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COMPILATION OF SHOCK, VIBRATION, AND ACOUSTIC DATA FROM TITAN VEHICLES

VOLUME III TITAN II SHOCK, VIBRATION, AND ACOUSTIC DATA

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HAMPTON, VIRGINIA

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COMPILATION OF SHOCK, VIBRATION, AND ACOUSTIC DATA FROM TITAN VEHICLES

Volume III

Titan II Shock, Vibration and Acoustic Data

January 1965

Approved

F. M. Condos, Program Manager

MARTIN COMPANY
Denver, Colorado
Aerospace Division of Martin-Marietta Corporation

FOREWORD

This report is submitted in accordance with Contract NAS1-4312 as amended. The report is submitted in three volumes. Volume I contains the general vehicle descriptions, performance information, and data acquisition system descriptions. Volume II contains Titan I vibration and acoustic data, and Volume III contains Titan II data.

CONTENTS

	Page
Foreword	ii
Contents	iii
Titan II Data	1
A. Vibration and Acoustic Data	1
B. Shock Data - Laboratory Tests	2
C. Shock Data - Stage I Captive Firings	3
D. Shock Data - Stage II Flight	4
Distribution	
Figure	
643 thru 981	23 thru 371
Table	
VI Titan II Measurement Locations	6
VII Summary of Titan II Vibration Data	9
VIII Summary of Titan II Acoustic Data	18
IX Summary of Shock Levels - Staging Ordnance T-II Laboratory Test	19

TITAN II DATA

A. Vibration and Acoustic Data

Table VI gives the measurement descriptions and locations of vibration transducers. Available photographs of transducer locations are shown in Figures 643 through 659. Measurements carrying a double number were acquired during captive firings by landline under the first set of numbers and by telemetry during flight under the second set of numbers.

The inboard profile showing component locations and transducer locations is given in Figure 660.

Table VII gives a summary of the Titan II measurements taken, their overall rms levels and indicates if a P.S.D. is presented.

Time Histories of Titan II flight data are very limited. The only ones available are presented in Figures 661 through 669.

The power spectral density plots are presented in Figure 670 through 929.

These plots are in the same order as given in the measurement summary (Table VII). All of the plots presented on level recorder type paper have the g^2/cps scale marked on them. Each major line represents 2.5 db in terms of g^2/cps, with a total range of 25 db. Spectral peaks going off scale or nearly off scale have been re-plotted as well as has the spectrum below 250 cps. The length of the loop used for the data is written on each record. The terms $87FS_1$ and $91FS_1$ refer to Stage I and Stage II engine ignition respectively.

Table VIII gives the location of acoustic measurements and summarizes the overall sound pressure levels obtained from measurements. The acoustic 1/3 octave plots are shown in Figures 930 through 955.

The 95% and 50% vibration probability levels are shown in Figures 956 through 981. Probability levels are given for each compartment for each firing configuration.

B. Shock Data - Laboratory Tests

Table IX lists the shock measurements obtained during a laboratory test in which the Stage I/Stage II separation nuts were blown.

Twelve single axis piezoelectric crystal accelerometers (Clevite #20 CW2) were used to acquire the shock data. They were attached to drilled and tapped phenolic blocks which were cemented to the vehicle structure at component mounting points. Seven (7) accelerometers were located in compartment IIIa - Sustained Engine Compartment, and five (5) were located in compartment II - Stage II Between Tanks.

Frequency responses of the instrumentation system components were as follows:

Accelerometers ... Natural frequency = 25KC
acceptable for measuring data up to 5 KC.

Amplifier .... 15 KC.

Tape Recorder .... 10 KC.

All data were tape recorded on 1 inch magnetic tape at 60 inches per second.

C. Shock Data - Stage I Captive Firings

Stage I vibration data were acquired during flights by use of the airborne vibration analyzer. The airborne analyzer. The airborne analyzer was not capable of analyzing shock or transient data; therefore, no shock data were obtained from stage I during flights. In order to obtain stage I ignition and shutdown transient information, SCF data were reviewed, which was recorded directly by landlines. The following tabulation presents the transients measured on stage I during SCF's. No Titan II data are available which would show the liftoff transients.

Missile Firing	Meas. No.	Axis	Location	Ignition Transient	Shutdown Transient
N-3 SCF 1(1)	3346	Vertical	Booster Eng. Gimbal Pad	± 60 g	± 80 g
N-3 SCF 1(1)	3353	Longitudinal	Booster Eng. Comp't Umbilical Mount	None	± 60 g
N-3 SCF 1(1)	3354	Radial	Booster Eng. Comp't Umbilical Mount	± 45 g	± 60 g
N-3 SCF	3353	Longitudinal	Booster Eng. Comp't Umbilical Mount	None	± 60 g
N-8 SCF	3354	Radial	Booster Eng. Comp't Umbilical Mount	None	± 55 g
N-8 SCF	3355	Tangential	Booster Eng. Comp't Umbilical Mount	None	± 120 g
N-8 SCF	3244	Longitudinal	Comp't IIIb Rate Gyro Mount	± 15 g	None
N-8 SCF	3245	Lateral	Comp't IIIb Rate Gyro Mount	None	± 12 g

D. Shock Data - Stage II Flight

Through the use of the airborne recorder, transmitted via FM/FM continuous telemetry, data of a transient nature were obtained at staging in compartment IIIa on stage II. Transients that were recorded can be associated simulatneously with staging nut detonation and stage II ignition. Other transients noted occurred at the initial thrust chamber pressure rise (PC_3 rise) during engine start. The staging recorder only recorded data for approximately 3 seconds, thus precluding the acquisition of data during the occurrance of other events, i.e., Stage II engine shutdown, vernier engine cutoff, etc. The transients recorded on stage II in compartment IIIa are tabulated below. The table also includes the stage II vibration level after the pertinent events occurred.

Summary of Shock Levels Recorded During Staging of Titan II Flights

Missile No.	Meas. No.	Axis	Meas. Description	Staging Nut	PC_3 Rise	Stage II Run Level
N-24	1394	Perp.	Fuel Tank Bottom	-	± 5.5 g	± 1.75 g
	1395	Parallel	Comp't IIIa-Low Freq. Accel.	-	± 7.2 g	± 4.5 g
	1388	Perp.	Fuel Tank Bottom	-	± 25 g	± 12.5 g
	1388	Parallel	Comp't IIIa-High Freq. Accel.	-	± 25 g	± 9 g
	1390	Long.	Ox. Fill & Drain Quick Disconnect Housing Comp't IIIa	± 105 g	± 70 g	± 13 g
N-25	1440	Long.	Oxidizer Prevalve	-	± 20 g	± 13 g
	1441	Radial	Comp't IIIa	-	± 10 g	± 8 g
	1442	Radial	False Tank Bottom @	-	± 45 g	± 5 g
	1443	Long.	Ox. Fill & Drain Tripod, Comp't IIIa	-	± 100 g	± 25 g
N-31	1389	Parallel	False Tank Bottom Comp't IIIa	-	± 120 g	± 10 g
	1390	Long.	Oxidizer Fill & Drain Line Q. D. Housing Comp't IIIa	± 130 g	± 180 g	± 12 g

Summary of Shock Levels ...Titan II Flights (Con't)

Missile No.	Meas. No.	Axis	Meas. Description	Staging Nut	PC_3 Rise	Stage II Run Level
N-32	1389	Long.	False Tank Bottom Comp't IIIa	-	$\pm$ 40 g	$\pm$ 5 g
N-3A	1506	Vert.	Mod III F Impact	$\pm$ 8 g	$\pm$ 10 g	$\pm$ 2 g
	1507	Lateral	Predictor Comp't II Truss	$\pm$ 7 g	$\pm$ 9 g	$\pm$ 1.5 g

TABLE VI

Titan II Measurement Locations

Meas. No.	Location	Axis	Photo Figure No.
Compartment I Structure			
744, 3402 745, 3403 746, 3404	Martin/G.E. R/V Interface Flange Compartment I - Airframe	Longitudinal Tangential Radial	643
Compartment II Truss			
278, 3395 279, 3373 280, 3394	Mounting Pt. Of Stage II Rate Gyro, Compartment II - Truss	Vertical Longitudinal Lateral	644
551 552 553	Interial Measuring Unit Mounting Pt. Compartment II - Truss	Lateral Longitudinal Vertical	645
896 897 898	Instrumentation Truss Adjacent to APS and IPS Destruct Relays	Longitudinal Lateral Vertical	646
1506 1507	Mod III F Impact Predictor Mounting Pt. Compartment II - Truss	Vertical Lateral	
Compartment II Structure			
750, 3396 751, 3397 752, 3398	Stringer 2C Compartment II - Airframe Sta. 370.5	Longitudinal Tangential Radial	647
1484 1485 1486	Stringer #1C Compartment II Sta. 370.5 - Airframe	Tangential Radial Longitudinal	
Compartment IIIa Structure			
893, 3476 894, 3477 895, 3478	Stringer 24 Compartment IIIa - Airframe Sta. 485	Longitudinal Radial Tangential	648
1014, 3505 1015, 3506 1016, 3507	Vernier Motor Support #2 Compartment IIIa Sustainer Engine Compartment - Airframe	Longitudinal Tangential Radial	649
1390	Oxidizer Fill and Drain Line Quick Disconnect Housing Compartment IIIa - Airframe	Longitudinal	650

TABLE VI (Con't)

Compartment IIIa Structure Con't.

Meas. No.	Location	Axis	Photo Figure No.
3416	Stringer 9B Adjacent Hydraulic	Longitudinal	651
3417	Motor Pump Mountin Compartment	Tangential	
3418	IIIa-Airframe Sta. 488	Radial	
Compartment IIIa Tank Dome			
1387	Fuel Tank Bottom, Compartment	Longitudinal	652
1388	IIIa (Sustainer Engine)	Perpendicular	
1389		Parallel	
1176	Fuel Outage Sensor Stage II	Perpendicular	
1177	Compartment IIIa-Fuel Tank	Tangential	
1178	Bottom	Parallel	
1440	Oxidizer Prevalve Compartment	Longitudinal	653
1441	IIIa (Sustainer Engine)	Radial	
Compartment IIIb Tank Top			
417, 3244	Stage I Rate Gyro Mount,	Longitudinal	654
418, 3245	Compartment IIIb - Tank	Lateral	
419, 3243	Dome	Vertical	
Compartment IV Structure			
763, 3390	Stringer 14A Compartment IV-	Longitudinal	655
764, 3391	Airframe Sta. 937.8	Radial	
765, 3392		Tangential	
1187	Stringer 7A Sta. 937.8	Tangential	
1188	Compartment IV-Airframe	Radial	
Compartment IV Tank Bottom			
3387	Oxidizer Outage Sensor	Perpendicular	656
3388	Compartment IV-Tank Bottom	Parallel	
3389		Tangential	
Compartment V Structure			
3353	Umbilical Mount Booster	Longitudinal	657
3354	Compartment V Stringer 16A-	Radial	
3355	Airframe	Tangential	

TABLE VI (Con't)

Compartment V Tank Bottom

Meas. No.	Location	Axis	Photo Figure No.
738, 3407 739, 3405 740, 3406	Fuel Outage Sensor Compartment V - Tank Bottom	Tangential Parallel Perpendicular	658

Compartment V Engine

3344 3345 3346	Engine #2 Gimbal Pad Stage I Engine	Longitudinal Lateral Vertical	659

TITAN II ACOUSTIC MEASUREMENTS

Meas. No.	Description
3219	SPL Between Tanks Stage I Compartment (IV) Internal
3319	SPL Booster Engine Compartment (V) External
3320	SPL Between Tanks Stage I Compartment (IV) External
3321	SPL Sustainer Engine Compartment (IIIa) Internal
3322	SPL Sustainer Engine Compartment (IIIa) External
3323	SPL Forward Compartment (I) Stage (II) Internal
3327	SPL Stage II Between Tanks Compartment (II) External
3328	SPL Stage II Between Tanks Compartment (II) Internal

TABLE VII

Summary of Titan II Vibration Data

Compartment I Structure Data

1	2	3	4	5	6	7	8	9	10	11
		Overall G's rms Measured				PSD Captive		PSD Flight		
Missile & Firing	Meas. No.	Stg. I Fire	Stg. II Fire	Tran-sonic	Max Q	Stg. I Fire	Stg. II Fire	L/O	Tran onic	Max Q
N-4 SCF	744	5.80	5.30			X	X			
	745	16.80	15.30			X	X			
	746	10.10	8.80			X	X			
N-5 SCF	744	5.20	5.20			X	X			
	745	20.90	19.20			X	X			
	746	8.10	5.10			X	X			
N-8 SCF	3402	3.60	4.00			X	X			
	3403	7.70	8.00			X	X			
	3404	8.80	9.20			X	X			
N-6 Flt.	744	2.40		3.30	7.20			X	X	X
	745	5.30		6.90	10.20			X	X	X
	746	3.80		4.30	7.70			X	X	X
				Compartment II Truss						
N-1 FRF	279	.90				X				
N-1 SCF	551	2.75				X				
	552	2.25				X				
	553	1.62				X				
	896	2.40	2.10			X	X			
	897	2.20	2.70			X	X			
	898	4.30	5.00			X	X			

TABLE VII (Con't)

Compartment II Truss Con't.

1	2	3	4	5	6	7	8	9	10	11
N-2 FRF	551	2.50				X				
	552	2.50				X				
	553	2.30				X				
N-3 SCF 1A	896	2.20	2.10			X	X			
	897	2.70	3.30			X	X			
	898	3.00	3.40			X	X			
N-3 SCF 2A	278	No Stg. I	4.00				X			
	279	Firing	4.90				X			
	896	No Stg. I	2.10				X			
	897	Firing	3.50				X			
	898		4.40				X			
N-4 SCF	551	1.35				X				
	552	2.07				X				
	553	1.80	3.20			X	X			
N-5 SCF	278	1.80	3.40			X	X			
	279	1.90	4.00			X	X			
	280	2.30	4.00			X	X			
	551	1.80	3.30			X	X			
	552	3.30	4.20			X	X			
	553	1.90	2.60			X	X			
N-8 SCF	278	2.10	3.50			X	X			
	280	2.10	3.90			X	X			
	552	4.30	4.40			X	X			
N-1 Flt.	278	1.90		3.20	.90			X	X	X
	279	2.50		5.60	1.70			X	X	X
	280	4.20		8.30	2.00			X	X	X

TABLE VII (Con't)

Compartment II Truss Con't.

1	2	3	4	5	6	7	8	9	10	11
N-2 Flt.	551	5.60		5.70	4.90			X	X	X
	552	4.40		4.60	3.40			X	X	X
	553	2.40		2.70	1.60			X	X	X
N-3 Flt.	551	3.20		3.90	2.20			X	X	X
	552	3.20		4.00	2.50			X	X	X
	553	2.70		3.40	2.20			X	X	X
	1506	4.00		3.62	5.75			X	X	X
	1507	2.62		2.50	3.62			X	X	X
N-4 Flt.	278	2.20		6.00	1.40			X	X	X
	279	2.30		5.00	1.50			X	X	X
	280	3.30		6.80	2.00			X	X	X
	896	.96		.88	.57			X	X	X
	897	1.65		1.44	1.12			X	X	X
	898	1.86		1.72	1.22			X	X	X
N-5 Flt.	896	.90		.86	.87			X	X	X
	897	-		1.17	.96					
	898	2.40		1.68	1.05					
N-6 Flt.	552	3.50		5.60	1.80					
				Compartment II Structure						
N-3 SCF 1A	752	10.70	9.40							
N-3 SCF 2A	750	No Stg. I	2.50				X			
	751	Firing	8.30				X			
	752		9.00				X			

TABLE VII (Con't)

Compartment II Structure Con't

1	2	3	4	5	6	7	8	9	10	11
N-4 SCF	3397	9.90	9.10			X	X			
	3398	21.60	17.60			X	X			
N-8 SCF	750	3.80	4.90			X	X			
	751	24.00	22.40			X	X			
	752	10.40	11.20			X	X			
N-14 SCF	3396	2.20	3.90			X	X			
	3397	7.40	8.00			X	X			
N-3A Flt.	1484	12.60		17.50	8.10			X	X	X
	1485	8.30		8.40	5.20			X	X	X
	1486	3.20		3.90	3.50			X	X	X
N-6 Flt.	750	4.30		5.40	2.60			X	X	X
	751	41.70		43.40	14.20			X	X	X
	752	4.70		7.40	5.90					
				Compartment IIIa Structure						
N-1 FRF	894	10.00				X				
	895	17.30				X				
N-1 SCF	894	18.00	45.30			X	X			
	895	37.90	57.90			X	X			
	3416	2.00	4.80			X	X			
	3417	3.30	8.80			X	X			
	3418	3.30	8.80			X	X			
	3505	2.80	6.80			X	X			
	3506	2.50	5.00			X	X			

TABLE VII (Con't)

Compartment IIIa Structure Con't.

1	2	3	4	5	6	7	8	9	10	11
N-2 FRF	1014	4.10				X				
	1015	7.20				X				
	1016	4.30				X				
N-3 SCF 1A	3505	2.60	5.70			X	X			
N-3 SCF 2A	3505	No Stg. I	6.00				X			
	3506	Fire	4.60				X			
	3507		4.50				X			
N-4 SCF	893	7.00	11.00			X	X			
	894	17.70	27.50			X	X			
	895	23.80	52.00			X				
N-5 SCF	3476	5.30	12.80				X			
	3477	12.00	31.20			X	X			
	3478	20.00	48.00			X	X			
N-8 SCF	893	4.80	9.70			X	X			
	894	11.80	13.50			X	X			
	895	17.70	40.00			X	X			
	1014	2.60	6.00			X	X			
	1015	2.00	2.60			X	X			
	1016	2.40	3.80			X	X			
N-14 SCF	3476	4.00	12.00			X	X			
	3478	16.80	55.00			X	X			
N-1 Flt.	894	8.40		8.30	6.80			X	X	X
	895	16.50		12.70	17.70			X	X	X

TABLE VII (Con't)

Compartment IIIa Structure Con't

1	2	3	4	5	6	7	8	9	10	11
N-2 Flt.	1014	2.20		3.30	4.30			X	X	X
	1015	6.30		4.80	7.20			X	X	X
	1016	3.20		3.10	5.90			X	X	X
N-5 Flt.	1015	2.30		2.50	2.40			X	X	X
	1016	1.70		2.20	2.20			X	X	X
N-6 Flt.	893	4.40		3.40	8.80			X	X	X
	894	12.80		10.40	16.00			X	X	X
	895	21.70		10.20	25.60			X	X	X
N-25 Flt.	1440	2.60		2.50	1.60					
	1441	1.90		1.70	1.60					
N-31 Flt.	1390	19.50		18.50	48.00					
				Compartment IIIa Tank Dome						
N-13 Flt.	1176	6.80		7.00	14.00			X	X	X
	1177	13.00		12.00	23.00			X	X	X
	1178	13.00		14.00	16.00			X	X	X
N-24 Flt.	1387	2.20		4.00	5.50			X	X	X
				Compartment IIIb Tank Dome						
N-1 FRF	417	6.90				X				
	418	3.30				X				
N-1 SCF	3243	3.80	1.60			X	X			
	3244	6.00	2.30			X	X			
	3245	2.20	1.10			X	X			
N-2 FRF	417	6.60				X				
	418	3.30				X				
	419	3.10								

TABLE VII (Con't)

Compartment IIIb Tank Dome

1	2	3	4	5	6	7	8	9	10	11
N-5 SCF	417	4.60	1.80			X	X			
	418	1.40	.90			X	X			
	419	3.60	1.70			X	X			
N-8 SCF	3243	1.70	.90			X	X			
	3244	4.40	2.10			X	X			
	3245	3.20	1.30			X	X			
N-1 Flt.	417	2.70		5.40	13.10			X		X
	418	4.40		7.50	10.10			X		X
N-2 Flt.	417	5.80		11.20	22.40			X	X	X
	418	2.00		3.20	14.20			X	X	X
	419	2.50		3.20	9.70			X	X	X
N-3A Flt.	417							X	X	X
	418							X	X	X
	419							X	X	X
				Compartment IV Structure						
N-1 FRF	764	31.20				X				
	765	6.90								
N-1 SCF	3390	5.00	1.40			X	X			
	3391	20.00	4.20			X	X			
	3392	40.00	8.80			X	X			
N-5 SCF	3390	7.40	2.00			X	X			
	3391	25.00	5.80			X	X			
	3392	44.00	10.50			X	X			
N-14 SCF	3390	16.80	4.64			X	X			
	3391	4.16	1.28			X	X			

TABLE VII (Con't)

Compartment IV Structure

1	2	3	4	5	6	7	8	9	10	11
								X		X
N-1 Flt.	763	10.20		14.20	18.00			X		X
	764	31.20		14.20	20.40			X		X
	765	59.40		12.30	28.90					
								X	X	X
N-4 Flt.	763	7.40		3.60	5.00			X	X	X
	764	33.40		6.40	7.30			X	X	X
	765	44.20		11.30	11.00					
								X	X	X
N-6 Flt.	765	61.80		16.80	17.50					
N-14 Flt.	1187	52.80		8.00	13.60					
	1188	24.00		6.90	9.60					
				Compartment IV Tank Dome						
							X			
N-3 SCF 1A	3387	---	3.50				X			
	3389	8.60	7.50			X				
						X	X			
N-4 SCF	3388	7.00	3.40			X	X			
	3389	10.00	4.80							
						X	X			
N-8 SCF	3387	5.30	2.60			X	X			
	3388	5.10	2.60			X	X			
	3389	6.40	3.40							
				Compartment V Structure						
						X	X			
N-3 SCF 1A	3353	10.10	1.80			X	X			
	3354	13.80	1.80							

TABLE VII (Con't)

Compartment V Structure

1	2	3	4	5	6	7	8	9	10	11
N-5 SCF	3353	20.30	3.80			X	X			
	3354	30.80	5.90			X	X			
	3355	14.00	3.10			X	X			
N-8 SCF	3353	40.00	7.40			X	X			
	3354	12.00	2.60			X	X			
	3355	40.00	9.00			X	X			
				Compartment V Tank Dome						
N-1 SCF	738	15.30	4.30			X	X			
	739	23.00	4.00			X	X			
	740	17.80	3.90			X	X			
N-2 FRF	738	17.20				X				
	739	37.90				X				
	740	22.30				X				
N-4 SCF	3405	31.20	4.40			X	X			
	3406	14.80	2.60			X	X			
	3407	16.20	----			X				
N-2 Flt.	738	19.20		8.50	10.20			X	X	X
	739	33.60		17.00	20.00			X	X	X
	740	21.00		10.00	12.40			X	X	X
N-5 Flt.	738	10.20		7.50	7.30			X	X	X
	739	14.80		10.90	13.60			X	X	X
N-3 SCF 1A	3346	10.50	1.00			X	X			
N-5 SCF	3345	6.80	1.10			X	X			
	3346	8.30	1.00			X	X			

TABLE VIII

Summary of Titan II Acoustic Data

Missile & Firing	Meas. No. & Compartment	Overall SPL I Fire	Overall SPL II Fire	Overall SPL Transonic	Overall SPL Max Q	SPL Plot				Internal or External*
						I Fire	II Fire	Trans	Max Q	
N-1 SCF	3323 (I)	140.0 db	137.0 db			X	X			Internal
N-3 SCF 1A	3323 (I)	144.0 db	141.5 db			X	X			Internal
N-1 SCF	3327 (II)	150.5 db	146.0 db							
N-3 SCF 1A	3327 (II)	151.0 db	146.0 db			X	X			External
N-8 SCF	3327 (II)	150.5 db	147.0 db			X	X			External
N-3 SCF 1A	3328 (II)	135.0 db	136.0 db			X	X			External
						X	X			External
N-1 SCF	3321 (IIIa)	150.0 db	159.0 db							
N-3 SCF 2A	3321 (IIIa)	------	154.0 db			X	X			Internal
N-5 SCF	3321 (IIIa)	151.0 db	157.0 db							Internal
N-8 SCF	3321 (IIIa)	148.5 db	154.5 db			X	X			Internal
N-4 Flt.	1105 (IIIa)	143.0 db				X	X			Internal
N-5 Flt.	1105 (IIIa)	142.8 db		132.0 db	134.0 db	X		X	X	Internal
					132.0 db					Internal
N-1 SCF	3322 (IIIa)	147.5 db	150.0 db							
N-3 SCF 1A	3322 (IIIa)	155.0 db	152.5 db			X	X			External
N-8 SCF	3322 (IIIa)	155.0 db	155.0 db			X	X			External
						X	X			External
N-1 SCF	3219 (IV)	139.0 db	129.5 db							
N-3 SCF 1A	3219 (IV)	142.0 db	133.0 db			X	X			Internal
N-5 SCF	3219 (IV)	133.0 db	123.0 db			X	X			Internal
						X	X			Internal
N-1 SCF	3320 (IV)	155.0 db	141.0 db							
N-3 SCF 1A	3320 (IV)	153.0 db	140.0 db			X	X			External
N-5 SCF	3320 (IV)	152.0 db	141.0 db			X	X			External
N-8 SCF	3320 (IV)	152.0 db	141.5 db			X	X			External
						X	X			External
N-3 SCF 1A	3319 (V)	152.0 db	141.0 db							
N-5 SCF	3319 (V)	156.0 db	143.0 db			X	X			External
N-8 SCF	3319 (V)	154.0 db	193.5 db			X	X			External
							X			External

* All external microphones were flush mounted.

TABLE IX

Summary of Shock Levels - Staging Ordnance T-II Laboratory Test

Location	Peak G's	Frequency	Axis
Comp't IIIa @ Mounting Pt. of Hydraulic Regulator Unit - Run 2	± 230	666 cps	Long
	± 390	1540 cps	Long
	+ 300		
	- 440	2300 cps	Long
	± 1050 (Clipped)	5500 cps	Long
Comp't IIIa @ Mounting Pt. of Hydraulic Regulator Unit - Run 3	± 70	1175 cps	Long
	± 210	1540 cps	Long
	± 400	2360 cps	Long
	± 920	5140 cps	Long
Comp't IIIa @ Mounting Pt. of Hydraulic Regulator Unit - Run 2	± 120	1540 cps	Radial
	± 150	2500 cps	Radial
	± 700	6000 cps	Radial
Comp't IIIa @ Mounting Pt. of Hydraulic Regulator Unit - Run 3	± 50	1110 cps	Radial
	± 300	2340 cps	Radial
	± 580	4940 cps	Radial
Comp't IIIa @ Mounting Pt. of Hydraulic Motor Driven Pump - Run 2	± 26	330 cps	Long
	± 53	880 cps	Long
	± 64	2000 cps	Long
	± 106	2600 cps	Long
	± 220	4680 cps	Long
Comp't IIIa @ Mounting Pt. of Hydraulic Motor Driven Pump - Run 3	± 60	1250 cps	Long
	± 180	3750 cps	Long
	± 400	4380 cps	Long
Vernier Rocket #1 - Run 2	± 45	666 cps	Long
	± 100	3190 cps	Long
	± 220	3800 cps	Long
Vernier Rocket #1 - Run 3	± 65	645 cps	Long
	± 45	1850 cps	Long
	± 80	2630 cps	Long
	± 150	5000 cps	Long

TABLE IX (Con't)

Location	Peak G's	Frequency	Axis
Airframe Attachment Pt. of Roll Control Nozzle - Run 2	± 40	605 cps	Long
	± 310	1710 cps	Long
	± 380	2180 cps	Long
	± 540	5800 cps	Long
Airframe Attachment Pt. of Roll Control Nozzle - Run 3	± 75	735 cps	Long
	± 360	1950 cps	Long
	± 530	5760 cps	Long
Airframe Attachment Pt. of Roll Control Nozzle - Run 2	± 70	450 cps	Radial
	± 340	1630 cps	Radial
	± 640	6000 cps	Radial
Airframe Attachment Pt. of Roll Control Nozzle - Run 3	± 530	1685 cps	Radial
	± 540	8000 cps	Radial
Mounting Pt. of VHPS Power Switch - Run 2	± 45	525 cps	Long
	± 50	1330 cps	Long
	± 40	2300 cps	Long
	± 140	5600 cps	Long
Mounting Pt. of VHPS Power Switch - Run 3	± 20	590 cps	Long
	± 65	1900 cps	Long
	± 140	6300 cps	Long
Guidance Truss @ Staging Control Relay - Run 2	± 4	440 cps	Long
	± 32	1900 cps	Long
	± 25	2120 cps	Long
	± 35	4650 cps	Long
Guidance Truss @ Staging Control Relay - Run 3	± 32	590 cps	Long
	± 33	1990 cps	Long
	± 22	3970 cps	Long

TABLE IX (Con't)

Location	Peak G's	Frequency	Axis
Guidance Truss @ Staging Control Relay - Run 2	± 8	455 cps	Radial
	± 36	2000 cps	Radial
	± 41	3120 cps	Radial
	± 50	4350 cps	Radial
Guidance Truss @ Staging Control Relay - Run 3	± 17	577 cps	Radial
	± 32	1780 cps	Radial
	± 20	2500 cps	Radial
	± 19	2100 cps	Radial
	± 28	5300 cps	Radial
Guidance Truss @ VHPS Battery - Run 2	± 2	510 cps	Long
	± 5	1875 cps	Long
	± 6	4000 cps	Long
	± 19	4550 cps	Long
Guidance Truss @ VHPS Battery - Run 3	± 4	577 cps	Long
	± 4.5	1875 cps	Long
	± 6	2620 cps	Long
	± 7	4200 cps	Long
IMU Mounting Point - Run 2	± 1.5	570 cps	Lateral
	± 7	1875 cps	Lateral
	± 7	3160 cps	Lateral
	± 6	4225 cps	Lateral
IMU Mounting Point - Run 3	± 2	560 cps	Lateral
	± 8.5	1700 cps	Lateral
	± 9	2570 cps	Lateral
	± 7	4200 cps	Lateral
Stringer #3 Quadrant I Comp't II - Run 2	± 4	1000 cps	Long
	± 70	2060 cps	Long
	± 40	3460 cps	Long
	± 105	4000 cps	Long

TABLE IX (Con't)

Location	Peak G's	Frequency	Axis
Stringer #3 Quadrant I Comp't II - Run 3	± 15	625 cps	Long
	± 80	2060 cps	Long
	± 80	3850 cps	Long



Fig. 643 Compartment I - Structure, Meas 744, 745, 746, R/V Interface Flange

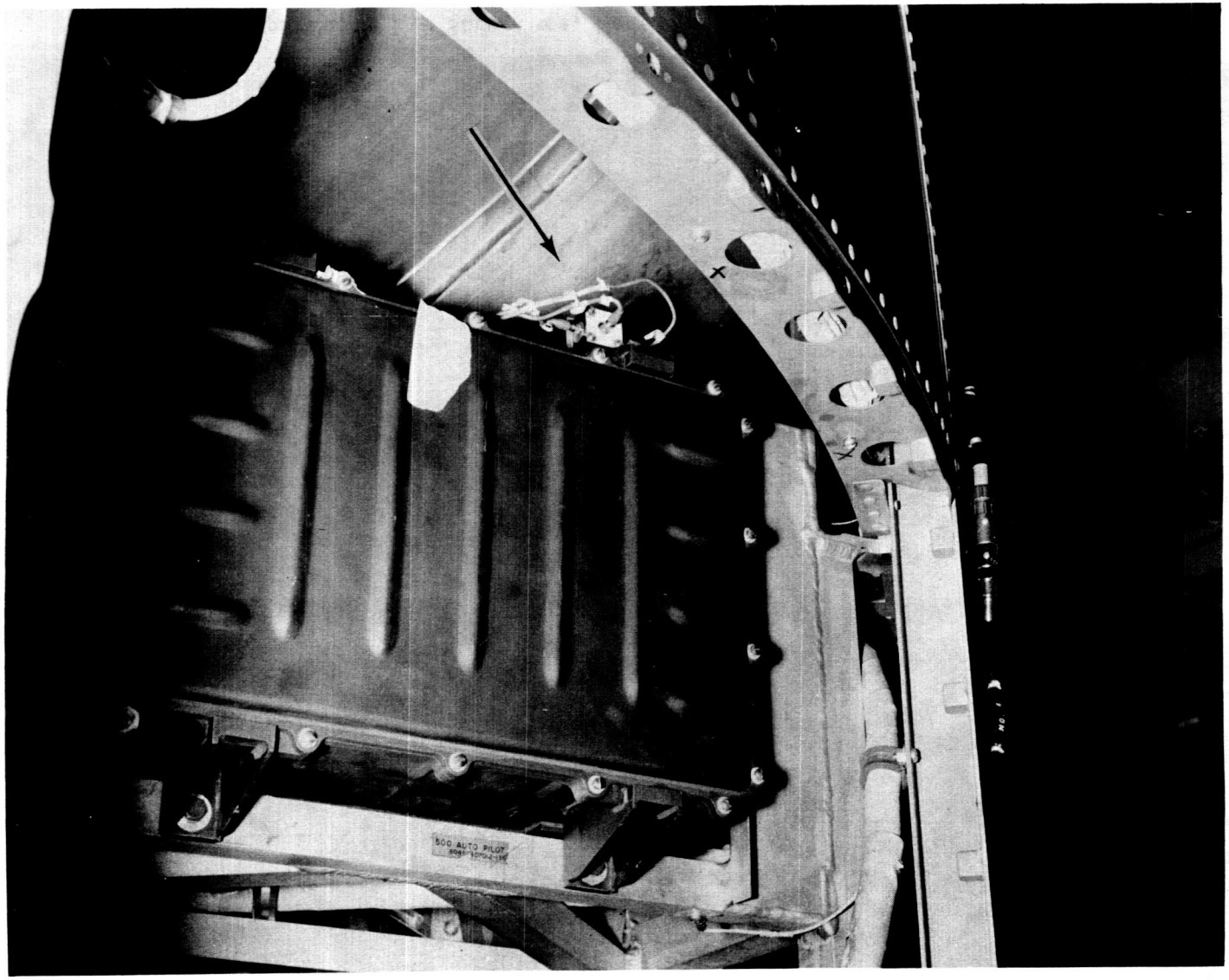


Fig. 644 Compartment II - Truss, Meas 278, 279, 280, Stage II Rate Gyro Mounting Point

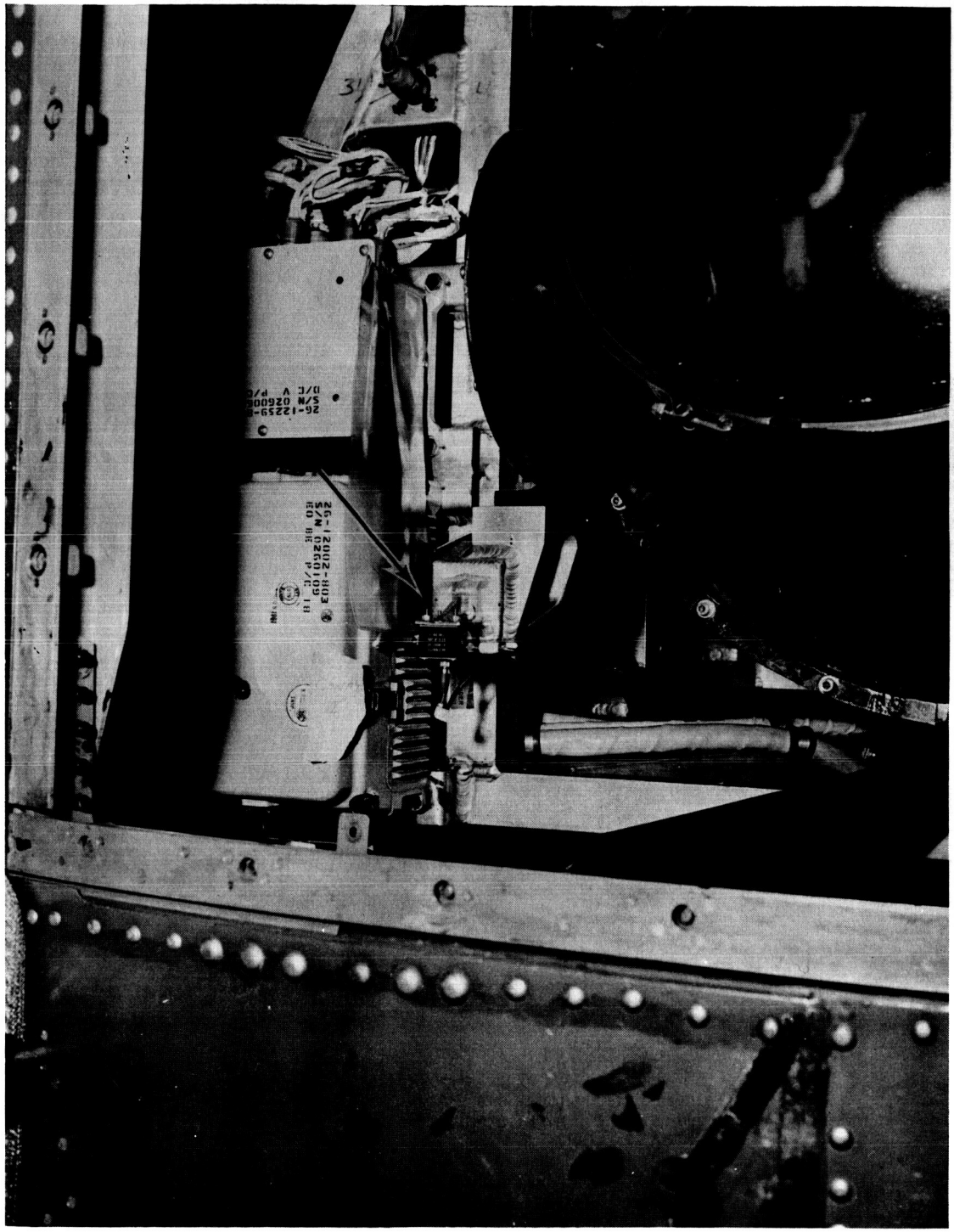


Fig. 645 Compartment II - Truss, Meas 551, 552, 553, IMU Mounting Point

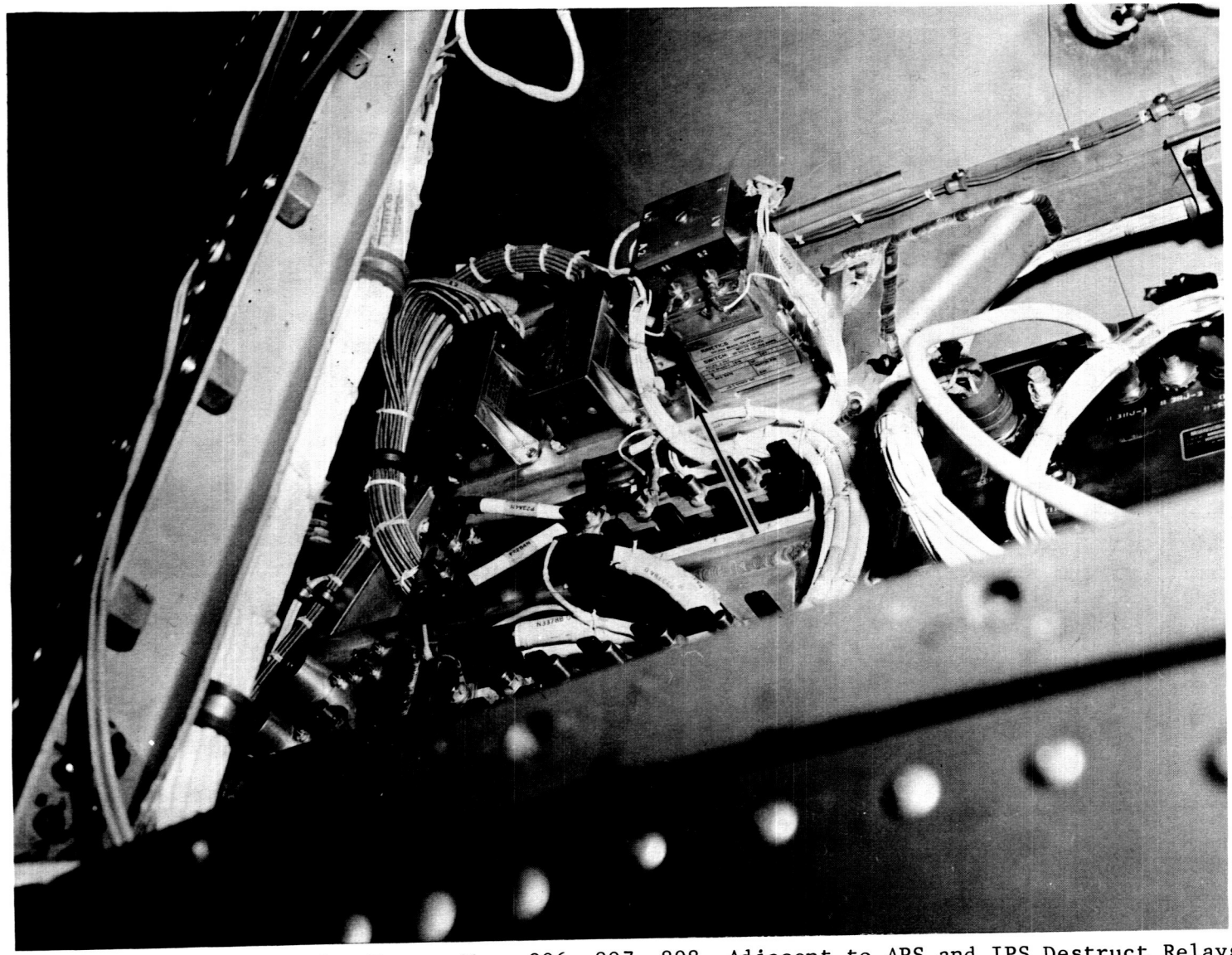


Fig. 646 Compartment II - Truss, Meas 896, 897, 898, Adjacent to APS and IPS Destruct Relays

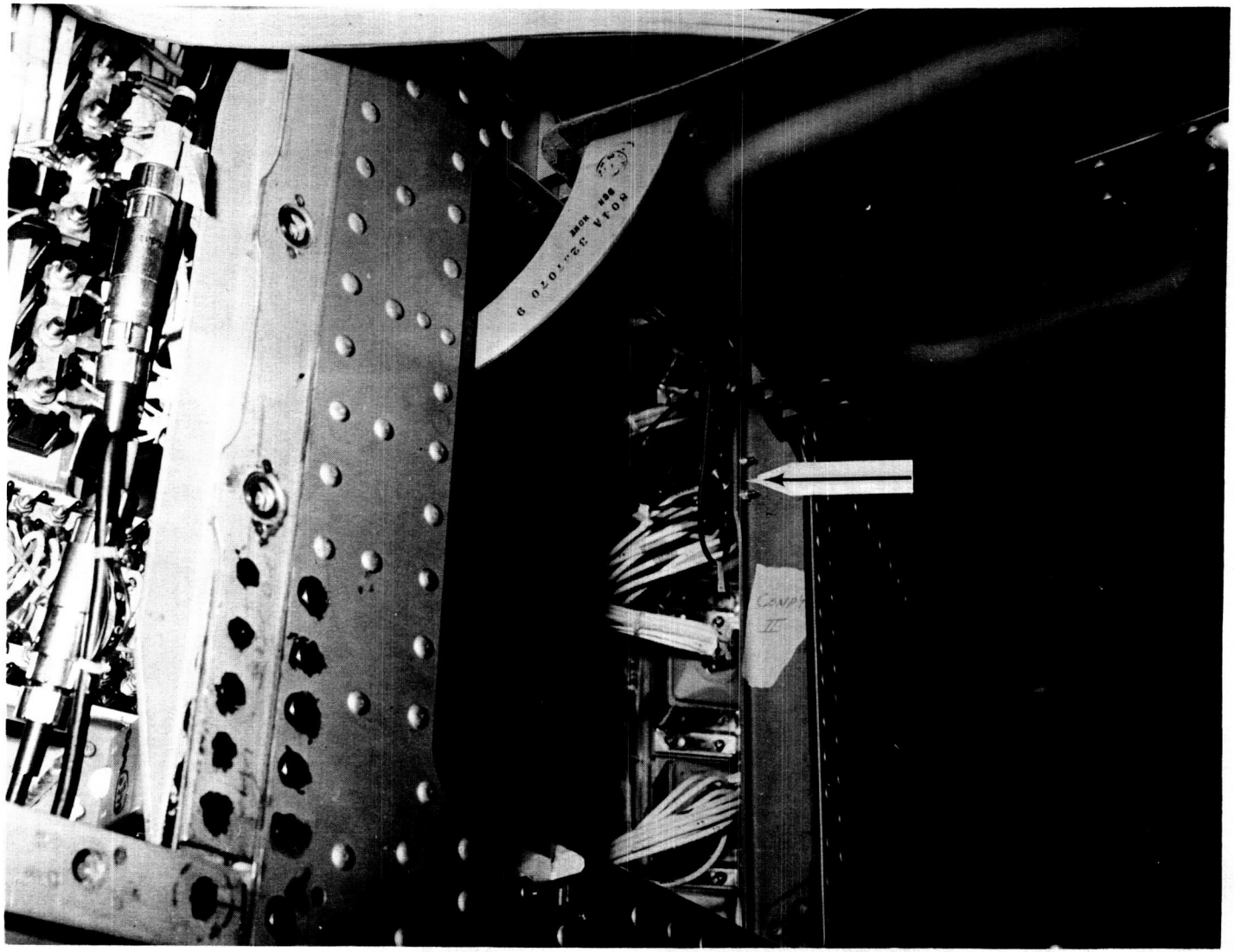


Fig. 647 Compartment II - Structure, Meas 750, 751, 752, Stringer #2C Sta. 370

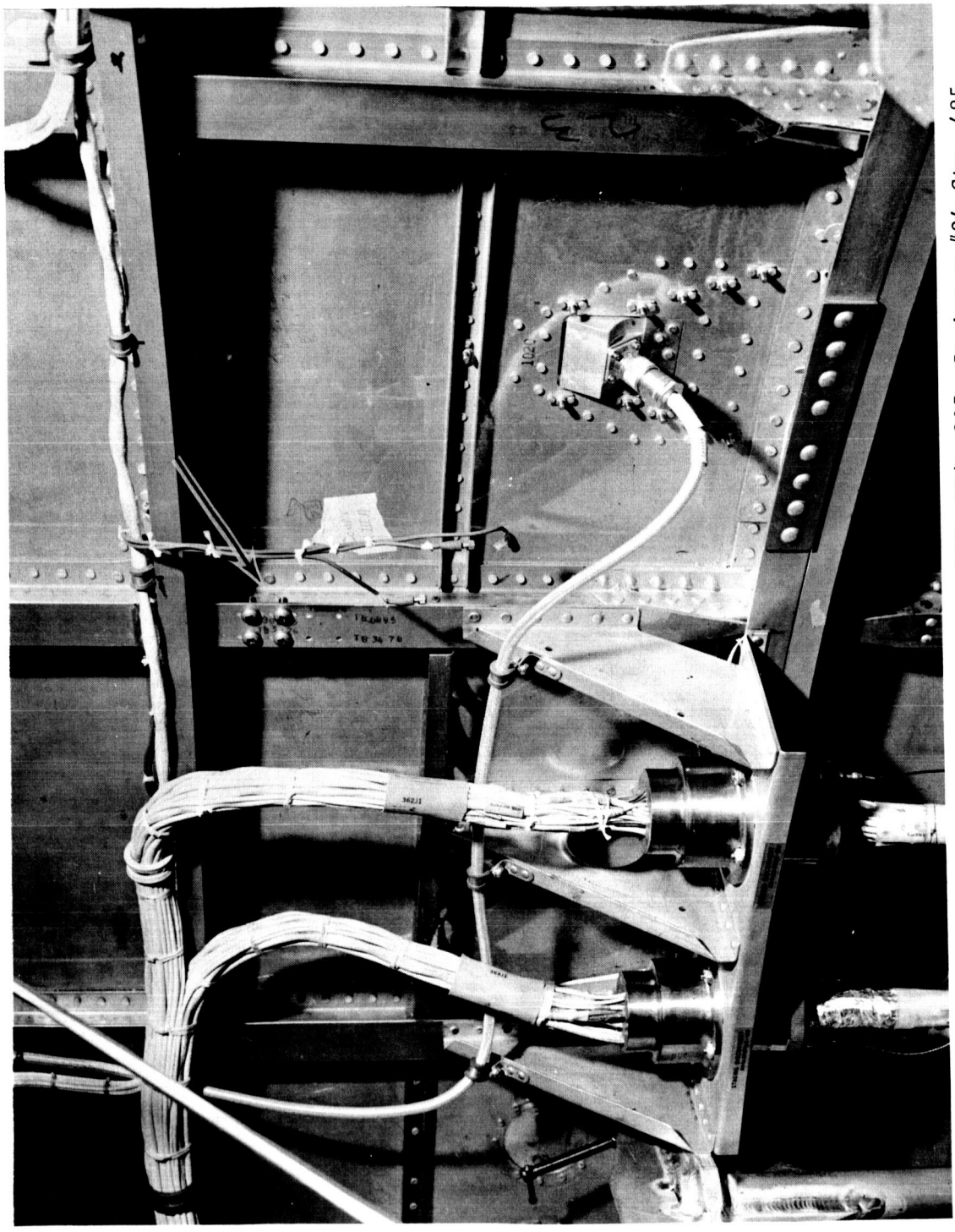


Fig. 648 Compartment IIIa Structure, Meas 893, 894, 895, Stringer #24 Sta. 485

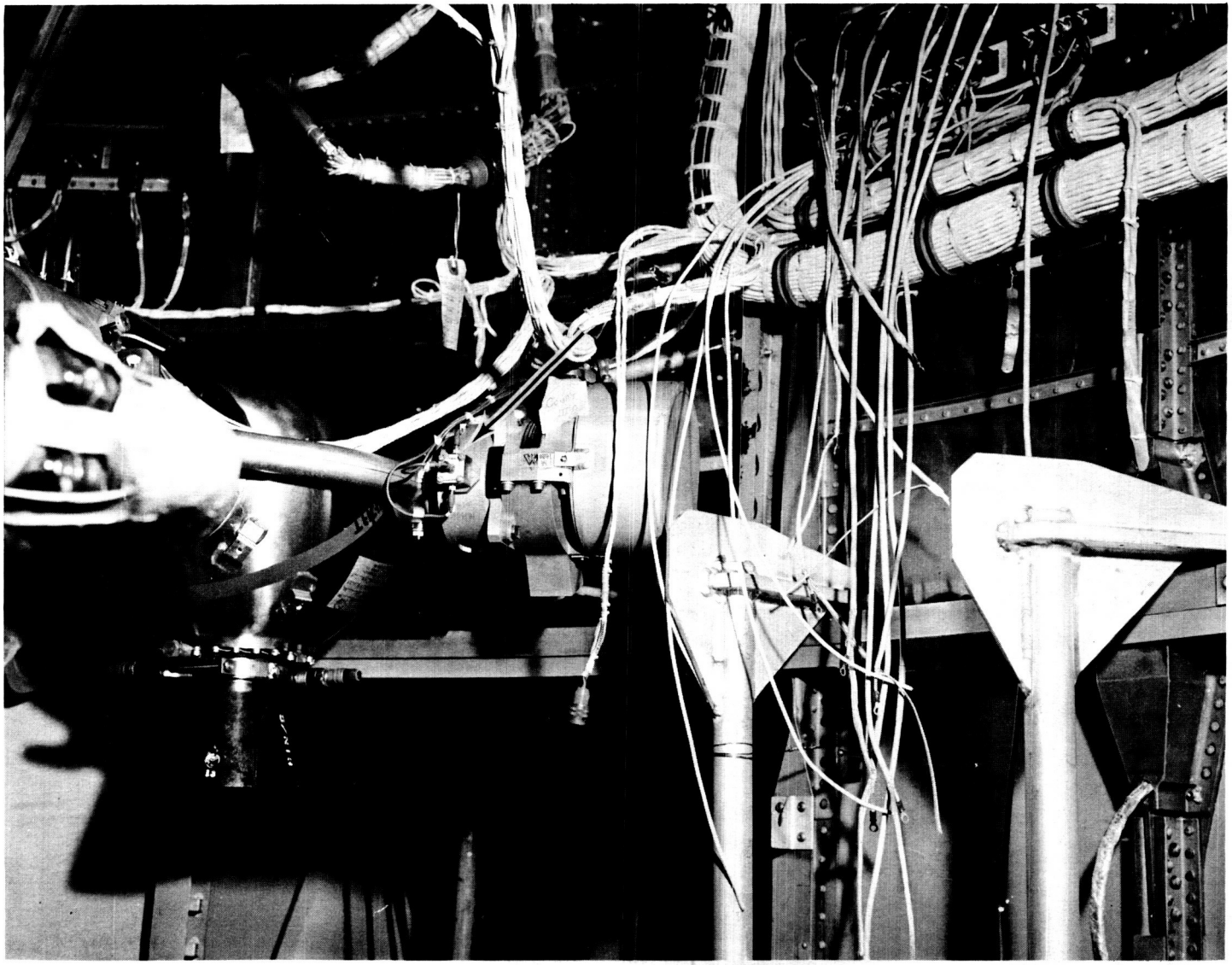


Fig. 649 Compartment IIIa - Structure, Meas 1014, 1015, 1016, Vernier Motor Support

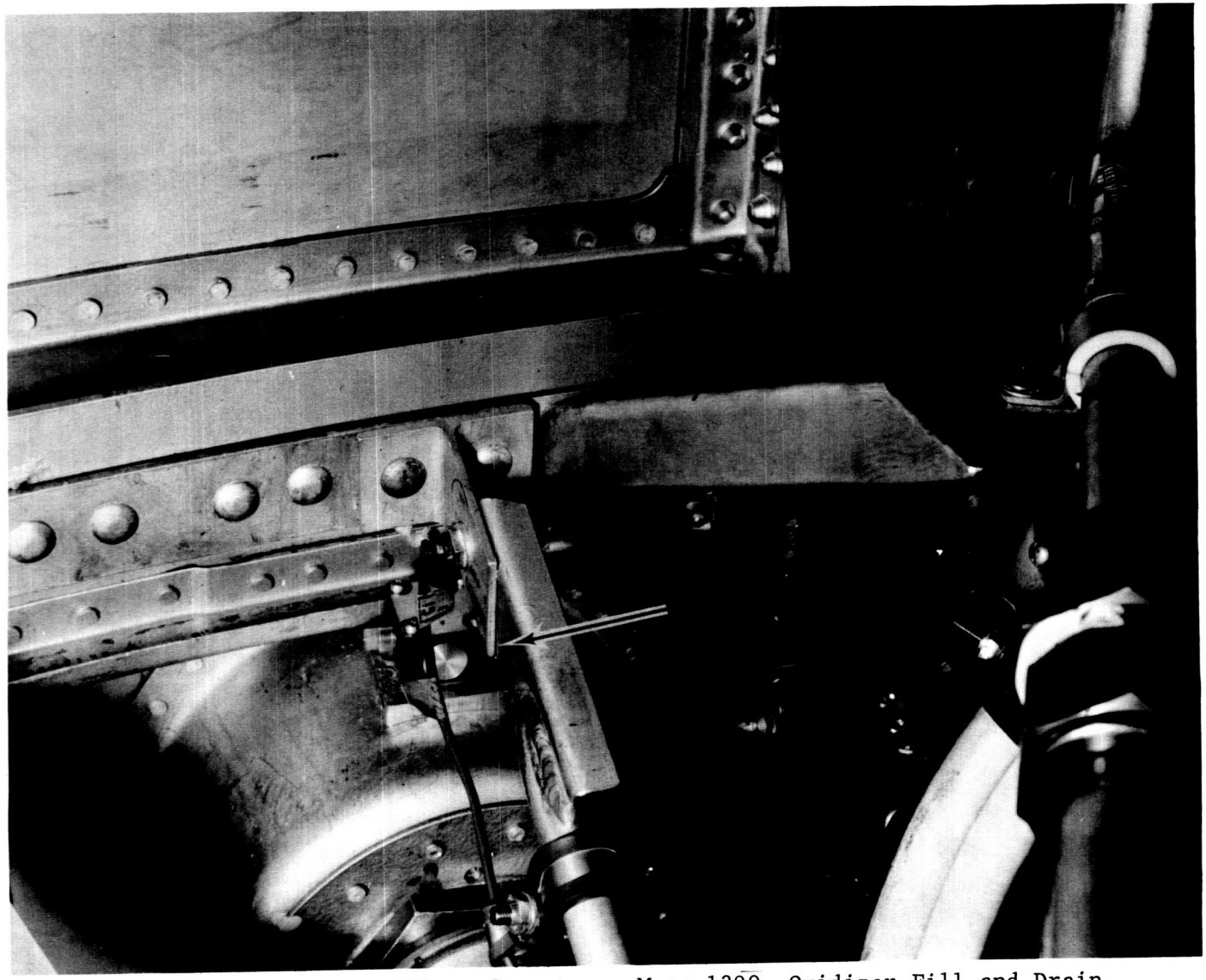


Fig. 650 Compartment IIIa - Structure, Meas 1390, Oxidizer Fill and Drain Quick Disconnect Housing Sta 497

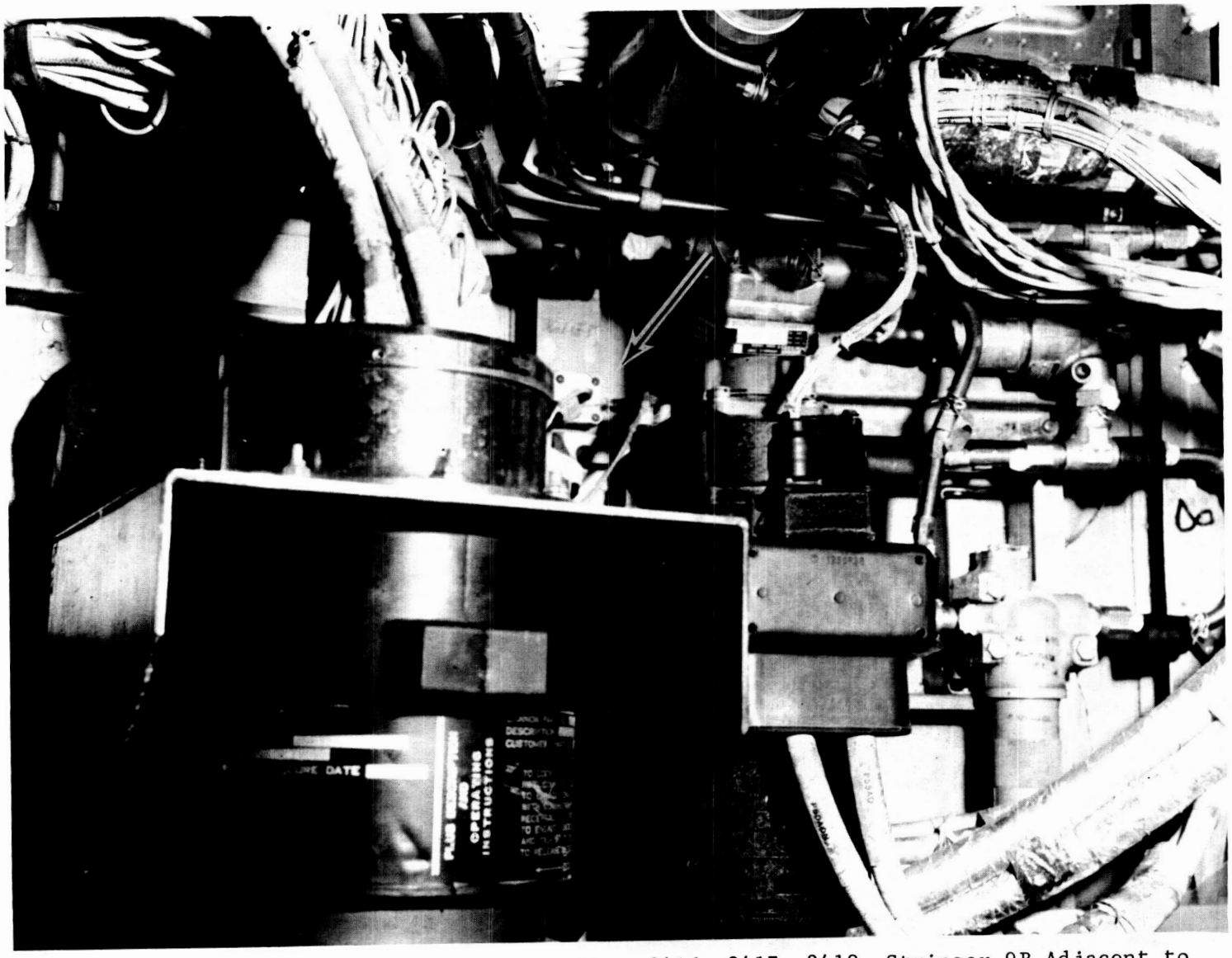


Fig. 651 Compartment IIIa - Structure, Meas 3416, 3417, 3418, Stringer 9B Adjacent to Hydraulic Motor Pump

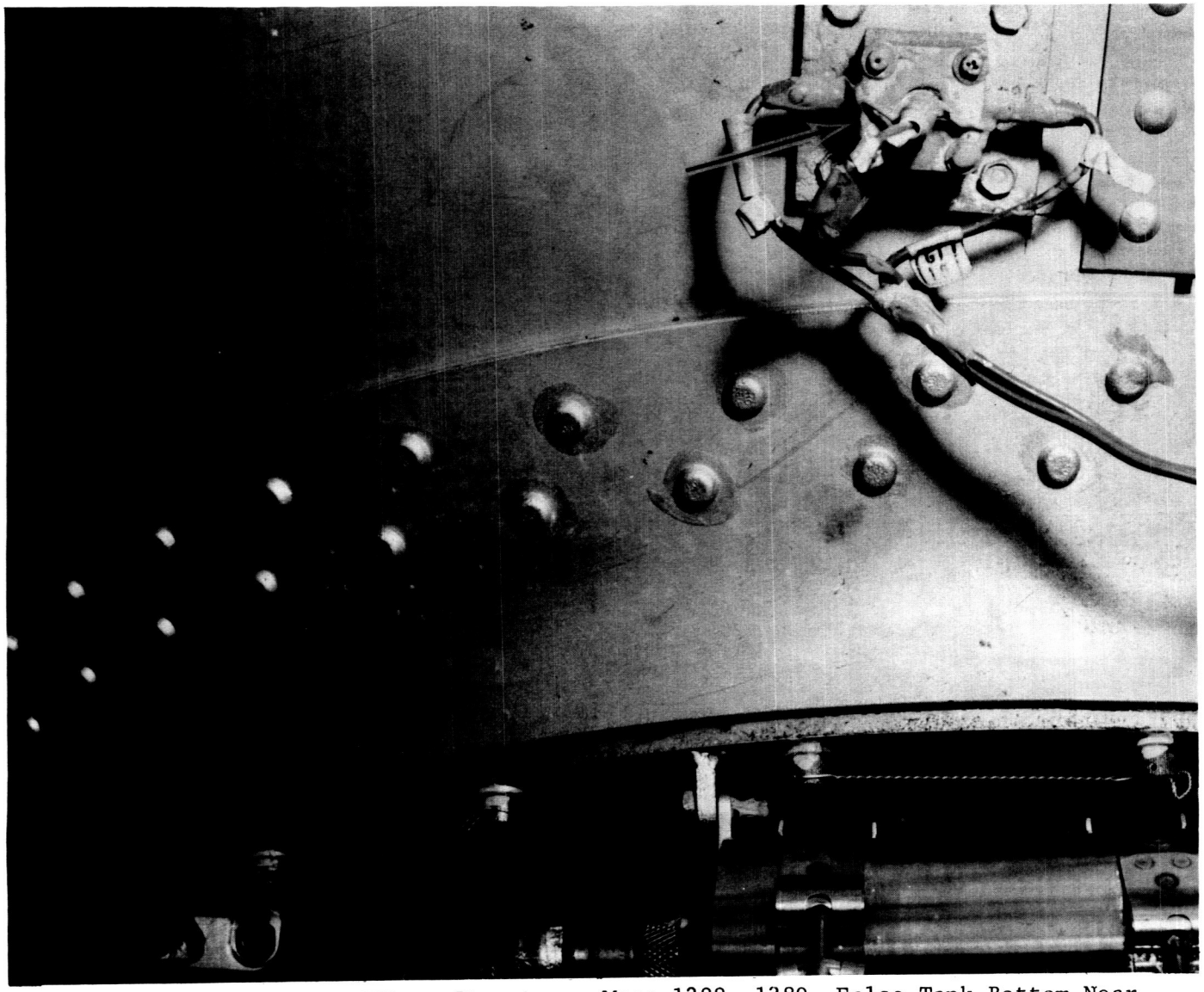


Fig. 652 Compartment IIIa - Structure, Meas 1388, 1389, False Tank Bottom Near Oxidizer Prevalve

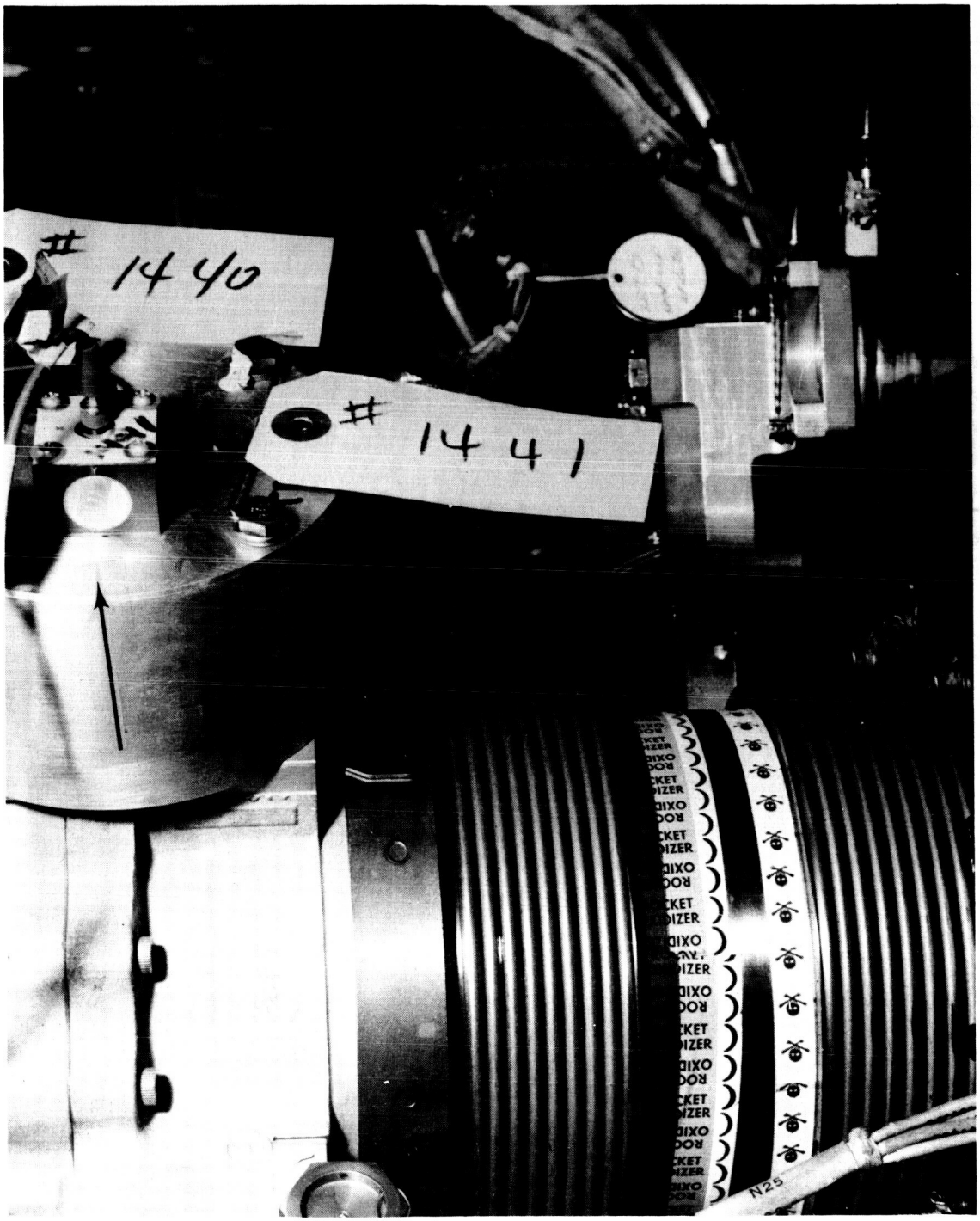


Fig. 653 Compartment IIIa - Tank Bottom, Meas 1440, 1441, On Oxidizer Prevalve

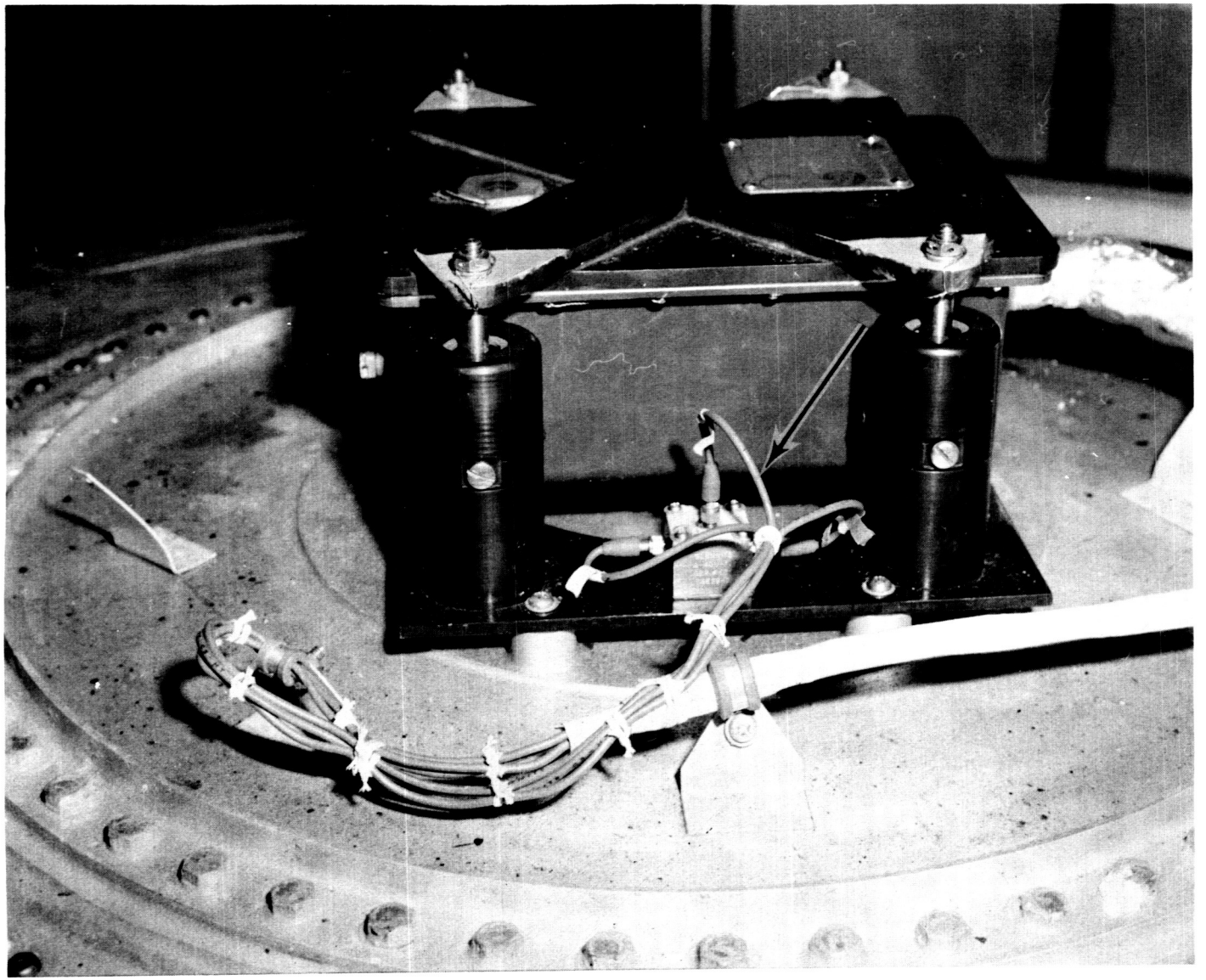


Fig. 654 Compartment III-6 - Tank Dome, Meas 417, 418, 419, Rate Gyro Mounting

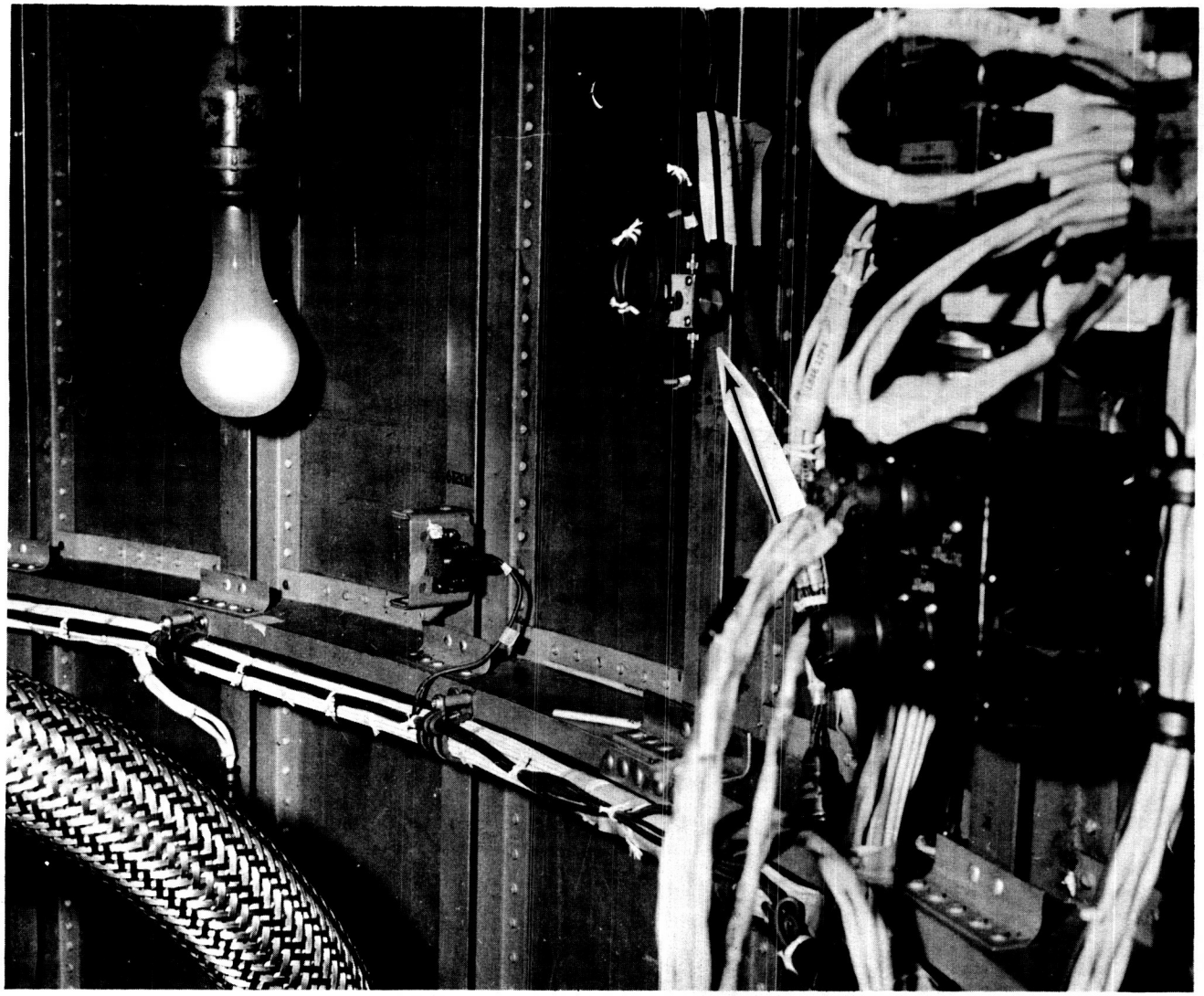


Fig. 655 Compartment IV - Structure, Meas 763, 764, 765, Stringer #14A Sta. 938

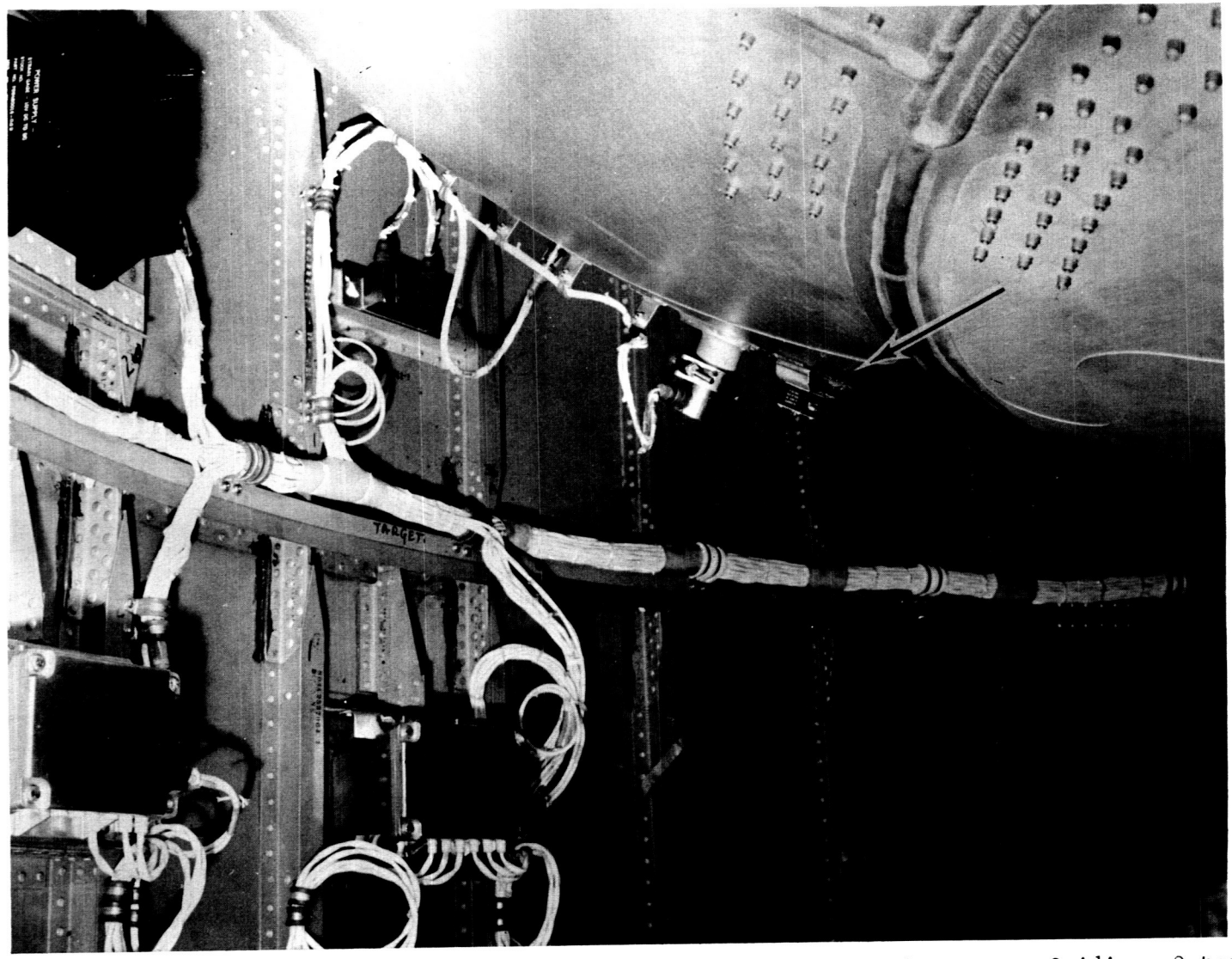


Fig. 656 Compartment IV - Tank Bottom, Meas 3387, 3388, 3389, Adjacent to Oxidizer Outage Sensor

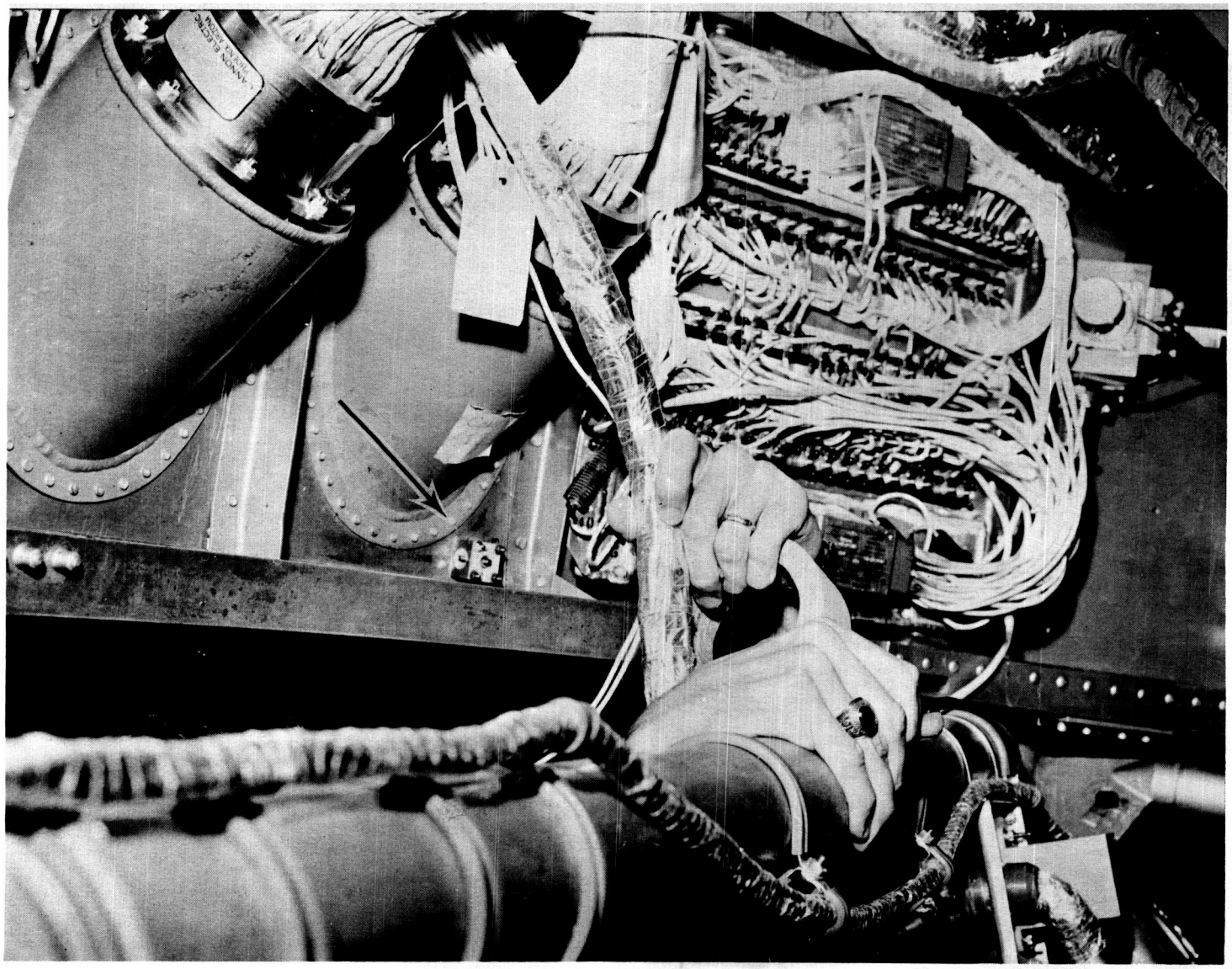


Fig. 657 Compartment V - Structure, Meas 3353, 3354, 3355, Adjacent to Electrical Umbilical

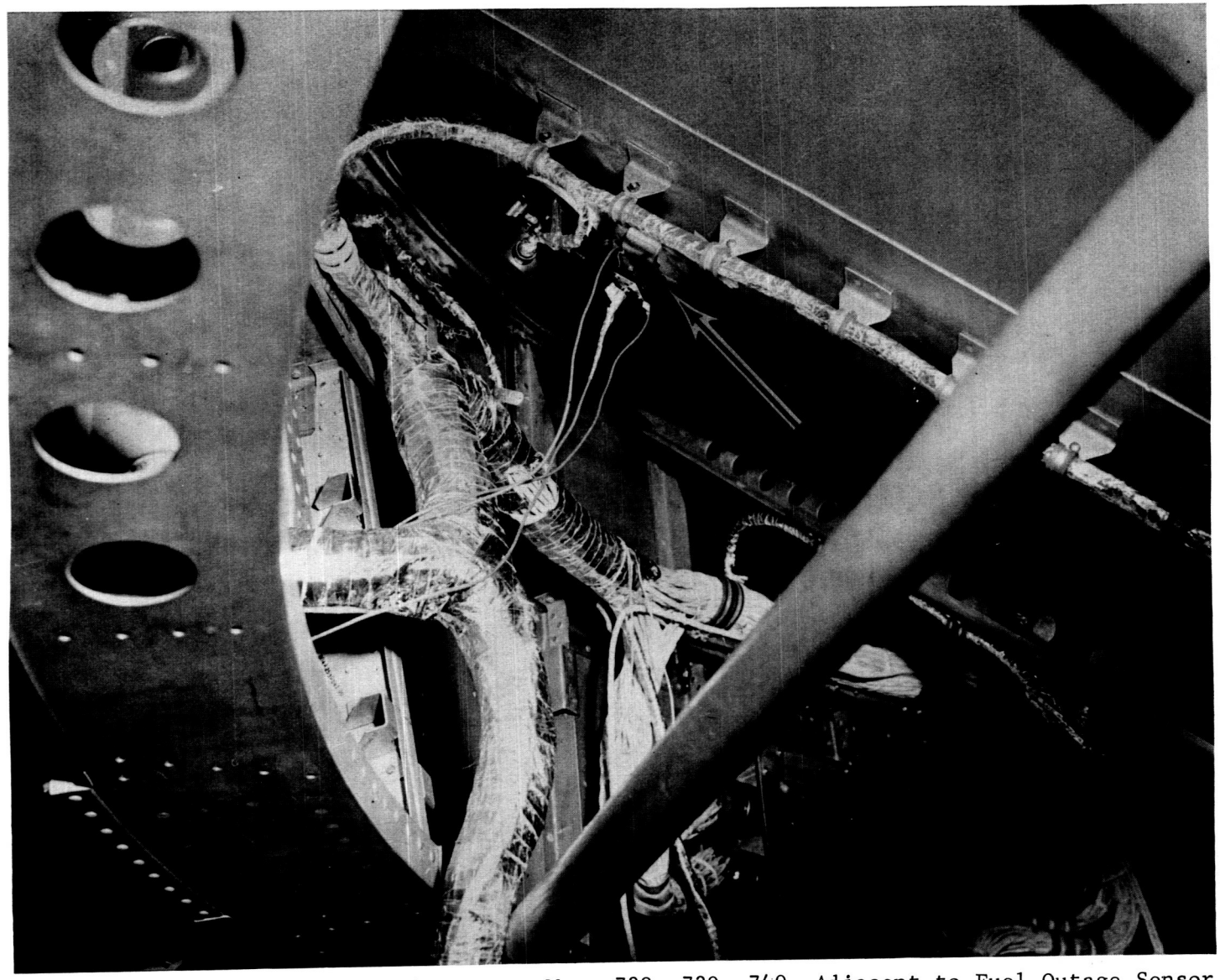


Fig. 658 Compartment V - Tank Bottom, Meas 738, 739, 740, Adjacent to Fuel Outage Sensor

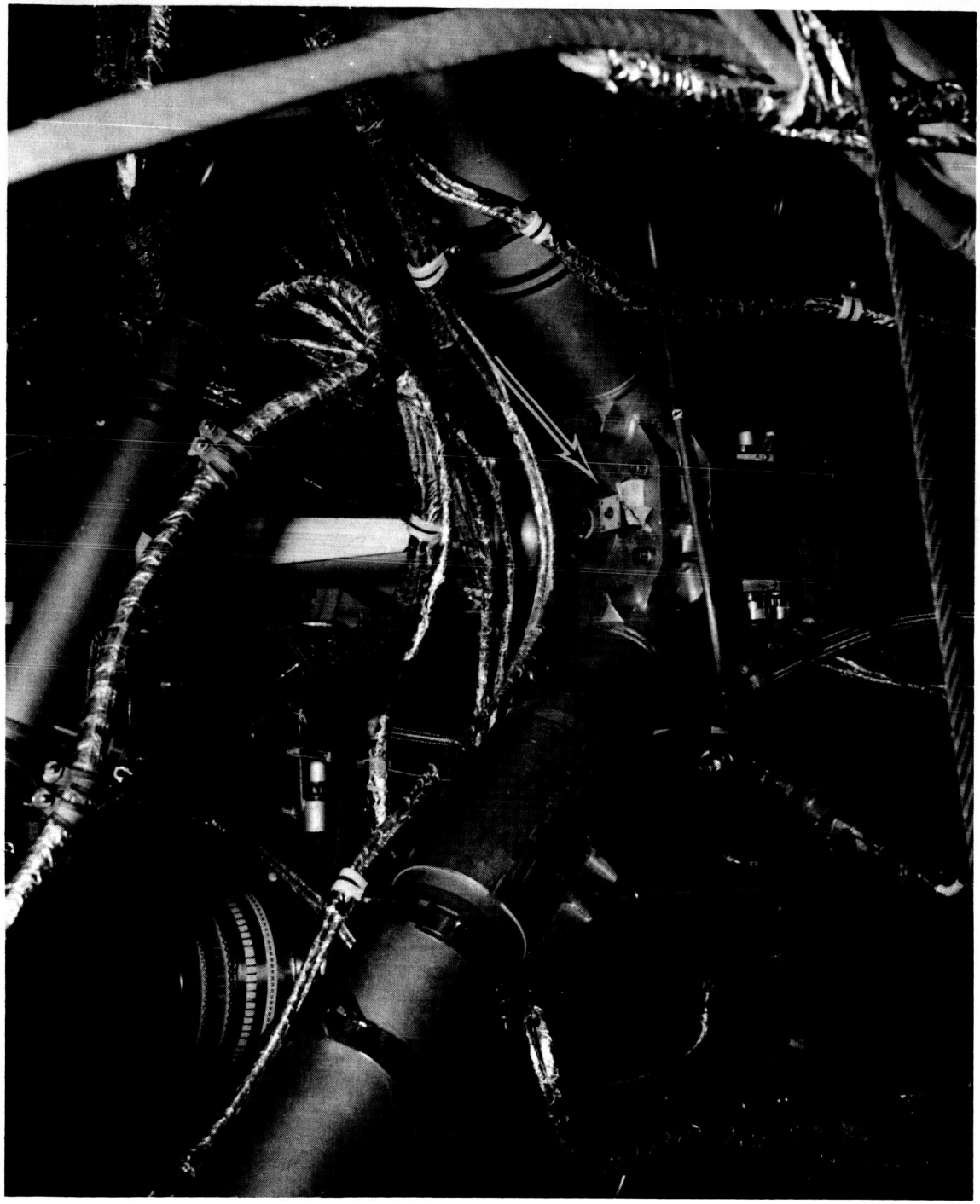


Fig. 659 Compartment V - Engine Meas 3344, 3345, 3346, Engine #2 Gimbal Pad

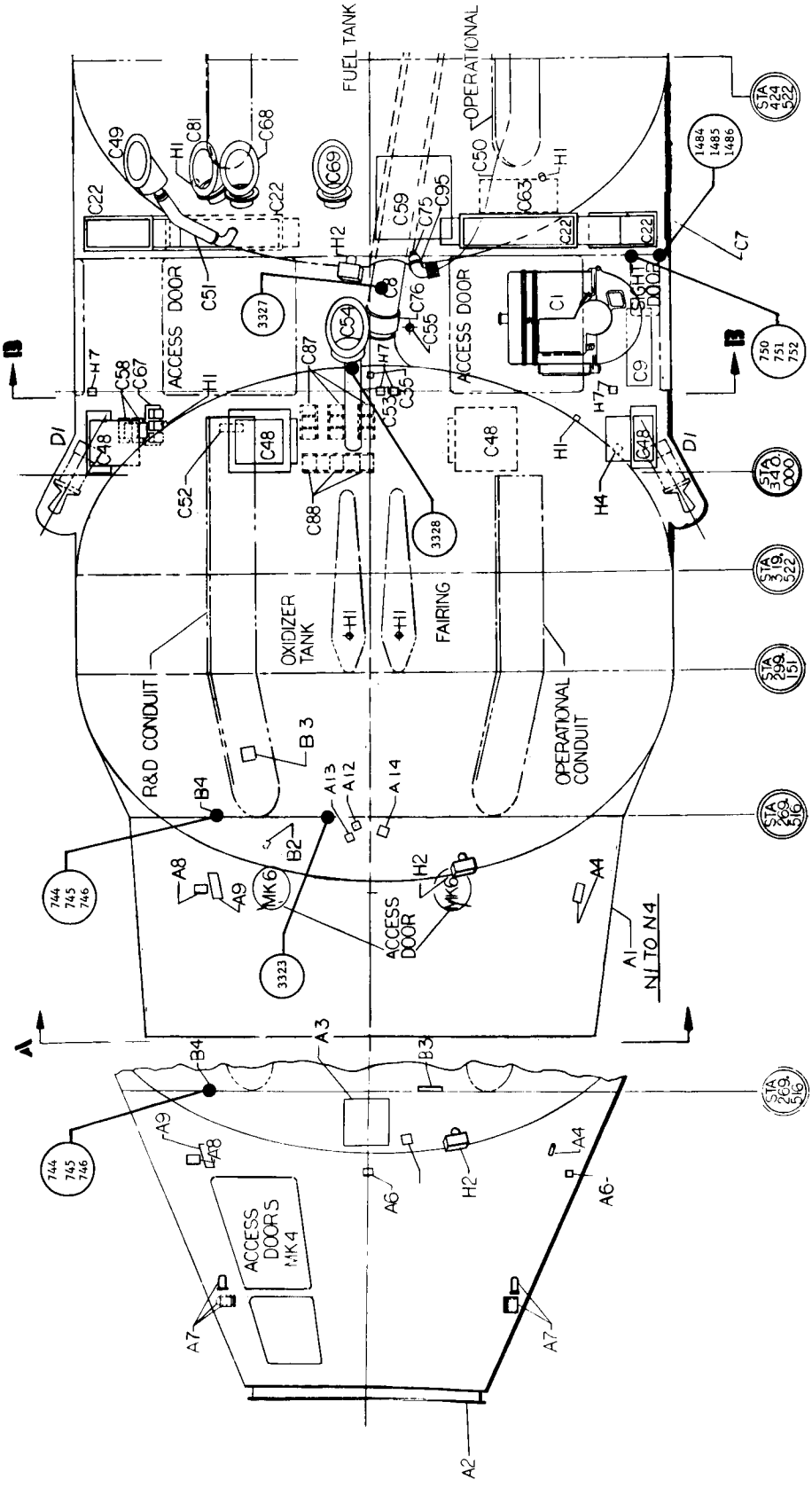


Fig. 660 Titan II Inboard Profile

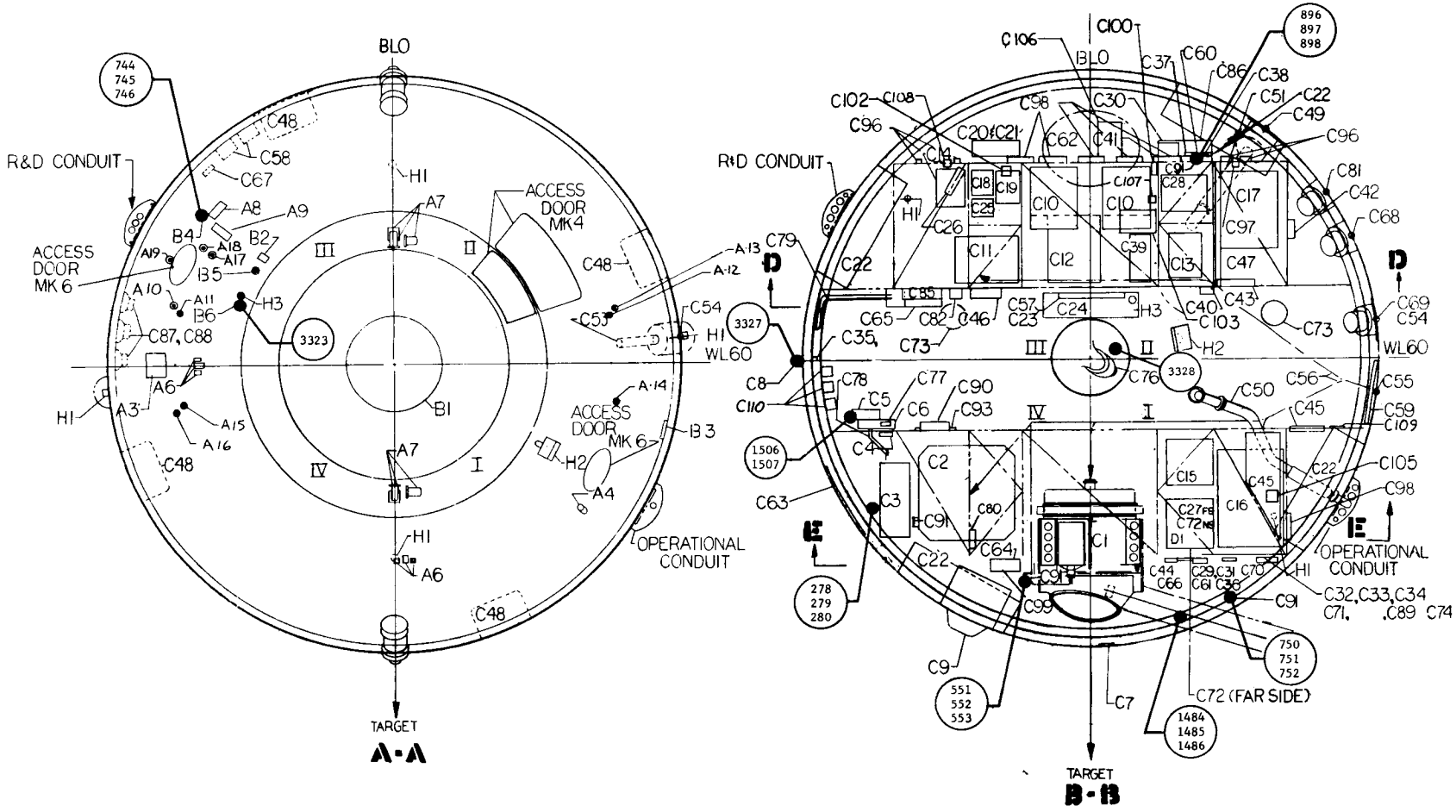

BLO
744
745
746
R&D CONDUIT
C48
C58
C67
HI
A7
ACCESS
DOOR
MK4
A8
A9
B4
B2
A19
A18
A17
B5
ACCESS
DOOR
MK 6
A10
A11
B6
H3
3323
C87, C88
A6
A3
HI
A15
A16
C48
III
II
IV
I
BI
A7
HI
A6
C48
TARGET
A-A
C48
A-13
A-12
C54
C53
HI
WL60
A-14
ACCESS
DOOR
MK 6
B3
H2
A4
OPERATIONAL
CONDUIT
C100
C106
BLO
C37
C60
C86
C38
C51
C22
C49
C96
C102
C108
C96
C98
C30
C20
C21
C62
C41
C4
R&D CONDUIT
C107
C9
C28
C81
C42
C68
C17
C97
C18
C19
C25
C10
C10
H1
C26
C11
C12
C39
C13
C47
C79
C22
C85
C65
C82
C46
C57
C23
C24
H3
C40
C43
C103
C69
C54
C73
C73
C35
3327
C8
C110
C78
C5
C6
C77
C90
C93
III
II
H2
3328
C76
C56
C55
C50
C45
C59
C109
IV
I
1506
1507
C4
C2
C15
C45
C22
C105
C98
C63
C3
C91
C80
C27
C72
D1
C16
C1
C64
C22
C44
C66
C29
C31
C61
C70
C36
HI
OPERATIONAL
CONDUIT
278
279
280
C99
C91
C32, C33, C34
C71, C89 C74
C9
750
751
752
551
552
553
C7
C72 (FAR SIDE)
1484
1485
1486
TARGET
B-B

Fig. 660 (cont)

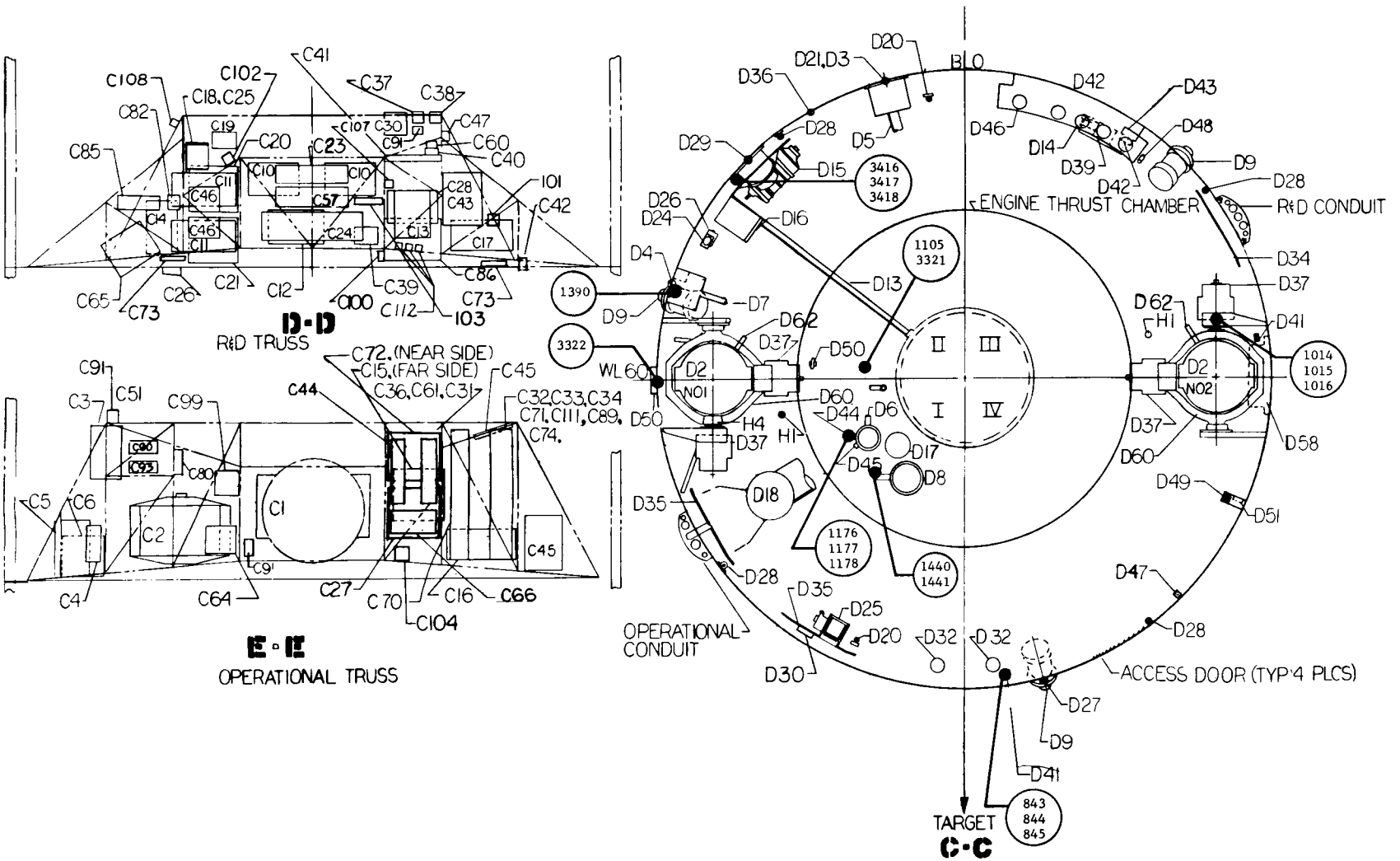

D-D
R&D TRUSS
E-E
OPERATIONAL TRUSS
C-C
ENGINE THRUST CHAMBER
R&D CONDUIT
OPERATIONAL CONDUIT
ACCESS DOOR (TYP 4 PLCS)
TARGET
WL 60
BL 0
NO1
NO2
I
II
III
IV
C41
C108
C102
C18, C25
C82
C19
C20
C23
C107
C30
C91
C47
C60
C40
C38
C37
C85
C10
C11
C46
C14
C57
C24
C13
C28
C43
C17
C101
C42
C65
C73
C26
C21
C12
C39
C112
C86
C73
103
C91
C72, (NEAR SIDE)
C15, (FAR SIDE)
C36, C61, C31
C45
C44
C32, C33, C34
C71, C111, C89,
C74.
C3
C51
C99
C80
C5
C6
C2
C1
C4
C64
C27
C70
C16
C66
C104
D20
D21, D3
D36
D28
D5
D29
D15
3416
3417
3418
D26
D24
D16
D4
1390
D9
D7
D13
1105
3321
3322
D62
D37
D50
D2
D60
D44
D6
H4
H1
D17
D45
D8
D18
D35
1176
1177
1178
1440
1441
D25
D20
D32
D30
D42
D43
D46
D14
D48
D39
D9
D28
D34
D41
1014
1015
1016
D58
D49
D51
D47
D27
D41
843
844
845

Fig. 660 (cont)

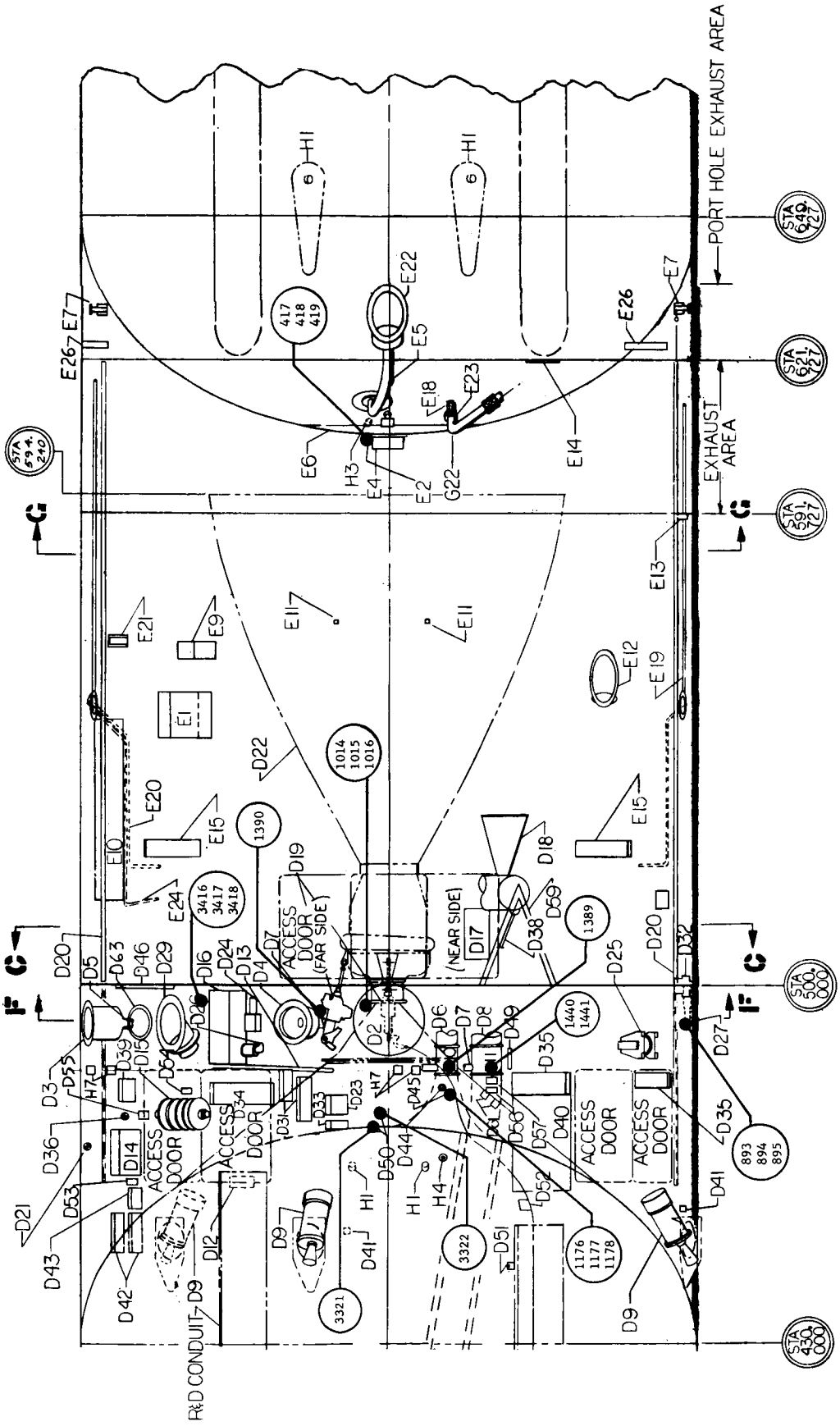

PORT HOLE EXHAUST AREA
EXHAUST AREA
ACCESS DOOR (FAR SIDE)
(NEAR SIDE)
ACCESS DOOR
R&D CONDUIT
STA 594.240
STA 640.927
STA 621.927
STA 591.927
STA 500.000
STA 430.000

Fig. 660 (cont)

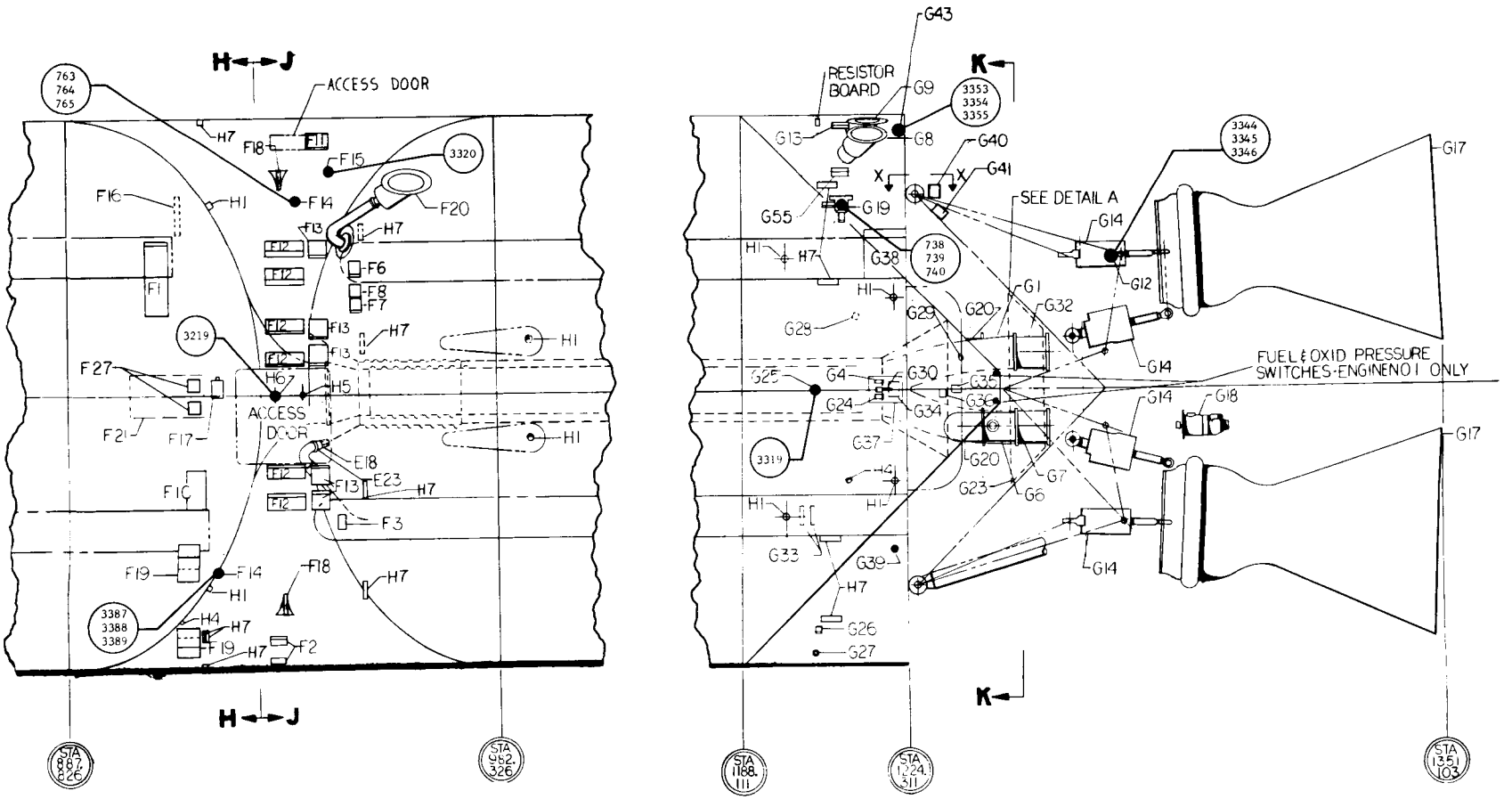

H
J
ACCESS DOOR
763
764
765
3320
F16
H1
F14
F20
F18
F15
H7
F13
F12
F6
F8
F7
F1
3219
F27
H67
H5
ACCESS
DOOR
F21
F17
E18
E23
F10
F3
F19
3387
3388
3389
H4
F2
STA
887.
826
STA
952.
326
K
RESISTOR
BOARD
G43
G9
3353
3354
3355
G13
G8
G40
G41
X
G55
G19
SEE DETAIL A
3344
3345
3346
G17
G14
738
739
740
G38
G12
G1
G32
G29
G20
G28
G25
G4
G30
G36
G24
G34
FUEL & OXID PRESSURE
SWITCHES-ENGINE NO 1 ONLY
G18
3319
G37
G7
G6
G23
G33
G39
G26
G27
STA
1188.
111
STA
1224.
311
STA
1351
103

Fig. 660 (cont)

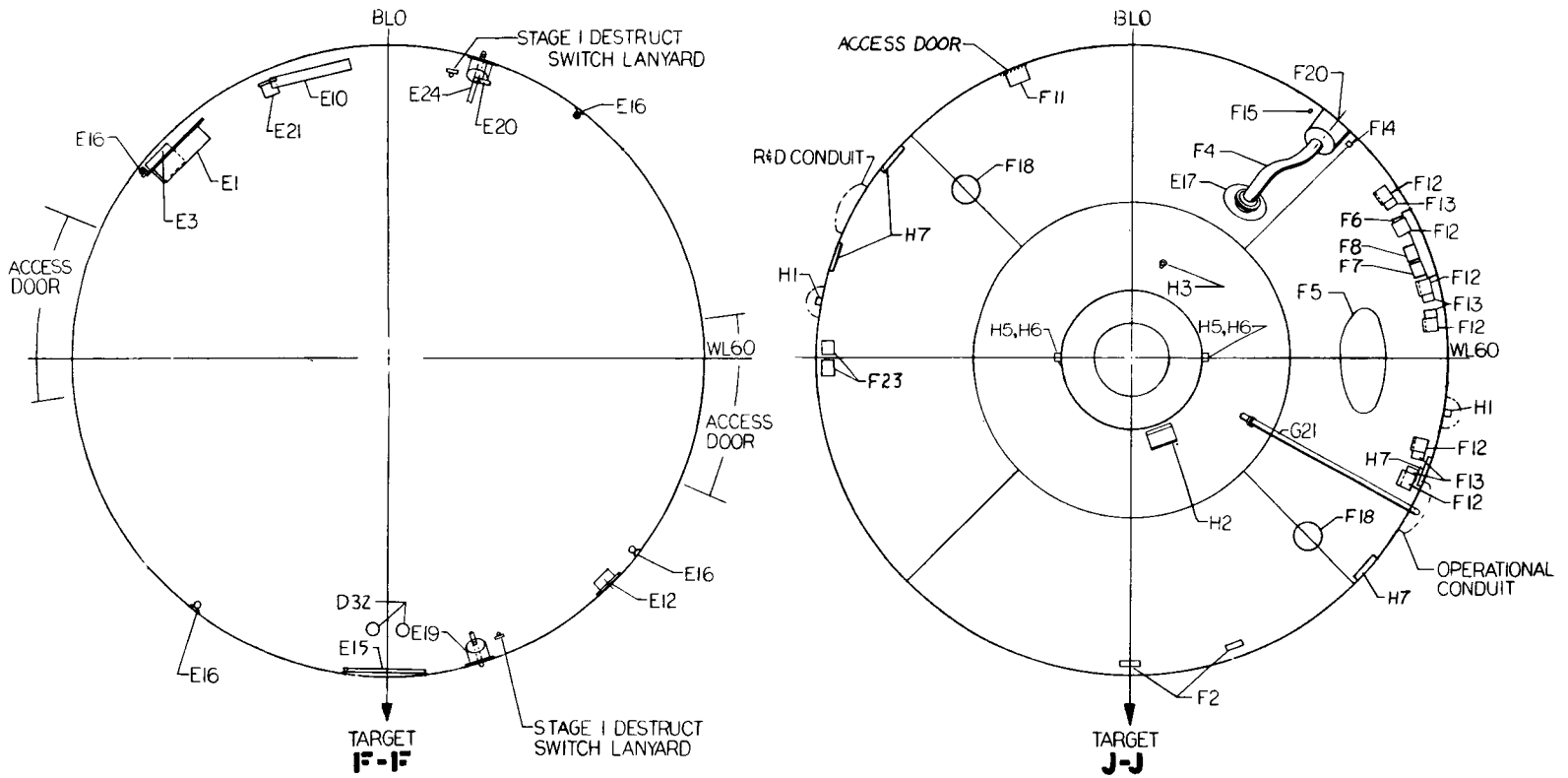

BLO
STAGE I DESTRUCT SWITCH LANYARD
E10
E21
E24
E20
E16
E16
E1
E3
ACCESS DOOR
WL60
ACCESS DOOR
E16
E12
D32
E19
E15
E16
TARGET
F-F
STAGE I DESTRUCT SWITCH LANYARD
BLO
ACCESS DOOR
F11
F20
F15
F14
R&D CONDUIT
F18
F4
E17
F12
F13
F6
F12
F8
F7
F12
F13
F12
H7
H1
H3
F5
H5,H6
H5,H6
WL60
F23
H1
G21
F12
H7
F13
F12
H2
F18
OPERATIONAL CONDUIT
H7
F2
TARGET
J-J

Fig. 660 (cont)

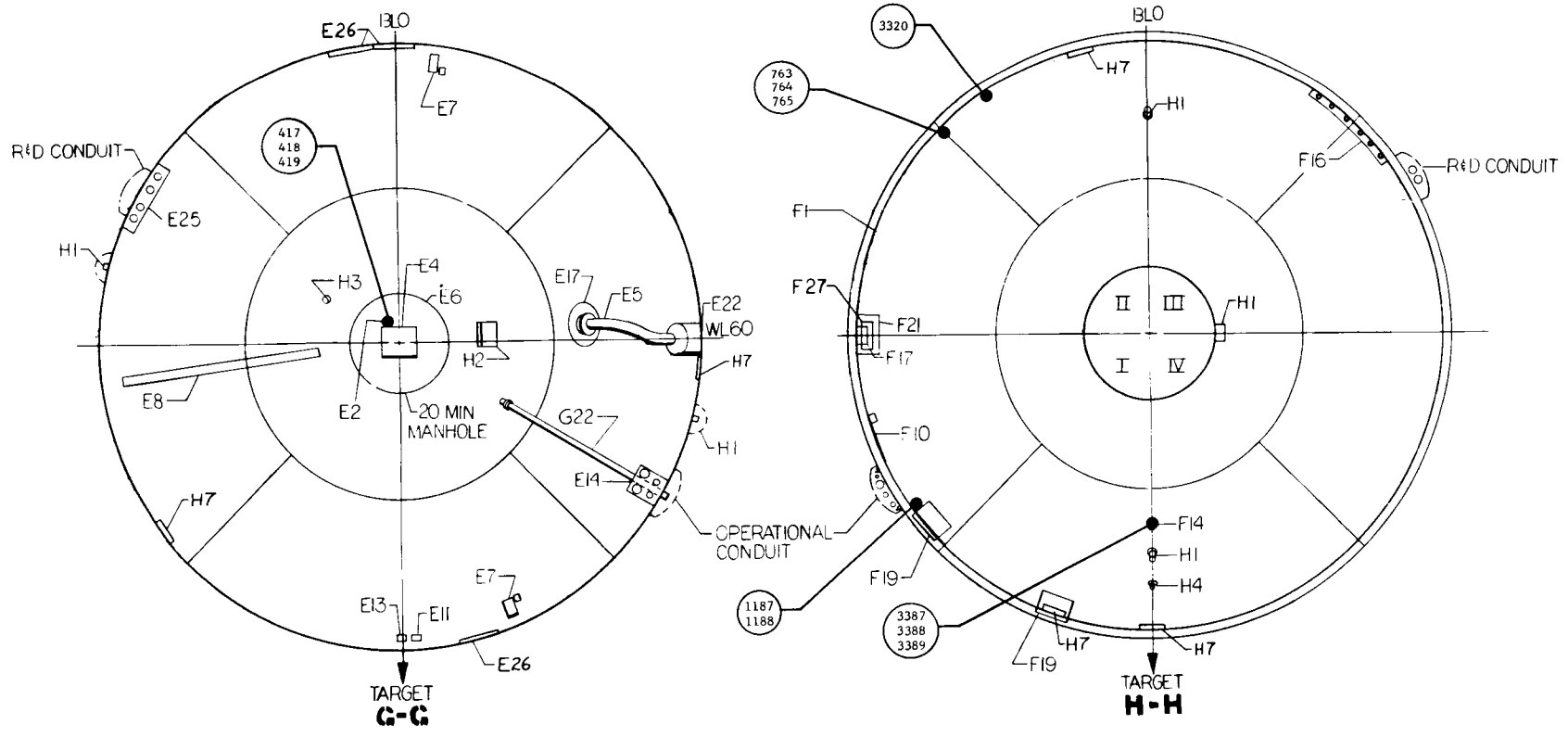

E26
BLO
E7
R&D CONDUIT
417
418
419
E25
H1
H3
E4
E6
E17
E5
E22
WL60
H7
H2
E8
E2
20 MIN
MANHOLE
G22
H1
E14
H7
OPERATIONAL
CONDUIT
E7
E13
E11
E26
TARGET
G-G
3320
BLO
763
764
765
H7
H1
F16
R&D CONDUIT
F1
F27
F21
F17
II
III
H1
I
IV
F10
F14
H1
H4
F19
1187
1188
3387
3388
3389
H7
H7
F19
TARGET
H-H

Fig. 660 (cont)

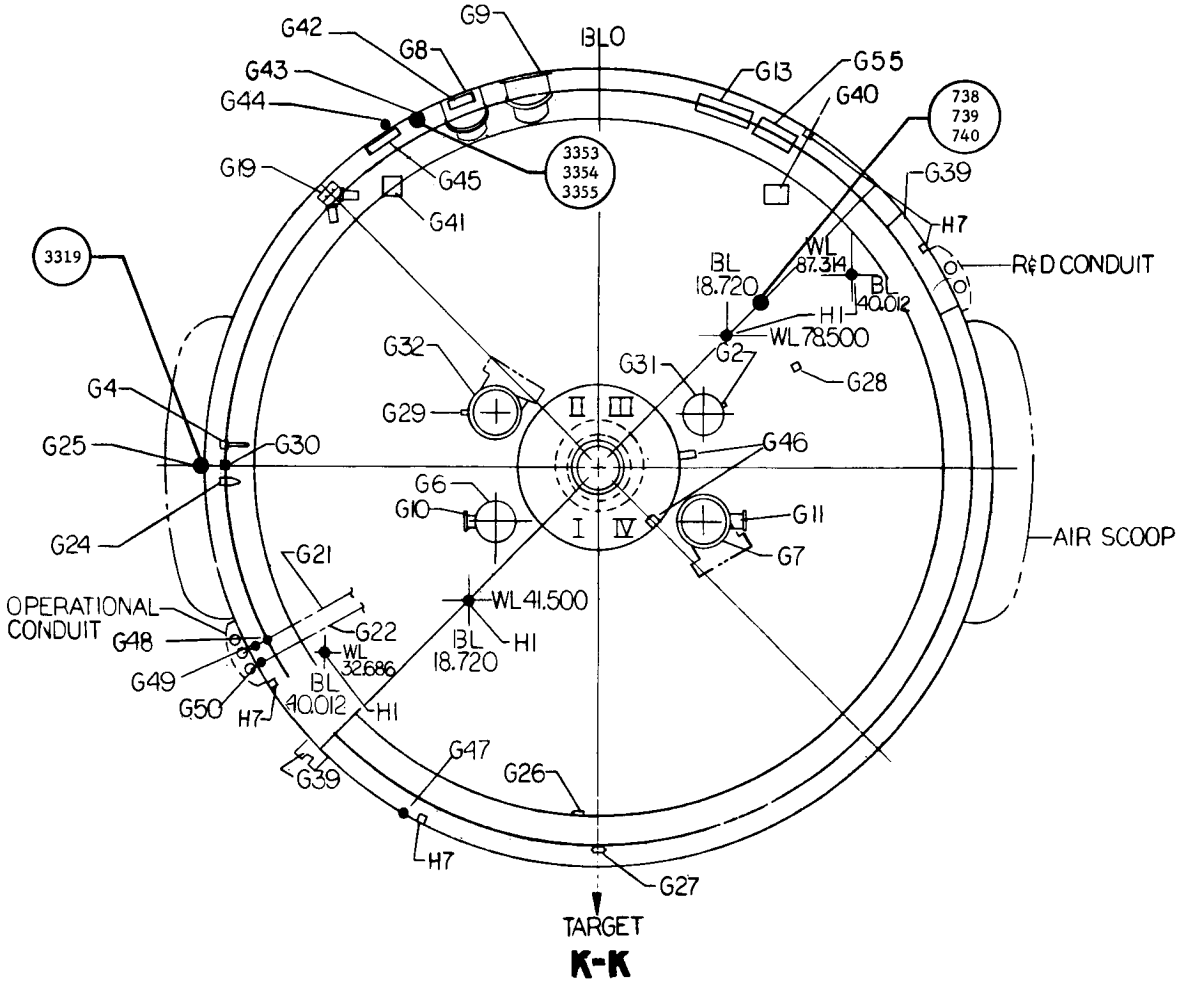

G42
G9
BLO
G8
G43
G13
G55
G44
G40
738
739
740
3353
3354
3355
G19
G45
G39
G41
H7
3319
BL
18.720
WL
87.314
BL
40.012
R&D CONDUIT
H1
WL 78.500
G32
G31
G2
G28
G4
G29
II
III
G25
G30
G46
G6
G10
G11
I
IV
G24
G7
AIR SCOOP
G21
WL 41.500
OPERATIONAL
CONDUIT
G48
G22
WL
32.686
BL
18.720
H1
G49
BL
40.012
G50
H7
H1
G47
G26
G39
H7
G27
TARGET
K-K

Fig. 660 (cont)

	CODE
A18 G.E. EXTOMETERS	
A17 TMC INSTRUMENTATION	
A16 DECOY INSTRUMENTATION	
A15 TMC THERMOCOUPLE	
A14 DECOY ELECTRICAL	
A13 R/V SEP. SWITCH	
A1 SPACER (MARK 6)	
A2 ADAPTER RING (MARK 4)	
A3 DISPLACEMENT GYRO	(I)
A4 ELECTRICAL INTERFACE PLUG	(E)
A5 PYGMY PLUG	(E)
A6 DIFFERENTIAL PRESSURE TRANSDUCERS (6) (MARK 4)	(I)
A7 ACCELEROMETERS (6) MARK (4)	(I)
A8 INSTRUMENTATION INTERFACE (MARK 4)	(I)
A9 INSTRU. TERMINAL INSTALLATION	(I)
A10 G.E. EXTENSOMETERS	
A11 TMC INSTRUMENTATION	
A12 R/V ELECTRICAL	
A19 TMC THERMOCOUPLE	

B1 TANK MANHOLE	
B2 ABSOLUTE PRESSURE TRANSDUCER	(E)
B3 PRESSURE XDUCER IN CONDUIT	(I)
B4 TRIAXIAL VIBRATION PICK-UP	(I)
B5 TEMPERATURE SENSOR	(I)
B6 SOUND PRESSURE LEVEL MICROPHONE	(I)
	(I)

GUIDANCE COMPARTMENT

C1 (IMU) INERTIAL MEASUREMENT UNIT	(G)
C2 (ADC) AIRBORNE DIGITAL COMPUTER	(G)
C3 AUTOPILOT RATE GYRO STATIC INVERTER	(G)
C4 GUIDANCE PANEL	(E)
C5 GE MOD III F RATE BEACON	(M)
C6 GE MOD III F PULSE BEACON	(M)
C7 GE MOD III F ANTENNA	(M)
C8 SPL MICROPHONE	(I)
C9 OPTICAL TRAJECTORY MEASUREMENT	(M)
C10 FM/FM TRANSMITTER (2)	(I)
C11 PCM/FM TRANSMITTER (2)	(I)
C12 PCM VIDEO UNIT (ENCODER-KEYER)	(I)
C13 TELEMETERING CALIBRATOR	(I)
C14 PROGRAM BOARD	(I)
C15 PCM ENCODER (ACSP)	(I)
C16 SIGNAL CONDITIONER (ACSP) GUIDANCE	(I)
C17 SIGNAL CONDITIONER (MARTIN)	(I)
C18 THERMOCOUPLE ZONE BOX	(I)
C19 10 VOLT DC POWER SUPPLY	(I)
C20 JUNCTION BOX #2A	(I)
C21 JUNCTION BOX #2B	(I)
C22 TELEMETERING ANTENNA (4) R-F SYSTEM)	
C23 POWER DIVIDER (5 PORT JUNCTION) (R-F SYSTEM	
C24 ANTENNA MULTIPLEXER (R-F SYSTEM)	
C25 STAGE DISCONNECT SWITCH	(I)
C26 INSTRUMENTATION TRUSS DISCONNECT	(I)
C27 APS BATTERY	(E)
C28 IPS BATTERY	(E)
C29 APS DC POWER SWITCH	(E)
C30 IPS DC POWER SWITCH	(E)
C31 IGS POWER SWITCH	(E)
C32 SUSTAINER SHUT DOWN CONTROL RELAY	(E)
C33 LEVEL SENSOR ARM RELAY (LOW)	(E)
C34 NOSE CONE RELEASE RELAY	(E)
C35 LO-G'S ACCELEROMETER	(I)
C36 SUSTAINER ENGINE SHUT DOWN SWITCH	(E)
C37 APS DESTRUCT SWITCH	(E)
C38 IPS DESTRUCT SWITCH	(E)
C39 SPECTRUM ANALIZER	(I)
C40 RANGE SAFETY POWER SWITCH (20 AMPS MTR DVN)	(E)
C41 IPS 28 VOLT DC DISTRIBUTION BUS	(E)
C42 UMBILICAL DISCONNECT	(I)
C43 DIODE PANEL (9 #3A DIODES)	(E)
C44 APS 28 VOLT DC DISTRIBUTION PANEL	(E)
C45 OPERATIONAL DUCT ENDING PANEL (2)	(E)
C46 COMMAND CONTROL RECEIVER (2)	(M)
C47 R&D DUCT ENDING PANEL (2)	(E)
C48 COMMAND CONTROL ANTENNA (4)	(M)
C49 FUEL VENT UMBILICAL (3" R.V)	(P)
C50 FUEL AUTOGENOUS LINE	(P)
C51 FUEL VENT LINE	(P)
C52 INITIATOR	(M)
C53 OXIDIZER VENT LINE	(P)
C54 OXIDIZER VENT UMBILICAL (3" BDV)	(P)
C55 AIR CONDITIONING UMBILICAL 2BA	(E)
C56 AIR CONDITIONING DUCT	(P)
C101 GYRO RELAY	(I)
C102 RELAY TIME DELAY	(I)
C103 STOWAGE PANEL	(I)
C112 RELAYS (3)	(I)
C111 DECOY RELAY	(I)
C110 AMPLIFIER CHASIS	(I)
C109 RESISTOR BOARD	(I)
C108 RESISTOR BOARD	(I)
C107 PCM BACKUP SWITCH	(I)
C106 RECORDER	(I)
C105 RESISTOR BOARD OPER. TRUSS (I)	(I)
C104 TEMP PROBE OPER. TRUSS	
C57 6 PORT JUNCTION BOX	(M)
C58 28 VOLT DC AMPLIFIER POWER SUPPLY	(I)
C59 IRS KIT TERMINAL	(E)
C60 IPS BATTERY SHUNT	(E)
C61 APS BATTERY SHUNT	(E)
C62 MANHOLE COVER	
C63 GE MISTRAM ANTENNA INSTALL.	(M)
C64 AZUSA TRANSPONDER	(M)
C65 MISTRAM TRANSPONDER	(M)
C66 DIODE PANEL	(E)
C67 AMPLIFER CHASSIS	(I)
C68 UMBILICAL (2BIE)	(E)
C69 UMBILICAL (2B2E)	(E)
C70 SEQUENCER & DUCT END PANEL	(E)
C71 RETRO ROCKET START RELAY	(E)
C72 VHPS BATTERY	(E)
C73 DESTRUCT BI-DIRECTIONAL CHARGE	(M)
C74 VERNIER CUTOFF RELAY	(E)
C75 FUEL DIFFUSER	(P)
C76 OXIDIZER LINE BELLOWS	(P)
C77 GE MOD III F DUPLEXER	(M)
C78 GE MOD III F WAVE GUIDE	(M)
C79 MISTRAM WAVE GUIDE INSTALL.	(M)
◆ C80 STROKER	(G)
C81 UMBILICAL 2BIT	(I)
C82 AMPLIFIER POWER SUPPLY (28 VOLT)	(I)
C83	
C84	
C85 AMPLIFIER CHASSIS	(I)
C86 JUNCTION BOX #2C	(I)
C87 AMPLIFIER CHASSIS (3)	(I)
C88 28VDC AMPLIFIER POWER SUPPLY	(I)
C89 STAGING CONTROL RELAY	(E)
C90 IMU CAPACITANCE PACKAGE	(E)
C91 VIBRATION ACCELEROMETER (4)	(I)
C92 DIODE BOX	(E)
C93 TERMINAL BOARD (CAPACITOR	(E)
C94 TERMINAL BOARD (JHPS)	(E)
C95 BURST DISC	(P)

SUSTAINER ENGINE COMPARTMENT	CODE
◒ D1 RETRO ROCKET TRANSLATION SYS	(M)
D2 VERNIER MOTOR (2)	(P)
D3 FUEL FILL & DRAIN UMBILICAL (S3IBF)	(P)(M)(H
D4 OXIDIZER FILL & DRAIN UMBILICAL (S3IBO)	(P)
D5 FUEL FILL & DRAIN LINE	(P)
D6 FUEL FEED LINE	(P)
D7 OXIDIZER FILL & DRAIN LINE	(P)
D8 OXIDIZER FEED LINE	(P)
◑ D9 RETRO ROCKETS (3)	(P)
D10 FUEL SHUT OFF VALVE	(P)
D11 OXIDIZER SHUT OFF VALVE	(P)
D12 INITIATOR UNIT	(M)
D13 HYDRAULIC BRIDGE	(H)
D14 JUNCTION BOX #5A	(I)
D15 HYDRAULIC REGULATING UNIT	(H)
D16 MOTOR DRIVEN PUMP	(H)
D17 MOTOR TURBINE PUMP	(H)
D18 ROLL CONTROL NOZZLE	(H)(P)
D19 ACTUATOR (2) ENGINE	(H)
D20 STAGE I DESTRUCT SWITCH LANYARD	(E)
D21 HYDRAULIC MANUAL DISCONNECT	(H)
D22 AEROJET ENGINE XRL-91-AJ-5	(P)
D23 VHPS POWER SWITCH	(E)
D24 LINE FILTER	(H)
D25 STAGE SEPARATION DISTANCE REEL	(I)
D26 LOCKOUT VALVE	(H)
D27 AZUSA ANTENNA	(M)
D28 STAGE SEPARATION NUTS EXPLOSIVE	(M) (4)
D29 UMBILICAL (3IBIE)	(E)
D30 RESISTOR BOARD	(I)
D31 VHPS DISTRIBUTION PANEL	(E)
D32 SEPARATION DISCONNECT (2)	(E)
D33 VPHS BATTERY SHUNT (2)	(E)
D34 SEPARATION & VERNIER PANEL	(E)
D35 ENGINE FUNCTIONS PANEL (DUCT ENDING)	(E)(2)
D36 AIR CONDITIONING UMBILICAL (3BA)	(P)
D37 VERNIER ROCKET ACTUATOR (4)	(H)
D38 ROLL NOZZLE ACTUATOR	(H)
D39 TEMP MEAS. UNIT	(I)
D40 ORDNANCE SAFETY	(E)
D41 VIBRATION ACCELEROMETER (2)	(I)
D42 AMPLIFIER CHASSIS (2)	(I)
	(I)

Fig. 660 (cont)

SUSTAINER ENGINE COMPARTMENT	CODE
D64. TEMP. PROBE AUTOG. LINE	(I)
D63. PRESS. XDUCER AUTOG. LINE	(I)
D43. 28 V AMPLIFIER POWER SUPPLY (2)	(I)
D44. FUEL PRESSURE TRANSDUCER (2)	(I)
D45. FUEL TEMPERATURE TRANSDUCER (2)	(I)
D46. STAGE DISCONNECT PANEL	(I)
D47. STAGE SEPARATION MICRO SWITCH	(I)
D48. CONVECTION PROBE	(I)
D49. RADIATION PROBE	(I)
D50. SPL MICROPHONE (2)	(I)
D51. DIFFERENTIAL PRESSURE TRANSDUCER.	(I)
* ADDITIONS RIGHT SIDE LOWER	

FORWARD COMPARTMENT	CODE
E1. JUNCTION BOX #3B	(I)
E2. VIBRATION ACCELEROMETER	(I)
◆E3. TEMP MEAS UNIT	(I)
E4. RATE GYRO	(G)
E5. OXIDIZER VENT LINE	(P)
E6. MANHOLE	
E7. STAGE I DESTRUCT SWITCH (2)	(E)
E8. ABSOLUTE PRESS TRANSDUCER (3)	(I)
E9. GEN. PURPOSE TEMP MEAS. UNIT	(I)
E10. 8 FT. REEL OUT CABLE STOWAGE BOX	(I)
E11. PRESSURE TRANSDUCER (ABSOLUTE)	(I)
E12. UMBILICAL (ICIT)	(I)
E13. ABSOLUTE PRESSURE TRANSDUCER	(I)
E14. TRANSPORTATION SPLICE DISCONNECTS (2)	(E)
E15. SEPARATION BOLTS TERMINAL BOARD	(E)
E16. STAGE SEPARATION NUTS-EXPLOSIVE	(M)
E17. VENT FITTINGS (TRANS)	(P)
E18. DIFFUSER (2)	(P)
E19. OXIDIZER TURBO PUMP SEAL DRAIN LINE	(P)
E20. FUEL TURBO PUMP SEAL DRAIN	(P)
E21. ACCELEROMETER LOW G	(I)
E22. OXIDIZER VENT UMBILICAL (SIDOV)	(P)
E23. BURST DISC (2)	(P)
E24. PRESSURE SEQUENCING VALVE DRAIN LINE	(P)
E25. TRANSPORTATION SPLICE DISCONNECTS	(I)
E26. DESTRUCT TERMINAL BOARD	(E)

BETWEEN TANKS STAGE I	CODE
F1. R&D DUCT ENDING PANEL	(E)
F2. GEN. PURPOSE TEMP MEASUREMENT UNIT (2)	(I)
F3. INITIATOR UNIT	(M)
F4. FUEL VENT LINE	(P)
F5. TANK MANHOLE	
F6. APS DESTRUCT SWITCH	(E)
F7. STAGE I DESTRUCT ARM SWITCH	(E)
F8. IPS DESTRUCT SWITCH	(E)
F9.	(E)
F10. OPER. DUCT ENDING PANEL	(E)
F11. DESTRUCT BATTERY	(E)
F12. AMPLIFIER CHASSIS (6)	(I)
F13. AMPLIFIER POWER SUPPLY-28 V (5)	(I)
F14. VIBRATION TRANSDUCER (2)	(I)
F15. SPL MICROPHONE	(I)
F16. DISCONNECT PANEL	(I)
F17. ATTITUDE GYRO	(I)
F18. DESTRUCT BI-DIRECTIONAL CHARGE	(M)
F19. 10V DC POWER SUPPLY (2)	(I)
F20. FUEL VENT UMBILICAL (S2DFV)	(P)
F21. DISPLACEMENT GYRO	(I)
F22. RESISTOR BOARD (2)	(I)

BOOSTER ENGINE COMPARTMENT	CODE
G1. OXIDIZER FEED LINE	(P)
G2. FUEL PRESSURE SENSOR	(I)
G3. LINE FILTER	(H)
G4. RADIATION CALORIMETER PROBE	(I)
G5. ACCUMULATOR RESERVOIR UNIT	(H)
G6. FUEL SHUT-OFF VALVE (FILL & DRAIN)	(P)
G7. OXIDIZER SHUT-OFF VALVE (FILL & DRAIN)	(P)
G8. UMBILICAL (3DIE)	(E)
G9. UMBILICAL (3DIT)	(I)
G10. FUEL FILL & DRAIN DISCONNECT	(P)
G11. OXIDIZER FILL & DRAIN DISCONNECT	(P)
G12. VIBRATION TRANSDUCER	(I)
◆G12. ENGINE FUNCTION DISCONNECT	(E)
G13. JUNCTION BOX # 5A	(I)
G14. ACTUATORS (4)	(H)
G15. HYDRAULIC MOTOR PUMP	(H)
G16. HYDRAULIC MANUAL DISCONNECT	(H)
G17. AEROJET ENGINE (XLR87-AJ-5) (2)	(P)
G18. ENGINE PUMP (ENGINE DRIVEN HYD PUMP)	(H)
G19. ACCELEROMETER	(I)
G20. FUEL FEED LINE	(P)
G21. FUEL AUTOGENOUS LINE	(P)
G22. OXIDIZER AUTOGENOUS LINE	(P)
G23. HYDRAULIC COMPONENT PLATFORM	(H)
G24. CONVECTION TEMPERATURE PROBE	(I)
G25. SPL MICROPHONE	(I)
G26. DIFFERENTIAL PRESSURE TRANSDUCER	(I)
G27. ABSOLUTE PRESSURE TRANSDUCER	(I)
G28. VIBRATION TRANSDUCER	(I)
G29. OXIDIZER PRESSURE SENSOR	(I)
G30. TEMPERATURE MEASUREMENT PROBE	(I)
G31. FUEL SHUT-OFF VALVE. (DRAIN ONLY)	(P)
G32. OXIDIZER SHUT-OFF VALVE (DRAIN ONLY)	(P)
G33. ABSOLUTE PRESS TRANSDUCER (2 AUTO)	(I)
G34. PRESS. TRANSDUCER (HYD PUMP DISCH)	(I)
G35. TEMP TRANSDUCER (HYD FLUID)	(I)
G36. HYD MANIFOLD	
G37. DISPLACEMENT GYRO	
G38. DUCT. ENDING & ENGINE FUNCTION PANEL	(E)
G39. STATIC GROUND CONNECTOR	(E)
G40. INSTRUMENT DISCONNECT BOX	(I)
G41. ELEC. DISCONNECT PANEL	(E)
G42. RESISTOR BOARD	
G43. UMBILICAL VIBRATION TRANSDUCER	
G44. FUEL DRAIN LINE	
G45. ELECTRICAL COMP. PANEL	
G46. PRESSURE SWITCHES	
G47. OXIDIZER DRAIN LINES	
G48. FUEL AUTOGENOUS TEMP TRANSDUCER	
G49. FUEL AUTO. PRESSURE TRANSDUCER	
G50. OXIDIZER AUTOGENOUS PRES. TRANS.	
G51. CONVECTION PROBE	
G52. RAD. & TEMP. PROBE	
G53. PRESSURE XDUCER	
G54. TEMPERATURE XDUCER (CONT. BELOW)	

ITEMS LOCATED IN VARIOUS COMPARTMENTS	
H1. PROPELLANT LEVEL SENSORS (18)	(P)
H2. PRESSURE SWITCH	(P)
H3. PRESSURE SENSOR	(I)
H4. PROPELLANT TEMPERATURE SENSOR	(I)
● H5. PROPELLANT LEVEL SENSORS (2)	(P)
■ H6. PROPELLANT LEVEL SENSORS (2)	(P)
H7. LEVEL SENSOR CONTROLLER (20)	(P)

D63. FUEL FILL & DRAIN (3BFD)	(P)
G55. JUNCTION BOX 5B	(I)
F23. AMPLIFIER AND POWER SUPPLY	(I)

SYSTEM CODE

(E) ELECTRICAL
(G) GUIDANCE
(H) HYDRAULIC
(I) INSTRUMENTATION
(M) MISSILE SAFETY
(P) PROPULSION

*

D52. ABSOLUTE PRESS TRANSDUCER	(I)
D53. PRESS TRANSDUCER (HYD PUMP INLET)	(I)
D54. PRESS TRANSDUCER (HYD PUMP DISCH)	(I)
D55. TEMP TRANSDUCER (HYD FLUID)	(I)
D56. OXID TEMP TRANSDUCER	(I)
D57. OXID PRESS TRANSDUCER	(I)
D58. DISPLACEMENT GYRO	(I)
D59. ROLL NOZZLE SUPPORT	(H)
D60. VERNIER GIMBAL RING	(H)
D61. TRANSDUCER INSTALL-FUEL PRESS	(I)
D62. PRESS. XDUCER VERNIER	(I)

*

C96. IPS TERMINAL BOARD (5)	(I)
C97. GROUND CONTROL RELAY	(I)
C98. RESISTOR BOARDS (5)	(I)
C99. AZUZA FILTER BOX	(I)
C100. DESTRUCT INITIATOR	(M)

Fig. 660 (concl)

