE 2. LIST OF TEST RUNS
BASIC INVESTIGATIONS OF THE HUB WAKE

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. psf	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
111	K ₁₁ /15" Long. wake traverse at TR center line	80	1433/0	8	6.0	-2.0	∞	Off
112	" /9" Vert. wake traverse above TR center line	"	"	"	"	"	"	"
113	" /2" Vert traverse through MR vortex	"	"	"	"	"	"	"
114	" /8" Vert. traverse below TR center line	"	"	"	"	"	"	"
115	" /13" Vert. traverse behind stabilizer	"	"	"	"	"	"	"
116	" /Lateral traverse - left stabilizer	"	"	"	"	"	"	"
117	" /116 continued	"	"	"	"	"	"	"
118	" /116 continued	"	"	"	"	"	"	"
119	" /Lateral traverse - right stabilizer	"	"	"	"	"	"	"
121	K ₁₁ +T ₂ /Effect of tail rotor flow on wake	"	1433/4500	"	"	"	"	On
135	K ₁₁ /Wake in 900 fpm climb	"	"	"	-6.0	-4.5	"	Off
136	" /Wake in 800 fpm descent	"	"	"	6.0	+2.0	"	"

TABLE 2 (CONTINUED) LIST OF TEST RUNS
EVALUATION OF WAKE-ALTERING DEVICES

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. p _{sf}	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
137	K ₁₁ -H _{1.0} +H _{1.2} /Effect of 7.6 inch diam. solid hub cap	80	1433/0	8	6	-3.8	∞	Off
138	K ₁₁ /Repeat of base run	"	"	"	"	"	"	"
139	K ₁₁ +VG _{2.1} /Effect of vortex generators on aft crown	"	"	"	"	"	"	"
140	K ₁₁ +D ₁ /Flat-topped "doghouse" fairing on aft crown	"	"	"	"	"	"	"
141	K ₁₁ +D ₂ /Rounded-top fairing	"	"	"	"	"	"	"
142	K ₁₁ +FV ₁ /Deflection vane on crown between nacelles	"	"	"	"	"	"	"
143	K ₁₁ +X ₁ /Variable porosity spoiler	"	"	"	"	"	"	"
149	K ₁₃ +H ₁ -N ₁ /Effect of nacelles off also add stiff pitch arms (K ₁₃)	60	1075/0	4.5	"	"	"	"
150	K ₁₃ +H ₁ /60 knot baseline	"	"	"	"	"	"	"
151	K ₁₃ +H _{1.3} /16 inch diam. helmet fairing	"	"	"	"	"	"	"
152	K ₁₃ +P _{1.0} /Pylon and intake fairings	80	1433/0	8	"	"	"	"
153	K ₁₃ +H _{1.2} /Repeat 137 with K ₁₃ pitch arms	"	"	"	"	"	"	"

TABLE 2 (CONTINUED) LIST OF TEST RUNS
EVALUATION OF WAKE-ALTERING DEVICES

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. psf	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
154	K13+H1.5.2/10" open hub cap, 7" underbody, 1.25" gap	80	1433/0	8	6	-3.8	∞	Off
155	K13+H1.5.2+S4/Same as 154 except strakes on aft crown	"	"	"	"	"	"	"
156	K13+H1.0/Baseline with K13, i.e., stiff pitch arms	"	"	"	"	"	"	"
158	K13-M+H1.0/Wake studies with blades off, hub not rotating	"	0/0	"	"	"	"	"
159	K13-M-H1.0/Wake studies with hub off	"	"	"	"	"	"	"
160	K13-M+H1.0/Same as 158 except hub is rotating	"	1433/0	"	"	"	"	"
161	K13-M+H1.5.2/Repeat of 154 without blades	"	0/0	"	"	"	"	"
162	K13-M+H1.5.3/Same as 161 except 4" gap	"	"	"	"	"	"	"
163	K13-M+H1.5.4/Same as 161 except 2" gap	"	"	"	"	"	"	"
164	K13-M+H1.5.1/Same as 161 except 0.5" gap	"	"	"	"	"	"	"
165	K13-M+H1.0.1/10" open hub cap, no underbody, same cap vert. position as Run 154	"	"	"	"	"	"	"
166	K13-M+H1.0.2/Same as 165 with cap lowered by 0.5"	"	"	"	"	"	"	"

TABLE 2 (CONTINUED) LIST OF TEST RUNS
EVALUATION OF WAKE-ALTERING DEVICES

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. psf	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
167	K ₁₃ -M+H _{1.7.1} /16" open cap, no underbody, 2" gap	80	0/0	8	6	-3.8	∞	Off
168	K ₁₃ +H _{1.7.1} /Blades on, same cap config. as 167	"	1433/0	"	"	"	"	"
169	K ₁₃ +H _{1.7.2} /16" open cap, no underbody, 4" gap	"	"	"	"	"	"	"
170	K ₁₃ +H _{1.0} +D _{4.0} /Extended flat top fairing on aft crown	"	"	"	"	"	"	"
171	K ₁₃ +H _{1.7.2} +D _{4.0} /Same fairing as 170, same cap as 169	"	"	"	"	"	"	"
172	K ₁₃ +H _{1.0} +E _{1.0} (0psi)/Basic air ejector zero blowing baseline	"	"	"	"	"	"	"
173	K ₁₃ +H _{1.0} +E _{1.0} (40 psi)/Same as 172 with 40 psi supply	"	"	"	"	"	"	"
174	K ₁₃ +H _{1.0} +E _{1.0} (150 psi)/Same as 172 with 150 psi supply	"	"	"	"	"	"	"
175	K ₁₃ +H _{1.0} +E _{2.5.1} (40 psi)/Ejector with wide chord shroud at 40 psi	"	"	"	"	"	"	"
176	K ₁₃ +H _{1.0} +E _{2.5.1} (150 psi)/Same as 174 with 150 psi supply	"	"	"	"	"	"	"
177	K ₁₃ +H _{1.5} +E _{2.5.1} (150 psi)/Same as 176 with 10" cap like 163	"	"	"	"	"	"	"
178	K ₁₃ +H _{1.0} +W _{1.0} +E _{1.1} (0 psi)/Nacelle mounted wing	"	"	"	"	"	"	"

TABLE 2 (CONTINUED) LIST OF TEST RUNS
EVALUATION OF WAKE-ALTERING DEVICES

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. psf	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
179	K ₁₃ +H _{1.0} +W _{2.0} +E _{1.0} (0 psi)/Double slotted flapped wing	80	1433/0	8	6	-3.8	∞	Off
180	K ₁₃ +H _{1.0} +W _{3.0} +E _{1.0} (0 psi)/Single slotted flapped wing	"	"	"	"	"	"	"
181	K ₁₃ +H _{1.0} +E _{1.2} (0 psi)/Baseline with ejector tube moved aft	"	"	"	"	"	"	"
182	K ₁₃ +H _{1.9} +E _{1.2} (0 psi)/Standard 10" frisbee	"	"	"	"	"	"	"
183	K ₁₃ +H _{1.9} +E _{1.2} (0 psi)/16" fabricated frisbee	"	"	"	"	"	"	"
184	K ₁₃ +H _{1.0} +E _{3.5} .2 (40 psi)/Wide chord with lip at 40 psi	"	"	"	"	"	"	"
185	K ₁₃ +H _{1.0} +E _{3.5} .2 (150 psi)/Same as 184 with 150 psi air	"	"	"	"	"	"	"
186	K ₁₃ +H _{1.0} +W _{4.0} /Boom mounted stub wing	"	"	"	"	"	"	"
187	K ₁₃ +H _{1.0} +E _{3.5} .4 (150 psi)/Like 185 with modified shroud	"	"	"	"	"	"	"
188	K ₁₃ +H _{1.0} +I ₁ +E _{1.0} (0 psi)/Baseline with I _y instr. ring	"	"	"	"	"	"	"
189	K ₁₃ +H _{1.8} .1+I ₁ +E _{1.0} (0 psi)/Solid cap, 10" diam. 3.25" height	"	"	"	"	"	"	"
190	K ₁₃ +H _{1.8} .2+I ₁ +E _{1.0} (0 psi)/Same as 190 except + 4.12" height	"	"	"	"	"	"	"

TABLE 2 (CONTINUED) LIST OF TEST RUNS
EVALUATION OF WAKE-ALTERING DEVICES

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. psf	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
191	K13+H1.0.2+I1+E1.0 (0 psi)/10" cap, no underbody, 1.87" gap	80	1433/0	8	6	-3.8	∞	Off
193	K13+H1.0.2+I1+E1.0 (0 psi)/10" cap, no underbody, 1.25" gap	"	"	"	"	"	"	"
194	K13+H1.11.1+I2+E1.0 (0 psi)/7.6" cap, underbody, 1.25" gap	"	"	"	"	"	"	"
195	K13+H1.11.1+I2+E1.0 (20 psi)/Same as 194 with 20 psi air	"	"	"	"	"	"	"
196	K13+H1.11.1+I2+E1.0 (40 psi)/Same as 194 with 40 psi air	"	"	"	"	"	"	"
197	K13+H1.11.1+I2+E1.0 (150 psi)/Same as 194 with 150 psi air	"	"	"	"	"	"	"
198	K13+H1.11.1+I2+E4.0 (0 psi)/Same as 194 except blowing tube 2" aft	"	"	"	"	"	"	"
199	K13+H1.11.1+I2+E4.0 (40 psi)/Same as 198 with 40 psi air	"	"	"	"	"	"	"
200	K13+H1.11.1+I2+E4.0 (150 psi)/Same as 198 with 150 psi air	"	"	"	"	"	"	"
201	K13+H1.11.2+I2+E4.0 (150 psi)/Same as 200 except center support cap	"	"	"	"	"	"	"
202	K13+H1.11.2+I2/Baseline with I2 and no blowing tube	"	"	"	"	"	"	"
203	K13+H1.0+E5.0 (0 psi)/Bifurcated air duct baseline	"	"	"	"	"	"	"

TABLE 2 (CONTINUED) LIST OF TEST RUNS
EVALUATION OF WAKE-ALTERING DEVICES

RUN NO.	CONFIGURATION/CONDITION	VTUN KNOTS	RPM MR/TR	DISK LDG. psf	MODEL ANGLES		MR HT. h/d	TAIL ROTOR
					α°	ψ°		
204	K ₁₃ +H _{1.0} +E _{5.0} (150 psi)/Bifurcated duct with 150 psi air	80	1433/0	8	6	-3.8	∞	Off
205	K ₁₃ +H _{1.0} +E _{5.0} (40 psi)/Same as 204 with 40 psi air	"	"	"	"	"	"	"
207	K ₁₃ +H _{1.2.1} +I ₁ +E _{1.0} (0 psi)/7.6" solid cap, no gap	"	"	"	"	"	"	"
208	K ₁₃ +H _{1.2.2} +I ₁ +E _{1.0} (0 psi)/Same as 207 except 0.55" gap	"	"	"	"	"	"	"
210	K ₁₃ +H _{1.15.1} +I ₁ +E _{1.0} (0 psi)/Repeat of 189	"	"	"	"	"	"	"
211	K ₁₃ +H _{1.14.1} +I ₁ +E _{1.0} (0 psi)/Like 189 and 210 except cap is open	"	"	"	"	"	"	"

TABLE 3					
INDEX TO RAKE POSITIONS					
RUN NUMBER	TEST POINT	WATER LINE	MODEL STATION	BUTT LINE	LOCATION FIGURE
111	20	53.5	103.1	-7.25	1
	21	"	"	"	
	22	"	105.0	"	
	24	"	107.0	"	
	26	"	109.0	"	
	28	"	111.0	"	
	30	"	112.9	"	
	32	"	114.9	"	
	34	"	116.9	"	
	36	"	118.9	"	
112	2	48.9	107.3	-7.25	1
	4	50.8	"	"	
	6	52.7	103.3	"	
	8	54.5	"	"	
	10	56.2	"	"	
	12	57.2	"	"	
113	2	51.7	103.3	-3.25	1
	4	52.3	"	"	
	6	52.8	"	"	
	8	53.3	"	"	
	10	53.9	"	"	
	11	53.3	"	"	
114	2	44.5	103.0	-3.25	1
	4	46.4	"	"	
	6	48.2	"	"	
	8	50.0	"	"	
	10	51.9	"	"	
115	3	52.9	124.7	-3.25	1
	4	52.0	"	"	
	6	50.0	"	"	
	9	48.0	"	"	
	10	46.0	"	"	
	12	44.1	"	"	
	14	42.1	"	"	
	16	53.0	"	"	
	18	54.0	"	"	
	20	55.0	"	"	

TABLE 3 (CONTINUED)					
INDEX TO RAKE POSITIONS					
RUN NUMBER	TEST POINT	WATER LINE	MODEL STATION	BUTT LINE	LOCATION FIGURE
116	7	36.9	100.5	-17.5	1
117	2	37.6	100.5	-16.0	1
	4	"	"	-14.0	
	6	37.3	99.6	-12.0	
	8	"	"	-10.0	
	10	"	"	- 8.0	
118	2	37.6	100.5	- 6.0	1
119	2	37.3	99.6	+ 6.0	1
	5	"	"	8	
	8	"	"	10	
	9	"	"	"	
	14	"	"	14	
	16	"	"	16	
	20	51.5	102.5	17.5	
	25	52.3	101.7	-17.5	
121	3	62.9	129.0	+ 5.7	2
	4	53.5	"	"	
	6	50.1	"	"	
	8	46.0	"	"	
	10	42.1	"	"	
135	2	56.9	106.3	- 5.7	3
	4	54.5	"	"	
	6	52.5	"	"	
	8	50.5	"	"	
	10	48.5	"	"	
	12	46.5	"	"	
	14	44.5	"	"	
136	2	56.5	104.0	- 8.0	4
	4	54.5	"	"	
	6	52.5	"	"	
	8	50.6	"	"	
	10	48.5	"	"	
	12	46.5	"	"	
	14	44.5	"	"	
	17	37.1	"	"	
	18	39.0	"	"	
	19	41.0	"	"	

TABLE 3 (CONTINUED)
INDEX TO RAKE POSITIONS

RUN NUMBER	TEST POINT	WATER LINE	MODEL STATION	BUTT LINE	LOCATION FIGURE
137	3	38.7	98.4	- 8.0	5
	5	39.9	"	"	
	7	42.0	100.5	"	
	9	44.0	"	"	
	11	46.0	103.6	"	
	13	48.0	"	"	
	15	50.0	"	"	
	17	52.0	"	"	
	19	54.0	"	"	
138-41, 143	2	38.8	98.4	- 8.0	5
	3	40.0	"	"	
	4	42.0	100.5	"	
	5	44.0	"	"	
	6	46.0	103.6	"	
	7	48.0	"	"	
	8	50.0	"	"	
	9	52.0	"	"	
	10	54.0	"	"	
142	7	37.8	98.4	- 8.0	5
	8	"	"	"	
	9	40.2	"	"	
	10	42.0	100.5	"	
	11	44.0	"	"	
	12	46.0	103.6	"	
	13	48.0	"	"	
	14	50.0	"	"	
	15	52.0	"	"	
	16	54.0	"	"	
	17	56.8	"	"	

TABLE 3 (CONTINUED)
INDEX TO RAKE POSITIONS

RUN NUMBER	TEST POINT	WATER LINE	MODEL STATION	BUTT LINE	LOCATION FIGURE
149-151	2	38.8	98.5	- 8.0	5
	3	40.0	"	"	
	4	42.0	100.6	"	
	5	44.0	"	"	
	6	46.0	103.5	"	
	7	48.0	"	"	
	8	50.0	"	"	
	9	52.0	"	"	
	10	54.0	"	"	
152-6, 158	2	42.9	97.9	0.0	6
161-4, 166	3	44.9	"	"	
167, 169-71	4	46.9	100.6	"	
175, 177-9	5	48.9	"	"	
180, 182, 184	6	50.9	104.6	"	
186-8, 190	7	52.9	"	"	
191, 193, 194	8	54.9	"	"	
196, 198, 201	9	56.9	"	"	
204, 207, 208					
211					
159	1	54.9	104.6	0.0	6
	2	52.9	"	"	
	3	50.7	"	"	
	4	48.6	100.6	"	
	5	46.7	"	"	
160, 203	5	42.9	97.9	0.0	6
	6	44.9	"	"	
	7	46.9	100.6	"	
	8	48.9	"	"	
	9	50.9	104.6	"	
	10	52.9	"	"	
	11	54.9	"	"	
165	3	44.9	97.9	0.0	6
	4	42.9	"	"	
	5	46.9	100.6	"	
	6	48.9	"	"	
	7	50.9	104.6	"	
	8	52.9	"	"	

TABLE 3 (CONTINUED)					
INDEX TO RAKE POSITIONS					
RUN NUMBER	TEST POINT	WATER LINE	MODEL STATION	BUTT LINE	LOCATION FIGURE
168, 183	4	42.9	97.9	0.0	6
	5	44.9	"	"	
	6	46.9	100.6	"	
	7	48.9	"	"	
	8	50.9	104.6	"	
	9	52.9	"	"	
	10	54.9	"	"	
172	3	42.9	97.9	0.0	6
	4	44.9	"	"	
	6	44.9	"	"	
	7	46.9	100.6	"	
	8	48.9	"	"	
	9	50.9	104.6	"	
	10	52.9	"	"	
173, 174, 176 185, 195, 197 199, 200, 205 210	1	42.9	97.9	0.0	6
	2	44.9	"	"	
	3	46.9	100.6	"	
	4	48.9	"	"	
	5	50.9	104.6	"	
	6	52.9	"	"	
	7	54.9	"	"	
181	2	42.9	97.9	0.0	6
	3	44.9	"	"	
	4	46.9	100.6	"	
	5	48.9	"	"	
	6	50.9	104.6	"	
	7	52.9	"	"	
	9	54.9	"	"	
	10	"	"	"	
	11	"	"	"	
	12	"	"	"	
	13	42.9	97.9	"	

TABLE 3 (CONTINUED)

INDEX TO RAKE POSITIONS

[illegible]

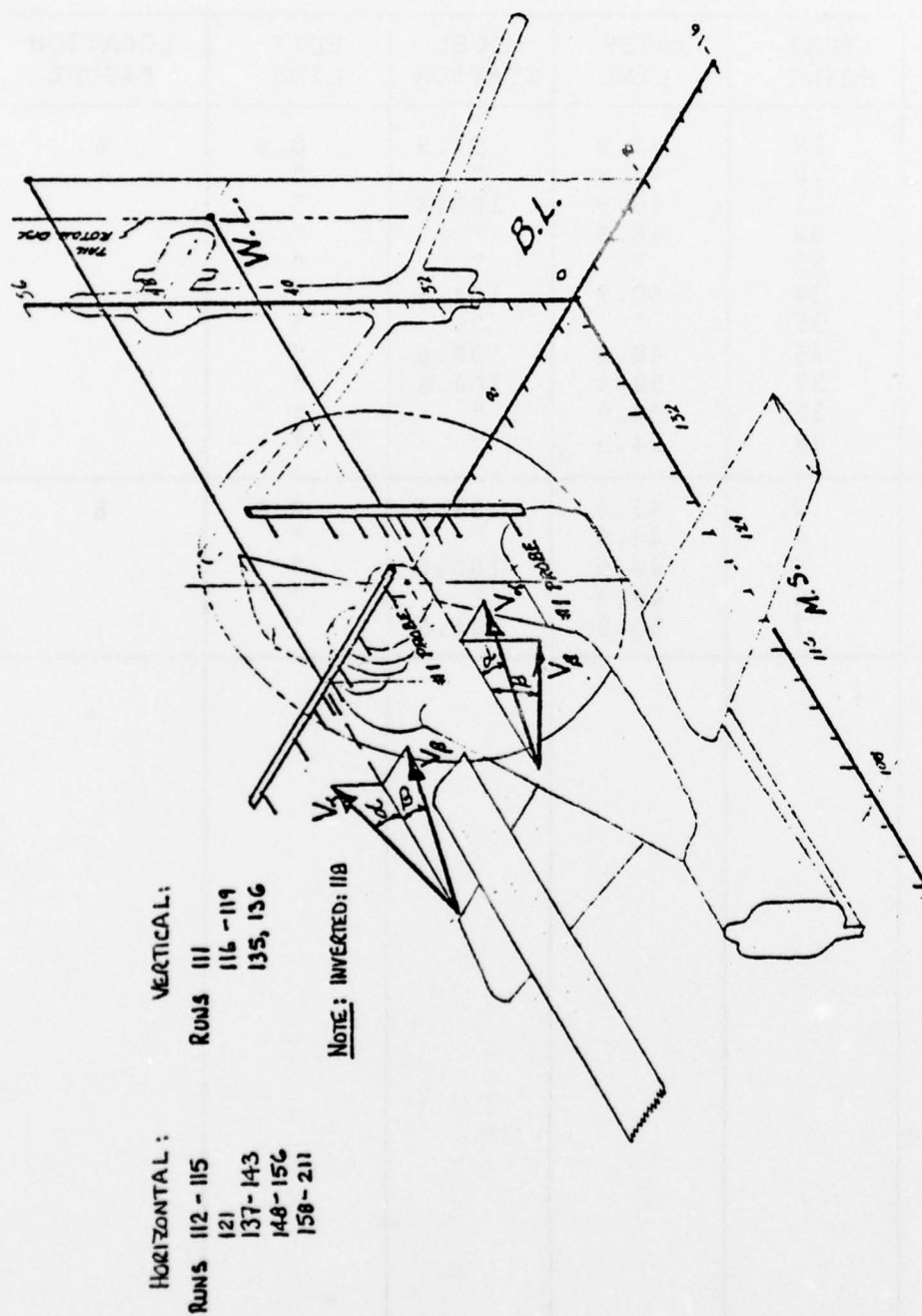


FIGURE 1 - RAKE ORIENTATION DIAGRAM

RUN 121

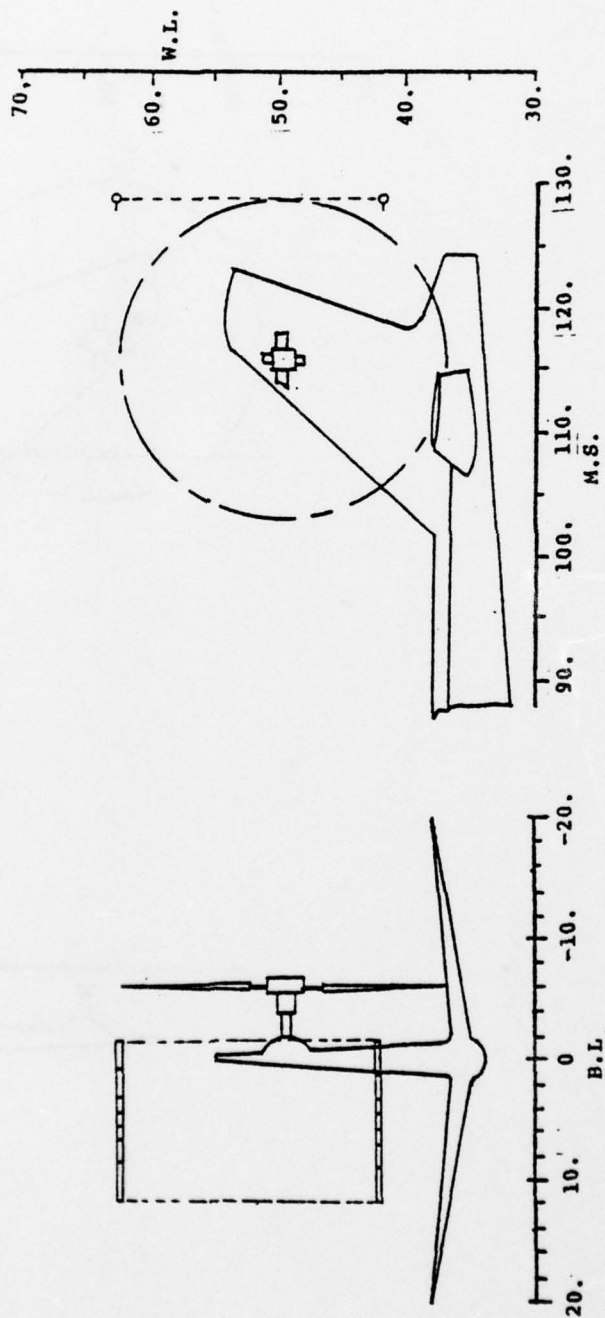


FIGURE 2 -HOT FILM RAKE LOCATIONS

RUN 135

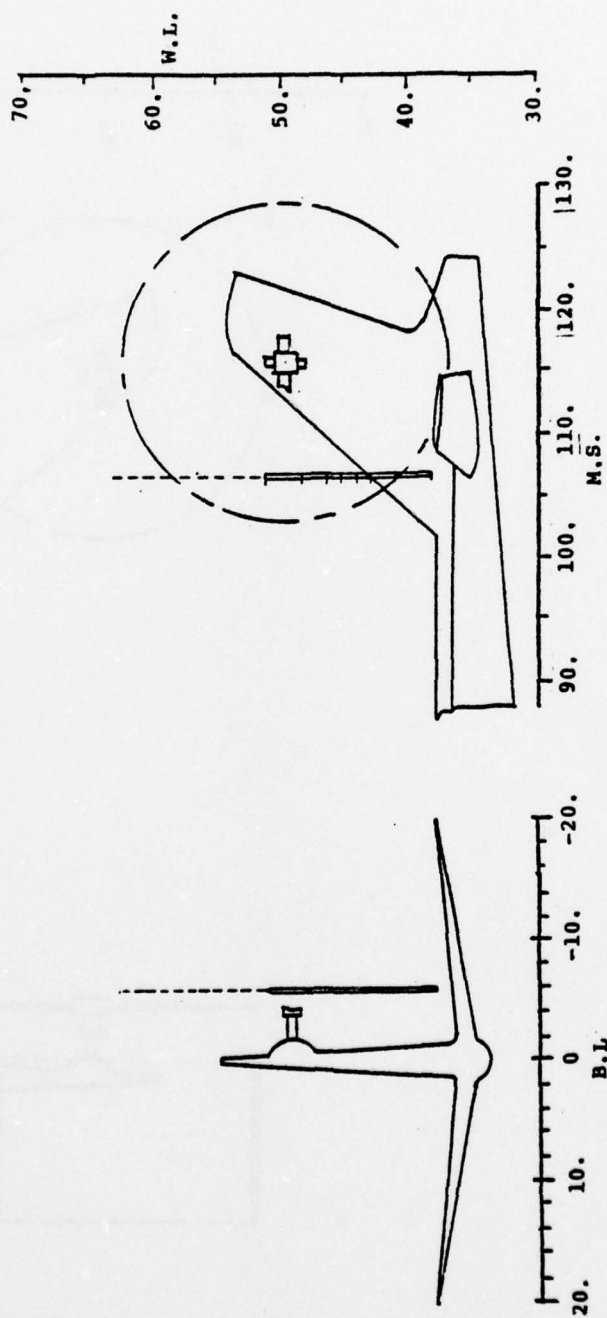


FIGURE 3 -HOT FILM RAKE LOCATIONS

RUN 136

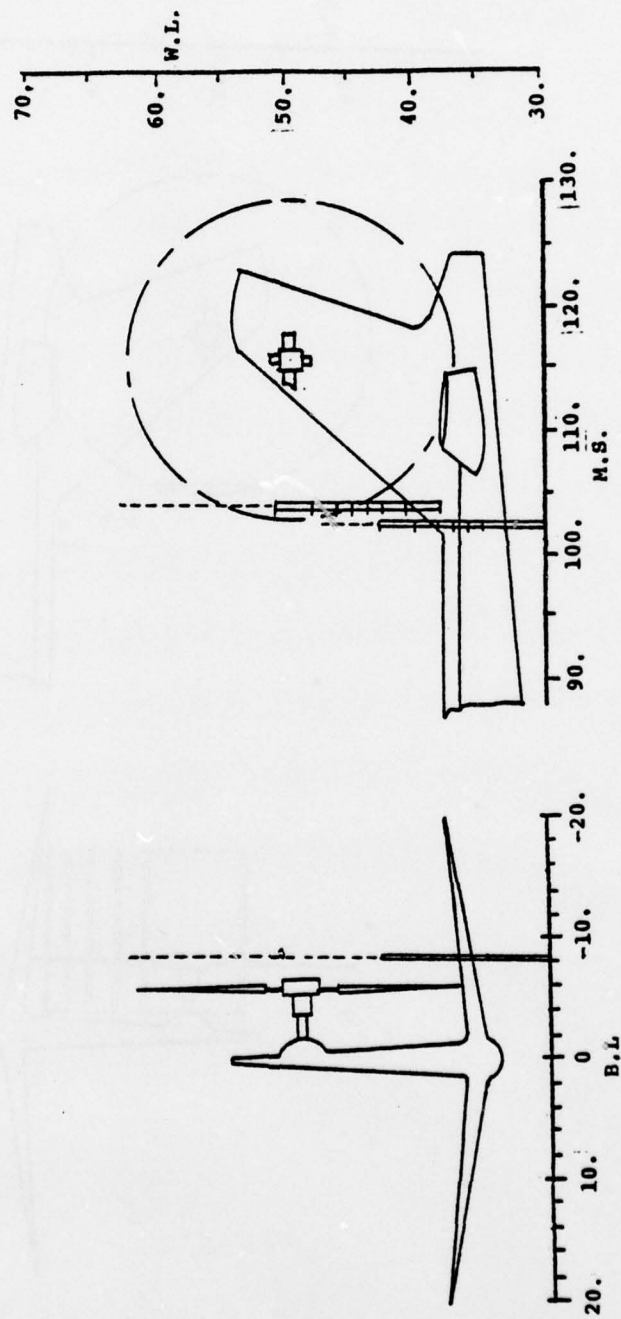


FIGURE 4 -HOT FILM RAKE LOCATIONS

RUN 137, 138, 139, 140, 141, 142,
143, 148, 149, 150, 151

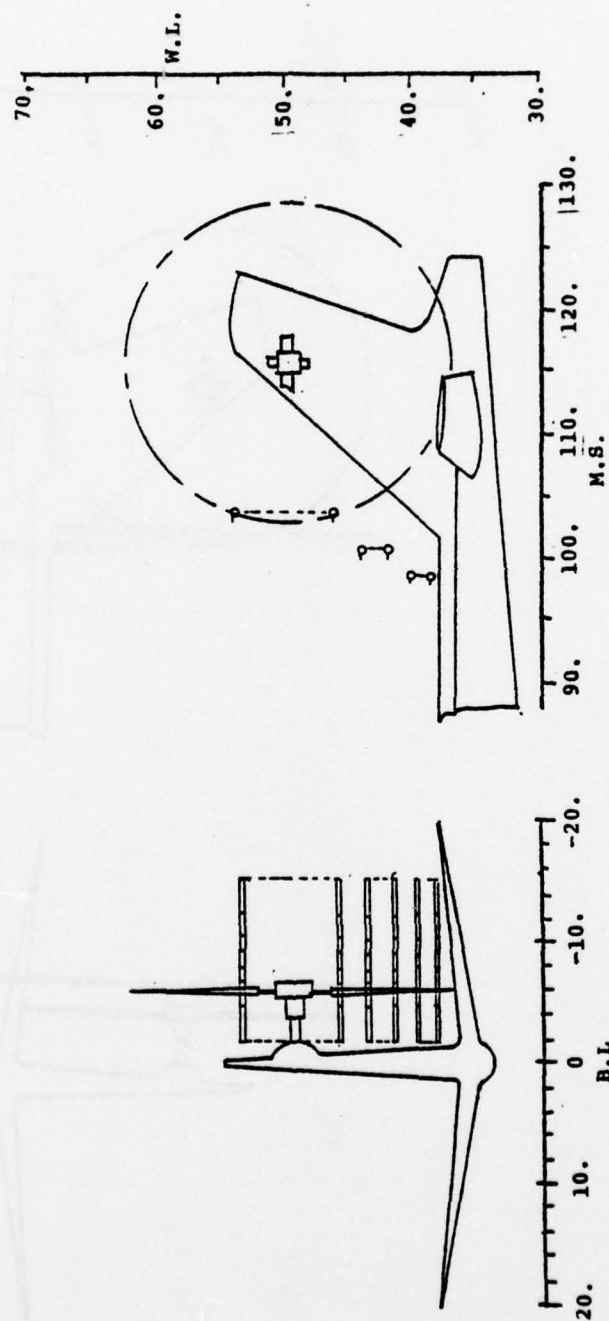


FIGURE 5 -HOT FILM RAKE LOCATIONS

RUN 152-156, 158-211

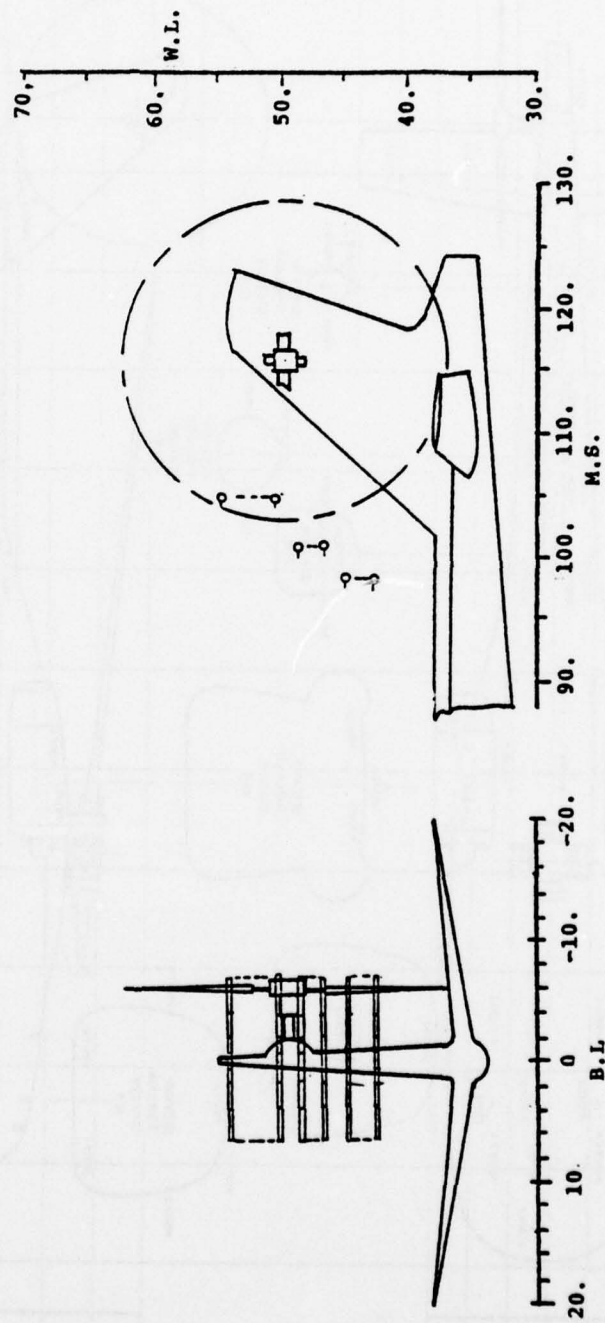


FIGURE 6 -HOT FILM RAKE LOCATIONS

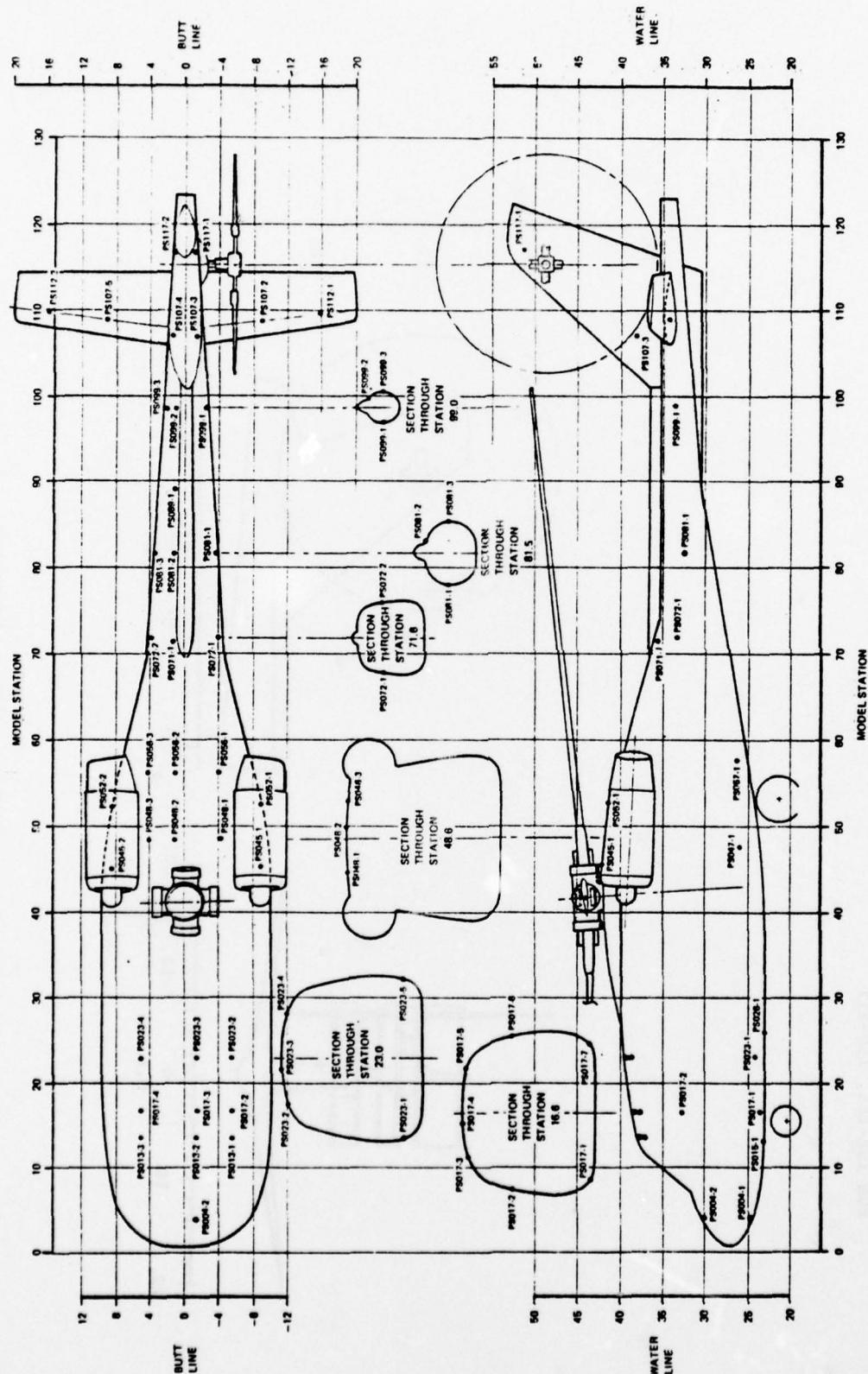
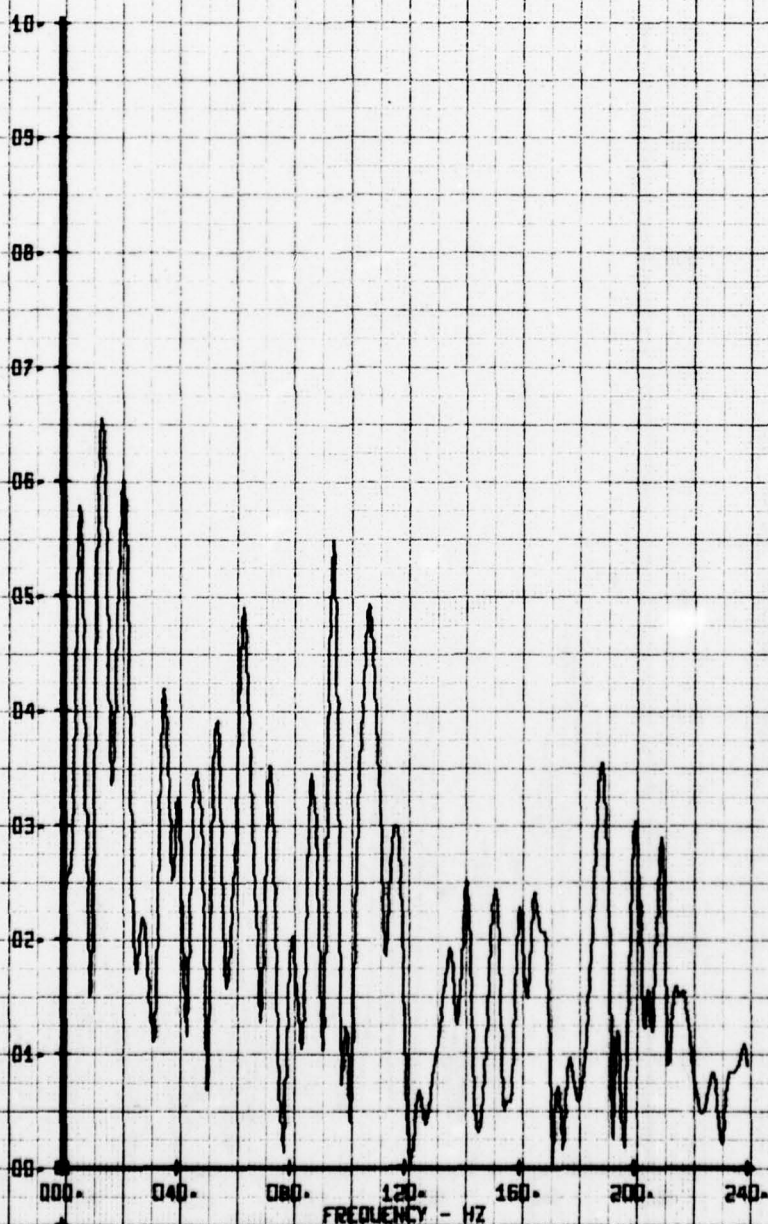


FIGURE 7 -1/4.85 SCALE MODEL GEOMETRY AND
SURFACE PRESSURE TRANSDUCER LOCATIONS

HRT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 4

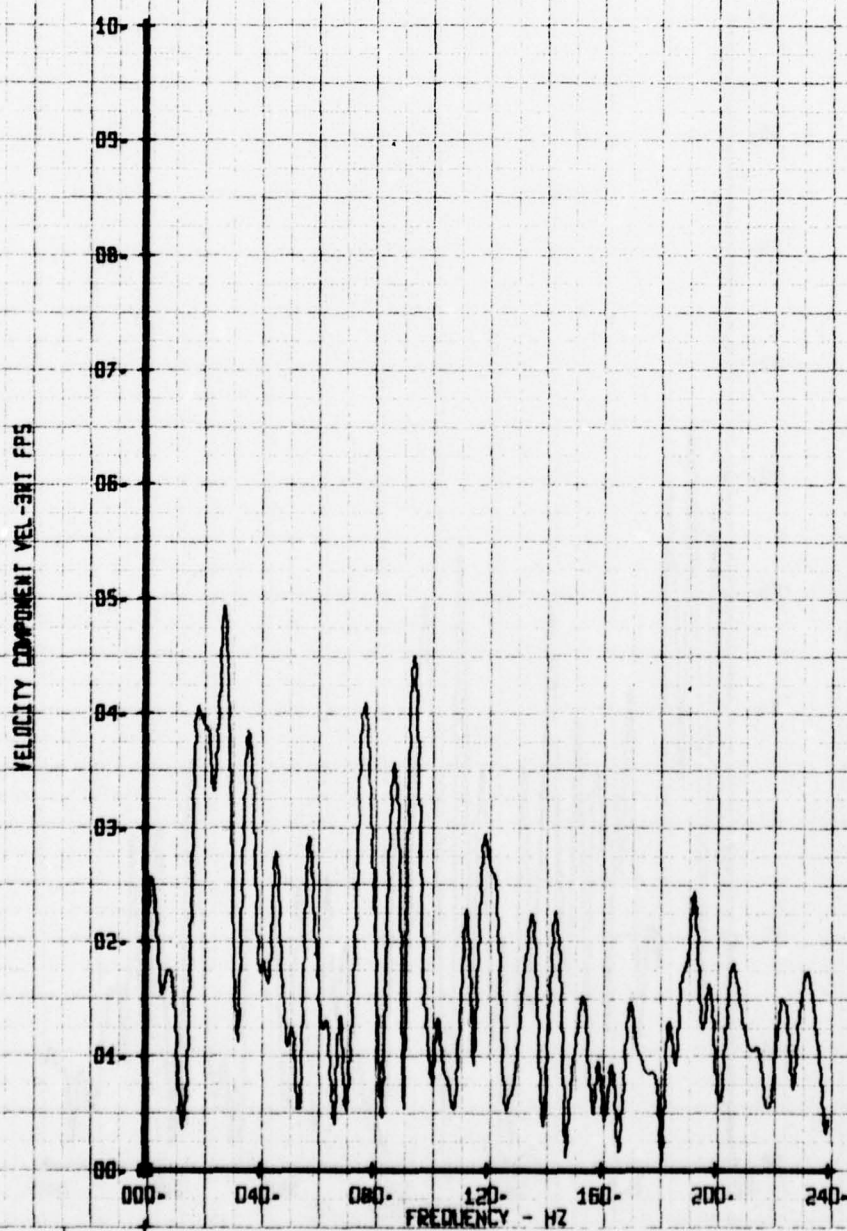
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



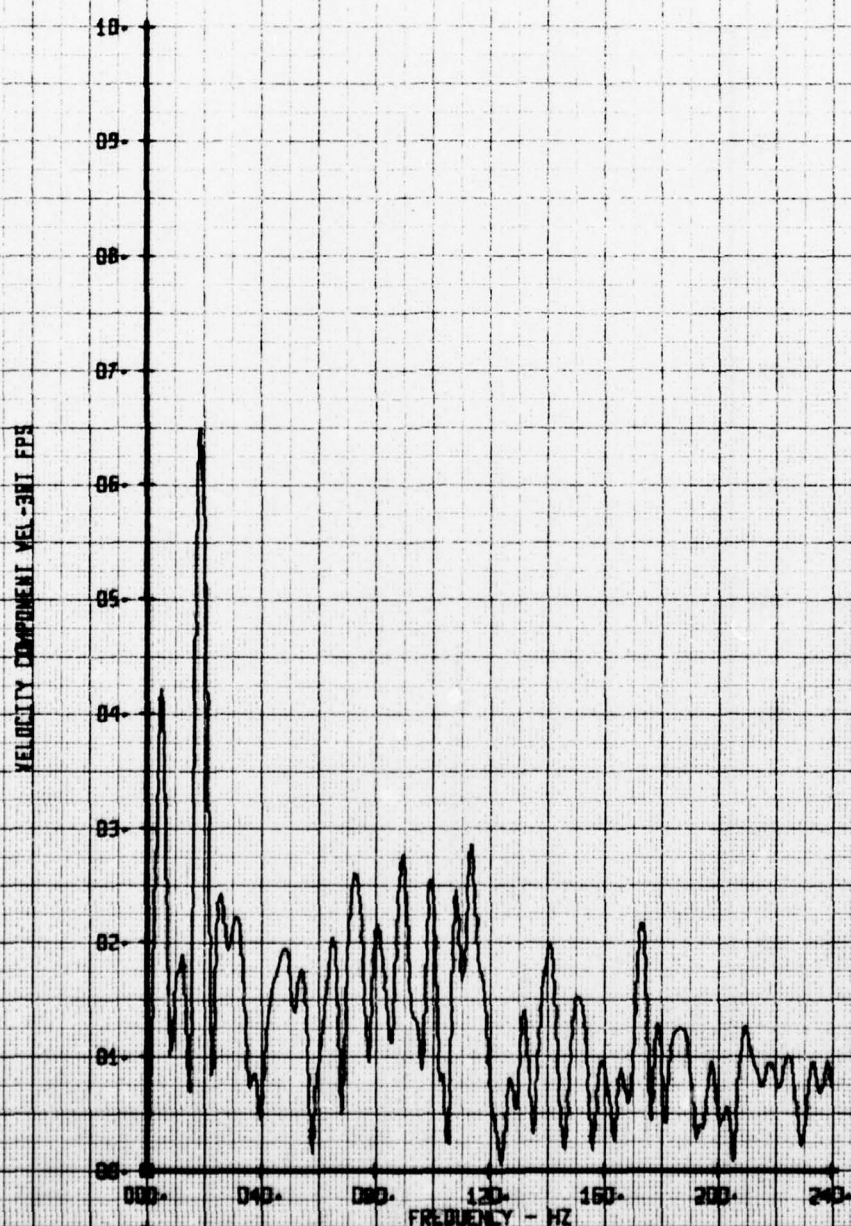
HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 5

LEGEND
CH 71 PARAMETER
VEL-3RT



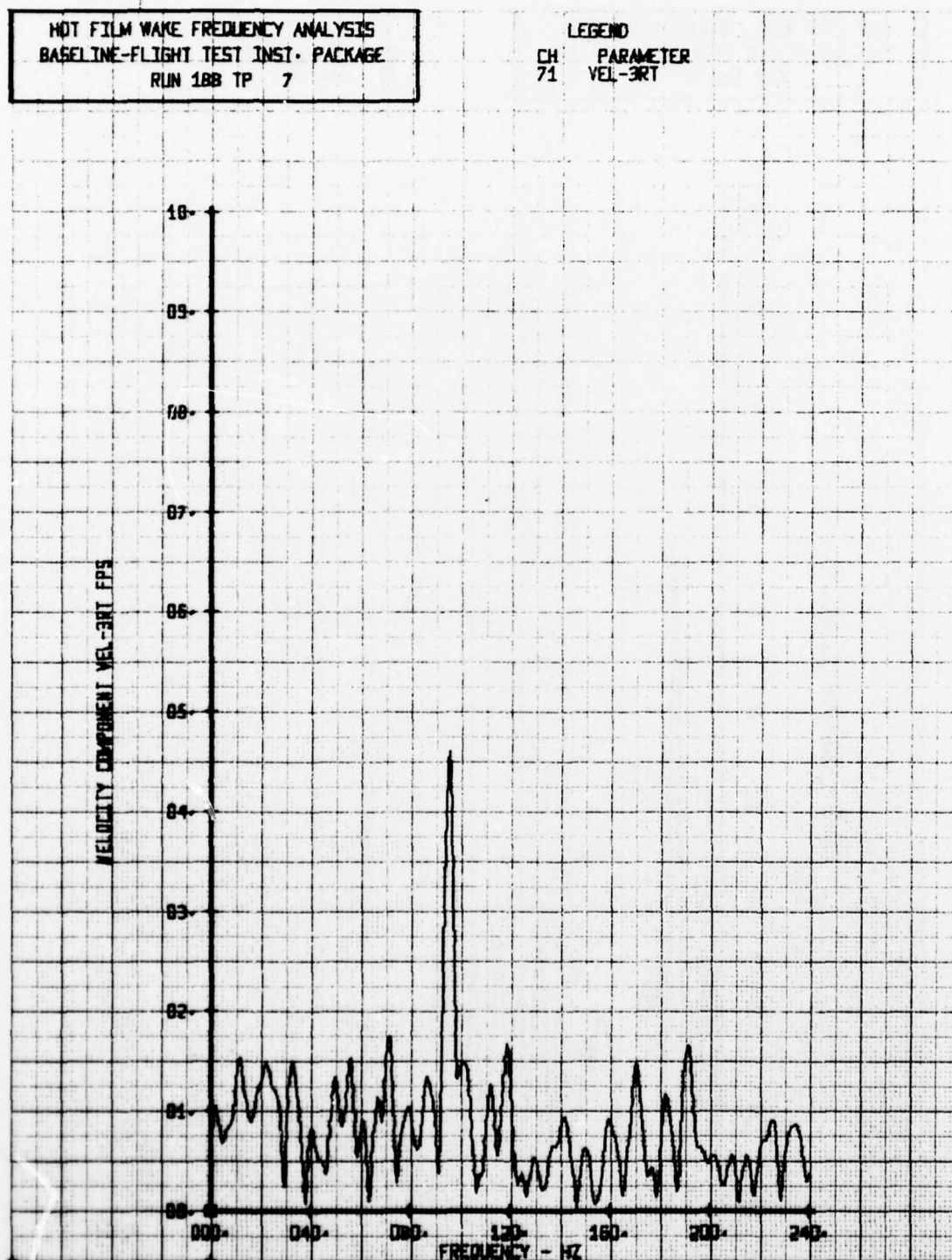
HDT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 18B TP 7

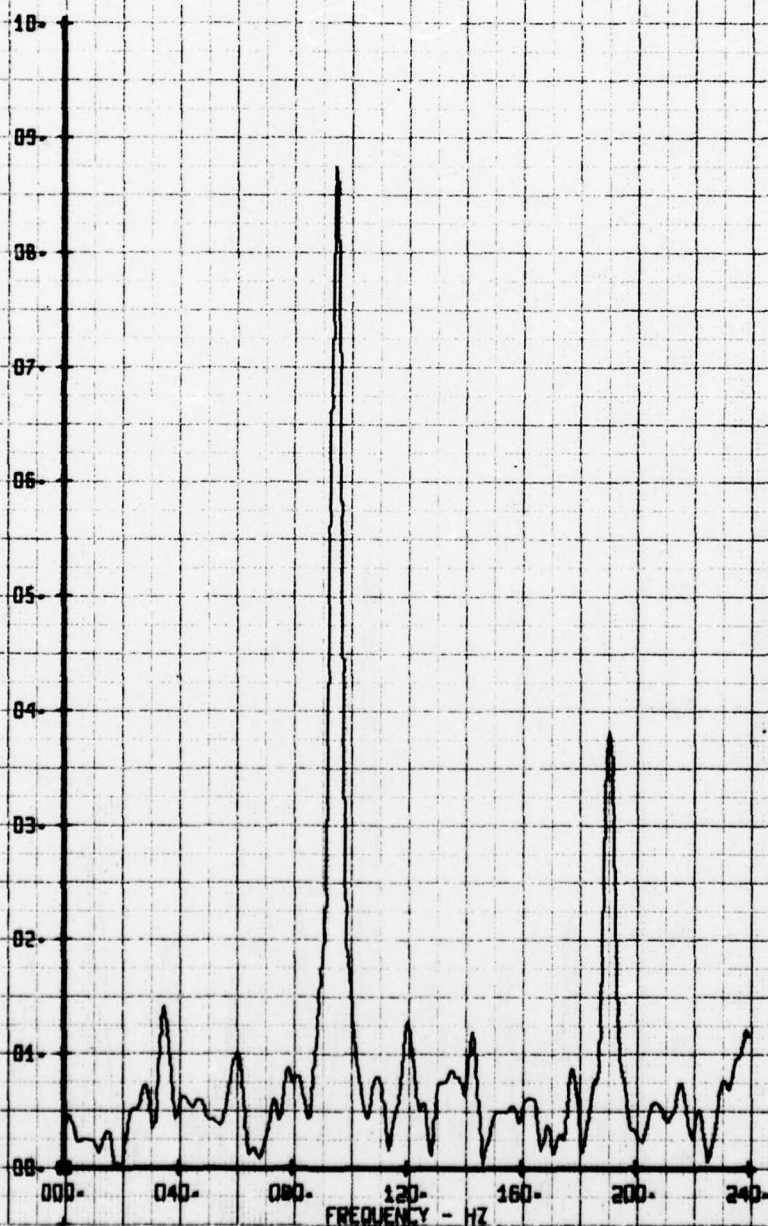
LEGEND
CH 71 PARAMETER
VEL-3RT



NOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 8

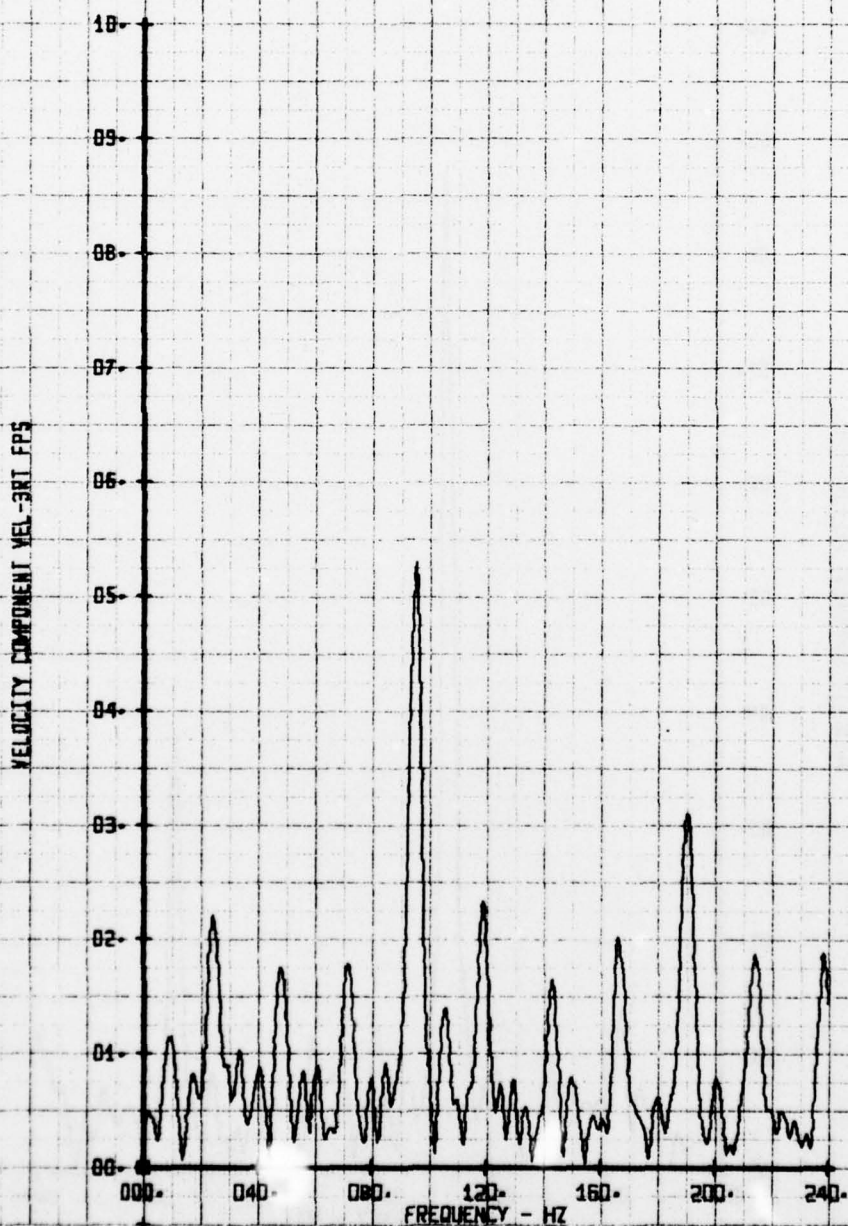
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



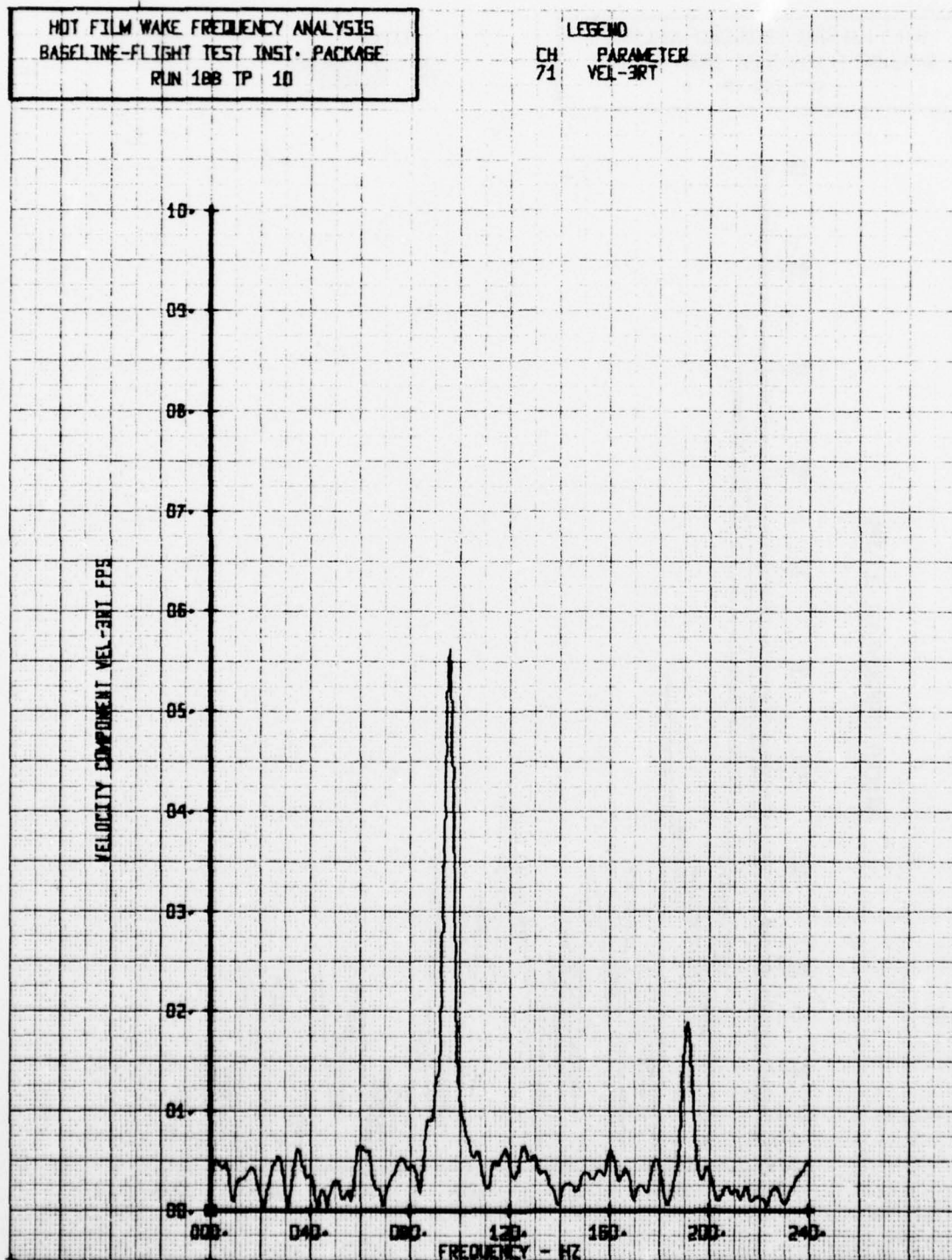
HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 9

LEGEND
CH 71 PARAMETER
VEL-3RT



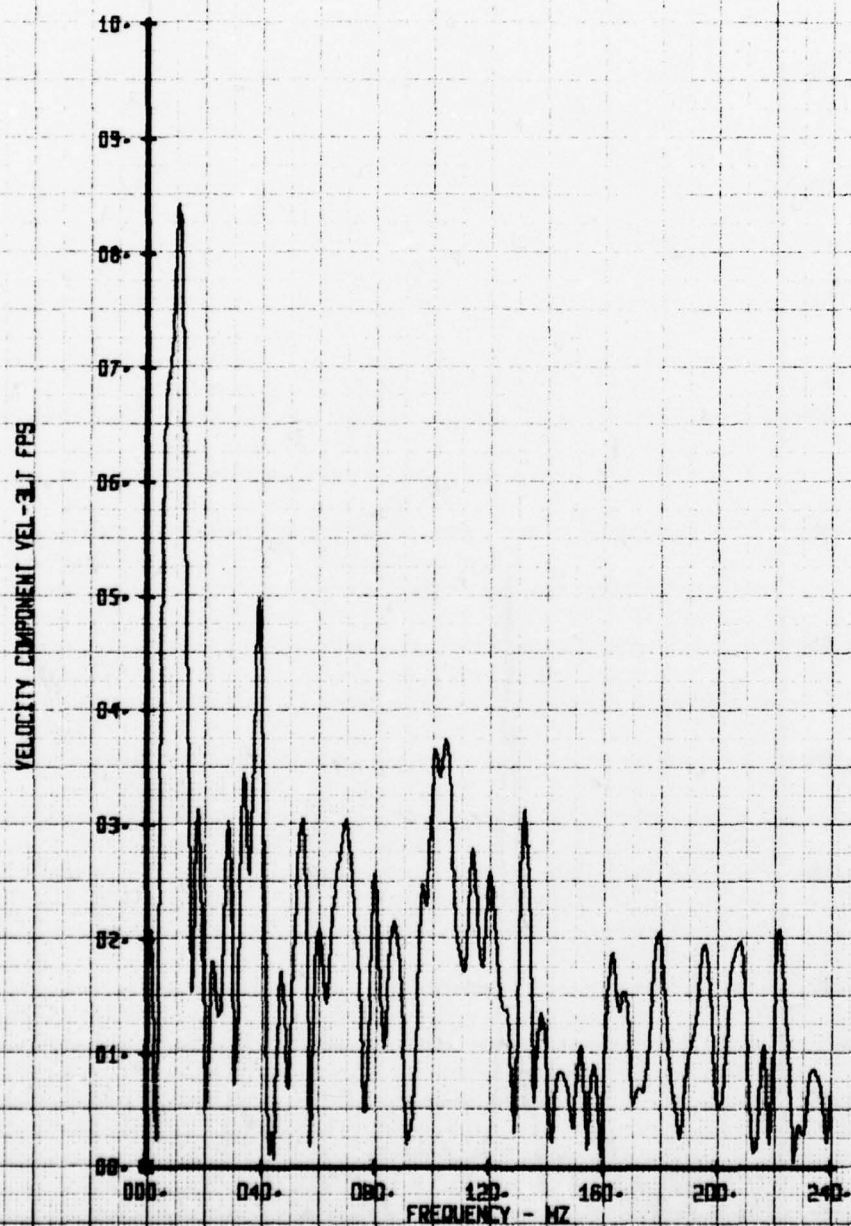
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BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 10

LEGEND
CH 71 PARAMETER
VEL-3RT



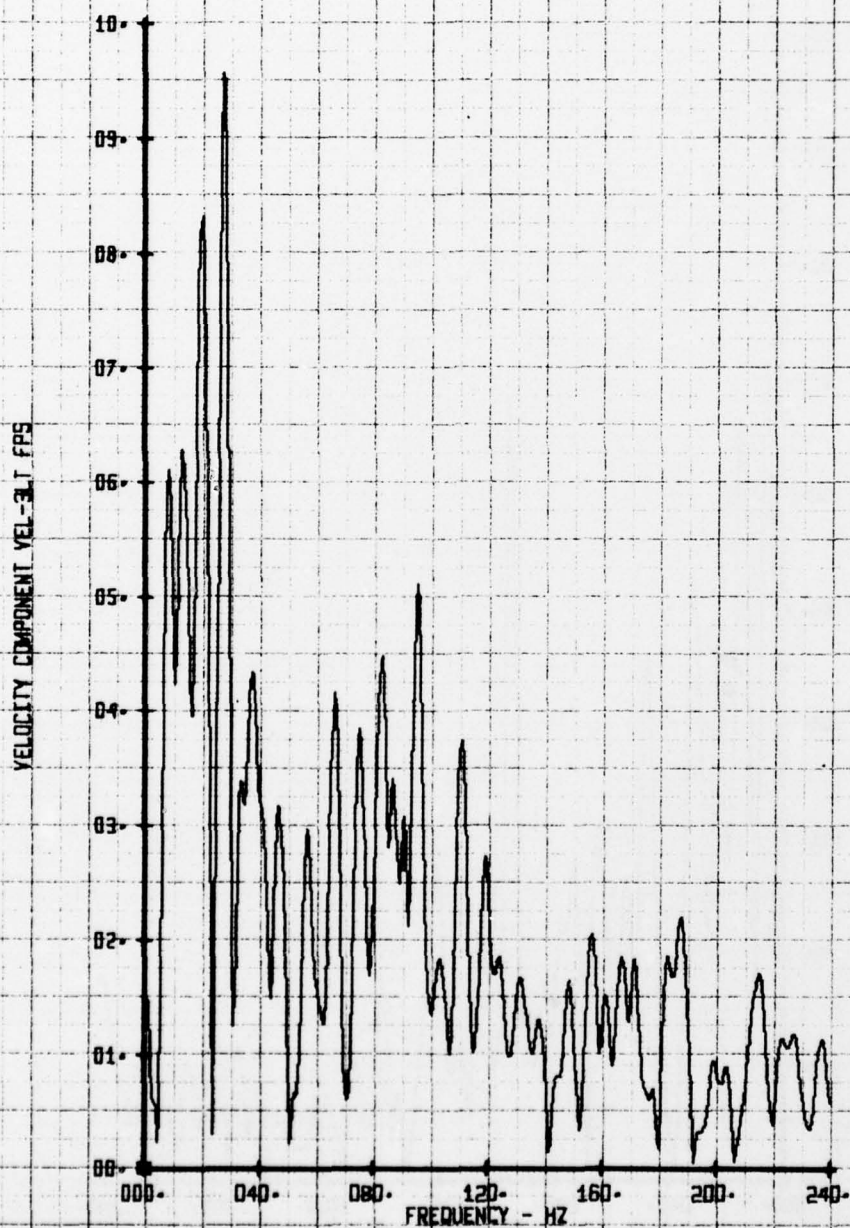
HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 4

LEGEND
CH 70 PARAMETER
VEL-3LT



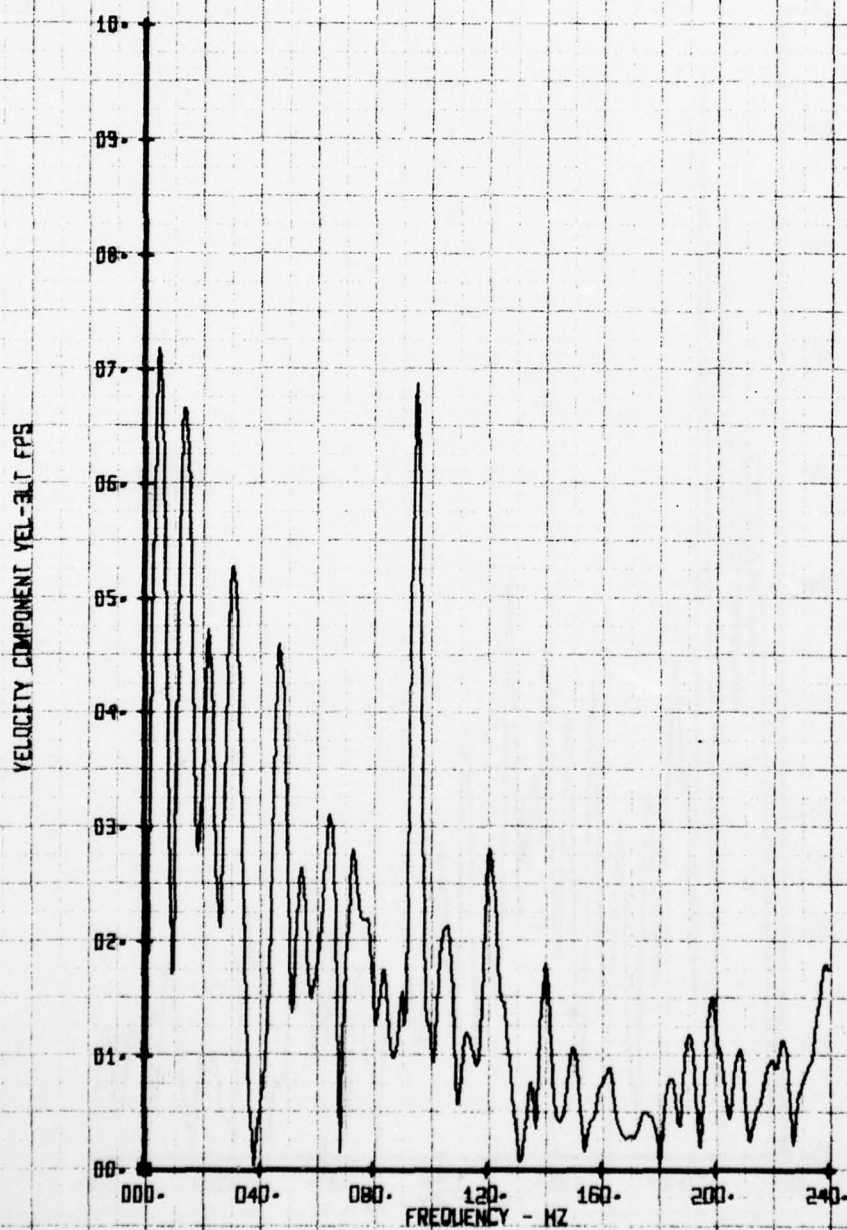
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BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 5

LEGEND
CH 70 PARAMETER
VEL-3LT



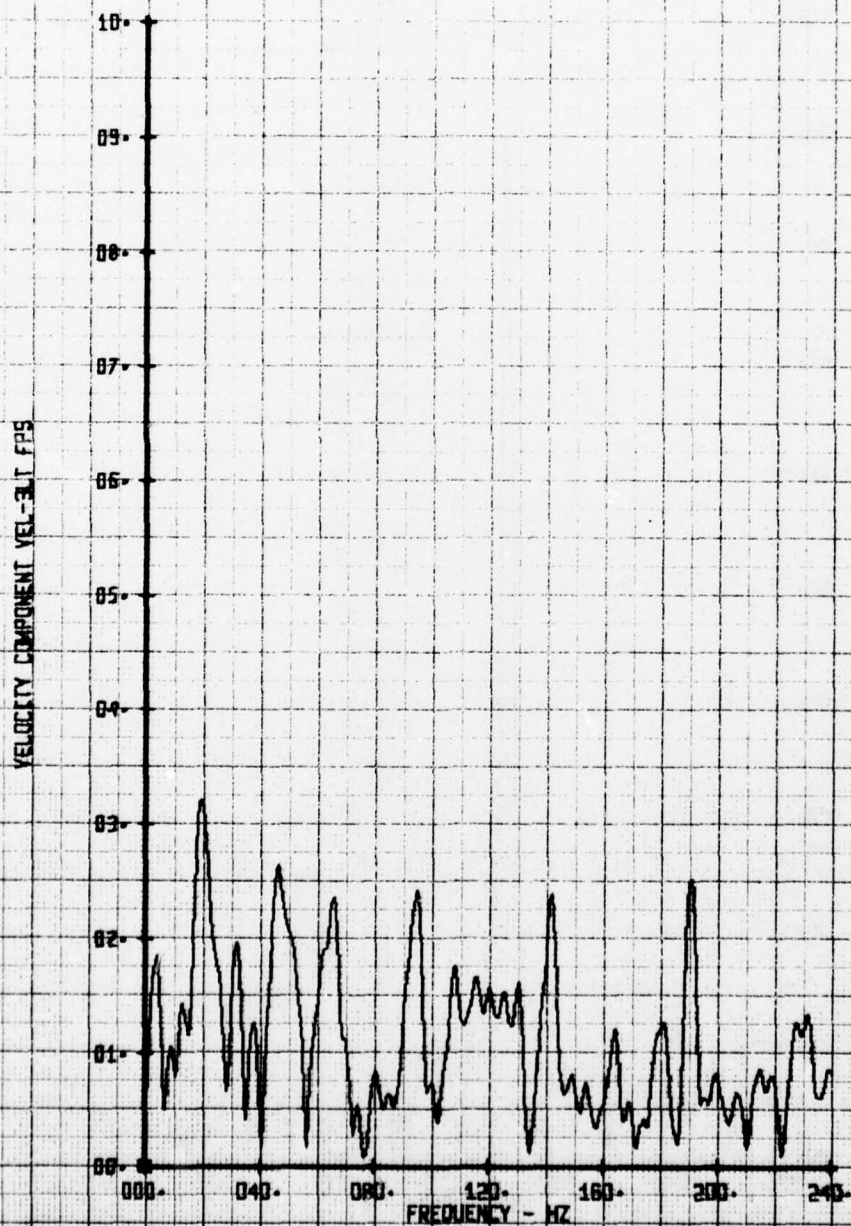
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BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 6

LEGEND
CH 70 PARAMETER
VEL-3LT



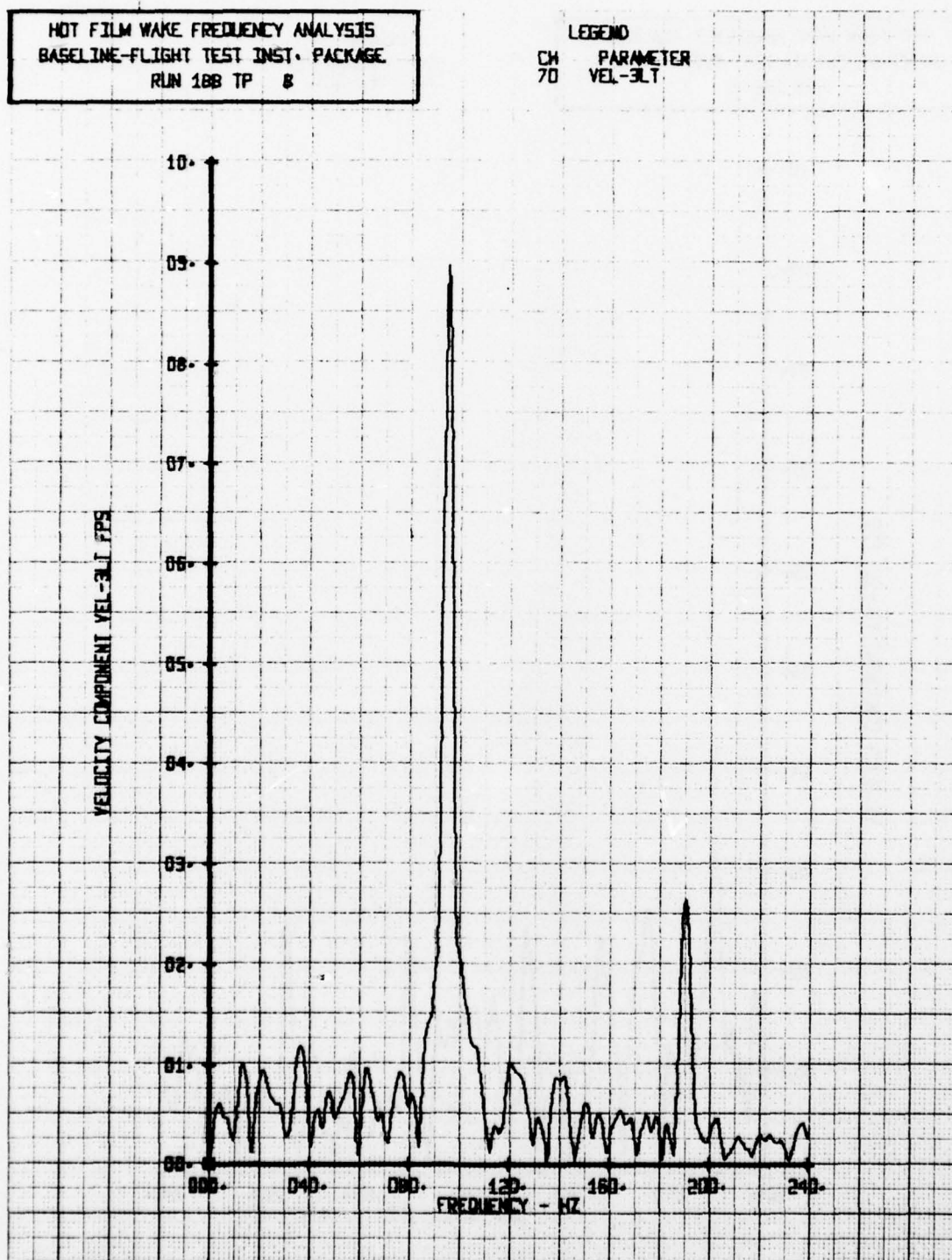
HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 7

LEGEND
CH 70 PARAMETER
VEL-3LT



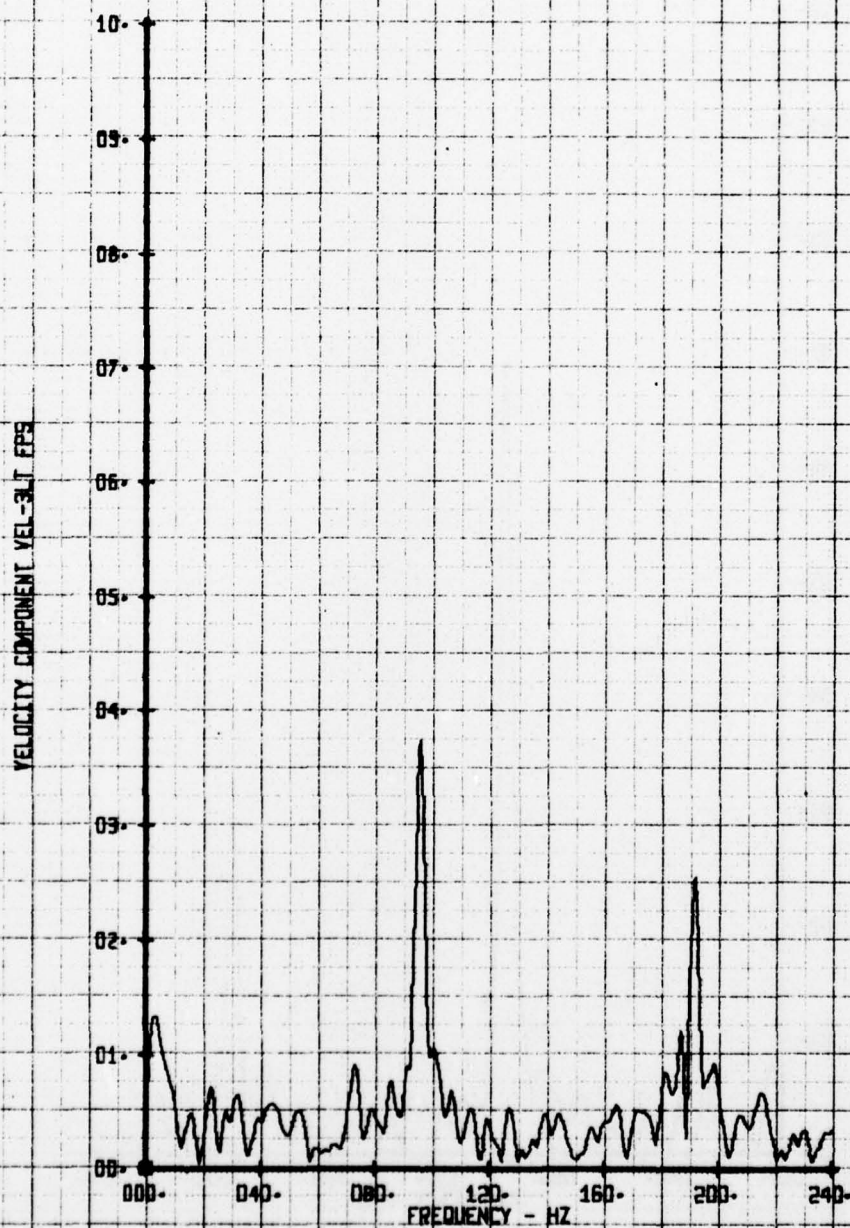
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BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 8

LEGEND
CH 70 PARAMETER
VEL-3LT



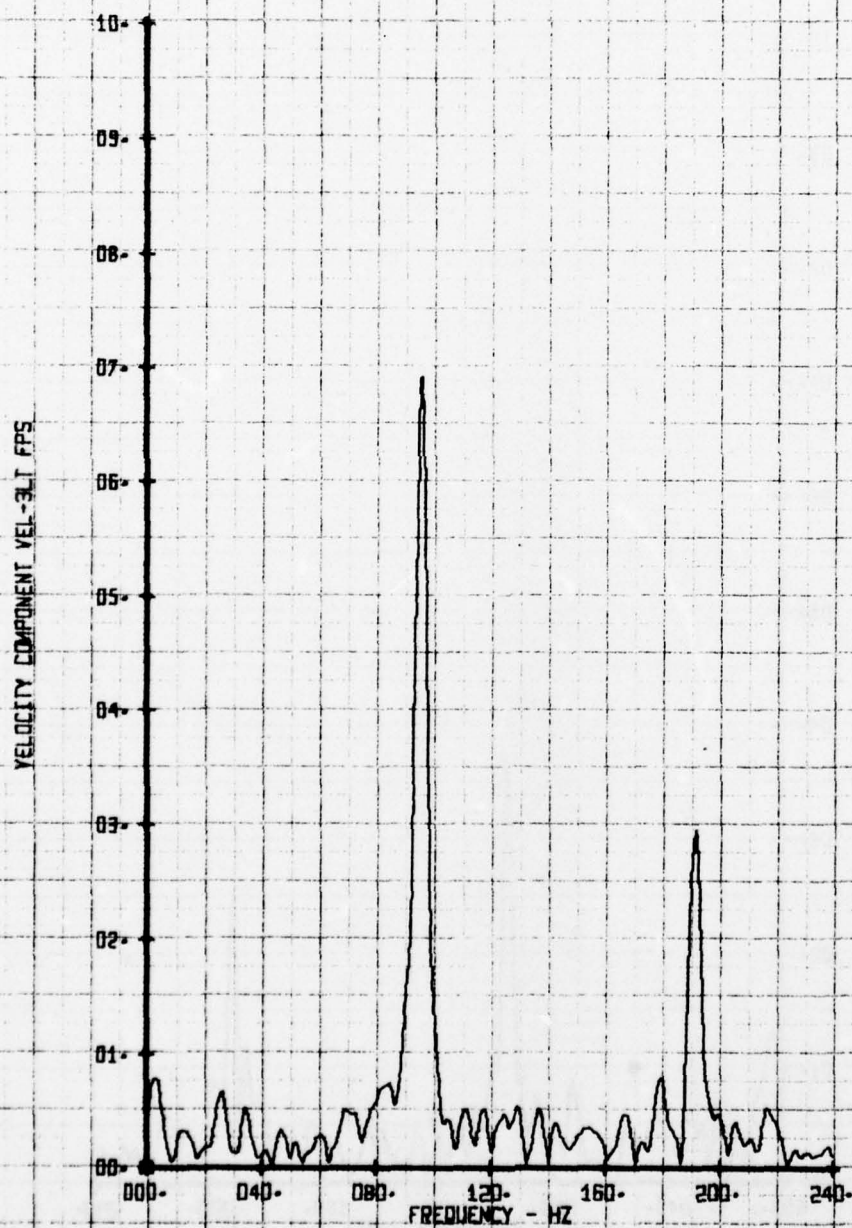
HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 9

LEGEND
CH 70 PARAMETER
VEL-3LT



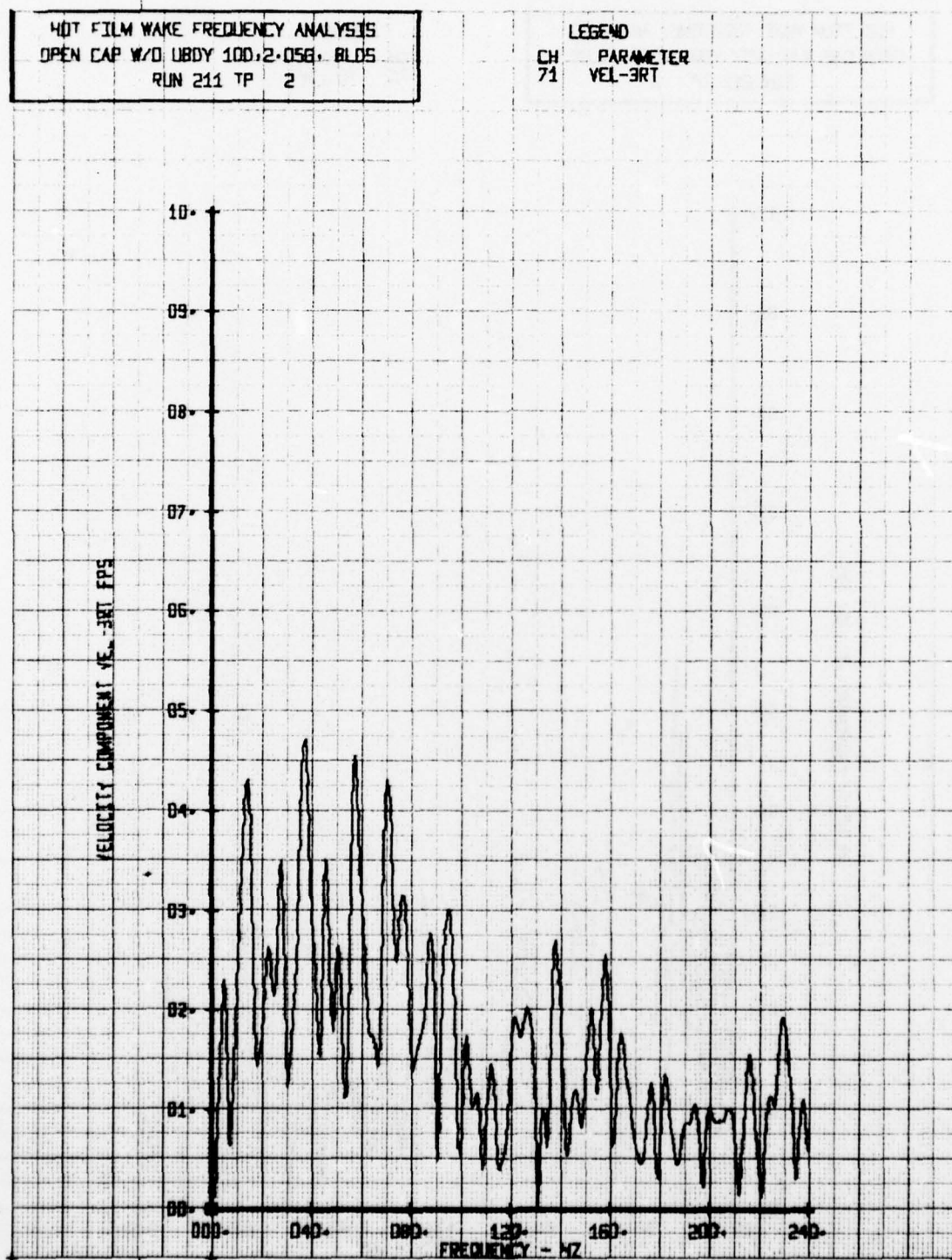
HOT FILM WAKE FREQUENCY ANALYSIS
BASELINE-FLIGHT TEST INST. PACKAGE
RUN 188 TP 10

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 100, 2.056, 8LOS
RUN 211 TP 2

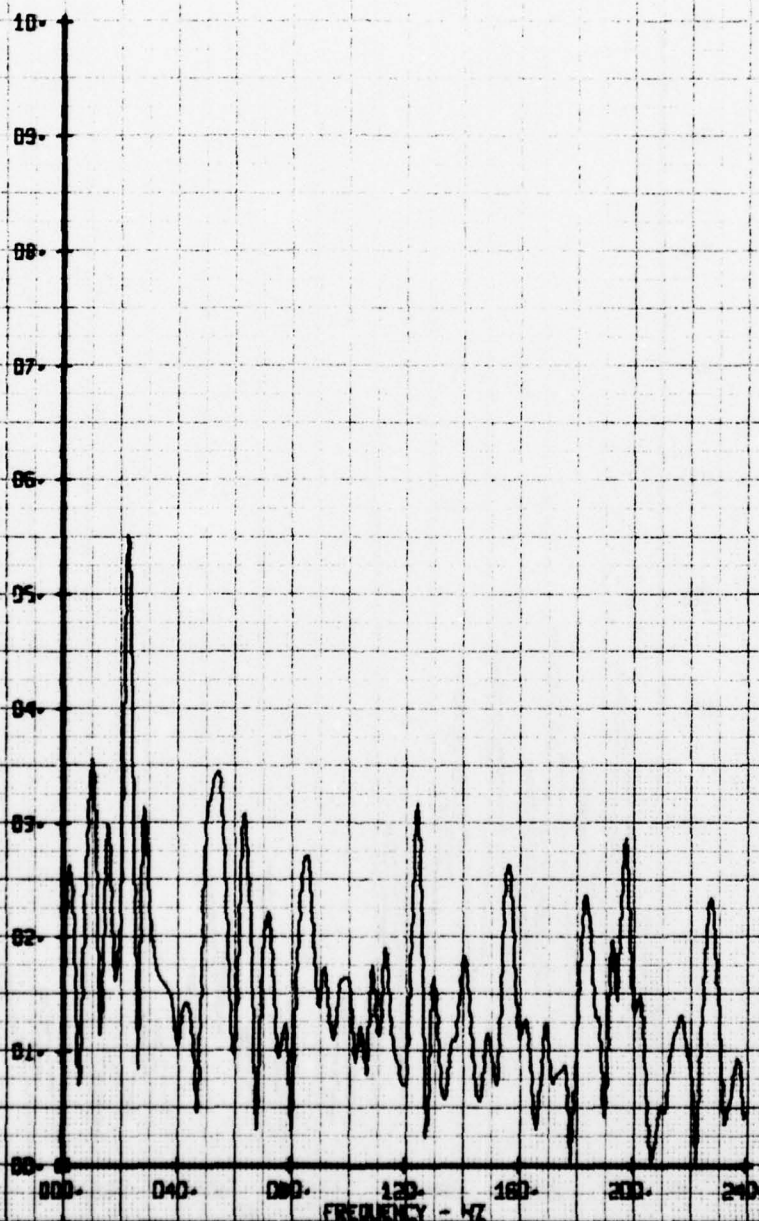
LEGEND
CH 71 PARAMETER
VEL-3RT



40T FTLW WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LB DY 100.2.056. 8LOS
RUN 211 TP 3

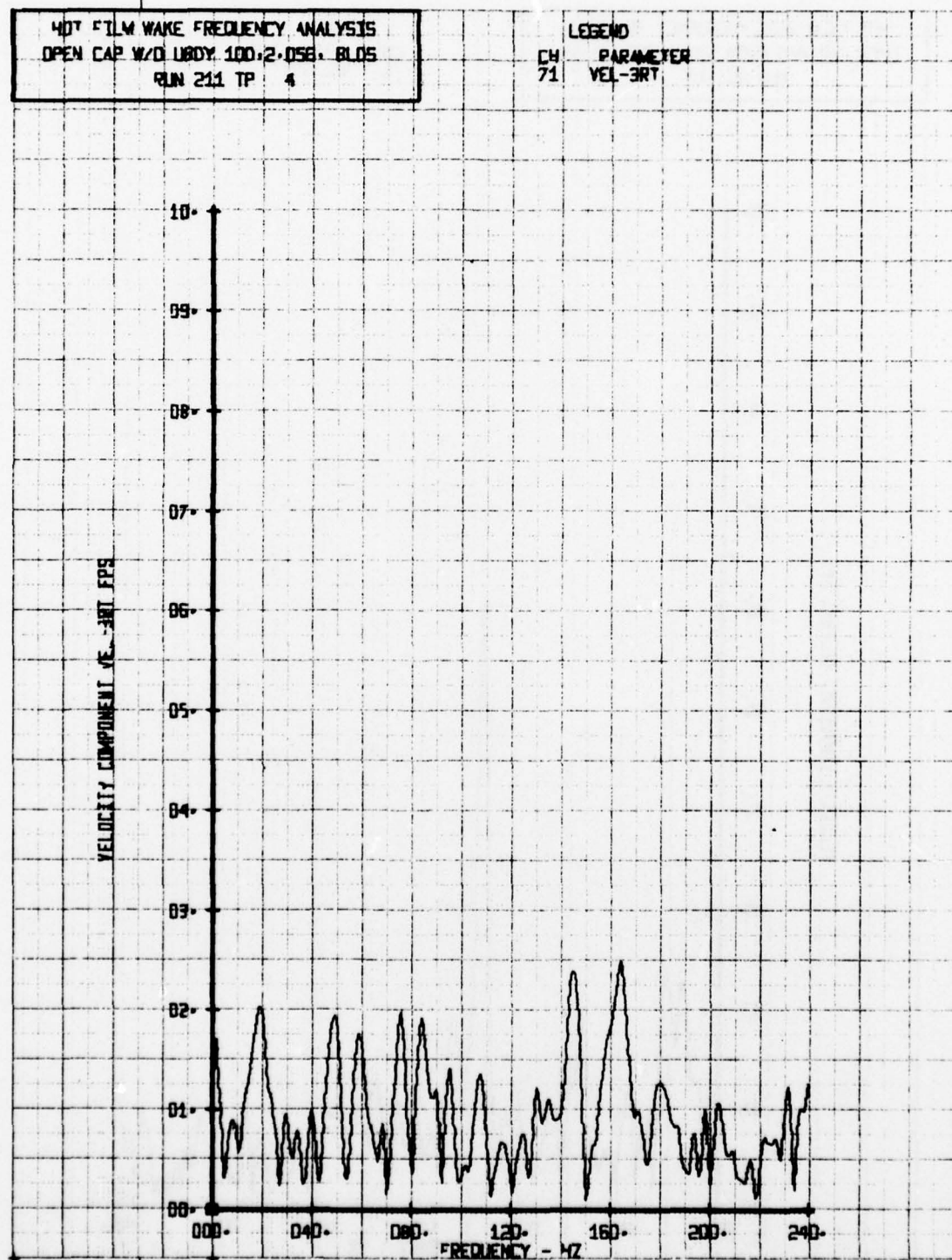
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBOY 100.2.058. BLOS
RUN 211 TP 4

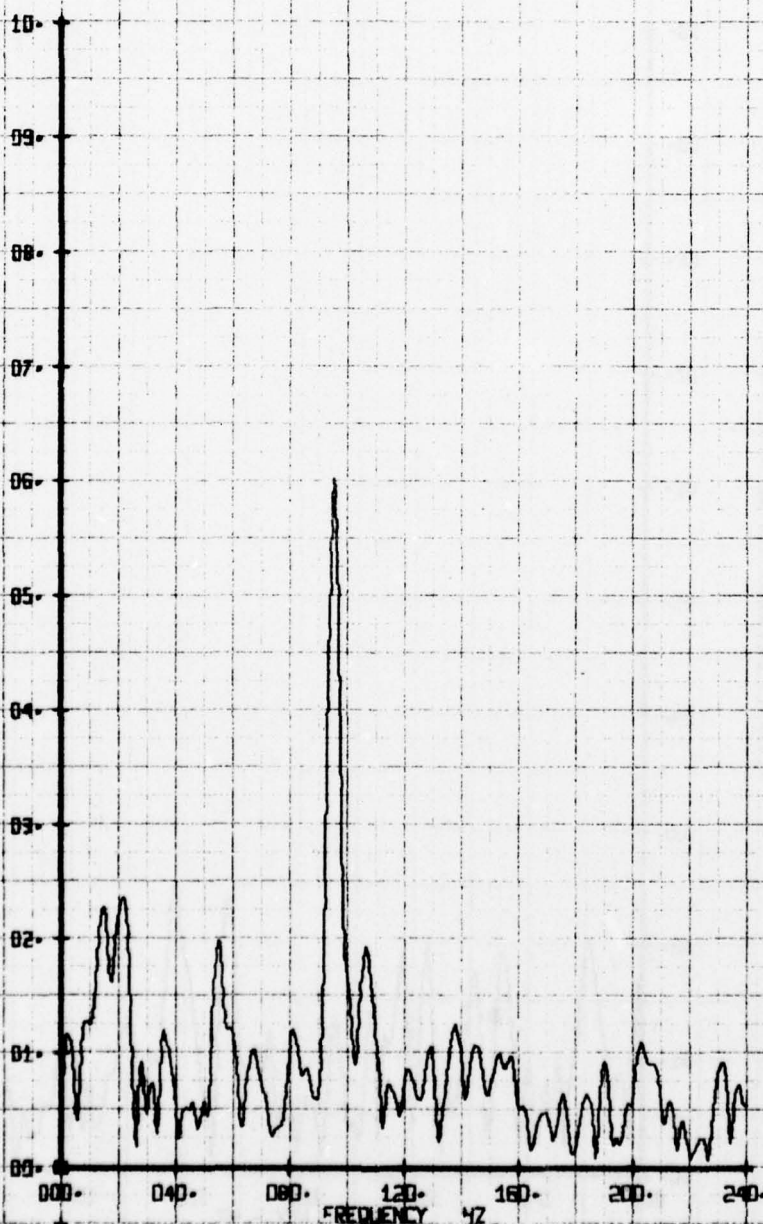
LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBOY 100.2.056. BLOS
RUN 211 TP 5

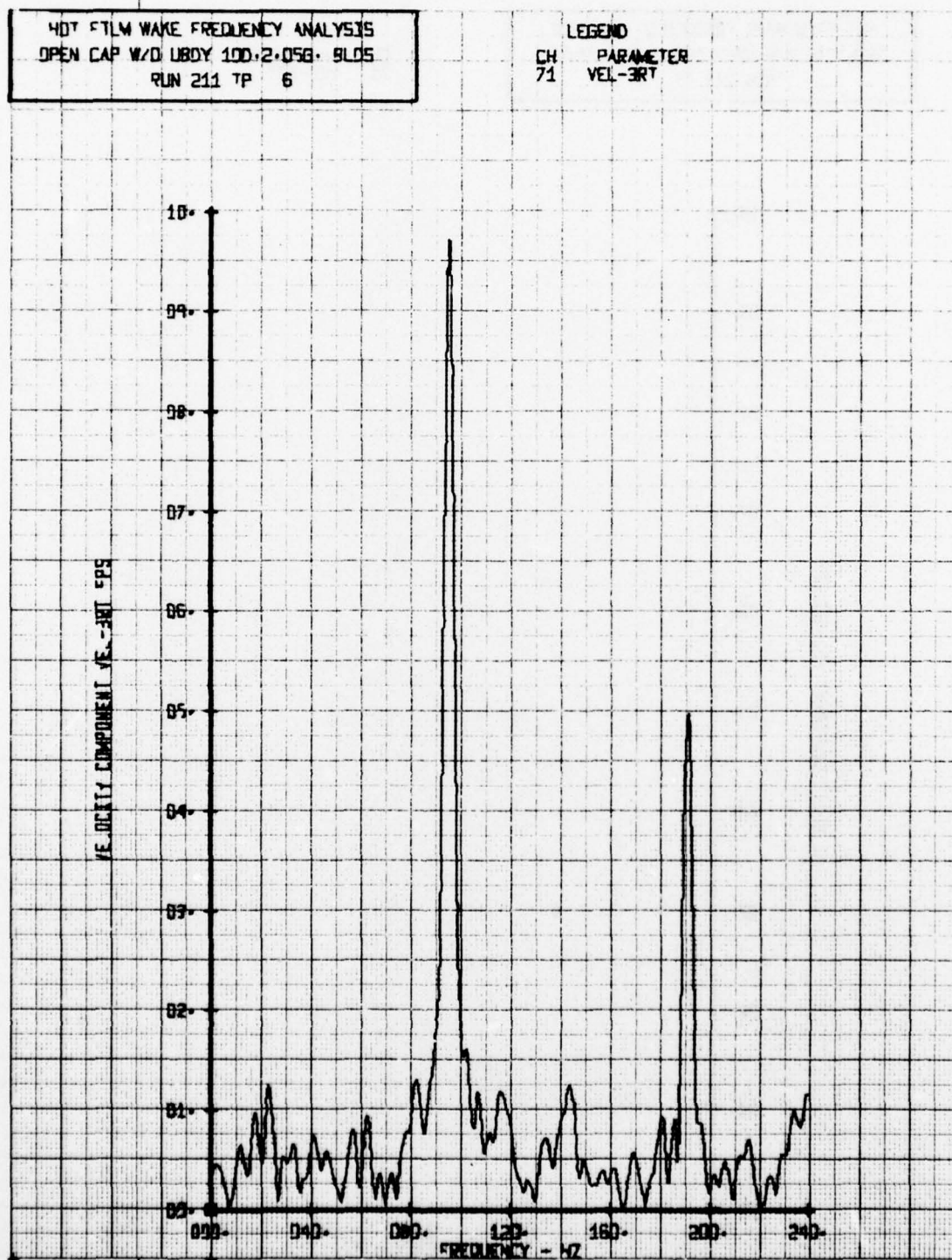
LEGEND
CH 71
PARAMETER
VEL-3RT

VELOCITY COMPONENT VE-3RT FPS



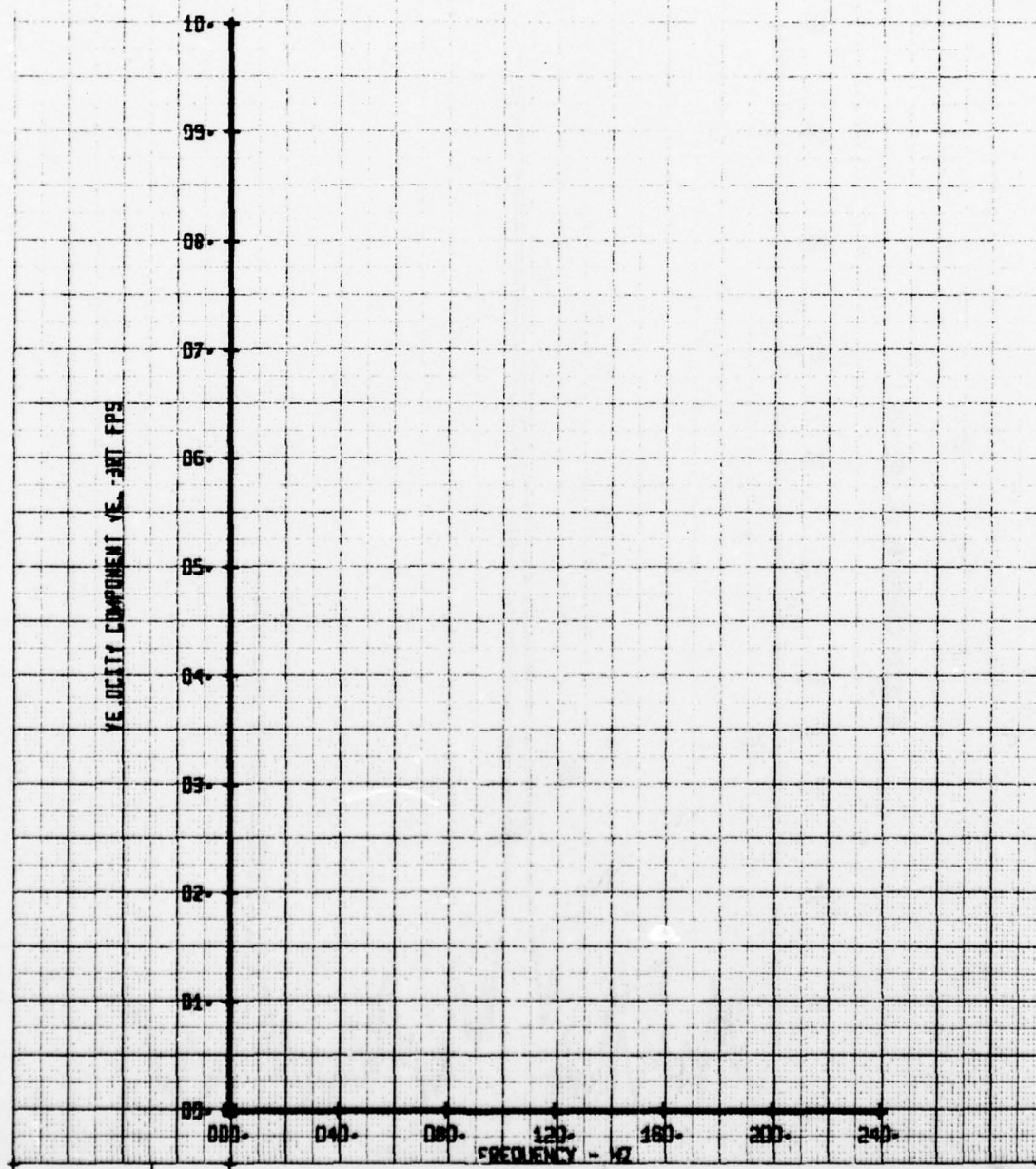
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OPEN CAP W/D BODY 100.2.058. 9LOS
RUN 211 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT



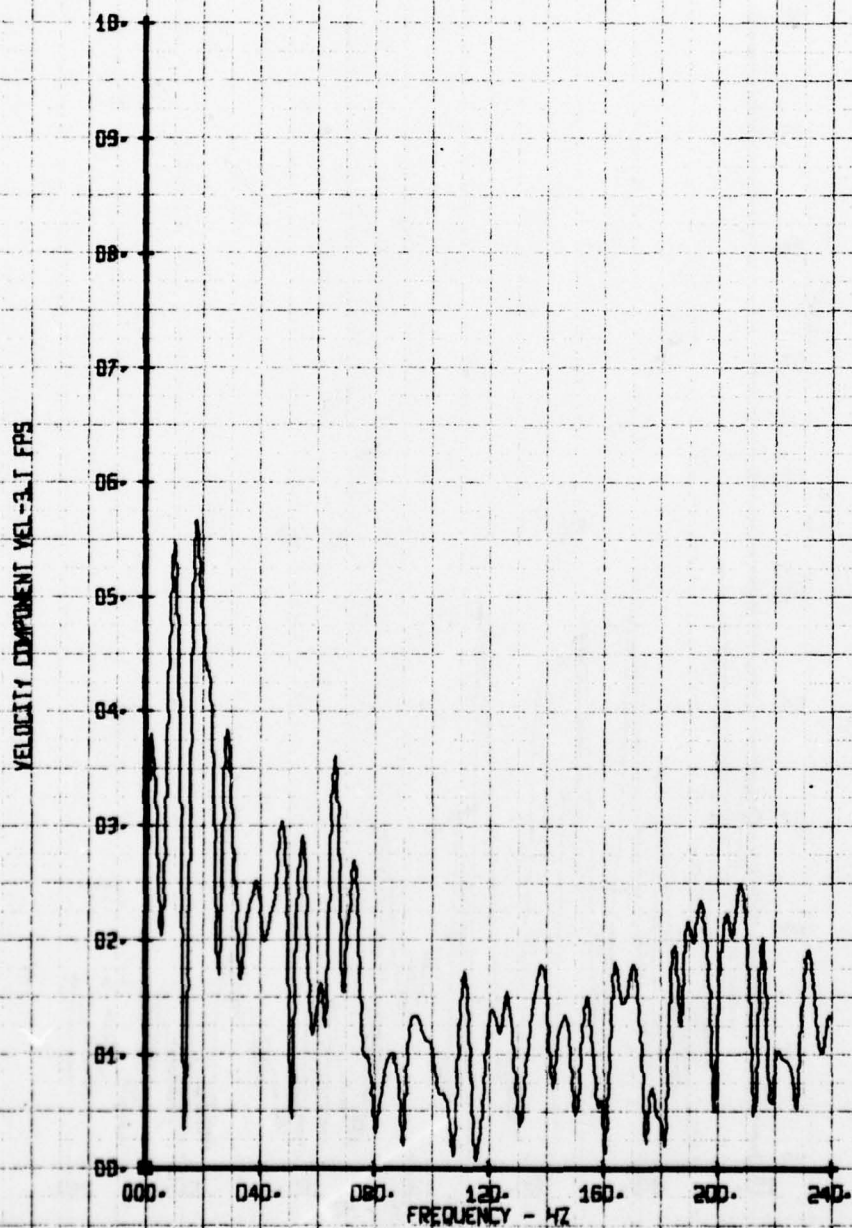
HDT FTLM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBOY 100.2.05G. BLOS
RUN 211 TP 7

LEGEND
CH 71 PARAMETER
VEL-3RT



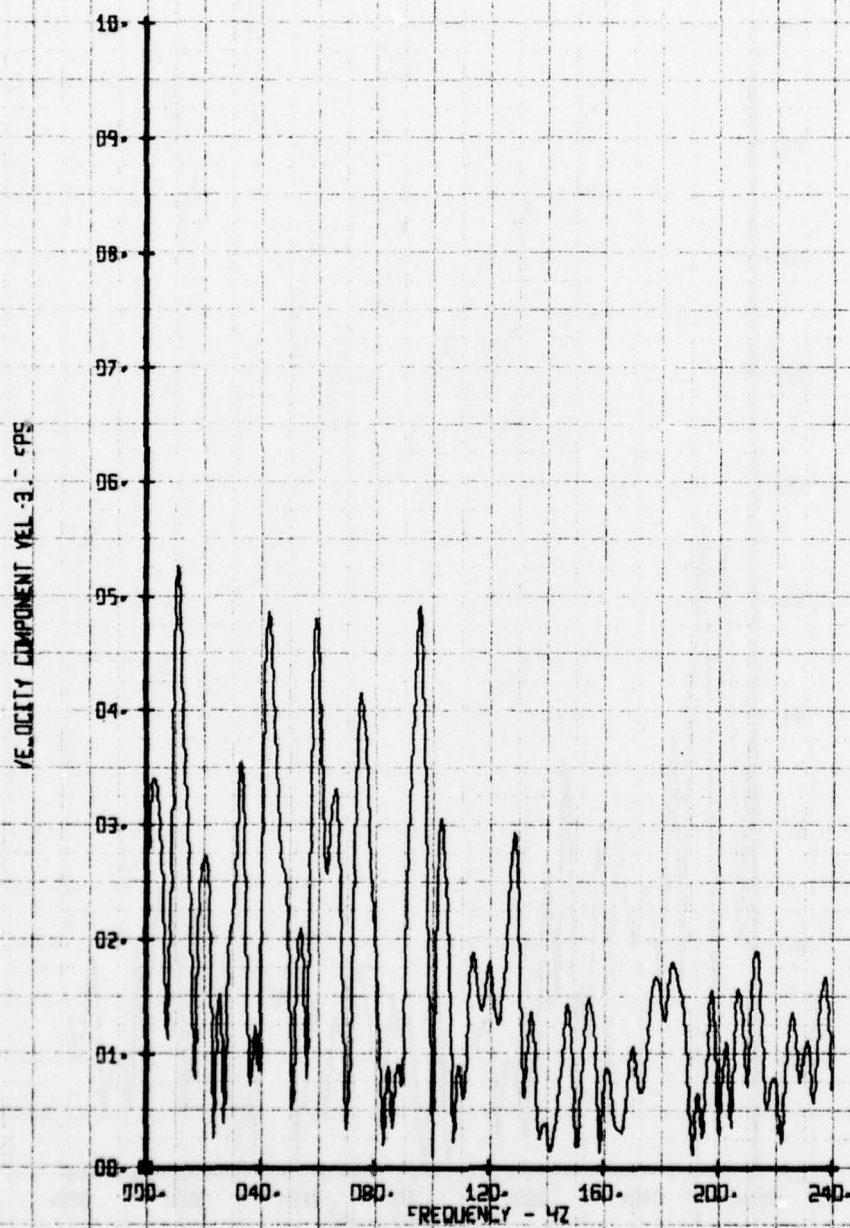
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O LBOY 100.2-056, BLOS
RUN 211 TP 2

