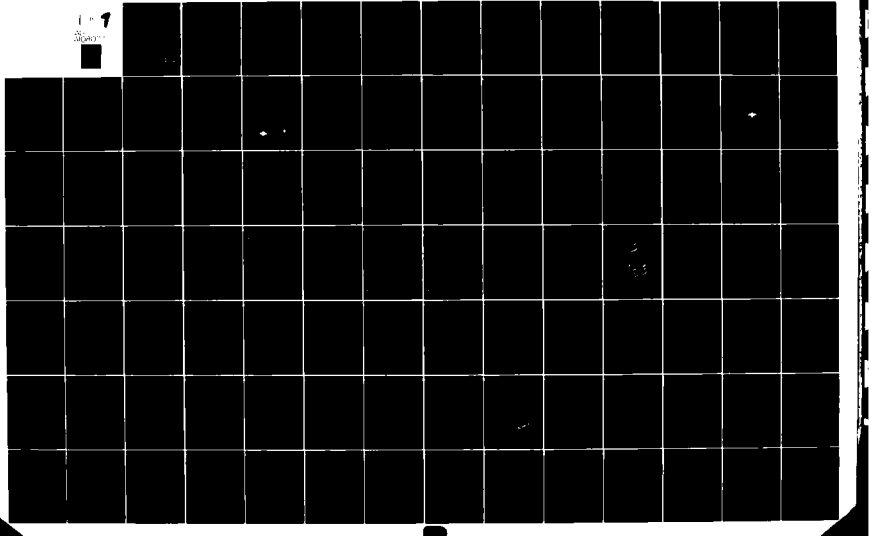
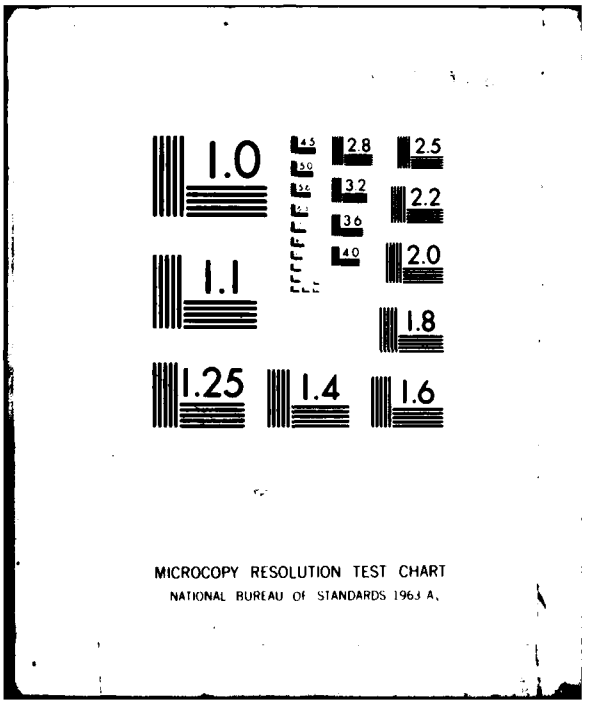
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ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978

Victor C. Anderson

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Marine Physical Laboratory

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The Advanced Detection Array (ADA) at the Marine Physical Laboratory is a high-gain directional receiving array which has been used to observe the background statistics of acoustic noise in the ocean. Background noise data collected over a six-day period in June 1978 is presented. Of interest is not only the power distribution with vertical and azimuthal angle, but also the fluctuation or envelope spectrum of the noise as seen through the highly directional beams. The overhad wind-generated noise exhibits a much greater

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envelope fluctuation than the near horizontal arrival angles where distant traffic sources are observed. Distant traffic sources were always observed even during periods of wind speeds up to 30 knots. Indications are that, if a high-gain array with sufficient directivity to reject overhead wind-generated surface noise is used, the residual noise field in the horizontal angles associated with distant targets will be highly structured and thus would be a prime candidate for adaptive processing techniques.

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ABSTRACT

The *A*dvanced *D*etection *A*rray (ADA) at the Marine Physical Laboratory is a high-gain directional receiving array which has been used to observe the background statistics of acoustic noise in the ocean. Background noise data collected over a six-day period in June 1978 is presented. Of interest is not only the power distribution with vertical and azimuthal angle, but also the fluctuation or envelope spectrum of the noise as seen through the highly directional beams. The overhead wind-generated noise exhibits a much greater envelope fluctuation than the near horizontal arrival angles where distant traffic sources are observed. Distant traffic sources were always observed even during periods of wind speeds up to 30 knots. Indications are that, if a high-gain array with sufficient directivity to reject overhead wind-generated surface noise is used, the residual noise field in the horizontal angles associated with distant targets will be highly structured and thus would be a prime candidate for adaptive processing techniques.

ACKNOWLEDGEMENTS

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ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978

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I. INTRODUCTION

One of the main objectives of the ADA program at the Marine Physical Laboratory has been to observe the background statistics of the noise in the ocean as seen through a high-gain directional receiving array. This report presents an analysis of data collected in a six-day observation period in June 1978. During this period of time, some 250 data tapes were recorded. Out of this set 60 tapes were made specifically for the observation of the acoustic background noise present in the ocean. Of interest in this data is not only the power distribution with vertical and azimuthal angle as it occurs in the ocean, but also the fluctuation or envelope spectrum of the noise as seen through the highly directional receiving beams.

Initial results from a selected data set have been previously published in the open literature[1]. The analysis of this report follows in general the approach taken in that reference, emphasizing the envelope spectrum computed from the detected and averaged beamformer outputs of the ADA instrument. A majority of the June 1978 data was collected with the array at a depth between 2000-2500 ft with winds ranging from 7 kts to 23 kts. A limited data set was obtained for depths of 1000 and 500 ft. During these different depth increments, the wind speed range was between 12-17 kts. All of the data was obtained with ADA and ORB (*Oceanographic Research Buoy*) moored approximately 160 miles west of San Diego off the edge of the Continental Shelf at a water depth of approximately 2000 fathoms.

The intent of the report is to be a data report rather than an exhaustive analysis of the mechanisms of wind and traffic noise. Evident in the data will be the variability

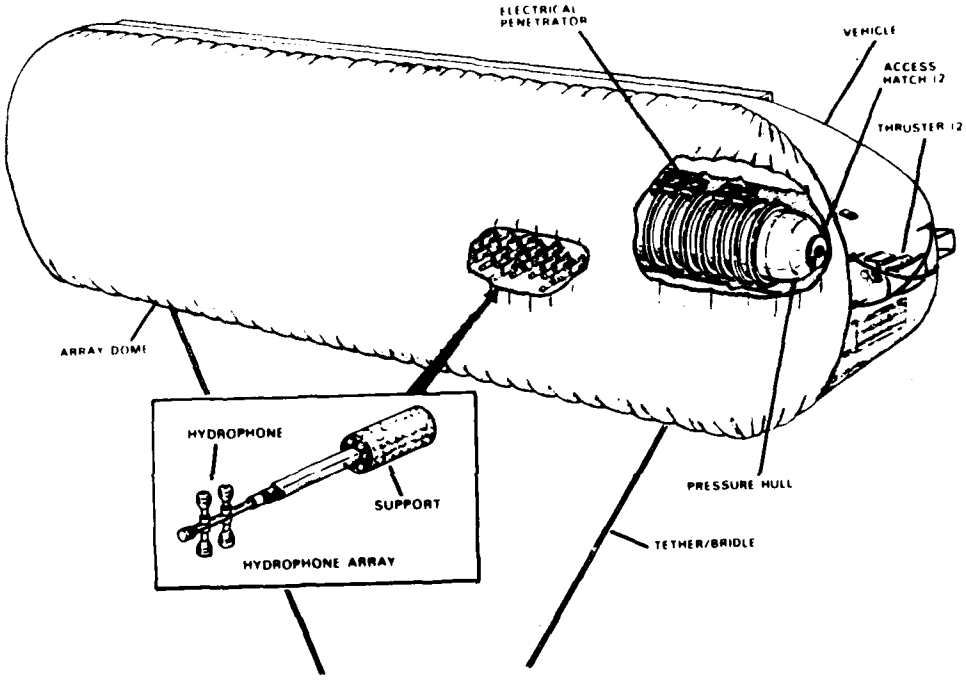


Figure III-1. The ADA array.

that is experienced in observations over a interval as short as six days from a single observation point in the ocean. Most of the traffic variability comes from sources which were outside of the radar detection range of the Decca radar aboard ORB. On those occasions where targets were observed within range these were noted in the log. The wind speed and direction data reported herein are derived from visual observations of the wind speed indicator aboard ORB. Sea state data is in the form of wave height and swell period estimates of observers from the deck of ORB. No wave recorder was available for this particular experiment.

II. BACKGROUND

One of the features recognized by those who have practiced the art of noise measurement in the ocean is the variability of the background noise levels. It has been thirty years since Knudsen[2] characterized the variable noise in the ocean in terms of its sea state dependence. Since that time a considerable amount of additional study has refined our understanding of the influence of sea state, shipping and biological sources on the ambient noise in the ocean. However, in most of these cases the attempt has been to obtain a correlation of average values of noise background with some feature of the environment which could be treated as a deterministic parameter.