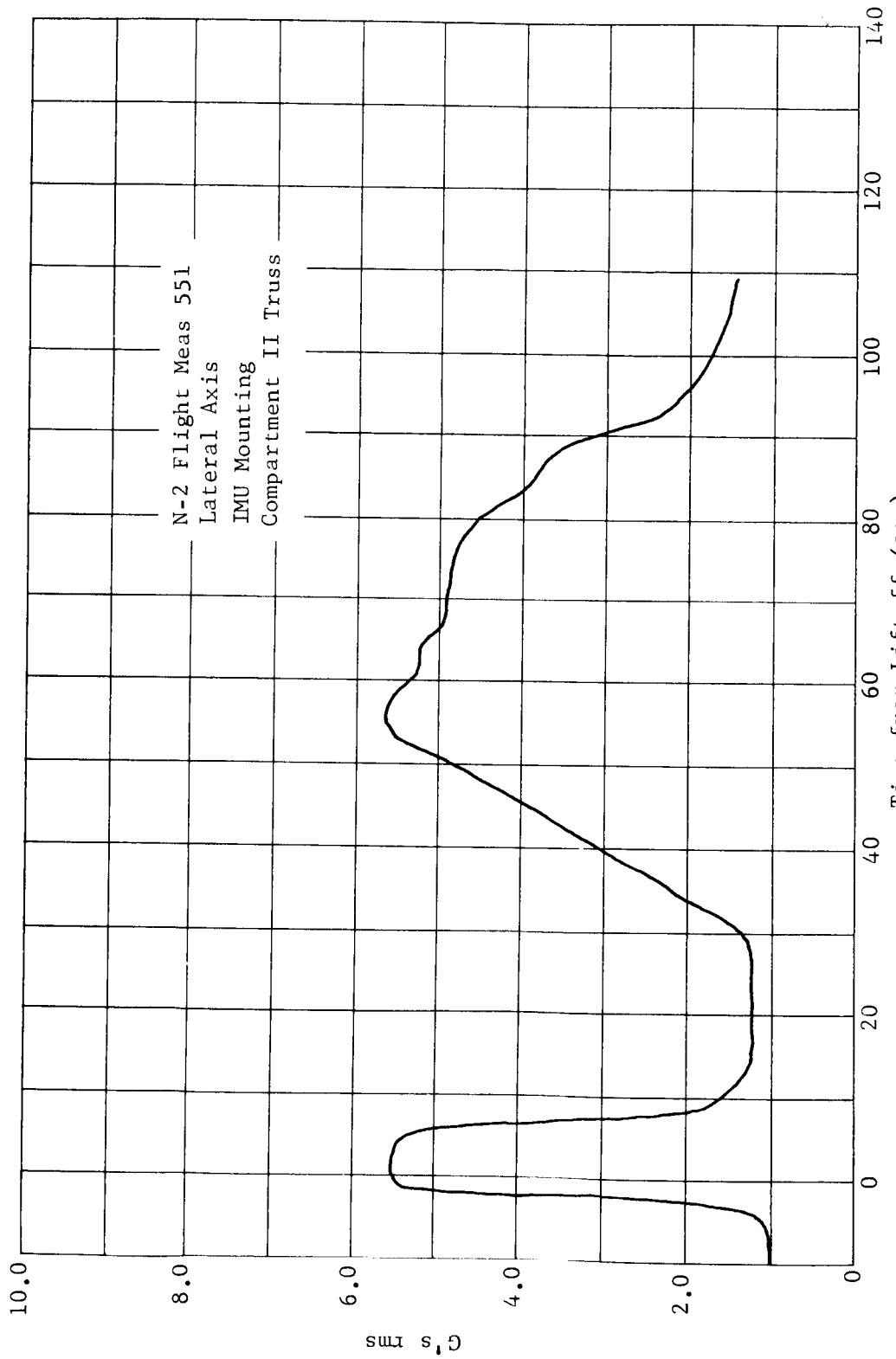


Fig. 661 Titan II RMS Time History

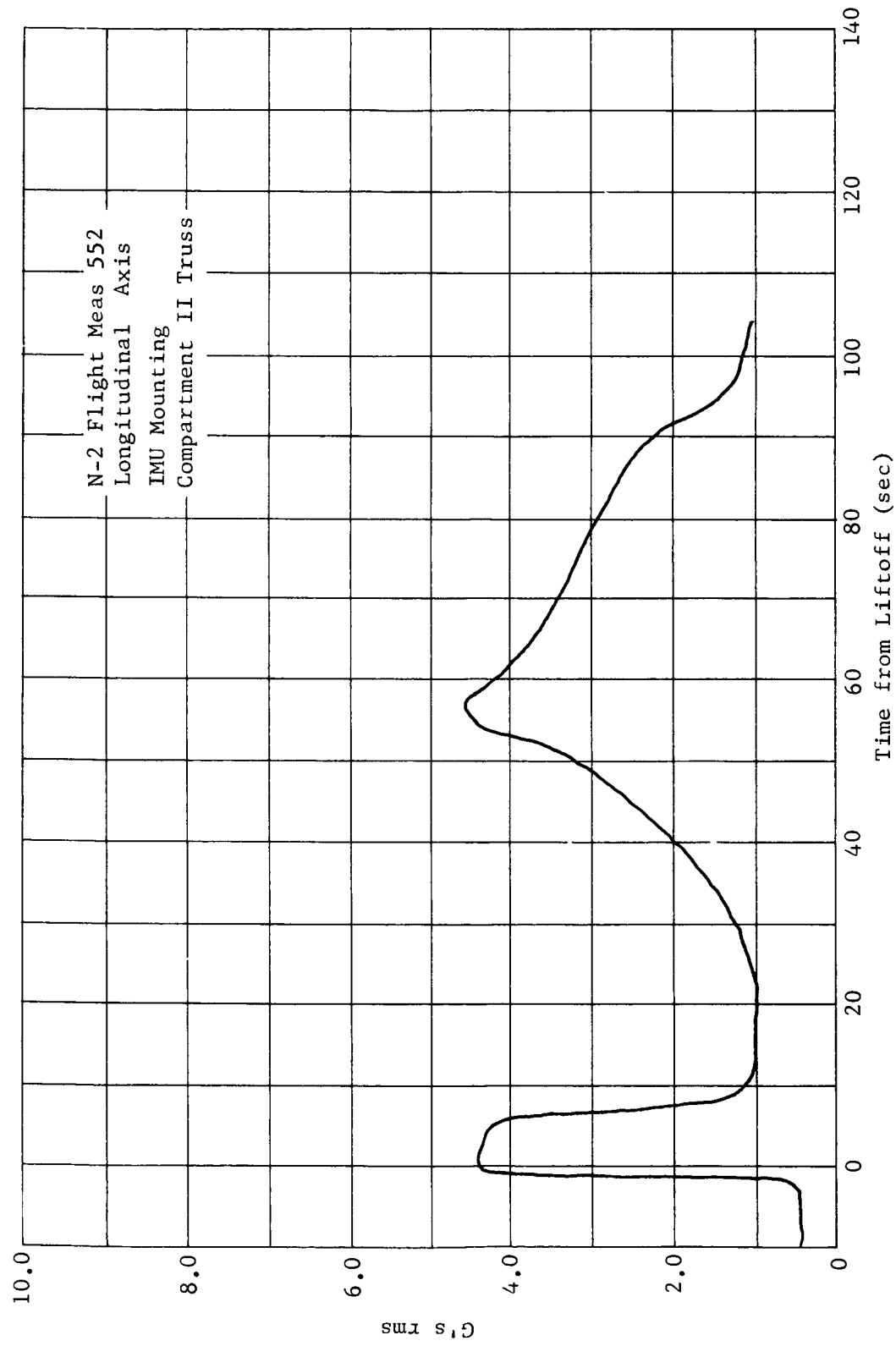


Fig. 662 Titan II RMS Time History

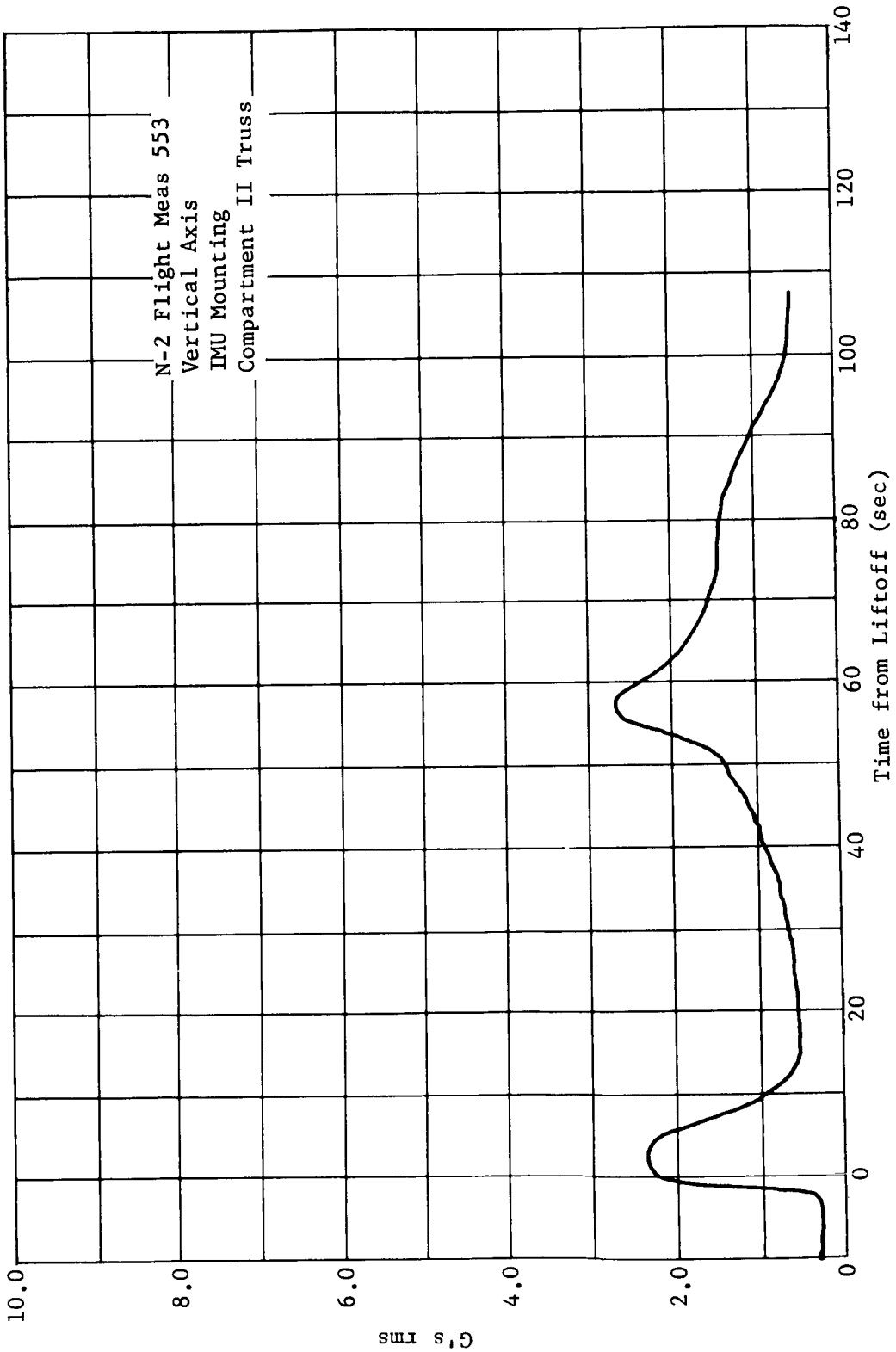


Fig. 663 Titan II RMS Time History

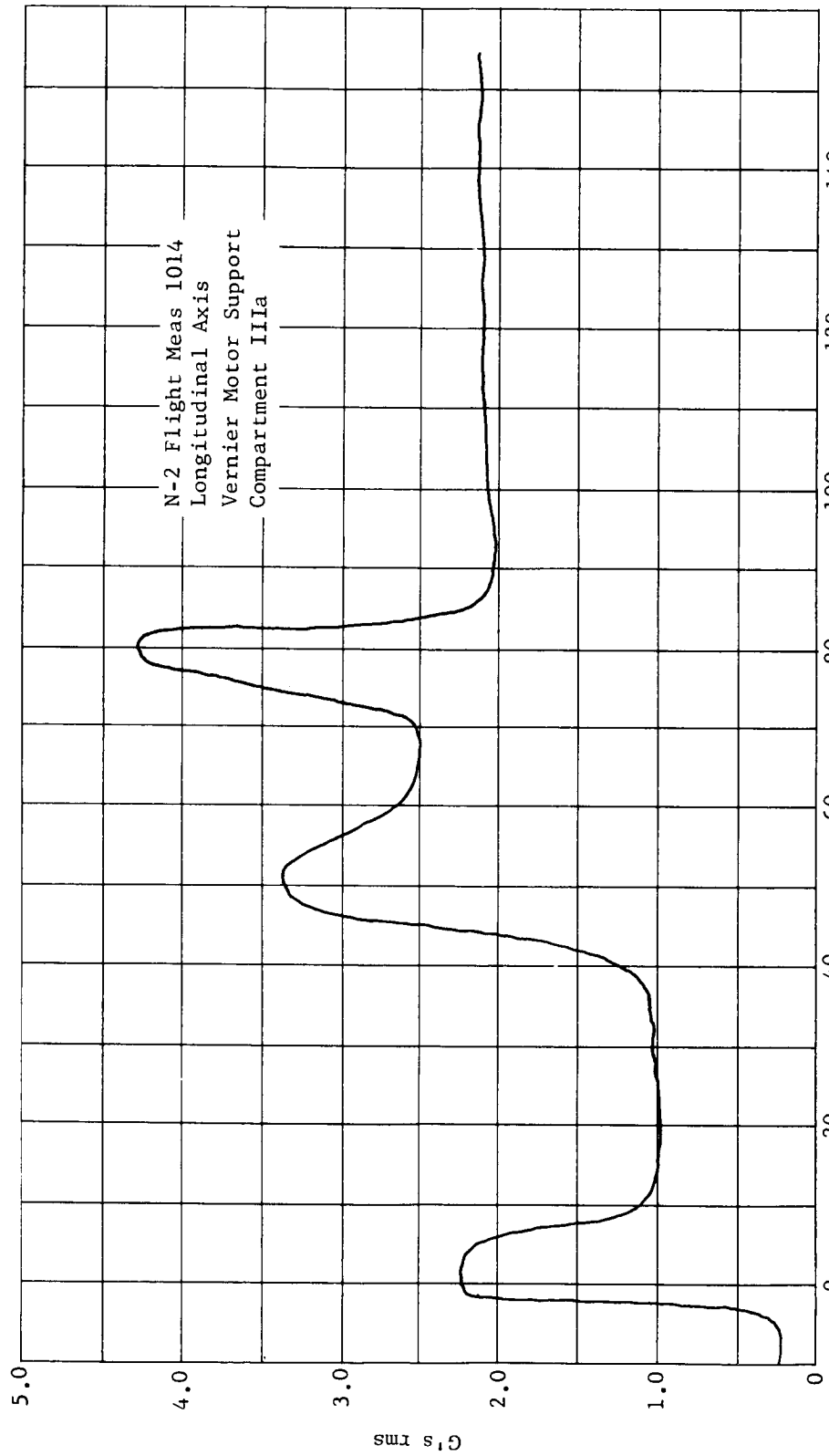


Fig. 664 Titan II RMS Time History

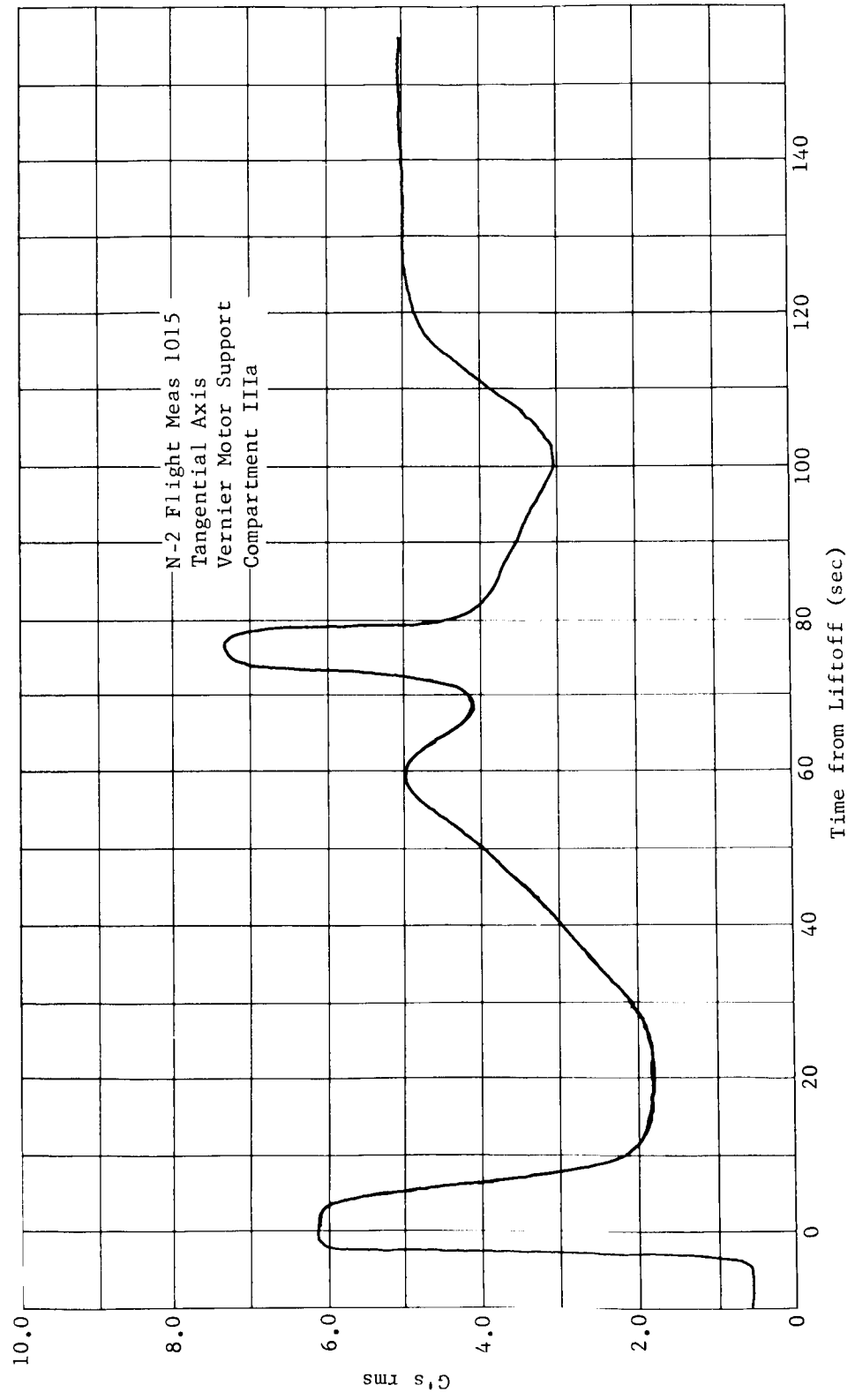


Fig. 665 Titan II RMS Time History

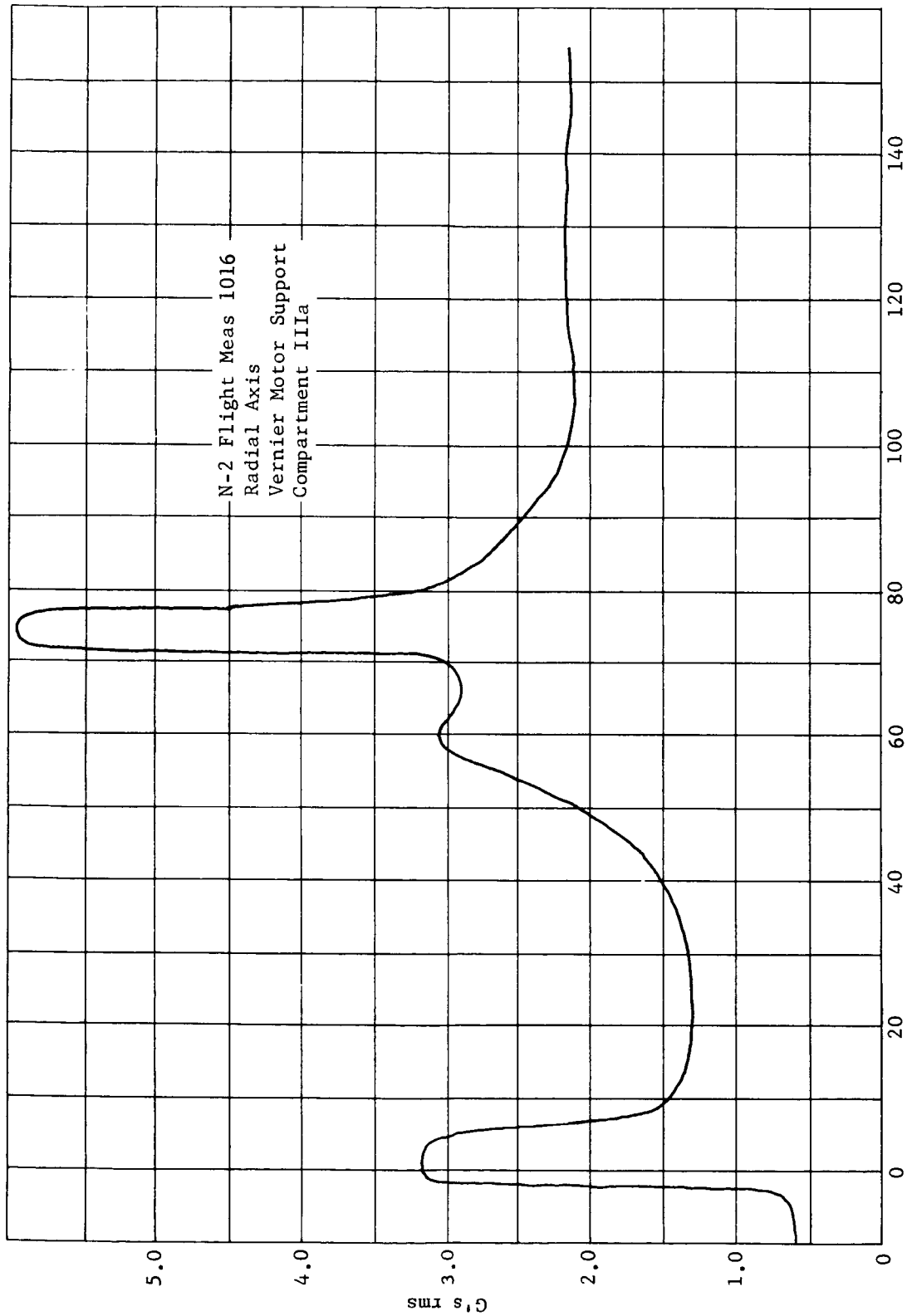


Fig. 666 Titan II RMS Time History

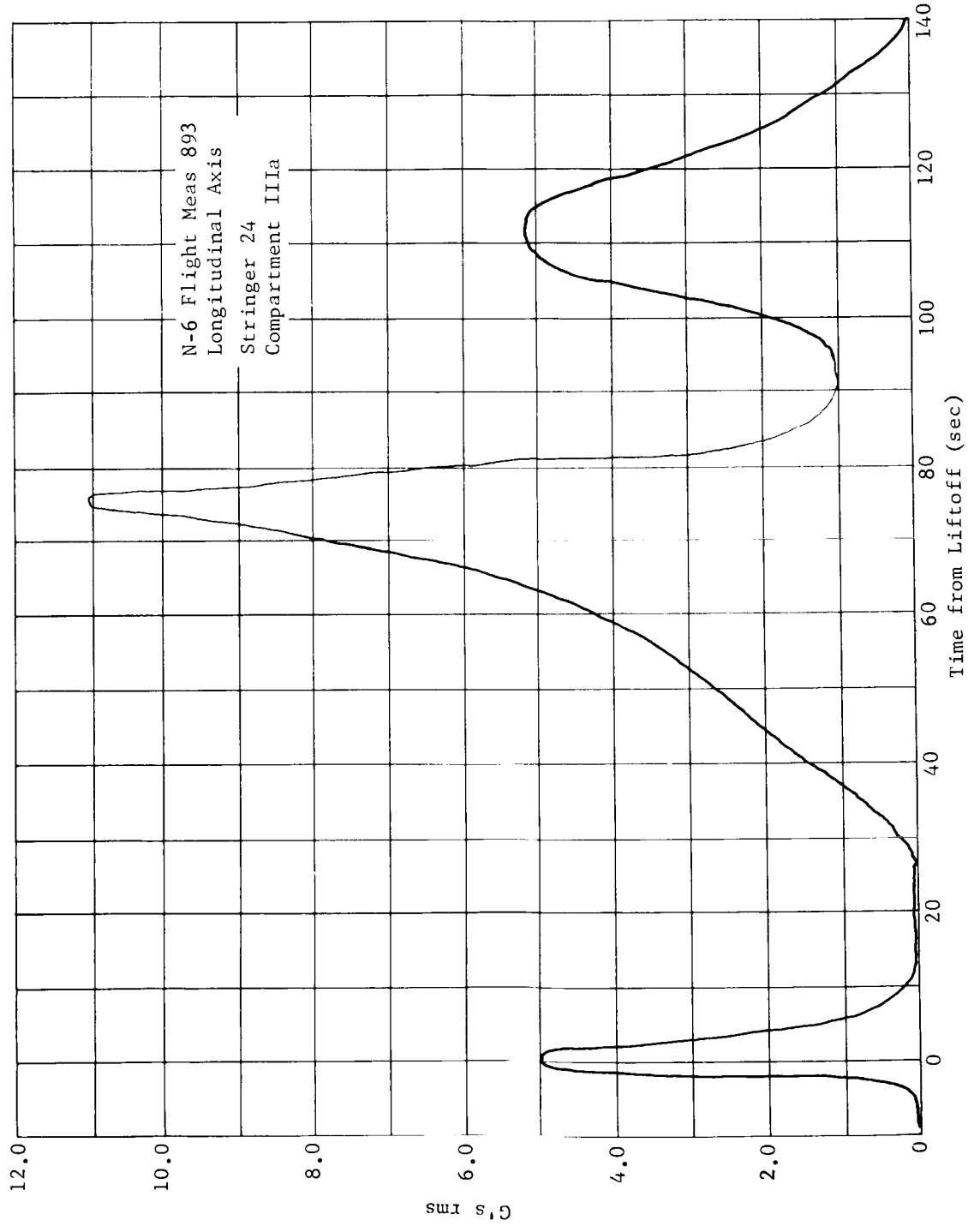


Fig. 667 Titan II RMS Time History

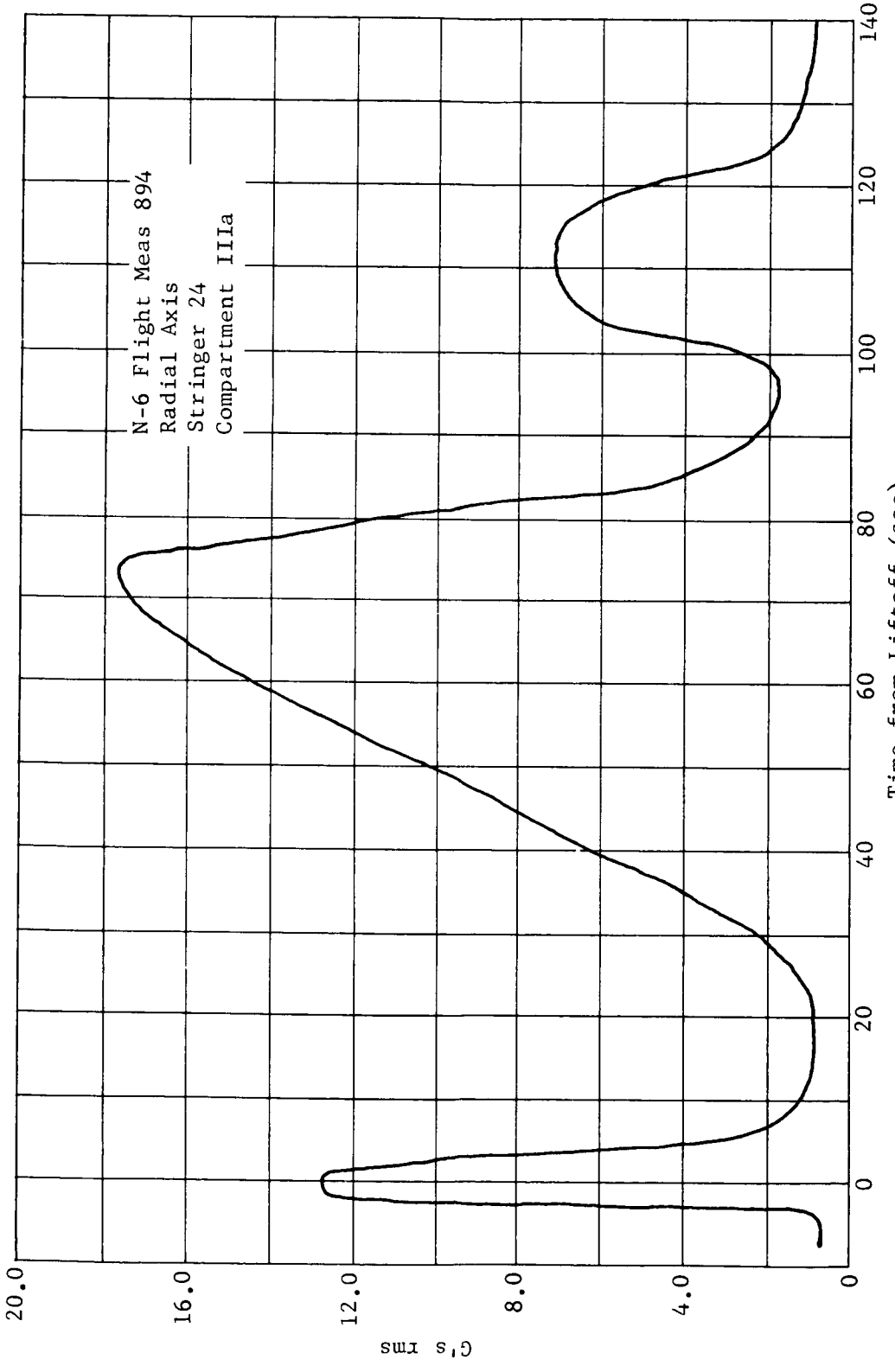


Fig. 668 Titan II RMS Time History

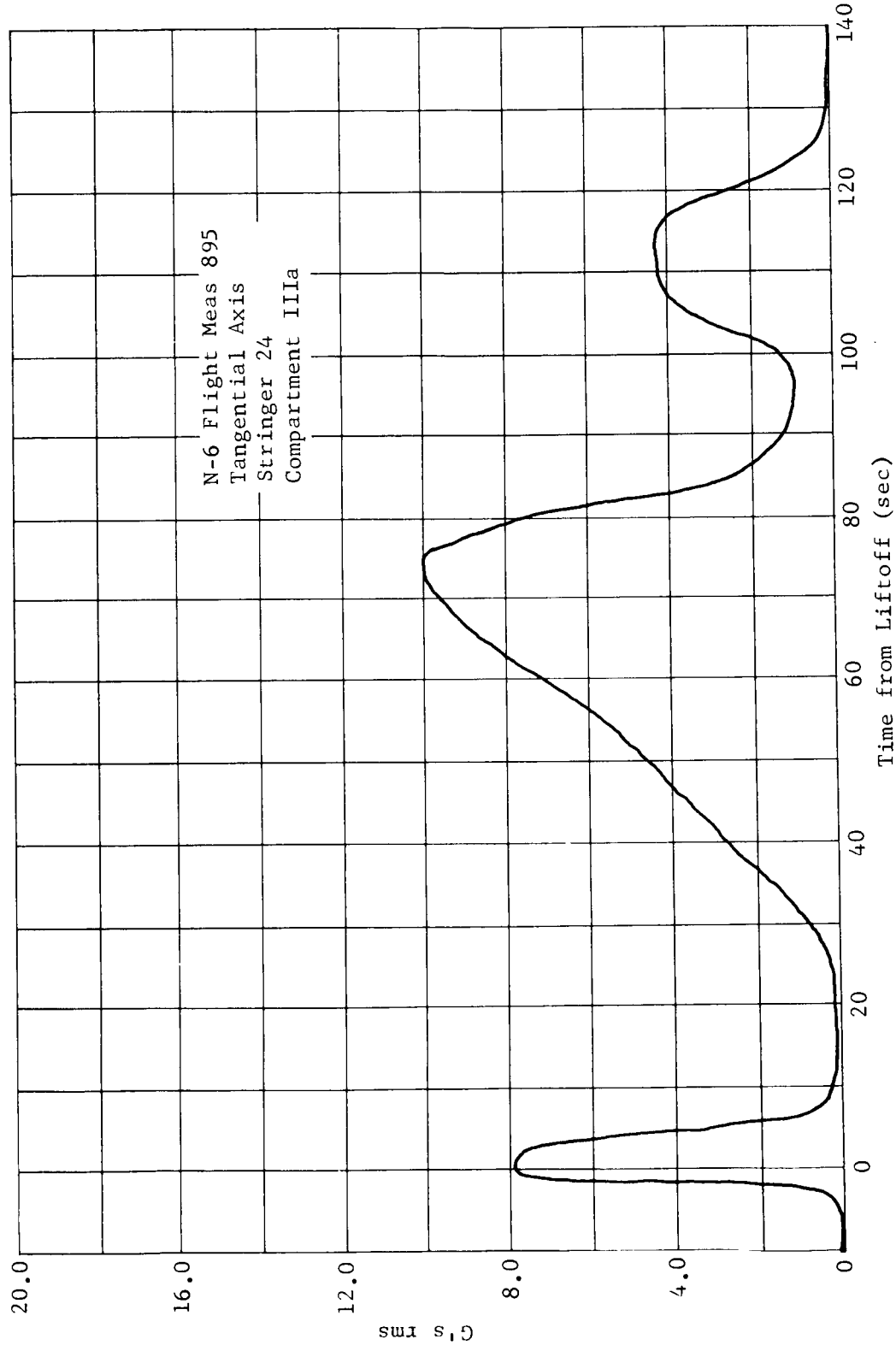
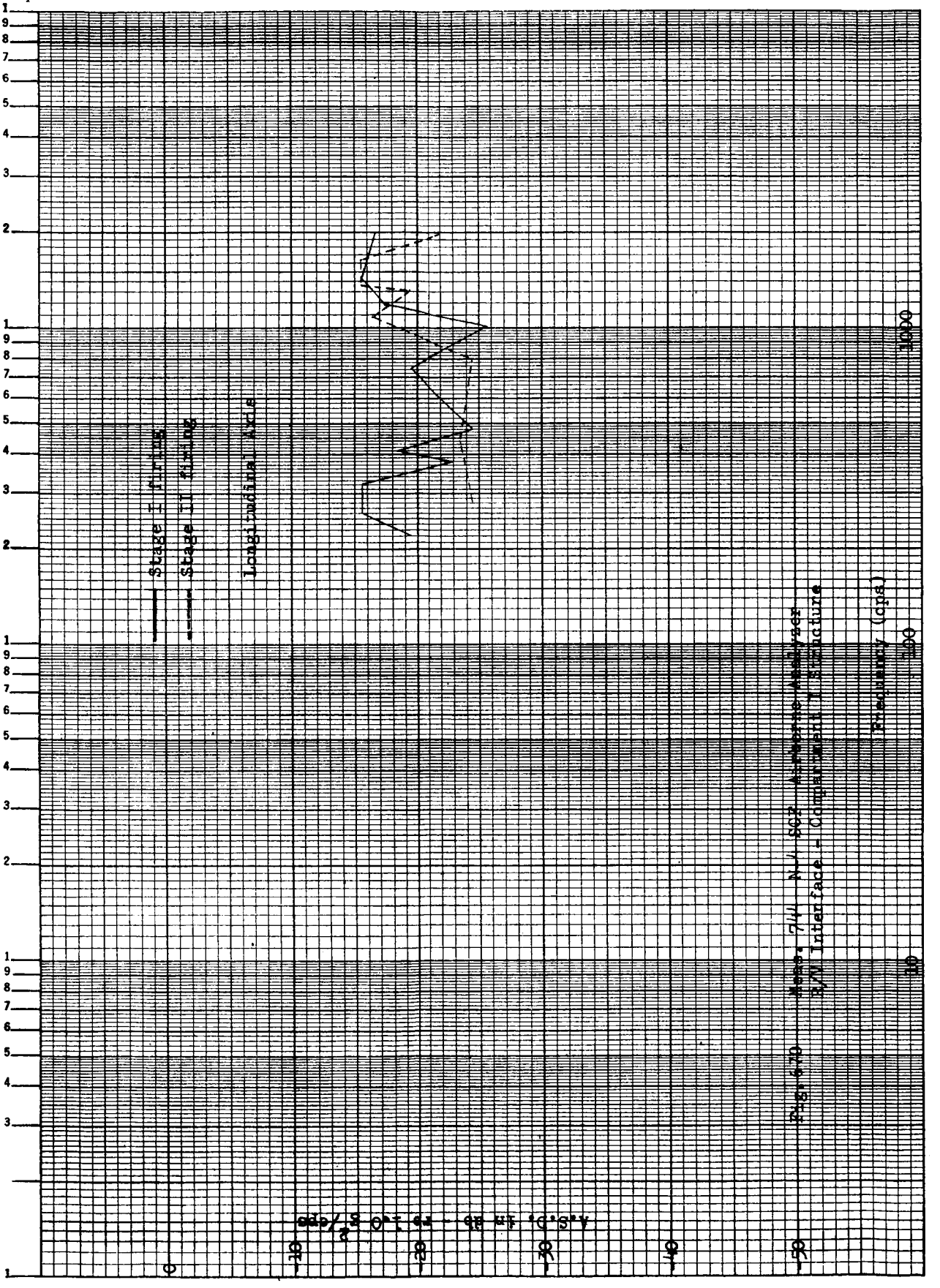
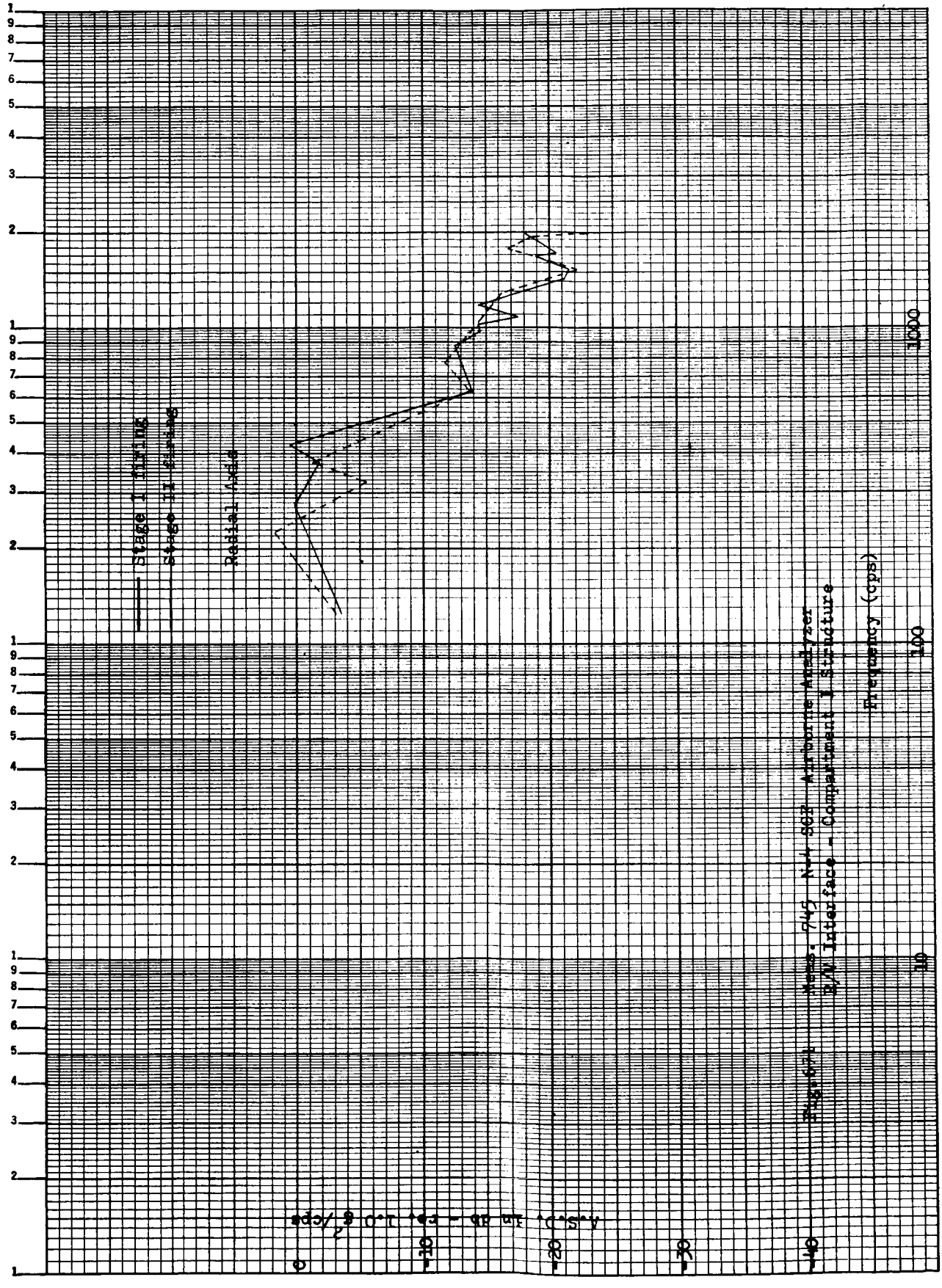
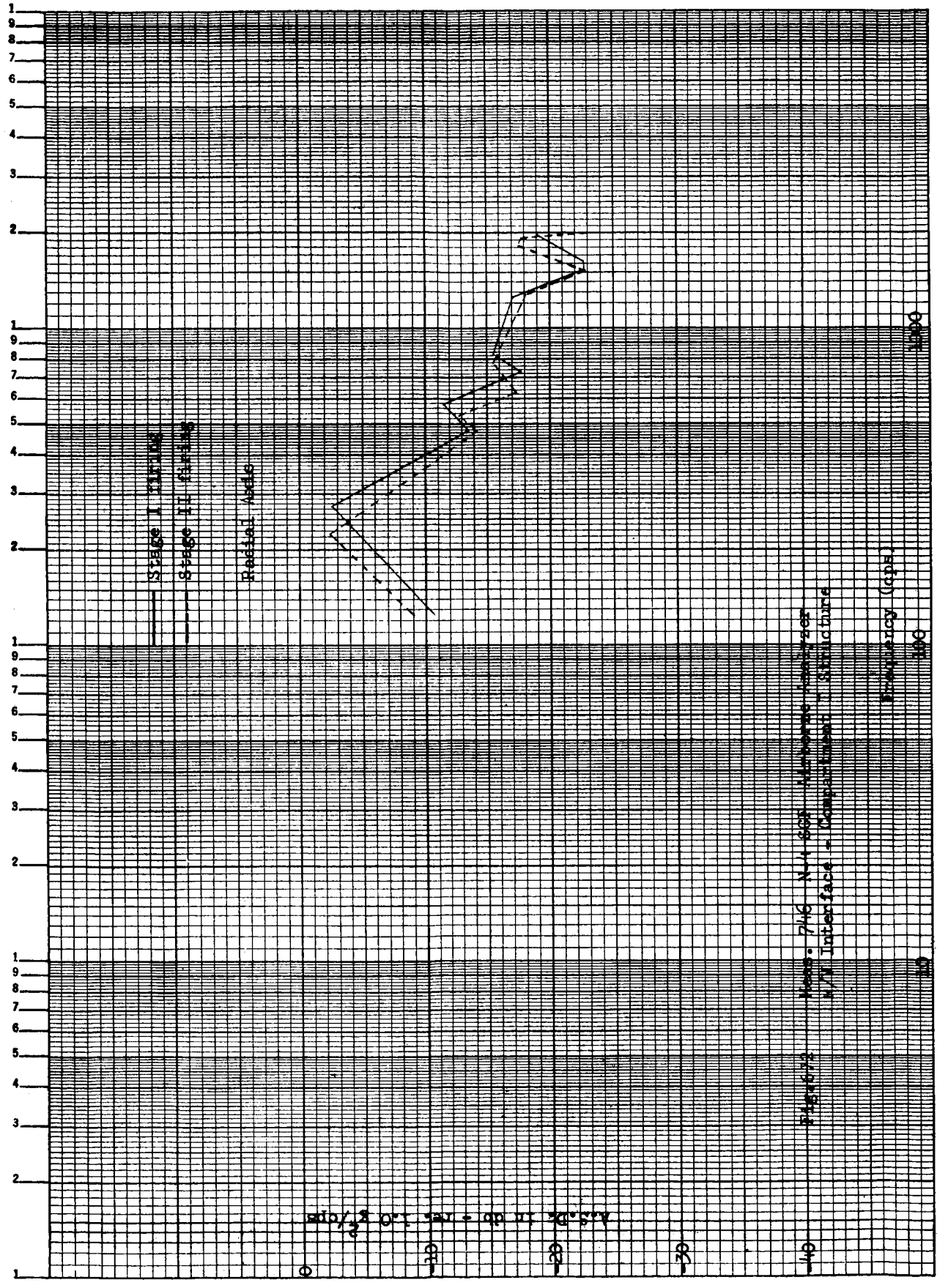


Fig. 669 Titan II RMS Time History


Stage I fitting
Stage II fitting
Longitudinal Mode
Frequency (cps)
Area = 7/1 N/m² sec
3/0 Interface - Compartment 1 Structure
Pressure (psi)


Stage 1 firing
Stage 2 firing
Radial axis
Frequency (cps)
1000
100
10
Area: 645 Nt. sqr. Airborne Analyzer
3/4 Interface - Compartment Structure
Ps-Pa
A.S.C. lb ab - ft² 1.0 ft²/cps


Stage I Trans
Stage II Trans
Reactor Node
Δs.Δx in db + rel. 1.0 g²/cm⁴
Frequency (cps)
Wave - 2/6 Nat. Sol. Interface Analyzer
w/W Interface - Compensation Standard

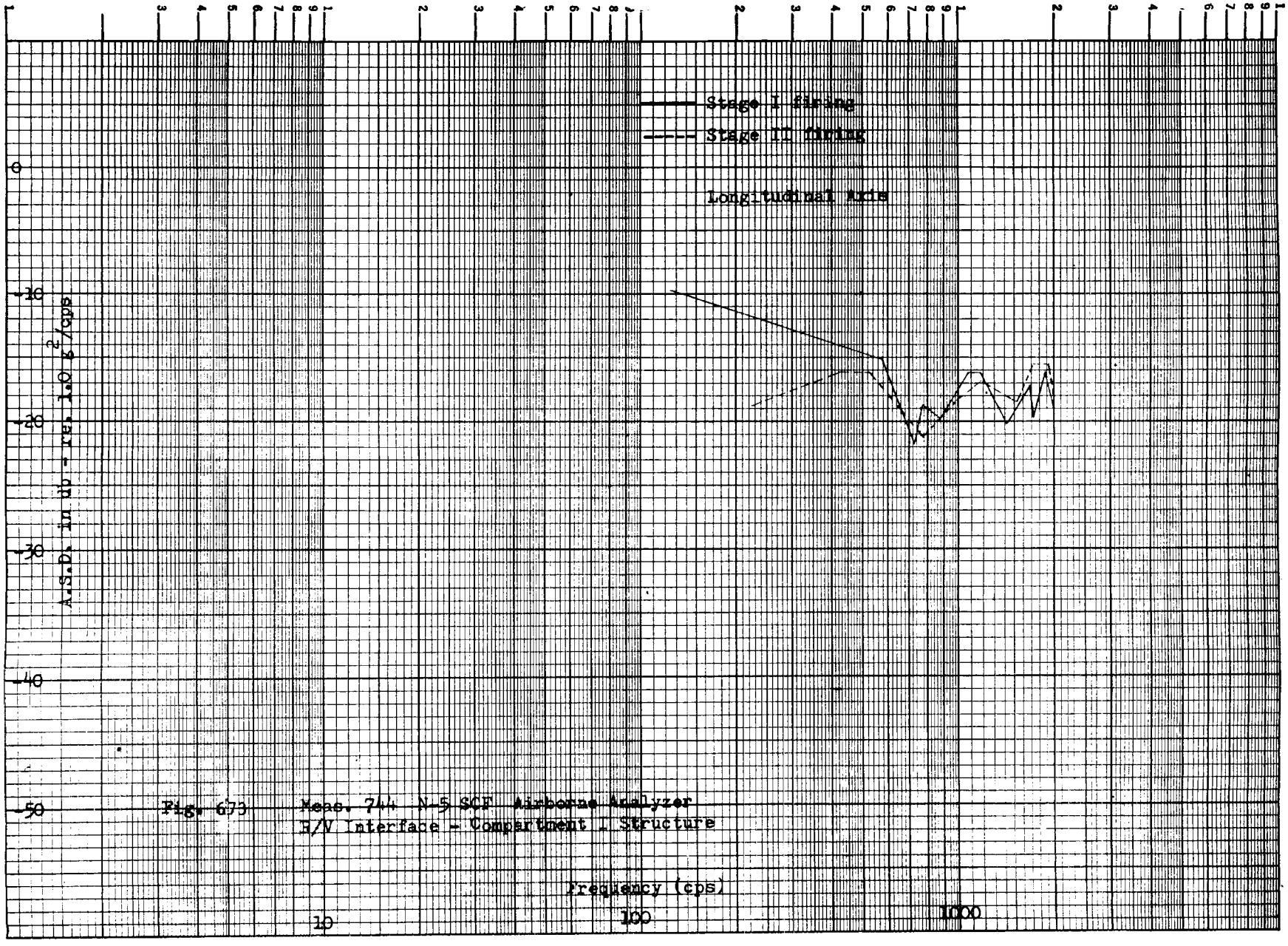
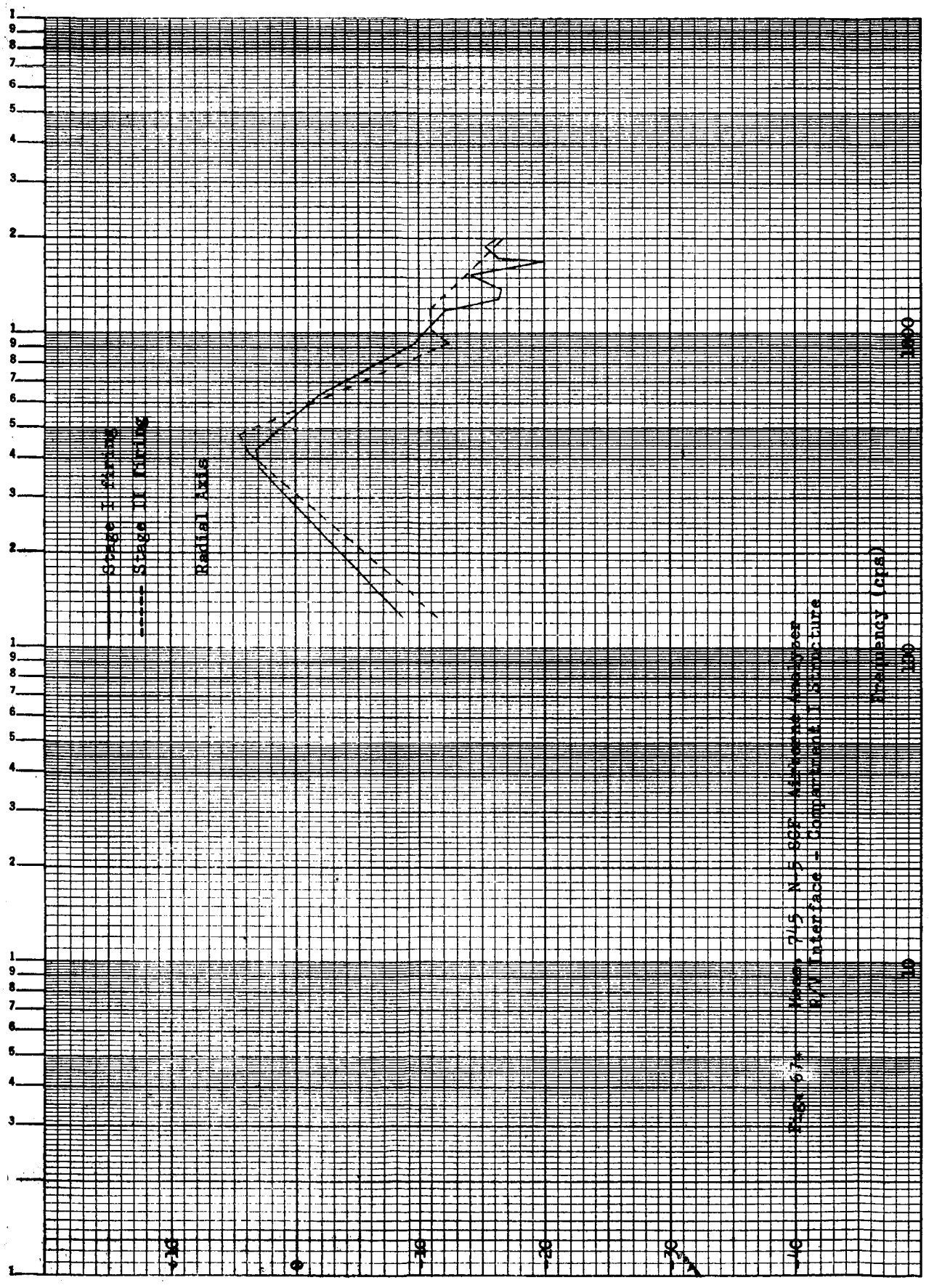
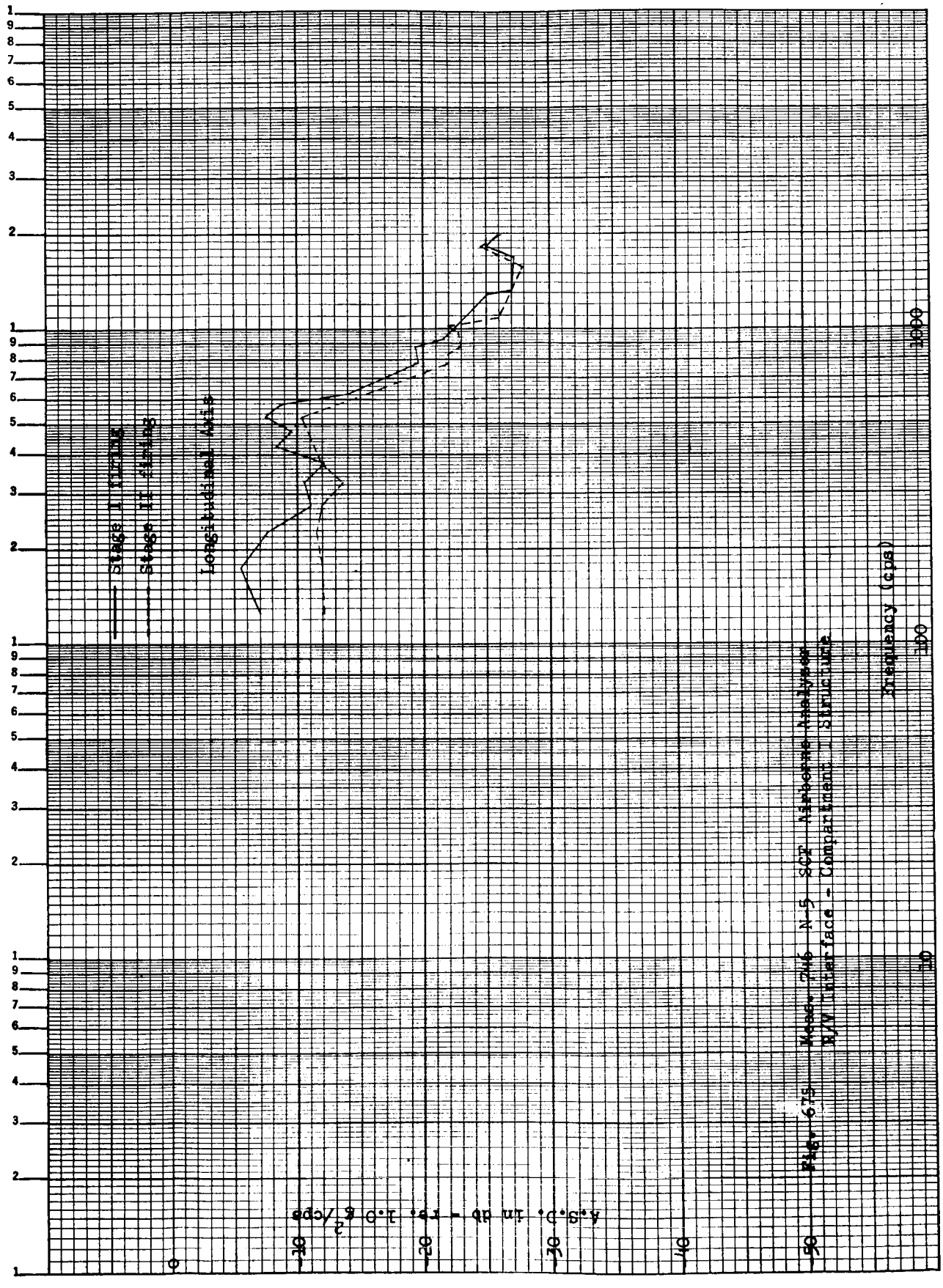


Fig. 673 Meas. 744 N-5 SCF Airborne Analyzer
S/V Interface - Compartment I Structure


Stage I Blade
Stage II Blade
Radial Axis
Frequency (cps)
Fig. 6.7 Mode 7/5 N-5 SCP Airfoil Analyses
R/V Interface - Compartment Structure


Stage I Turns
Stage II Stalls
Longitudinal Axis
A.S.D. in db - re. 1.0 ft²/cps
Frequency (cps)
FIG. 675 — Model 2W6 N-5 SCF Airborne Antenna
R/W Interface - Compartment - Structure

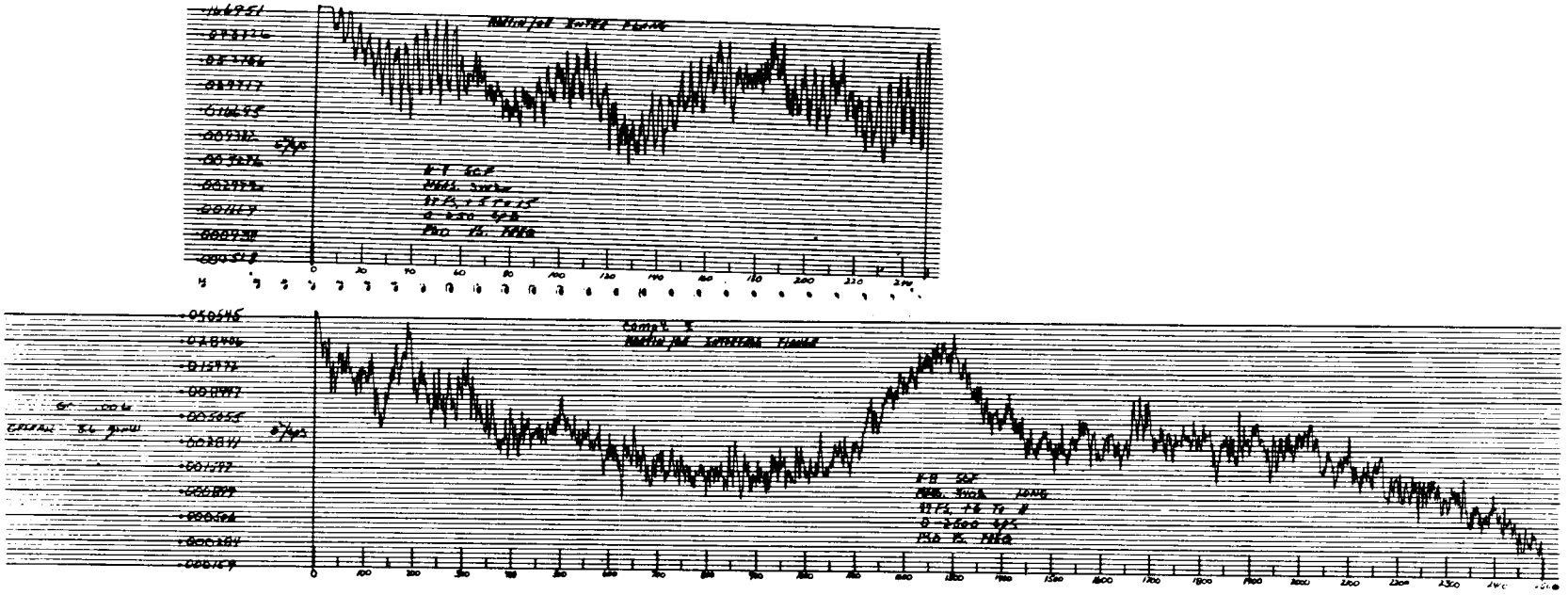


Fig. 676

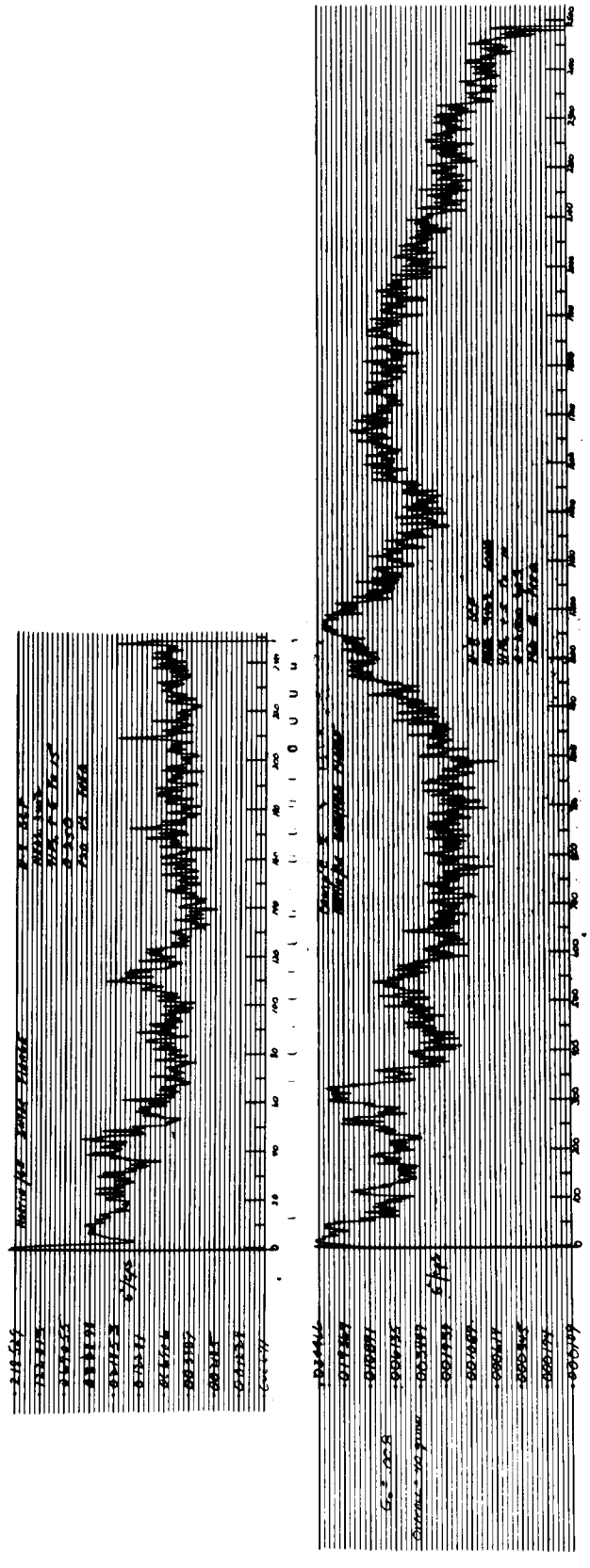


Fig. 677

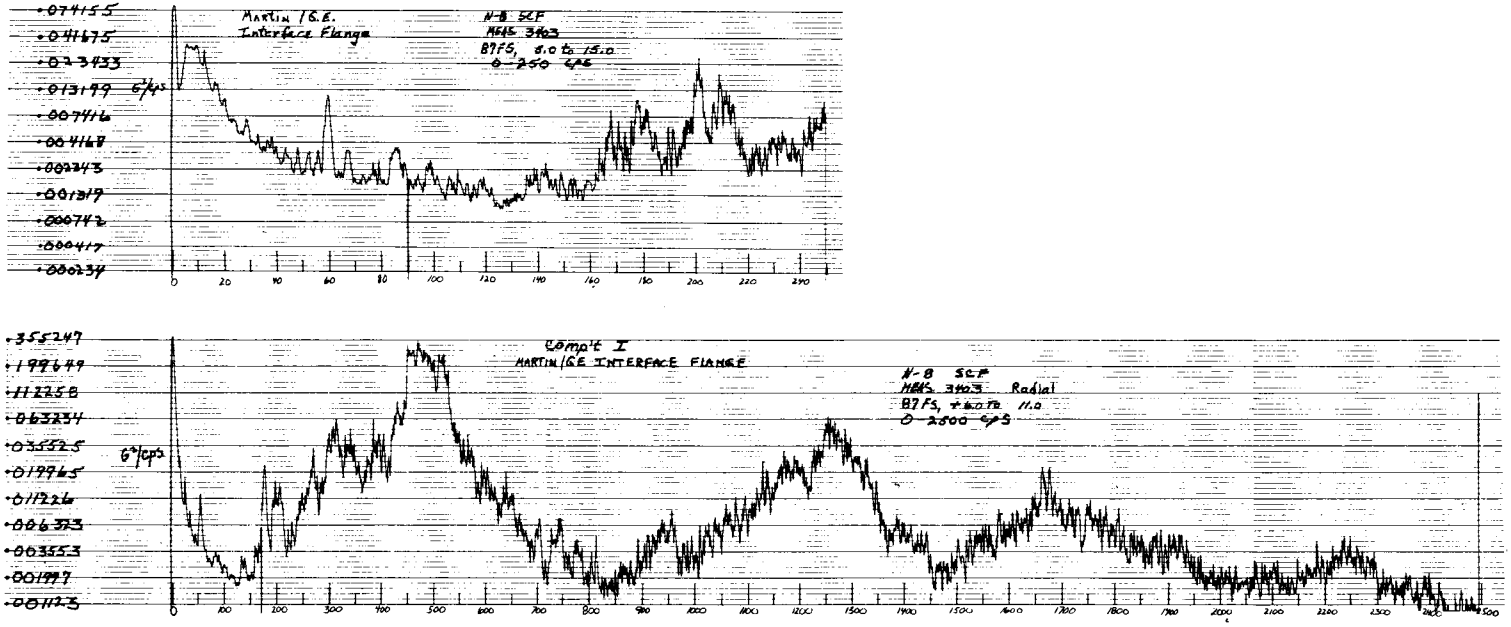

Martin / G.E.
Interface Flange
N-8 SCF
NAVS 3403
87FS, 8.0 to 15.0
0-250 CPS
Compt I
MARTIN/GE INTERFACE FLANGE
N-8 SCF
NAVS 3403 Radial
87FS, +6.0 to 11.0
0-2500 CPS

Fig. 678

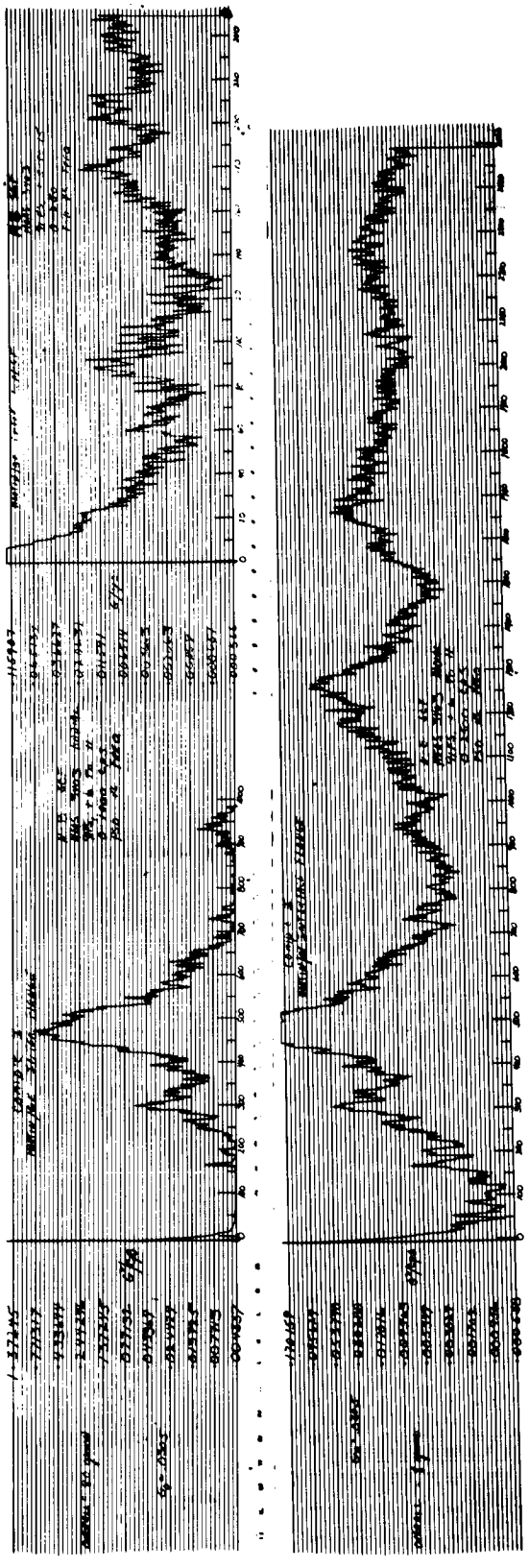


Fig. 679

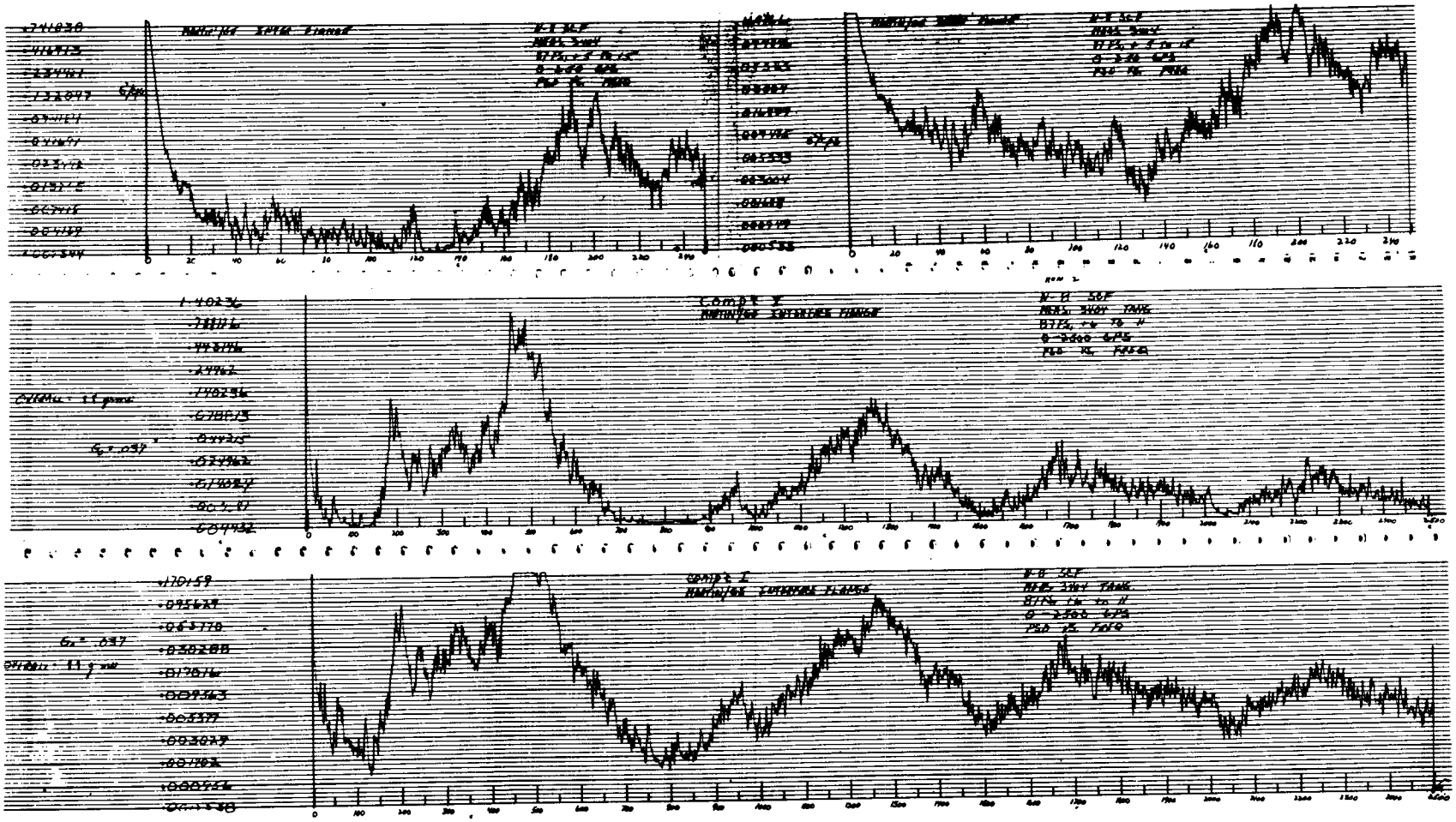


Fig. 680

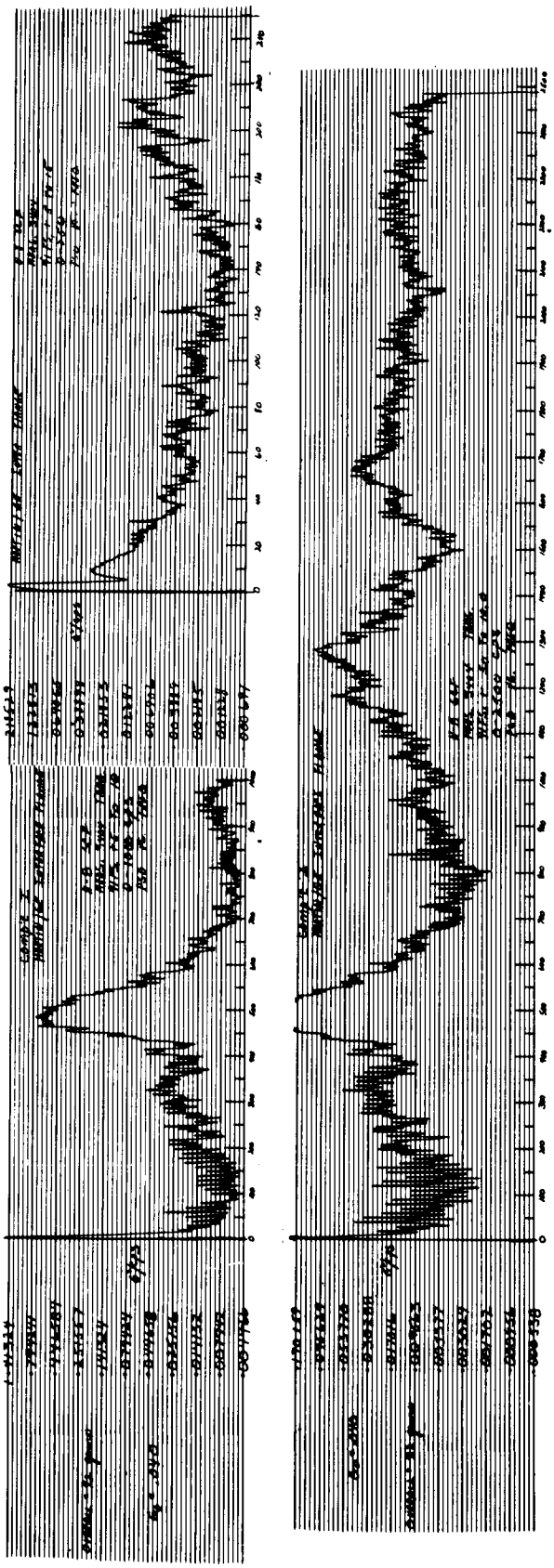


Fig. 681

Figure 68.- Variation of attitude angles with time for a typical flight.

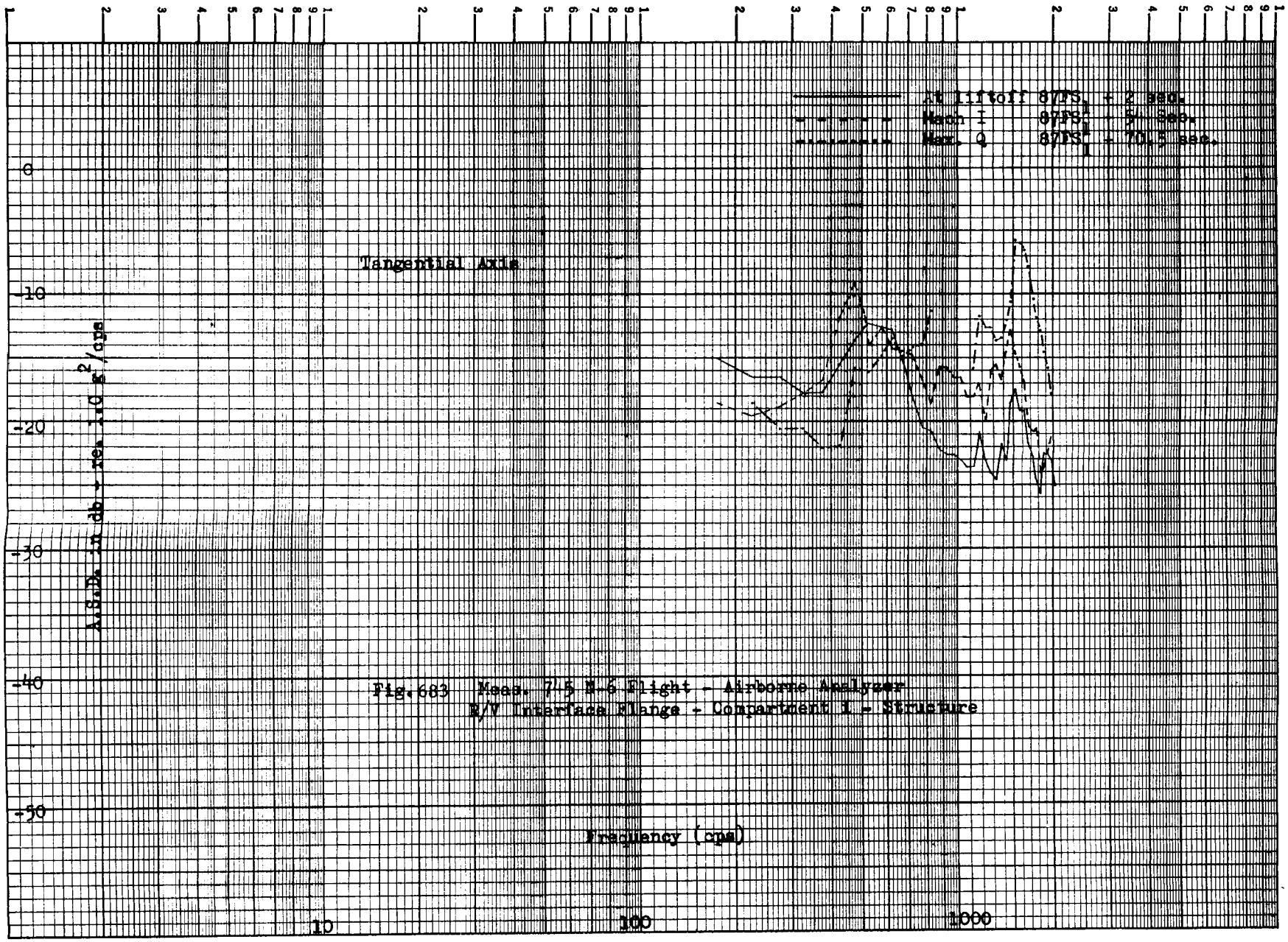
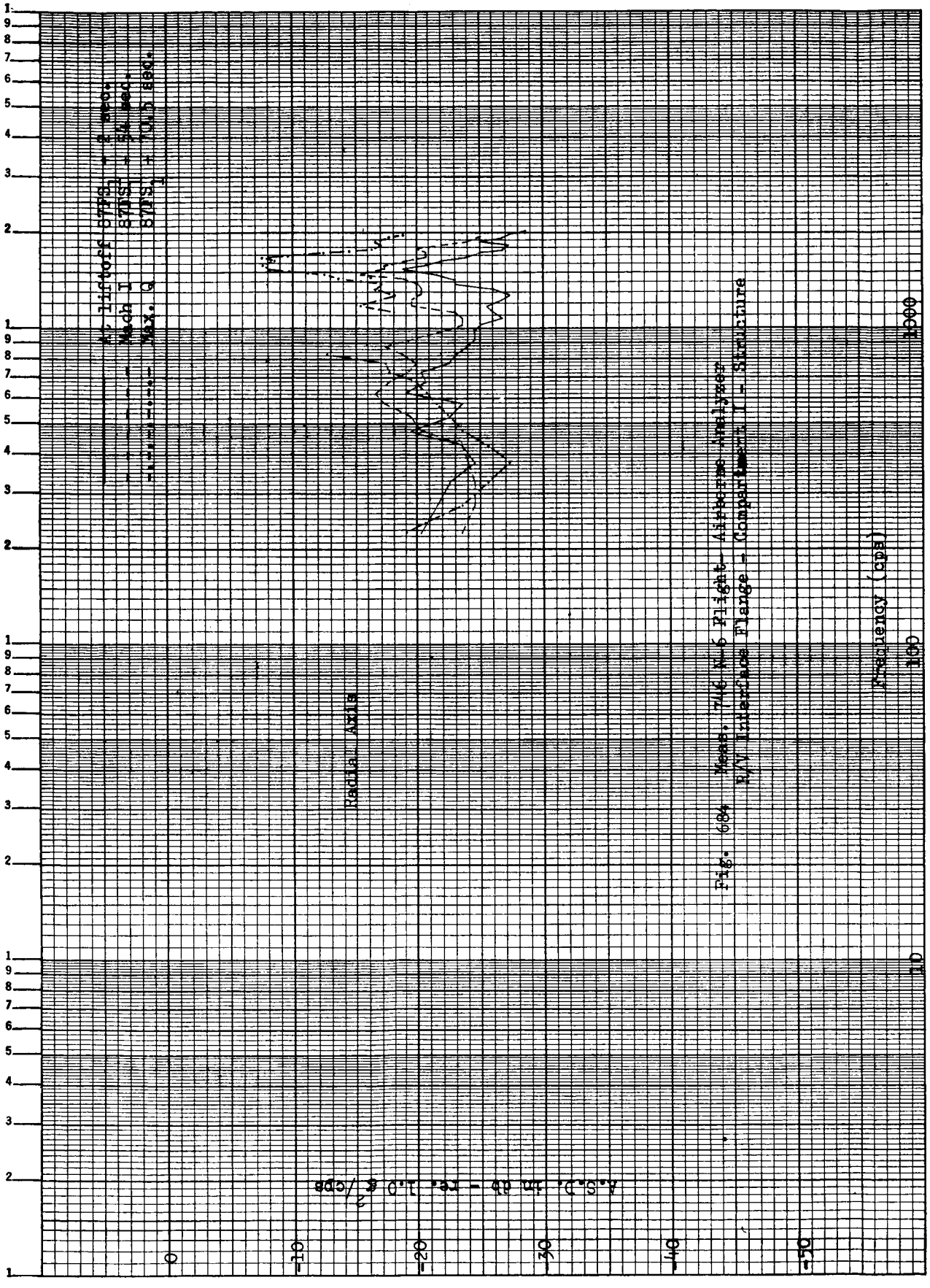


Fig. 683 Meas. 7.5 M-6 Flight - Airborne Analyzer
B/V Interface Flange - Compartment 1 - Structure


Fig. 684 Meas. 7/6 A-6 Flight - Airborne Analyzer
R/V Interface Flange - Component T - Structure
Frequency (cps)
1000
100
10
Radial Axis
0
-10
-20
-30
-40
-50
A.S.D. in db - re. 1.0 g²/cps
Mach 1 at sea level
Max. Q at 10,000 ft.

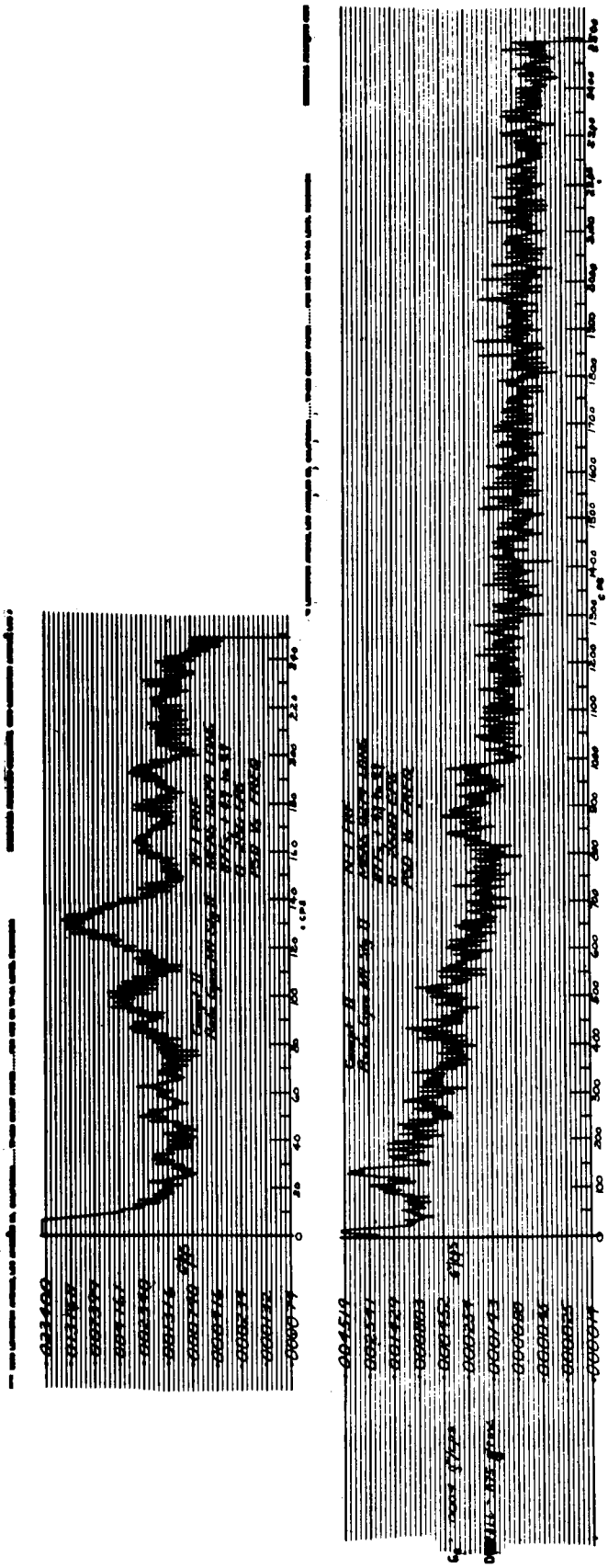


Fig. 685

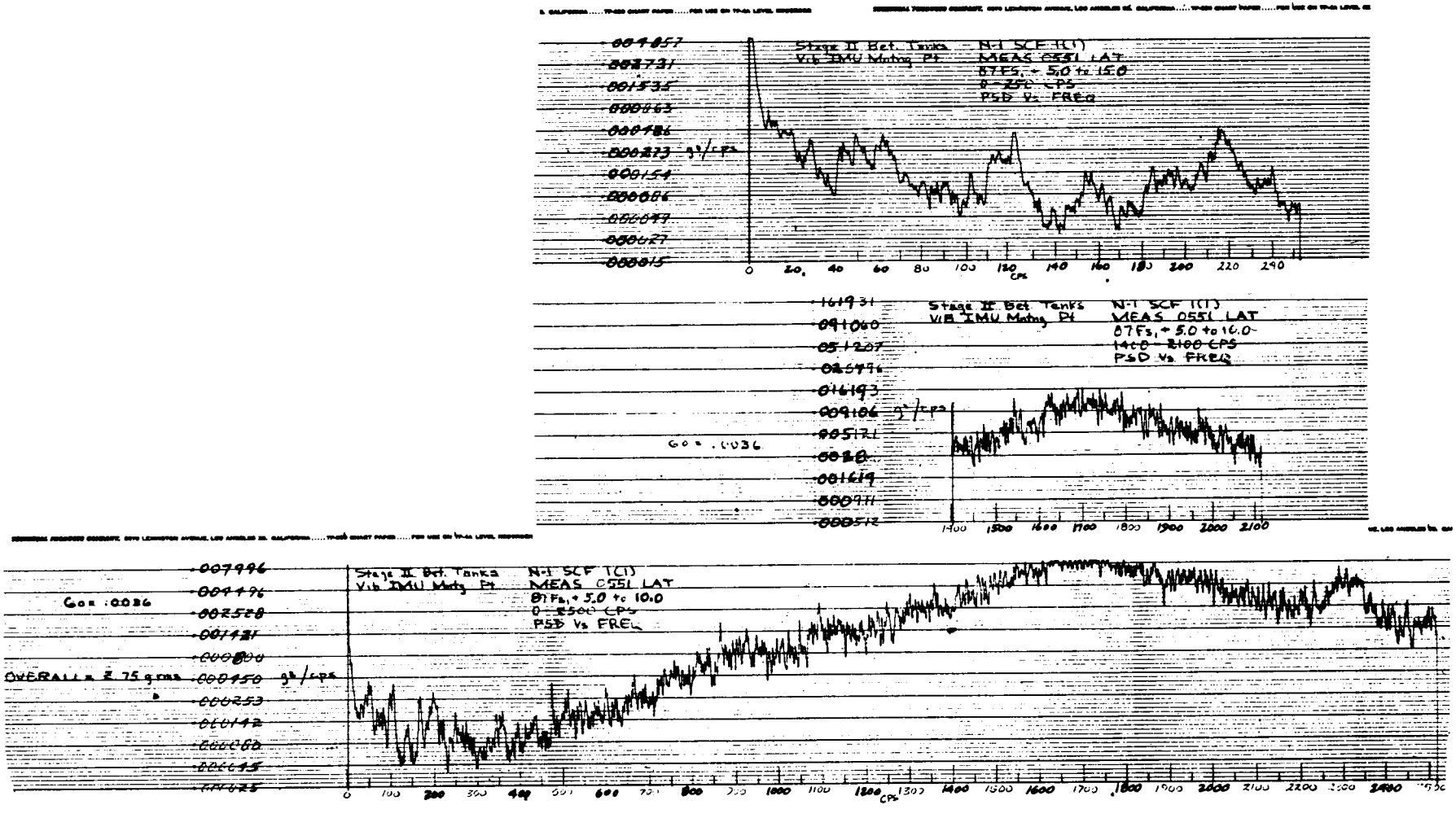

Stage II Bet. Tanks
Vib IMU Mating Pt
N-1 SCF I(1)
MEAS 0551 LAT
87Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
g²/cps
CPS
Stage II Bet. Tanks
VIB IMU Mating Pt
N-1 SCF I(1)
MEAS 0551 LAT
87Fs, + 5.0 to 16.0
1400-2100 CPS
PSD Vs FREQ
Gos .0036
Stage II Bet. Tanks
Vib IMU Mating Pt
N-1 SCF I(1)
MEAS 0551 LAT
87Fs, + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
Gos .0036
OVERALL = 7.75 grms
g²/cps
CPS

Fig. 686

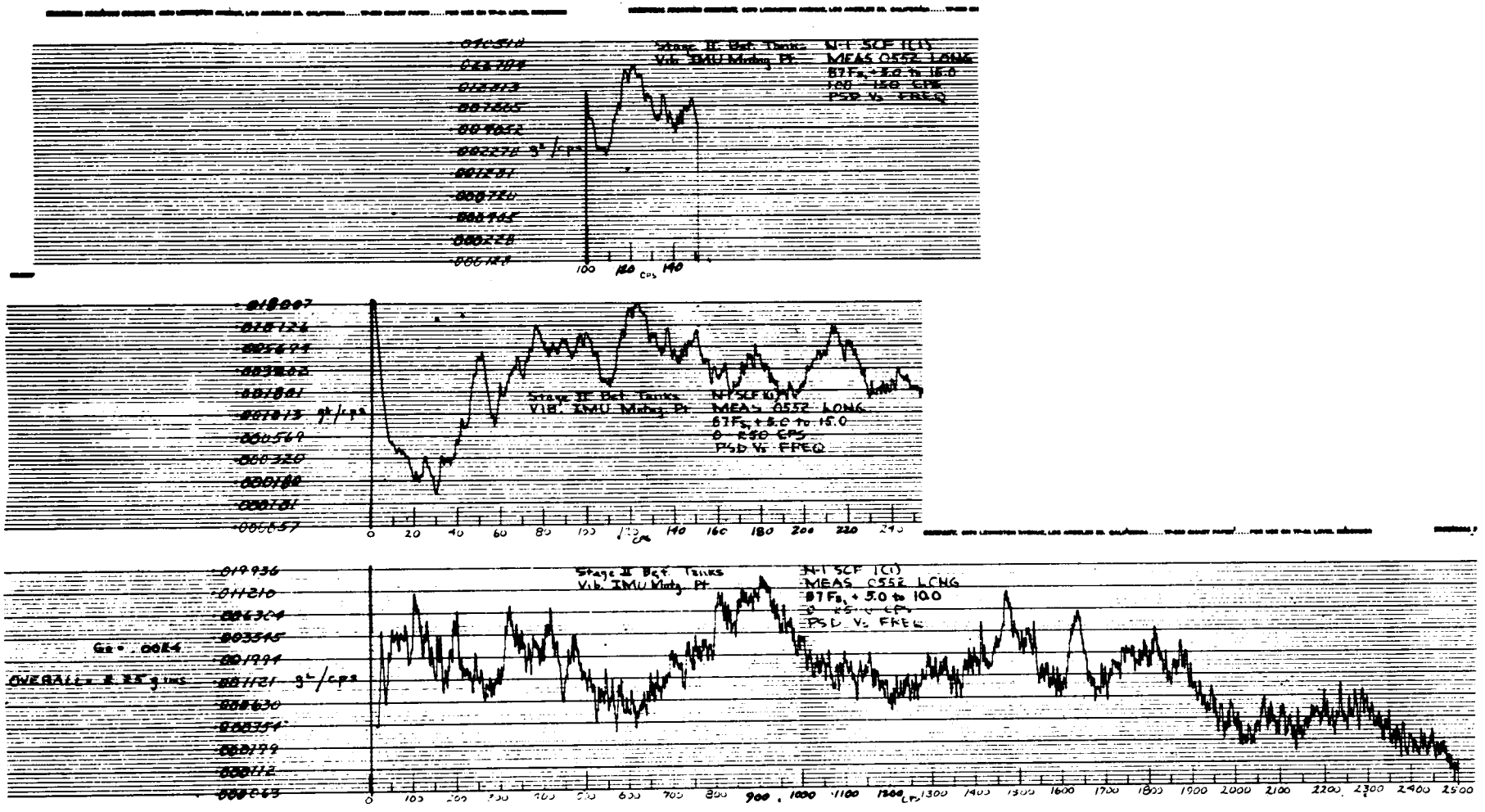

Stage II Bot Tanks
V1B. IMU Mntg Pt
N-1 SCF 1(1)
MEAS 0552 LONG
87Fs1 + 5.0 to 10.0
0 - 250 CPS
PSD Vs FREQ
g²/cps
Stage II Bot Tanks
V1B. IMU Mntg Pt
N-1 SCF 1(1)V
MEAS 0552 LONG
87Fs1 + 5.0 to 15.0
0 - 250 CPS
PSD Vs FREQ
g²/cps
Stage II Bot Tanks
V1B. IMU Mntg Pt
N-1 SCF 1(1)
MEAS 0552 LONG
87Fs1 + 5.0 to 10.0
PSD Vs FREQ
Ga = .0064
OVERALL = 8.55 g rms
g²/cps

Fig. 687

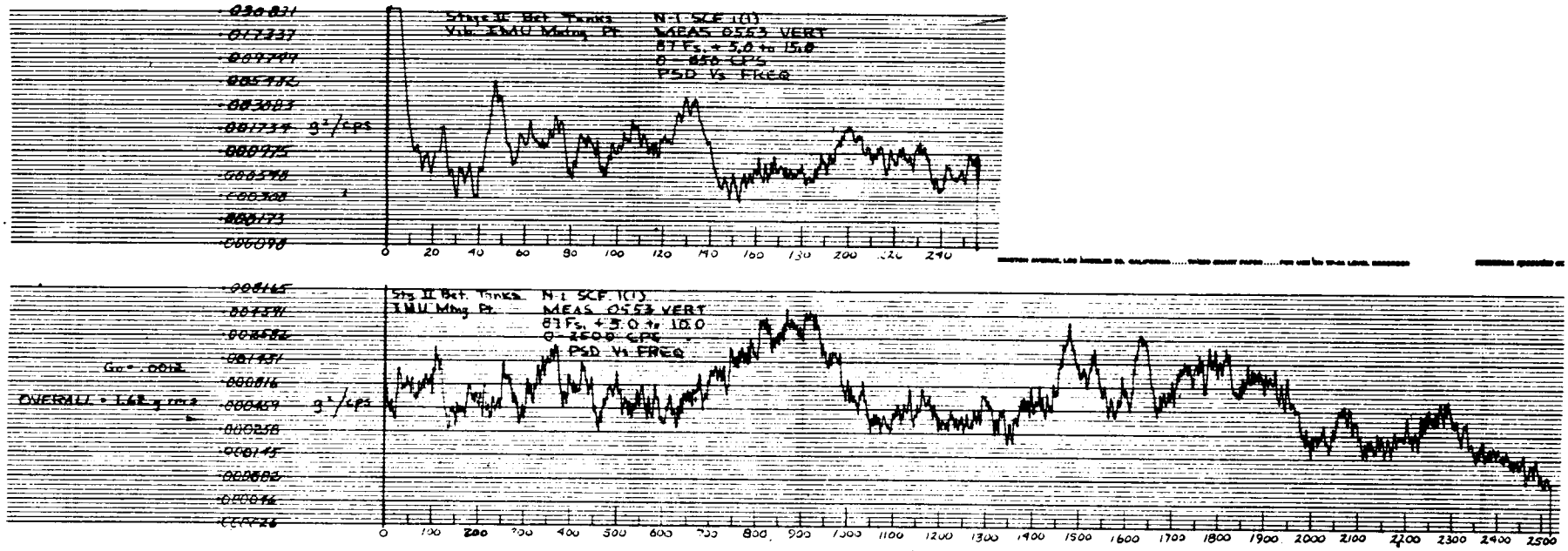
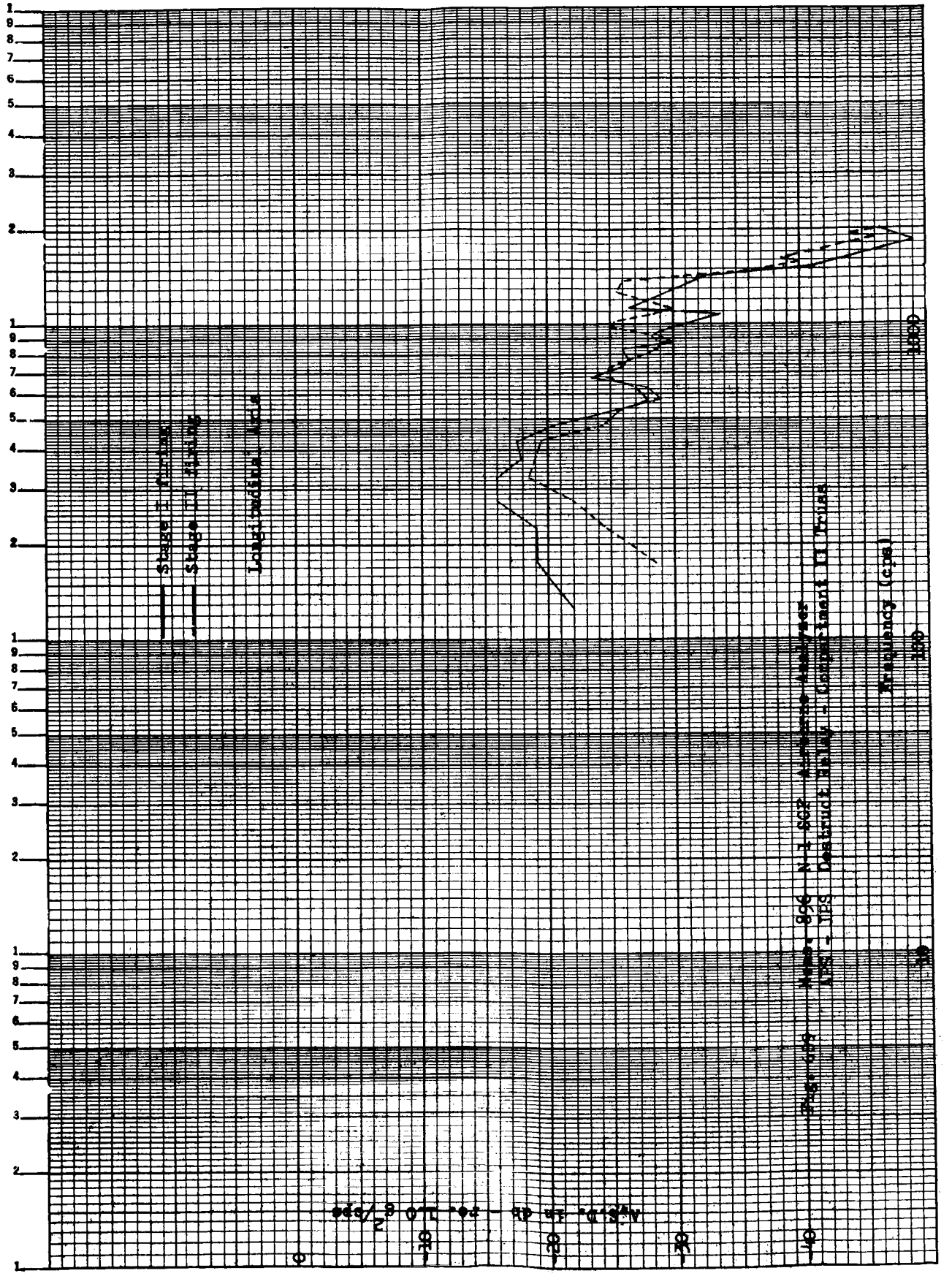

Stage II Bat. Tanks
Vib. IMU Mtng Pt.
N-1 SCF 1(1)
MEAS 0553 VERT
87 Fs, +5.0 to 15.0
0 - 850 CPS
PSD Vs FREQ
g²/CPS
0 20 40 60 80 100 120 140 160 180 200 220 240
Stg II Bat. Tanks
IMU Mtng Pt.
N-1 SCF 1(1)
MEAS 0553 VERT
87 Fs, +5.0 to 10.0
0 - 2500 CPS
PSD Vs FREQ
Gw = .0012
OVERALL = 1.68 g rms
g²/CPS
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500

Fig. 688


Stage I - Cruise
Stage II - Climb
Landing Gear Noise
Frequency (cps)
LPSP - TBS
Destruct Fault - Lower Limit (1) Occurs

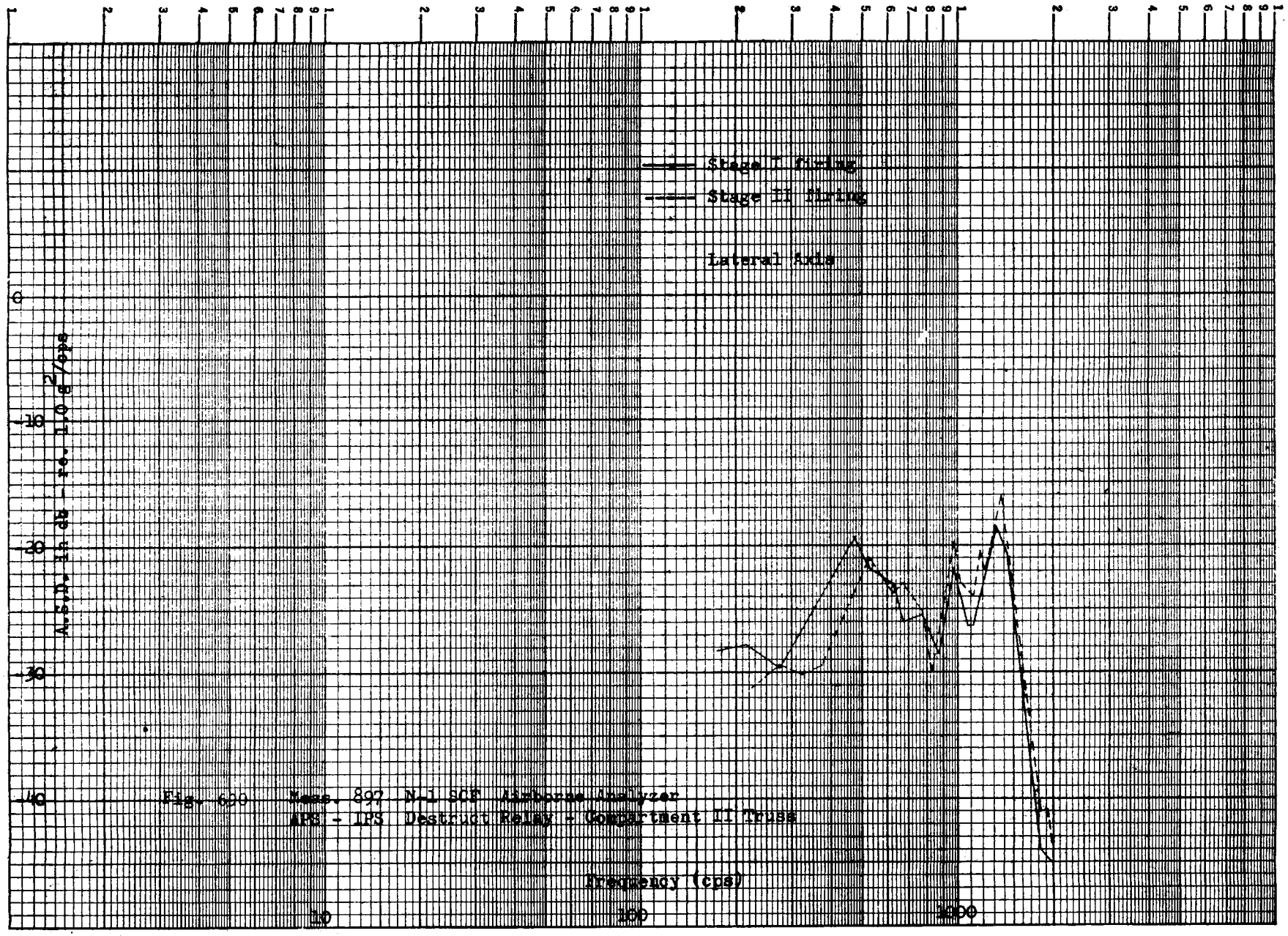


Fig. 600 Mass. 897 N-1 SCF Airborne Analyzer
APS - IPS Destruct Relay - Compartment II Truss

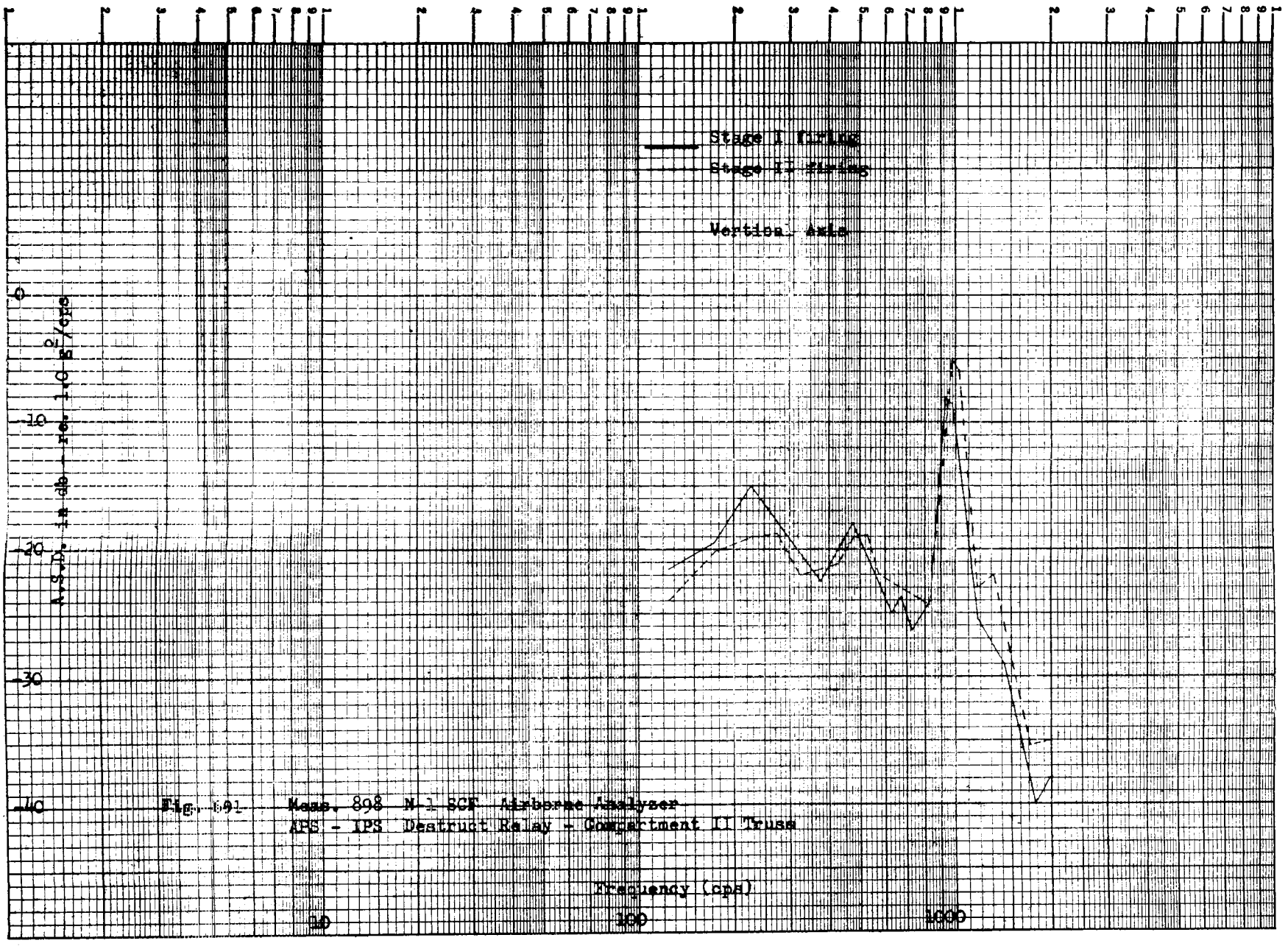


Fig. 191 Mass. 898 M-1 SCF Airborne Analyzer
IPS - IPS Destruct Relay - Compartment II Truss

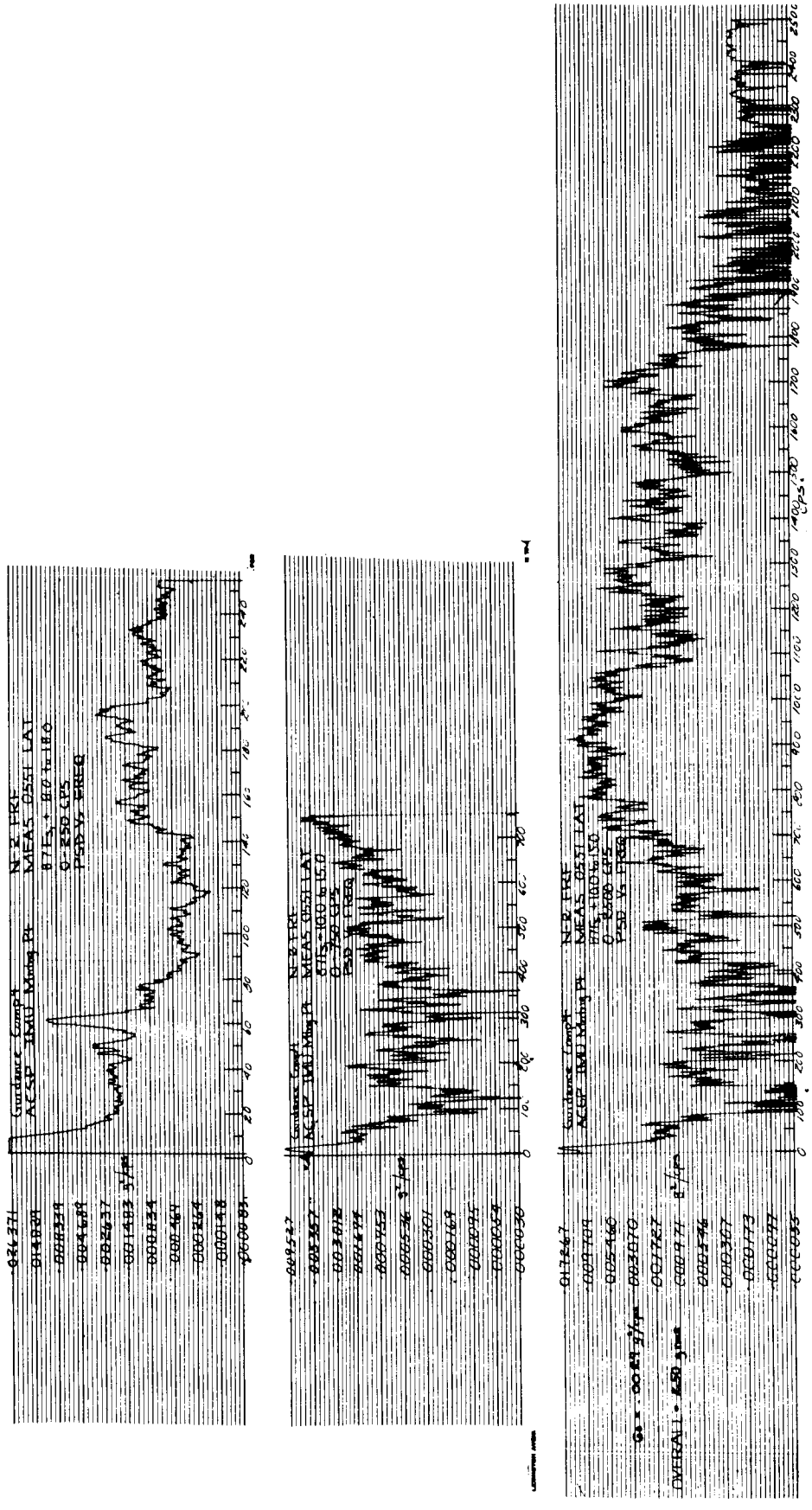


Fig. 692

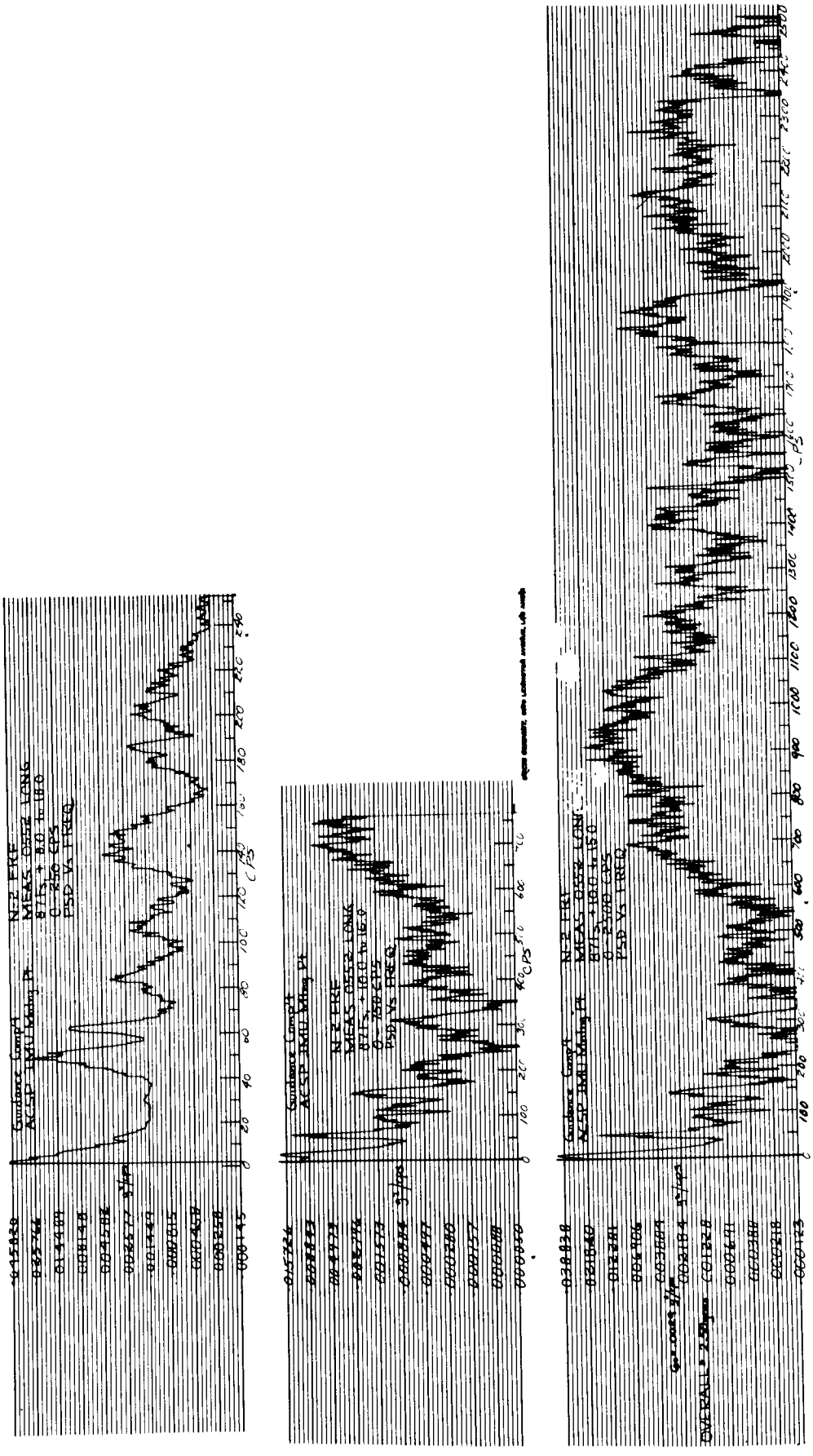

N-2 FRF
Guidance Comp't
ACSP IMU Mtng Pt
MEAS. OSS2 LONG
8 Pts. + 8.0 to 18.0
0-250 EPS
PSD Vs FREQ
CPS
N-2 FRF
Guidance Comp't
ACSP IMU Mtng Pt
MEAS. OSS2 LONG
8 Pts. + 10.0 to 16.0
0-250 EPS
PSD Vs FREQ
CPS
N-2 FRF
Guidance Comp't
ACSP IMU Mtng Pt
MEAS. OSS2 LONG
8 Pts. + 10.0 to 15.0
0-2500 CPS
PSD Vs FREQ

Fig. 693

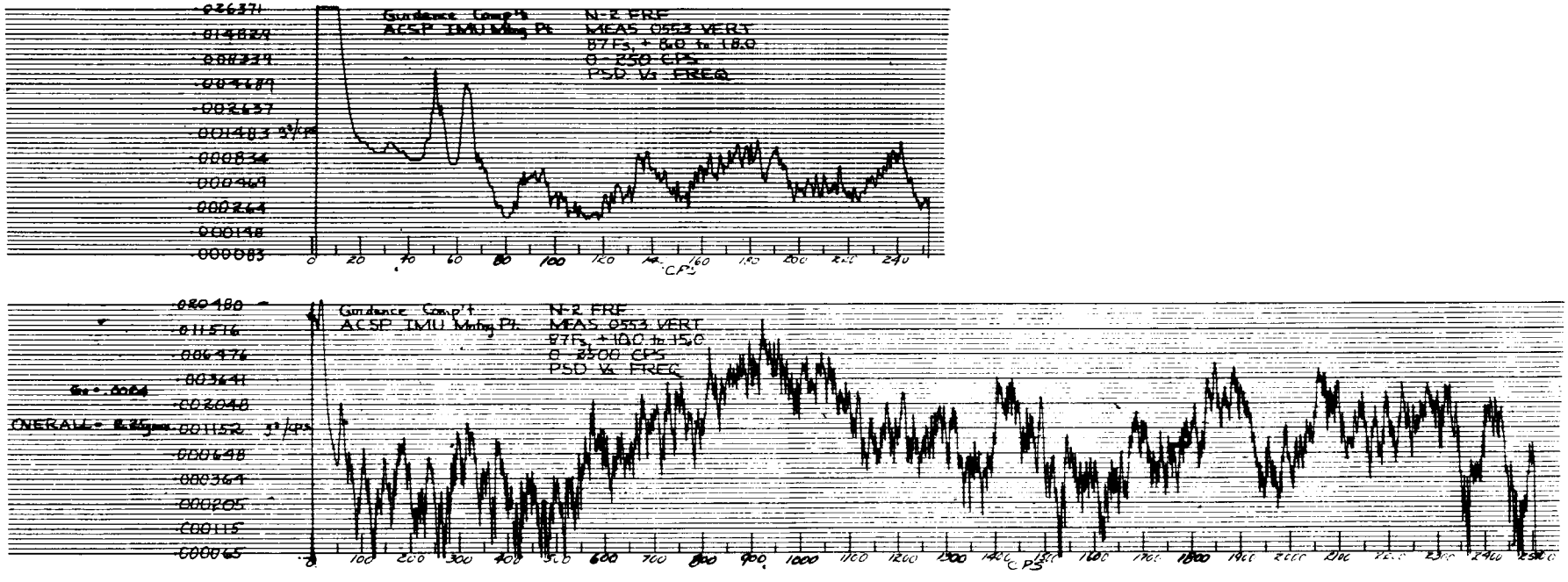
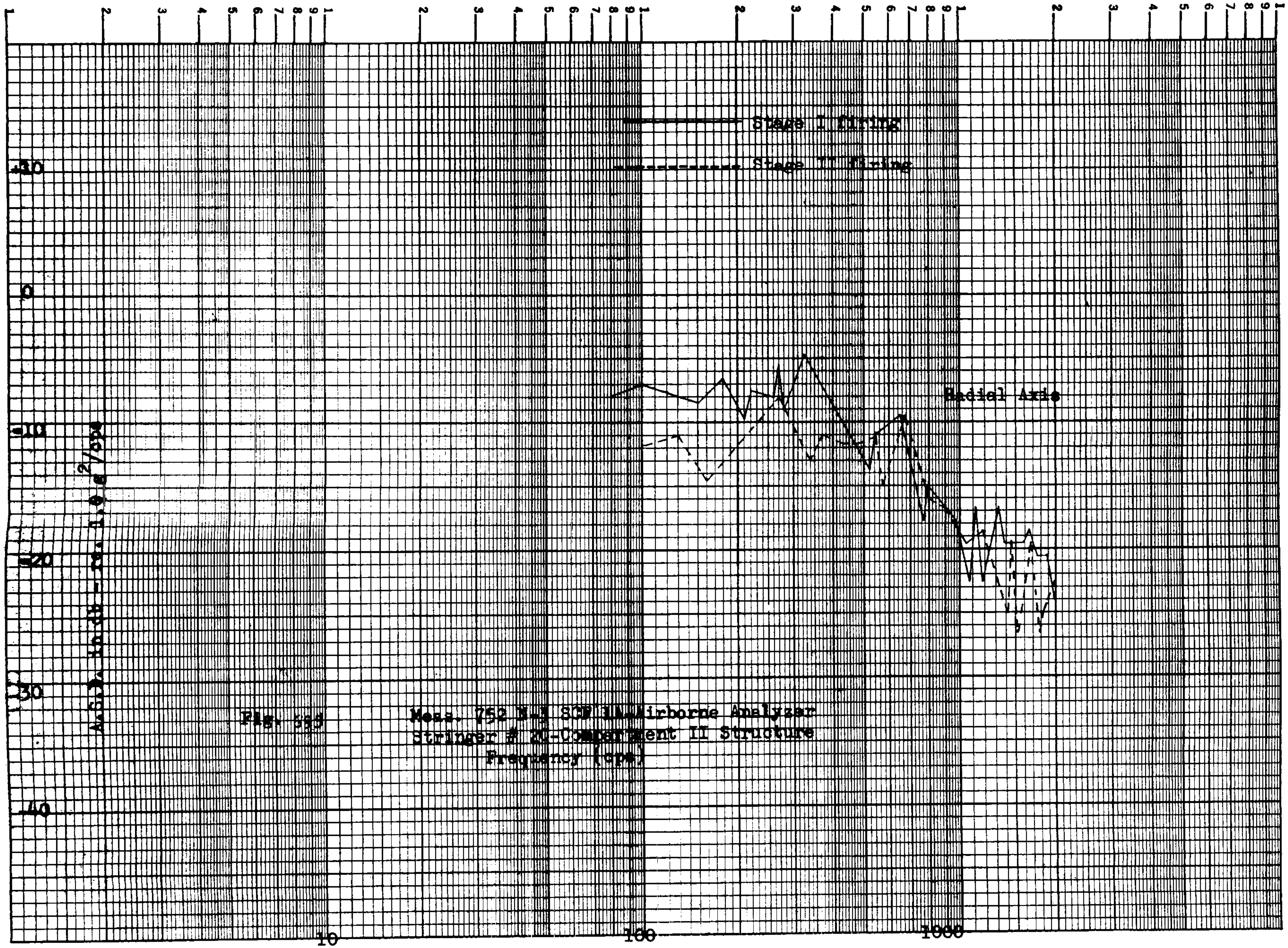
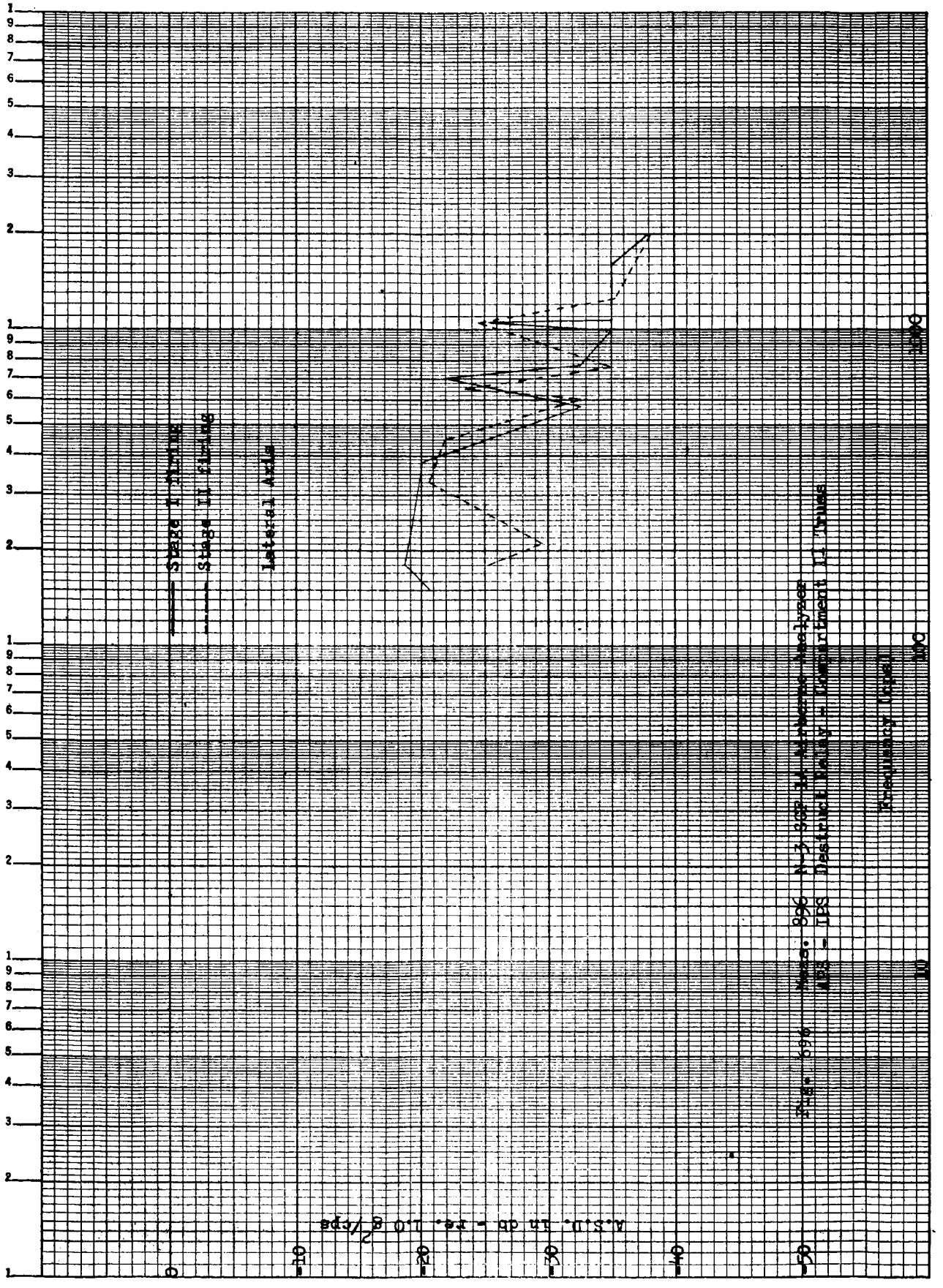
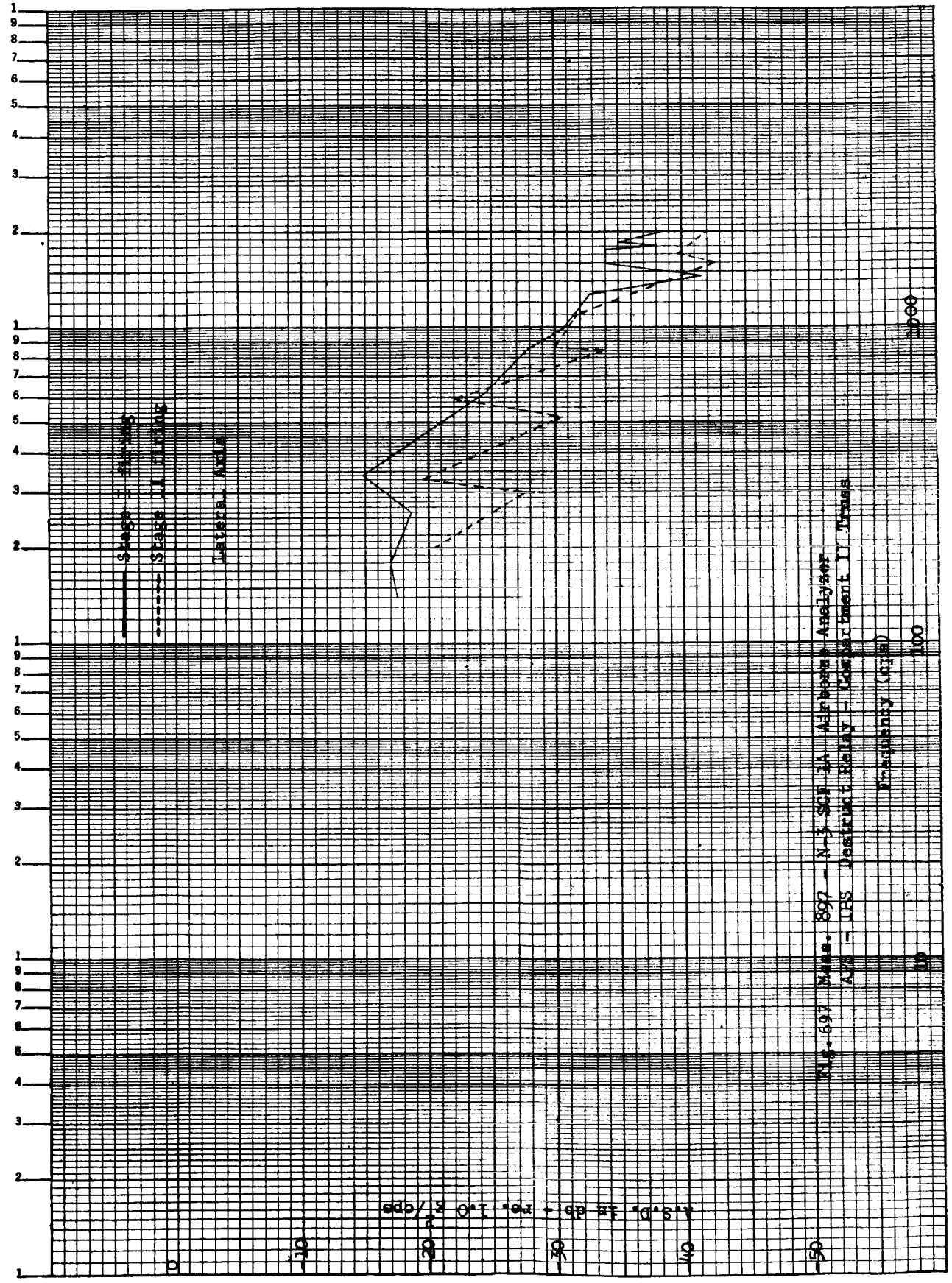
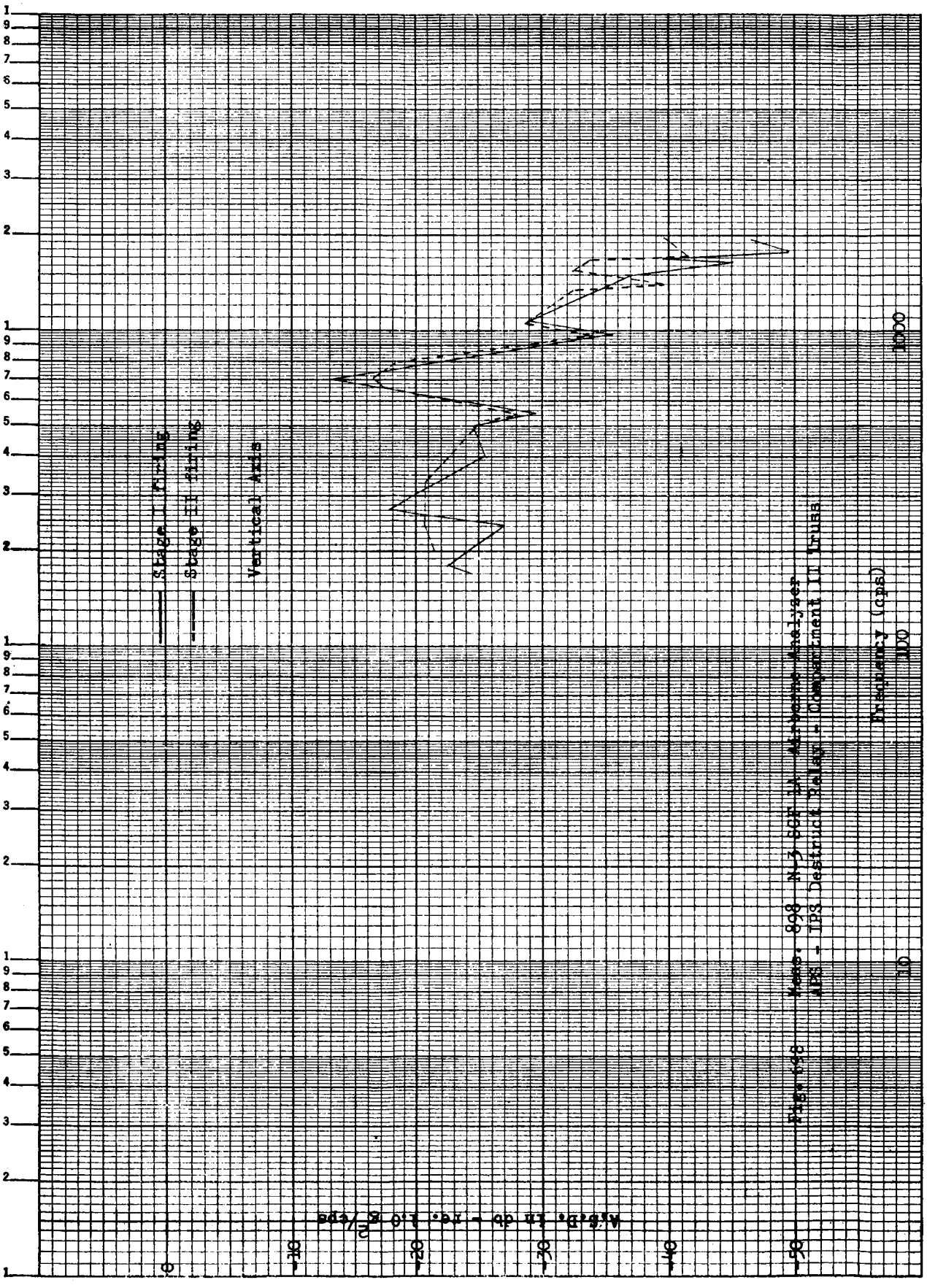

Guidance Comp't
ACSP IMU Mntg Pt
N-2 FRF
MEAS 0553 VERT
87 Fs, + 8.0 to 18.0
0-250 CPS
PSD Vs FREQ
CPS
Guidance Comp't
ACSP IMU Mntg Pt
N-2 FRF
MEAS 0553 VERT
87 Fs, +10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 694


Stage I Firing
Stage II Firing
Radial Axis
A.S.D. in db - re. 1.0 g²/cps
-10
0
10
20
30
40
10
100
1000
Fig.
Meas. 752 N-1 SCP Airborne Analyzer
Stringer # 20-Compartment II Structure
Frequency (cps)


Stage I Stage
Stage II Stage
Lateral Axis
Pressure Distribution
Fig. 3.6 Distribution of pressure coefficient on the surface of a wing of NACA 64A006 airfoil section at 8° angle of attack
A.S.U. 4in dn - Re. 1.0 e^6/ft


Stage II Flutter
Lateral Axis
Frequency (cps)
1000
100
10
1
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
2
3
4
5
6
7
8
9


Stage I Firing
Stage II Firing
Vertical Axis
Frequency (cps)
1000
100
10
Fig. 6.8 Mode 8&8 N-3 SSR in Alternate Analyses
ABS - IPS Destruct Relay - Component II Trues
A.E.D. in db - re. 1.0 E²/cps

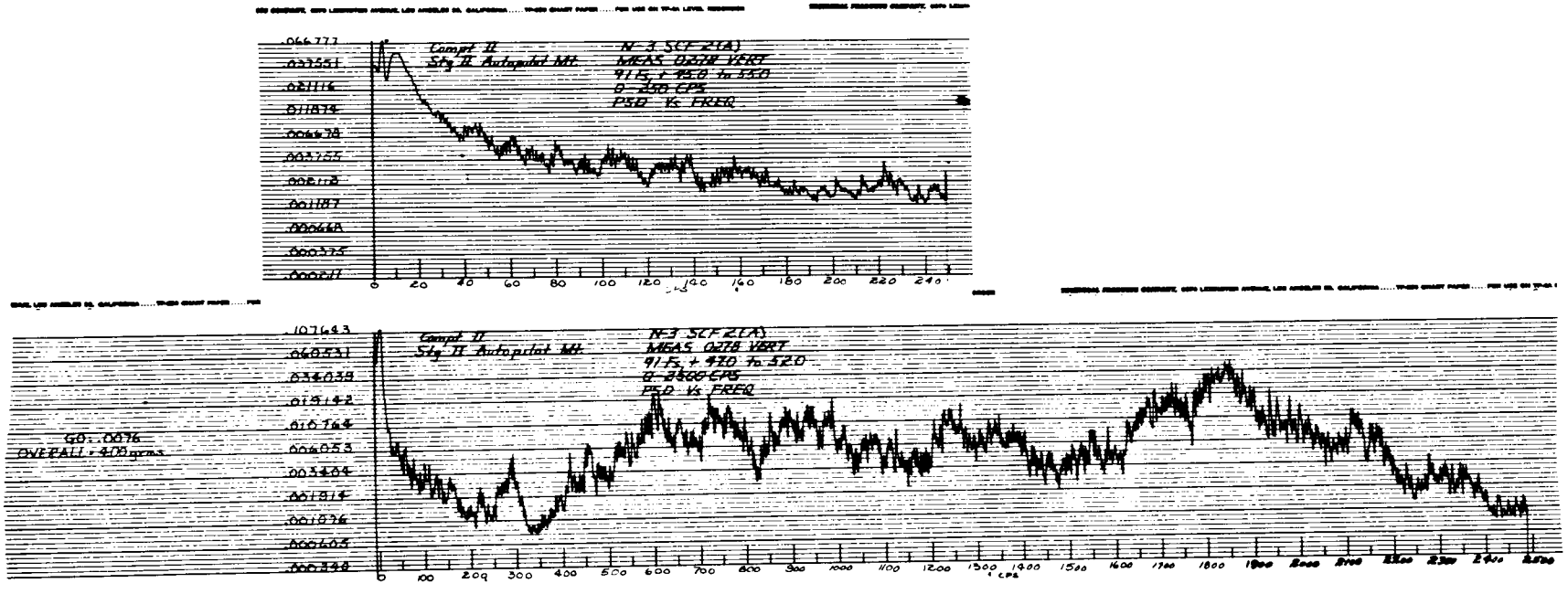

Compt II
Stg II Autopilot Mk.
N-3 SCF-21A)
MEAS. 027B VERT
915 + 915.0 to 1350
0-250 CPS
PSD Vs FREQ
Compt II
Stg II Autopilot Mk.
N-3 SCF-21A)
MEAS. 027B VERT
915 + 920 to 1320
0-2500 CPS
PSD Vs FREQ
GO: .0076
OVERALL = 4.09 grms

Fig. 699

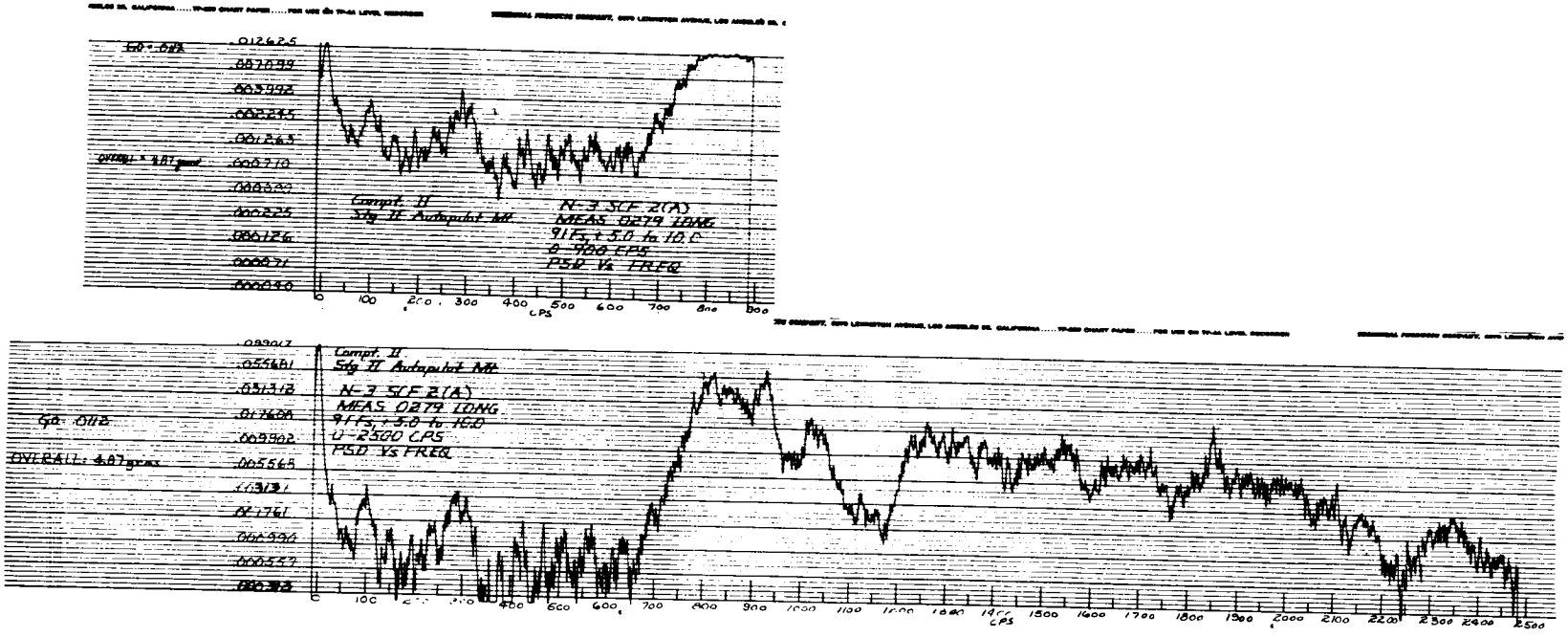
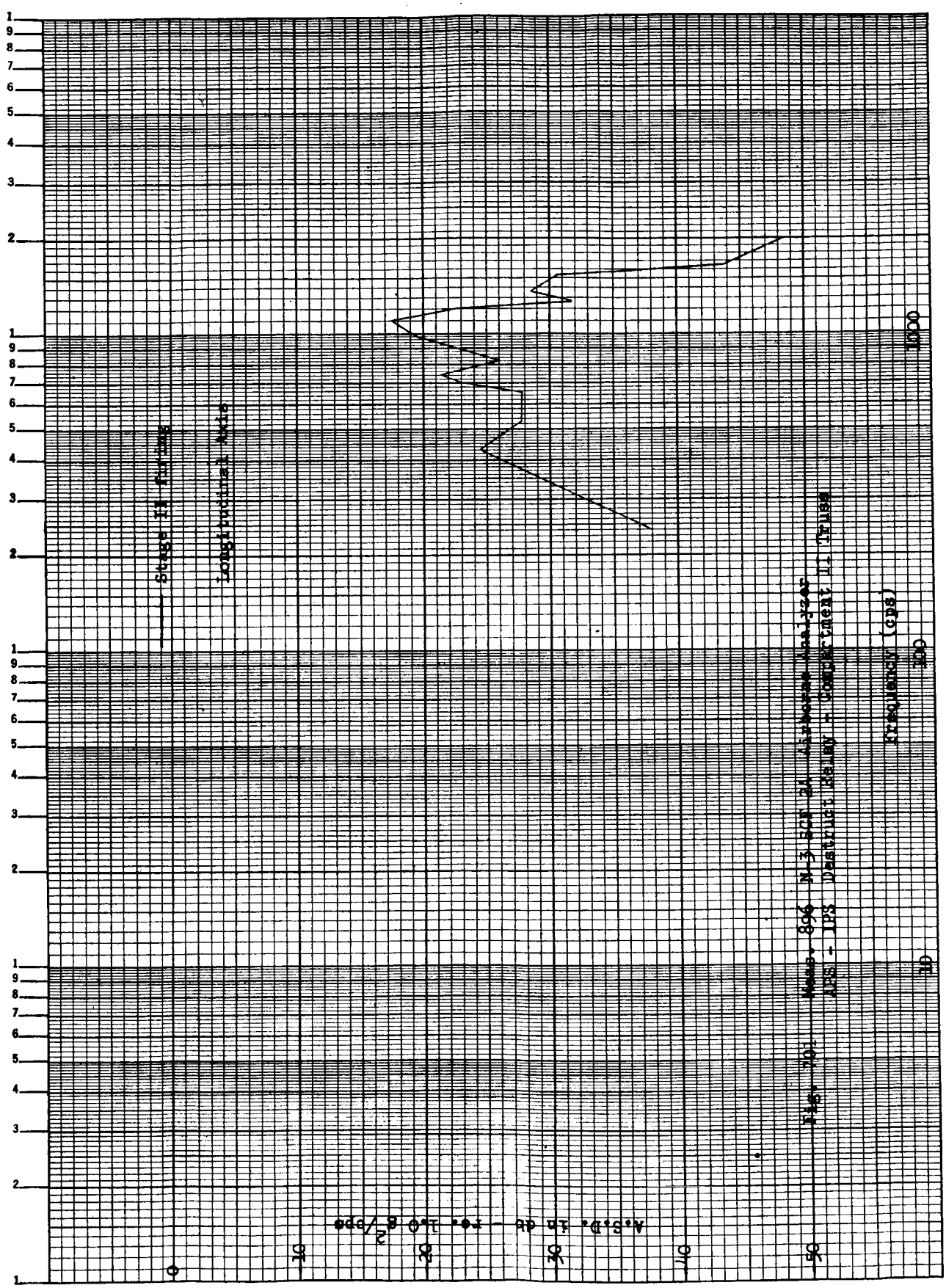
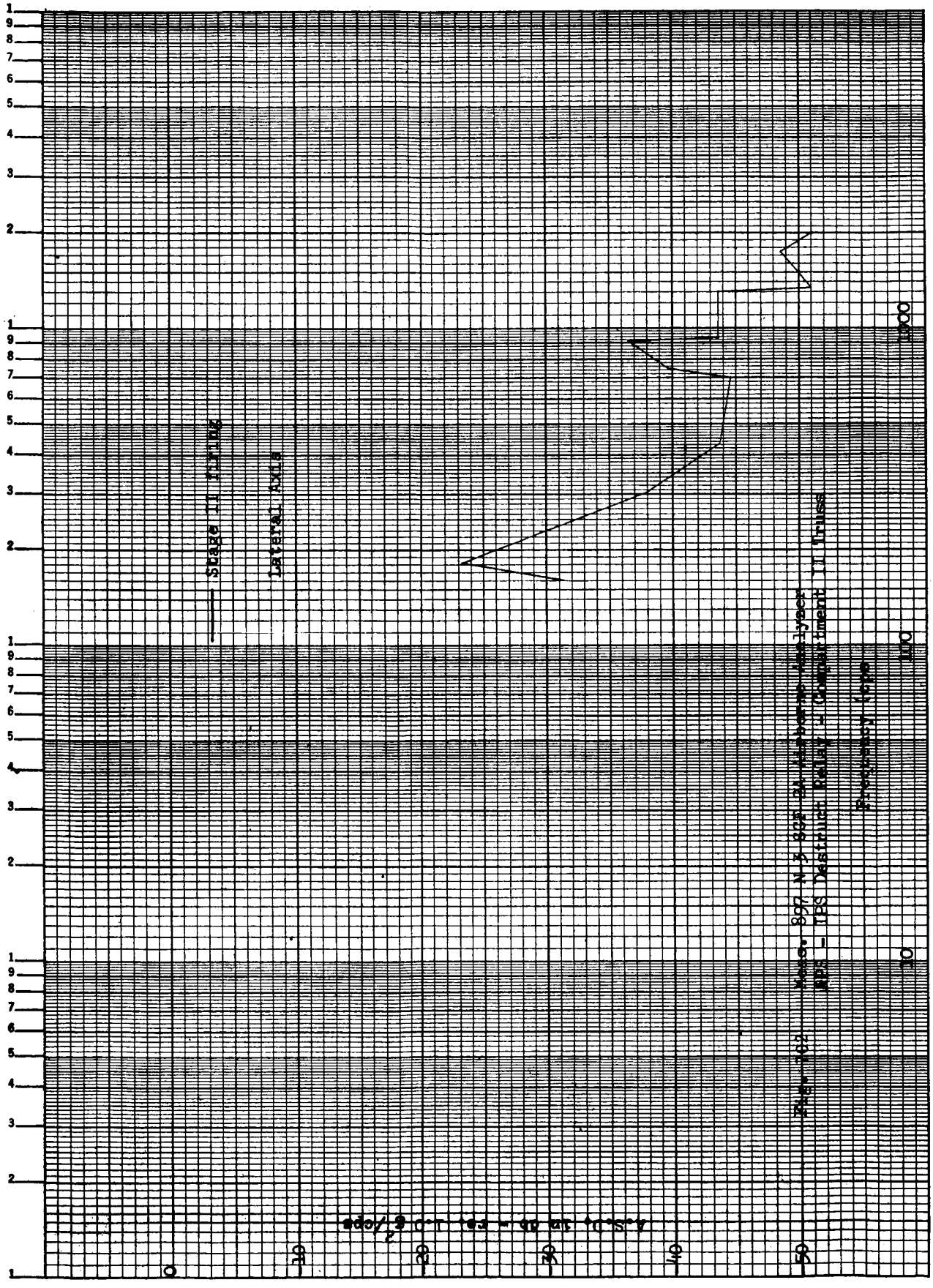
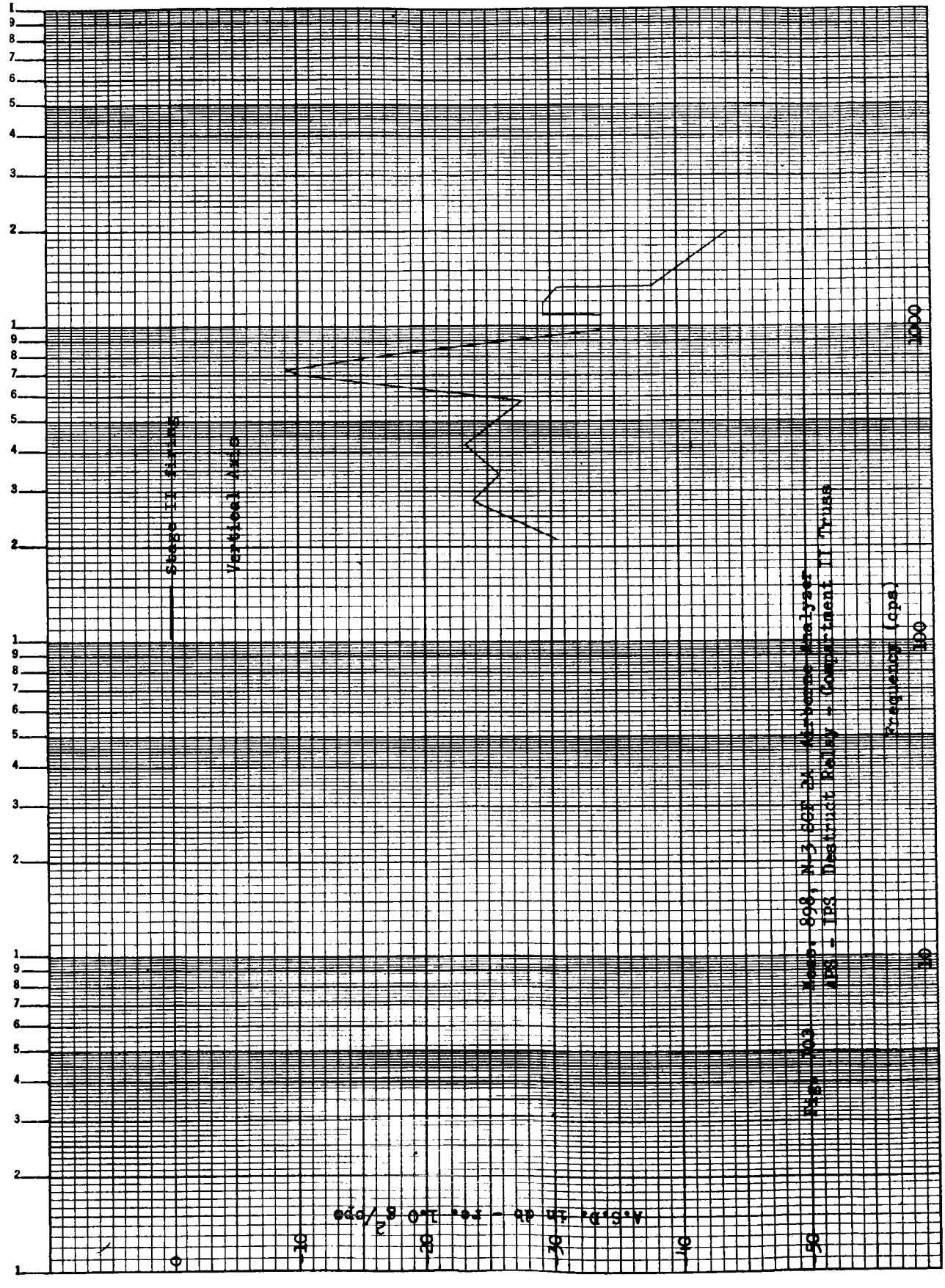

Compt. II
Stg II Autopilot Mfr
N-3 SCF 2(A)
MEAS 0279 LONG
9 FS, +5.0 to 10.0
0-700 CPS
PSD Vs FREQ
CPS
Compt. II
Stg II Autopilot Mfr
N-3 SCF 2(A)
MEAS 0279 LONG
9 FS, +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 700


Frequency (cps)
Model 840 M 3 cm 2d Microwave Analyzer
ZBS - Ins Operating Manual - Supplement III Tables
Fig. 70:
Scope Tube Face
Longitudinal Axis


Stage II Thrust
Total Thrust
Stage II Thrust
Total Thrust
Stage II Thrust
Total Thrust


Shear - psi
Vertical Axis
Frequency (cps)
1000
100
10
Fig. 203 Model 808, 2-3 cps Vibrasonic Analyzer
IBM - IBS Destruct Relay - Compartment II Truss
A.S.D.E. in db - re. 1.0 g²/cps

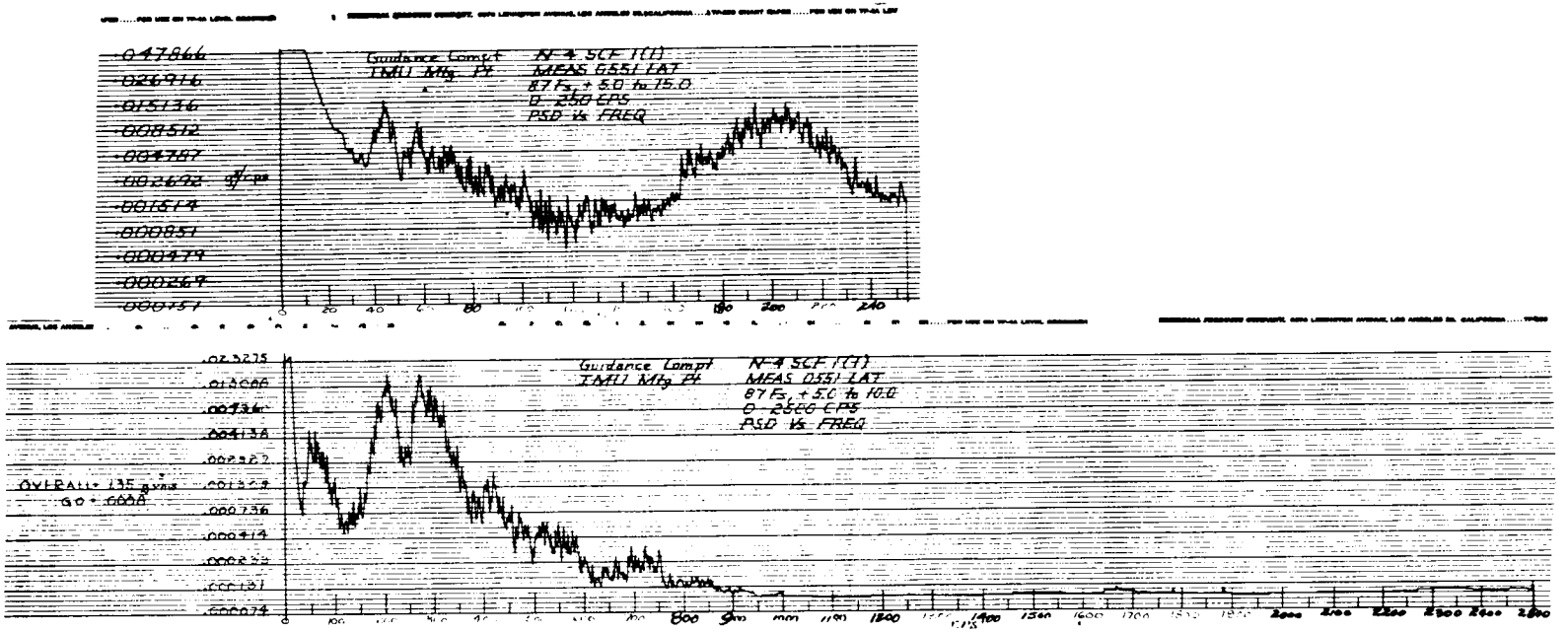

Guidance Compt
IMU Mtg Pt
N-4 SCF (C)
MEAS G551 LAT
87 Fs, +5.0 to 15.0
0-250 CPS
PSD vs FREQ
Guidance Compt
IMU Mtg Pt
N-4 SCF (C)
MEAS G551 LAT
87 Fs, +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ

Fig. 704

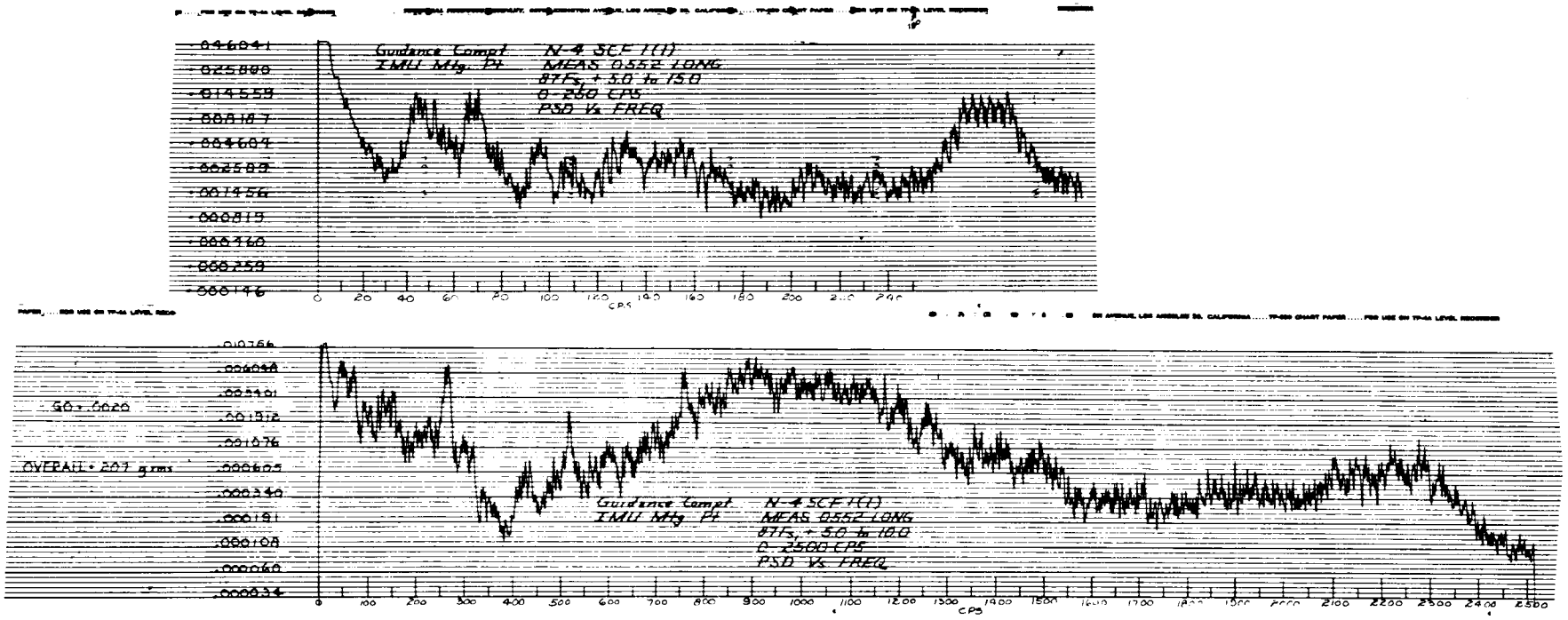

Guidance Compt
IMU Mtg Pt
N-4 SCF 1(1)
MEAS 0552 LONG
BTFs + 5.0 to 150
0-250 CPS
PSD Vs FREQ
CPS
Guidance Compt
IMU Mtg Pt
N-4 SCF 1(1)
MEAS 0552 LONG
BTFs + 5.0 to 100
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 705

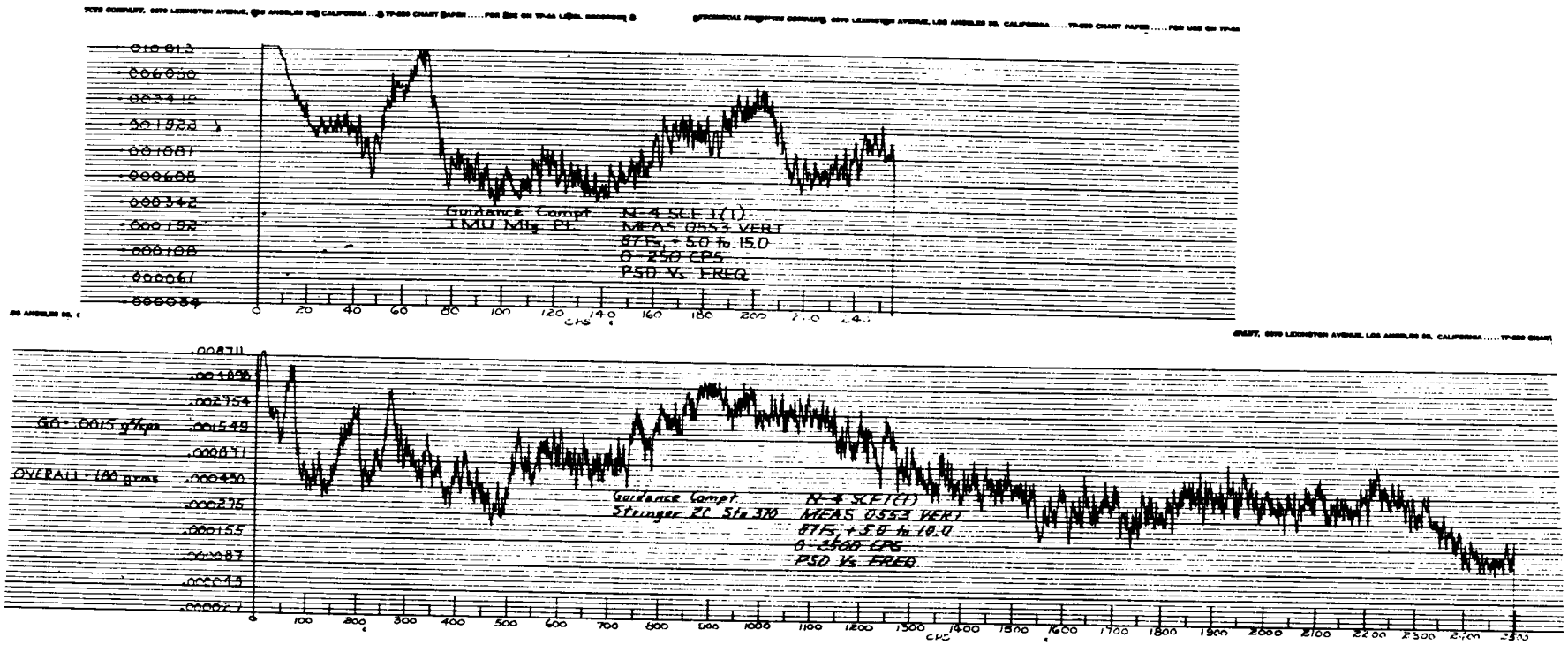

Guidance Compt.
TMU Mtg Pt.
N-4 SCF 1(1)
MEAS 0553 VERT
BTF5 +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
CPS
Guidance Compt
Stringer ZC Sta 370
N-4 SCF1(1)
MEAS 0553 VERT
BTF5 +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 706

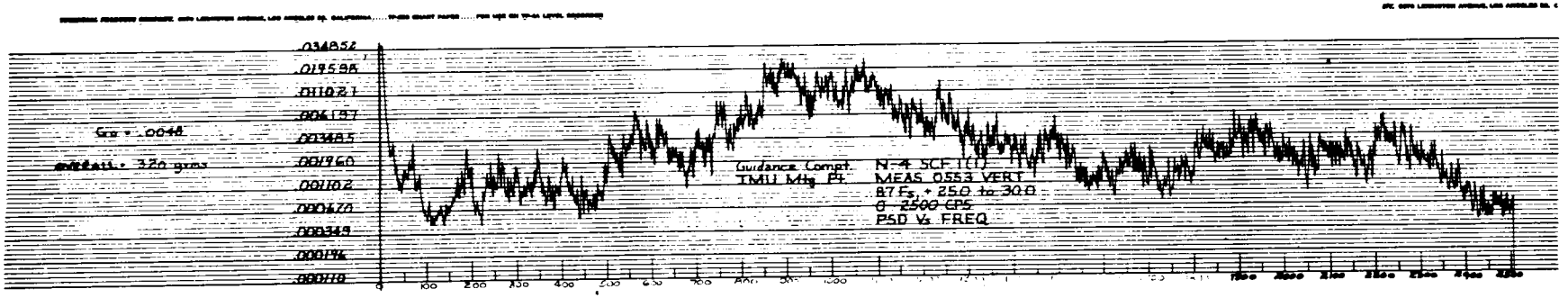

.034852
.019598
.011021
.006197
.003485
.001960
.001102
.000620
.000349
.000196
.000110
Guidance Comptr.
TMU Mtg Pt.
N-4 SCF (C)
MEAS 0553 VERT
87 Fs, + 250 to 300
0 2500 CPS
PSD Vs FREQ

Fig. 707

Stage I Current
Stage II Signal
Figure 708
Stage II Rate Gyro - Compartment Noise
Navy 22' N5 SCT - Airborne Analyzer
Frequency (cps)
30
300
1000
Vertical Axis

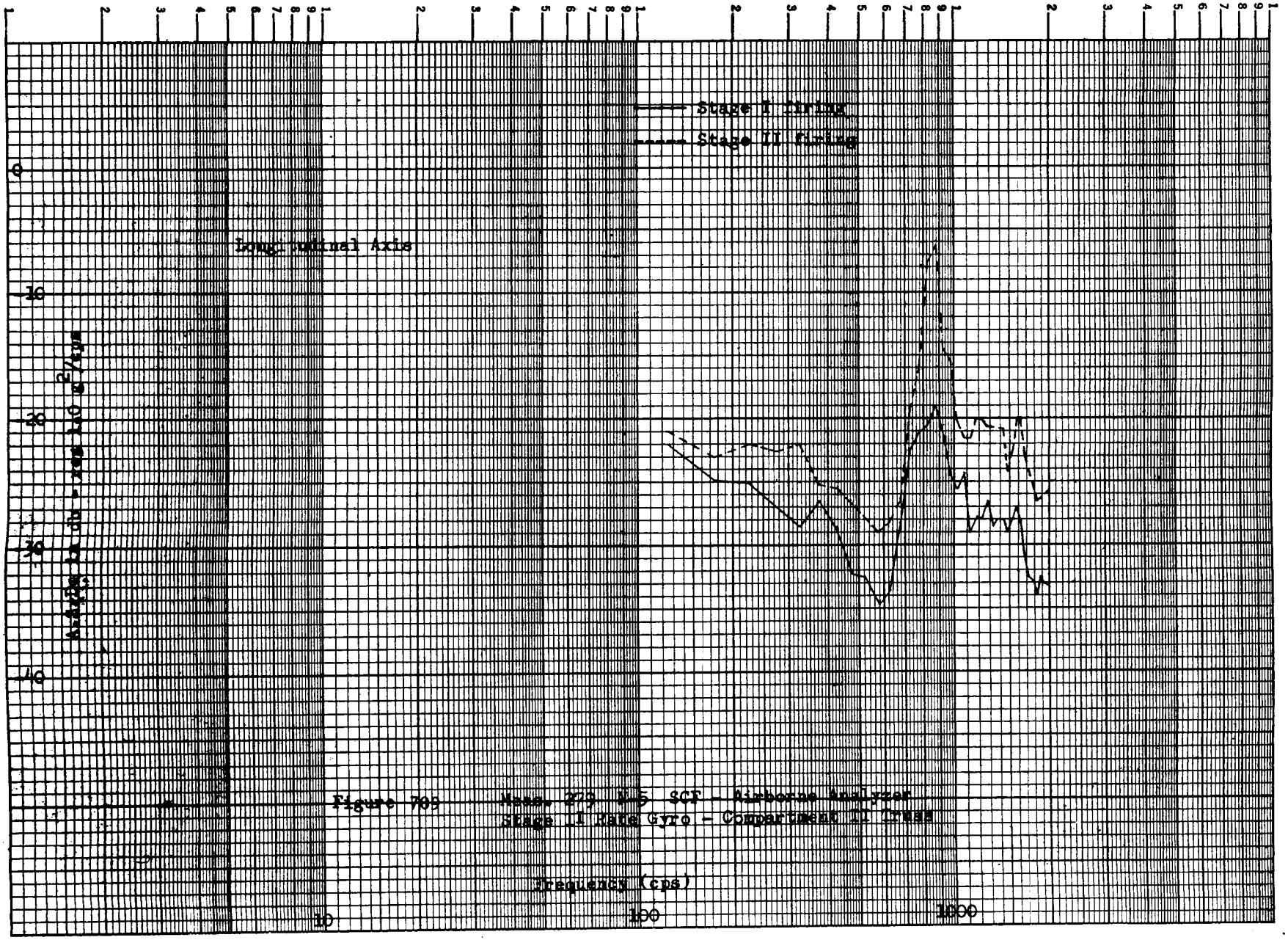


Figure 709 Mach. 2.9, 1.5 SCF - Airborne Analyzer
Stage II Rate Gyro - Compartment II Trans

Stage I Fitting
Stage II Fitting
Lateral Axis
A-81b. in du - rel. 1.0 lb/cps^2
Stage I Data Syn - Compressible Turbulence
Mach 2.50 Re 5 sqf - Wind-tunnel Measured
Frequency (cps)

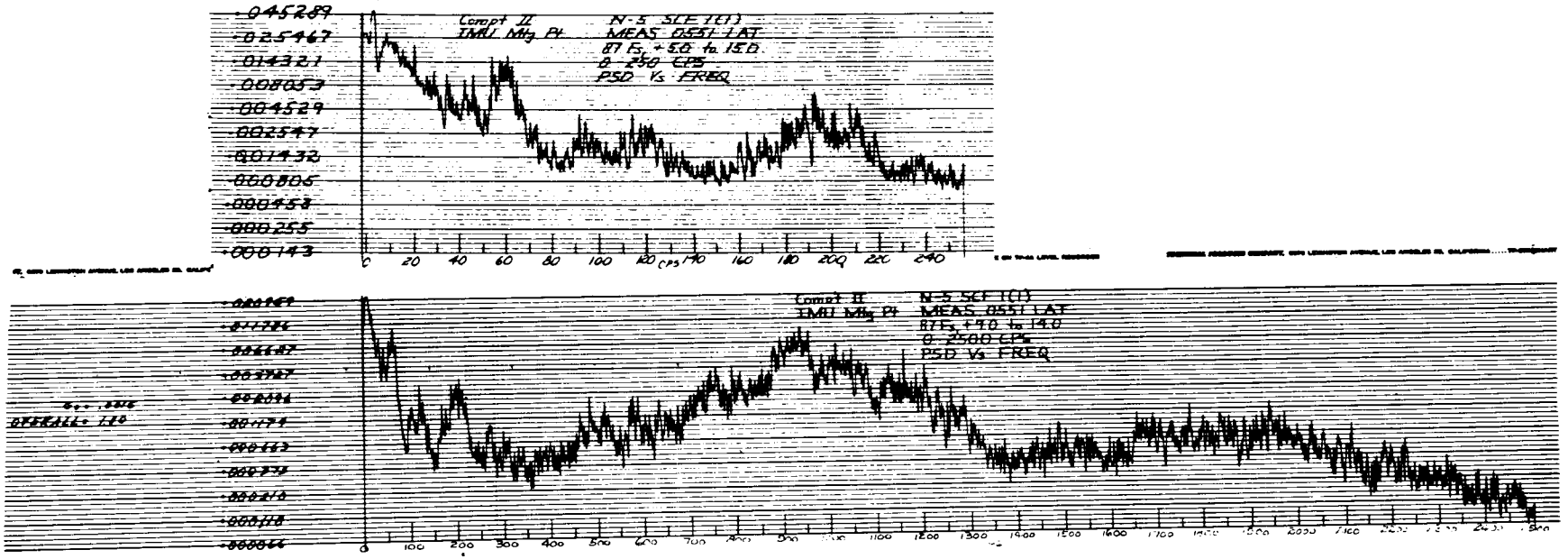

Comprt II
IMU Mtg Pl
N-S SCE T(1)
MEAS 0551 LAT
87 Fs +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Comprt II
IMU Mtg Pl
N-S SCE T(1)
MEAS 0551 LAT
RTF3 +9.0 to 14.0
0-2500 CPS
PSD Vs FREQ

Fig. 711

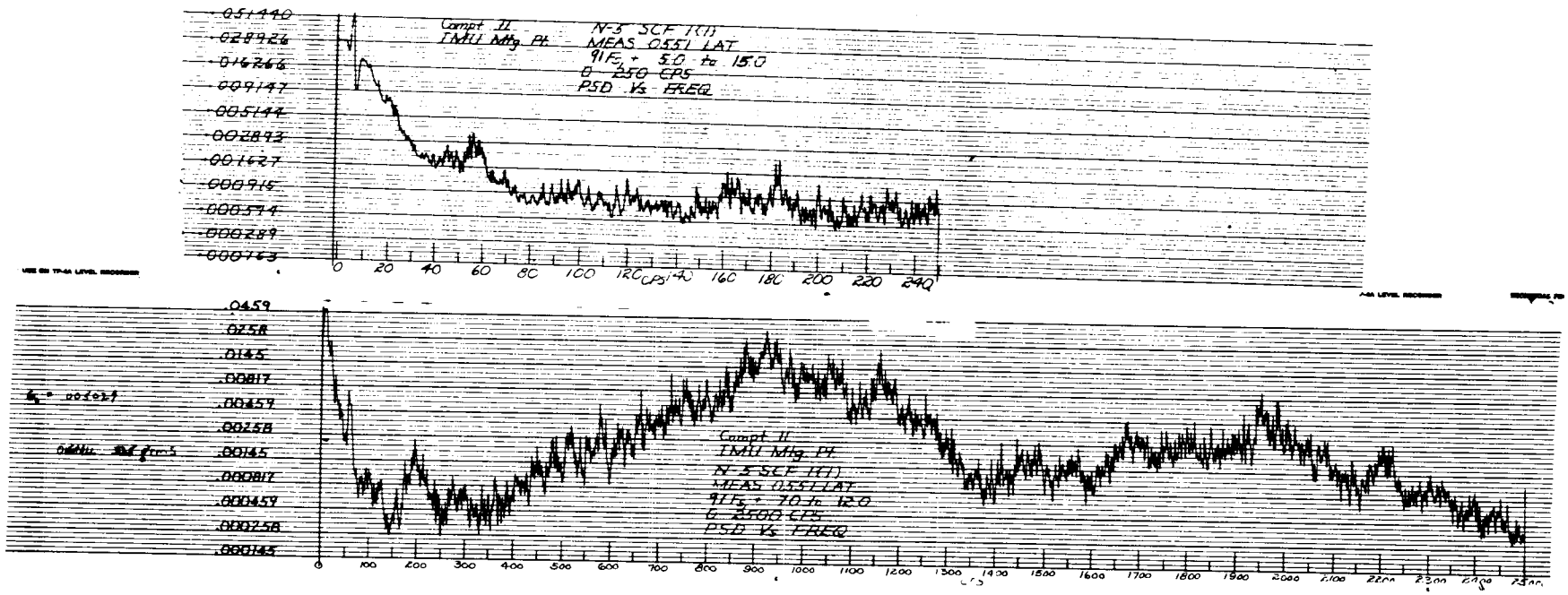

Compt II
IMU Mtg Pt
N-3 SCF 1(1)
MEAS 055 LAT
91F5 + 5.0 to 15.0
Δ 2.50 CPS
PSD Vs FREQ
.051440
.028926
.016266
.009147
.005144
.002893
.001627
.000915
.000574
.000289
.000163
0 20 40 60 80 100 120 CPS 140 160 180 200 220 240
.0459
.0258
.0145
.00817
.00459
.00258
.00145
.000817
.000459
.000258
.000145
Compt II
IMU Mtg Pt
N-3 SCF 1(1)
MEAS 055 LAT
91F5 + 10 to 12.0
Δ 2500 CPS
PSD Vs FREQ
100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500

Fig. 712

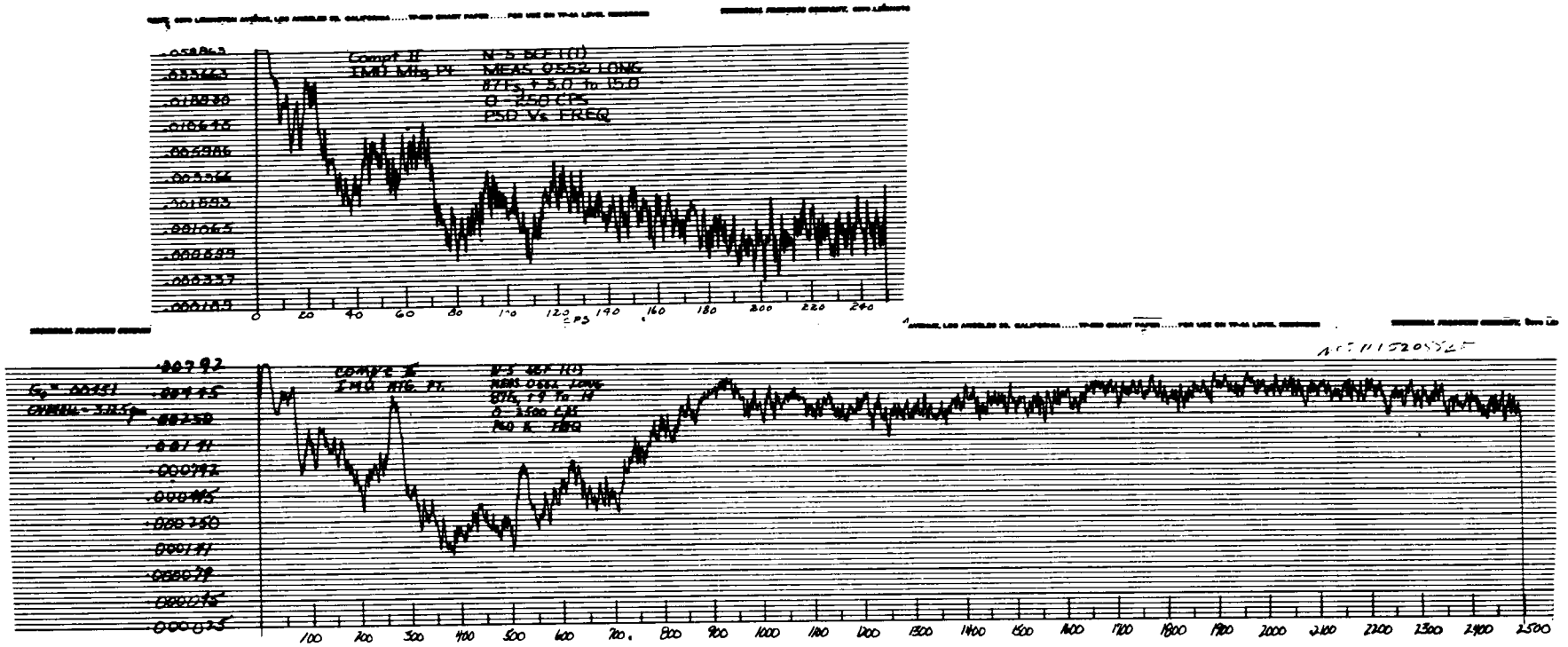

Compt II
1MO Mtg Pt
N=5 BCF (10)
MEAS. 0552 LONG
BTH 5 F=5.0 to 15.0
0-250 CPS
PSD Vs FREQ
0
20
40
60
80
100
120
140
160
180
200
220
240
Compt II
1MO Mtg Pt
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500

Fig. 713

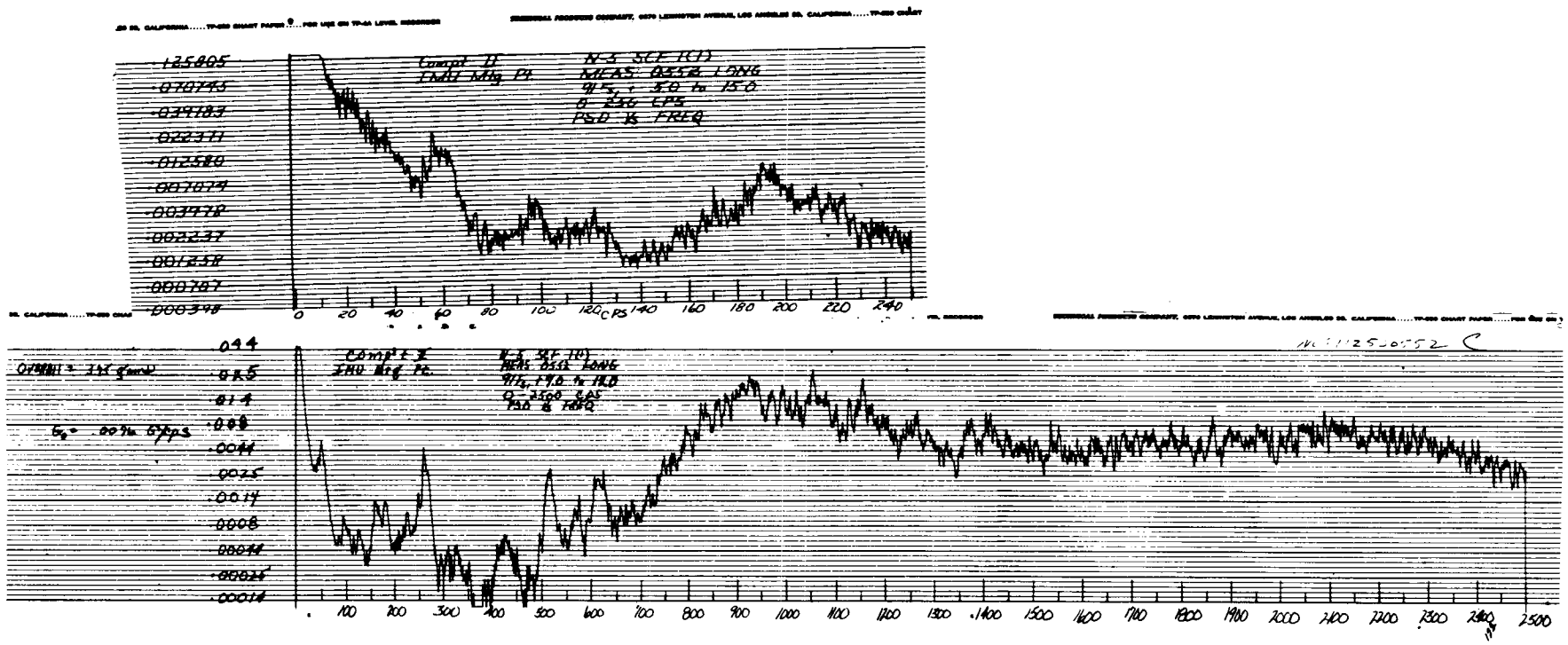

Compt II
N-S SCE 7(1)
MEAS. OSSB. LONG
0 250 CPS
PSD VS FREQ
Compt I
E-W SCE 7(1)
MEAS. OSSB. LONG
0 250 CPS
PSD VS FREQ

Fig. 714

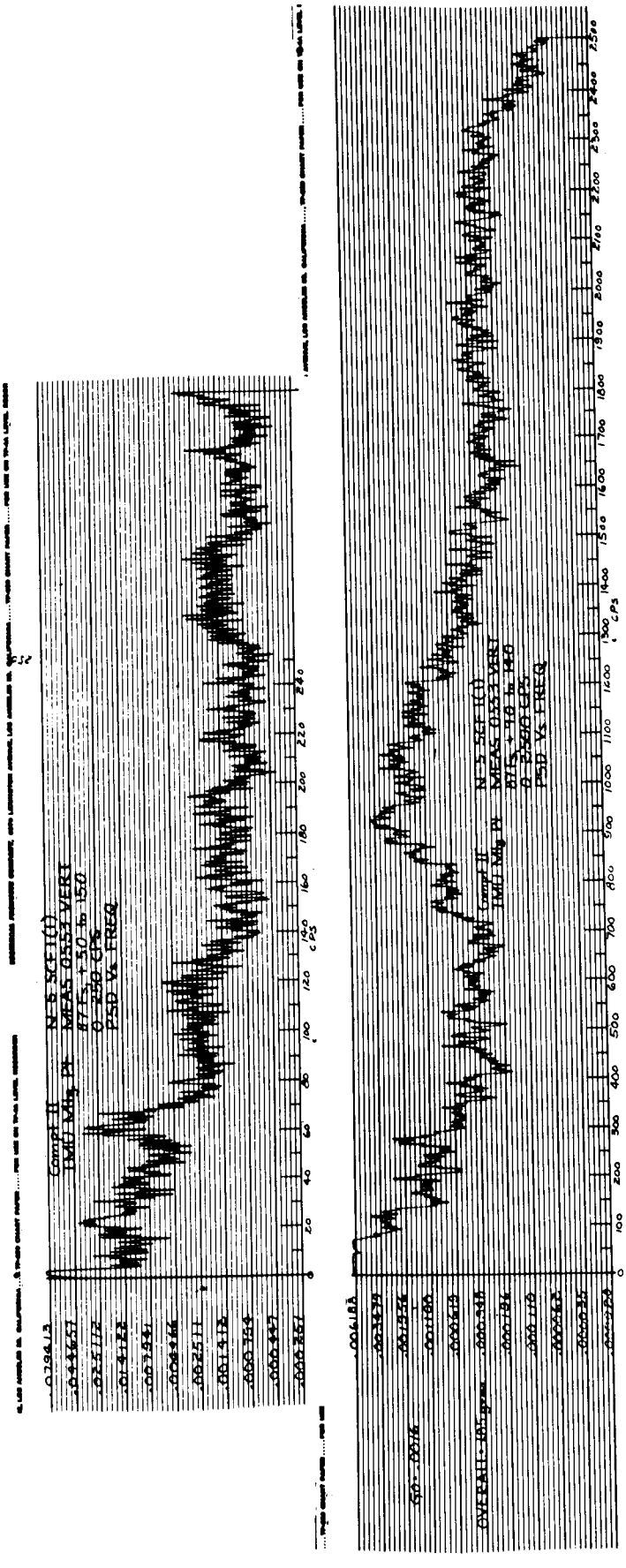

Compt II N-S SCF (C)
TMU MAg PK MEAS 0553 VERT
RTS +30 to 150
0-256 CPS
PSD Vs FREQ
CPS
Compt II N-S SCF (C)
TMU MAg PK MEAS 0553 VERT
RTS +90 to 140
0-2560 CPS
PSD Vs FREQ
CPS

Fig. 715

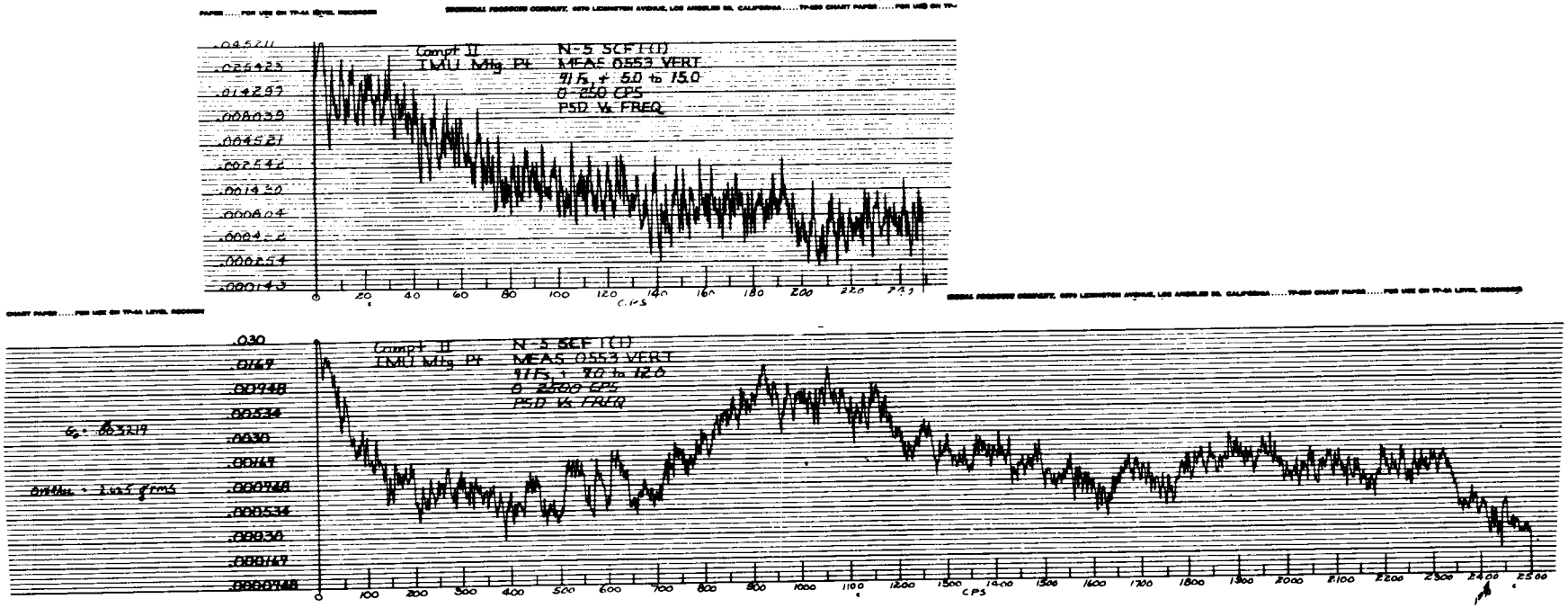
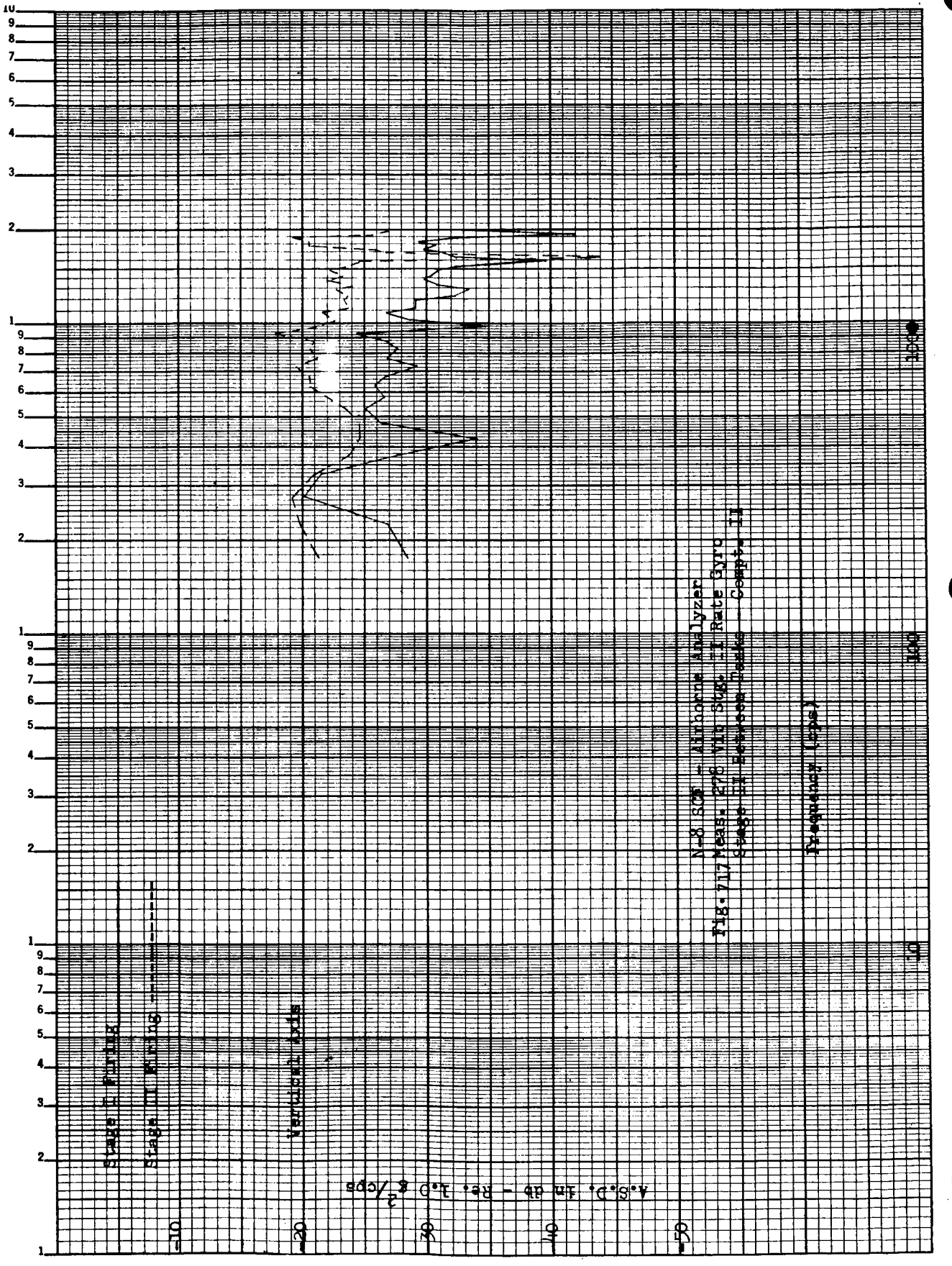
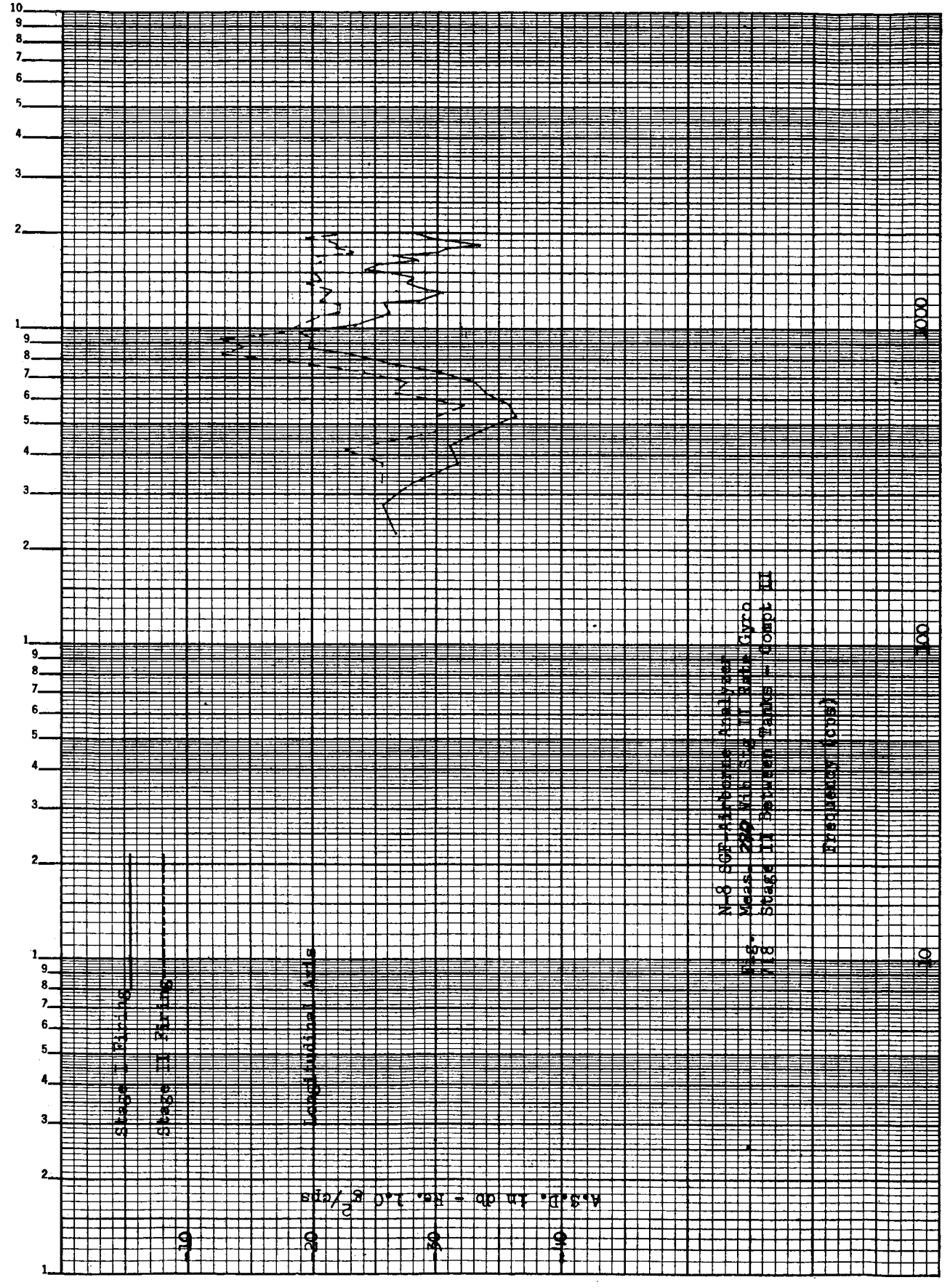

Compt II
EMU Mtg Pt
N-5 SCF (1)
MEAS 0553 VERT
911 5, ± 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
.045211
.025423
.014297
.008039
.004521
.002542
.001430
.000804
.000452
.000254
.000143
20
40
60
80
100
120
140
160
180
200
220
240
C.P.S
Compt II
EMU Mtg Pt
N-5 SEF (1)
MEAS 0553 VERT
911 5, 90 to 120
0-2500 CPS
PSD Vs FREQ
.030
.0169
.00948
.00534
.0030
.00169
.000948
.000534
.00030
.000169
.0000948
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
CPS

Fig. 716


Stage II Rotor
Stage III Rotor
Vertical Axis
A.S.D. in db - Re. 1.0 g²/cps
N-8 SCE Airborne Analyzer
Fig. 717 Meas. 670 Vib Sys. II Rate Gyro
Stage II Resonance Search
Frequency (cps)


Frequency (cps)
Ni-8 SCF-11 Bare Airfoil
Meas. 220 kts. S.L. Std. Cyc.
718 Stage II Between Plates
Stage II Bare
Stage II Fin
Stage I Fin
A.3.D. in db - Rel. to p^2/cps

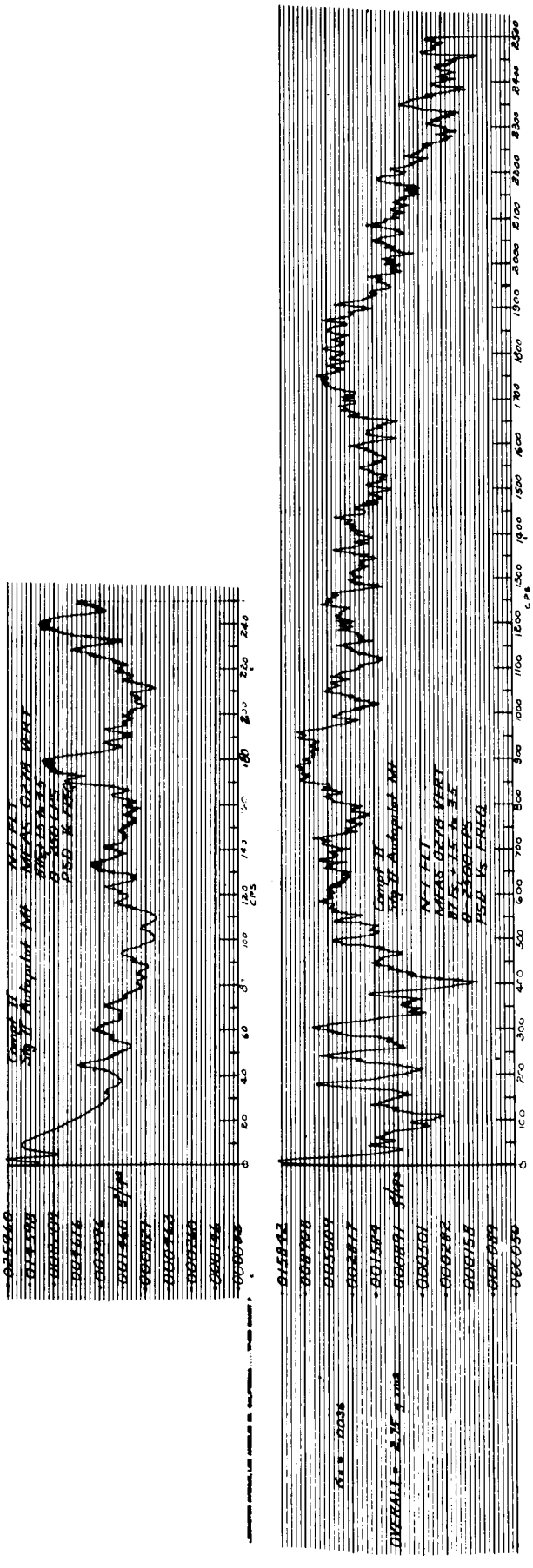

Compt II
Sig II Autopilot Mtr
N-1 FLT
MEAS OUTB VERT
BTC 15 to 35
0-300 CPS
PSD vs FREQ
OVERALL = 2.76 g rms
CPS

Fig. 719

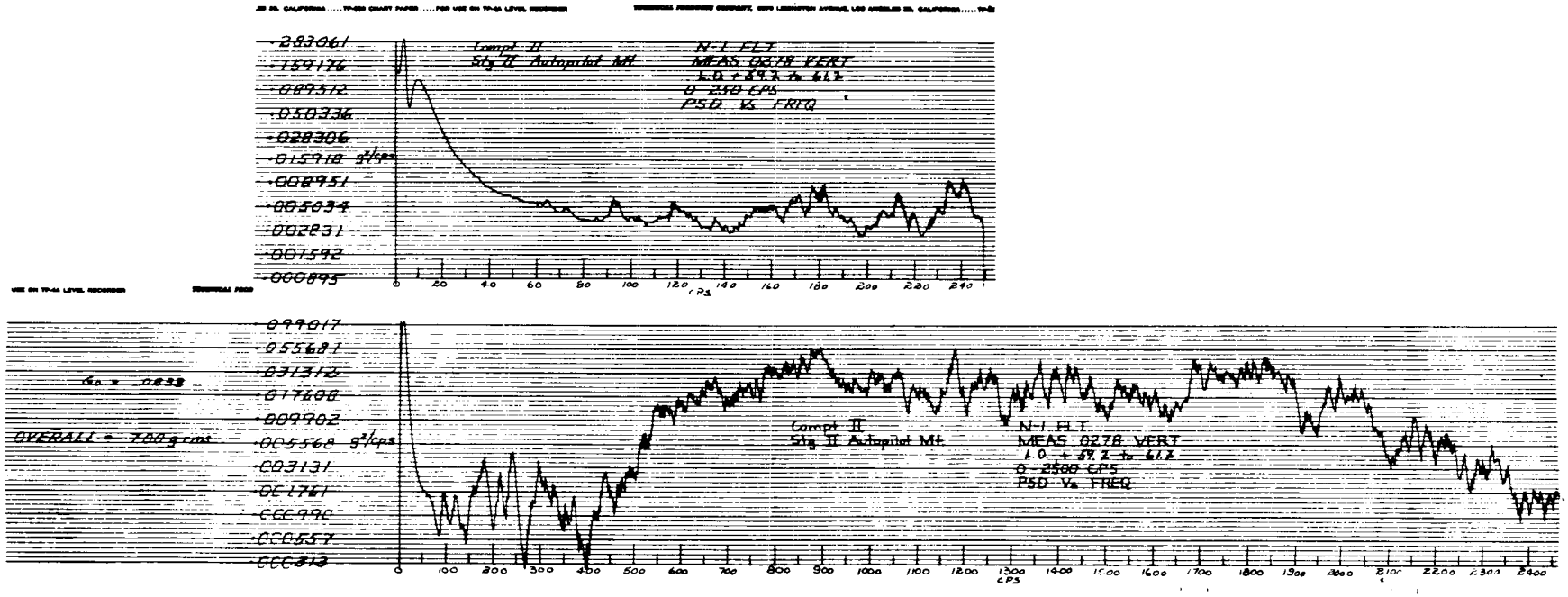
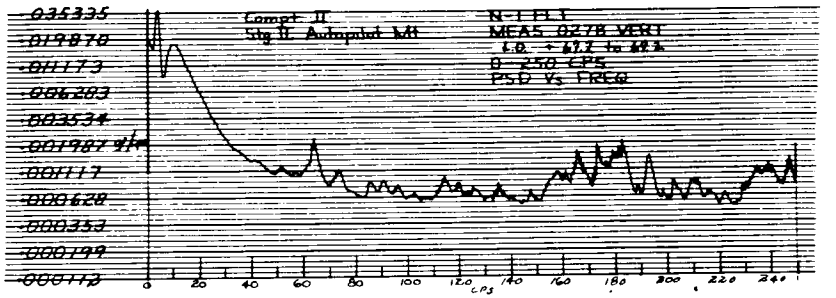

.283061
.159176
.089512
.050336
.028306
.015918 g²/cps
.008951
.005034
.002831
.001592
.000895
Compt II
Stg II Autopilot Mt
N-1 FLT
MEAS 0278 VERT
L.O. + 59.2 to 61.2
0-250 CPS
PSD Vs FREQ
0 20 40 60 80 100 120 140 160 180 200 220 240
CPS
.099017
.055681
.031312
.017608
.009902
.005568 g²/cps
.003131
.001761
.000990
.000557
.000313
σo = .0833
OVERALL = 7.00 g rms
Compt II
Stg II Autopilot Mt
N-1 FLT
MEAS 0278 VERT
L.O. + 59.2 to 61.2
0-2500 CPS
PSD Vs FREQ
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400
CPS

Fig. 720


Compt II
Stg II Autopilot Mt
N-1 FLT
MEAS 0278 VERT
I.D. = 67.1 to 68.1
0-250 CPS
PSD Vs FREQ
g²/cps
CPS

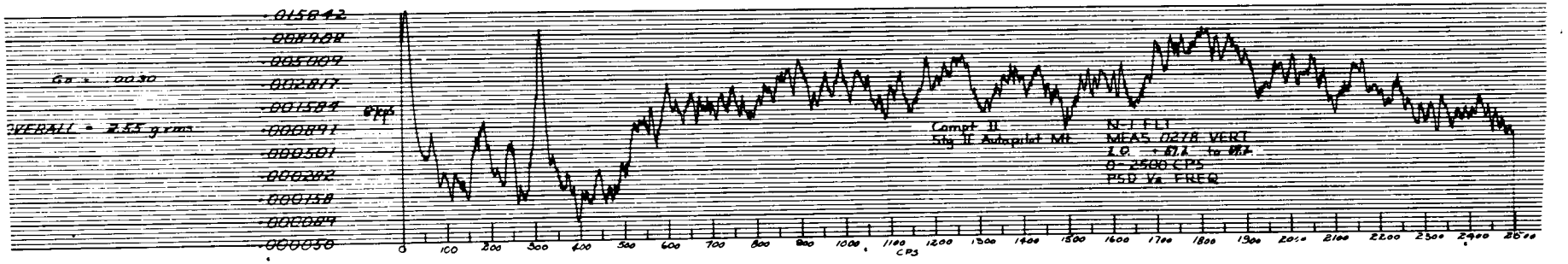

Go = .0030
OVERALL = 2.55 grms
g²/cps
Compt II
Stg II Autopilot Mt
N-1 FLT
MEAS 0278 VERT
I.D. = 67.1 to 68.1
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 721

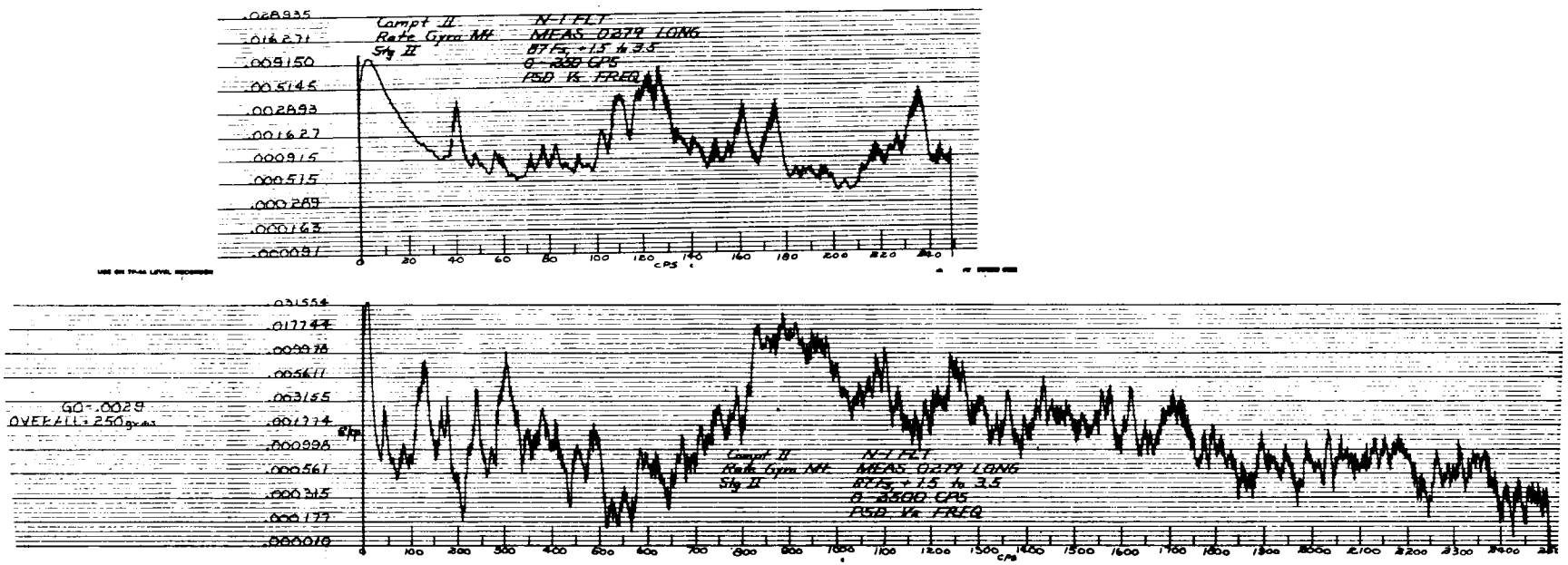

Compt II
Rate Gyro MH
Stg II
N-1 FLT
MEAS 0279 LONG
BTS, ±15 to 35
0-250 CPS
PSD Vs FREQ
.028935
.016271
.009150
.005145
.002893
.001627
.000915
.000515
.000289
.000163
.000091
0
20
40
60
80
100
120
CPS
140
160
180
200
220
240
GO-.0029
OVERALL=2.50 grms
.031554
.017747
.009978
.005611
.003155
.001774
.000998
.000561
.000315
.000177
.000010
g²/cps
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
CPS
Compt II
Rate Gyro MH
Stg II
N-1 FLT
MEAS 0279 LONG
BTS, ±15 to 35
0-2500 CPS
PSD Vs FREQ

Fig. 722

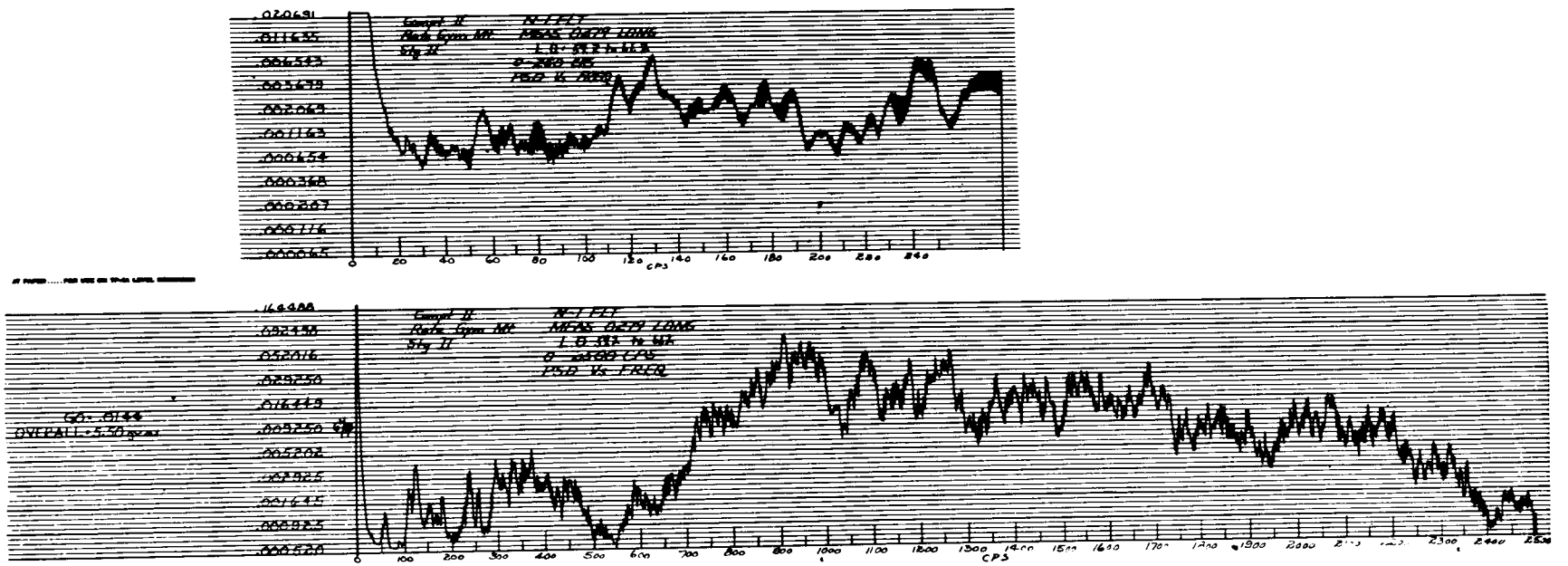

Gemini XI
Rock Gym MK
Sty II
NEFET
MASS OPTY LONG
PSD Vs FREQ
CPS
Gemini XI
Rock Gym MK
Sty II
NEFET
MASS OPTY LONG
PSD Vs FREQ
CPS

Fig. 723

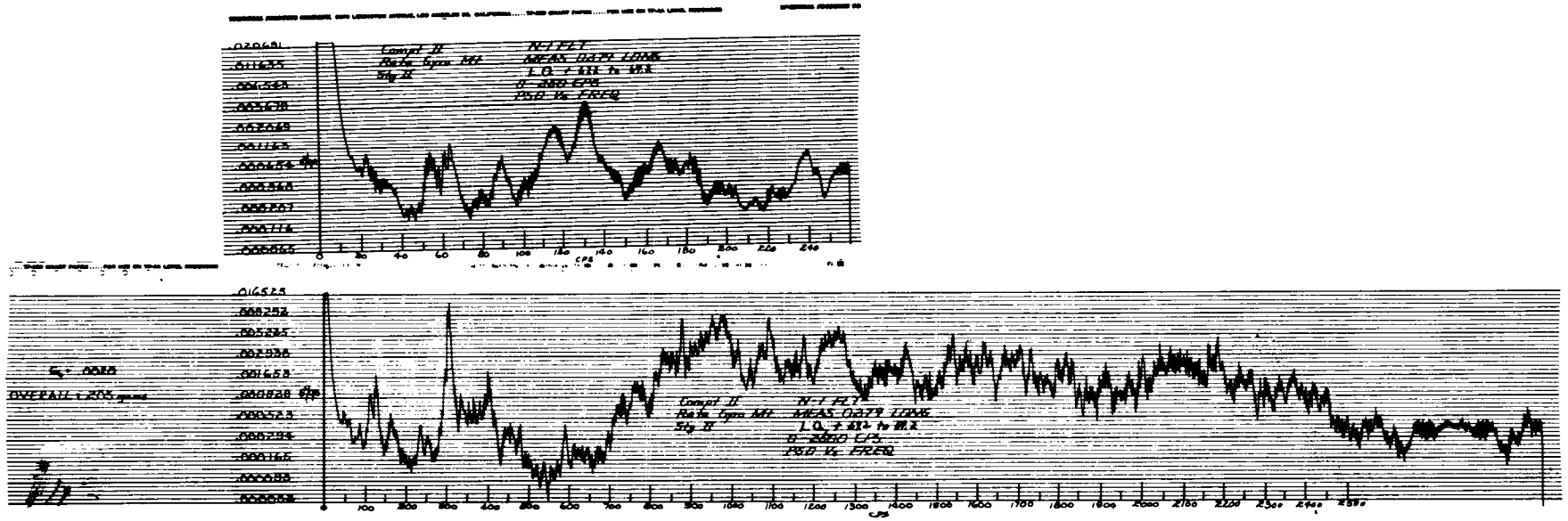


Fig. 724

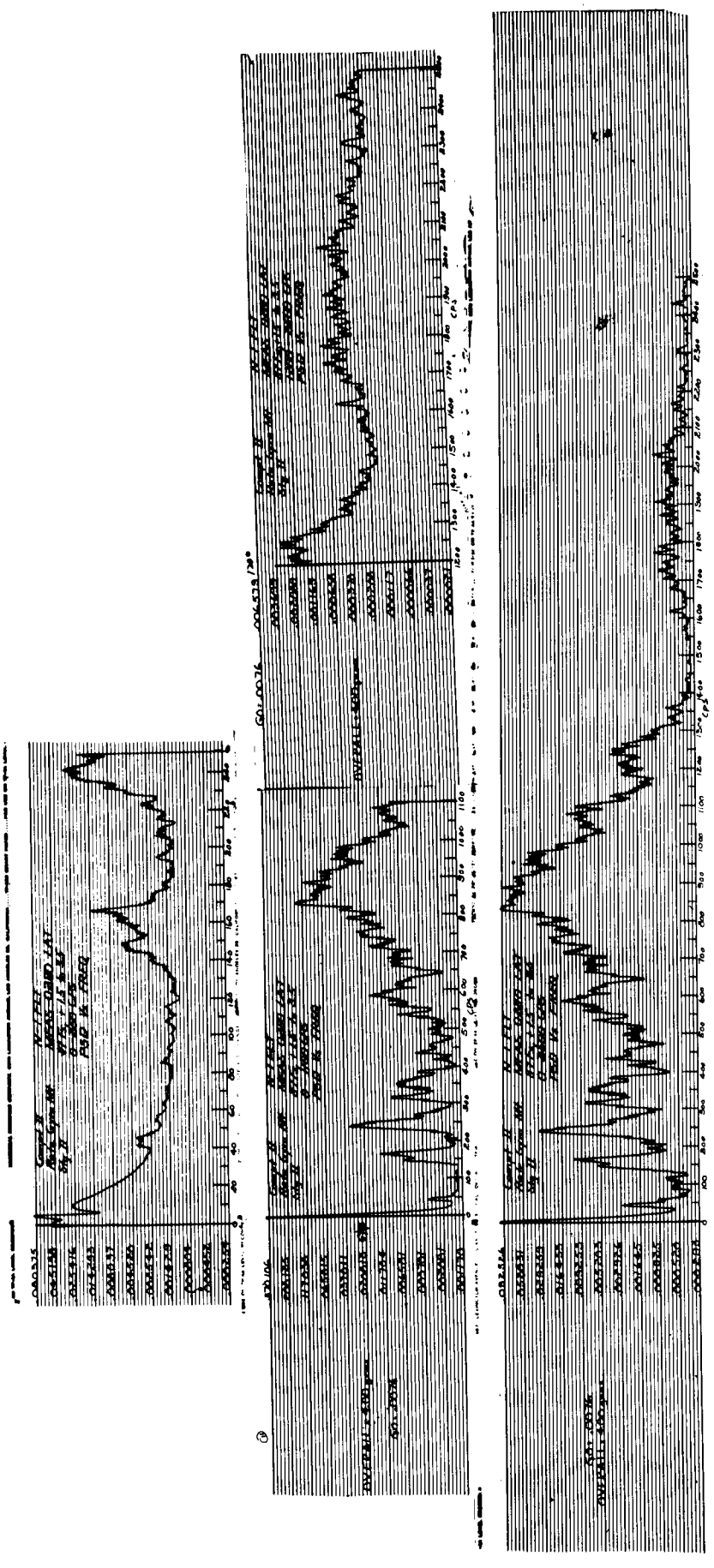


Fig. 725

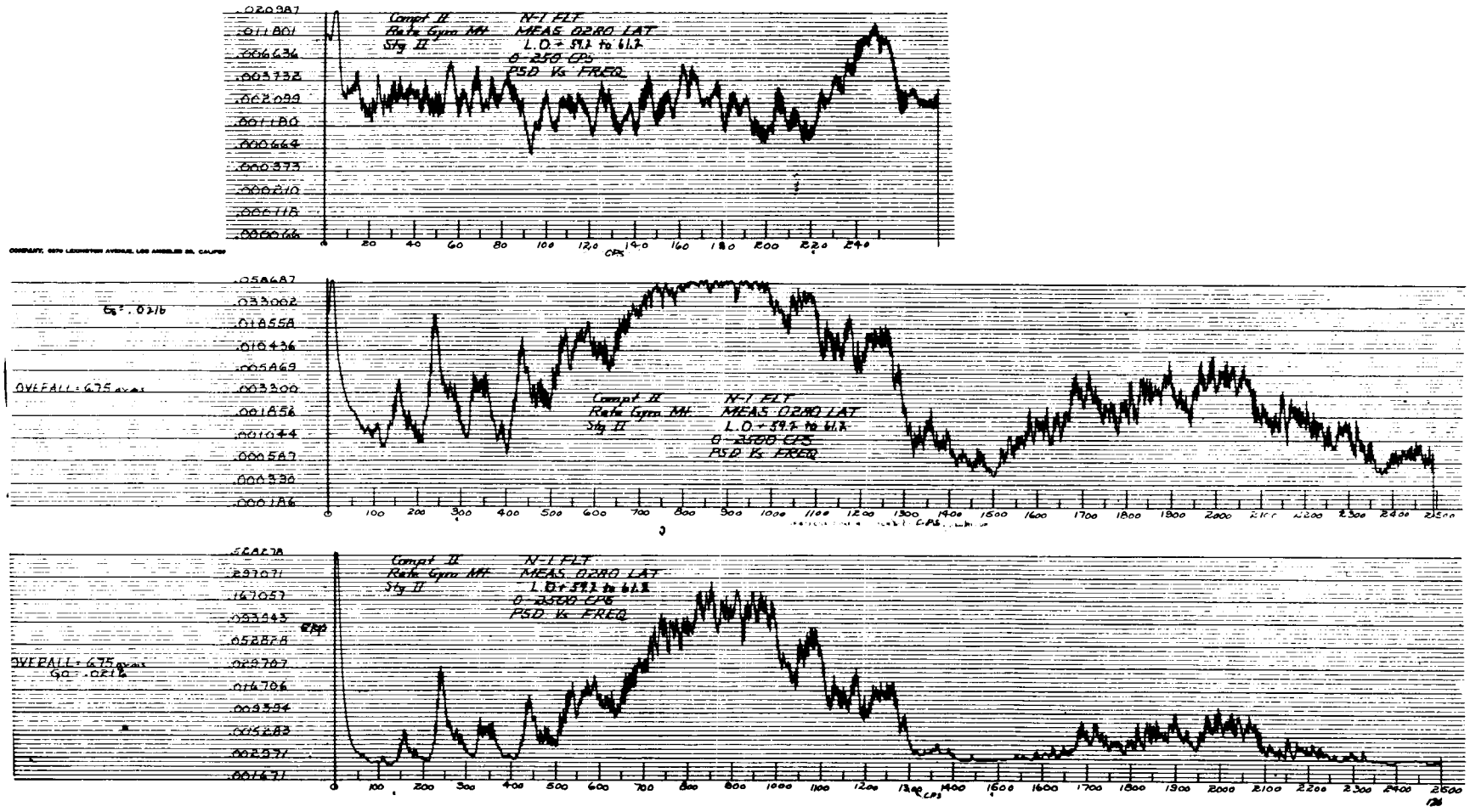

Compt II
Rate Gyro MH
Stg II
N-1 FLT
MEAS 0280 LAT
L.O. = 59.1 to 61.7
0-250 CPS
PSD Vs FREQ
Compt II
Rate Gyro MH
Stg II
N-1 FLT
MEAS 0280 LAT
L.O. = 59.1 to 61.7
0-2500 CPS
PSD Vs FREQ
Compt II
Rate Gyro MH
Stg II
N-1 FLT
MEAS 0280 LAT
L.O. = 59.1 to 61.7
0-2500 CPS
PSD Vs FREQ
OVERALL = 6.75 g rms
OVERALL = 6.75 g rms

Fig. 726

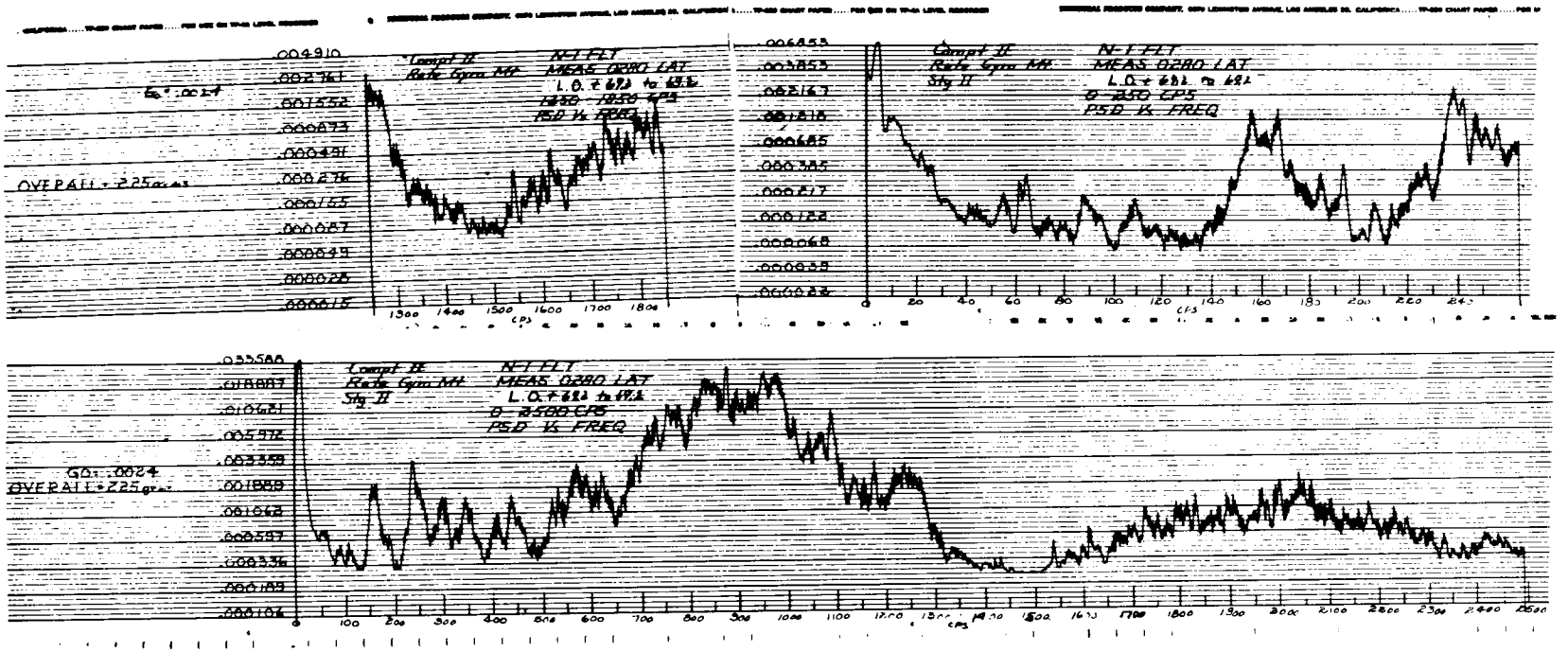

Compt II
Rate Gyro MH
Stg II
N-1 FLT
MEAS 0280 LAT
L.O.+68.2 to 69.2
0-3500 CPS
PSD vs FREQ
OVERALL = 2.25 grms
GO = .0024
CPS

Fig. 727

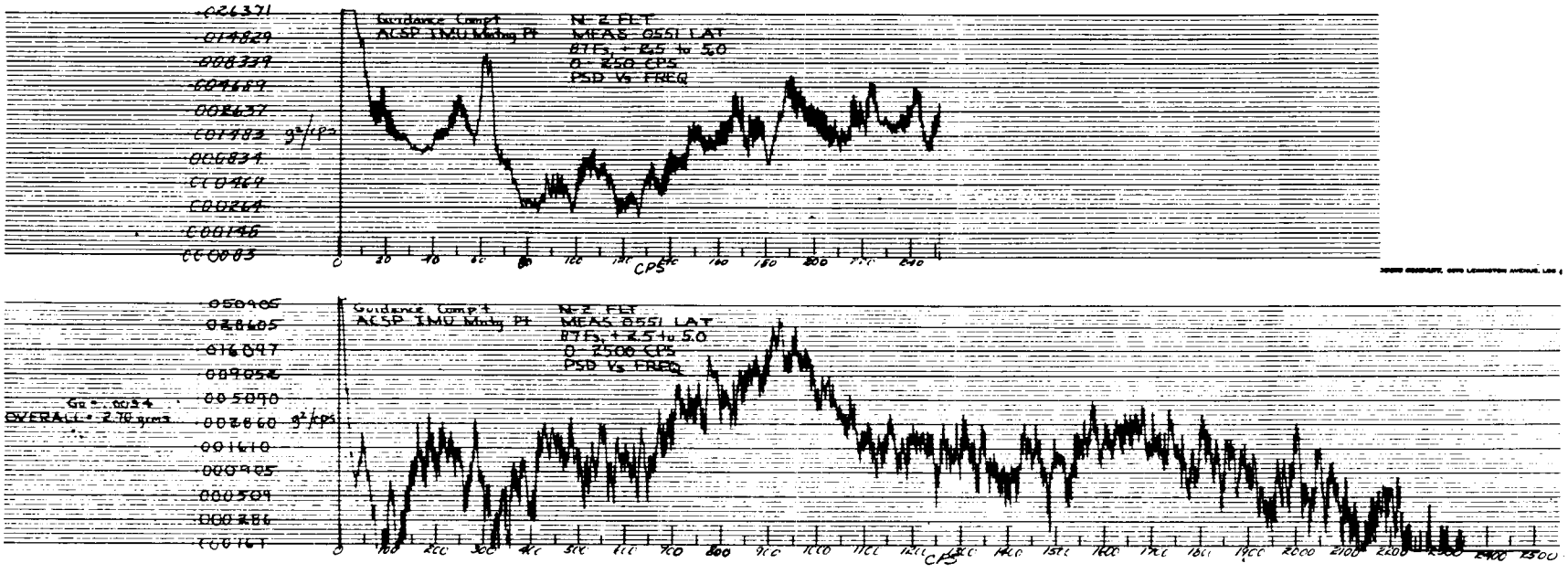

Guidance Compt
AGSP IMU Mtg Pt
N-Z FLT
MEAS 055I LAT
BTFS, + 2.5 to 5.0
0- 250 CPS
PSD Vs FREQ
g²/cps
CPS
Guidance Compt
AGSP IMU Mtg Pt
N-Z FLT
MEAS 055I LAT
BTFS, + 2.5 to 5.0
0- 2500 CPS
PSD Vs FREQ
g²/cps
CPS

Fig. 728

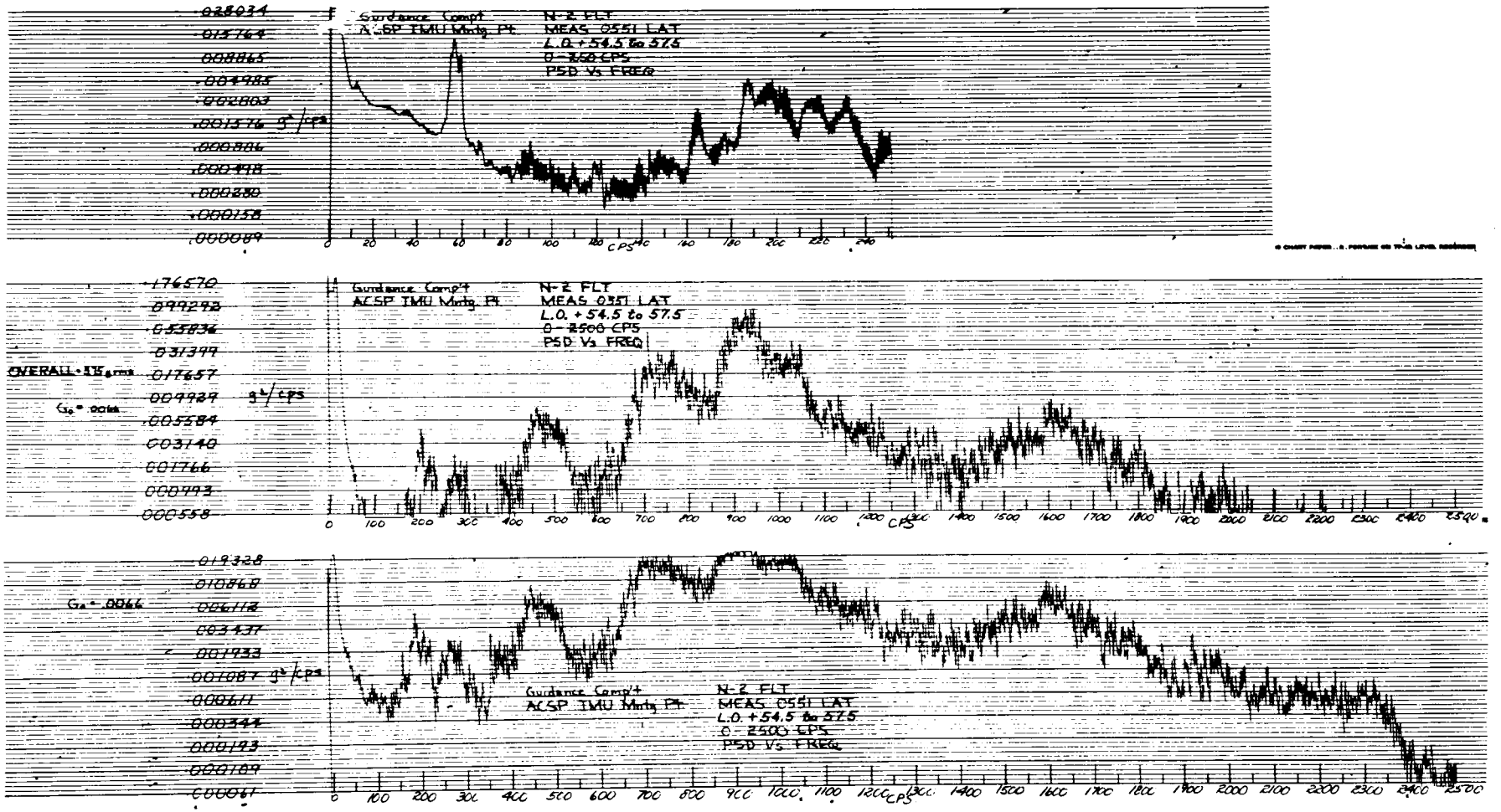

Guidance Comp't
ACSP IMU Mntg Pt.
N-2 FLT
MEAS 0551 LAT
L.O. +54.5 to 57.5
0-250 CPS
PSD Vs FREQ
.028034
.015764
.008865
.004985
.002803
.001576 g²/cps
.000886
.000498
.000280
.000158
.000089
0 20 40 60 80 100 120 CPS 140 160 180 200 220 240
Guidance Comp't
ACSP IMU Mntg Pt.
N-2 FLT
MEAS 0551 LAT
L.O. +54.5 to 57.5
0-2500 CPS
PSD Vs FREQ
.176570
.099292
.055836
.031399
OVERALL = 15 g rms
.017657
.009929 g²/cps
.005584
.003140
.001766
.000993
.000558
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 CPS 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
Guidance Comp't
ACSP IMU Mntg Pt.
N-2 FLT
MEAS 0551 LAT
L.O. +54.5 to 57.5
0-2500 CPS
PSD Vs FREQ
.019328
.010868
Gs = .0066
.006112
.003437
.001933
.001087 g²/cps
.000611
.000344
.000193
.000109
.000061
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 CPS 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500

Fig. 729

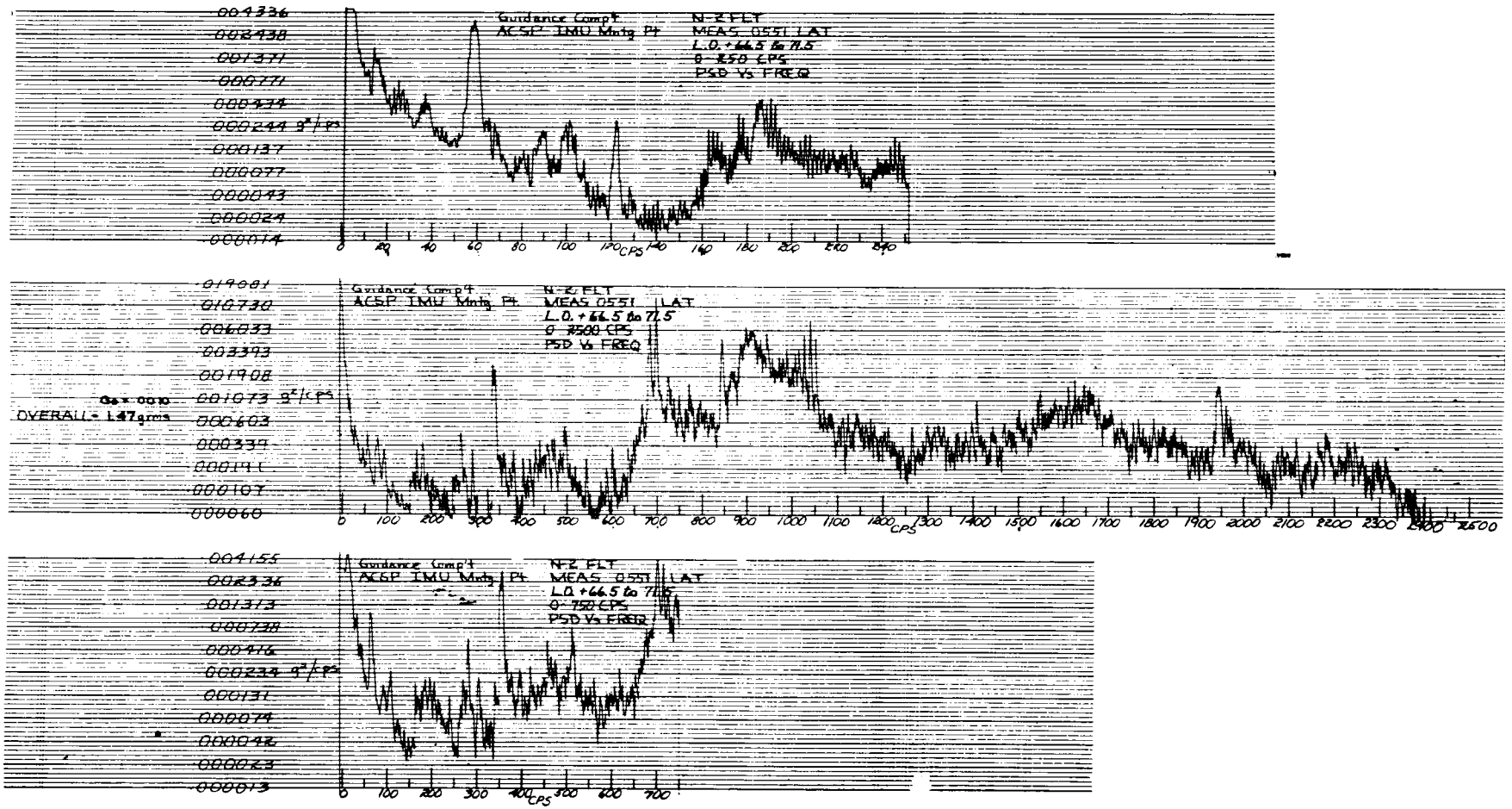

Guidance Comp't
ACSP IMU Mntg Pt
N-Z FLT
MEAS 0551 LAT
L.O. +66.5 to 71.5
0-250 CPS
PSD Vs FREQ
0.004336
0.002438
0.001371
0.000771
0.000434
0.000244 g²/cps
0.000137
0.000077
0.000043
0.000024
0.000014
0 20 40 60 80 100 120 CPS 140 160 180 200 220 240
Guidance Comp't
ACSP IMU Mntg Pt
N-Z FLT
MEAS 0551 LAT
L.O. +66.5 to 71.5
0-1500 CPS
PSD Vs FREQ
0.019081
0.010730
0.006033
0.003393
0.001908
0.001073 g²/cps
0.000603
0.000339
0.000191
0.000107
0.000060
OVERALL = 1.47 grms
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 CPS 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
Guidance Comp't
ACSP IMU Mntg Pt
N-Z FLT
MEAS 0551 LAT
L.O. +66.5 to 71.5
0-750 CPS
PSD Vs FREQ
0.004155
0.002336
0.001313
0.000738
0.000416
0.000234 g²/cps
0.000131
0.000074
0.000042
0.000023
0.000013
0 100 200 300 400 CPS 500 600 700

Fig. 730

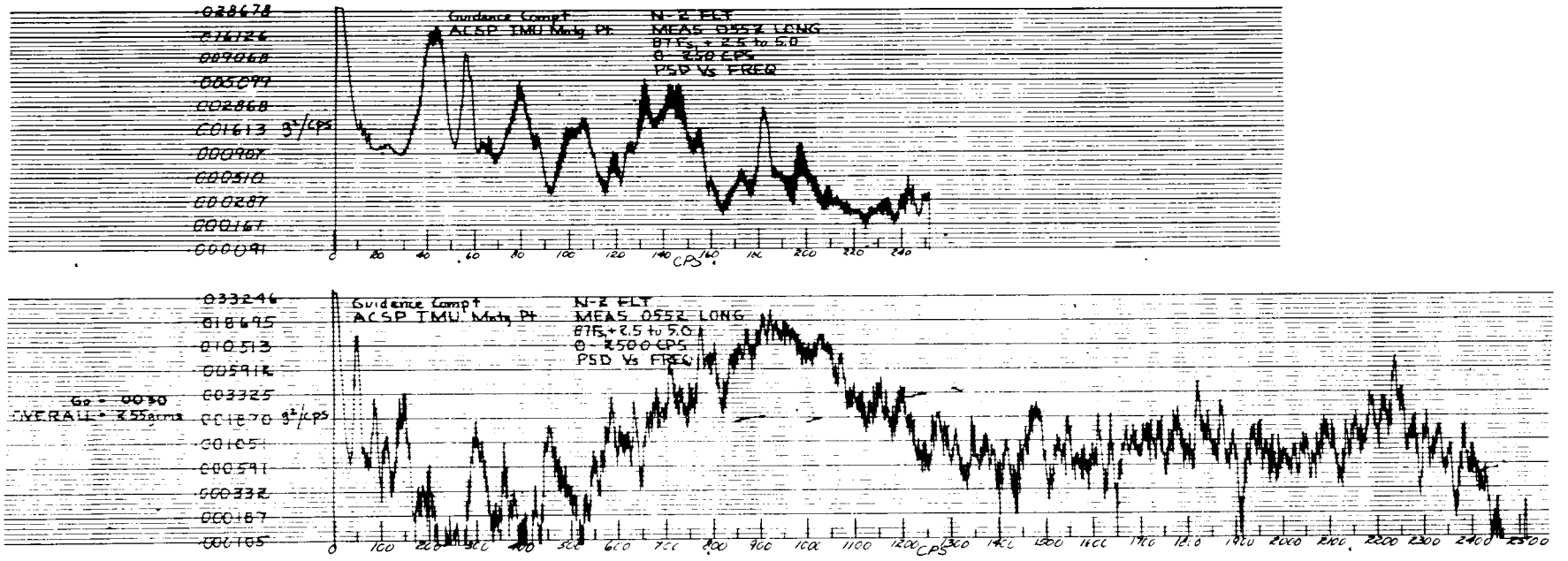

Guidance Compt
ACSP IMU Mntg Pt
N-Z PLT
MEAS 0552 LONG
BTFs + 2.5 to 5.0
0-2500 CPS
PSD Vs FREQ
g²/CPS
CPS
Guidance Compt
ACSP IMU Mntg Pt
N-Z PLT
MEAS 0552 LONG
BTFs + 2.5 to 5.0
0-2500 CPS
PSD Vs FREQ
g²/CPS
CPS

Fig. 731

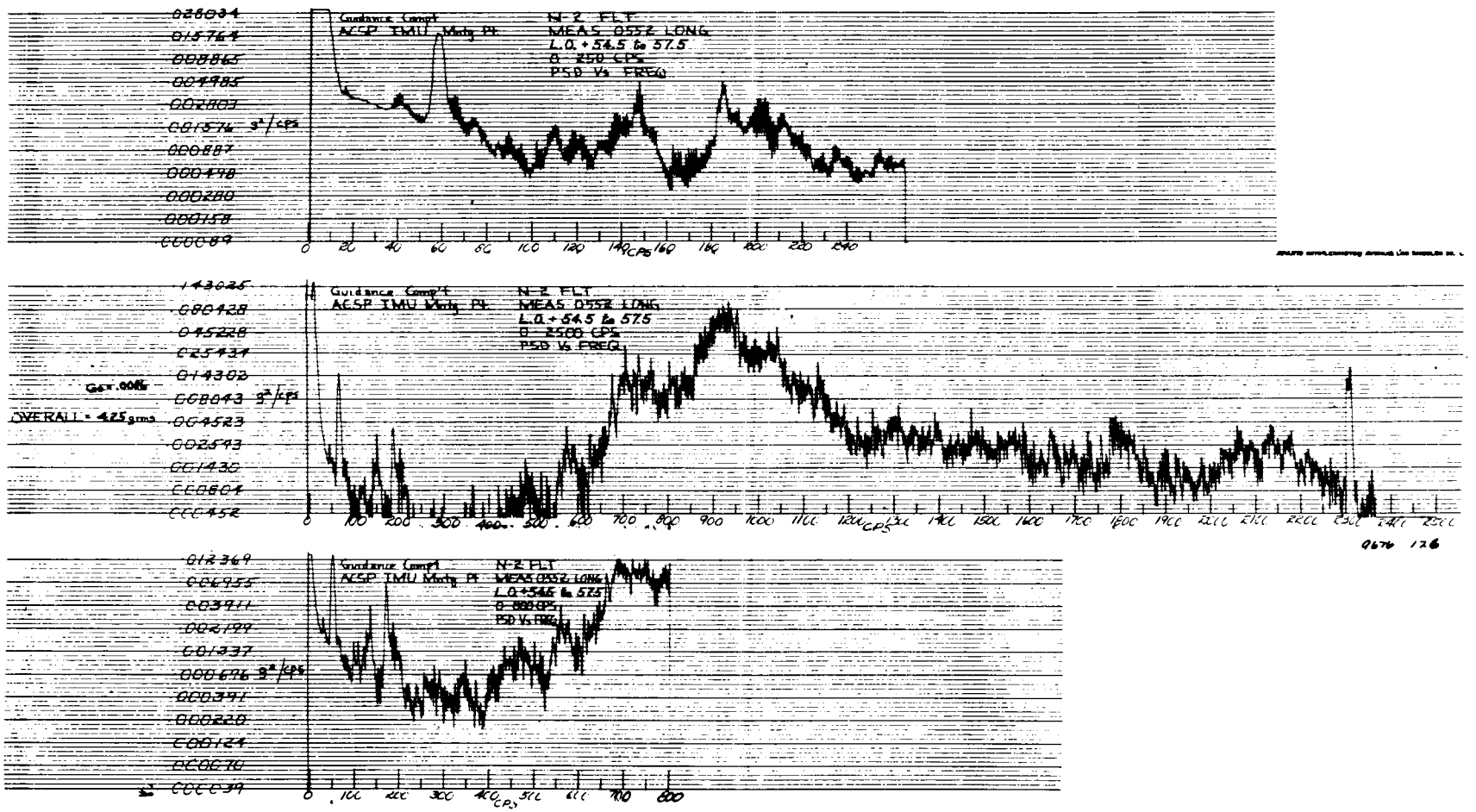

Guidance Comp't
ACSP TMU Mtg Pt
N-2 FLT
MEAS 055Z LONG
L.O. + 54.5 to 57.5
B 250 CPS
PSD Vs FREQ
g²/cps
Guidance Comp't
ACSP TMU Mtg Pt
N-2 FLT
MEAS 055Z LONG
L.O. + 54.5 to 57.5
B 2500 CPS
PSD Vs FREQ
OVERALL = 4.25 grms
g²/cps
Guidance Comp't
ACSP TMU Mtg Pt
N-2 FLT
MEAS 055Z LONG
L.O. + 54.5 to 57.5
B 800 CPS
PSD Vs FREQ
g²/cps

Fig. 732

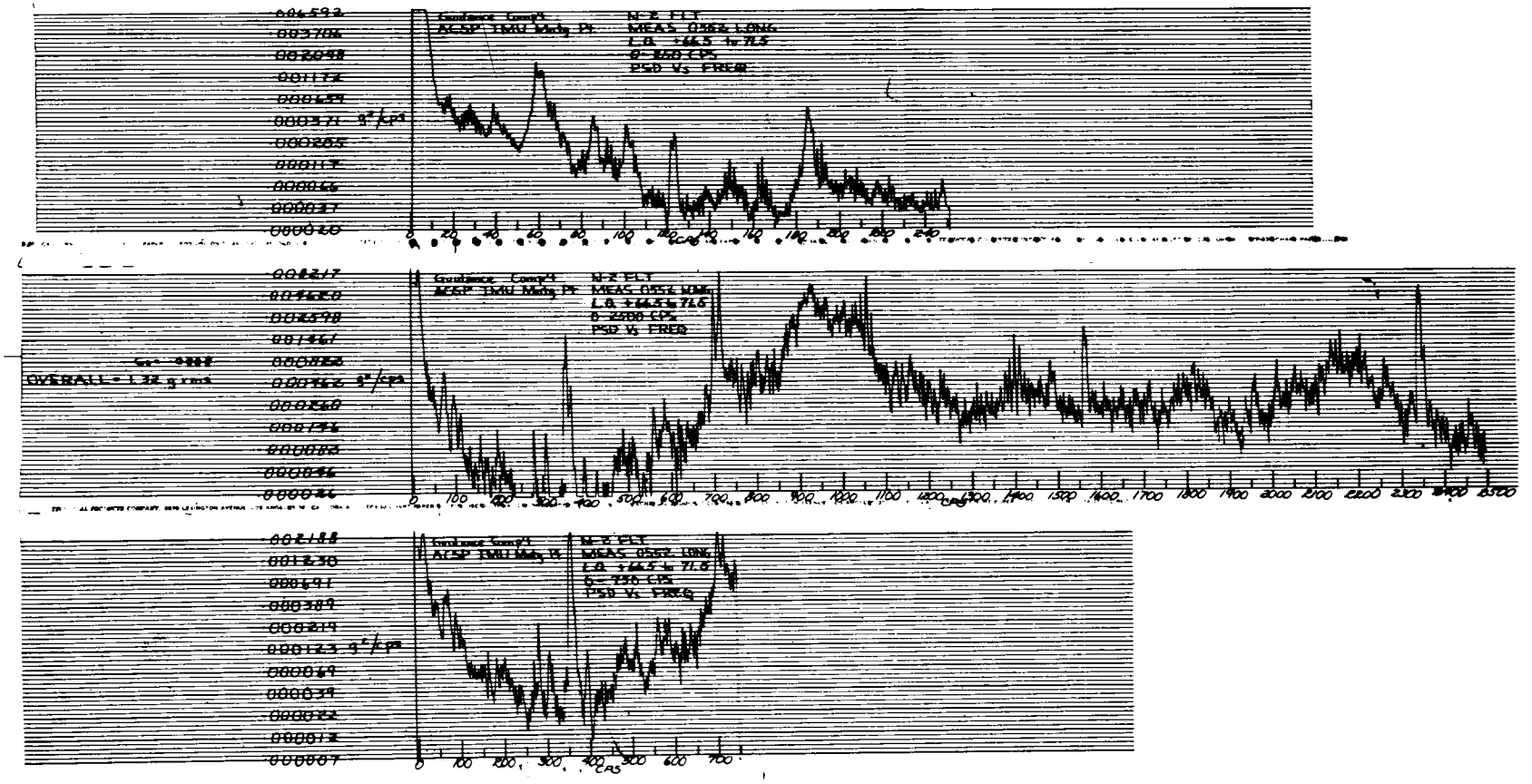

Guidance Comp't
ACSP IMU Mod₃ Pt
M-X PLT
MEAS 0552 LONG
LO +66.5 to 71.5
0-2500 CPS
PSD Vs FREQ
g²/cps
OVERALL = 1.32 g rms
CPS
Guidance Comp't
ACSP IMU Mod₃ Pt
M-X PLT
MEAS 0552 LONG
LO +66.5 to 71.5
0-2500 CPS
PSD Vs FREQ
g²/cps
CPS
Guidance Comp't
ACSP IMU Mod₃ Pt
M-X PLT
MEAS 0552 LONG
LO +66.5 to 71.5
0-750 CPS
PSD Vs FREQ
g²/cps
CPS

Fig. 733

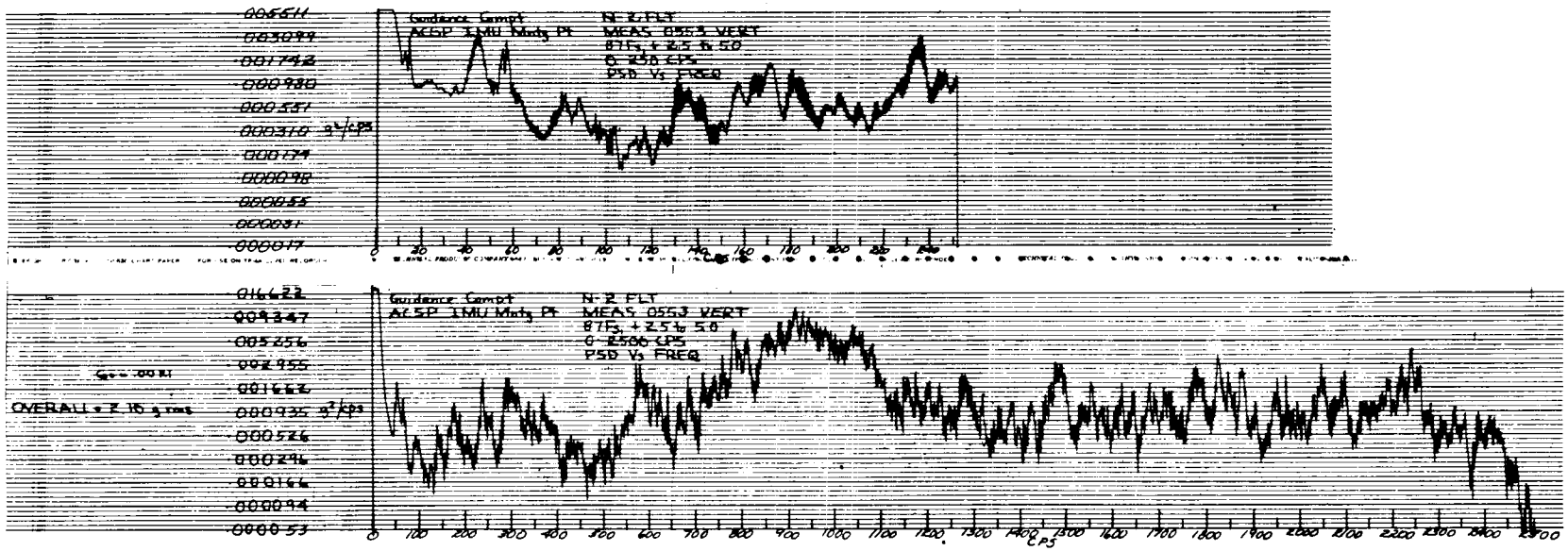

Guidance Compt
ACSP 1 IMU Mnty Pt
N-2 FLT
MEAS 0553 VERT
87Fs + 2.5 to 5.0
0-250 CPS
PSD Vs FREQ
Guidance Compt
ACSP 1IMU Mnty Pt
N-2 FLT
MEAS 0553 VERT
87Fs + 2.5 to 5.0
0-2500 CPS
PSD Vs FREQ
OVERALL = 2.15 g rms
CPS

Fig. 734

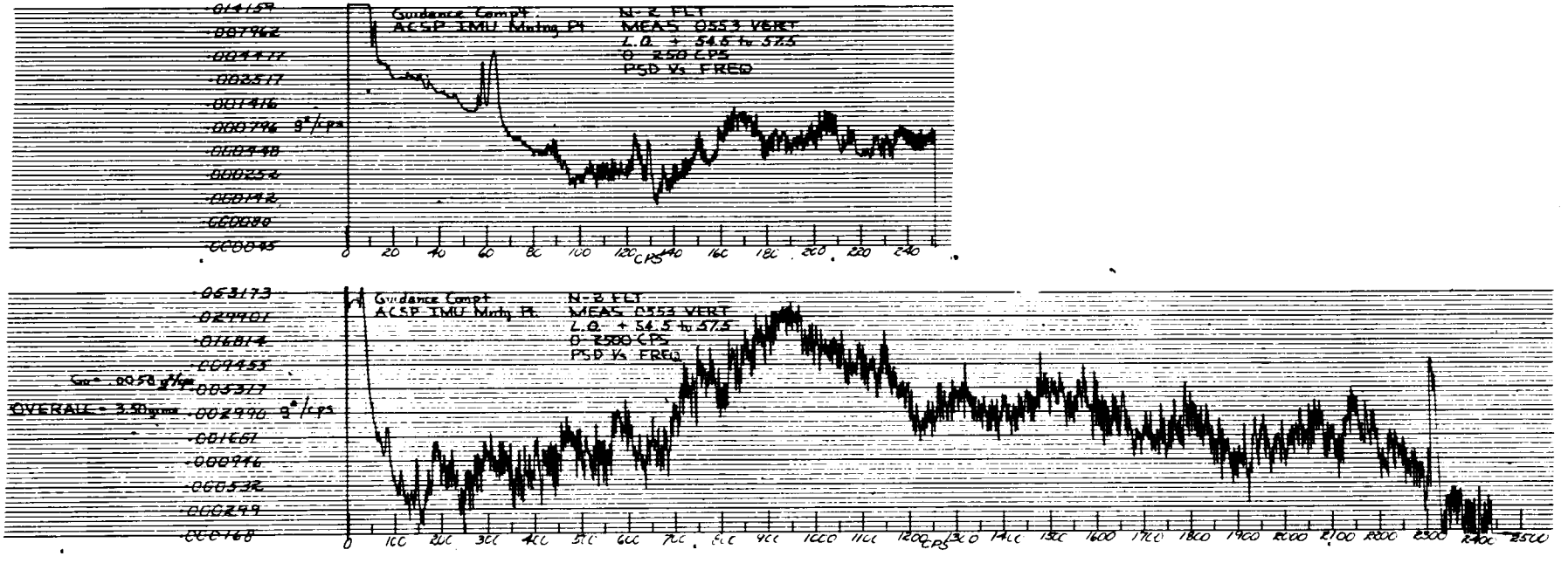

Guidance Compt
ACSP IMU Mntg Pt
N-2 FLT
MEAS 0553 VERT
L.O. + 54.5 to 57.5
0-250 CPS
PSD Vs FREQ
g²/cps
CPS
Guidance Compt
ACSP IMU Mntg Pt
N-2 FLT
MEAS 0553 VERT
L.O. + 54.5 to 57.5
0-2500 CPS
PSD Vs FREQ
g²/cps
CPS

Fig. 735

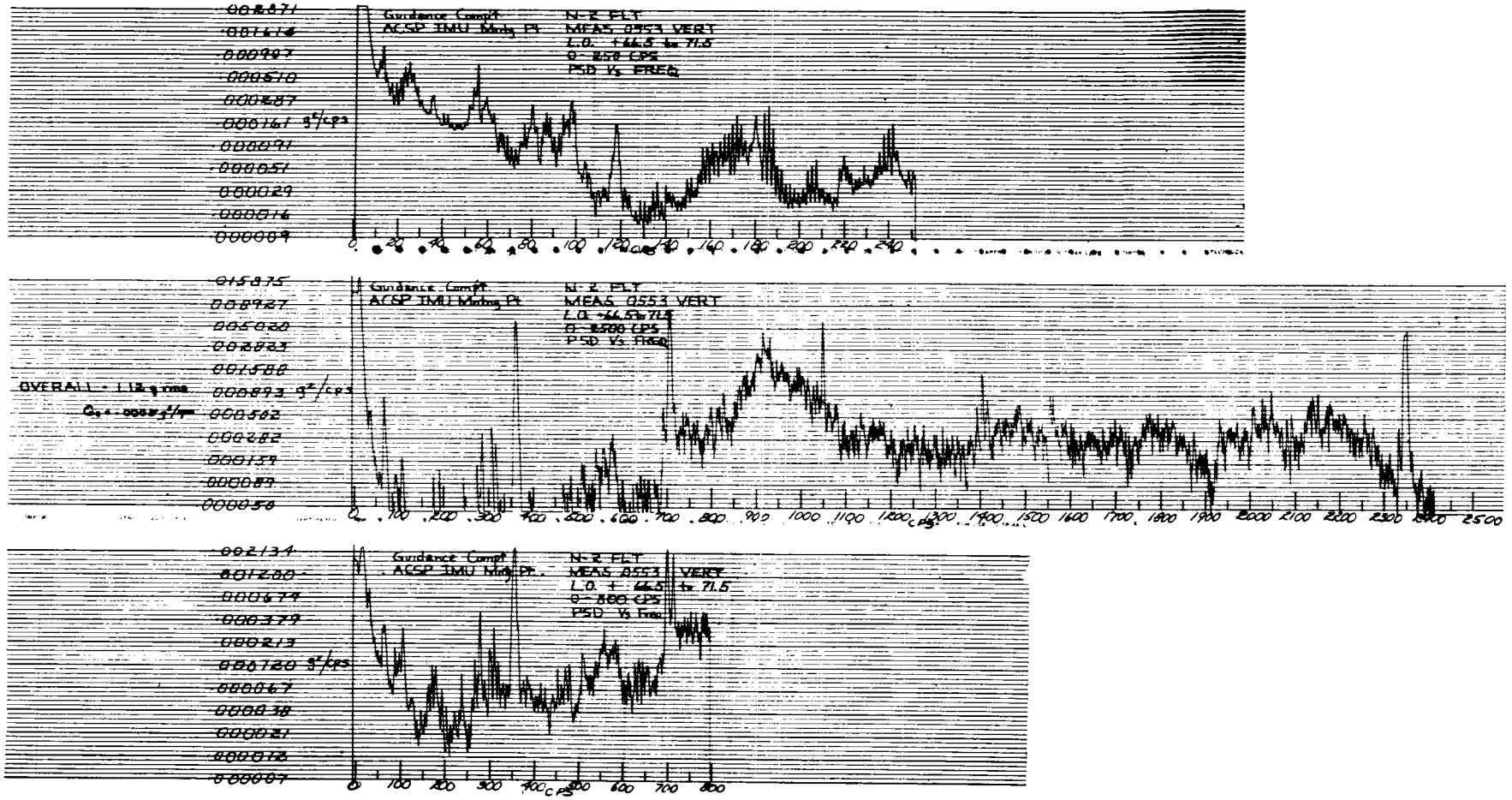
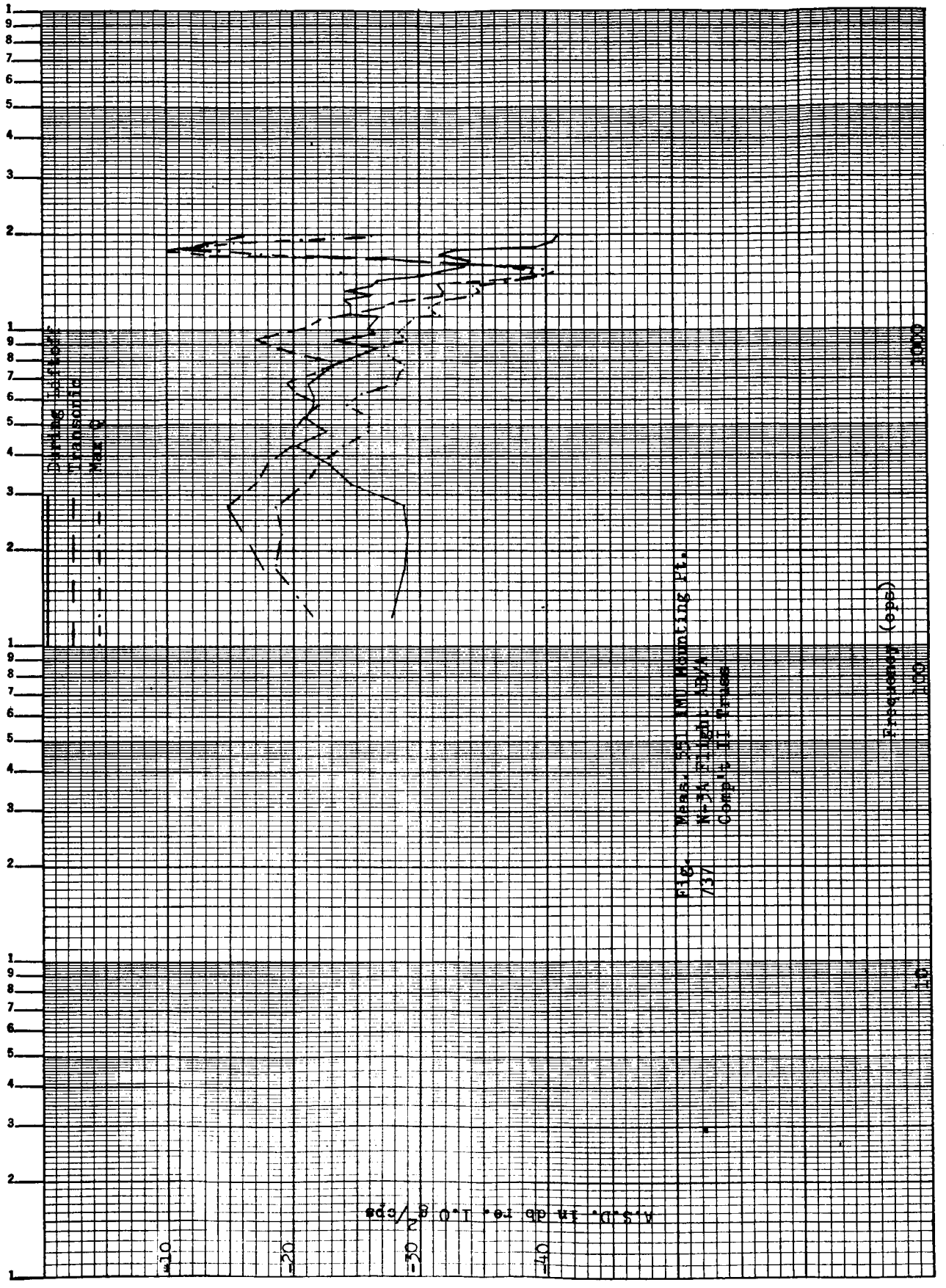
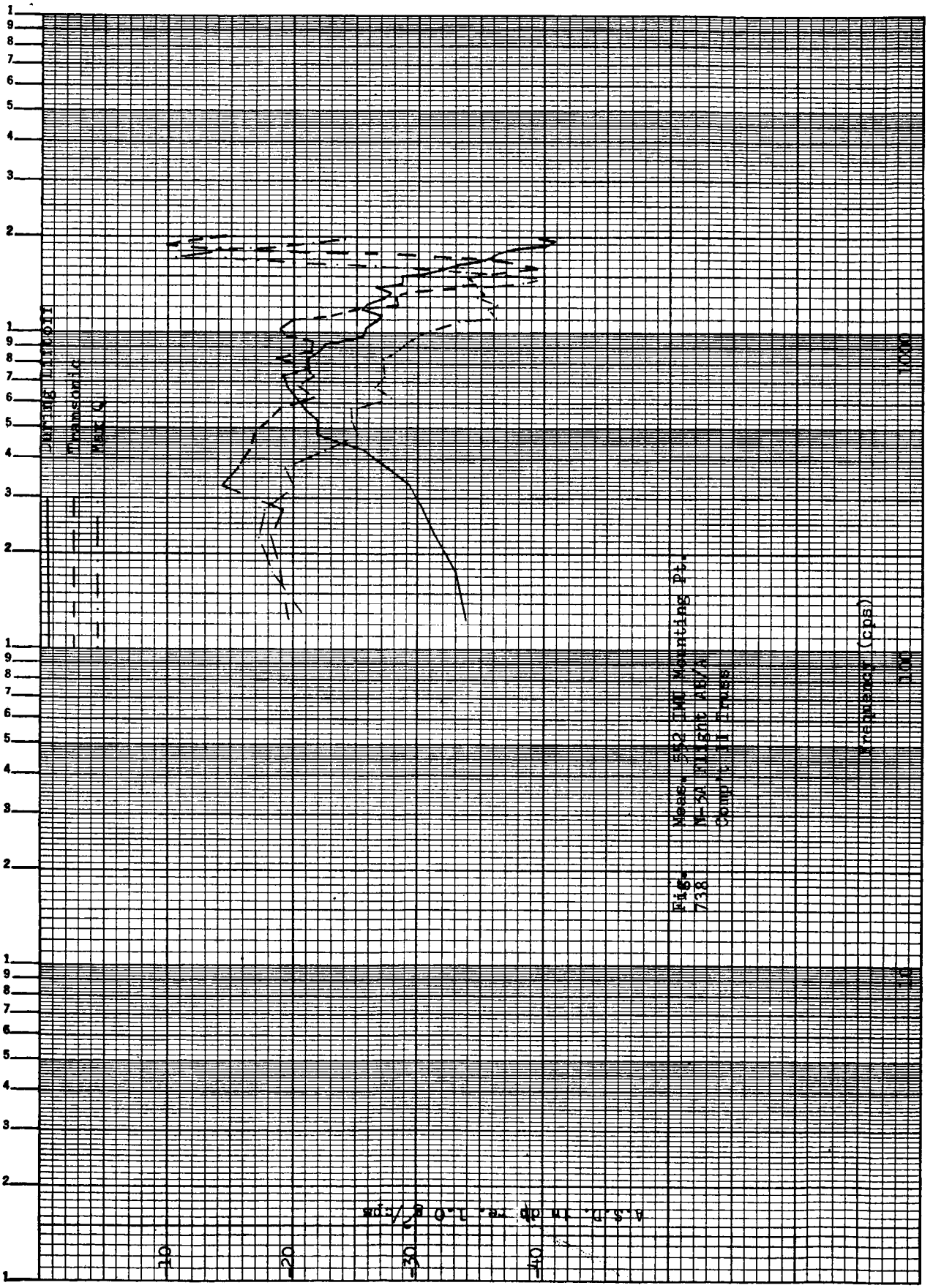

Guidance Compt.
ACSP IMU Mtg. Pt.
N-Z FLT
MEAS 0553 VERT
L.O. +44.5 to 71.5
0-250 CPS
PSD Vs FREQ
g²/cps
0 20 40 60 80 100 120 140 160 180 200 220 240
Guidance Compt.
ACSP IMU Mtg. Pt.
N-Z FLT
MEAS 0553 VERT
L.O. +44.5 to 71.5
0-2500 CPS
PSD Vs FREQ
OVERALL - 1.12 g rms
g²/cps
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
Guidance Compt.
ACSP IMU Mtg. Pt.
N-Z FLT
MEAS 0553 VERT
L.O. + 44.5 to 71.5
0-500 CPS
PSD Vs Freq
g²/cps
0 100 200 300 400 500 600 700 800

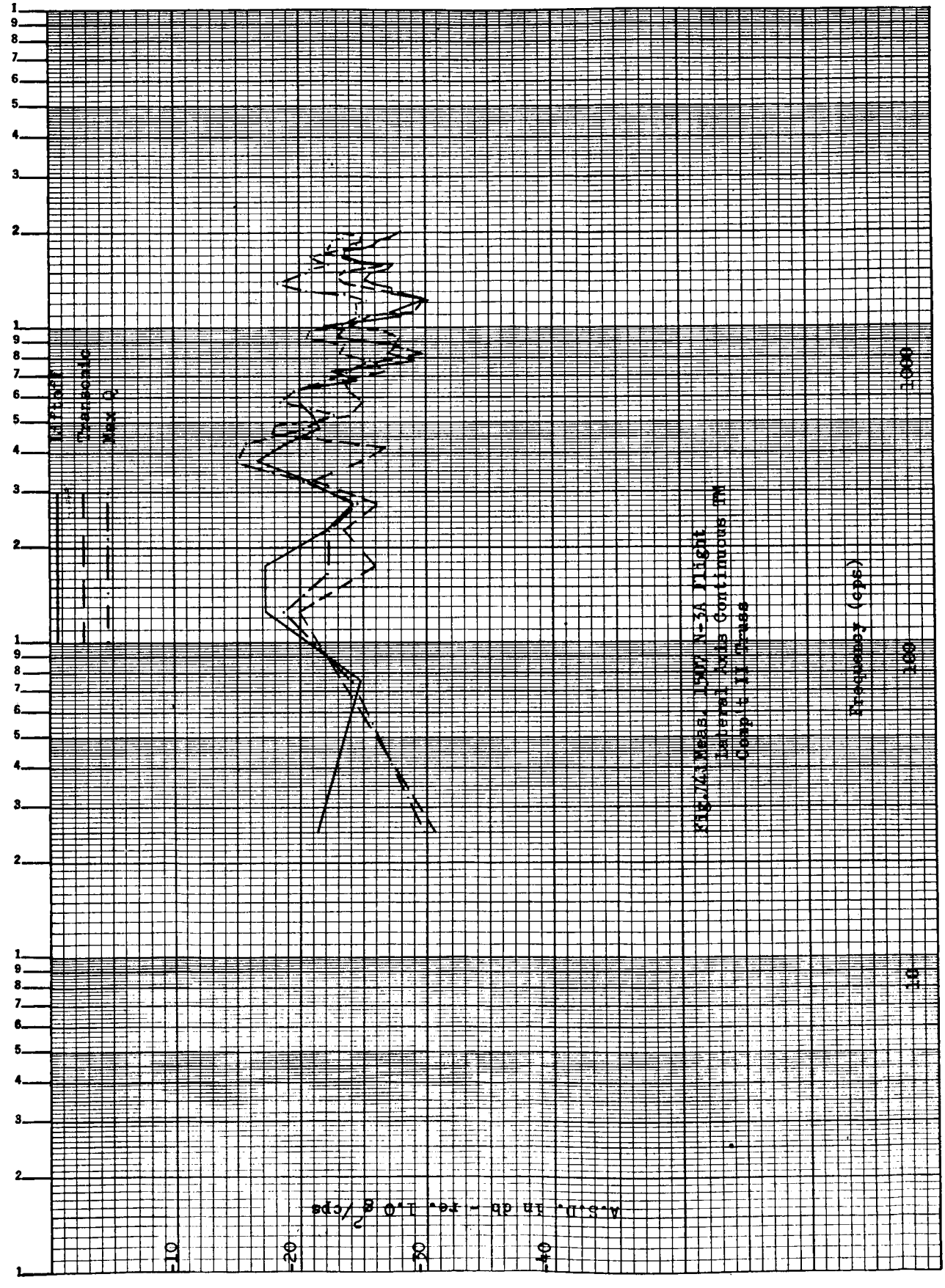
Fig. 736


Fig. Meas. SPL in Hunting Ft.
737
N-3-4 Fan
Cowl
Frequency (cps)
A.S.D. in db re. 1.0 g²/cps


Fig. Measured Mounting Pt.
738 MF-51 Engine Mtd.
Comp. 11 Runs
Frequency (cps)
1000
100
10
20
30
40
A.S.D. in db re 1.0 g²/cps
Darling Airport
Transducer
Mark 10


Peaking Turnoff
Transonic
Max Q
Frequency (cps)
100
10
Fig. 739 Meas. Ess. IMU Mounting Pt.
N-3A Flight 13/A
Comp't II Trans

Fig. 74 Wheel, 1500 N-3A Flight
Vertical Axis Continuous Trace
Frequency (cps)
1000
100
10
1
-10
-20
-30
-40
A. S. D. in db re. 1.0 g²/cps
Max. @


A.S.D. in db - re. 1.0 g²/cps
-10
-20
-30
-40
Frequency (cps)
100
1000
KTB-743 Mean, Lgy N-3A Flight
Internal Axis Continuous PN
Comp. 11 Runs
Terrain
Centerline
Pos. 9

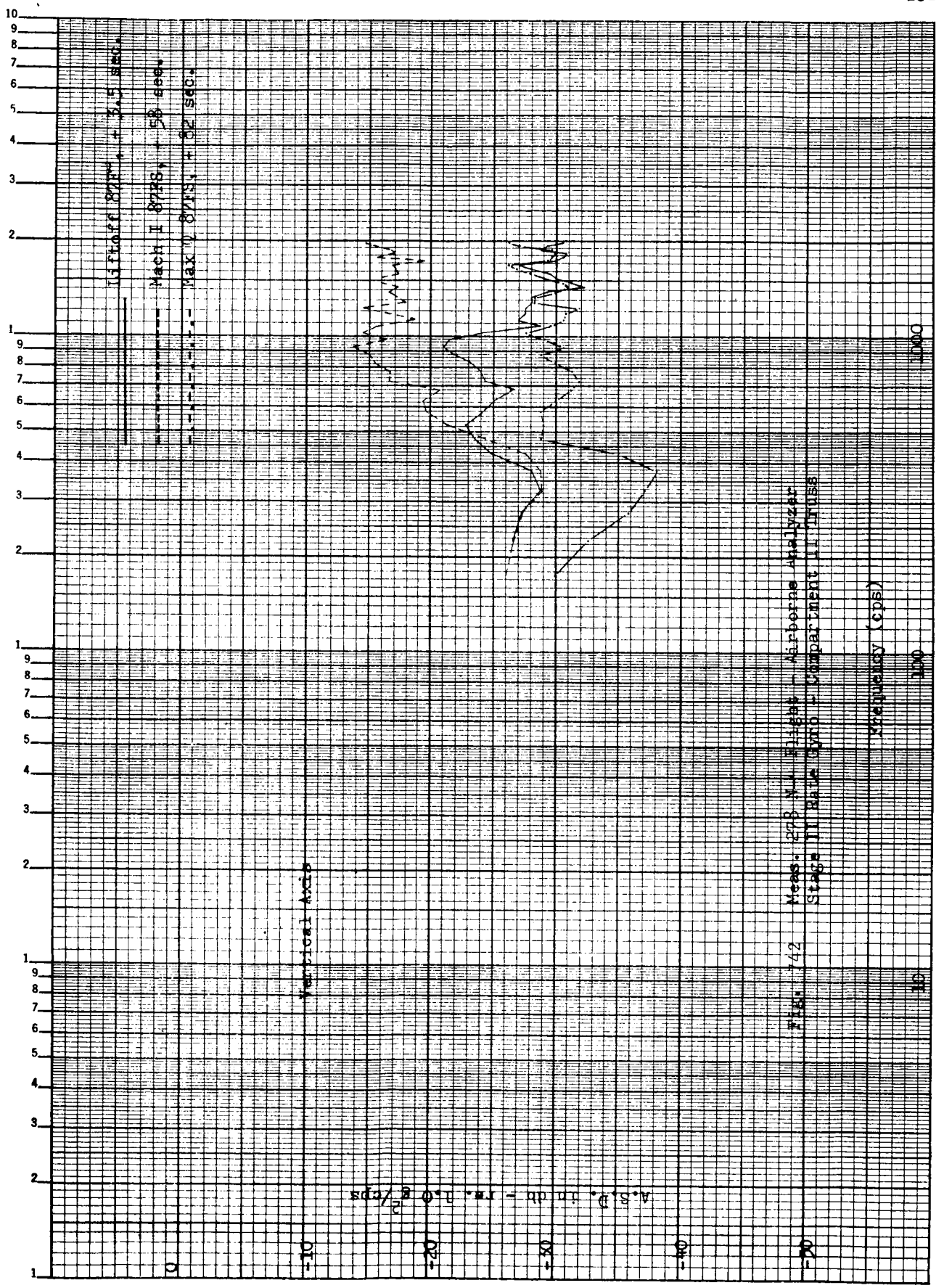


Fig. 742 Meas. 278 N.J. Flights - Airborne Analyzer
Stage II Rate Gyro - Compartment II Truss

Fig. 7-2. Wyle 270 N-4 Flight - Airborne Analyzer Spectrum Level Comparisons at Three Mach Numbers

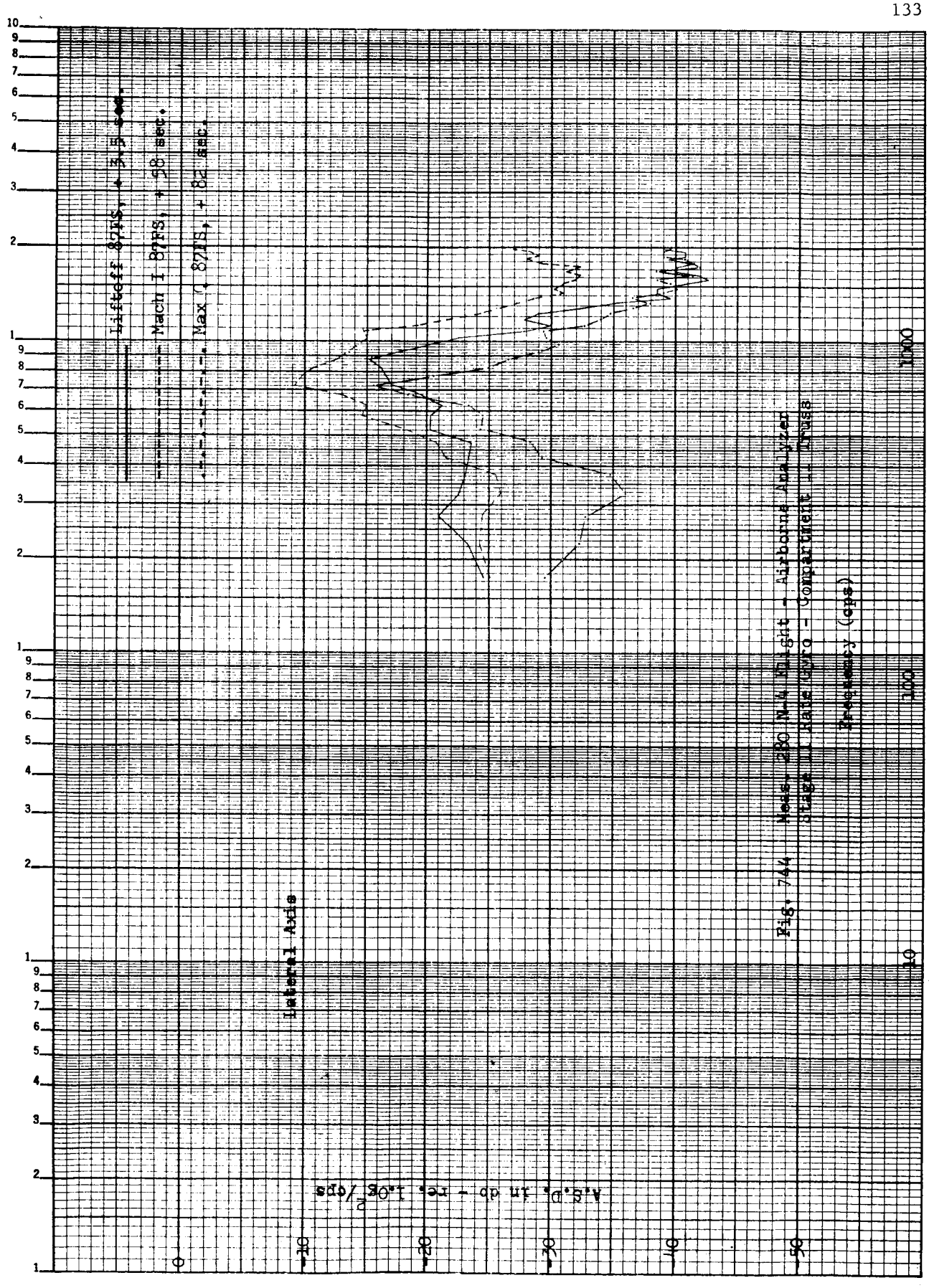


Fig. 744 Mode 280 N-4 Flight - Airborne Analyzer Stage 1 Gate Cyro - Compartment - Mass

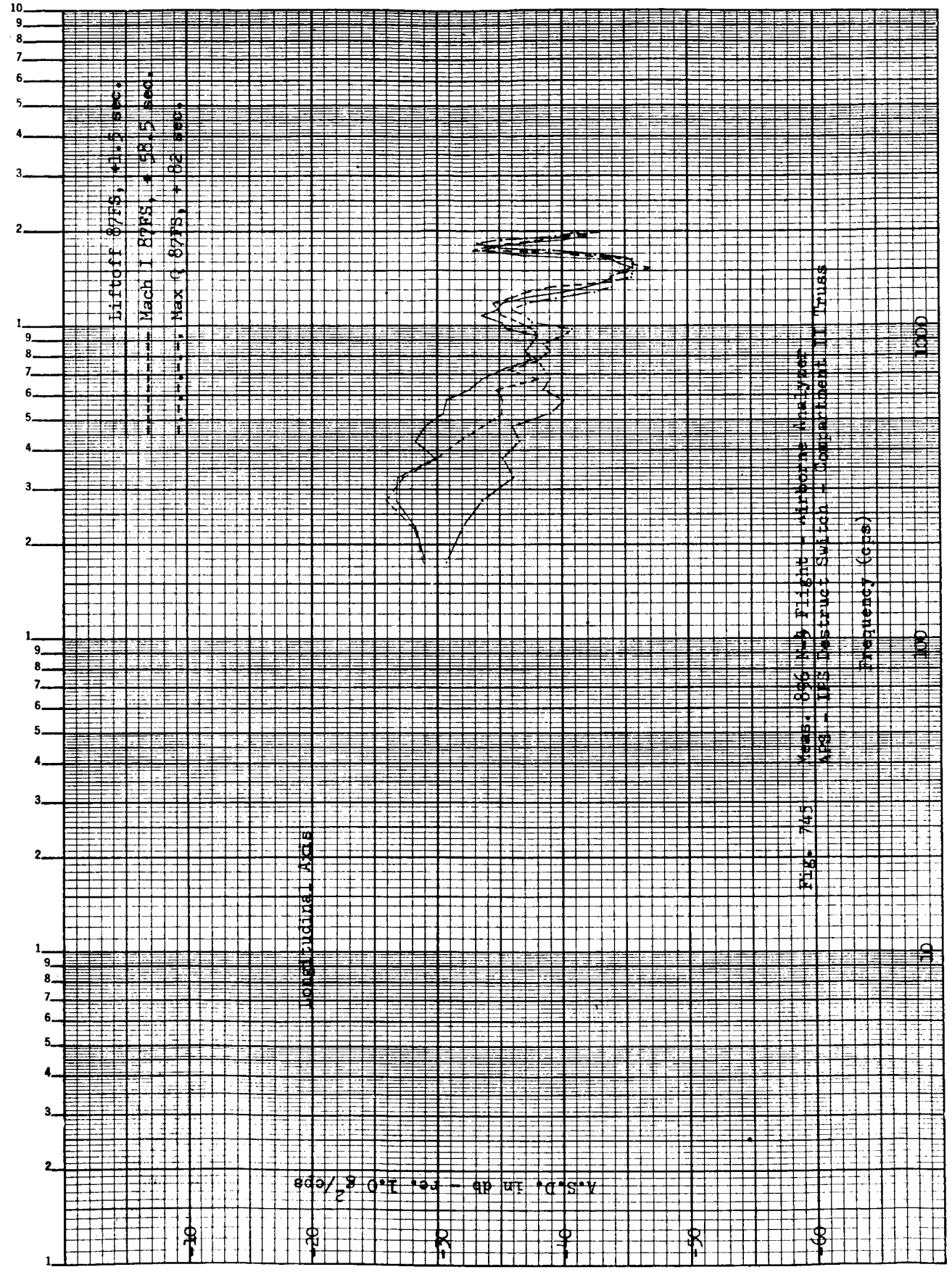


Fig. 745
Vmax. 846 KEAS Flight - Airborne Analyzer
APS - 13B Destruct Switch - Compartment II Truss

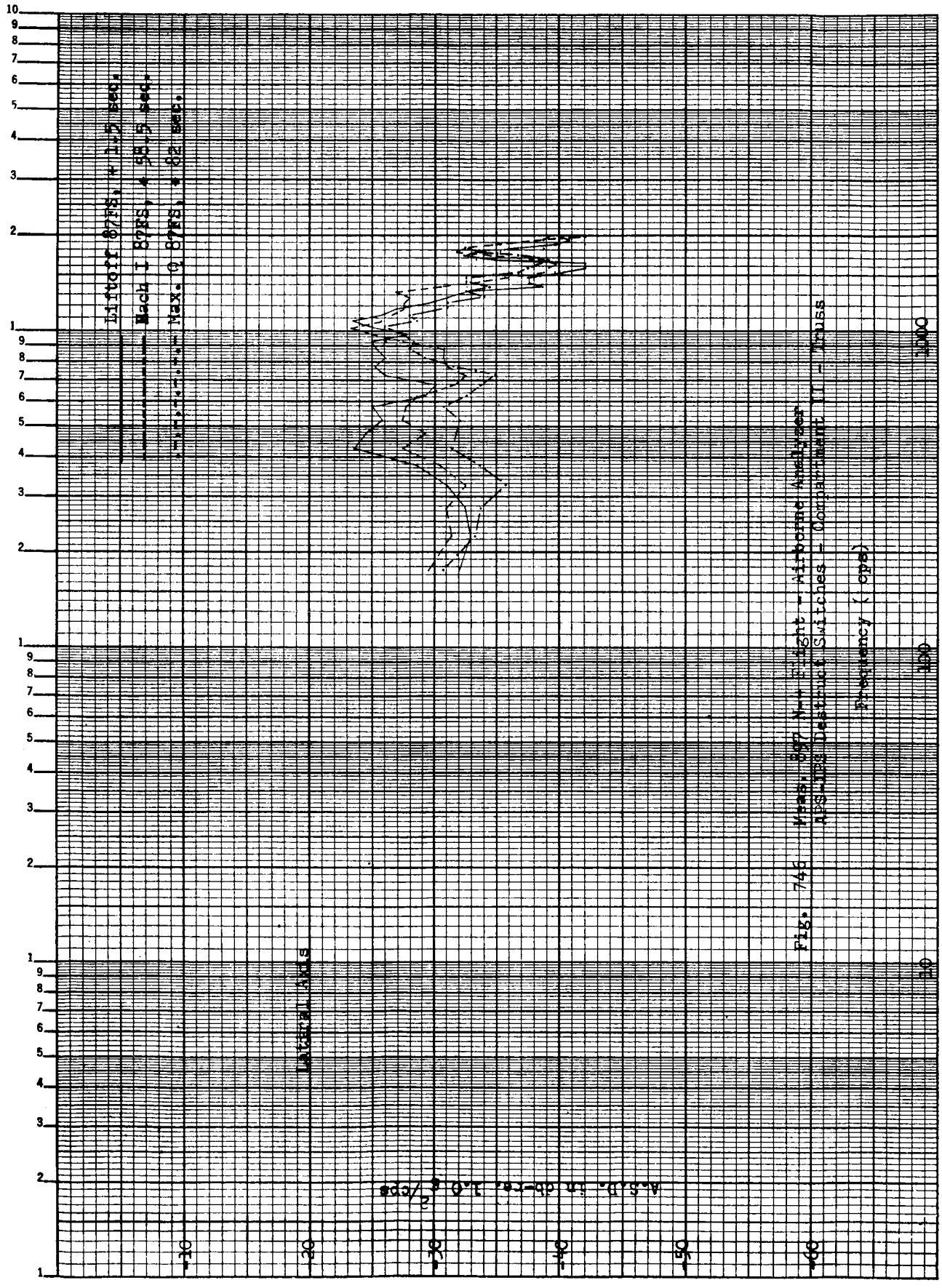
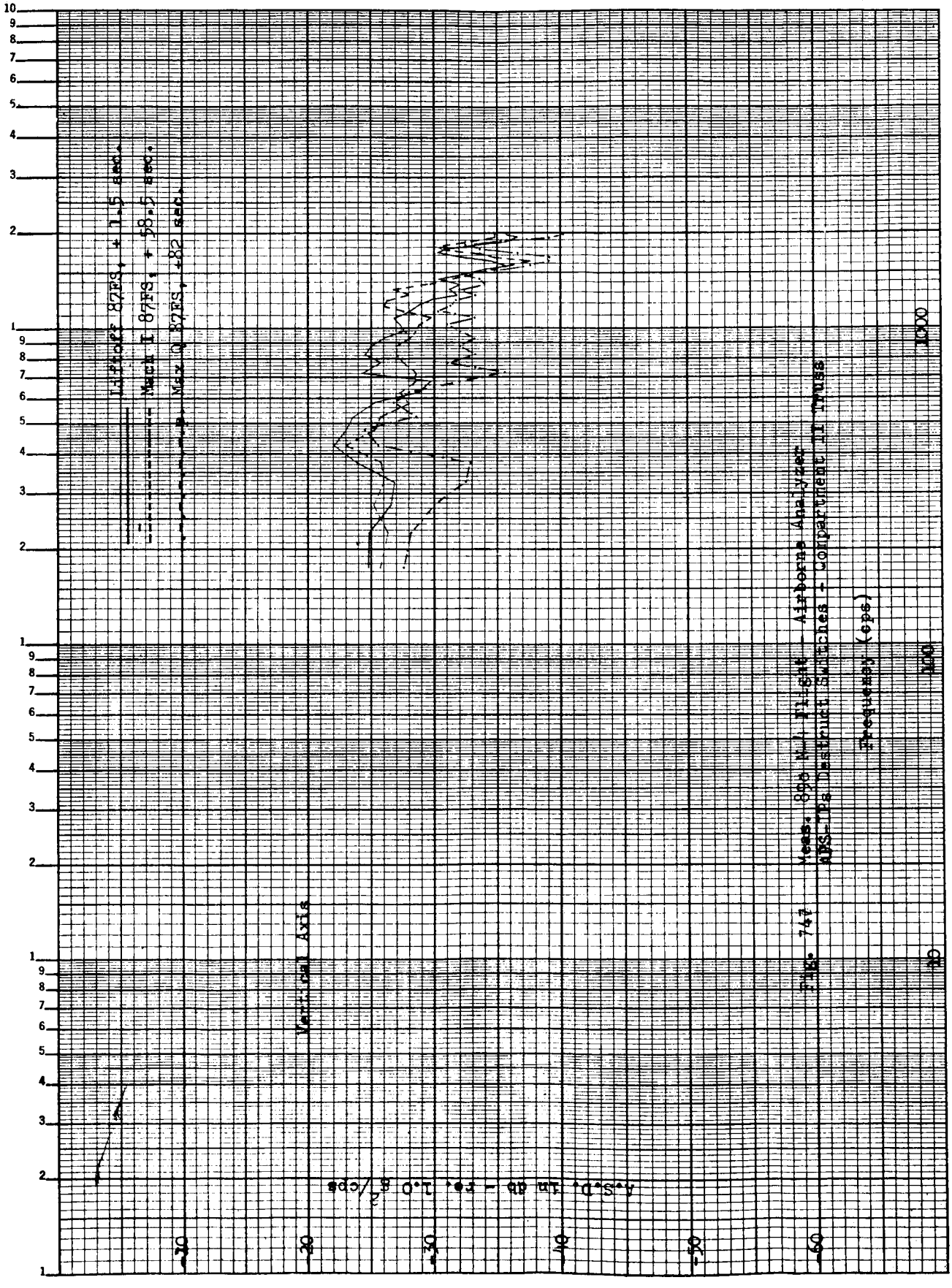


Fig. 746 Mean-Sky Flight - Airborne Analyzer
RS-135 Destruct Switches - Compartment III - Mass


Liftoff 87ES + 1.5 sec.
Mach 1 87ES + 58.5 sec.
Max Q 87ES + 82 sec.
Vertical Axis
A·s²p₁ in db re 1.0 g²/cps
-30
-40
-50
-60
1000
100
10
Frequency (cps)
Fig. 747
Mass. 825 Mk. Flight Airborne Analyzer
OAST-1 Wasatch Antenna - Compartment II Truss

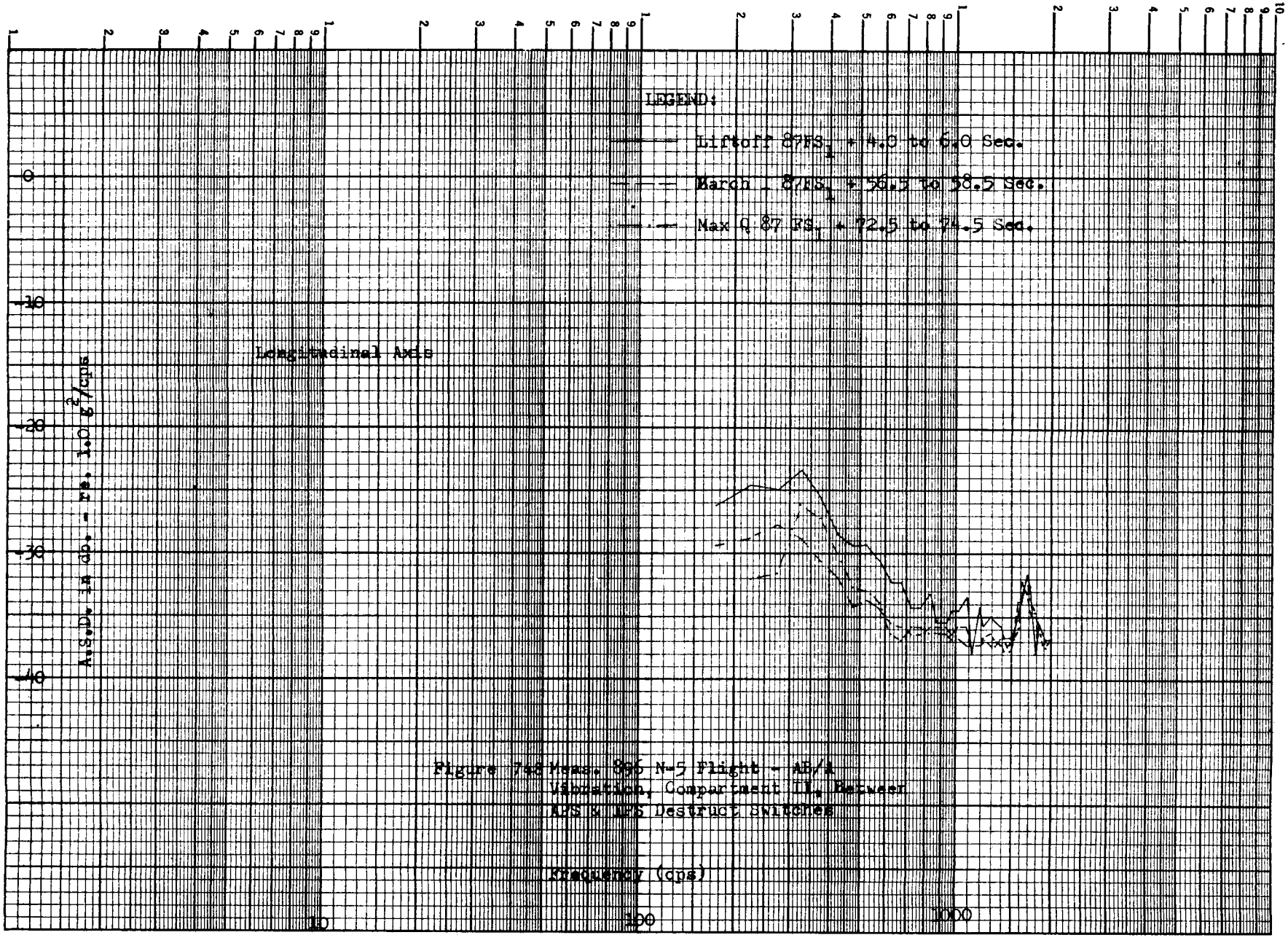
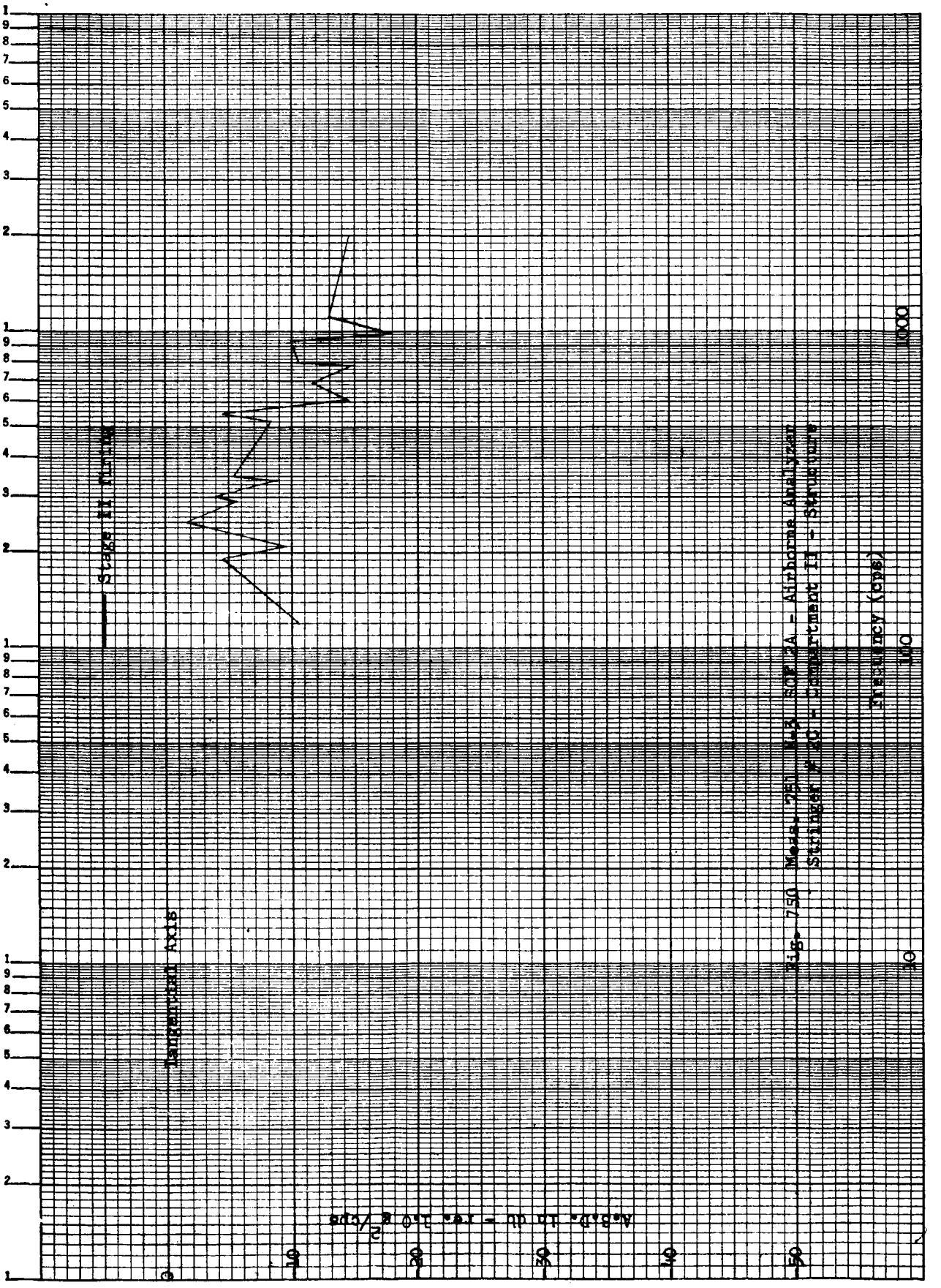
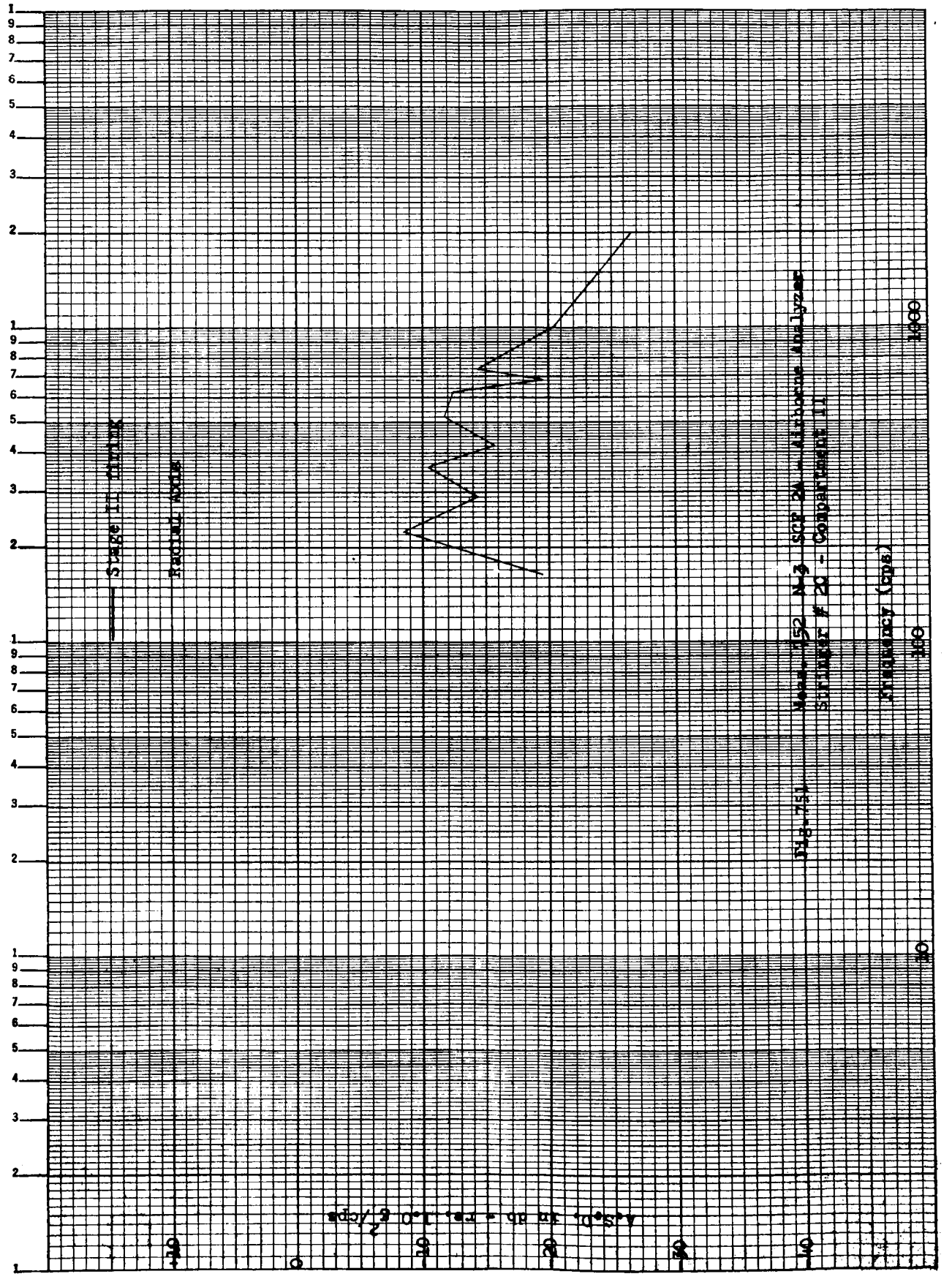


Figure 7xd Meas. 86% N-5 Flight - AB/A
Vibration, Compartment II, Between
AFS & AFS Destruct Switches

Stage II Curve
Longitudinal Axis
Fig. 77.9 Wash, 250 MPH SCF 2A - Airframe Analyses
Stringer # 2K - Compartment II Stations
Gradient (cps)
1000
100
10
0
10
20
30
40
50


Stage II Marker
Tangential Axis
Fig. 750 Mod. 75A, Mk3 SOF 2A - Airborne Analyzer
Strainer #50 - Department II - Structure
Frequency (cps)
1000
100
30
10
50
40
30
20
10
A.B.D. Ib du - ra. Ib ft²/cps


Stage II Cancer
Earthquake
Frequency (cps)
Power (dB)
Model 352 N-3 SCP 20 Airborne Analyzer
Signature # 20 - Compliment II
Phd-751