LEGEND
CH 70
PARAMETER
VEL-3LT



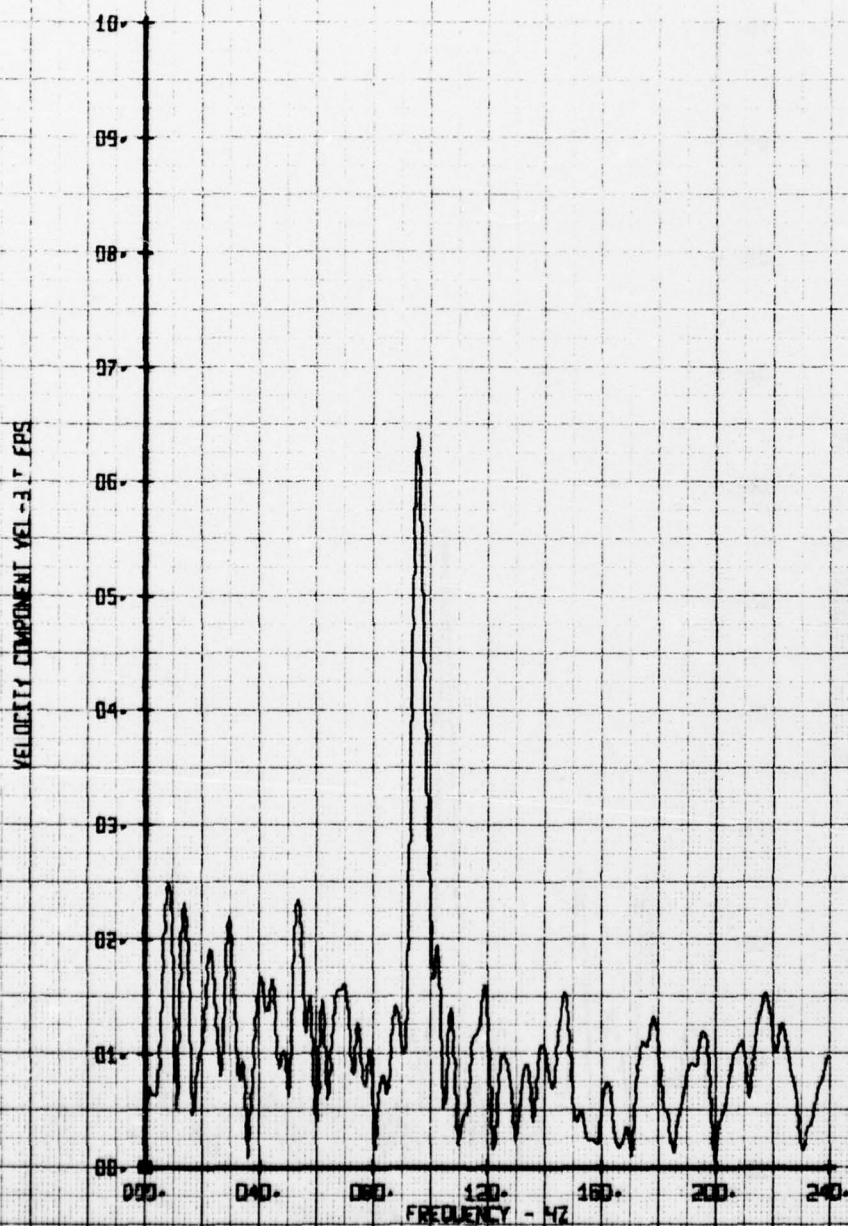
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBOY 100, 2.05G, BLOS
RUN 211 TP 3

LEGEND
CH 70
PARAMETER
VEL-3LT



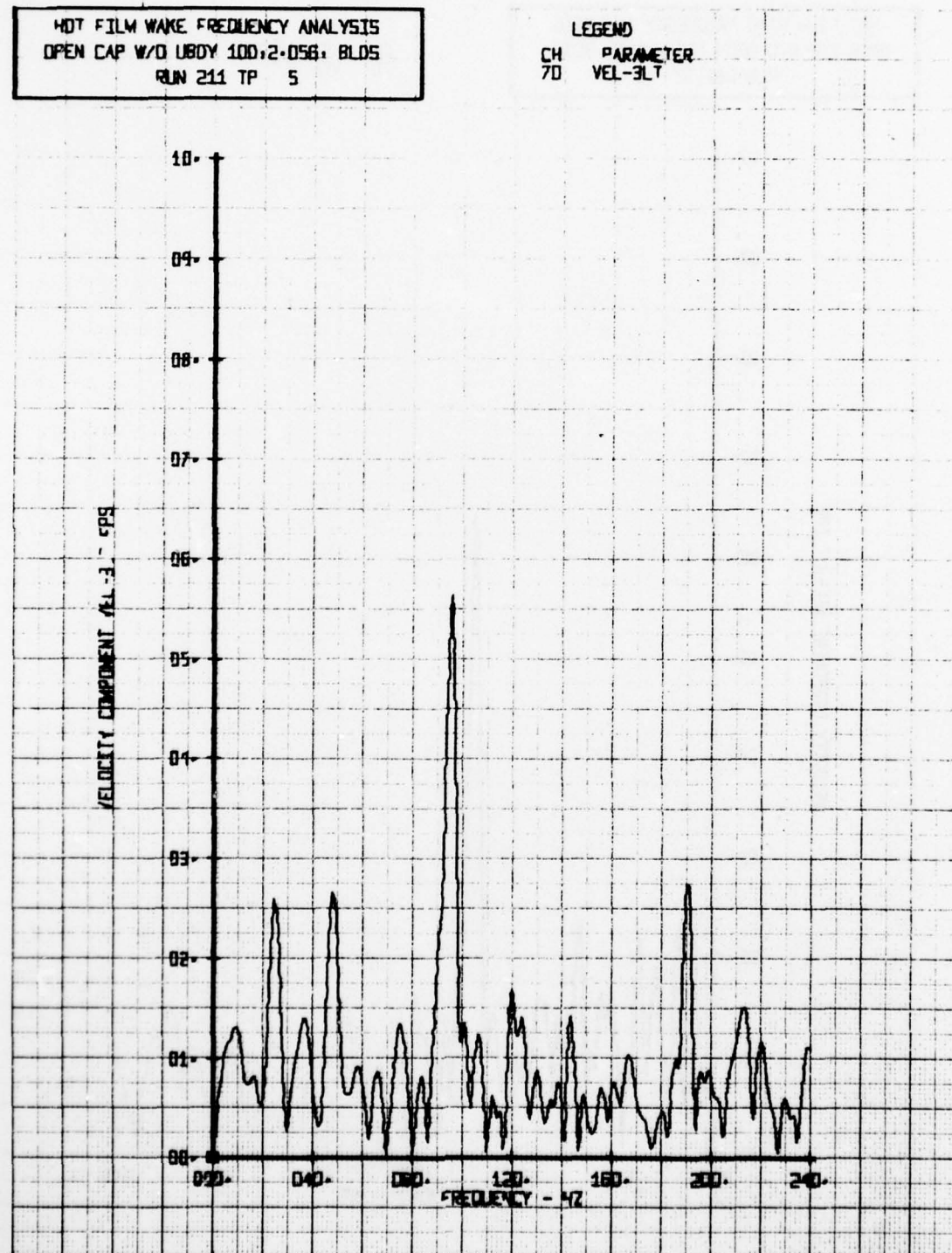
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 100, 2.056, BLOS
RUN 211 TP 4

LEGEND
CH 70 PARAMETER
VEL 3LT



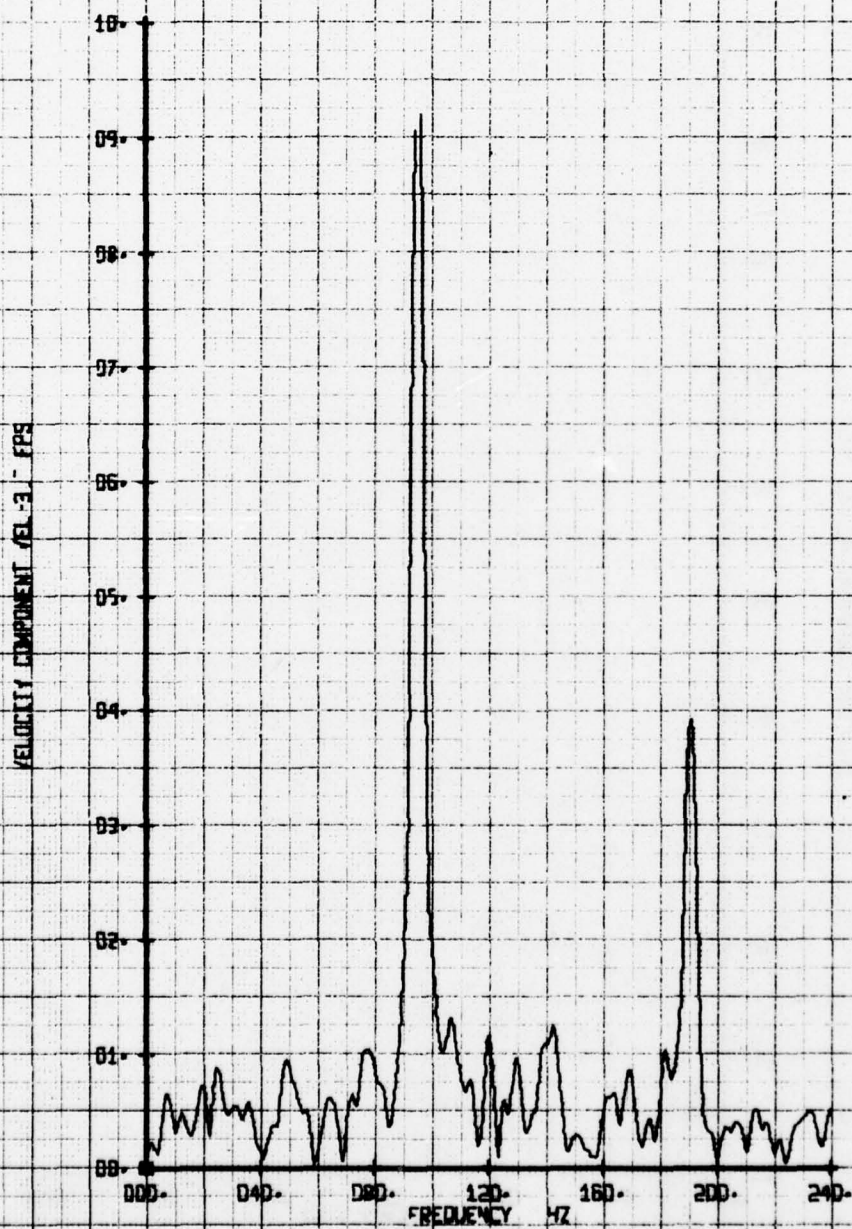
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBOY 100, 2.056, BLOS
RUN 211 TP 5

LEGEND
CH 70 PARAMETER
70 VEL-3LT



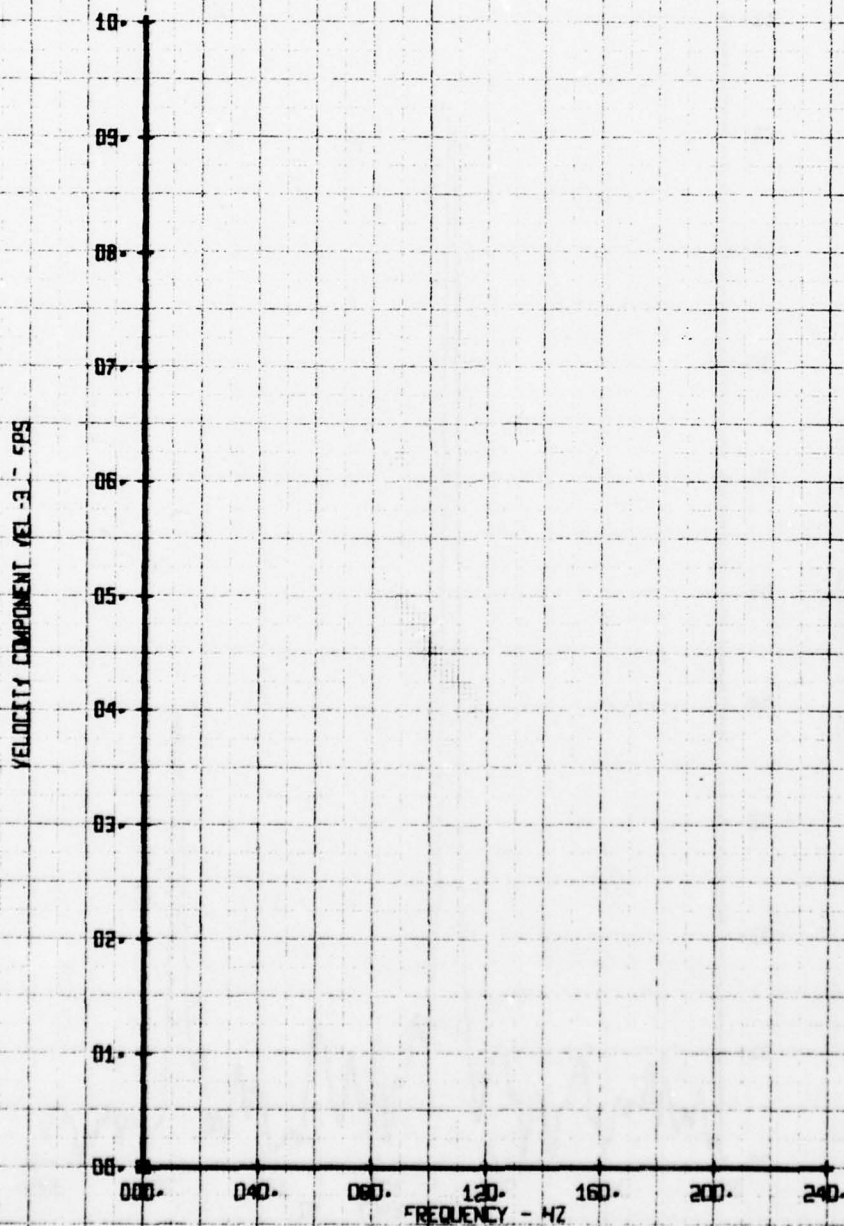
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBOY 100-2.056, 8LOS
RUN 211 TP 6

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 100-2.056, BLOS
RUN 211 TP 7

LEGEND
CH 70
PARAMETER
VEL-3LT

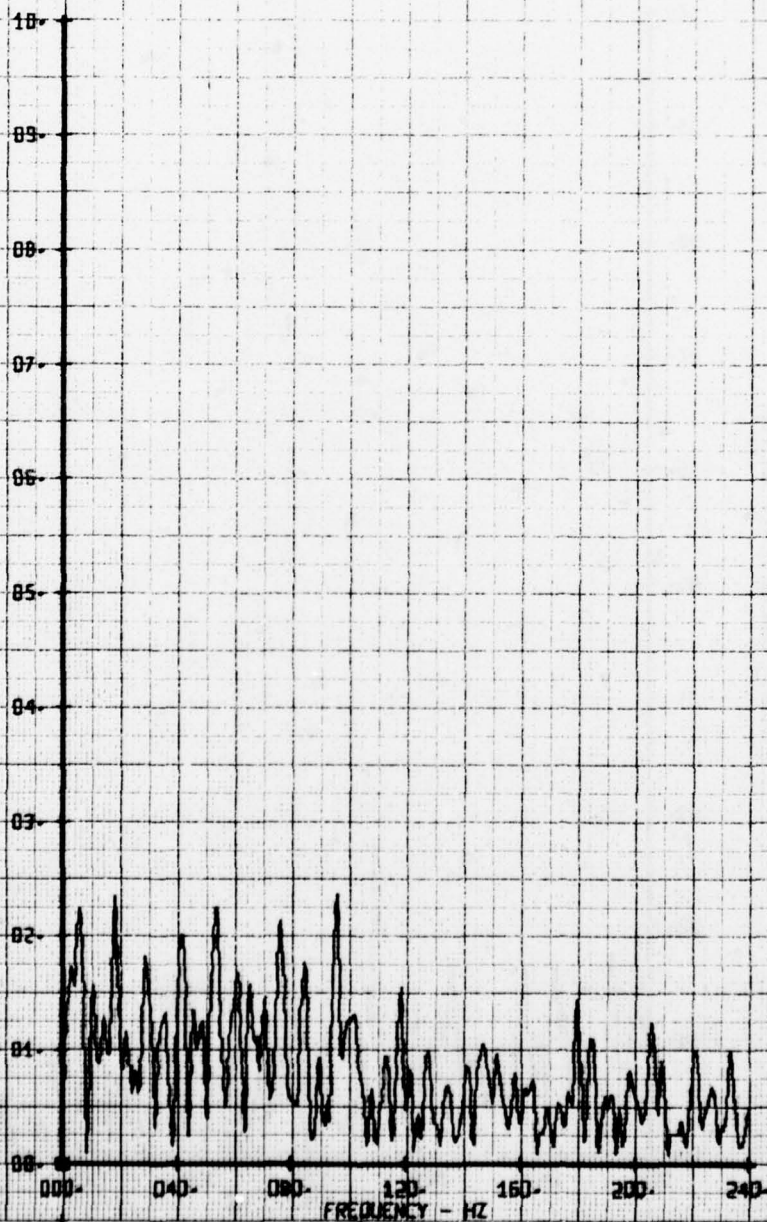


HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UDDY 160 2.00P BLD5
RUN 16B TP 4

LEGEND

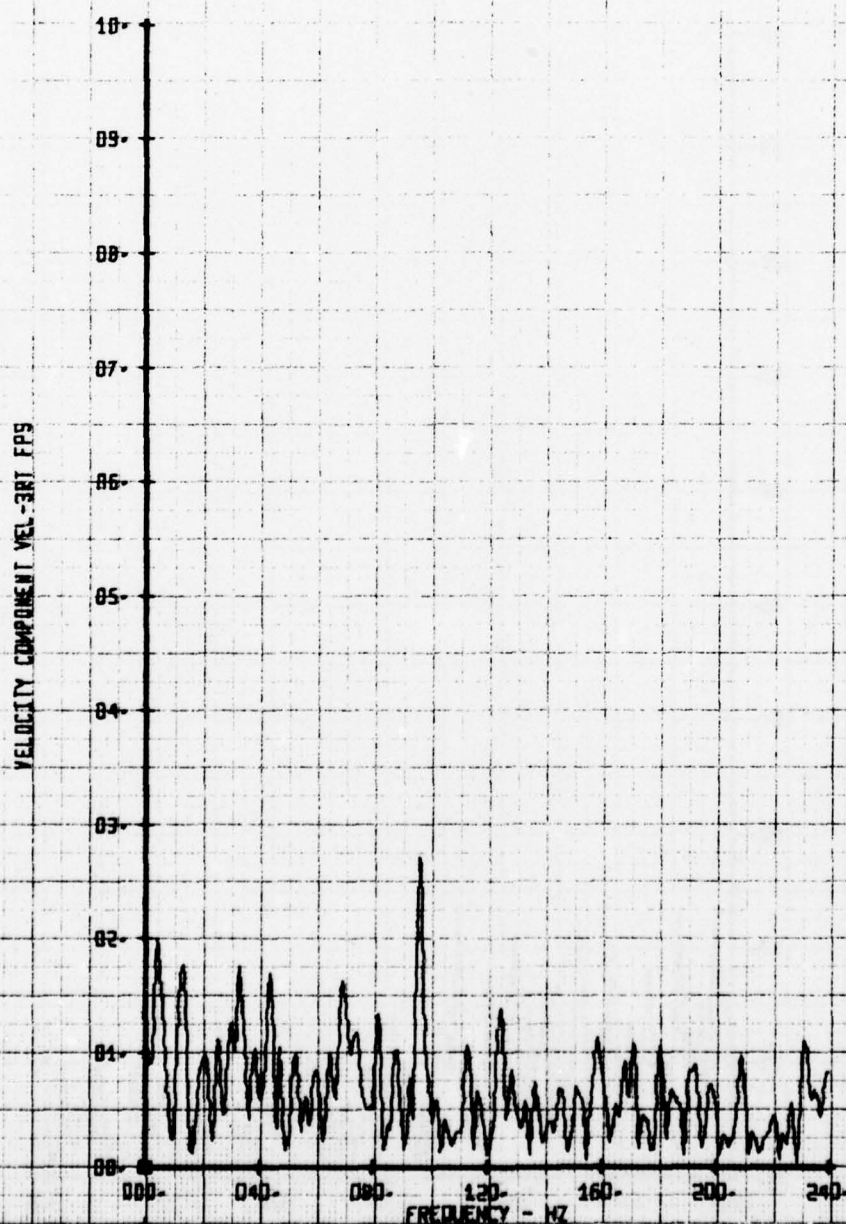
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBDY 160- 2-DEP BLDS
RUN 16B TP 5

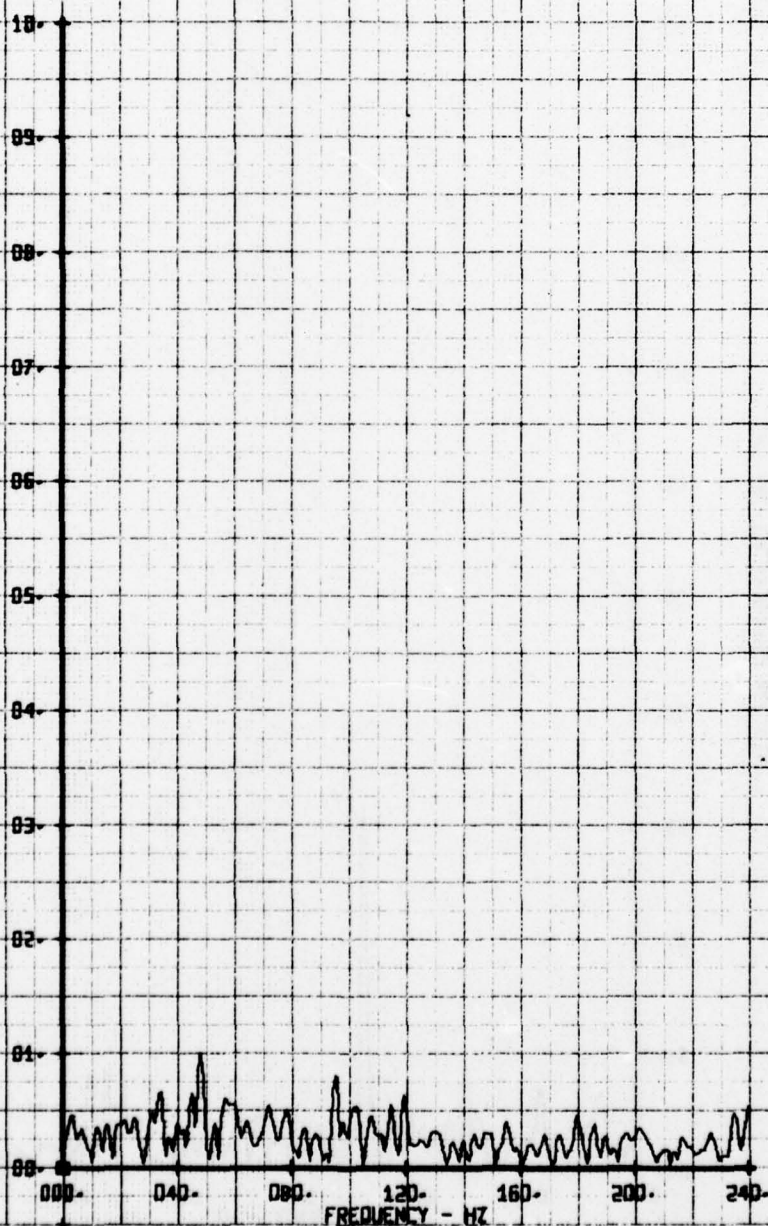
LEGEND
CH PARAMETER
71 VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UROY 160. 2.0EP 8LOS
RUN 168 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT

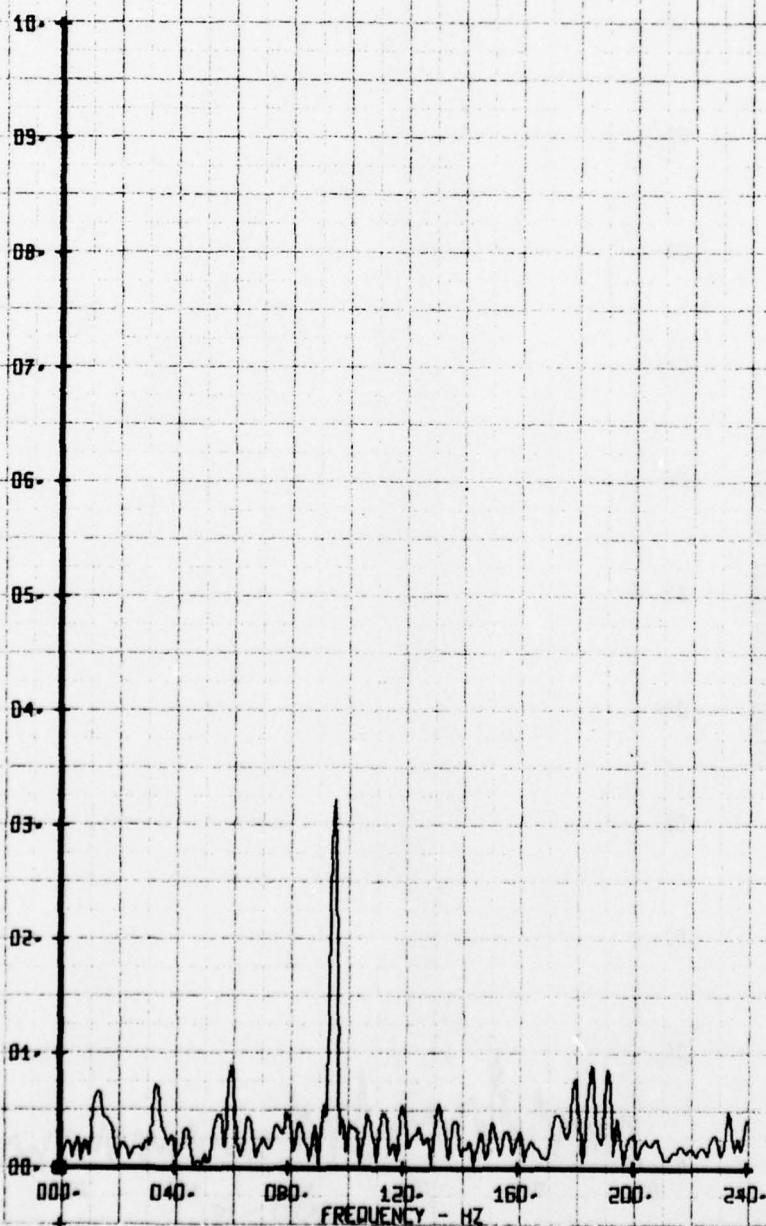
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 16D. 2.0GP BLD5
RUN 16B TP 7

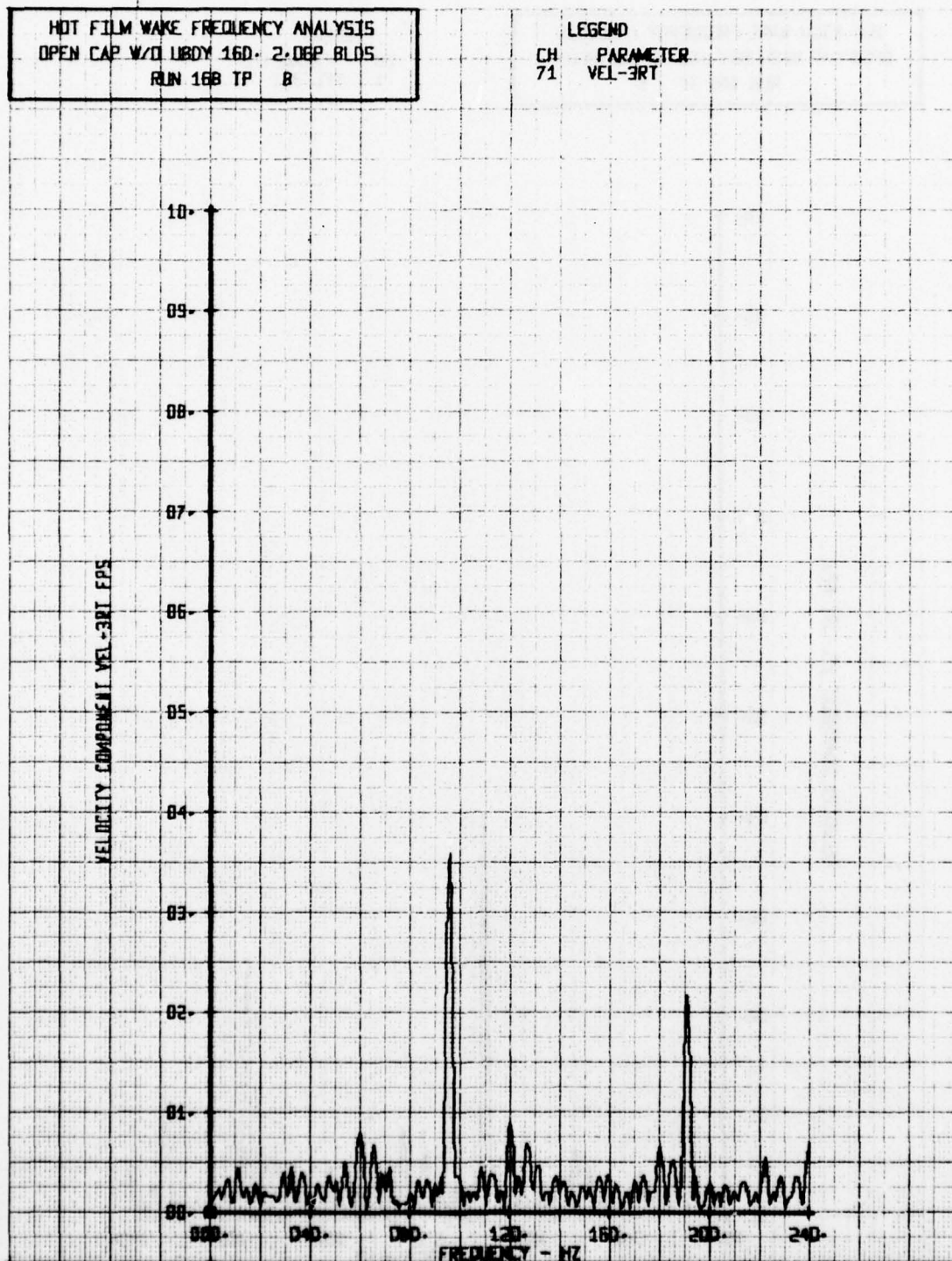
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



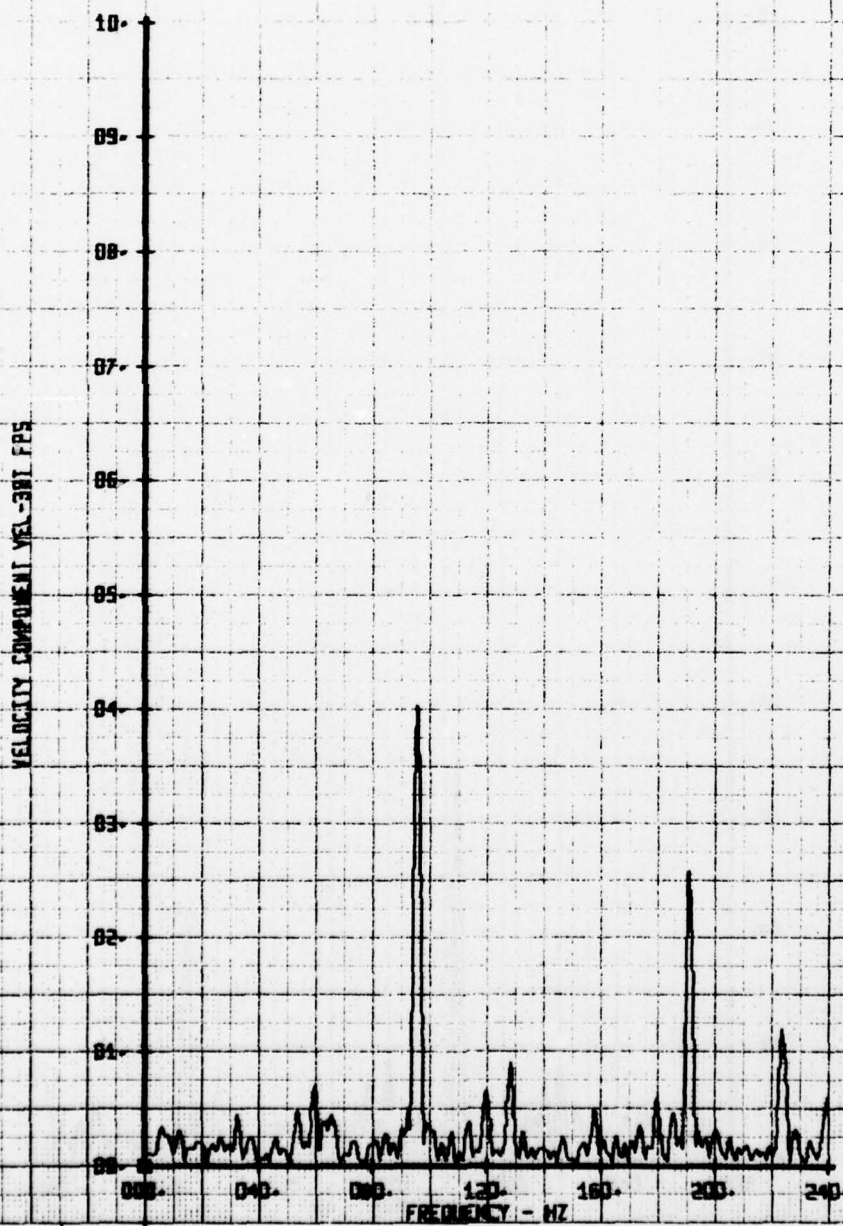
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 16D- 2-DEP BLOS
RUN 16B TP B

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O LBDY 160. 2-06P BLOS
RUN 168 TP 9

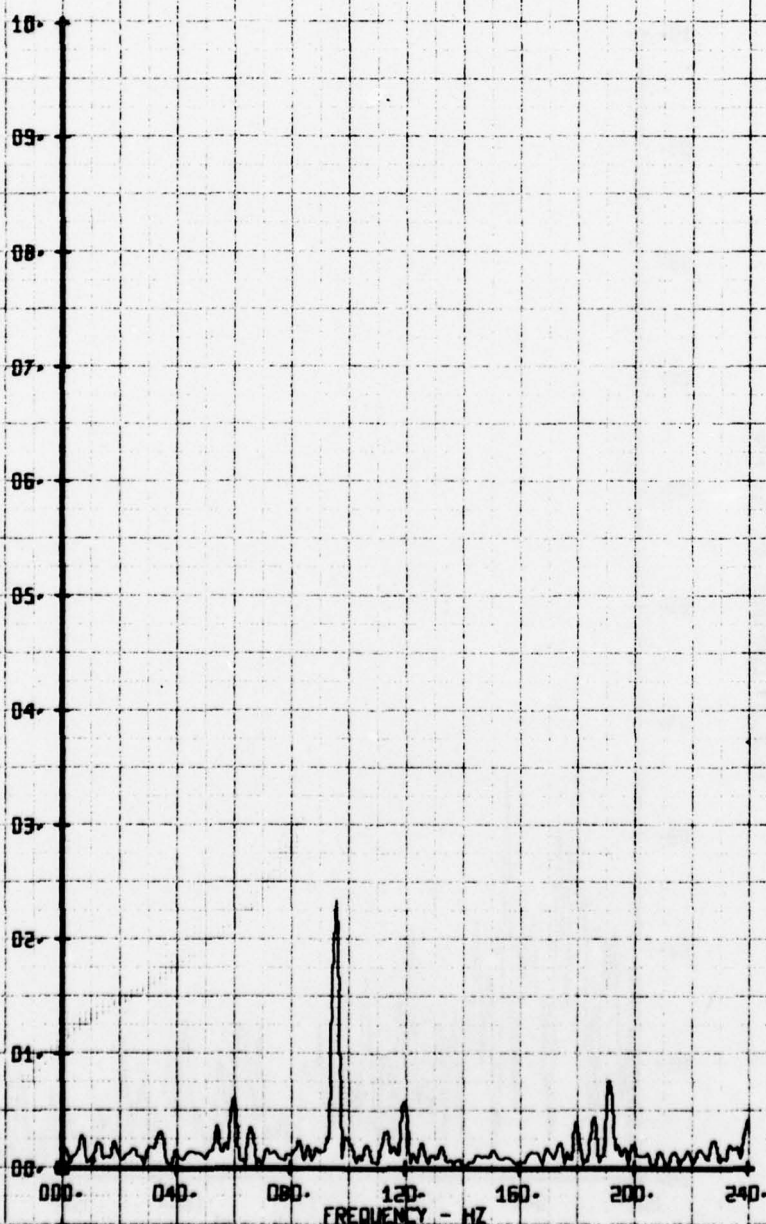
LEGEND
CH PARAMETER
71 VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160, 2-DEP BLDS
RUN 168 TP 10

LEGEND
CH 71 PARAMETER
VEL-3RT

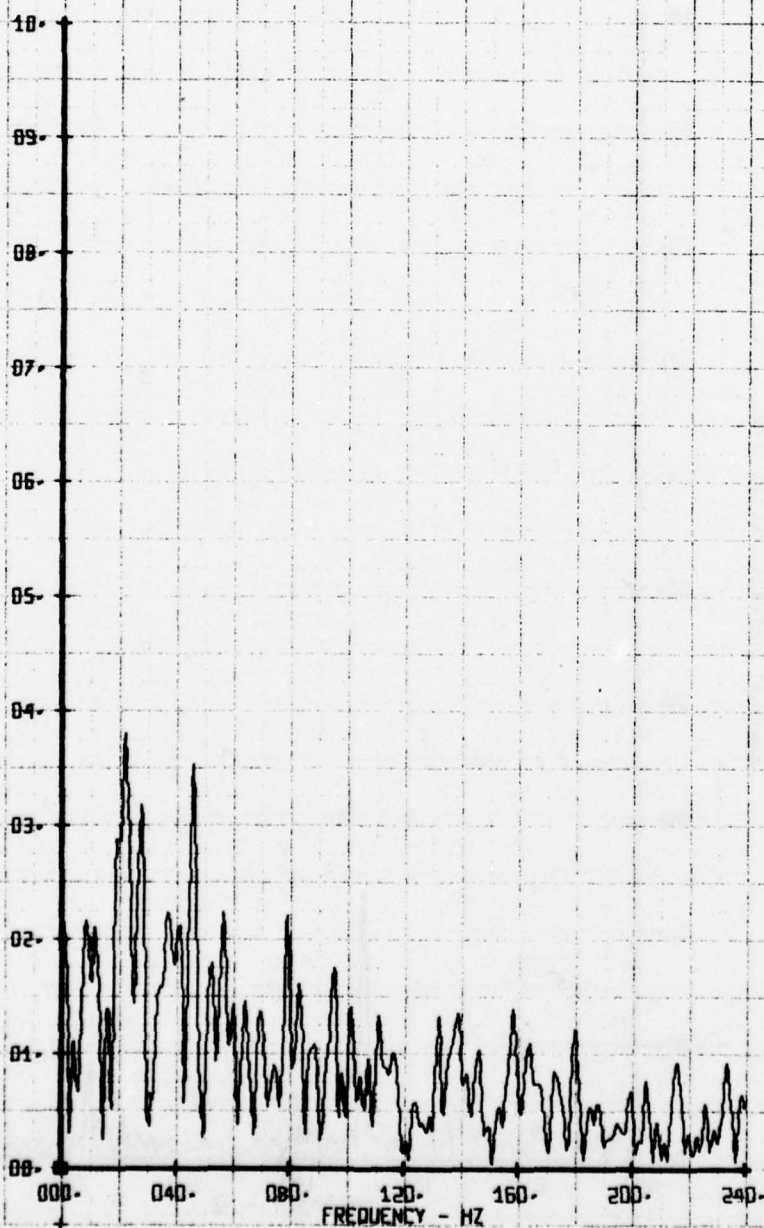
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160. 2.06P BLOS
RUN 168 TP 4

LEGEND
CH 72 PARAMETER
VEL-ZLT

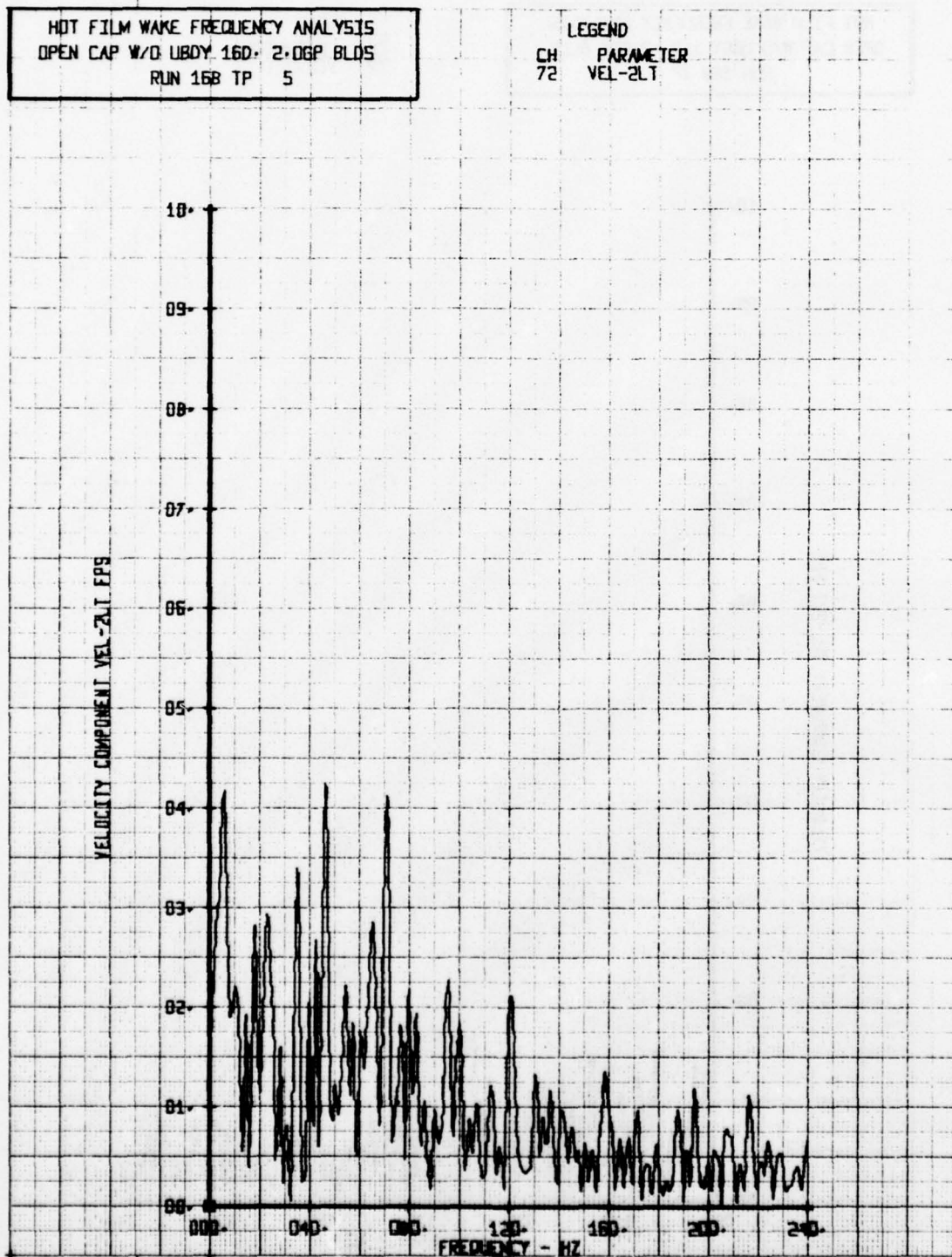
VELOCITY COMPONENT VEL-ZLT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O LUBDY 16D 2-0GP BLOS
RUN 16B TP 5

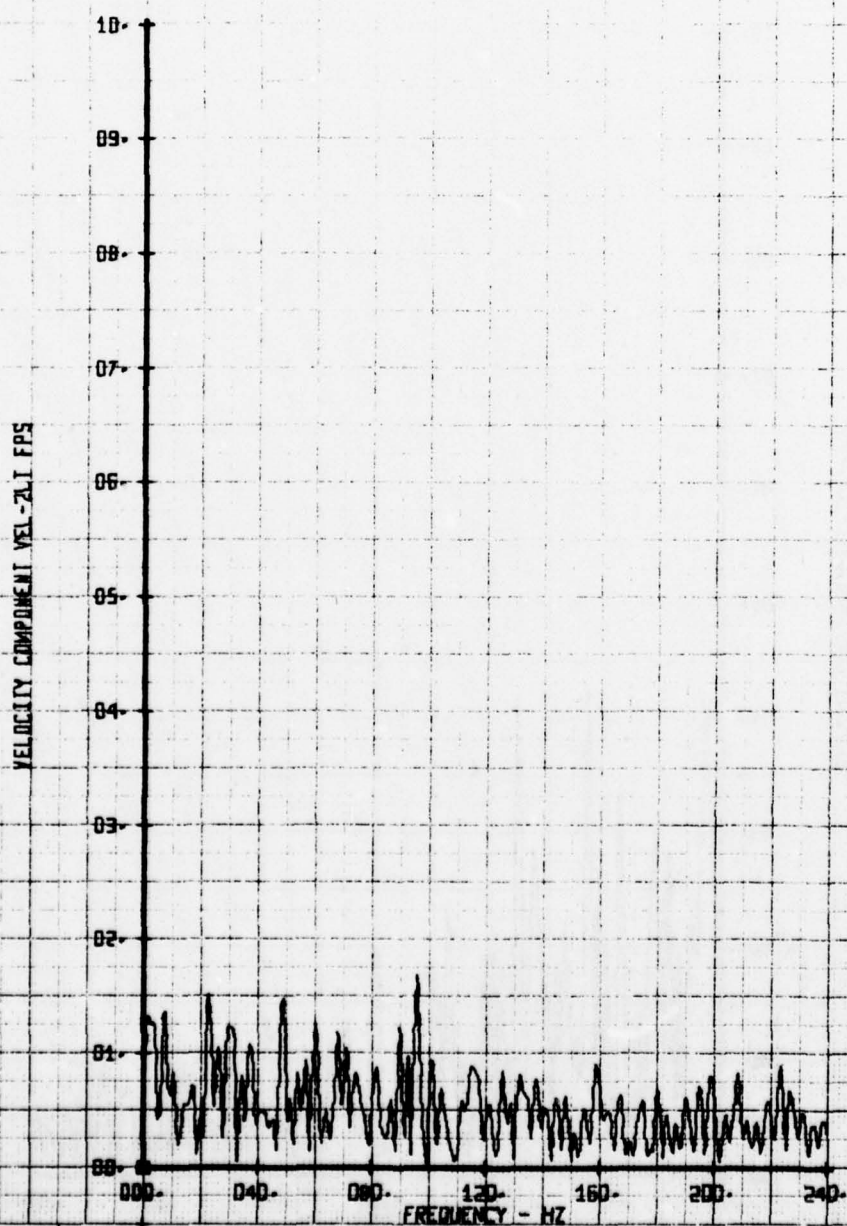
LEGEND

CH 72
PARAMETER
VEL-2LT



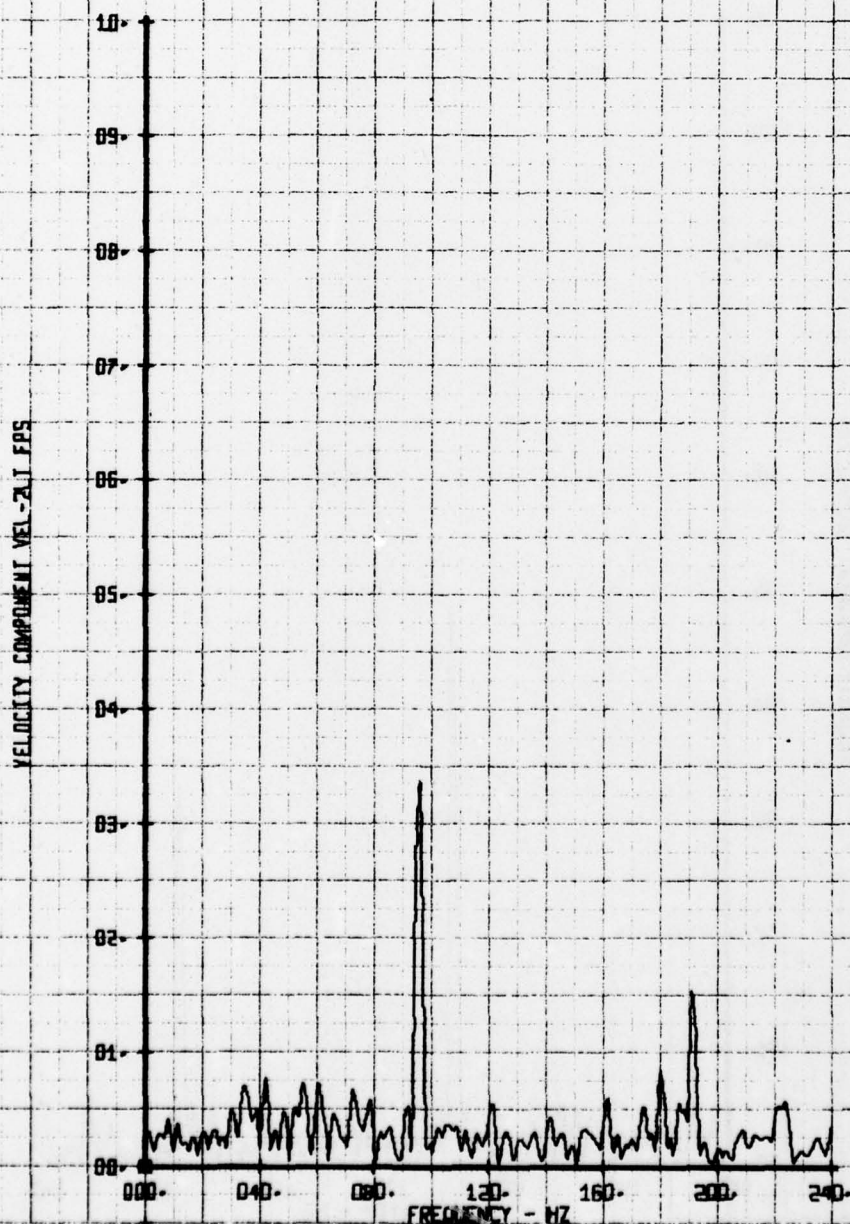
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBODY 160. 2.0GP BLOS
RUN 168 TP 6

LEGEND
CH 72
PARAMETER
VEL-2LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160- 2.06P BLOS
RUN 168 TP 7

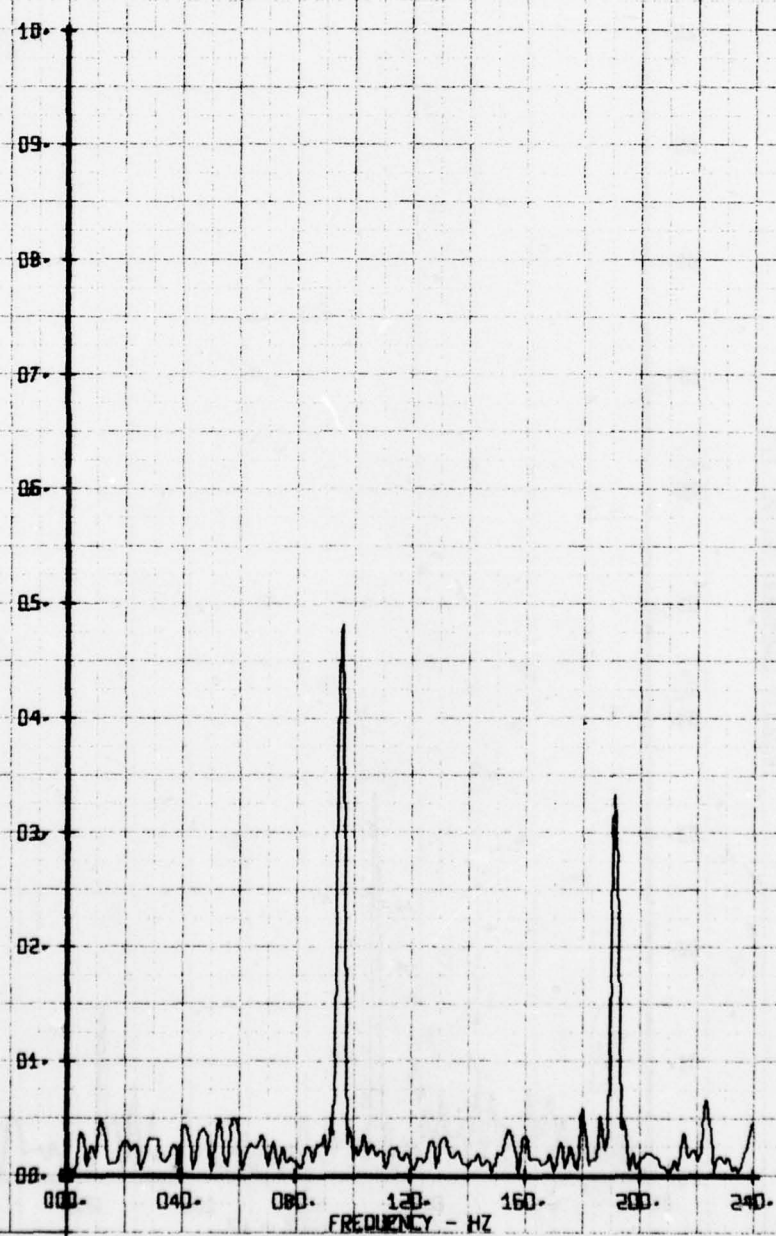
LEGEND
CH 72 PARAMETER
VEL-2LT



HOT FILM WAKE FREQUENCY ANALYSIS
 OPEN CAP W/O BODY 160. 2.00P BLOS
 RUN 16B TP B

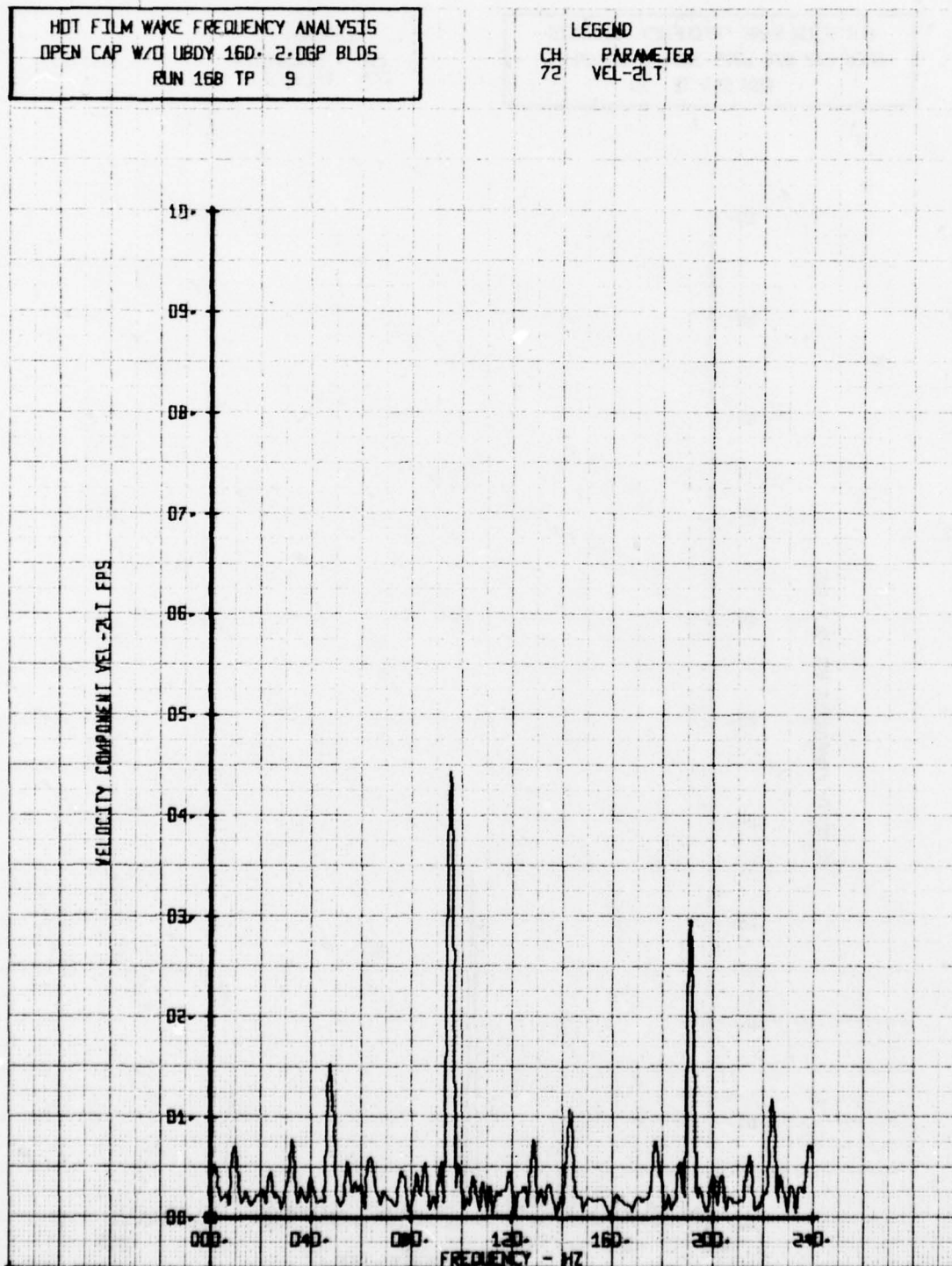
LEGEND
 72 PARAMETER
 VEL-2LT

VELOCITY COMPONENT VEL-2LT FPS



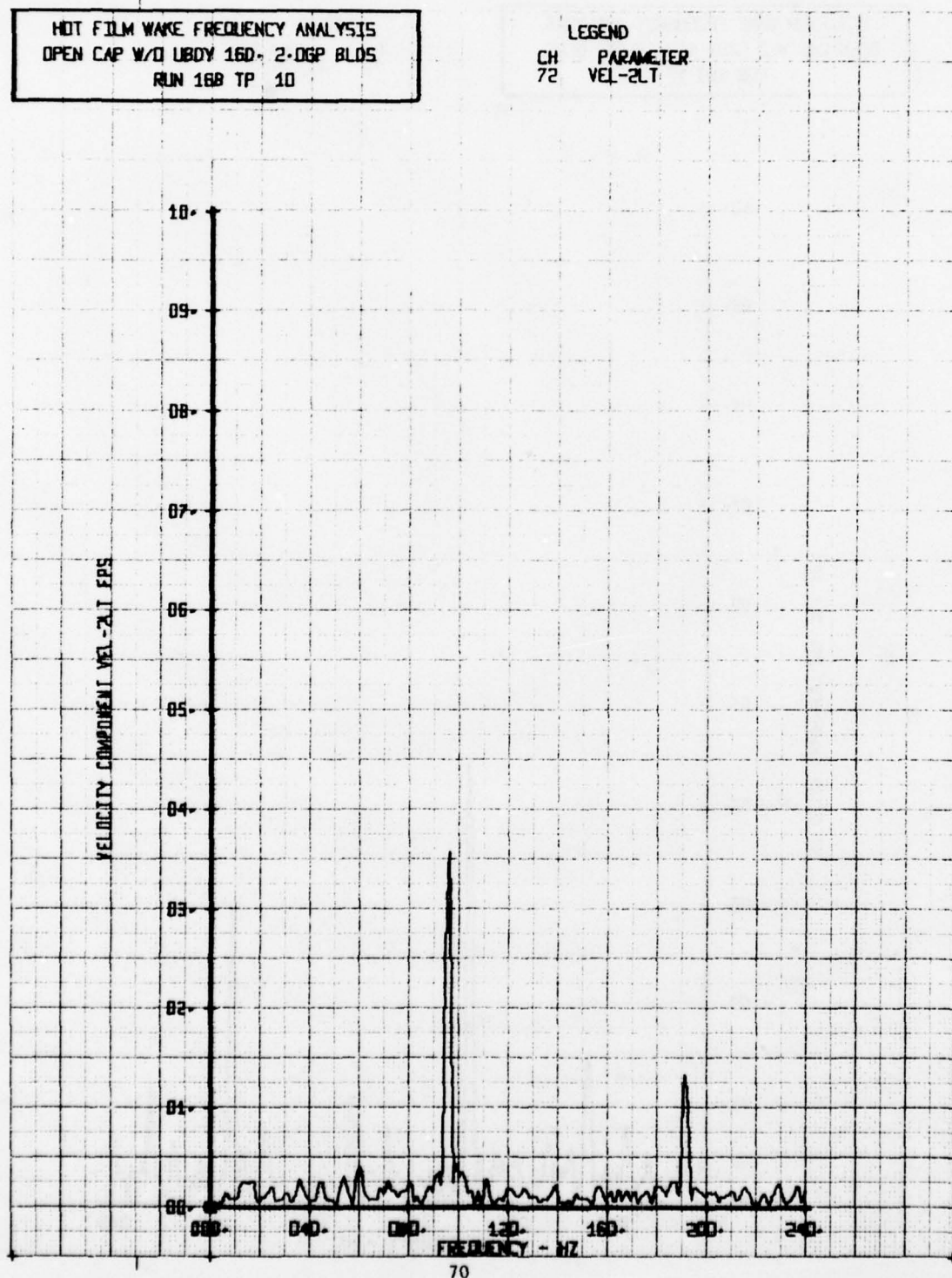
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160- 2-DGP BLDS
RUN 168 TP 9

LEGEND
CH 72 PARAMETER
VEL-2LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBODY 160- 2-0GP BLOS
RUN 168 TP 10

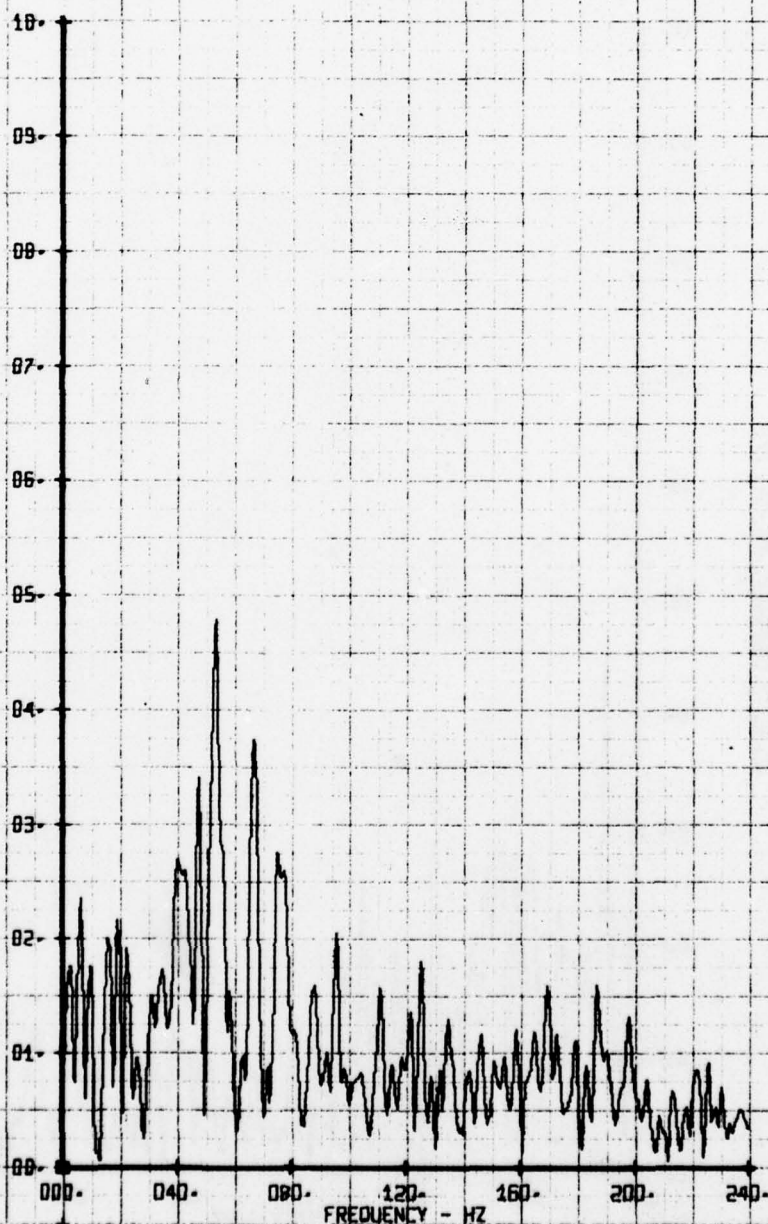
LEGEND
CH 72 PARAMETER
VEL-2LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160. 2.0GP BLOS
RUN 16B TP 4

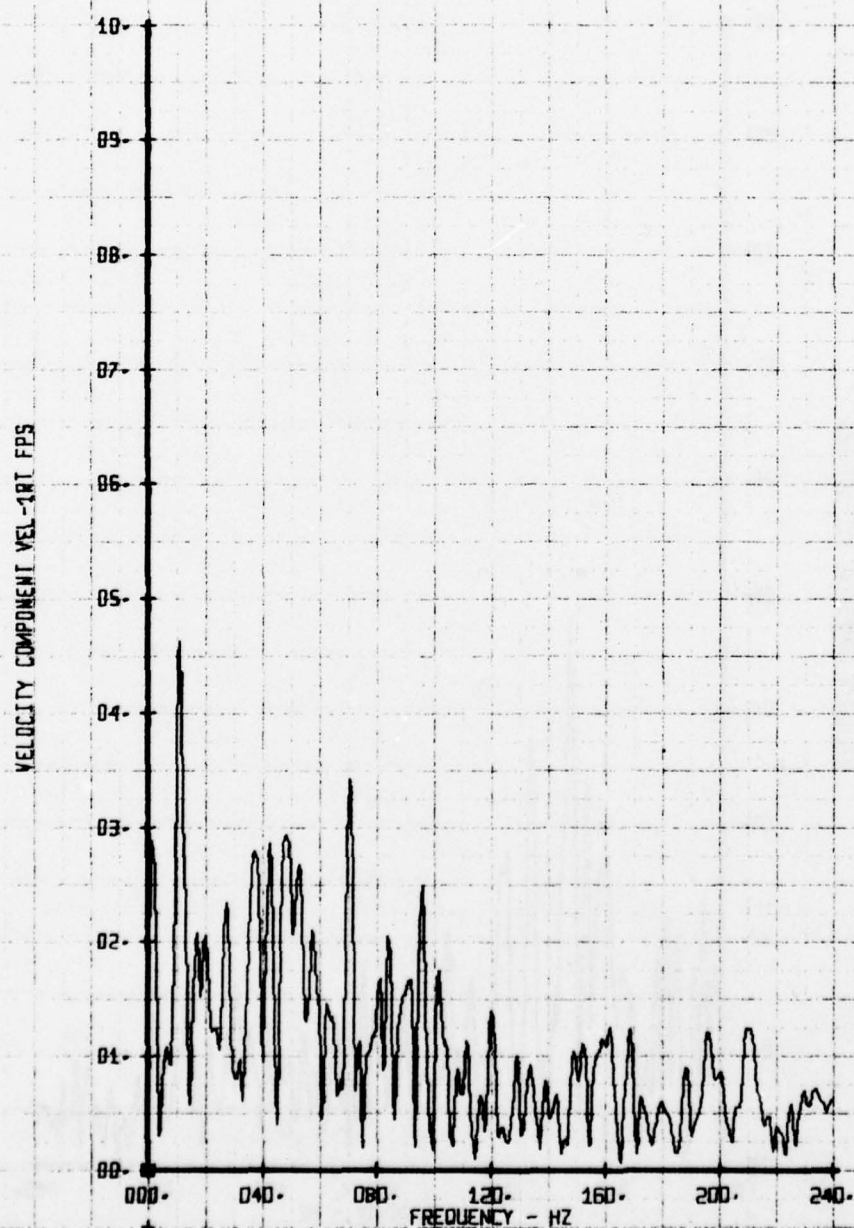
LEGEND
CH 74 PARAMETER
VEL-1RT

VELOCITY COMPONENT VEL-1RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.0GP BLOS
RUN 16B TP 5

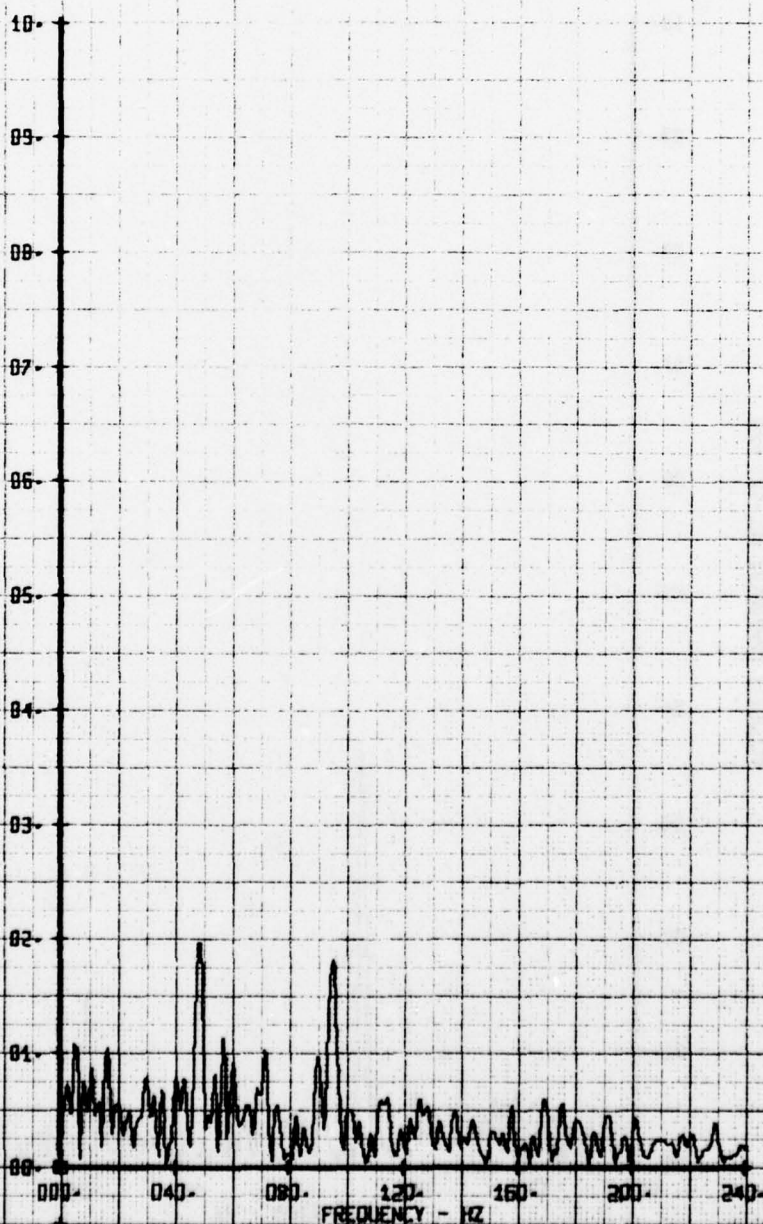
LEGEND
CH PARAMETER
74 VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160, 2.06P BLOS
RUN 16B TP 6

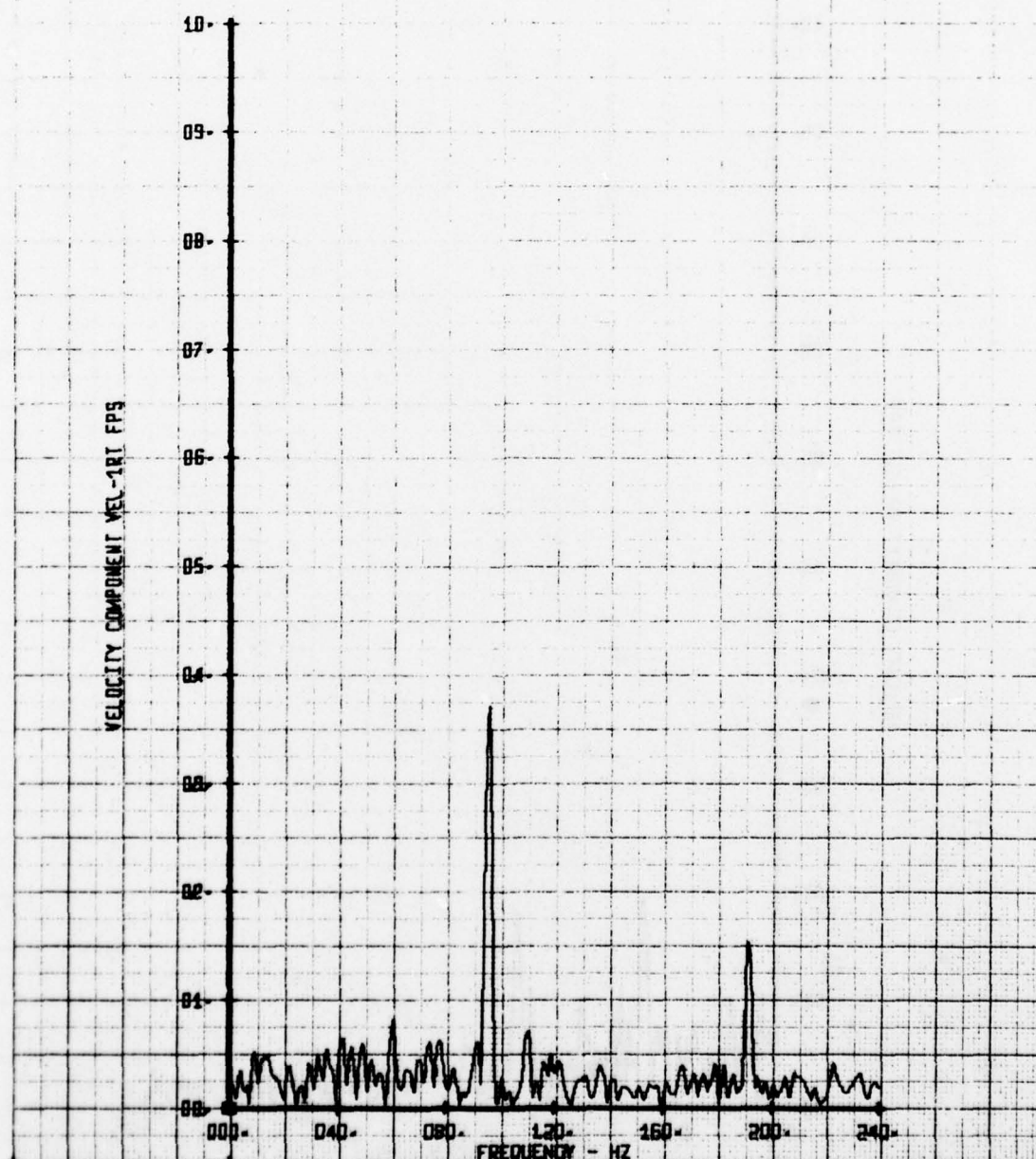
LEGEND
CH PARAMETER
74 VEL-1RT

VELOCITY COMPONENT VEL-1RT FPS



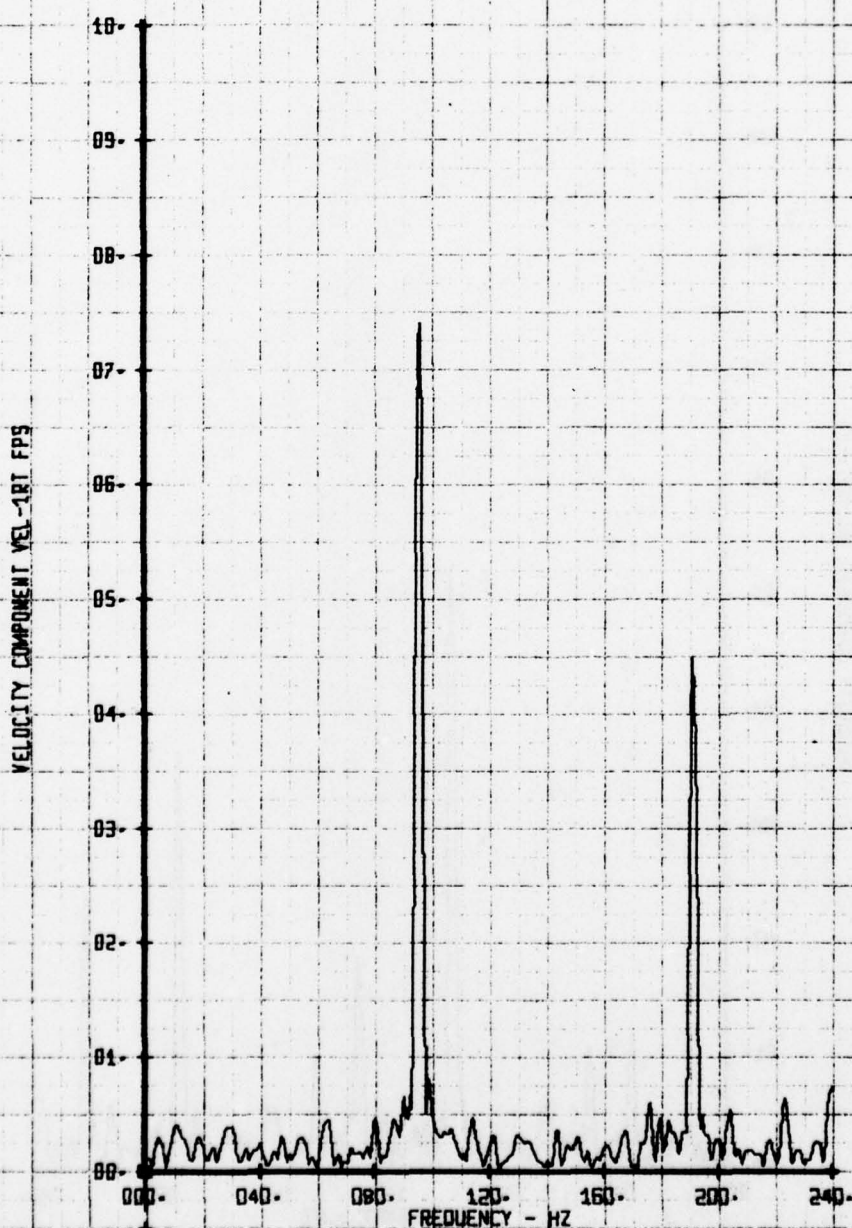
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.06P BLOS
RUN 16B TP 7

LEGEND
CH PARAMETER
74 VEL-1RT



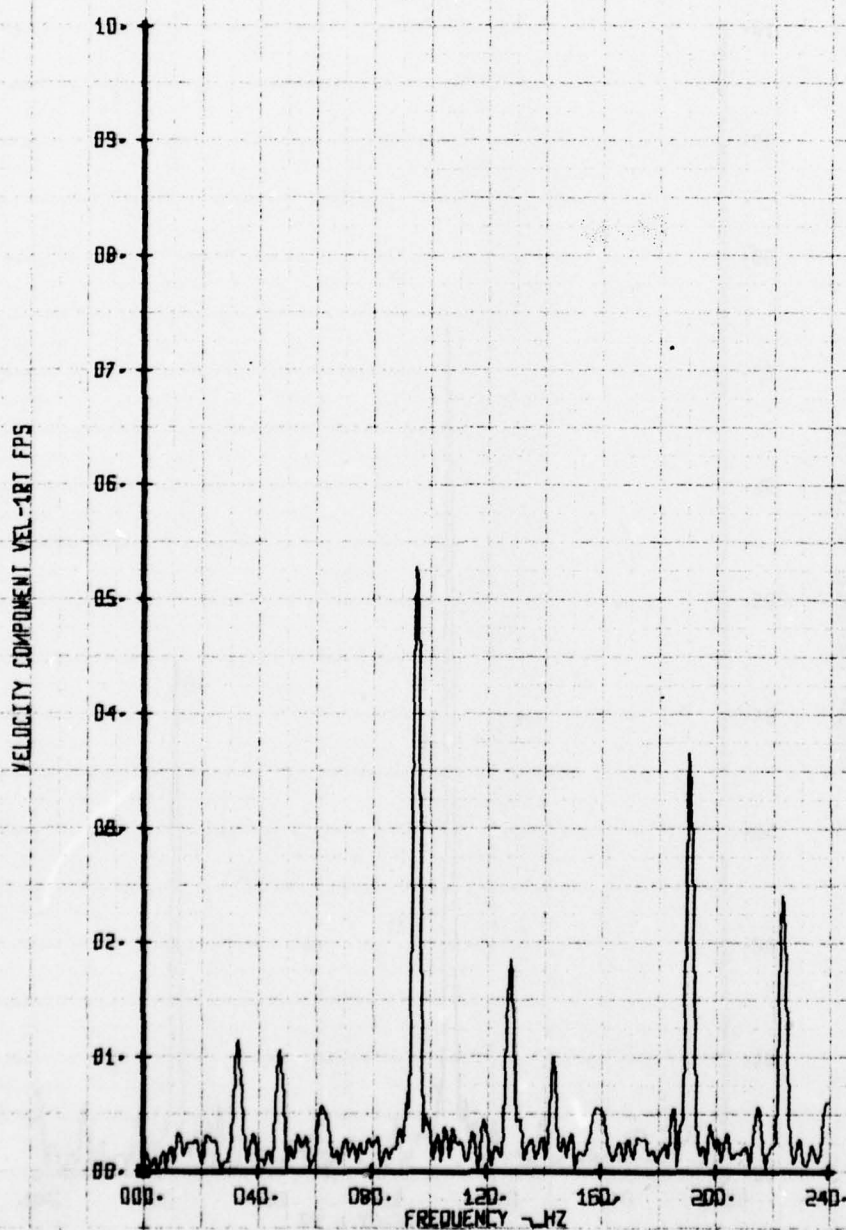
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 16D: 2.0GP 8LOS
RUN 16B TP 8

LEGEND
CH 74 PARAMETER
VEL-1RT



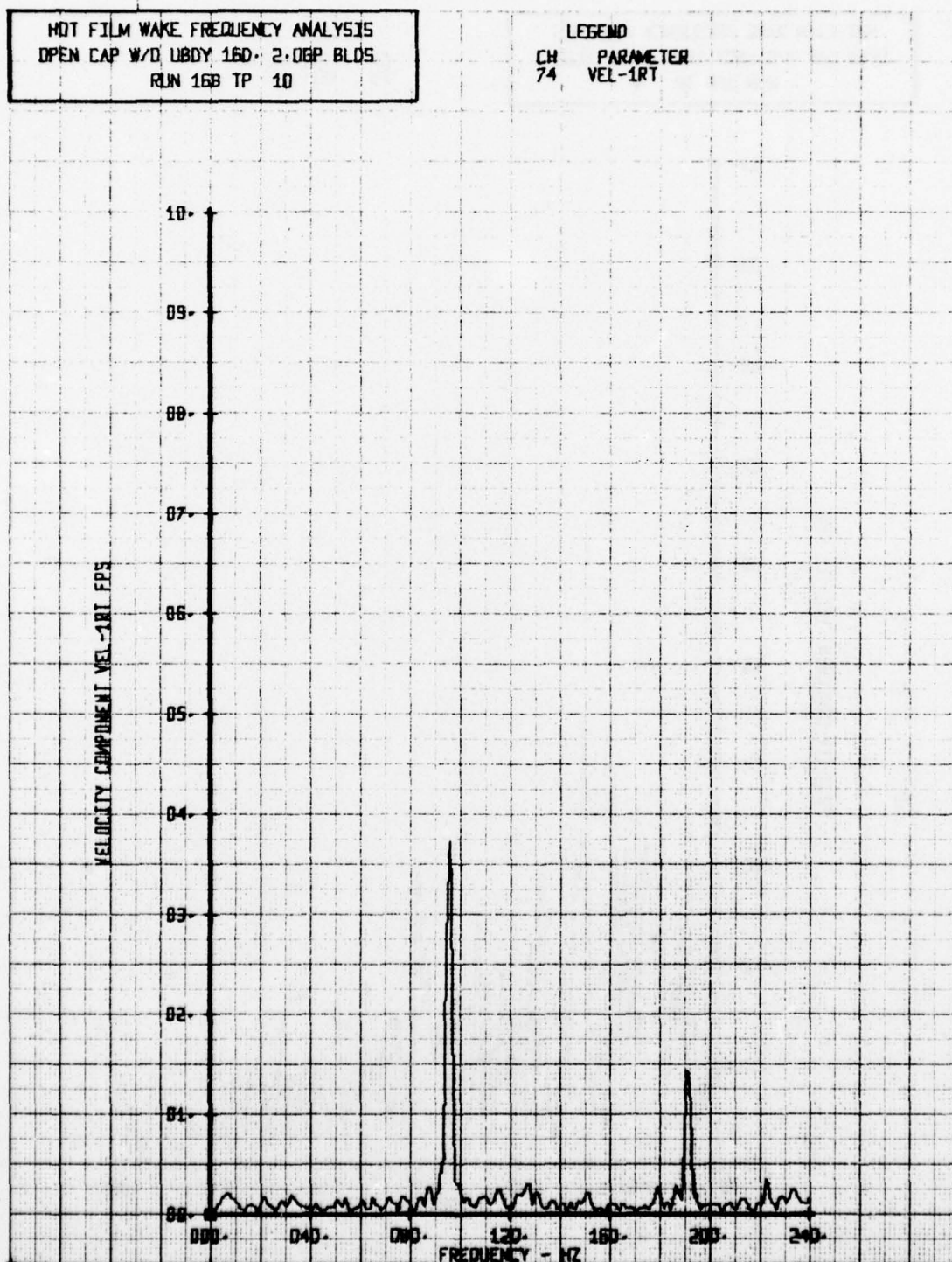
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160. 2.0GP BLOS
RUN 168 TP 9

LEGEND
CH 74 PARAMETER
VEL-1RT



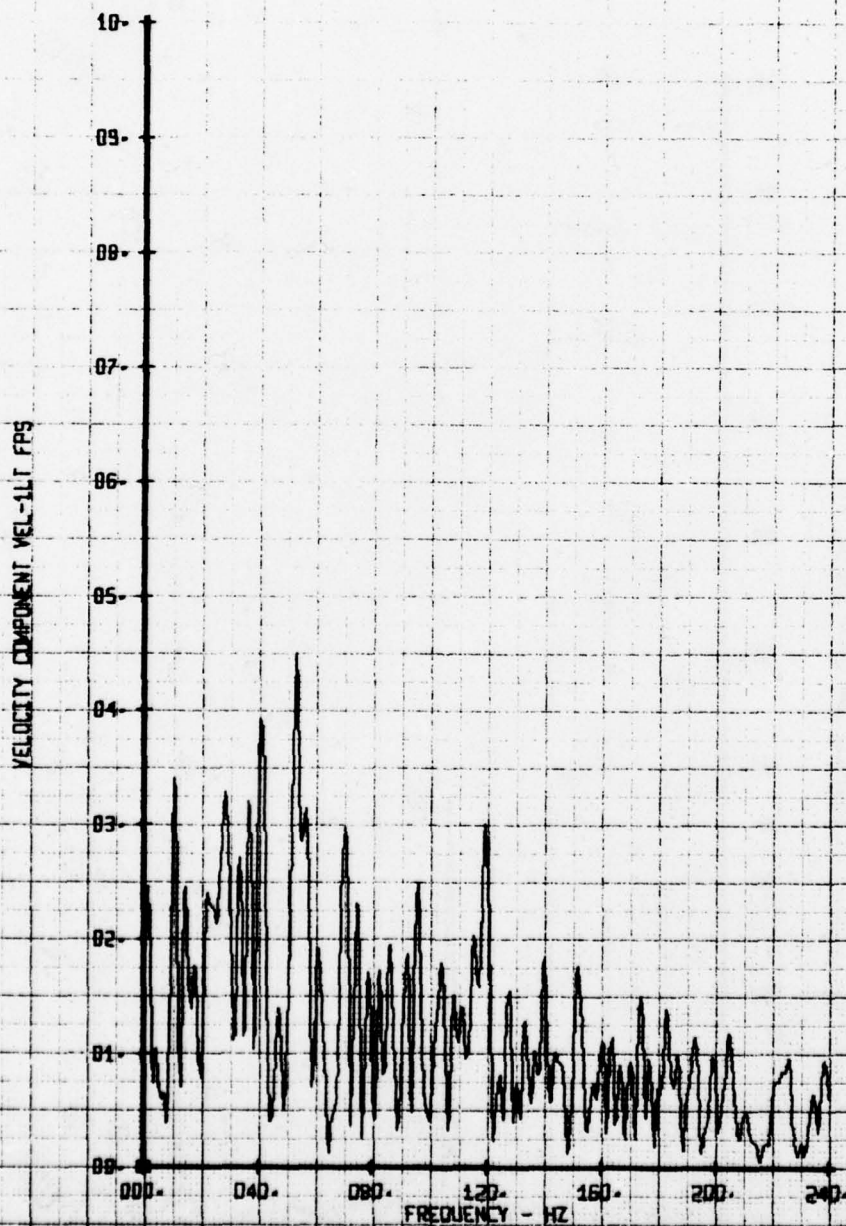
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160. 2.0BP BLOS
RUN 16B TP 10

LEGEND
CH PARAMETER
74 VEL-1RT



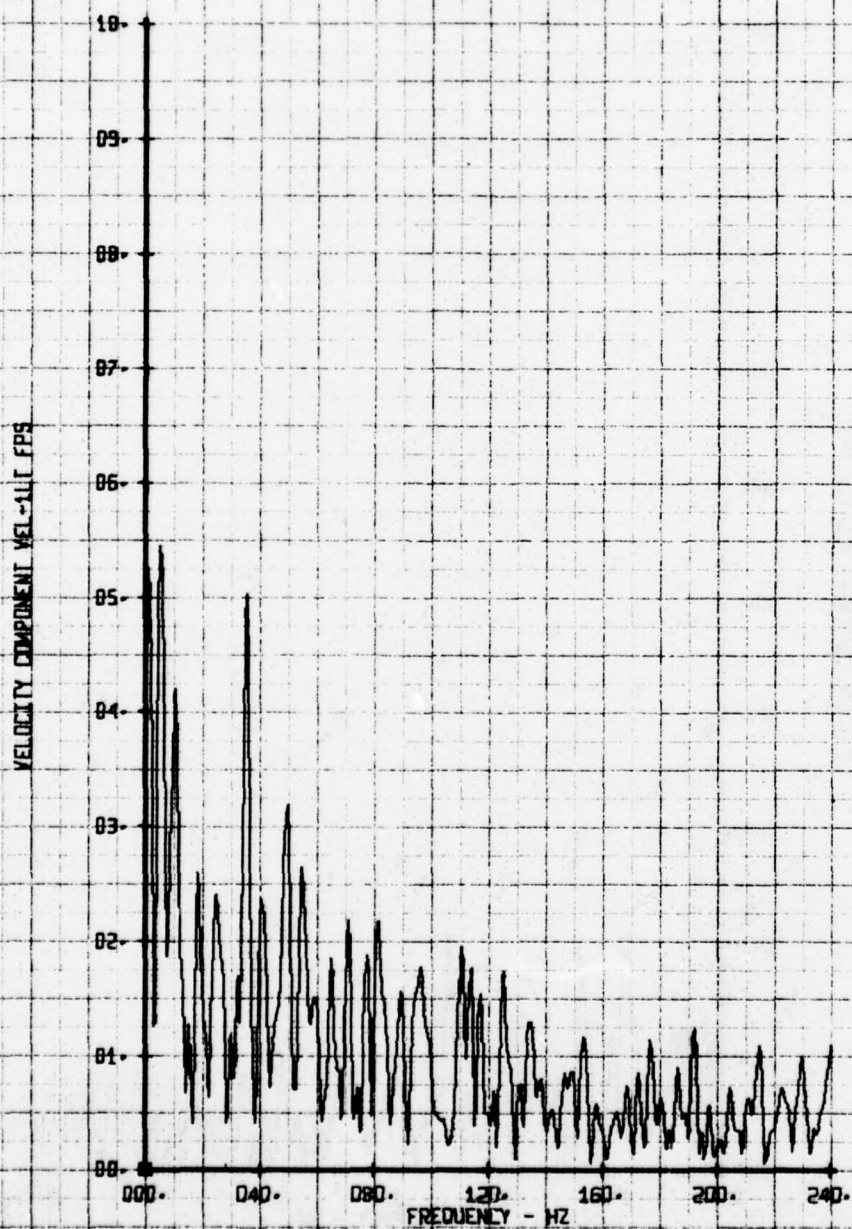
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160. 2.06P BLOS
RUN 16B TP 4

LEGEND
CH PARAMETER
73 VEL-1LT



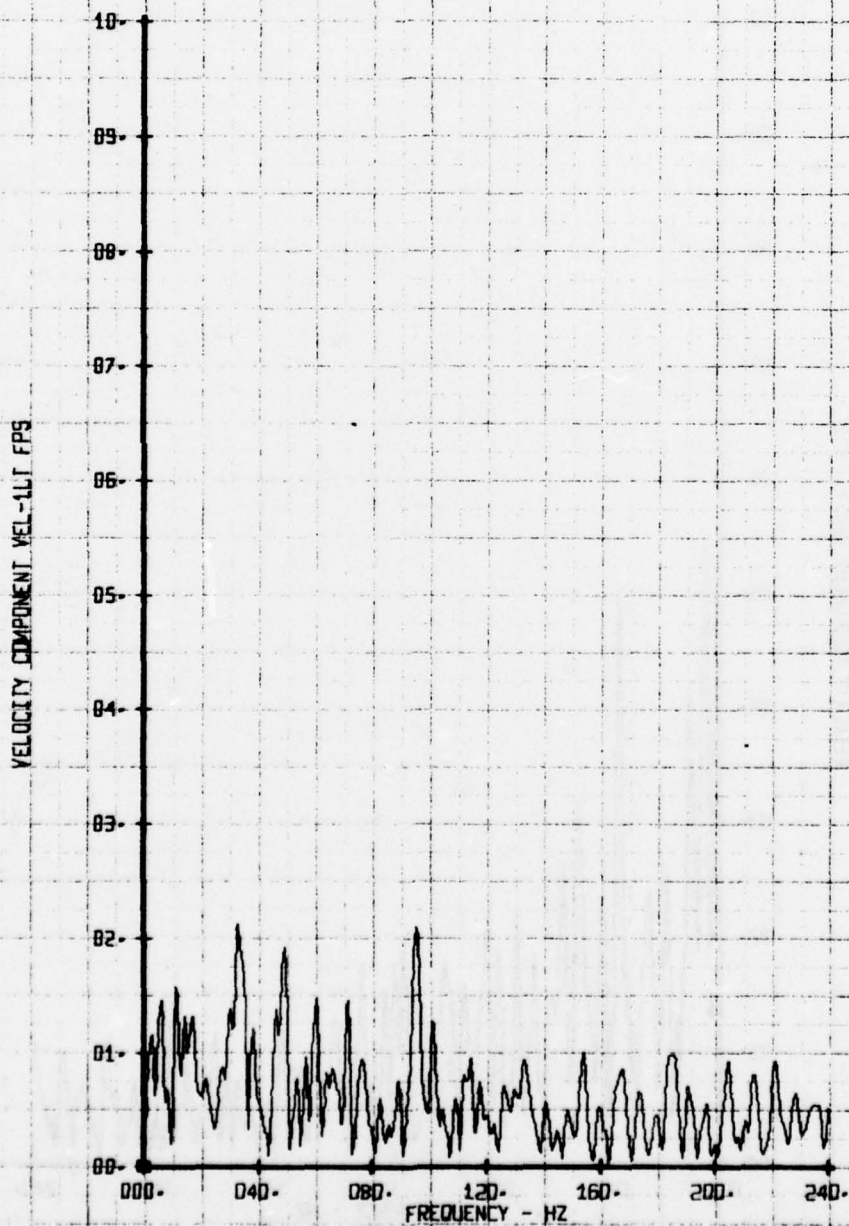
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBOY 160. 2.0BP BLOS
RUN 168 TP 5

LEGEND
CH 73 PARAMETER
VEL-1LT



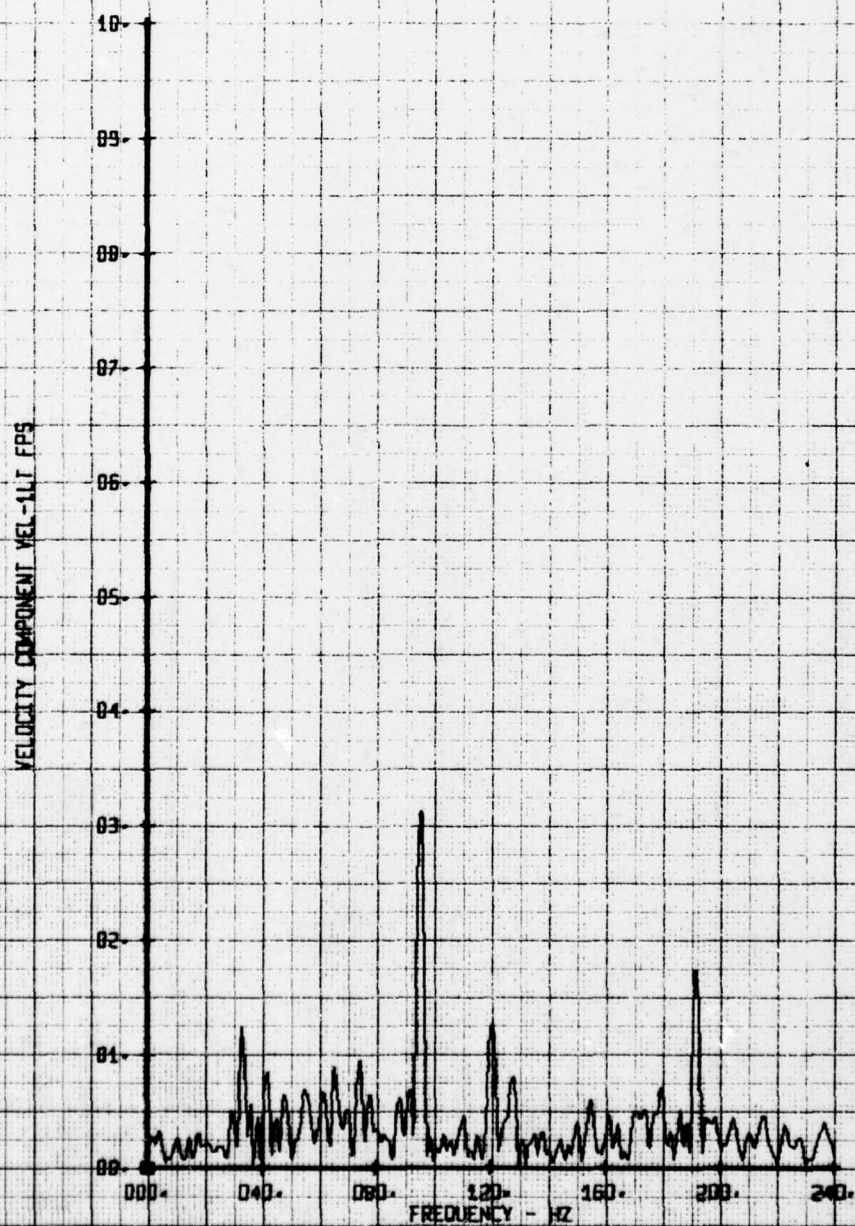
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UDDY 160 2-DEP BLOS
RUN 16B TP 6

LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160. 2.06P BIDS
RUN 16B TP 7

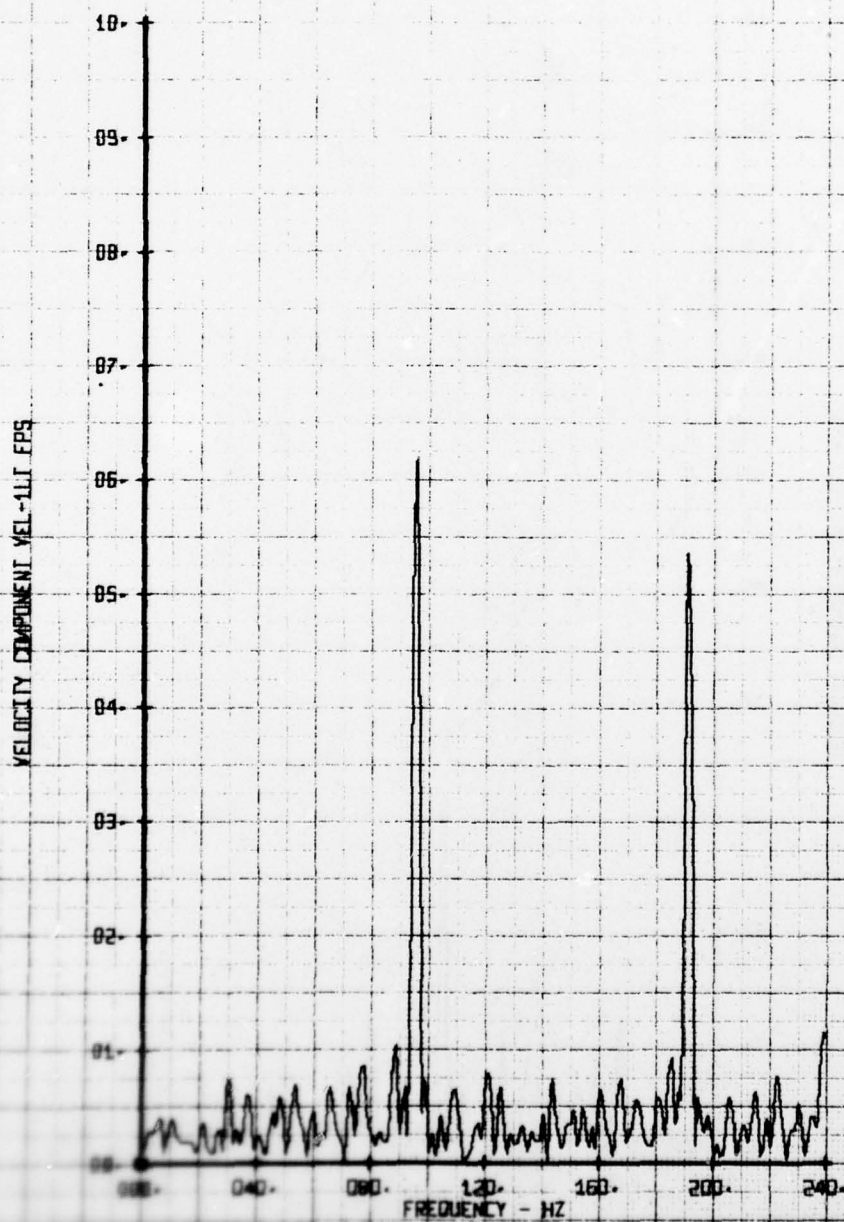
LEGEND
CH PARAMETER
73 VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160 2.0BP BLOS
RUN 168 TP 8

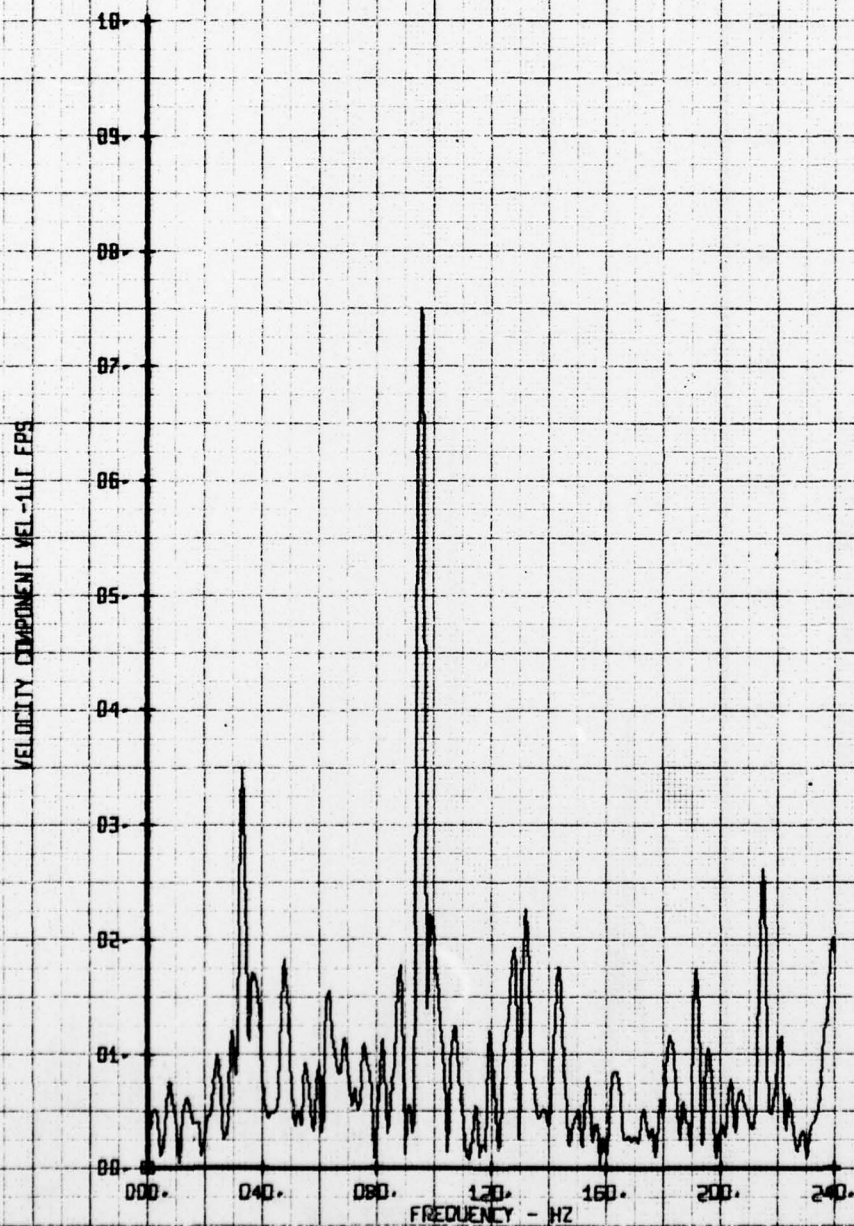
LEGEND

CH PARAMETER
73 VEL-1LT



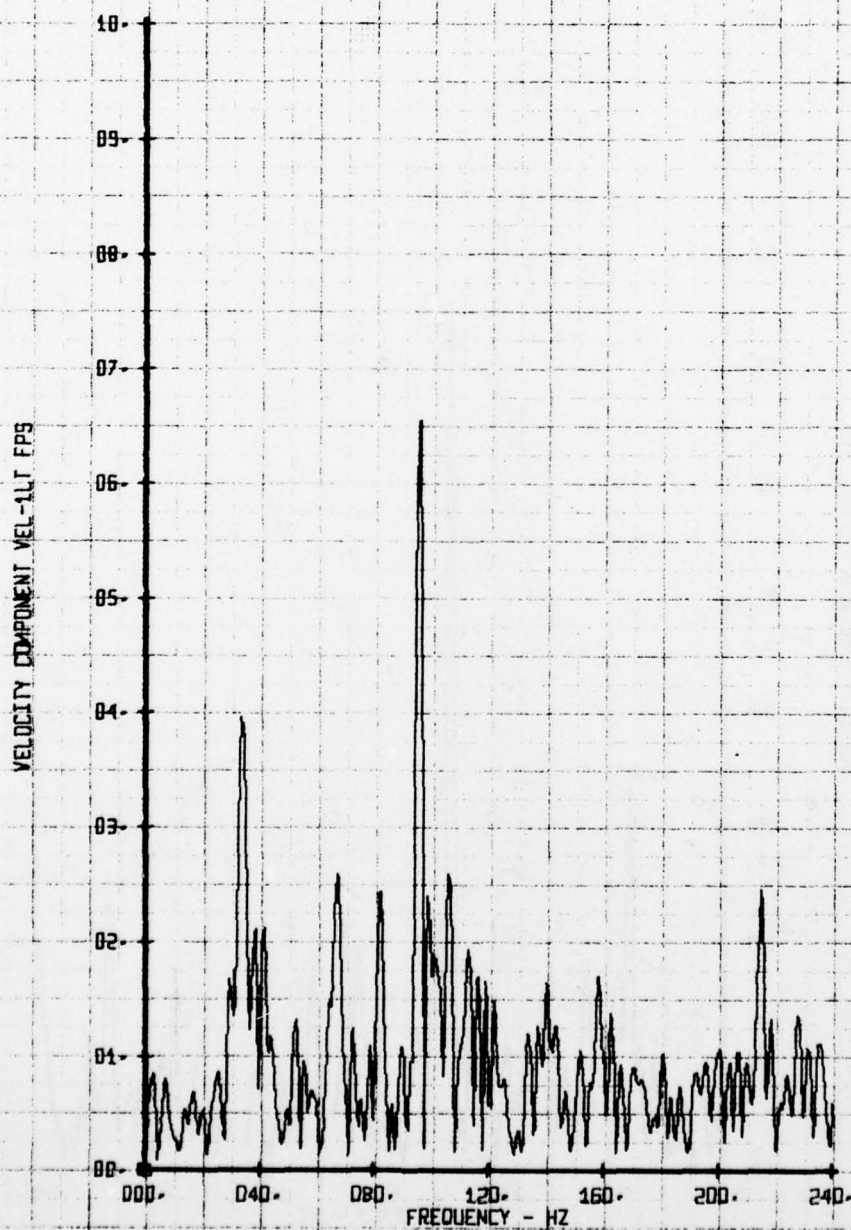
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBOY 160- 2-DEP BLOS
RUN 168 TP 9

LEGEND
CH 73 PARAMETER
VEL-1LT



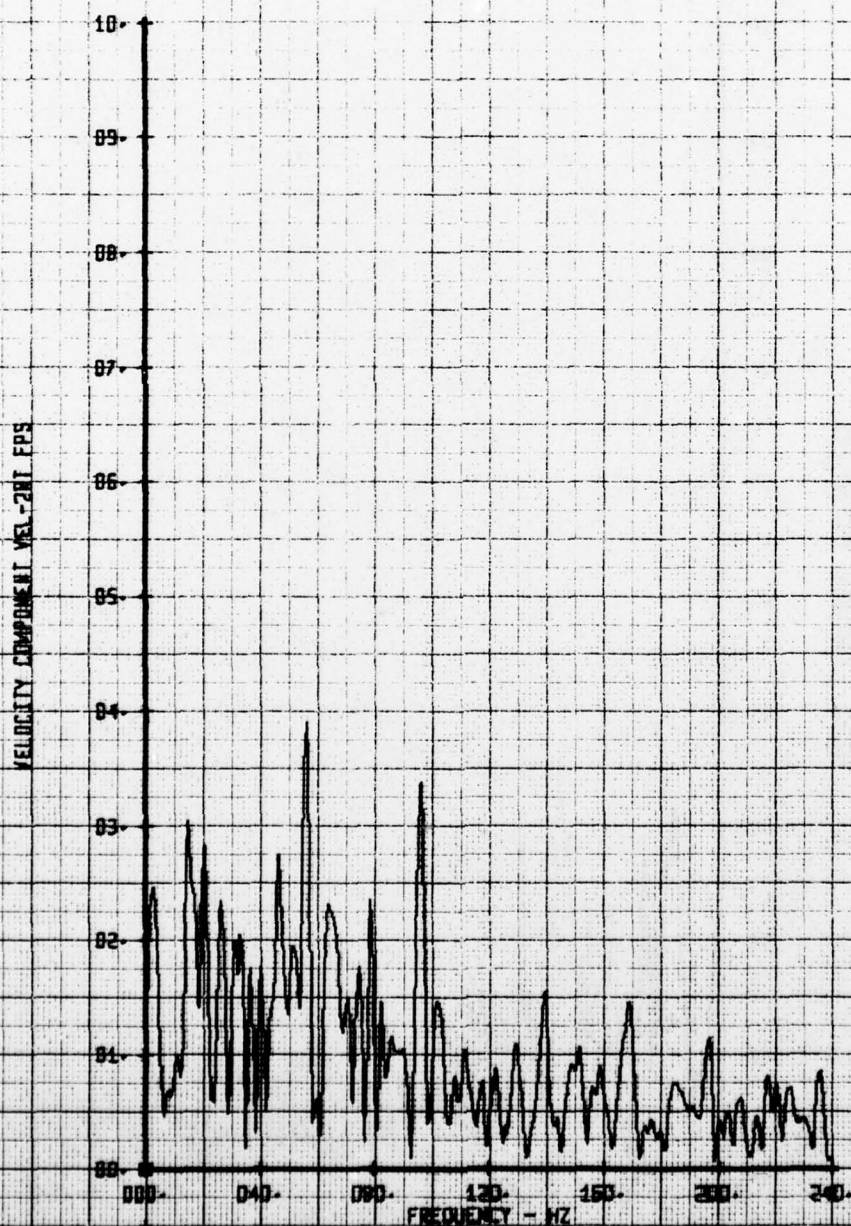
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OPEN CAP W/O UBDY 160- 2.06P BLOS
RUN 16B TP 10