An example of this is to be found in the work by Axelrod[3] in 1965 where the objective was to characterize the directional spectrum of the ambient noise in the ocean by looking at the output of a vertical array of hydrophones installed near the bottom in deep water. It is interesting to note that the data which they show in Figure 4 of that earlier paper, exhibits a very strong degree of variability, even though the data set of that Figure represents selected data - data that has been screened for the presence of ship traffic and has been characterized by being grouped on the basis of observed sound pressure level on a single hydrophone in one of the 1/3 octave bands.

Although the authors did not specifically state the frequency associated with that particular data set, one can infer from the shape of the curve that it was in the region of 1 kHz, which for a 1/3 octave bandwidth and a 4-second integration time constant would give a time-bandwidth product on the order of 10^3 for 2 x 10^3 degrees of freedom for the power measurement corresponding to each individual data point of their Figure 4. If one assumes that the samples were derived from a stationary Gaussian process, the expected σ for the power samples shown would be .022 of the mean. However, the computed sample from the data set taken at 30° shows a σ of more than ten times that (.38). In this data set, the individual samples were taken at intervals of 4 hours; hence, the σ of .38 represents variability over a large time separation of individual samples. Thus, there is no indication of the time constant associated with observed variability.

Rudnick and Squier[4] in 1967 showed a variability in directional structure that was well in excess of theoretical. In their paper, which dealt with a limited amount of data, no attempt was made to remove traffic noise; rather this was considered as part of the realistic background of the ocean. Consequently, some of the excursions in ambient background level were caused by nearby shipping. Nevertheless, the comments on the gross spectral characteristics of this limited data set indicated that one would expect components in the envelope spectrum with periods greater than 1 hour.

Arase and Arase[5] specifically studied the nonstationarity of the ambient background in a lower frequency region covering frequencies from 100-1600 Hz. Their conclusion was that in general the noise is Gaussian and stationary for less than 3 minutes. More recently Jobst and Adams[6] have investigated the stationarity of narrow band ambient noise. They found the noise to be nonstationary even for narrow band noise with the nonstationarity appearing over intervals as short as 10 minutes at 260 Hz. Granted, 260 Hz is about 1/10 the frequency observed in our current studies, however, the nonstationarity they observed does not disagree with the data which we will present in this report.

The earlier work of Rudnick and Squier[4] and of Axelrod[3] dealt with a directional noise field; that is, a study of the output of acoustic array. Axelrod used a linear array; Rudnick used a volume distributed array of 32 elements. In Axelrod's data the beamforming was done with a linear beamformer and the data analysis was carried out through 1/3 octave filters. Rudnick used a fixed band and analyzed the data through a DIMUS processor which normalizes the element inputs to constant power by an infinite clipper transformation. There is a subtle difference between these two. In Axelrod's data the beam output essentially represented an approximation to the intensity of sound arriving from a particular direction. The output of the beam in Rudnick's data represented a change in the directional structure of the background, rather than a change in the total level.

These are significant differences and affect the way in which one should interpret the data. It is the latter technique which we have employed in our current study. The 720 element array is processed through an infinite clipper DIMUS beamformer to transform the element signals into a set of directional signals.

It is apparent from this earlier research that there has been an interest in nonstationarity of the noise background and it should be pointed out that this is more than an academic interest. It does have a practical significance as it relates to performance estimation for a passive sonar receiving system. The character of the nonstationarity directly influences the processing gain which can be achieved through post-detection averaging. This particular topic is the subject of a paper by Hodgkiss and Anderson[7]. In that paper, treating the detection of a sinusoidal signal in ocean acoustic background noise, the envelope structure of data taken from the data set of reference 1 is related to the detection or processing gain that could be theoretically achieved with post-detection integration.

In the example chosen, a difference in processing gain of up to 3 dB occurs for integration intervals as short as 1 sec. It is not until integration times approach 100 seconds that the theoretical five log integration time processing gain is recovered. Quite simply, this means that at a 100 second integration time the post detection integration gain is about 13 dB lower than one would have expected for a stationary Gaussian background. This difference is obviously significant in the performance of a passive sonar system and an understanding of the envelope structure and its characterization can lead to a more optimum exploitation of integration time in such systems.

III. DESCRIPTION OF THE ADA SYSTEM

A complete description of the ADA system hardware is contained in reference 8. As a prelude to the analysis of the background noise data of this report, the acoustical characteristics and data recording capabilities are summarized below: ADA as depicted in the artist sketch of Figure III-1 is a large planar receiving array mounted on a submersible platform which consists of a large pressure hull containing processing and control electronics, and a supporting structure and skin which provides buoyancy for operation on the surface.

Sensor Array

A set of 2880 omnidirectional hydrophones is distributed in 720 four-element sub-array trees over a spatially tapered aperture 7 m high by 20 m long.

Sub Arrays

Each sub-array is a rectangular configuration lying in a vertical plane which is normal to the array. The vertical spacing is 25.0 cm, $1/2\lambda$ at 3.0 kHz. The two elements of the back pair are summed together, time delayed, and subtracted from the sum of the front pair to form a directional response pattern with a response below -15 dB over the back-hemisphere over the band of 200 Hz to 3.2 kHz. The $1/2\lambda$ vertical pair provides additional rejection from overhead at the upper end of the band. Typical frequency and directional response characteristics are displayed in Figures III-2 and III-3. A typical self-noise spectrum level is shown in Figure III-4.

The sub-arrays can be switched to an omnidirectional mode in which the upper forward hydrophone is selected in lieu of the directional output. This is accomplished by a controlling voltage, common to all elements of the array which actuates a read relay in each sub-array tree. The self-noise spectrum level of the omni-phone is also shown in Figure III-4.

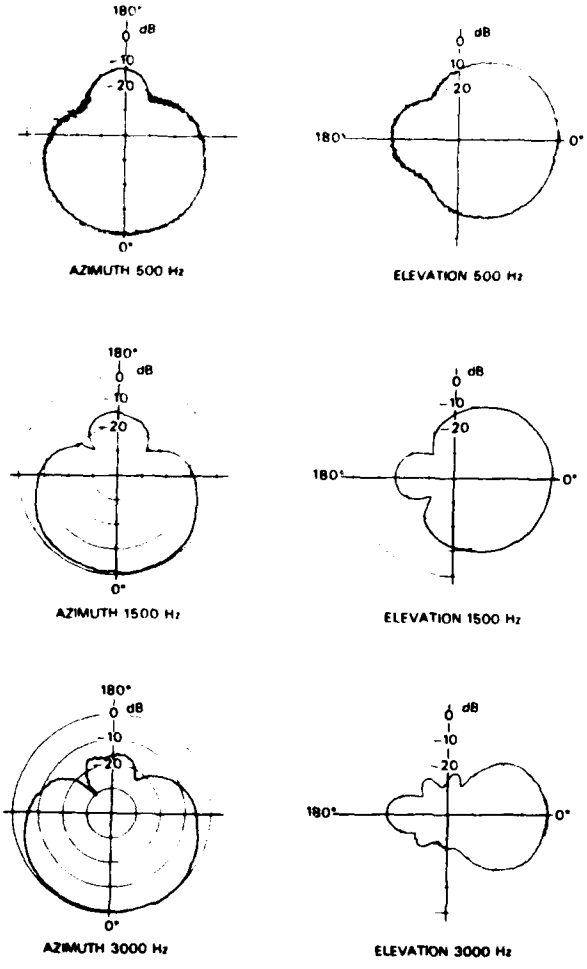


Figure III-2. Directional responses, sub-array trees.

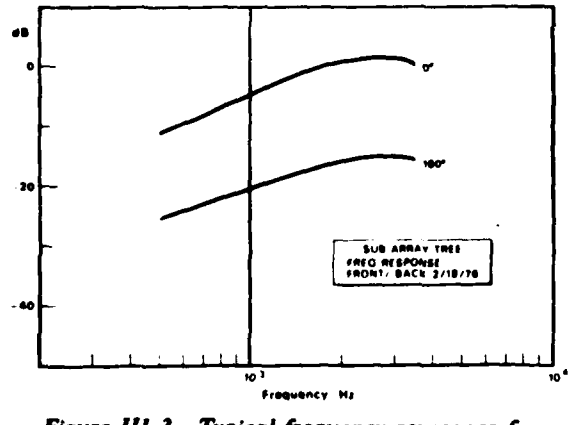


Figure III-3. Typical frequency responses for a sub-array tree.

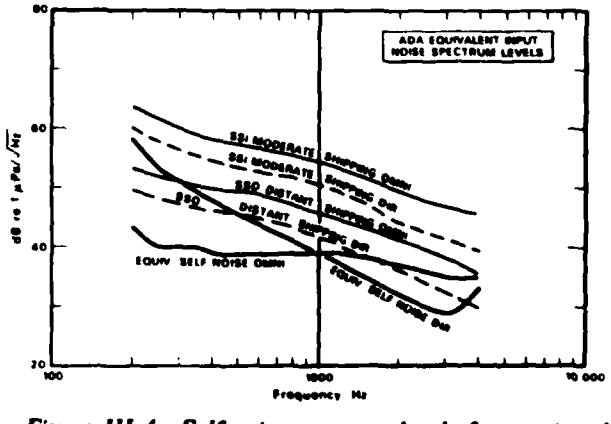


Figure III-4. Self noise spectrum levels for omni and directional sub-array trees.