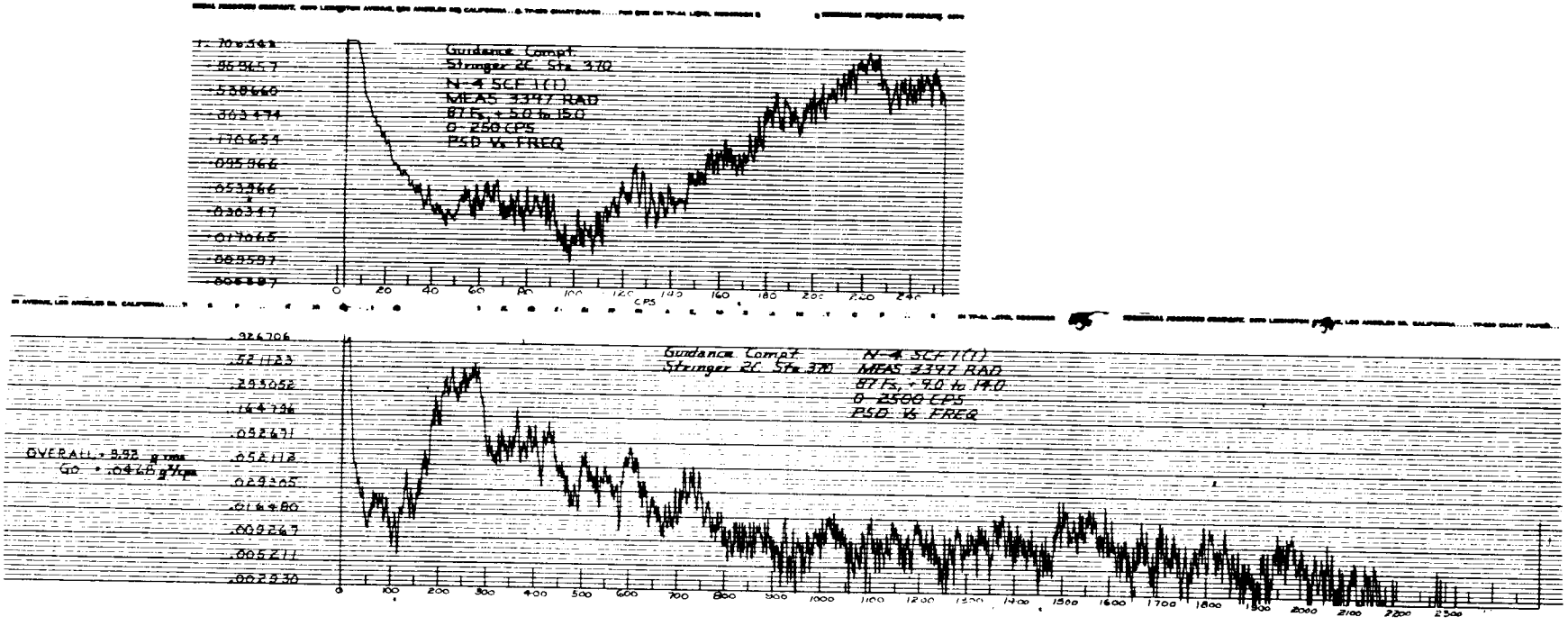

Guidance Compt.
Stringer 2C Sta. 370
N-4 SCF 1(1)
MEAS 3397 RAD
87 Fs, +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Guidance Compt.
Stringer 2C Sta. 370
N-4 SCF 1(1)
MEAS 3397 RAD
87 Fs, +9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
OVERALL = 9.92 g rms
GO = .0476 g²/cps

Fig. 752

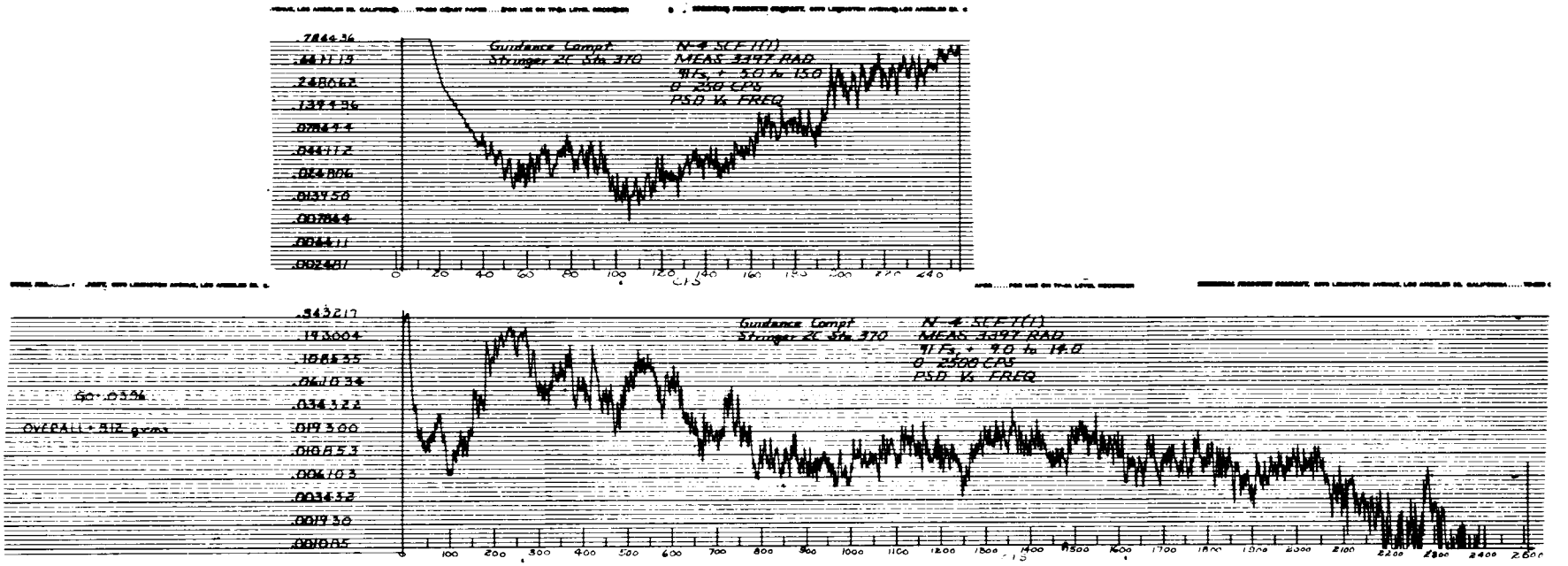

Guidance Compt
Stringer 2C Stn 370
N-4 SCF 1(1)
MEAS 3397 RAD
Hz + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Guidance Compt
Stringer 2C Stn 370
N-4 SCF 1(1)
MEAS 3397 RAD
Hz + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ

Fig. 753

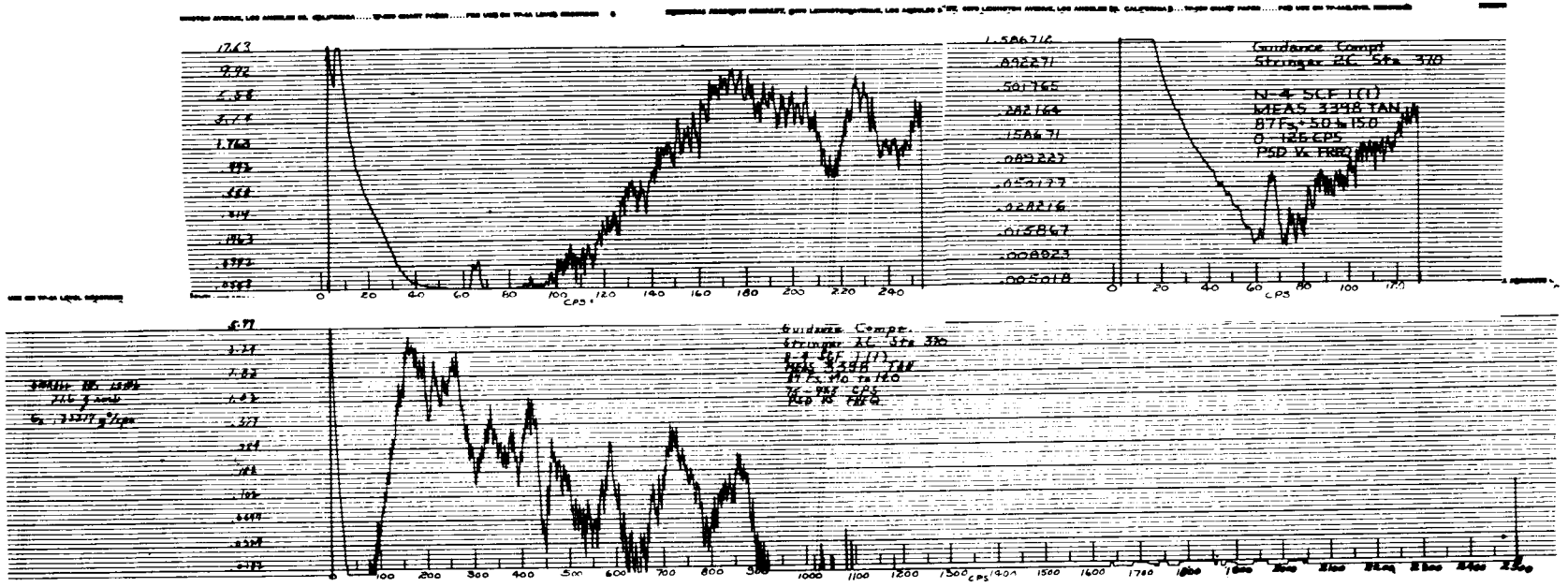

Guidance Compt
Stringer 2C Sta 370
N-4 SCF 1(1)
MEAS 3398 TAN
87 Fs +50 to 150
0 126 CPS
PSD Vs FREQ
CPS
Guidance Compt.
Stringer 2C Sta 370
N-4 SCF 1(1)
MEAS 3398 TAN
87 Fs 370 to 140
0 - 952 CPS
PSD VS FREQ

Fig. 754

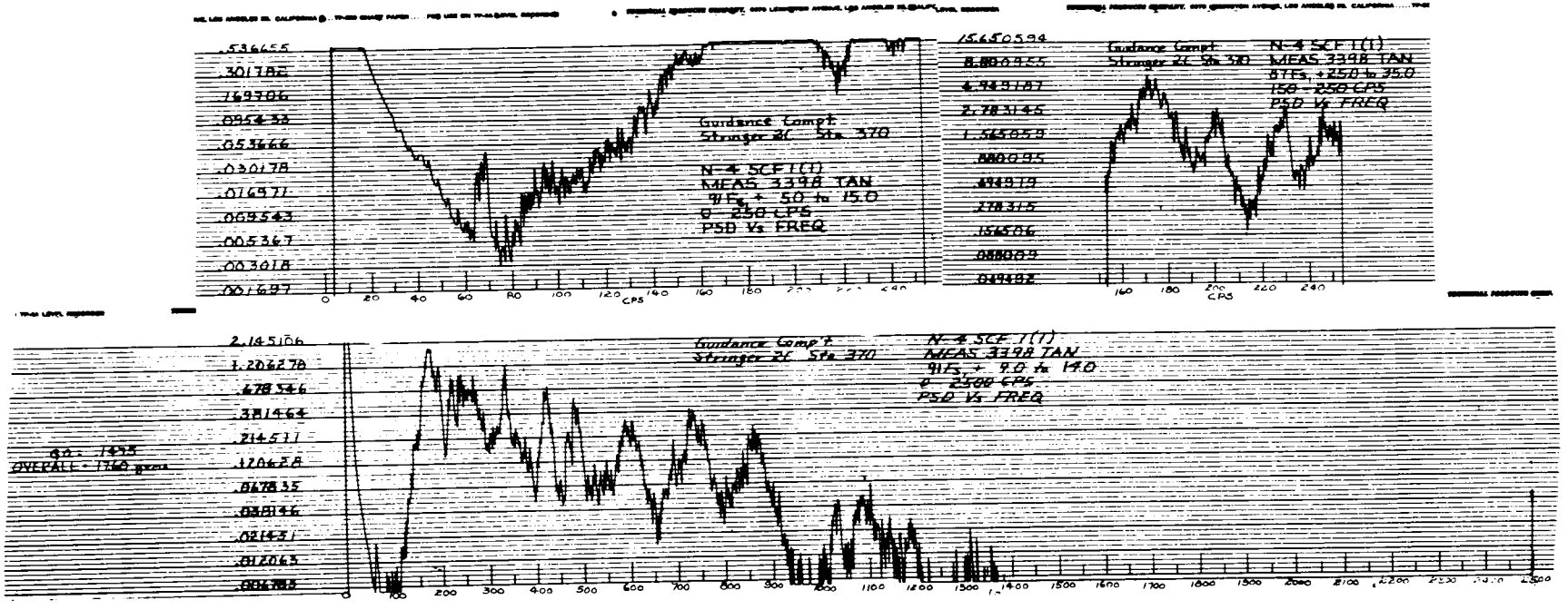

.536655
.301782
.169306
.095433
.053666
.030178
.016971
.009543
.005367
.003018
.001697
Guidance Compt
Stringer 2C Sta 370
N-4 SCF 1(1)
MEAS 3398 TAN
91Fs + 50 to 150
0-250 CPS
PSD Vs FREQ
CPS
1.565059
.880095
.494919
.278315
.156506
.088059
.049502
Guidance Compt
Stringer 2C Sta 370
N-4 SCF 1(1)
MEAS 3398 TAN
91Fs +250 to 350
150-250 CPS
PSD Vs FREQ
CPS
2.145106
1.206278
.678546
.381464
.214511
.120628
.067835
.038146
.021451
.012063
.006785
GO: 1455
OVERALL - 1760 grms
Guidance Comp't
Stringer 2C Sta 370
N-4 SCF 1(1)
MEAS 3398 TAN
91Fs + 9.0 to 190
0-2500 CPS
PSD Vs FREQ

Fig. 755

Stage III
Stage II
Stage I
-30
-20
-10
A.S.D. in db - Re. 1.0 G²/cps
Fig. 7.16 Hydrodynamic Analyzer
N-8 Stage III Compressor
Stages I, II, III
Re. 1.0 G²/cps

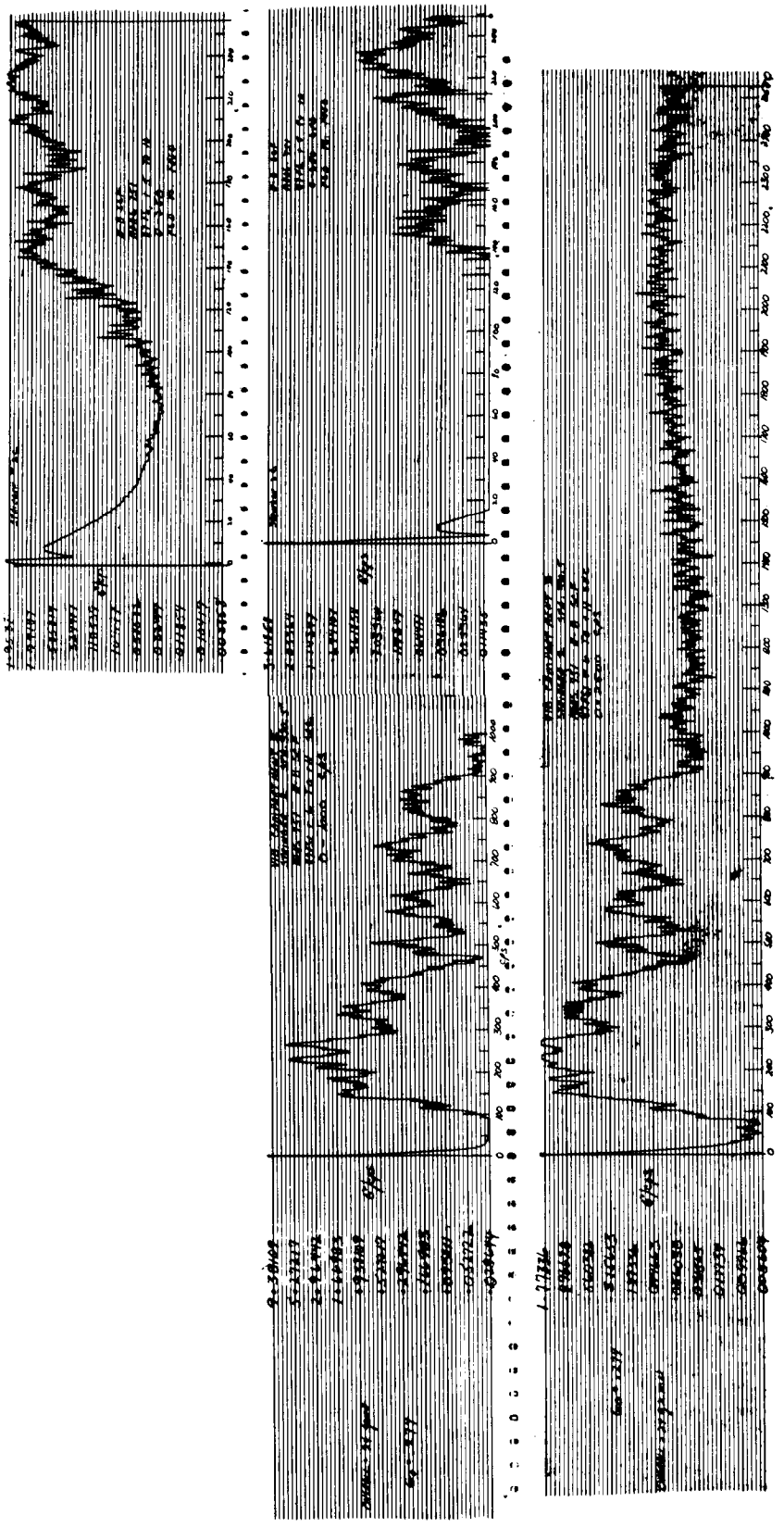


Fig. 757

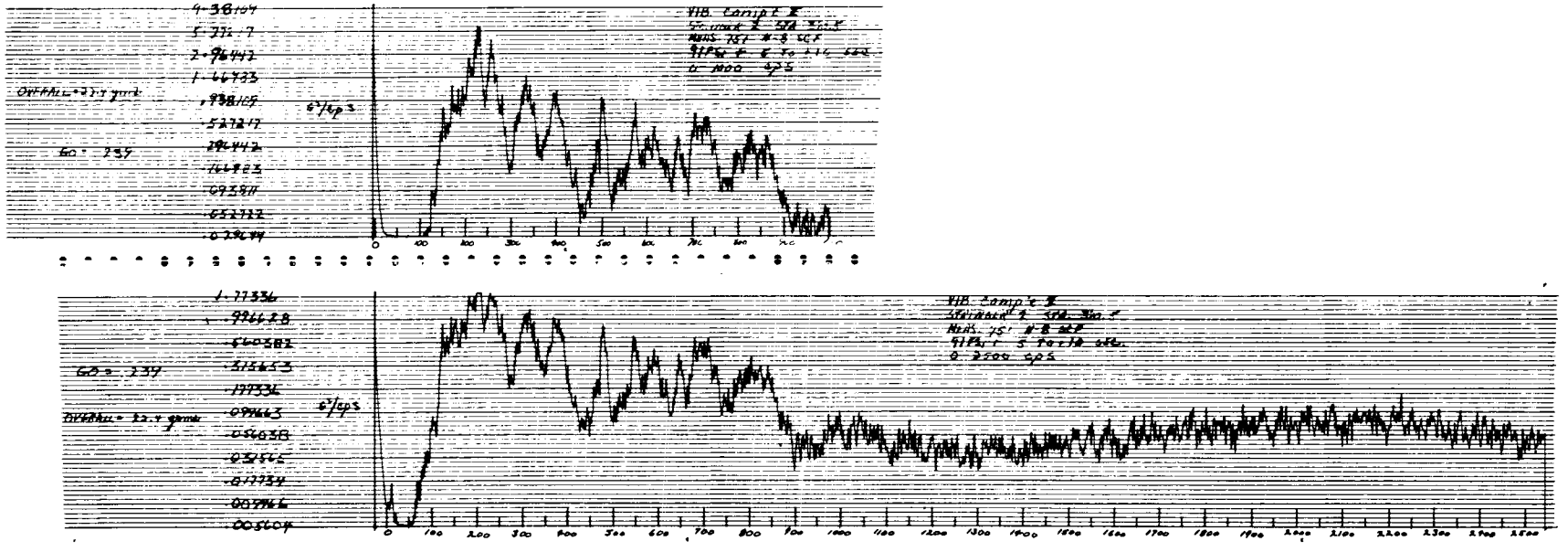


Fig. 758

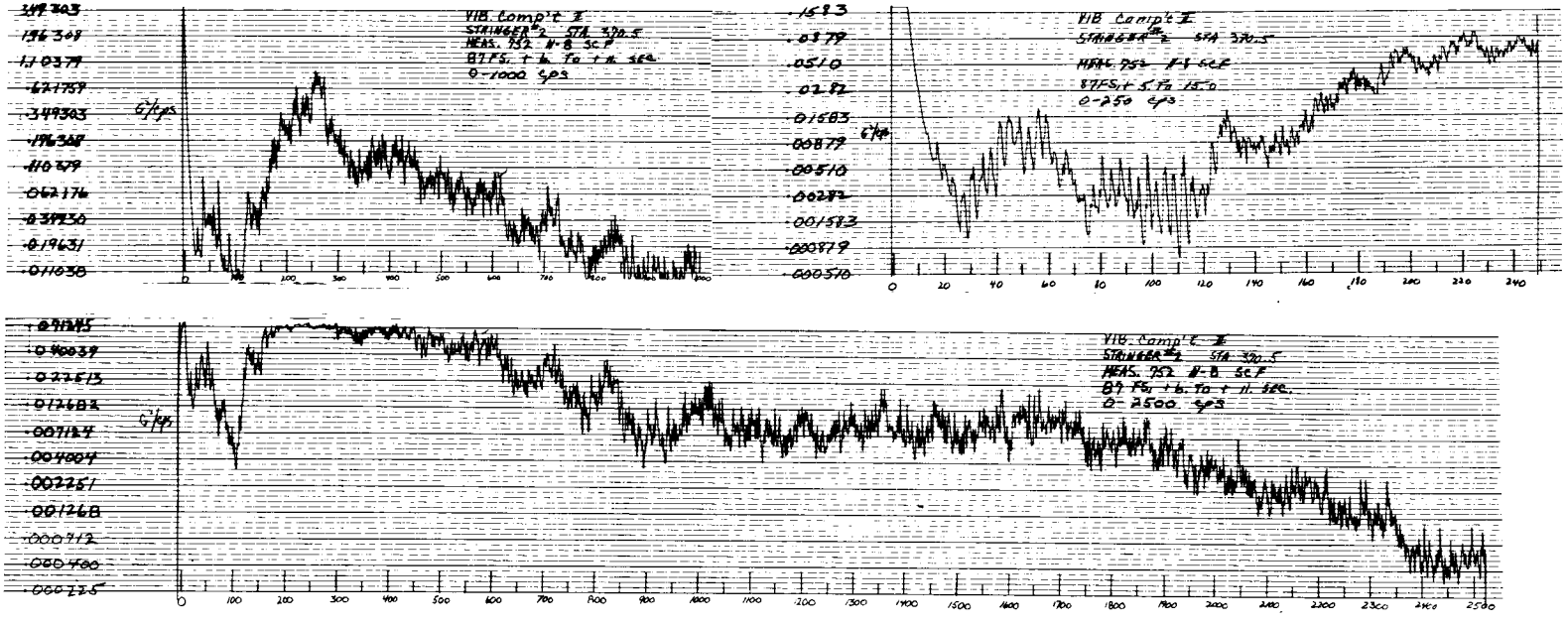

VIB. Comp't Z
STRINGER #2 STA 370.5
MEAS. 752 W-B SCF
87 FS, ± b. To ± n. SEC
0-1000 cps
VIB Comp't Z
STRINGER #2 STA 370.5
MEAS. 752 W-B SCF
87 FS, ± 5 To 15.0
0-250 cps
VIB. Comp't Z
STRINGER #2 STA 370.5
MEAS. 752 W-B SCF
87 FS, ± b. To ± 11. SEC.
0-2500 cps
G/cps

Fig. 759

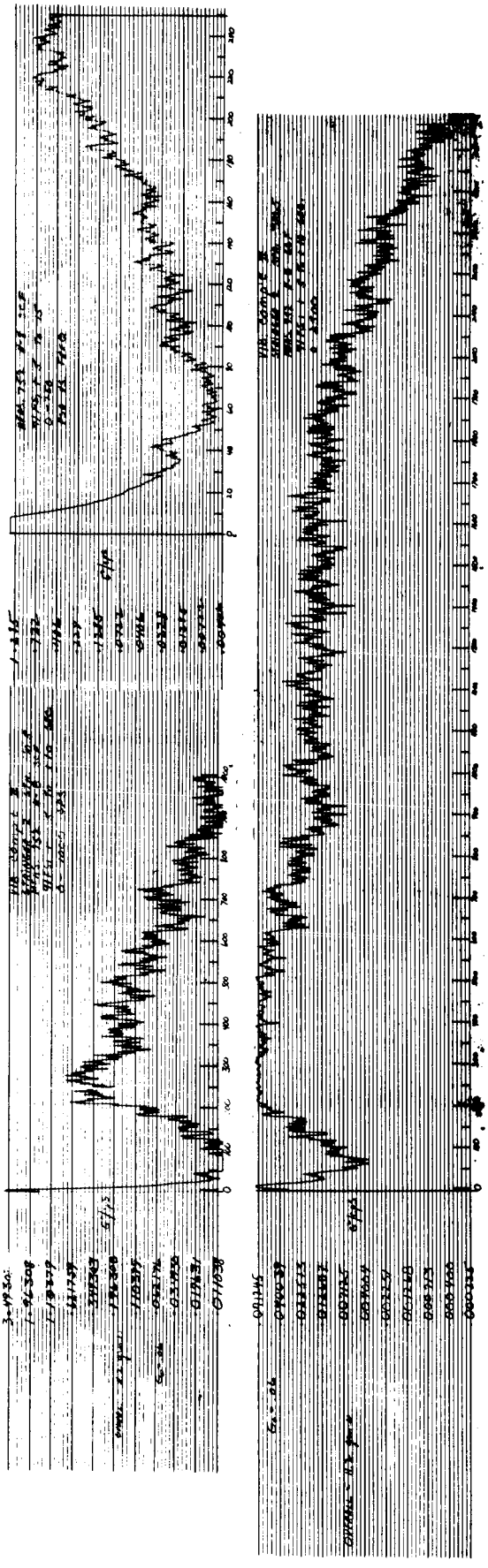


Fig. 760

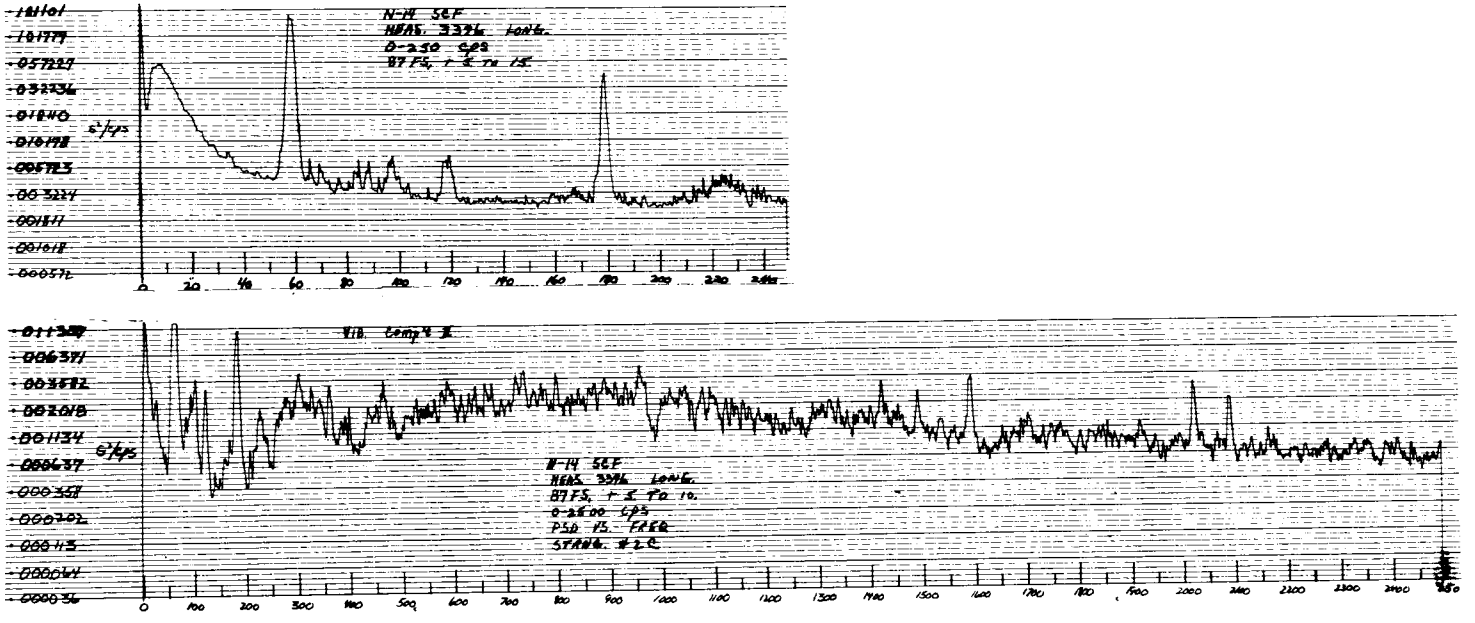

N-14 SEF
HEAD 3396 LONG
0-250 CPS
87 FS, ± 2 TO 15
g²/cps
VIB. Comp'd ⊥
N-14 SEF
HEAD 3396 LONG
87 FS, ± 2 TO 10.
0-2500 CPS
PSD VS. FREQ
STARS. #2 C

Fig. 761

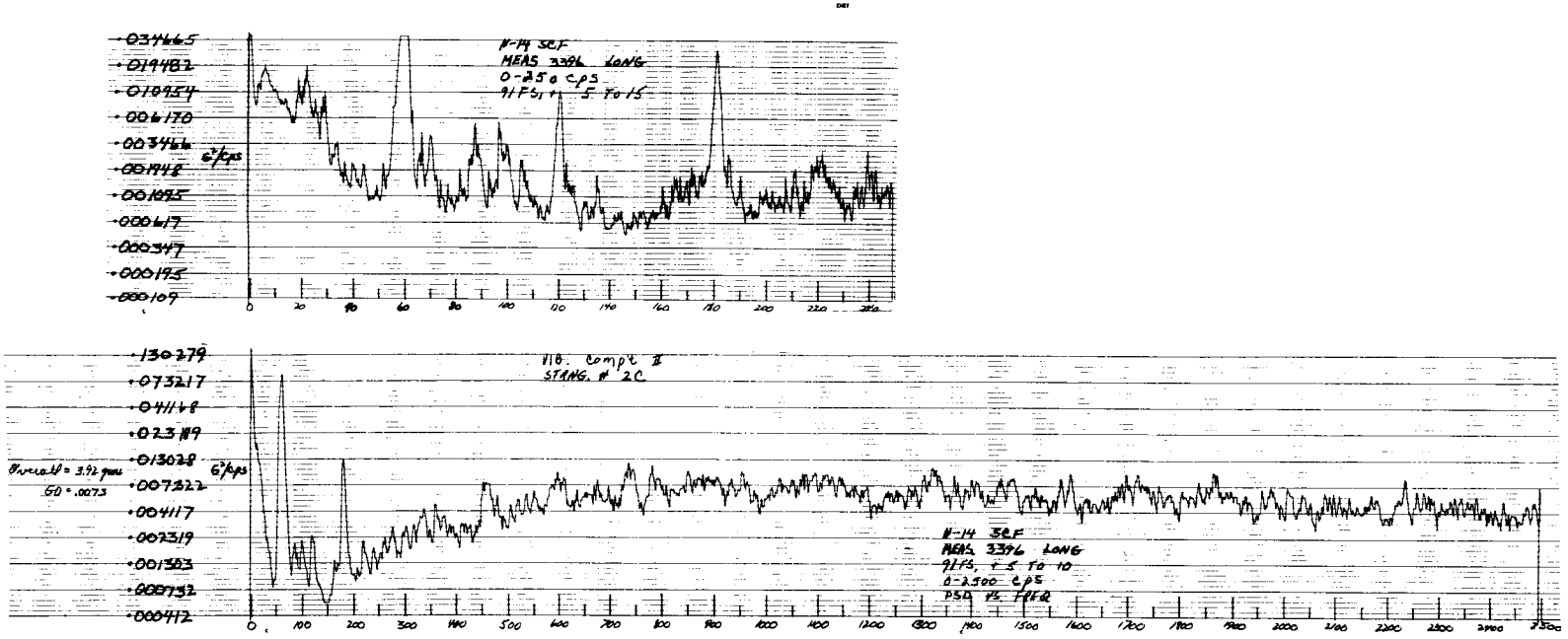

N-14 SEF
MEAS 3396 LONG
0-250 cps
9 IPS, t .5 TO 15
G²/cps
VIB. Compt II
STRNG. # 2C
N-14 SEF
MEAS 3396 LONG
9 IPS, t .5 TO 10
0-2500 cps
PSD VS. FREQ
G²/cps

Fig. 762

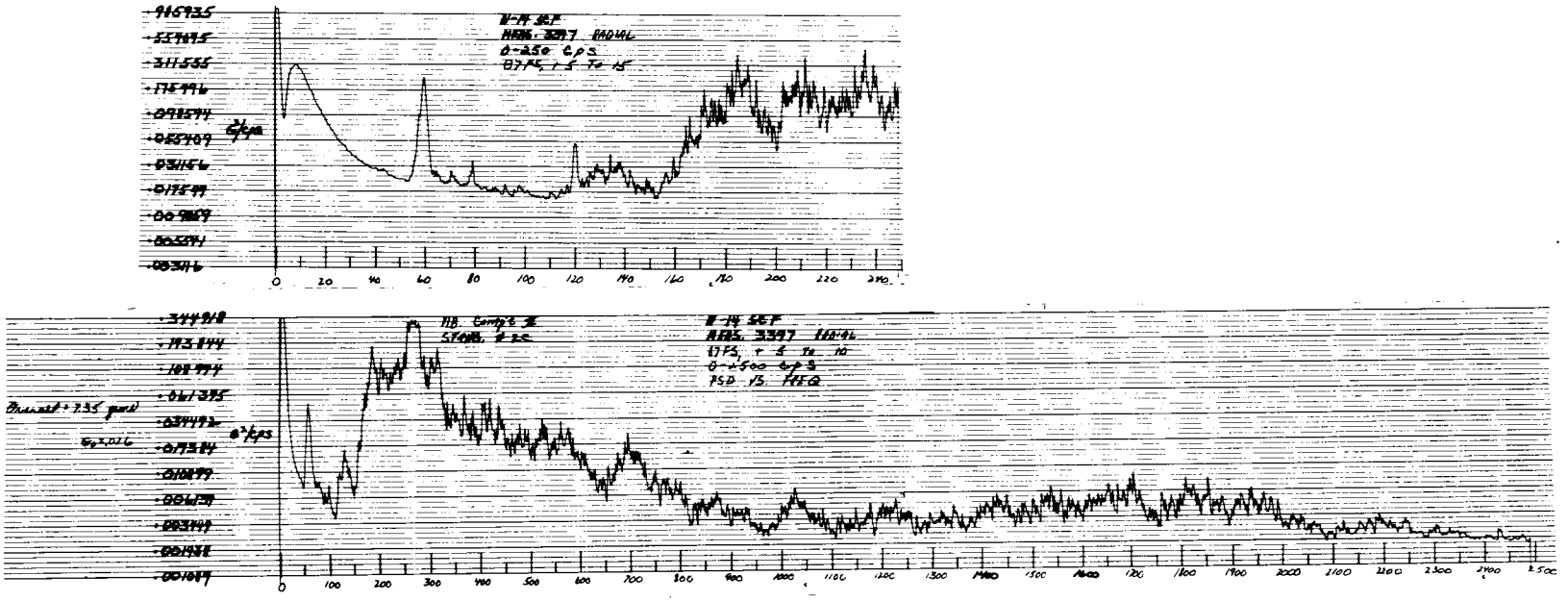

V-14 SCF
RUN: 3397 RADIAL
0-250 cps
0.75 to 15
V-14 SCF
RUN: 3397 TANGL
0-500 cps
0.75 to 10
PSD VS. FREQ

Fig. 763

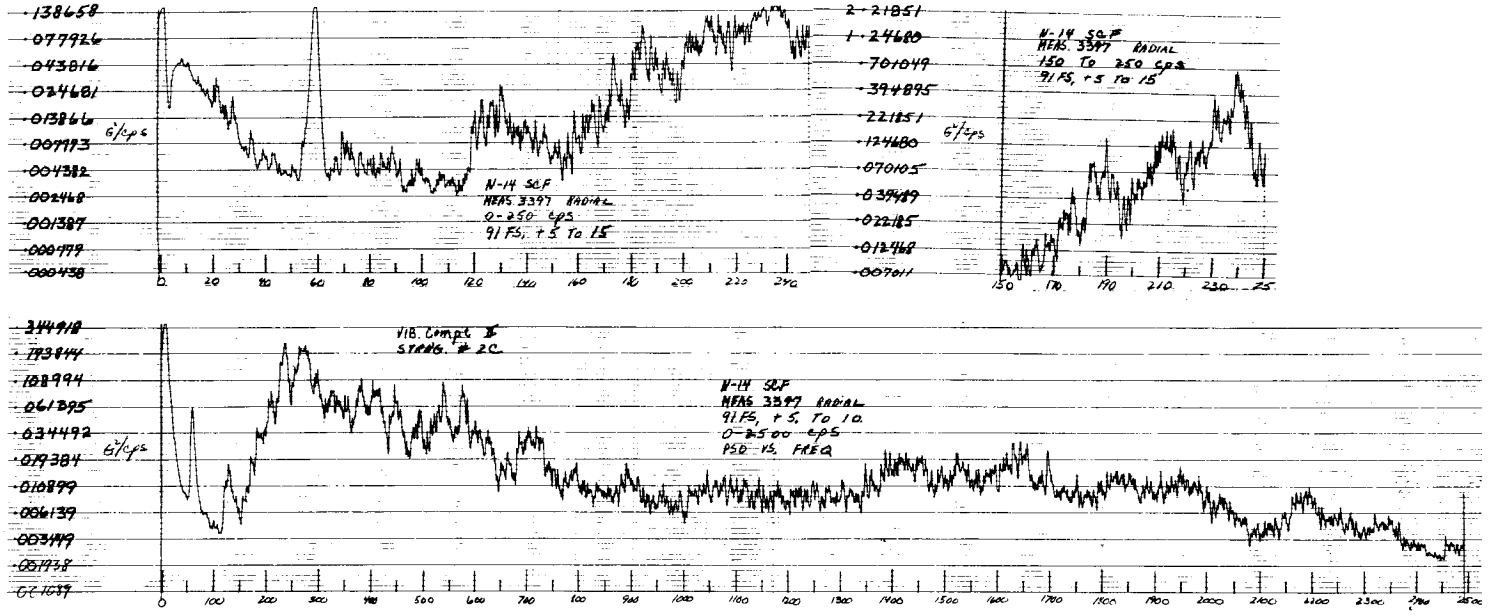
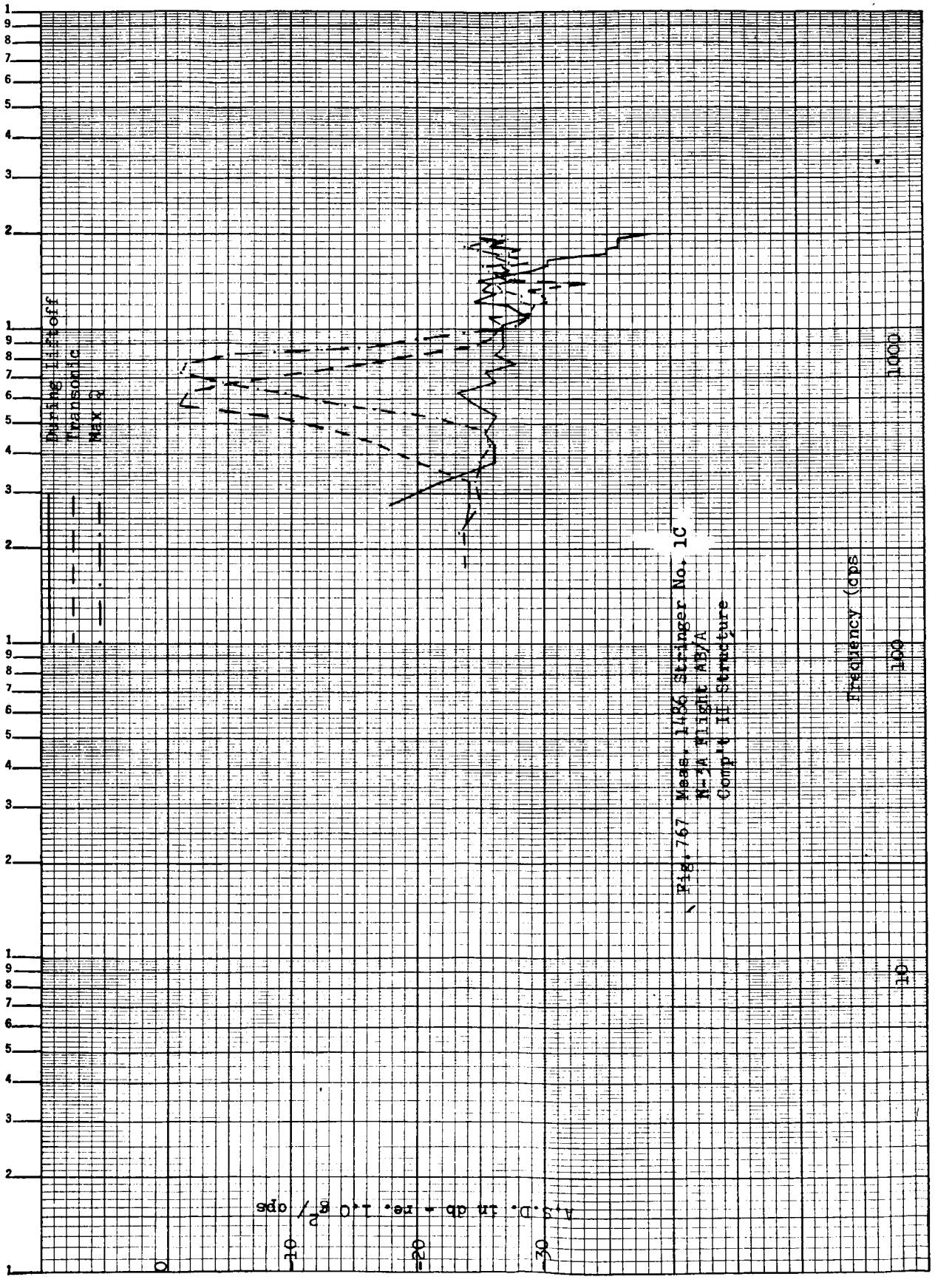

N-14 SCF
MEAS. 3397 RADIAL
0-250 CPS
91 FS, ± 5 To 15
N-14 SCF
MEAS. 3397 RADIAL
150 To 250 CPS
91 FS, ± 5 To 15
VIB. Compt. #
STRUC. # 2C.
N-14 SCF
MEAS 3397 RADIAL
91 FS, ± 5. To 10.
0-2500 CPS
PSD VS. FREQ
G²/CPS

Fig. 764

Fig. 765 Mean, 1/24 Stringer No. 1C
N-3A Flight AE/A
Comp't II Structure

A.S.D in db - re: 1.0 ft²/cps
0
10
20
30
40
Fig. 766 Meas. 1408 Springer No. 1C
N-3A Flight 48/A
Comp. # 11 Signature
Post Flight (ops)
1000
Frequency
During Liftoff
Transonic
Max Q


During Lift-off
Transonic
Max Q
Fig. 767 Meas. 1486 Stringer No. 1C
N-1A Flight AB/A
Comp't II Structure
Frequency (cps
100
1000
10
A.S.D. in db re. 1.0 g²/ cps
-10
-20
-30
0

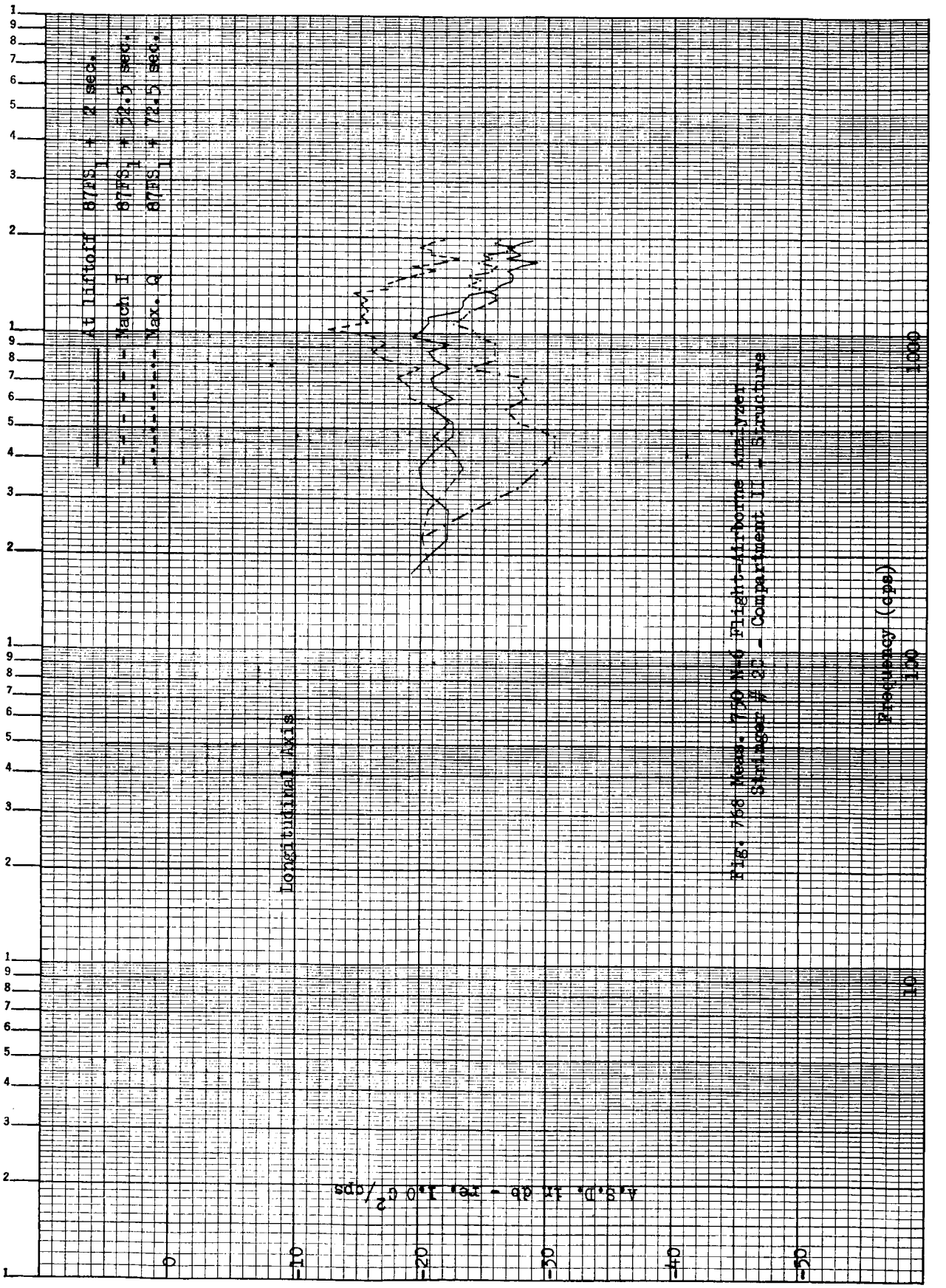


Fig. 168 Measured flight-vibration power spectral density of Saturn I Configuration 11 structure

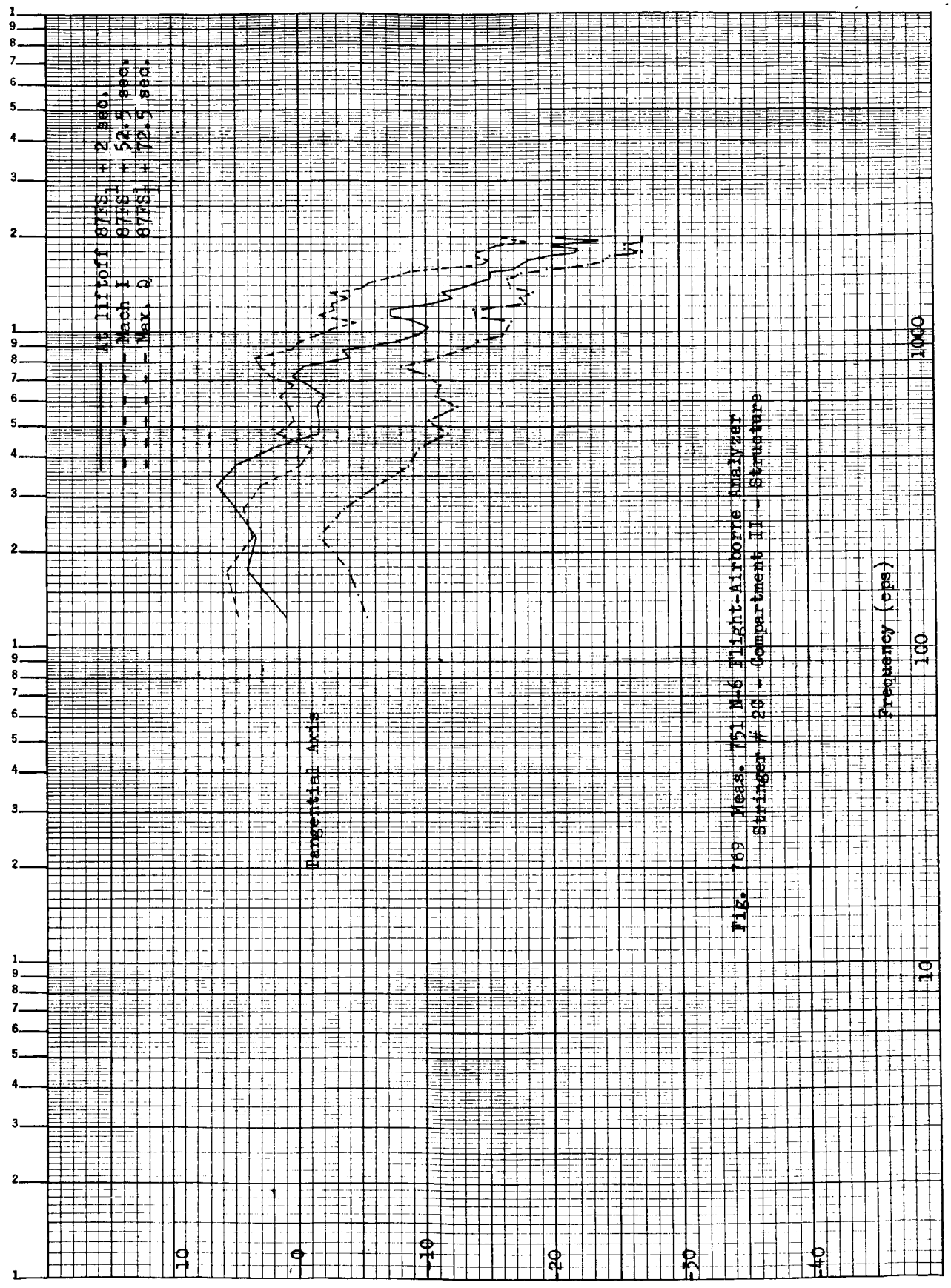


Fig. 769 Meas. 751 M-6 Flight-Airborne Analyzer
Stringer # 25 - Compartment II - Structure

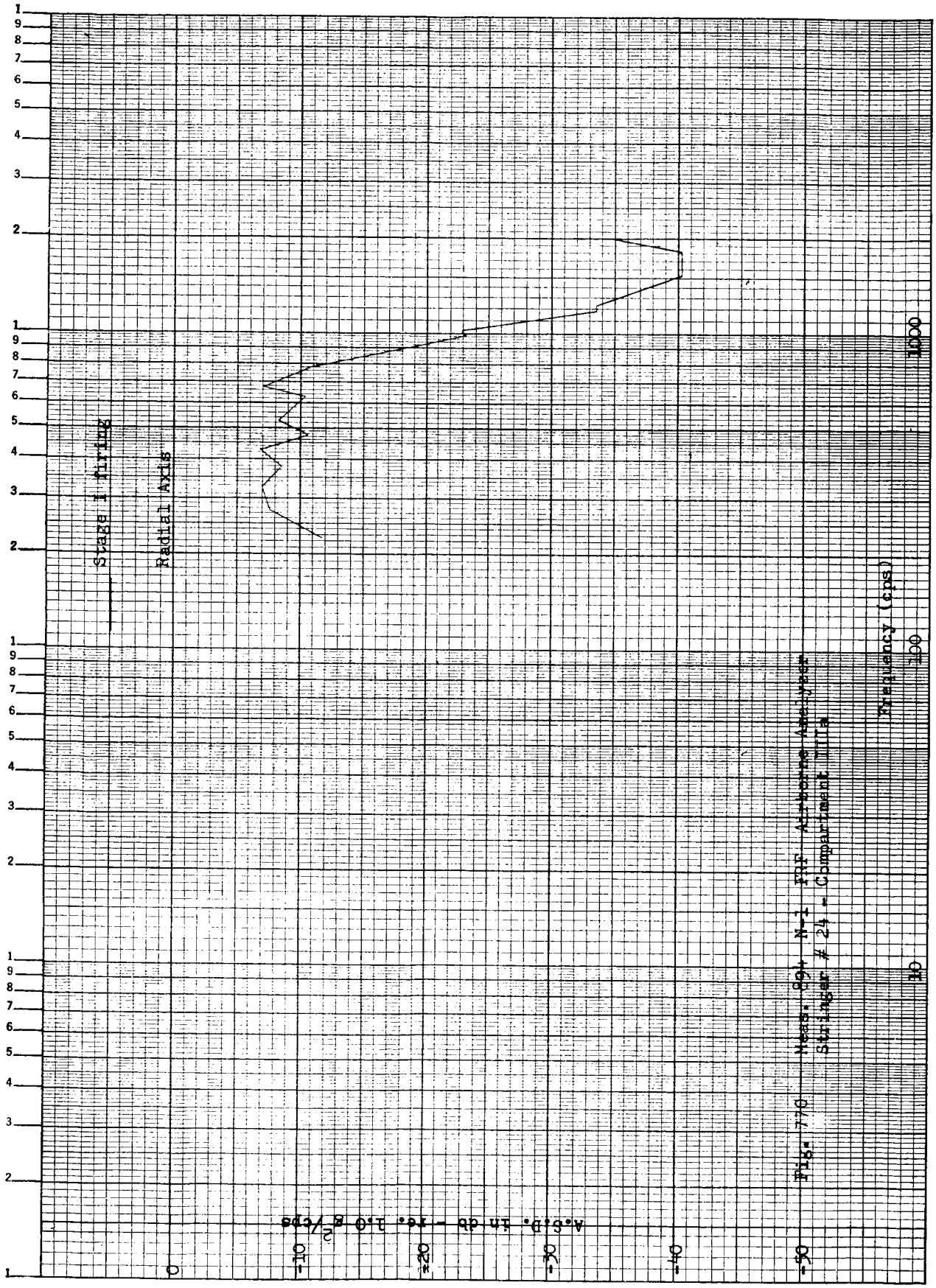
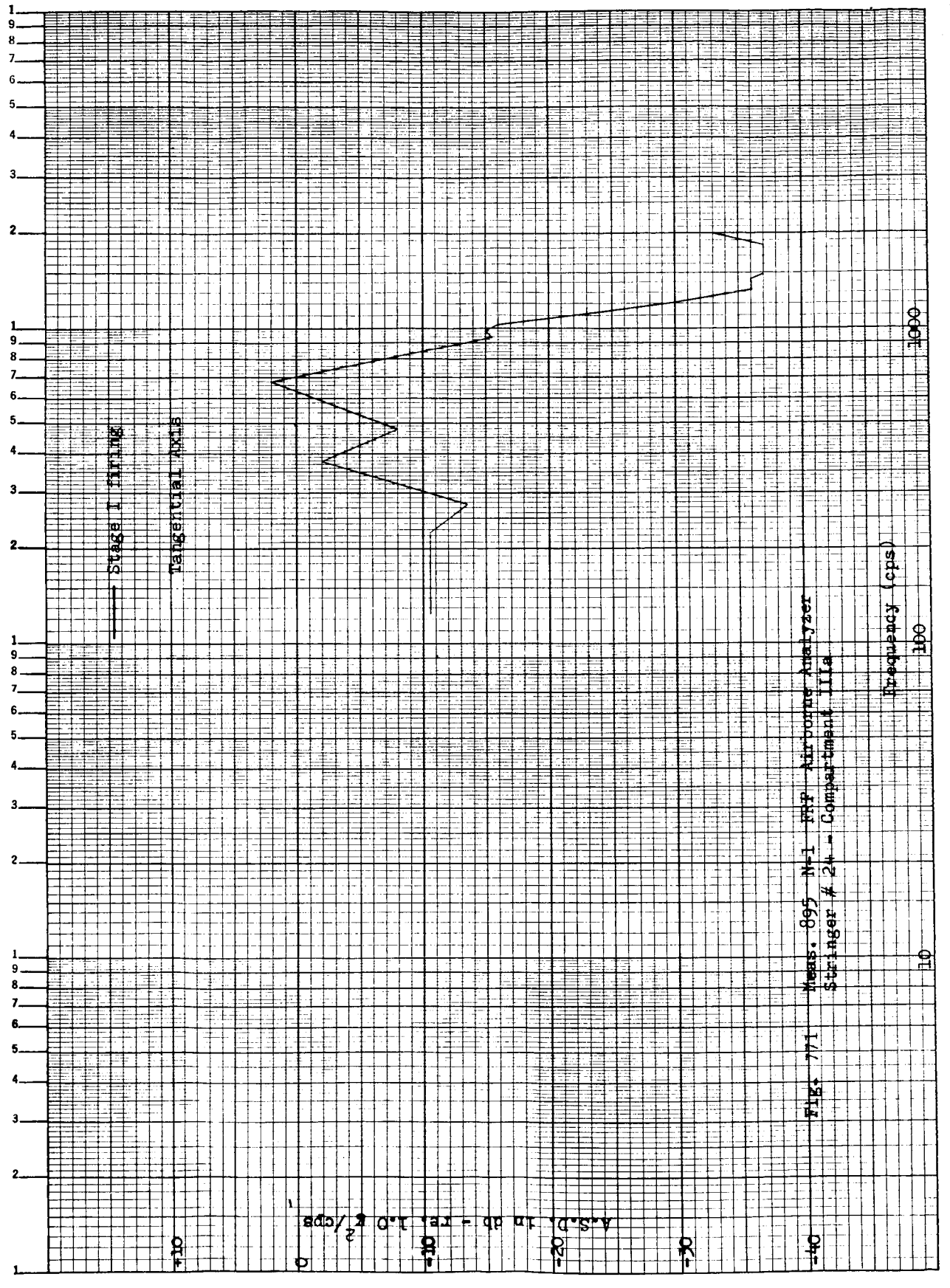


Fig. 7.70 Mean SPL Attenuation Averages
Stringer # 24 - Compartment III


Stage I firing
Tangential axis
Frequency (cps)
10
100
1000
Fig. 771 Meas. 865 N-1 rnp Airborne Analyzer
Stringer # 24 - Compartment IIIa
A.S.D. in db - ref 1.0 g²/cps
+10
0
-10
-20
-30
-40

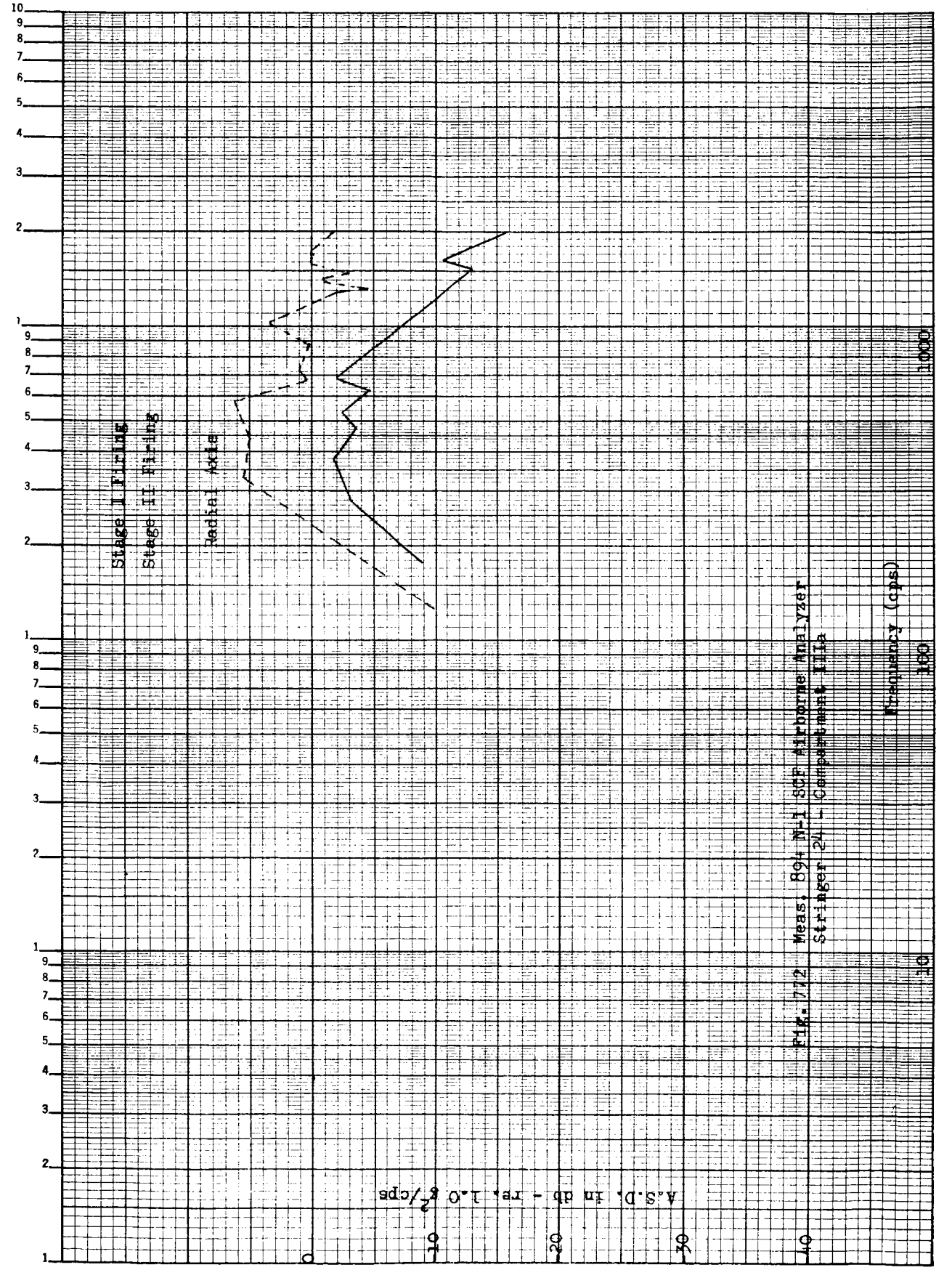


Fig. 7.12 Meas. 894 N-1 SCP Airborne Analyzer
Stringer 24 - Compartment III-A

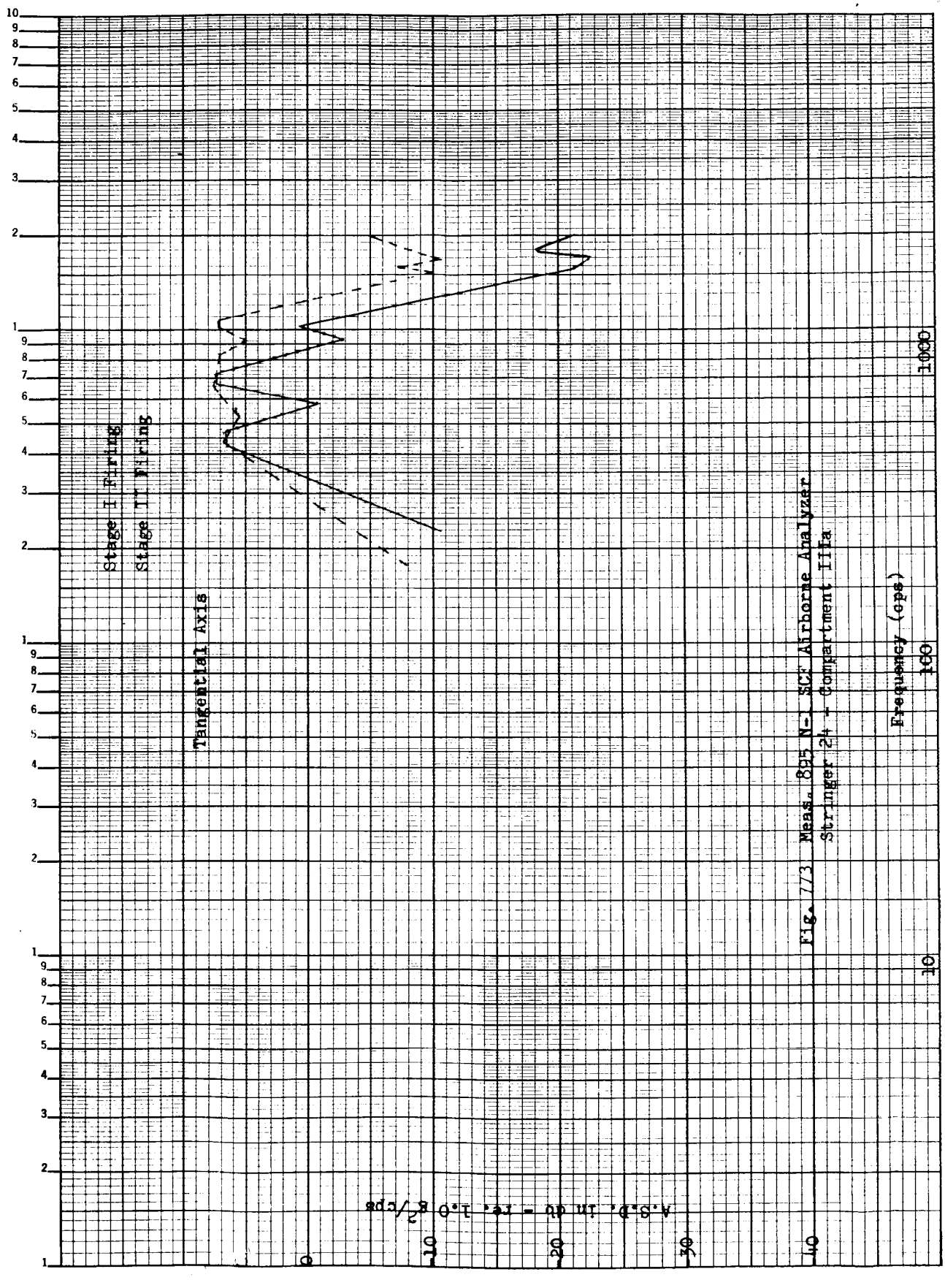


Fig. 773 Meas. 895 N-1 SCF Airborne Analyzer
Stringer 24 + Compartment IIa

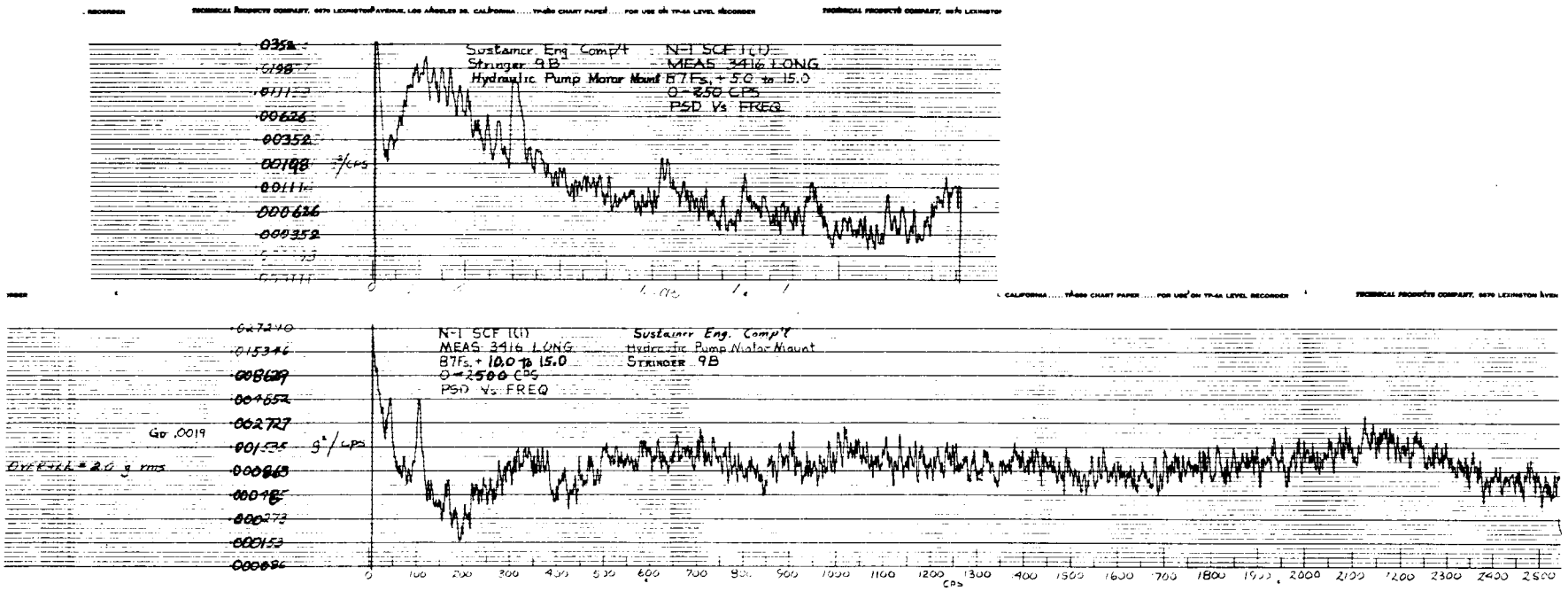

Sustainer Eng Comp't
Stringer 9B
Hydraulic Pump Motor Mount
N-1 SCF (1)
MEAS 3416 LONG
87Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
g²/CPS
N-1 SCF (1)
MEAS 3416 LONG
87Fs, + 10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
Sustainer Eng. Comp't
Hydraulic Pump Motor Mount
Stringer 9B
Go .0019
Overall = 2.6 g rms
g²/CPS
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 774

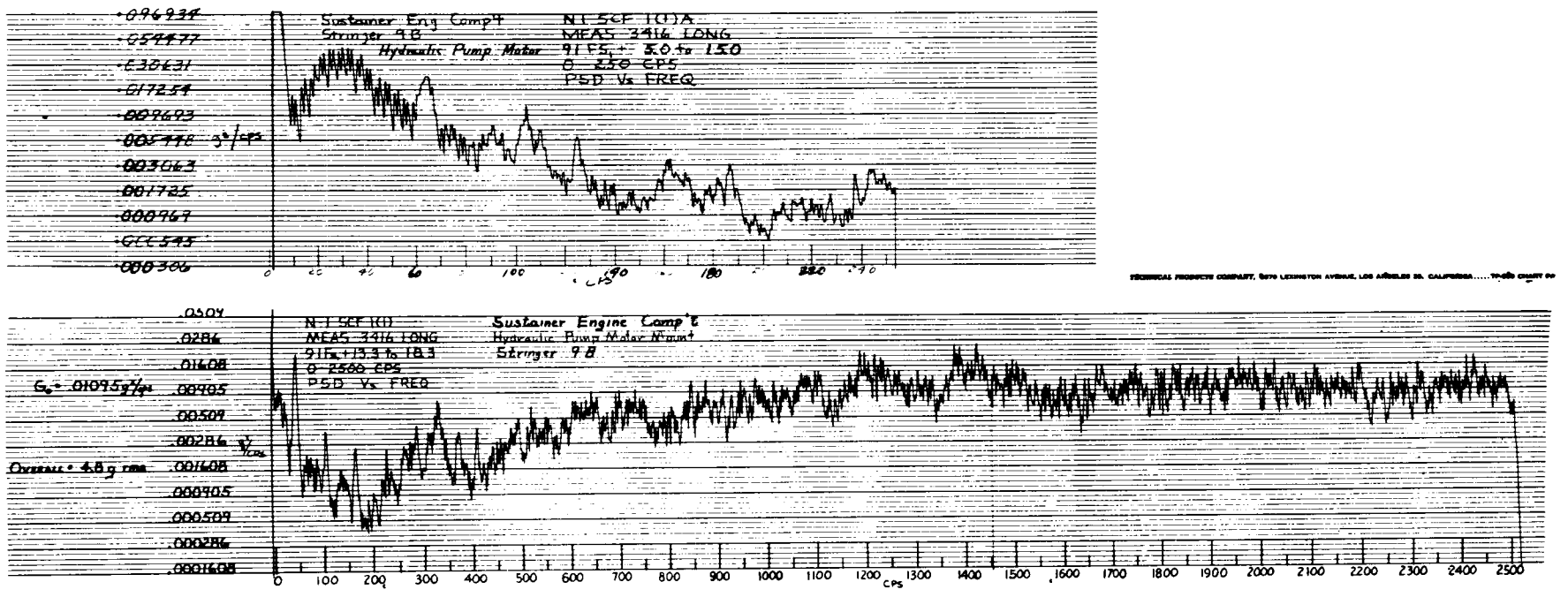
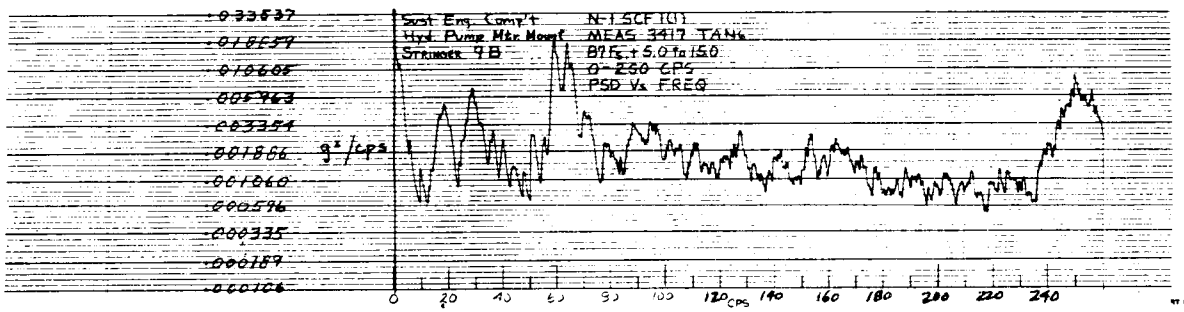

Sustainer Eng Comp't
Stringer 98
Hydraulic Pump Motor
N1 SCF 100 A
MEAS 3416 LONG
91 FS + 5.0 to 150
0 250 CPS
PSD Vs FREQ
.096934
.054477
.030631
.017254
.009693
.005448
.003063
.001725
.000969
.000545
.000306
g²/cps
0 20 40 60 100 140 180 220 240
CPS
N1 SCF 100
MEAS 3416 LONG
91 FS + 13.3 to 18.3
0 2500 CPS
PSD Vs FREQ
Sustainer Engine Comp't
Hydraulic Pump Motor Mount
Stringer 98
G_rms = .01095 g²/cps
Overall = 4.8 g rms
.0509
.0286
.01608
.00905
.00509
.00286
.001608
.000905
.000509
.000286
.0001608
g²/cps
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 775


Sust Eng. Comp't
Hyd Pump Mtr Mount
STRINGER 9B
N-1 SCF 1(1)
MEAS 3417 TAN
B7F5 +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
g²/cps
CPS

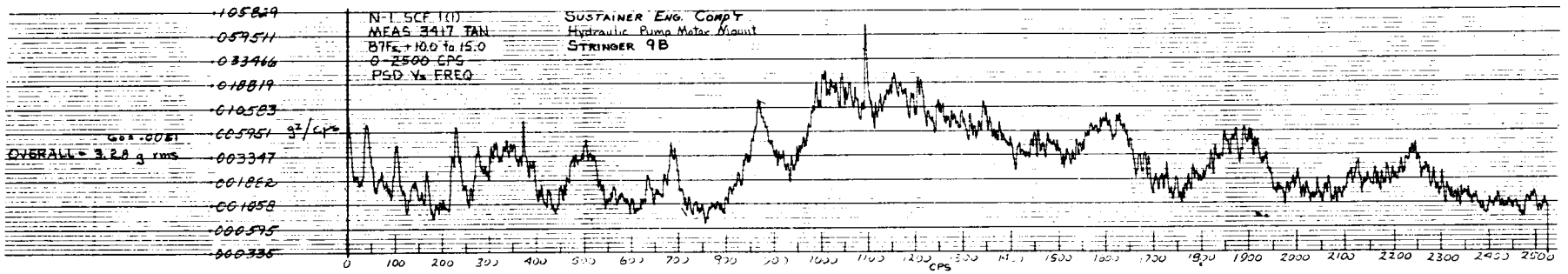

N-1 SCF 1(1)
MEAS 3417 TAN
B7F5 +10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
SUSTAINER ENG. COMP'T
Hydraulic Pump Motor Mount
STRINGER 9B
OVERALL = 3.28 g rms
g²/cps
CPS

Fig. 776

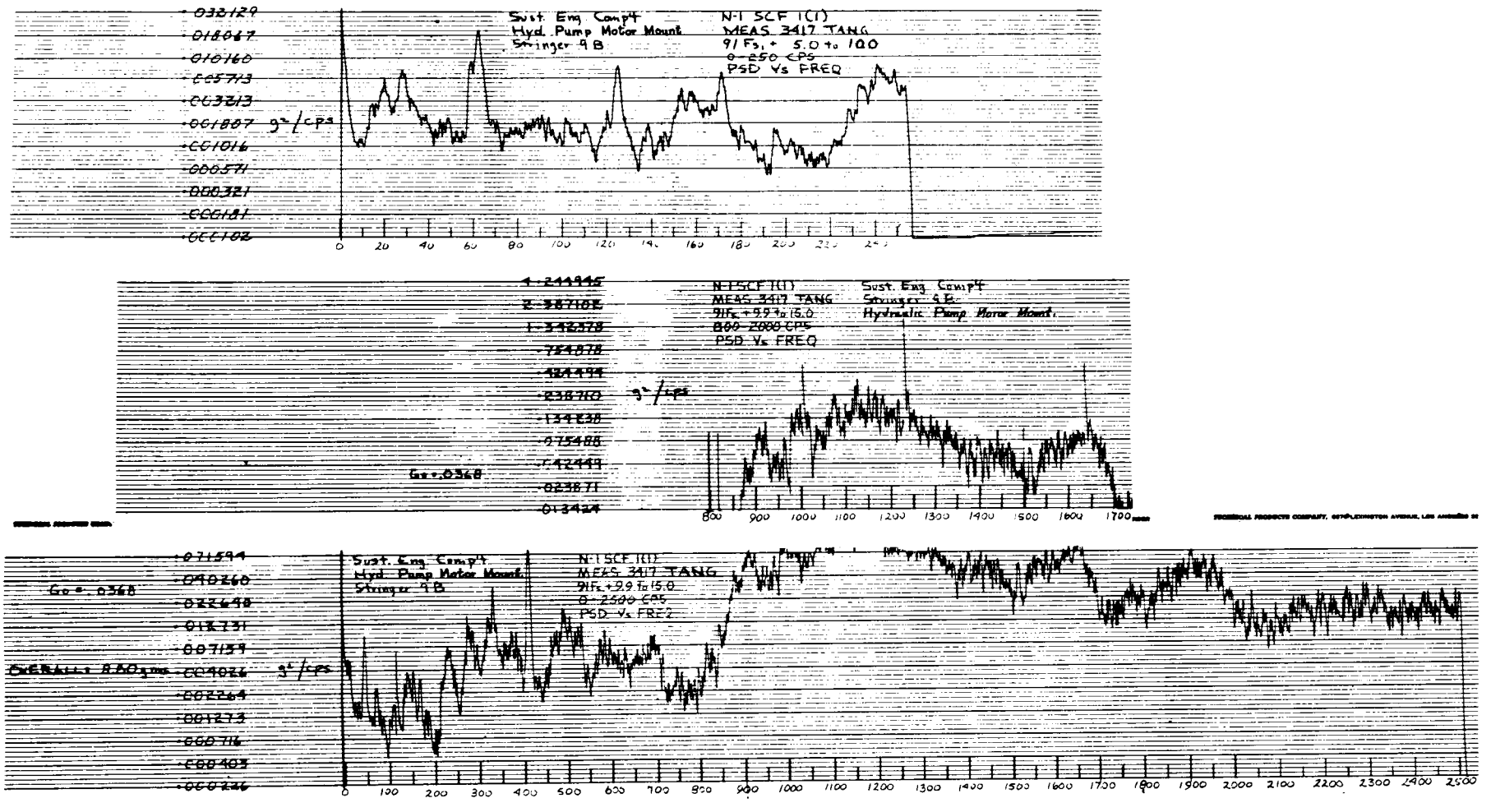
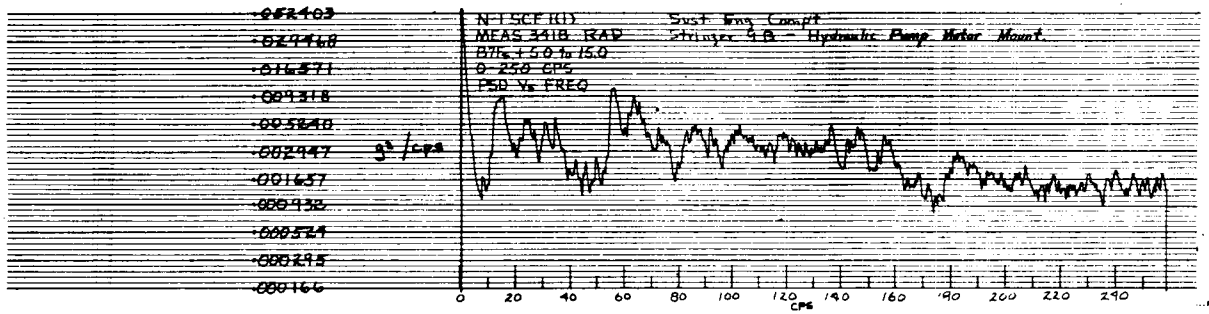

Sust. Eng Comp't
Hyd. Pump Motor Mount
Stringer 9B
N-1 SCF 1(1)
MEAS 3417 TANG
91 Fs, + 5.0 to 100
0-250 CPS
PSD Vs FREQ
g²/CPS
Sust. Eng Comp't
Stringer 9B
Hydraulic Pump Motor Mount.
N-1 SCF 1(1)
MEAS 3417 TANG
91Fs +9.9 to 15.0
800-2000 CPS
PSD Vs FREQ
Go = .0368
Sust. Eng Comp't
Hyd. Pump Motor Mount
Stringer 9B
N-1 SCF 1(1)
MEAS 3417 TANG
91Fs +9.9 to 15.0
0-2500 CPS
PSD Vs FREQ
Go = .0368
OVERALL 8.80 g rms

Fig. 777


N-1 SCF (0)
MEAS 3418 RAD
BTS + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Sust. Eng. Comp't
Stringer 9 B - Hydraulic Pump Motor Mount.
g²/CPS
0 20 40 60 80 100 120 140 160 190 200 220 290
CPS

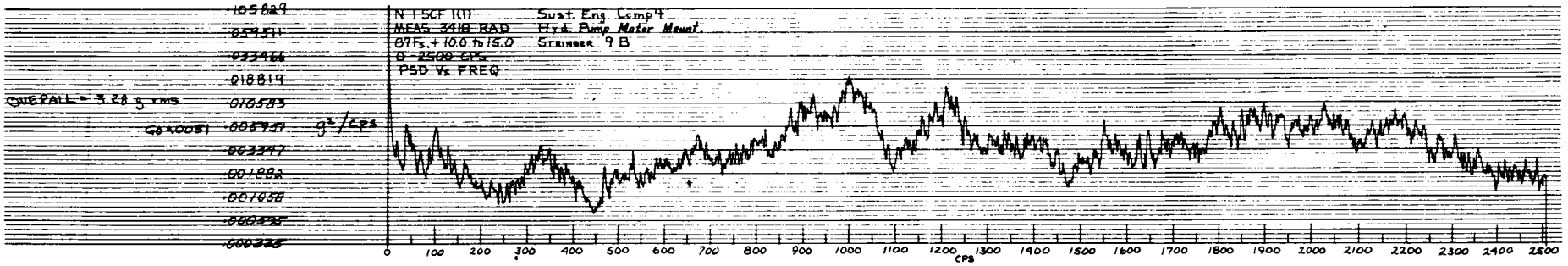

N-1 SCF (0)
MEAS 3418 RAD
BTS + 10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
Sust. Eng. Comp't
Hyd. Pump Motor Mount.
Stringer 9 B
OVERALL = 3.28 g rms
g²/CPS
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 778

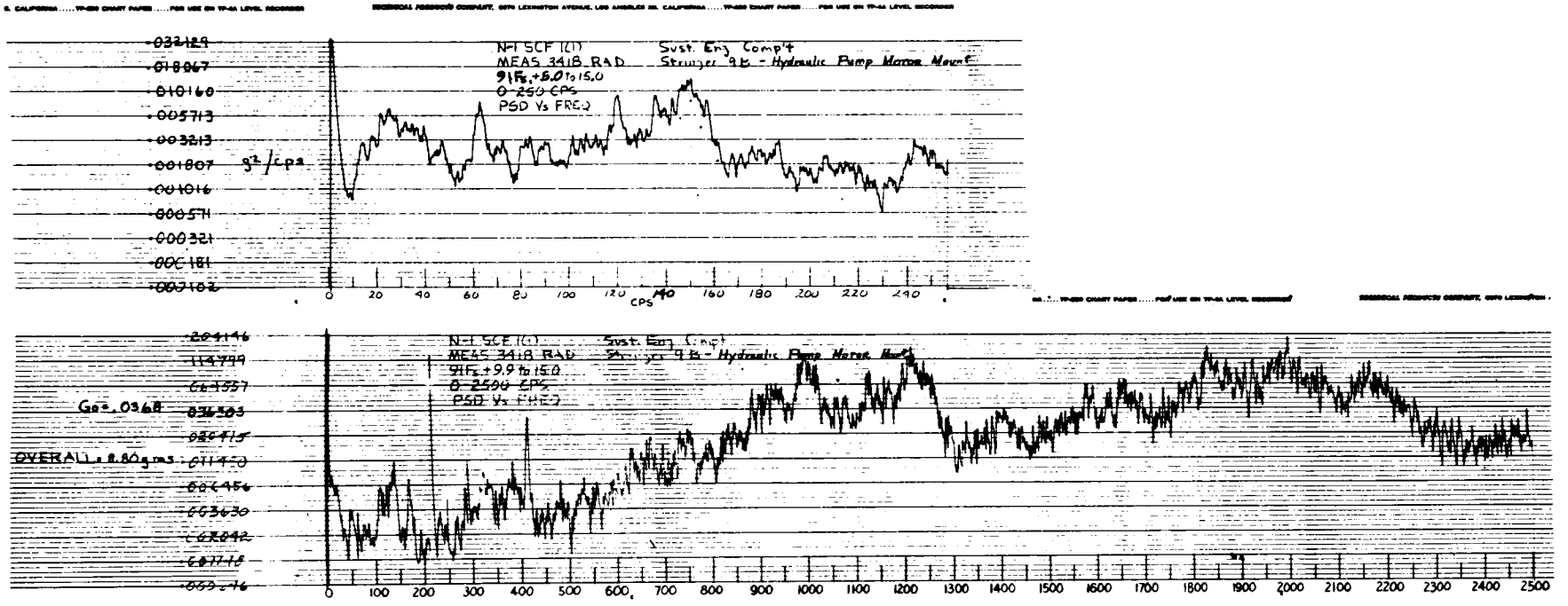

N-1 SCF 1(1)
MEAS 341B RAD
91Fs +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Syst. Eng Comp't
Stringer 9B - Hydraulic Pump Motor Mount
g²/cps
CPS
N-1 SCF 1(1)
MEAS 341B RAD
91Fs +9.9 to 15.0
0-2500 CPS
PSD Vs FREQ
Syst. Eng Comp't
Stringer 9B - Hydraulic Pump Motor Mount
Go=.0368
OVERALL = 8.80 g rms

Fig. 779

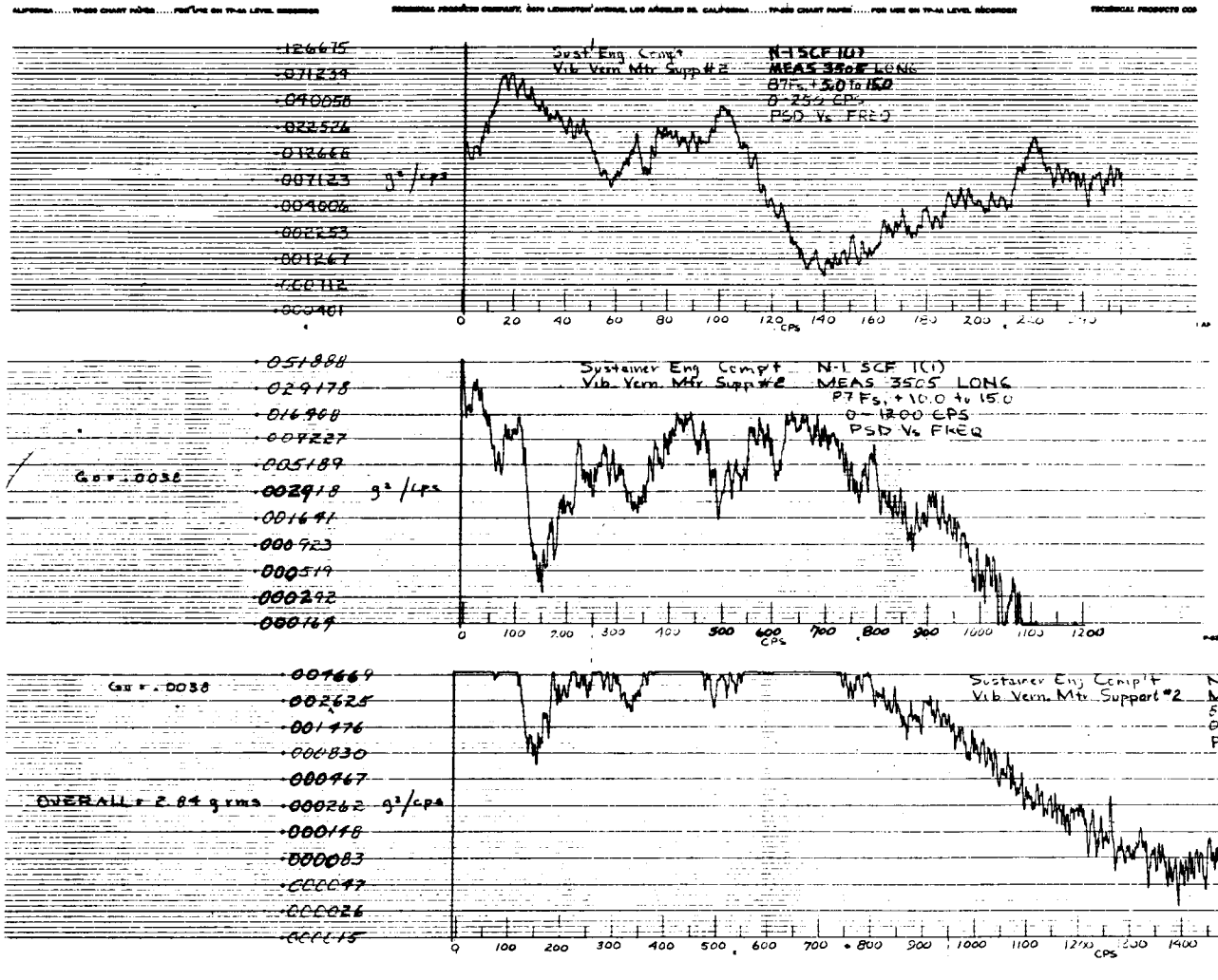
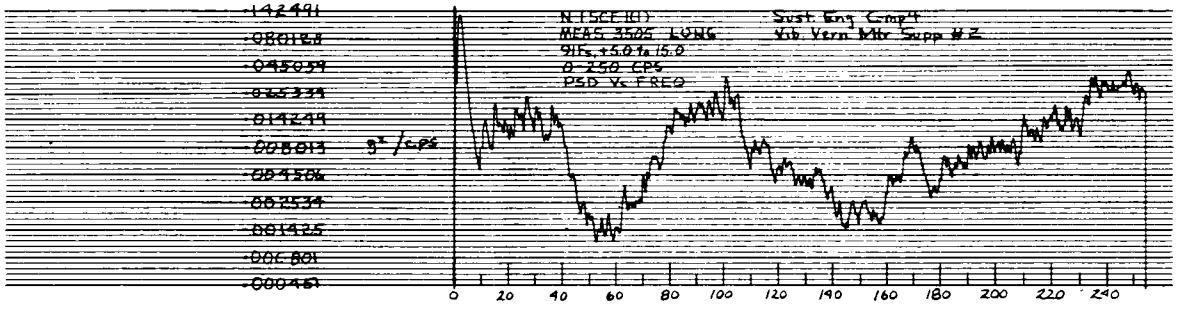
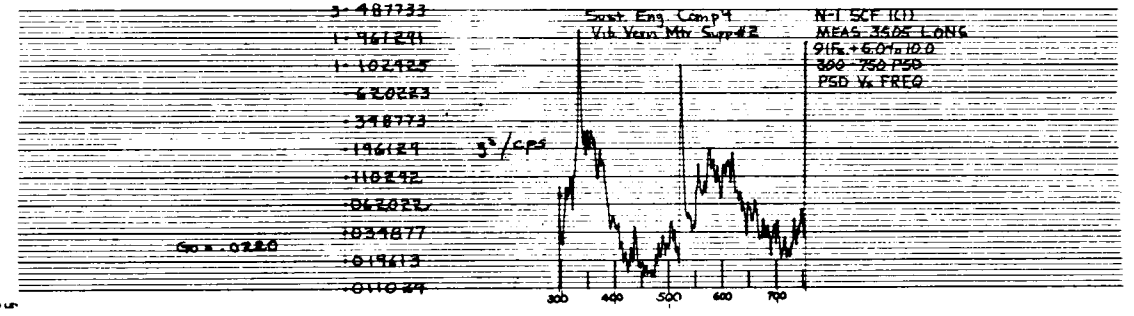

Sust. Eng. Compt
Vib. Vern. Mtr. Supp #2
N-1 SCF 1(1)
MEAS 350F LONG
87 Fs, +5.0 to 15.0
0-2500 CPS
PSD Vs FREQ
.126615
.071234
.040058
.022526
.012666
.007123
.004006
.002253
.001267
.000712
.000401
g²/cps
0 20 40 60 80 100 120 CPS 140 160 180 200
Sustainer Eng Compt
Vib. Vern. Mtr. Supp #2
N-1 SCF 1(1)
MEAS 350S LONG
P7 Fs, +10.0 to 15.0
0-1200 CPS
PSD Vs FREQ
Gsv = .0038
.051888
.029178
.016968
.009227
.005189
.002918
.001641
.000923
.000519
.000292
.000164
g²/cps
0 100 200 300 400 500 600 CPS 700 800 900 1000 1100 1200
Gsv = .0038
OVERALL = 2.84 g rms
.007669
.002625
.001476
.000830
.000467
.000262
.000148
.000083
.000047
.000026
.000015
g²/cps
Sustainer Eng Compt
Vib. Vern. Mtr. Support #2
N-1 SCF 1(1)
MEAS 350S LONG
57 Fs, +10. to 15.0
0-2500 CPS
PSD Vs FREQ
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 CPS 1400 1500 1600 1700 1800 1900 2000 2100 2200

Fig. 780


N-1 SCF 1(1)
MEAS. 3505 LONG
91Fs, +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Sust. Eng. Comp't
Vib. Vern Mtr Supp #2
g²/cps
0
20
40
60
80
100
120
140
160
180
200
220
240


Sust. Eng. Comp't
Vib Vern Mtr Supp #2
N-1 SCF 1(1)
MEAS. 3505 LONG
91Fs, +6.0 to 10.0
300-750 CPS
PSD Vs FREQ
g²/cps
Go = .0220
300
400
500
600
700

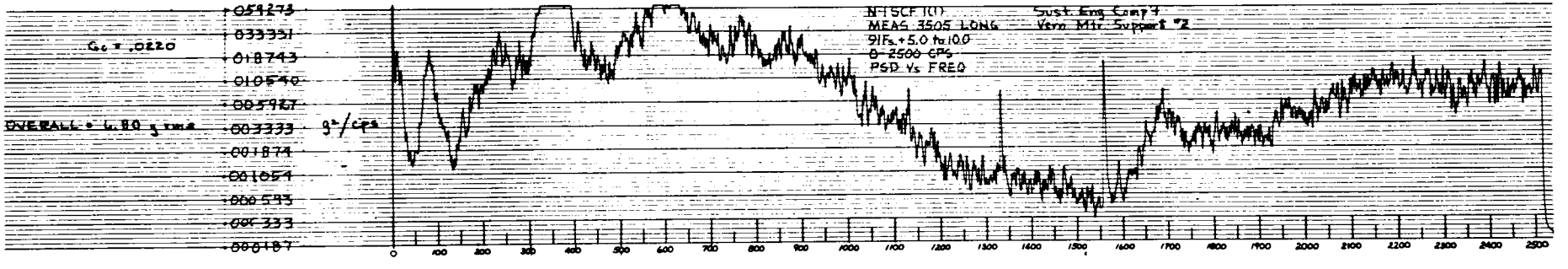
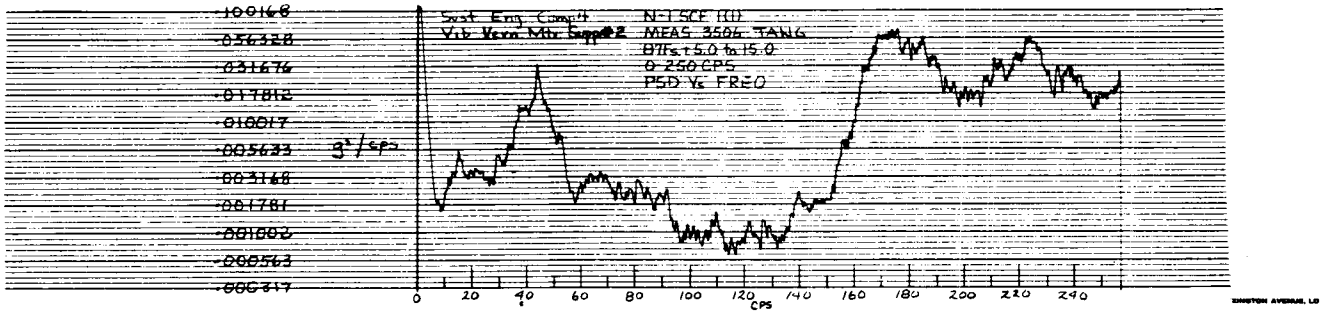
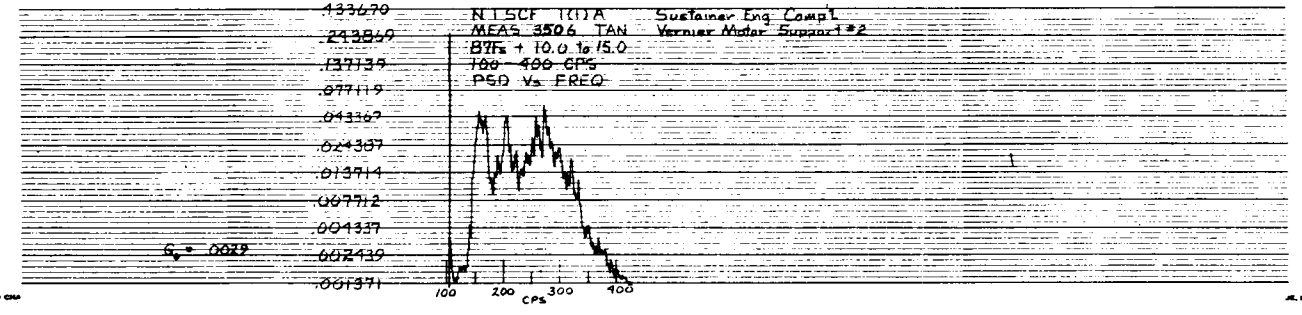

N-1 SCF 1(1)
MEAS. 3505 LONG
91Fs, +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
Sust. Eng. Comp't
Vern Mtr. Support #2
Go = .0220
OVERALL = 4.80 g rms
g²/cps
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500

Fig. 781


Sust Eng Comp't
Vib Vern Mtr Suppt #2
N-I SCF (C)
MEAS 3506 TANG
BTFs + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
g²/cps
CPS


N I SCF (C) A
MEAS 3506 TAN
BTFs + 10.0 to 15.0
100-400 CPS
PSD Vs FREQ
Sustainer Eng Comp't
Vernier Motor Support #2
CPS

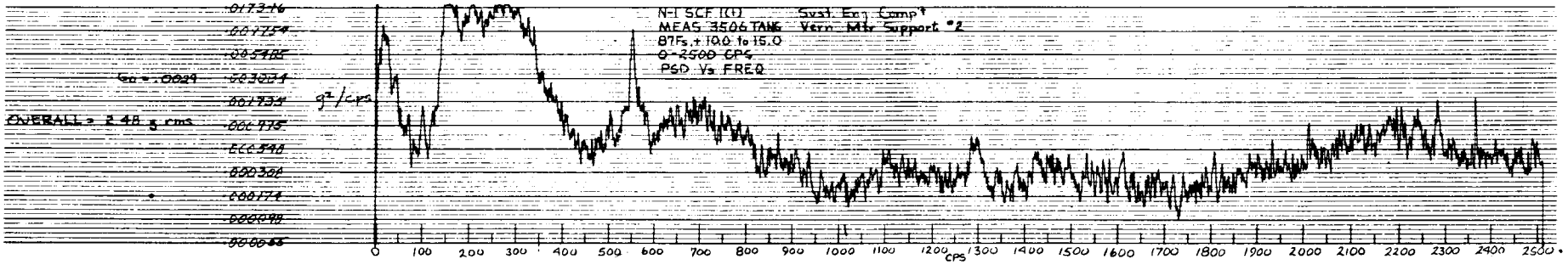

N-I SCF (C)
MEAS 3506 TANG
BTFs + 10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
Sust Eng Comp't
Vern Mtr Support #2
g²/cps
CPS

Fig. 782

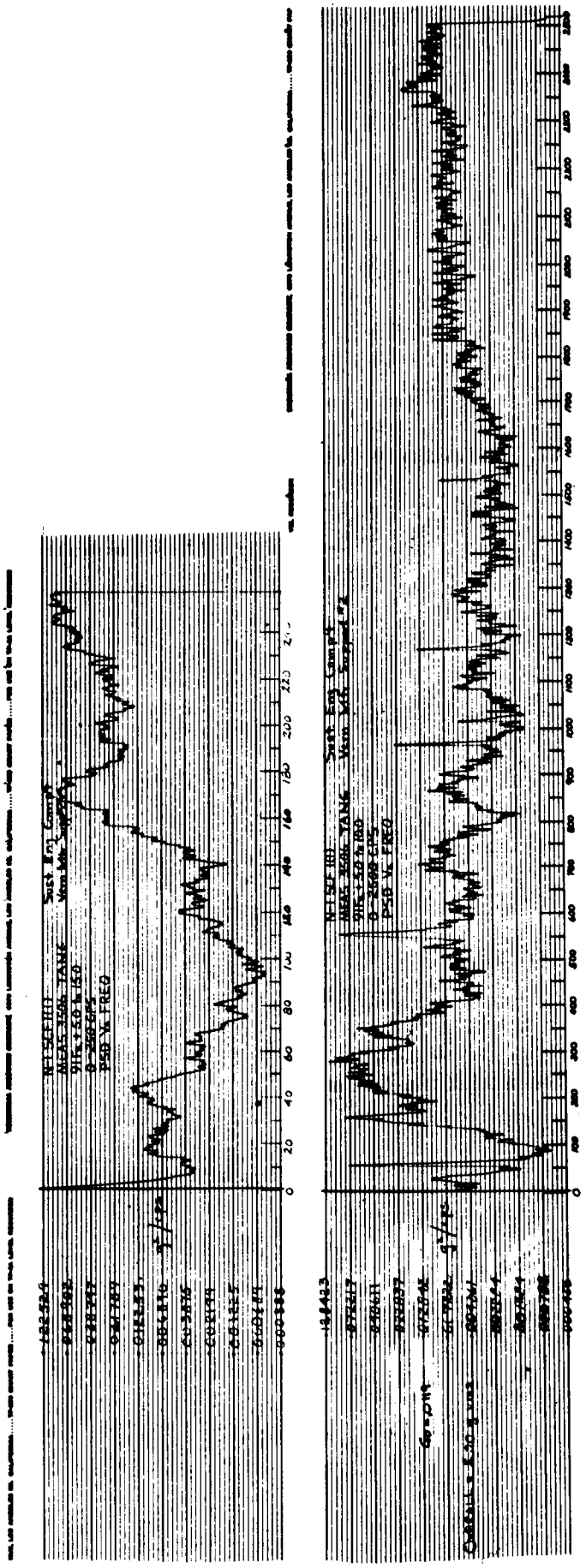


Fig. 783

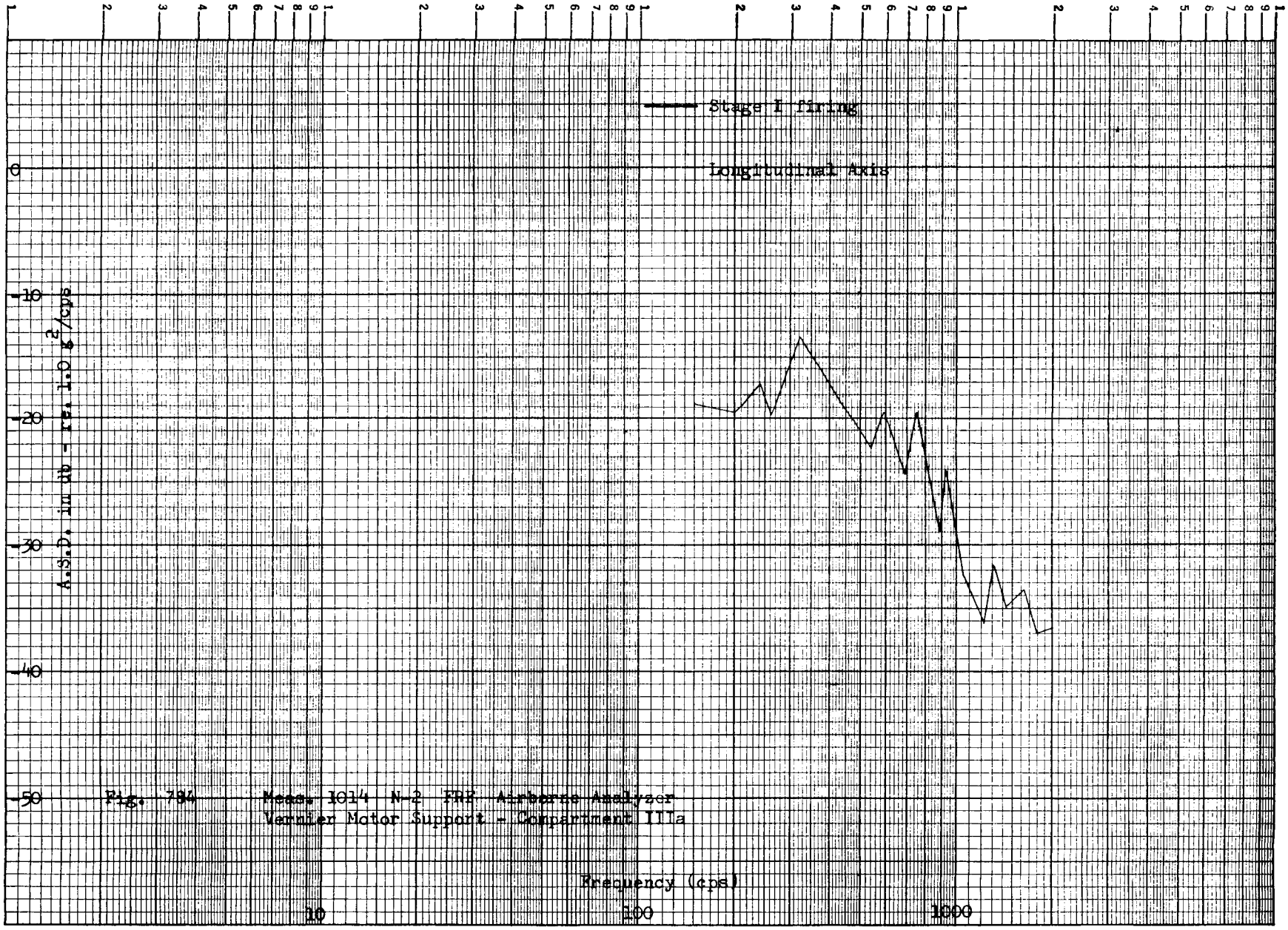
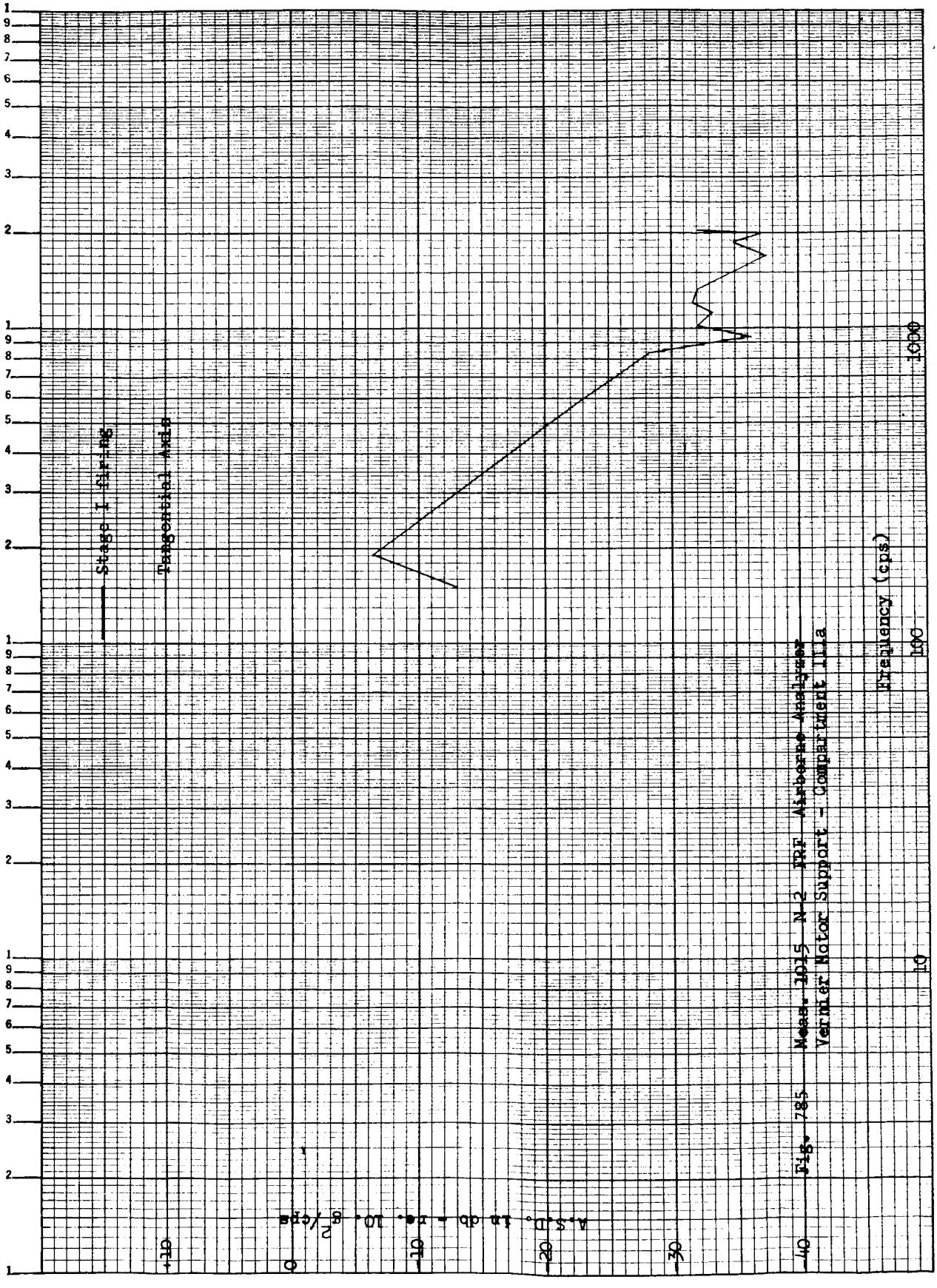
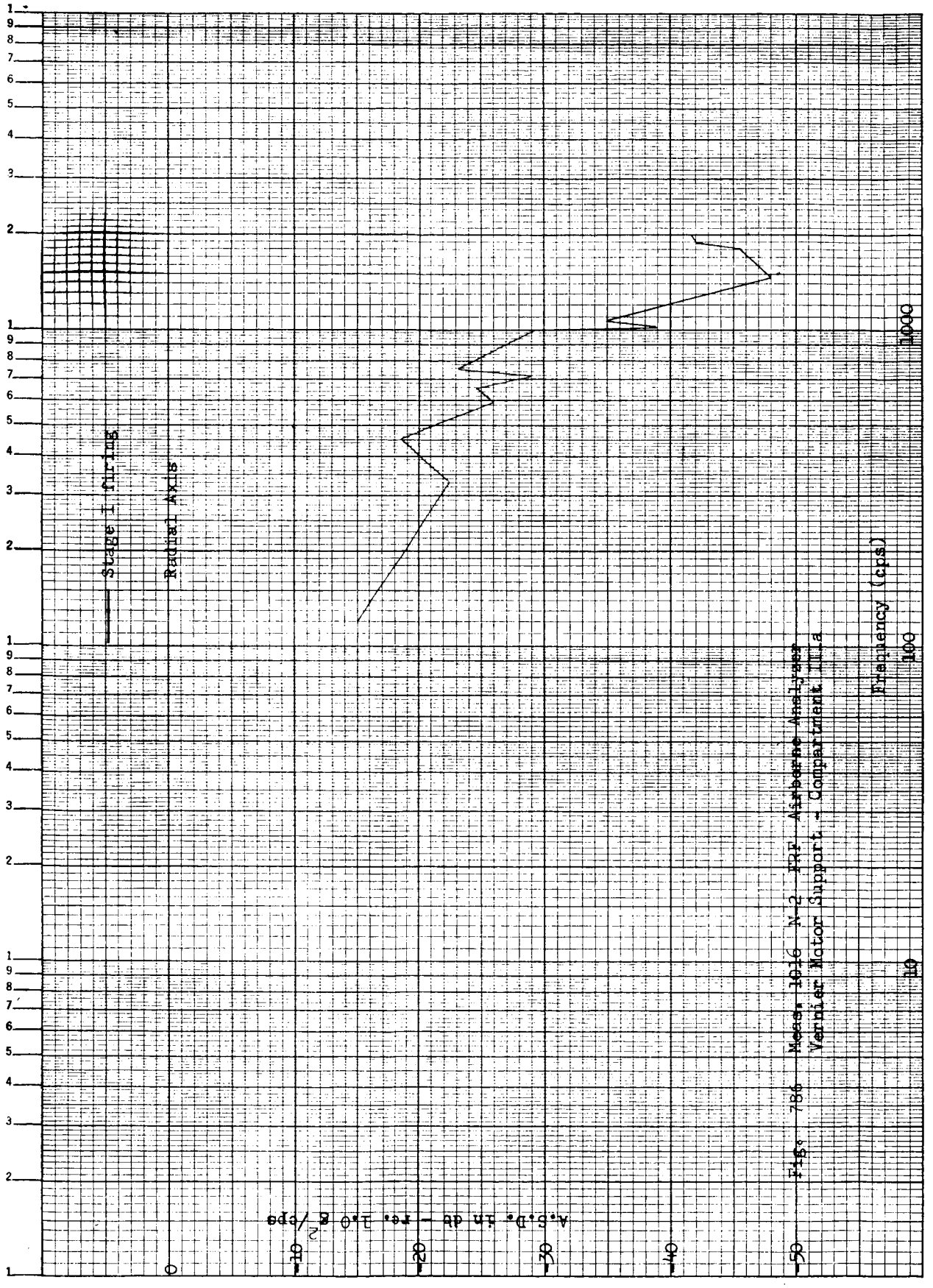


Fig. 784 Meas. 1014 N-2 FRF Airborne Analyzer
Vernier Motor Support - Compartment IIIa


Stage I Strap
Tangential Axis
Frequency (cps)
10
100
1000
Meas. 1015 N-2 IRF Airborne Analyzer
Vernier Motor Support - Compartment IIIa
F15-785
+10
0
-10
-20
-30
db re 1g²/cps
Acceleration


Stage E Turbine
Radial Axis
Frequency (cps)
1000
100
10
A.S.D. in dB - re. 1.0 g²/cps
Fig. 786 Meas. 1016 N-2 FRF Airborne Analyzer
Vernier Motor Support - Compartment III a

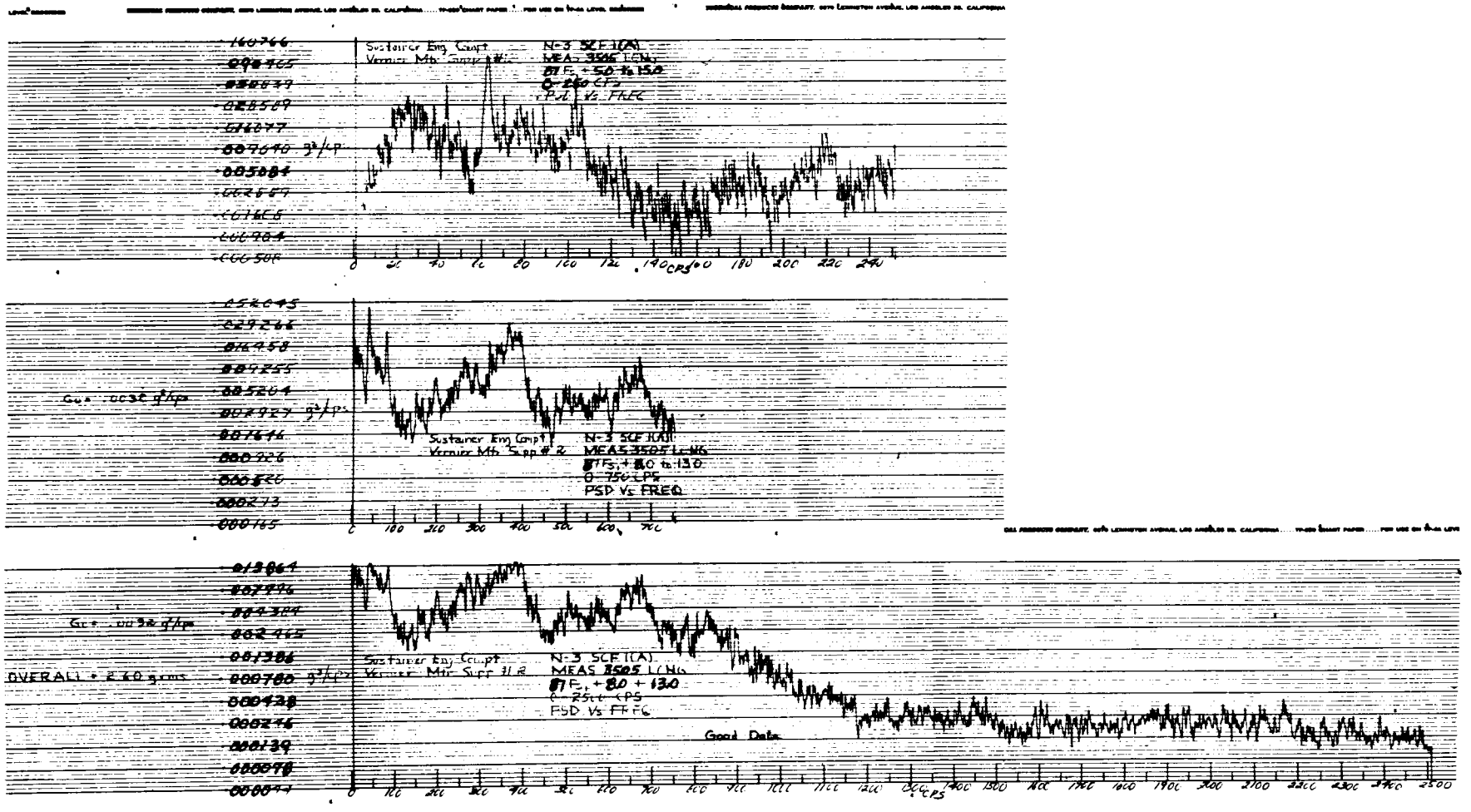

Sustainer Eng Compt
Vernier Mtr Supp #1
N-3 SCF 1(A)
MEAS 3505 LCMs
BTF1 +50 to 150
0-250 CPS
PSD Vs FREQ
Sustainer Eng Compt
Vernier Mtr Supp # 2
N-3 SCF 1(A)
MEAS 3505 LCMs
BTF1 +80 to 130
0-750 CPS
PSD Vs FREQ
Sustainer Eng Compt
Vernier Mtr Supp #1 R
N-3 SCF 1(A)
MEAS 3505 LCMs
BTF1 +80 + 130
0-2500 CPS
PSD Vs FREQ
Good Data
OVERALL = 2.60 grms

Fig. 787

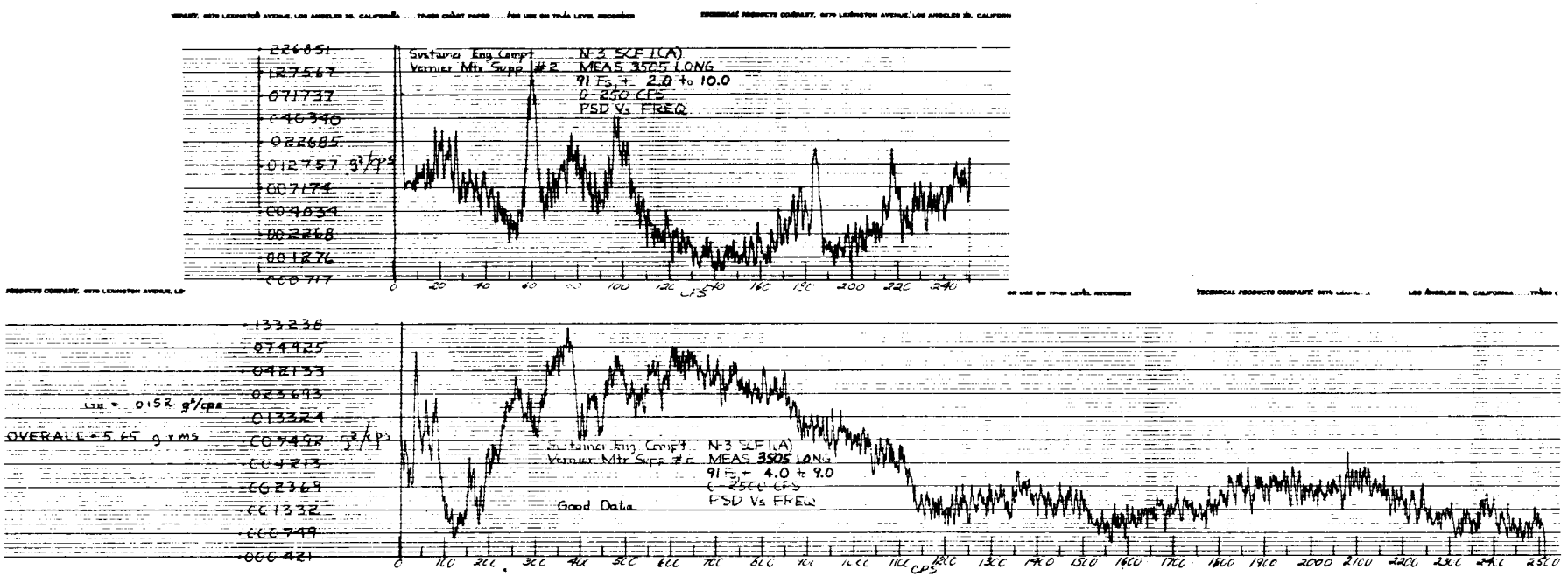

Sistrunk Eng Corp't
Vernier Mtr Supp #2
N-3 SCF (LA)
MEAS 3505 LONG
91 Fs + 2.0 to 10.0
0-250 CPS
PSD Vs FREQ
g²/cps
CPS
OVERALL = 5.65 g rms
Good Data
N-3 SCF (LA)
MEAS 3505 LONG
91 Fs + 4.0 to 9.0
0-250 CPS
PSD Vs FREQ

Fig. 788

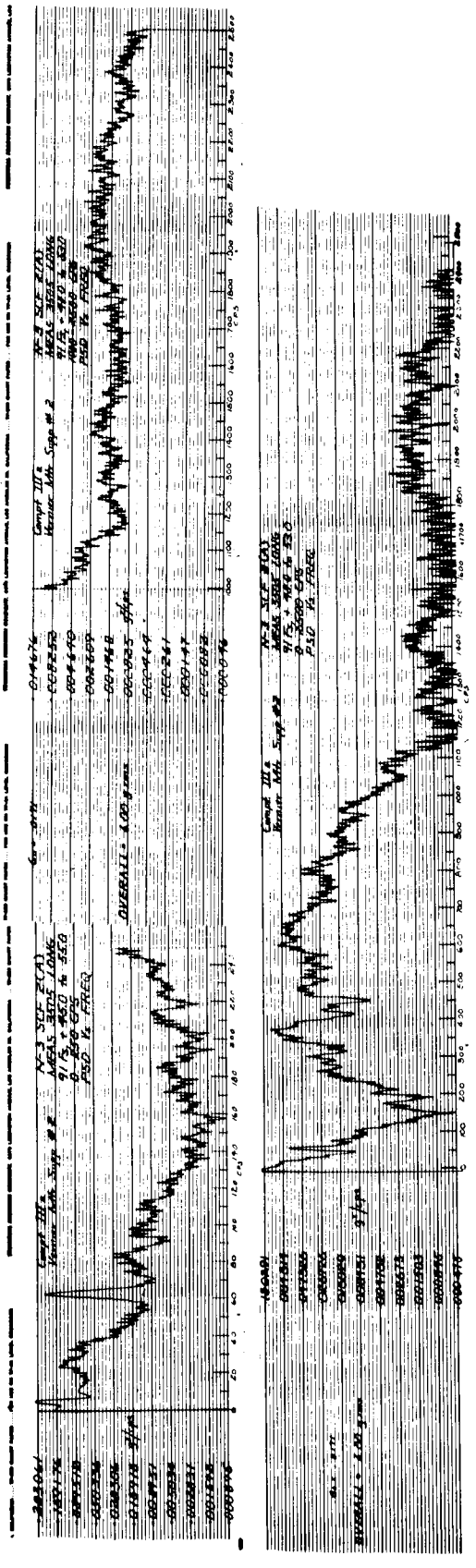


Fig. 789

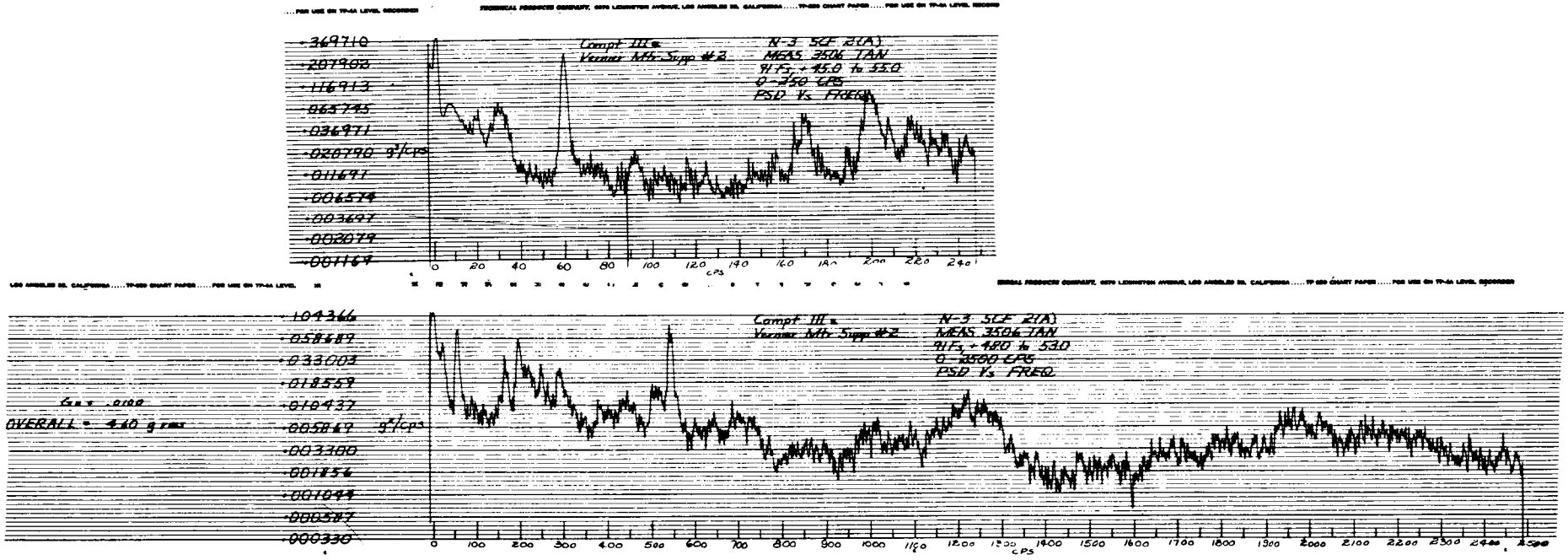

Compt III &
Vernier Mtr Supp #2
N-3 SCF 21(A)
MEAS 3506 TAN
9 HFs + 45.0 to 55.0
0-350 CPS
PSD Vs FREQ
.369710
.287908
.116913
.065745
.036971
.020790 g²/cps
.011691
.006574
.003697
.002079
.001169
0 20 40 60 80 100 120 140 160 180 200 220 240
CPS
Compt III &
Vernier Mtr Supp #2
N-3 SCF 21(A)
MEAS 3506 TAN
9 HFs + 480 to 530
0-3500 CPS
PSD Vs FREQ
.104346
.058689
.033003
.018559
.010437
.005869
.003300
.001856
.001044
.000587
.000330
g²/cps
Gs = .0100
OVERALL = 4.40 g rms
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 790

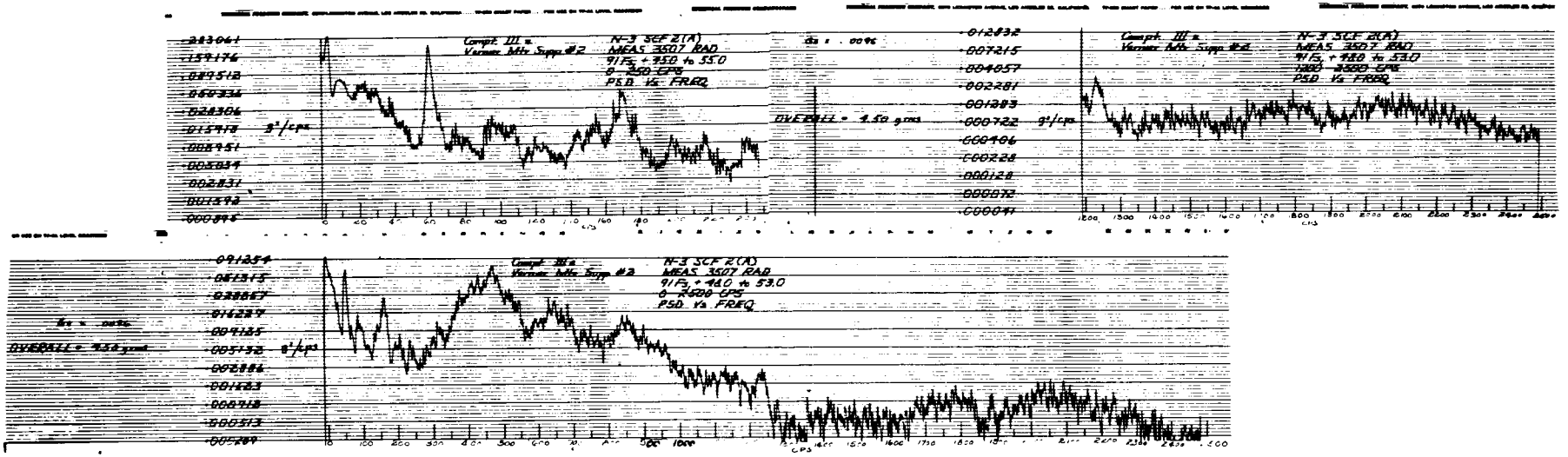
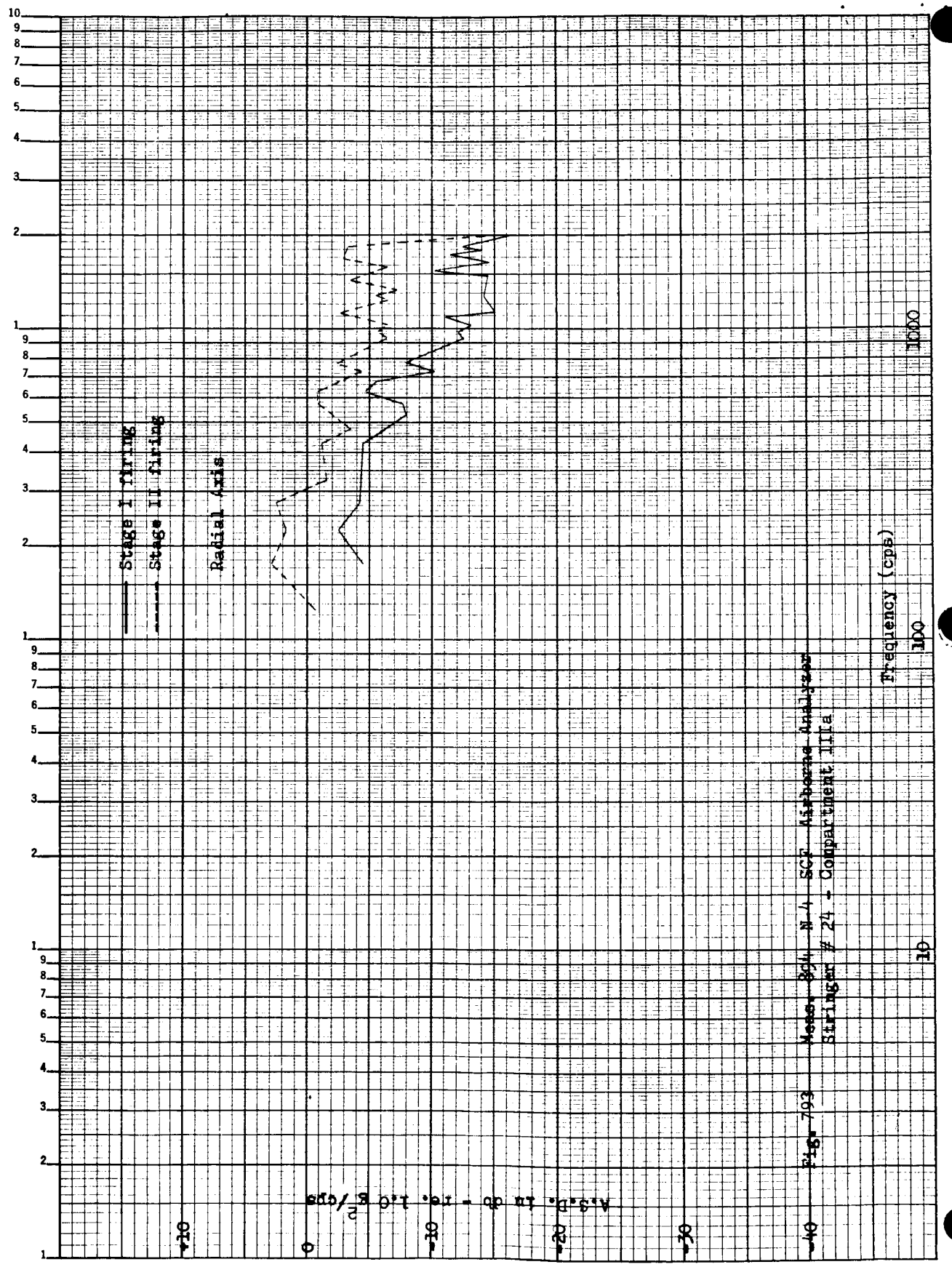

Compt. III a
Vernier Mtr Supp #2
N-3 SCF Z(A)
MEAS 3507 RAD
9/F2 +35.0 to 55.0
0-250 CPS
PSD Vs FREQ
g²/cps
OVERALL = 4.50 g rms
Compt. III a
Vernier Mtr Supp #2
N-3 SCF Z(A)
MEAS 3507 RAD
9/F2 +48.0 to 53.0
0-2500 CPS
PSD Vs FREQ
g²/cps
Compt. III a
Vernier Mtr Supp #2
N-3 SCF Z(A)
MEAS 3507 RAD
9/F2 +48.0 to 53.0
1395-3500 CPS
PSD Vs FREQ
g²/cps

Fig. 791

Fig. 792 Meas. 897 N.J. SOF Airborne Analyzer
Stringer # 24 - Compartment III a


Stage I firing
Stage II firing
Radial Axis
Frequency (cps)
10
100
1000
Fig. 793 Meas. Sys. N-4 SCF Airborne Analyzer
Stringer # 24 - Compartment IIIa

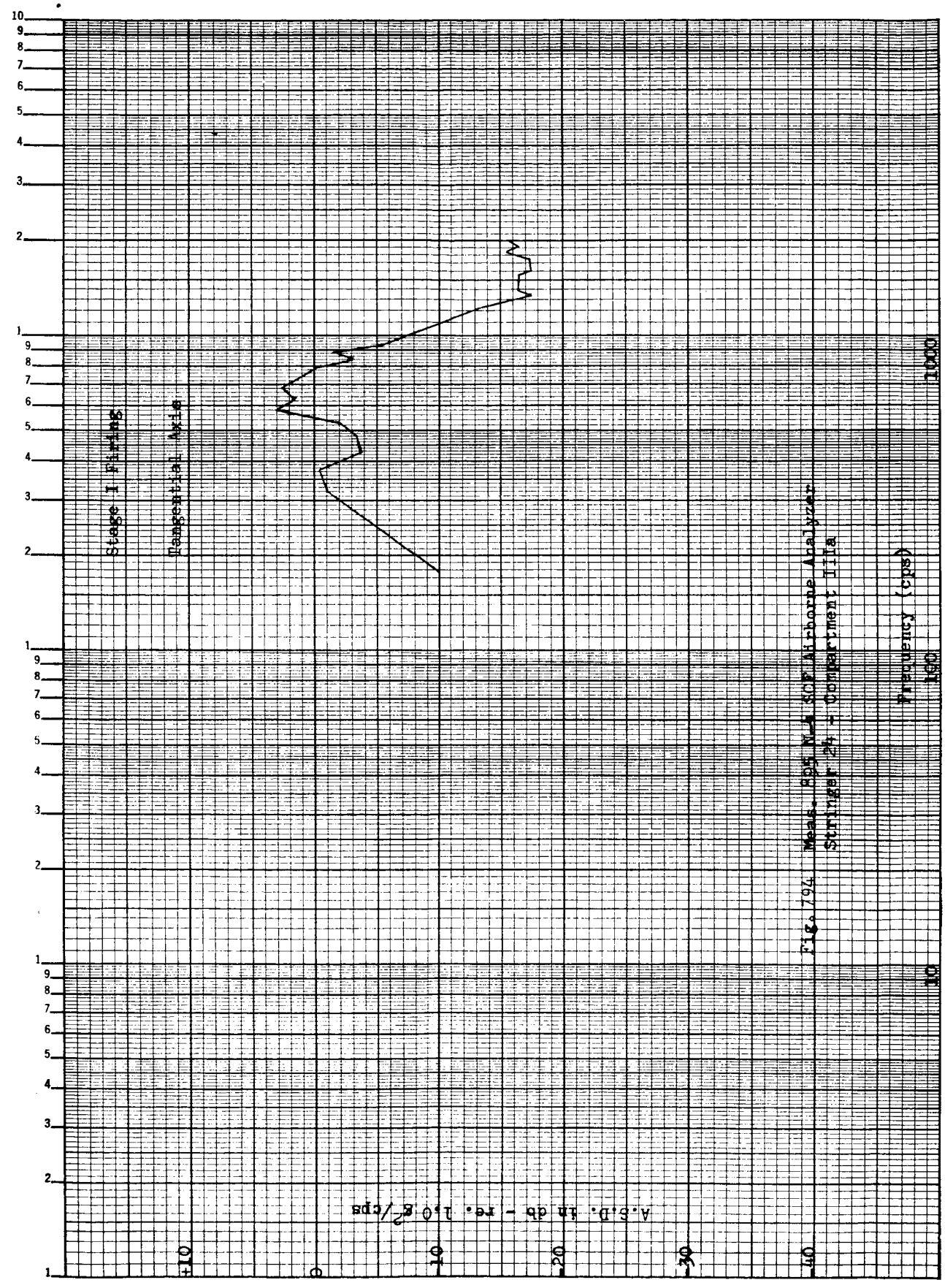


Fig. 794 Meas. 895 N.A. SOF Airborne Analyzer
Stringer 24 - Compartment III a

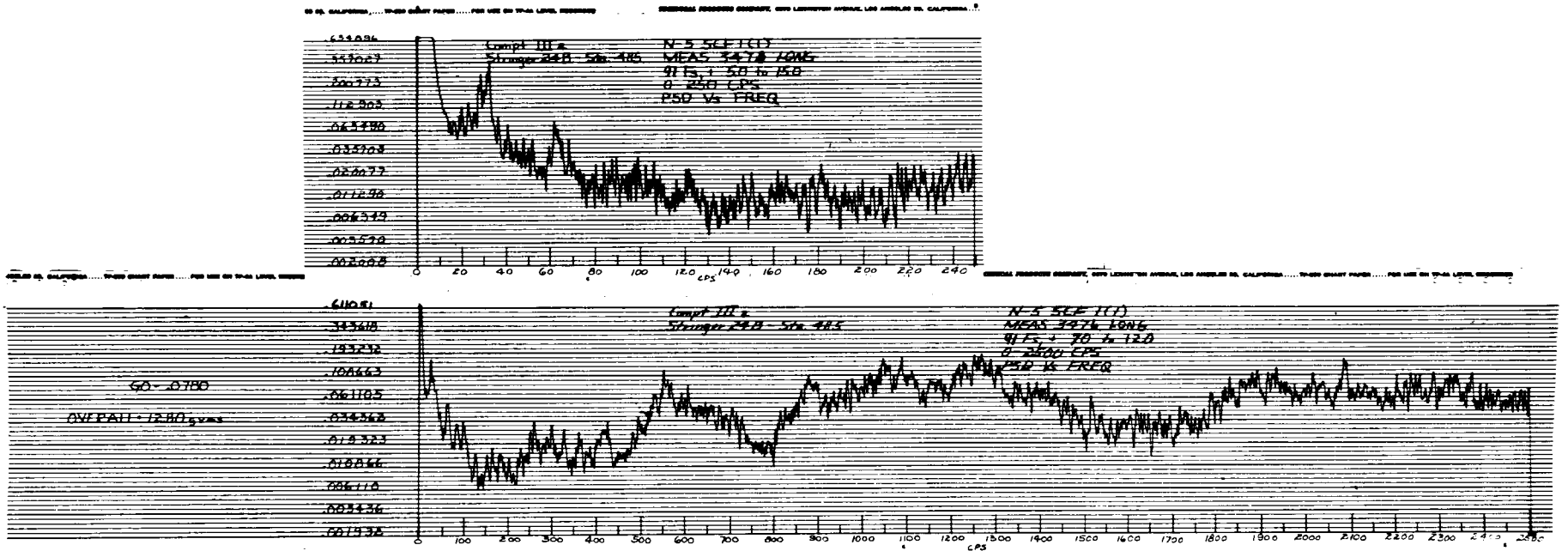

Compt III a
Stringer 248 - Stn 485
N-5 SCF I(T)
MEAS 3476 LONG
91 FS, 70 to 120
0 2500 CPS
PSD Vs FREQ
CPS
GO - .0780
OVERALL - 12.80 g rms

Fig. 795

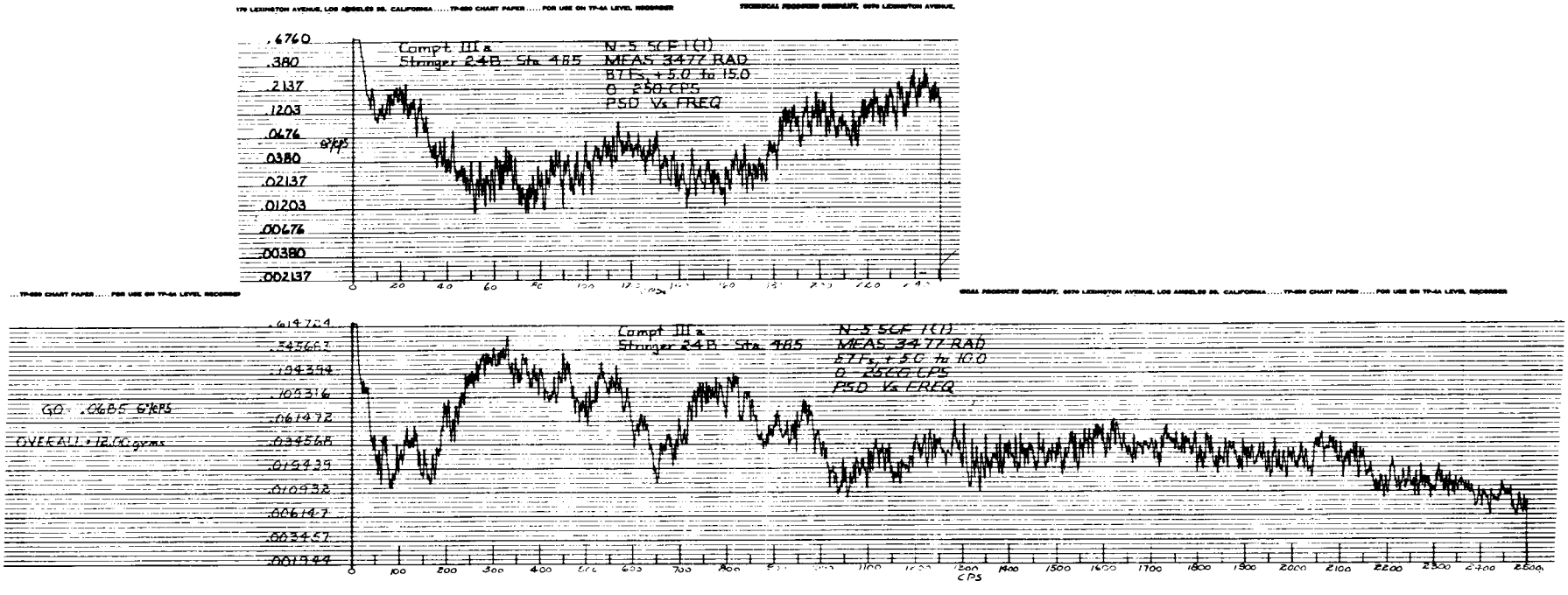

.6760
.380
.2137
.1203
.0676
.0380
.02137
.01203
.00676
.00380
.002137
g's²/f
Compt III a
Stringer 24B - Sta 485
N-5 SCF 1(1)
MEAS 3477 RAD
BTE$_s$ + 5.0 to 15.0
0 - 250 CPS
PSD Vs FREQ
GO - .0685 G²/F²S
OVERALL = 12.00 grms
Compt III a
Stringer 24B - Sta 485
N-5 SCF 1(1)
MEAS 3477 RAD
ETF$_s$ + 5.0 to 10.0
0 - 2500 CPS
PSD Vs FREQ
CPS

Fig. 796

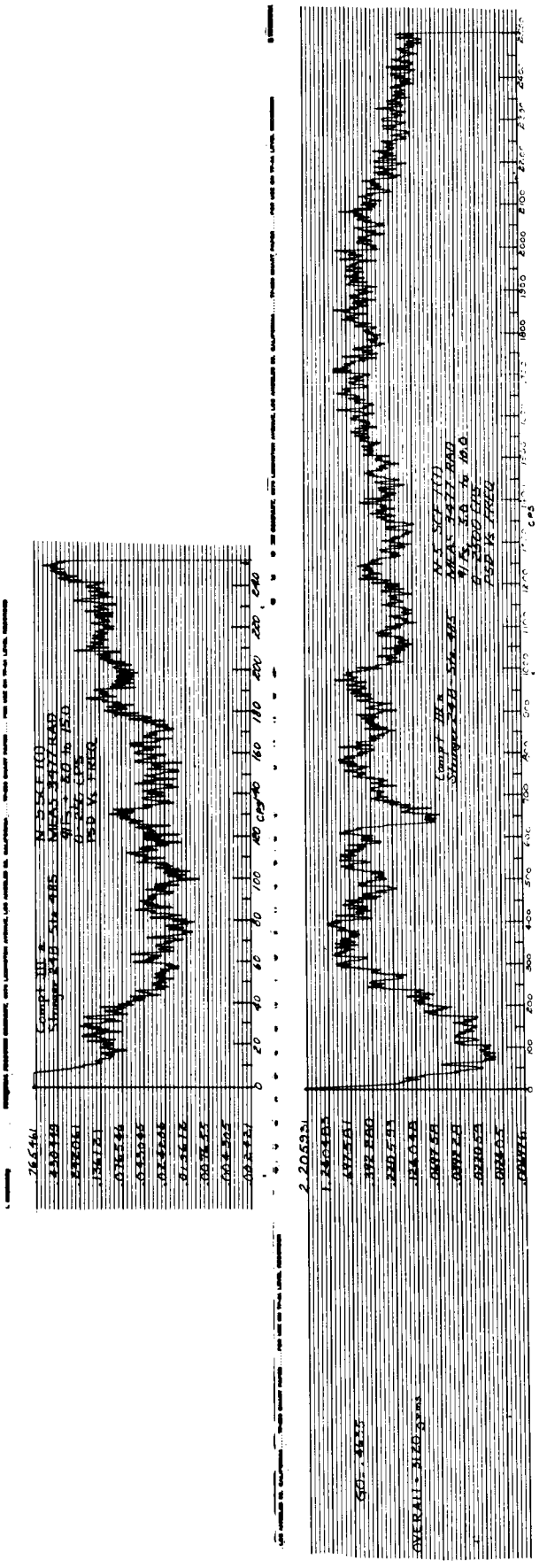
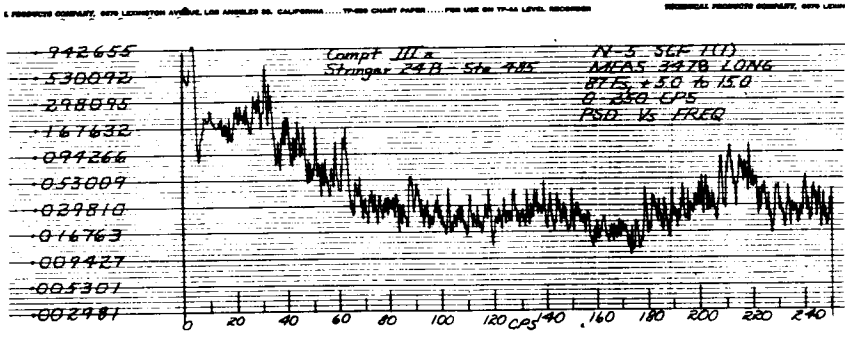


Fig. 797


·942655
·530092
·298095
·167632
·094266
·053009
·029810
·016763
·009427
·005301
·002981
Compt IIIa
Stringer 24B - Sta 485
N-5 SCF 1(1)
MEAS 3478 LONG
BTFS +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
0 20 40 60 80 100 120 CPS 140 160 180 200 220 240

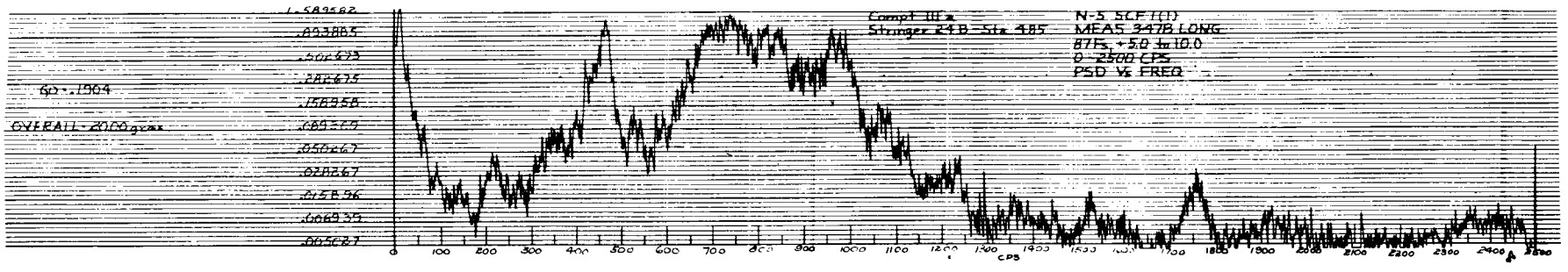

60 - .1904
OVERALL - 2000 g rms
Compt IIIa
Stringer 24B - Sta 485
N-5 SCF 1(1)
MEAS 3478 LONG
BTFS +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 798

