NASA CR-66204

COMPILATION OF FLIGHT DATA FROM TITAN III VEHICLES

By J. Newgent

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Prepared under Contract NAS1-6483 by
MARTIN COMPANY
A DIVISION OF MARTIN MARIETTA CORPORATION
Denver, Colorado

for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FOREWORD

This report is submitted in accordance with the requirements of Contract NAS1-6483.

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COMPILATION OF FLIGHT DATA

FROM TITAN III VEHICLES

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N67-11321

ABSTRACT

The report presents descriptions of the Titan III flight vehicles and the vibration, acoustic, and shock data acquired during the flight and ground test programs from inception through December 1965. Data are presented for four Titan IIIA core vehicles and for three Titan IIIC core vehicles (boosted with strap-on solid rocket motors). Pertinent information relative to the data acquisition systems and vehicle trajectories also is included.

Author

INTRODUCTION

To provide a basic description of the flight vehicles, with particular reference to those factors pertinent to vibration and acoustic environment analysis, a profile drawing of the core vehicle, an equipment compartment identification sketch, and associated structural descriptions are presented. In addition, structural surface weight data for the various equipment compartments are given.

Flight vehicle trajectory and performance parameters of concern in vibration and acoustic environment analysis are shown graphically. These include time-history plots of vehicle weight, fuel, and oxidizer consumption, Mach number; altitude; and dynamic pressure.

The instrumentation systems employed to transduce, telemeter, record, and reduce the vibration, acoustic, and shock environment measurements are described briefly, and pertinent system block diagrams are presented. The information is presented in individual sections relating to transducers, telemetry, ground receiving stations, flyaway landline instrument system, and data reduction.

The vibration and acoustic data acquired for the flight vehicles are presented in the following manner: All Titan IIIA vehicles data are grouped in one section. These include data from Vehicles 1, 2, 3, and 6. Vibration and acoustic time histories, showing the overall (root mean square) acceleration and sound pressure levels recorded, are grouped. Acceleration spectral density and 1/3 octave band sound pressure level frequency spectra are included in a second grouping.

The Titan IIIC vehicles data are presented in the same groupings and include measurements from Vehicles 4, 7, and 8.

For both the Titan IIIA and IIIC time-history and frequency-spectrum presentations, the data are organized as follows.

Measurements acquired in a given equipment compartment, or part thereof, are grouped and presented in the numerical order of the designated measurement numbers. Where data from more than one vehicle have been obtained for a given measurement number, the data are included in the numerical order of the vehicles. Compartment grouping of the data starts at the forward end of the vehicle (Compartment 3A) and finishes with the aft end (Compartment 1C).

Shock data acquired from shock measurements taken during five laboratory payload fairing separation tests are presented at the end of the report.

FLIGHT VEHICLE

Inboard Profile

The inboard profile of the Titan IIIA and Titan IIIC core vehicle is shown in figure 1.

Compartment Locations

Compartment and station locations for Titan III are shown in figure 2.

Structural Description

First stage.- The major sections of the first stage are a forward skirt, a forward tank skirt, an oxidizer tank, a between-tanks section, a fuel tank, and an aft tank skirt. Semimonocoque and monocoque construction is used in all sections. Aluminum alloy 2014 is used for skin areas (maximum gage of 0.48 in.) Low stress areas of the tank interiors are milled to reduce vehicle weight.

Integrally milled T-shape stringers extend longitudinally in each tank. Ring frames, attached to the stringers, provide structural stability when the vehicle is unpressurized.

The propellant tanks are formed by domes and cones welded to the ring frame and stringer structure.

In Titan IIIC, the core engine compartment is enclosed by a boattail heat shield. It is an aluminum skin-stringer-frame structure.

Second stage.- The structure of this stage is of similar design to that of the first stage.

Transtage.- This stage consists of an outer cylindrical skin-stringer-ring frame structure. Within this structure, are two side-by-side propellant tanks and trusses for mounting the major electronic equipment.

The outer structure is similar to skirt sections of the first and second stages. The tanks are constructed of titanium cylinders with domes and cones welded to the tops and bottoms of the cylinders, respectively. Material thickness of the tanks varies from 0.030 to 0.091 in.

The equipment trusses are constructed of extruded, square-cross-section, aluminum tubing.

A standard structural interface is provided at the top of the transtage to provide mounting for the various payloads of the vehicle.

Weight per Surface Area

The weight per surface area for the Titan III vehicle is presented in table I.

Captive Test and Launch Stand Configuration

Figure 3 shows a captive test stand configuration for either Titan IIIA or IIIC.

Figures 4 and 5 show the launch stand configurations for Titan IIIA and IIIC, respectively.

TRAJECTORY DATA

Vehicle Weight Versus Time

Figures 6 and 7 show typical nominal Titan III vehicle weight versus time.

Figures 8 and 9 show typical nominal Titan III vehicle Mach number versus time.

Figures 10 and 11 show typical nominal Titan III vehicle dynamic pressure versus time.

Figures 12 and 13 show typical nominal Titan III vehicle altitude versus time.

Typical nominal Titan IIIA fuel and oxidizer consumption versus time curves are shown in figures 14, 15, and 16.

Typical nominal Titan IIIC fuel and oxidizer consumption versus time curves are shown in figures 17, 18, and 19.

INSTRUMENTATION

An inboard profile drawing, showing locations of flight and static firing data transducers is presented in figure 1. Also, figures 20 through 55 show actual installation of these transducers.

Airborne Measurement System

A block diagram of the airborne vibration and acoustic measurement system is presented in figure 56(a). The instrumentation components comprising this system are described in the following paragraphs.

A voltage output instrument system was selected for the Titan III vibration and acoustic measurements for its low sensitivity to temperature transients, high-level vibration, and shock excitation.

The accelerometer employed in this system is a triaxial, piezoelectric crystal type. The voltage output of each accelerometer is standarized to 4 mV, RMS per g, rms (with 1800 mmf cable capacitance). Both 20- and 50-ft ultra-low-noise cables are used between the accelerometers and amplifiers. Both the 20- and 50-ft cables are standarized to 1800 mmf total capacitance by a small capacitor potted in the connector at the amplifier end of the cable. The vibration amplifier is a solid-state, high-input impedance unit with seven switchable, standardized fixed gain settings.

Standardized accelerometer output, cable capacitance, and amplifier fixed gain settings eliminate the requirement for maintaining individual calibration logs with each vibration measurement. Accelerometers, cables, amplifiers, and amplifier gain settings can be changed without loss of system calibration. Three vibration amplifiers are packaged in one container, designated as a three-channel amplifier. At some vibration measurement locations, the transducers for only one or two axes of a triaxial accelerometer are used. Therefore, the three-channel amplifier is designed to accept input signals from any single-axis transducer in any accelerometer, so it is not limited to use with one accelerometer. It can accept single-axis input from up to three accelerometers.

The output of the amplifier is fed into a single sideband (SSB) modulator. The output of the SSB goes to an FM transmitter.

The acoustic system is similar to the vibration system. A piezoelectric crystal microphone with standardized output connects to a single channel amplifier through ultra-low-noise cable (iden-

tical to, and can be interchanged with, the accelerometer cable). The amplifier has seven fixed gain (dB) switch settings. The output of the acoustic amplifier feeds into the same SSB modulator and transmitter as are used with the accelerometer amplifier.

The basic performance characteristics of the major components of the vibration and acoustic measurement system are as described below.

Accelerometer.- The accelerometer is a triaxial unit that has three individual piezoelectric crystal accelerometers mounted in an aluminum block in the three mutually perpendicular axes. Three ultra-low-noise, double-shielded cables are used with the unit.

Martin part number	74E39
Assembly dash numbers	74E39-7, accelerometer with 20-ft cable
	74E39-8, accelerometer with 50-ft cable
Vendor part number	Gulton Industries Model A40UA
Acceleration range	1 to 300 g peak
Sensitivity (with cable)	4 mV, rms per g, rms ± 5%
Lateral sensitivity	Less than 5%
Frequency response	Within ±7½% of the response at 1000 cps from 15 to 2000 cps
Resonance frequency	Above 17 kc
Acoustic sensitivity	Less than 0.75 g equivalent output in 58 dB overall noise level
Temperature	Less than ±10% of 77°F ref in the -35° to 160°F range
Capacitance	1000 mmf minimum
Weight	Less than 3 oz

Microphone.- The high-intensity microphone is of the piezoelectric crystal type. The microphone cables are identical to and interchangeable with the accelerometer cables.

Martin part number

Assembly dash numbers	74E41-49, microphone with 20-ft cable 74E41-59, microphone with 50-ft cable
Vendor part number	Gulton Industries No. MA299501
Sensitivity (with cable)	106 ± 1 dB referenced to 1 V/dyn/cm^2
Dynamic range	110 to 190 dB
Frequency response	Within ±1.5 dB of 1000 cps from 15 to 5000 cps
Linearity	±0.5 dB max
Capacitance	2000 mmf minimum
Vibration	Less than 138 dB when subjected to sine vibration of 18.5 in./sec 15 to 200 cps, 60-g peak 200 to 800 cps, 30-g peak 800 to 2000 cps
Temperature	Less than ±0.5 dB from -35° to 160°F

Amplifier, high-impedance.- The acoustic amplifiers (PD80S0025-009 and -029) are single-channel units with an internal power supply that supplies regulated voltage isolated from the 28 Vdc input power to the amplifier module. The accelerometer amplifiers (PD80S0025-019 and -039) are three-channel units that have a power supply that provides regulated-isolated power to each of the three amplifier modules.

Each amplifier module is electrically isolated from the other two modules. The acoustic and vibration amplifier module consists of a very-high-input impedance emitter/follower on the input followed by a filter, an amplifier, and a line driver. The -009 and -019 amplifiers are employed for the airborne telemetry measurements. The -029 and -039 units are used for the 100-foot flyaway landline (FAL) measurements.

Martin part number	PD80S0025
Vendor part numbers	Gulton Industries Model No. FT-1071E-3 (vibration) and FT-1855 (acoustic)
Input impedance	50 MΩ at 27 cps minimum

Output impedance	$Z = (20 - JX_c)$ over the range of 15 to 5000 cps for -029 and -039, and 20 to 3000 cps for -009 and -019
Frequency response	Flat within ±2.5% from 20 to 3000 cps for -009 and -019, flat within ±2.5% from 15 to 5000 cps for the -029 and -039
3 dB down point	Down at least 3 dB at 4000 cps for the -009 and -019, and at 8000 cps for -029 and -039
Attenuation	At least 15 dB at 5000 cps and 36 dB at 7000 cps for -009 and -019, at least 15 dB to 11 000 cps and 36 dB at 17 500 cps for -029 and -039
Voltage gain	
One-channel unit	The one channel unit has seven fixed gain settings in the range of 140 to 190 dB SPL; the input from any crystal microphone is conditioned to 5 ± 0.050 V peak to peak for the specified gain setting
Three-channel unit	The three-channel unit has three channels similar to the one-channel unit; each channel has seven fixed gain settings in the range of ±25 to ±300 g; the accelerometer input is conditioned to 5 ± 0.050 V peak to peak for the specified gain setting
Gain stability	Stable within ±1% of the gain value at 28 Vdc when the supply voltage is varied between the limits of 24.0 and 32.0 Vdc and ±3% over the

	temperature range of 25° to 160°F
Output voltage	At least 5.5 V peak to peak without clipping or distortion; maximum output voltage is limited to 6.5 V peak to peak
Vibration noise	Less than 0.03535 V, rms for any gain setting while subjected to 85 g, rms random vibration
Quiescent noise level	Less than 10 mV peak to peak referred to the output or 1 mV peak to peak referred to the input, whichever is greater, for any gain setting over the temperature range of 25° to 160°F

Single Sideband Telemetry

The airborne SSB modulator unit is designed to accept 15 channels of 0 to 3 kc high-frequency data and combine these data by a dual-modulation process into a composite video signal occupying a total bandwidth of 1.74 to 75.833 kc to modulate an FM transmitter for transmission via the rf transmitter [figure 56(a)].

Single sideband modulator.-

Martin part number	PD64S0381-019
Vendor part number	Spacecraft Inc. Model 1100-1
Output signal level	345 mV, rms
Input impedance	Greater than 97 kΩ
Output impedance	100 ohms maximum
Channel ripple	1.4 dB max between 20 cps and 2.8 kc
Amplitude linearity	±0.25 dB
Amplitude stability	±1 dB
Crosstalk	Less than 40 dB

AGC characteristics	Attack time - 5 milliseconds, release time 15 milliseconds; input signal variations of 20 dB cause the AGC amplifier output to vary less than 1 dB
Back current	5 mV maximum
Carrier leakage	30 dB down minimum

FM telemetry transmitter.-

Martin part number	80801H2400 (manufacturer, Martin Company)
Power output	50 to 80 w
Carrier deviation	125 kc
Frequency response	Flat within 2 dB peak to peak over a modulation frequency range of 100 cps to 90 kc
Carrier frequency stability	±0.01%
Input impedance	150 kΩ min shunted by no more than 100 pF
Output impedance	50 ohms
Standing wave ratio	1.3 to 1 maximum
Output noise	Less than 25%

TM Antenna.-

Martin part number	80801J01300 (directional) 804A3350110 (omnidirectional)
Power output	50 to 80 w
VSVR	2:1

Telemetry Receiving System

A block diagram of the ground receiving system is presented in figure 56(b). For each telemetry transmitting system used in a vehicle tested on the Eastern Test Range (ETR), there must be a corresponding telemetry receiving system. In general, the range

telemetry system is designed to permit the greatest sharing of equipment for receiving and recording the various types of telemetry data. The principal components of this telemetry receiving and recording system are discussed below.

Antennas.- Four different types of telemetry antennas are used on the ETR: seven-turn helix, trihelix, quadhelix, and parabolic (TLM-18). Each of these is directive for gain; the latter two are also directive for tracking. Right circular polarization is normally used throughout the range. Right and left (vertical or horizontal) for polarization diversity with the parabolic antennas are available. When telemetry antennas and radars are located at the same site, the servo trackers of the telemetry antennas may be slaved to that of the radars.

The output of the antennas is fed to preamplifiers for power gain and to multicouplers for separating the inputs to receivers.

Seven-turn helix - 2.-

Gain	12 dB (average)
Beam width	45° conical (average)
Polarization	Right circular
Frequency band	215 to 260 Mc
Mounting	RCP-6 pedestal
Power required at antenna	-94 dBm; 12 V/m
Manual tracking	

Trihelix - 4.-

Gain	18 dB (average)
Beam width	20° conical (average)
Polarization	Right circular
Frequency band	215 to 260 Mc
Mounting	RCP-6 pedestal
Power required at antenna	-100 dBm; 5 V/m

TLM-18 - 2.-

Gain	28 dB (average)
Beam width	5° conical (8° when nutating)
Polarization	Right- and left-hand circular

Frequency band	215 to 260 Mc
Mounting	Stationary pedestal automatic tracking

Receivers.- The output of the antennas is fed through preamplifiers and multicouplers that route the signal to receivers (one per link except where polarization diversity is used) that can be tuned to any frequency within the band. The receiver detects and amplifies the signal so that a composite signal is produced, which is a replica of the signal that was used to frequency-modulate the transmitter in the vehicle. A switch permits selecting either of two bandwidths. The wider bandwidth is normally used for FM/FM signals.

Receiver.-

Radio frequency range	215 to 260 Mc
Type	Double superheterodyne FM
Noise figure	Less than 6 dB
Intermediate frequencies	30 and 5 Mc
First i.f. bandwidth	1.5 Mc
Second i.f. bandwidth	500 and 100 kc (selectable)
Sensitivity	7 V for 20 dB quieting
Linearity	1% over a bandwidth of +150 kc
Video bandwidth	Variable from 1 kc to 1 Mc

Magnetic tape recording.- The standard magnetic tape recorder for composite signals is a seven-track record-reproduce unit. Two operating speeds are selectable by switch setting with choice of speed pairs by a drive belt change. Pushbutton controls allow fast-forward and rewind movements, stop, record, or reproduce. Stable speed is achieved in about 2 sec, and the tape may be stopped in less than 0.50 sec. A metallic lead at the end of the tape provides automatic end-of-tape stop. Various reel sizes up to 14 in. are handled. Seven plug-in record and reproduce amplifiers are available for analog, FM, and PDM modes of operation.

FR-1400.-

Speed	120, 60, 30, 15 in./sec
Tape dimension	1/2 in.

Tape thickness	1 mil
Length reel	7200 ft of 1 mil on 14-in. reel
Tape leader	140 ft for 14-in. reel
Frequency response	±3 dB from 300 cps to 1.5 Mc at 120 in./sec
Crosstalk	-17 dB between adjacent channels at 60 in./sec
Signal-to-noise ratio	-28 dB at 120 cps ref 1 volt (0 dB)

Vibration/Acoustic Measurement System Response

The frequency response of a typical vibration or acoustic measurement system, including all instrumentation from the transducer to the final data readout equipment, is shown by the plot in figure 57.

100-Foot Flyaway Landline Vibration and Acoustic Recording System

The system is shown in block diagram form in figure 58. Up to 30 measurements can be recorded, along with timing and voice annotation. The system components that affect the accuracy and frequency response are the isolation amplifiers and the FM record-reproduce systems. These specifications and those of the calibrator are as follows.

Isolation amplifiers.-

Frequency response	15 to 500 cps ± 0.5 dB
Gain	Unity ± 5%
Amplitude stability	±1% or better
Output dc offset	±125 mV

FM recorder-reproducer system.-

Tape speed	60 in./sec
Frequency response	dc to 10 000 cps ± 0.5 dB
Signal-to-noise ratio	52 dB maximum

AC calibrator.-

Calibration frequency	1000 ± 50 cps
Amplitude	±2.5 and ±1.25 V 0 to peak
Amplitude stability	±1%
Harmonic distortion	1% maximum

The overall system, during acceptance testing, met the requirement of recording 50- to 4000-cps signals via the 100-ft flyaway cable and playing them back with an amplitude within 1.5 dB of the original signals.

VIBRATION AND ACOUSTIC DATA REDUCTION

Landline and Telemetry Data

Reduction of 2-kc vibration data acquired via telemetry and landlines consisted of power spectral density (PSD) analyses to give frequency information and measurement of overall rms g-levels.

The PSD analyses were performed with the Technical Products Analyzer System TP-625, consisting of the TP-633 power integrator, TP-626 oscillator, TP-627 analyzer, and TP-4A level recorder. Analyses from 0 to 2500 cps were made with a slow scan speed (1.85 cps^2), medium pen speed, slow paper speed, 5-cps filter, and a 1.5-sec time constant. The loop length was approximately 2 sec for flight data and up to 4 sec for captive data. Time periods were held to close tolerances for analysis of flight data, although it is realized that recommended procedure calls for a longer loop length. Varying vibration levels during flight makes longer tape loops impractical. Overall rms levels were measured with a Ballantine, Model 320, true rms meter for each data sample used in PSD analysis. This instrument was also used in conjunction with a level recorder to provide overall rms time-history information. The PSD analysis accuracy is such that there is approximately a 90% probability of a given spectrum value being within 54 to 155% of the true value.

Acoustic Data

The overall sound pressure levels were determined as follows: The levels were read as absolute measurements with the Bruel and Kjaer Analyzer. The data were further reduced to 1/3 octave band levels using the Bruel and Kjaer 1/3 Octave Band Analyzer, Model 2111, and Level Recorder, Model 2305. The 1/3 octave band acoustic spectra plots contained in this report are not corrected for system frequency response and, as such, are useful only up to a frequency of about 2 kc. System response corrections are estimated to be 2 dB at 5 kc and 5 dB at 10 kc.

In addition, the Bruel and Kjaer Analyzer was further used to reduce the data into an rms time-history plot.

Pyrotechnic Shock Instrumentation

Shock measurements have been taken during the five payload fairing separation tests. The first three tests run at Fairchild-Stratos were nonenvironmental. Tests 4 and 5 were run at a 300 000-ft pressure altitude in the Douglas altitude chamber at Huntington Beach, California. In addition, aerodynamic heating was simulated in Test 5. Nine different accelerometer locations (3 axes per location) were used to measure shock. These locations and accelerometer information are listed in table II. Block diagrams of the recording and playback systems used are given in figures 59 and 60.

DATA

Axes Designation

Figures 61, 62, and 63 define the general axes nomenclature for all data transducers, whether acoustic or vibration.

A sample vibration spectrum to illustrate vibration characteristics at a specific vehicle location during a period of minimum vibration excitation is presented in figure 64.

Vibration data are presented as rms time histories and power/acceleration spectral density analyses. During the Titan III program, a change in nomenclature was made, i.e., the term power spectral density was changed to acceleration spectral density. As used in this report, the two terms have the same meaning. Therefore, Titan IIIA vibration data are presented as power spectral density plots and Titan IIIC data are presented as acceleration spectral density plots. Accoustic data are presented as rms time histories and 1/3 octave band analyses. All time histories are presented with T = 0 referenced to first stage ignition ($87FS_1$) or second stage ignition ($97FS_1$). The Titan IIIA data are given in figures 65 through 199, in the order shown in table III. The Titan IIIC data are given in figures 200 through 361, in the order shown in table III.

Pyrotechnic shock data are presented as 1/3 octave band peak acceleration spectra. Table IV summarizes shock test information. The shock spectra are shown in figures 362 through 393.

MARTIN COMPANY
A DIVISION OF MARTIN MARIETTA CORPORATION
Denver, Colorado, November 15, 1966

TABLE I.- TITAN III VEHICLE SURFACE WEIGHT DATA

Vehicle compartment	Compartment description	Compartment boundary stations	Titan IIIA			Titam IIIC					
			Vehicles 1, 2, 3, and 6			Vehicles 4 and 7			Vehicle 8		
			Total weight, lb	Total area, ft^2	Surface density, lb/ft^2	Total weight, lb	Total area, ft^2	Surface density, lb/ft^2	Total weight, lb	Total area, ft^2	Surface density, lb/ft^2
3A	Transtage control module	77.0 to 133.6	232	148	1.57	232	148	1.57	598	148	4.04
3B	Transtage propulsion module	133.6 to 151.6	136	47	2.89	136	47	2.89	293	47	6.23
2A	Stage II forward compartment	151.6 to 296.6	773	378	2.04	773	378	2.04	773	380	2.04
2B	Stage II betweentanks compartment	323.6 to 413.5	699	235	2.97	702	235	2.99	699	235	2.99
2C	Stage II engine compartment	433.5 to 500.0	505	174	2.90	532	174	3.06	505	174	2.90
1A equipment section	Stage I forward compartment	500.0 to 508.0	154	21	7.33	250	21	11.9	250	21	11.9
1A aft of equipment section		508.0 to 646.2	1418	362	3.91	1071	362	2.96	1071	362	2.96
1B	Stage I betweentanks compartment	891.4 to 978.2	780	229	3.41	780	229	3.41	804	229	3.51
1C	Stage I engine compartment	1188.8 to 1224.3	1124	93	12.09	1126	93	12.11	1123	93	12.08

TABLE II.- PAYLOAD FAIRING SEPARATION SHOCK MEASUREMENT DATA

Location	Meas	Axis	Cal level, ±g	Accelerometer mfgr	Accelerometer type	Usable frequency range, kc	Natural resonant frequency, kc	Usable frequency range of tape, ±3 dB, kc
Stringer 3C longeron at Sta 114 guidance truss attachment point	3A-1	Long	1000	Endevco	2225	15	80	20
	3A-2	Rad	1000	Endevco	2225	15	80	20
	3A-3	Tang	1000	Endevco	2225	15	80	20
Guidance truss at mounting point of IMU nearest truss to airframe attachment	3A-4	Long	200	CRL	302-6	6	30	10
	3A-5	Vert	200	CRL	302-6	6	30	10
	3A-6	Lat	200	Endevco	2225	15	80	10
Guidance truss at mounting point of ACSP pulse code modulator	3A-7	Long	300	Clevite	1C1	10	80	10
	3A-8	Lat	300	Clevite	1C1	10	80	10
	3A-9	Vert	300	Clevite	1C1	10	80	10
Guidance truss at mounting point of airborne digital computer	3A-10	Long	150	Clevite	1C1	10	80	10
	3A-11	Lat	150	Clevite	EM	10	70	10
	3A-12	Vert	150	Endevco	2225	15	80	10
Guidance truss at mounting point of adapter programer	3A-13	Long	150	Endevco	2225	15	80	10
	3A-14	Lat	150	Endevco	2225	15	80	10
	3A-15	Vert	150	Endevco	2225	15	80	10
Stringer 3C longeron at sta 77 under fairing attachment point	3A-16	Long	1000	Endevco	2225	15	80	20
	3A-17	Rad	1000	Endevco	2225	15	80	20
	3A-18	Tang	1000	Endevco	2225	15	80	20
On ring frame at WL60 sta 77 on target	3A-19	Long	1000	Endevco	2225	15	80	20
	3A-20	Rad	1000	Endevco	2225	15	80	20
	3A-21	Tang	1000	Endevco	2225	15	80	20
Stringer 26C longeron at sta 77 under fairing attachment point	3A-22	Long	1000	Endevco	2225	15	80	20
	3A-23	Rad	1000	Endevco	2225	15	80	20
	3A-24	Tang	1000	Endevco	2225	15	80	20
Payload mounting frame on payload adapter sta 42	3A-25	Long	1000	Endevco	2225	15	80	20
	3A-26	Rad	1000	Endevco	2225	15	80	20
	3A-27	Tang	1000	Endevco	2225	15	80	20

TABLE III. - TITAN III VEHICLE COMPARTMENTAL DATA FIGURE SUMMARY

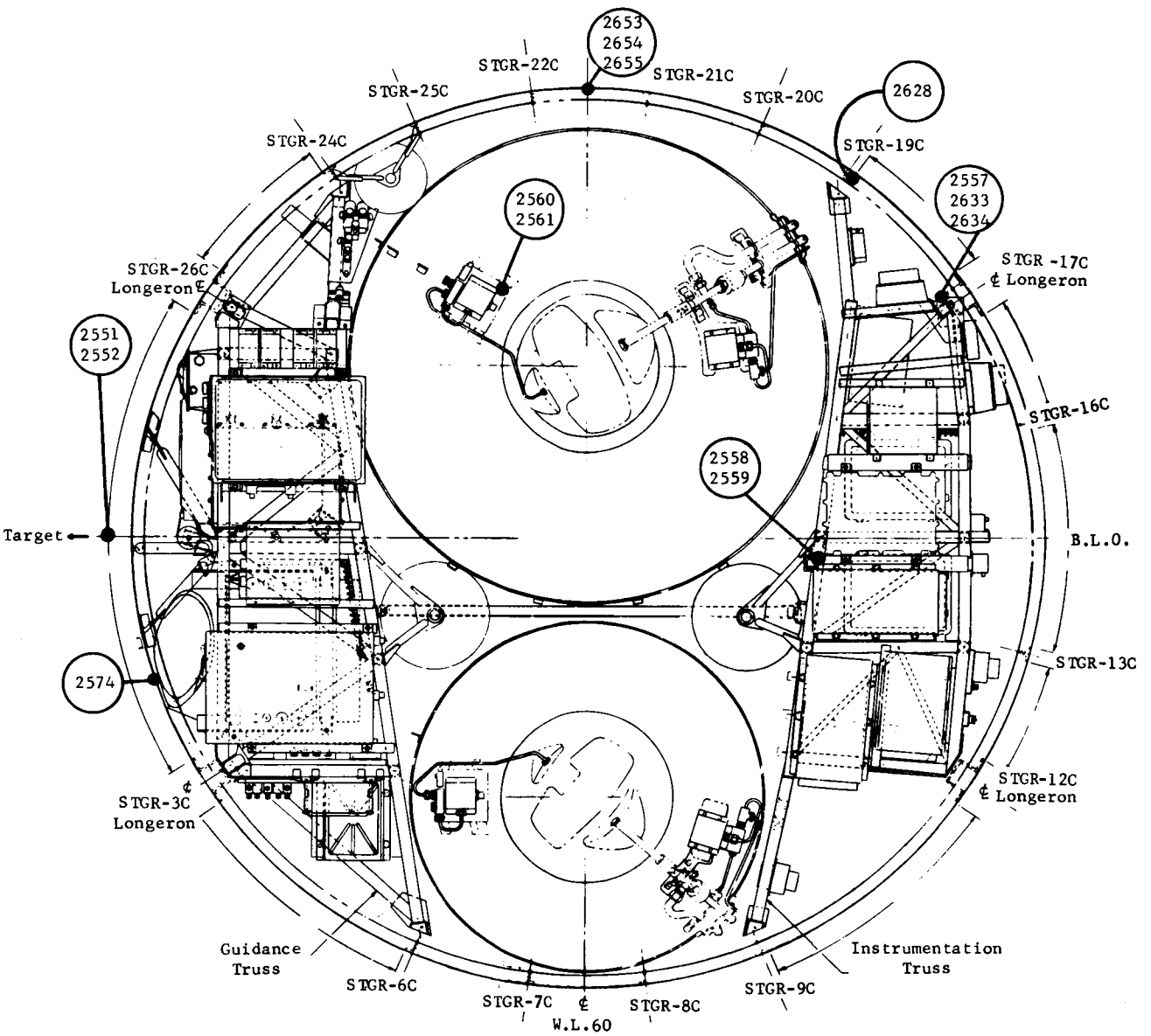
Compartment designation (see figure 2)	Time history figure numbers		Sound pressure level 1/3-octave band figure numbers		Power/acceleration spectral density figure numbers	
	IIIA	IIIC	IIIA	IIIC	IIIA	IIIC
3A airframe	65-69	200-205(a)	127,128	260-266	125,126,129-132	259,267
3A truss	70-81	205(b)-224			133-145	268-299
3B tank top	82-84				146-149	
3B engine truss	85-86				150-151	
2B airframe	87-91	225			152-157	300-302
2B truss	92-95	226-230			158-162	303-309
2C airframe	96-100	231-233			163-167	310-315
2C tank bottom		234				316-318
1A airframe	101-102	235-240	170,171	329	168-169	319-328
						330-332
1A tank top	103-105	241-244		336	172-175	333-335
						337-338
1B airframe	106-107	245-246(b)			176-177	339-342
1B tank bottom	108-111	246(c)-248			178-184	343-347
1B tank top	112-113	249-251(a)			185-186	348-349
1C airframe	114-120	253-257	195	354,358	187-194	355-357
1C tank bottom		251(b)-252(c)				350-353
1C engine	121-124	258			196-199	359-361

TABLE IV. - SUMMARY OF PAYLOAD FAIRING SEPARATION SHOCK TESTS

Test	Facility	Date	Environment	Measurement taken	Modifications
1	Fairchild-Stratos[a]	4-22-64	STP	3A-1 thru -21	
2	Fairchild-Stratos	6-1-64	STP	3A-1 thru -7, 3A-9 thru -11, 3A-13 and -14, and 3A-16 thru -24	Payload isolated for this test only
3	Fairchild Stratos	10-26-64	STP	3A-1 and -2, 3A-4 thru -11, 3A-13 and -14, and 3A-17 thru -27	Beefed up fairing
4	Douglas[b]	9-23-65	300 000-ft ambient temperature	3A-4 thru -6, 3A-16 thru -18, and 3A-22 thru -27	Pneumatic/ordnance separation device
5	Douglas	11-4-65	300 000-ft aerodynamic heating	3A-4 thru -6, 3A-16 thru -18, and 3A-25 thru -27	

[a]Facility at Hagerstown, Maryland.

[b]Facility at Huntington Beach, California.



View Looking Aft

Figure 1. Titan III Core Vehicle Profile Drawing Showing Instrument Locations

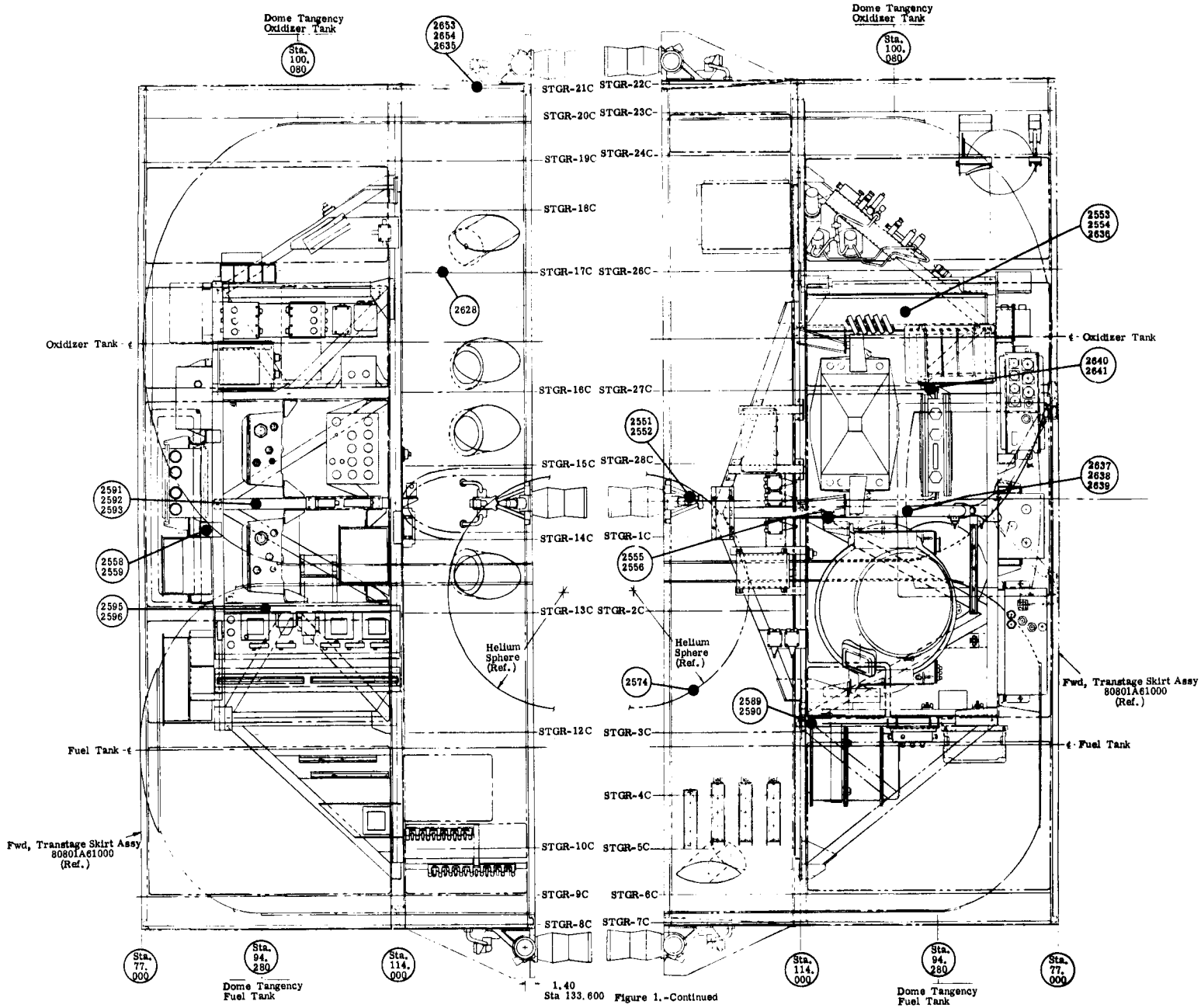


Figure 1.-Continued

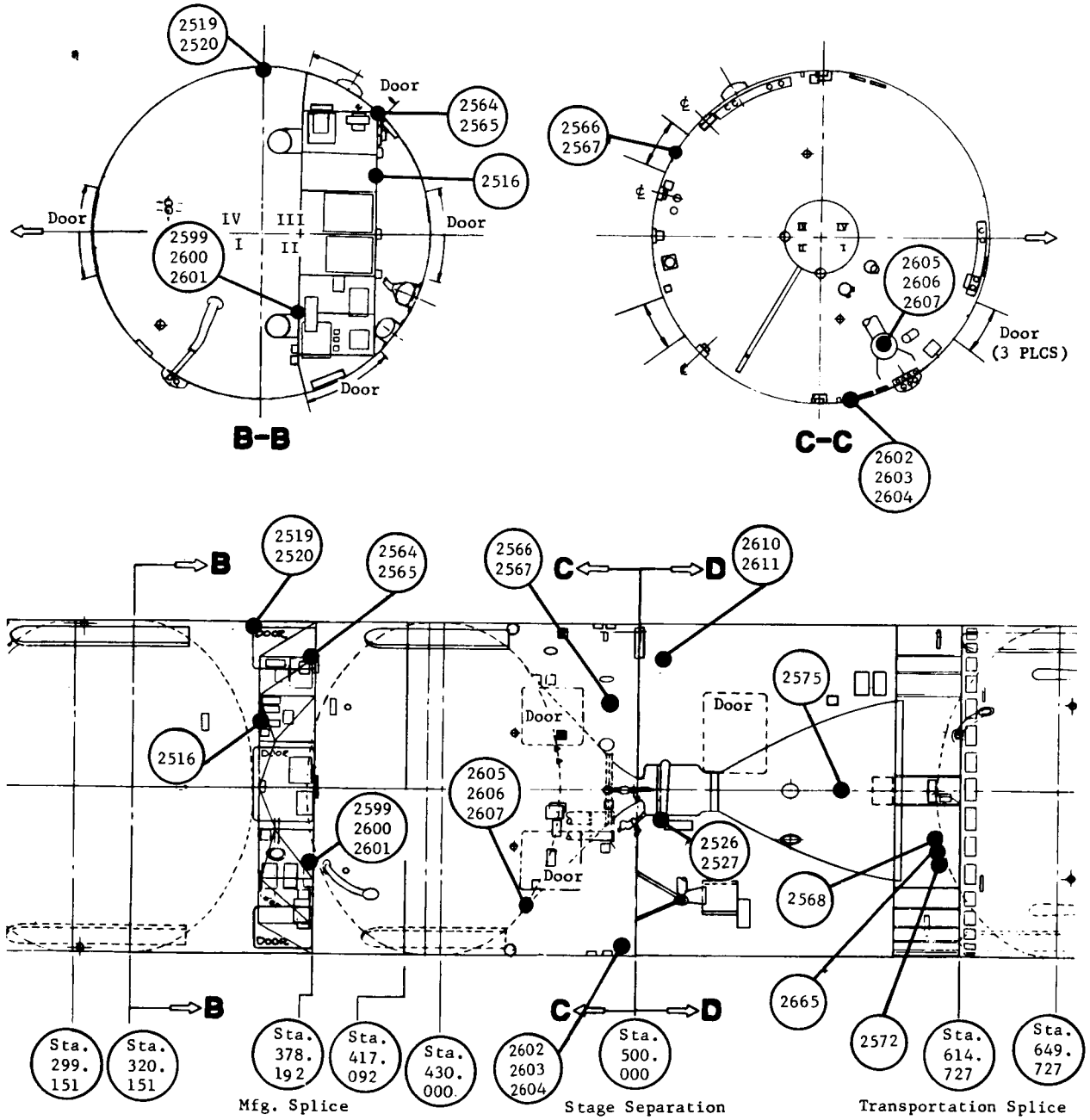


Figure 1.-Continued

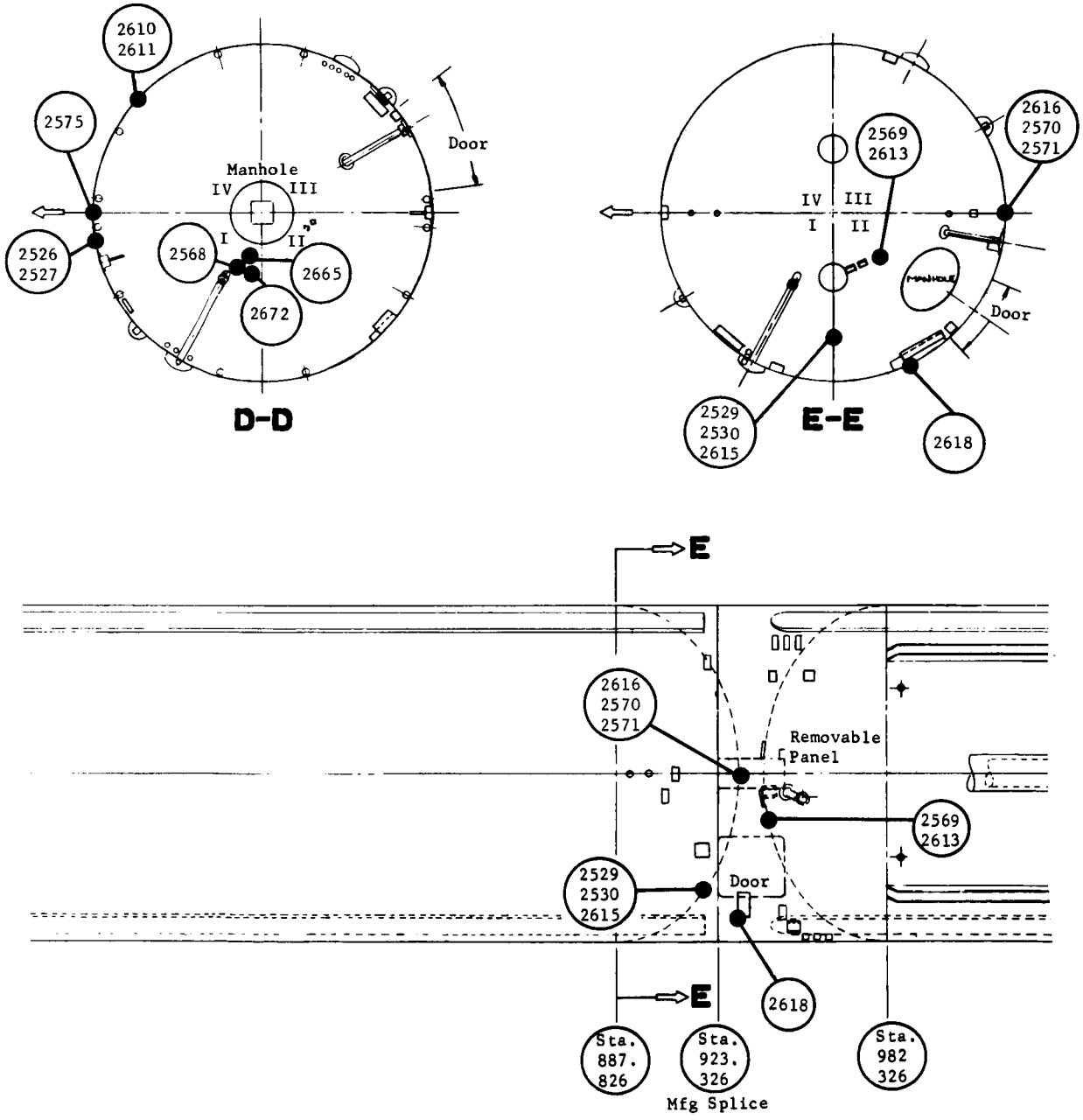
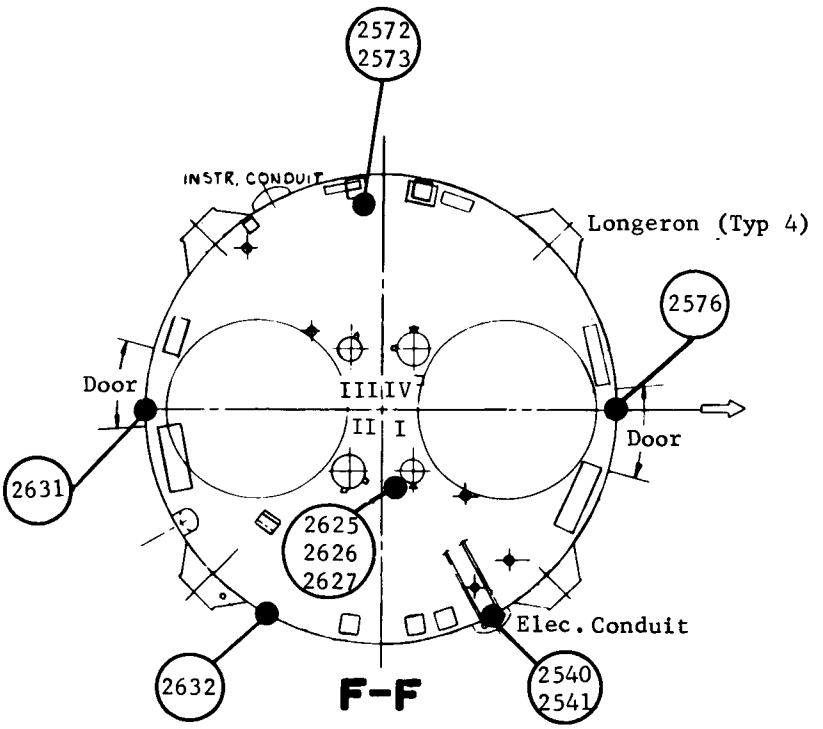


Figure 1.-Continued



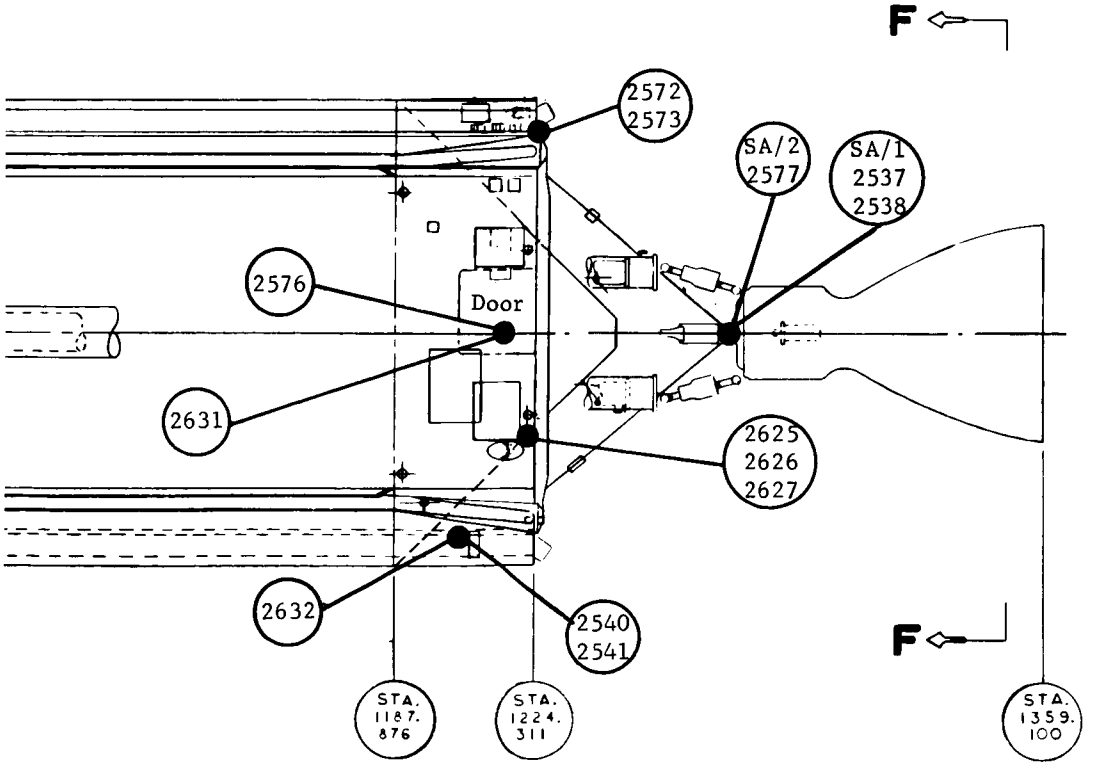


Figure 1.-Concluded

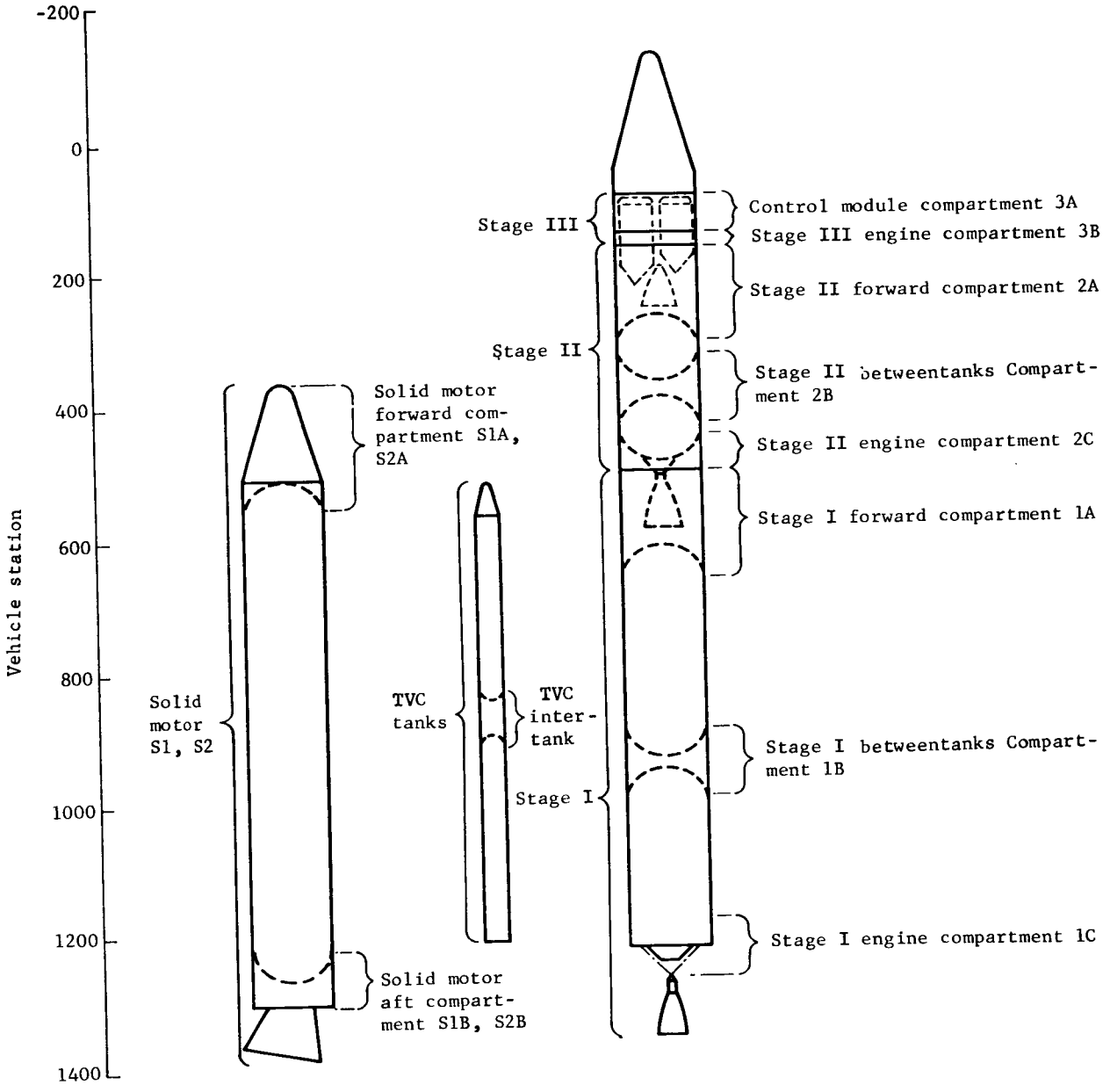


Figure 2. Titan III Vehicle Compartment and Station Designations

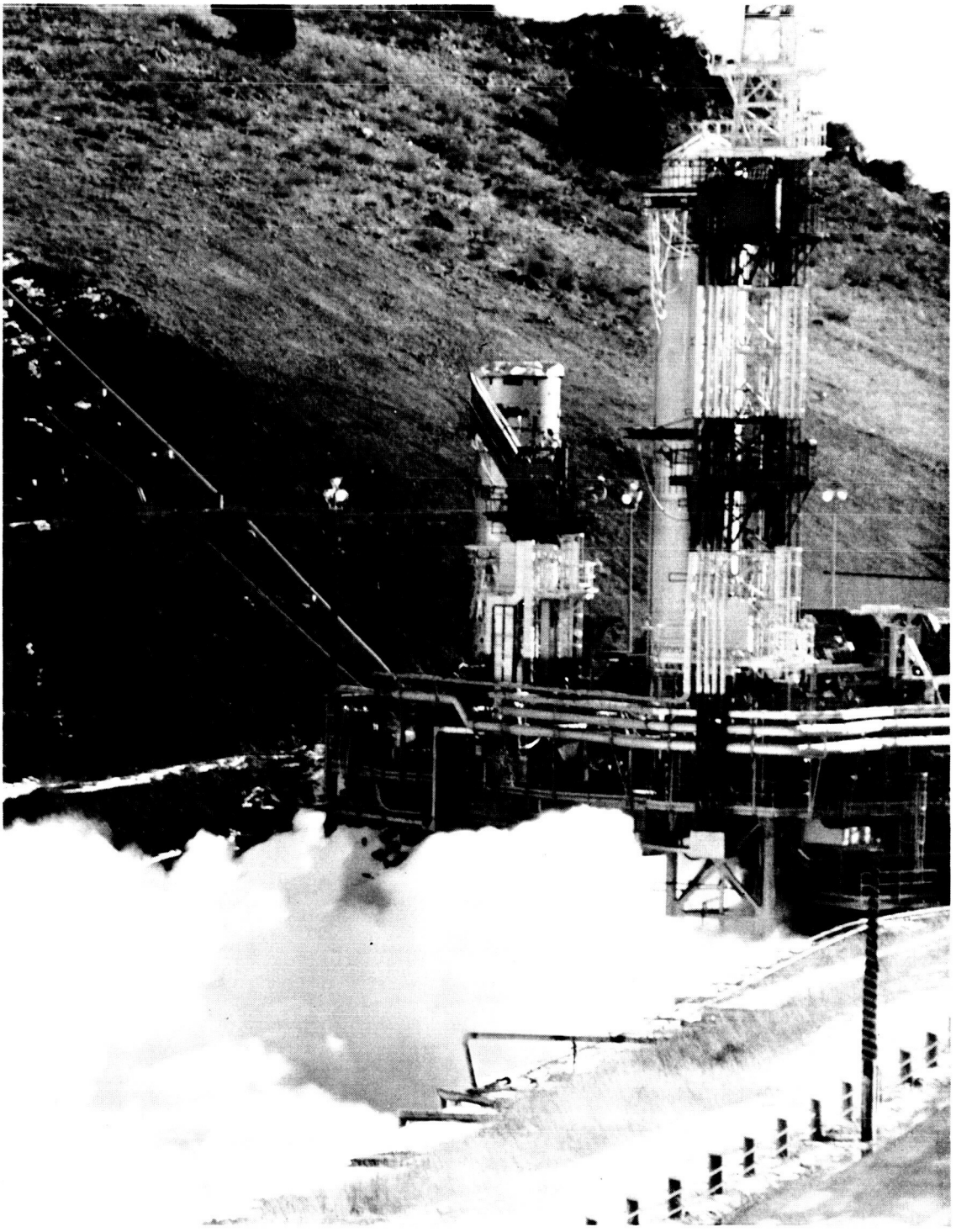


Figure 3. Captive Test Stand Configuration, Sequence Compatibility Firing (SCF), Titan IIIA and IIIC Vehicles

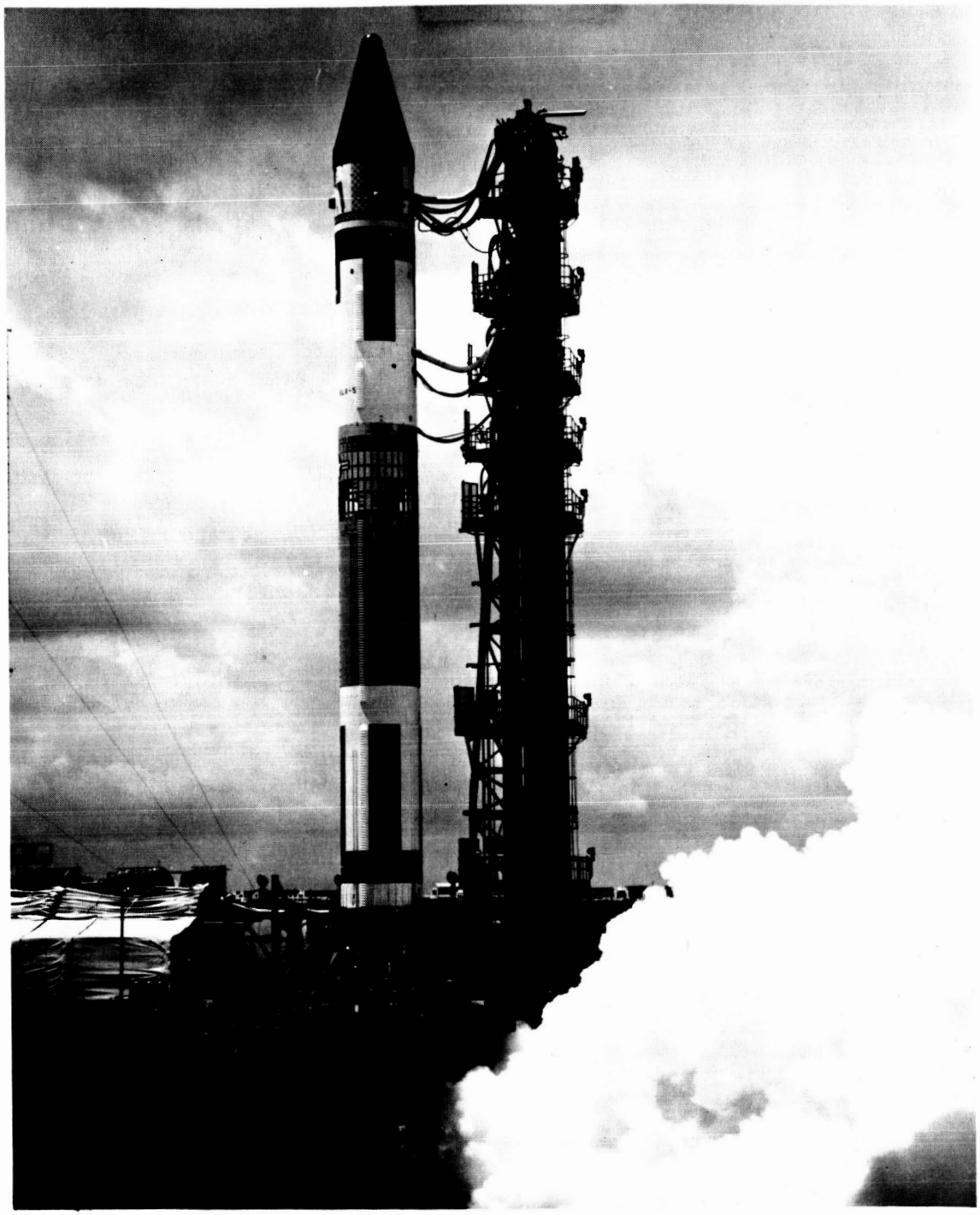


Figure 4. Launch Stand Configuration, Titan IIIA Launch and Flight Readiness Firing (FRF)

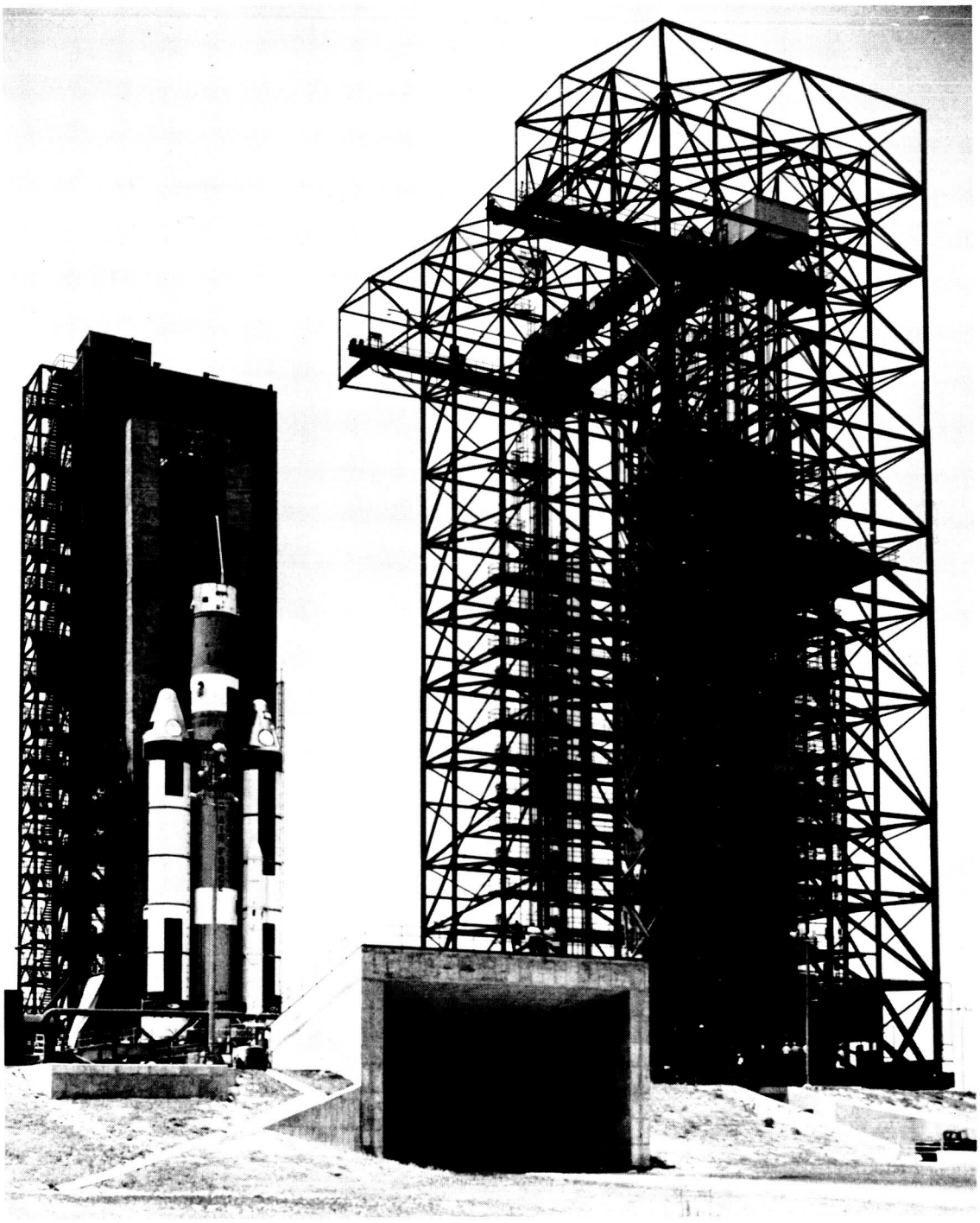


Figure 5. Launch Stand Configuration, Titan IIIC Launch

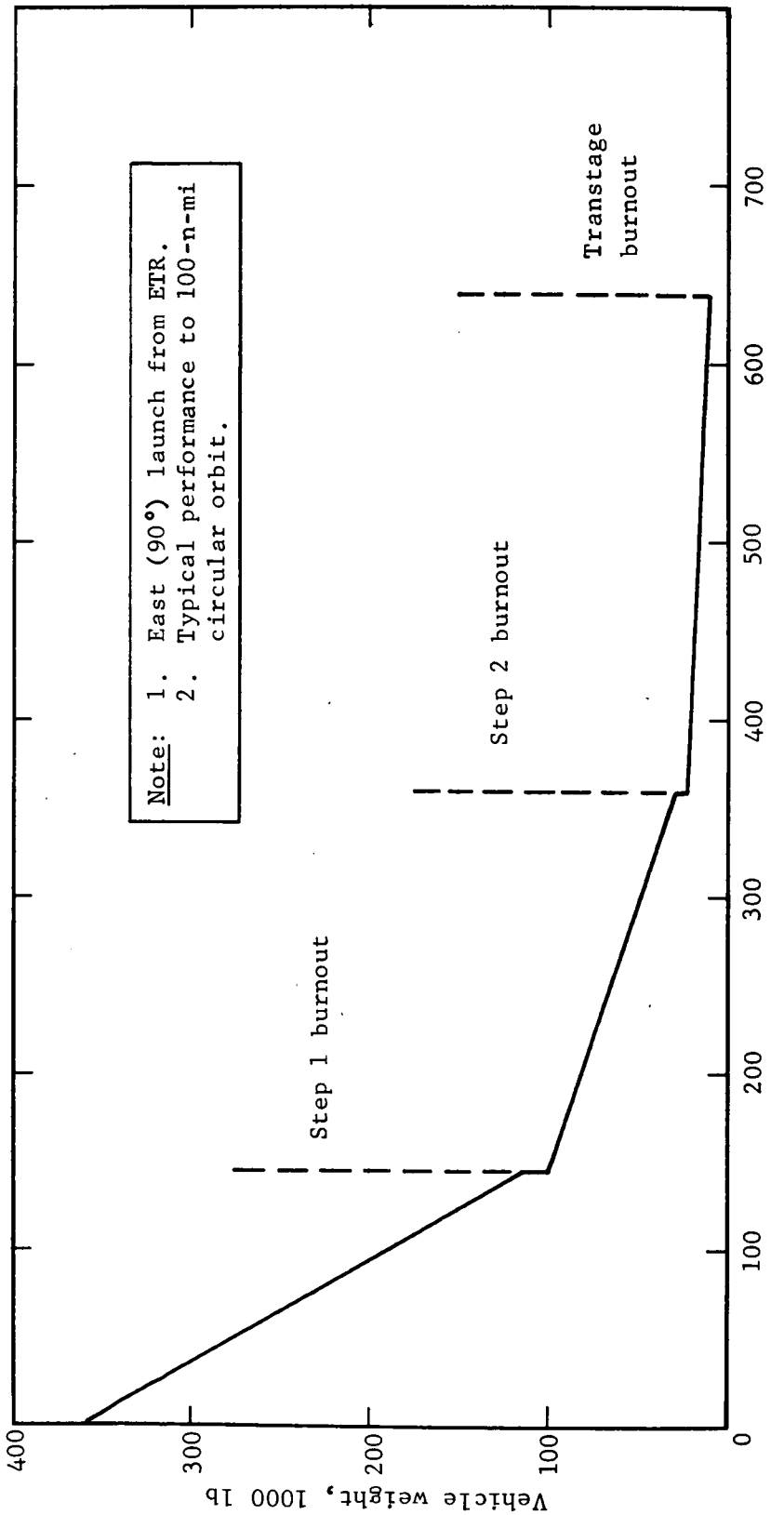


Figure 6. Typical Nominal Titan IIIA Vehicle Weight vs Time

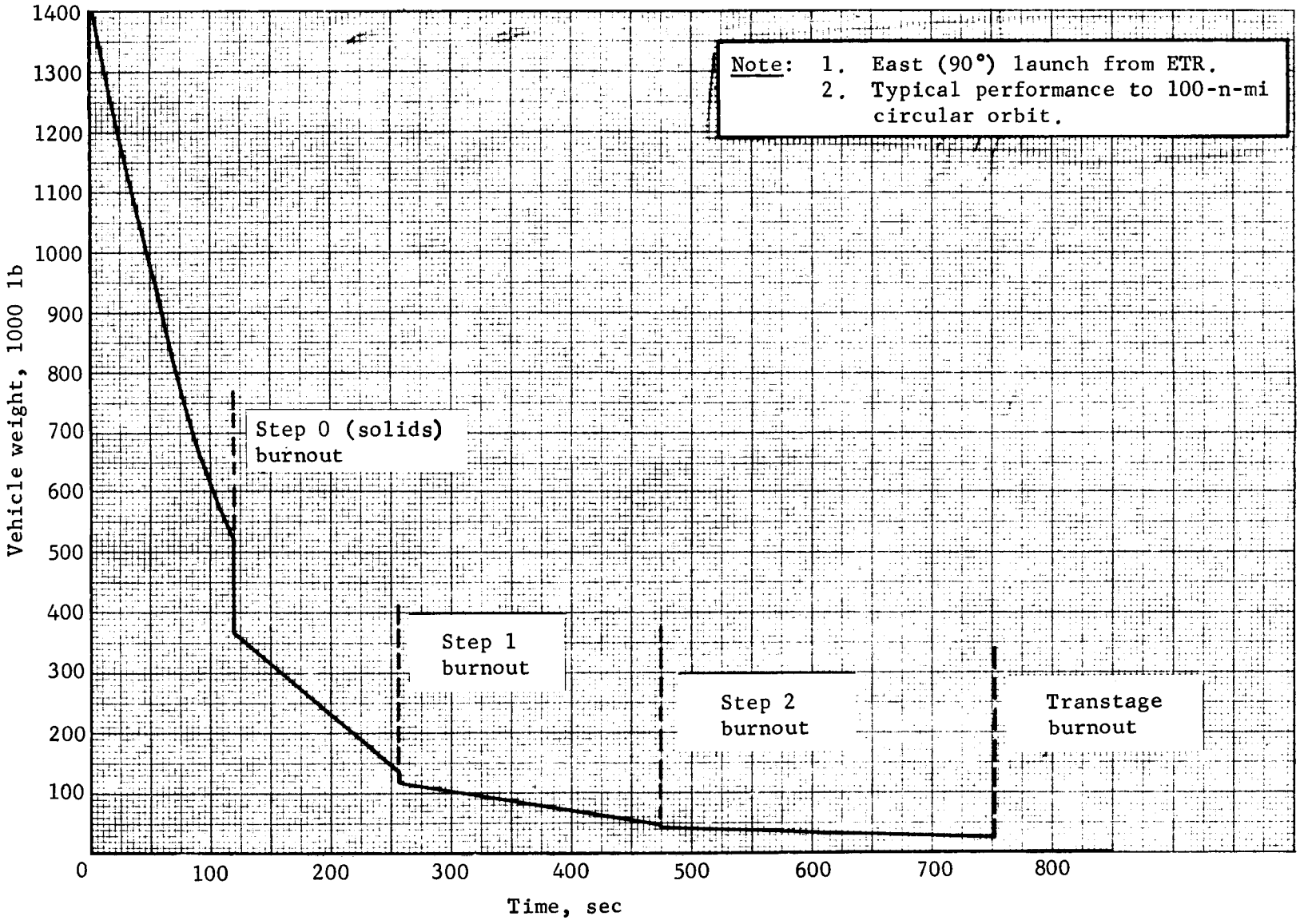


Figure 7. Typical Nominal Titan IIIC Vehicle Weight vs Time

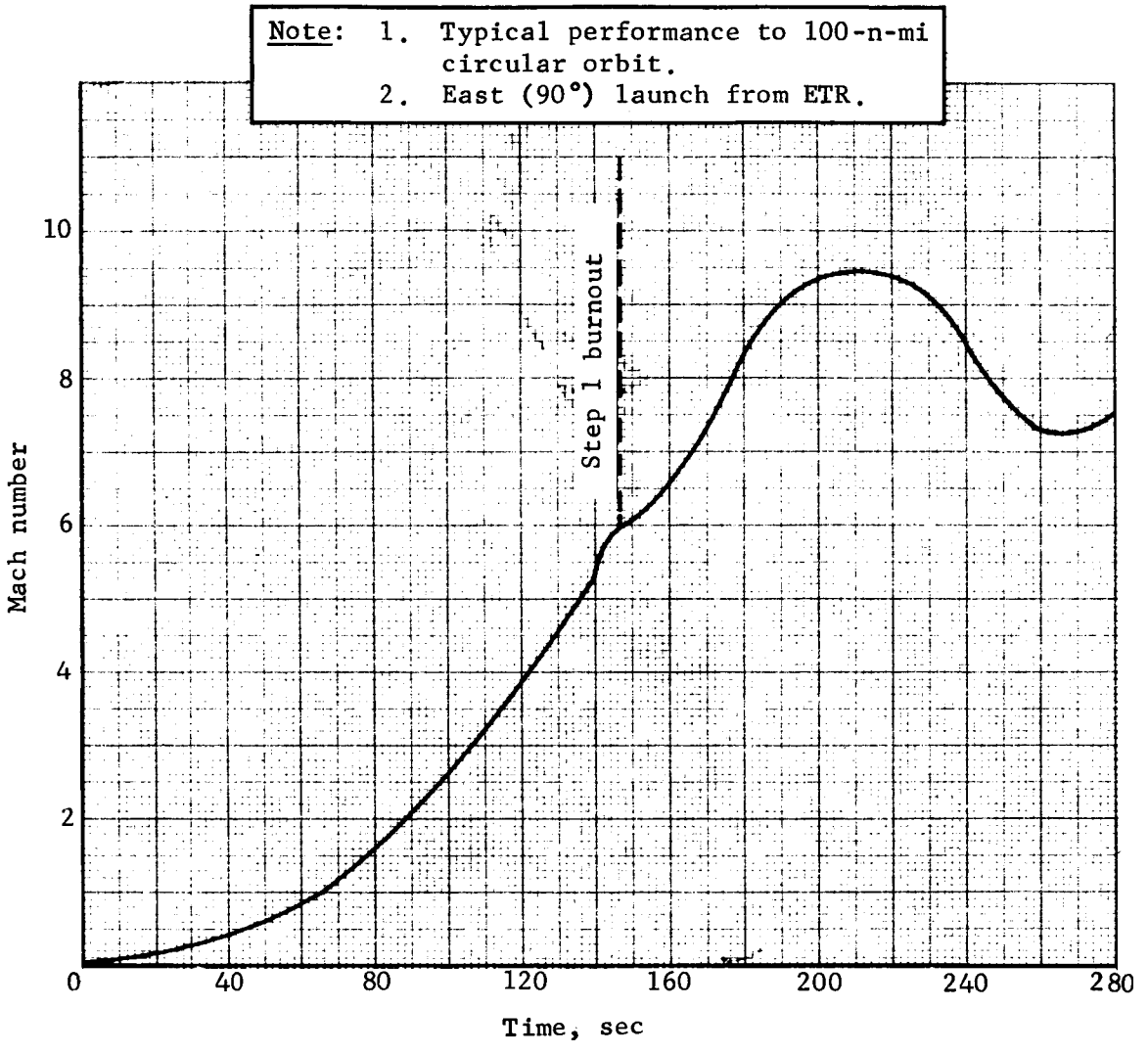


Figure 8. Typical Nominal Titan IIIA Mach Number vs Time

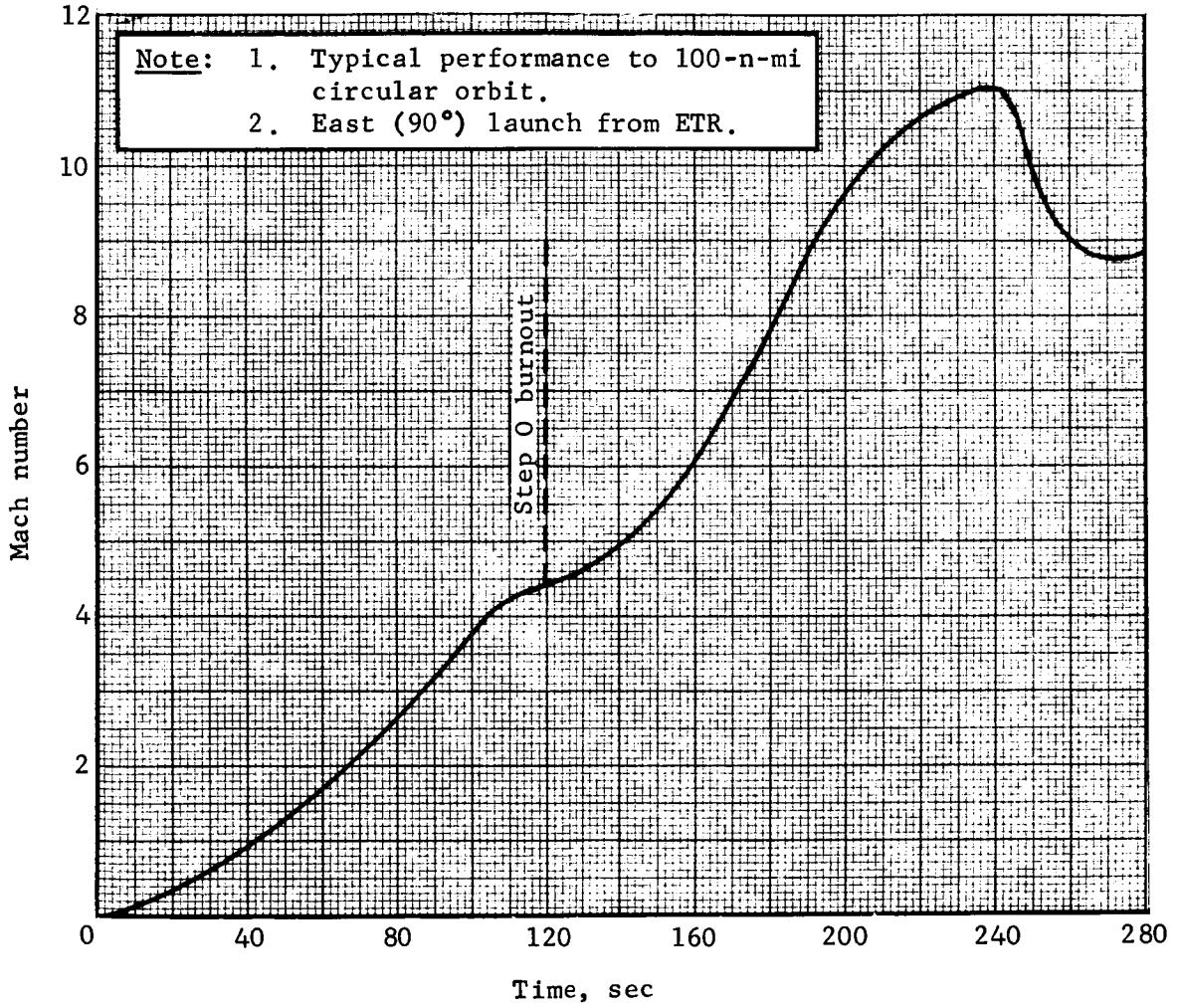


Figure 9. Typical Nominal Titan IIIC Mach Number vs Time

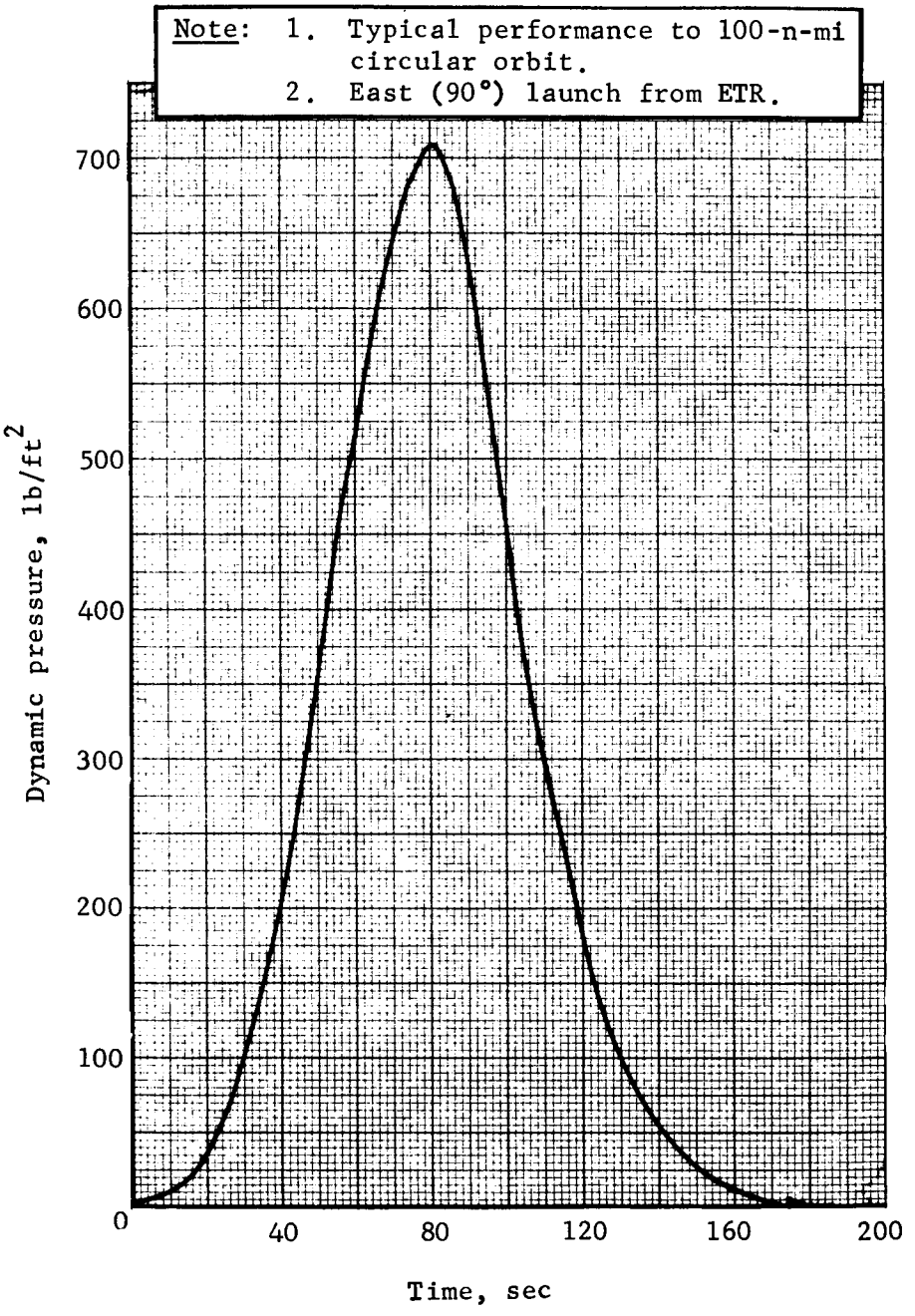


Figure 10. Typical Nominal Titan IIIA Dynamic Pressure vs Time

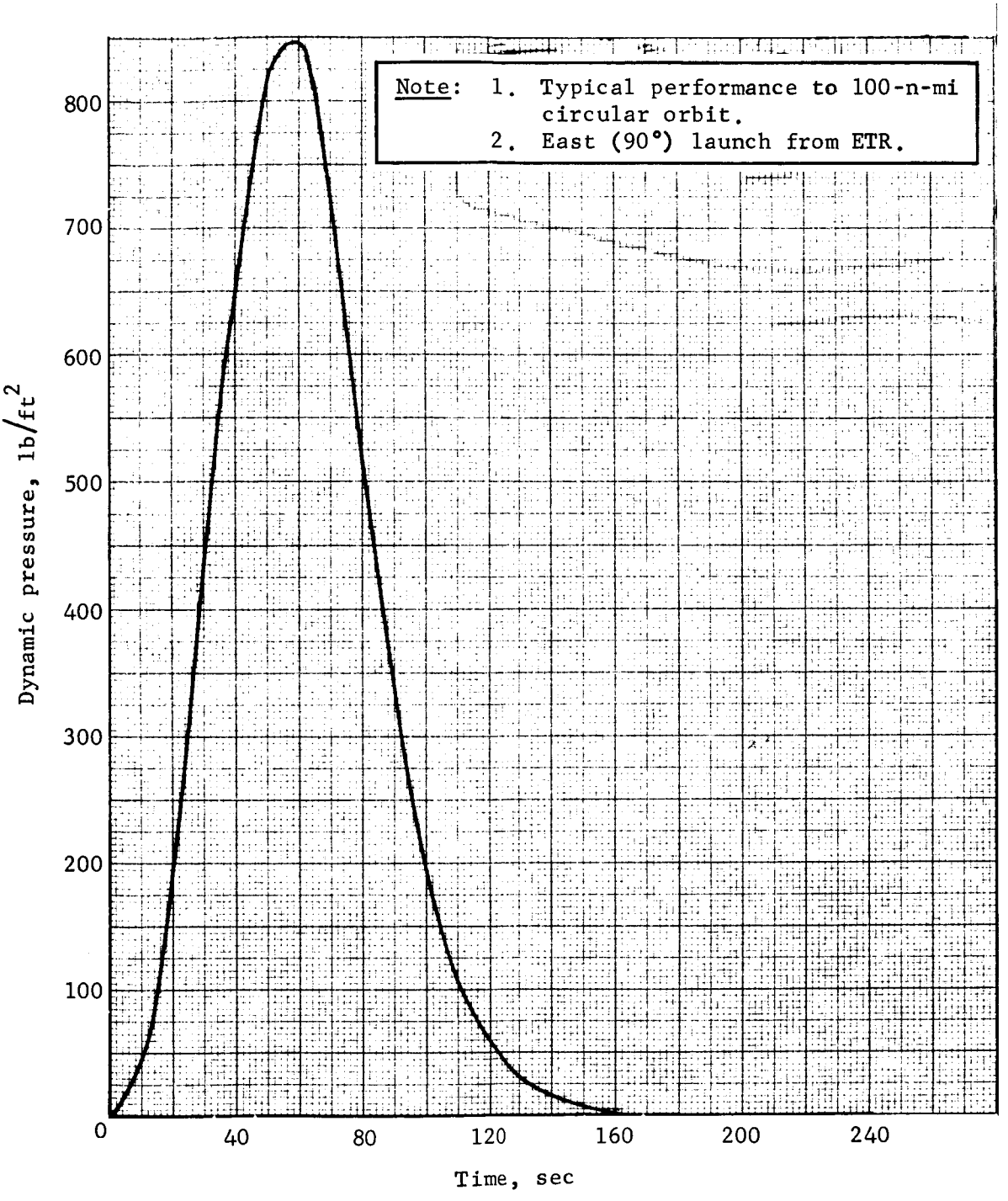


Figure 11. Typical Nominal Titan IIIC Dynamic Pressure vs Time

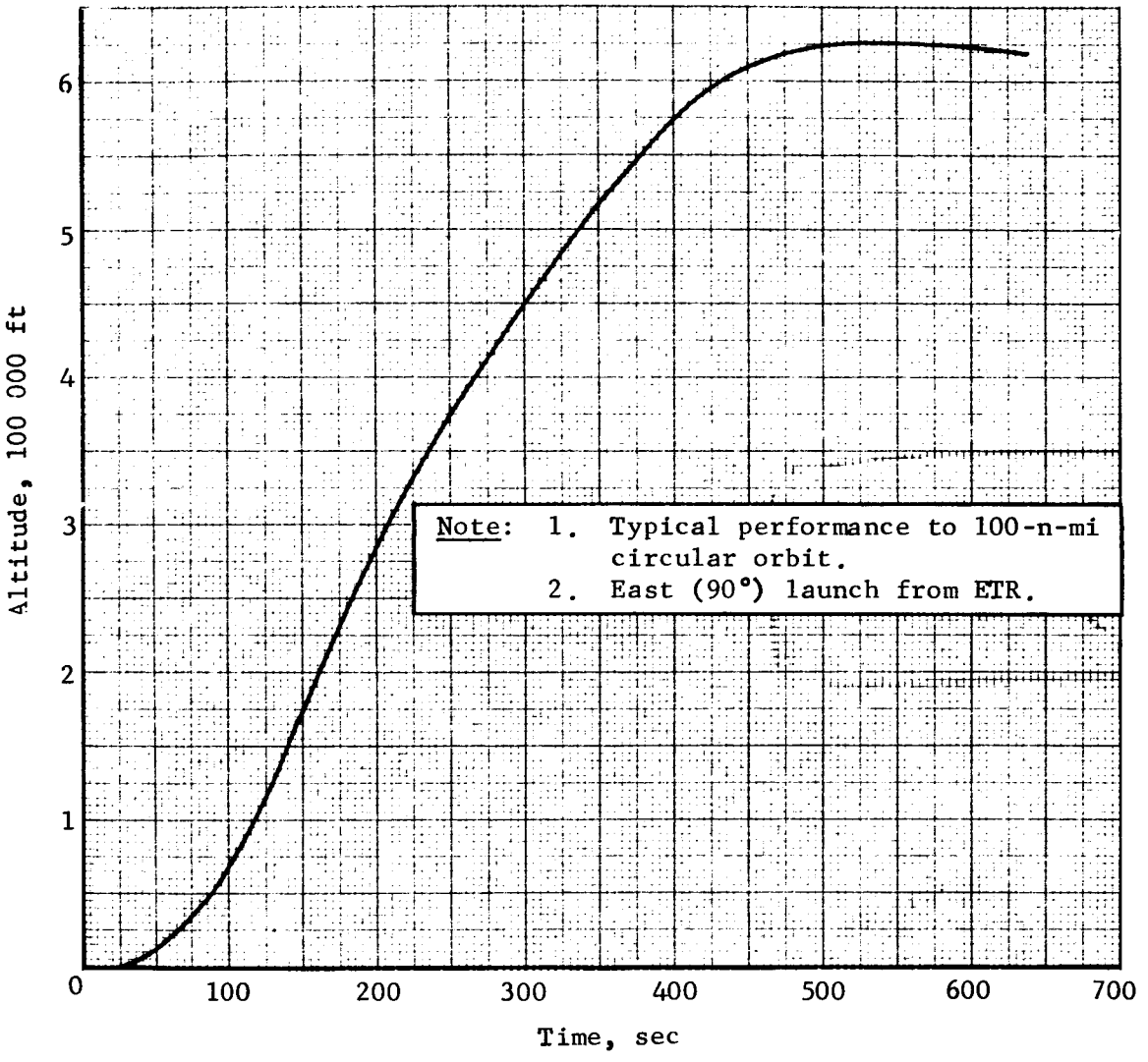


Figure 12. Typical Nominal Titan IIIA Altitude vs Time

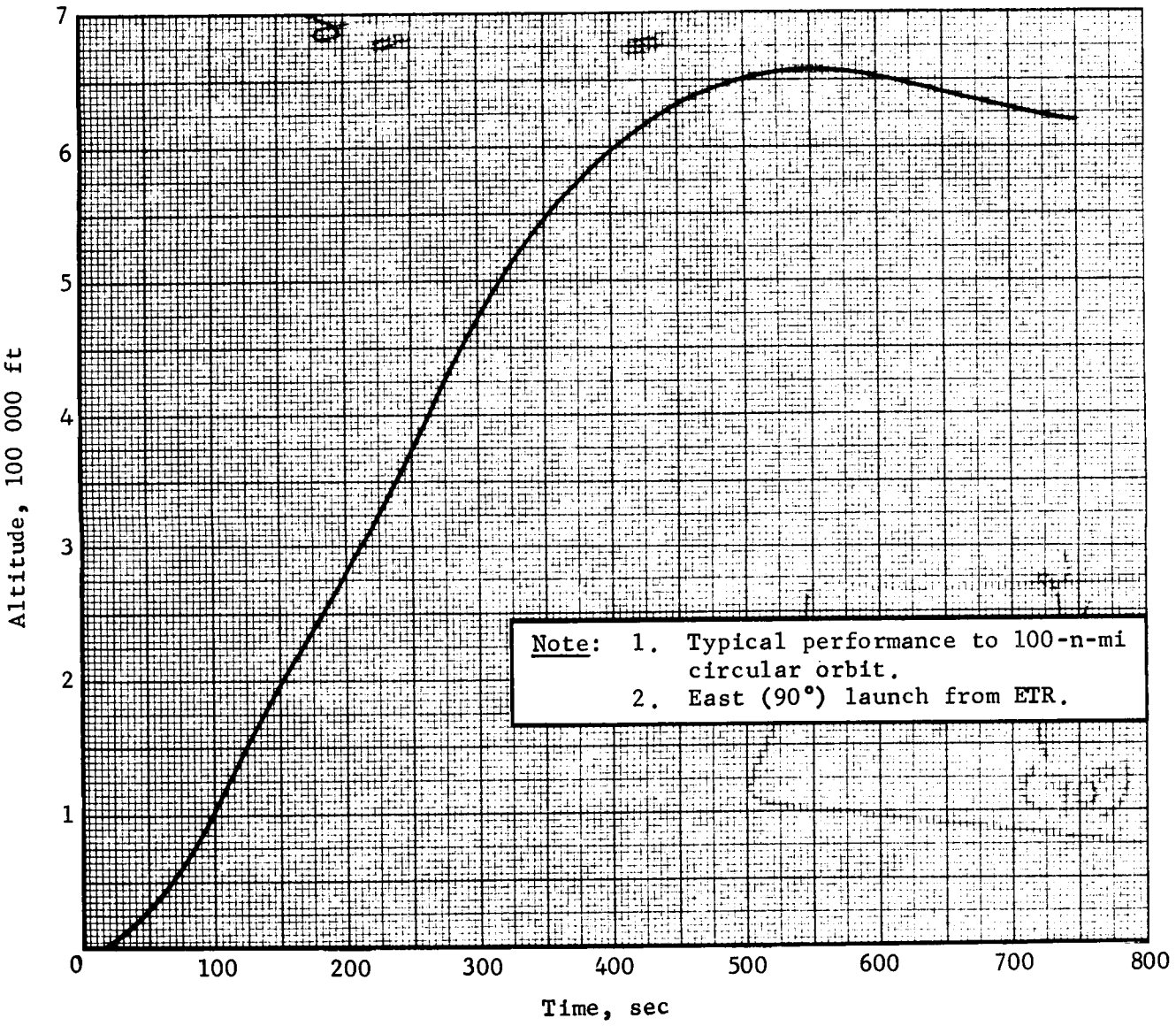


Figure 13. Typical Nominal Titan IIIC Altitude vs Time

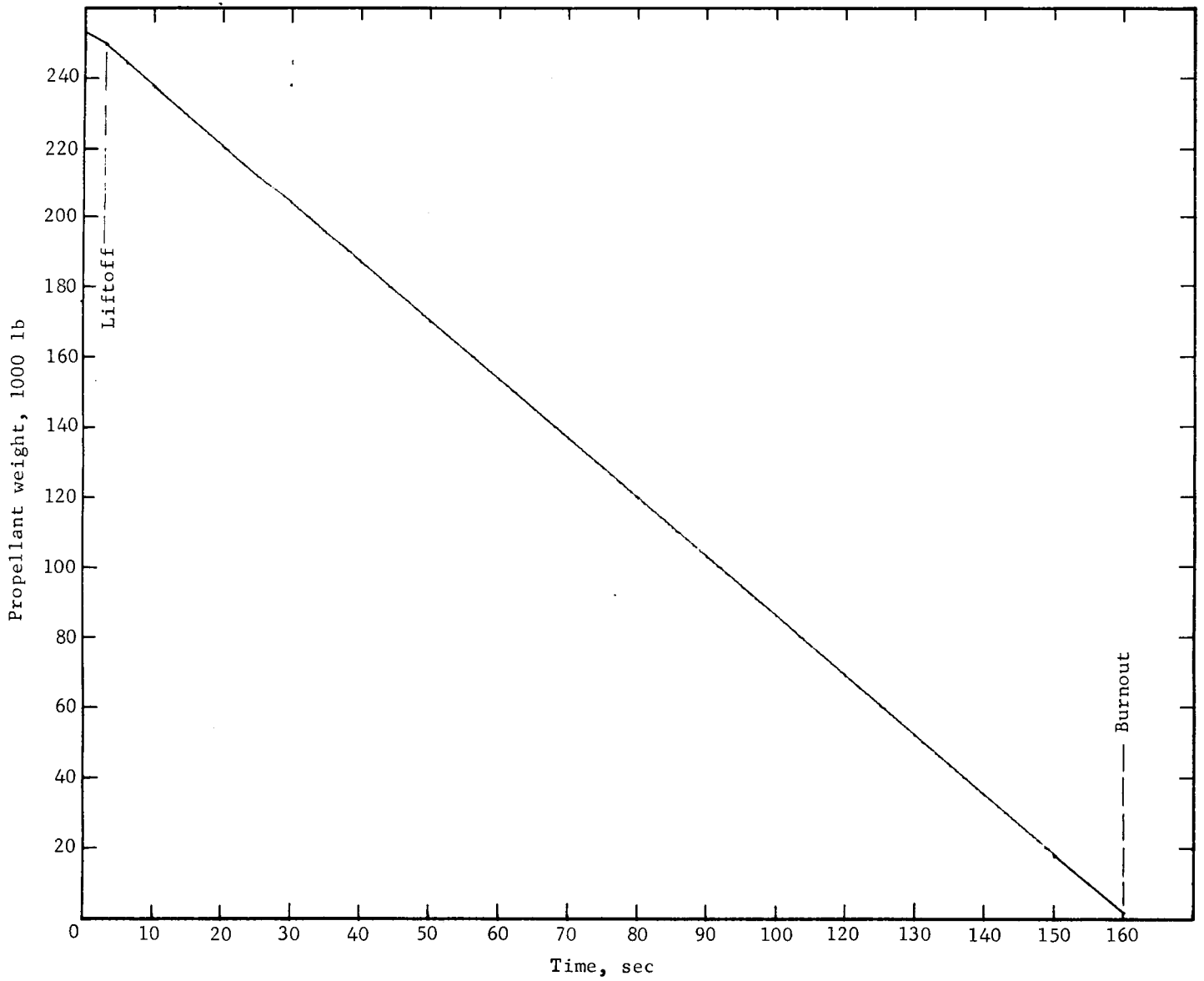


Figure 14. Typical Nominal Titan IIIA Stage I Propellant Remaining vs Time

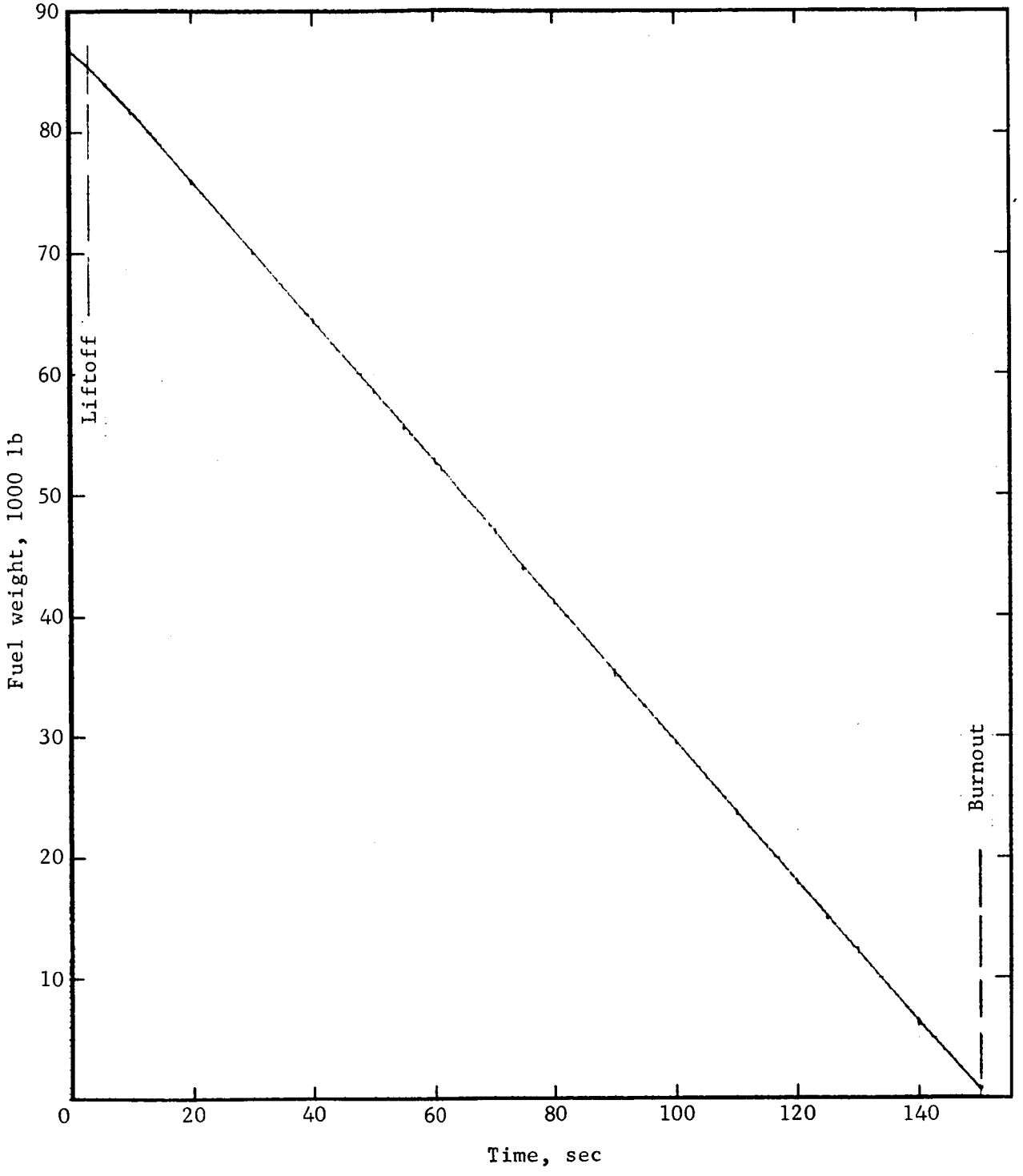


Figure 15. Typical Nominal Titan IIIA Fuel Weight vs Time, Stage I

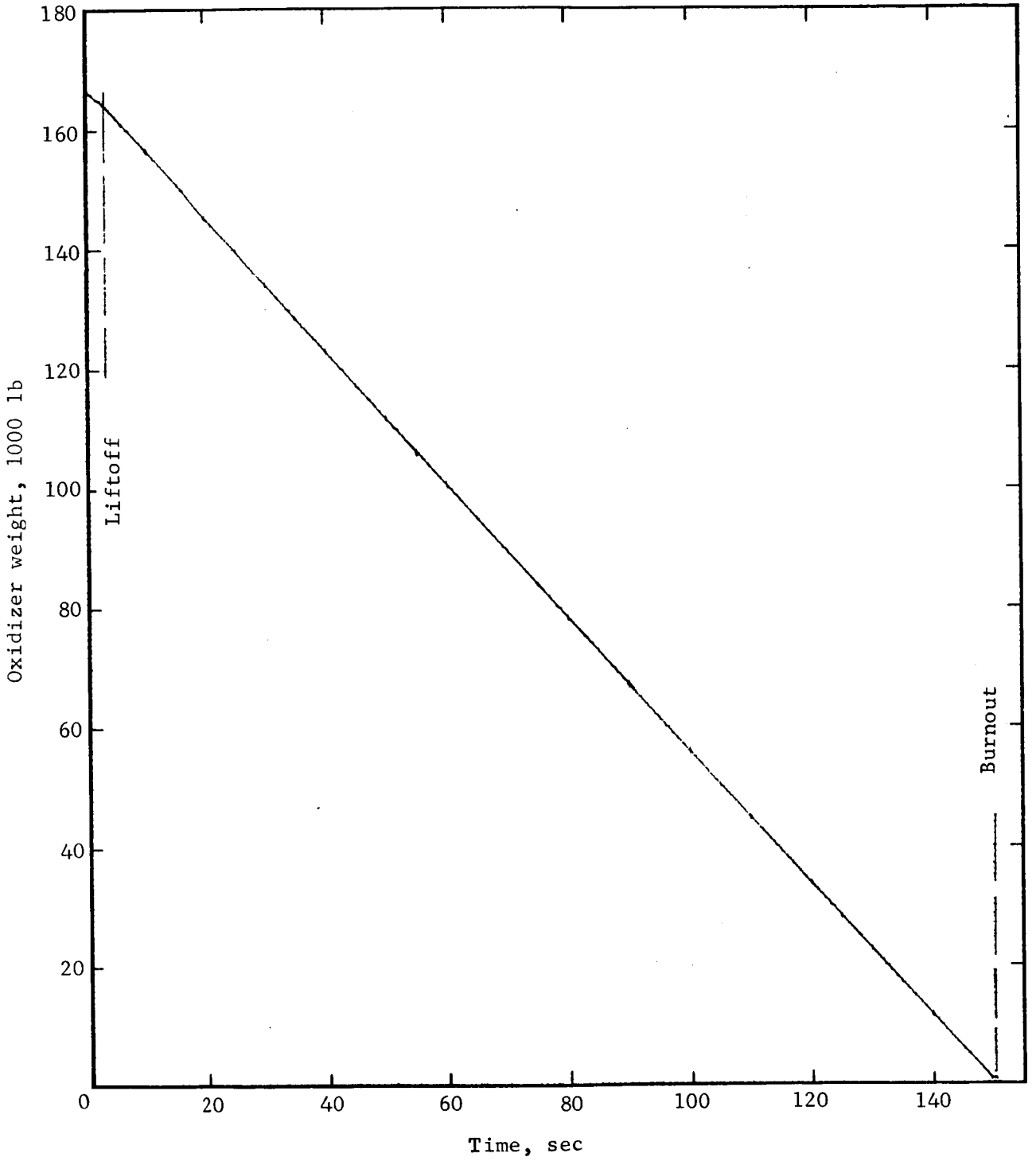


Figure 16. Typical Nominal Titan IIIA Oxidizer Weight vs Time, Stage I

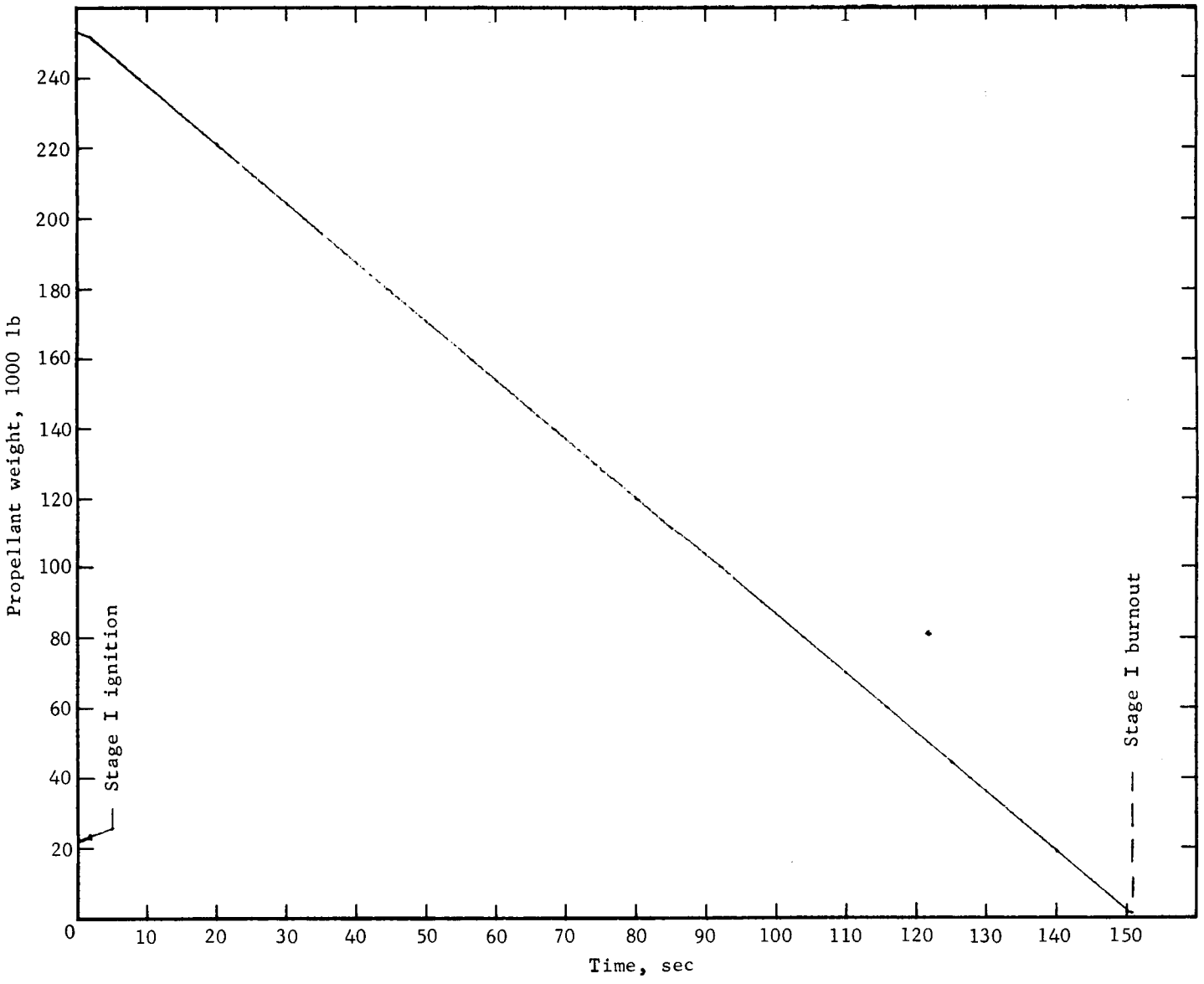


Figure 17. Typical Nominal Titan IIIC Stage I Propellant Remaining vs Time

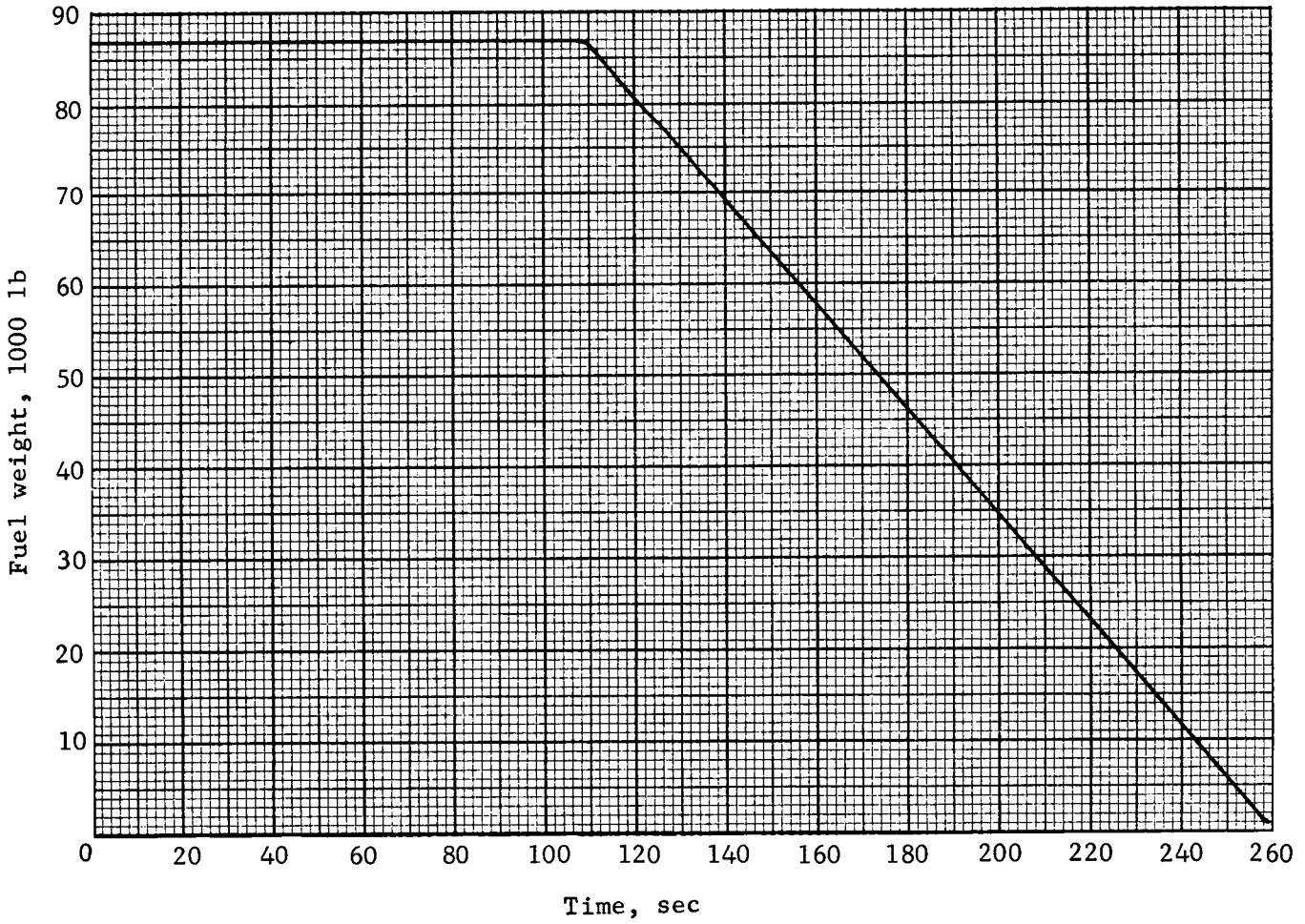


Figure 18. Typical Nominal Titan IIIC Fuel Weight vs Time, Stage I

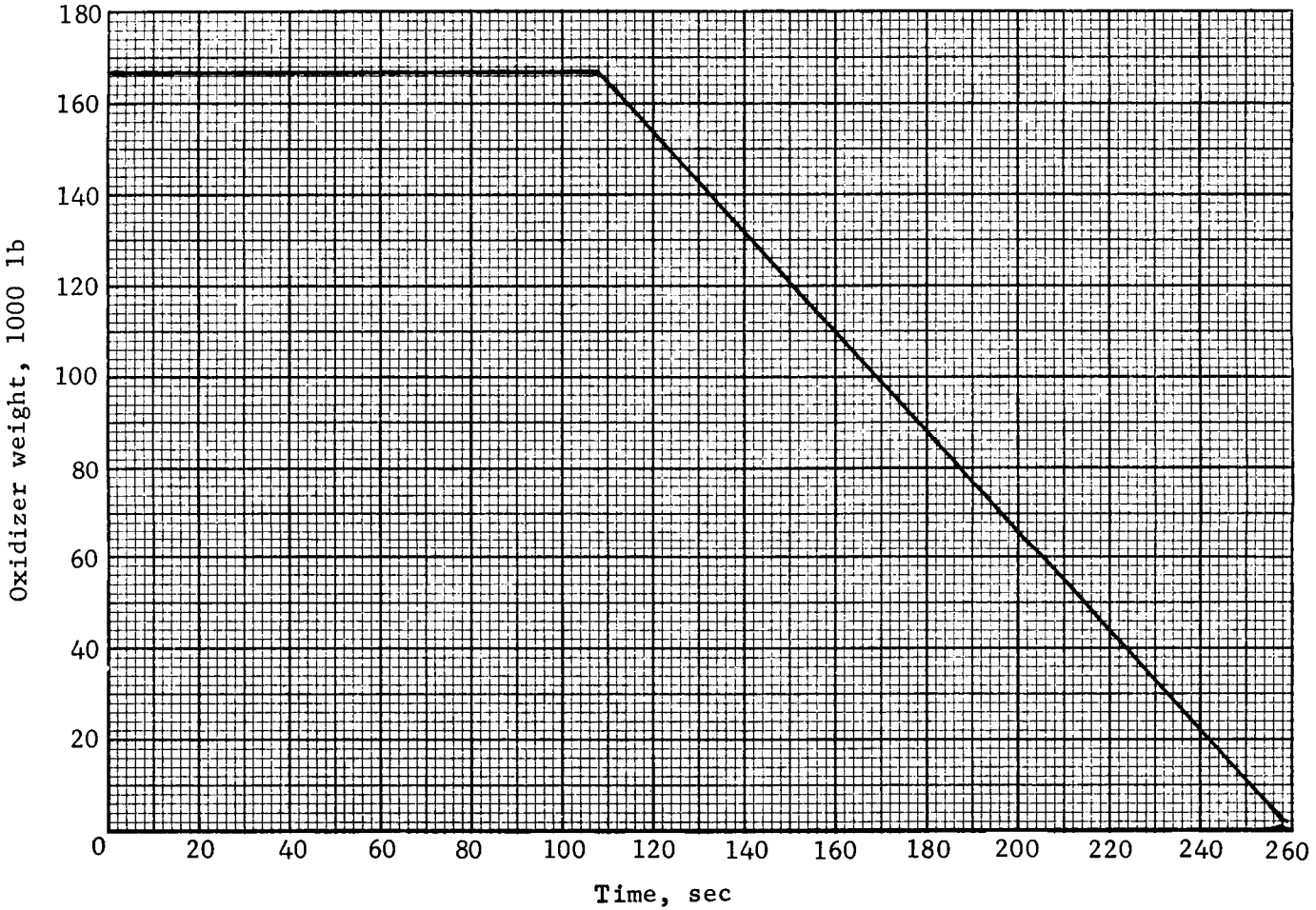


Figure 19. Typical Nominal Titan IIIC Oxidizer Weight vs Time, Stage I

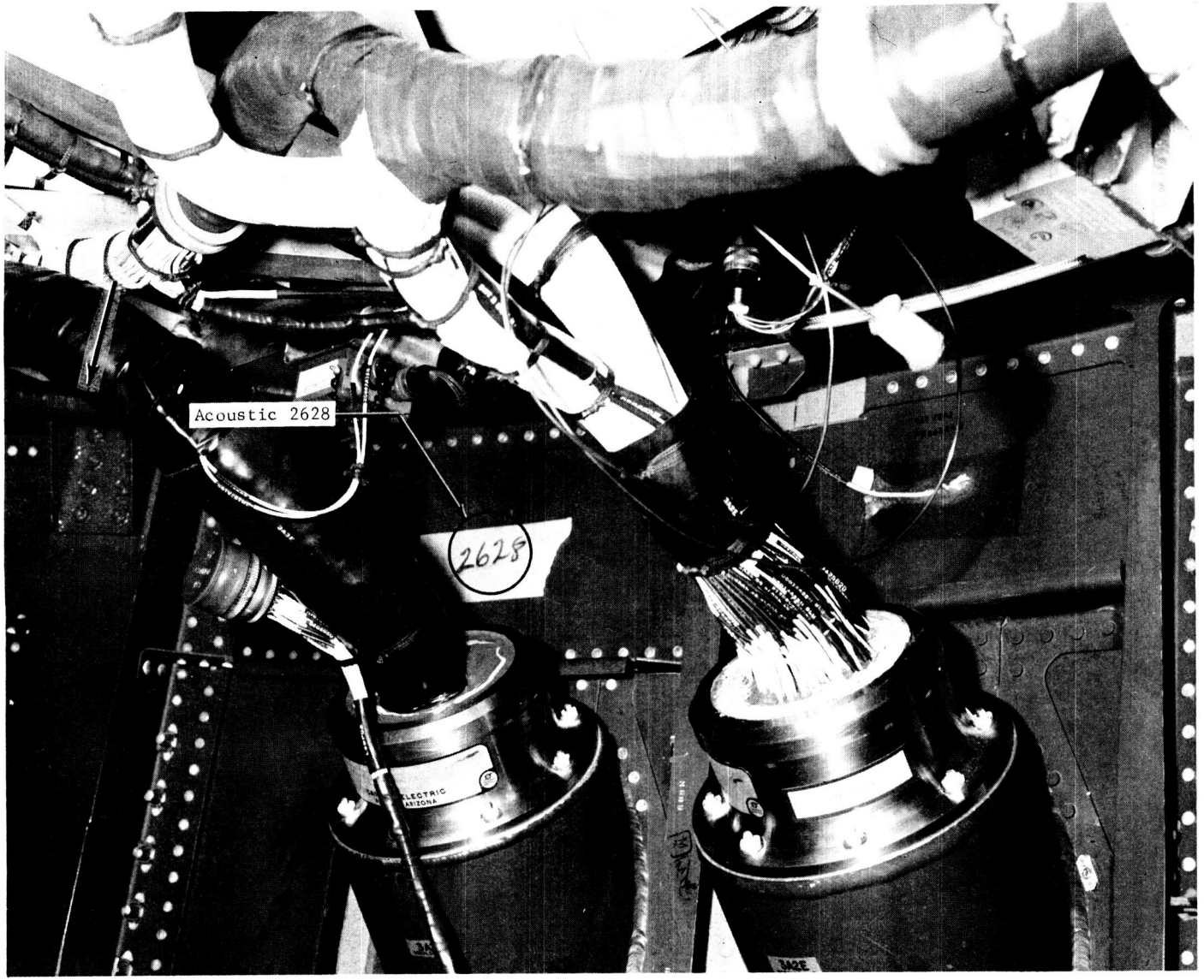


Figure 20. SPL Compartment 3A, Flush Mounted, Sta 123, Quad III, 120° Off Target

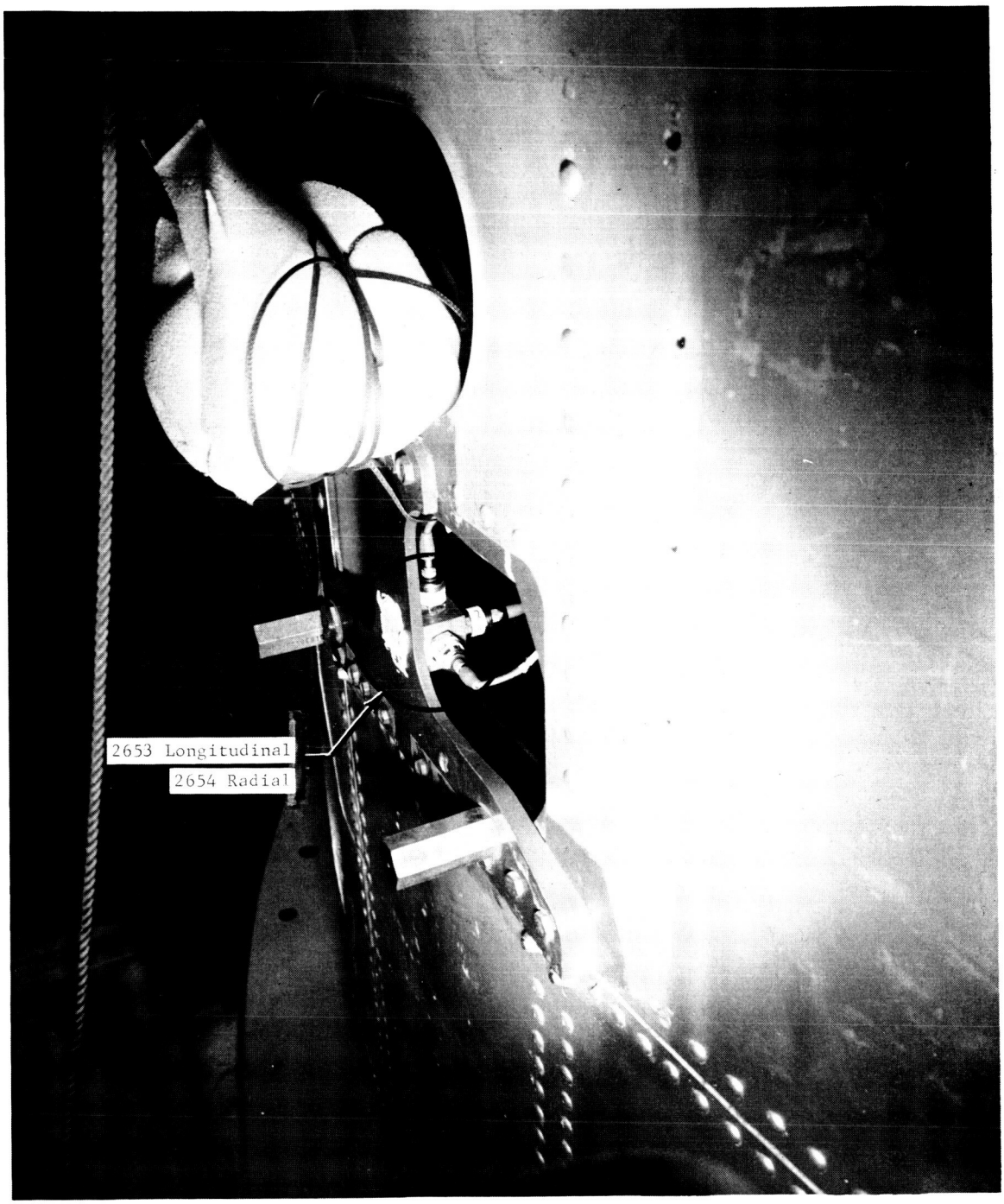


Figure 21. Compartment 3A Structure at Mounting Point of Attitude Control Nozzles, Sta 130, Target Side between Stringers 1 and 28

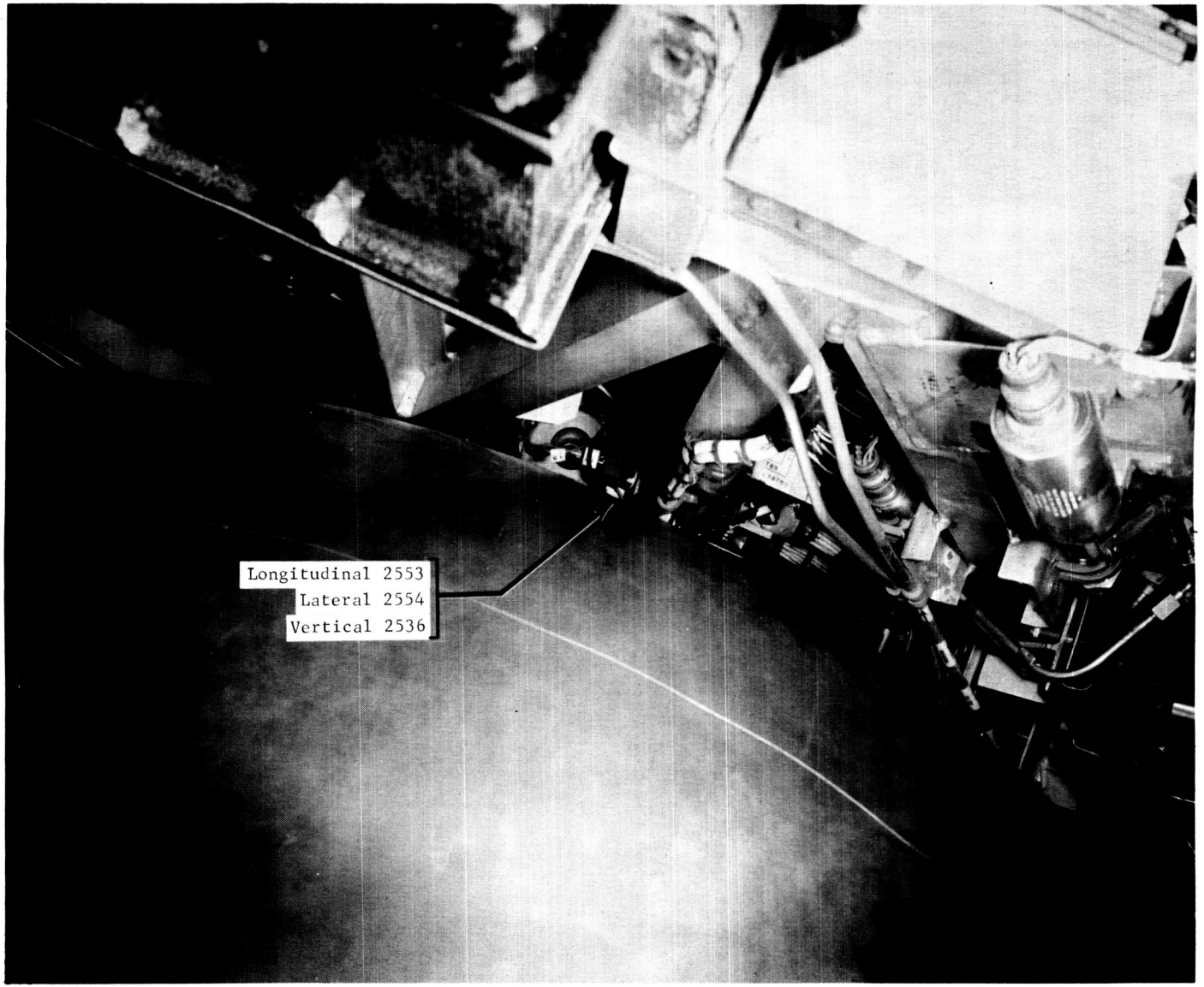


Figure 22. Compartment 3A Guidance Truss between MGC and Relays

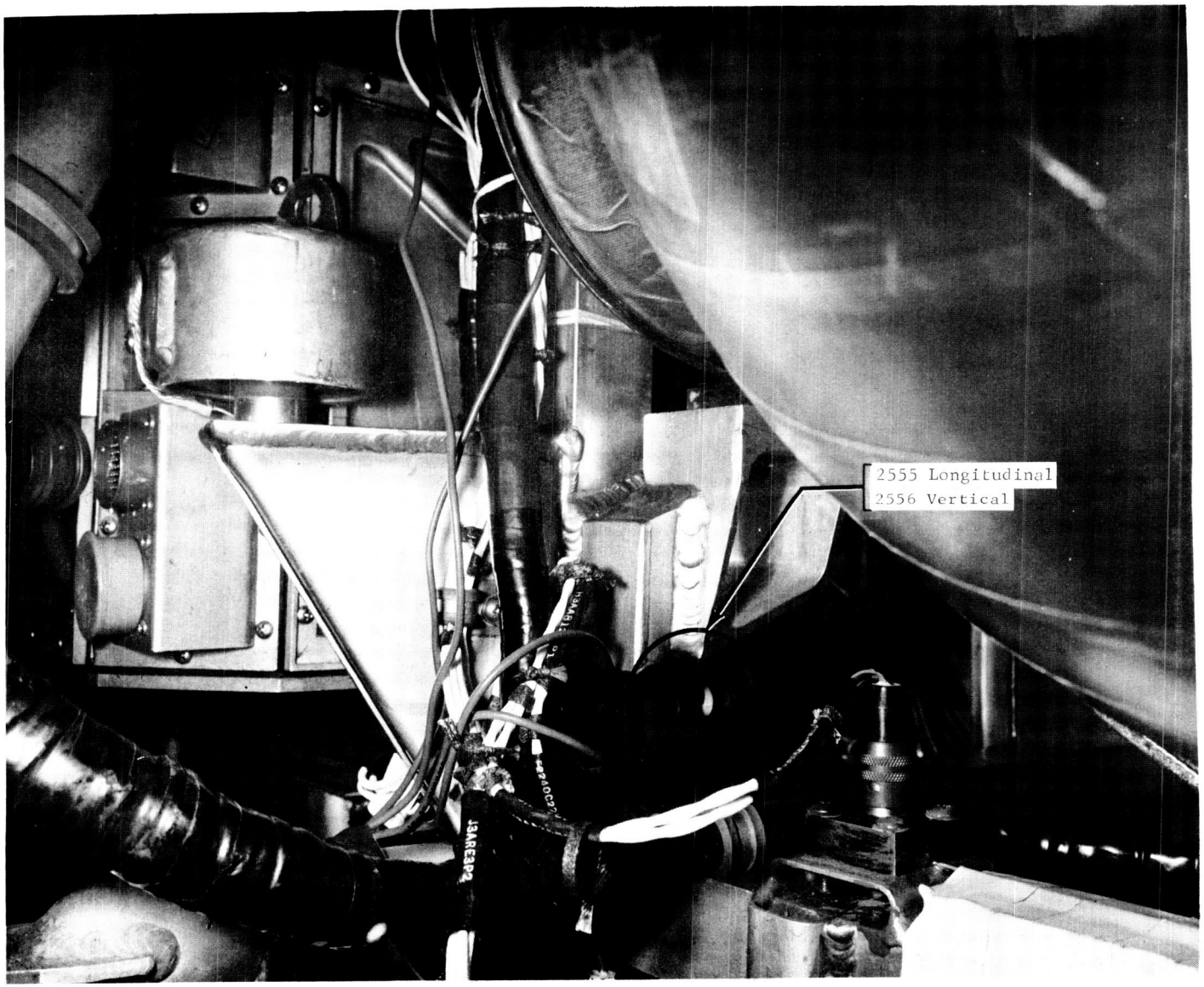


Figure 23. Compartment 3A Guidance Truss between IMU and DCU (Common Mounting)

Figure 24. Compartment 3A Equipment Truss at Signal Conditioner Foot Near Airframe Tie-in Point

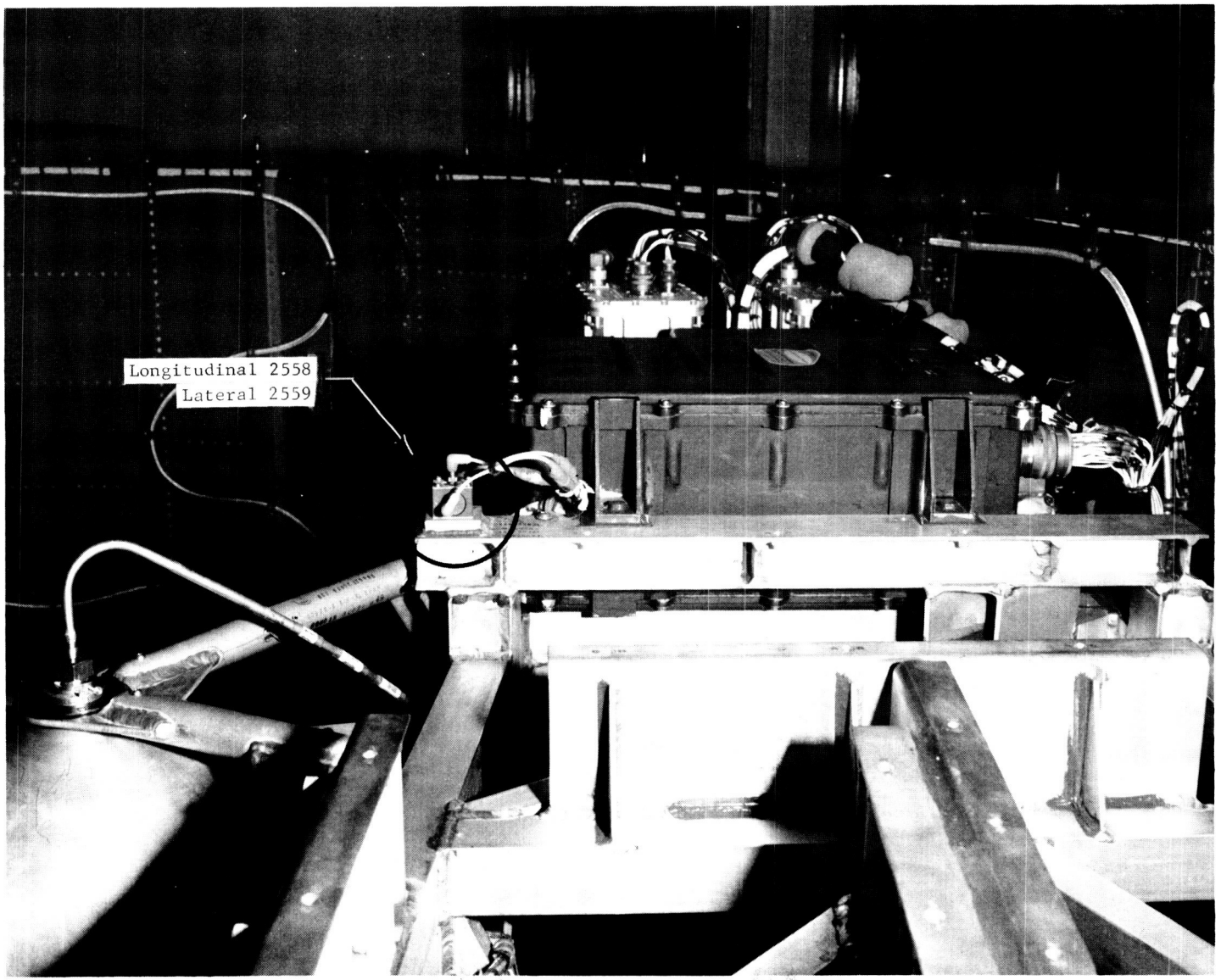


Figure 25. Compartment 3A Equipment Truss at Malfunction Detection Package

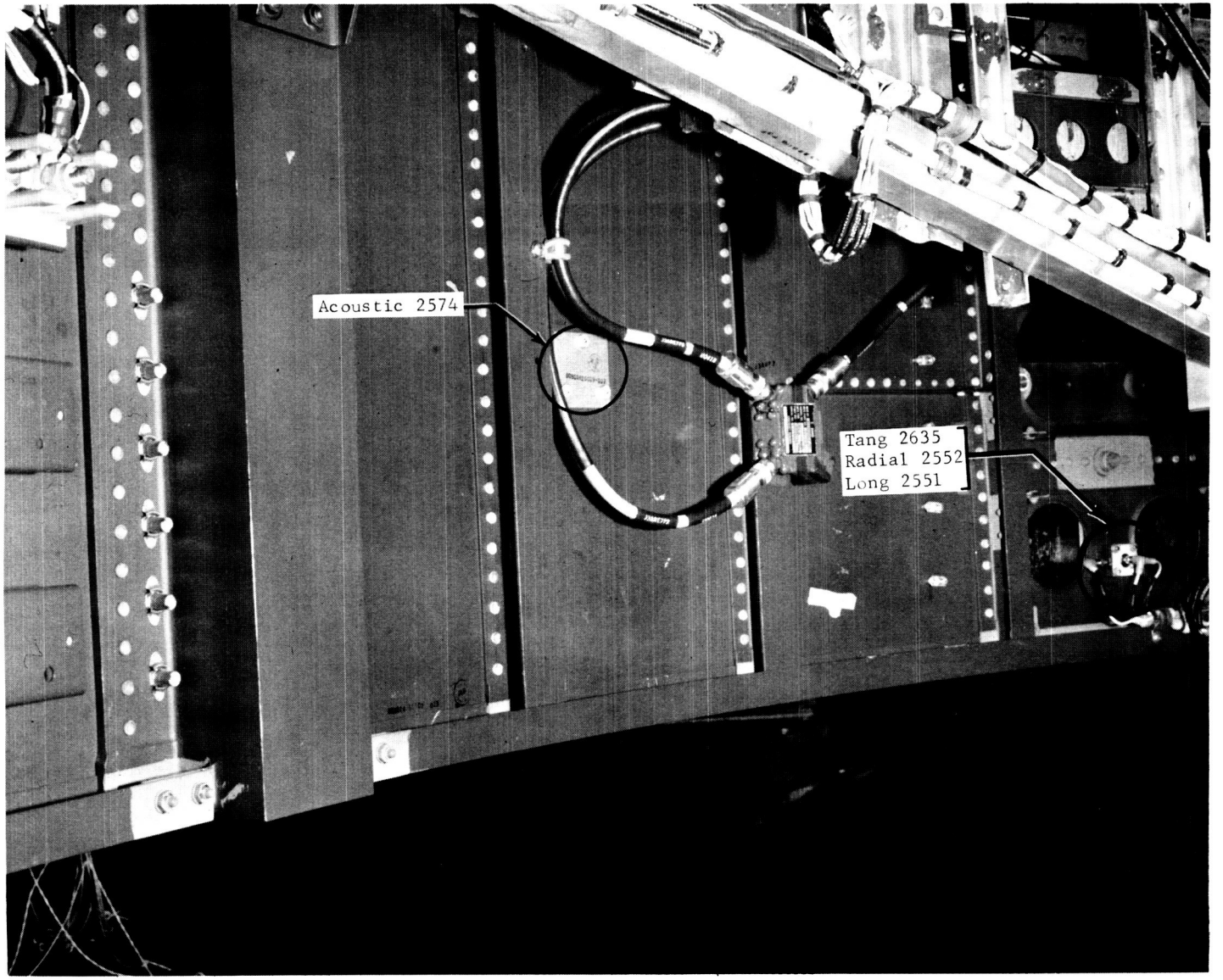


Figure 26. SPL Compartment 3A, Flush Mounted, Quad I, 20° Off Target

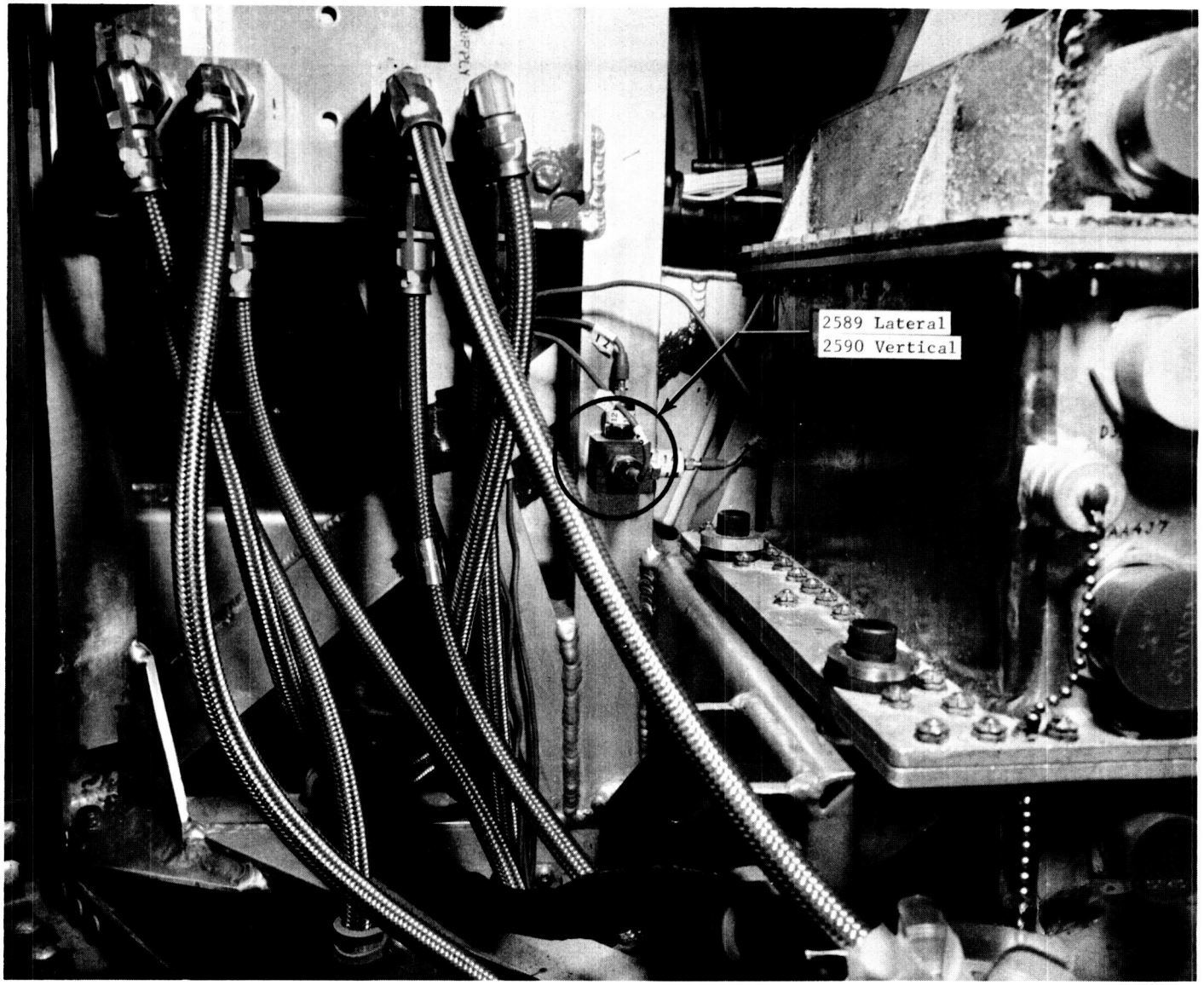


Figure 27. Compartment 3A Guidance Truss Near PCM and IMU Mounting

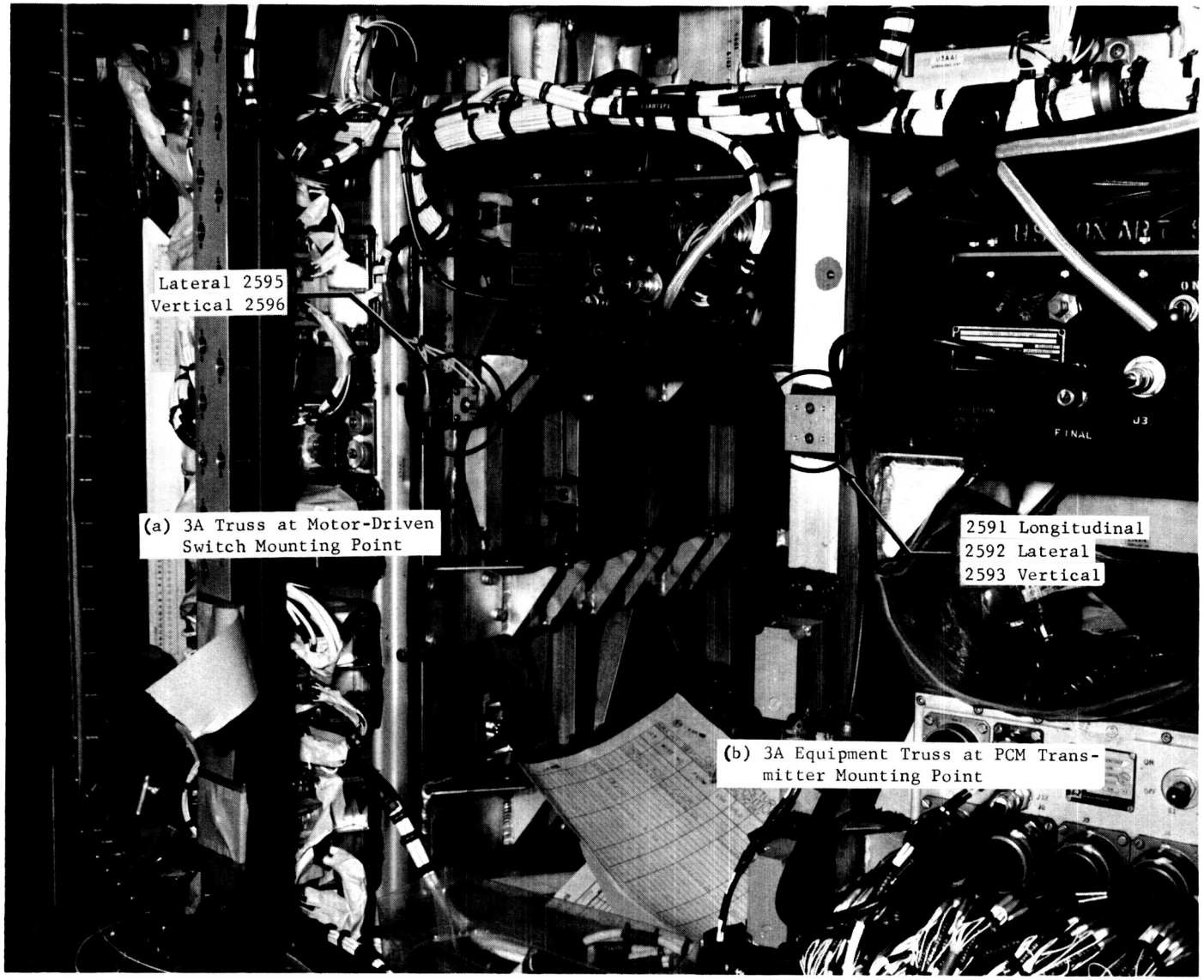


Figure 28. Compartment 3A Instrumentation Truss at PCM Transmitter and Motor-Driven Switch Mountings

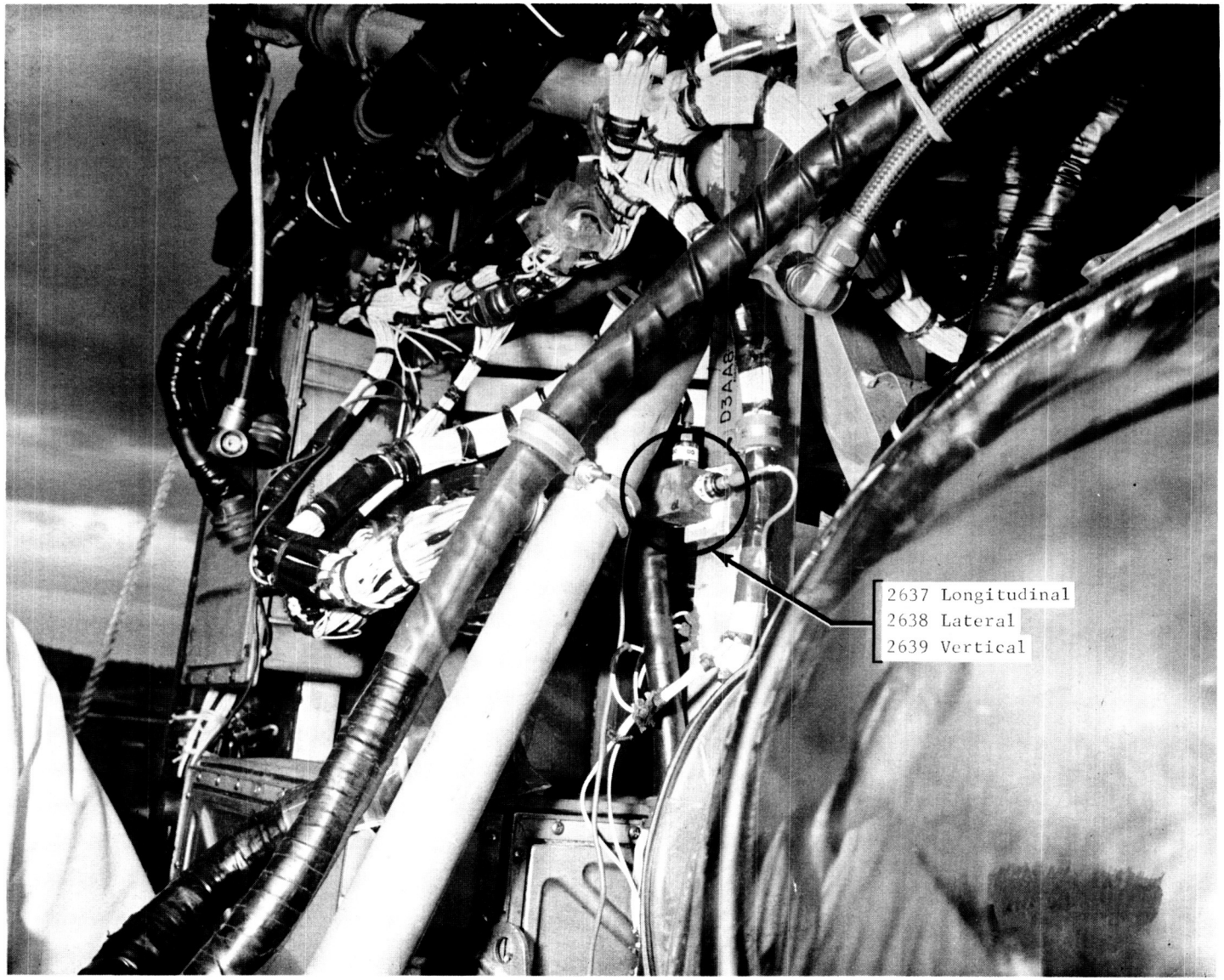


Figure 29. Compartment 3A Truss, Autopilot Mounting Point

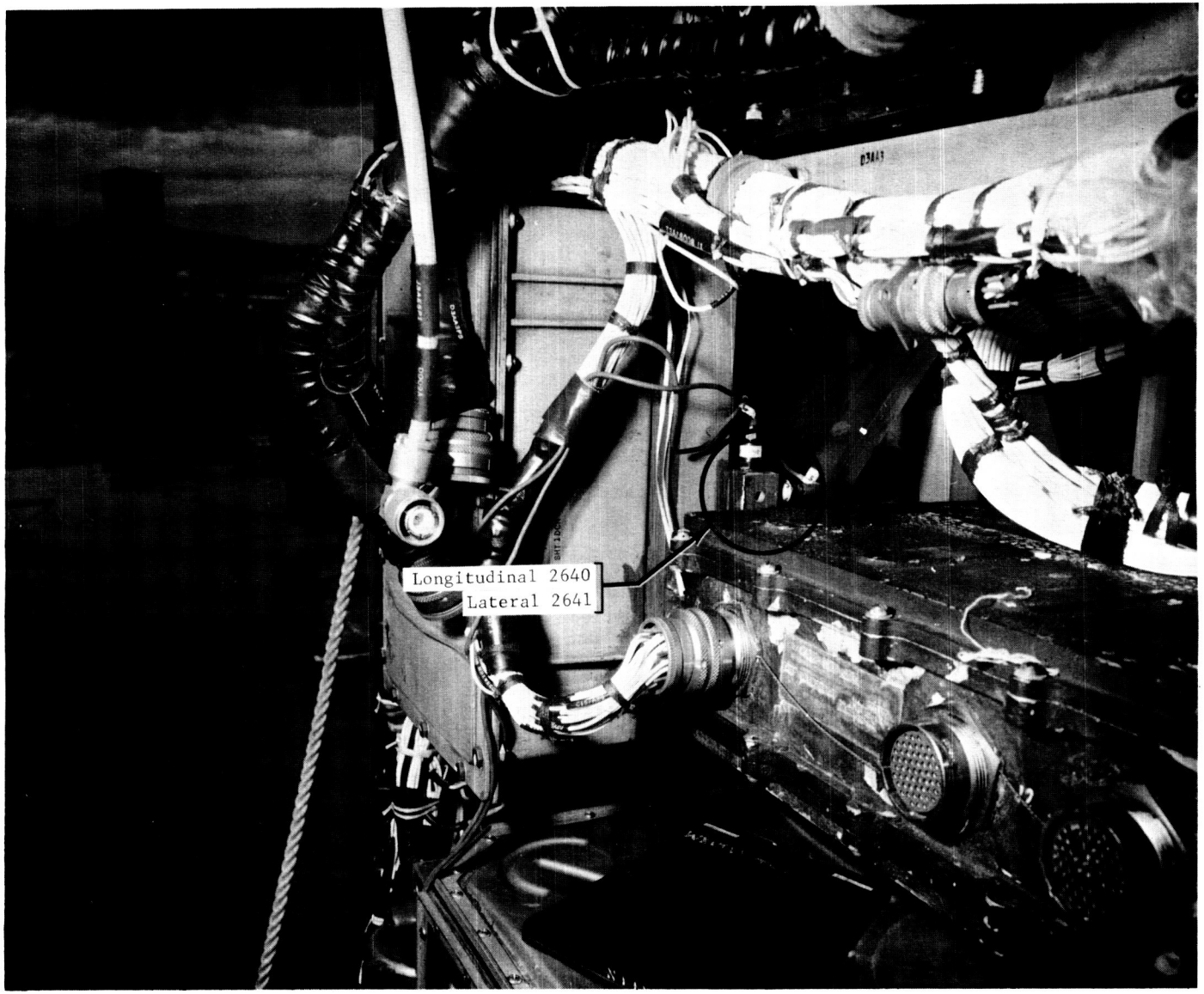


Figure 30. Compartment 3A Guidance Truss between Autopilot and Static Inverter

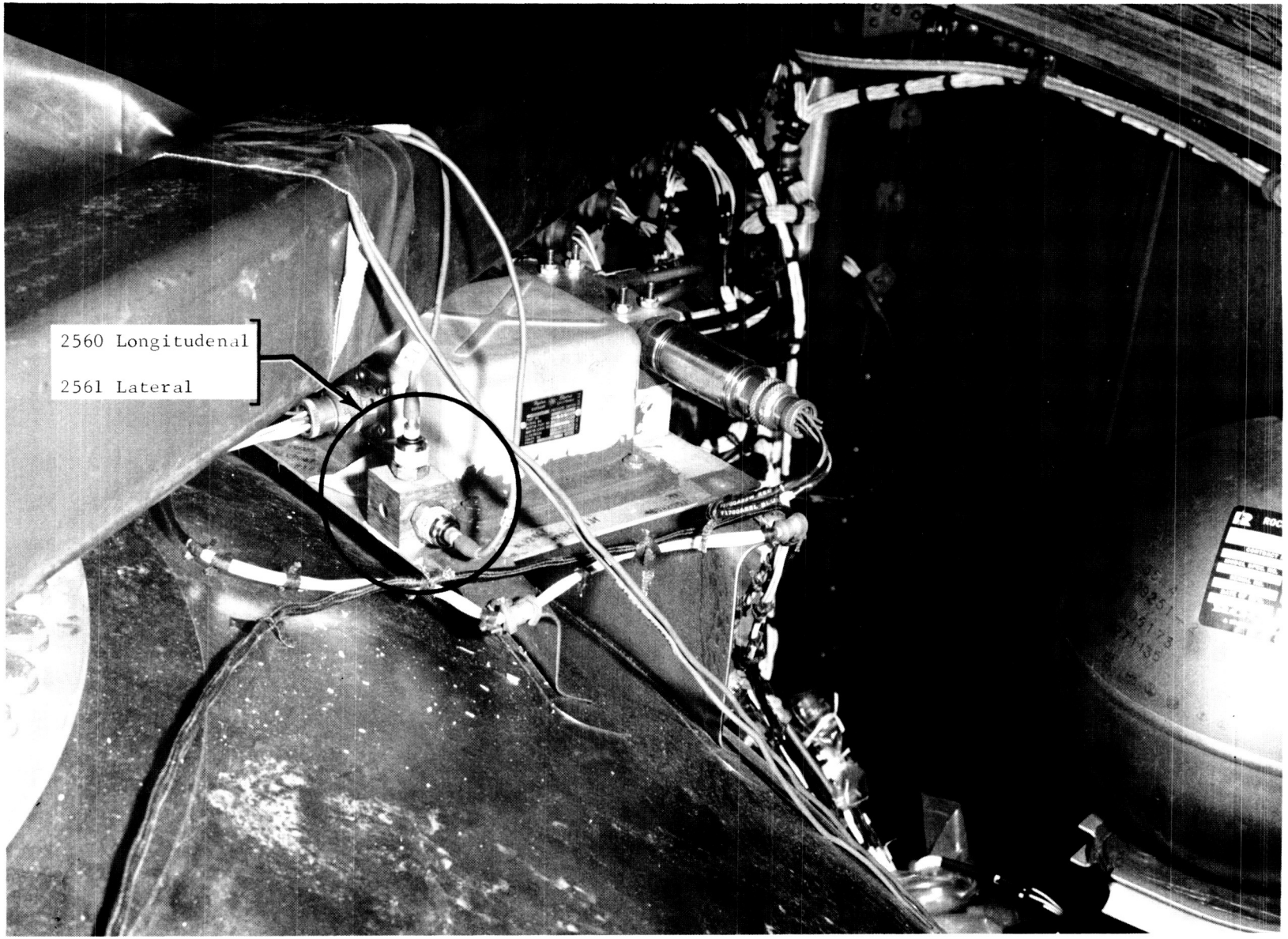


Figure 31. Compartment 3B Oxidizer Tank Top at Pressure Switch Mounting

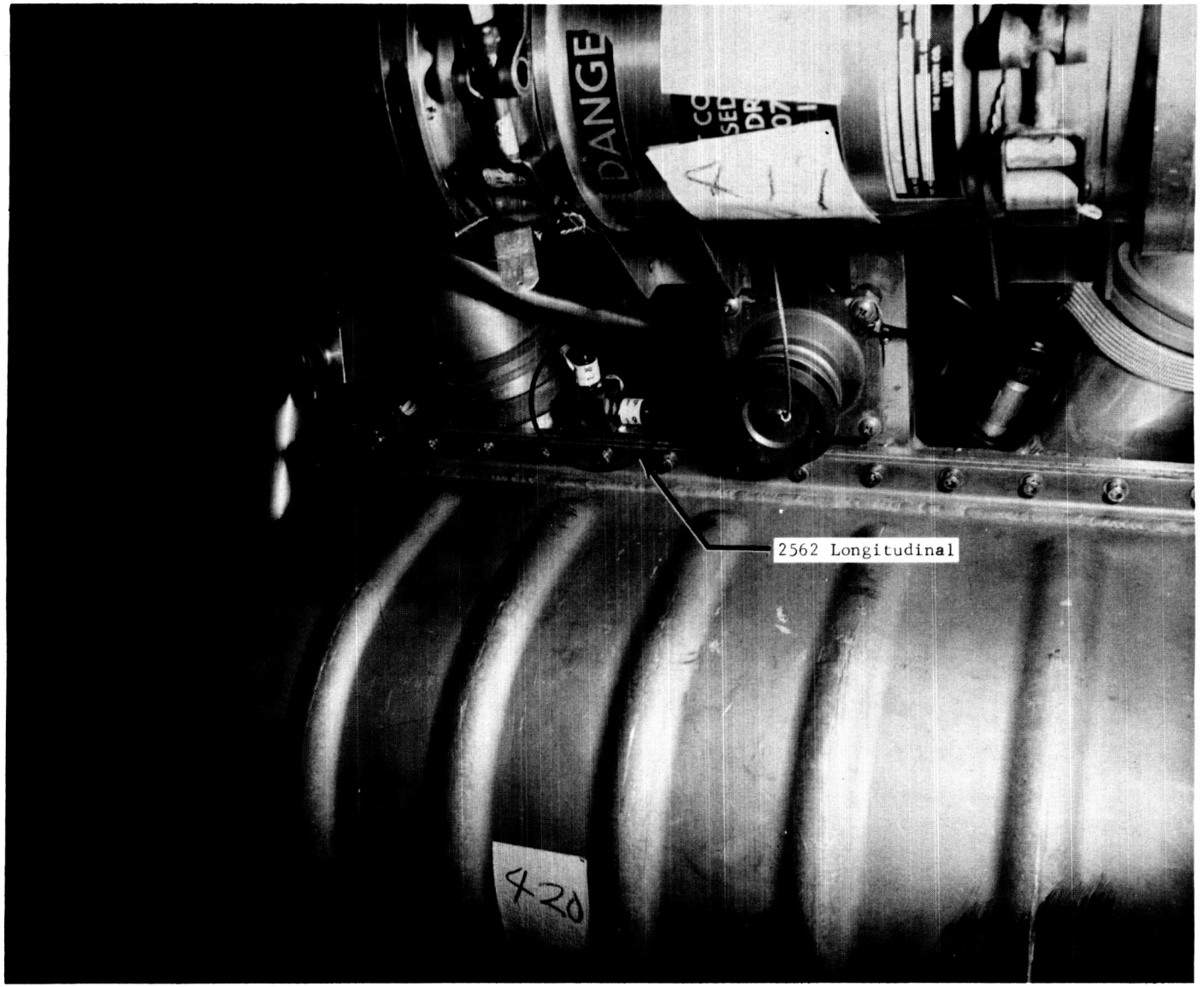


Figure 32. Compartment 3B Engine Truss at Hydraulic Motor Pump Mounting

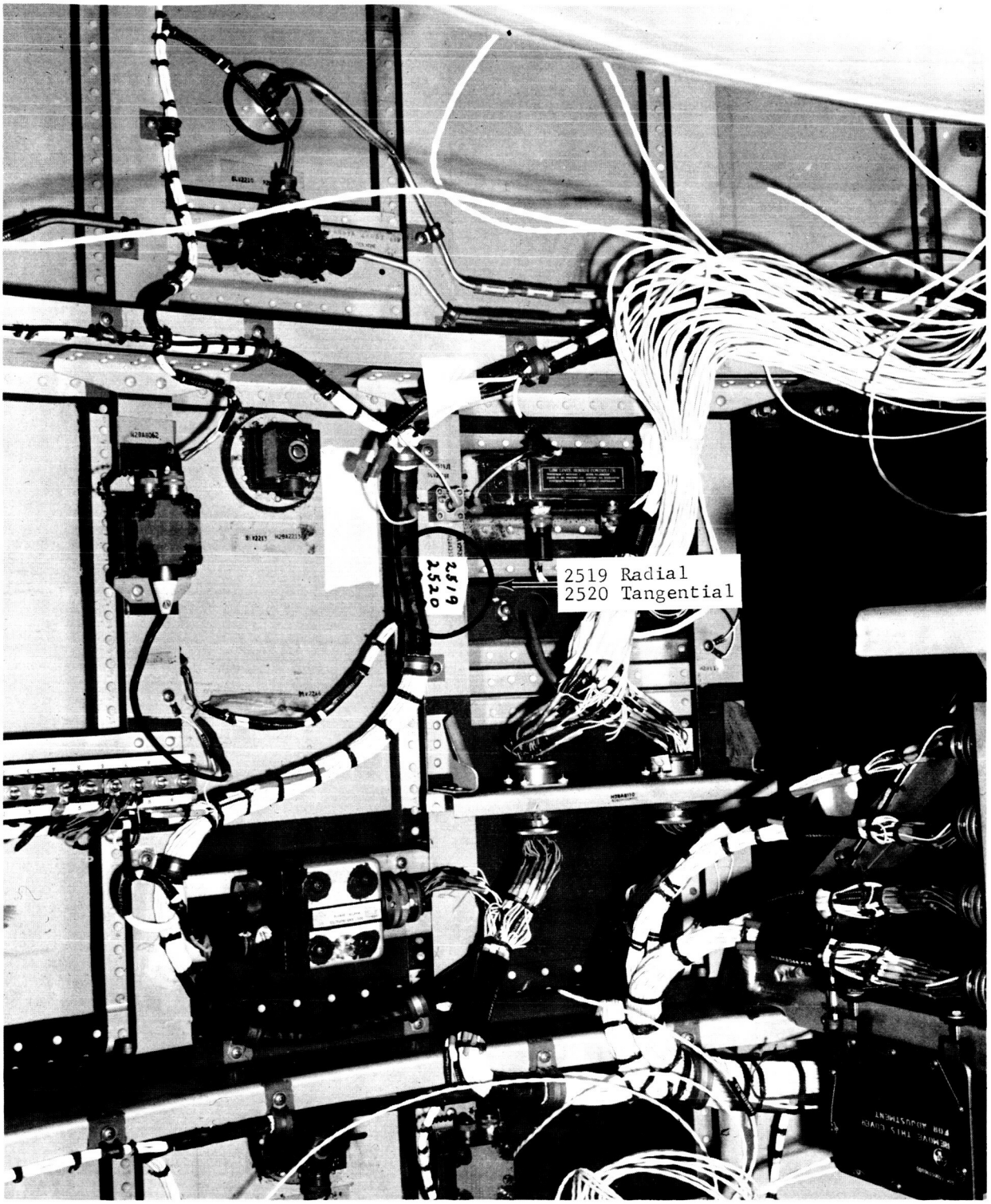


Figure 33. Compartment 2B Airframe at Outage Sensor Controller Mounting on Stringer 27, Controller on Intercostal between Stringer 26 and 27, Sta 360

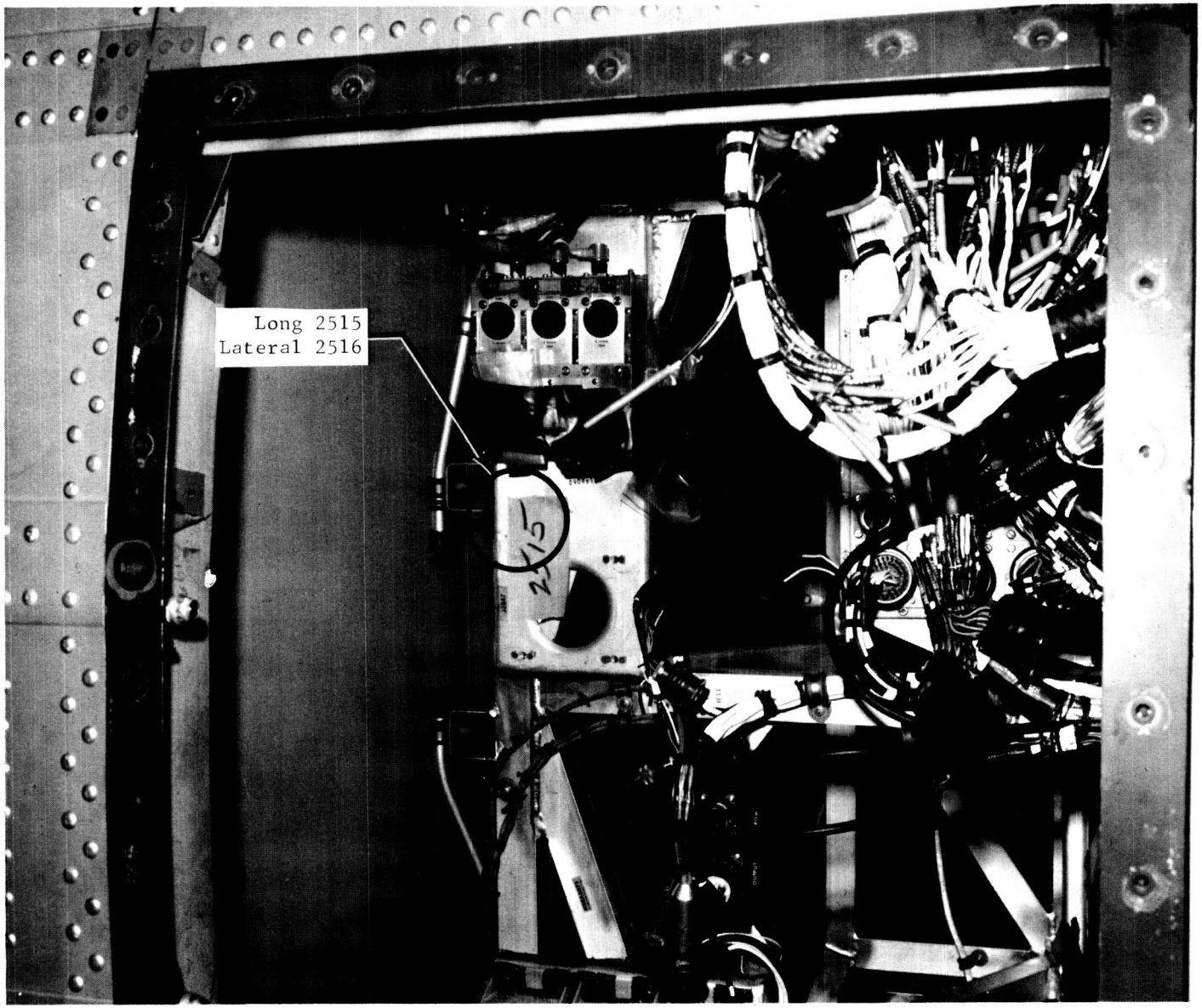


Figure 34. Compartment 2B Truss at Destruct Initiator Mounting Foot on Panel Supporting Destruct Initiator and Amp Chassis