LEGEND
CH 73 PARAMETER
VEL-1LT



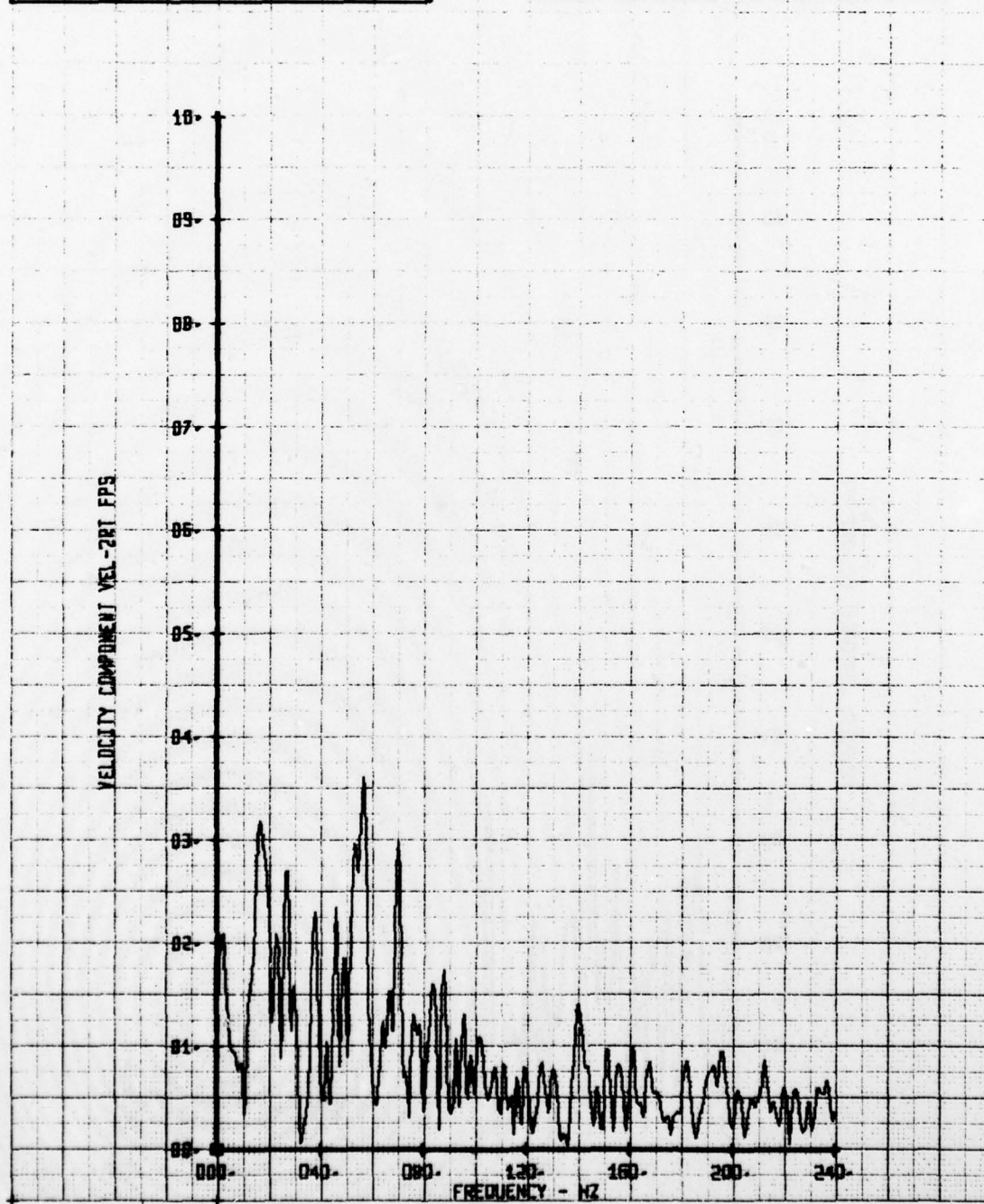
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LB DY 160. 2.06P BLOS
RUN 16B TP 4

LEGEND
CH 75
PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160- 2-DEG BLOS
RUN 168 TP 5

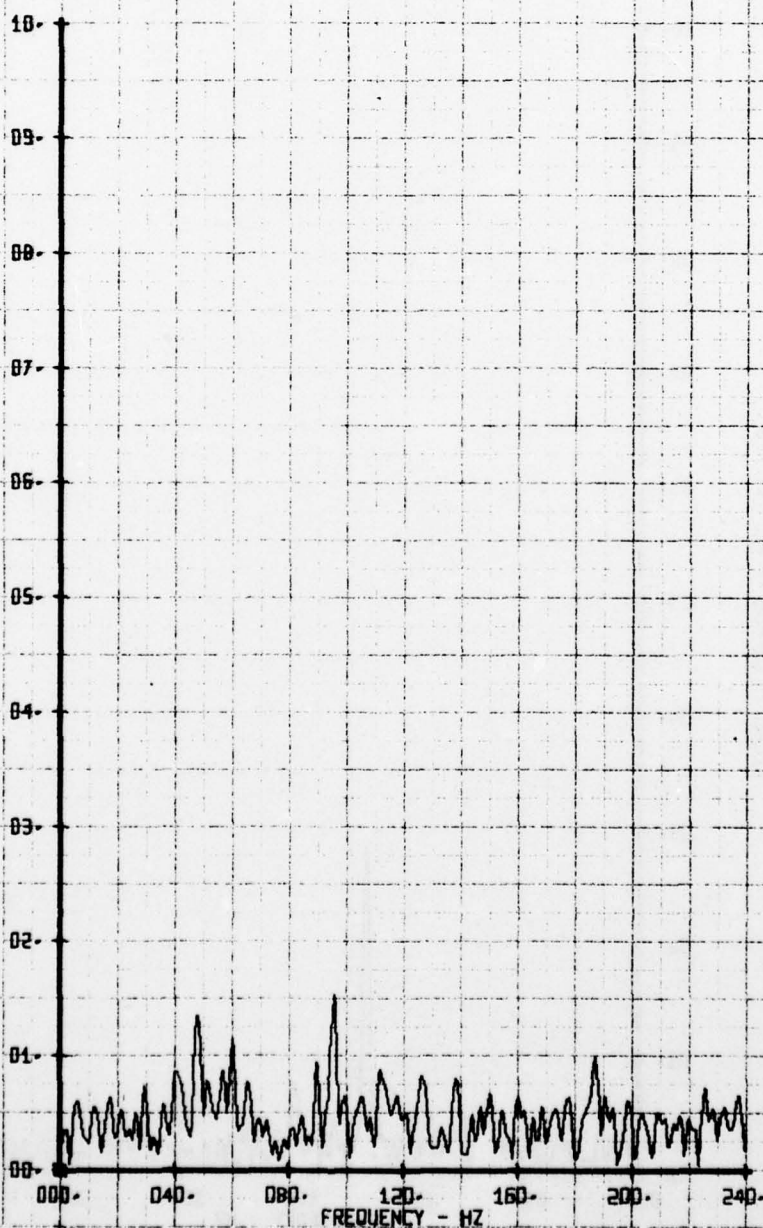
LEGEND
CH. PARAMETER
75 VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160- 2.06P BLOS
RUN 16B TP 6

LEGEND
CH PARAMETER
75 VEL-2RT

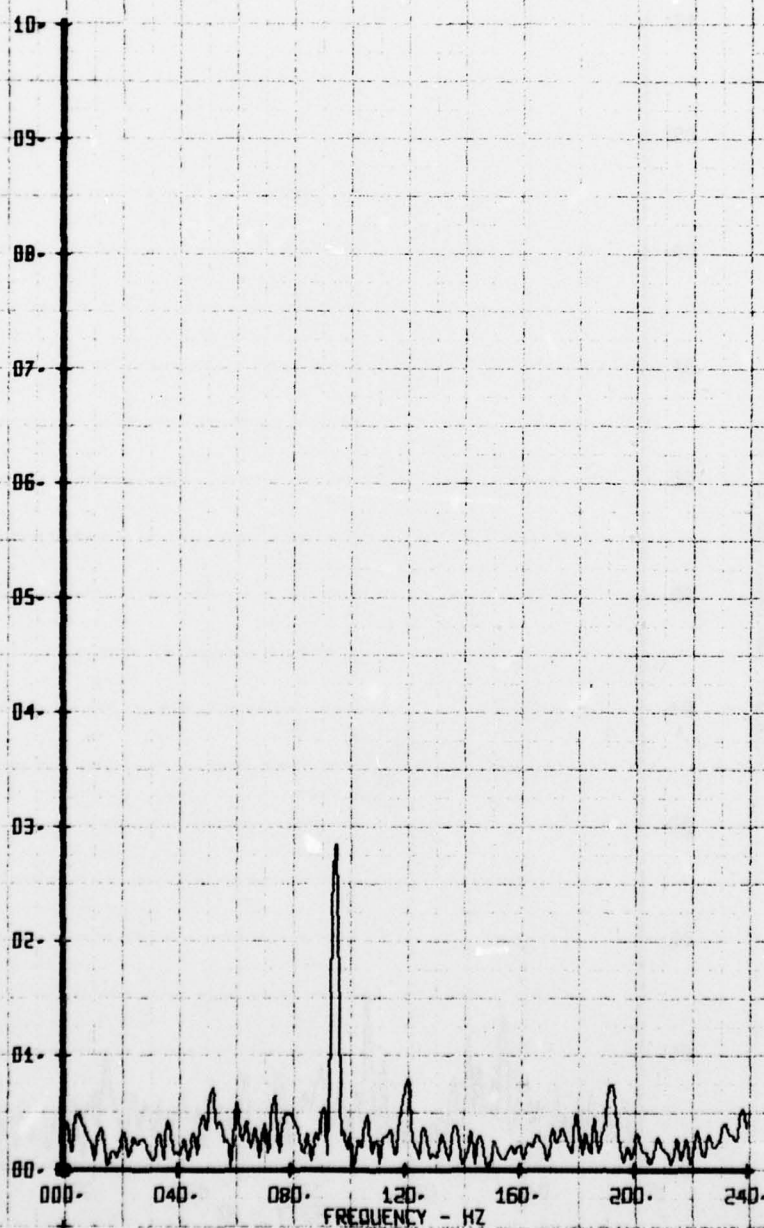
VELOCITY COMPONENT VEL-2RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.06P 8LOS
RUN 16B TP 7

LEGEND
CH 75 PARAMETER
VEL-2RT

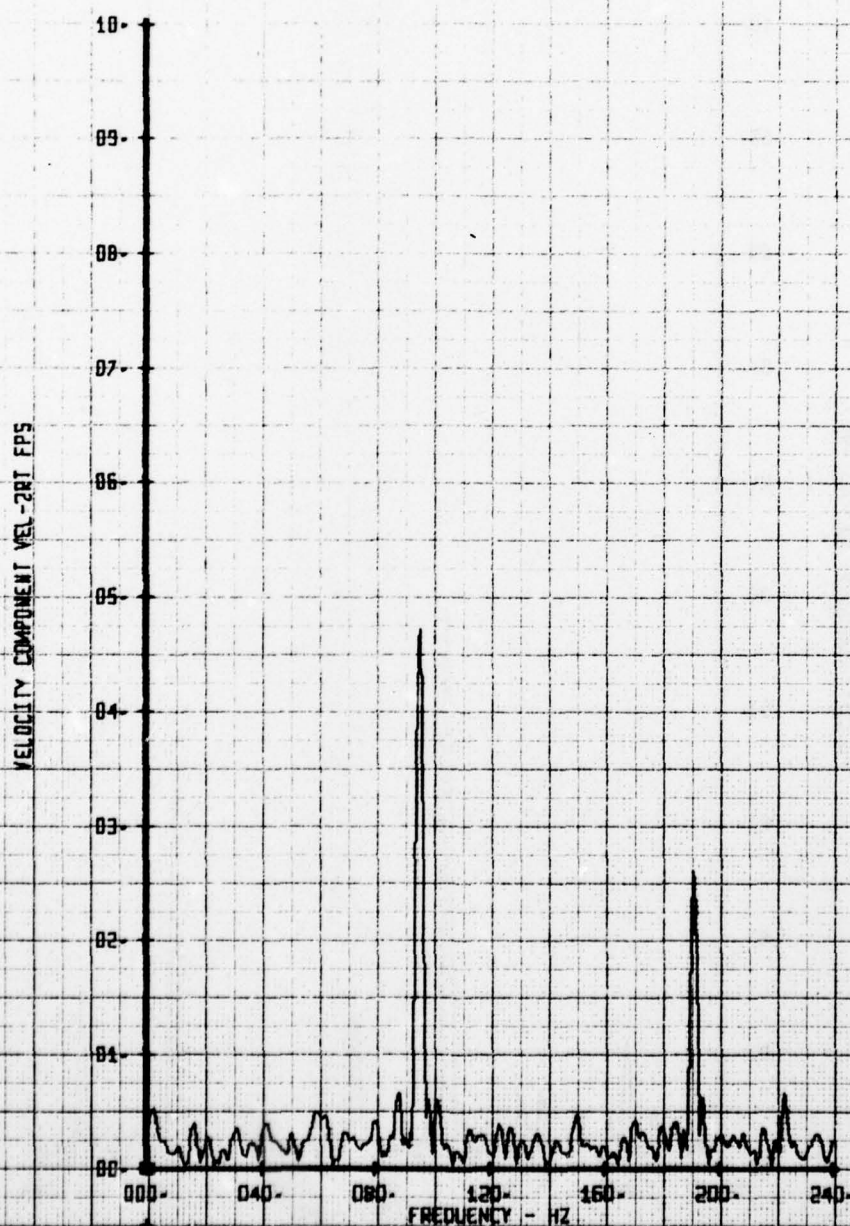
VELOCITY COMPONENT VEL-2RT FPS



FREQUENCY - HZ

HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 16D- 2-0GP BLOS
RUN 16B TP B

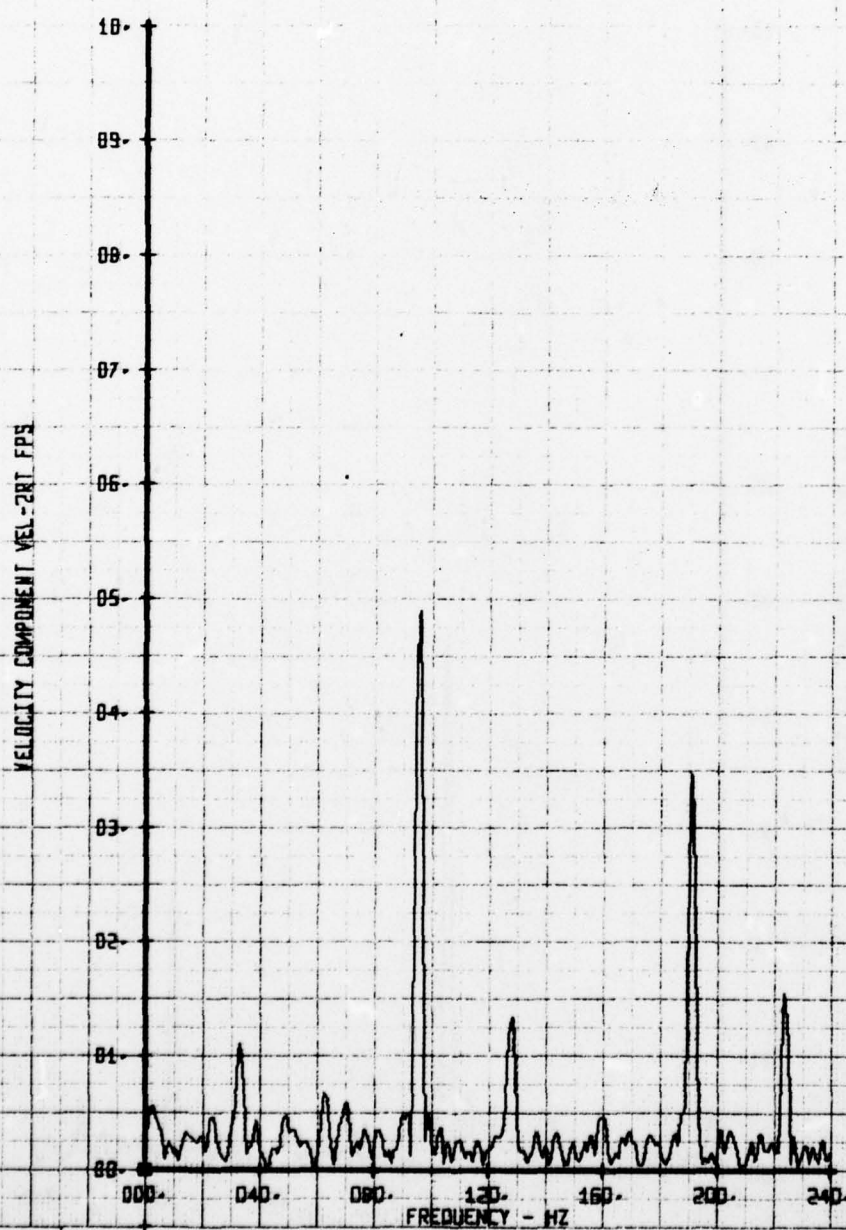
LEGEND
CH 75 PARAMETER
VEL-2RT



HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBODY 160. 2.06P BLOS
RUN 168 TP 9

LEGEND

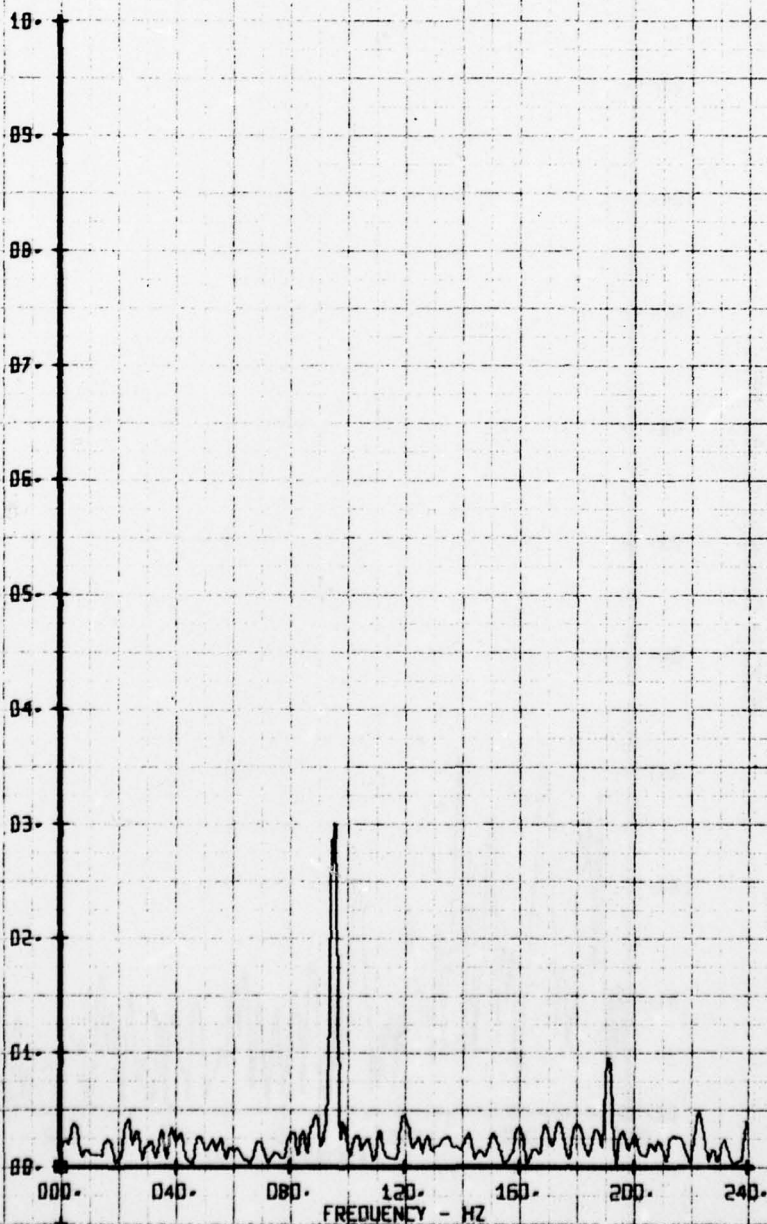
CH 75 PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UDDY 160. 2.0GP BLOS
RUN 16B TP 10

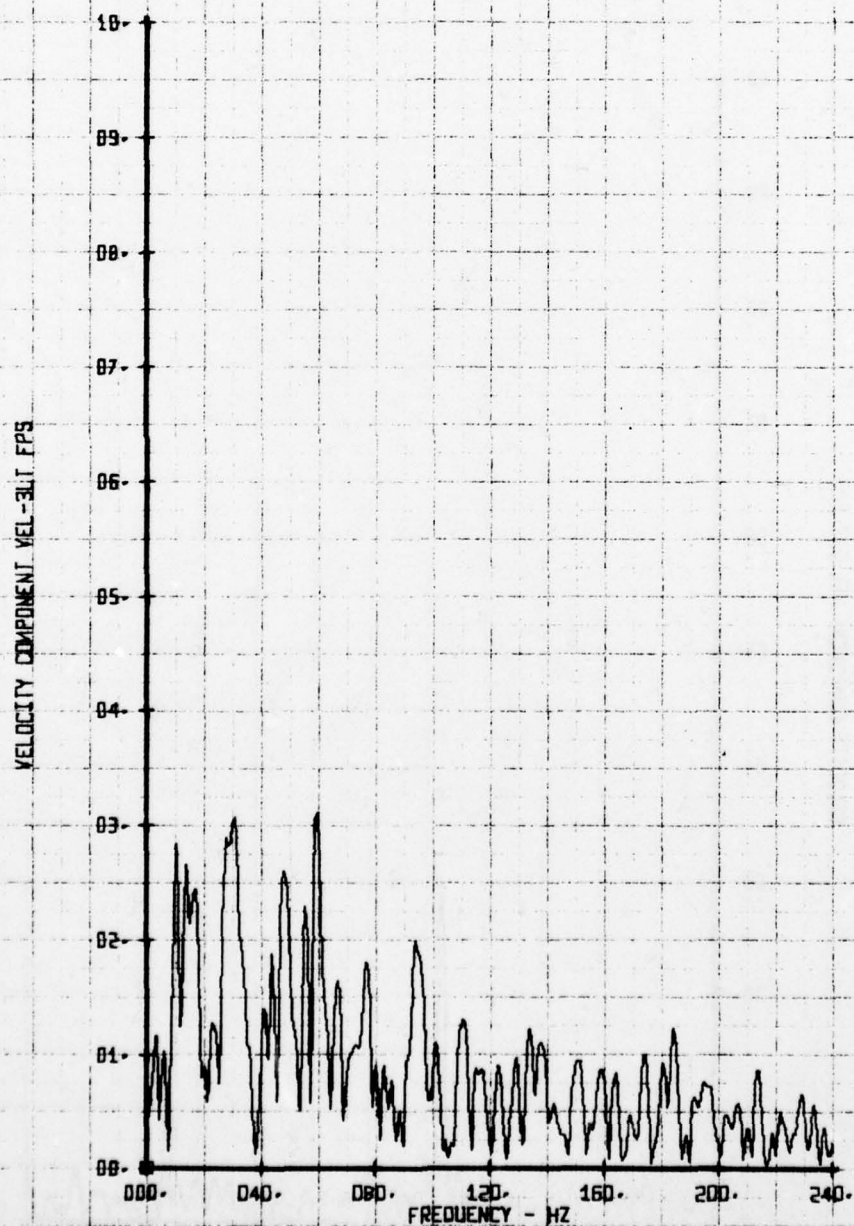
LEGEND
CH 75 PARAMETER
VEL-2RT

VELOCITY COMPONENT VEL-2RT FPS



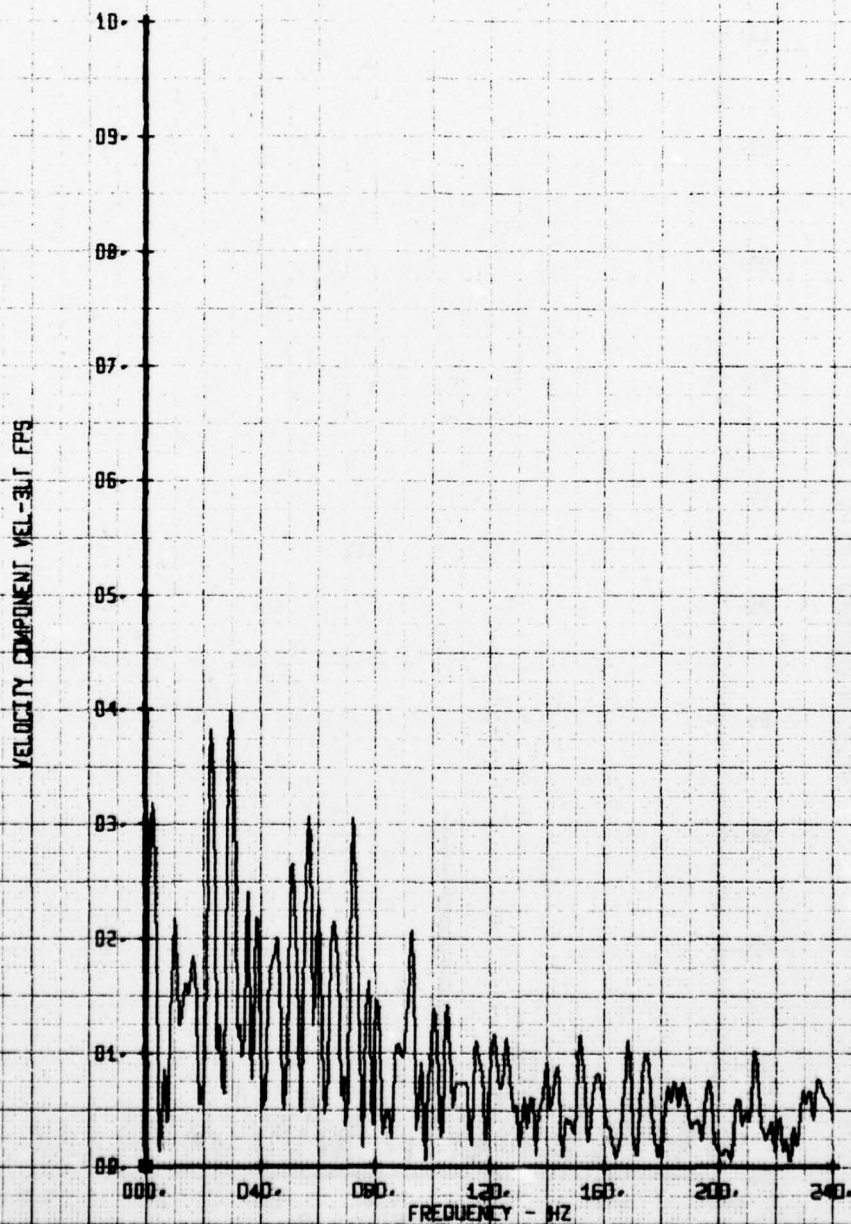
HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBDY 160. 2.06P BLOS
RUN 168 TP 4

LEGEND
CH 70 PARAMETER
VEL-3LT



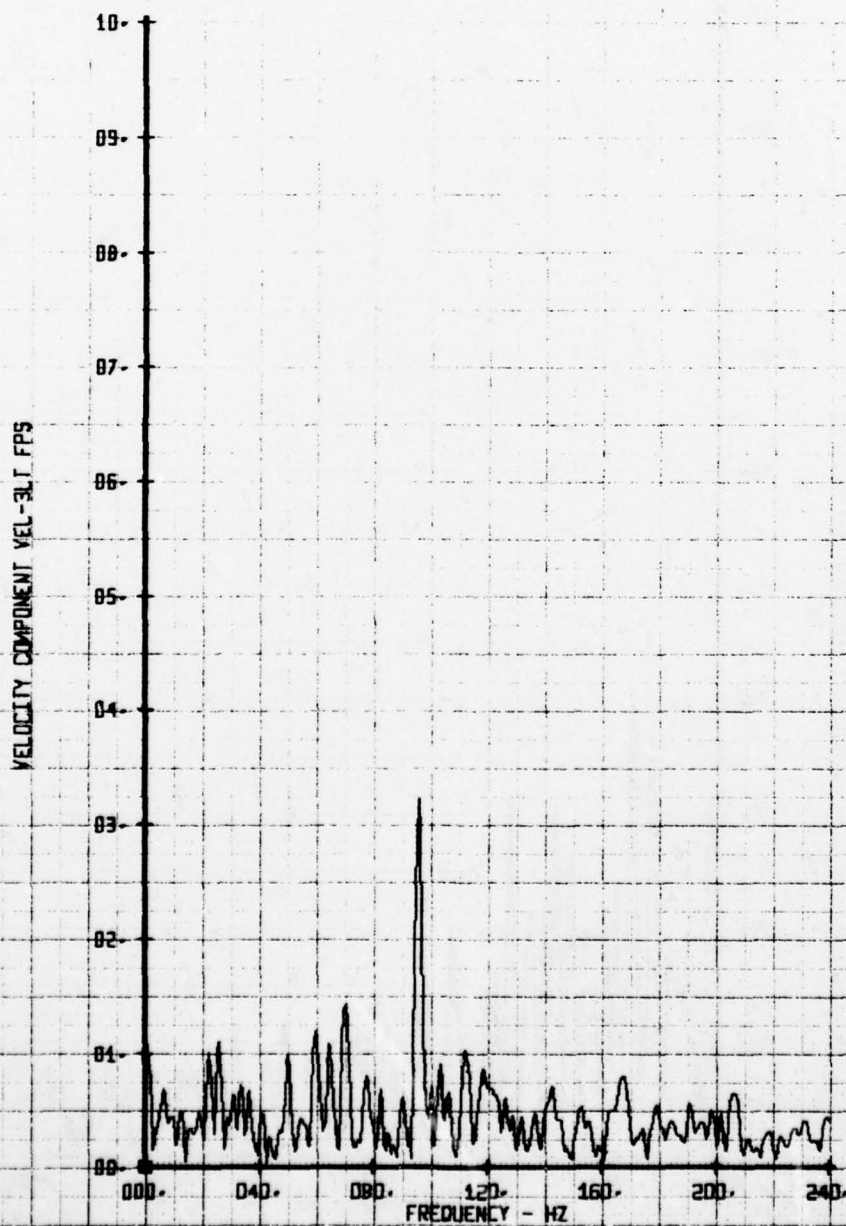
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBODY 160. 2.0GP BLOS
RUN 16B TP 5

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160. 2.0GP BLD5
RUN 16B TP 6

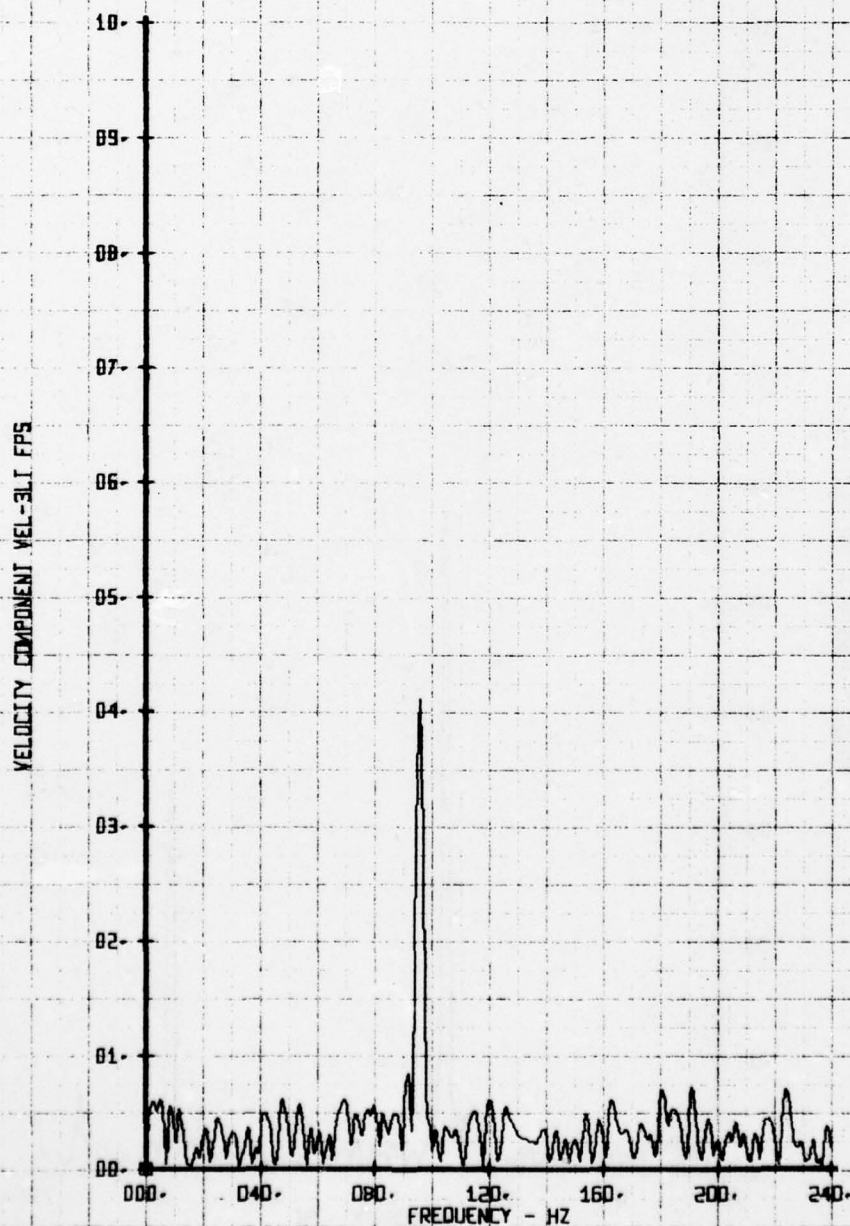
LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.0BP BLOS
RUN 168 TP 7

LEGEND

CH: PARAMETER
70 VEL-3LT



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BOEING VERTOL CO PHILADELPHIA PA

F/G 1/3

INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONF--ETC(U)

SEP 78 P F SHERIDAN

DAAJ02-77-C-0020

UNCLASSIFIED

USARTL-TR-78-23H

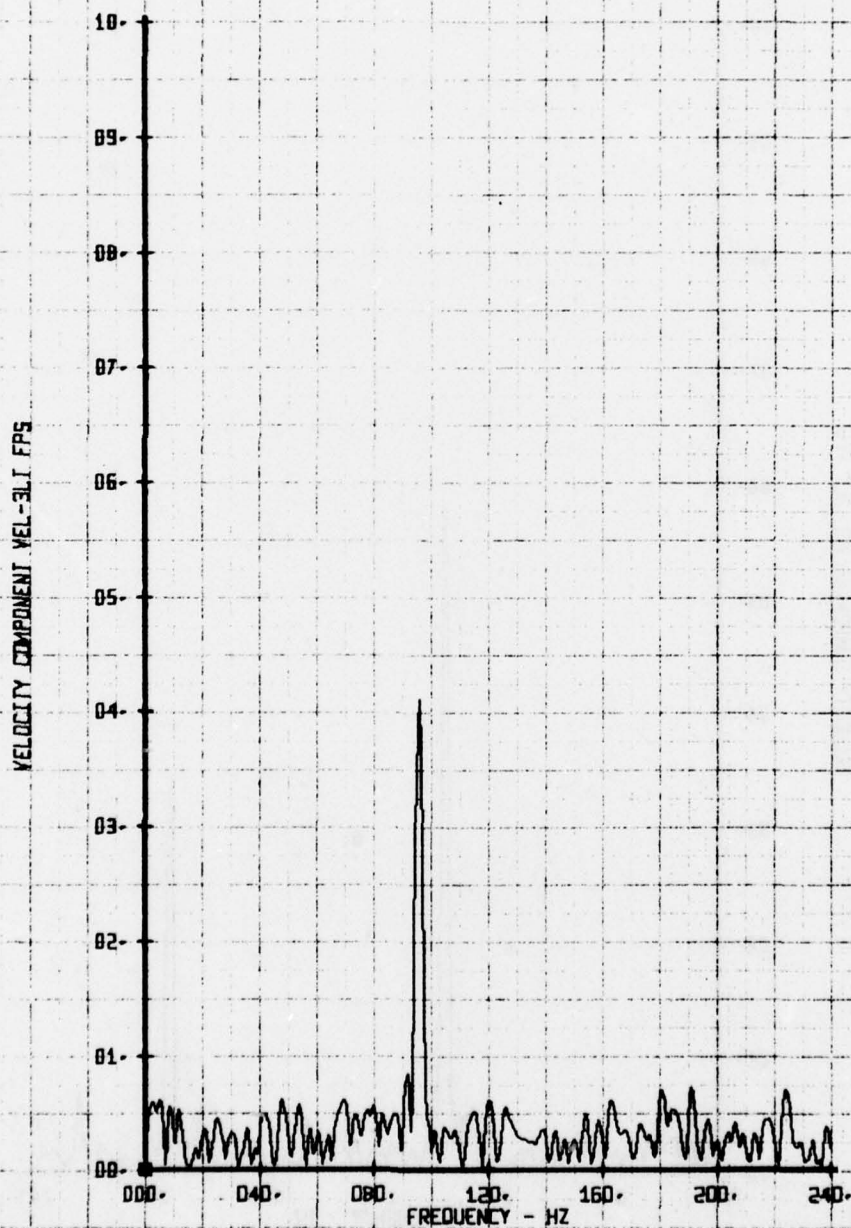
NL

2 OF 3
AD
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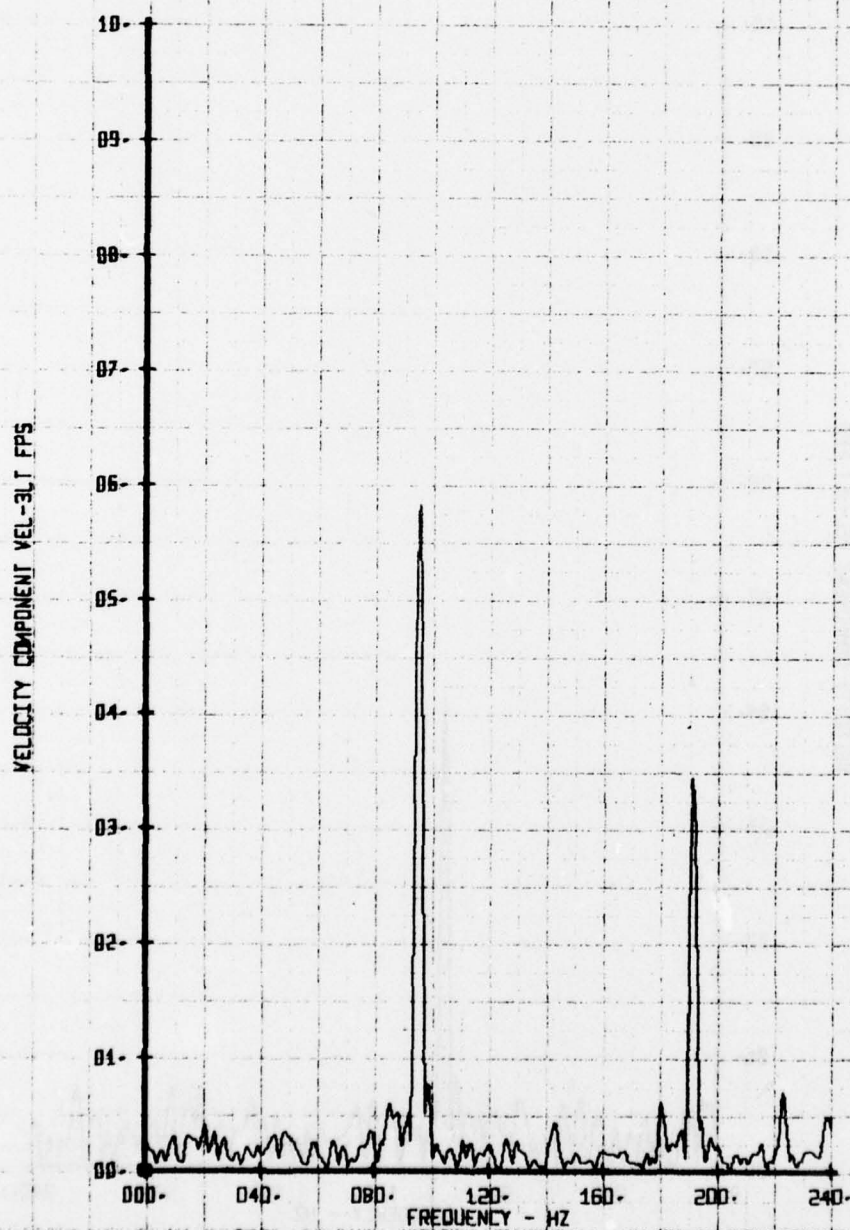
HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160. 2-DEP BLOS
RUN 168 TP 7

LEGEND
CH: PARAMETER
70: VEL-3LT



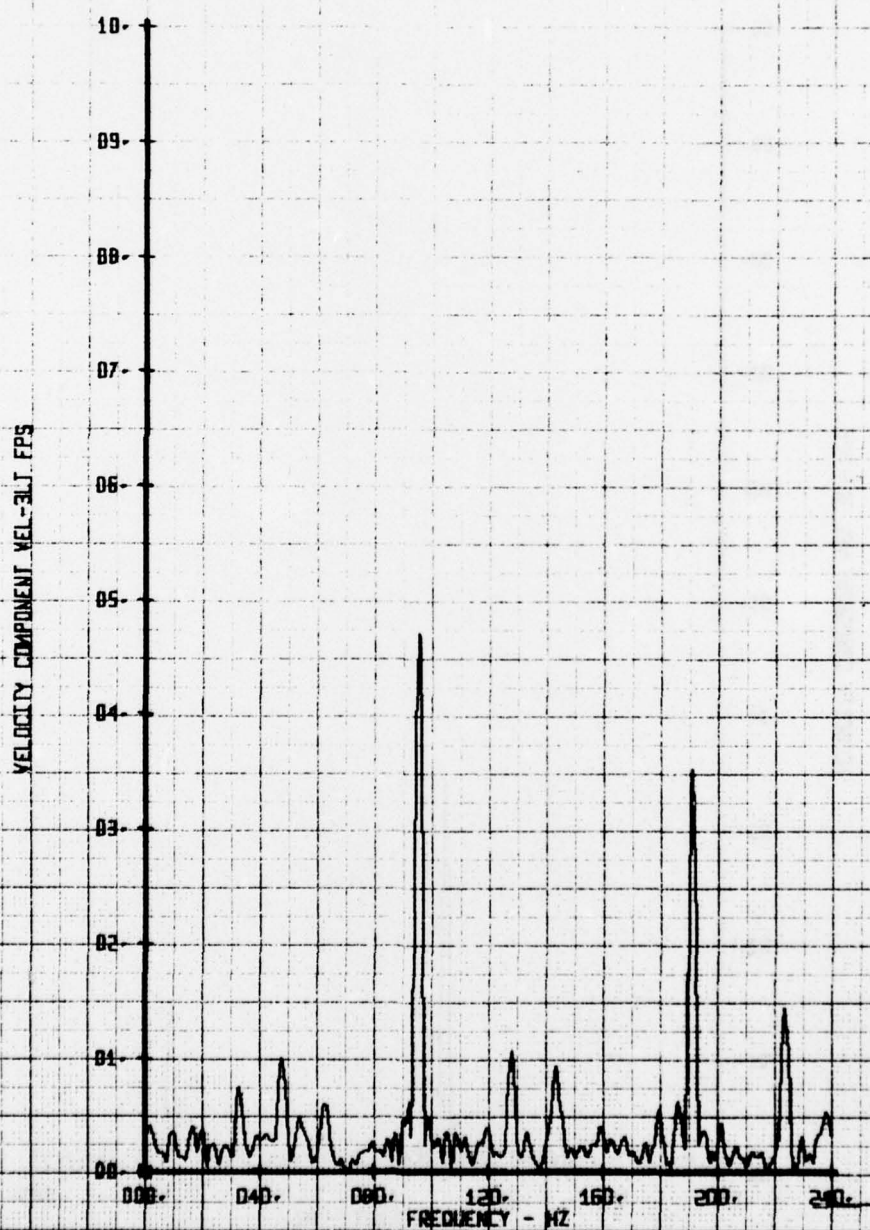
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O LBDY 160. 2.0GP BLOS
RUN 16B TP 8

LEGEND
CH 70 PARAMETER
VEL-3LT



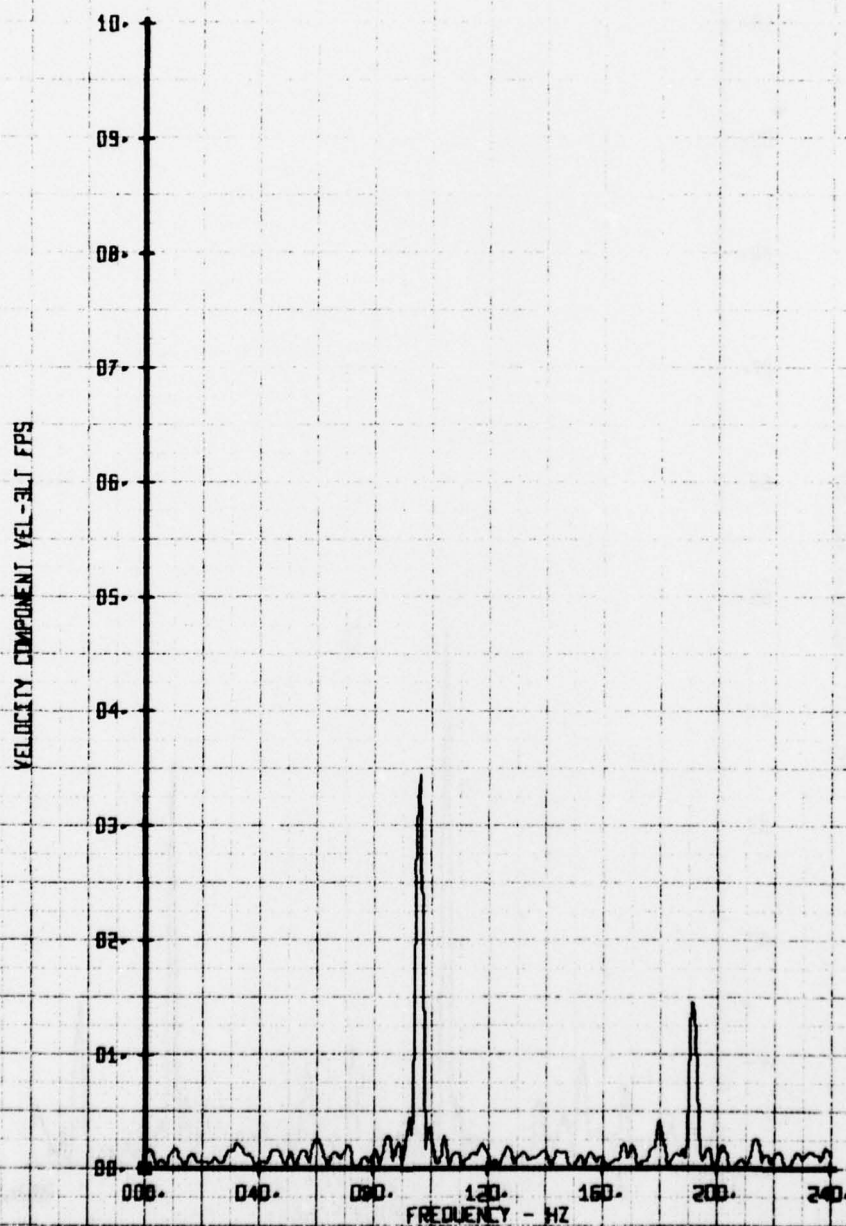
HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UB0Y 160. 2.06P BLOS
RUN 168 TP 9

LEGEND
CH 70 PARAMETER
VEL-3LT



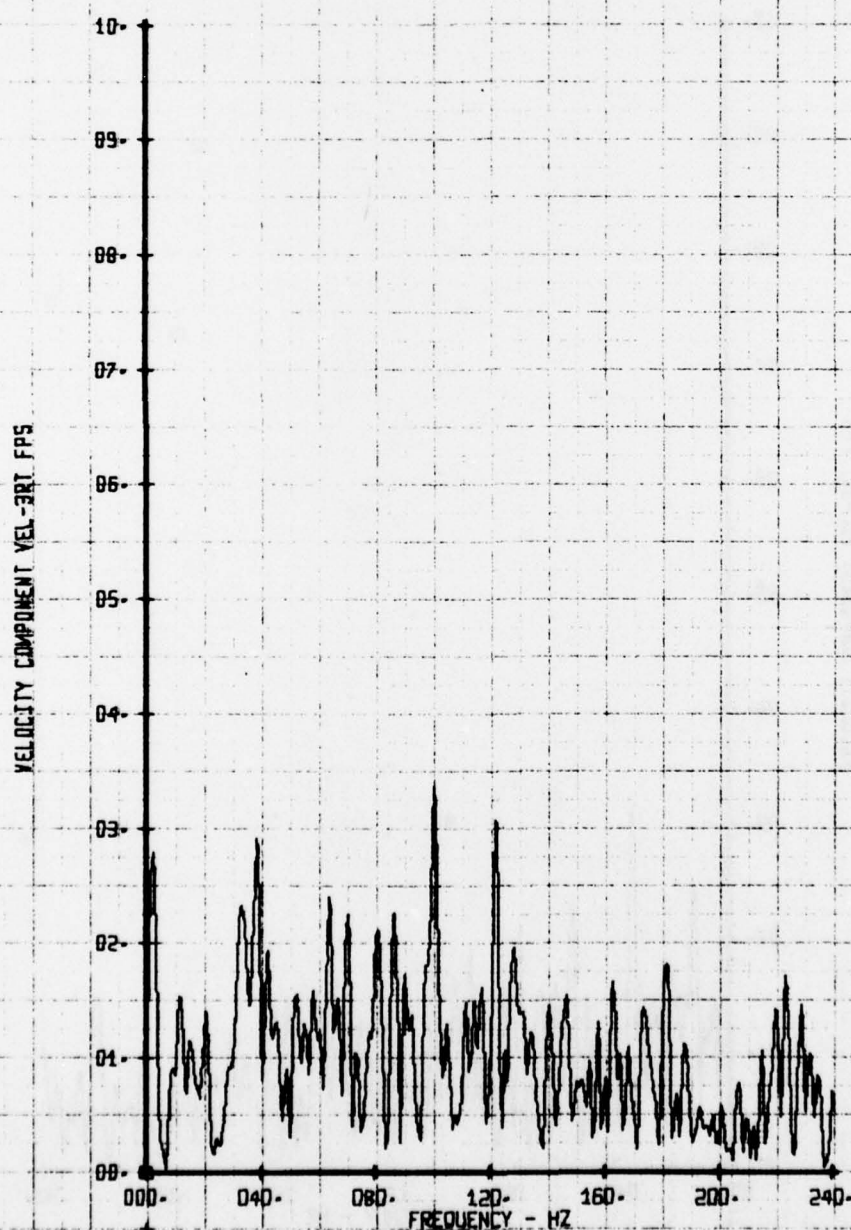
HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBOY 160 2-06P BLOS
RUN 168 TP 10

LEGEND
CH 70 PARAMETER
VEL-3LT



HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160 2.06P NE
RUN 167 TP 2

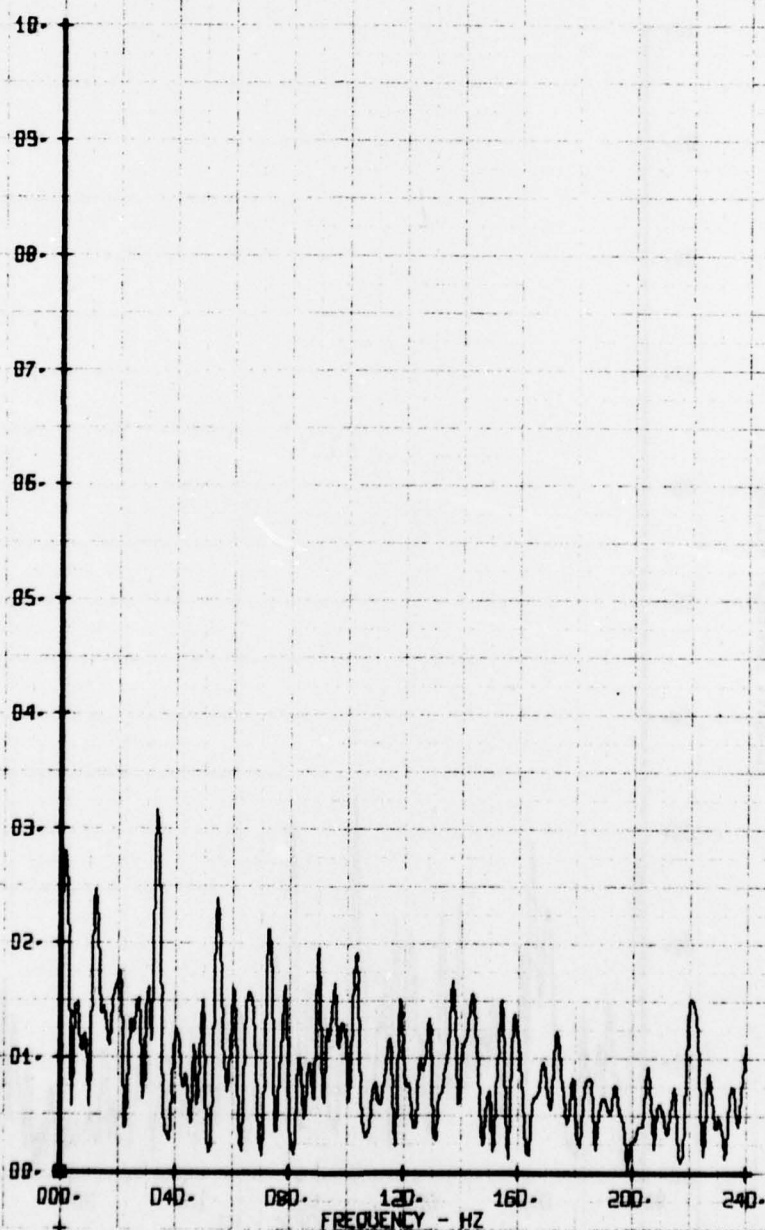
LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBDY 160. 2-DEP NB
RUN 167 TP 3

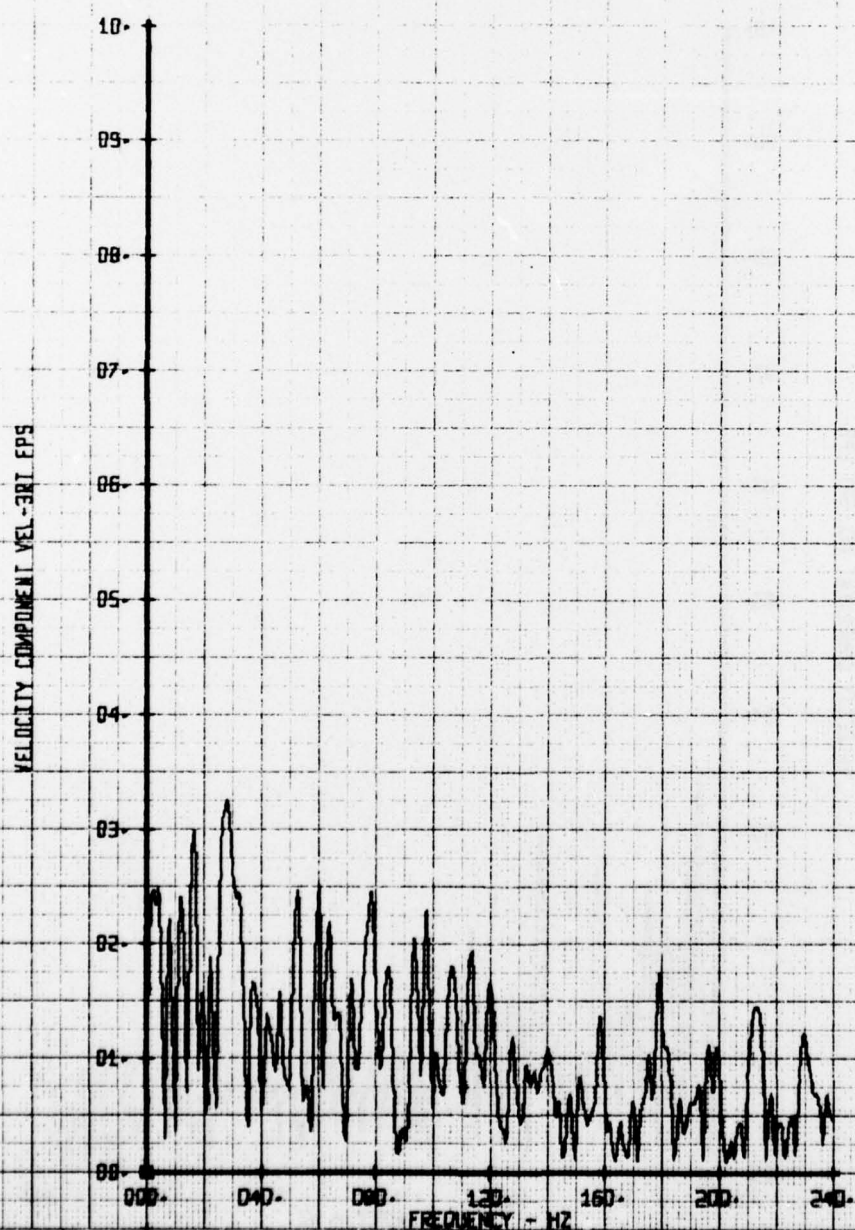
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



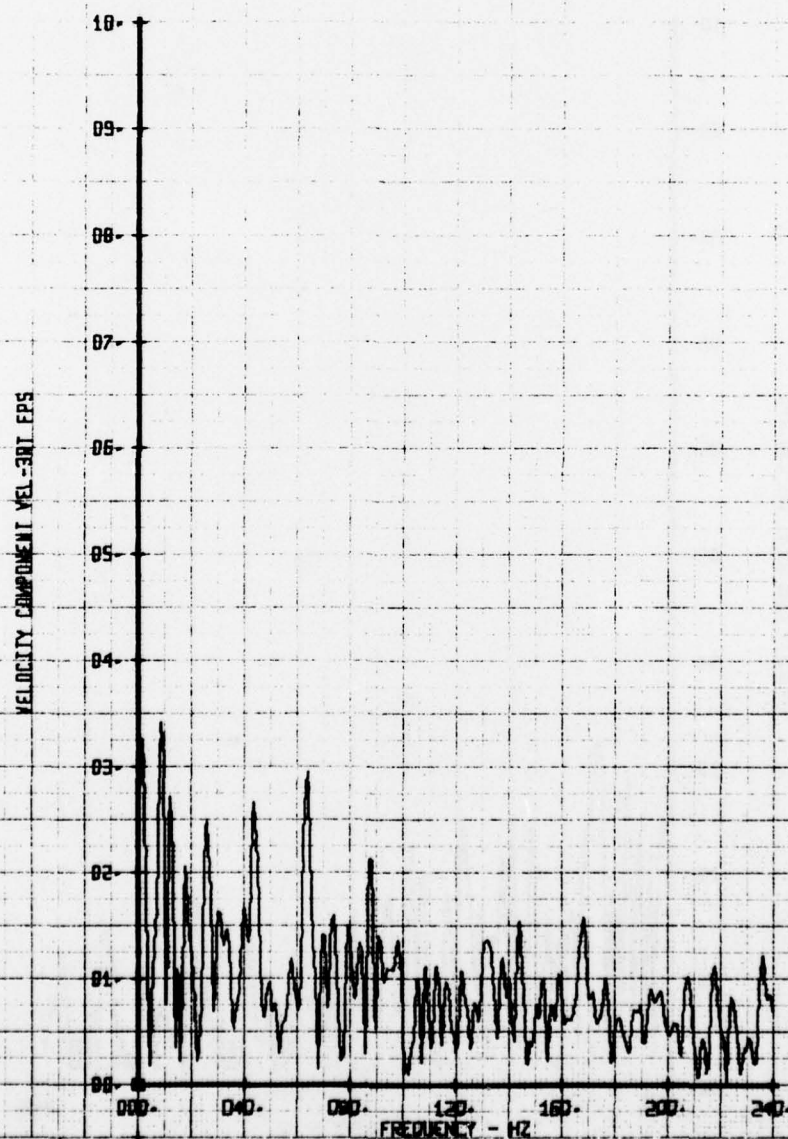
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OPEN CAP W/D UBDY 160. 2.06P NB
RUN 167 TP 4

LEGEND
CH 71 PARAMETER
VEL-3RT



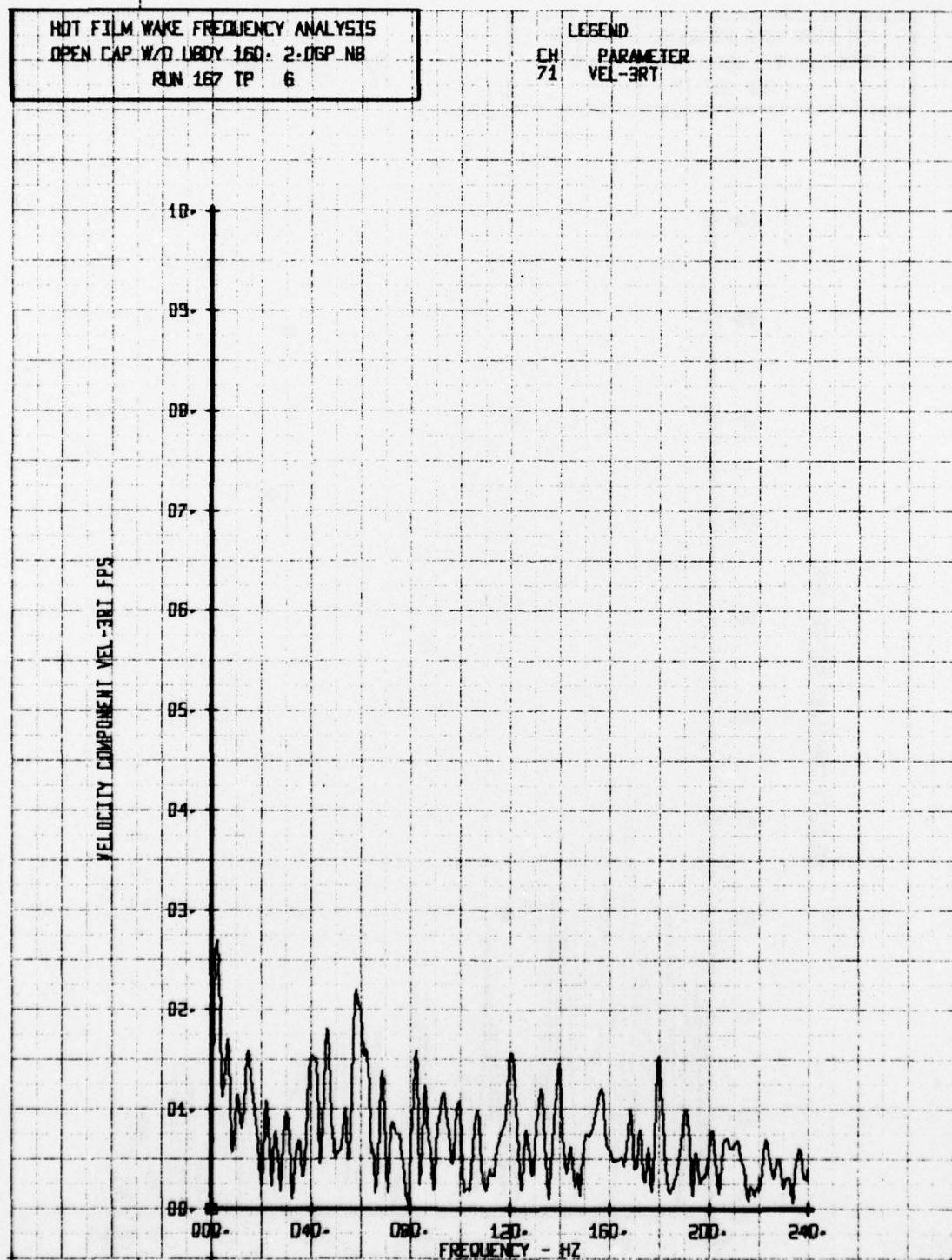
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OPEN CAP W/O LBODY 160. 2.06P NB
RUN 167 TP 5

LEGEND
CH 71 PARAMETER
71 VEL-3RT



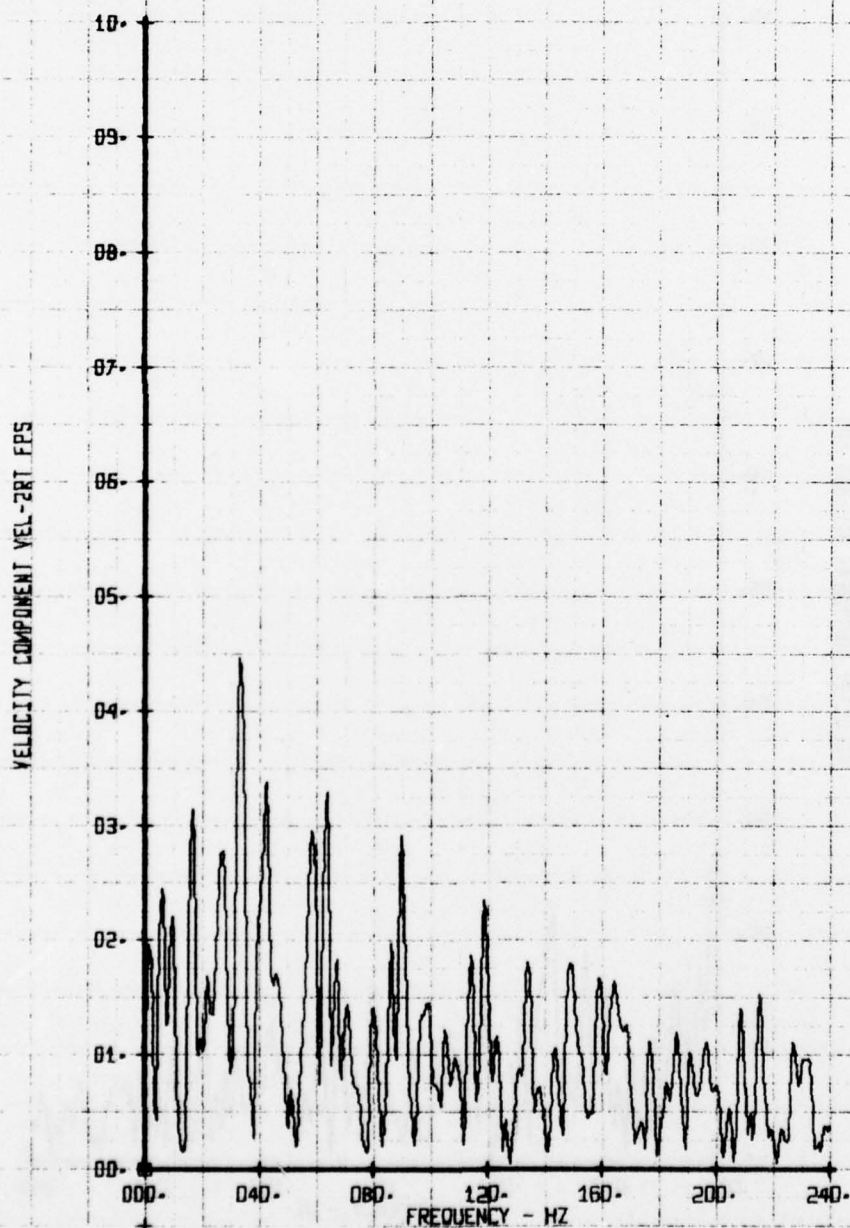
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OPEN CAP W/D BODY 160 2.06P NB
RUN 167 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT



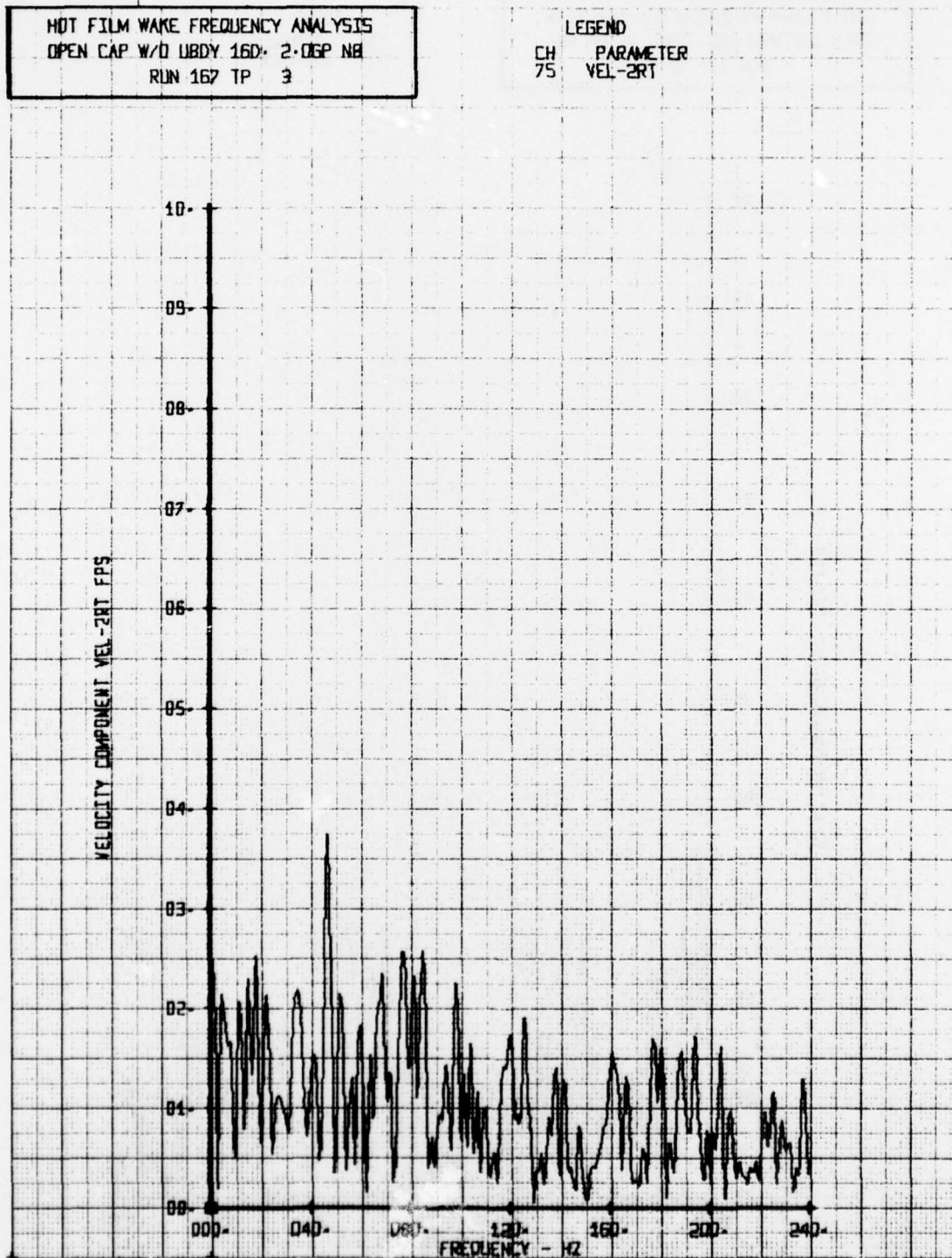
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBODY 160. 2.06P.NB
RUN 167 TP 2

LEGEND
CH 75 PARAMETER
VEL-2RT



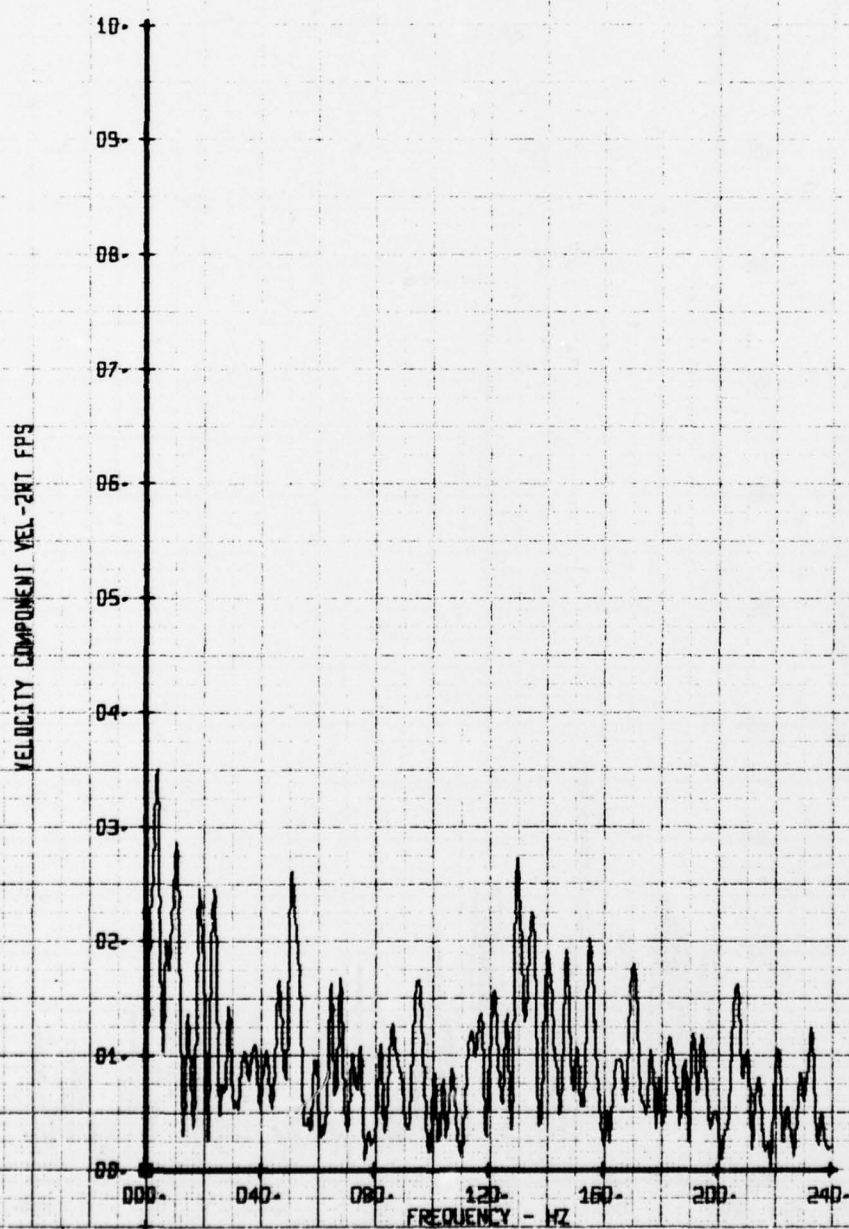
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160- 2-06P NB
RUN 167 TP 3

LEGEND
CH 75 PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160. 2.06P NB
RUN 167 TP 4

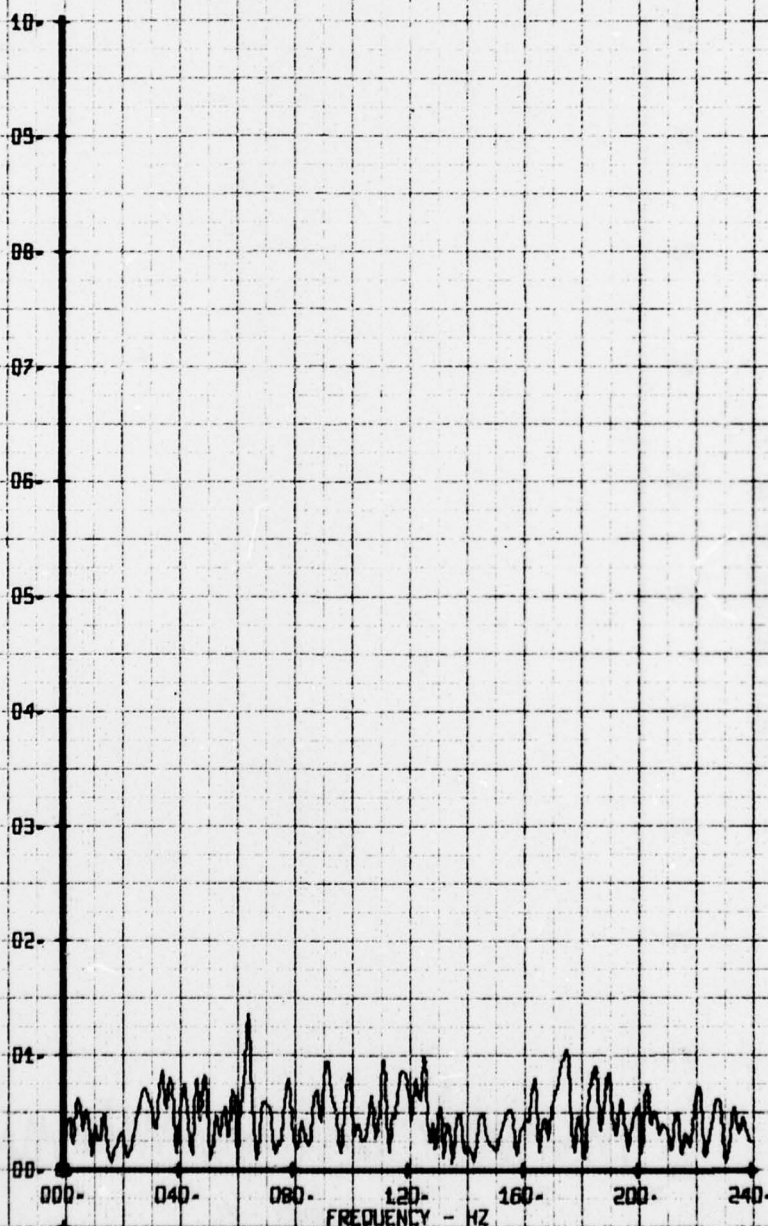
LEGEND
CH 75 PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160- 2-DEP NB
RUN 167 TP 5

LEGEND
CH 75 PARAMETER
VEL-2RT

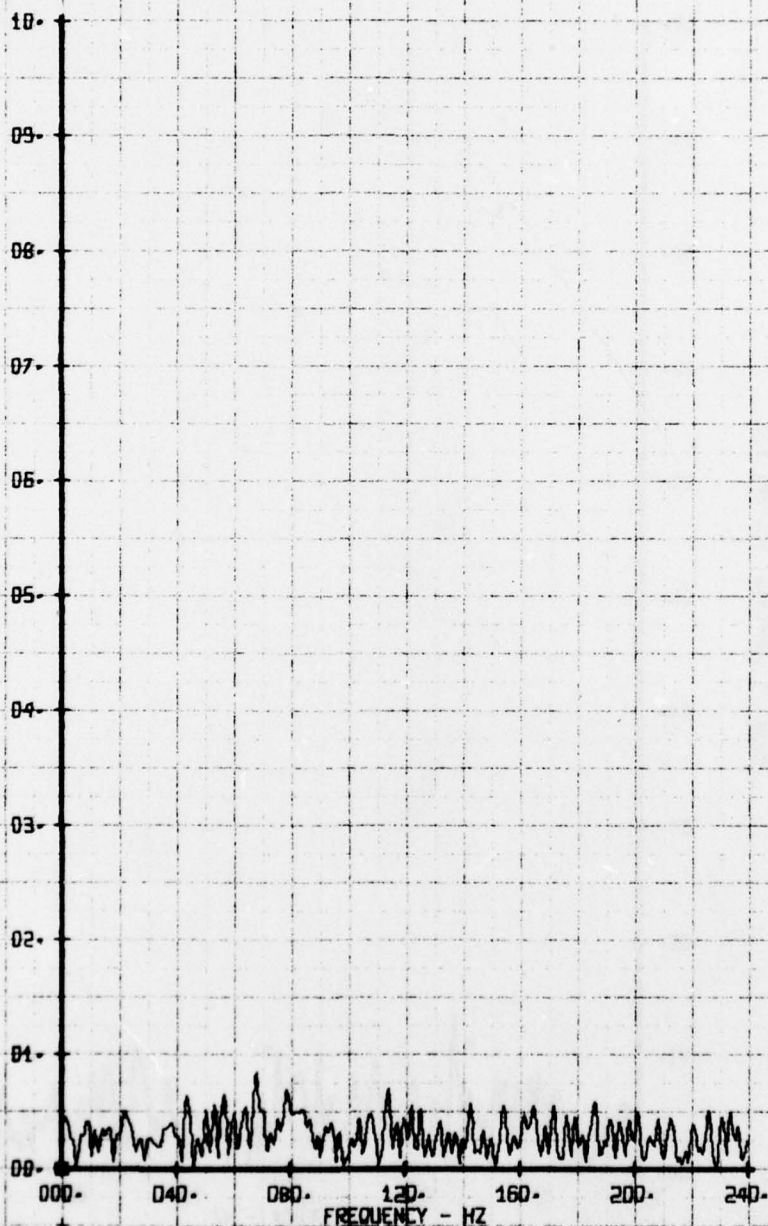
VELOCITY COMPONENT VEL-2RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.06P NR
RUN 167 TP 6

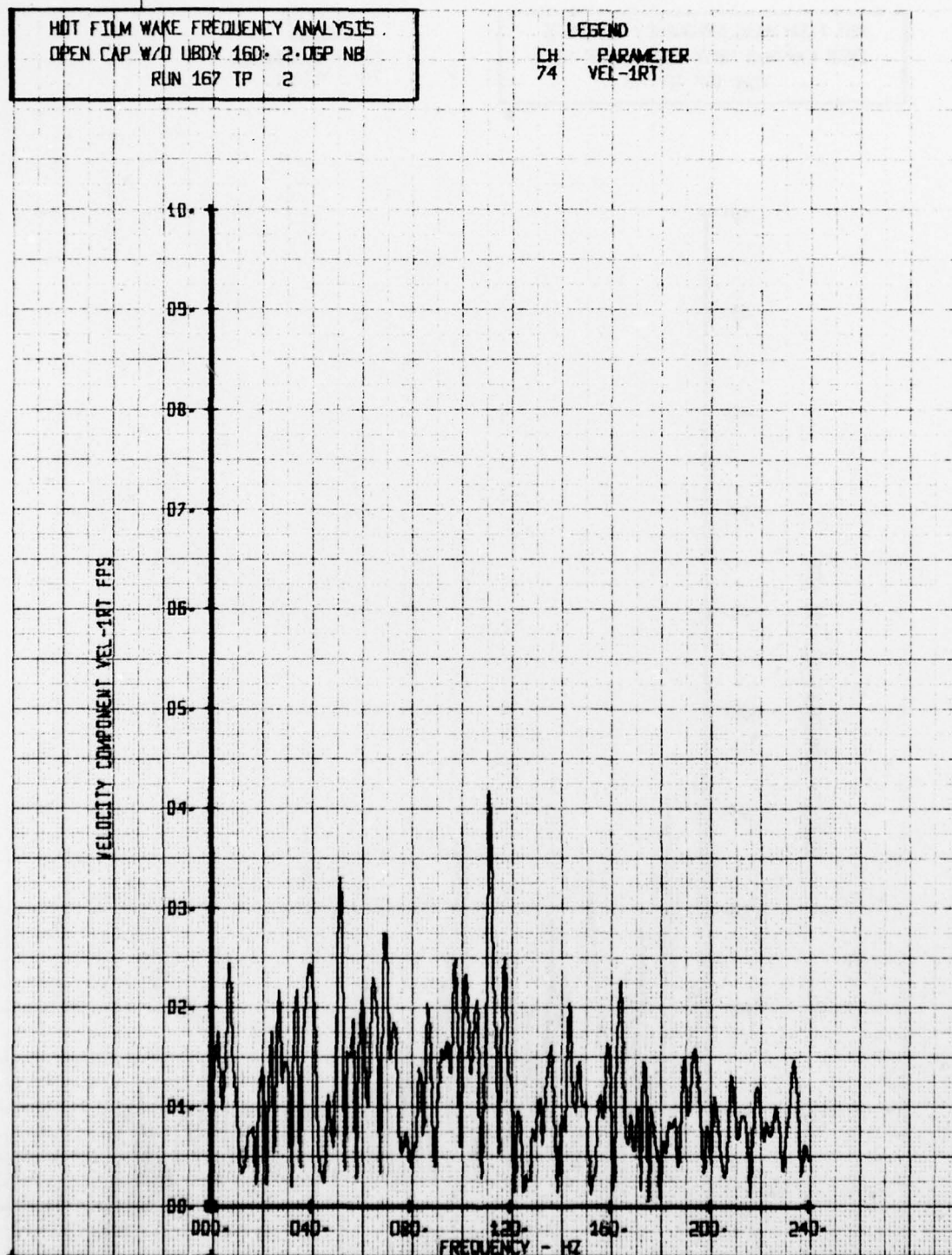
LEGEND
CH 75 PARAMETER
VEL-2RT

VELOCITY COMPONENT VEL-2RT FPS



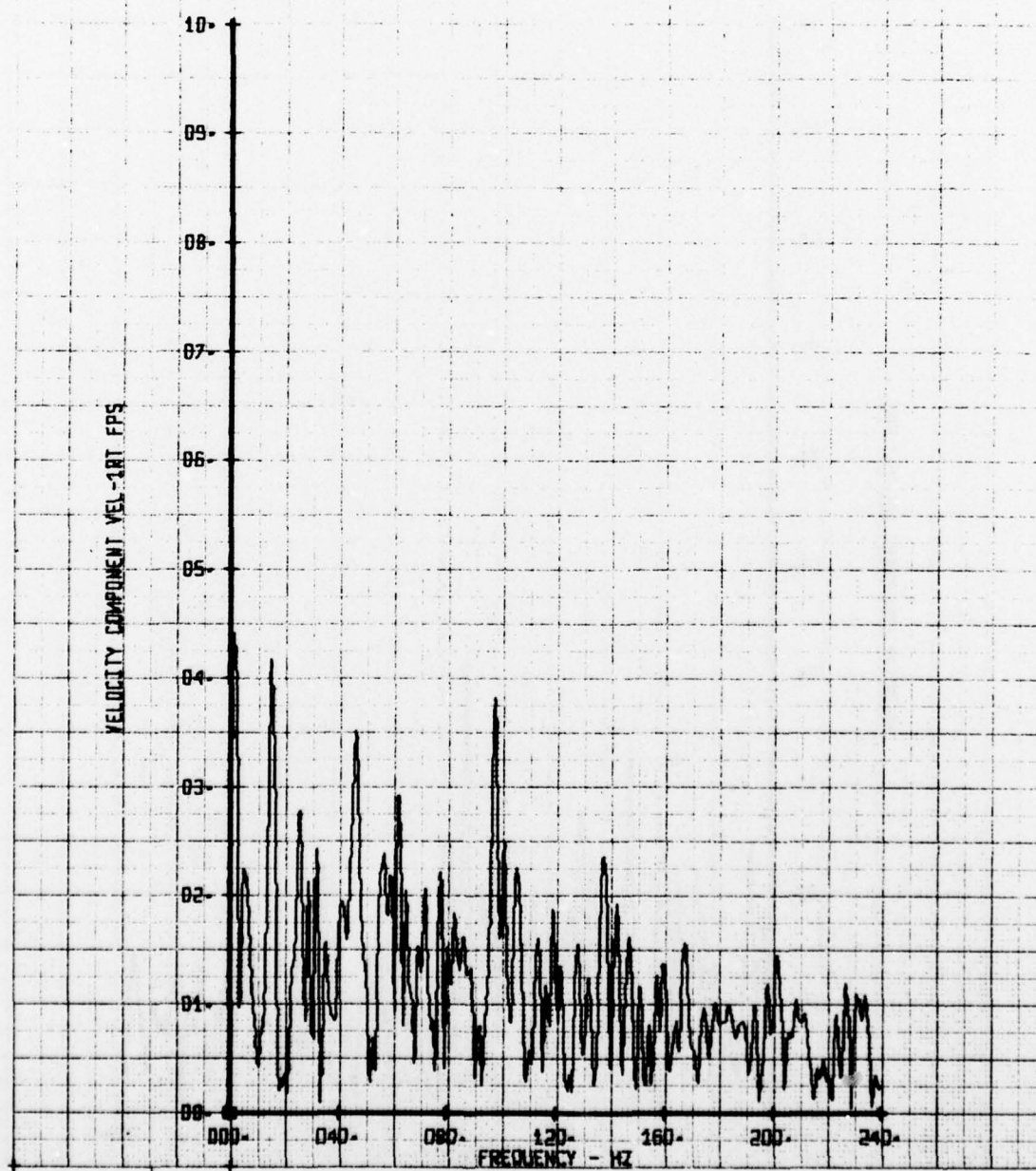
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160: 2-DEP NB
RUN 167 TP 2

LEGEND
CH 74 PARAMETER
VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O UBDY 160. 2.06P NB
RUN 167 TP 3

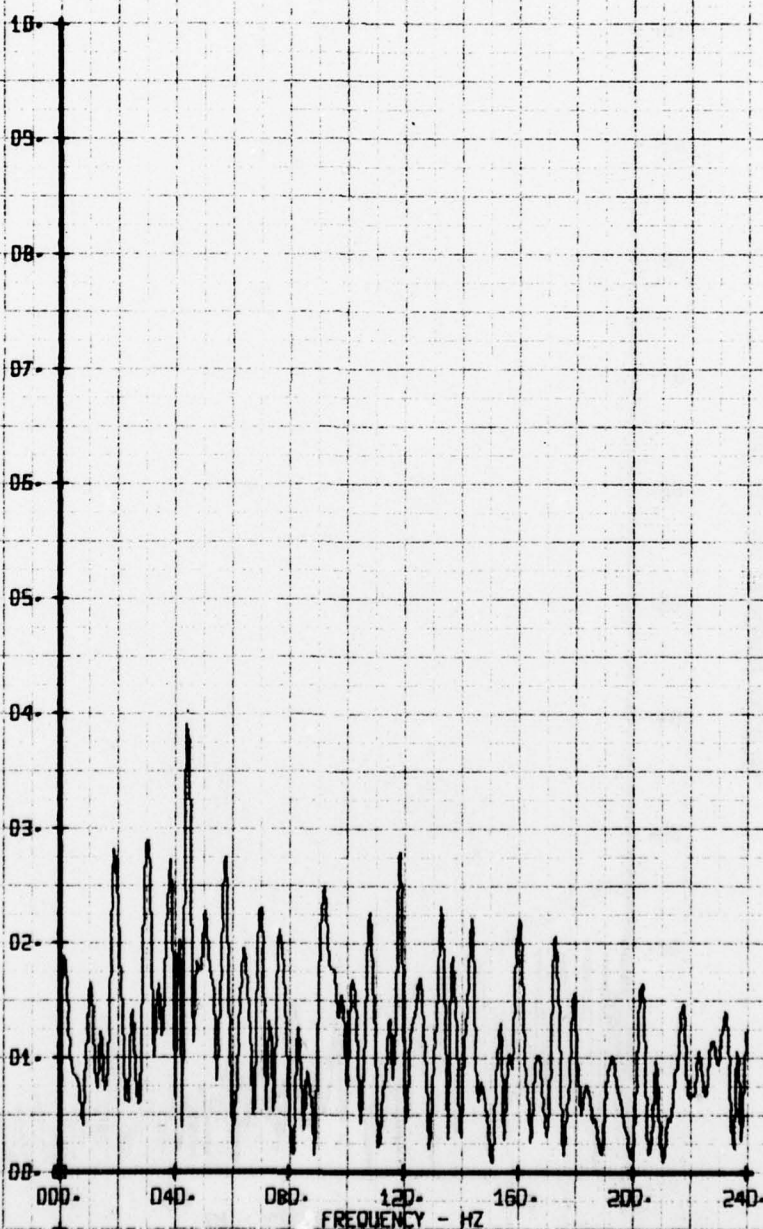
LEGEND
CH PARAMETER
74 VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160. 2.0GP NB
RUN 167 TP 4

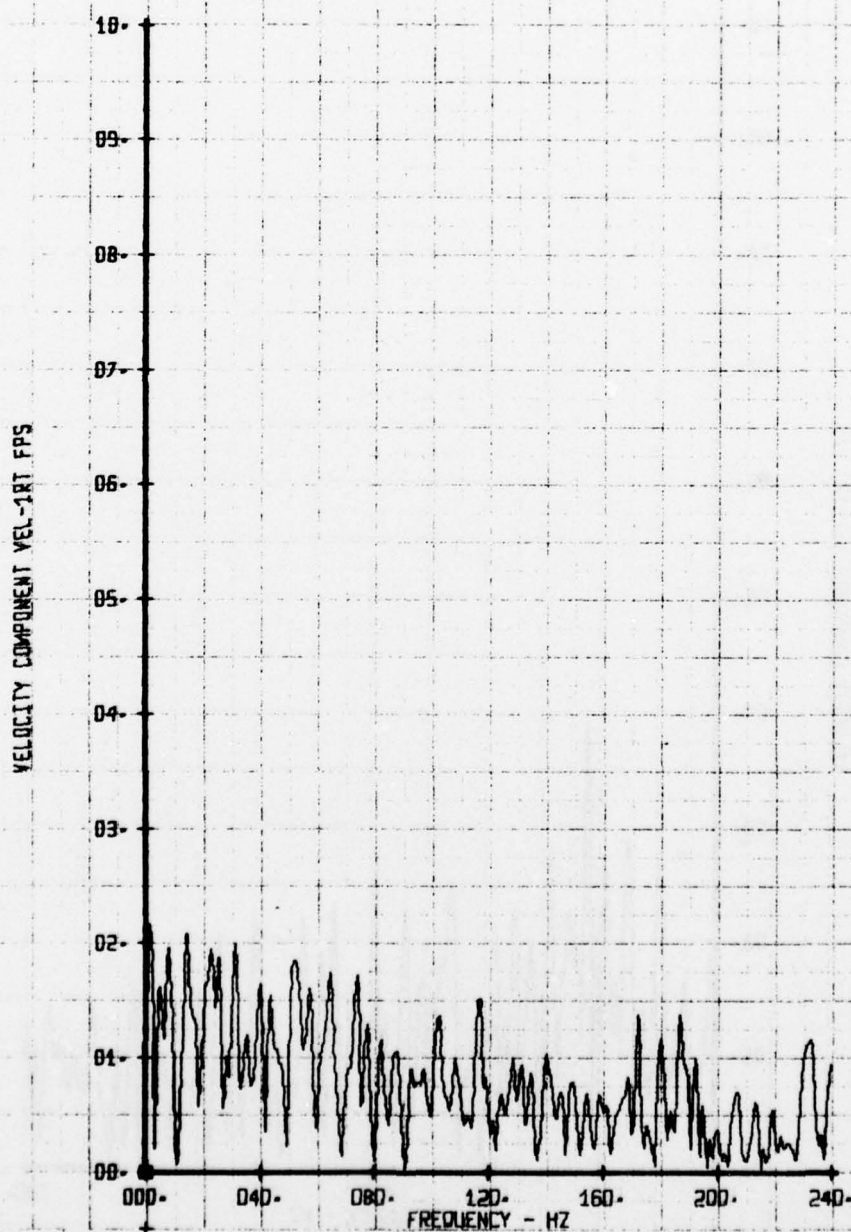
LEGEND
CH 74 PARAMETER
VEL-1RT

VELOCITY COMPONENT VEL-1RT FPS



HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160. 2.06P NE
RUN 167 TP 5

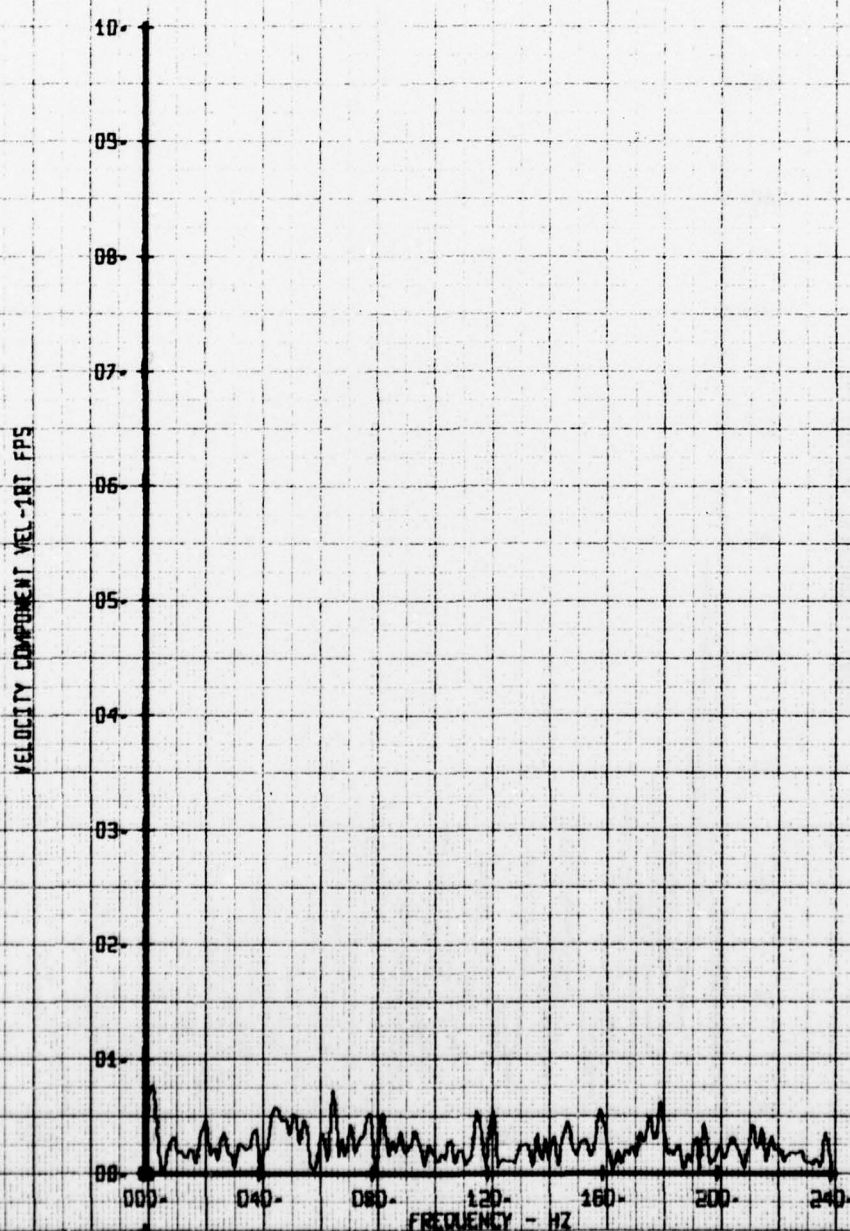
LEGEND
CH 74 PARAMETER
VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160- 2-DEP NB
RUN 167 TP 6

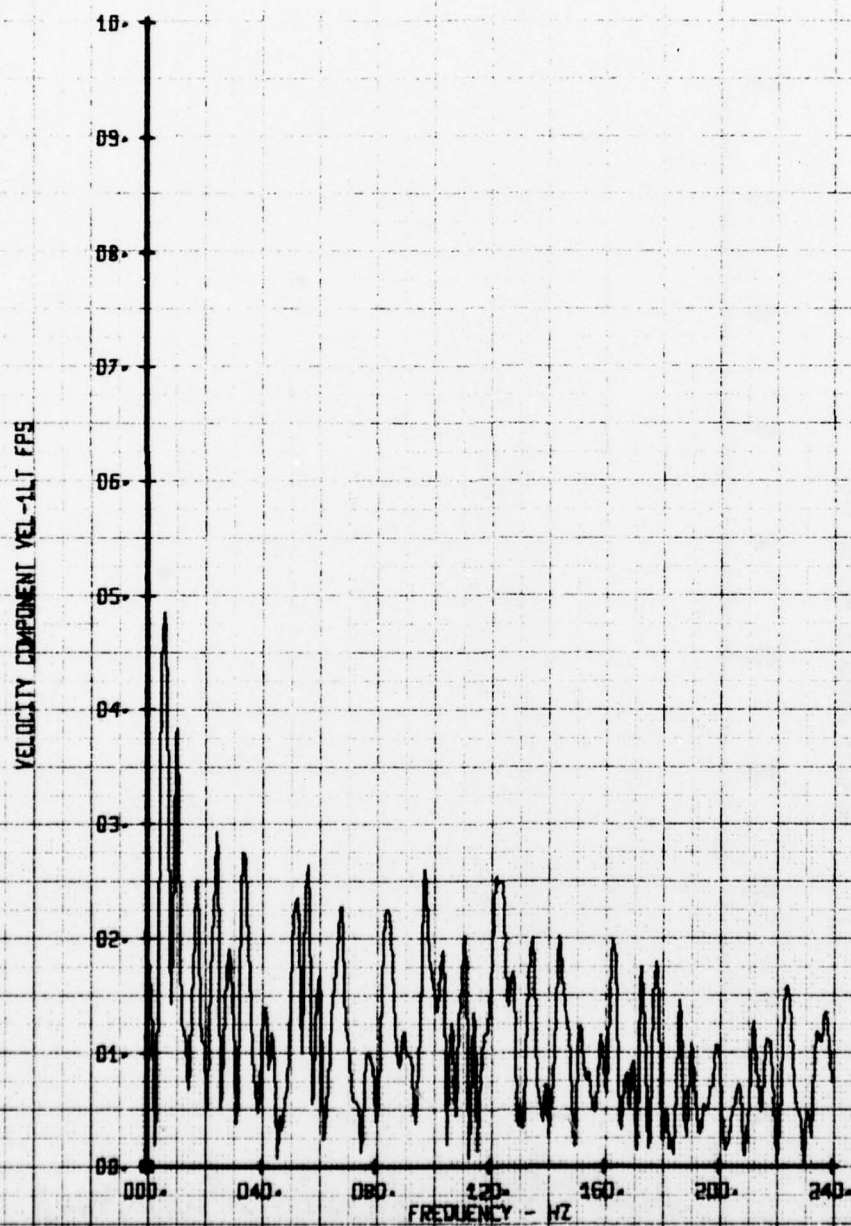
LEGEND

CH 74 PARAMETER
VEL-1RT



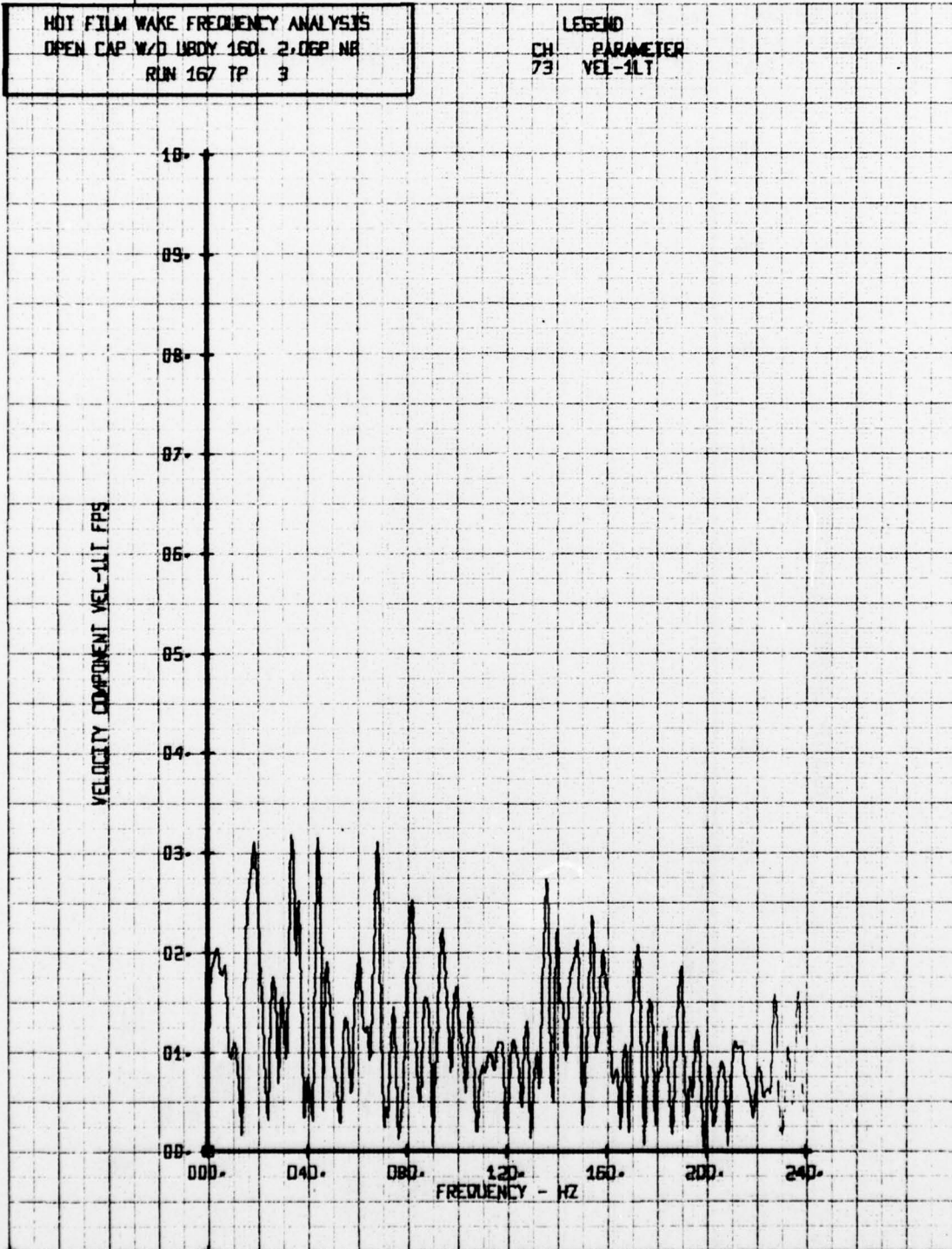
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160. 2.06P NB
RUN 167 TP 2

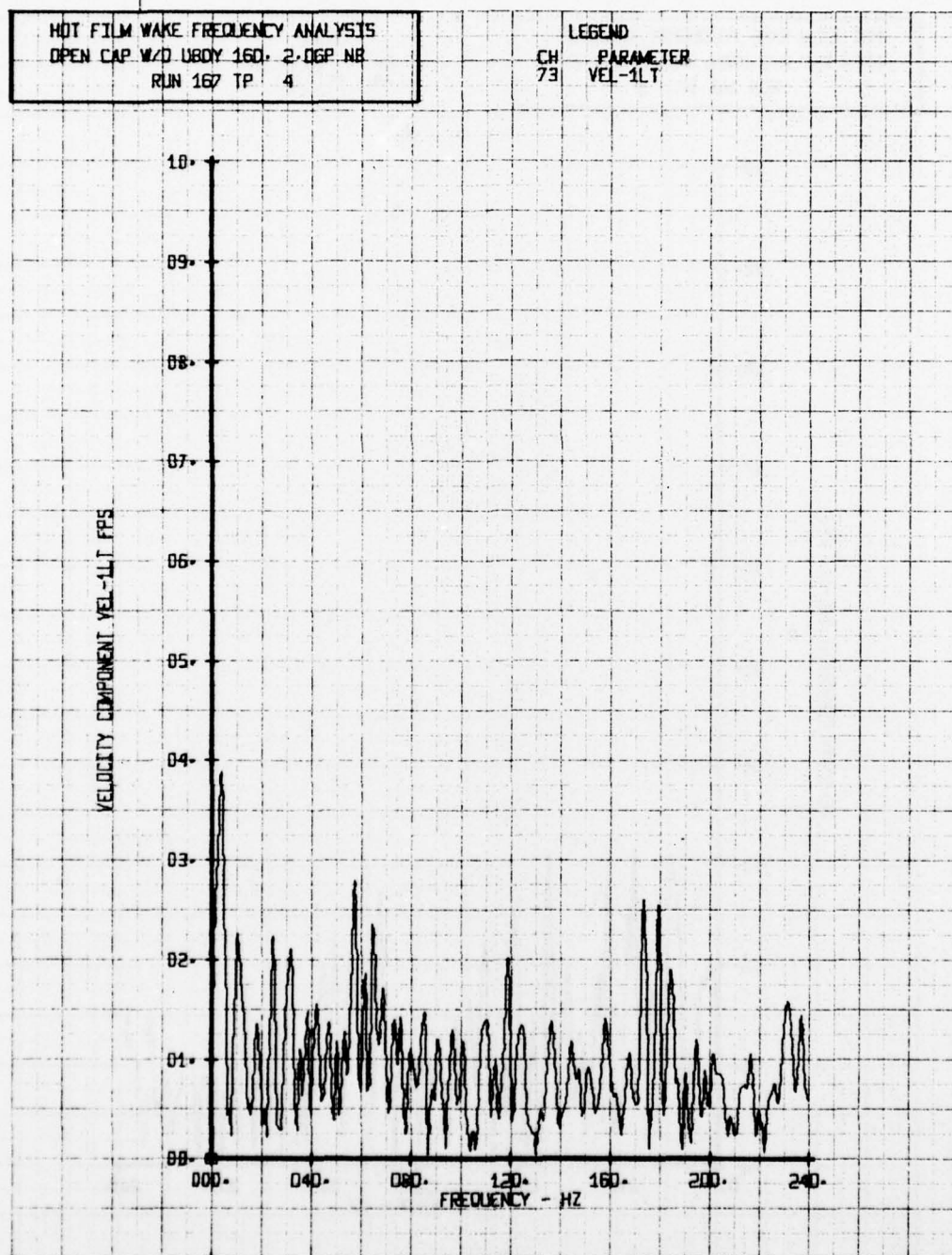
LEGEND
CH PARAMETER
73 VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160. 2.06P NR
RUN 167 TP 3

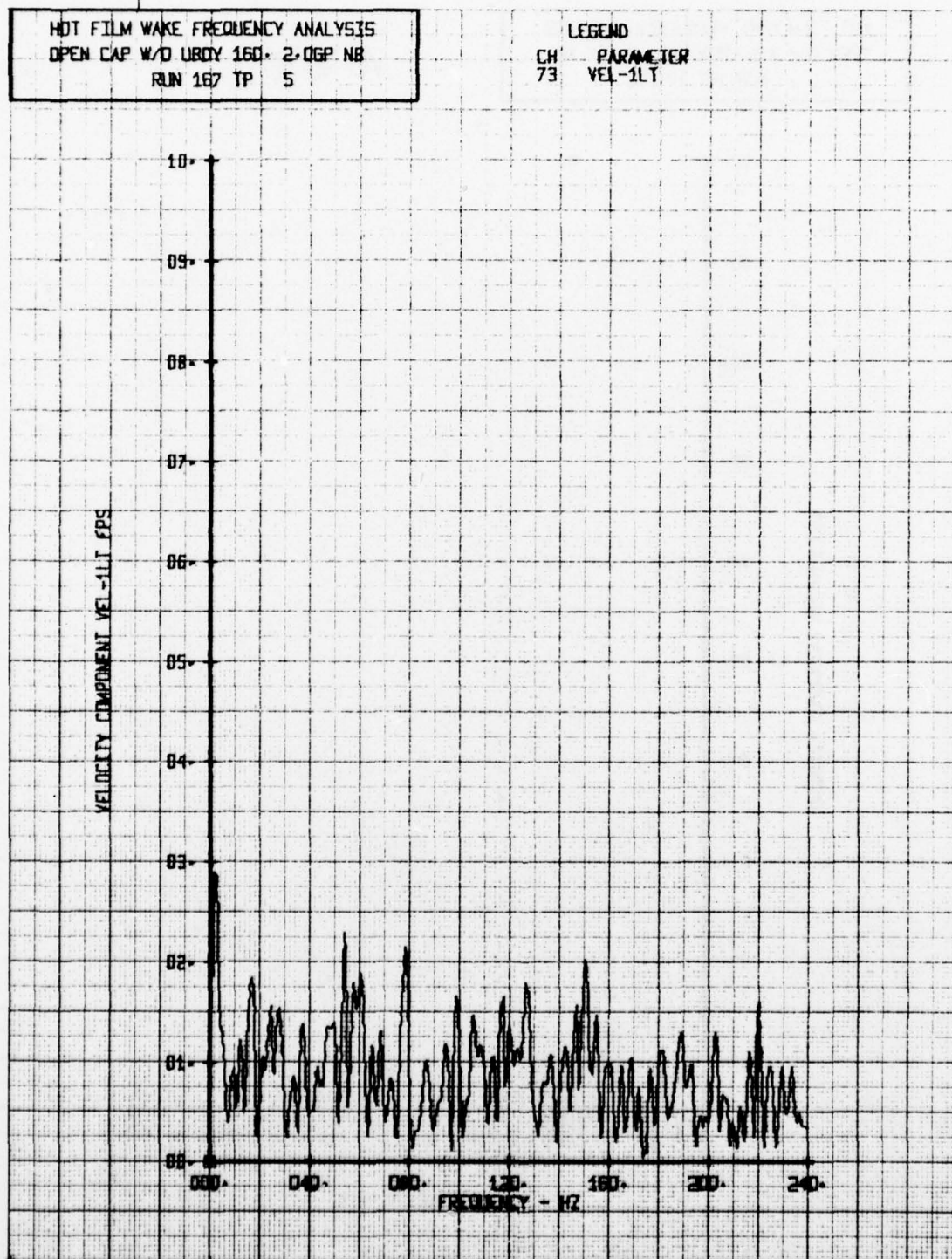
LEGEND
CH 73 PARAMETER
VEL-1LT





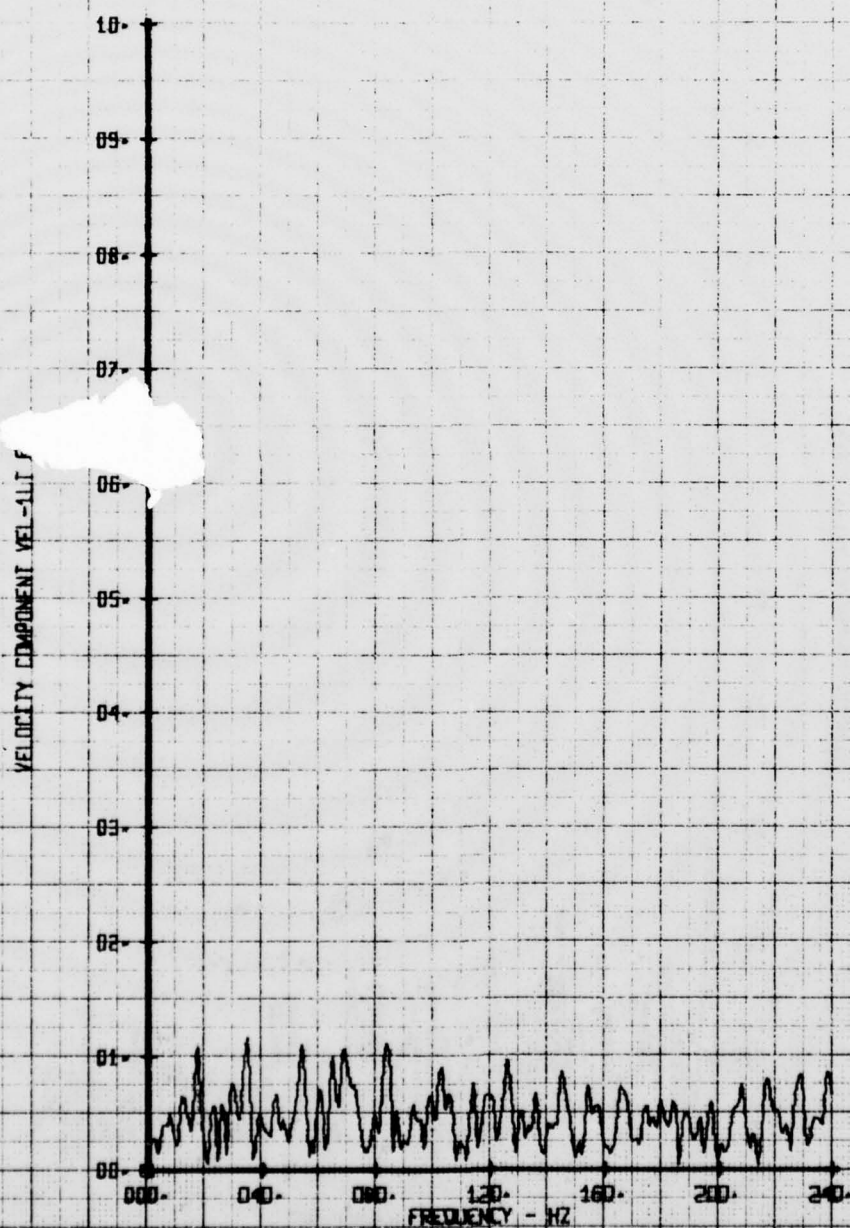
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBOY 160. 2-06P. NB
RUN 167 TP 5

LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.0GP NB
RUN 167 TP 6

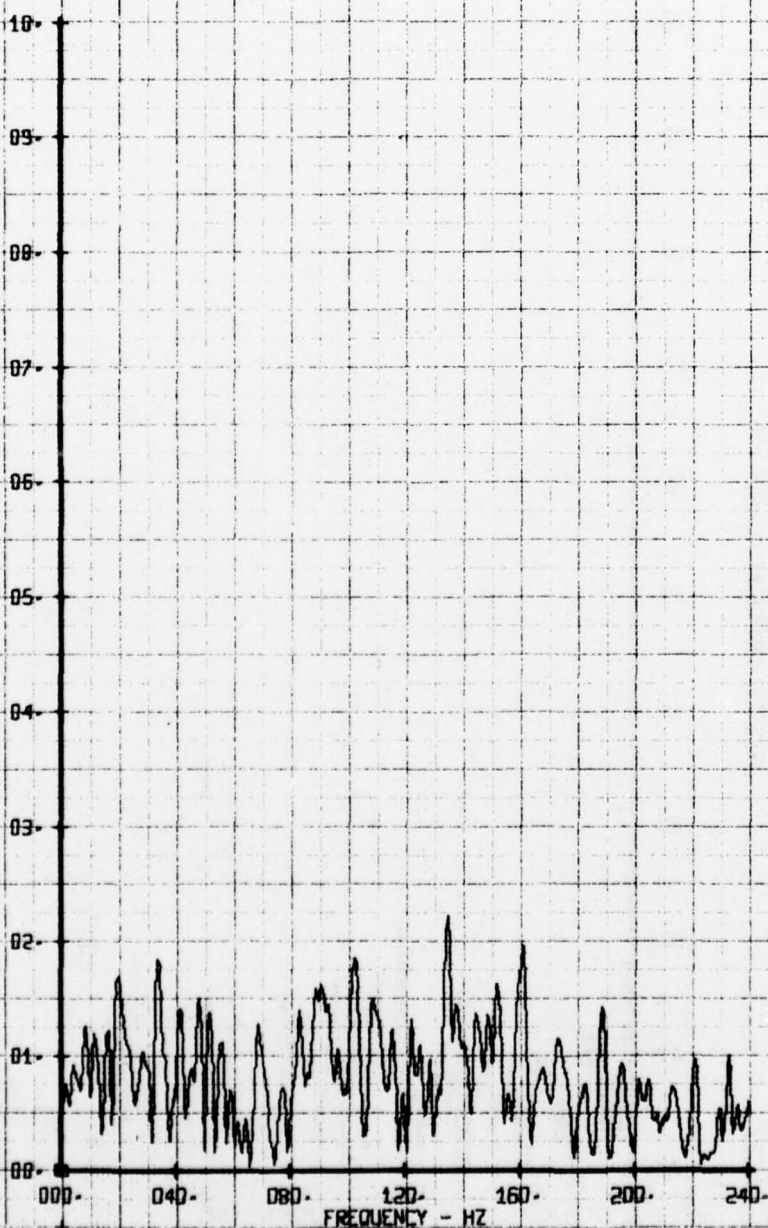
LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP. W/D UBODY 160. 2.05P NB
RUN 167 TP 2

LEGEND
CH 72 PARAMETER
VEL-ZLT

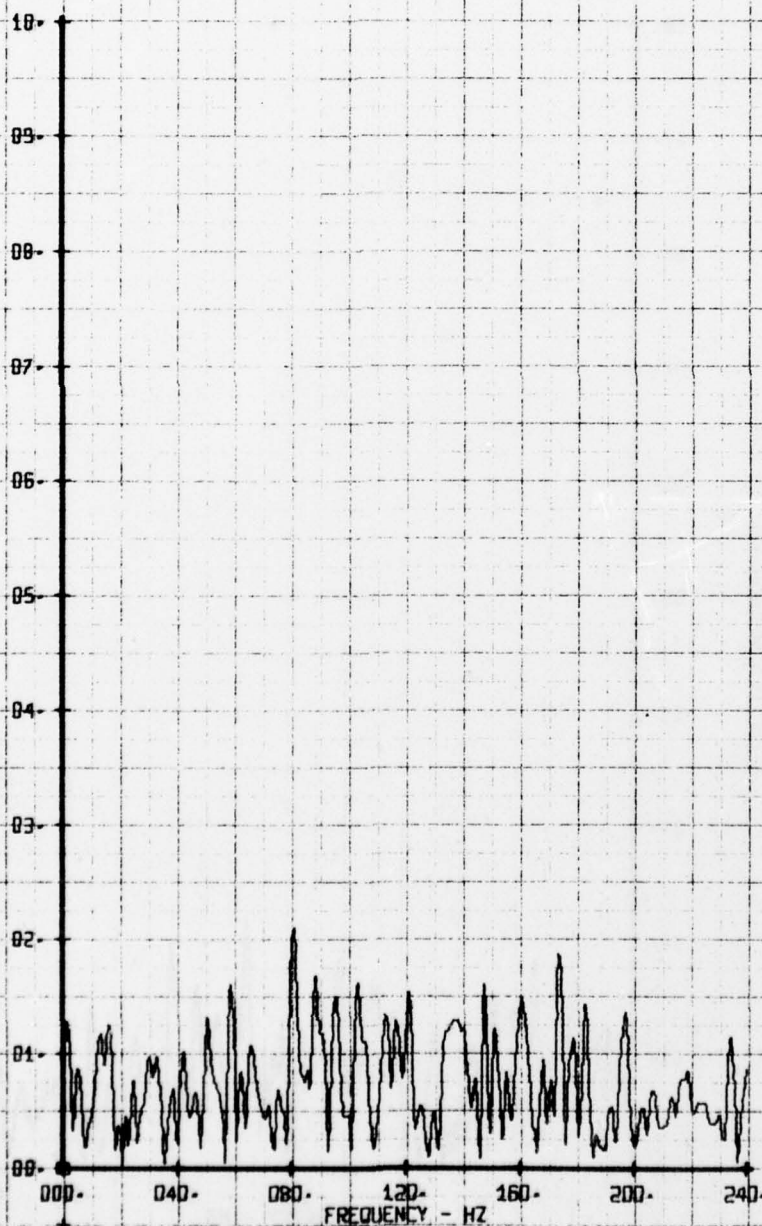
VELOCITY COMPONENT VEL-ZLT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 160 2.06P NB
RUN 167 TP 3

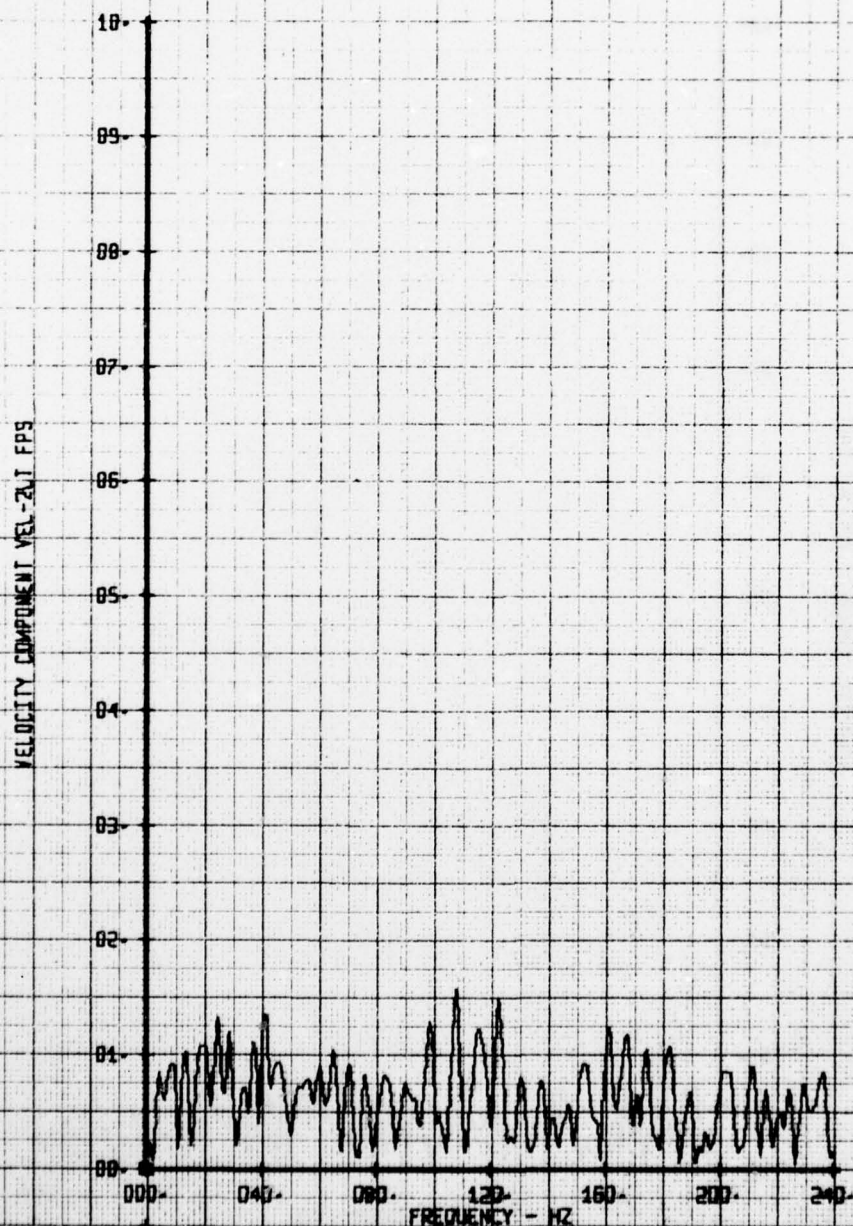
LEGEND
CH 72 PARAMETER
VEL-2LT

VELOCITY COMPONENT VEL-2LT FPS



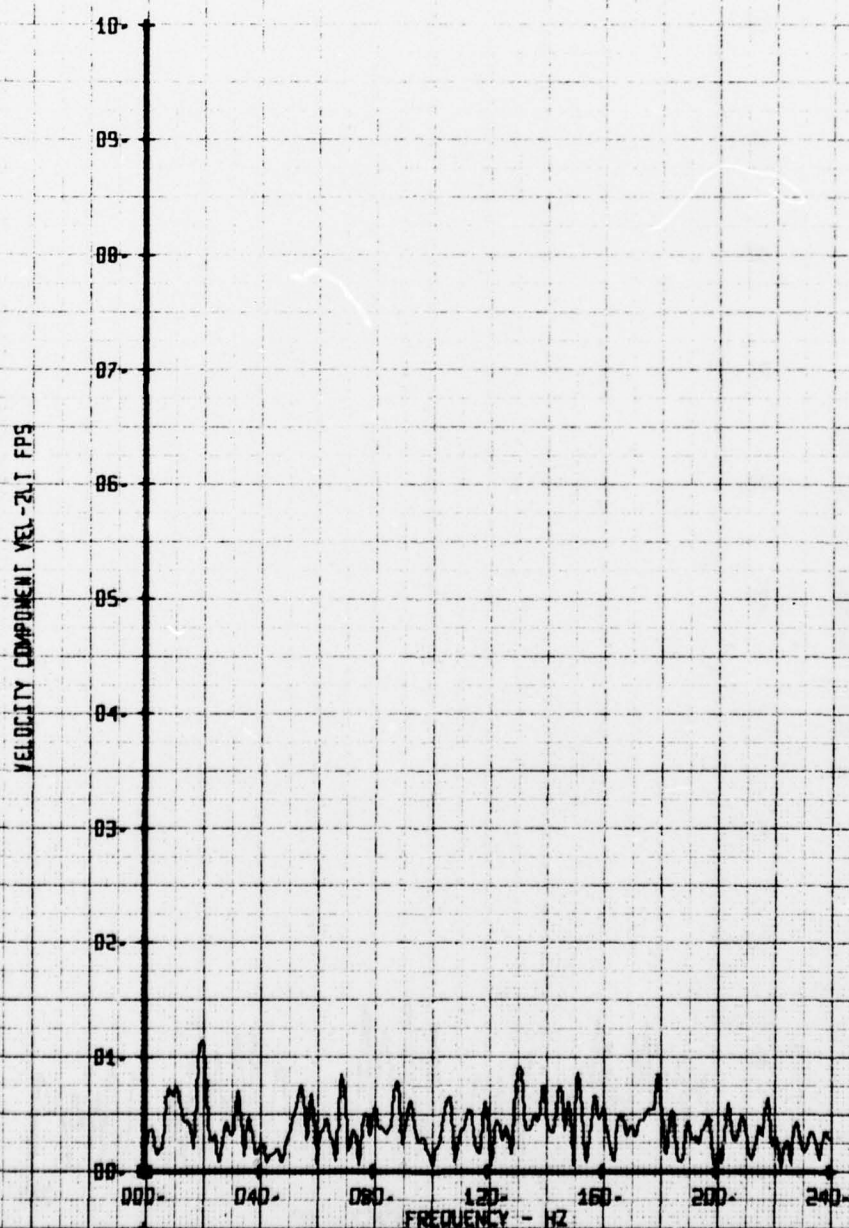
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBODY 160 2.06P NB
RUN 167 TP 4

LEGEND
CH 72 PARAMETER
VEL-2LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UBDY 16D. 2.06P NB
RUN 167 TP 5

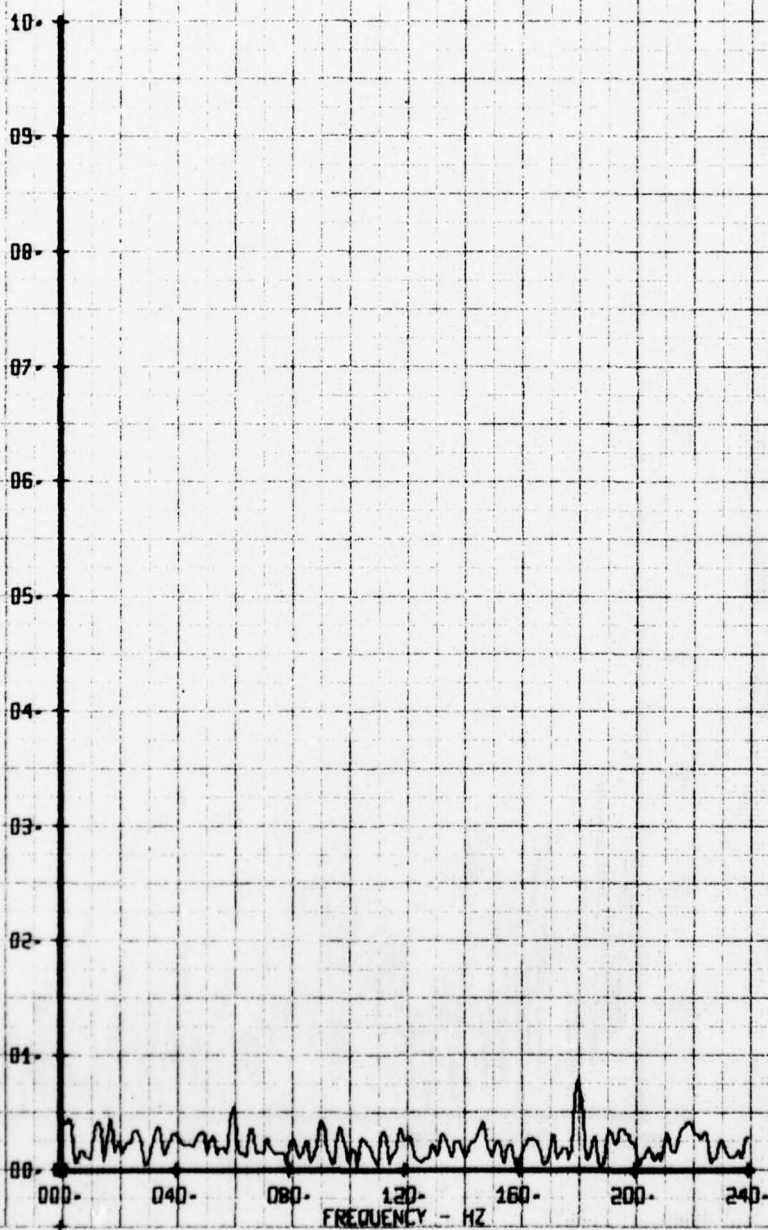
LEGEND
CH PARAMETER
72 VEL-ZLT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.05P NR
RUN 167 TP 6

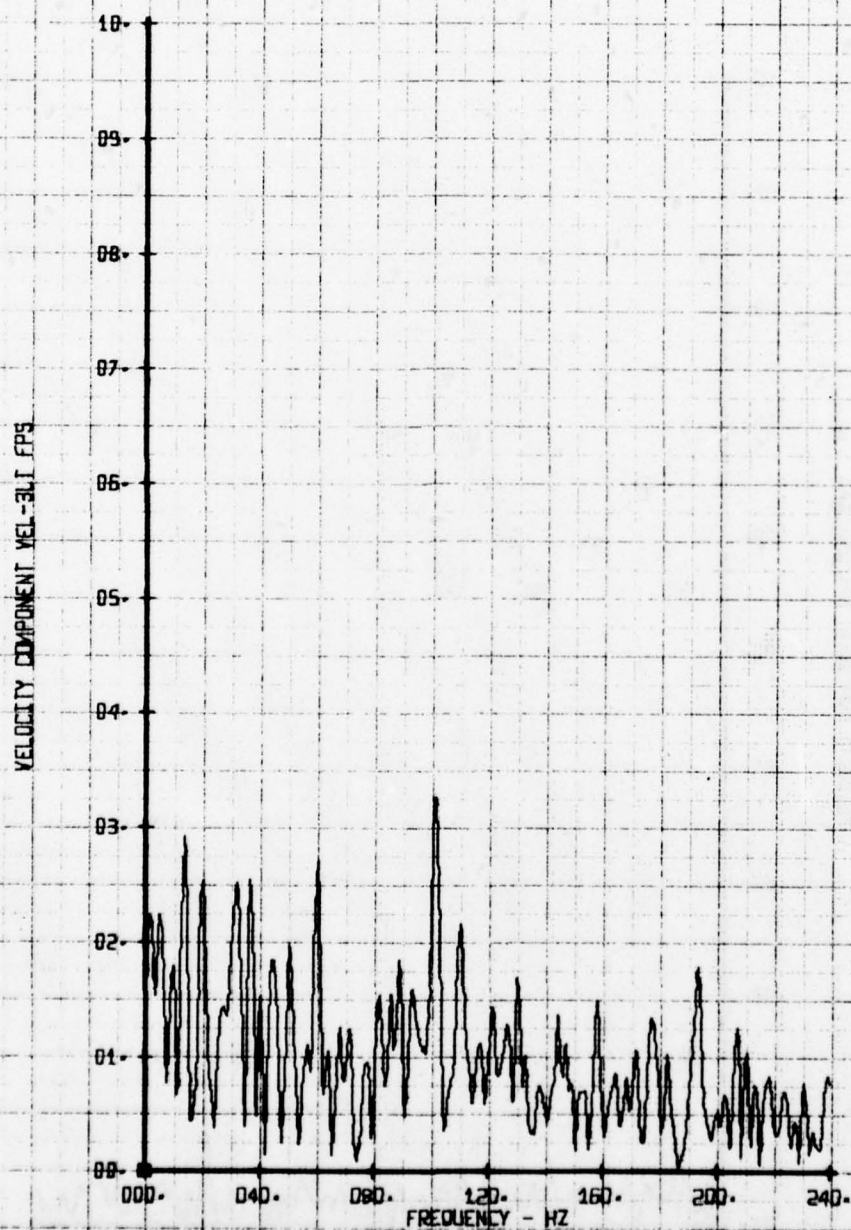
LEGEND
CH 72 PARAMETER
VEL-ZLT

VELOCITY COMPONENT VEL-ZLT FPS



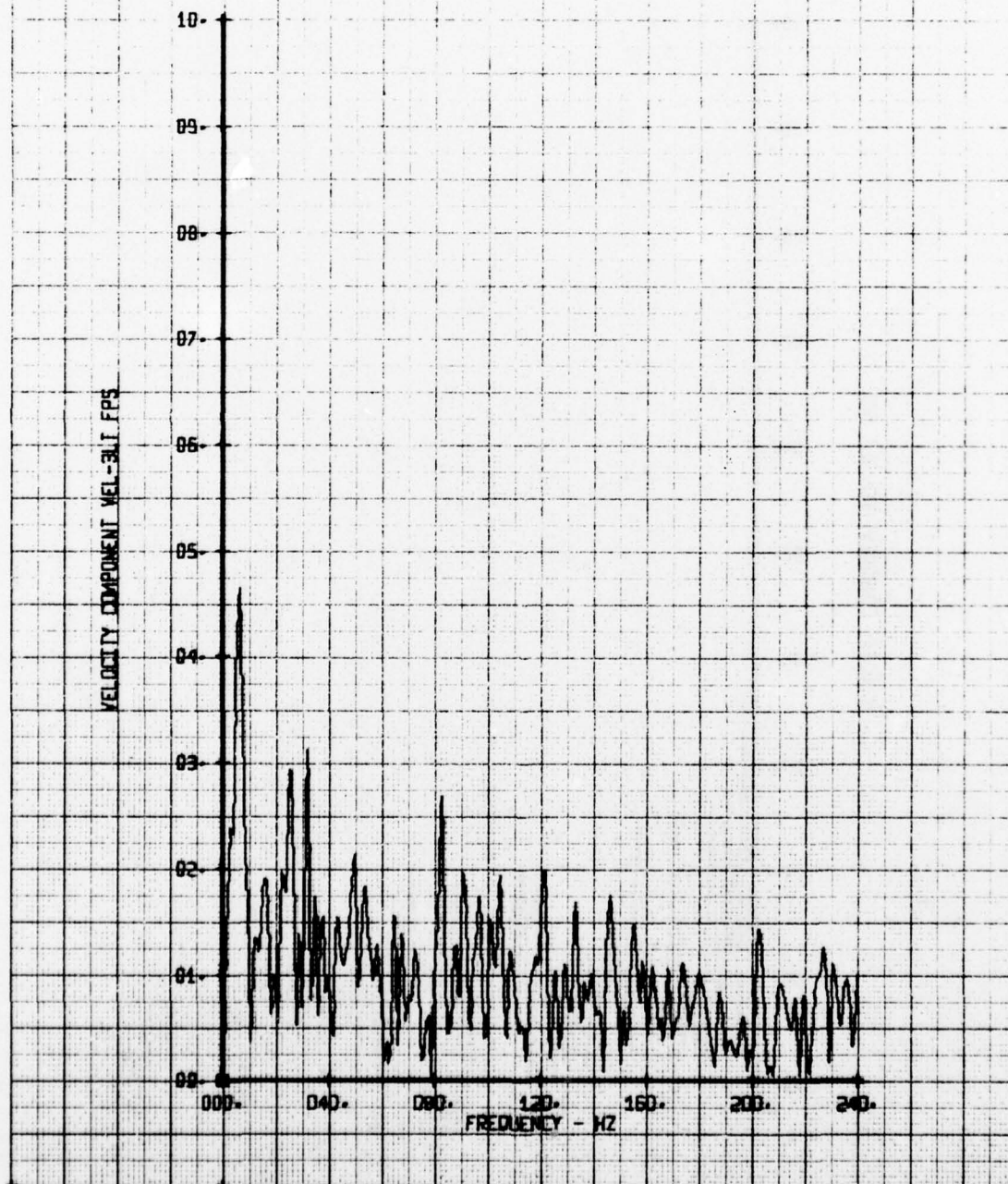
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160. 2.06P NR
RUN 167 TP 2

LEGEND
CH. 70
PARAMETER
VEL-3LT



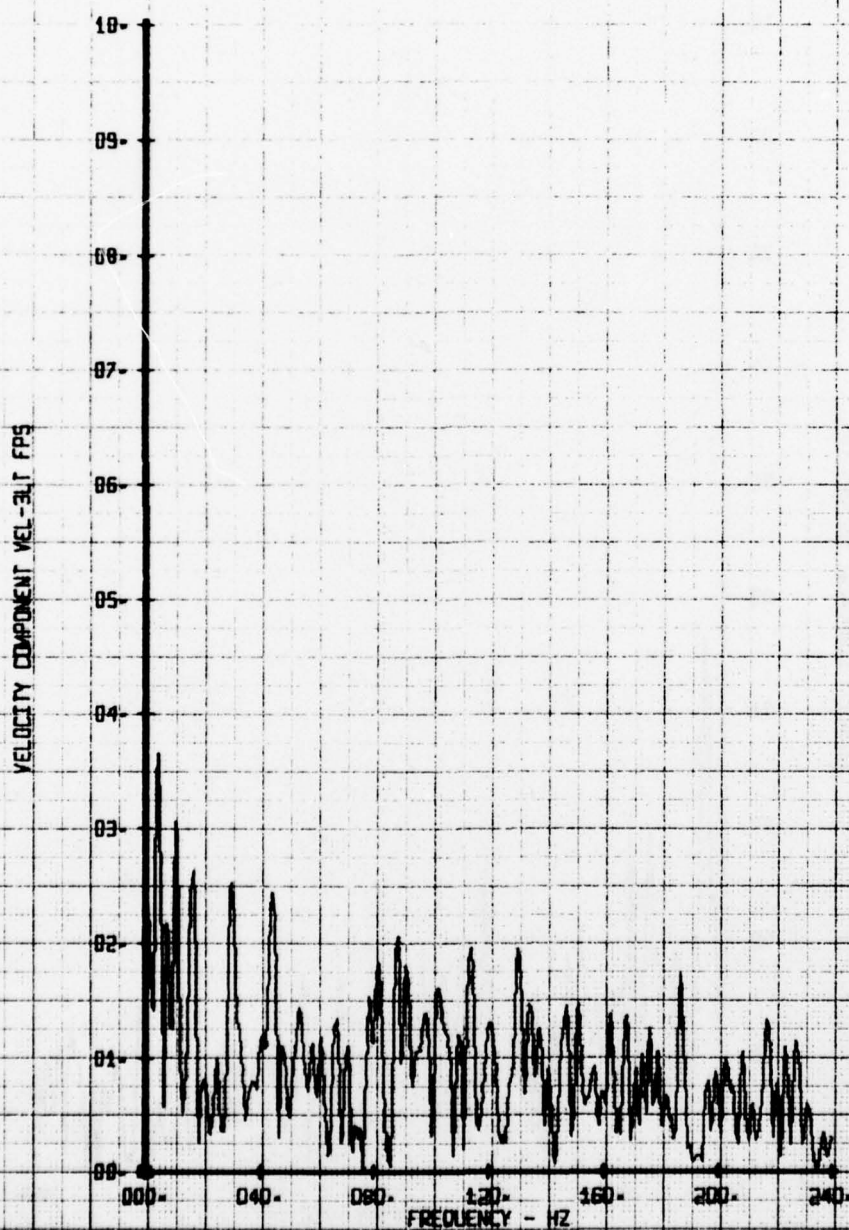
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D UDDY 160. 2.06P NB
RUN 167 TP 3

LEGEND
CH 70 PARAMETER
VEL-3LT



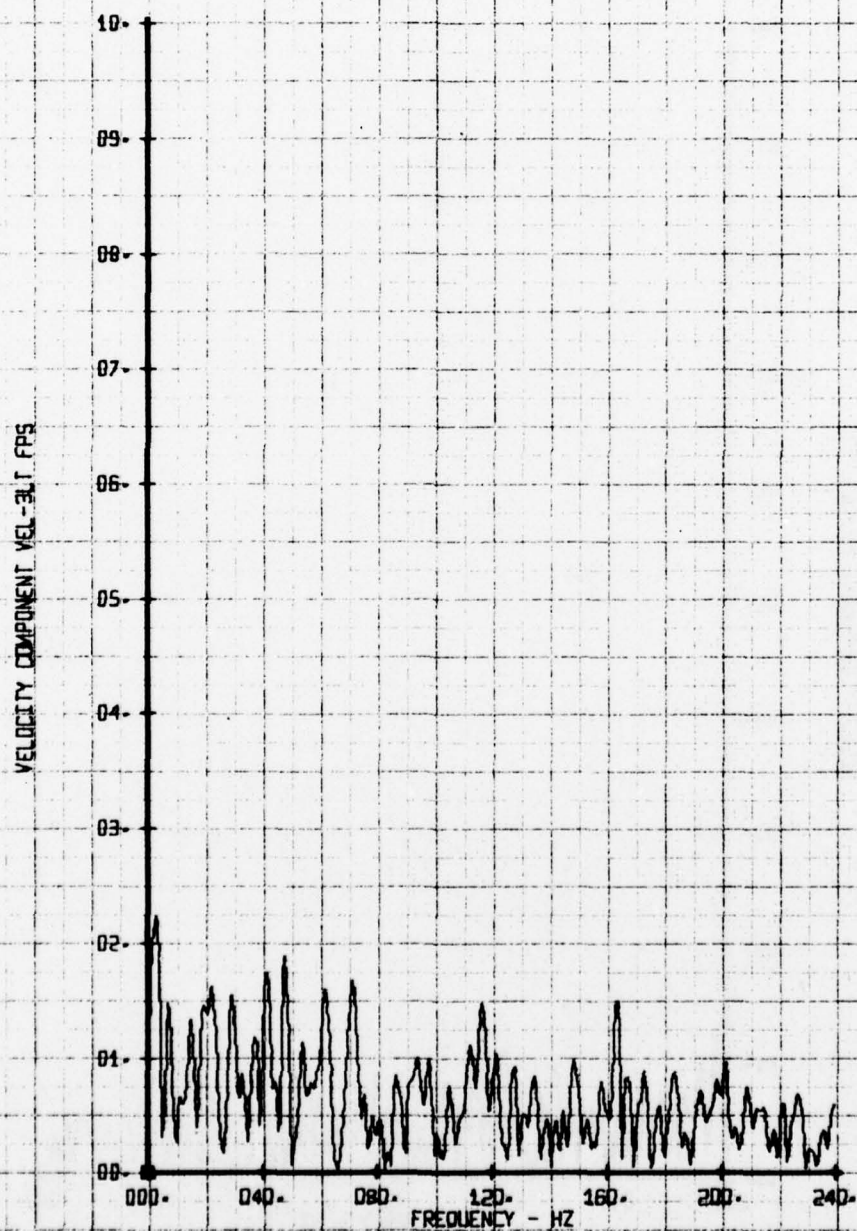
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D LBDY 160. 2-DEP NR
RUN 167 TP 4

LEGEND
CH PARAMETER
70 VEL-3LT



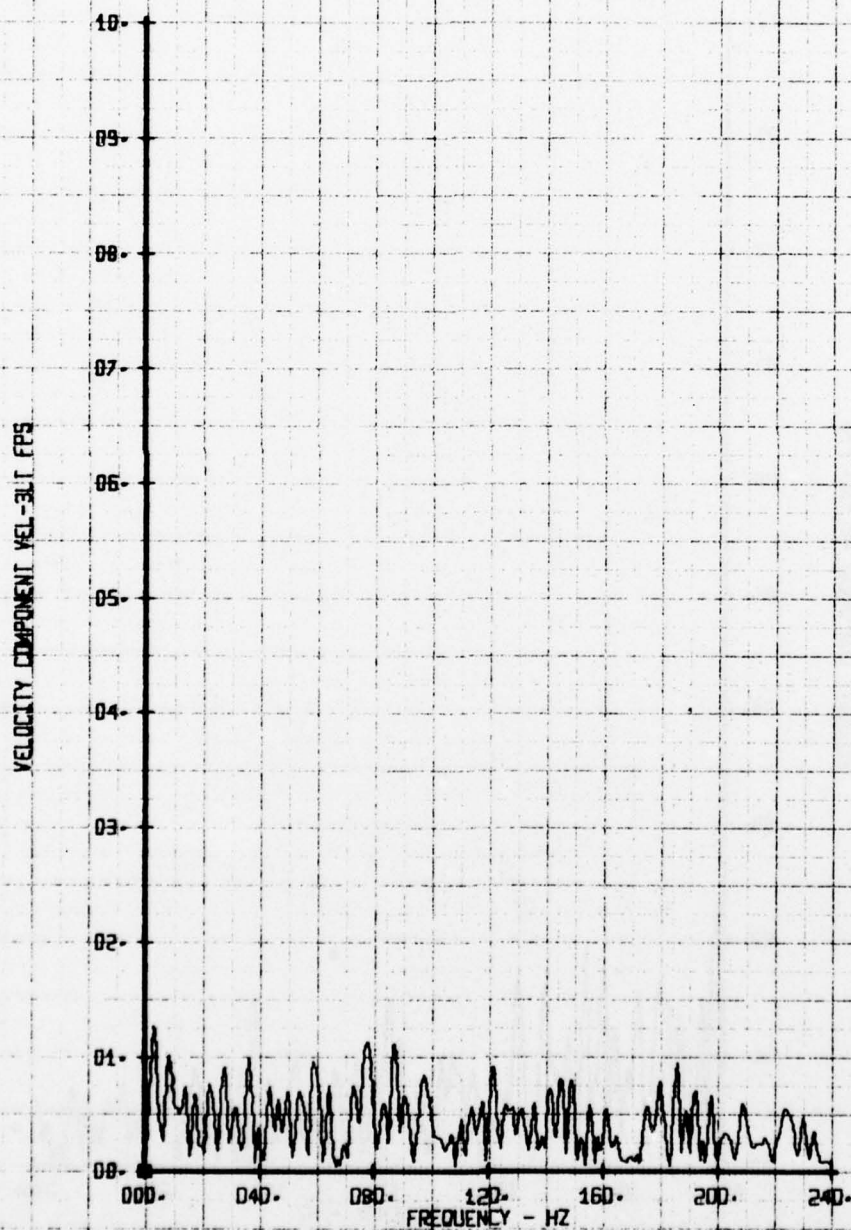
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/O BODY 160. 2.05P NB
RUN 167 TP 5

LEGEND
CH 70
PARAMETER
VEL-3LT



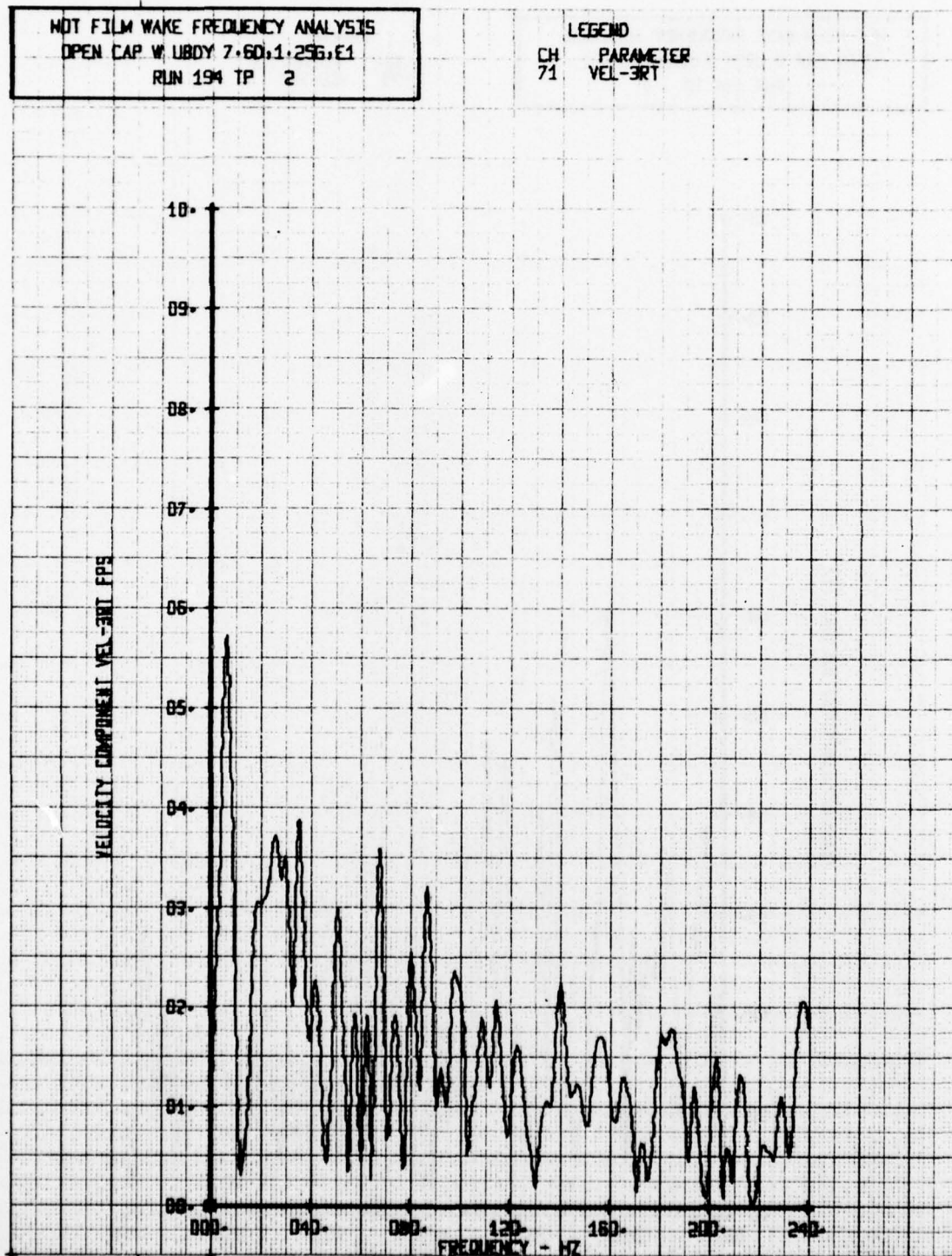
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/D BODY 160. 2.06P NR
RUN 167 TP 6

LEGEND
CH 70 PARAMETER
VEL-3LT



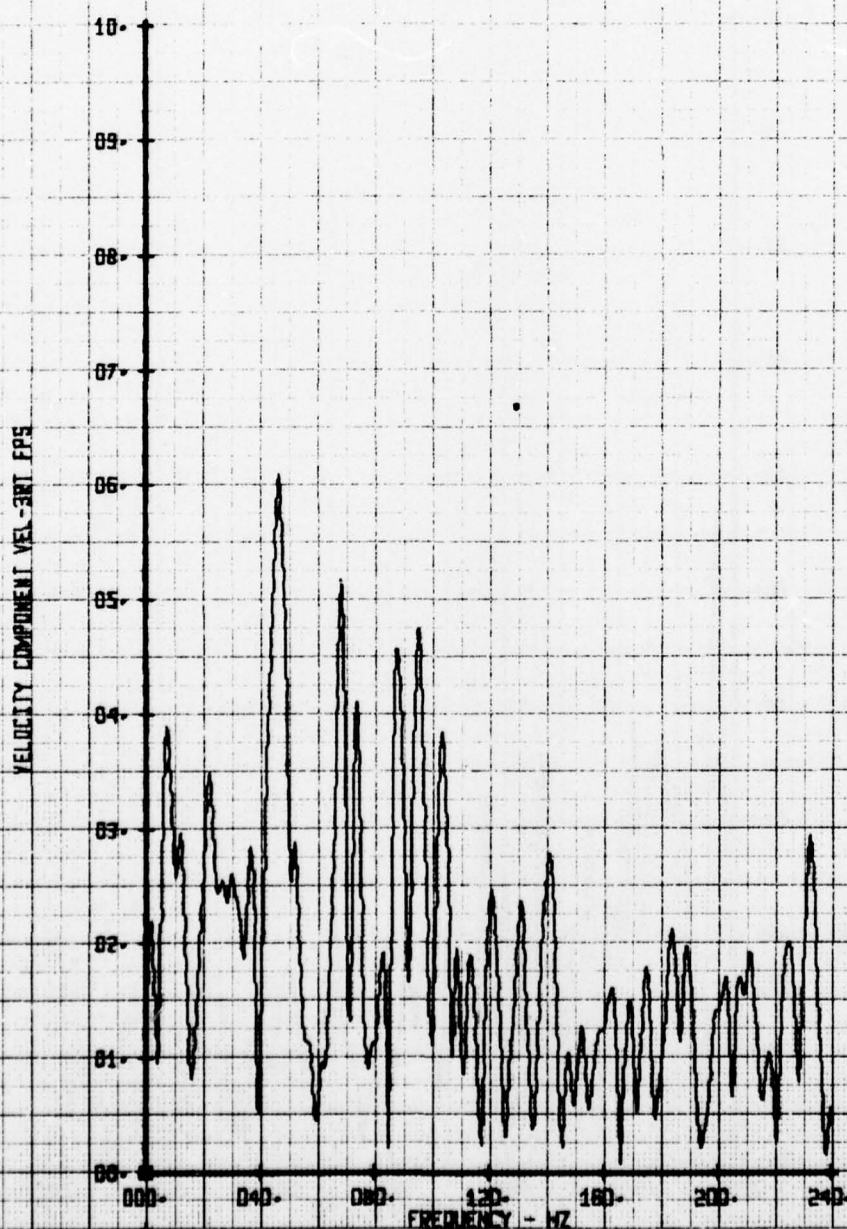
NOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 7.60:1.25G.E1
RUN 194 TP 2

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 7.60,1.256,E1
RUN 194 TP 3

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS

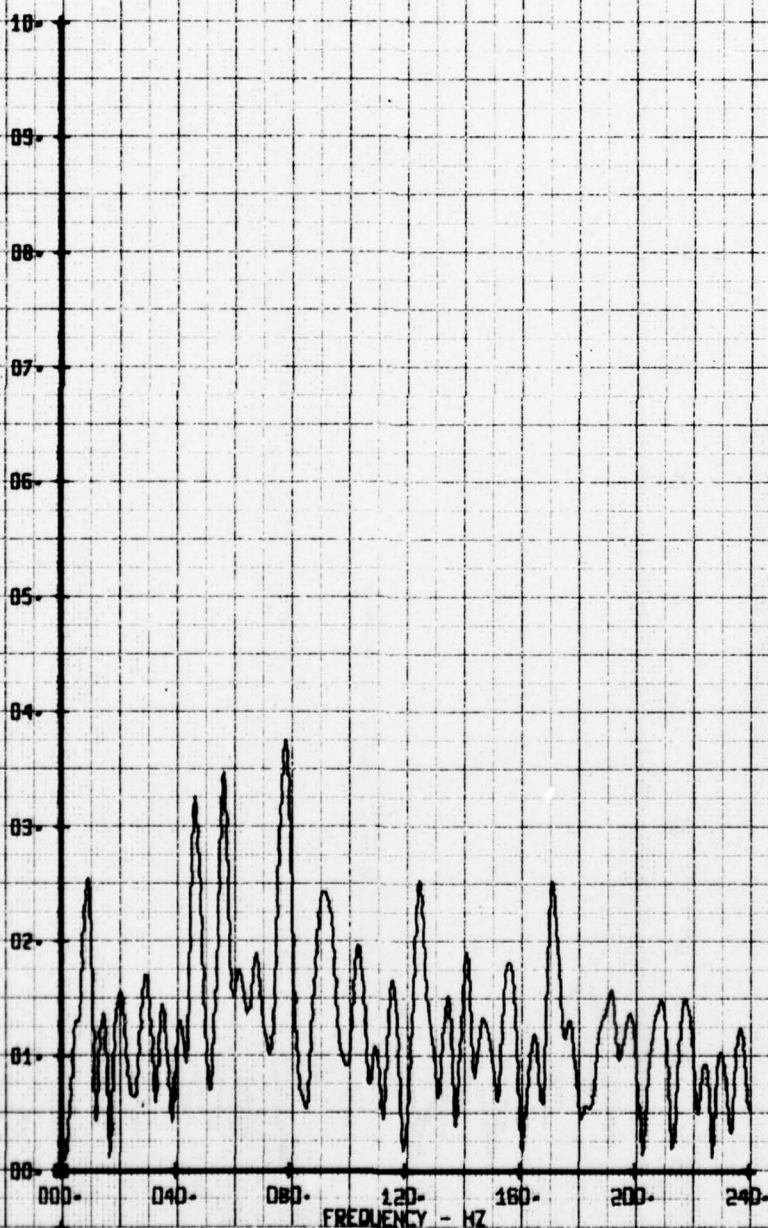
OPEN CAP W UBDY 7.60E11.256.E1

RUN 194 TP 4

LEGEND

CH 71
PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS

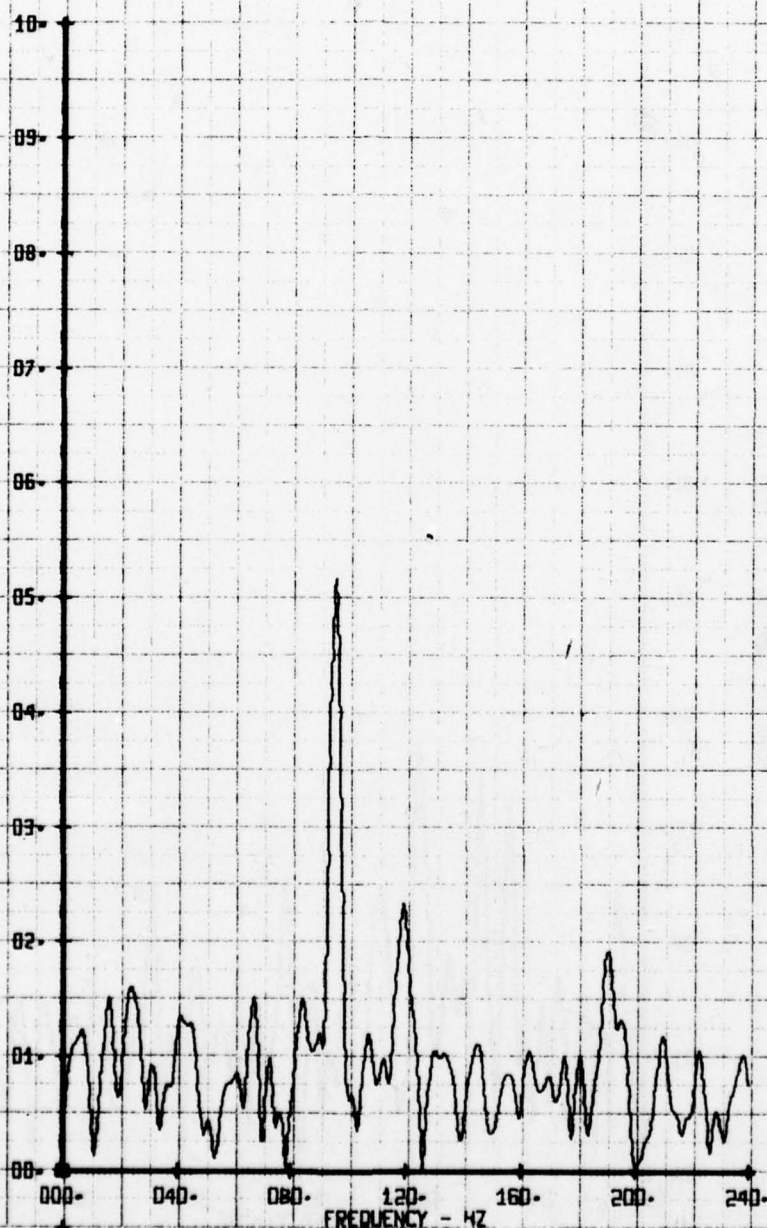
OPEN CAP W LBDY 7.60-1.256.E1

RUN 194 TP 5

LEGEND

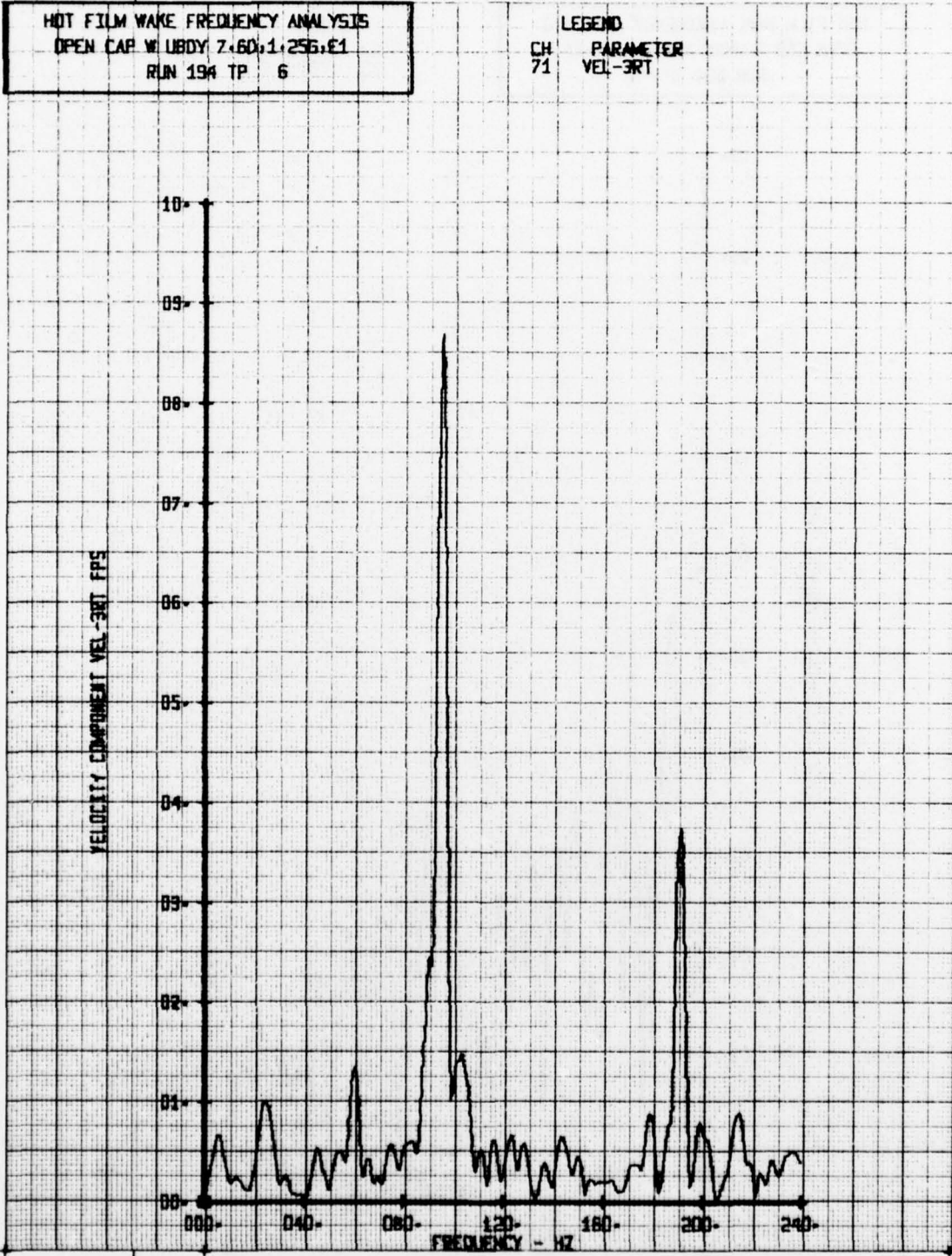
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



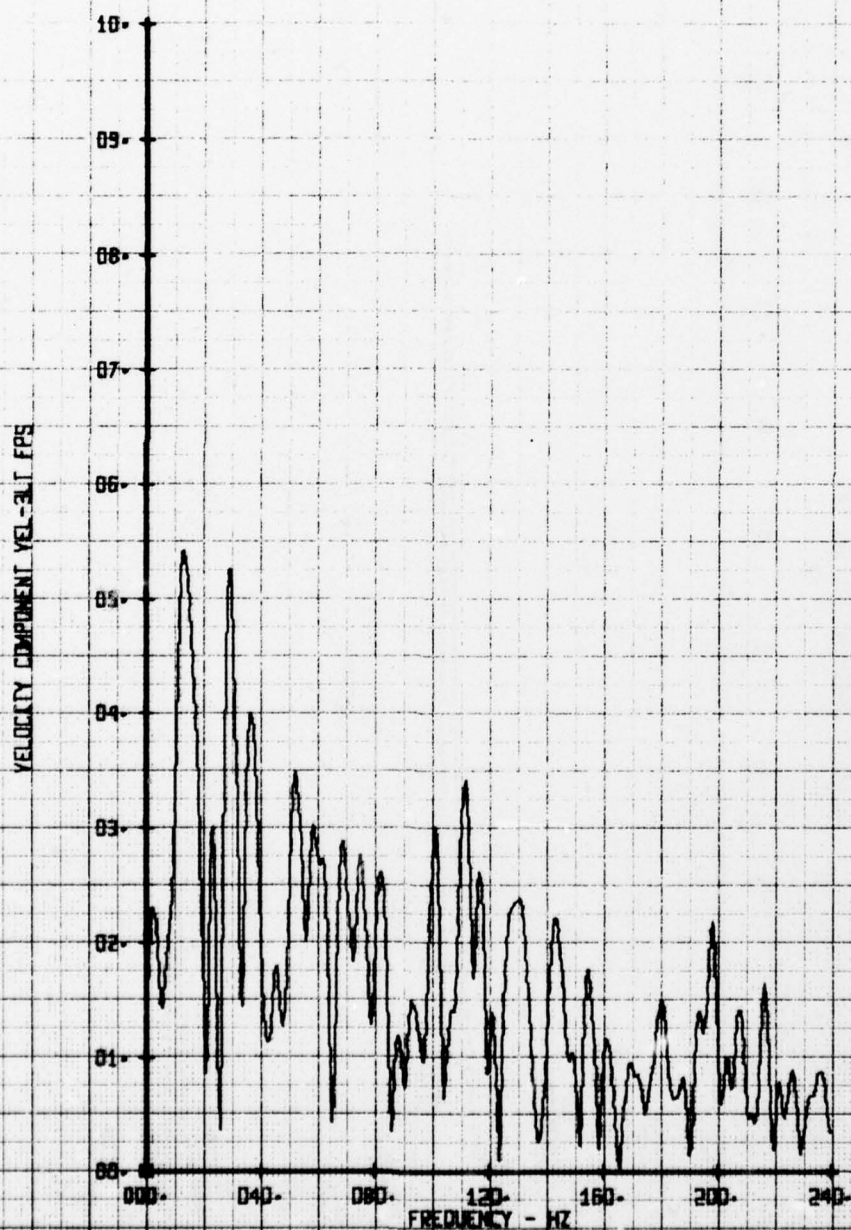
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 7.60, 1.256, E1
RUN 194 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT



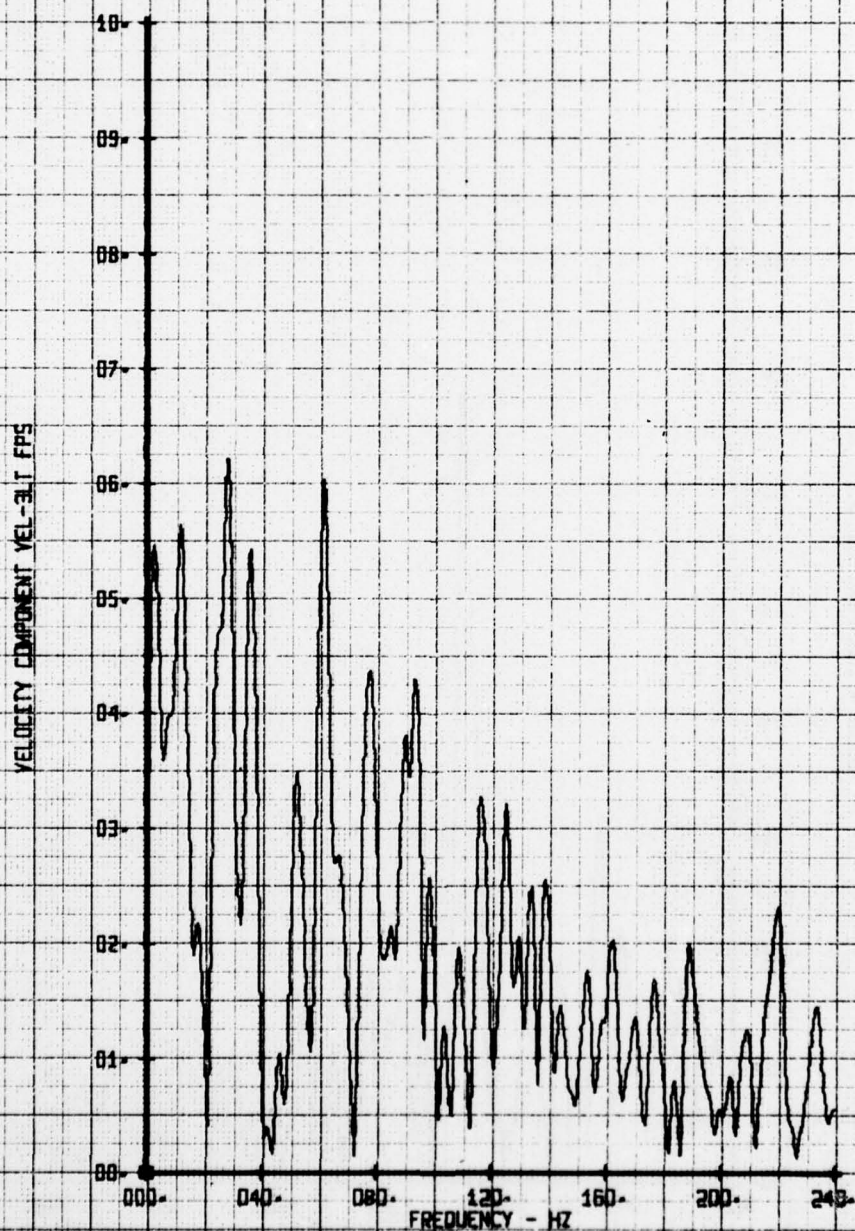
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W/ BODY 7.60, 1.256, E1
RUN 194 TP 2

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W. BODY 7.60, 1.256, E1
RUN 194 TP 3

LEGEND
CH 70 PARAMETER
VEL-3LT



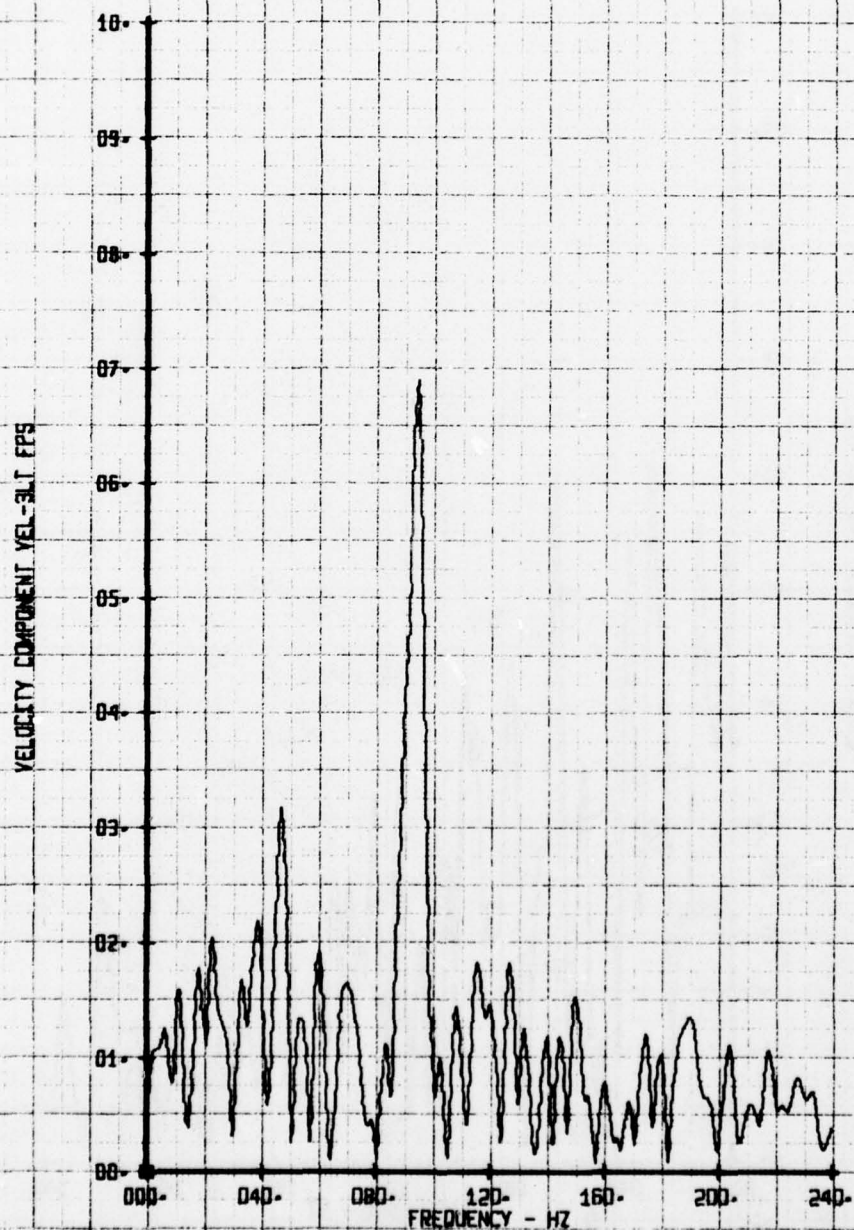
HOT FILM WAKE FREQUENCY ANALYSIS

OPEN CAP W UBOY 7.60.1.256.E1

RUN 194 TP 4

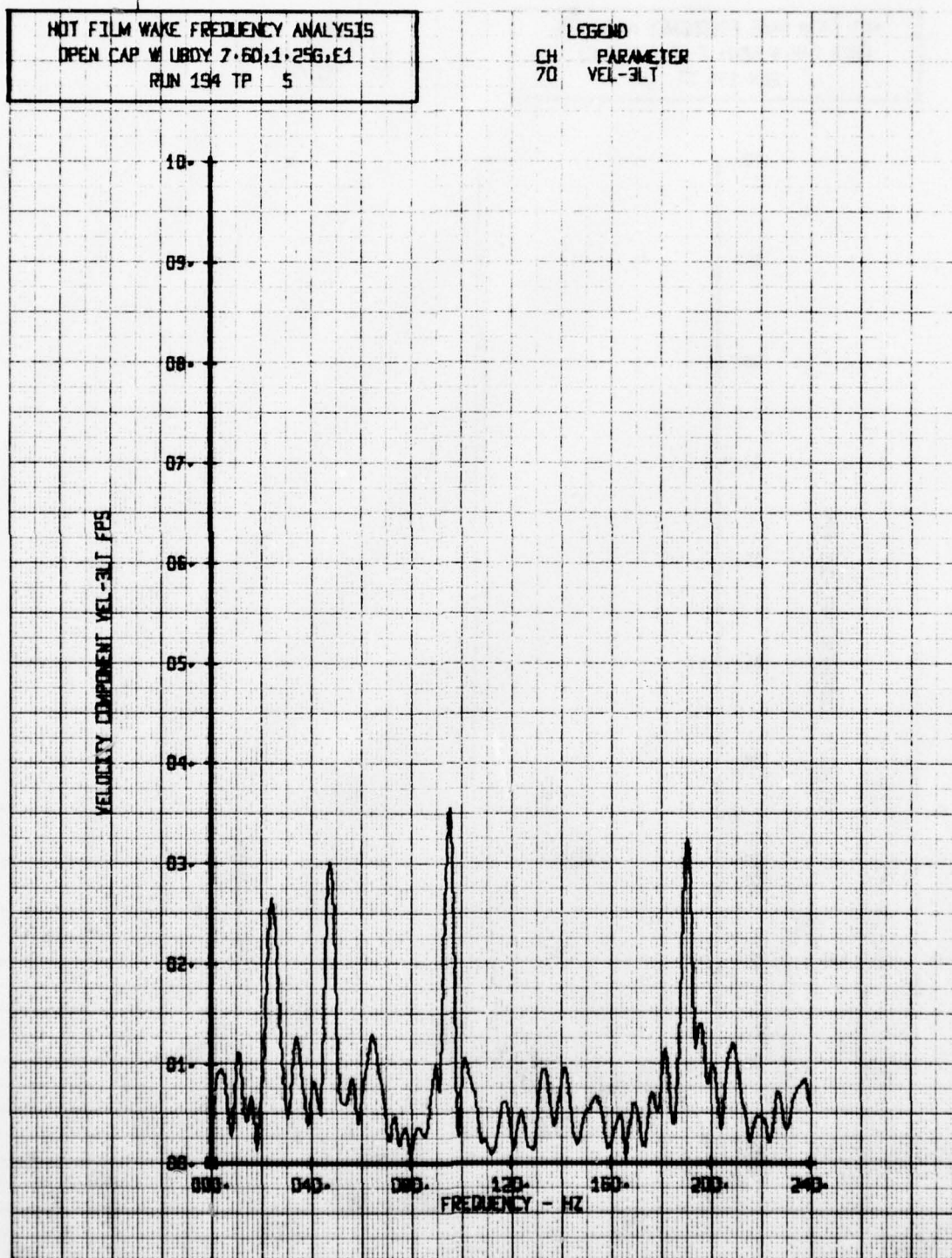
LEGEND

CH	PARAMETER
70	VEL-3LT



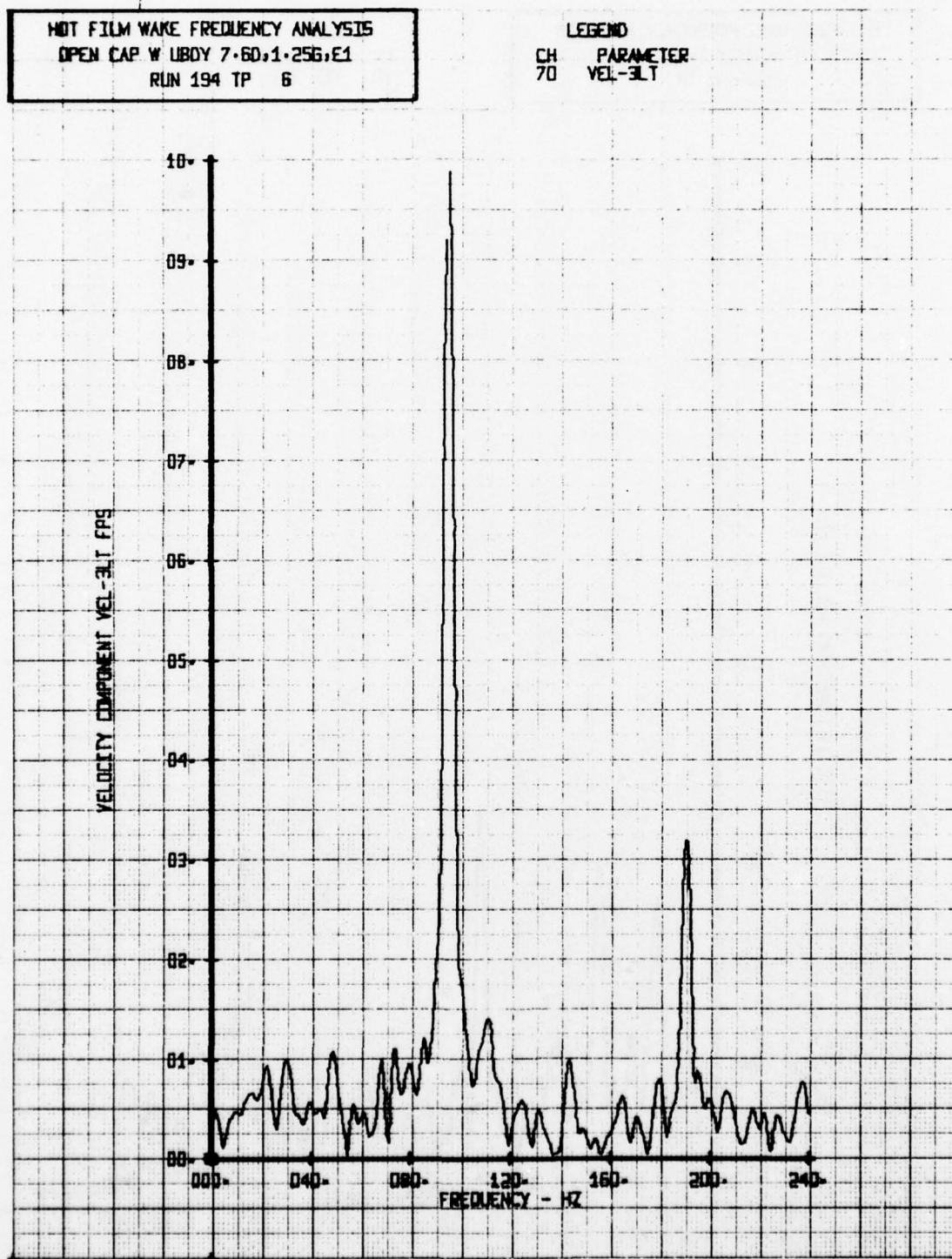
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 7.60,1.25G,E1
RUN 194 TP 5

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 7.60,1.25G,E1
RUN 194 TP 6

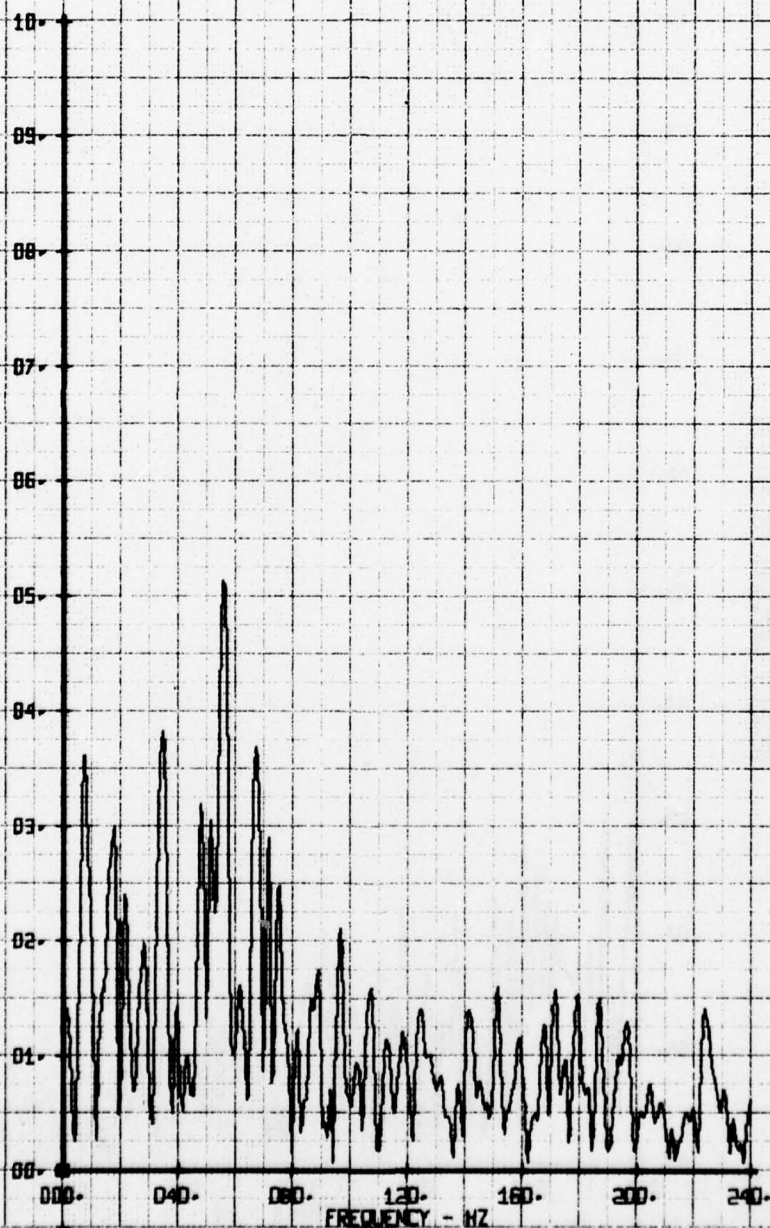
LEGEND
CH PARAMETER
70 VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40, 1-256 NO BLDS
RUN 161 TP 2

LEGEND
CH 71 PARAMETER
VEL-3RT

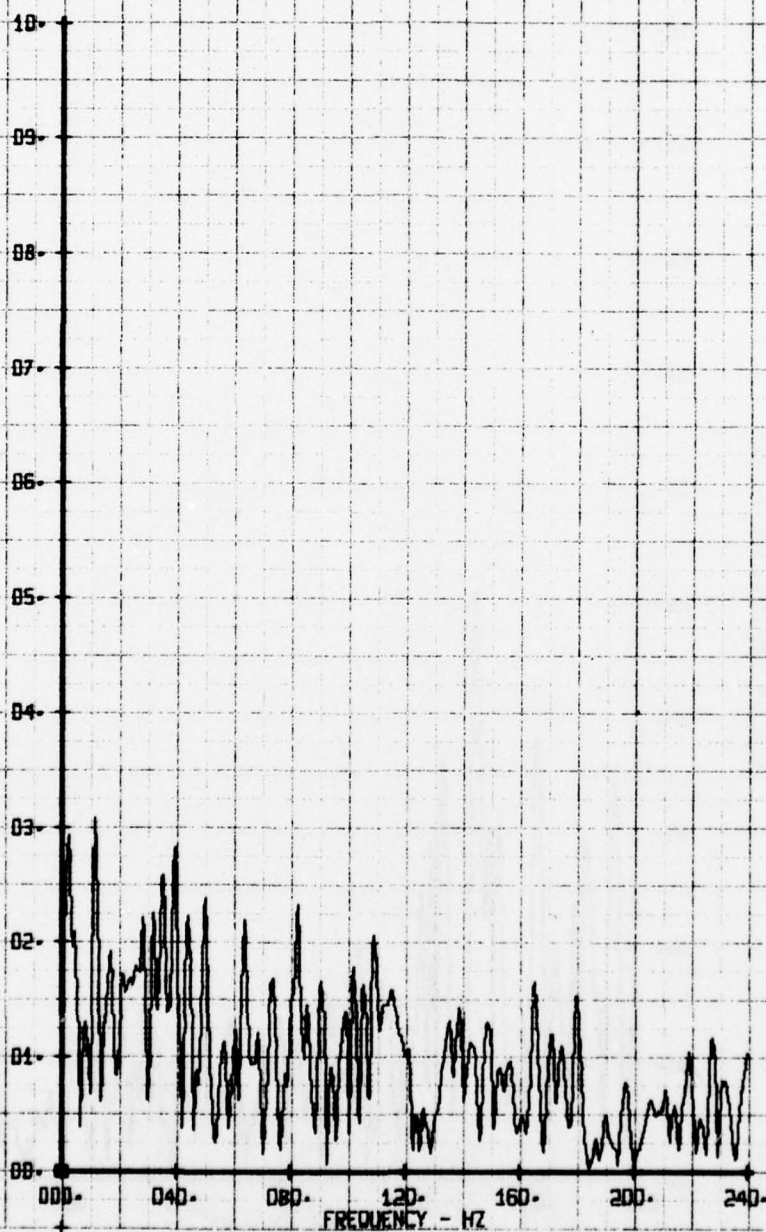
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10-40, 1.25G NO BLDS
RUN 161 TP 3

LEGEND
CH 71 PARAMETER
VEL-3RT

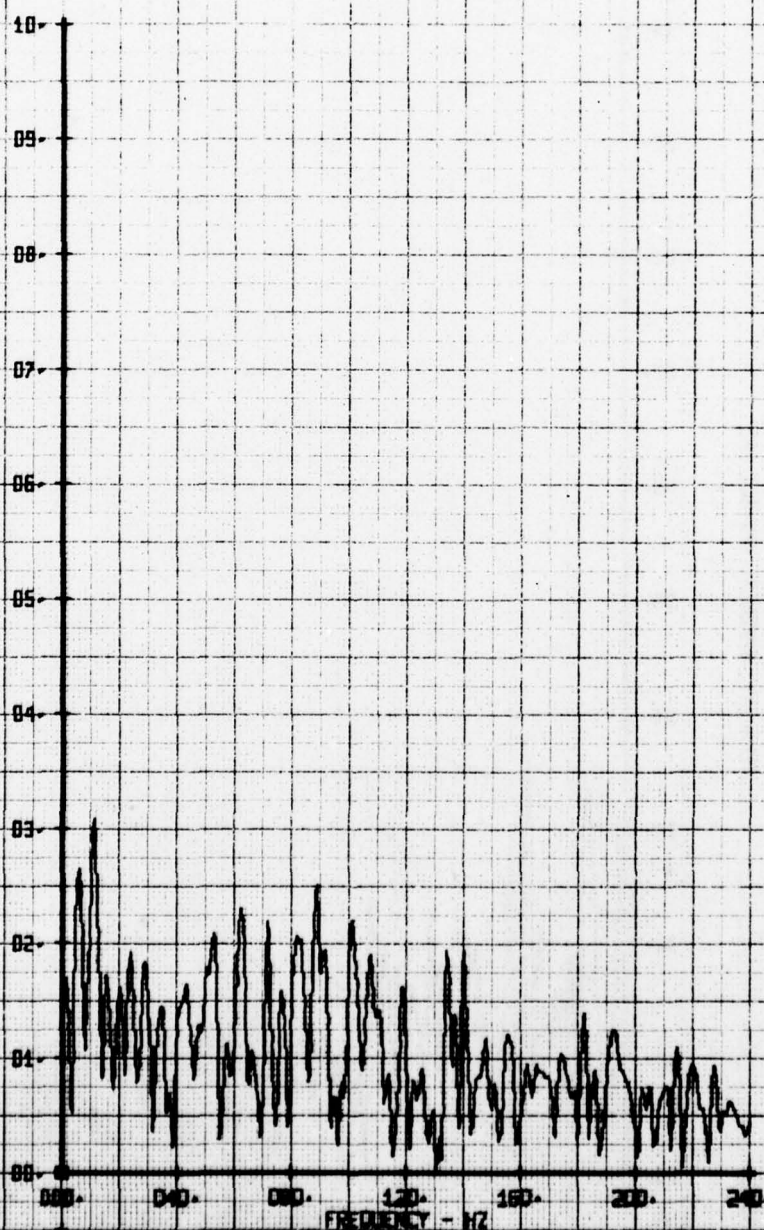
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LIBBY 10.40, 1.256 NO BLDG
RUN 161 TP 4

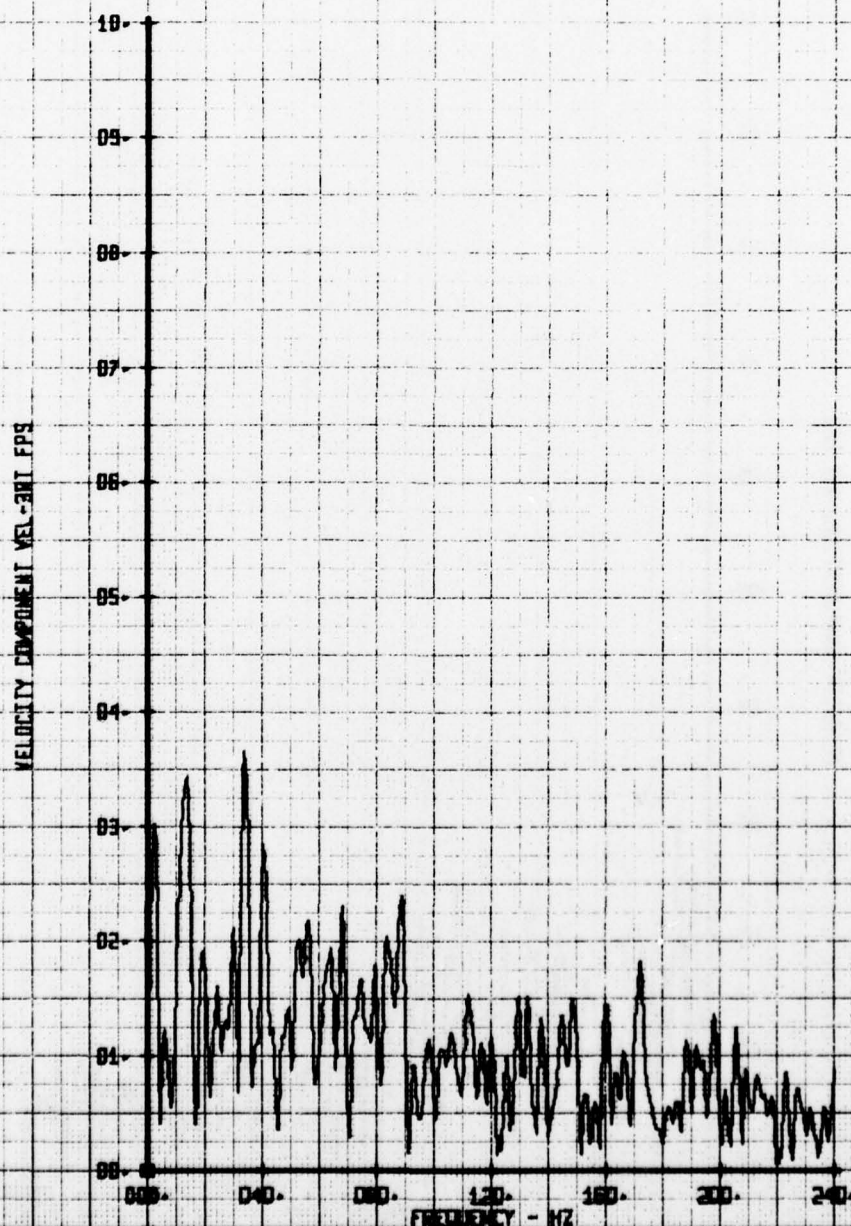
LEGEND
CH 71 PARAMETER
71 VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



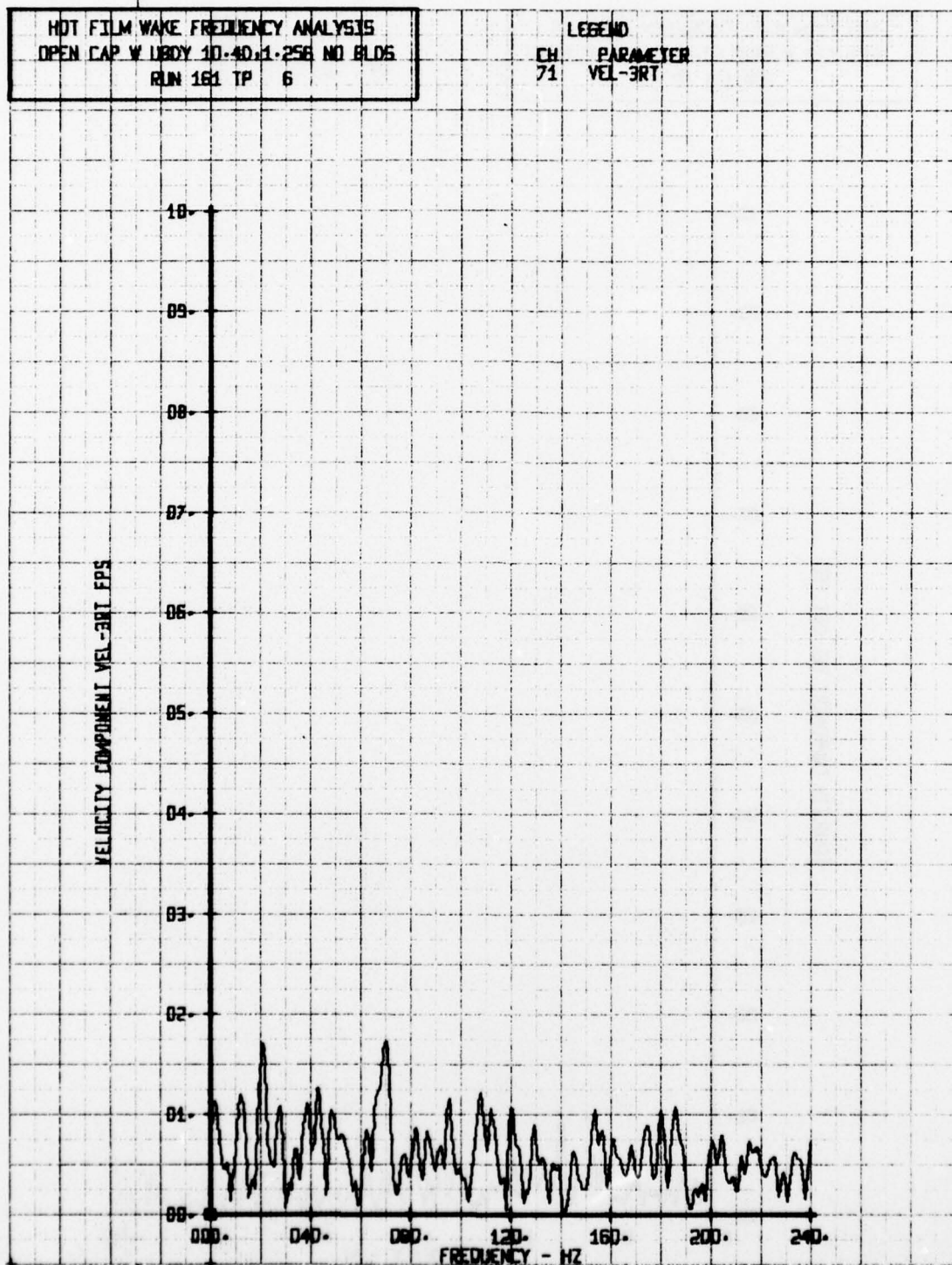
HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10.40.1.256 NO BLDG
RUN 161 TP 5

LEGEND
CH: PARAMETER
71: VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40, 1.256 NO BLDG
RUN 181 TP 6

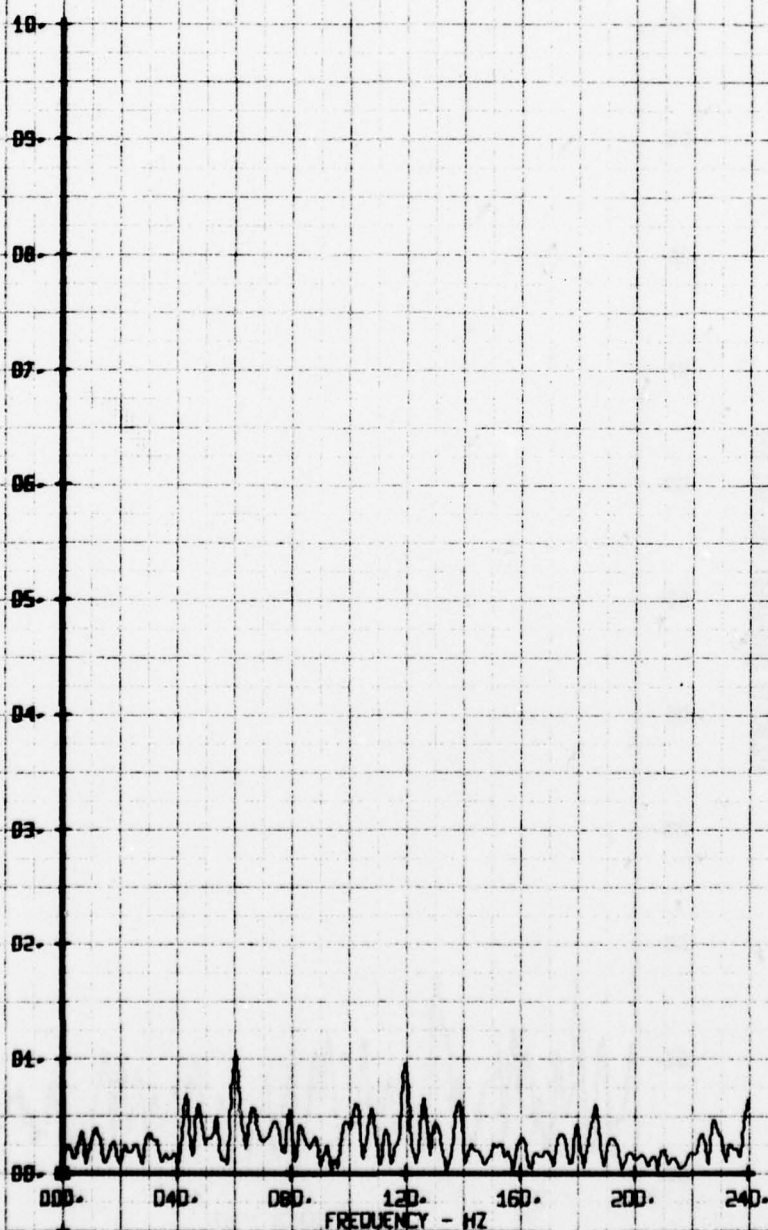
LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10-40, 1-256 NO BLOS
RUN 161 TP 7

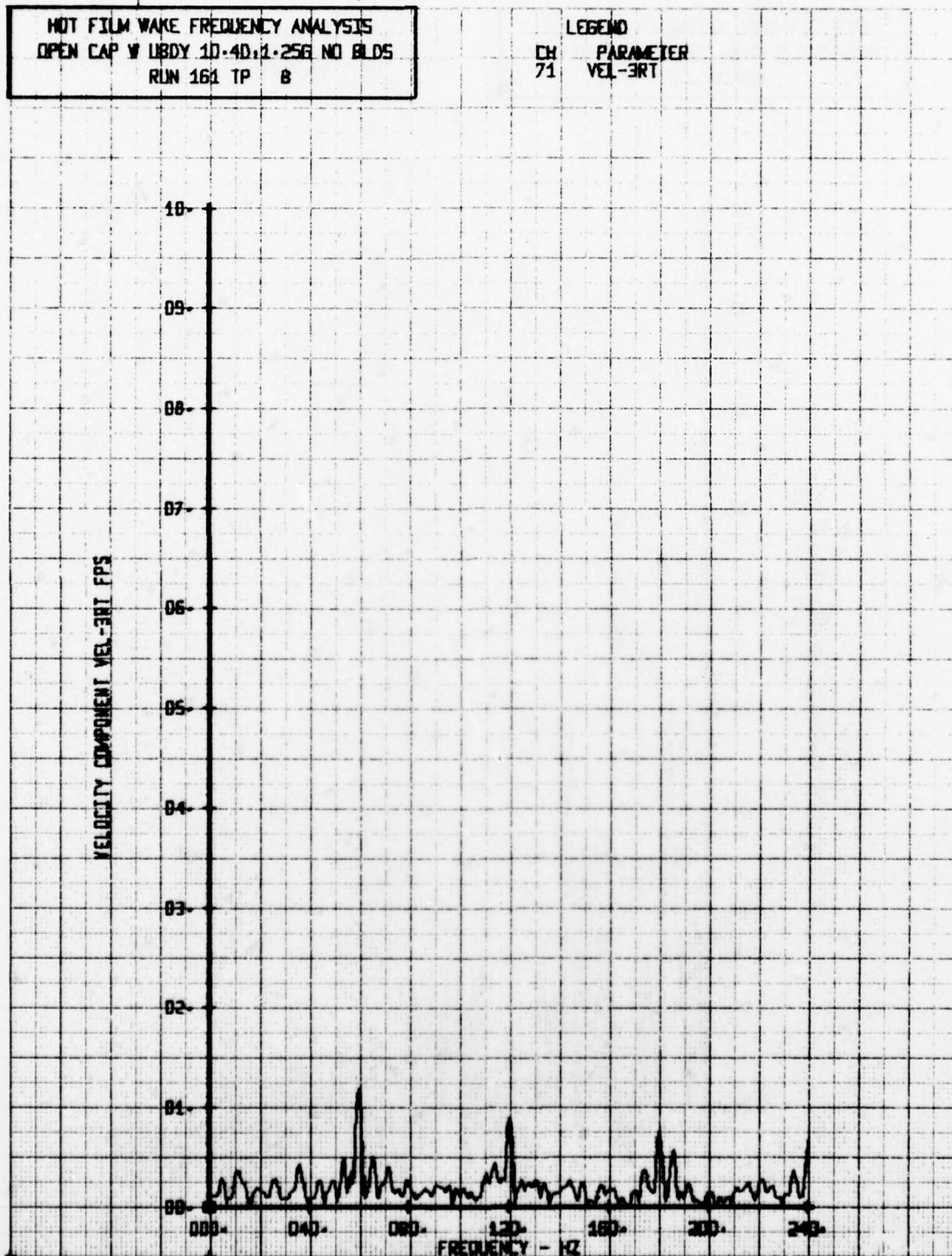
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



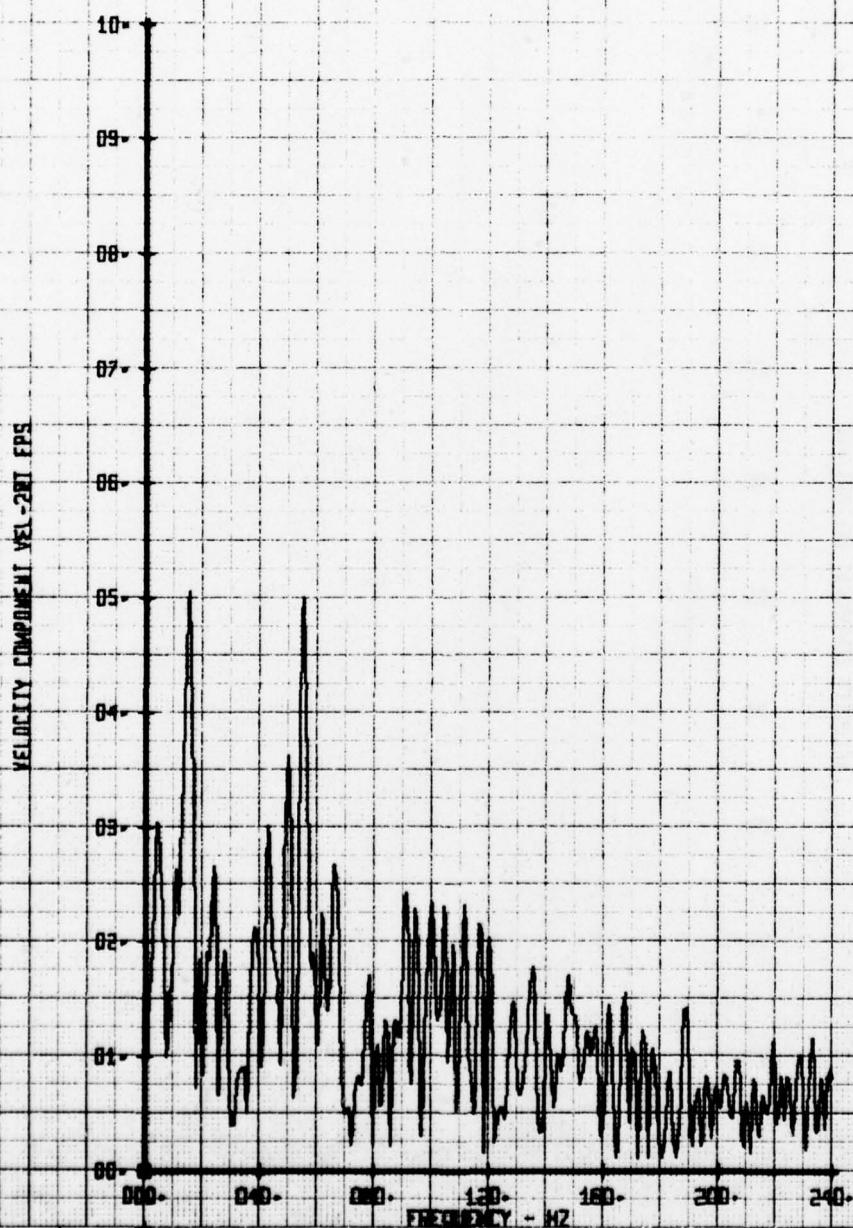
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40, 1.25G NO BLD5
RUN 161 TP 8

LEGEND
CH 71
PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10.40.1.256 NO BLOS
RUN 161 TP 2

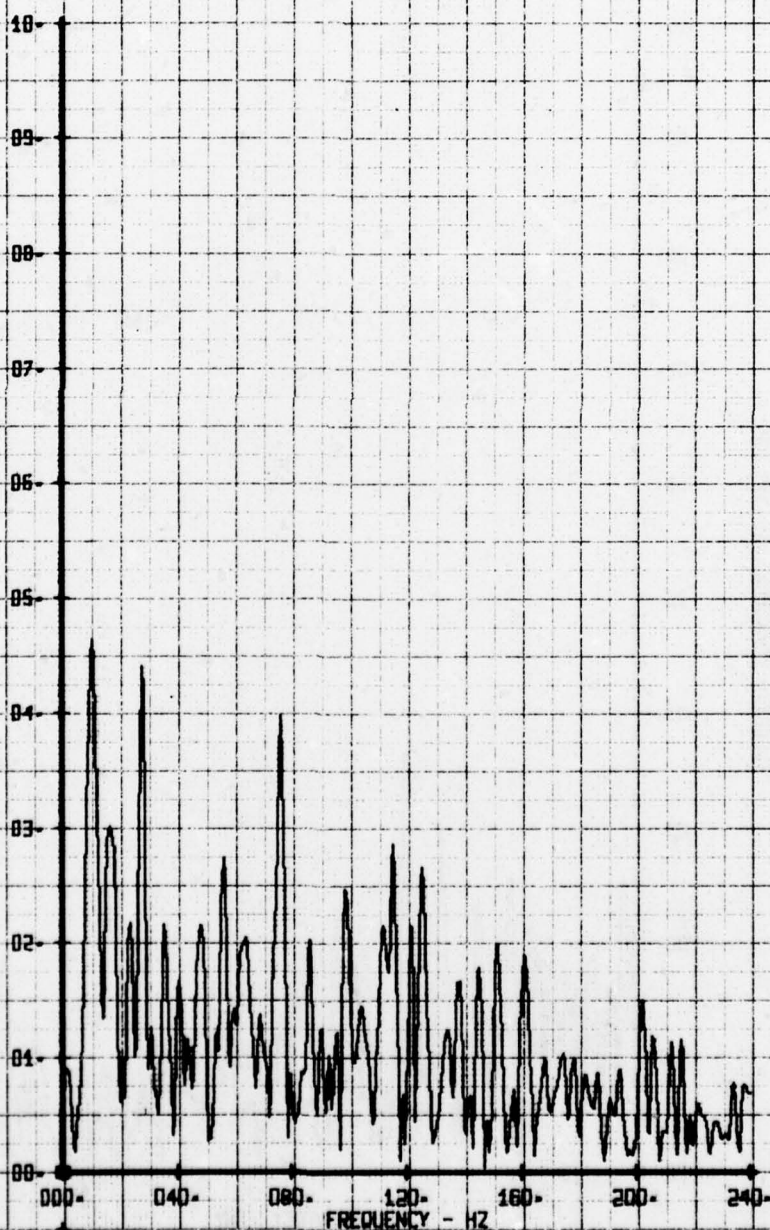
LEGEND
CH 75
PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBOY 10-40, 1.25G NO BLOS
RUN 161 TP 3

LEGEND
CH 75
PARAMETER
VEL-2RT

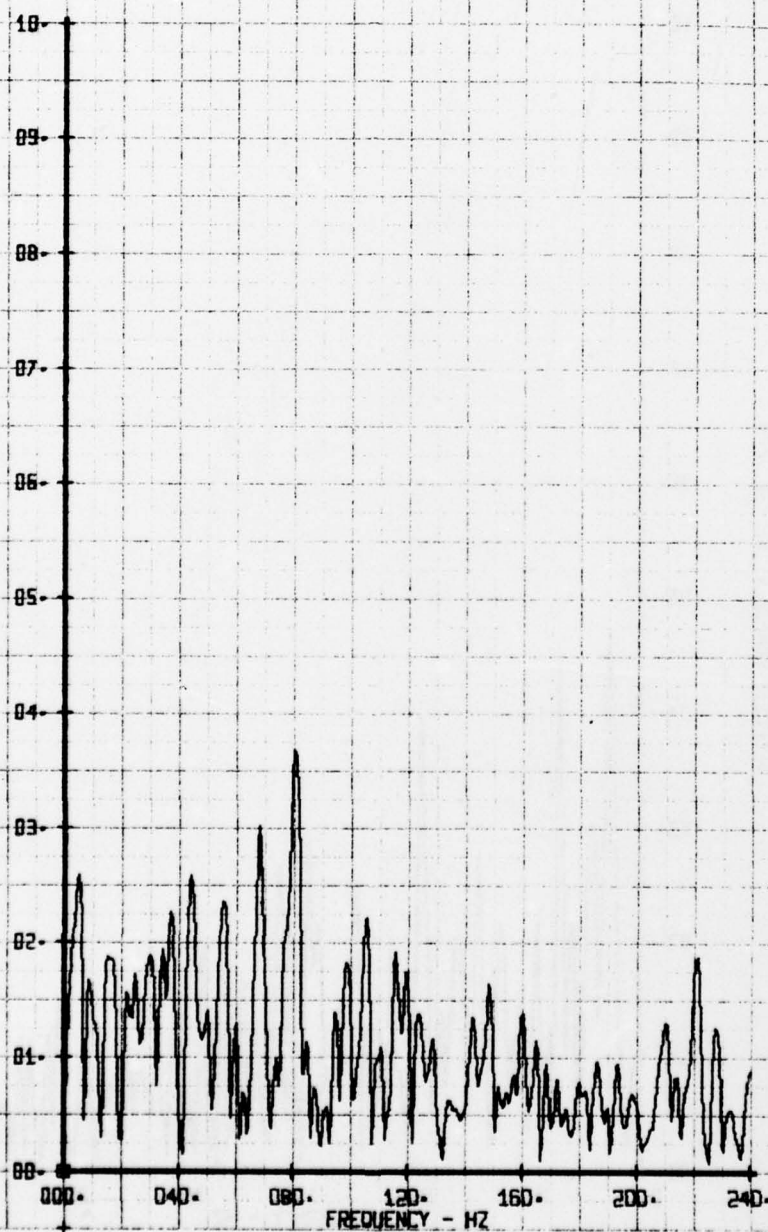
VELOCITY COMPONENT VEL-2RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LUBOY 10-40, 1-256 NO BLOS
RUN 161 TP 4

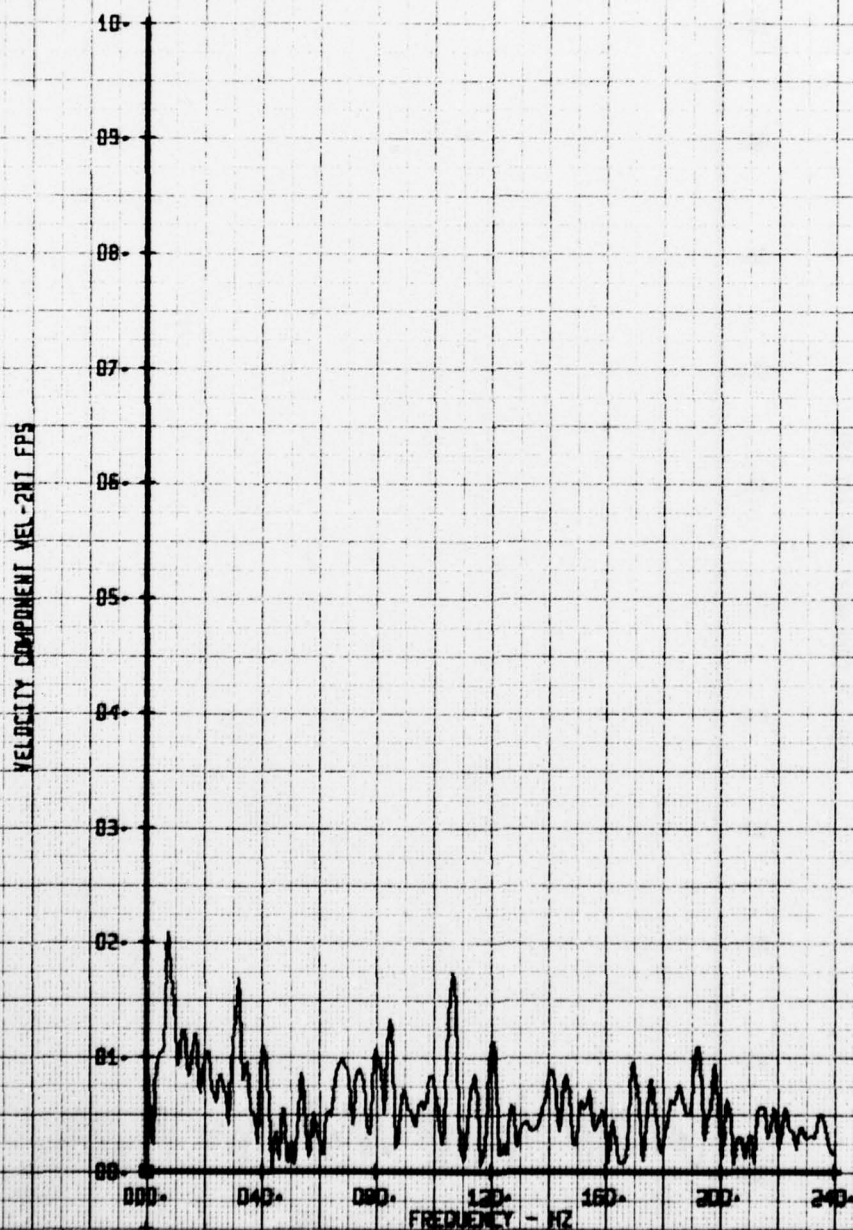
LEGEND
CH 75
PARAMETER
VEL-2RT

VELOCITY COMPONENT VEL-2RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40, 1-256 NO BLOS
RUN 161 TP 5

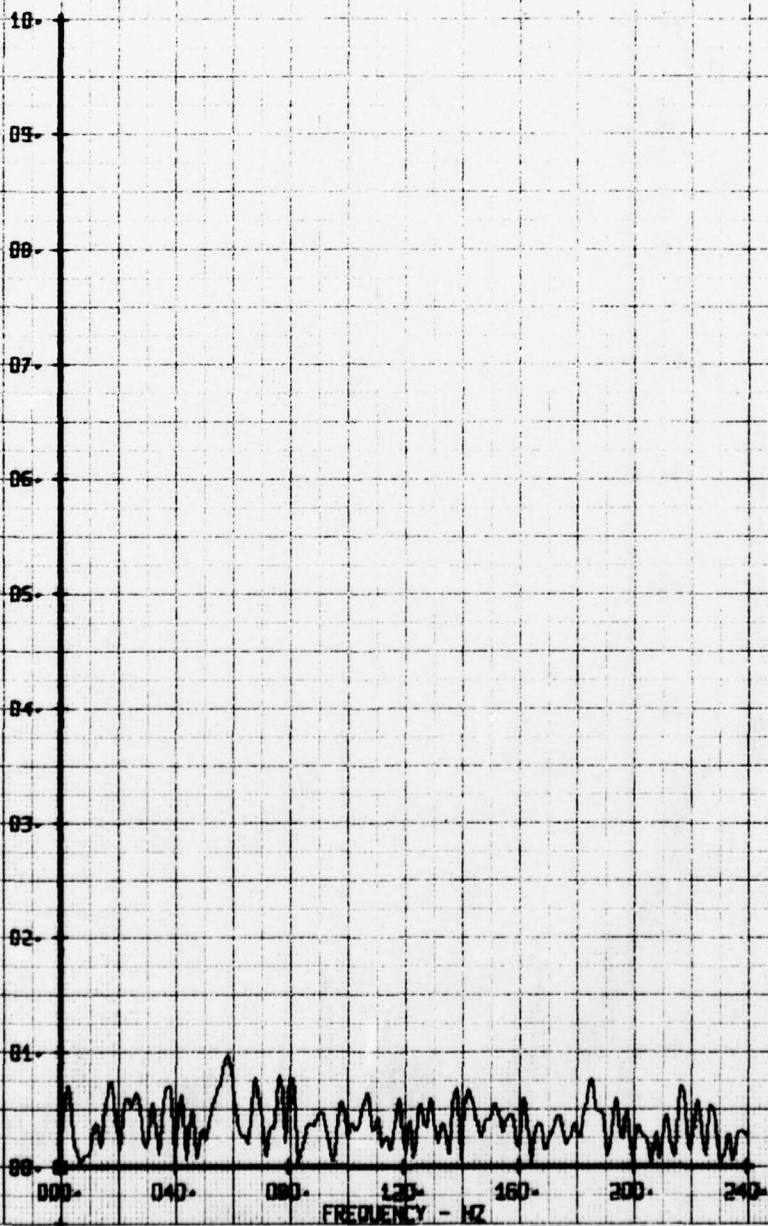
LEGEND
CH 75
PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LIBBY 10-40, 1-256 NO BLOS
RUN 161 TP 6

LEGEND
CH 75 PARAMETER
VEL-2RT

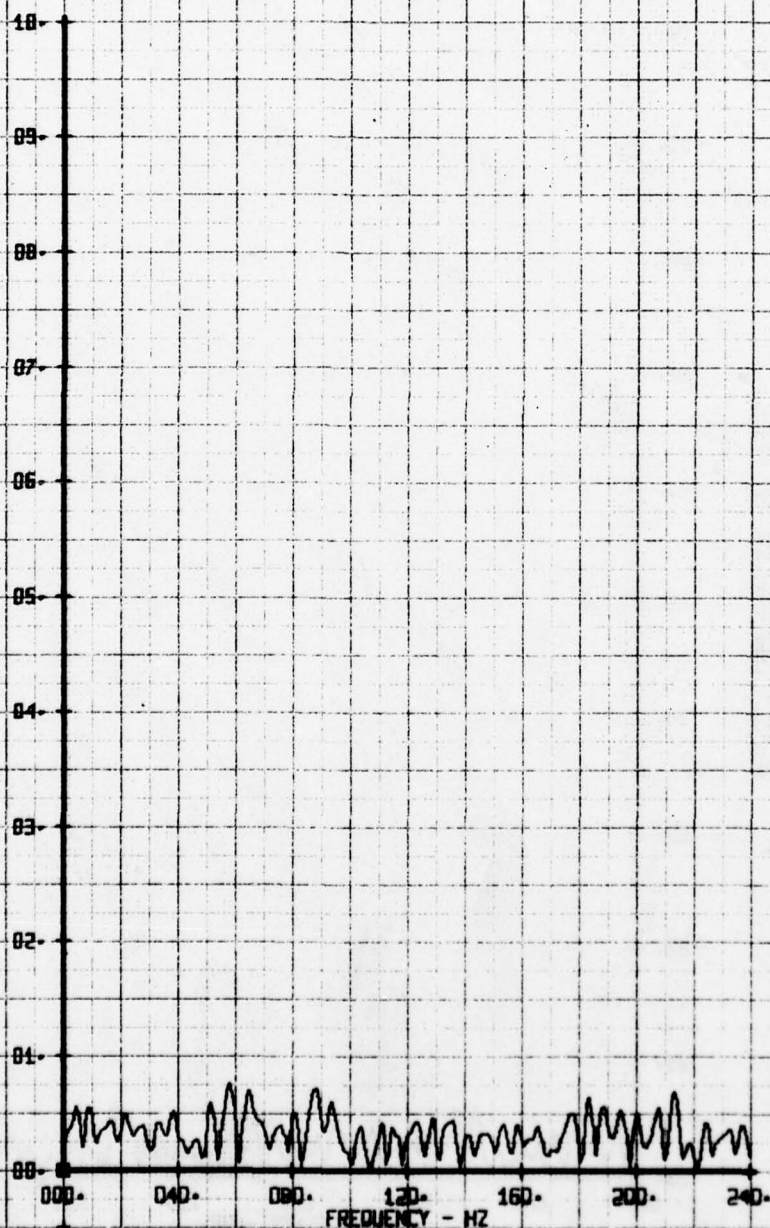
VELOCITY COMPONENT VEL-2RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40, 1-256 NO BLOS
RUN 161 TP 7