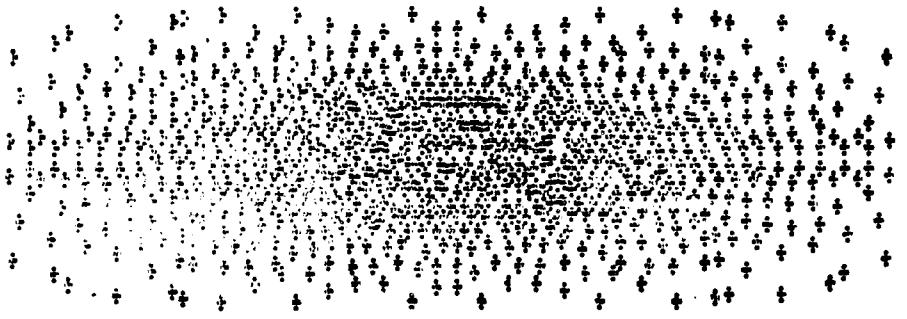


Figure III-5. Plot of sub-array tree locations.

Array Pattern

A randomized truncated-gaussian distribution of spacings was used to establish the positions of the elements (sub-array trees) within the array aperture. The average spacing varies over a factor of two-to-one from the center to the edge; being closer at the center. Figure III-5 is a plot of the element locations, Figure III-6 shows a theoretical response in the vertical and horizontal plane for the unsteered array pattern (normal to the plane of the array). The sidelobe structure of the array pattern is shown in the orthographic projection of the two-dimensional beam pattern of Figure III-7. This orthographic projection is a universal presentation which shows all of the sidelobes that could be observed for any steered beam up to the highest frequency of operation; 3.5 kHz. The array patterns shown have been computed for 720 omnidirectional receivers; the pattern of the individual sub-arrays will be superimposed on this array response pattern when they are operated in the directional mode.

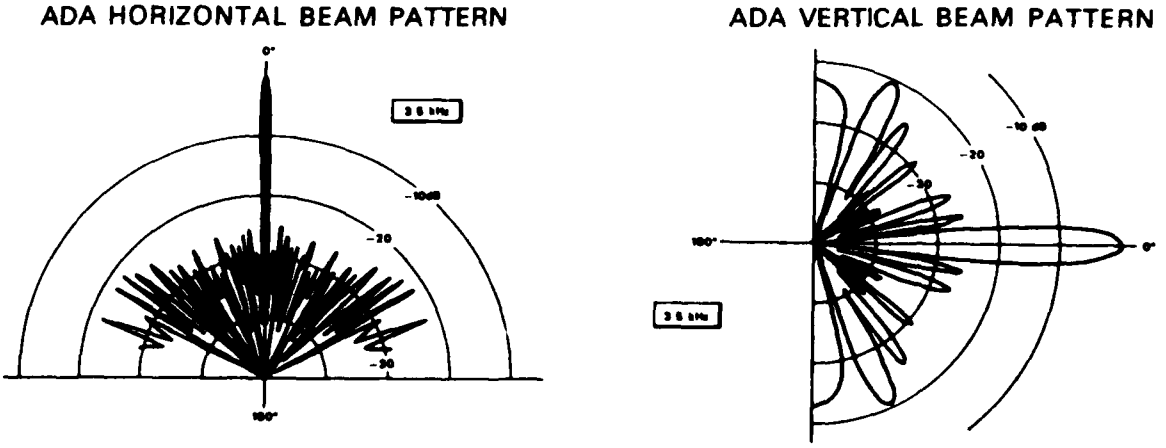


Figure III-6. Array patterns for the unsteered ADA array (omni elements).

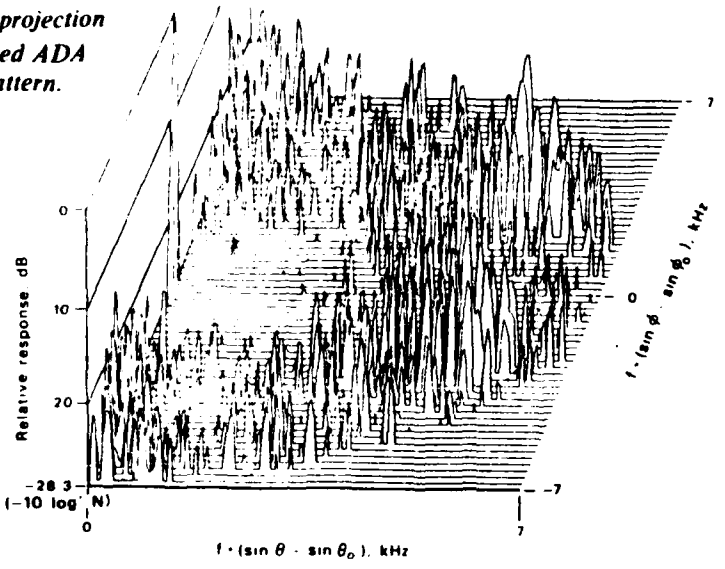


Figure III-7. Orthographic projection of the unsteered ADA array beam pattern.

Array Processing

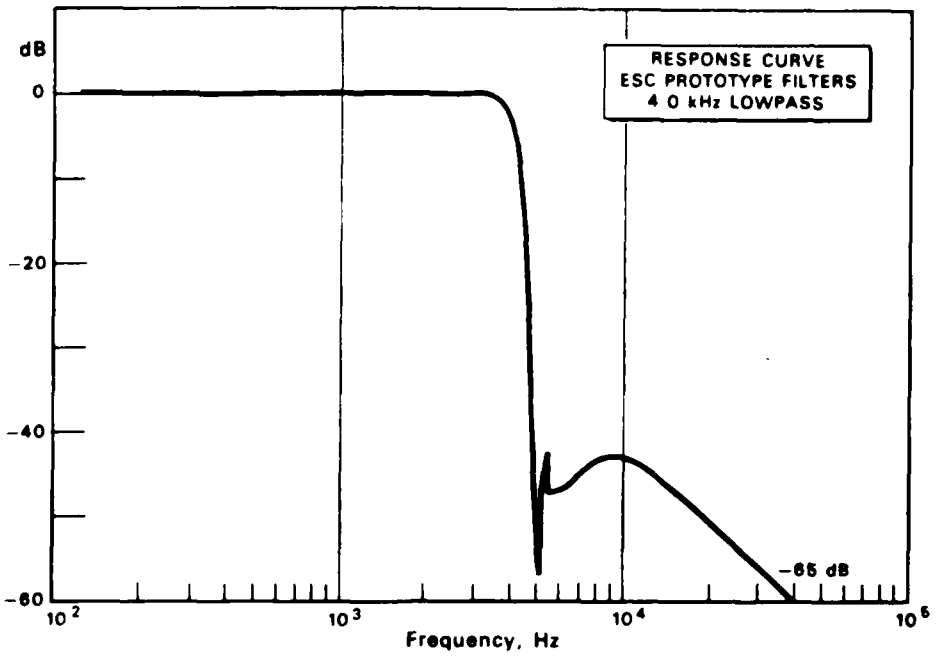
Signal Conditioning

Two stages of filtering are provided on each of the 720 elements. The first stage is an analog anti-aliasing filter having a cutoff frequency of 4.0 kHz and an optional (switchable) notch at 3.5 kHz (Figure III-8). This first filter stage is incorporated in the preamplifier stage, the gain of which can be varied under digital system control over a range of 84 dB in 6 dB steps.

After this stage the signal is sampled with an 8 bit A-D converter at a rate of 10 kHz.

The 8 bit digital data are time multiplexed into 3 digital filters for further spectral shaping. These filters provide, for each element channel, a recursive second order cascaded filter section multiplexed to the fourth order. A set of standard response patterns have been established for use in the experimental program. These are listed in Table I and the corresponding response curves are given in Figure III-9.

At the outputs of the digital filters the most significant bits, representing the polarities of the signals, are selected as inputs to the DIMUS beamformer. Also, a two-channel demultiplexer is provided which can select any two 8-bit individual element signals at the digital filter output for transmission over the high-speed telemetry link to the surface.