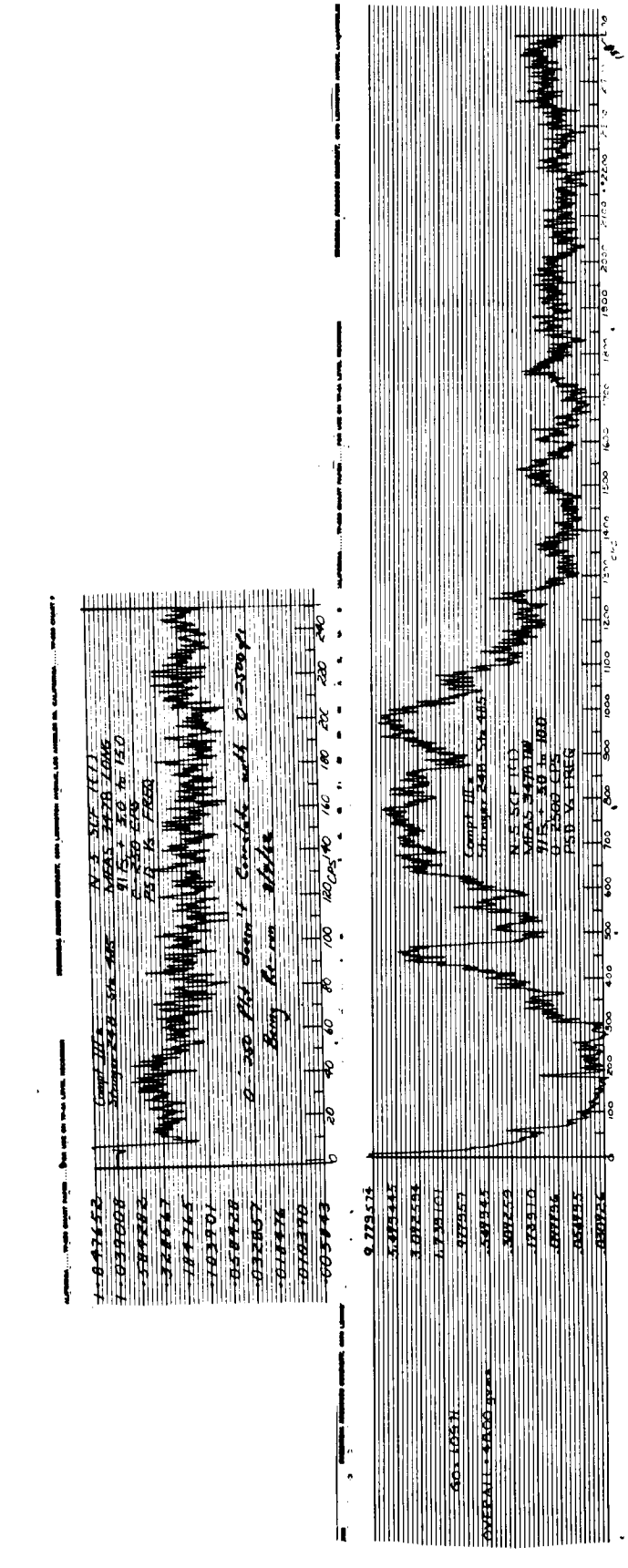
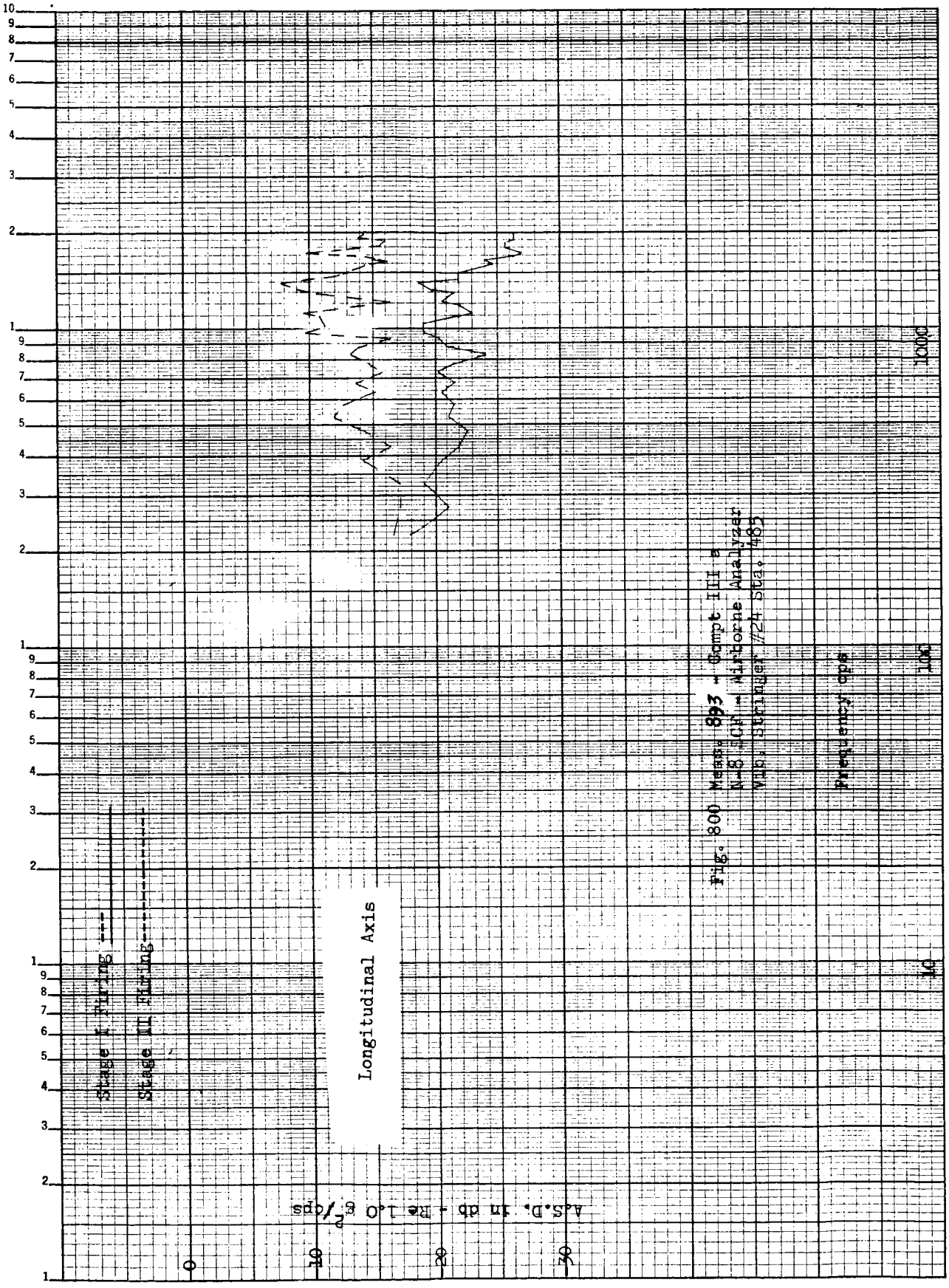


Fig. 799


Fig. 800 Meas. 893 - Comp. III a
4-8 gun - Airborne Analyzer
VHF, Stringer #24 Sta. 485
Frequency cps
1000
100
10
A.S.D. in db - Re 1.0 gr²/cps
Longitudinal Axis
Stage I Firing ---
Stage II Firing----------

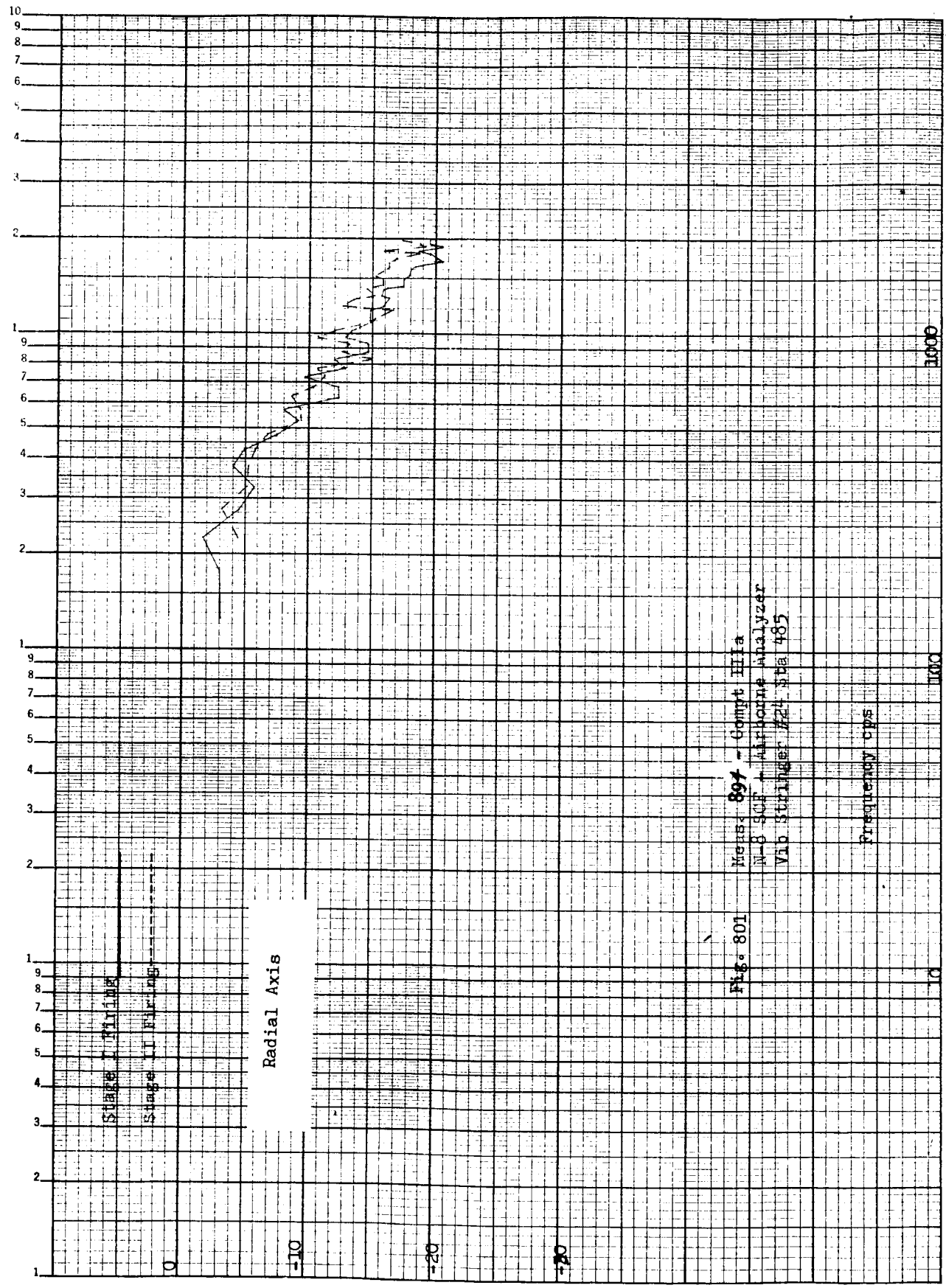

Stage I Firing
Stage II Firing
Radial Axis
Frequency cps
Meas. 894 - Compt IIIa
M-8 SCF - Airborne Analyzer
Vib Stringer #24 Sta 485

Fig. 801

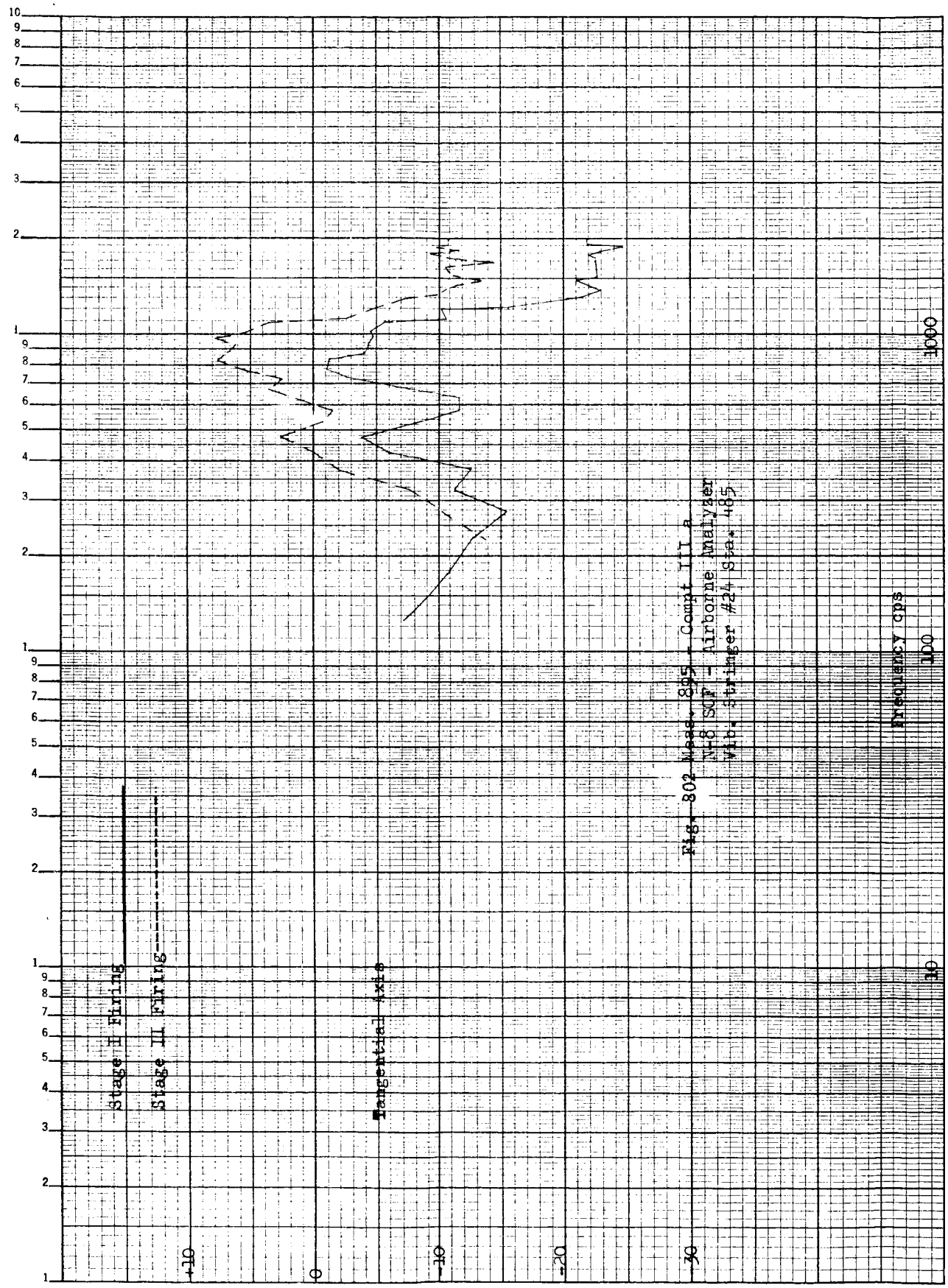
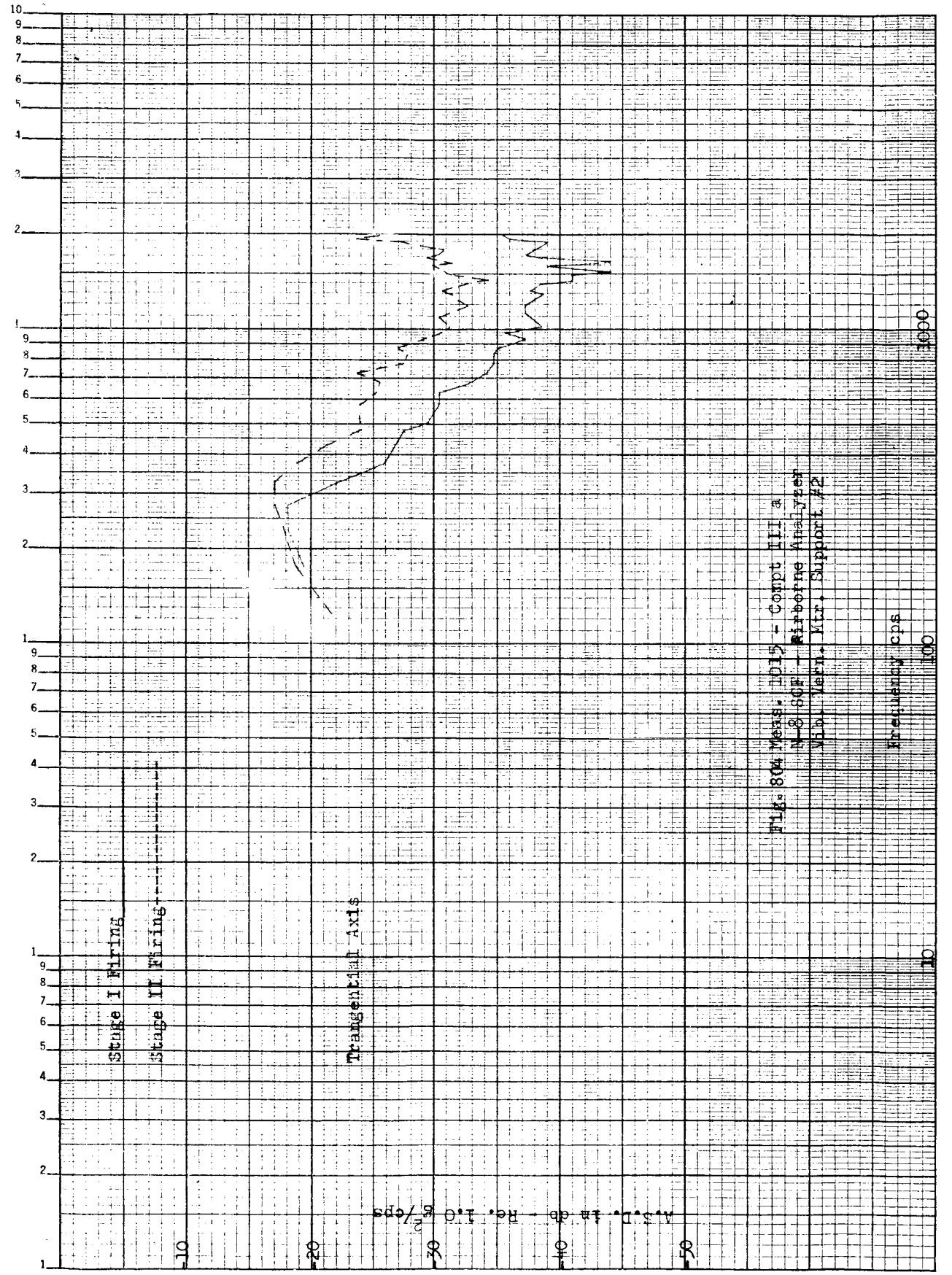

Stage I Firing
Stage II Firing
Tangential axis
Fig. 802 Mass. 895 - Compt III a
V-8 SCF - Airborne Analyzer
Vib. Stringer #24 Sta. 485
Frequency cps
10
100
1000
+10
0
-10
-20
-30

Fig. 803 Meas. 1014 - Cmpt III a
N-8 SDF - Airborne Analyzer
Vib. Shpprt #2
Vib. Mtr. Shpprt #2
Frequency cps
A.S.D. in db - Re 1.0 g²/cps
Stage I Firing
Stage II Firing
Longitudinal Axis


Stage I Firing
Stage II Firing
Tangential Axis
Frequency, cps
10
100
1000
FIG. 804 Meas. ID15 - Comp III a
4-8 psf - Airborne Analyzer
VLF, Vert. Mtr. Support #2

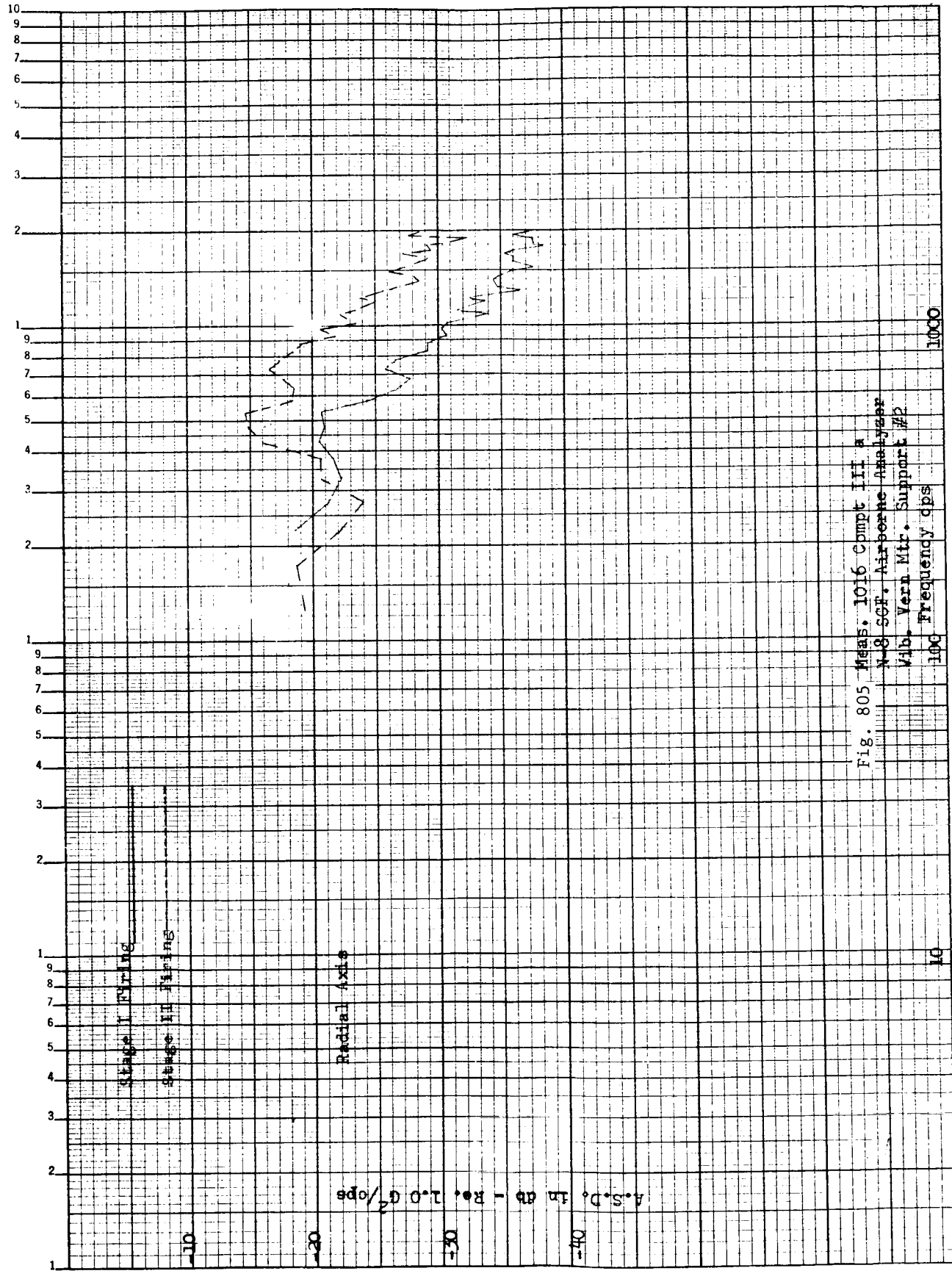


Fig. 805 Meas. 1016 Cmpt III a
N-8 SCF. Airborne Analyzer
Vib. Vern Mtr. Support #2

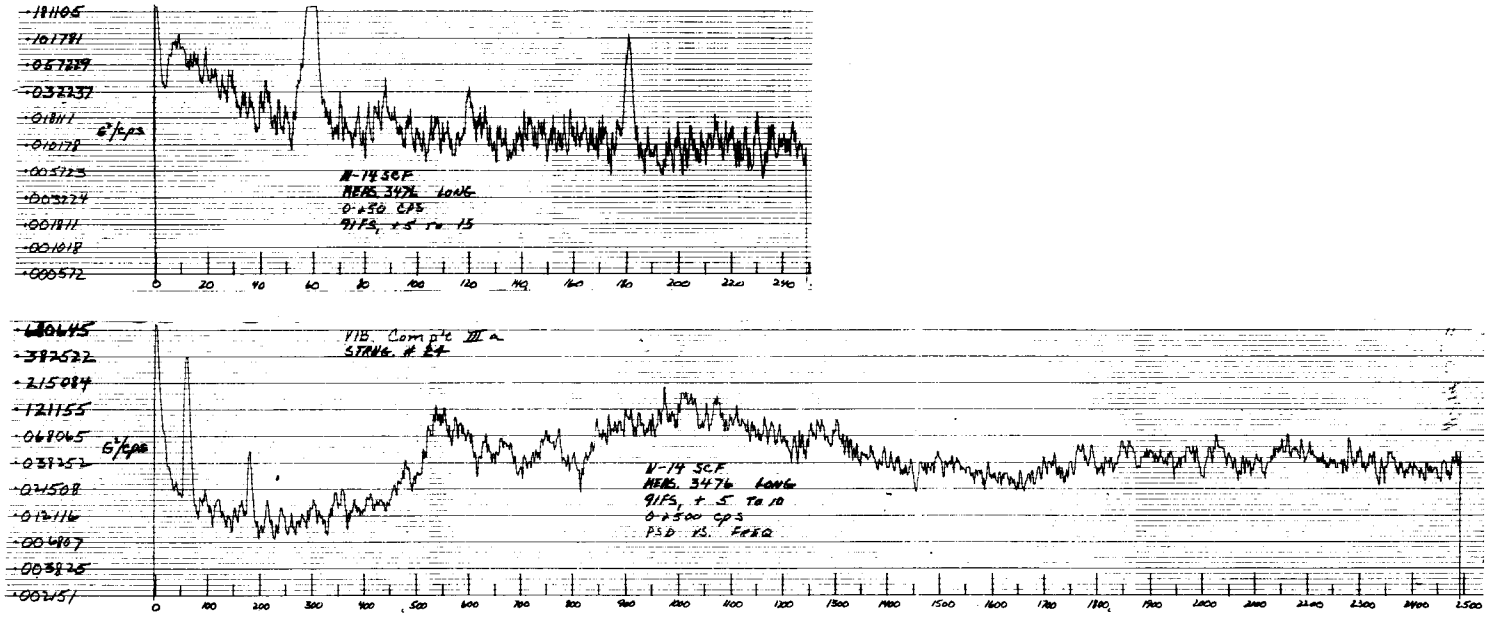

.181105
.101781
.057229
.032237
.018111
.010178
.005723
.003224
.001811
.001018
.000572
G²/cps
A-1436F
MEAS. 347L LONG
0-±50 CPS
9 IPS, ±5 TO 15
0
20
40
60
80
100
120
140
160
180
200
220
240
VIB. Compte III a
STAND. # 24
.387522
.215084
.121155
.068065
.038252
.021508
.012116
.006807
.003825
.002151
G²/cps
V-14 SCF
MEAS. 347L LONG
9 IPS, ± 5 TO 10
0-±500 CPS
PSD VS. FREQ
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500

Fig. 806

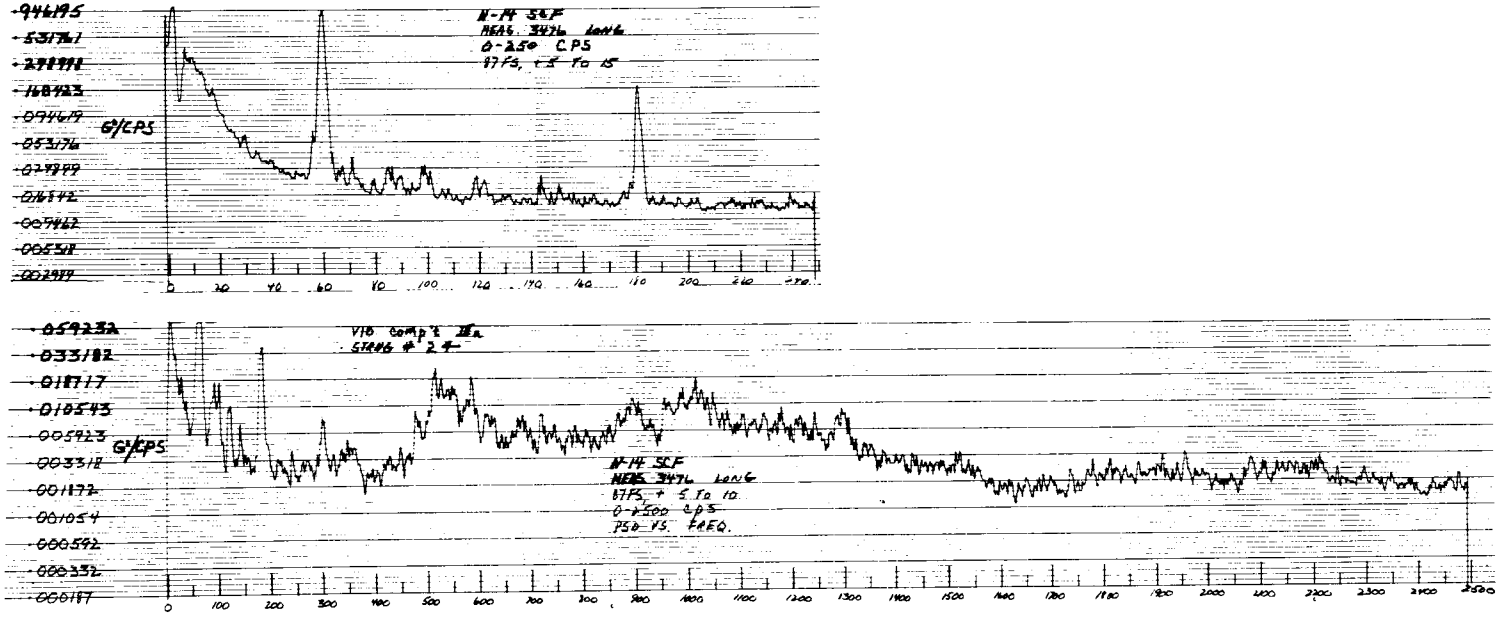

G²/CPS
.946195
.531761
.299991
.168423
.094679
.053176
.029999
.016842
.009462
.005318
.002999
N-M SCF
NEAS 3476 Long
0-250 CPS
87FS, + 5 To 15
0 30 40 60 80 100 120 140 160 200 240 280
G²/CPS
.059232
.033182
.018717
.010543
.005923
.003318
.001872
.001054
.000592
.000332
.000187
V16 Comp't IIa
STAGE # 24
N-M SCF
NEAS 3476 Long
87FS, + 5 To 10
0-2500 CPS
PSD VS. FREQ.
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500

Fig. 806a

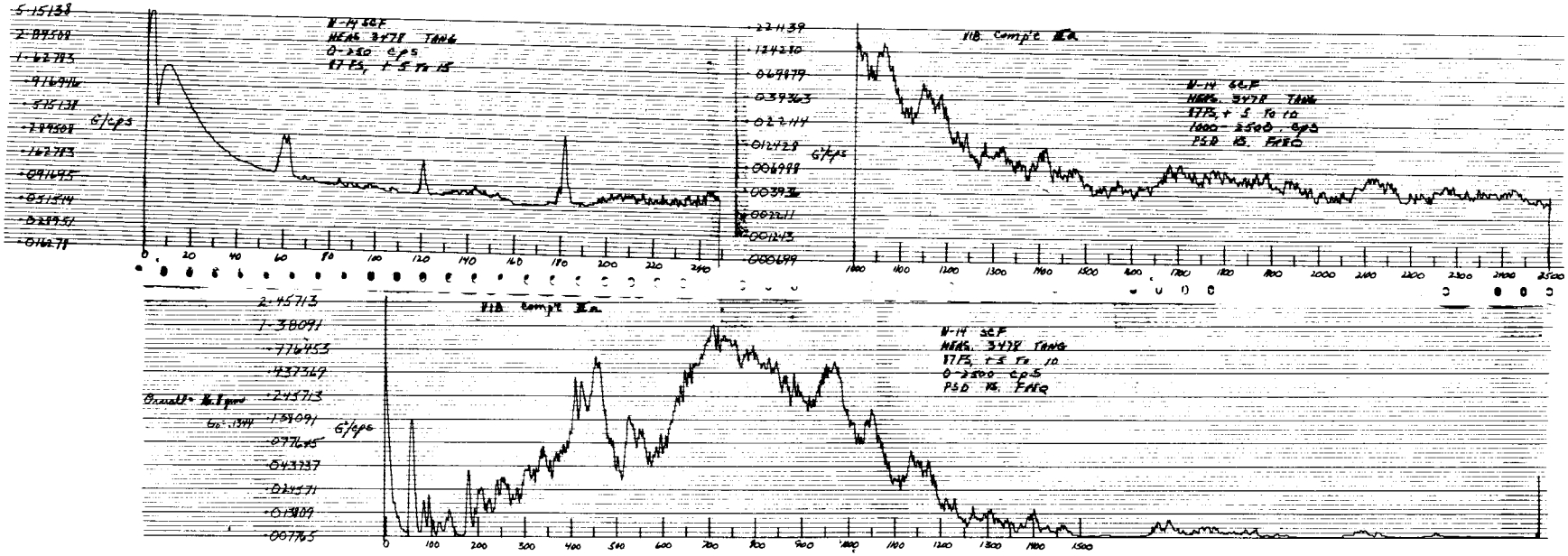

W-14 SCF
HEAS. 3478 TANK
0-250 cps
17 FS, ± 5 To 15
G/cps
VIB. Comp'r No.
W-14 SCF
HEAS. 3478 TANK
17FS, ± 5 To 10
1000- 2500 cps
PSD VS. FREQ
VIB Comp'r No.
W-14 SCF
HEAS. 3478 TANK
17FS, ± 5 To 10
0-2500 cps
PSD VS. FREQ

Fig. 807

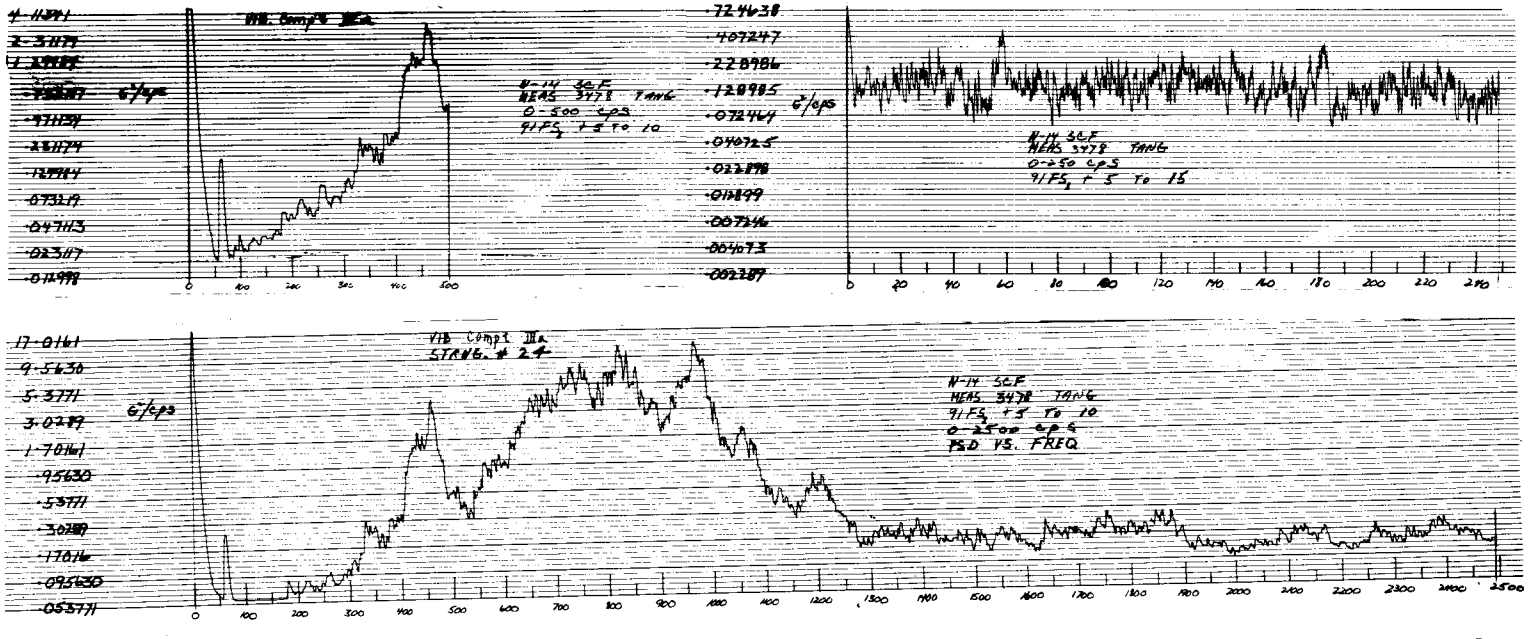

N-14 SCF
MEAS 5478 TANG
0-500 CPS
9 IFS, T 5 TO 10
N-14 SCF
MEAS 5478 TANG
0-250 CPS
9 IFS, T 5 TO 15
VIB Comp I IIa
STANG. # 24
N-14 SCF
MEAS 5478 TANG
9 IFS, T 5 TO 10
0-2500 CPS
PSD VS. FREQ

Fig. 808

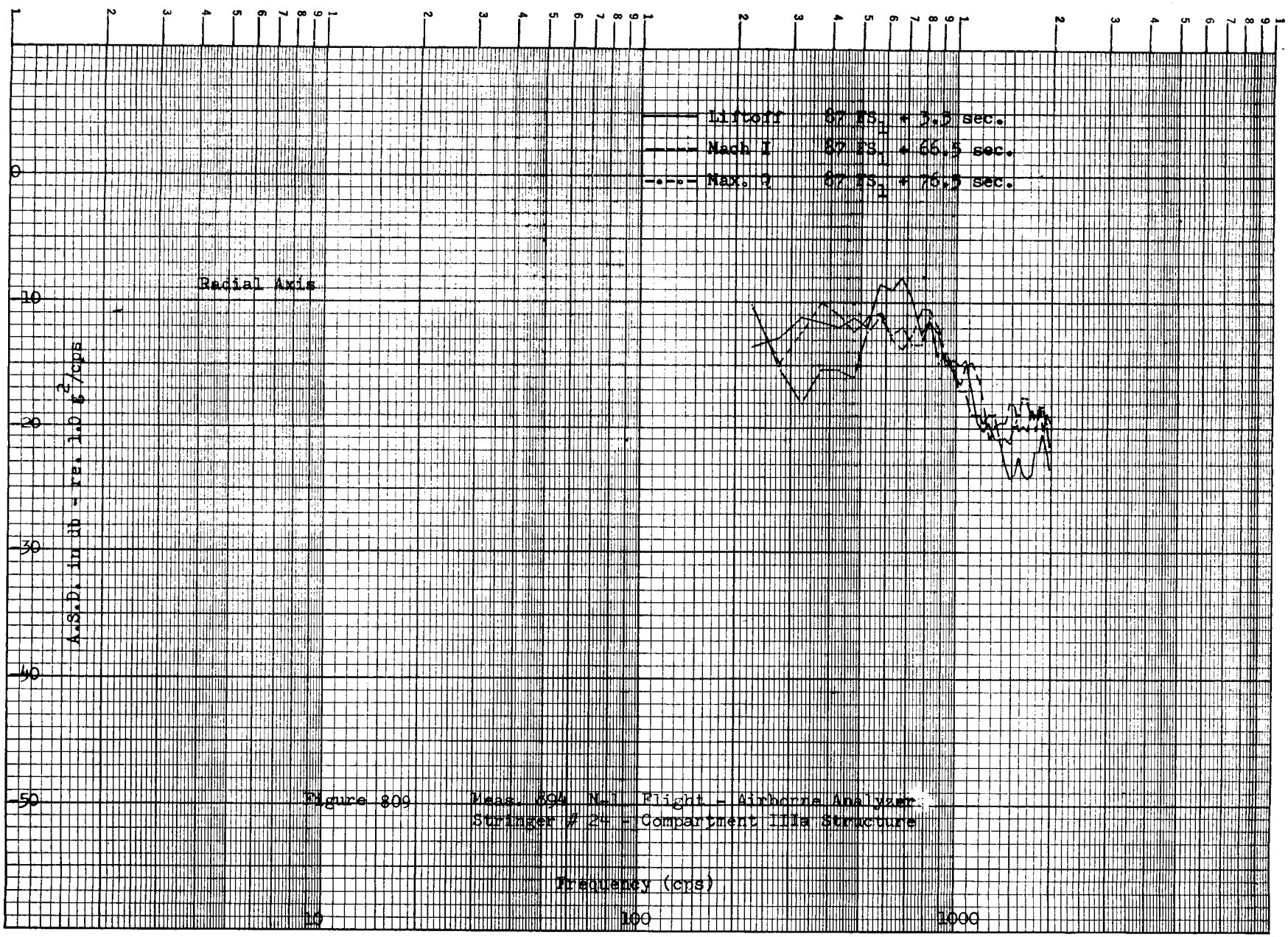
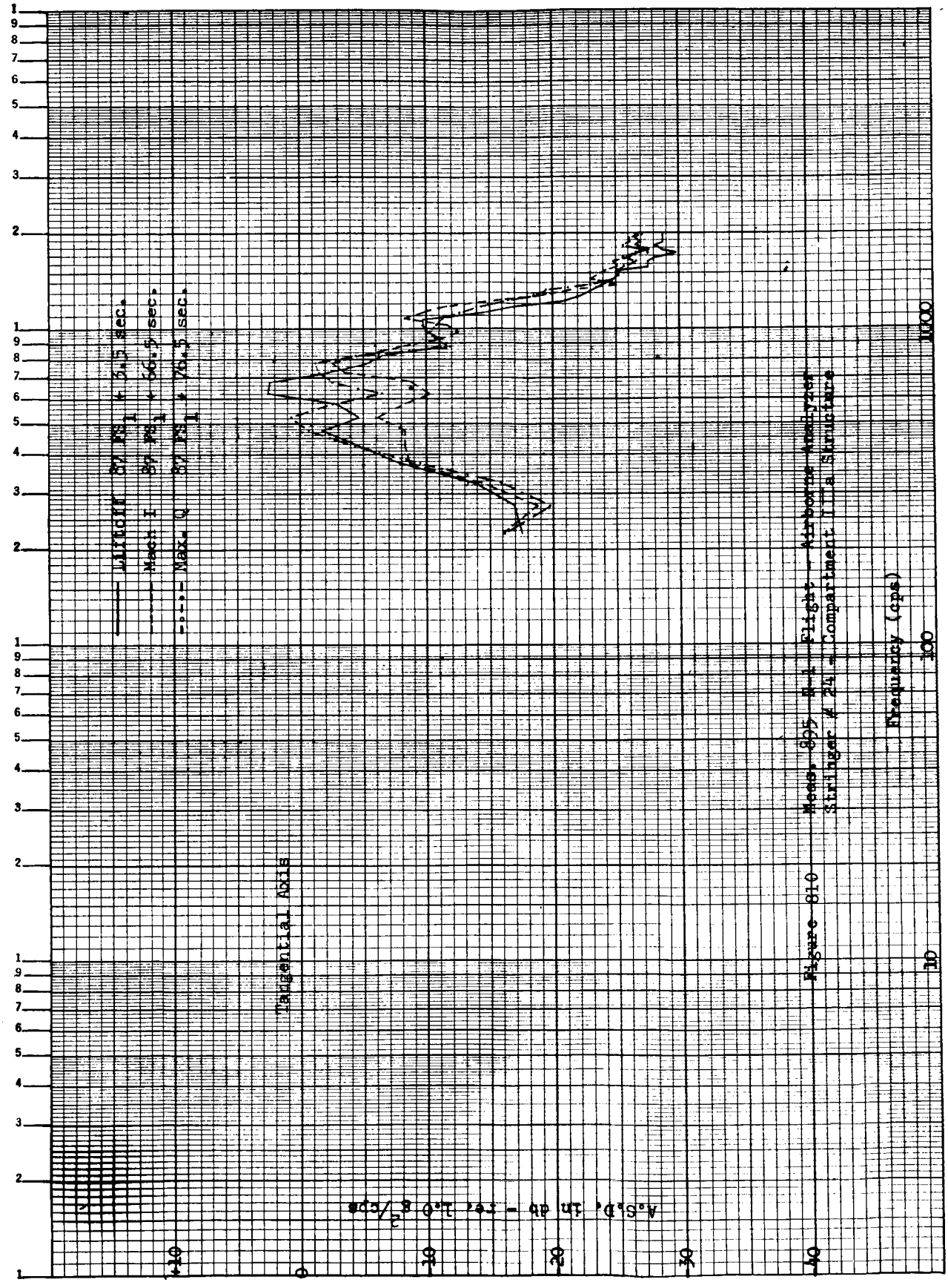


Figure 809 Meas. 894 No. 1 Flight - Airborne Analyzer
Stringer # 24 - Compartment IIIa Structure


Lift Off ——— 87 KS, t = 65.5 sec.
Mach 1 ------ 89 KS, t = 66.9 sec.
Max. Q -·-·- 87 KS, t = 70.5 sec.
Tangential Axis
Frequency (cps)
Figure 810
Mean, 805 #1 Flight - Airborne Accepted
Stringer # 24 Compartment Tail Structure

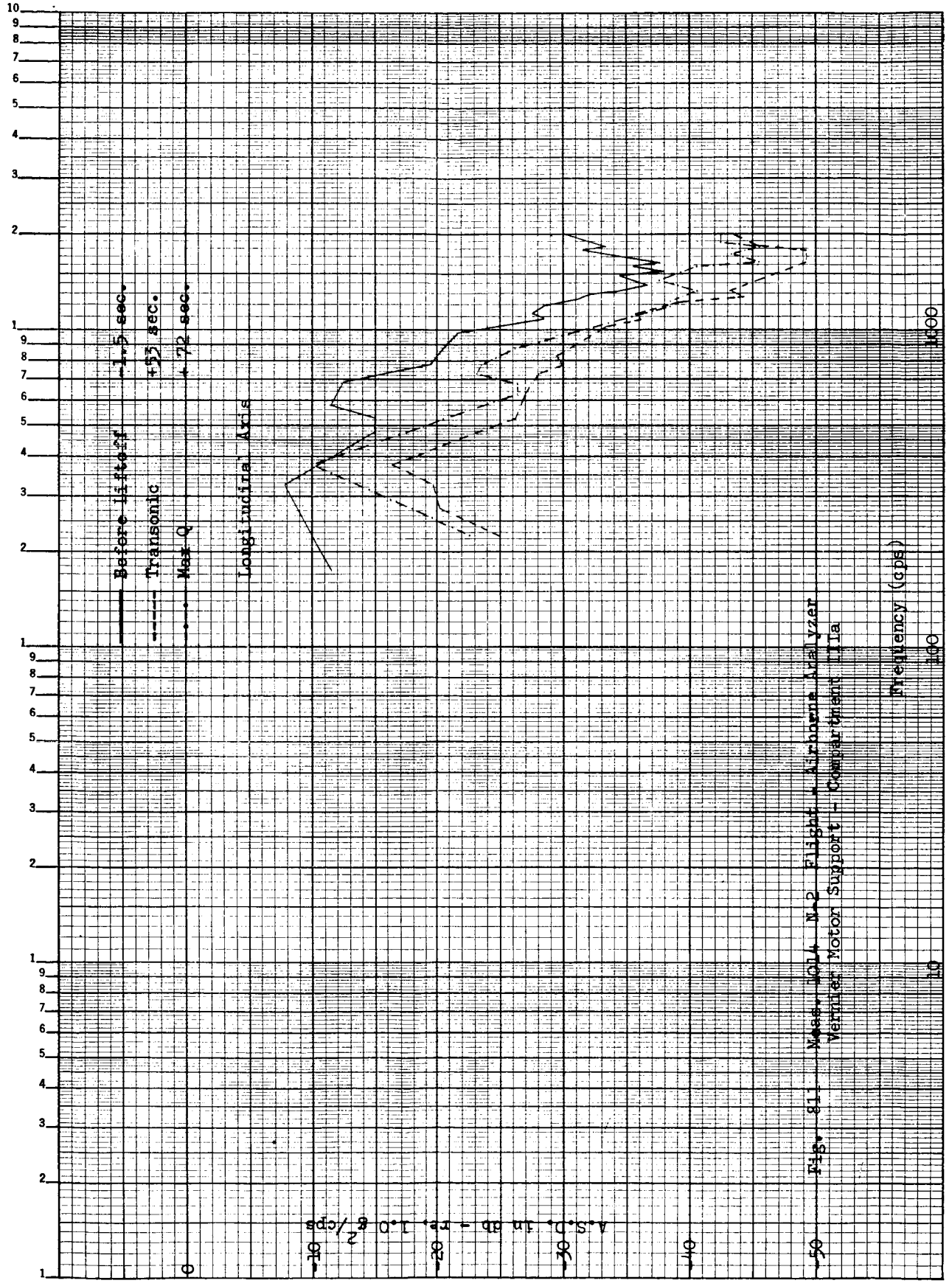
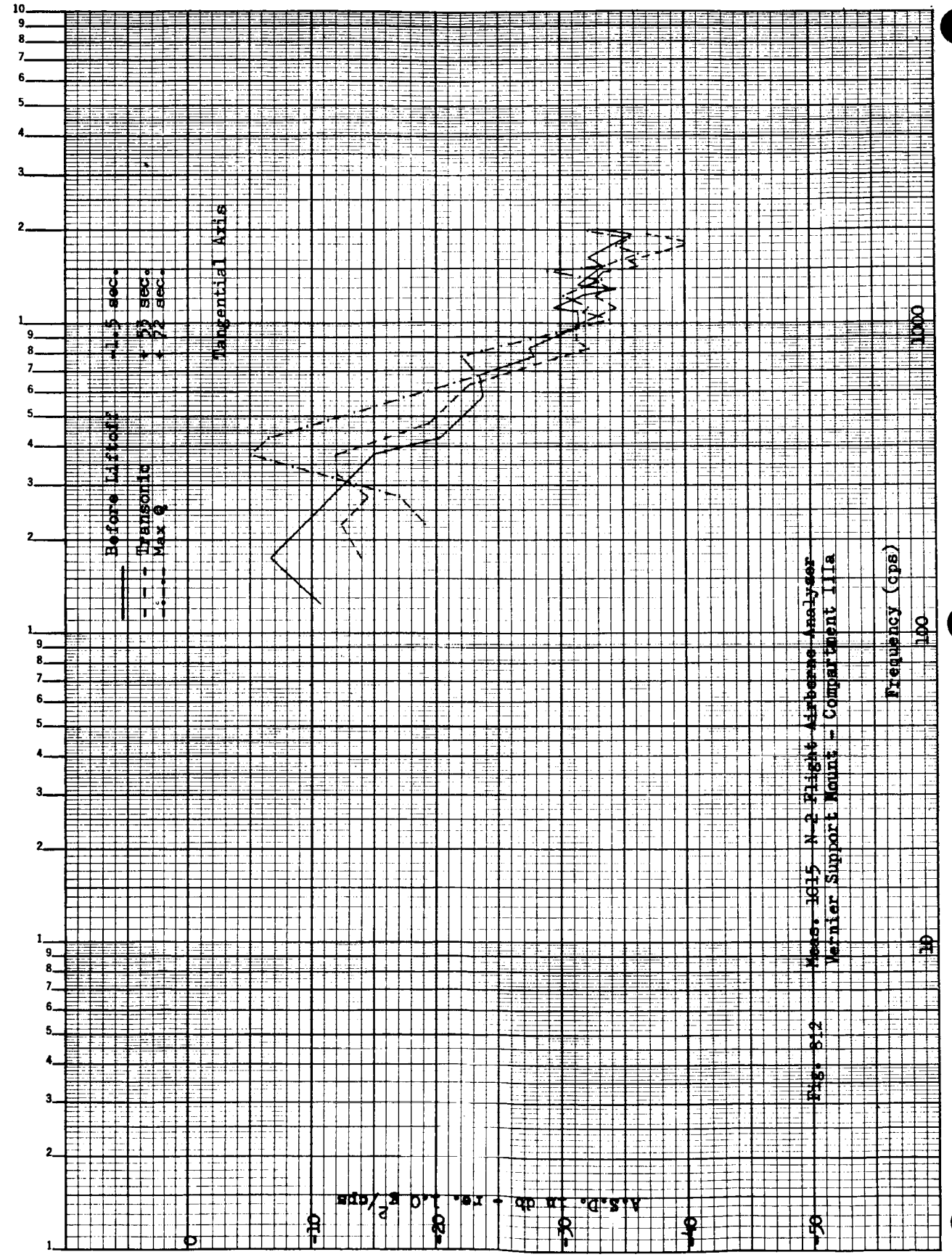
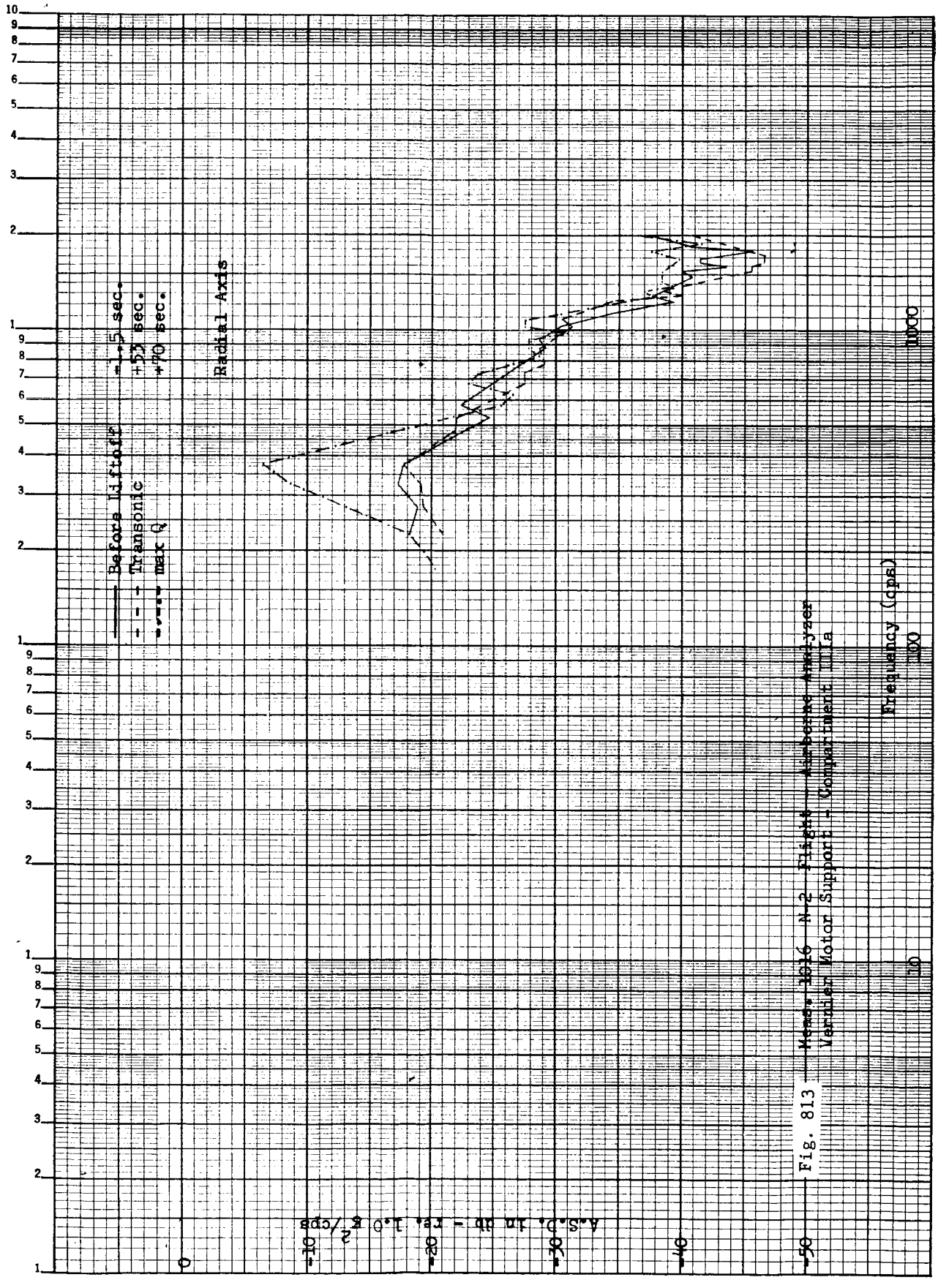


Fig. 811 Mod. NOL N-2 Flight - Airborne Analyzer
Vernier Motor Support - Compartment IIIa


Before Liftoff
+4.5 sec.
+2.5 sec.
+2 sec.
Transonic
Max Q
Tangential Axis
Frequency (cps)
1000
100
10
A.S.D. in db re. 1.0 g²/cps
Fig. 8.12 Mass. 3015 N-2 Flight Airborne Analyzer
Vernier Support Mount - Compartment IIIa


Before Liftoff
Transonic
Max Q
±.5 sec.
+52 sec.
+70 sec.
Radial Axis
Frequency (cps)
Fig. 813 Mach 3.16 N-2 Flight Ambient Analyzer
Vertical Motor Support - Compartment IIIa

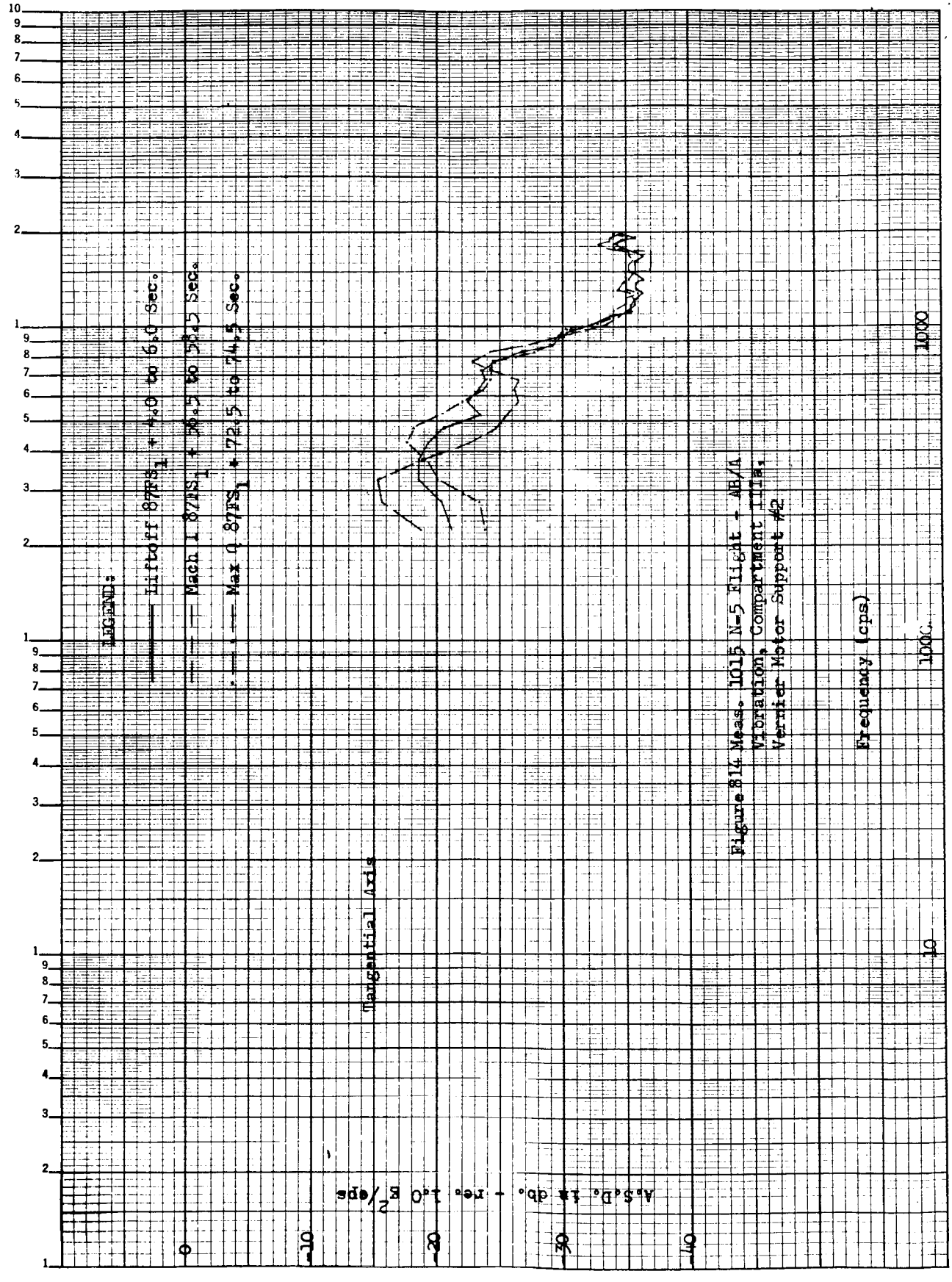


Figure 814 Meas. 1015 N-5 Flight - AB/A
Vibration, Compartment III B,
Vernier Motor Support #2

Figure 8.15 Meas. 1016 N-5 Flight - AB/A
Vibration Compartment III a,
Vertical Motor Support #2

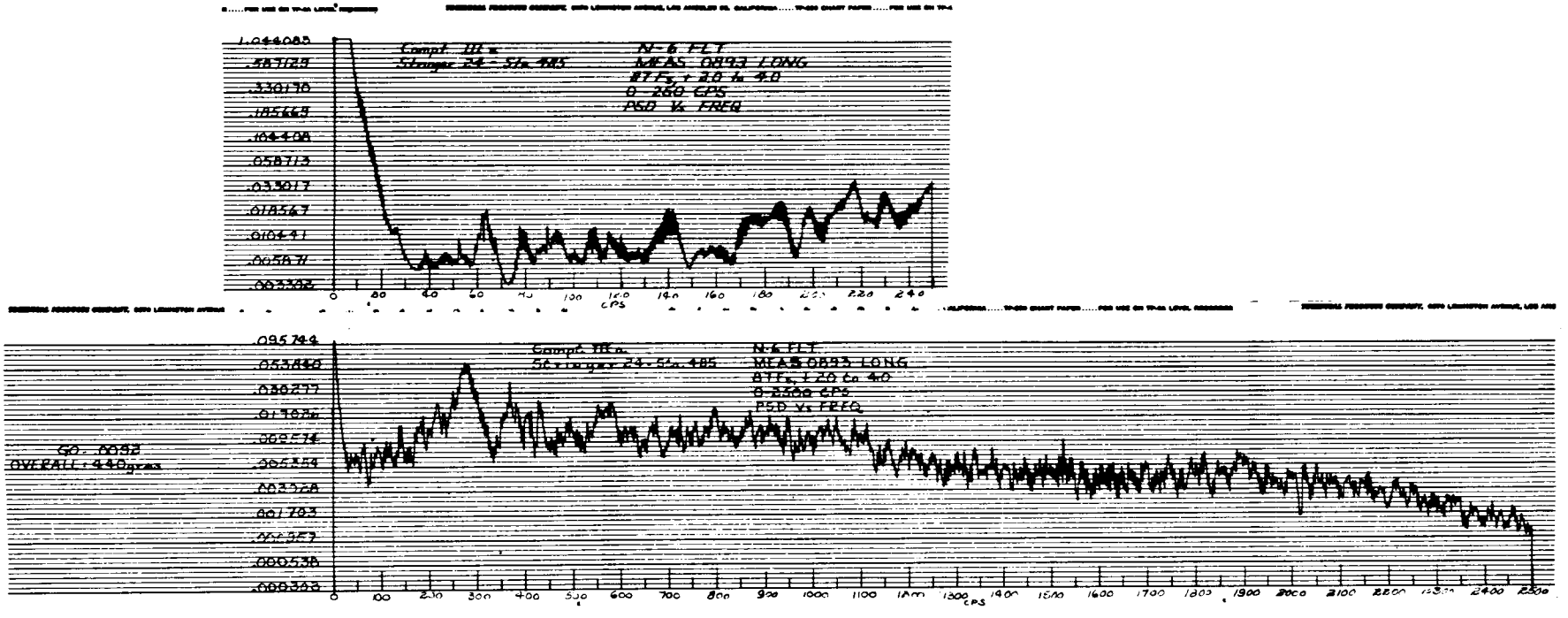

Compt. III n
Stringer 24 - 5½ 485
N-6 FLT
MEAS 0893 LONG
BTFs 120 to 40
0 2560 CPS
PSD Vs FREQ
.095744
.053840
.030277
.017026
.009574
.005384
.003028
.001703
.000958
.000538
.000303
GO. 0052
OVERALL: 440 grms
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 CPS 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500

Fig. 816

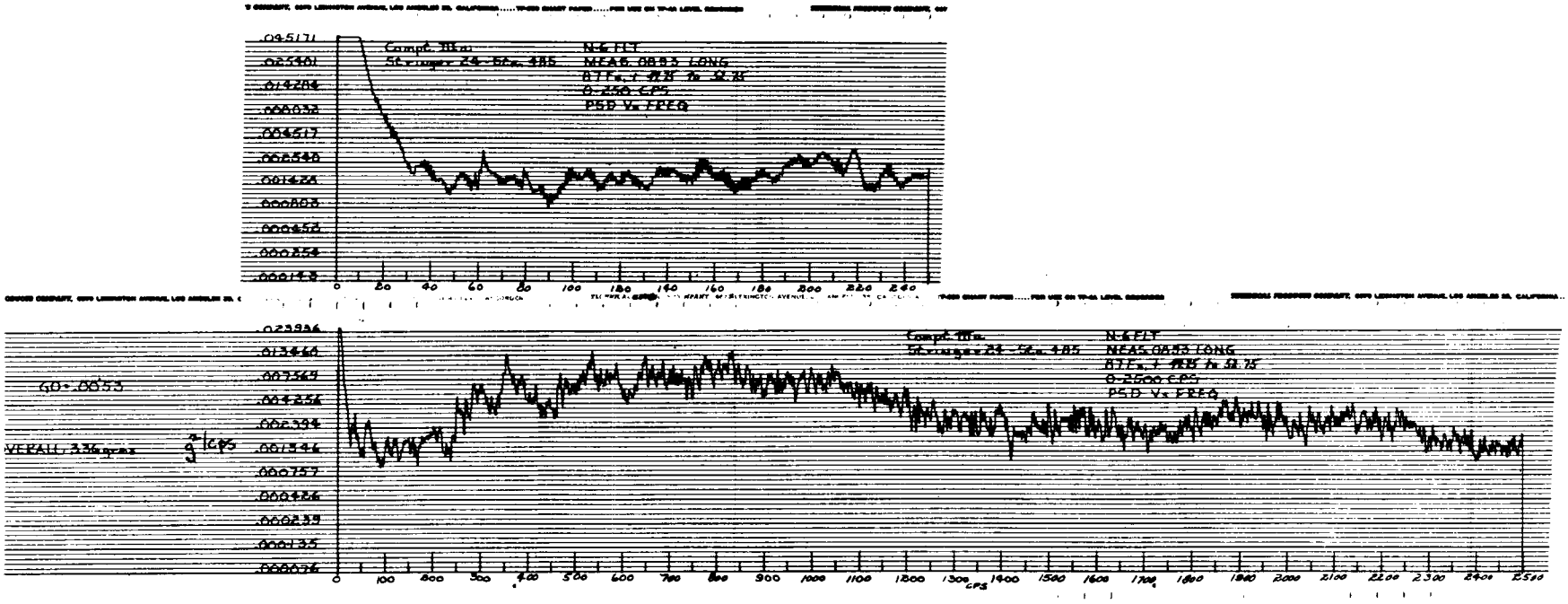

Compt. Illus.
Stringer 24-56 m 485
N & FLT
MEAS. 0853 LONG
0-250 CPS
PSD Vs FREQ
Compt. Illus.
Stringer 24-56 m 485
N & FLT
MEAS. 0853 LONG
0-2500 CPS
PSD Vs FREQ
G0=.0053
OVERALL 336 grms
g²/cps
CPS

Fig. 817

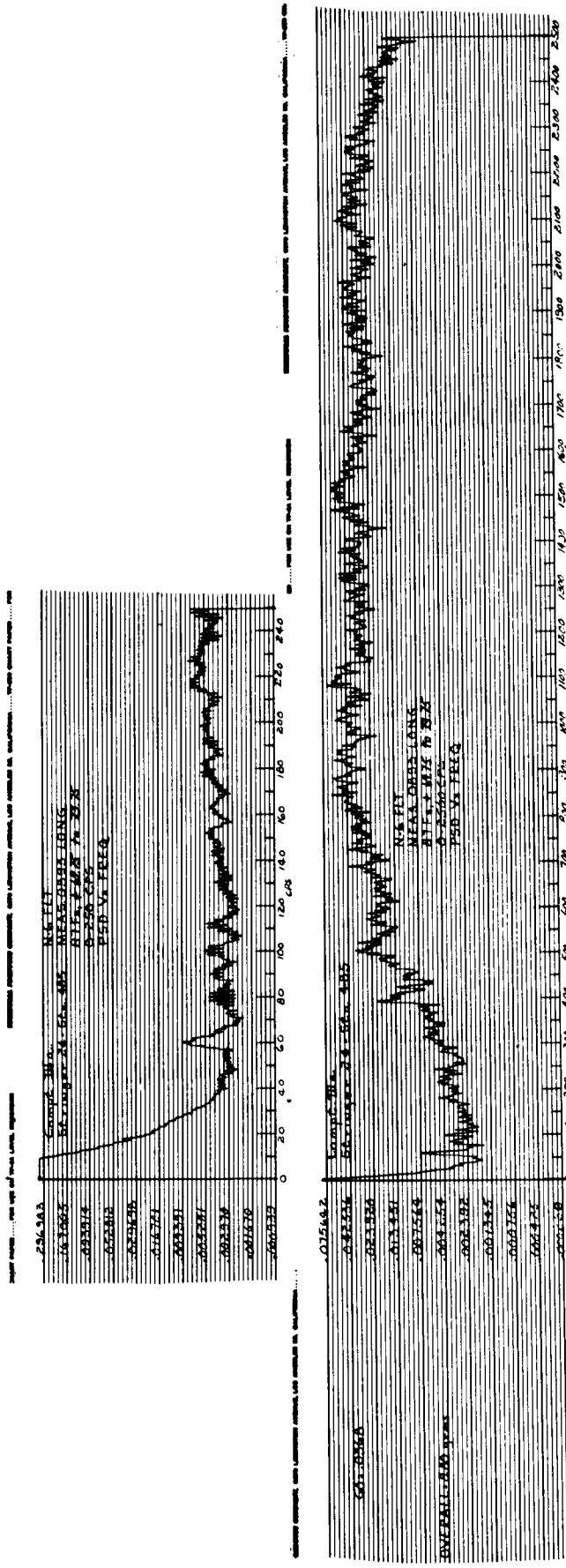


Fig. 818

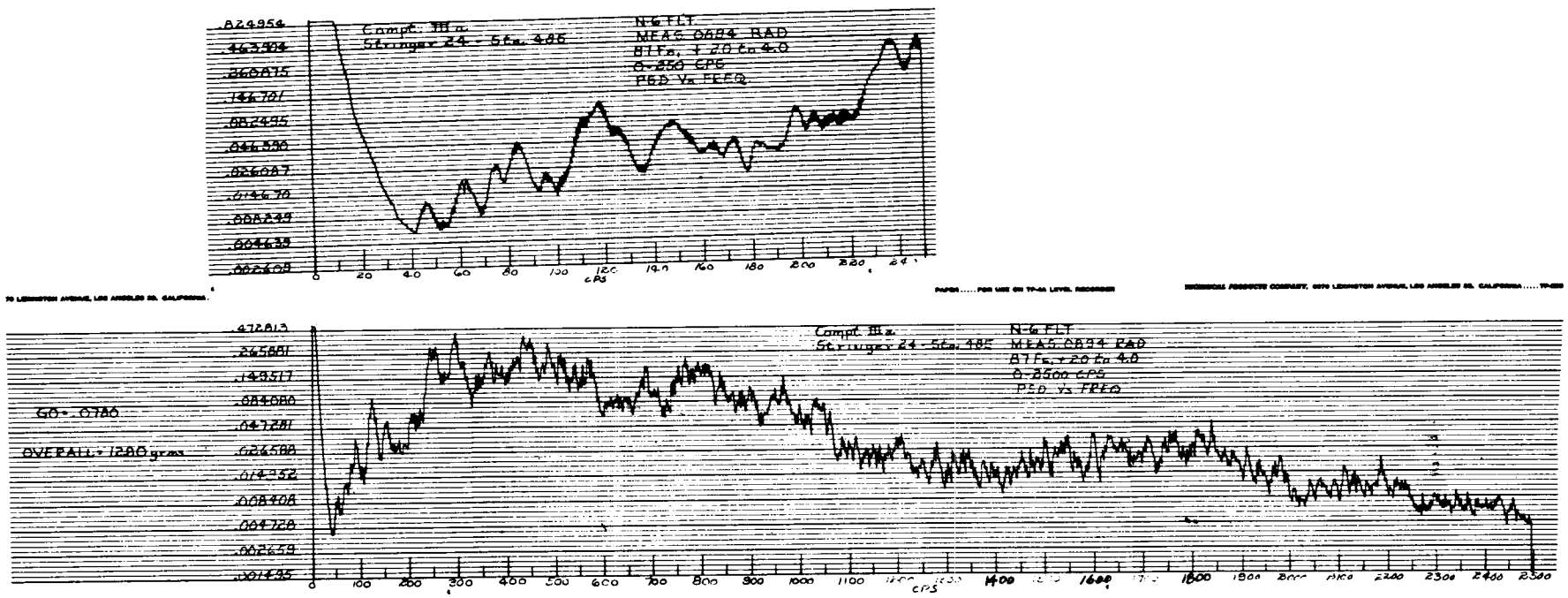

Compt. IIIa
Stringer 24 - Stn. 485
N-6 FLT
MEAS 0884 RAD
BTFm. + 20 Cn 4.0
0-850 CPS
PSD Vs FREQ
Compt. IIIa
Stringer 24 - Stn. 485
N-6 FLT
MEAS 0884 RAD
BTFm. + 20 Cn 4.0
0-3500 CPS
PSD Vs FREQ
GO - 0780
OVERALL - 1280 grms
CPS

Fig. 819

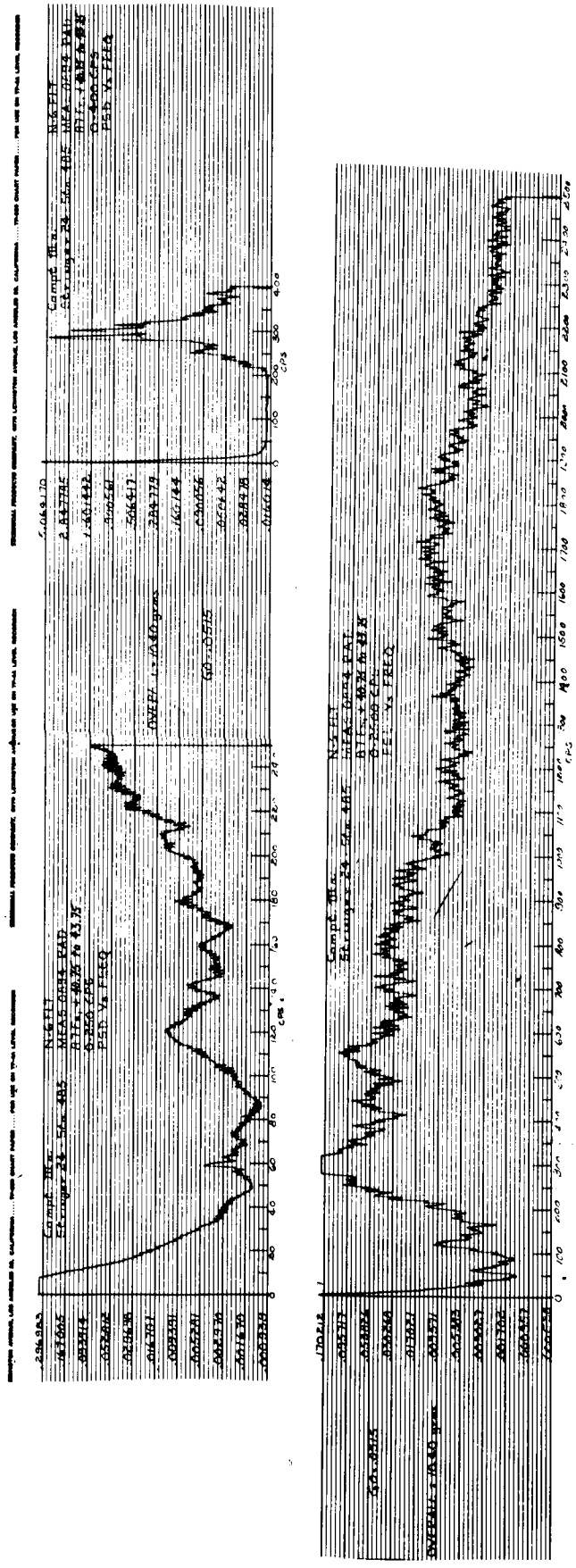


Fig. 820

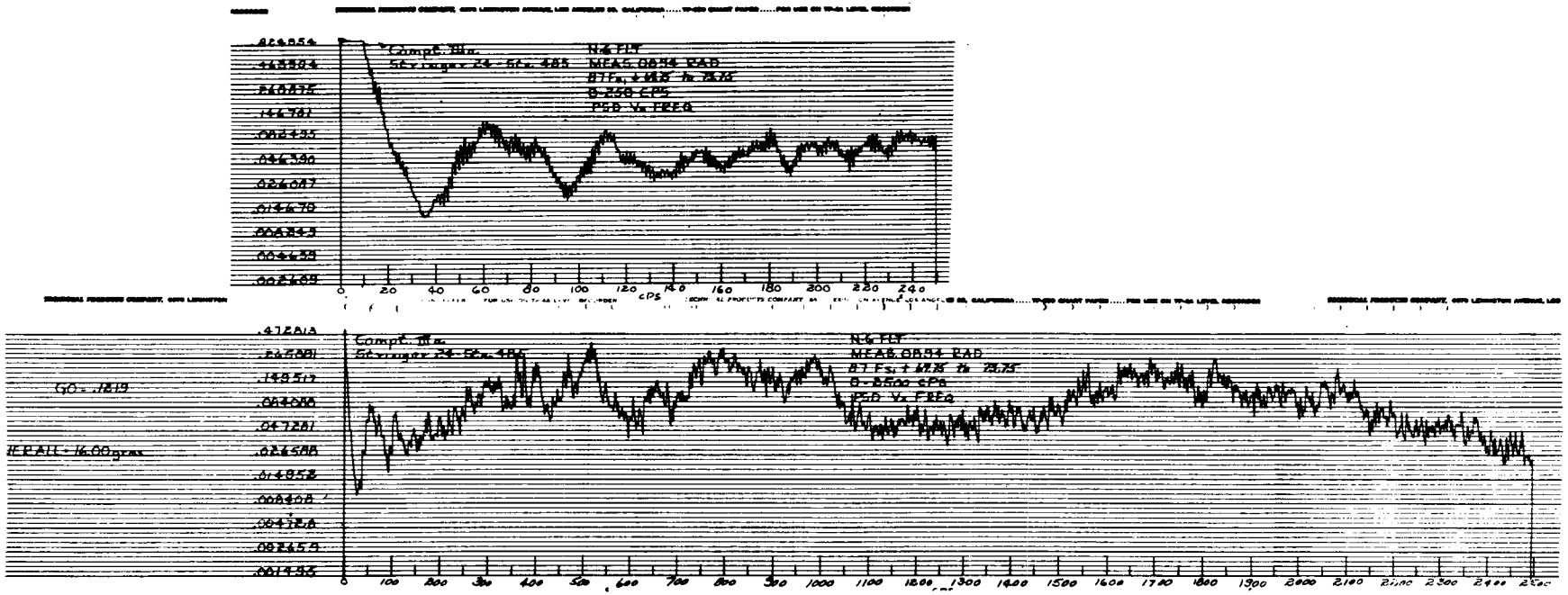

Compt. Mtn.
Schwinger 24-56m 485
N-S FLT
MEAS. 0.854 RAD
87 Fs. 1 MIX in 25.75
0-250 CPS
PSD Vs FREQ
CPS
Compt. Mtn.
Schwinger 24-56m 486
N-S FLT
MEAS. 0.854 RAD
87 Fs. 1 MIX in 25.75
0-2500 CPS
PSD Vs FREQ
GO: .1819
IF RAIL: 16.00 gms

Fig. 821

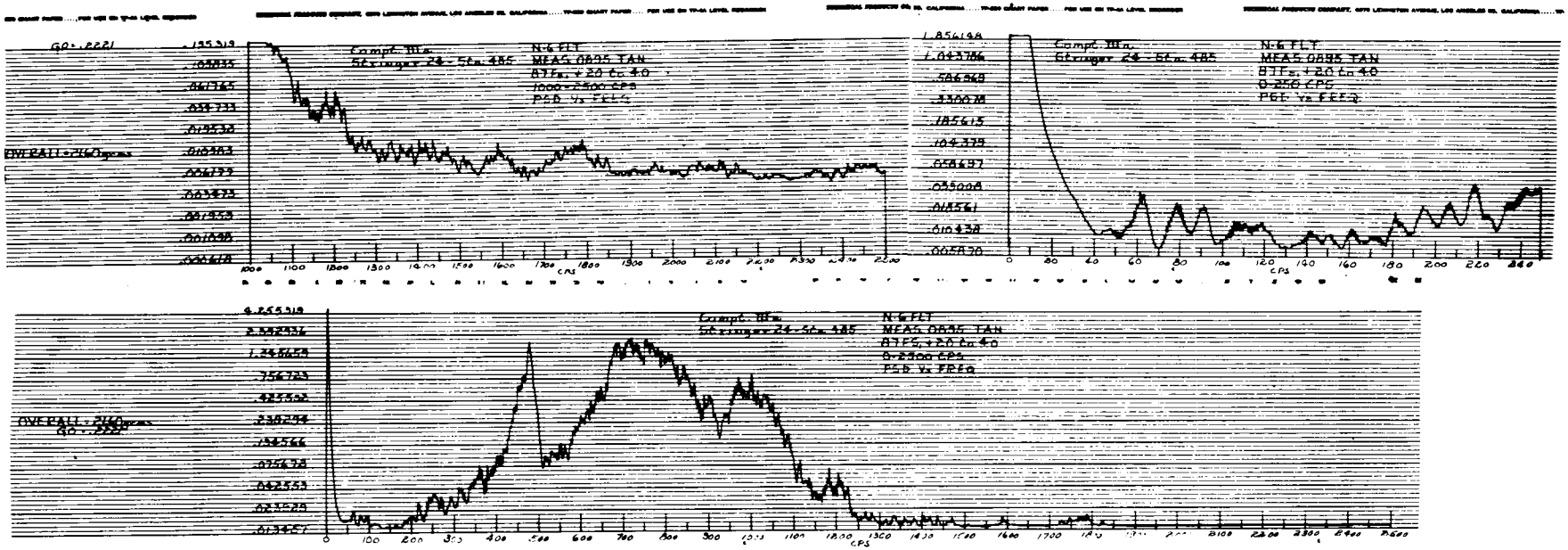

Compt. III a.
Stringer 24 - Sta. 485
N-6 FLT
MEAS. 0895 TAN
B7F$_{E_0}$ + 20 to 40
1000 - 2500 CPS
PSD Vs FREQ
Compt. III a.
Stringer 24 - Sta. 485
N-6 FLT
MEAS. 0895 TAN
B7F$_{E_0}$ + 20 to 40
0-250 CPS
PSD Vs FREQ
Compt. III a.
Stringer 24 - Sta. 485
N-6 FLT
MEAS. 0895 TAN
B7FS$_{E_0}$ + 20 to 40
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 822

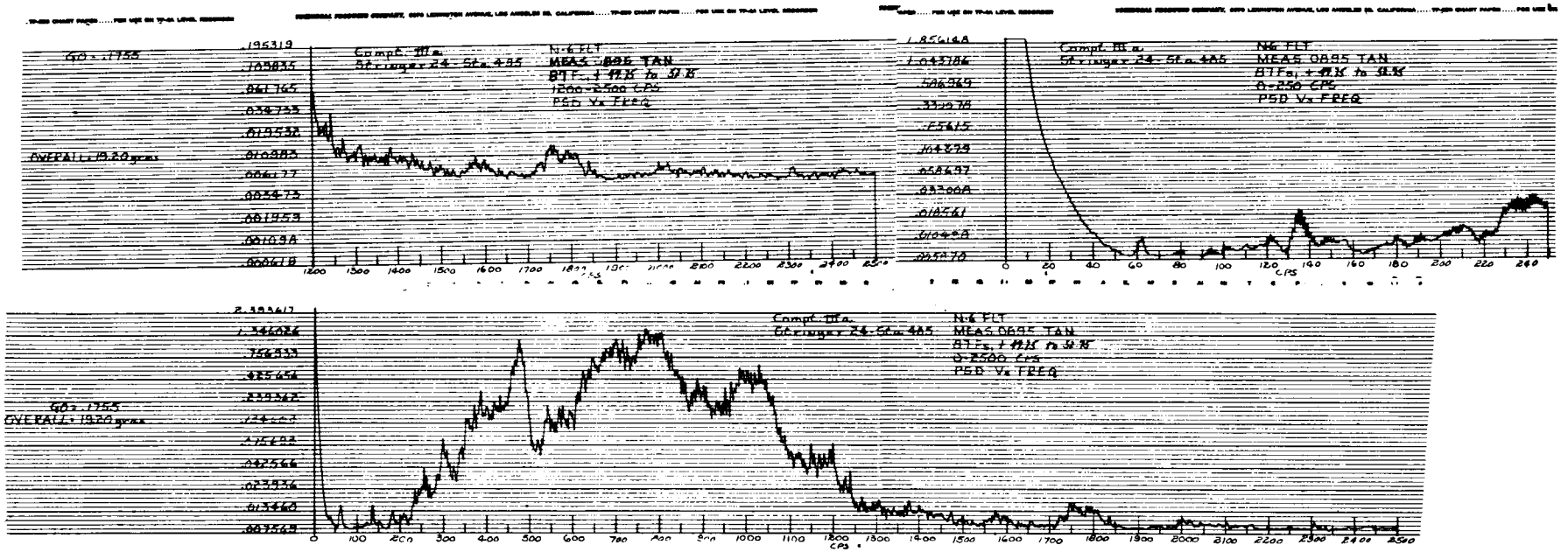

Compt. III a.
Stringer 24 - Sta. 485
N-6 FLT
MEAS .0895 TAN
BTFs1 + 49K to 51K
1200-2500 CPS
PSD Vs FREQ
GO = .1755
OVERALL = 19.20 grms
Compt. III a.
Stringer 24 - Sta. 485
N6 FLT
MEAS 0895 TAN
BTFs1 + 49K to 51K
0-250 CPS
PSD Vs FREQ
CPS
Compt. III a.
Stringer 24 - Sta. 485
N-6 FLT
MEAS 0895 TAN
BTFs1 + 49K to 51K
0-2500 CPS
PSD Vs FREQ
GO = .1755
OVERALL = 19.20 grms
CPS

Fig. 823

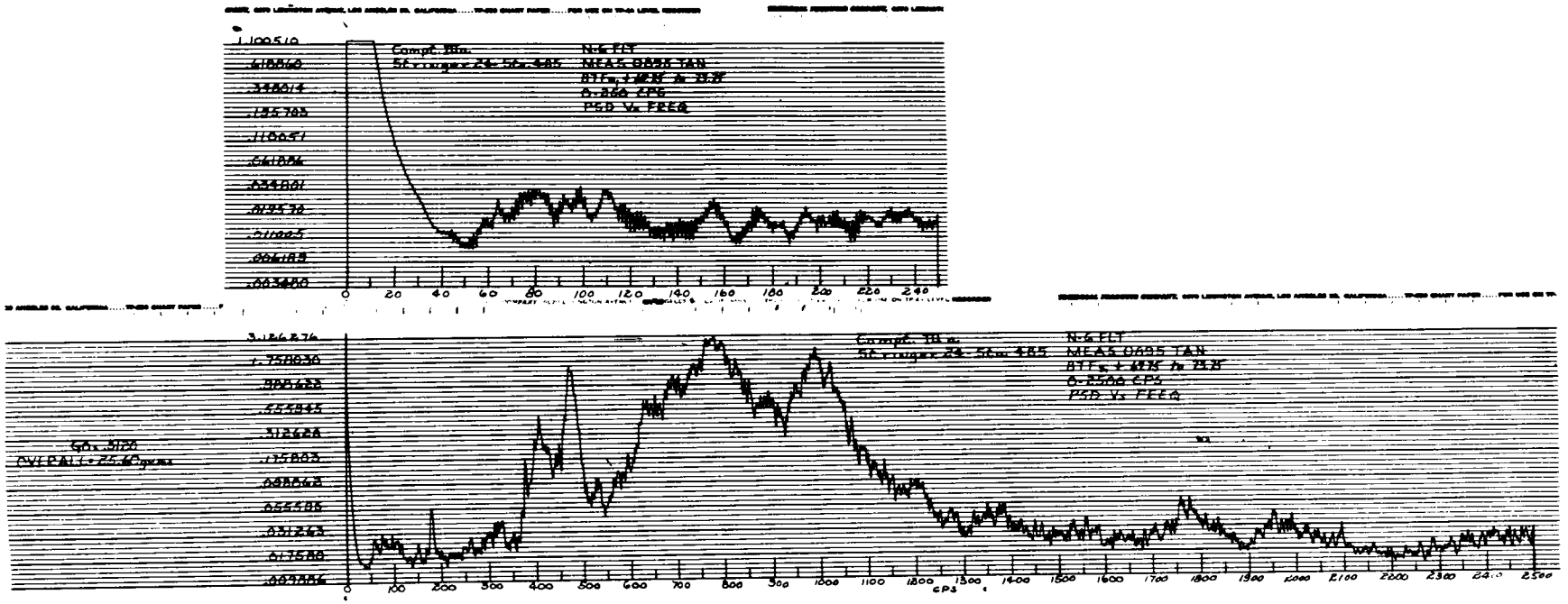
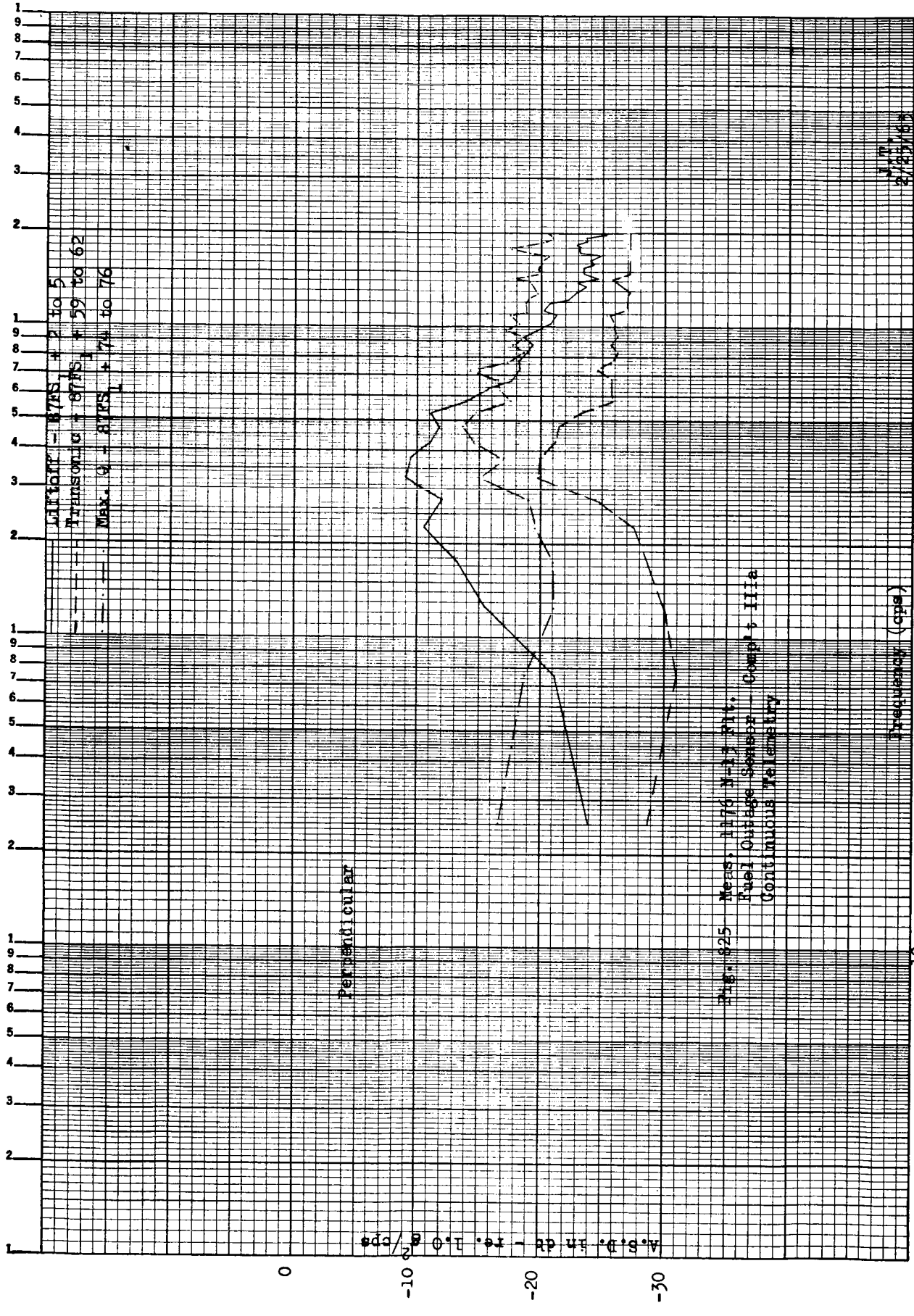
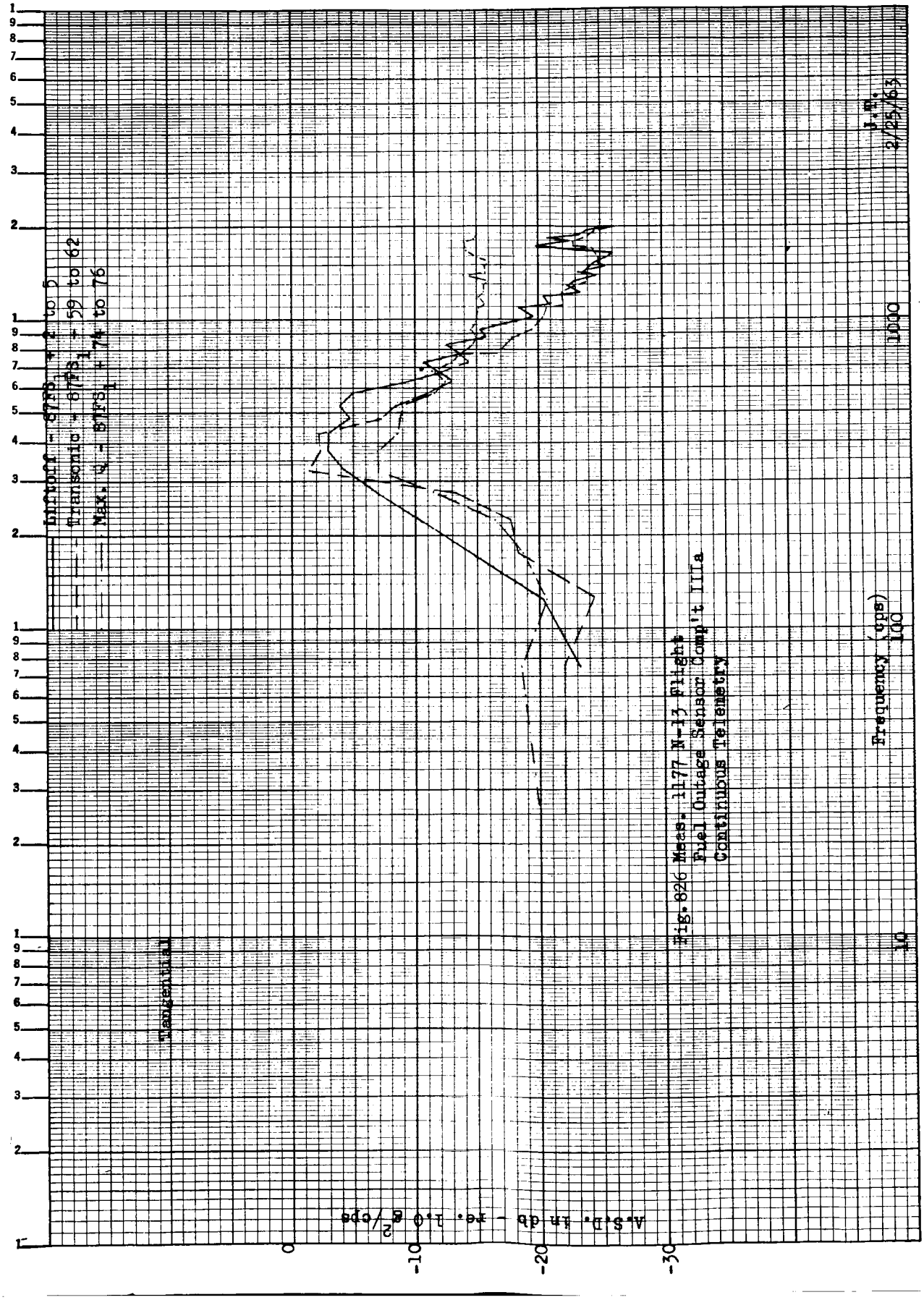

Compt. Bldg.
56 Cougar 24-56m-485
N-S FLT
MEAS 0895 TAN
0-250 CPS
PSD Vs FREQ
Compt. Bldg.
56 Cougar 24-56m-485
N-S FLT
MEAS 0895 TAN
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 824


Perpendicular
Frequency (cps)
1000
100
10
0
-10
-20
-30
A.S.D. in dB - re. 1.0 g²/cps
Fig. 825 Meas. 1176 ft. alt.
Fuel Quiesce Sonobuoy - Comet + IIIa
Continuous Telemetry
Mirfak - 87RS + 2 to 5
Transonic + 87RS + 59 to 62
Max. 9 - 87RS + 74 to 76


Fig. 826 Mes. 1177 X-15 Flight
Fuel Outage Sensor Comp't IIIa
Continuous Telemetry
Frequency (cps)
100
10
1000
J.F.
2/25/63
Transducer
Liftoff - 6'18" to 5
Transonic - 8'18" to 62
Max. Q - 8'38" to 76
A.S.D. in db - re. 1.0 g²/cps
0
-10
-20
-30

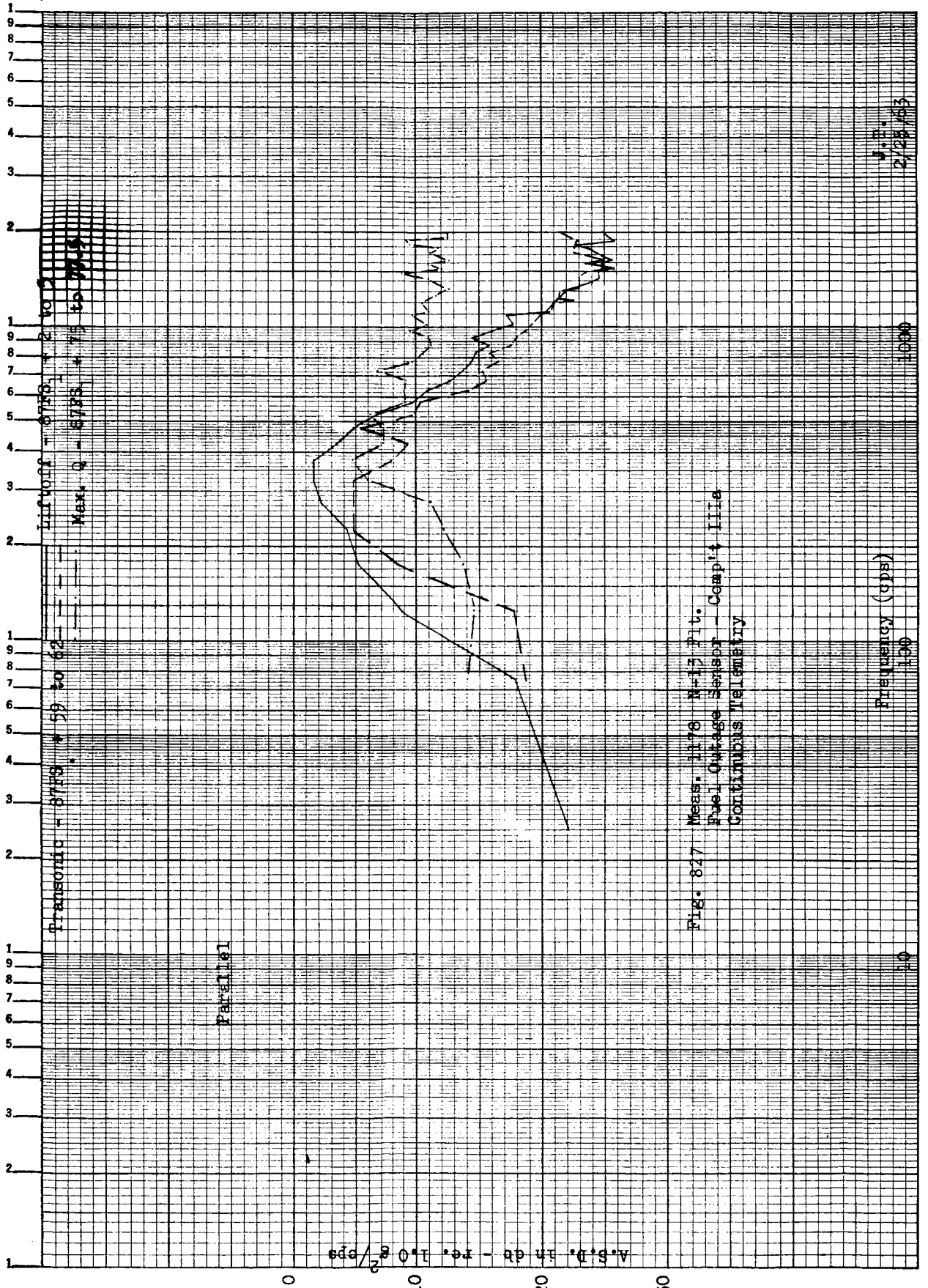
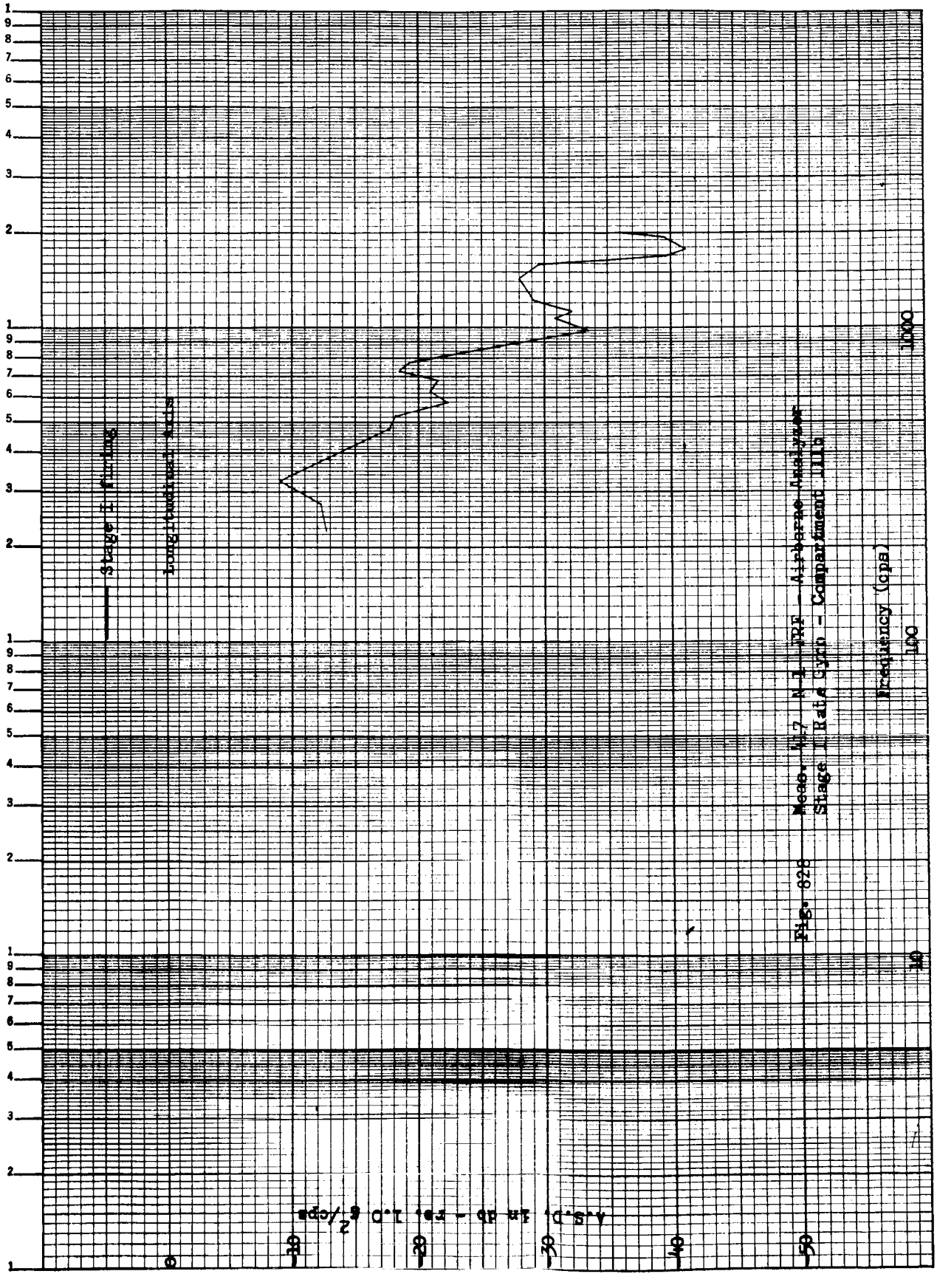


Fig. 827 Meas. 1178 N-12 Flt.
Fuel Outage Sensor — Comp't Fire
Continuous Telemetry


Stage I Gain - Compartment III b
Head #7 N.I.P.P.E. — Airborne Analyzer
Fig. 826
Frequency (cps)
100
1000
Stage I Functions
Longitudinal Axis
A.S.D. in db - re: 1.0 g²/cps

Stage I Firing
Lateral Axis
Fig. 825
Mean Amb N-2 PSE - Airborne Analyzer
Stage I Fwd Cryo - Compartment Amb
Frequency (cps)
A.S.D. in db - re. 1.0 g²/cps

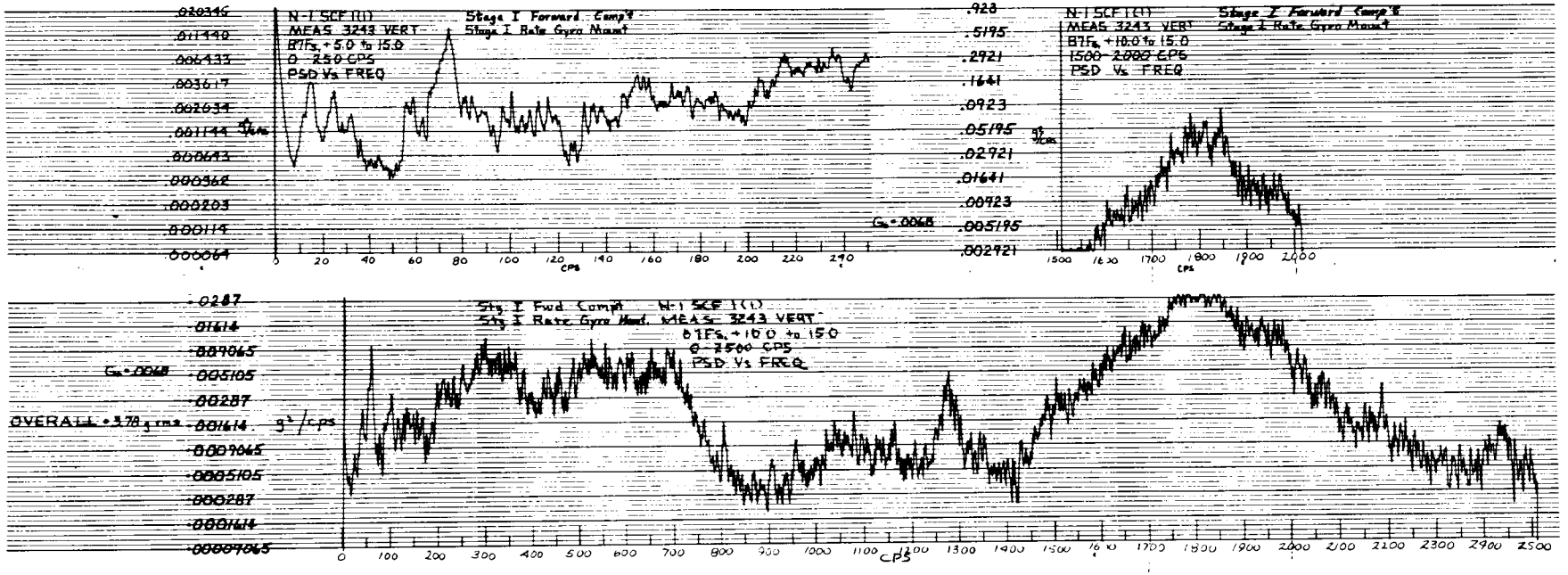
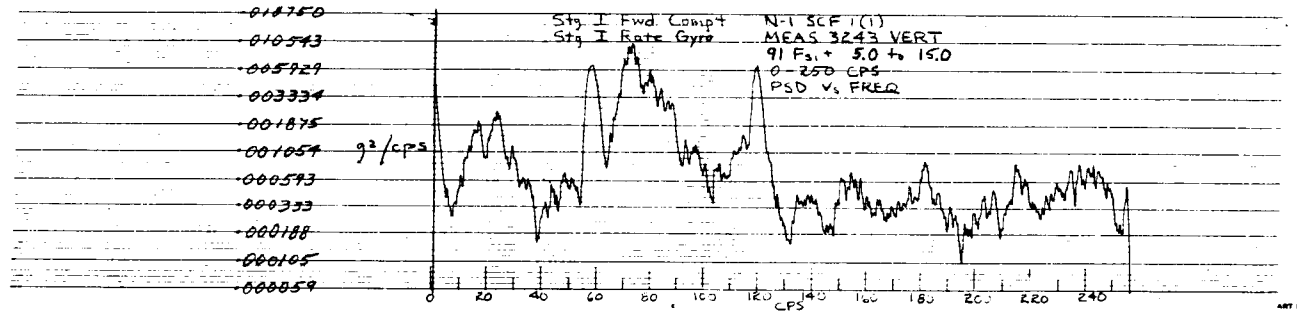

N-1 SCF (1)
MEAS 3243 VERT
BTFs +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stage I Forward Comp't
Stage I Rate Gyro Mount
N-1 SCF (1)
MEAS 3243 VERT
BTFs +10.0 to 15.0
1500-2000 CPS
PSD Vs FREQ
Stg I Fwd Comp't N-1 SCF (1)
Stg I Rate Gyro Mtd. MEAS 3243 VERT
BTFs +10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
OVERALL .378 g rms
CPS

Fig. 830


Stg I Fwd Compt
Stg I Rate Gyro
N-1 SCF 1(1)
MEAS 3243 VERT
91 Fs1 + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
g²/cps
CPS

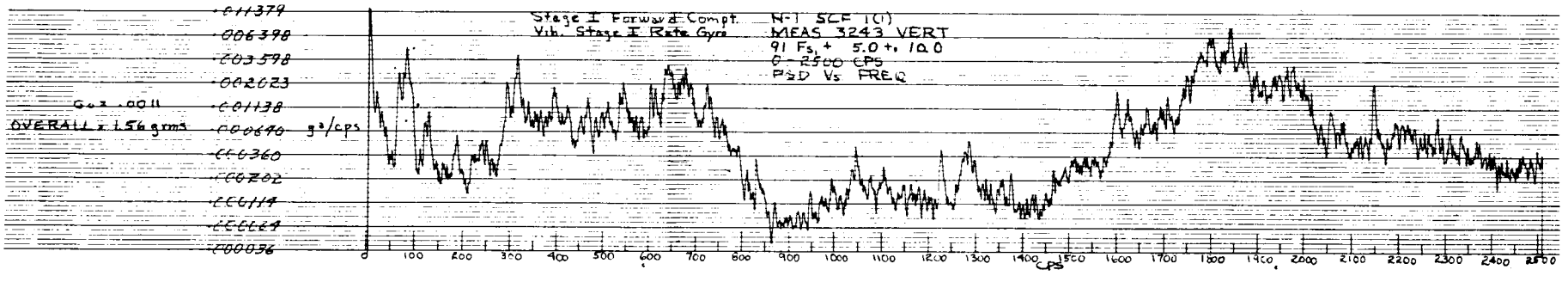

Stage I Forward Compt.
Vib. Stage I Rate Gyro
N-1 SCF 1(1)
MEAS 3243 VERT
91 Fs1 + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
Gx = .0011
OVERALL = 1.56 grms
g²/cps
CPS

Fig. 831

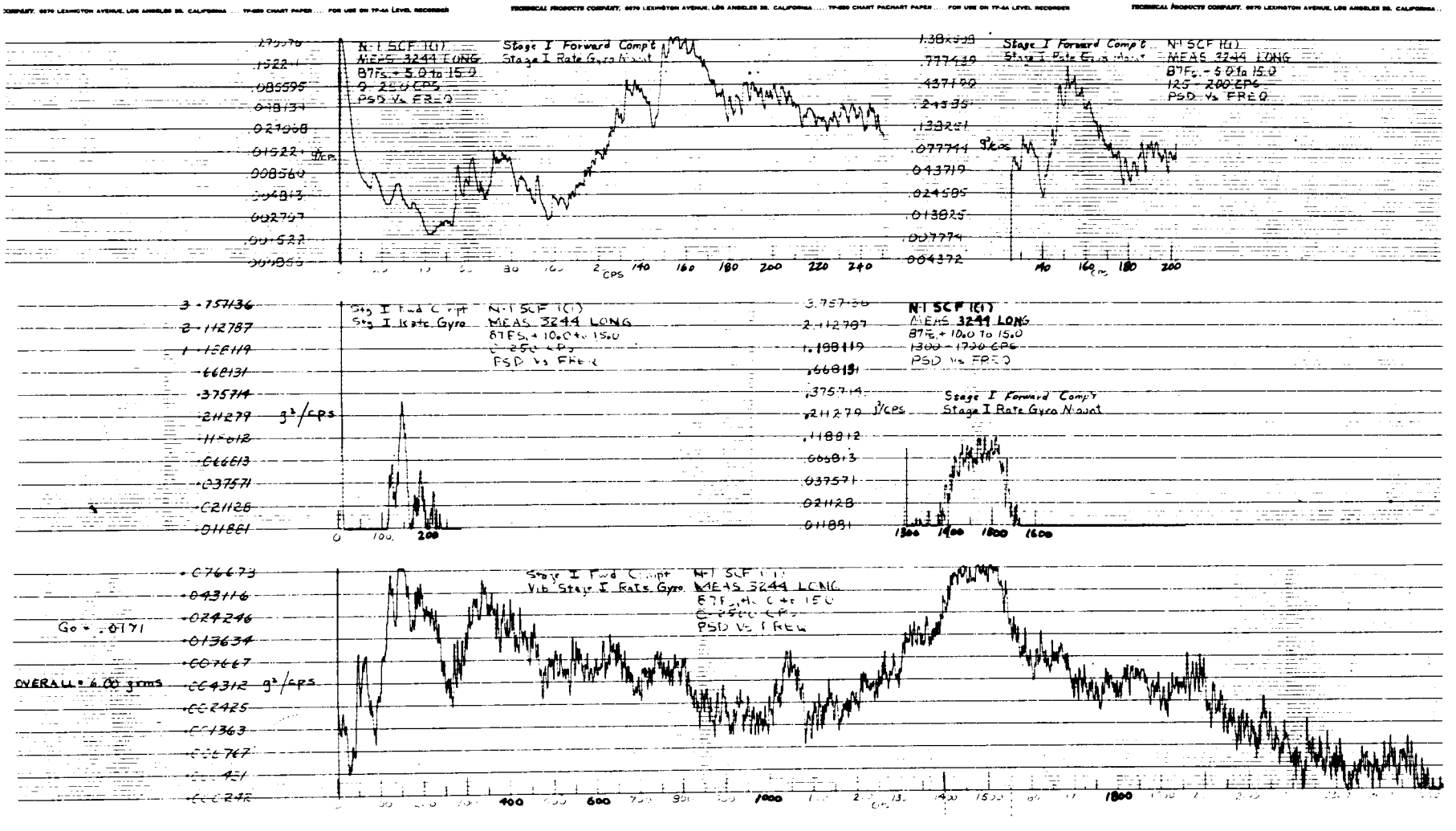

N-1 SCF 1(1)
MEAS 3244 LONG
87Fs = 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stage I Forward Compt
Stage I Rate Gyro Noise
g²/CPS
CPS
N-1 SCF 1(1)
MEAS 3244 LONG
87Fs = 10.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stg I Fwd Compt
Stg I Rate Gyro
N-1 SCF 1(1)
MEAS 3244 LONG
87Fs = 10.0 to 15.0
1300 - 1750 CPS
PSD Vs FREQ
Stage I Forward Compt
Stage I Rate Gyro Noise
Go = .0171
OVERALL = 6.00 grms
Stage I Fwd Compt
Vib Stage I Rate Gyro
N-1 SCF 1(1)
MEAS 3244 LONG
87Fs = 10.0 to 15.0
0-250 CPS
PSD Vs FREQ

Fig. 832

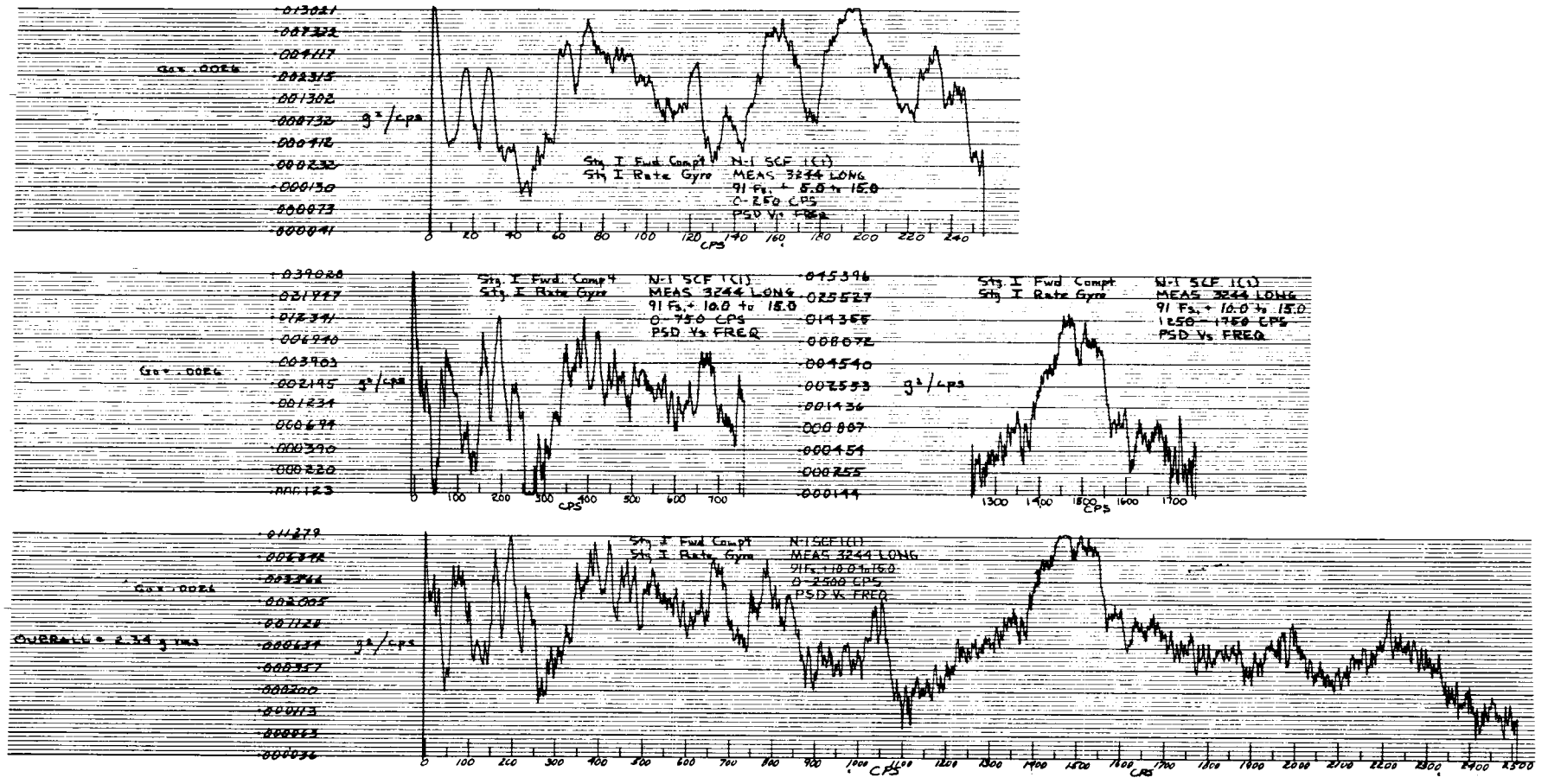

Stg I Fwd Compt
Stg I Rate Gyro
N-1 SCF 1(1)
MEAS 3244 LONG
91 Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stg. I Fwd. Compt
Stg. I Rate Gyro
N-1 SCF 1(1)
MEAS 3244 LONG
91 Fs, + 10.0 to 15.0
0-750 CPS
PSD Vs FREQ
Stg. I Fwd Compt
Stg I Rate Gyro
N-1 SCF 1(1)
MEAS 3244 LONG
91 Fs, + 16.0 to 15.0
1250-1750 CPS
PSD Vs FREQ
Stg I Fwd Compt
Stg I Rate Gyro
N-1 SCF 1(1)
MEAS 3244 LONG
91 Fs, + 10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 833

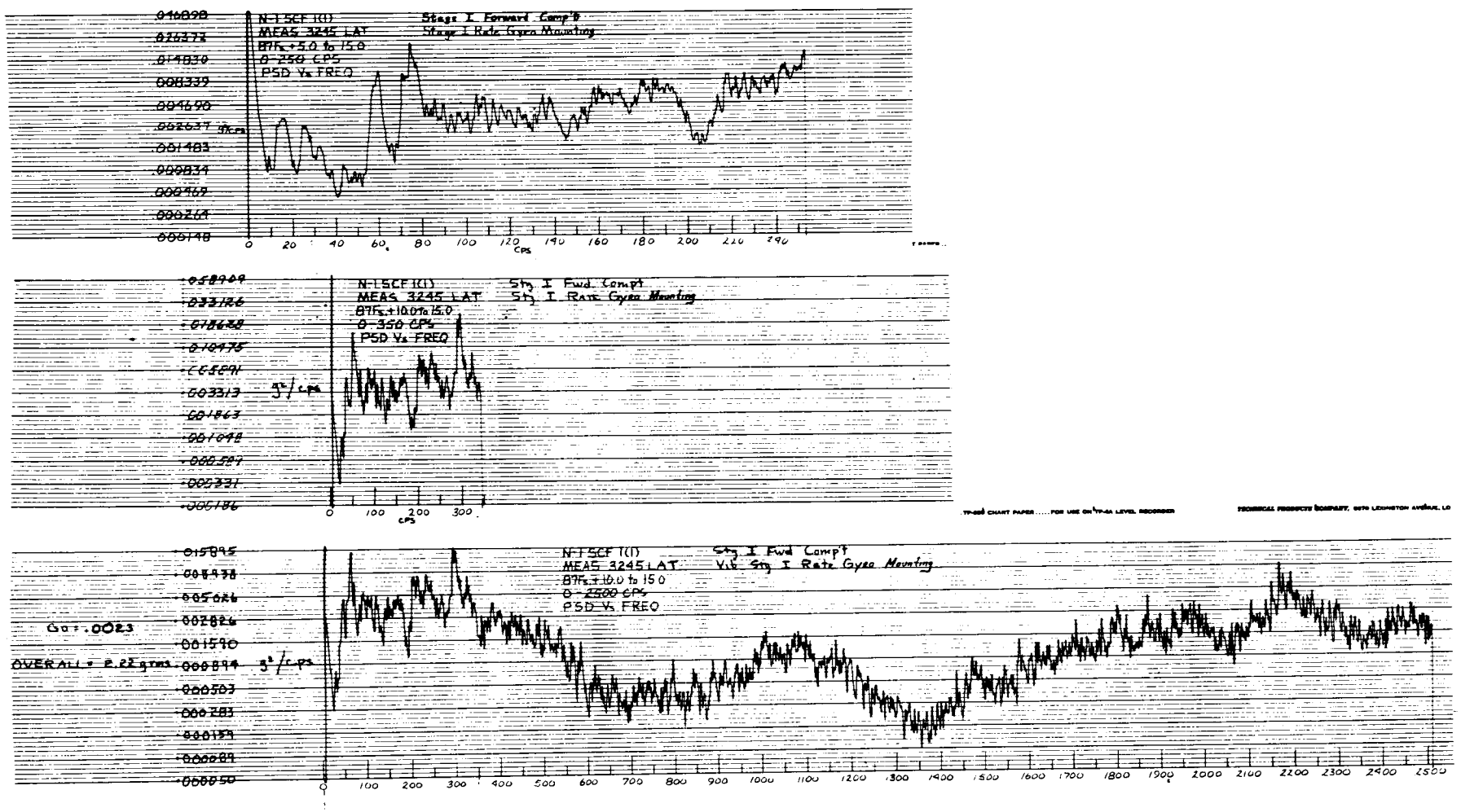

N-1 SCF 1(1)
MEAS 3245 LAT
Stage I Forward Comp't
Stage I Rate Gyro Mounting
0-250 CPS
PSD Vs FREQ
0-350 CPS
0-2500 CPS
Vib Stg I Rate Gyro Mounting
Gs=.0023
OVERALL = 8.22 grms
CPS

Fig. 834

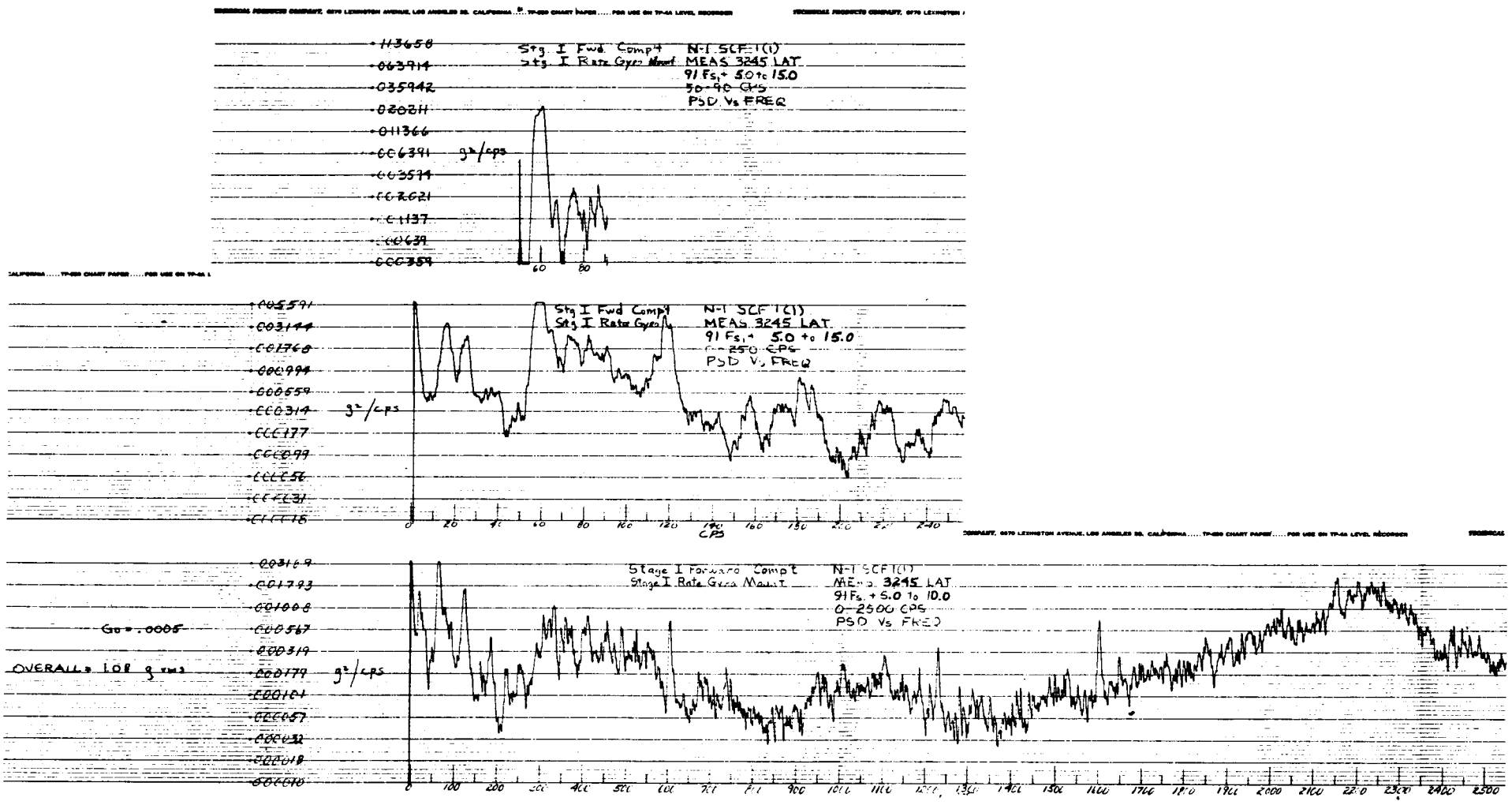
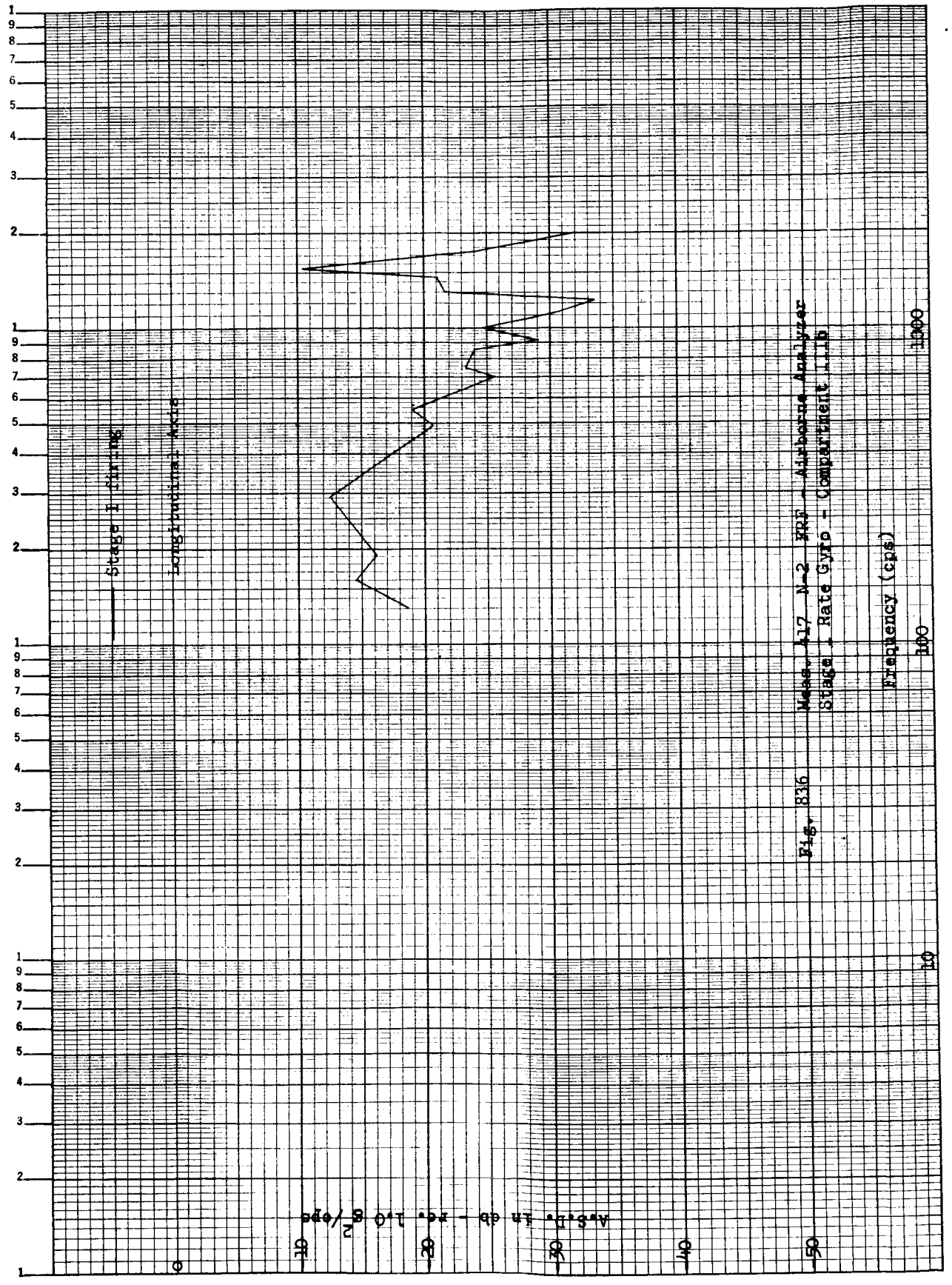
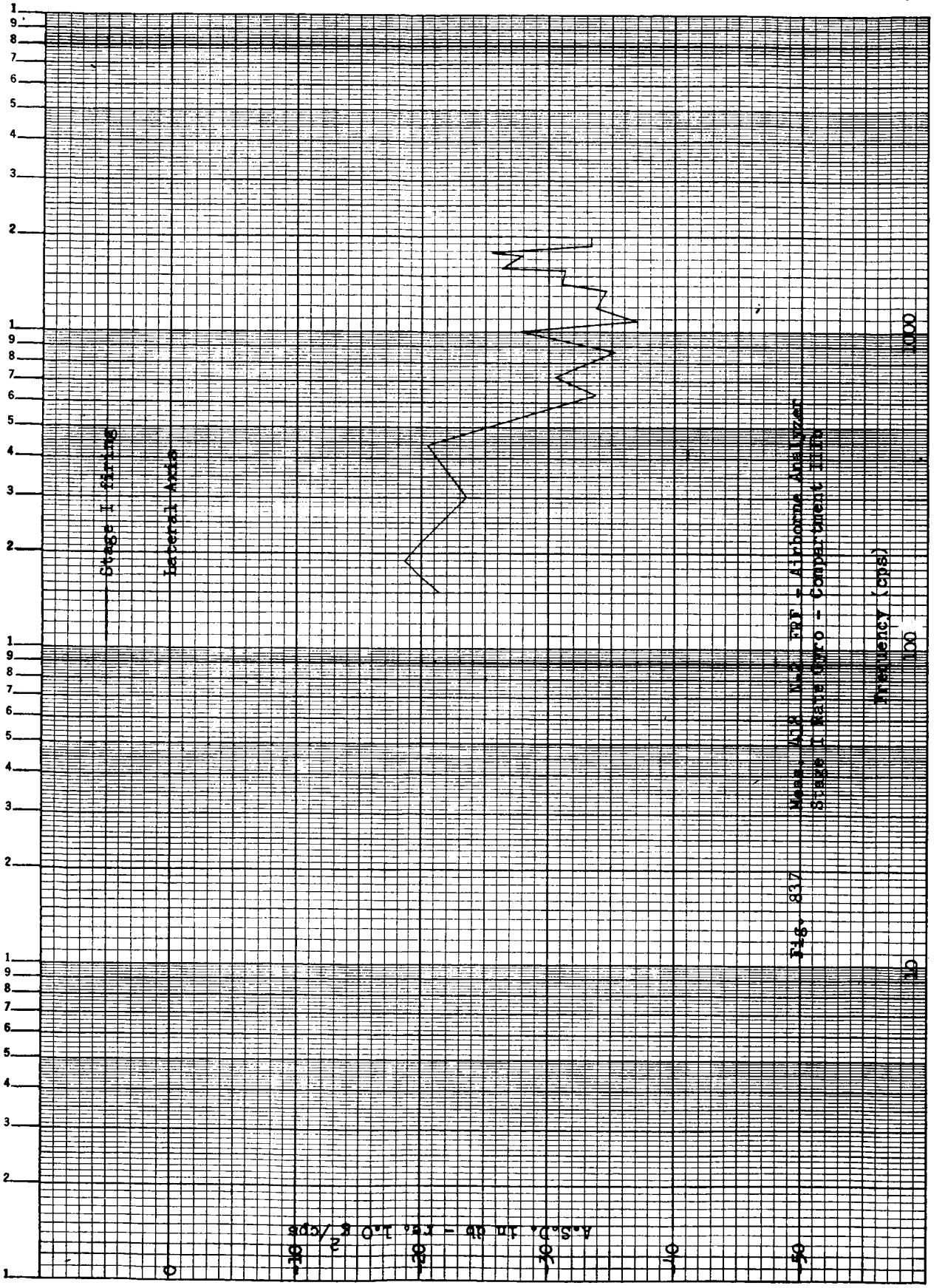

Stg I Fwd Compt
Stg I Rate Gyro Mount
N-1 SCF 1(1)
MEAS 3245 LAT
91 Fs, + 5.0 to 15.0
50-90 CPS
PSD Vs FREQ
g²/cps
Stg I Fwd Compt
Stg I Rate Gyro
N-1 SCF 1(1)
MEAS 3245 LAT
91 Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
g²/cps
CPS
Stage I Forward Compt
Stage I Rate Gyro Mount
N-1 SCF 1(1)
MEAS 3245 LAT
91 Fs, + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
g²/cps
Go = .0005
OVERALL = 10.8 g rms

Fig. 835


Stage I Curves
Longitudinal Axis
Meas. 417 N-2 FRF - Airborne Analyzer
Stage - Rate Gyro - Compartment I-1b
836
815
Frequency (cps)
1000
100
10
Abs. In db - rel. 1.0 g²/cps


Stage I Rating
Lateral Axis
Frequency (cps)
F-4C 837
Mean Alt. No. FRF - Airborne Analyzer
Stage I Rate Gyro - Compartment Time
A.S.D. in db - re. 1.0 g²/cps

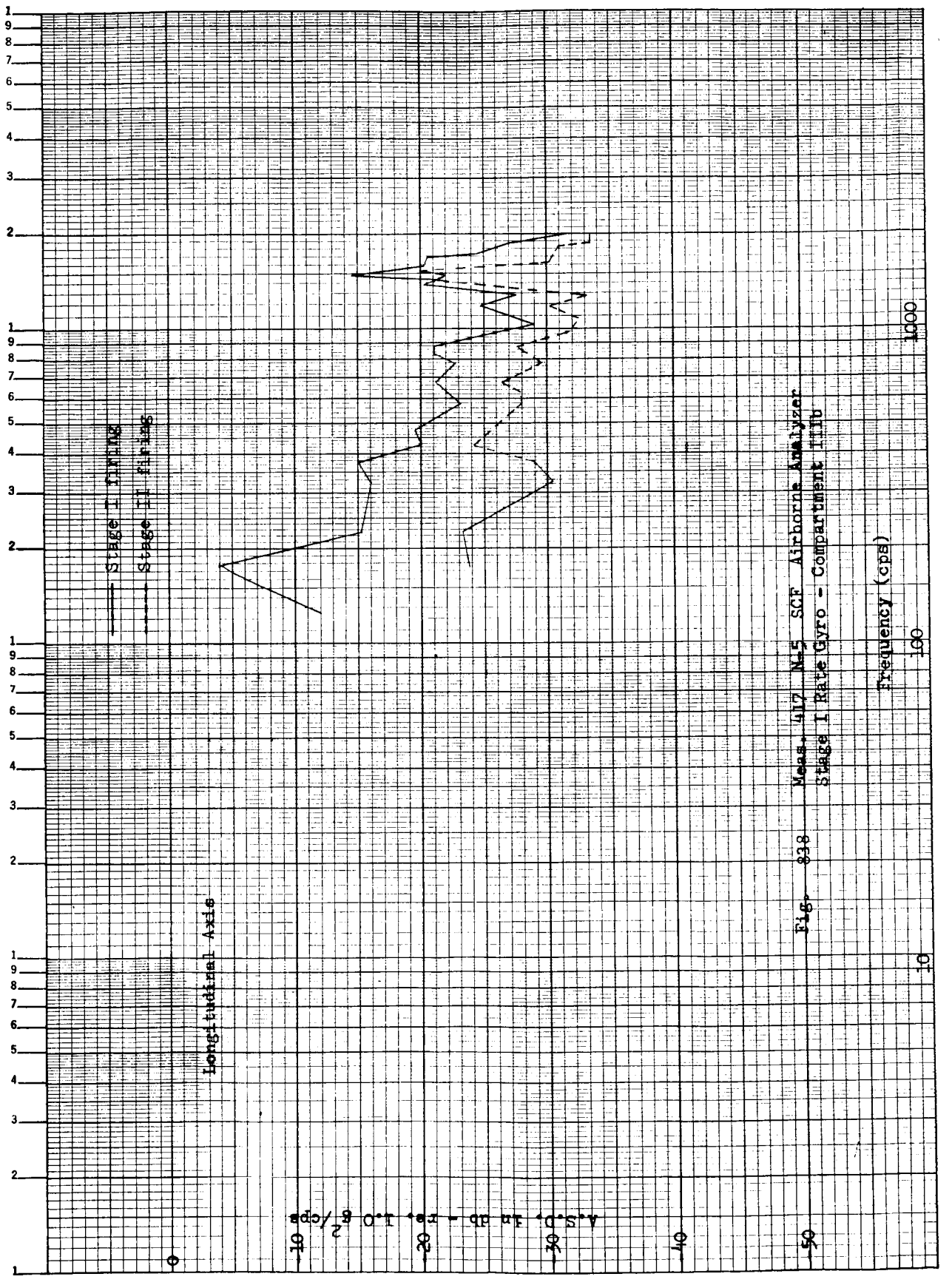

Stage I firing
Stage II firing
Longitudinal Axis
Frequency (cps)
Meas. 417 N-5 SCF Airborne Analyzer
Stage I Rate Gyro - Compartment #1b

Fig. 838

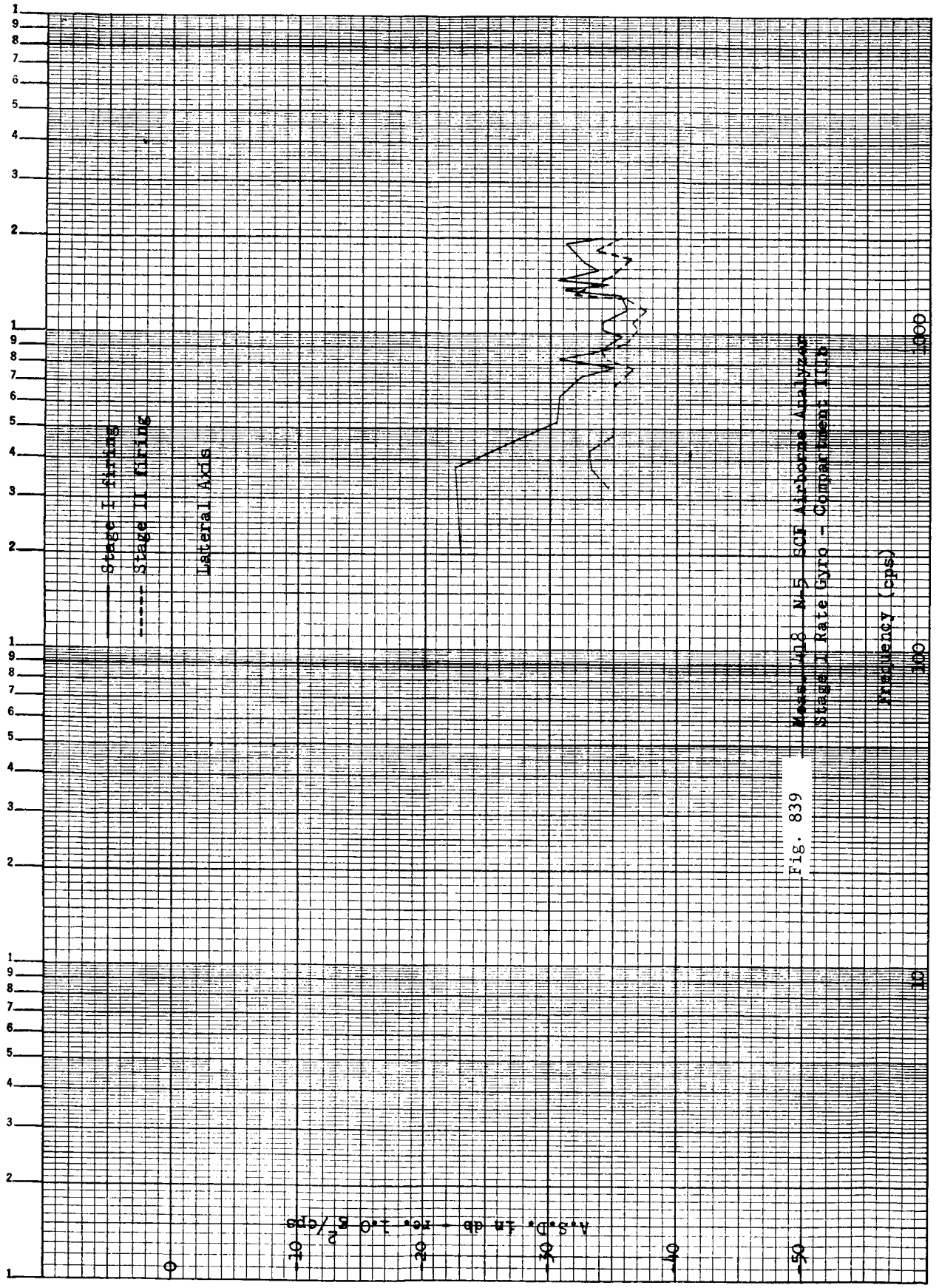

Stage I firing
Stage II firing
Lateral Axis
Mass 408 N5 SCR Airborne Analyzer
Stage II Rate Gyro - Compartment III
Frequency (cps)
A.S.D. in db - re. 1.0 R²/cps
0
-10
-20
-30
-40
-50
1
10
100

Fig. 839

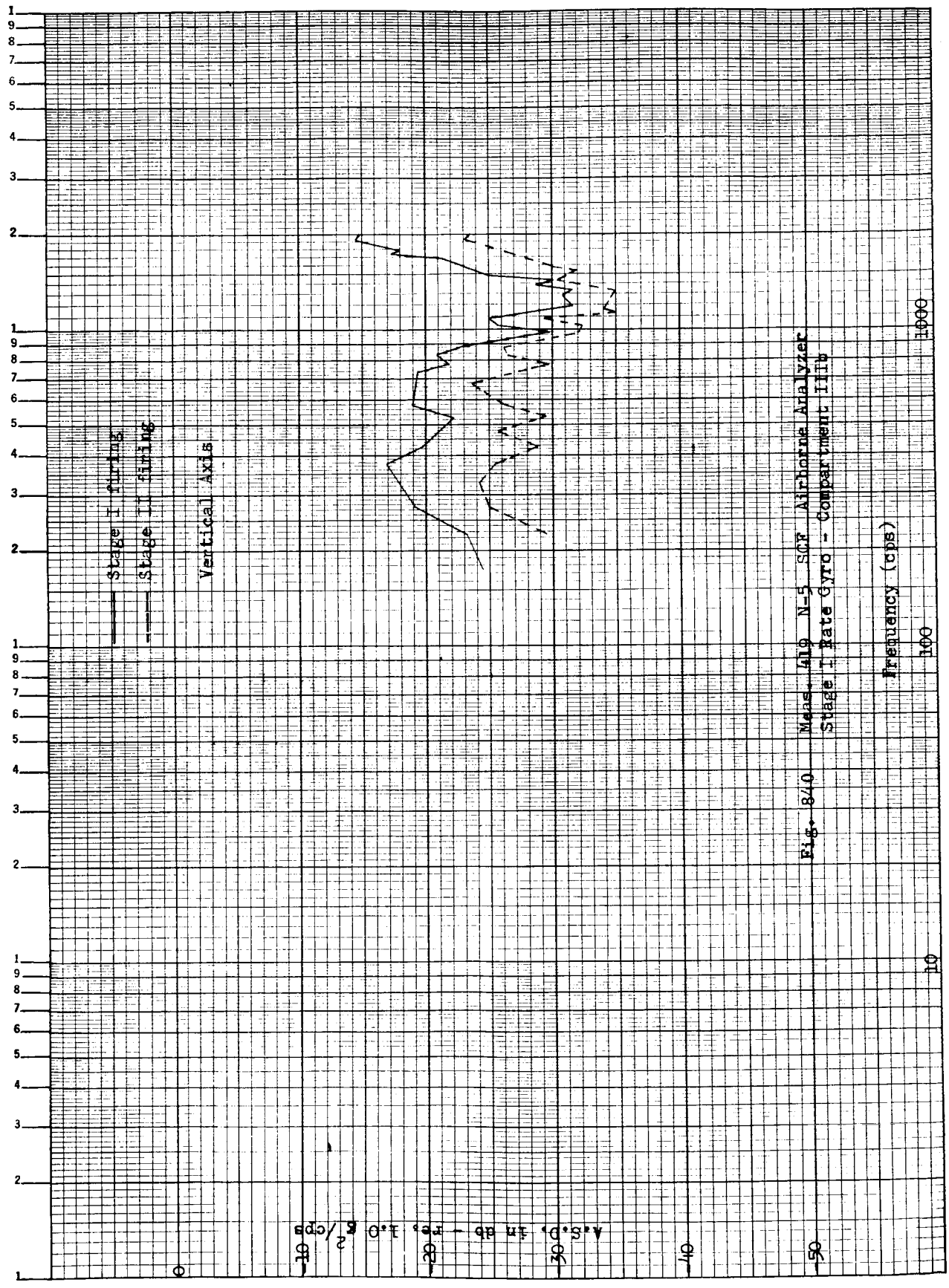


Fig. 8.10 Mars Lab N-5 SCF Airborne Analyzer
Stage I Rate Gyro - Compartment IIIb

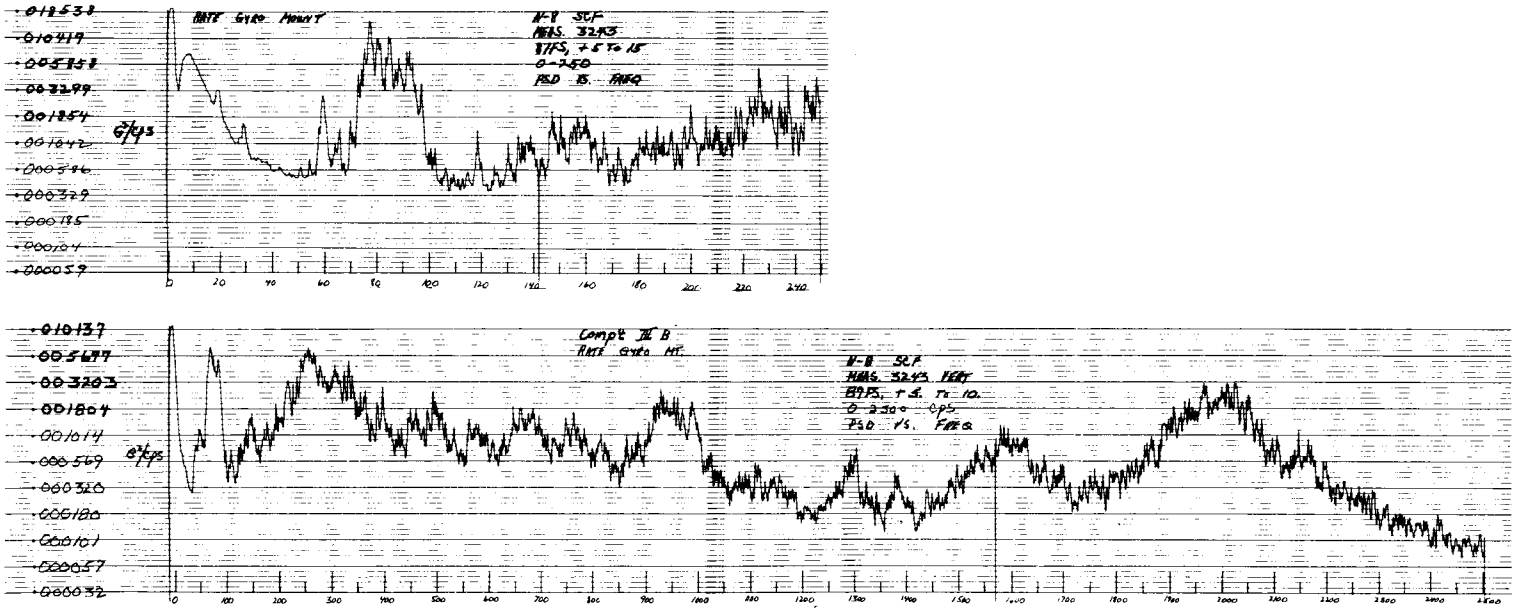

RATE GYRO MOUNT
N-B SCF
MEAS. 3243
B/FS, +5 TO 15
0-250
PSD VS. FREQ
6°/s
Comp't 'A' B
RATE GYRO MT.
N-B SCF
MEAS. 3243 FEET
B9 FS, +5. TO 10.
0-250 CPS
PSD VS. FREQ.
8°/s