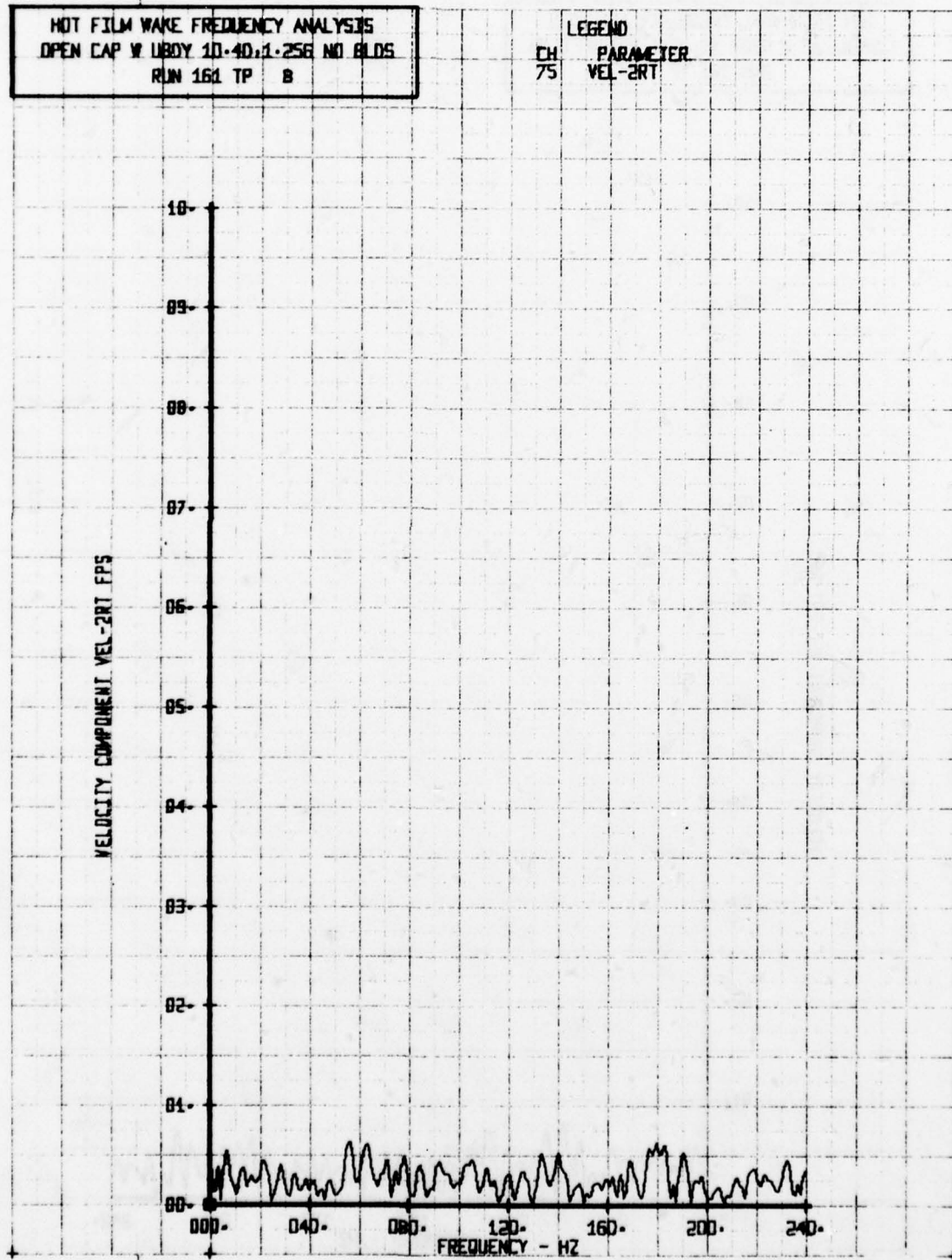
LEGEND
CH 75
PARAMETER
VEL-2RT

VELOCITY COMPONENT VEL-2RT FPS



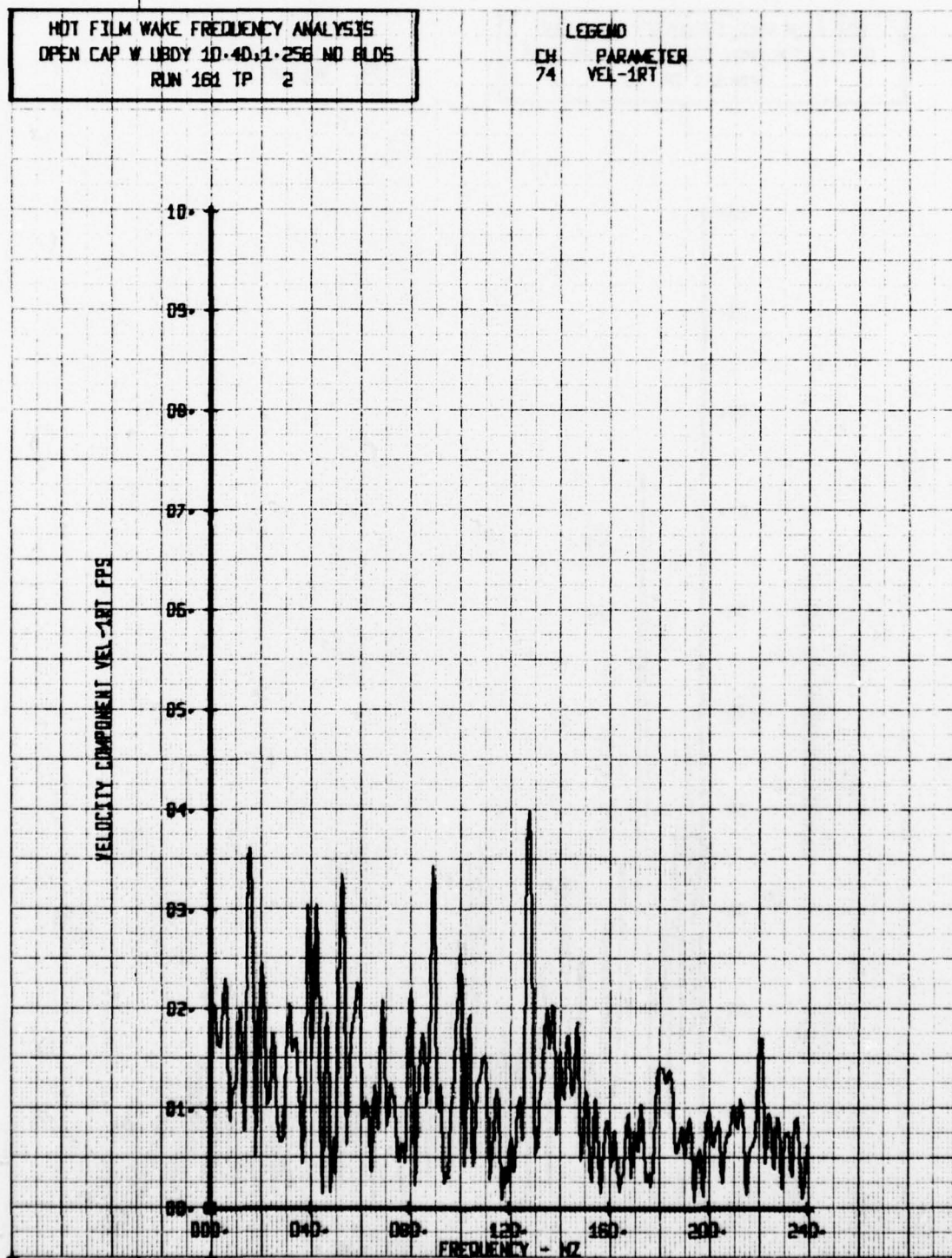
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10-40, 1-256 NO BLOS
RUN 161 TP 8

LEGEND
CH 75
PARAMETER
VEL-2RT



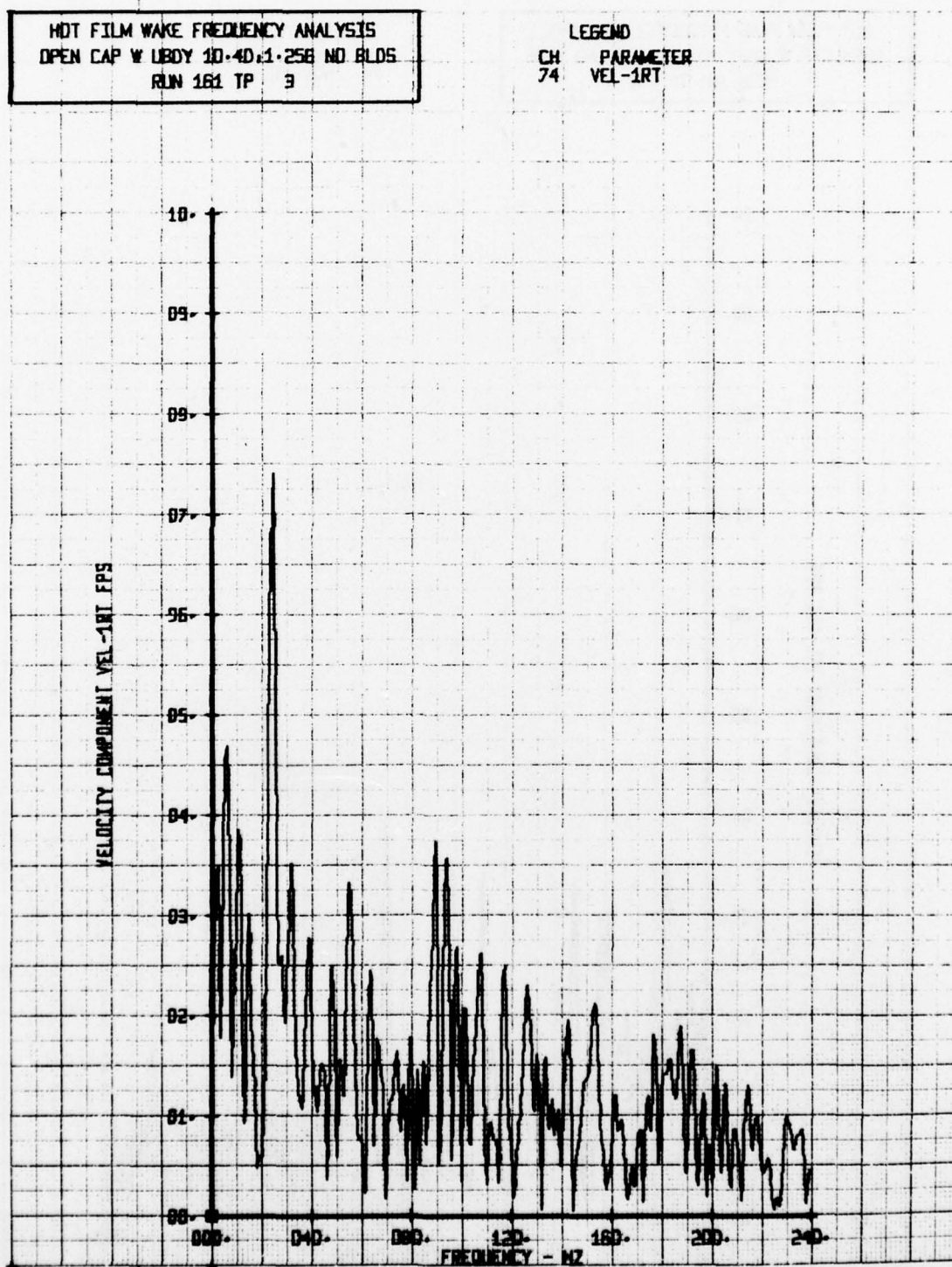
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W. BODY 10-40, 1.256 NO BLOS
RUN 161 TP 2

LEGEND
CH 74 PARAMETER
VEL-1RT



HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40:1-256 NO BLOS
RUN 161 TP 3

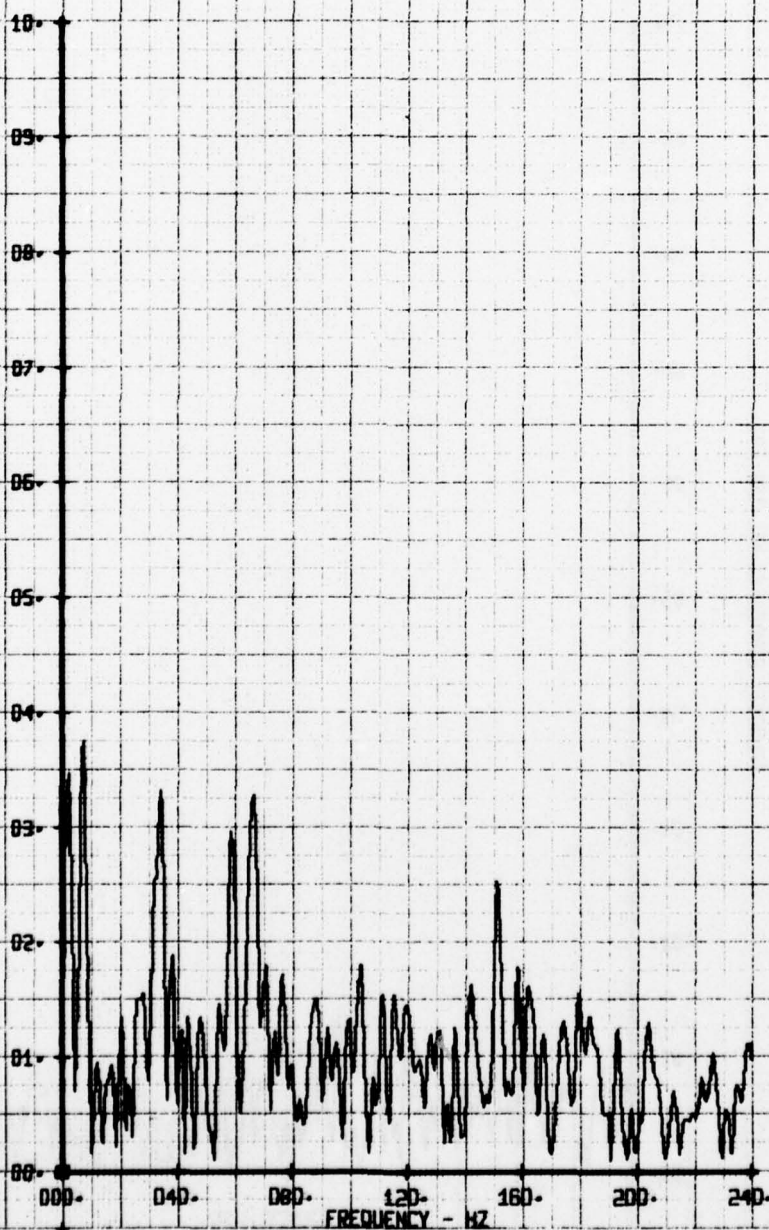
LEGEND
CH 74 PARAMETER
VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBOY 10-40.1-256 NO BLOS
RUN 161 TP 4

LEGEND
CH 74 PARAMETER
VEL-1RT

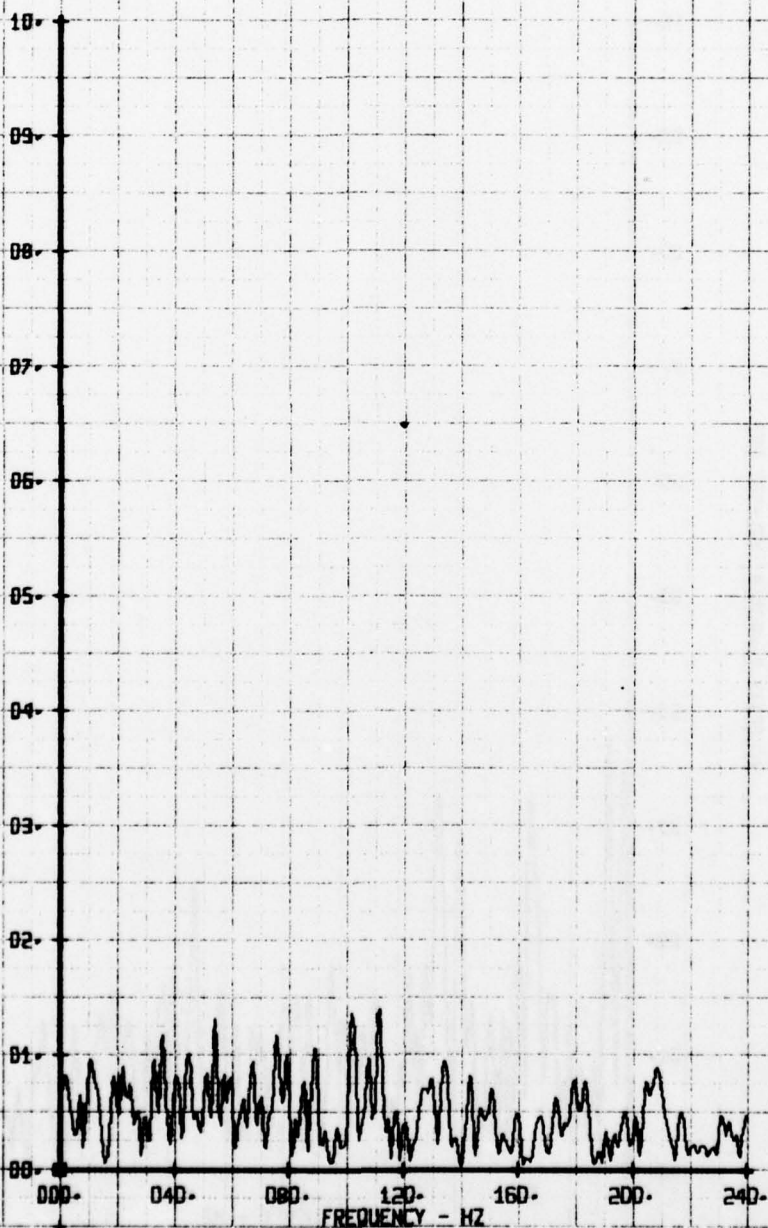
VELOCITY COMPONENT VEL-1RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UDDY 10.40.1.256 NO BLOS
RUN 161 TP 5

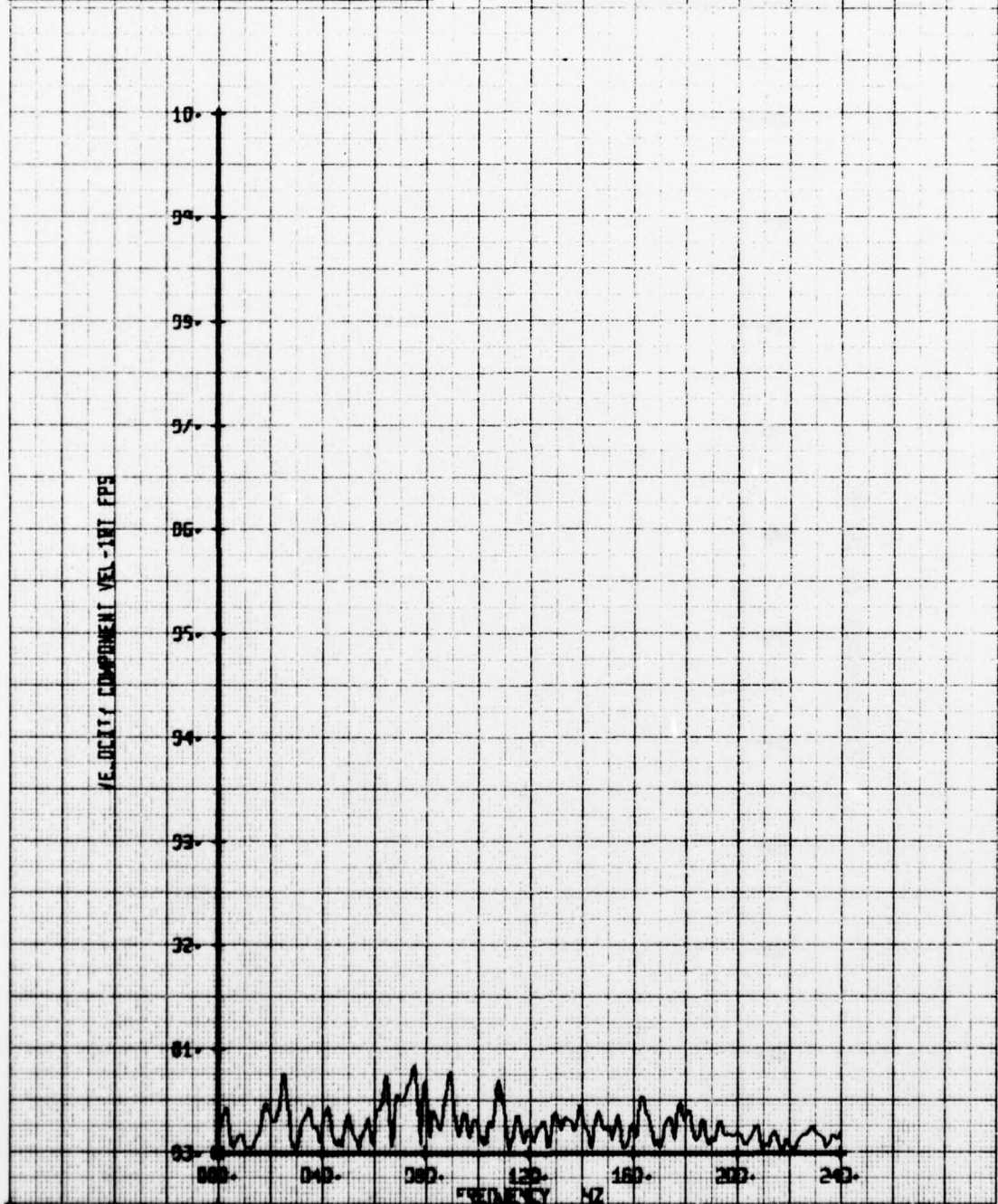
LEGEND
CH 74 PARAMETER
74 VEL-1RT

VELOCITY COMPONENT VEL-1RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBOY 10.40.1.256 NO BLOS
RUN 162 TP 6

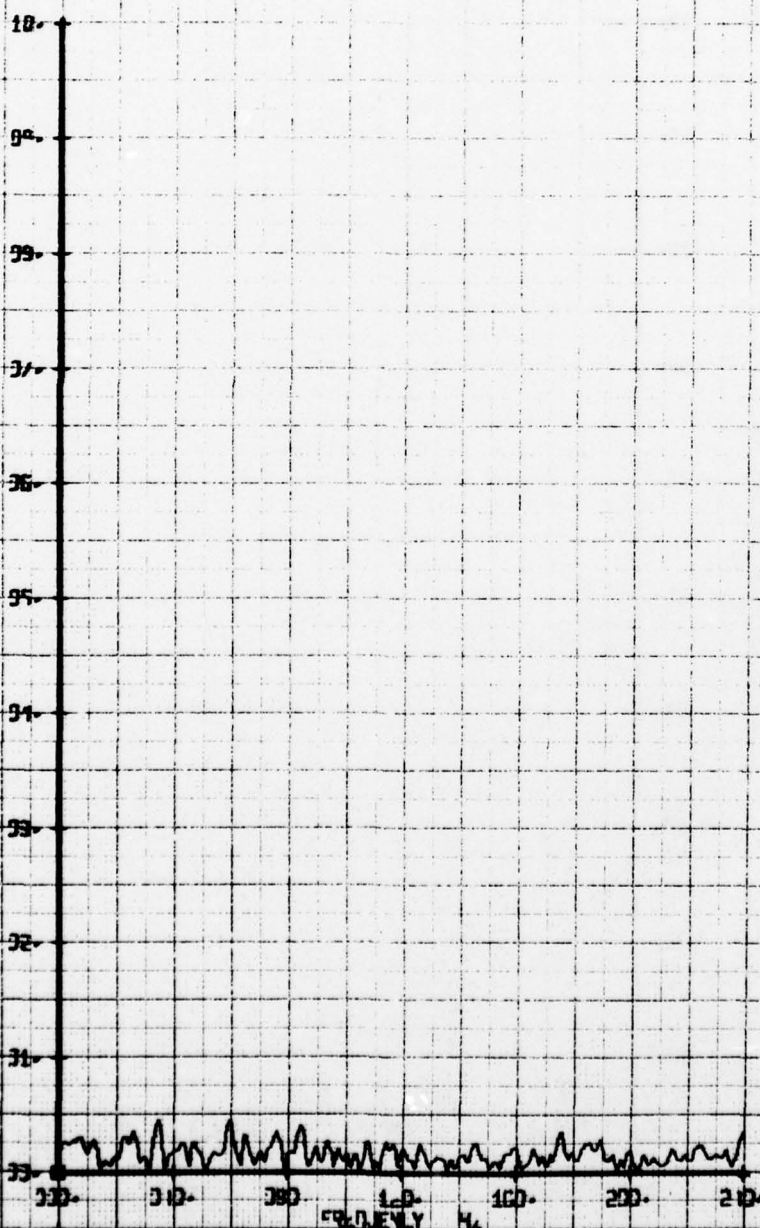
LEGEND
CH 74 PARAMETER
VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
 OPEN CAP W BODY 10-40-1-256 NO 9L35
 RUN 101 TO 7

LEGEND
 L4 PARAMETER
 /4 REL 12"

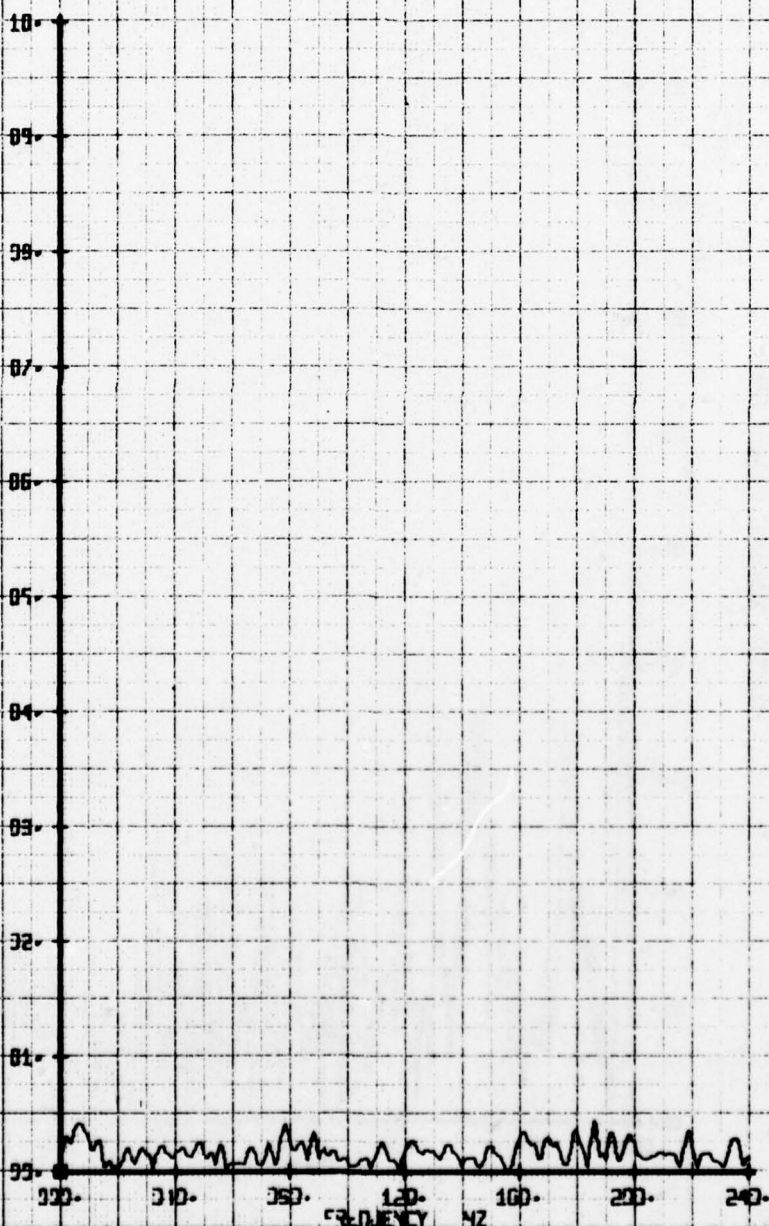
VELOCITY COMPONENT REL 12" FPS



HOT FILM WAKE FREQUENCY ANALYSIS
 OPEN CAP # 1001 10.10.1.256 NO 3 OF
 JUN 101 TO 9

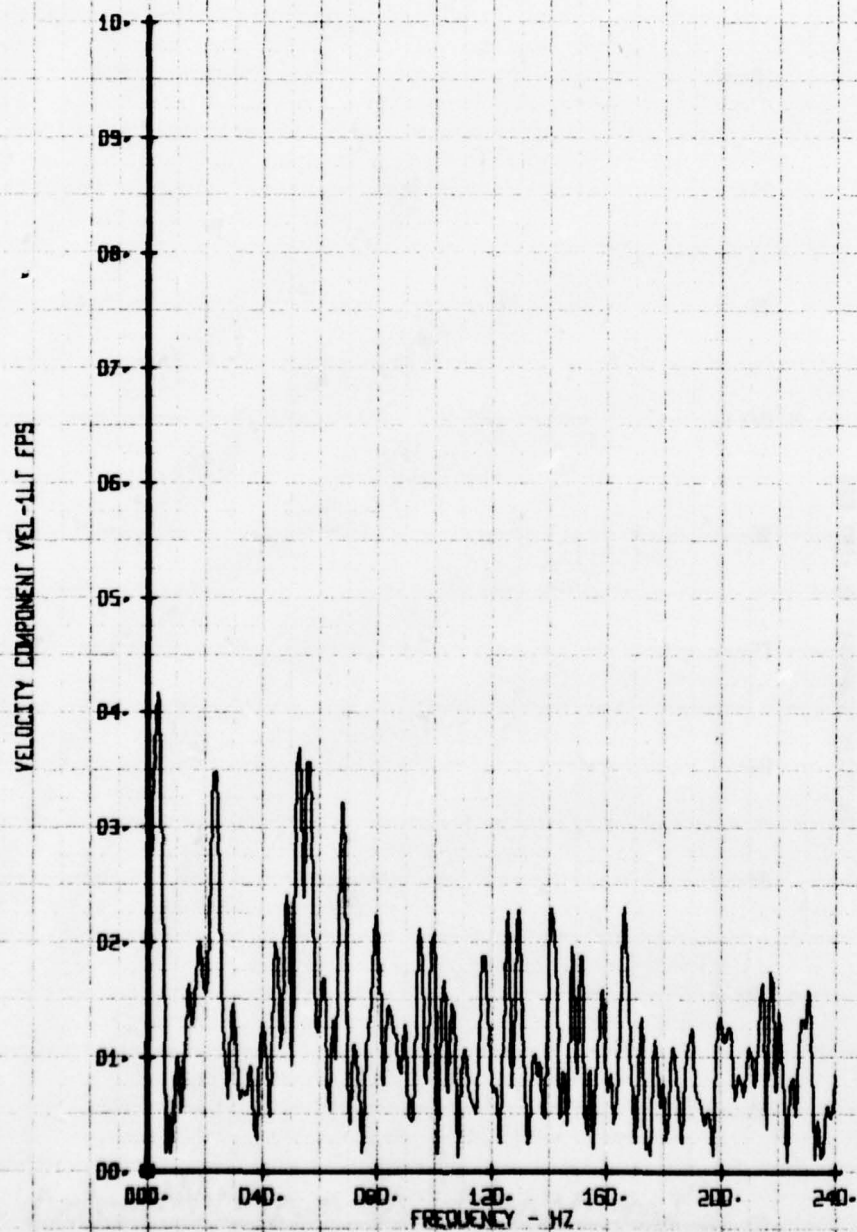
LEGEND
 L4 PARAMETER
 74 VEL 197

VELOCITY COMPONENT VELOCITY FPS



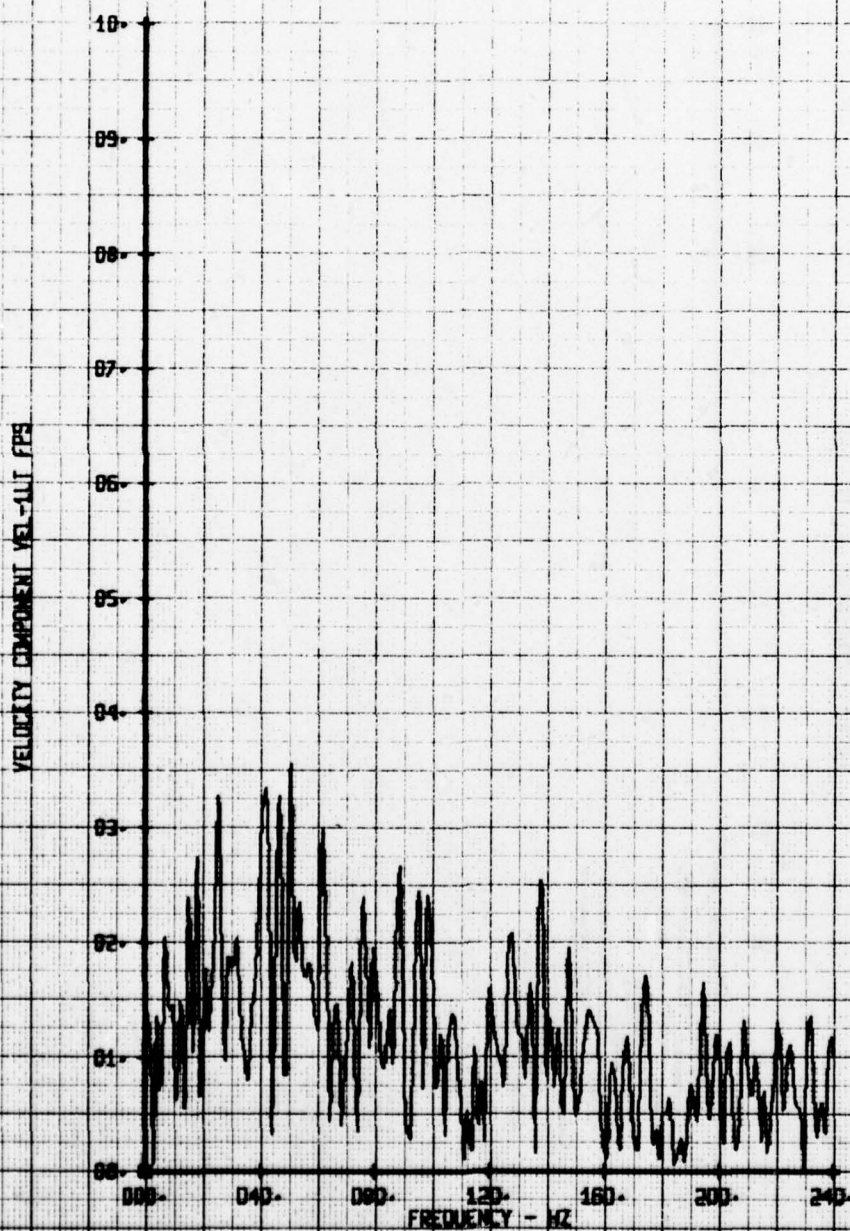
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40.1-256 NO 81.05
RUN 161 TP 2

LEGEND
CH 73 PARAMETER
VEL-1LT



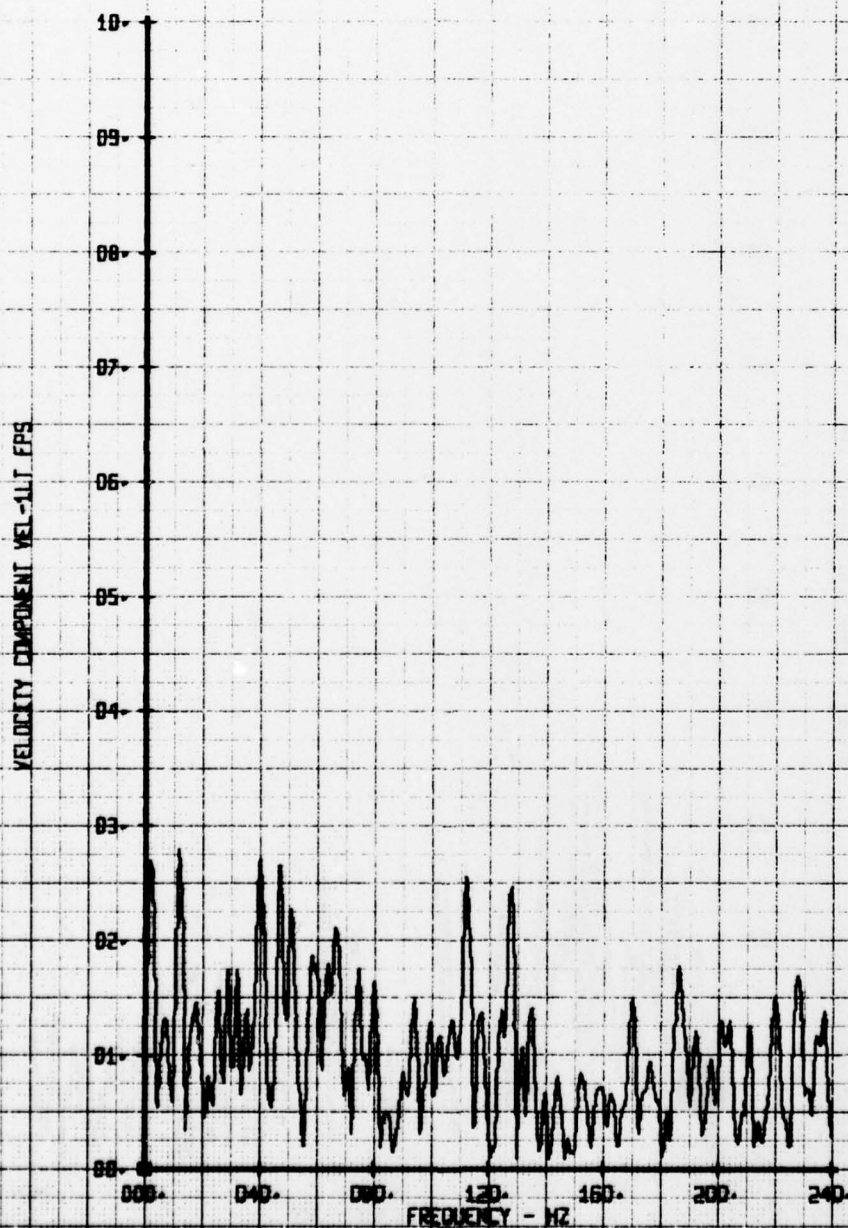
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10.40, 1.256 NO BLDS
RUN 161 TP 3

LEGEND
CH. 73 PARAMETER
VEL-1LT



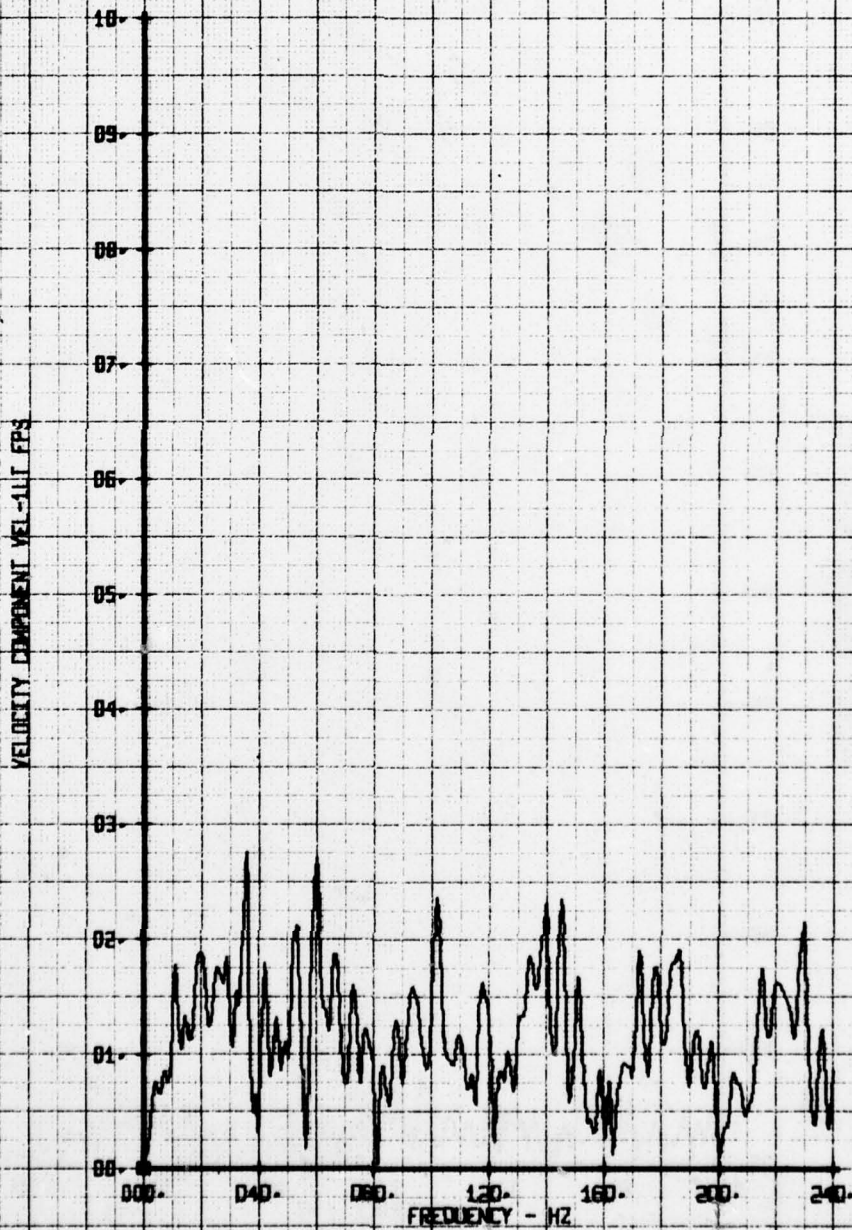
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40; 1.258 NO BLDG
RUN 161 TP 4

LEGEND
CH 73 PARAMETER
73 VEL-1LT



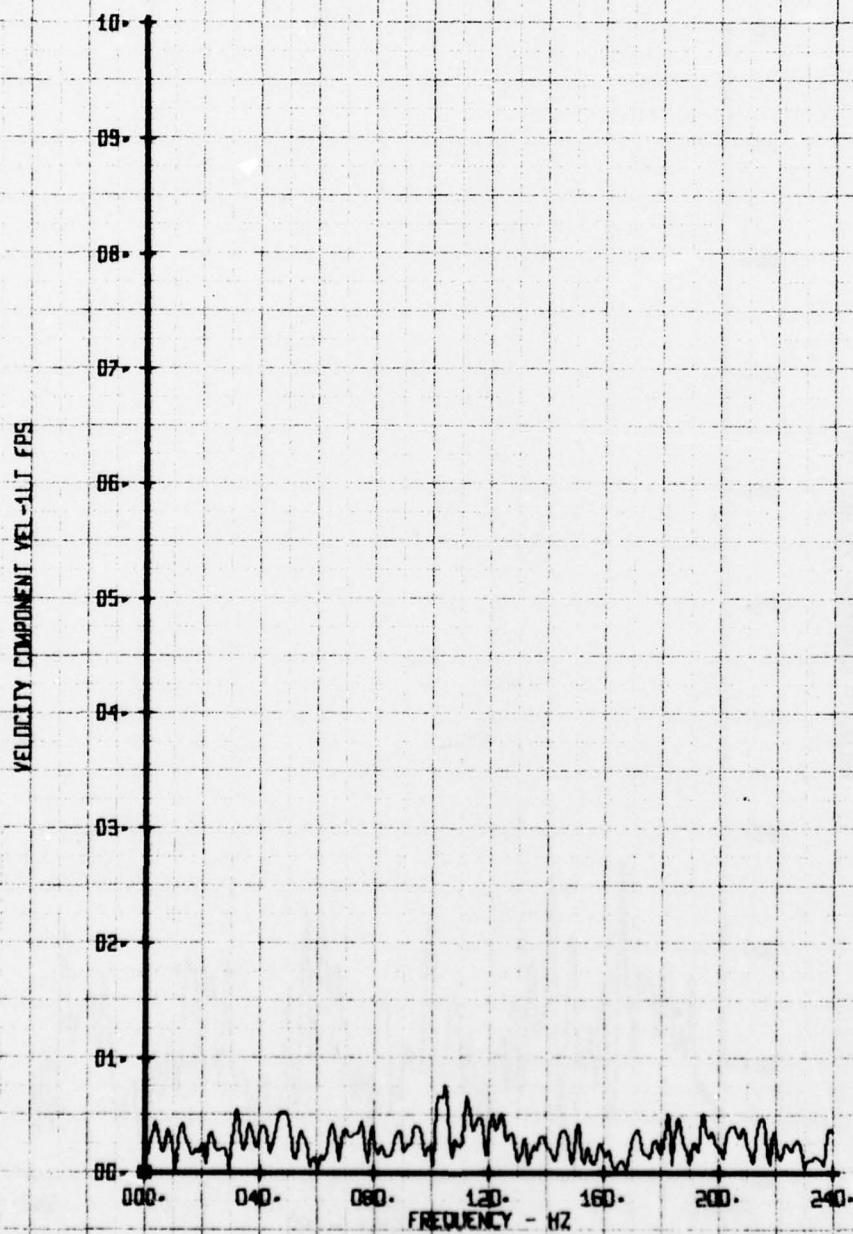
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OPEN CAP W LEROY 10-40-1-256 NO BLOS
RUN 161 TP 5

LEGEND
CH 73 PARAMETER
VEL-1LT



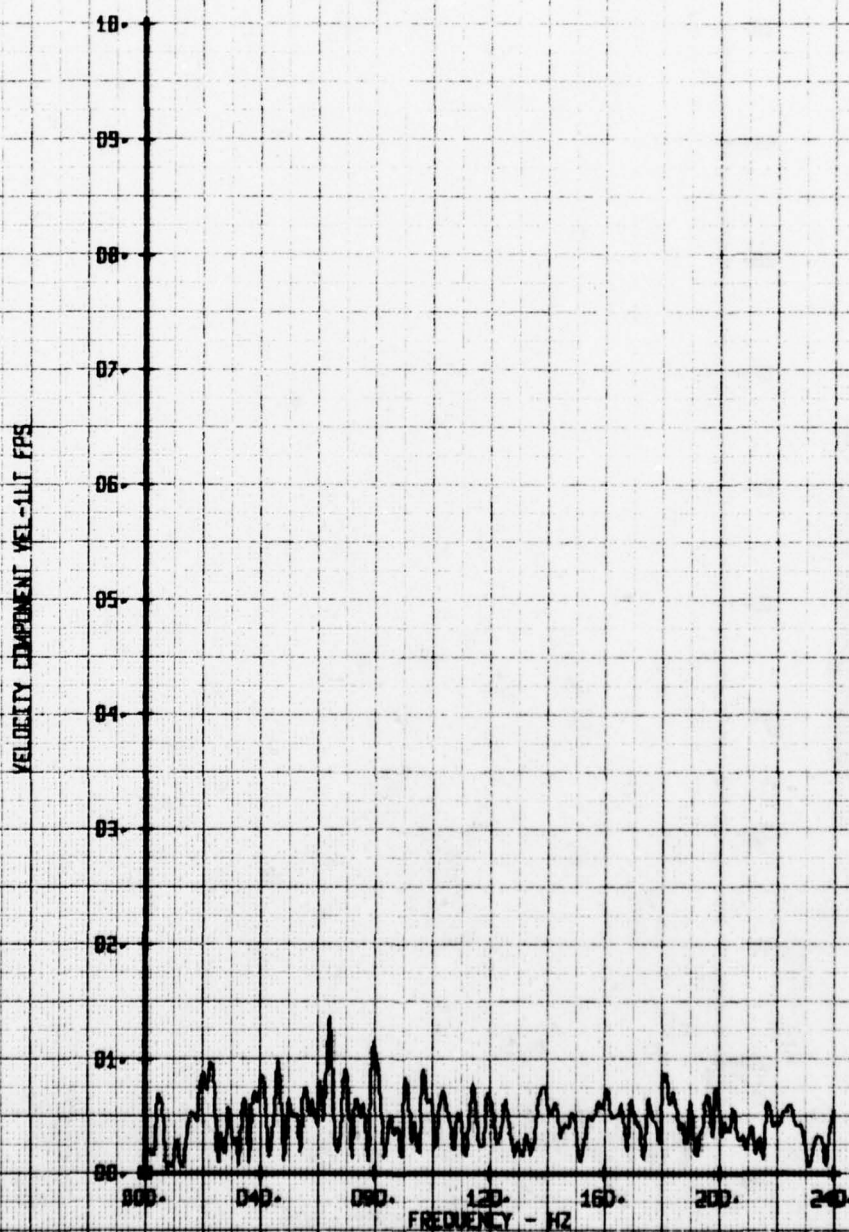
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OPEN CAP W LBDY 10.40.1.256 NO BLD5
RUN 161 TP 6

LEGEND
CH 73 PARAMETER
VEL-1LT



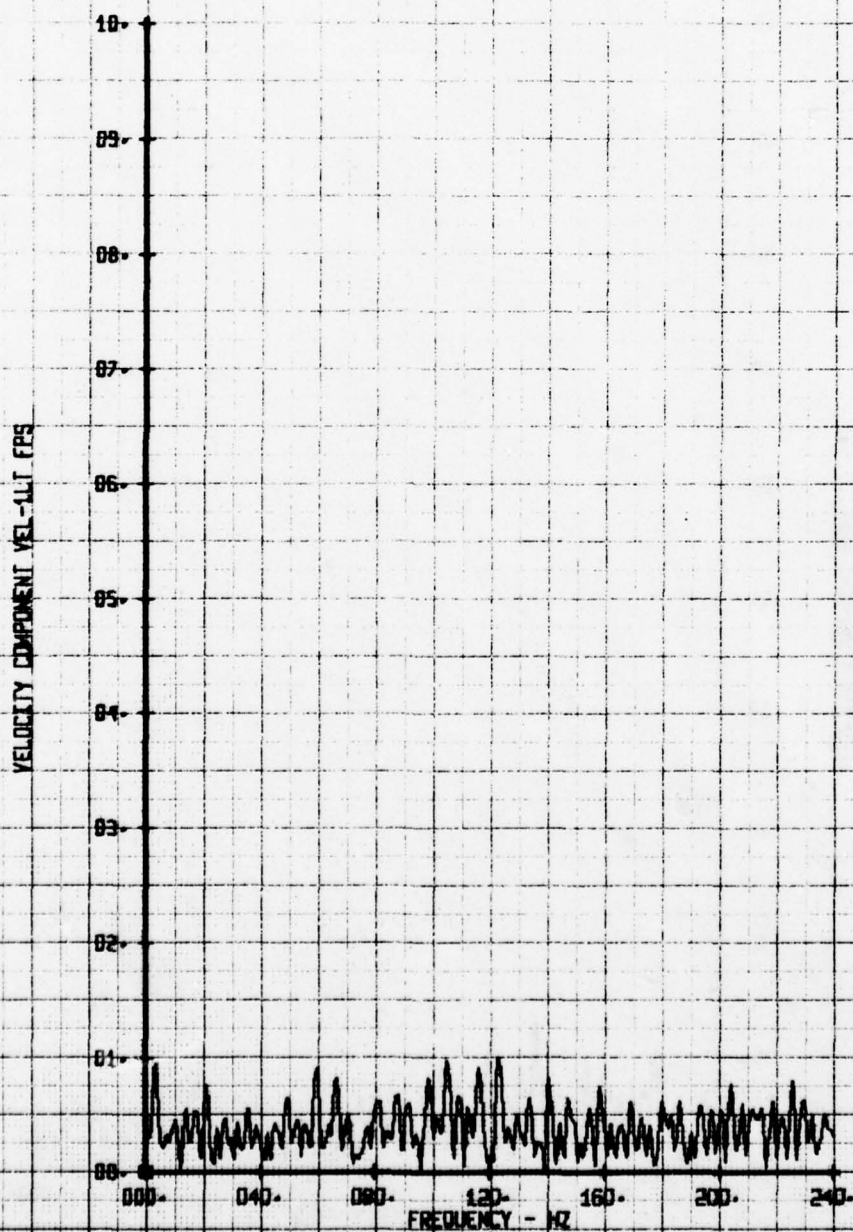
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LEROY 10-40, 1-256 NO BLOS
RUN 161 TP 7

LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBOY 1D-4D, 1-258 NO BLOS
RUN 166 TP 8

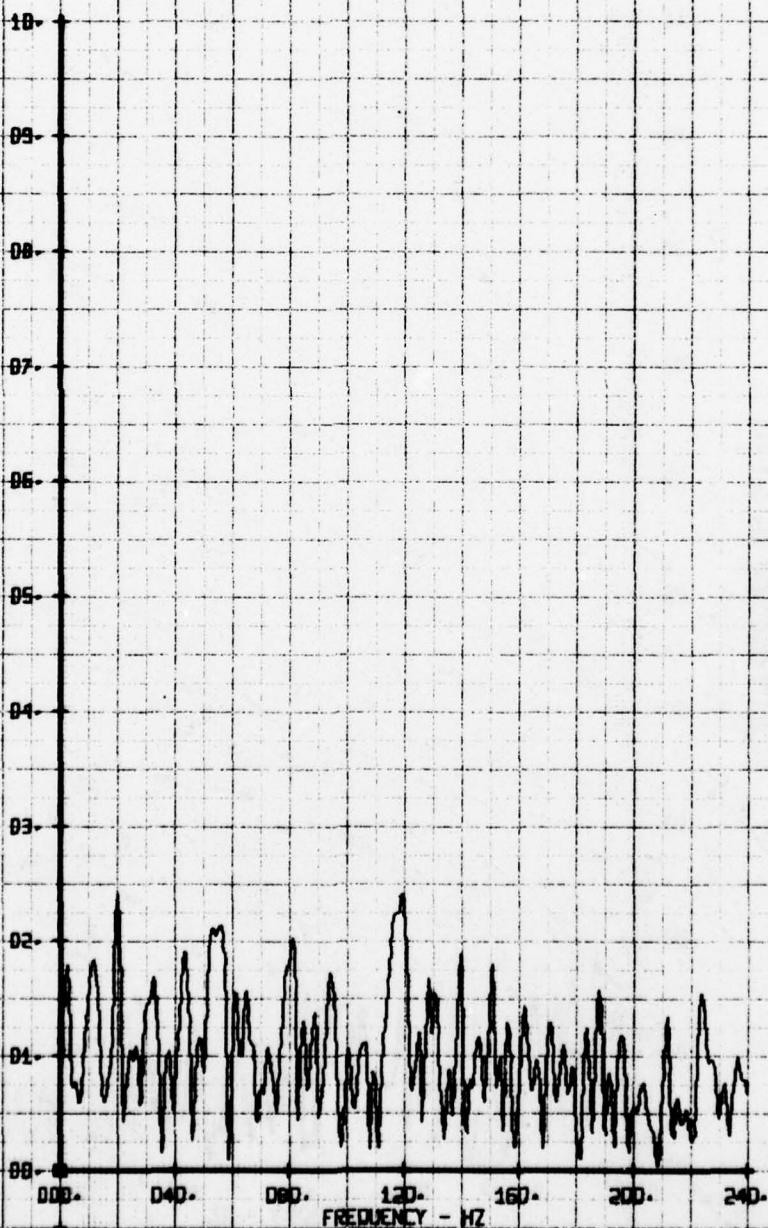
LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LRDY 10-40-1-256 NO BLOS
RUN 161 TP 2

LEGEND
CH 72 PARAMETER
VEL-ZLT

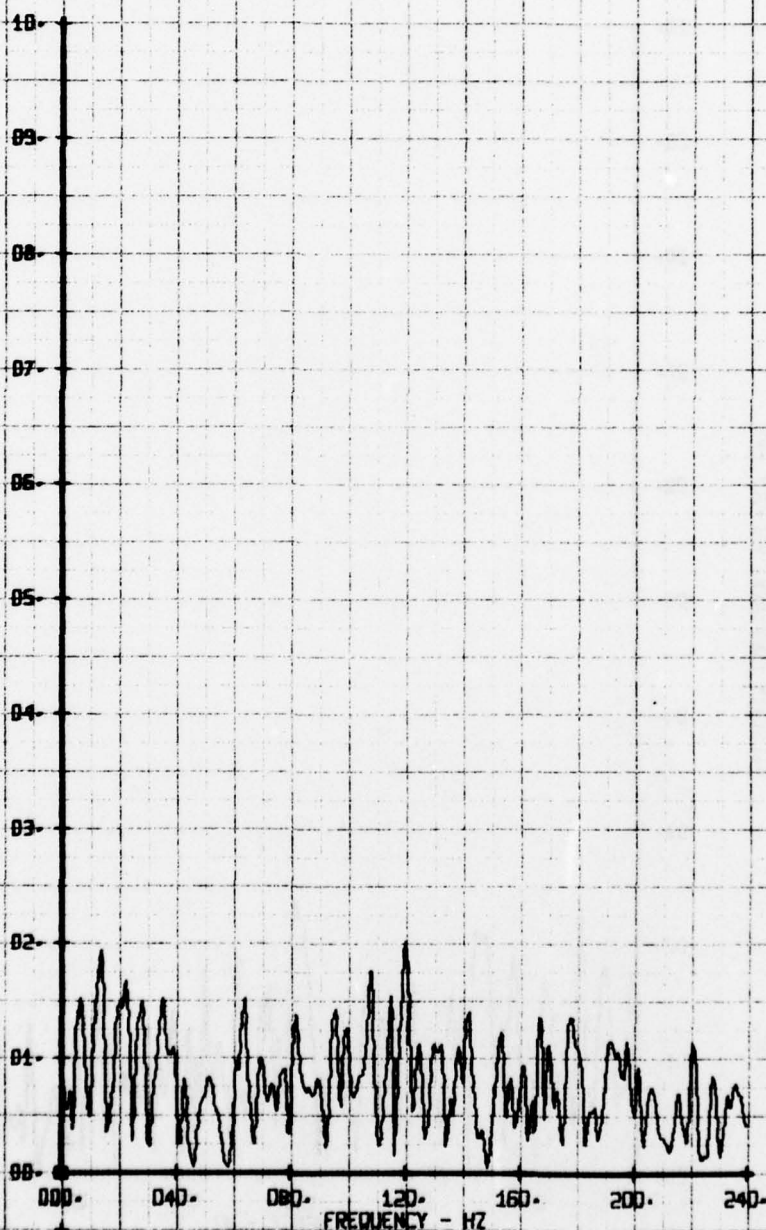
VELOCITY COMPONENT VEL-ZLT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LUBDY 10-40, 1-256 NO BLOS
RUN 161 TP 3

LEGEND
CH 72 PARAMETER
VEL-ZLT

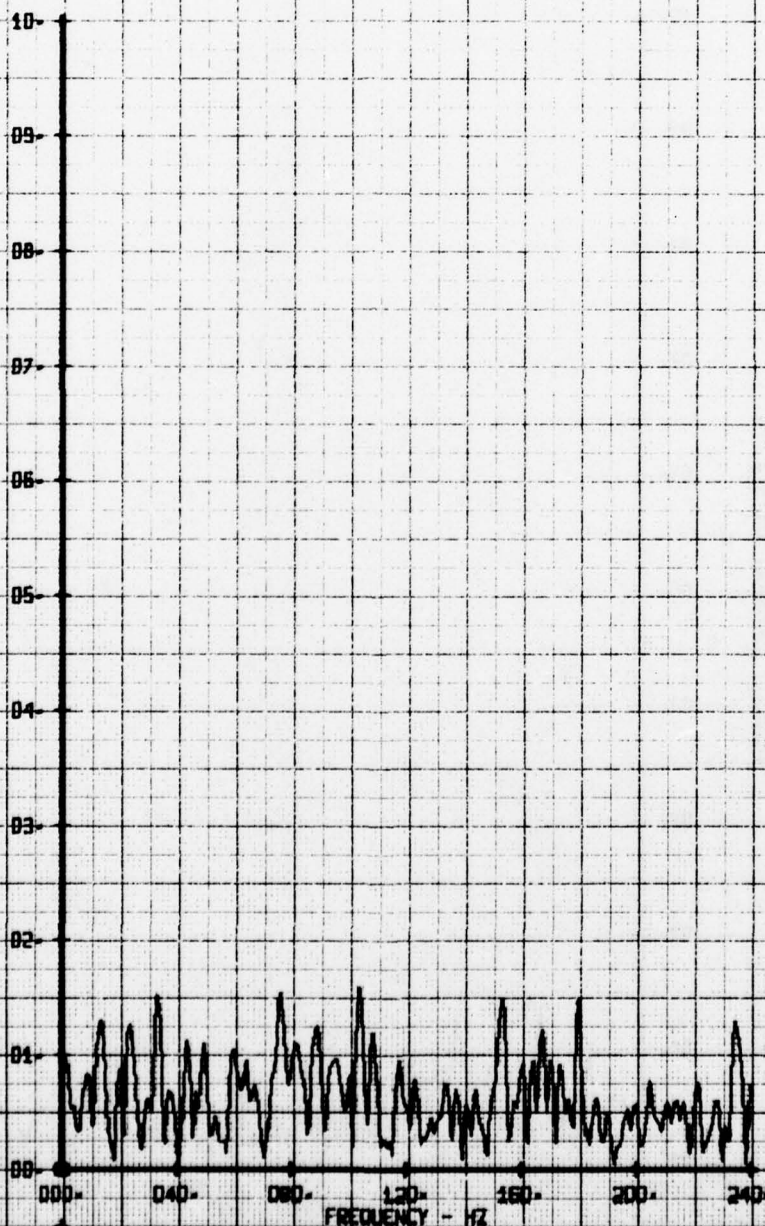
VELOCITY COMPONENT VEL-ZLT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10-40, 1.256 NO BLOS
RUN 161 TP 4

LEGEND
CH: 72 PARAMETER
VEL-2LT

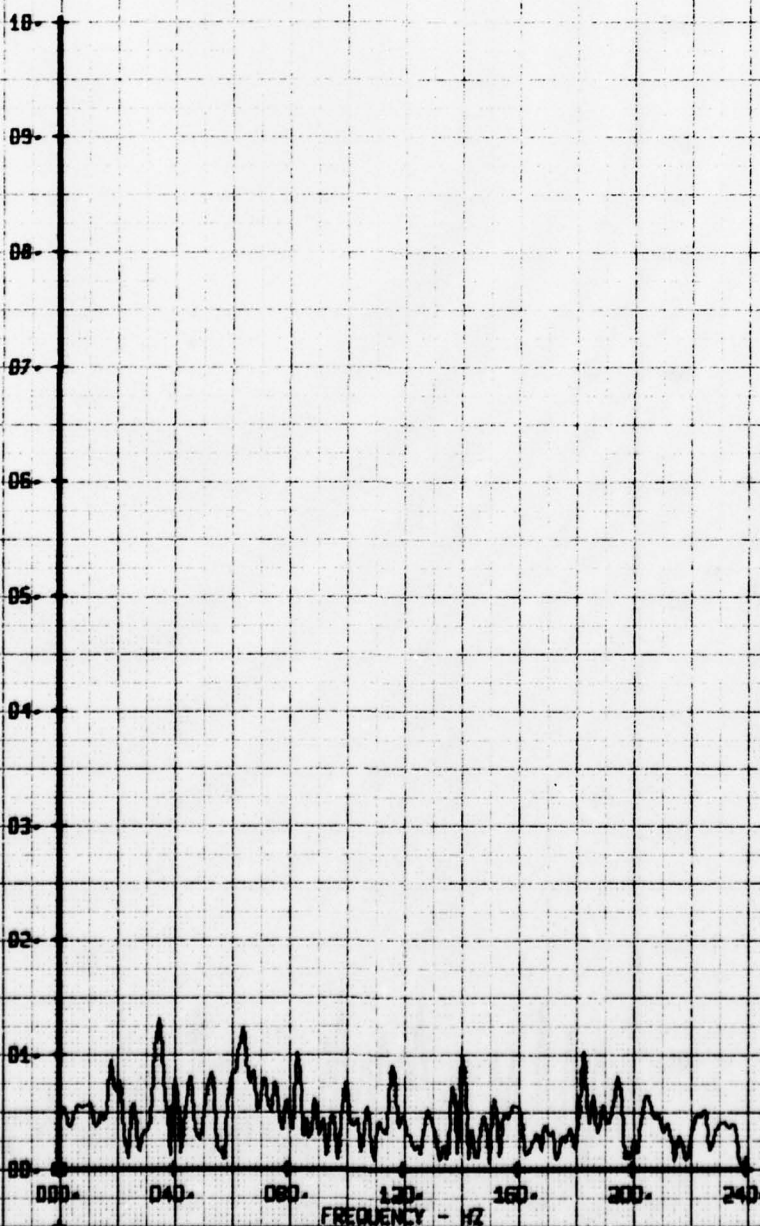
VELOCITY COMPONENT VEL-2LT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40, 1.25G NO BLD5
RUN 161 TP 5

LEGEND
CH 72 PARAMETER
VEL-2LT

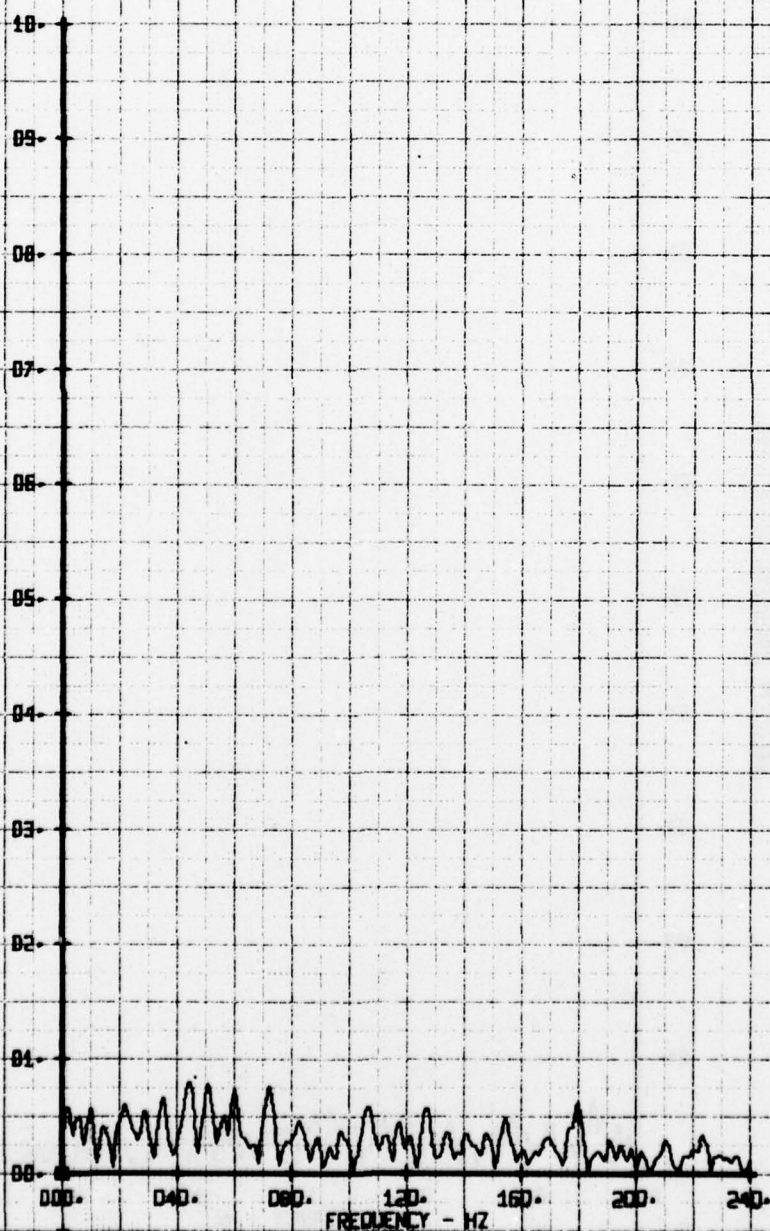
VELOCITY COMPONENT VEL-2LT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40-1-256 NO BLOS
RUN 161 TP 6

LEGEND
CH 72
PARAMETER
VEL-2LT

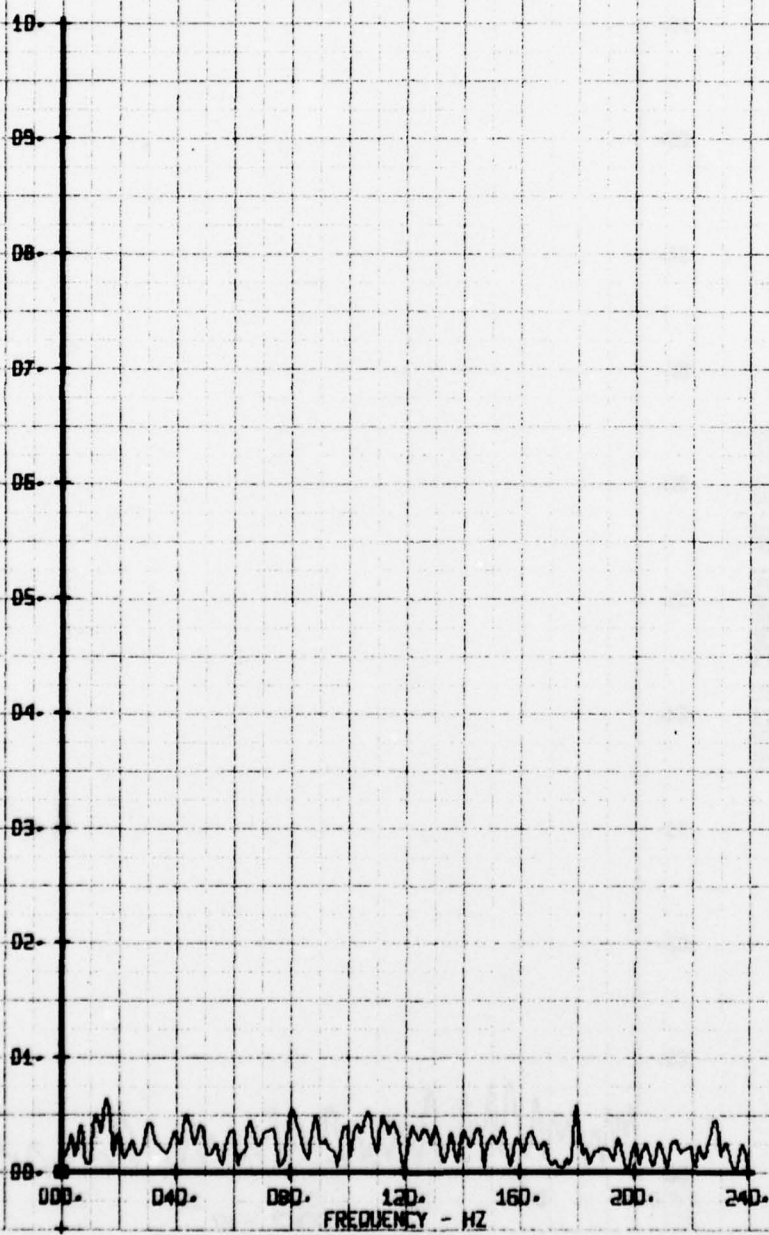
VELOCITY COMPONENT VEL-2LT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40, 1.256 NO BLOS
RUN 161 TP 7

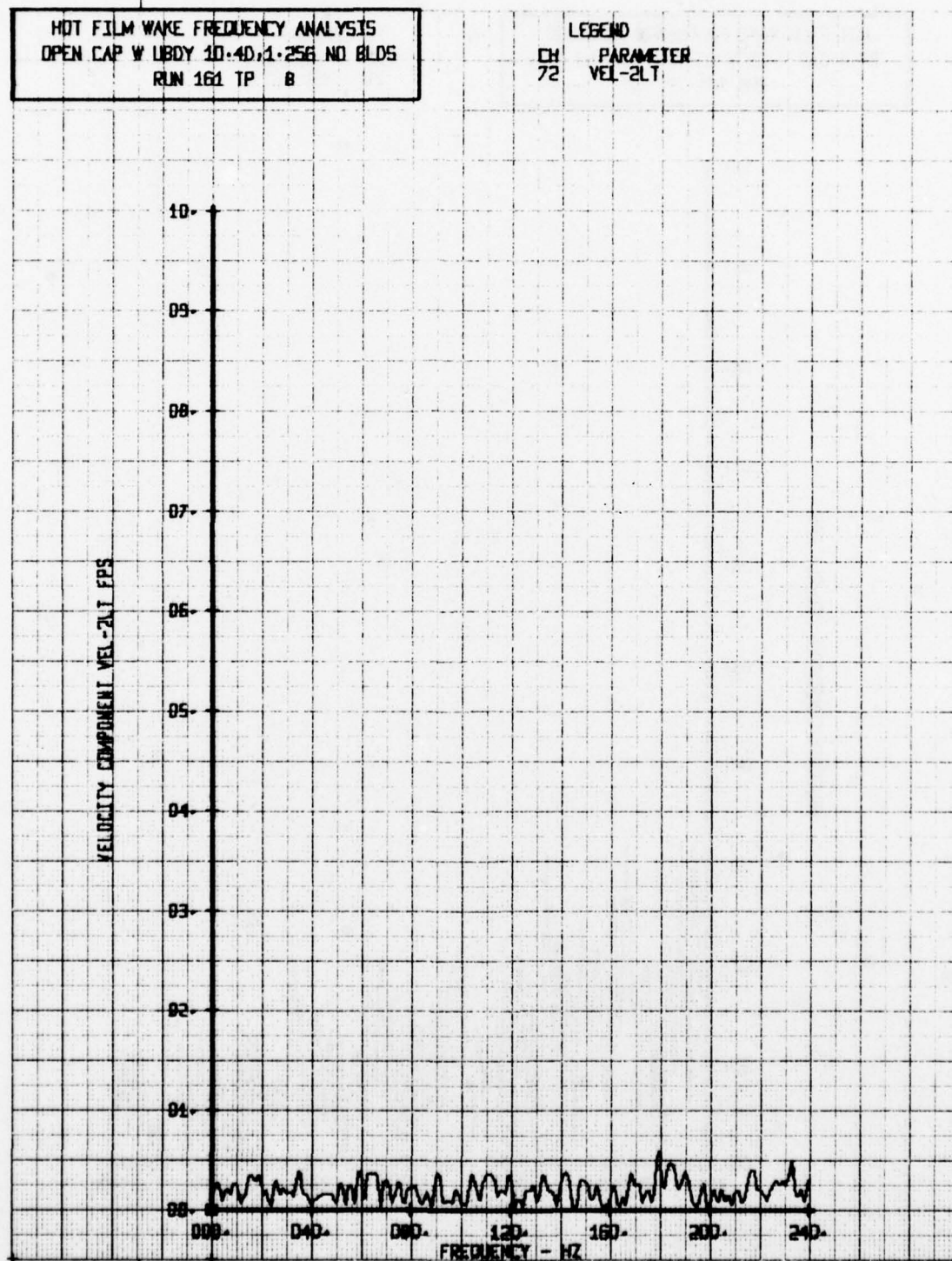
LEGEND
CH 72 PARAMETER
VEL-ZLT

VELOCITY COMPONENT VEL-ZLT FPS



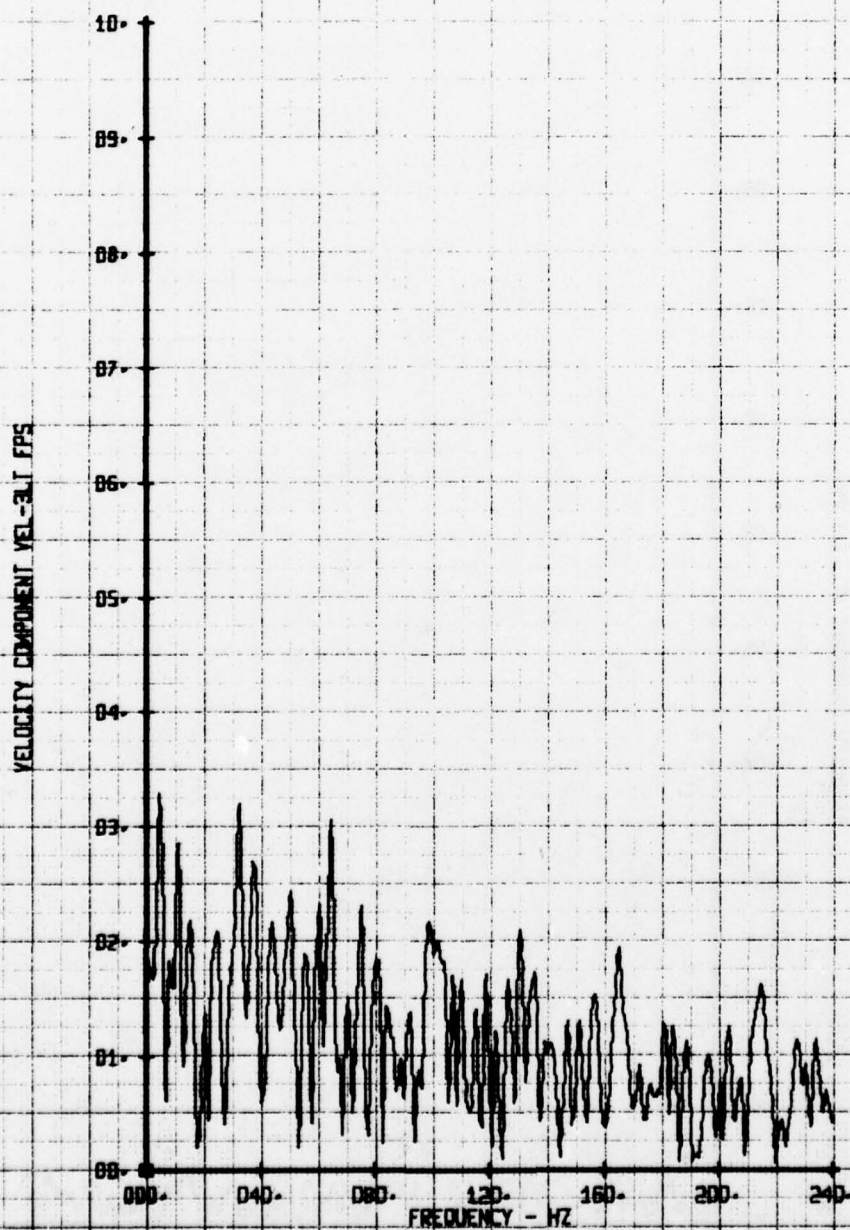
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBODY 10-40, 1-256 NO BLOS
RUN 161 TP 8

LEGEND
CH 72 PARAMETER
VEL-2LT



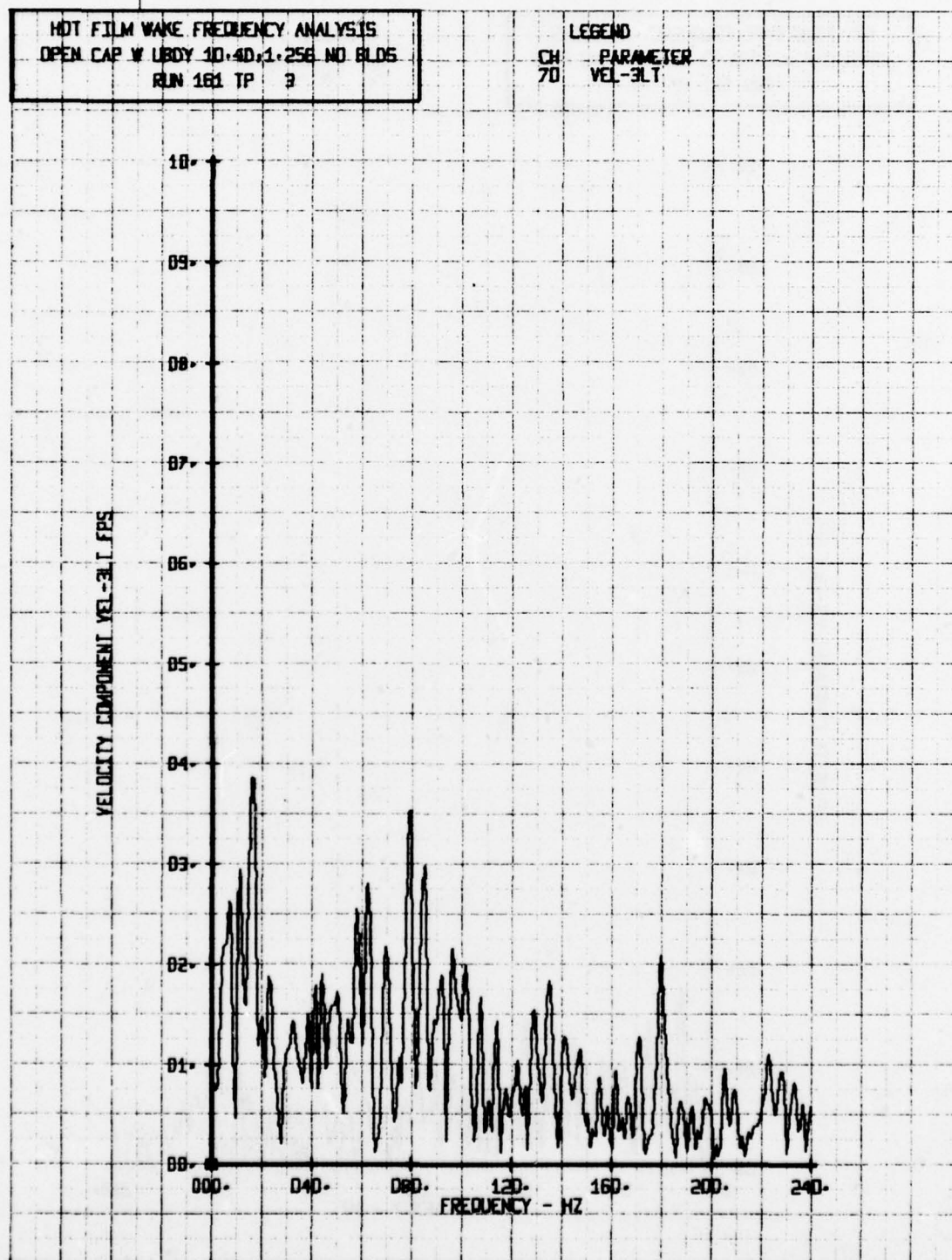
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OPEN CAP W LBDY 10.40,1.256 NO BLOS
RUN 161 TP 2

LEGEND
CH 70 PARAMETER
VEL-3LT



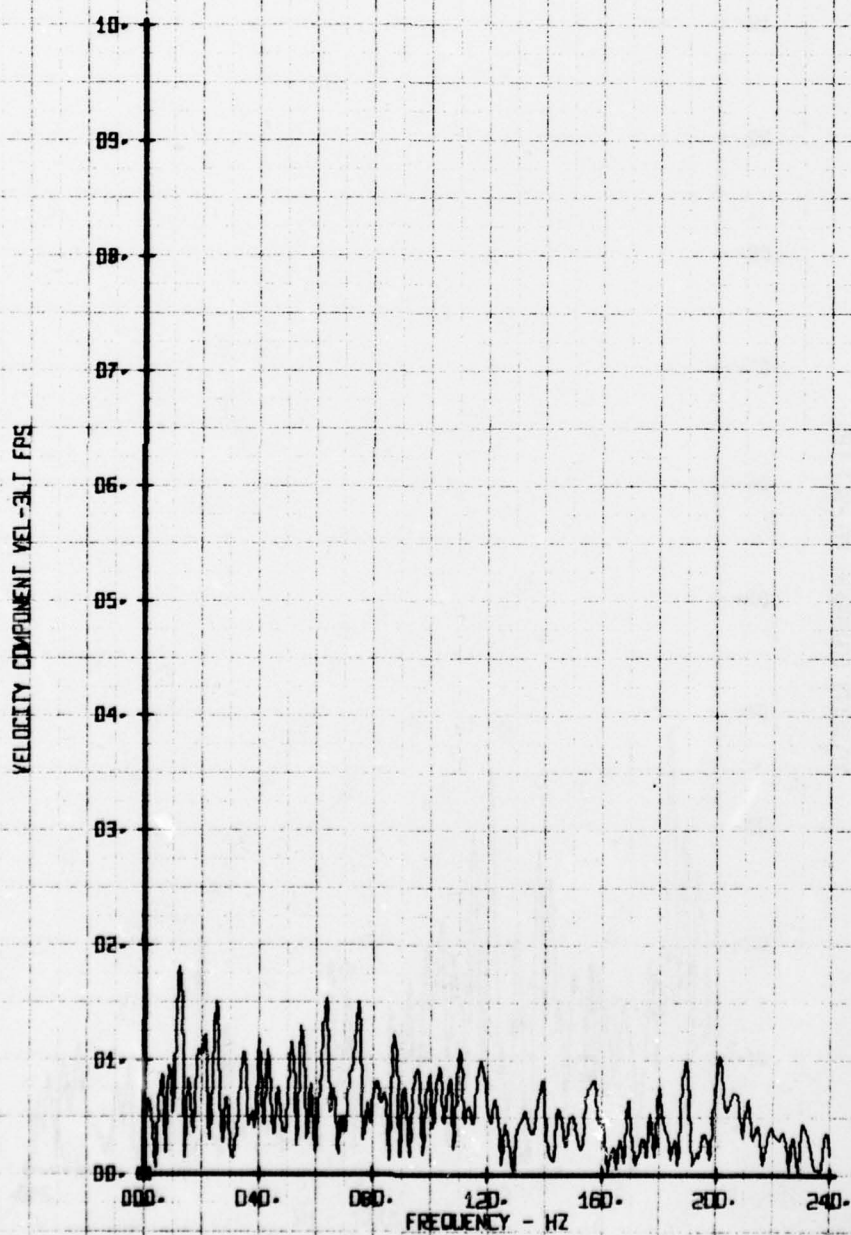
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10.40, 1.256 NO BLOS
RUN 161 TP 3

LEGEND
CH 70 PARAMETER
VEL-3LT



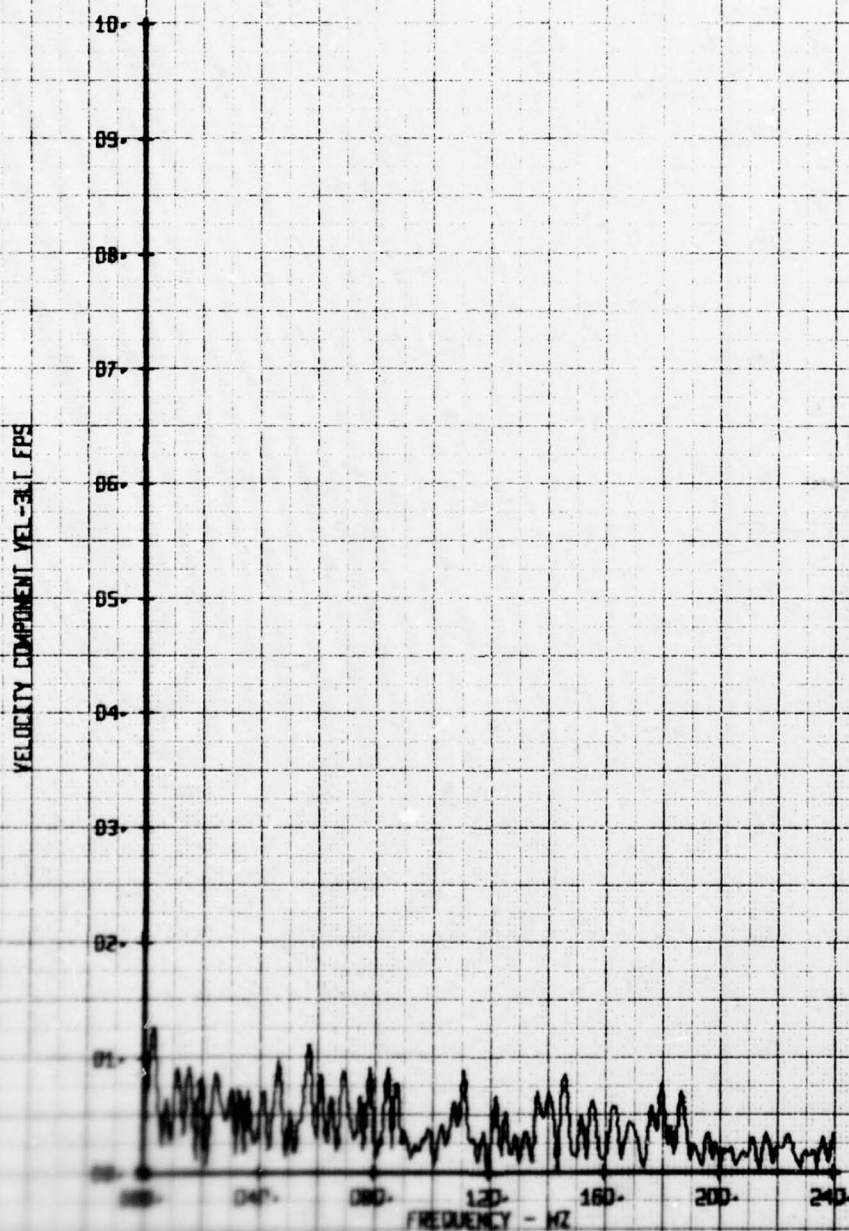
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OPEN CAP W LBDY 10.40.1.256 NO BLDG
RUN 161 TP 4

LEGEND
CH 70 PARAMETER
70 VEL-3LT



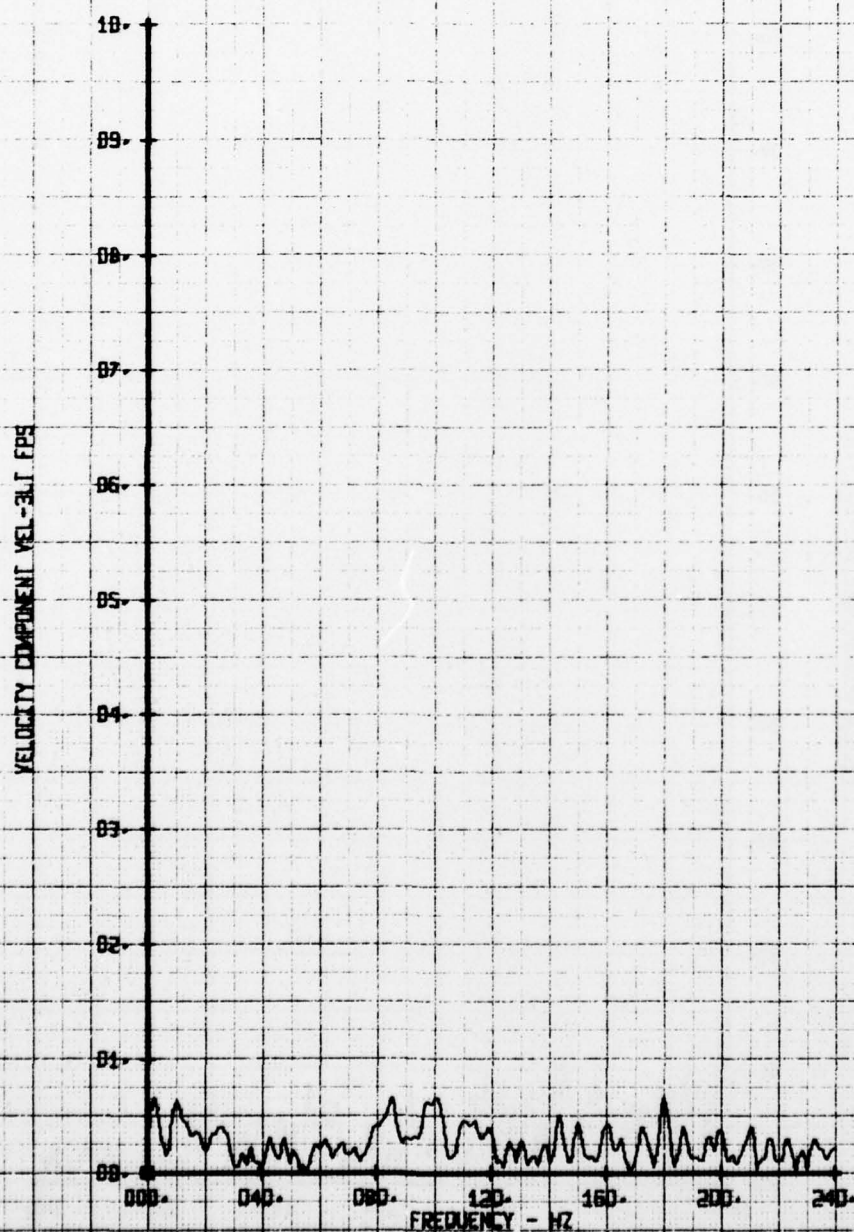
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UROY 10.40, 1.256 NO BLOS
RUN 161 TP 5

LEGEND
CH: PARAMETER
70: VEL-3LT



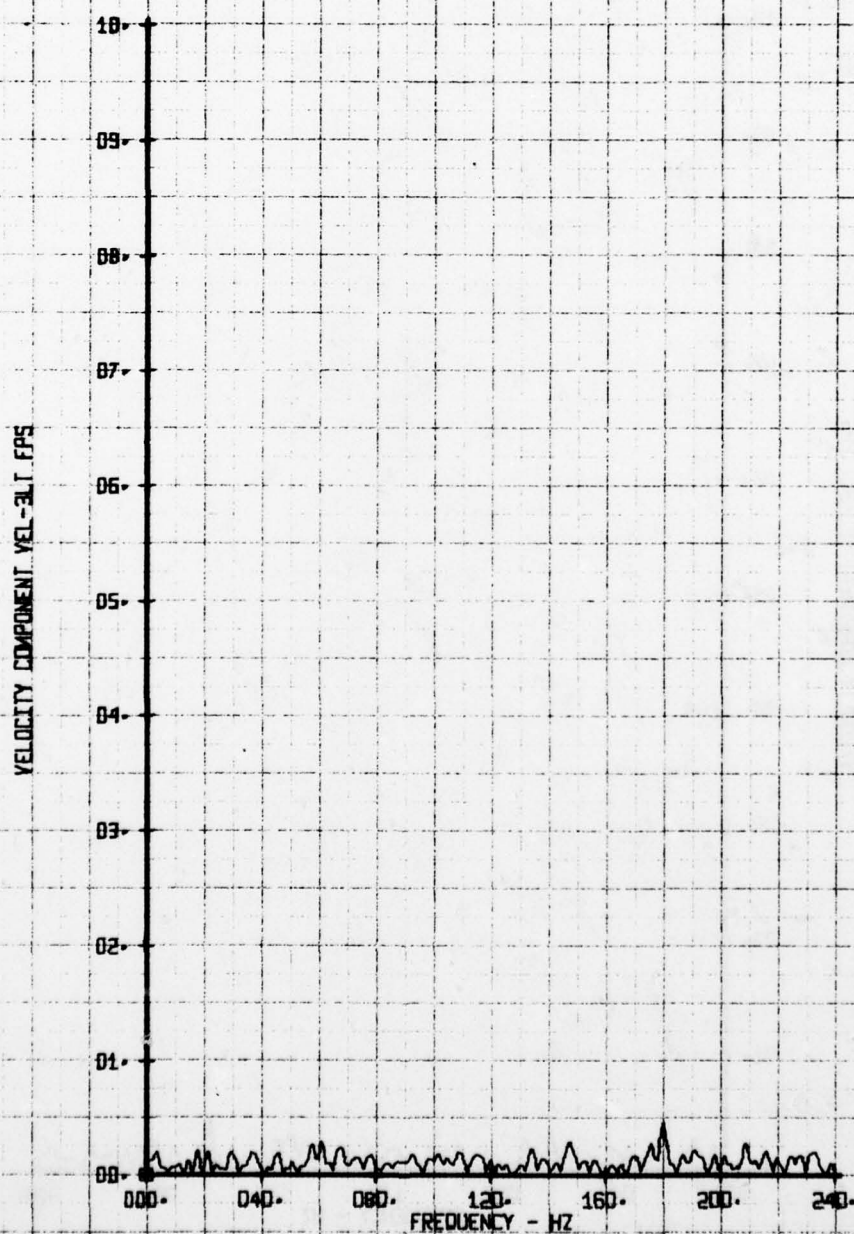
HDT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40.1-256 NO BLOS
RUN 161 TP 6

LEGEND
CH 70 PARAMETER
VEL-3LT



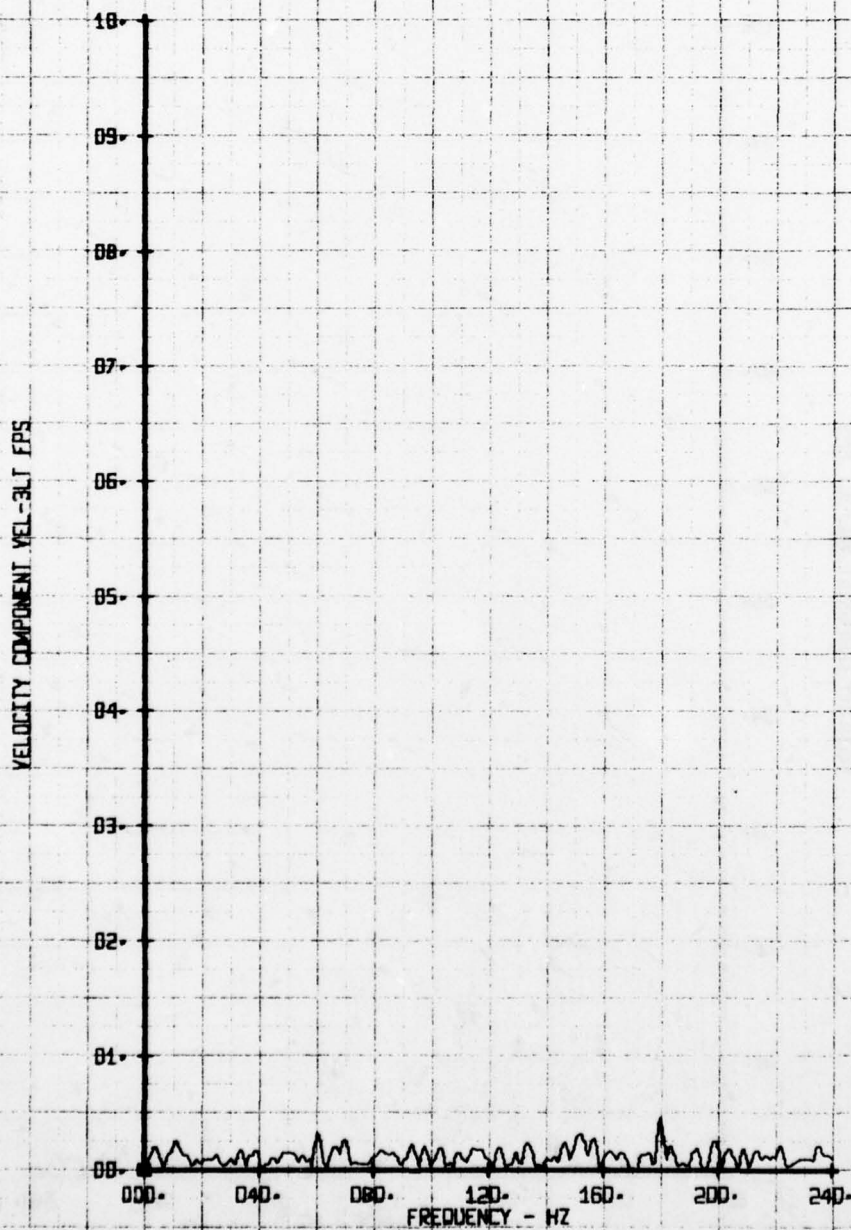
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10.40.1.256 NO BLOS
RUN 161 TP 7

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40 1.258 NO BLDS
RUN 161 TP 8

LEGEND
CH 70 PARAMETER
VEL-3LT



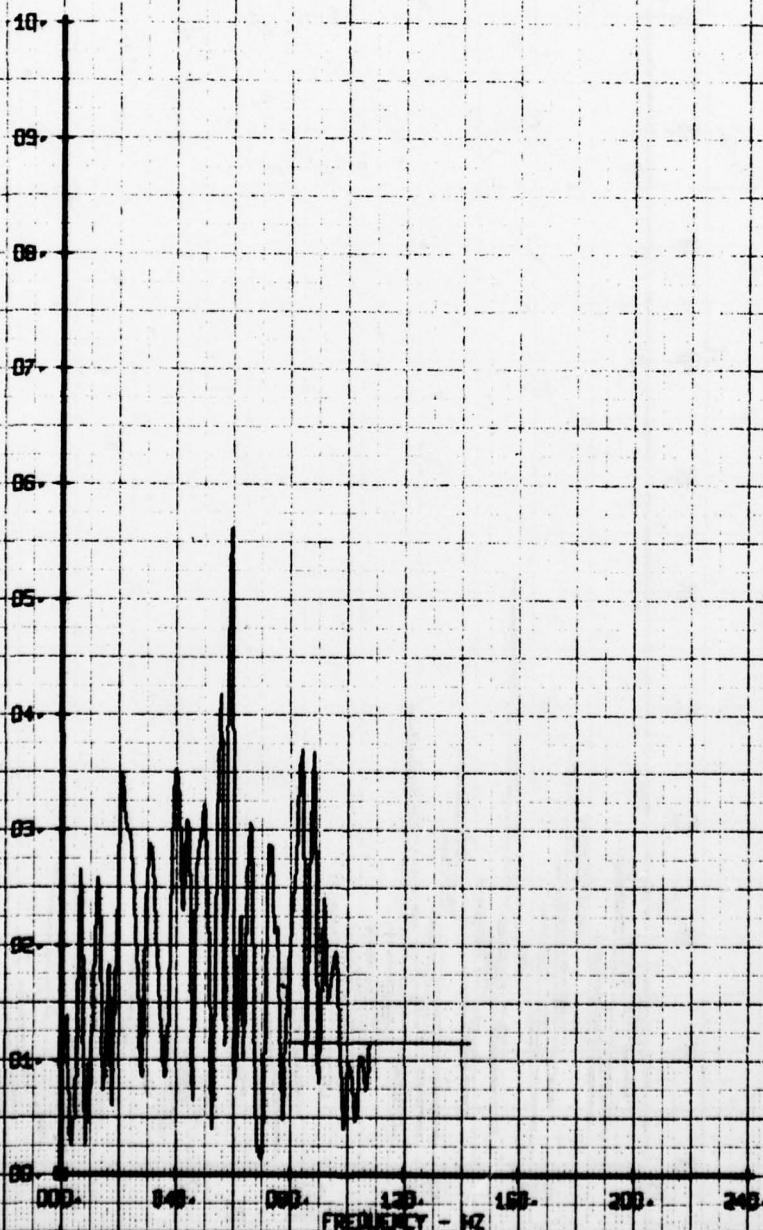
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SET 59
BVWT 169

HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UB0Y 10-40:1-250 NO BLOS
RUN 154 TP 2

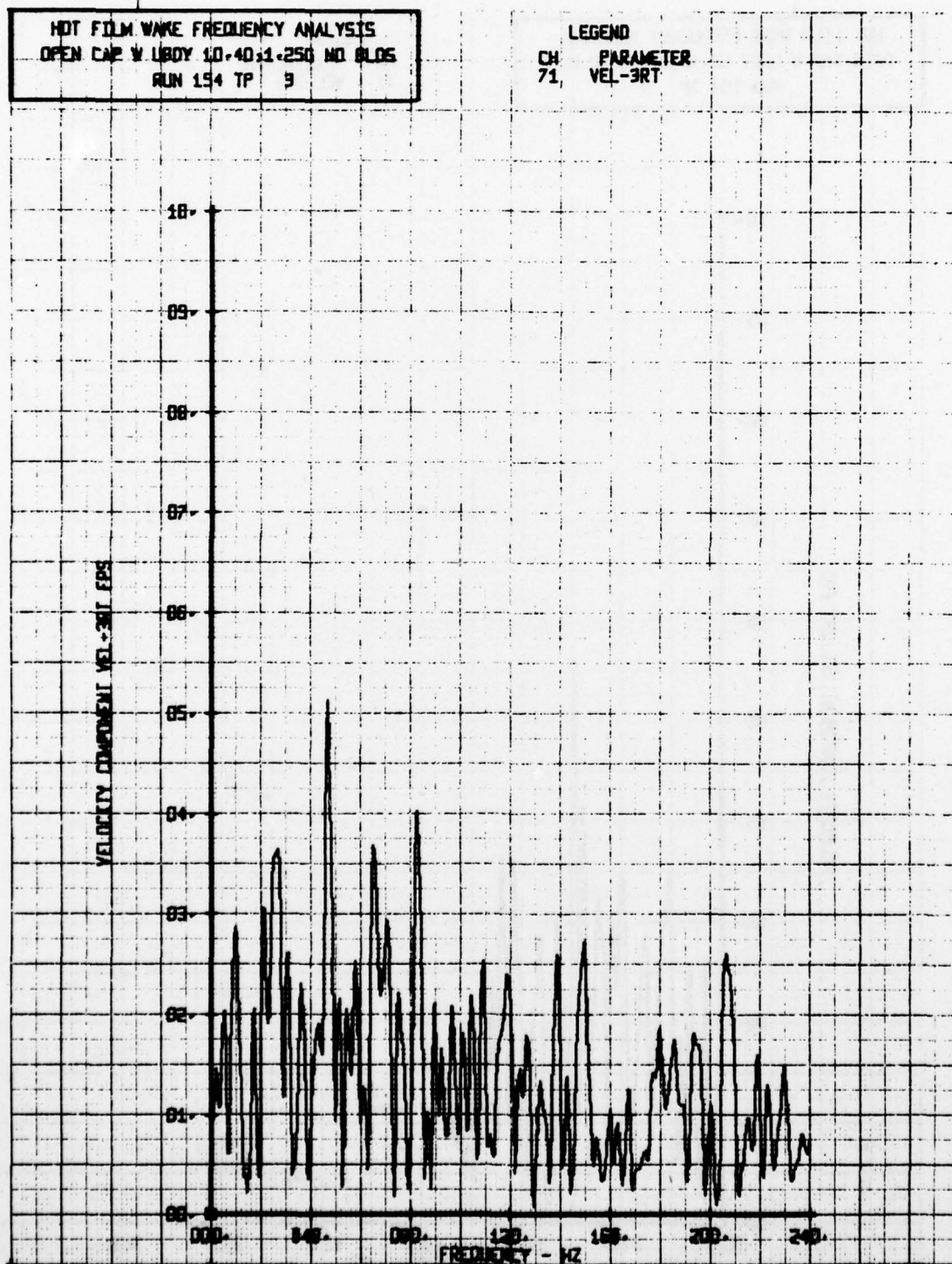
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40:1-250 NO BLOS
RUN 154 TP 9

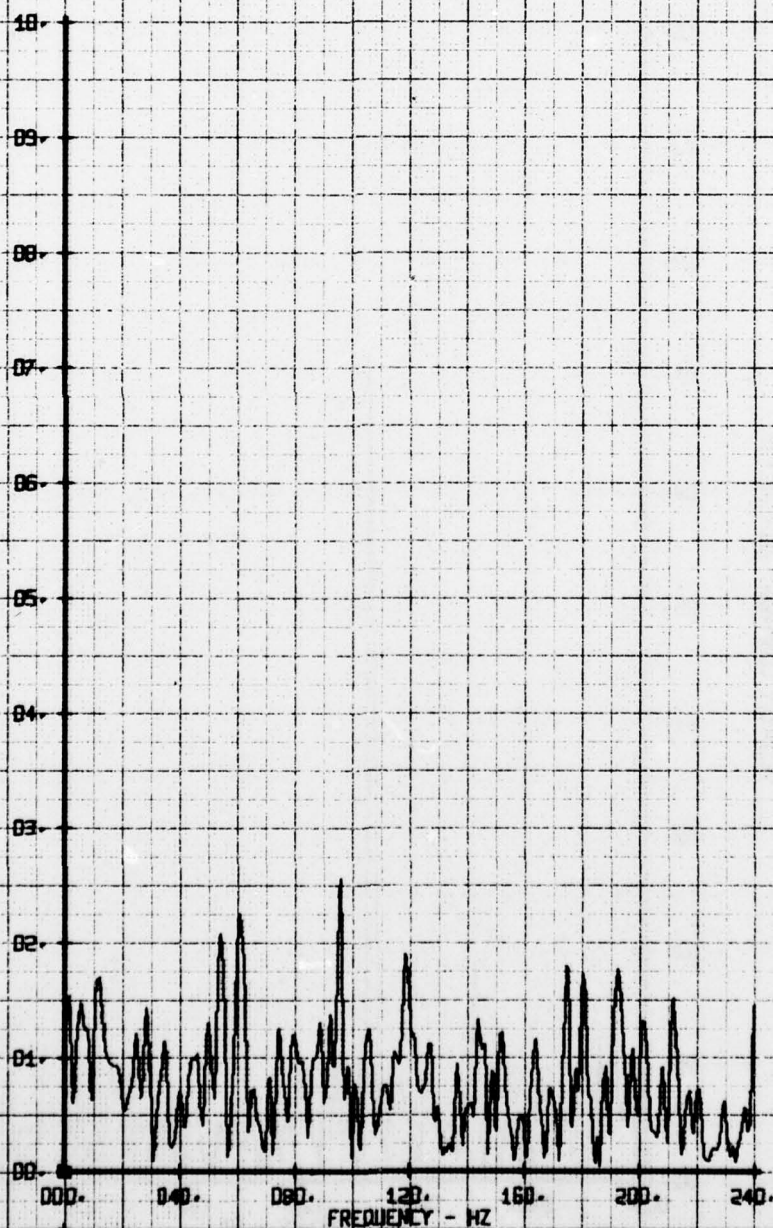
LEGEND
CH 71, PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40-1-250 NO BLOS
RUN 154 TP 4

LEGEND
CH 71 PARAMETER
VEL-3RT

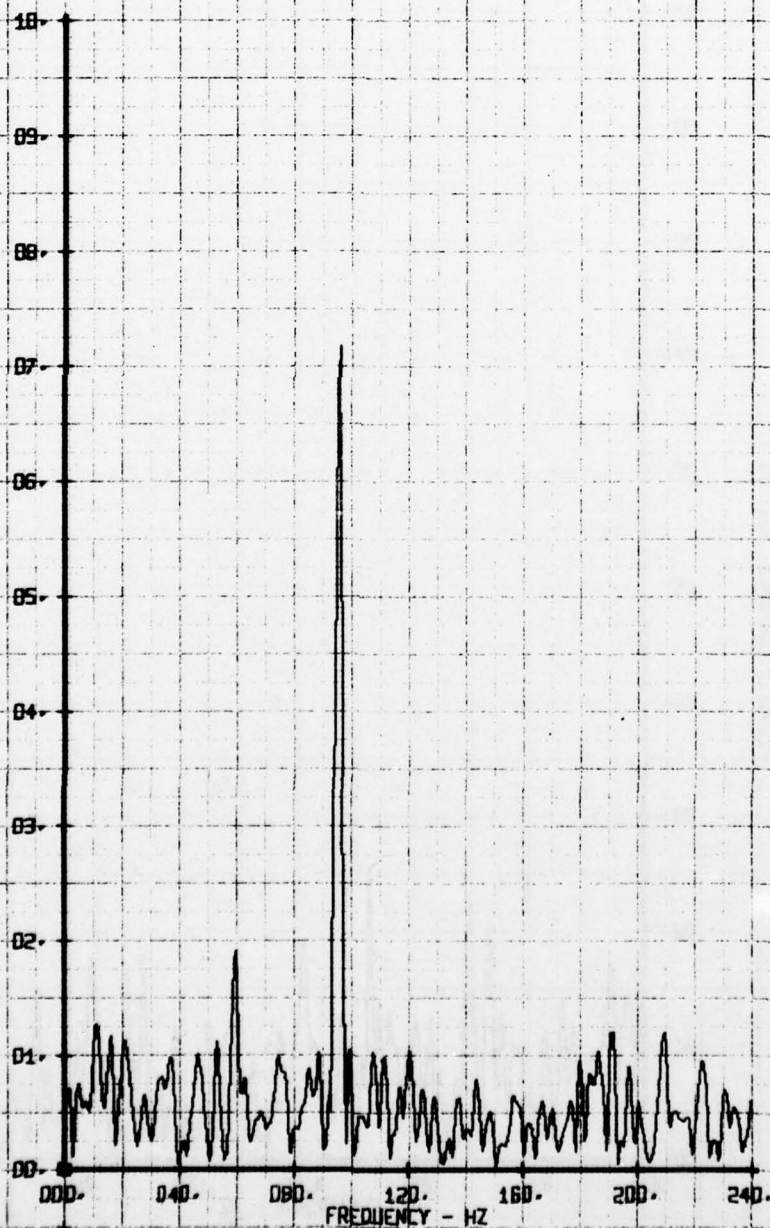
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAR W UDDY 10-40-1-25G NO BLOS
RUN 154 TP 5

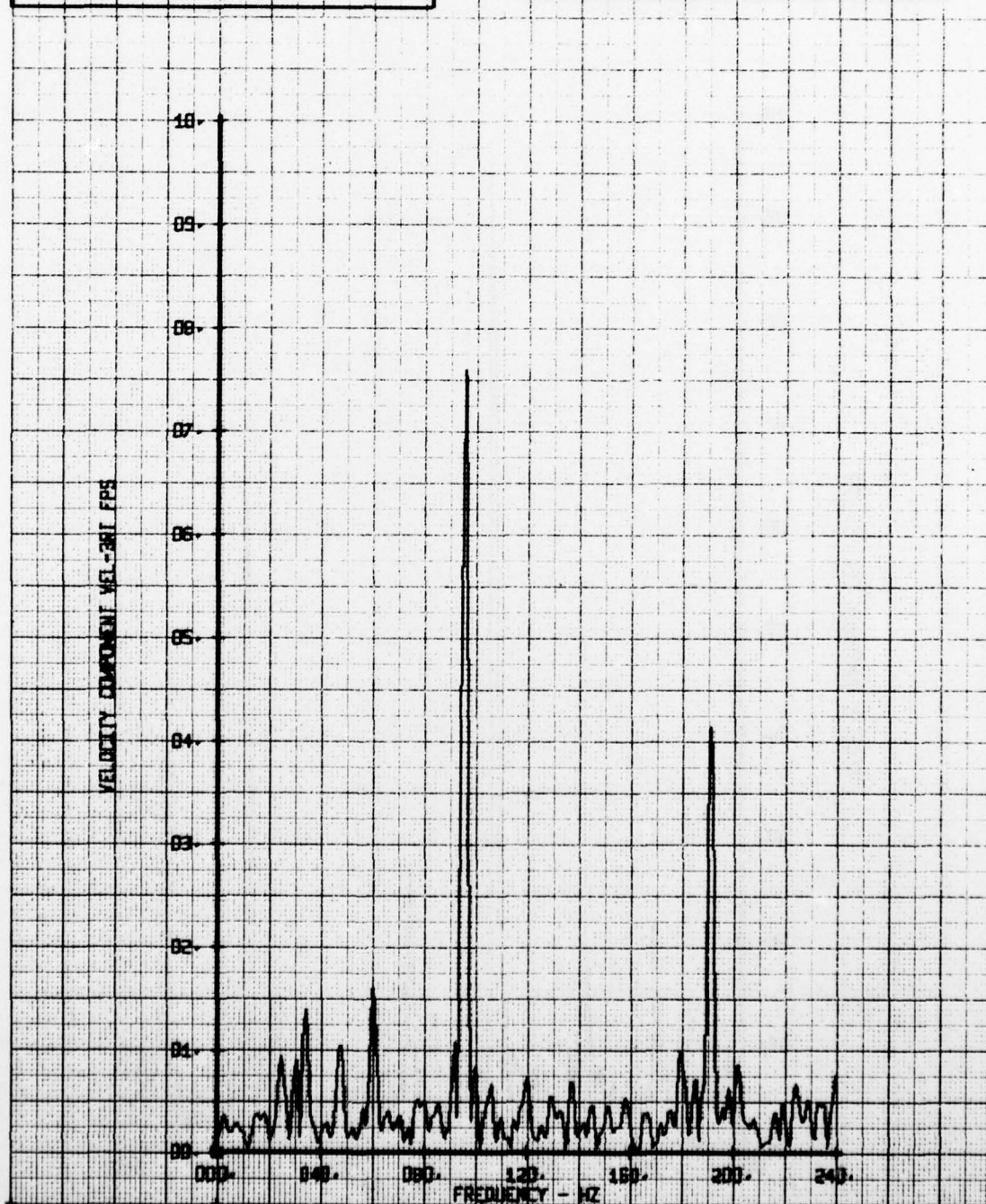
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