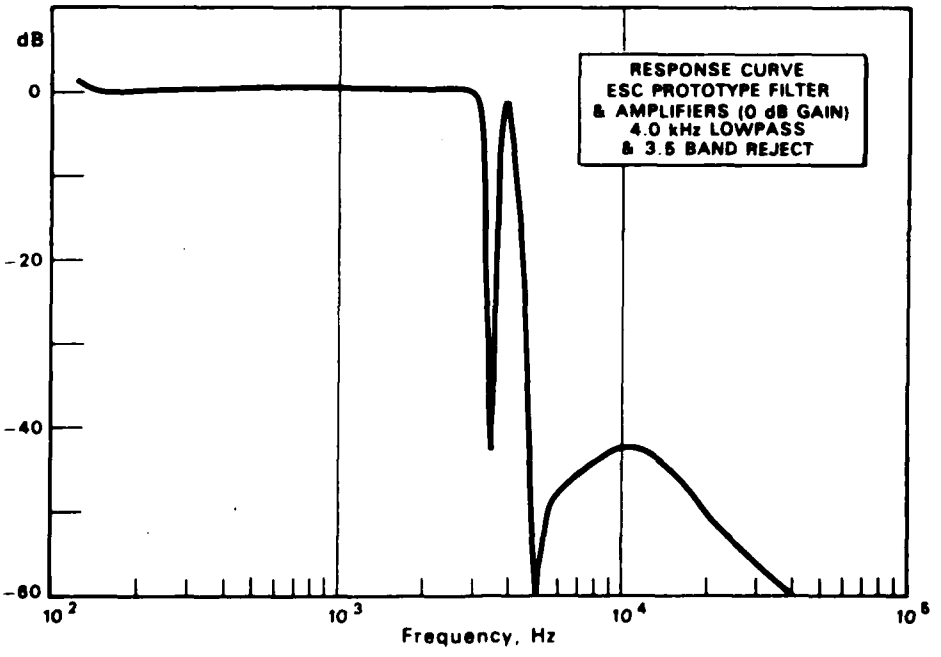


Figure III-8. Anti-aliasing filter responses, with and without 3.5 kHz notch filter.

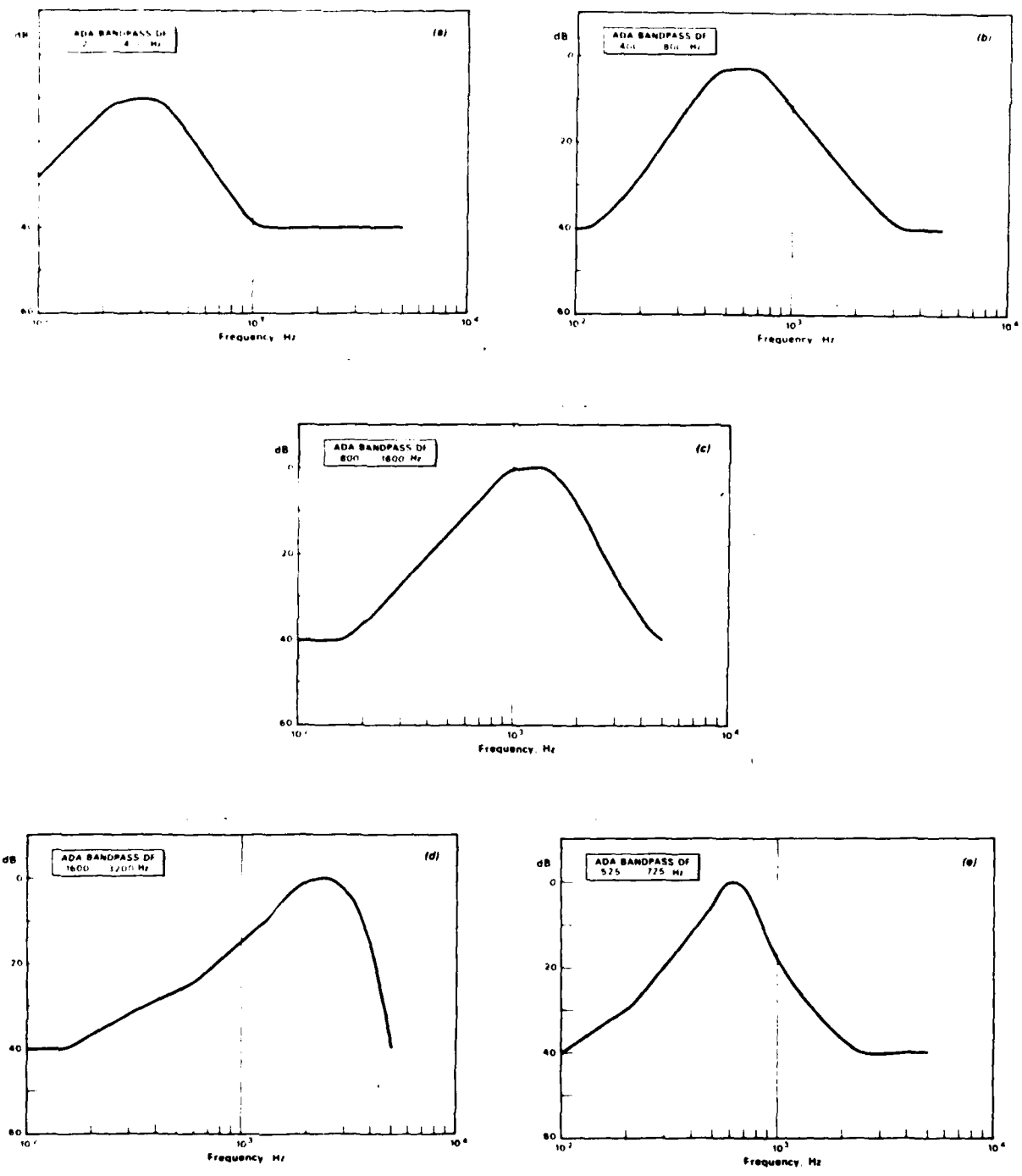


Figure III-9 (a-e). Standard frequency response characteristics of the digital filter.

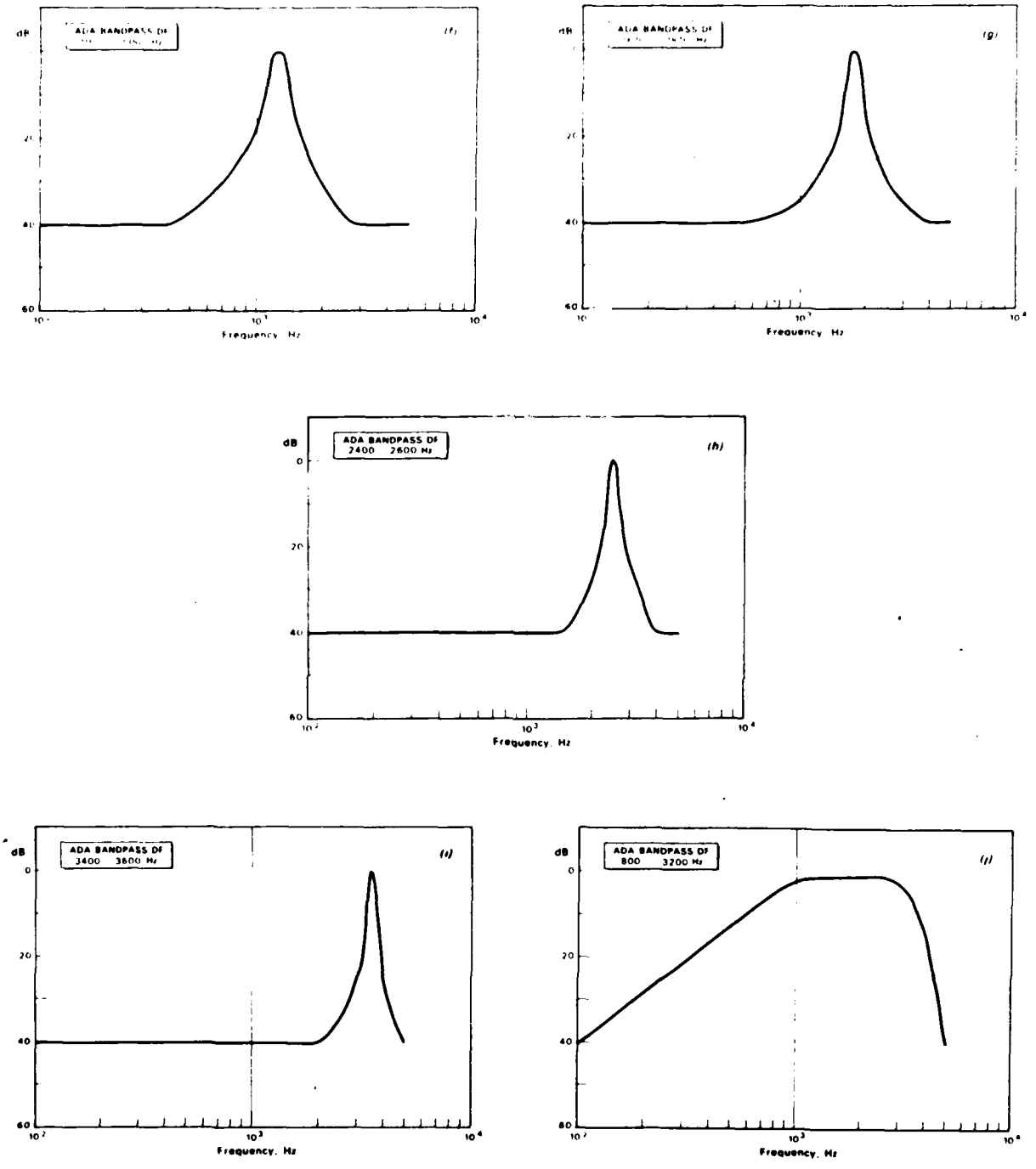


Figure III-9 (f-j). Standard frequency response characteristics of the digital filter.