Fig. 841

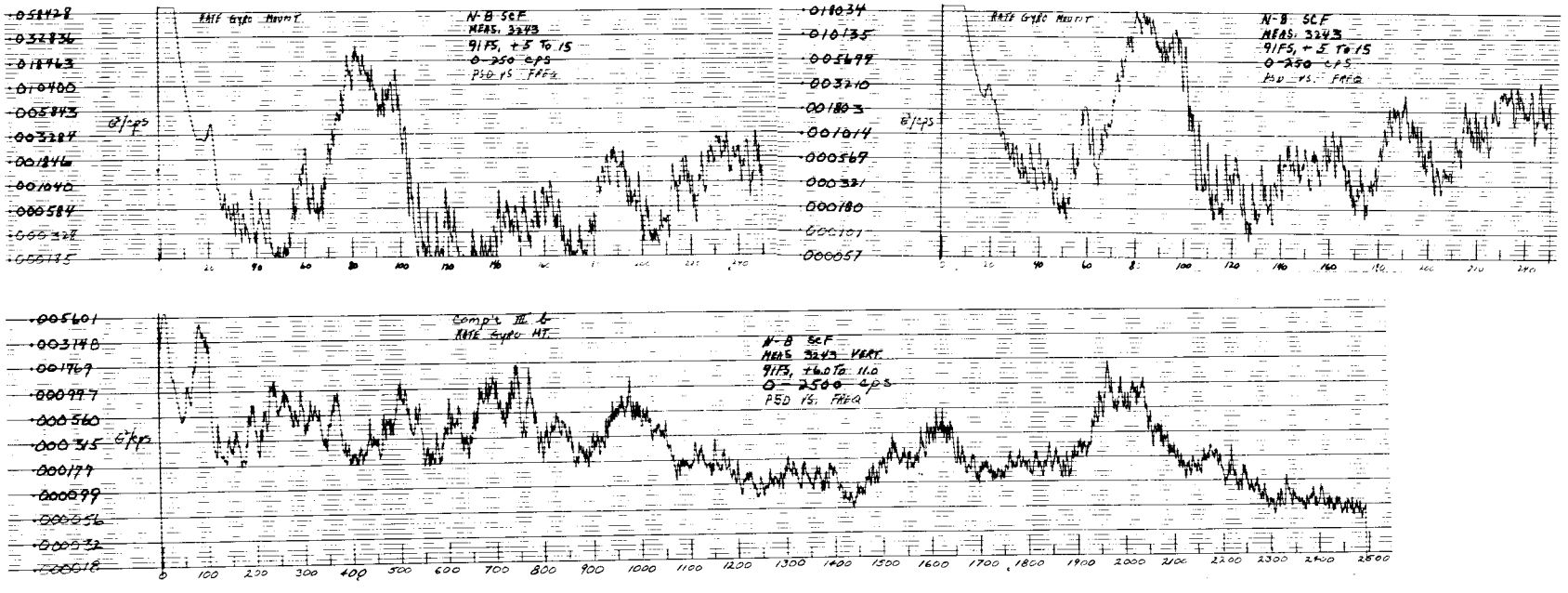

RATE GYRO MOUNT
N-B SCF
MEAS. 3243
91FS, +5 TO 15
0-250 cps
PSD VS. FREQ
G²/cps
RATE GYRO MOUNT
N-B SCF
MEAS. 3243
91FS, +5 TO 15
0-250 cps
PSD VS. FREQ
G²/cps
Comp'r III b
RATE GYRO MT.
N-B SCF
MEAS 3243 VERT.
91FS, +6.0 TO 11.0
0-2500 cps
PSD VS. FREQ
G²/cps
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500

Fig. 842

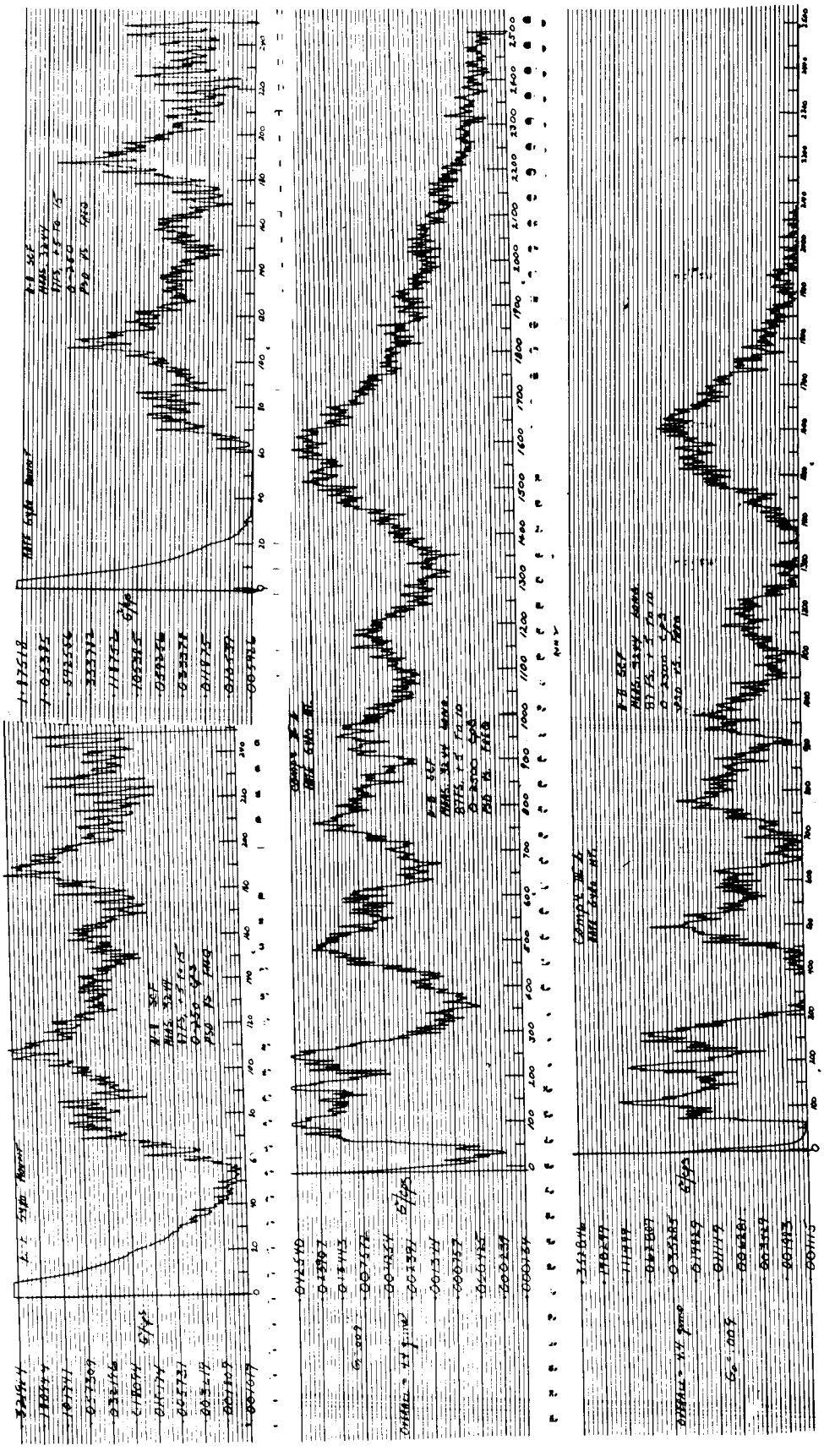


Fig. 843

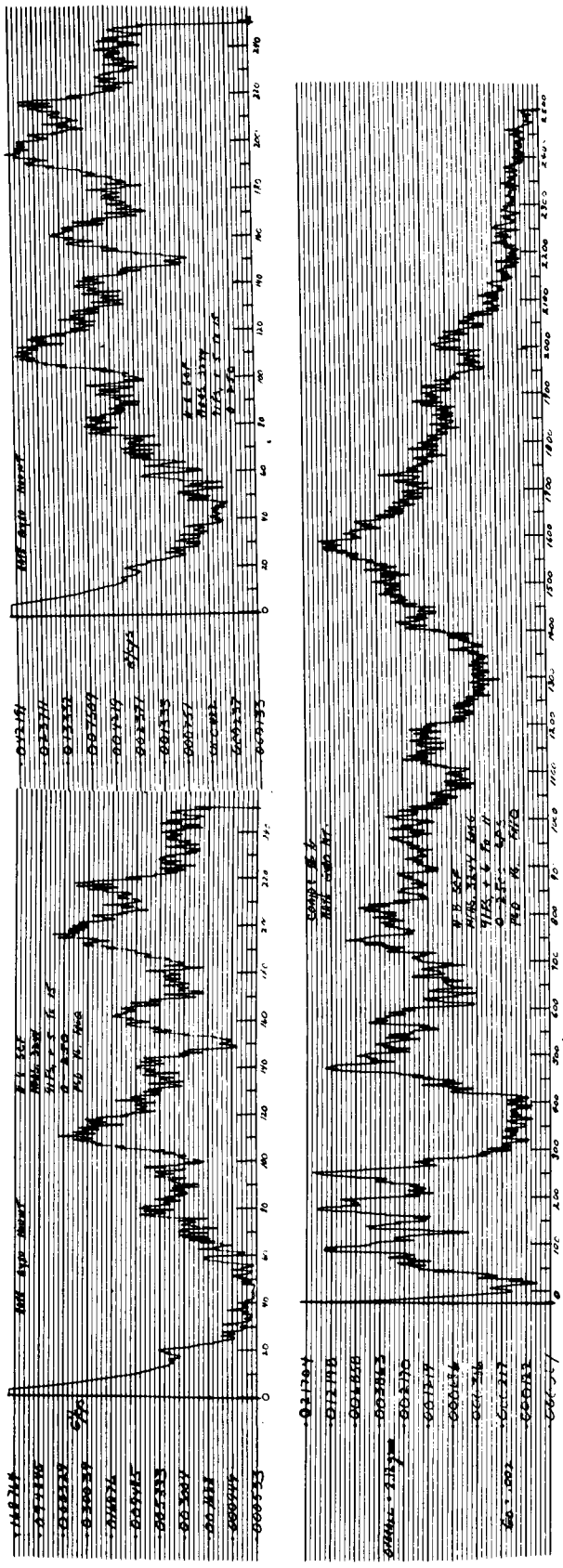


Fig. 844

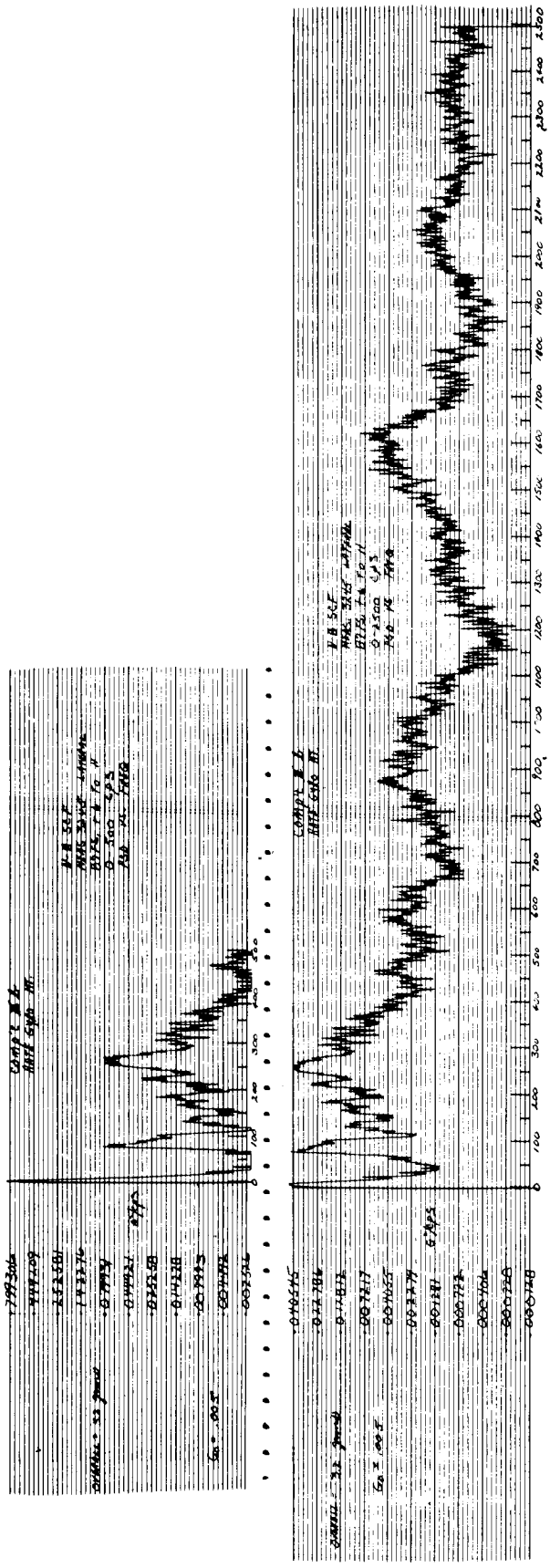


Fig. 845

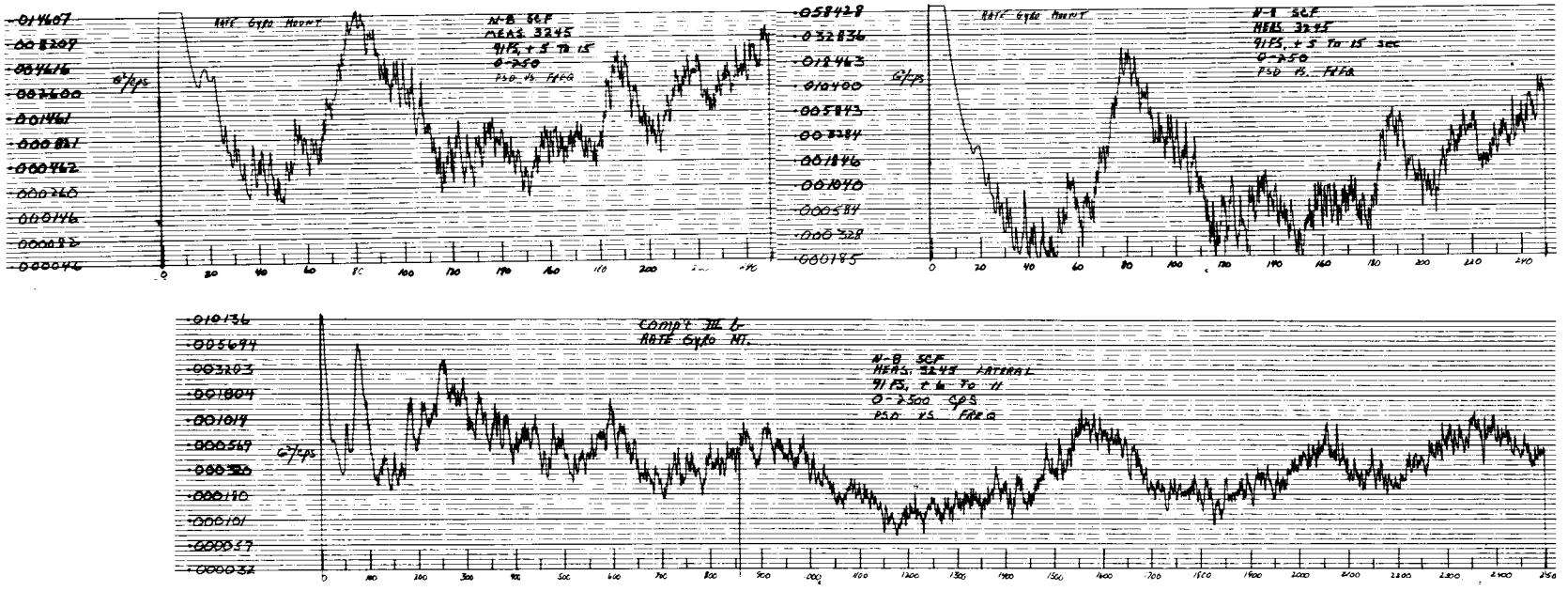
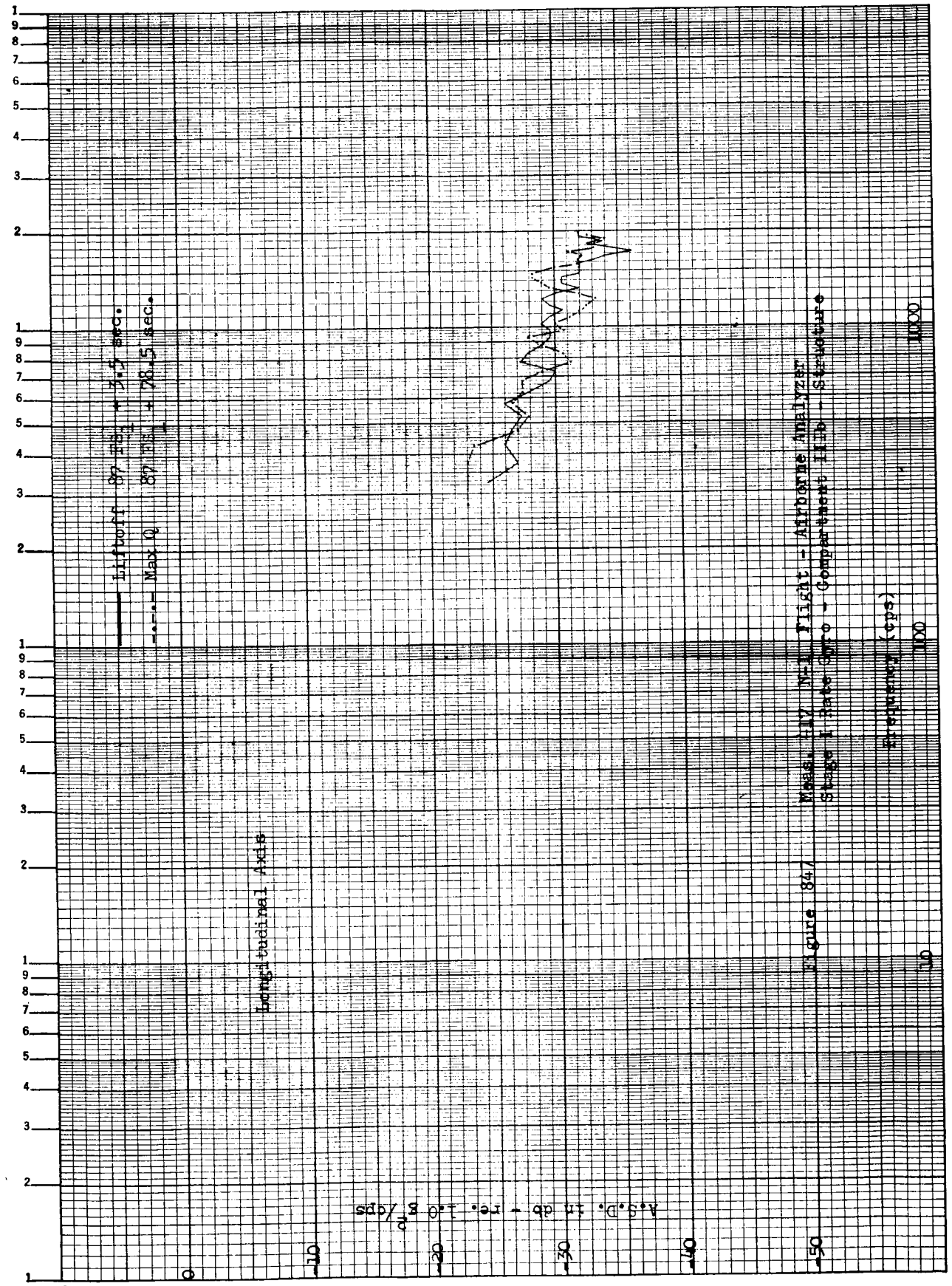

Comp't III b
ROTE Cyto NT.
N-8 SCF
MEAS. 3245 LATERAL
9 FS, t & To 11
0-2500 cps
PSD vs FREQ

Fig. 846


Liftoff 87 sec. + 2.5 sec.
Max Q 87 sec. + 28.5 sec.
Longitudinal Axis
A.S.D. in db re. 1.0 g²/cps
Frequency (cps)
Figure 847 Mass Fluctuation Analyzer
Stage I data Gemini-Titan II Spacecraft

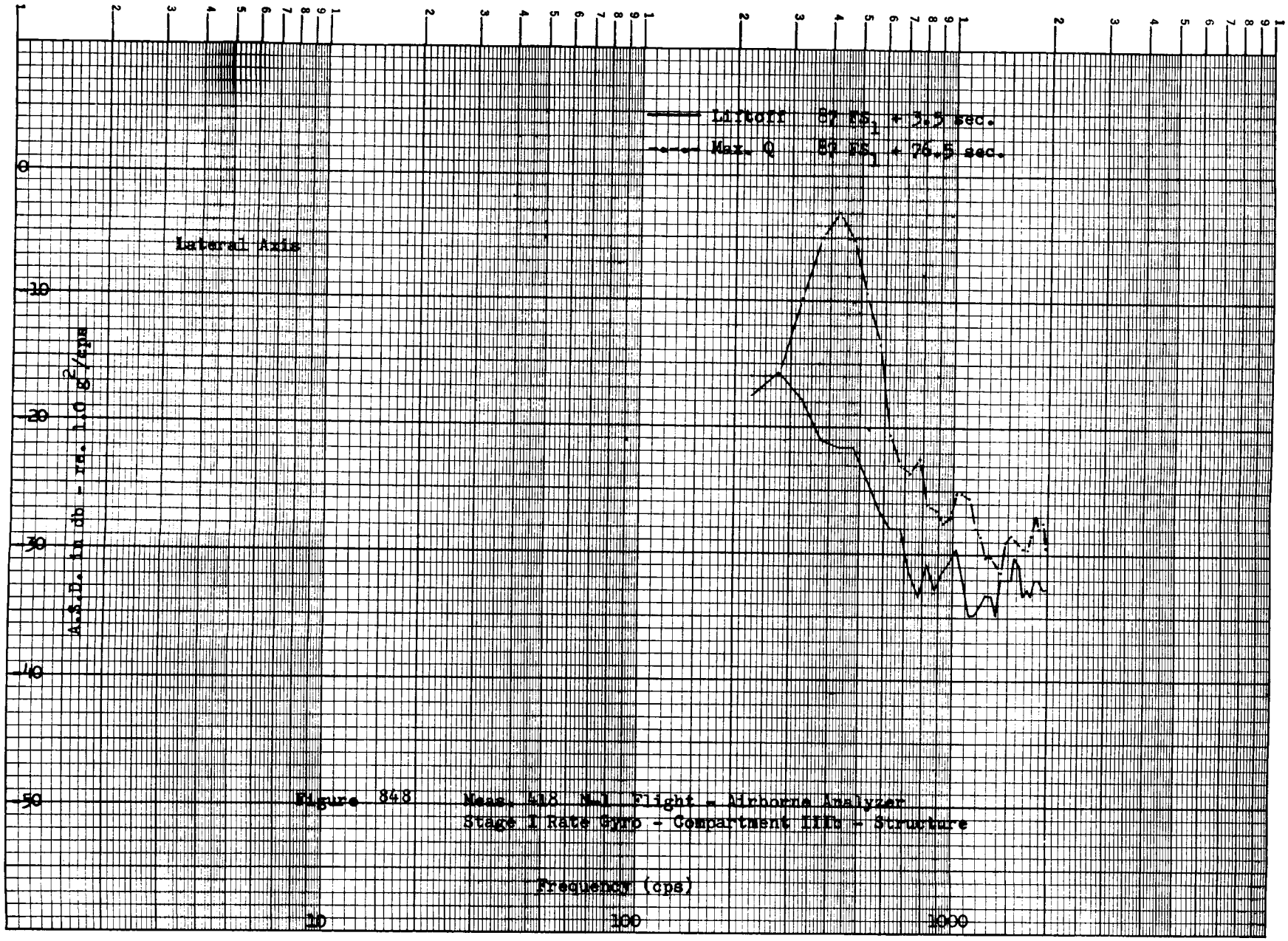


Figure 848 Meas. 418 M-1 Flight - Airborne Analyzer
Stage I Rate Gyro - Compartment IIIa - Structure

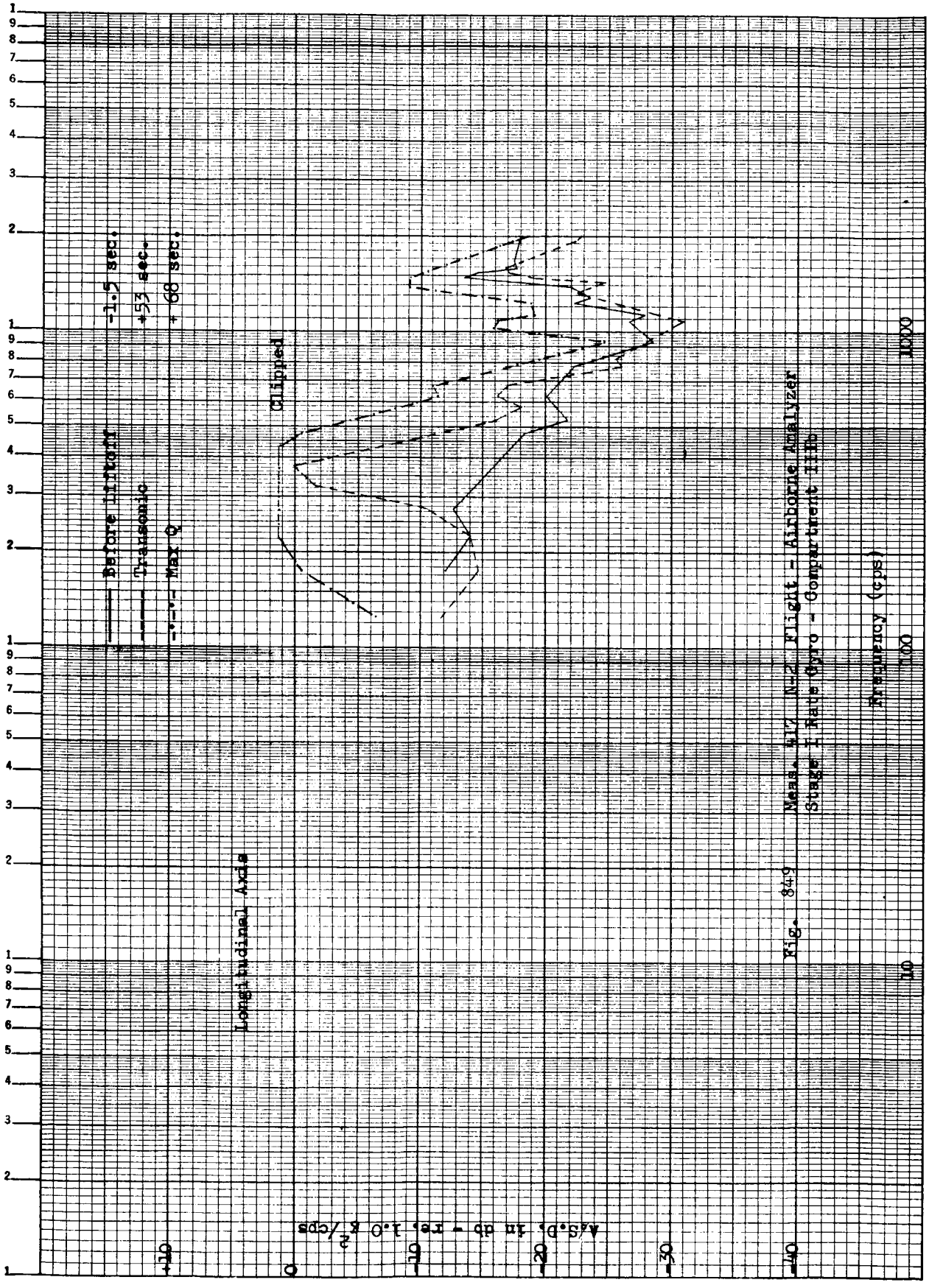
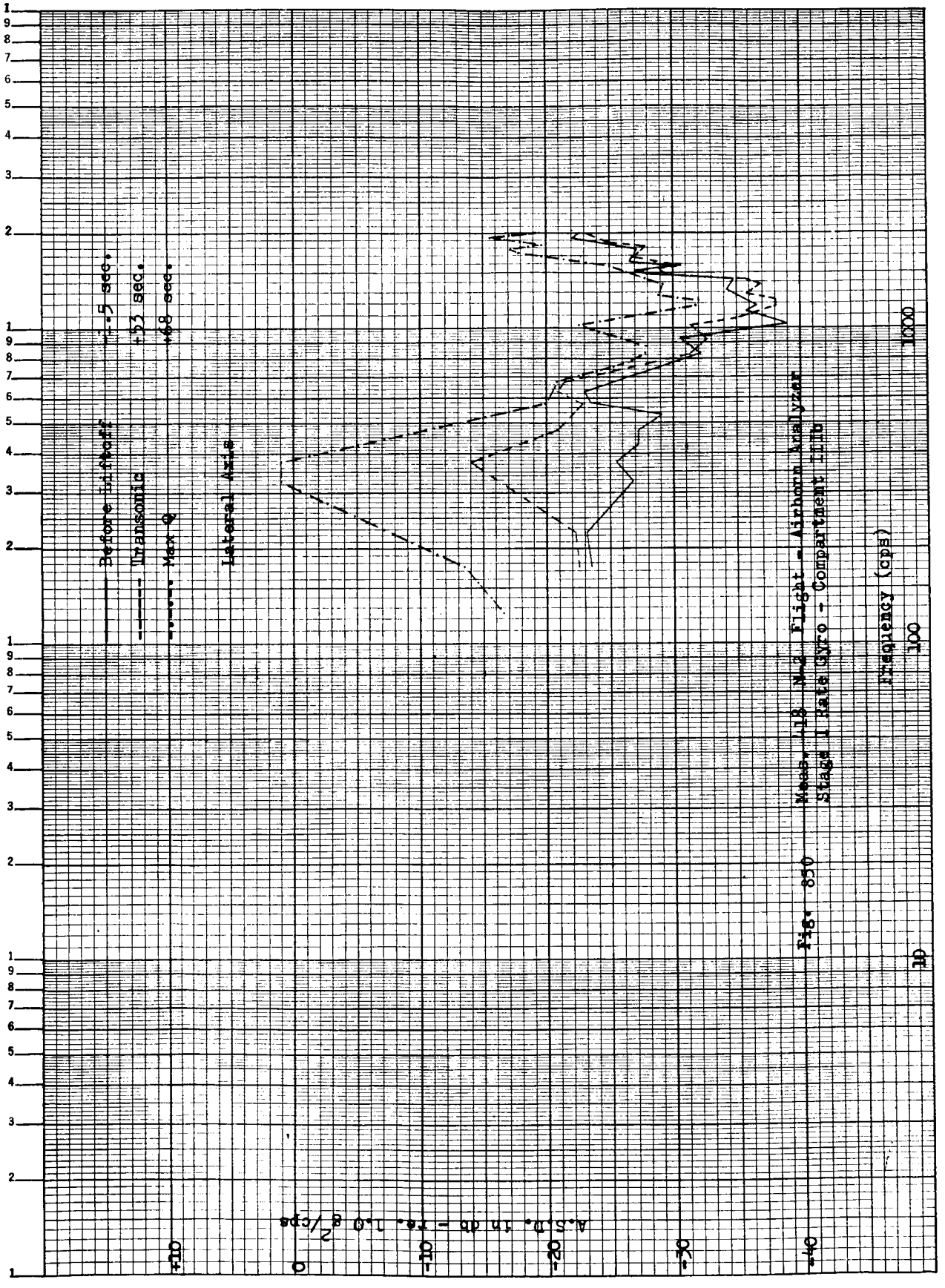

-1.5 sec.
+53 sec.
+68 sec.
Before liftoff
Transonic
Max Q
Clipped
Longitudinal Axis
Frequency (cps)
10
100
1000
Meas. #12 N-2 Flight - Airborne Analyzer
Stage I Rate Gyro - Compartment Fwd

Fig. 849


Before liftoff
+.5 sec.
Transonic
+3 sec.
Max Q
+8 sec.
Lateral Axis
Fig. 850
Meas. #18 No. 2 Flight - Airborn Analyzer
Stage I Rate Gyro - Compartment #18
Frequency (cps)
100
1000
10
A.S.D. in db re 1.0 g²/cps
0
-10
-20
-30
-40

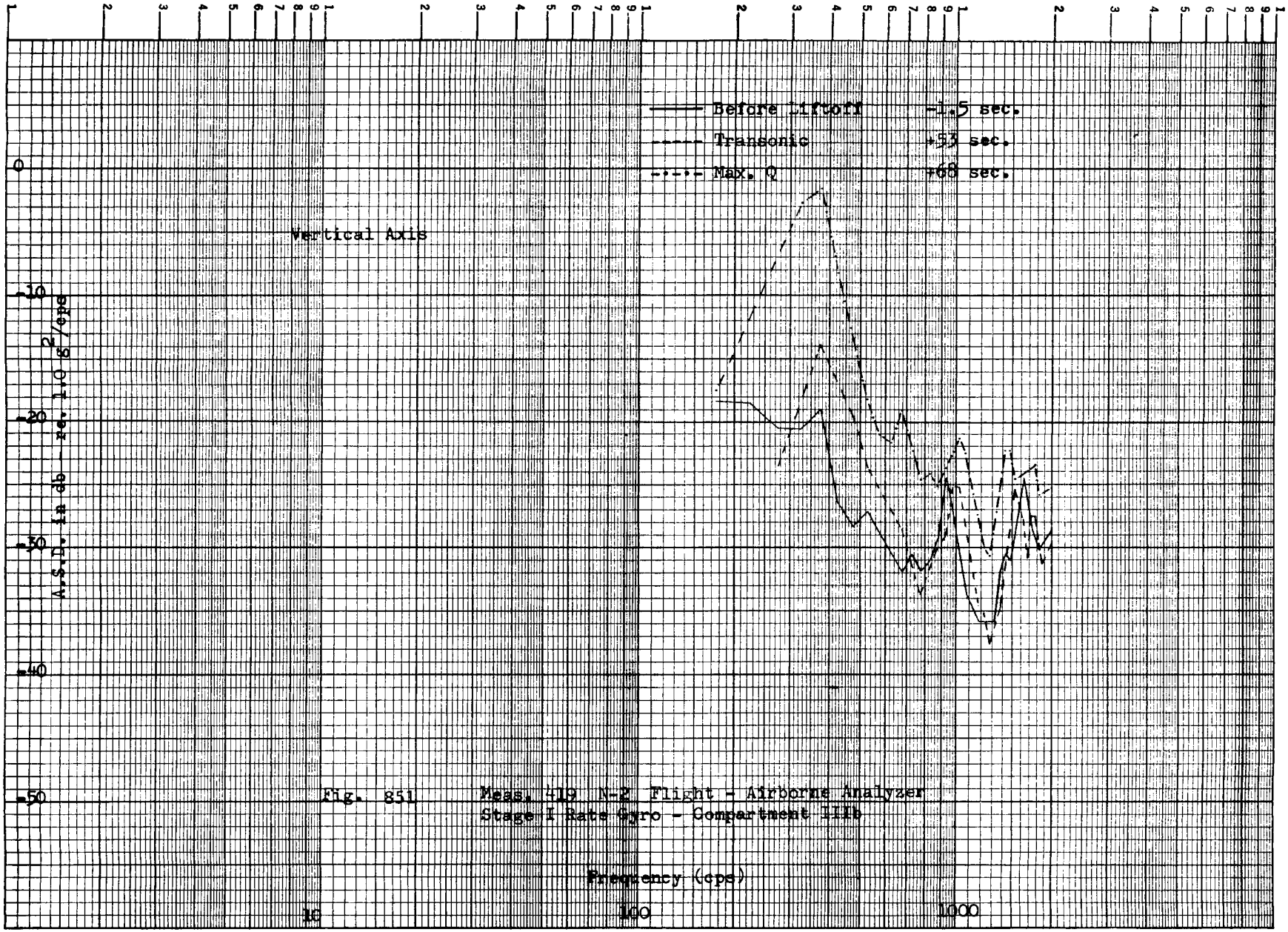
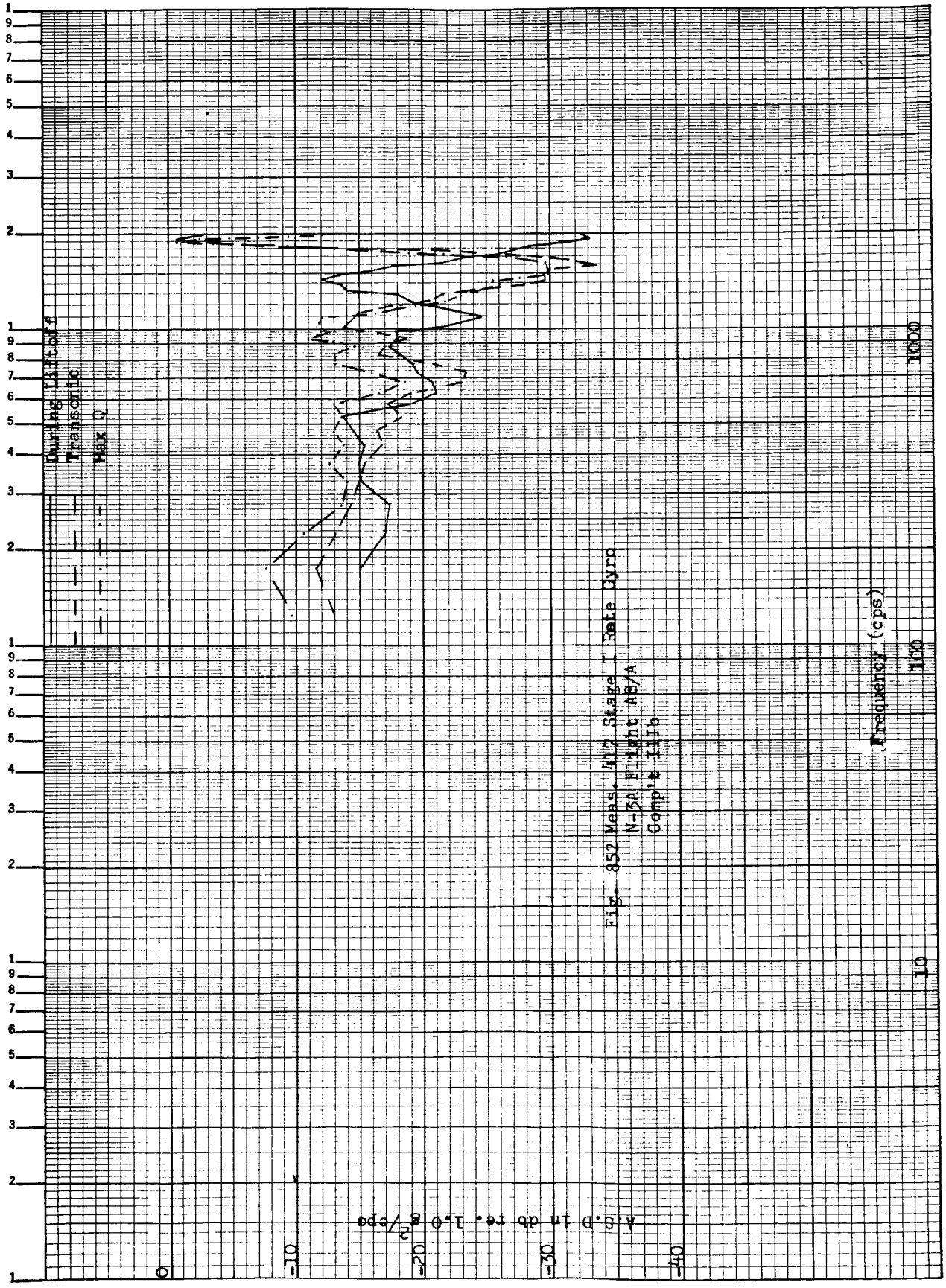


Fig. 851 Meas. 419 N-2 Flight - Airborne Analyzer
Stage I Rate Gyro - Compartment IIIb


Frequency (cps)
1000
100
10
A.S.D in db re. 1.0 g^2/cps
0
-10
-20
-30
-40
During Turbine Transonic Max Q
Fig. 852 Meas. 417 Stage 1 Rate Gyro
N-5A Flight AB/A
Comp't III

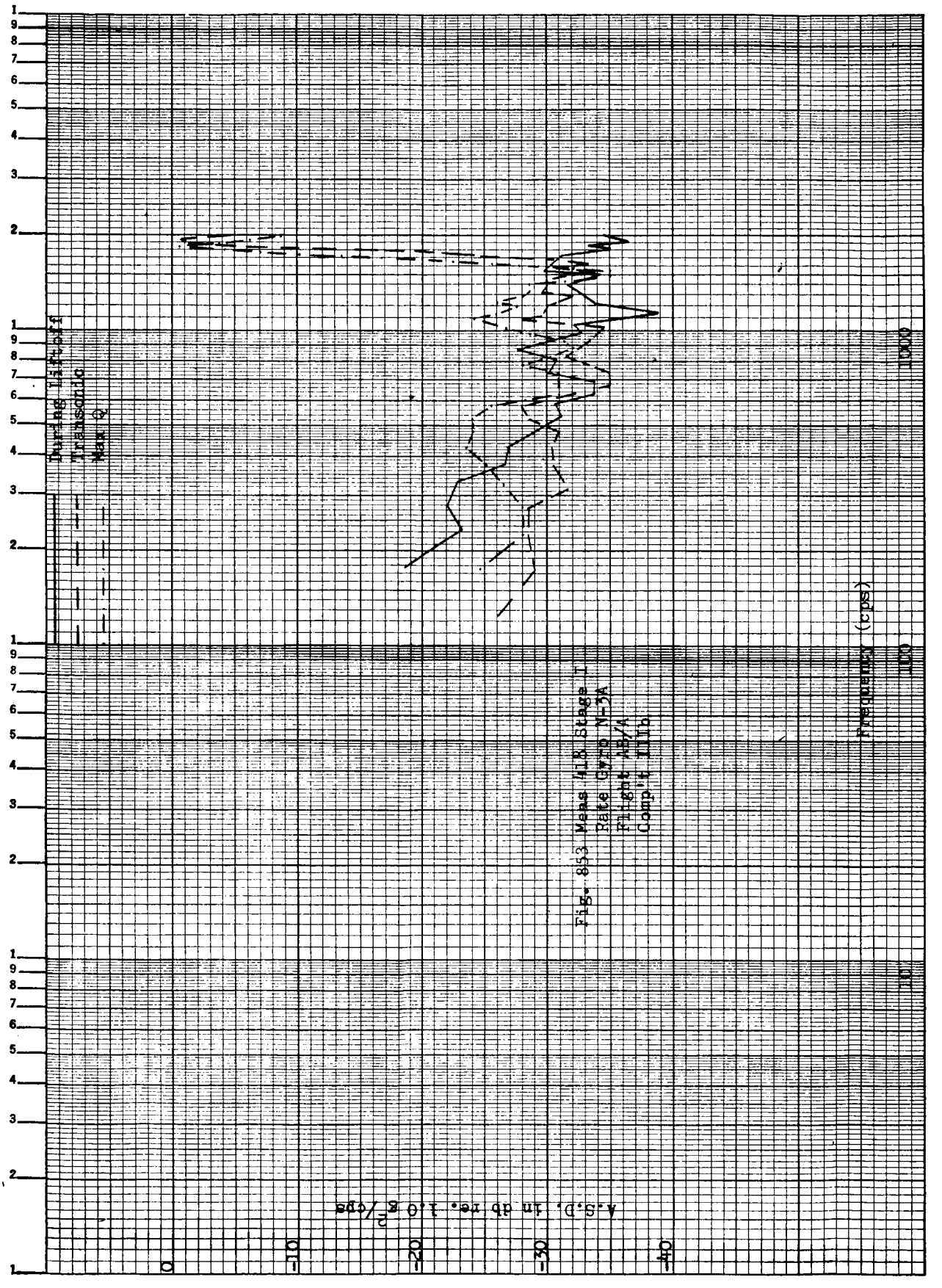


Fig. 853 Meas 418 Stage I
Rate Gyro N-3A
Flight A8/A
Comp. 4 Ttl.

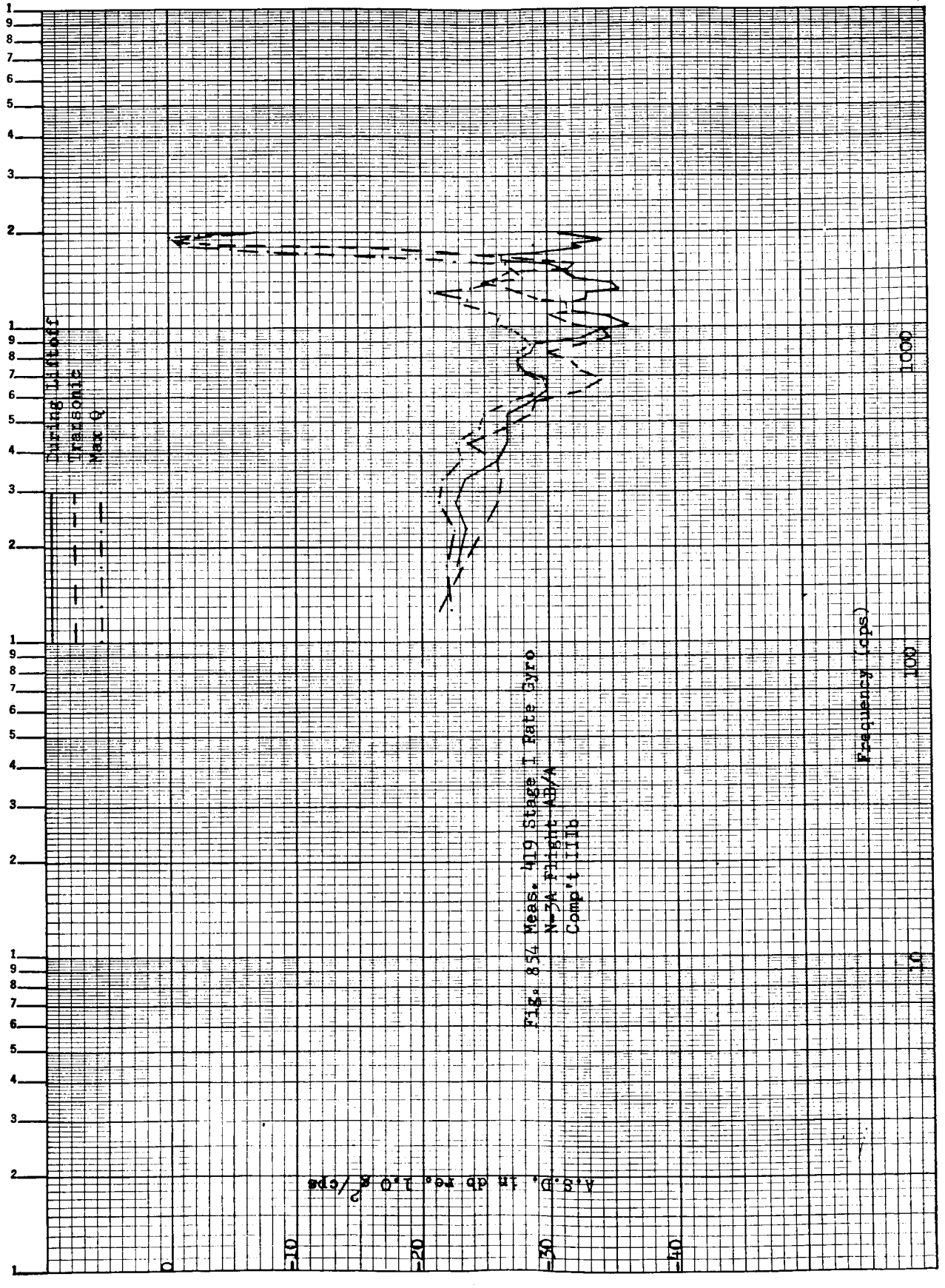

During Liftoff
Transonic
Max Q
Fig. 854 Meas. 419 Stage 1 Rate Gyro
N-2A Flight AB/A
Comp't IIIb
Frequency (cps)
1000
100
10
A.S.D. in db re. 1.0 g²/cps
0
-10
-20
-30
-40

Fig. 955 - Navy 764 N-1 ECM Airborne Analyzer
Stringer # 1HA - Compartment 11
Frequency (cps)
Stage I Filter
Radial Axis
A.S.D. in db - re. 1.0 E²/cps

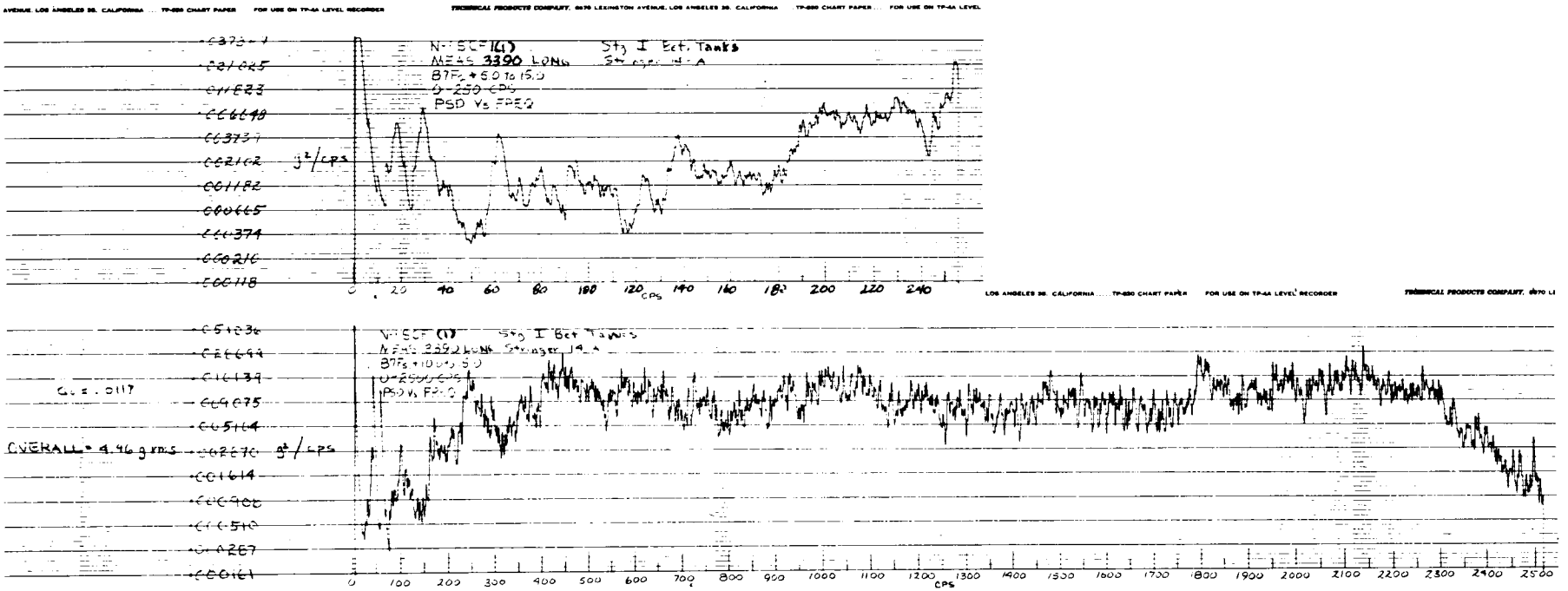

N-1 SCF (4)
MEAS 3390 LONG
B7F5 + 5.0 TO 15.0
0-250 CPS
PSD Vs FREQ
Stg I Ect. Tanks
g²/cps
0 20 40 60 80 100 120 CPS 140 160 180 200 220 240
N-1 SCF (1)
Stg I Ect Tanks
B7F5 + 10.0 - 5.0
PSD Vs FREQ
G.E. .0117
OVERALL = 4.96 grms
g²/cps
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 856

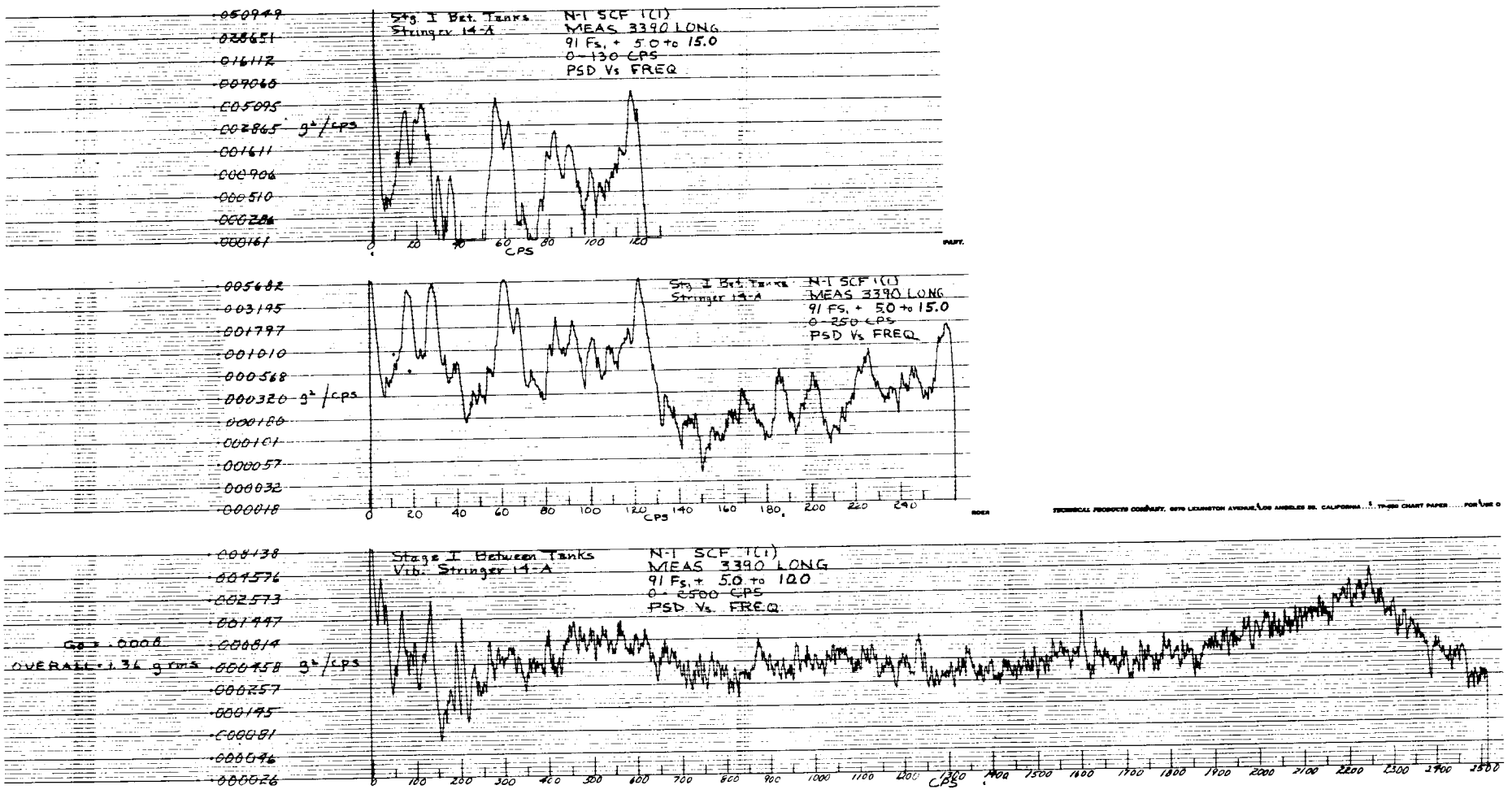

Stg I Bet. Tanks
Stringer 14-A
N-T SCF 1(1)
MEAS 3390 LONG
91 Fs, + 5.0 to 15.0
0-130 CPS
PSD Vs FREQ
.050949
.028651
.016112
.009060
.005095
.002865
.001611
.000906
.000510
.000286
.000161
g²/cps
0 10 20 60 80 100 120
CPS
Stg I Bet. Tanks
Stringer 14-A
N-T SCF 1(1)
MEAS 3390 LONG
91 FS, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
.005682
.003195
.001797
.001010
.000568
.000320
.000180
.000101
.000057
.000032
.000018
g²/cps
0 20 40 60 80 100 120 140 160 180 200 220 240
CPS
Stage I Between Tanks
Vib. Stringer 14-A
N-T SCF 1(1)
MEAS 3390 LONG
91 Fs, + 5.0 to 10.0
0-2500 CPS
PSD Vs. FREQ
Gs = 0.008
OVERALL = 1.36 g rms
.008138
.004576
.002573
.001447
.000814
.000458
.000257
.000145
.000081
.000046
.000026
g²/cps
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 857

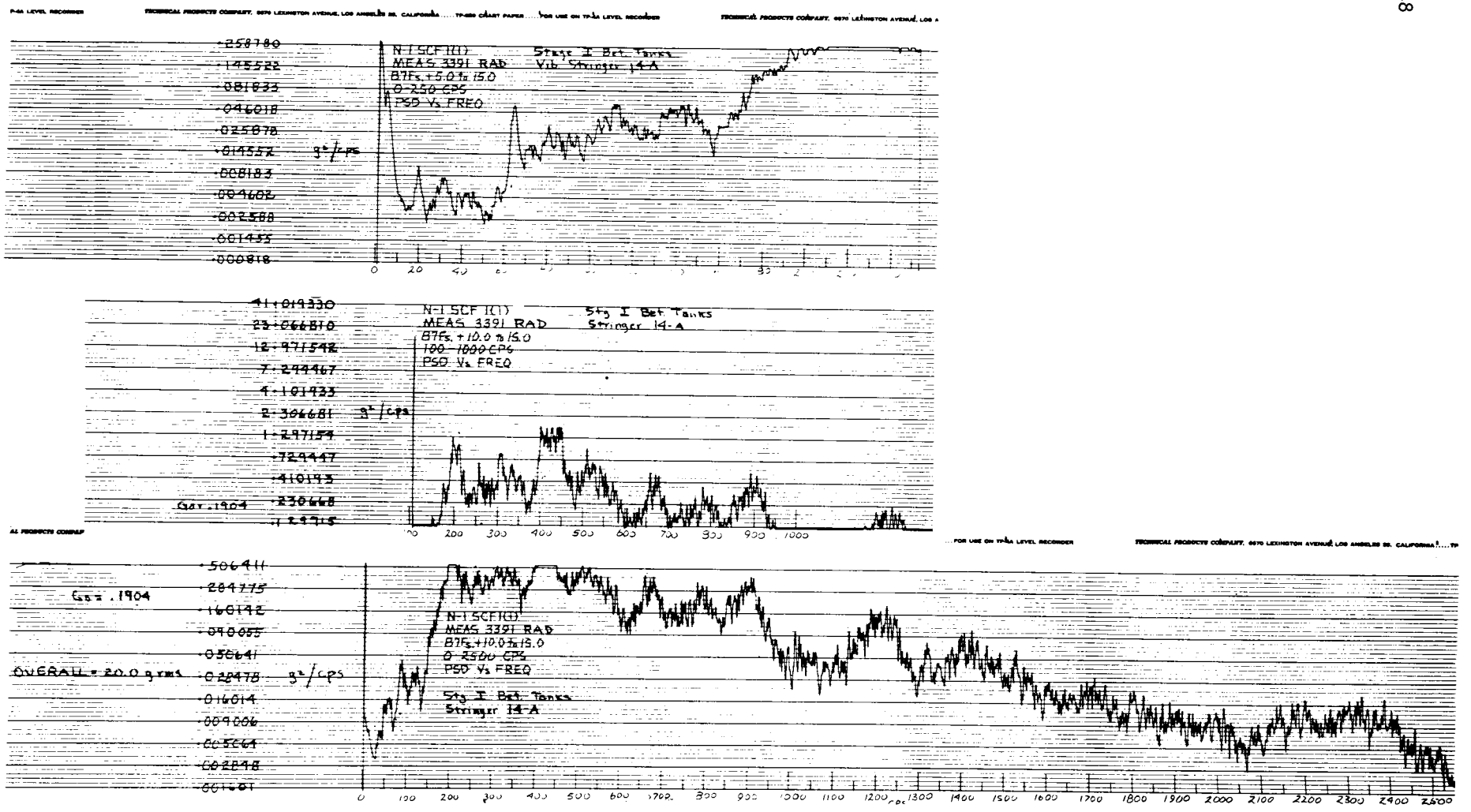

N-1 SCF I(1)
MEAS 3391 RAD
BTFs. +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stage I Bet. Tanks
Vib Stringer 14-A
g²/cps
N-1 SCF I(1)
MEAS 3391 RAD
BTFs. +10.0 to 15.0
100-1000 CPS
PSD Vs FREQ
Stg I Bet Tanks
Stringer 14-A
Grms .1904
N-1 SCF I(1)
MEAS 3391 RAD
BTFs. +10.0 to 15.0
0-2500 CPS
PSD Vs FREQ
Stg I Bet Tanks
Stringer 14-A
Grms = .1904
OVERALL = 20.0 g rms
g²/cps
f_pc

Fig. 858

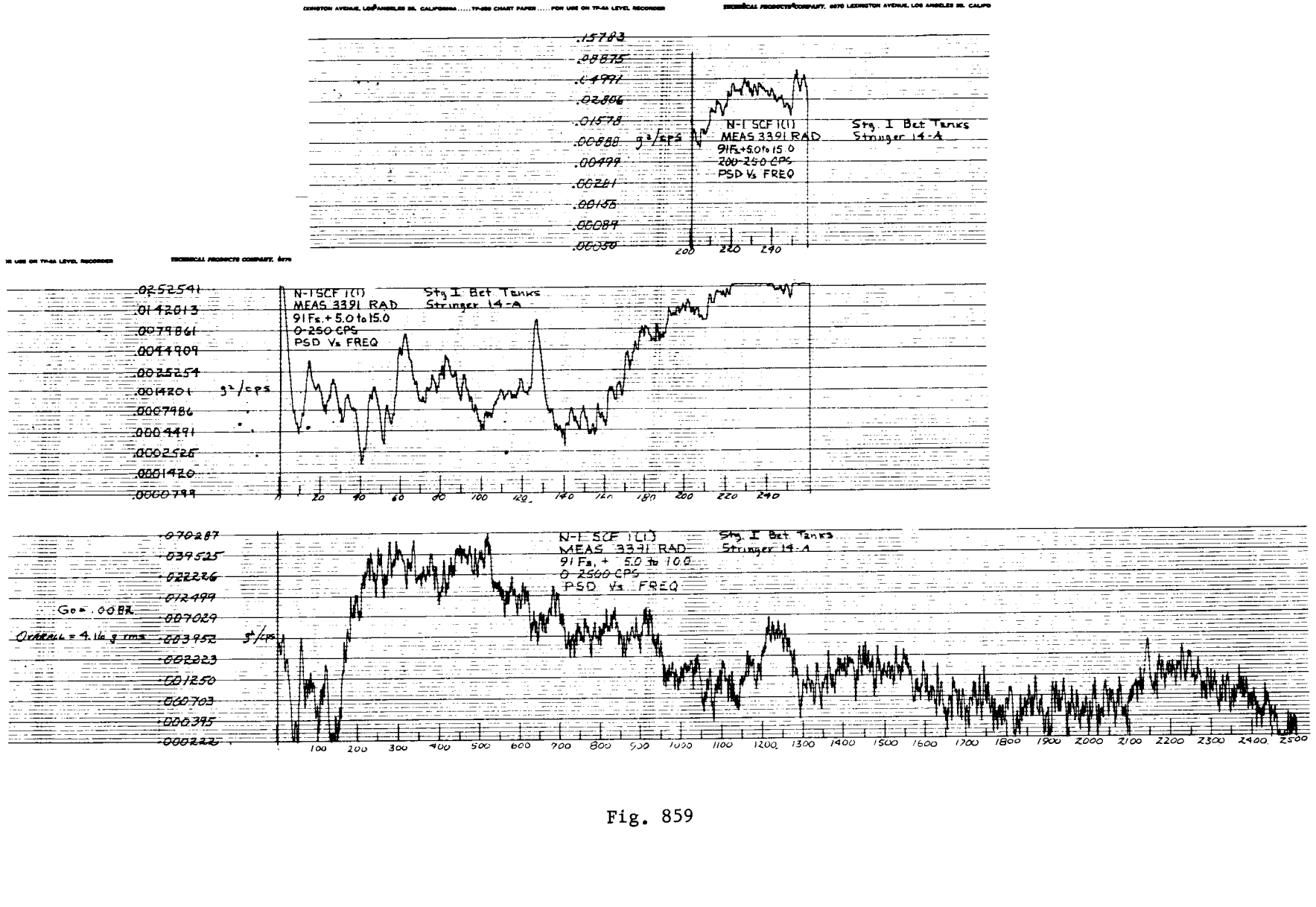

.15783
.08875
.04991
.02806
.01578
.00888
g²/cps
.00499
.00281
.00158
.00089
.00050
200
220
240
N-1 SCF 1(1)
MEAS 3391 RAD
91 Fs + 5.0 to 15.0
200-250 CPS
PSD Vs FREQ
Stg. I Bet Tanks
Stringer 14-A
.0252541
.0142013
.0079861
.0044909
.0025254
.0014201
g²/cps
.0007986
.0004491
.0002526
.0001420
.0000799
N-1 SCF 1(1)
MEAS 3391 RAD
91 Fs. + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stg I Bet Tanks
Stringer 14-A
20
40
60
80
100
120
140
160
180
200
220
240
.070287
.039525
.022226
.012499
.007029
.003952
g²/cps
.002223
.001250
.000703
.000395
.000222
Go = .0082
Overall = 4.16 g rms
N-1 SCF 1(1)
MEAS 3391 RAD
91 Fs. + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
Stg. I Bet Tanks
Stringer 14-A
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500

Fig. 859

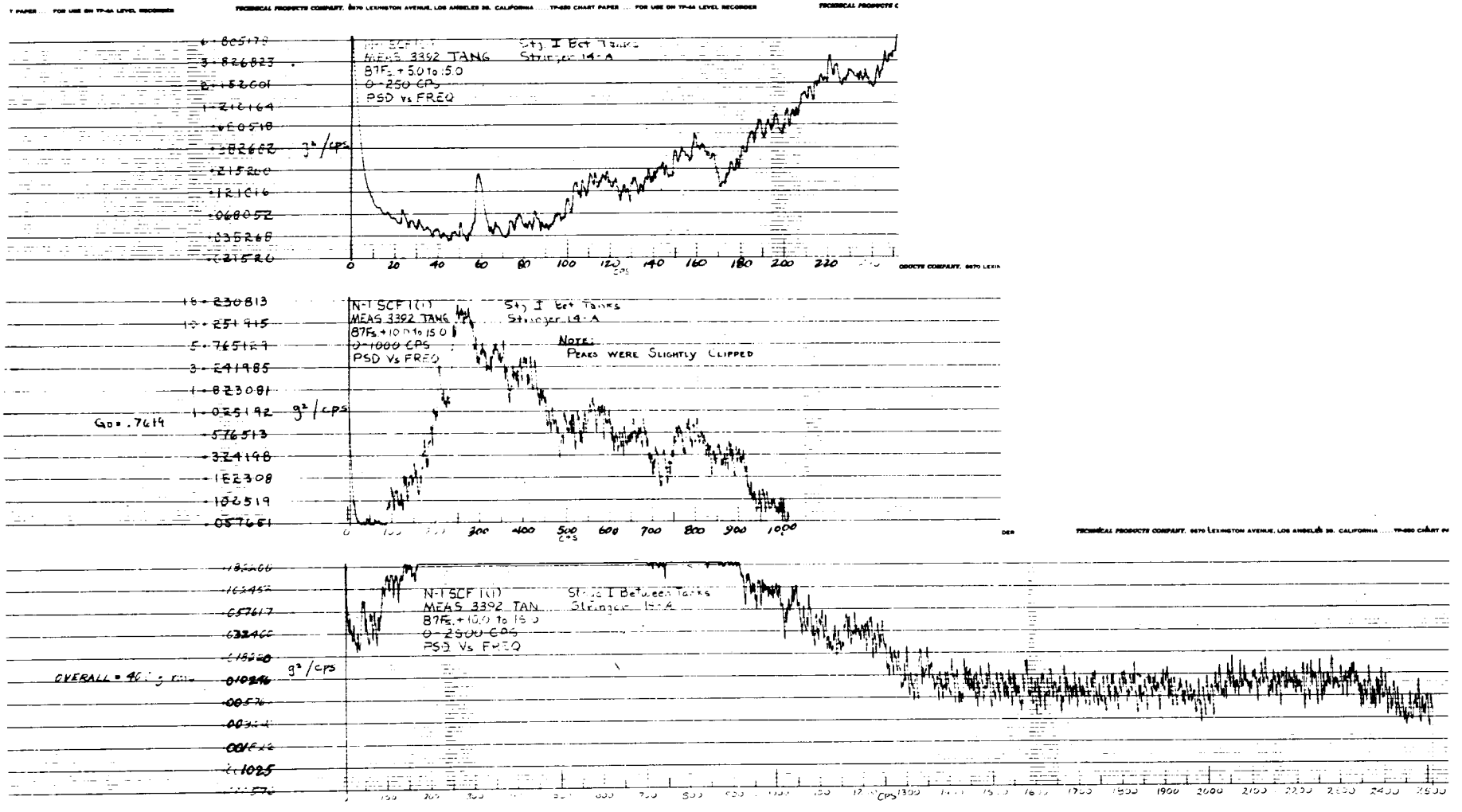
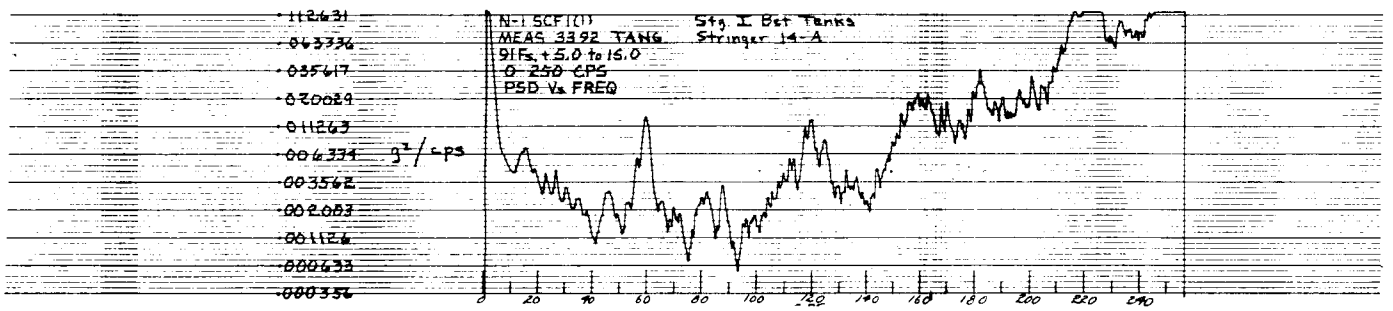
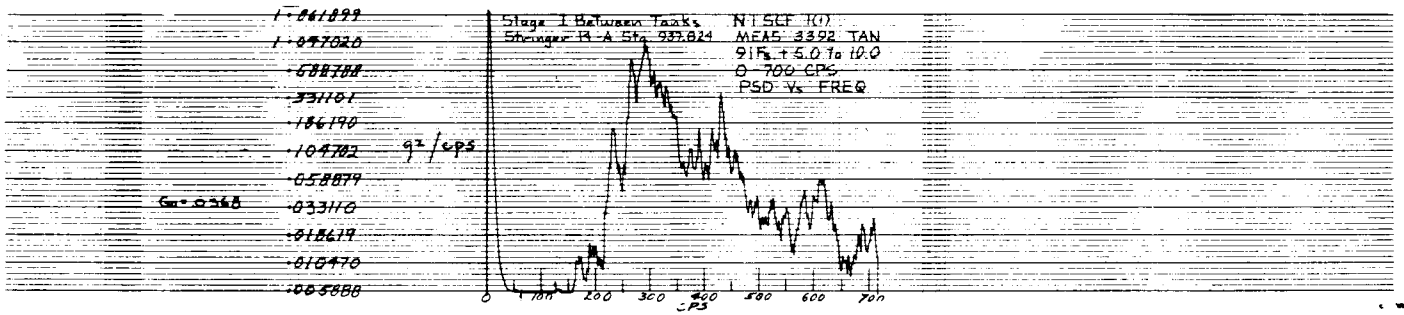

N-1 SCF 1(1)
MEAS 3392 TANG
BTF$_E$ + 5.0 To 5.0
0-250 CPS
PSD Vs FREQ
Stg I Bet Tanks
Stringer 19-A
g²/cps
CPS
N-1 SCF 1(1)
MEAS 3392 TANG
BTF$_E$ + 10.0 To 15.0
0-1000 CPS
PSD Vs FREQ
Stg I Bet Tanks
Stringer 19-A
Note:
Peaks were Slightly Clipped
g²/cps
CPS
GD = .7619
N-1 SCF 1(1)
MEAS 3392 TAN
BTF$_E$ + 10.0 To 15.0
0-2500 CPS
PSD Vs FREQ
Stg I Between Tanks
Stringer 19-A
g²/cps
CPS
OVERALL = 96 g rms

Fig. 860


N-1 SCF 1(1)
MEAS 3392 TANG
91 Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stg. I Bet Tanks
Stringer 14-A
g²/cps
0 20 40 60 80 100 120 140 160 180 200 220 240


Stage I Between Tanks
Stringer 13-A Stg 937.824
N1 SCF 1(1)
MEAS 3392 TAN
91 Fs, + 5.0 to 10.0
0-700 CPS
PSD Vs FREQ
g²/cps
Gm = 0368
0 100 200 300 400 500 600 700
CPS

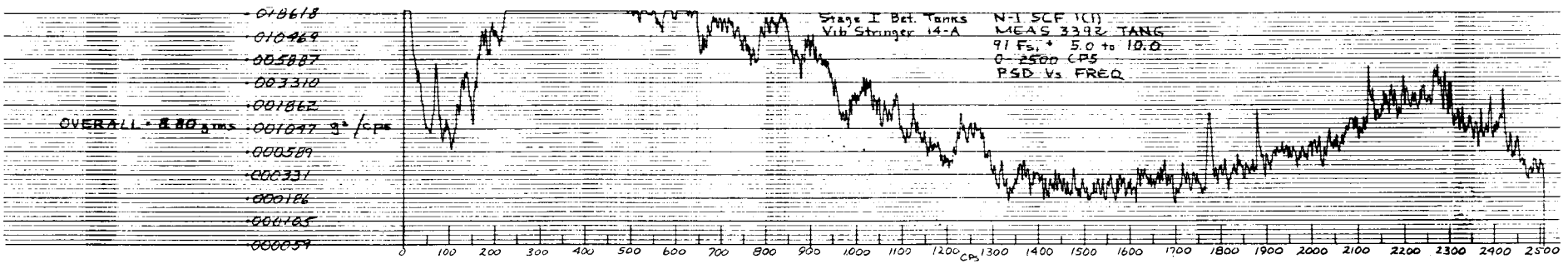

Stage I Bet. Tanks
Vib Stringer 14-A
N-1 SCF 1(1)
MEAS 3392 TANG
91 Fs, + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
OVERALL = 8.80 grms
g²/cps
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 861

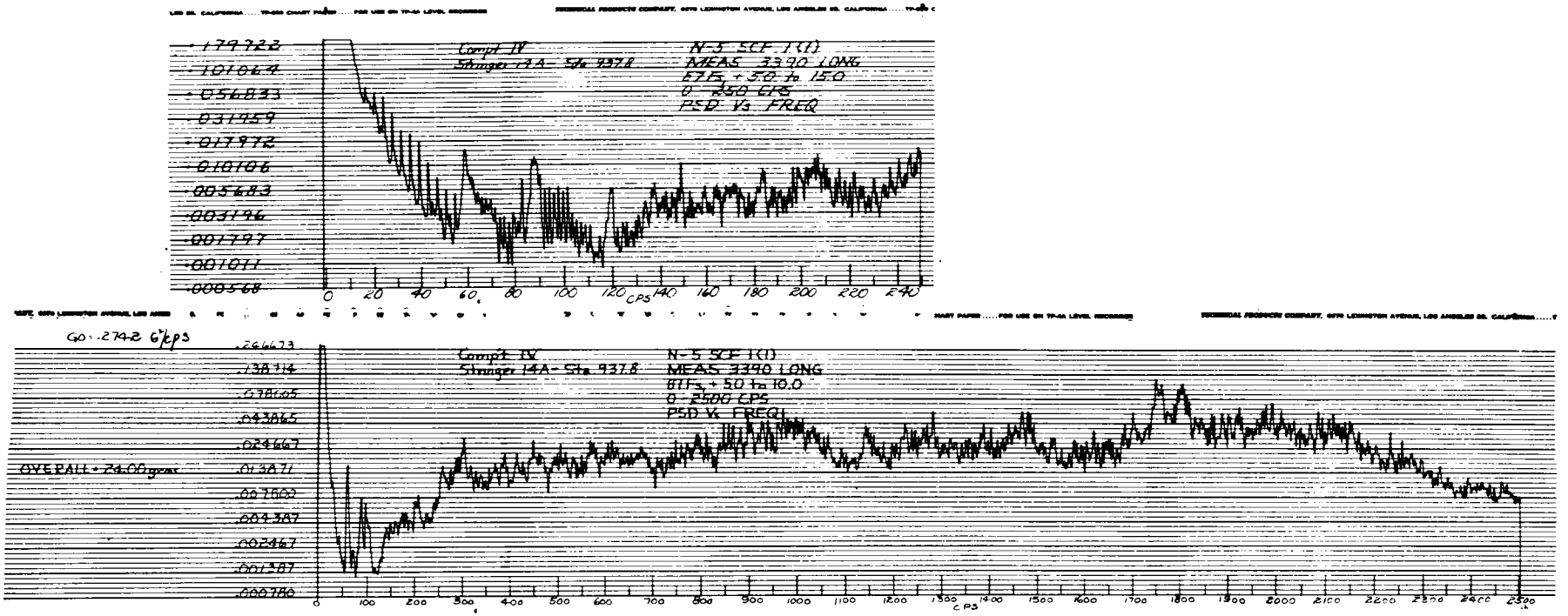

Compt IV
Stringer 14A - Sta 937.8
N-5 SCF 1(1)
MEAS 3390 LONG
BTFs + 50 to 10.0
0 - 2500 CPS
PSD Vs FREQ
OVERALL = 24.00 g rms
CPS

Fig. 862

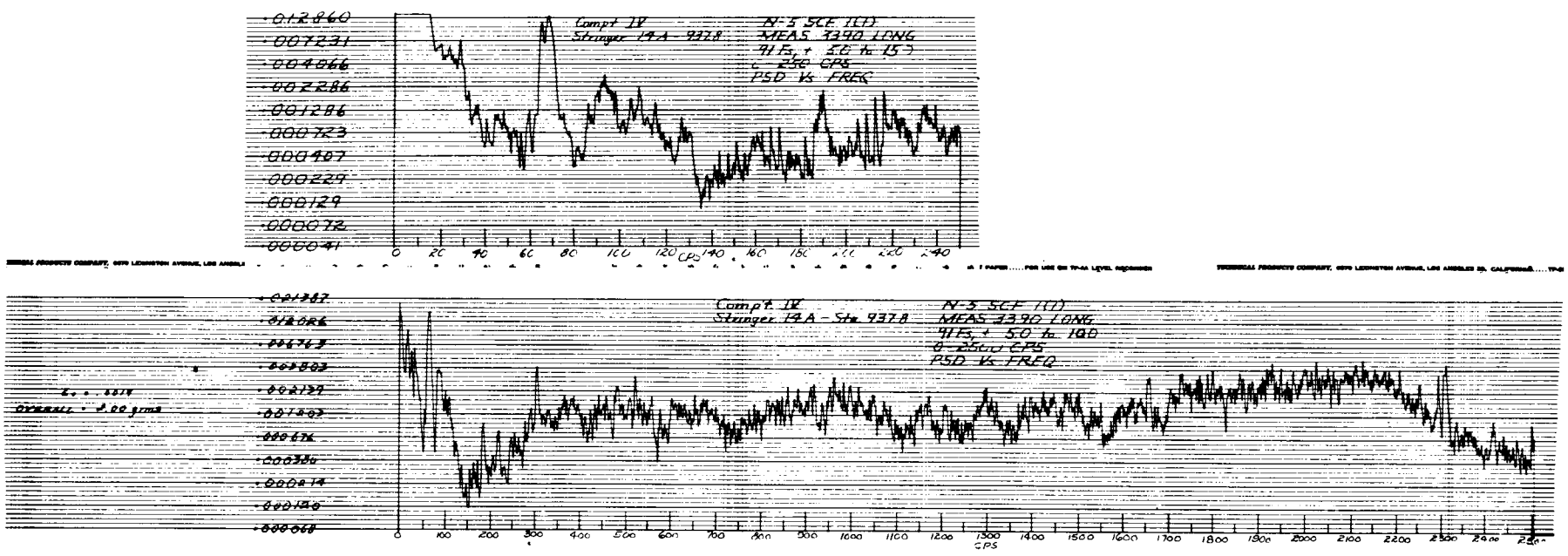

Compt IV
Stringer 19A - Sta 937.8
N-S SCF I(1)
MEAS 3390 LONG
91 Fs, ± 5.0 to 100
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 863

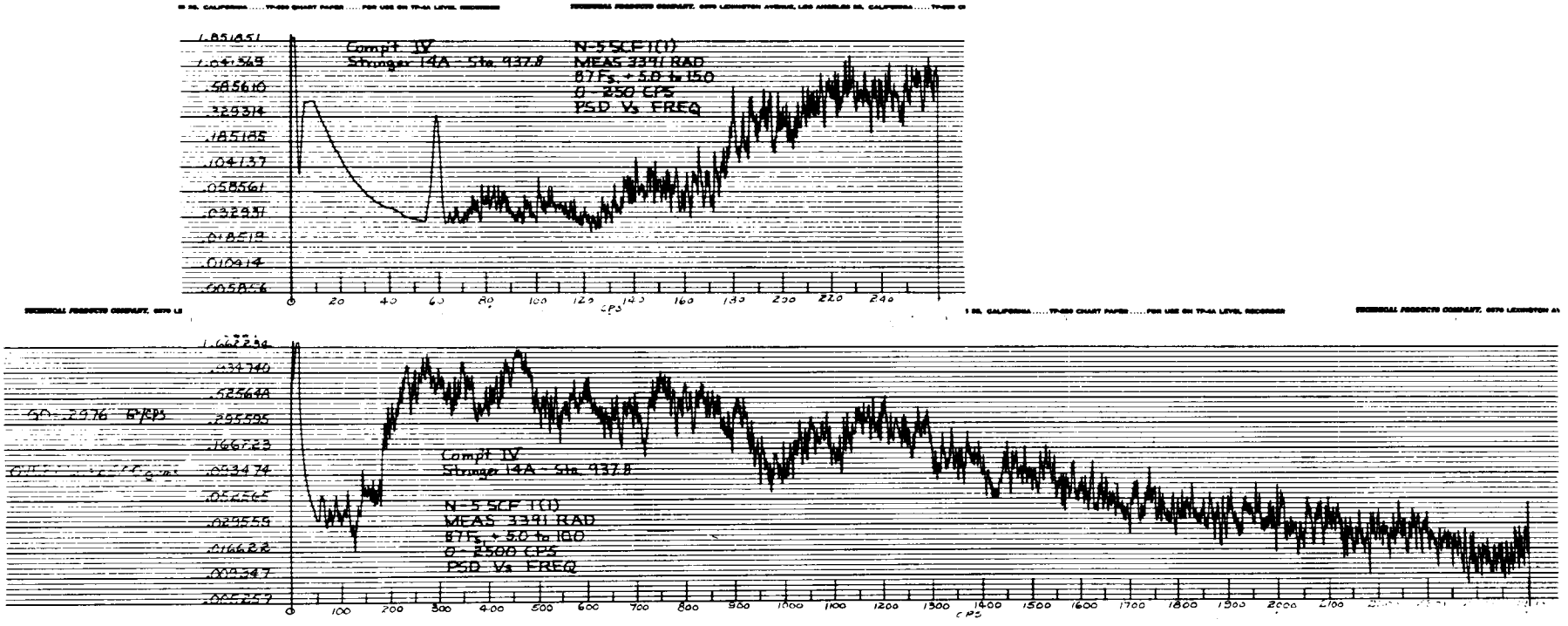

Compt IV
Stringer 14A - Sta 937.8
N-55CF1(1)
MEAS 3391 RAD
87Fs + 5.0 to 150
0-250 CPS
PSD Vs FREQ
.851851
1.04549
.585610
.329314
.185185
.104137
.058561
.032951
.018519
.010414
.005856
0 20 40 60 80 100 120 140 160 180 200 220 240
CPS
Compt IV
Stringer 14A - Sta 937.8
N-55CF1(1)
MEAS 3391 RAD
87Fs + 5.0 to 150
0-2500 CPS
PSD Vs FREQ
1.666234
.934740
.525648
.295595
.166723
.093474
.052565
.029559
.016628
.009347
.005257
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100
CPS

Fig. 864

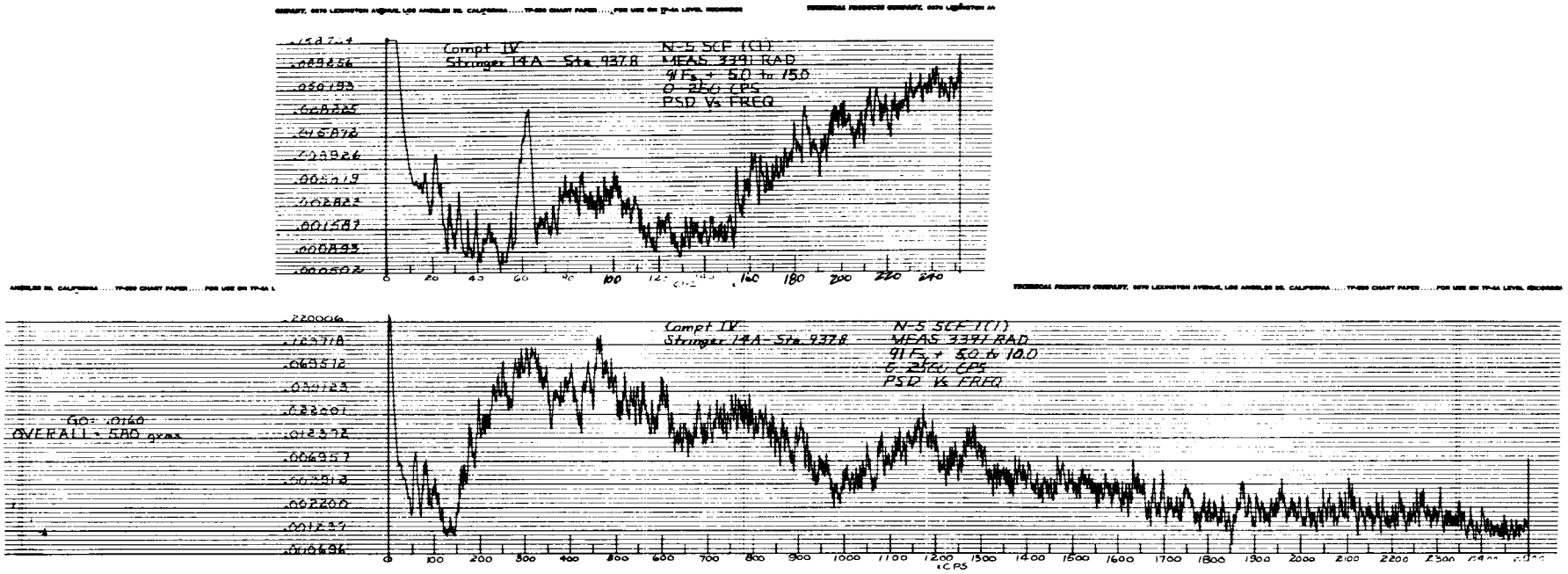

Compt IV
Stringer 14A - Sta. 937.8
N-5 SCF T(1)
MEAS 3391 RAD
91 Es + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Compt IV
Stringer 14A - Sta. 937.8
N-5 SCF T(1)
MEAS 3391 RAD
91 Es + 5.0 to 10.0
0-250 CPS
PSD Vs FREQ
GO: .0140
OVERALL = 580 grms
CPS

Fig. 865

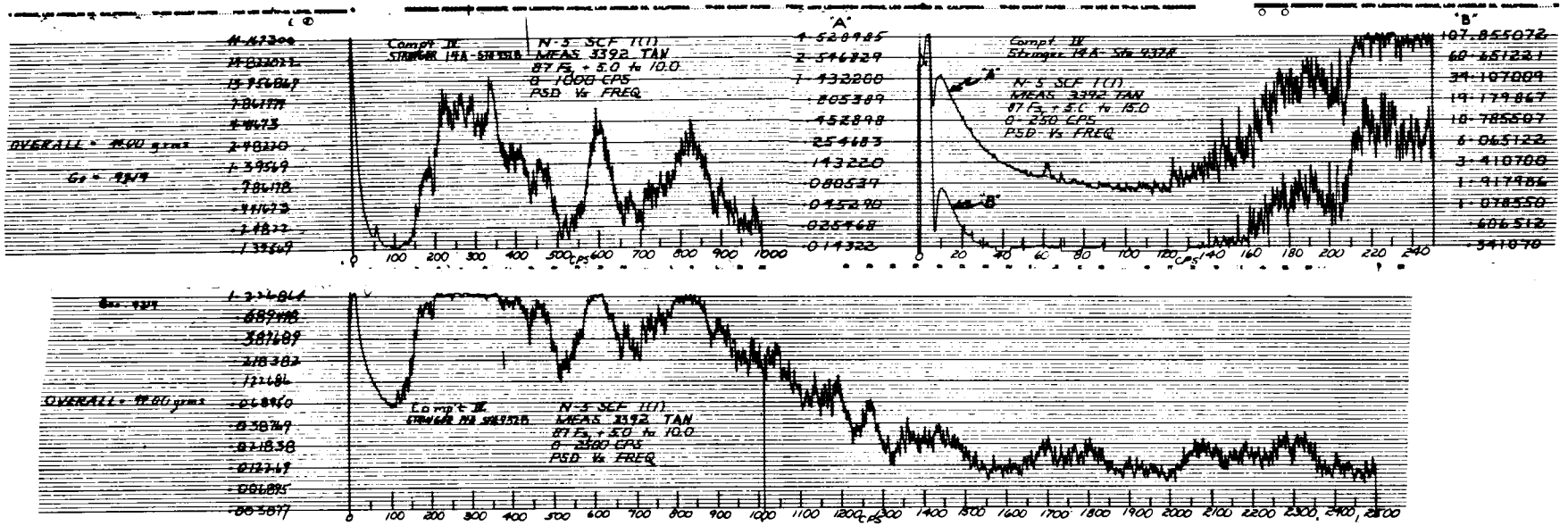

Compt IV
Stringer 19A-SN 9328
N-5 SCF T(1)
MEAS 3392 TAN
87 Fs + 5.0 to 10.0
0-1000 CPS
PSD Vs FREQ
"A"
"B"
OVERALL = 11.00 grms
Compt IV
Stringer 19A-SN 9328
N-5 SCF T(1)
MEAS 3392 TAN
87 Fs + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
OVERALL = 11.00 grms
Compt IV
Stringer 19A-SN 9328
N-5 SCF T(1)
MEAS 3392 TAN
87 Fs + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
cps

Fig. 866

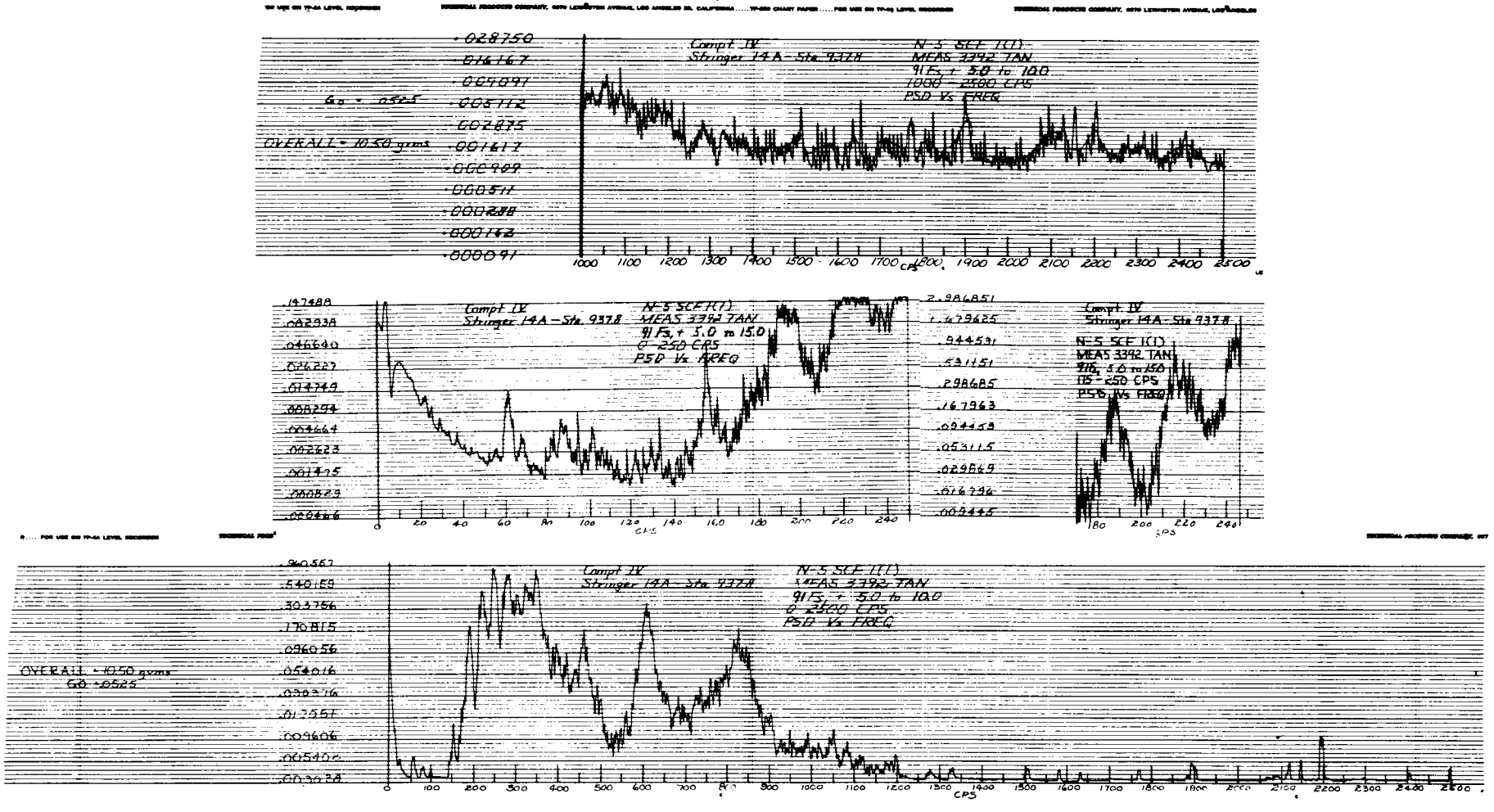

Compt IV
Stringer 14A - Sta 937.8
N-5 SCE (T)
MEAS 3392 TAN
915, + 5.0 to 10.0
1000 - 2500 CPS
PSD Vs FREQ
OVERALL = 10.50 grms
Compt IV
Stringer 14A - Sta 937.8
N-5 SCE (T)
MEAS 3392 TAN
915, + 5.0 to 15.0
0 - 250 CPS
PSD Vs FREQ
Compt IV
Stringer 14A - Sta 937.8
N-5 SCE (T)
MEAS 3392 TAN
915, + 5.0 to 15.0
115 - 250 CPS
PSD Vs FREQ
Compt IV
Stringer 14A - Sta 937.8
N-5 SCE (T)
MEAS 3392 TAN
915, + 5.0 to 10.0
0 - 2500 CPS
PSD Vs FREQ
OVERALL = 10.50 grms
G0 = .0525
CPS

Fig. 867

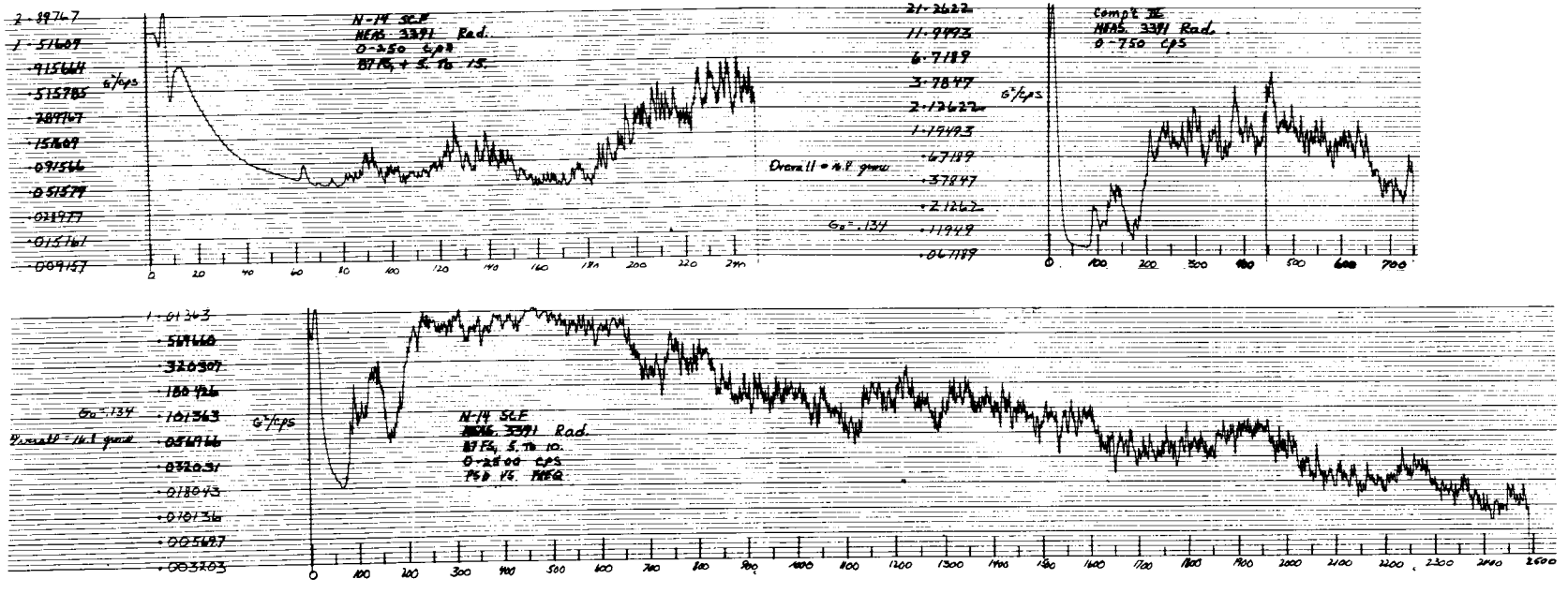

N-14 SCE
MEAS. 3391 Rad.
0-250 cps
BF3 P4 + S. To 15.
Drum II = 4.8 gms
Gz = .134
Compt SE
MEAS. 3391 Rad.
0-750 cps
N-14 SCE
MEAS. 3391 Rad.
BF3 P4, S. To 10.
0-2500 cps
Psb VS. MEQ
Gz = .134
G²/cps

Fig. 868

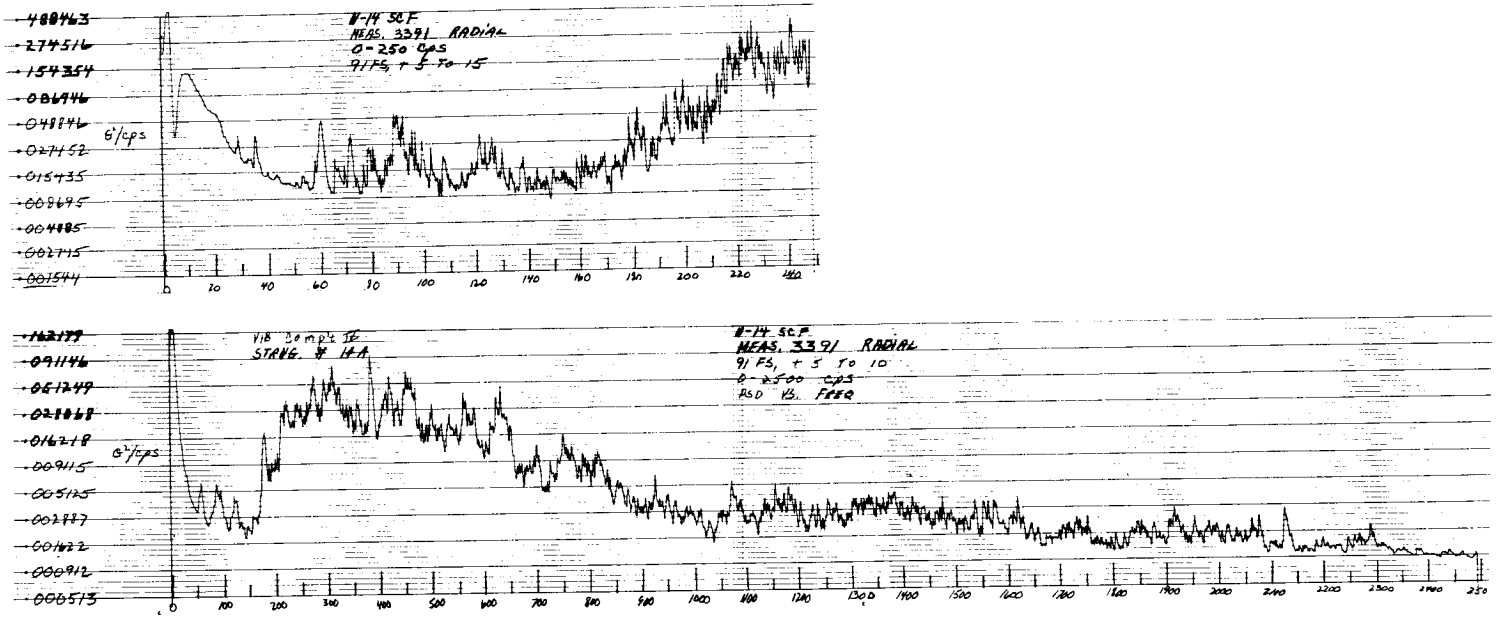

B-14 SCF
MEAS. 3391 RADIAL
0-250 CPS
9/FS, + 5 TO 15
G²/cps
VIB 30 mph IF
STRUC. # 1 FA
B-14 SCF
MEAS. 3391 RADIAL
9/FS, + 5 TO 10
0-2500 CPS
PSD VS. FREQ
G²/cps

Fig. 869

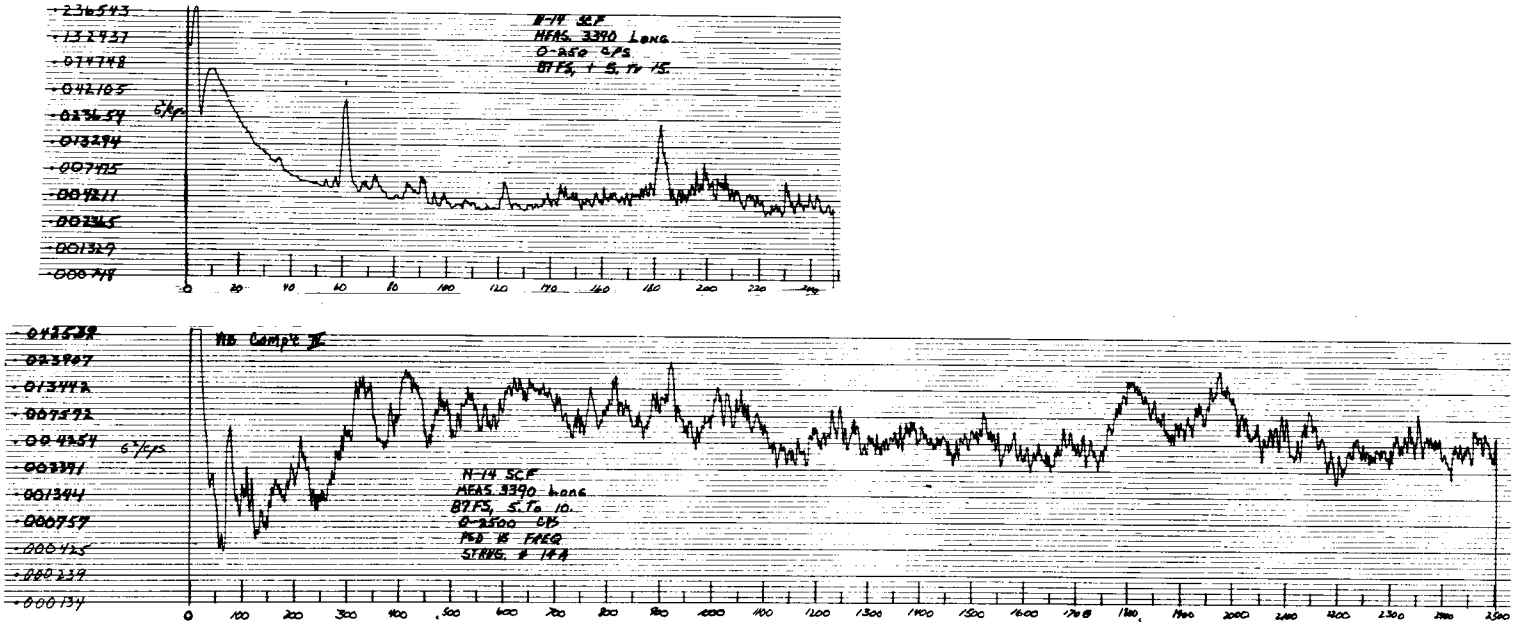

N-14 SCF
MEAS 3390 LONG
0-250 CPS
BTFS, 1 S. TO 15.
G²/cps
N-14 SCF
MEAS 3390 LONG
BTFS, 5. TO 10.
0-2500 CPS
PSD VS FREQ
STRUC. # 14A
G²/cps
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500

Fig. 870

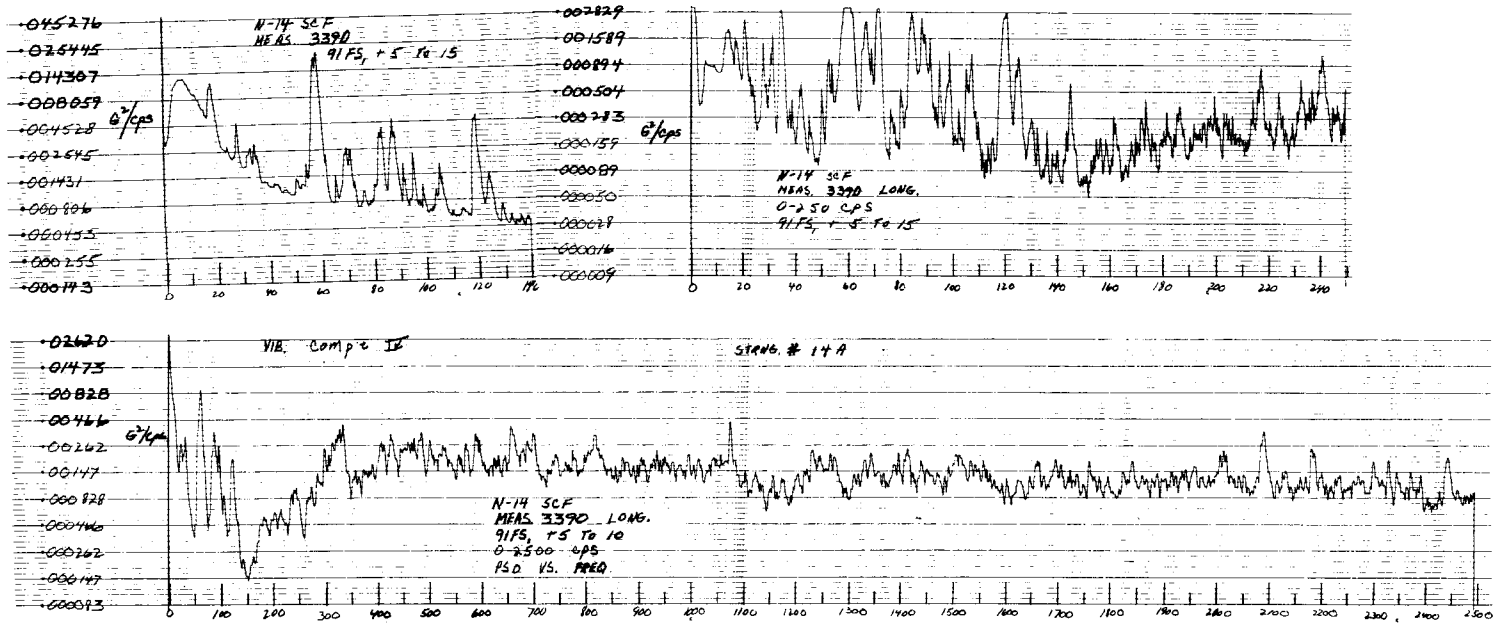
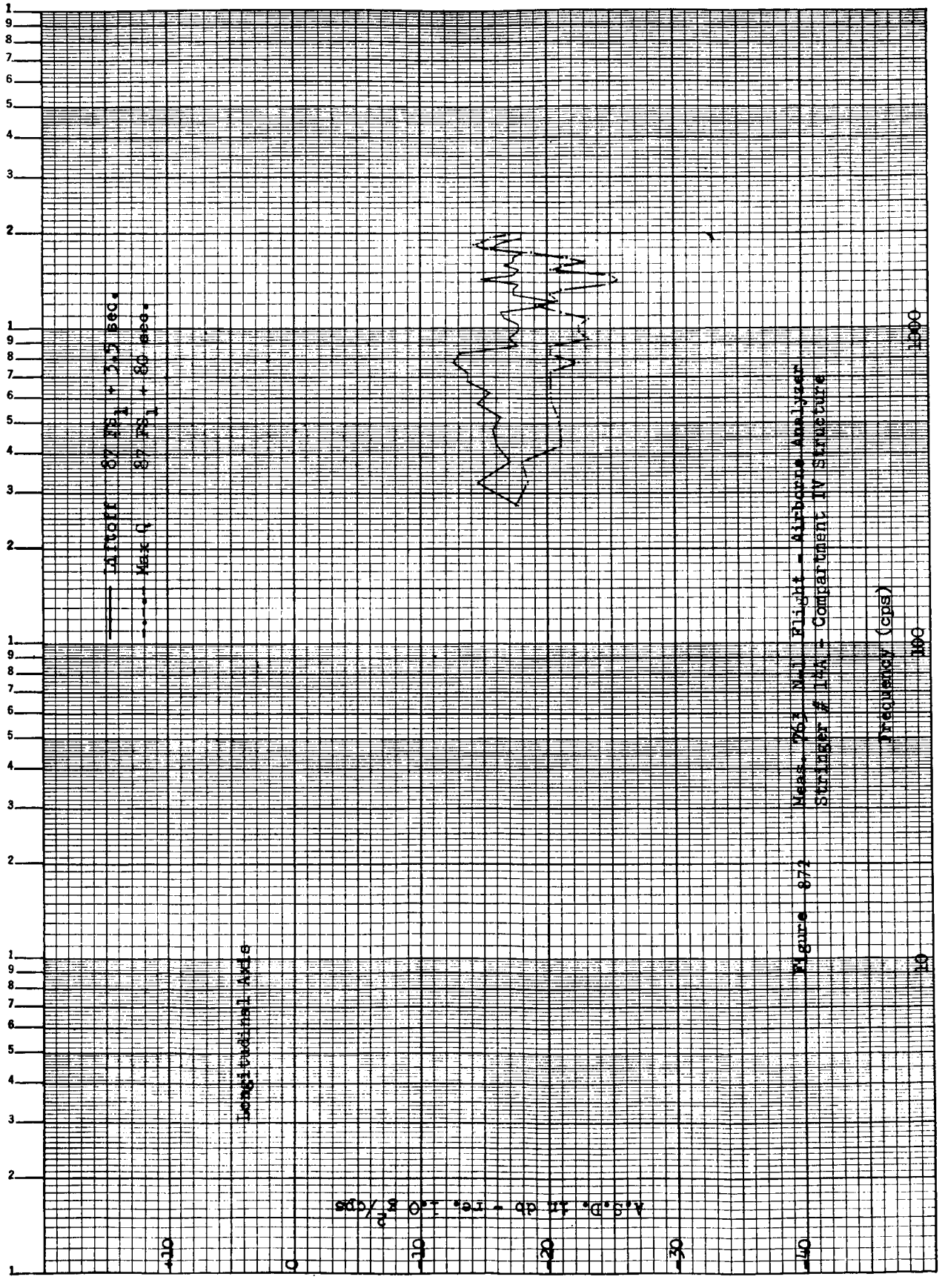

N-14 SCF
MEAS. 3390
91 FS, ± 5 TO 15
G²/cps
N-14 SCF
MEAS. 3390 LONG.
0-250 CPS
91 FS, ± 5 TO 15
VIB. Comp'e II
STRNG. # 14 A
N-14 SCF
MEAS. 3390 LONG.
91 FS, ±5 TO 10
0-2500 CPS
PSD VS. FREQ.

Fig. 871


Figure 872
Meas. 763 Nml Flight - Airborne Analyzer
Stringer # 114 - Compartment IV Structure
Frequency (cps)
Longitudinal Axis
Lanyard 87 PSI + 2.5 sec.
87 PSI + 80 sec.
Mark Q

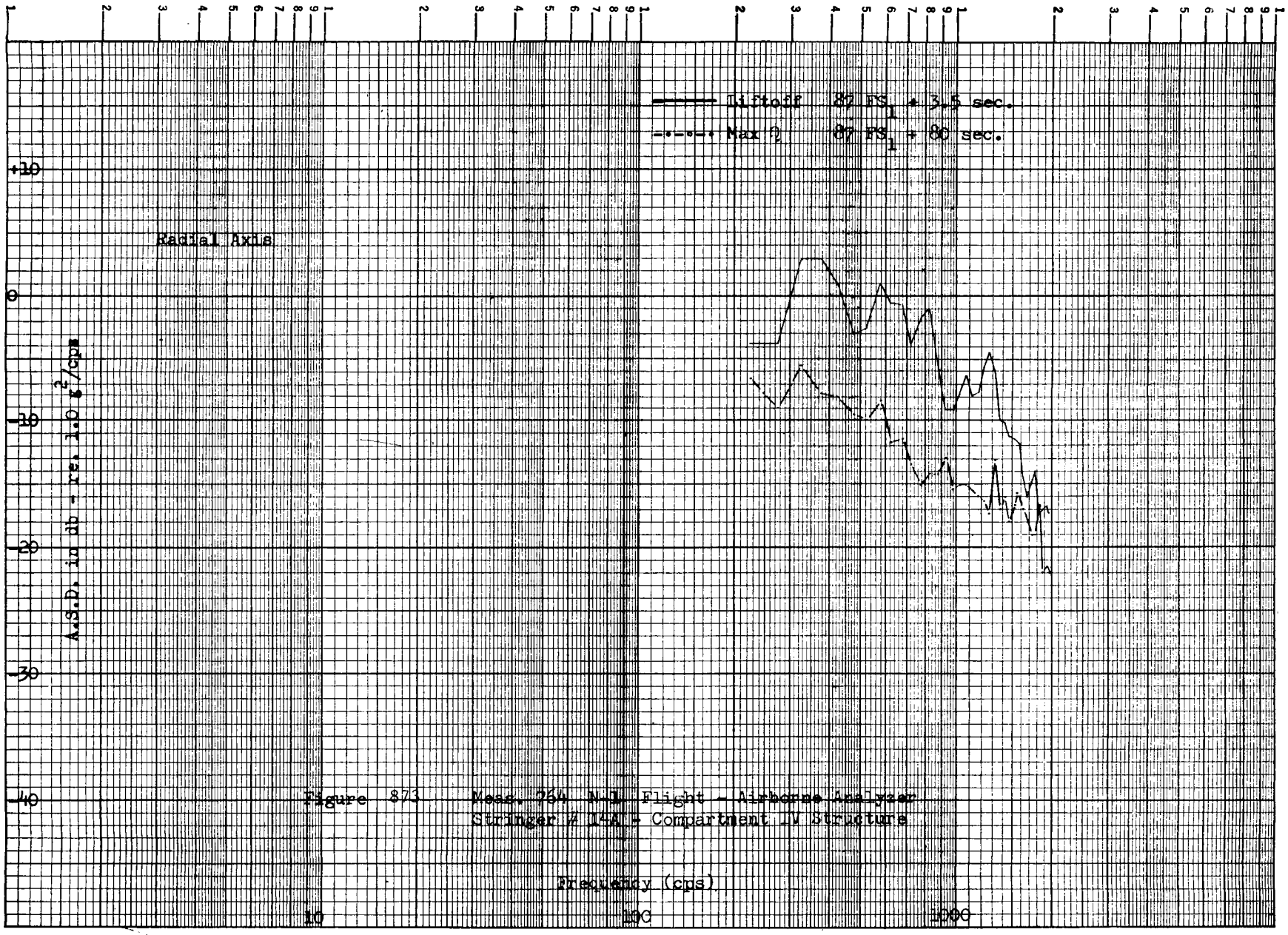


Figure 873 Meas. 764 N-1 Flight - Airborne Analyzer
Stringer # 144 - Compartment IV Structure

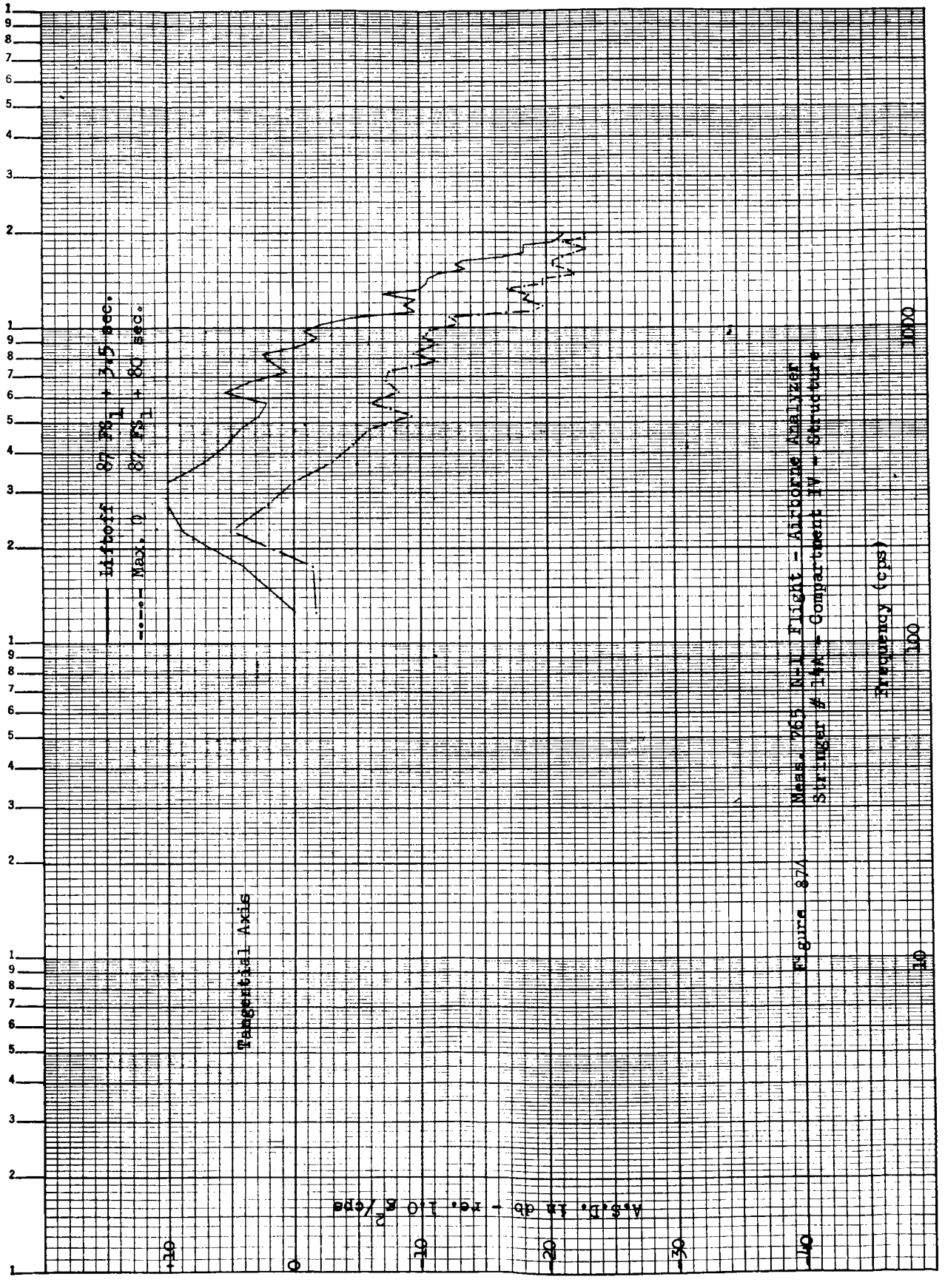

Liftoff
87 Ft. + 3.5 sec.
87 Ft. + 80 sec.
Max. Q
Tangential Axis
Acceleration in db re 1.0 g²/cps
Frequency (cps)
10
100
1000
Figure 87A Meas. 295 N-1 Flight - Airborne Analyzer
Stringer # 14W - Compartment IV - Structure

Fig. 875 Meas. No. M-1 Flight - Airborne Analyzer
Stringer #744 - Compartment IV Structure

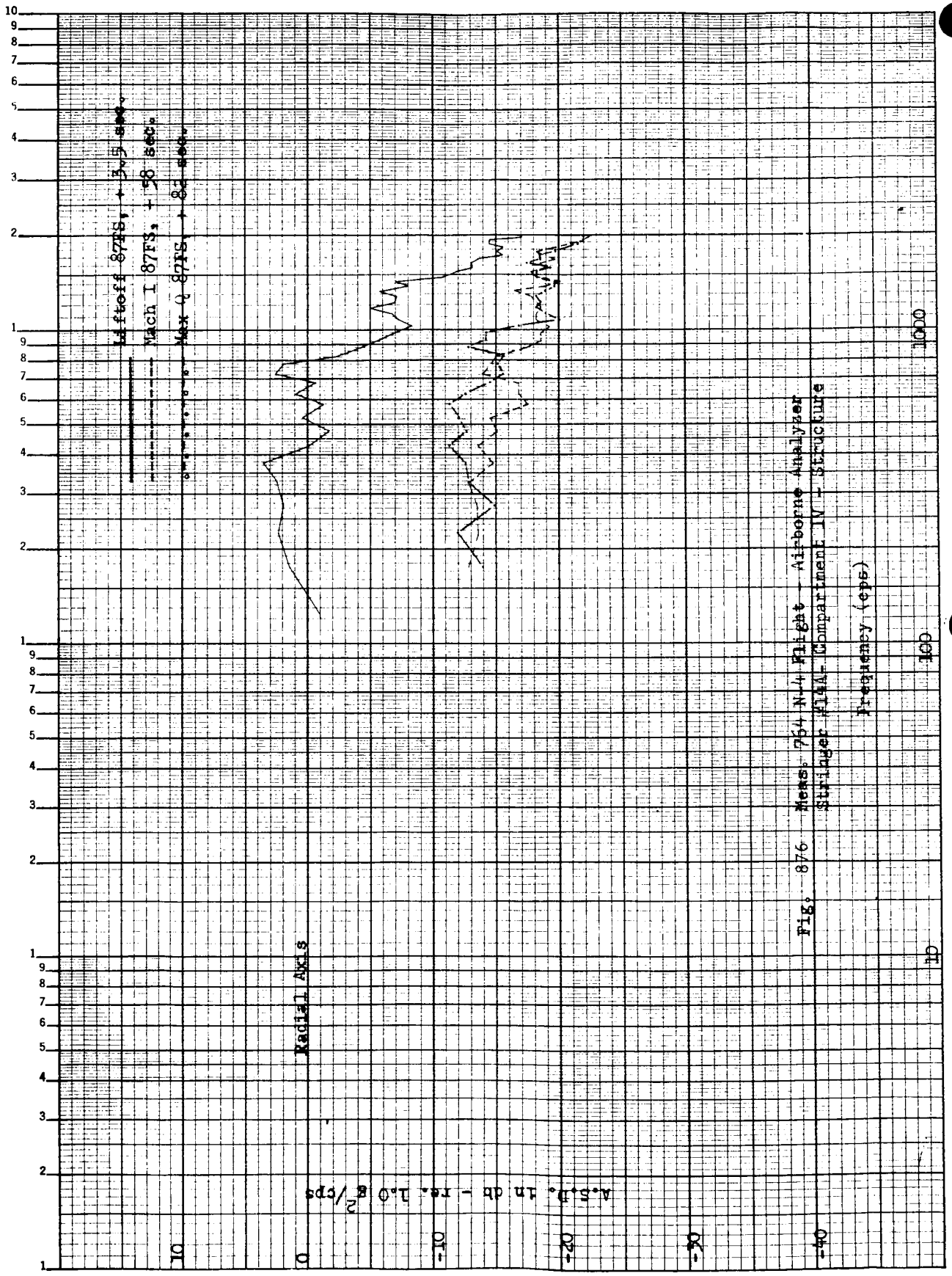

Liftoff 87FS, + 3.5 sec.
Mach 1 87FS, + 28 sec.
Max q 87FS, + 82 sec.
Radial Axis
Frequency (cps)
Fig. 876 Meas. 764 N-4 Flight - Airborne Analyzer
Spring 1964 - Compartment IV - Structure

Fig. 877 Mean 765 K-Flight - Airborne Analyzer
Spectra of Aircraft Compartment TV Structure

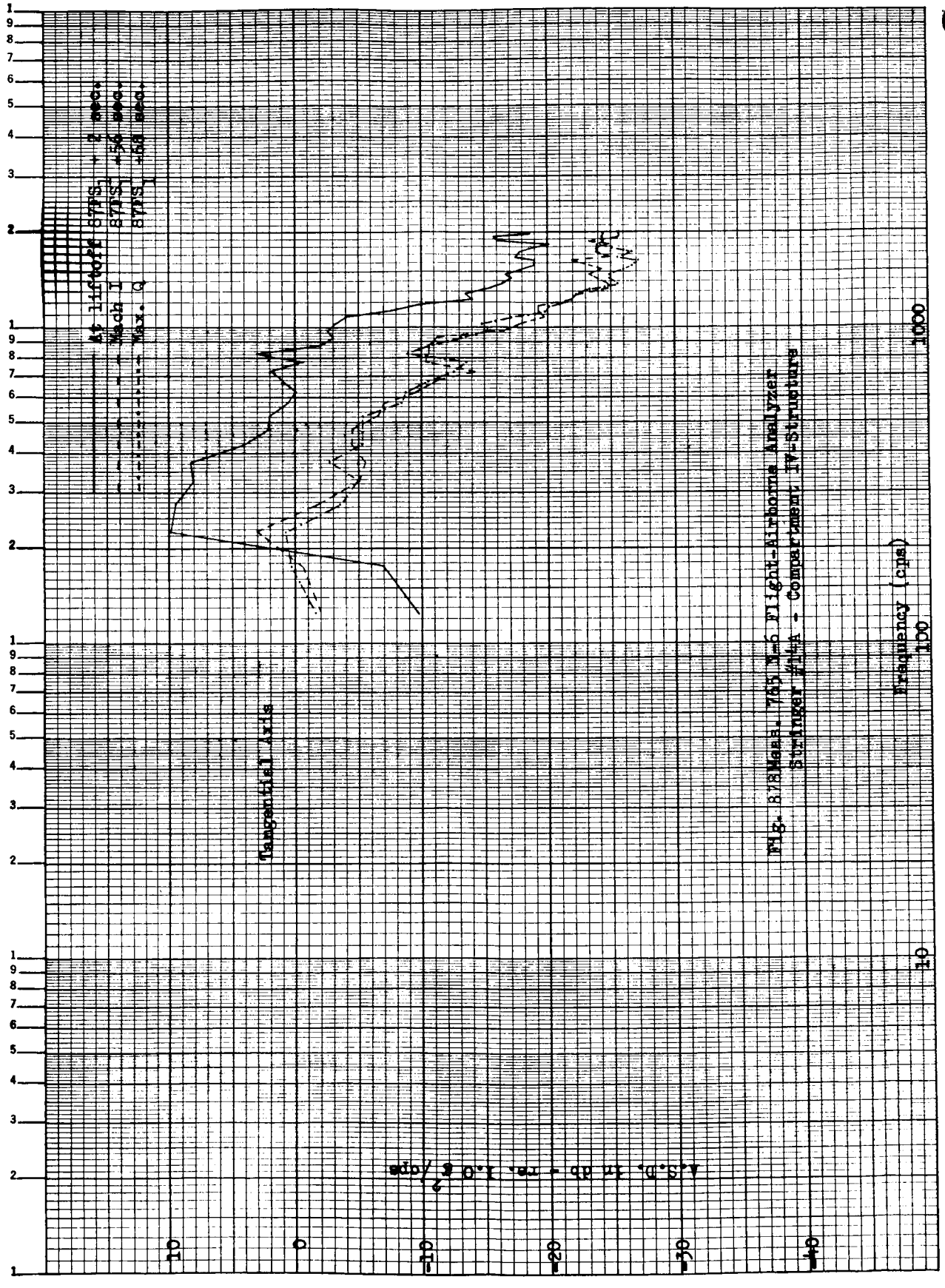


Fig. 878Wa-1, 765 Mc Flight-Airborne Analyzer
Structural Test - Compartment #4-Structure

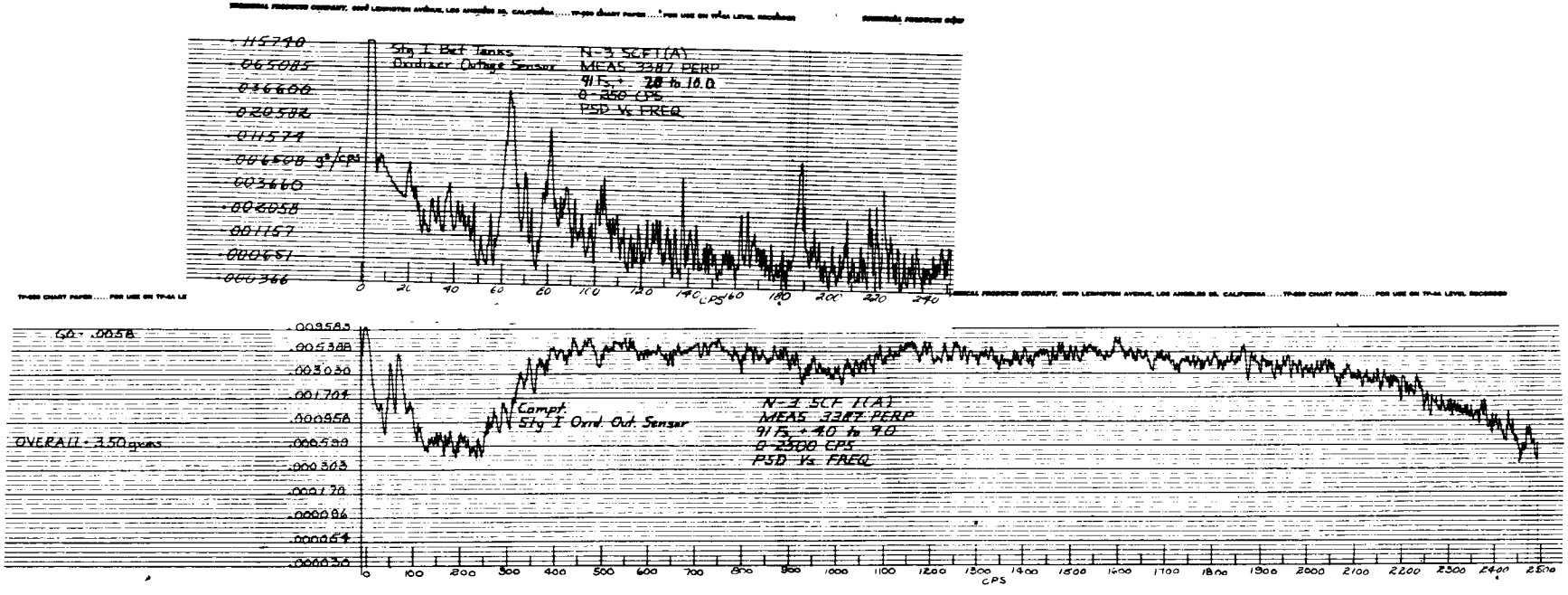

Stg I Ext Tanks
Oxidizer Outage Sensor
N-3 SCFT(A)
MEAS 3387 PERP
915 + 20 to 10.0
0-250 CPS
PSD Vs FREQ
.115740
.065085
.036606
.020582
.011574
.006508 g²/cps
.003660
.002058
.001157
.000651
.000366
0 20 40 60 80 100 120 140 CPS 160 180 200 220 240
GO - .0058
OVERALL - 3.50 grms
.009583
.005388
.003030
.001704
.000958
.000539
.000303
.000170
.000096
.000054
.000030
Compt.
Stg I Oxid. Out Sensor
N-3 SCF. I(A)
MEAS 3387 PERP
915 + 40 to 90
0-2500 CPS
PSD Vs FREQ
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 879

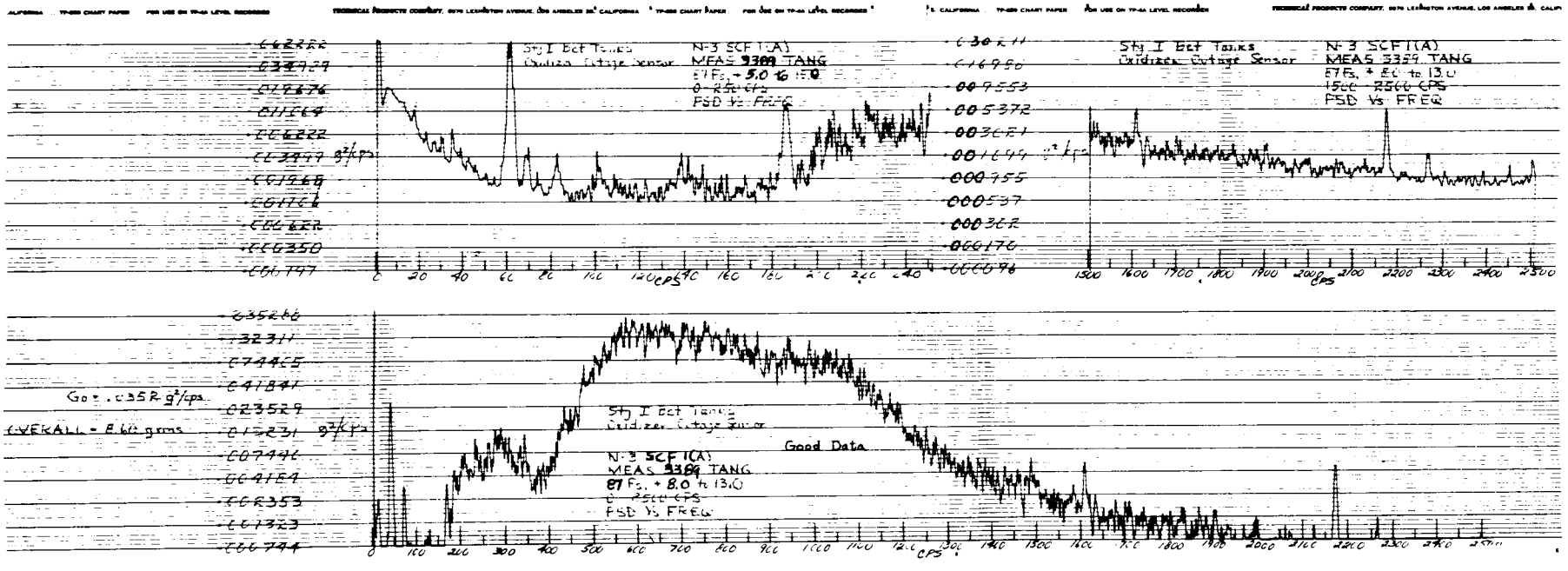
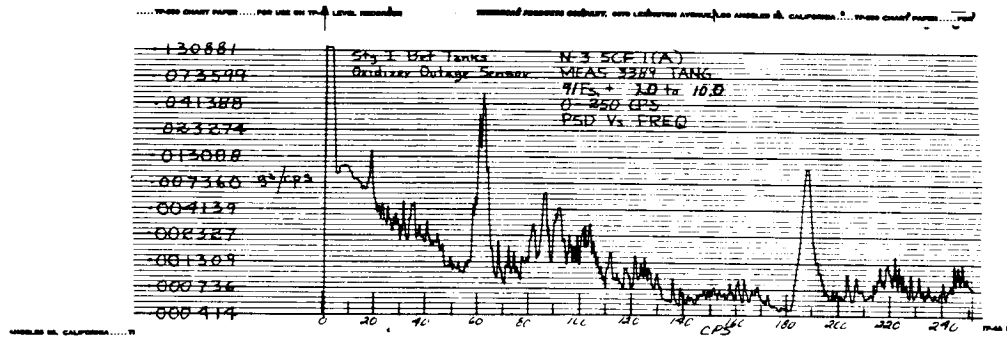

Sty I Bef Tanks
Oxidizer Outage Sensor
N-3 SCF 1(A)
MEAS 9309 TANG
87 Fs, + 5.0 to 13.0
0-2500 CPS
PSD Vs FREQ
Sty I Bef Tanks
Oxidizer Outage Sensor
N-3 SCF 1(A)
MEAS 9359 TANG
87 Fs, + 8.0 to 13.0
1500-2500 CPS
PSD Vs FREQ
Good Data
CPS

Fig. 880


Stg 1 Ox Tanks
Ambient Outage Sensor
N-3 SCF 1(A)
MEAS 3389 TANG
91 FS ± 10 to 10.8
0-250 CPS
PSD Vs FREQ
CPS

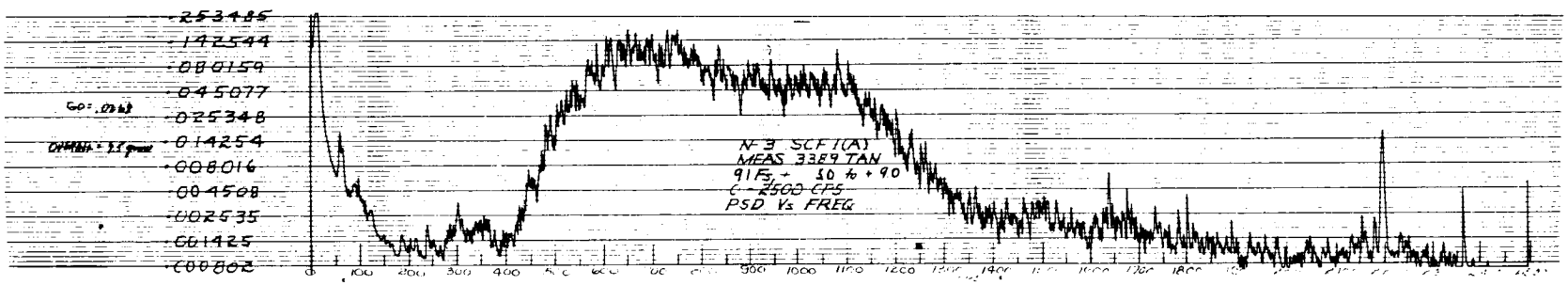

N-3 SCF 1(A)
MEAS 3389 TAN
91 FS ± 50 to + 90
0-2500 CPS
PSD Vs FREQ

Fig. 881

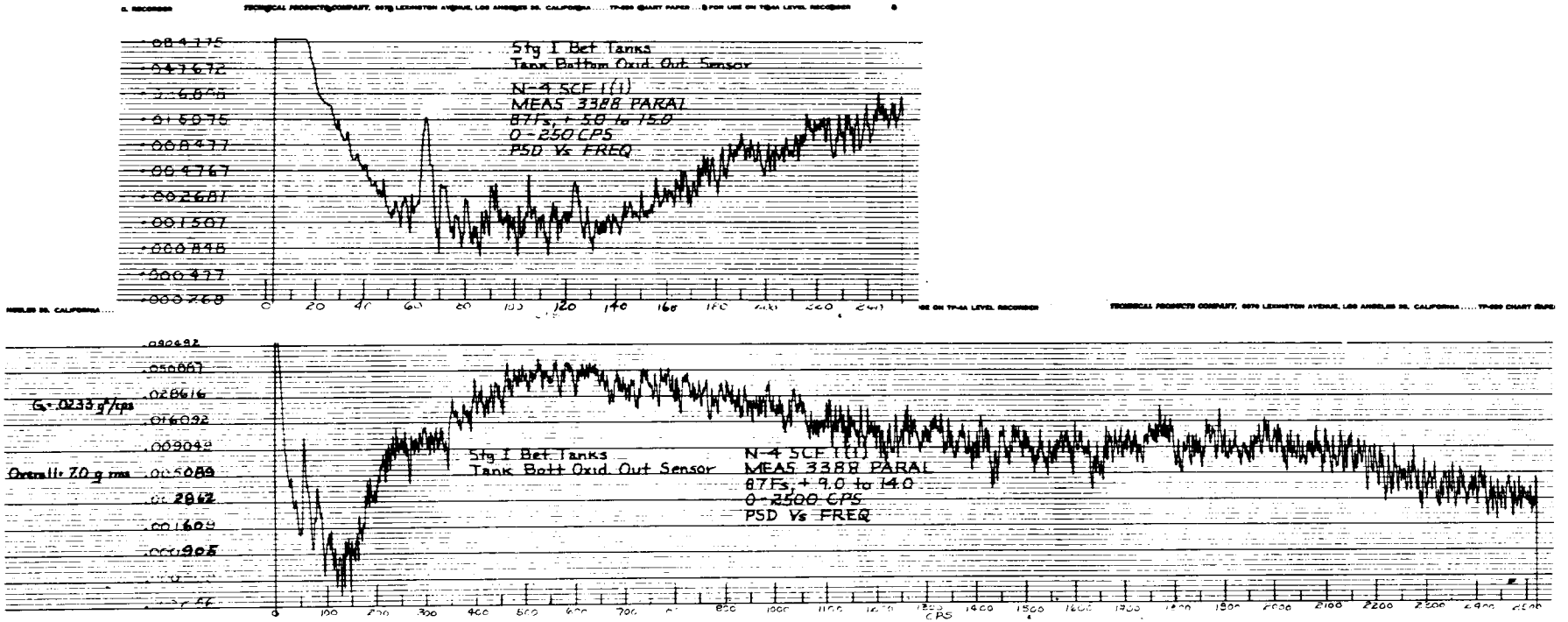
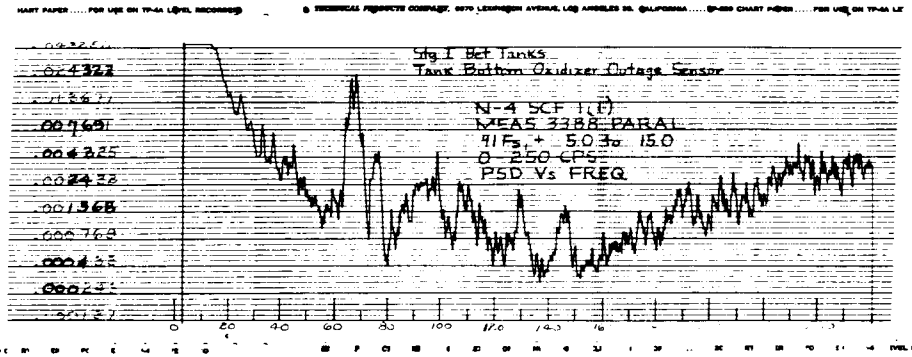

Stg I Bet Tanks
Tank Bottom Oxid. Out Sensor
N-4 SCF 1(1)
MEAS 3388 PARAL
87Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stg I Bet Tanks
Tank Bott Oxid. Out Sensor
N-4 SCF 1(1)
MEAS 3388 PARAL
87Fs, + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 882


Stg. I Bet Tanks
Tank Bottom Oxidizer Outage Sensor
N-4 SCF 1(1)
MEAS 3388 PARAL
91 Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ

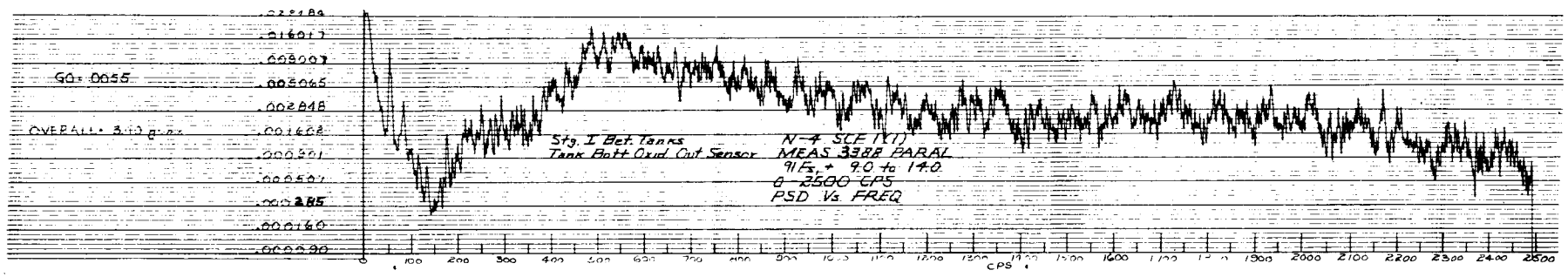

GO= 0055
OVERALL= 3.10 g rms
Stg. I Bet Tanks
Tank Batt Oxid Out Sensor
N-4 SCF 1(1)
MEAS 3388 PARAL
91 Fs, + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 883

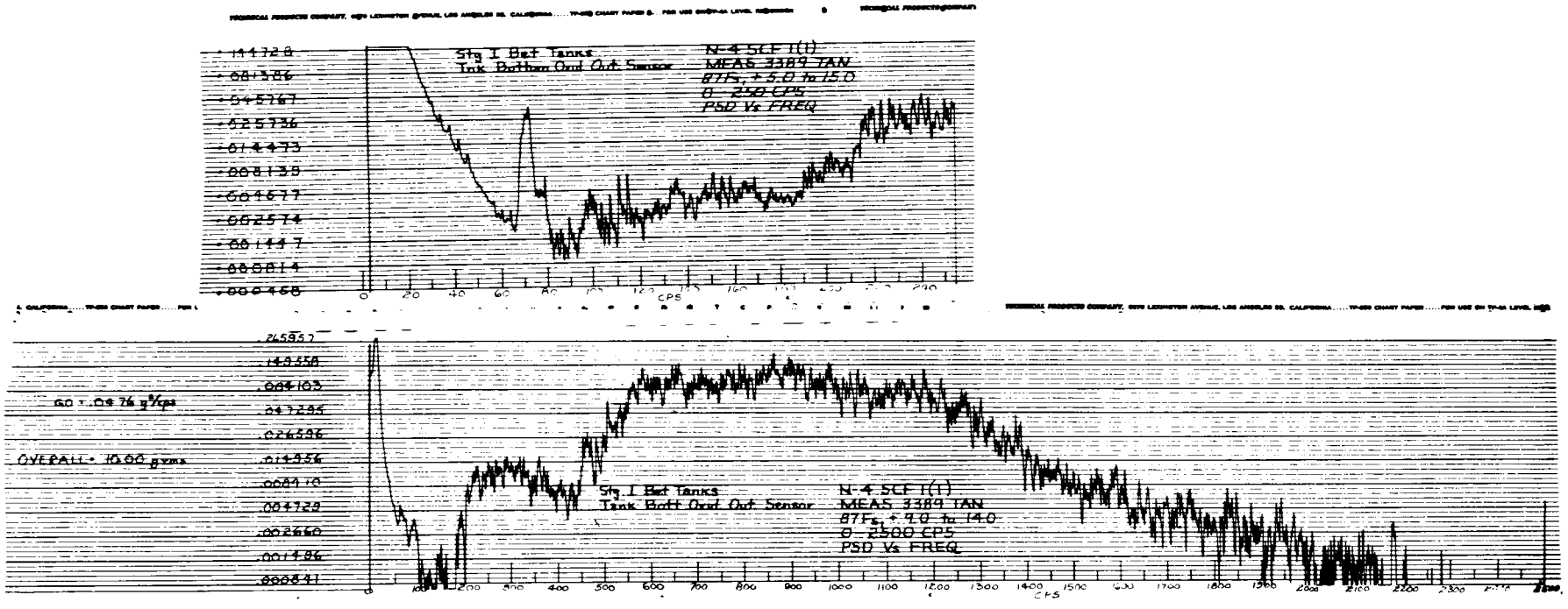

Stg I Bet Tanks
Tank Bottom Out Out Sensor
N-4 SCF I(t)
MEAS 3389 TAN
87F6 +5.0 to 15.0
0 - 250 CPS
PSD Vs FREQ
CPS
Stg I Bet Tanks
Tank Bott Out Out Sensor
N-4 SCF I(t)
MEAS 3389 TAN
87F6 +9.0 to 14.0
0 - 2500 CPS
PSD Vs FREQ
CPS

Fig. 884

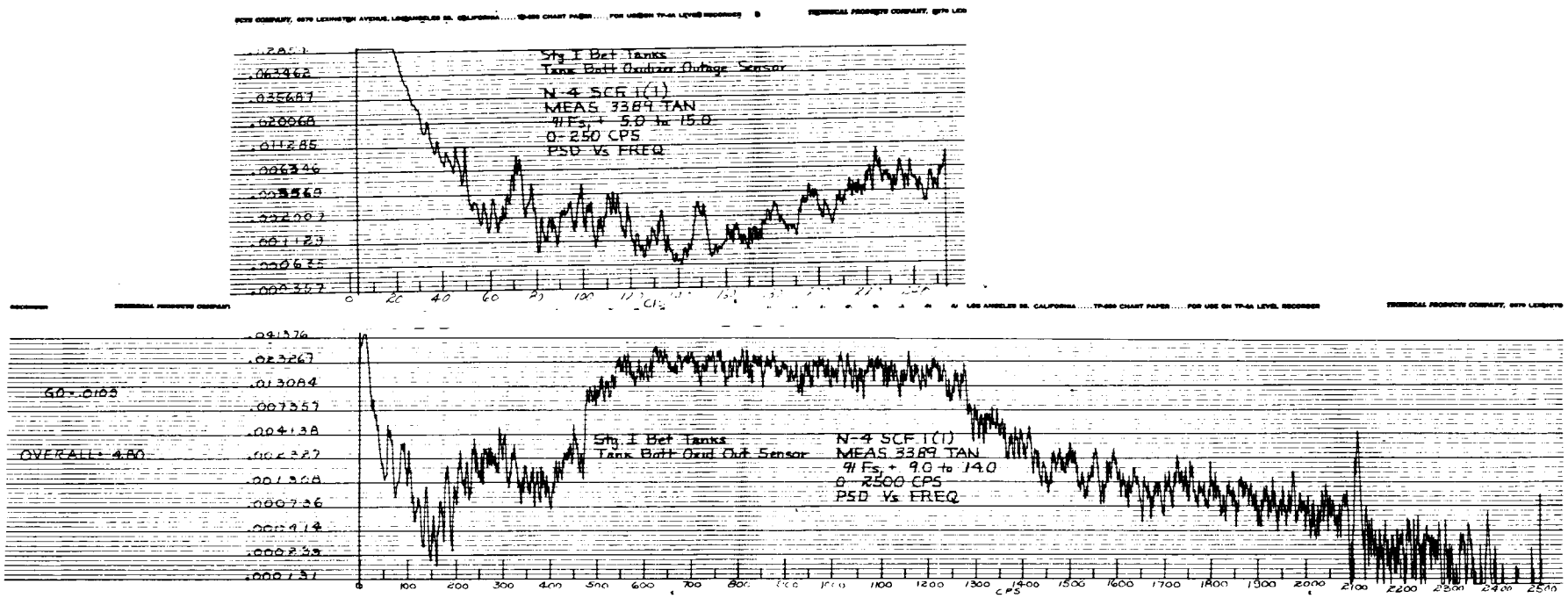

Stg I Bet Tanks
Tank Batt Oxidizer Outage Sensor
N-4 SCF 1(1)
MEAS 3389 TAN
91 Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Stg I Bet Tanks
Tank Batt Oxid Out Sensor
N-4 SCF 1(1)
MEAS 3389 TAN
91 Fs, + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
OVERALL = 4.80
CPS