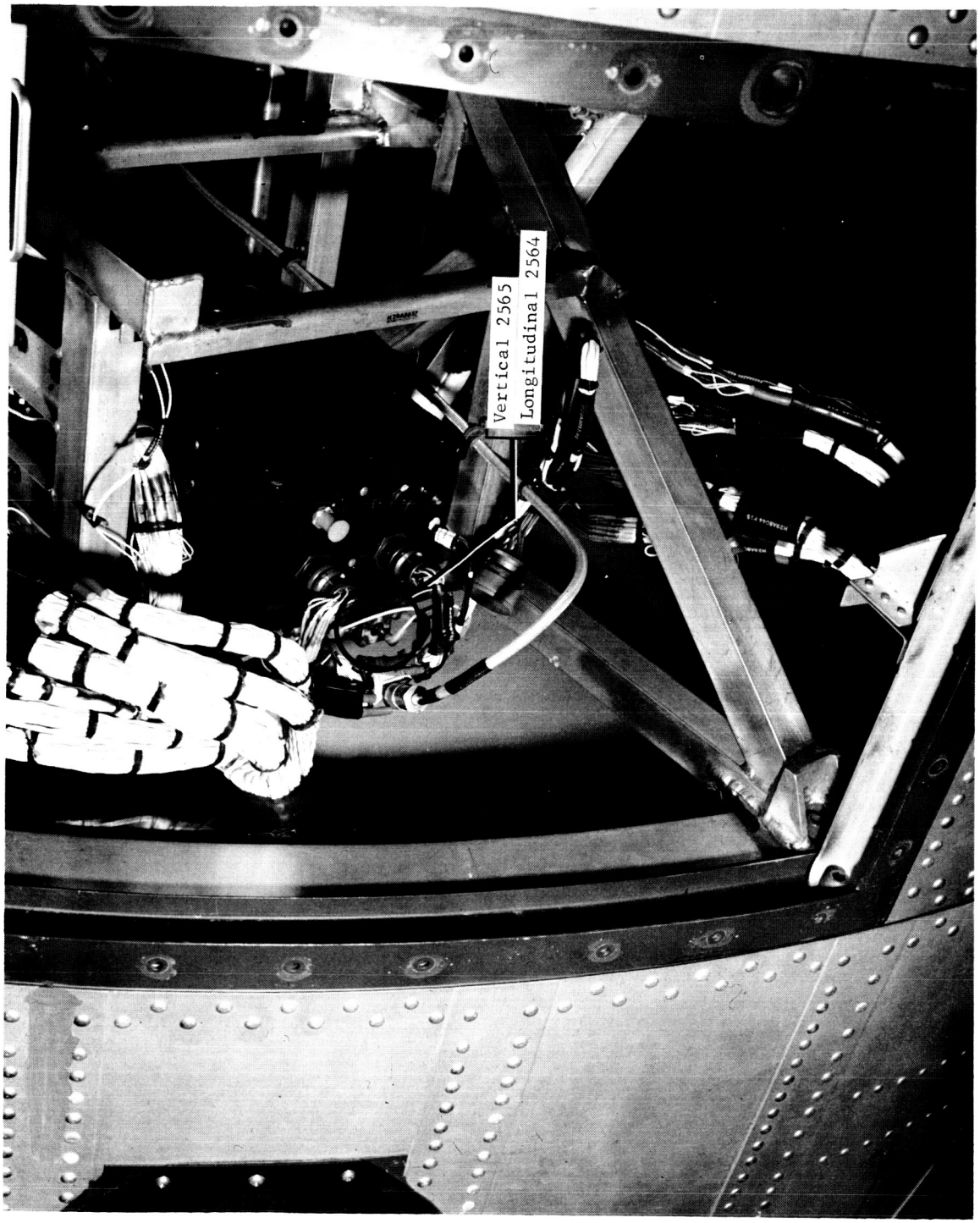


Figure 35. Compartment 2B Truss at SSB/FM Multiplexer Mounting Foot

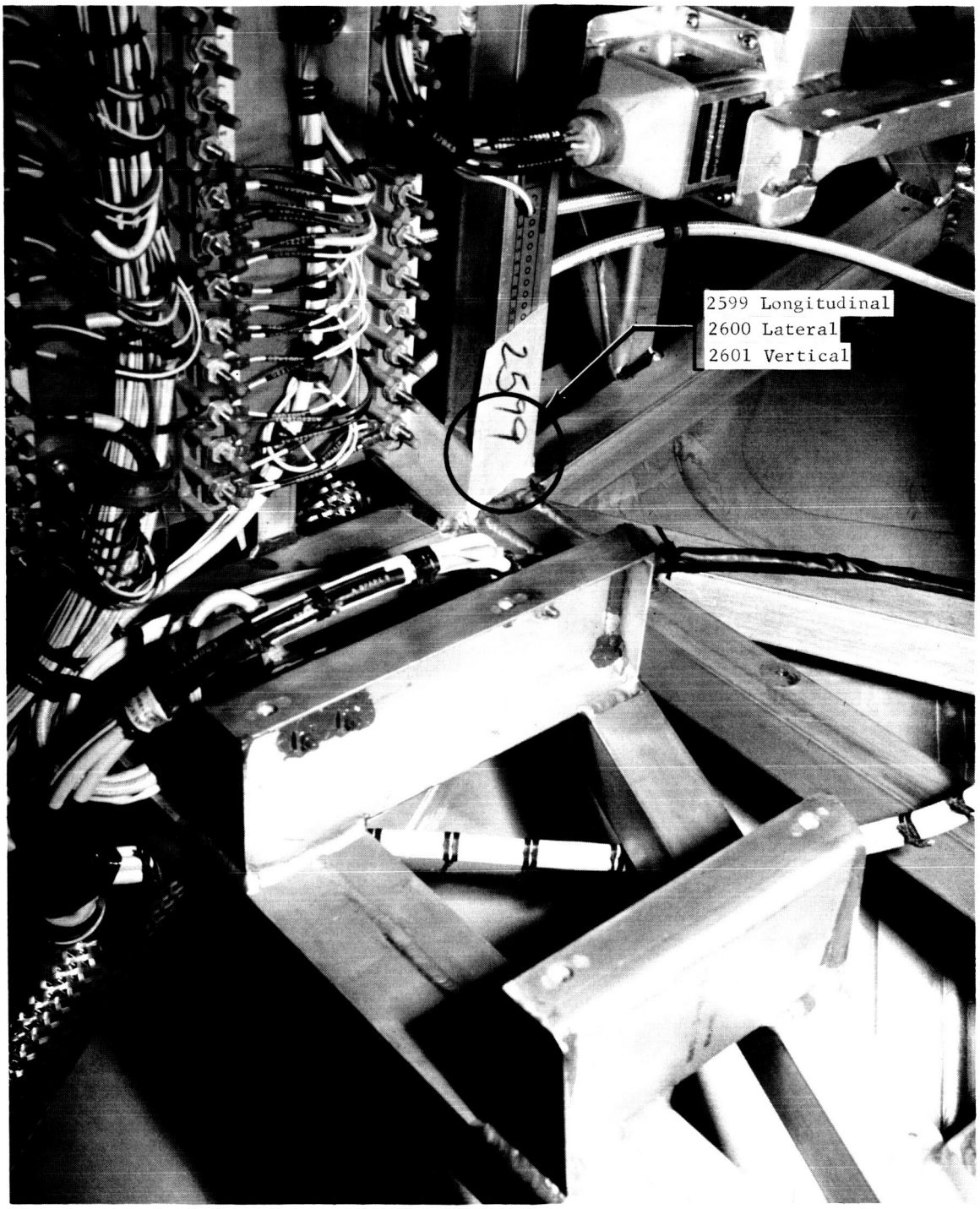


Figure 36. Compartment 2B Truss between IPS Batteries and TM Multiplexer, on Lower Truss Member, Near Battery

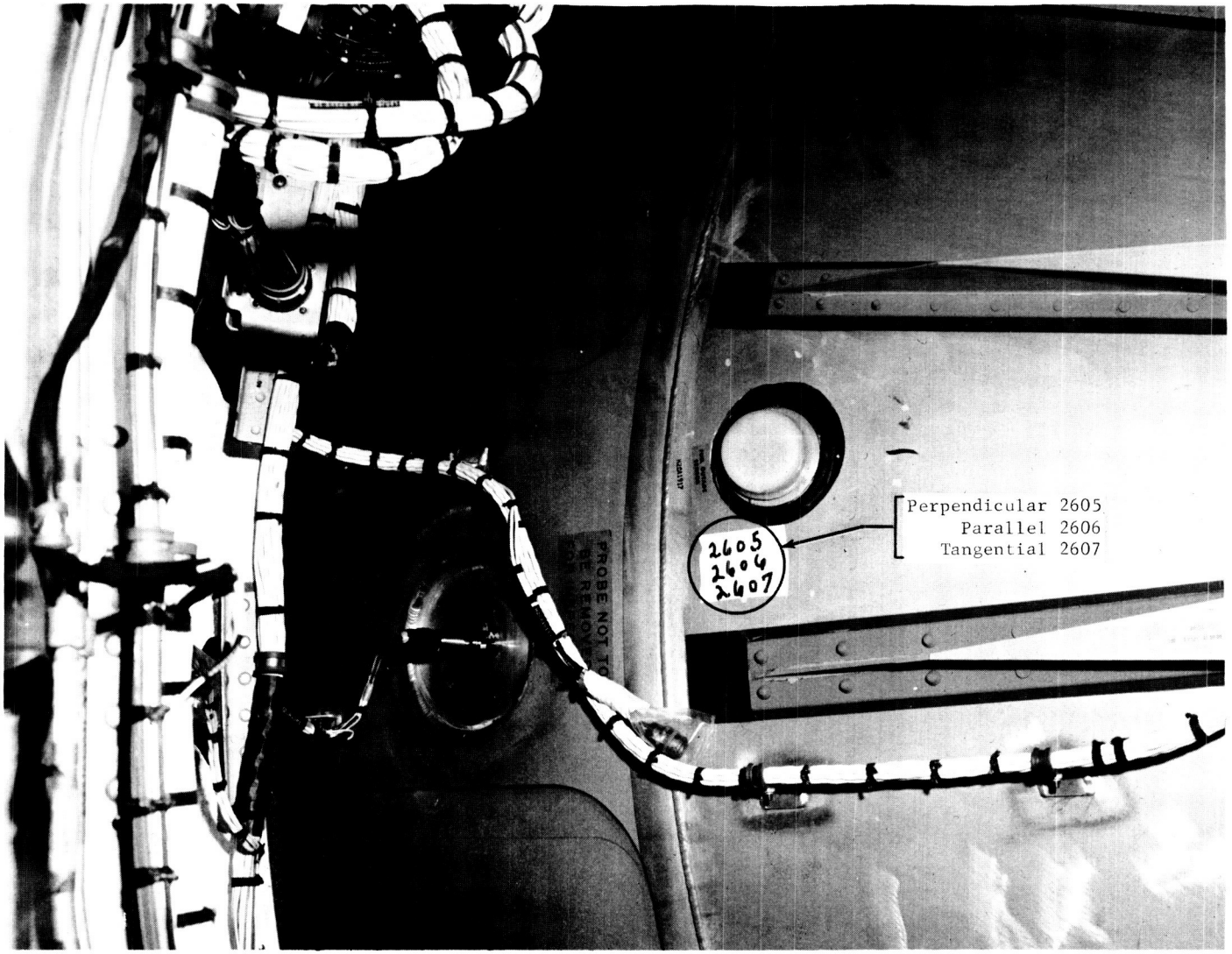


Figure 37. Compartment 2C Tank Bottom at Fuel Outage Sensor, Cemented to Bottom Near Sensor

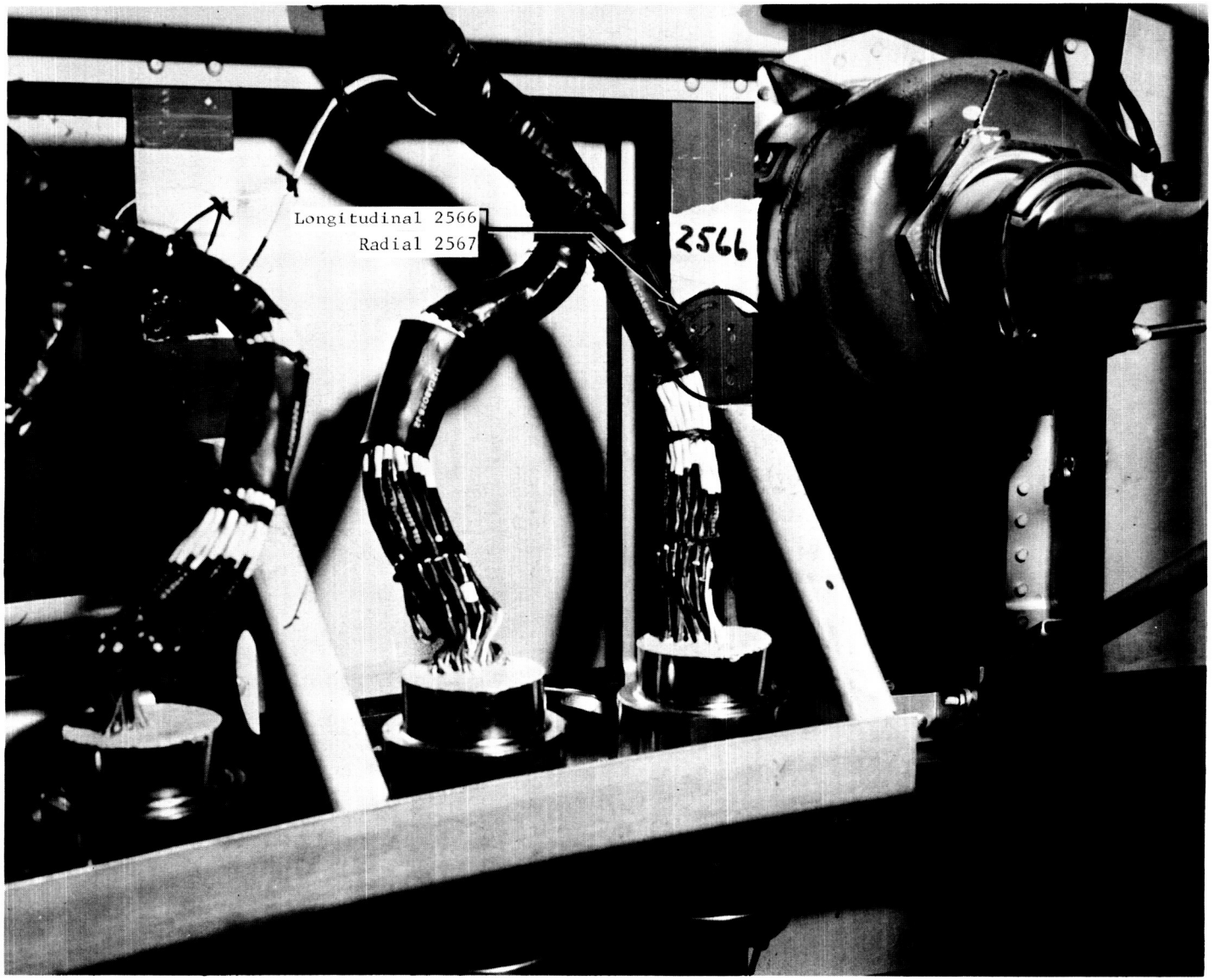


Figure 38. Compartment 2C Airframe at Instrumentation Staging Disconnect, Stringer 23, Sta 493

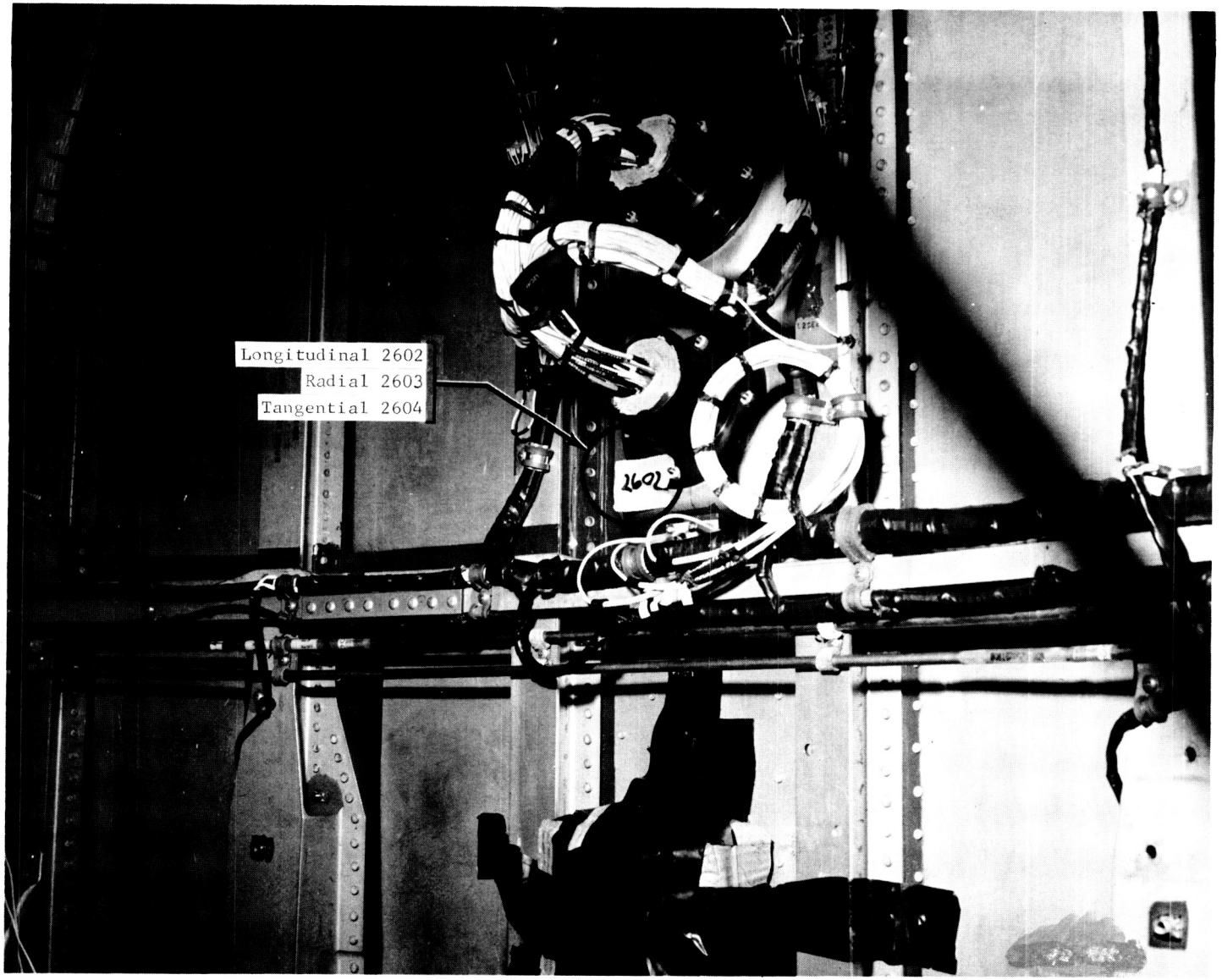


Figure 39. Compartment 2C Airframe, Mounting Point of SRM/Core Electrical Connector, Sta 473 between Stringers 9 and 10

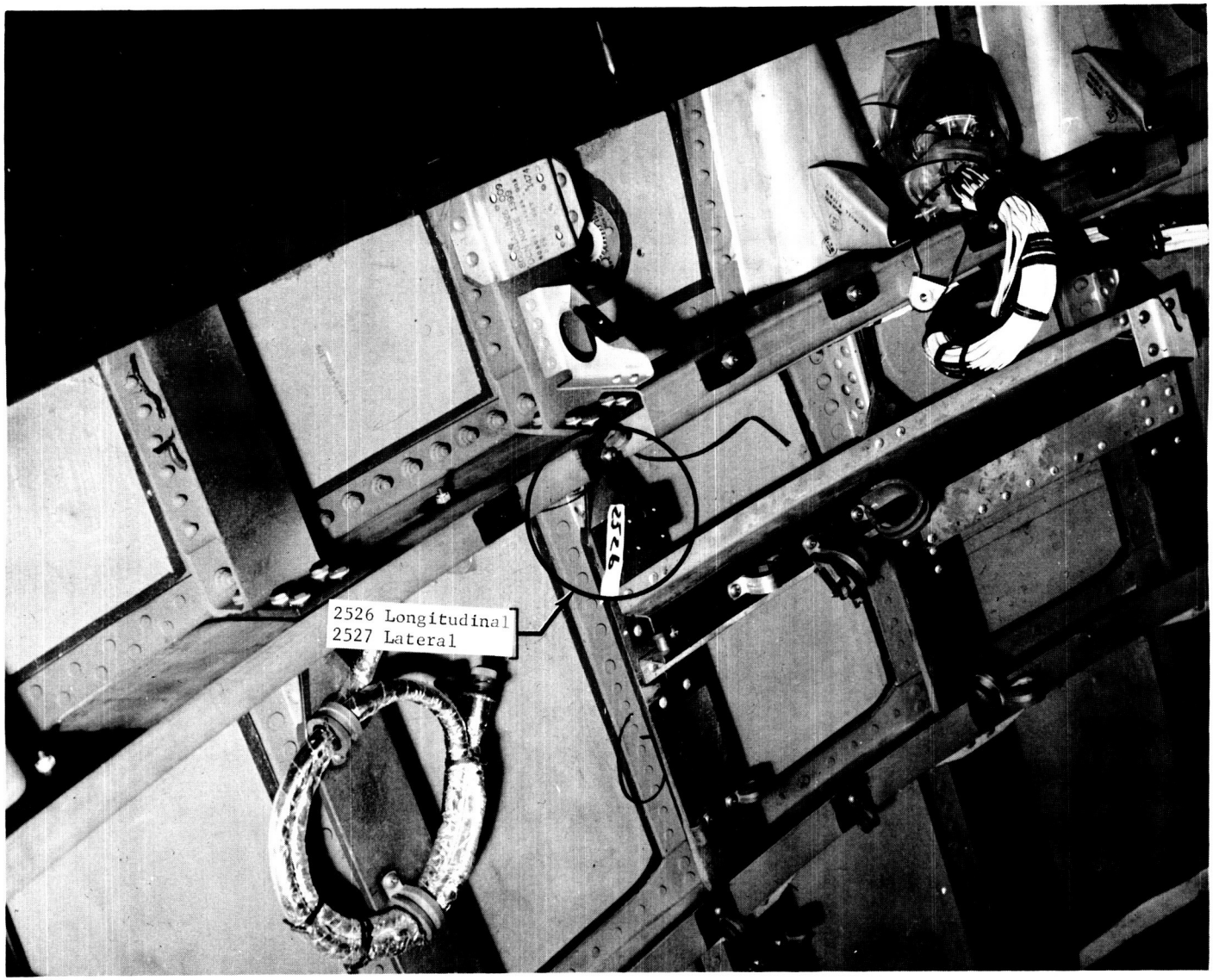


Figure 40. Compartment 1A Airframe at SRM Tie-in Point Adjacent to Stringer S2A, Sta 508

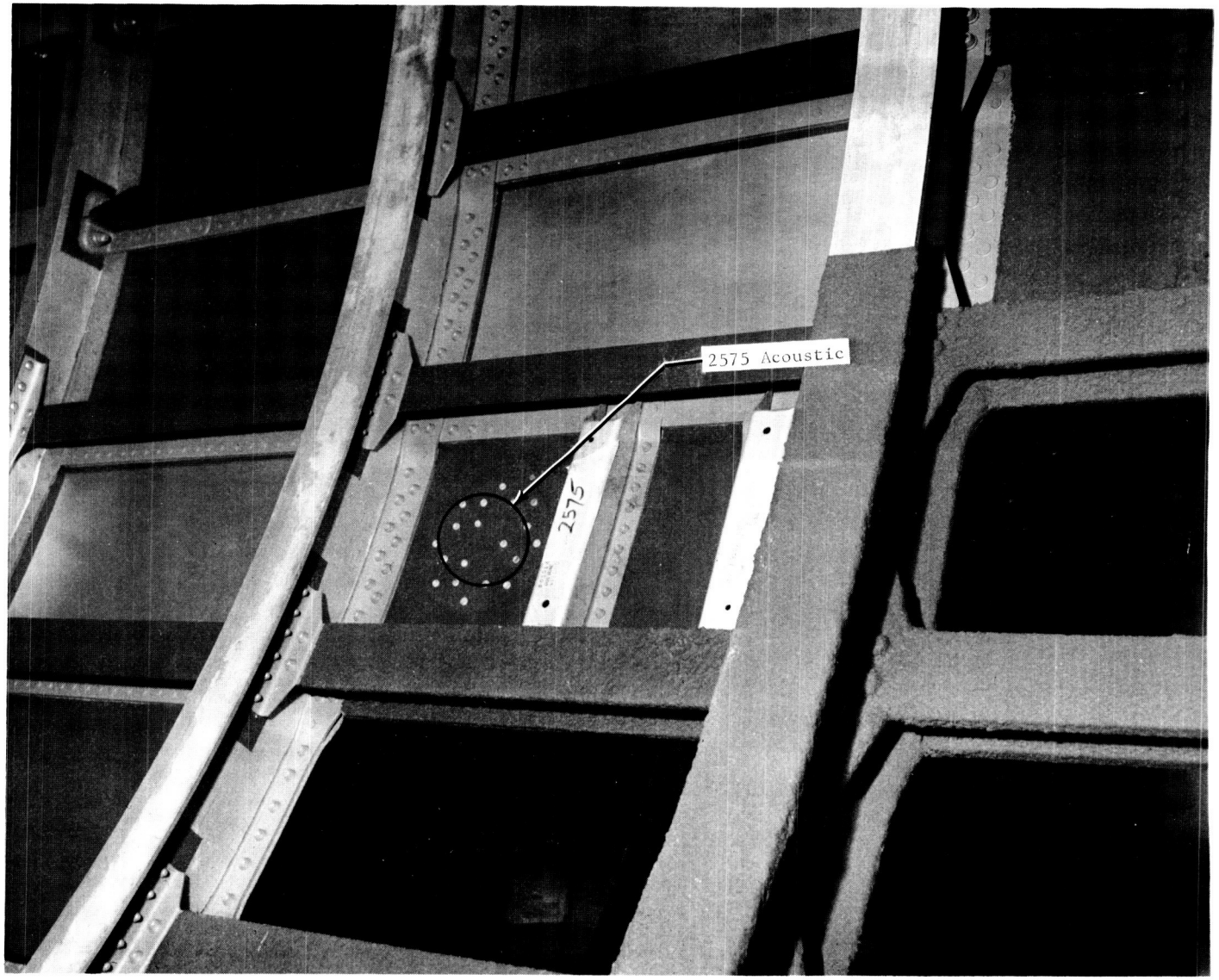


Figure 41. SPL, Compartment 1A, Flush Mounted, Target Side, Sta 567

Figure 42. Compartment 1A Airframe at Solid-State Switch, Sta 508, between Stringers 31 and 32

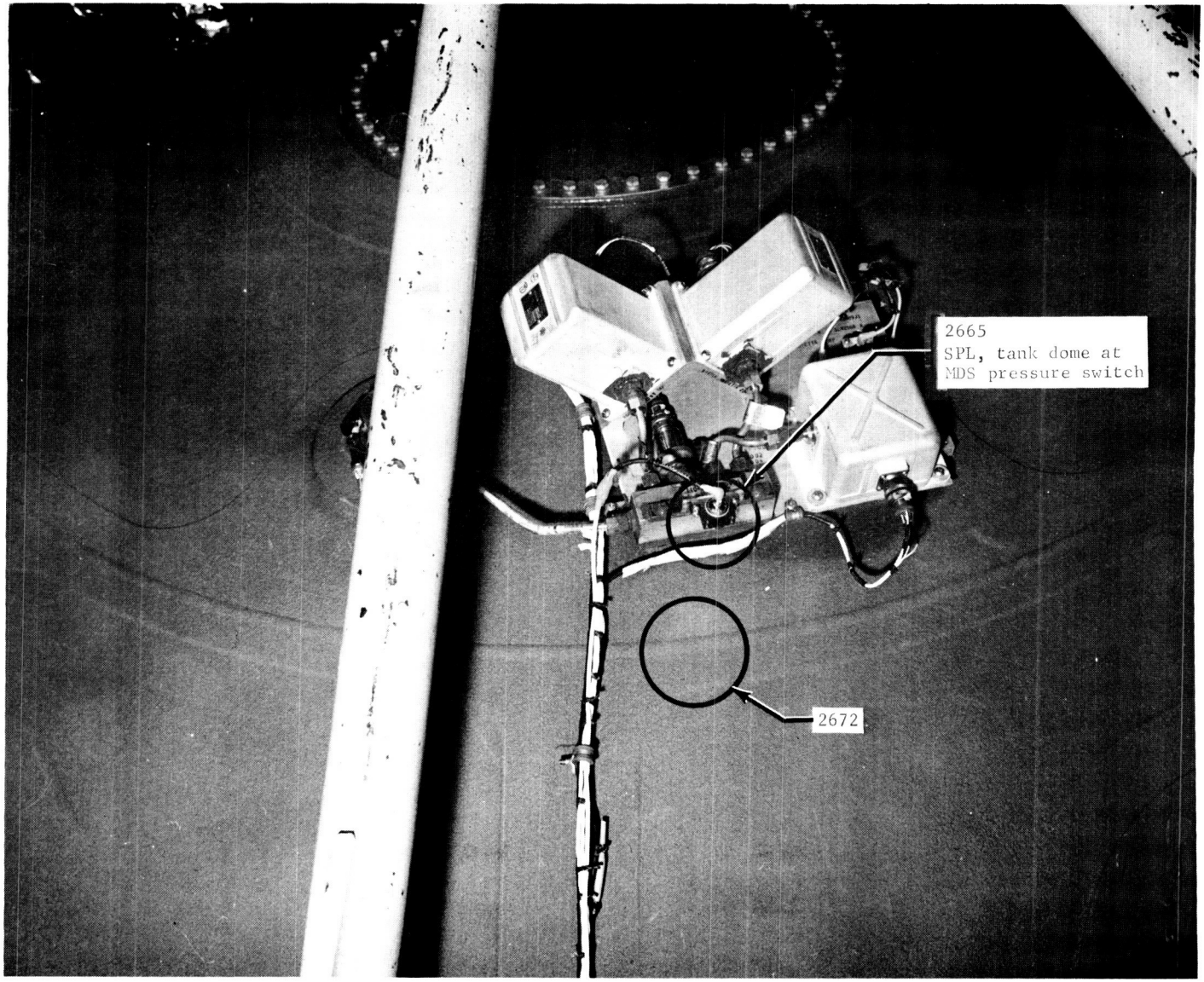


Figure 43. Compartment 1A, Forward Oxidizer Tank Dome

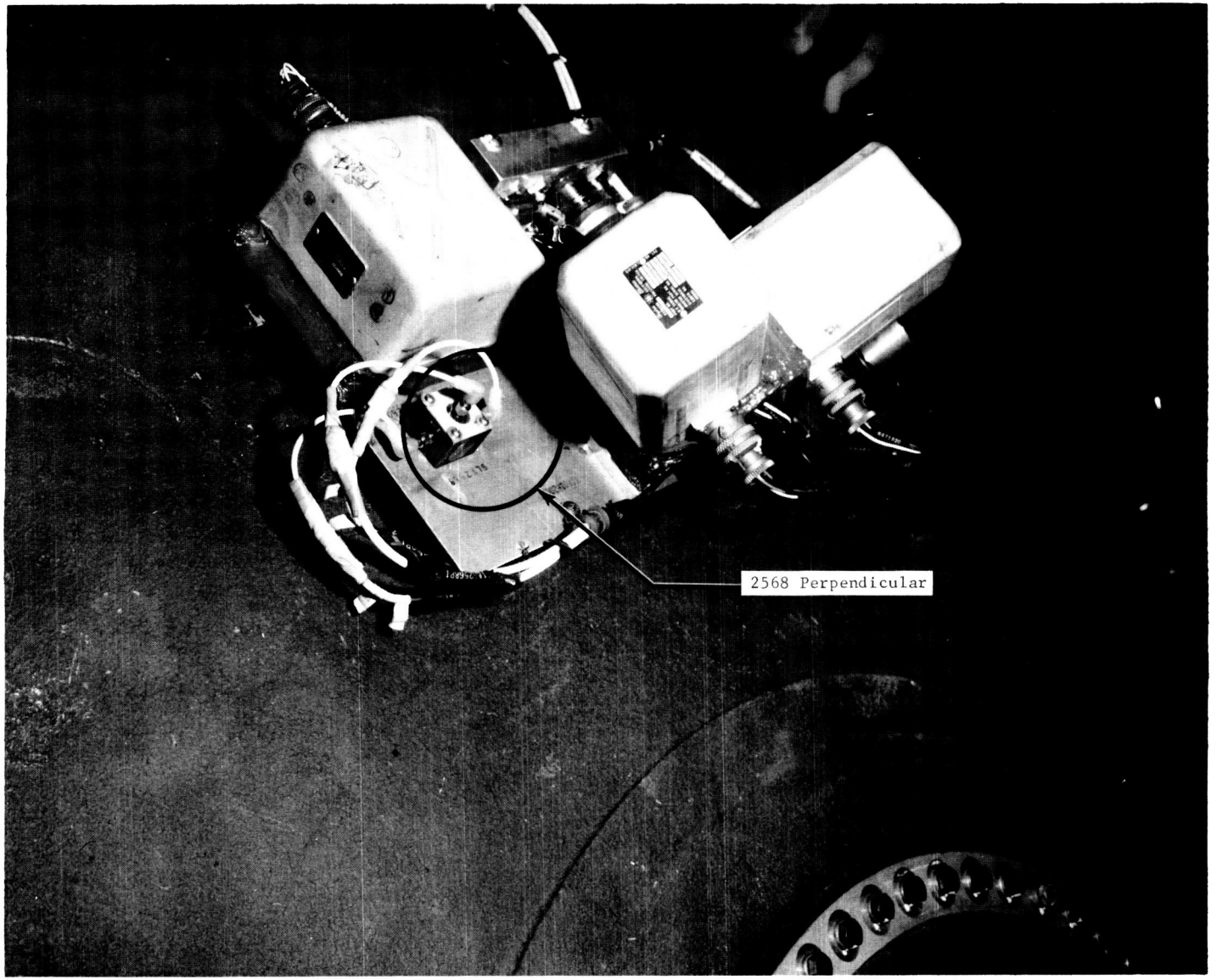


Figure 44. Compartment 1A Tank Dome at MDS Pressure Switch on Plate Welded to Dome

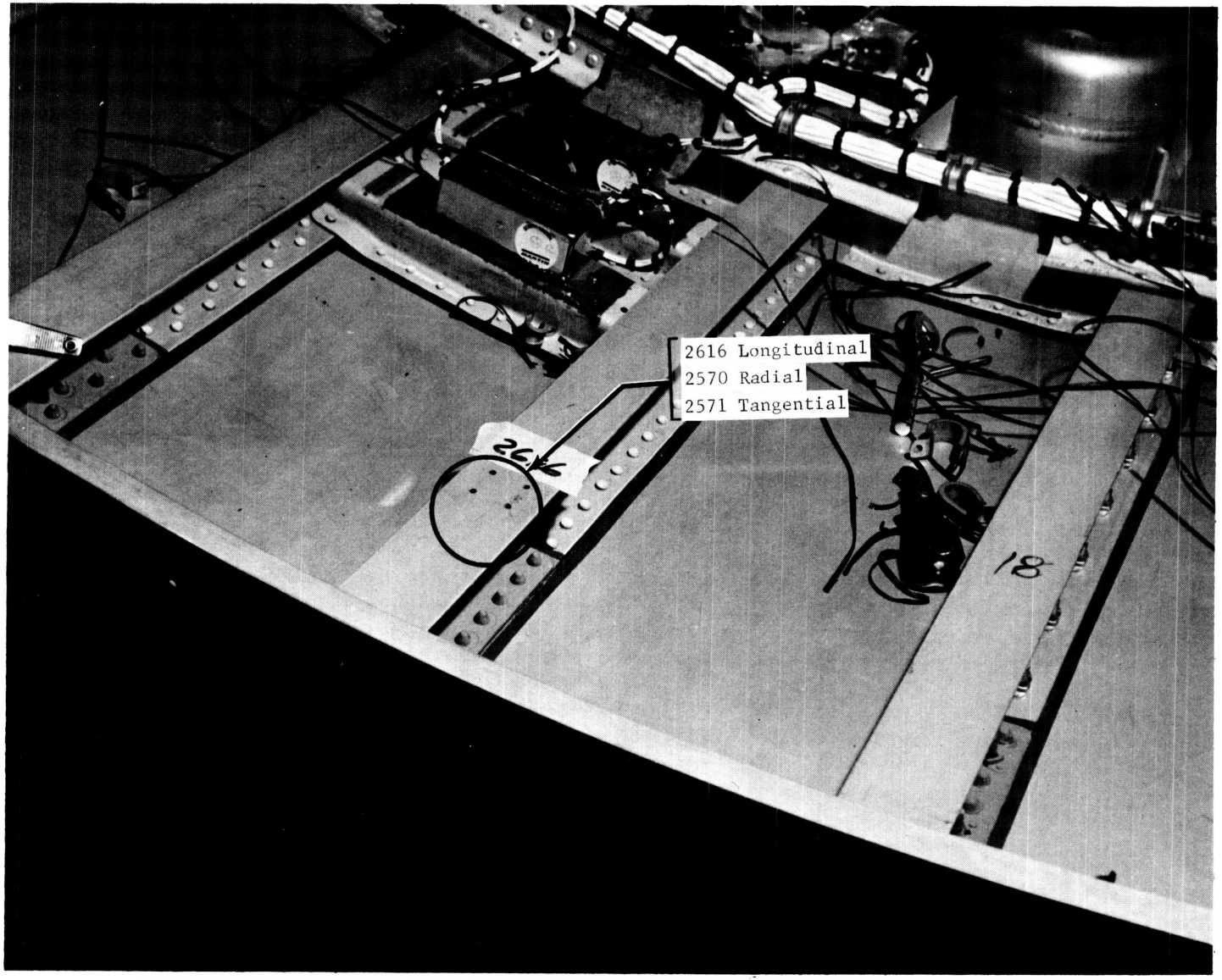


Figure 45. Compartment 1B Airframe at Destruct Battery Mounting on Stringer 17, Sta 929

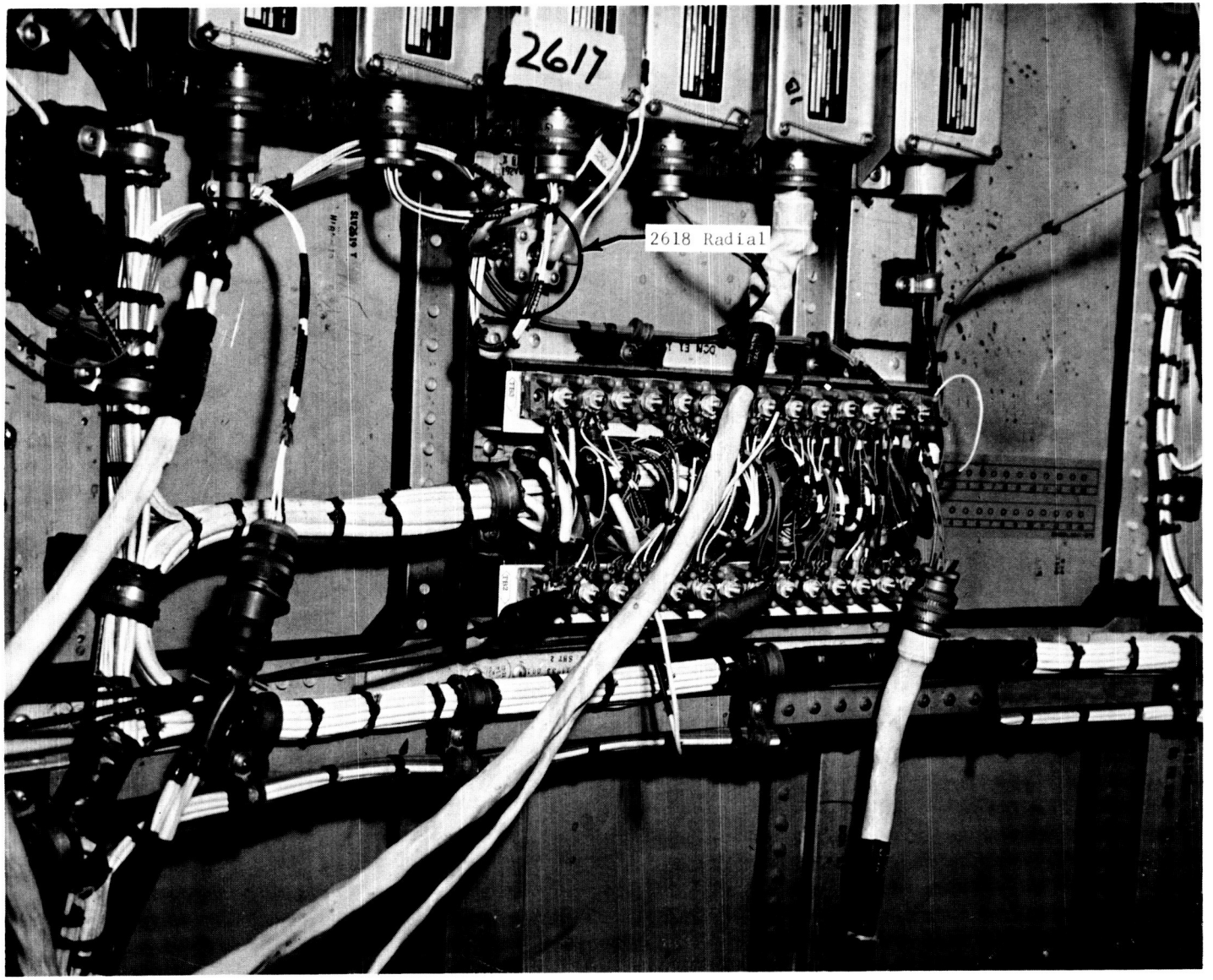


Figure 46. Compartment 1B Airframe at Solid-State Switch Panel Mounting, Stringer 11, Sta 929

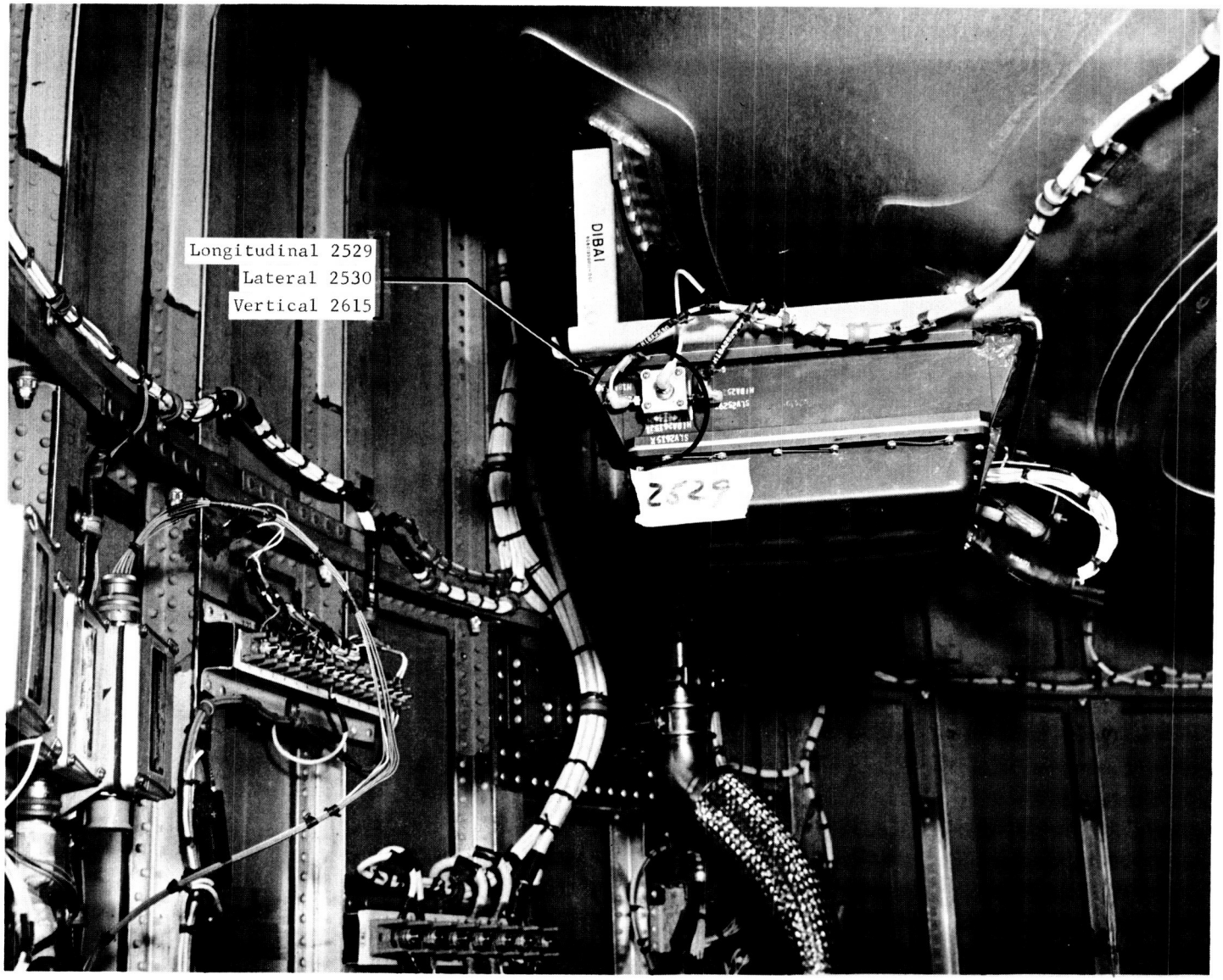


Figure 47. Compartment 1B on Oxidizer Tank Bottom at Rate Gyro Mounting, Side of Gyro Case

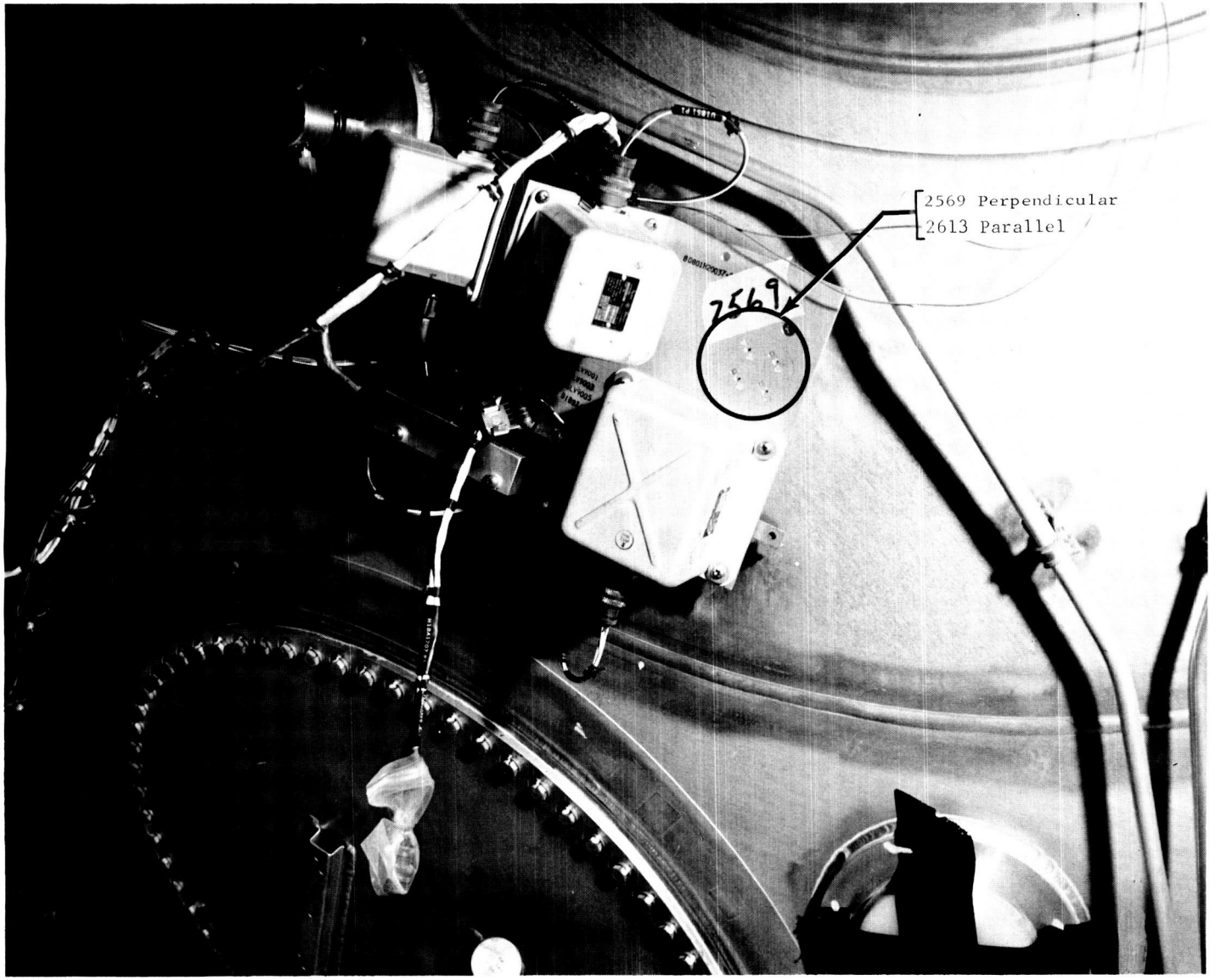


Figure 48. Compartment 1B on Fuel Tank Dome at MDS Underpressure Switch on Plate Welded to Dome

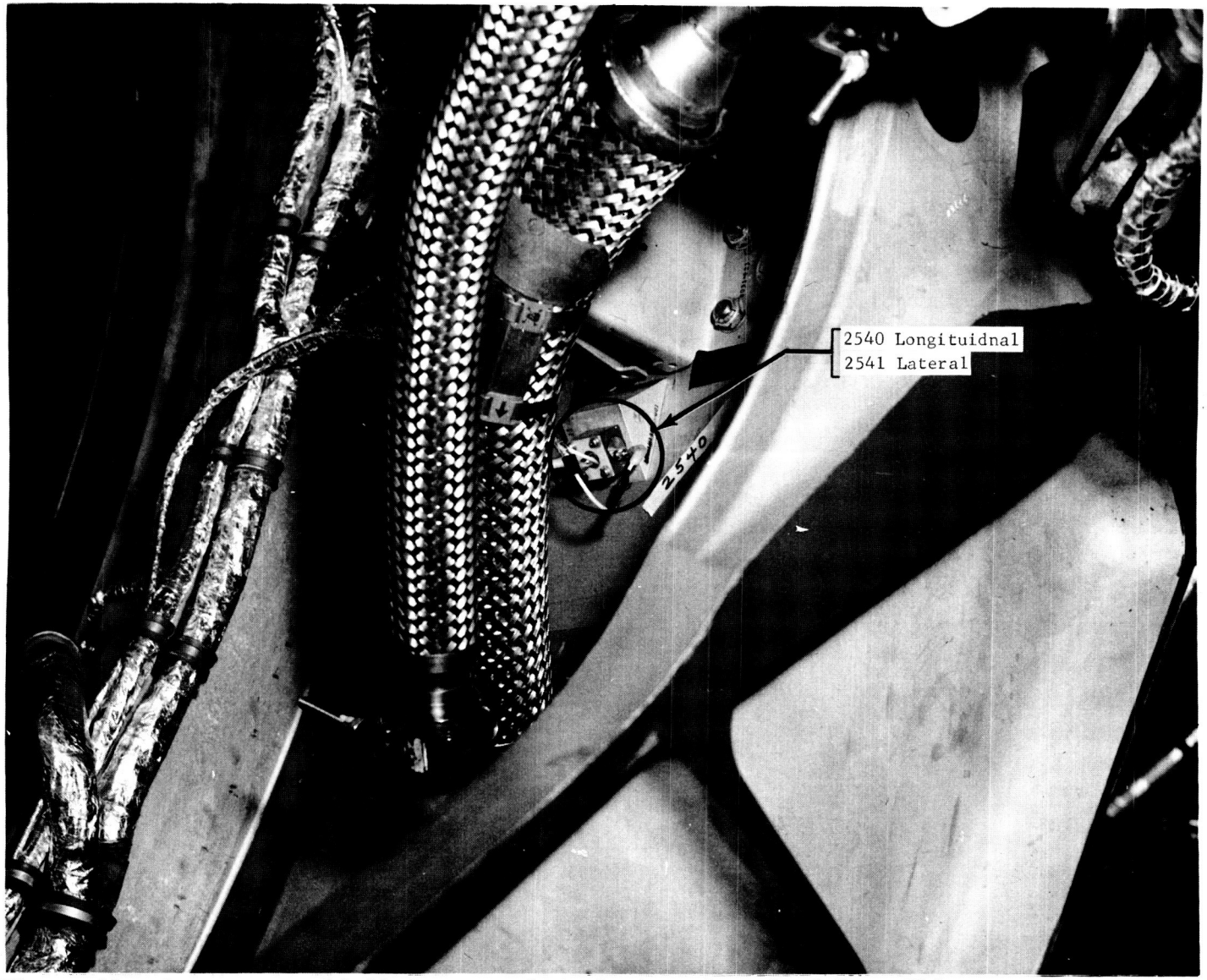


Figure 49. Compartment 1C Airframe at SRM Tie-in Point, Quad I on Skin at Longeron S5A, Sta 1214

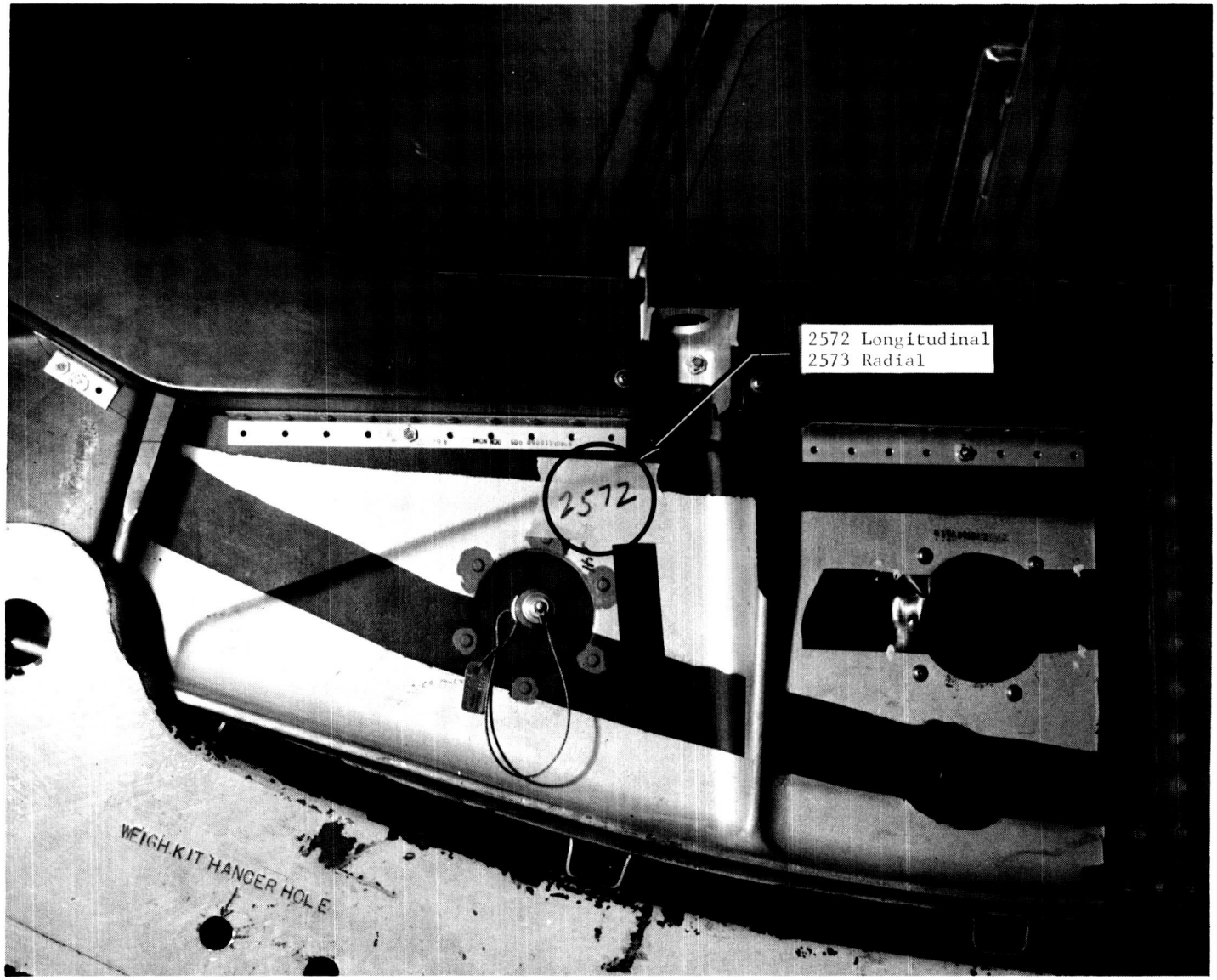


Figure 50. Compartment 1C Airframe at Electrical Staging Disconnect

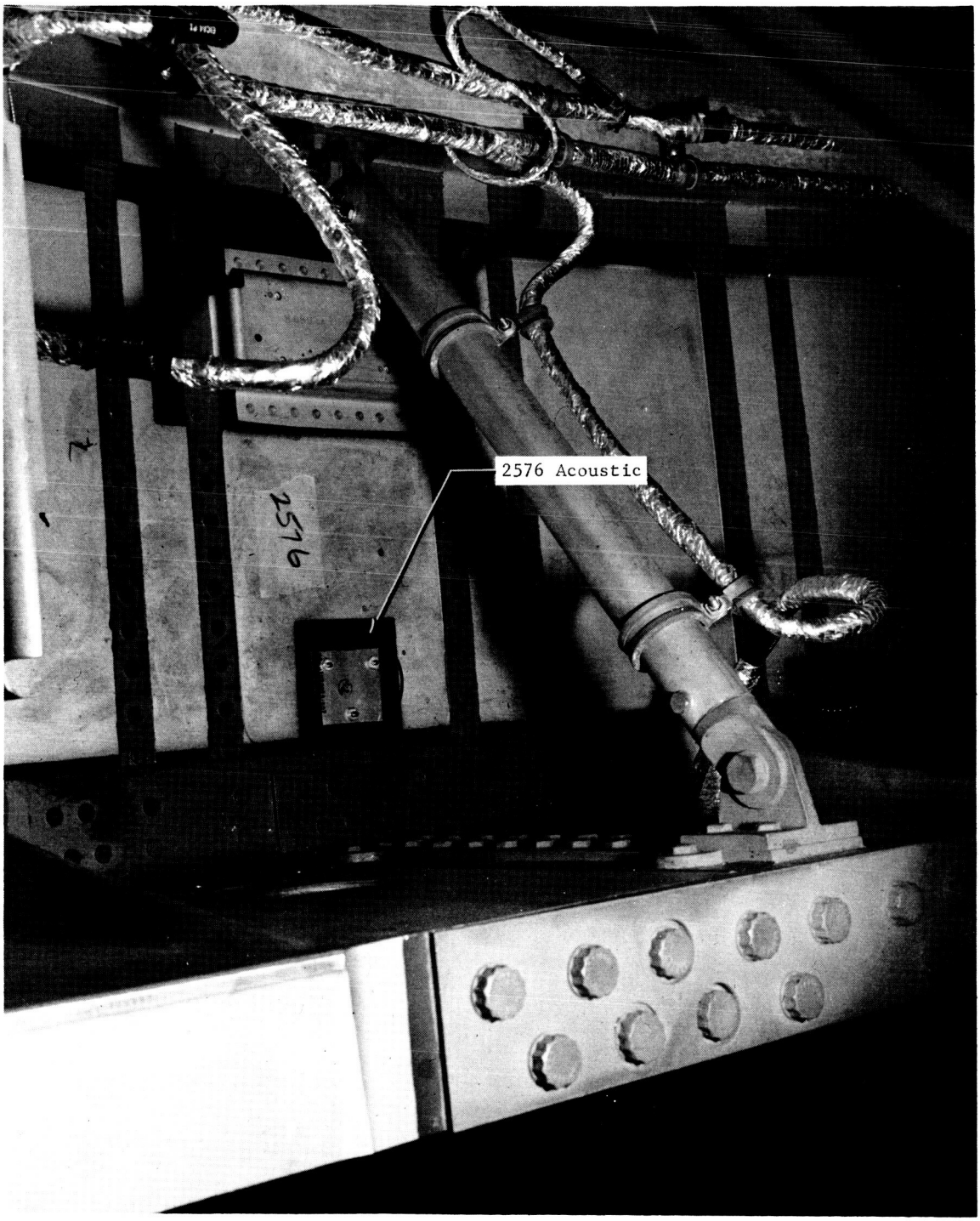


Figure 51. SPL, Compartment 1C, Flush Mounted, Target Side (BL-0), Sta 1219

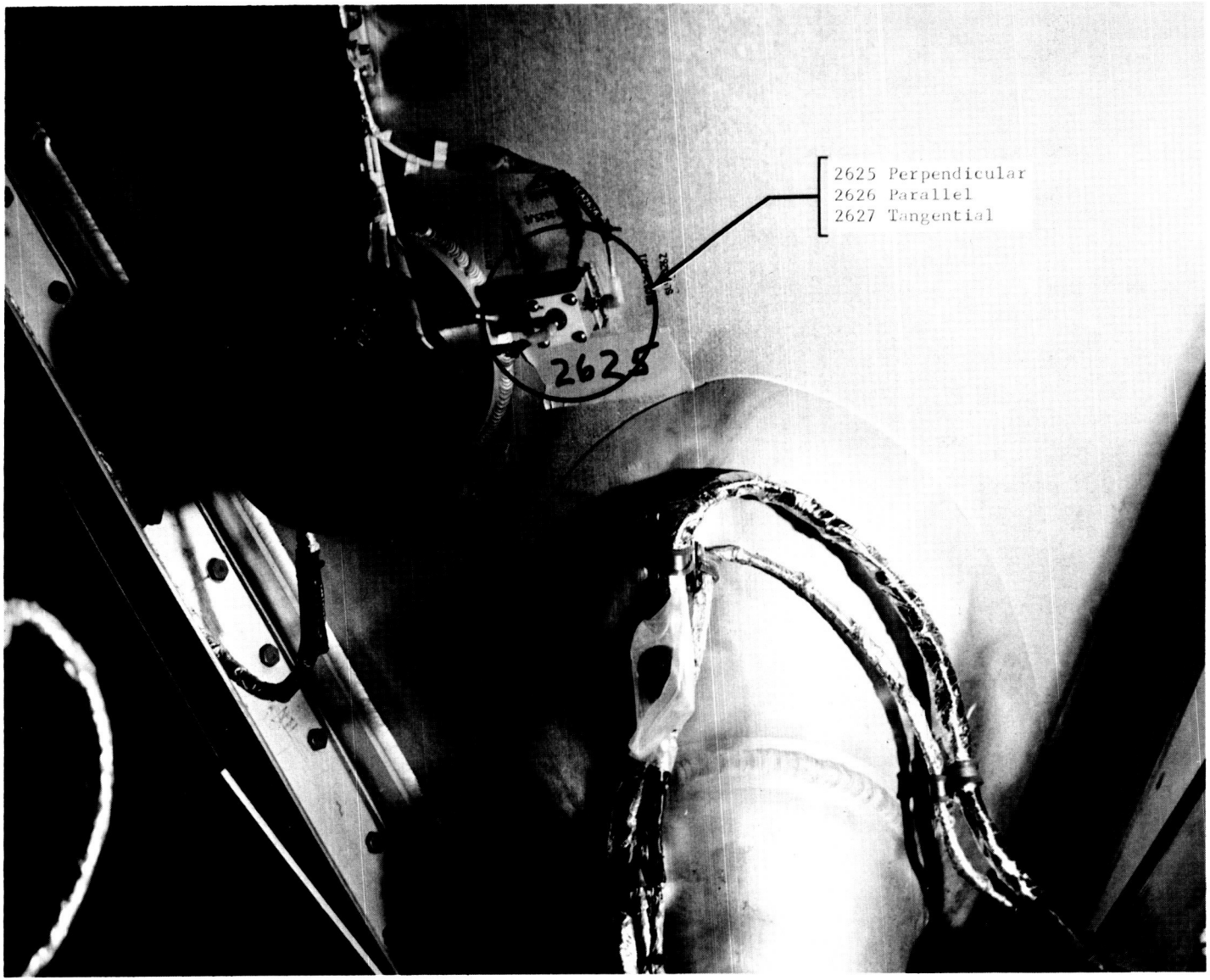


Figure 52. Compartment 1C at Shutdown Sensor in Quad I, Cemented to Bottom

Figure 53. SPL, Compartment 1C, Internal Quad III Near Airframe, Sta 1204

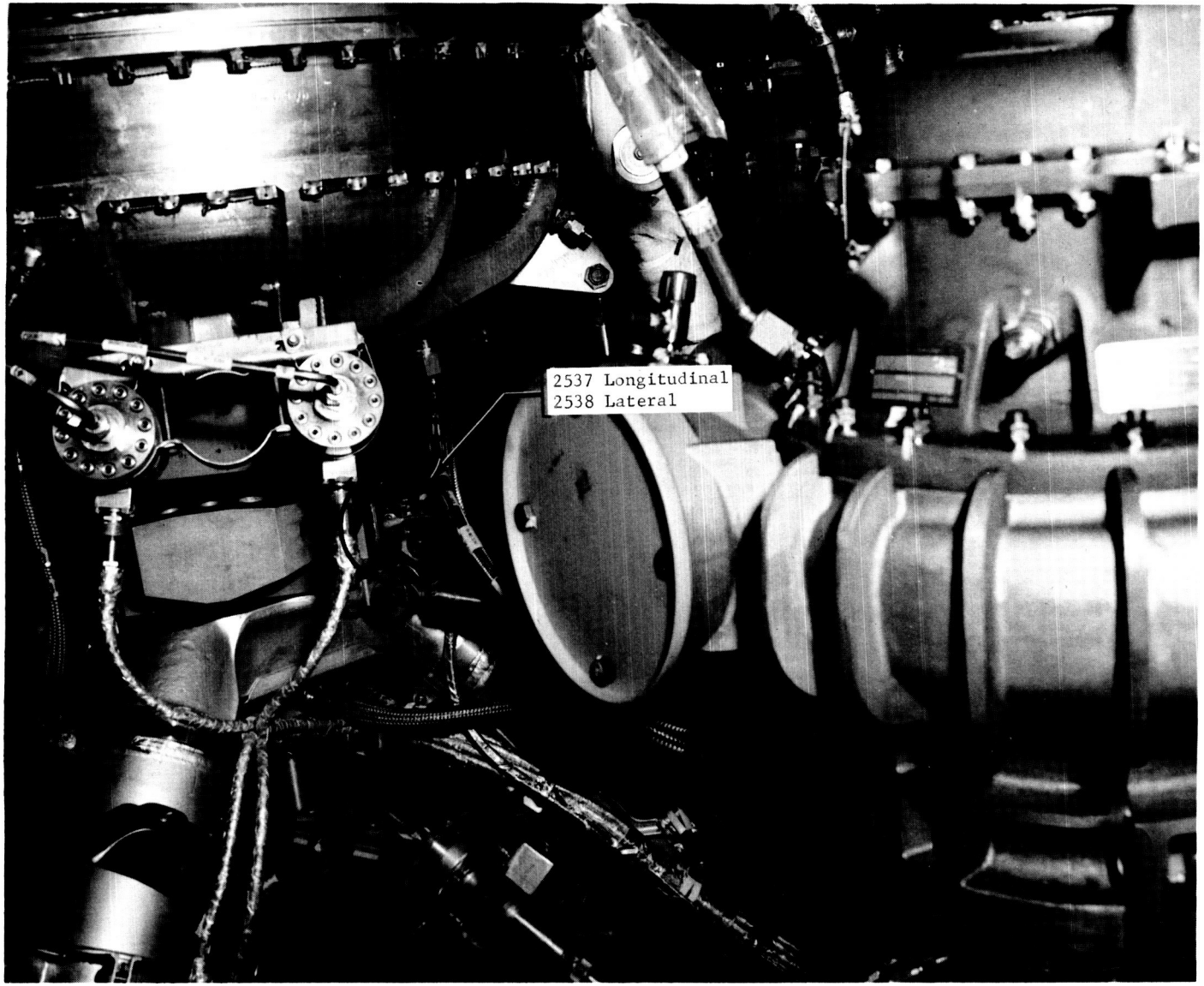


Figure 54. Compartment 1C Engine Subassembly 1 Gimbal Pad

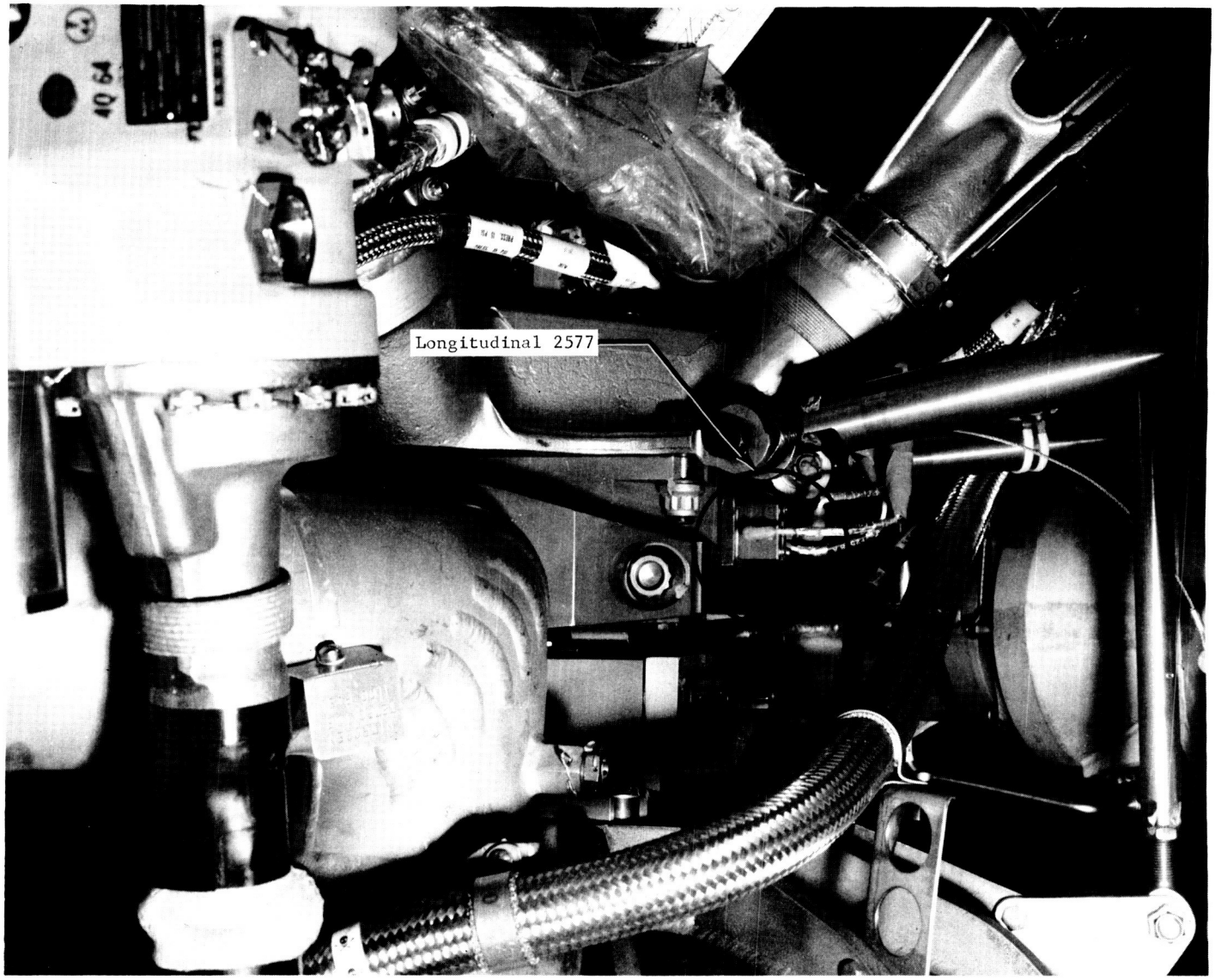
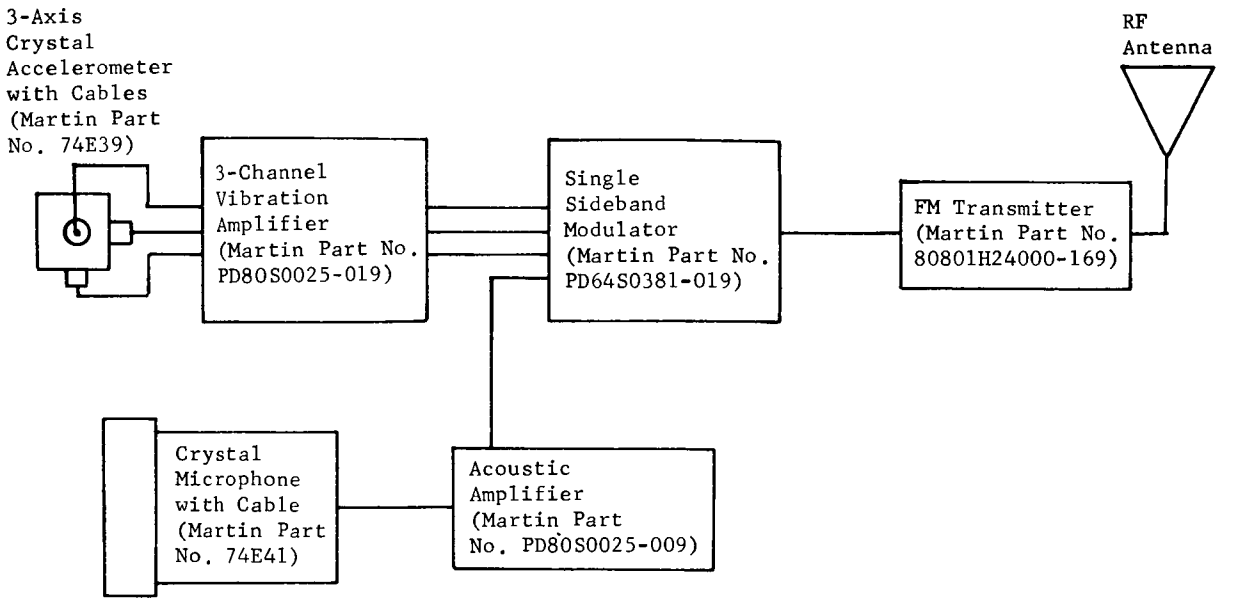
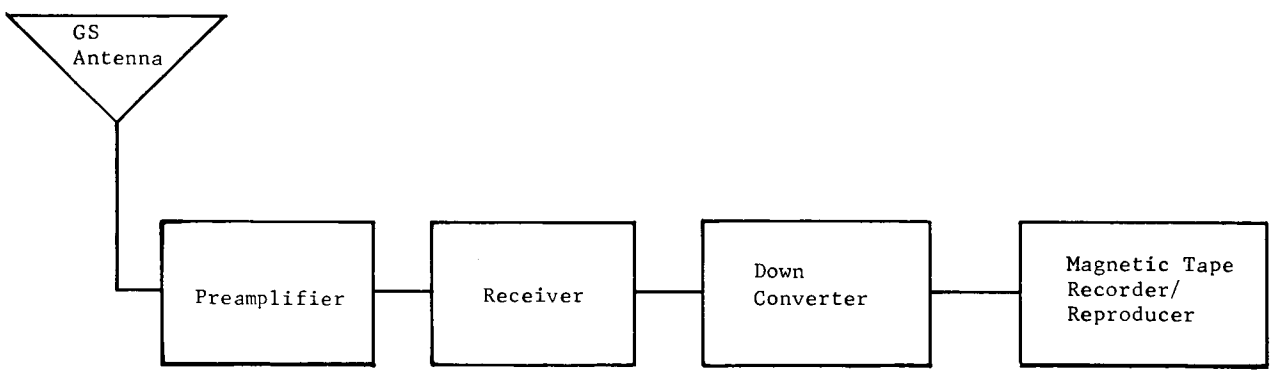


Figure 55. Compartment 1C Engine Subassembly 2 Gimbal Pad



(a) Airborne Vibration and Acoustic Measurement System



(b) Ground Receiving and Recording System

Figure 56. Block Diagrams of Airborne Vibration and Acoustic Measurement System and Ground Receiving and Recording System

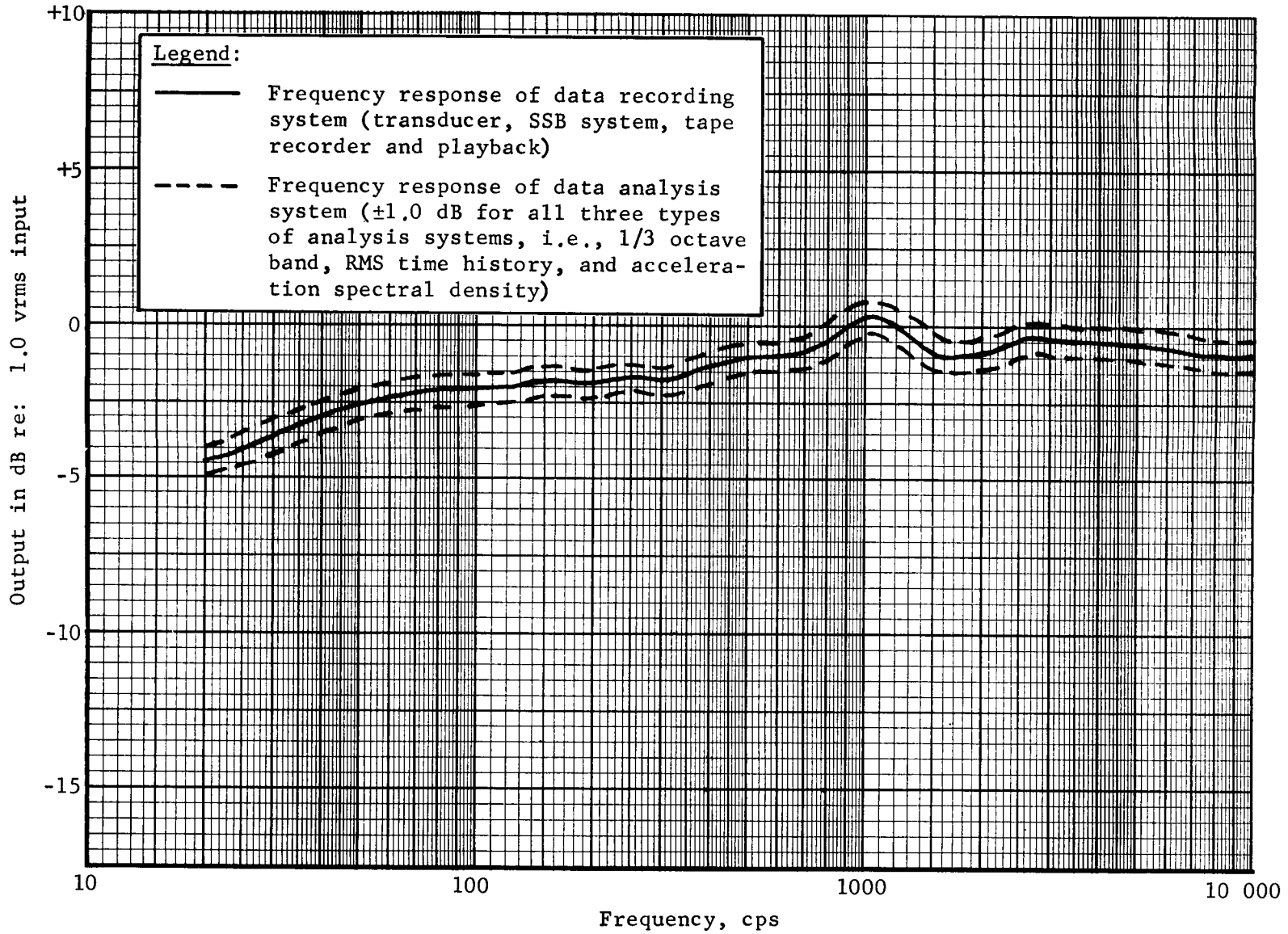


Figure 57. Frequency Response of Typical Accelerometer and Microphone Inputs to Final Data Readout

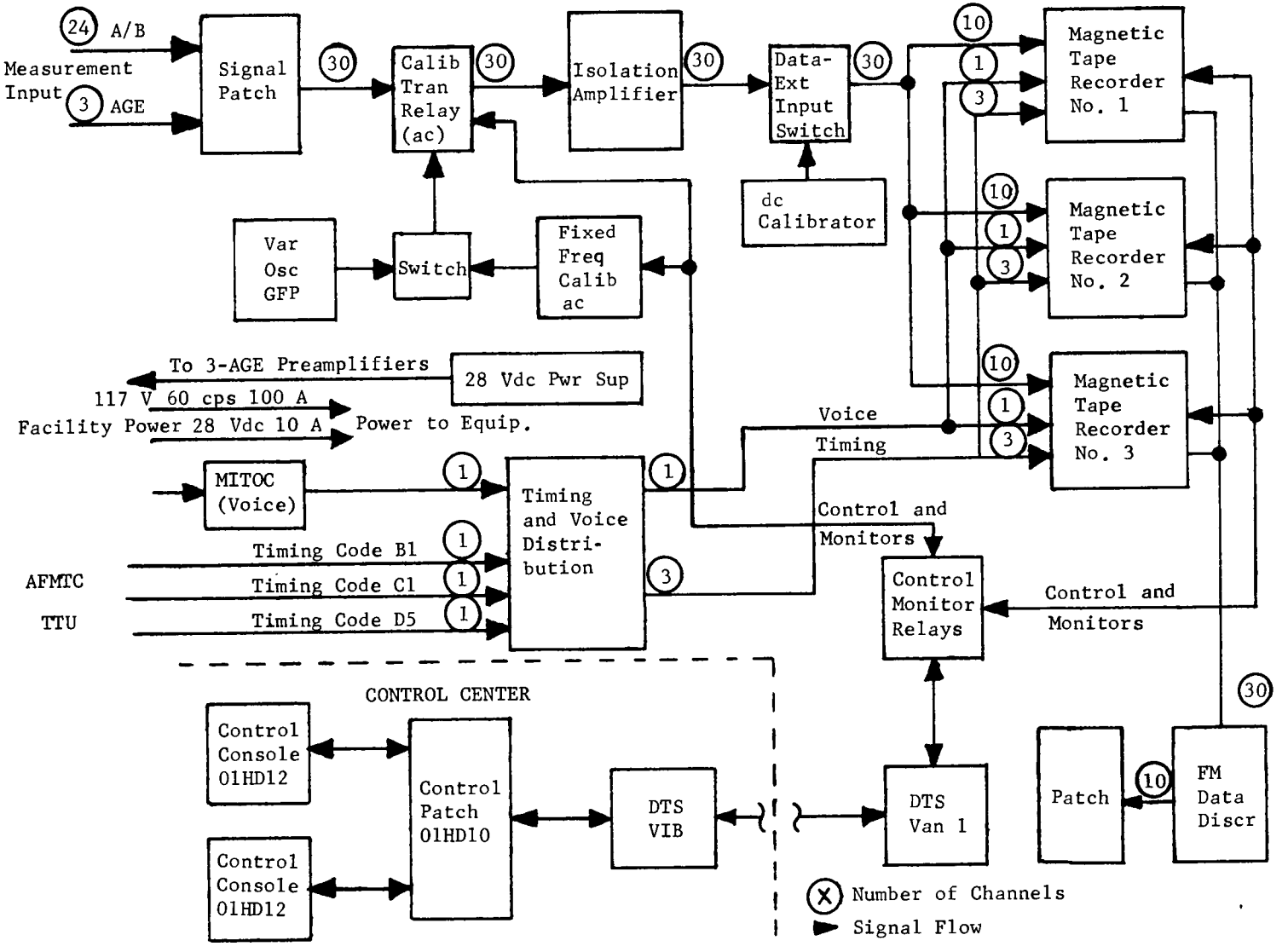


Figure 58. Recorder/Reproducer System, Signal Data (100-ft Flyaway Landline)

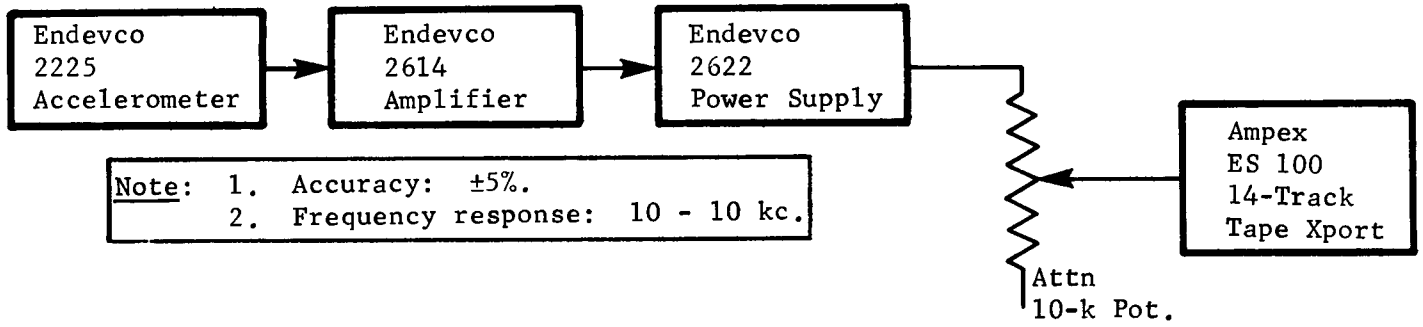


Figure 59. Payload Fairing Separation Shock Test Recording System

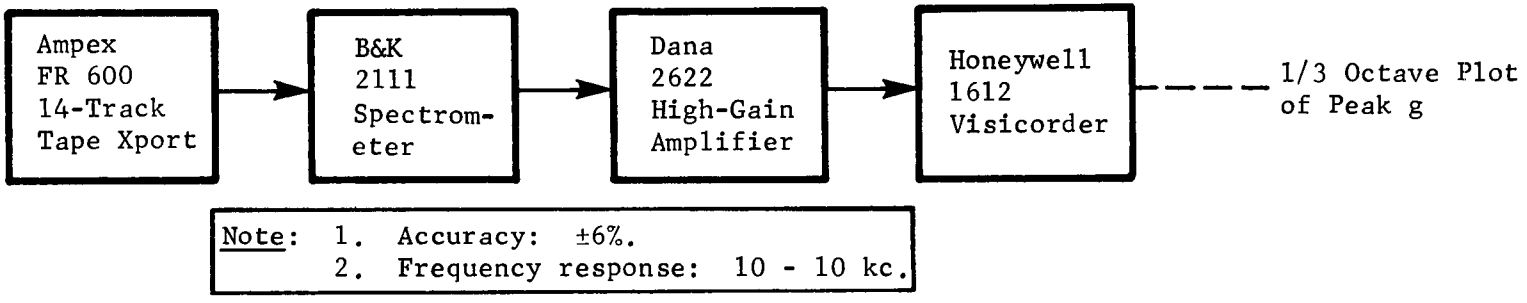
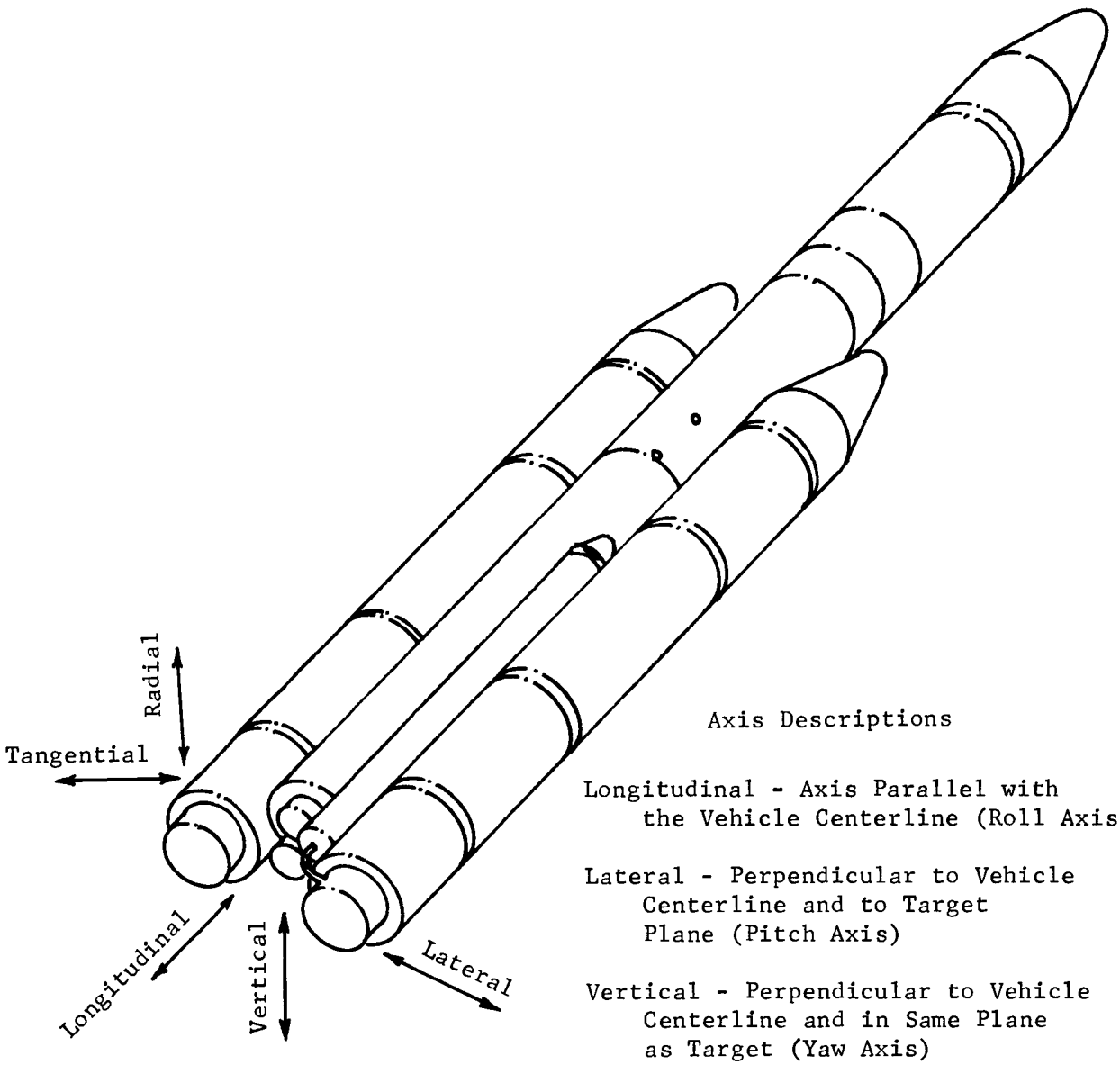


Figure 60. Payload Fairing Separation Shock Test Playback System



Axis Descriptions

Longitudinal - Axis Parallel with the Vehicle Centerline (Roll Axis)

Lateral - Perpendicular to Vehicle Centerline and to Target Plane (Pitch Axis)

Vertical - Perpendicular to Vehicle Centerline and in Same Plane as Target (Yaw Axis)

Radial - Any Axis Perpendicular to the Vehicle Centerline and Perpendicular to the Circumference of the Vehicle

Tangential - Any Axis Perpendicular to the Vehicle Centerline and Tangent to the Circumference of the Vehicle

Figure 61. Orientation of Axes for Titan III Vibration Measurements

Perpendicular - An Axis Perpendicular to the Dome Skin at the Accelerometer Mounting

Parallel - Any Axis in a Radial Plane and Tangent to the Dome

Tangential - Any Axis Perpendicular to a Radial Plane and Tangent to the Dome

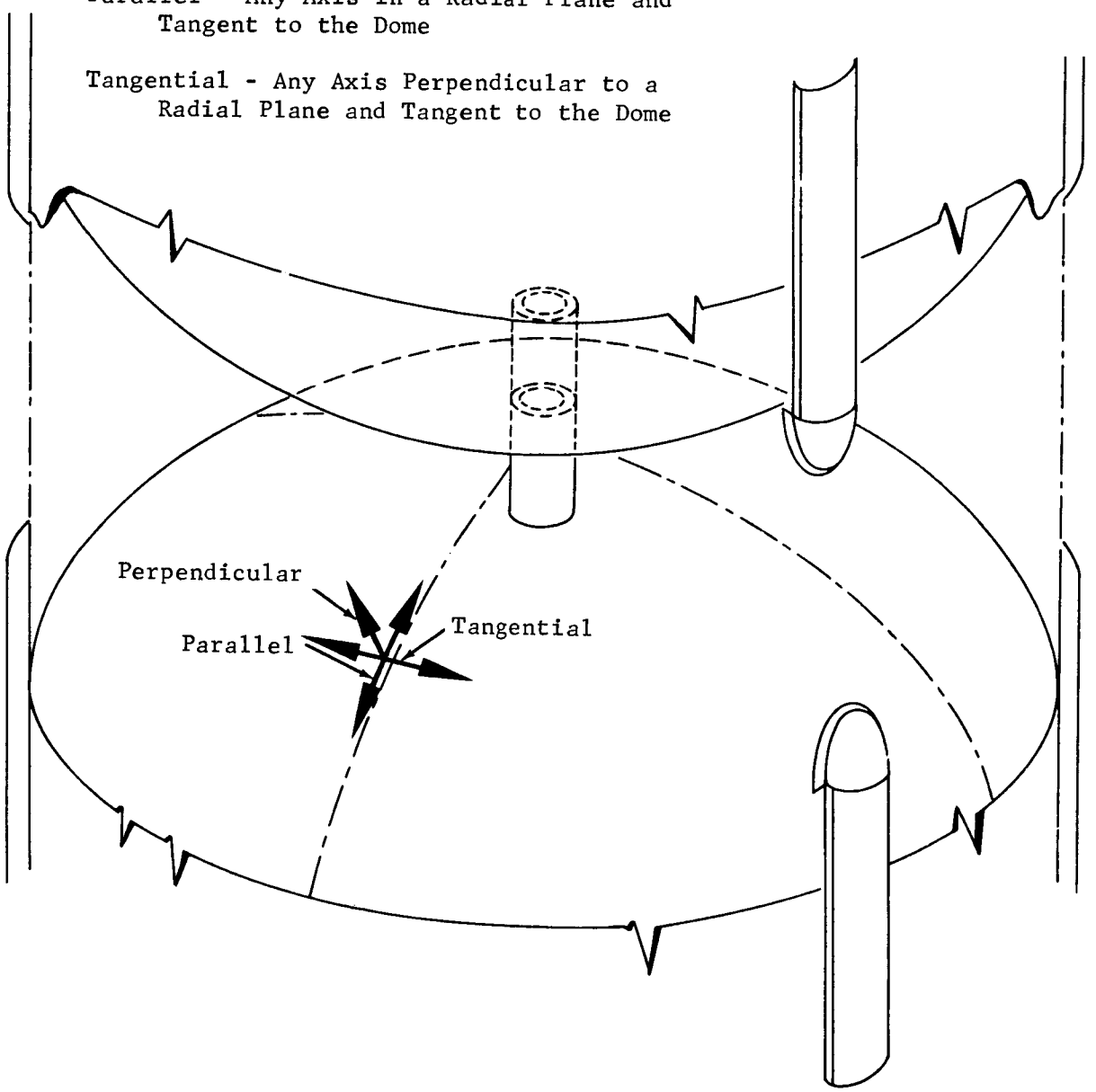


Figure 62. Orientation of Axes for Titan III Vibration Measurements, Tank Tops and Bottoms

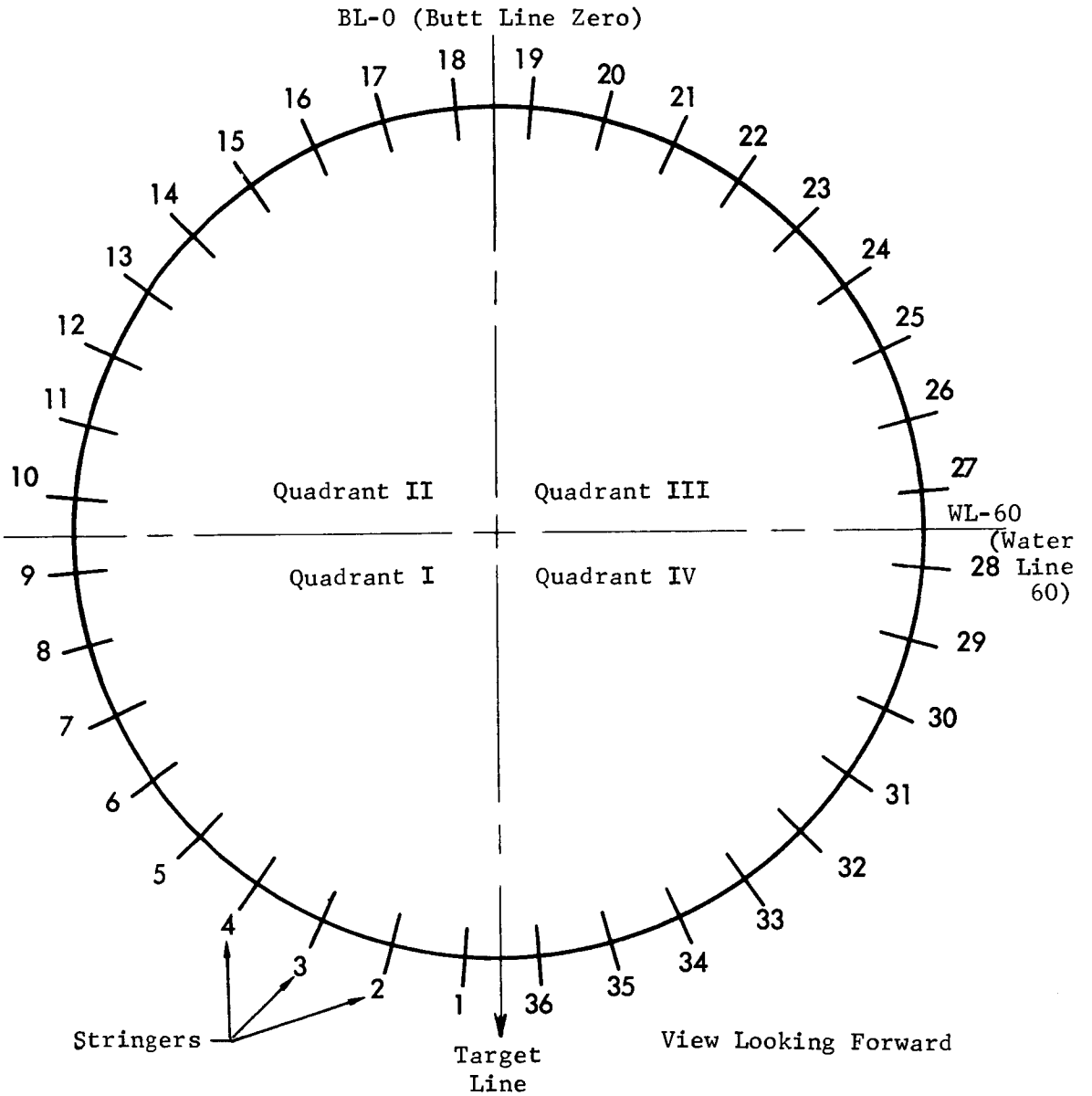


Figure 63. Titan III Vehicle Quadrant and Stringer Designations

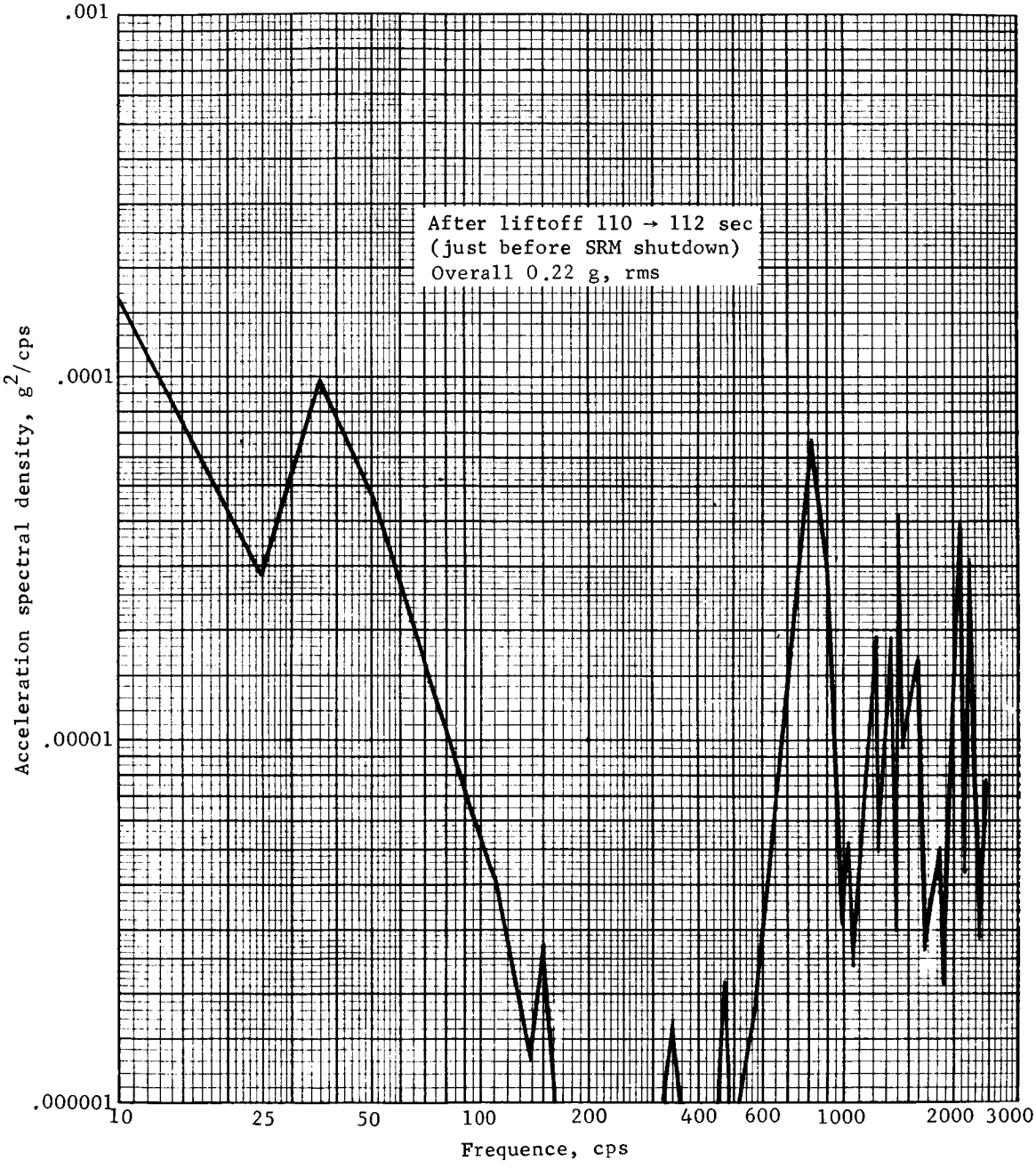
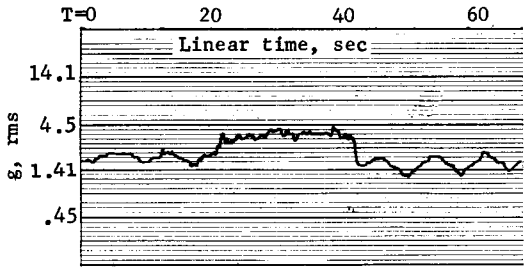
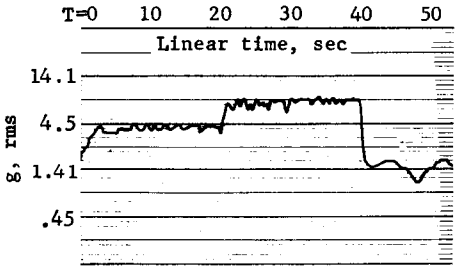


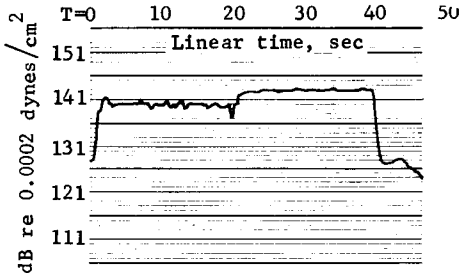
Figure 64. Measurement 2637, 3A Guidance Truss at Autopilot Mounting, Longitudinal Axis, Vehicle 8 Flight



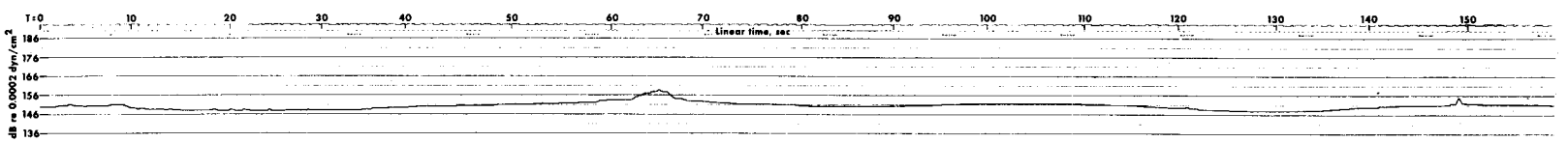
(a) Measurement 2551, Vibration, Structure Mounting Point Pitch ACS Nozzle, Longitudinal, Compartment 3A, Sta 130, BL-0 between Stringer 1C and 28C, Vehicle 1 SCF



(b) Measurement 2552, Vibration Structure Mounting Point of Pitch ACS Nozzle, Radial, Compartment 3A, Sta 130, BL-0 between Stringers 1C and 28C, Vehicle 1 SCF



(c) Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 1 SCF



(d) Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 1

Figure 65.

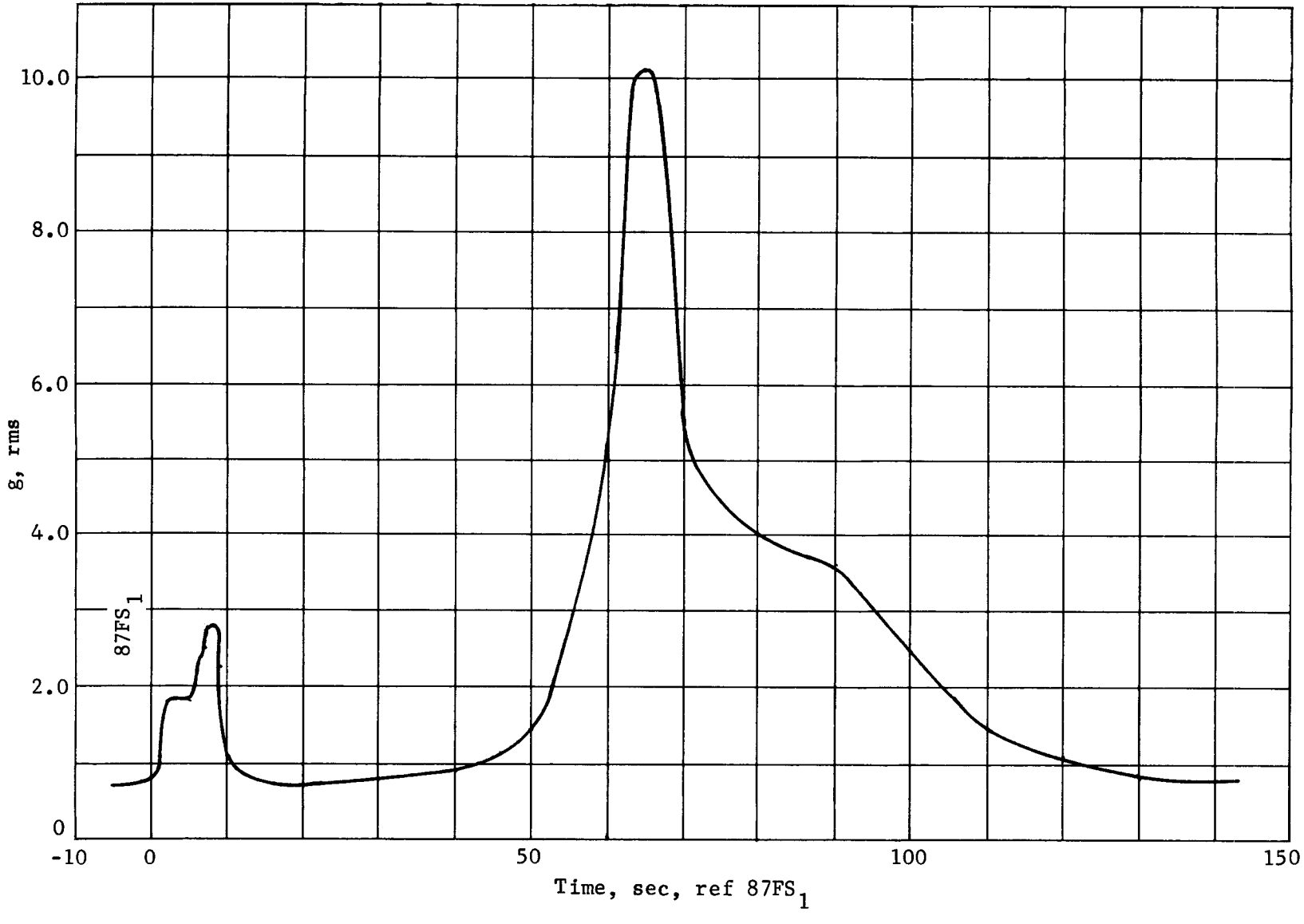


Figure 66. Measurement 2653, 3A Structure at Mounting Point of Roll-Yaw ACS Nozzle, rms/History, Longitudinal Axis, Vehicle 1 Flight

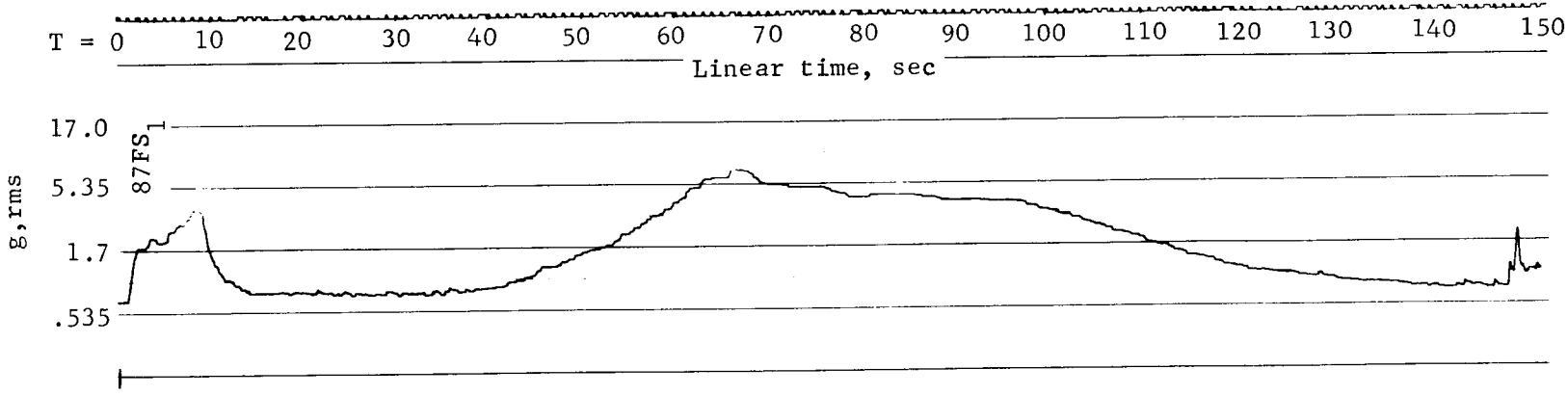


Figure 67. Measurement 2653, Vibration, Structure Mounting Point of Roll-Yaw ACS Nozzle, Longitudinal, Compartment 3A, Sta 124, WL-60R, Vehicle 6 Flight

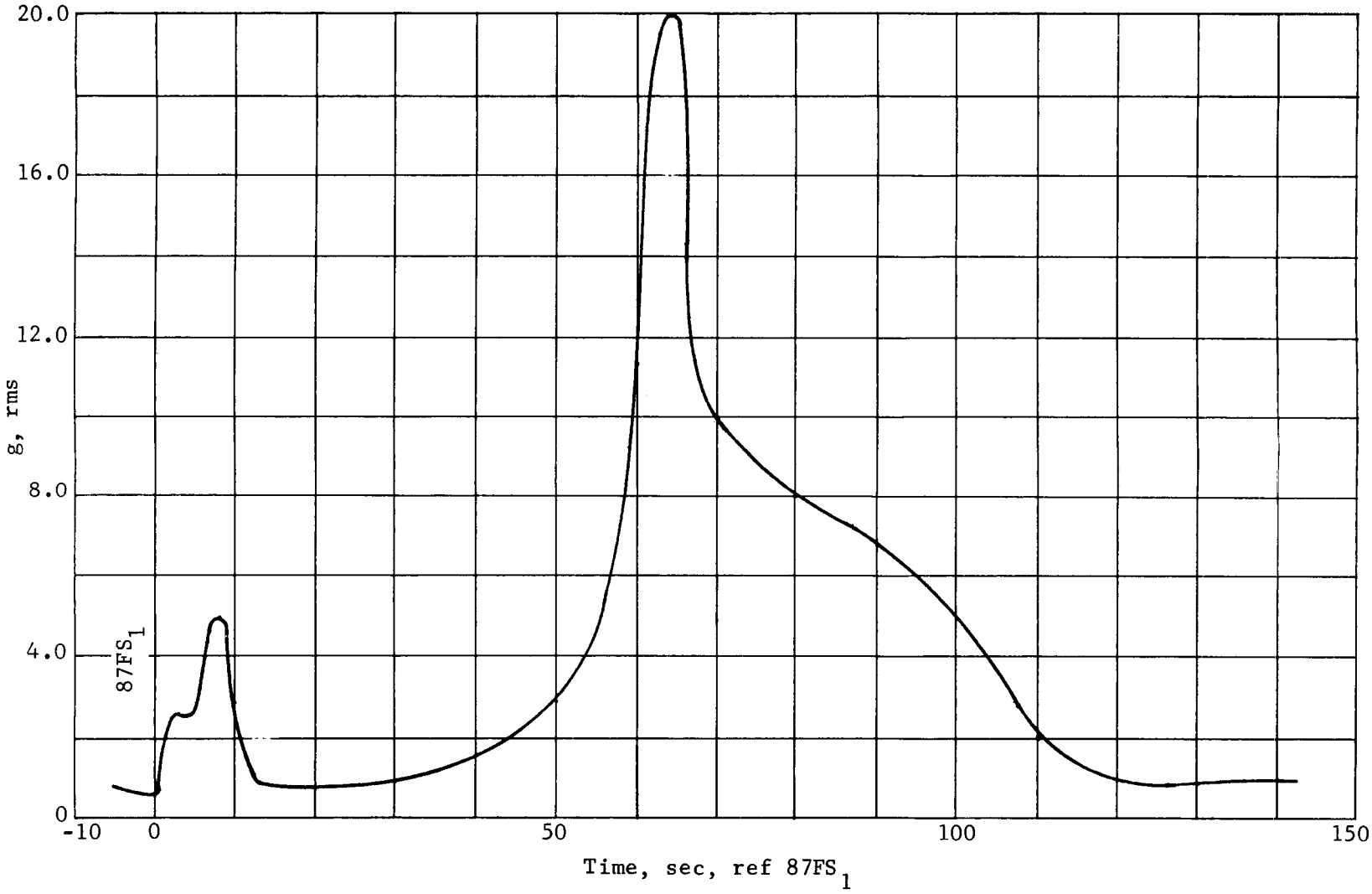


Figure 68. Measurement 2654, 3A Structure at Roll-Yaw ACS Nozzle, rms/History, Radial Axis, Vehicle 1 Flight

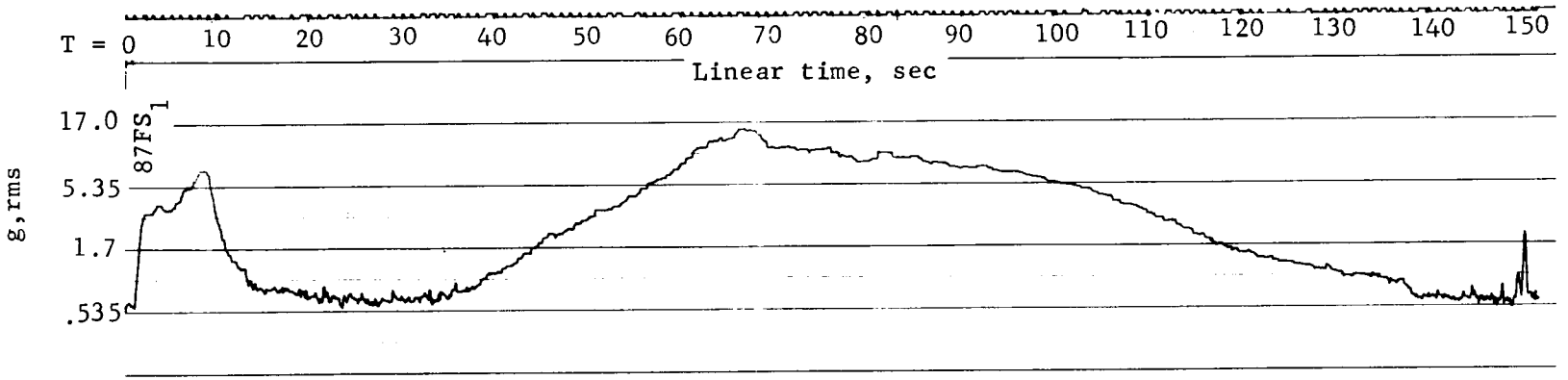


Figure 69. Measurement 2654, Vibration, Structure Mounting Point of Roll-Yaw ACS Nozzle, Radial, Compartment 3A, Sta 124, WL-60R, Vehicle 6 Flight

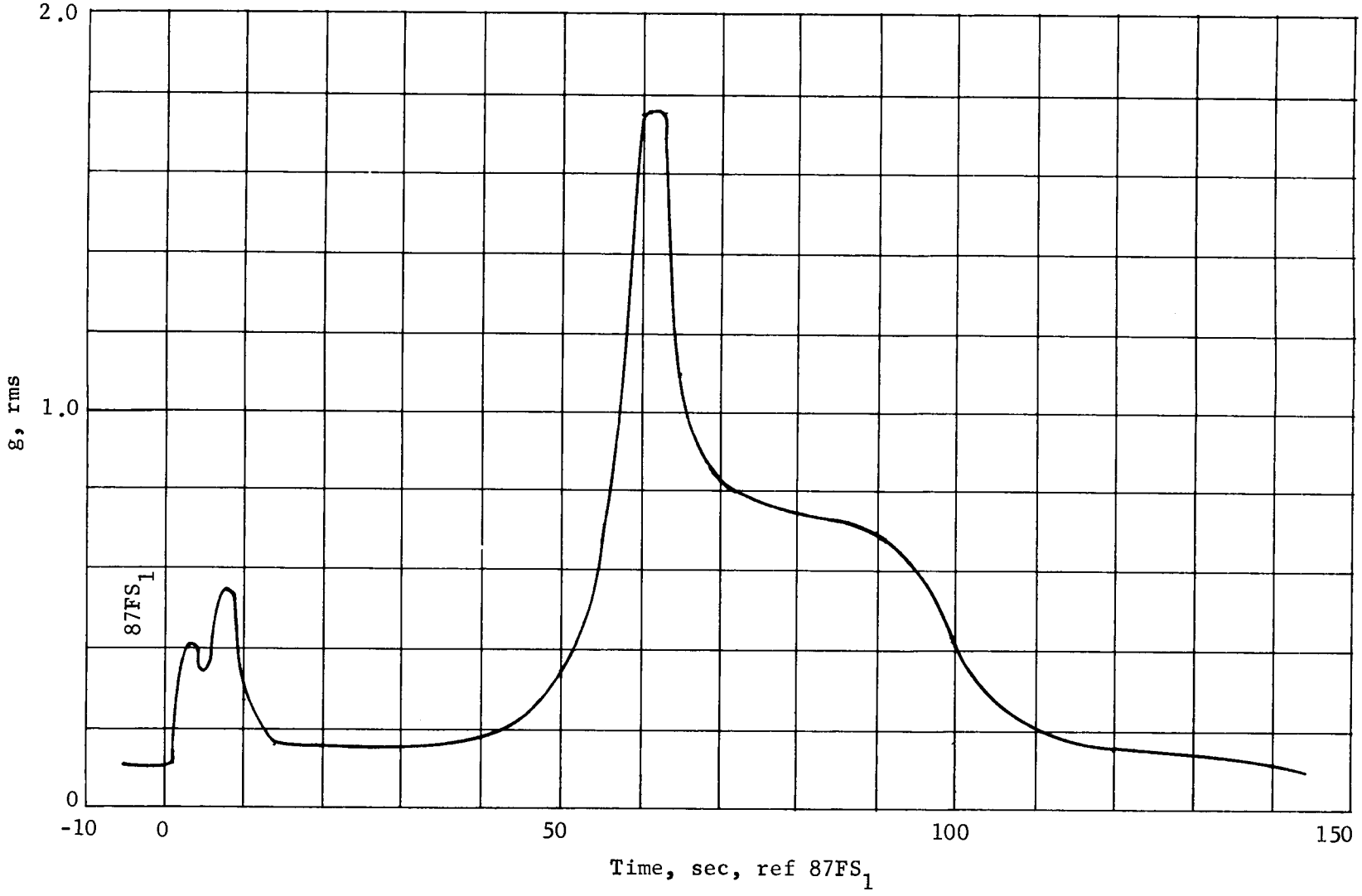


Figure 70. Measurement 2555, 3A Guidance Truss between IMU and MGC, rms/History, Longitudinal Axis, Vehicle 3 Flight

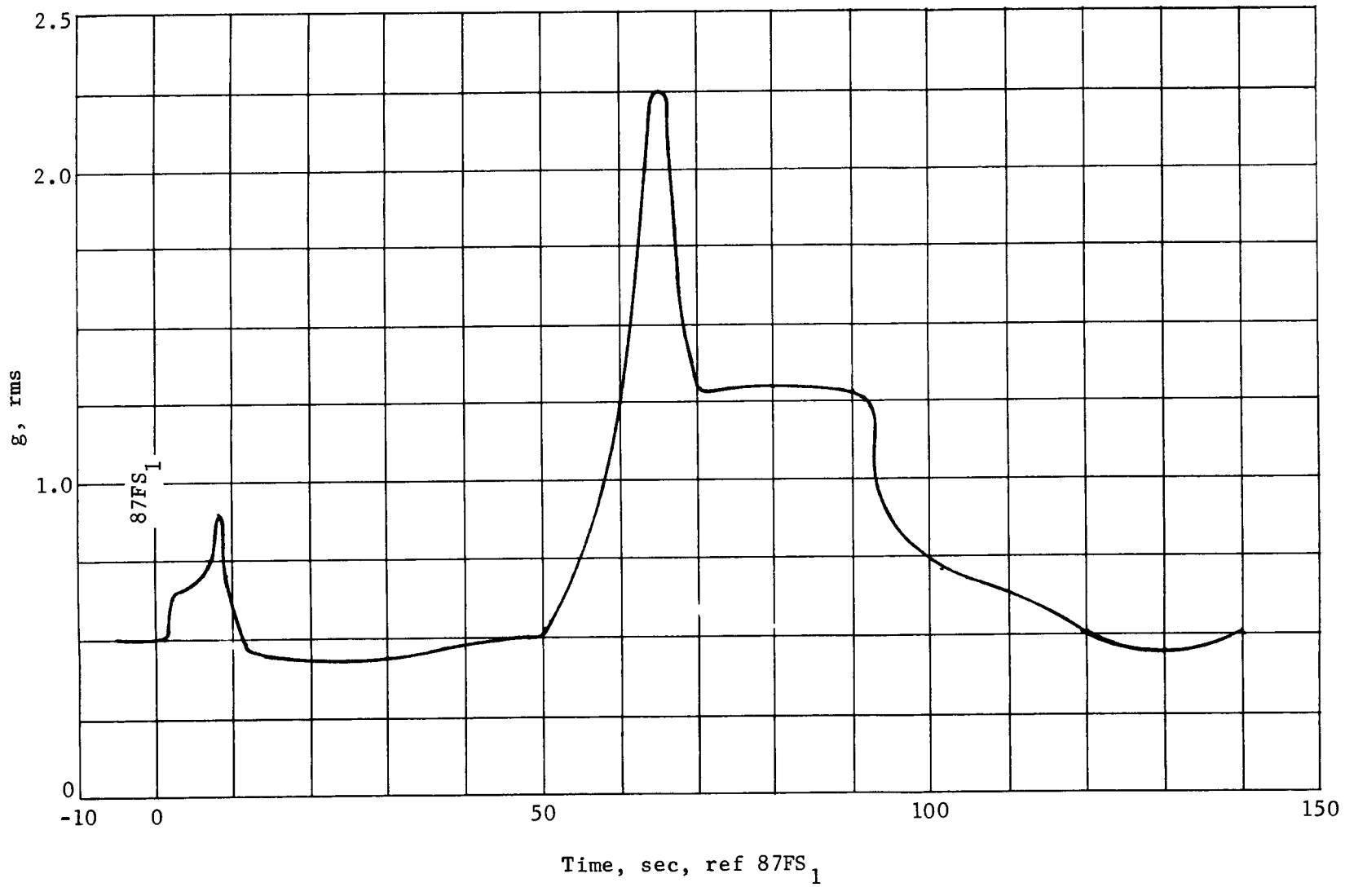


Figure 71. Measurement 2556, 3A Guidance Truss between IMU and MGC, rms/History, Vertical Axis, Vehicle 1 Flight

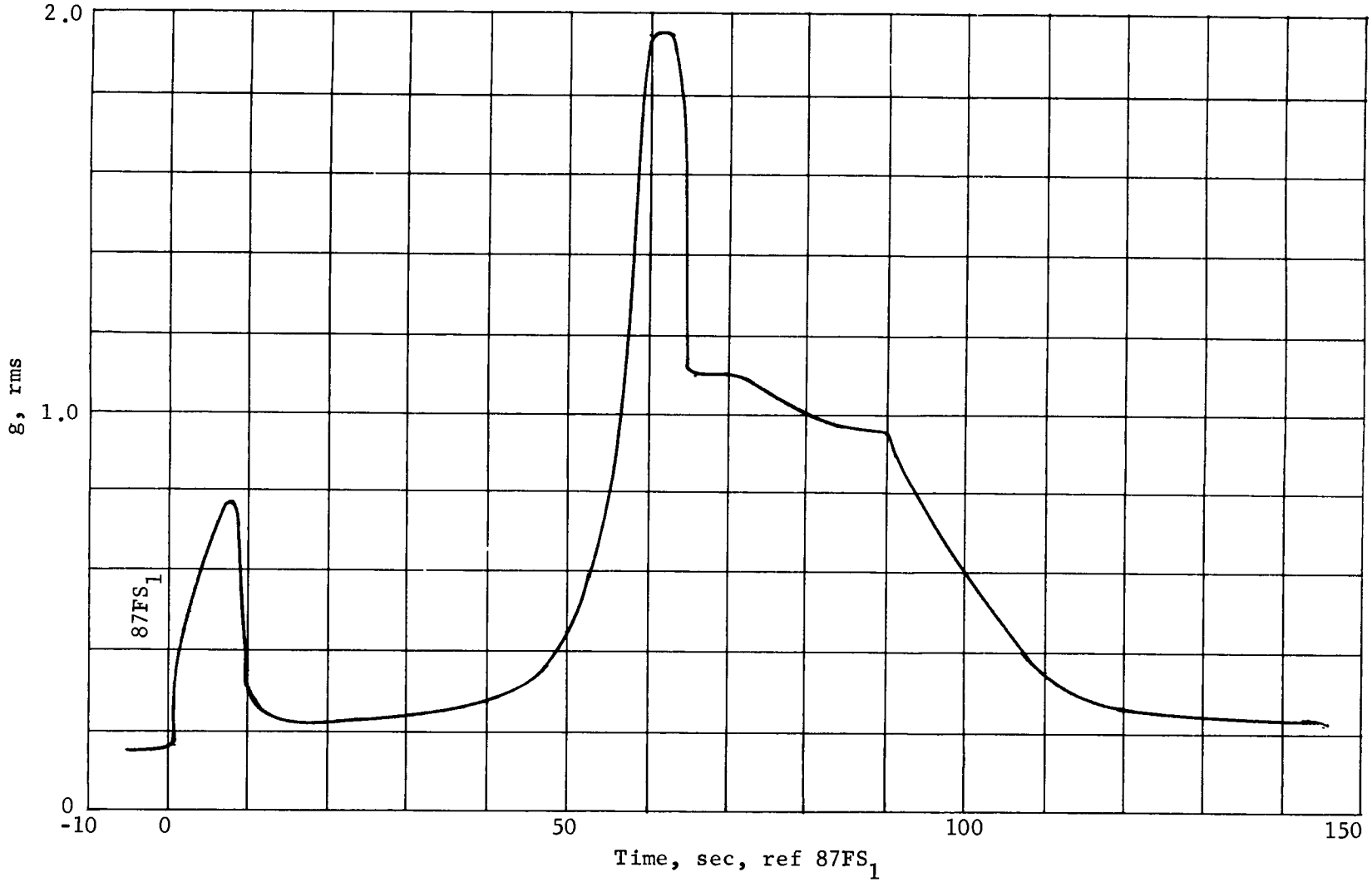


Figure 72. Measurement 2556, 3A Guidance Truss between IMU and MGC, rms/History, Vertical Axis, Vehicle 3 Flight

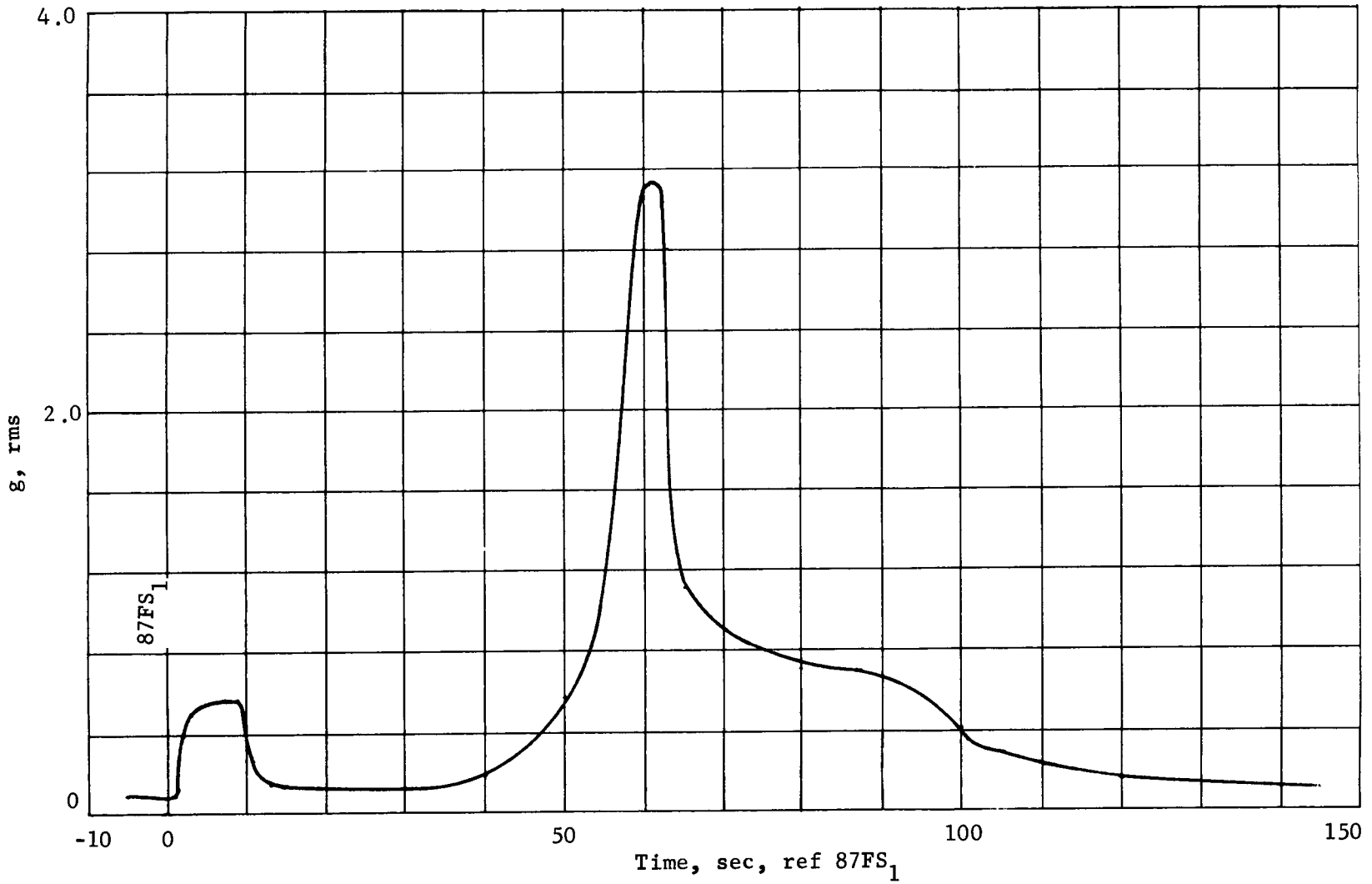


Figure 73. Measurement 2557, 3A Truss at Signal Conditioner Mount, rms/History, Lateral Axis, Vehicle 3 Flight

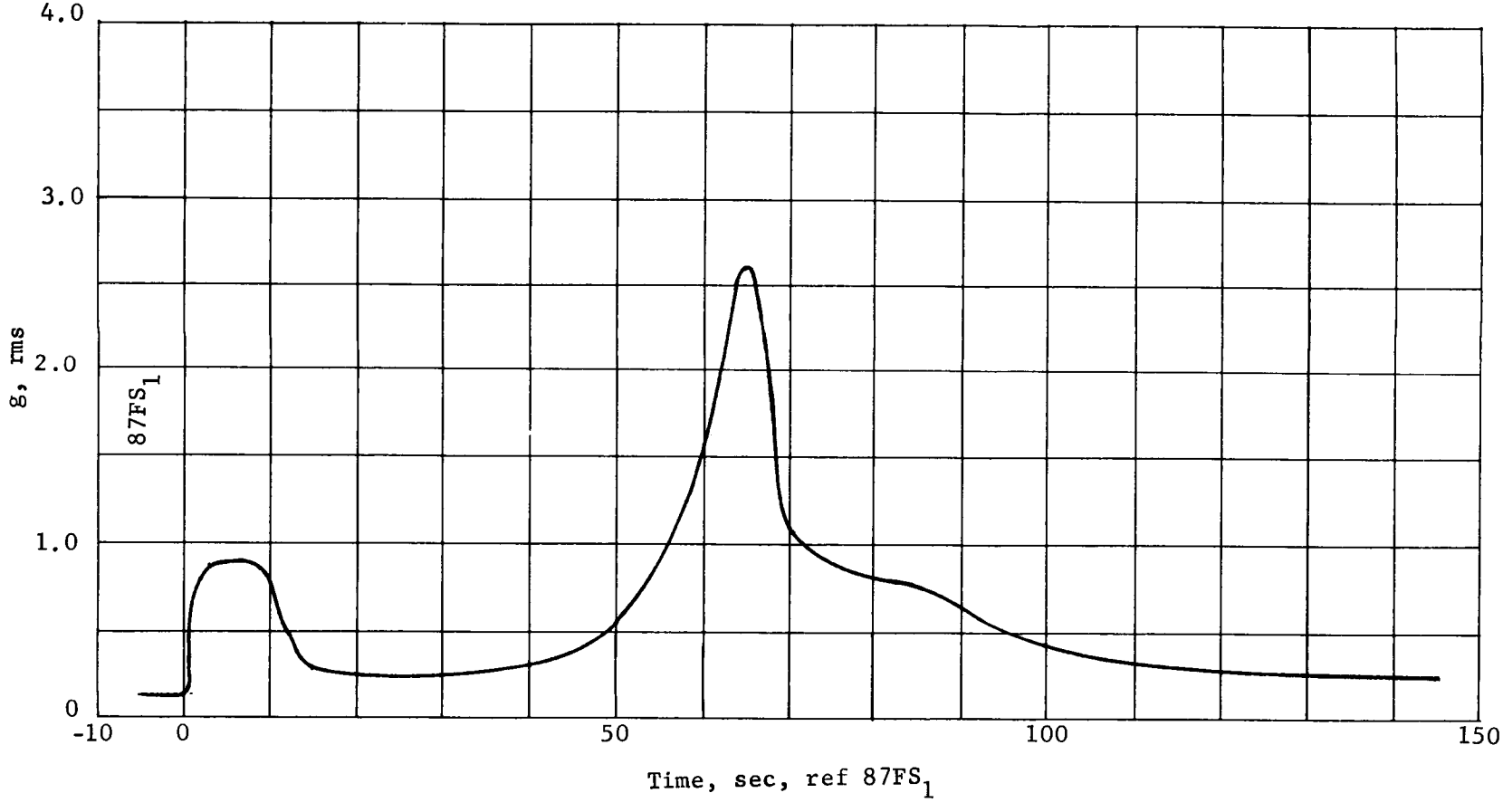


Figure 74. Measurement 2558, 3A Equipment Truss at MDS Package Mounting, rms/History, Longitudinal Axis, Vehicle 2 Flight

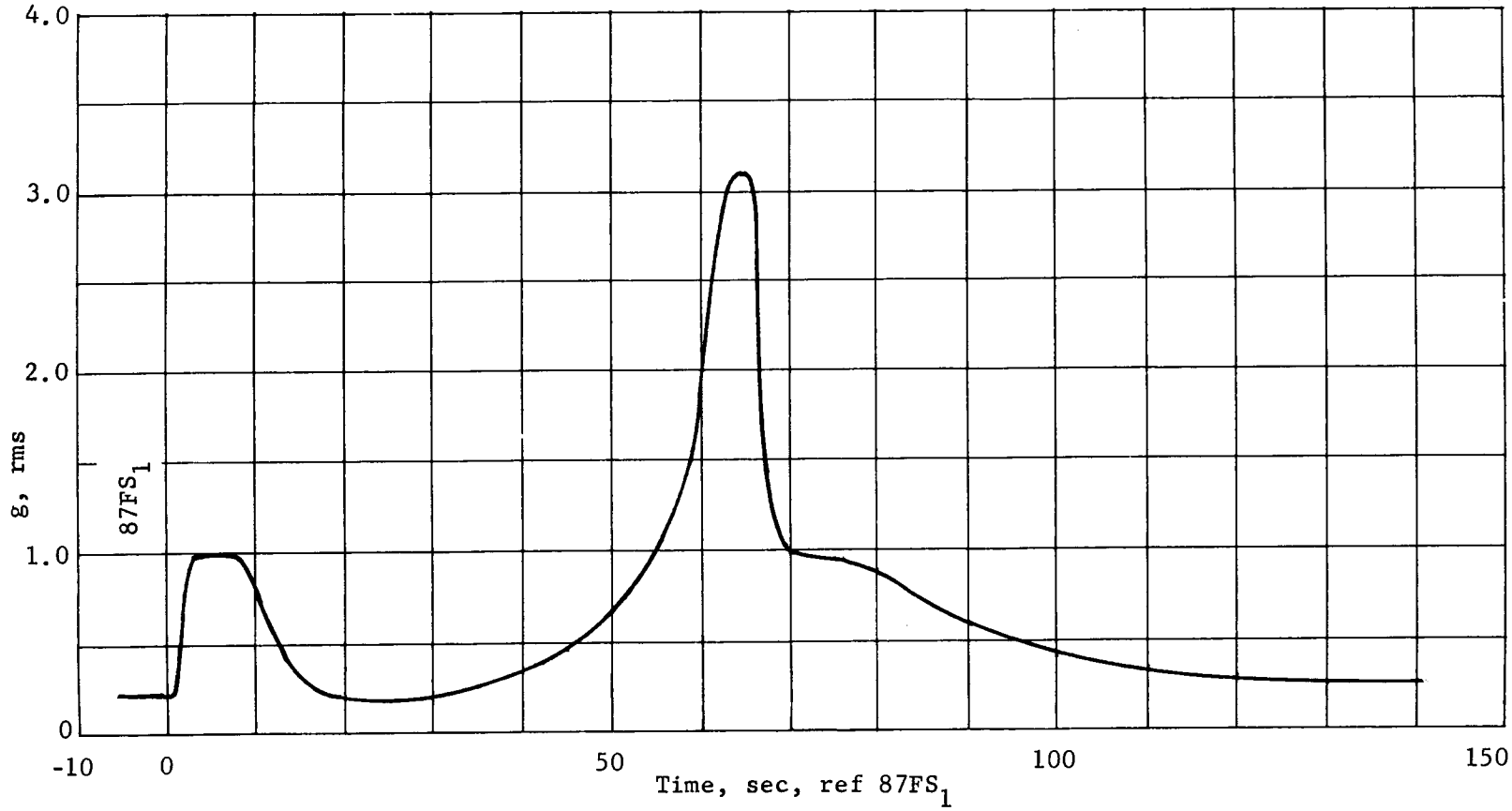


Figure 75. Measurement 2559, 3A Equipment Truss at MDS Package Mounting, rms/History, Lateral Axis, Vehicle 2 Flight

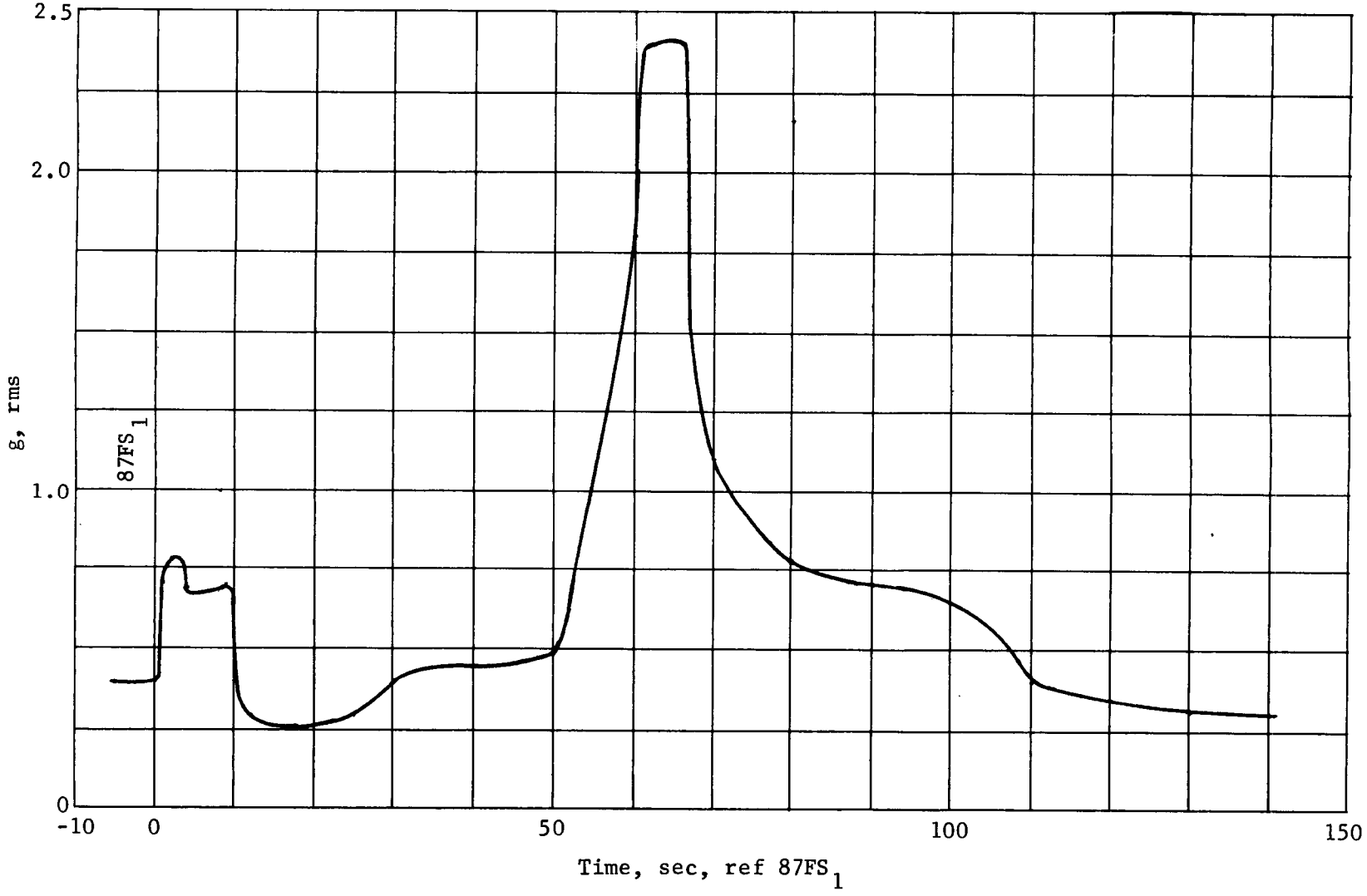


Figure 76. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, rms/History, Longitudinal Axis, Vehicle 1 Flight

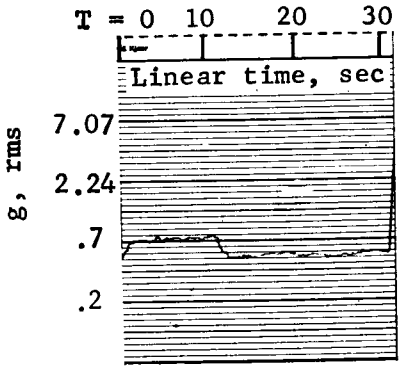


Figure 77. Measurement 2640, Vibration, Guidance Truss between Autopilot and Static Inverter, Longitudinal, Compartment 3A, Sta 97, Quad IV, Vehicle 2 FRF

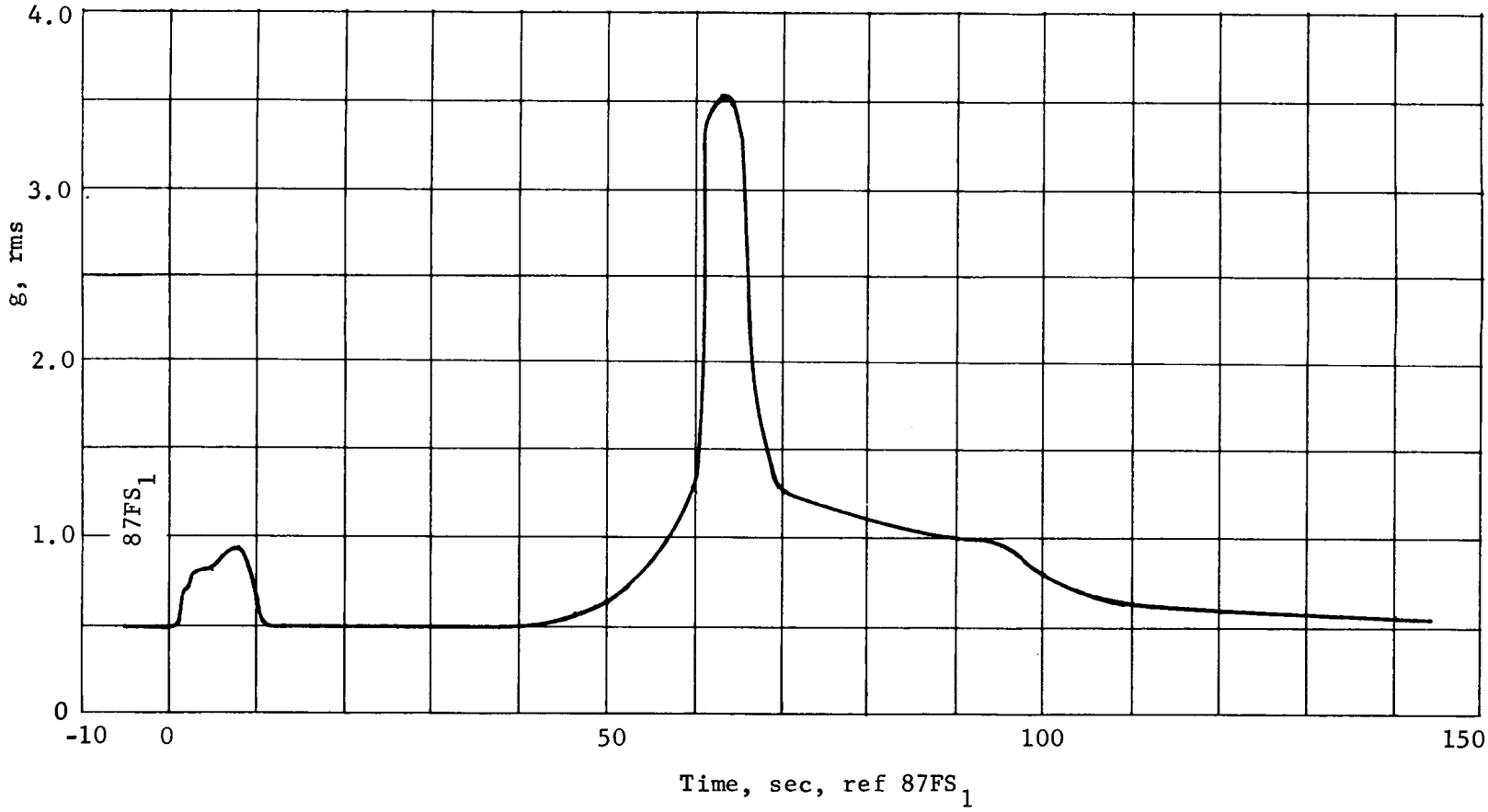
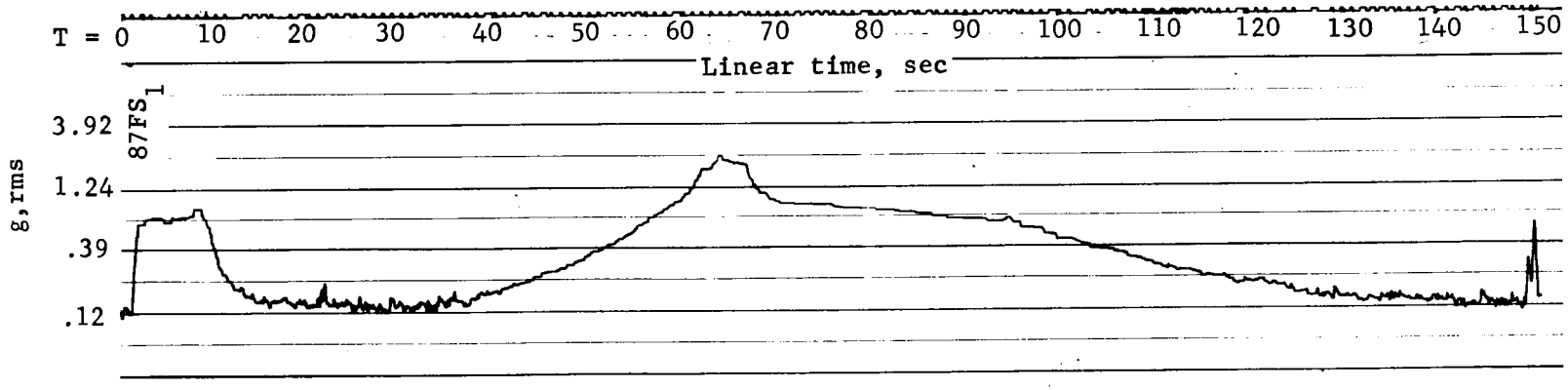
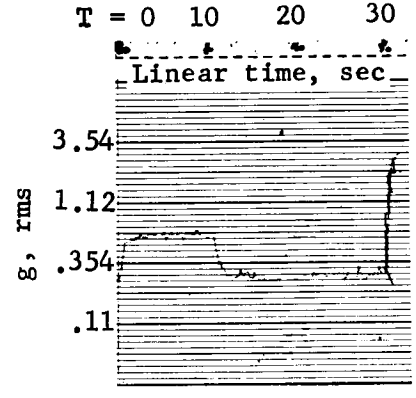


Figure 78. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, rms/History, Longitudinal Axis, Vehicle 2 Flight



(a) Measurement 2640, Vibration, Guidance Truss between Autopilot and Static Inverter, Longitudinal, Compartment 3A, Sta 97, Quad IV, Vehicle 6 Flight



(b) Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral. Compartment 3A, Sta 97, Quad IV, Vehicle 2 FRF

Figure 79.

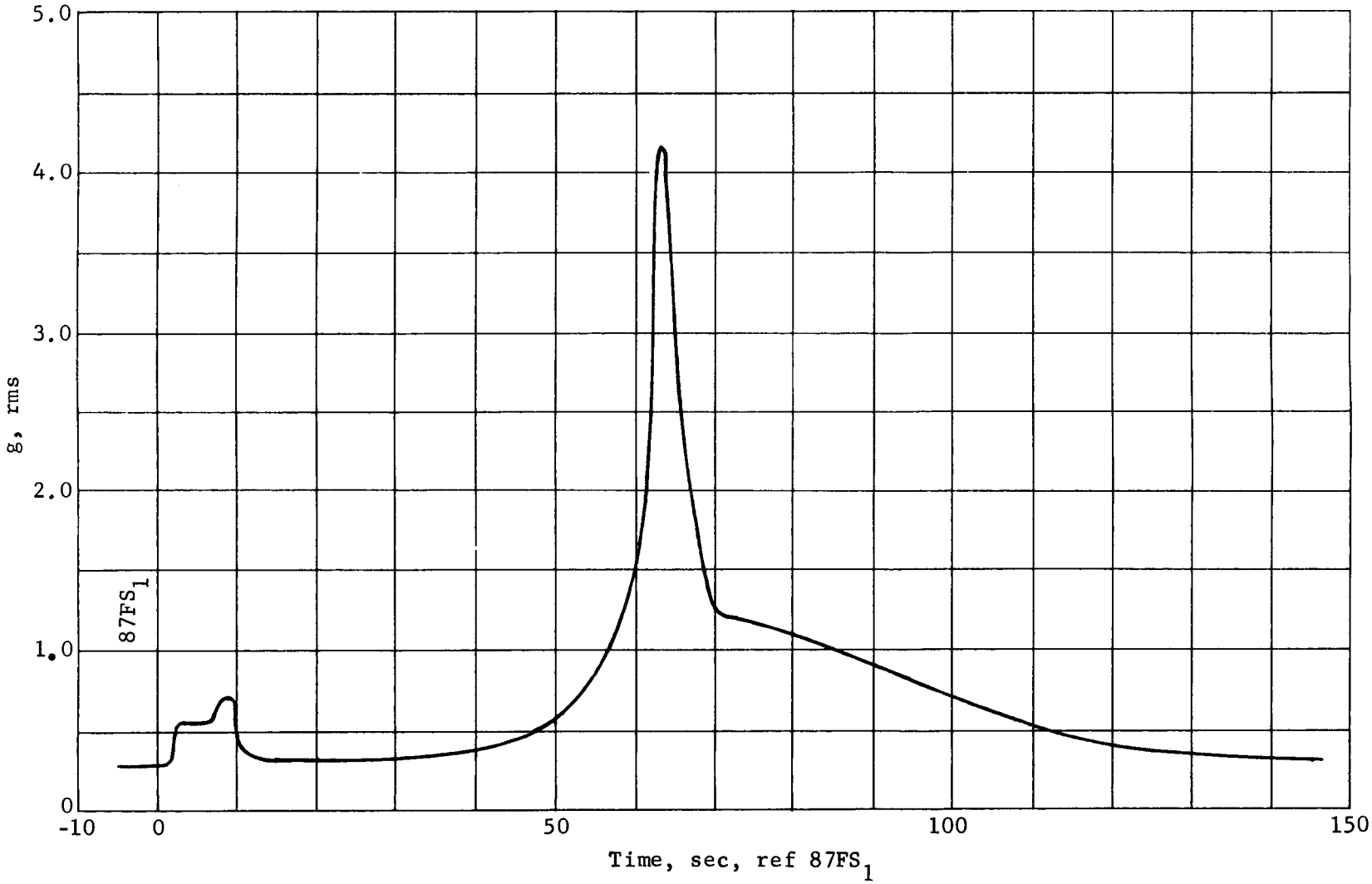


Figure 80. Measurement 2641, 3A Guidance Truss between Autopilot and Static Inverter, rms/History, Lateral Axis, Vehicle 2 Flight

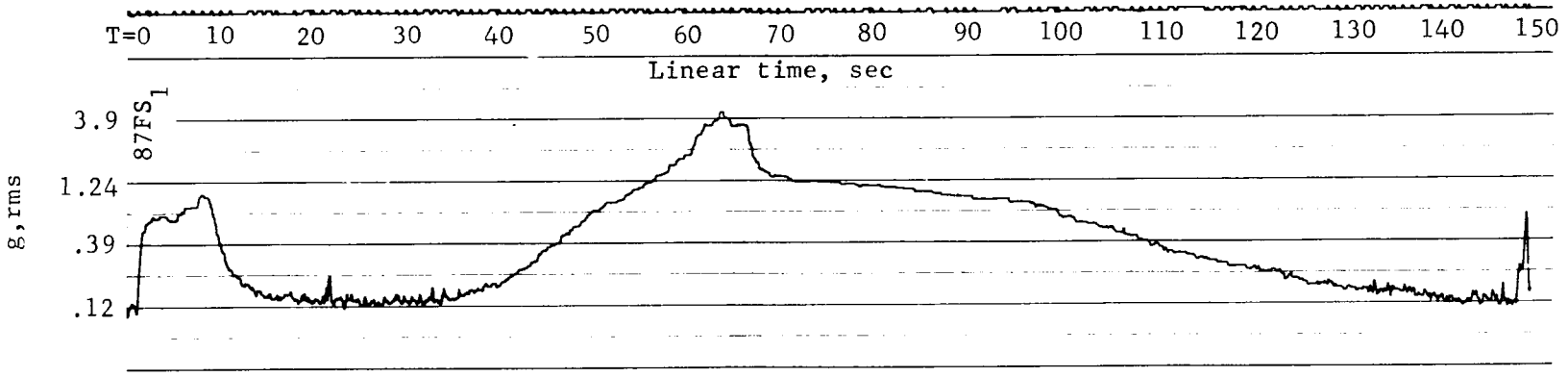


Figure 81. Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral, Compartment 3A, Sta 97, Quad IV, Vehicle 6 Flight

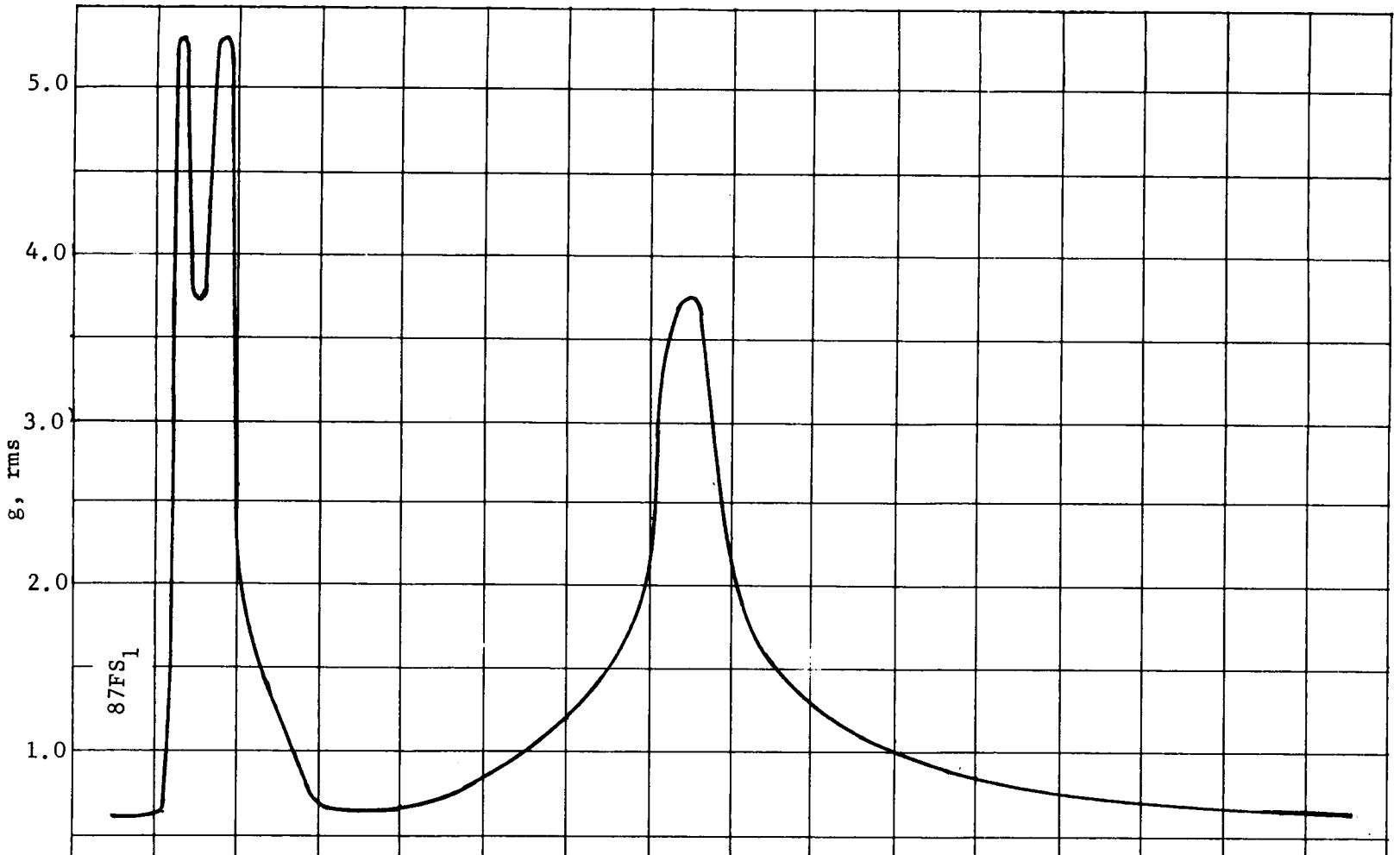
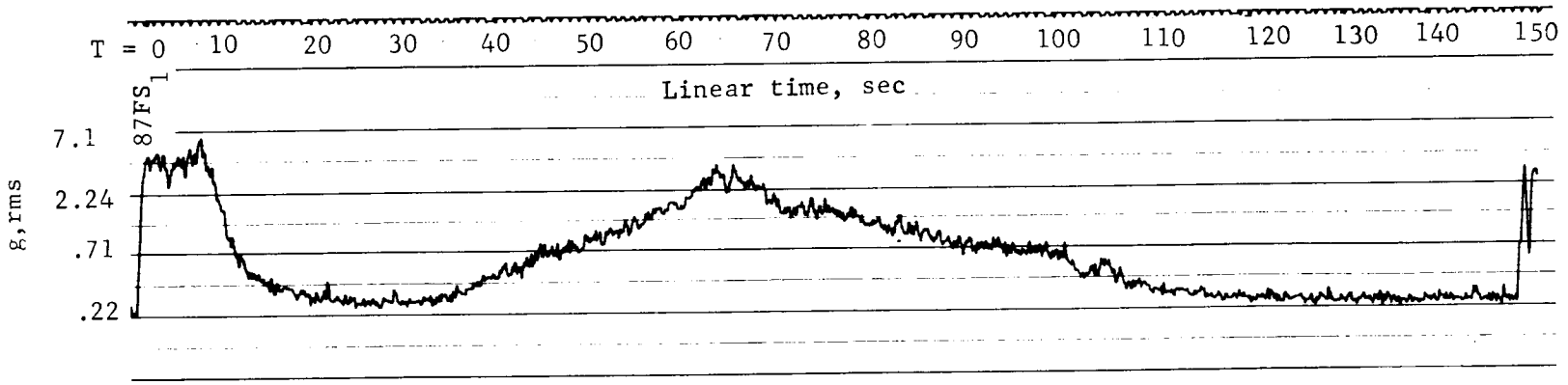
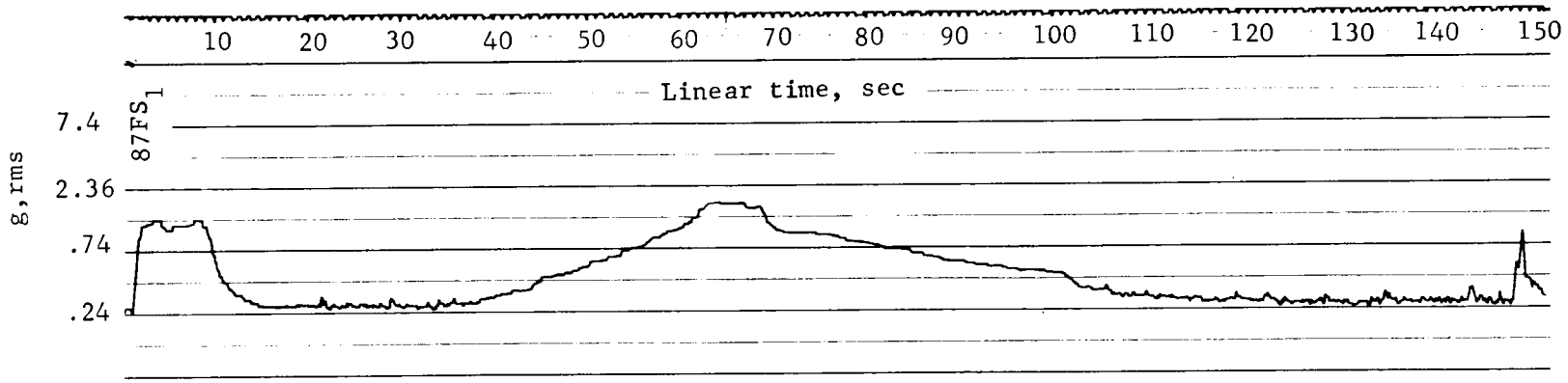


Figure 82. Measurement 2560, 3B Oxidizer Tank Top at Pressure Switch Mounting, rms/History, Longitudinal Axis, Vehicle 2 Flight



(a) Measurement 2560, Vibration, Oxidizer Tank Top at Pressure Switch Mounting, on Mounting Plate, Longidudinal, Compartment 3B, Sta 72, Quad III, Vehicle 6 Flight



(b) Measurement 2561, Vibration, Oxidizer Tank Top at Pressure Switch Mounting, on Mounting Plate, Lateral, Compartment 3B, Sta 72, Quad III, Vehicle 6 Flight

Figure 83.