Table III-1. Azimuth angles for one quadrant of the orthographic beam set.

BEAM NUMBER FROM CENTER	ELEVATION ANGLE										
	0°	6°	12°	17°	23°	30°	37°	44°	53°	64°	84°
1											
2											
3											
4											
5											
6											
7								14.4	18.1	19.2	28.4
8	13.4	13.5	13.7	14.1	14.7	15.5	16.8	18.9	22.5	31.4	
9	15.4	15.5	15.7	16.1	16.8	17.8	19.3	21.7	26.0	36.5	
10	17.4	17.5	17.7	18.2	19.0	20.1	21.8	24.6	29.5	42.0	
11	19.4	19.5	19.8	20.3	21.2	22.5	24.4	27.5	33.2	48.1	
12	21.4	21.5	21.8	22.5	23.4	24.9	27.0	30.5	37.0	54.9	
13	23.4	23.6	24.0	24.8	25.7	27.3	29.7	33.7	41.1	63.2	
14	25.4	25.7	26.1	26.9	28.1	29.8	32.5	36.9	45.4	75.1	
15	27.7	27.8	28.3	29.1	30.4	32.3	35.3	40.3	50.0		
16	29.8	30.0	30.5	31.4	32.8	35.0	38.3	43.9	55.2		
17	32.0	32.2	32.8	33.8	35.3	37.7	41.4	47.7	61.1		
18	34.3	34.5	35.1	36.2	37.9	40.5	44.6	51.7	68.5		
19	36.6	36.9	37.5	38.7	40.6	43.5	48.1	56.2	80.2		
20	39.0	39.3	40.0	41.3	43.4	46.6	51.7	61.4			
21	41.5	41.8	42.6	44.0	46.3	49.8	55.7	67.5			
22	44.1	44.4	45.3	46.8	49.4	53.4	60.2	75.9			
23	46.8	47.1	48.1	49.8	52.7	57.2	65.4				
24	49.7	50.0	51.1	53.0	56.2	61.5	71.9				
25	52.7	53.1	54.3	56.5	60.1	66.5	82.6				
26	56.0	56.4	57.8	60.3	64.6	72.8					
27	59.5	60.0	61.6	64.6	70.0	83.5					
28	63.5	64.1	66.0	69.7	77.4						
29	68.2	68.9	71.3	76.6							
30	74.0	75.1	78.8								
	84.1	88.4									

Beamforming

At the heart of the beamformer lies a bank of 720 1150 x 1 bit recirculating shift register memories which dynamically store a 115 msec history of clipped element data, recirculating at a 5 kHz rate, and adding 2 new data samples each recirculating period. The 1150 bits of shift register are composed of a 1024 bit MOS register plus 126 TTL stages which provide addressable delays.

During the 200 μsec recirculation time a set of 720 time delays is computed for one look direction or beam. These time delays are computed in a hardwired dot-product multipler operating on the components of the beam vector and the components of the position vectors of the elements. Beam stabilization can be optionally provided in the system by rotating the element vectors in accord with the gyro compass and tilt sensor data to express the element position in true azimuth and elevation coordinates.

The time delayed samples of the clipped element signals are summed in subsets of 120 elements (sextants of the arrray). These sextant sums represent nodes in the system that are accessible by the high speed multiplex link. All six subsets are summed to form a full audio beam; another node accessible by the high speed multiplex link. A short time averaged beam scan, STA, is generated from the audio beam samples. All

of the audio beam samples are rectified in a digital absolute value detector circuit and accumulated for 512 sample periods for transmission to the surface over the high speed multiplex link. The accumulated values, with a maximum possible value of 18 bits are truncated to 16 bits for transmission over the data link. Two 512 sample sums (each equivalent to 50 ms real time) are transmitted for each beam in sequence for a total of 3000 detected beam samples (1500 beams) each 100 ms of elapsed time. A long time averaged beam power scan, LTA, is accumulated in software, combining 20 STA scans. These data are multiplexed into the data stream on the high speed data link also.

In addition to these complete sets of detected beams, three undetected audio beam channels (10 kHz sampling rate) and two selectable hydrophone channels are transmitted over the high speed multiplex link. The undetected beam sums have a maximum range of ± 360 and are represented by a 10 bit number. The two 8-bit hydrophone channel samples are packed 2 to a 16 bit telemetry channel.

On Line Display

The primary display medium at the surface control station is an EPC Corp. intensity versus time recorder which is operated as a bearing time recorder. Formatting of the display is under computer control with a fully buffered data set.

The emphasis in the ambient noise measurements is on the vertical distribution and, in order to cover the environmental effects, the preformed beam set must cover a full hemisphere. The selection of a beam set is based on the assignment of uniformly packed beams at the upper frequency. This is equivalent to selecting a uniformly spaced lattice of beams covering the "visible" region of the orthographic projection of Figure III-7. The resulting display has a nonuniform spacing in angle which arises from the fact that the beams are broadened at angles far from normal to the plane of the array.

Data Recording

Four 9-track magnetic tape recorders are available on-line for data recording. These operate at 1600 BPI, 45 IPS. Recording can be carried out on one of each of the two pairs simultaneously. One pair, for the log tape, is devoted to recording the 1 second averaged beam outputs along with 1 second scans of sensor data. Each log tape contains about 2-1/2 hours of data.

The second pair can be used to record either the multibit high speed audio data, 2 audio beams and 2 hydrophones, or else the 50 ms averaged detected beam outputs. The data rate in this case is considerably higher; a tape will be filled in 11 minutes.

Operating Depth

Deployment of the array is accomplished by the passive pull-down technique illustrated in Figure III-10. With a maximum tension limit of 6800 Kg for the mooring lines, the geometry of the moor and the maximum umbilical length of 1755 m limits the deployment depth to 700 m in 3700 m deep operating areas beyond the continental shelf.

A scale drawing of the moor configuration for the June 1978 experiment is shown in Figure III-11.

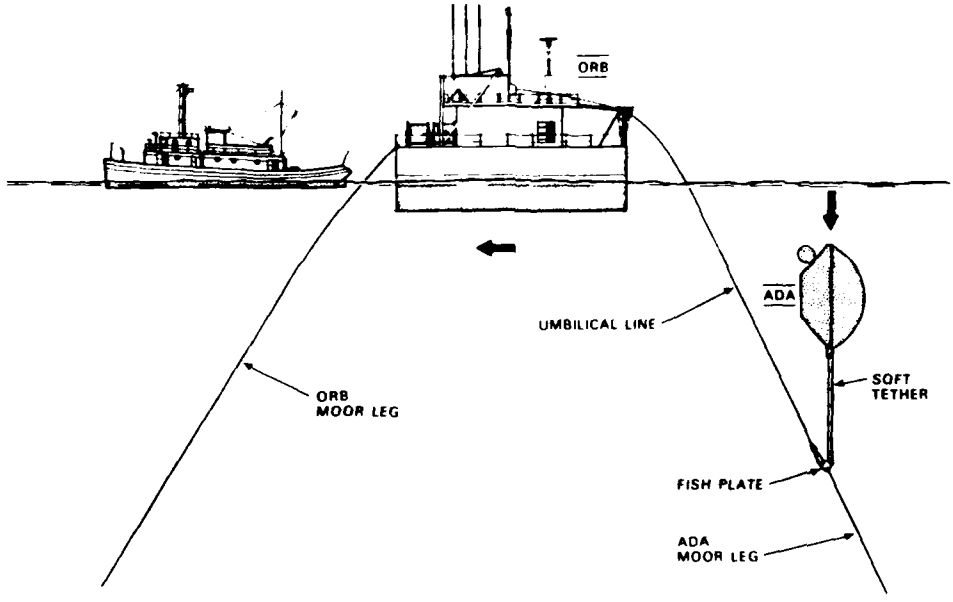


Figure III-10. Passive pull down deployment of ADA.

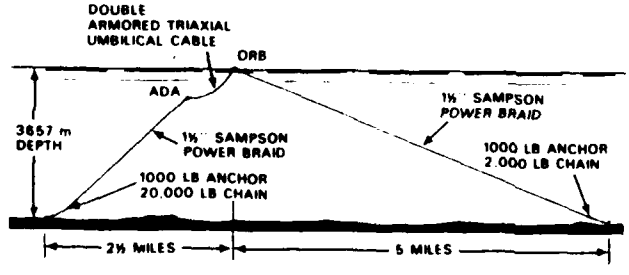


Figure III-11. Mooring geometry for June 1978 ADA operation.

System Status

At the time of the June 1978 operation, 109 hydrophone elements were determined to be faulty in the system checkout. Also, one of the three beamformers was found to be erratic in performance. Consequently, the beam set was reconfigured to a 1000 beam set covering the full hemisphere with beam centers as listed in Table III. The effect of the reduced number of elements on the beam pattern of the array is illustrated by the horizontal pattern of Figure III-12 which should be compared with Figure III-6.