Fig. 885

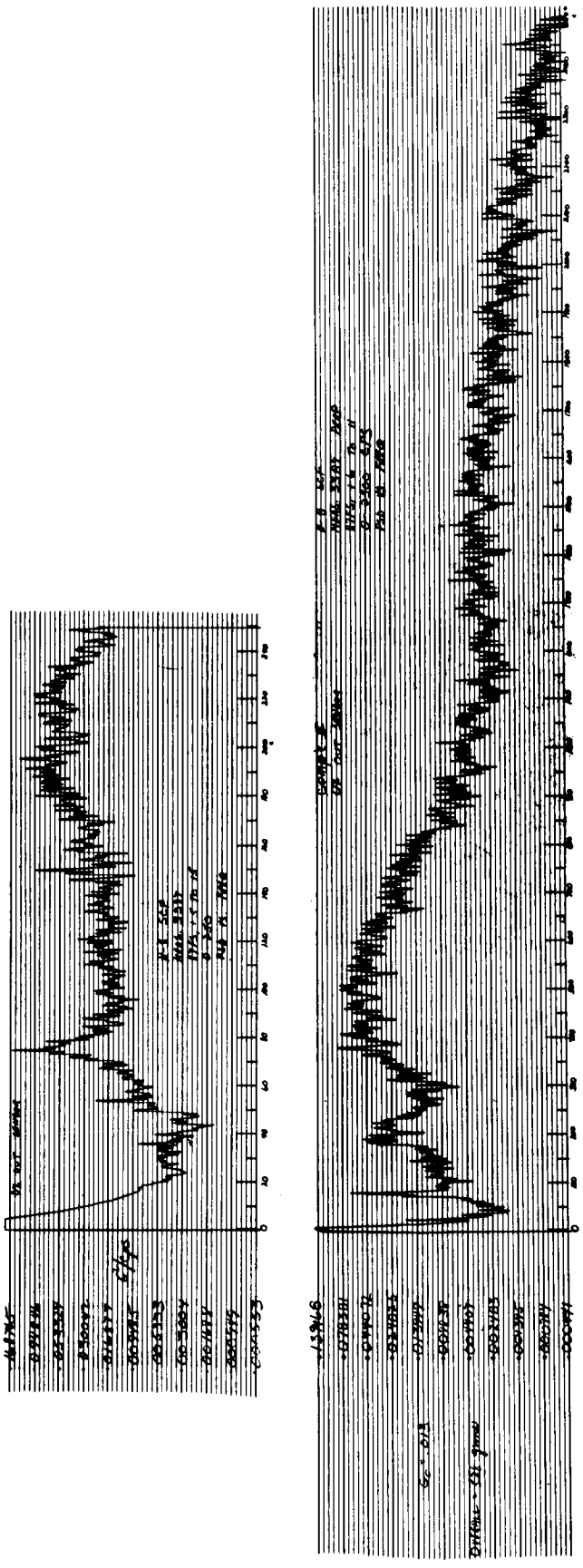


Fig. 886

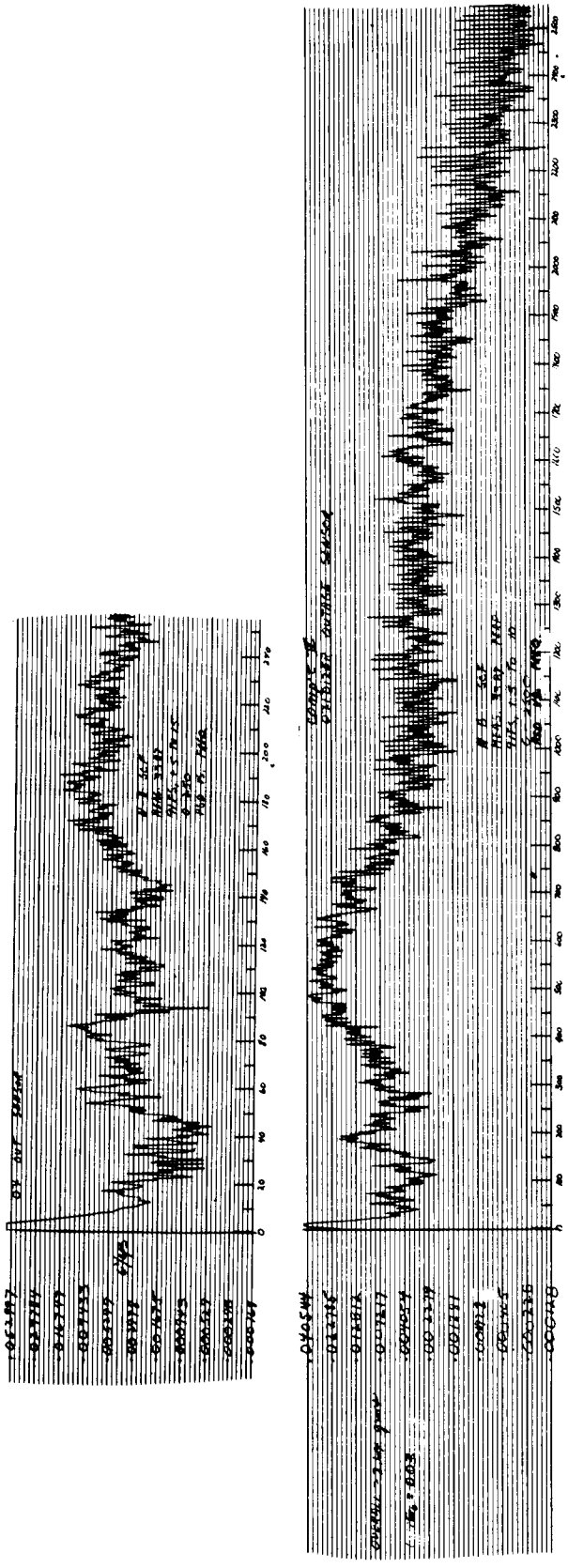


Fig. 887

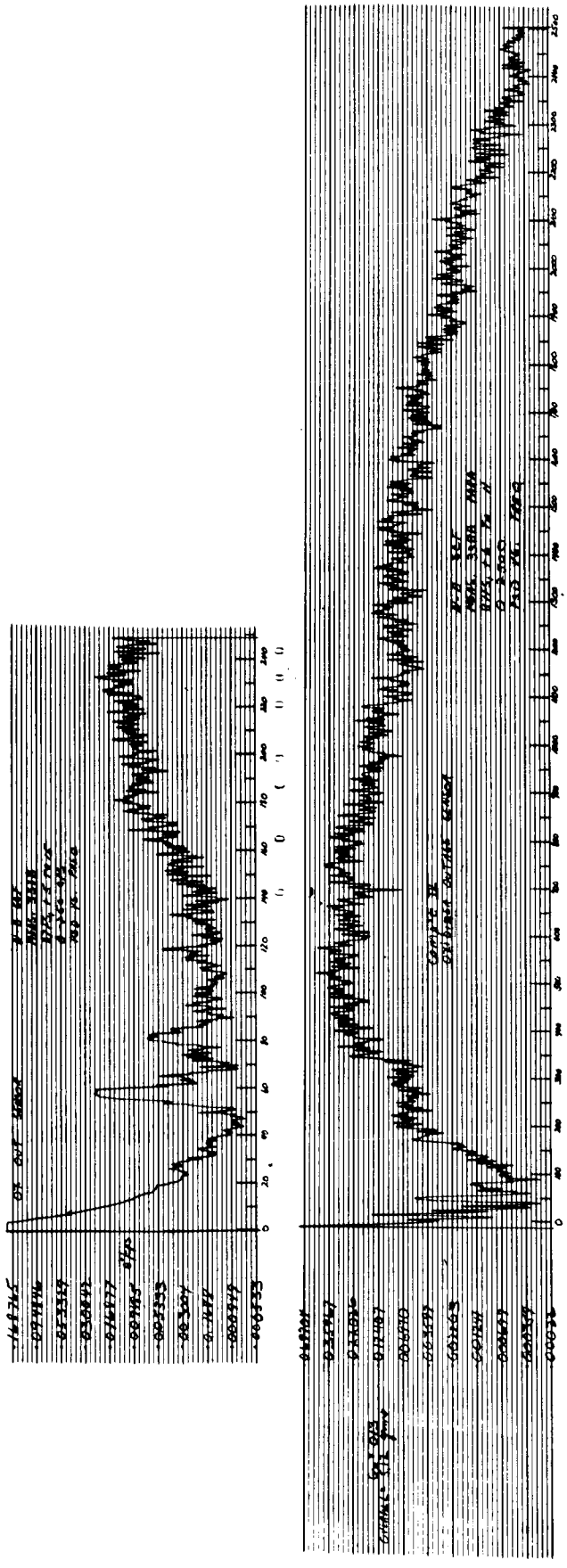


Fig. 888

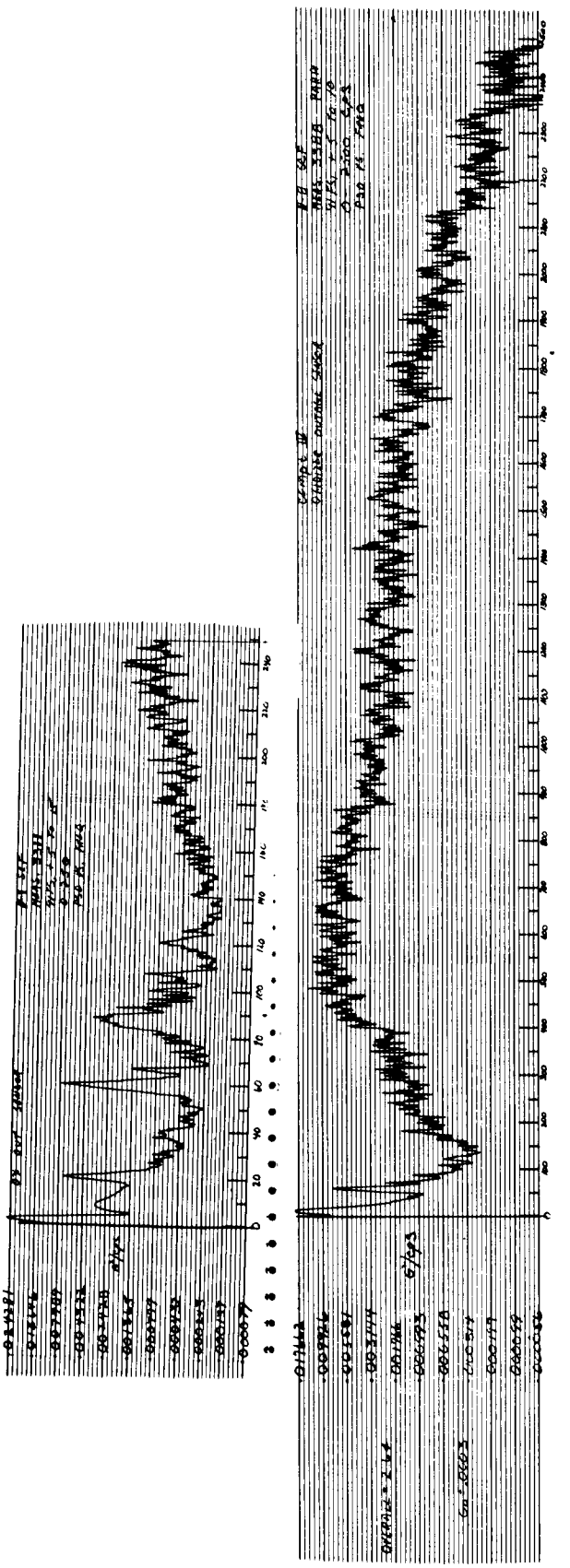


Fig. 889

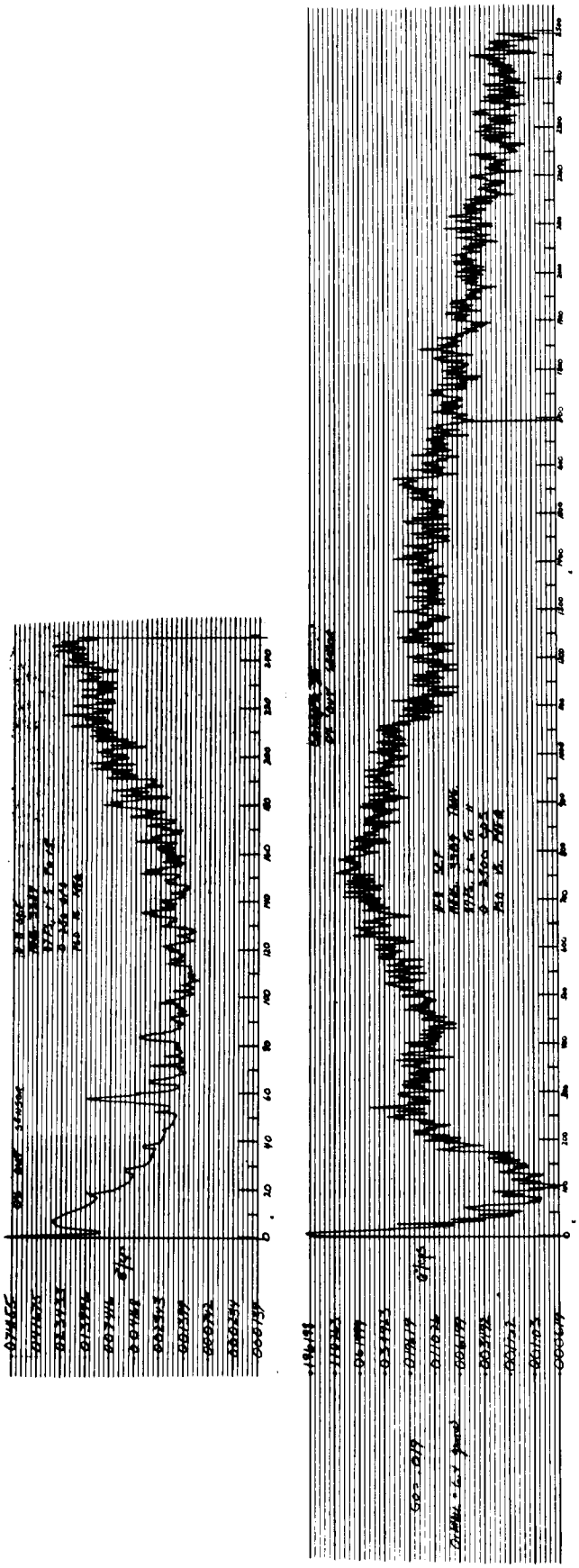


Fig. 890

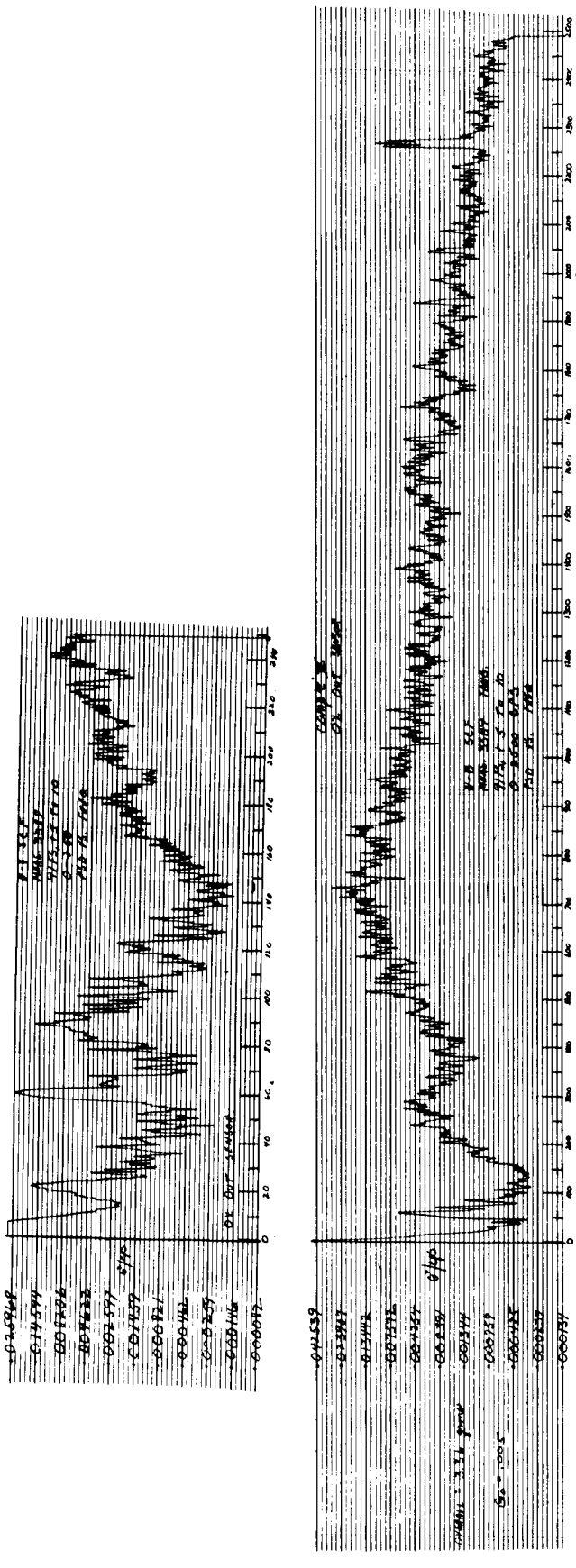


Fig. 891

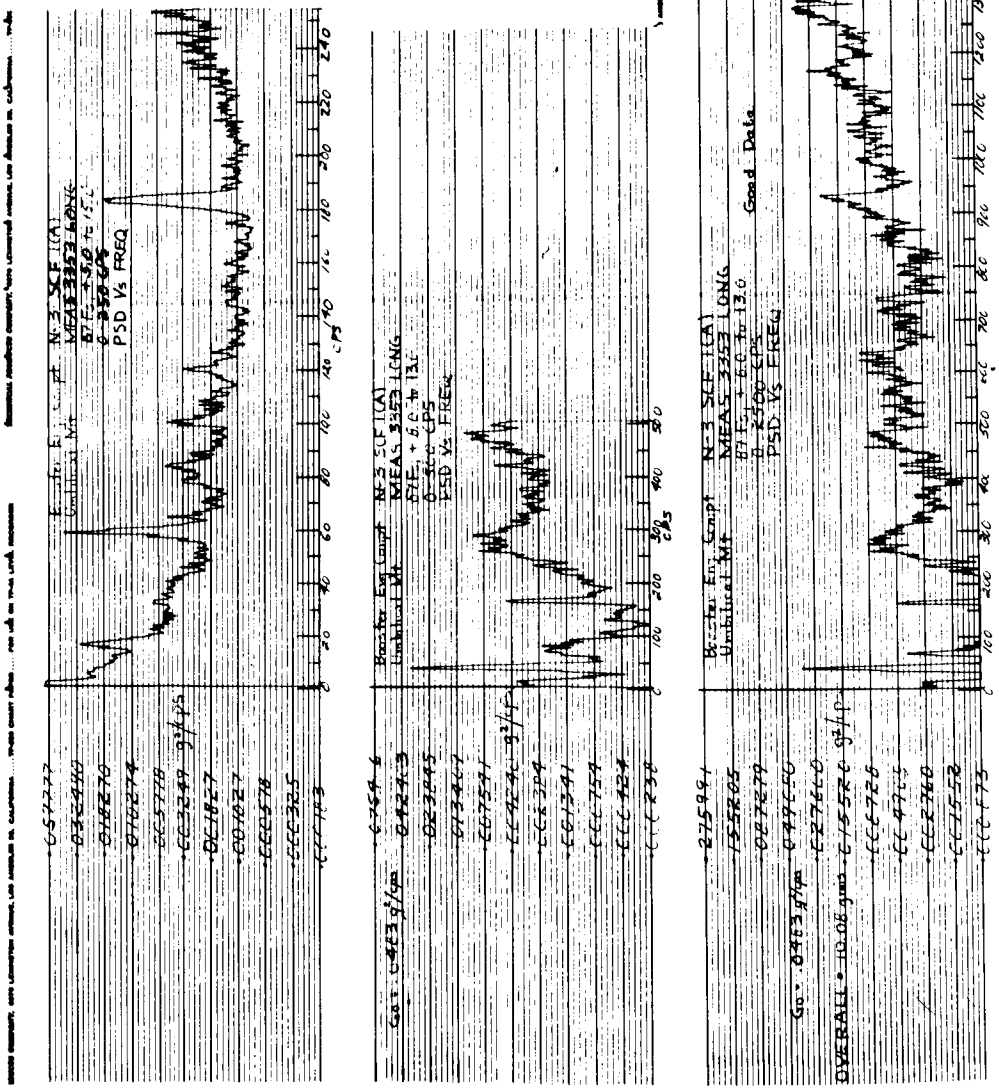


Fig. 892

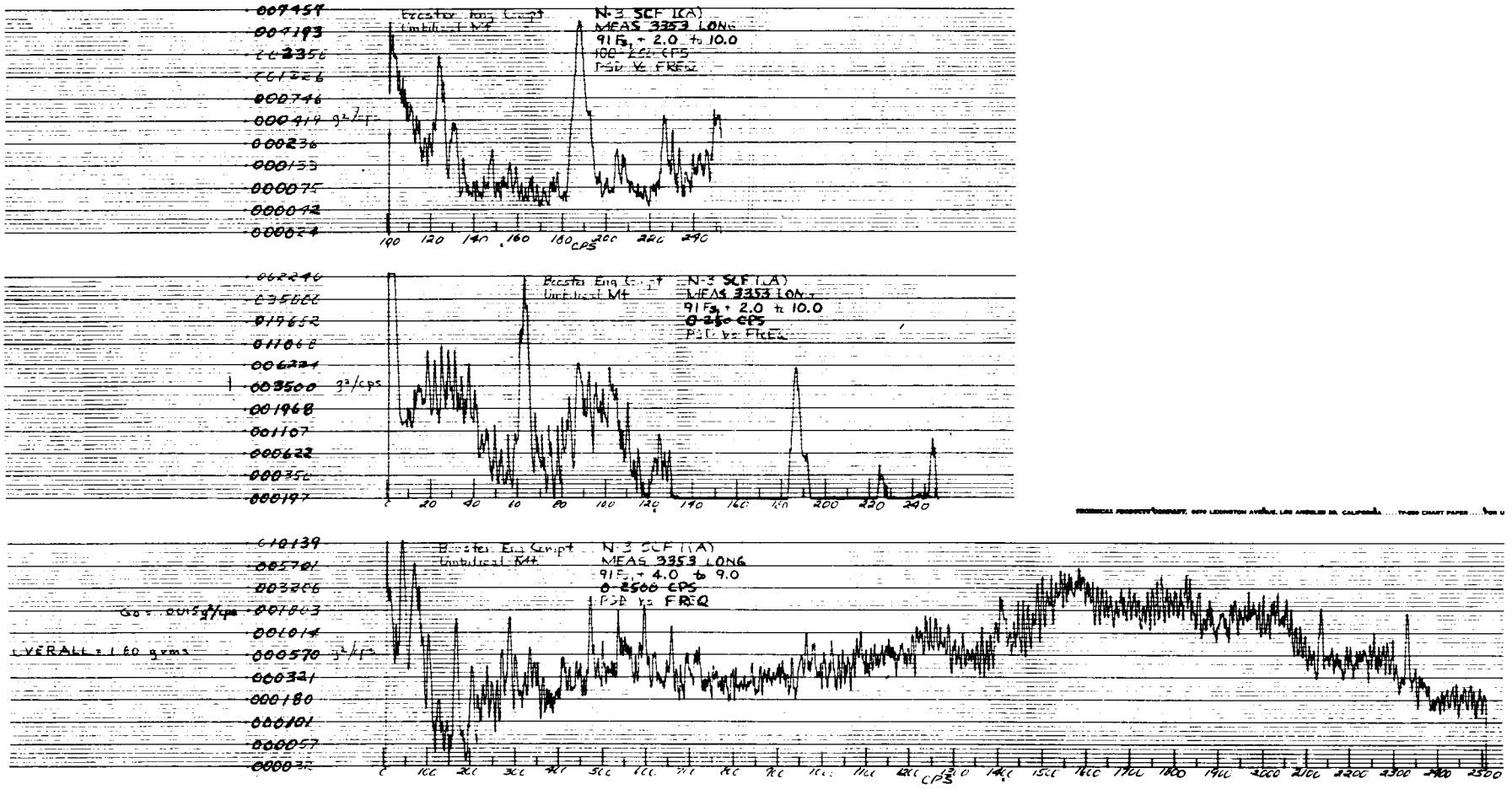

Booster Eng Cmpt
Umbilical M4
N-3 SCF (A)
MEAS 3353 LONG
91 F3 + 2.0 to 10.0
100-250 CPS
PSD Vs FREQ
g²/cps
Booster Eng Cmpt
Umbilical M4
N-3 SCF (A)
MEAS 3353 LONG
91 F3 + 2.0 to 10.0
0-250 CPS
PSD Vs FREQ
g²/cps
Booster Eng Cmpt
Umbilical M4
N-3 SCF (A)
MEAS 3353 LONG
91 F3 + 4.0 to 9.0
0-2500 EPS
PSD Vs FREQ
Go = 0.0159 g²/cps
OVERALL = 1.60 grms
g²/cps
CPS

Fig. 893

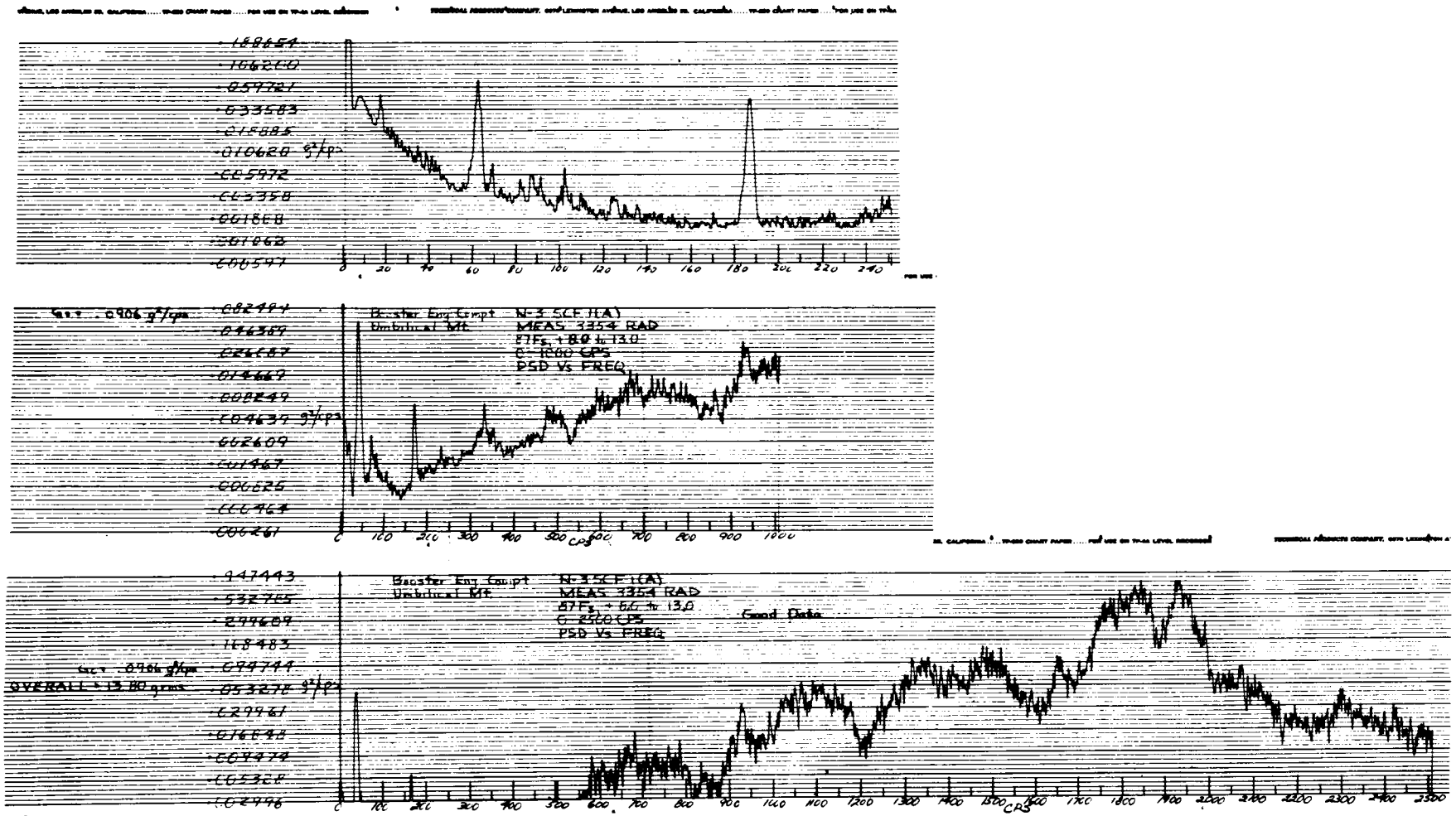

Booster Eng Compt
Umbilical Mt
N-3 SCF (A)
MEAS 3354 RAD
BTFs + 80 to 130
C- 1600 CPS
PSD Vs FREQ
Booster Eng Compt
Umbilical Mt
N-3 SCF (A)
MEAS 3354 RAD
BTFs + 66 to 130
C- 2500 CPS
PSD Vs FREQ
Good Data
OVERALL = 13.80 grms
CPS

Fig. 894

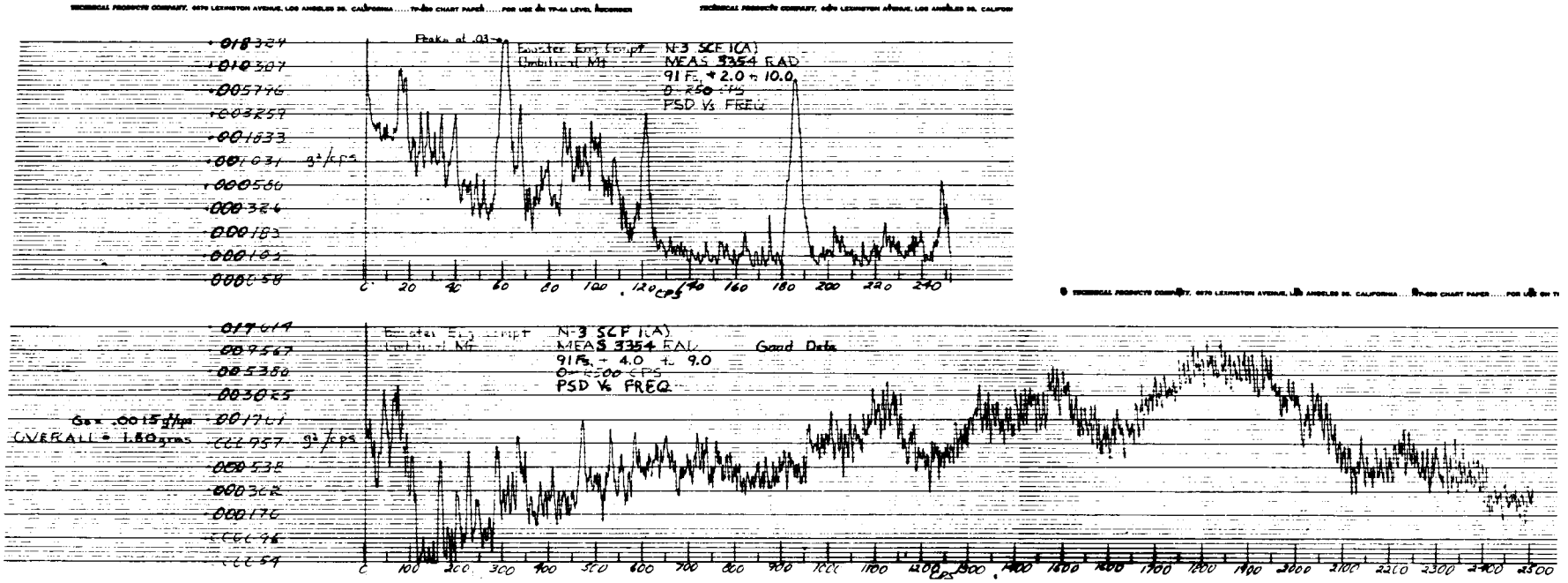

Booster Env Compt
Combined Mt
N-3 SCF 1(A)
MEAS 3354 RAD
91 Fs ± 2.0 ± 10.0
0-250 CPS
PSD Vs FREQ
Booster Env Compt
Combined Mt
N-3 SCF 1(A)
MEAS 3354 RAD
91 Fs ± 4.0 ± 9.0
0-2500 CPS
PSD Vs FREQ
Good Data
Gen .0015 g²/cps
OVERALL = 1.80 grms
g²/cps
CPS

Fig. 895

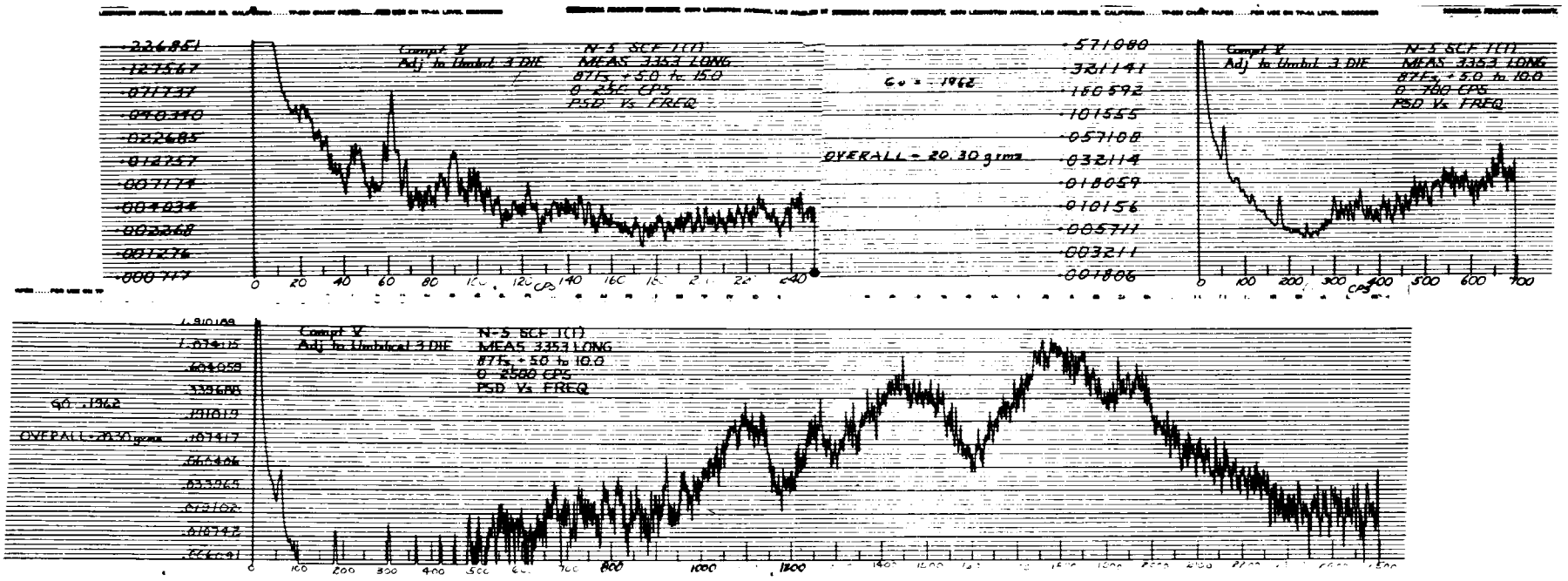

Compt V
Adj to Umbil 3 DIE
N-5 SCF 1(1)
MEAS 3353 LONG
871s + 5.0 to 15.0
0 256 CPS
PSD Vs FREQ
Go = .1962
OVERALL = 20.30 g rms
Compt V
Adj to Umbil 3 DIE
N-5 SCF 1(1)
MEAS 3353 LONG
871s + 5.0 to 10.0
0 700 CPS
PSD Vs FREQ
Compt V
Adj to Umbilical 3 DIE
N-5 SCF 1(1)
MEAS 3353 LONG
871s + 5.0 to 10.0
0 2500 CPS
PSD Vs FREQ
Go .1962
OVERALL = 20.30 g rms
CPS

Fig. 896

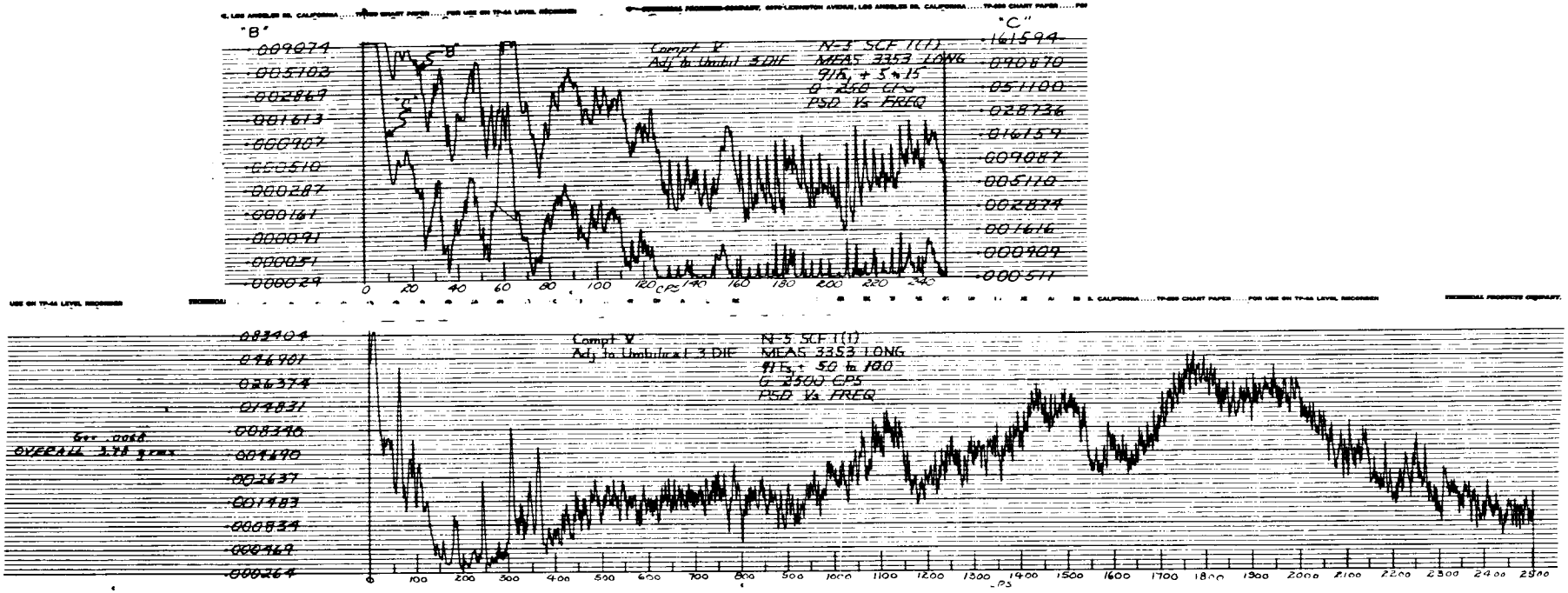

"B"
"C"
Compt V
Adj to Umbilical 3 DIF
N-3 SCF I(f)
MEAS 3353 LONG
9 FS + 5 to 15
0-250 CPS
PSD Vs FREQ
Compt V
Adj to Umbilical 3 DIF
N-3 SCF I(f)
MEAS 3353 LONG
9 FS + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
OVERALL 3.48 grms

Fig. 897

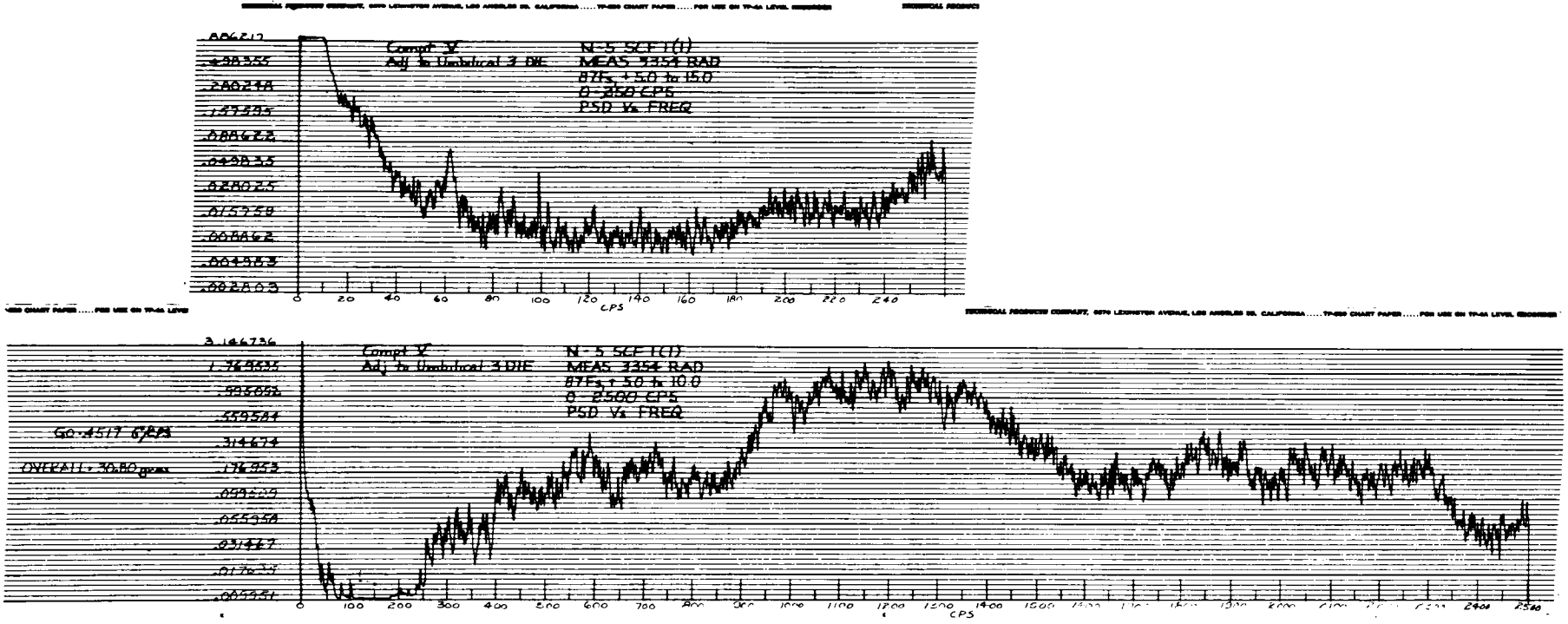

Compt V
Adj to Umbilical 3 DIE
N-5 SCF1(1)
MEAS 3354 RAD
87F5 + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
CPS
Compt V
Adj to Umbilical 3 DIE
N-5 SCF1(1)
MEAS 3354 RAD
87F5 + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
GO .4517 G²/CPS
OVERALL 30.80 grms
CPS

Fig. 898

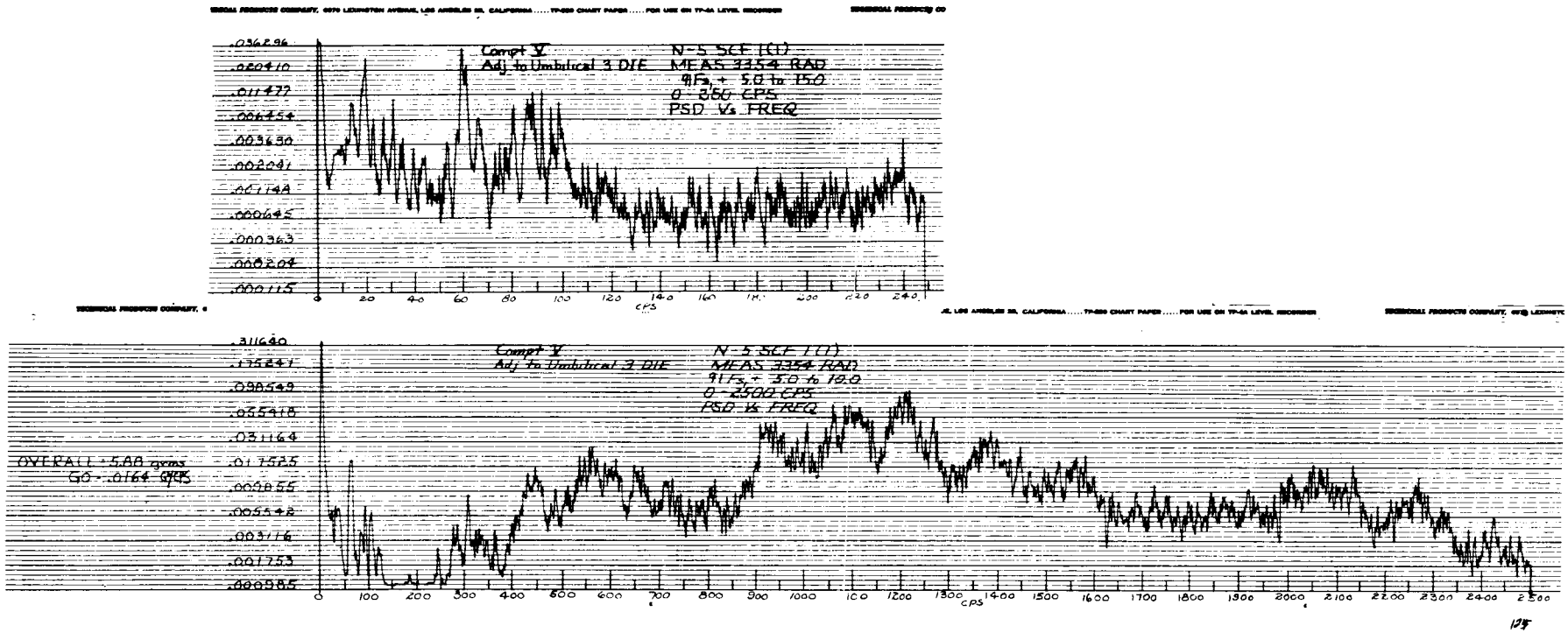

Compt V
Adj to Umbilical 3 DIE
N-5 SCF (C)
MEAS 3354 RAD
91Fs + 5.0 to 15.0
0 - 250 CPS
PSD Vs FREQ
.036296
.020410
.011477
.006454
.003630
.002041
.001148
.000645
.000363
.000204
.000115
0 20 40 60 80 100 120 140 160 180 200 220 240
CPS
Compt V
Adj to Umbilical 3 DIE
N-5 SCF (C)
MEAS 3354 RAD
91Fs + 5.0 to 10.0
0 - 2500 CPS
PSD Vs FREQ
OVERALL 5.88 grms
GO - .0164 G²/CPS
.311640
.175241
.098549
.055418
.031164
.017525
.009855
.005542
.003116
.001753
.000985
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 899

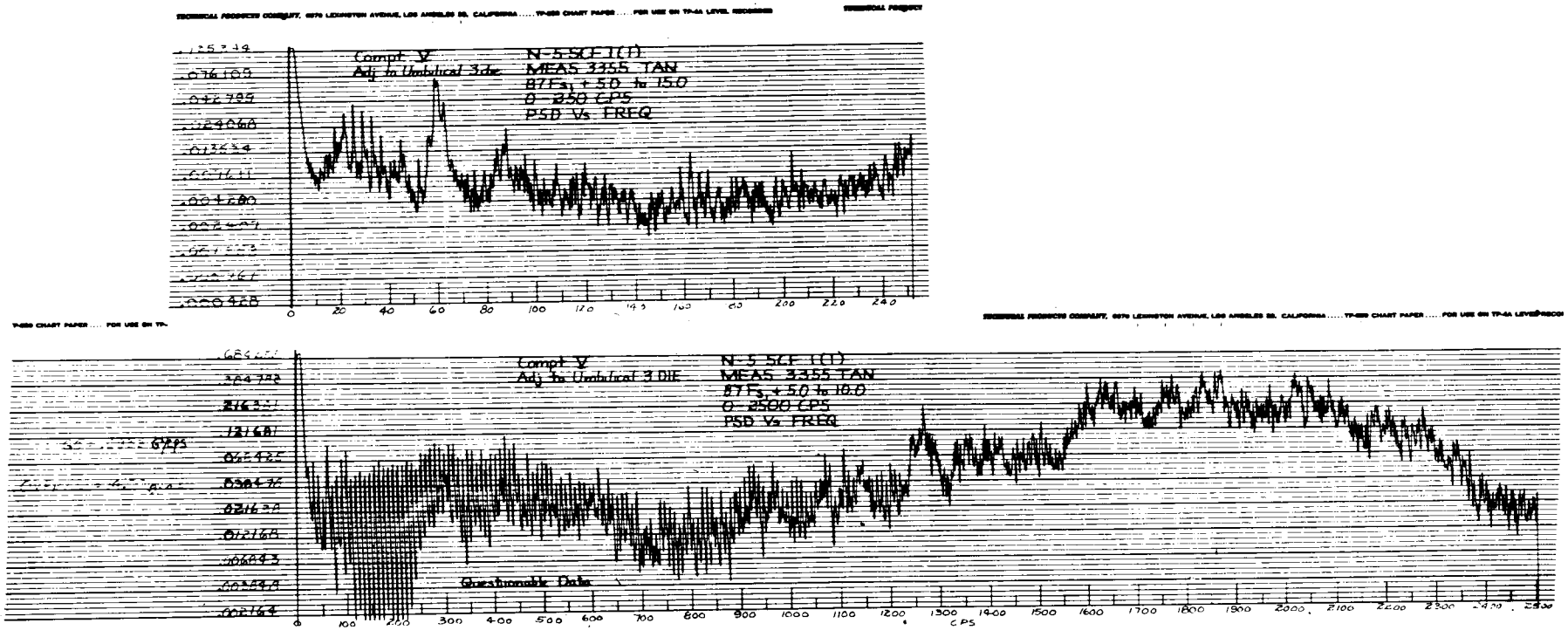

Compt V
Adj to Umbilical 3die
N-5 SCF 1(1)
MEAS 3355 TAN
87F$_{S_1}$ + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Compt V
Adj to Umbilical 3 DIE
N-5 SCF 1(1)
MEAS 3355 TAN
87F$_{S_1}$ + 5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
Questionable Data
CPS

Fig. 900

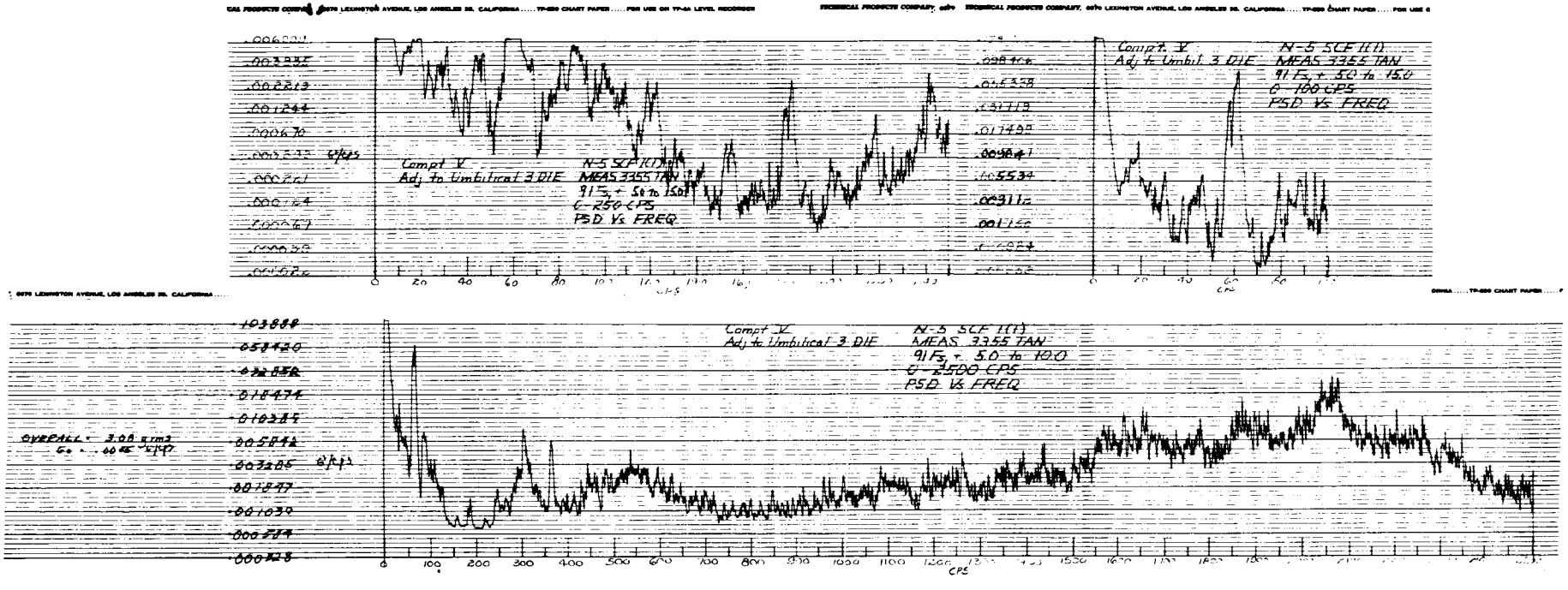

Compt. V
Adj. to Umbilical 3 DIE
N-5 SCF II(1)
MEAS 3355 TAN
91 F3 + 5.0 to 15.0
C-250 CPS
PSD Vs FREQ
Compt. V
Adj. to Umbilical 3 DIE
N-5 SCF II(1)
MEAS 3355 TAN
91 F3 + 5.0 to 15.0
C-100 CPS
PSD Vs FREQ
Compt. V
Adj. to Umbilical 3 DIE
N-5 SCF II(1)
MEAS 3355 TAN
91 F3 + 5.0 to 10.0
C-2500 CPS
PSD Vs FREQ
OVERALL = 3.08 grms
CPS

Fig. 901

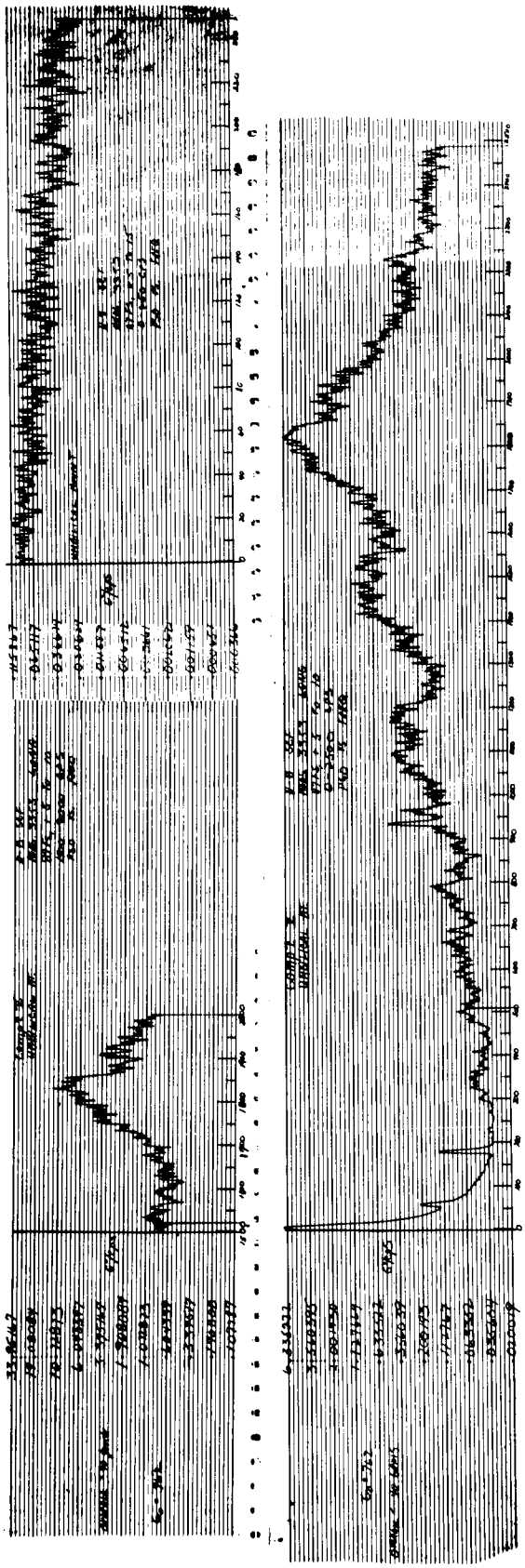


Fig. 902

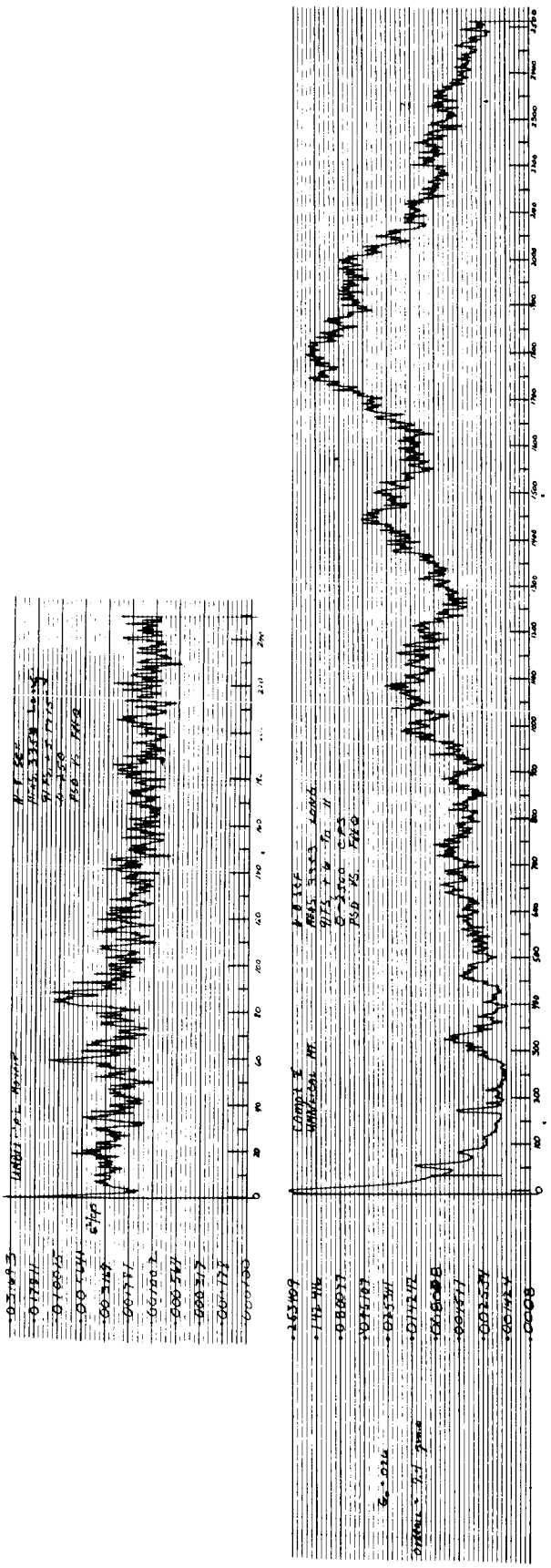


Fig. 903

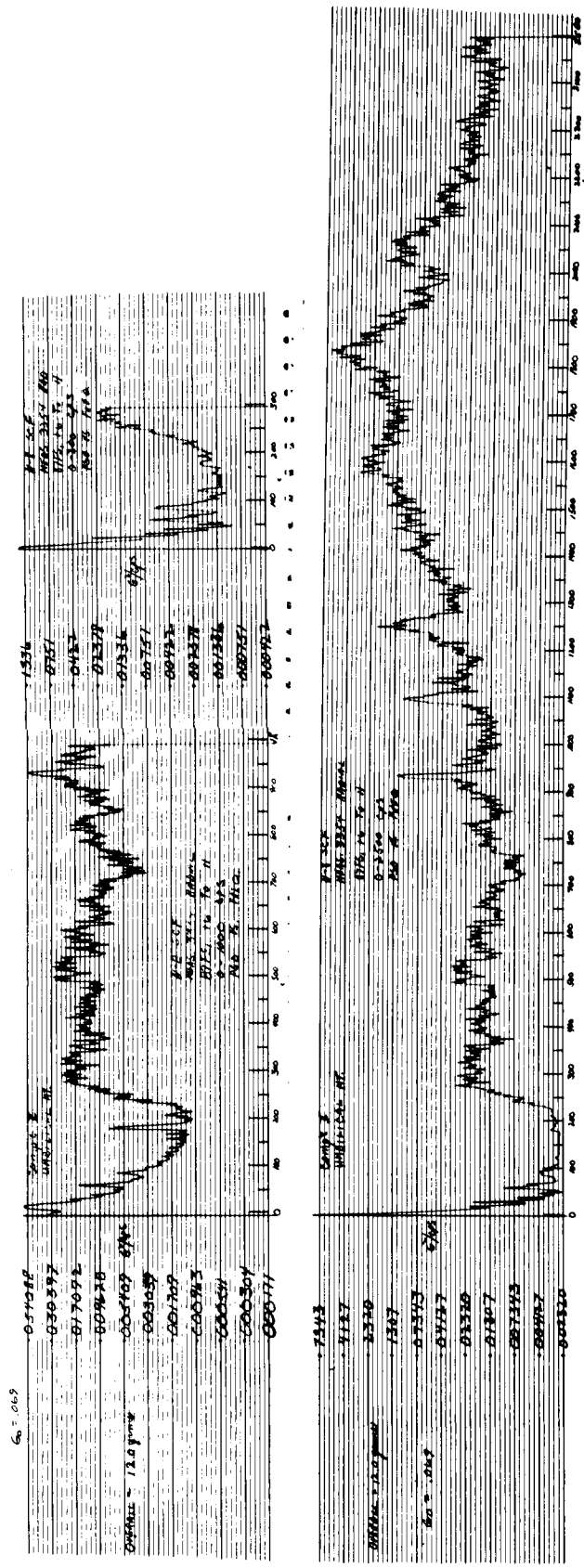


Fig. 904

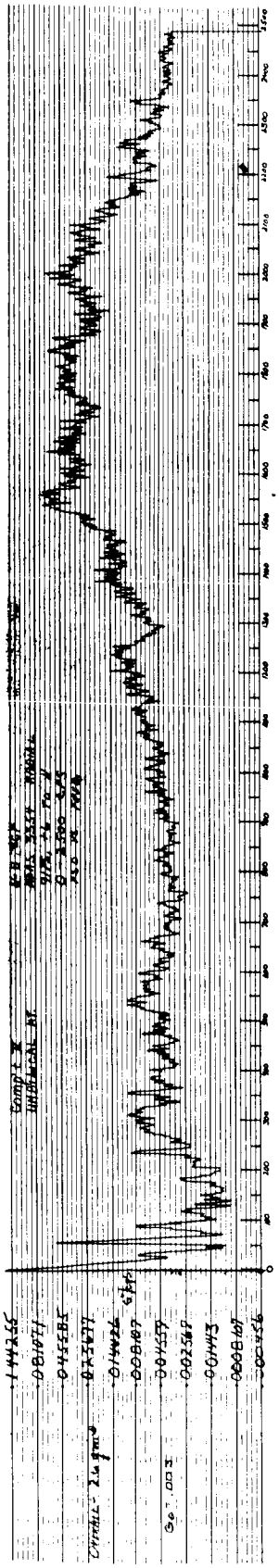


Fig. 905

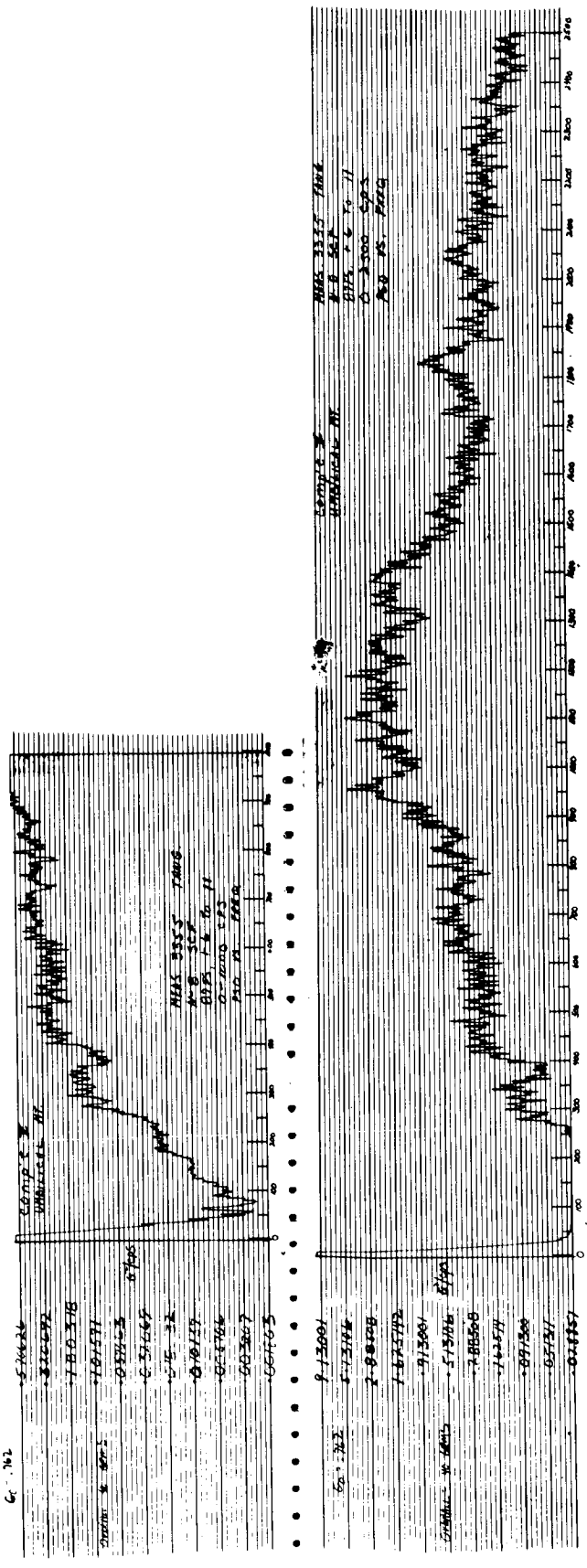


Fig. 906

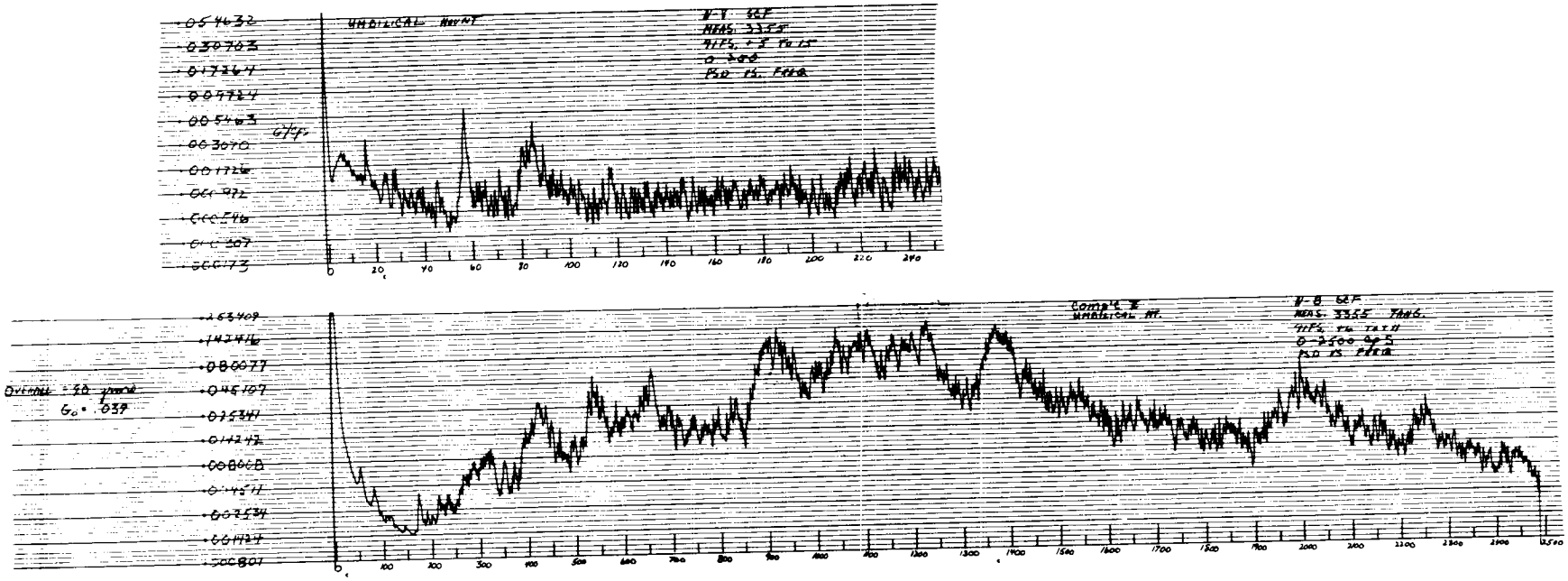
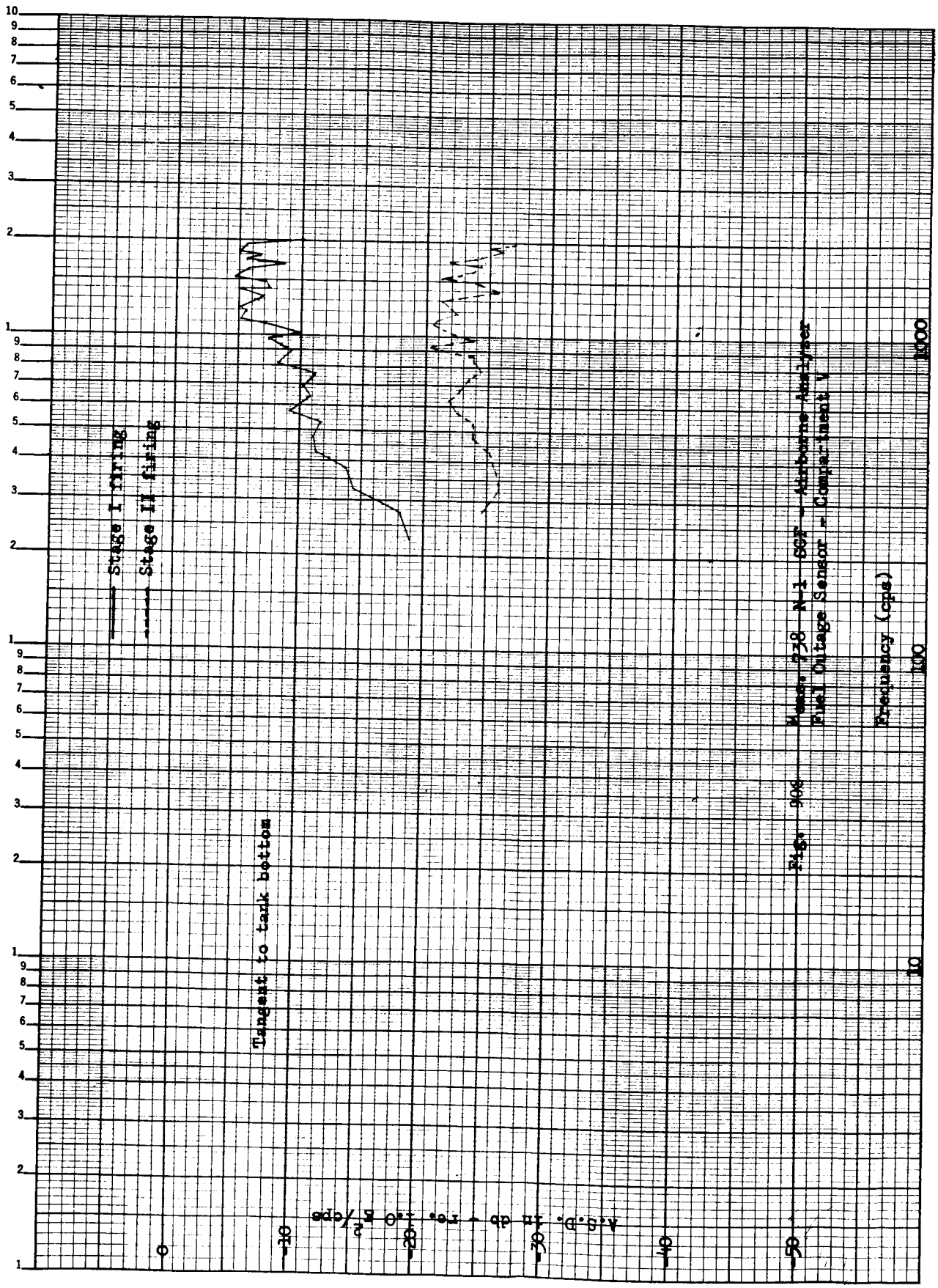


Fig. 907


Stage I firing
Stage II firing
Tangent to tank bottom
Fig. 904
Rocket #28 N-1 GSE - Airborne Analyzer
Pad Outage Sensor - Compartment V
Frequency (cps)
1000
100
10
0
-10
-20
-30
-40
-50

Stage II firing
Stage III firing
Parallel to tank bottom
Frequency (cps)
Fig. 906 Meas. 720 NL SCF - Airborne Analyzer
Fuel Outage Sensor - Compartment 4

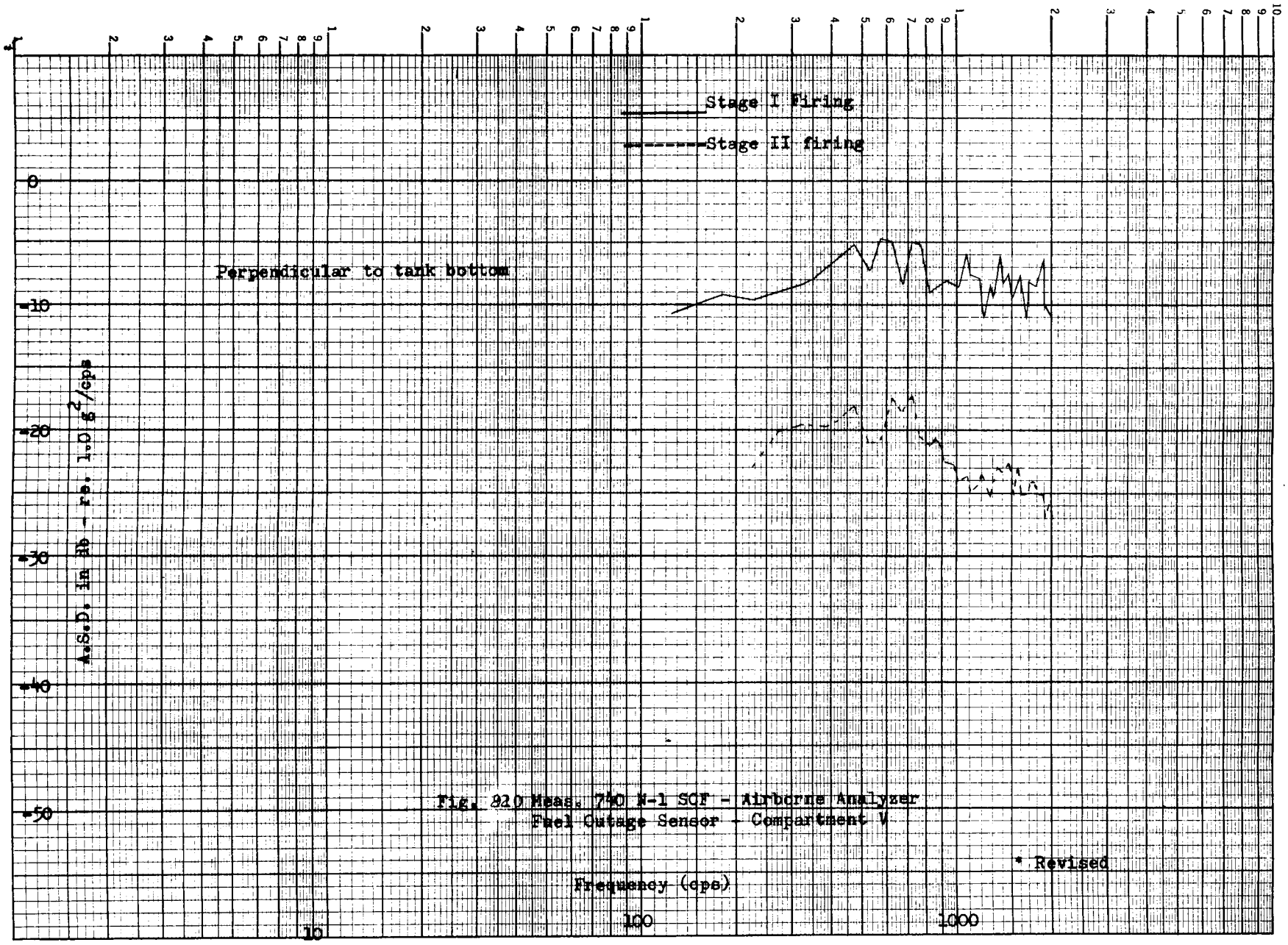


Fig. 920 Meas. 740 M-1 SCF - Airborne Analyzer
Fuel Outage Sensor - Compartment V

* Revised

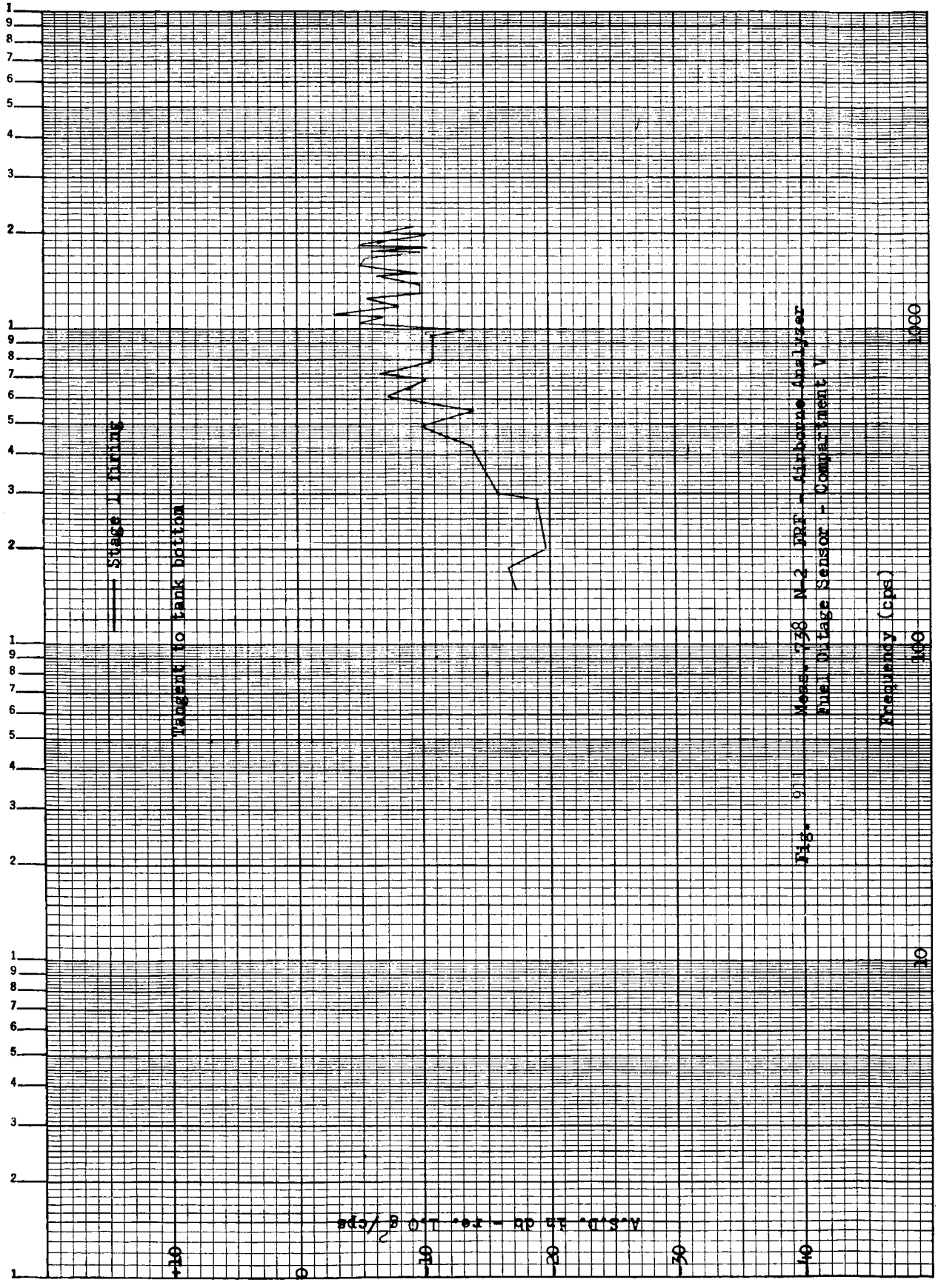

Stage I Engine
Tangent to tank bottom
Weber 728 - N2 PSF - Airborne Analyzer
Fuel Voltage Sensor - Compartment 1
Frequency (cps)
A.S.D. in db - re. 1.0 g²/cps

Fig. 6.11

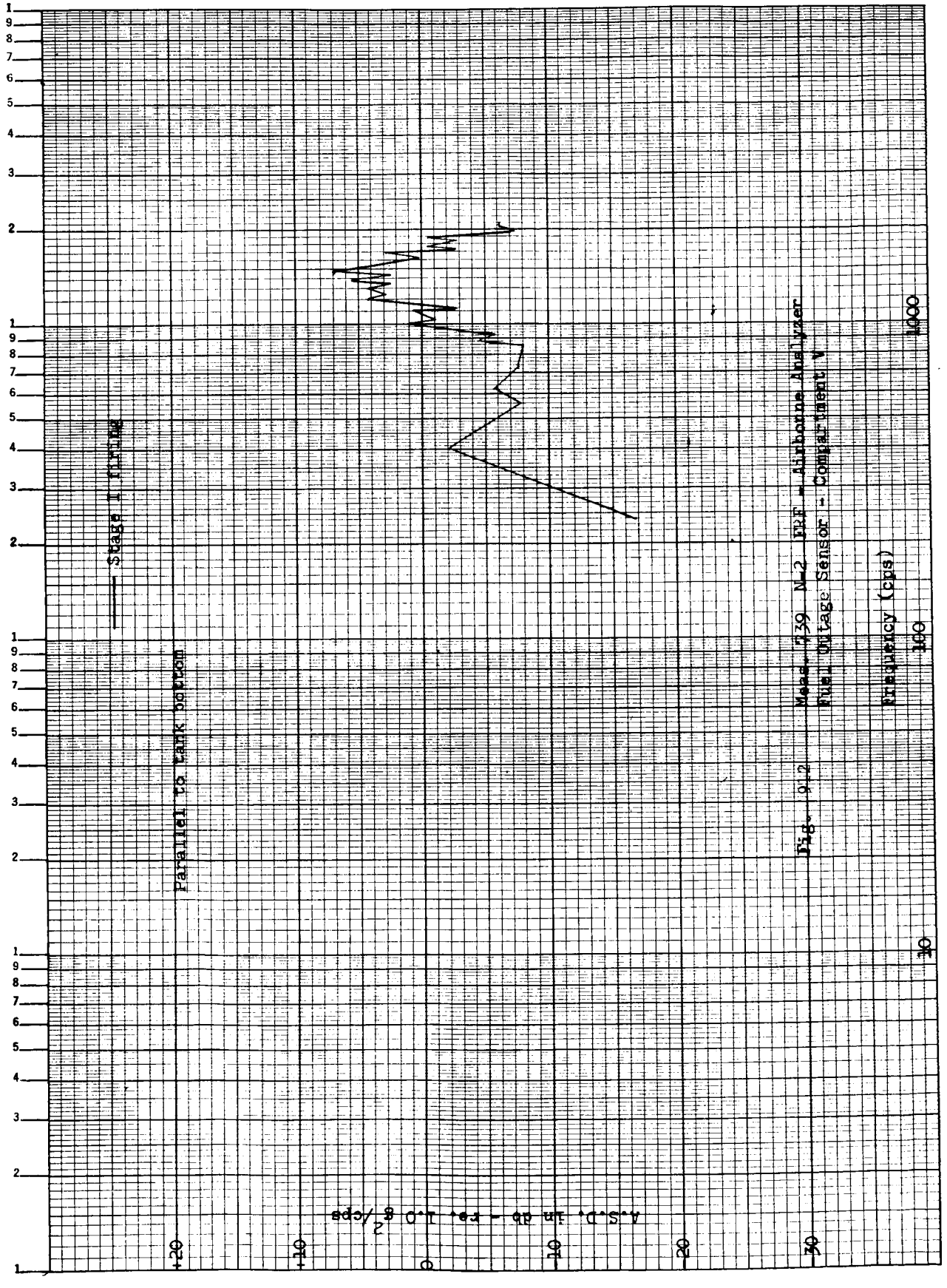


Fig. 9-2 Weapon 739 M-2 TSF - Airborne Analyzer
Fuel Outage Sensor - Compartment 4

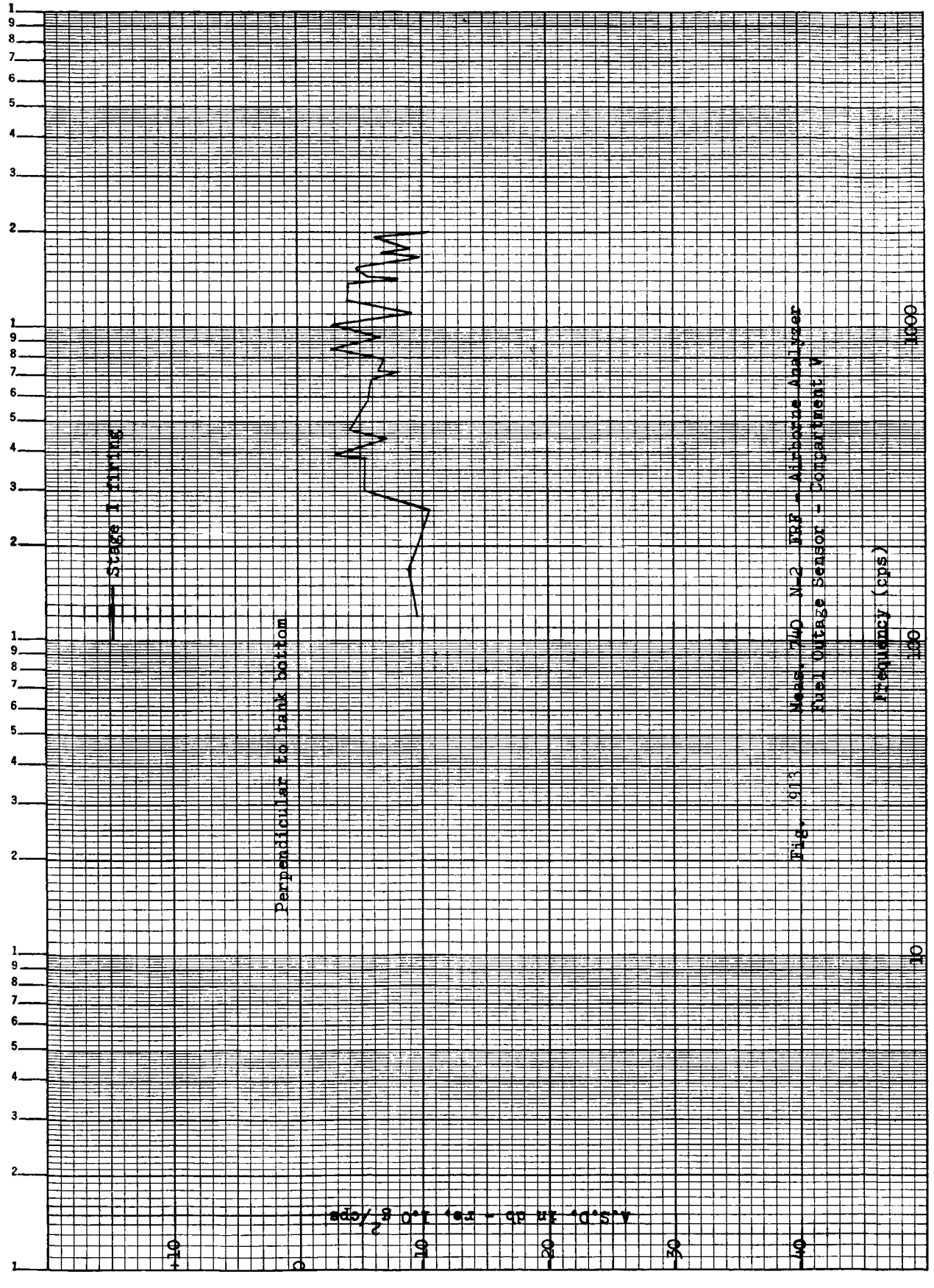


Fig. 913 Mast 2WD N-2 FTF - Airborne Analyzer
Fuel Outage Sensor - Compartment A

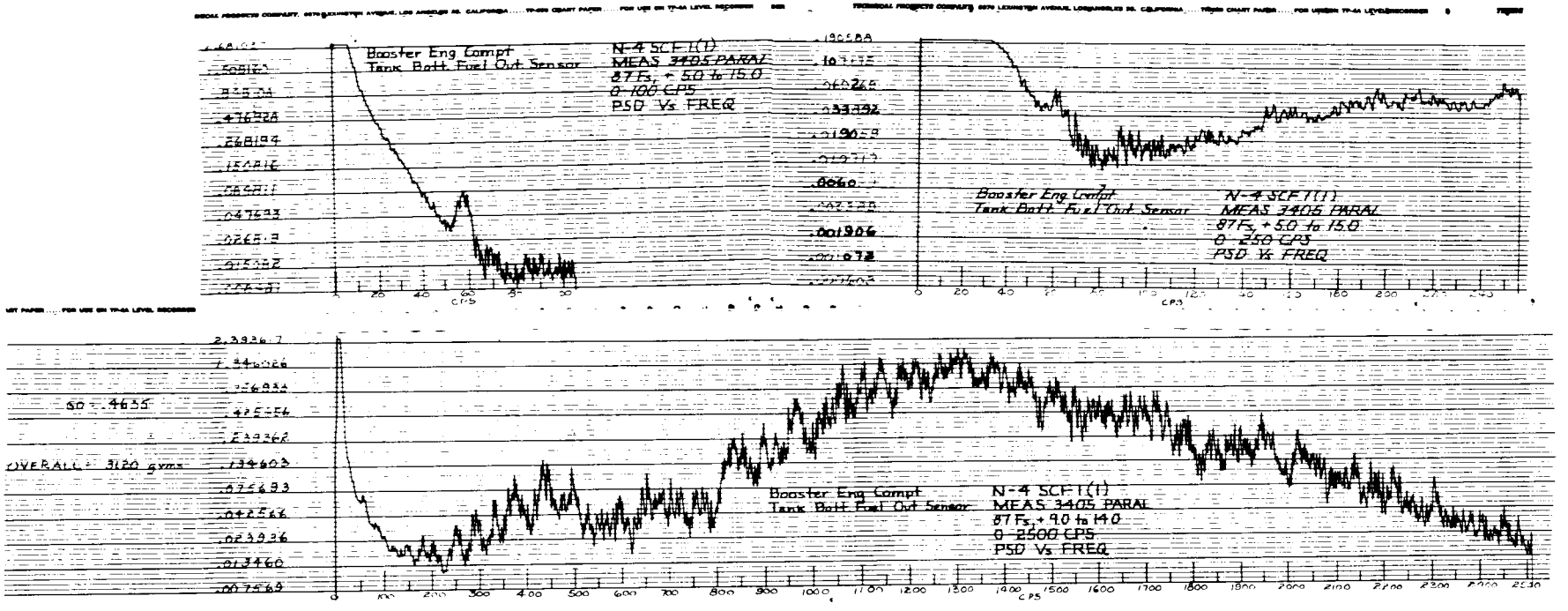
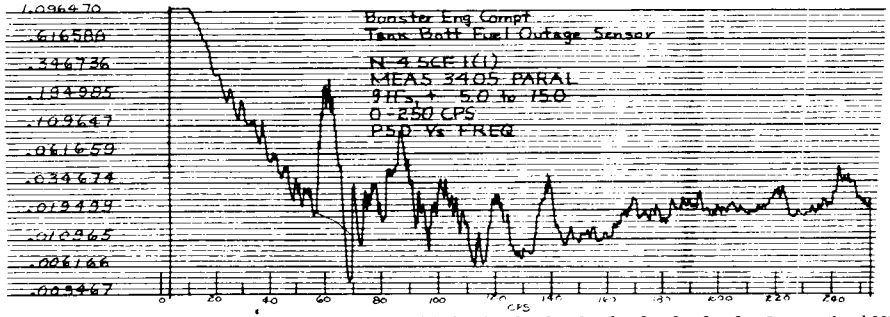

Booster Eng Compt
Tank Bott Fuel Out Sensor
N-4 SCF1(1)
MEAS 3405 PARAL
87 Fs, + 5.0 to 15.0
0-100 CPS
PSD Vs FREQ
Booster Eng Compt
Tank Bott Fuel Out Sensor
N-4 SCF1(1)
MEAS 3405 PARAL
87 Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Booster Eng Compt
Tank Bott Fuel Out Sensor
N-4 SCF1(1)
MEAS 3405 PARAL
87 Fs, + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 914


Booster Eng Compt
Tank Batt Fuel Outage Sensor
N-4 SCF 1(1)
MEAS 3405 PARAL
91Fs + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
.096470
.016588
.346736
.184985
.109647
.061659
.034674
.019499
.010965
.006166
.003467
CPS

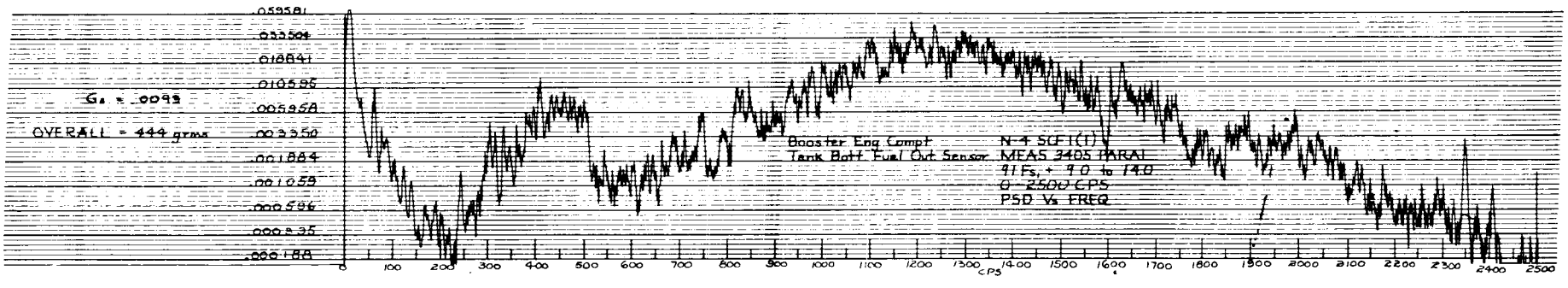

Booster Eng Compt
Tank Batt Fuel Out Sensor
N-4 SCF 1(1)
MEAS 3405 PARAL
91Fs + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
G = .0093
OVERALL = 444 grms
.059581
.033504
.018841
.010595
.005958
.003350
.001884
.001059
.000596
.000335
.000188
CPS

Fig. 915

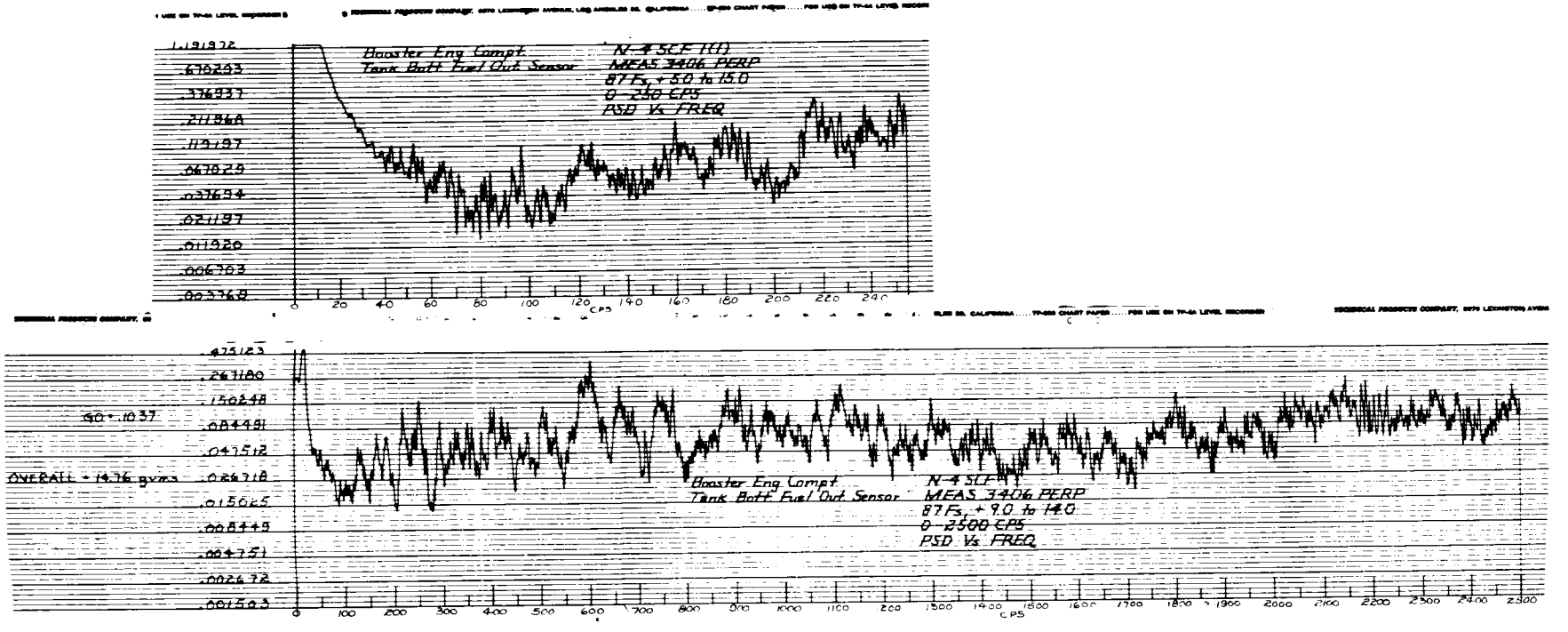

Booster Eng Compt
Tank Batt Fuel Out Sensor
N-4 SCF (1)
MEAS 3406 PERP
87 Fs, +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
CPS
Booster Eng Compt
Tank Batt Fuel Out Sensor
N-4 SCF (1)
MEAS 3406 PERP
87 Fs, +9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 916

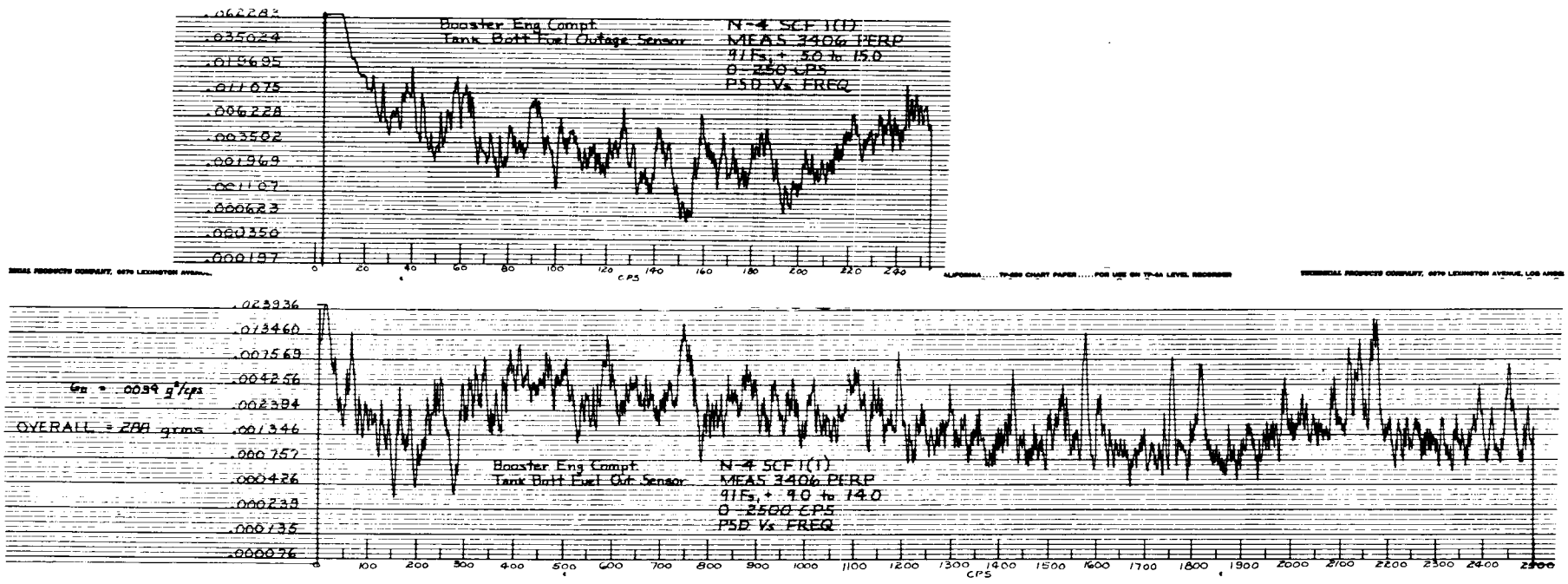
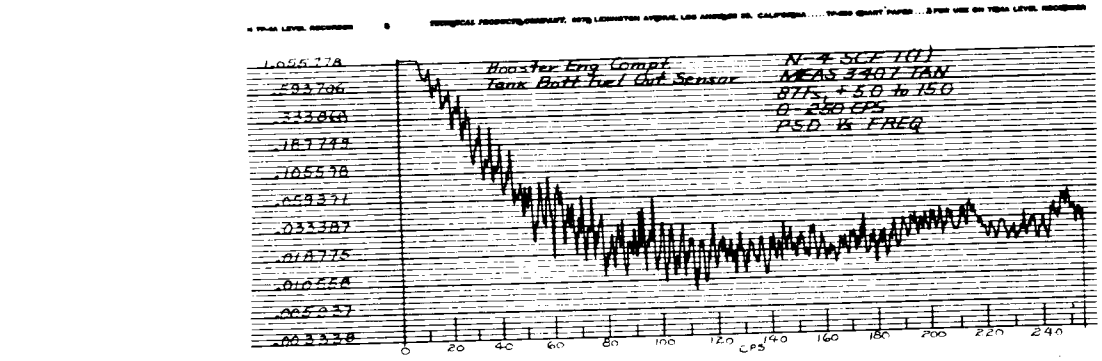

Booster Eng Compt.
Tank Bott Fuel Outage Sensor
N-4 SCF 1(1)
MEAS 3406 PERP
91Fs, + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
.062282
.035024
.015695
.011075
.006228
.003502
.001969
.001107
.000623
.000350
.000197
0 20 40 60 80 100 120 140 160 180 200 220 240
CPS
Booster Eng Compt.
Tank Bott Fuel Out Sensor
N-4 SCF 1(1)
MEAS 3406 PERP
91Fs, + 9.0 to 14.0
0-2500 CPS
PSD Vs FREQ
.023936
.013460
.007569
.004256
.002394
.001346
.000757
.000426
.000238
.000135
.000076
GRMS = .0039 g²/cps
OVERALL = 288 grms
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 917


Booster Eng Compt
Tank Batt Fuel Cut Sensor
N-4 SCF 1(1)
MEAS 3407 TAN
87Fs +5.0 to 150
0-250 CPS
PSD Vs FREQ
CPS

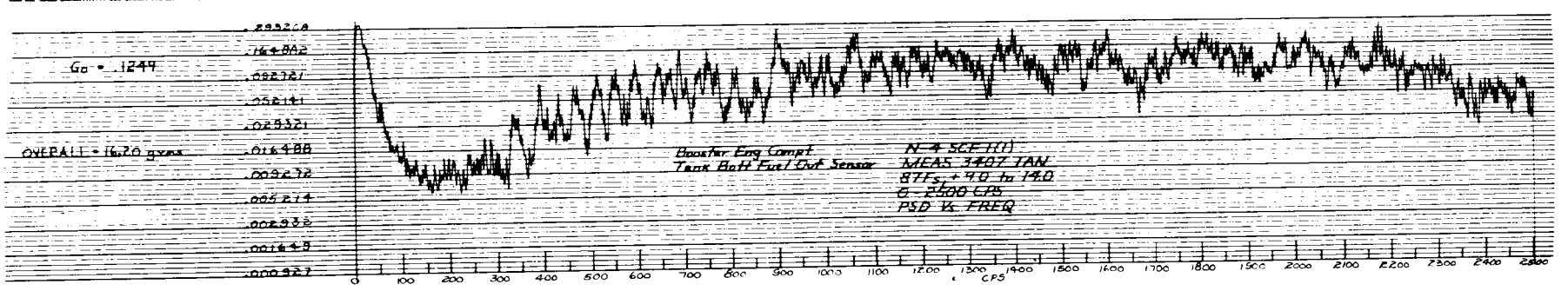

Booster Eng Compt
Tank Batt Fuel Cut Sensor
N-4 SCF 1(1)
MEAS 3407 TAN
87Fs +90 to 140
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 918

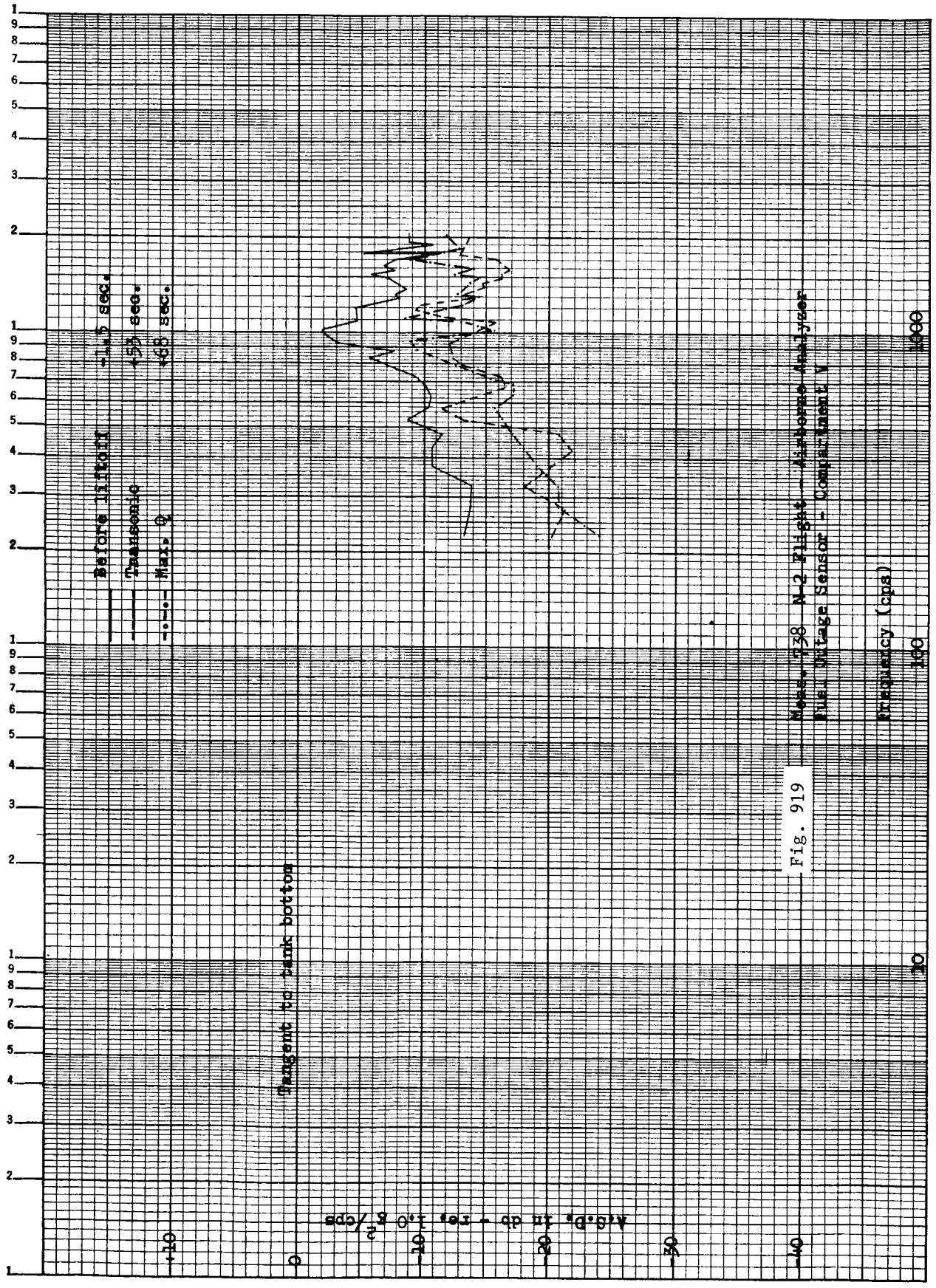

Before liftoff
-1.45 sec.
+53 sec.
+66 sec.
Transonic
Max. Q
Model 738 M-2 Flight — Airborne Analyzer
Flat Outage Sensor - Compartment V
Frequency (cps)
1000
100
10
Tangent to tank bottom
dB re 1.0 g²/cps

Fig. 919

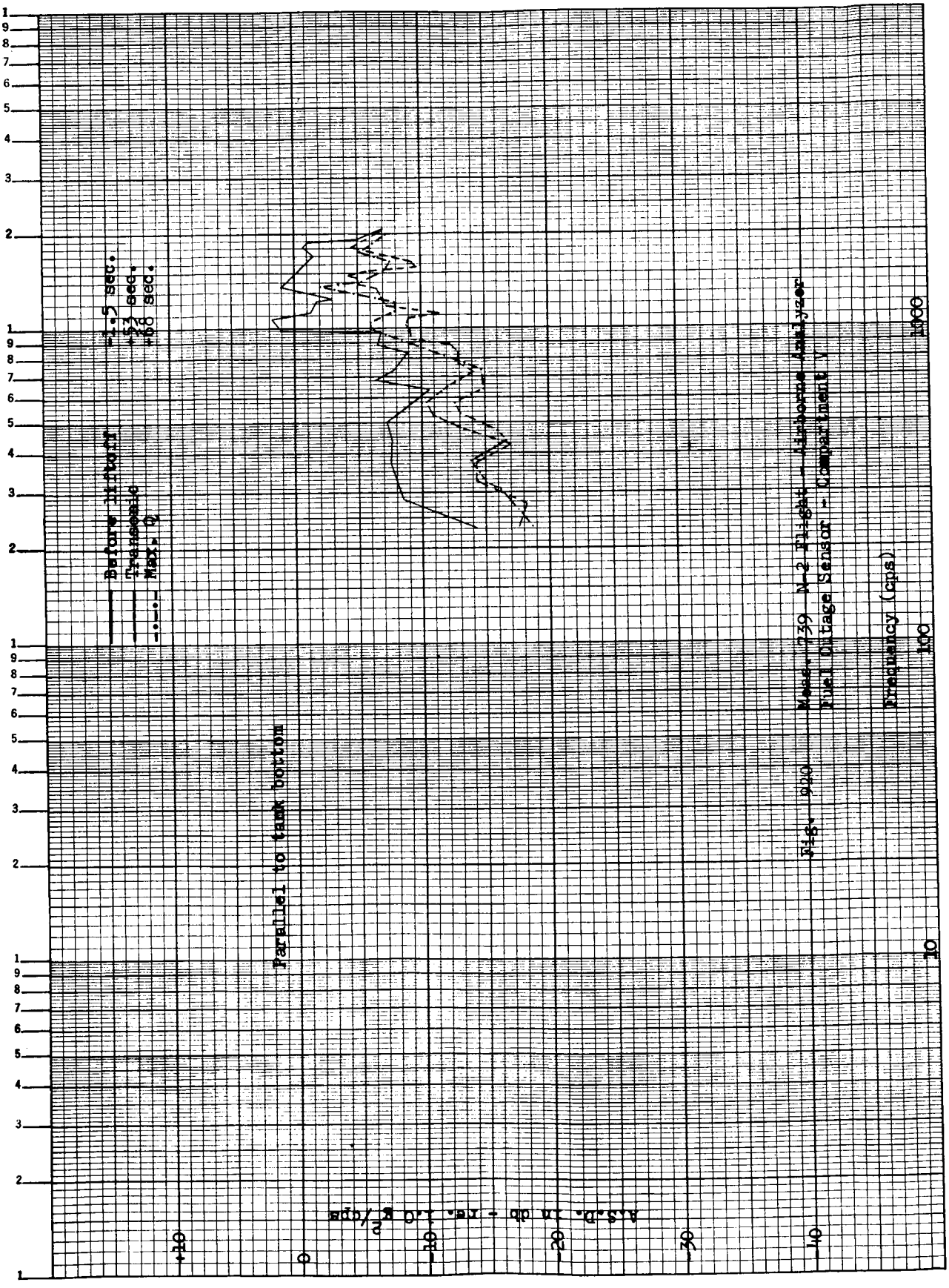

Before liftoff
+1.5 sec.
+53 sec.
+60 sec.
Transonic
Max. Q
Parallel to tank bottom
Frequency (cps)
Model 239 N-2 Flight Airborne Analyzer
Final Outage Sensor Compartment V
Flt. 920
A.s.D. in db re. 1.0 g²/cps

Fig. 9.4 Wood, C/O N-2 Flight Airborne Analyzer
Fuel Outage Sensor - Compartment A

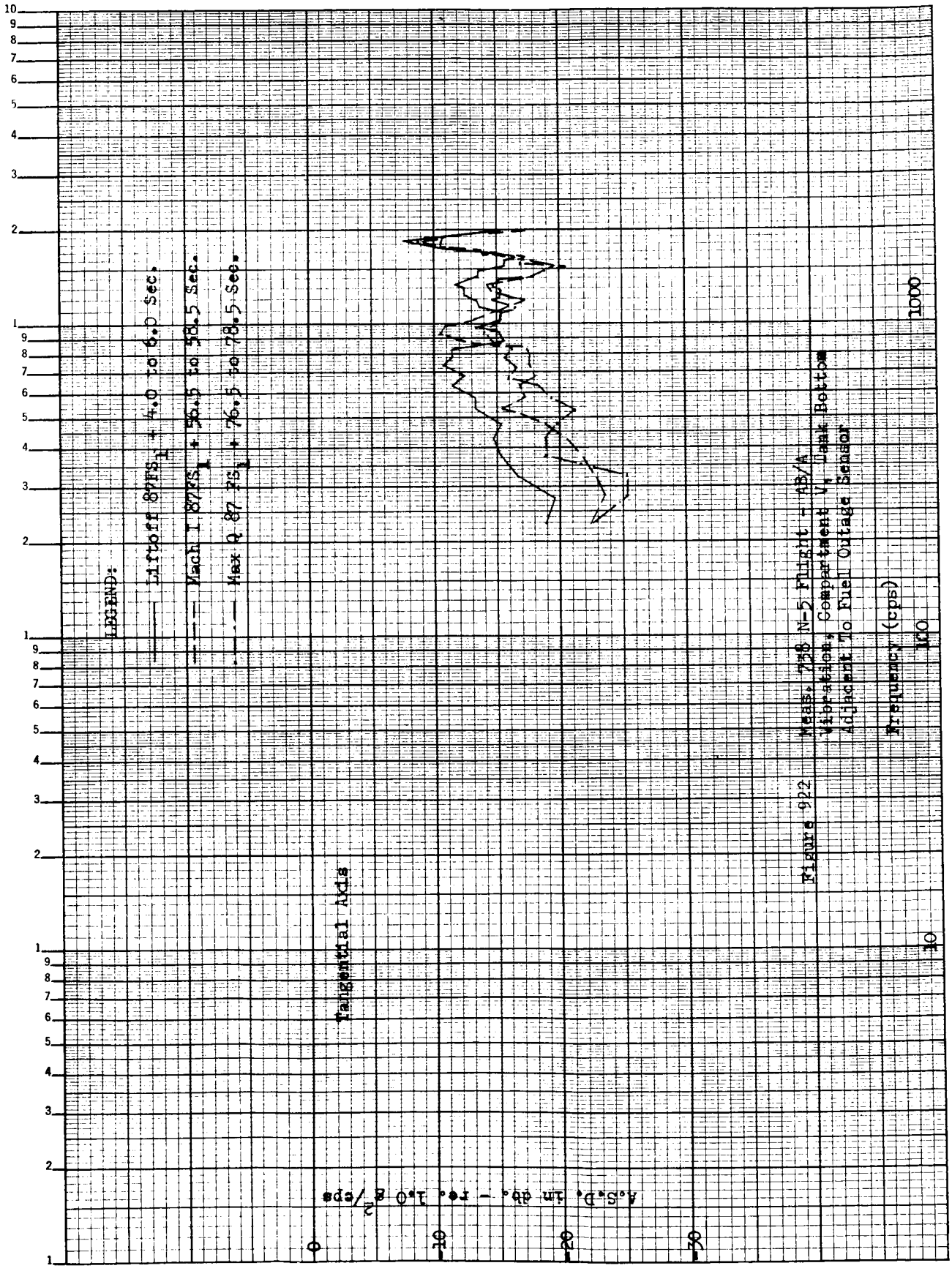


Figure 922 Meas. 738 N-5 Flight - AB/A
Vibration, Compartment V, Tank Bottom
Adjacent To Fuel Outage Sensor

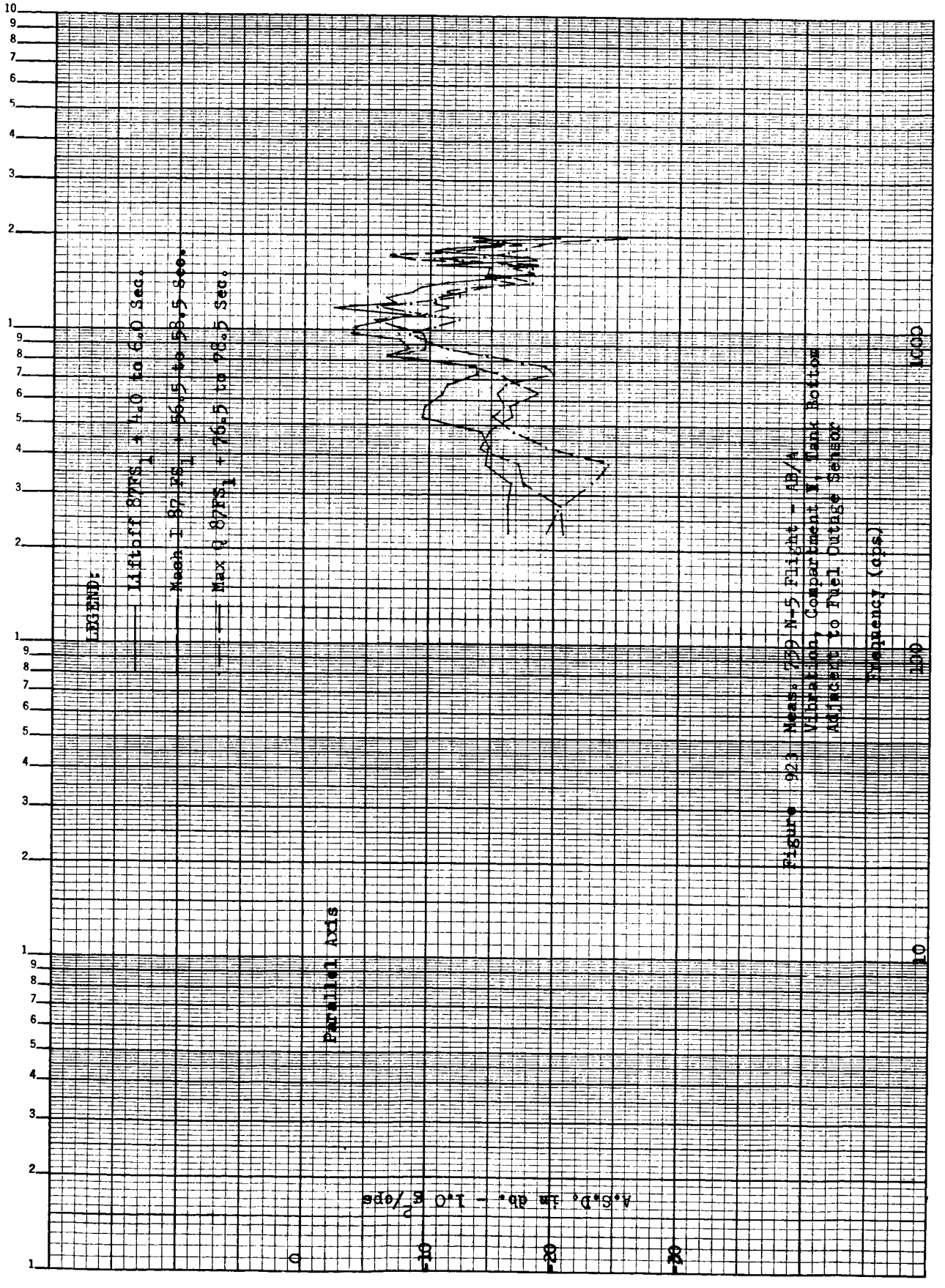


Figure 92. Mass 229 N-5 Flight - aft/A Vibration Comparison at Tank Bottom Adjacent to Fuel Outage Sensor

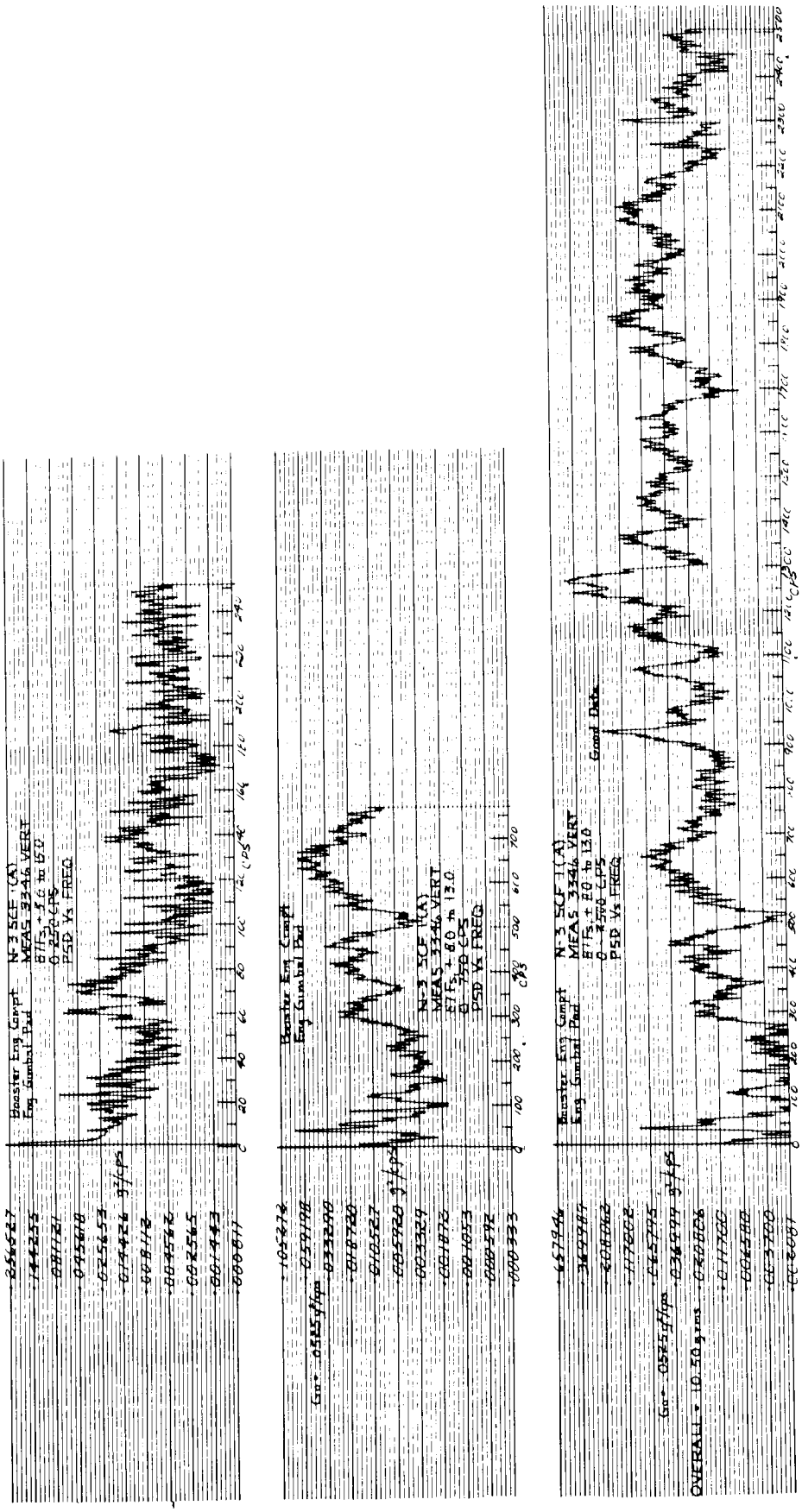

Booster Eng Compt
Eng Gimbal Pad
N-3 SCF (A)
MEAS 3346 VERT
ETF5 + 5.0 to 6.0
0-250 CPS
PSD Vs FREQ
Booster Eng Compt
Eng Gimbal Pad
N-3 SCF (A)
MEAS 3346 VERT
ETF5 + 8.0 to 13.0
0-750 CPS
PSD Vs FREQ
Booster Eng Compt
Eng Gimbal Pad
N-3 SCF (A)
MEAS 3346 VERT
ETF5 + 8.0 to 13.0
0-1500 CPS
PSD Vs FREQ
Grand Data
OVERALL = 10.50 grms

Fig. 924

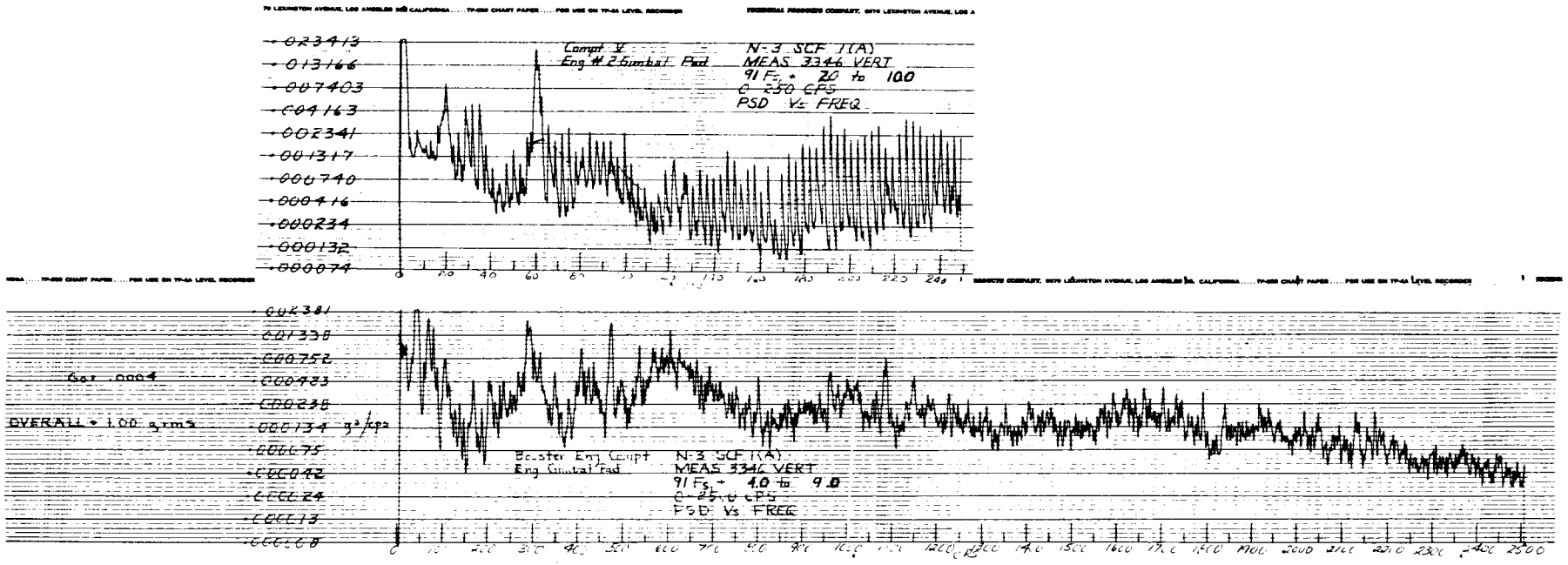

Compt V
Eng # 2 Gimbal Pad
N-3 SCF 1(A)
MEAS 3346 VERT
91 Fs = 20 to 100
0-250 CPS
PSD Vs FREQ
Booster Eng Compt
Eng Gimbal Pad
N-3 SCF 1(A)
MEAS 3346 VERT
91 Fs = 4.0 to 9.0
PSD Vs FREQ
OVERALL = 1.00 g rms

Fig. 925

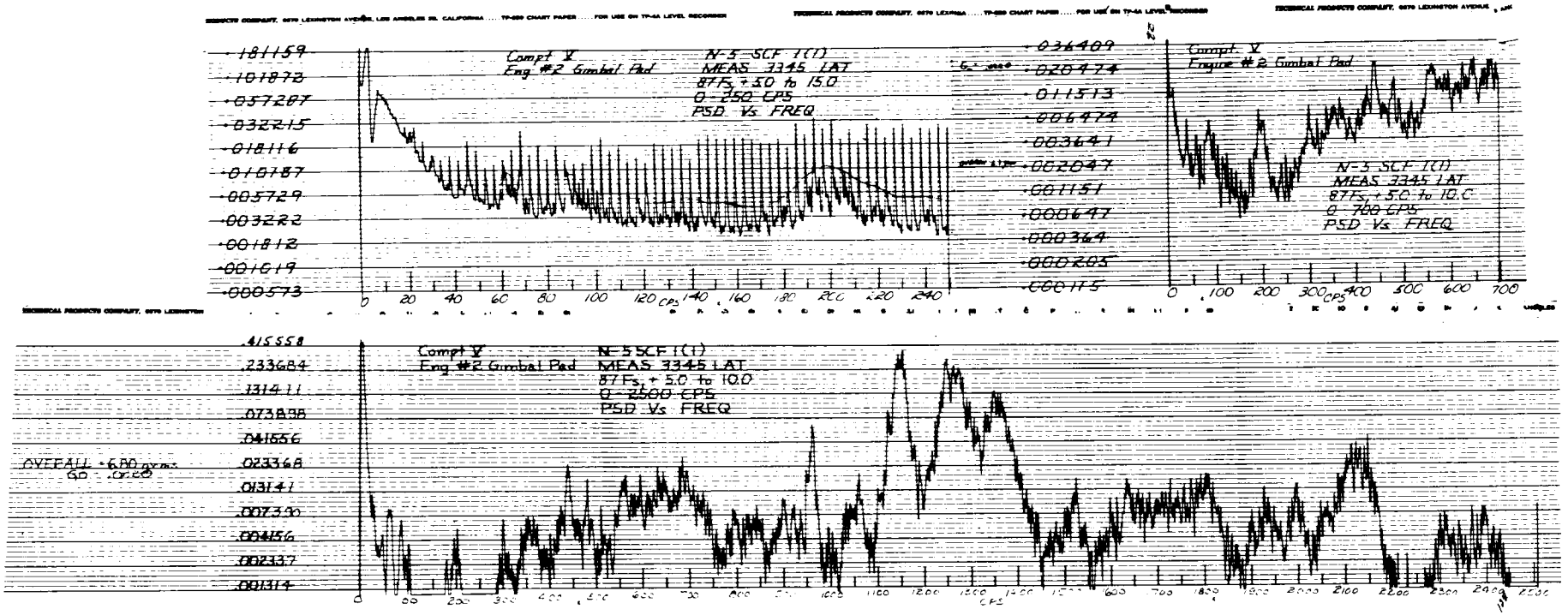

Compt V
Eng #2 Gimbal Pad
N-5 SCF 1(1)
MEAS 3345 LAT
87 Fs, +5.0 to 15.0
0-250 CPS
PSD Vs FREQ
Compt V
Engine #2 Gimbal Pad
N-3 SCF 1(1)
MEAS 3345 LAT
87 Fs, +5.0 to 10.0
0-700 CPS
PSD Vs FREQ
Compt V
Eng #2 Gimbal Pad
N-5 SCF 1(1)
MEAS 3345 LAT
87 Fs, +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 926

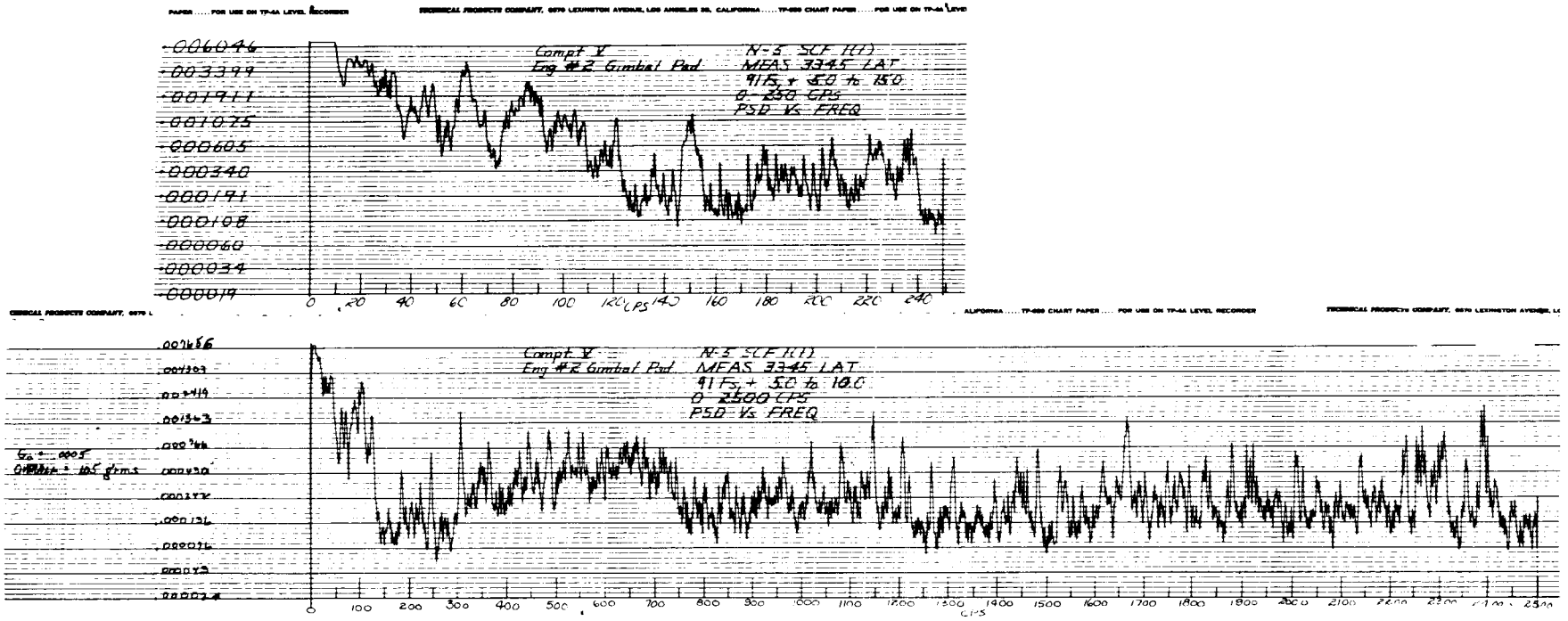
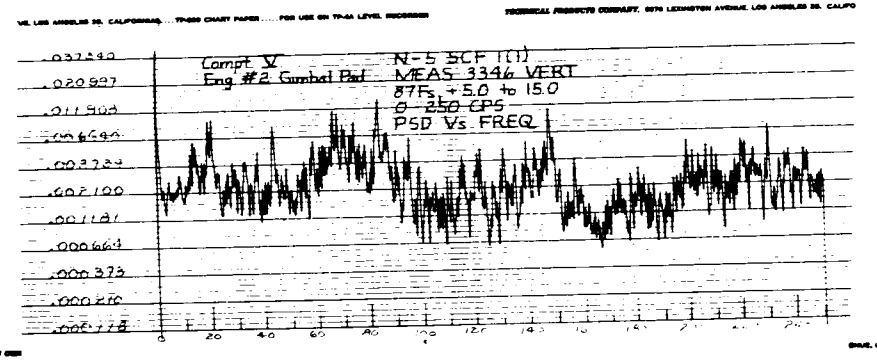

Compt V
Eng #2 Gimbal Pad
N-3 SCF I(1)
MEAS 3345 LAT
91 Fs + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
.006046
.003399
.001911
.001025
.000605
.000340
.000191
.000108
.000060
.000034
.000019
0 20 40 60 80 100 120 CPS 140 160 180 200 220 240
Compt V
Eng #2 Gimbal Pad
N-3 SCF I(1)
MEAS 3345 LAT
91 Fs + 5.0 to 10.0
0 2500 CPS
PSD Vs FREQ
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 927


Compt V
Eng #2 Gimbal Pad
N-5 SCF (1)
MEAS 3346 VERT
87Fs +5.0 to 15.0
0-250 CPS
PSD Vs FREQ

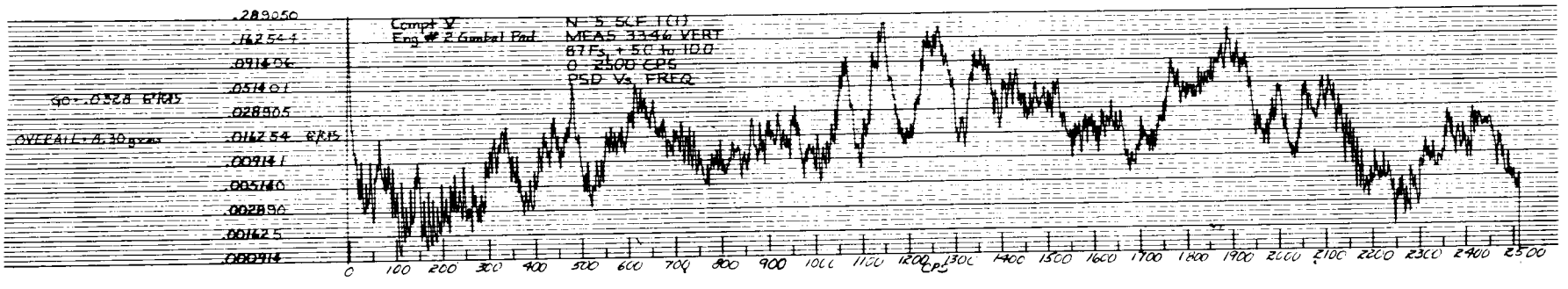

Compt V
Eng # 2 Gimbal Pad
N-5 SCF (1)
MEAS 3346 VERT
87Fs +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
GO=.0528 GRMS
OVERALL=8.30 gRMS
.289050
.162544
.091406
.051401
.028905
.016254
.009141
.005140
.002890
.001625
.000914
0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500
CPS

Fig. 928

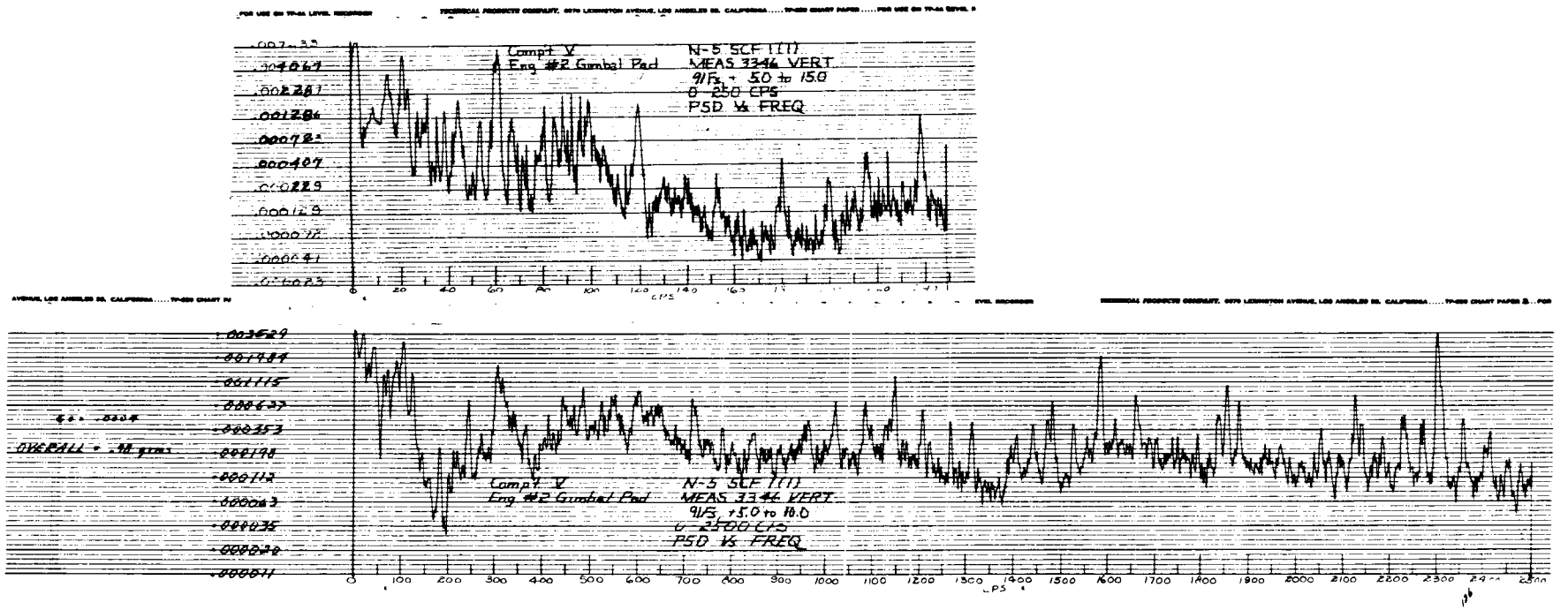

Compt V
Eng #2 Gimbal Pad
N-5 SCF (11)
MEAS 3346 VERT
9 1/3 + 5.0 to 15.0
0-250 CPS
PSD Vs FREQ
CPS
Compt V
Eng #2 Gimbal Pad
N-5 SCF (11)
MEAS 3346 VERT
9 1/3 +5.0 to 10.0
0-2500 CPS
PSD Vs FREQ
CPS

Fig. 929

This Figure Number Not Used.