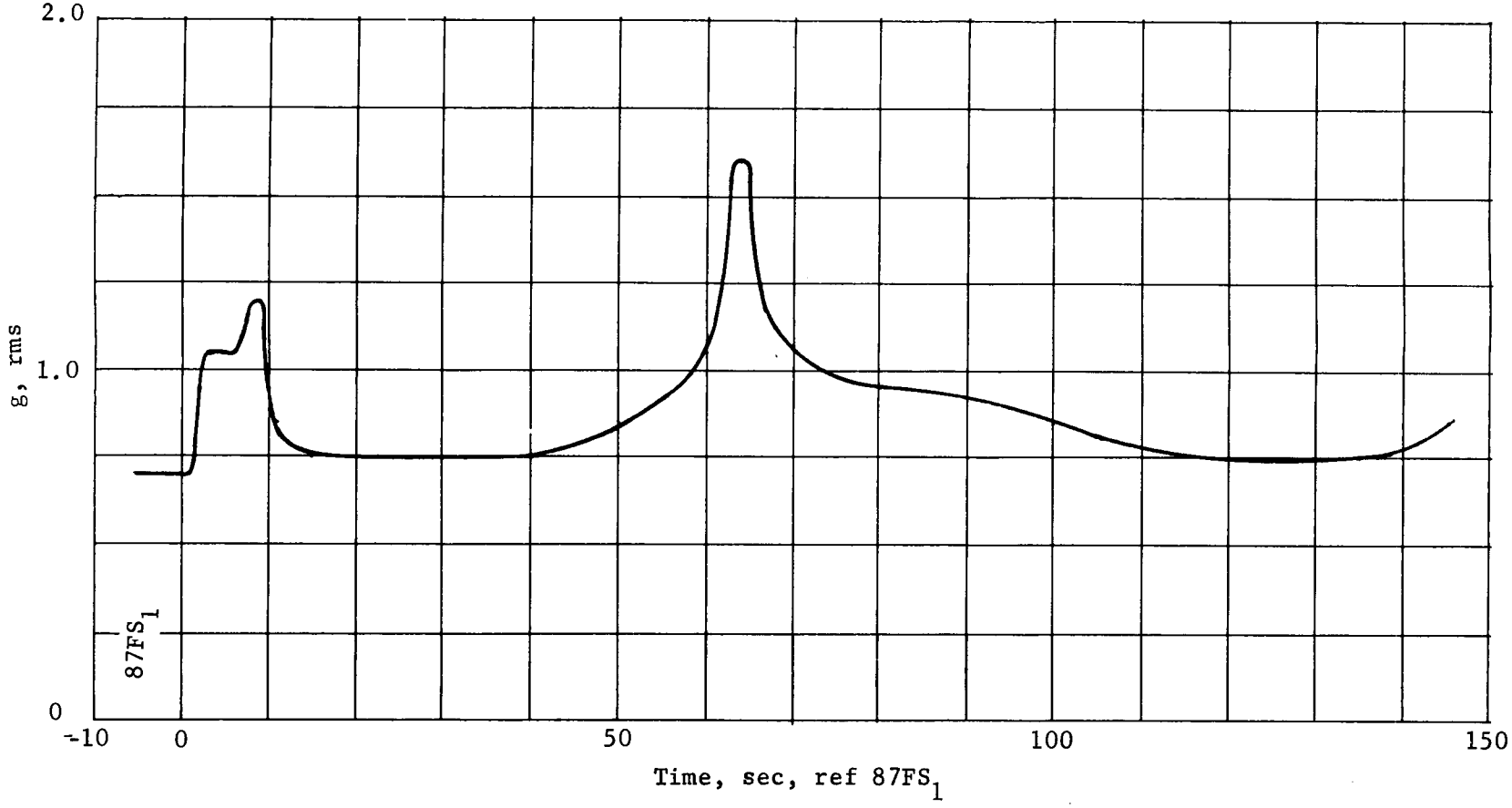


Figure 84. Measurement 2561, 3B Oxidizer Tank Top at Pressure Switch Mounting, rms/History, Lateral Axis, Vehicle 2 Flight

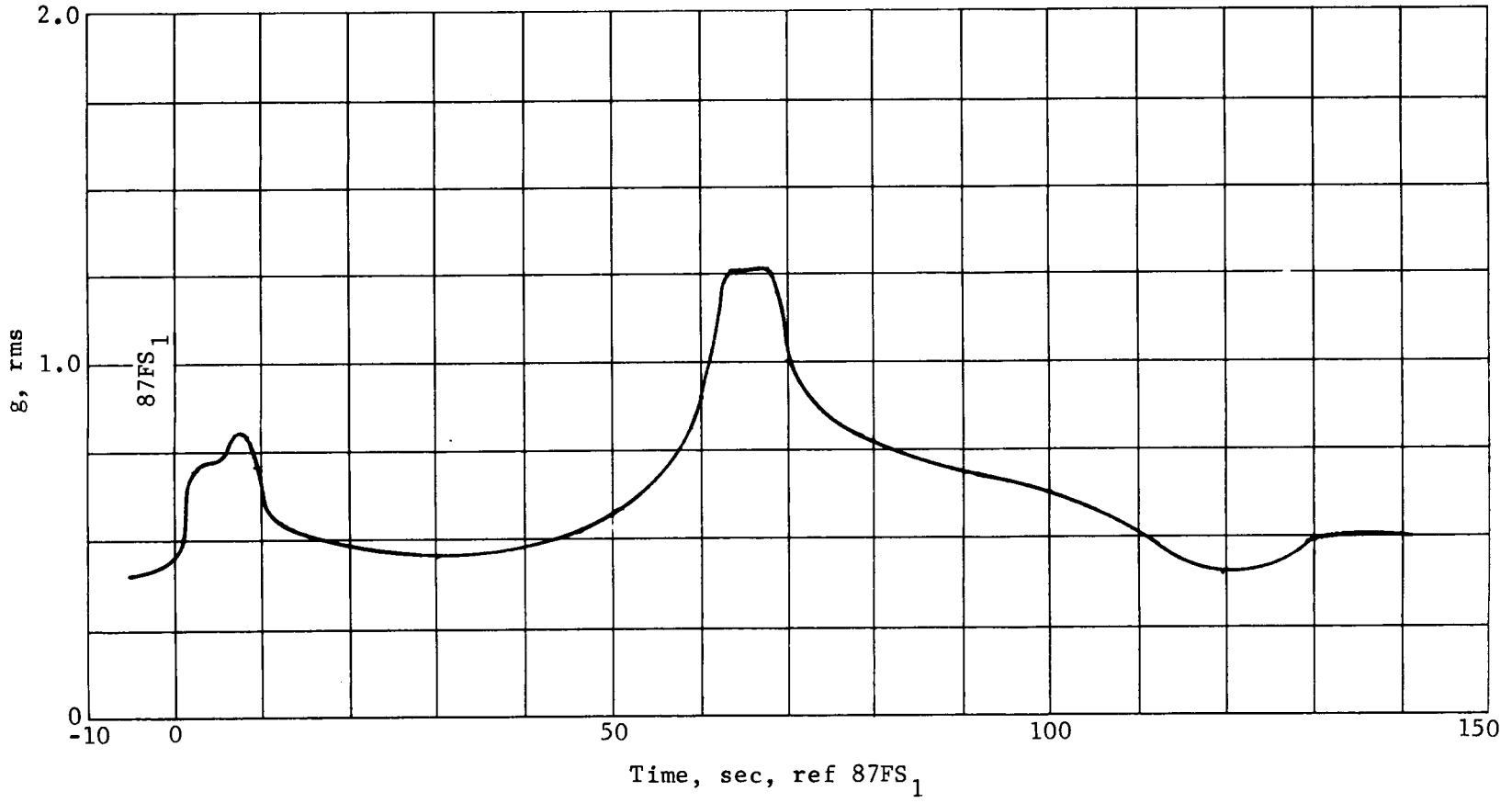


Figure 85. Measurement 2562, Transtage Engine Truss at Hydraulic Motor Pump Mounting, rms/History, Longitudinal Axis, Vehicle 1 Flight, Compartment 3B

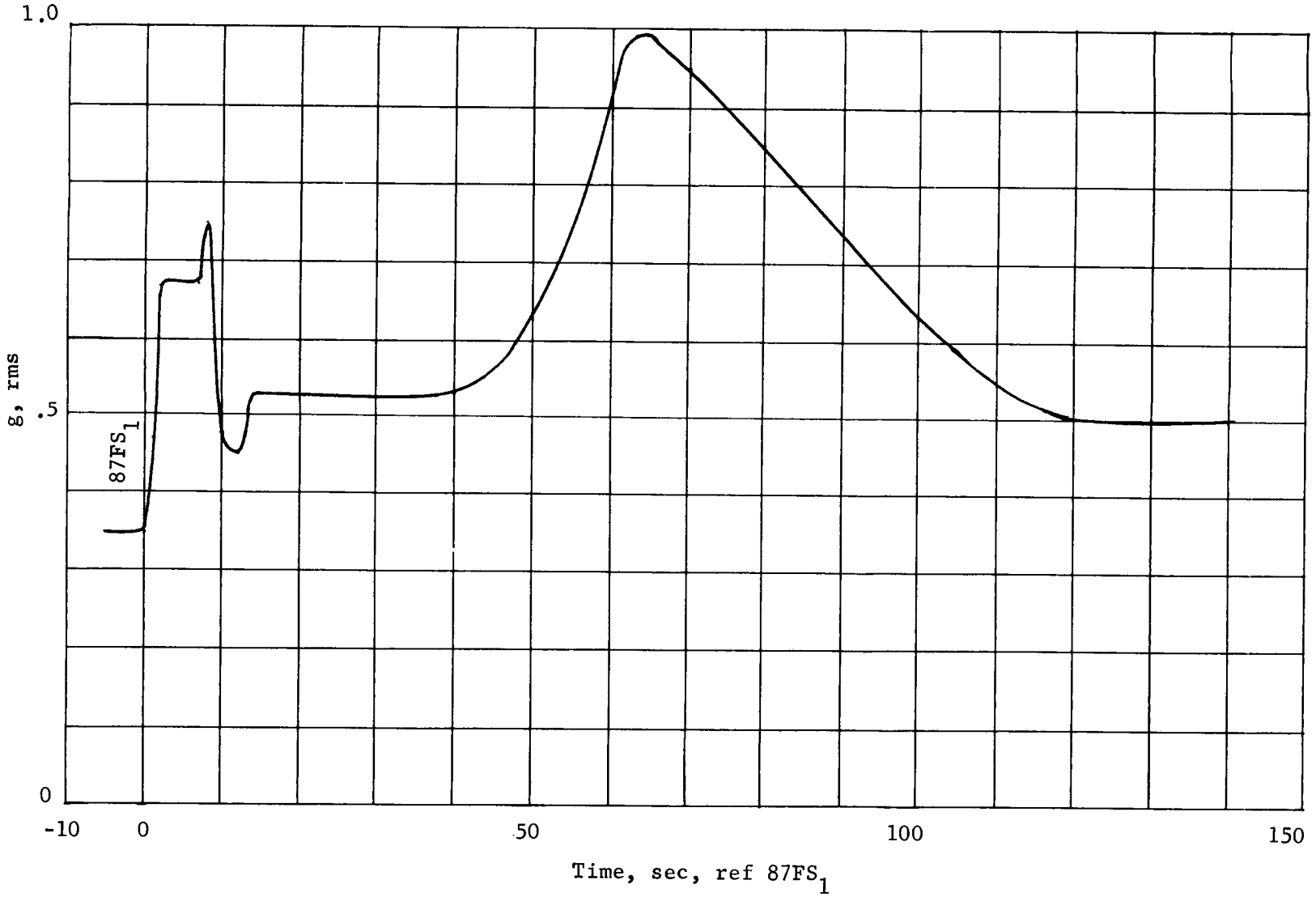


Figure 86. Measurement 2562, 3B Engine Truss at Hydraulic Motor Pump Mount, rms/History, Longitudinal Axis, Vehicle 3 Flight

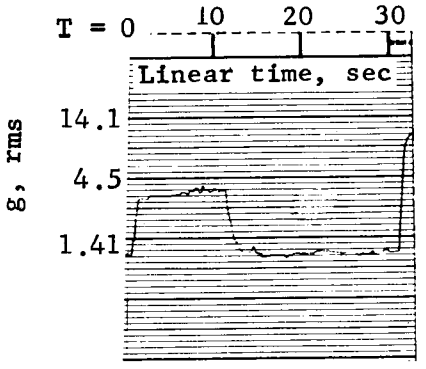


Figure 87. Measurement 2519, Vibration, Airframe at Outage Sensor Controller Mounting, Radial Axis, Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 2 FRF

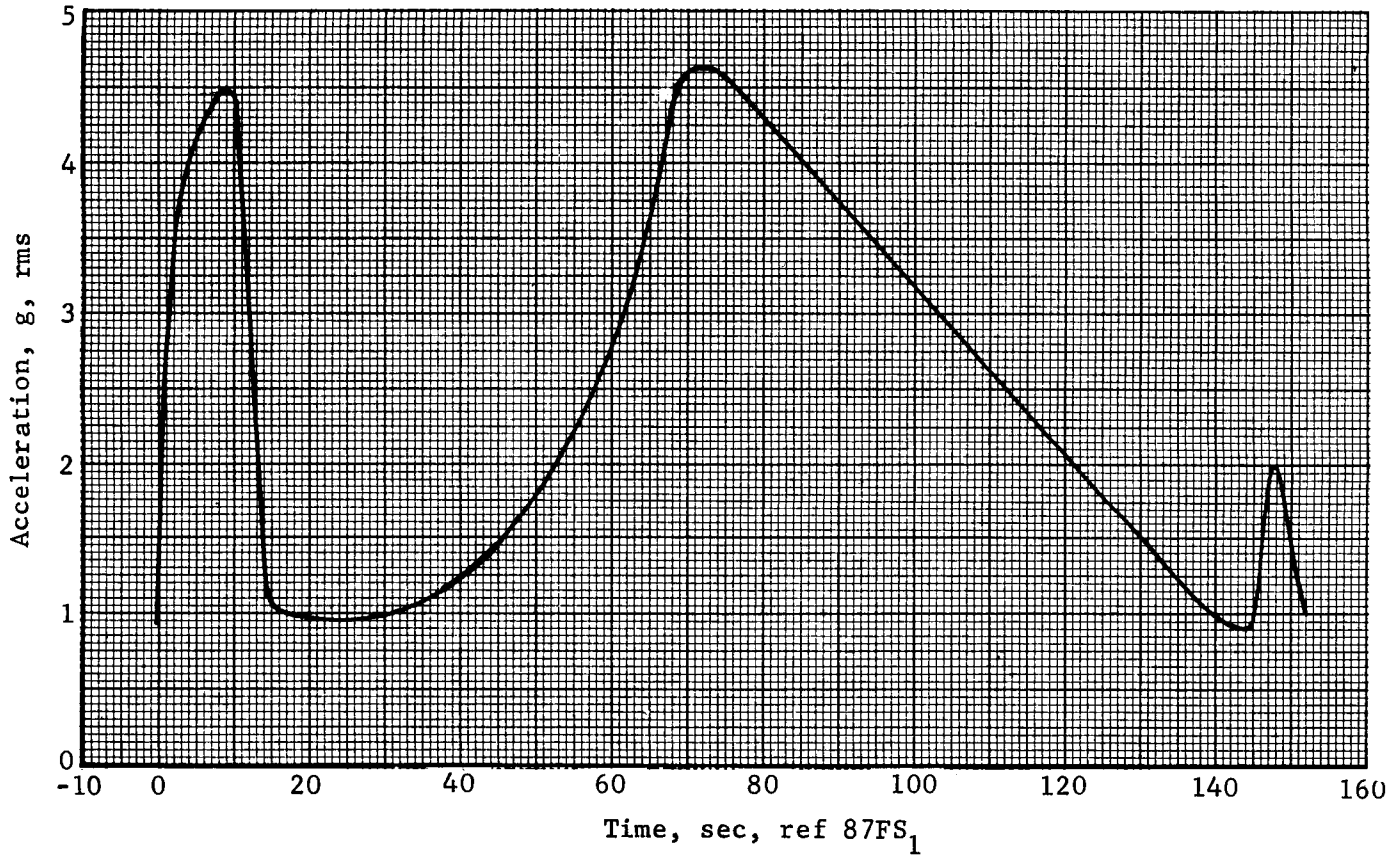


Figure 88. Measurement 2519, Compartment 2B Airframe at Outage Sensor, rms/History, Radial Axis, Vehicle 2 Flight

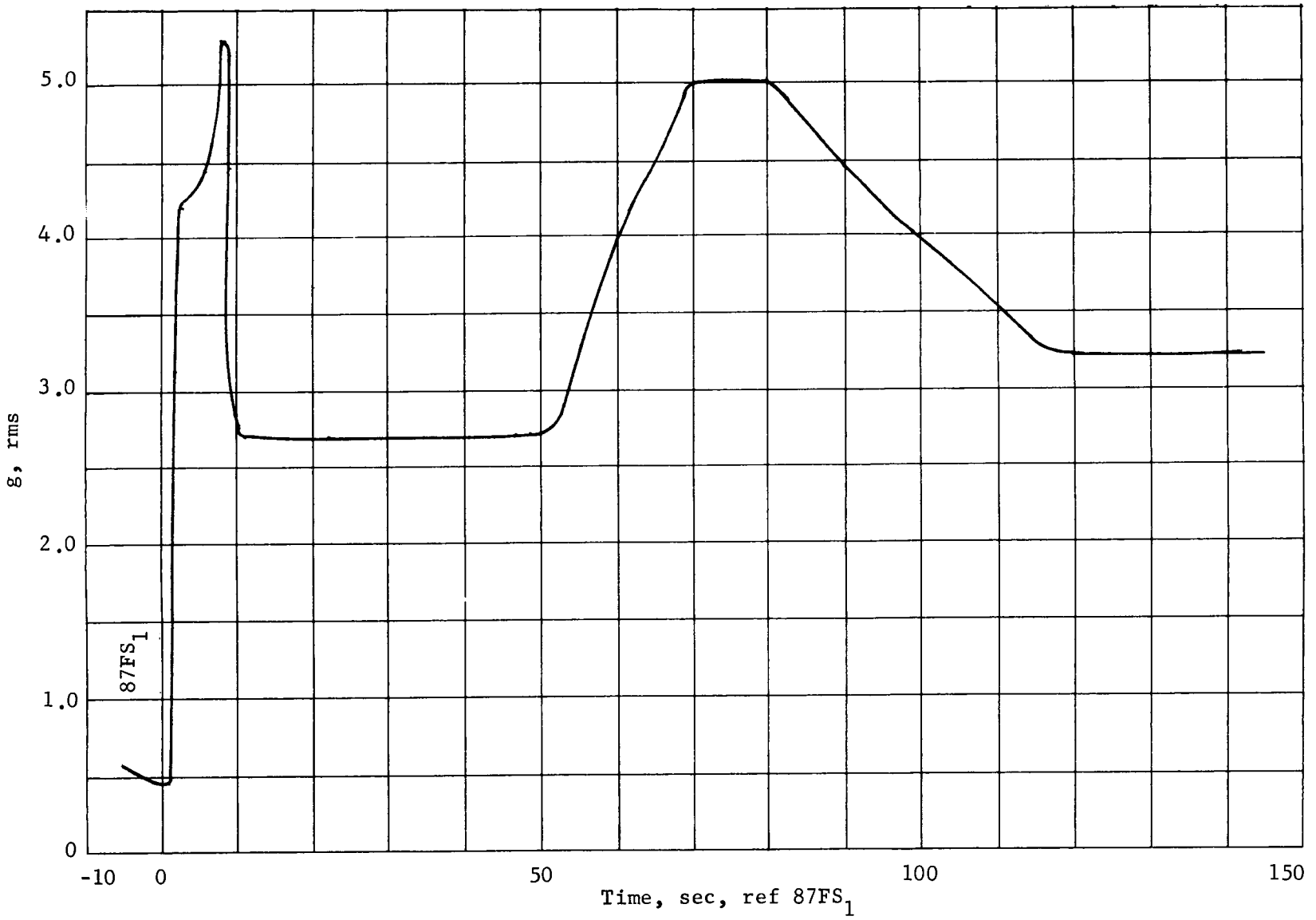
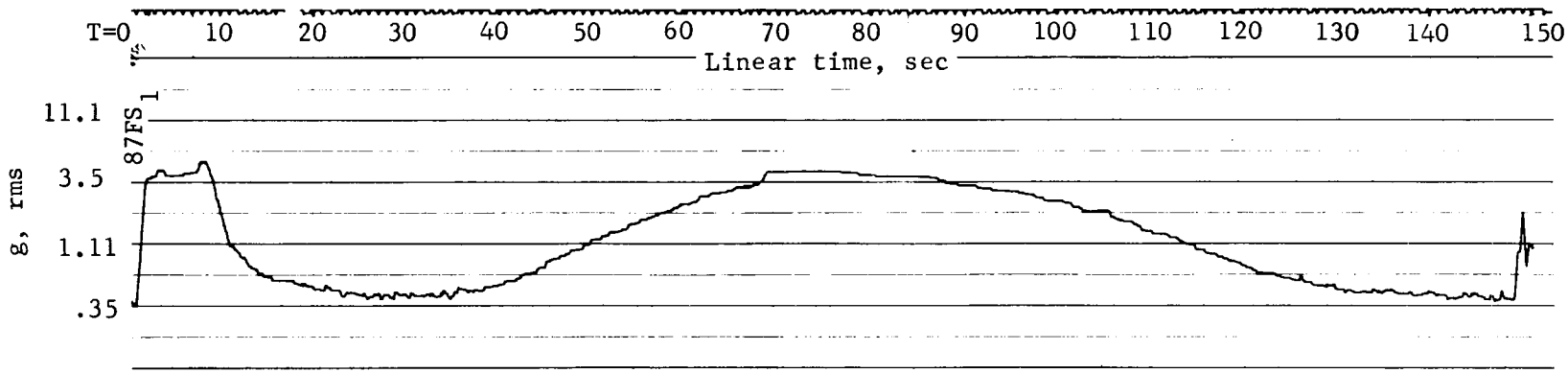
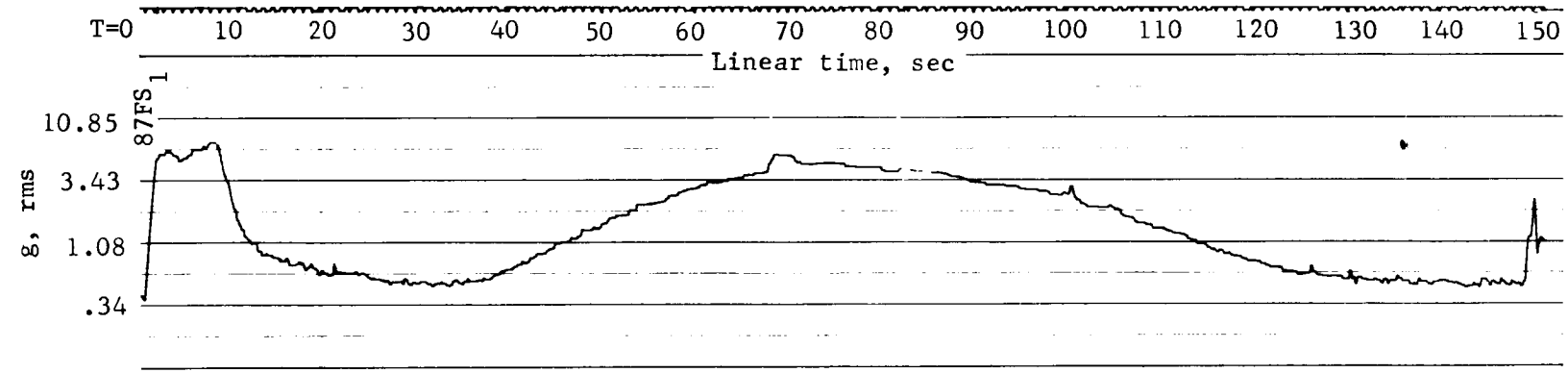


Figure 89. Measurement 2519, 2B Airframe at Outage Sensor Contoller Mounting, rms/History, Radial Axis, Vehicle 3 Flight



(a) Measurement 2519, Vibration, Airframe at Outage Sensor Controller Mounting, Radial, Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 6 Flight



(b) Measurement 2520, Vibration, Airframe at Outage Sensor Controller Mounting, Tangential, Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 6 Flight

Figure 90.

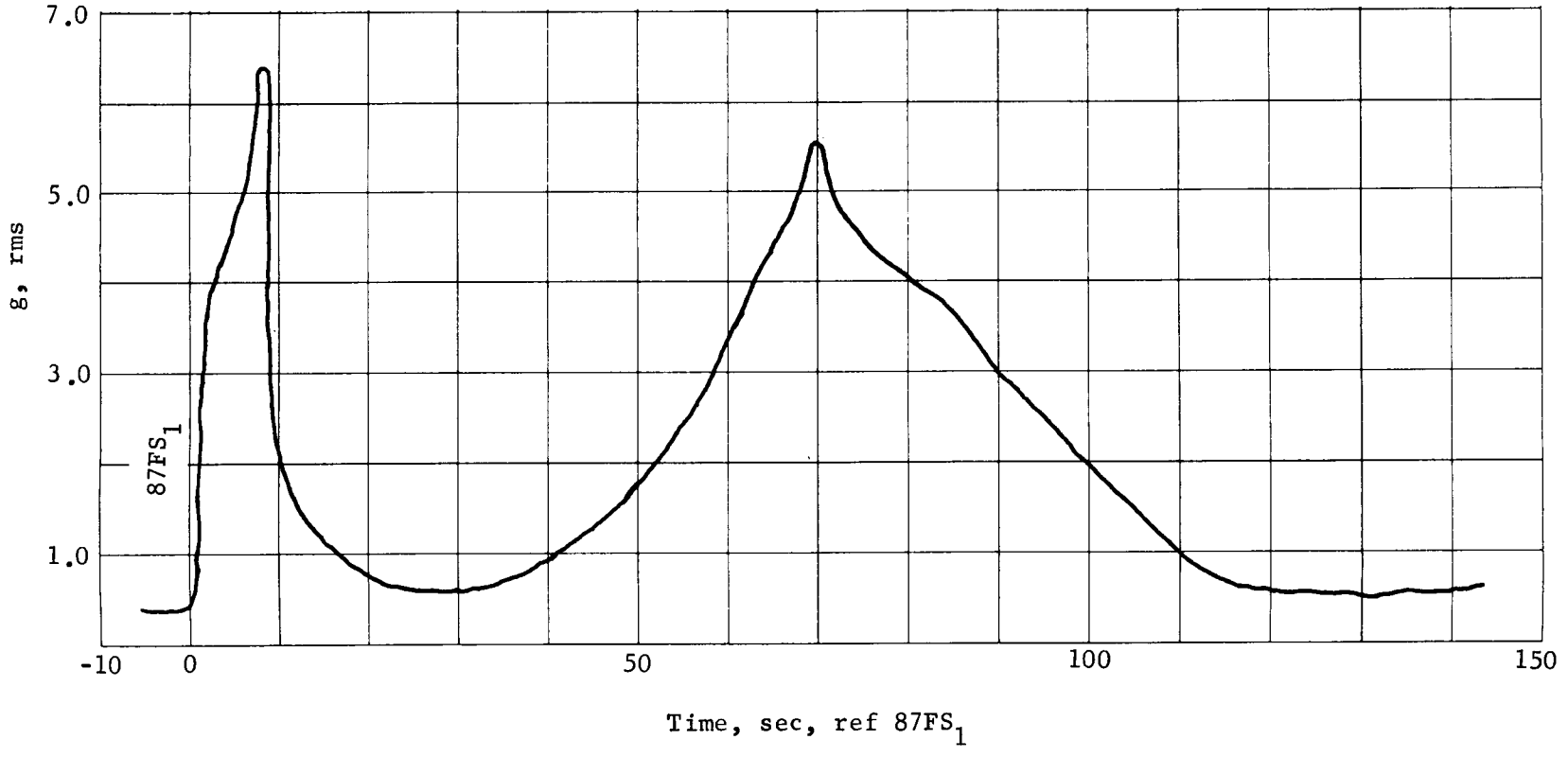


Figure 91. Measurement 2520, 2B Airframe at Outage Sensor Controller Mounting, rms/History, Tangential Axis, Vehicle 3 Flight

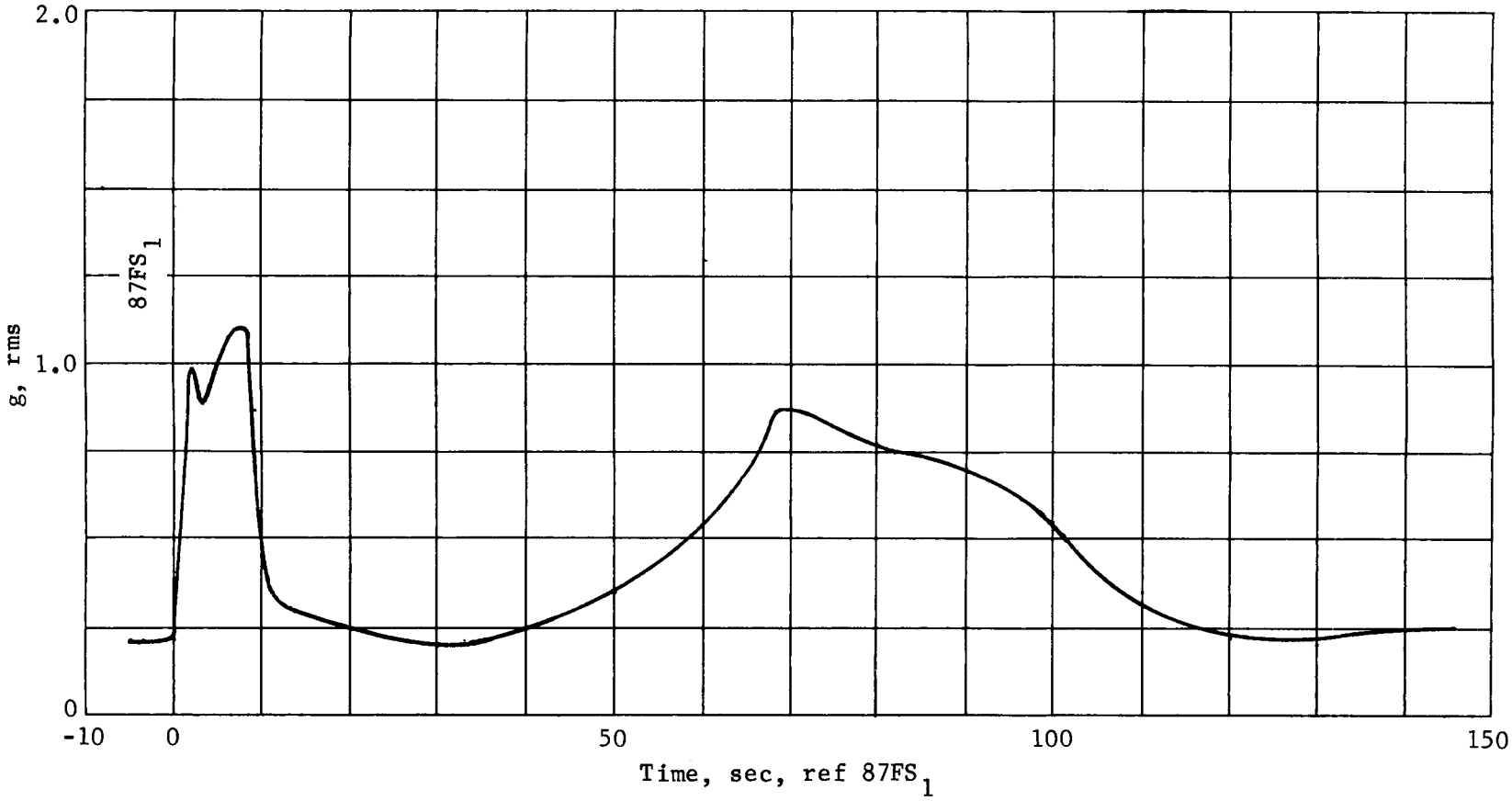
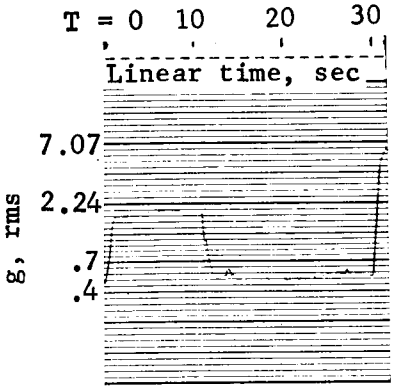
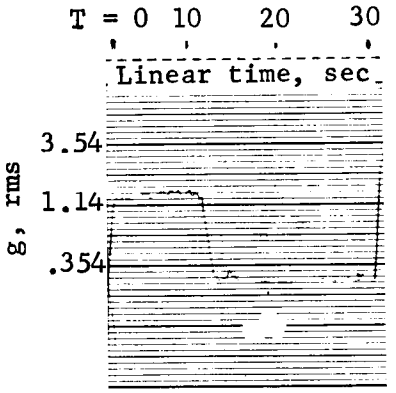


Figure 92. Measurement 2564, 2B Truss at SSB Modulator, rms/History, Longitudinal Axis, Vehicle 1 Flight



(a) Measurement 2564, Vibration, Equipment Truss at SSB Modulator Mounting, Longitudinal, Compartment 2B, Sta 378, Quad III, Vehicle 2 FRF



(b) Measurement 2565, Vibration, Equipment Truss at SSB Modulator Mounting, Vertical, Compartment 2B, Sta 378, Quad III, Vehicle 2 FRF

Figure 93.

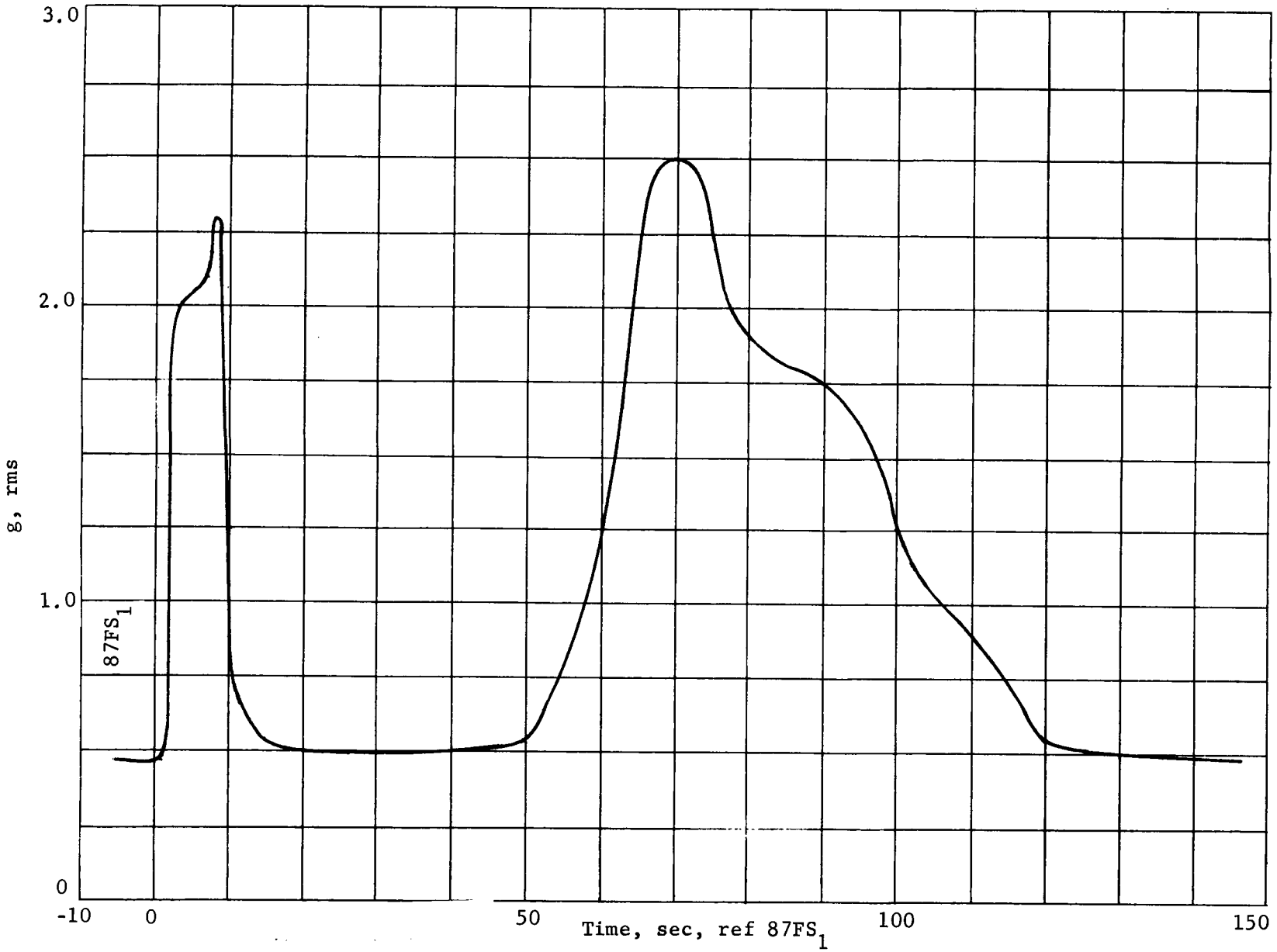


Figure 94. Measurement 2564, 2B Equipment Truss at SSB Modulator Mounting, rms/History, Longitudinal Axis, Vehicle 2 Flight

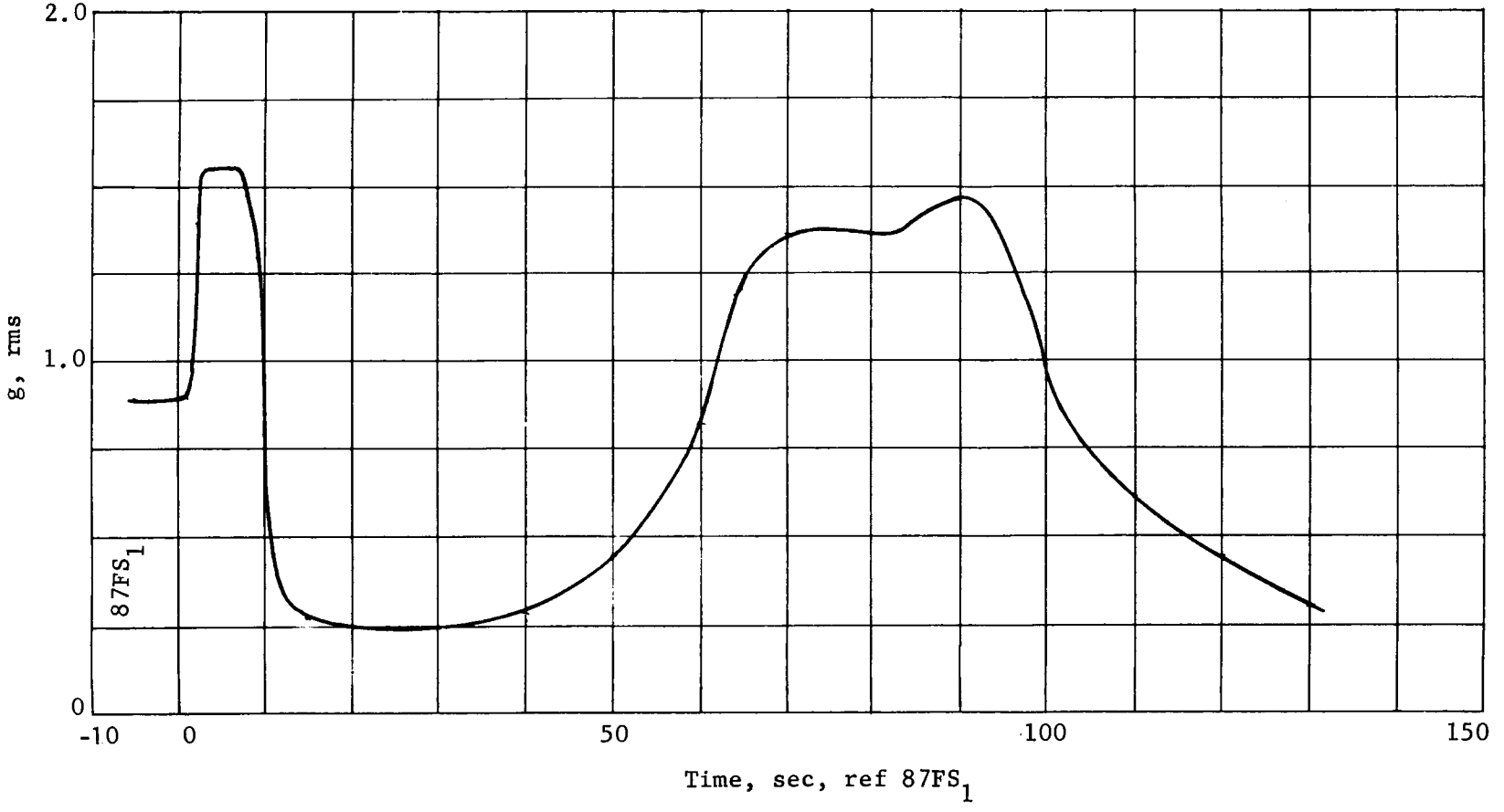


Figure 95. Measurement 2565, 2B Equipment Truss at SSB Modulator Mounting, rms/History, Vertical Axis, Vehicle 2 Flight

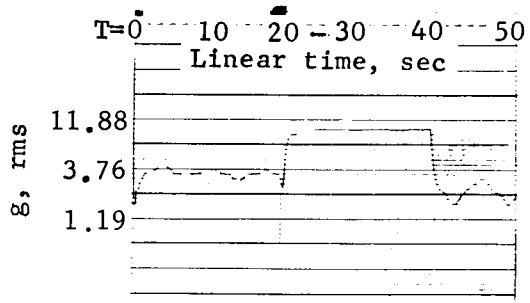


Figure 96. Measurement 2566, Vibration, Airframe at Instrumentation Staging Disconnect, Longitudinal, Compartment 2C, Sta 490, Quad III, Stringer 23, Vehicle 1 SCF

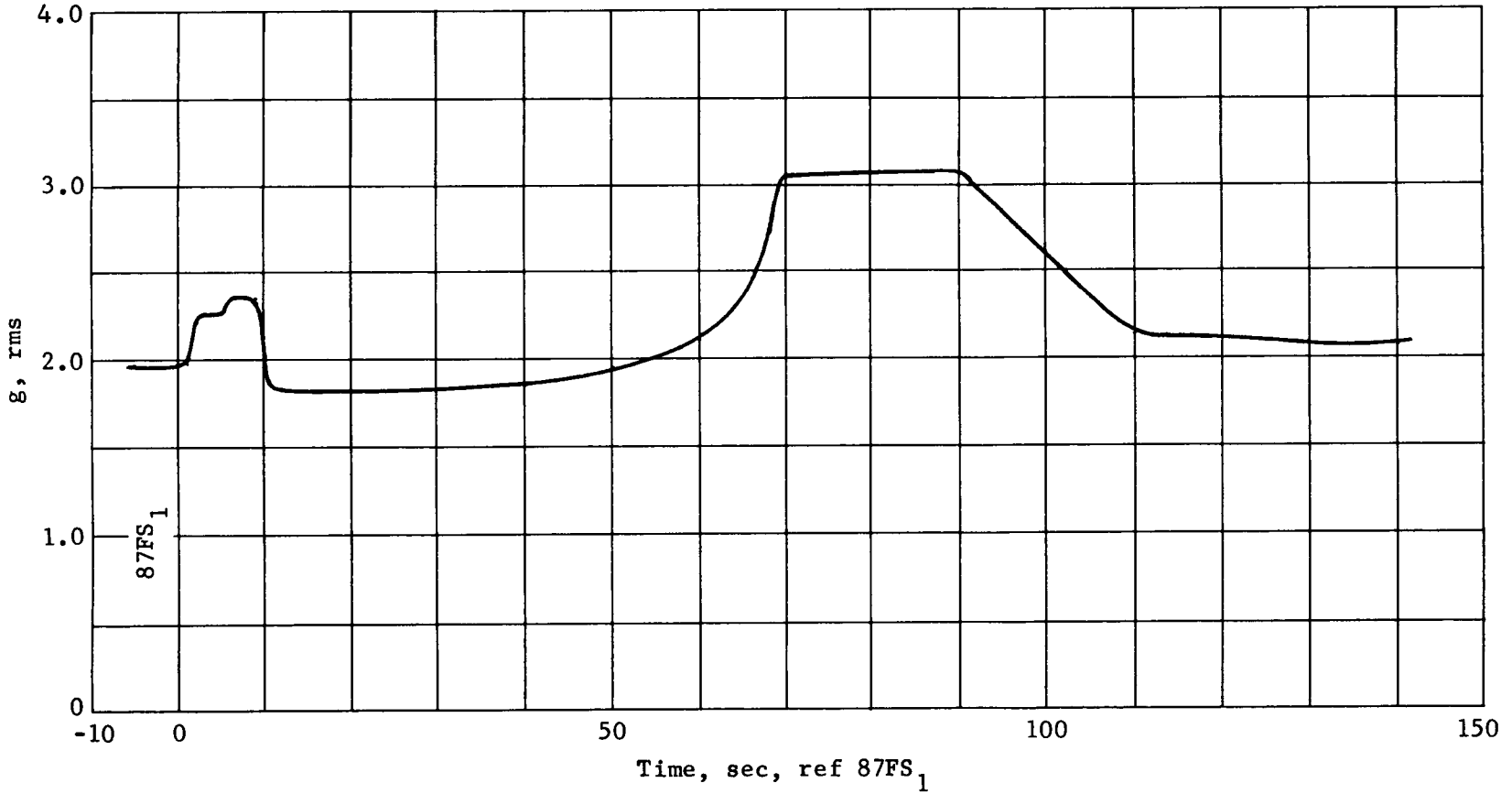


Figure 97. Measurement 2566, 2C Airframe at Instrumentation Staging Disconnect, rms/History, Longitudinal Axis, Vehicle 1 Flight

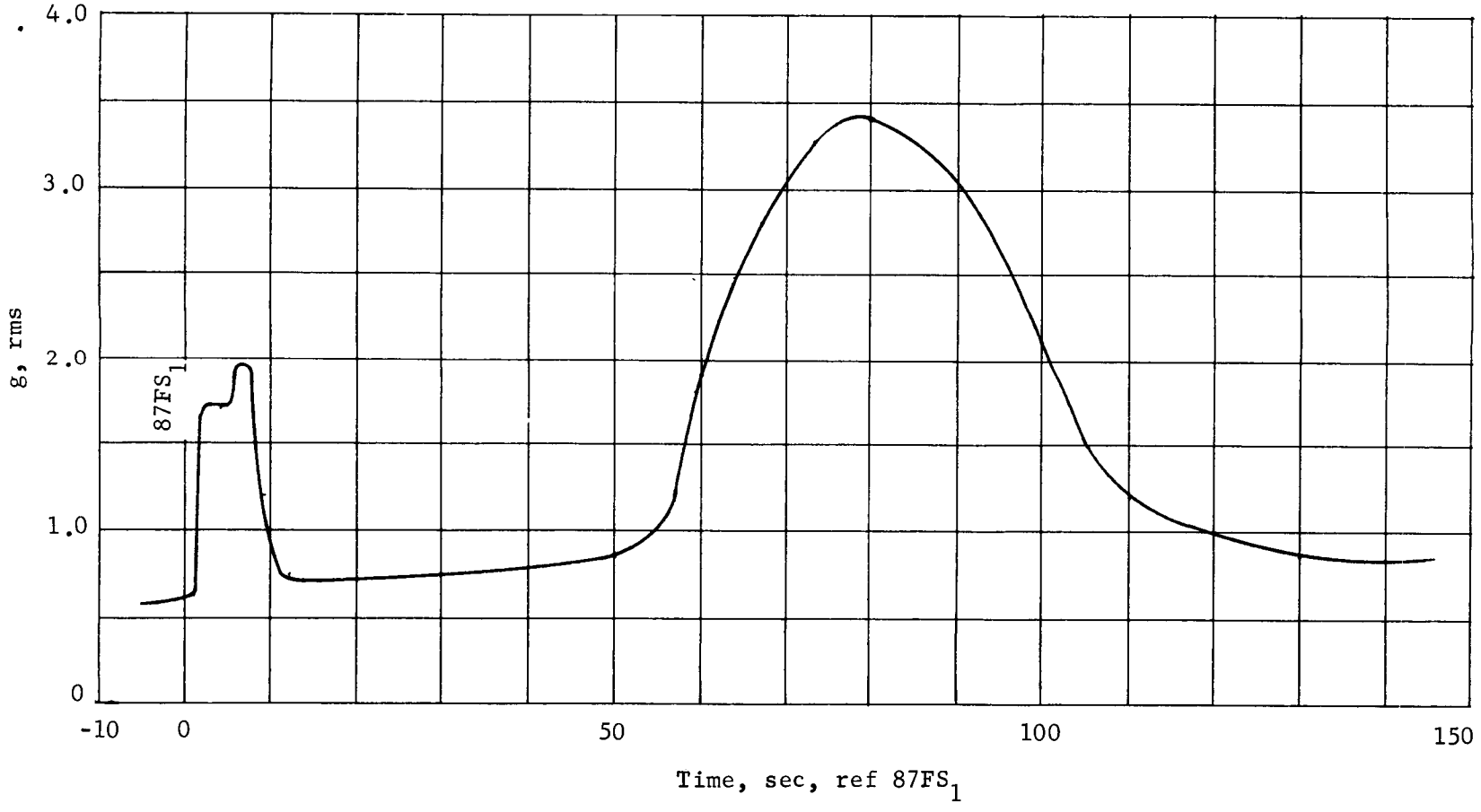


Figure 98. Measurement 2566, 2C Airframe at Instrumentation Staging Disconnect, rms/History, Longitudinal Axis, Vehicle 3 Flight

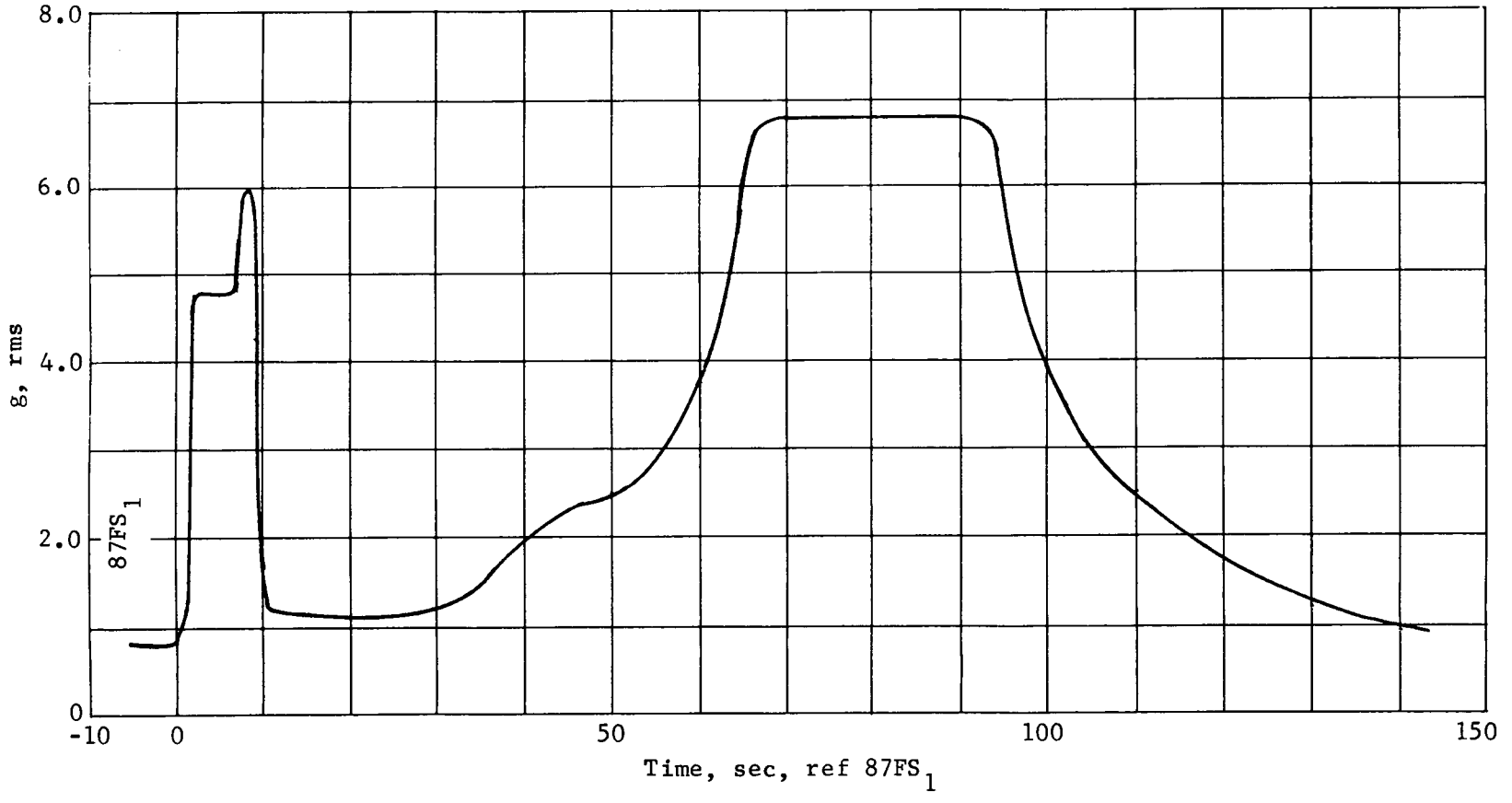


Figure 99. Measurement 2567, 2C Airframe at Instrumentation Staging Disconnect, rms/History, Radial Axis, Vehicle 1 Flight

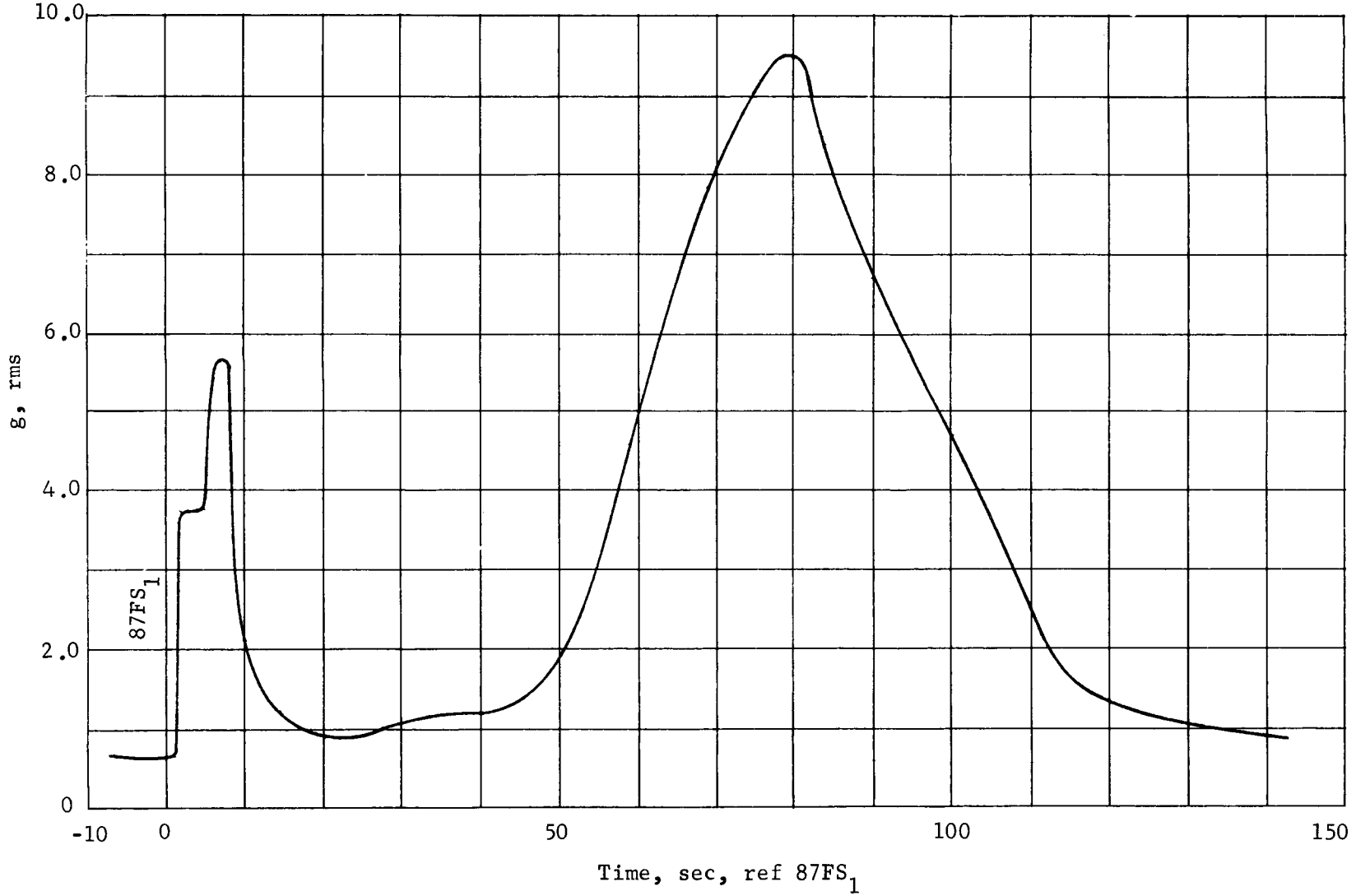
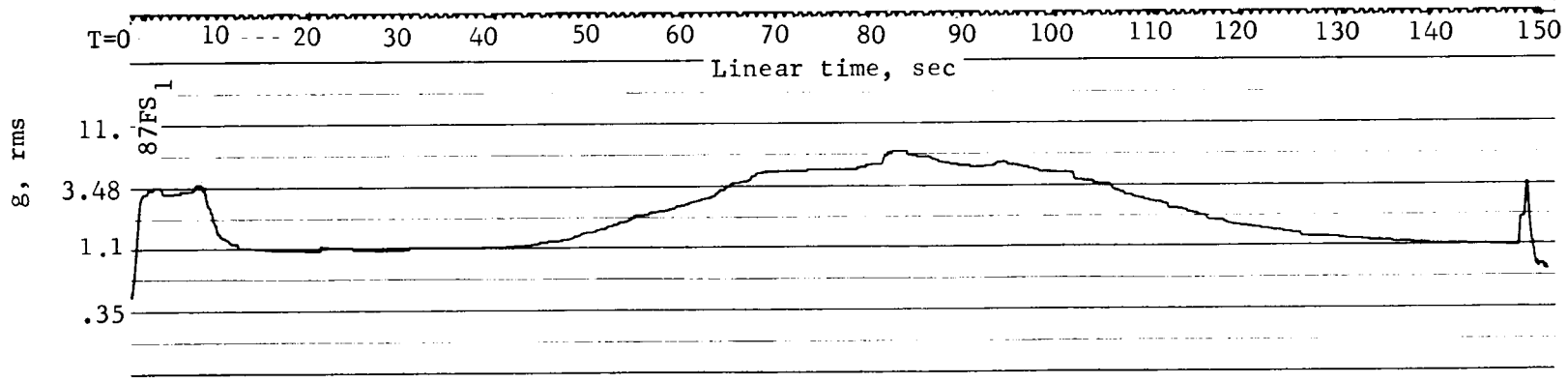
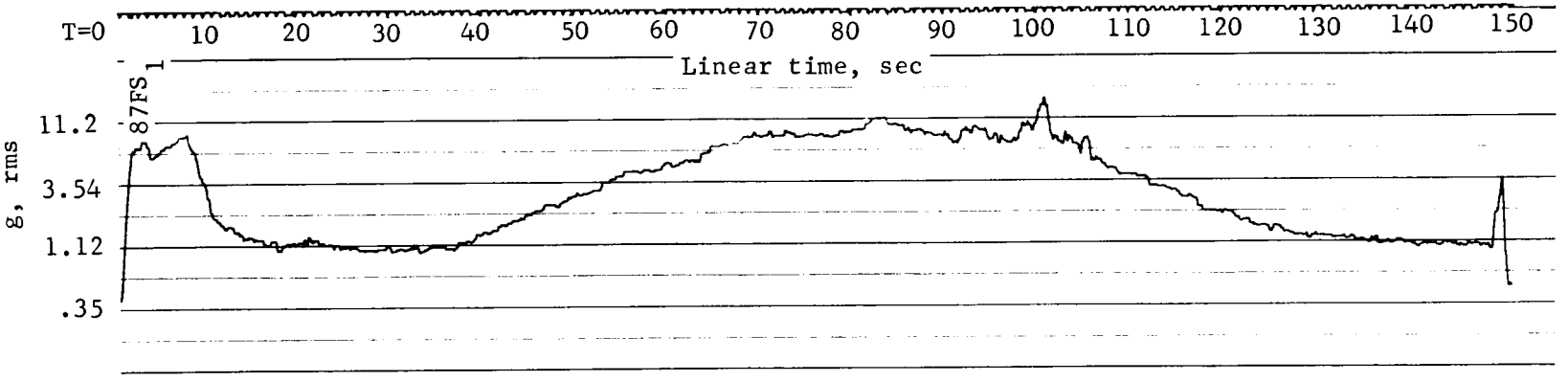


Figure 100. Measurement 2567, 2C Airframe at Instrumentation Staging Disconnect, rms/History, Radial Axis, Vehicle 3 Flight



(a) Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 6 Flight



(b) Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 6 Flight

Figure 101.

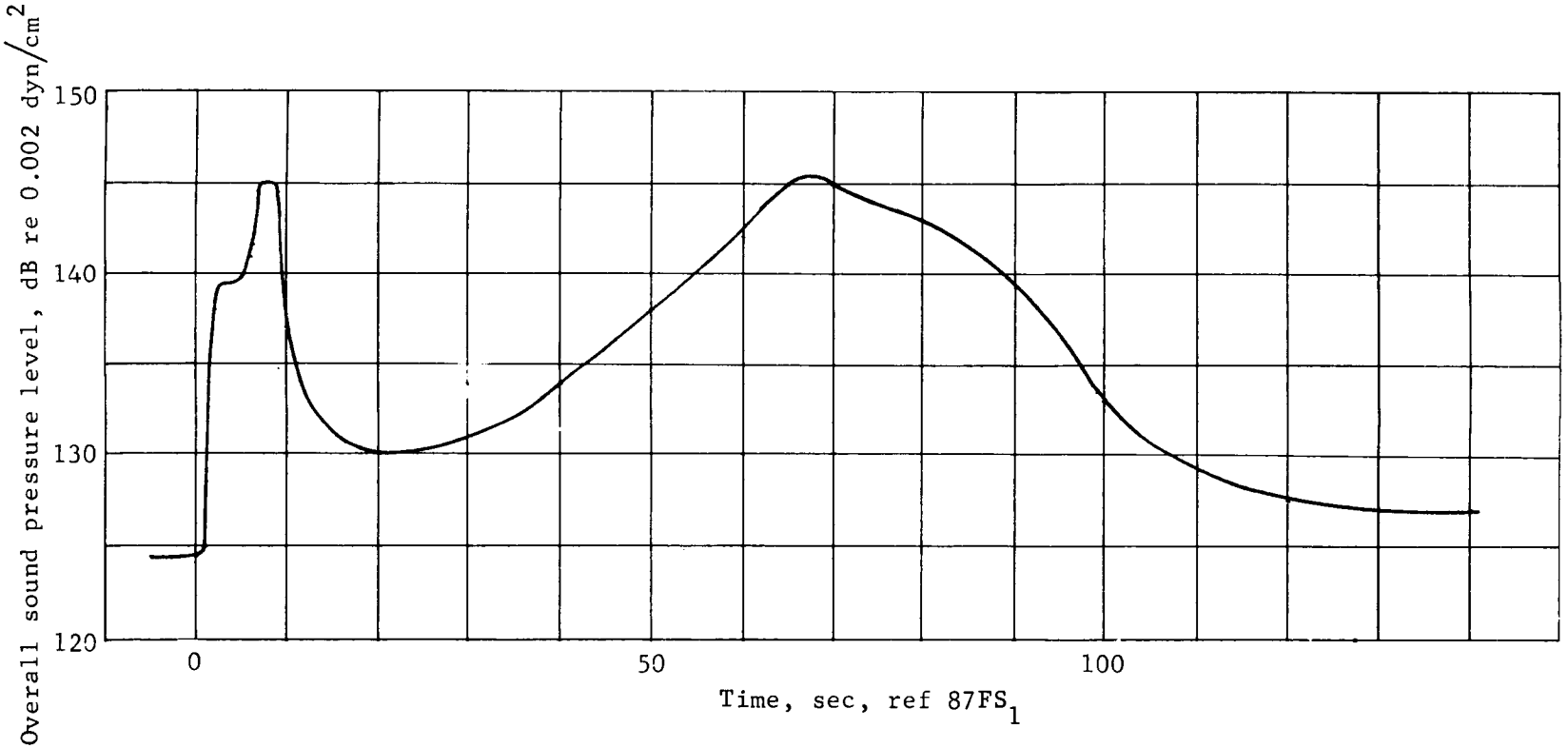
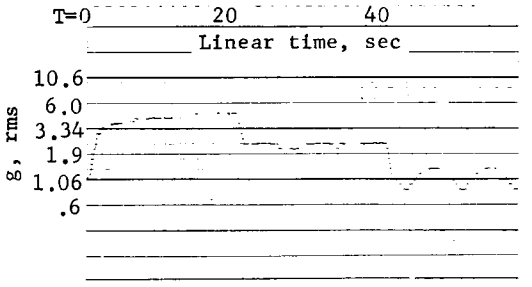
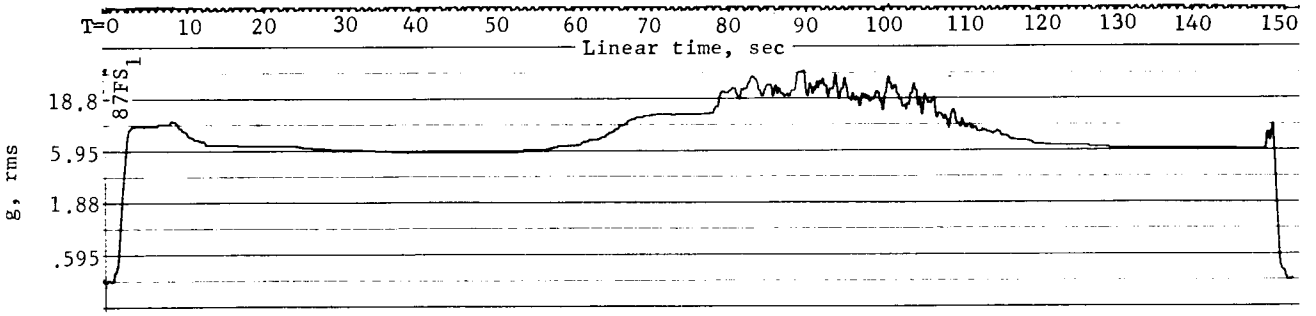


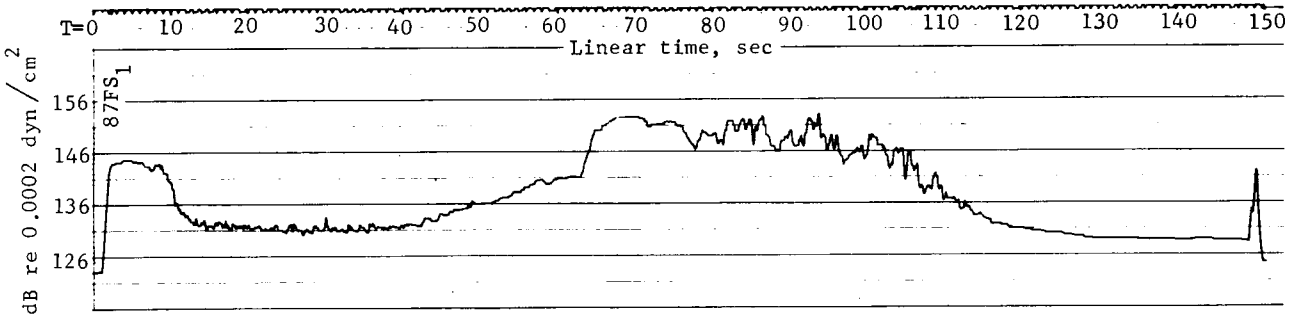
Figure 102. Measurement 2575, SPL Flush Mounted, Compartment 1A, Target Side, rms/History, Vehicle 3 Flight



(a) Measurement 2568, Vibration, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 1 SCF



(b) Measurement 2568, Vibration, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 6 Flight



(c) Measurement 2665, Acoustic, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Compartment 1A, Sta 617, Quad III, Vehicle 6 Flight

Figure 103.

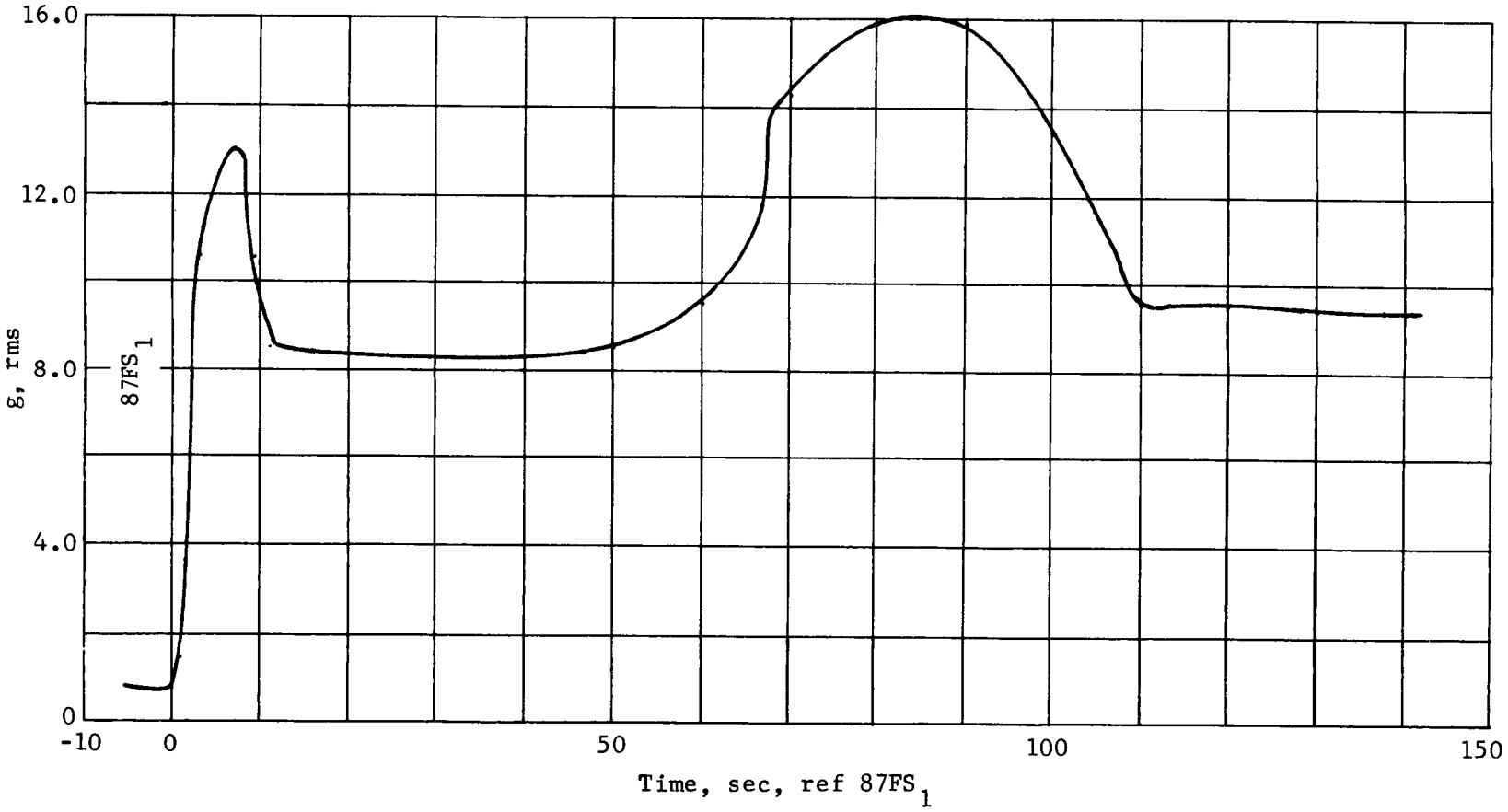


Figure 104. Measurement 2568, 1A Tank Top at MDS Pressure Switch Mounting, rms/History, Perpendicular Axis, Vehicle 1 Flight

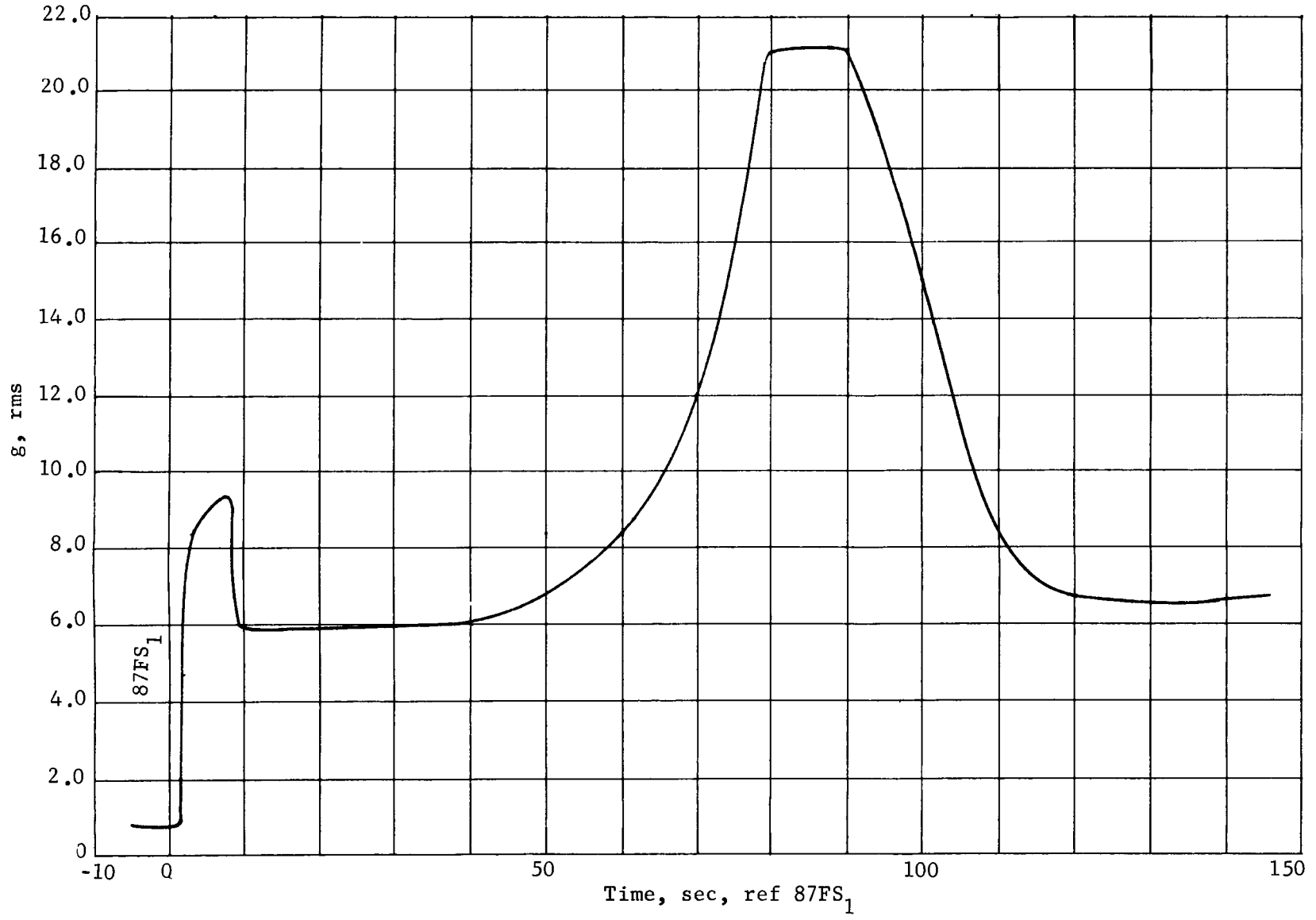
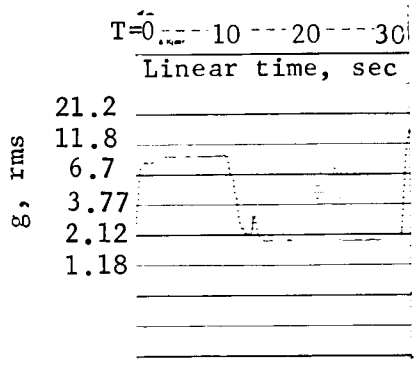
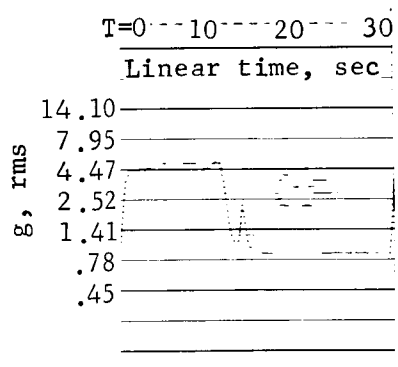


Figure 105. Measurement 2568, 1A Oxidizer Tank Top at MDS Pressure Switch, rms/History, Perpendicular Axis, Vehicle 3 Flight



(a) Measurement 2570, Vibration, Airframe at Destruct Battery Mounting, Radial, Compartment 1B, Sta 929, Quad III, Stringer 17, Vehicle 2 FRF



(b) Measurement 2529, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Longitudinal, Compartment 1B, Sta 923, Quad II, Vehicle 2 FRF

Figure 106.

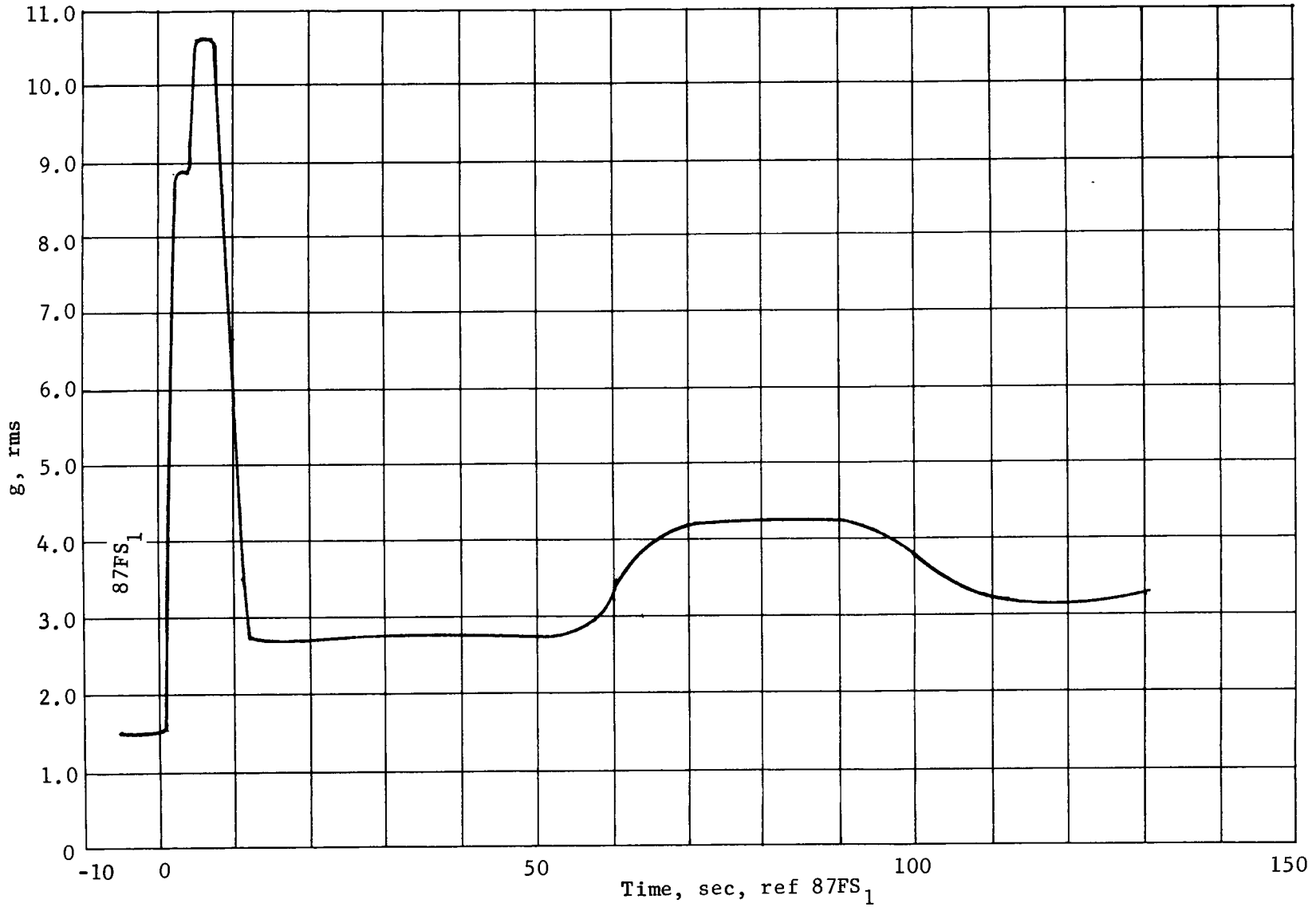


Figure 107. Measurement 2570, 1B Airframe at Destruct Battery Mounting, rms/History, Radial Axis, Vehicle 2 Flight

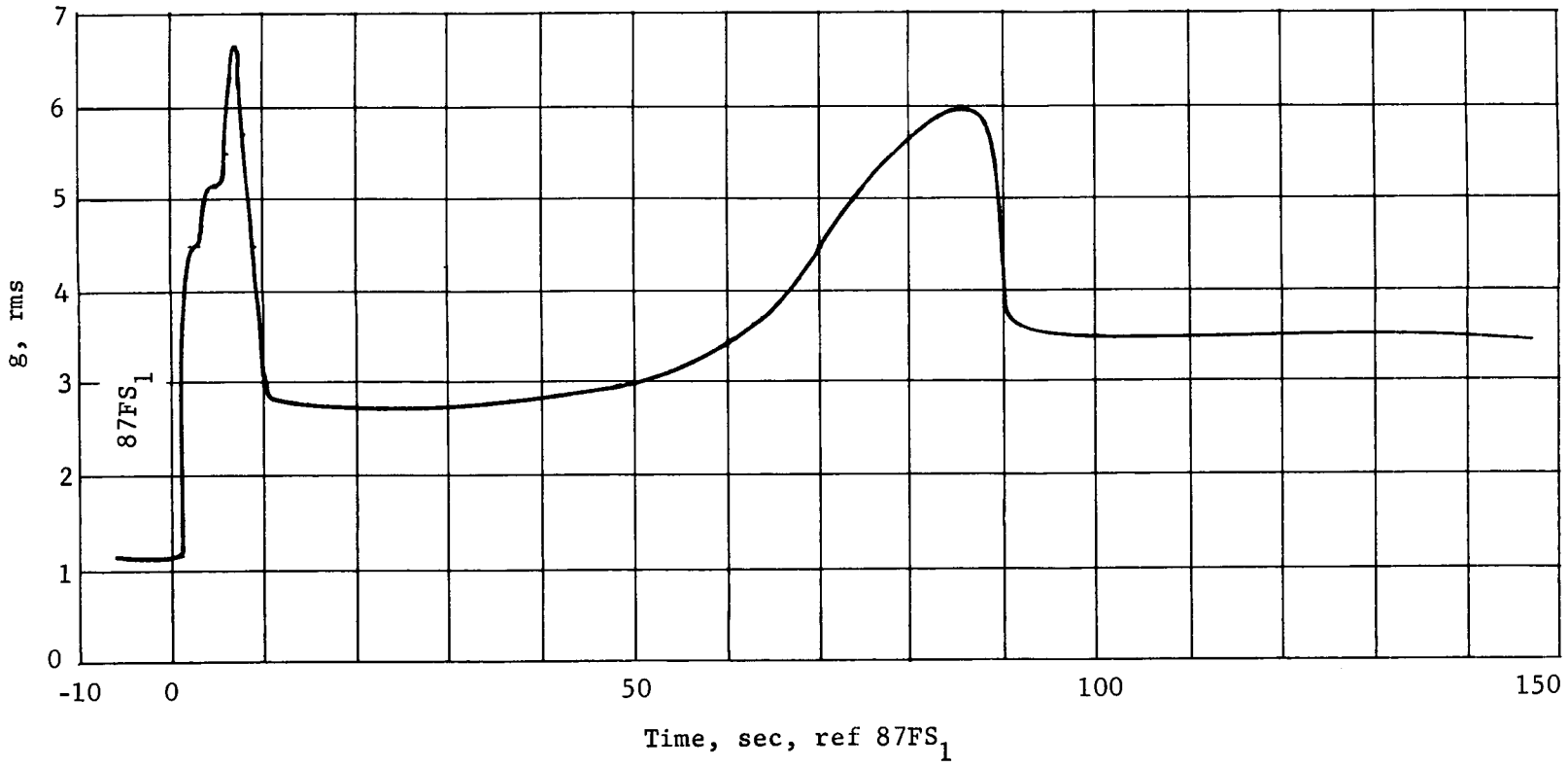
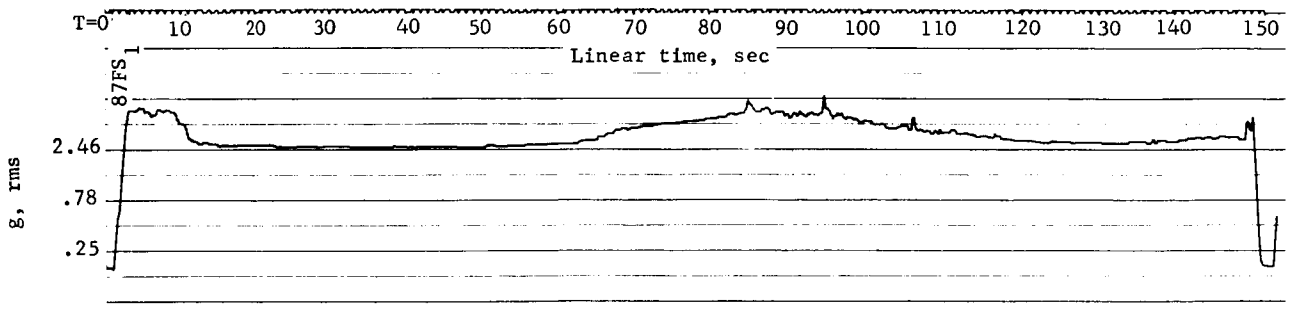
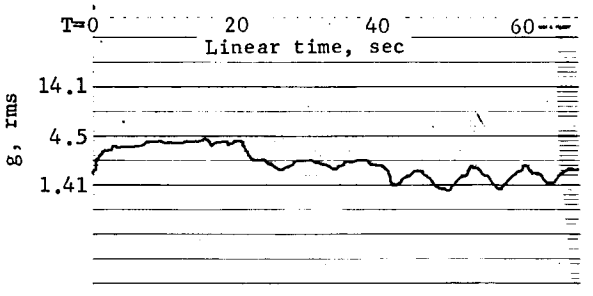


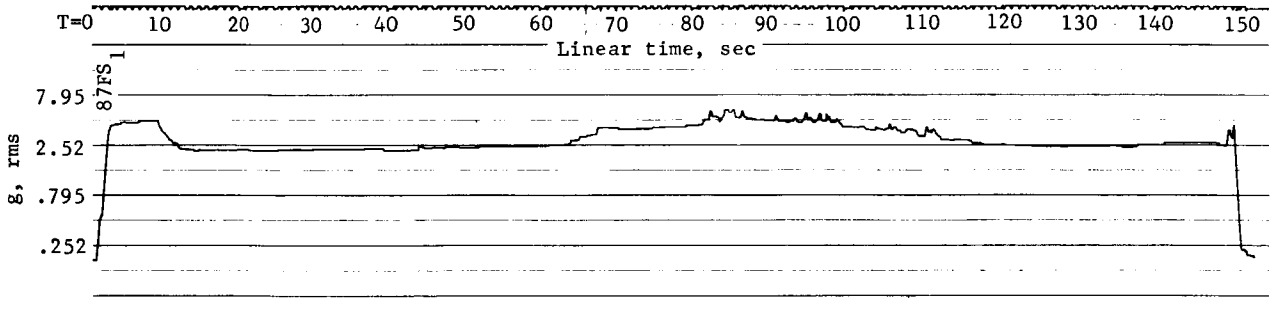
Figure 108. Measurement 2529, 1B Oxidizer Tank Bottom at Rate Gyro Mounting, rms/History, Longitudinal Axis, Vehicle 2 Flight



(a) Measurement 2529, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Longitudinal, Compartment 1B, Sta 923, Quad II, Vehicle 6 Flight



(b) Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehicle 1 SCF



(c) Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehicle 6 Flight

Figure 109.

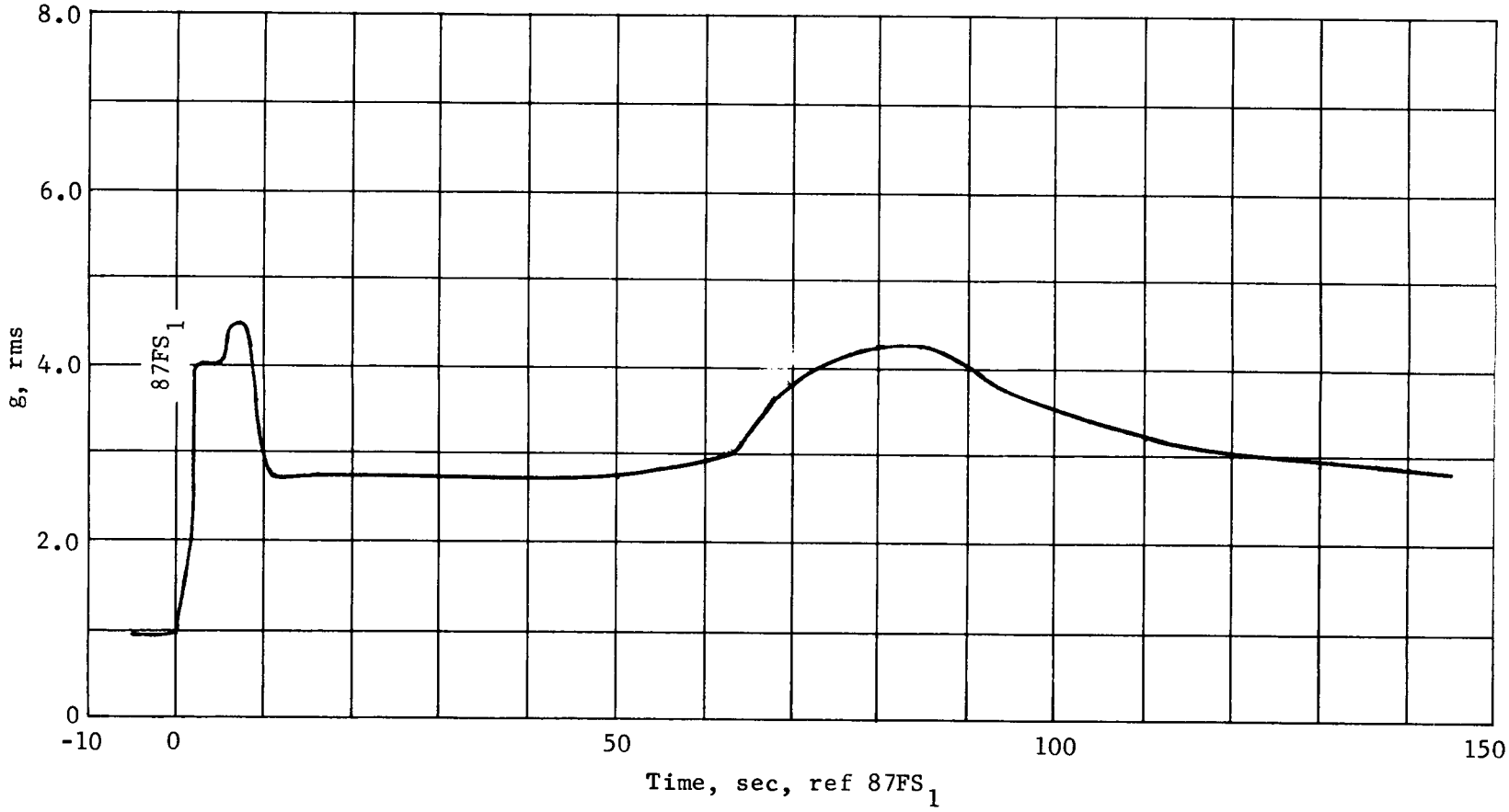


Figure 110. Measurement 2530, 1B Oxidizer Tank Bottom at Rate Gyro Mounting, rms/History, Lateral Axis, Vehicle 1 Flight

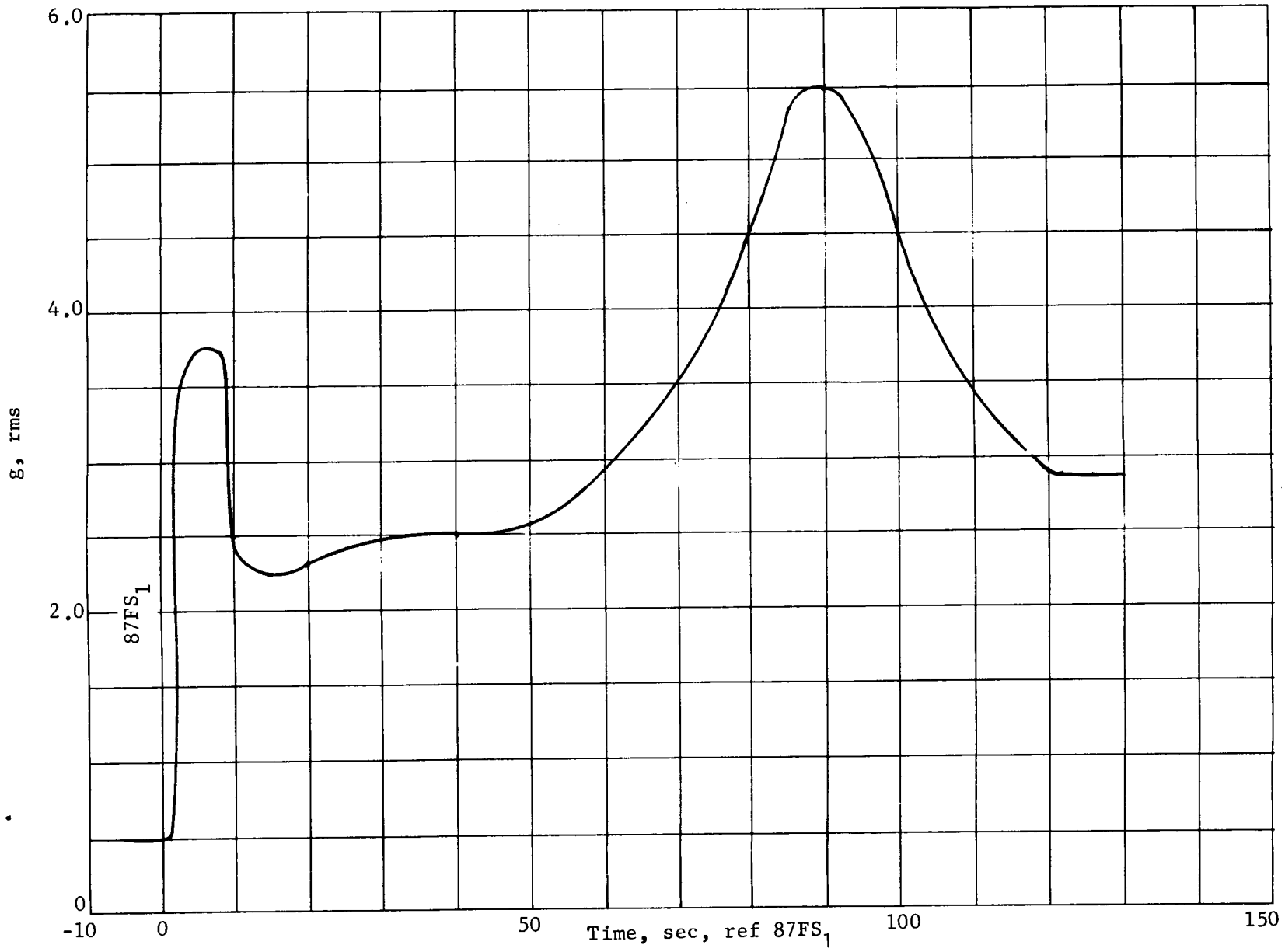


Figure 111. Measurement 2530, 1B Tank Bottom at Rate Gyro Mounting, rms/History, Lateral Axis, Vehicle 3 Flight

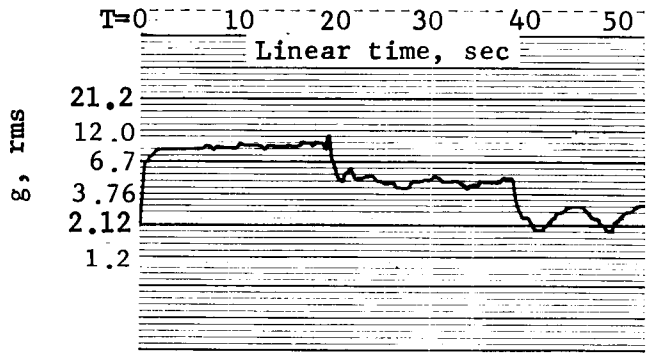


Figure 112. Measurement 2569, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1B, Sta 938, Quad III, Vehicle 1 SCF

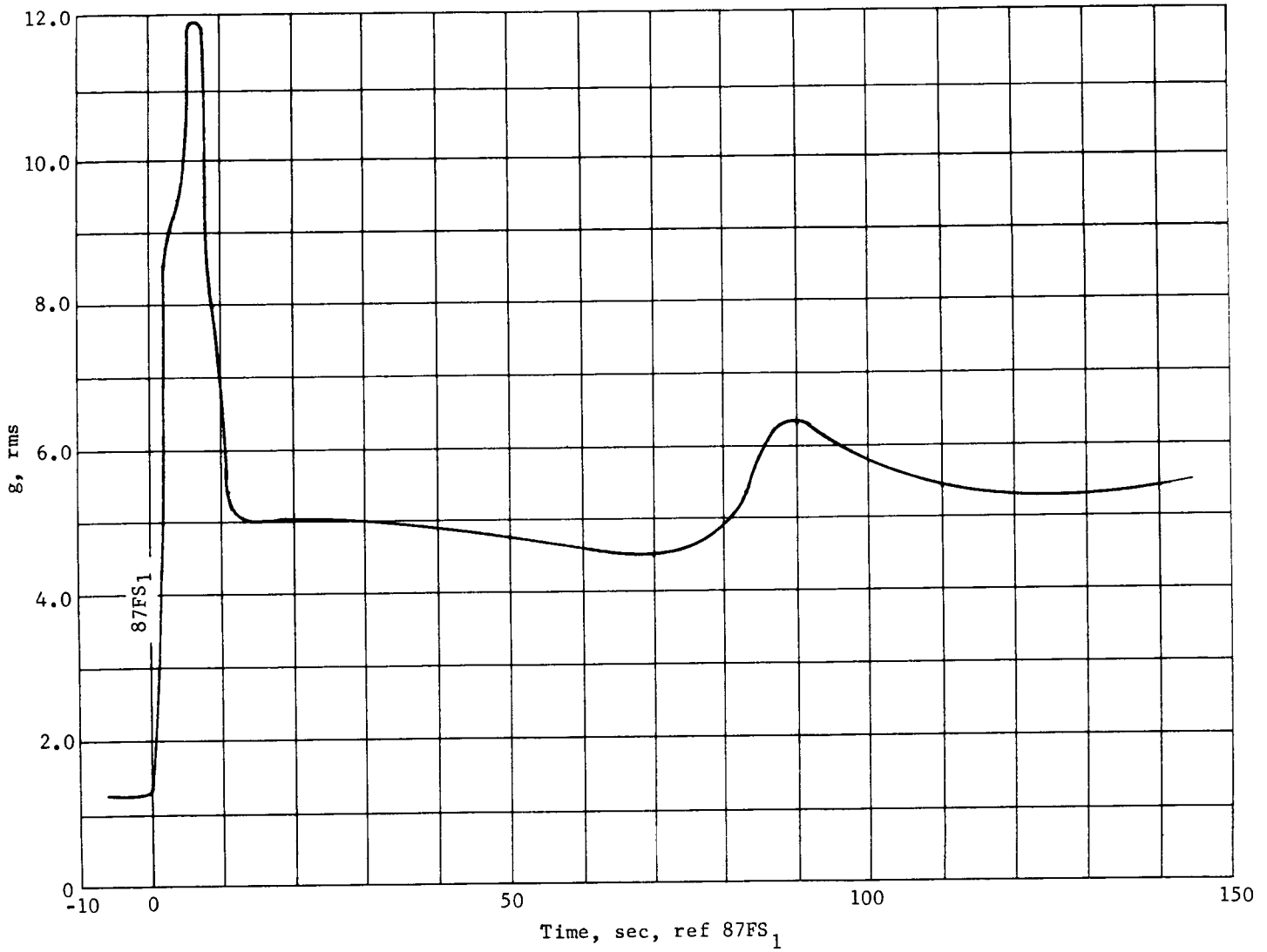


Figure 113. Measurement 2569, 1B Fuel Tank Top at MDS under Pressure Switch, rms/History, Perpendicular Axis, Vehicle 1 Flight

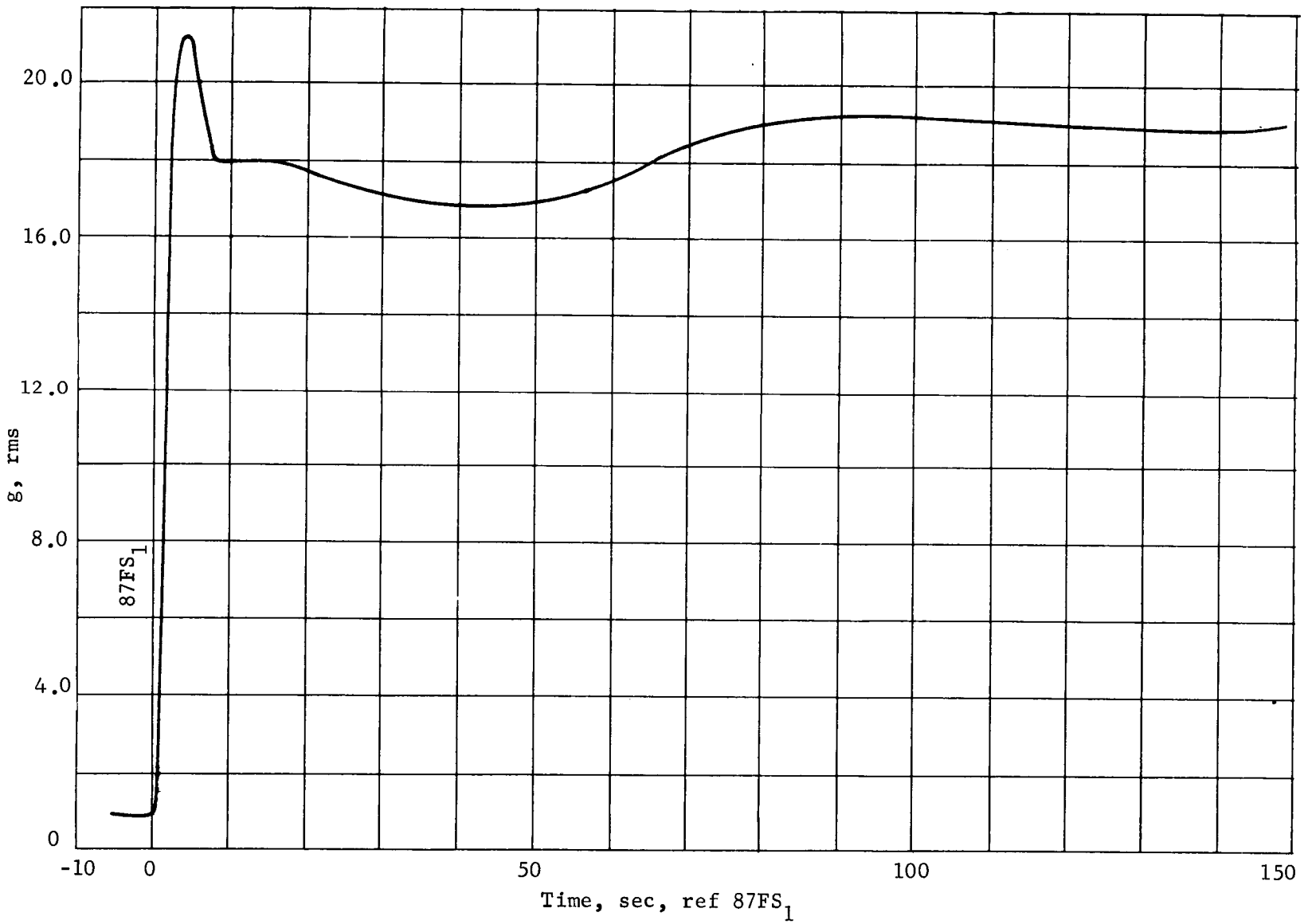
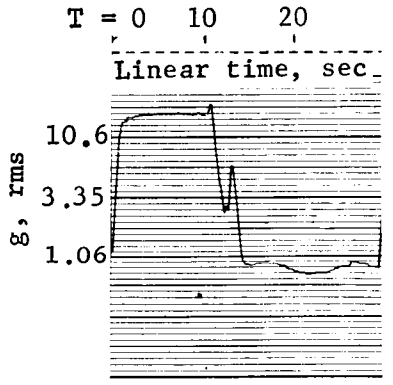
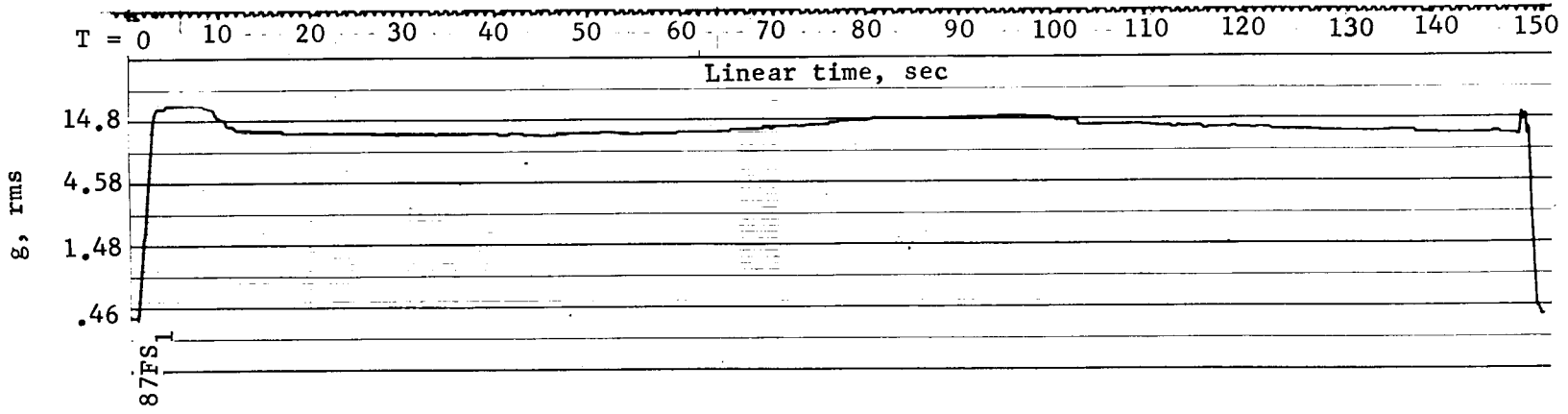


Figure 114. Measurement 2540, 1C Airframe at SRM Tie-in between Stringers 5 and 6, rms/History, Longitudinal Axis, Vehicle 3 Flight



(a) Measurement 2541, Vibration, Airframe at SRM Tie-in Point Lateral, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 2 FRF



(b) Measurement 2541, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 6 Flight

Figure 115.

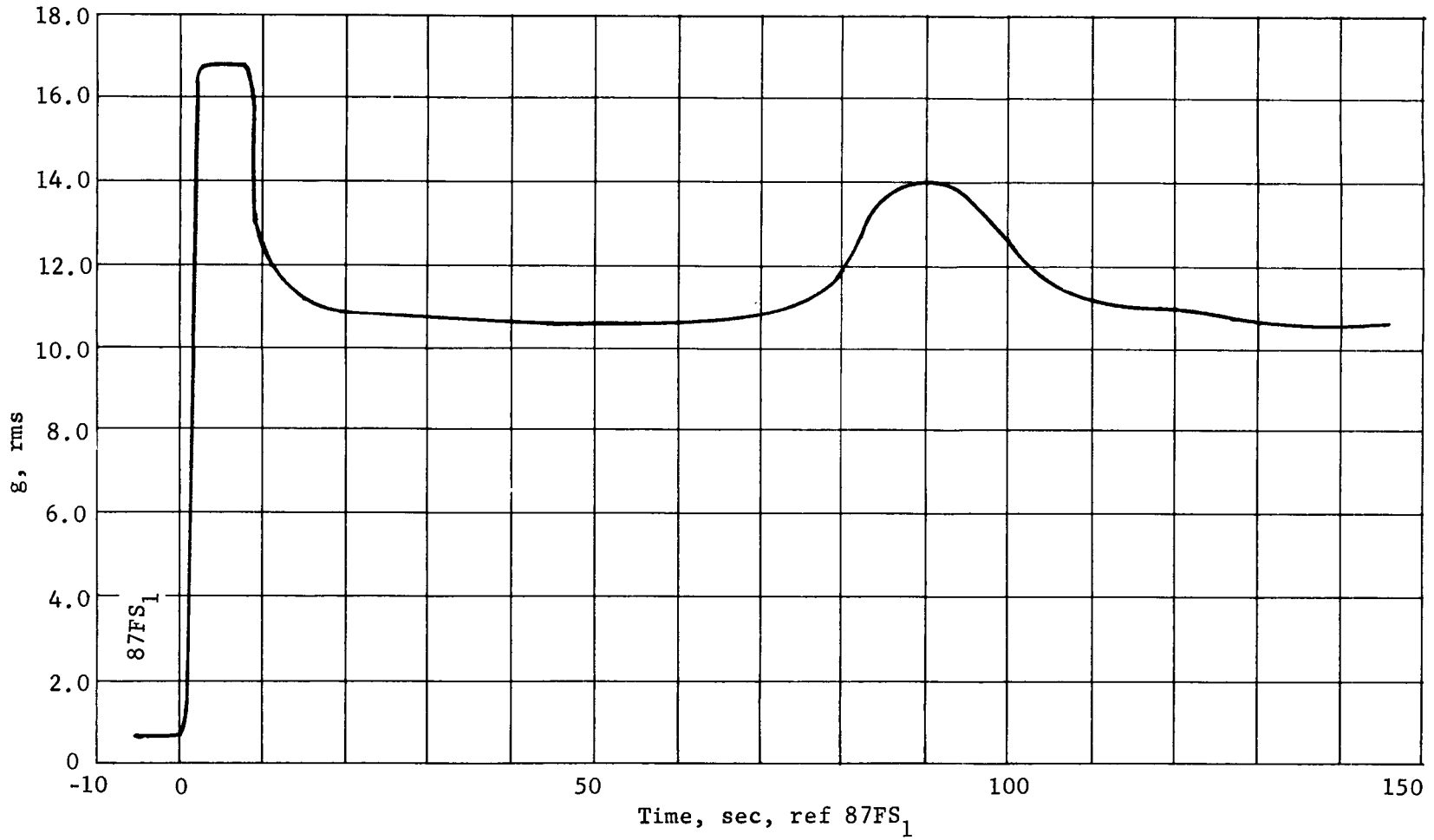
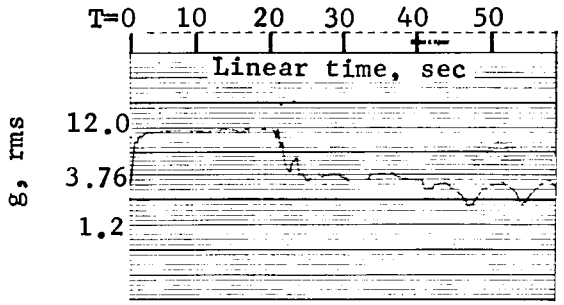
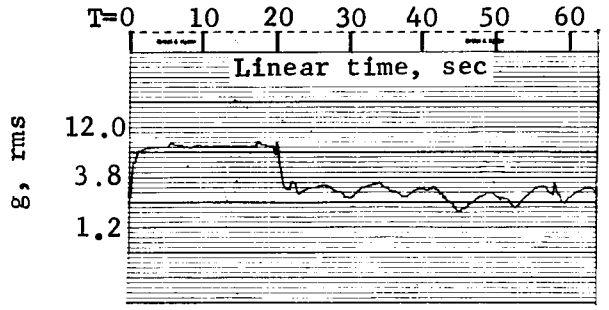


Figure 116. Measurement 2541, 1C Airframe at SRM Tie-in Point, rms/History, Lateral Axis, Vehicle 2 Flight



(a) Measurement 2572, Vibration, Airframe at Electrical Staging Disconnect, Longitudinal, Compartment 1C, Sta 1224, Quad III, between Stringers 26 and 27, Vehicle 1 SCF



(b) Measurement 2573, Vibration, Airframe at Electrical Staging Disconnect, Radial, Compartment 1C, Sta 1224, Quad III, between Stringers 26 and 27, Vehicle 1, SCF

Figure 117.

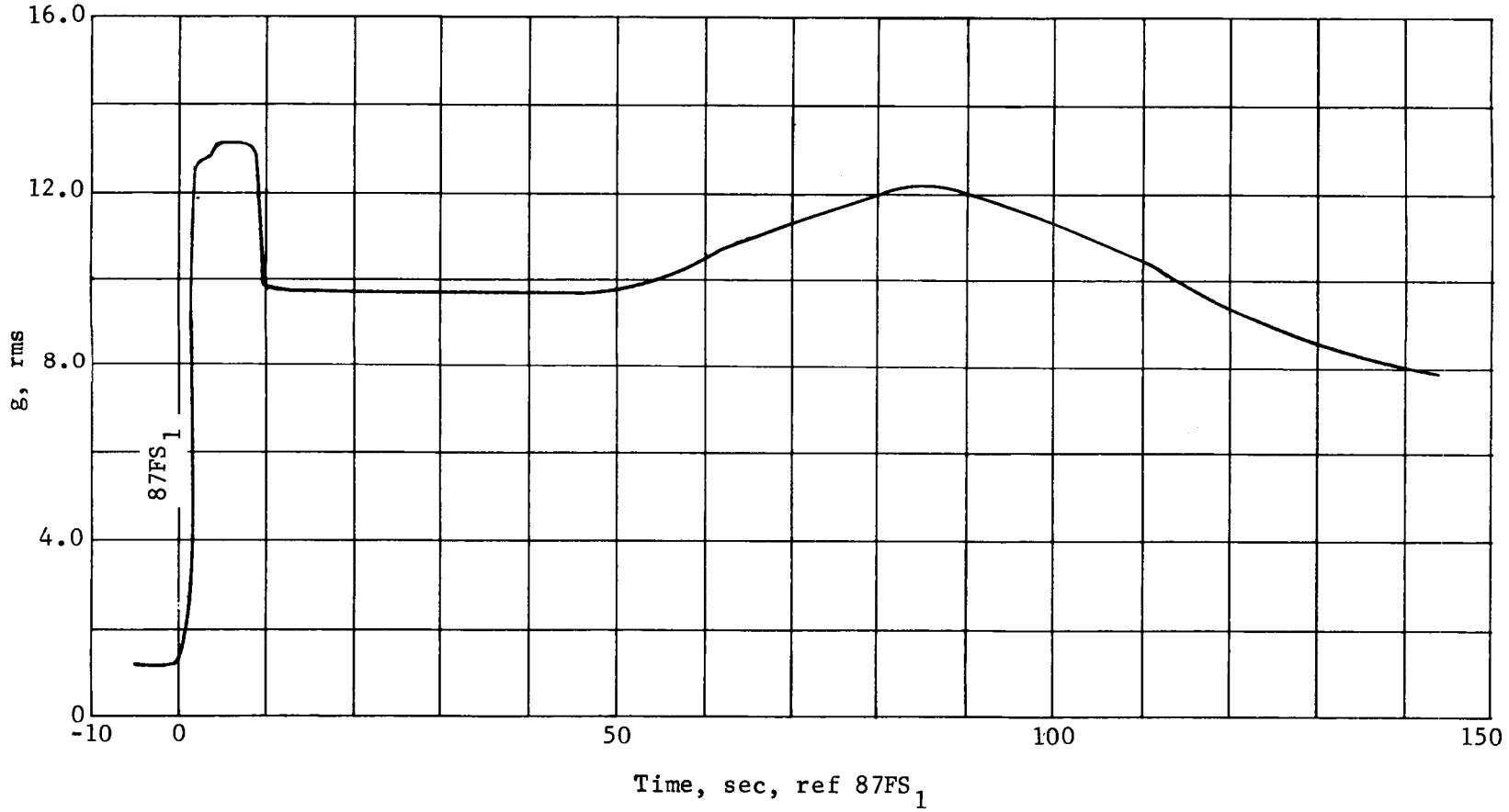


Figure 118. Measurement 2572, 1C Airframe at Electrical Disconnect between Stringers 26 and 27, rms/History, Longitudinal Axis, Vehicle 1 Flight

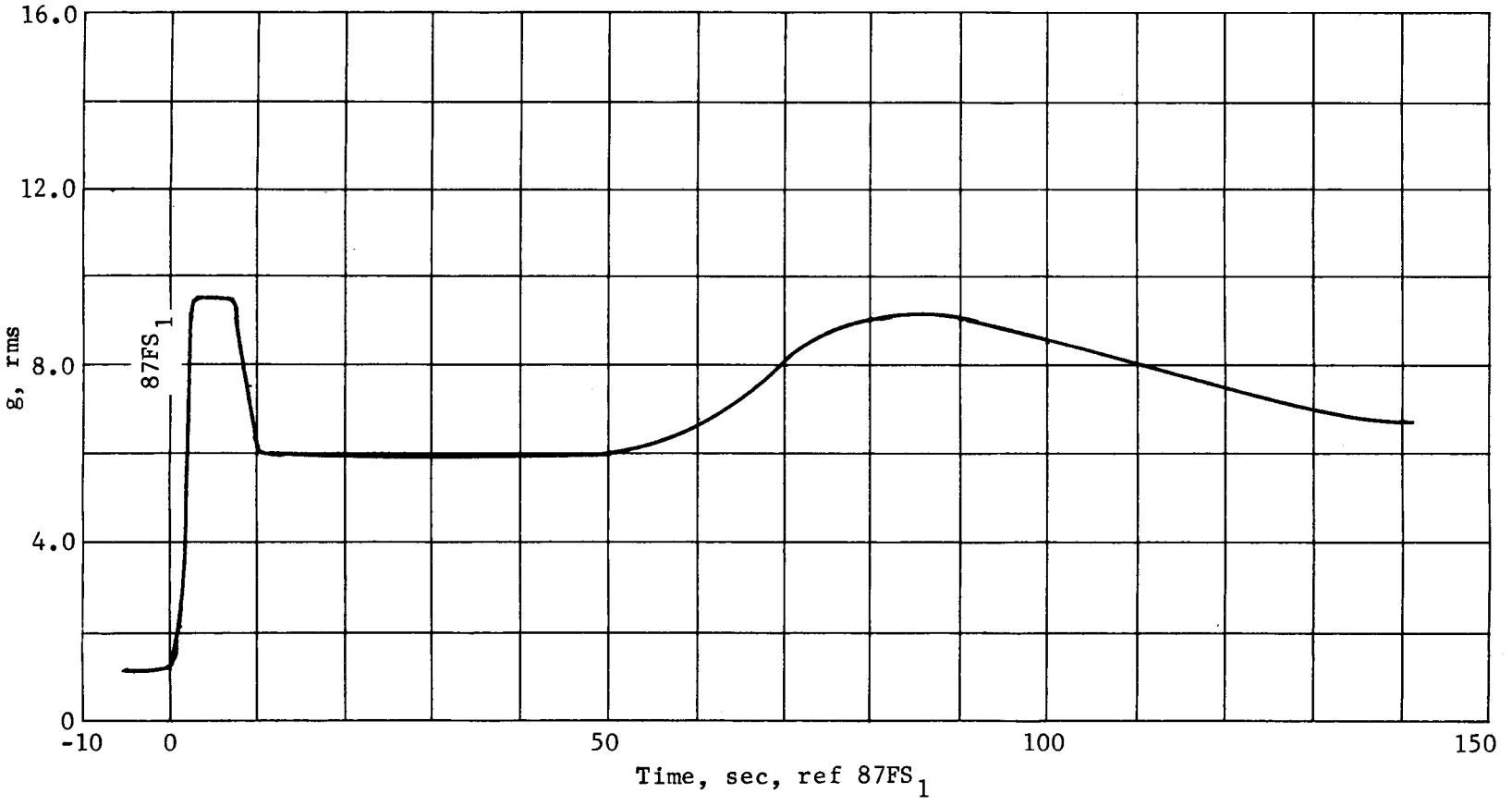


Figure 119. Measurement 2573, 1C Airframe at Electrical Staging Disconnect between Stringers 26 and 27, rms/History, Radial Axis, Vehicle 1 Flight

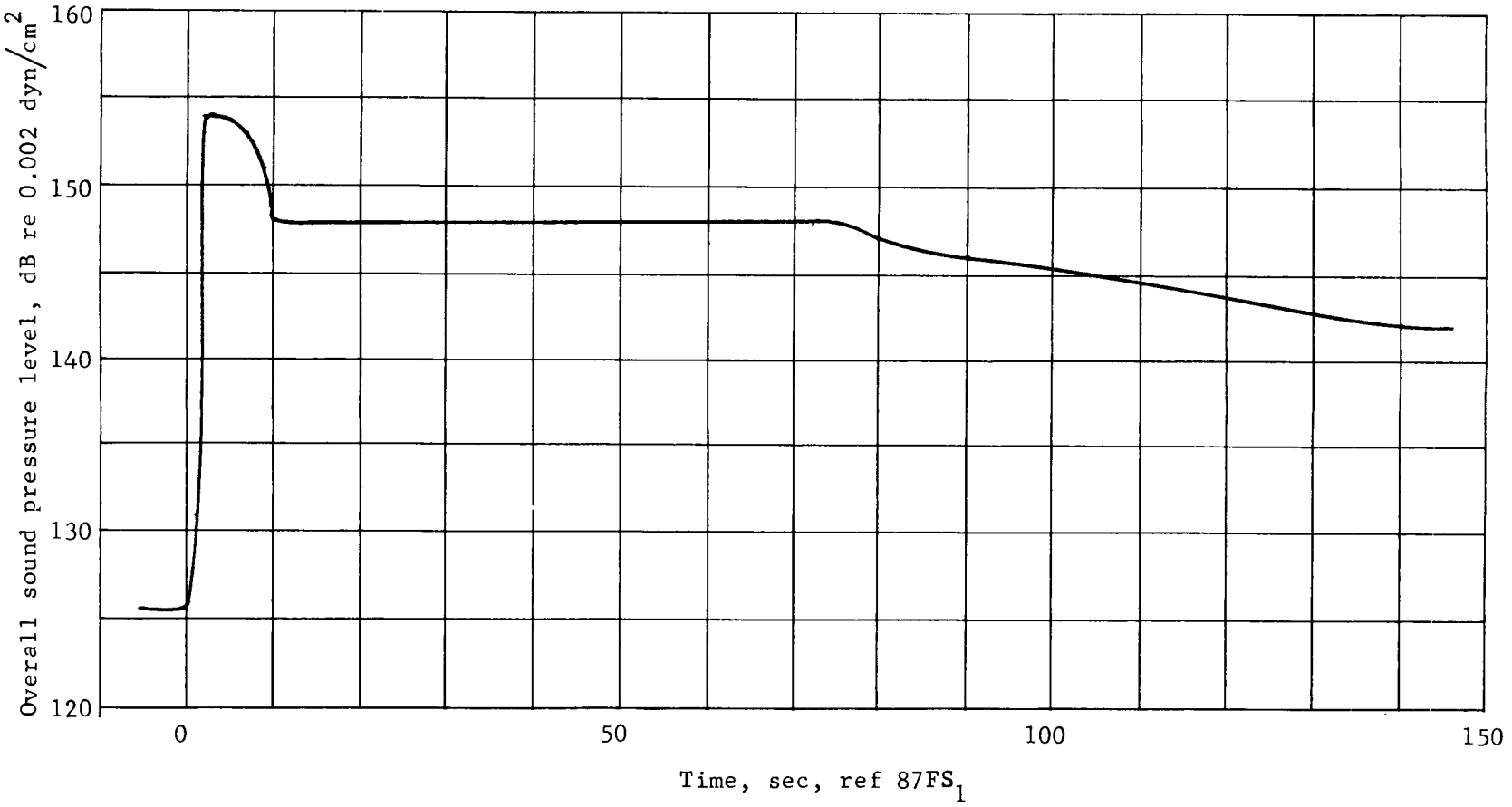


Figure 120. Measurement 2576, SPL Compartment 1C, Flush Mounted, rms/History, Vehicle 3 Flight

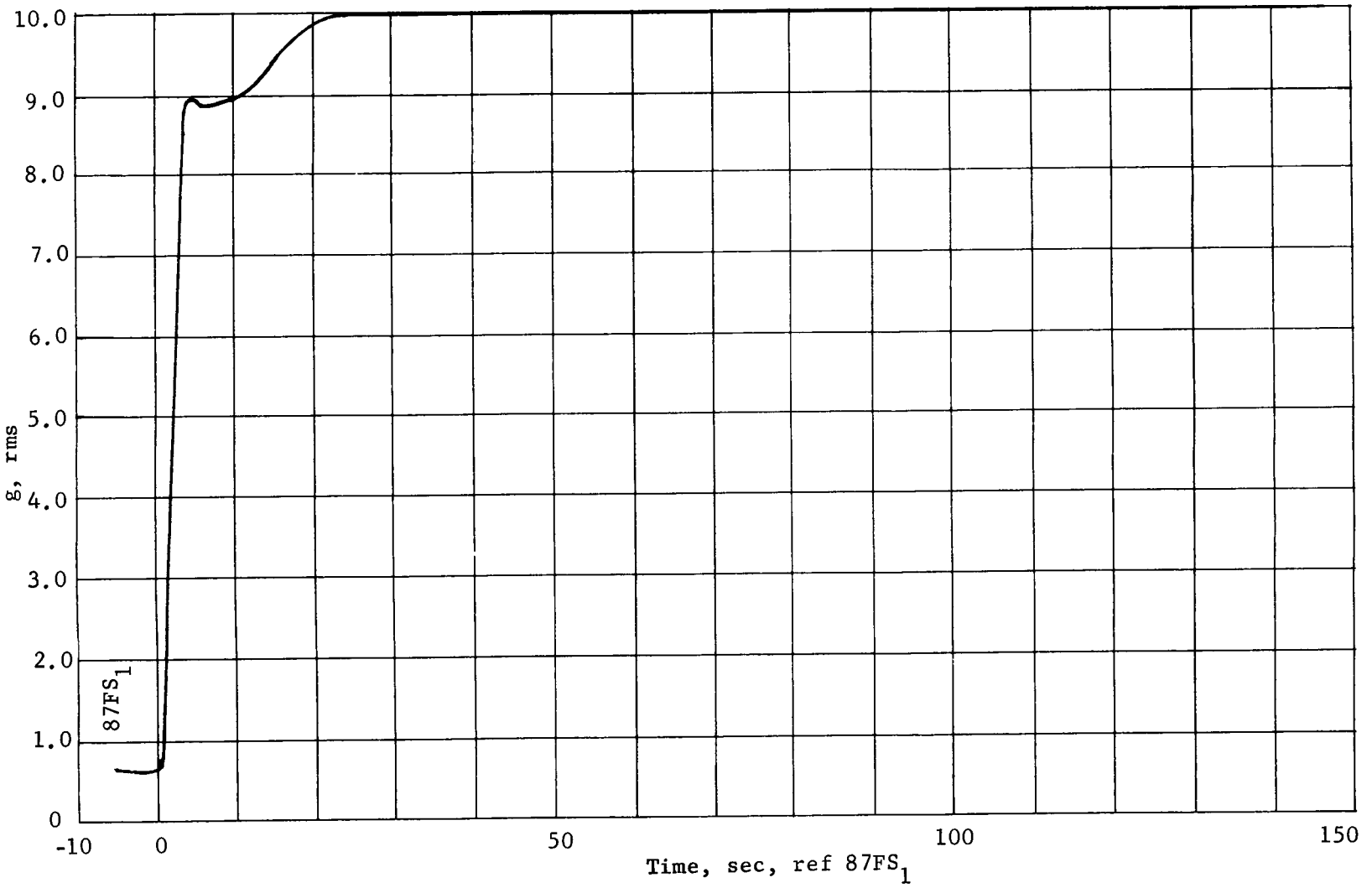


Figure 121. Measurement 2537, 1C Engine Gimbal Pad SA-1, rms/History, Longitudinal Axis, Vehicle 2 Flight

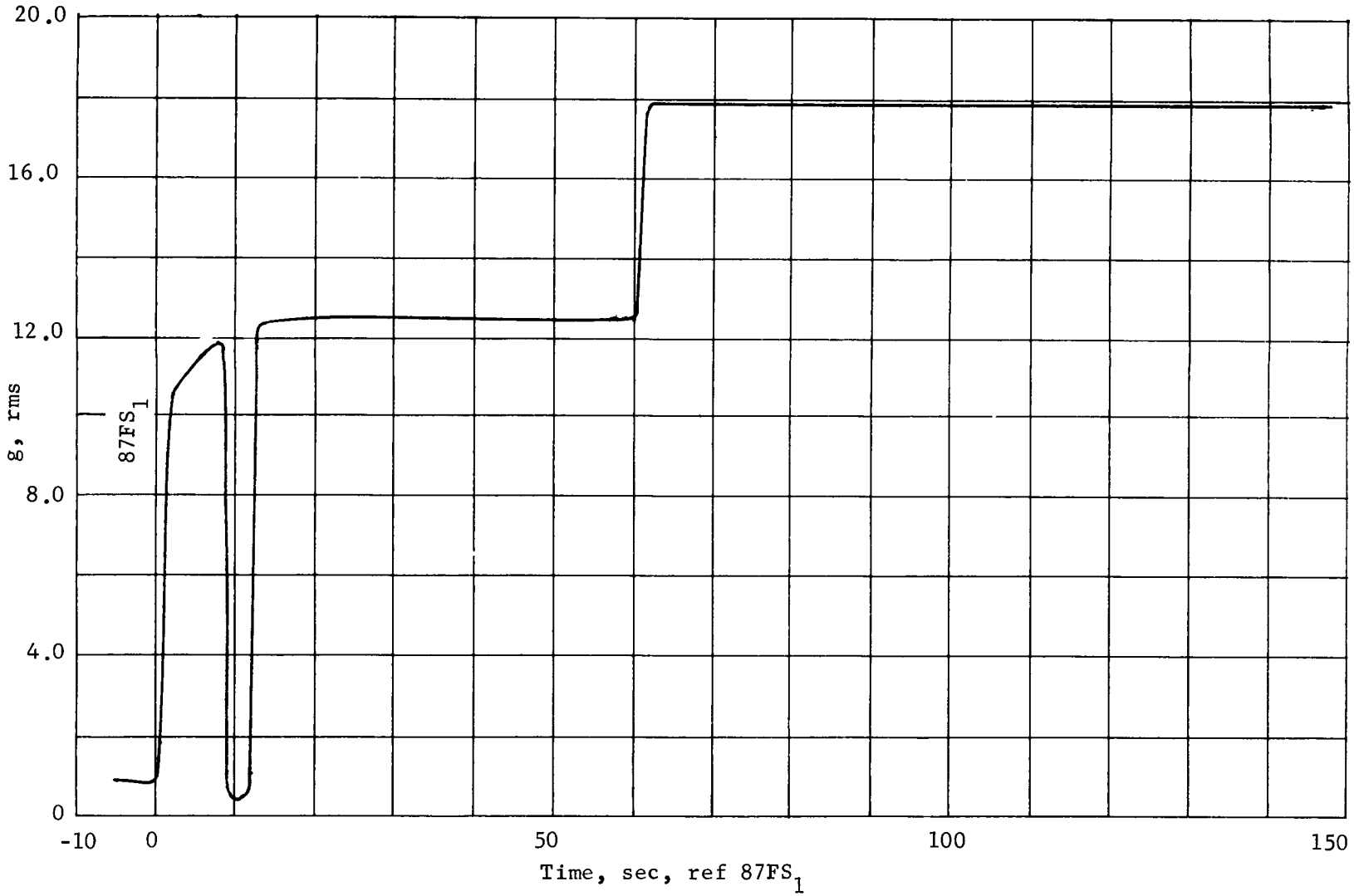


Figure 122. Measurement 2537, Engine Gimbal Pad SA-1, rms/History, Longitudinal Axis, Vehicle 3 Flight

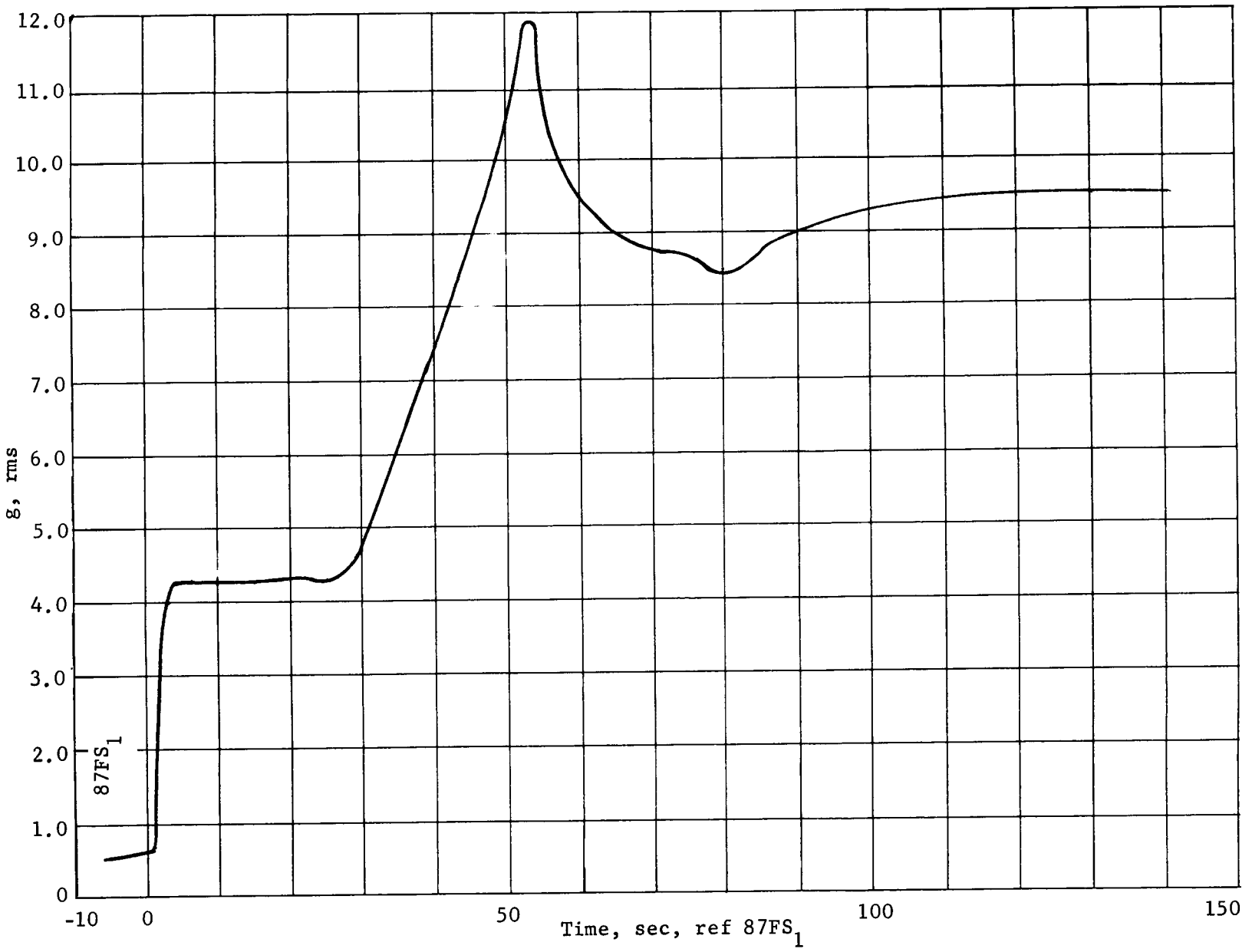


Figure 123. Measurement 2538, 1C Engine Gimbal Pad SA-1, rms/History, Laterial Axis, Vehicle 2 Flight

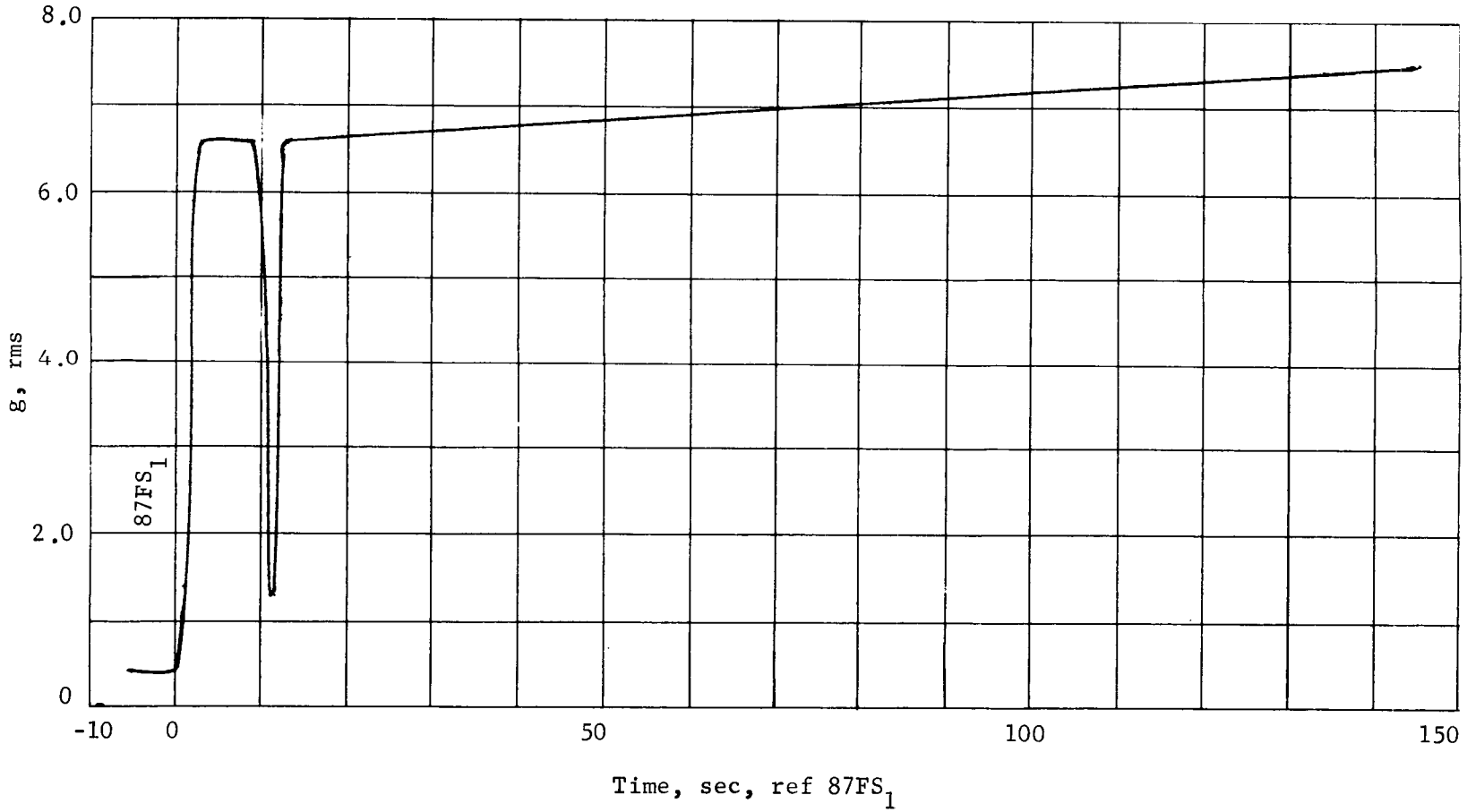


Figure 124. Measurement 2538, 1C Engine Gimbal Pad, rms/History, Longitudinal Axis, Vehicle 3 Flight

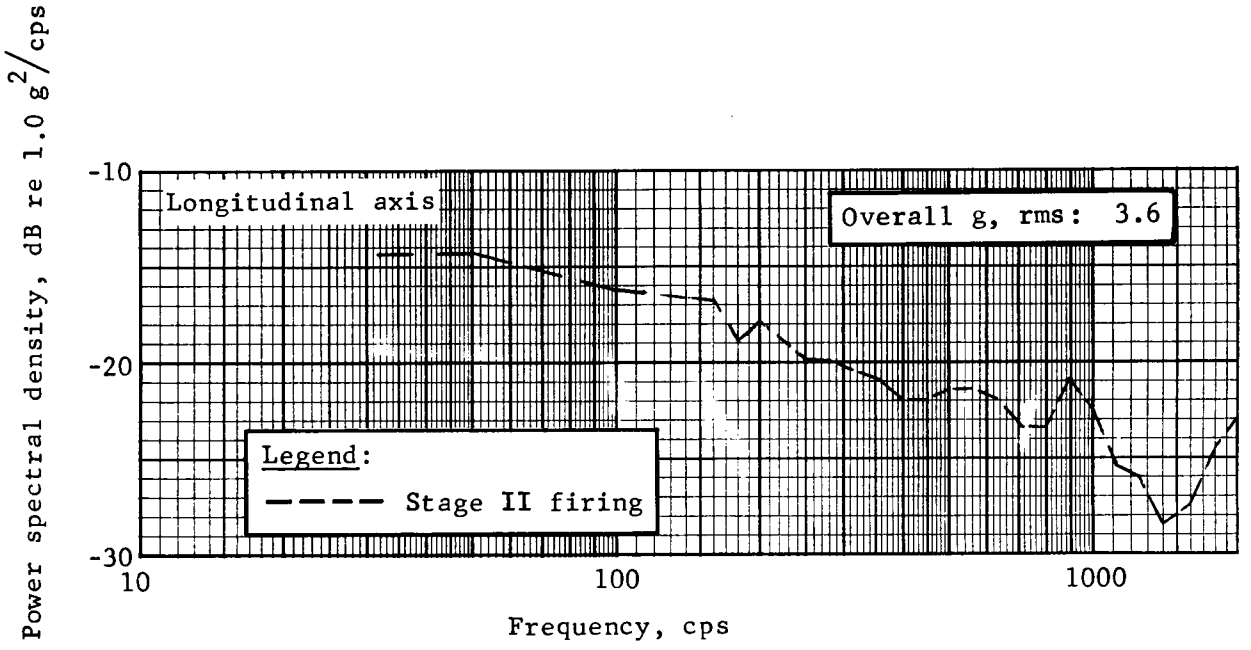


Figure 125. Measurement 2551, Vibration, Structure Mounting Point of Pitch ACS Nozzle, Longitudinal, Compartment 3A, Sta 130, BL-0 between Stringer 1C and 28C, Vehicle 1 SCF

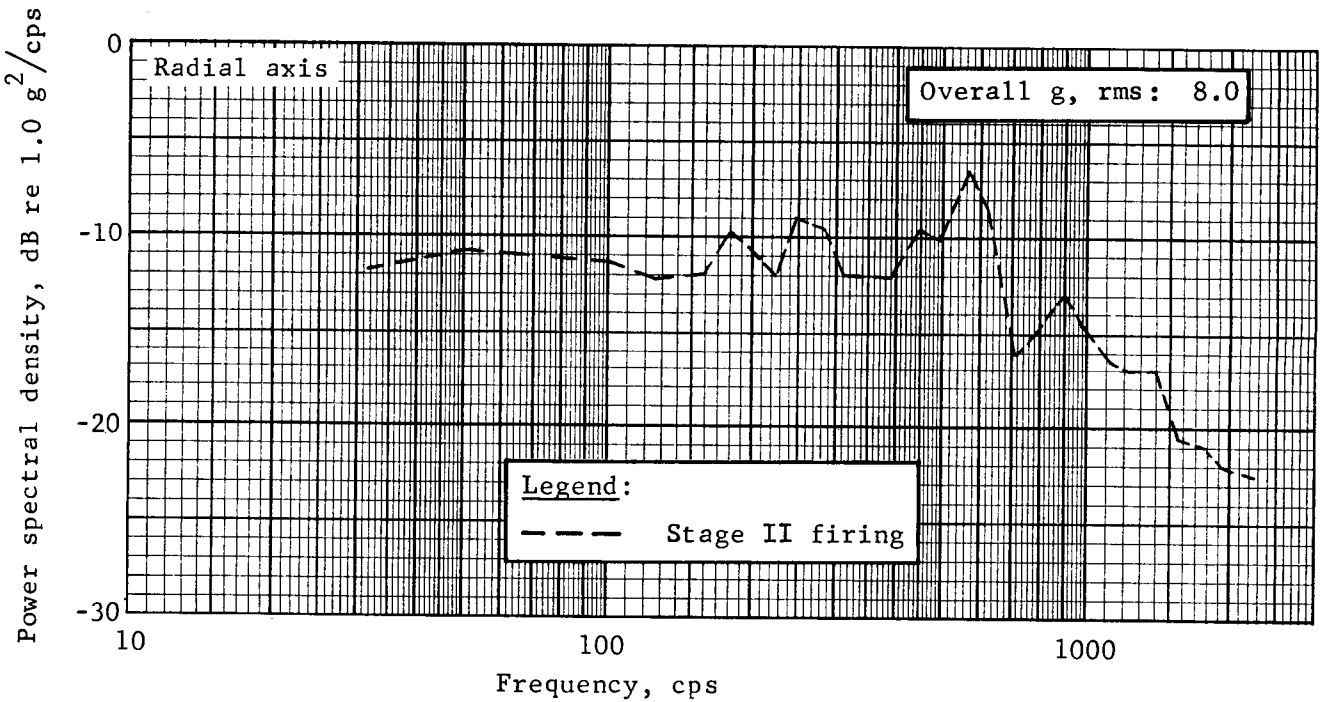


Figure 126. Measurement 2552, Vibration, Structure Mounting Point of Pitch ACS Nozzle, Radial, Compartment 3A, Sta 130, BL-0 between Stringers 1C and 28C, Vehicle 1 SCF

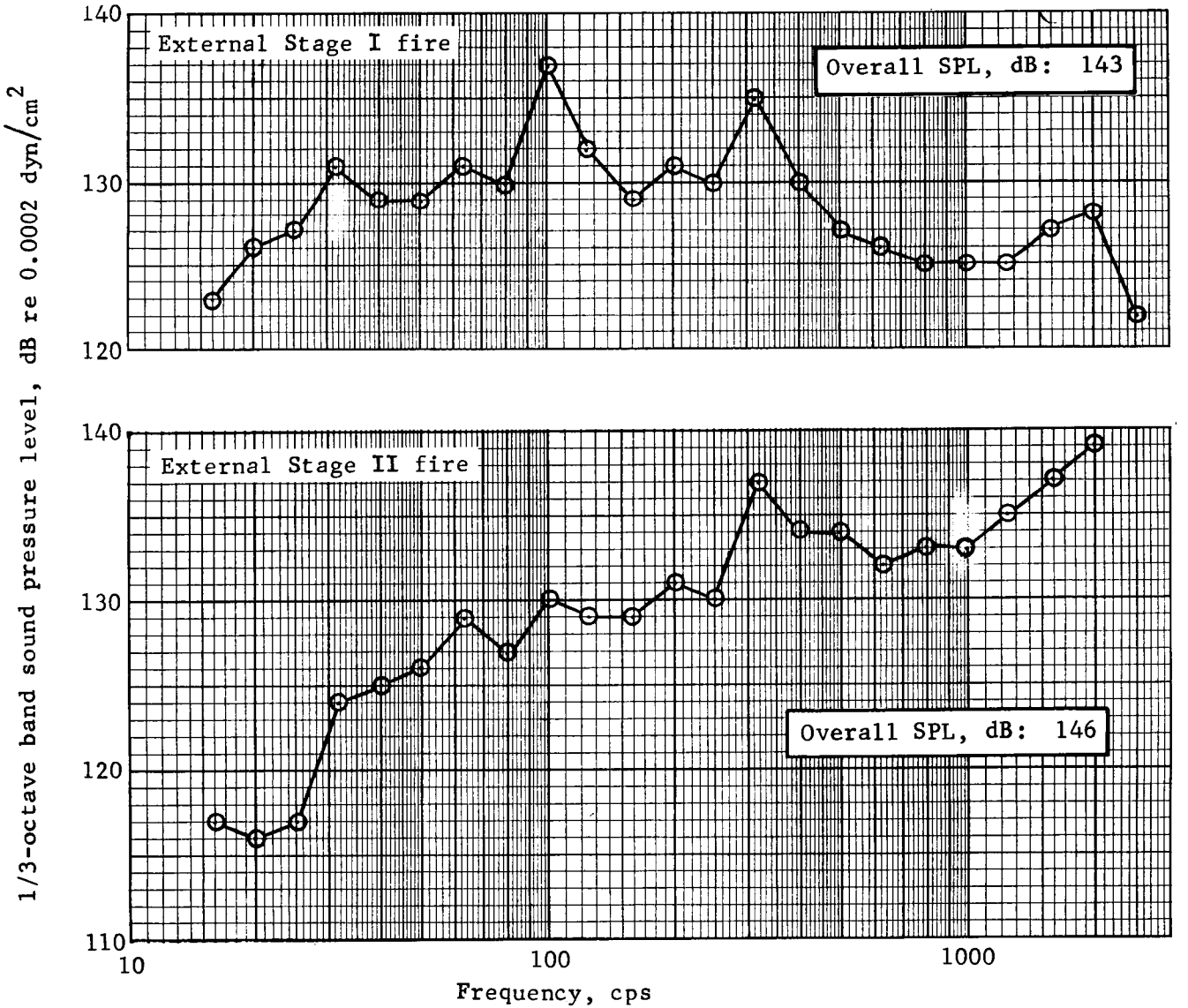


Figure 127. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° Off Target, Sta 123, Quad I, Vehicle 1 SCF

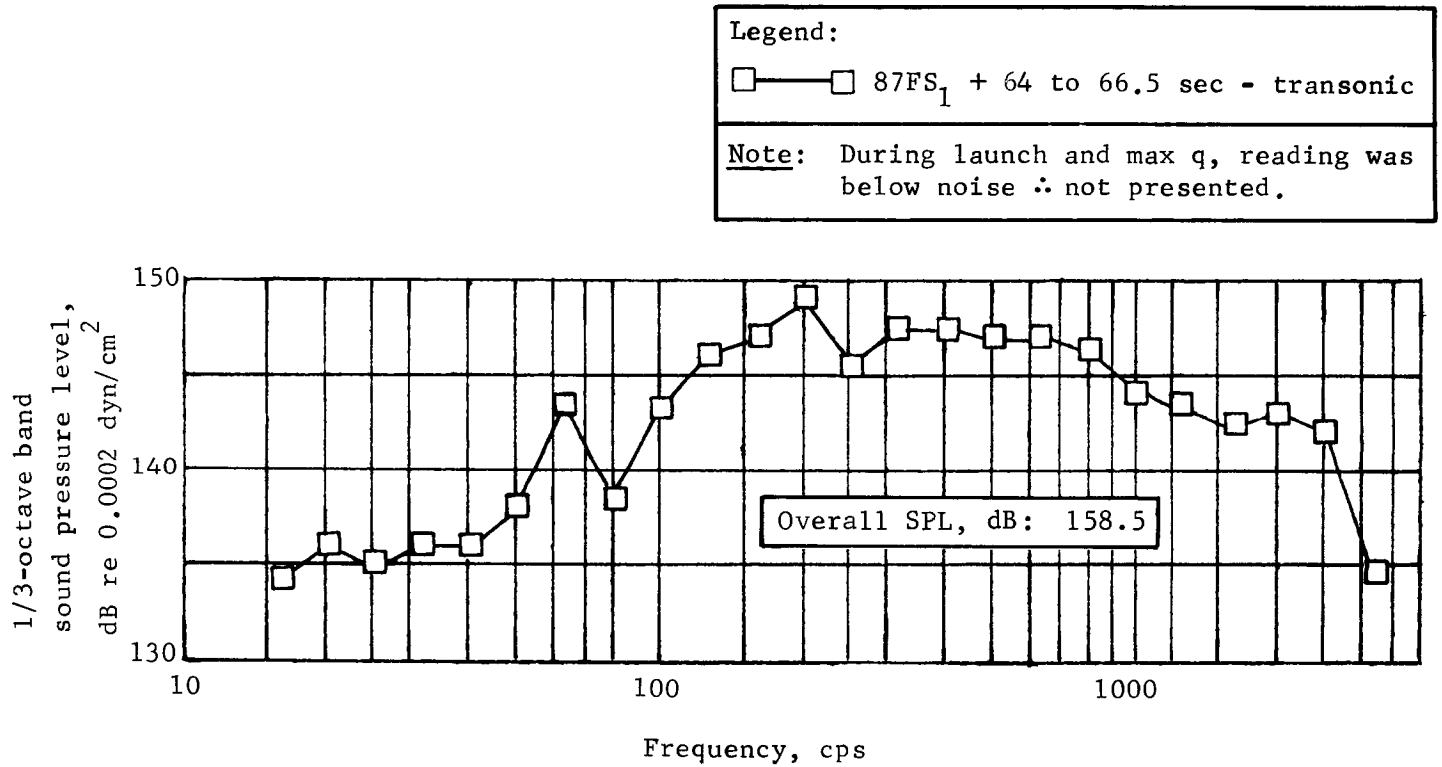


Figure 128. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 1 Flight

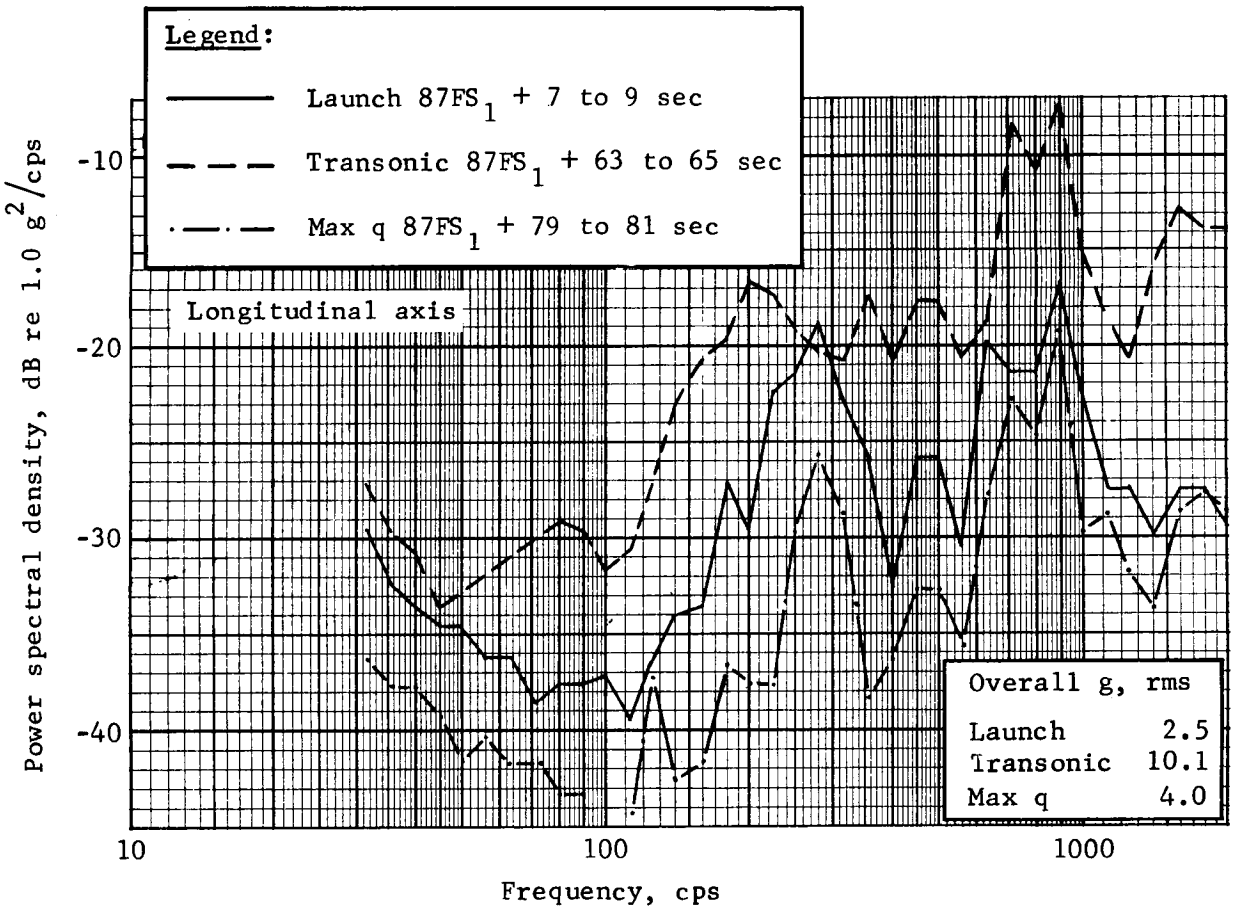


Figure 129. Measurement 2653, 3A Structure at Yaw ASCM, Vehicle 1 Flight

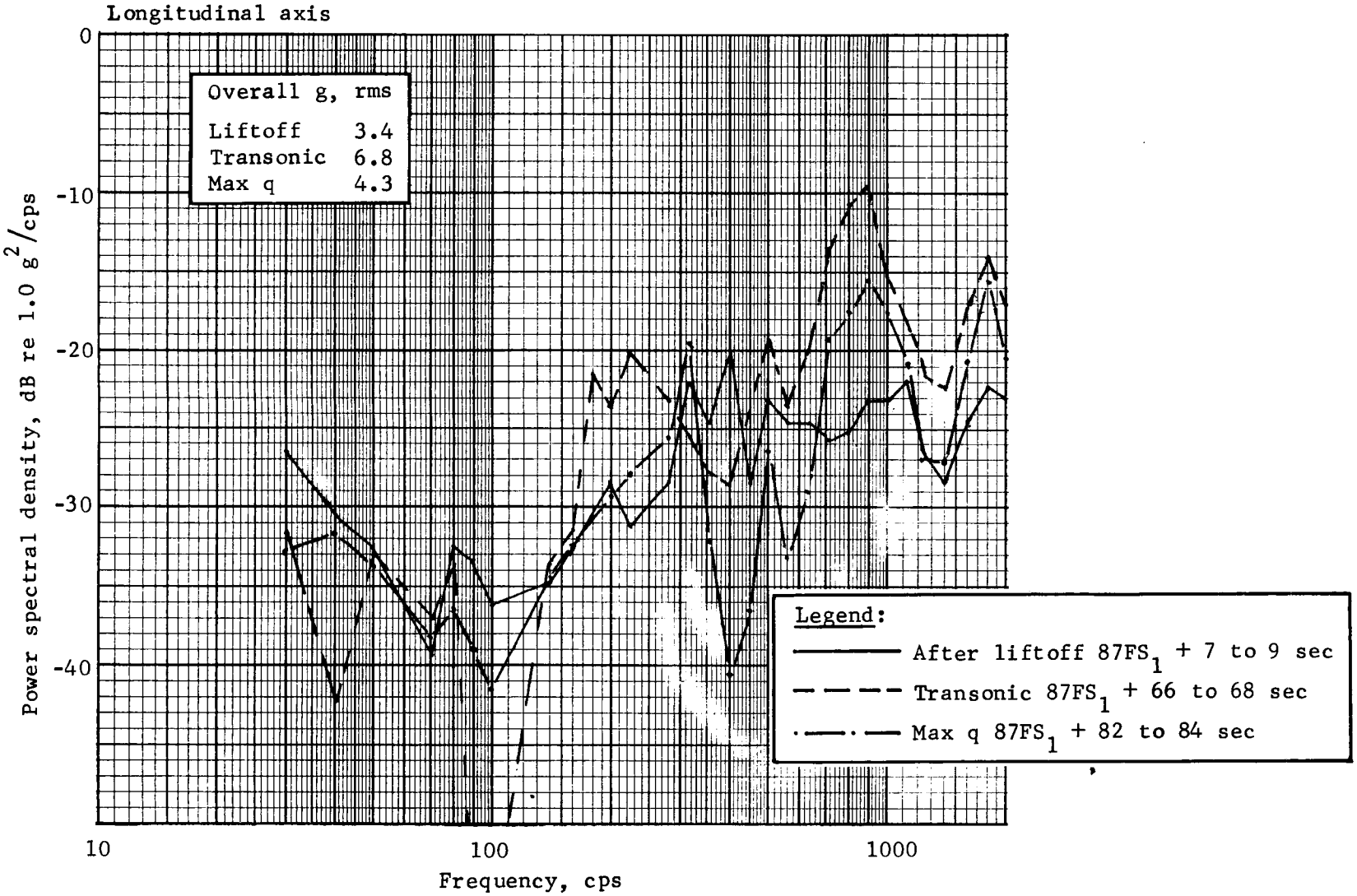


Figure 130. Measurement 2653, 3A Structure at Mounting Point of ACS Nozzle, Vehicle 6 Flight

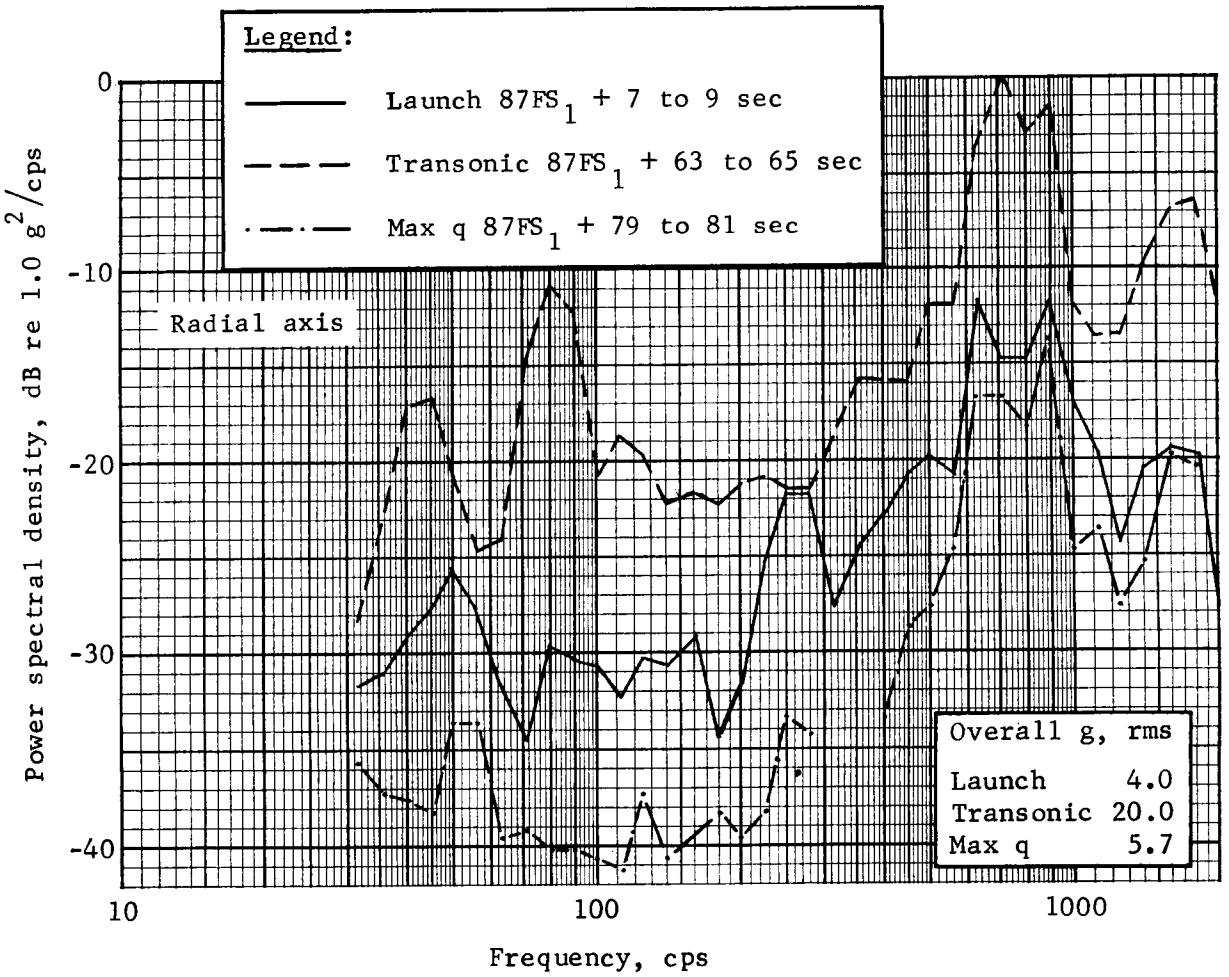


Figure 131. Measurement 2654, 3A Structure at Yaw ACSM, Vehicle 1 Flight

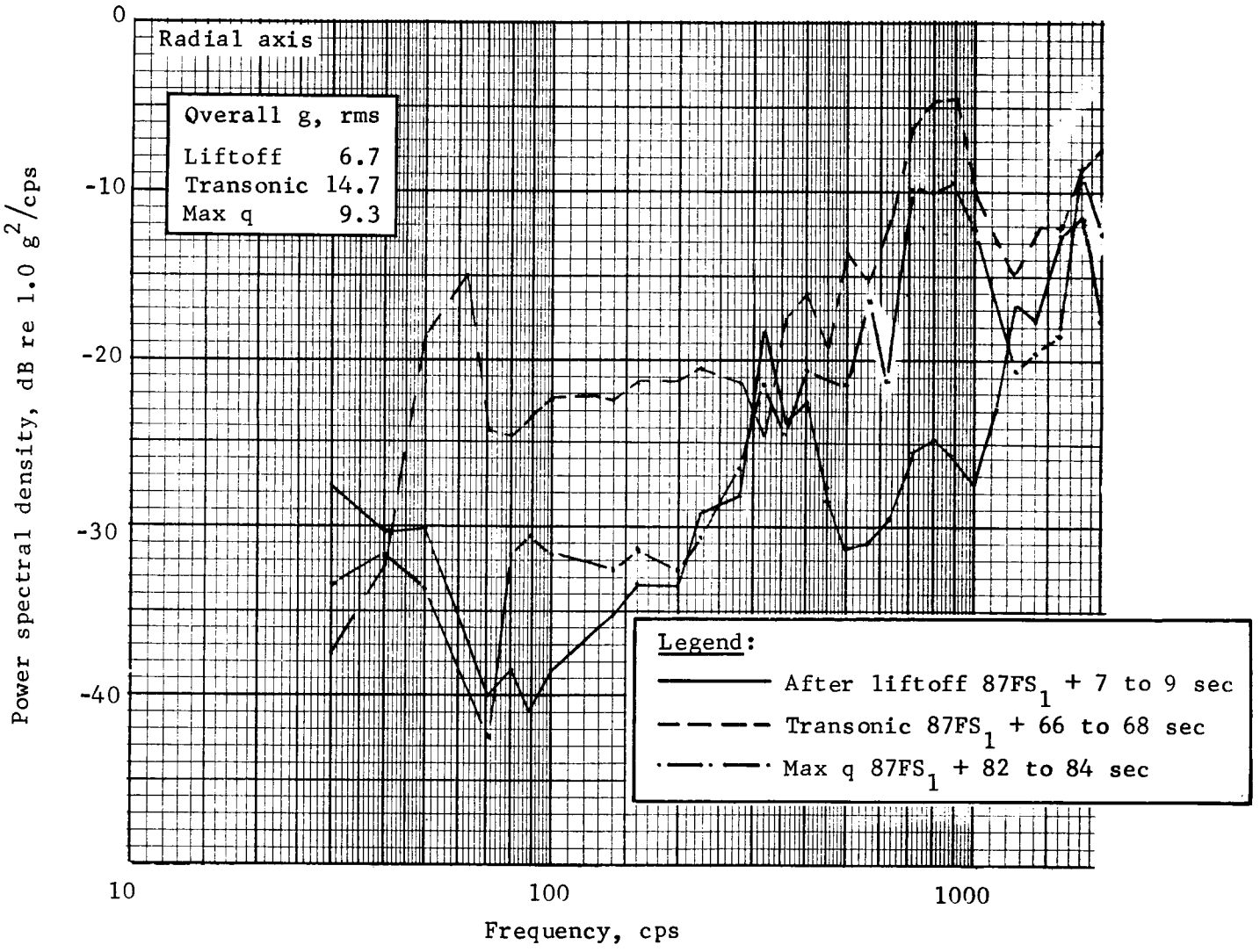


Figure 132. Measurement 2654, 3A Structure at Mounting Point of ACS Nozzle, Vehicle 6 Flight