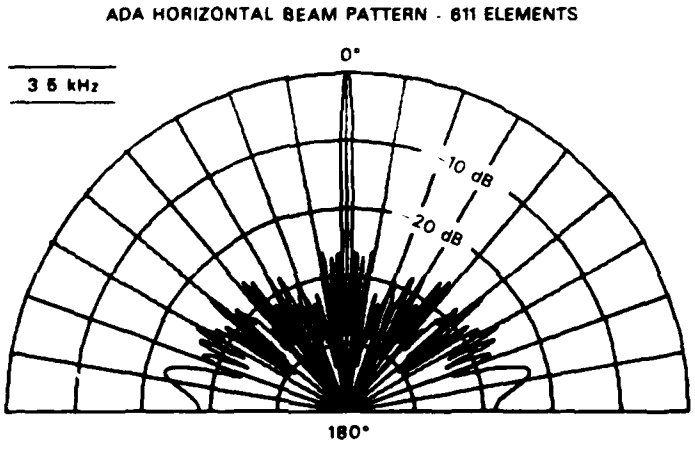


Figure III-12. Array patterns for the unsteered ADA array with 109 elements turned off.

IV. DESCRIPTION OF DATA SET

Sea Operations

The data of this report were collected with ORB moored at a location off the Continental Shelf at position 114 W 32°N as shown in Figure IV-1. The water in this area was predominantely in excess of 2000 fathoms and supported convergence zone propagation. At the time of the sea measurements a well mixed layer was prevalent in the sound velocity profile to a depth of 50 m. The sound velocity profile and the corresponding ray diagrams for a 700 m submergence depth are shown in Figure IV-2.

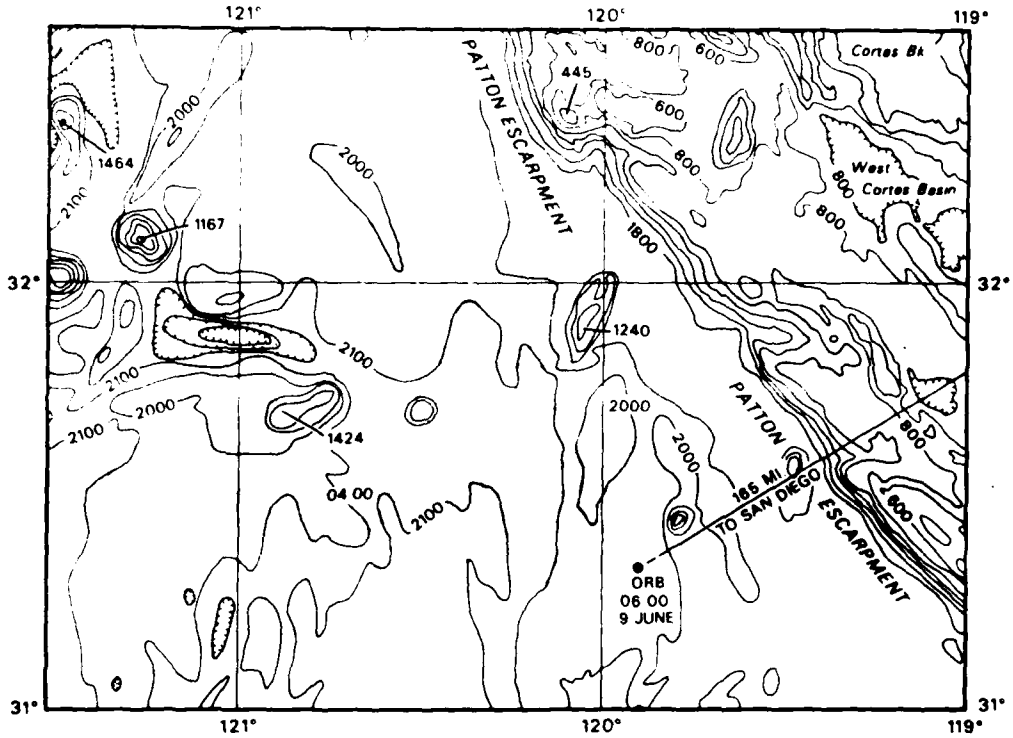


Figure IV-1. ADA moor location for June 1978 operation.

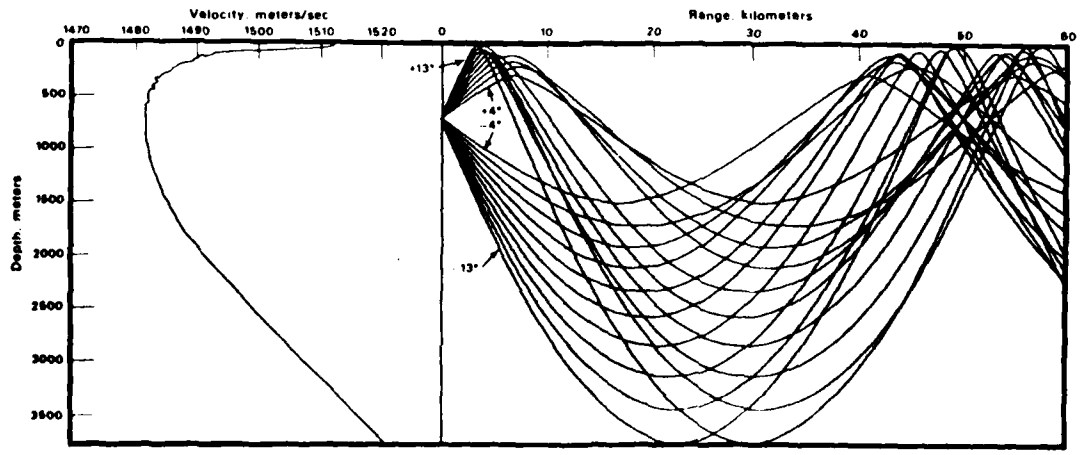


Figure IV-2. Sound velocity profile and ray diagrams for a 700 m receiver depth.

The analysis of the data concentrates on two vertical angles of arrival. One angle is in the steep overhead direction lying outside of the $\pm 12^{O}$ array bundles of the ray path diagram of Figure IV-2. The other angle is one below the 12^{O} ray which intersects the surface and is an angle which contains distant targets, but lies below the major surface noise structure in the immediate vicinity of the array.

Observations were made over a period from 7 June 1978 through 12 June 1978. The acoustic background was sampled at intervals during this six-day period. Each sample of the acoustic background consisted of one continuous log tape, which contained the long-term averaged (LTA) data. The LTA data is in the form of a sequential bearing scan of 1 second averaged detected beam outputs and is represented by 1 second samples during that approximately 2-1/2 hour period of the log tape recording.

During the log tape two other short term averaged tapes were collected; each with the duration on the order of 11 minutes (one usually taken at the beginning of the log tape and the other at the end). An exception to the lengths of time occur on June 12 where a shorter sequence of log tapes accompanied by single STA tapes was taken as the array was raised in the recovery process.

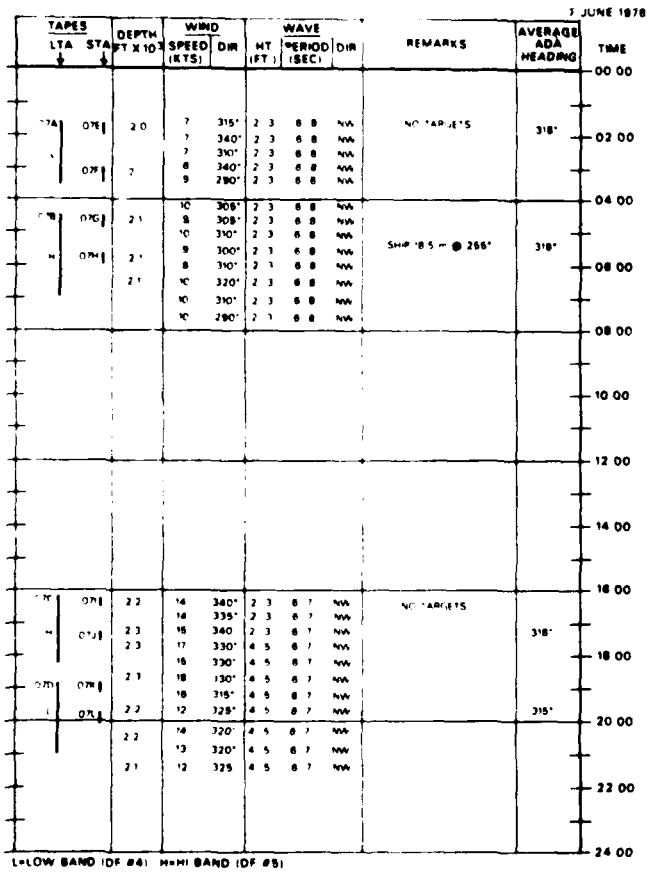
The time at which the tapes were taken and the accompanying environmental observations are presented in the chronological sequence of Table IV-1. In this table the vertical bars indicate the length of the respective tapes and tapes are identified by the date and an alphabetic character. This table includes the wind speed direction, the average depth of the array during the recording, the average ADA heading, and remarks, particularly with reference to the presence of ship radar targets during the recording period. As can be seen from the comments, at no time during these recordings was there a ship within a range of less than 8 miles and only on two occasions were there any radar targets visible at all.