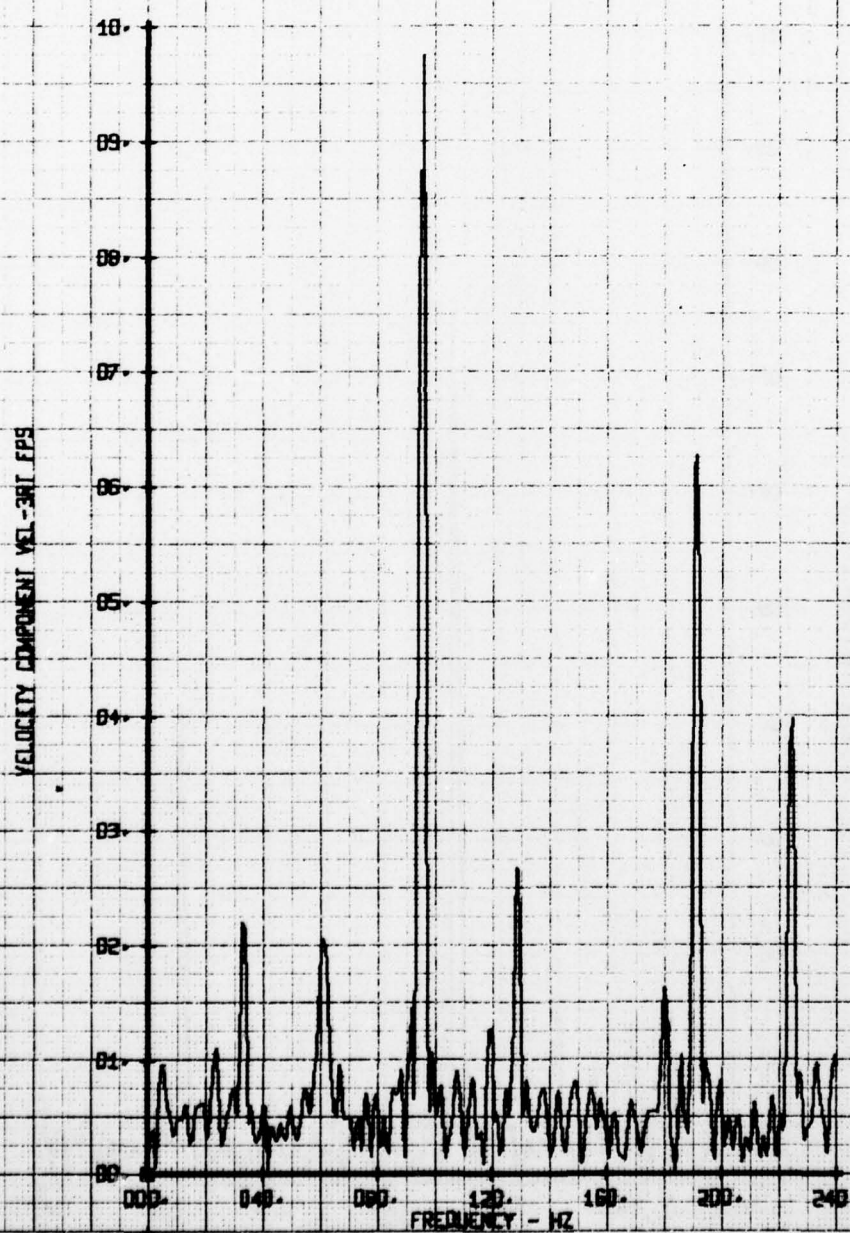
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OPEN CAP W LBDY 10-40:1-250 NO BLOS
RUN 154 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40s1-250 NO BLOS
RUN 154 TP 7

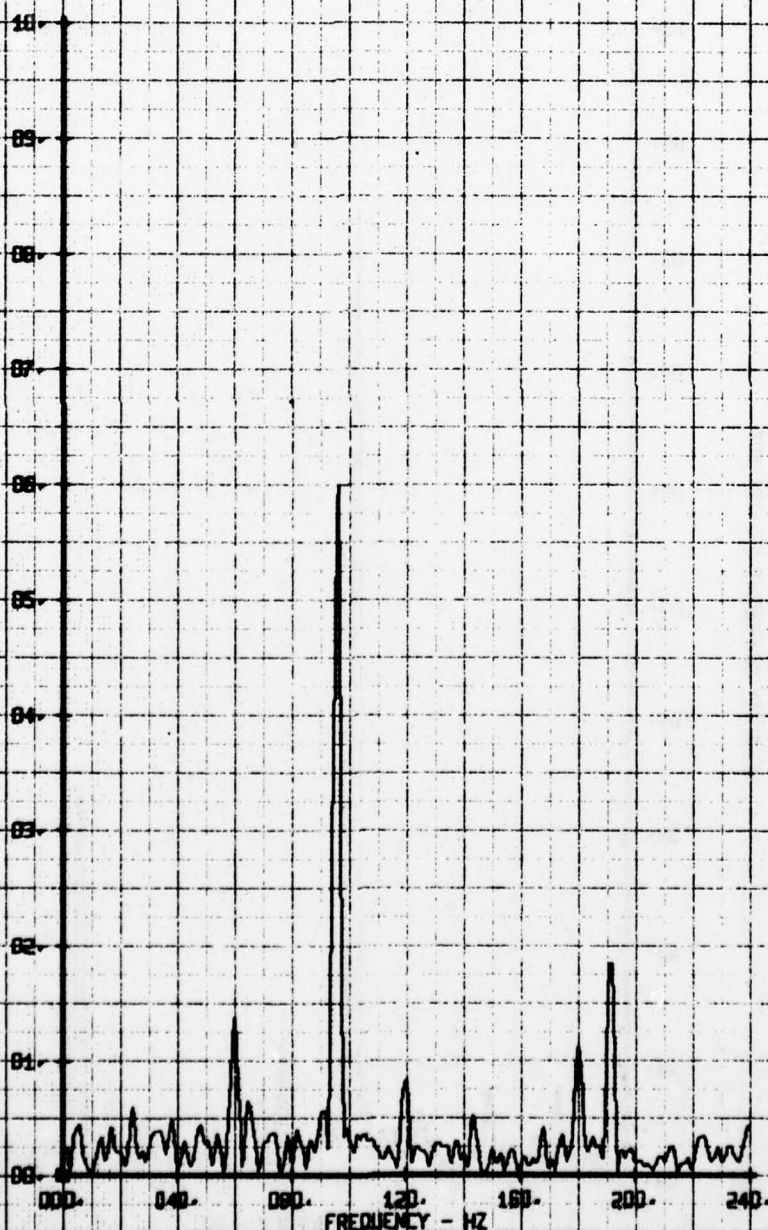
LEGEND
CH 71 PARAMETER
71 VEL-3RT



MOT FILM WARE FREQUENCY ANALYSIS
OPEN CAP W LEROY 101-40-1-250 NO BLOS
RUN: 154 TP 0

LEGEND
CH 71 PARAMETER
VEL-3RT

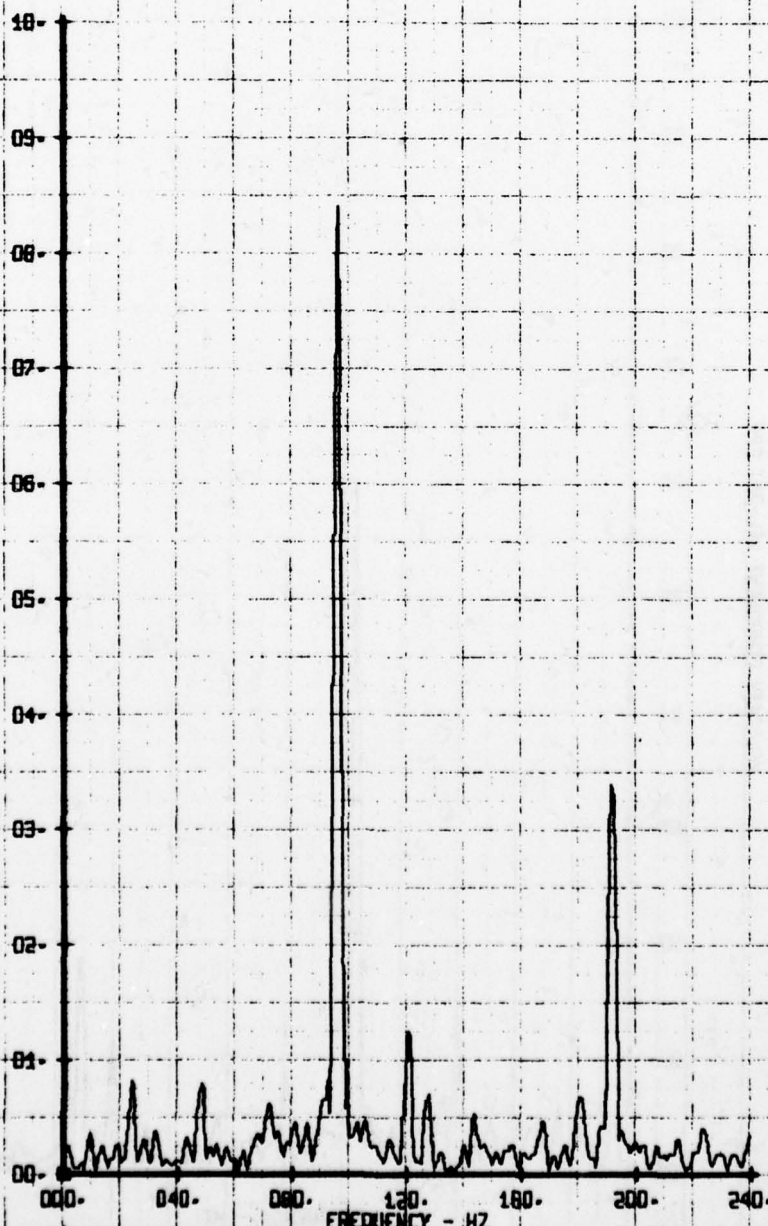
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W L80Y 10.40 1.250 NO BLOS
RUN 154 TP B

LEGEND
CH 74 PARAMETER
VEL-1RT

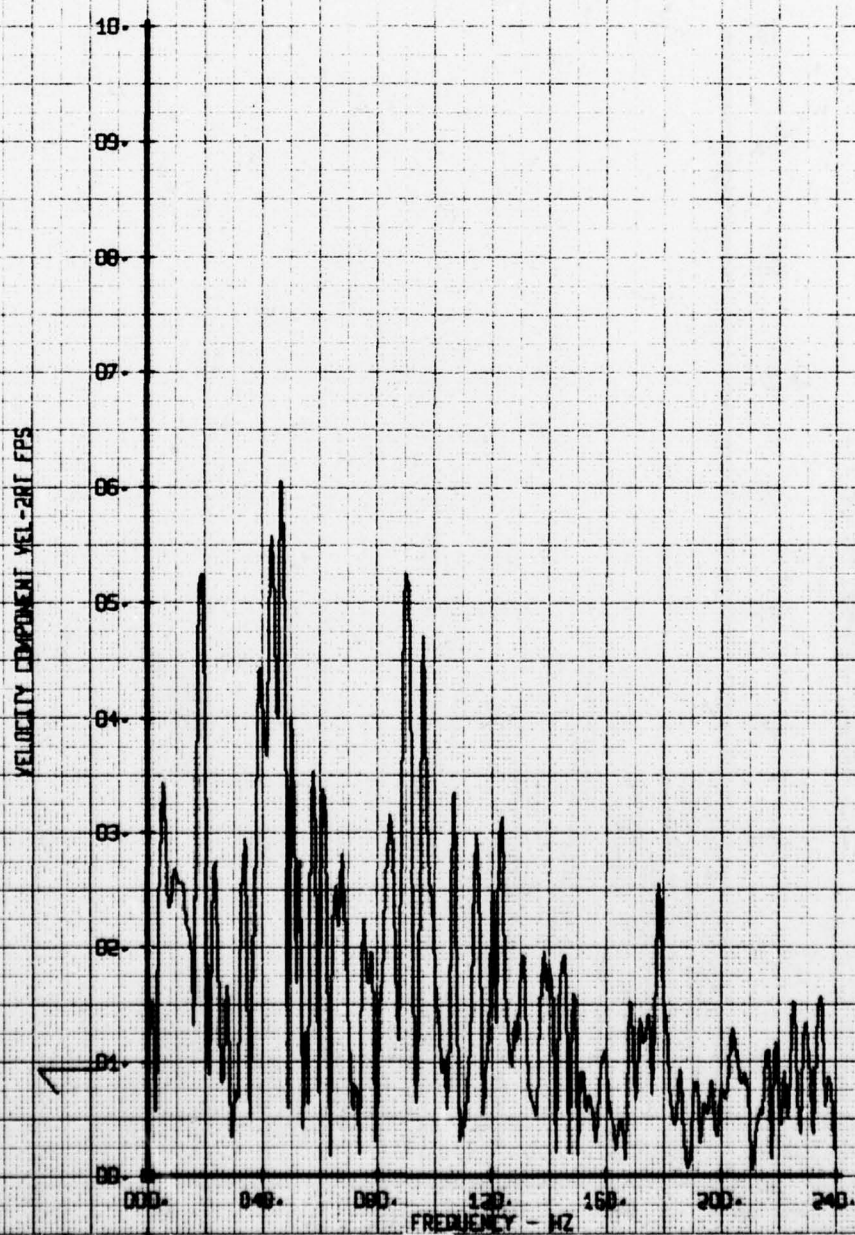
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FREQUENCY - HZ
188

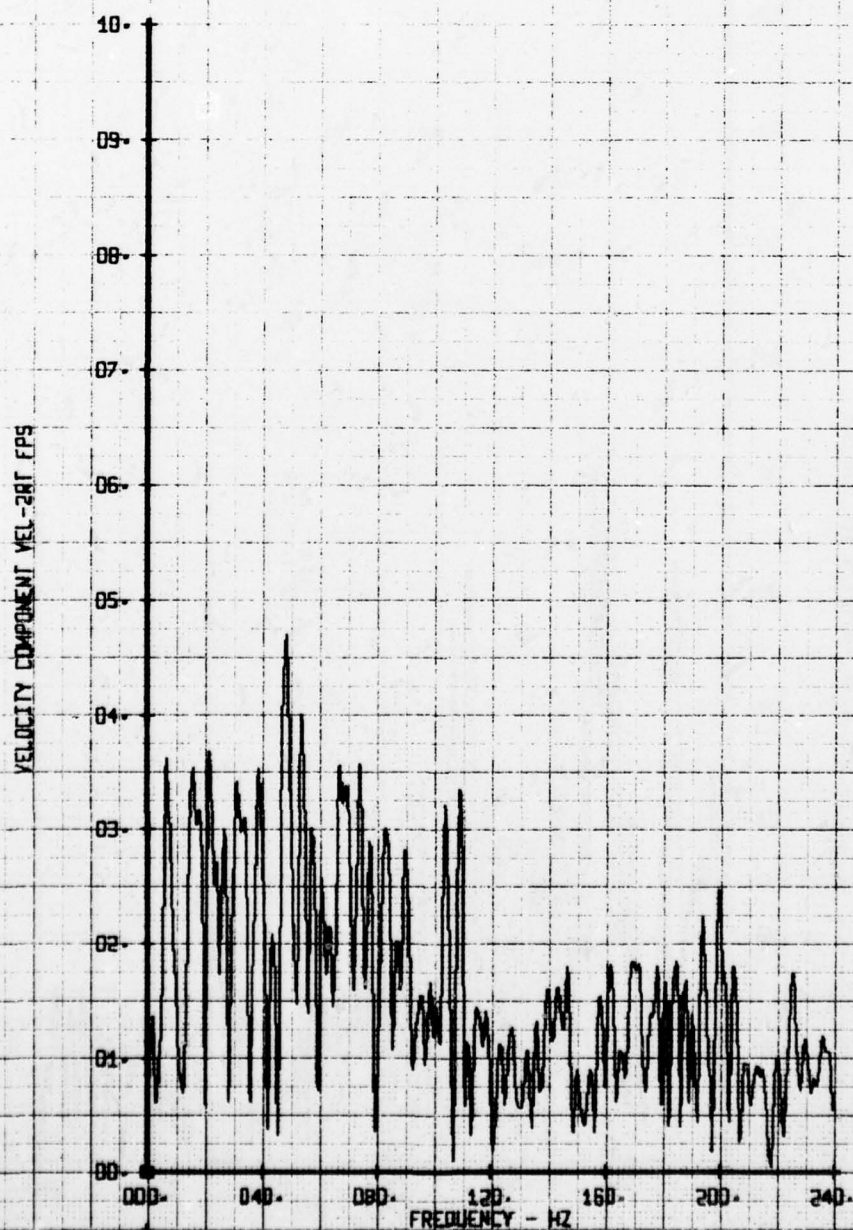
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40-1-256 NO BLOS
RUN 154 TP 2

LEGEND
CH 75 PARAMETER
VEL-2RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40,1-25G NO BLOS
RUN 154 TP 3

LEGEND
CH 75 PARAMETER
75 VEL-2RT



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INTERACTIONAL AERODYNAMICS OF THE SINGLE ROTOR HELICOPTER CONF1--ETC(U)

SEP 78 P F SHERIDAN

DAAJ02-77-C-0020

UNCLASSIFIED

USARTL-TR-78-23H

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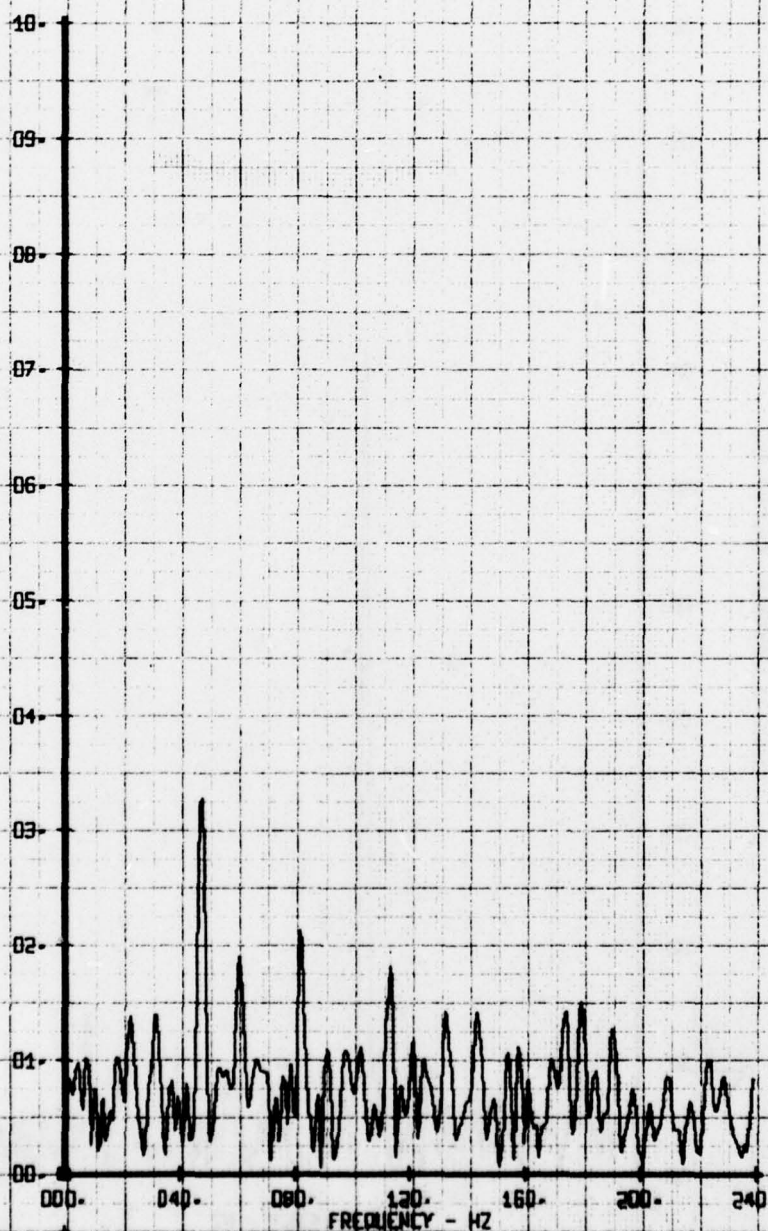
3 OF 3
AD A061995



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40, 1-25G NO BLOS
RUN 154 TP 4

LEGEND
CH 75 PARAMETER
VEL-2RT

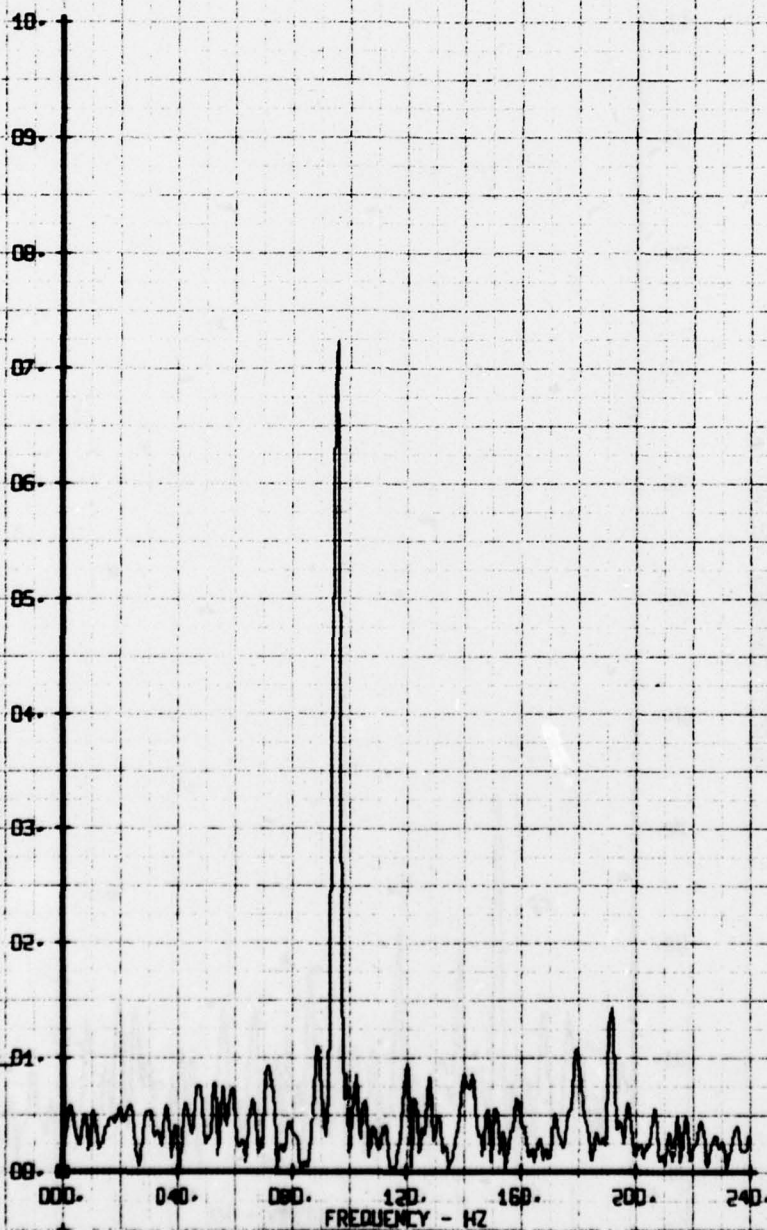
VELOCITY COMPONENT VEL-2RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W 180Y 10-40-1-25G NO BLOS
RUN 154 TP 5

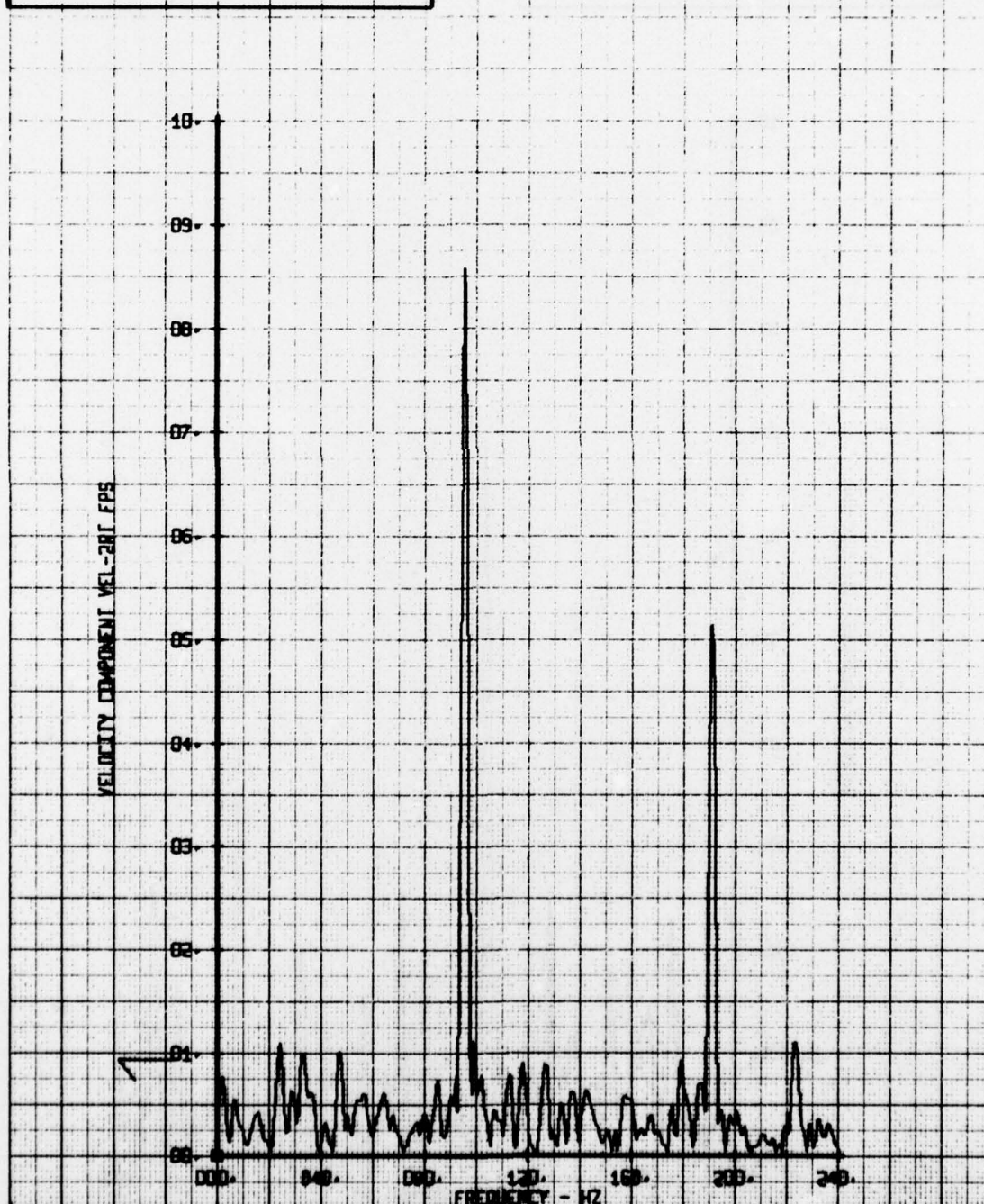
LEGEND
CH: 75
PARAMETER
VEL-2RT

VELOCITY COMPONENT VEL-2RT FPS



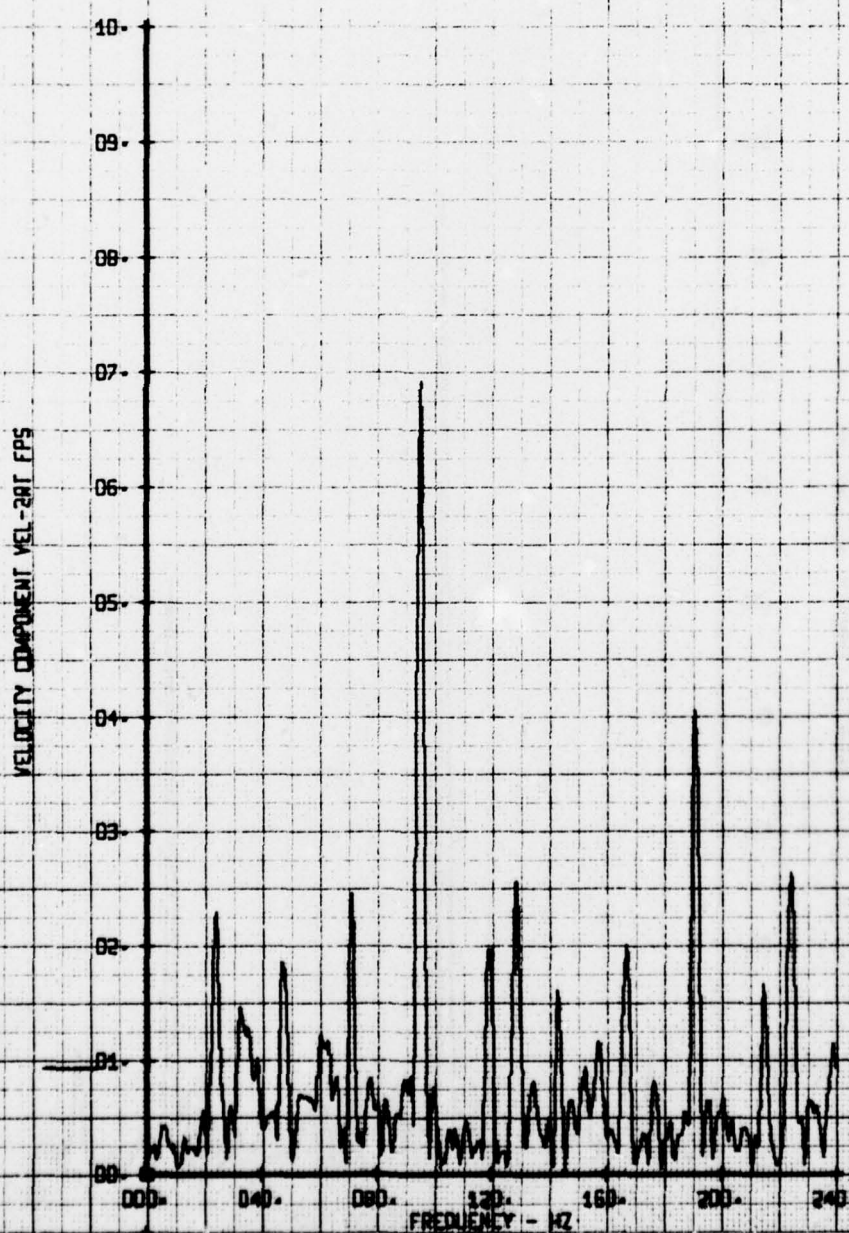
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OPEN CAP W UBODY 10-40-1-250 NO BLOS
RUN 154 TP 6

LEGEND
CH 75 PARAMETER
VEL-2RT



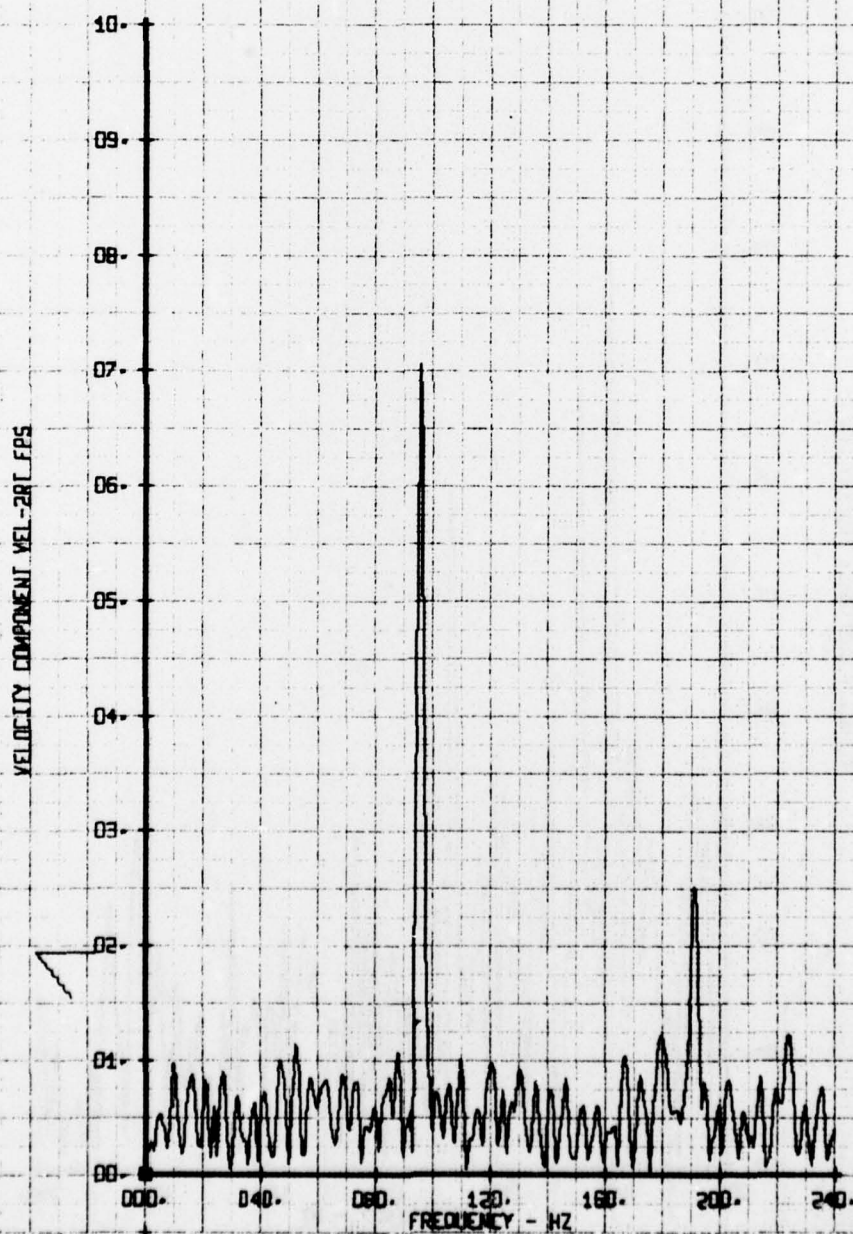
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LIBDY 1D-40, 1-25G NO BLOS
RUN 154 TP 7

LEGEND
CH 75
PARAMETER
VEL-2RT



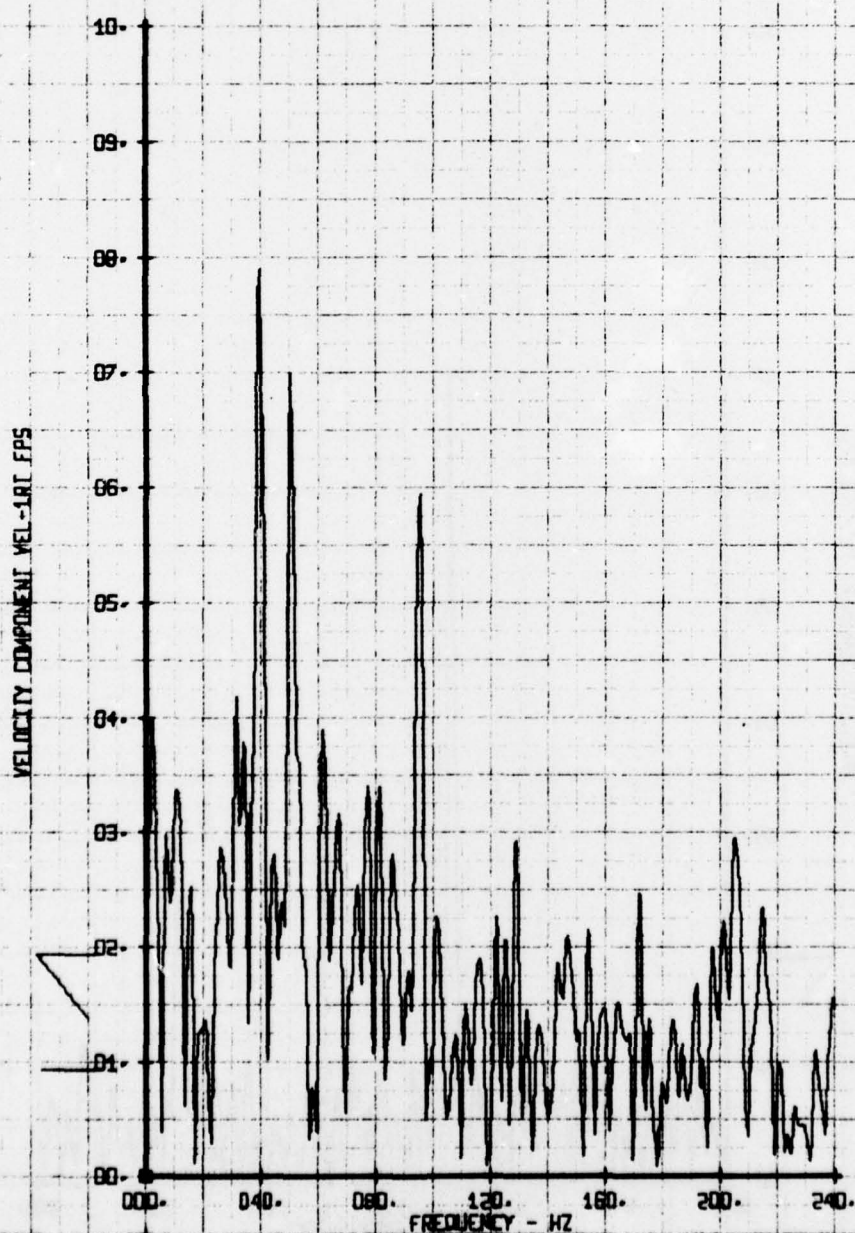
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OPEN CAP W UBDY 10-40-1-250 NO 8105
RUN 154 TP 8

LEGEND
CH 75 PARAMETER
VEL-2RT



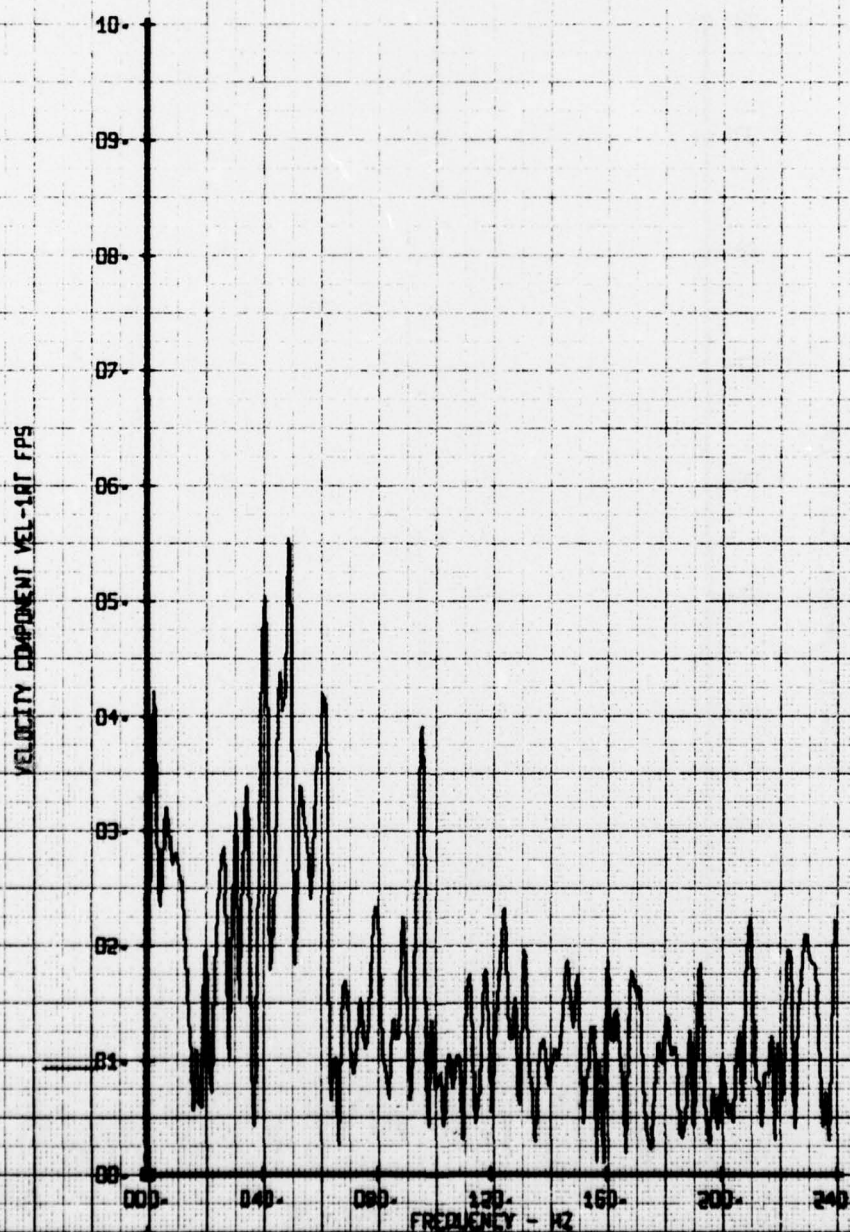
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LIBBY 10-40-1-250 NO BLOS
RUN 154 TP 2

LEGEND
CH 74 PARAMETER
VEL-1RT



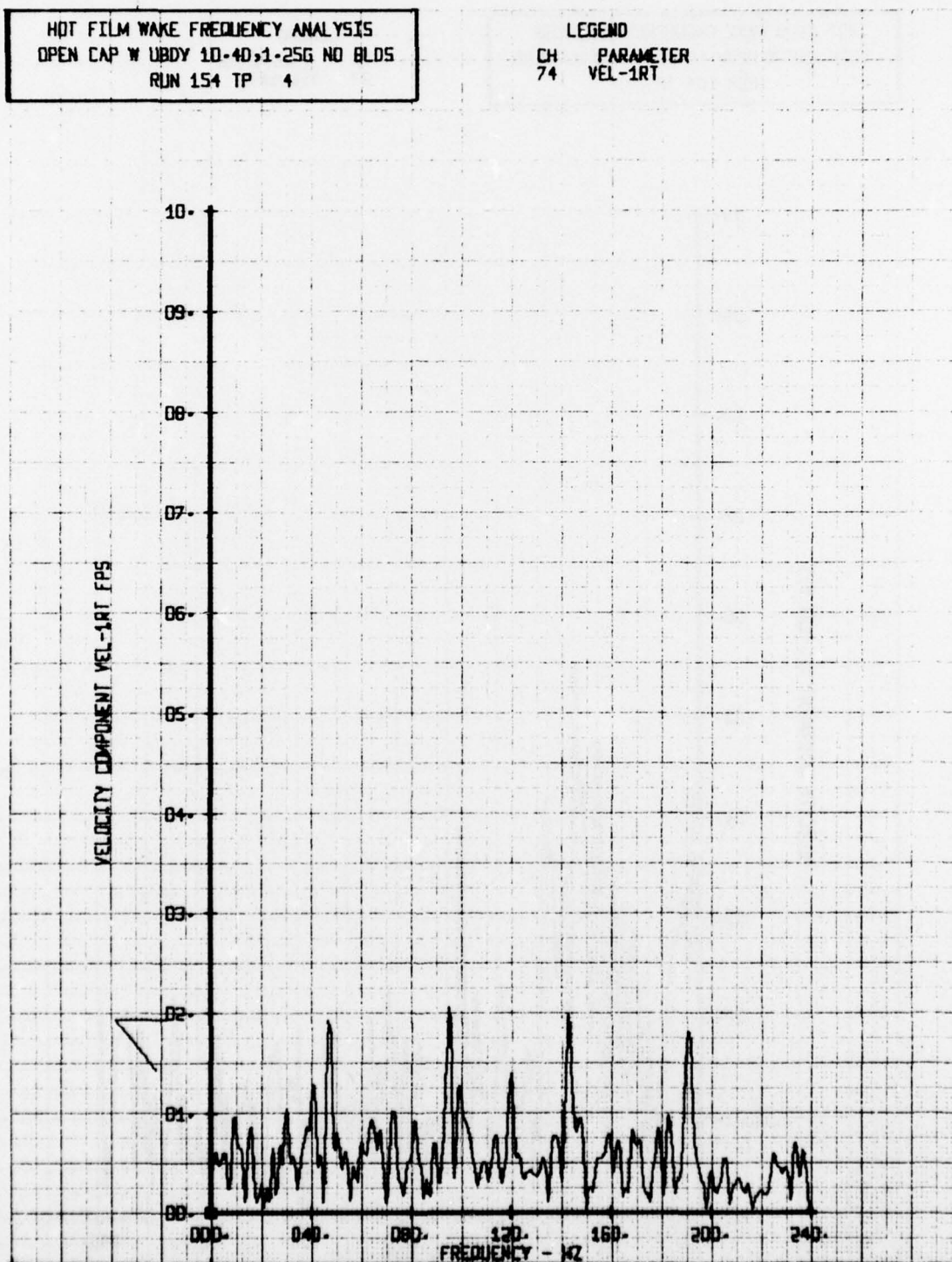
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40; 1-25G NO BLOS
RUN 154 TP 3

LEGEND
CH 74 PARAMETER
VEL-1RT



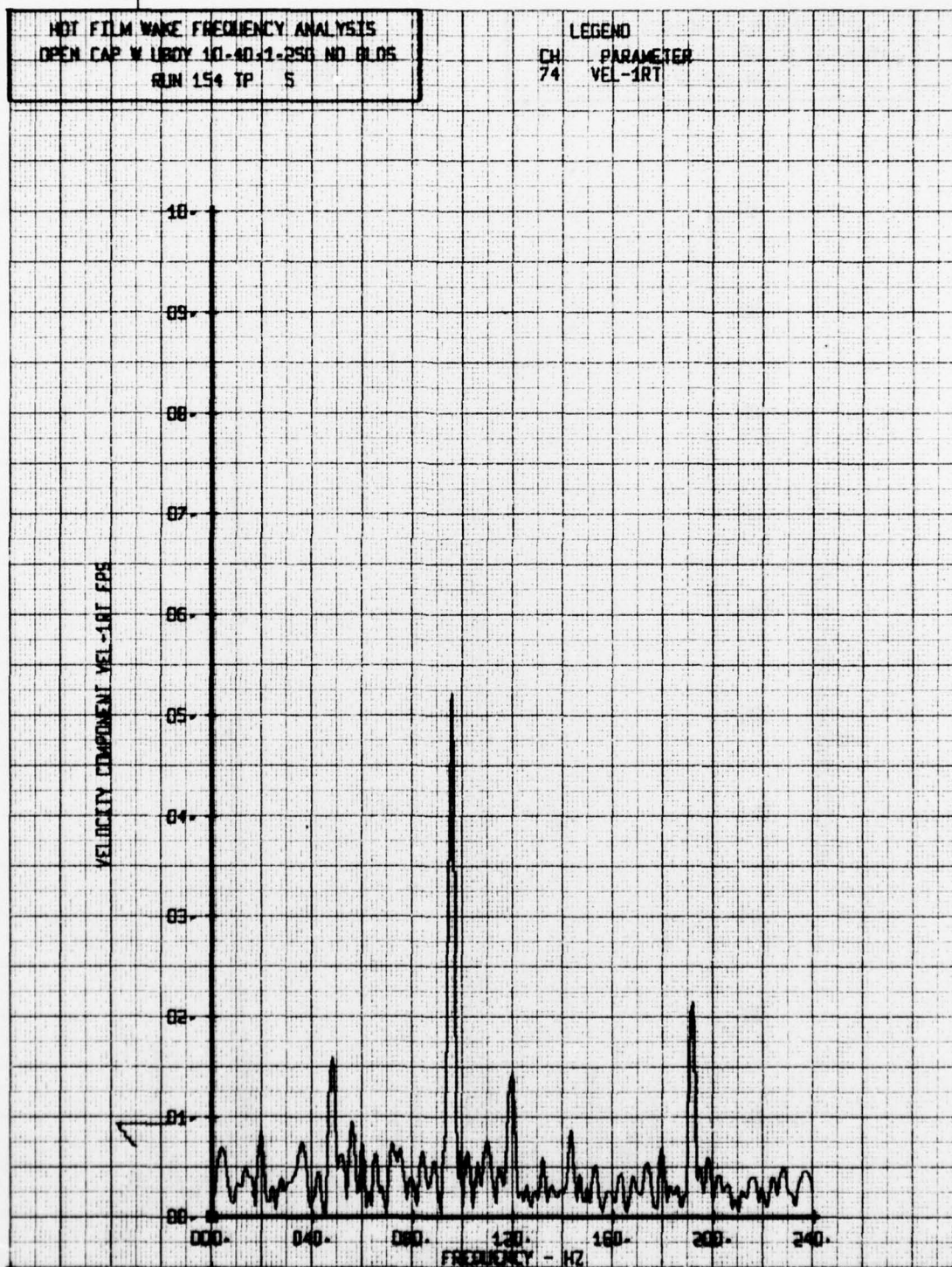
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OPEN CAP W UDDY 10-40,1-25G NO BLOS
RUN 154 TP 4

LEGEND
CH PARAMETER
74 VEL-1RT



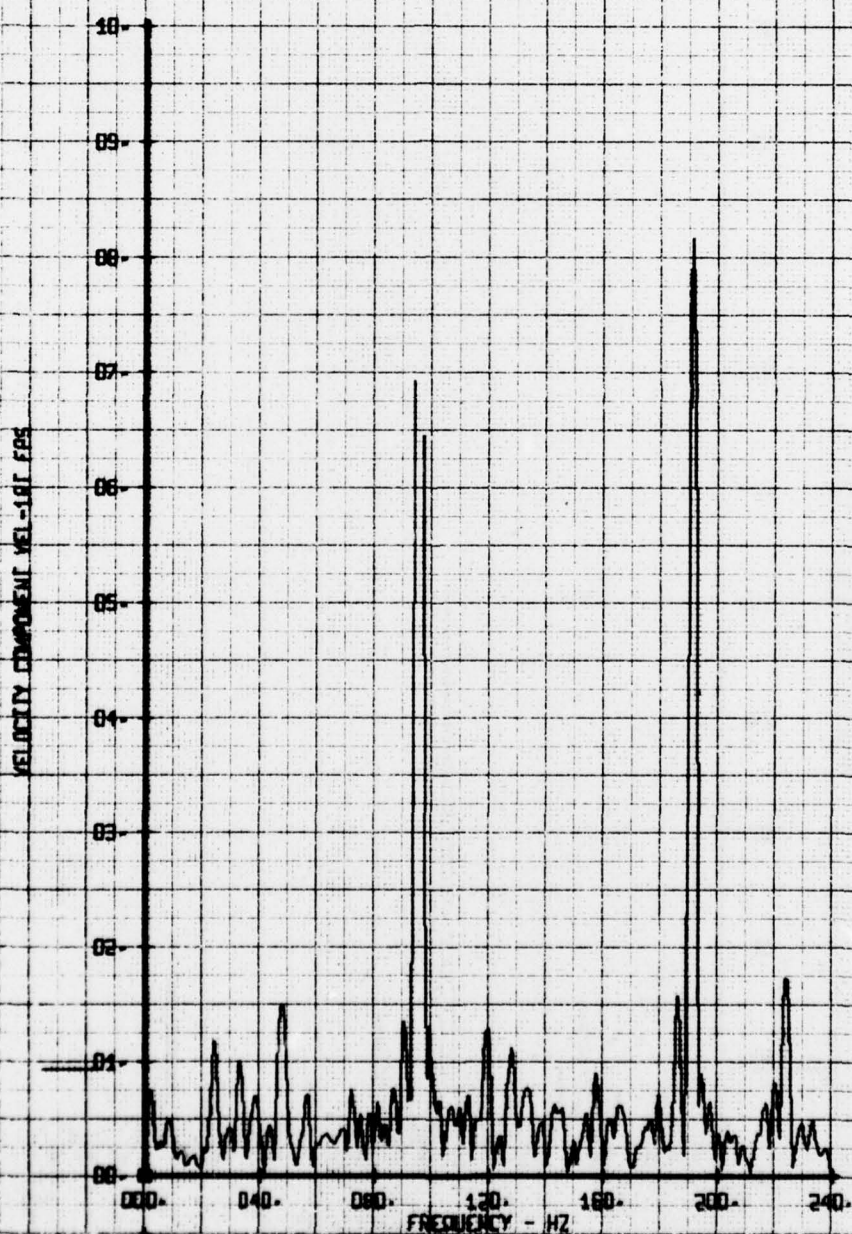
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LEROY 10-40-1-250 NO BLOS
RUN 154 TP 5

LEGEND
CH 74 PARAMETER
VEL-1RT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40-1-250 NO BLOS
RUN 154 TP 6

LEGEND
CH 74
PARAMETER
VEL-1RT

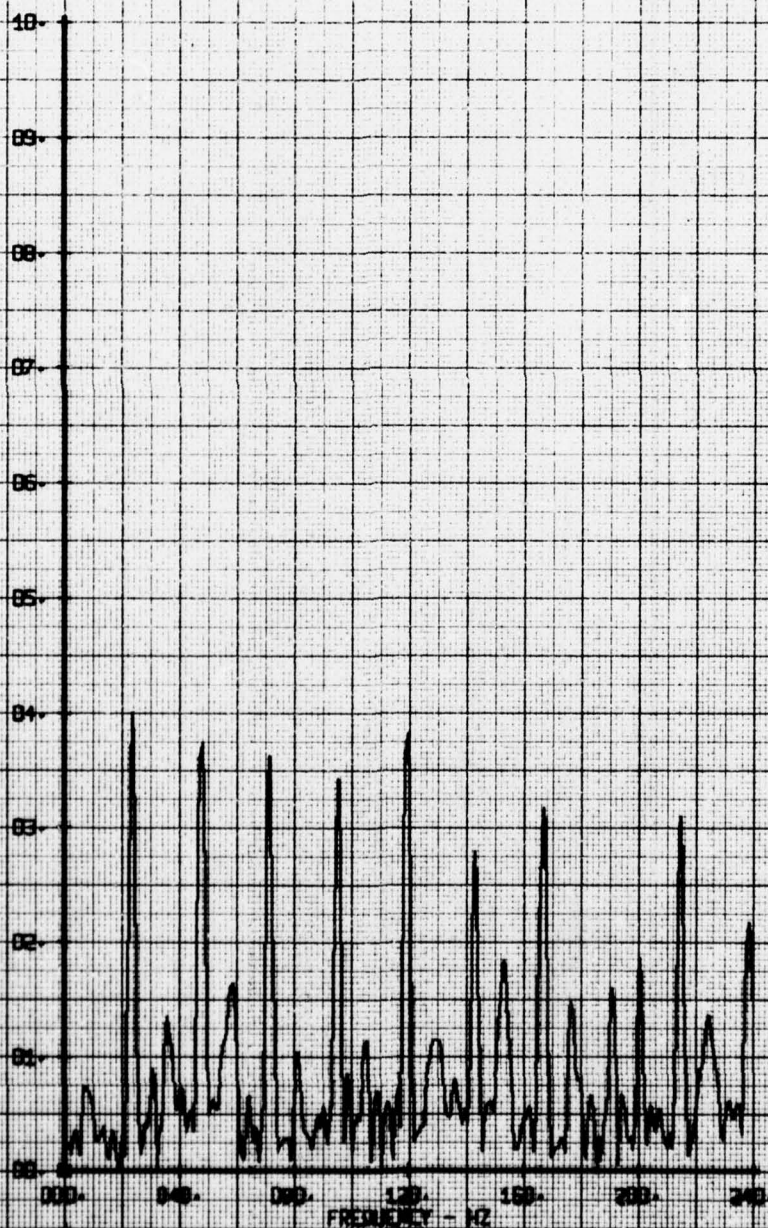


HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W 180Y 10-40-1-256 NO BLOS
RUN 154 TP 7

LEGEND

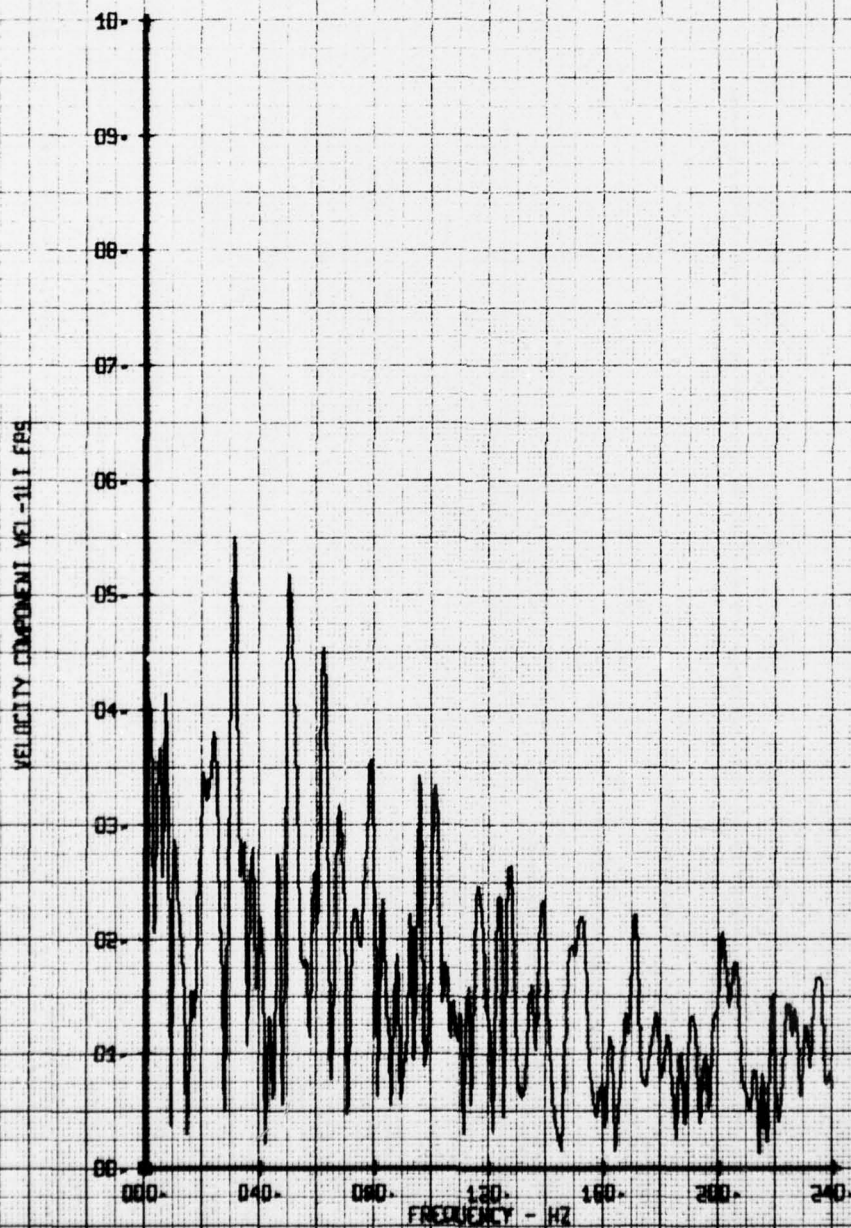
CH 74
PARAMETER
VEL-1RT.

VELOCITY COMPONENT VEL-1RT FPS



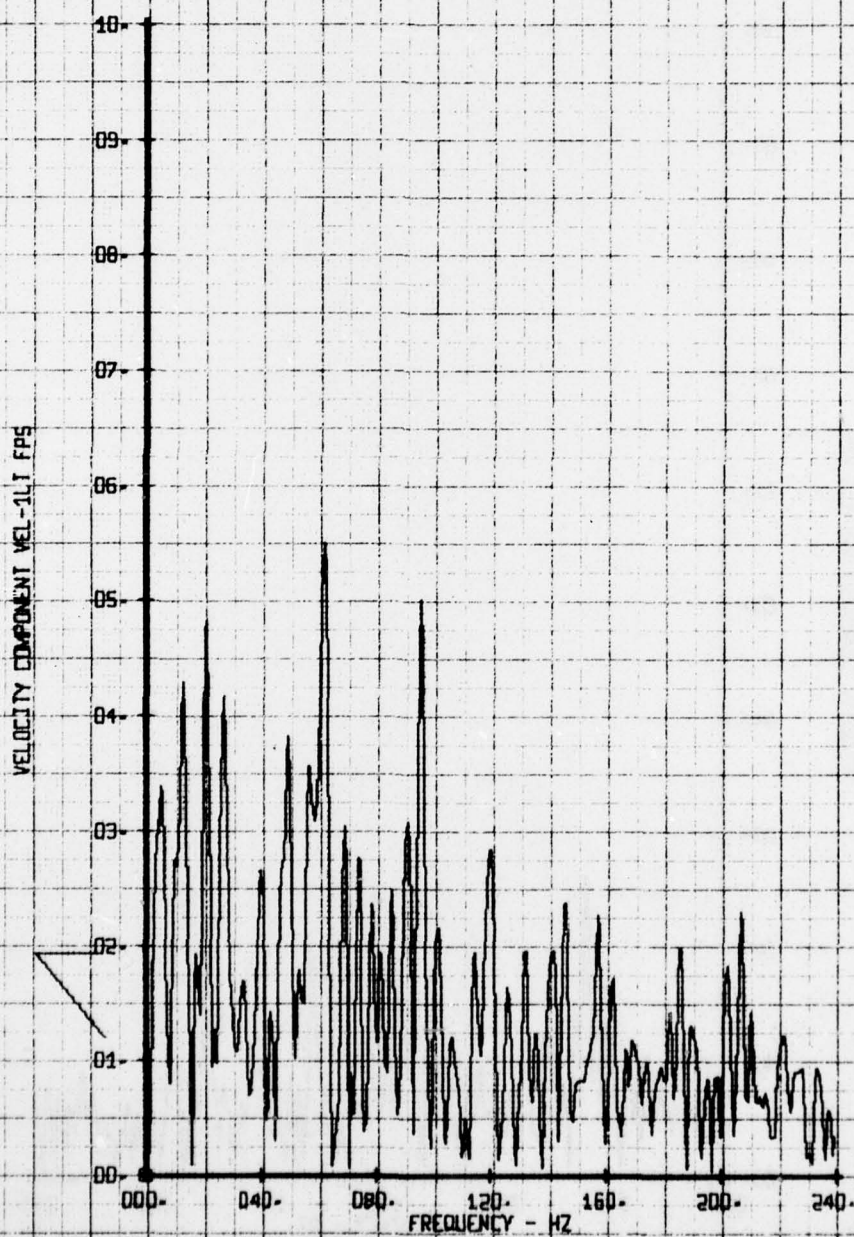
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LUBDY 10-40:1-25G NO BLOS
RUN 154 TP 2

LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LIBBY 10-40, 1-25G NO BLOS
RUN 15A TP 3

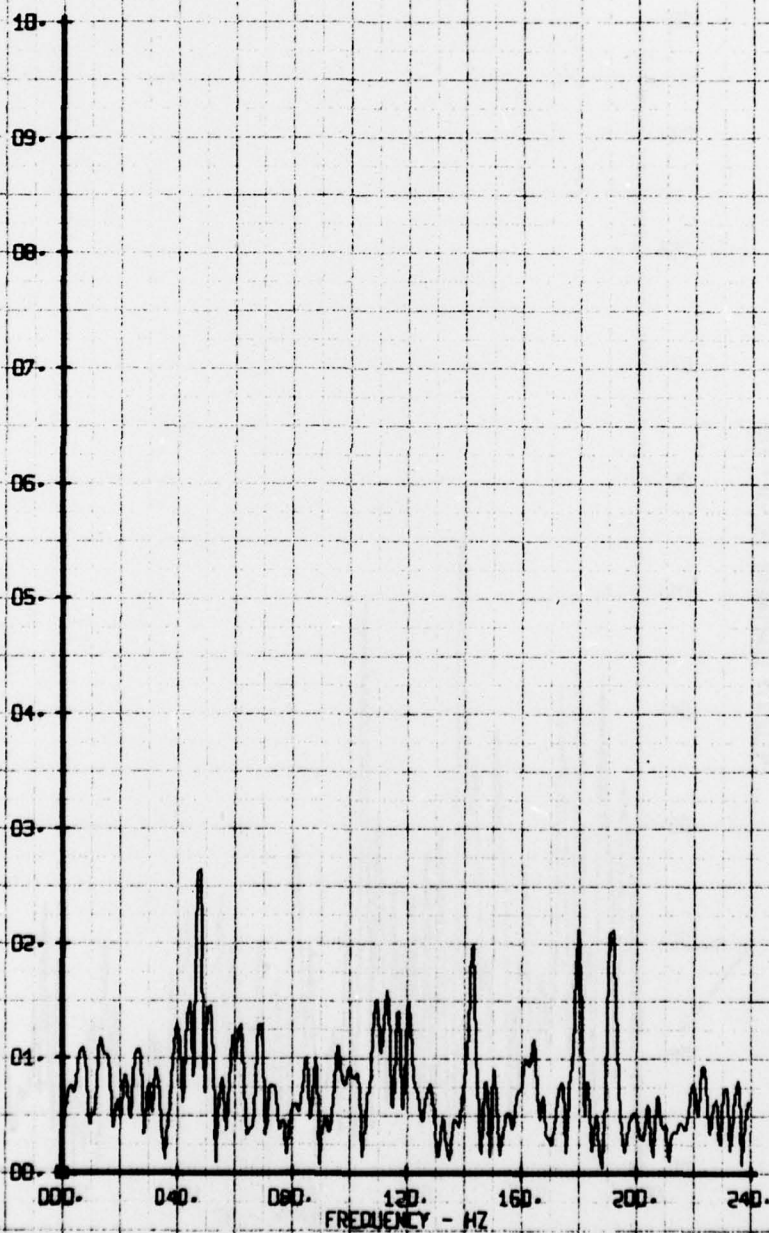
LEGEND
CH 73 PARAMETER
VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40 1-250 NO BLOS
RUN 154 TP 4

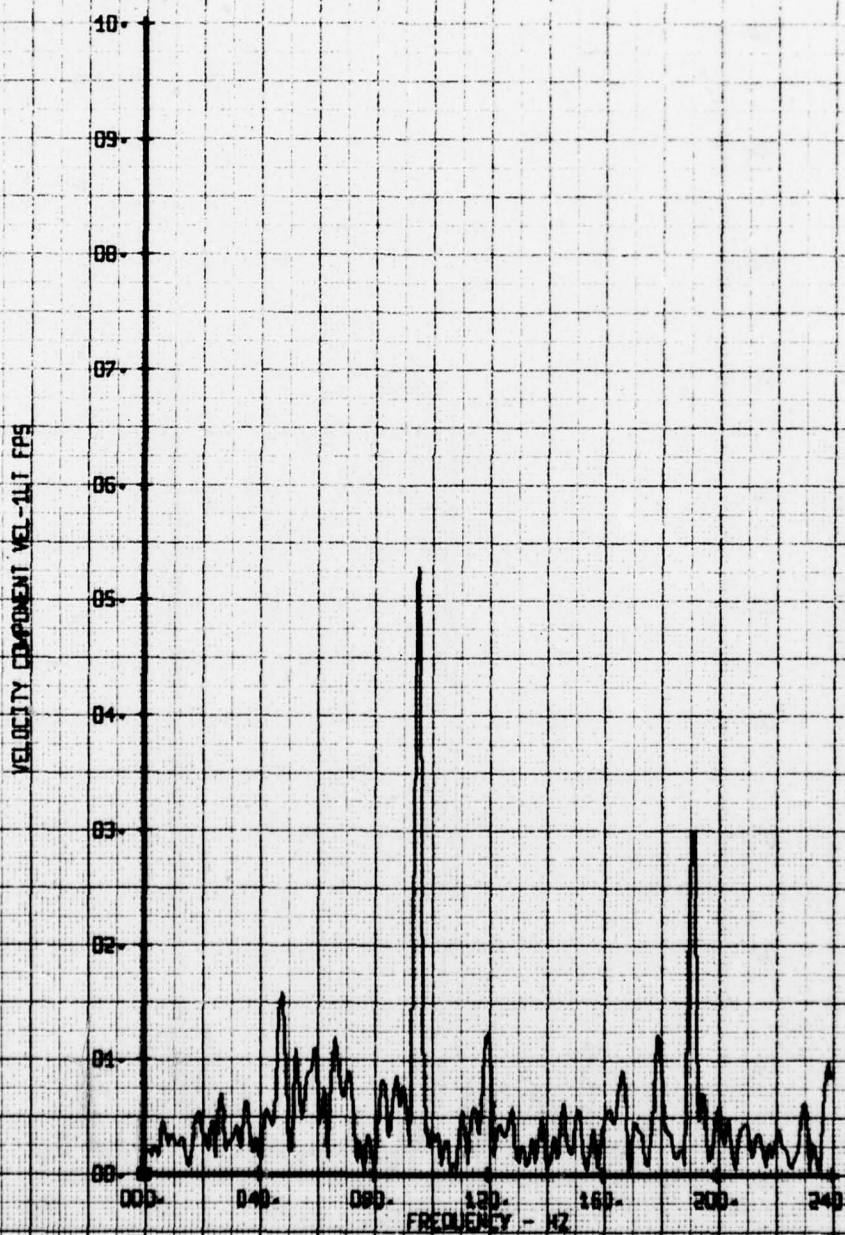
LEGEND
CH 73
PARAMETER
VEL-1LT

VELOCITY COMPONENT VEL-1LT FPS



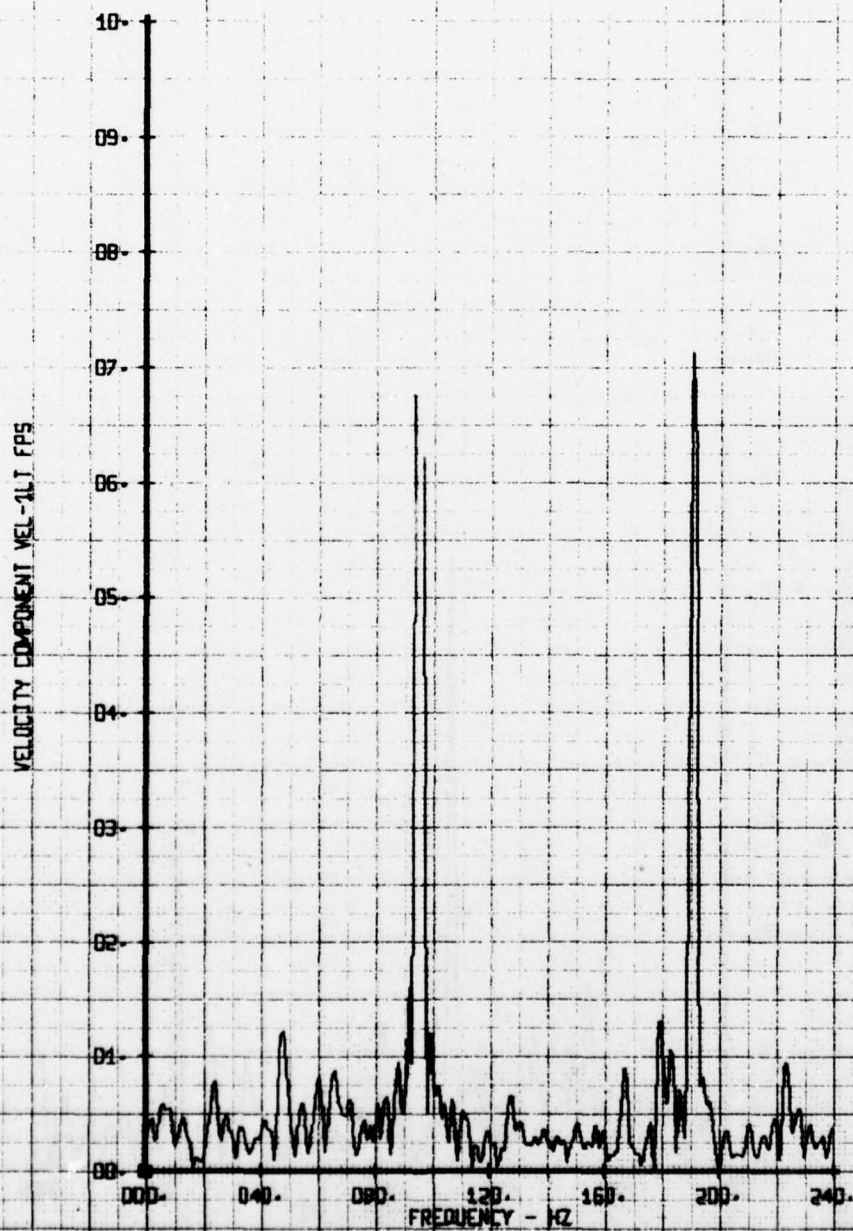
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBODY 1D-4D-1-25G NO BLOS
RUN 15A-TP 5

LEGEND
CM 73 PARAMETER
VEL-1LT



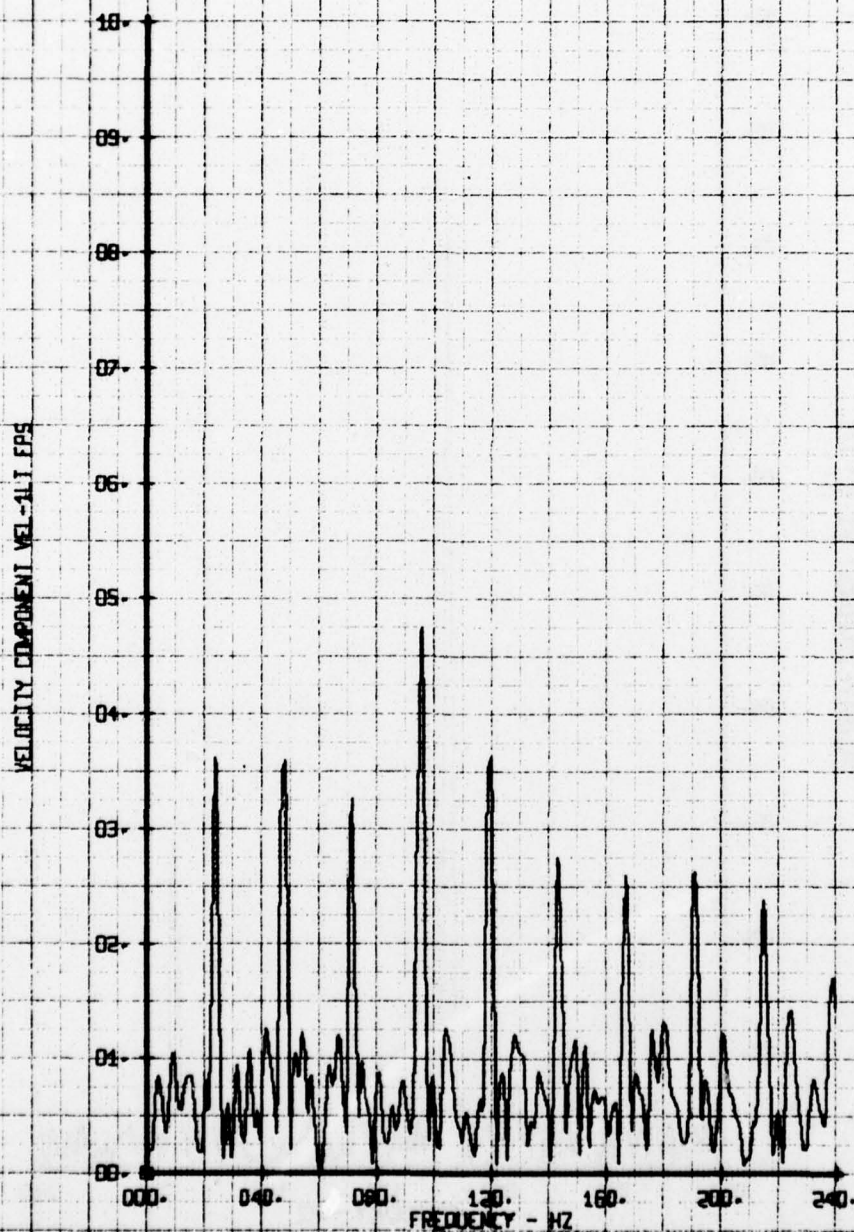
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 1D-4D, 1-2SG NO BLOS
RUN 154 TP 6

LEGEND
CH 73 PARAMETER
VEL-1LT



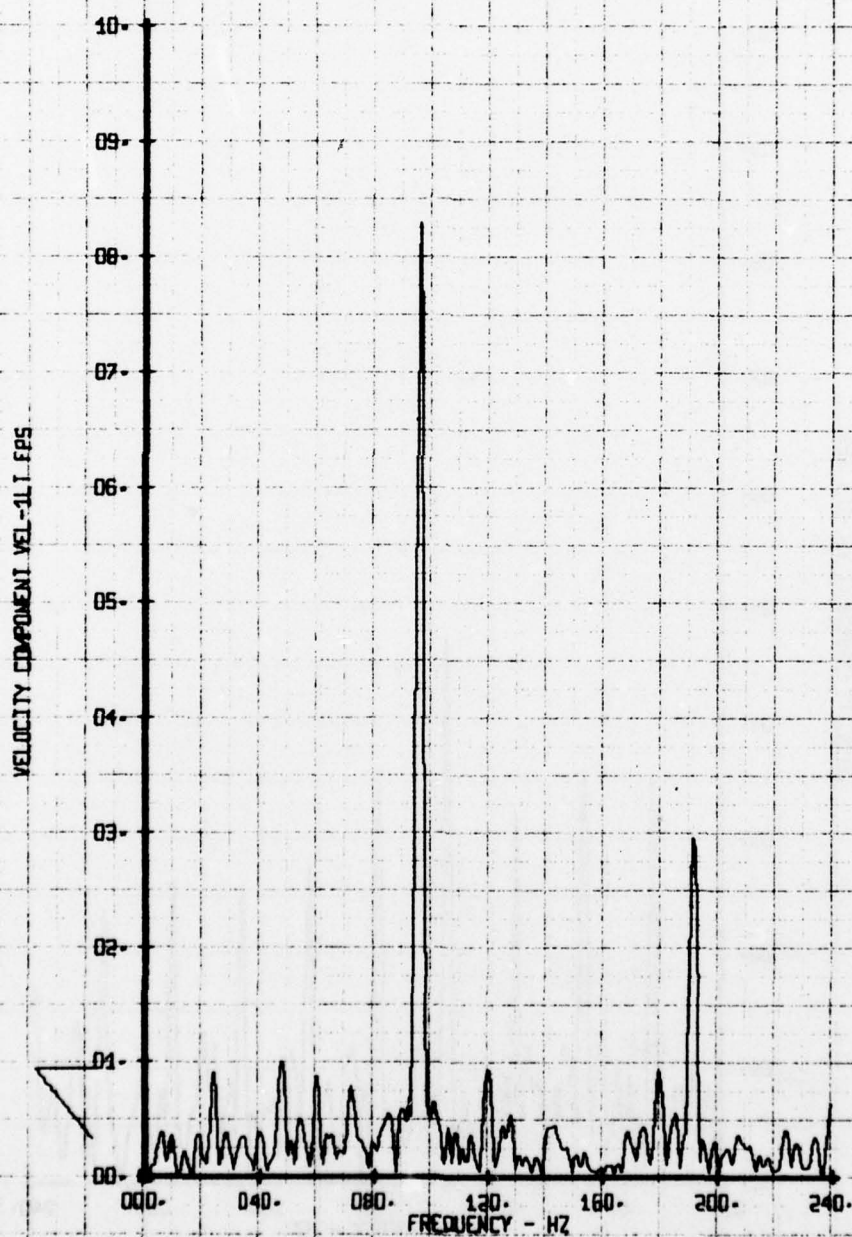
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W 180Y 10-40-1-250 NO BLDS
RUN 154 TP 7

LEGEND
CH 73 PARAMETER
73 VEL-1LT



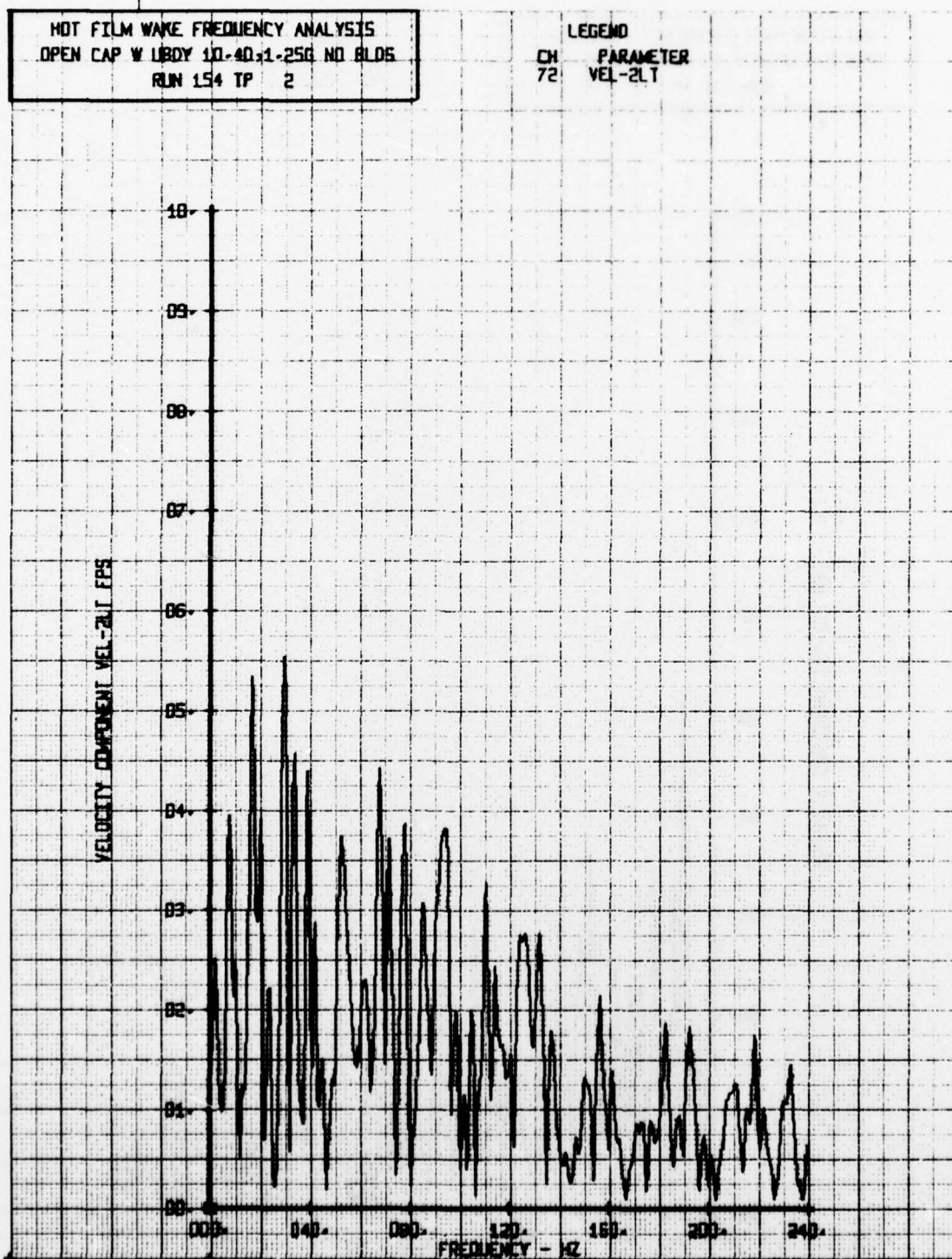
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40-1-250 NO BLOS
RUN 154 TP B

LEGEND
CH. PARAMETER
73 VEL-1LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40-1-25G NO BLOS
RUN 154 TP 2

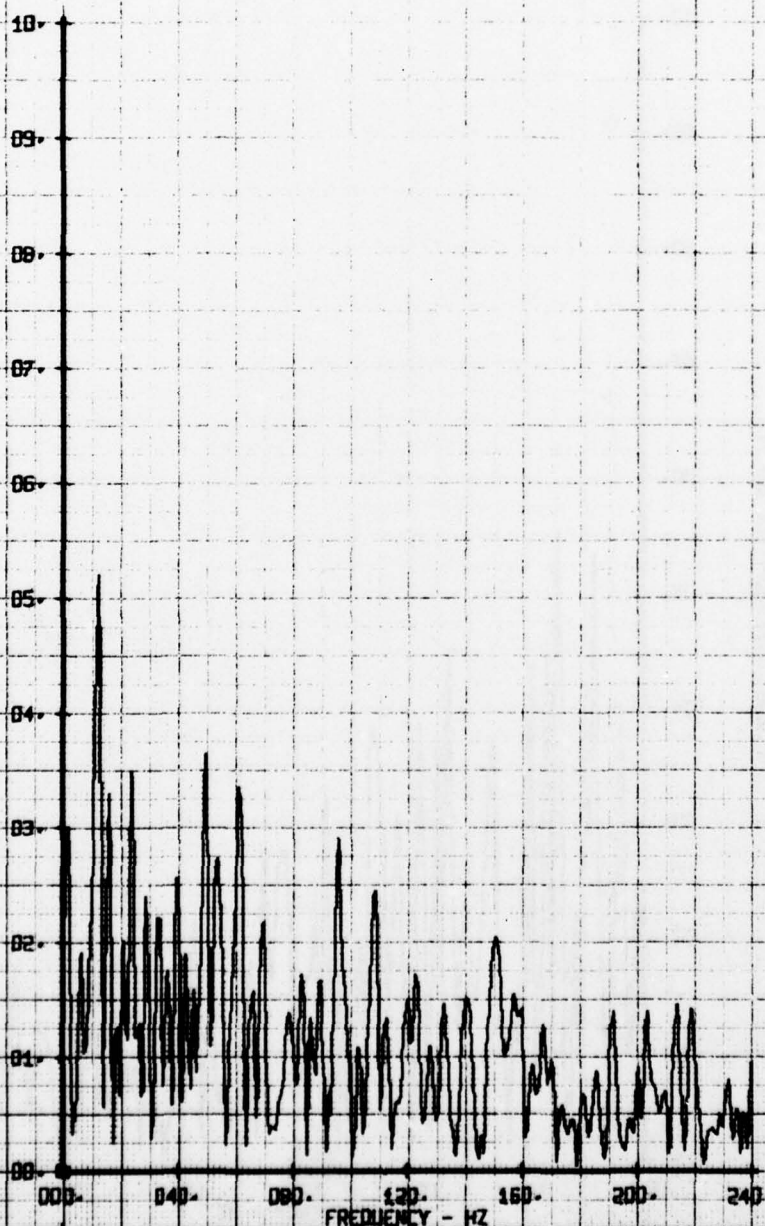
LEGEND
CH 72 PARAMETER
VEL-2LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10.4011-256 NO BLOS
RUN 154 TP 3

LEGEND
CH 72 PARAMETER
VEL-2LT

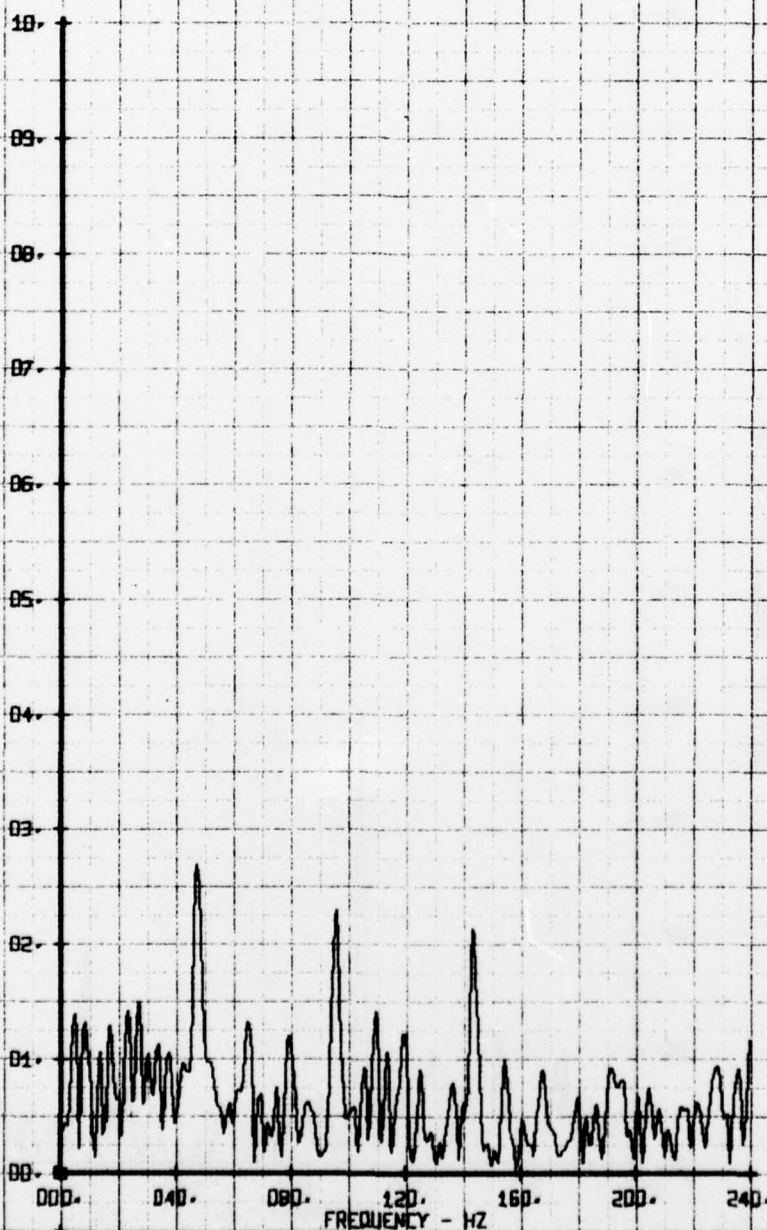
VELOCITY COMPONENT VEL-2LT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBOY 10-40 1-250 NO BLOS
RUN 154 TP 4

LEGEND
CH 72
PARAMETER
VEL-2LT

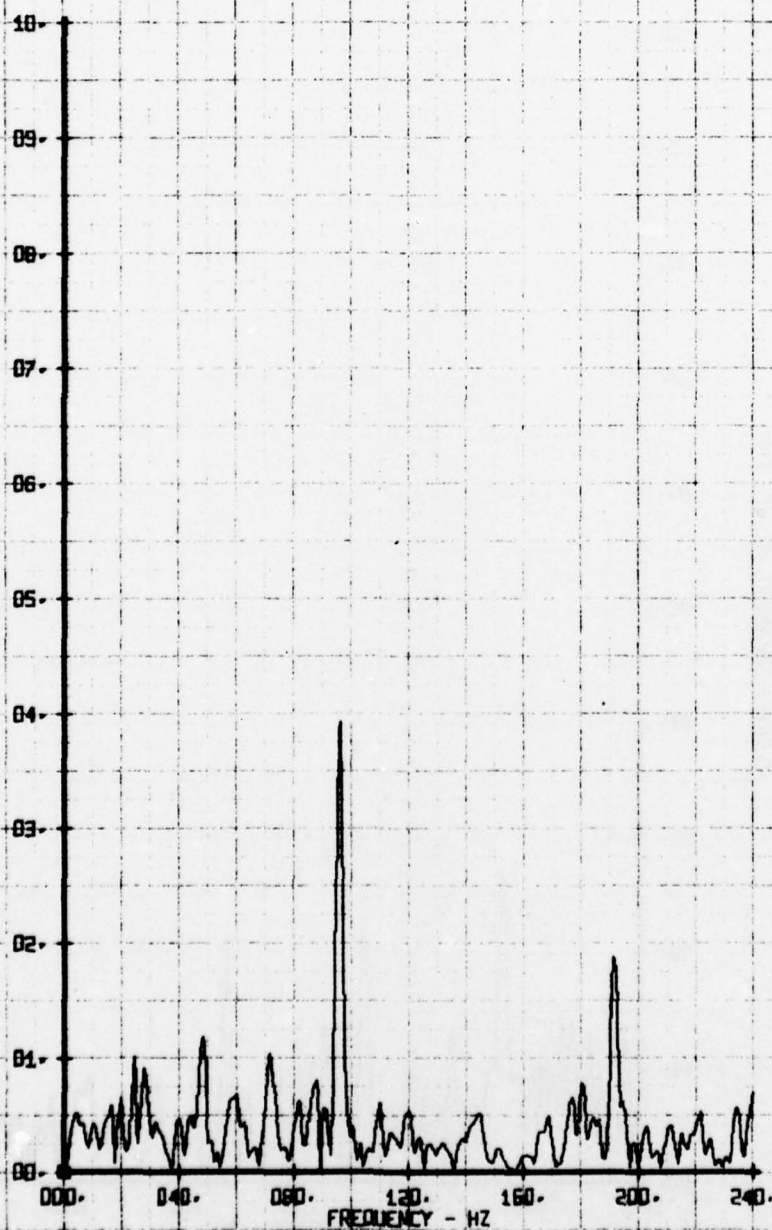
VELOCITY COMPONENT VEL-2LT FPS



NOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP V LBDY 10.40:1-256 NO BLOS
RUN 154 TP 5

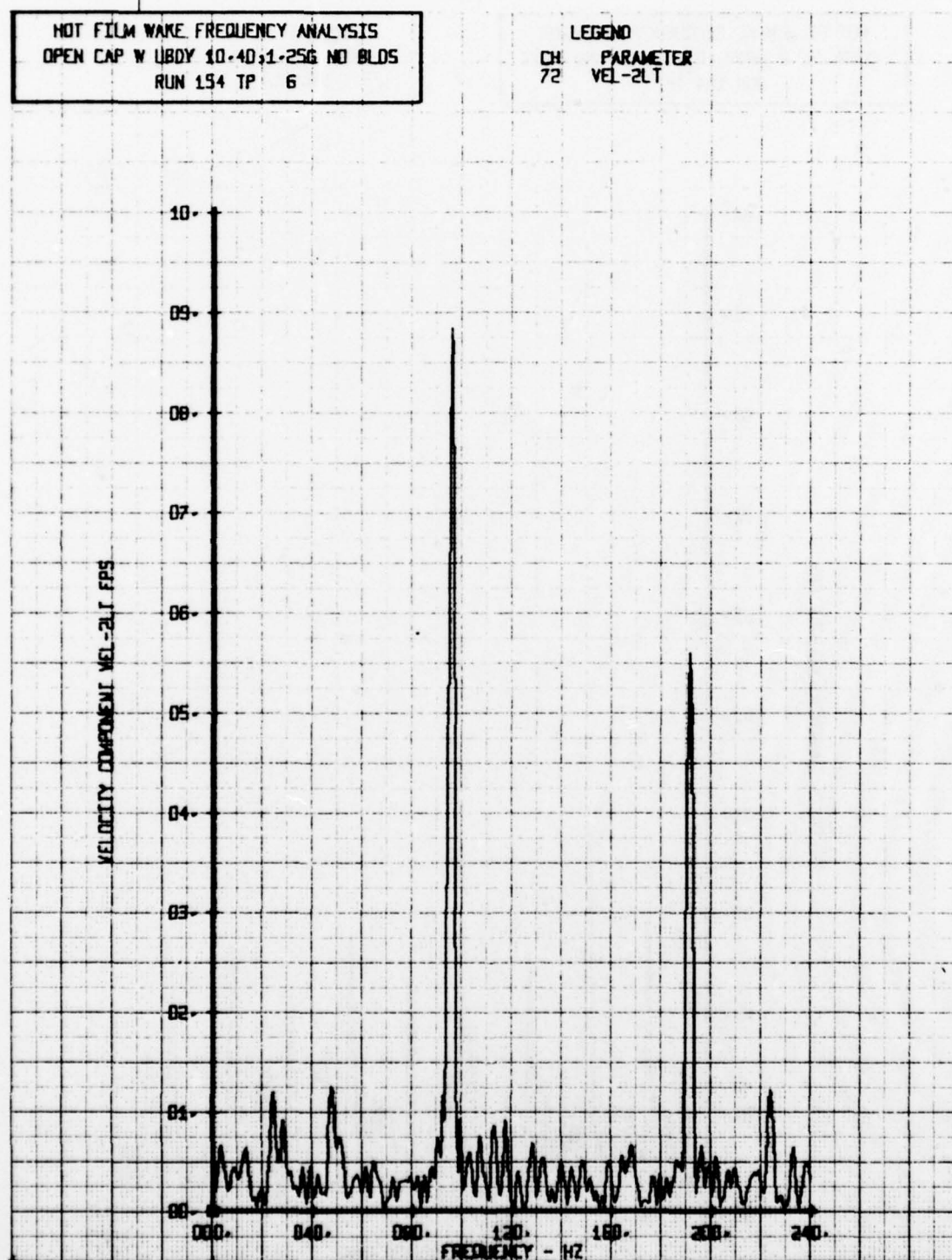
LEGEND
CH 72
PARAMETER
VEL-2LT

VELOCITY COMPONENT VEL-2LT FPS



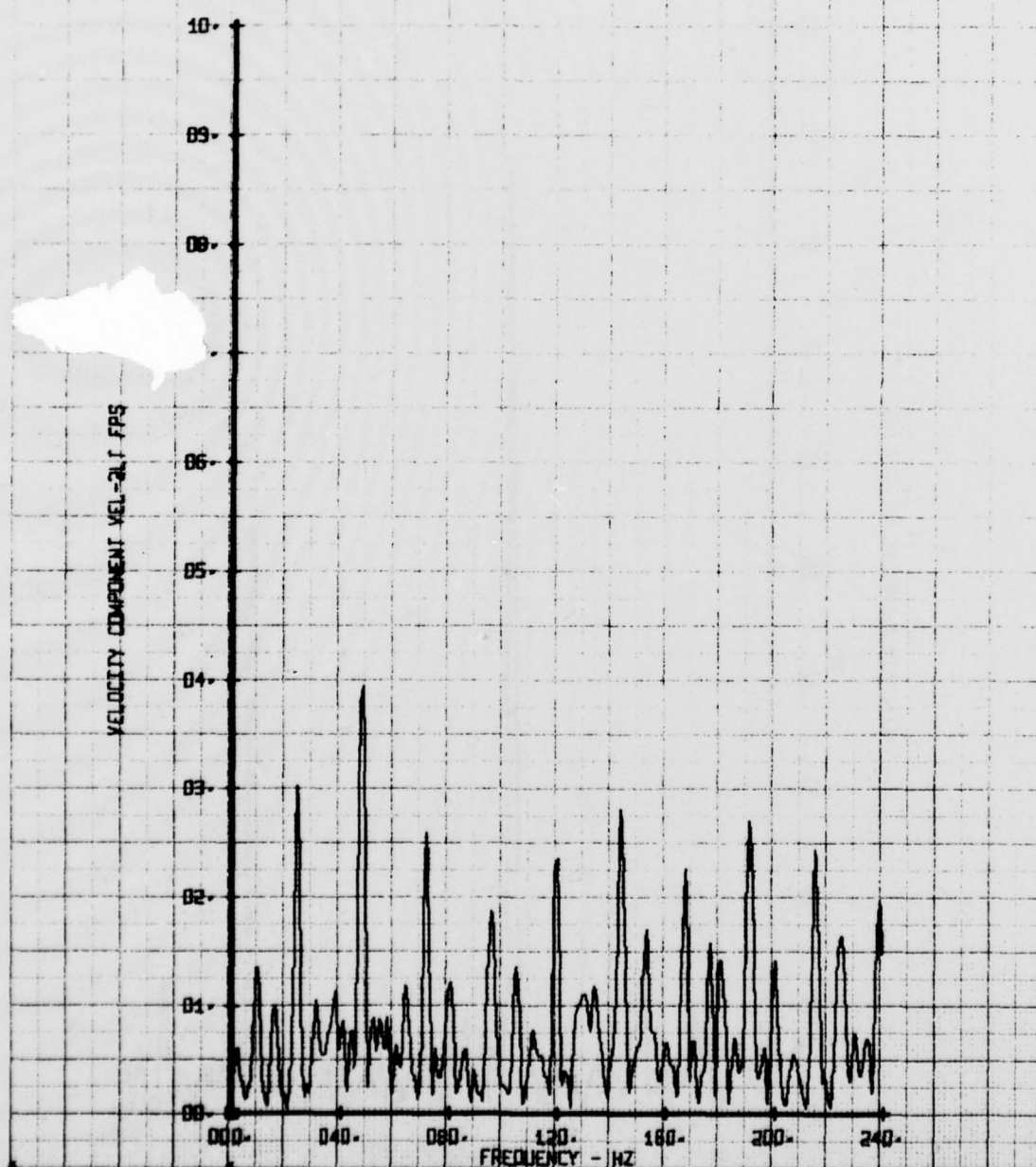
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBDY 10-40;1-25G NO BLOS
RUN 154 TP 6

LEGEND
CH. PARAMETER
72 VEL-2LT



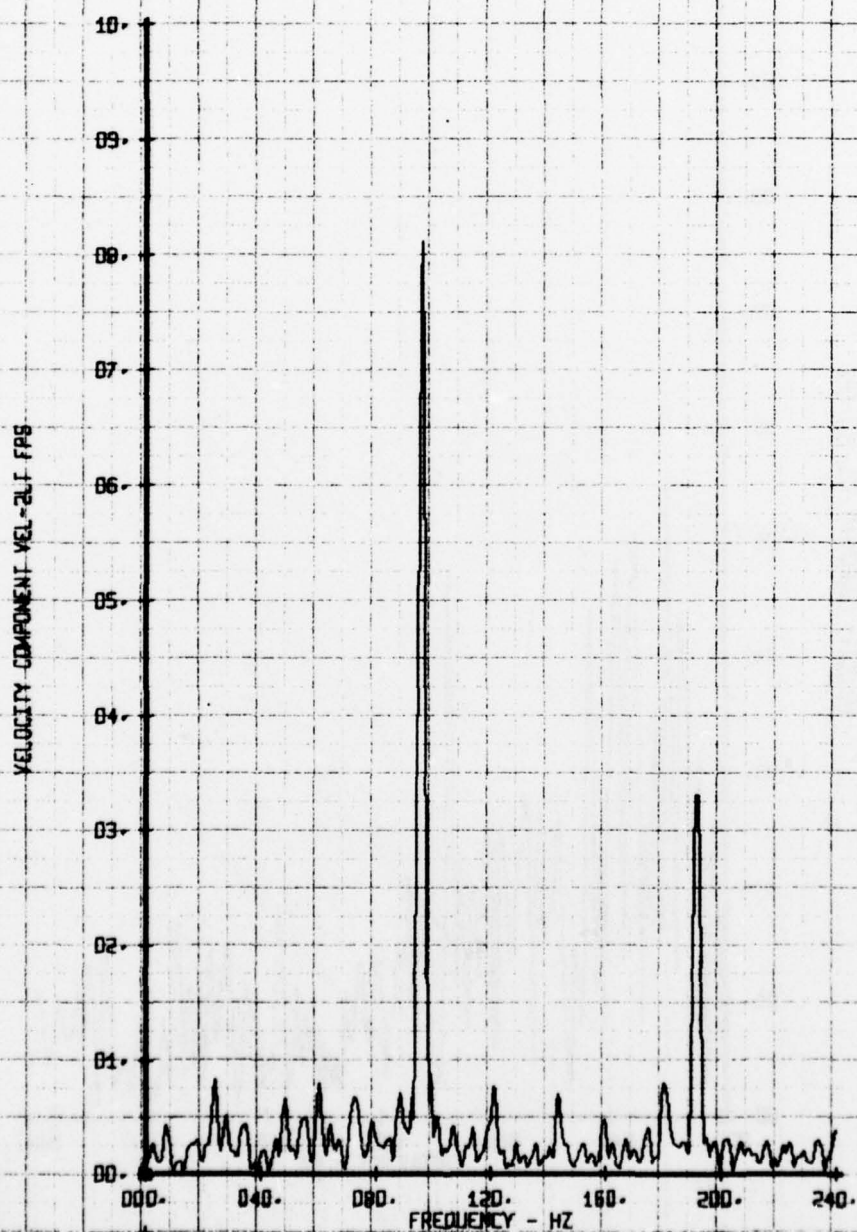
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBOY 10-40.1-25G NO BLOS
RUN 154 TP 7

LEGEND
CH PARAMETER
72 VEL-2LT



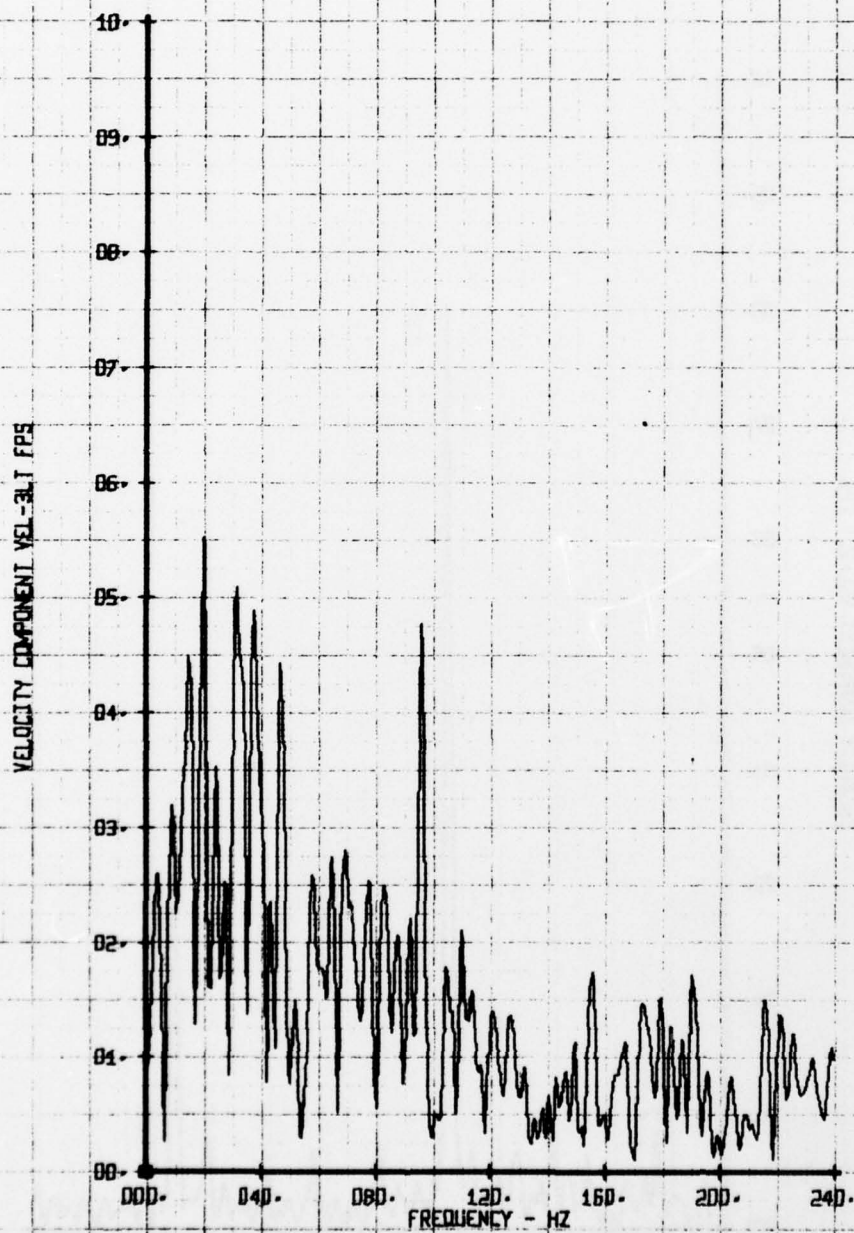
NOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W UBOY 10-40, 1.25G NO BLOS
RUN 154 TP B

LEGEND
CH 72 PARAMETER
VEL-2LT



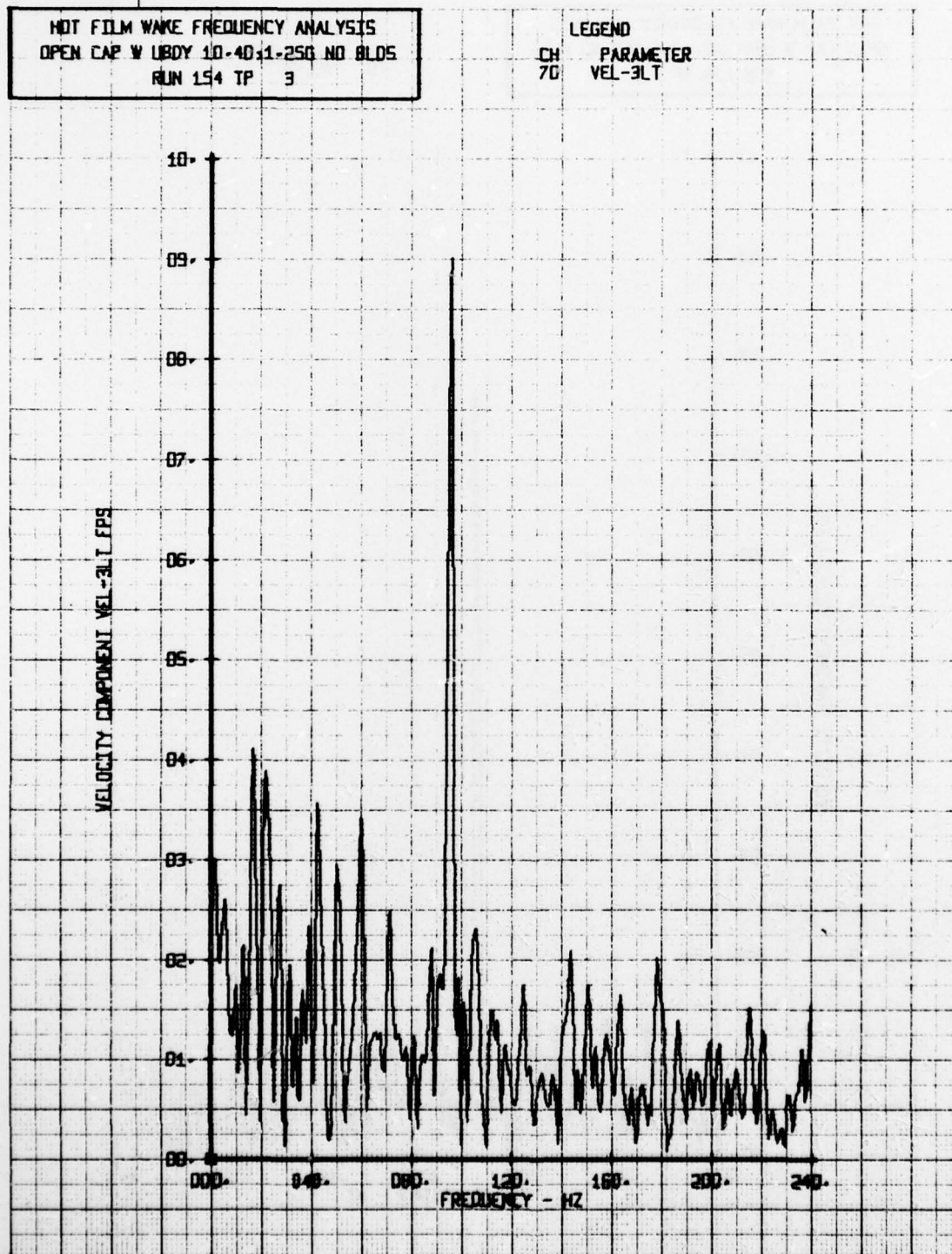
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40.1-256 NO BLOS
RUN 154 TP 2

LEGEND
CH 70 PARAMETER
VEL-3LT



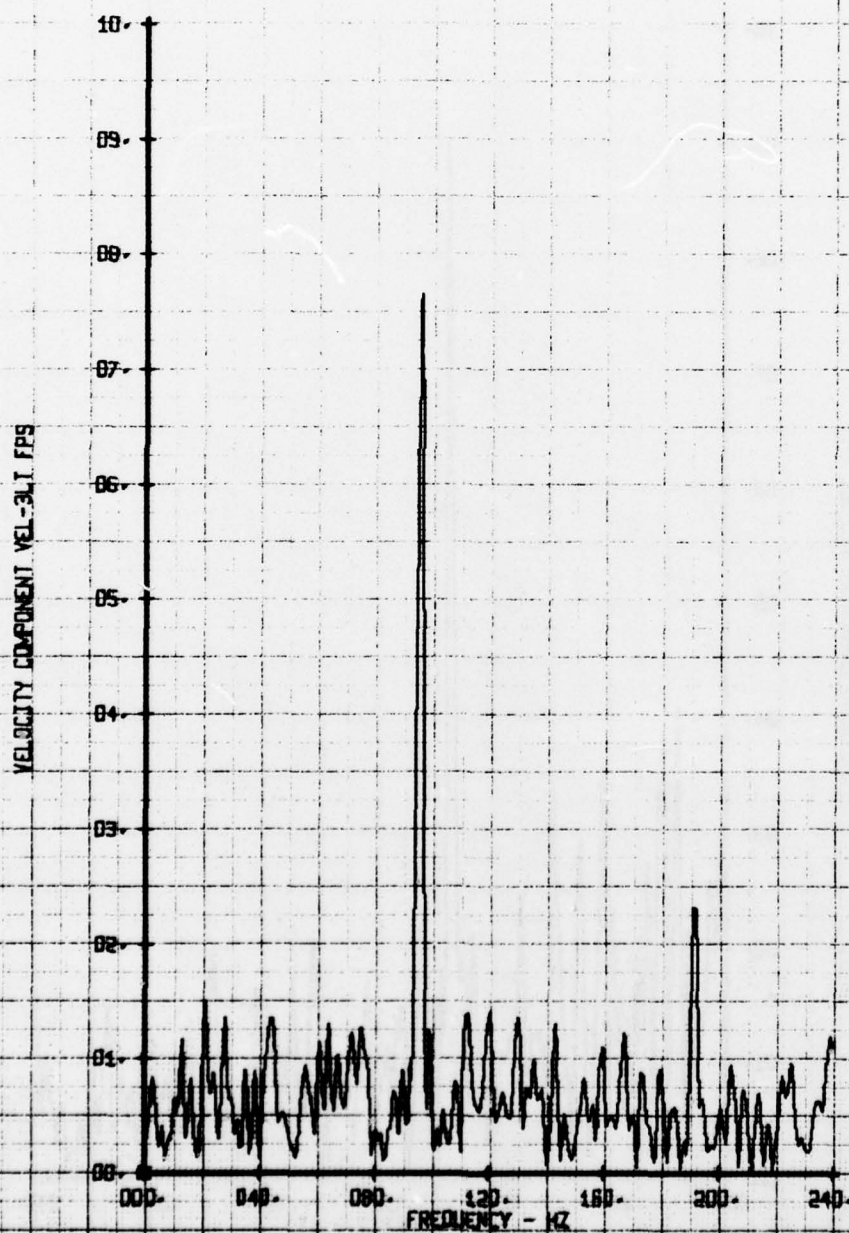
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10-40-1-250 NO BLOS
RUN 154 TP 3