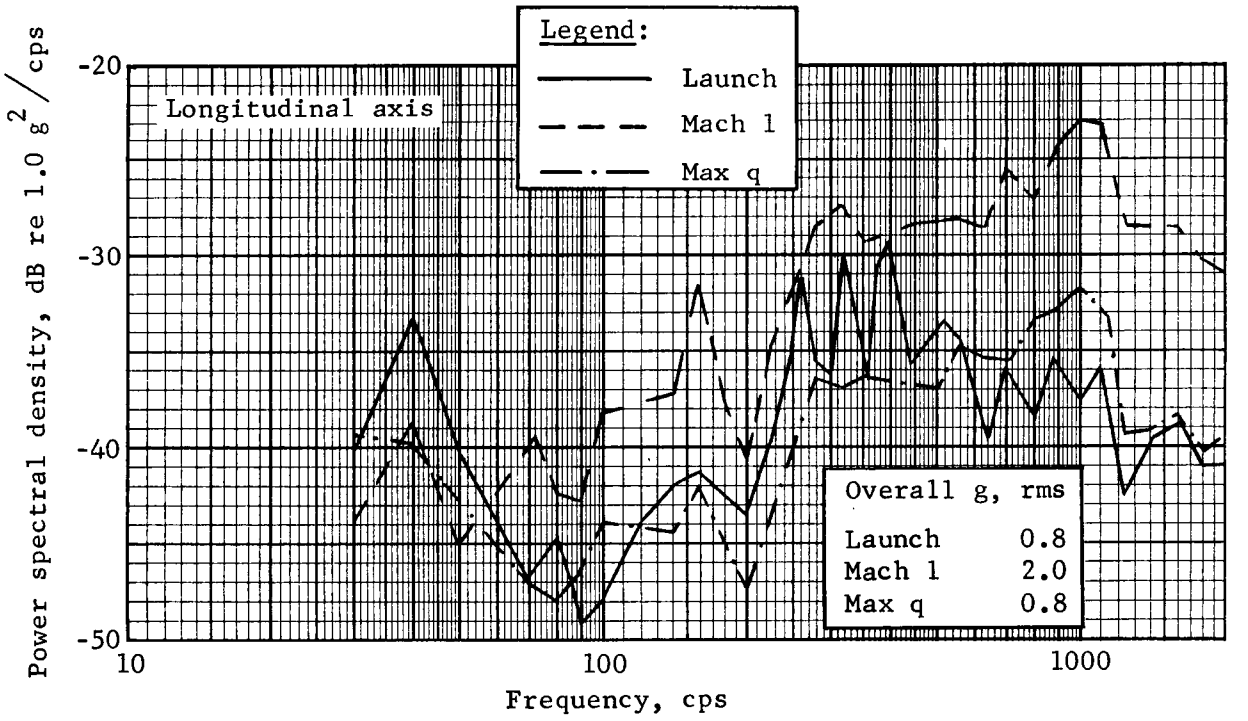


Figure 133. Measurement 2555, 3A Guidance Truss between IMU and DCU, Vehicle 3 Flight

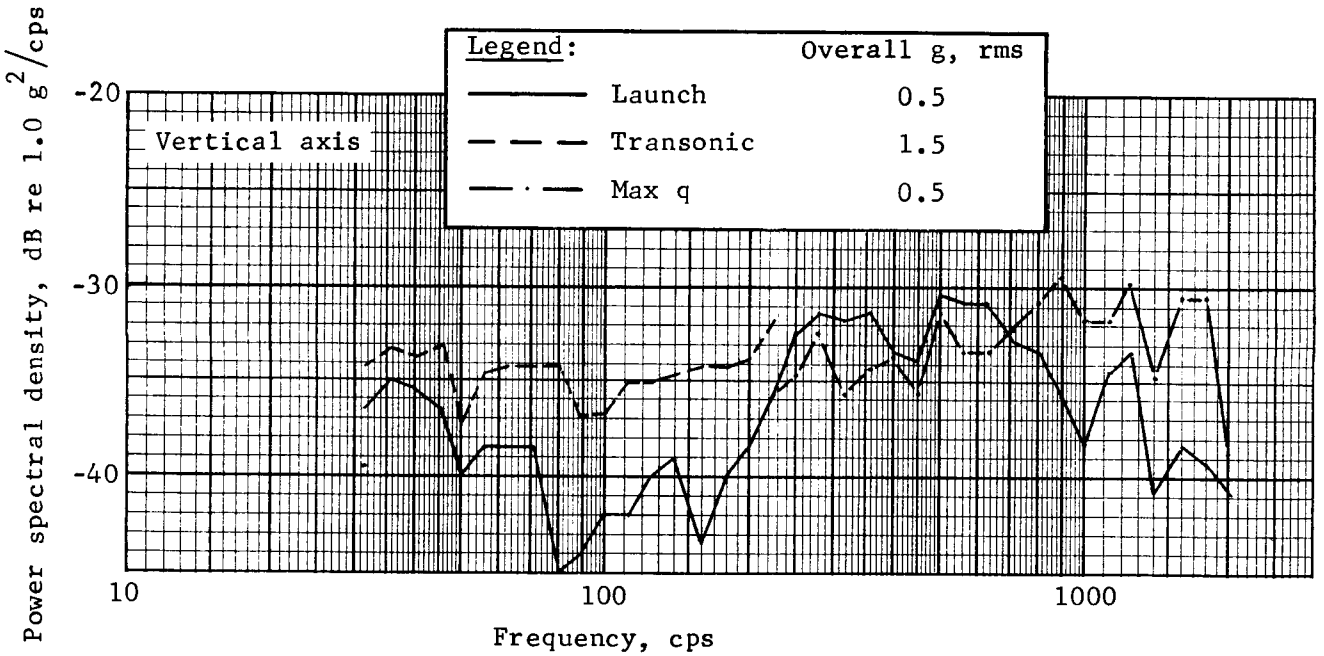


Figure 134. Measurement 2556, 3A Guidance Truss between IMU and DCU, Vehicle 1 Flight

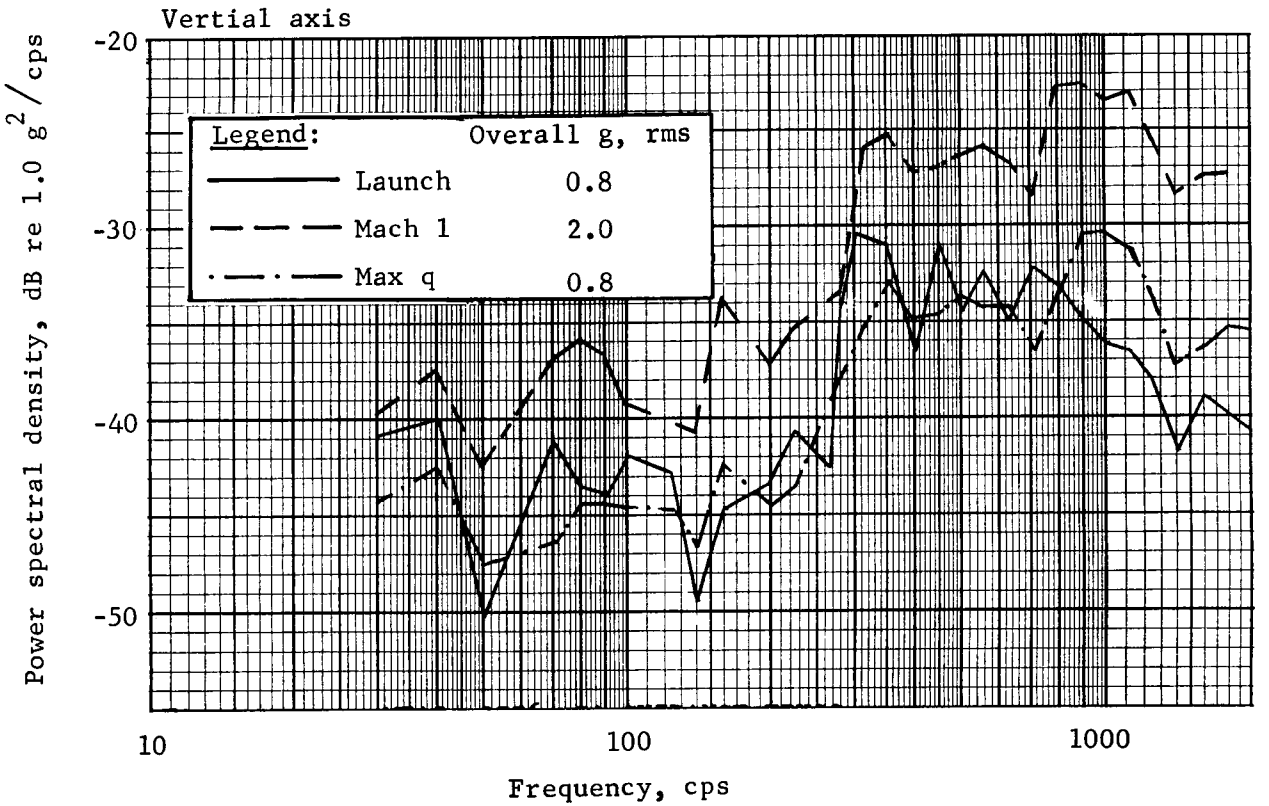


Figure 135. Measurement 2556, 3A Guidance Truss between IMU and DCU, Vehicle 3 Flight

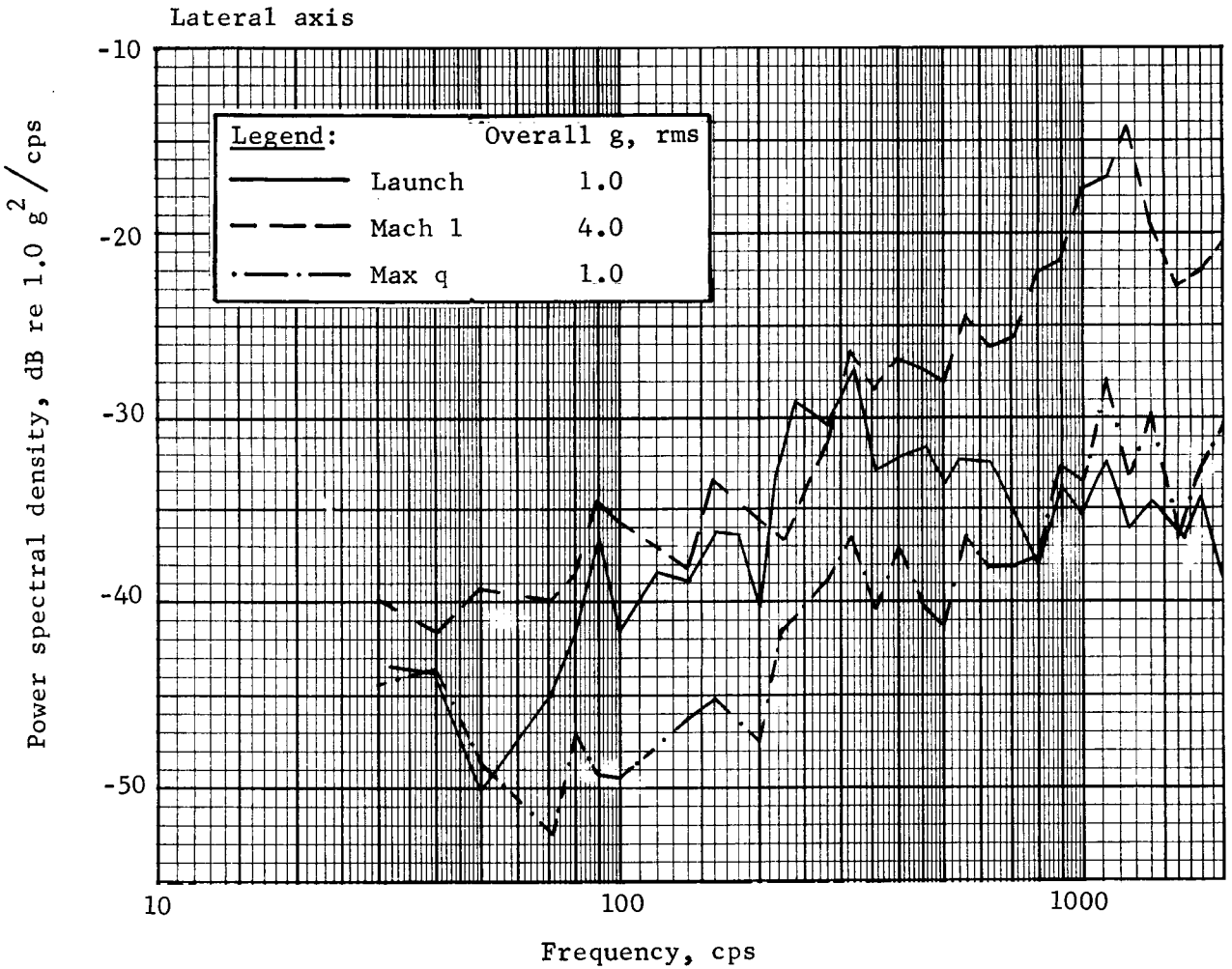


Figure 136. Measurement 2557, 3A Equipment Truss at Signal Conditioner Foot, Vehicle 3 Flight

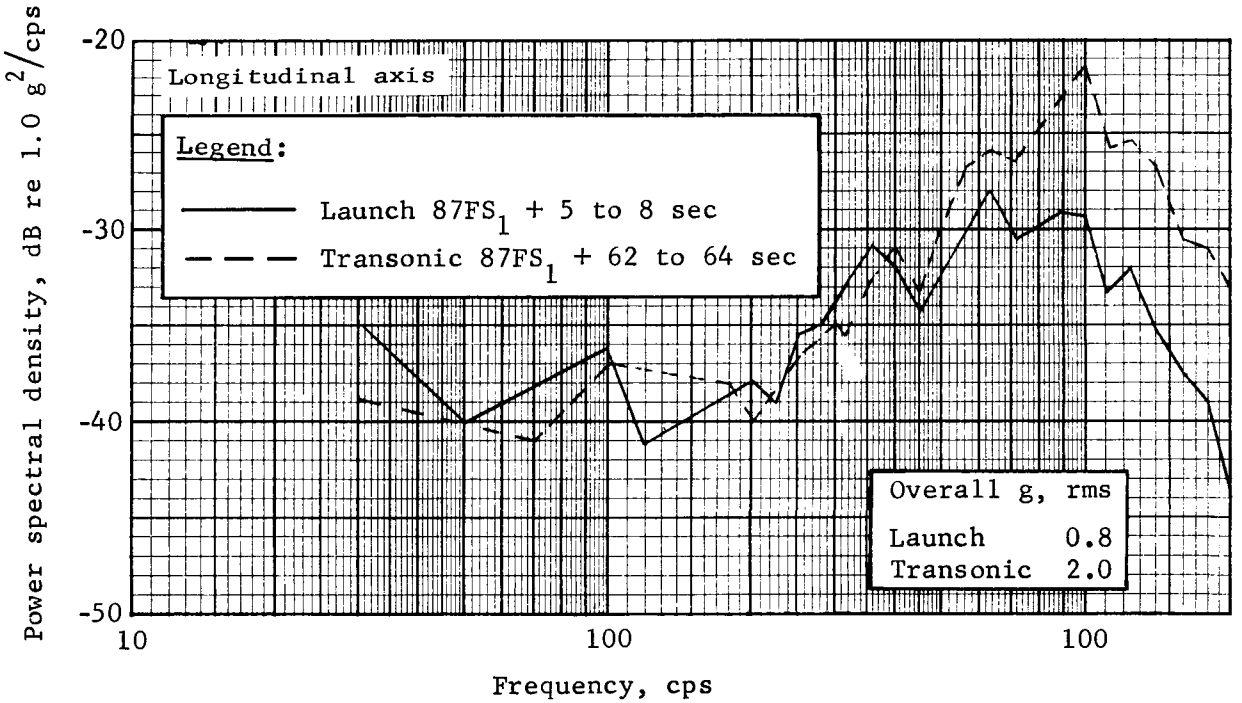


Figure 137. Measurement 2558, 3A Equipment Truss at Malfunction Detector Package, Vehicle 2 Flight

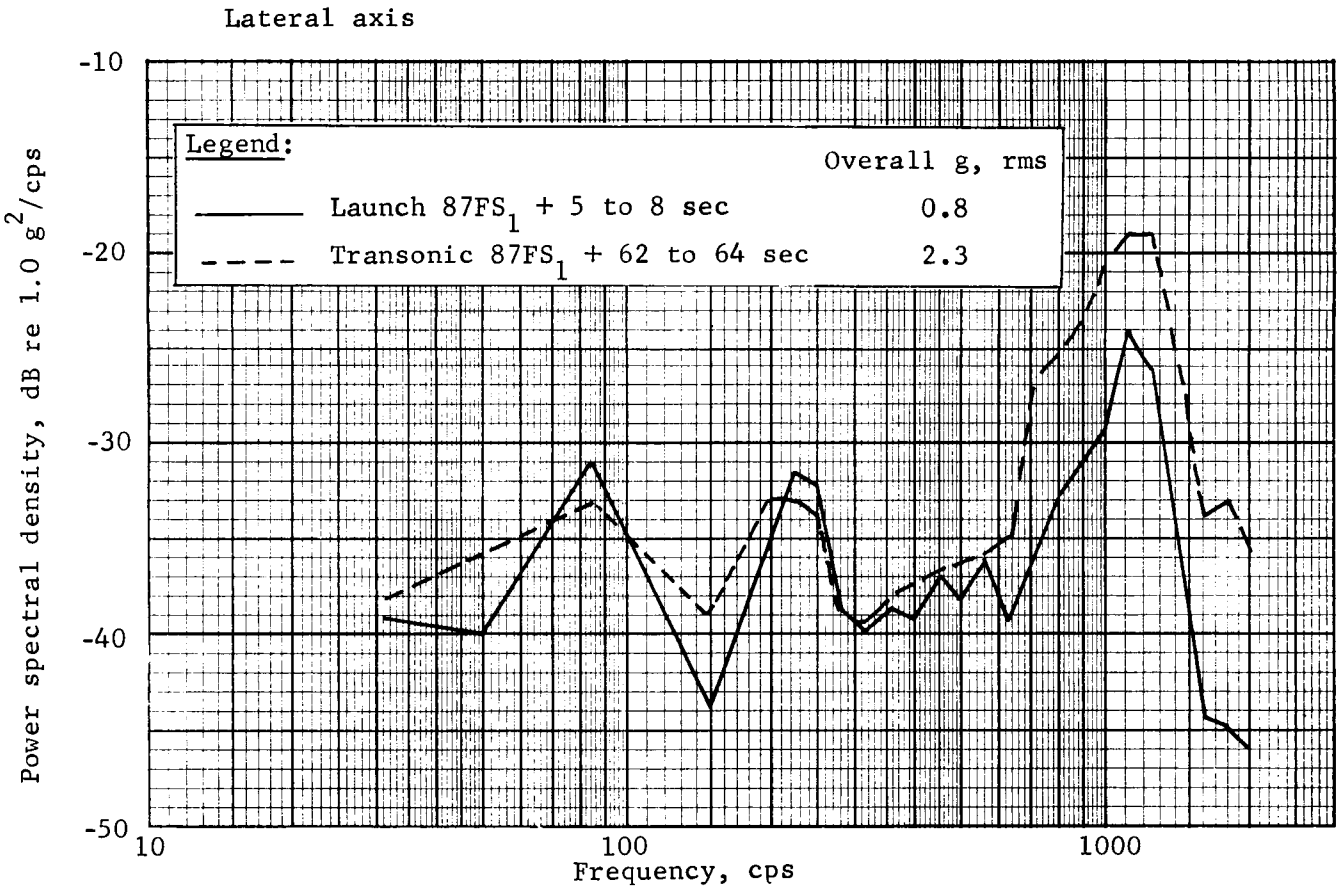


Figure 138. Measurement 2559, 3A Equipment Truss at Malfunction Detector Package, Vehicle 2 Flight

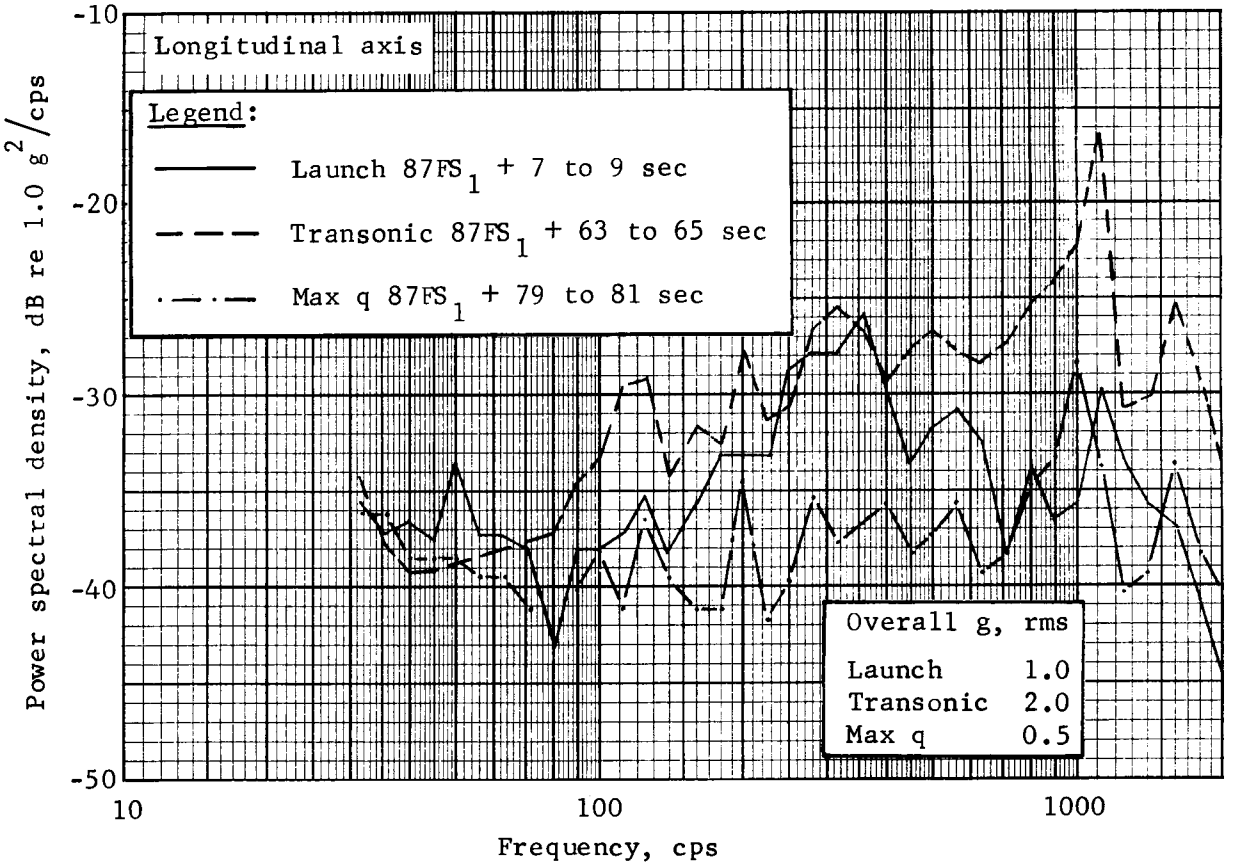


Figure 139. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 1 Flight

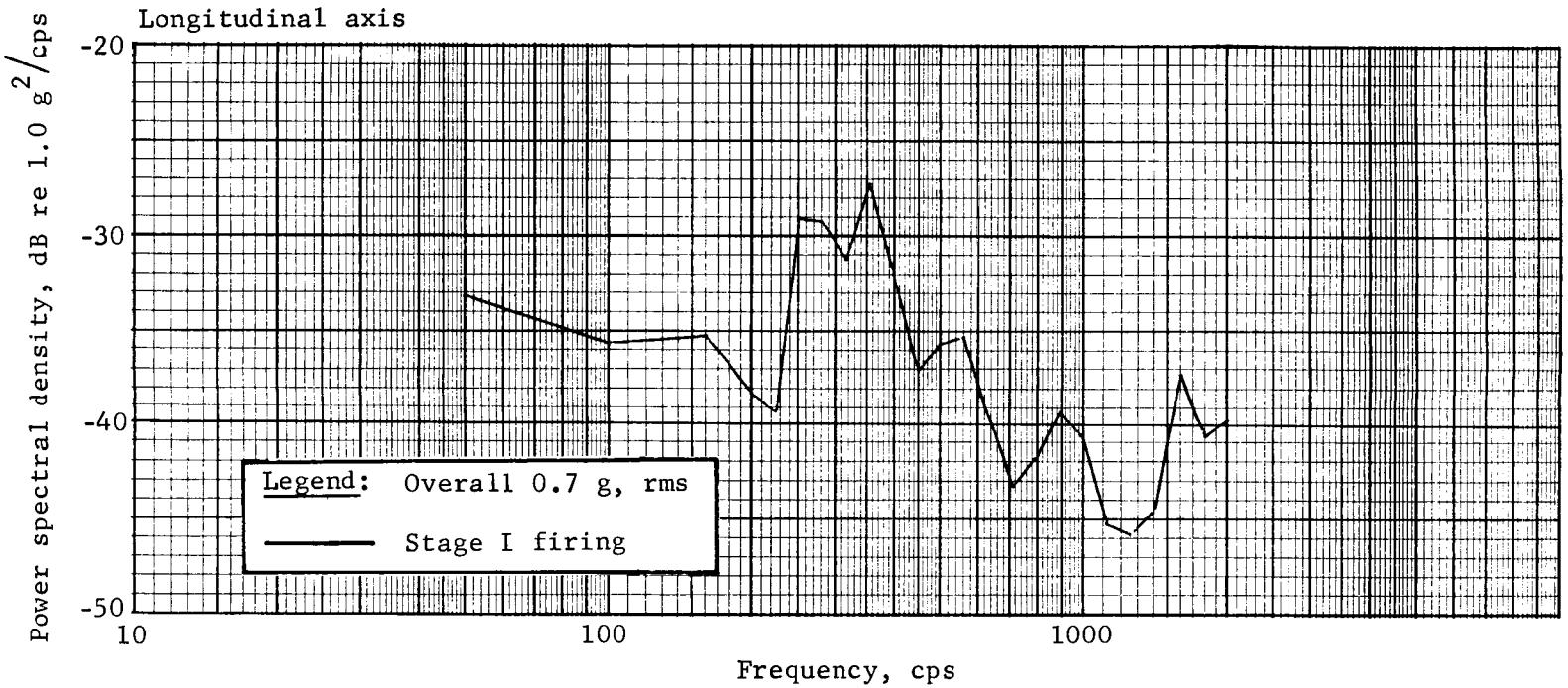


Figure 140. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 2 FRF

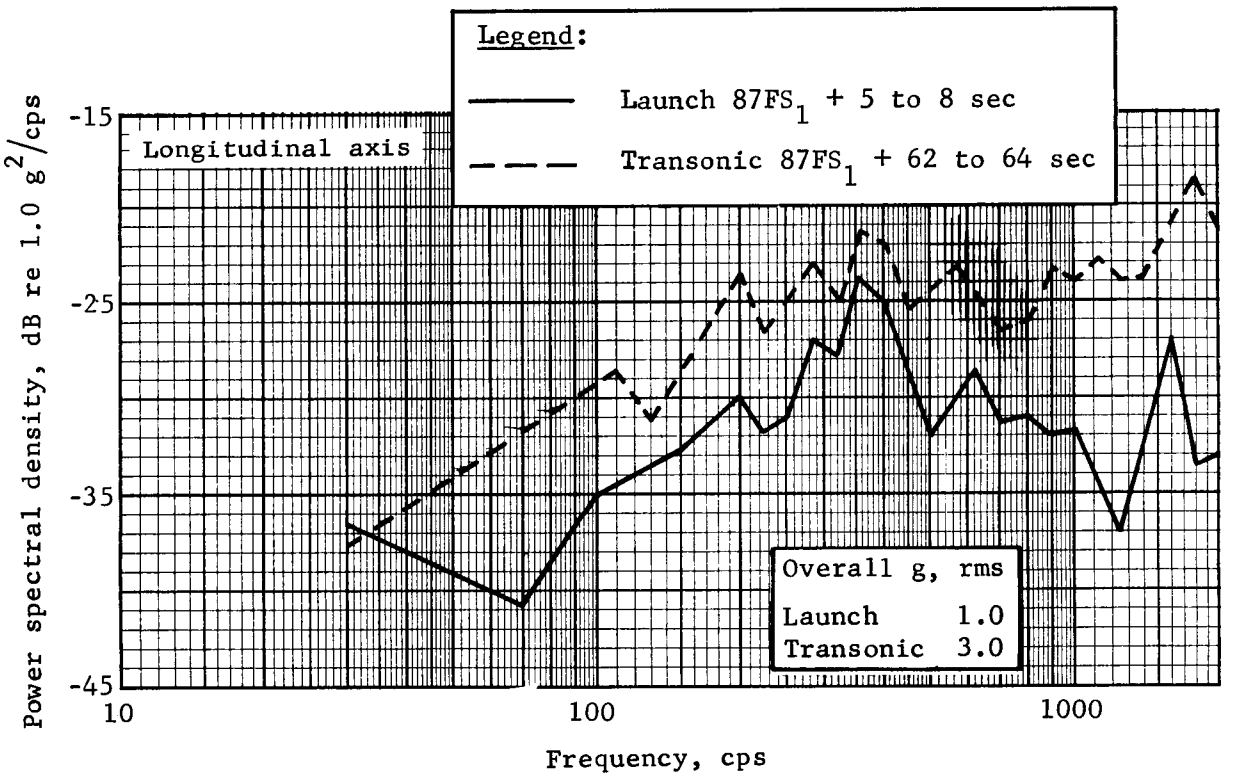


Figure 141. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 2 Flight

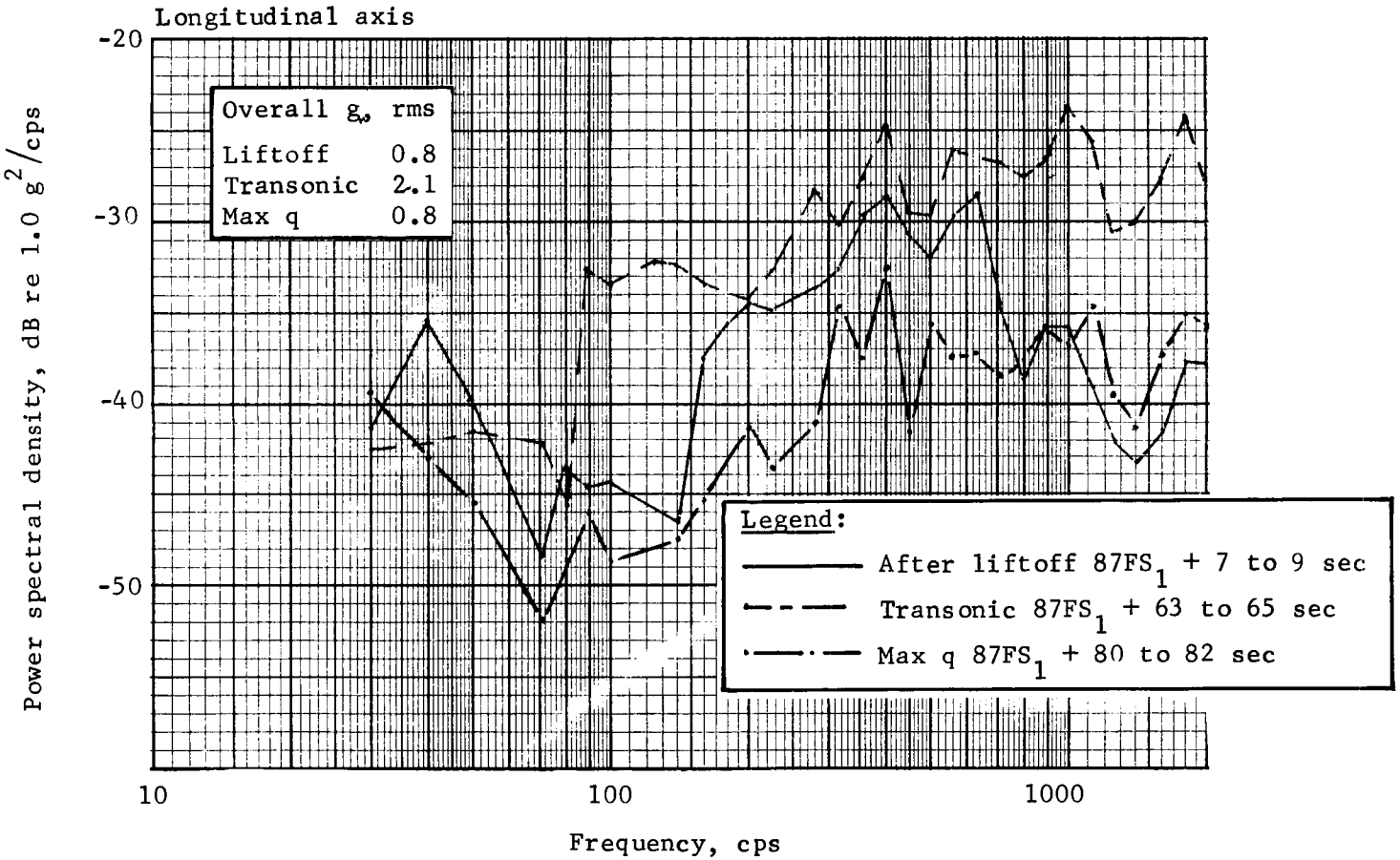


Figure 142. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 6 Flight

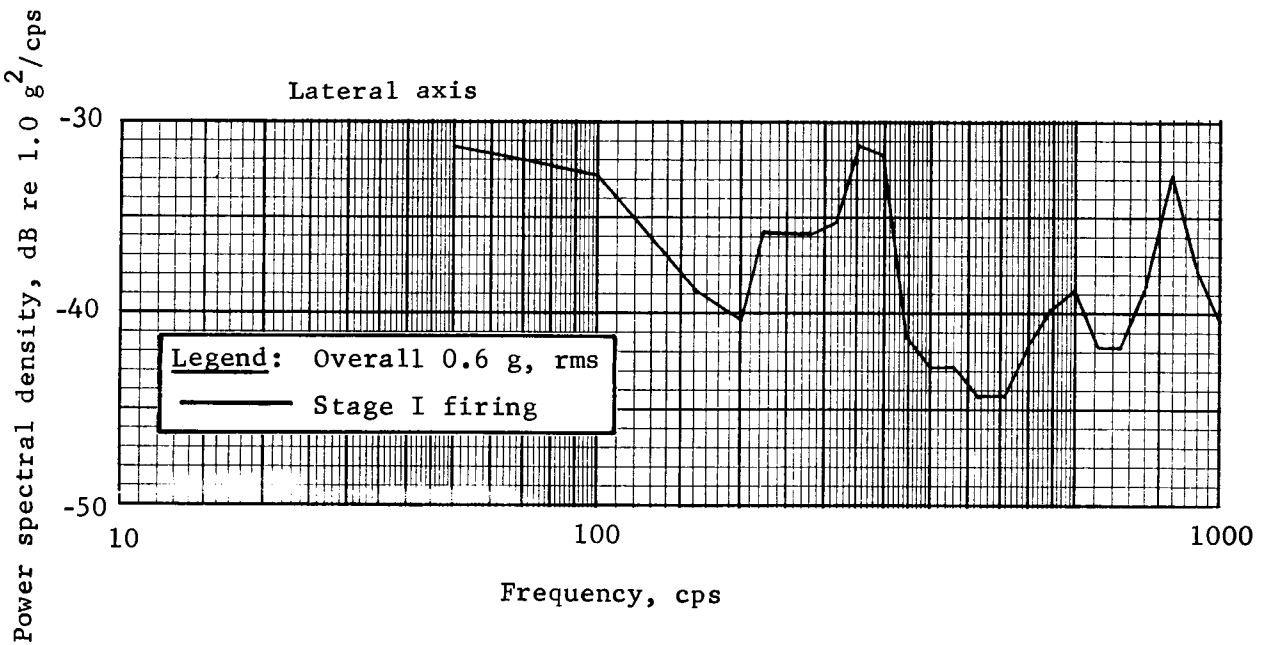


Figure 143. Measurement 2641, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 2 FRF

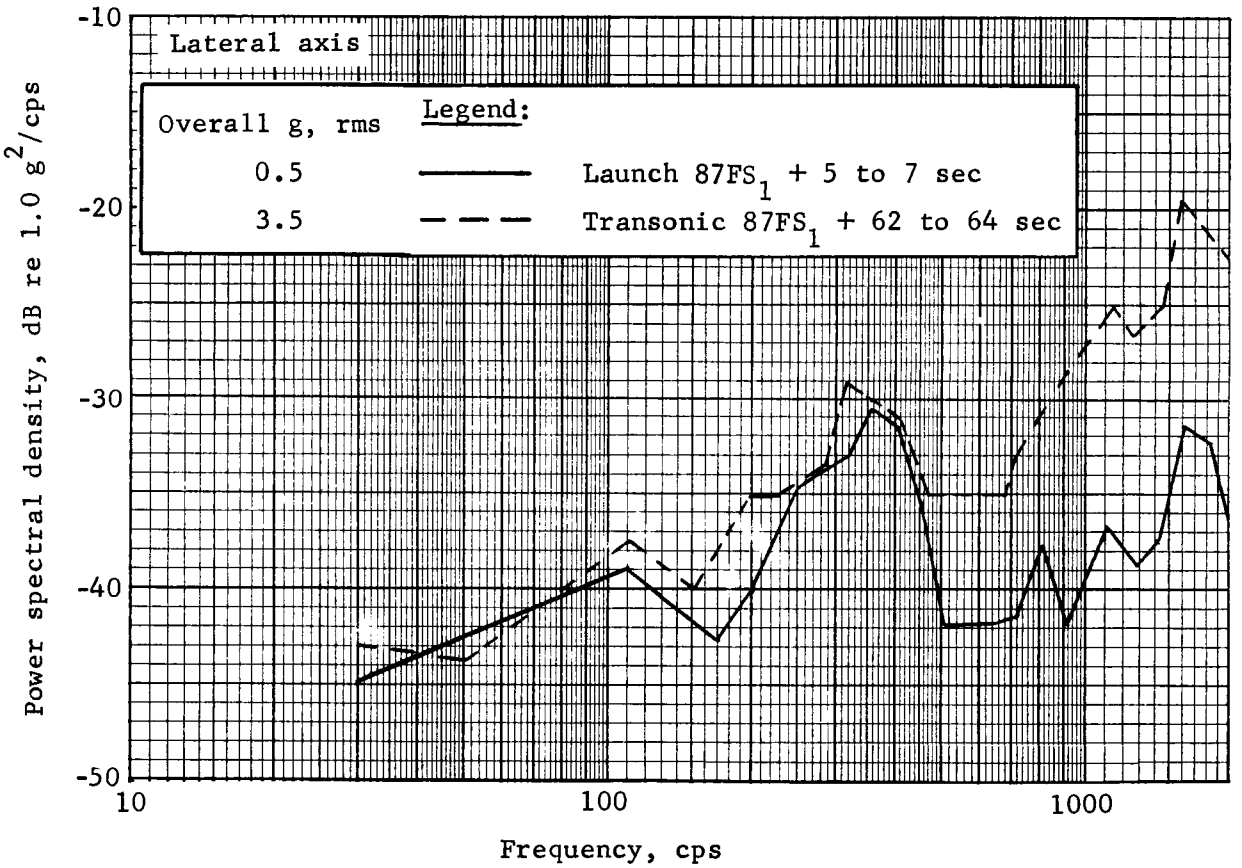


Figure 144. Measurement 2641, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 2 Flight

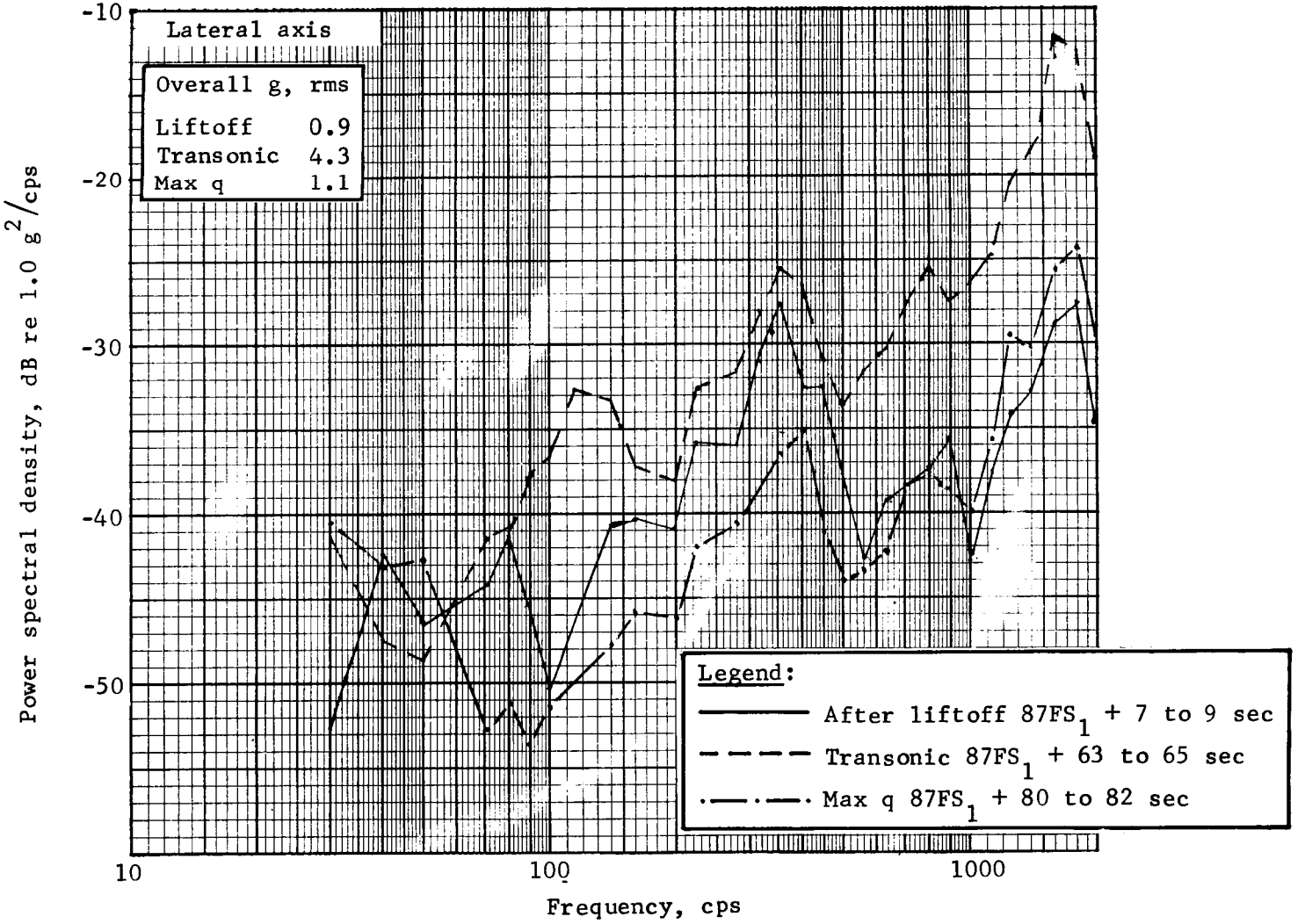


Figure 145. Measurement 2641, 3A Guidance Truss between Autopilot and Static Inverter, Vehicle 6 Flight

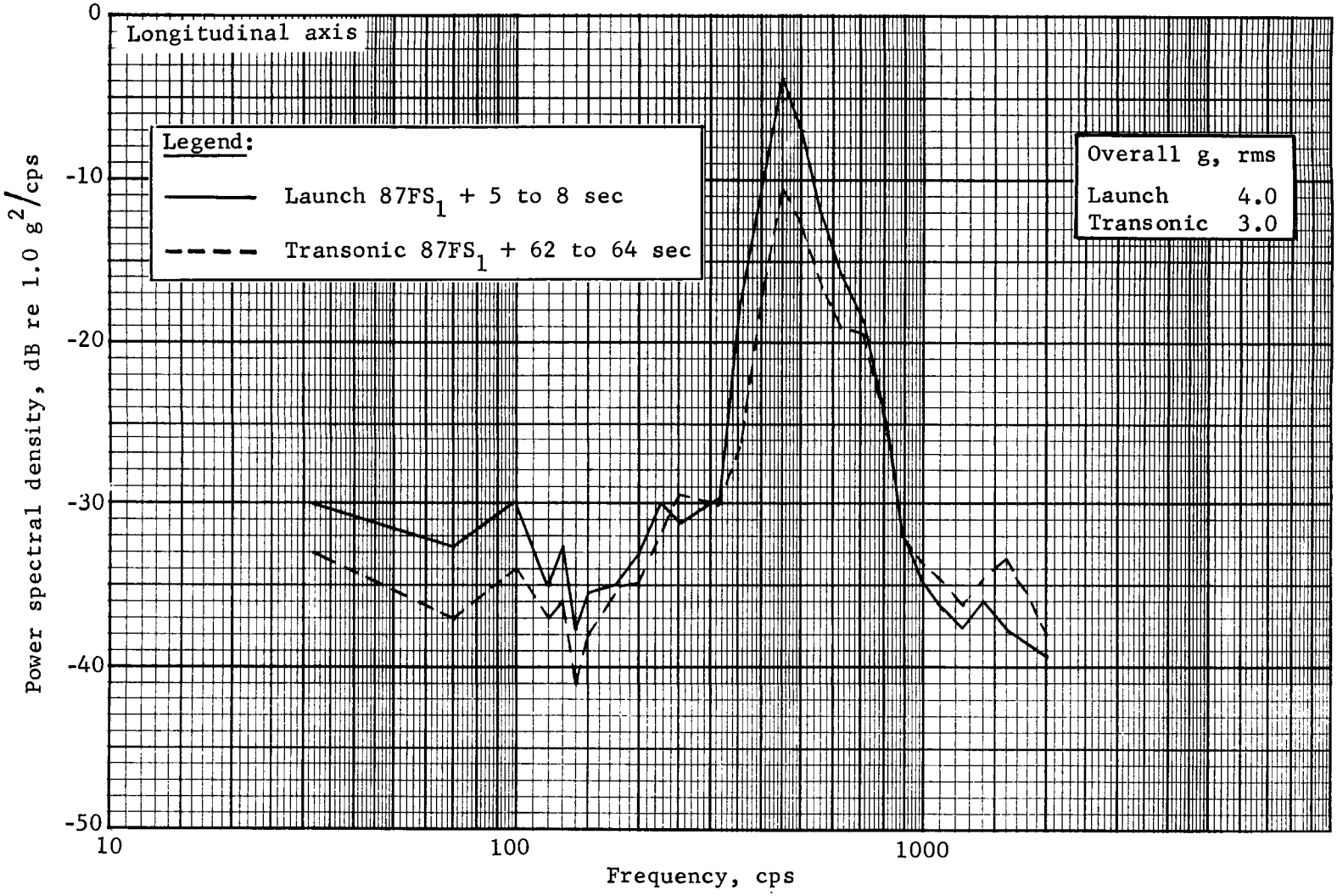


Figure 146. Measurement 2560, 3B Oxidizer Tank Top at Pressure Switch Mounting, Vehicle 2 Flight

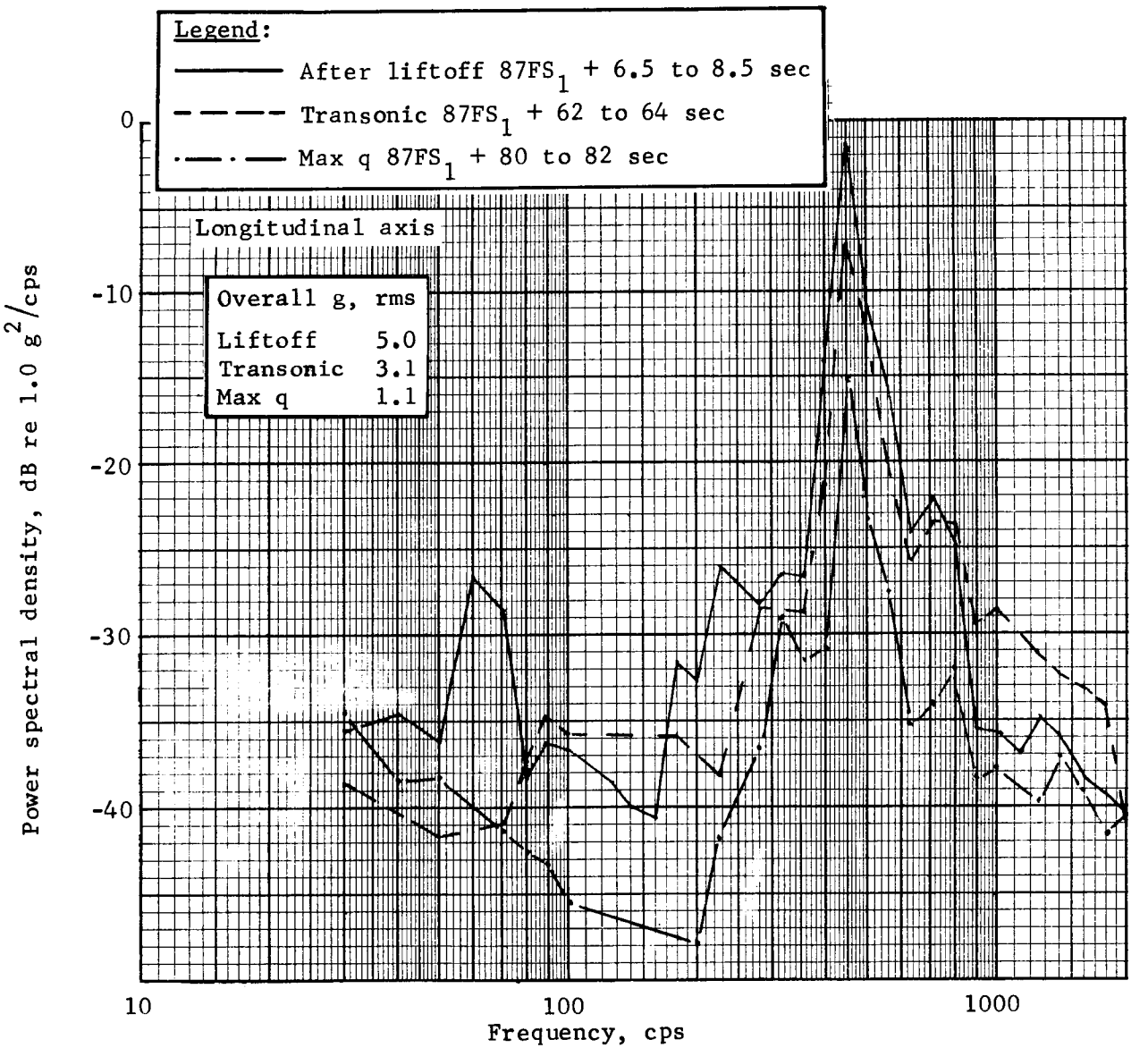


Figure 147. Measurement 2560, 3B Oxidizer Tank Top at Pressure Switch Mounting, Vehicle 6 Flight

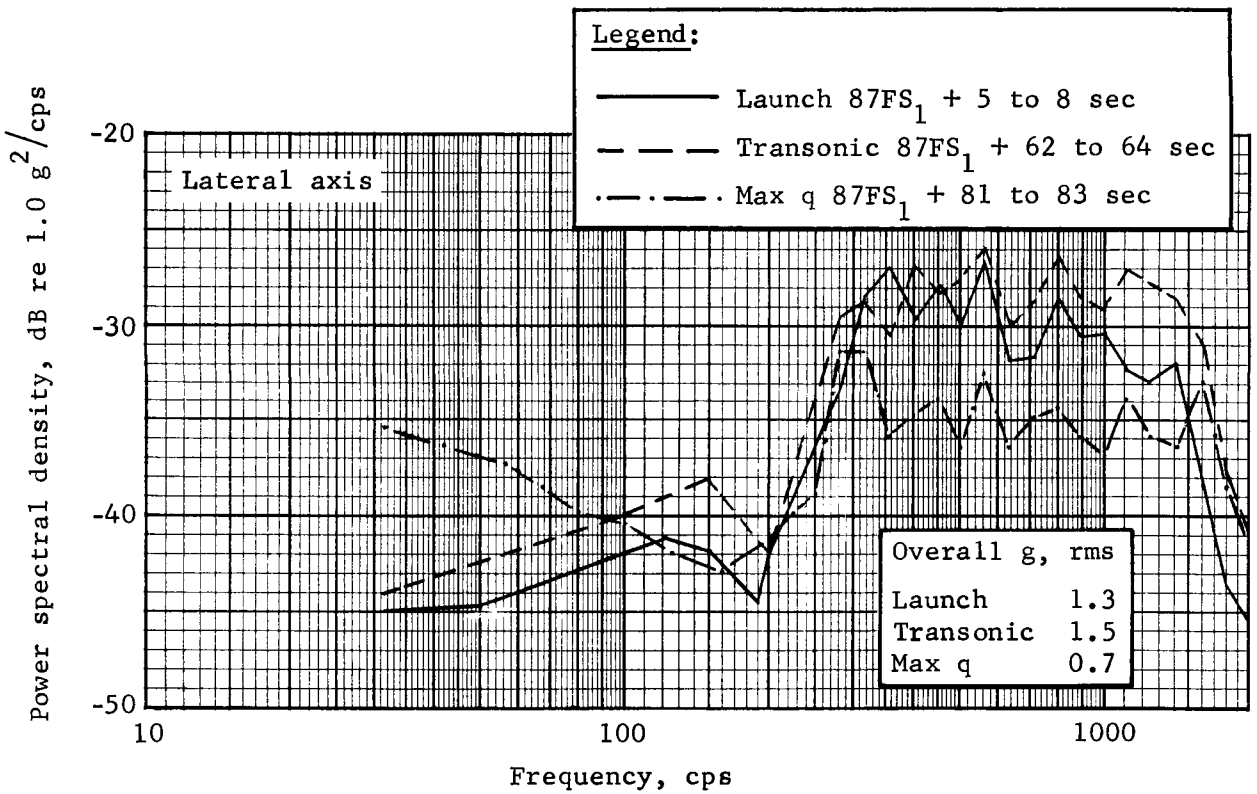


Figure 148. Measurement 2561, 3B Oxidizer Tank Top at Pressure Switch Mounting, Vehicle 2 Flight

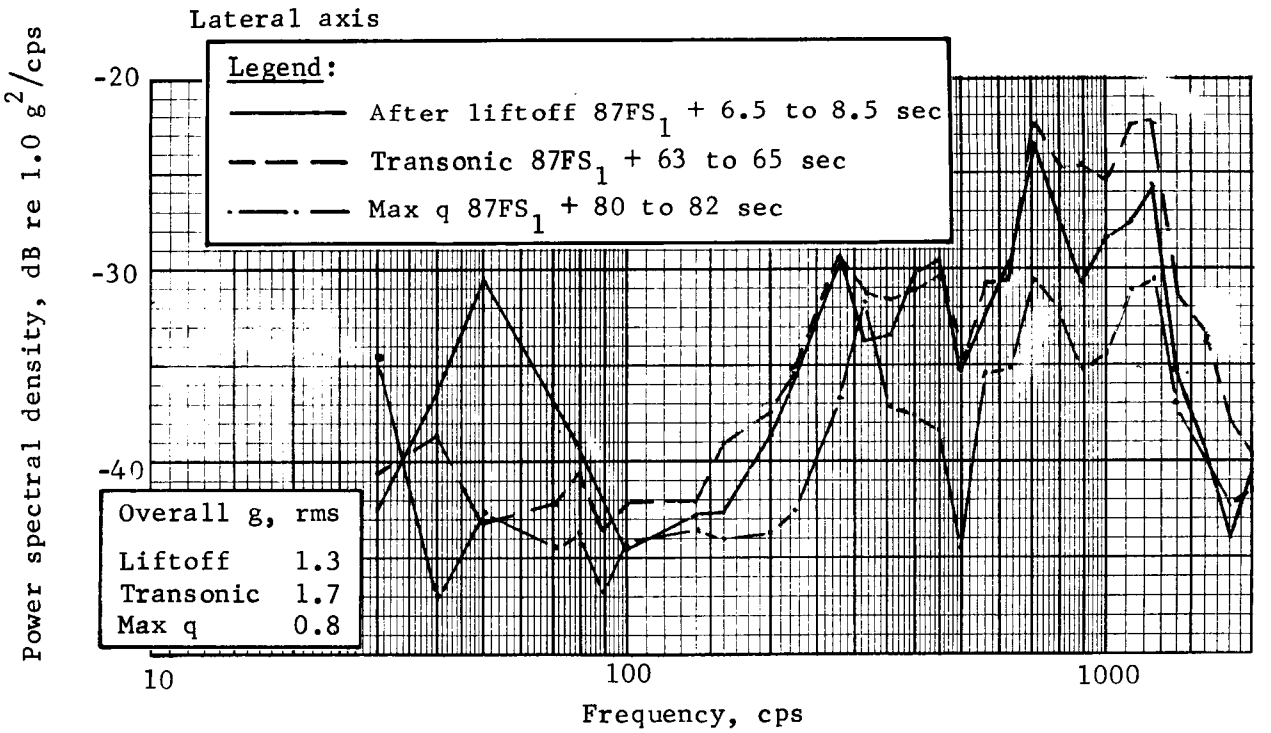


Figure 149. Measurement 2561, 3B Oxidizer Tank Top at Pressure Switch Mounting, Vehicle 6 Flight

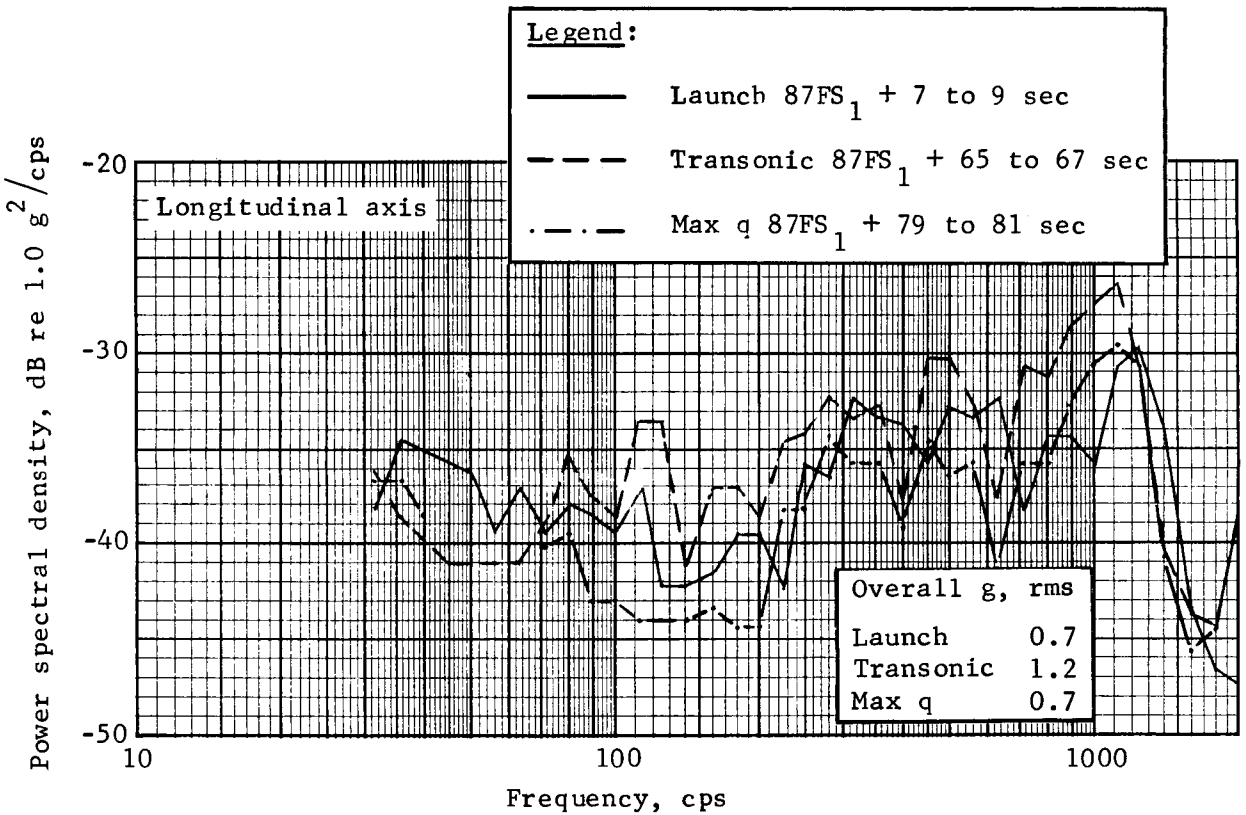


Figure 150. Measurement 2562, 3B Engine Truss at Hydraulic Motor Pump, Vehicle 1 Flight

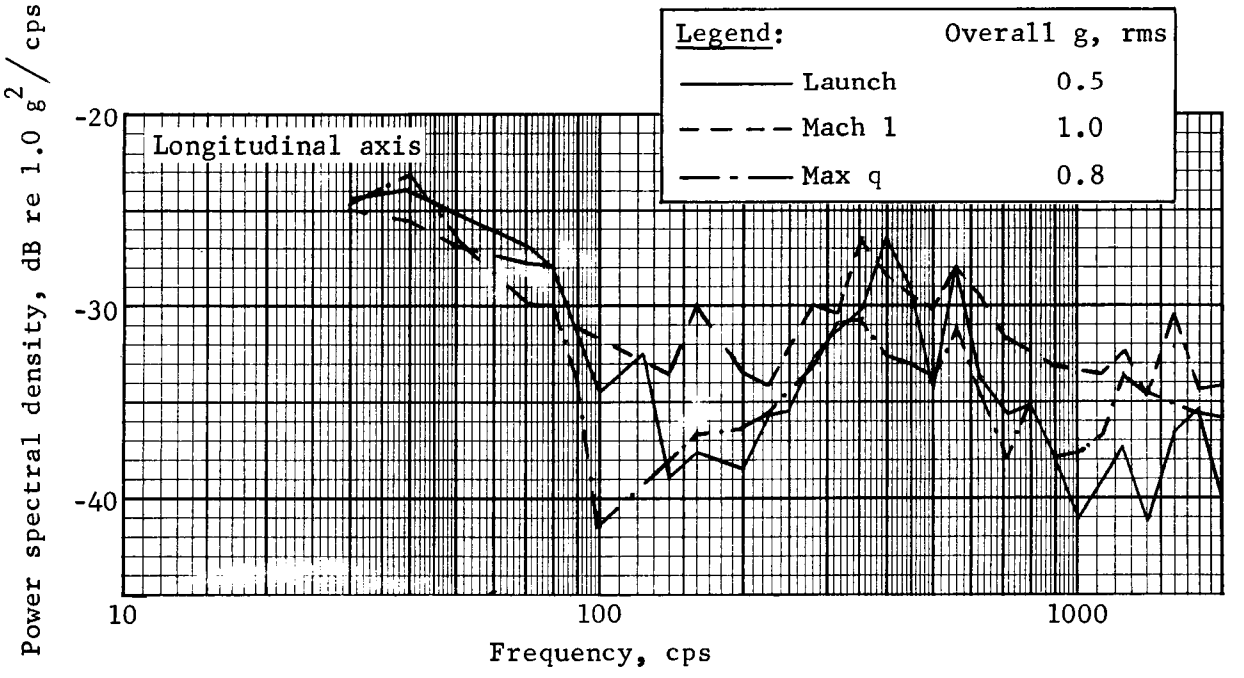


Figure 151. Measurement 2562, 3B Engine Truss at Hydraulic Motor Pump, Vehicle 3 Flight

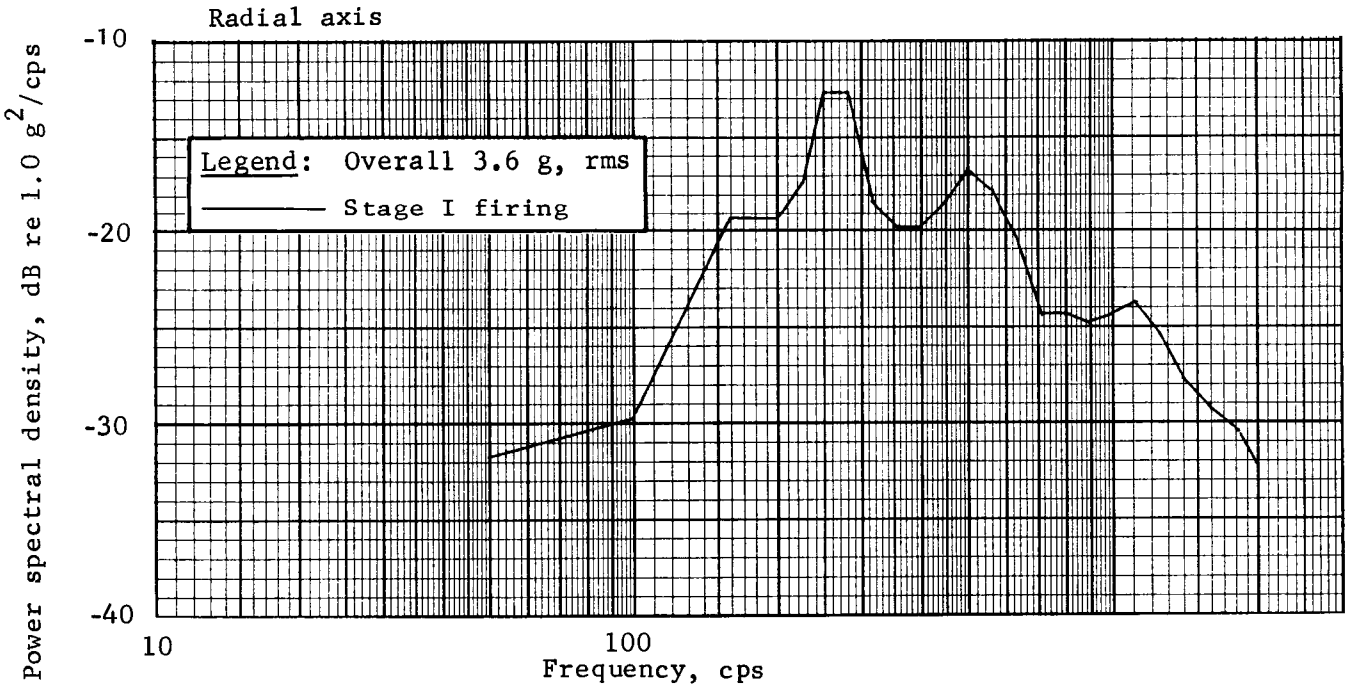


Figure 152. Measurement 2519, 2B Airframe at Outage Sensor Controller Stringer 27, Vehicle 2 FRF

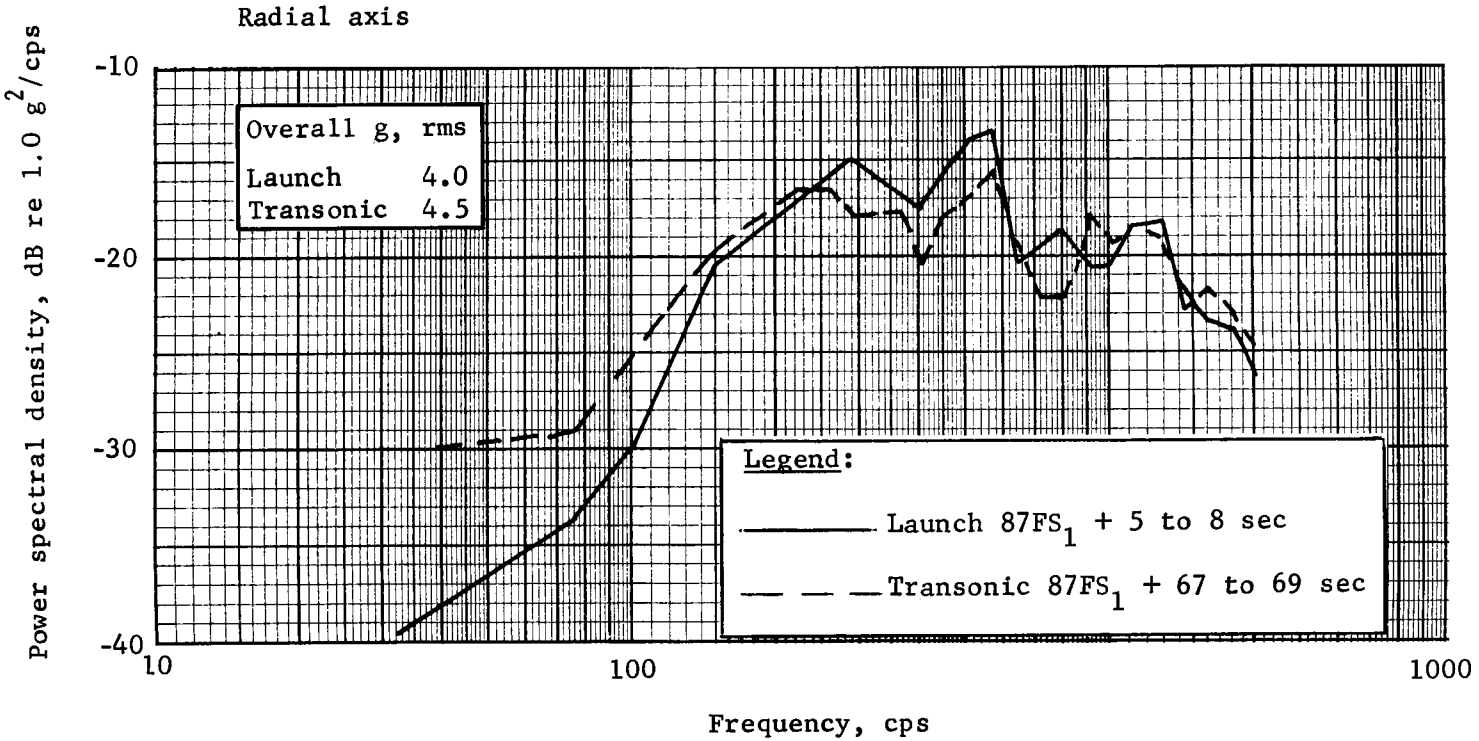


Figure 153. Measurement 2519, 2B Airframe at Outage Sensor Controller, Stringer 27, Vehicle 2 Flight

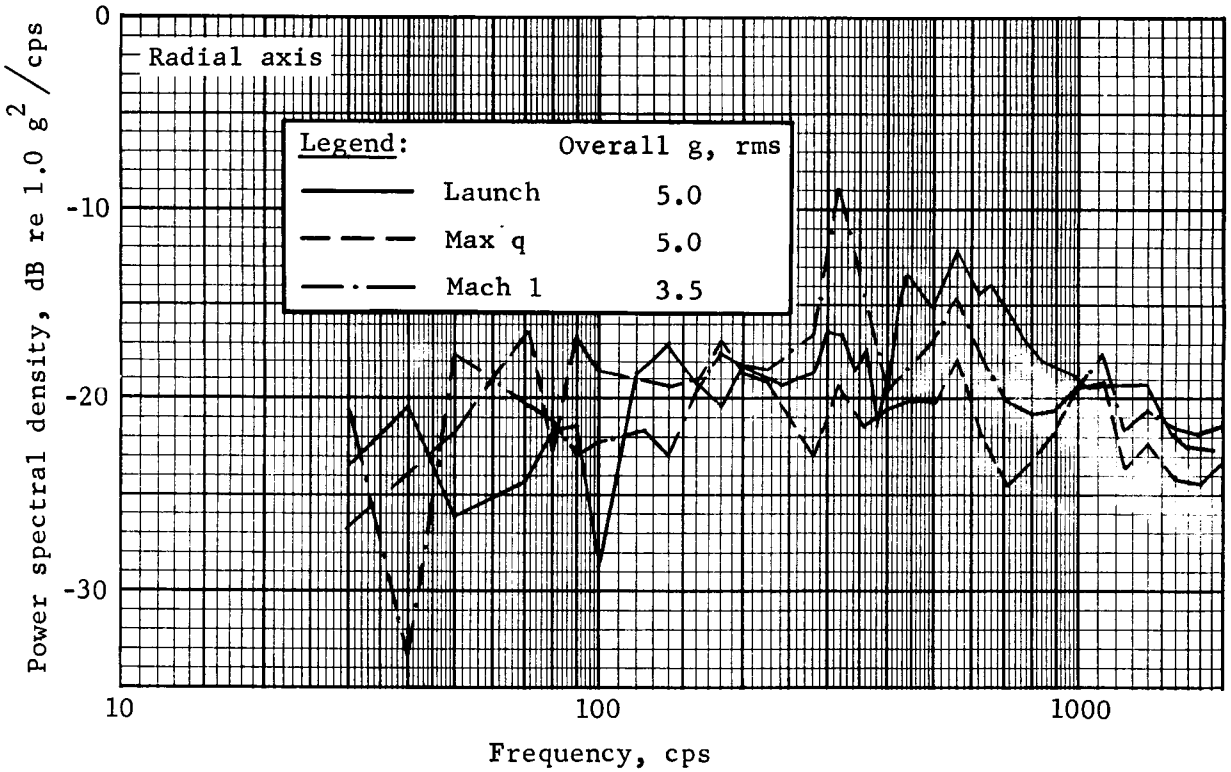


Figure 154. Measurement 2519, 2B Airframe at Outage Sensor Controller Stringer 27, Vehicle 3 Flight

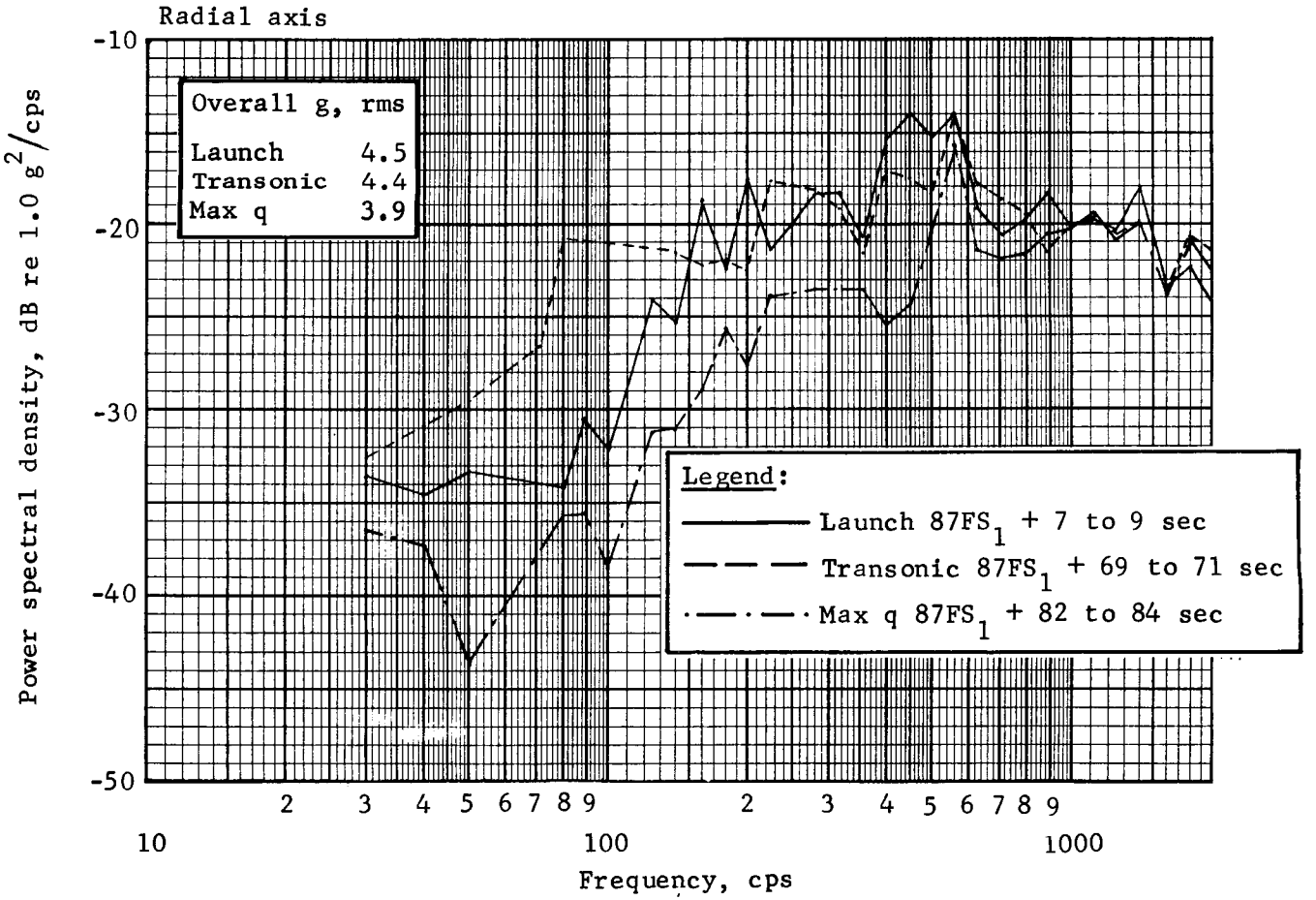


Figure 155. Measurement 2519, 2B Airframe at Outage Sensor Controller Stringer 27, Vehicle 6 Flight

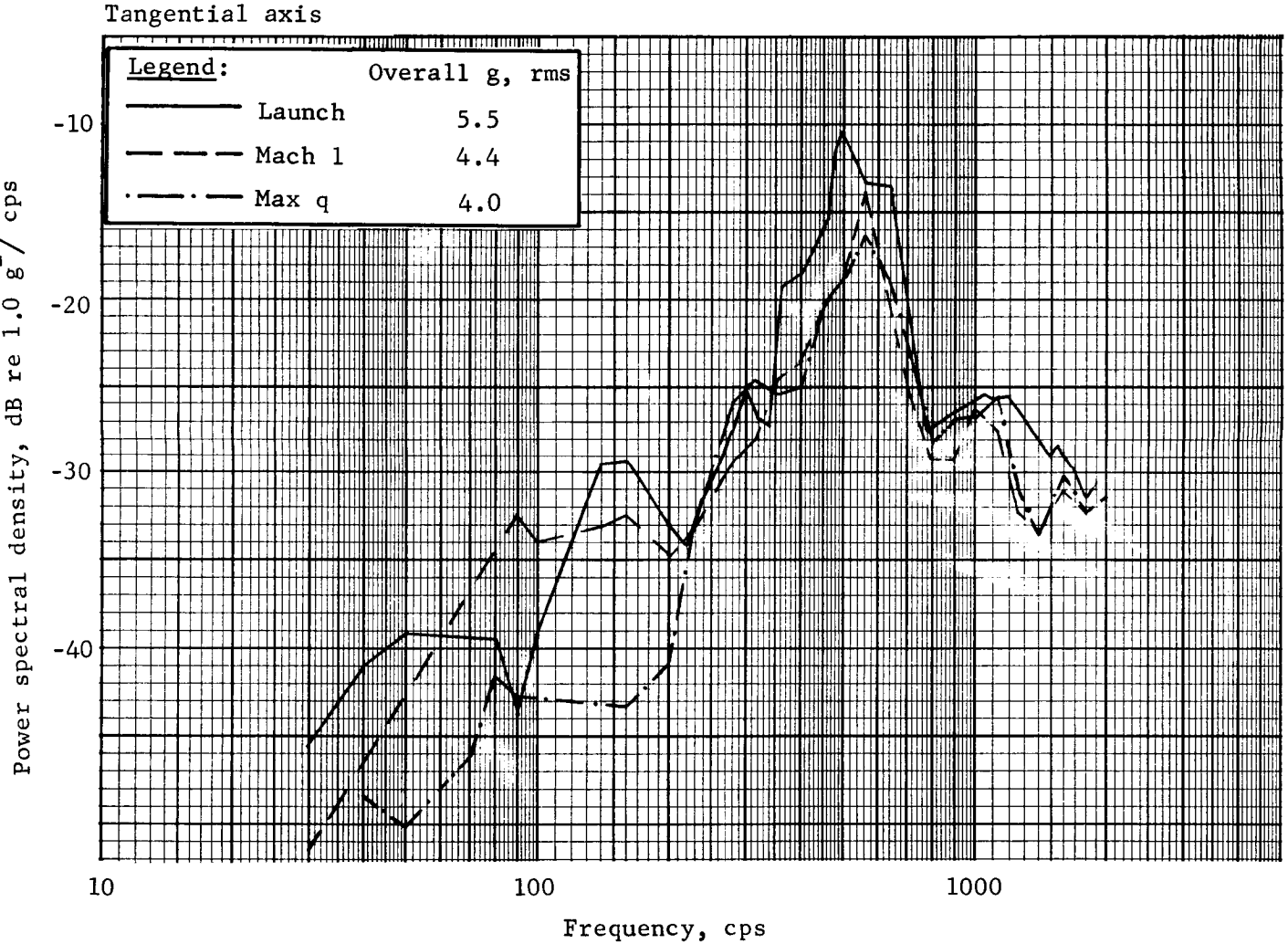


Figure 156. Measurement 2520, 2B Airframe at Outage Sensor Controller Stringer 27, Vehicle 3 Flight

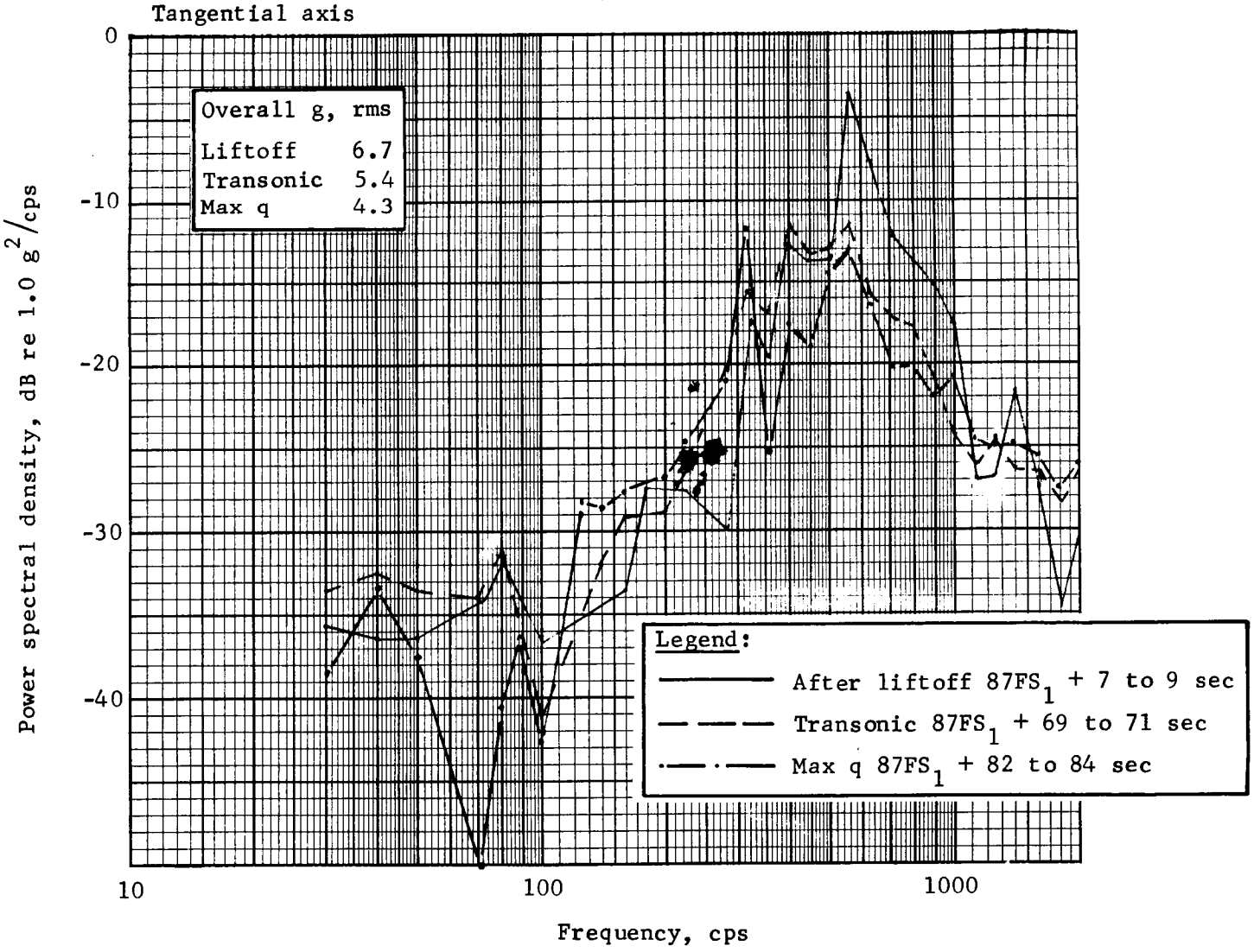


Figure 157. Measurement 2520, 2B Airframe at Outage Sensor Control Mounting, Vehicle 6 Flight

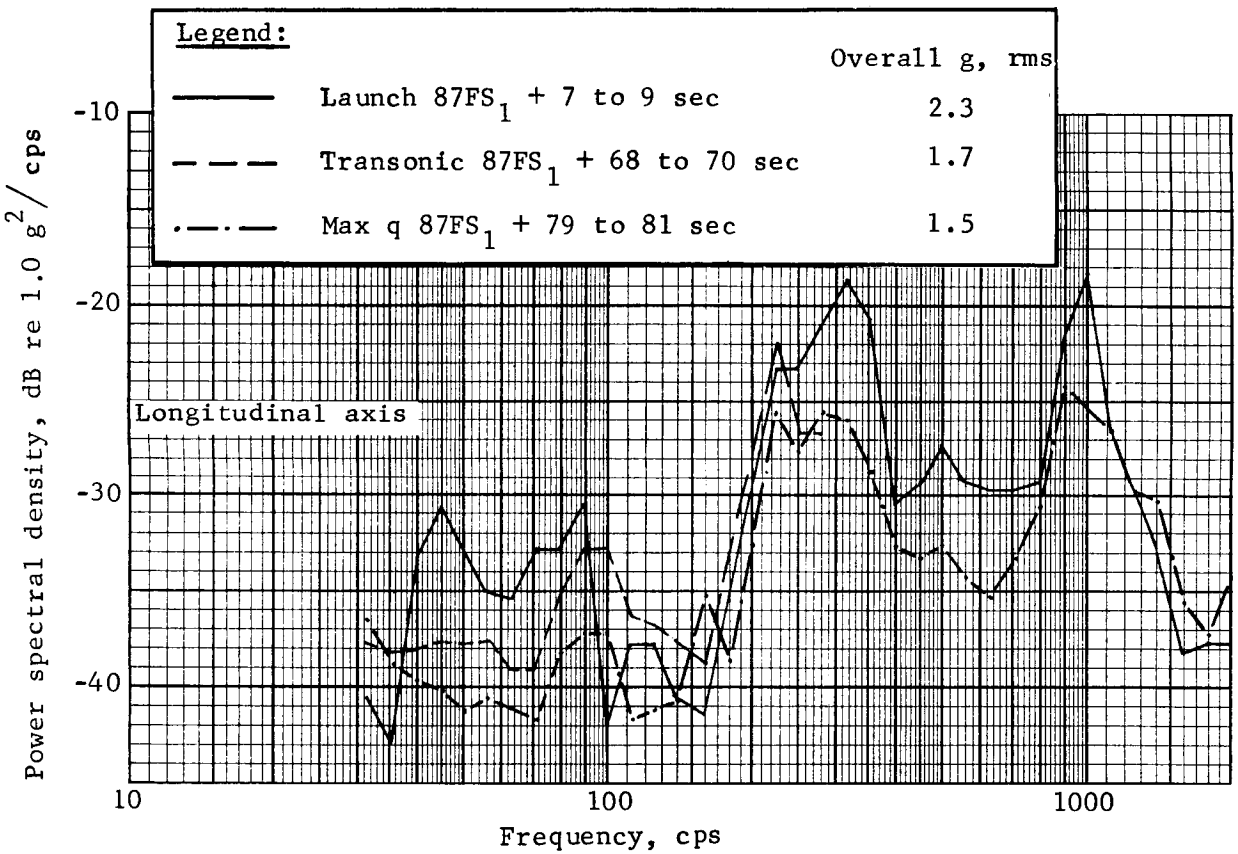


Figure 158. Measurement 2564, 2B Truss at SS/FM Modulator Mounting, Vehicle 1 Flight

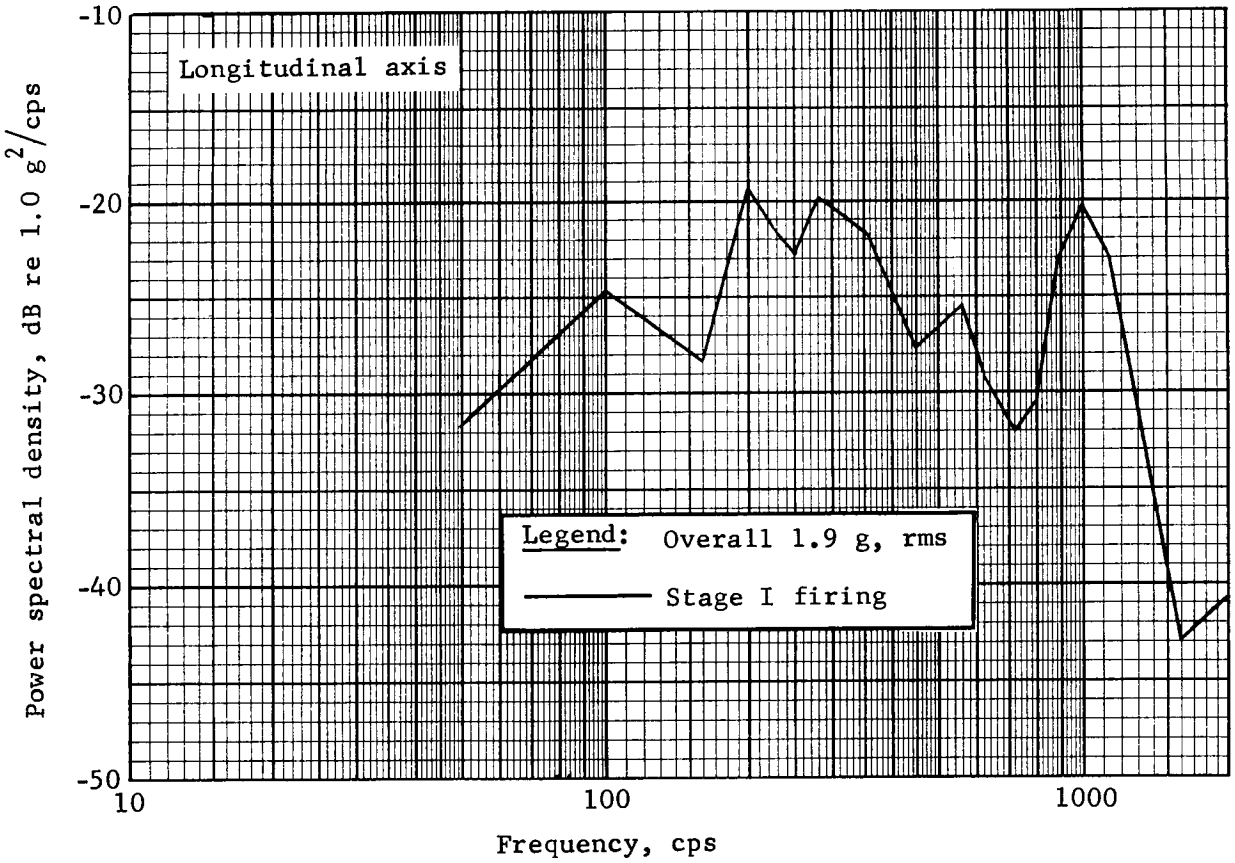


Figure 159. Measurement 2564, 2B Truss at SS/FM Modulator Mounting, Vehicle 2 FRF

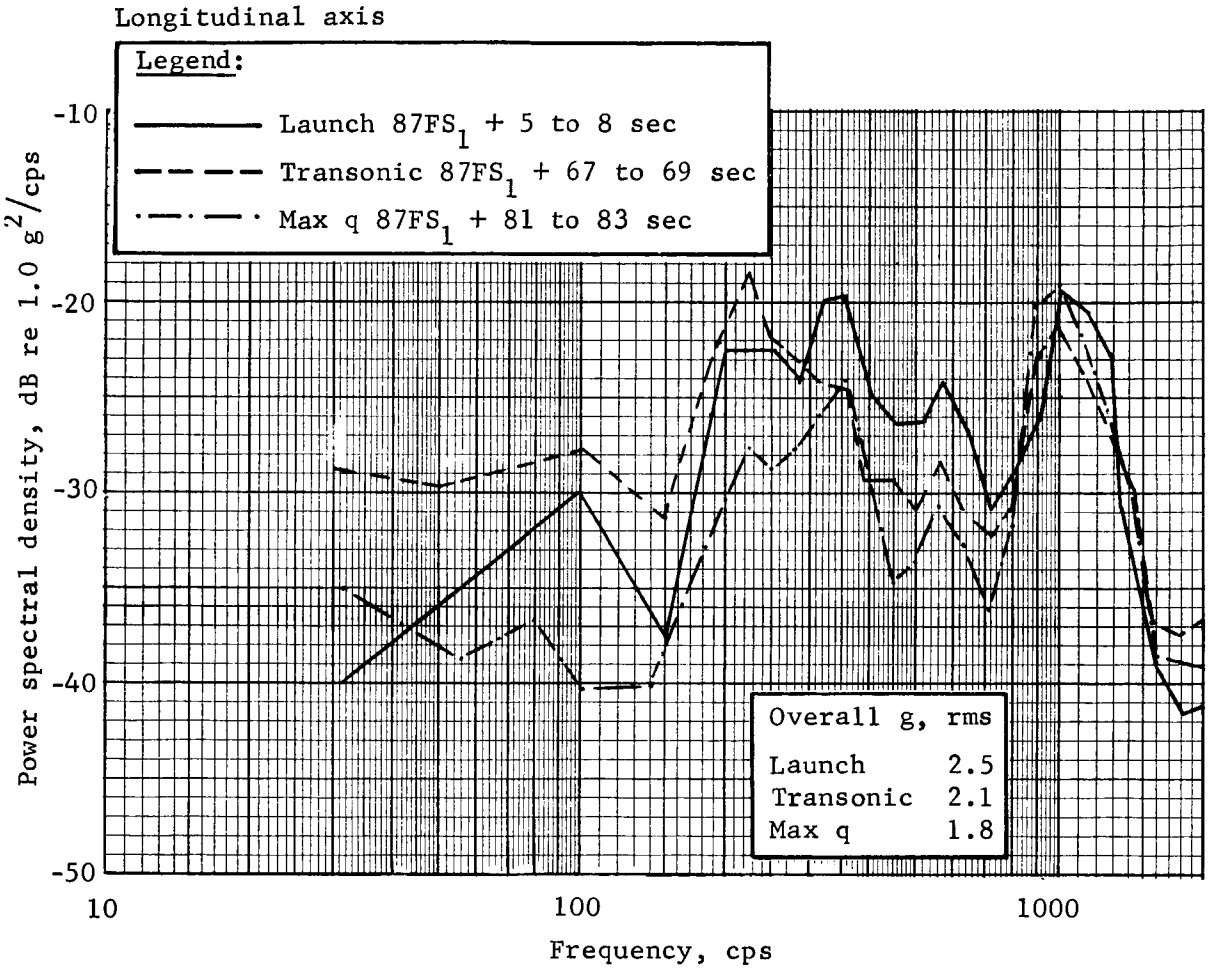


Figure 160. Measurement 2564, 2B Truss at SS/FM Modulator Mounting, Vehicle 2 Flight

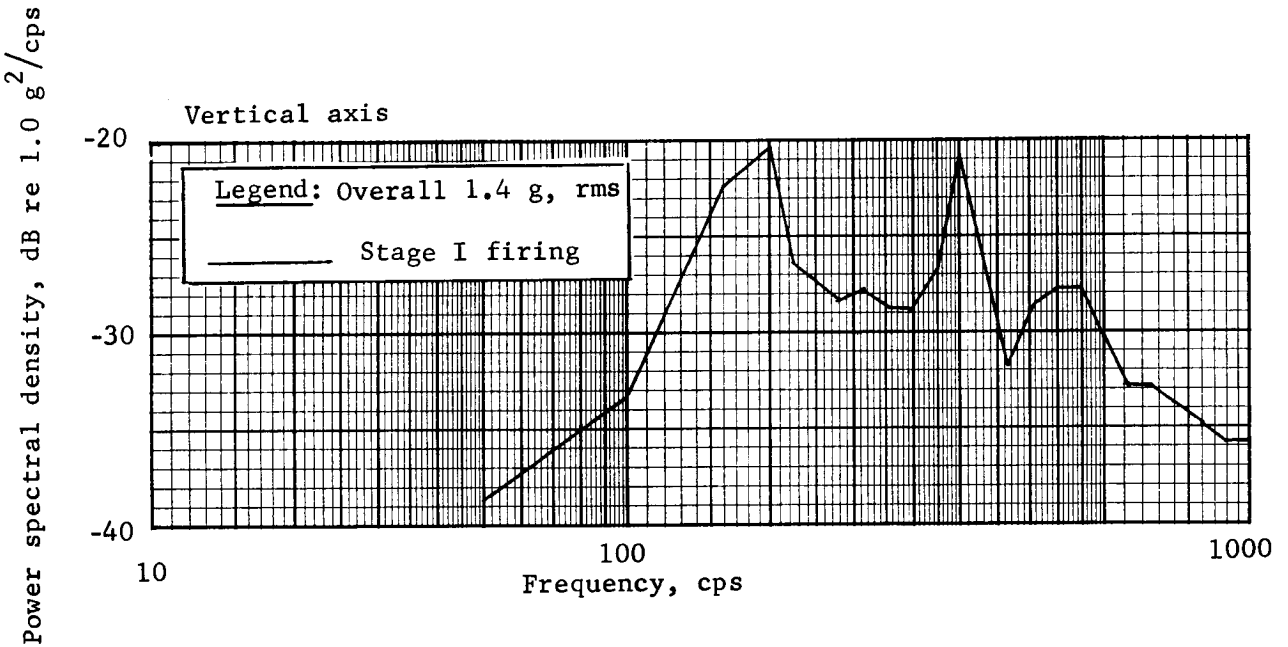


Figure 161. Measurement 2565, 2B Truss at SS/FM Modulator Mounting, Vehicle 2 FRF

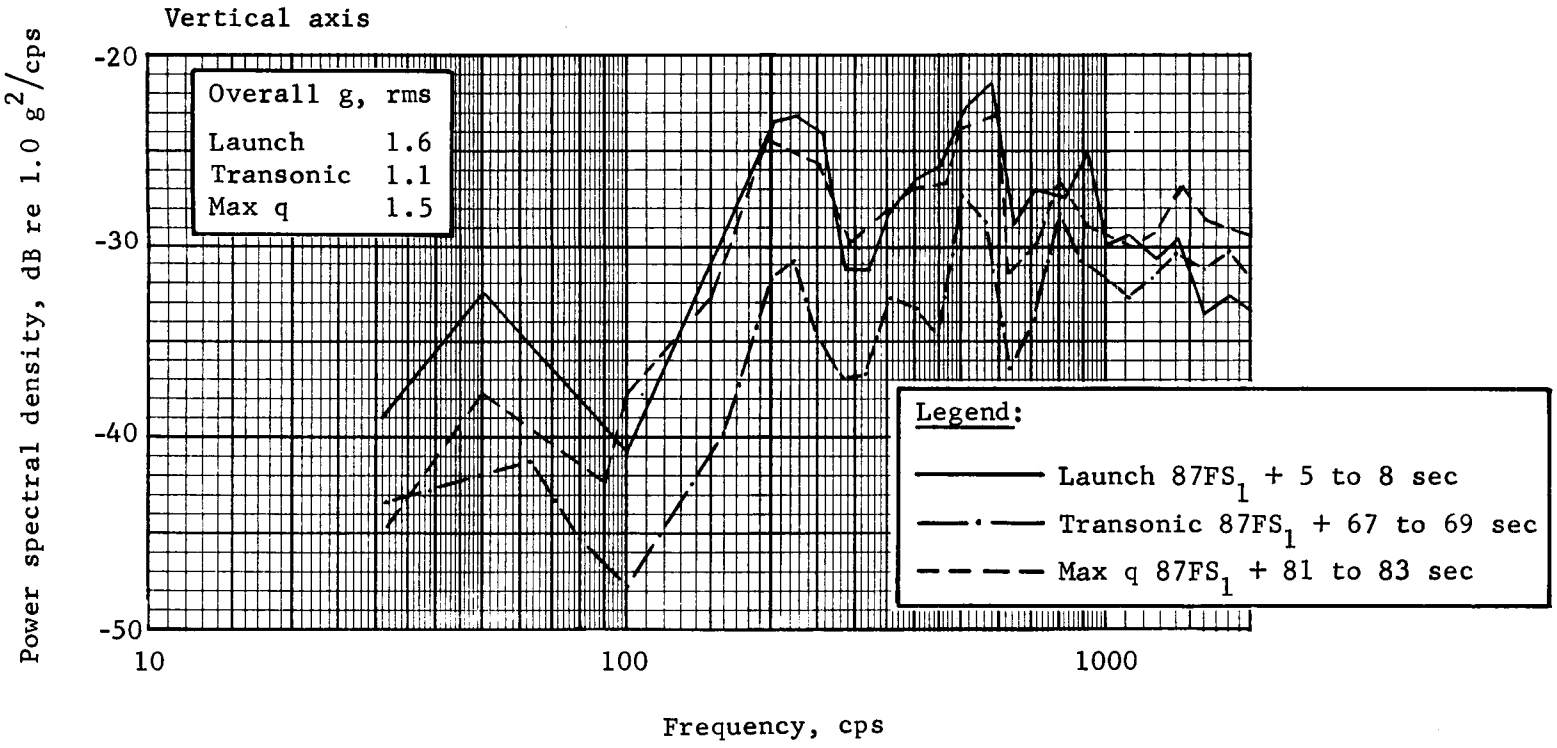


Figure 162. Measurement 2565, 2B Truss at SS/FM Modulator Mounting, Vehicle 2 Flight

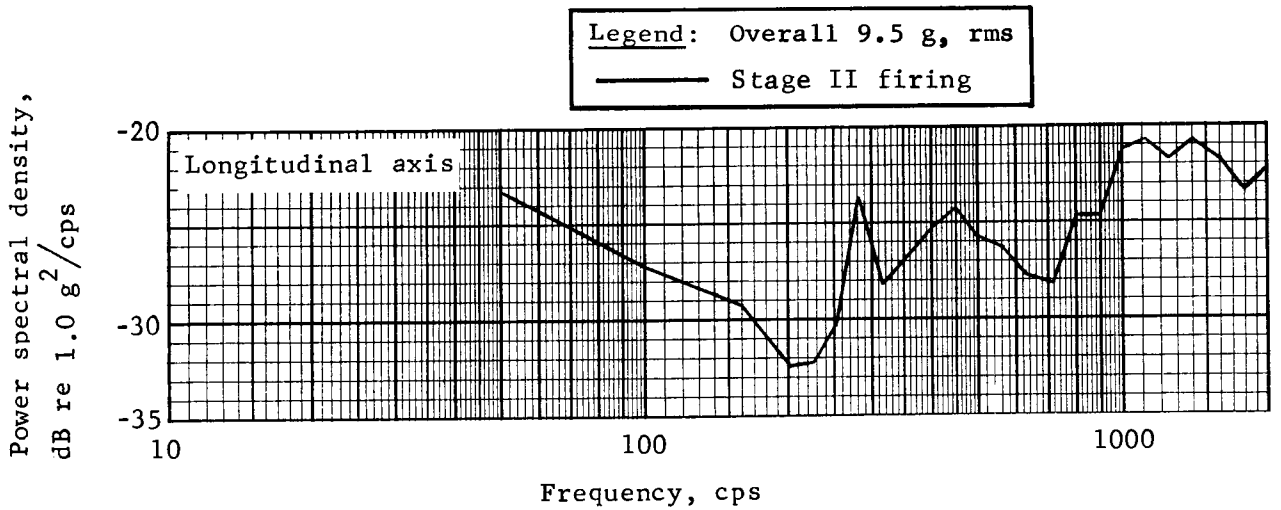


Figure 163. Measurement 2566, Vibration, Airframe at Instrumentation Staging Disconnect, Longidudinal, Compartment 2C, Sta 490, Quad III, Stringer 23, Vehicle 1 SCF

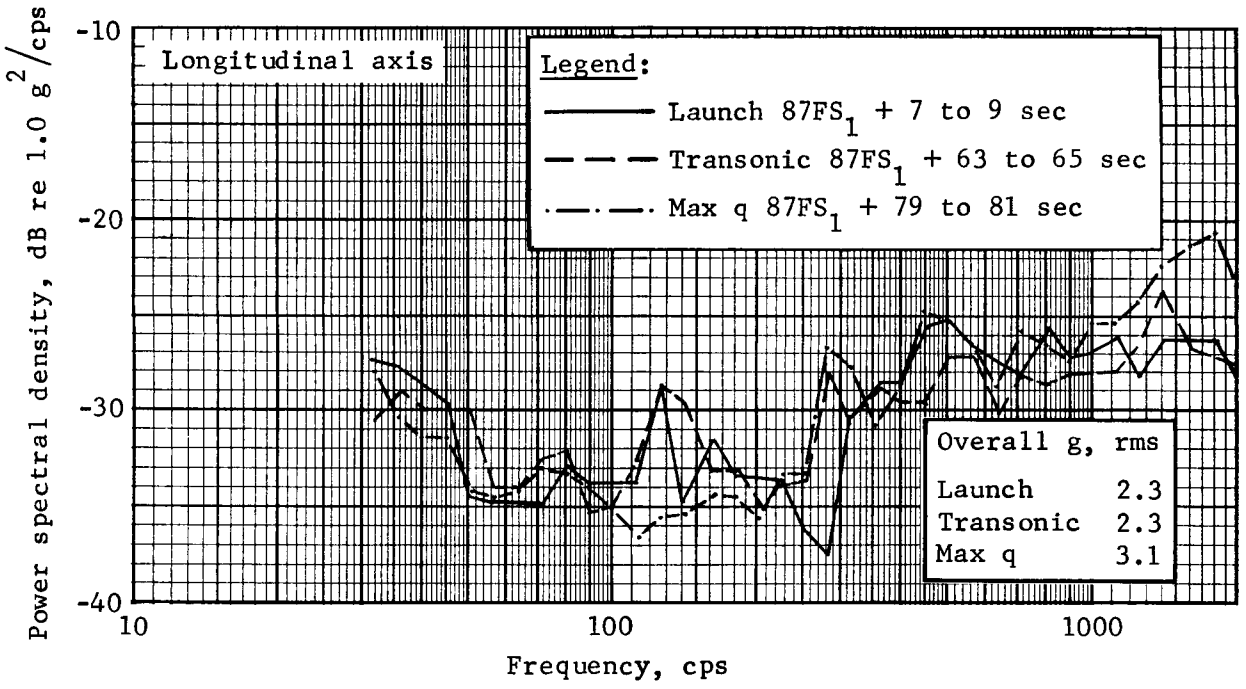


Figure 164. Measurement 2566, 2C Airframe at Instrumentation Staging Disconnect Stringer 23, Vehicle 1 Flight

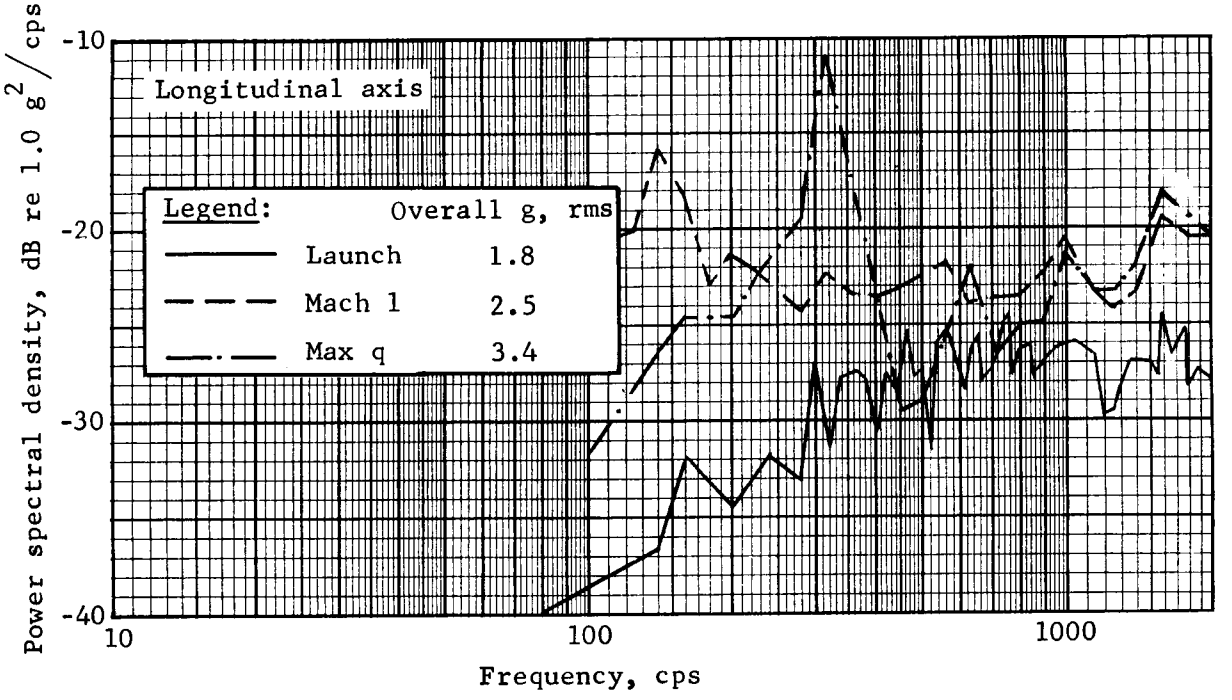


Figure 165. Measurement 2566, 2C Airframe at Instrumentation Staging Disconnect Stringer 23, Vehicle 3 Flight

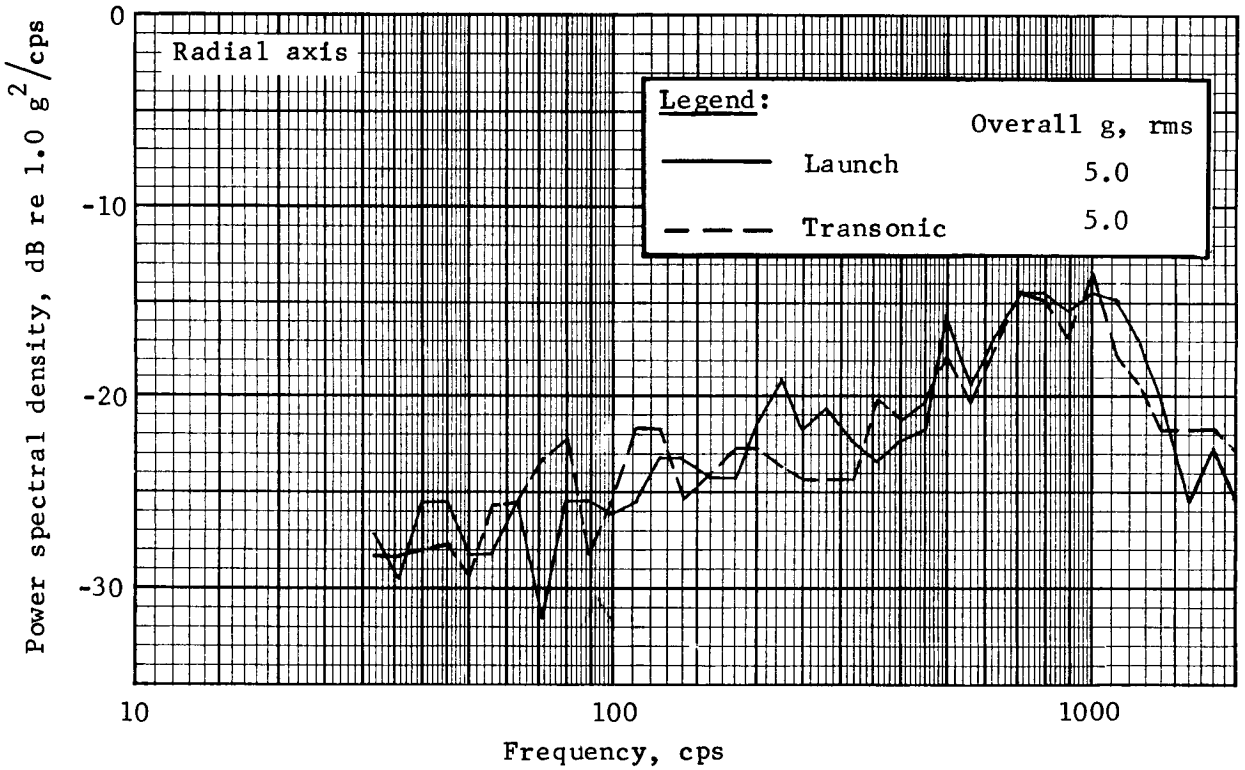


Figure 166. Measurement 2567, 2C Airframe at Instrumentation Staging Disconnect Stringer 23, Vehicle 1 Flight

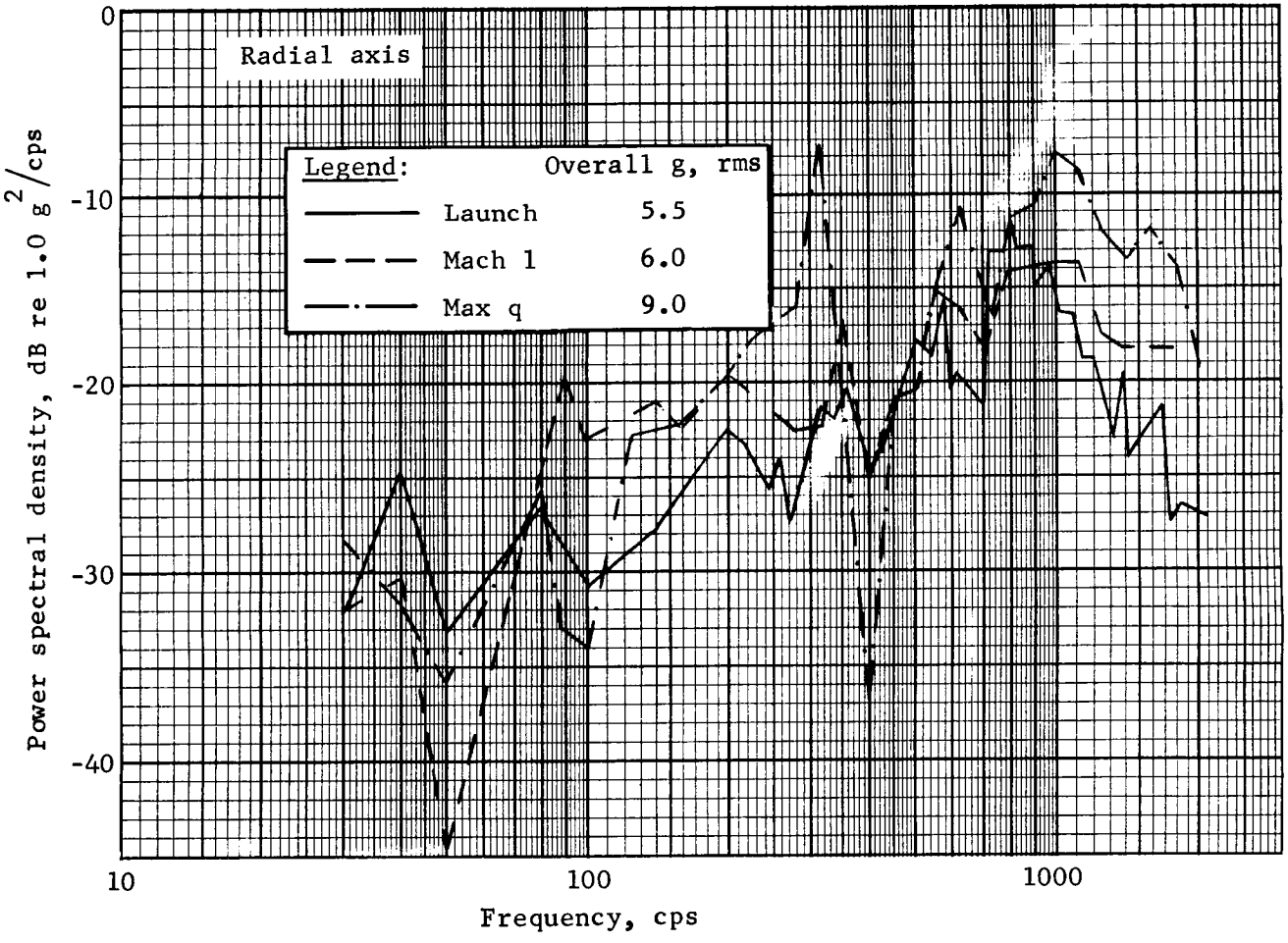


Figure 167. Measurement 2567, 2C Airframe at Instrumentation Staging Disconnect Stringer 23, Vehicle 3 Flight

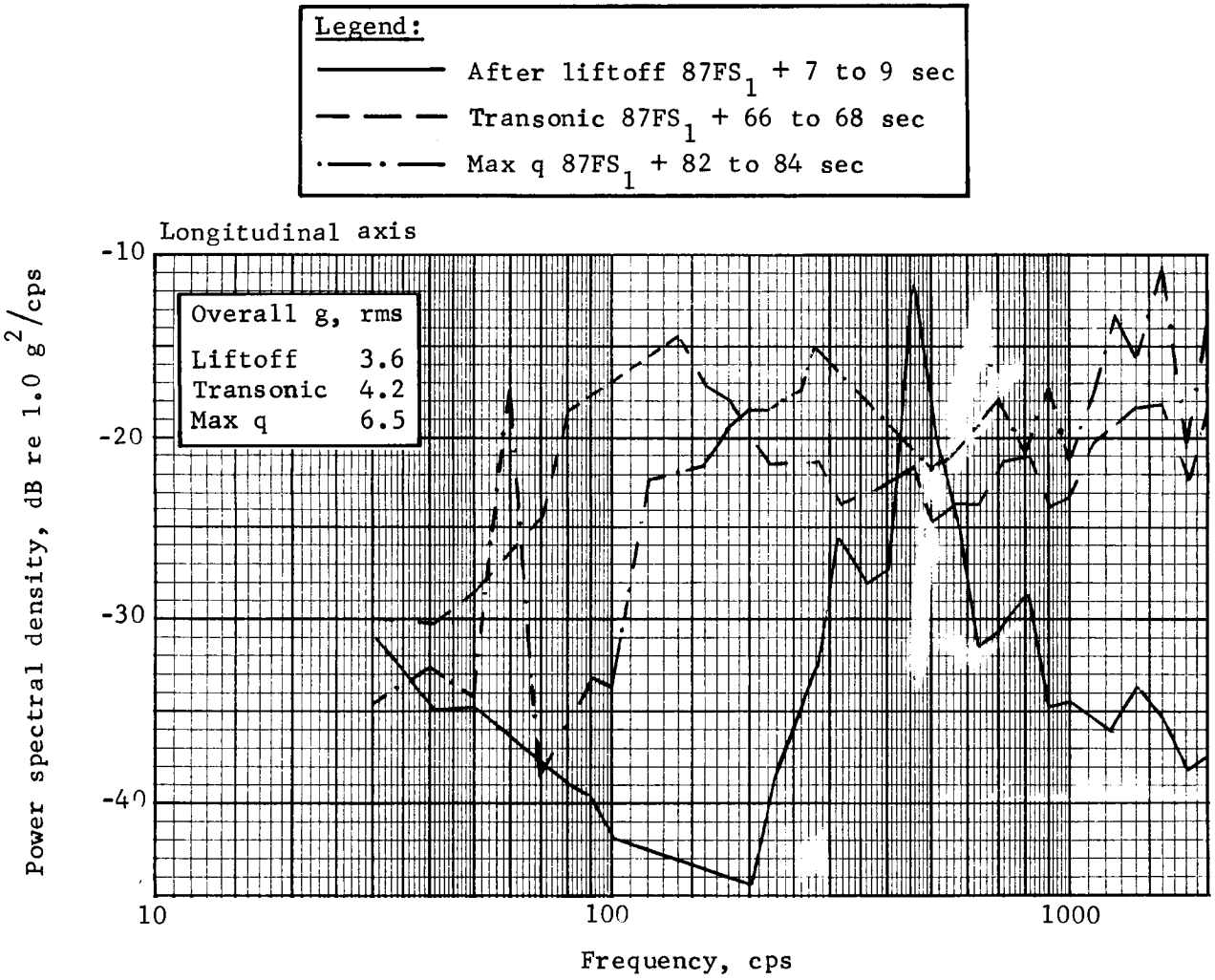


Figure 168. Measurement 2526, 1A Airframe Adjacent to Stringer S2A, Sta 508, Vehicle 6 Flight

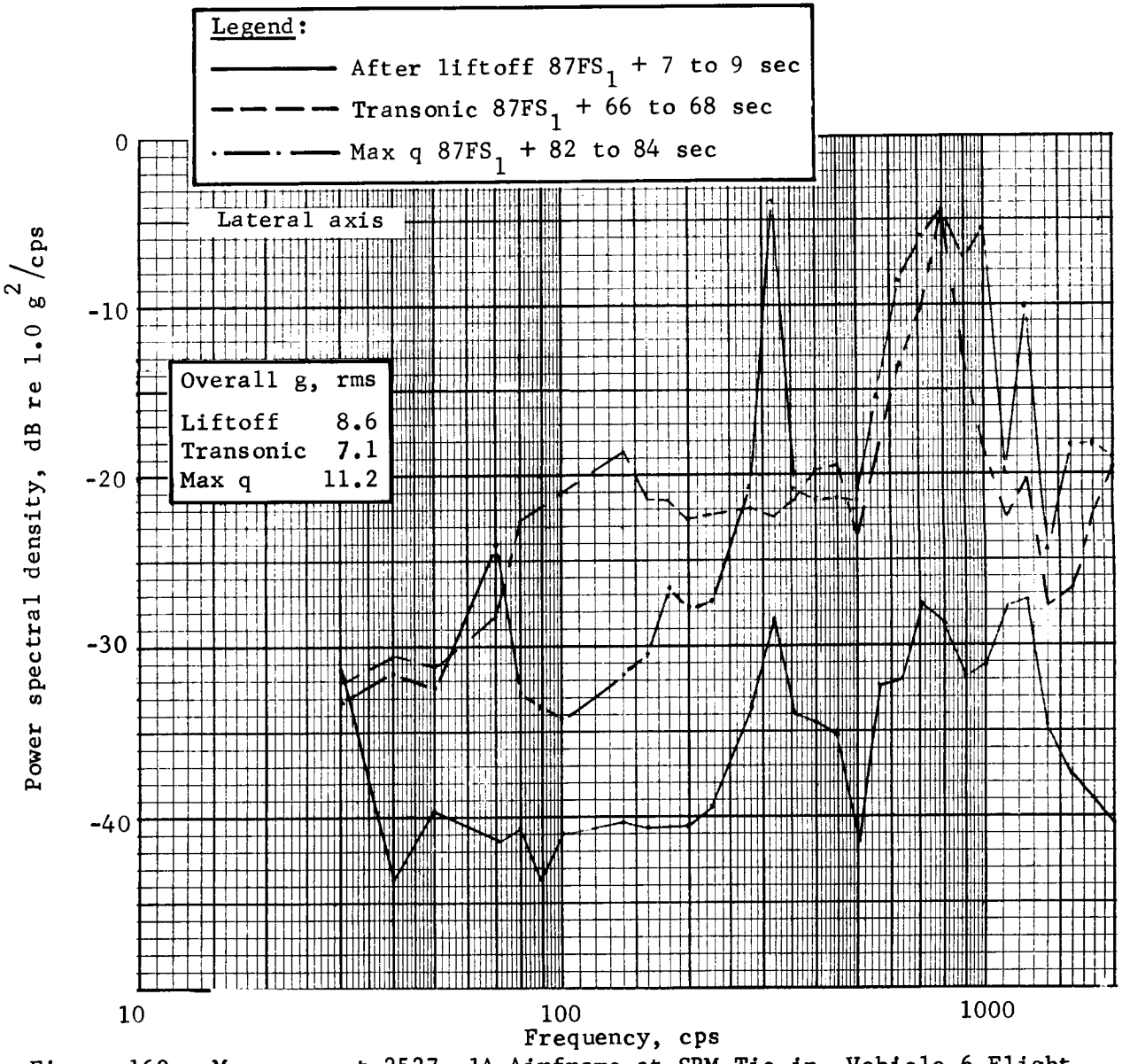


Figure 169. Measurement 2527, 1A Airframe at SRM Tie-in, Vehicle 6 Flight

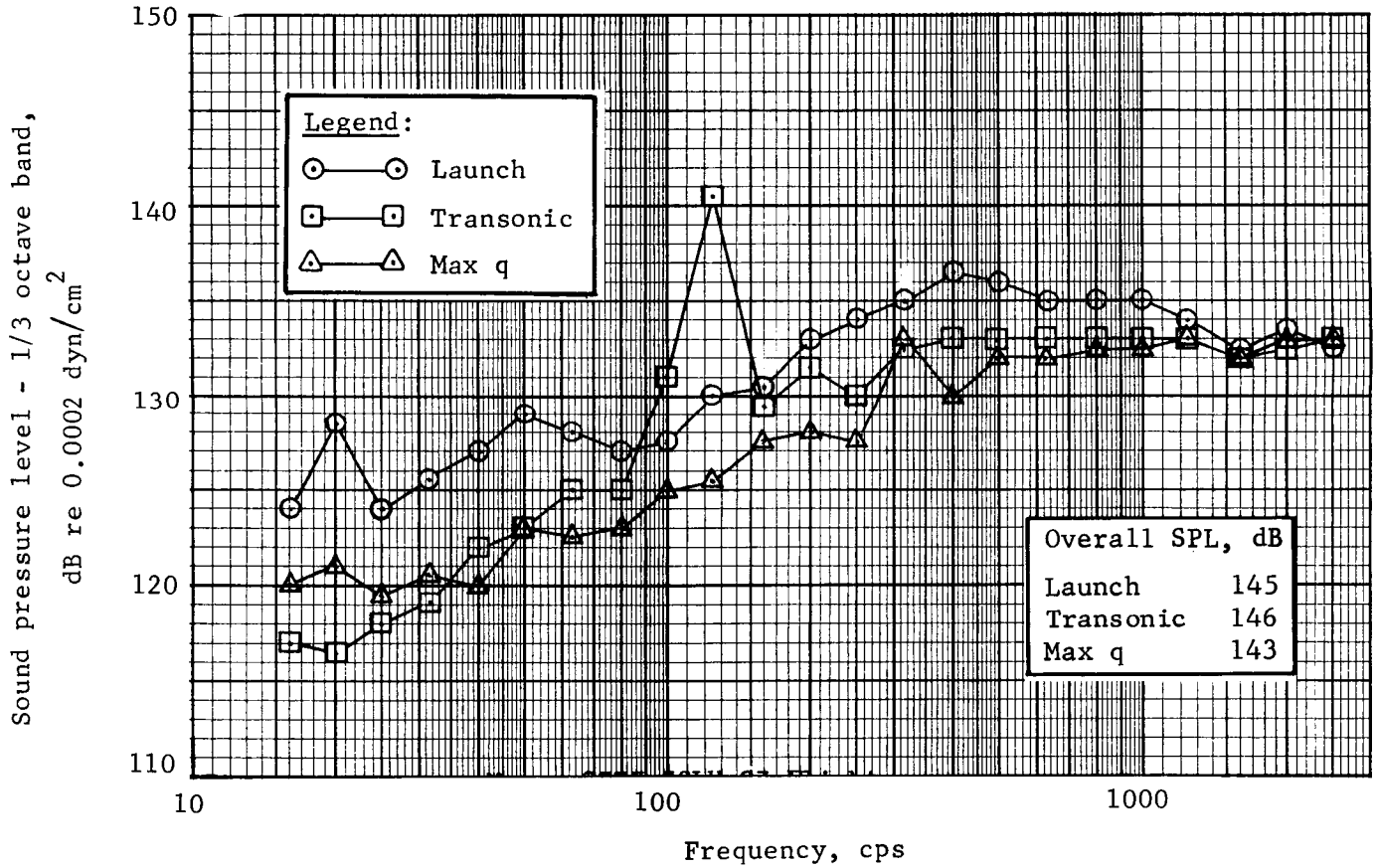


Figure 170. Measurement 2575, SPL Compartment 1A Flush Mounted Target Side (Over Flame), Sta 567, Vehicle 3 Flight

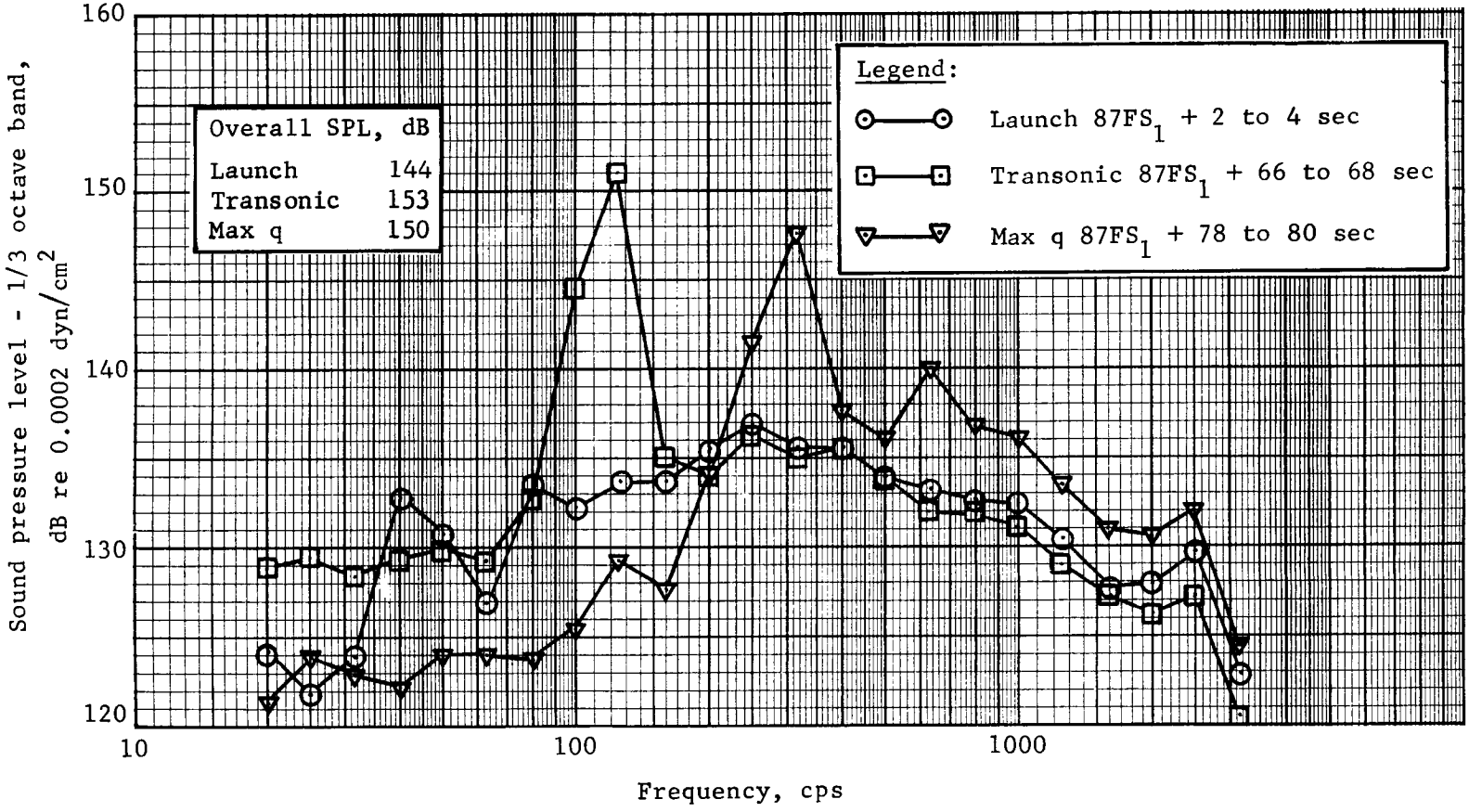


Figure 171. Measurement 2665, SPL Compartment 1A Tank Dome Near Vibration Measurement 2568, Vehicle 6 Flight

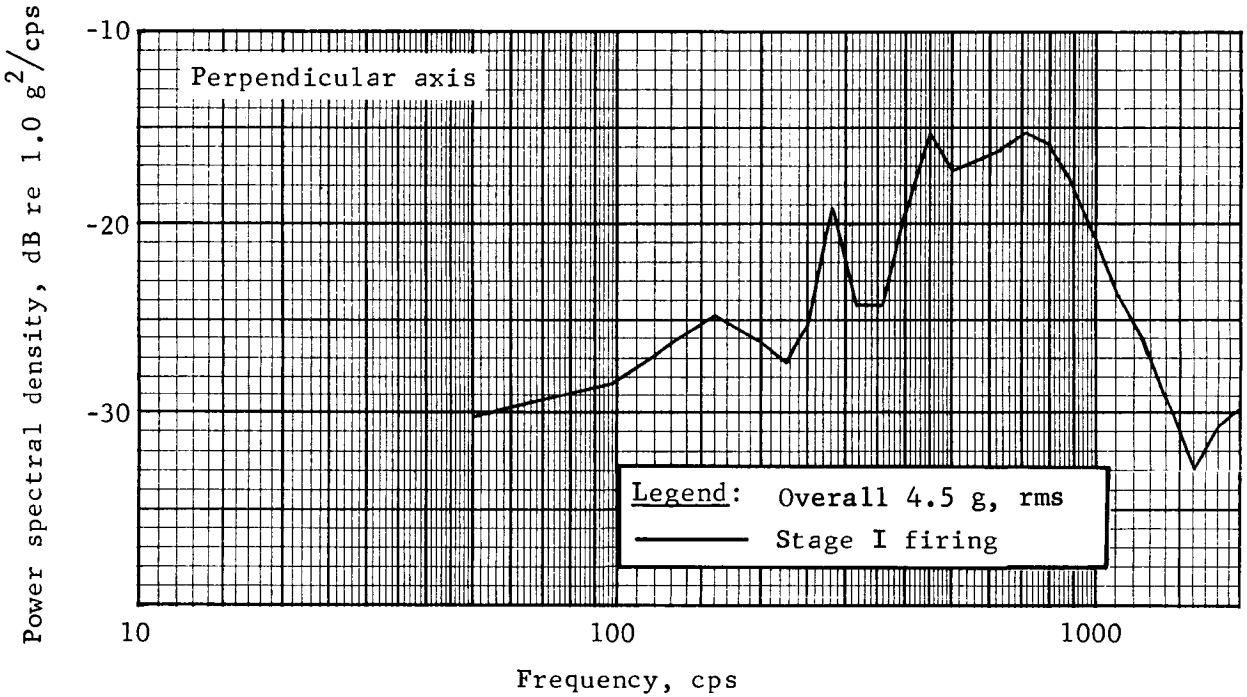


Figure 172. Measurement 2568, Vibration, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 1 SCF

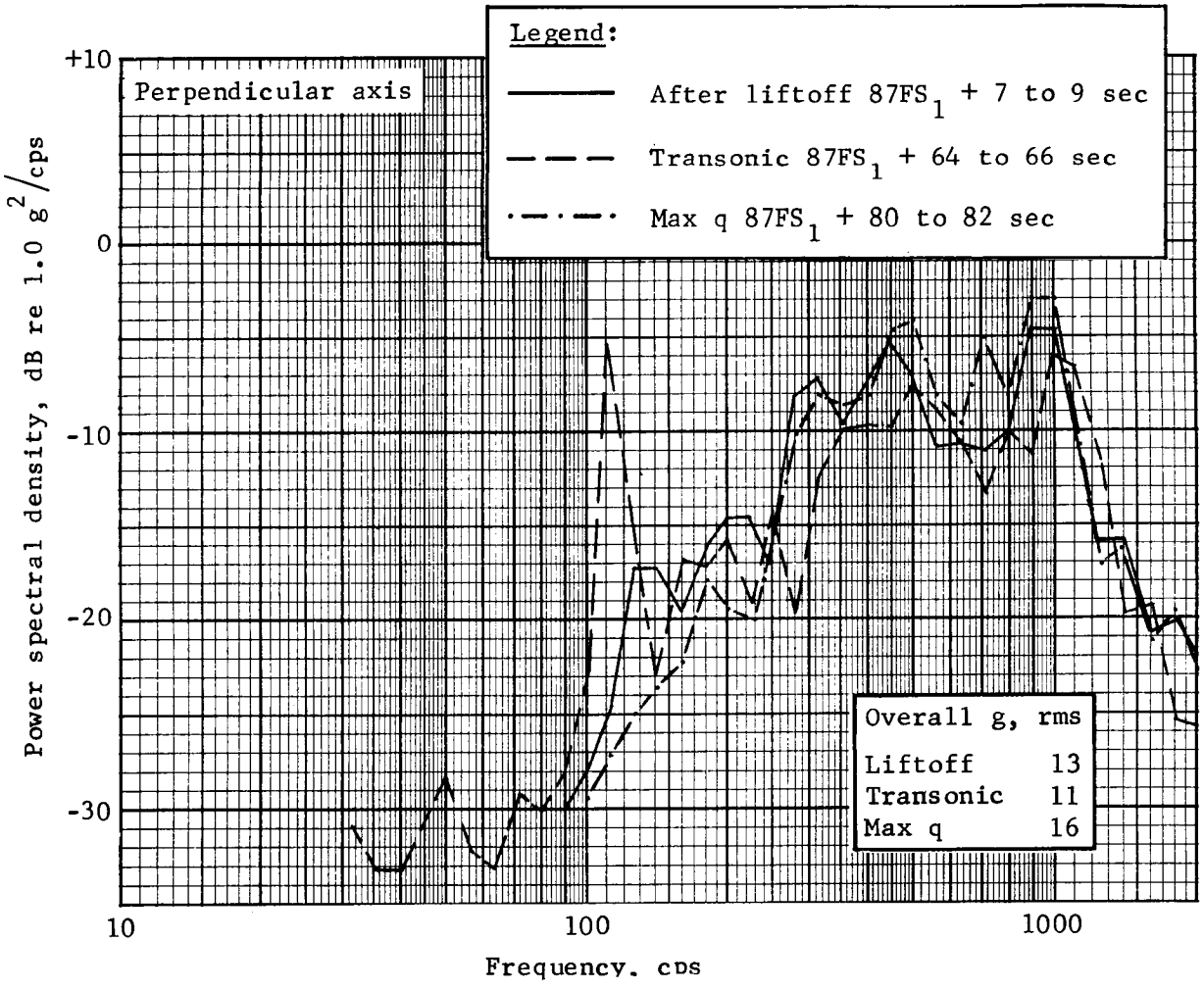


Figure 173. Measurement 2568, 1A Tank Dome at MDS Pressure Switch, Vehicle 1 Flight

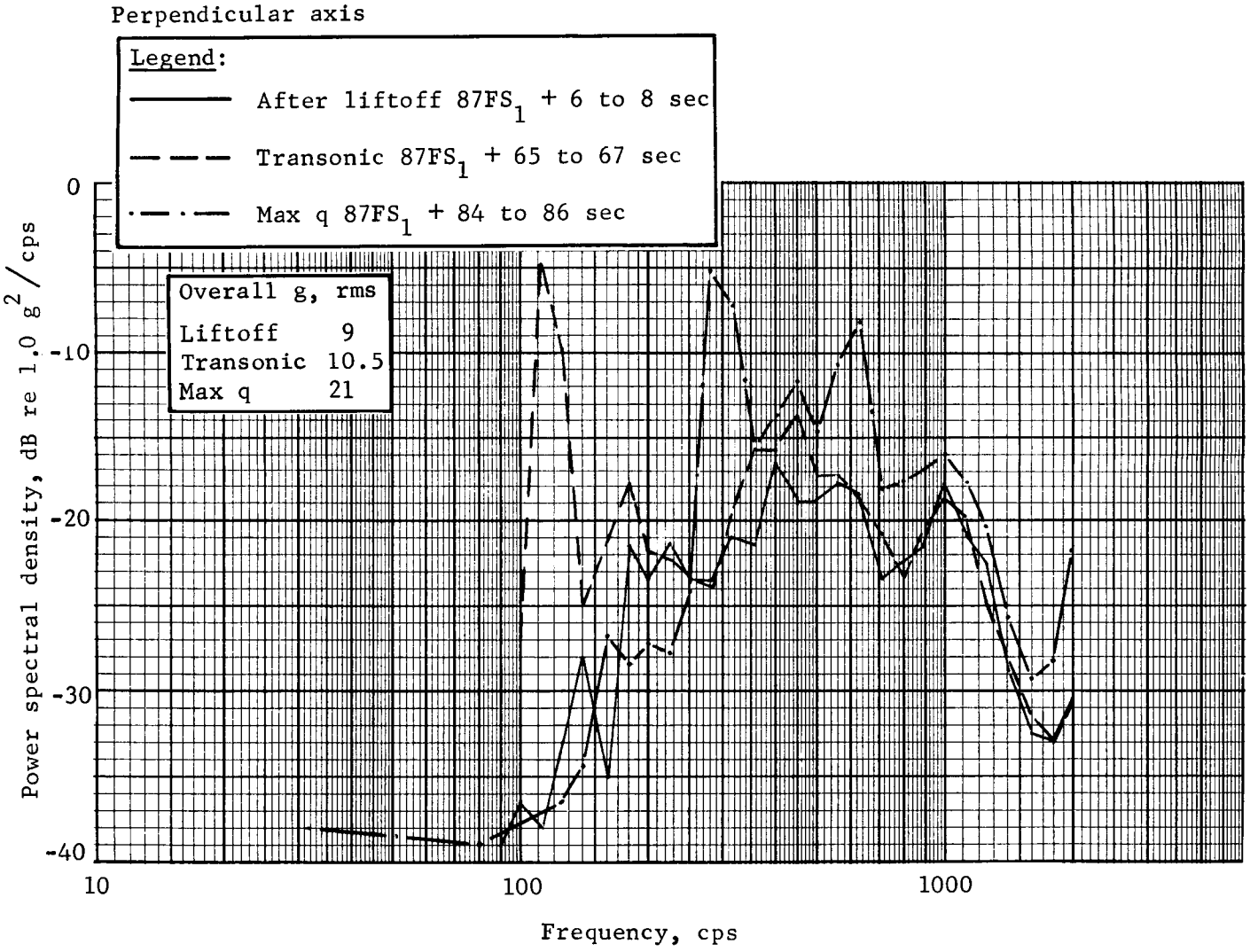


Figure 174. Measurement 2568, 1A Tank Dome at MDS Pressure Switch, Vehicle 3 Flight

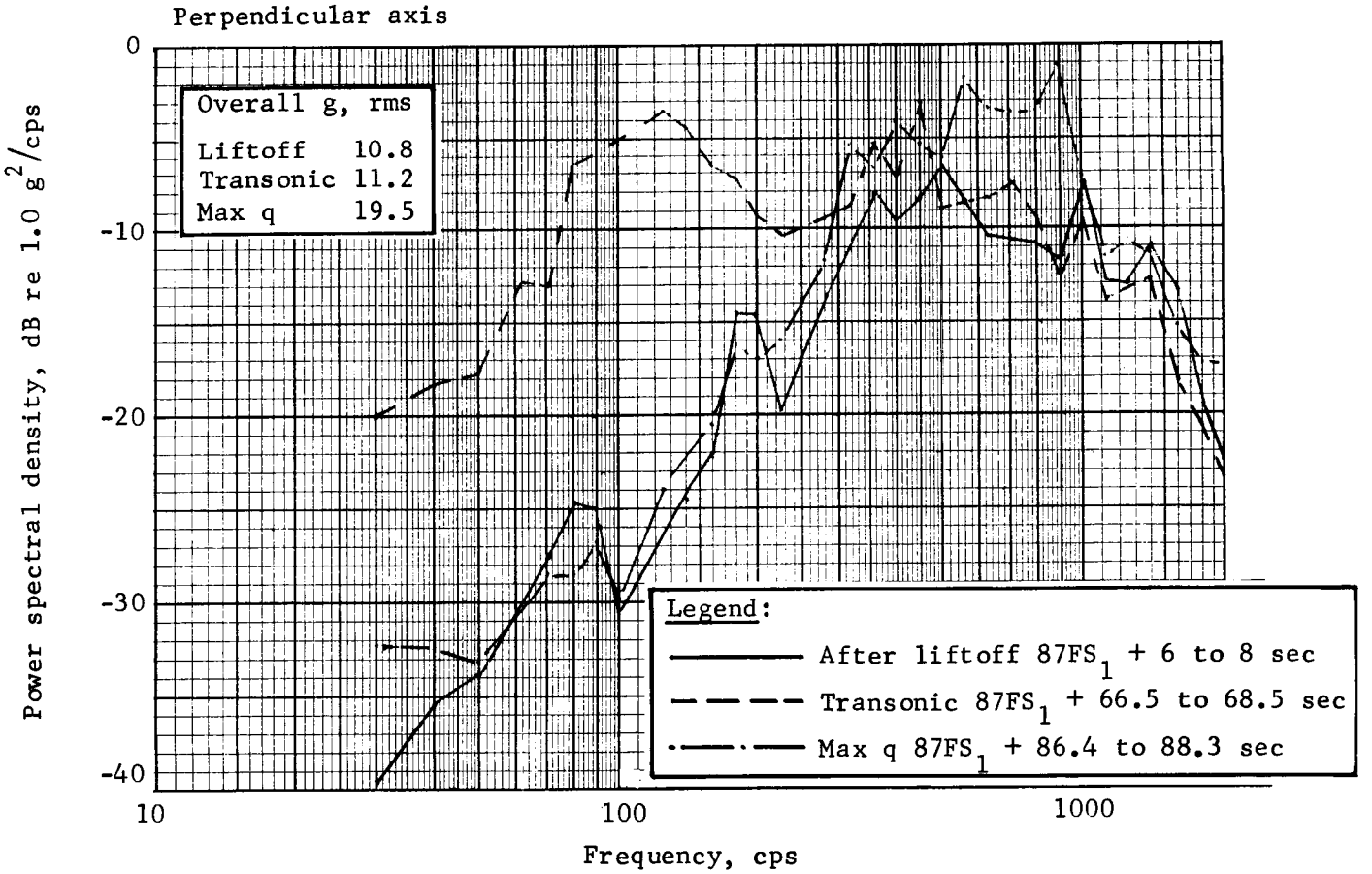


Figure 175. Measurement 2568, 1A Oxidizer Tank Top at MDS Switch Mounting, Vehicle 6 Flight

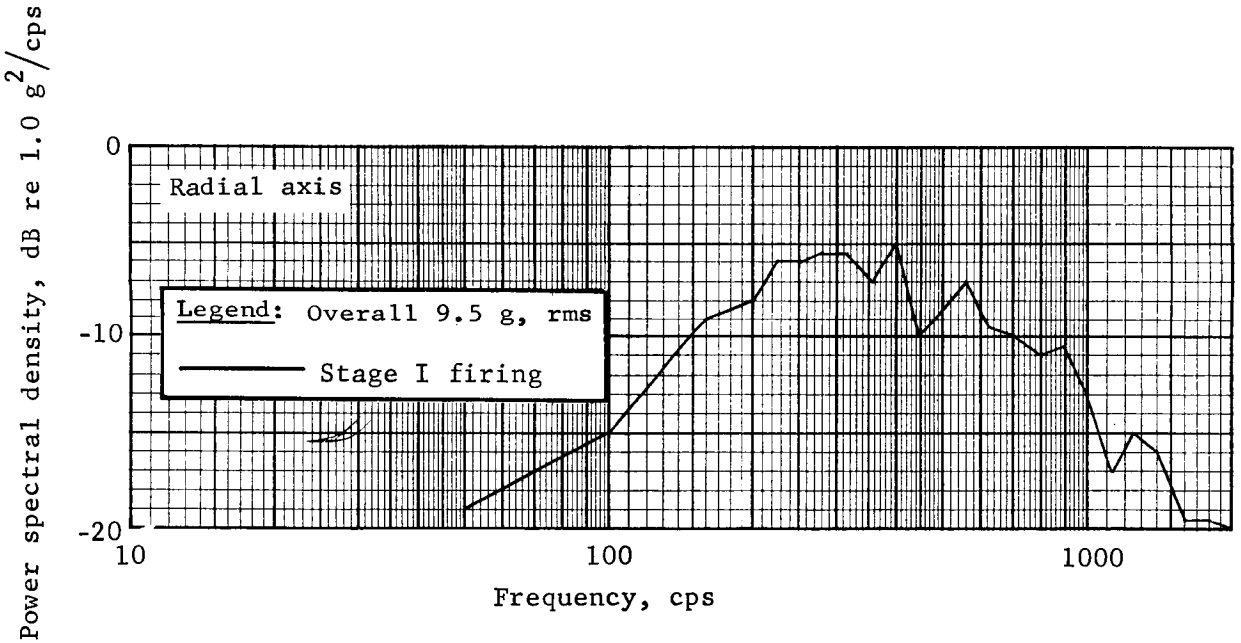


Figure 176. Measurement 2570, 1B Airframe Destruct Battery Mounting Stringer 17, Vehicle 2 FRF

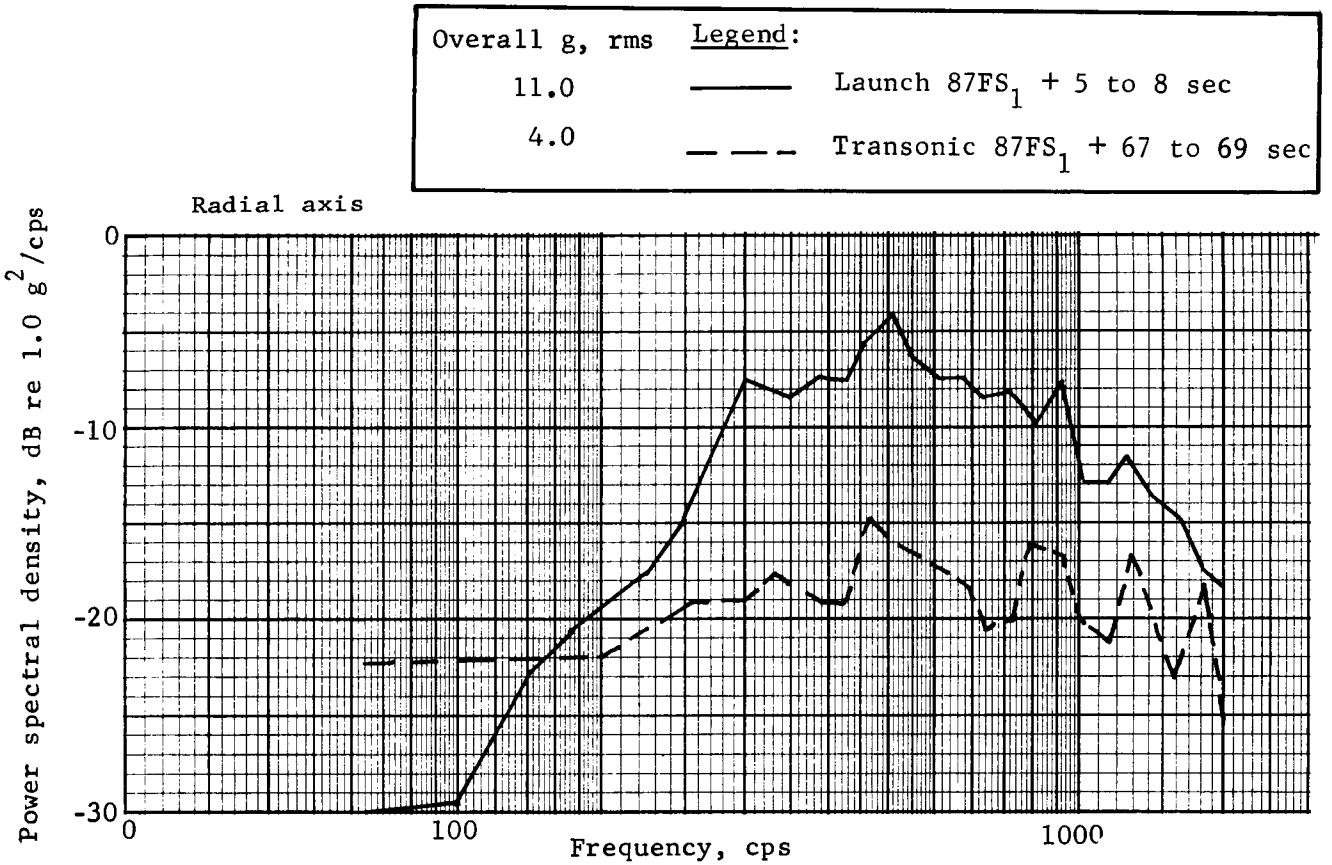


Figure 177. Measurement 2570, 1B Airframe at Destruct Battery Mounting, Stringer 17, Vehicle 2 Flight

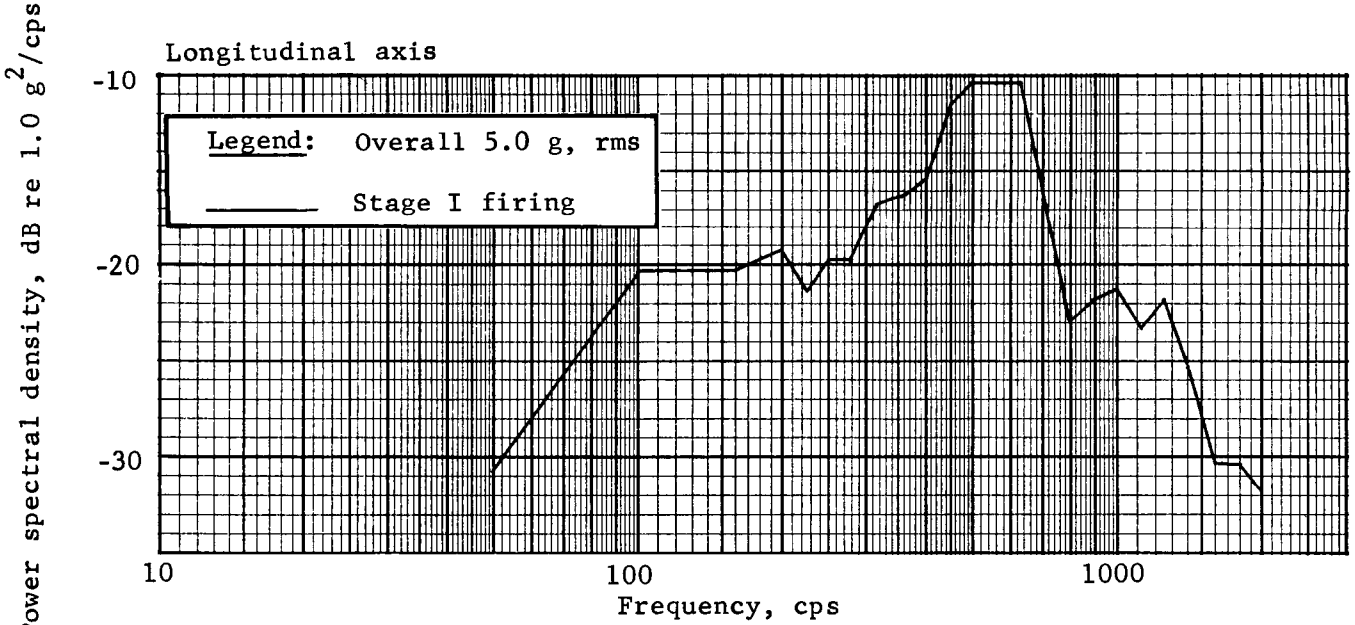


Figure 178. Measurement 2529, 1B Oxidizer Tank Bottom at Rate Gyro Mounting, Vehicle 2 FRF

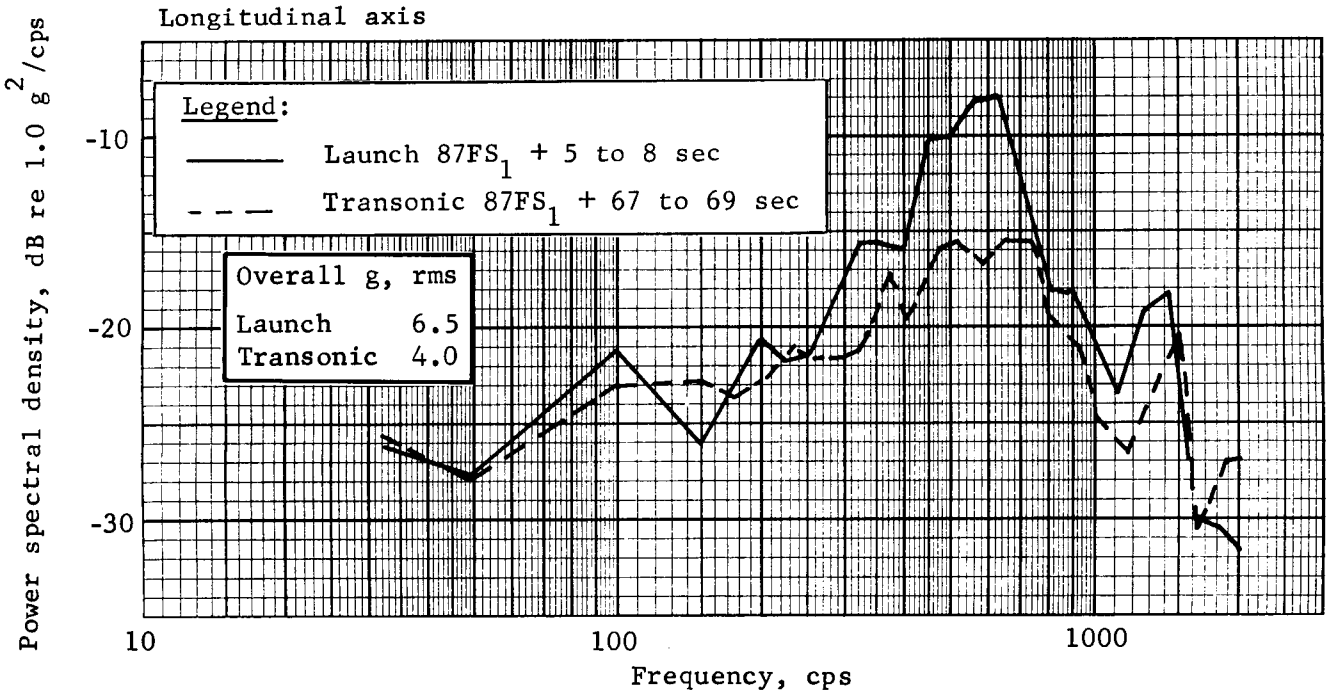


Figure 179. Measurement 2529, 1B Oxidizer Tank Bottom at Rate Gyro, Vehicle 2 Flight

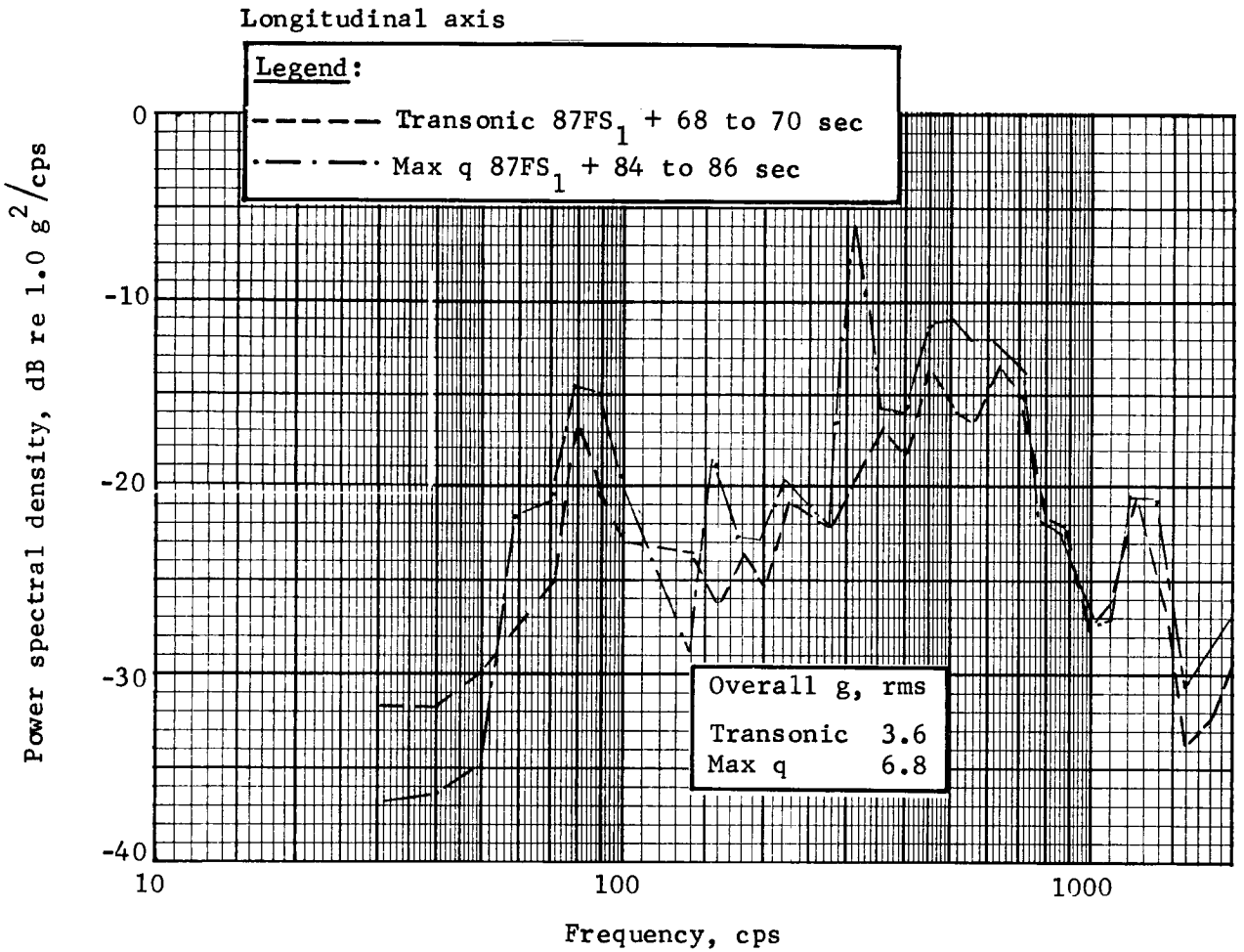


Figure 180. Measurement 2529, 1B Oxidizer Tank Bottom at Rate Gyro Mounting, Vehicle 6 Flight

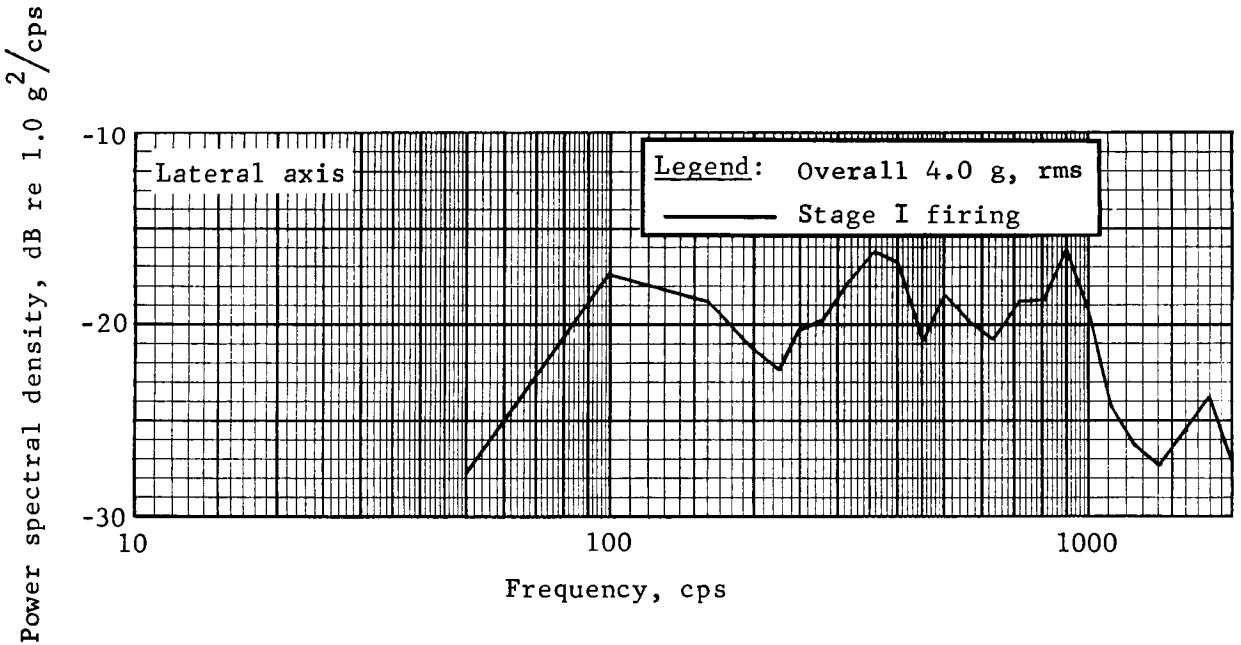


Figure 181. Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting, on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehicle 1 SCF

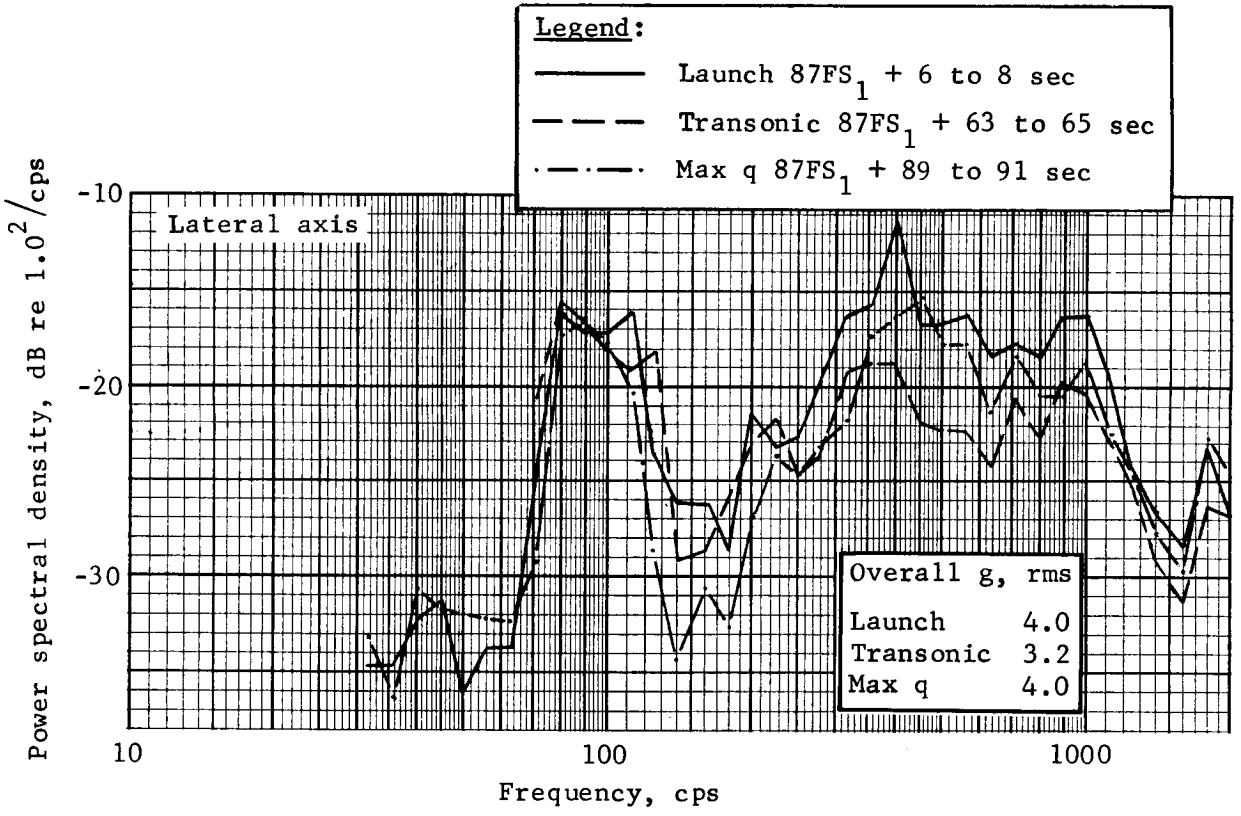


Figure 182. Measurement 2530, 1B Oxidizer Tank Bottom at Rate Gyro, Vehicle 1 Flight