Table IV-2 lists the date and start time of the tapes along with the tape ID's which were assigned for identification in this report.

Throughout the seven days of recording the wind direction was very consistent, deviating not more than $\pm 30^{O}$. Wind speed was also quite constant. Except for the early morning recordings on 7 June, when the wind speed gradually increased from 7 to 10 kts, the wind speed remained between 15-20 kts for the entire recording period.

In addition to these LTA and STA data tapes, which represent rectified beam outputs from the beamformer, sample recordings were made of the digitized audio signal outputs of selected elements from the array. The spectra of these elements are included in the data set. They are identified by their recording time and can be placed in the proper context of the LTA and the STA tapes by comparison with the starting times of those tapes as given in Table IV-2.

Table IV-1. Chronological sequence of data tapes (7-8 June 1978).



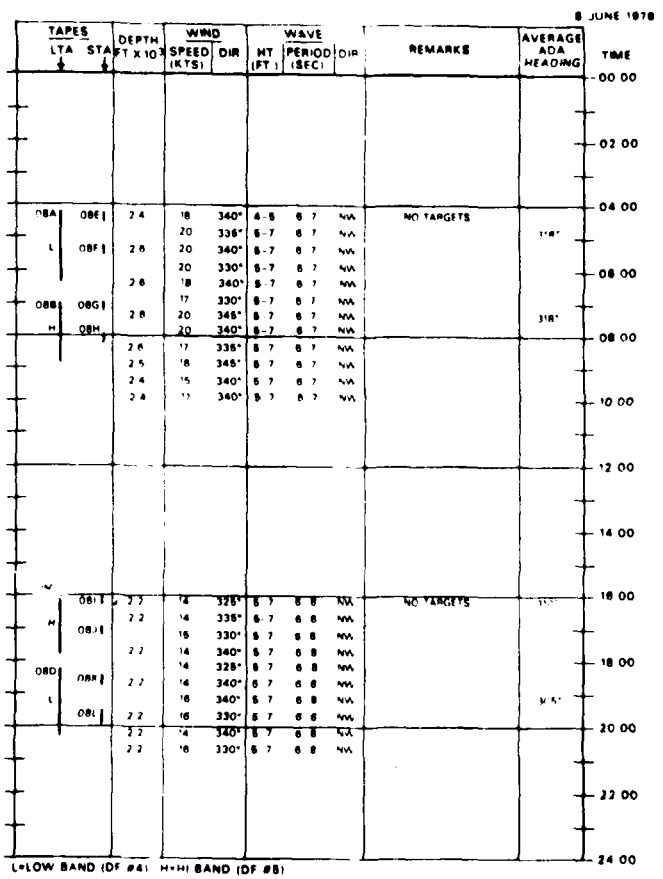


Table IV-1. Chronological sequence of data tapes (9-10 June 1978).

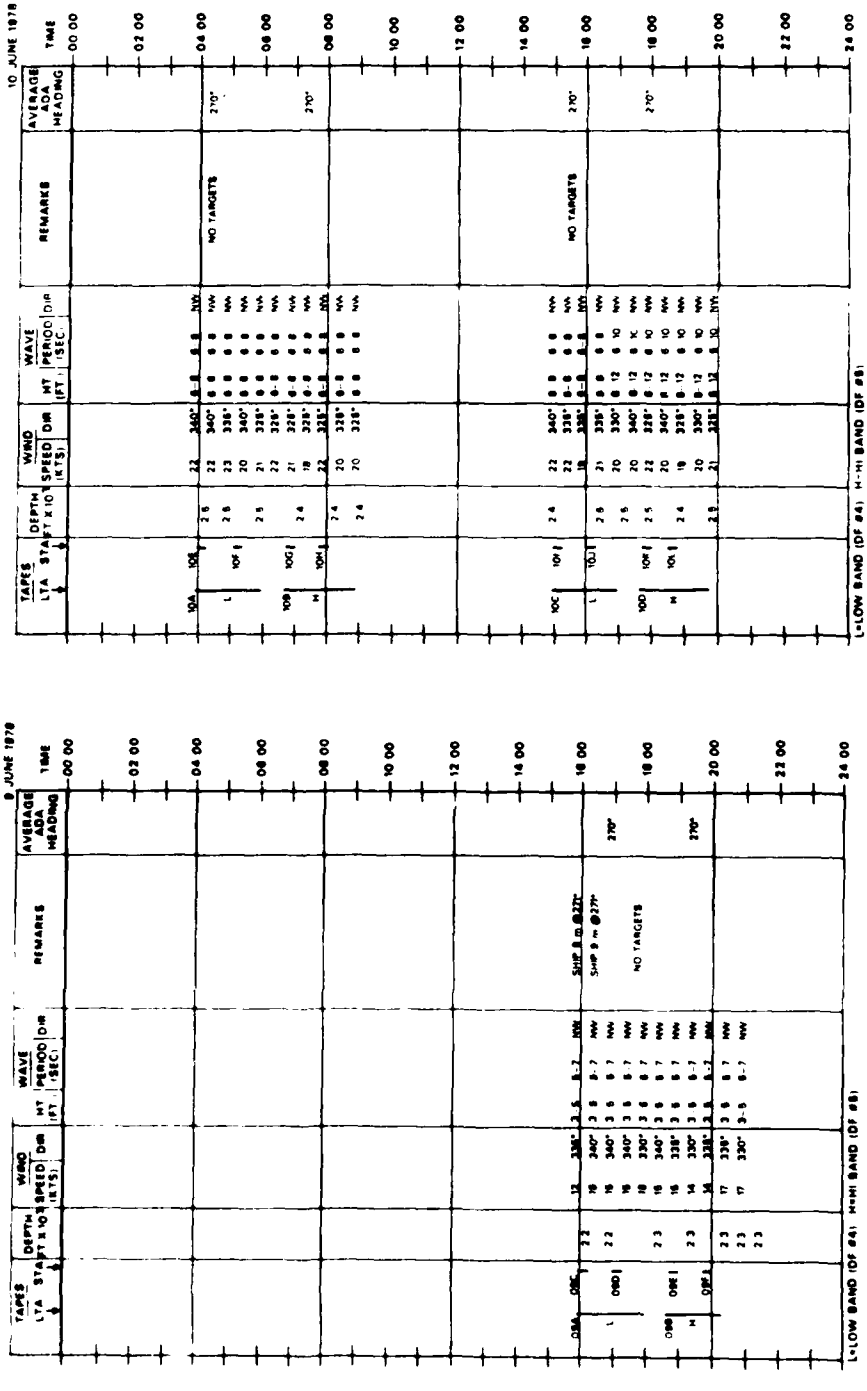


Table IV-1. Chronological sequence of data tapes (11-12 June 1978).

11 JUNE 1978

TAPES LTA	TAPES STA	DEPTH FT X 10³	WIND SPEED (KTS)	WIND DIR	WAVE HT (FT)	WAVE PERIOD (SEC)	WAVE DIR	REMARKS	AVERAGE ADA HEADING	TIME
										00 00
										02 00
										04 00
11A L	11C	2.3	18	335°	6 10	6 9	NW	NO TARGETS	310°	06 00
	11D	2.3	18	330°	6 10	6-9	NW			
			16	320°	6 10	6-9	NW			
			17	328°	6 10	6-9	NW			
			17	320°	6 10	6 9	NW			08 00
11B H	11E	2.2	18	330°	6 10	6 9	NW		310°	
			18	330°	6 10	6-9	NW			
	11F	2.2	17	328°	6 10	6 9	NW			10 00
		2.2	16	328°	6 10	6 9	NW			
			17	328°	6 10	6 9	NW			
		2.2	16	330°	6 10	6 9	NW			
										12 00
										14 00
										16 00
										18 00
										20 00
										22 00
										24 00

L=LOW BAND (DF #4) H=HI BAND (DF #5)

12 JUNE 1978

TAPES LTA	TAPES STA	DEPTH FT X 10³	WIND SPEED (KTS)	WIND DIR	WAVE HT (FT)	WAVE PERIOD (SEC)	WAVE DIR	REMARKS	AVERAGE ADA HEADING	TIME
										00 00
										02 00
										04 00
12A L	12G	1.0	17	340°	6-7	6 7	NW	NO TARGETS	318°	
			17	330°	6-7	6 7	NW			
12B H	12H	1.0	18	340°	6-7	6 7	NW			
			14	340°	6-7	6 7	NW			
		1.0	18	340°	6-7	6 7	NW		320°	06 00
			14	328°	6-7	6 7	NW			
		1.0	18	330°	6-7	6-7	NW			
			18	328°	6-7	6 7	NW			08 00
		0.9								
		0.7	15	330°	6-7	6 7	NW		320°	10 00
			16	330°	6-7	6-7	NW			
12C H	12I	0.8	17	330°	6-7	6 7	NW			
			14	338°	6-7	6 7	NW			
12D L	12J	0.6	18	330°	6-7	6 7	NW			12 00
			16	340°	6-7	6 7	NW		320°	
		0.6	15	340°	6-7	6 7	NW			
12E L	12K	0.55	17	350°	6-7	6 7	NW		230°	14 00
			15	348°	6-7	6 7	NW			
12F H	12L	0.63	17	350°	6-7	6 7	NW		230°	
			16	350°	6-7	6 7	NW			
			12	340°	6-7	6 7	NW			16 00
		0.2								
										18 00
										20 00
										22 00
										24 00

L=LOW BAND (DF #4) H=HI BAND (DF #5)

Table IV-2. Data and starting time of data tapes and identifier numbers used in this report.