Fig. 930

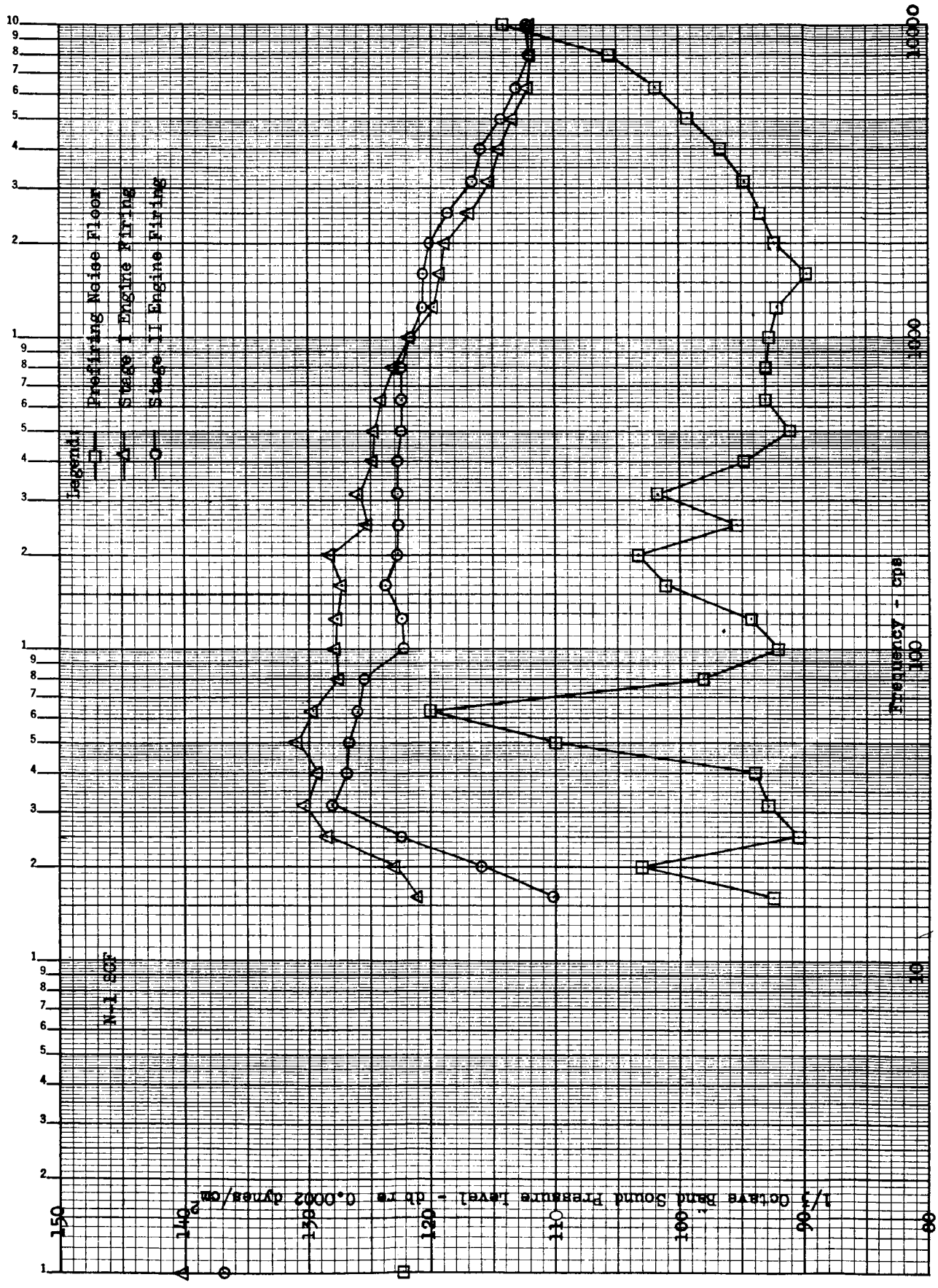


FIGURE 931: ACOUSTIC SPECTRA - MEASUREMENT 1923, STAGE II FORWARD COMPARTMENT, COMPARTMENT I, INTERNAL

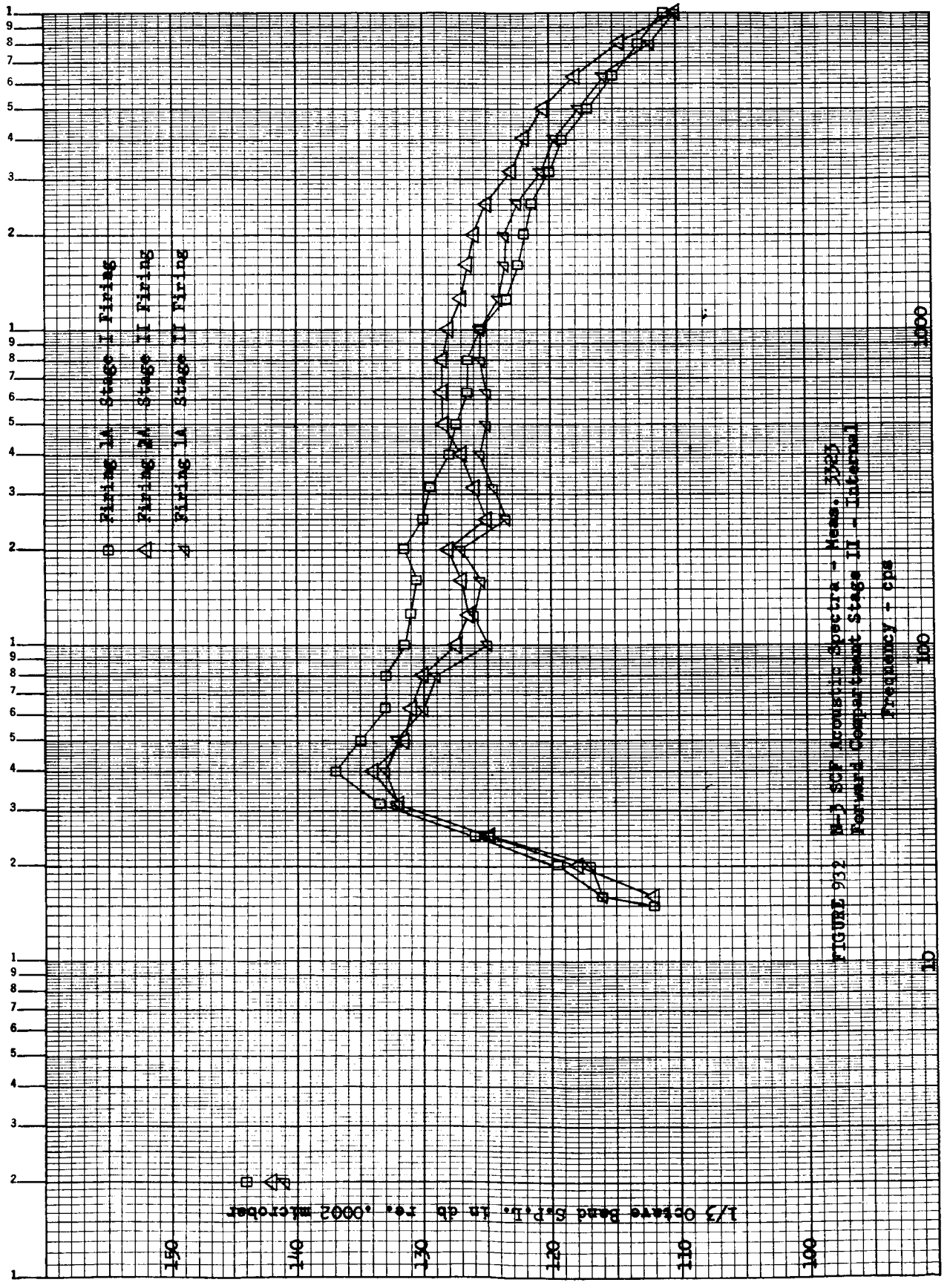


FIGURE 932 #2 Sub Acoustic Spectra - Heat Sink Forward Compartment Stage II - Internal

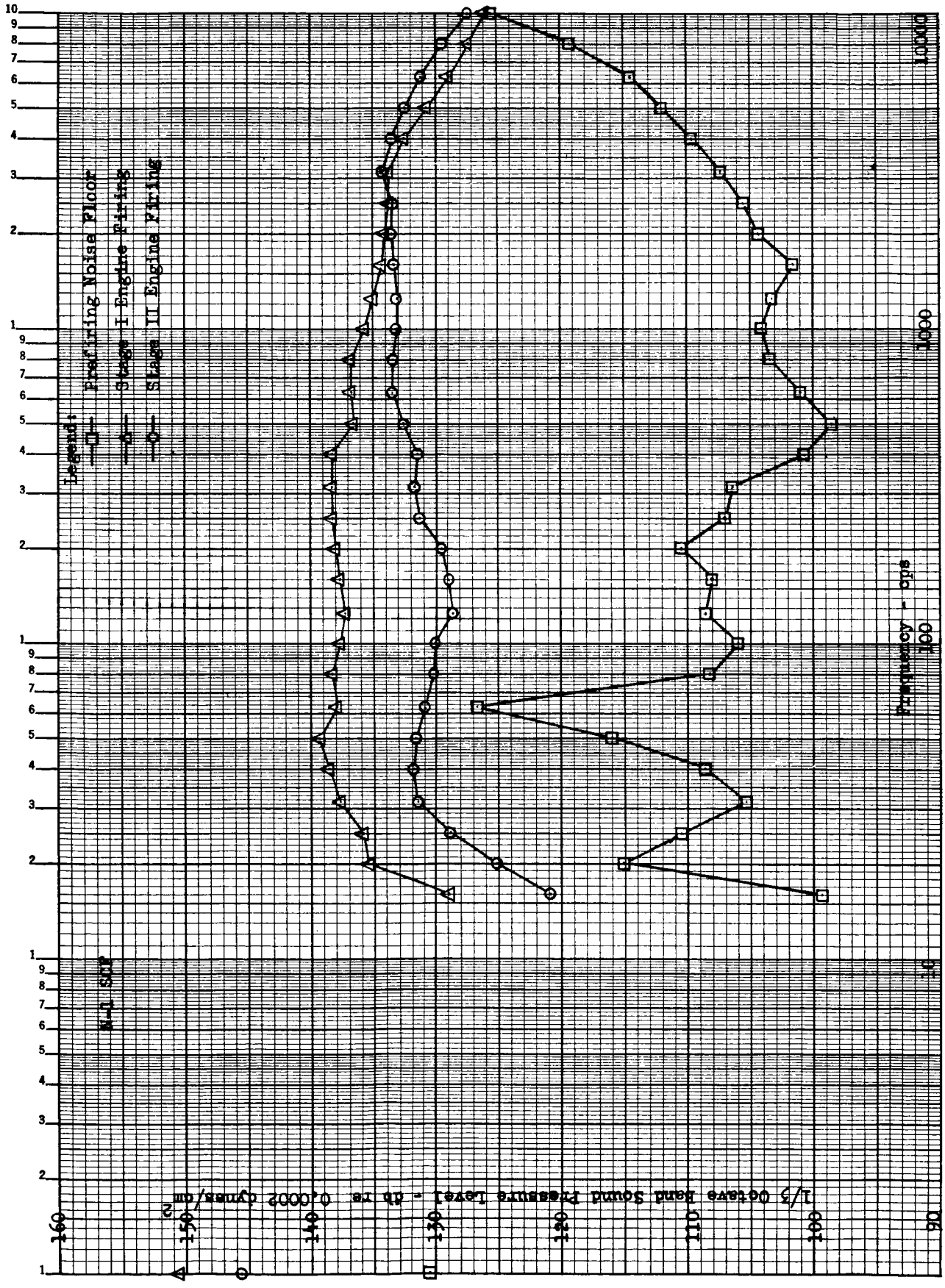


FIGURE 933: ACOUSTIC SPECTRA - MEASUREMENT 3327, STAGE II BETWEEN TANKS, COMPARTMENT II, EXTERNAL

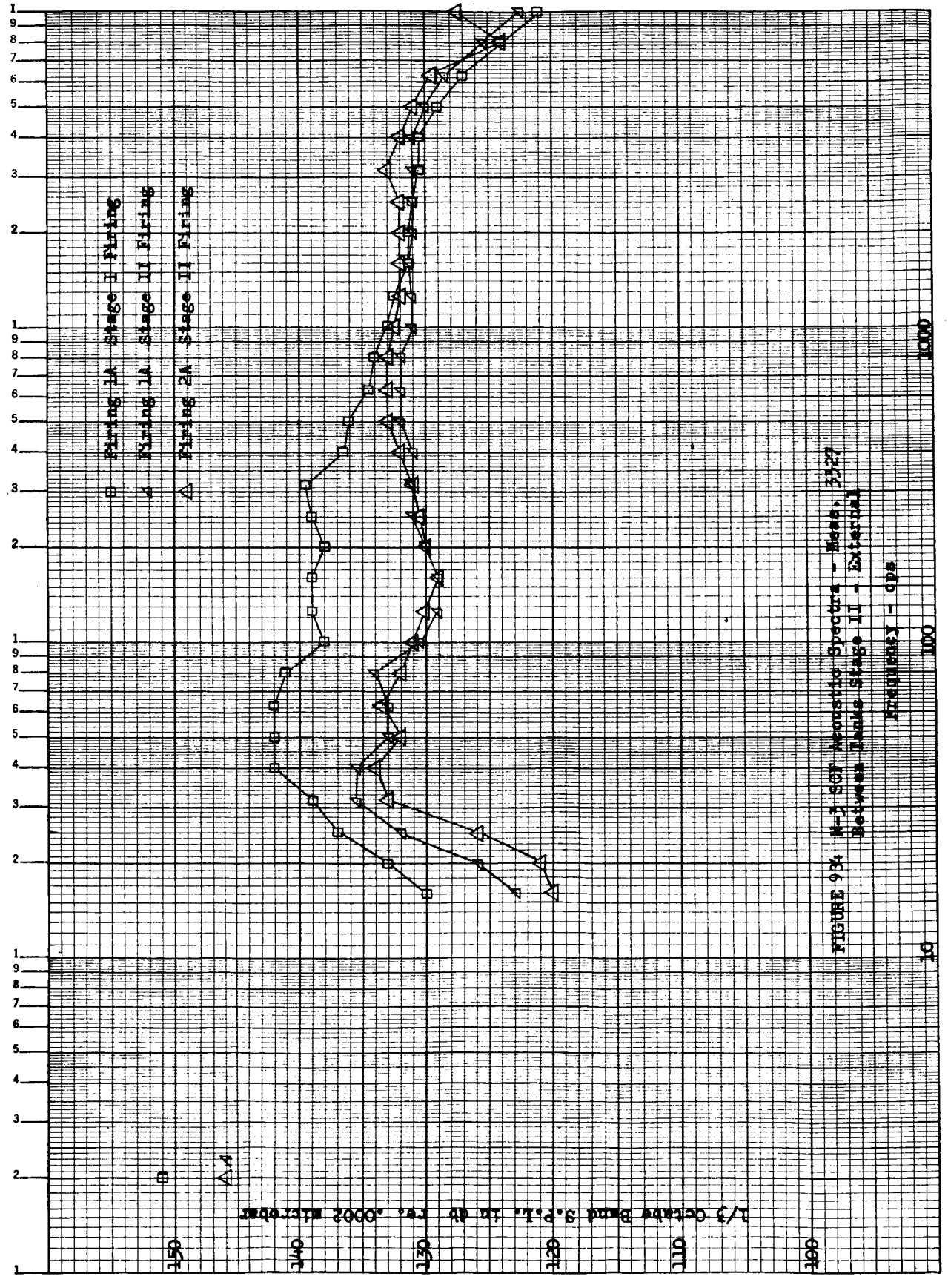


FIGURE 9.34 M-3 SCP Acoustic Spectra - Meas. 3327
Between Tank Stage II - External

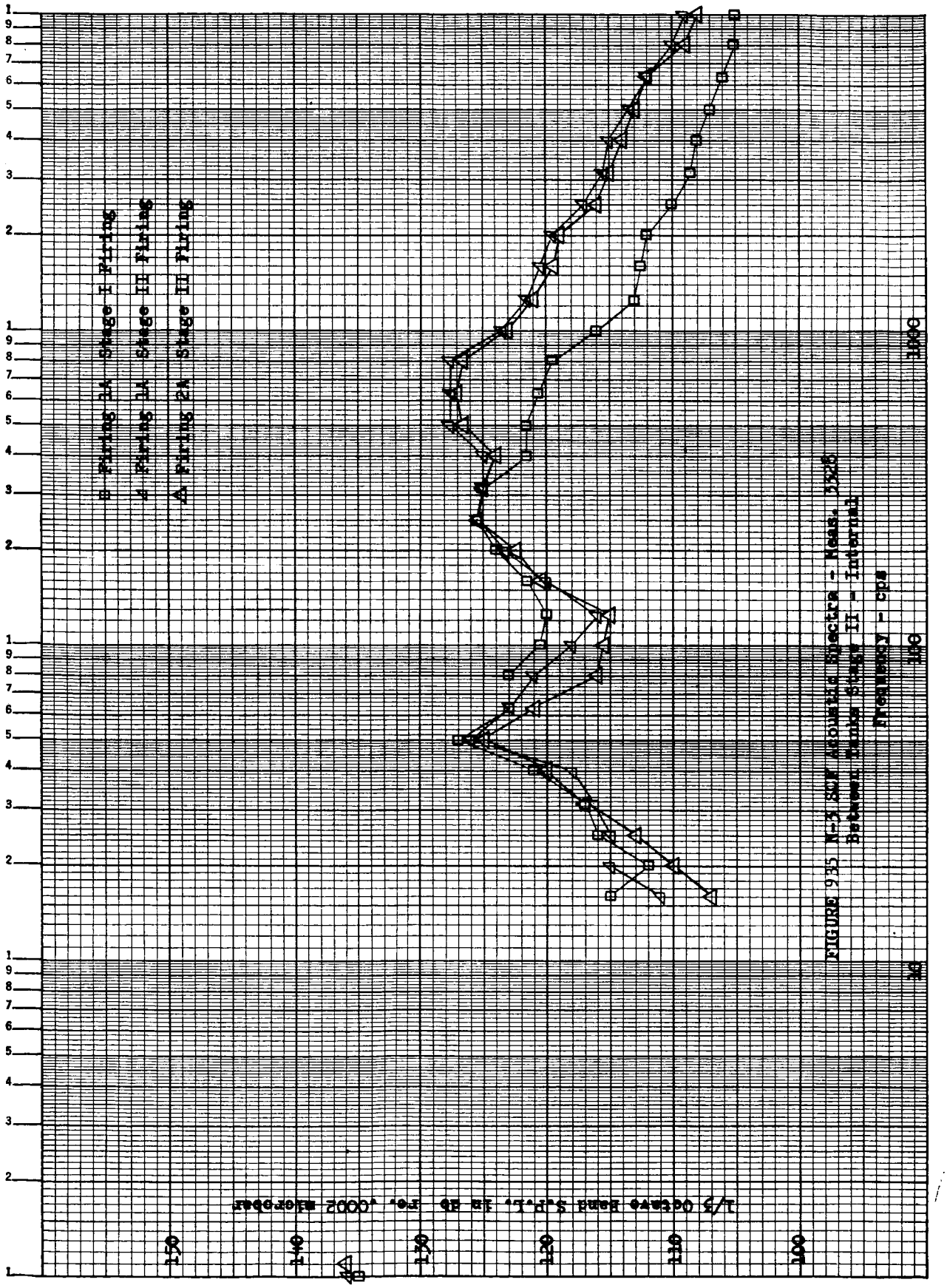


FIGURE 6.35 A-3 SWP Acoustic Spectra - Near Field Between Tanks Stage II - Inboard

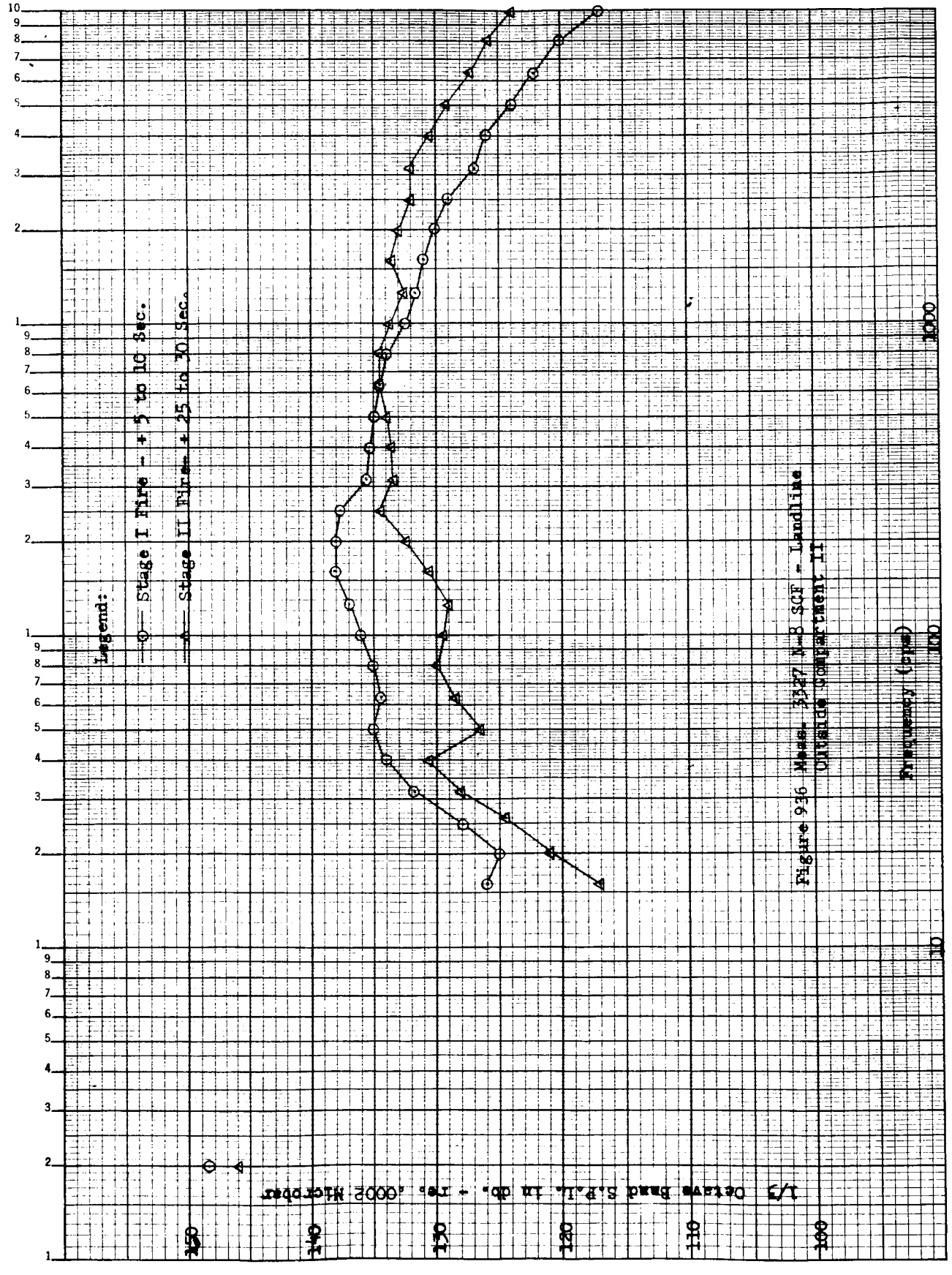


Figure 936 Mean- 33.7 N-B SCF - Landline
Outside Compartment II

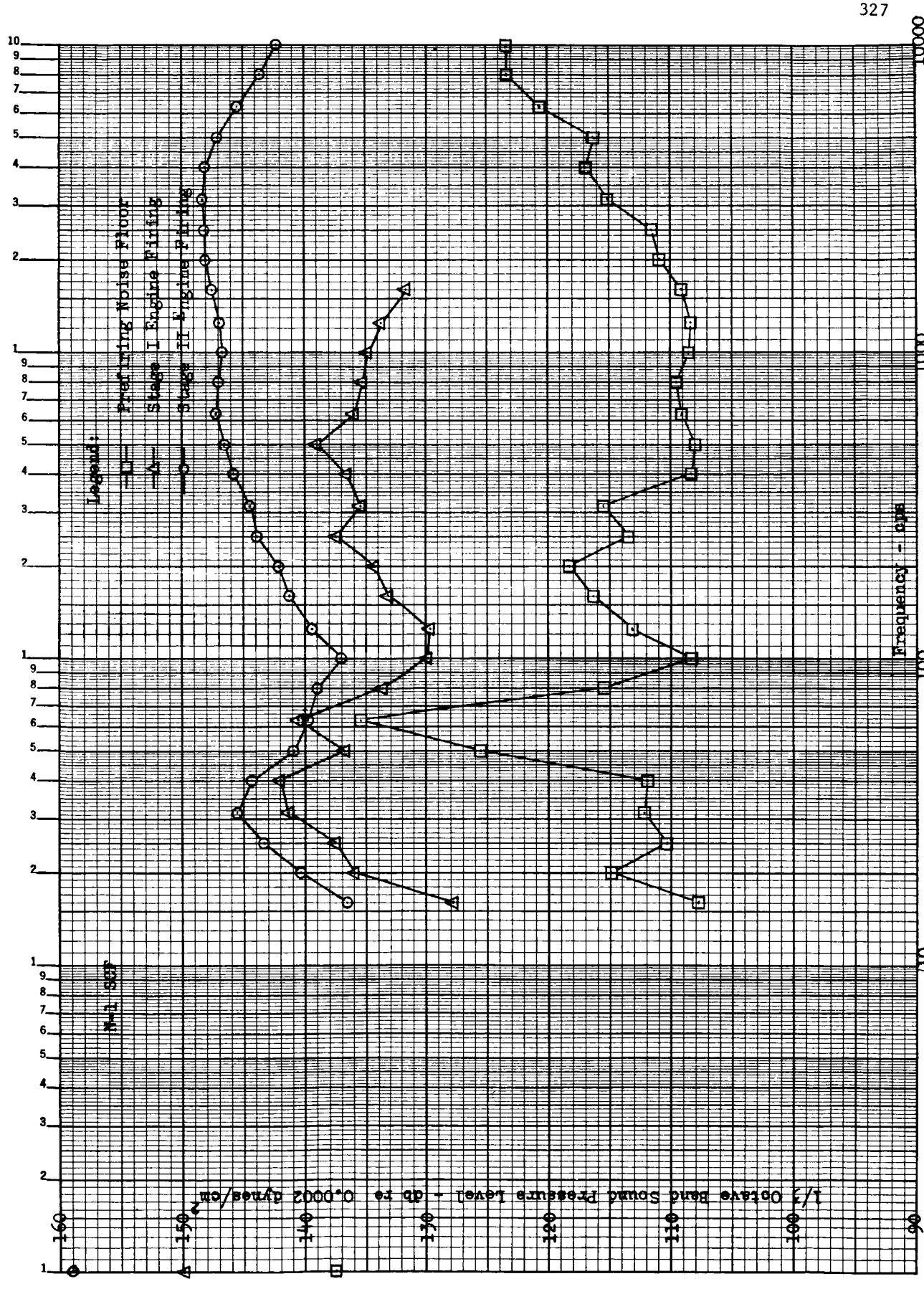


FIGURE 937: ACOUSTIC SPECTRA - MEASUREMENT 3321, STAGE II ENGINE COMPARTMENT, COMPARTMENT IIIA, INTERNAL

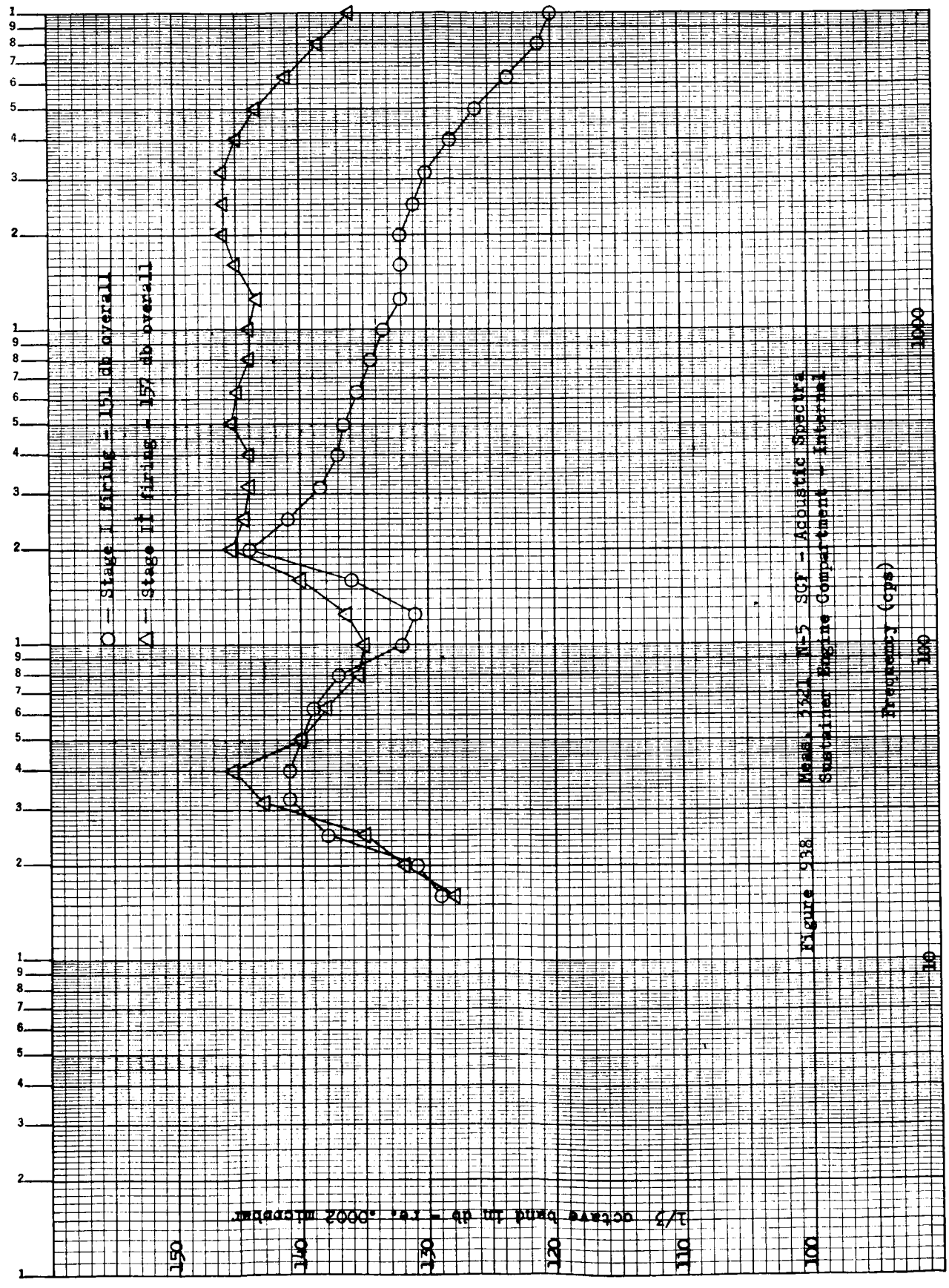


Figure 938 Meas. 2321, N-5 SGT - Acoustic Spectra
Spartanburg Engine Compartment - Internal

Figure 6.3 Mean SPL N-4 SCF - Landline
Outside Compartment III a

Figure 940 Meas. IDS N-4 Flight - Continuous TM
Inside Compartment III a
+1.5 to 3.5 Sec.

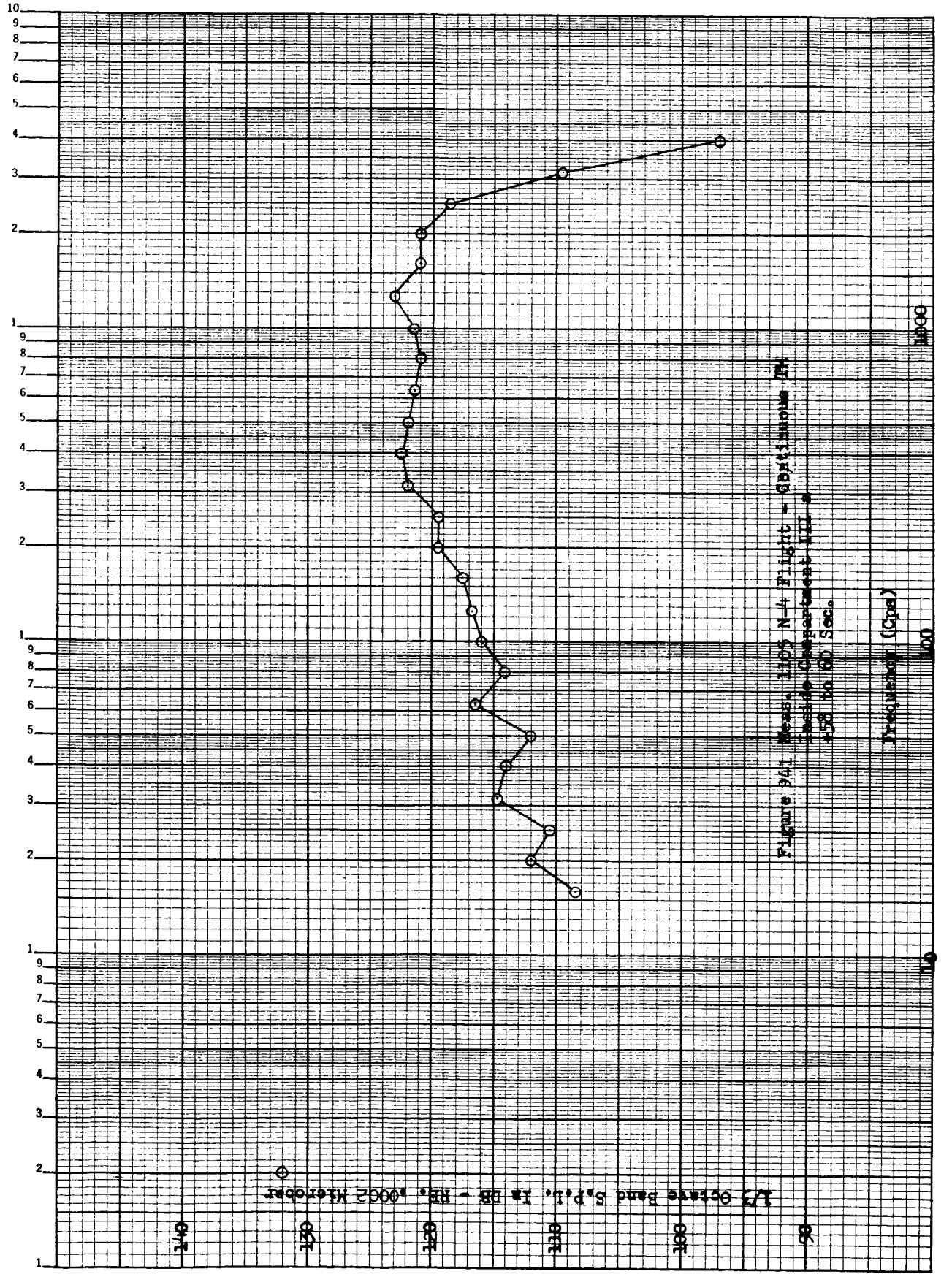


Figure 941 Mean 1105 N-4 Flight - Centerline FWD
Inside Cockpit - Seat Level
T-38
Mach 0.80 Sec.

1/3 Octave Band S.P.L. in db. re. .0002 Microbar
Frequency (cps)
Figure 9.2 Mean 1105 ft. Flight - Continuous FM
Tunable Component III a
+ 7.5 to 7.5 sec.

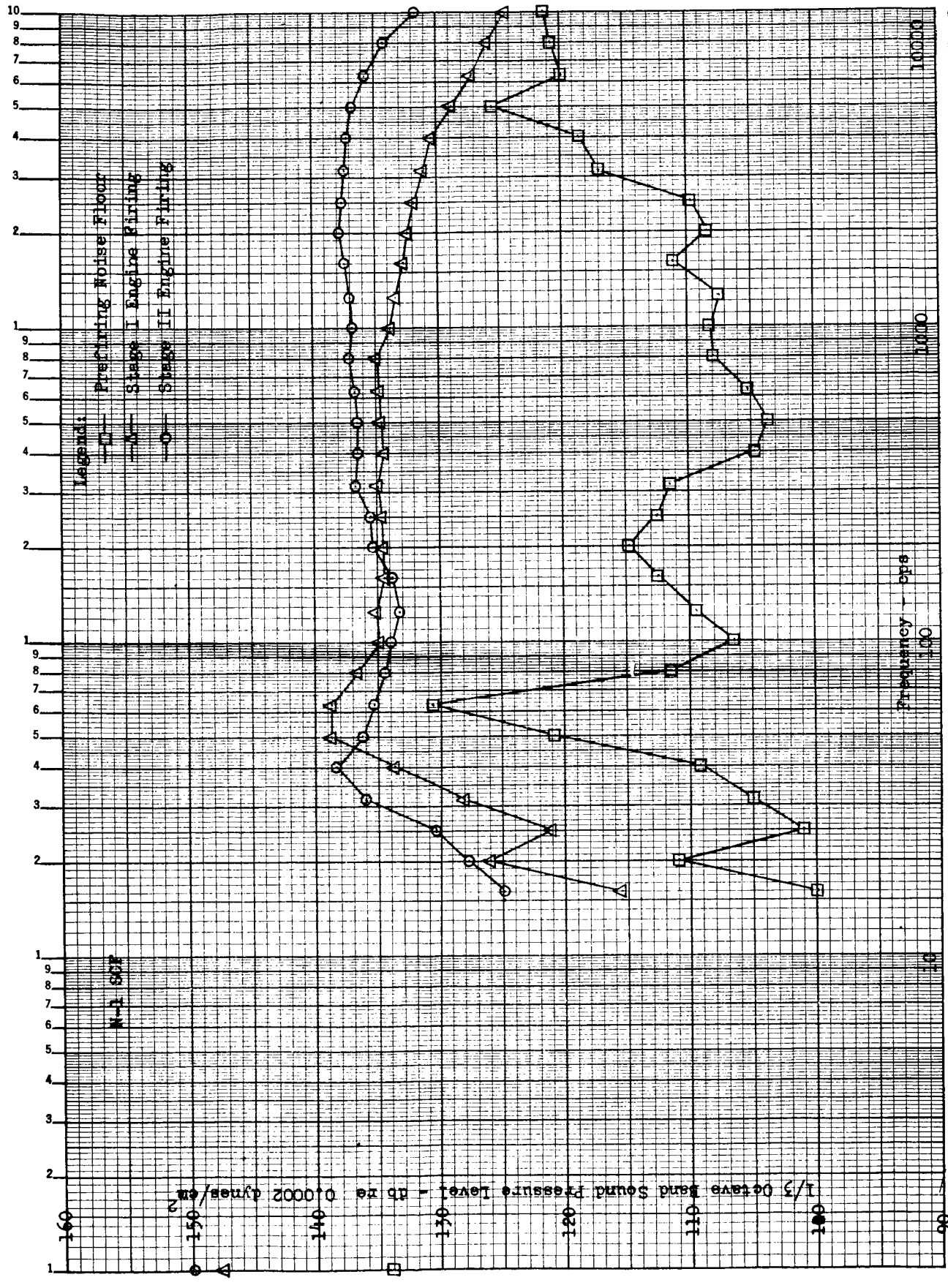


FIGURE 943: ACOUSTIC SPECTRA - MEASUREMENT 3322, STAGE II ENGINE COMPARTMENT, COMPARTMENT IIIA, EXTERNAL

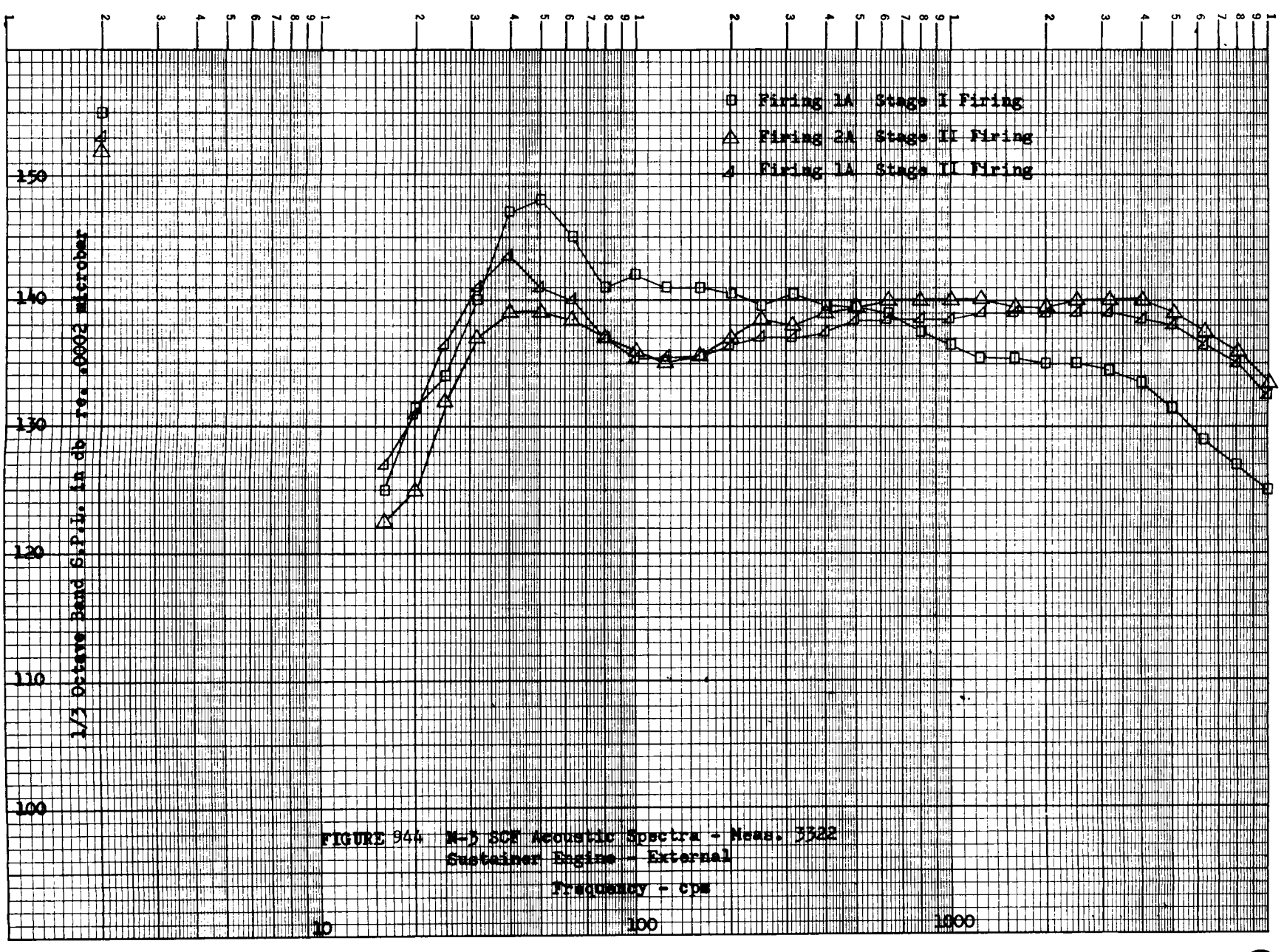


FIGURE 944 M-5 SCF Acoustic Spectra - Meas. 3322
Sustainer Engine - External
Frequency - cps

Figure 545 Mare 3322 N-8 SCP - Landline
Octave Comparment LIT's

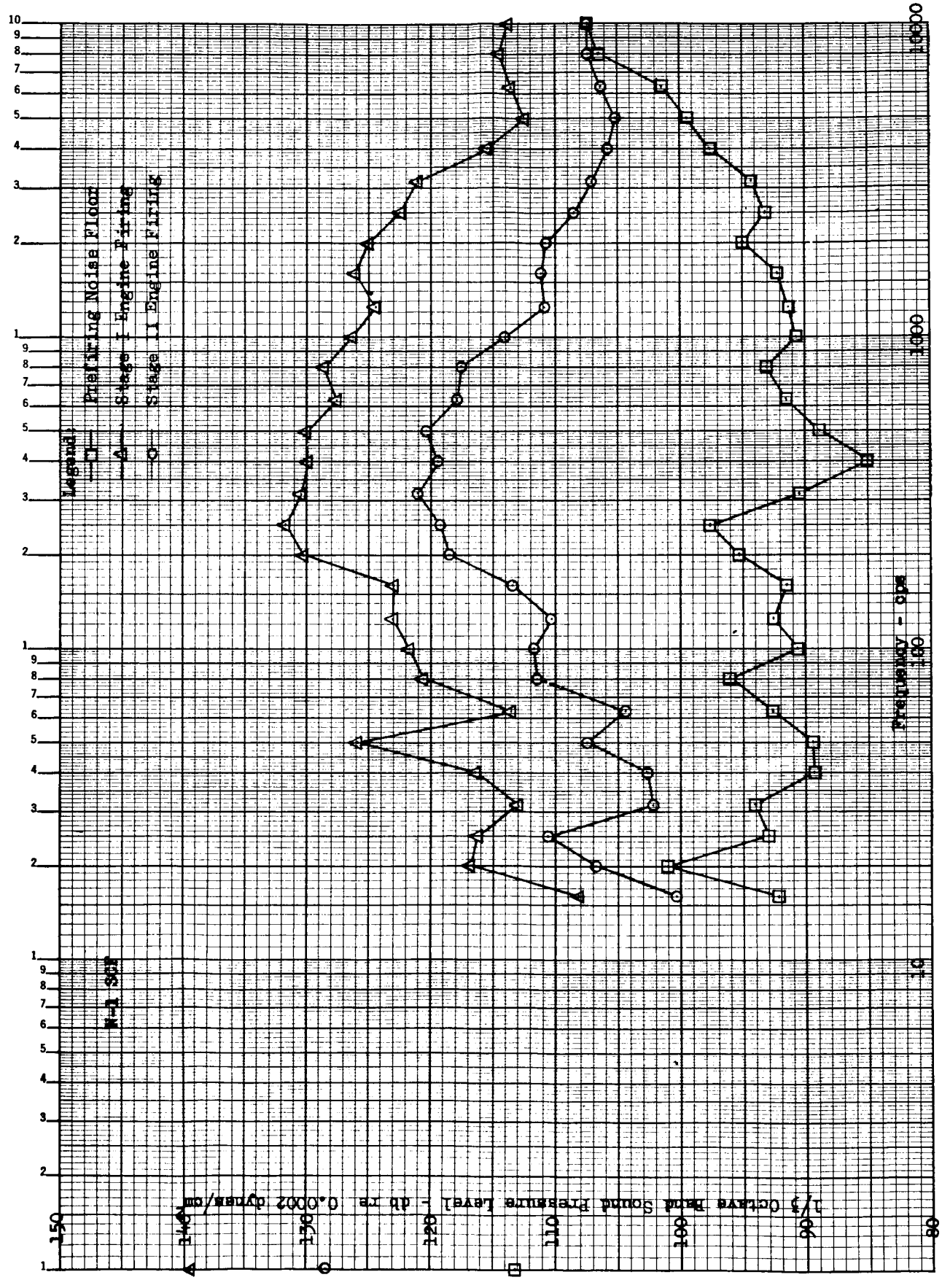


FIGURE 946: ACOUSTIC SPECTRA - MEASUREMENT 3219, STAGE I BETWEEN TANKS, COMPARTMENT IV, INTERNAL

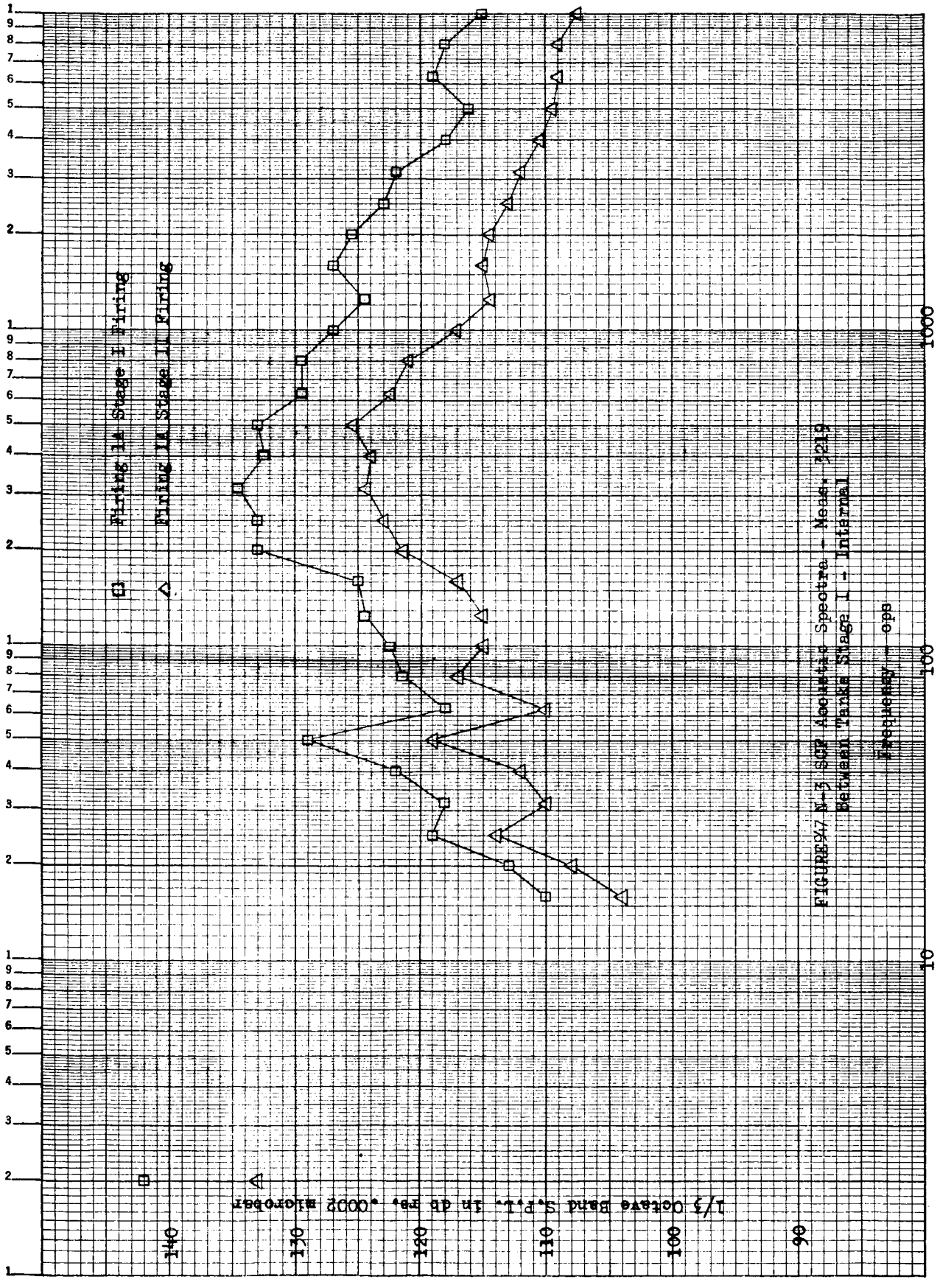
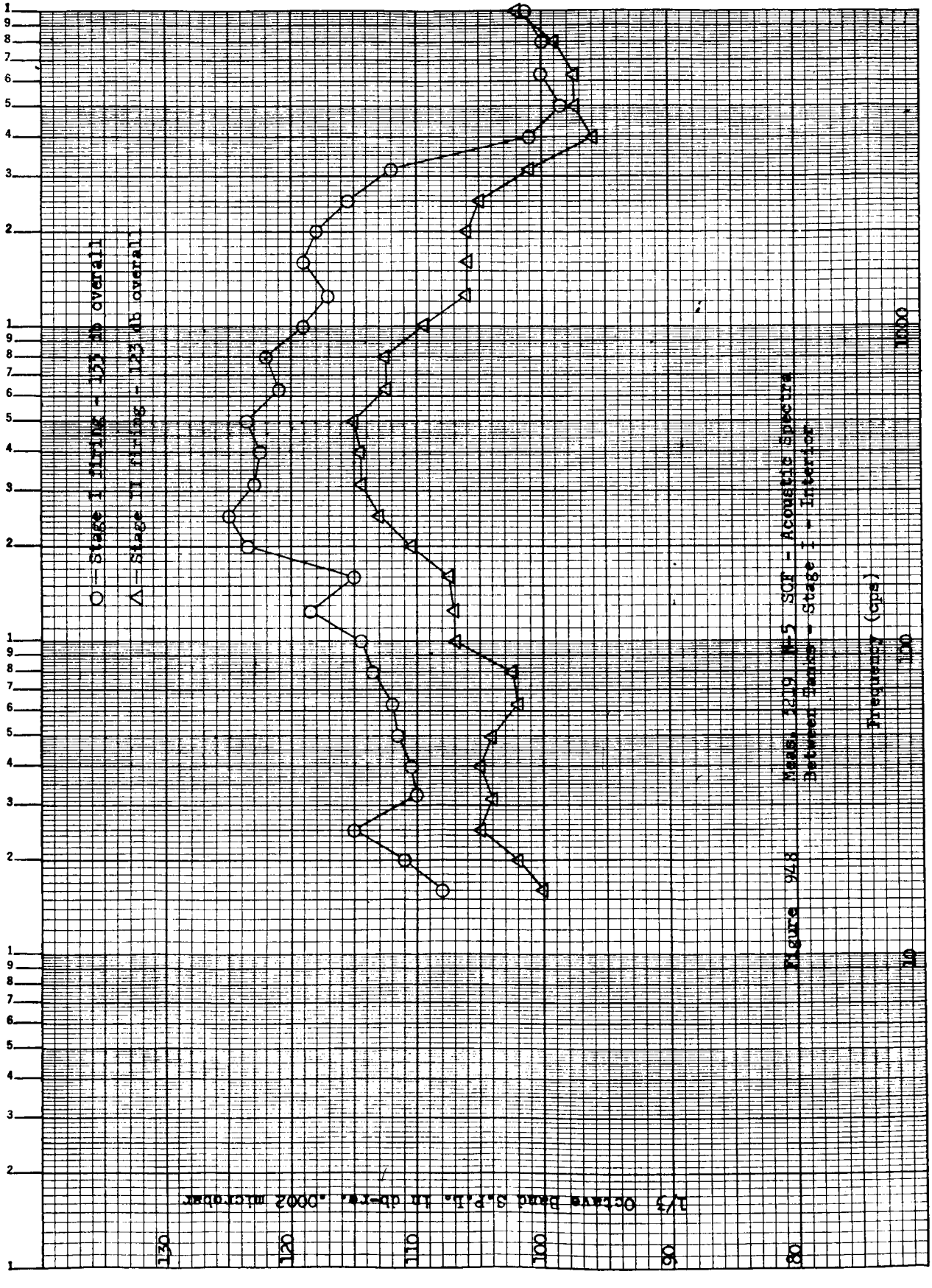


FIGURE 47 A-3 SGP Acoustic Spectra - Near Field Between Inside Stage I - I Interval


O — Stage I flight - 125 db overall
Δ — Stage II flight - 123 db overall
1/3 Octave Band S.P.L. re 0.0002 microbar
Frequency (cps)
Figure 978
Mass. 2219 #5 SCF - Acoustic Spectra
Between Stage I - Interstage
Between Stage II - Interstage

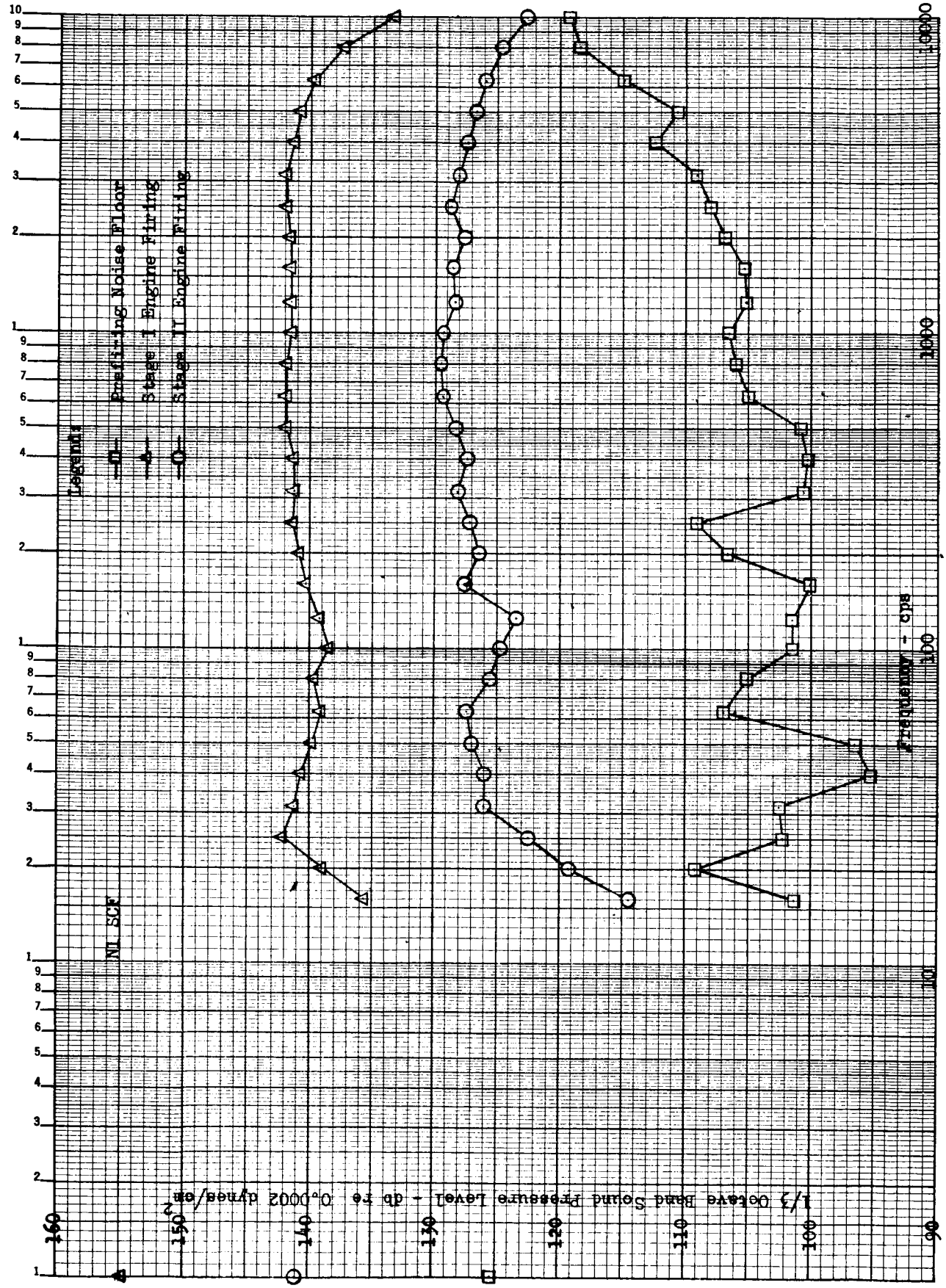


FIGURE 949: ACOUSTIC SPECTRA - MEASUREMENT 3320, STAGE I BETWEEN TANKS, COMPARTMENT IV EXTERNAL

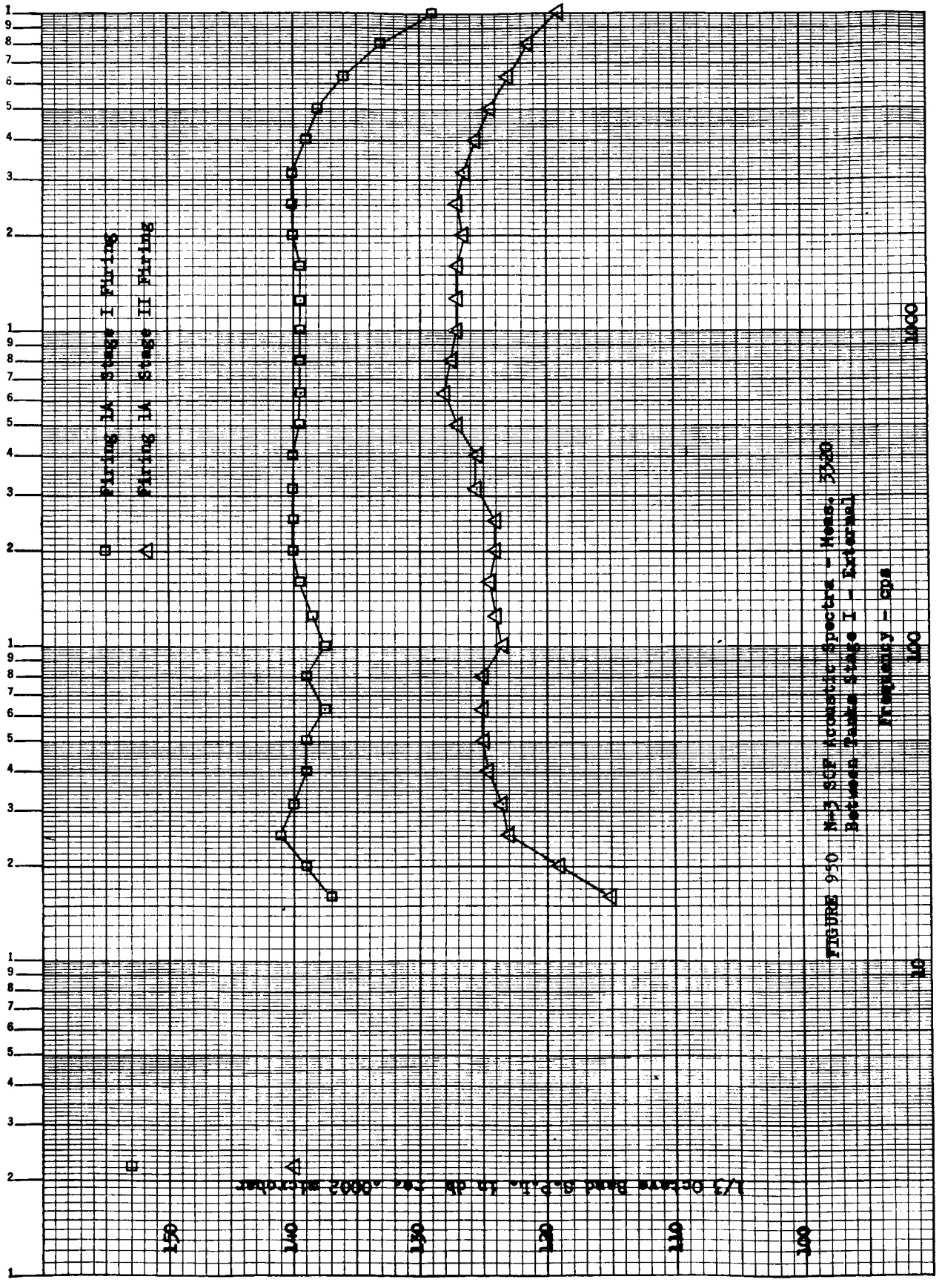


FIGURE 950 #3 SCP Acoustic Spectra - Horiz. Zero Degree Table Step I - External

1/3 Octave Band S.P.L. in db re .0002 microbar
Frequency (cps)
Figure 951
Year 1960 X-5 SST - Acoustic Spectra
Between tanks - Stage I - Exterior
O = Stage I Taxiing - 142 db overall
Δ = Stage II Taxiing - 144 db overall

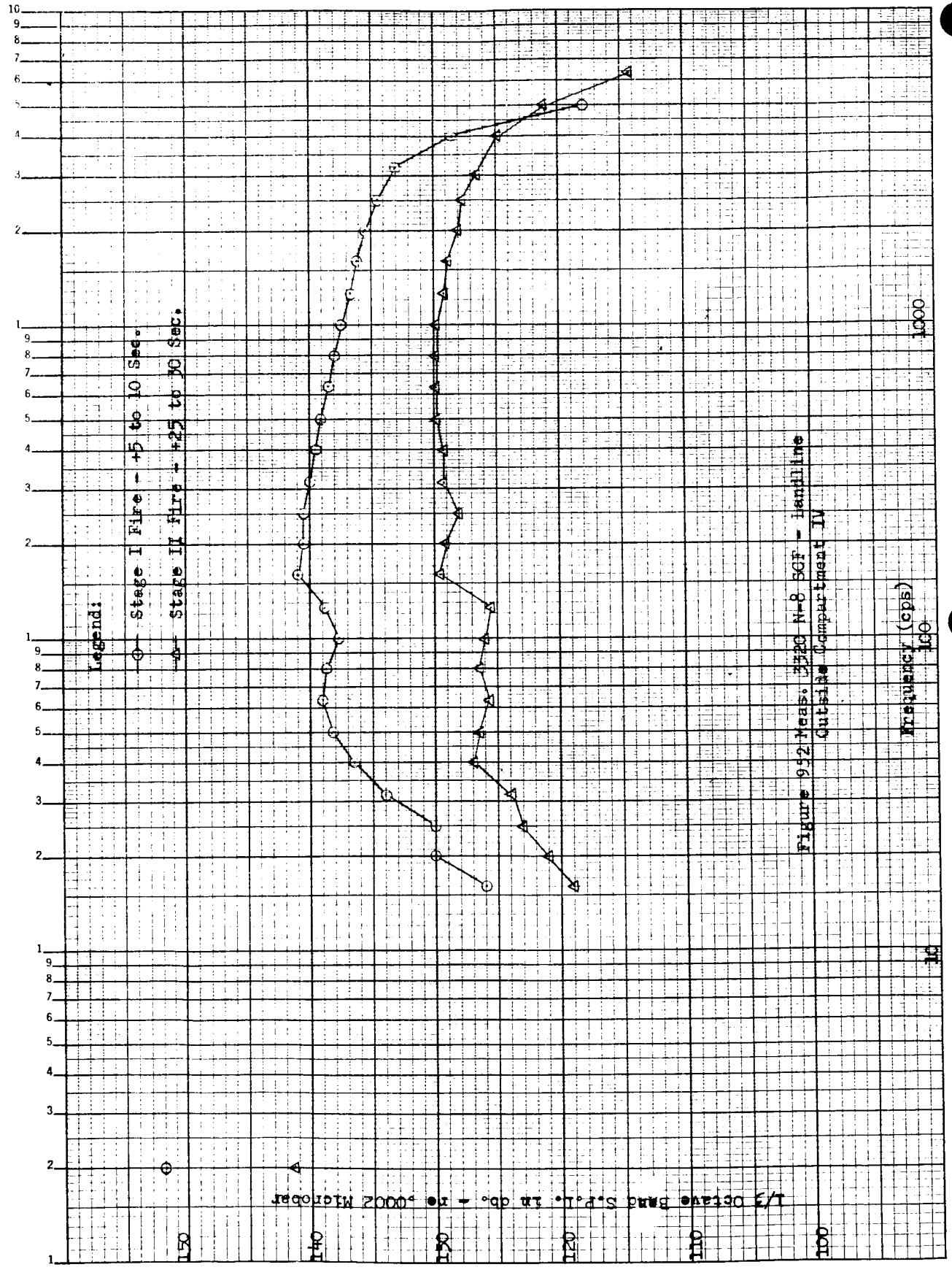


Figure 952 Meas. 3320 N-8 BGF - Landline
Outside Compartment IV

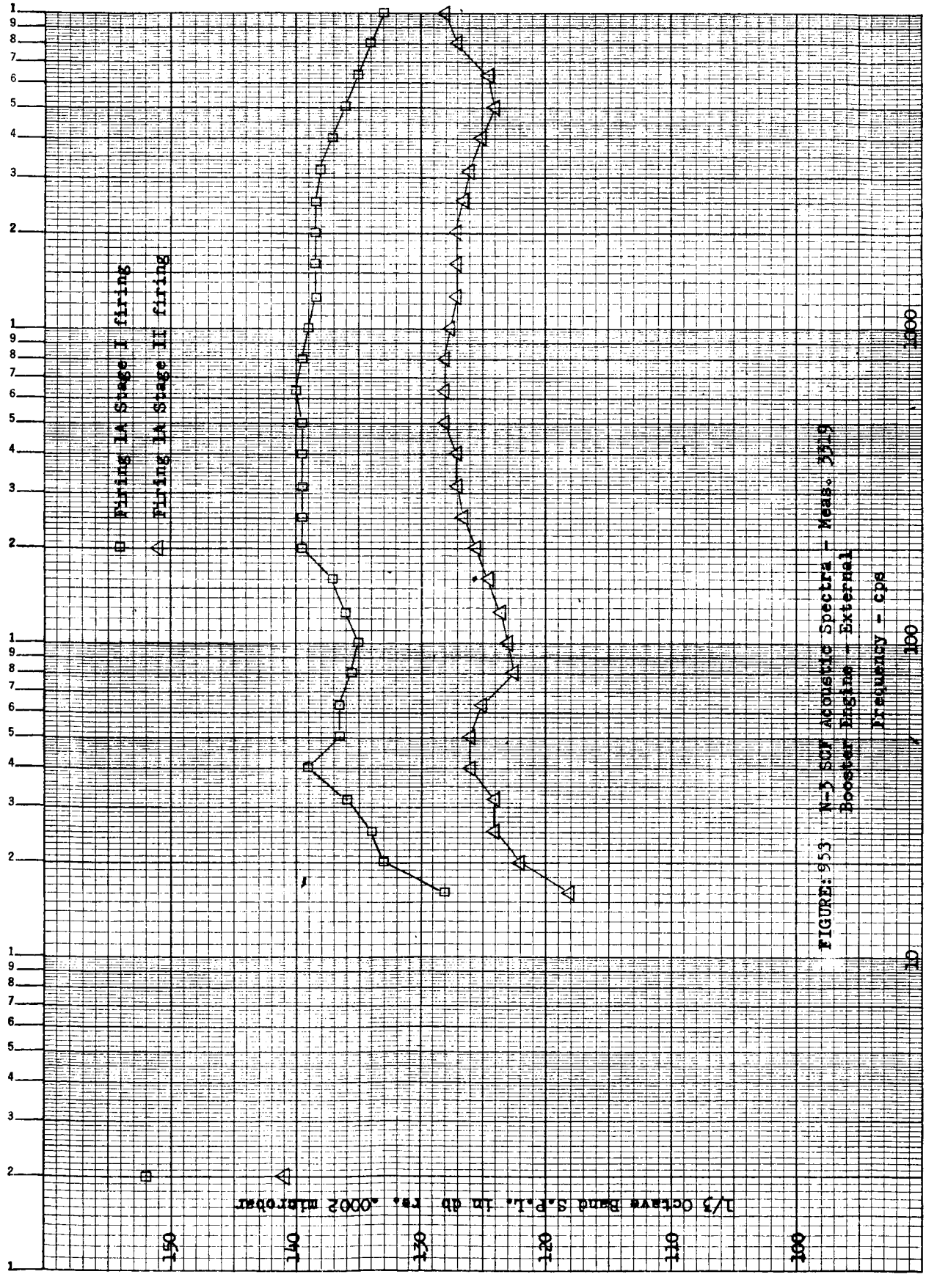


FIGURE: 953 N-5 SCP Acoustic Spectra - Meas. 2519
Booster Engine - External

○ — Stage I firing - 158 db overall
△ — Stage II firing - 143 db overall
1/3 Octave Band S.P.L. in db - ref. .0002 microbar
Frequency (cps)
10
100
1000
Figure 954
Meas. #319 M-5 SGF - Acoustic Spectra
Booster Engine Compartment - Exterior

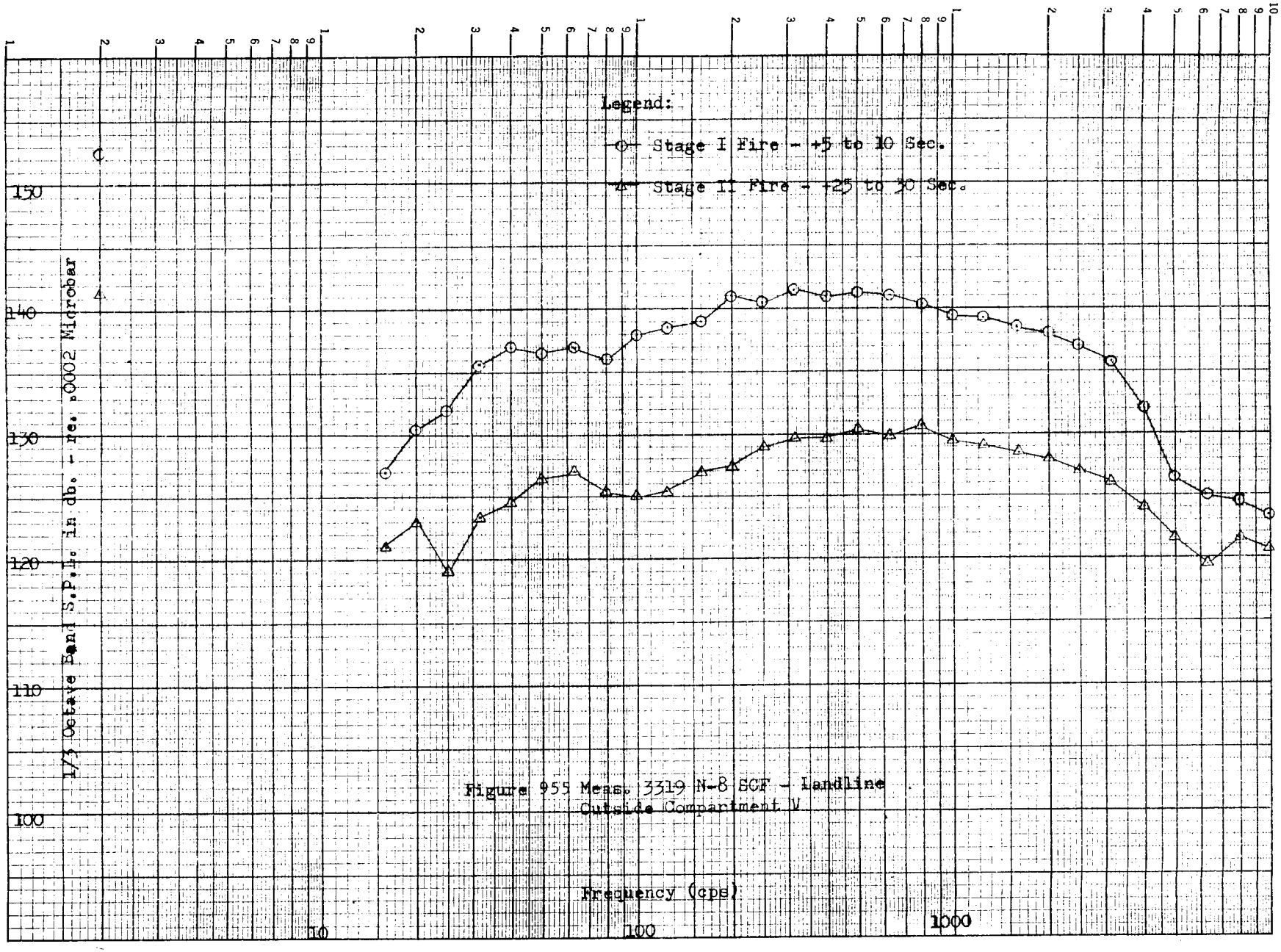
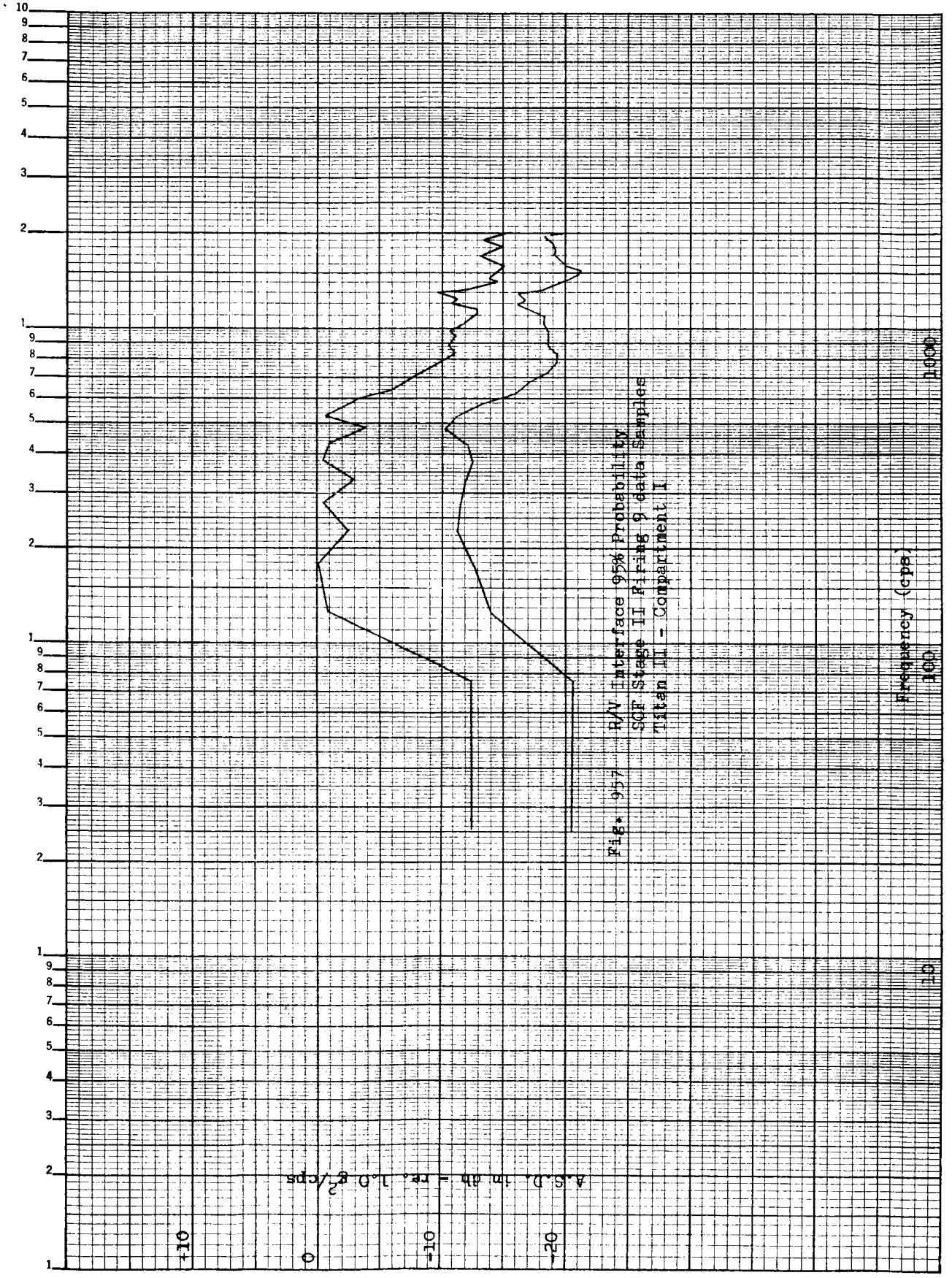


Figure 955 Meas. 3319 N-8 SCF - Landline
Outside Compartment V

A.S.D. 1b db - re. 1.0 g²/cps
+10
0
-10
-20
Frequency (cps)
10
100
1000
Titan II - Compartment 1
SCE Stage I Firing 9 Data Samples
Flight A/V Interface 95% Probability


Fig. 957 R/V Interface 95% Probability
SQF Stage II Firing 9 data Samples
Titan III - Compartment I
Frequency (cps)
10
100
1000
A.S.D. in db = re. 1.0 g²/cps
+10
0
-10
-20

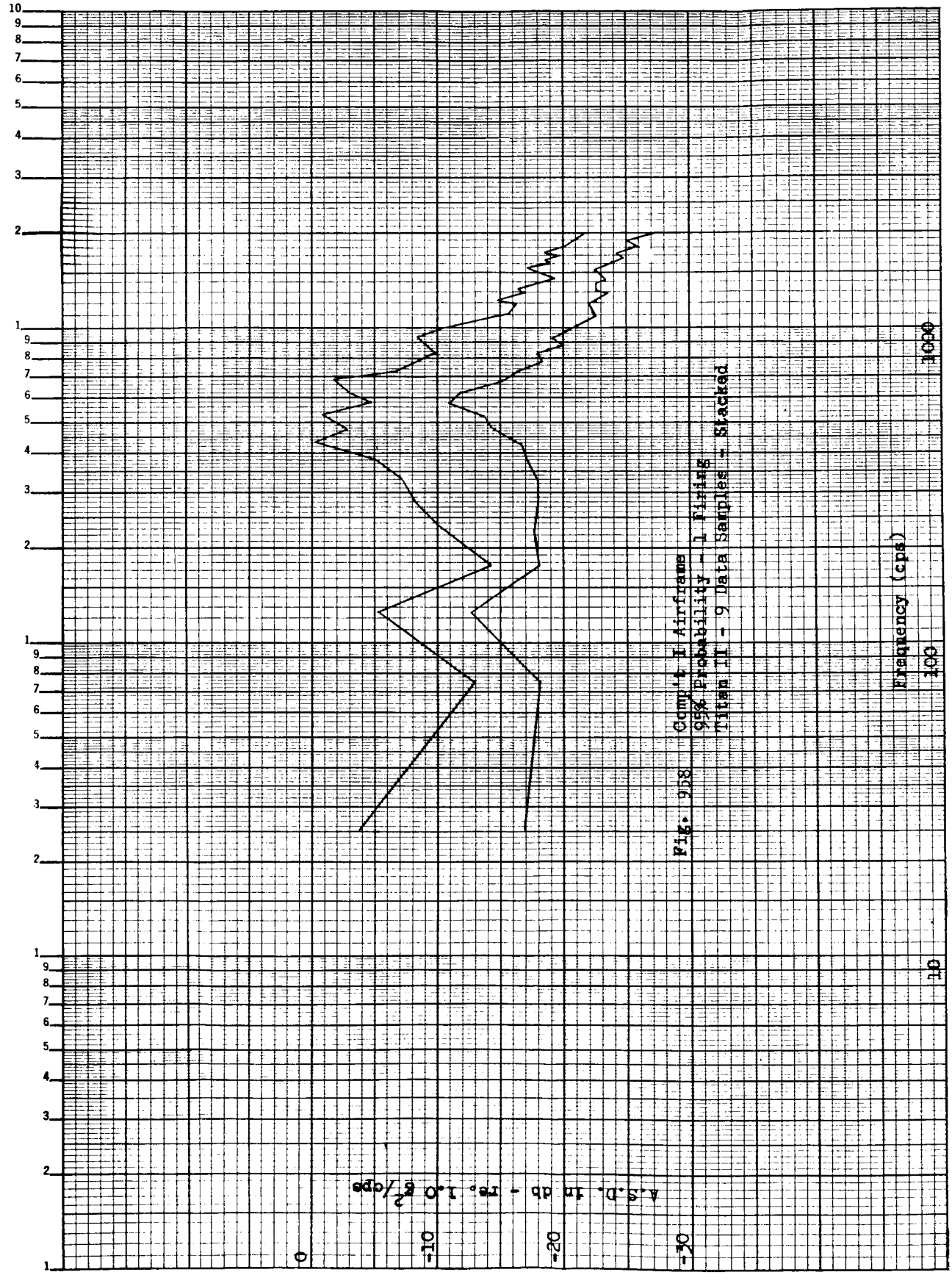
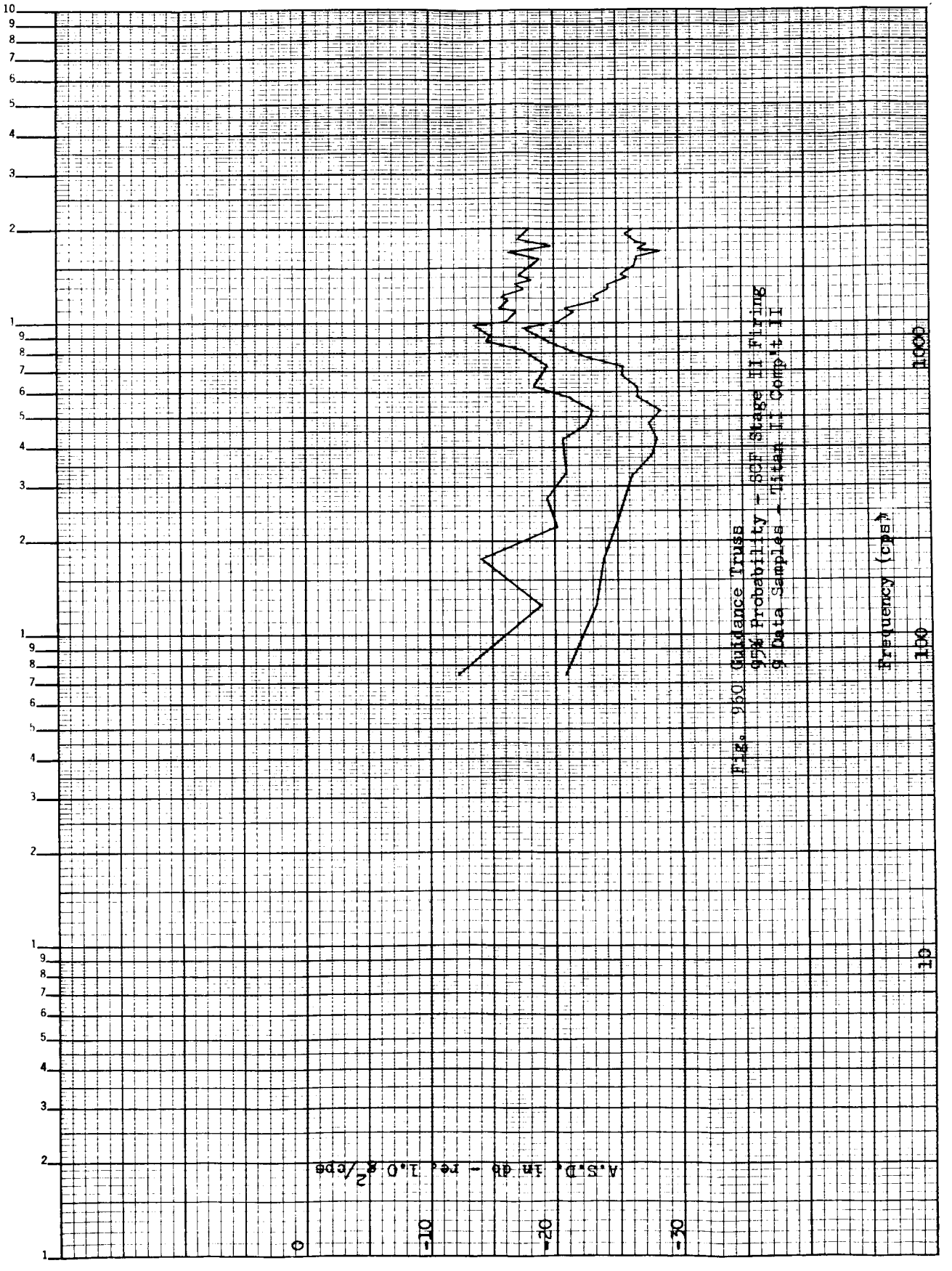

Frequency (cps)
10
100
1000
Titan II - 9 Data Samples - Stacked
95% Probability - 1 Firing
Comp't. II Airframe
Fig. 308
A.s.D. in db - Te, 1.0 g²/cps
0
-10
-20
-30

Fig. 959 Guidance Truss
95% Probability SCF Stage 1 Firing
14 Data Samples - Titan III Comp't II


Fig. 960 Guidance Truss
95% Probability - SCF Stage II Firing
9 Data Samples - Titan II Comp't II
Frequency (cps)
1000
100
10
0
-10
-20
-30
A.S.D. in db - re. 1.0 g²/cps

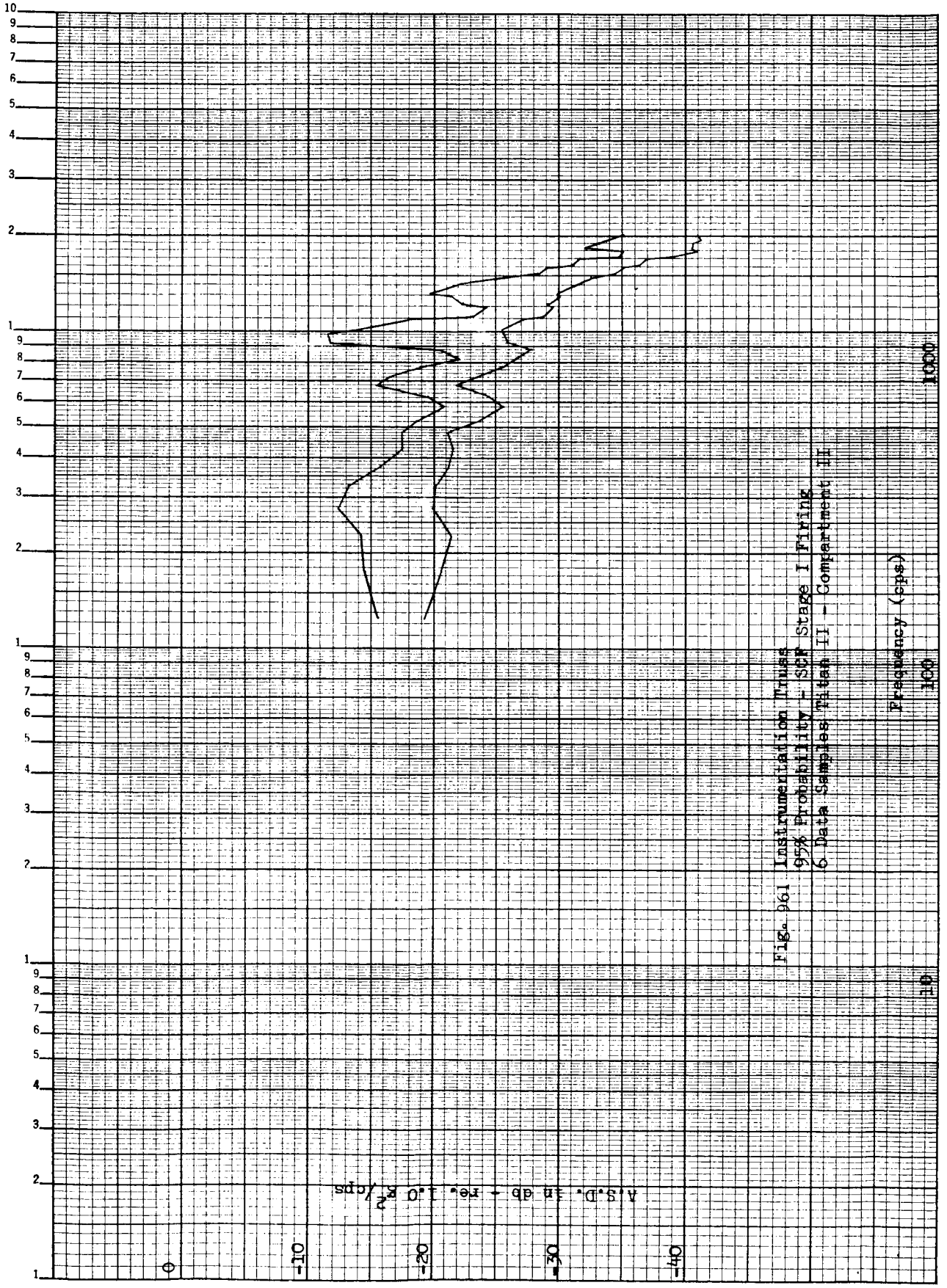


Fig. 961 Instrumentation Truss
95% Probability - SCR Stage I Firing
6 Data Samples Titan II - Compartment II

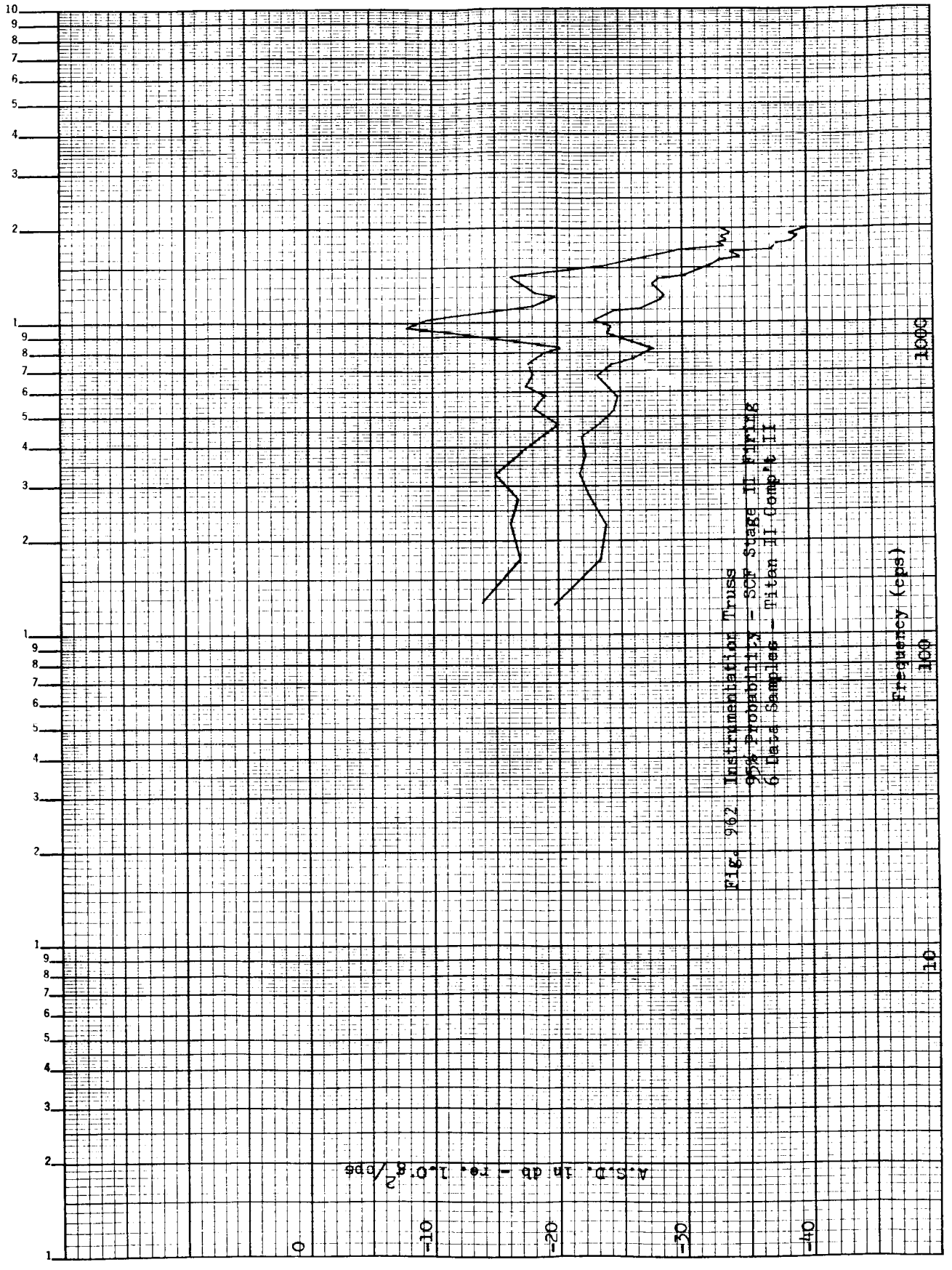


Fig. 962 Instrumentation Truss
95% Probability - SCF Stage II Firing
6 Data Samples - Titan II demo's II

Fig. 9.3 Comp't II Instrumentation Truss
95% Probability Stack Fitting
9 Data Samples - Titan II
Frequency (cps)
100
1000
10
A.S.D. in db re. 1.0 g²/cps
0
-10
-20
-30
-40

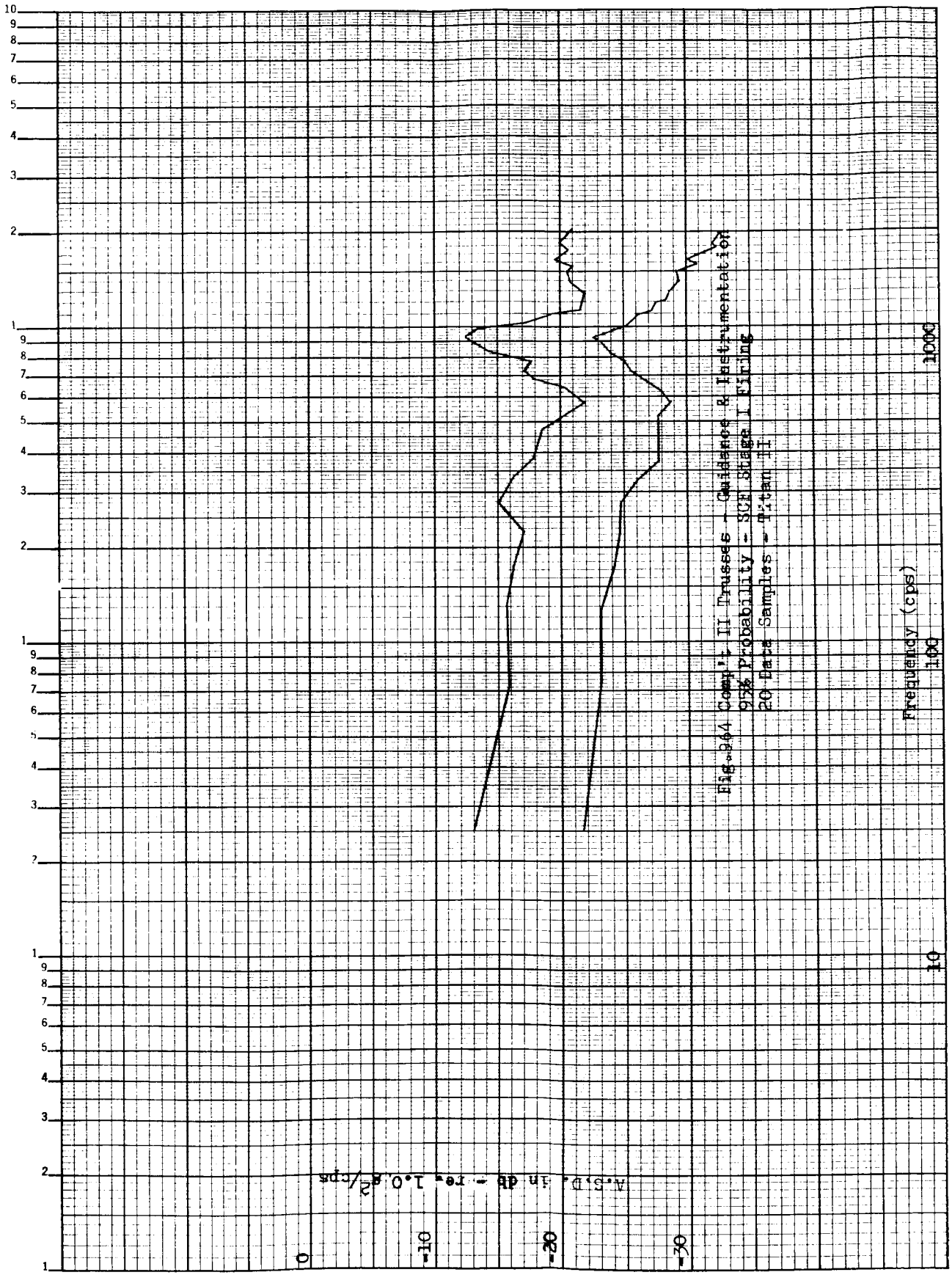
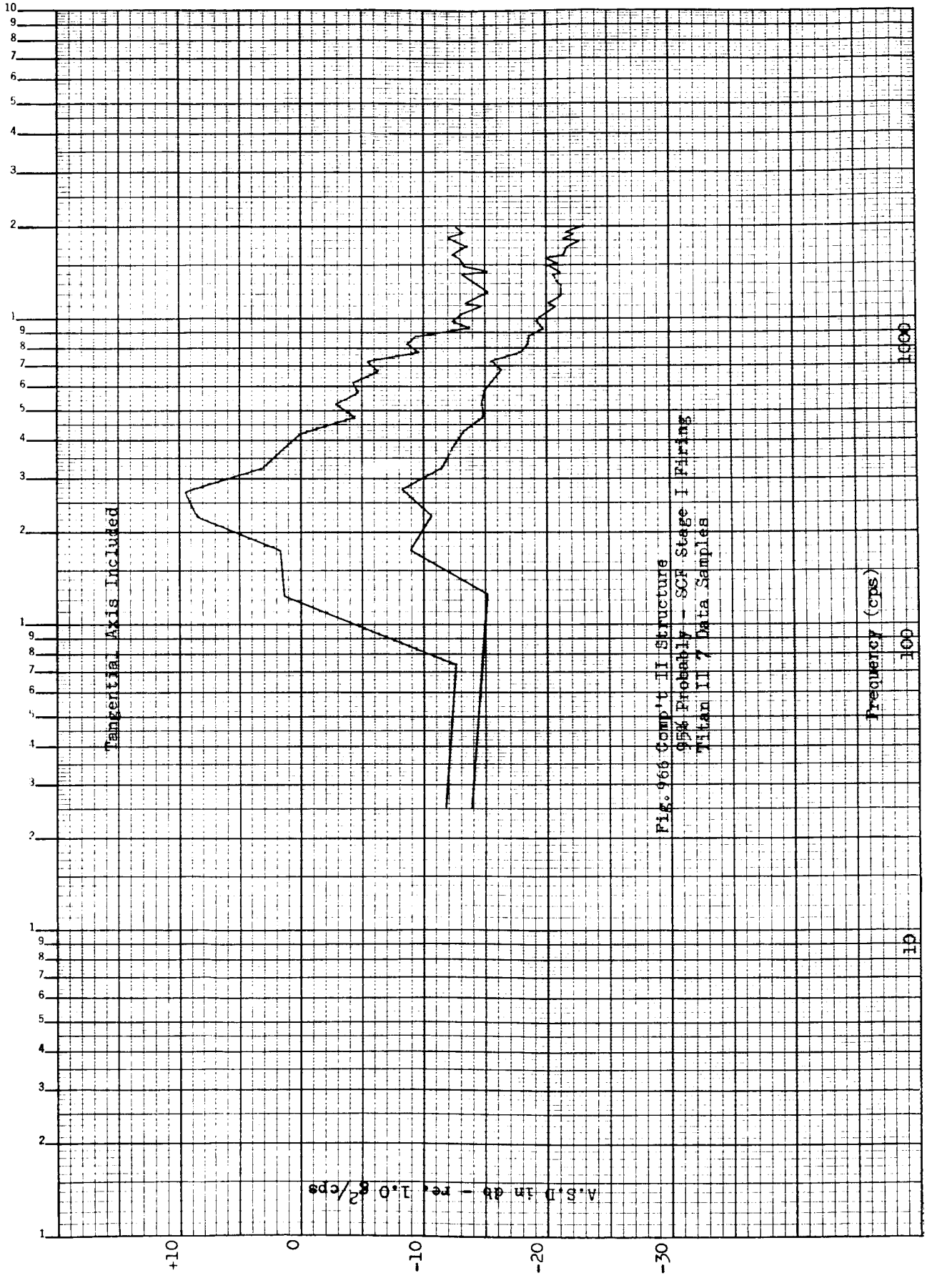
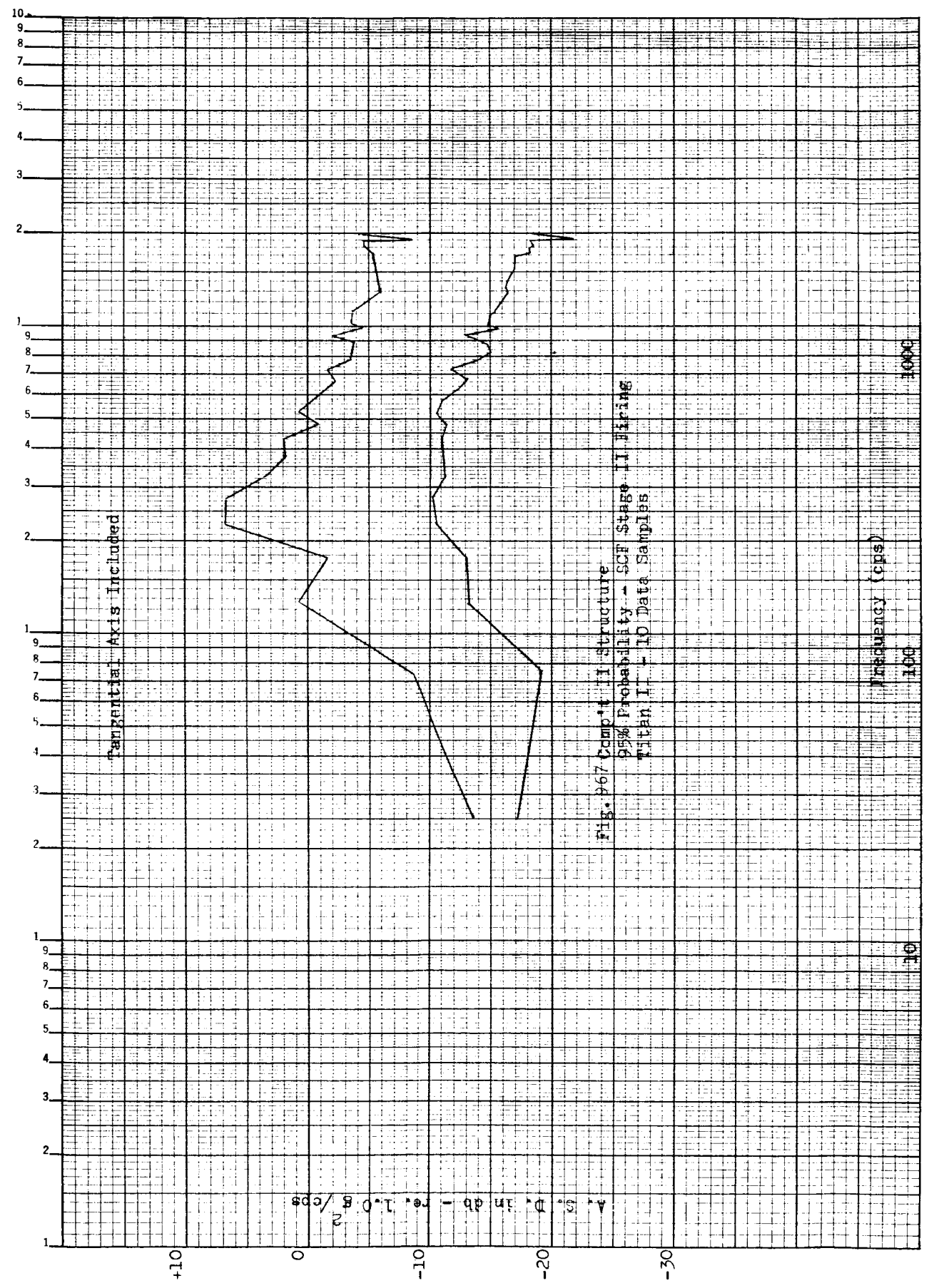
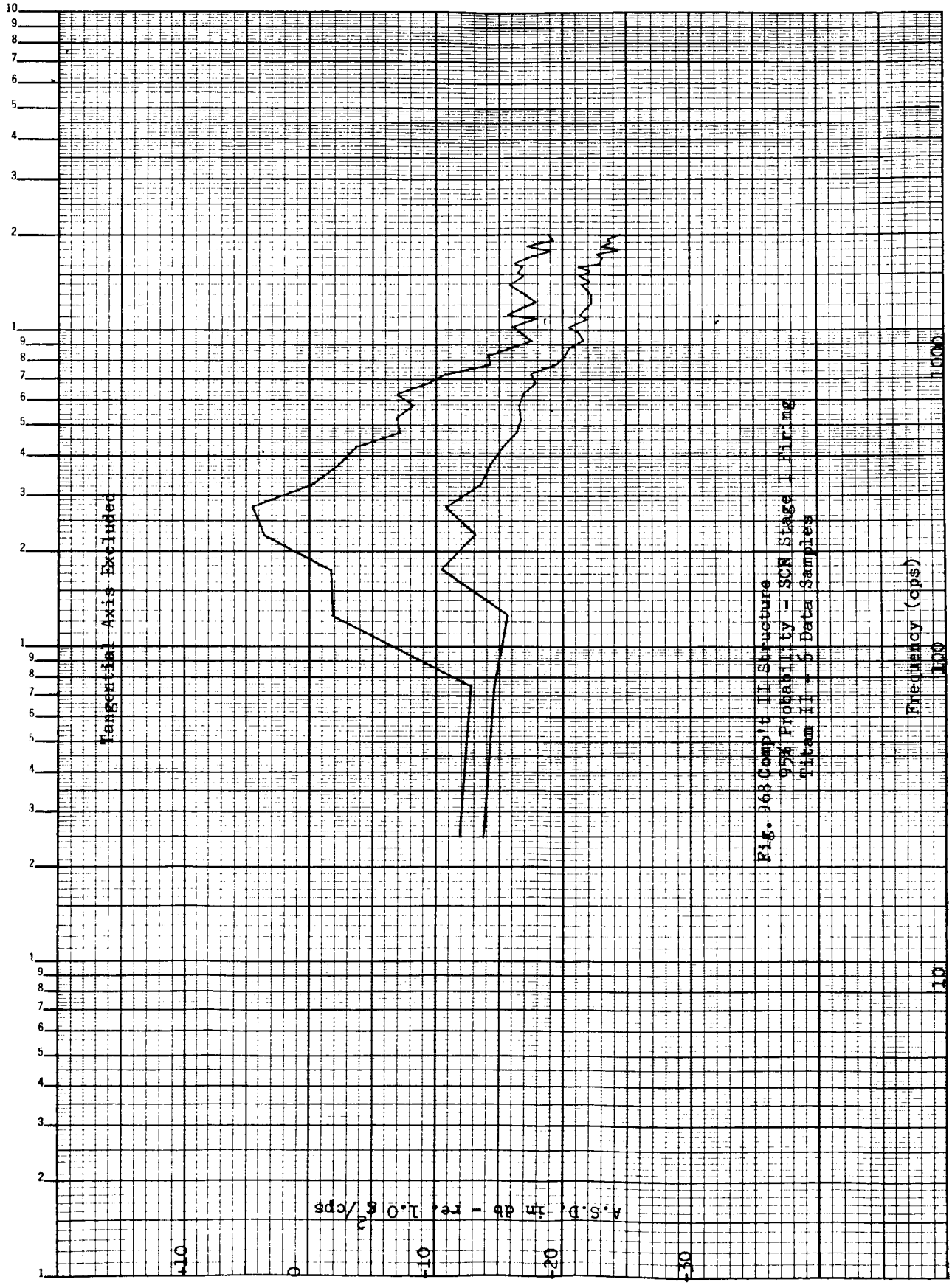


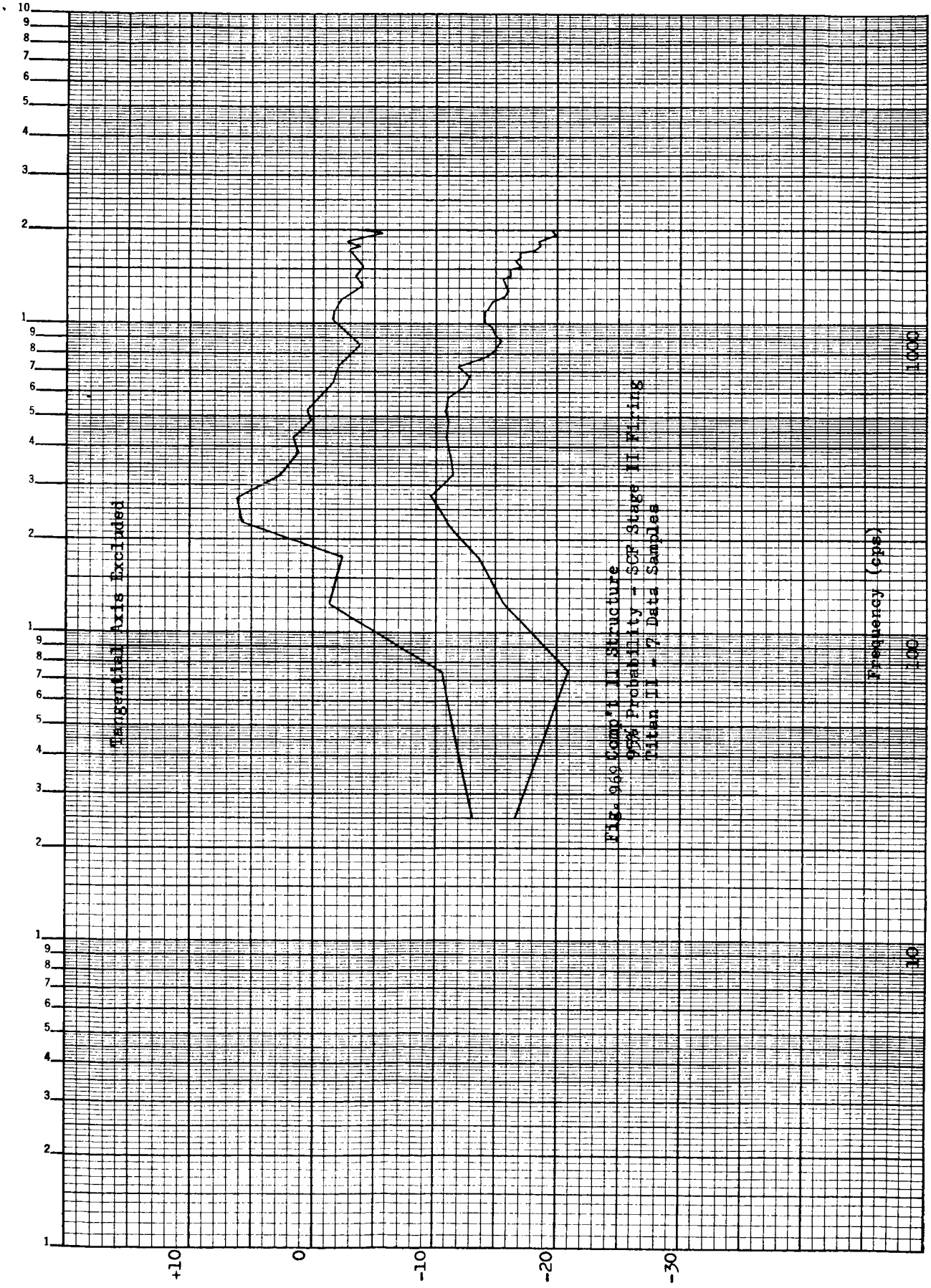
Fig. 964 Comp't. II Trusses - Guidance & Instrumentation
95% Probability - SCR Stage I Firing
20 Data Samples - Titan II

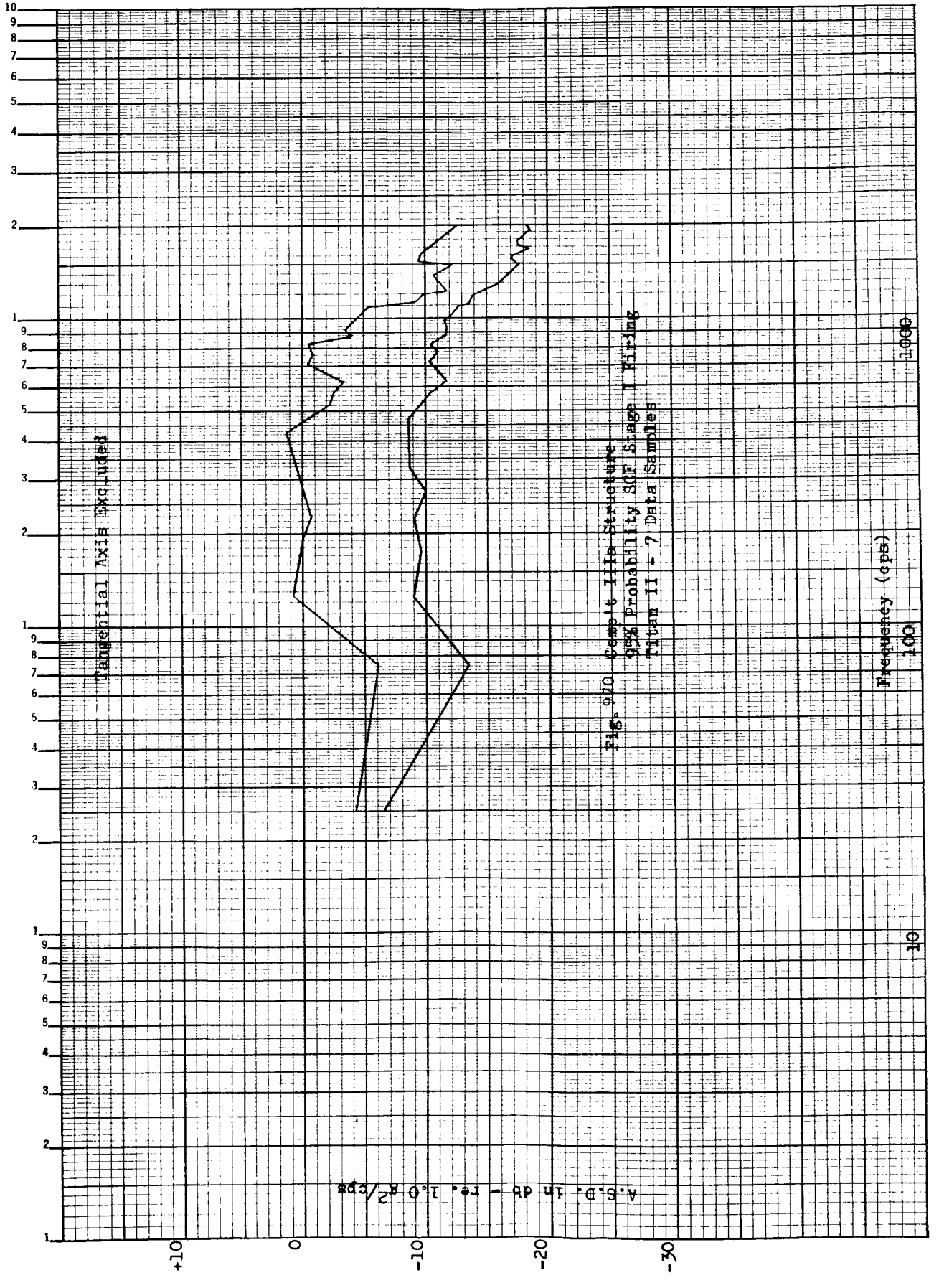
Fig. 96 Comp'te II Trasses - Guidance & Instrumentation
95% Probability - SCF Stage II Firing
17 Data Samples - Titan II
m.s.D. in db re 1.0 g²/cps
Frequency (cps)
10
100
1000
0
-10
-20
-30

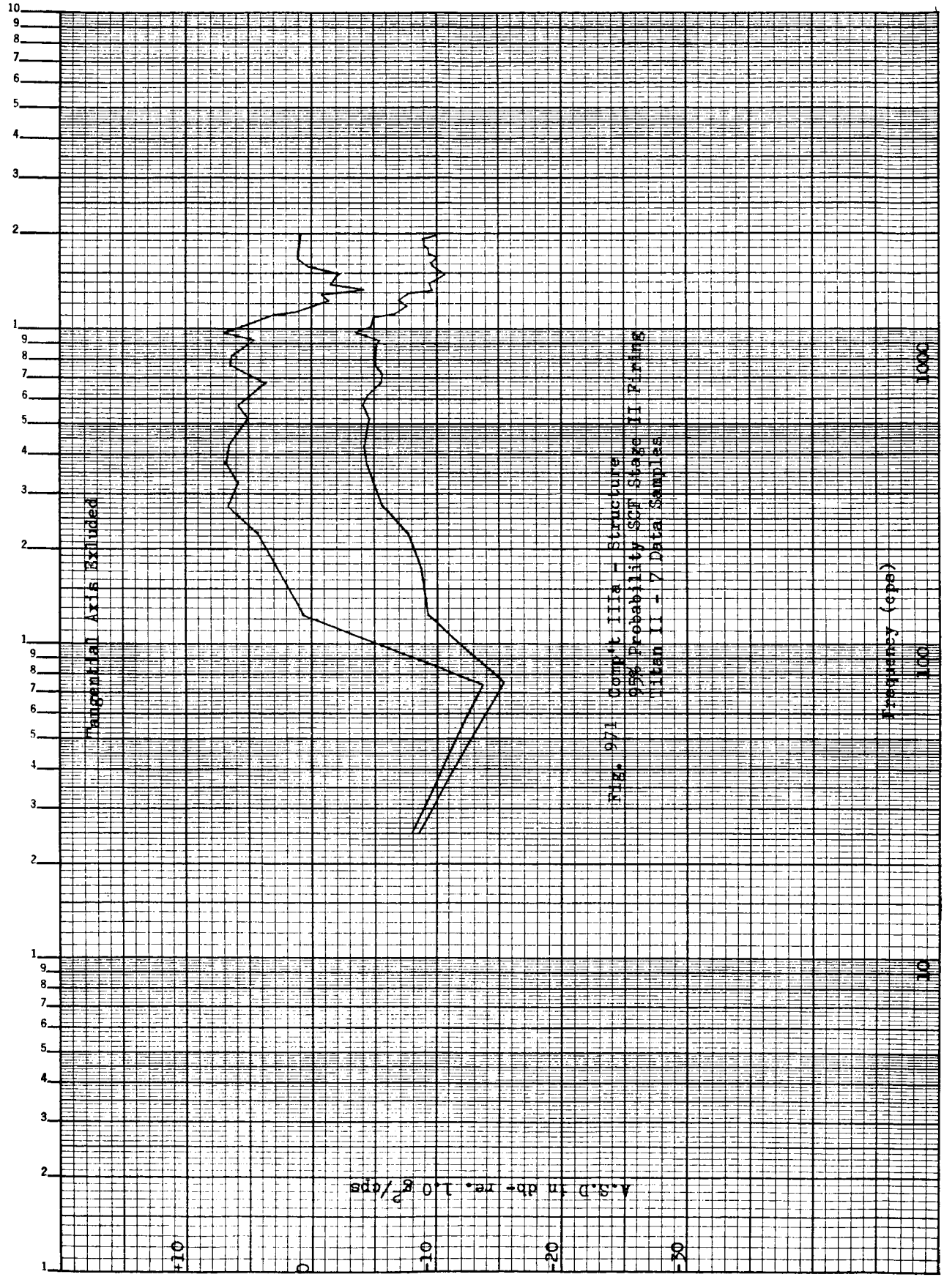

Tangential Axis Included
Fig. 966 Comp't II Structure
95% Probably - SCF Stage I Firing
Titan II 7 Data Samples
Frequency (cps)
10
100
1000
+10
0
-10
-20
-30
A.S.D in db - ref 1.0 g²/cps

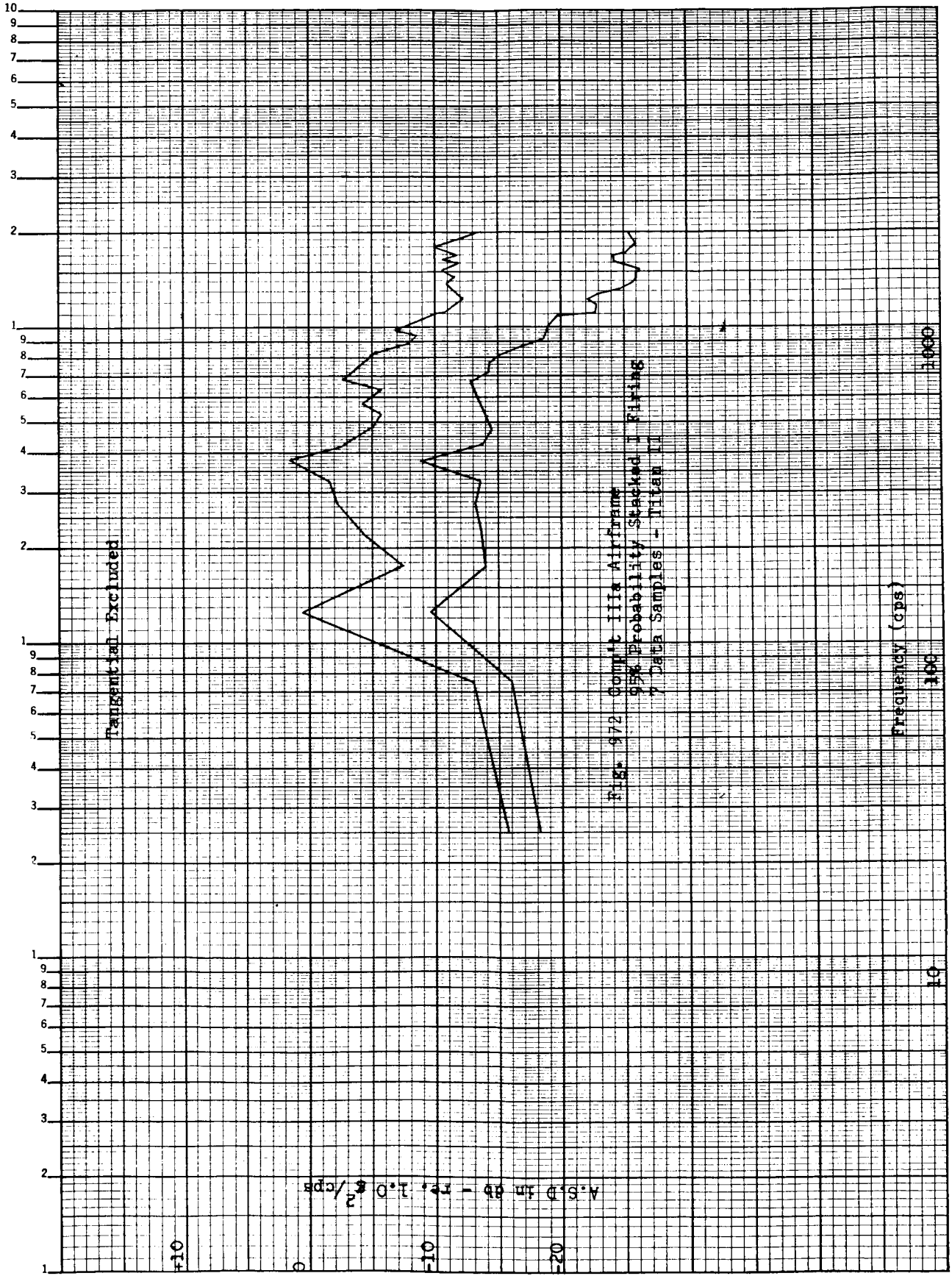

Fig. 967 Comp't II Structure
95% Probability - SCF Stage II Firing
Titan II - 1D Data Samples
Tangential Axis Included
Frequency (cps)
100
1000
+10
0
-10
-20
-30


Tangential Axis Excluded
Fig. 368 Comp't II Structure
95% Probability - SCR Stage I Firing
Item II - 5 Data Samples
Frequency (cps)
100
1000
10
-10
0
-10
-20
-30
A.S.D. in db - re: 1.0 g²/cps


Tangential Axis Excluded
Fig. 96 Comp'n II Structure
95% Probability - SCP Stage II Firing
Titan II - 7 Data Samples
Frequency (cps)
1000
100
10
+10
0
-10
-20
-30


Tangential Axis Excluded
Fig. 970 Cabin Tile Structure
95% Probability SCF Stage 1 Firing
Titan II - 7 Data Samples
Frequency (cps)
100
1000
10
+10
0
-10
-20
-30


Fig. 9.71 Comput. III - Structure
96% Probability Sig. Stage II Points
Plan II - 7 Data Samples
Frequency (cps)
100
1000
Tangential Axis Excluded
A.S.D in db re. 1.0 g²/cps
+10
0
-10
-20
-30


Tangential Excluded
Fig. 972 Comet IIIa Airframe
95% Probability Stacked I Firing
P Data Samples - Titan II
Frequency (cps)
1000
100
10
+10
0
-10
-20
A.S.D in ab - re. 1.0 ¢²/cps

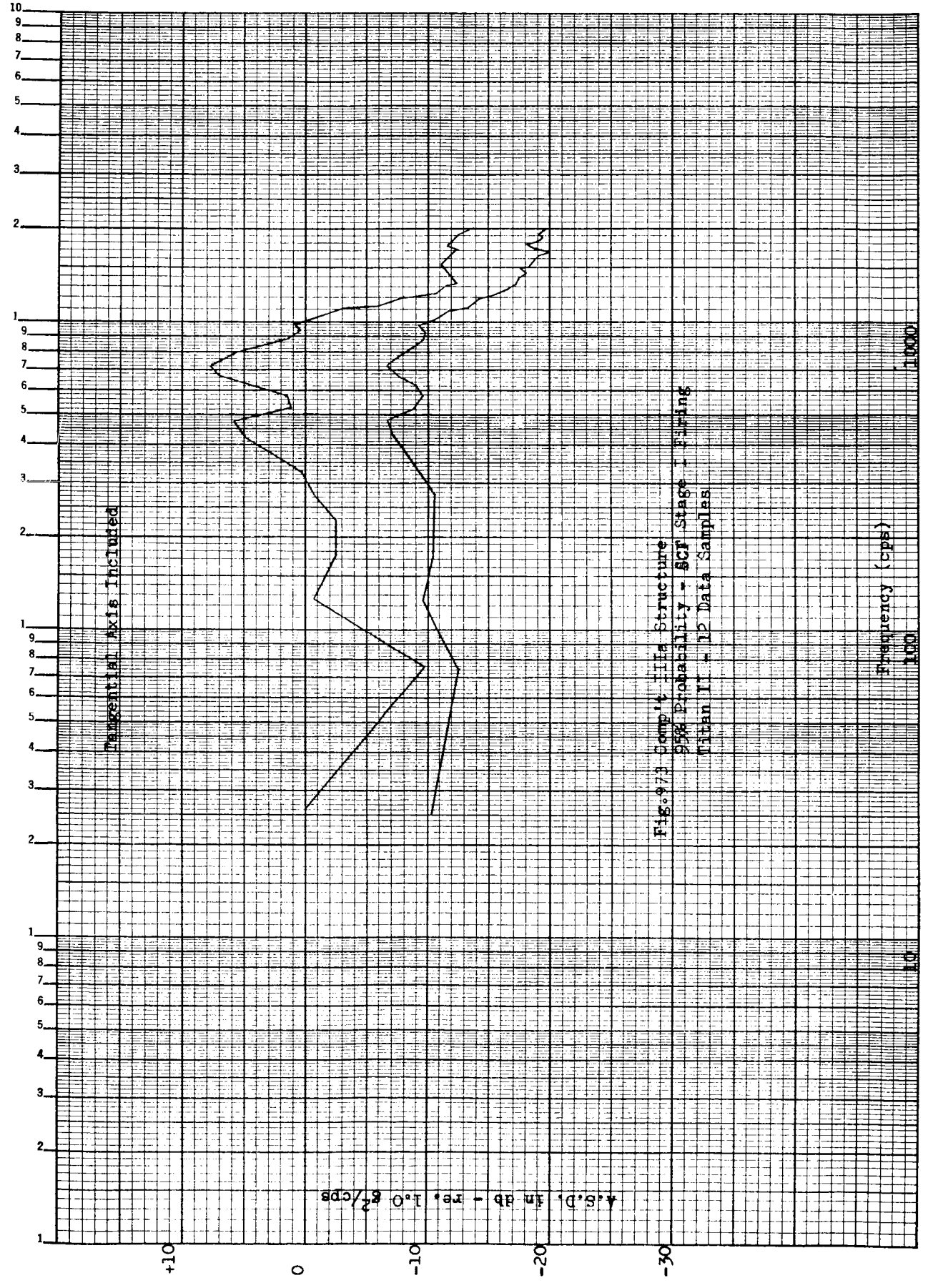
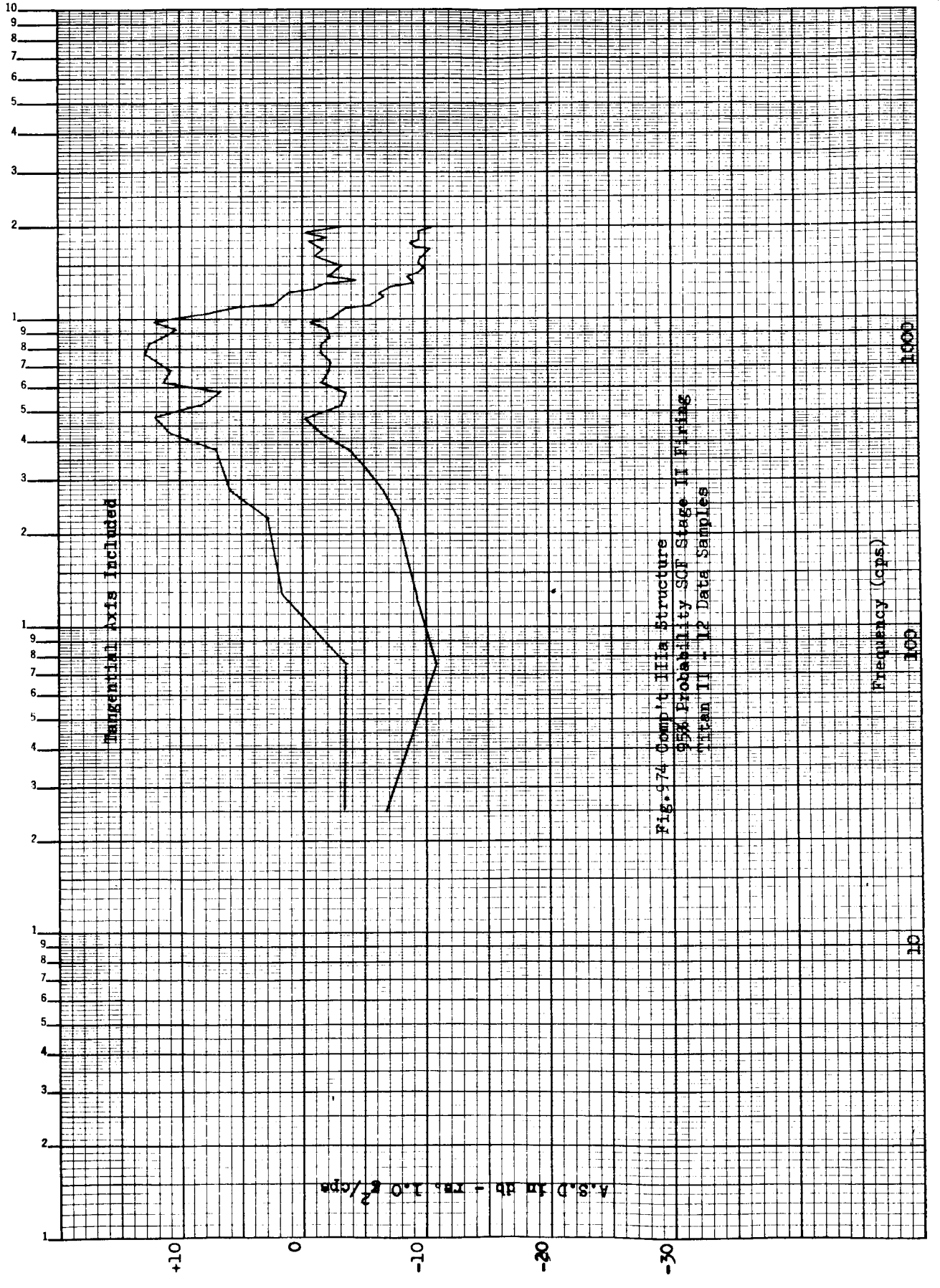


Fig. 973 Comp't IIIa Structure
95% Probability - SCR Stage I Firing
Titan II - 1D Data Samples


Tangential Axis Included
Fig. 74 Comp't IIa Structure
95% Probability SOF Stage II Firing
Titan II - 12 Data Samples
Frequency (cps)
1000
100
10
+10
0
-10
-20
-30
A.S.D. in db - re 1.0 g²/cps

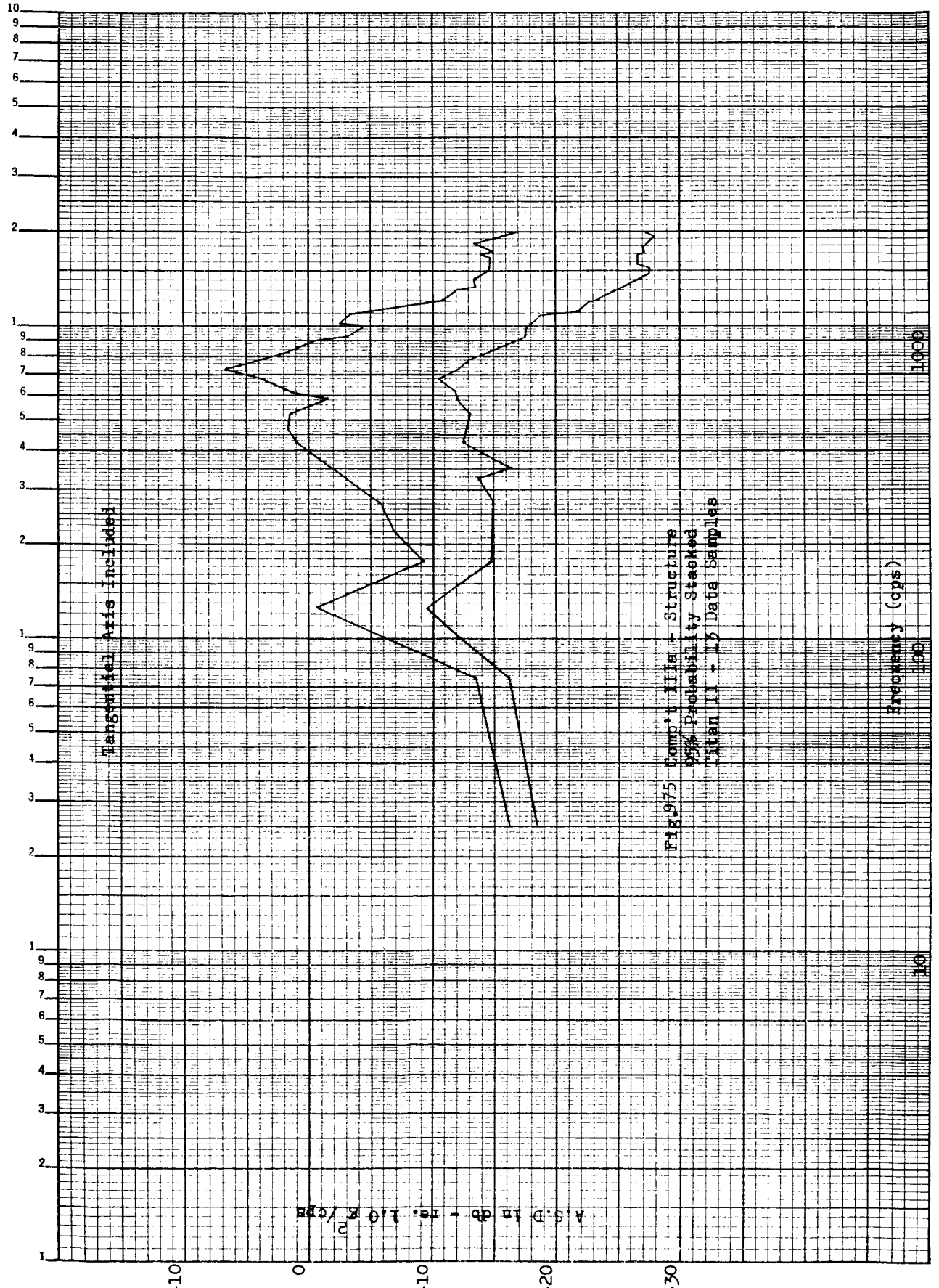
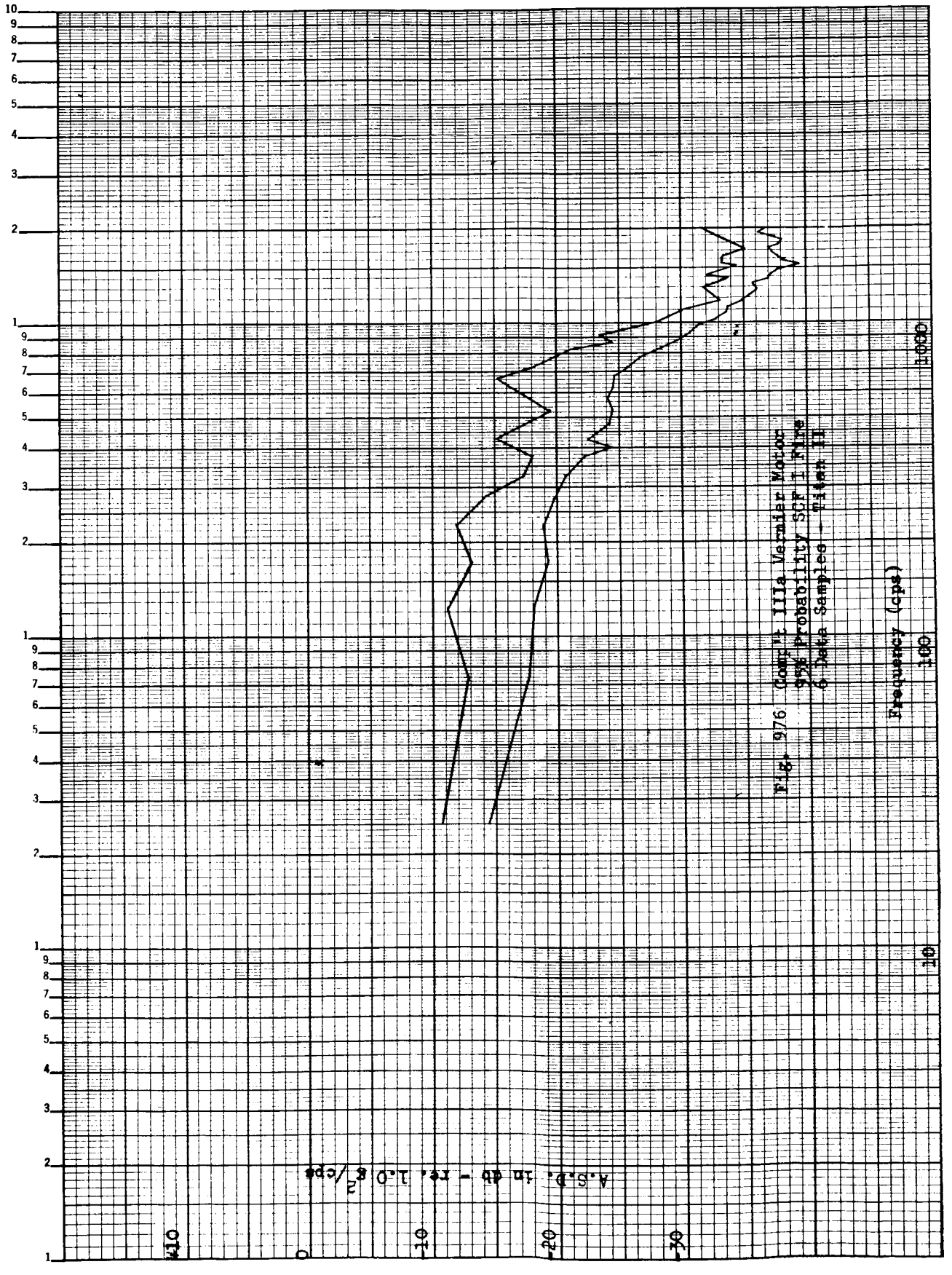


Fig.975 Comp't IIIa - Structure
95% Probability Stacked
Titan II - T5 Data Samples


A.S.D. in db - re. 1.0 g²/cps
Frequency (cps)
Fig. 976 Comp. IIIa Vertical Motion
95% Probability SCF Plus
6 Lake Samples - Plan II

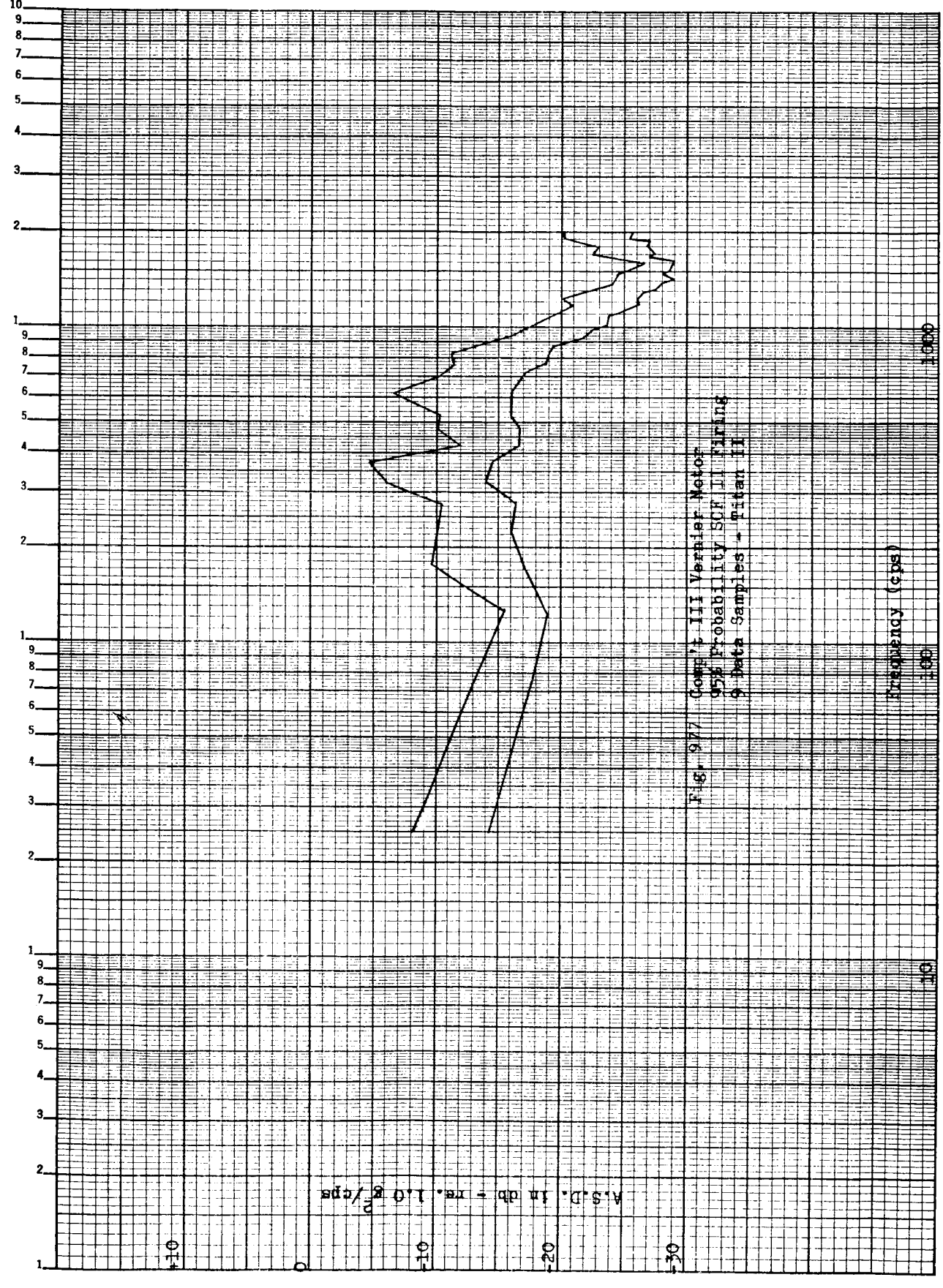
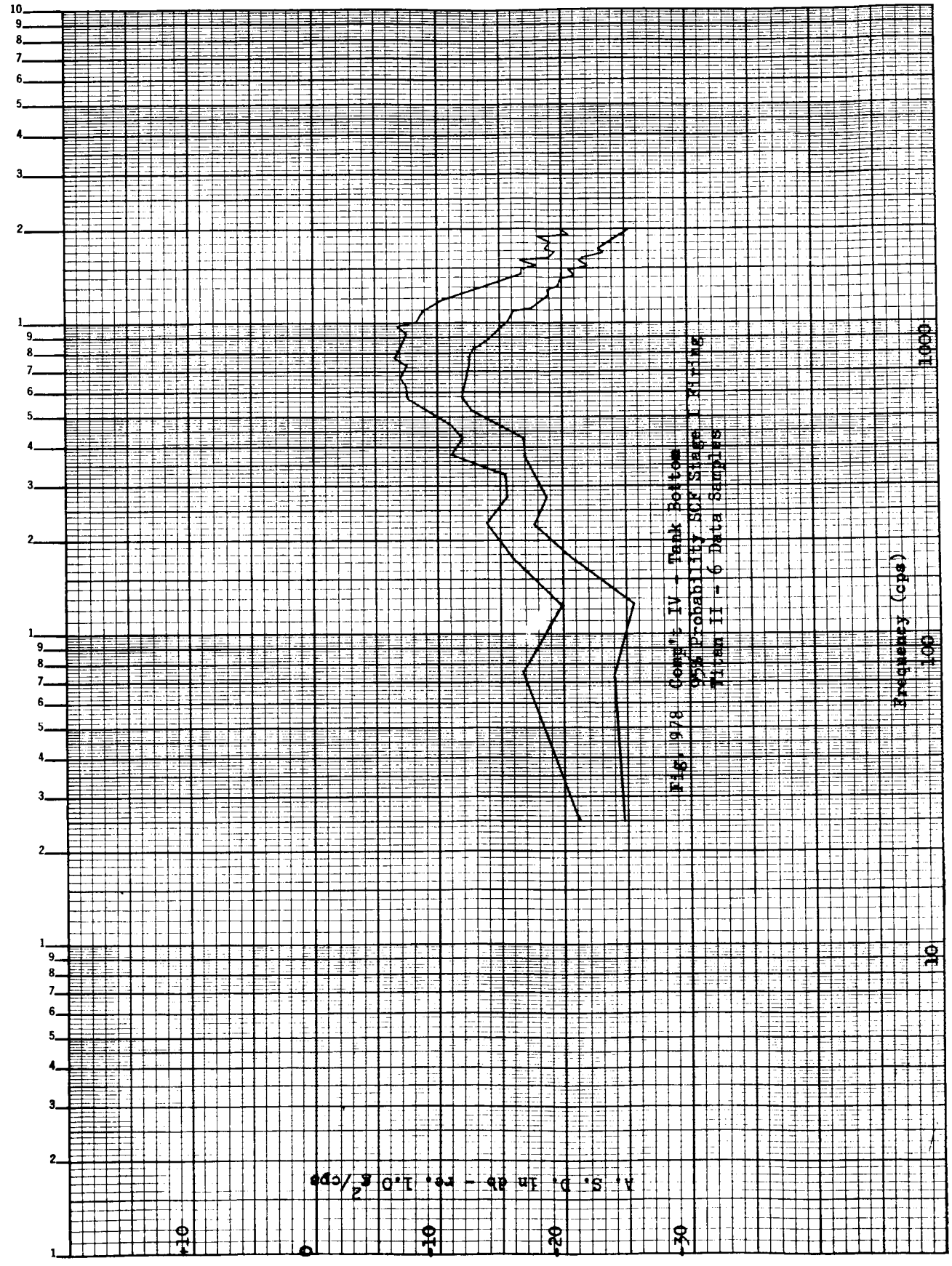


Fig. 977 Comp't III Vernier Motor
95% Probability SOF II Firing
6 Data Samples - Titan II


Frequency (cps)
100
1000
Fig. 9.78 Comp. IV - Tank Bottom
95% Probability SCF Stage I Strike
Plan II - 6 Data Samples
A. S. D. ln db - re. 1.0 ε²/cps
-10
0
+10
+20
+30

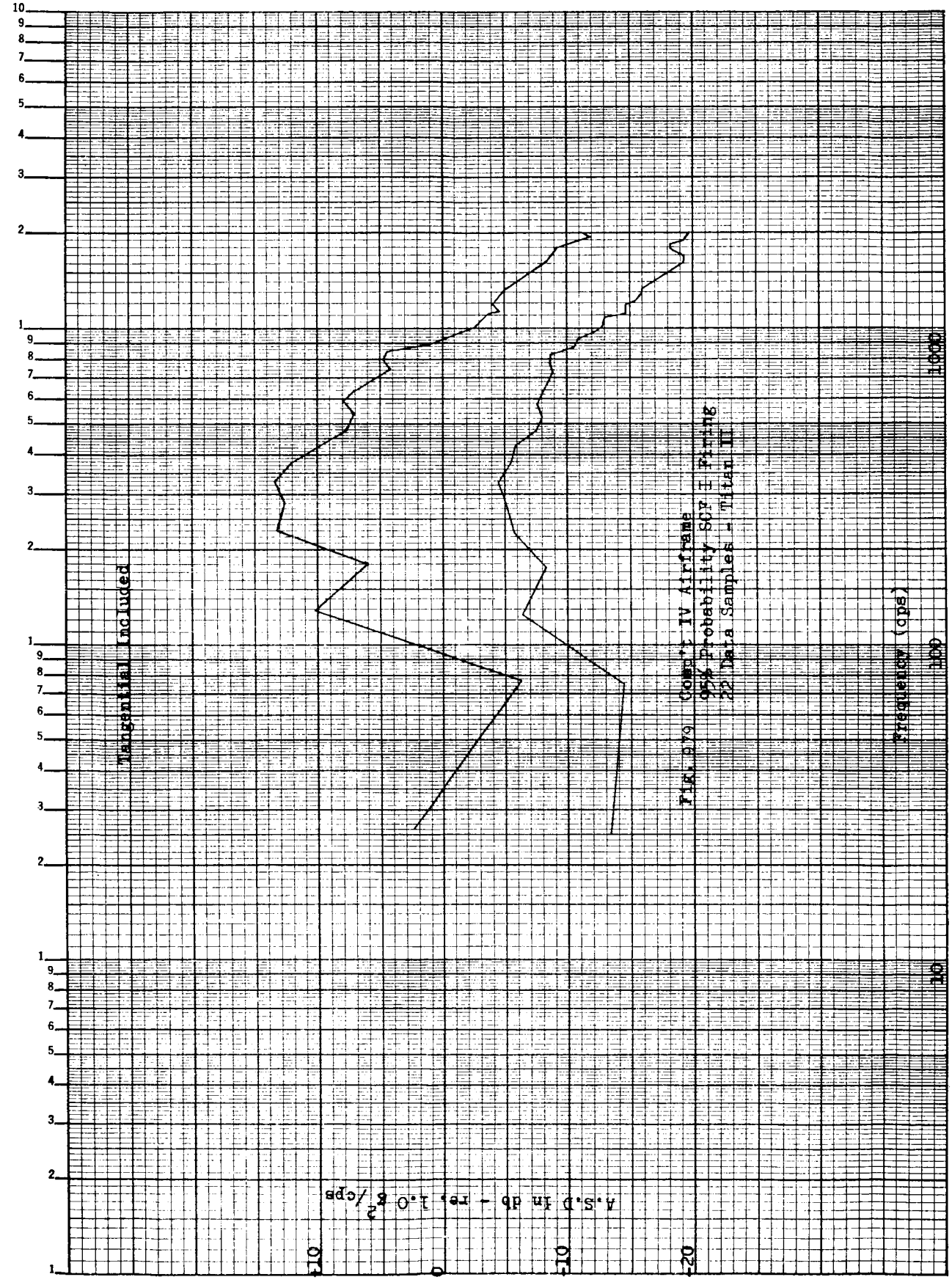
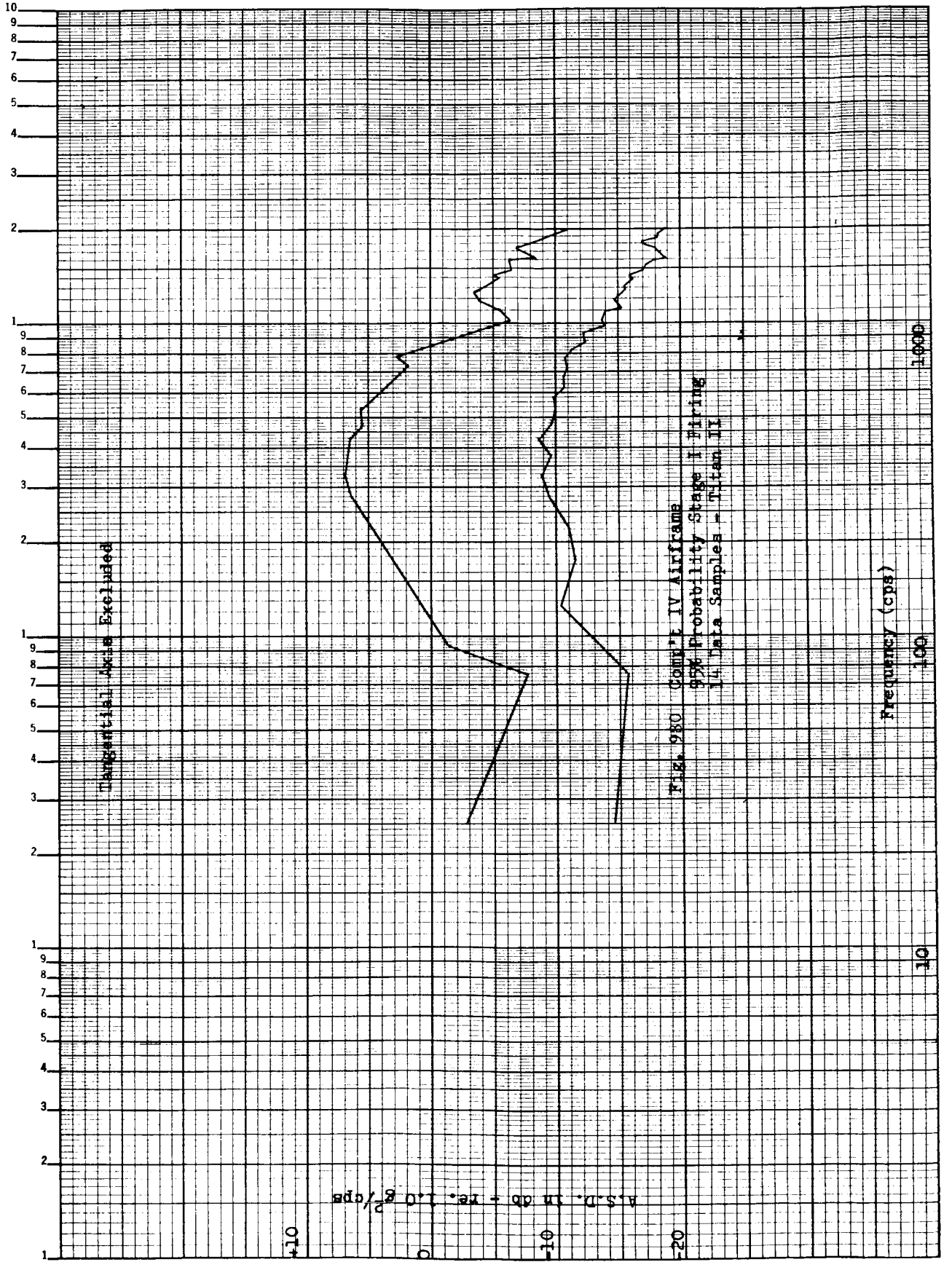


Fig. 279 Comet IV Airframe
95% Probability SCF Firing
22 Data Samples - Titan III


Tangential Axis Excluded
Fig. 980 Comp't IV Airframe
PSK Probability Stage I Firing
14 Data Samples - Titan II
Frequency (cps)
1000
100
10
A.S.D. in db re. 1.0 g²/cps
+10
0
-10
-20

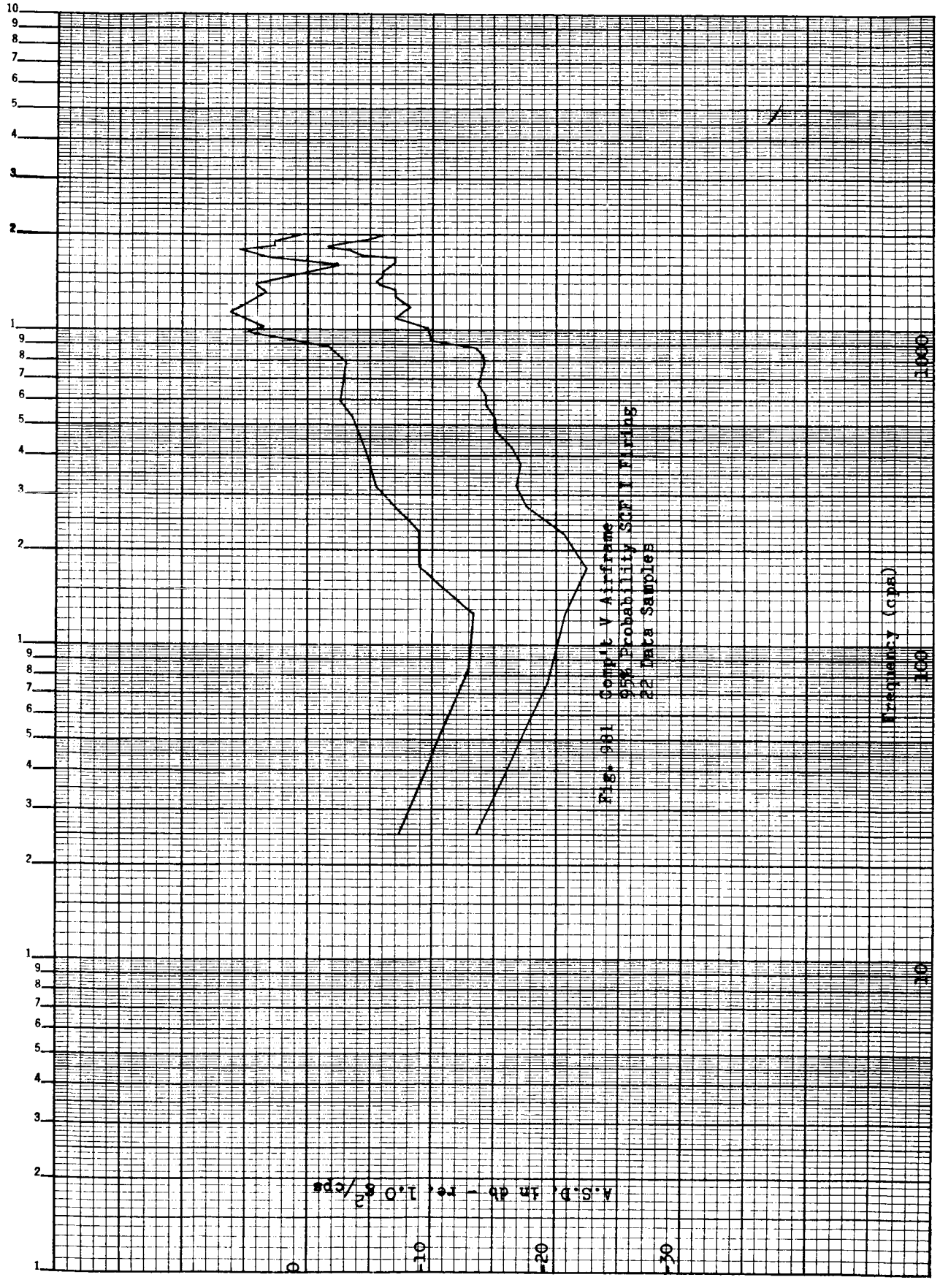


Fig. 681 Comput V Airframe
SSF Probability Surf Fitting
2 Data Samples

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