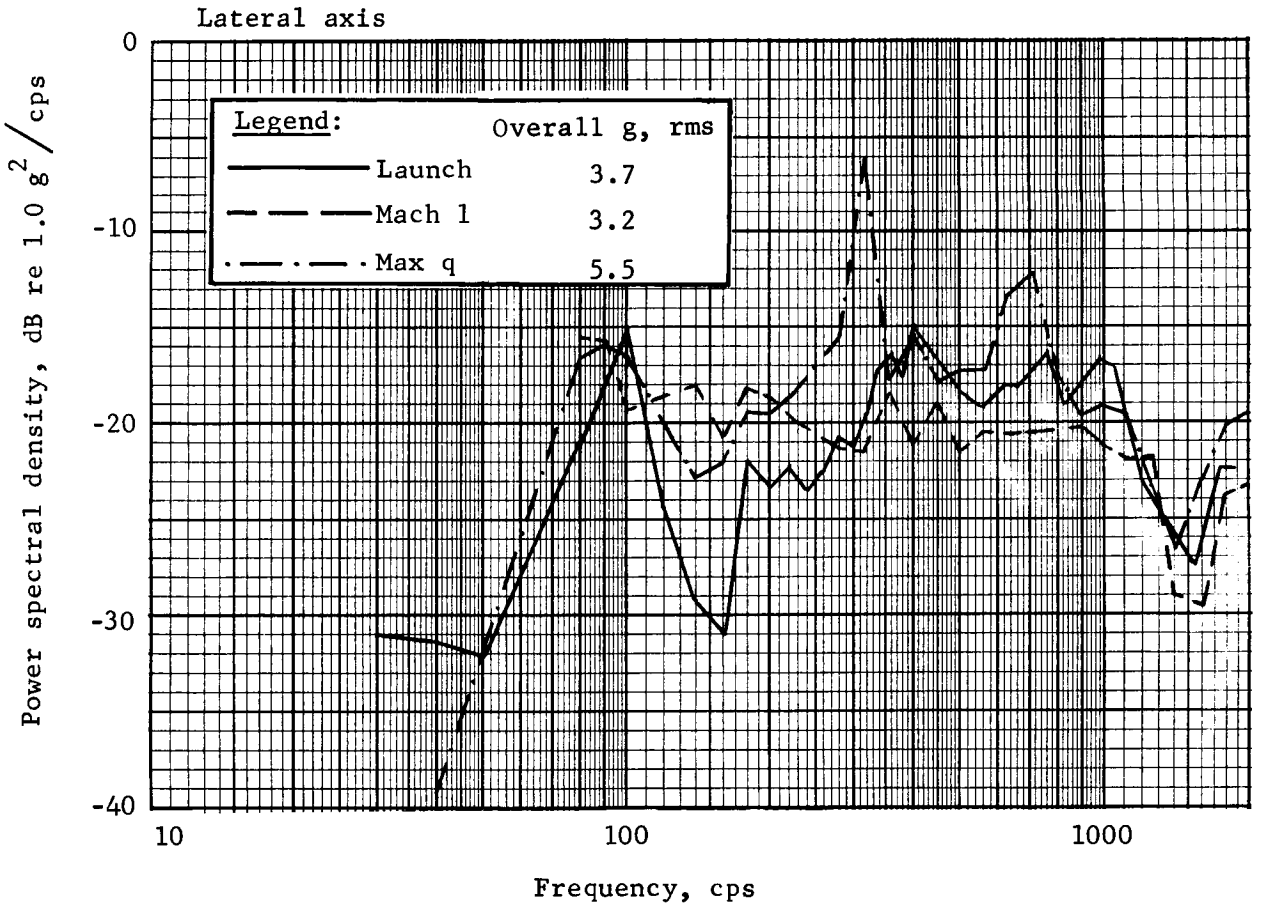


Figure 183. Measurement 2530, 1B Oxidizer Tank Bottom at Rate Gyro, Vehicle 3 Flight

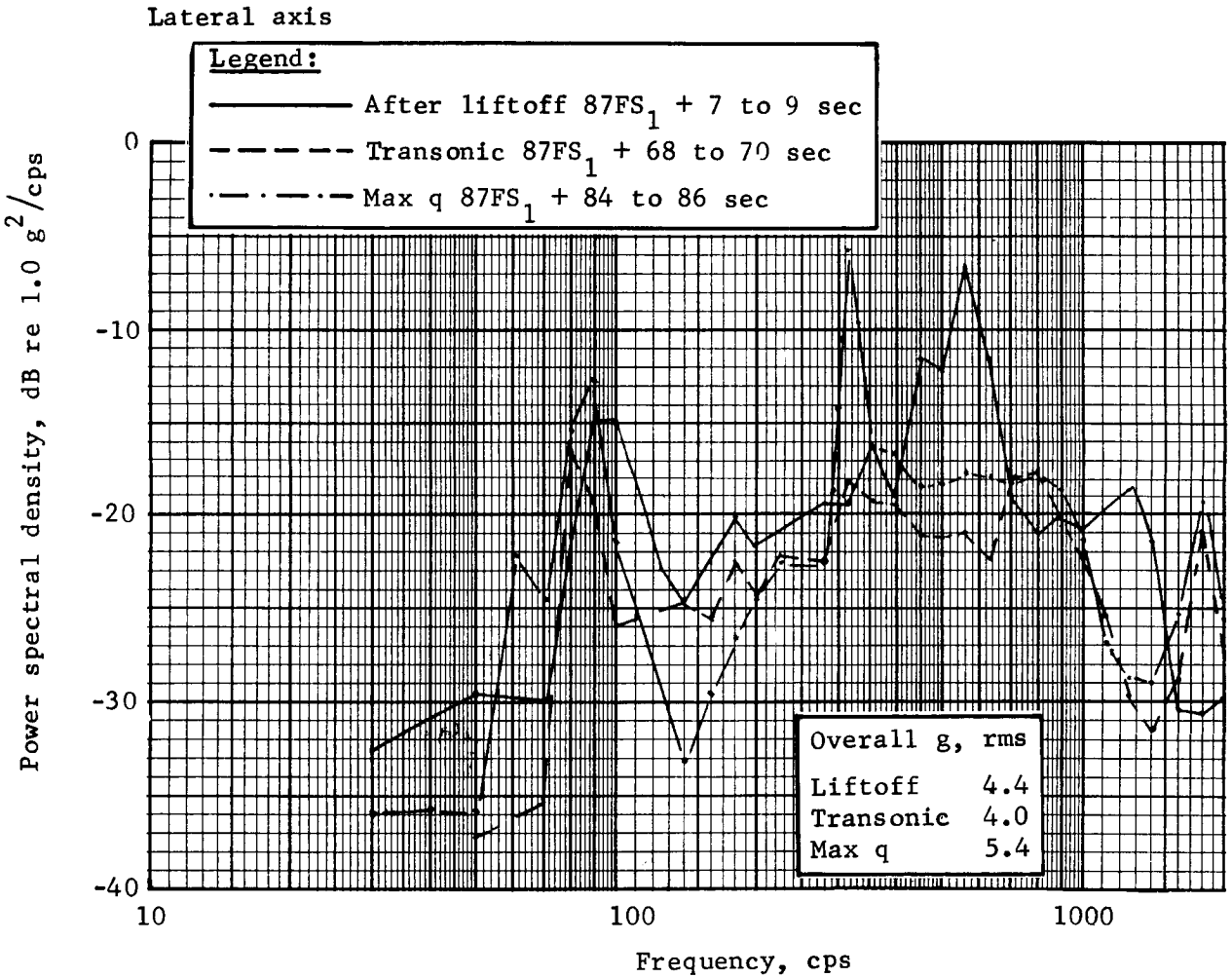


Figure 184. Measurement 2530, 1B Oxidizer Tank Bottom at Rate Gyro Mounting, Vehicle 6 Flight

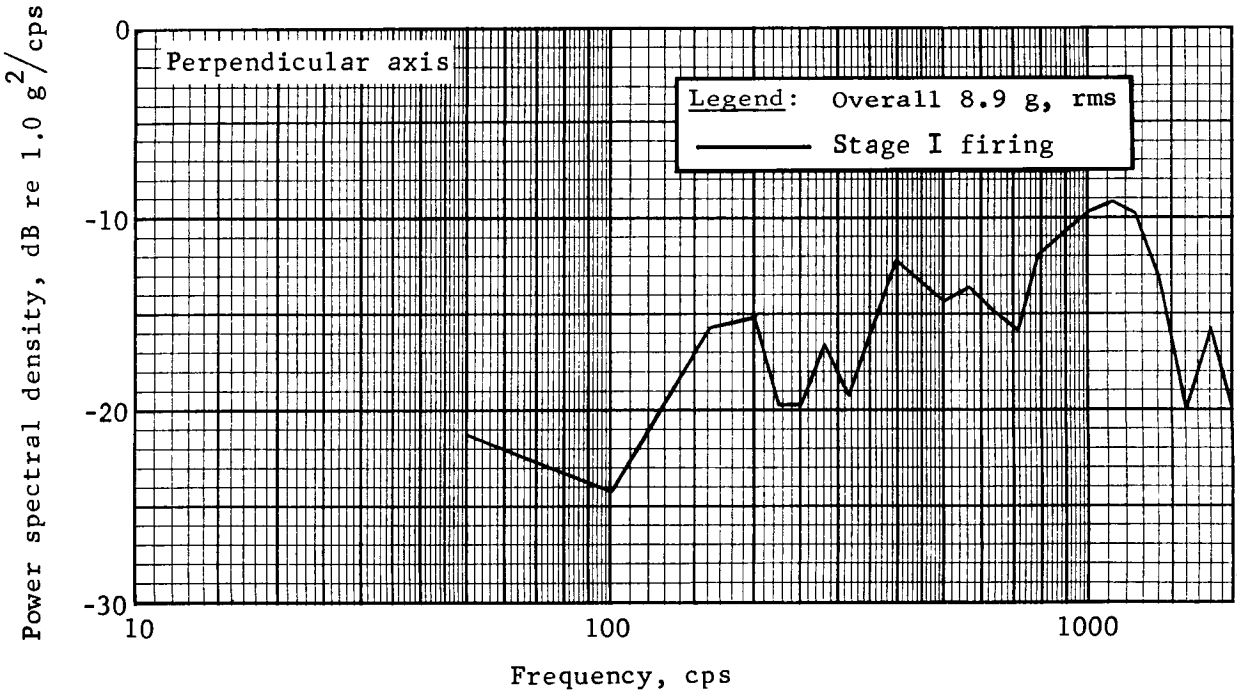


Figure 185. Measurement 2569, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1B, Sta 938, Quad III, Vehicle 1 SCF

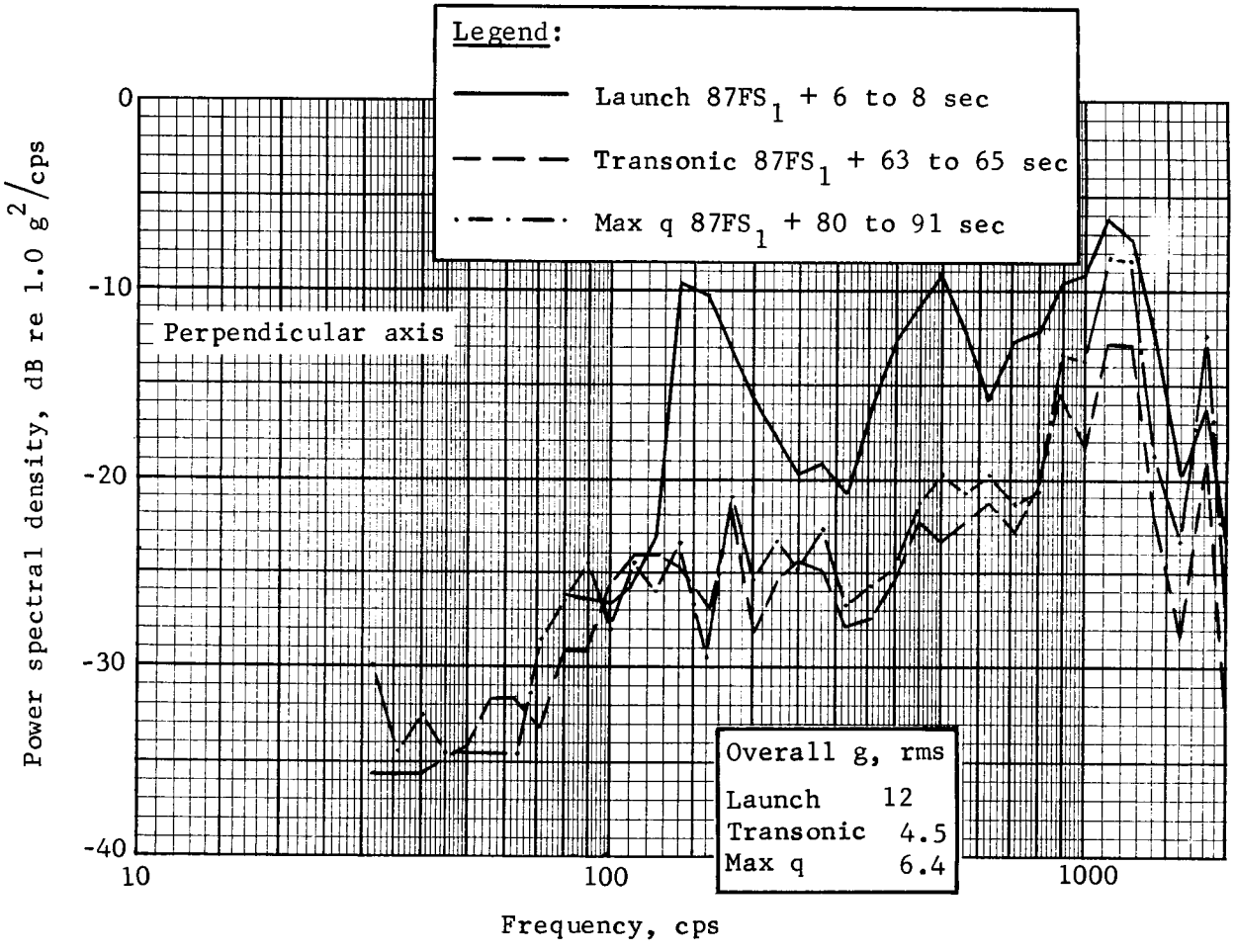


Figure 186. Measurement 2569, 1B Fuel Tank Dome at MDS Pressure Switch, Vehicle 1 Flight

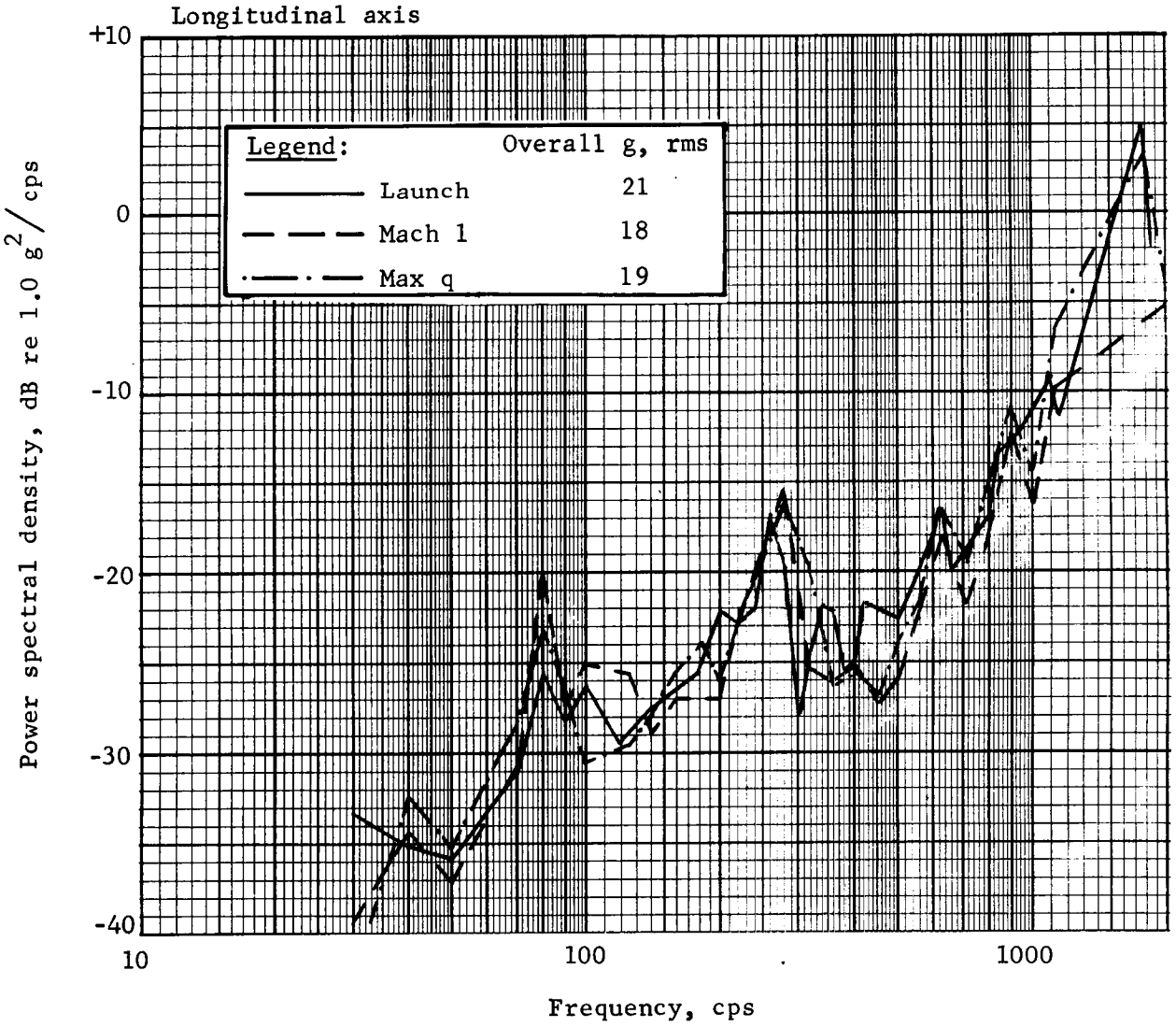


Figure 187. Measurement 2540, 1C Airframe at Quad I Longeron S5A Sta 1214, Vehicle 3 Flight

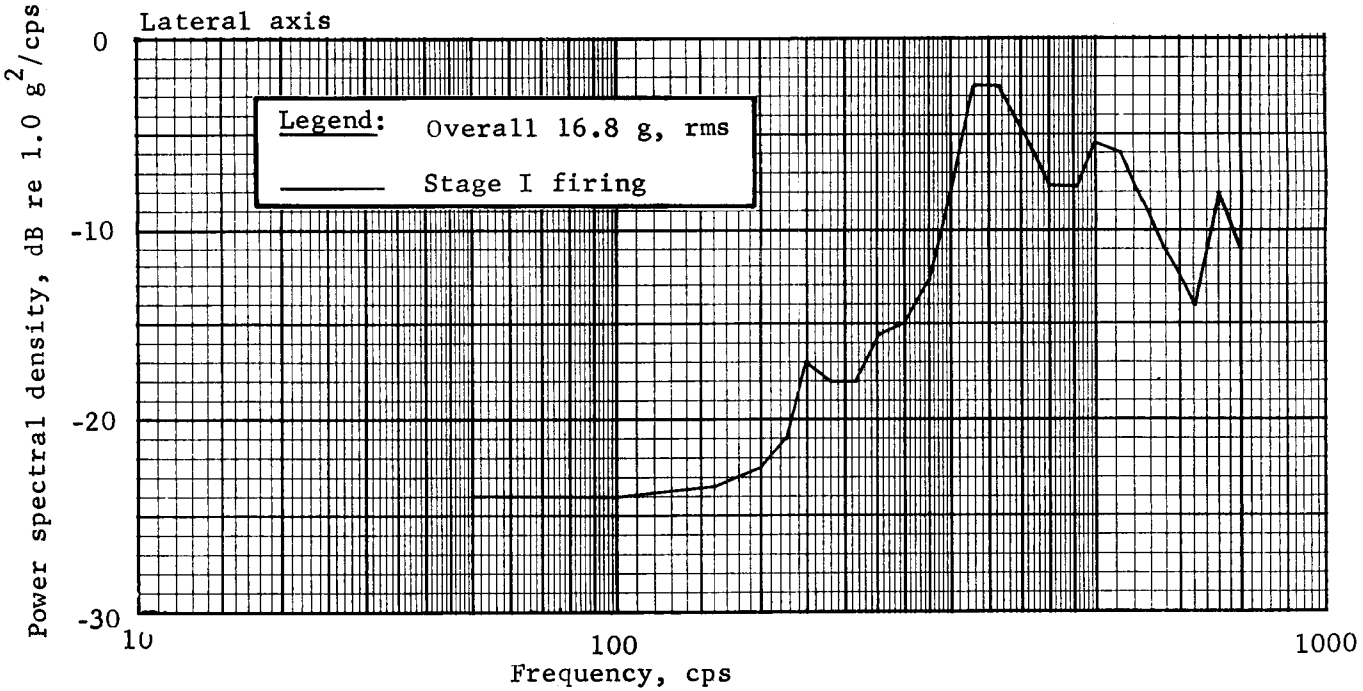


Figure 188. Measurement 2541, 1C Airframe at Solid Tie-in Point, Vehicle 2 FRF

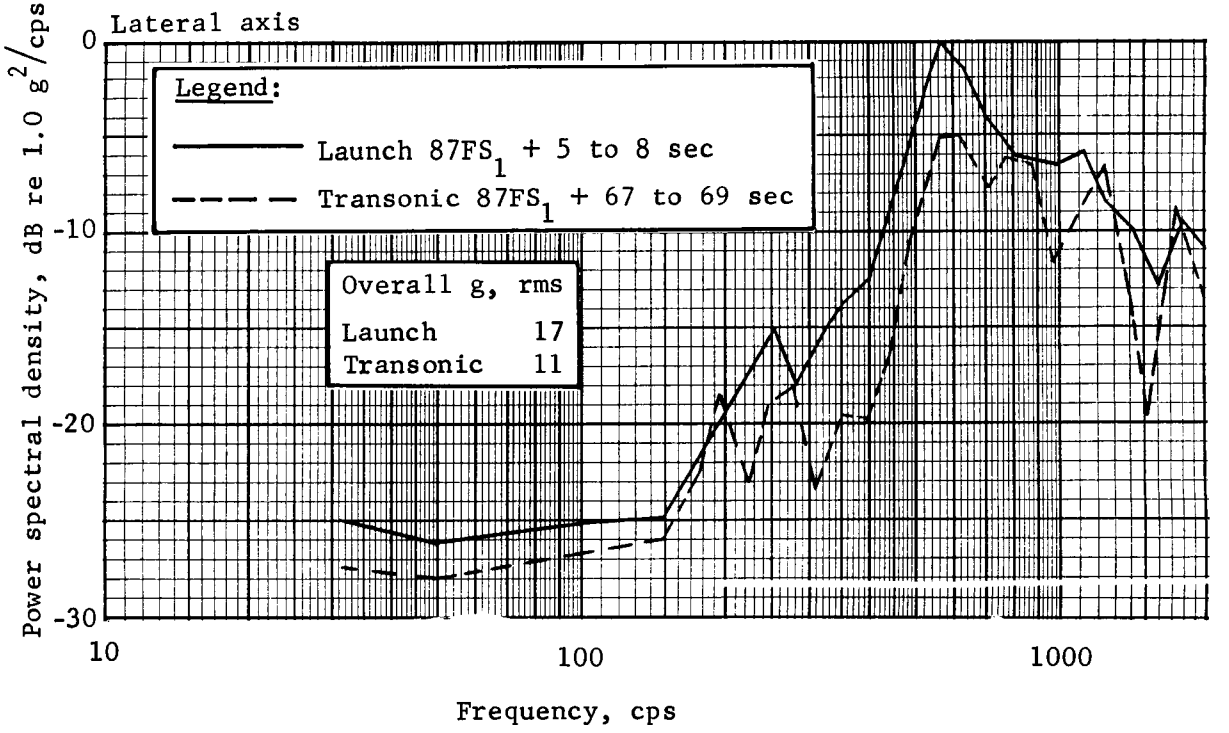


Figure 189. Measurement 2541, 1C Airframe at Solid Tie Point, Vehicle 2 Flight

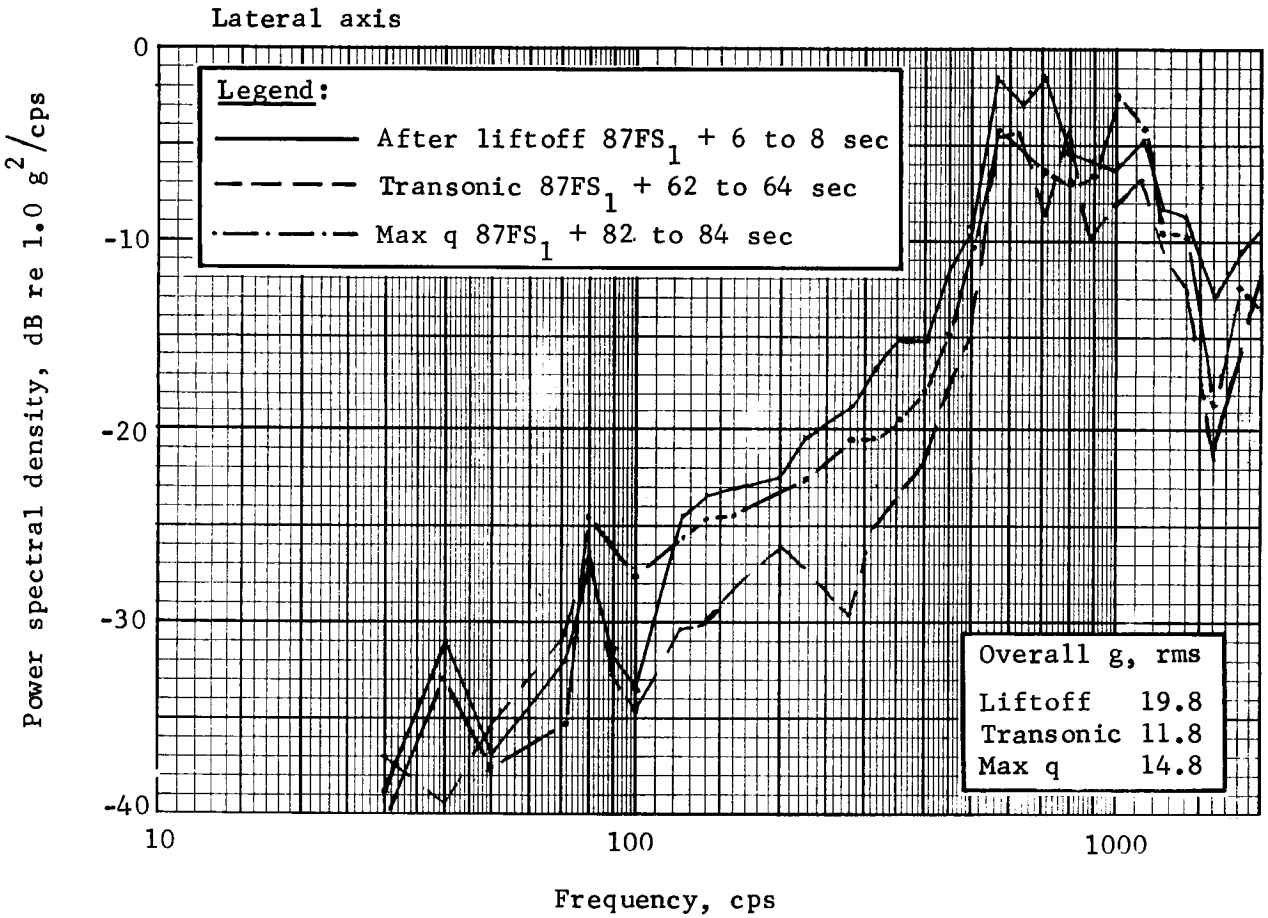


Figure 190. Measurement 2541, 1C Airframe at SRM Tie-in, Vehicle 6 Flight

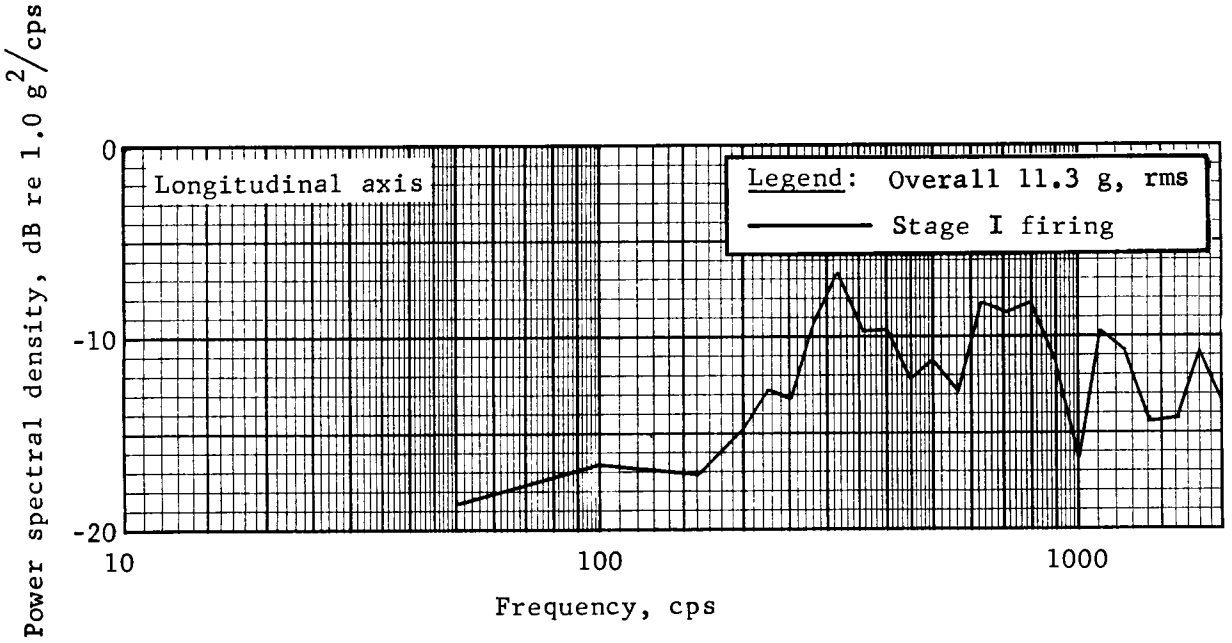


Figure 191. Measurement 2572, Vibration, Airframe at Electrical Staging Disconnect, Longitudinal, Compartment 1C, Sta 1224, Quad III, between Stringers 26 and 27, Vehicle 1 SCF

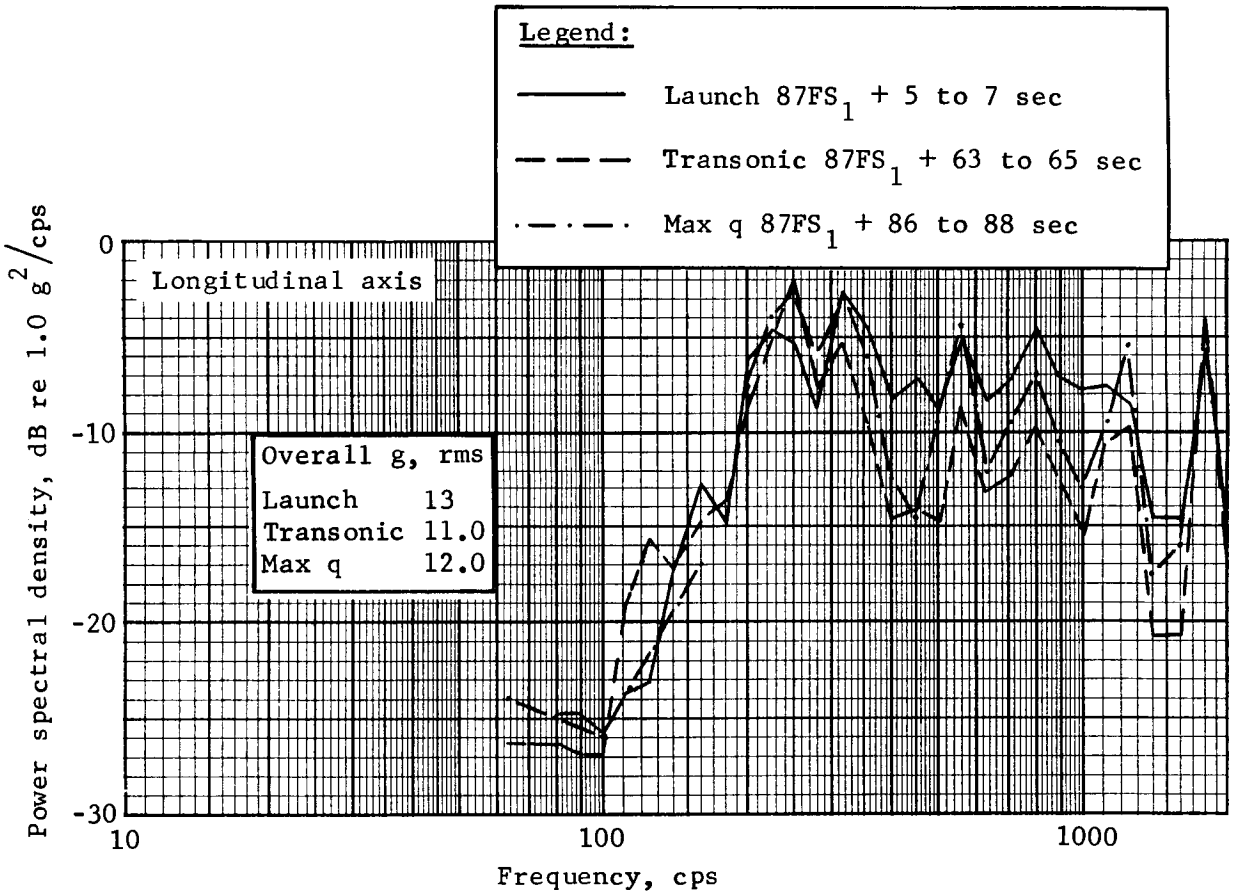


Figure 192. Measurement 2572, 1C Airframe at Electrical Staging Disconnect, Vehicle 1 Flight

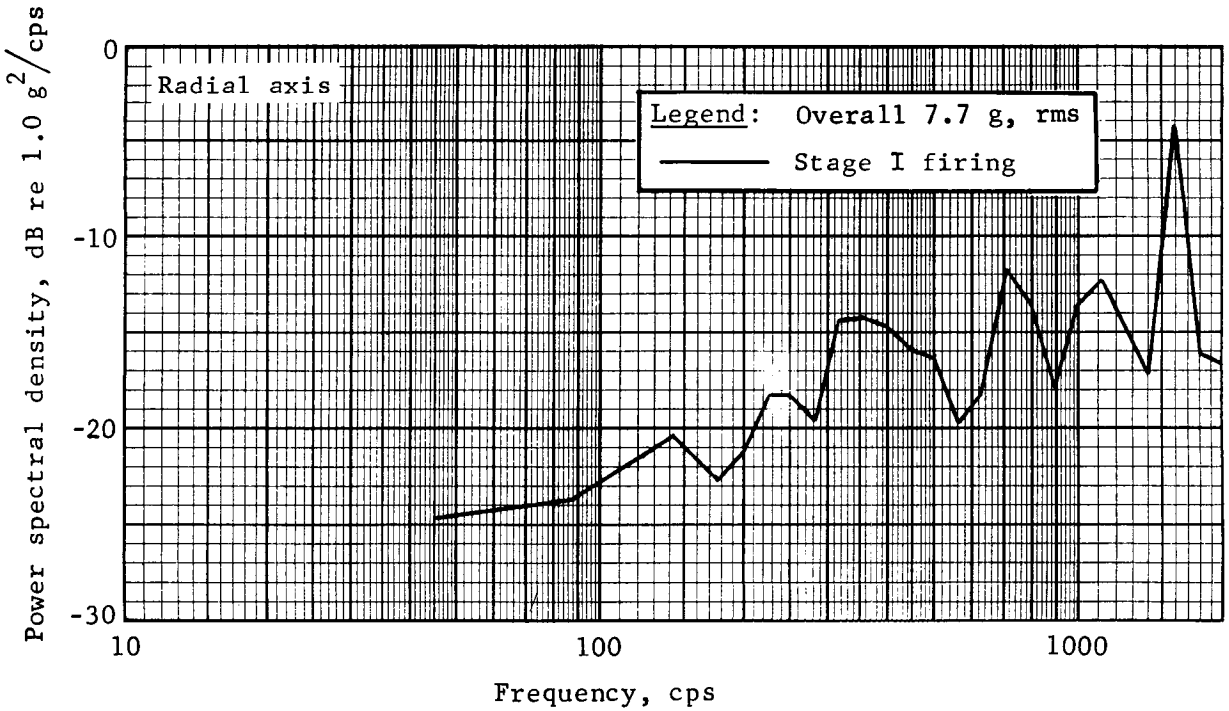


Figure 193. Measurement 2573, Vibration, Airframe at Electrical Staging Disconnect, Radial, Compartment 1C, Sta 1224, Quad III, between Stringers 26 and 27, Vehicle 1 SCF

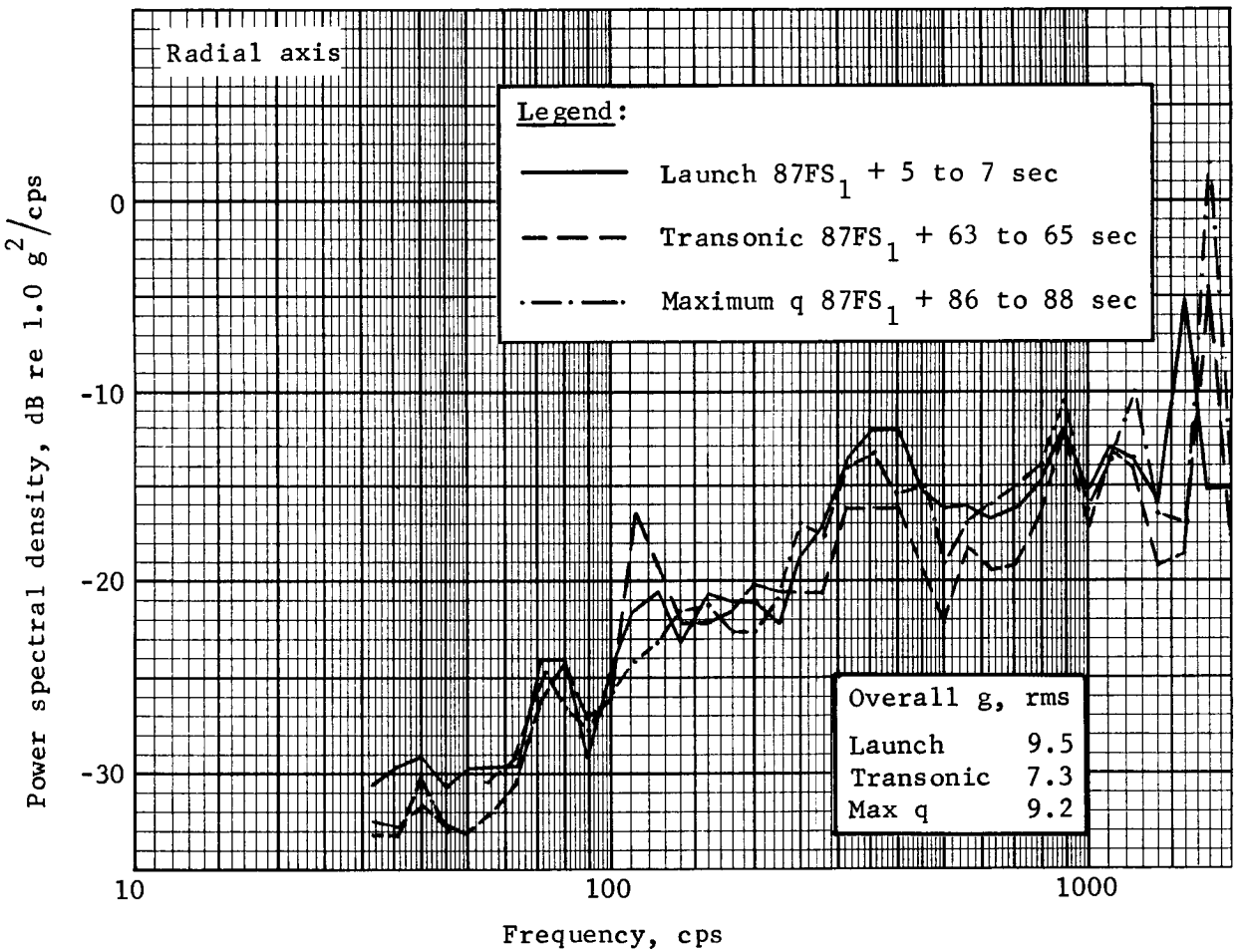


Figure 194. Measurement 2573, 1C Airframe at Electrical Staging Disconnect, Vehicle 1 Flight

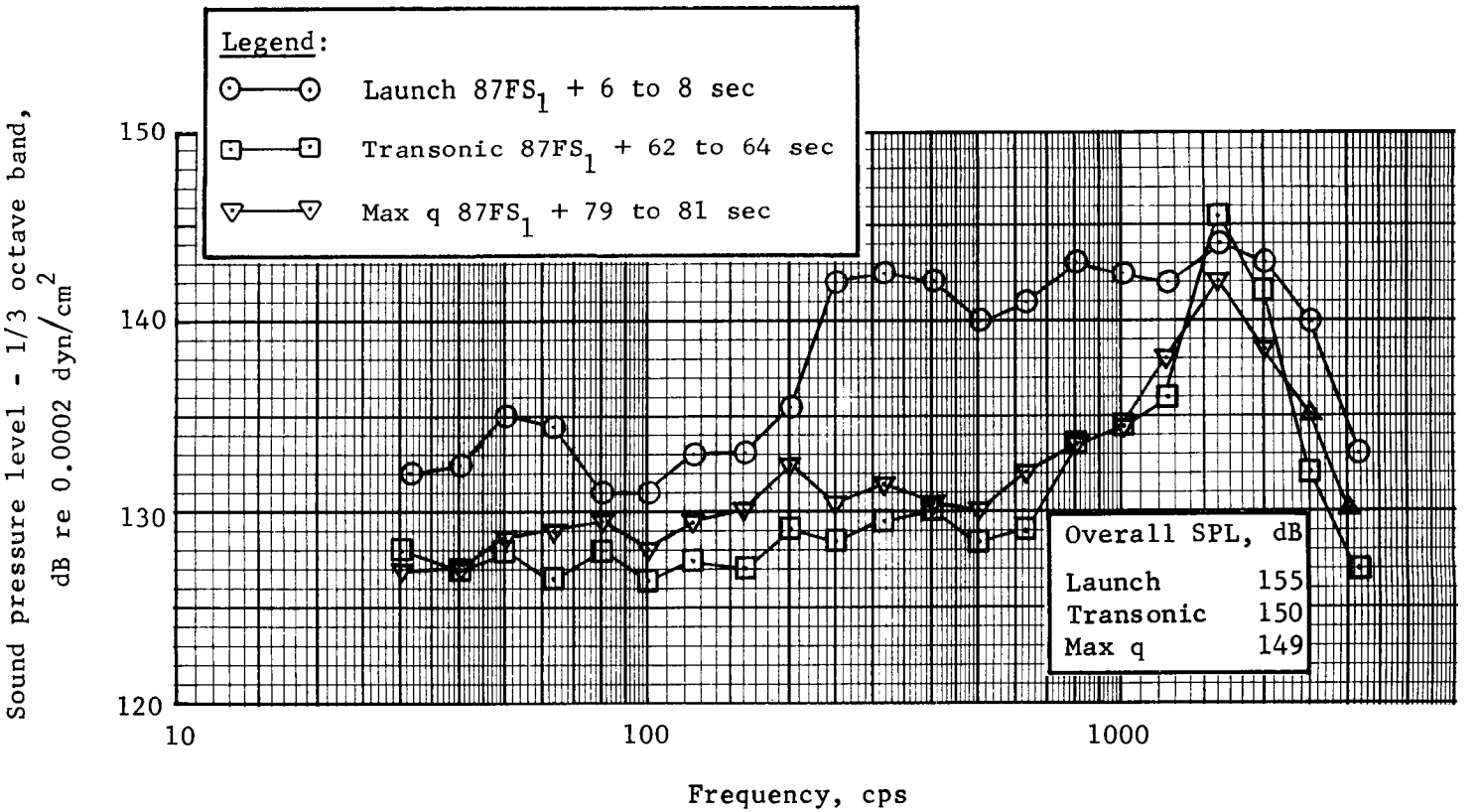


Figure 195. Measurement 2576, SPL Compartment 1C Flush Mounted Target Side (Over Flame), Vehicle 3 Flight

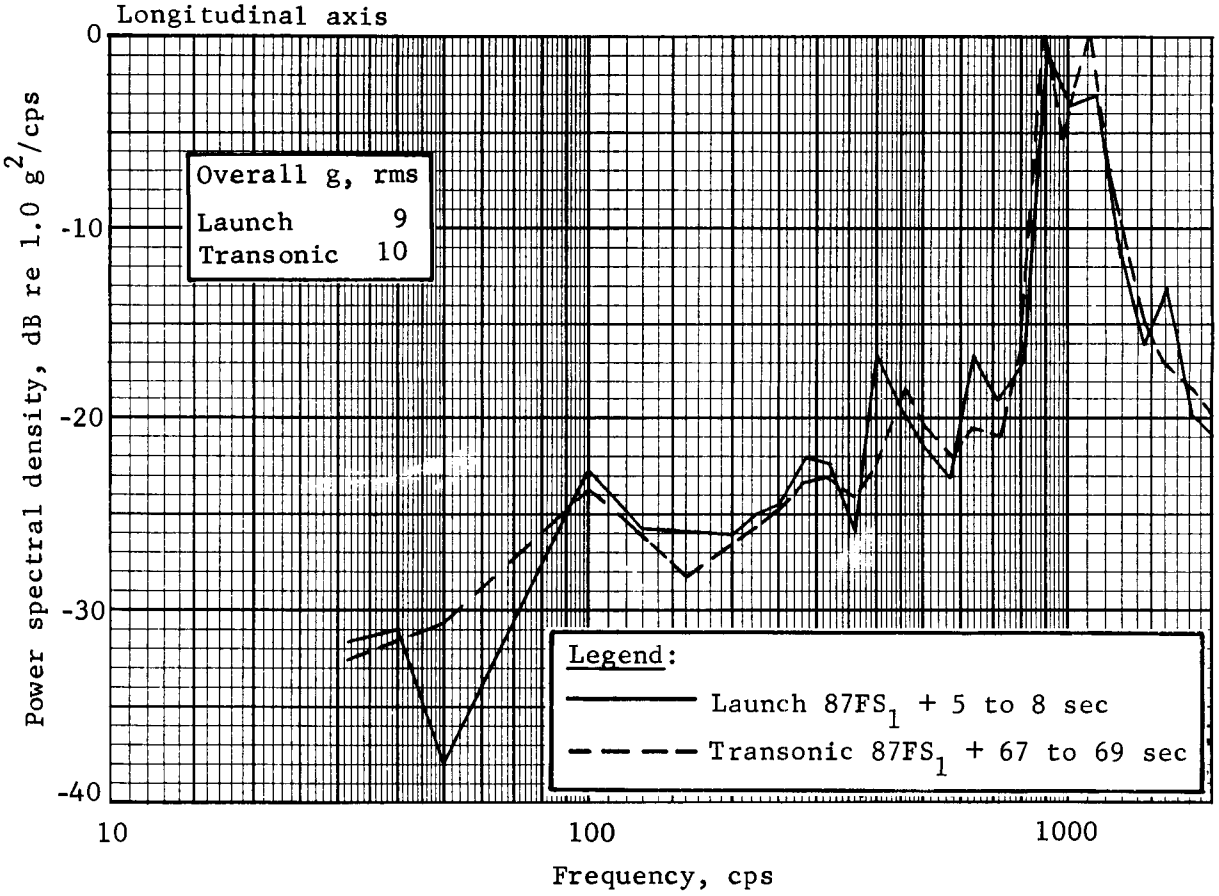


Figure 196. Measurement 2537, 1C Subassembly 1 Engine Gimbal Pad, Vehicle 2 Flight

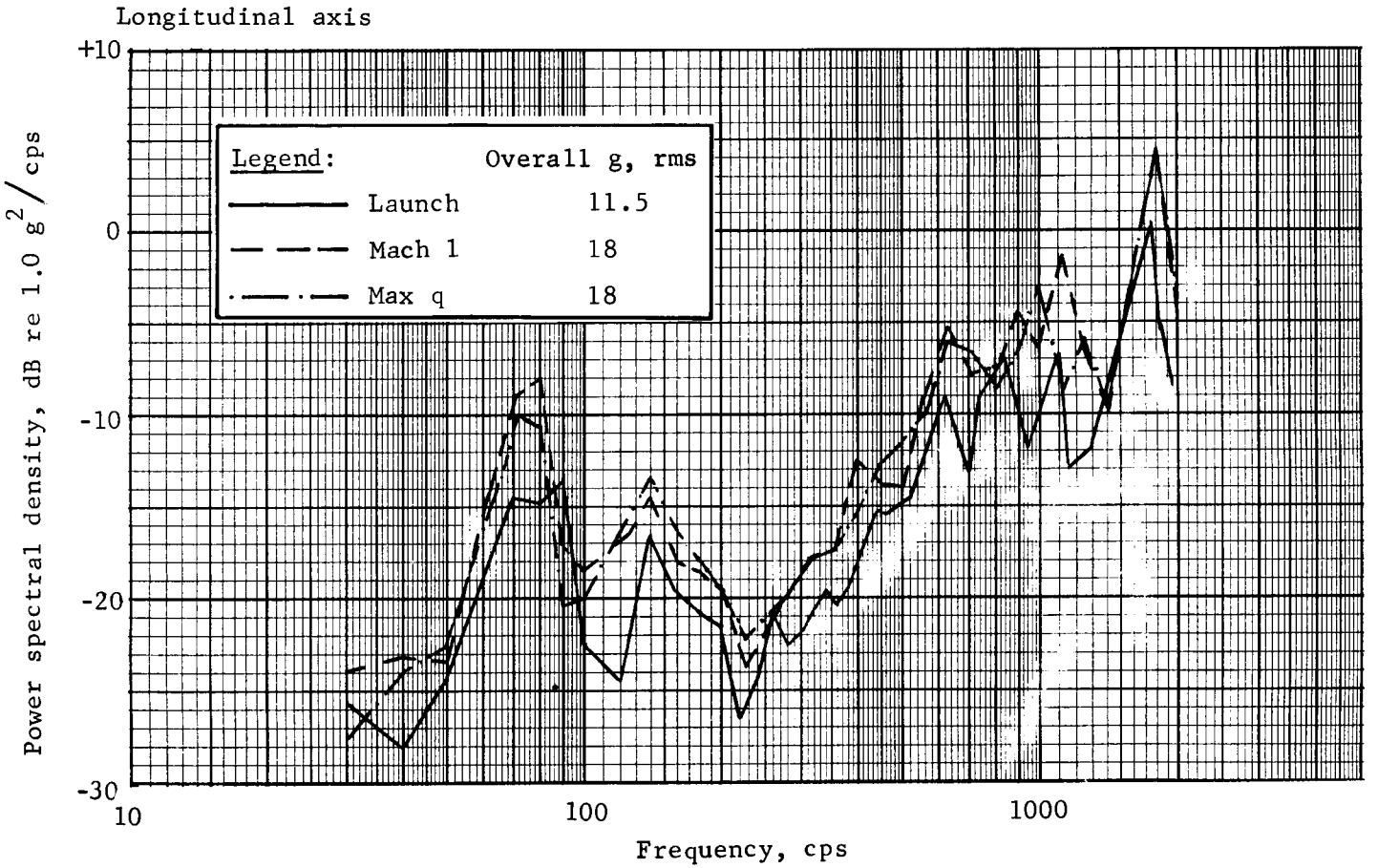


Figure 197. Measurement 2537, 1C Subassembly 1 Engine Gimbal Pad, Vehicle 3 Flight

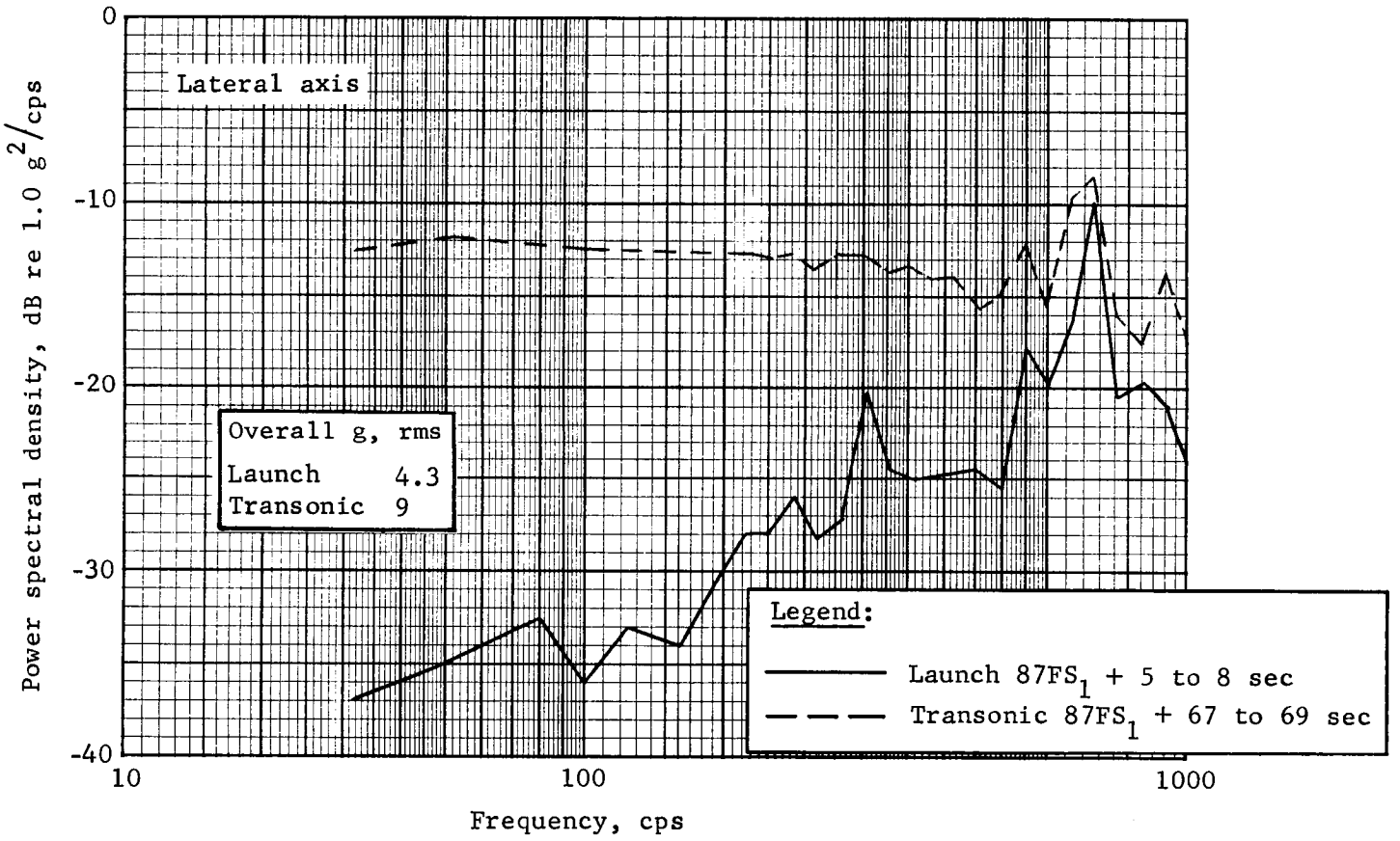


Figure 198. Measurement 2538, 1C Subassembly 1 Engine Gimbal Pad, Vehicle 2 Flight

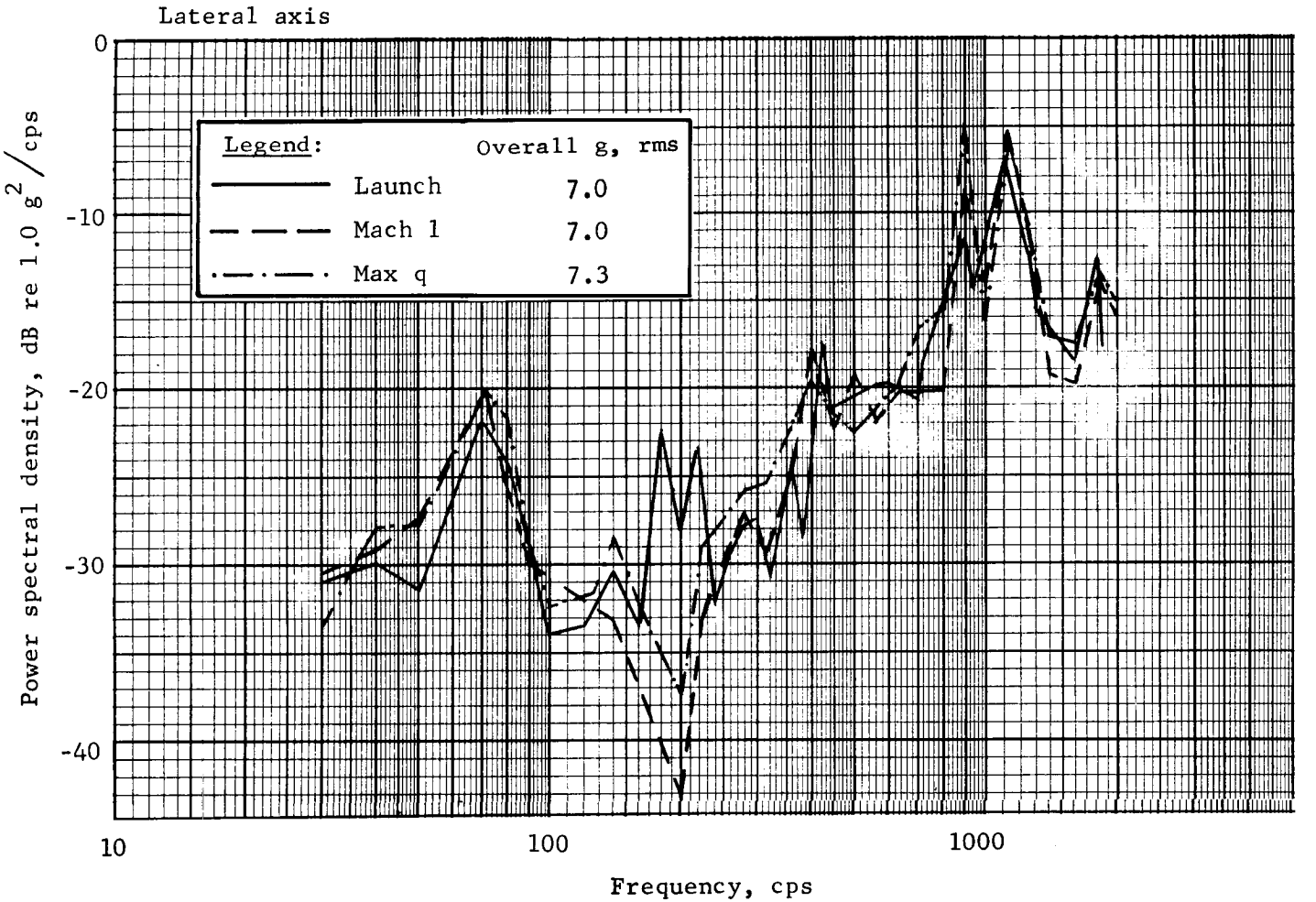


Figure 199. Measurement 2538, 1C Subassembly 1 Engine Gimbal Pad, Vehicle 3 Flight

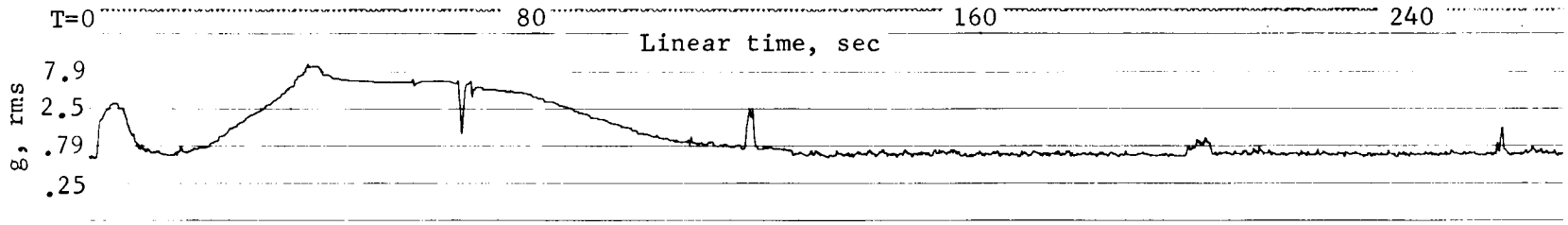


Figure 200. Measurement 2551, Vibration, Structure Mounting Point of Pitch ACS Nozzle, Longitudinal, Compartment 3A, Sta 130 BL-0 between Stringer 1C and 28C, Vehicle 7

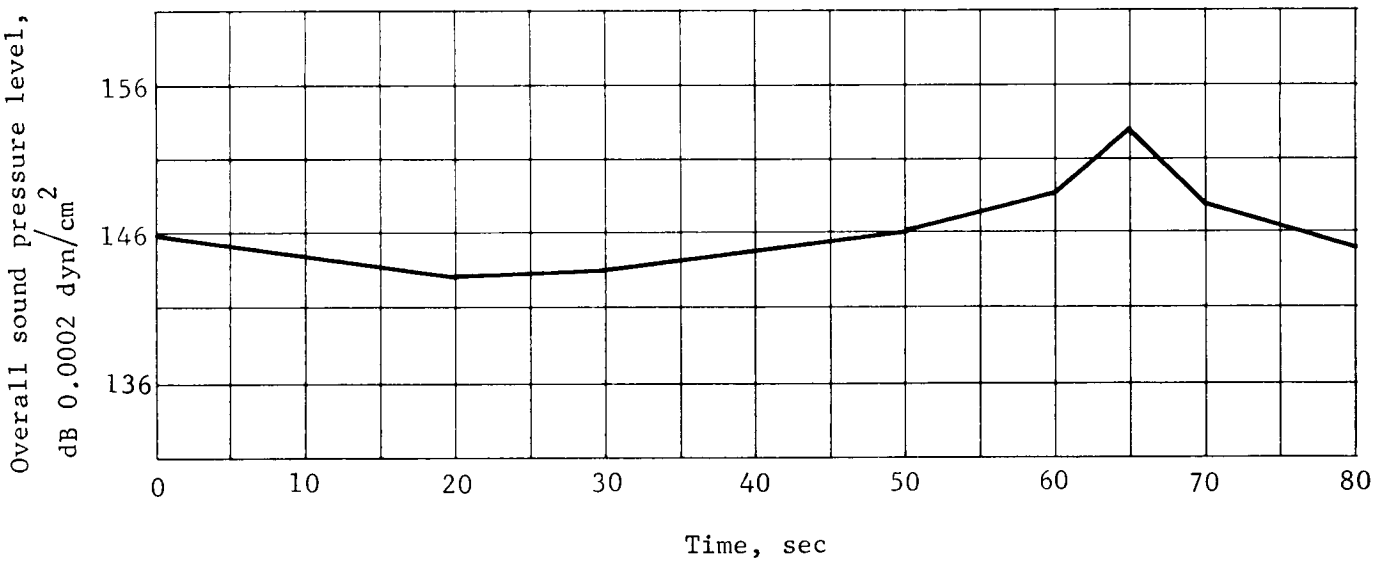
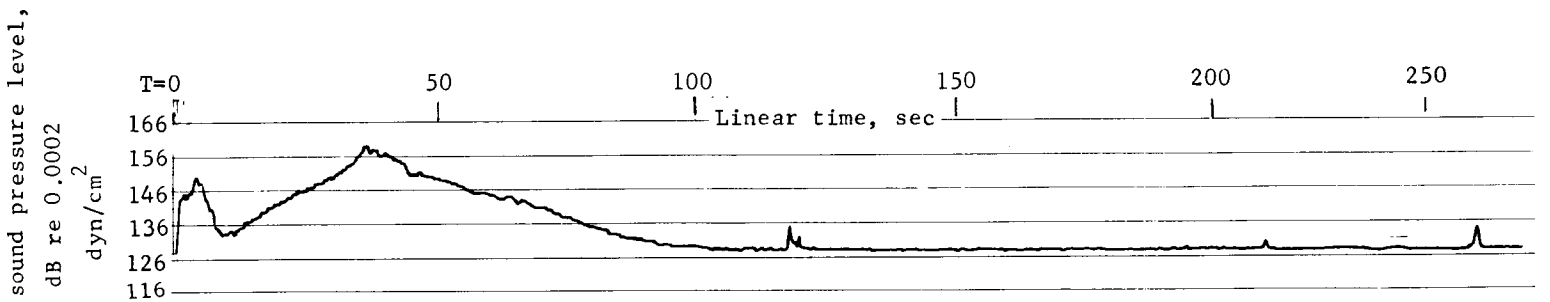
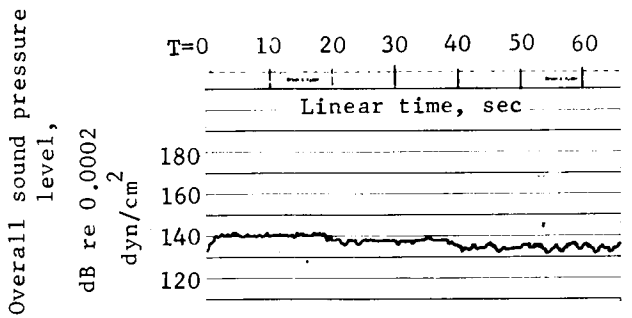


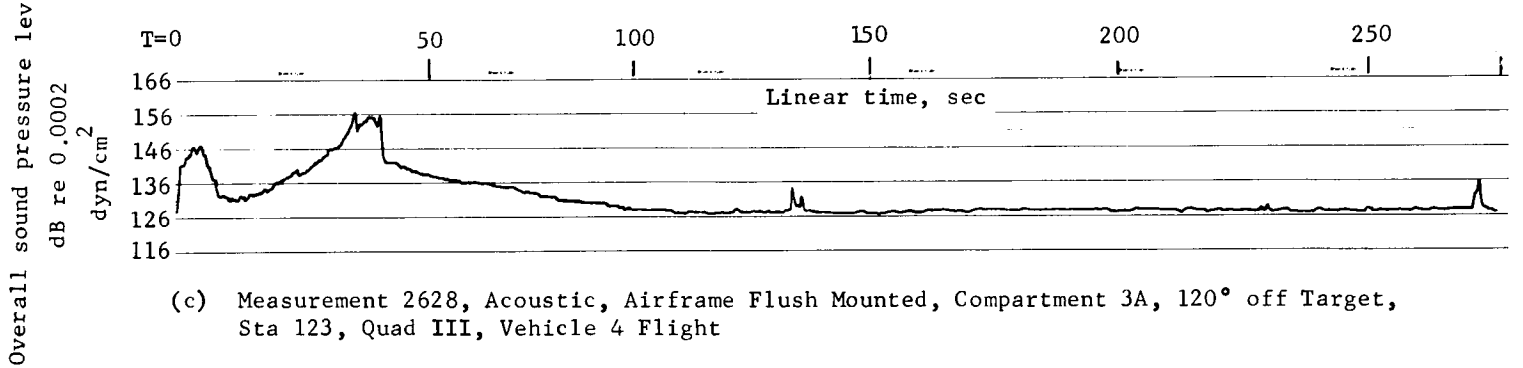
Figure 201. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 4 SCF



(a) Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 4



(b) Measurement 2628, Acoustic, Airframe Flush Mounted, Compartment 3A, 120° off Target, Sta 123, Quad III, Vehicle 4 SCF



(c) Measurement 2628, Acoustic, Airframe Flush Mounted, Compartment 3A, 120° off Target, Sta 123, Quad III, Vehicle 4 Flight

Figure 202.

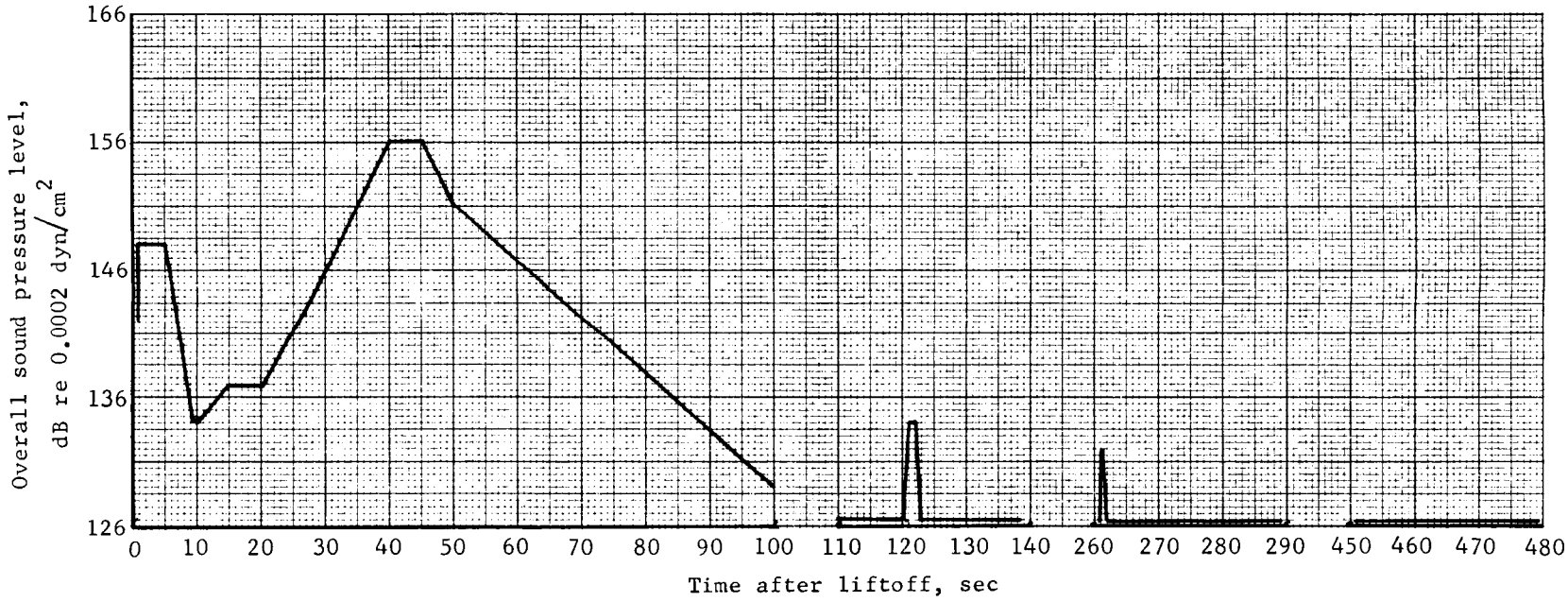


Figure 203. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 8 Flight

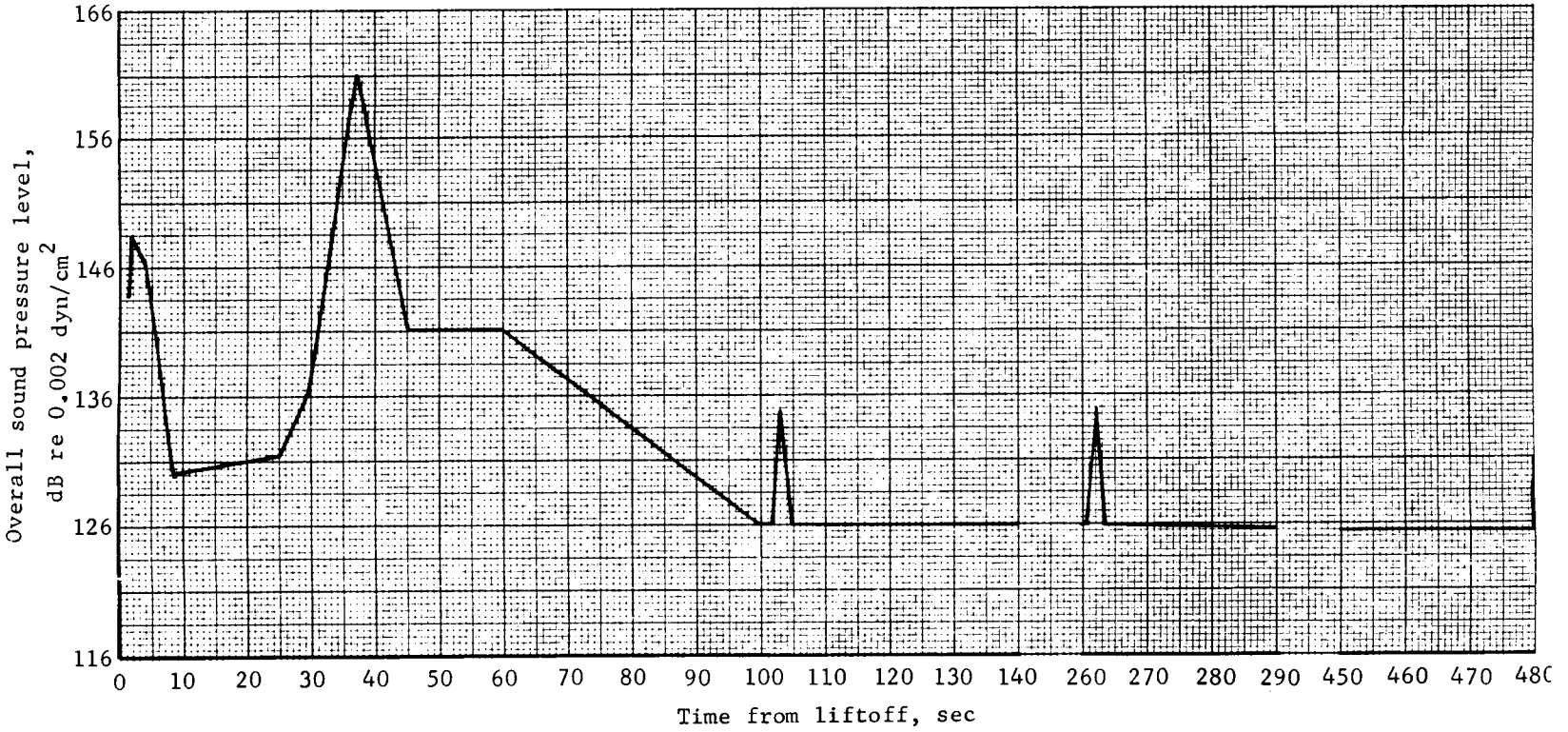
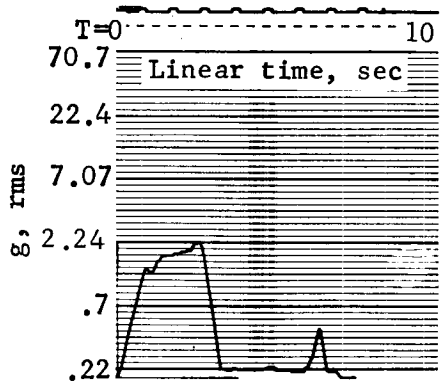
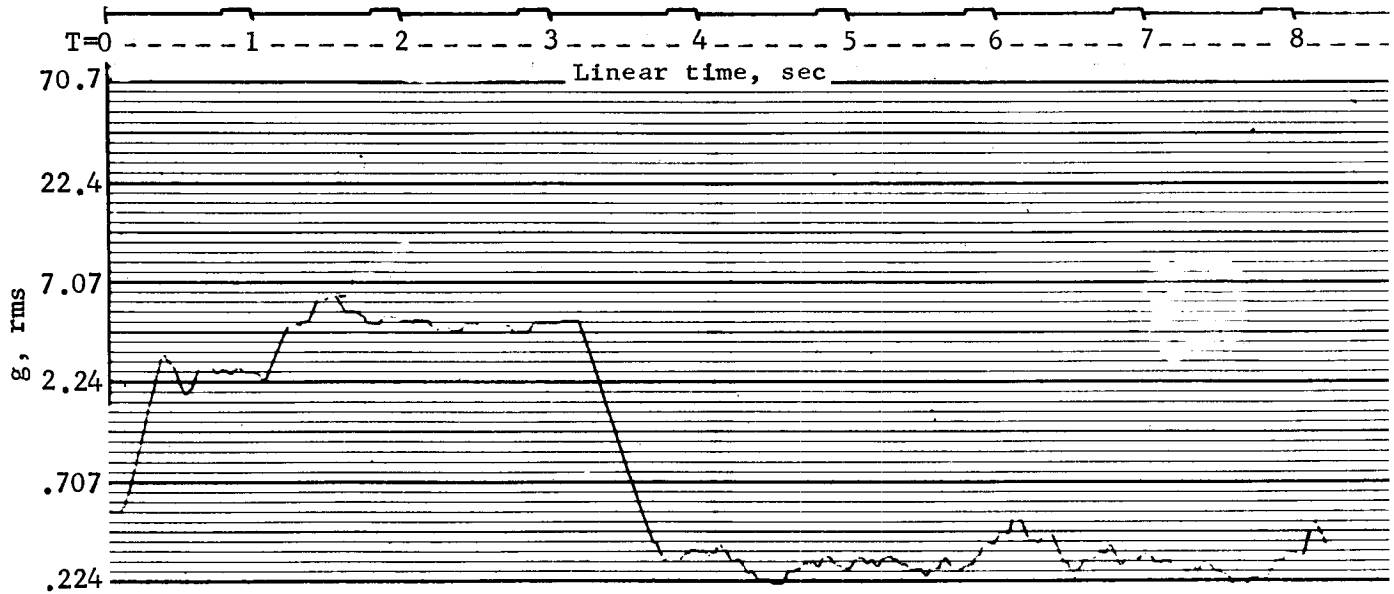


Figure 204. Measurement 2628, Acoustic, Airframe Flush Mounted, Compartment 3A, 120° off Target, Sta 123, Quad III, Vehicle 8 Flight



(a) Measurement 2635, Vibration, Structure at Mounting Point of Pitch ACS Nozzle, Tangential, Compartment 3A, Sta 124, Quad I, BL-0, Vehicle 7



(b) Measurement 2553, Vibration, Guidance Truss between MGC and Relay Panel, on Common Mounting, Longitudinal, Compartment 3A, Sta 100, Quad IV, Vehicle 8

Figure 205.

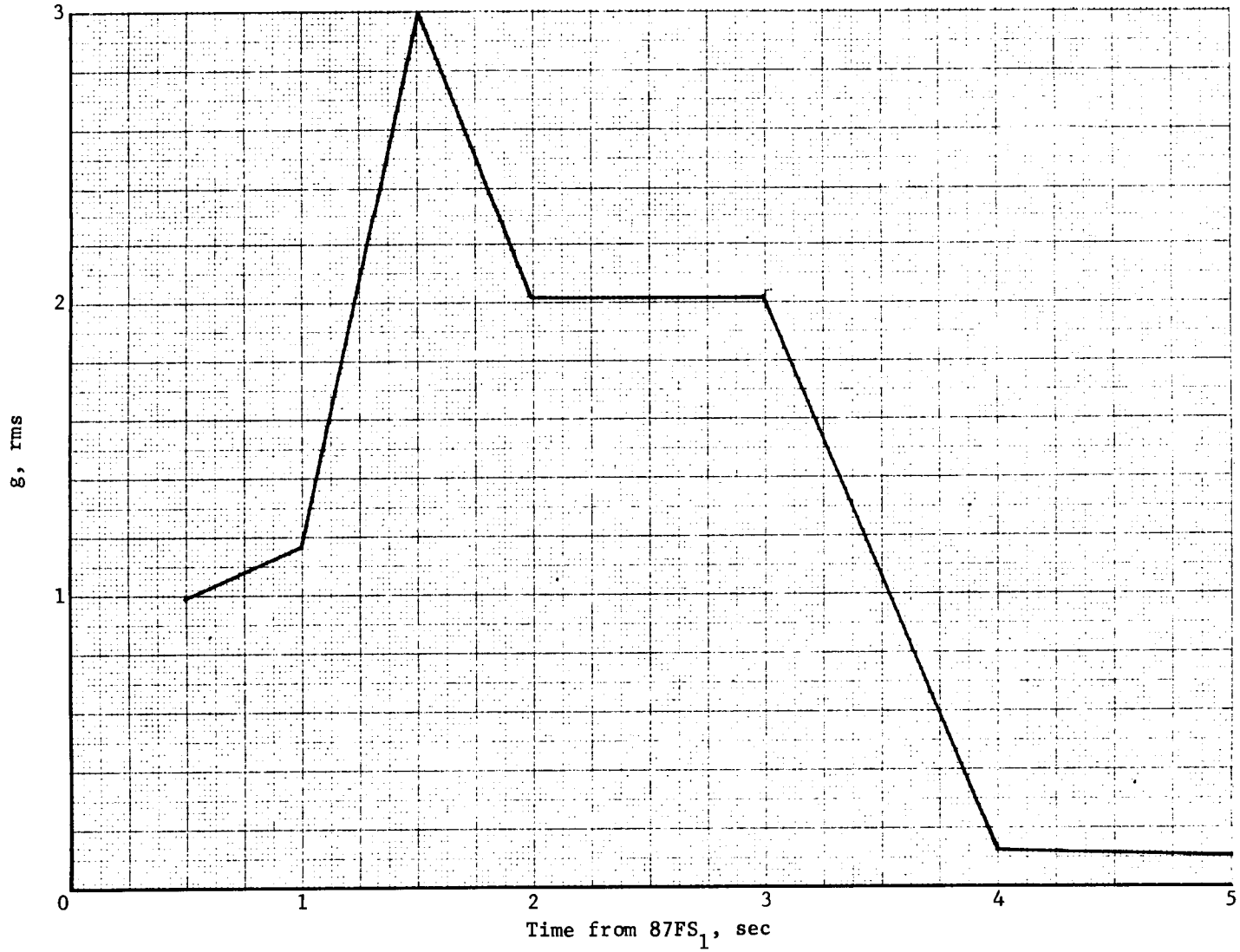
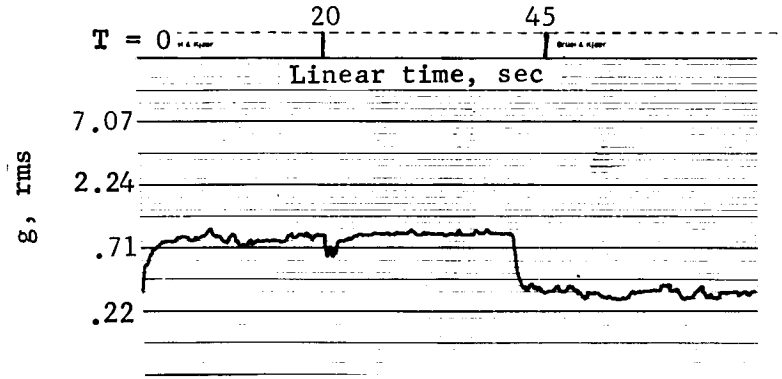
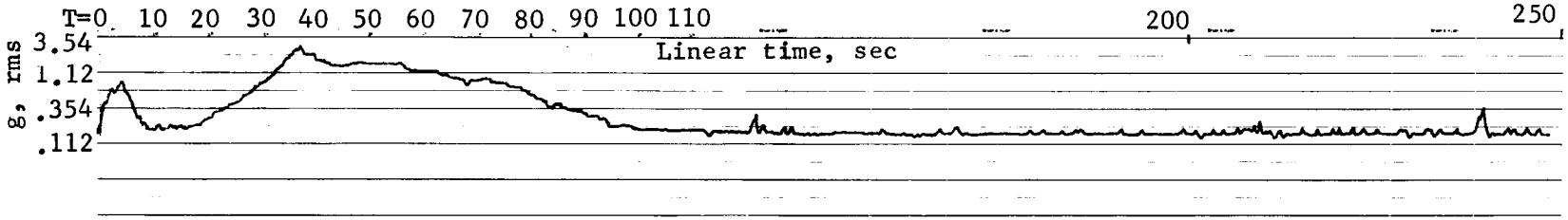


Figure 206. Measurement 2554, Vibration, Guidance Truss between MGC and Relay Panel, on Common Mounting, Lateral, Compartment 3A, Sta 100, Quad IV, Vehicle 8 Flight (FAL)



(a) Measurement 2555, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Longitudinal, Compartment 3A, Sta 114, Quad I, Vehicle 4 SCF



(b) Measurement 2555, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Longitudinal, Compartment 3A, Sta 114, Quad I, Vehicle 4

Figure 207.

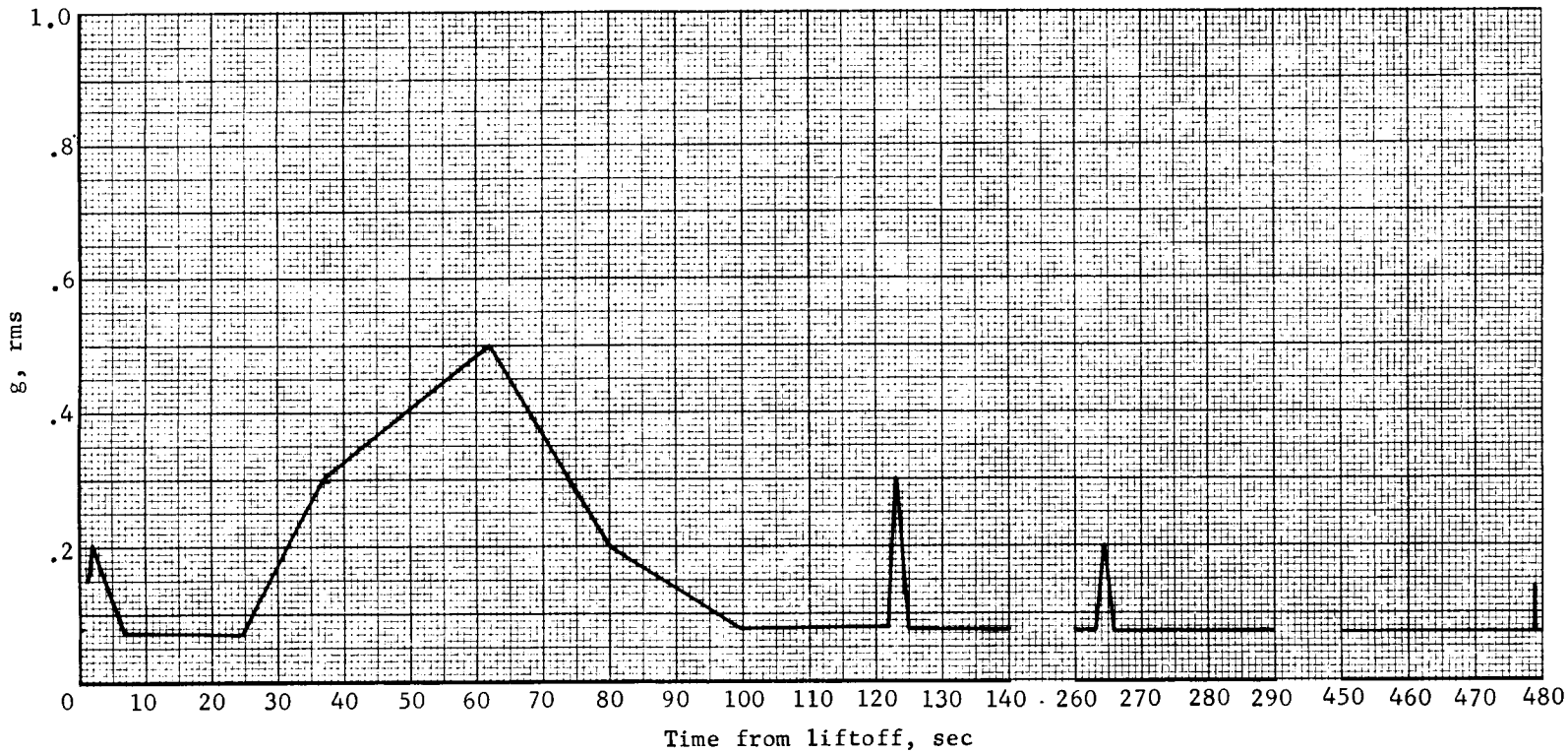
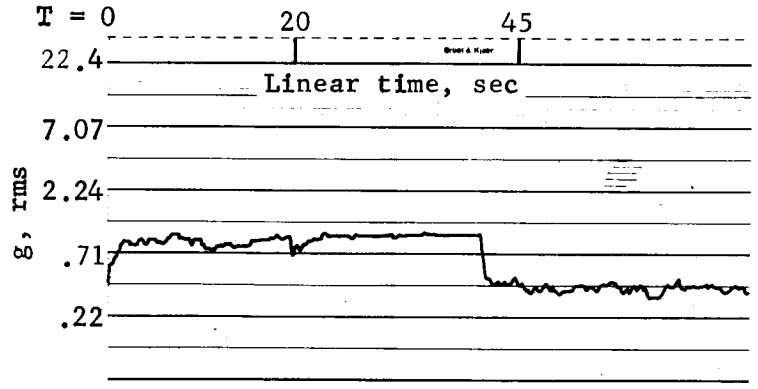
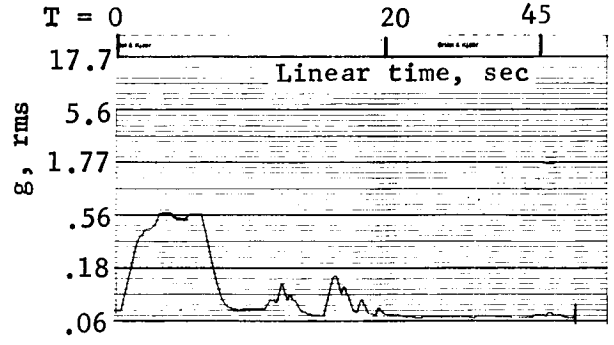


Figure 208. Measurement 2555, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Longitudinal, Compartment 3A, Sta 114, Quad I, Vehicle 8 Flight



(a) Measurement 2556, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Vertical, Compartment 3A, Sta 114, Quad I, Vehicle 4 SCF



(b) Measurement 2556, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Vertical, Compartment 3A, Sta 114, Quad I, Vehicle 4

Figure 209.

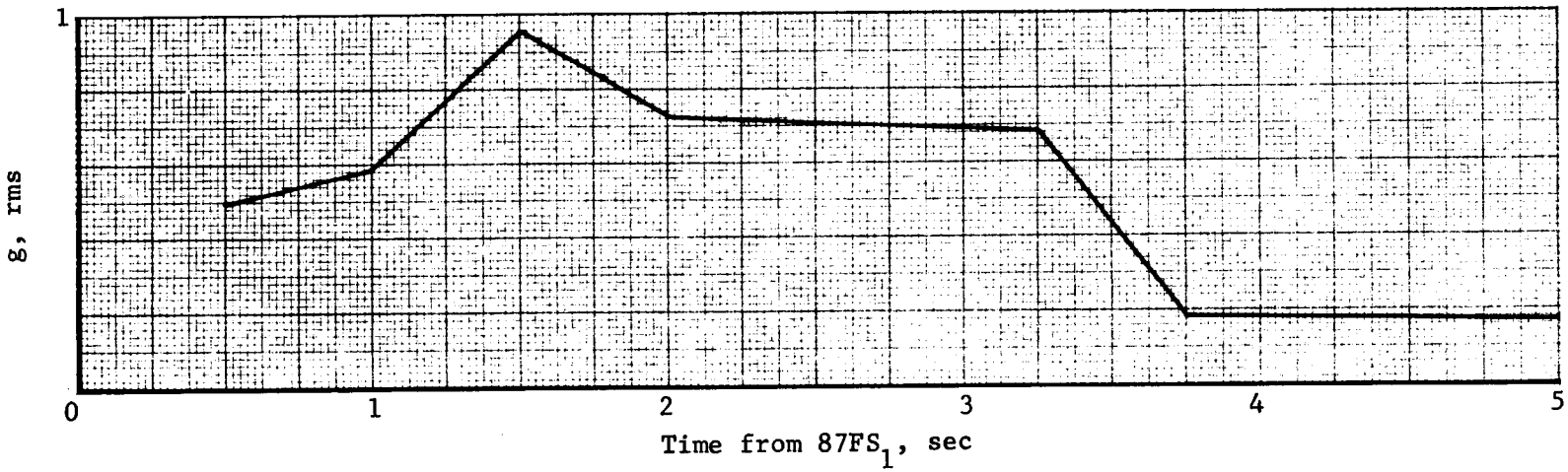
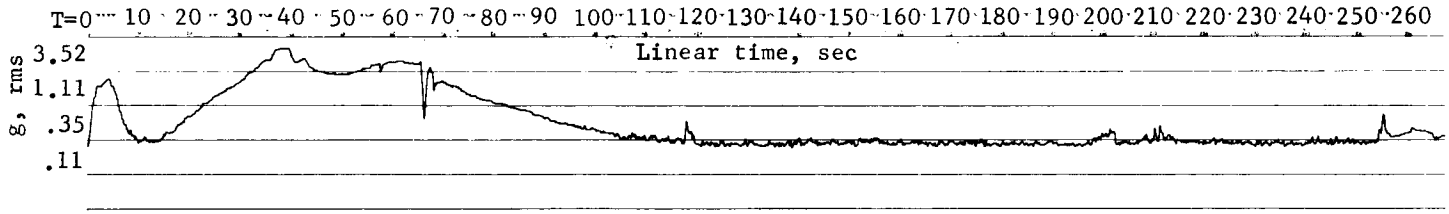
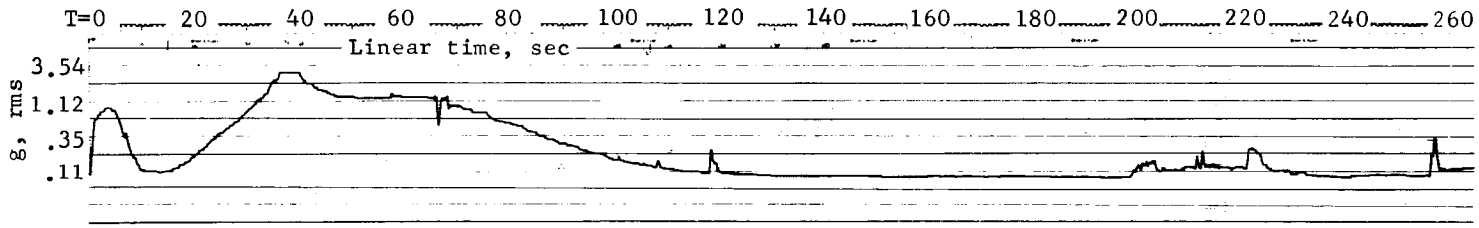


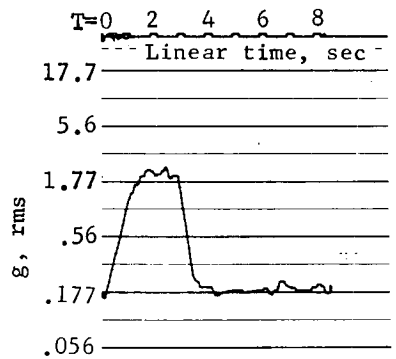
Figure 210. Measurement 2556, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Vertical, Compartment 3A, Sta 114, Quad I, Vehicle 8 Flight (FAL)



(a) Measurement 2557, Vibration, Equipment Truss at Signal Conditioner Mounting, Near Airframe Tie-in Point, Lateral, Compartment 3A, Sta 84, Quad III, Vehicle 7



(b) Measurement 2589, Vibration, Guidance Truss at PCM and IMU Mounting, Lateral, Compartment 3A, Sta 97, Quad I, Vehicle 7



(c) Measurement 2590, Vibration, Guidance Truss at PCM and IMU Mounting, Vertical, Compartment 3A, Sta 97, Quad I, Vehicle 7

Figure 211.

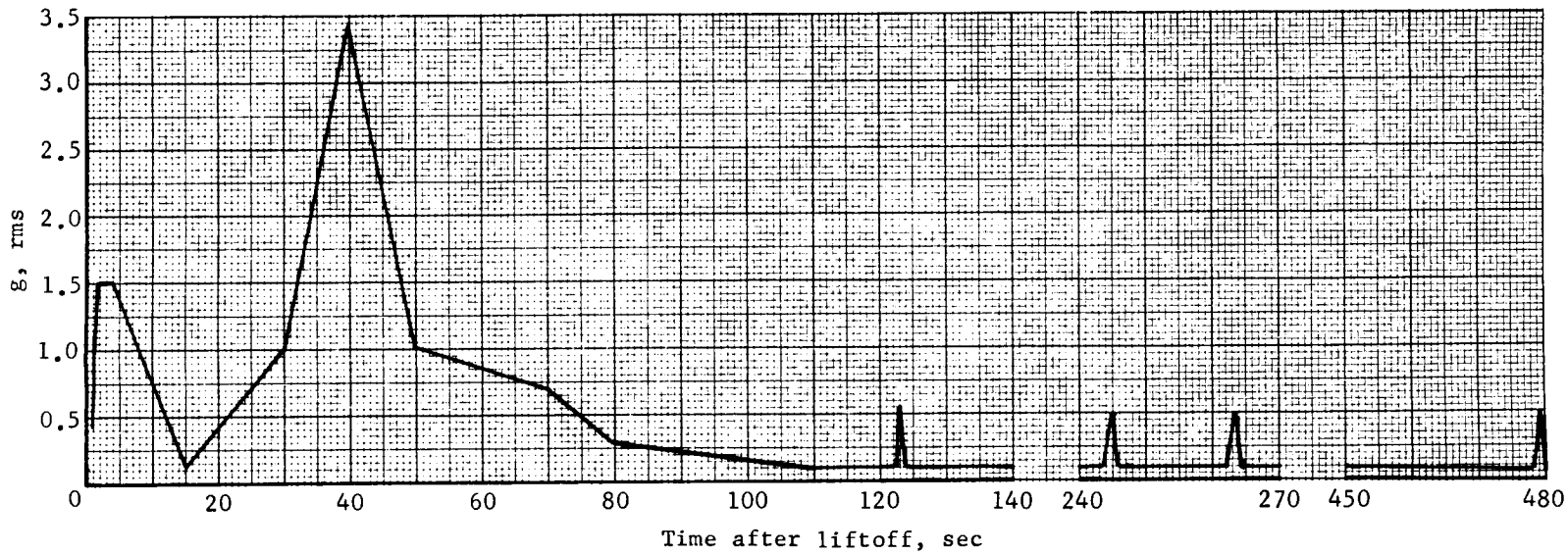


Figure 212. Measurement 2558, Vibration, Equipment Truss at MDS Package Mounting, Longitudinal, Compartment 3A, Sta 84, Quad III, Vehicle 8 Flight

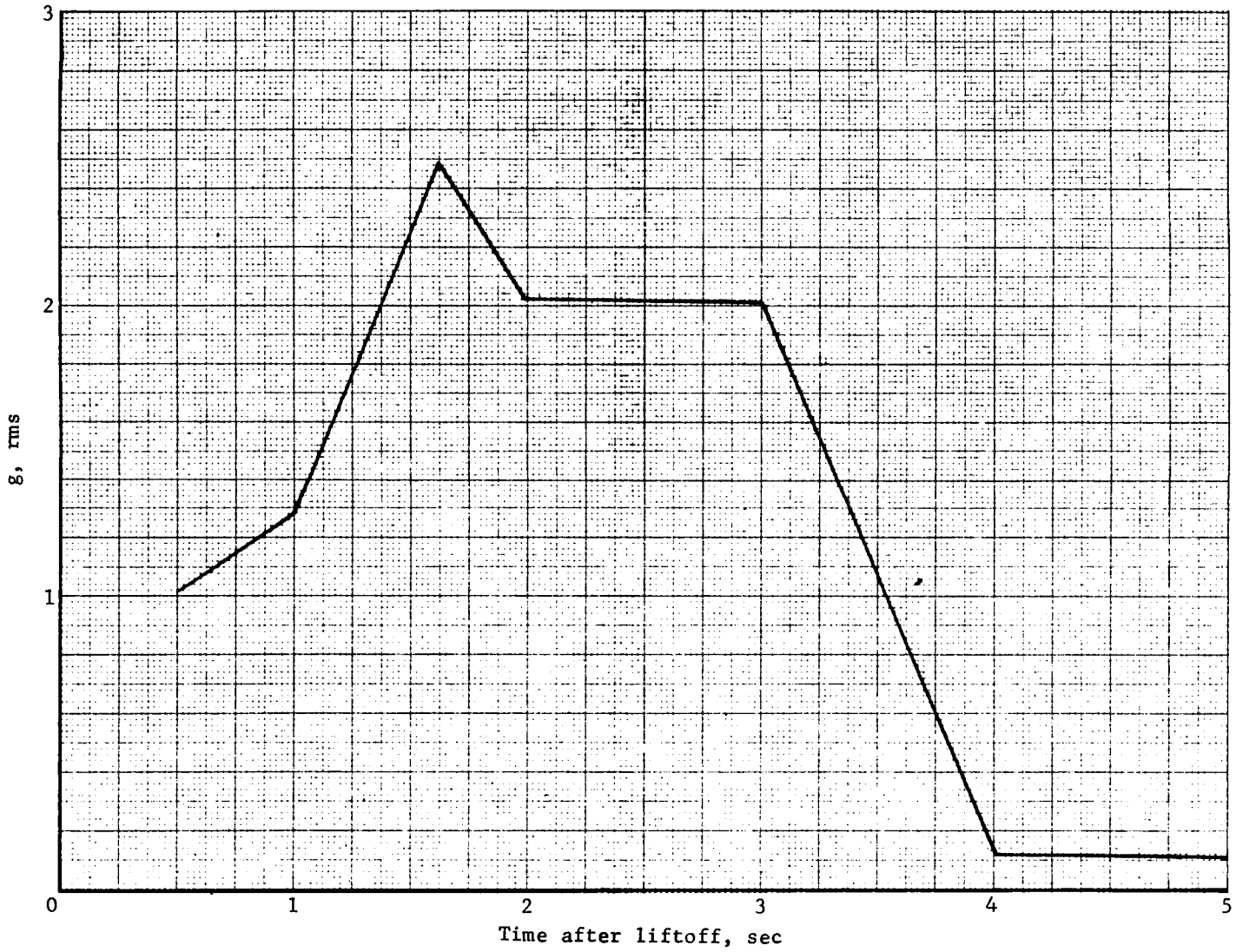


Figure 213. Measurement 2590, Vibration, Guidance Truss at PCM and IMU Mounting, Vertical, Compartment 3A, Sta 97, Quad I, Vehicle 8 Flight (FAL)

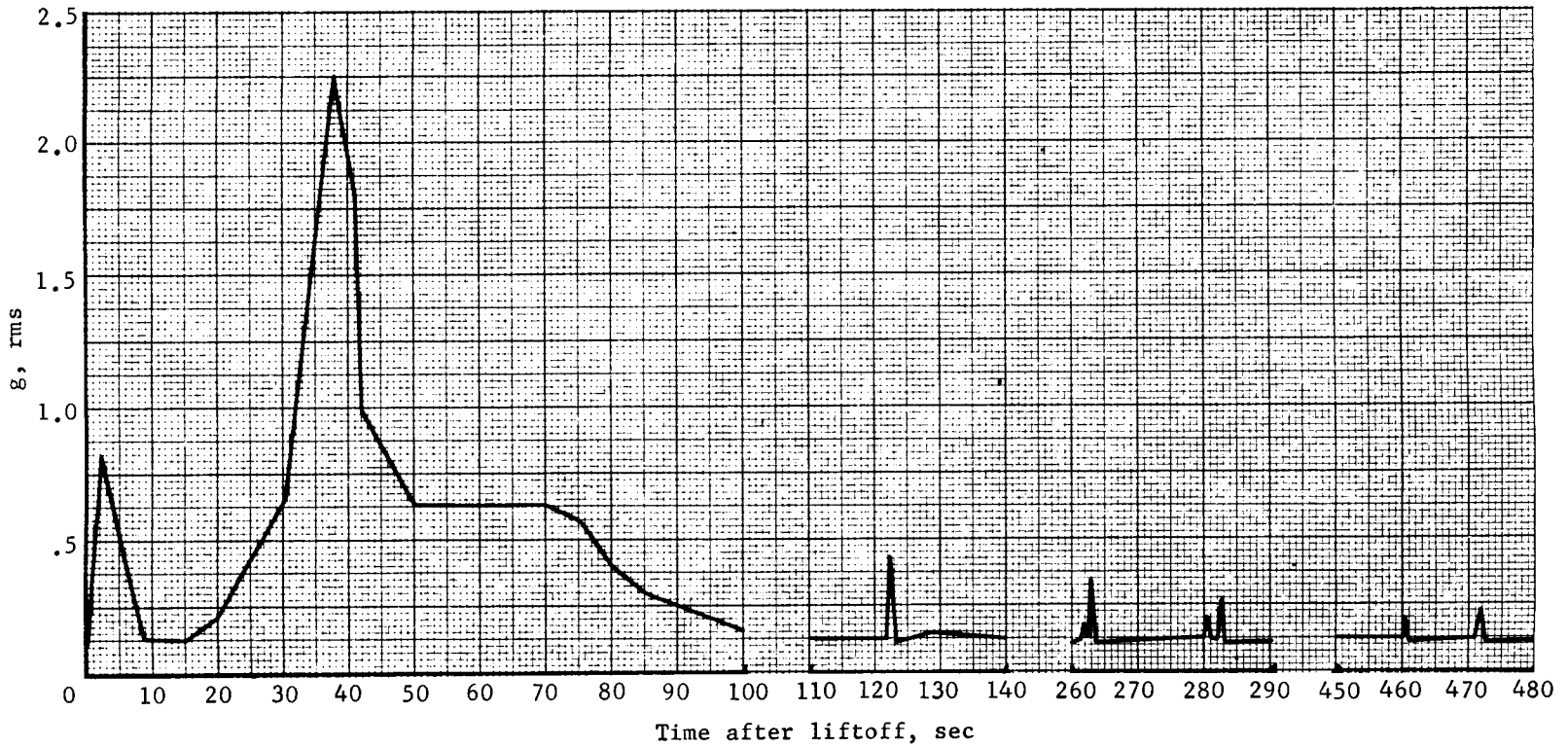
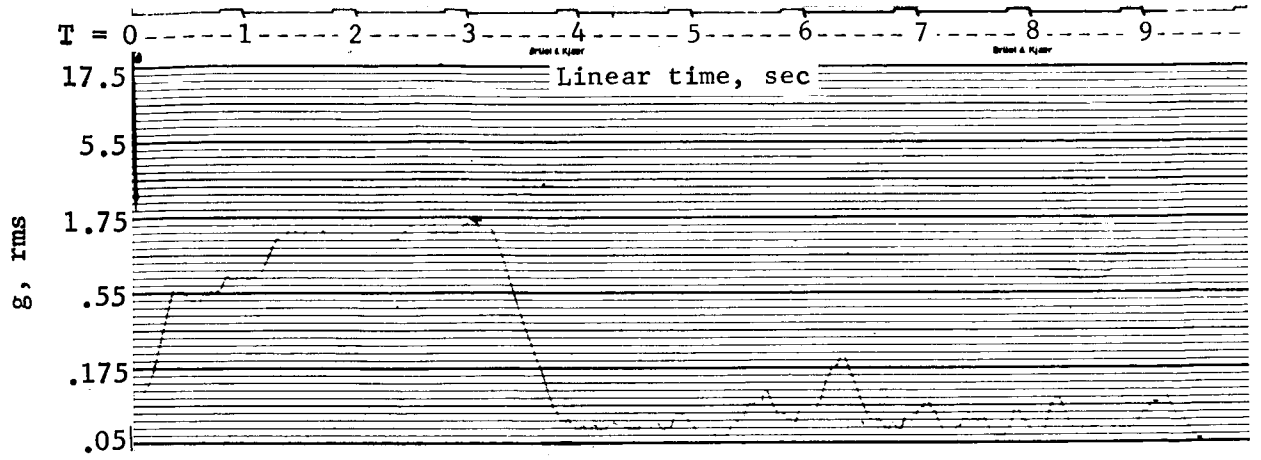
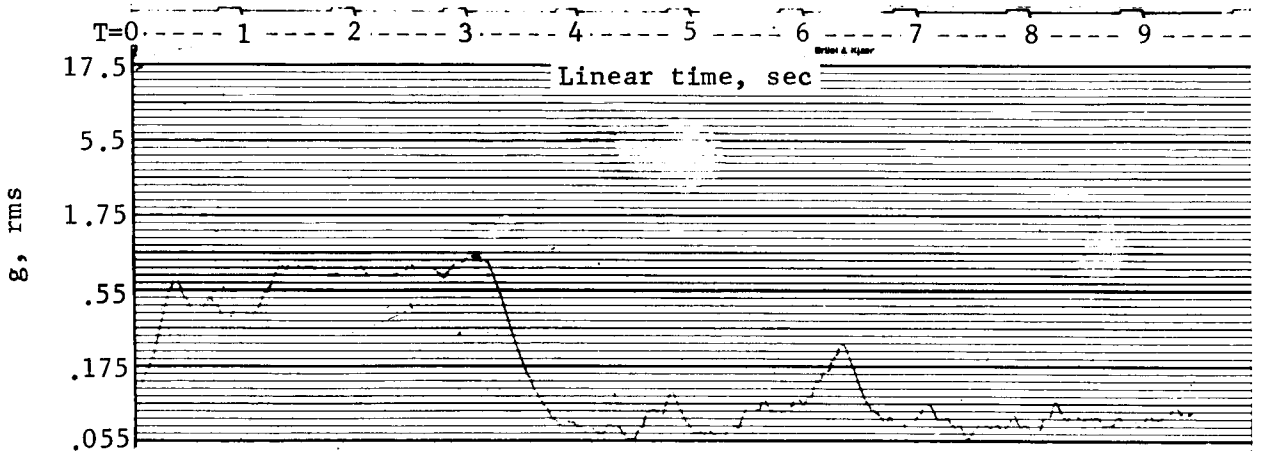


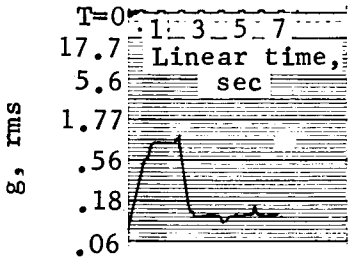
Figure 214. Measurement 2591, Vibration, Equipment Truss at PCM Transmitter Mounting, Longitudinal, Compartment 3A, Sta 97, Quad III, Vehicle 8 Flight



(a) Measurement 2592, Vibration, Equipment Truss at PCM Transmitter Mounting, Lateral, Compartment 3A, Sta 97, Quad III, Vehicle 8



(b) Measurement 2596, Vibration, Equipment Truss at Motor-Driven Switch Mounting, Vertical Compartment 3A, Sta 97, Quad II, Vehicle 8



(c) Measurement 2633, Vibration, Equipment Truss at Signal Conditioner Mounting Near Airframe Tie-in Point, Vertical, Compartment 3A, Sta 84, Quad III, Vehicle 7

Figure 215.

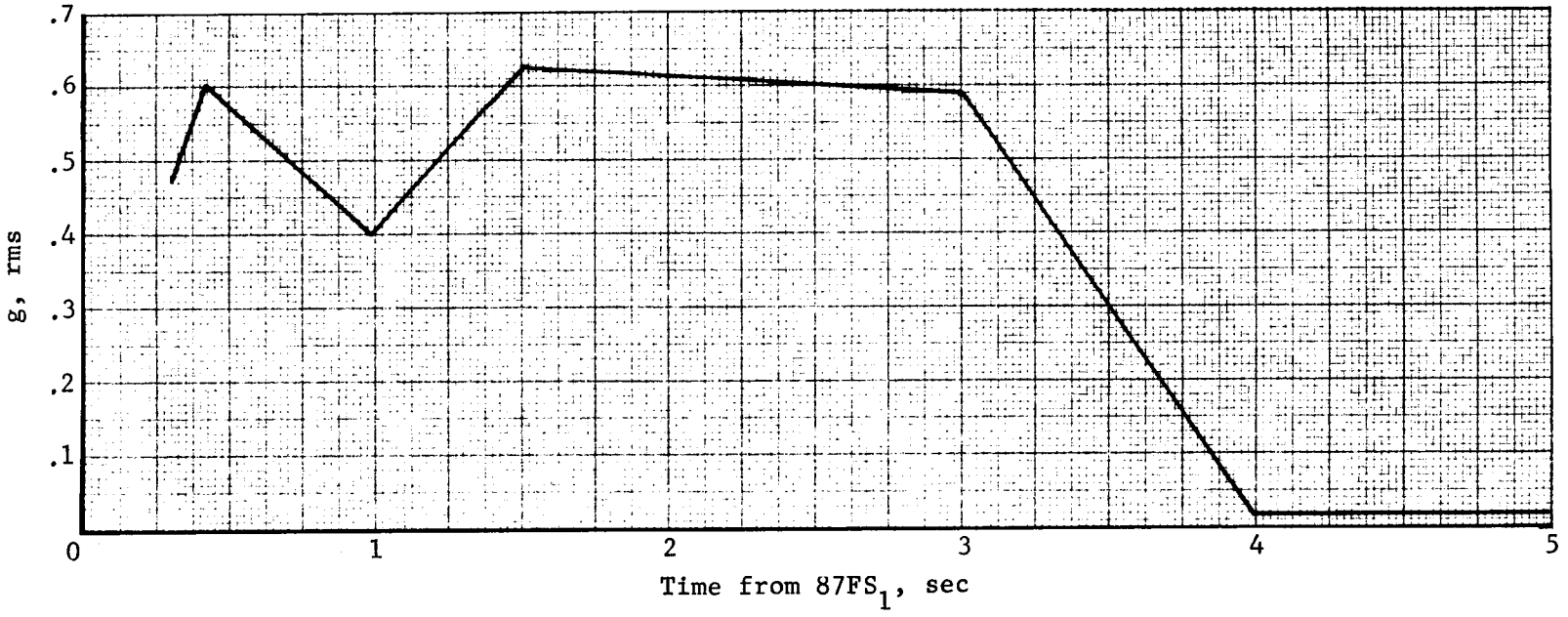


Figure 216. Measurement 2593, Vibration, Equipment Truss at PCM Transmitter Mounting, Vertical, Compartment 3A, Sta 97, Quad III, Vehicle 8 Flight (FAL)

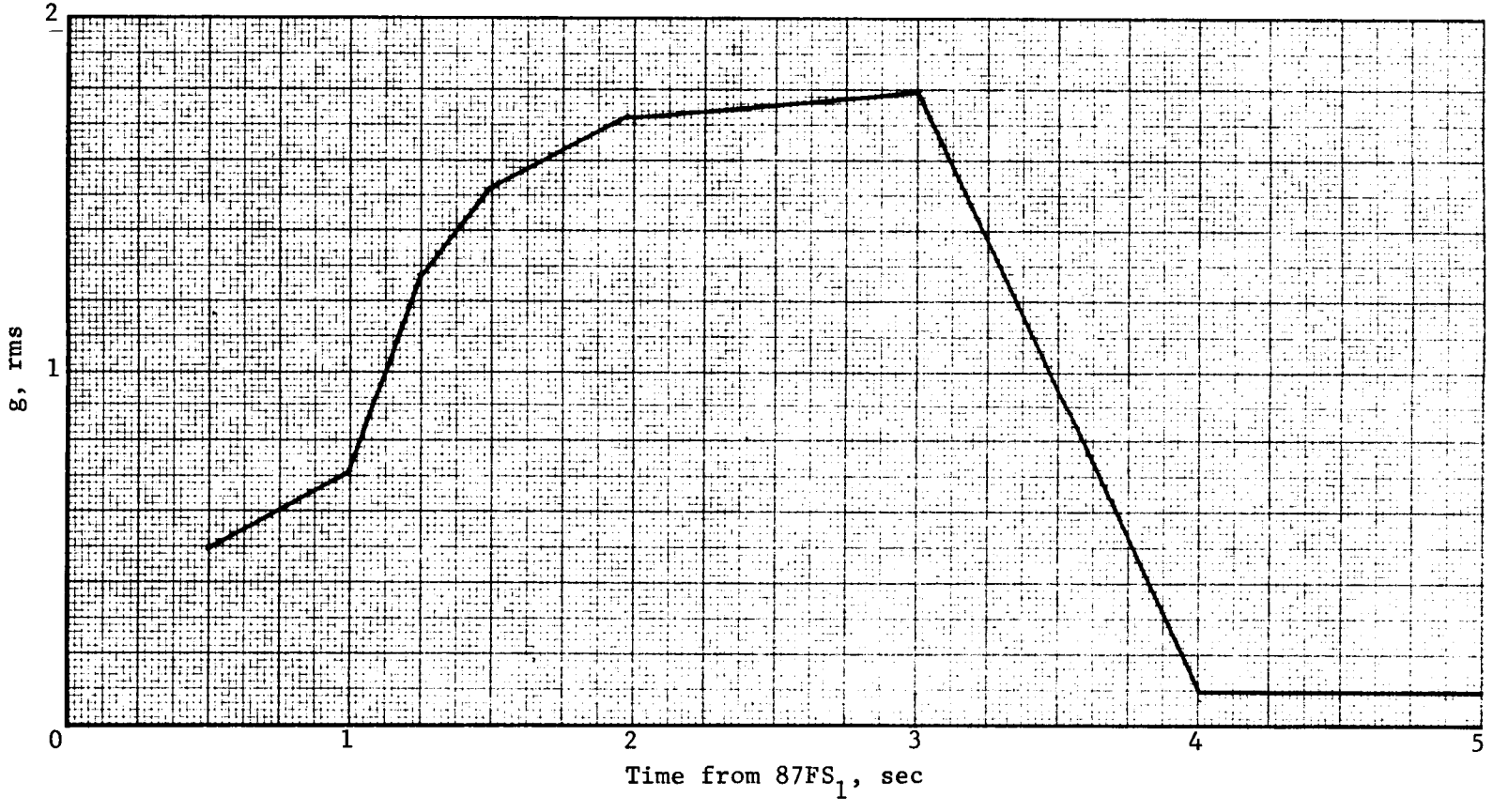
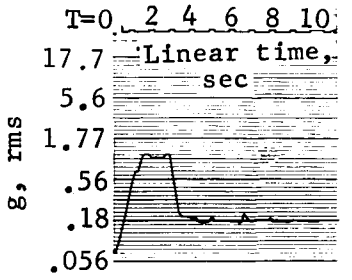
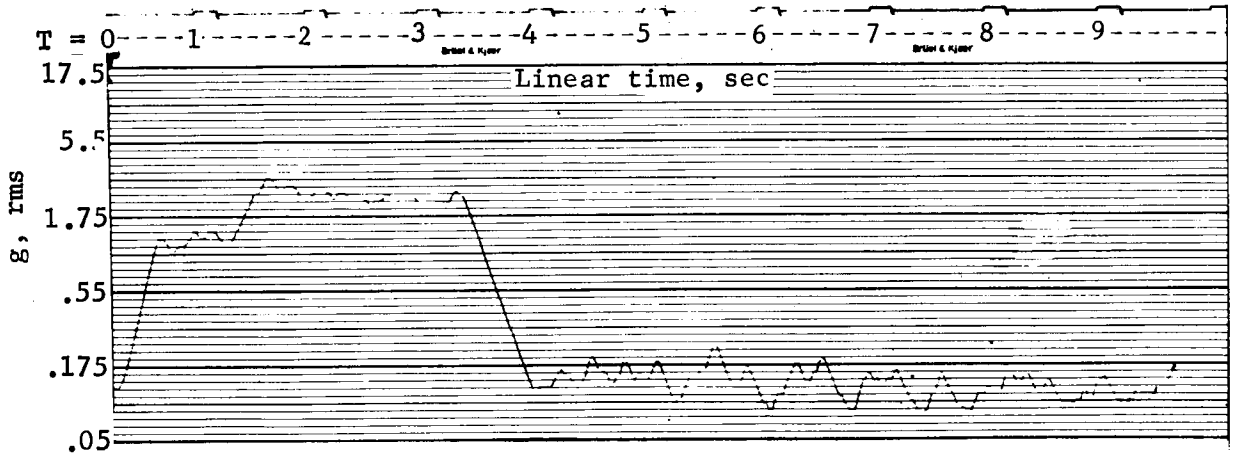


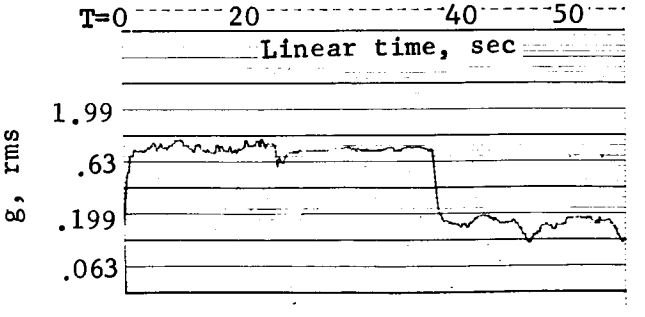
Figure 217. Measurement 2595, Vibration, Equipment Truss at Motor-Driven Switch Mounting, Lateral, Compartment 3A, Sta 97, Quad II, Vehicle 8 Flight (FAL)



(a) Measurement 2634, Vibration, Equipment Truss at Signal Conditioner Mounting Mounting Near Airframe Tie-in Point, Longitudinal, Compartment 3A, Sta 84, Quad III, Vehicle 7 (FAL)



(b) Measurement 2636, Vibration, Guidance Truss between MGC and Relay Panel, on Common Mounting, Vertical, Compartment 3A, Sta 100, Quad IV, Vehicle 8



(c) Measurement 2637, Vibration, Guidance Truss at Autopilot Mounting, Longitudinal, Compartment 3A, Sta 84, Quad IV, Vehicle 4 (SCF)

Figure 218.

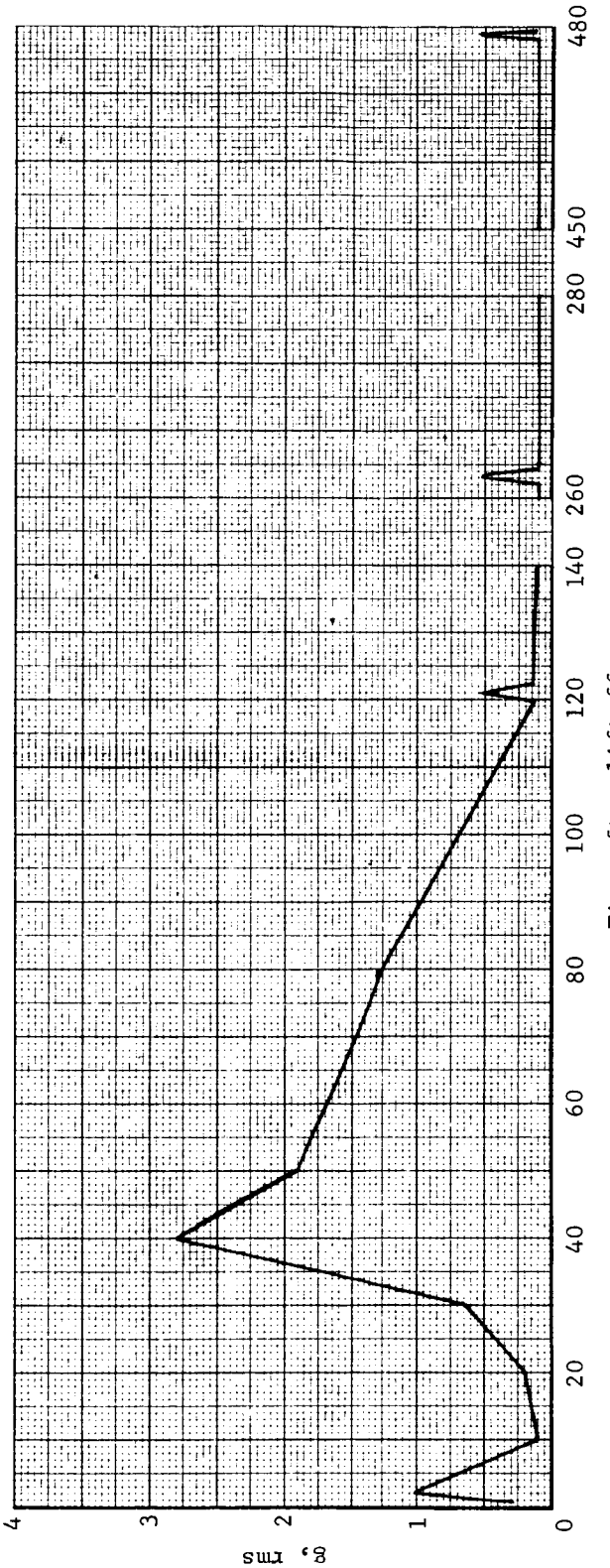
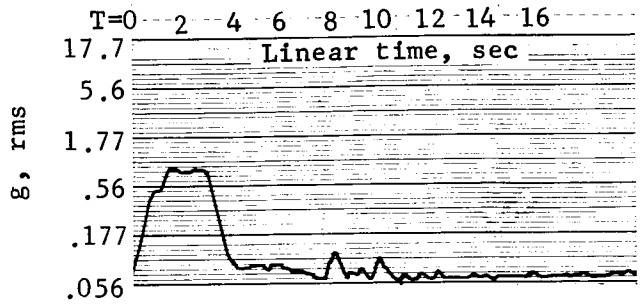
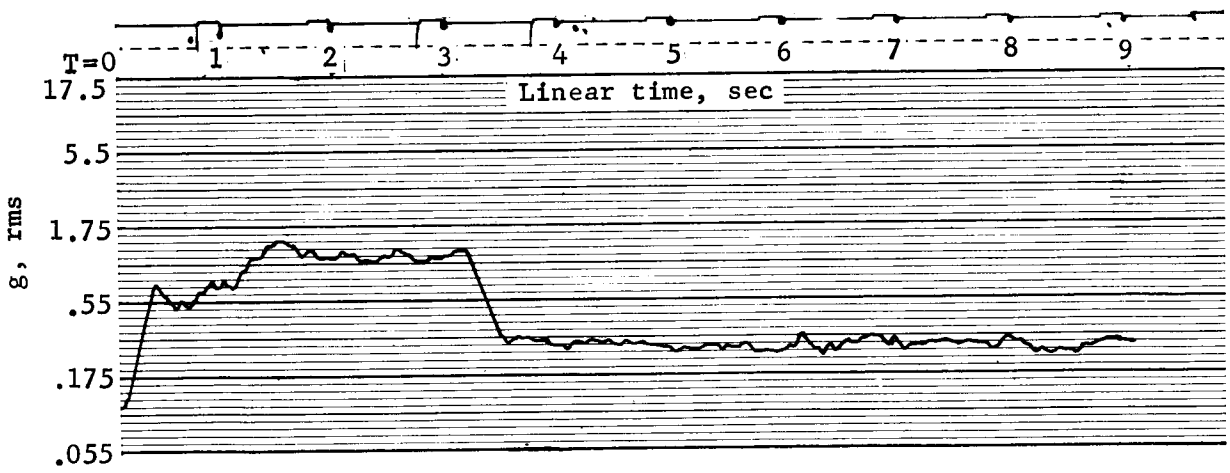


Figure 219. Measurement 2637, Vibration, Guidance Truss at Autopilot Mounting, Longitudinal, Compartment 3A, Sta 84, Quad IV, Vehicle 8 Flight



(a) Measurement 2638, Vibration Guidance Truss at Autopilot Mounting, Lateral, Compartment 3A, Sta 84, Quad IV, Vehicle 4 Flight



(b) Measurement 2638, Vibration, Guidance Truss at Autopilot Mounting, Lateral, Compartment 3A, Sta 84, Quad IV, Vehicle 8

Figure 220.

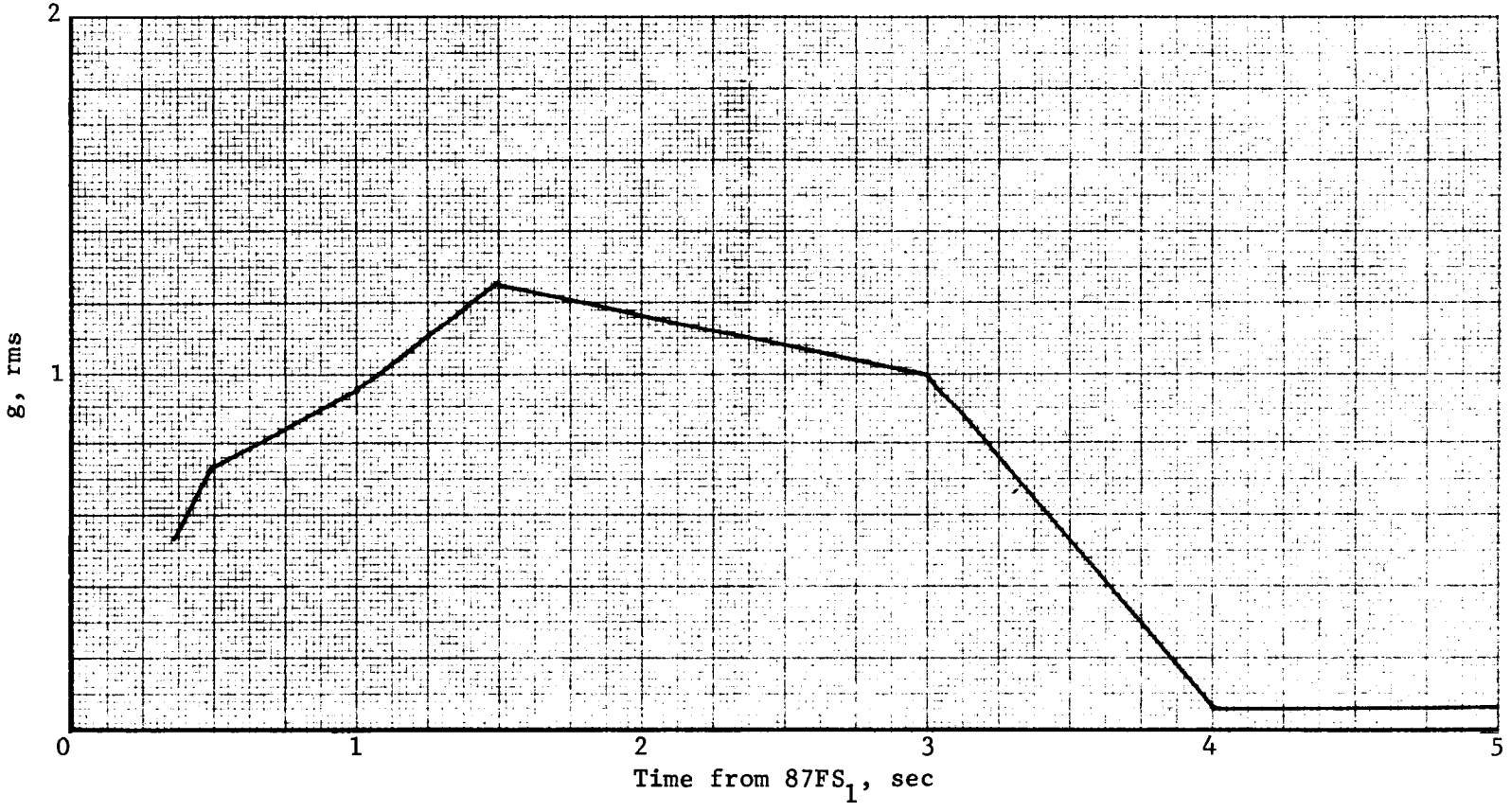
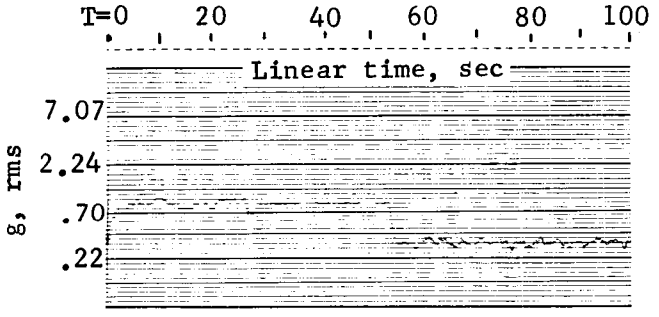
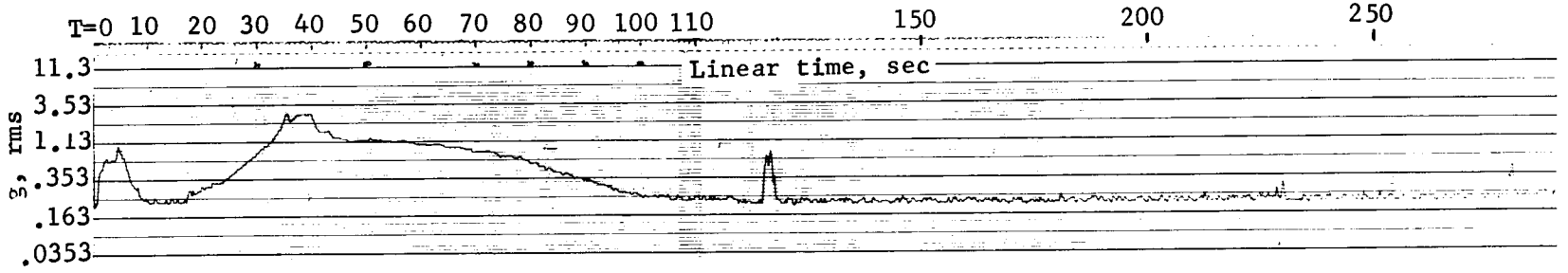


Figure 221. Measurement 2639, Vibration, Guidance Truss at Autopilot Mounting, Vertical, Compartment 3A, Sta 84, Quad IV, Vehicle 8 Flight (FAL)

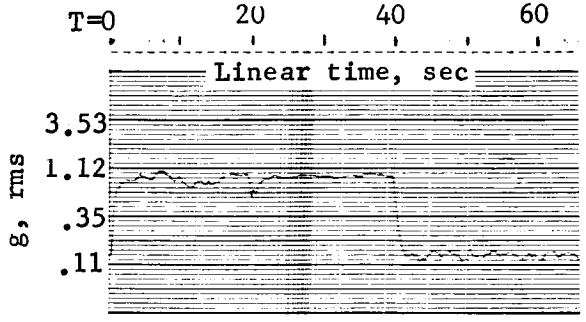


(a) Measurement 2640, Vibration, Guidance Truss between Autopilot and Static Inverter, Longitudinal, Compartment 3A, Sta 97, Quad IV, Vehicle 4 SCF

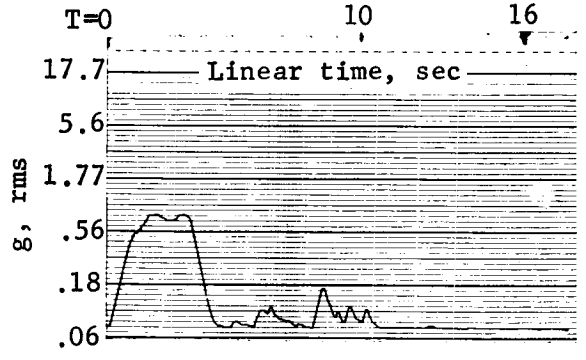


(b) Measurement 2640, Vibration, Guidance Truss between Autopilot and Static Inverter, Longitudinal, Compartment 3A, Sta 97, Quad IV, Vehicle 4

Figure 222.



(a) Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral, Compartment 3A, Sta 97, Quad IV, Vehicle 4 SCF



(b) Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral, Compartment 3A, Sta 97, Quad IV, Vehicle 4

Figure 223.

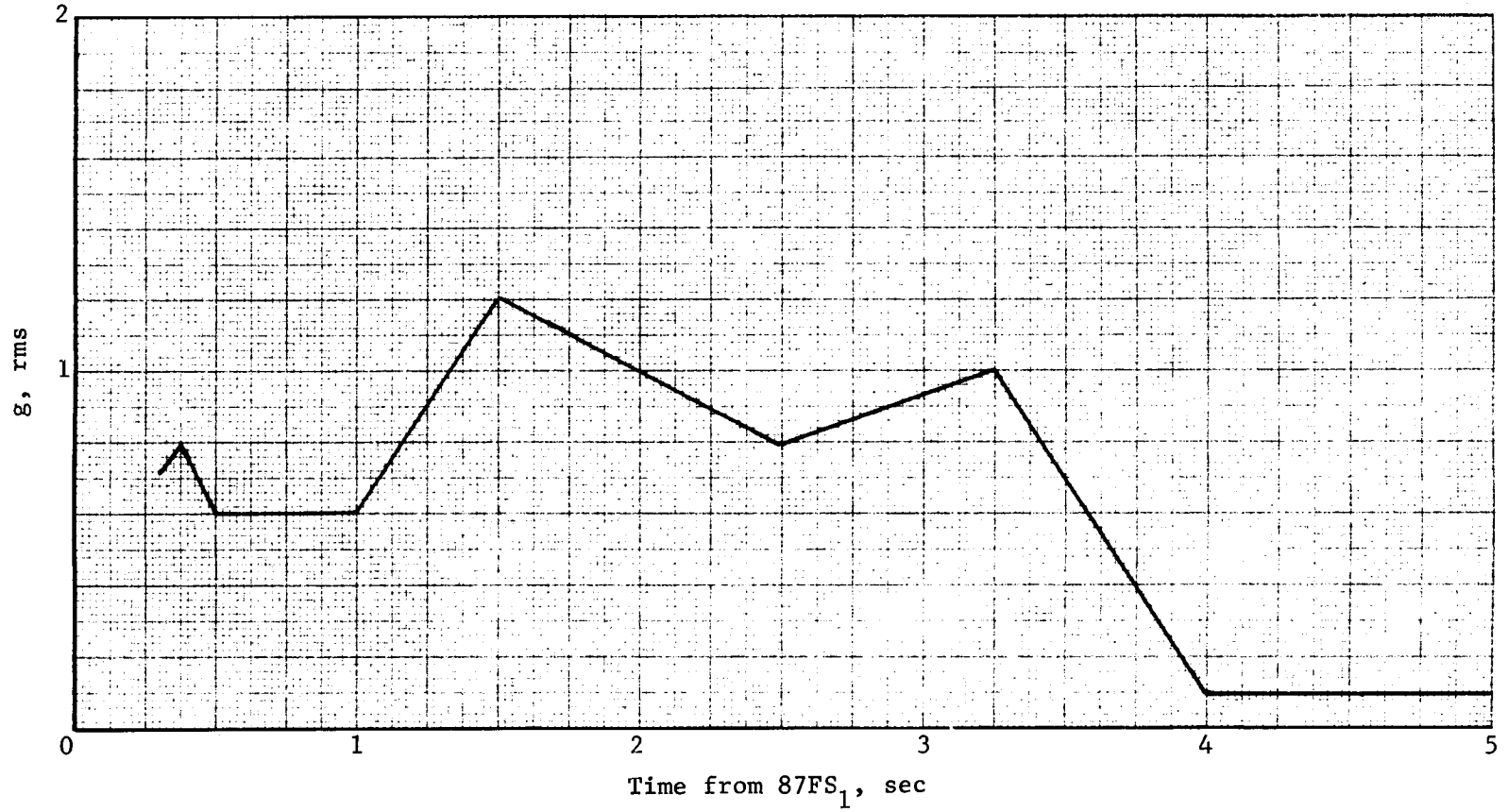
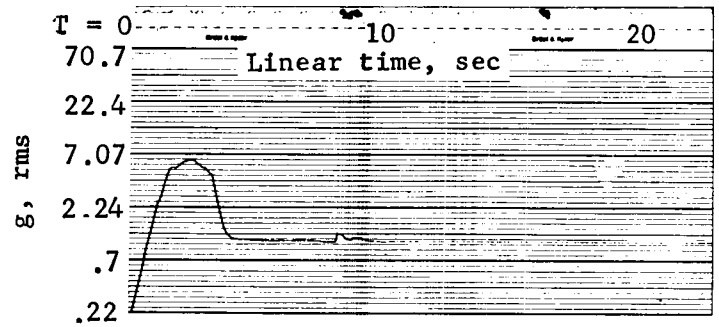
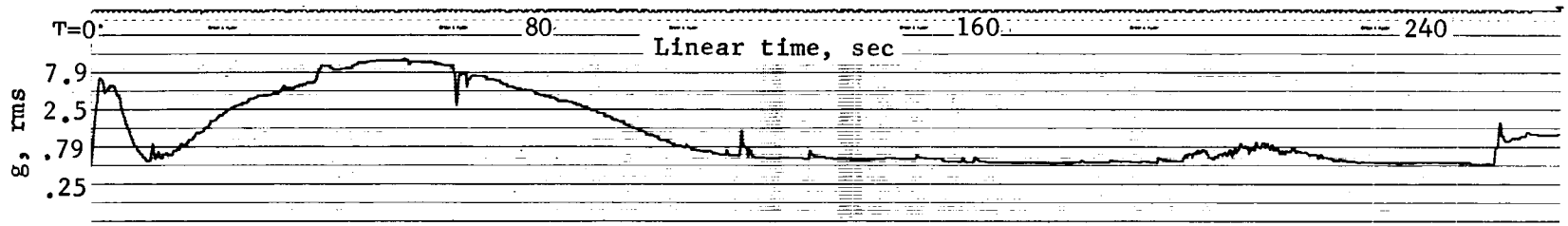


Figure 224. Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral, Compartment 3A, Sta 97, Quad IV, Vehicle 8 Flight (FAL)



(a) Measurement 2519, Vibration, Airframe at Outage Sensor Controller Mounting, Radial, Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 4



(b) Measurement 2520, Vibration, Airframe at Outage Sensor Controller Mounting, Tangential Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 7

Figure 225.

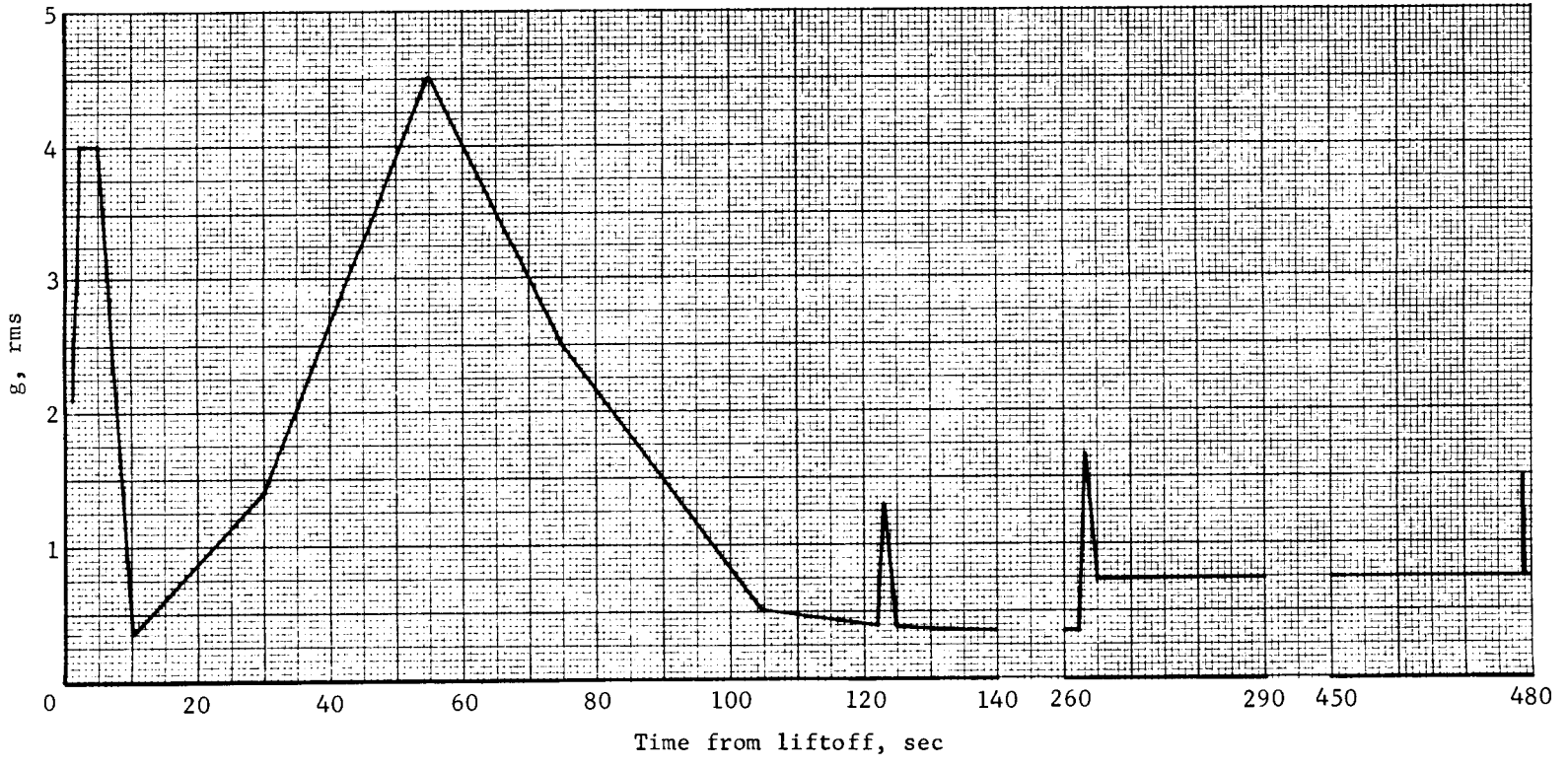


Figure 226. Measurement 2516, Vibration, Equipment Truss at Destruct Initiator Mounting, Lateral, Compartment 2B, Sta 354, Quad III, Vehicle 8 Flight

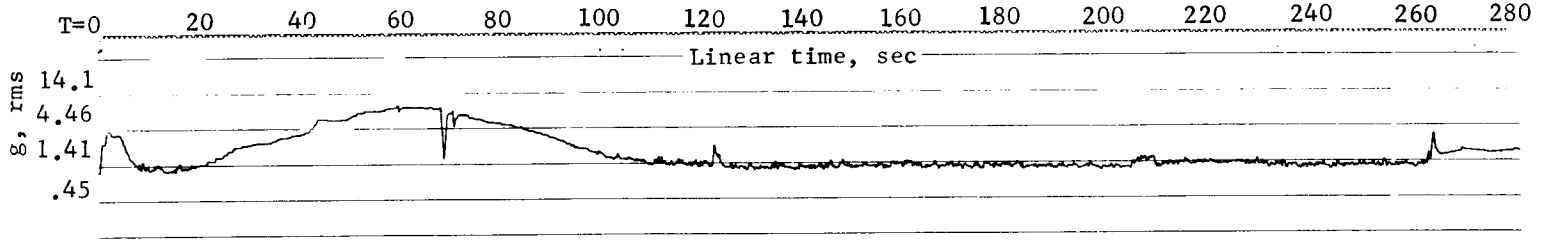


Figure 227 Measurement 2599, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Longitudinal, Compartment 2B, Sta 378, Quad II, Vehicle 7

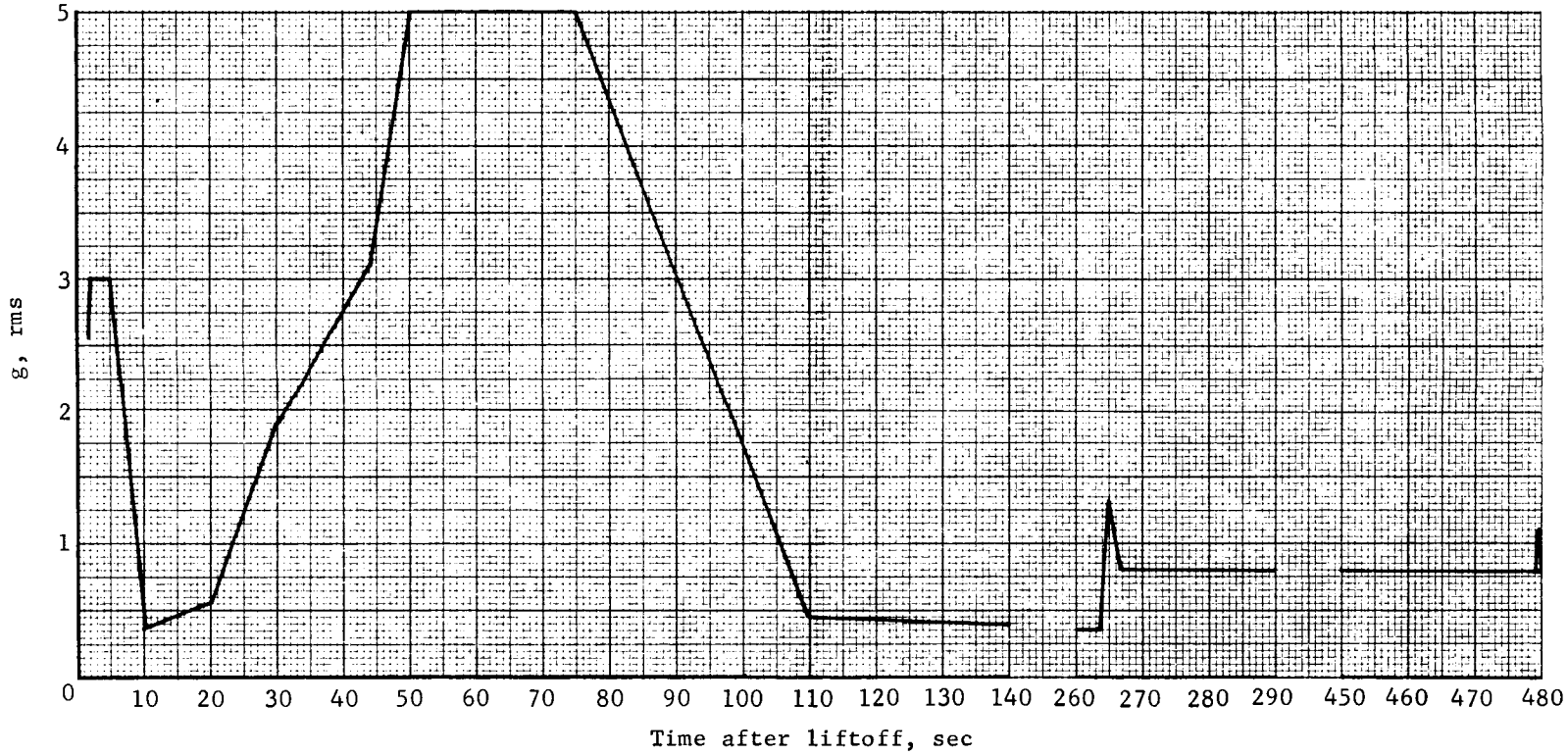
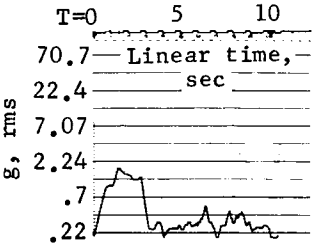
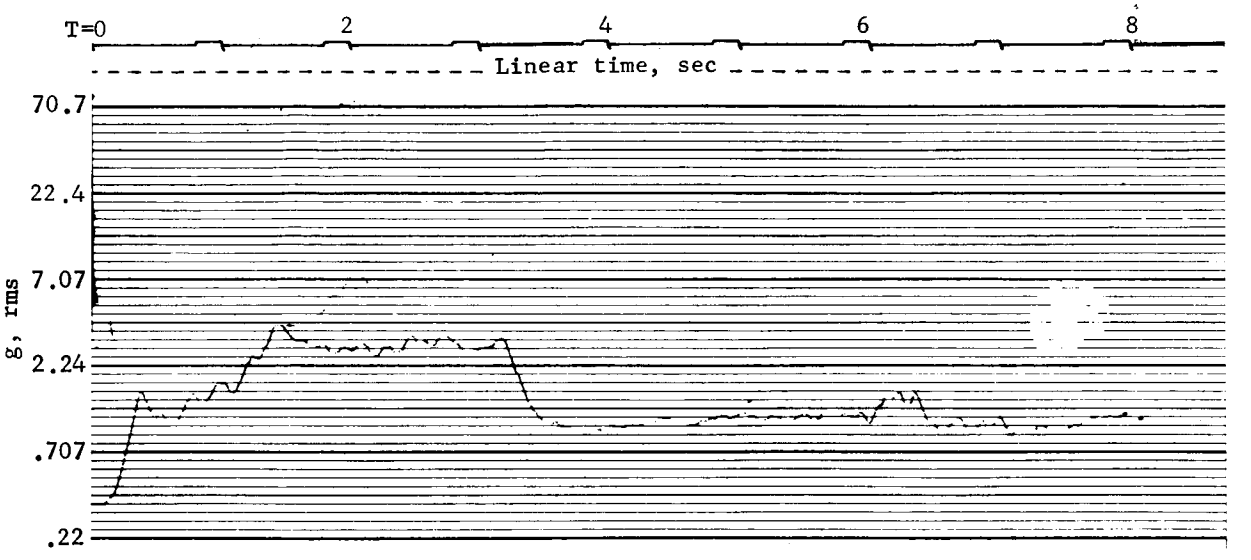


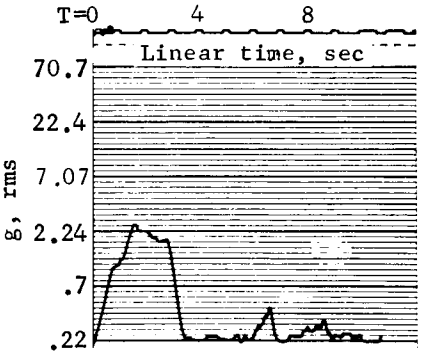
Figure 228. Measurement 2599, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Longitudinal, Compartment 2B, Sta 378, Quad II, Vehicle 8 Flight



(a) Measurement 2600, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Vertical, Compartment 2B, Sta 378, Quad II, Vehicle 7 (FAL)



(b) Measurement 2600, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Lateral, Compartment 2B, Sta 378, Quad II, Vehicle 8 (FAL)



(c) Measurement 2601, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Vertical, Compartment 2B, Sta 378, Quad II, Vehicle 7 (FAL)

Figure 229.

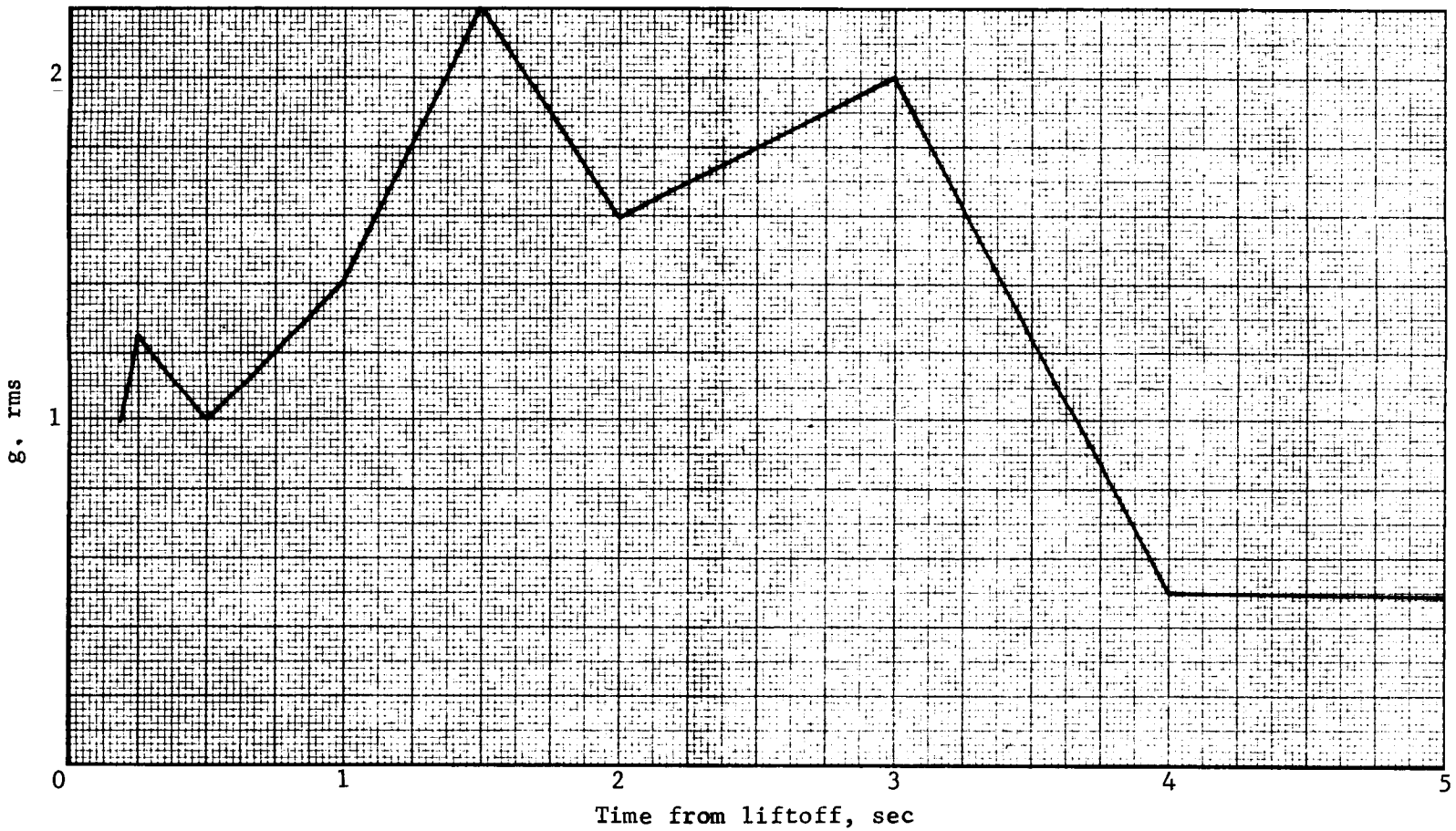
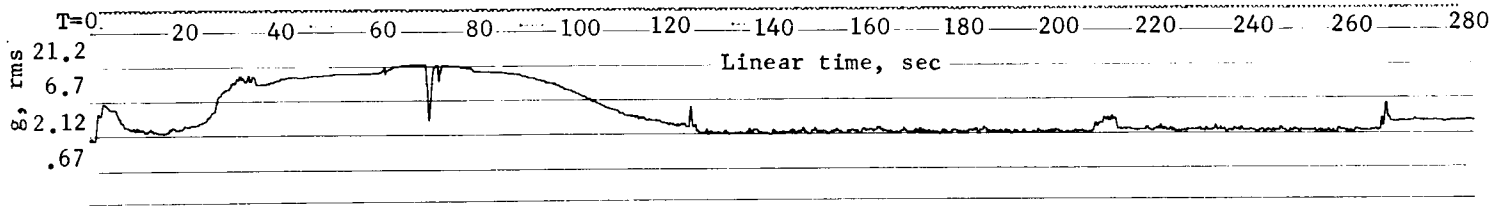
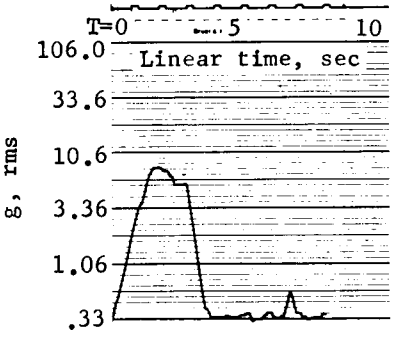


Figure 230. Measurement 2601, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Vertical, Compartment 2B, Sta 378, Quad II, Vehicle 8 Flight (FAL)



(a) Measurement 2566, Vibration, Airframe at Instrumentation Staging Disconnect, Longitudinal, Compartment 2C, Sta 490, Quad III, Stringer 23, Vehicle 7



(b) Measurement 2567, Vibration, Airframe at Instrumentation Staging Disconnect, Radial, Compartment 2C, Sta 490, Quad III, Stringer 23, Vehicle 7

Figure 231.

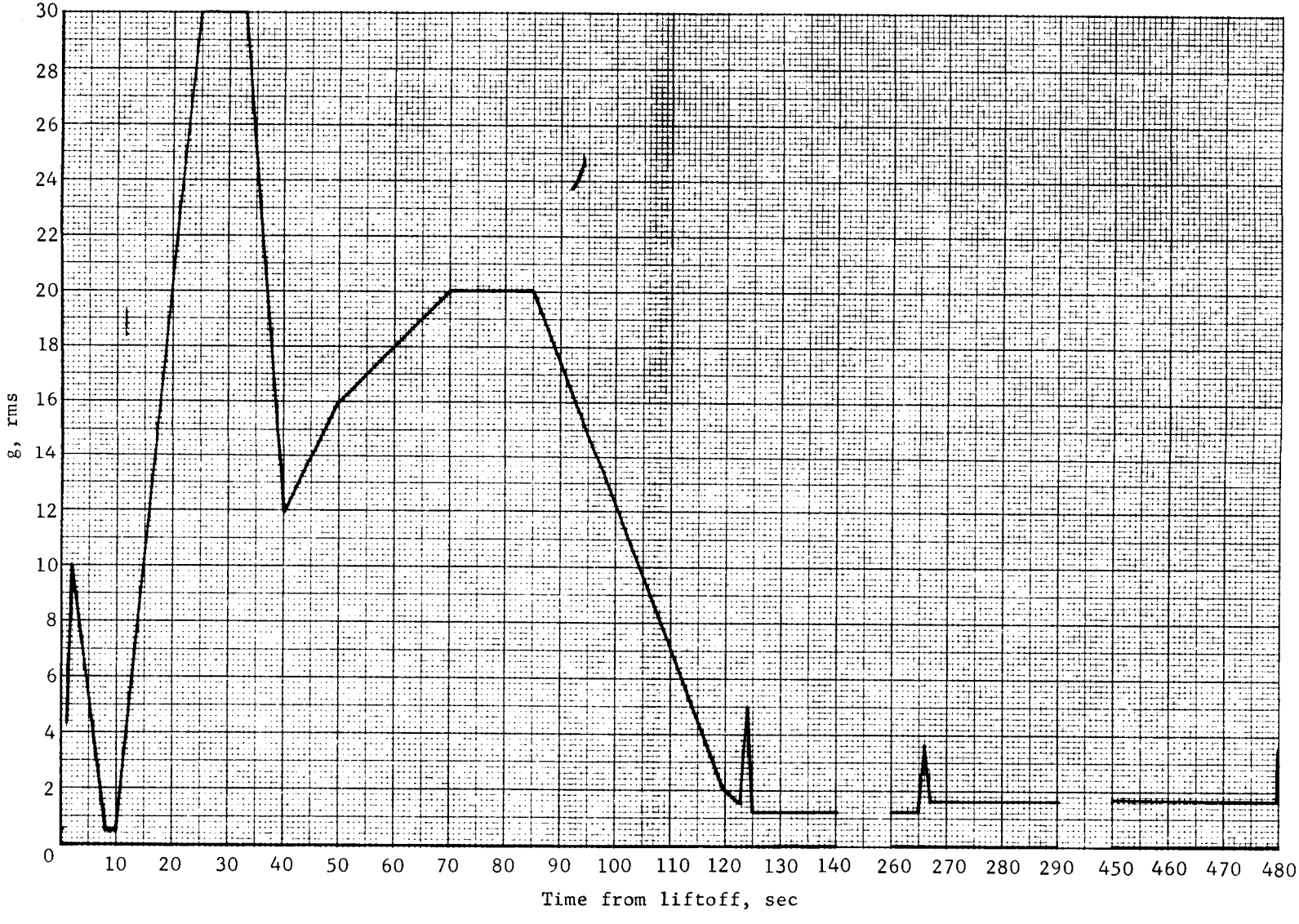
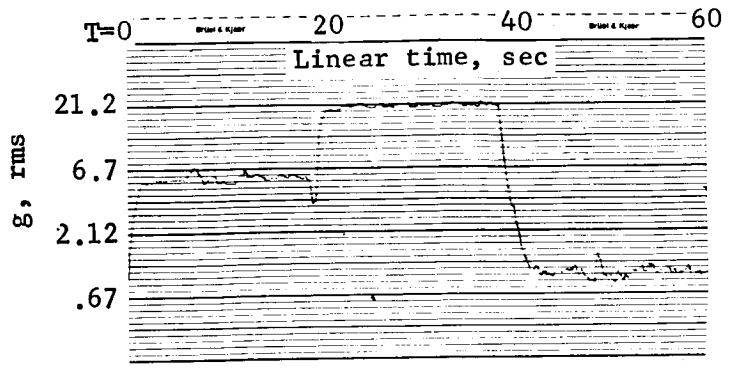
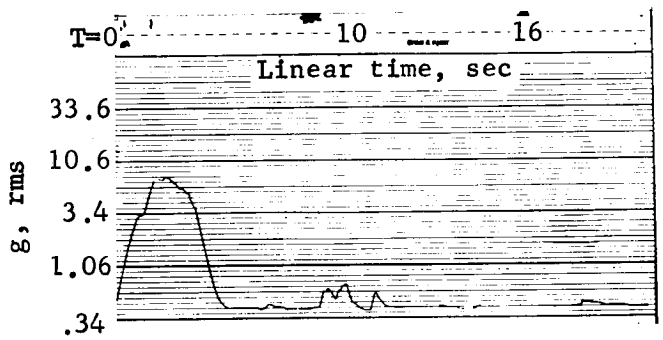


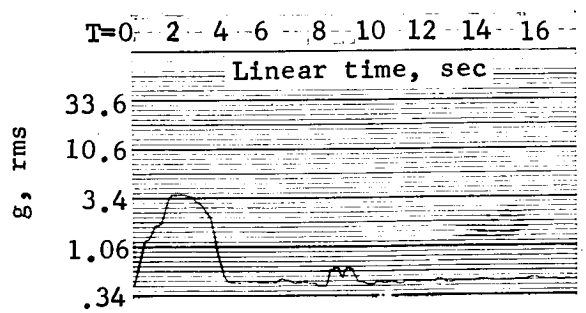
Figure 232. Measurement 2602, Vibration, Airframe at Electrical/Instrumentation SRM/Core Staging Disconnect, Longitudinal, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 8 Flight



(a) Measurement 2603, Vibration, Airframe at Electrical/ Instrumentation SRM/Core Staging Disconnect, Radial, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 4 SCF

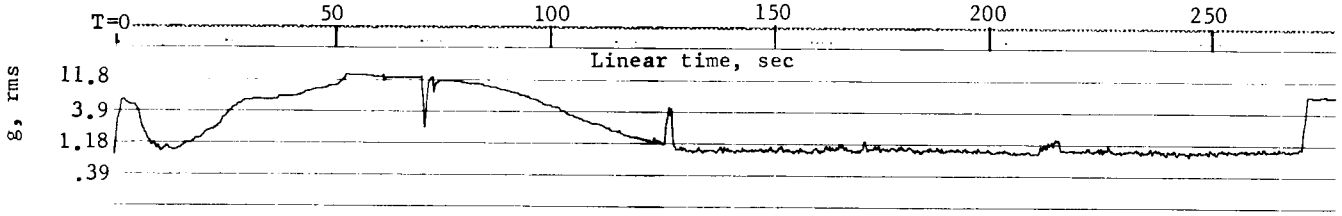


(b) Measurement 2603, Vibration, Airframe at Electrical/ Instrumentation SRM/Core Staging Disconnect, Radial, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 4 (FAL)

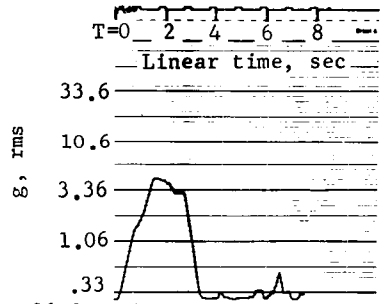


(c) Measurement 2604, Vibration, Airframe at Electrical/ Instrumentation SRM/Core Staging Disconnect, Tangential, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 4 (FAL)

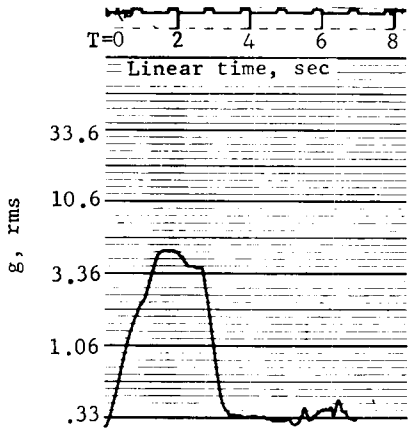
Figure 233.



(a) Measurement 2605, Vibration, on Fuel Tank Bottom at Outage Sensor Mounting, Perpendicular, Compartment 2C, Sta 460, Quad I, Vehicle 7

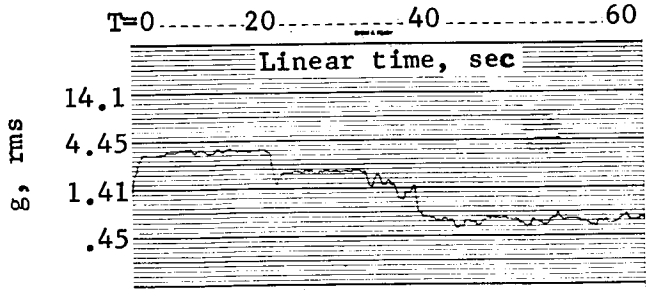


(b) Measurement 2606, Vibration, on Fuel Tank Bottom at Outage Sensor Mounting, Parallel, Compartment 2C, Sta 460, Quad I, Vehicle 7

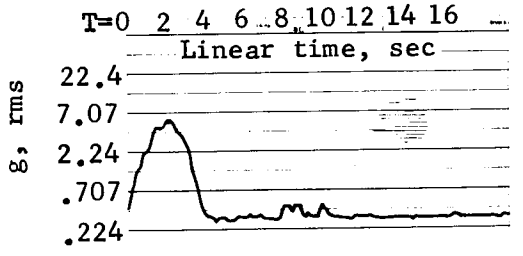


(c) Measurement 2607, Vibration, on Fuel Tank Bottom at Outage Sensor Mounting, Tangential, Compartment 2C, Sta 460, Quad I, Vehicle 7

Figure 234.