LEGEND
CH 70 PARAMETER
VEL-3LT



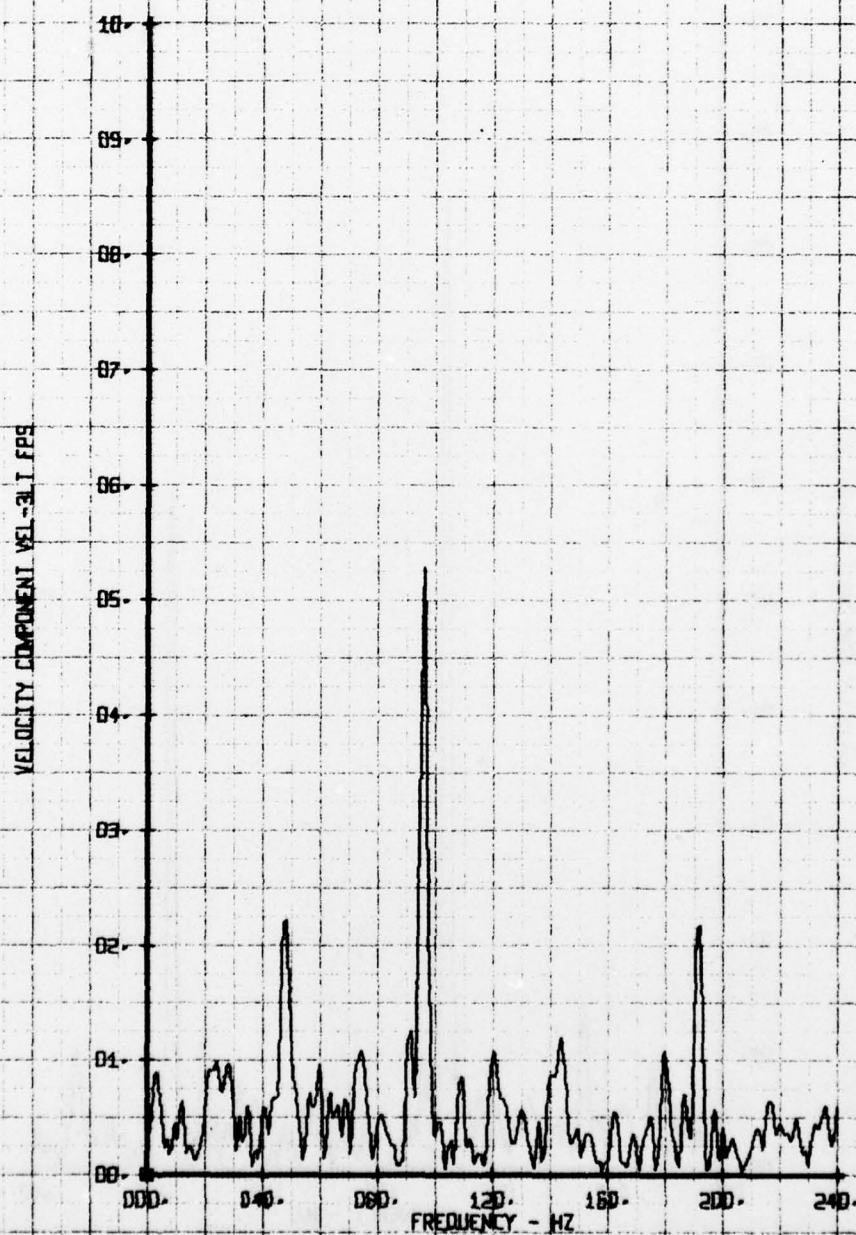
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40,1-256 NO BLOS
RUN 154 TP 4

LEGEND
CH 70 PARAMETER
VEL-3LT



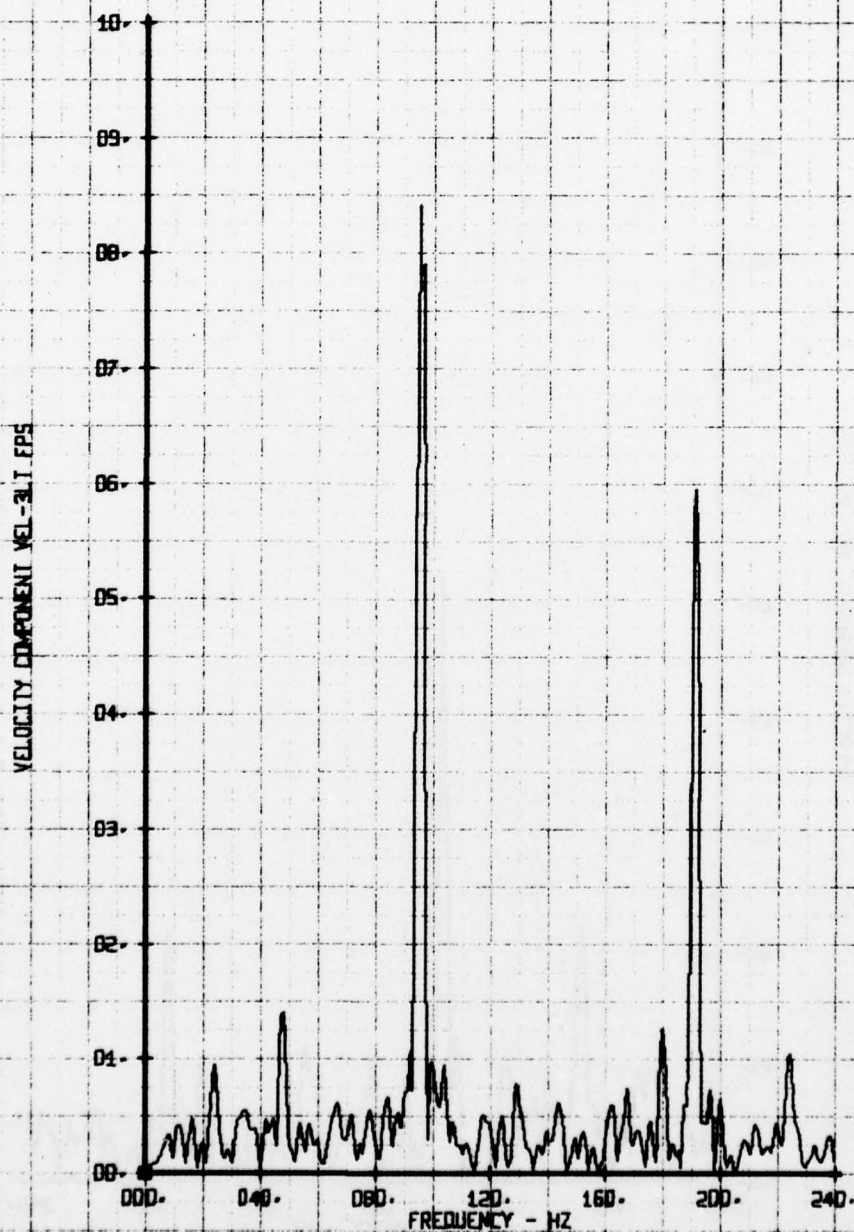
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W BODY 10-40-1-250 NO BLOS
RUN 154 TP 5

LEGEND
CH 70 PARAMETER
VEL-3LT



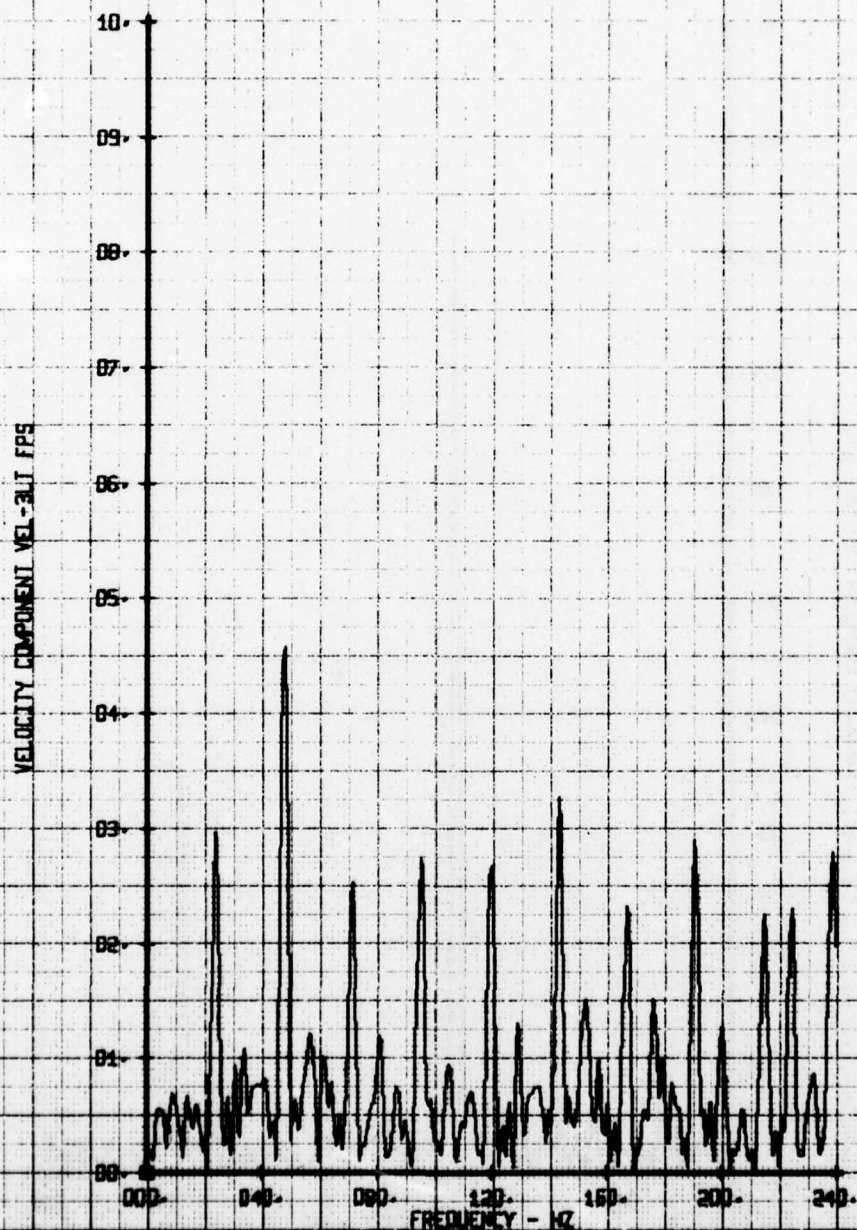
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40-1-250 NO BLOS
RUN 154 TP 6

LEGEND
CH 70
PARAMETER
VEL-3LT



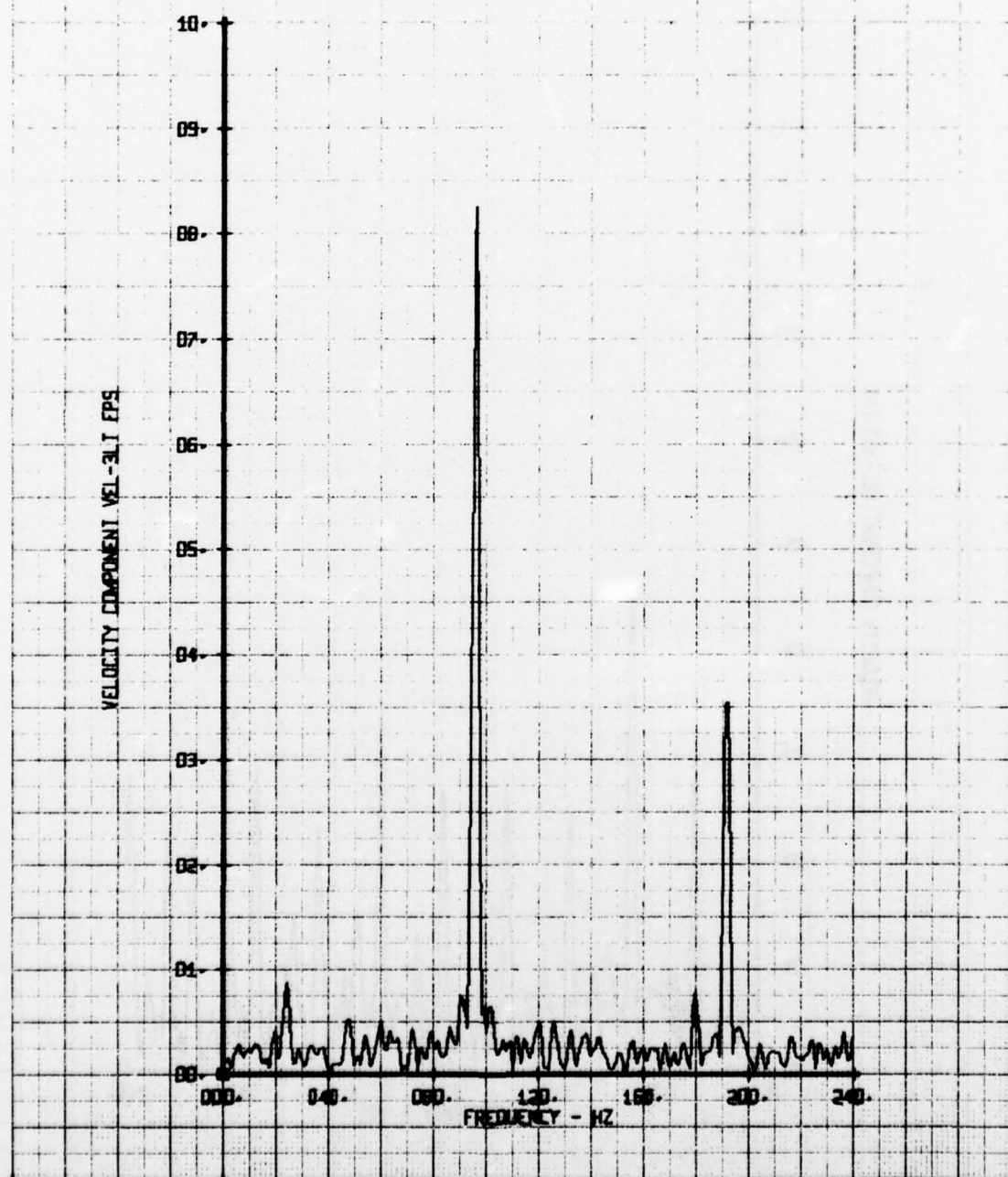
HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LBDY 10-40, 1-250 NO 8LDS
RUN 154 TP 7

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
OPEN CAP W LUBDY 10-40, 1-25G NO BLDS
RUN 154 TP B

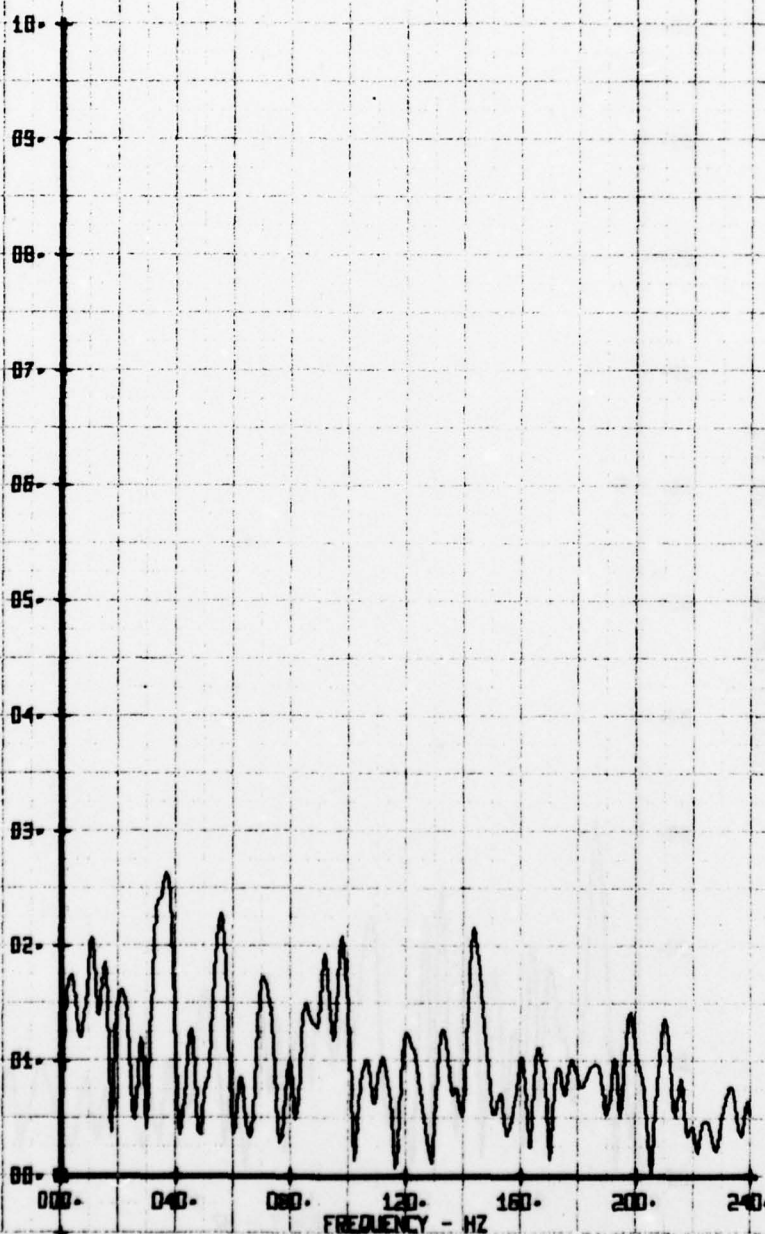
LEGEND
CH PARAMETER
70 VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 3

LEGEND
CH 71: PARAMETER
VEL-3RT

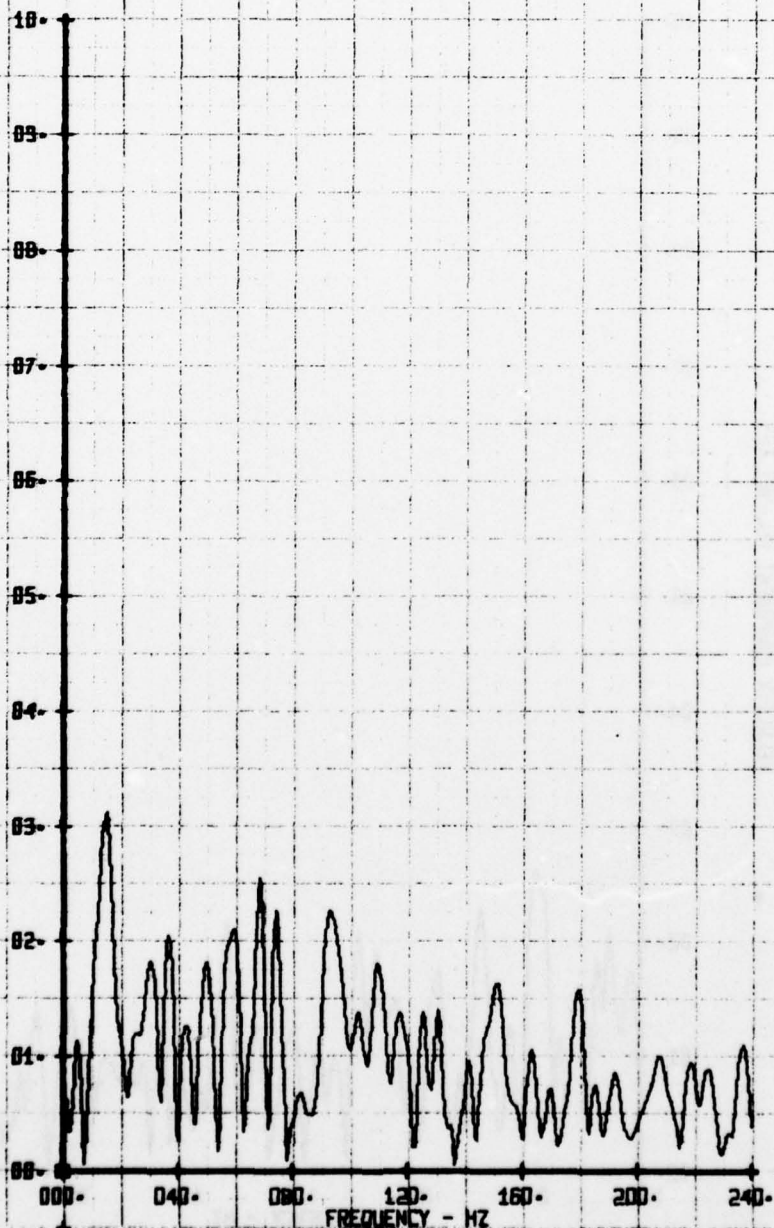
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO 810
RUN 172 TP 4

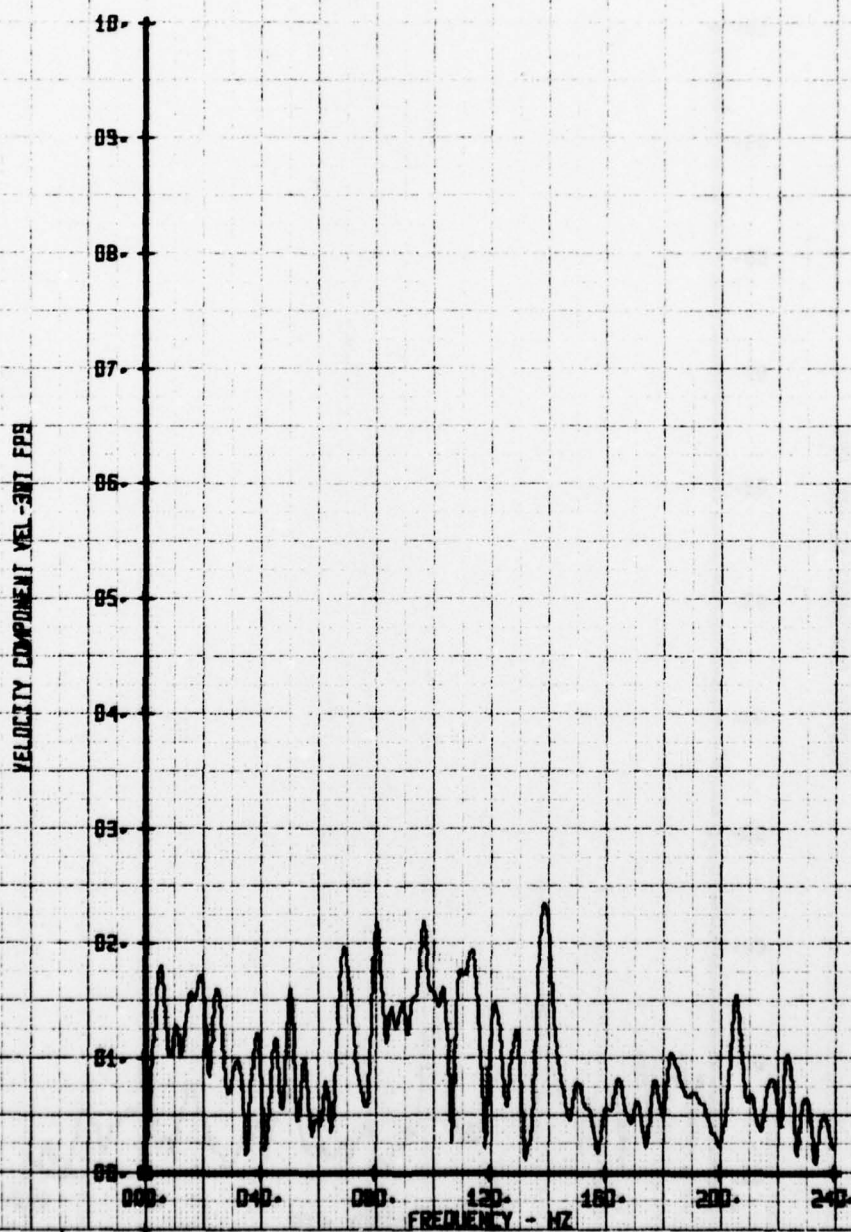
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



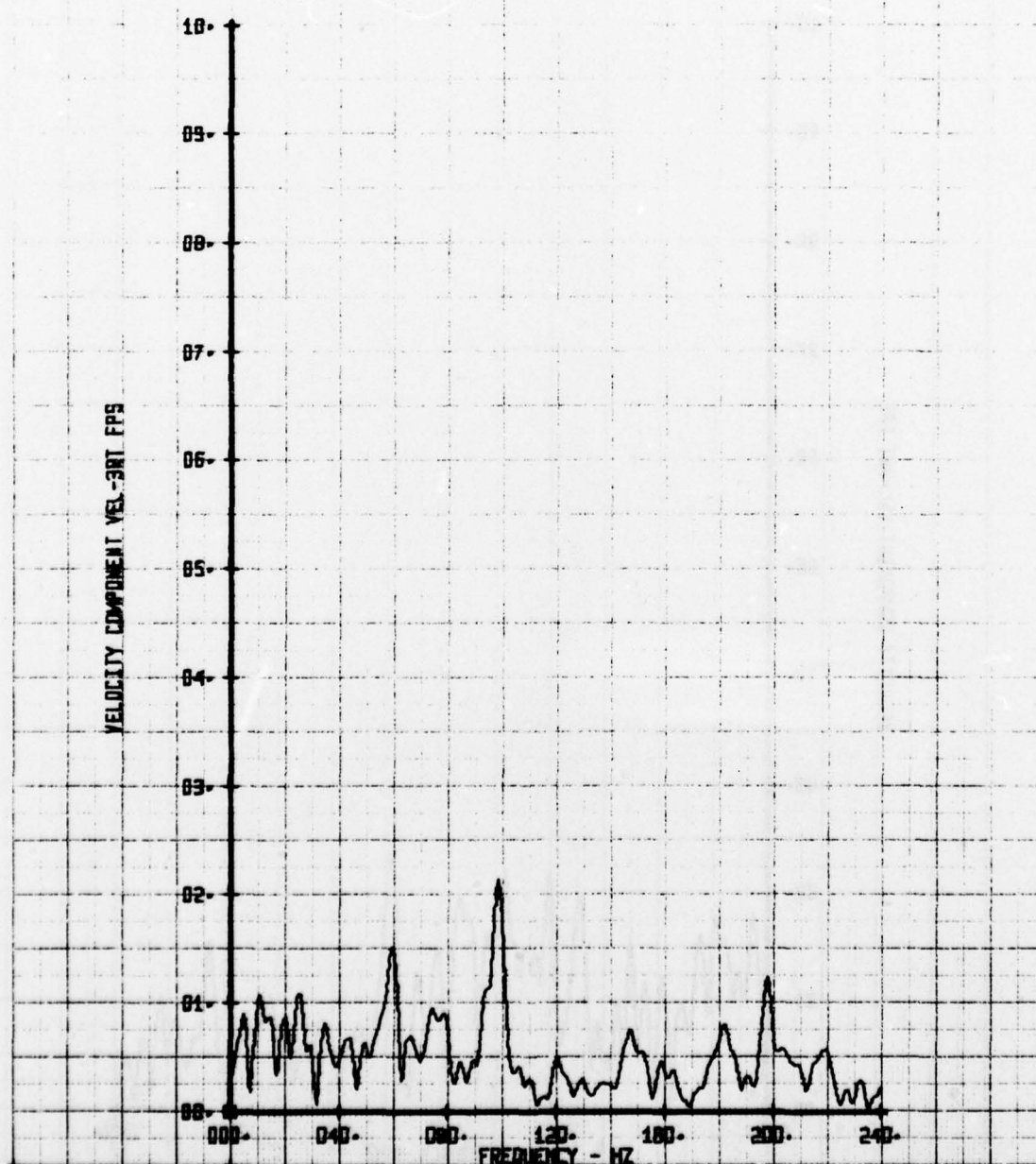
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 6

LEGEND
CH 71 PARAMETER
VEL-3RT



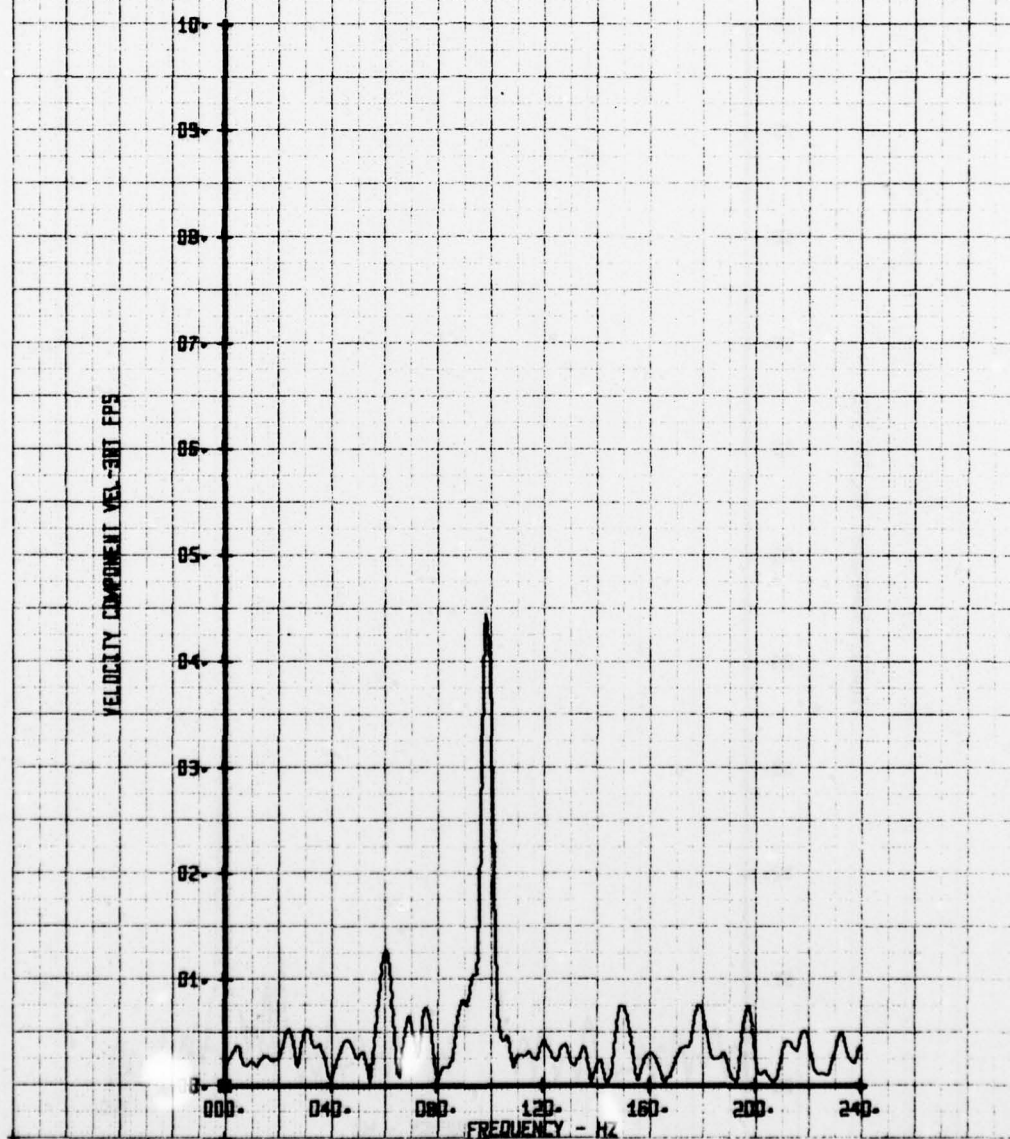
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 7

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO 810
RUN 172 TP 8

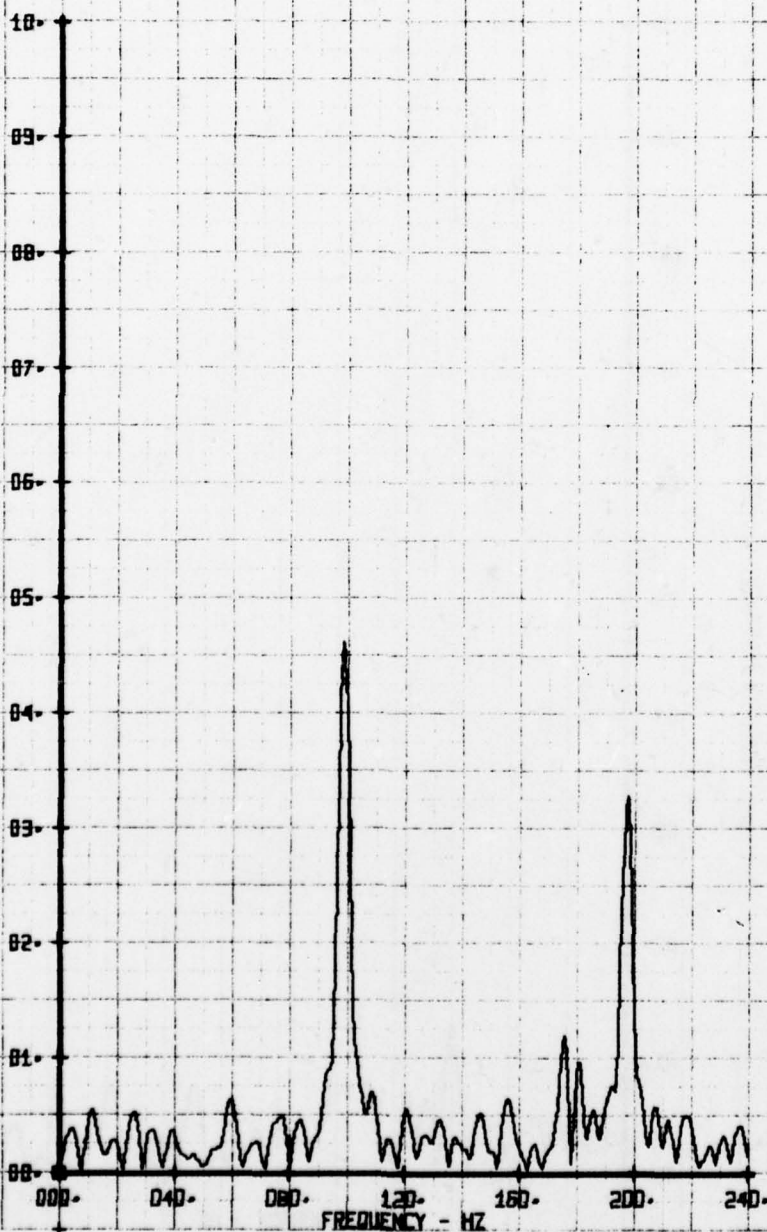
LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF ATR EJECT BASIC SYS NO BLD
RUN 172 TP 9

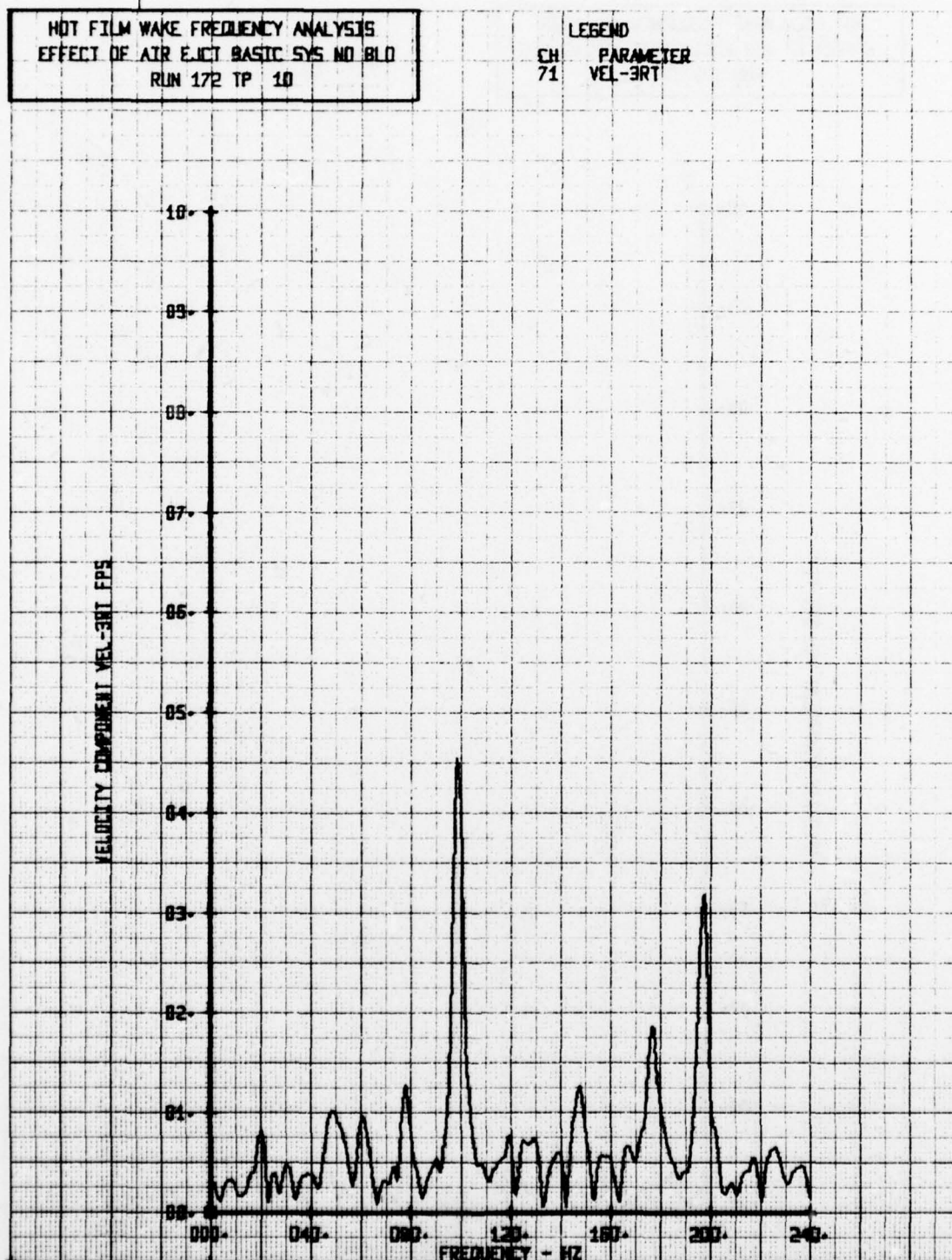
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



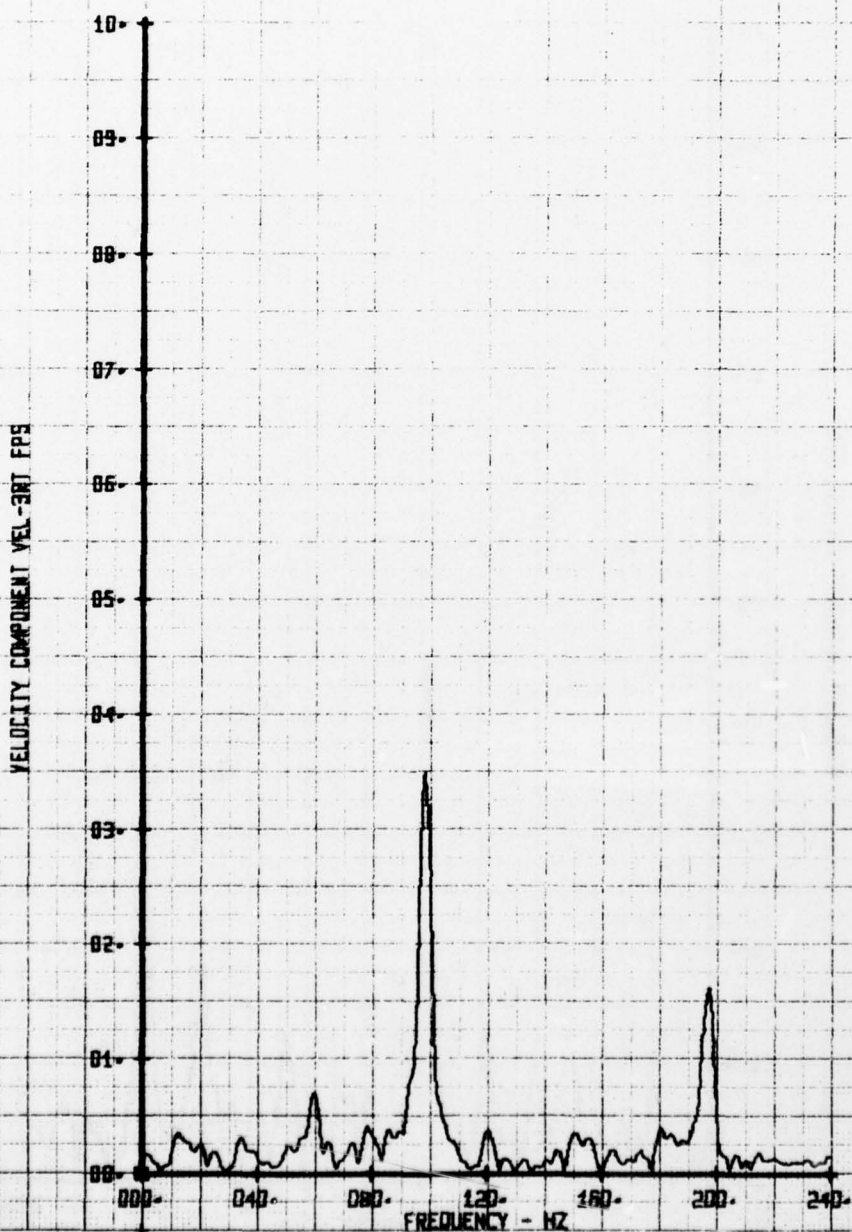
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 10

LEGEND
CH 71 PARAMETER
VEL-3RT



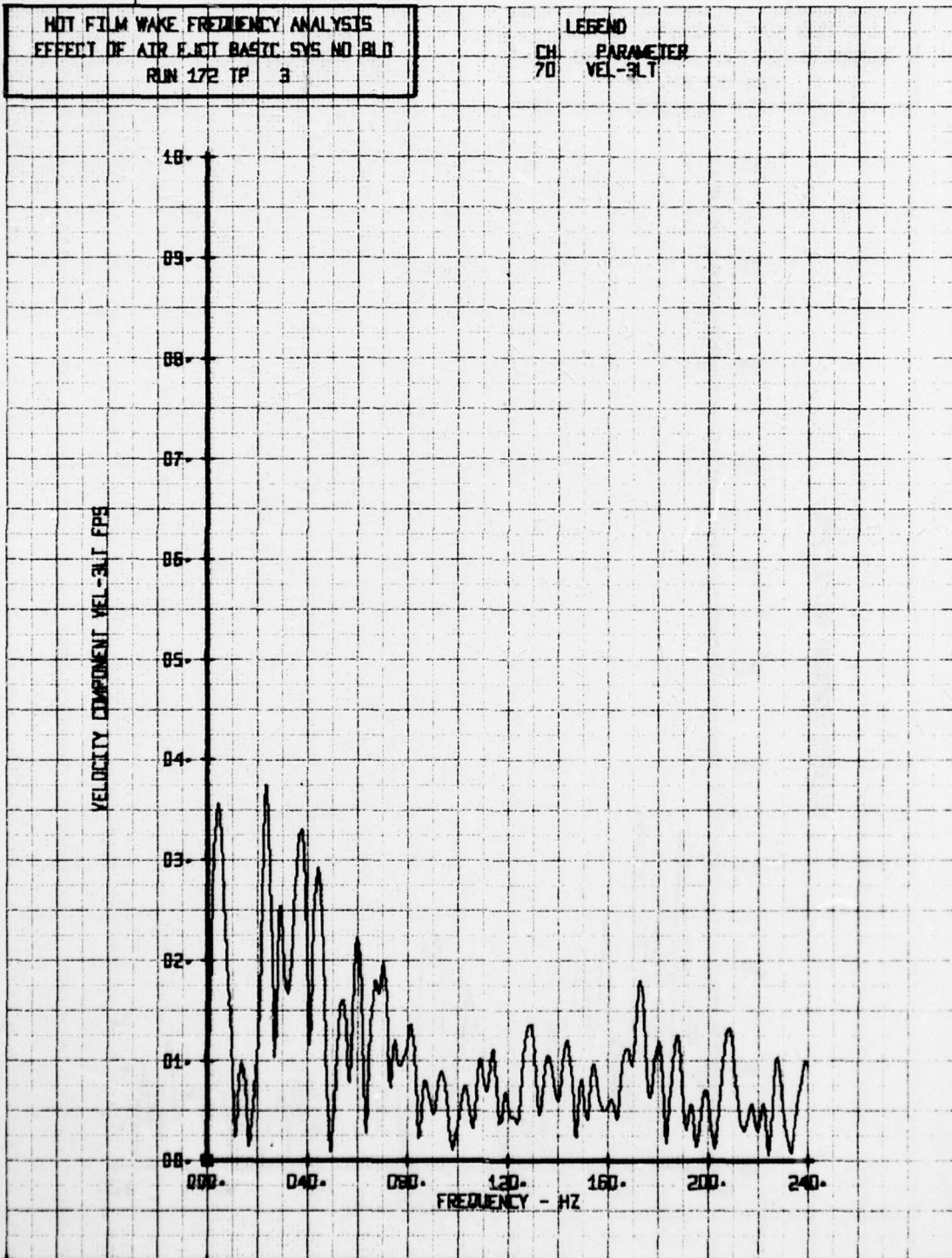
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 11

LEGEND
CH 71 PARAMETER
VEL-3RT



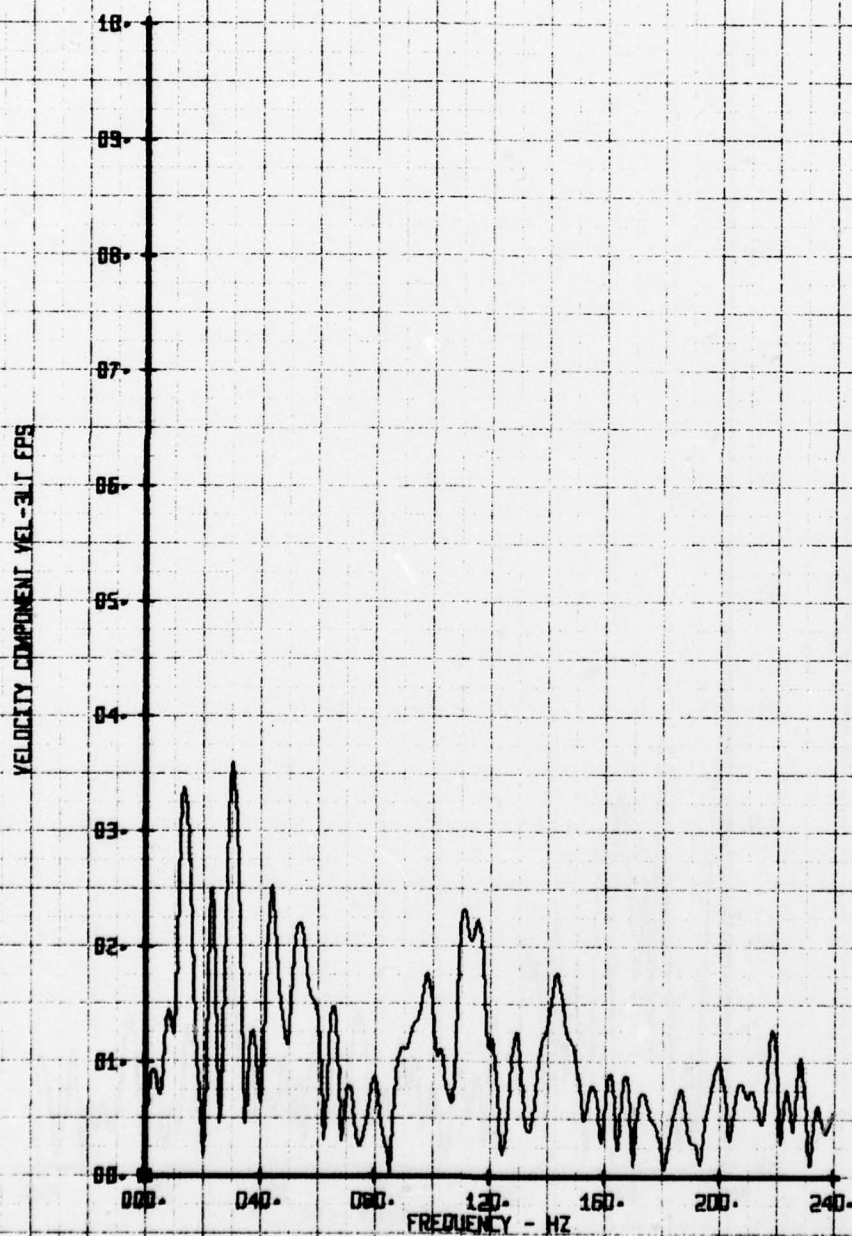
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR FLOW BASIC SYS NO. 810
RUN 172 TP 3

LEGEND
CH 70
PARAMETER
VEL-3LT



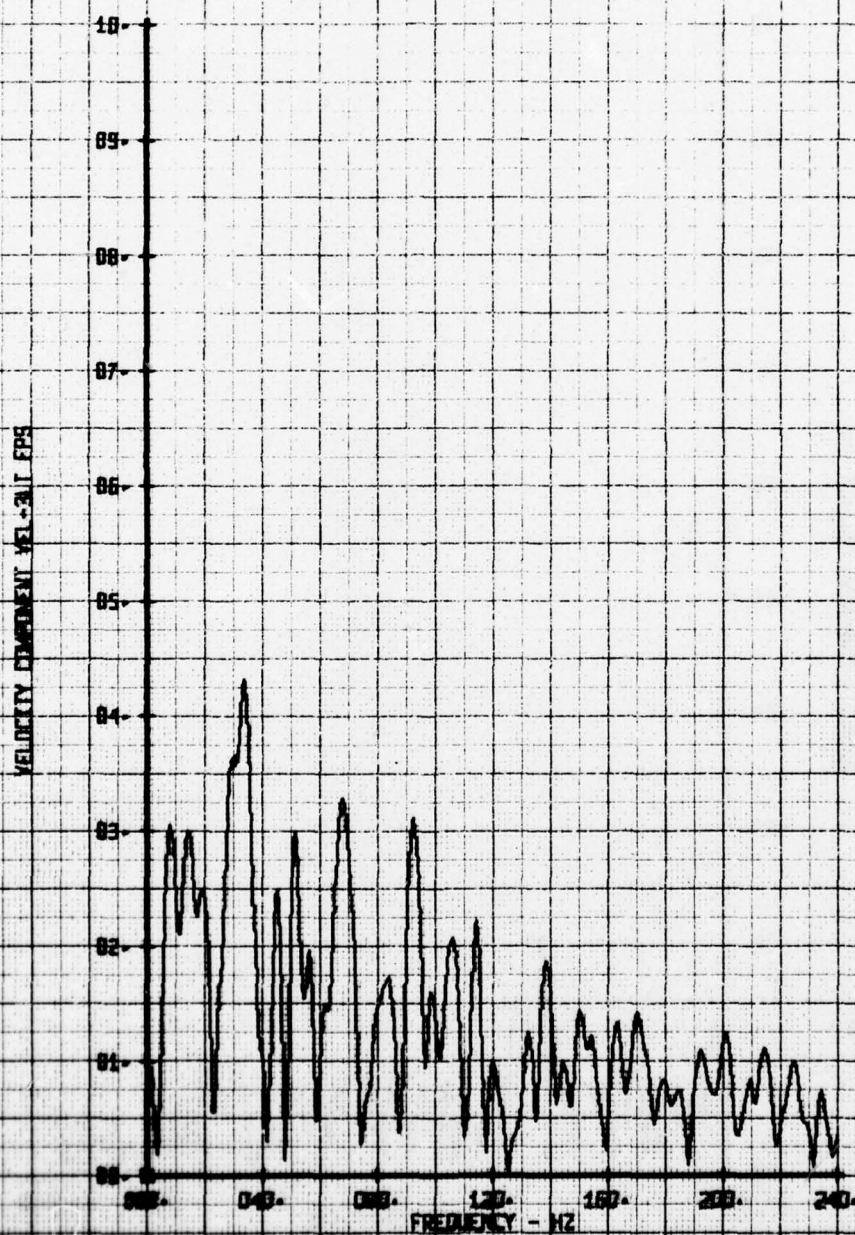
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 4

LEGEND
CH 70 PARAMETER
VEL-3LT



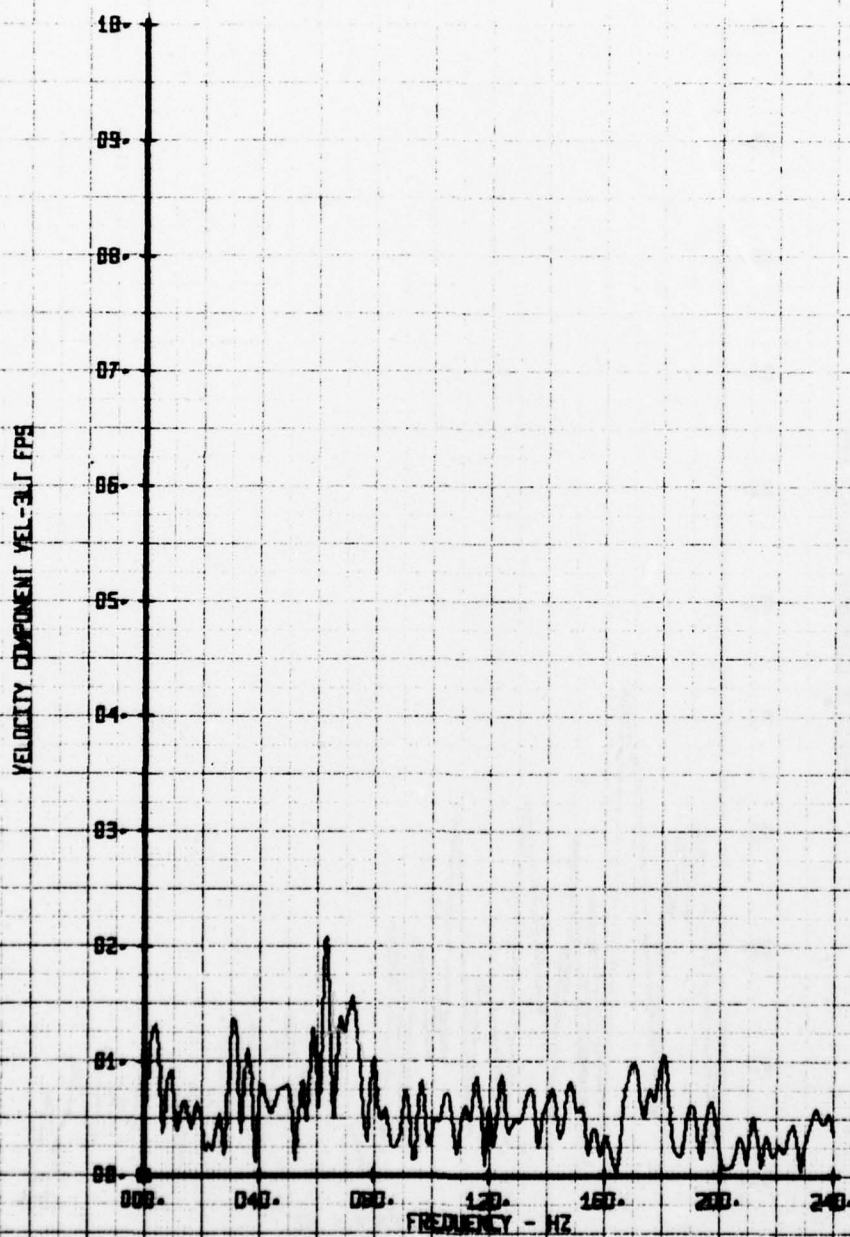
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 6

LEGEND
CH 70 PARAMETER
VEL-3LT



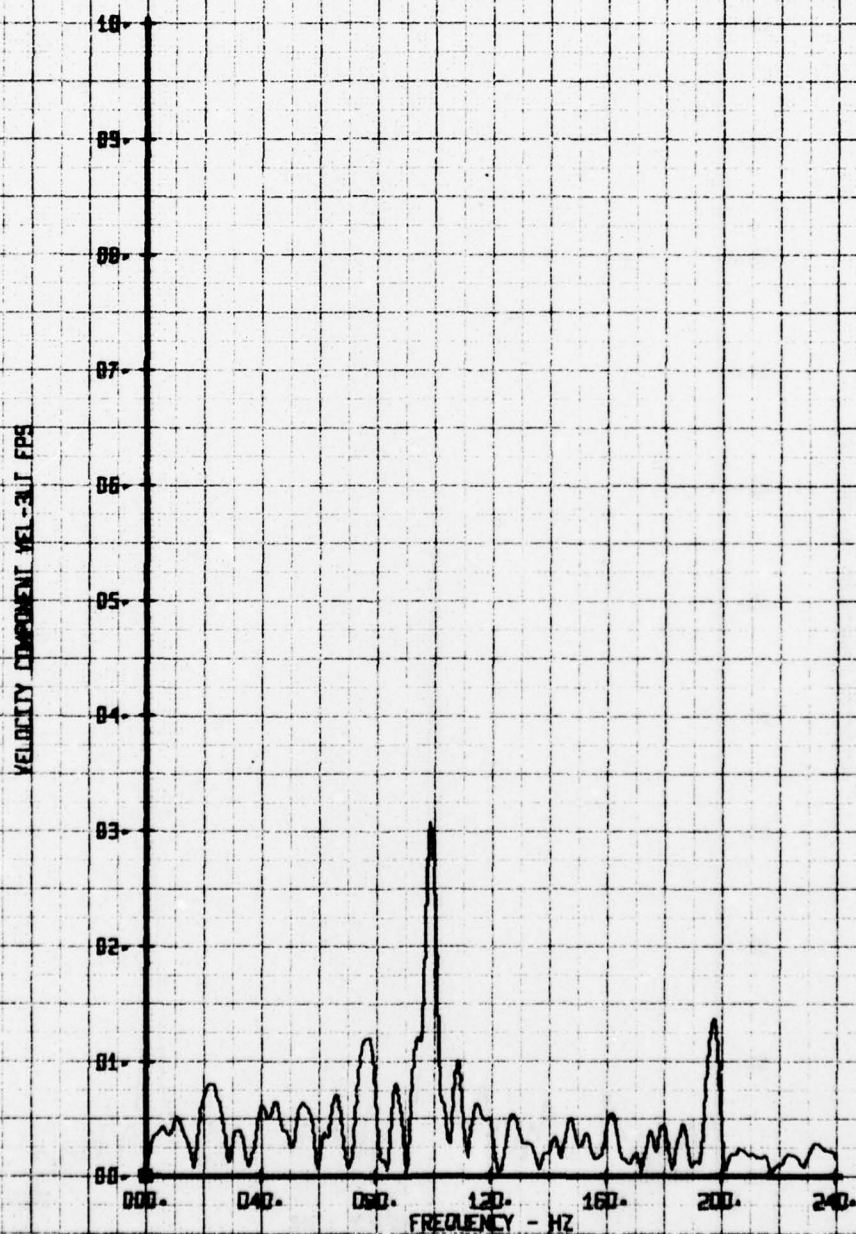
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 7

LEGEND
CH 70 PARAMETER
VEL-3LT



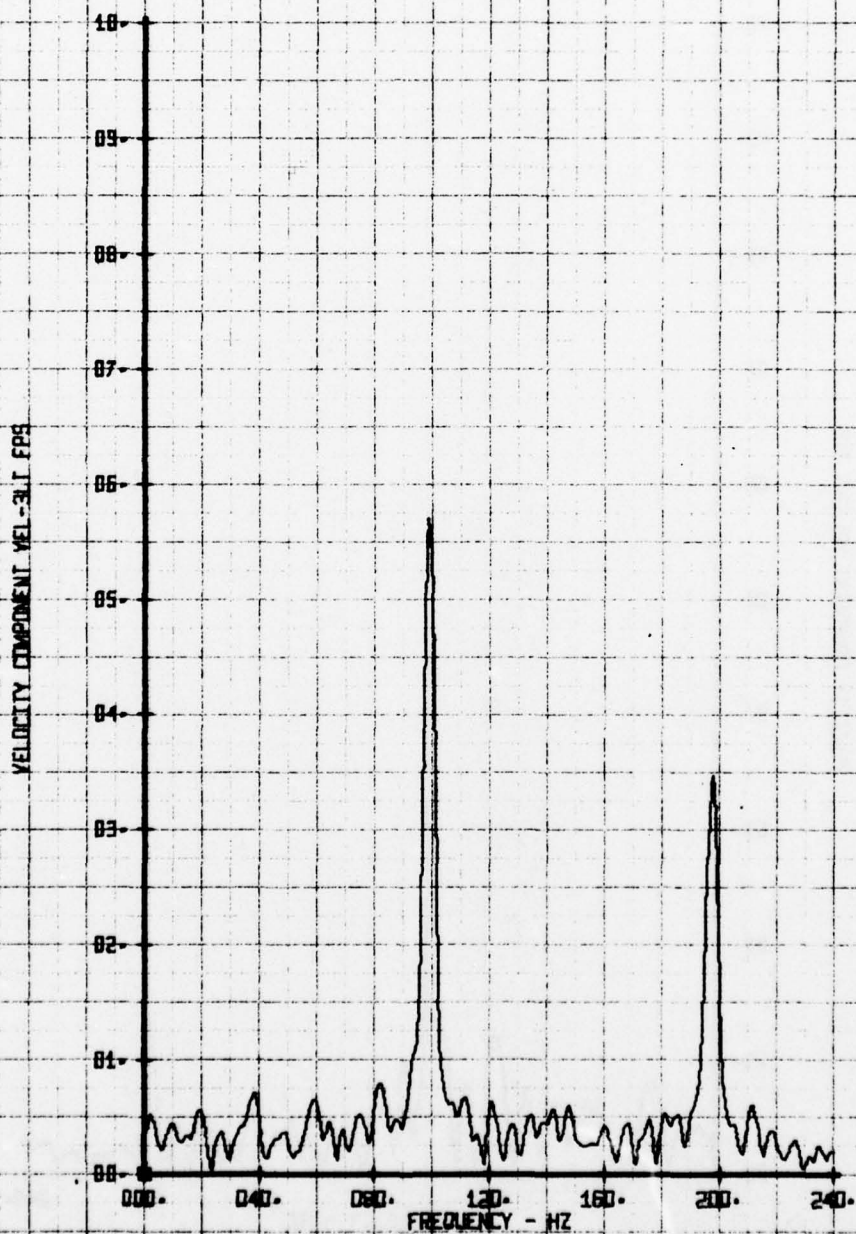
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF ATR EJECT BASIC SYS NO 810
RUN 172 TP 8

LEGEND
CH 70
PARAMETER
VEL-3LT



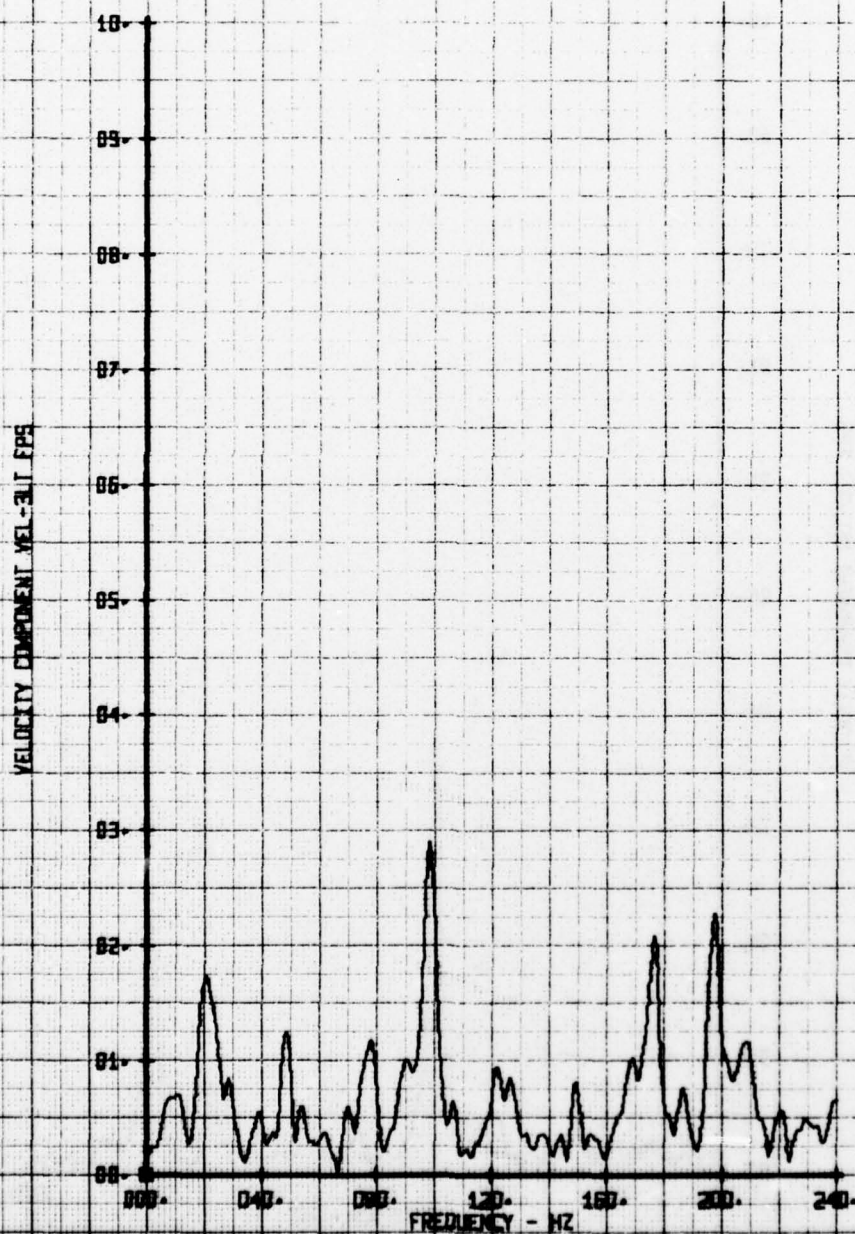
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 9

LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 10

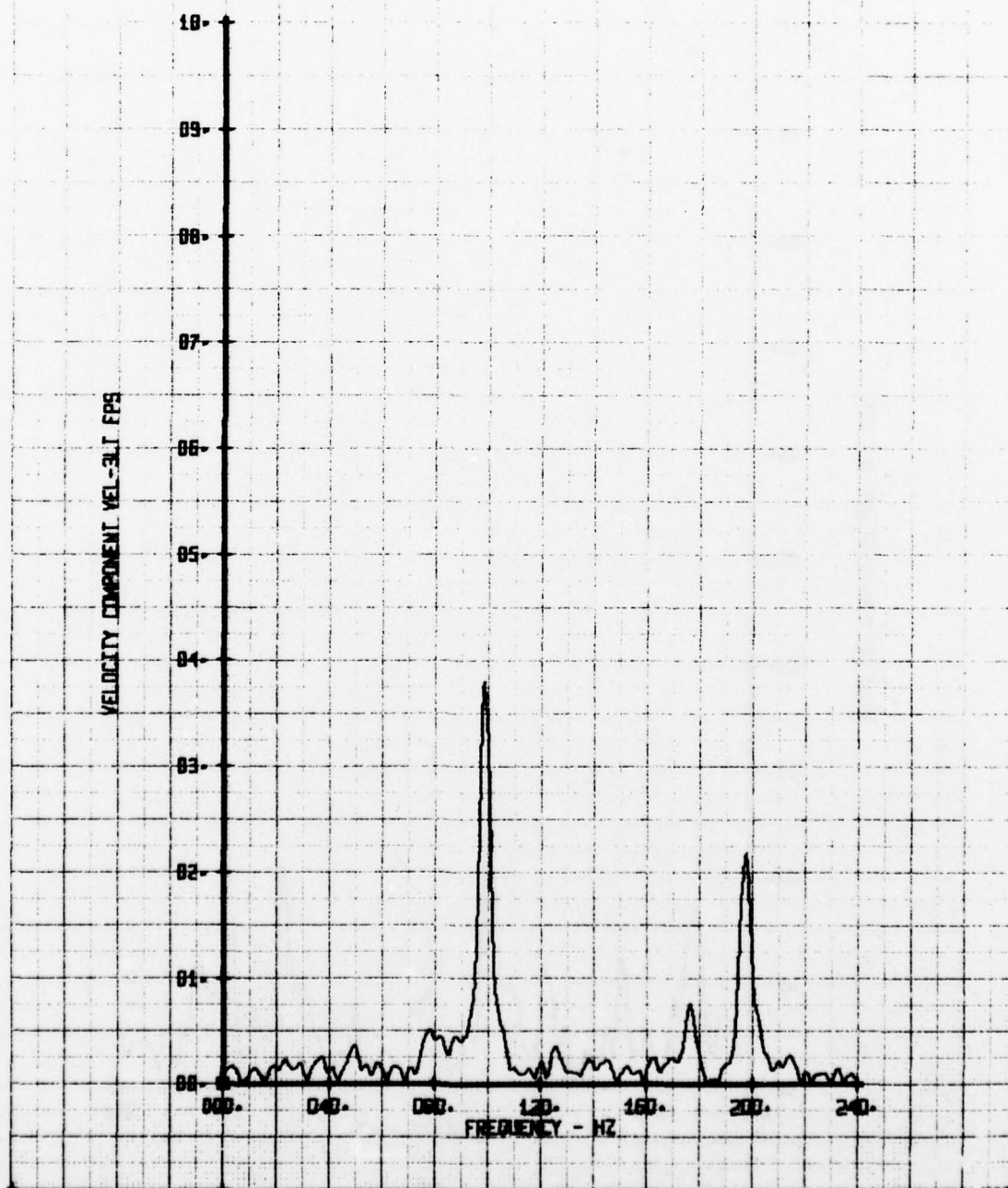
LEGEND
CH 70: PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS NO BLD
RUN 172 TP 11

LEGEND

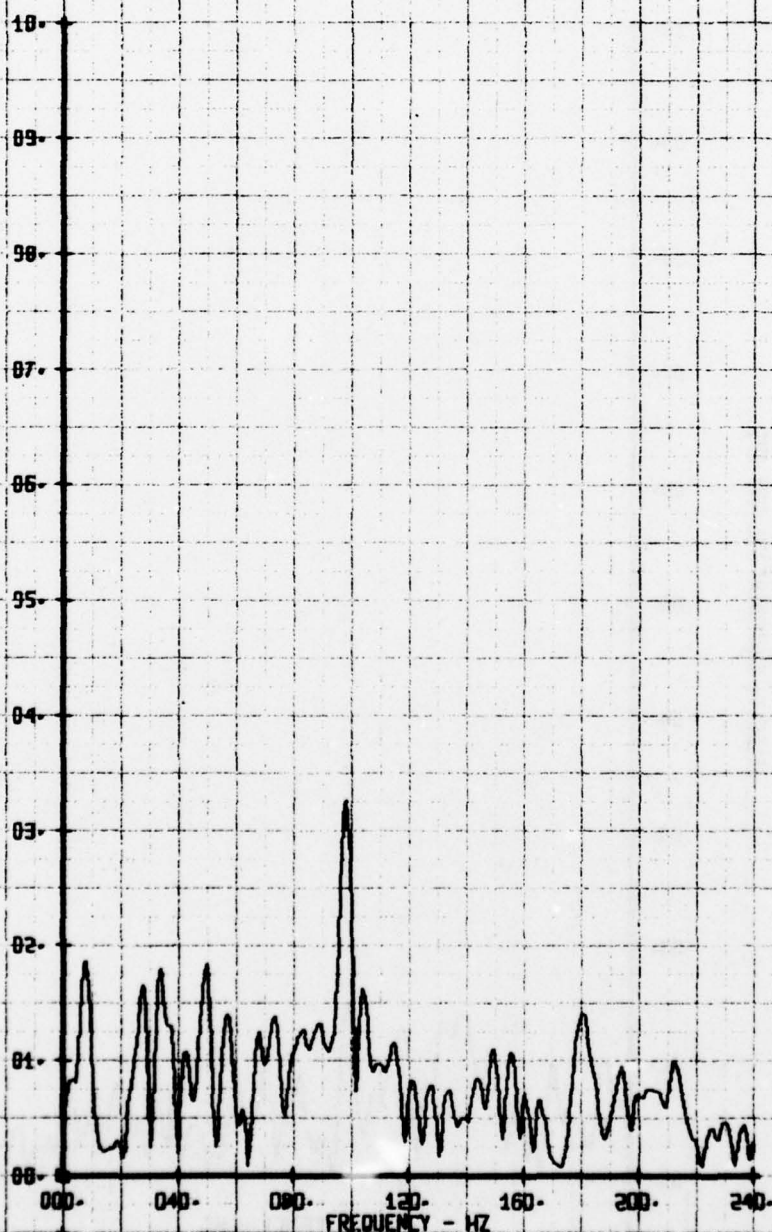
CH PARAMETER
70 VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS 150R51
RUN 174 TP 1

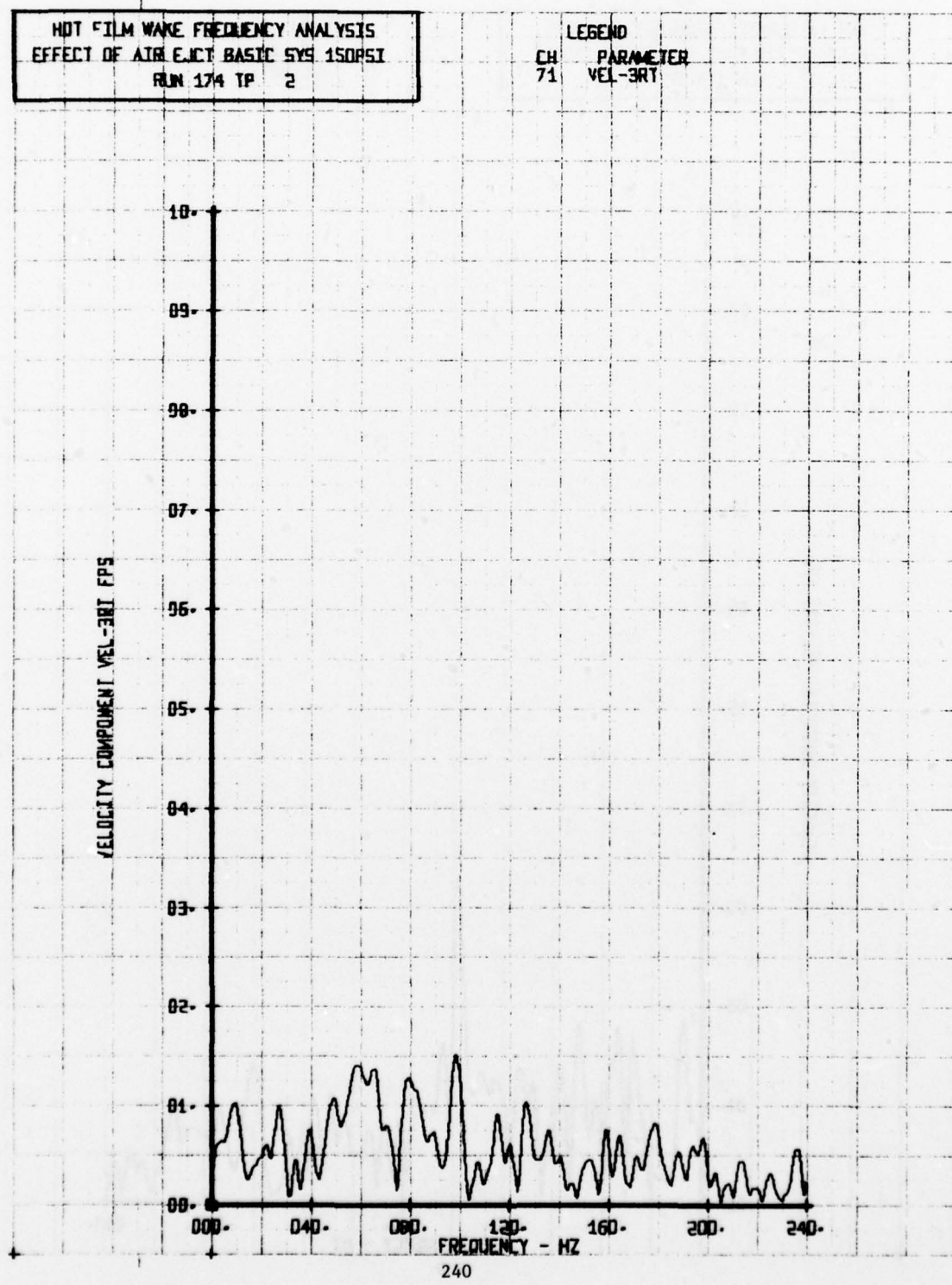
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



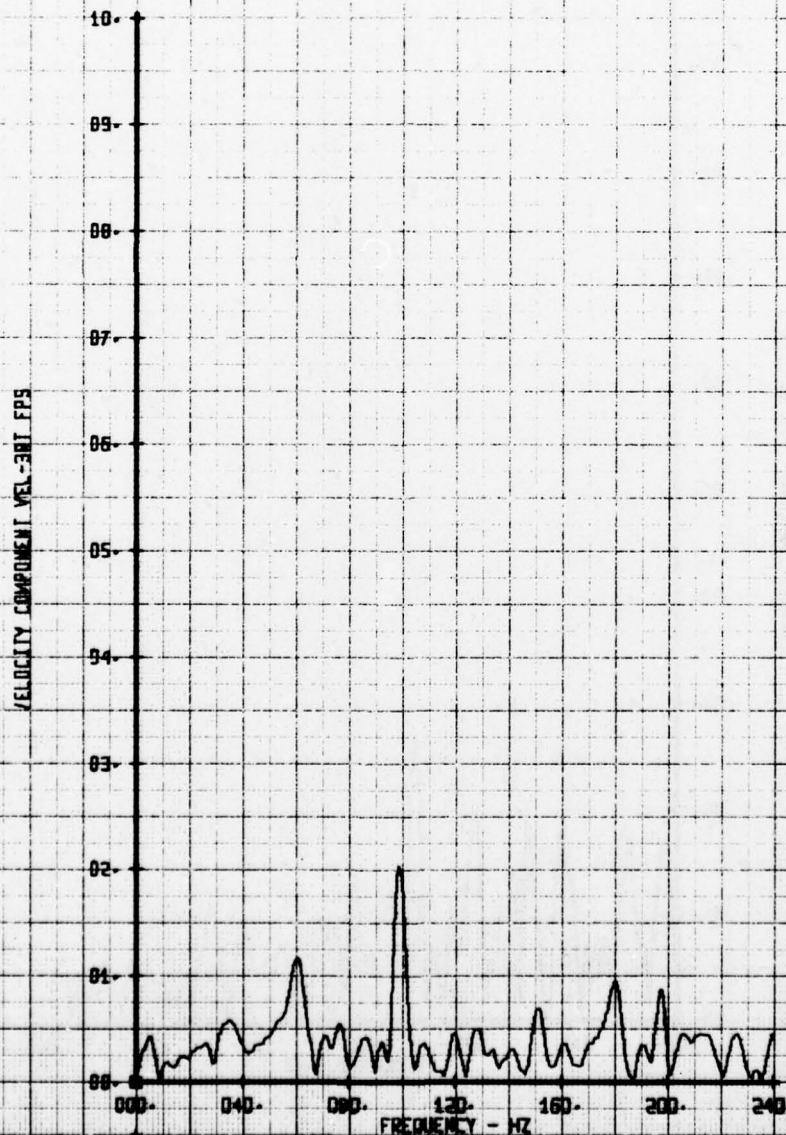
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS 150PSI
RUN 174 TP 2

LEGEND
CH 71 PARAMETER
VEL-3RT



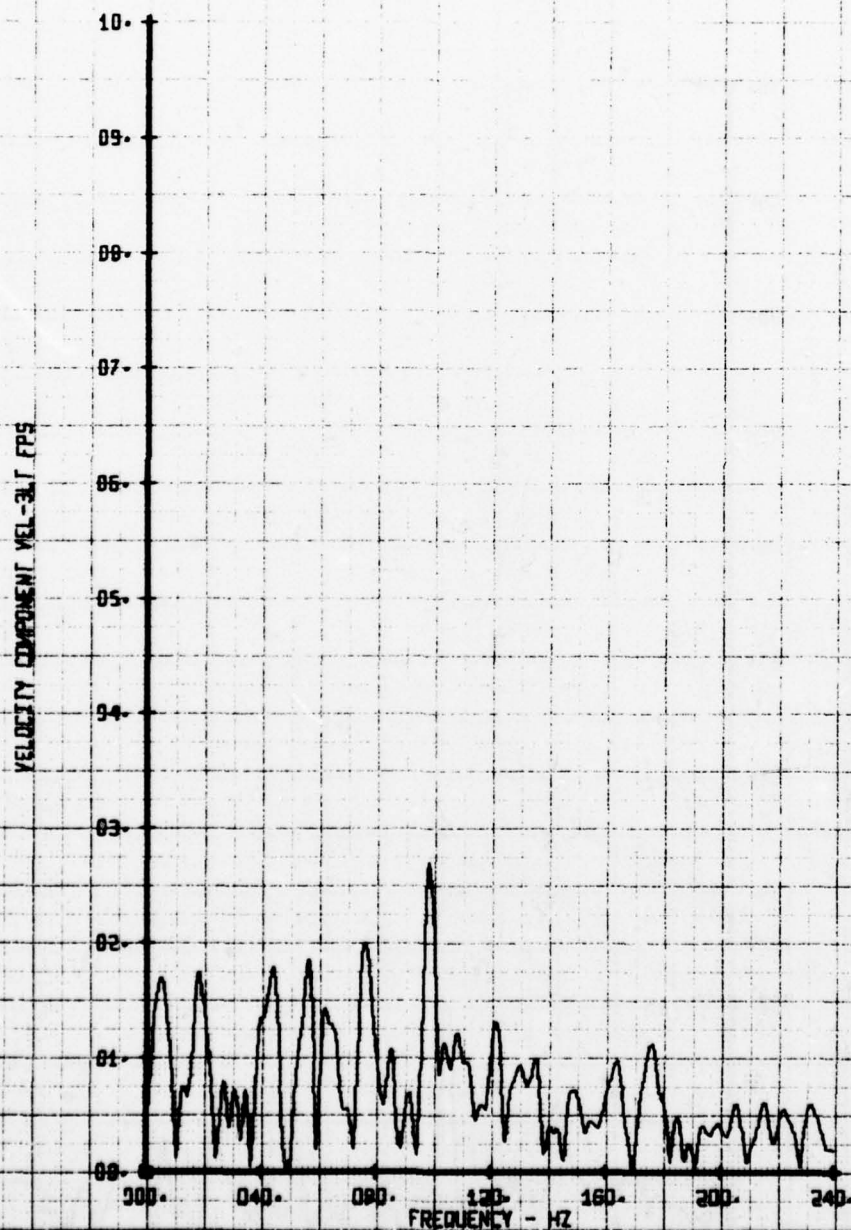
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS 150PSI
RUN 174 TP 3

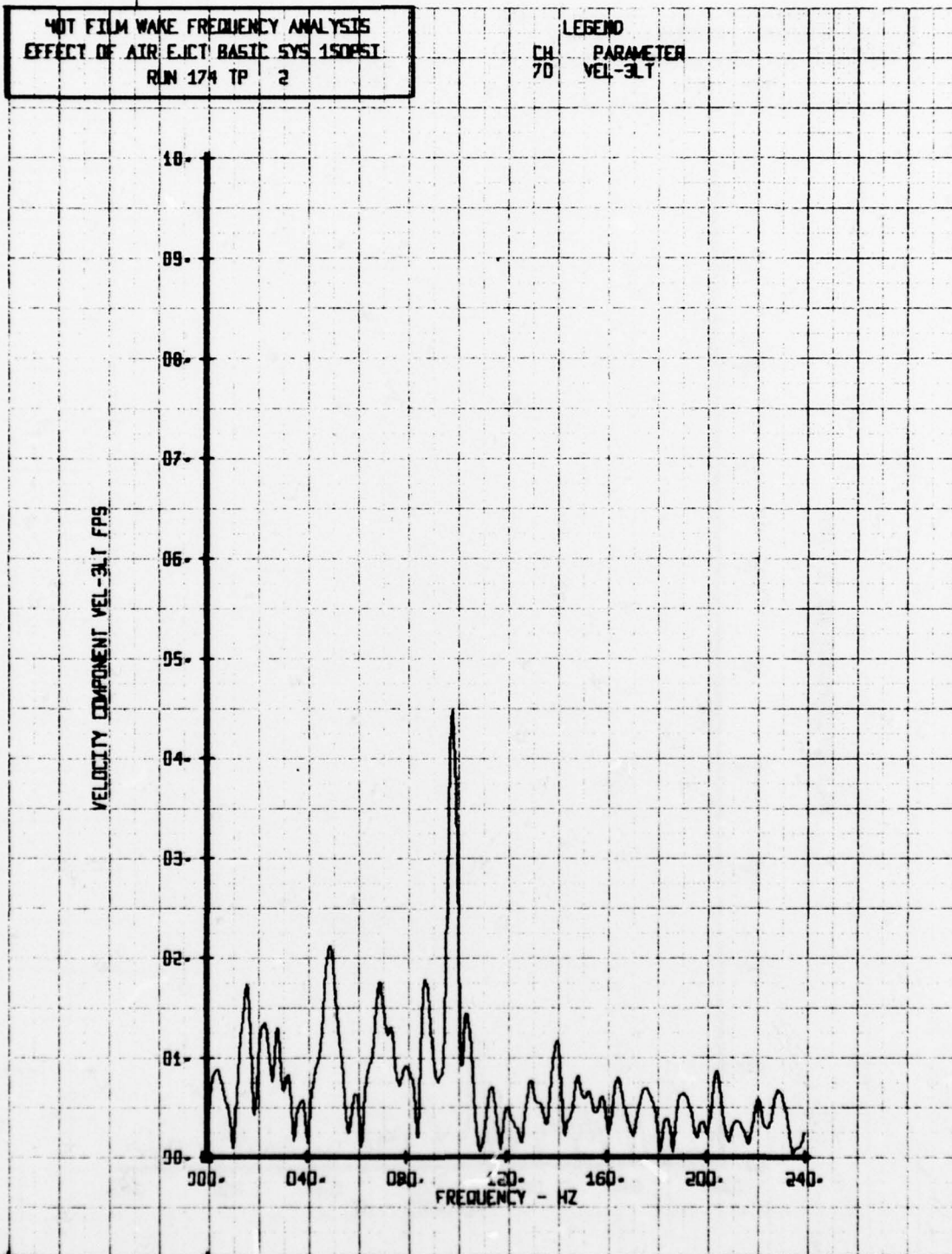
LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS 150PSI
RUN 174 TP 1

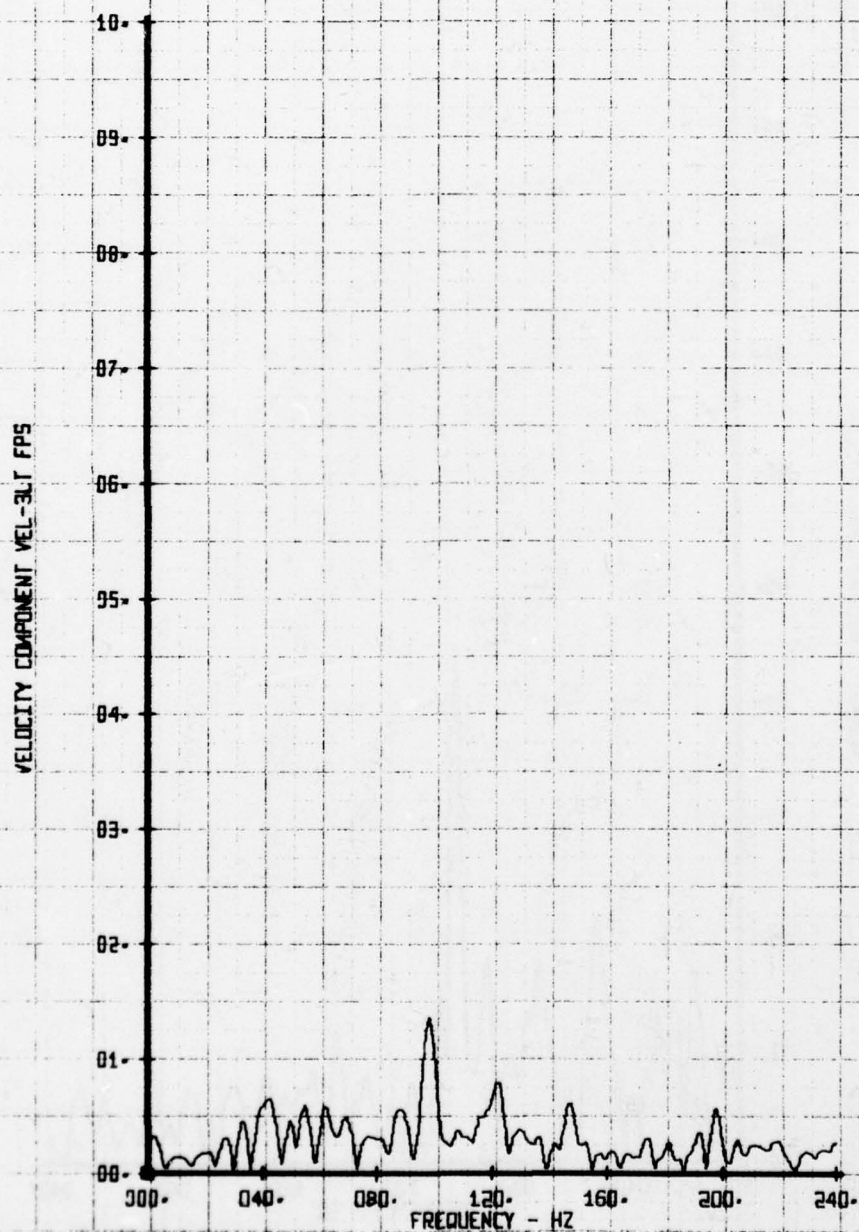
LEGEND
CH 70 PARAMETER
VEL-3LT





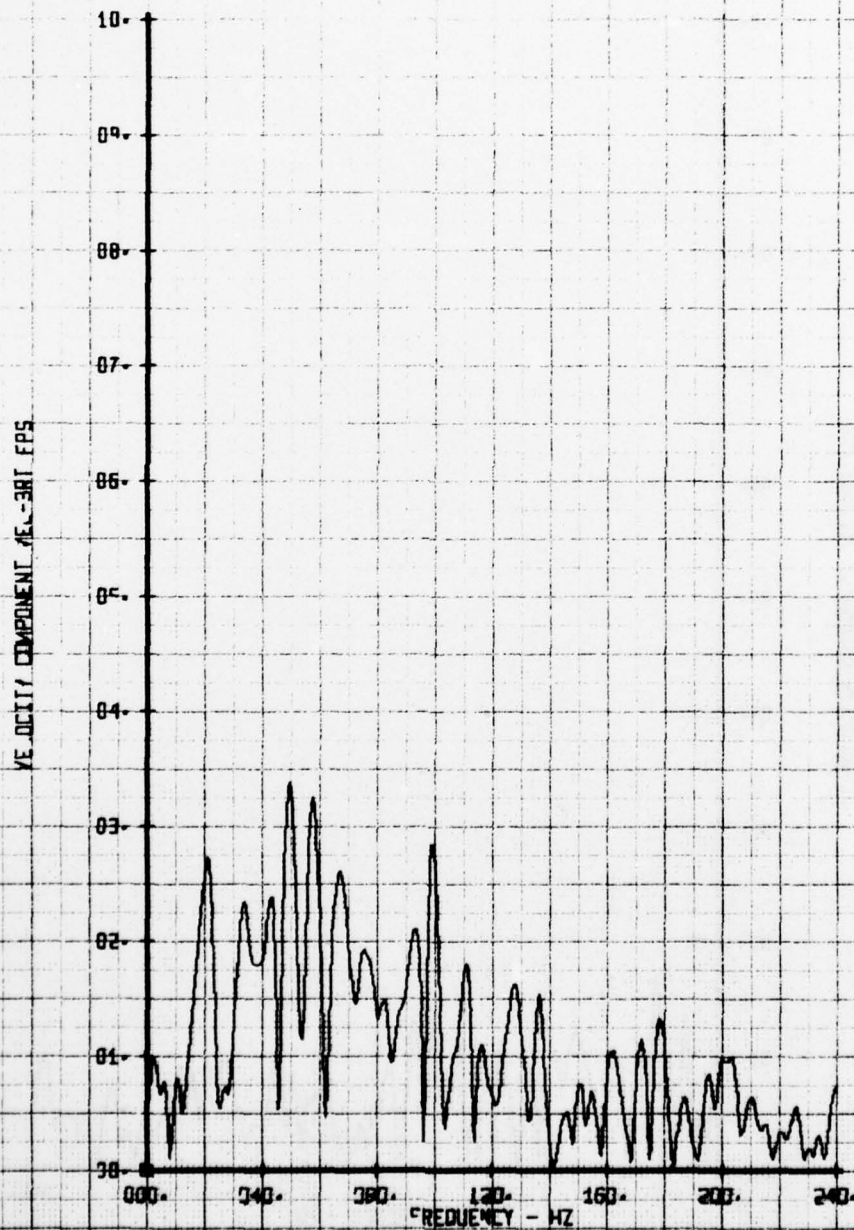
HOT FILM WAKE FREQUENCY ANALYSIS
EFFECT OF AIR EJECT BASIC SYS 150PSI
RUN 174 TP 3

LEGEND
CH 70
PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
RUN 176 TP 1

LEGEND
C4: PARAMETER
71: VEL-397

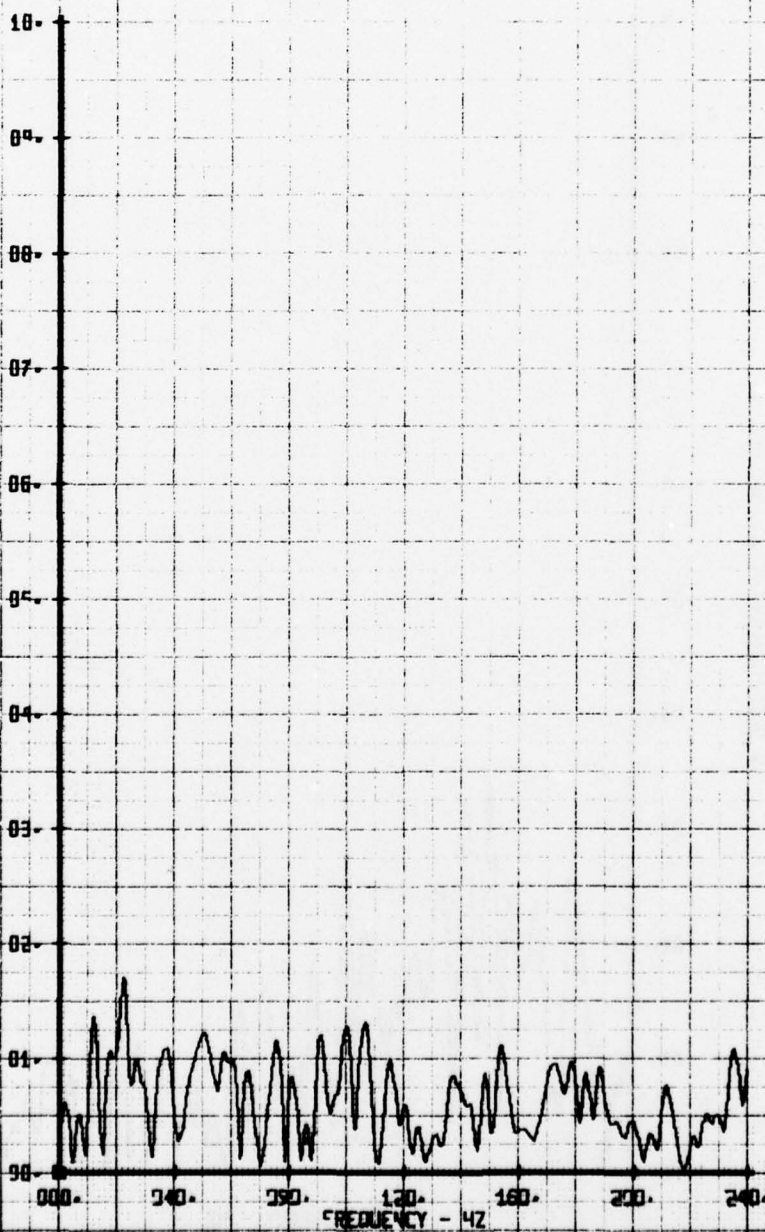


WOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
RUN 176 TP 2

LEGEND

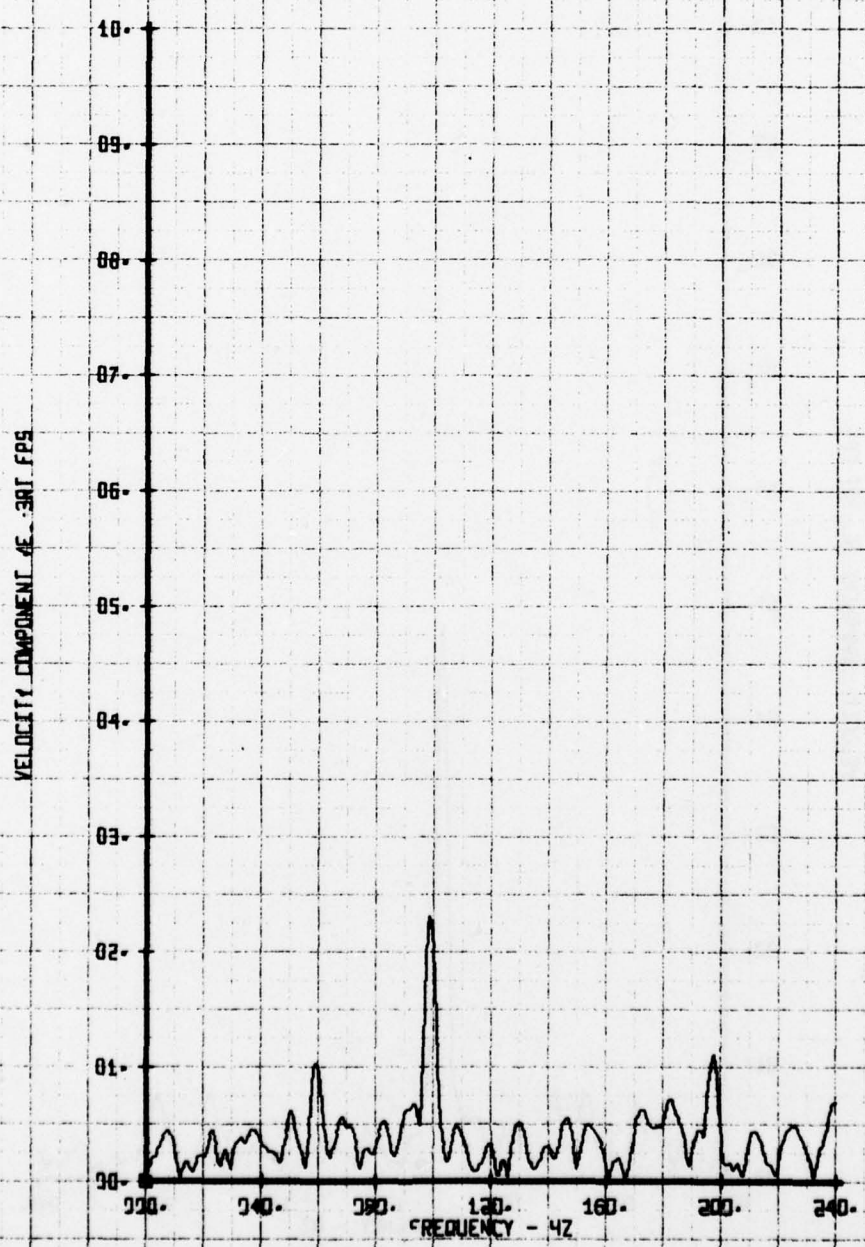
CH: PARAMETER
71: VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



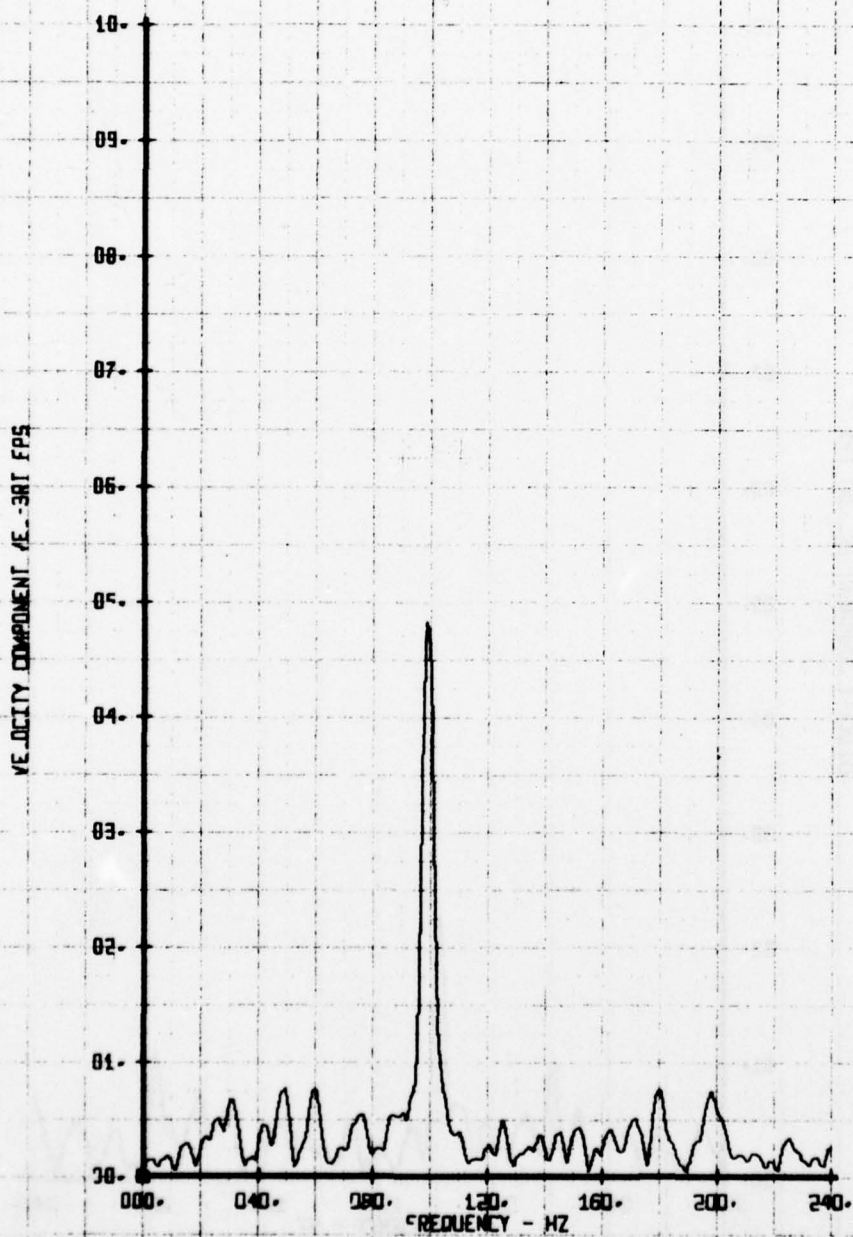
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
GUN 176 TP 3

LEGEND
CH 71
PARAMETER
VEL-3RT



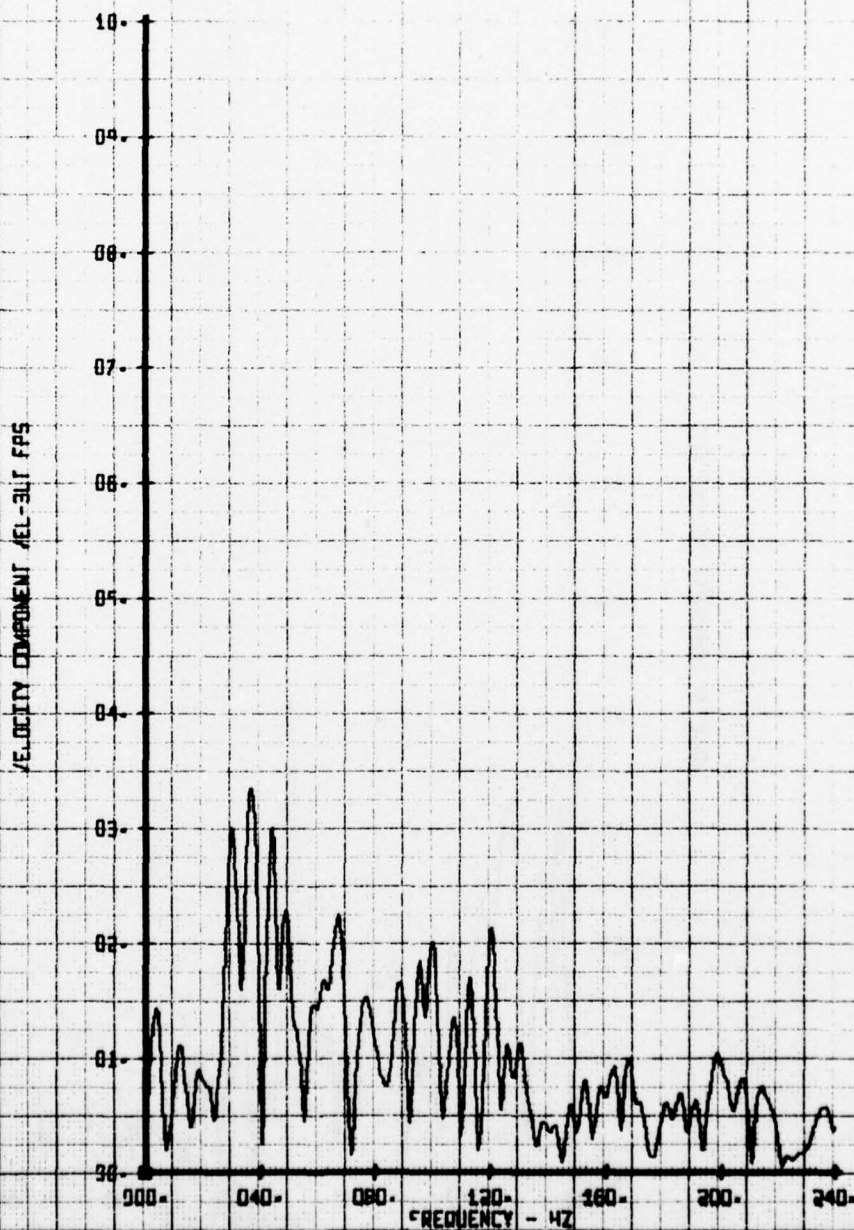
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
GUN 176 TP 4

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
RUN 176 TP 1

LEGEND
CH 70 PARAMETER
VEL-3LT

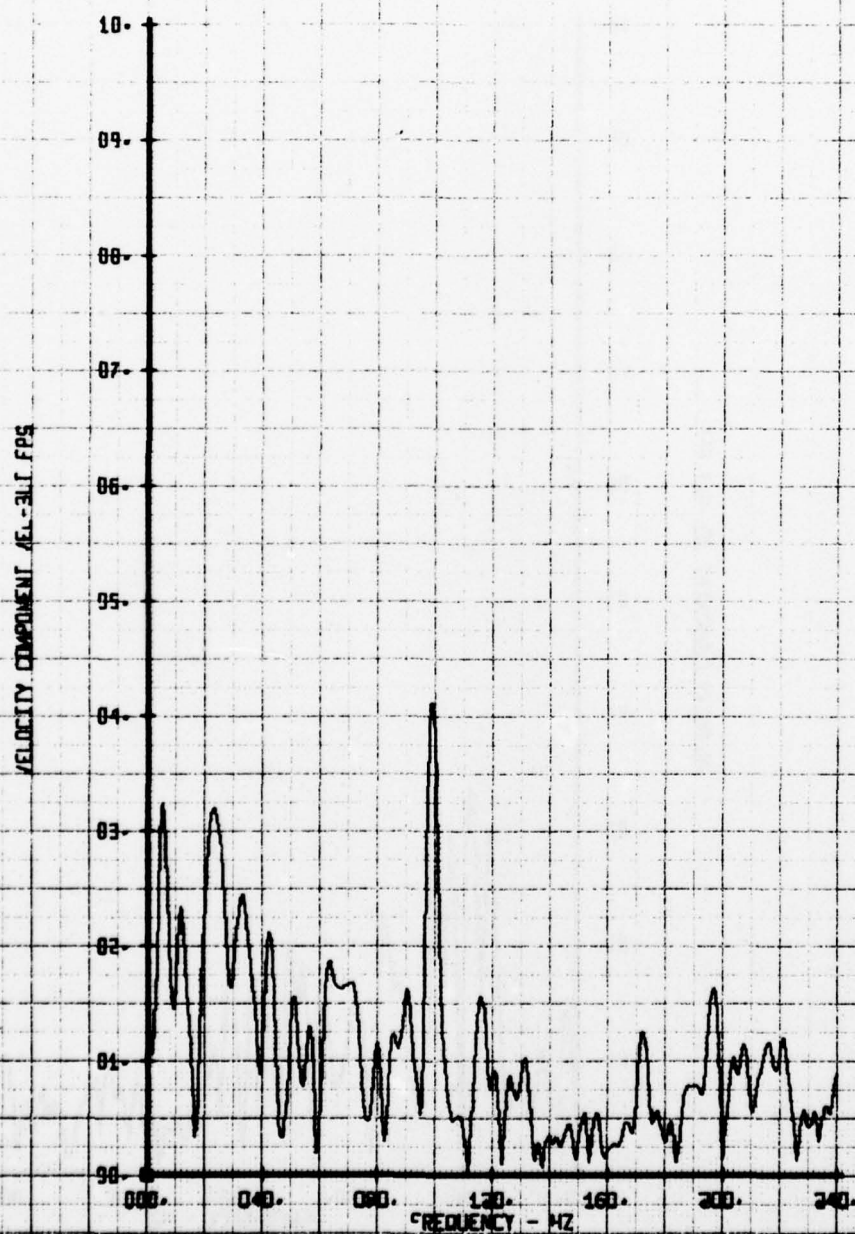


SET 34
9VWT 169

249

HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
RUN 176 TP 2

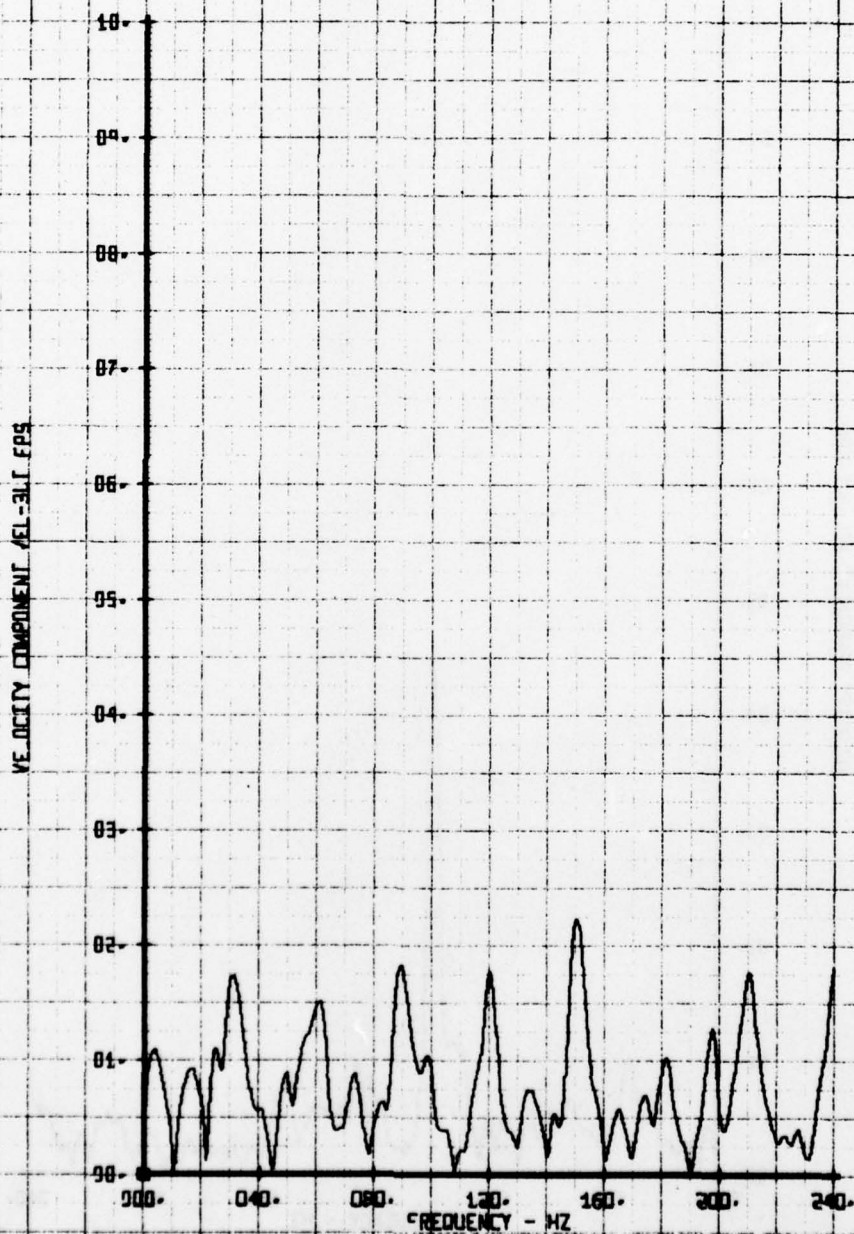
LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/ SHROUD-150 PSI
GUN 176 YP 3