(a) Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4 SCF



(b) Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4

Figure 235.

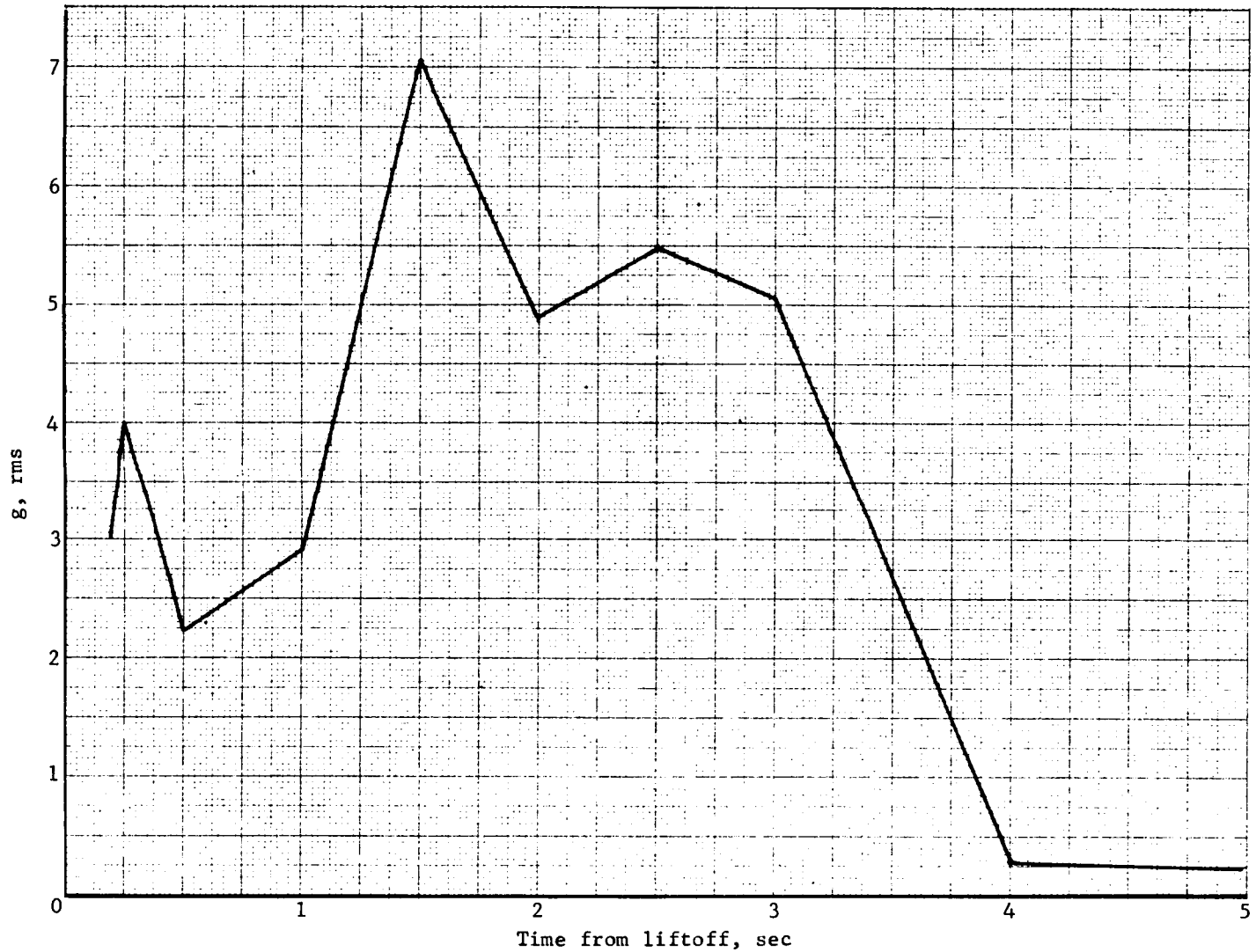
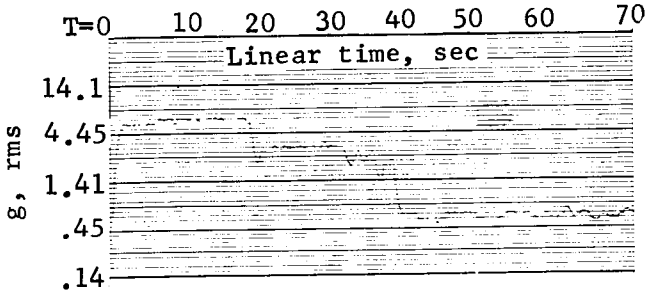
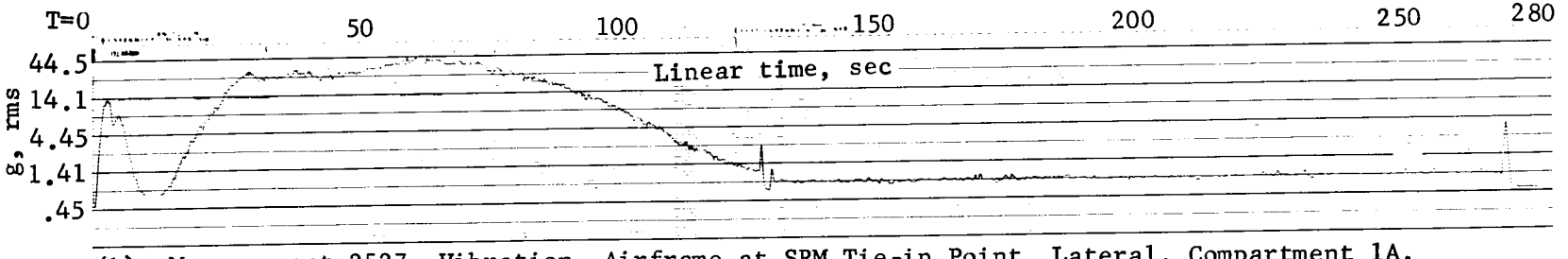


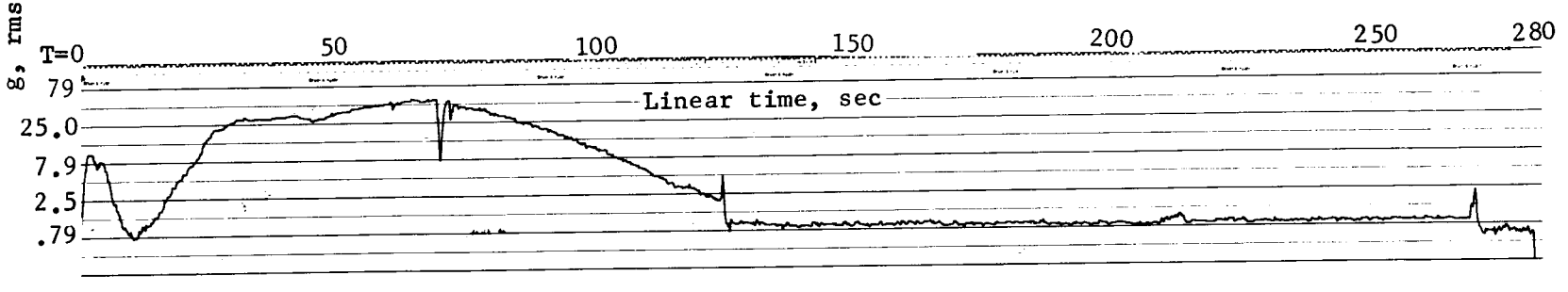
Figure 236. Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 8 Flight (FAL)



(a) Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4 SCF



(b) Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4



(c) Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 7

Figure 237.

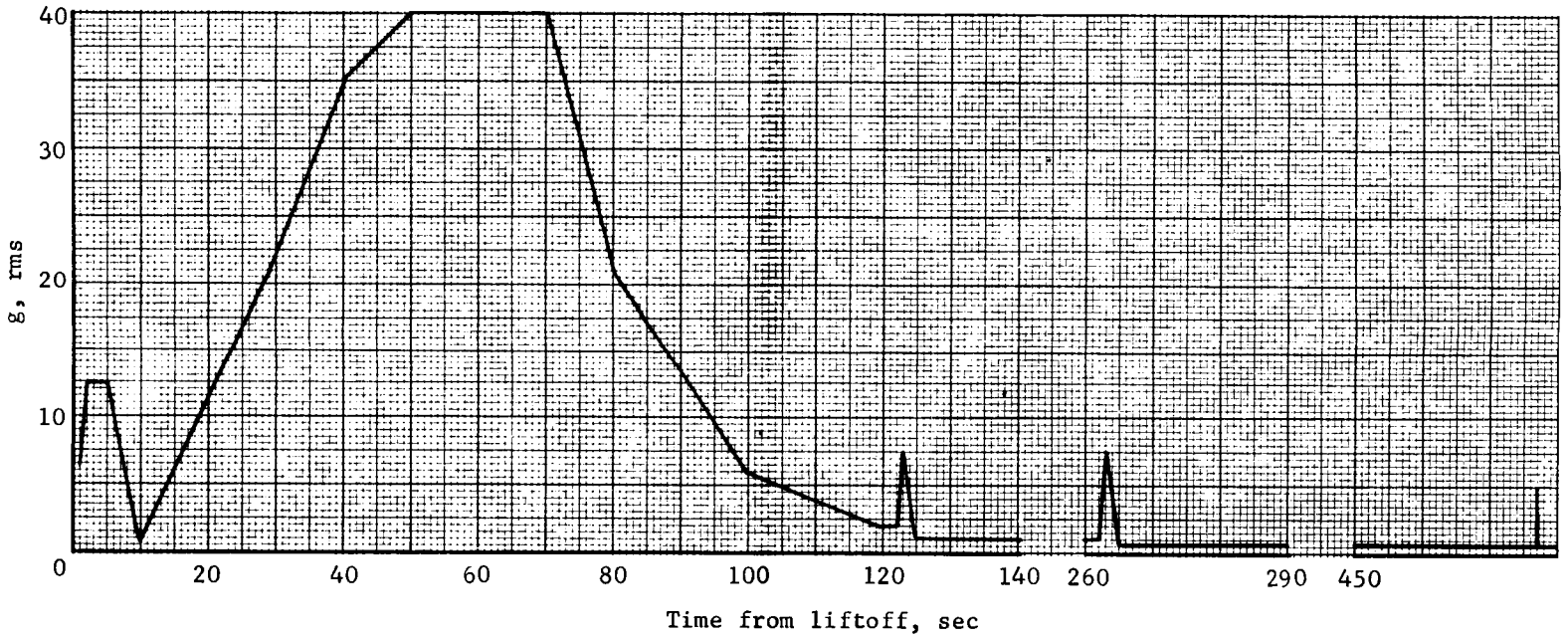
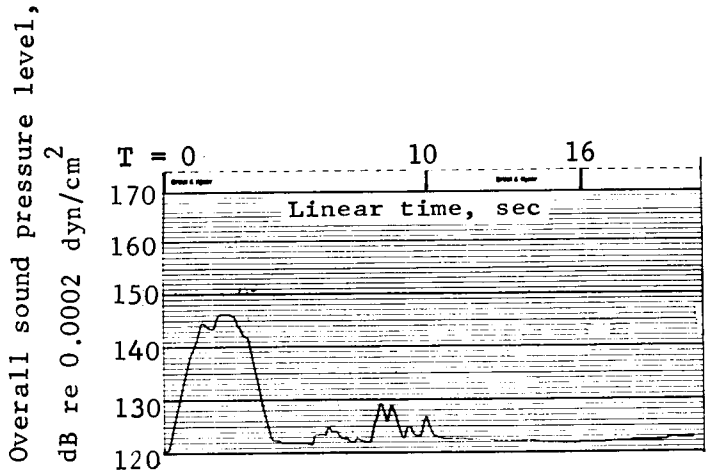
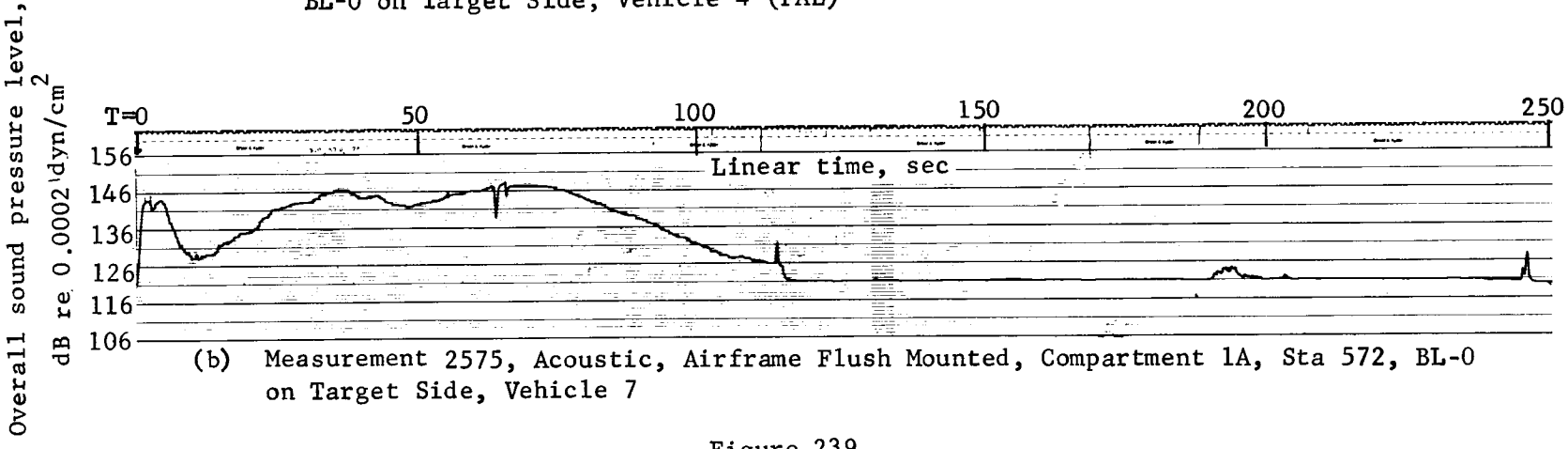


Figure 238. Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 8 Flight

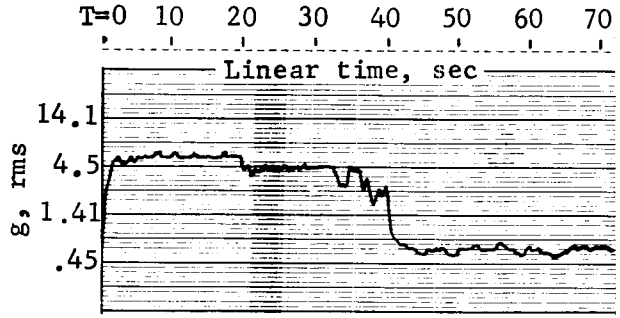


(a) Measurement 2575, Acoustic, Airframe Flush Mounted, Compartment 1A, Sta 572, BL-0 on Target Side, Vehicle 4 (FAL)

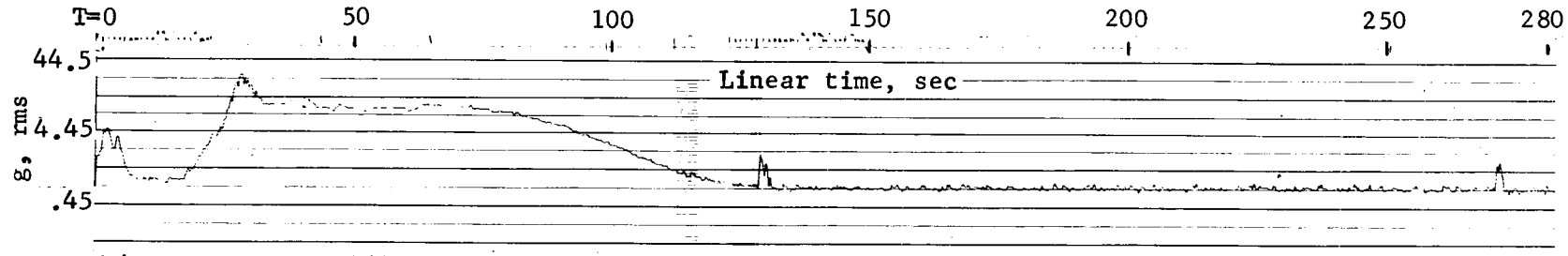


(b) Measurement 2575, Acoustic, Airframe Flush Mounted, Compartment 1A, Sta 572, BL-0 on Target Side, Vehicle 7

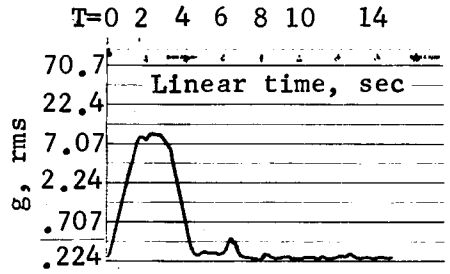
Figure 239.



(a) Measurement 2610, Vibration, Airframe Near Solid-State Switch Mounting, Longitudinal, Compartment 1A, Sta 508, Quad IV, between Stringers 31 and 32, Vehicle 4 SCF

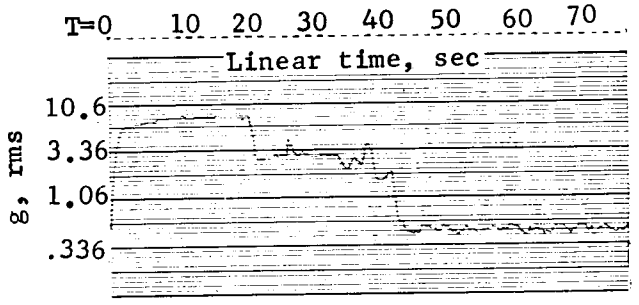


(b) Measurement 2610, Vibration, Airframe Near Solid State Switch Mounting, Longitudinal, Compartment 1A, Sta 508, Quad IV, between Stringers 31 and 32, Vehicle 4

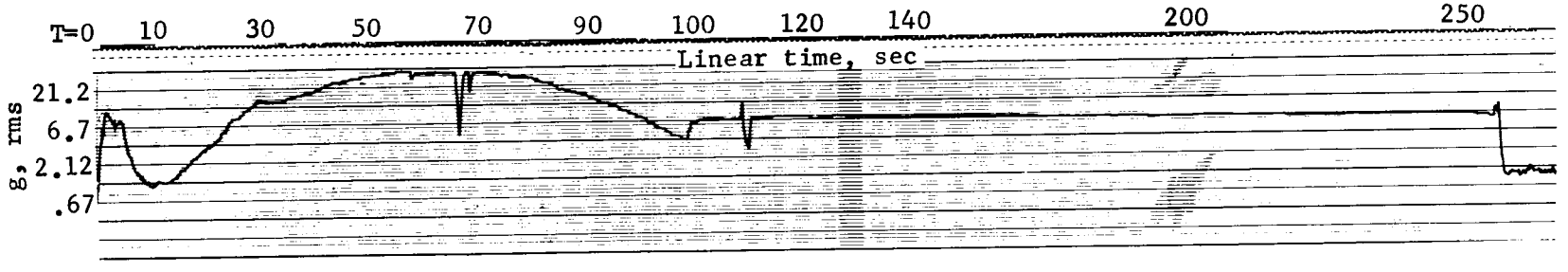


(c) Measurement 2611, Vibration, Airframe Near Solid-State Switch Mounting, Radial, Compartment 1A, Sta 508, Quad IV, between Stringers 31 and 32, Vehicle 4

Figure 240.



(a) Measurement 2568, Vibration, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 4 SCF



(b) Measurement 2568, Vibration, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 7

Figure 241.

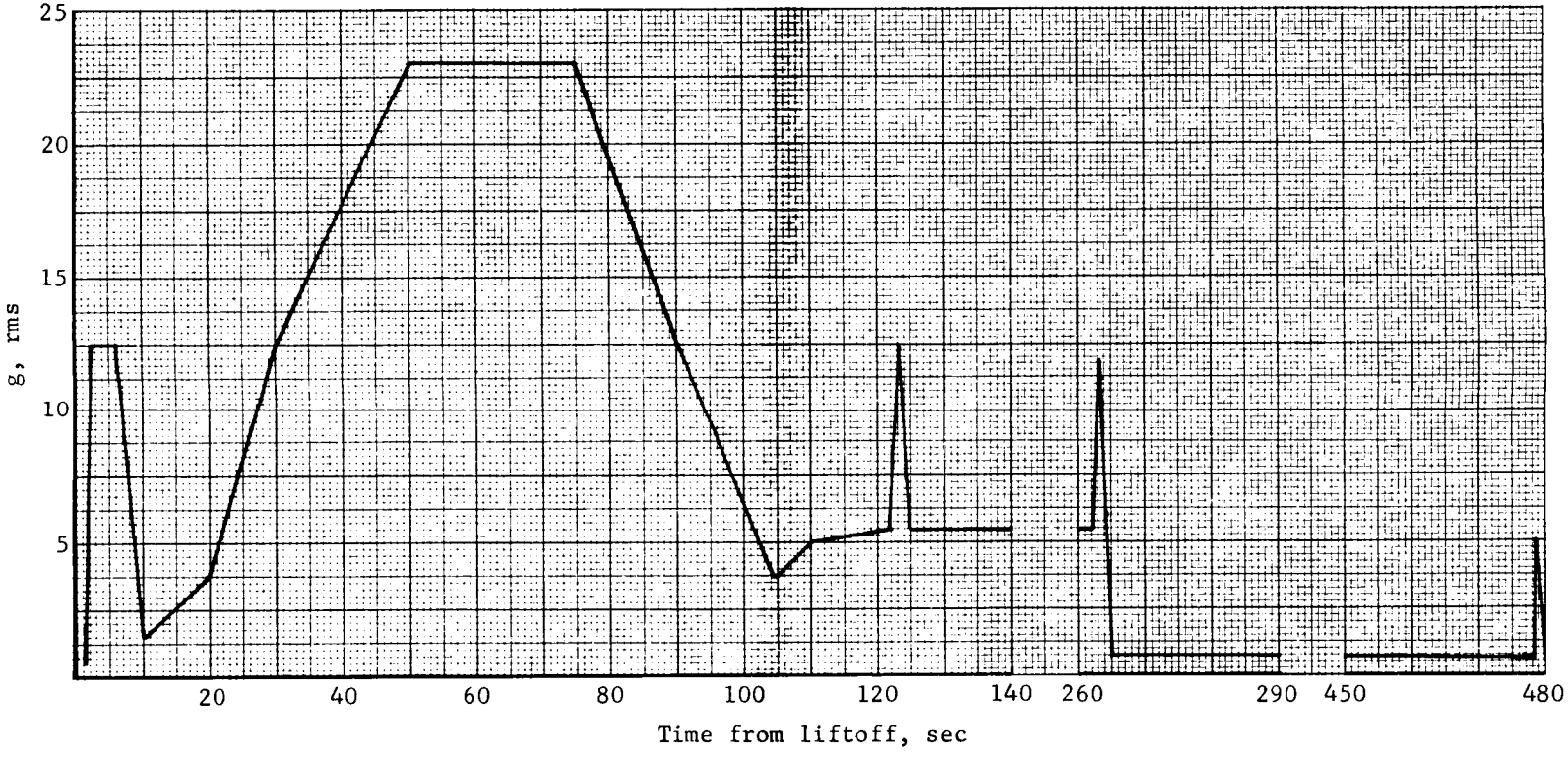
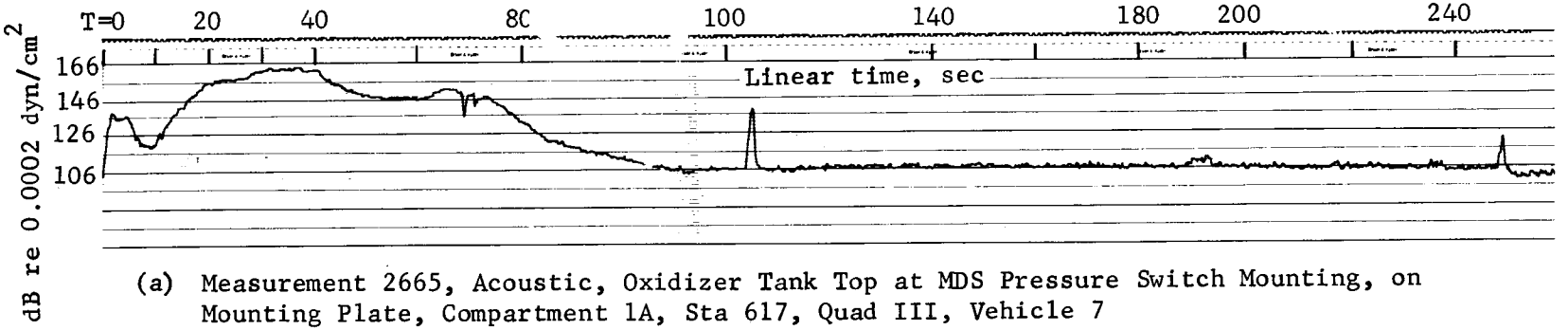
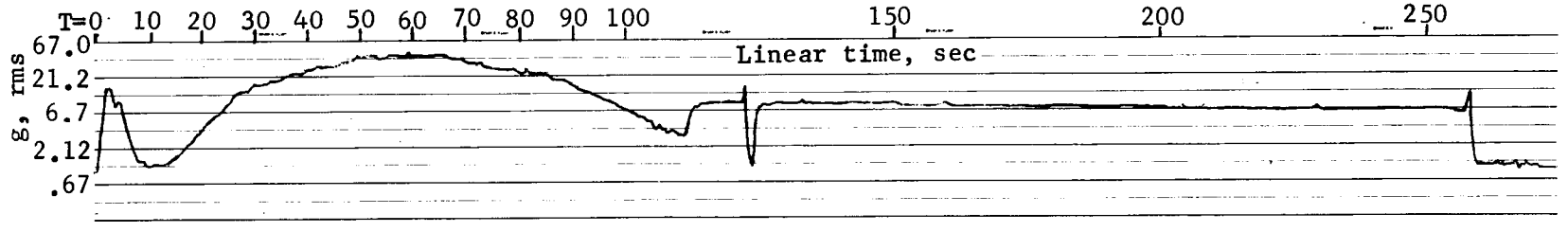


Figure 242. Measurement 2568, Vibration, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 8 Flight



(a) Measurement 2665, Acoustic, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Compartment 1A, Sta 617, Quad III, Vehicle 7



(b) Measurement 2672, Vibration, Oxidizer Tank Top, on Dome Land Area, Perpendicular, Compartment 1A, Sta 613, Quad III, Vehicle 4

Figure 243.

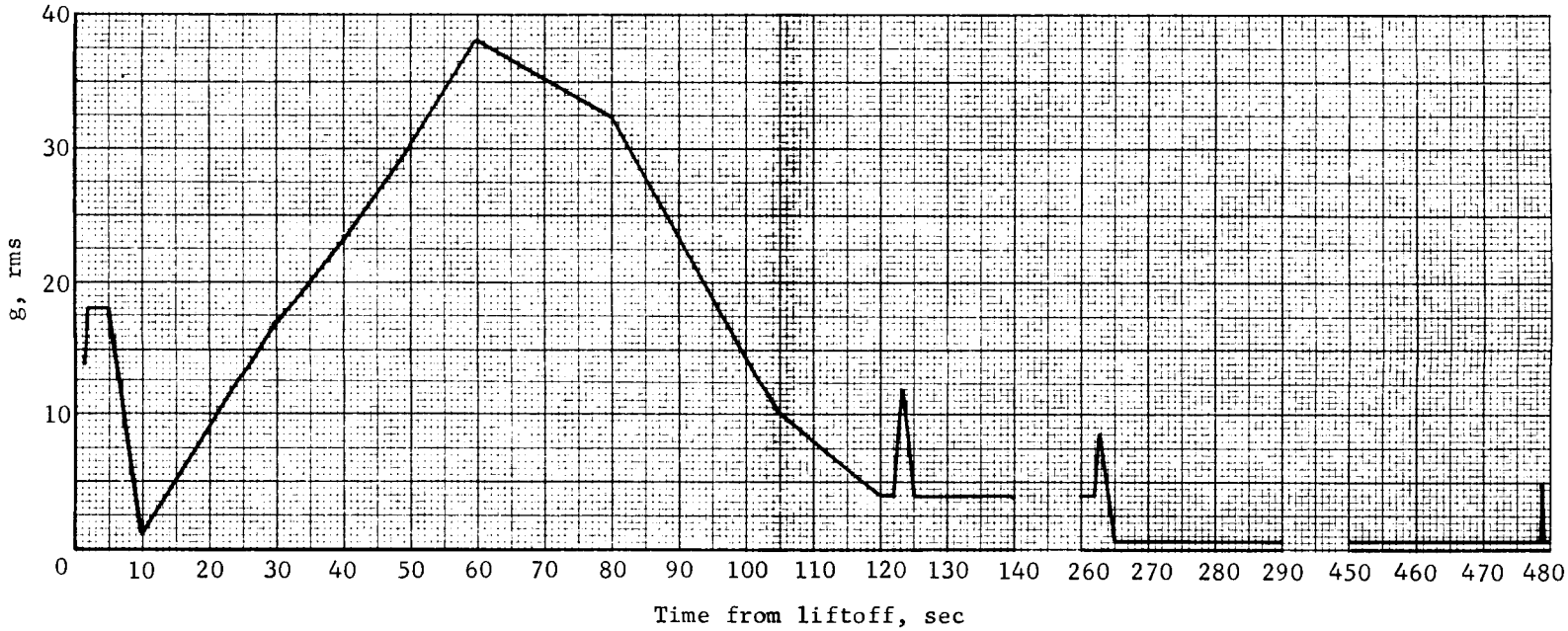
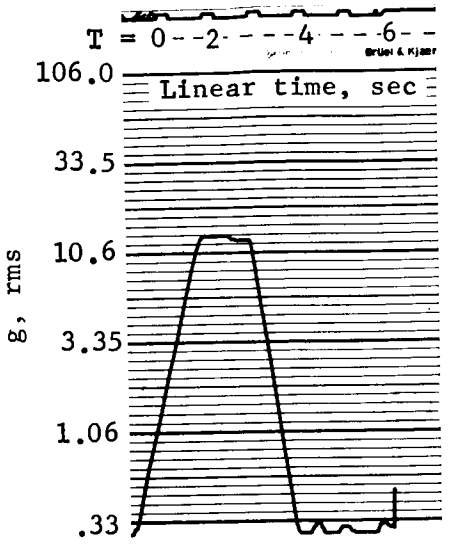
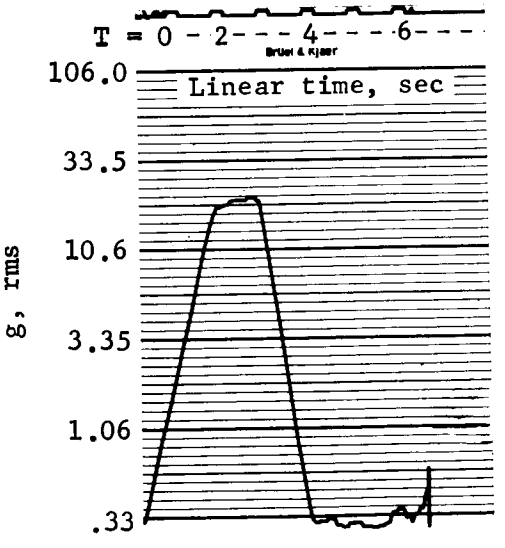


Figure 244. Measurement 2672, Vibration, Oxidizer Tank Top, on Dome Land Area, Perpendicular, Compartment 1A, Sta 613, Quad III, Vehicle 8 Flight

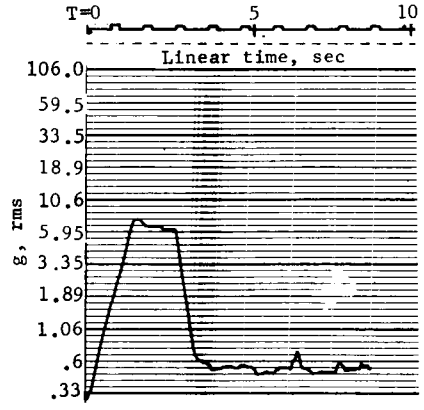


(a) Measurement 2570, Vibration, Airframe at Destruct Battery Mounting, Radial, Compartment 1B, Sta 929, Quad III, Stringer 17, Vehicle 7

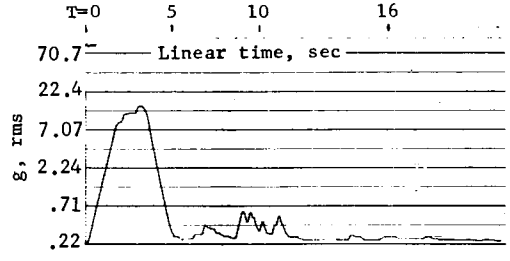


(b) Measurement 2571, Vibration, Airframe at Destruct Battery Mounting, Tangential, Compartment 1B, Sta 020, Quad III, Stringer 17, Vehicle 7

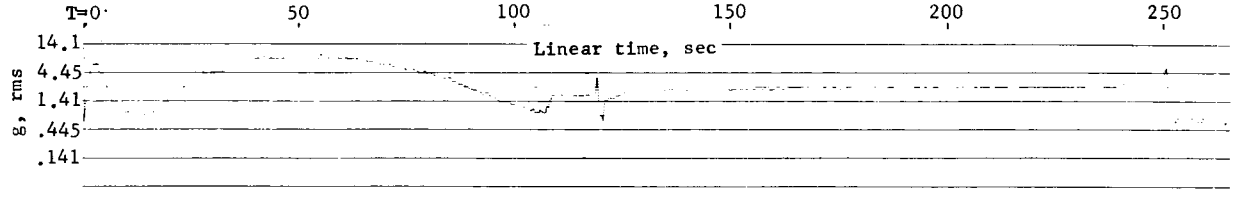
Figure 245.



(a) Measurement 2616, Vibration, Airframe at Destruct Battery Mounting, Longitudinal, Compartment 1B, Sta 929, Quad III, Stringer 17, Vehicle 7



(b) Measurement 2618, Vibration, Airframe at Solid-State Switch Panel Mounting, Radial, Compartment 1B, Sta 929, Quad III, Stringer 11, Vehicle 4



(c) Measurement 2529, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Longitudinal, Compartment 1B Sta 923, Quad II, Vehicle 4

Figure 246.

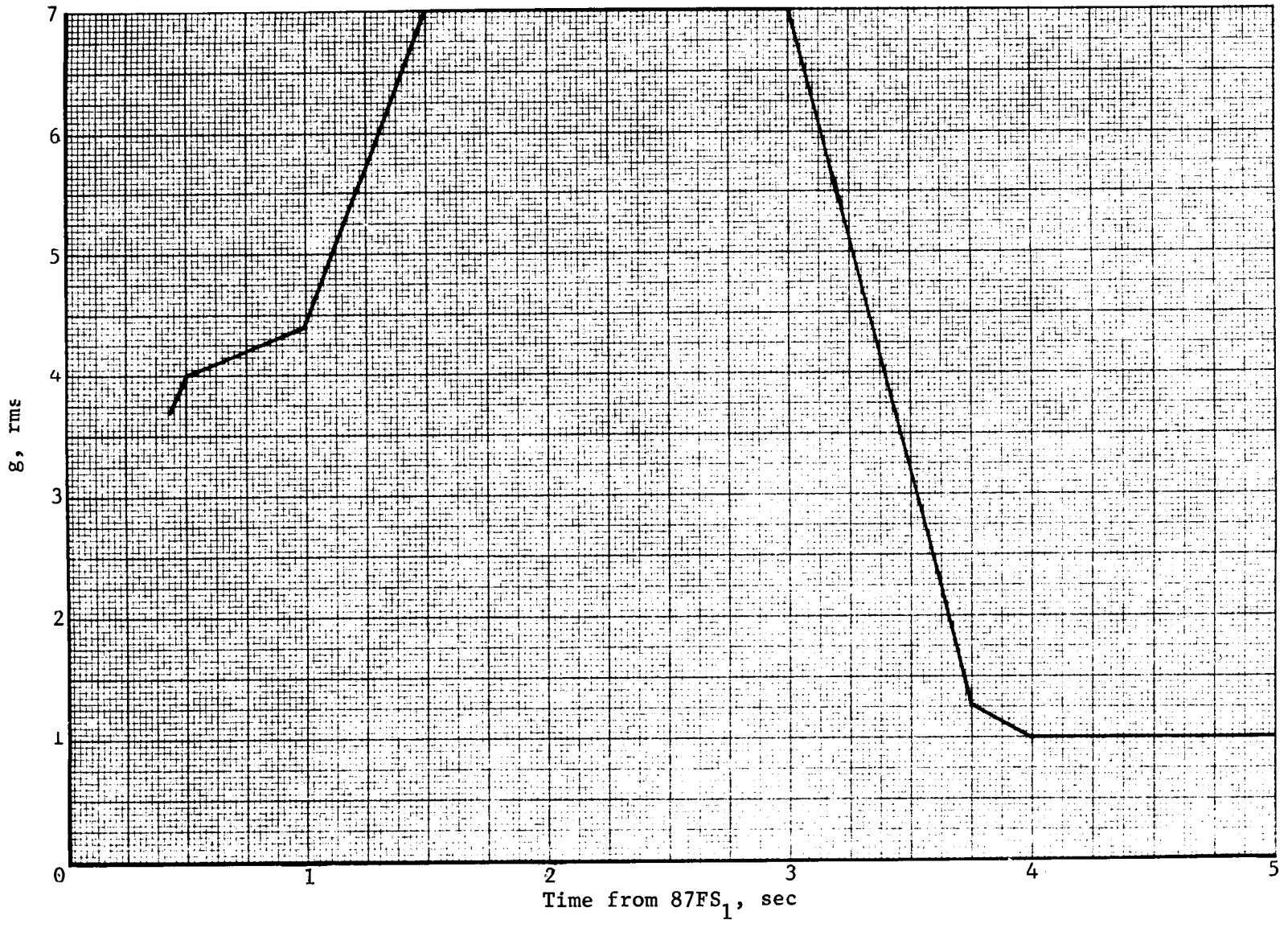
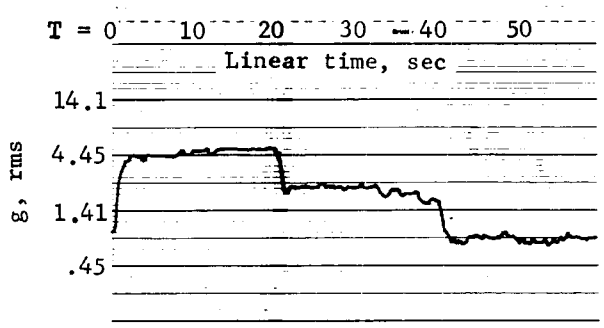
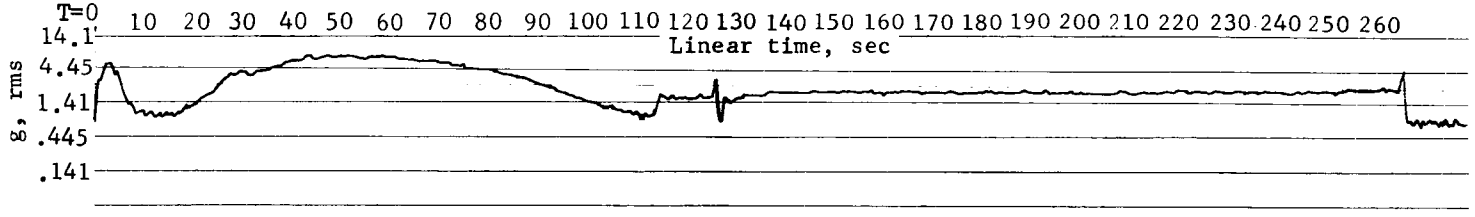


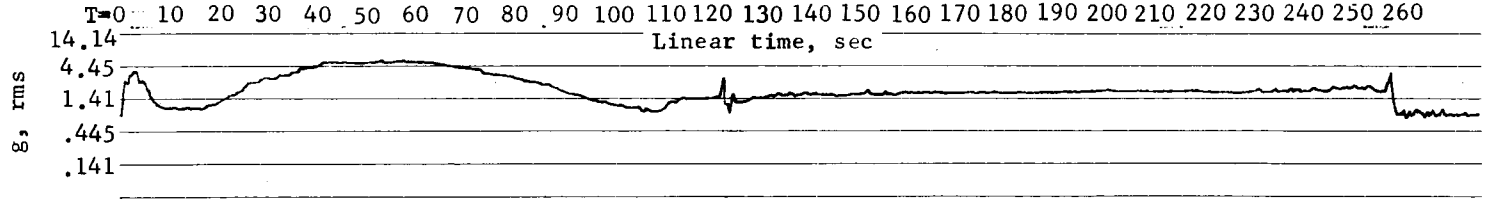
Figure 247. Measurement 2529, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting, on Gyro Case, Longitudinal, Compartment 1B, Sta 923. Quad II, Vehicle 8 Flight (FAL)



(a) Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehicle 4 SCF



(b) Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehicle 4



(c) Measurement 2615, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting, on Gyro Case, Vertical, Compartment 1B, Sta 923, Quad II, Vehicle 4

Figure 248.

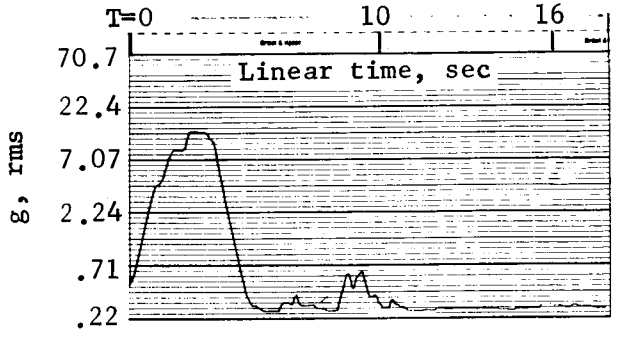


Figure 249. Measurement 2569, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1B, Sta 938, Quad III, Vehicle 4 (FAL)

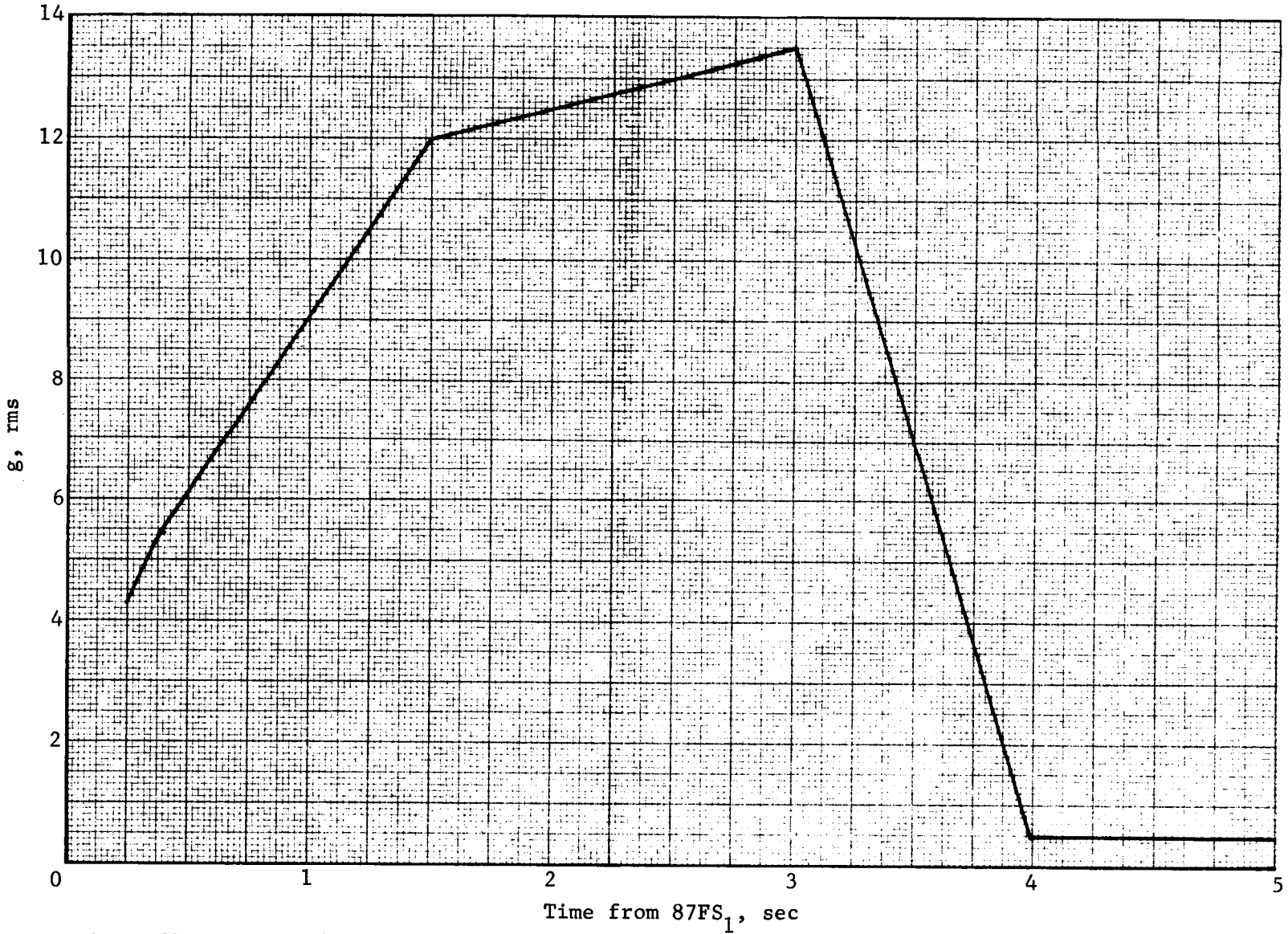
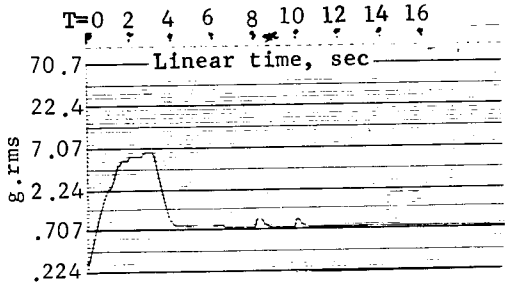
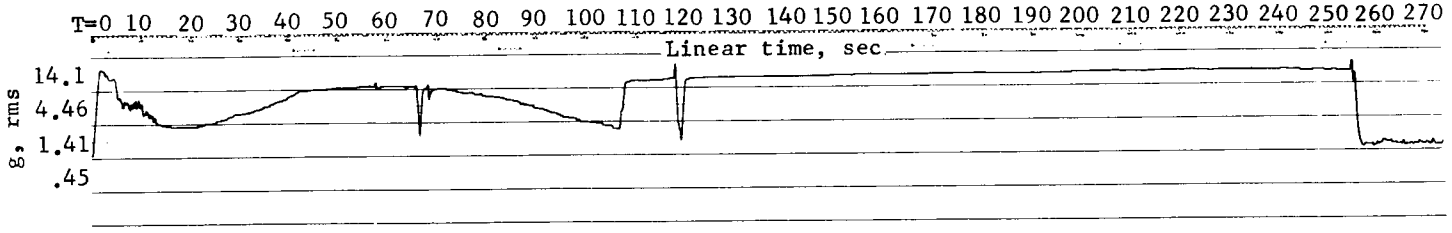


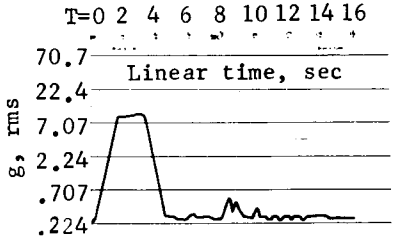
Figure 250. Measurement 2569, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1B, Sta 938, Quad III, Vehicle 8 Flight (FAL)



(a) Measurement 2613, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Parallel, Compartment 1B, Sta 938, Quad II, Vehicle 4 (FAL)

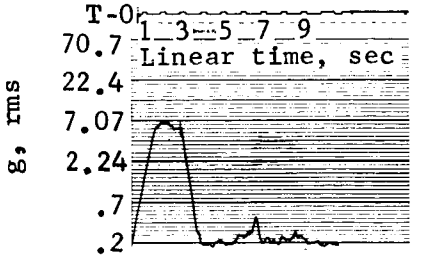


(b) Measurement 2625, Vibration, on Fuel Tank Bottom at Shutdown Sensor Mounting, Perpendicular, Compartment 1C Sta 1207, Quad I, Vehicle 7

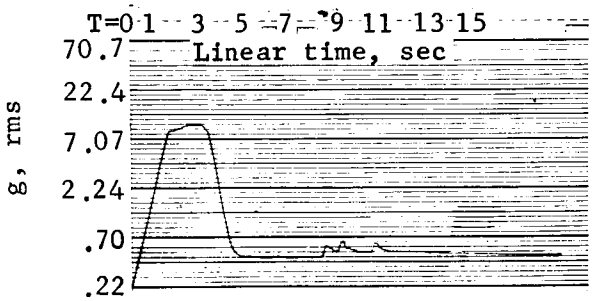


(c) Measurement 2626, Vibration, on Fuel Tank Bottom at Shutdown Sensor Mounting, Parallel, Compartment 1C, Sta 1207, Quad I, Vehicle 4 (FAL)

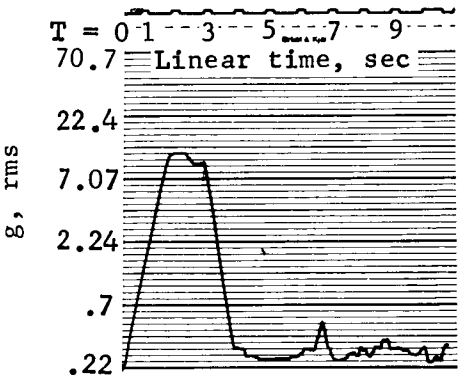
Figure 251.



(a) Measurement 2626, Vibration, on Fuel Tank Bottom at Shutdown Sensor Mounting, Parallel, Compartment 1C, Sta 1207, Quad I, Vehicle 7 (FAL)



(b) Measurement 2627, Vibration, Fuel Tank Bottom at Shutdown Sensor Mounting, Tangential, Compartment 1C, Sta 1207, Quad, Vehicle 4 (FAL)



(c) Measurement 2627, Vibration, Fuel Tank Bottom at Shutdown Sensor Mounting, Tangential, Compartment 1C, Sta 1207, Quad I, Vehicle 7 (FAL)

Figure 252.

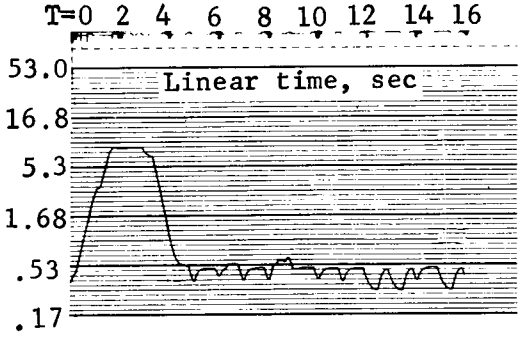


Figure 253. Measurement 2540, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 4 (FAL)

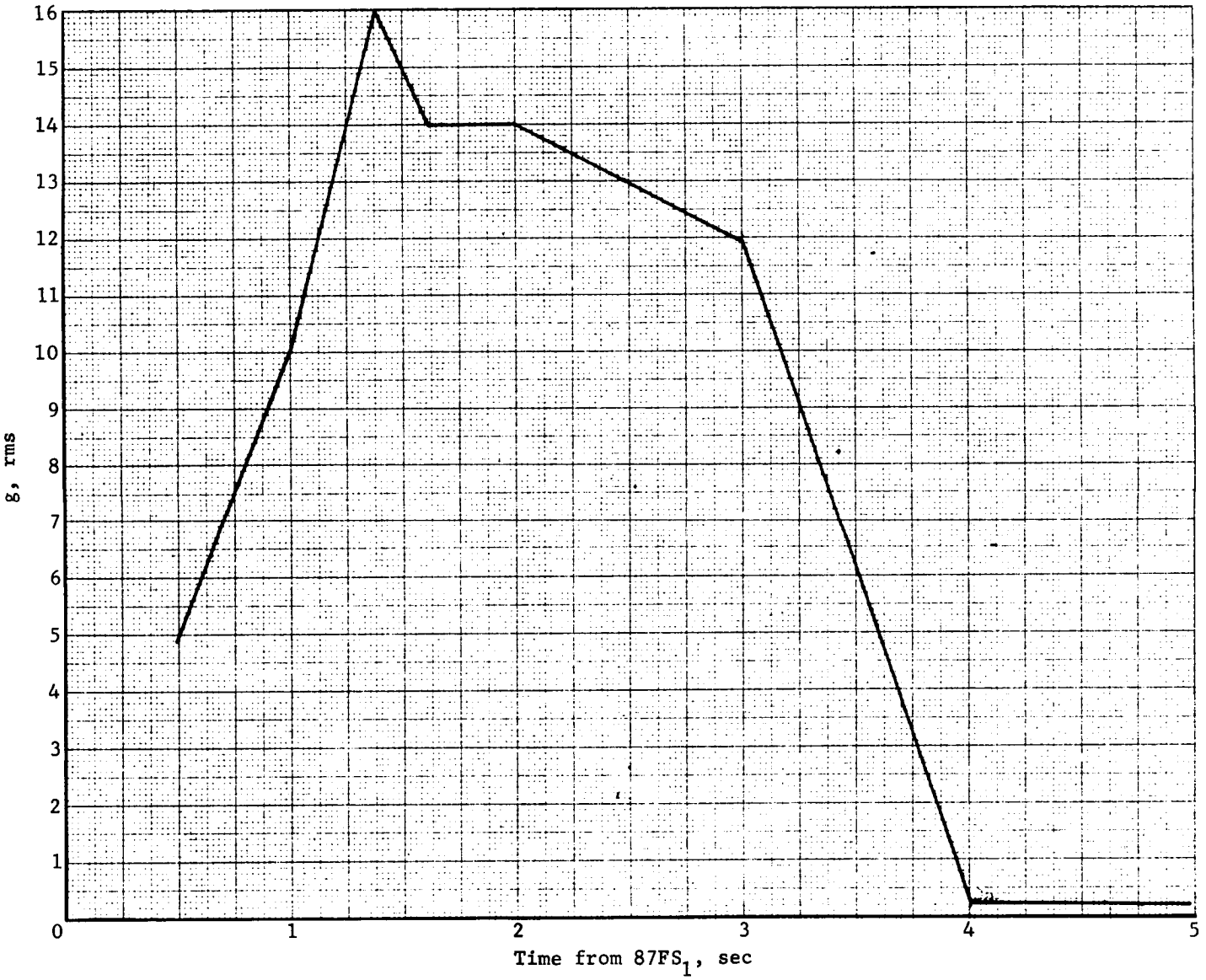


Figure 254. Measurement 2540, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 8 Flight (FAL)

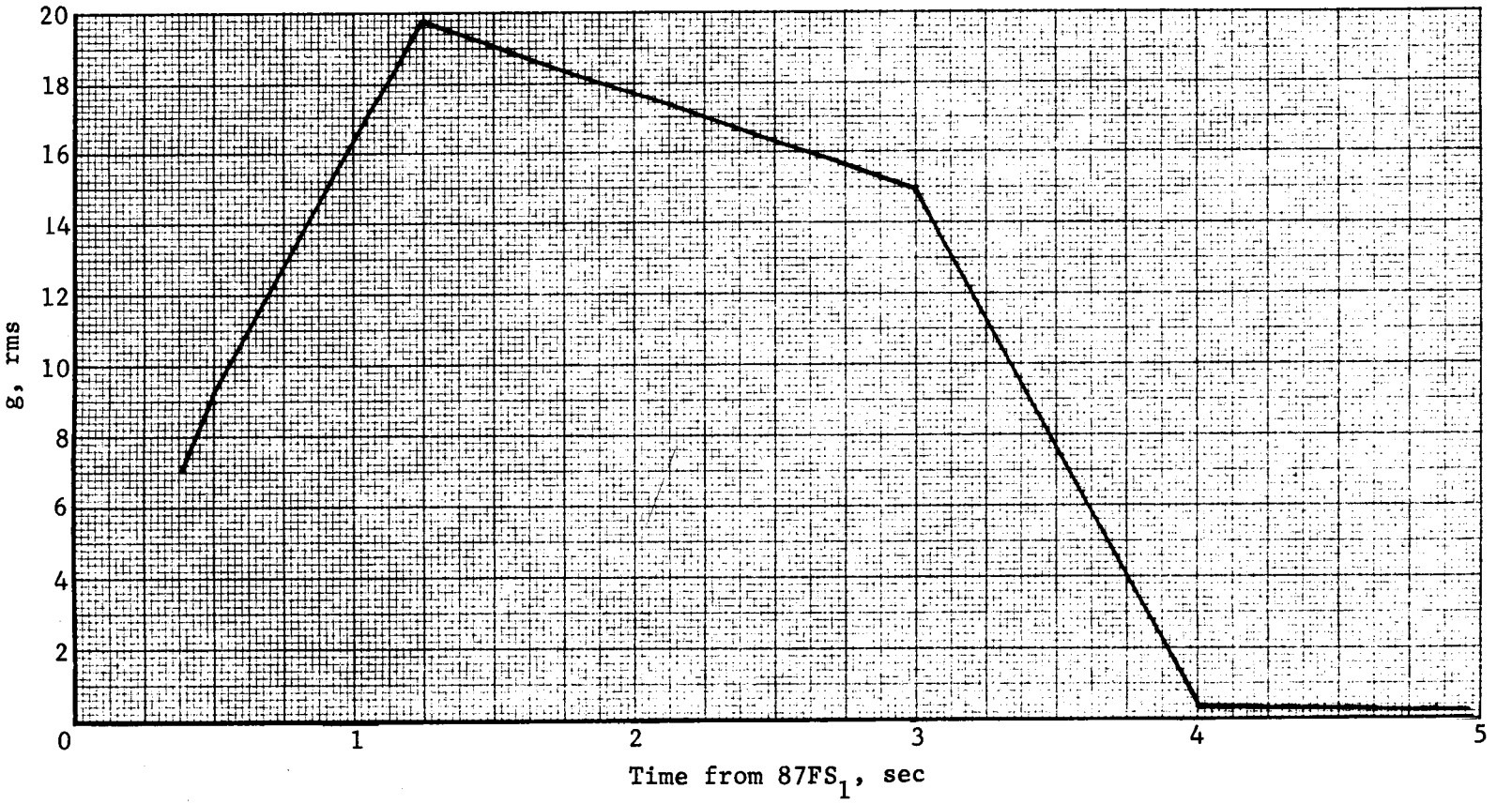


Figure 255. Measurement 2541, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 8 Flight (FAL)

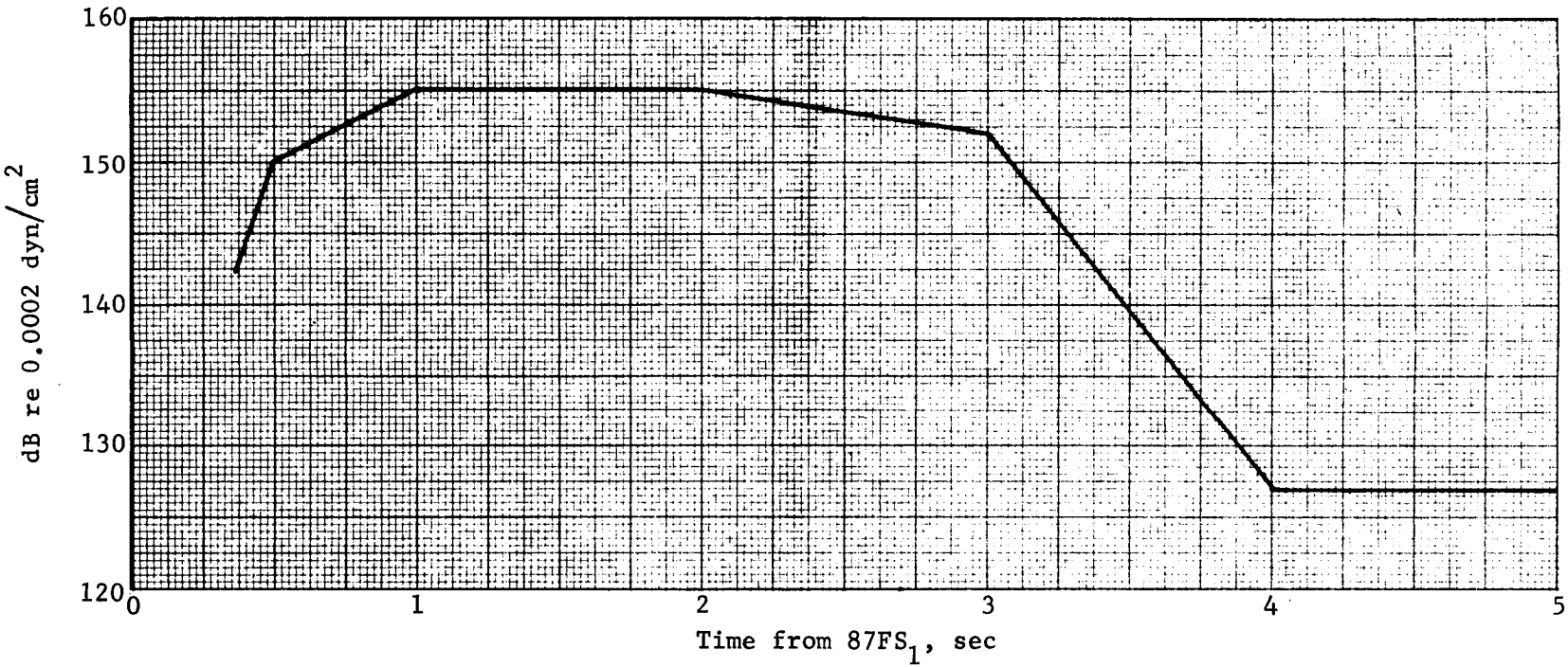


Figure 256. Measurement 2576, Acoustic, Airframe Flush Mounted, Compartment 1C, on Target Side, Sta 1219, BL-0, Vehicle 8 Flight (FAL)

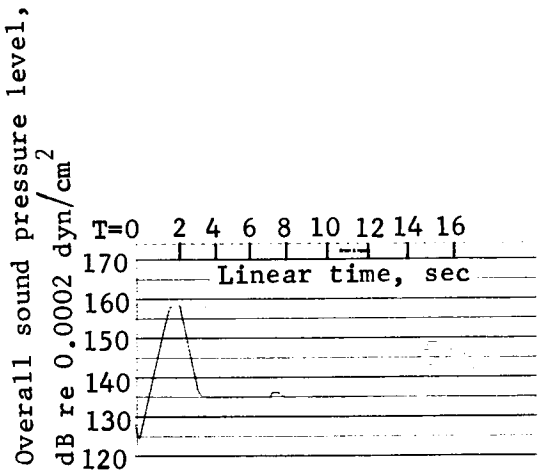
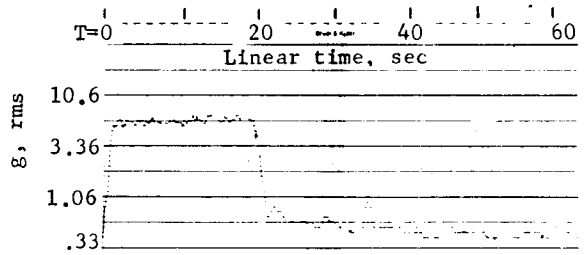
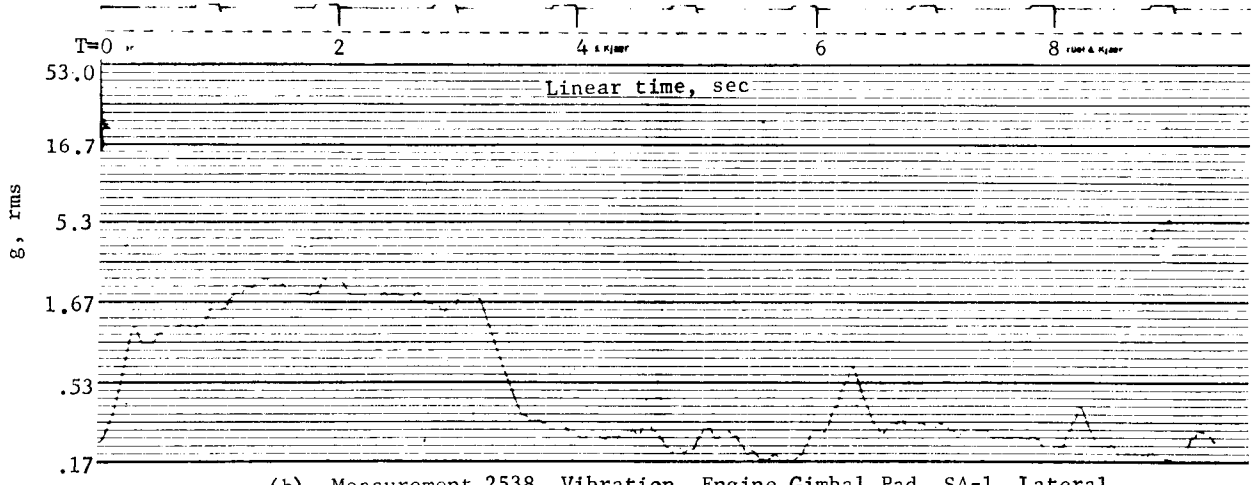


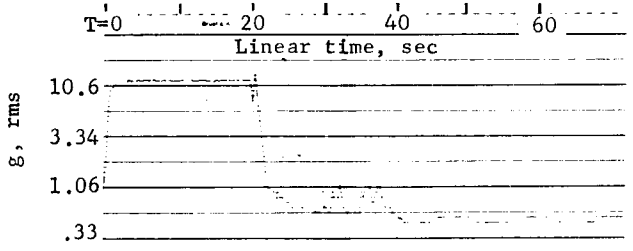
Figure 257. Measurement 2632, Acoustic, Internal Near Airframe, Compactment 1C, Sta 1224, Quad III, Vehicle 4 (FAL)



(a) Measurement 2537, Vibration Engine Gimbal Pad, SA-1, Longitudinal, Compartment 1C, Sta 1265, BL-0, Vehicle 4 SCF



(b) Measurement 2538, Vibration, Engine Gimbal Pad, SA-1, Lateral, Compartment 1C, Sta 1265, BL-0, Vehicle 8 (FAL)



(c) Measurement 2577, Vibration, Engine Gimbal Pad, SA-2, Longitudinal, Compartment 1C, Sta 1265, BL-0, Vehicle 4 SCF

Figure 258.

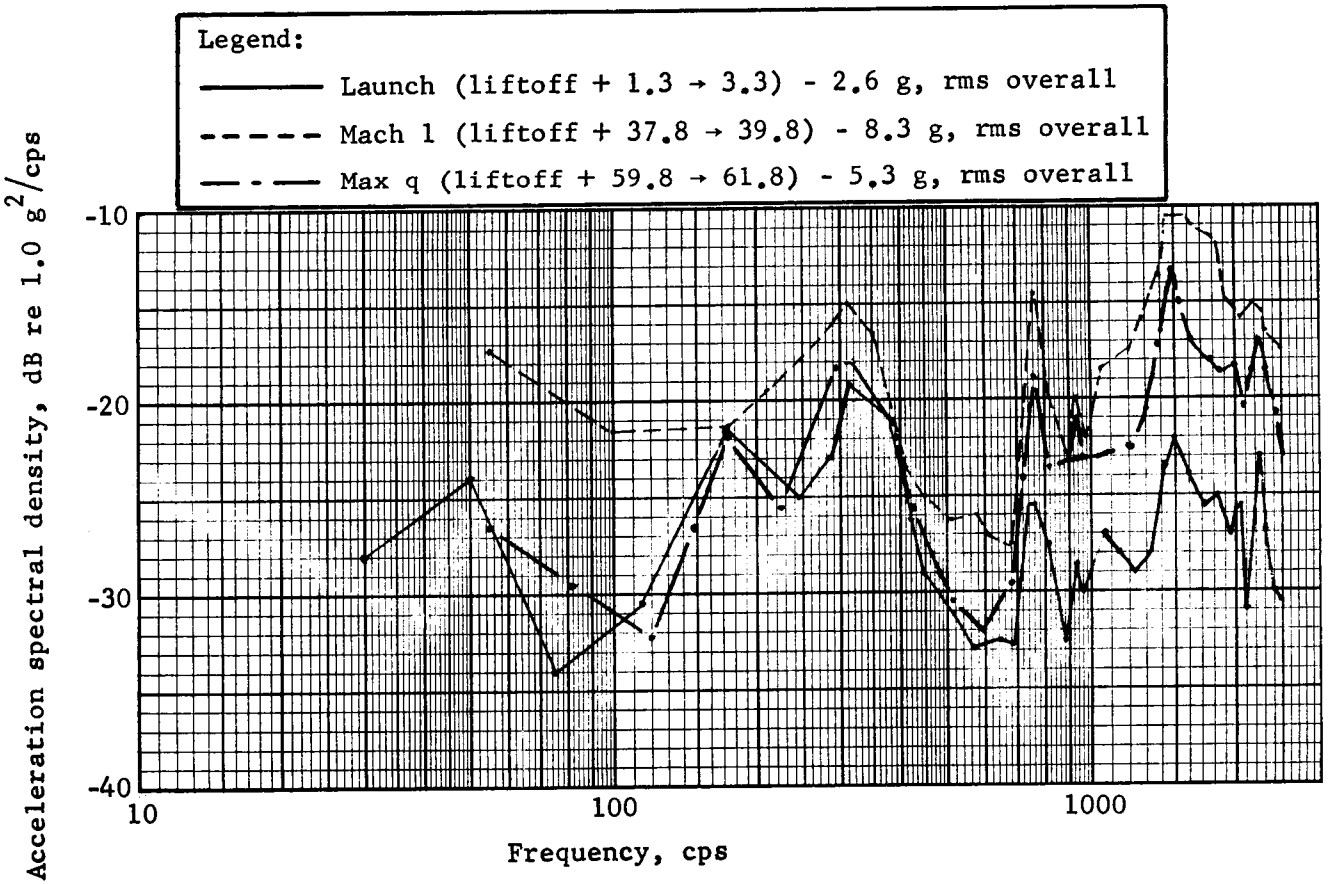


Figure 259. Measurement 2551 (T), Longitudinal, 3A Structure, Vehicle 7 Flight

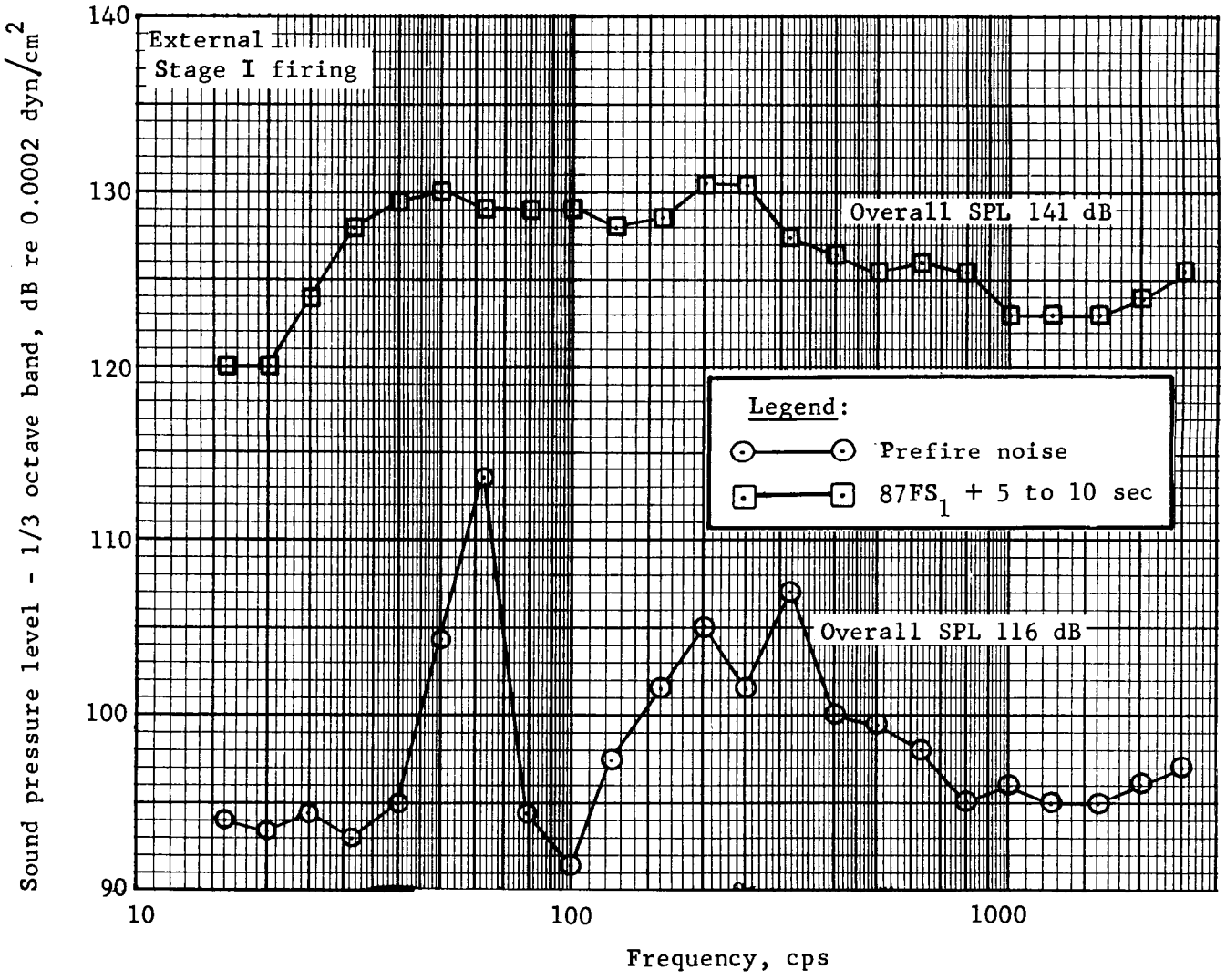


Figure 260. Measurement 2574, Acoustic, Airframe Flusn Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 4 SCF

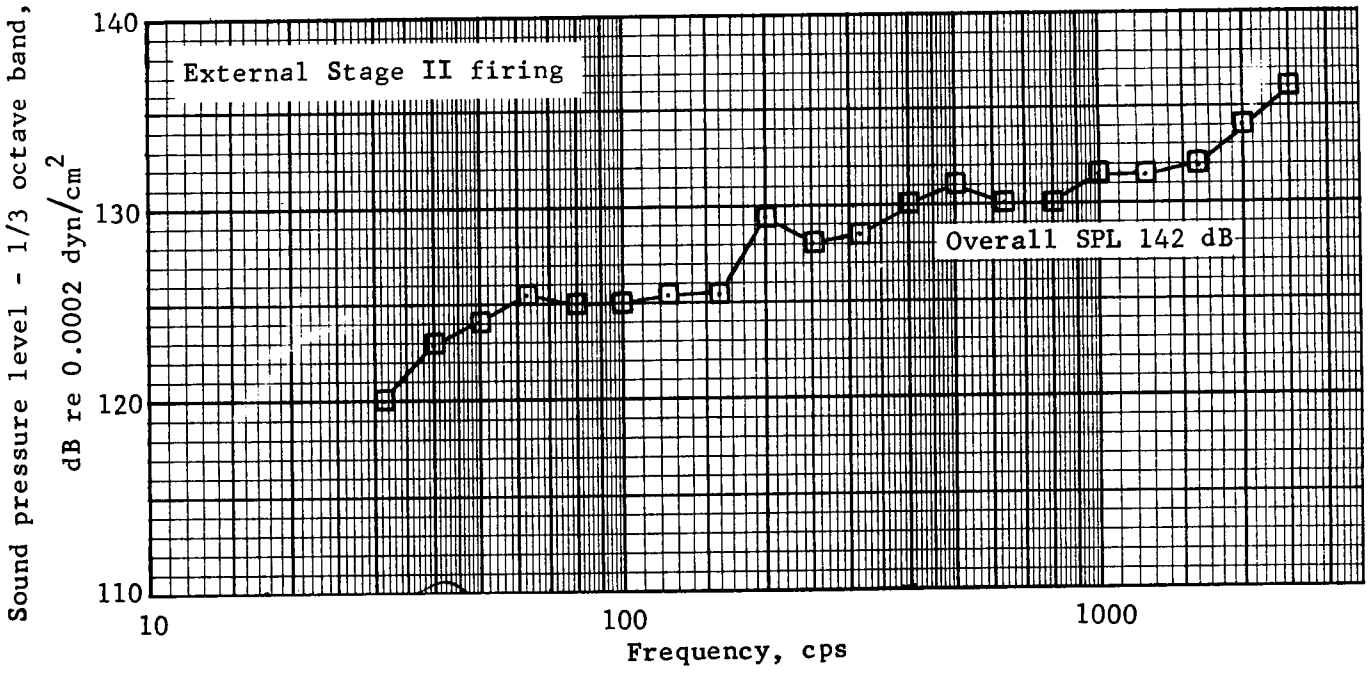


Figure 261. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 4 SCF

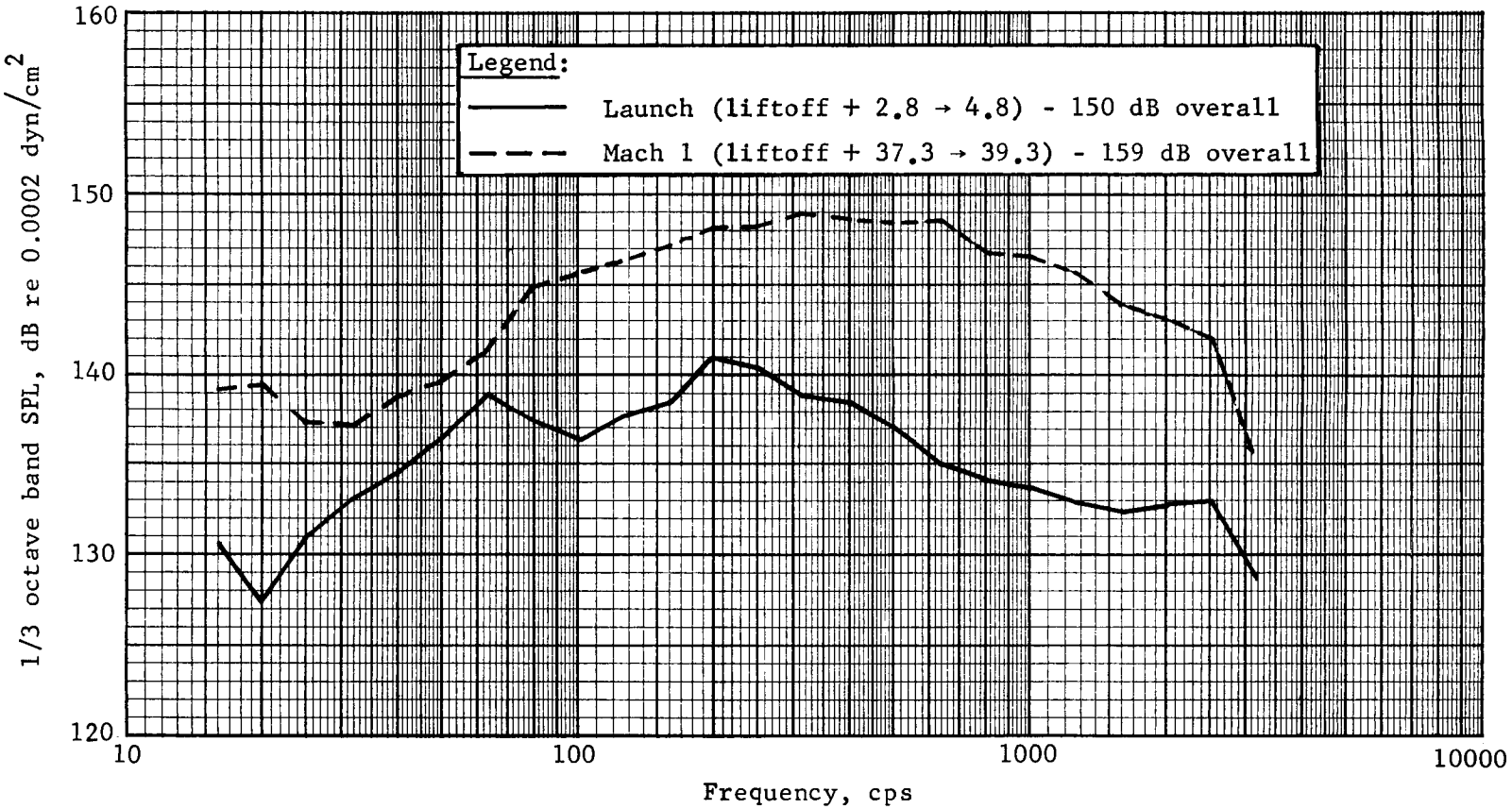


Figure 262. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 4 Flight

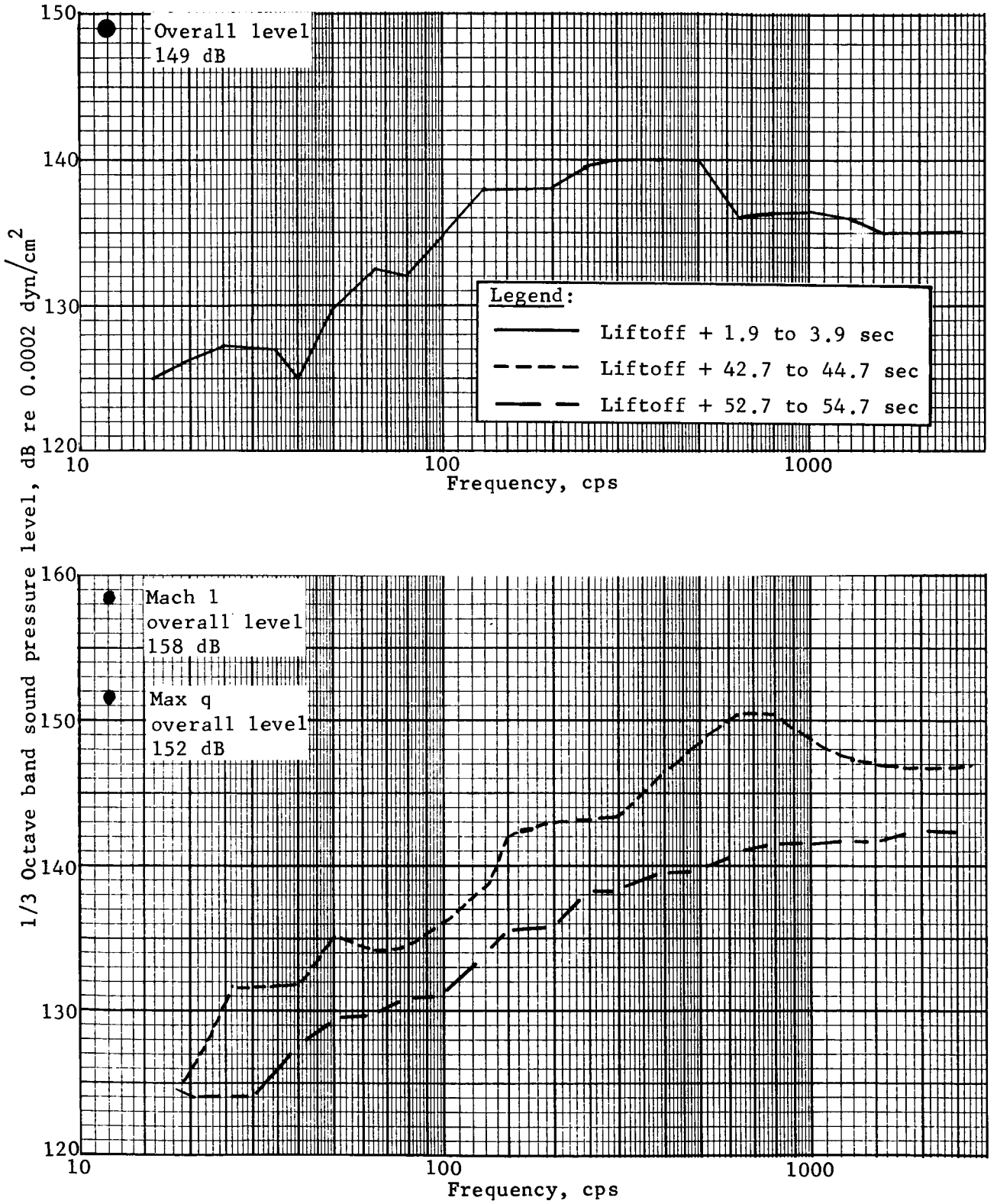


Figure 263. Measurement 2574, Acoustic, Airframe Flush Mounted, Compartment 3A, 23° off Target, Sta 123, Quad I, Vehicle 8 Flight

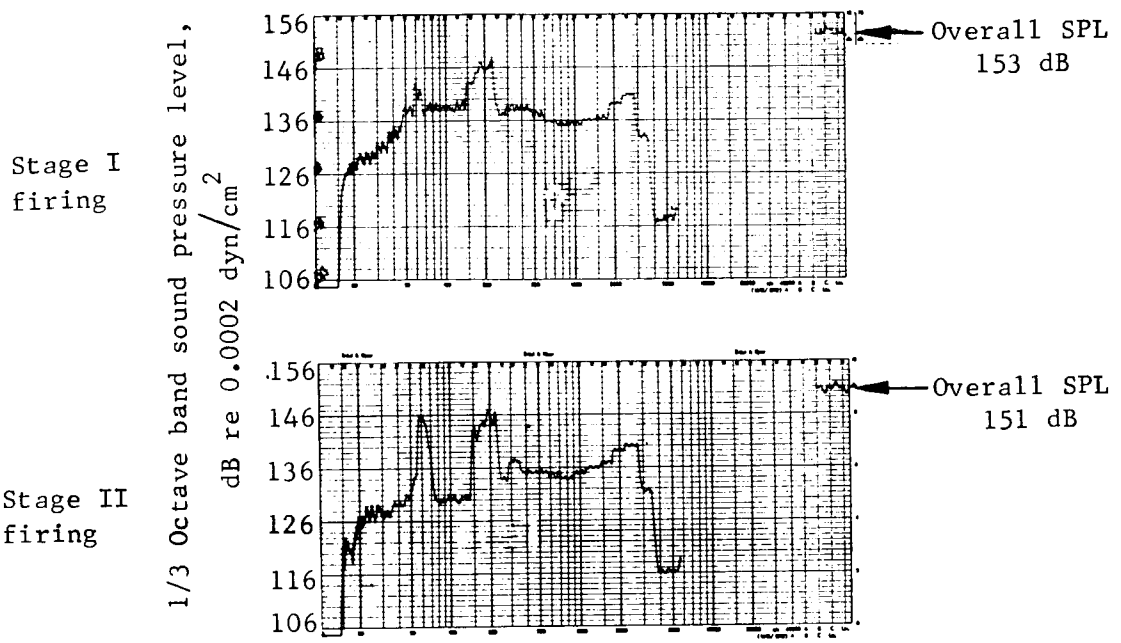


Figure 264. Measurement 2628, Acoustic, Airframe Flush Mounted, Compartment 3A, 120° off Target, Sta 123, Quad III, Vehicle 4 SCF

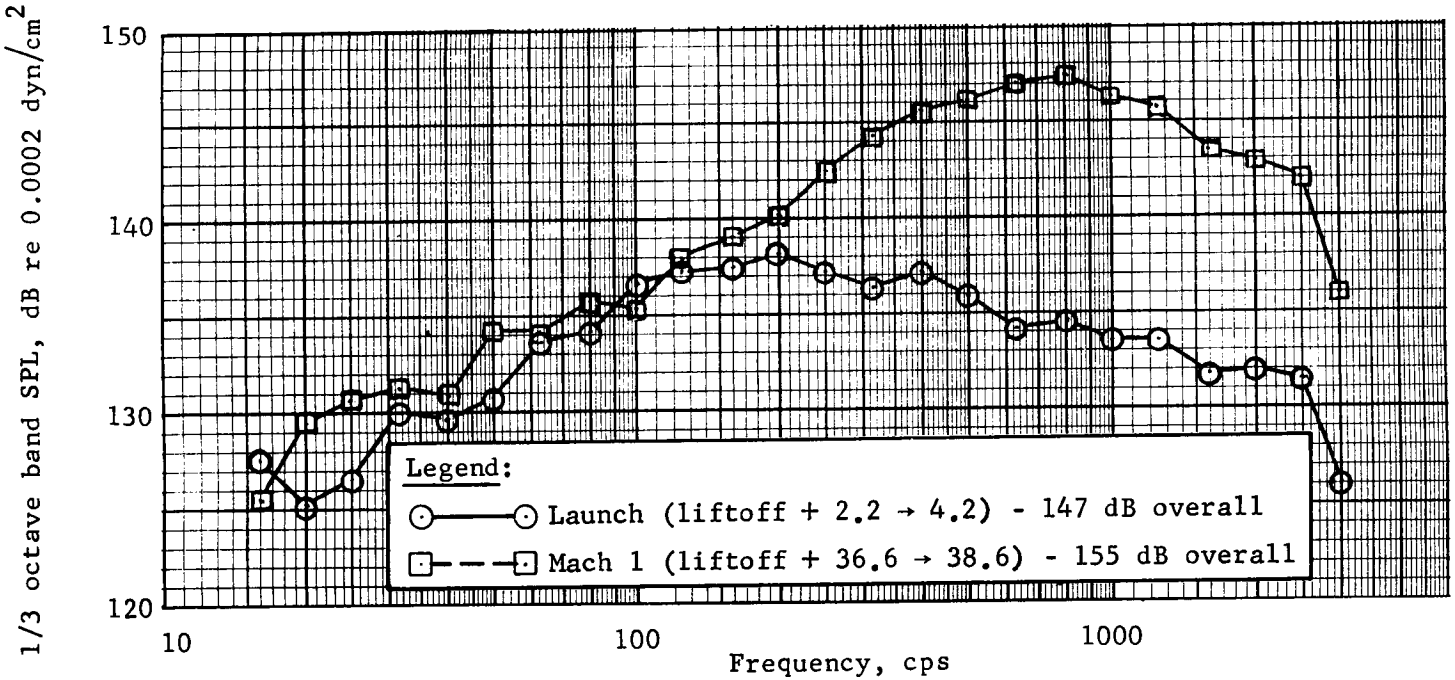


Figure 265. Measurement 2628, Acoustic, Airframe Flush Mounted, Compartment 3A, 120° off Target, Sta 123, Quad III, Vehicle 4 Flight

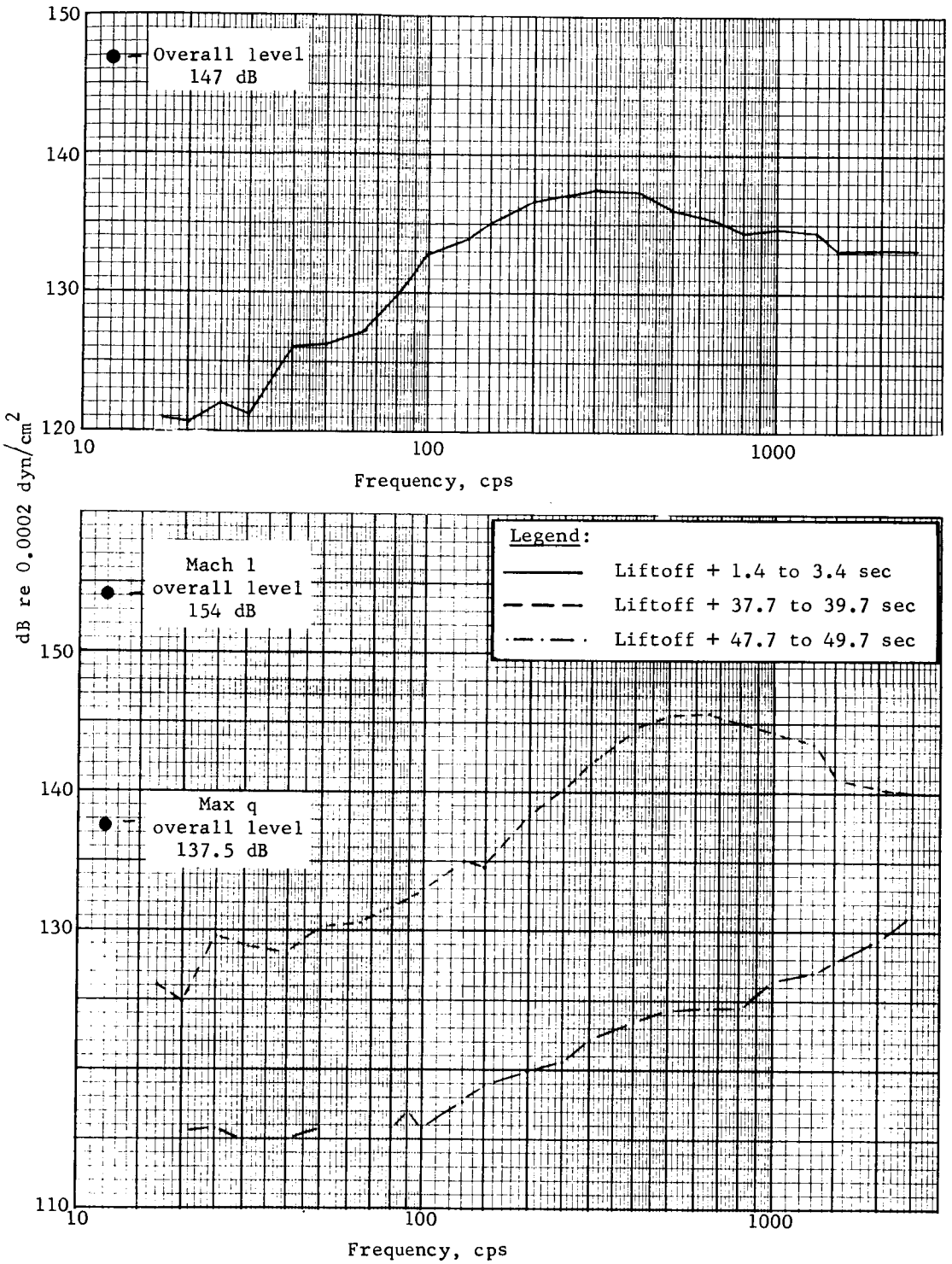


Figure 266. Measurement 2628, Acoustic, Airframe Flush Mounted, Compartment 3A, 120° off Target, Sta 123, Quad III, Vehicle 8 Flight

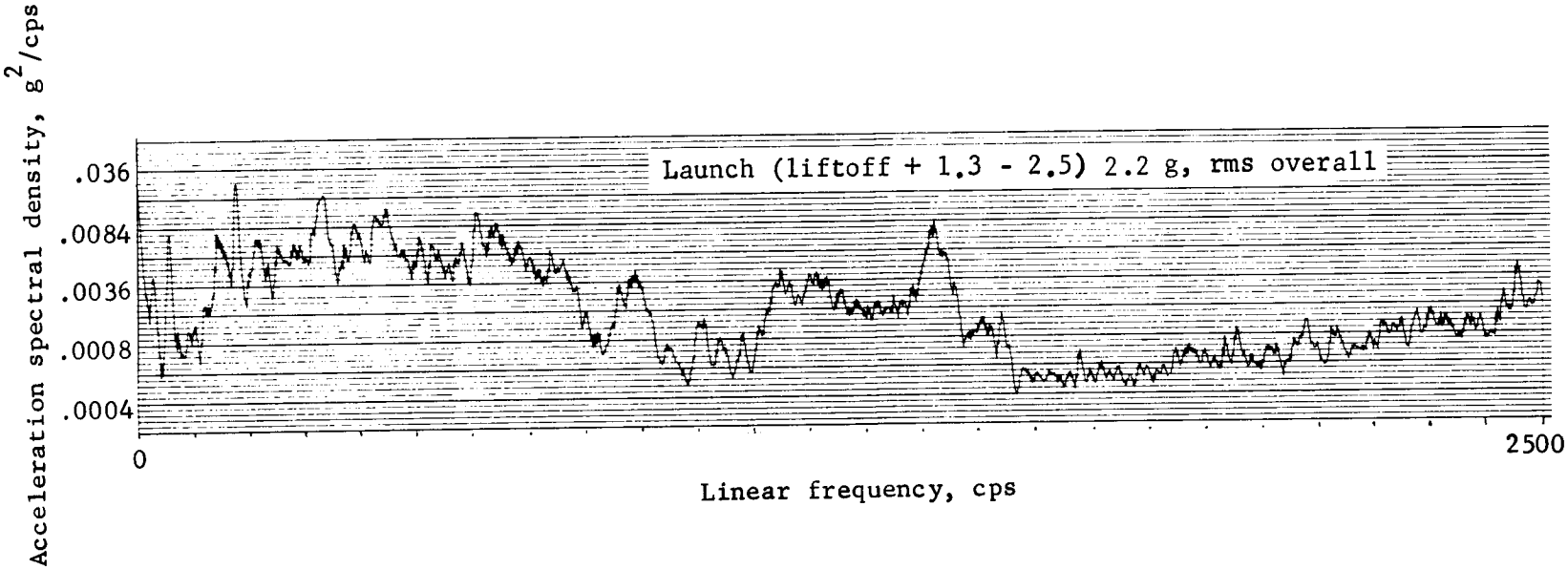


Figure 267. Measurement 2635, Vibration, Structure at Mounting Point of Pitch ACS Nozzle, Tangential, Compartment 3A, Sta 124, Quad I, BL-0, Vehicle 7 Flight

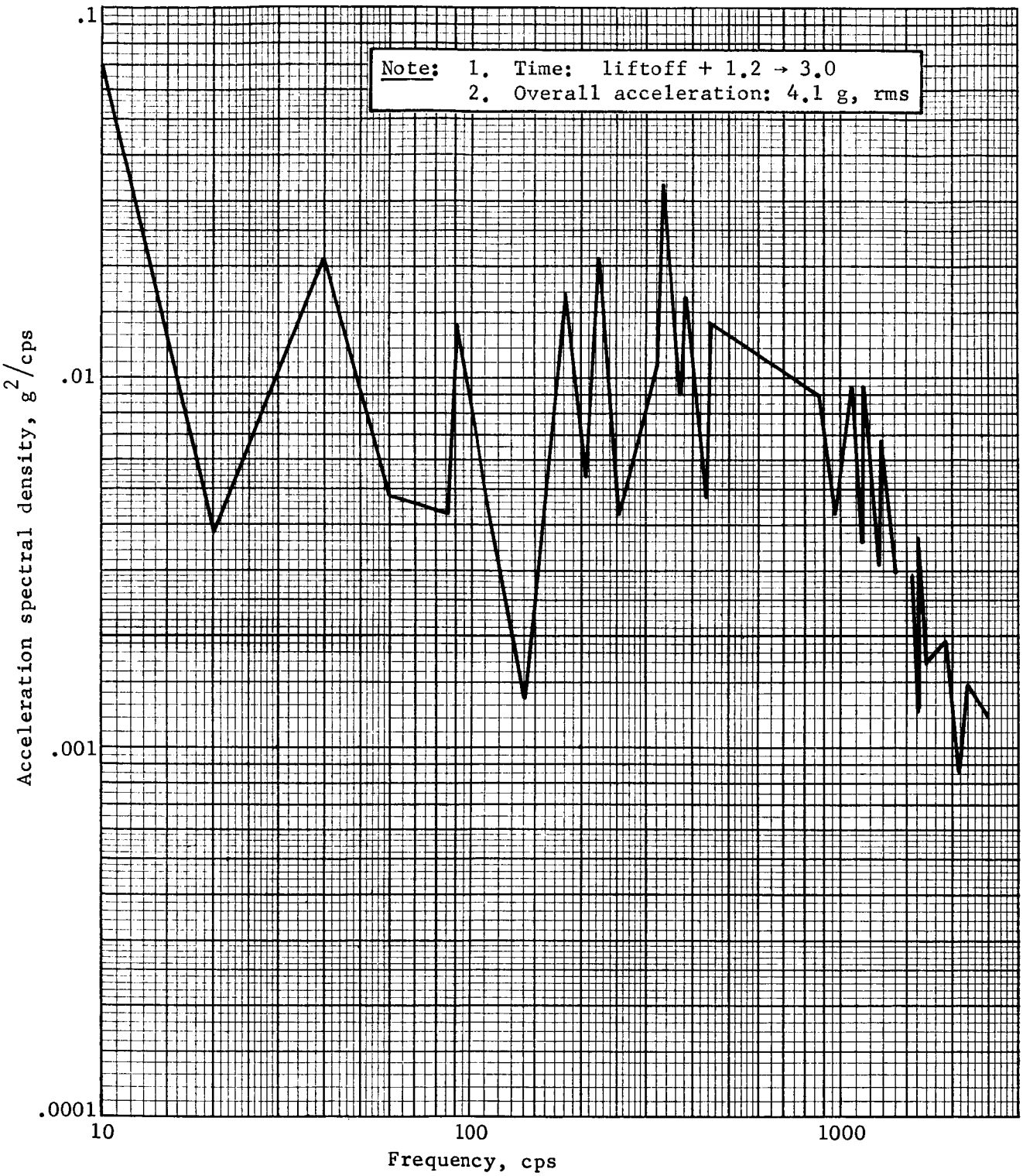


Figure 268. Measurement 2553B, 3A Guidance Truss Near MGC and Relays, Longitudinal, Vehicle 8 Flight (FAL)

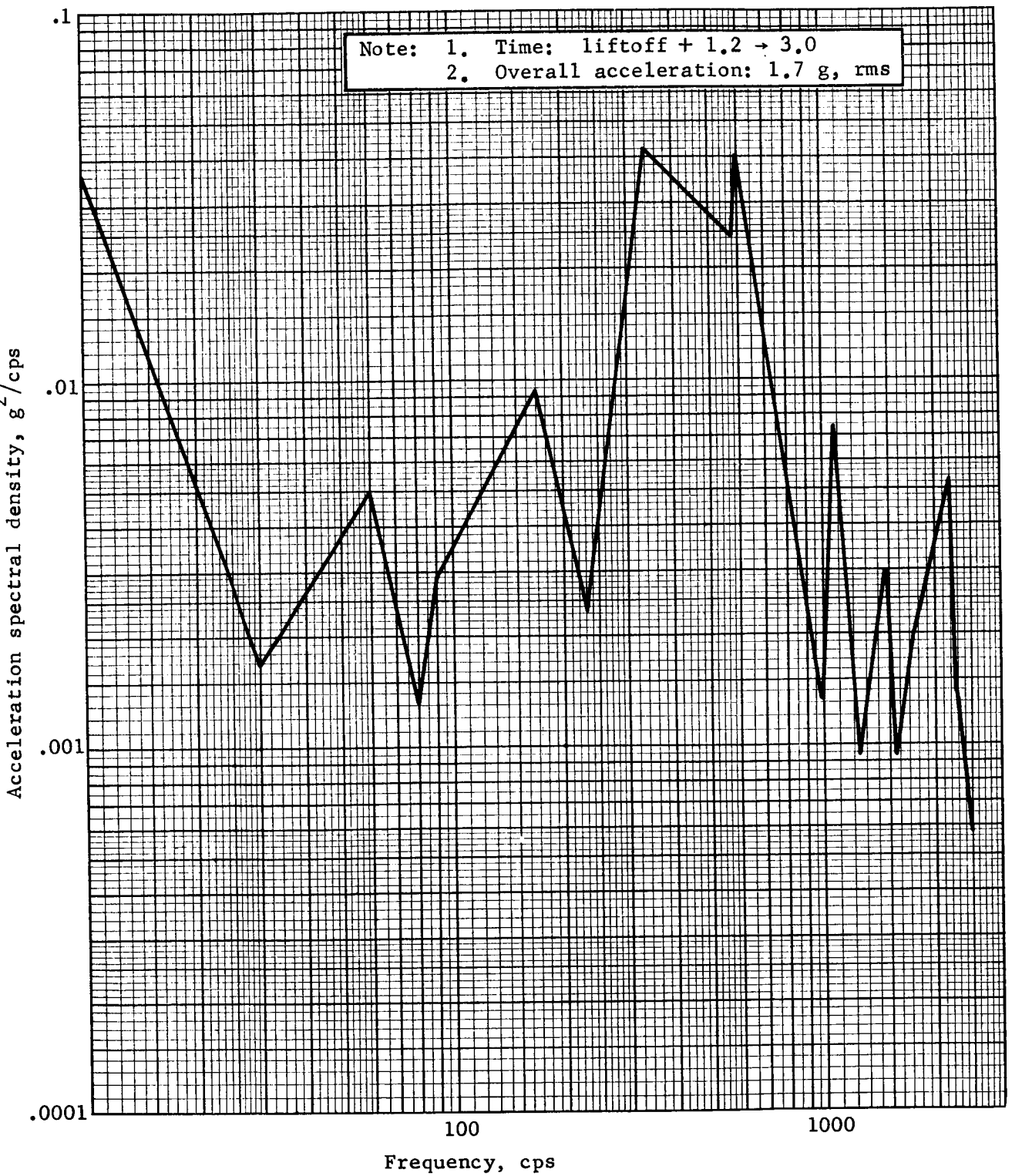


Figure 269. Measurement 2554, 3A Guidance Truss between MGC and Relays, Lateral, Vehicle 8 Flight (FAL)

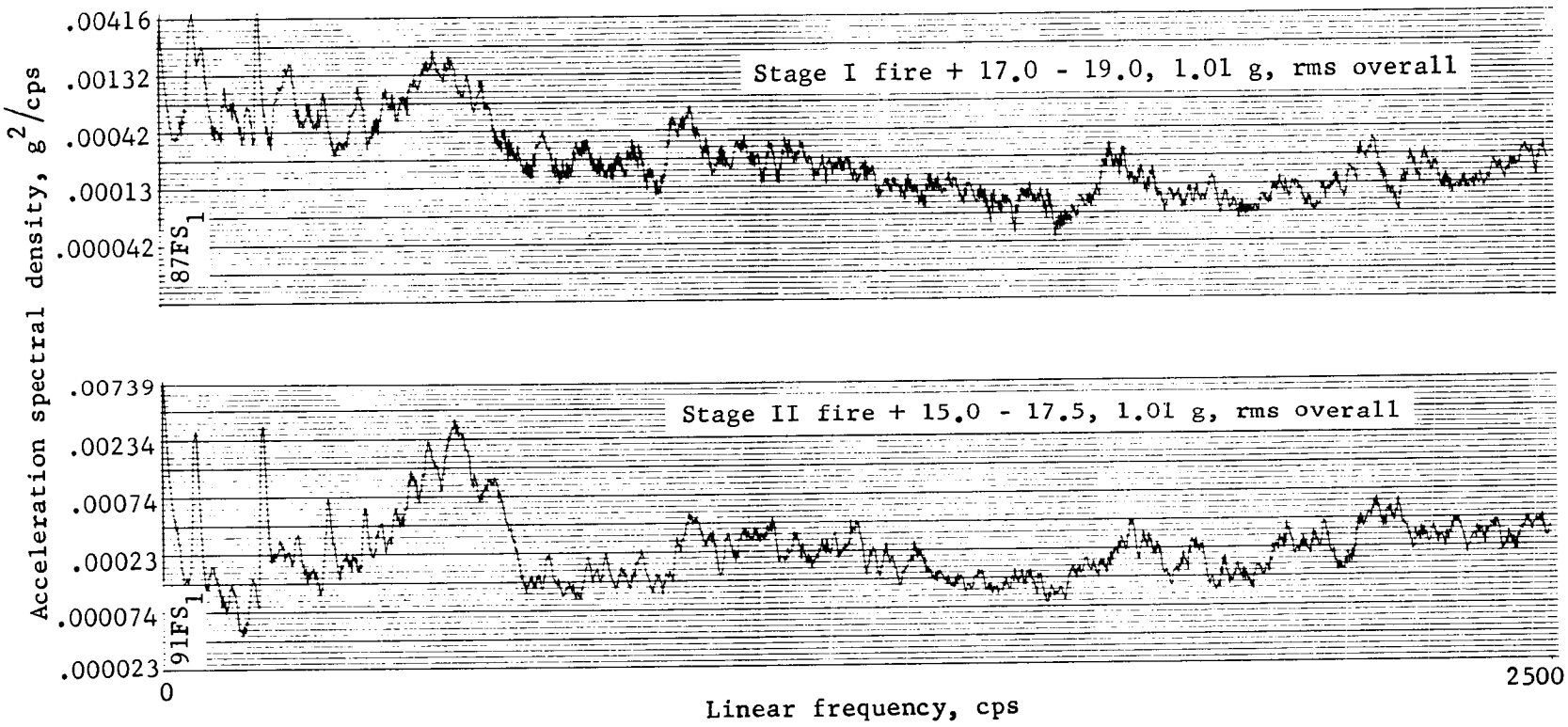


Figure 270. Measurement 2555, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Longitudinal, Compartment 3A, Sta 114, Quad I, Vehicle 4 SCF

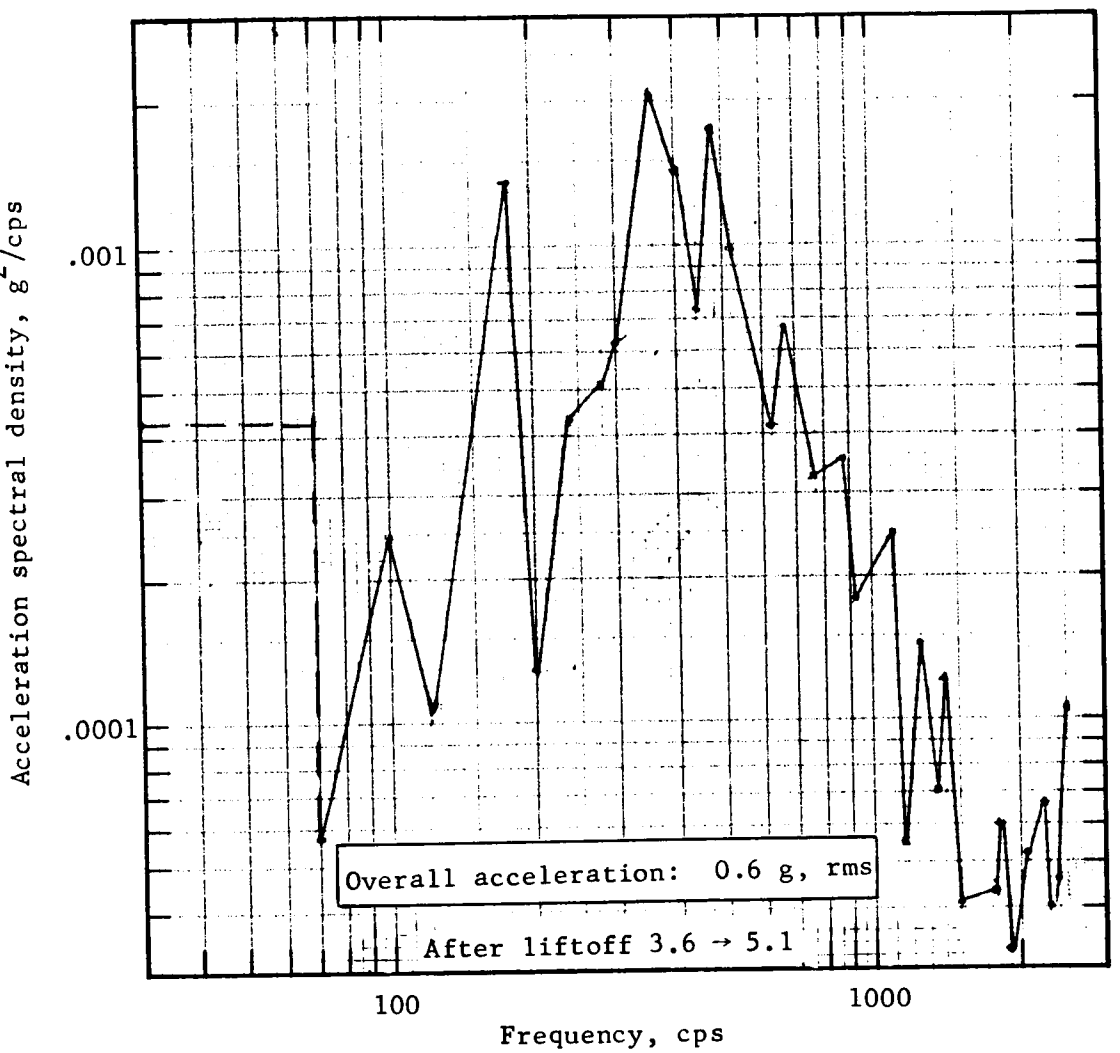


Figure 271. Measurement 2555, 3A Guidance Truss between IMU and DCU, Longitudinal Axis, Vehicle 4 Flight

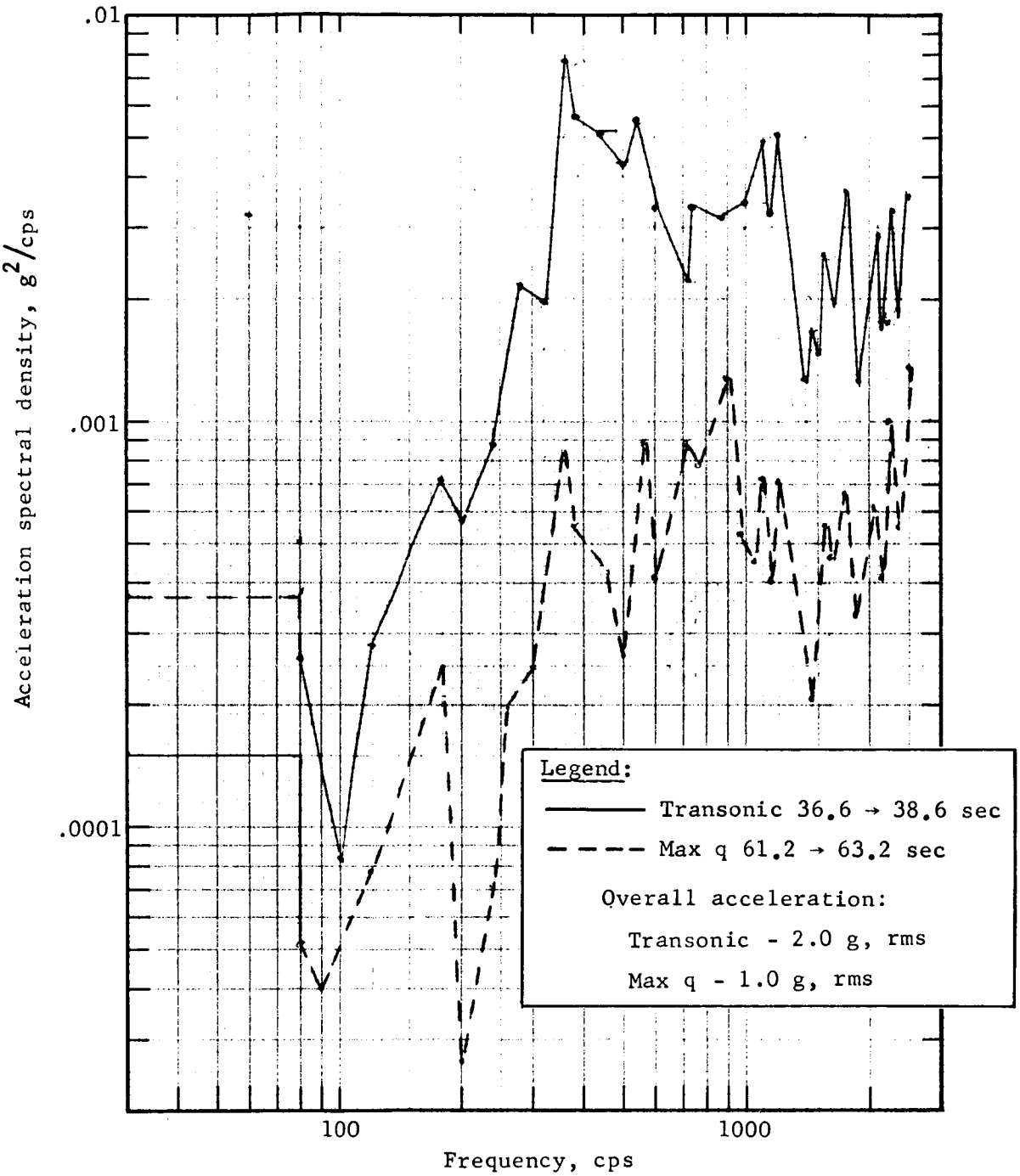


Figure 272. Measurement 2555, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Longitudinal, Compartment 3A, Sta 114, Quad I, Vehicle 4 Flight

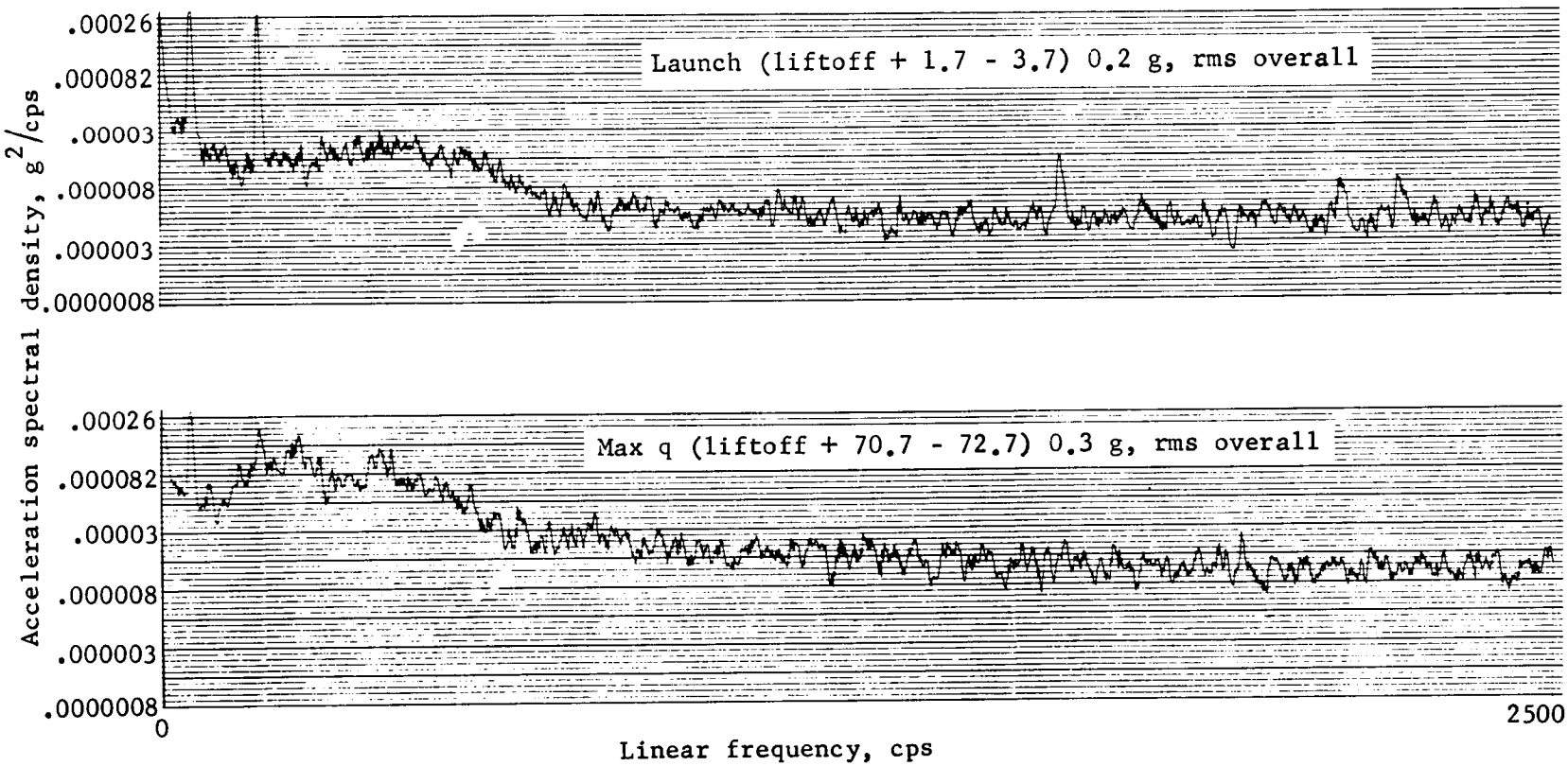


Figure 273. Measurement 2555, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Longitudinal, Compartment 3A, Sta 114, Quad I, Vehicle 8

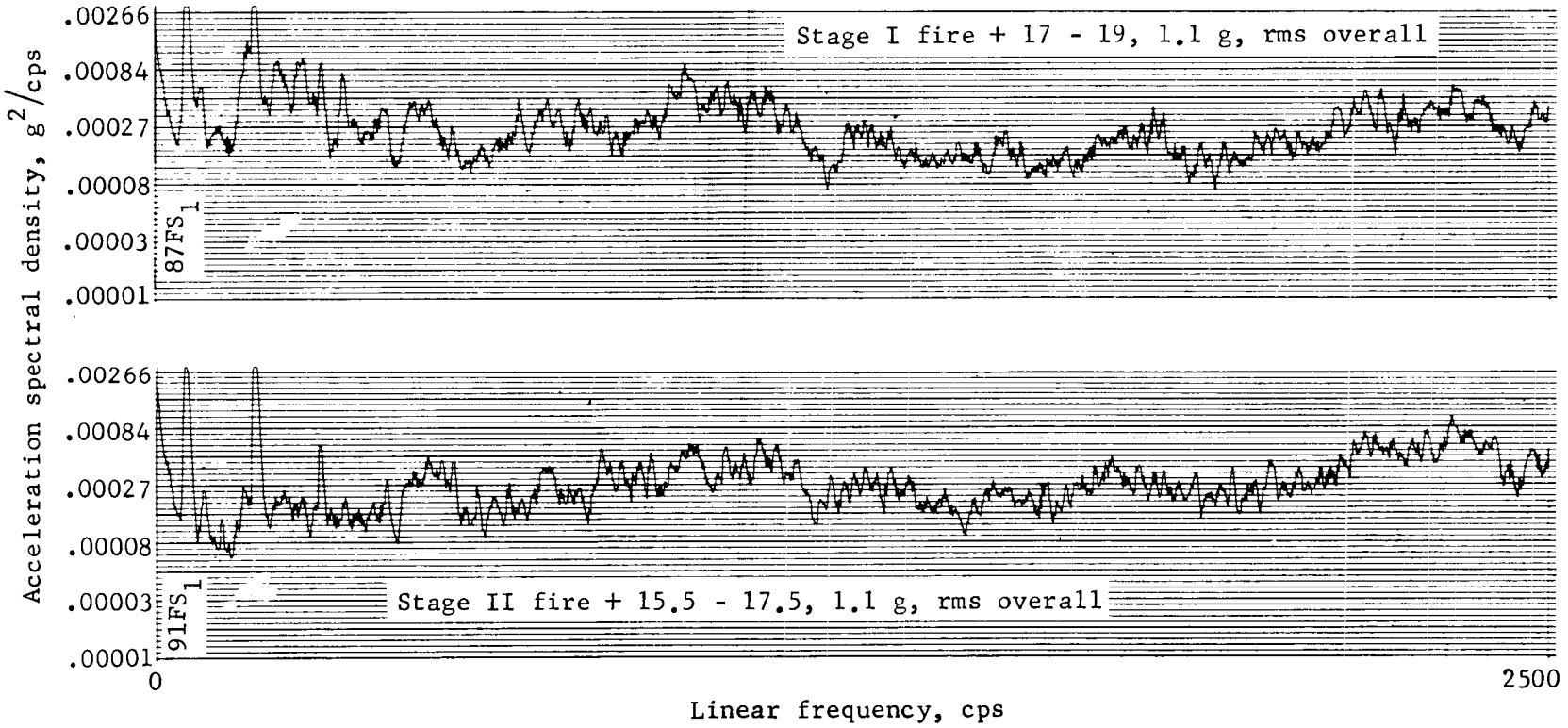


Figure 274. Measurement 2556, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Vertical, Compartment 3A, Sta 114, Quad I, Vehicle 4 SCF

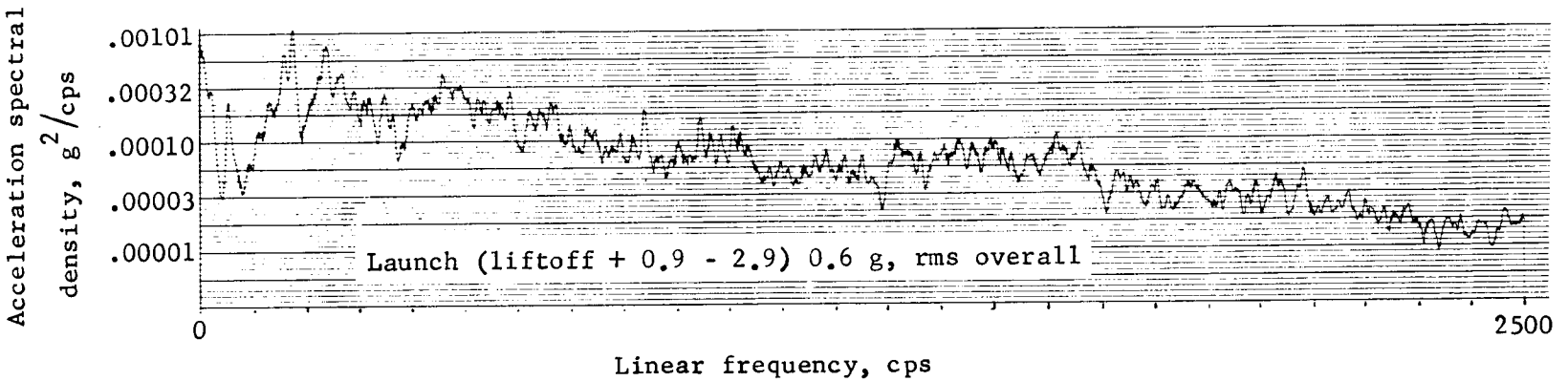


Figure 275. Measurement 2556, Vibration, Guidance Truss between IMU and MGC, on Common Mounting, Vertical, Compartment 3A, Sta 114, Quad I, Vehicle 4

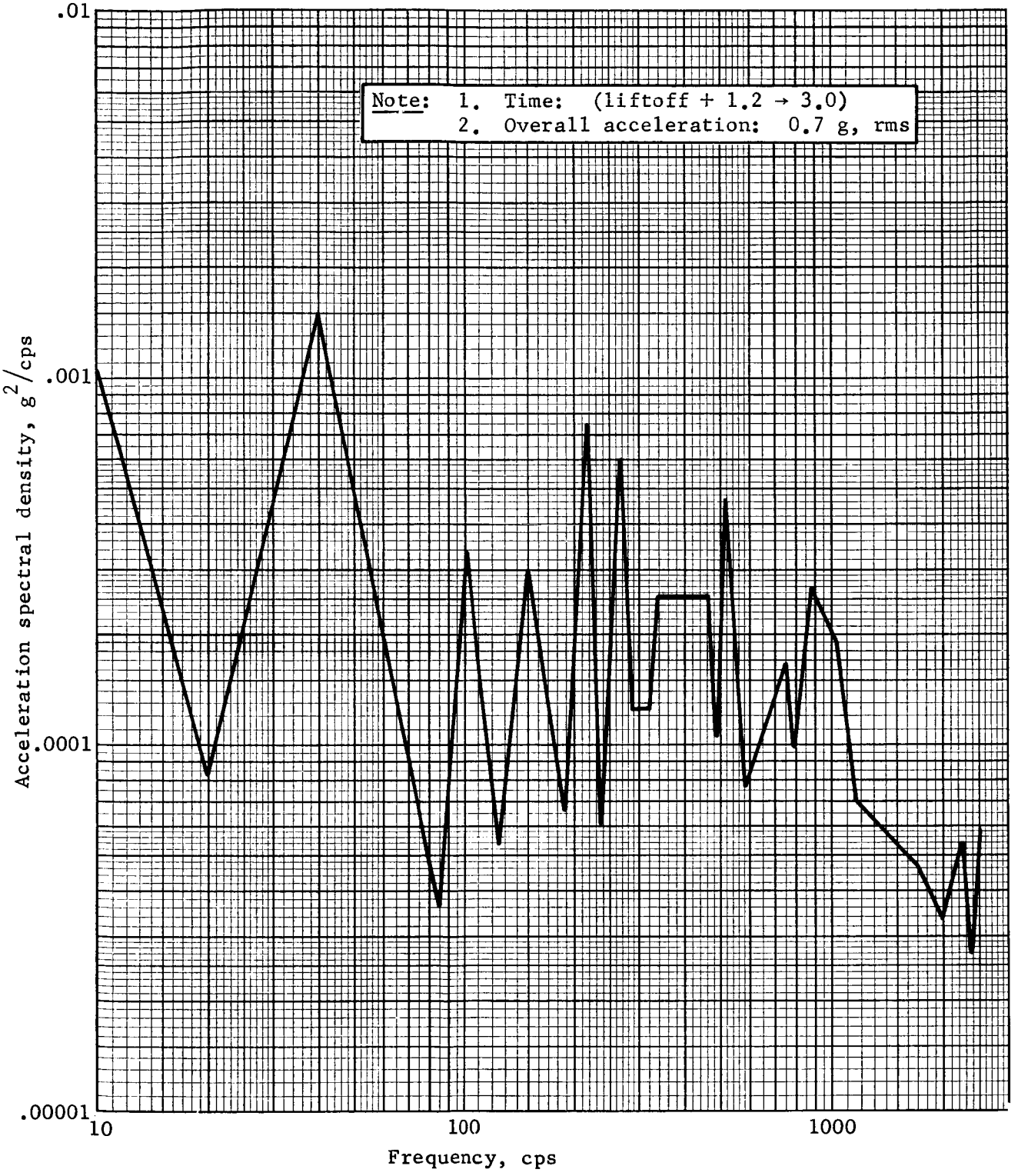


Figure 276. Measurement 2556B, 3A Guidance Truss between IMU and DCV Common Mounting, Vertical, Vehicle 8 Flight (FAL)

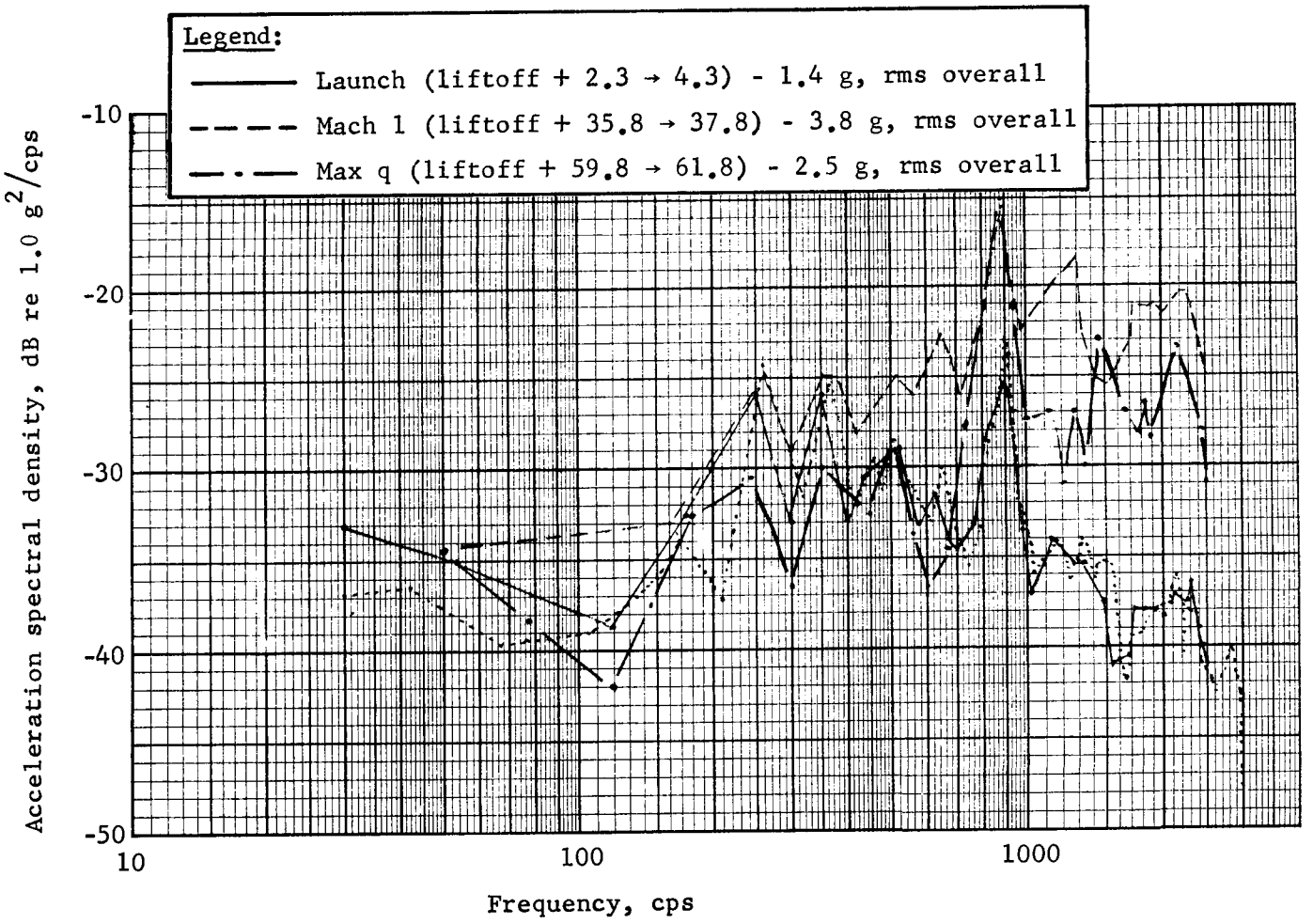


Figure 277. Measurement 2557 (T), 3A Equipment Truss, Lateral, Vehicle 7 Flight

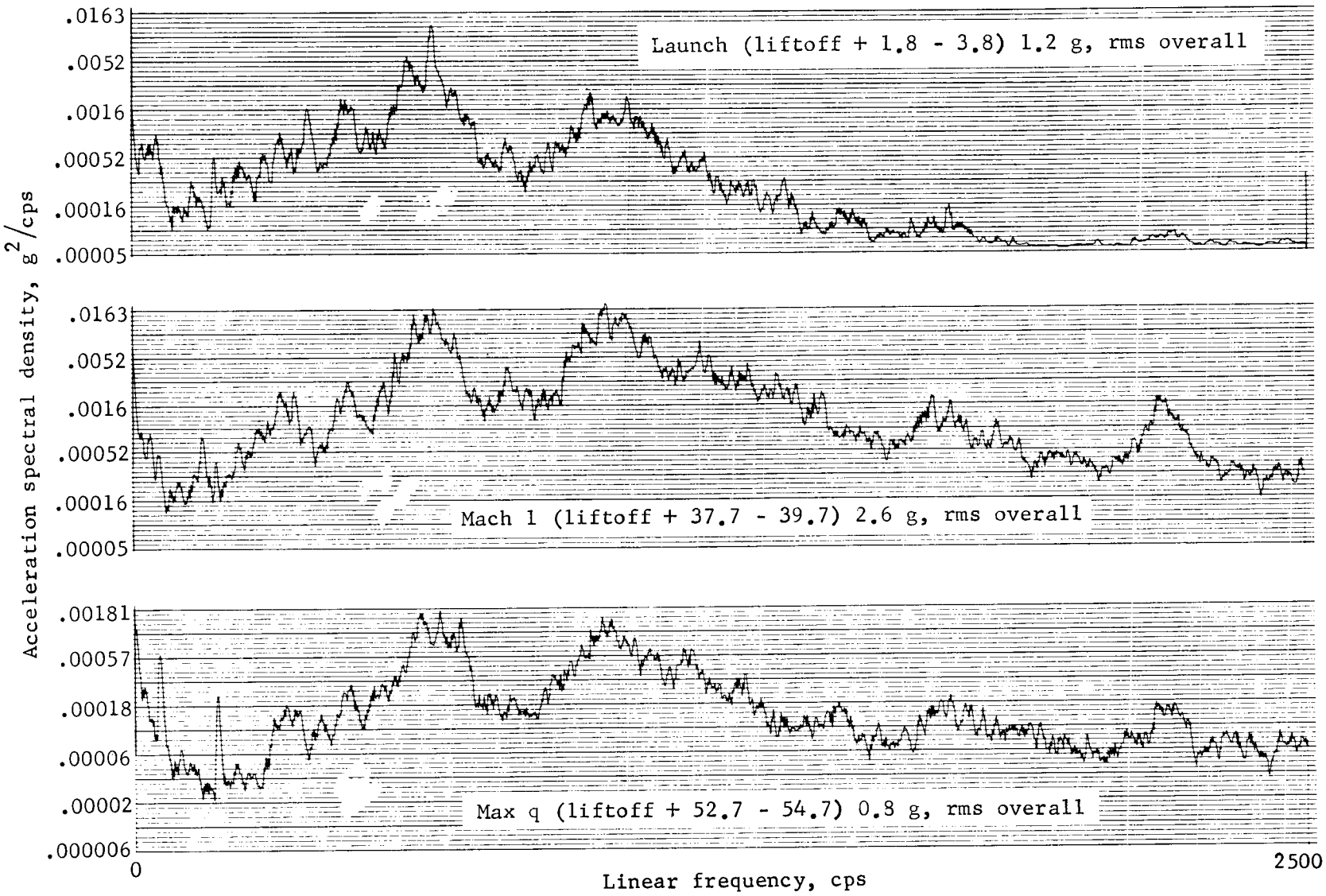


Figure 278. Measurement 2558, Vibration, Equipment Truss at MDS Package Mounting, Longitudinal, Compartment 3A, Sta 84, Quad III, Vehicle 8

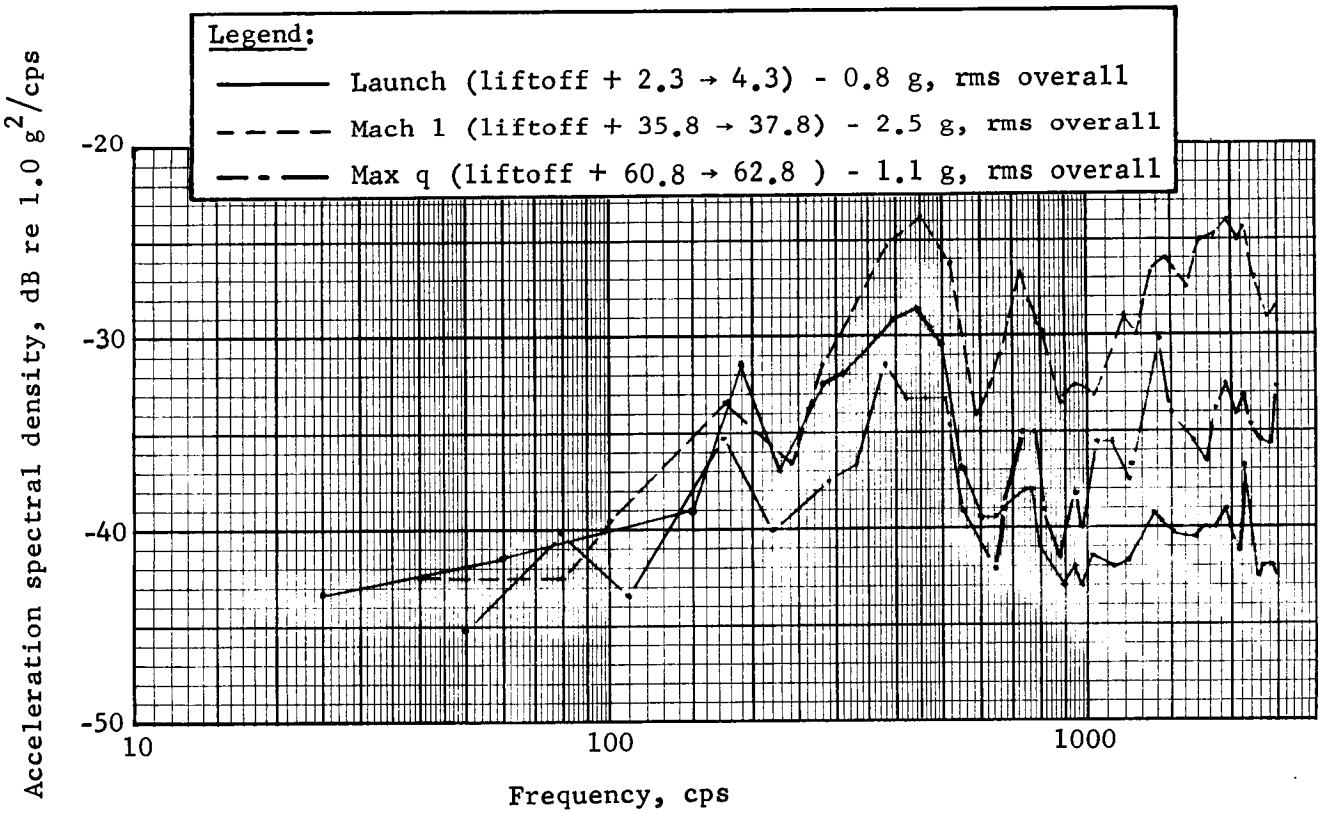


Figure 279. Measurement 2589 (T), 3A Guidance Truss, Lateral, Vehicle 7 Flight

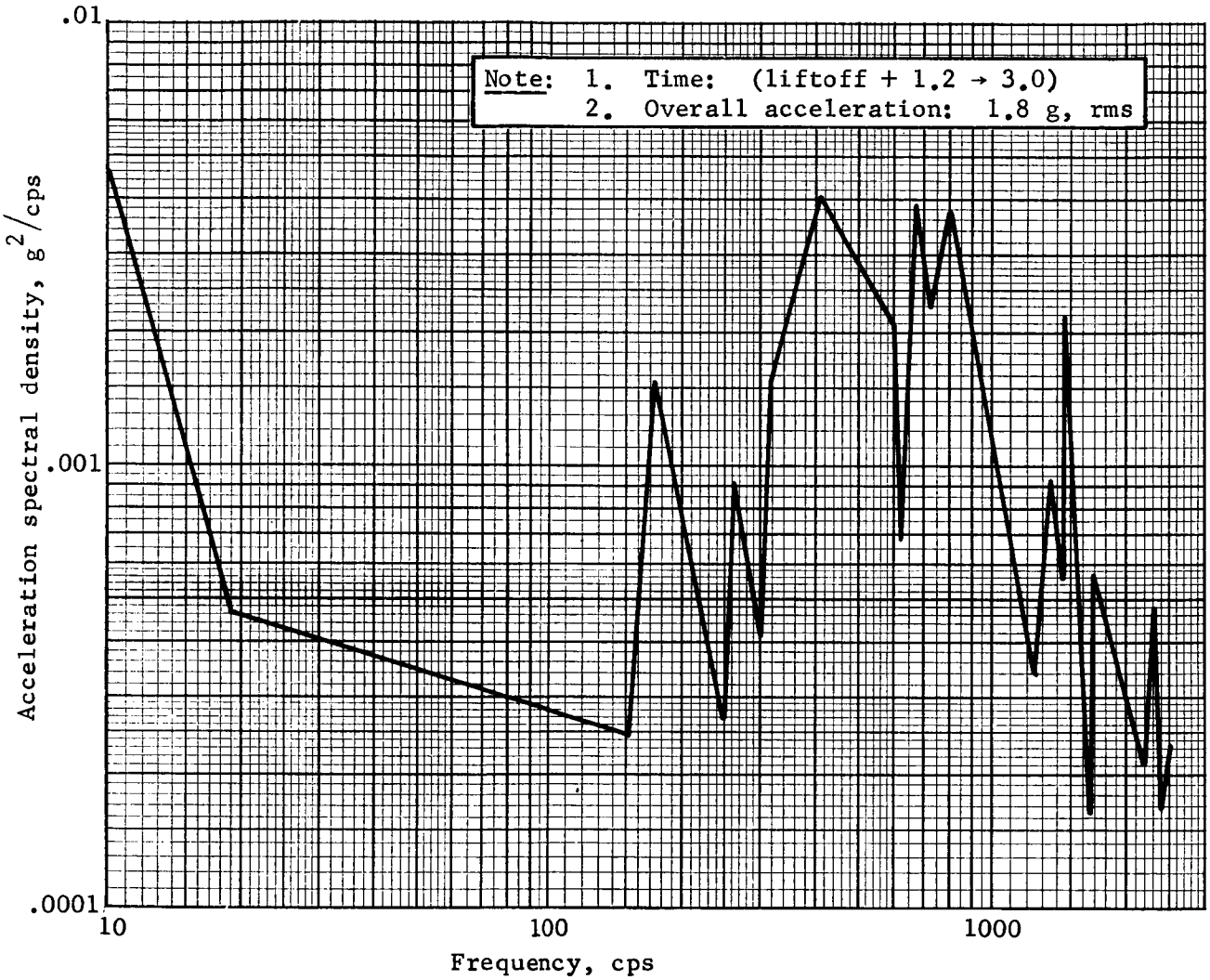


Figure 280. Measurement 2590, 3A Guidance Truss near PCM and IMU, Vertical, Vehicle 8 Flight (FAL)

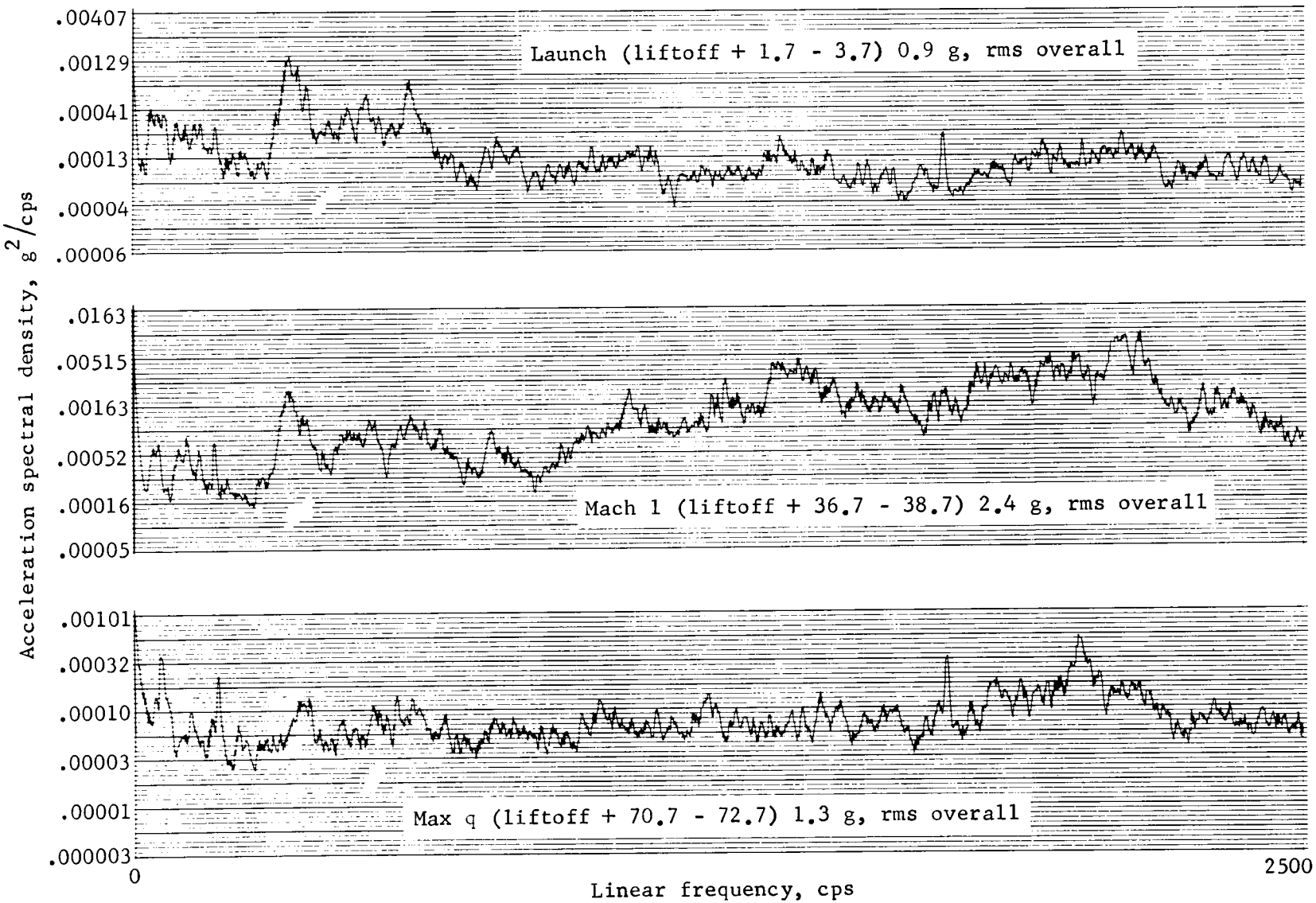


Figure 281. Measurement 2591, Vibration, Equipment Truss at PCM Transmitter Mounting, Longitudinal, Compartment 3A, Sta 97, Quad III, Vehicle 8

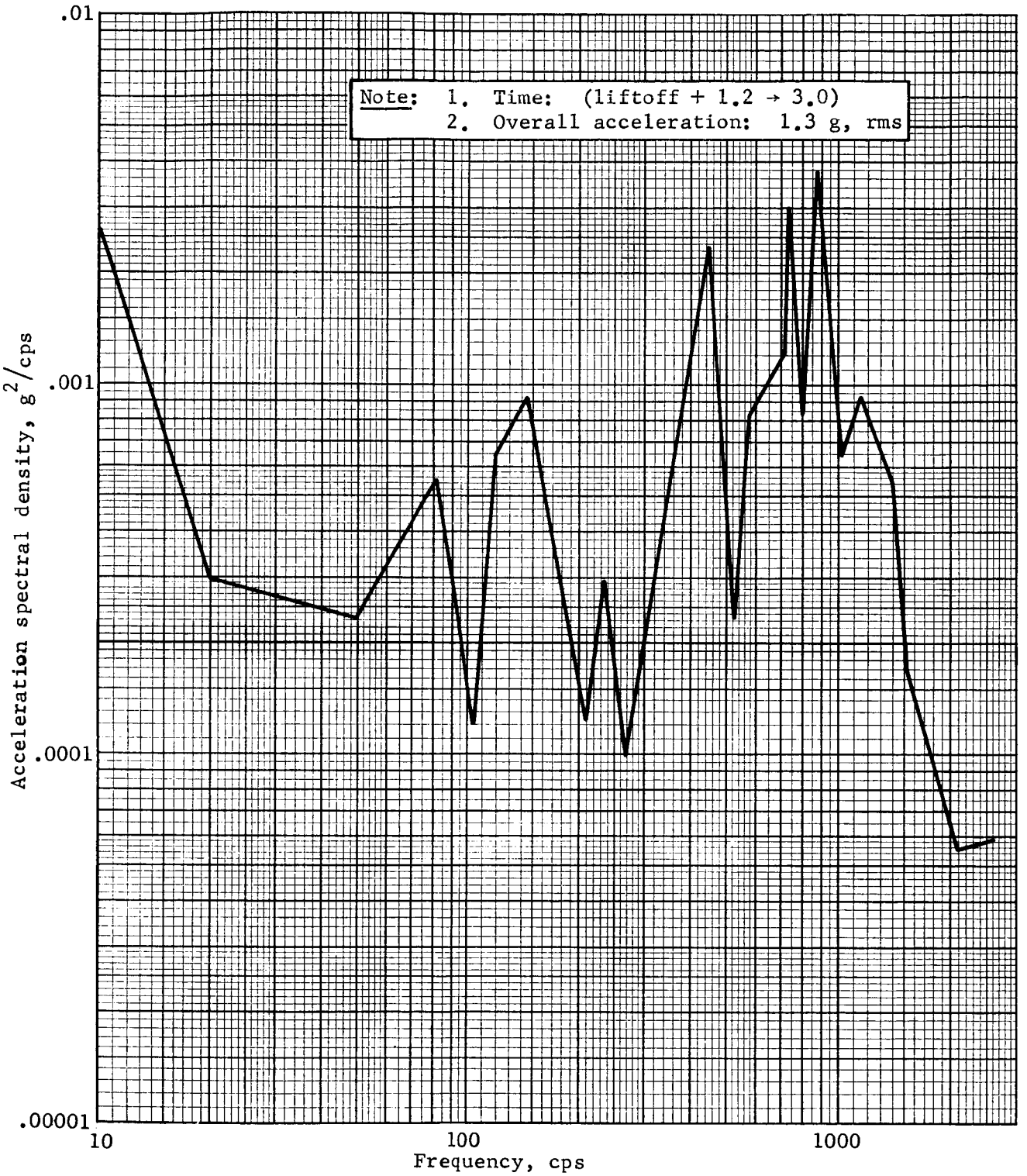


Figure 282. Measurement 2592, 3A Equipment Truss at PCM Transfer Mounting Point, Lateral, Vehicle 8 Flight (FAL)

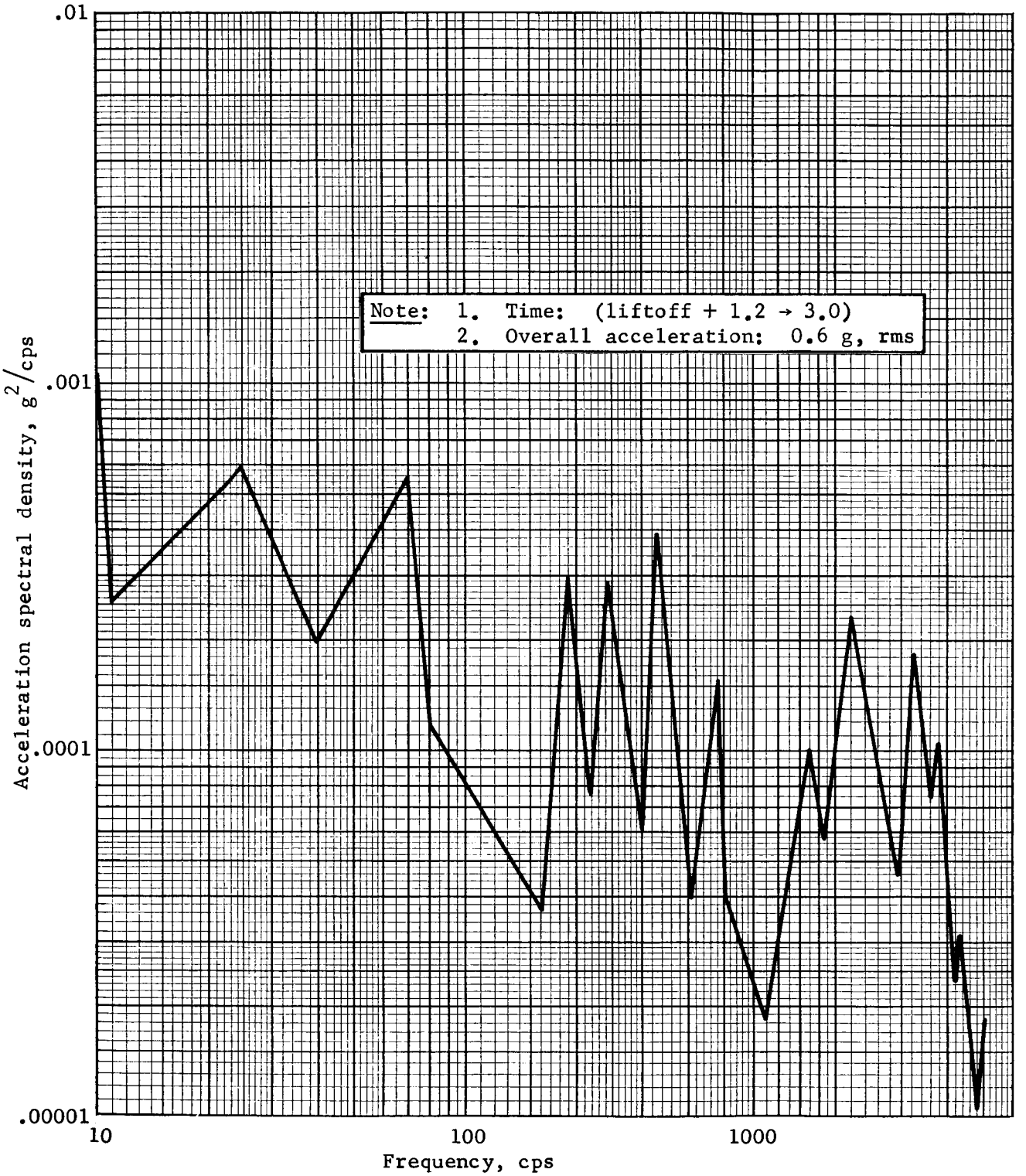


Figure 283. Measurement 2593, 3A Equipment Truss at PCM Transfer Mounting Point, Vertical, Vehicle 8 Flight (FAL)

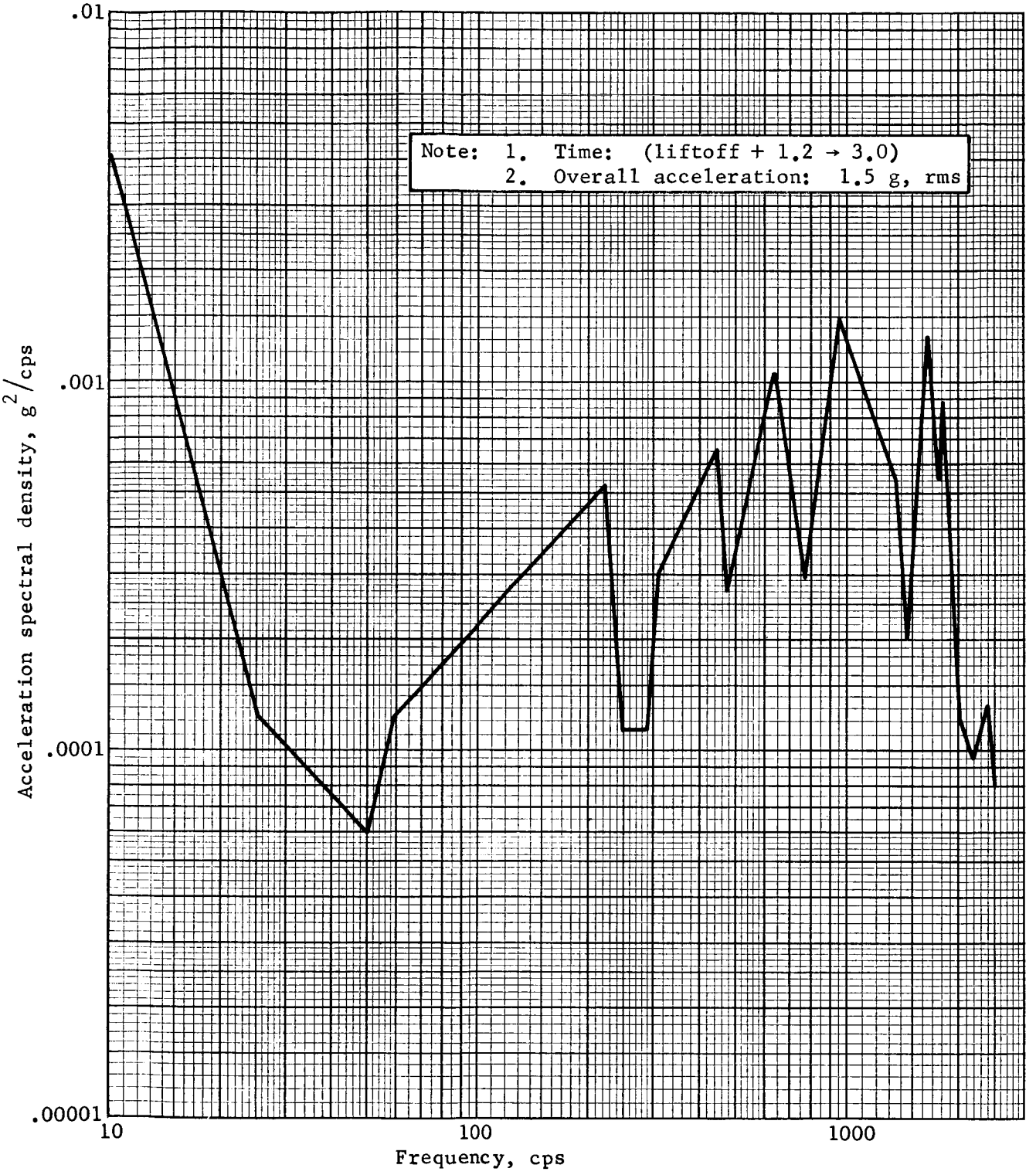


Figure 284. Measurement 2595, 3A Truss at Motor-Driven Switch Mounting, Lateral, Vehicle 8 Flight (FAL)

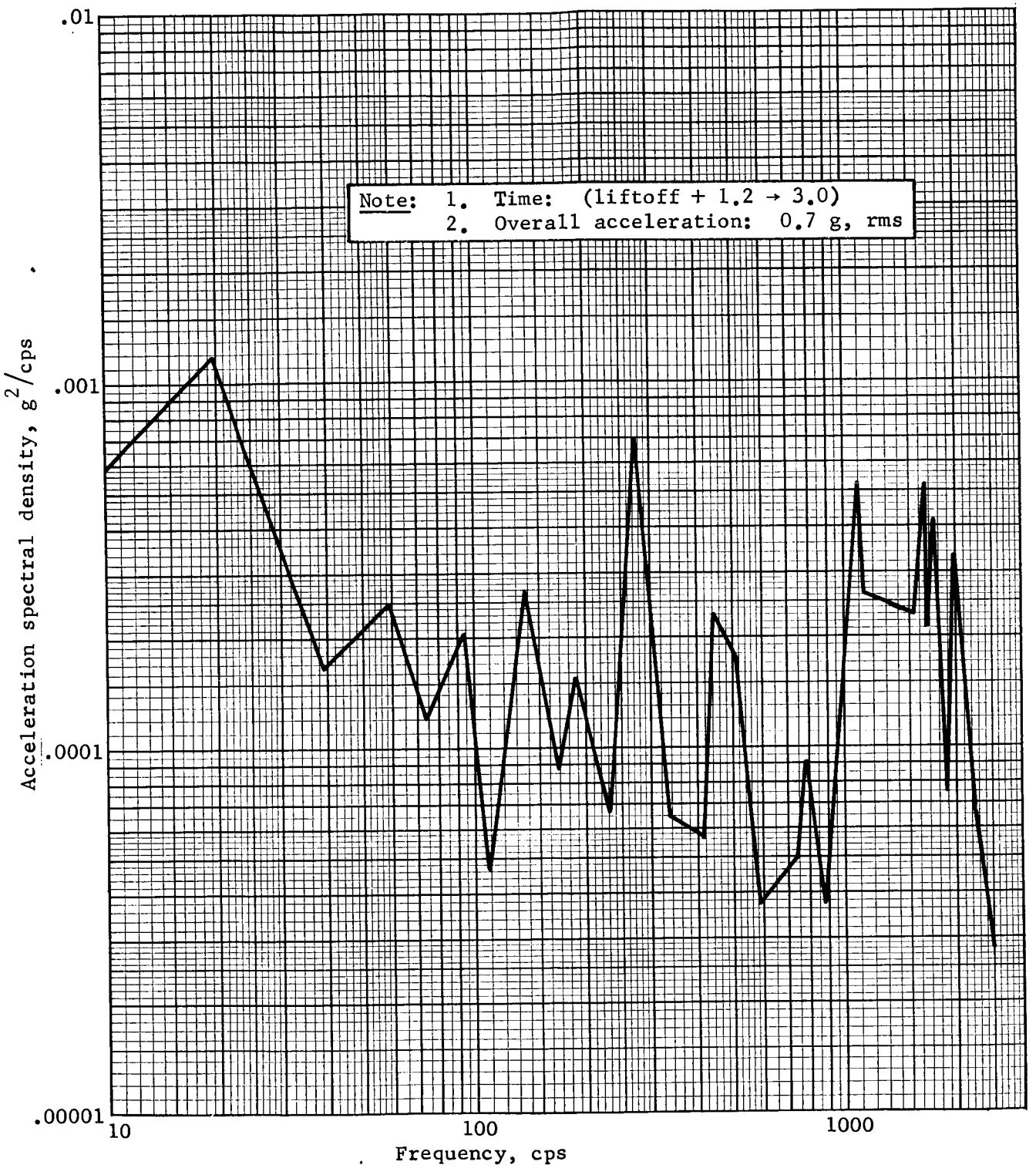


Figure 285. Measurement 2596, 3A Truss at Motor Switch Mounting Point, Vertical, Vehicle 8 Flight (FAL)

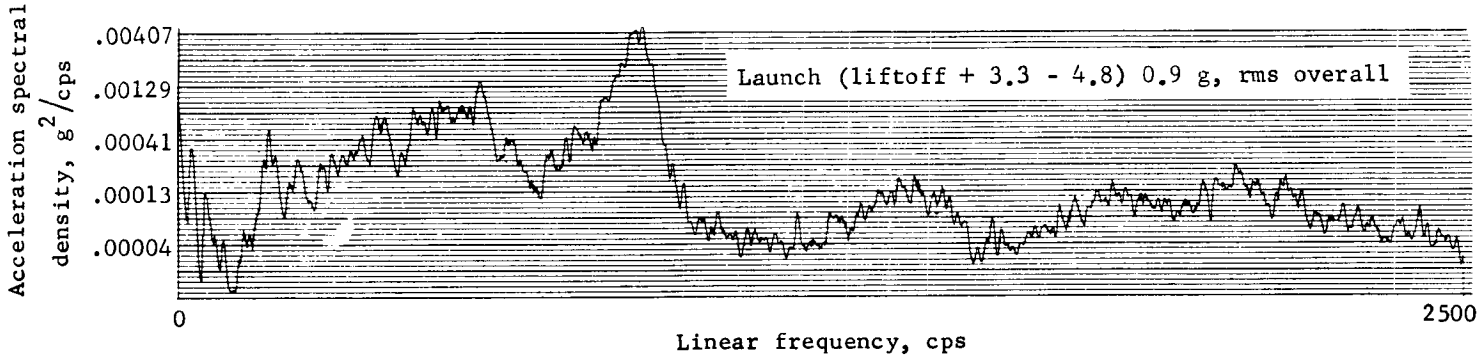


Figure 286. Measurement 2633, Vibration, Equipment Truss at Signal Conditioner Mounting Near Airframe Tie-in Point, Vertical, Compartment 3A, Sta 84, Quad III, Vehicle 7

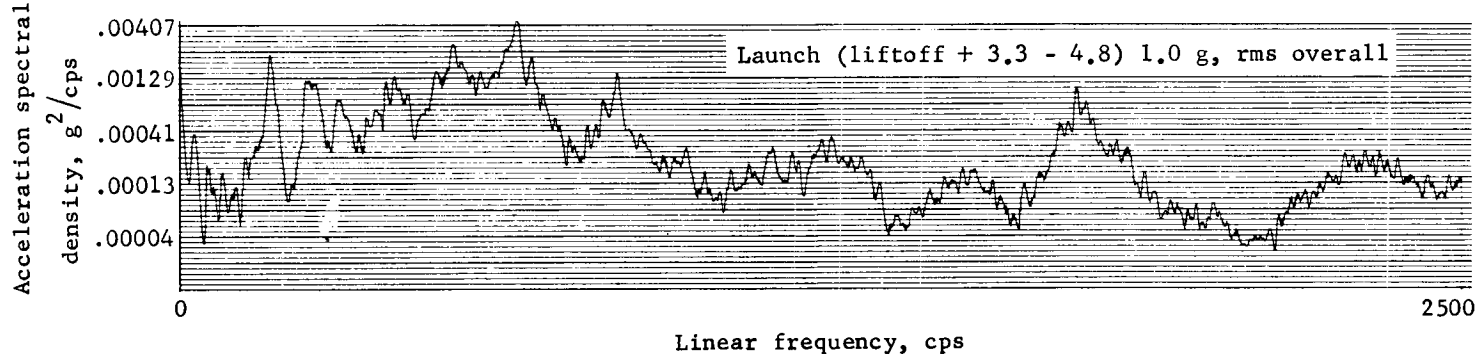


Figure 287. Measurement 2634, Vibration, Equipment Truss at Signal Conditioner Mounting Near Airframe Tie-in Point, Longitudinal, Compartment 3A, Sta 84, Quad III, Vehicle 7

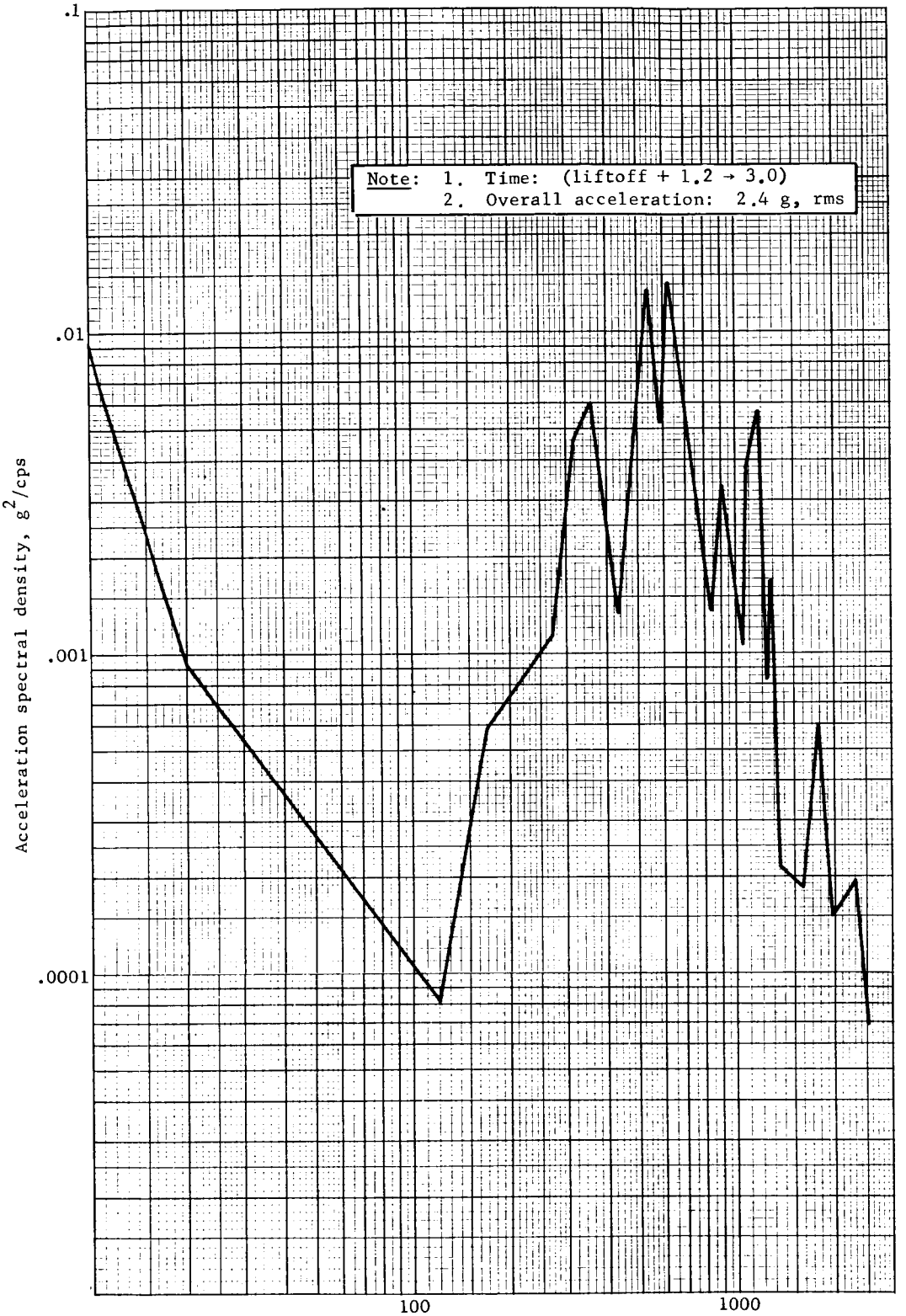


Figure 288. Measurement 2636, 3A Guidance Truss between MGC and Relays, Vertical, Vehicle 8 Flight (FAL)

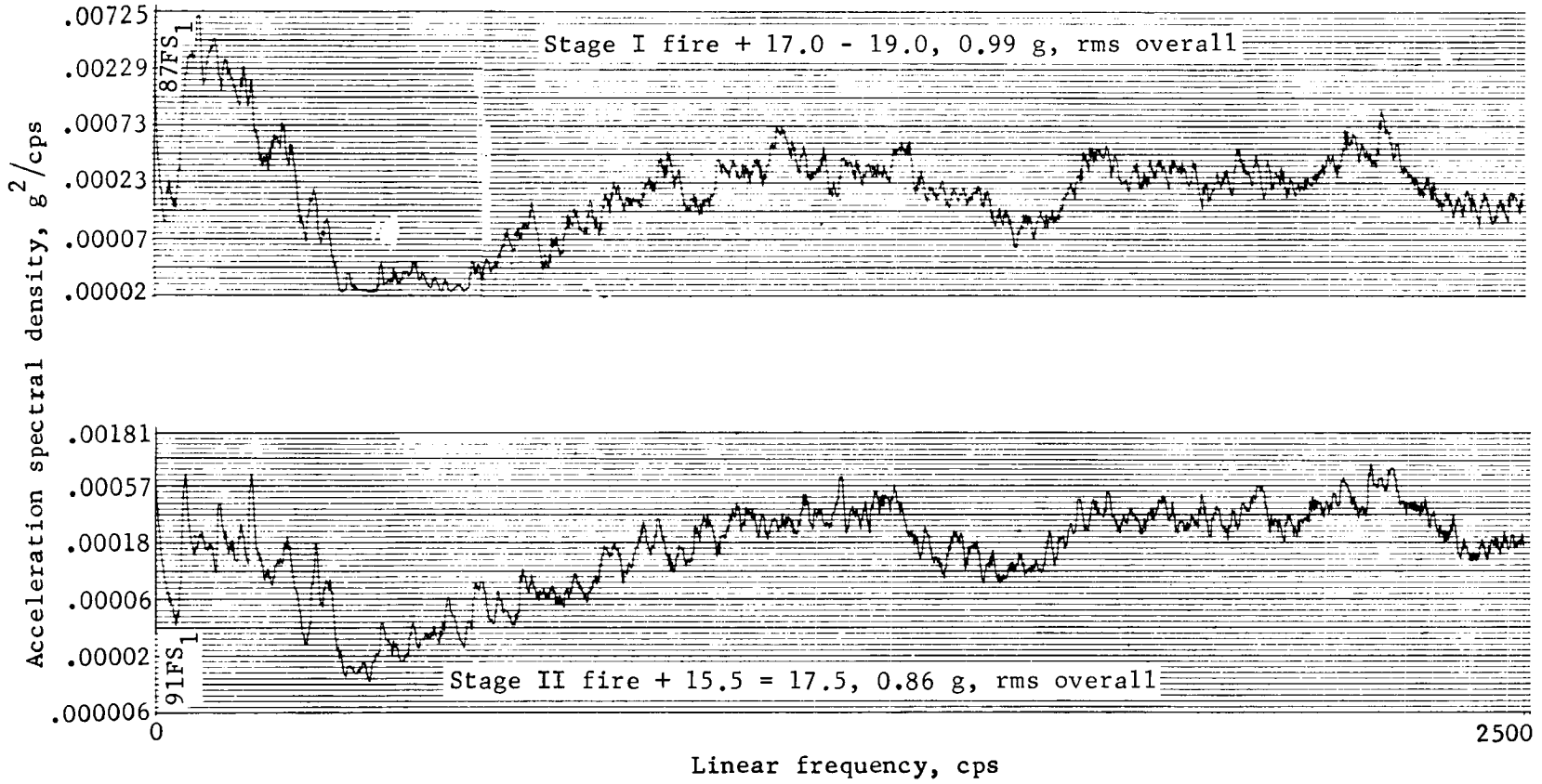


Figure 289. Measurement 2637, Vibration, Guidance Truss at Autopilot Mounting, Longitudinal, Compartment 3A, Sta 84, Quad IV, Vehicle 4 SCF

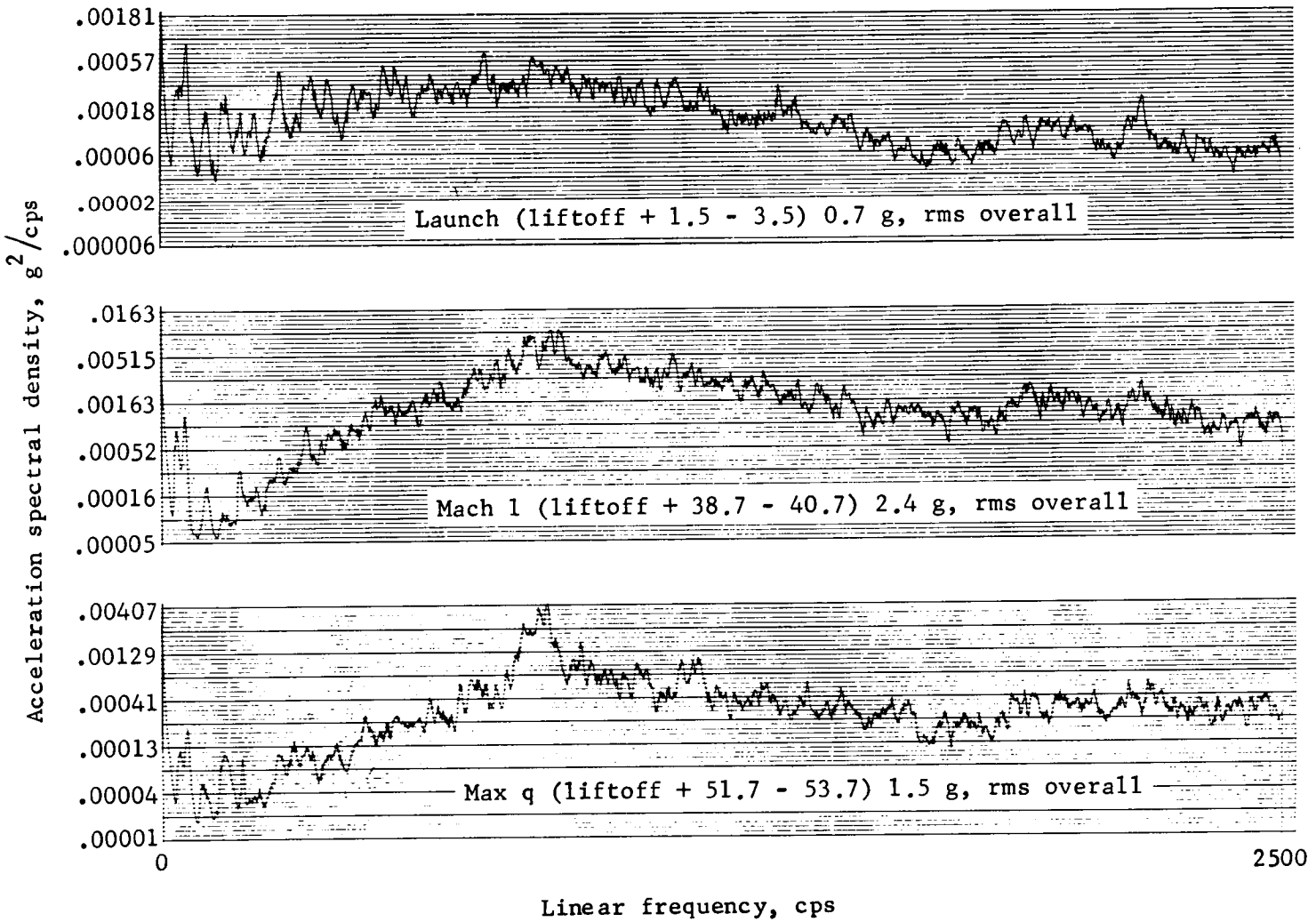


Figure 290. Measurement 2637, Vibration, Guidance Truss at Autopilot Mounting, Longitudinal, Compartment 3A, Sta 84, Quad IV, Vehicle 8

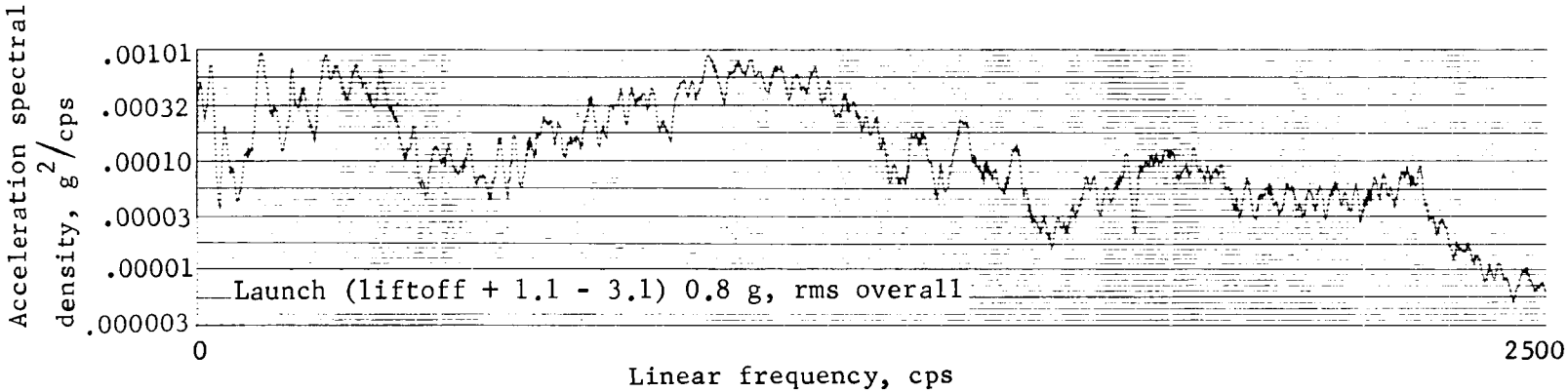


Figure 291. Measurement 2638, Vibration, Guidance Truss at Autopilot Mounting, Lateral, Compartment 3A, Sta 84, Quad IV, Vehicle 4 Flight

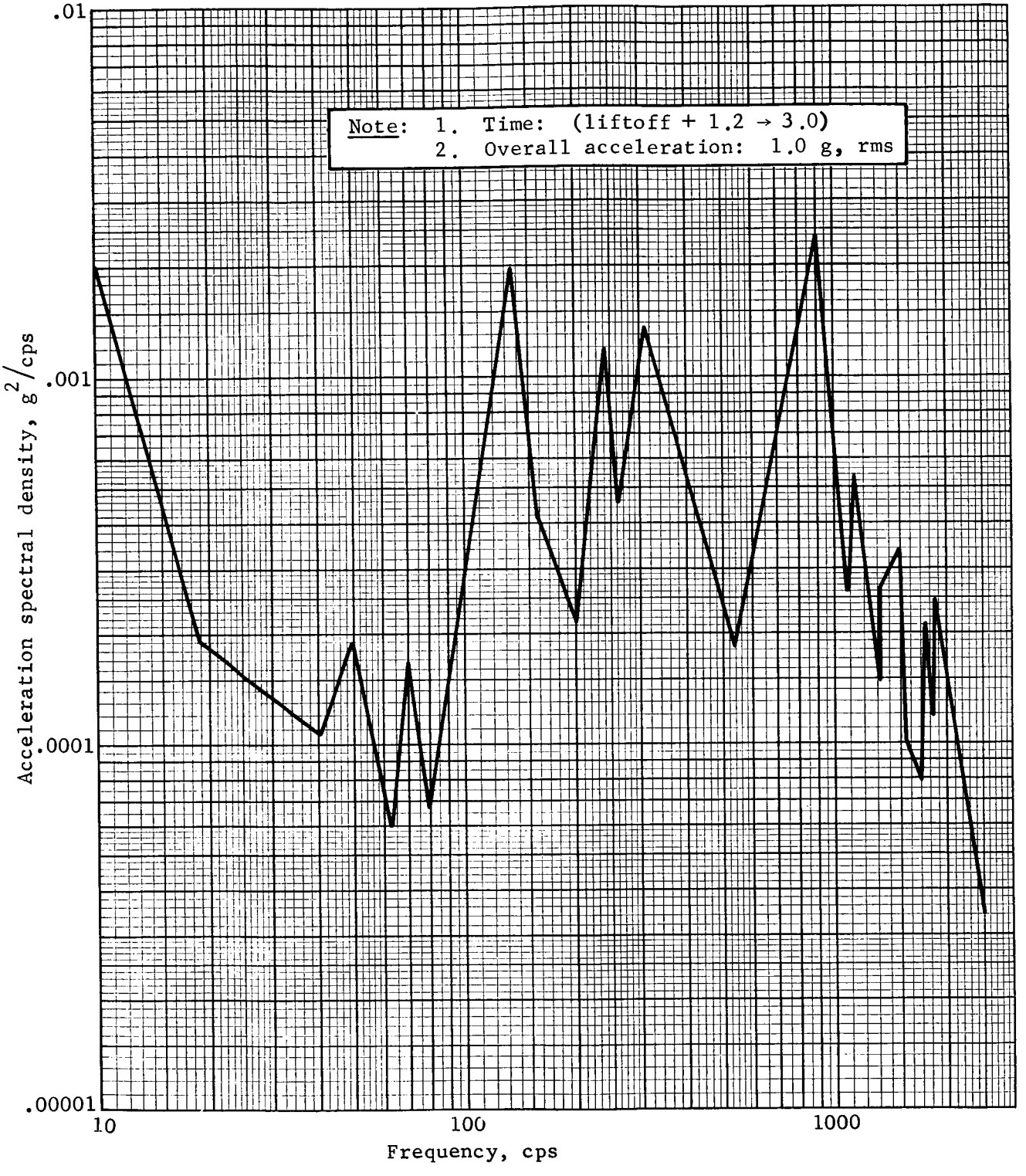


Figure 292. Measurement 2638, 3A Guidance Truss at Autopilot Mounting Point, Lateral, Vehicle 8 Flight (FAL)

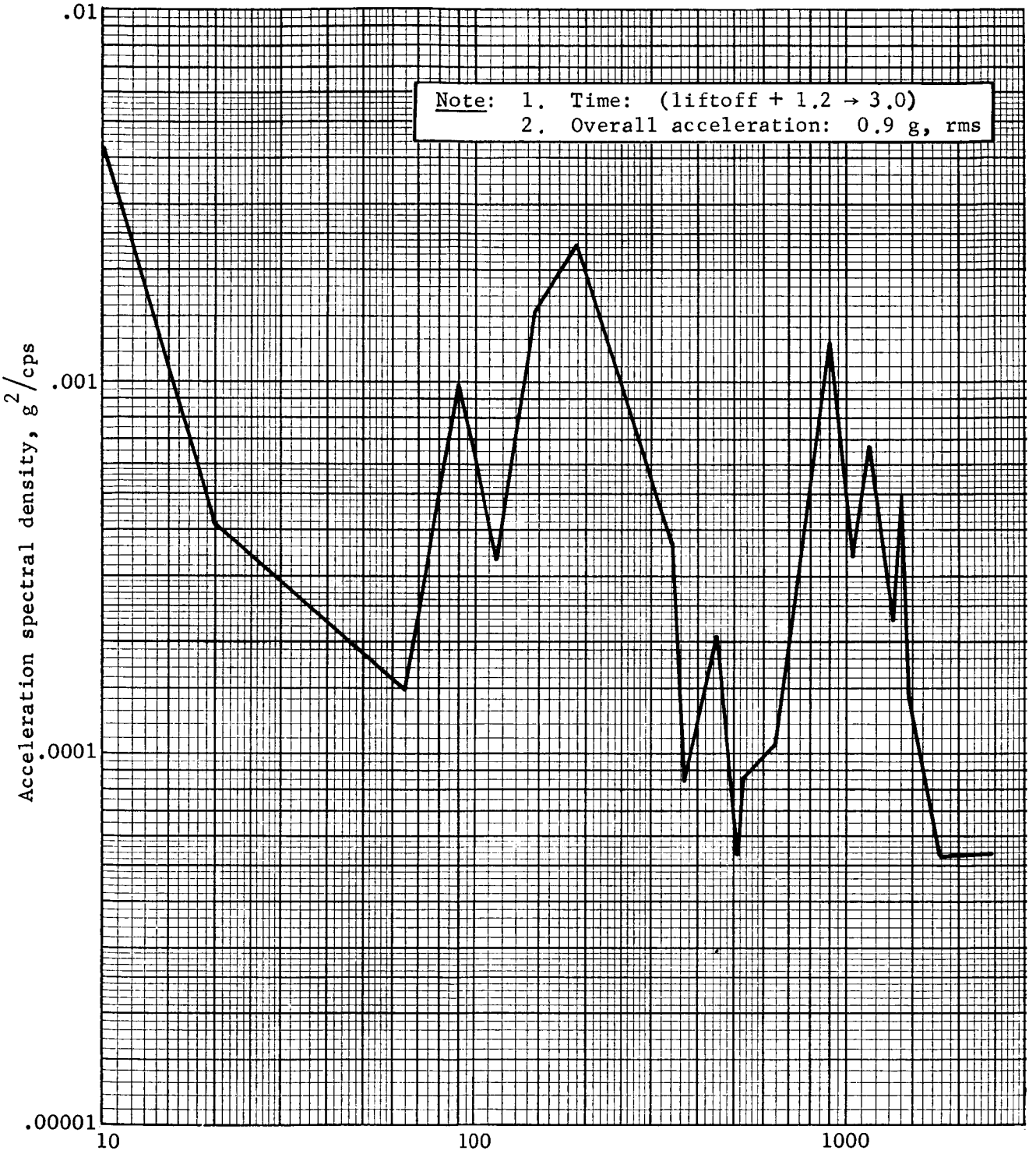


Figure 293. Measurement 2639, 3A Guidance Truss at Autopilot Mounting Point, Vertical, Vehicle 8 Flight (FAL)

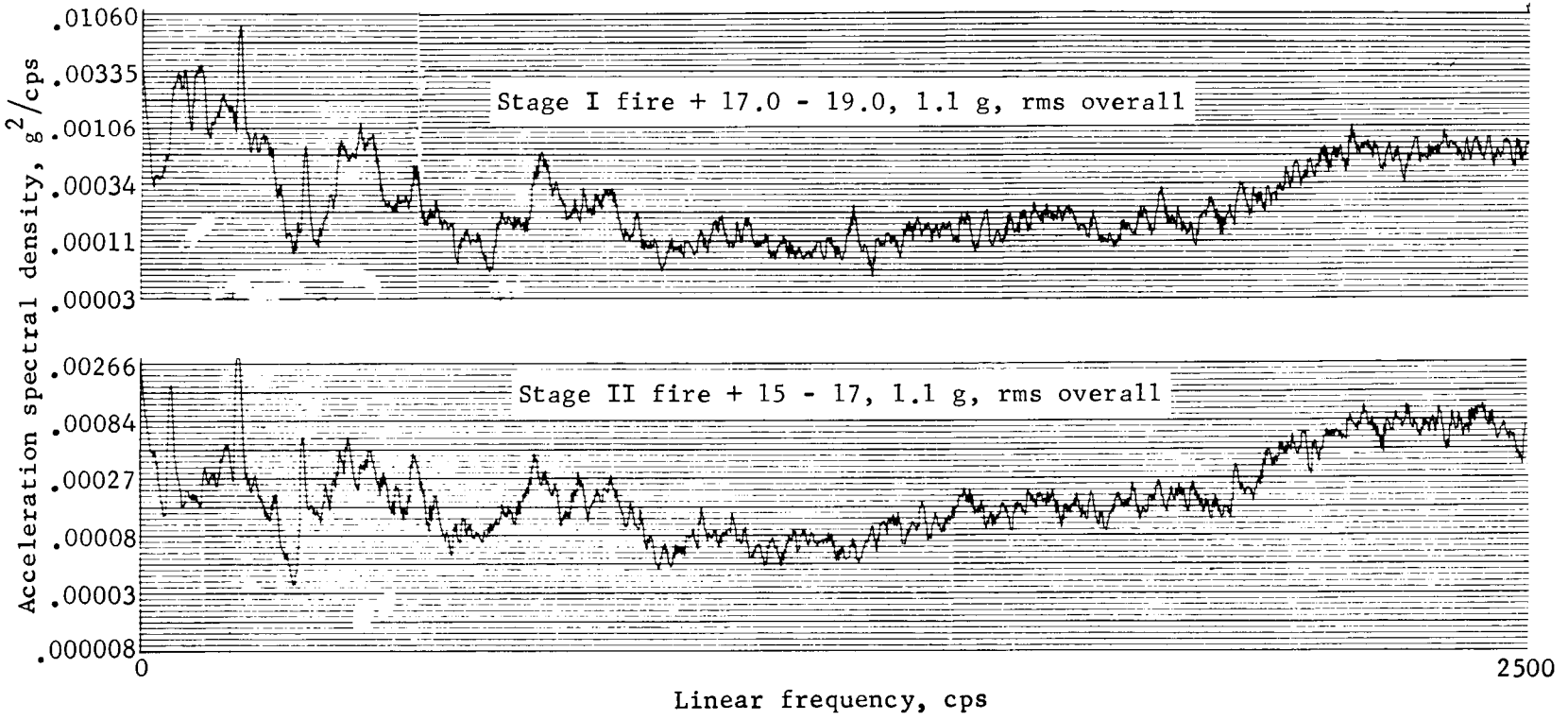


Figure 294. Measurement 2640, Vibration, Guidance Truss between Autopilot and Static Inverter, Longitudinal, Compartment 3A, Sta 97, Quad IV, Vehicle 4 SCF

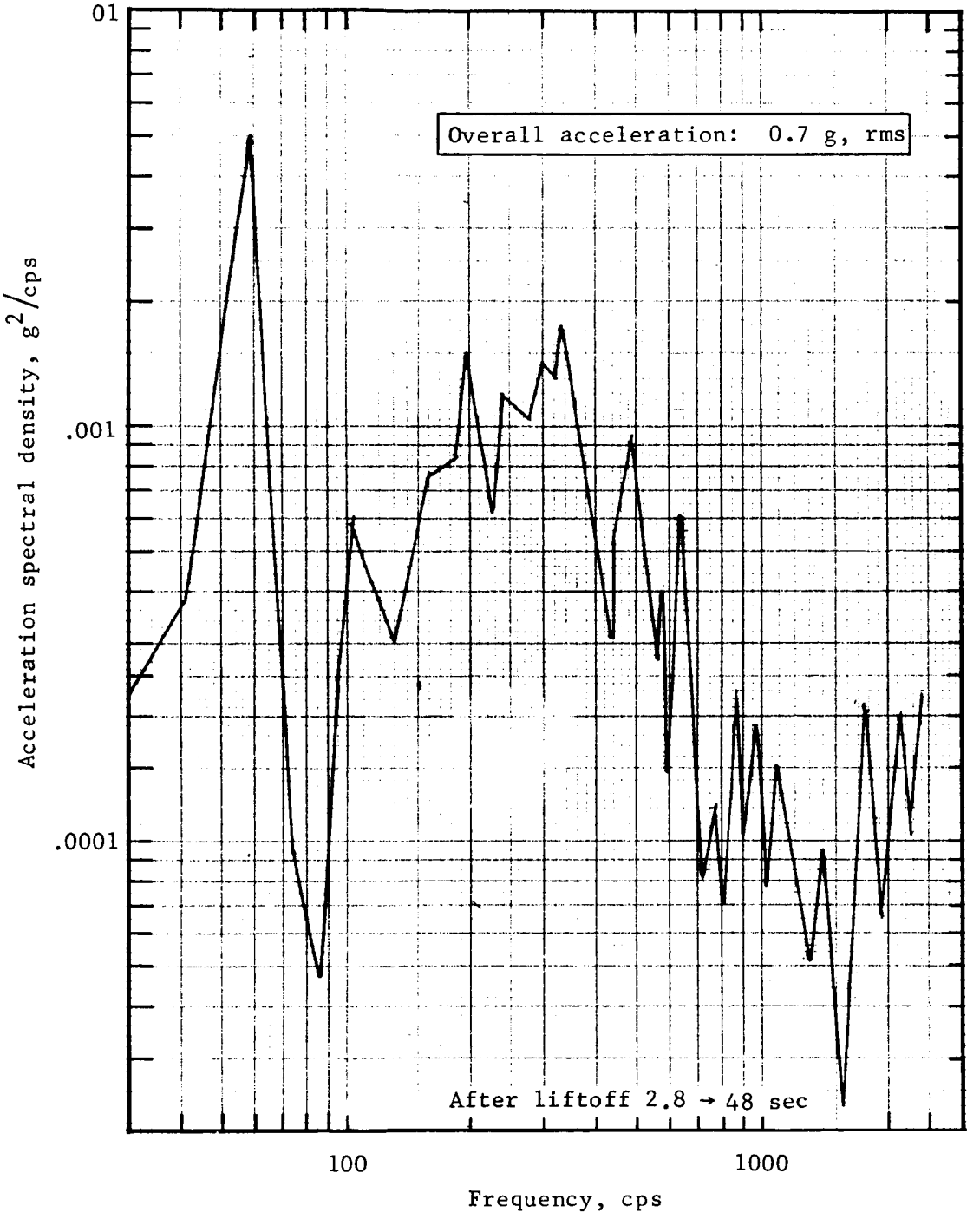


Figure 295. Measurement 2640, 3A Guidance Truss between Autopilot and Static Inverter, Longitudinal Axis, Vehicle 4 Flight

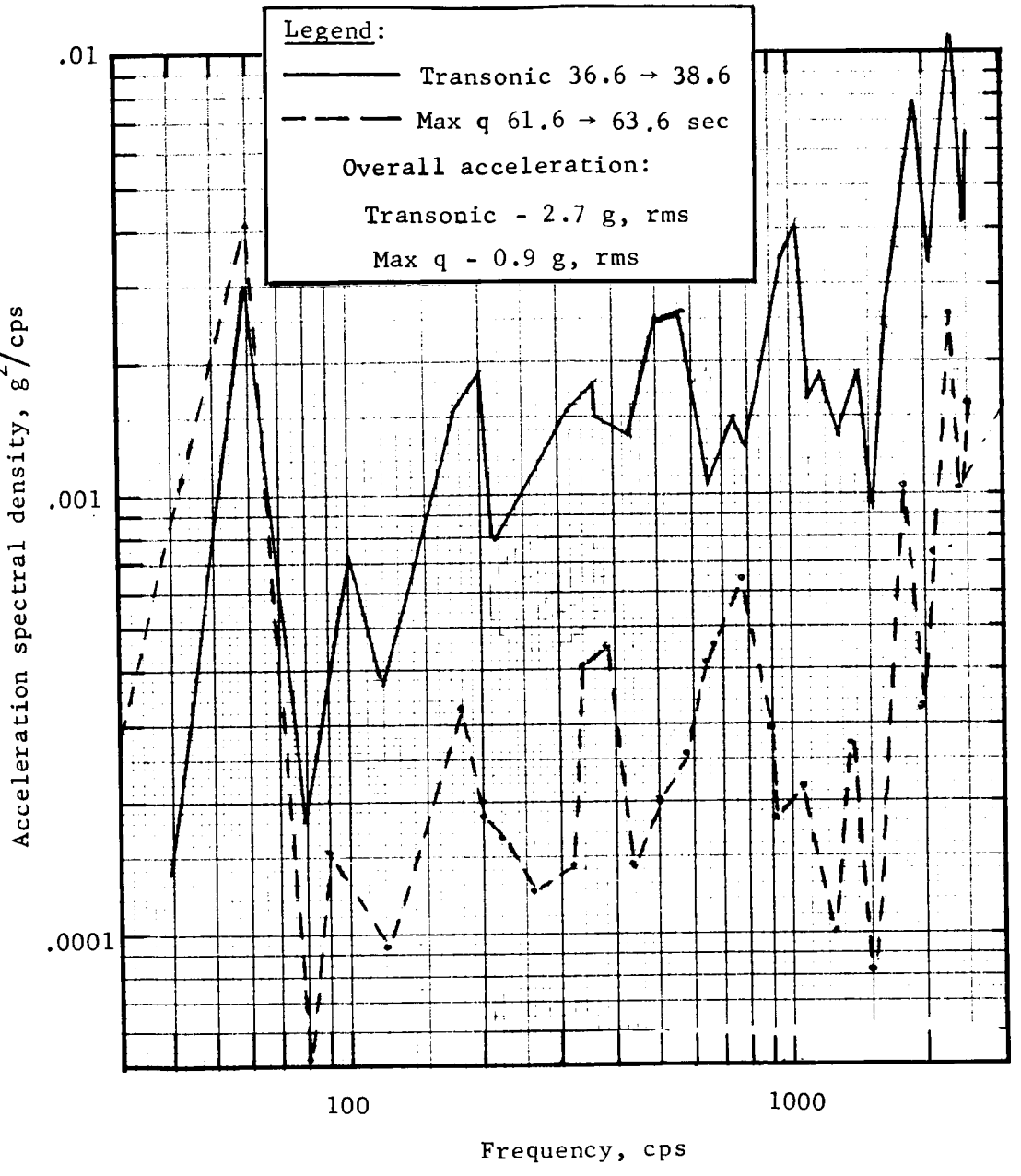


Figure 296. Measurement 2640, Vibration, Guidance Truss between Autopilot and Static Inverter, Longitudinal, Compartment 3A, Sta 97, Quad IV, Vehicle 4 Flight

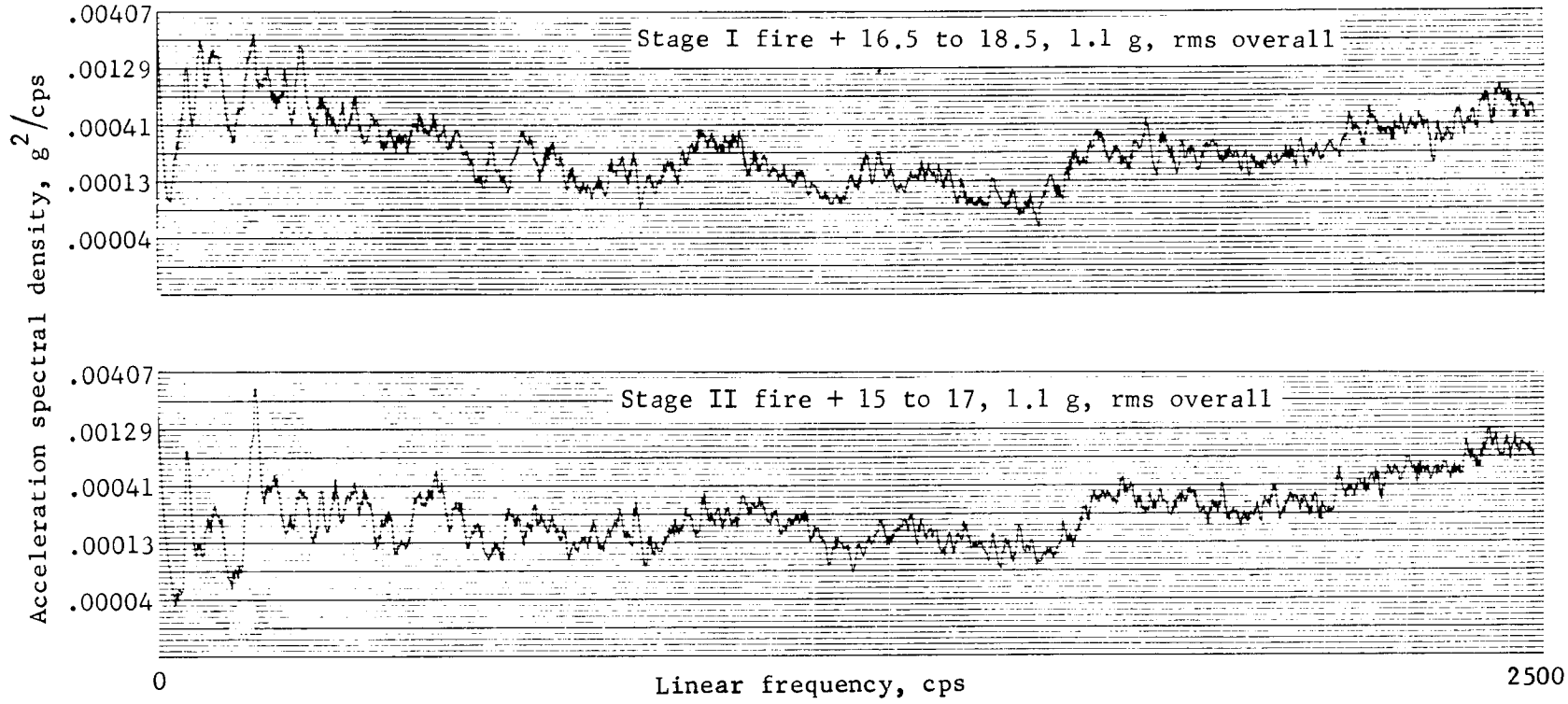


Figure 297. Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral, Compartment 3A, Sta 97, Quad IV, Vehicle 4 SCF

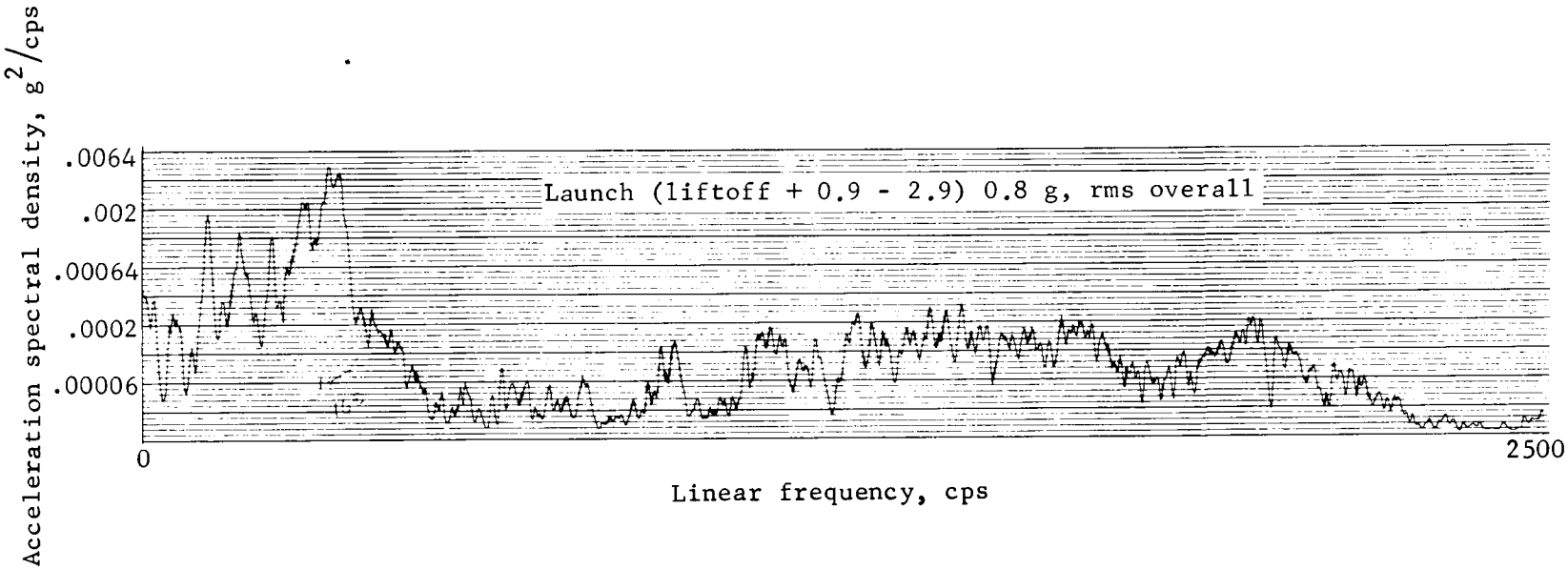


Figure 298. Measurement 2641, Vibration, Guidance Truss between Autopilot and Static Inverter, Lateral, Compartment 3A, Sta 97, Quad IV, Vehicle 4

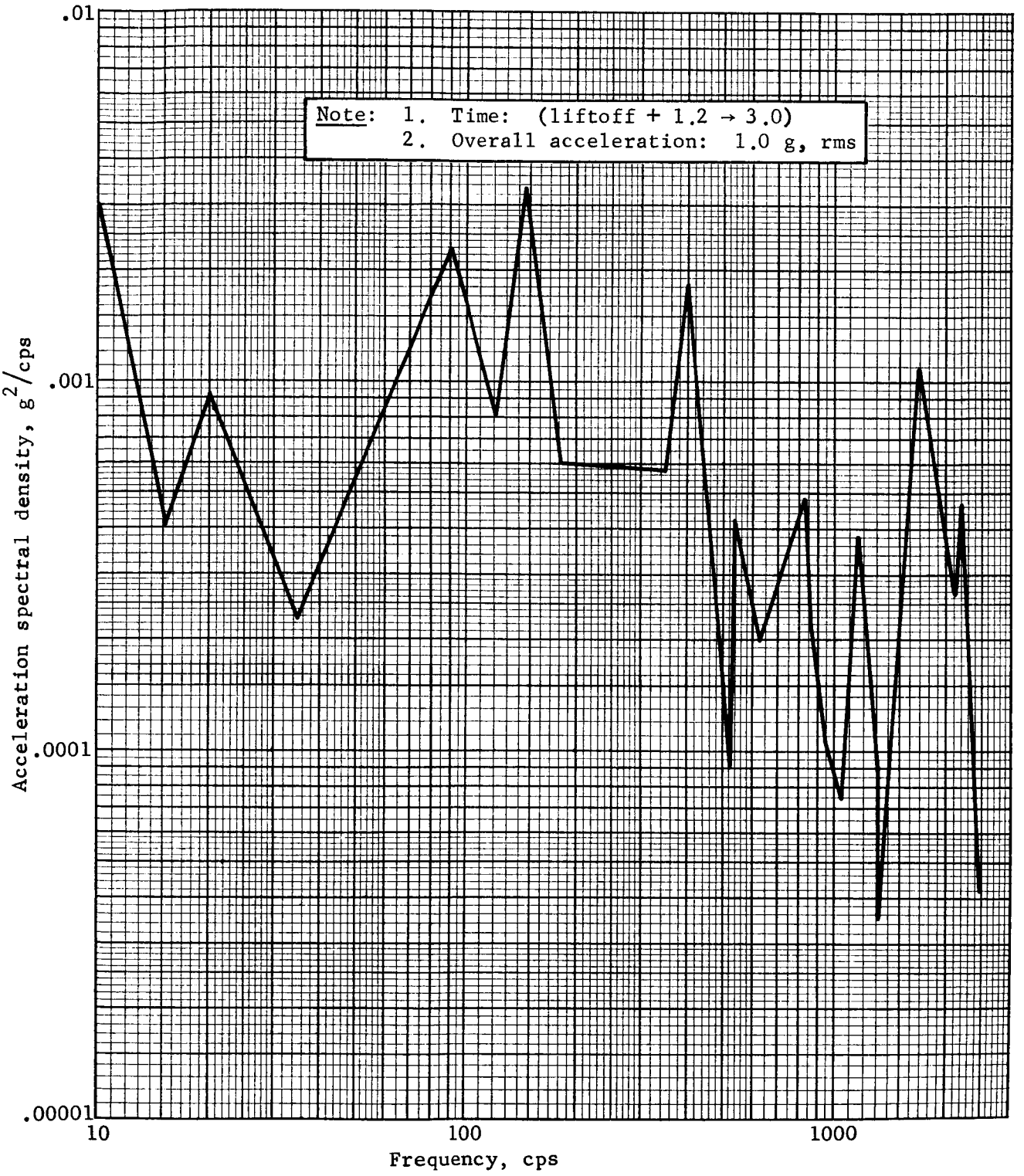


Figure 299. Measurement 2641B, 3A Guidance Truss, Autopilot and Static Inverter Common Mounting, Lateral, Vehicle 8 Flight (FAL)

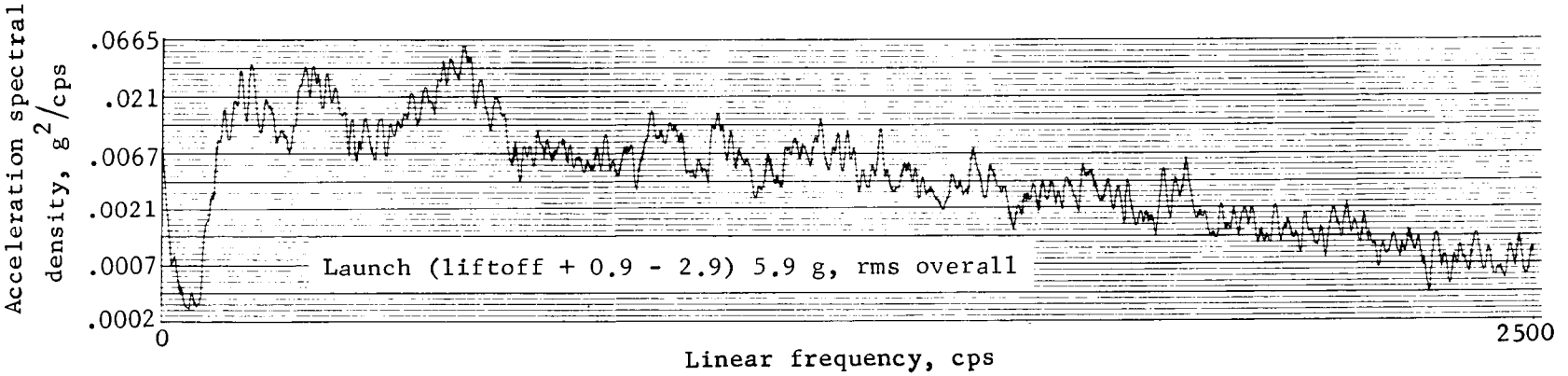


Figure 300. Measurement 2519, Vibration, Airframe at Outage Sensor Controller Mounting, Radial, Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 4 (FAL)

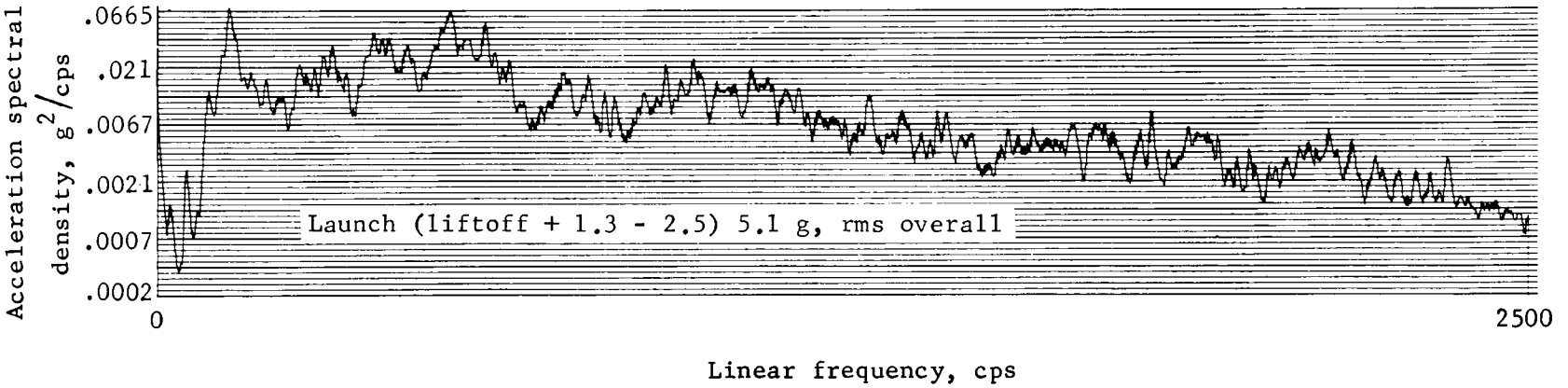


Figure 301. Measurement 2519, Vibration, Airframe at Outage Sensor Controller Mounting, Radial, Compartment 2B, Sta 360, Quad III, Stringer 27A, Vehicle 7 (FAL)

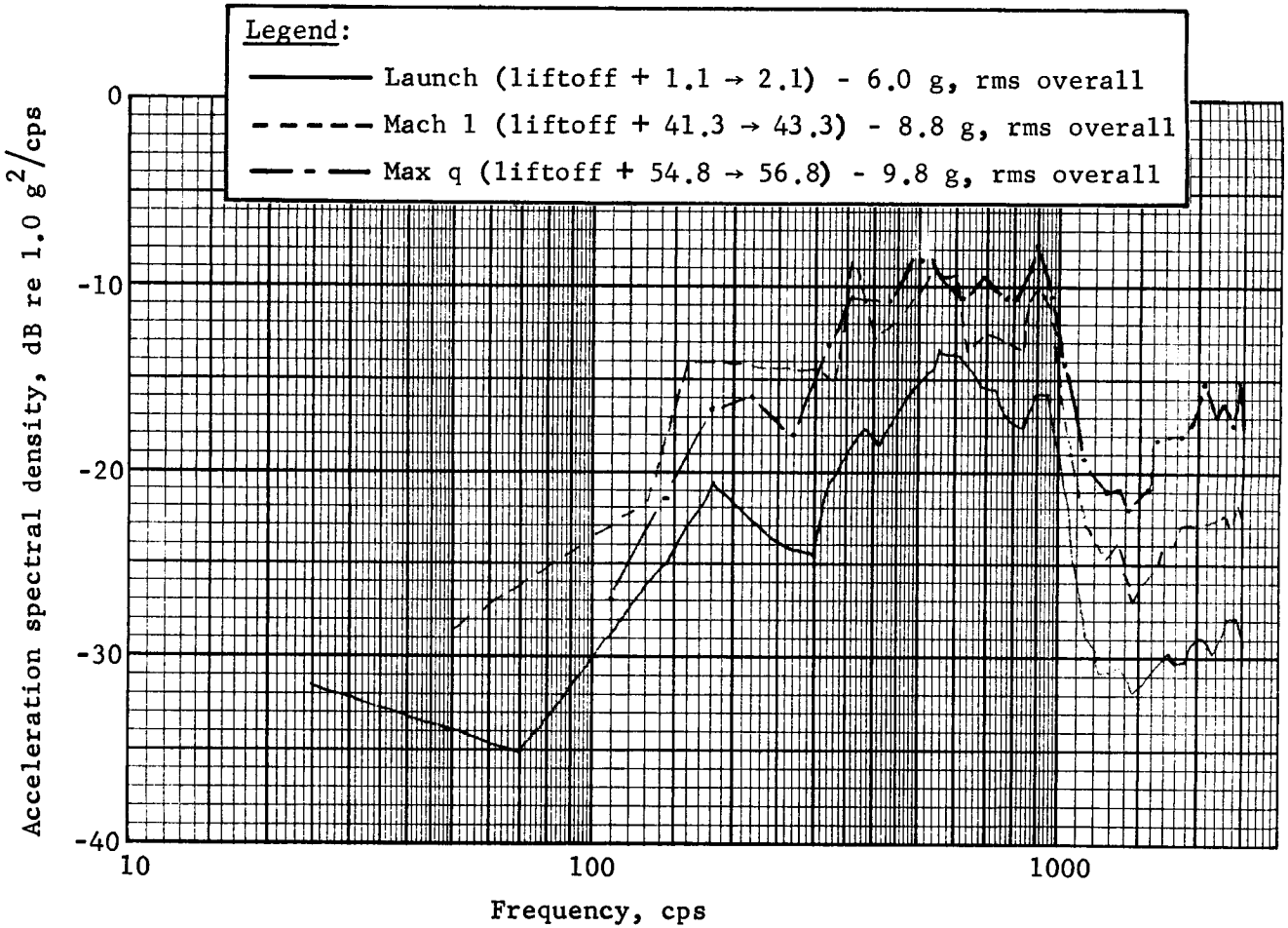


Figure 302. Measurement 2520 (T), 2B Airframe, Tangential, Adjacent to SRM Nose Tip, Vehicle 7 Flight

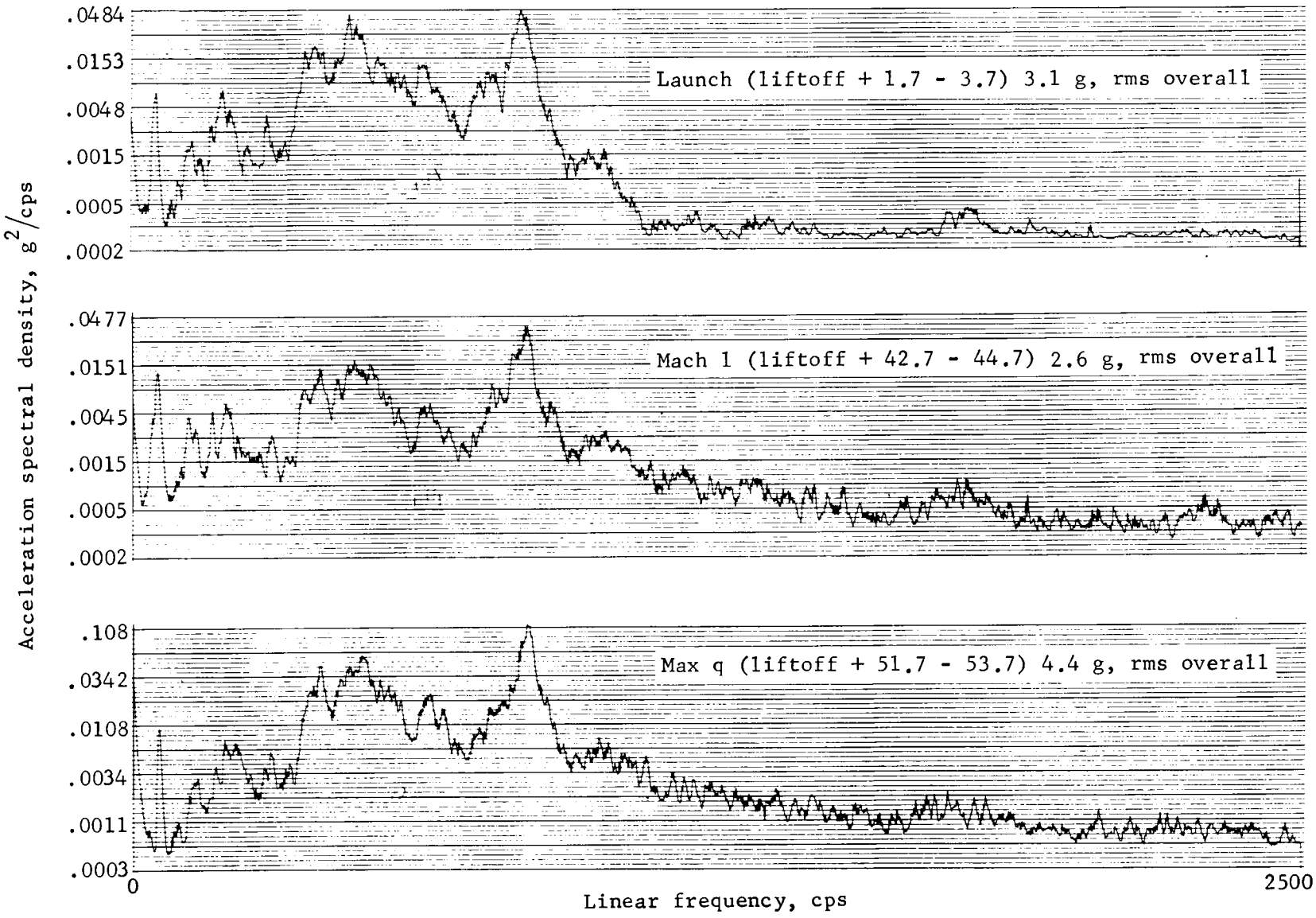


Figure 303. Measurement 2516, Vibration, Equipment Truss at Destruct Initiator Mounting, Lateral, Compartment 2B, Sta 354, Quad III, Vehicle 8

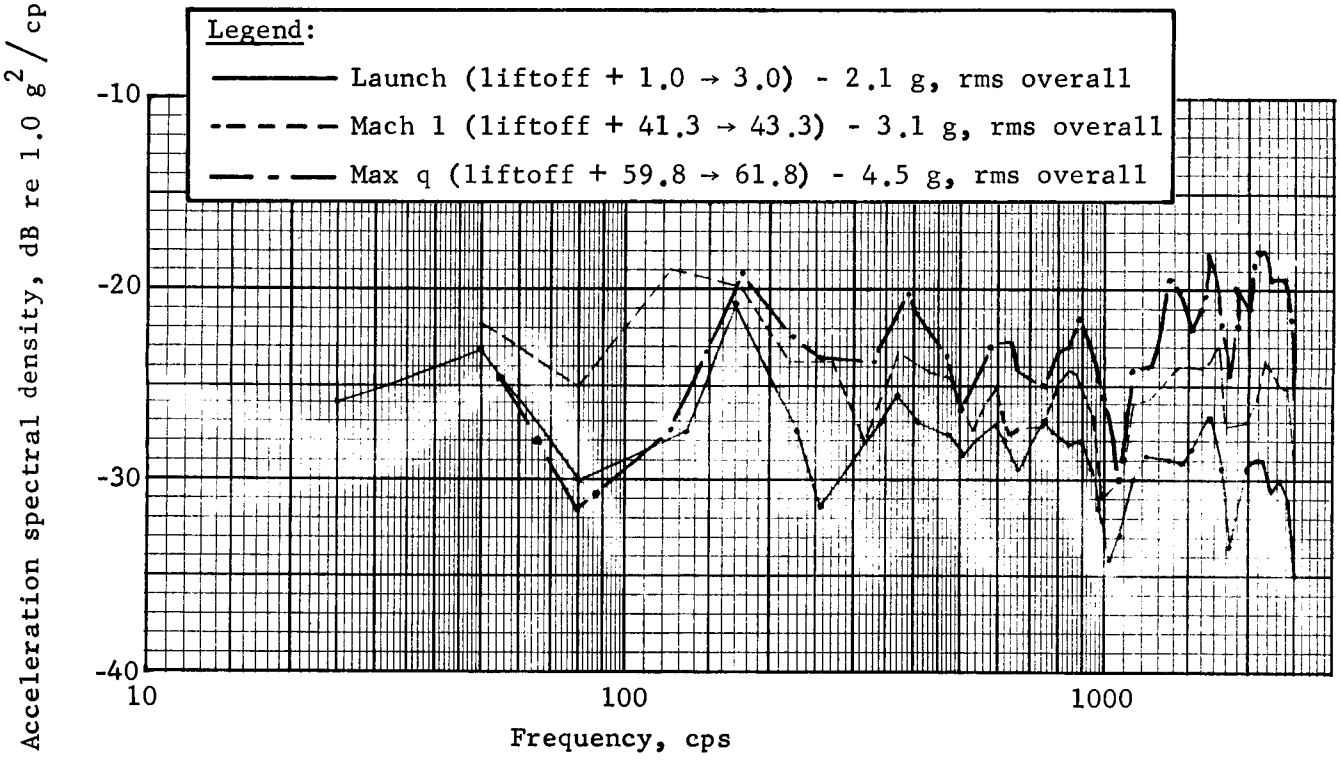


Figure 304. Measurement 2599 (T), Longitudinal, 2B Truss, Vehicle 7 Flight

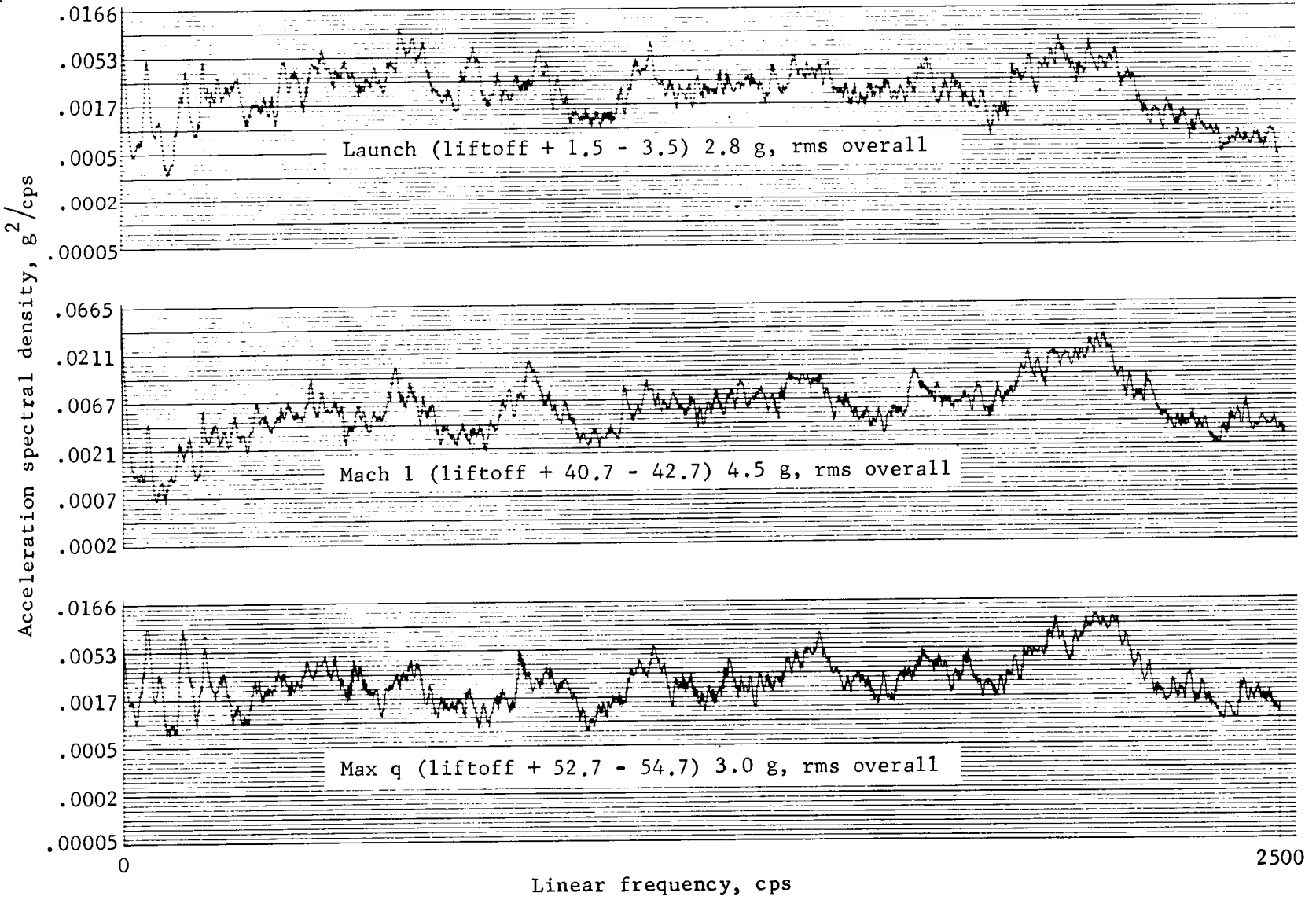


Figure 305. Measurement 2599, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Longitudinal, Compartment 2B, Sta 378, Quad II, Vehicle 8

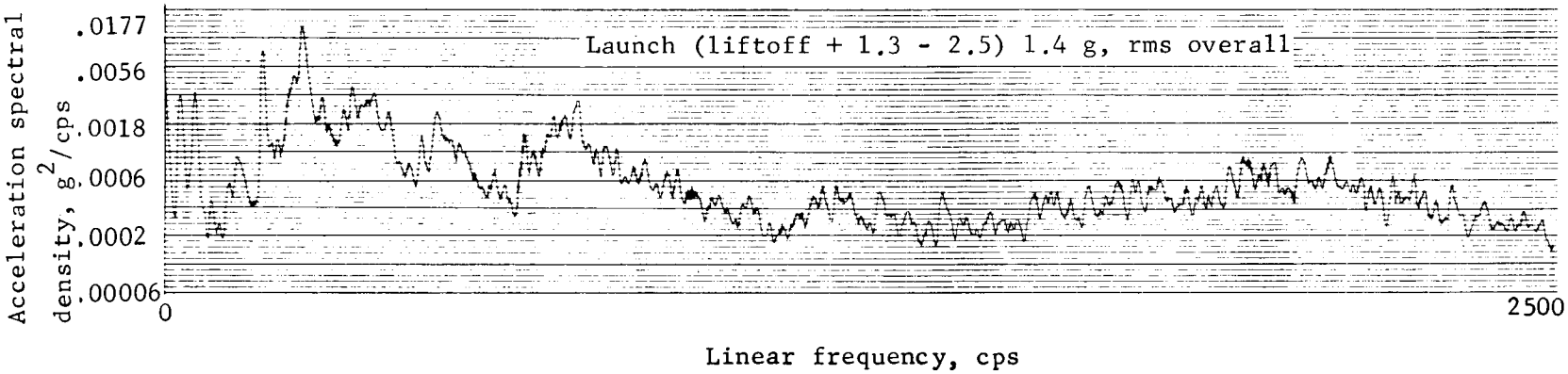


Figure 306. Measurement 2600, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer Lateral, Compartment 2B, Sta 388, Quad II, Vehicle 7 (FAL)

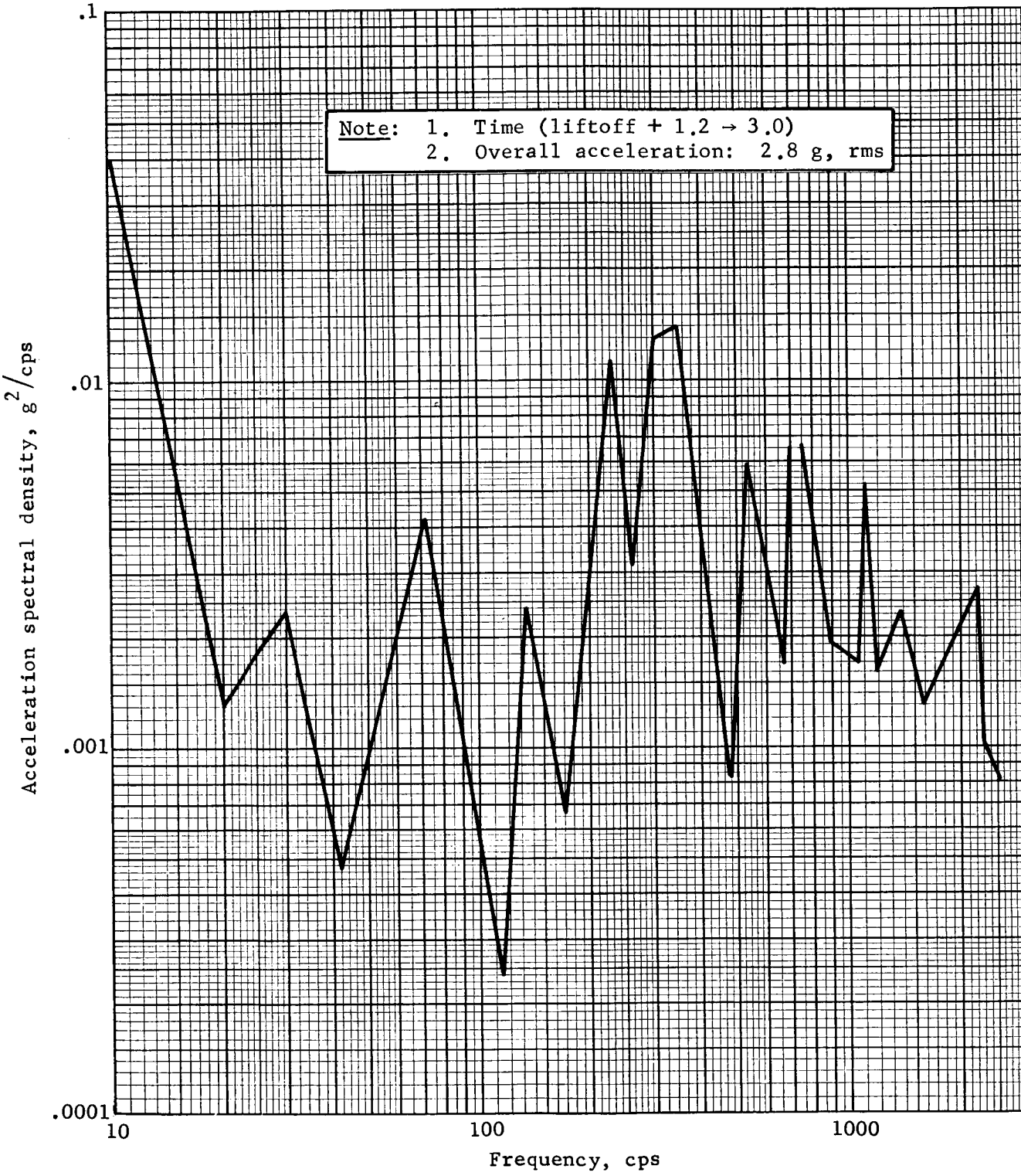


Figure 307. Measurement 2600, 2B Truss between IPS Battery and TM, Lateral, Vehicle 8 Flight (FAL)

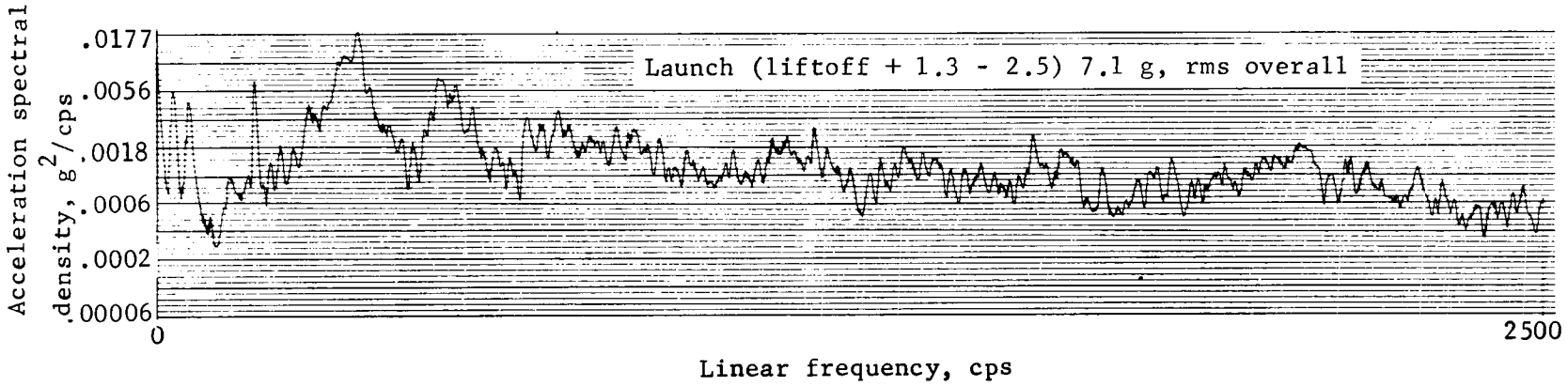


Figure 308. Measurement 2601, Vibration, Equipment Truss between IPS Battery and Telemetry Multiplexer, Vertical, Compartment 2B, Sta 378, Quad II, Vehicle 7

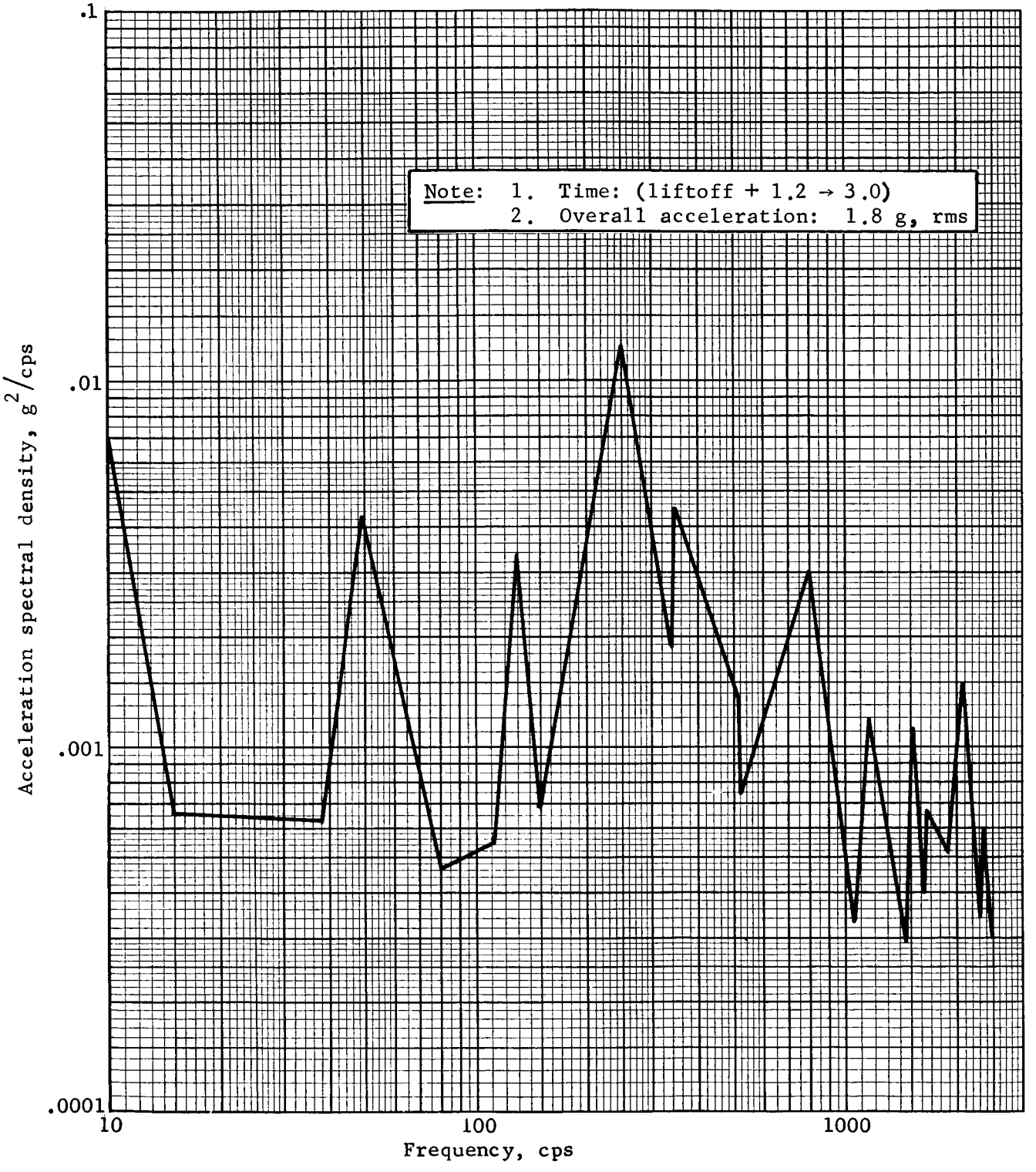


Figure 309. Measurement 2601, 2B Truss between IPS and TM, Vertical, Vehicle 8 Flight (FAL)

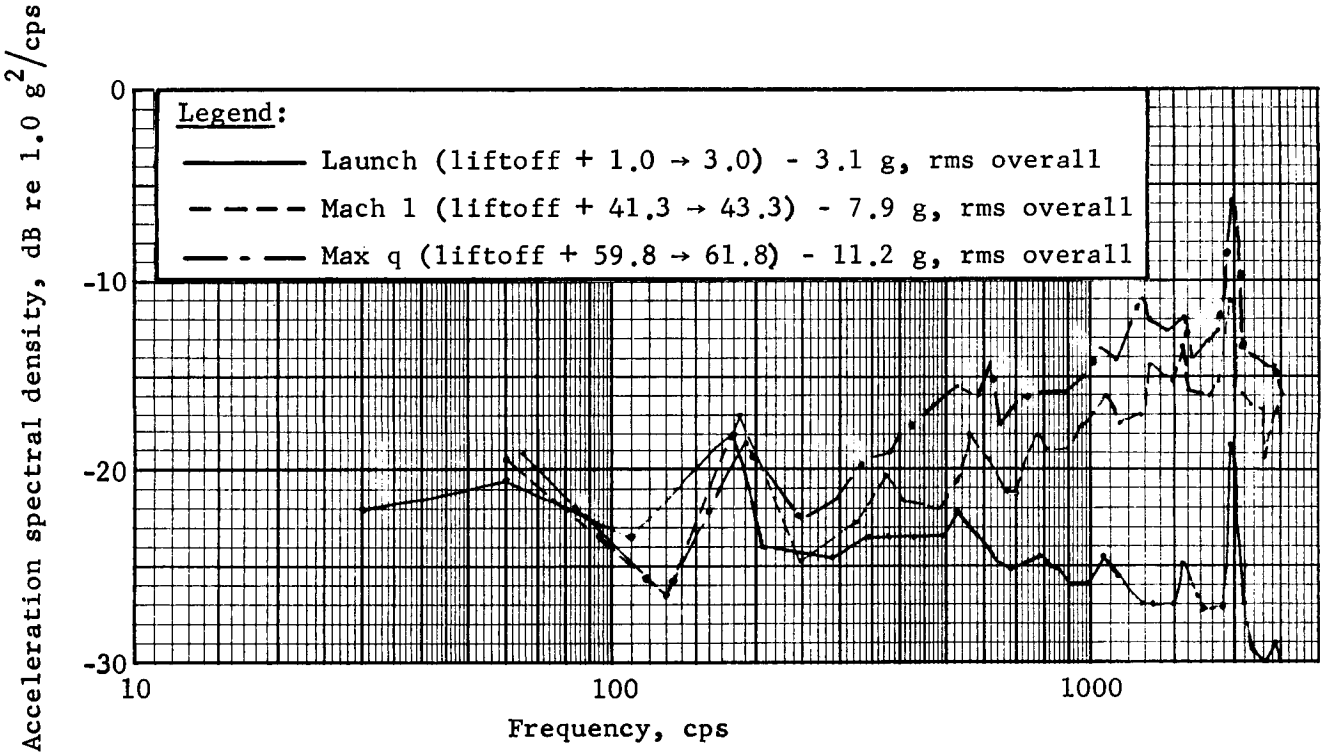


Figure 310. Measurement 2566 (T), Longitudinal, 2C Airframe at Stringer 23, Sta 493, Vehicle 7 Flight

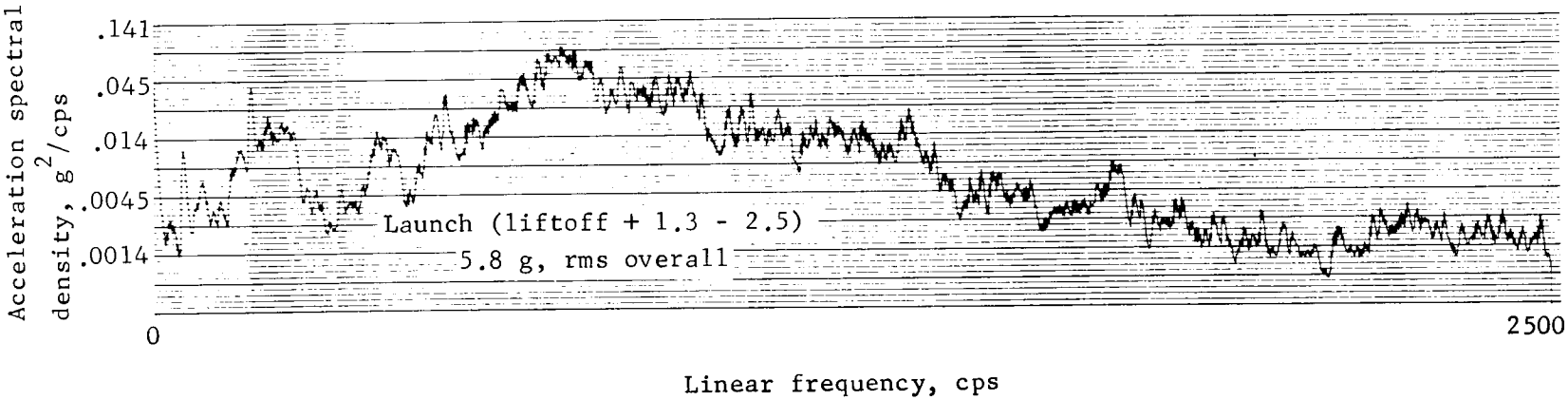


Figure 311. Measurement 2567, Vibration, Airframe at Instrumentation Staging Disconnect, Radial, Compartment 2C, Sta 490, Quad III, Stringer 23, Vehicle 7

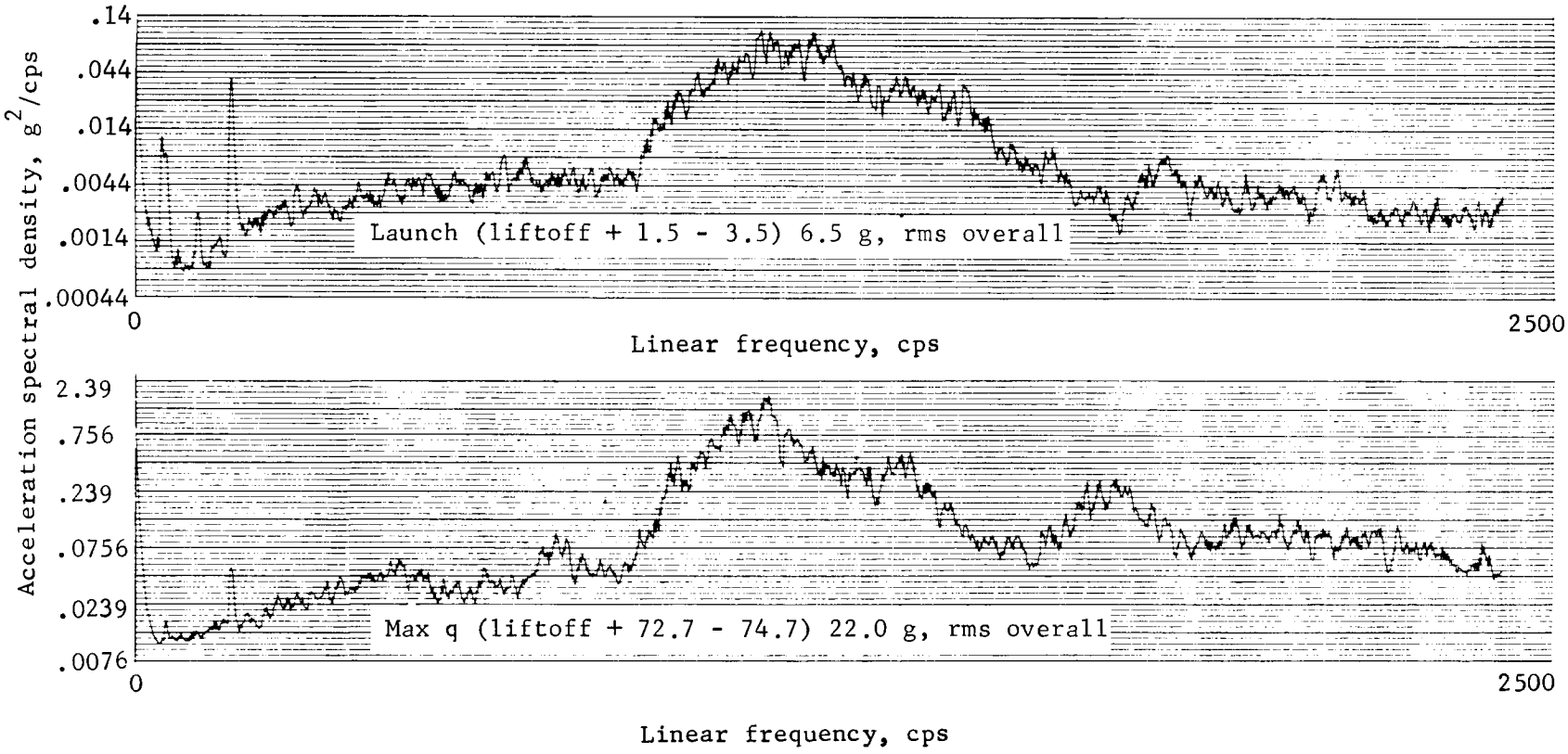


Figure 312. Measurement 2602, Vibration, Airframe at Electrical/Instrumentation SRM/Core Staging Disconnect, Longitudinal, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 8

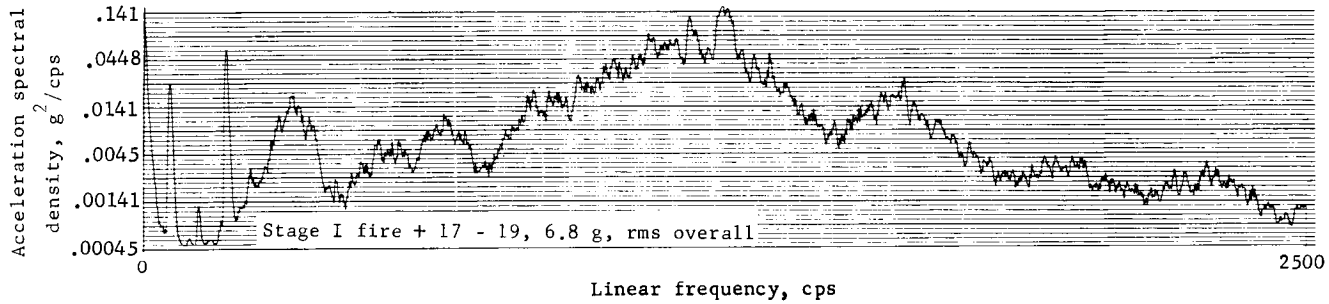


Figure 313. Measurement 2603, Vibration, Airframe at Electrical/Instrumentation SRM/Core Staging Disconnect, Radial, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 4 SCF

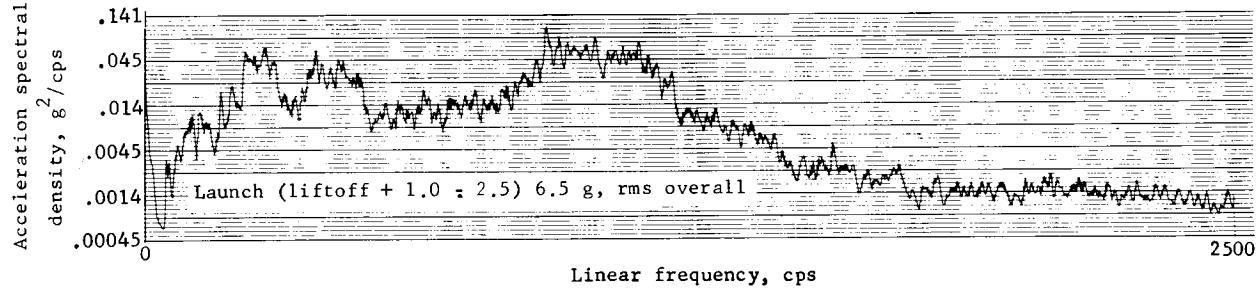


Figure 314. Measurement 2603, Vibration, Airframe at Electrical/Instrumentation SRM/Core Staging Disconnect, Radial, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 4 (FAL)

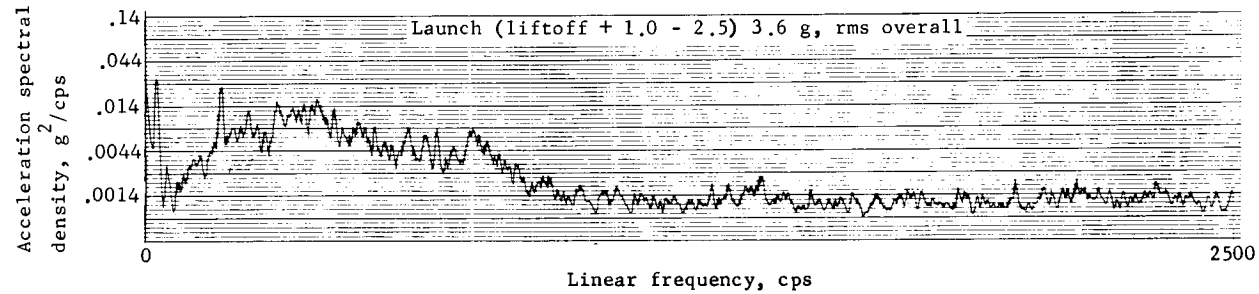


Figure 315. Measurement 2604, Vibration, Airframe at Electrical Instrumentation SRM/Core Staging Disconnect, Tangential, Compartment 2C, Sta 496, Quad II, WL-60L, Vehicle 4 (FAL)

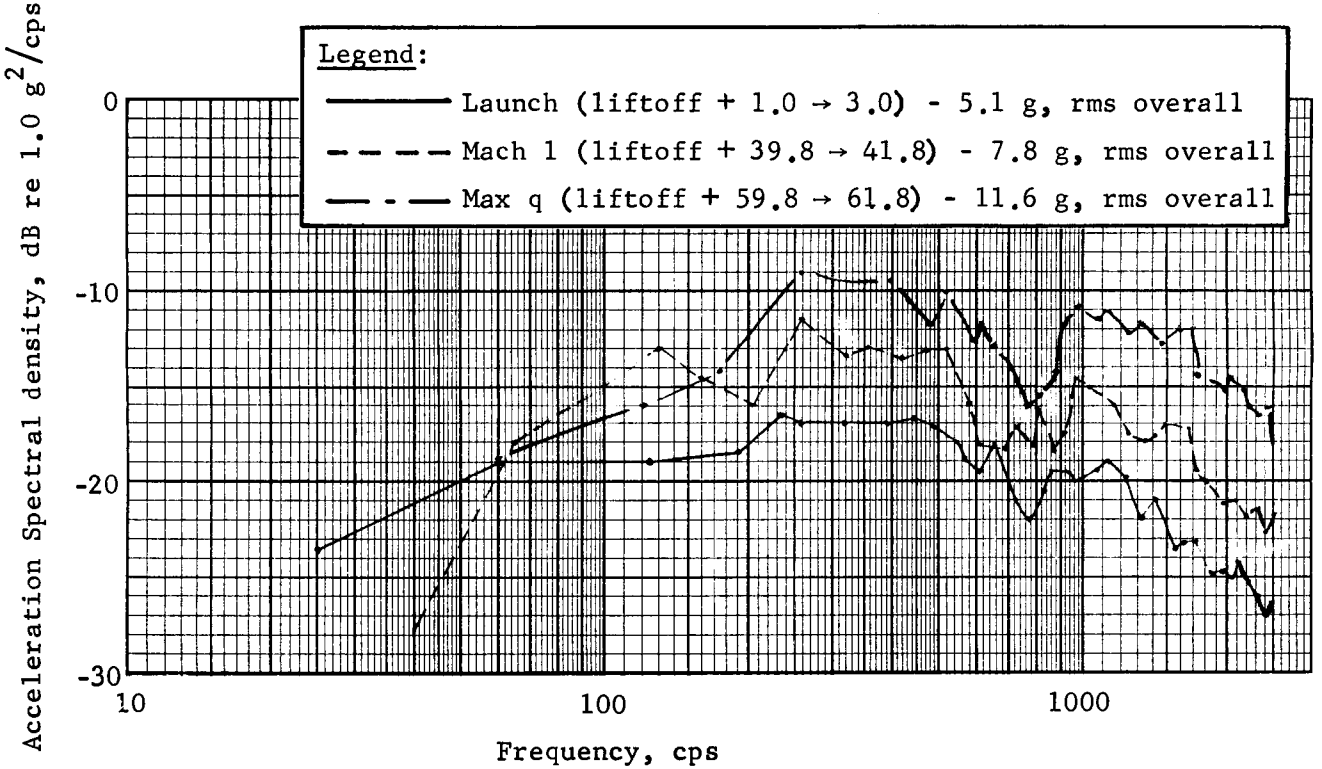


Figure 316. Measurement 2605 (T), 2C Tank Bottom, Perpendicular, Vehicle 7 Flight

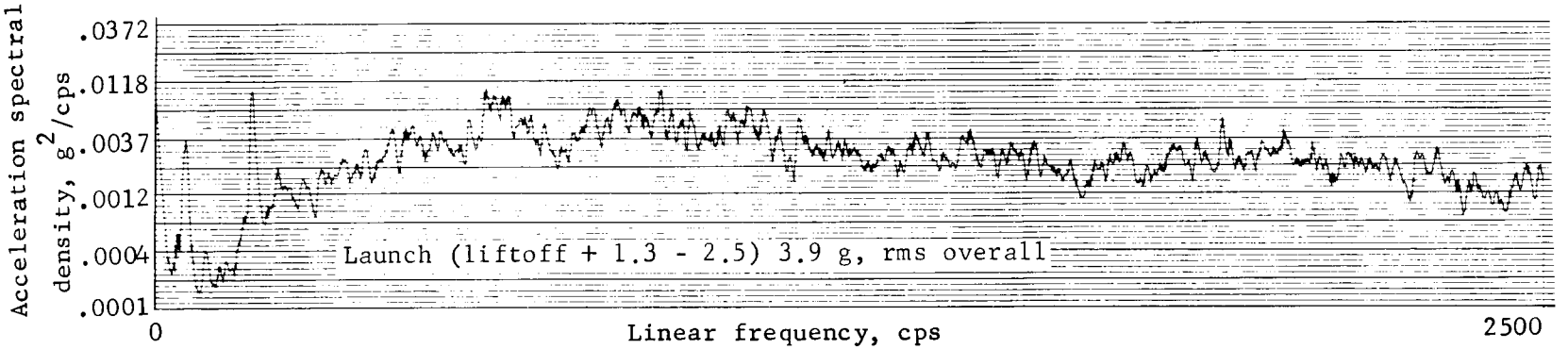


Figure 317. Measurement 2606, Vibration, on Fuel Tank Bottom at Outage Sensor Mounting, Parallel, Compartment 2C, Sta 460, Quad I, Vehicle 7 (FAL)

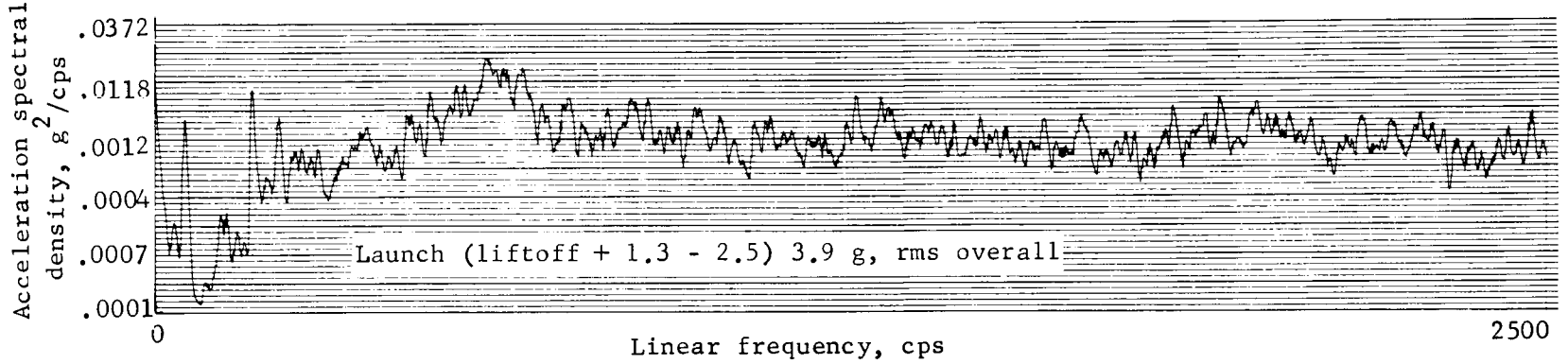


Figure 318. Measurement 2607, Vibration, on Fuel Tank Bottom at Outage Sensor Mounting, Tangential, Compartment 2C, Sta 460, Quad I, Vehicle 7 (FAL)

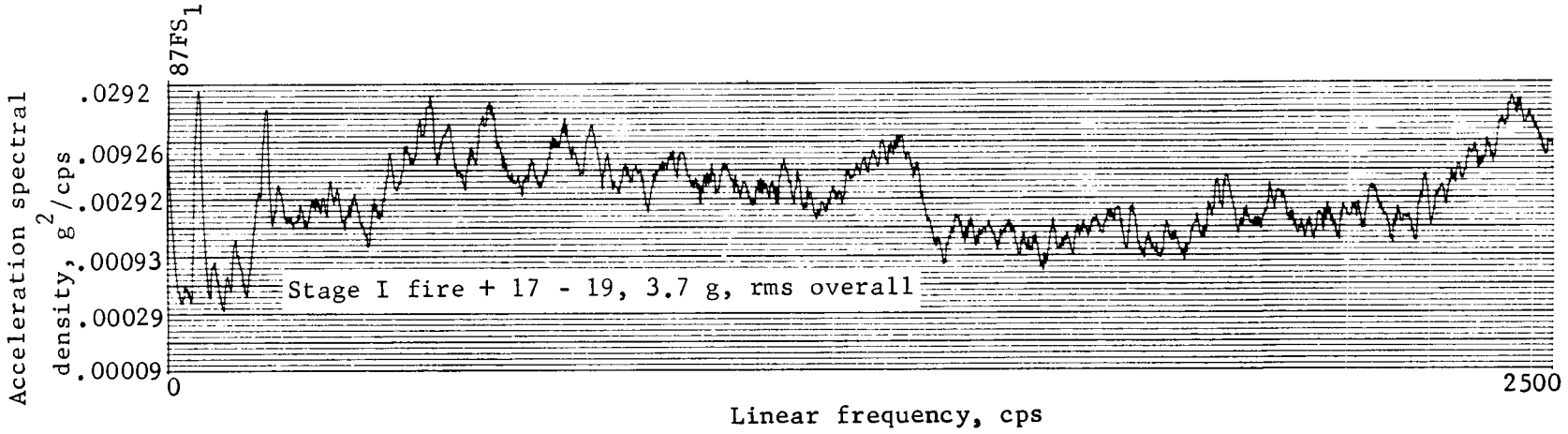


Figure 319. Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4 SCF

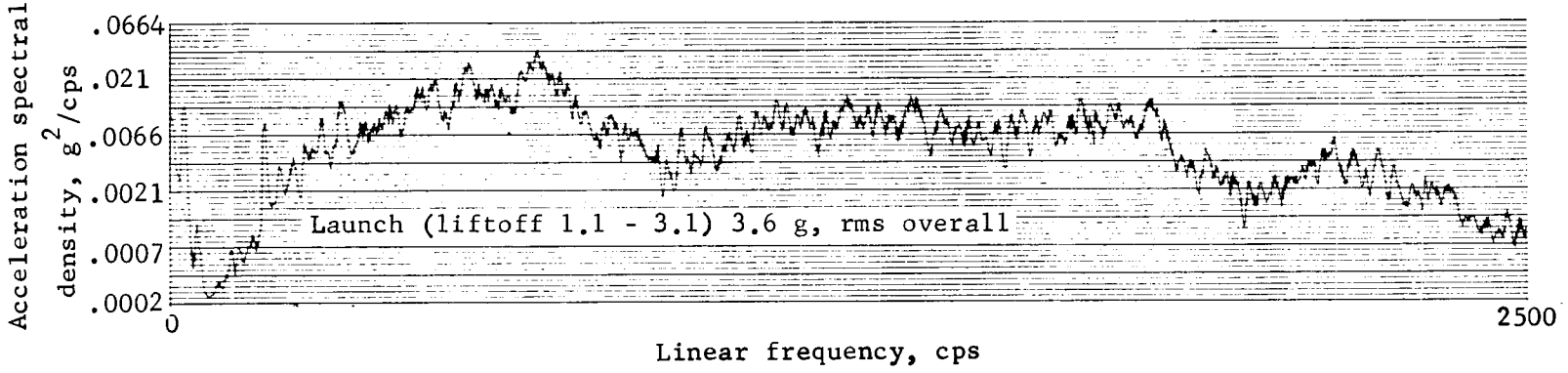


Figure 320. Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I Stringer 2A, Vehicle 4

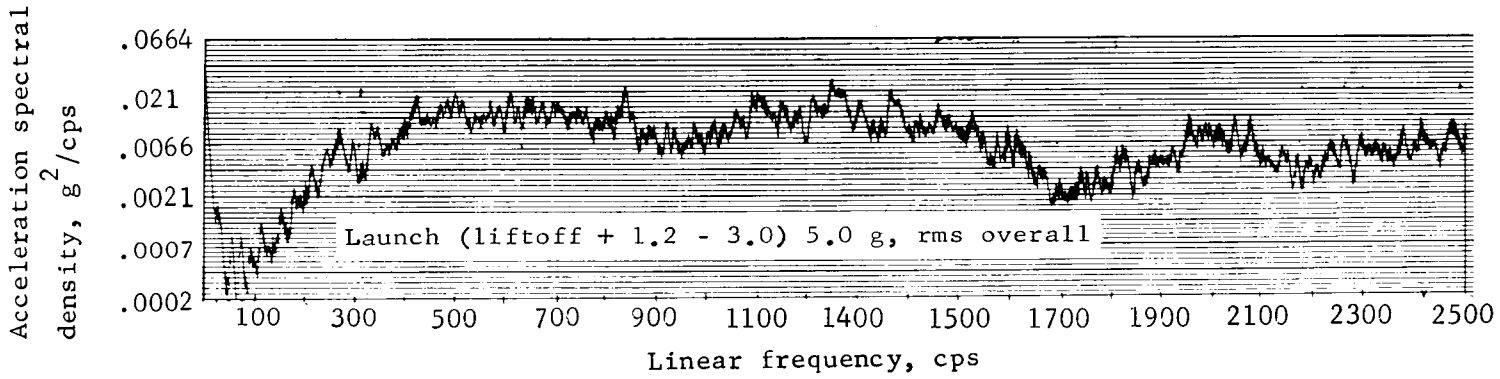


Figure 321. Measurement 2526, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1A, Sta 508, Quad I Stringer 2A, Vehicle 8 (FAL)

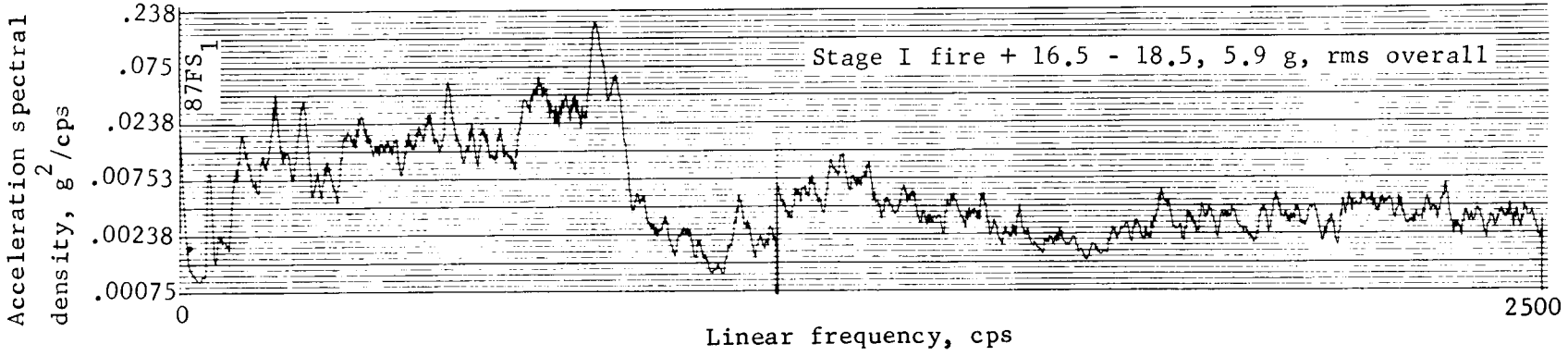


Figure 322. Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4 SCF

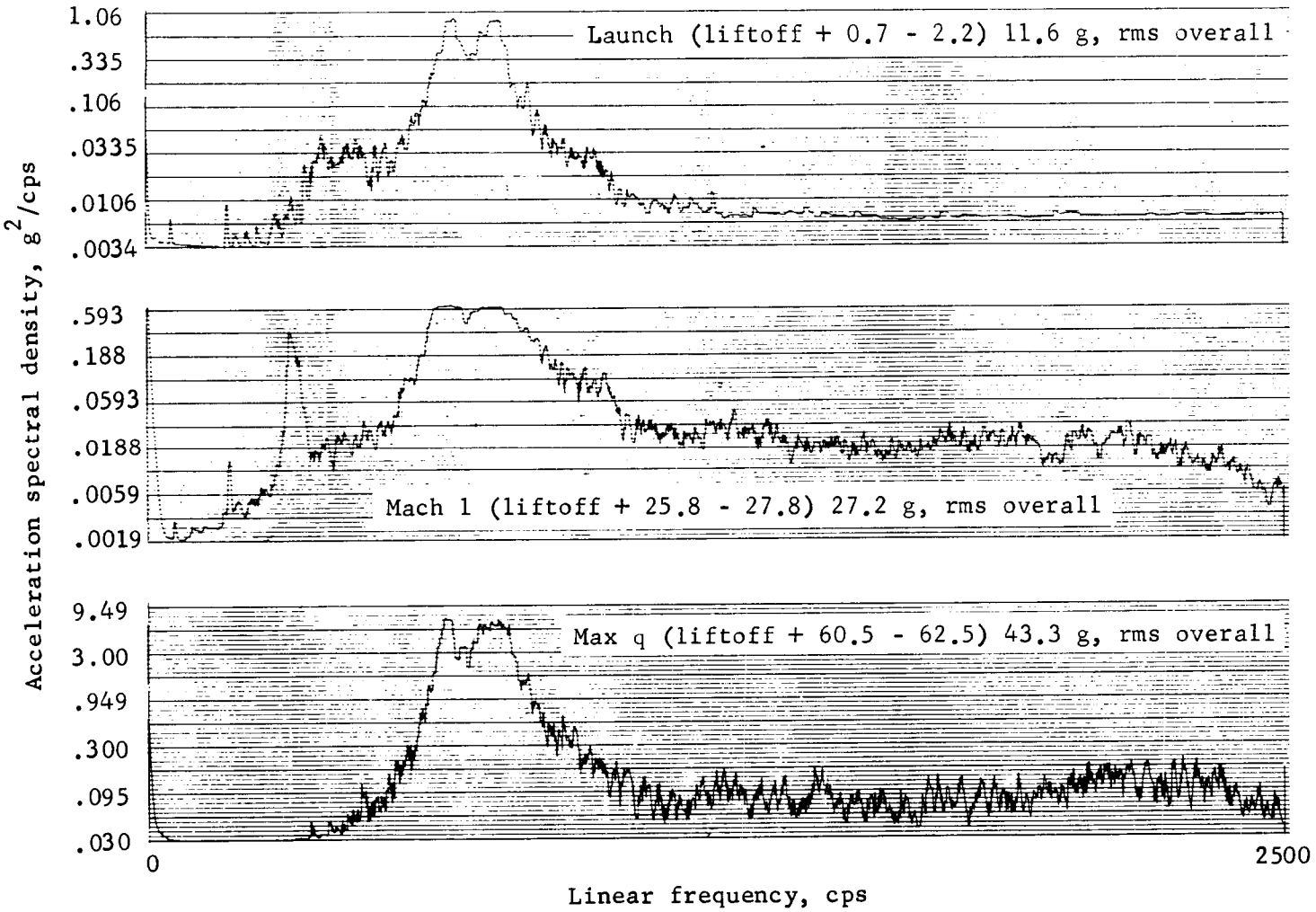


Figure 323. Measurement 2527, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1A, Sta 508, Quad I, Stringer 2A, Vehicle 4

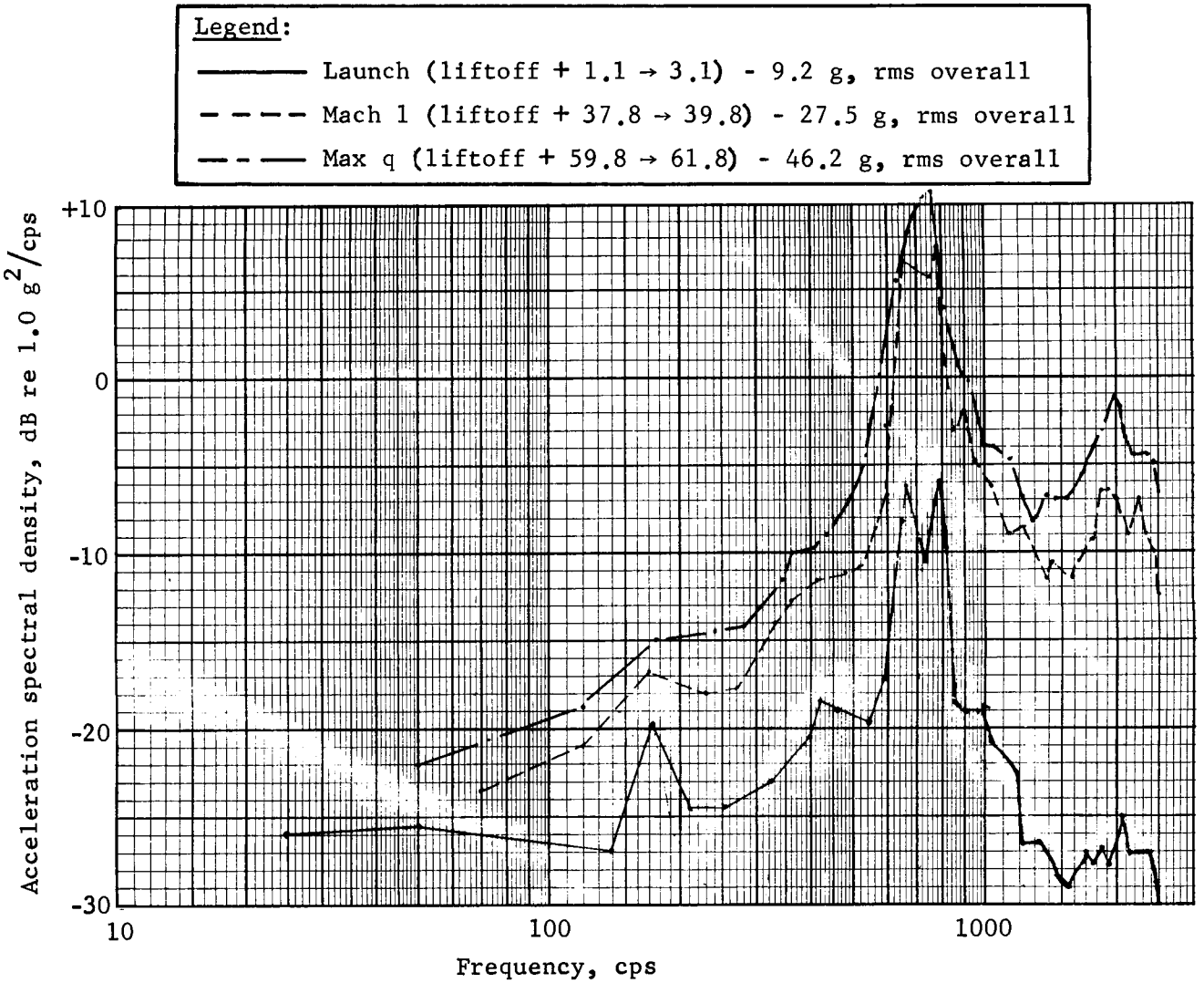


Figure 324. Measurement 2527 (T), 1A Airframe, Lateral, Vehicle 7 Flight

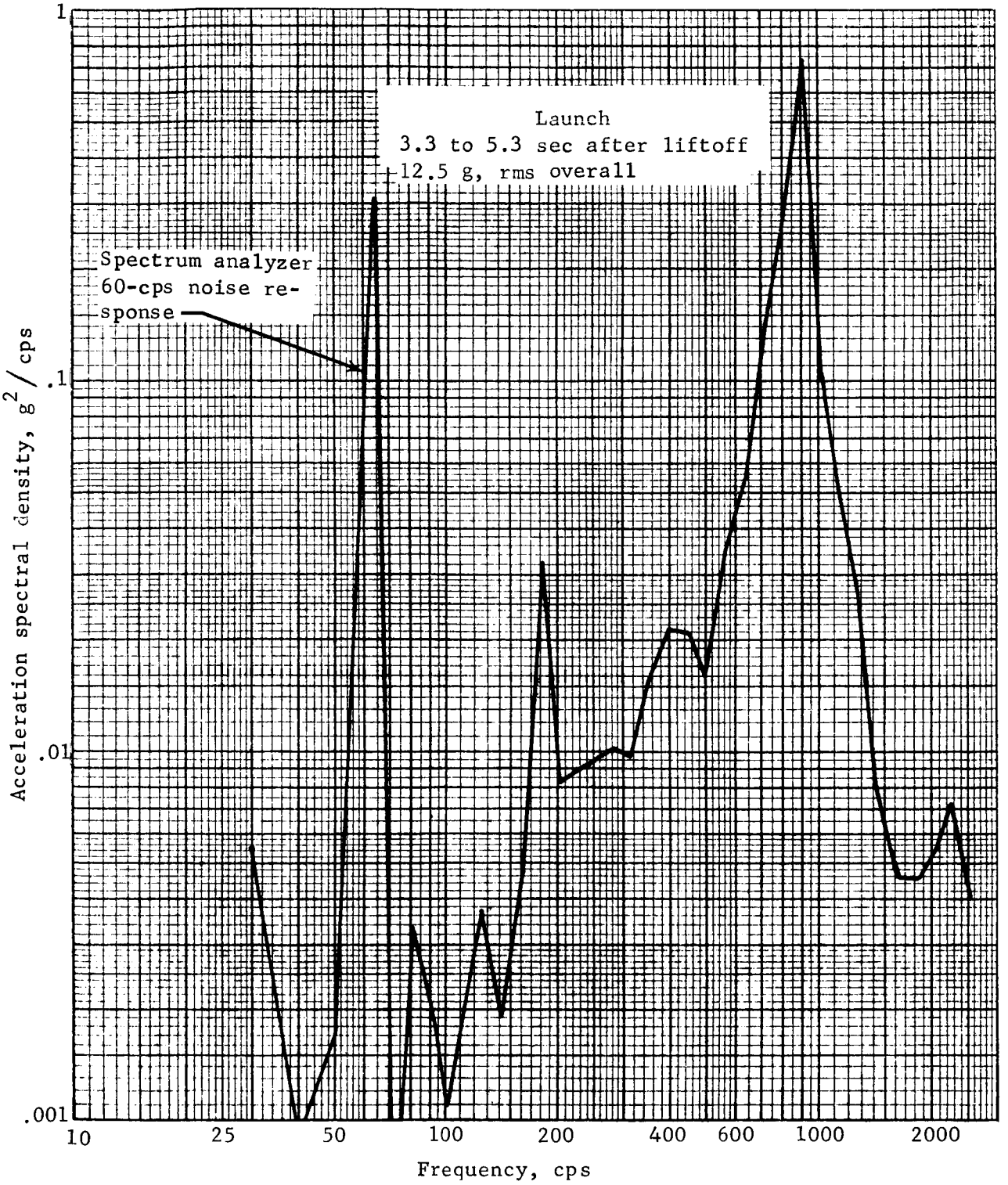


Figure 325. Measurement 2527, Vibration Spectrum, Compartment 1A, Airframe at SRM Tie-in, Stringer 2A, Quad I, Sta 508, Lateral, Vehicle 8

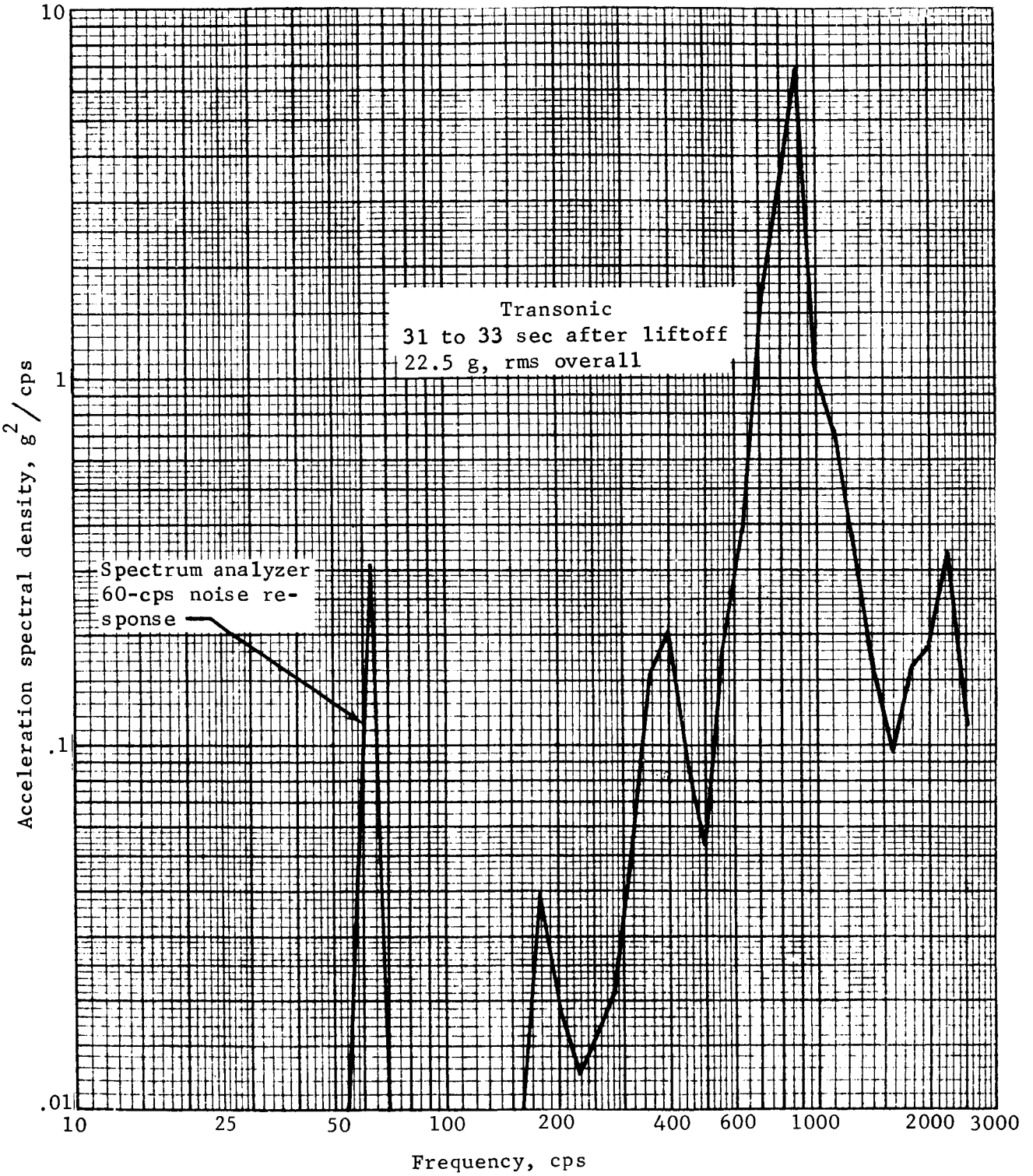


Figure 326. Measurement 2527, Vibration Spectrum, Compartment 1A, Airframe at SRM Tie-in, Stringer 2A, Quad I, Sta 508, Lateral, Vehicle 8

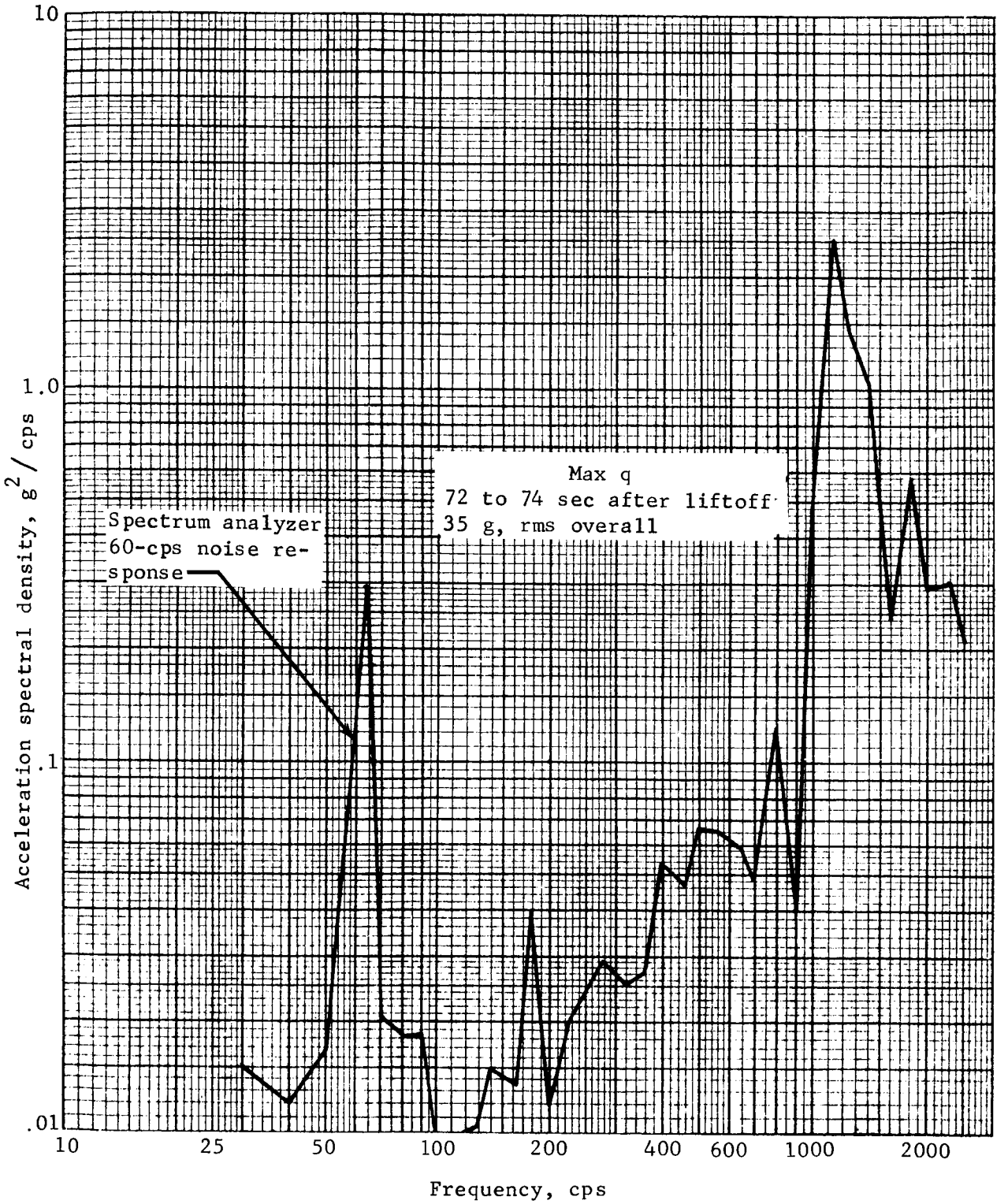


Figure 327. Measurement 2527, Vibration Spectrum, Compartment 1A, Airframe at SRM Tie-in, Stringer 2A, Quad I, Sta 508, Lateral, Vehicle 8

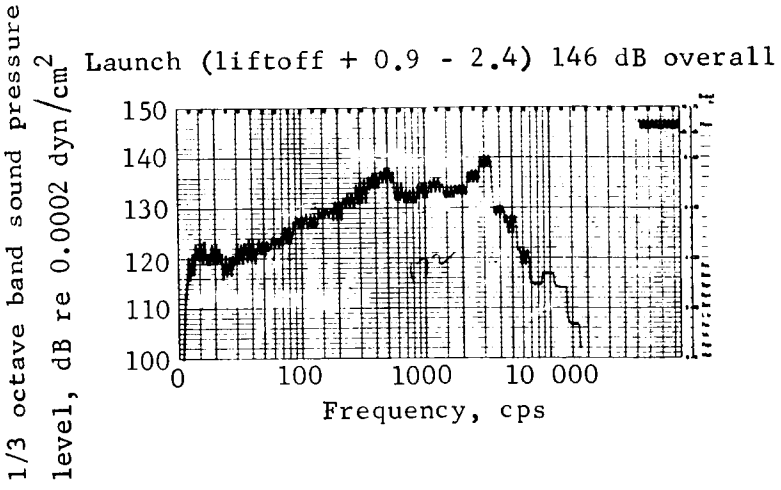


Figure 328. Measurement 2575, Acoustic, Airframe Flush Mounted, Compartment 1A, Sta 572, BL-0 on Target Side, Vehicle 4 (FAL)

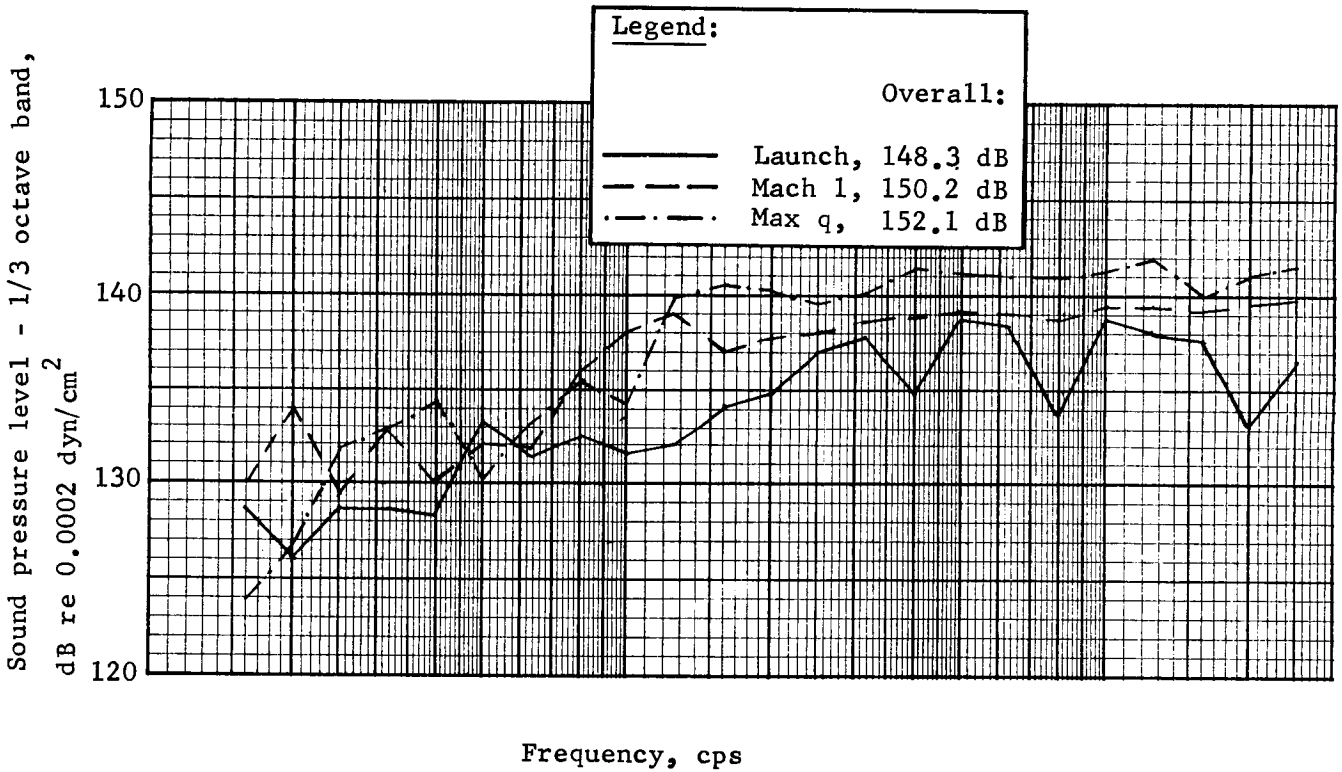


Figure 329. Measurement 2575, Acoustic, Airframe Flush Mounted, Compartment 1A, Sta 572, BL-0 on Target Side, Vehicle 7 Flight

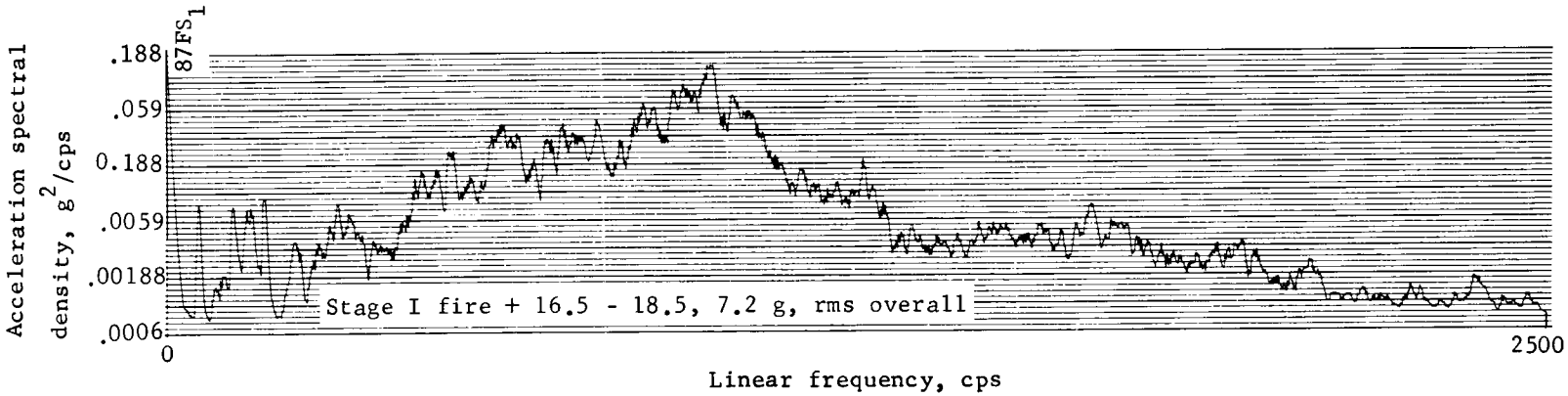


Figure 330. Measurement 2610, Vibration, Airframe Near Solid-State Switch Mounting, Longitudinal, Compartment 1A, Sta 508, Quad IV, between Stringers 31 and 32, Vehicle 4 SCF

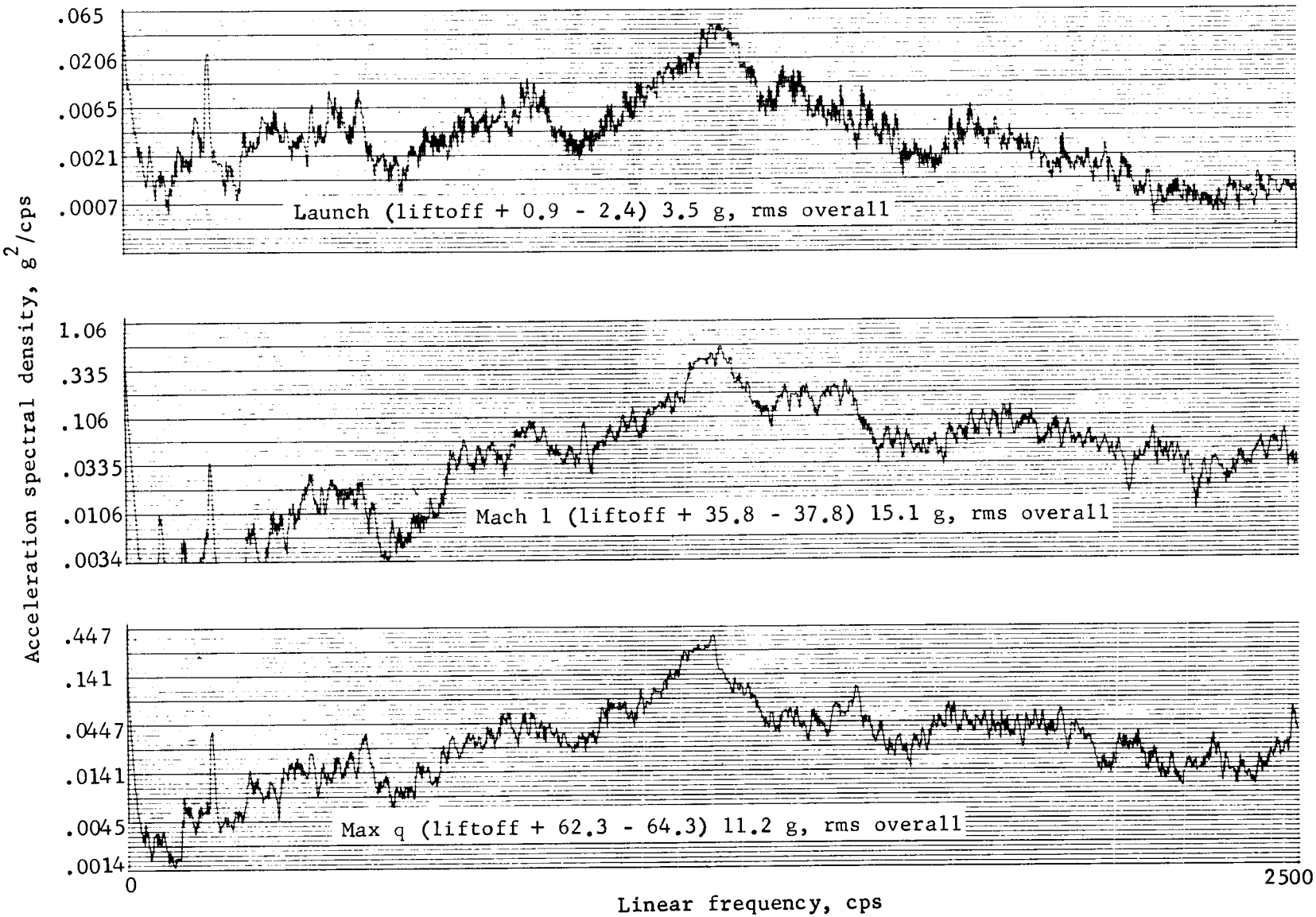


Figure 331. Measurement 2610, Vibration, Airframe Near Solid-State Switch Mounting Longitudinal, Compartment 1A, Sta 508, Quad IV, between Stringers 31 and 32, Vehicle 4 Flight .

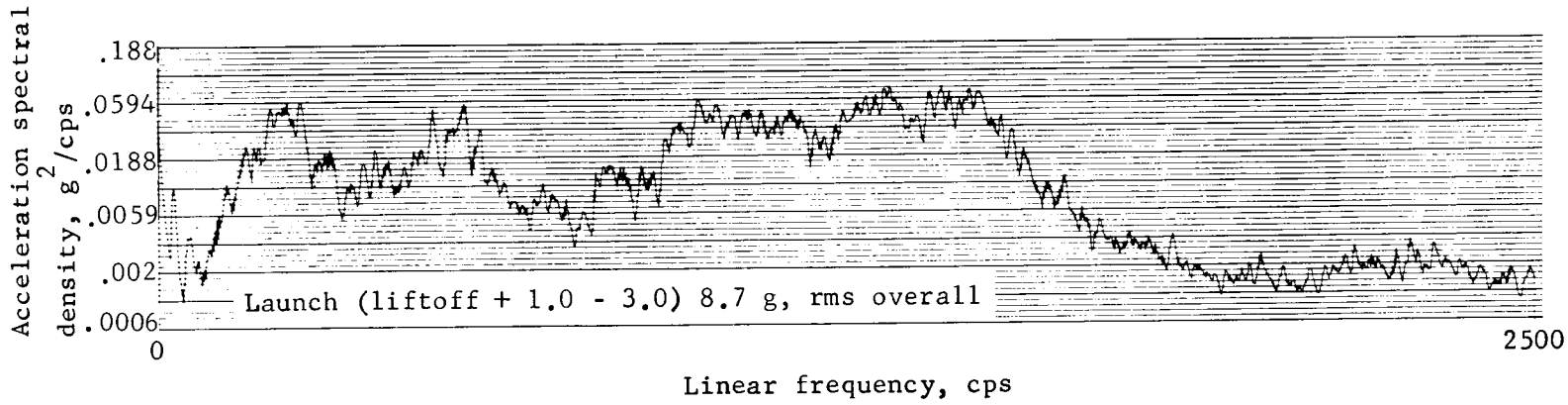


Figure 332. Measurement 2611, Vibration, Airframe Near Solid-State Switch Mounting, Radial, Compartment 1A, Sta 508, Quad IV, between Stringers 31 and 32, Vehicle 4 Flight

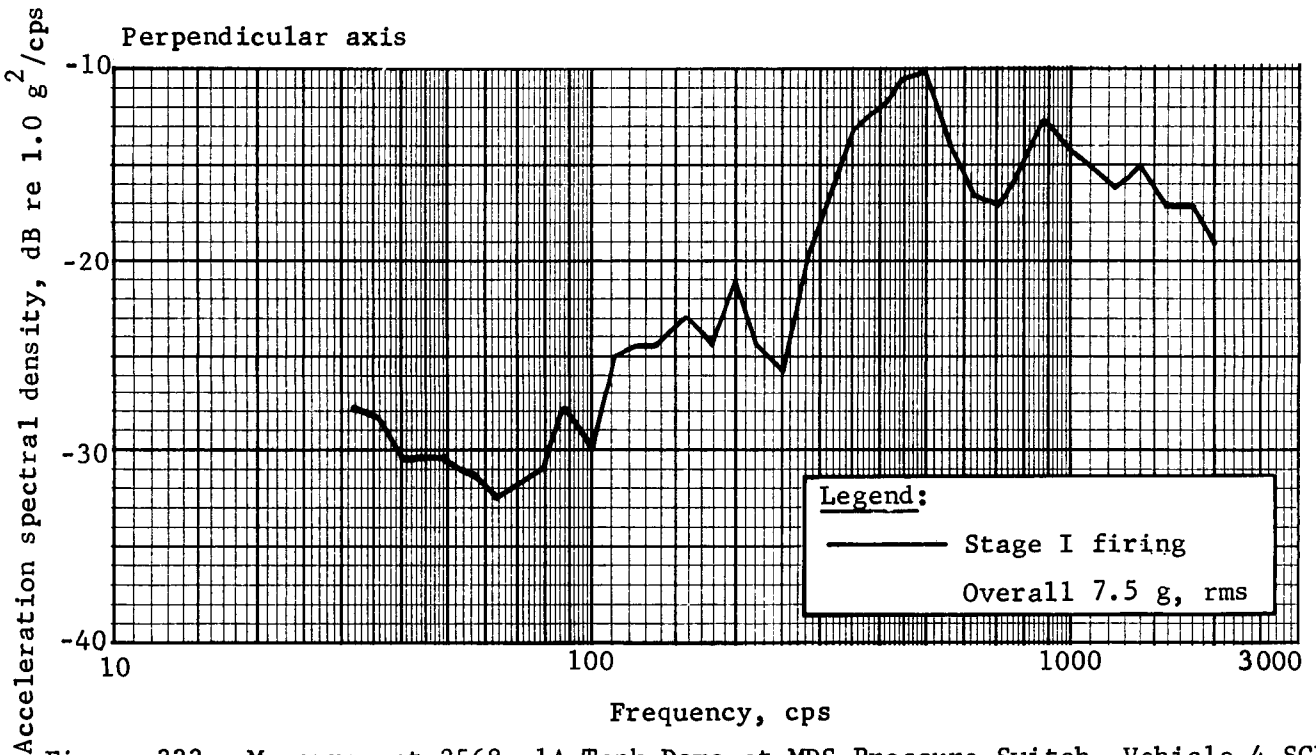


Figure 333. Measurement 2568, 1A Tank Dome at MDS Pressure Switch, Vehicle 4 SCF

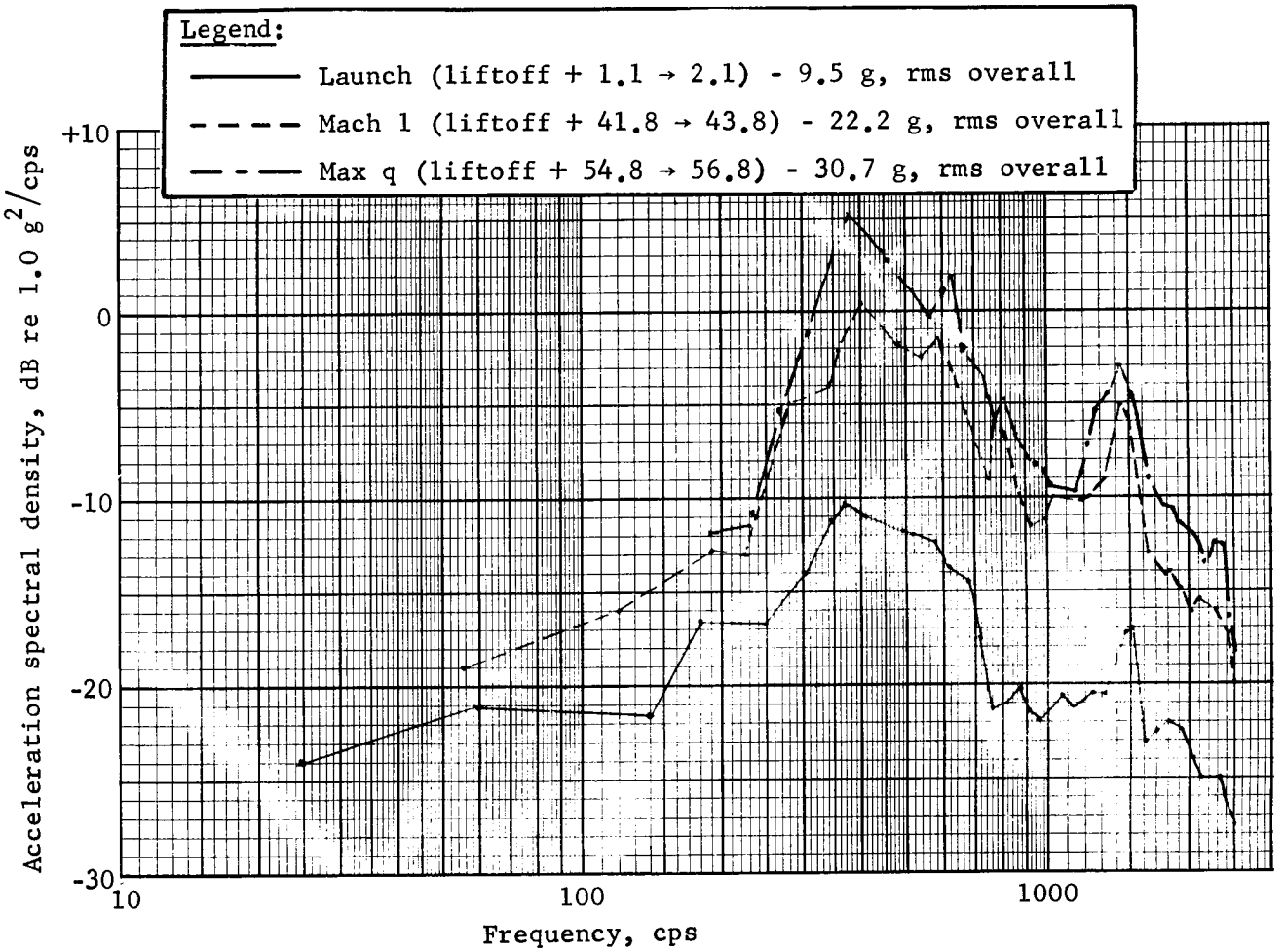


Figure 334. Measurement 2568 (T), 1A Tank Dome at MDS Pressure Switch, Perpendicular, Vehicle 7 Flight

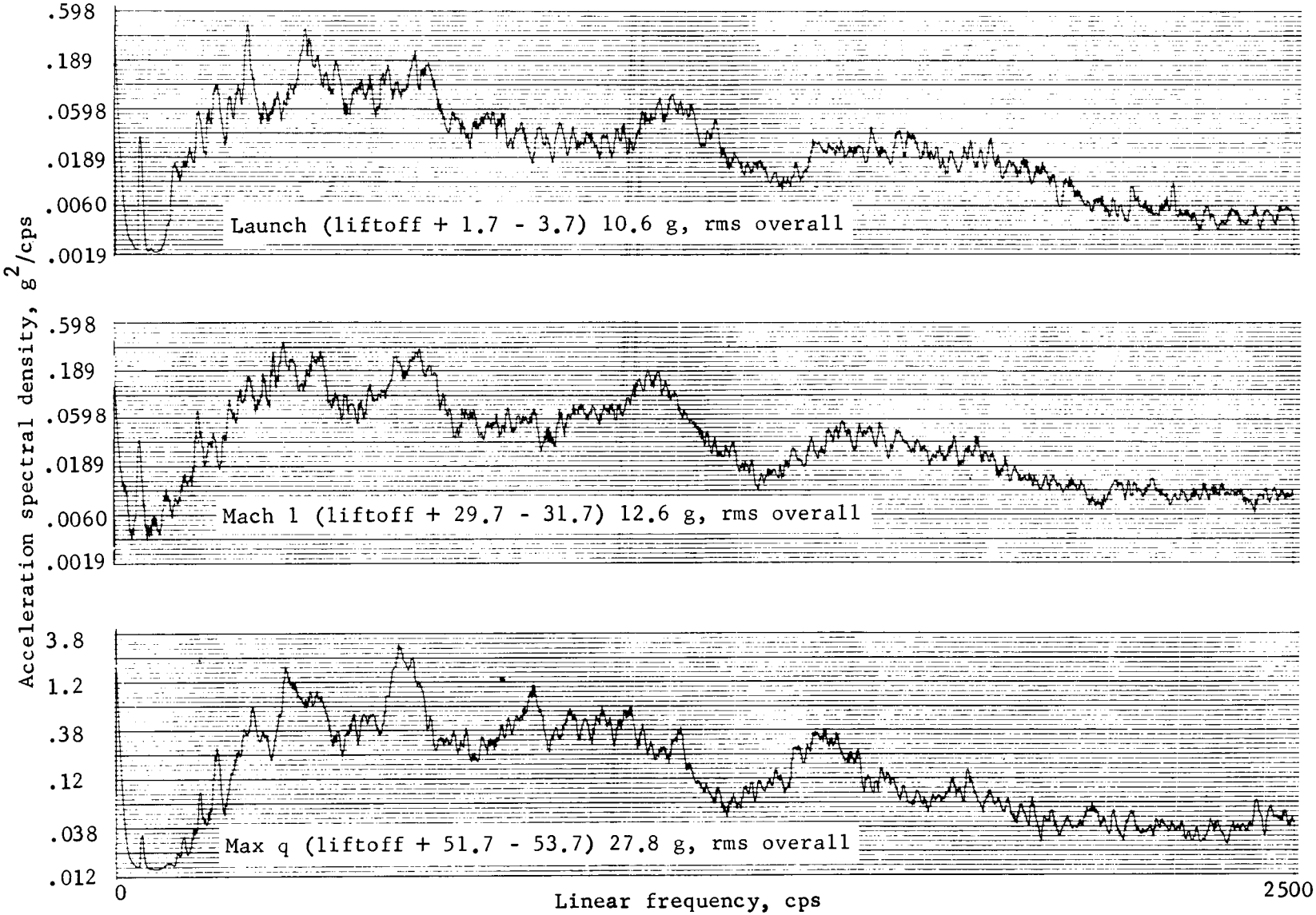


Figure 335. Measurement 2568, Vibration, Oxdizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1A, Sta 617, Quad III, Vehicle 8

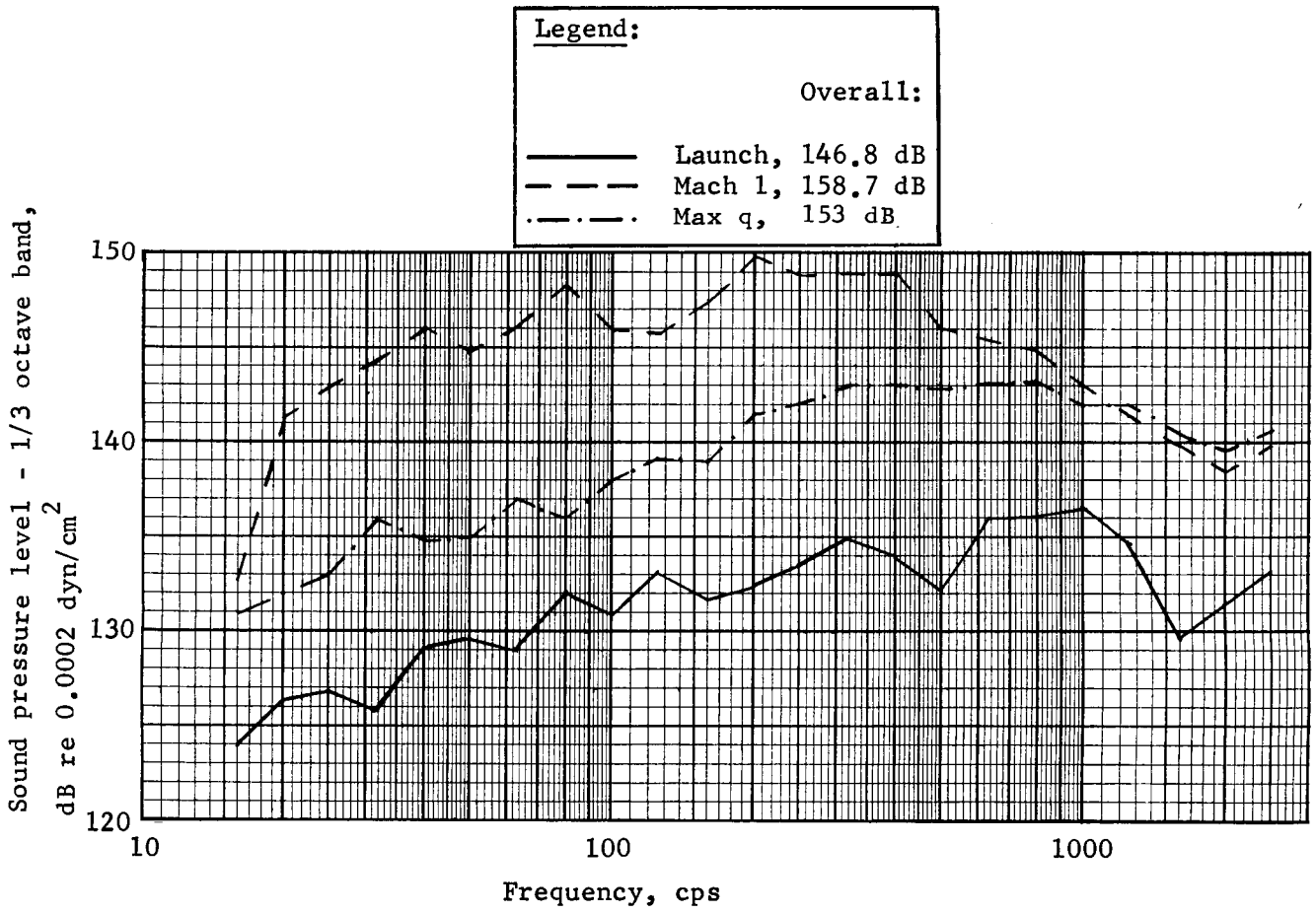


Figure 336. Measurement 2665, Acoustic, Oxidizer Tank Top at MDS Pressure Switch Mounting, on Mounting Plate, Compartment 1A, Sta 617, Quad III, Vehicle 7 Flight

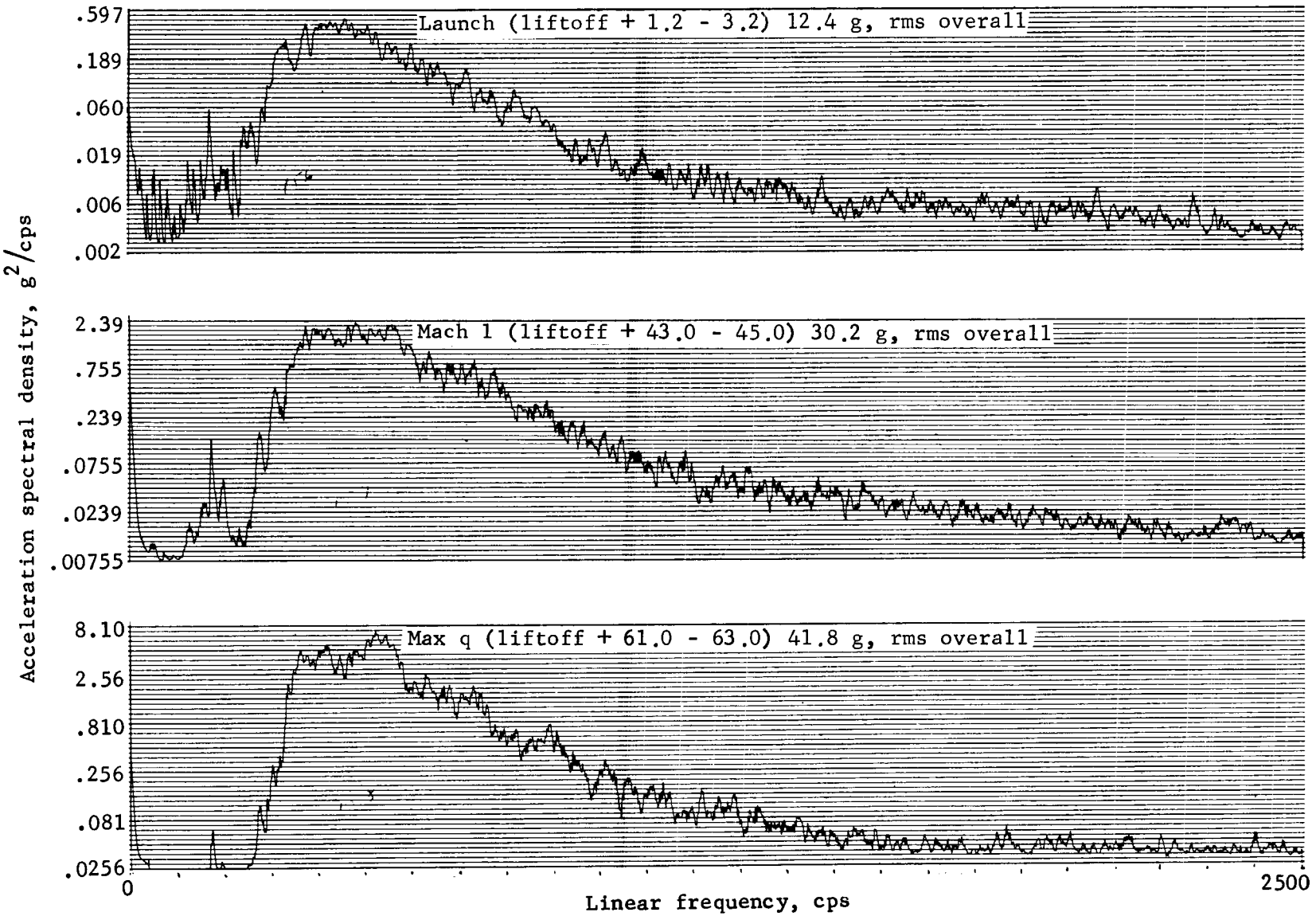


Figure 337. Measurement 2672, Vibration, Oxidizer Tank Top, on Dome Land Area, Perpendicular, Compartment 1A, Sta 613, Quad III, Vehicle 4

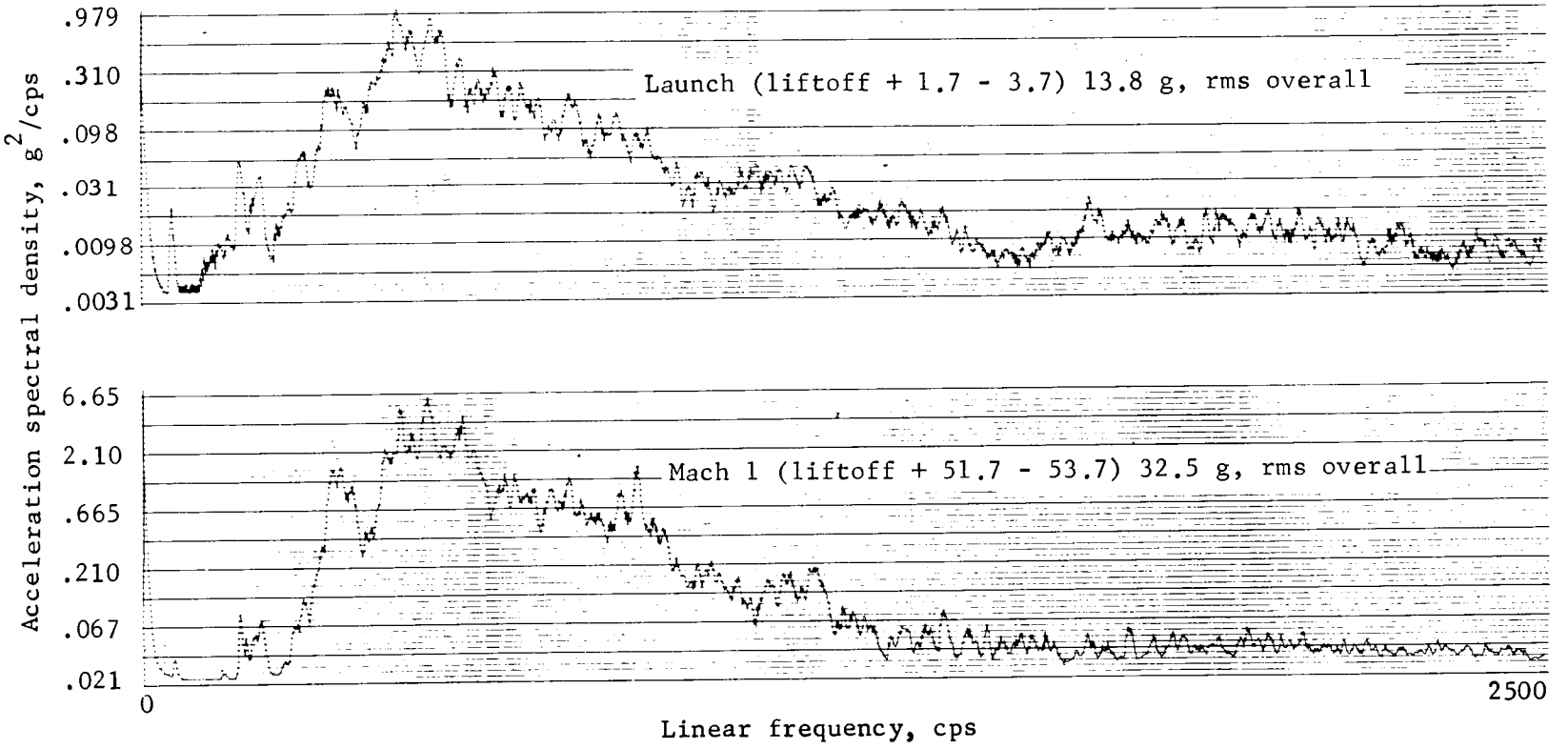


Figure 338. Measurement 2672, Vibration, Oxidizer Tank Top, on Dome Land Area, Perpendicular, Compartment 1A, Sta 613, Quad III, Vehicle 8

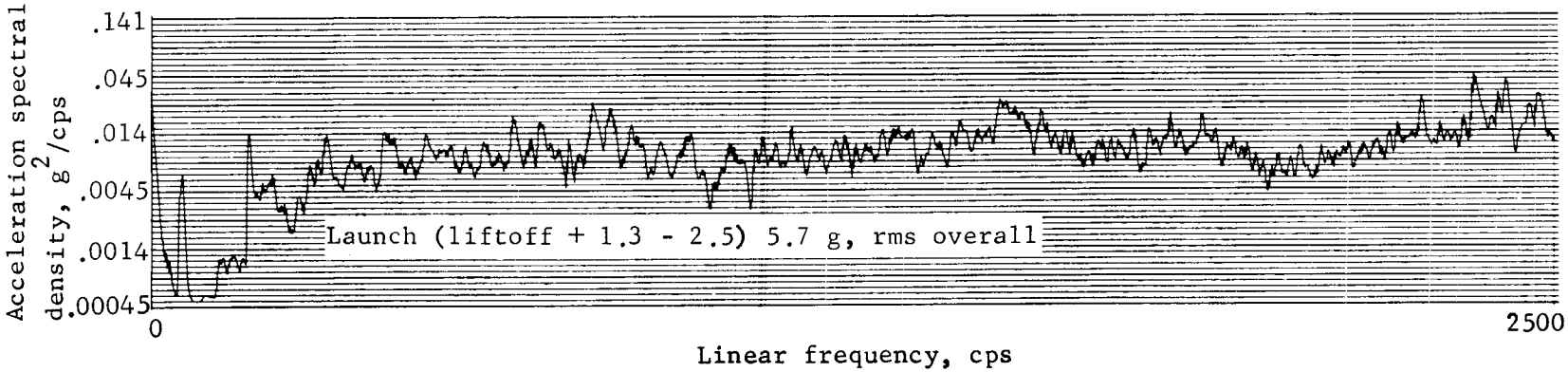


Figure 339. Measurement 2616, Vibration, Airframe at Destruct Battery Mounting (LONG), Compartment 1B, Sta 929, Quad III, Stringer 17, Vehicle 7

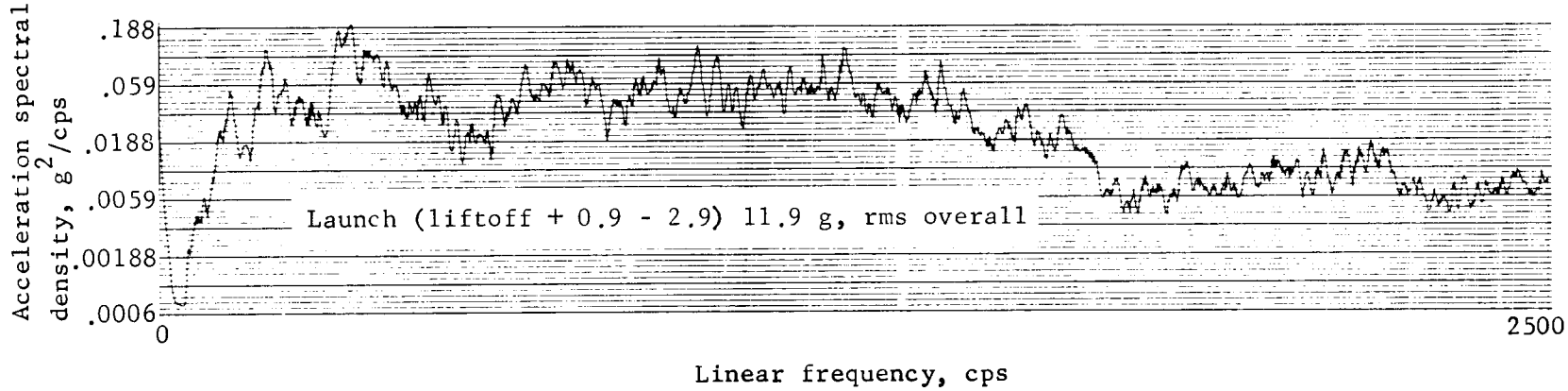


Figure 340. Measurement 2618, Vibration, Airframe at Solid-State Switch Panel Mounting, Radial, Compartment 1B, Sta 929, Quad III, Stringer 11, Vehicle 4

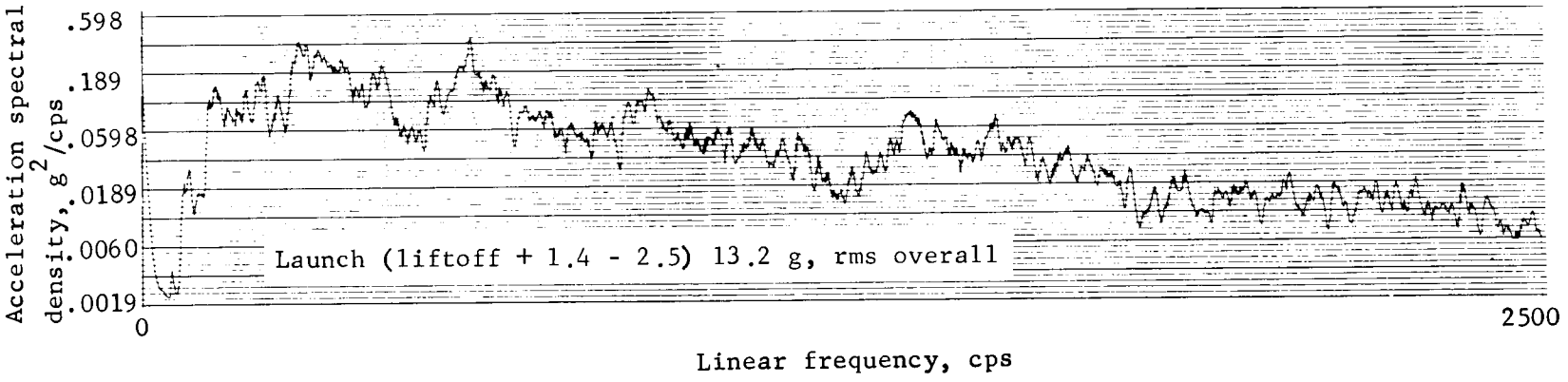


Figure 341. Measurement 2570, Vibration, Airframe at Destruct Battery Mounting, Radial, Compartment 1B, Sta 929, Quad III, Stringer 17, Vehicle 7

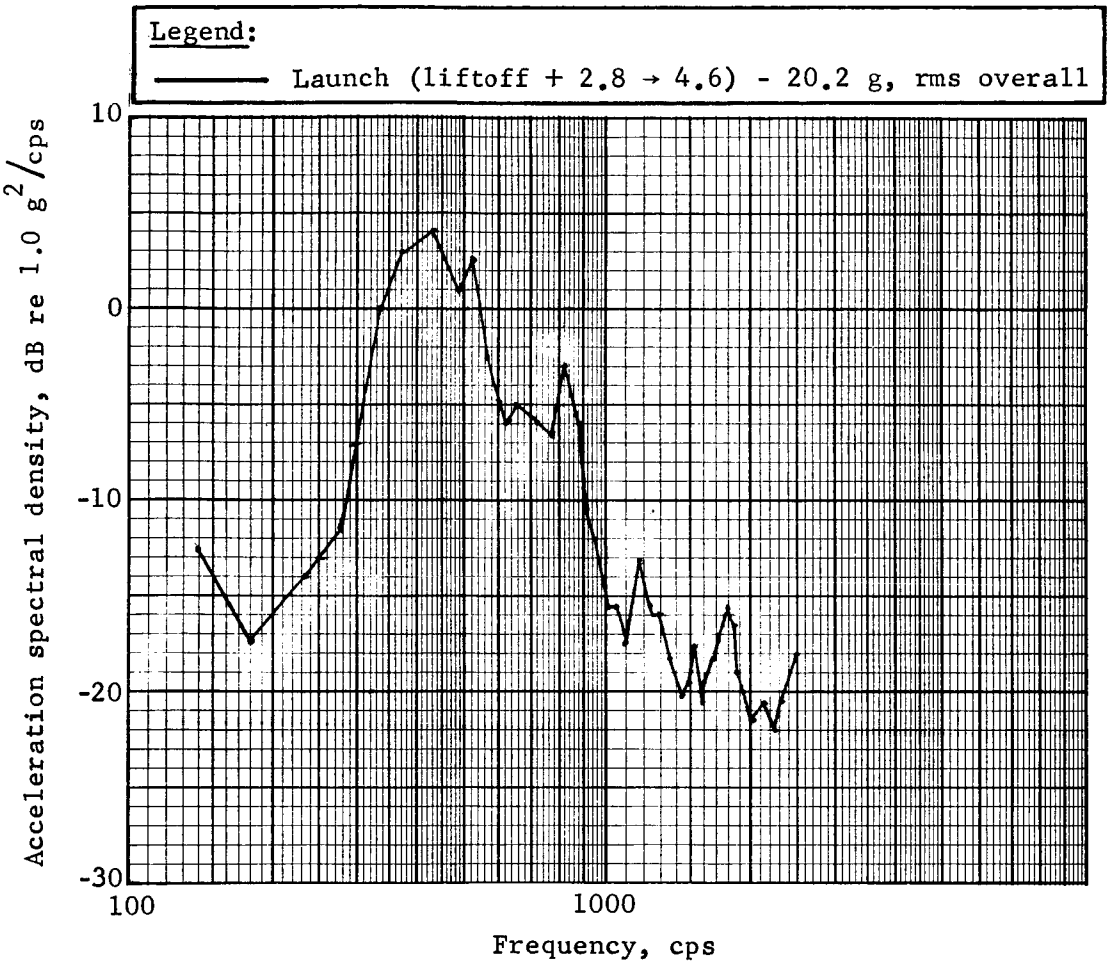


Figure 342. Measurement 2571 (L), Tangential, 1B Airframe on Stringer 17, Sta 929, Vehicle 7 Flight