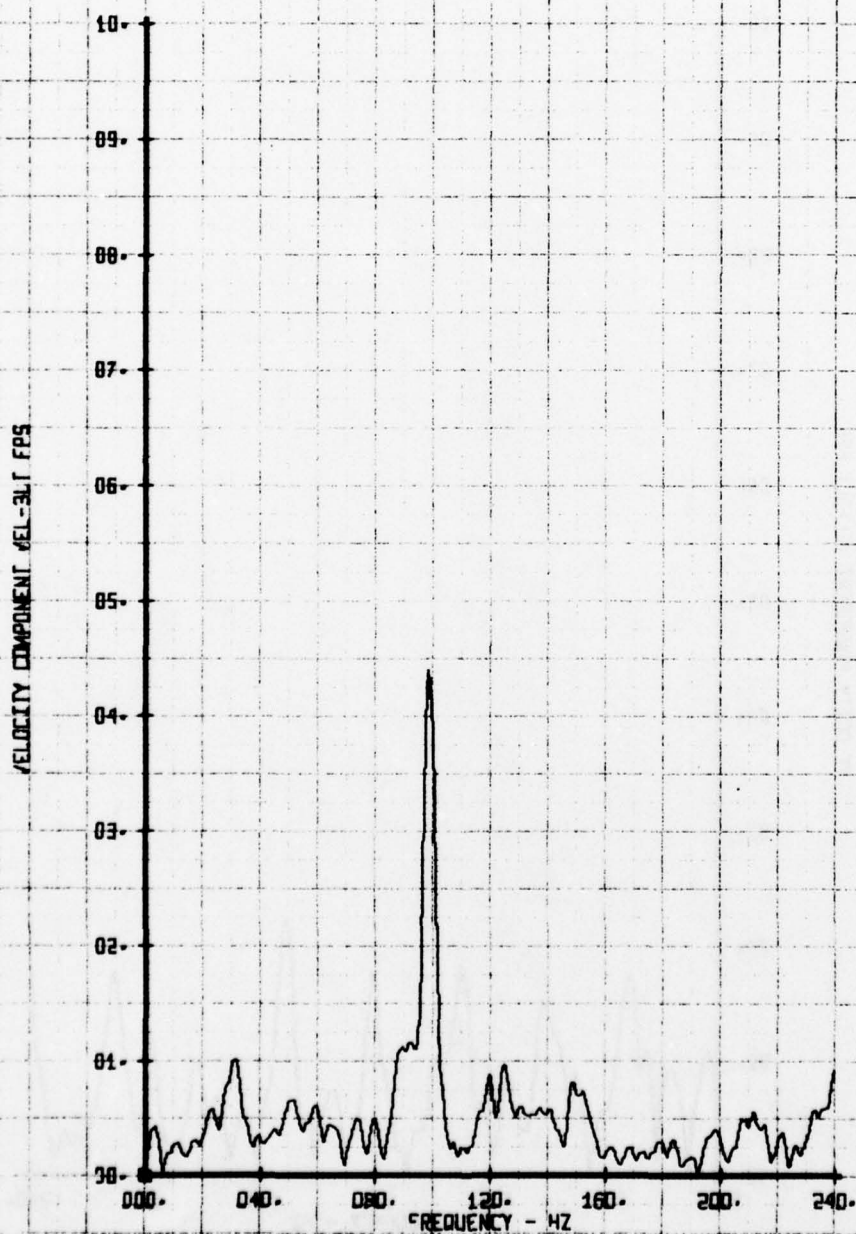
LEGEND

CH 70
PARAMETER
VEL-3LT



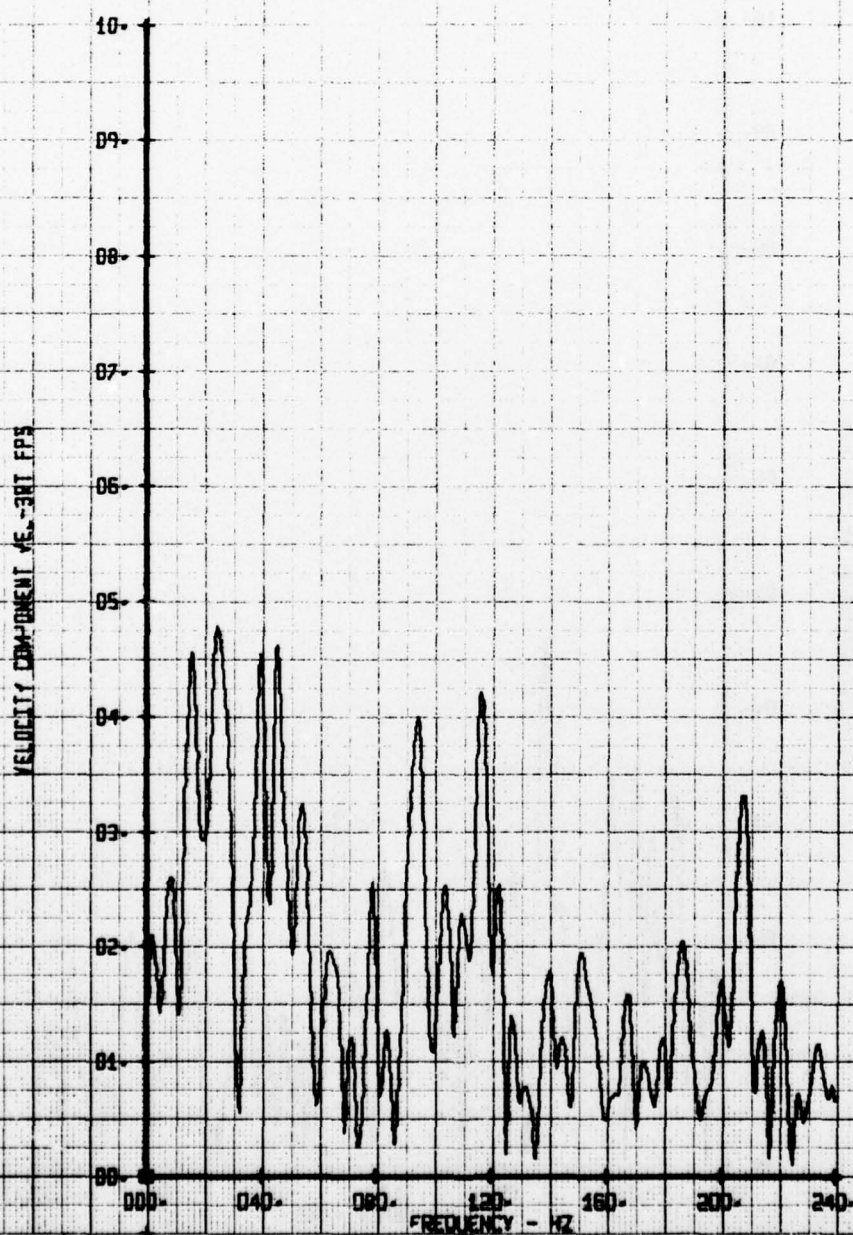
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECTOR W/C SHROUD-150 PSI
GUN 176 TP 4

LEGEND
CH 70
PARAMETER
VEL-3LT



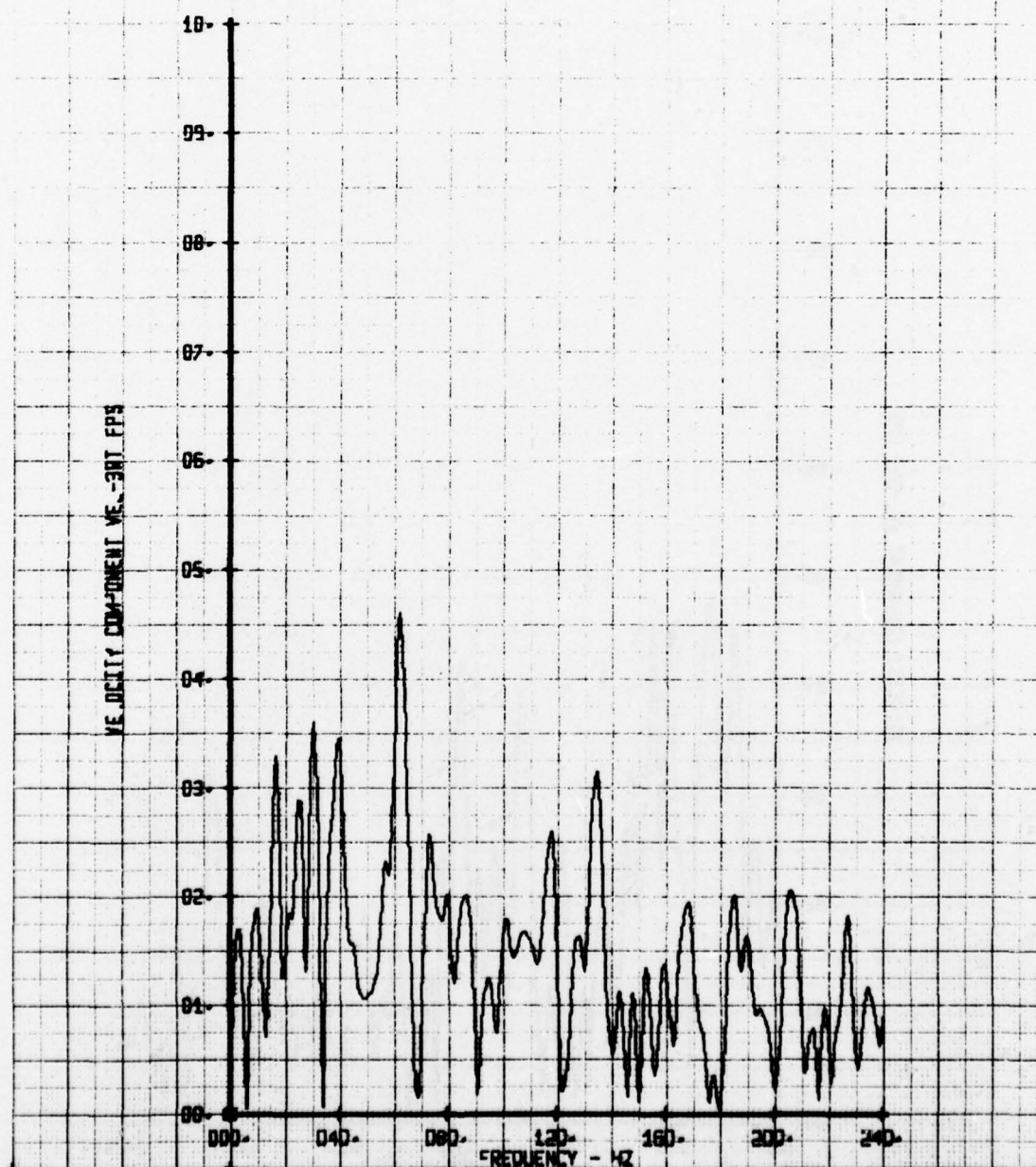
40T FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT OPSI
RUN 203 TP 5

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT DP51
RUN 203 TP 6

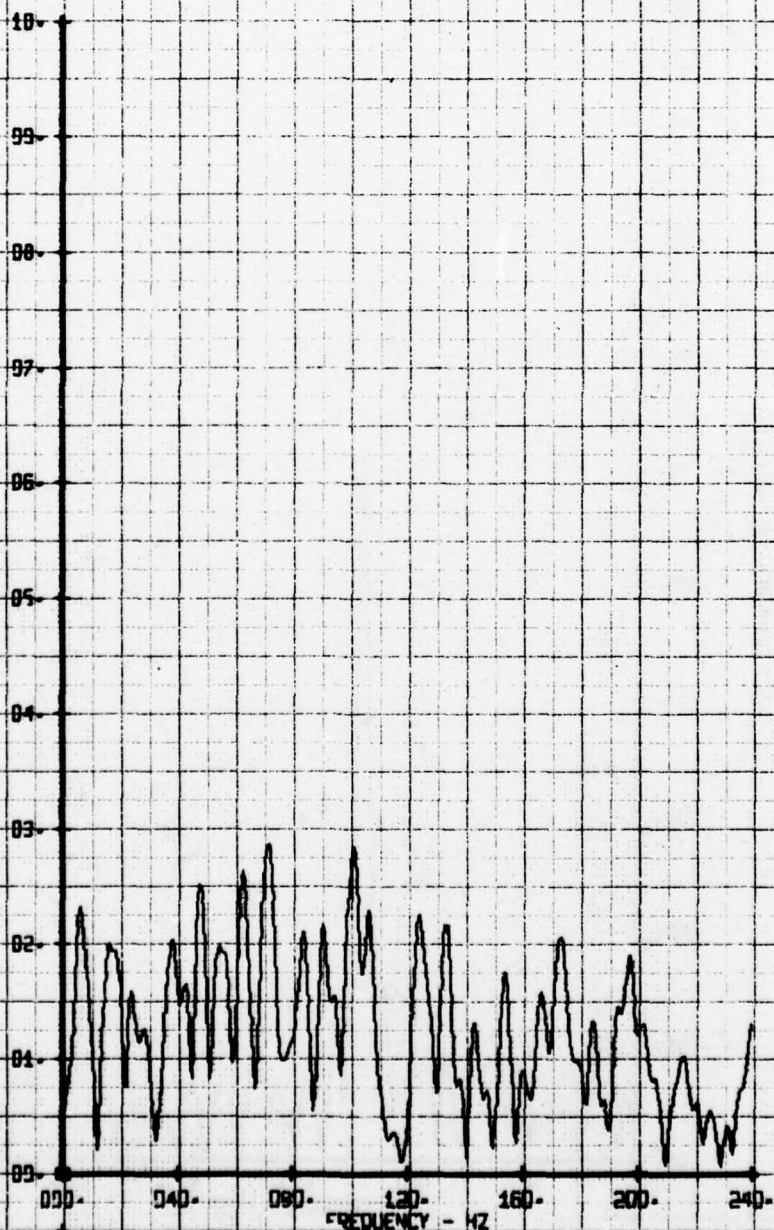
LEGEND
CH. PARAMETER
71 VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. REPERATED DUCT OPST
RUN 209 TP 7

LEGEND
CH 71 PARAMETER
VEL-3RT

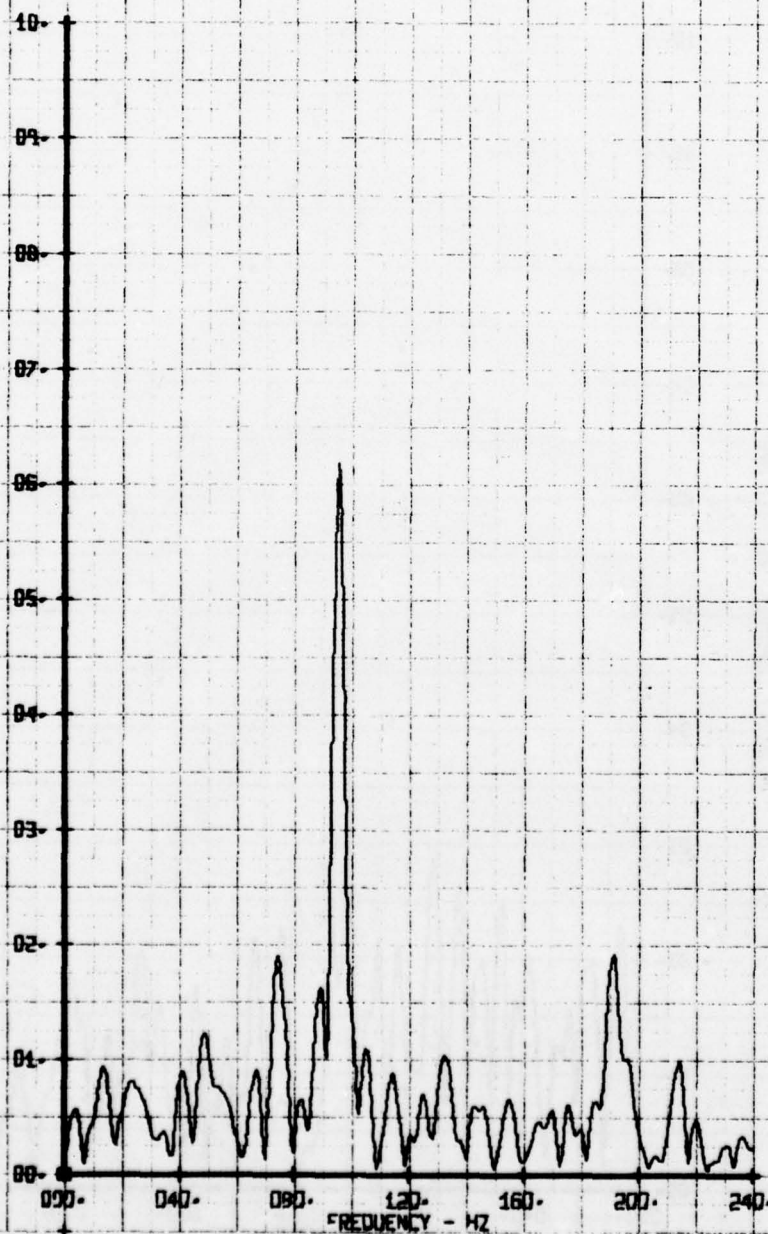
VELOCITY COMPONENT VE-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT OPS1
RUN 203 TP 9

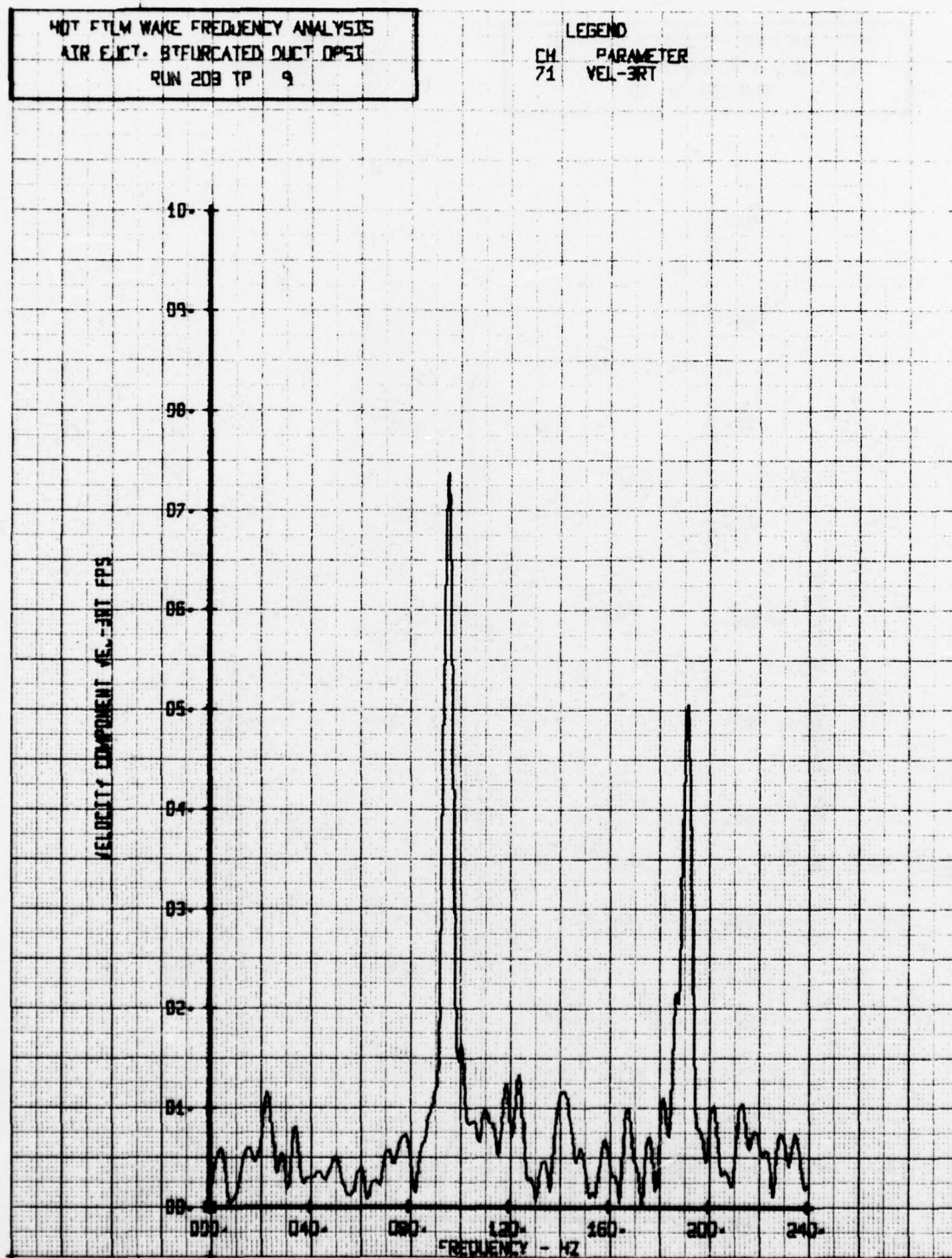
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



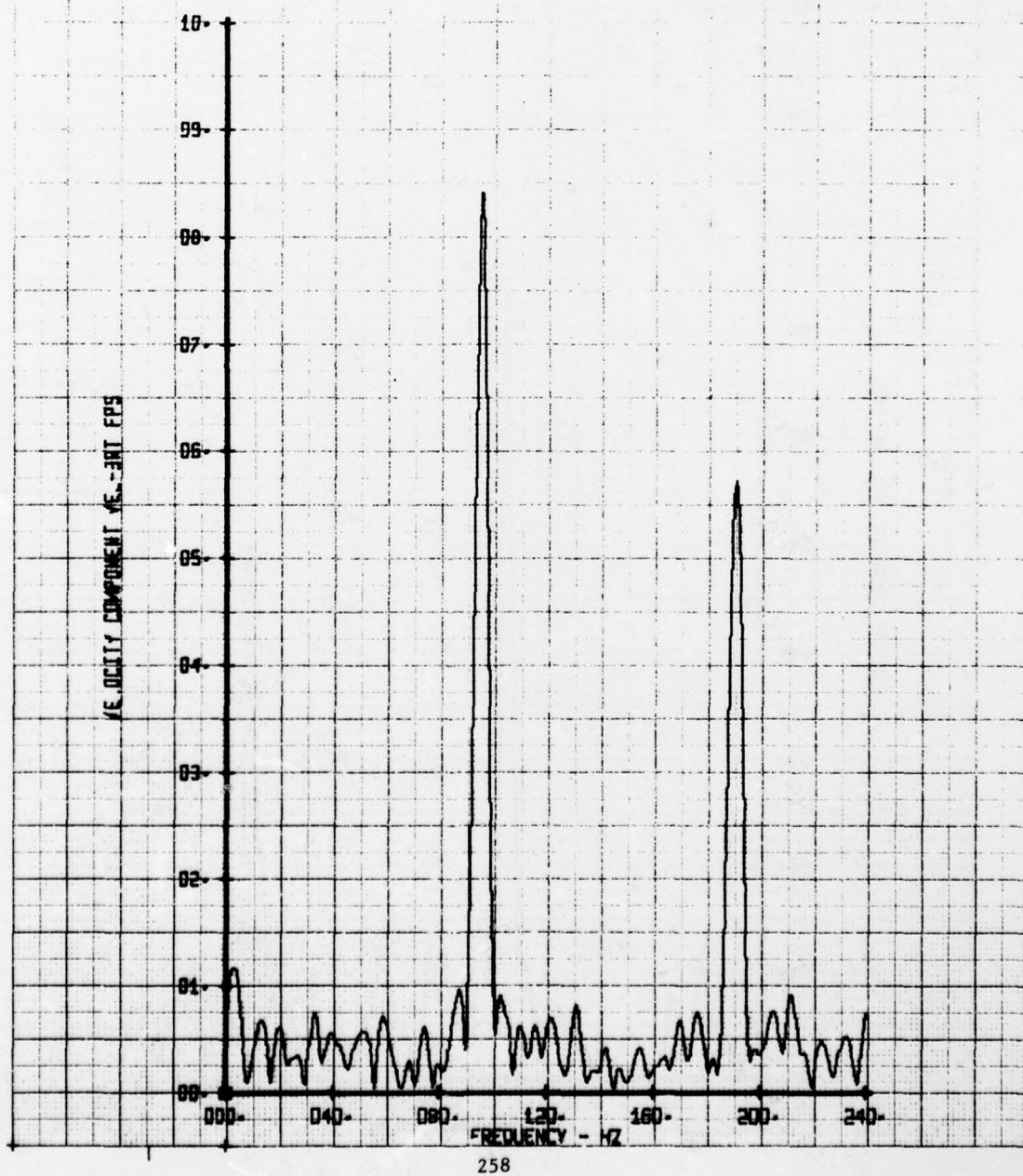
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT OPSI
RUN 208 TP 9

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
ATR EJECT. STURCATED DUCT OPSJ
RUN 209 TP 10

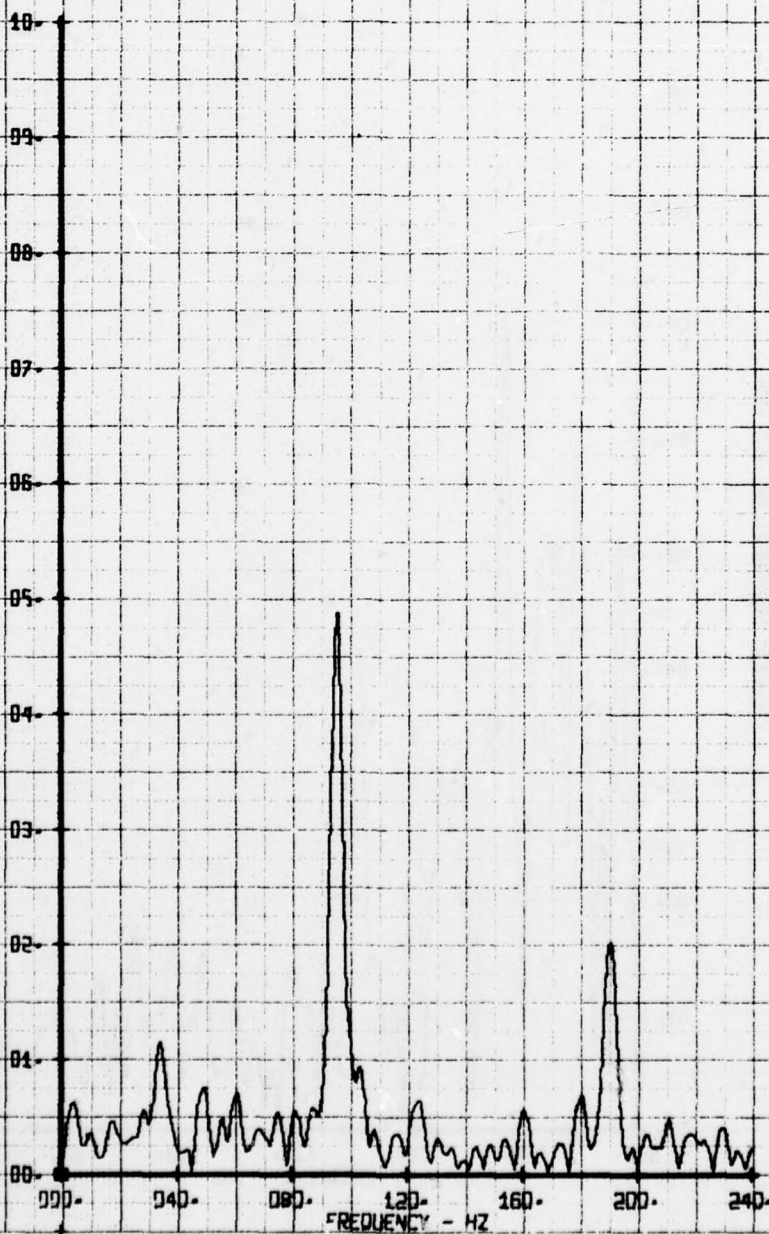
LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. STEURATED DUCT DPST
RUN 208 TP 11

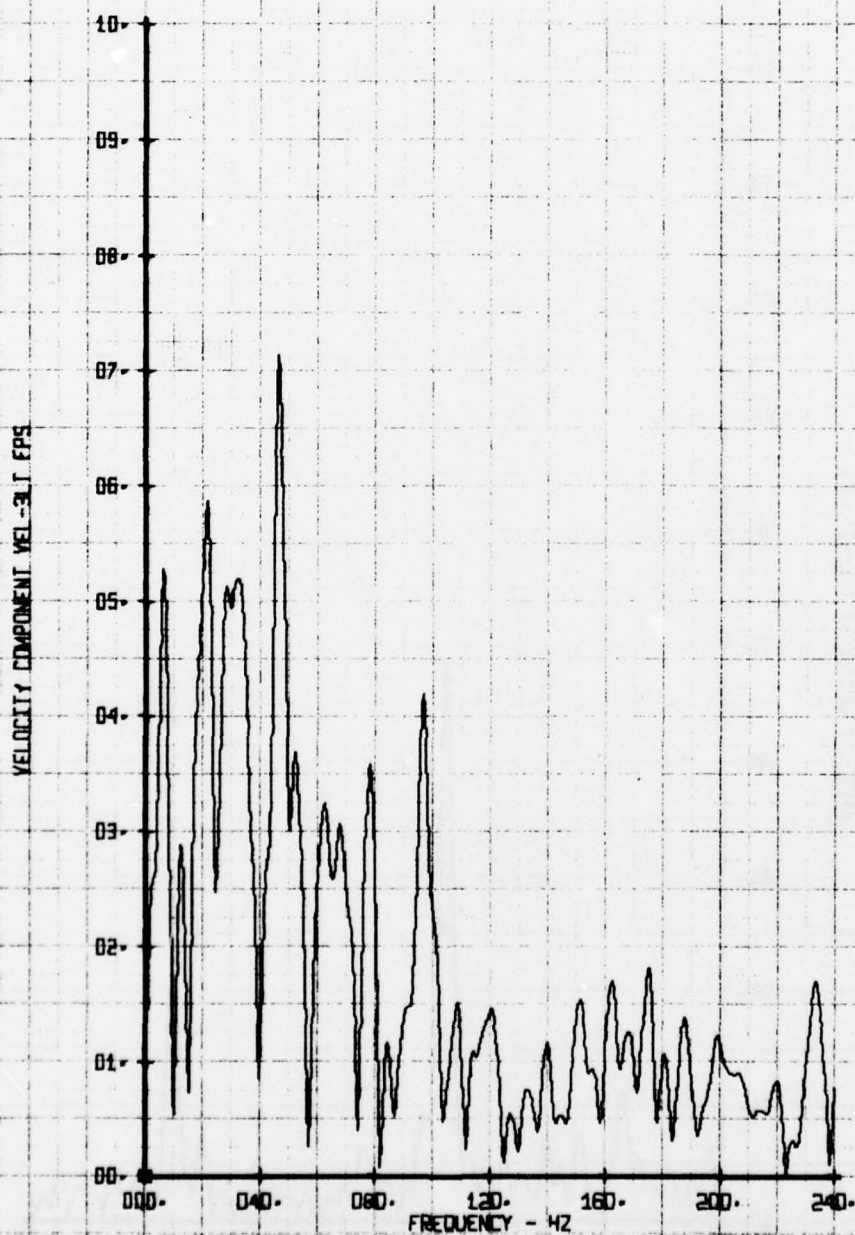
LEGEND
CH 71
PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



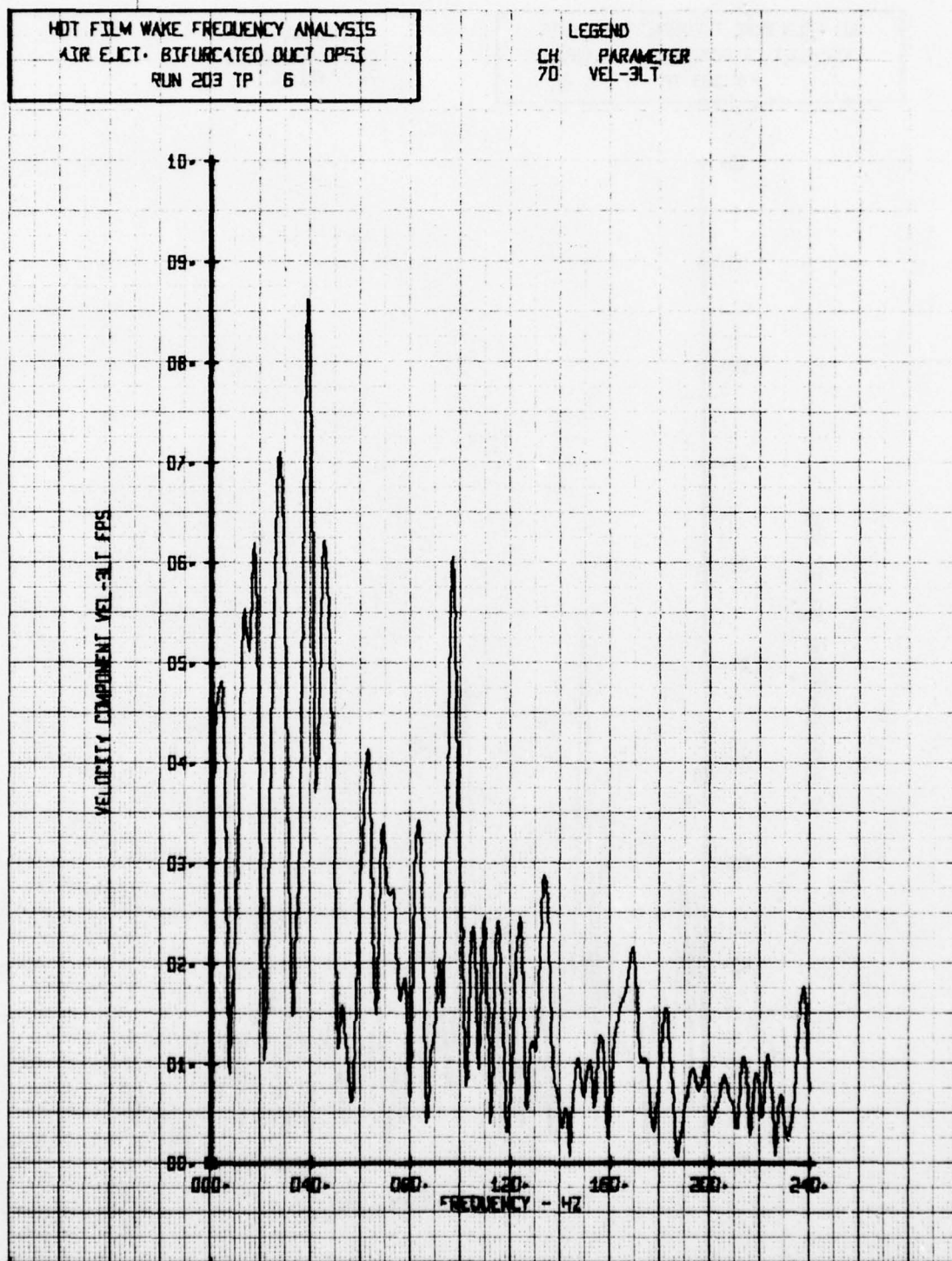
WOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT OPSI
RUN 203 TP 5

LEGEND
CH 70 PARAMETER
VEL-3LT



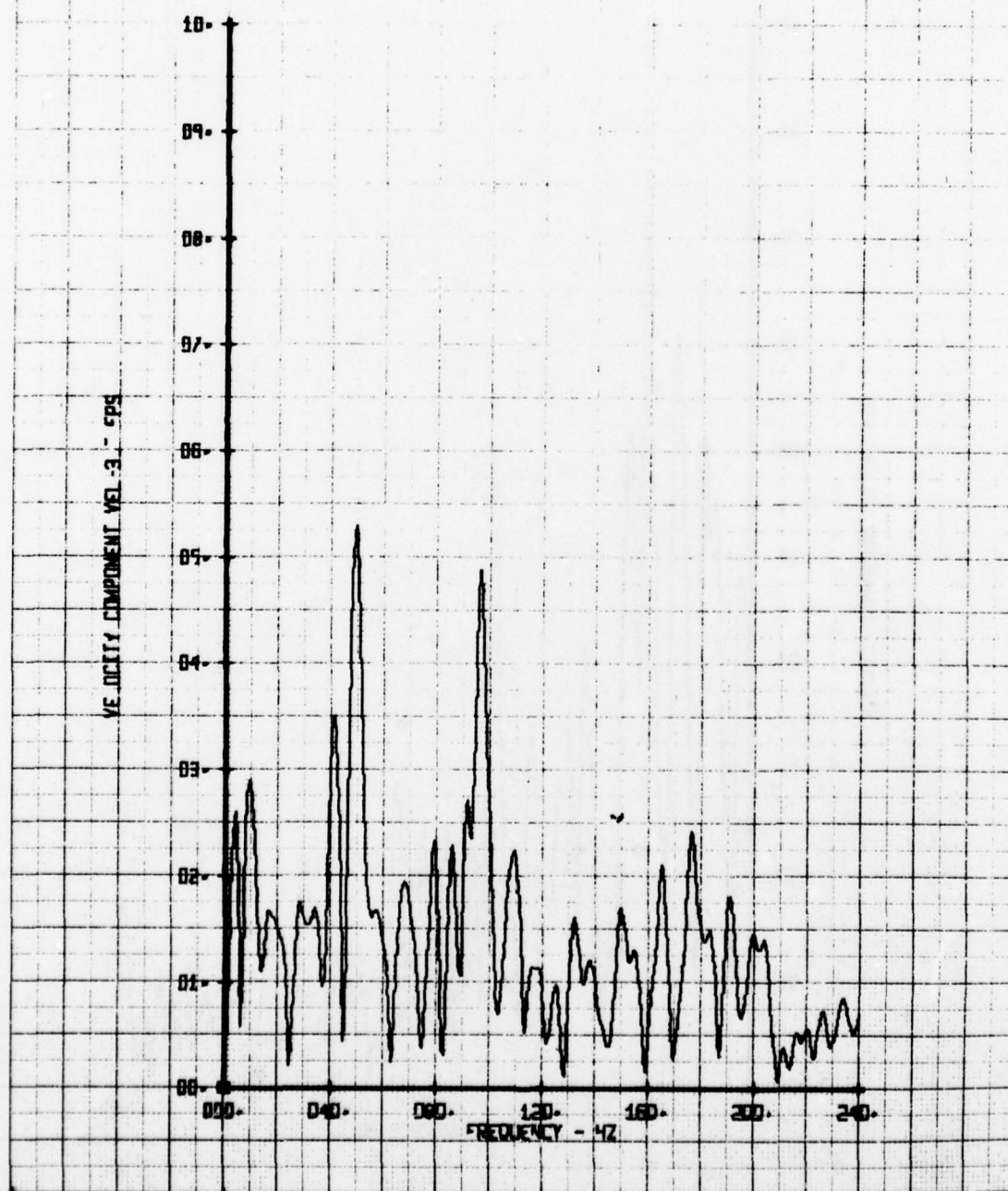
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT OPSJ
RUN 203 TP 6

LEGEND
CH 70 PARAMETER
VEL-3LT



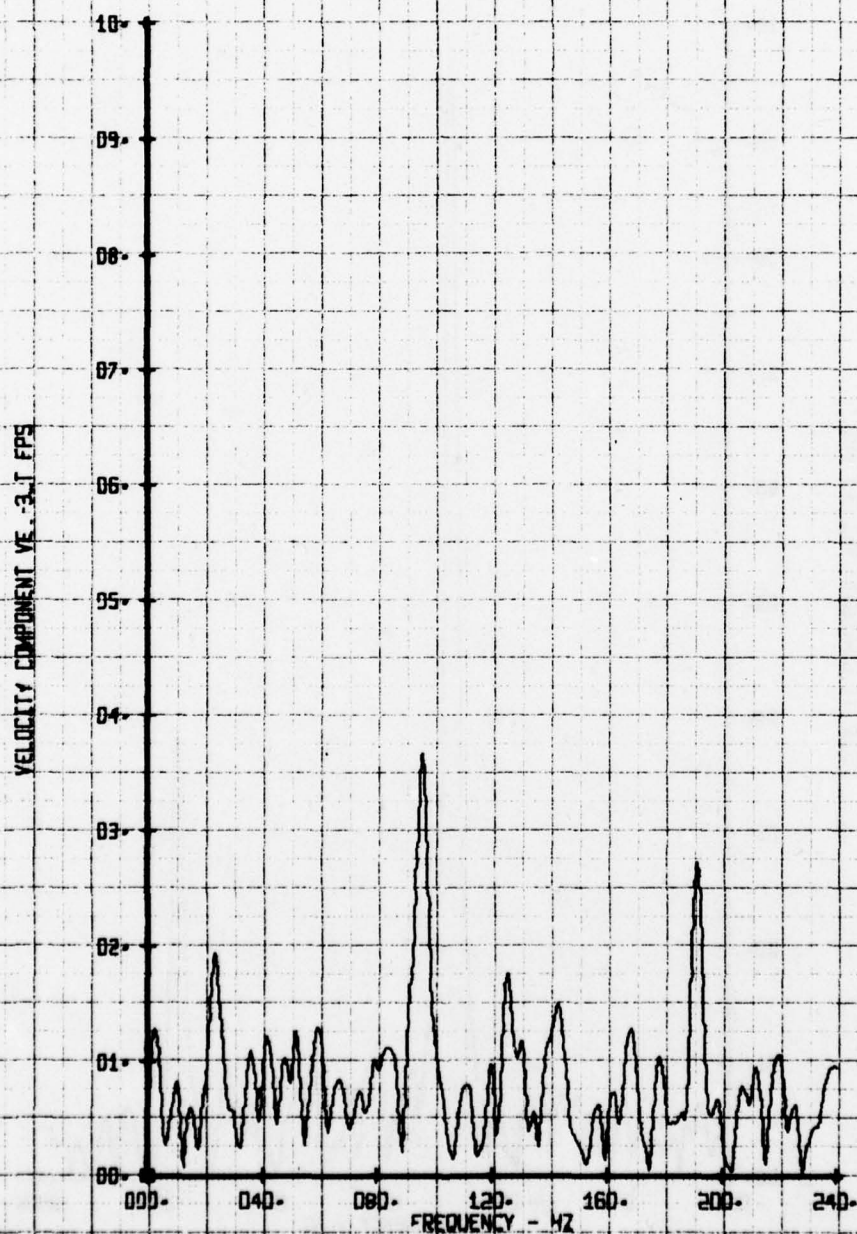
WOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT DP5J
RUN 203 TP 7

LEGEND
CH PARAMETER
70 VEL-3LT



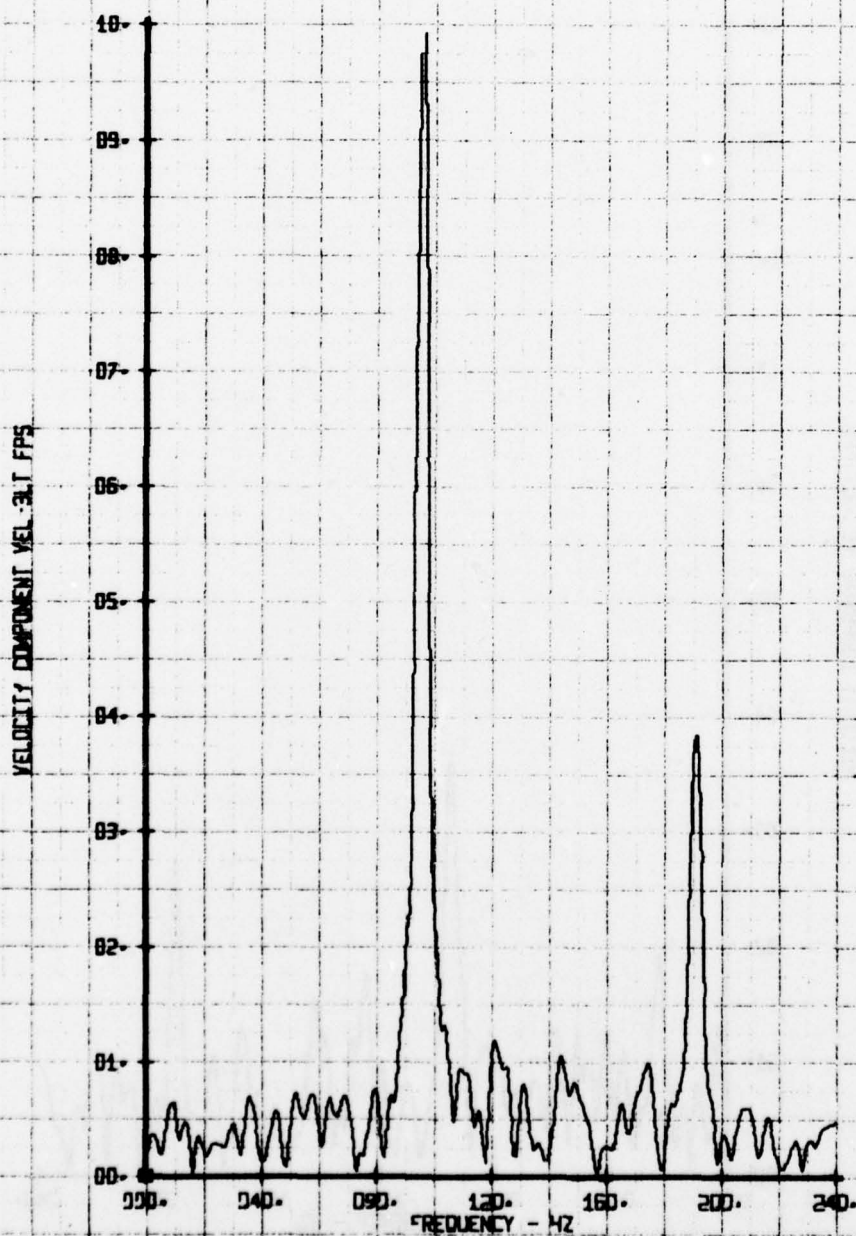
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT TEST
RUN 209 TP 8

LEGEND
CH 70
PARAMETER
VEL-3LT



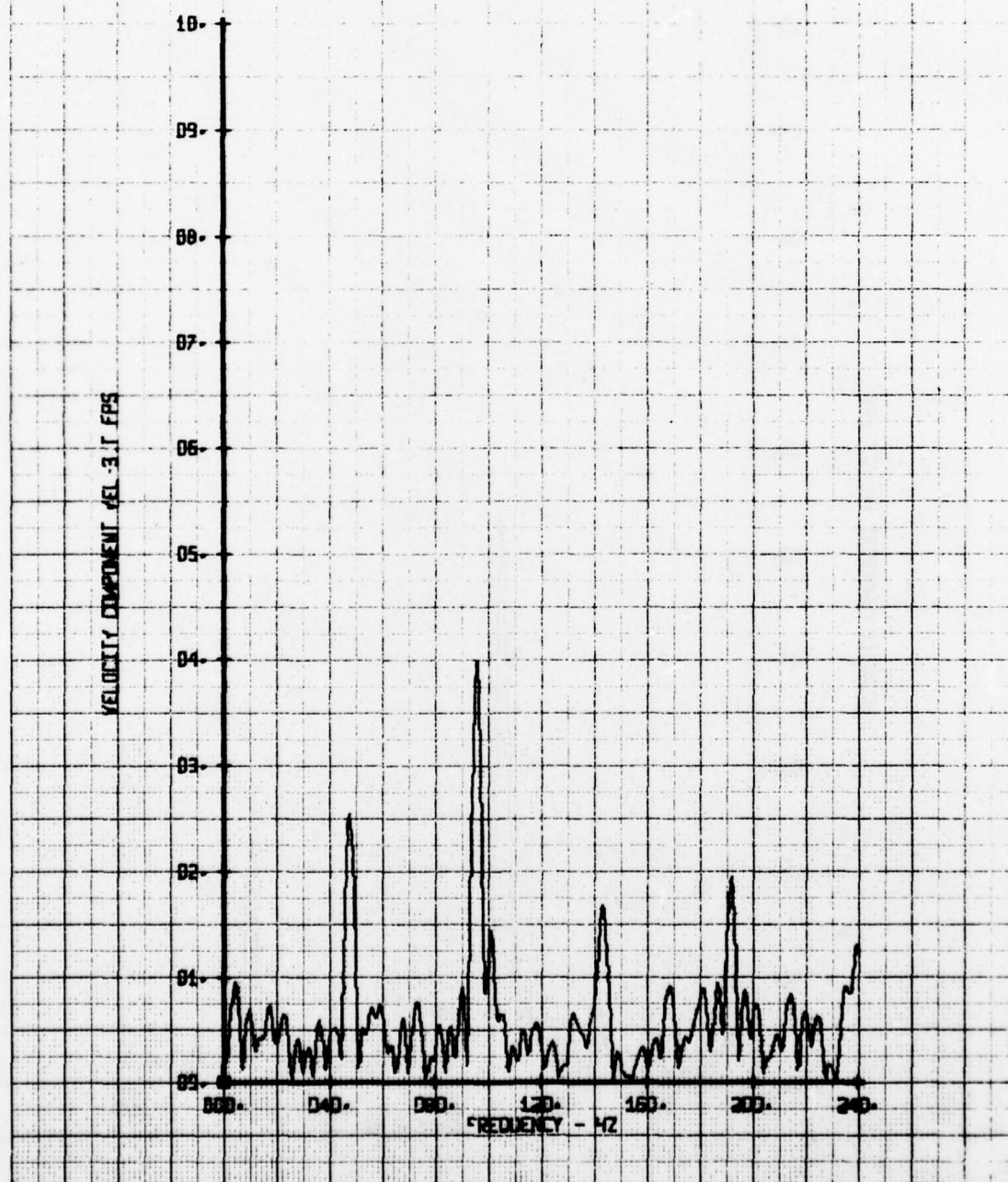
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT DPST
RUN 203 TP 9

LEGEND
CH 70
PARAMETER
VEL-3LT



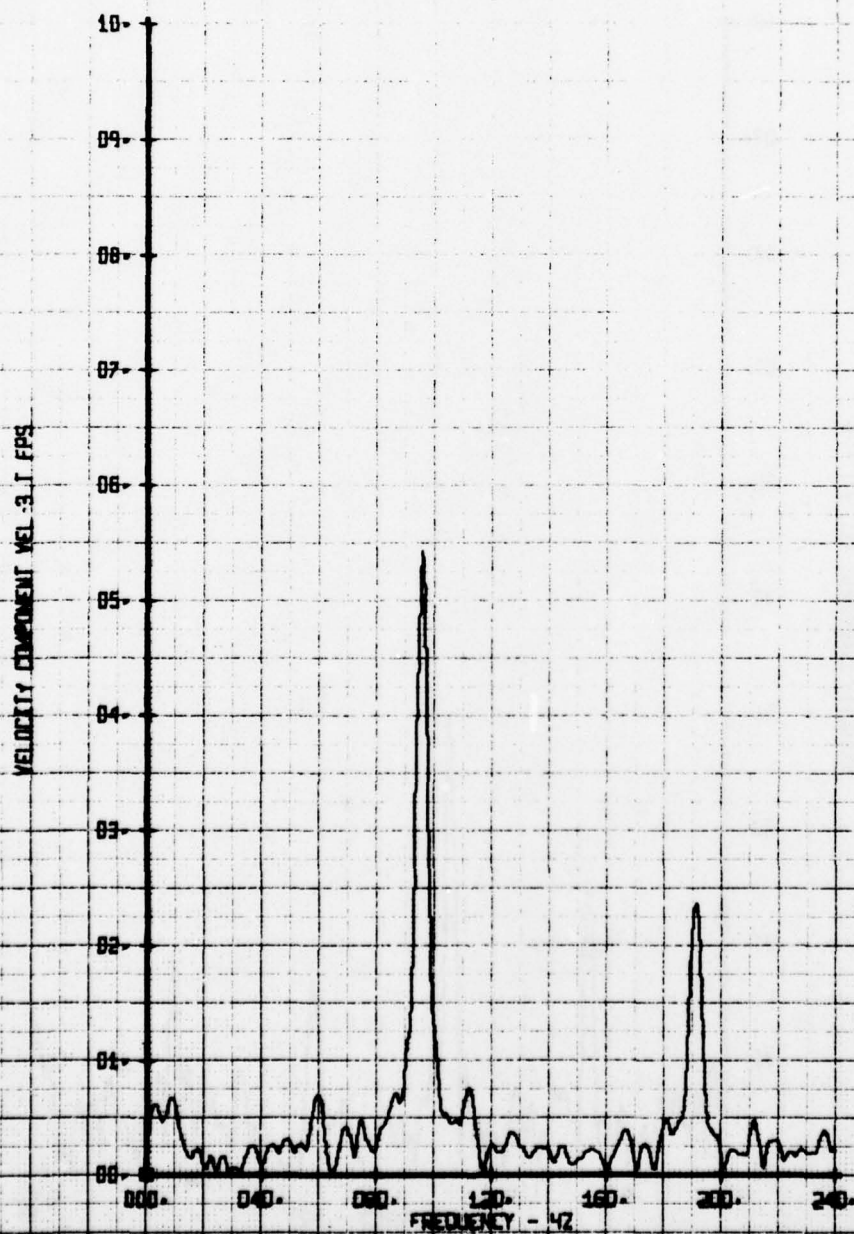
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT DP51
RUN 203 TP 10

LEGEND
CH 70 PARAMETER
VEL-3LT



40T FLM WAKE FREQUENCY ANALYSIS
AIR EJECT. STURGEON DUCT OPSI
RUN 203 TP 11

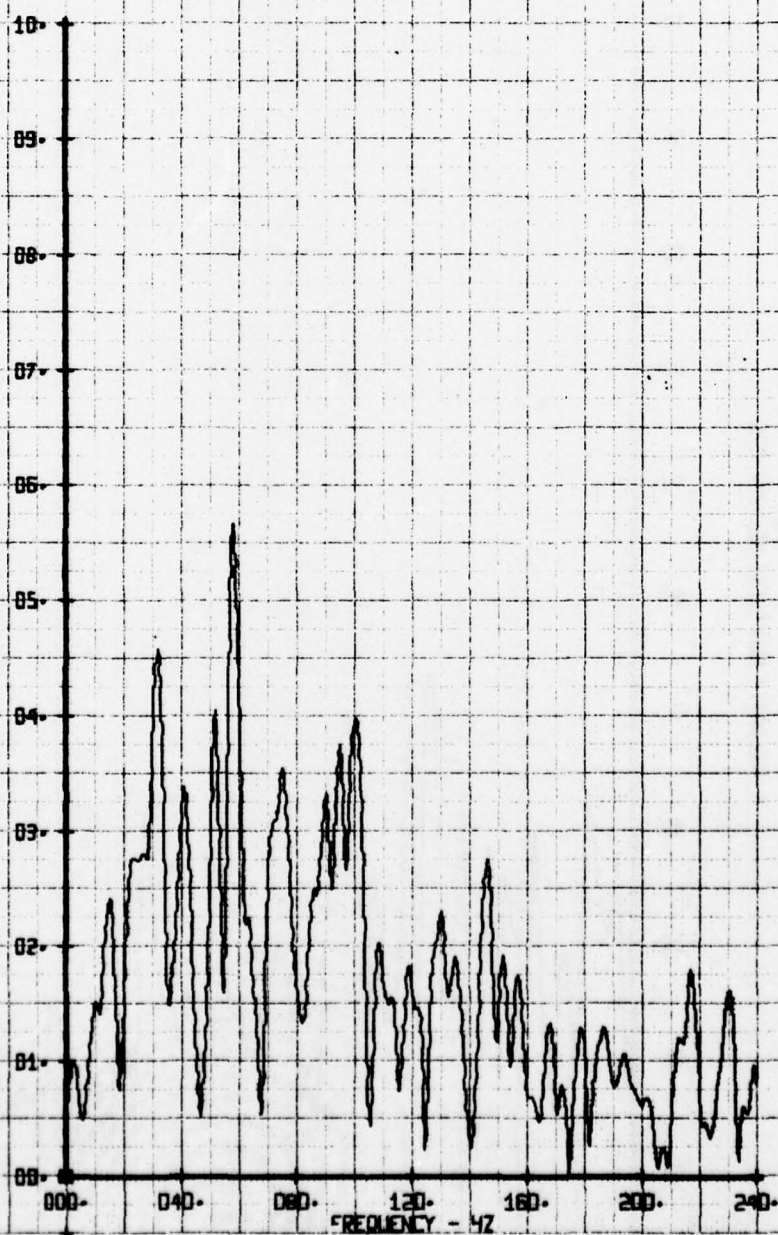
LEGEND
CH 70 PARAMETER
VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 1

LEGEND
CH 71 PARAMETER
VEL-3RT

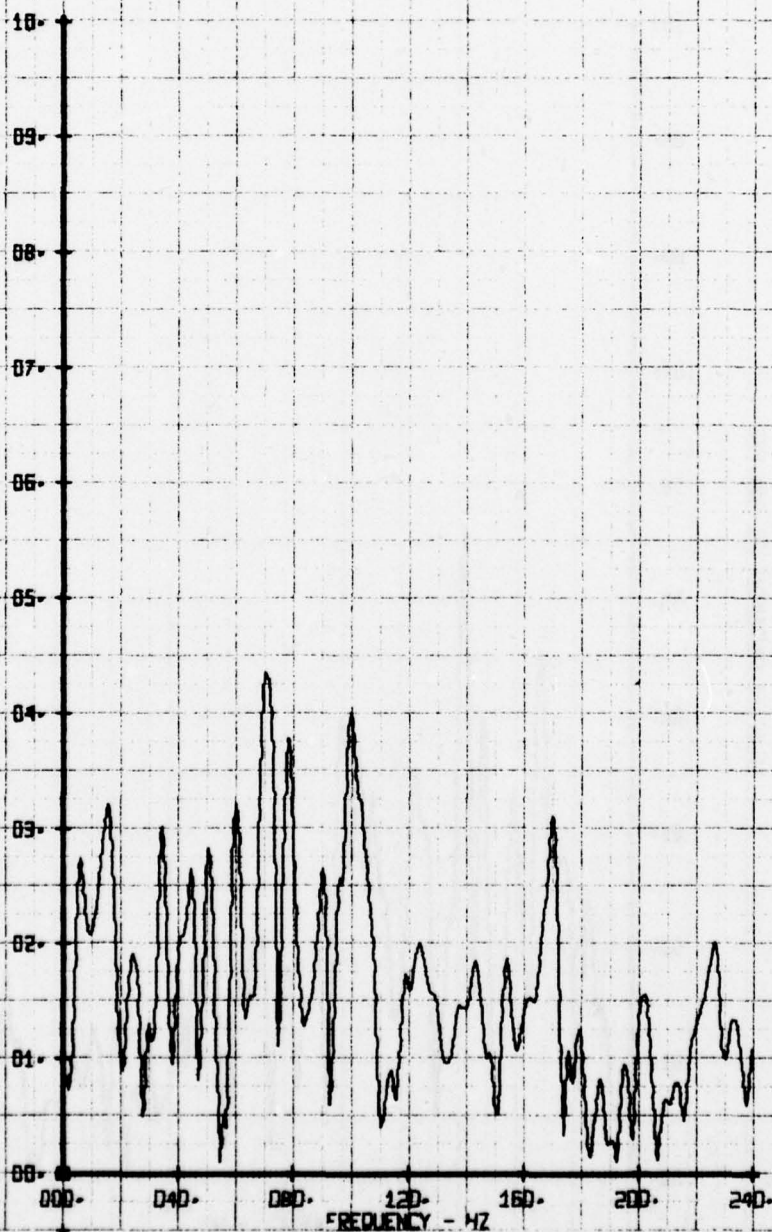
VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 2

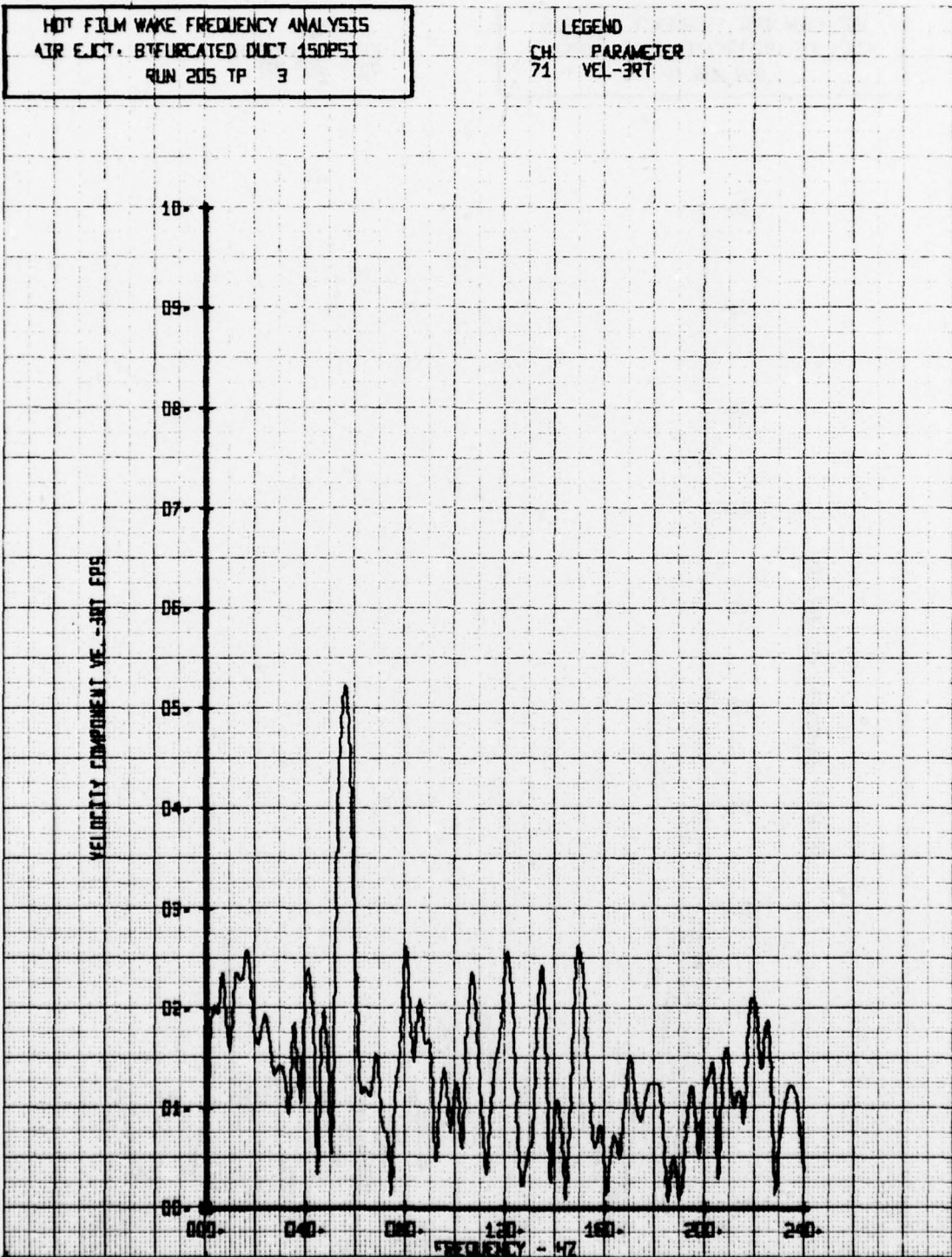
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VEL-3RT FPS



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 3

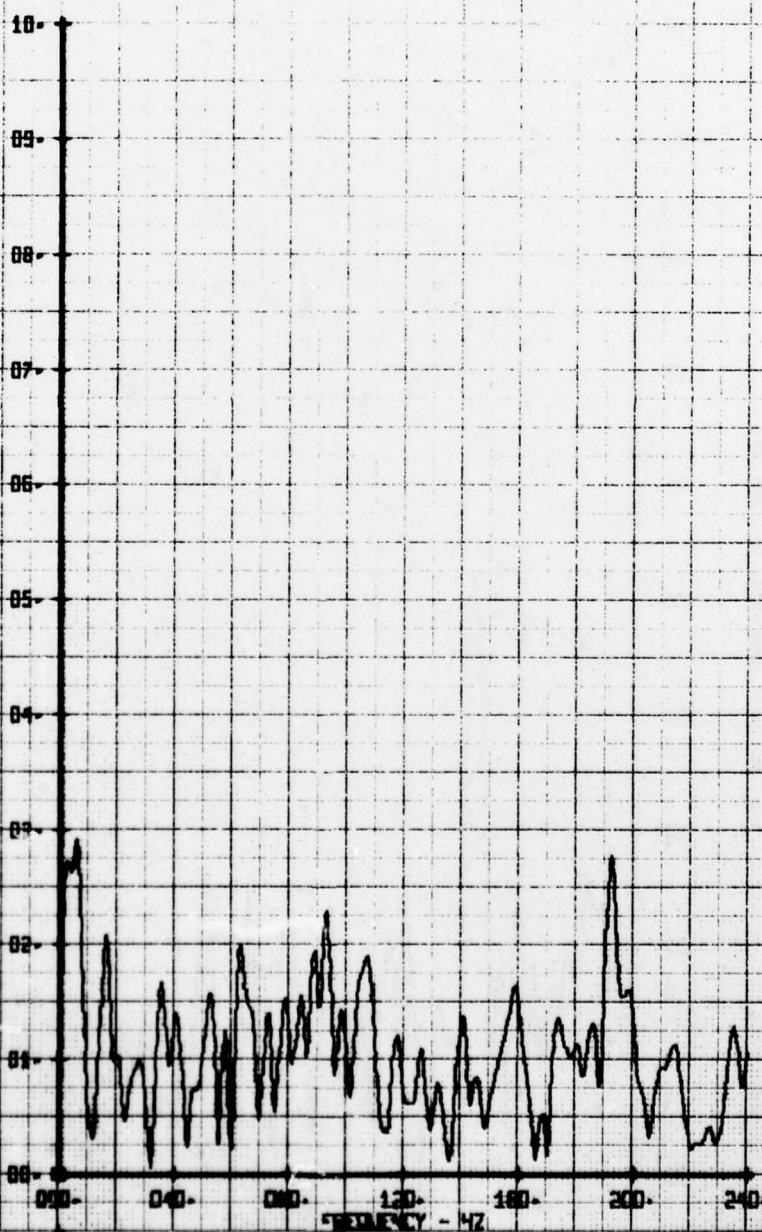
LEGEND
CH. 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 4

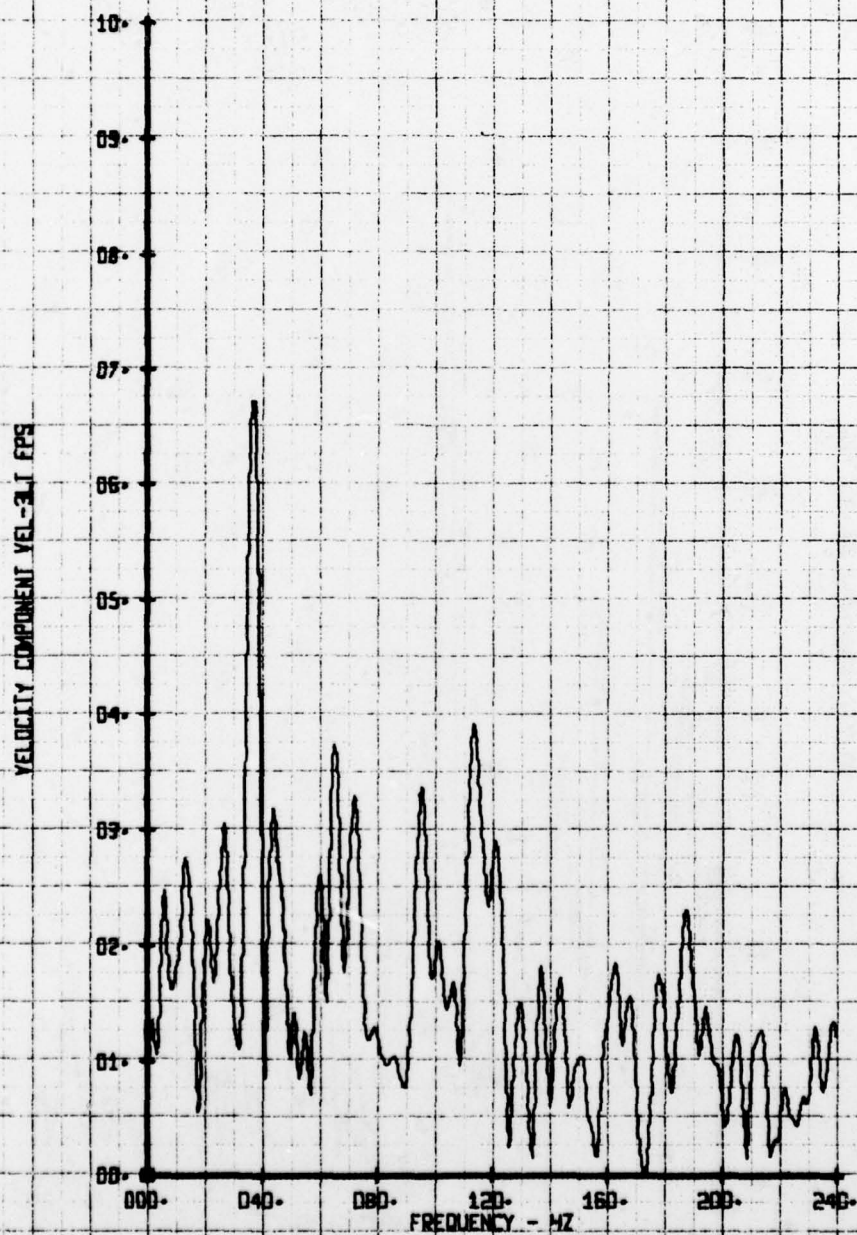
LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VE -3RT CPS



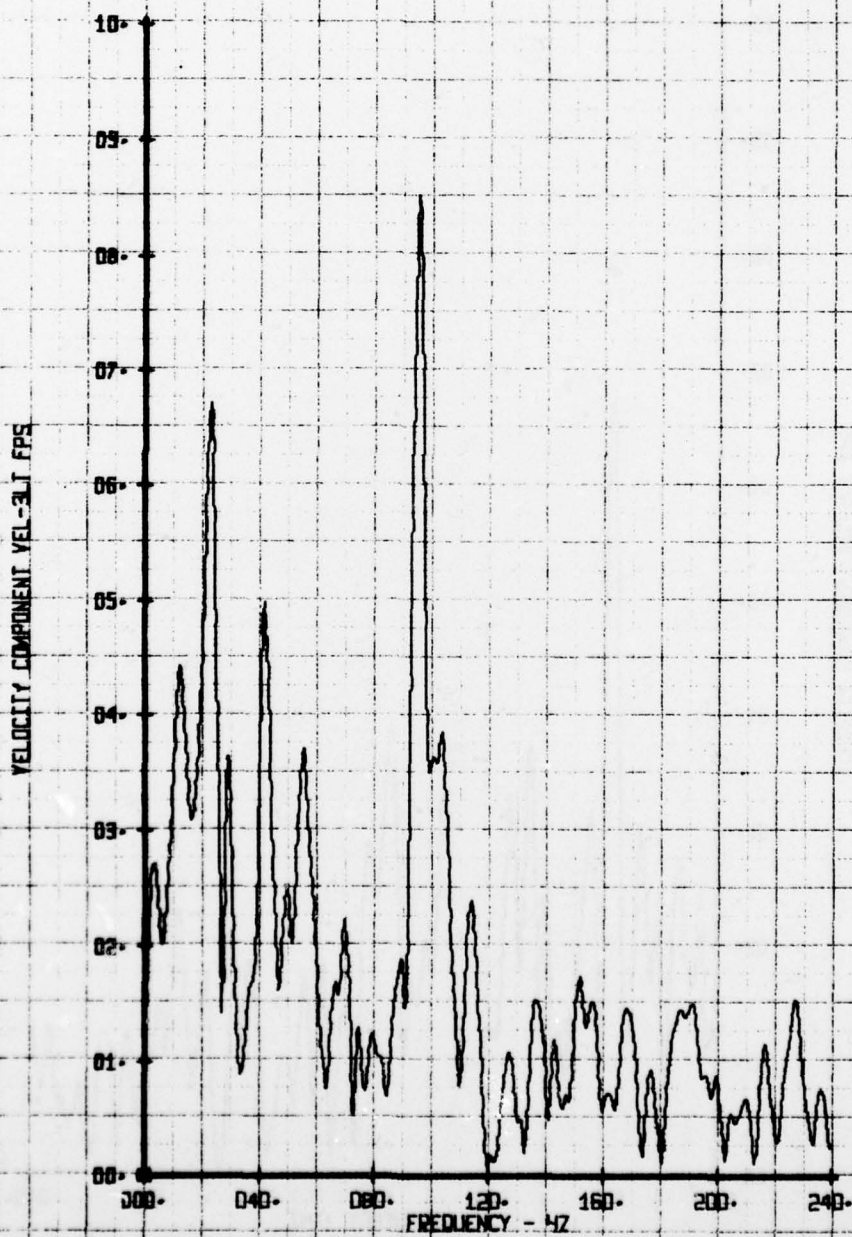
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 1

LEGEND
CH 70 PARAMETER
VEL-3LT



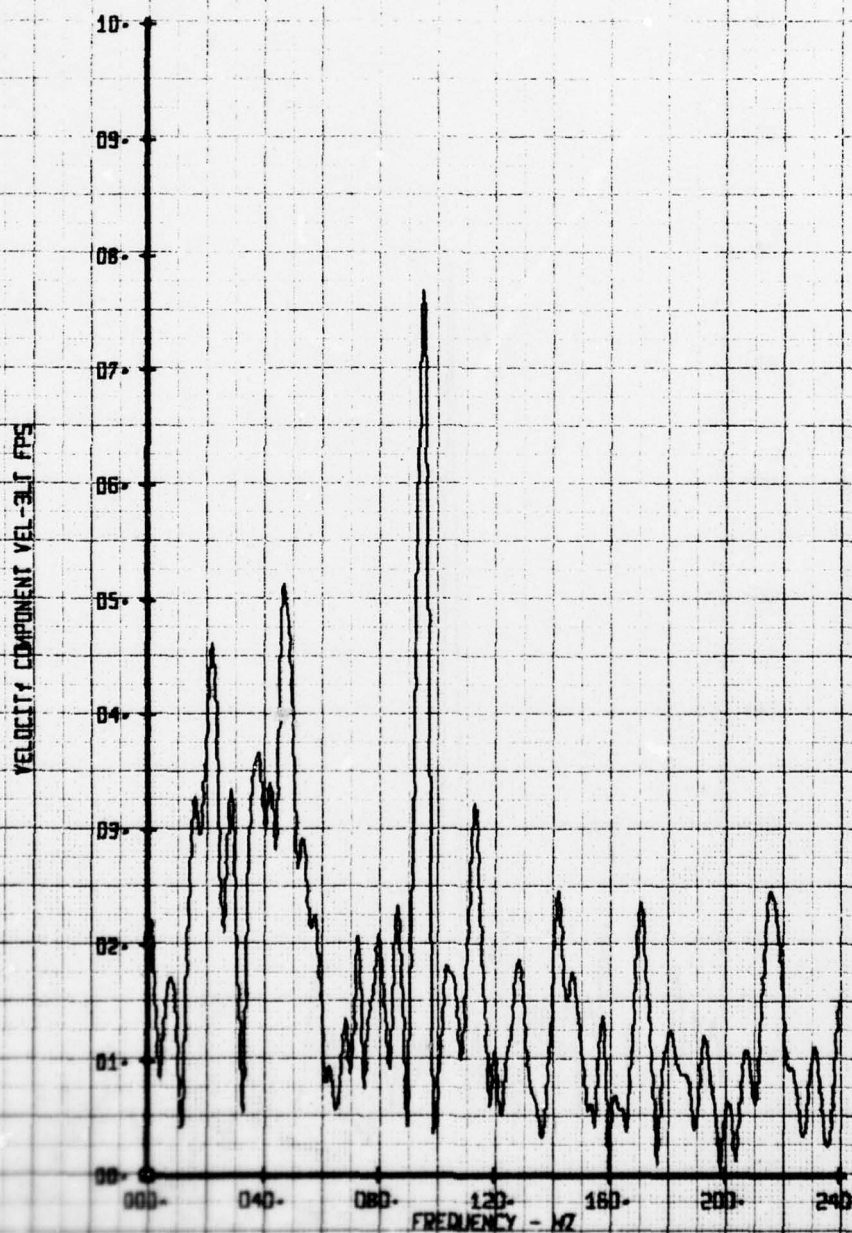
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AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 2

LEGEND
CH 70 PARAMETER
VEL-3LT



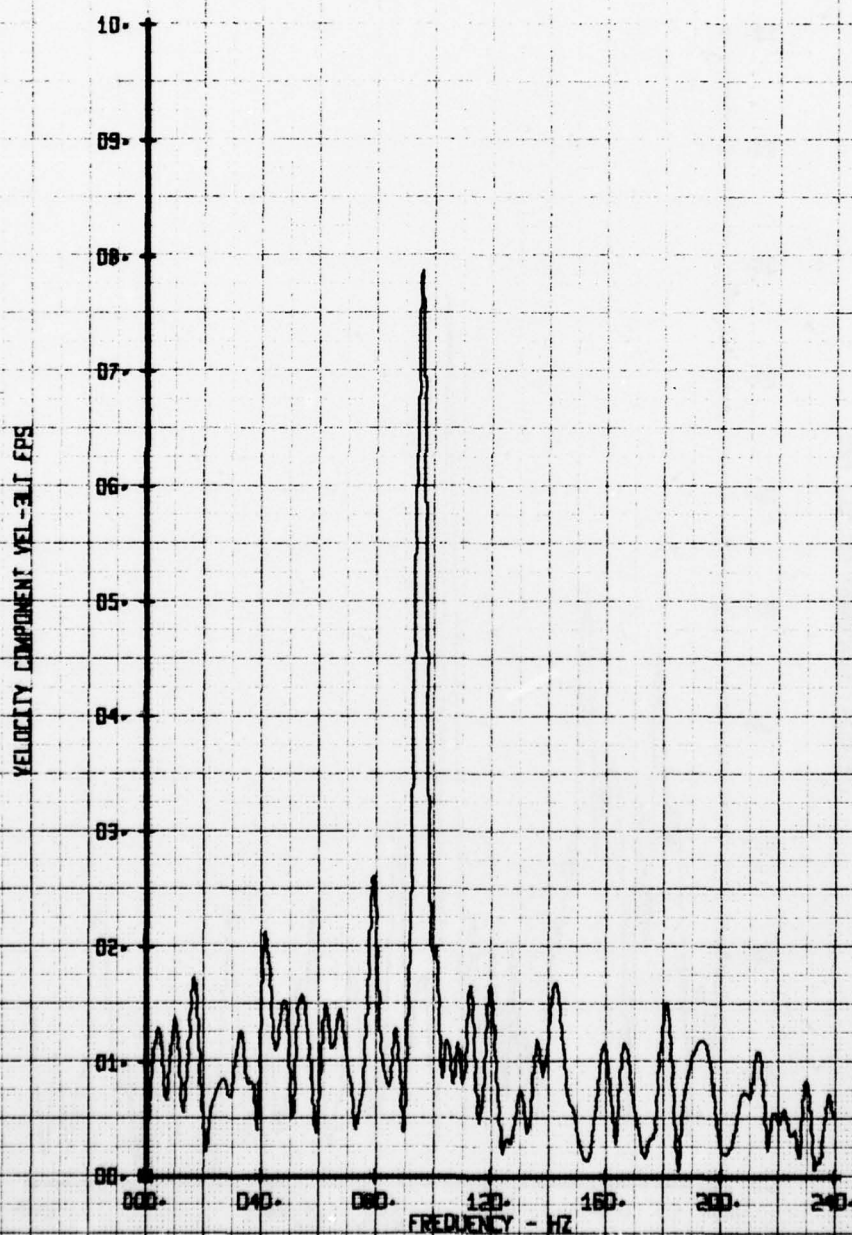
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AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 3

LEGEND
CH. PARAMETER
70: VEL-3LT



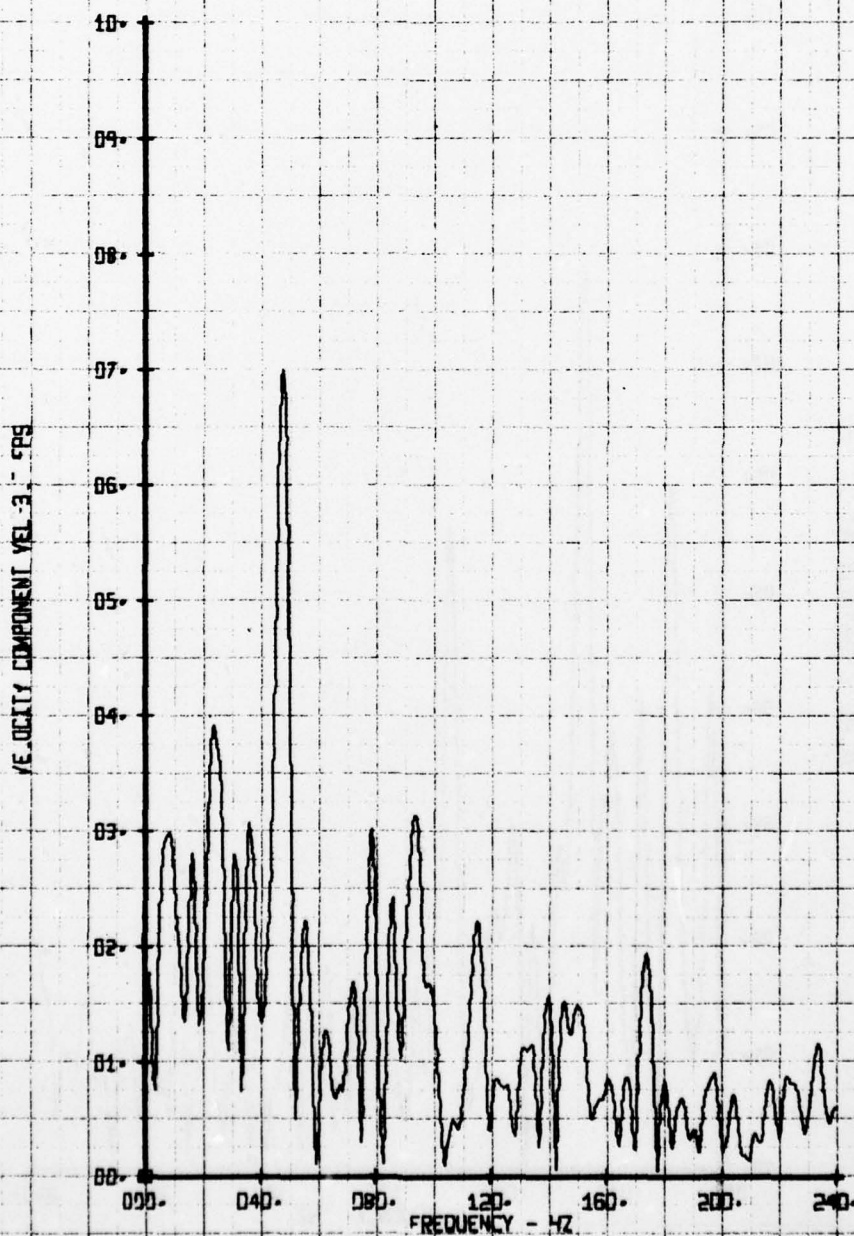
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AIR EJECT. BIFURCATED DUCT 150PSI
RUN 205 TP 4

LEGEND
CH 70 PARAMETER
VEL-3LT



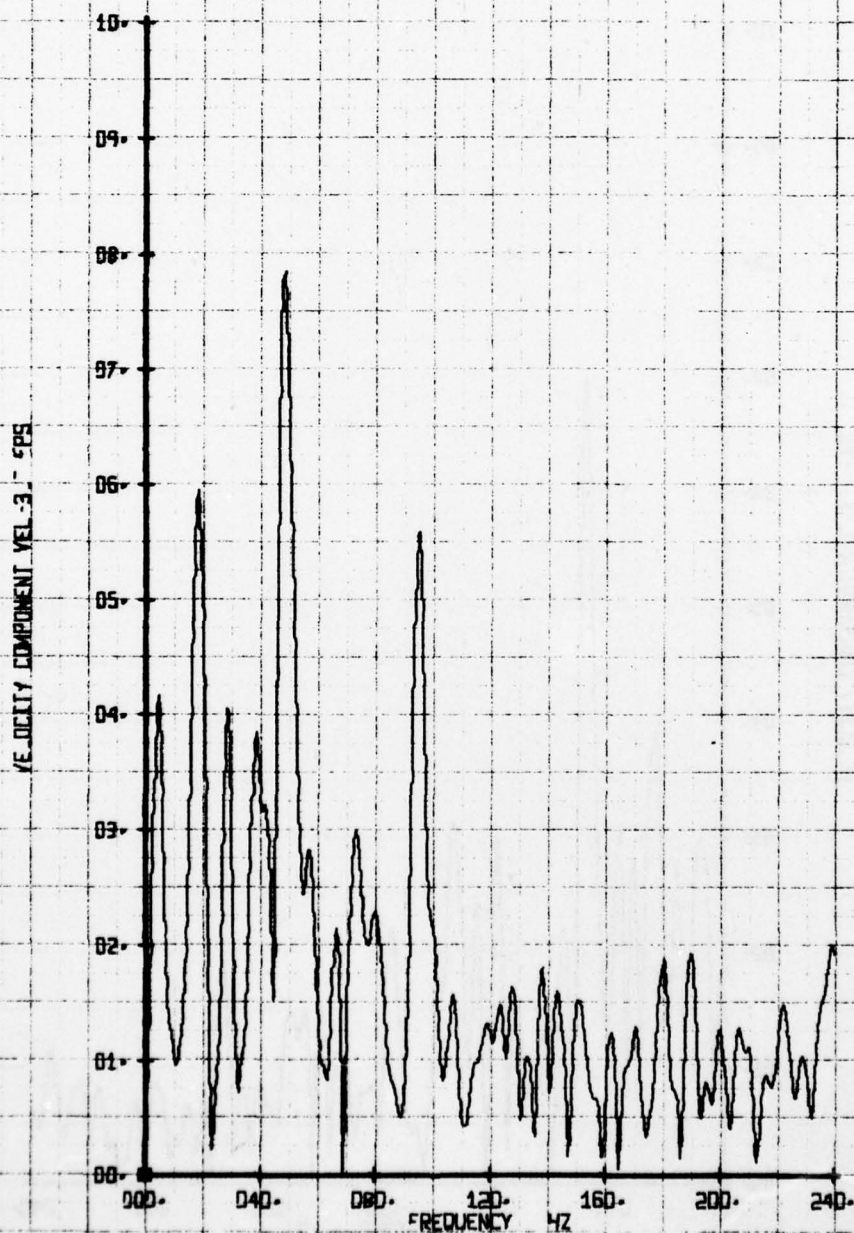
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT: 2.60.1.256 150PSI BASTC E1
RUN 197 TP 1

LEGEND
CH 70
PARAMETER
VEL-3LT



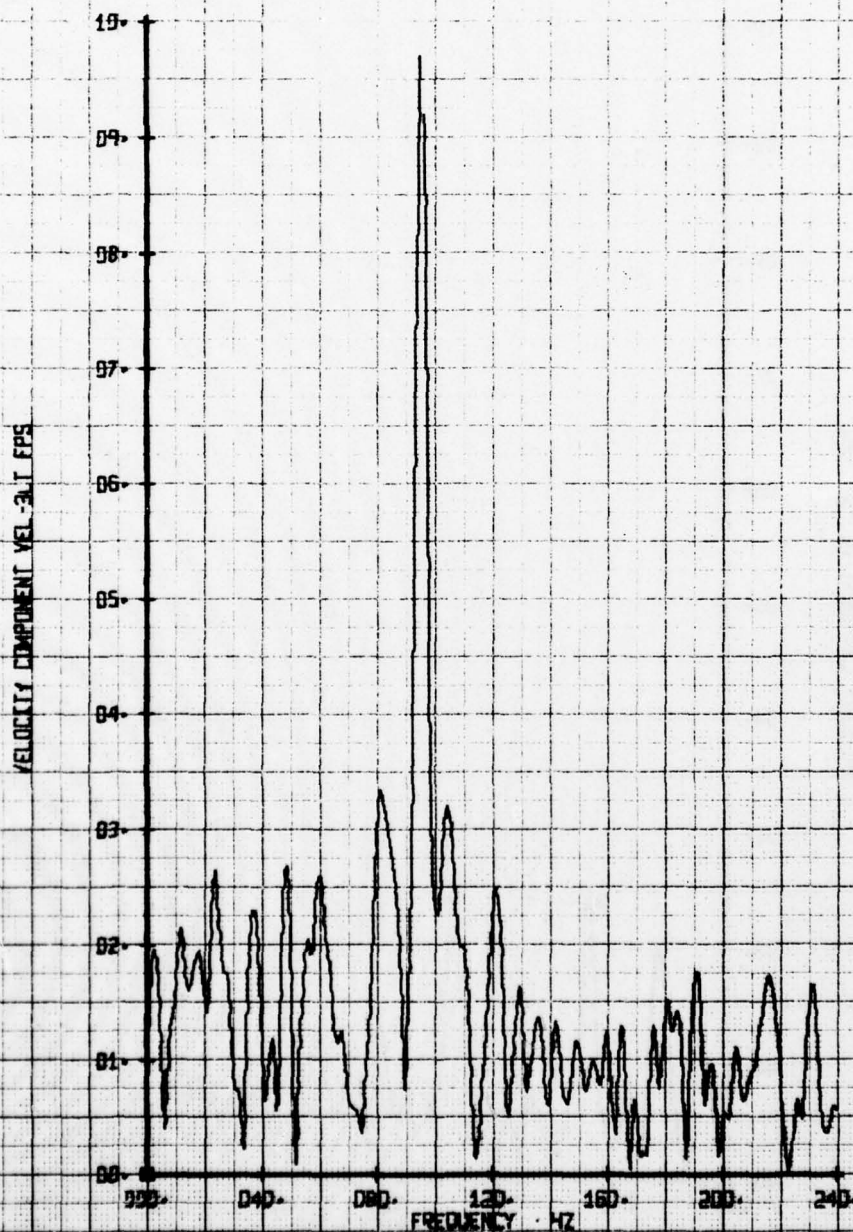
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. 7.60 1.256 150PSI BASIC E1
RUN 197 TP 2

LEGEND
CH 70 PARAMETER
VEL-3LT



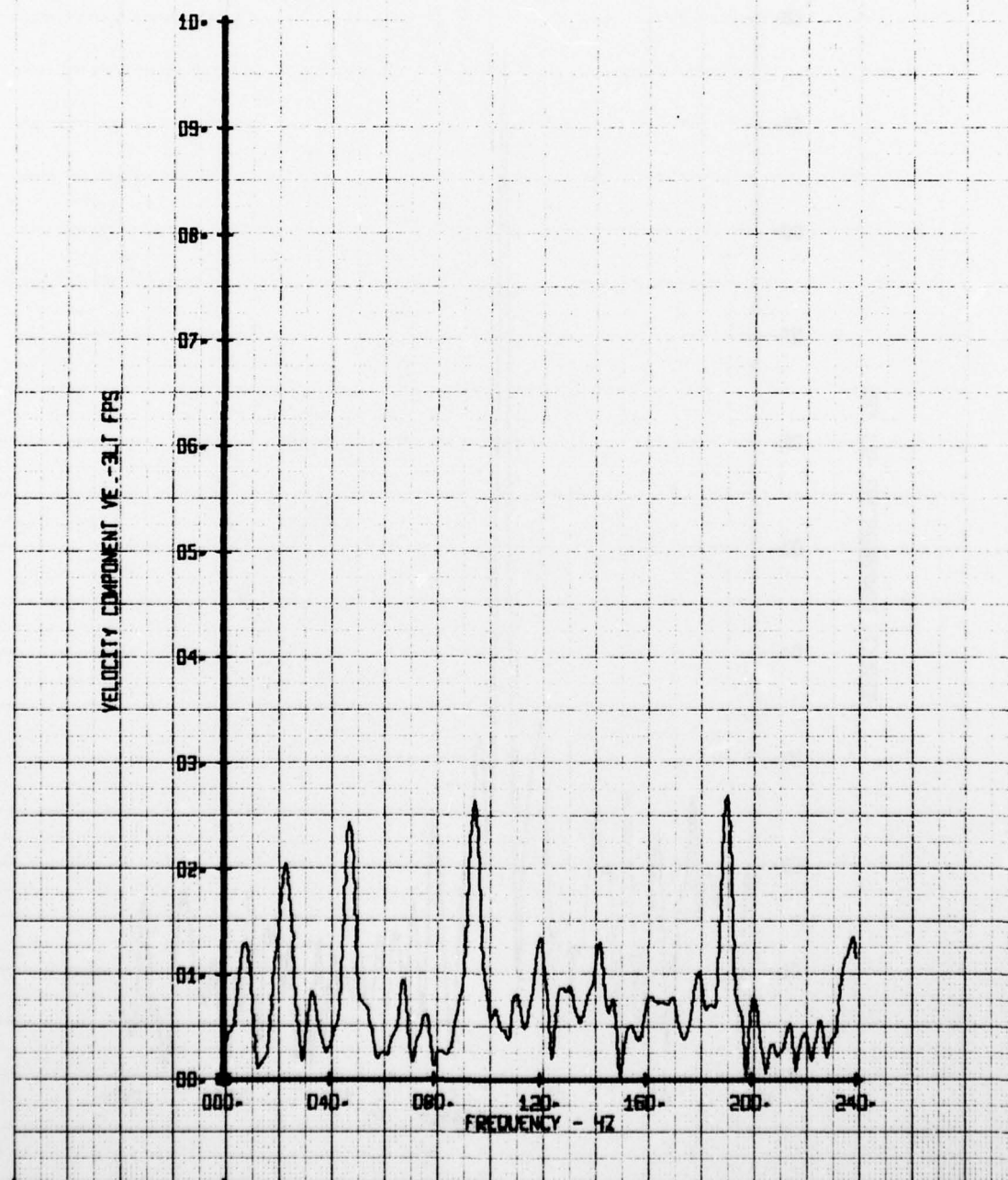
HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT: 7.60 J. 256 150PSI BASIC E1
RUN 197 TP 3

LEGEND
CH 70 PARAMETER
VEL-3LT



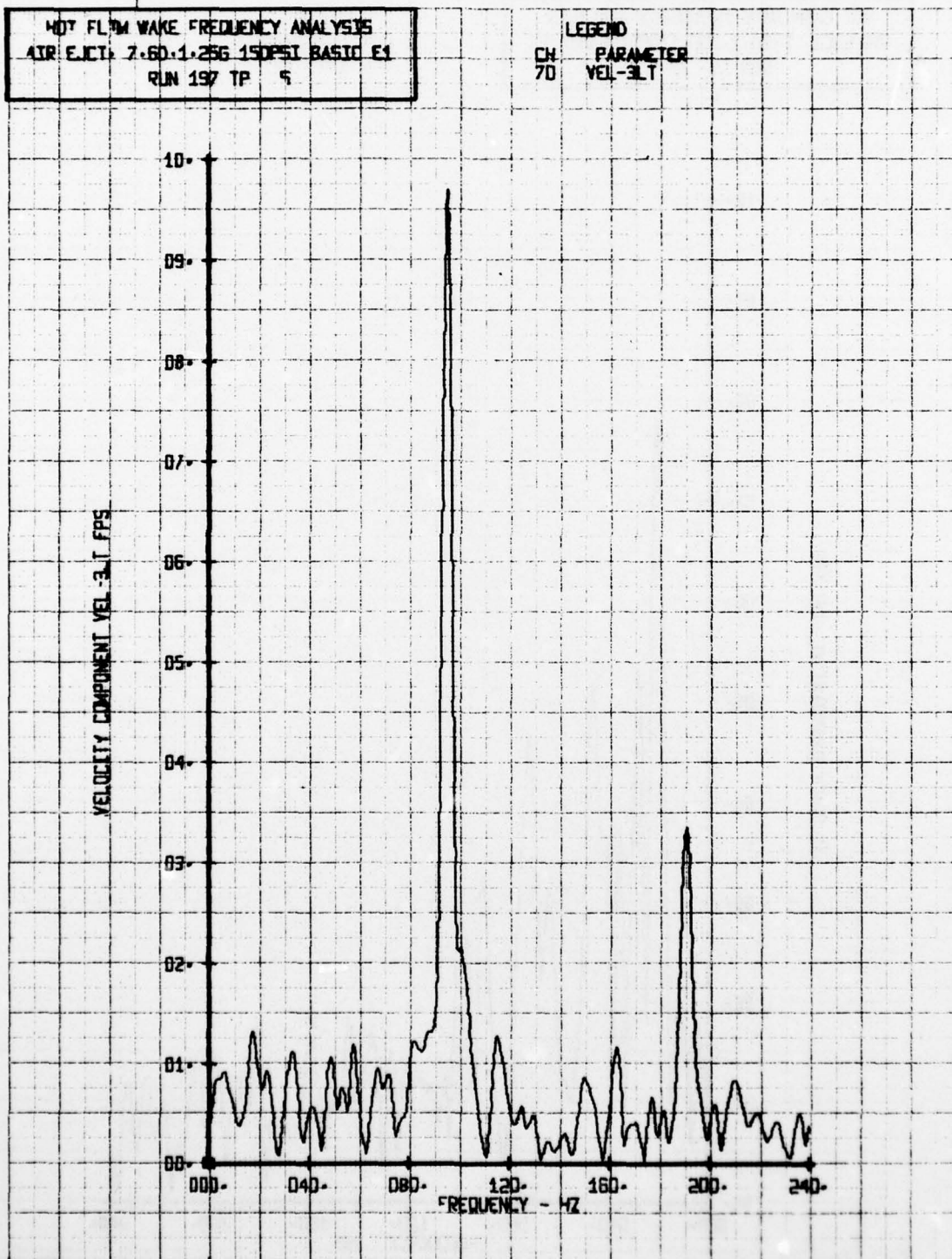
407 FLTM WAKE FREQUENCY ANALYSIS
AIR EJECT. 7.60, 1.256 150PSI BASIC E1
RUN 197 TP 4

LEGEND
CH 70 PARAMETER
VEL-3LT



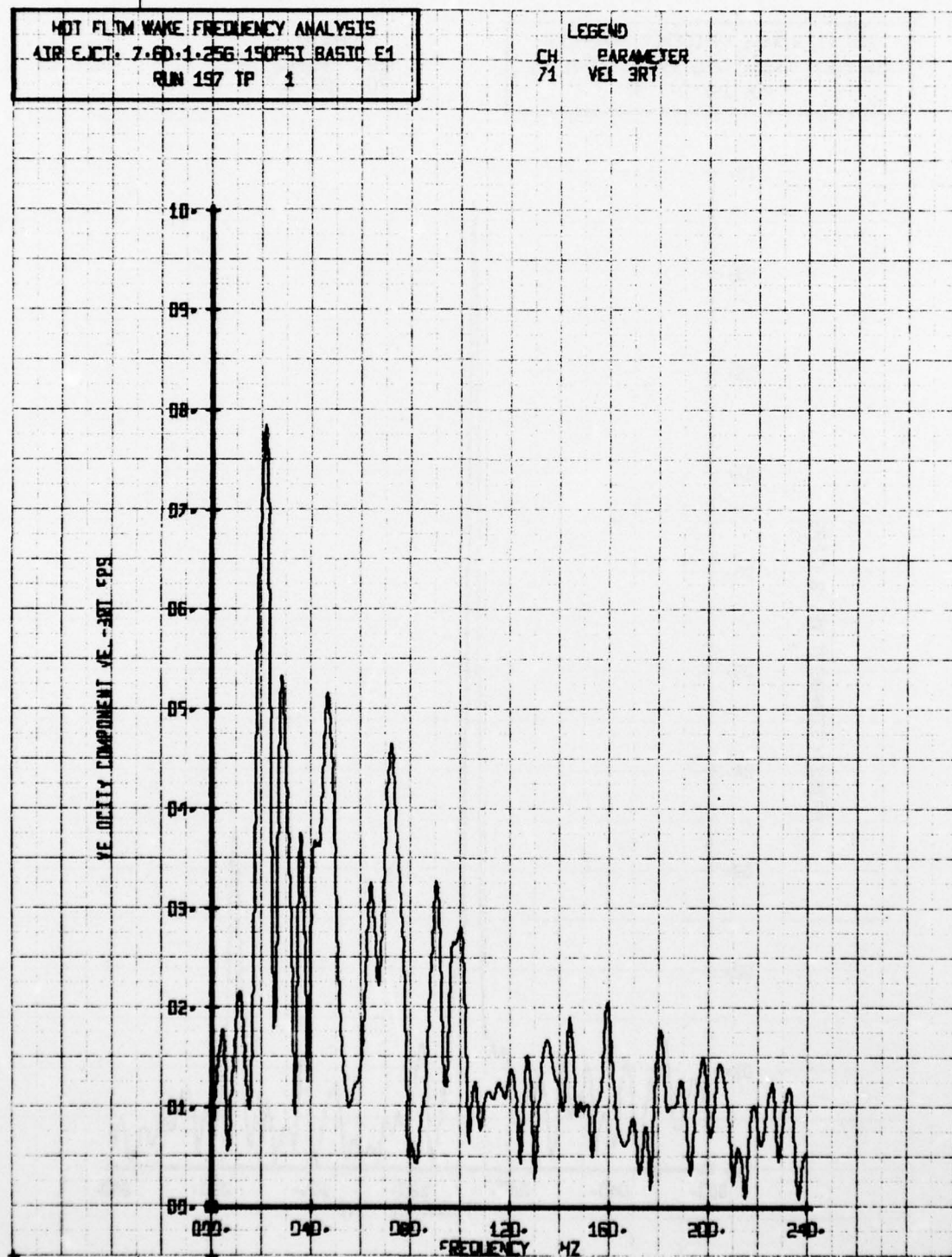
HOT FILM WAKE FREQUENCY ANALYSIS
 AIR EJECT: 7.60-1.256 150PSI BASTIC E1
 RUN 197 TP 5

LEGEND
 CH 70 PARAMETER
 VEL-3LT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. 7.60.1.256 150PSI BASIC E1
RUN 157 TP 1

LEGEND
CH 71
PARAMETER
VEL 3RT

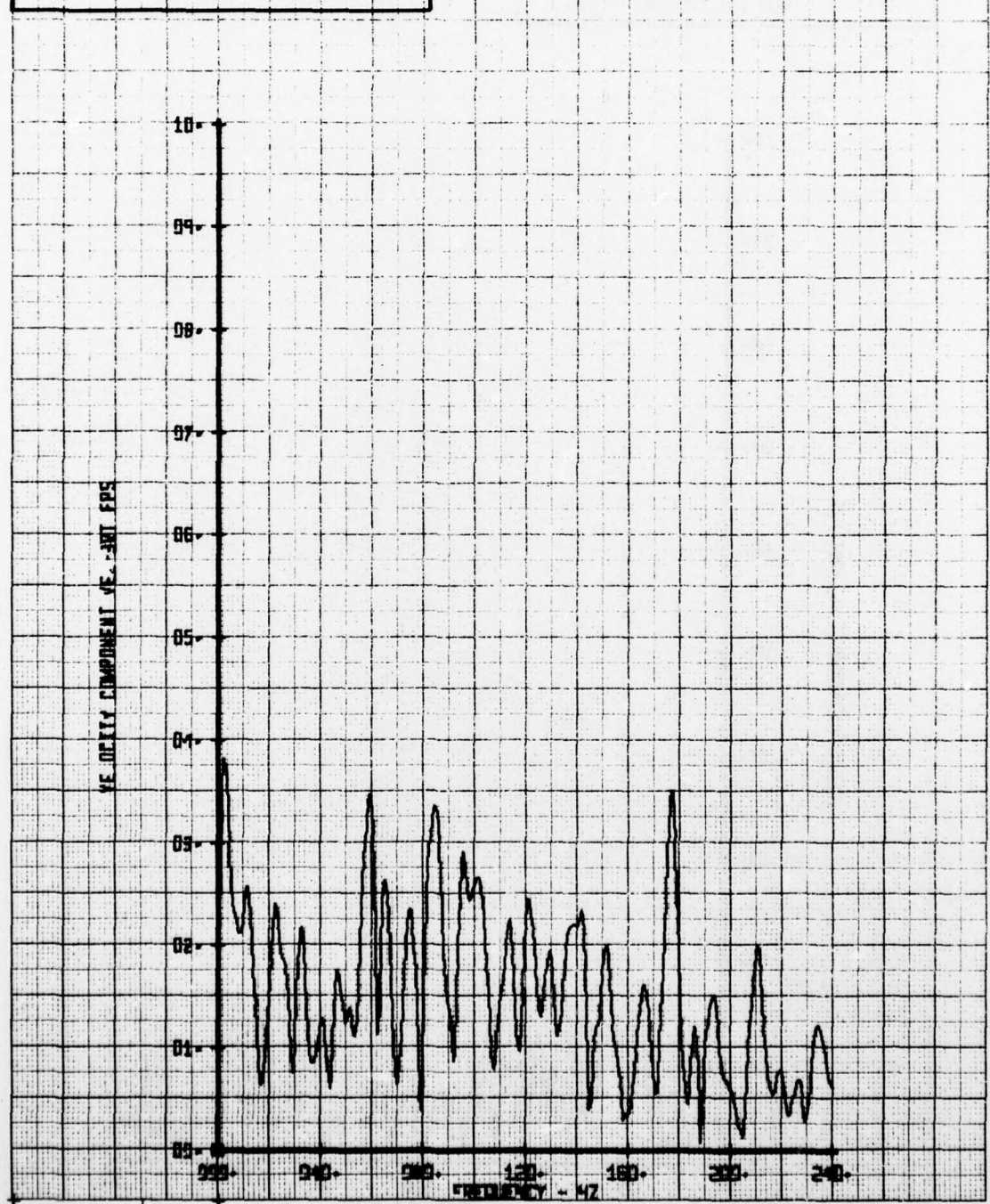


280

SET 74
9VWT 169

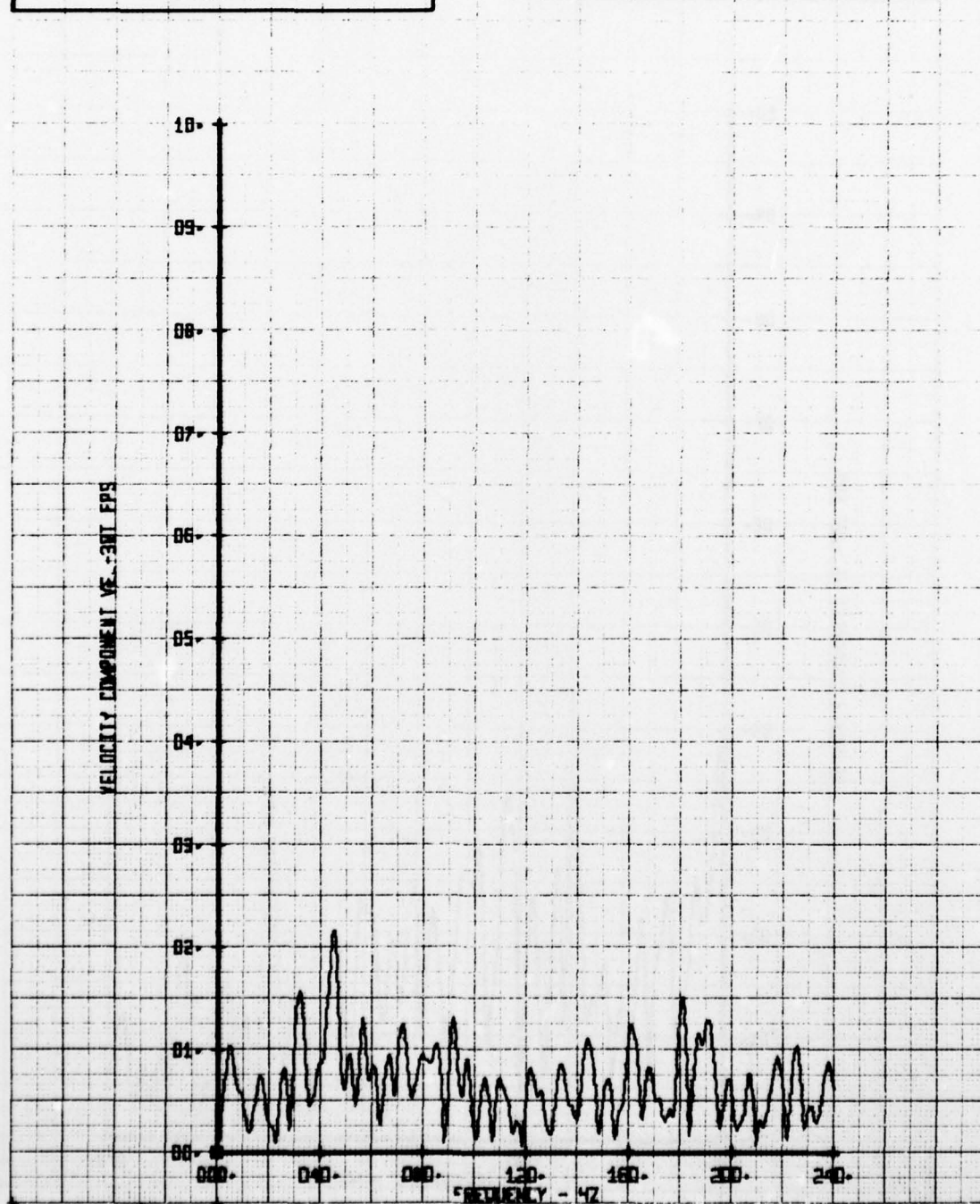
HOT FLTM WAKE FREQUENCY ANALYSIS
 AIR EJECT. 7.60-1.256 150PSI BASIC E1
 RUN 197 TP 2

LEGEND
 CH 71 PARAMETER
 VEL 3RT



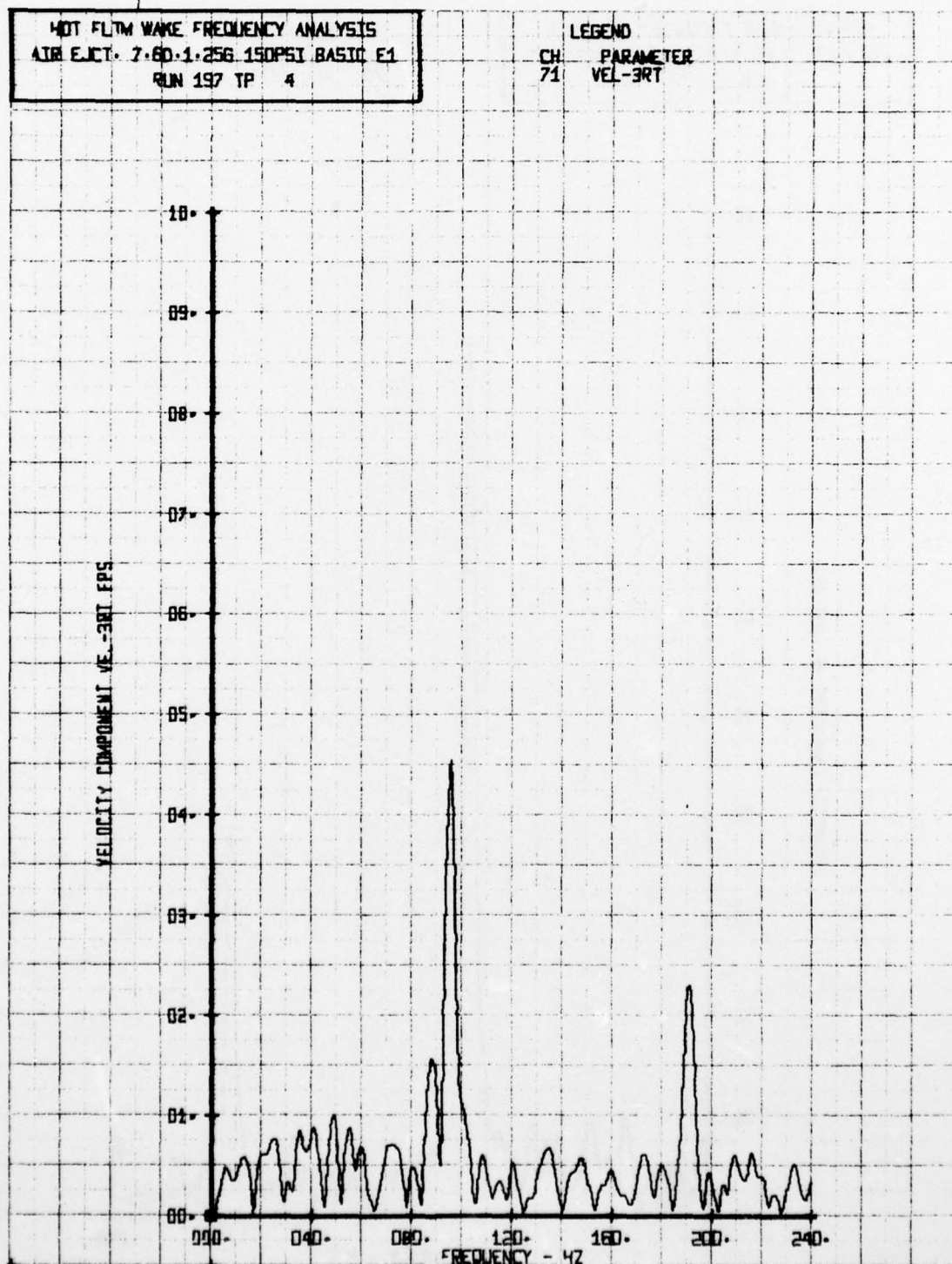
HOT FLTM WAKE FREQUENCY ANALYSIS
AIR EJECT. 7.60-1.256 150PSI BASIC E1
RUN 197 TP 3

LEGEND
CH PARAMETER
71 VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR EJECT. 7.60-1.256 150PSI BASIC E1
RUN 197 TP 4

LEGEND
CH 71 PARAMETER
VEL-3RT



HOT FILM WAKE FREQUENCY ANALYSIS
AIR E.C.T. 7.60-1.256 190PSI BASTIC E1
RUN 157 IP 5

LEGEND
CH 71 PARAMETER
VEL-3RT

VELOCITY COMPONENT VE - 3RT FPS