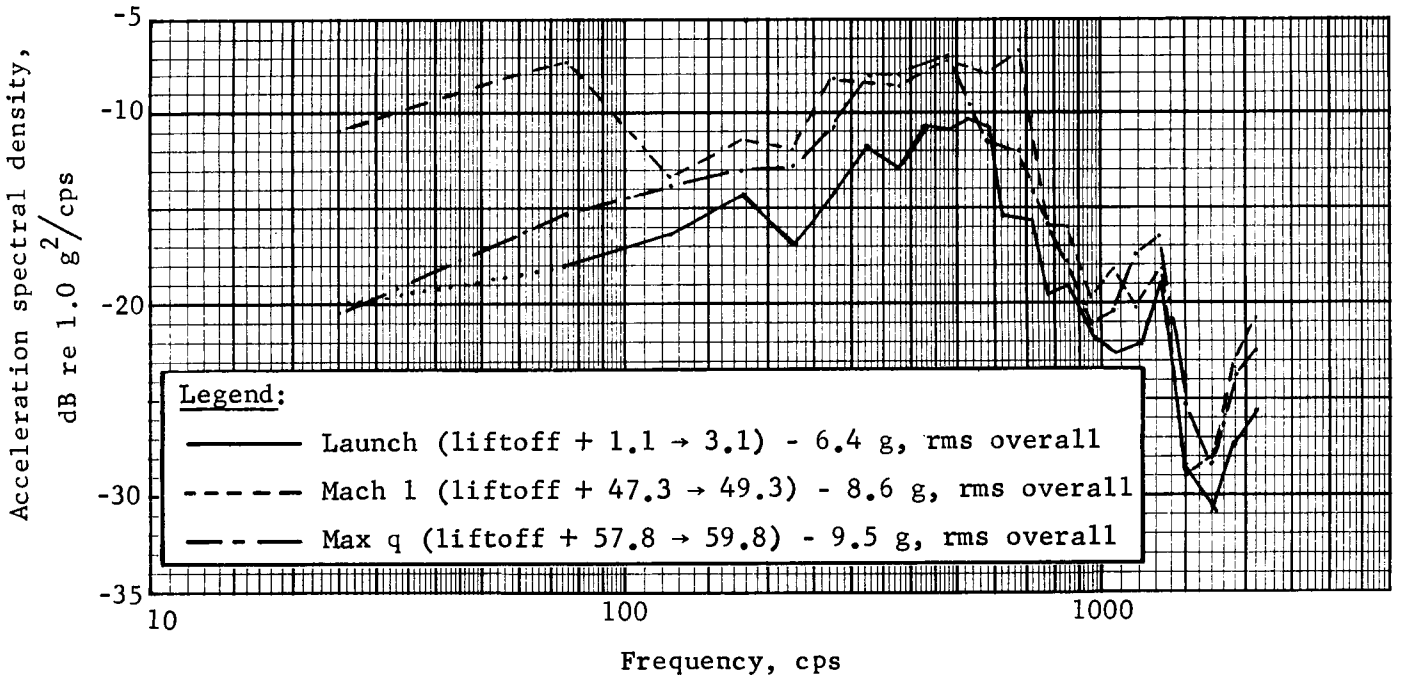


Figure 343. Measurement 2529, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting, on Gyro Case, Longitudinal, Compartment 1B, Sta 923, Quad II, Vehicle 4 Flight

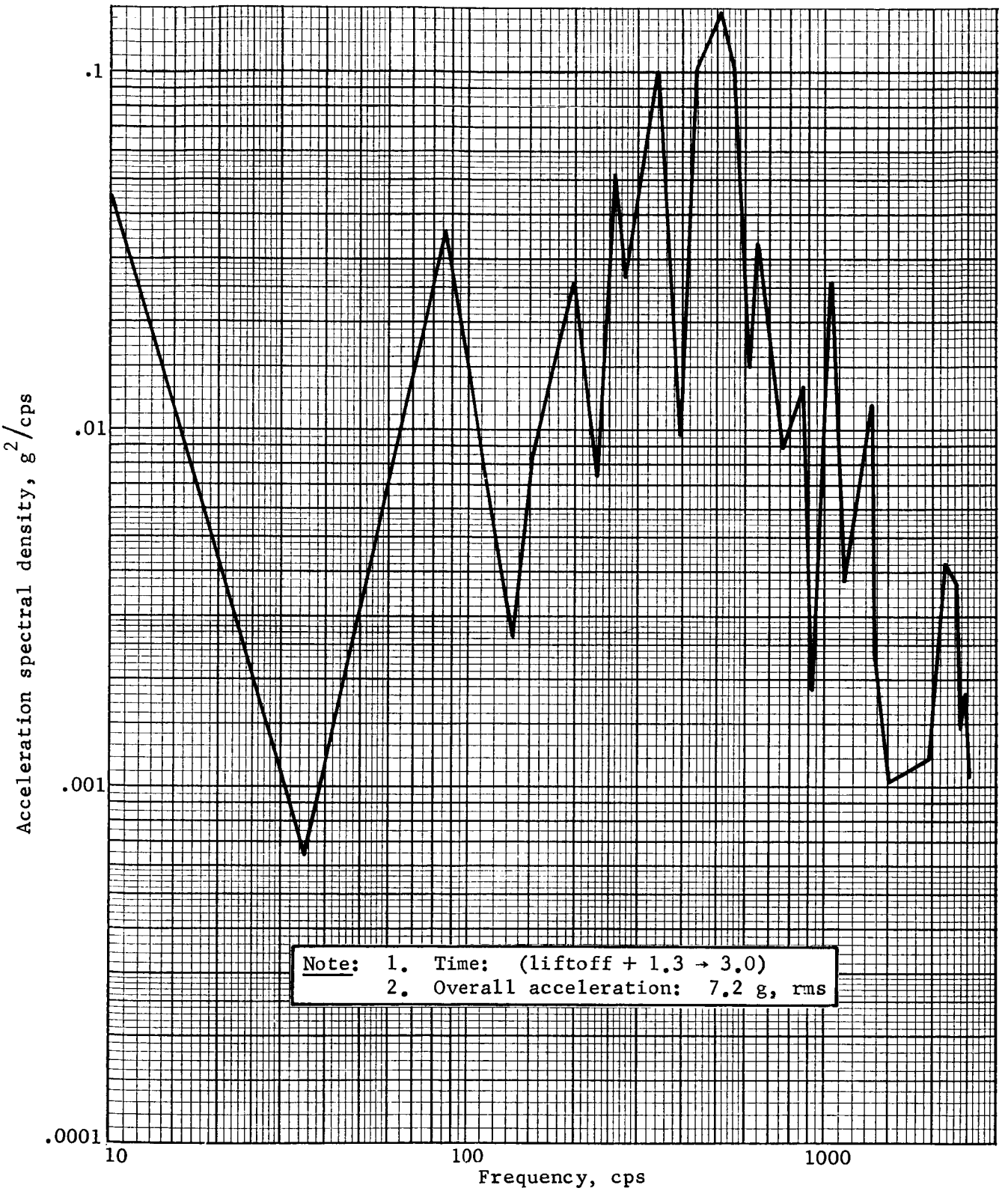


Figure 344. Measurement 2529B, Oxidizer Tank Bottom at Rate Gyro on Side of Case, Longitudinal, Vehicle 8 Flight (FAL)

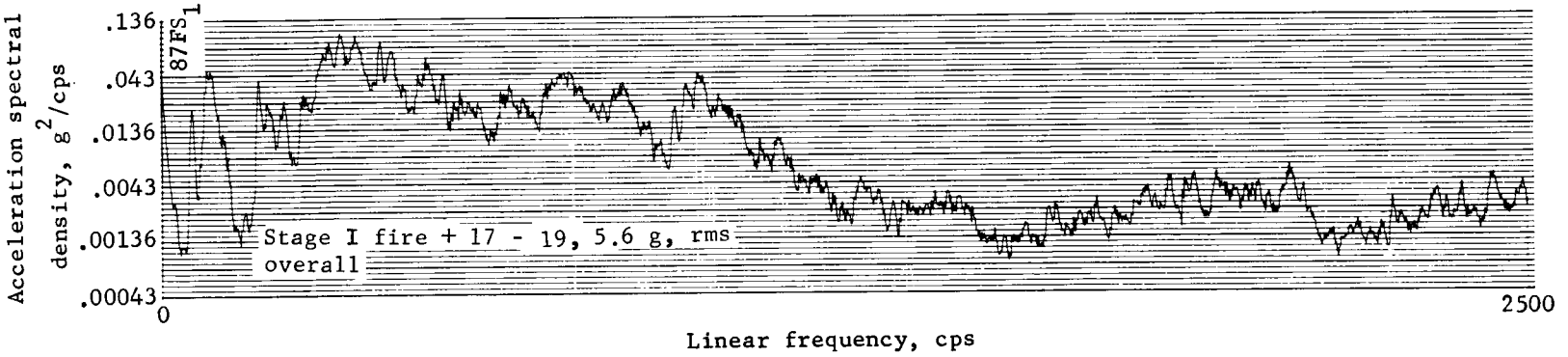


Figure 345. Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehicle 4 SCF

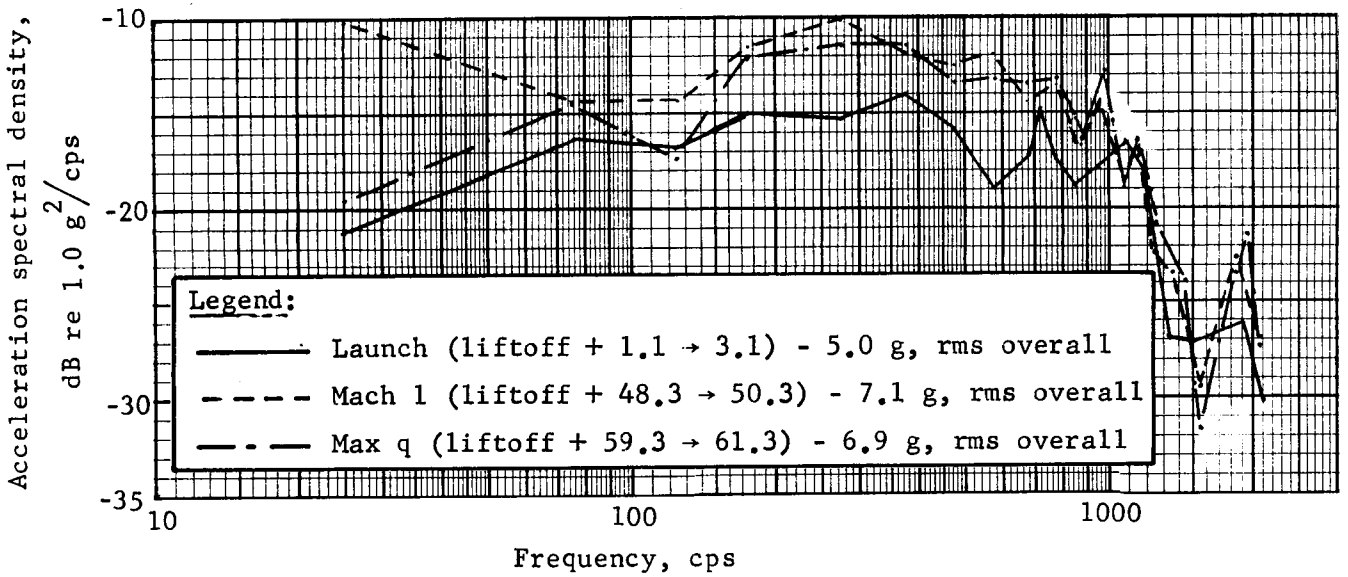


Figure 346. Measurement 2530, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting, on Gyro Case, Lateral, Compartment 1B, Sta 923, Quad II, Vehcile 4 Flight

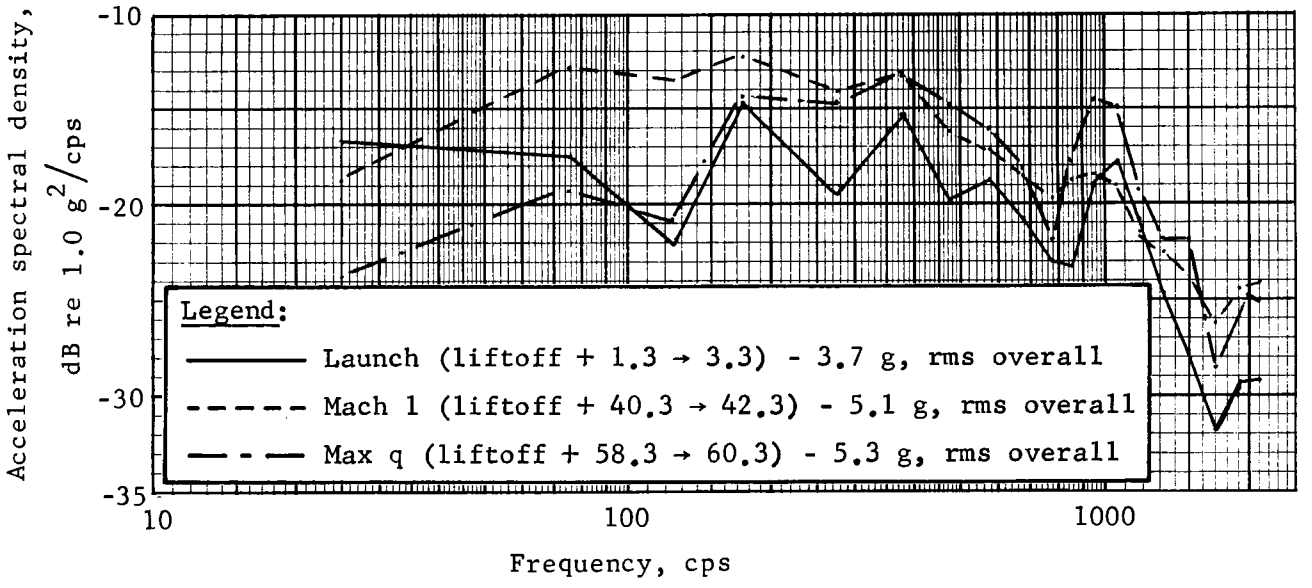


Figure 347. Measurement 2615A, Vibration, Oxidizer Tank Bottom at Rate Gyro Mounting, on Gyro Case, Vertical, Compartment 1B, Sta 923, Quad II, Vehicle 4 Flight

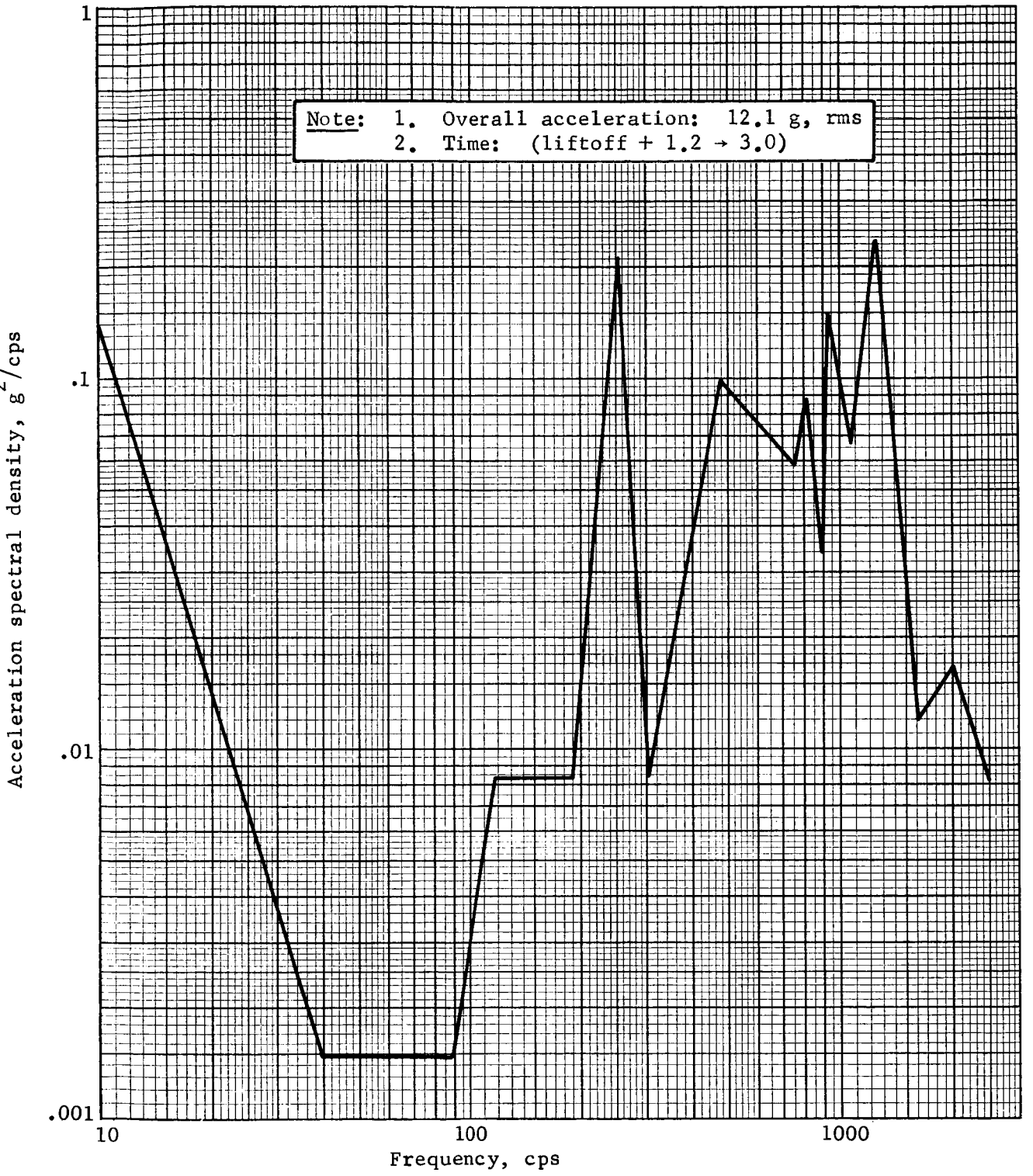


Figure 348. Measurement 2569B, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Perpendicular, Compartment 1B, Sta 938, Quad III, Vehicle 8 Flight (FAL)

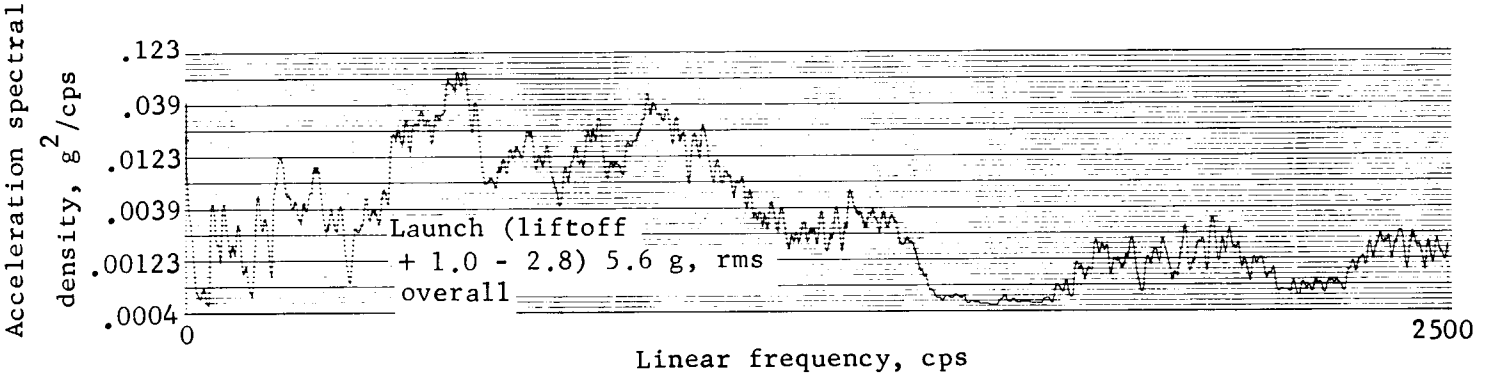


Figure 349. Measurement 2613, Vibration, Fuel Tank Top at MDS Underpressure Switch Mounting, on Mounting Plate, Parallel, Compartment 1B, Sta 938, Quad II, Vehicle 4 (FAL)

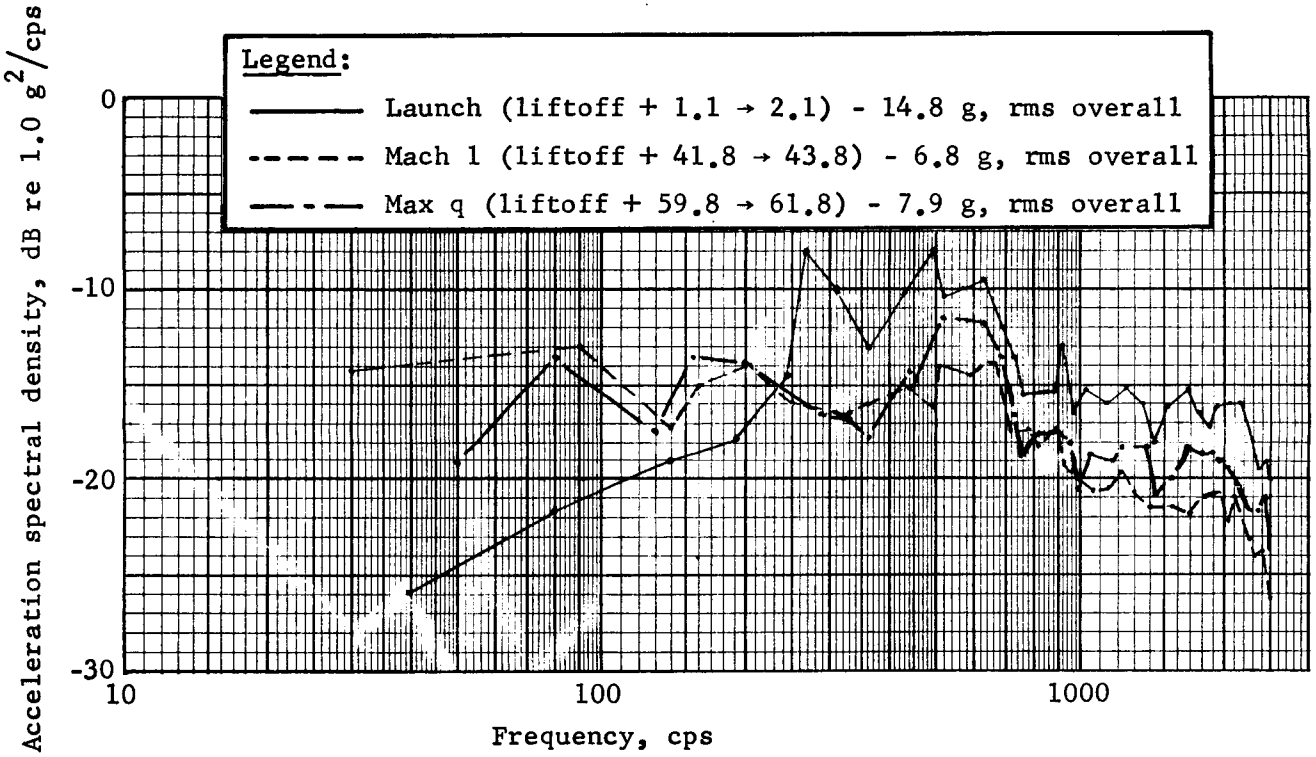


Figure 350. Measurement 2625 (T), Perpendicular, Compartment 1C, Vehicle 7 Flight

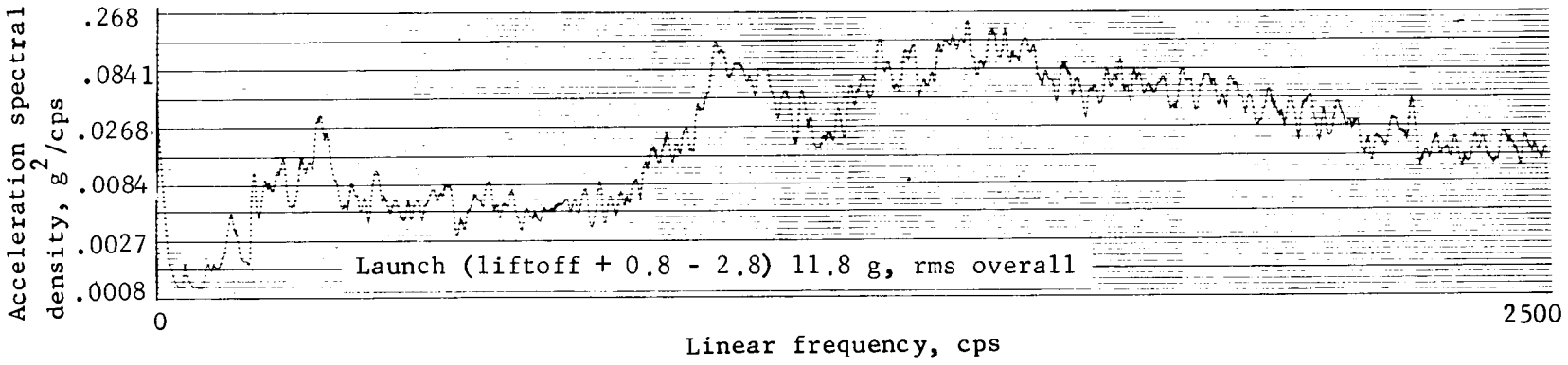


Figure 351. Measurement 2627, Vibration, Fuel Tank Bottom at Shutdown Sensor Mounting, Tangential, Compartment 1C, Sta 1207, Quad I, Vehicle 4

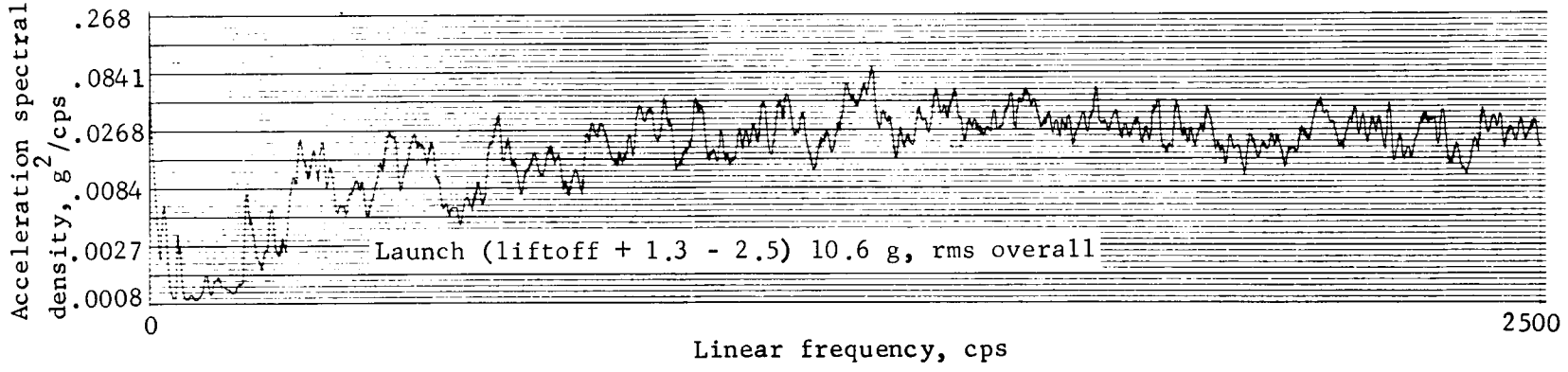


Figure 352. Measurement 2627, Vibration, Fuel Tank Bottom at Shutdown Sensor Mounting, Tangential, Compartment 1C, Sta 1207, Quad I, Vehicle 7

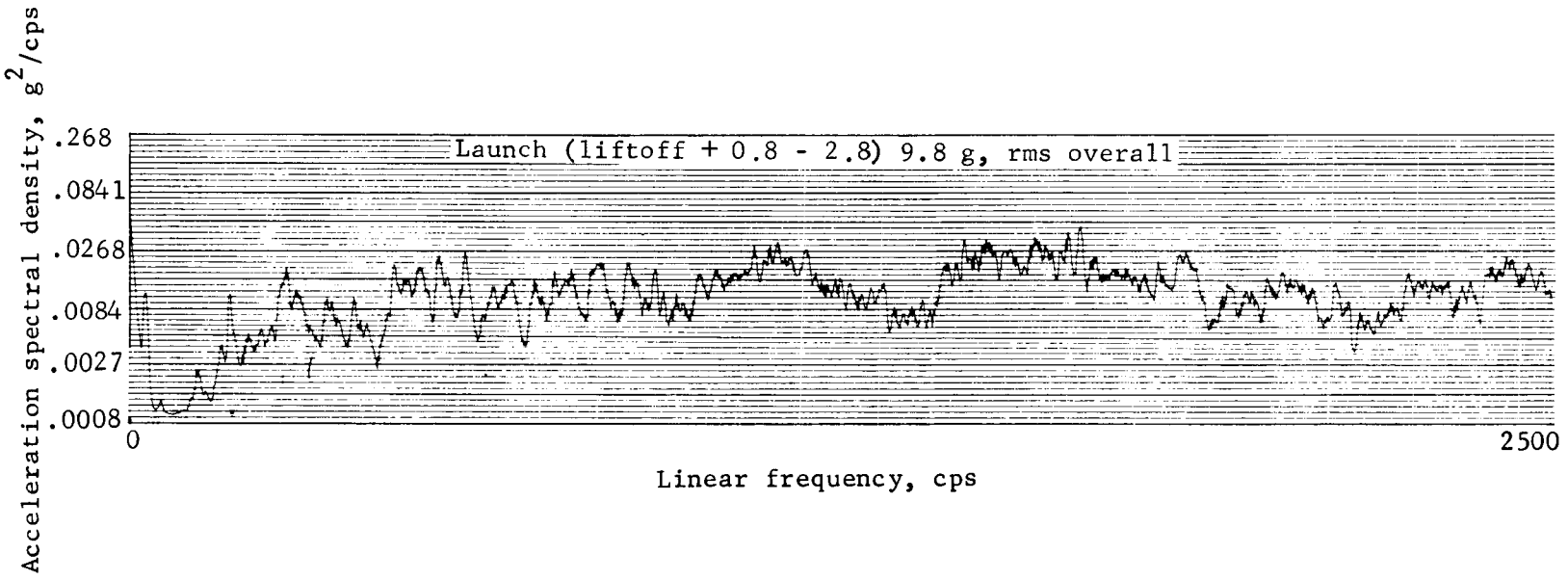


Figure 353. Measurement 2626, Vibration on Fuel Tank Bottom at Shutdown Sensor Mounting, Parallel, Compartment 1C, Sta 1207, Quad I, Vehicle 4 (FAL)

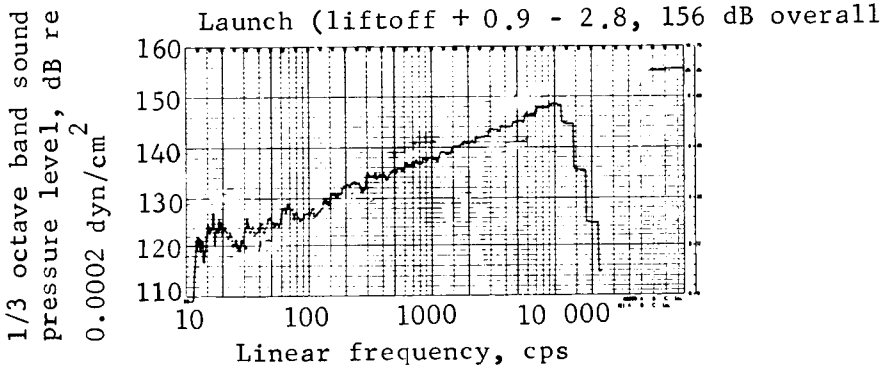


Figure 354. Measurement 2632, Acoustic, Internal Near Airframe, Compartment 1C, Sta 1224, Quad III, Vehicle 4 (FAL)

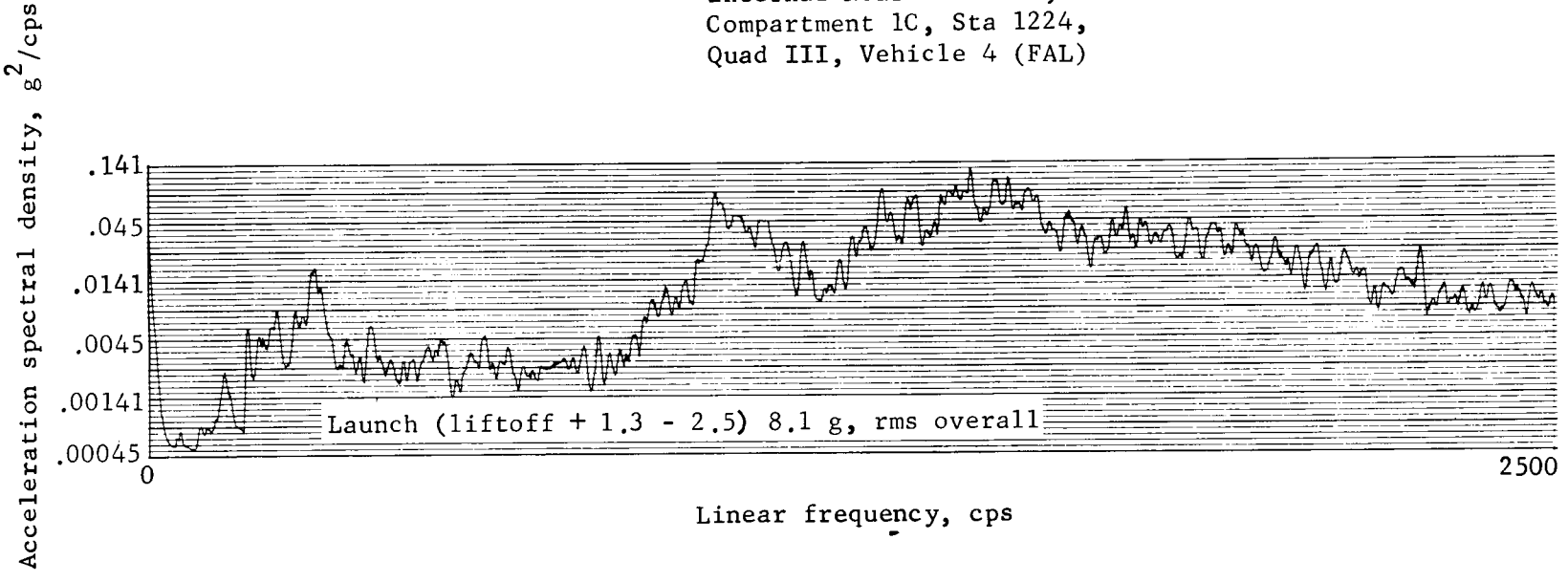


Figure 355. Measurement 2540, Vibration, Airframe at SRM Tie-in Point, Longitudinal, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 4 (FAL)

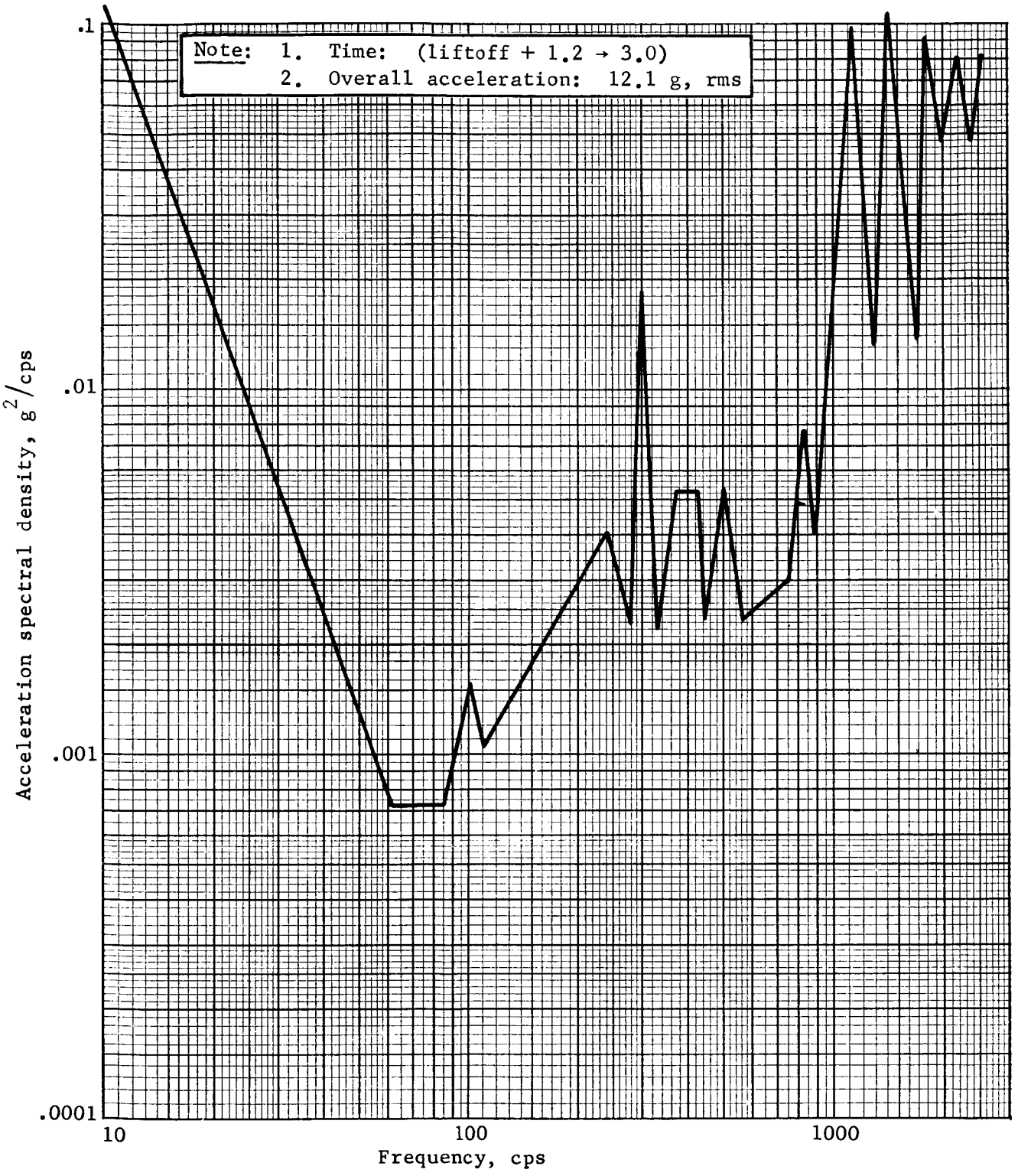


Figure 356. Measurement 2540, 1C Airframe at Solid Tie, Quad I, Longeron S 5A 1214, 10-in. Forward, Longitudinal, Vehicle 8 Flight (FAL)

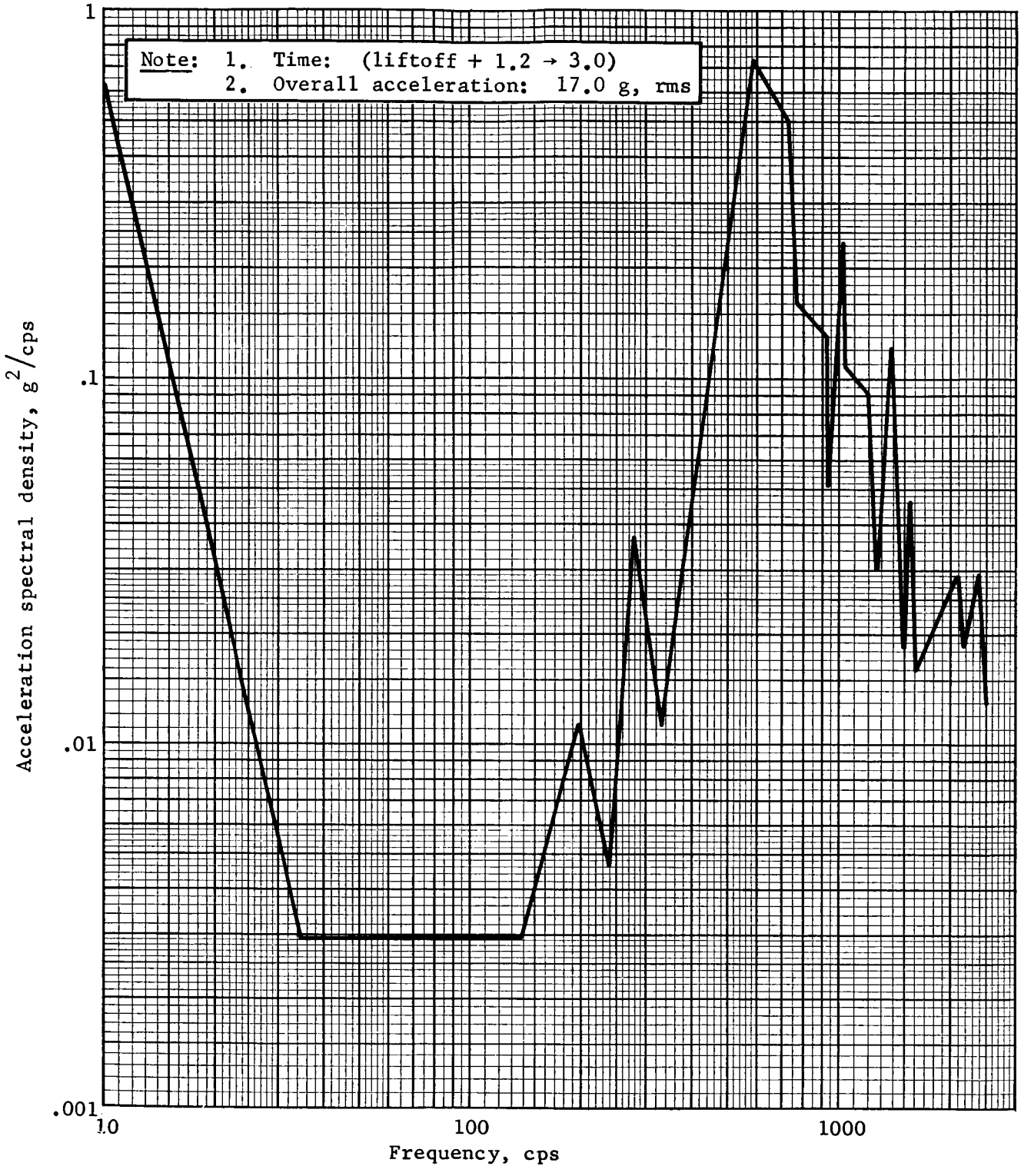


Figure 357. Measurement 2541, Vibration, Airframe at SRM Tie-in Point, Lateral, Compartment 1C, Sta 1214, Quad I, between Stringers 5 and 6, Vehicle 8 Flight (FAL)

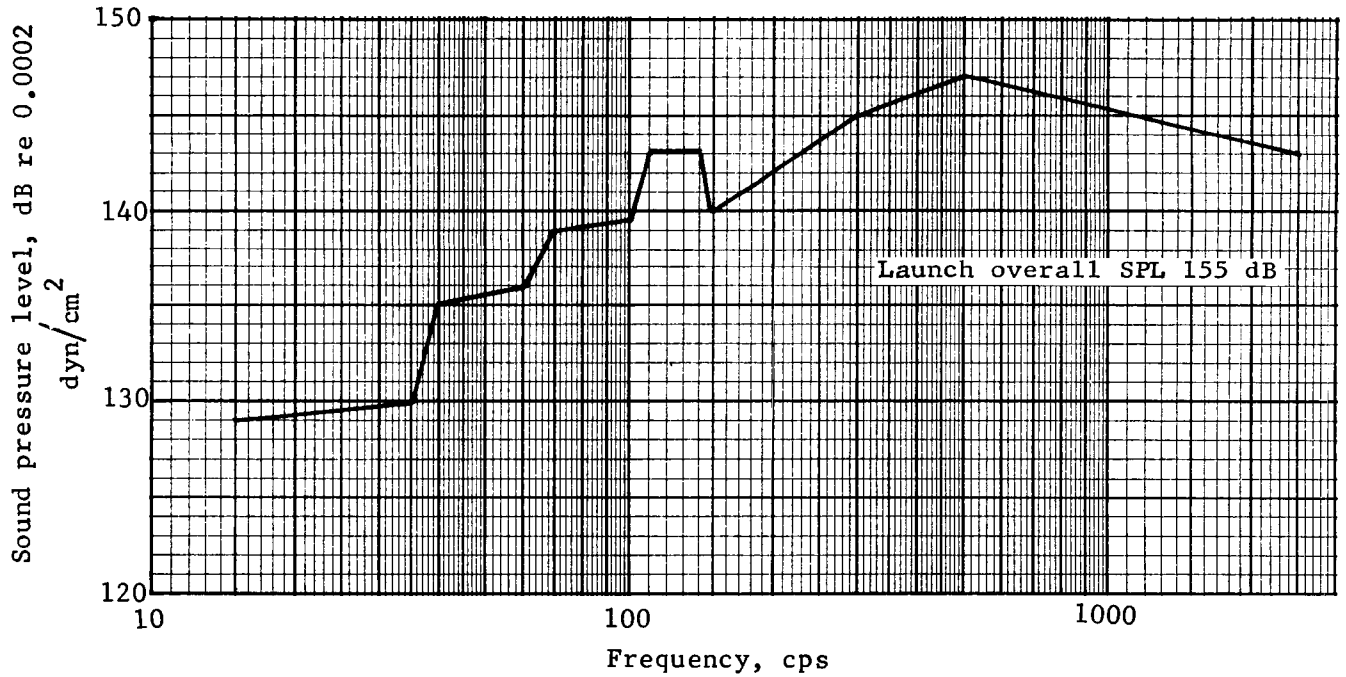


Figure 358. Measurement 2576, Acoustic Airframe Flush Mounted, Compartment 1C, Sta 1219, BL-0 on Target Side, Vehicle 8 Flight (FAL)

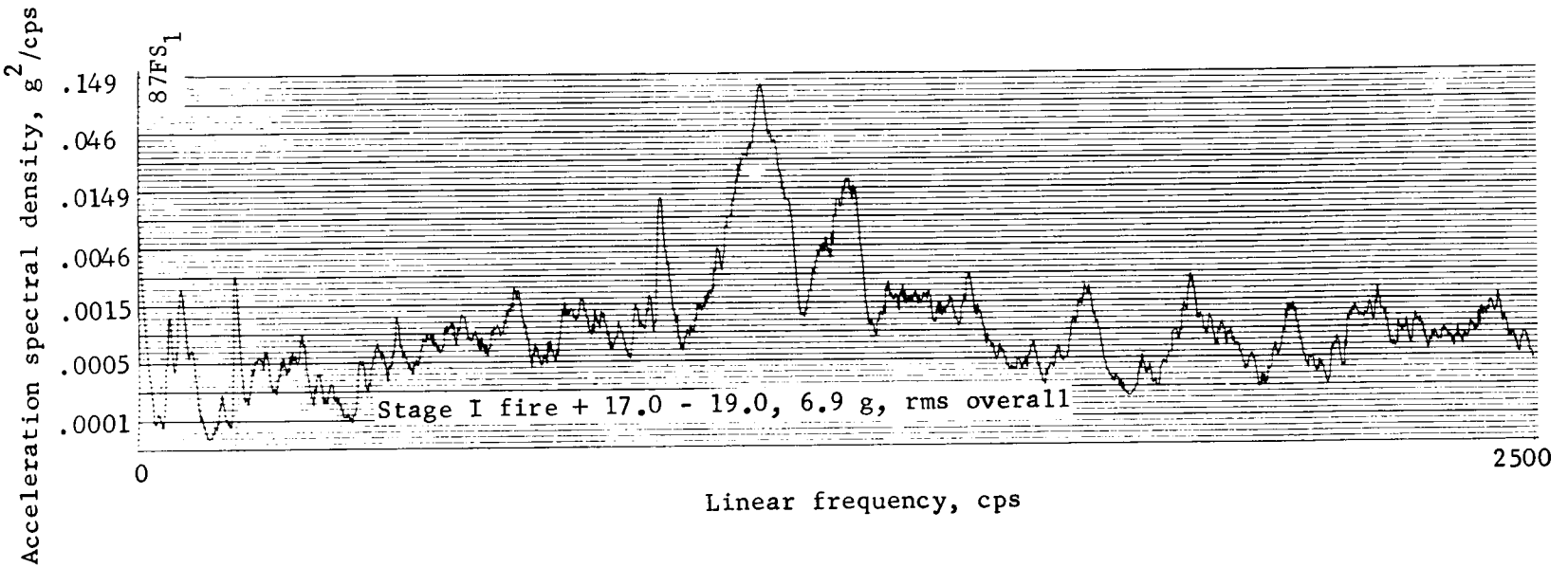


Figure 359. Measurement 2537, Vibration Engine Gimbal Pad, SA-1, Longitudinal, Compartment 1C, Sta 1265, BL-0, Vehicle 4 SCF

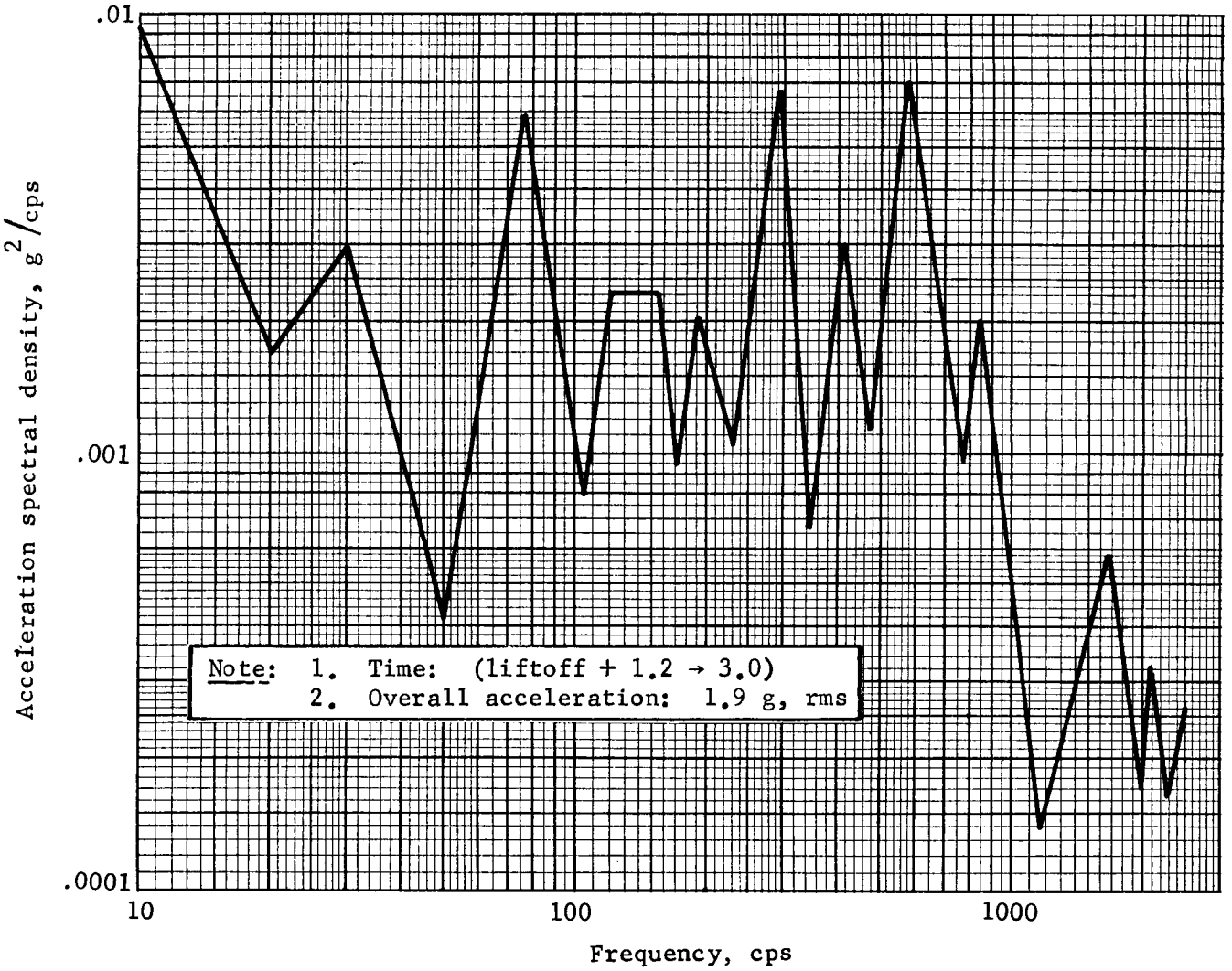


Figure 360. Measurement 2538B, 1C Subassembly 2 Engine Gimbal Pad, Lateral, Vehicle 8 Flight (FAL)

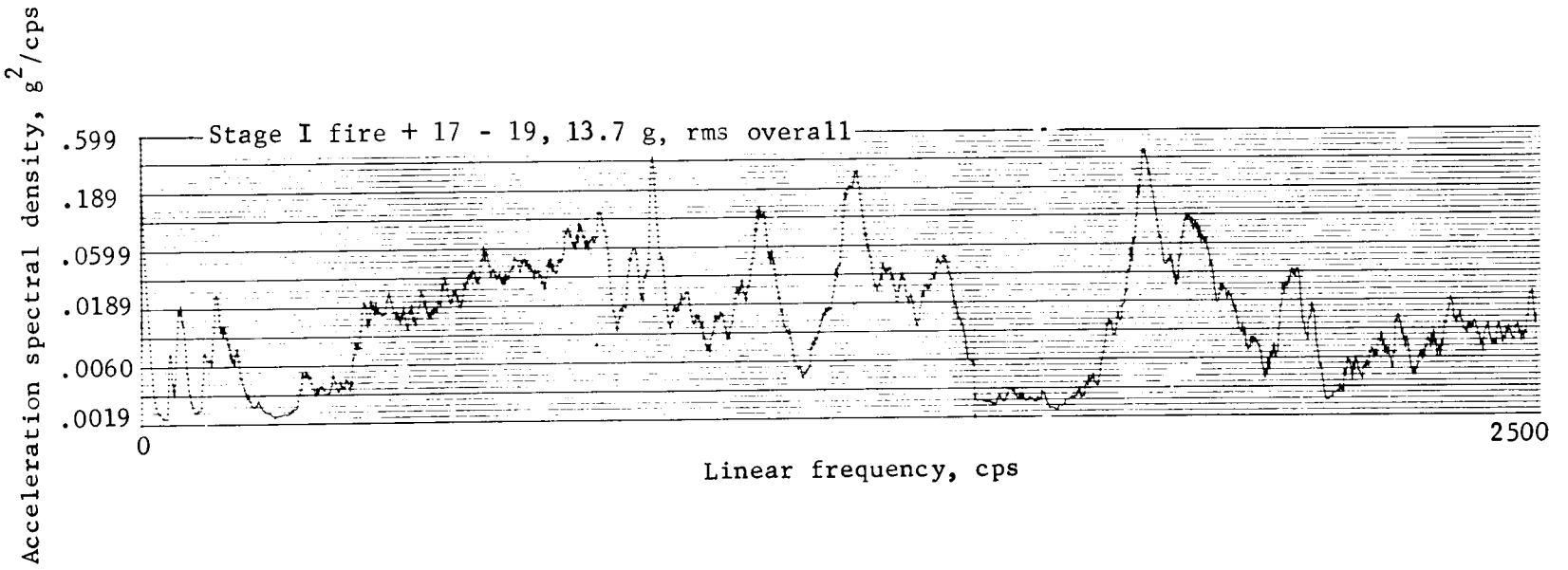


Figure 361. Measurement 2577, Vibration, Engine Gimbal Pad, SA-2, Longitudinal, Compartment 1C, Sta 1265, BL-0, Vehicle 4 SCF

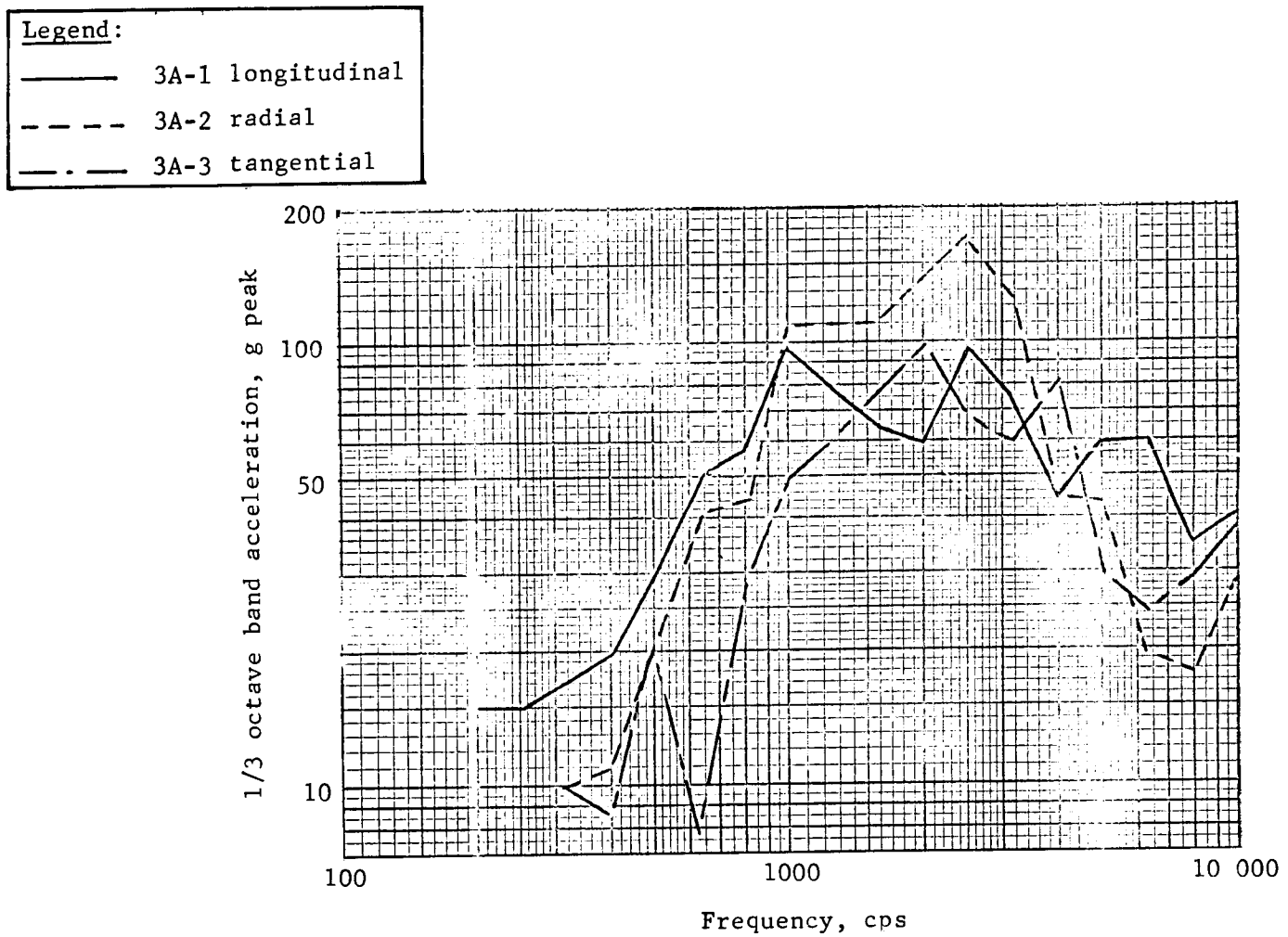


Figure 362. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-1, -2, -3, Stringer 3C (Longeron) at Sta 114 Guidance Truss Attachment Point

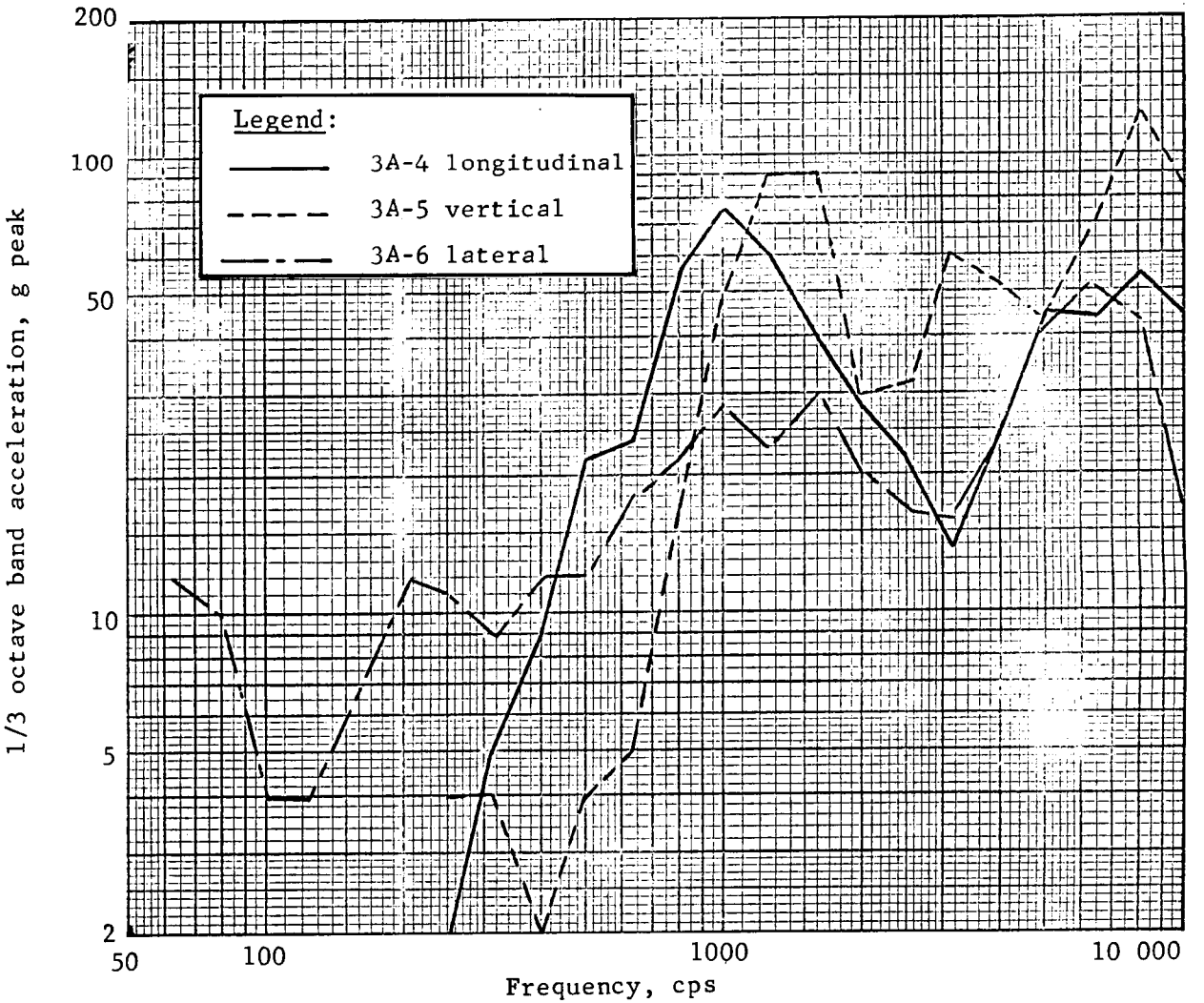


Figure 363. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-4, -5, -6, Guidance Truss at Mounting Point of IMU Nearest Truss to Airframe Attachment

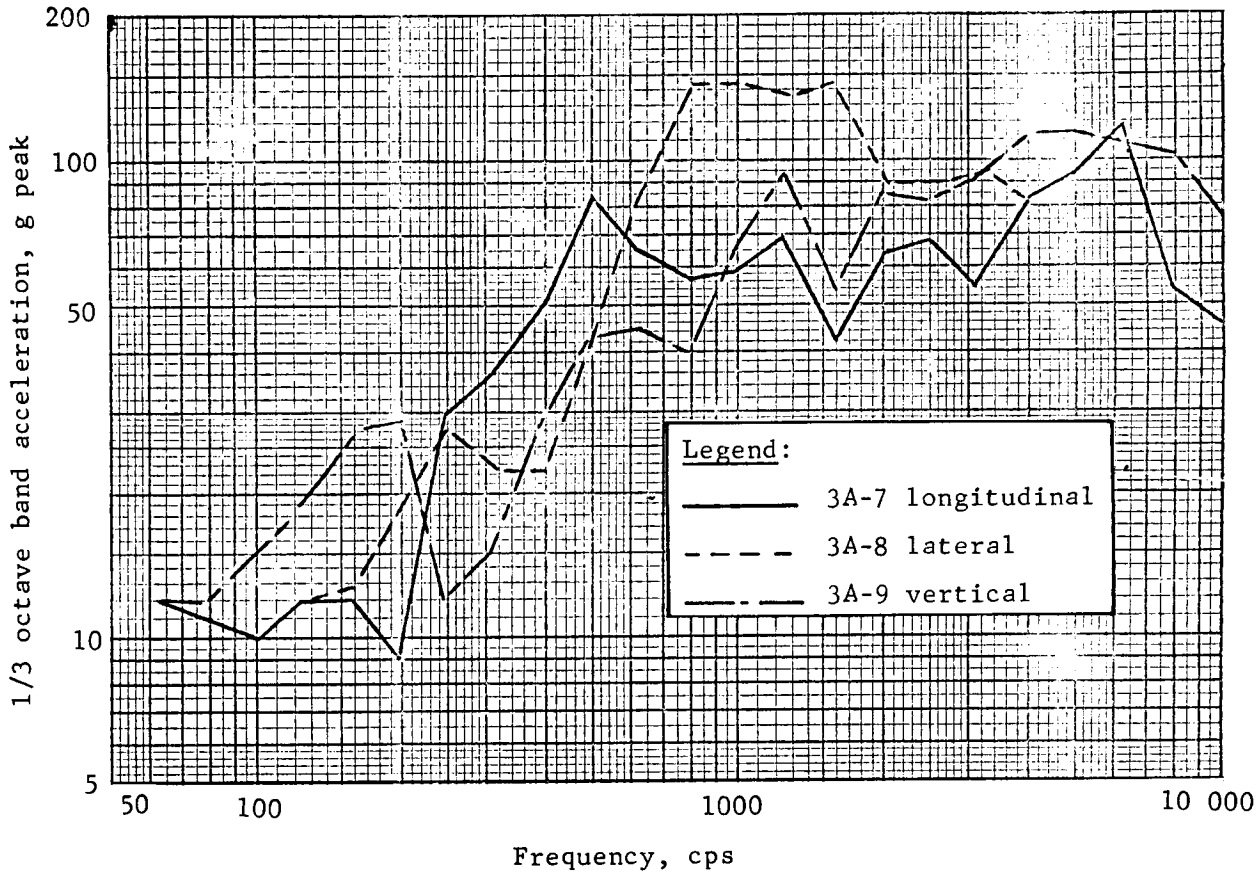


Figure 364. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-7, -8, -9, Guidance Truss at Mounting Point of ACSP Pulse Code Modulator

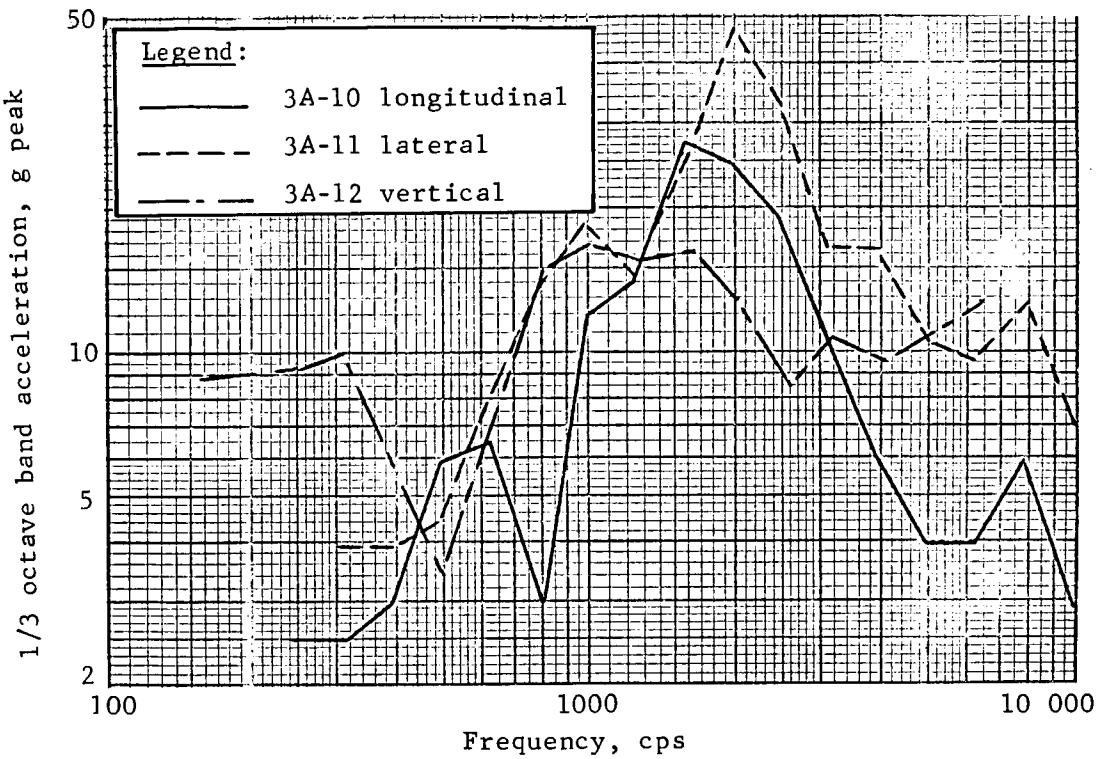


Figure 365. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-10, -11, -12, Guidance Truss at Mounting Point of Airborne Digital Computer

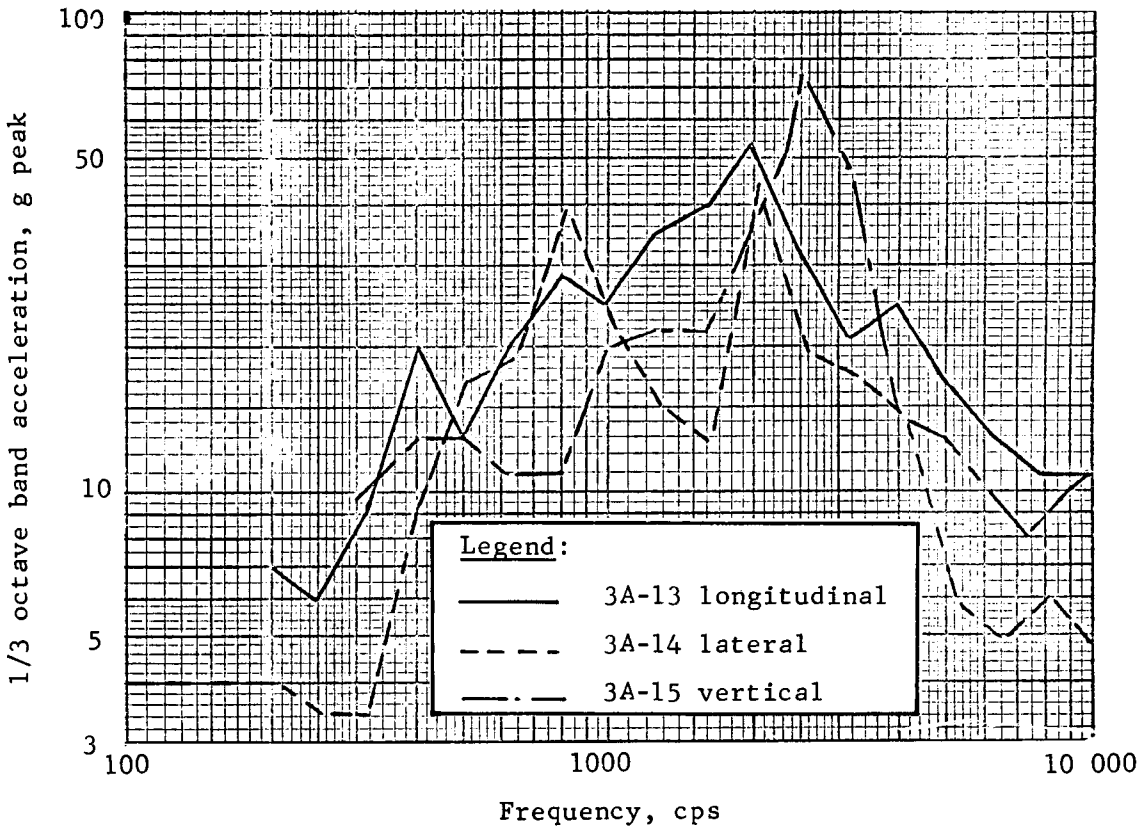


Figure 366. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-13, -14, -15, Guidance Truss at Mounting Point of Adapter Programer

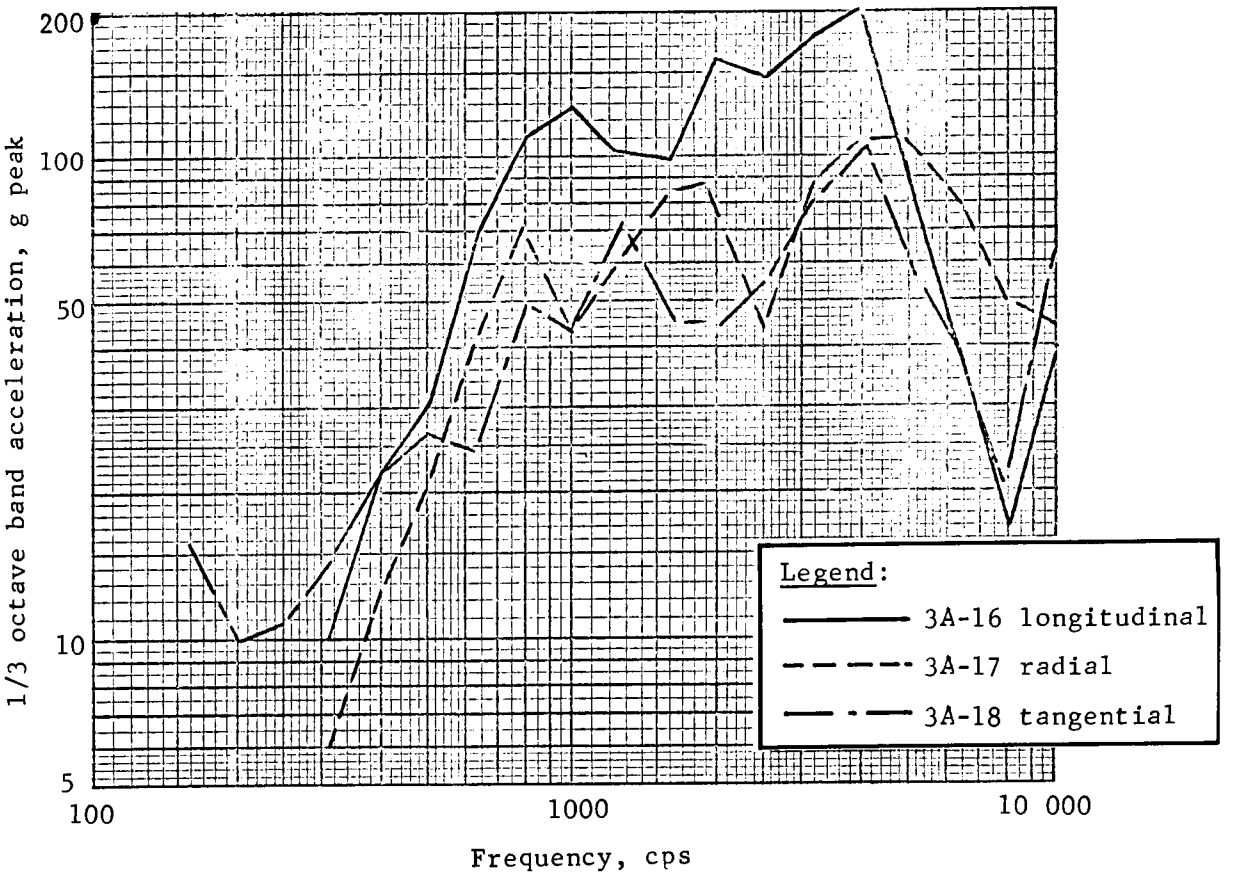


Figure 367. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-16, -17, -18, Stringer 3C (Longeron) at Sta 77 Under Fairing Attachment Point

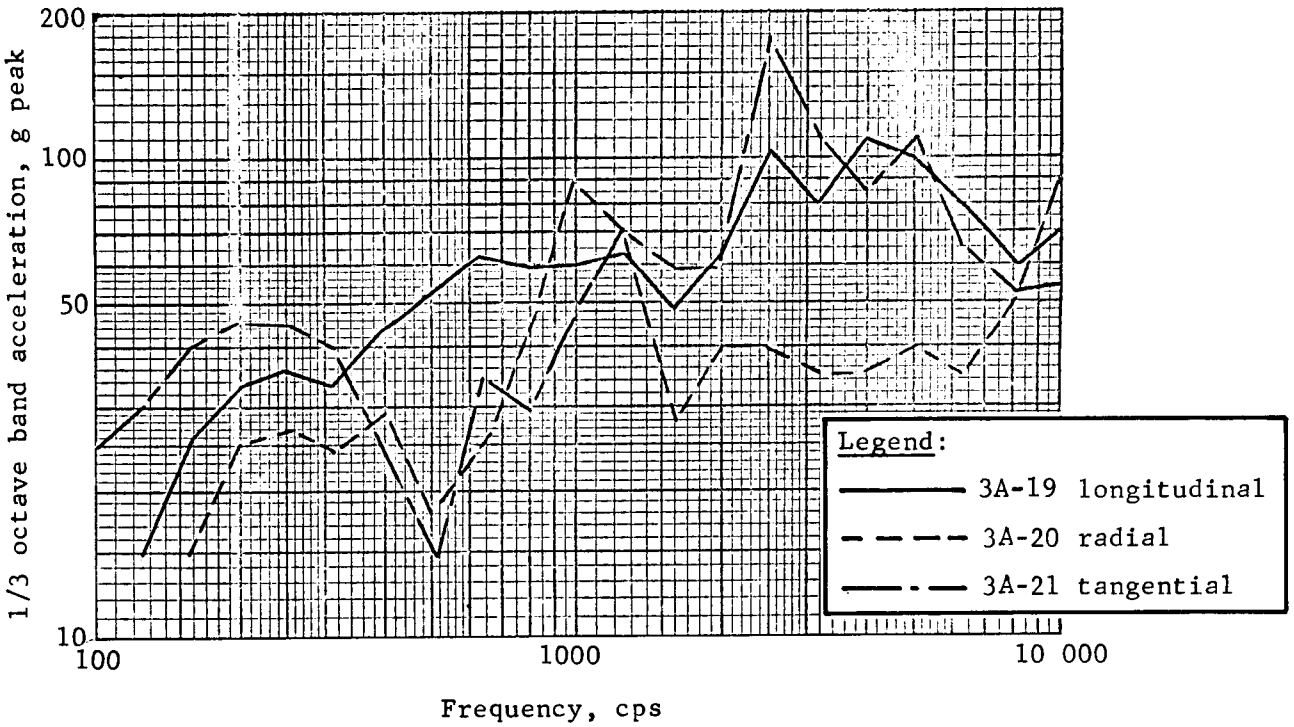


Figure 368. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-19, -20, -21, on Ring Frame at WL60, Sta 77 on Target

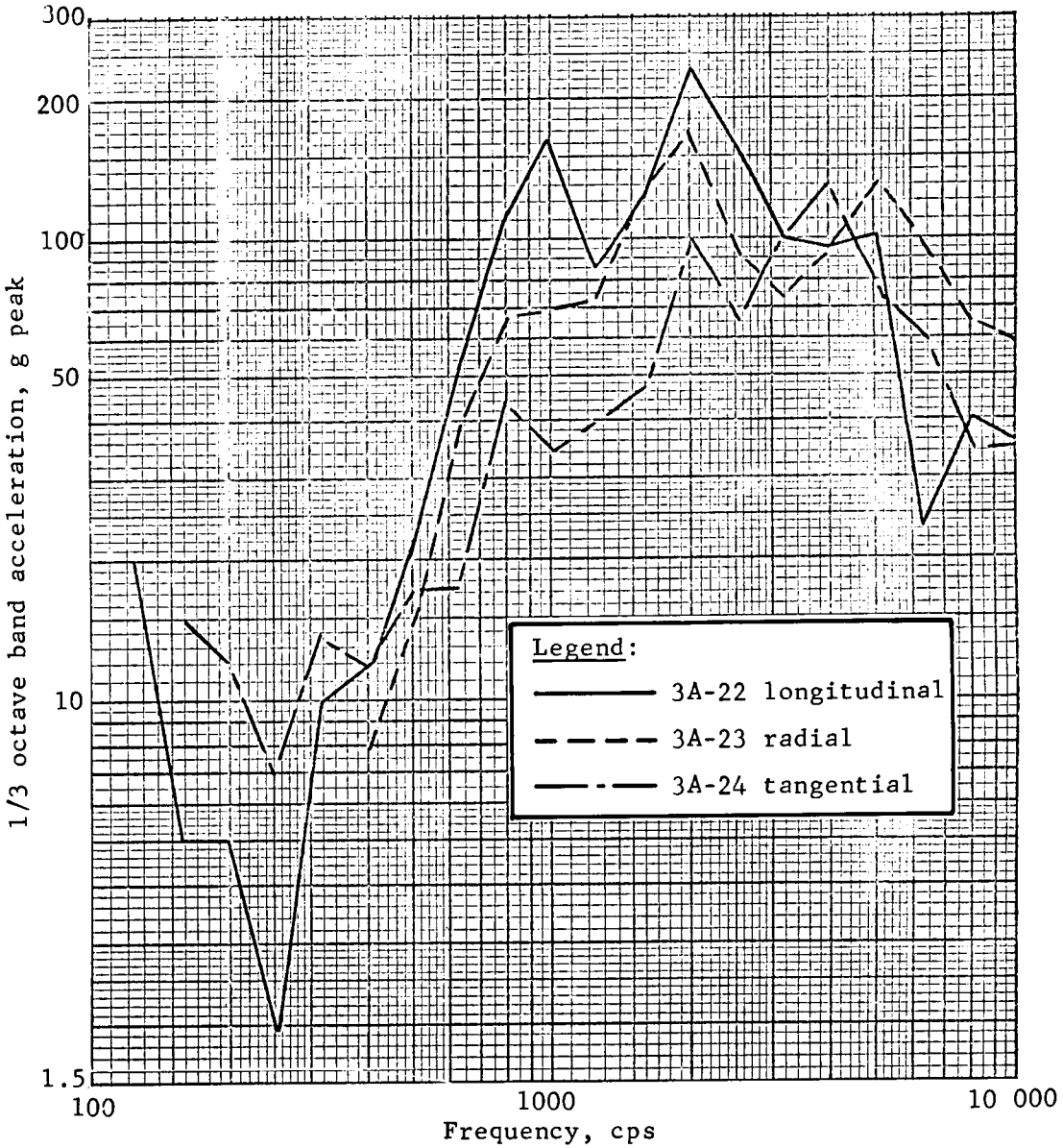


Figure 369. Shock Spectra, T-III Payload Fairing Separation Test 1, Measurements 3A-22, -23, -24, Stringer 26C (Longeron) at Sta 77 Under Fairing Attachment Point

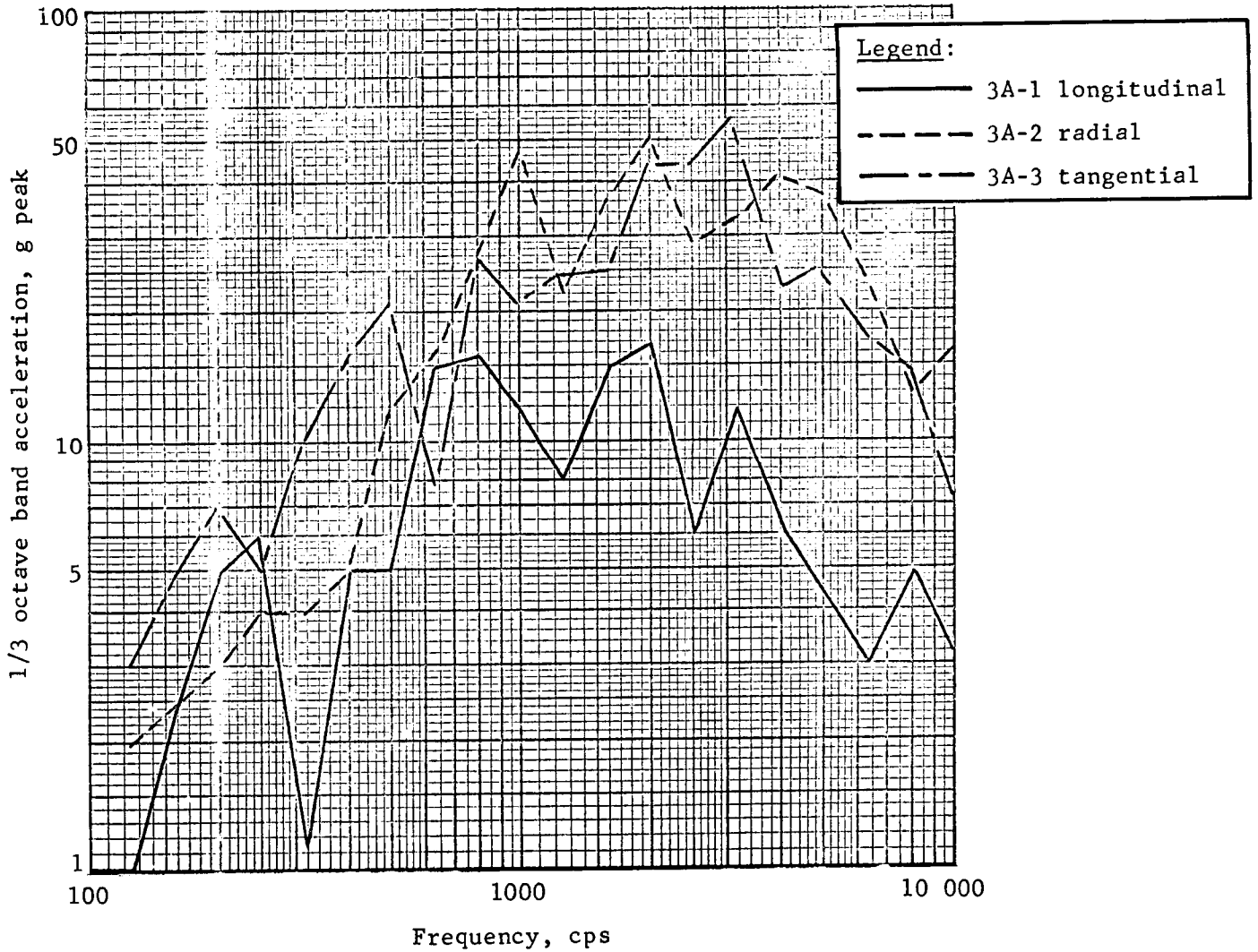


Figure 370. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-1, -2, -3, Stringer 3C (Longeron) at Sta 114 Guidance Truss Attachment Point

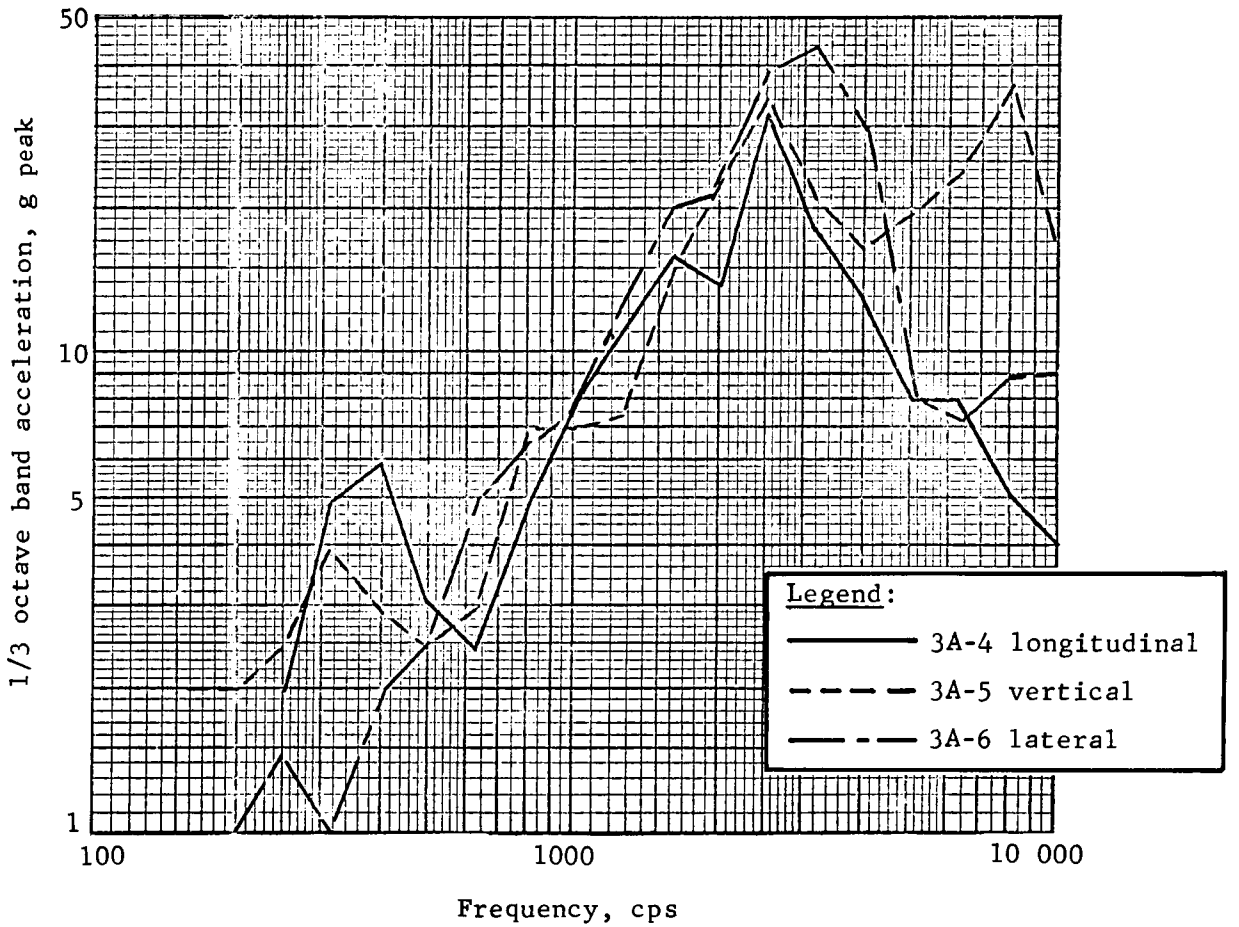


Figure 371. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-4, -5, -6, Guidance Truss at Mounting Point of IMU Nearest Truss to Airframe Attachment

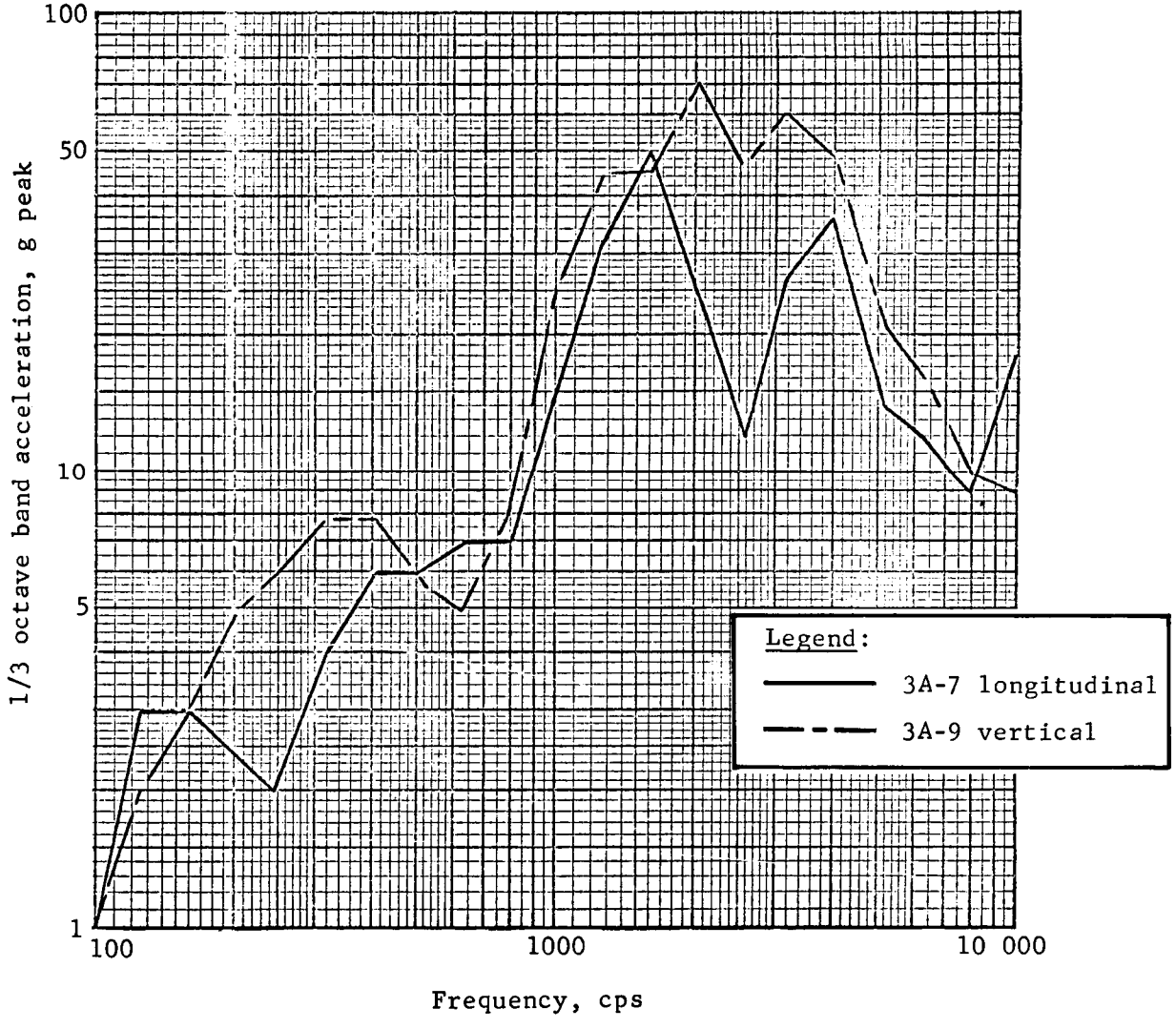


Figure 372. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-7, -9, Guidance Truss at Mounting Point of ACSP Pulse Code Modulator

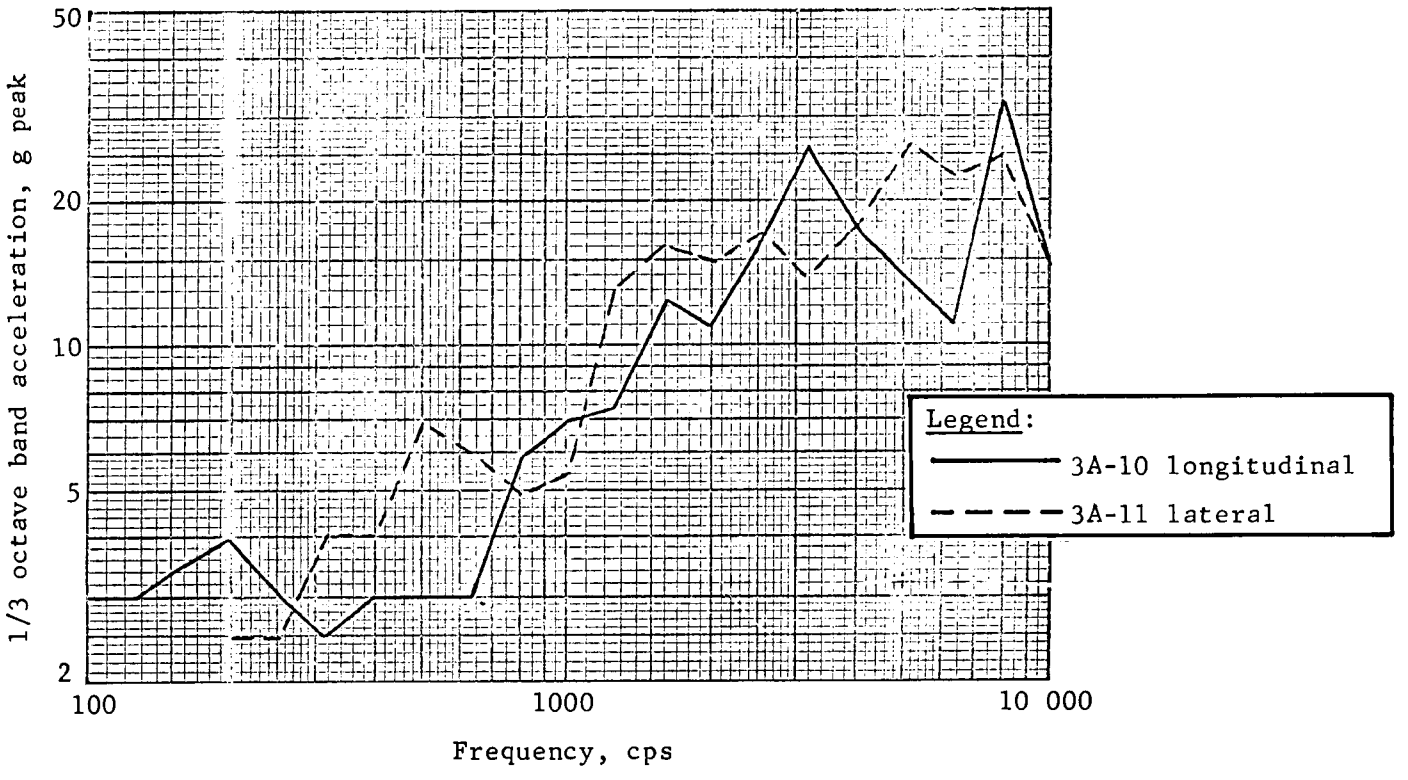


Figure 373. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-10, -11, Guidance Truss at Mounting Point of Airborne Digital Computer

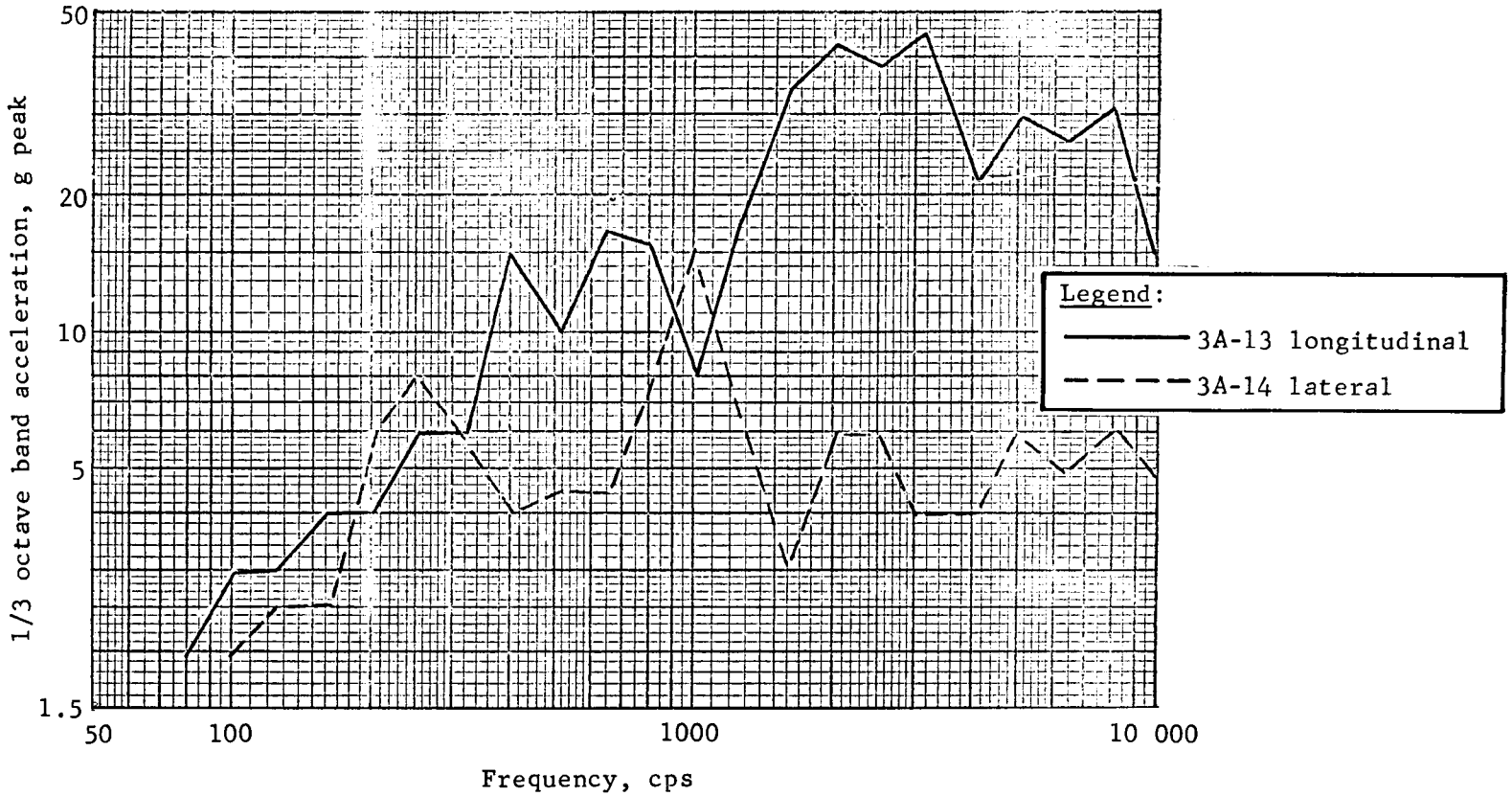


Figure 374. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-13, -14, Guidance Truss at Mounting Point of Adapter Programer

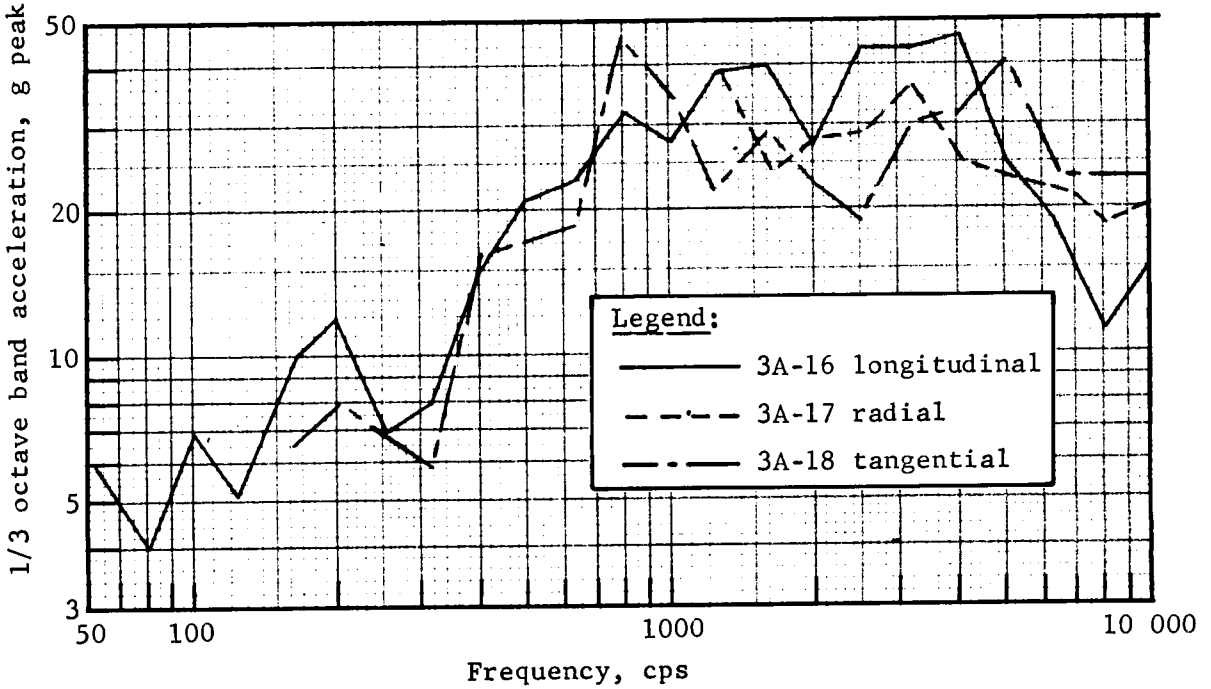


Figure 375. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-16, -17, -18, Stringer 3C (Longeron) at Sta 77 under Fairing Attachment Point

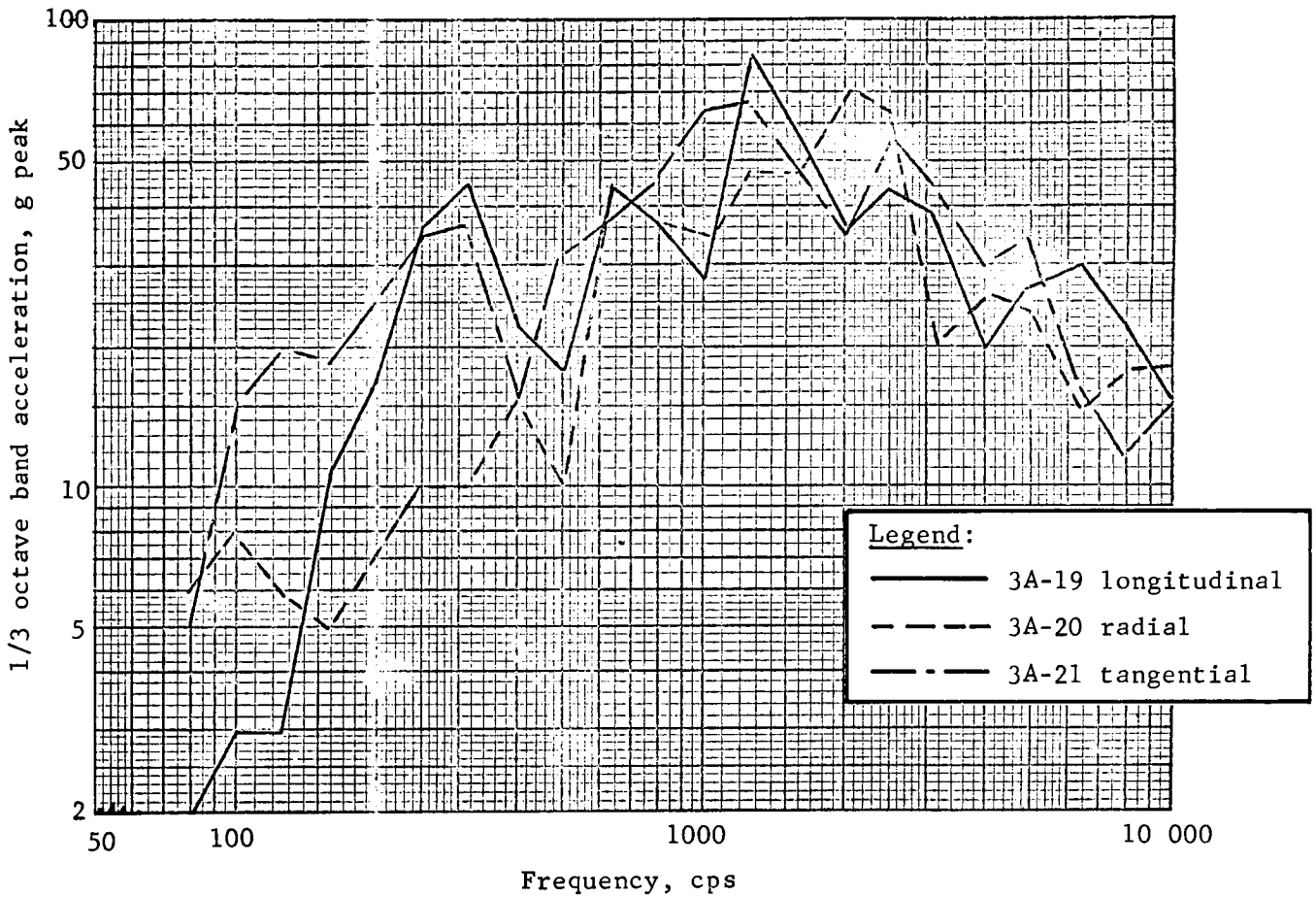


Figure 376. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-19, -20, -21, on Ring Frame at WL60 Sta 77 on Target

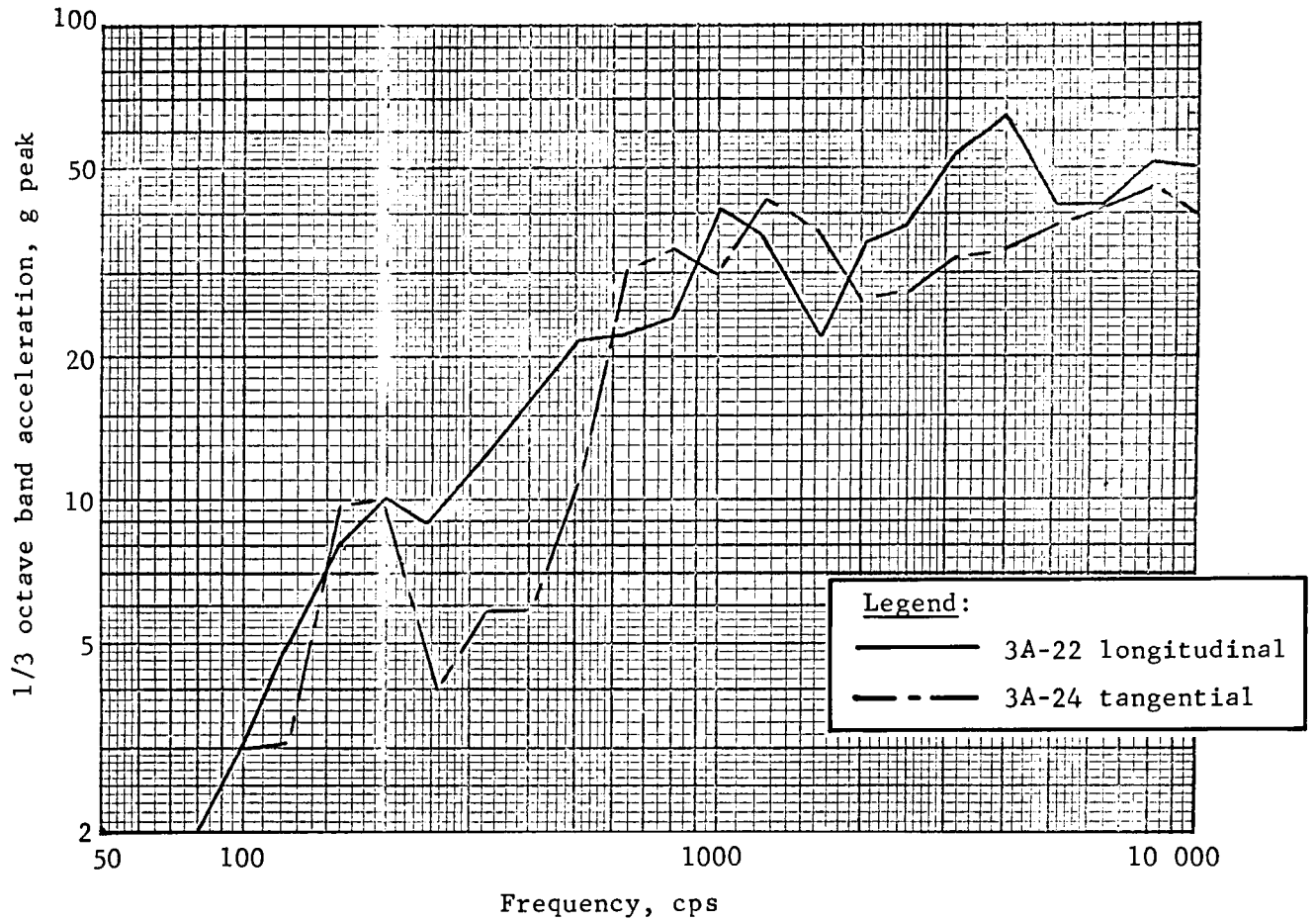


Figure 377. Shock Spectra, T-III Payload Fairing Separation Test 2, Measurements 3A-22, -24, Stringer 26C (Longeron) at Sta 77 under Fairing Attachment Point

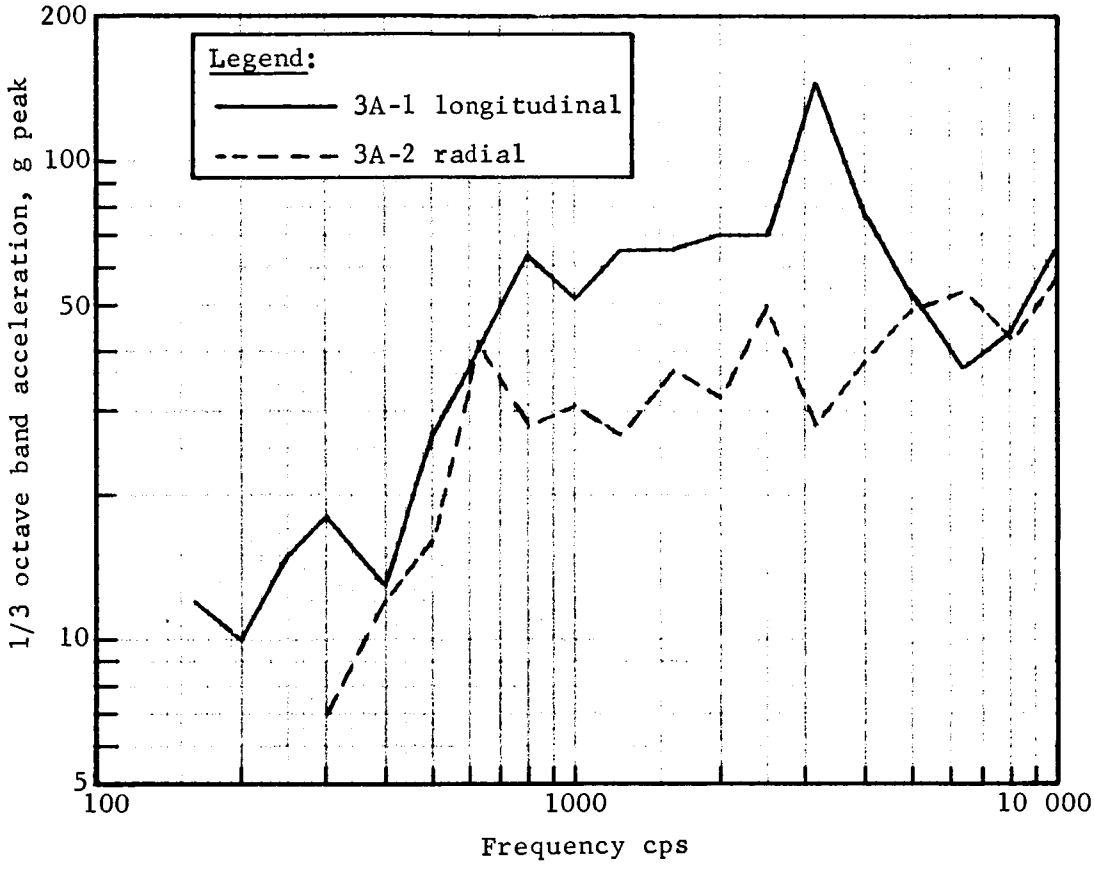


Figure 378. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-1, -2, Stringer 3C (Longeron) at Sta 114 Guidance Truss Attachment Point

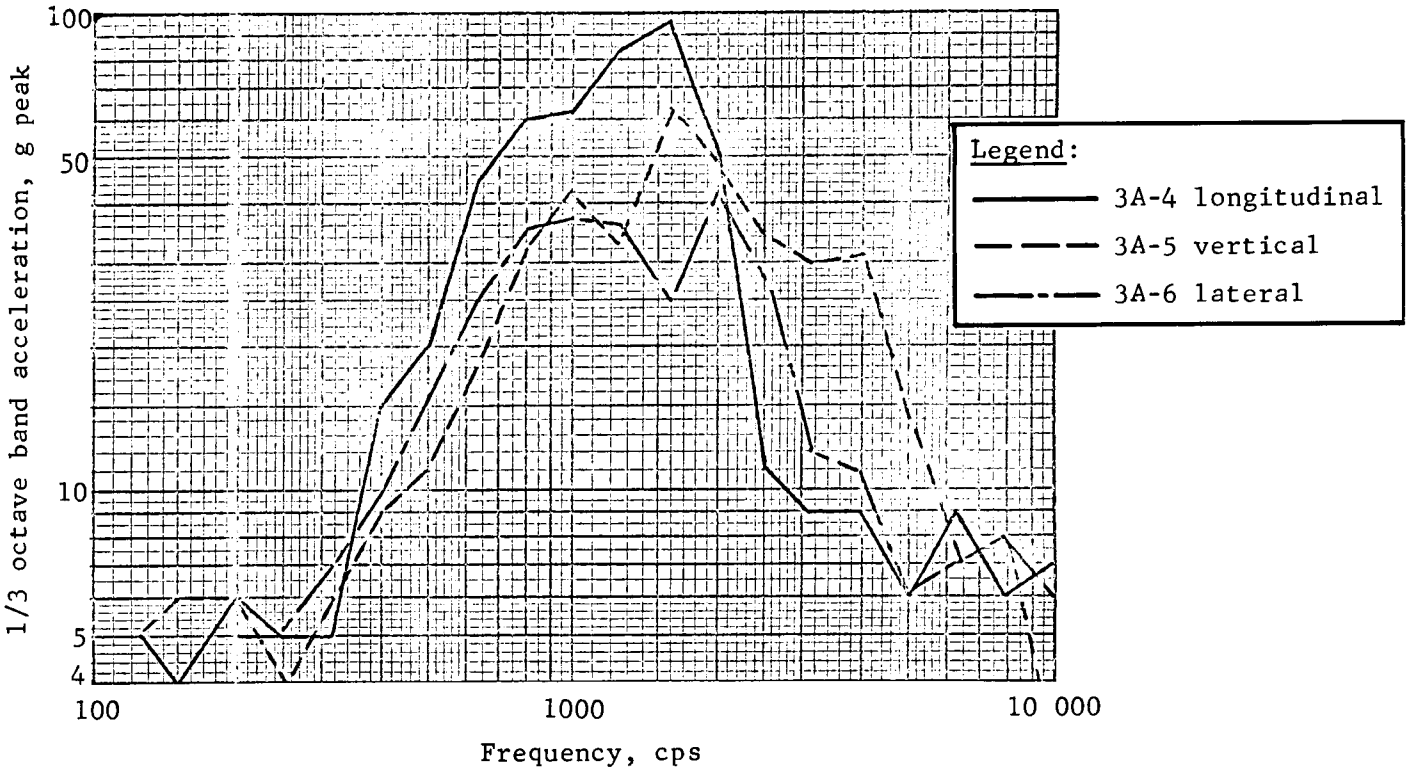


Figure 379. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-4, -5, -6, Guidance Truss at Mounting Point of IMU Nearest Truss to Airframe Attachment

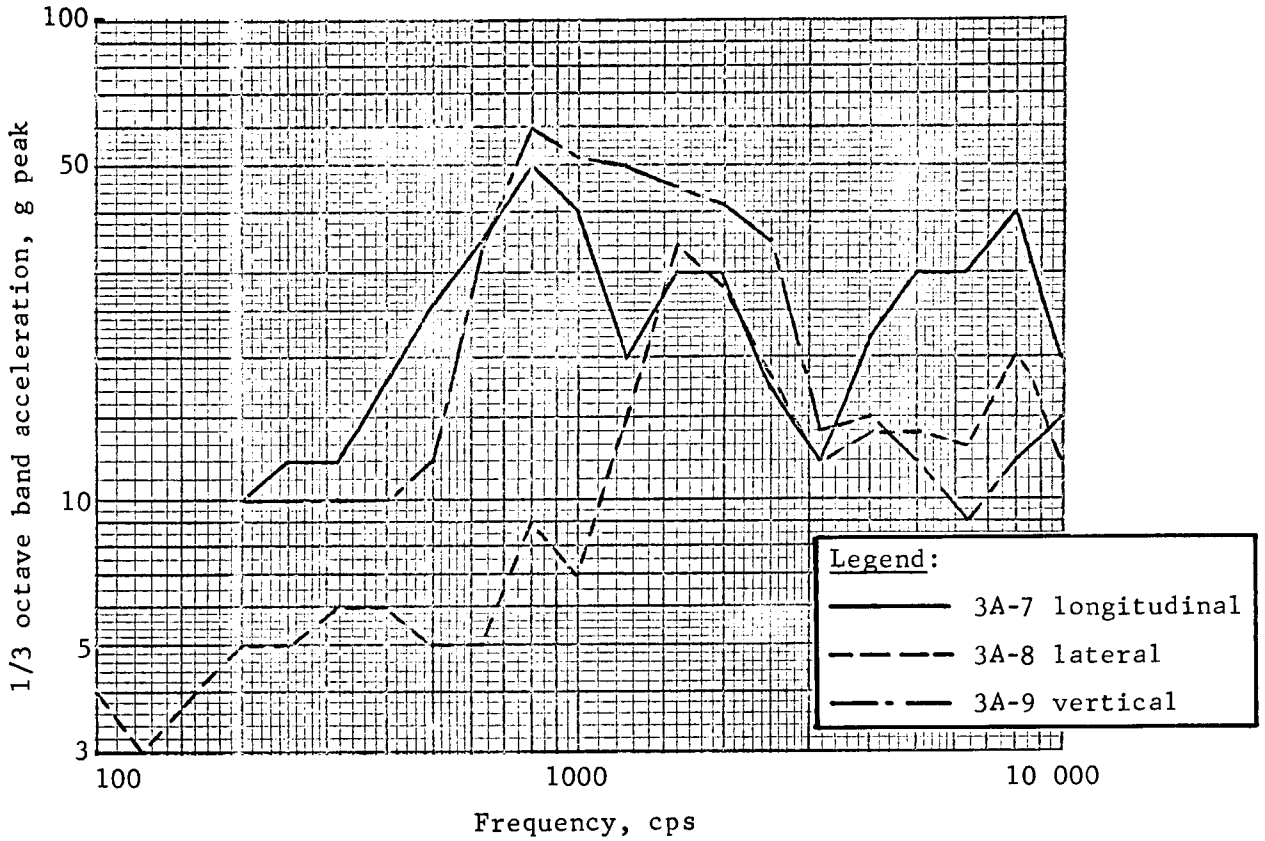


Figure 380. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-7, -8, -9, Guidance Truss at Mounting Point of ACSP Pulse Code Modulator

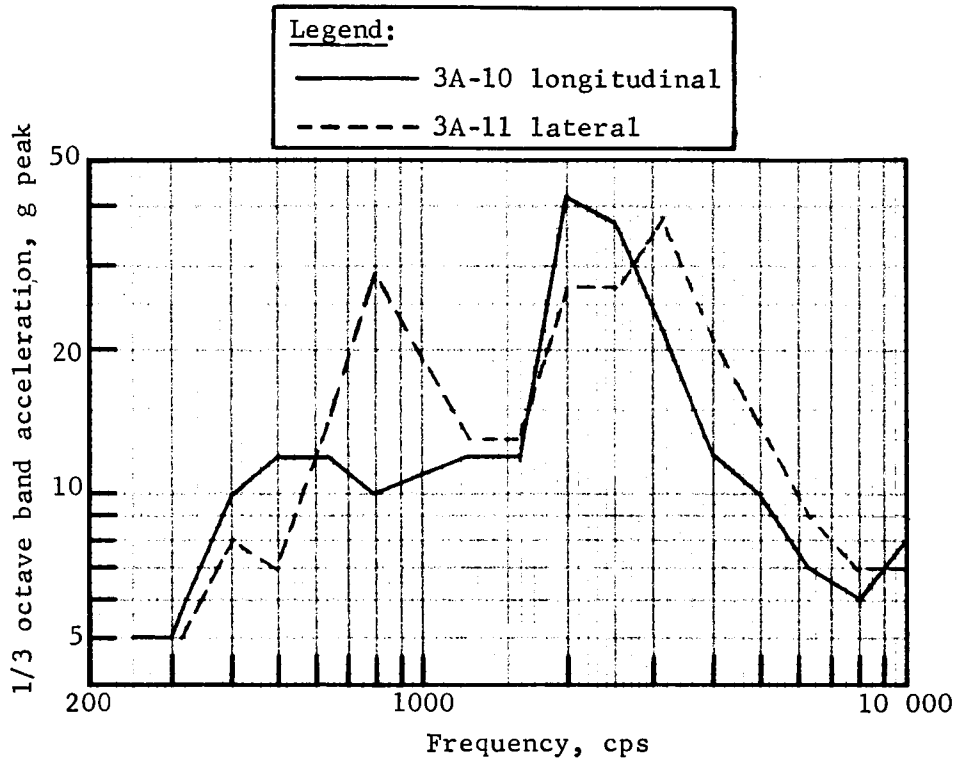


Figure 381. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-10, -11, Guidance Truss at Mounting Point of Airborne Digital Computer

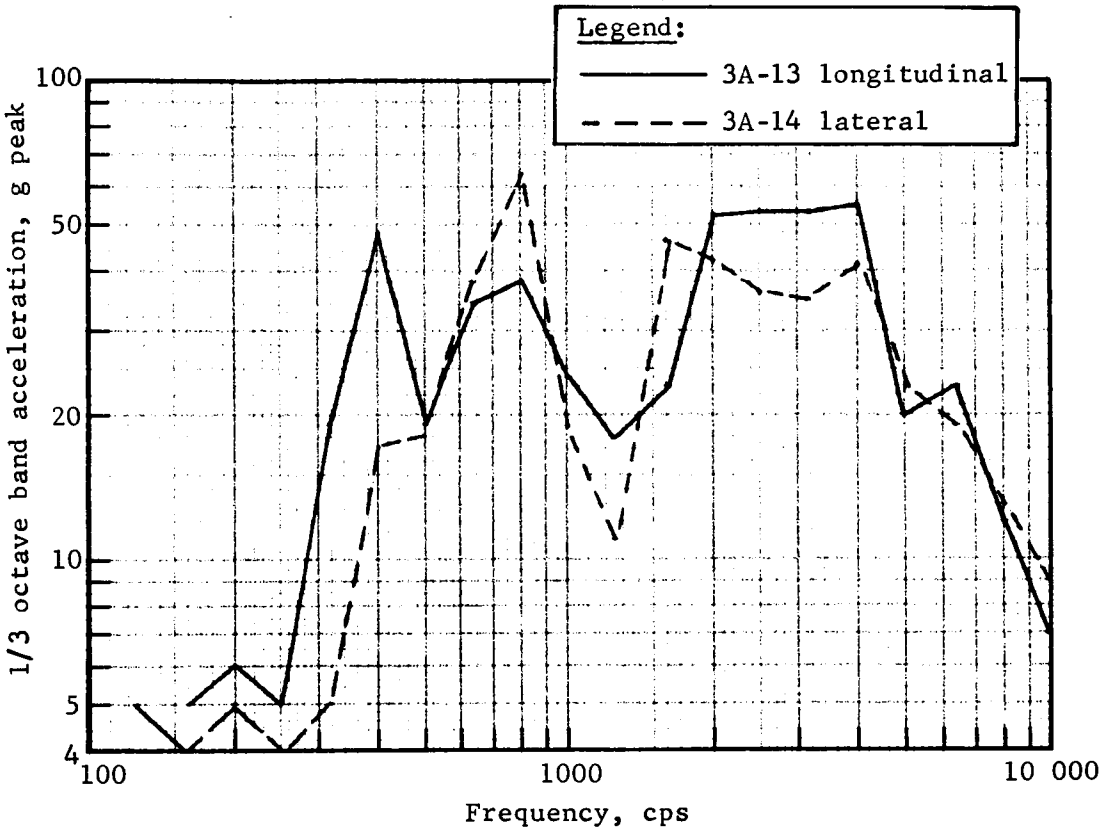


Figure 382. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-13, -14, Guidance Truss at Mounting Point of Adapter Programer

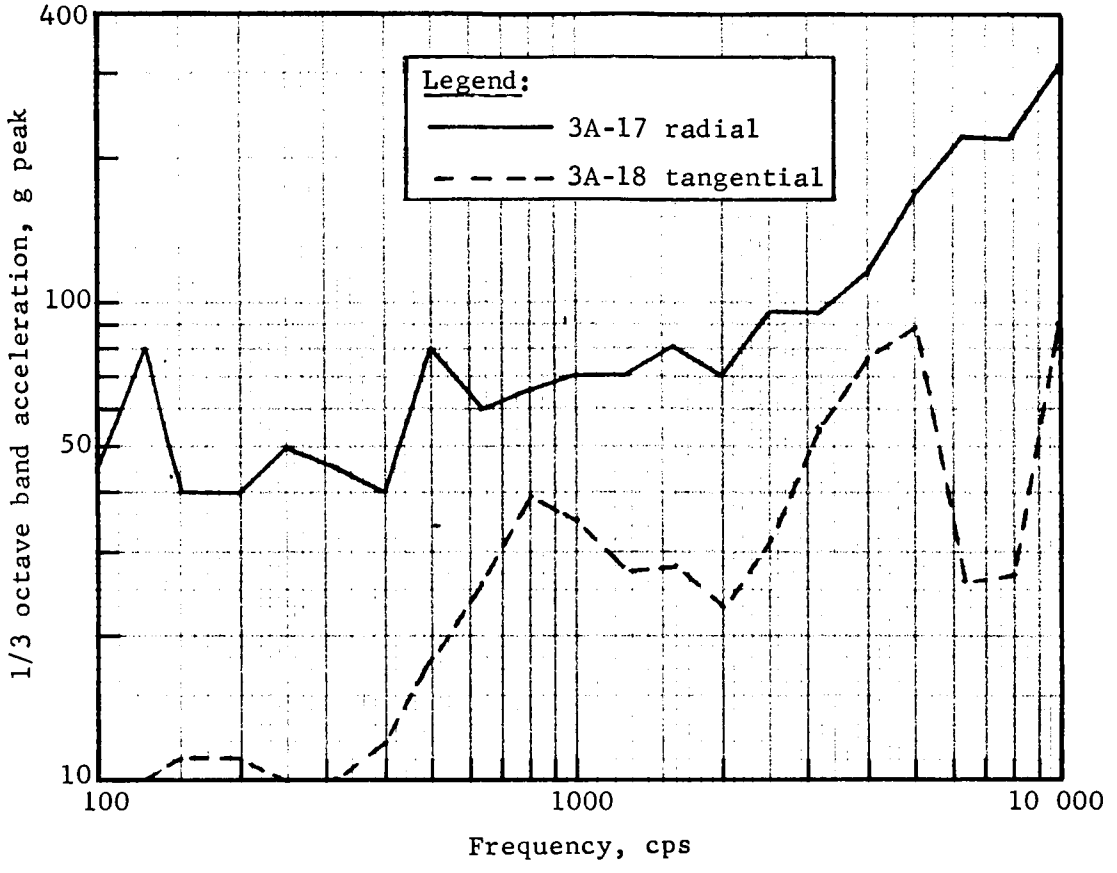


Figure 383. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-17, -18, Stringer 3C (Longeron) at Sta 77 under Fairing Attachment Point

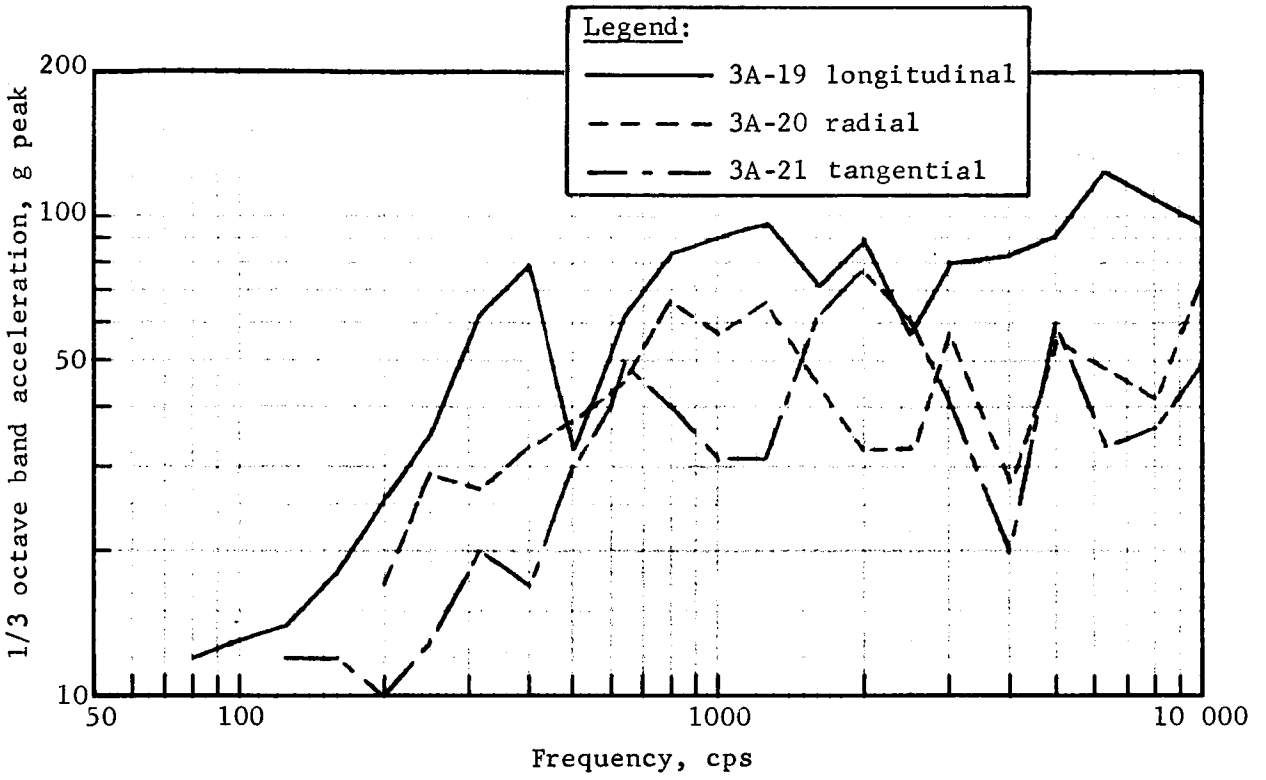


Figure 384. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-19, -20, -21, on Ring Frame at WL-60 Sta 77 on Target

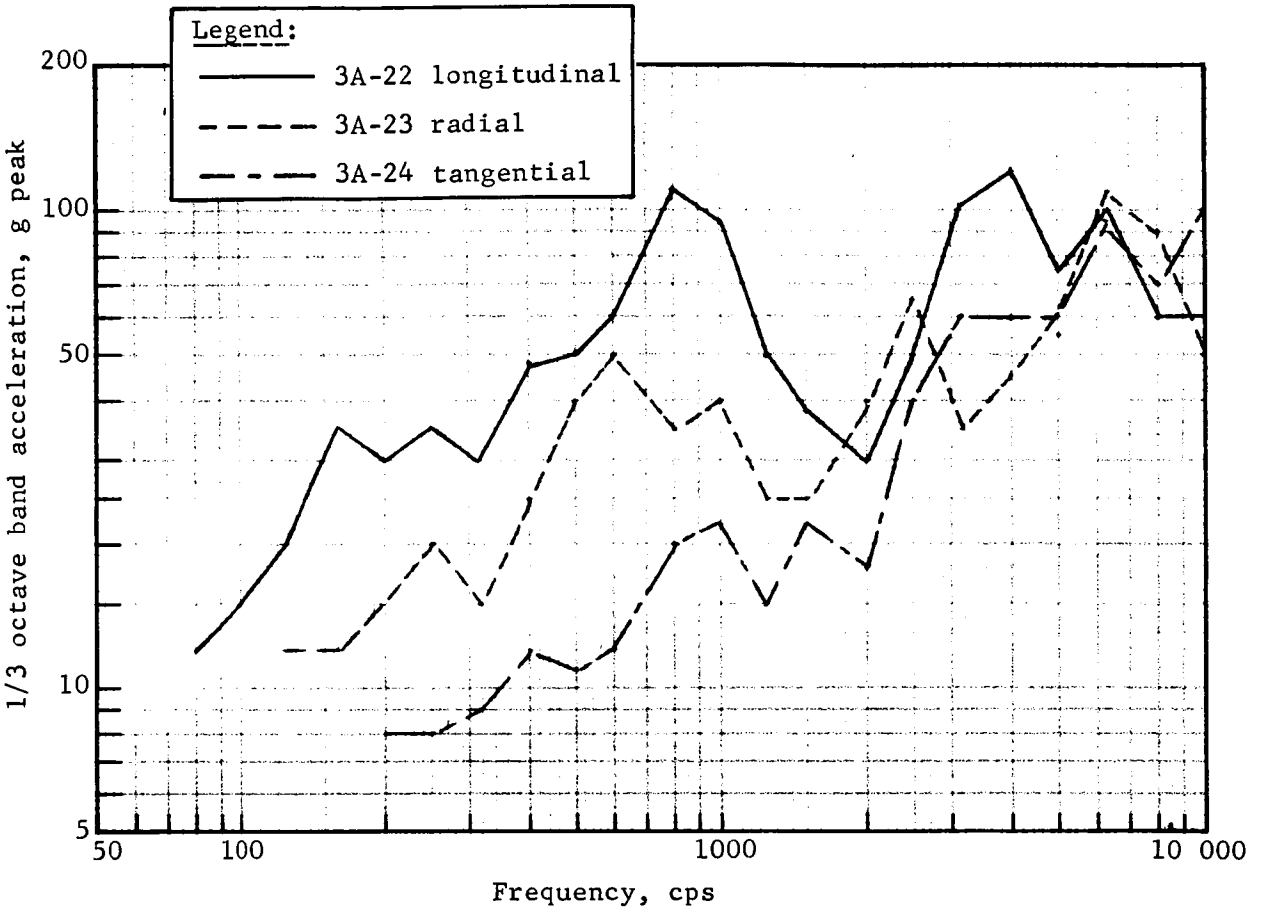


Figure 385. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-22, -23, -24, Stringer 26C (Longeron) at Sta 77 under Fairing Attachment Point

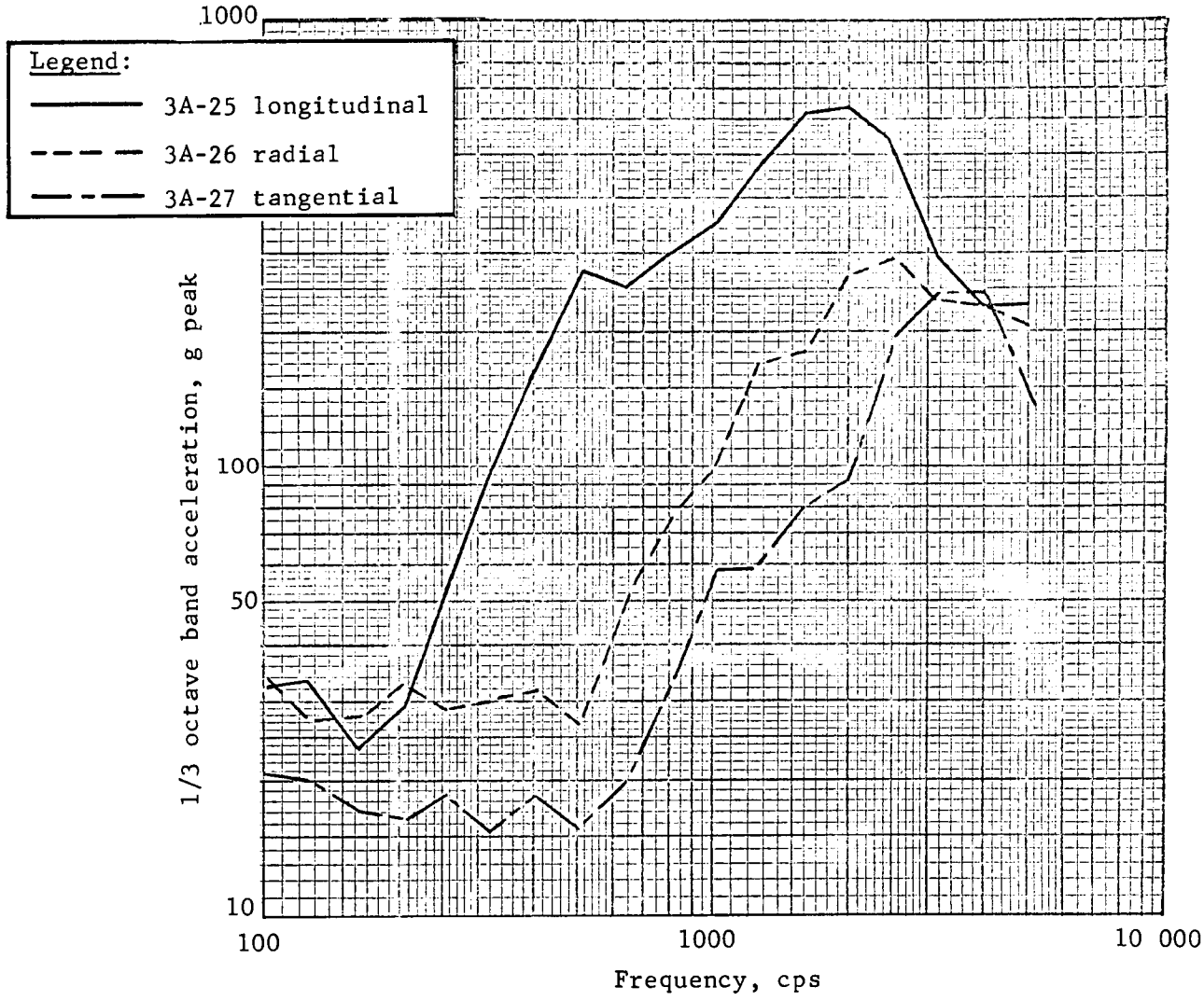


Figure 386. Shock Spectra, T-III Payload Fairing Separation Test 3, Measurements 3A-25, -26, -27, Payload Mounting Frame on Payload Adapter Near Sta 42

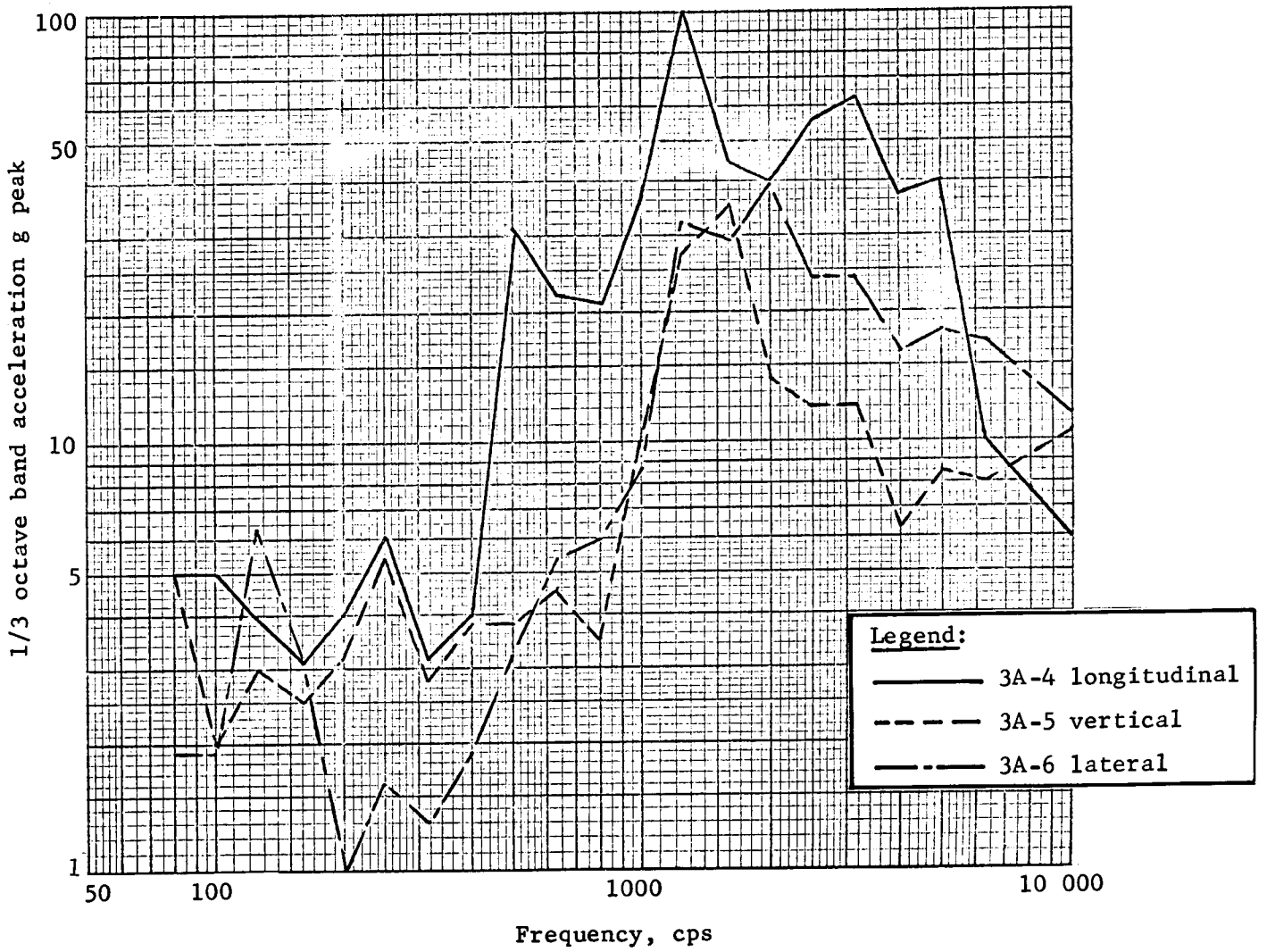


Figure 387. Shock Spectra, T-III Payload Fairing Separation Test 4, Measurements 3A-4, -5, -6, Guidance Truss at Mounting Point of IMU Nearest Truss to Airframe Attachment

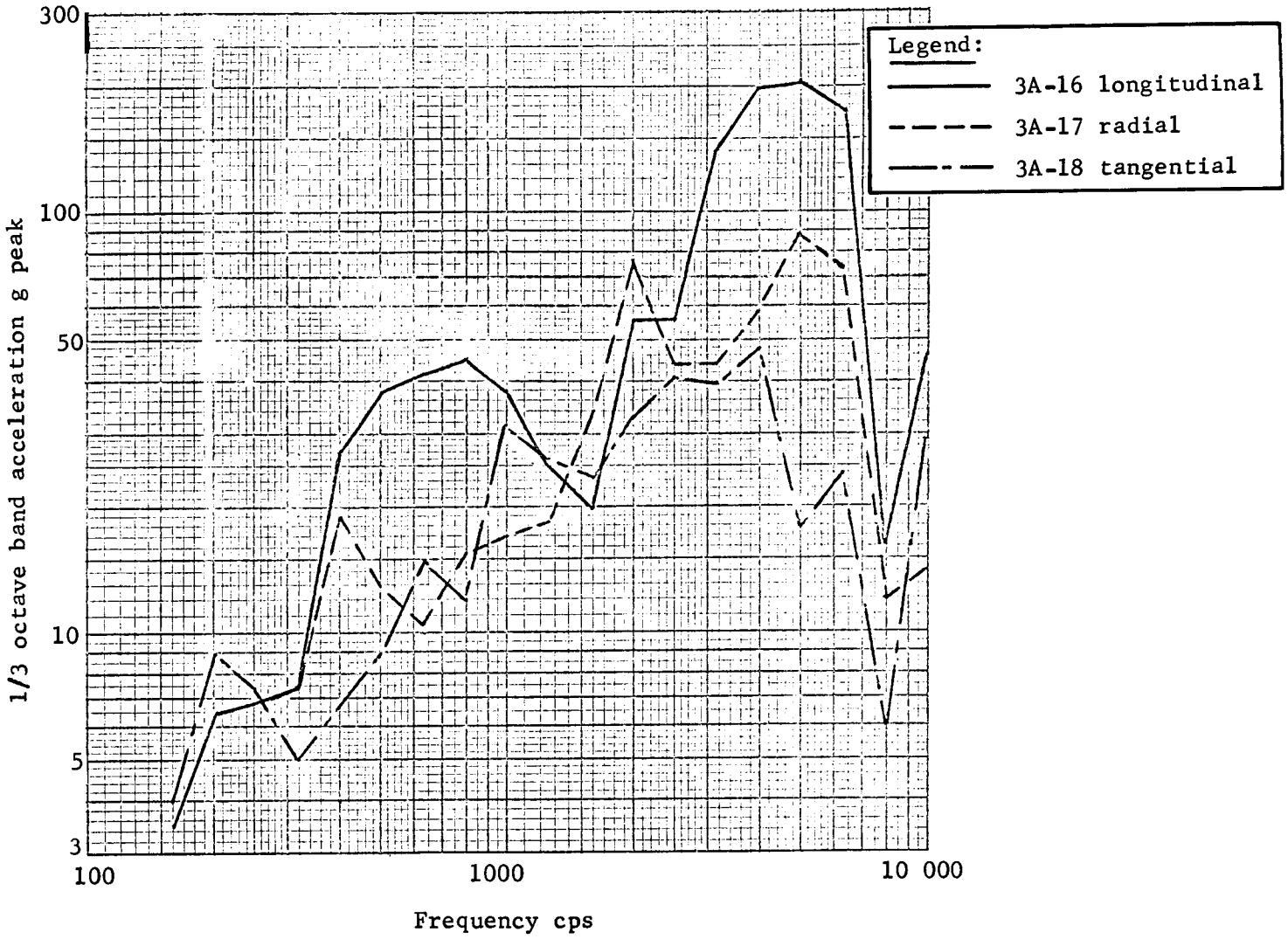


Figure 388. Shock Spectra, T-III Payload Fairing Separation Test 4, Measurements 3A-16, -17, -18, Stringer 3C (Longeron) at Sta 77 under Fairing Attachment Point

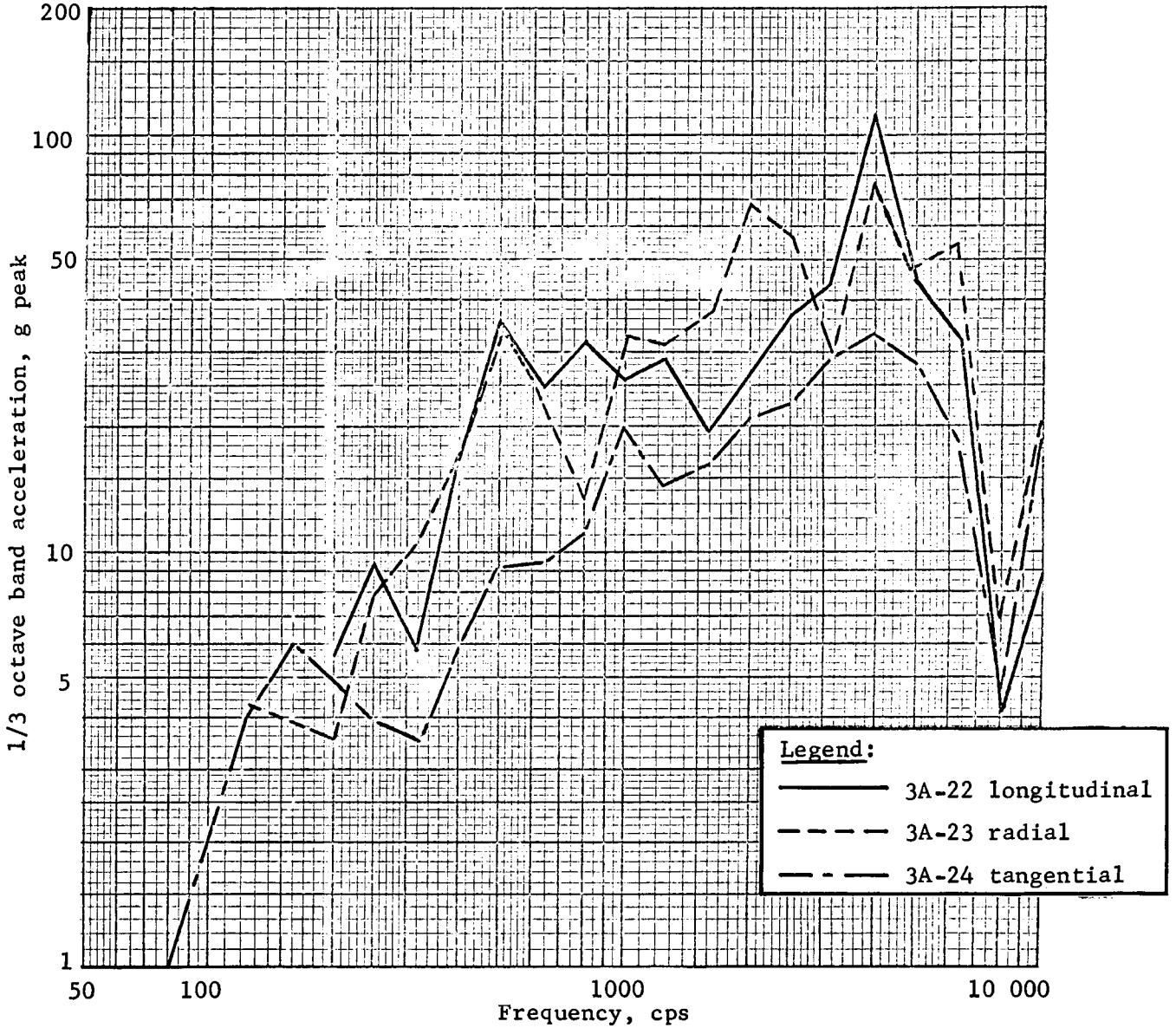


Figure 389. Shock spectra, T-III Payload Fairing Separation Test 4, Measurements 3A-22, -23, -24, Stringer 26C (Longeron) at Sta 77 under Fairing Attachment Point

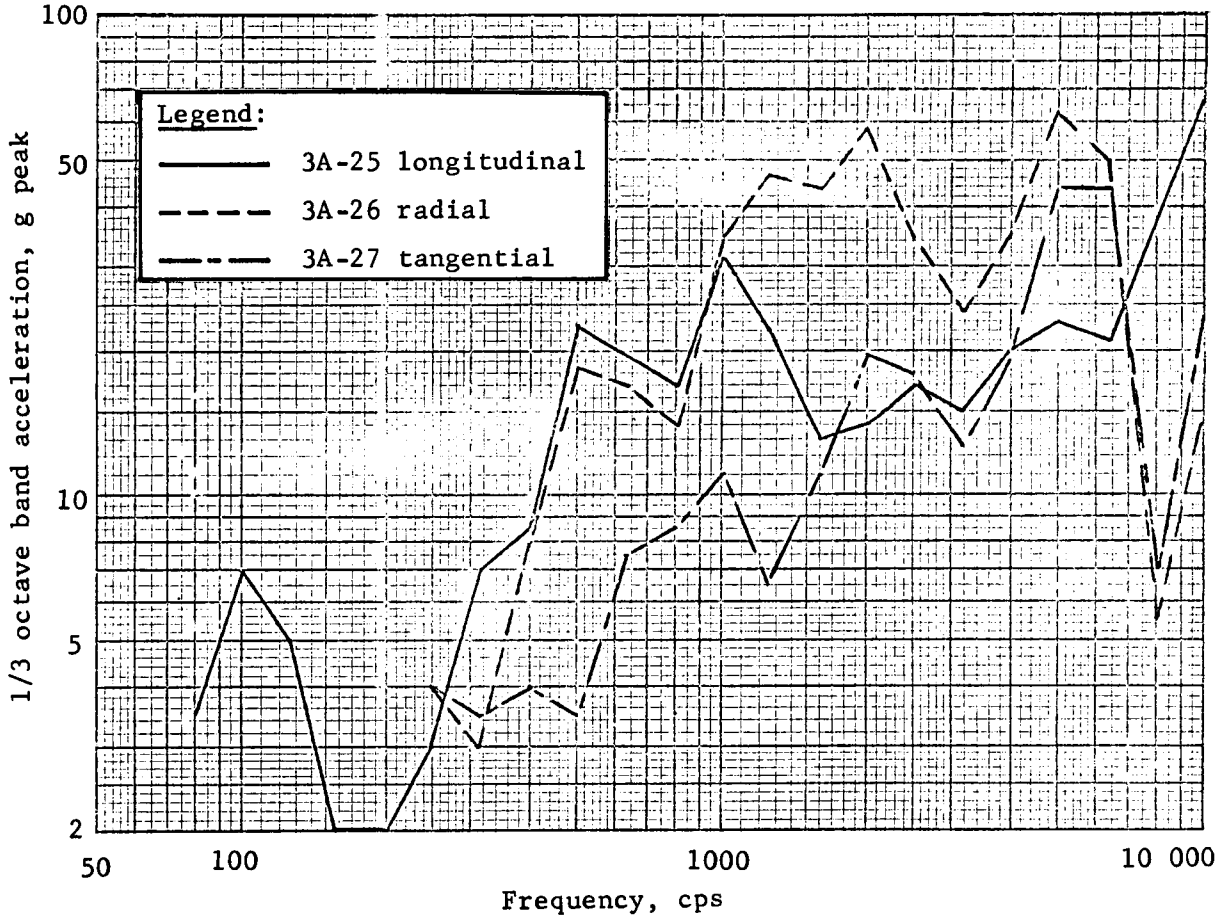


Figure 390. Shock Spectra, T-III Payload Fairing Separation Test 4, Measurements 3A-25, -26, -27, Payload Mounting Frame on Payload Adapter Near Sta 42

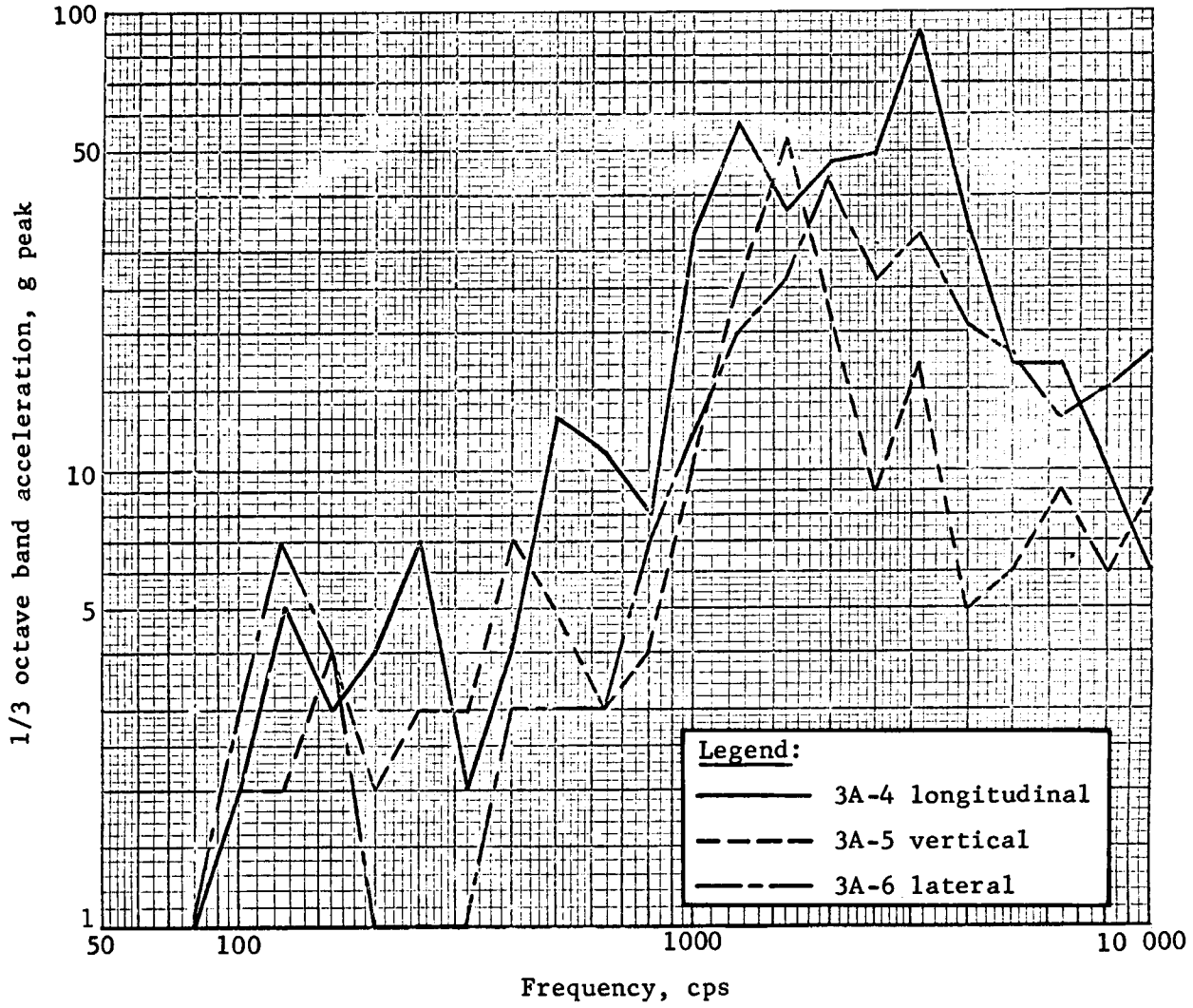


Figure 391. Shock Spectra, T-III Payload Fairing Separation Test 5, Measurements 3A-4, -5, -6, Guidance Truss at Mounting Point of IMU Nearest Truss to Airframe Attachment

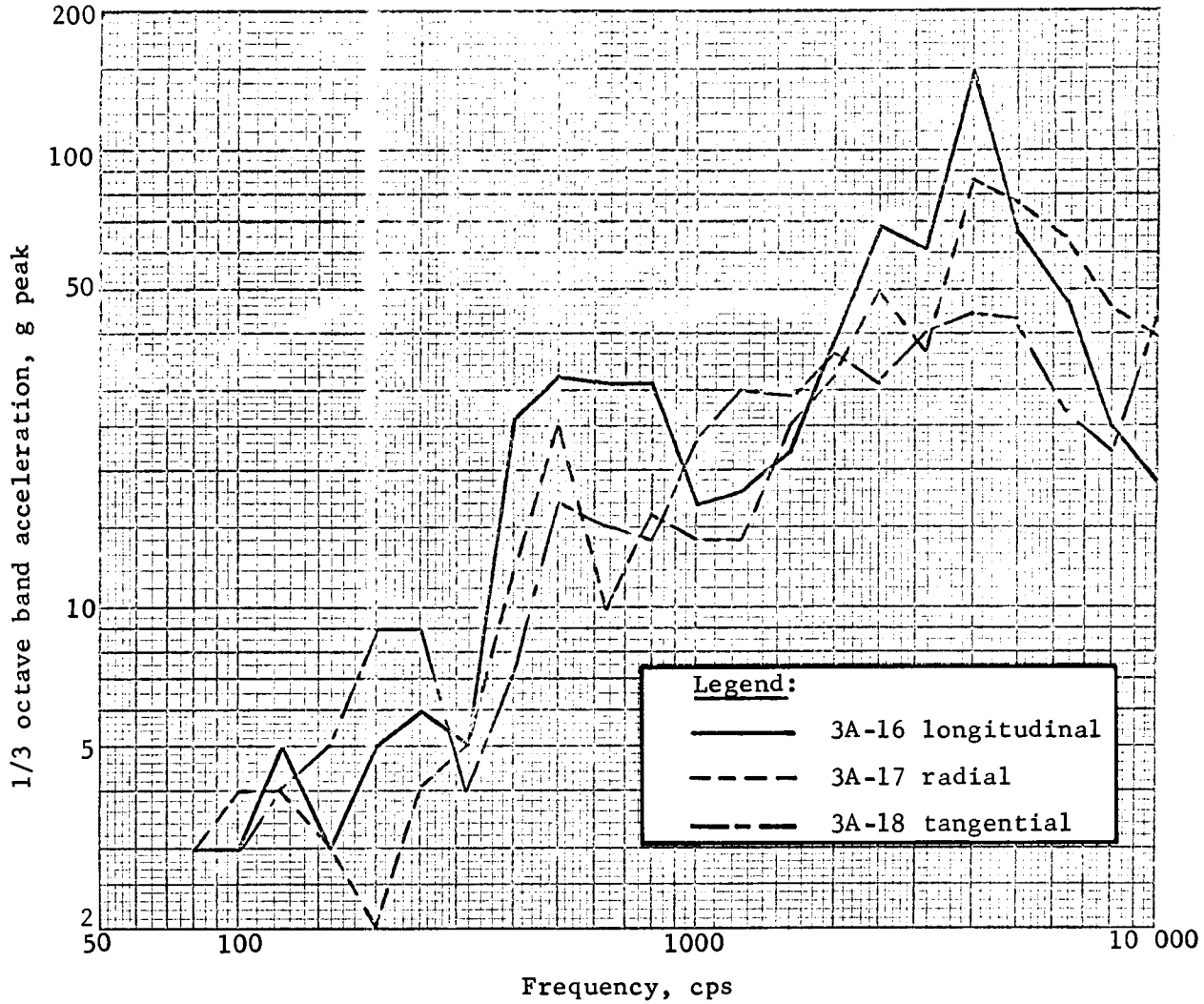


Figure 392. Shock Spectra, T-III Payload Fairing Separation Test 5, Measurements 3A-16, -17, -18, Stringer 3C (Longeron) at Sta 77 under Fairing Attachment Point

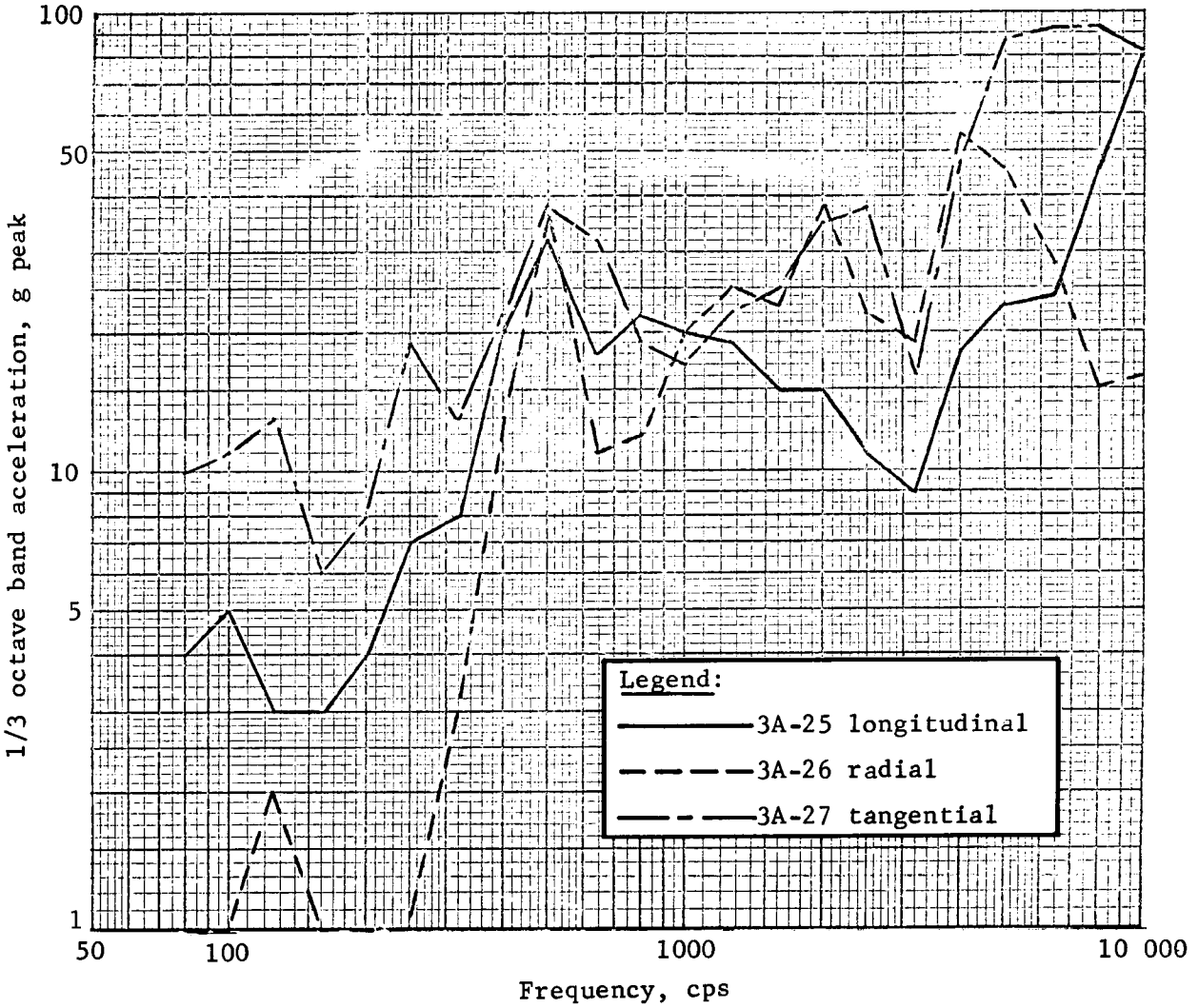


Figure 393. Shock Spectra, T-III Payload Fairing Separation Test 5, Measurements 3A-25, -26, -27, Payload Mounting Frame on Payload Adapter Near Sta 42