DATE JUNE 1978	TIME HR MIN SEC	FILTER BAND	TAPE ID LTA
[illegible]	[illegible]	[illegible]	[illegible]
8	04 20 04	L	8E
	05 16 47	L	8F
	07 01 07	H	8G
	07 59 19	H	8H
	16 02 4[illegible]	[illegible]	[illegible]
	16 57 5[illegible]	[illegible]	[illegible]
	18 28 48	L	8P
	19 30 [illegible]	L	8L
[illegible]	[illegible]	[illegible]	[illegible]
	16 59 [illegible]	[illegible]	[illegible]
	18 4[illegible]	[illegible]	[illegible]
	19 43 [illegible]	[illegible]	[illegible]
10	03 59 35	L	10E
	05 04 12	L	10F
	06 46 28	H	10G
	07 44 07	H	10H
	14 57 33	L	10I
	16 02 19	L	10J
	17 40 5[illegible]	[illegible]	[illegible]
	18 3[illegible]	[illegible]	[illegible]
11	06 06 44	L	11C
	07 04 48	L	11G
	08 39 4[illegible]	H	11E
	09 40 04	H	11I
12	04 10 48	L	12C
	05 25 43	H	12H
	10 59 31	H	12
	12 16 35	L	12J
	13 29 50	L	12K
	14 29 0[illegible]	H	12L
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]

also displayed along with the single element power spectrum for each LTA tape. These audio power spectra were generated with a 1024 point FFT, which provides a frequency bin width of approximately 10 Hz. The power spectra were ensemble averaged to generate a smoothed spectrum to represent the element signal. The averaged power spectrum of the FFT was scaled to display the single element spectrum level in dB referenced to 1 $volt/\sqrt{Hz}$. The hydrophone output spectrum level can be obtained by subtracting the amplifier gain from the plotted spectrum. In the case of the beam spectrum level the reference is to the full scale output of the beamformer rather than a particular voltage, inasmuch as the clipper normalization of the beamformer would preclude a direct conversion to input acoustic pressure level.

An RMS level of the wide band audio input signal was also computed directly from the data tapes. This level is included as part of the log data accompanying the hydrophone and beam spectral curves.

The shape of the input spectrum is dominated by the filter characteristics of the system and thus there are two characteristic spectra for the measurements made here corresponding to the high-band and low-band filters which were used in the data collection. All of the low-band power spectra of this data set have been overlaid in Figure V-1. The bounds of the spectra are indicated by the shaded band. The dots are points selected as representative of a typical power spectrum for the low-band set. Figure V-2 presents a similar set of spectra for the high-band data where the dots, again, are the points selected to represent a typical power spectrum for the high-band data. In these overlays the peak spectrum levels have been matched so as to normalize the spectra

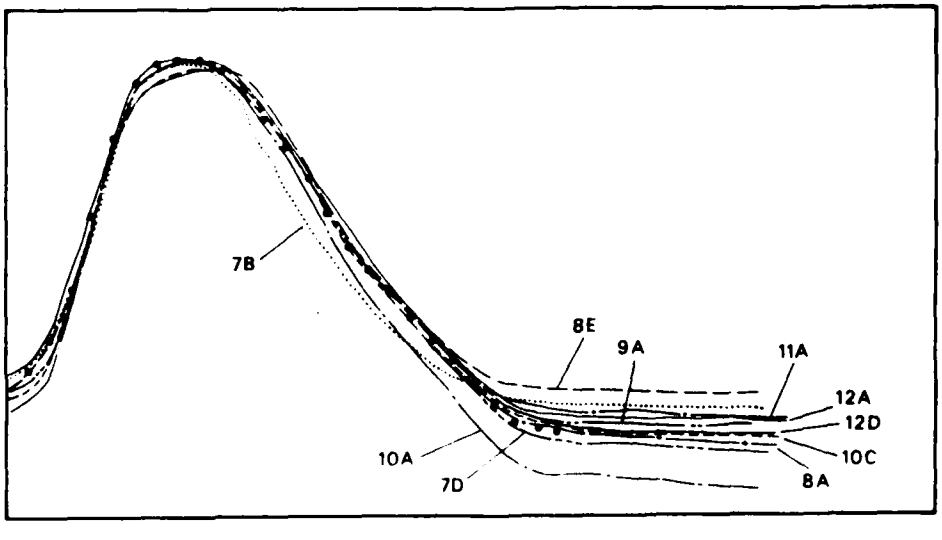


Figure V-1. Overlay of low-band power spectra normalized to maximum value. Dots represent selected typical low-band spectrum.

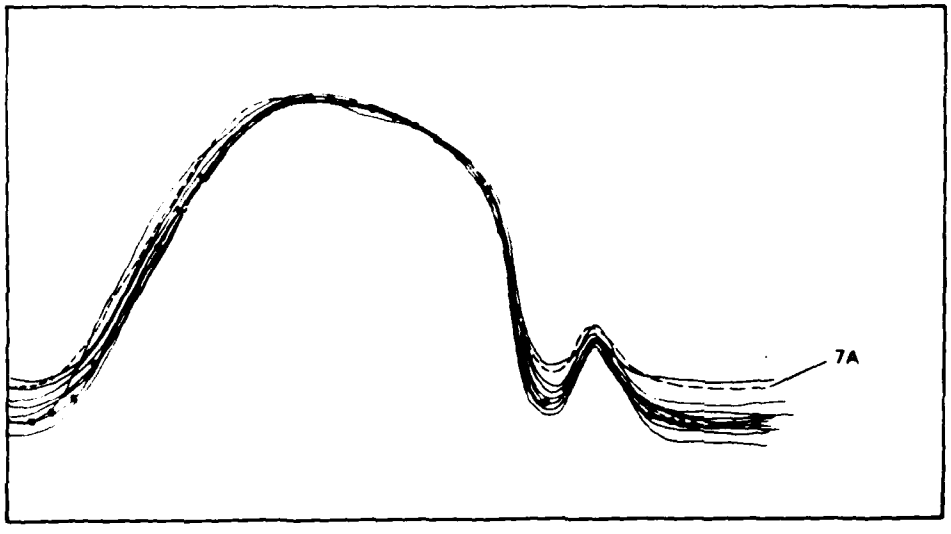


Figure V-2. Overlay of high-band power spectra similar to V-1.

inasmuch as the shape of the spectrum is the important feature for determining the bandwidth of the input signal. These two typical spectra are replotted on a power scale in Figure V-3. Numerical integration of the power spectra, gives rise to a mean frequency and effective bandwidth; both of which are listed on the plot. Also tabulated on Figure V-3 are the various sensitivity and gain factors which have been used to correct the RMS element level to an equivalent pressure spectrum level in the water.

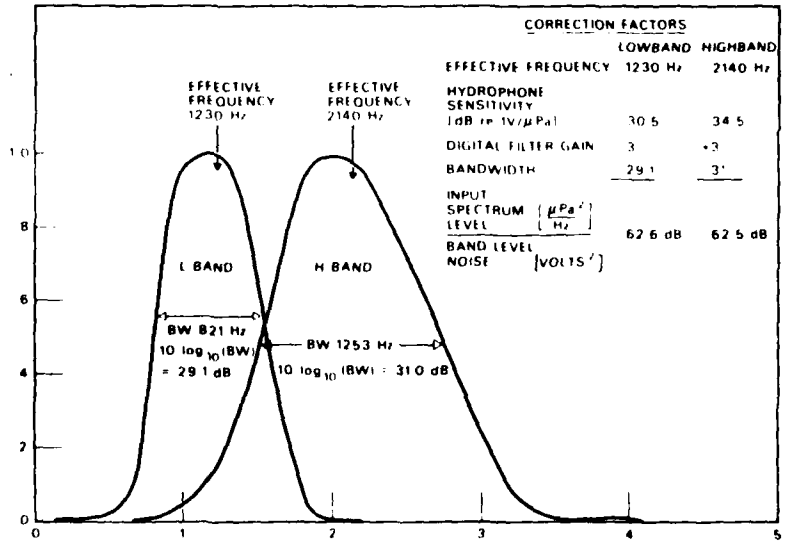


Figure V-3. Two typical spectra on a power scale numerically integrated. Mean frequency and effective bandwidth are listed along with sensitivity and gain factors.

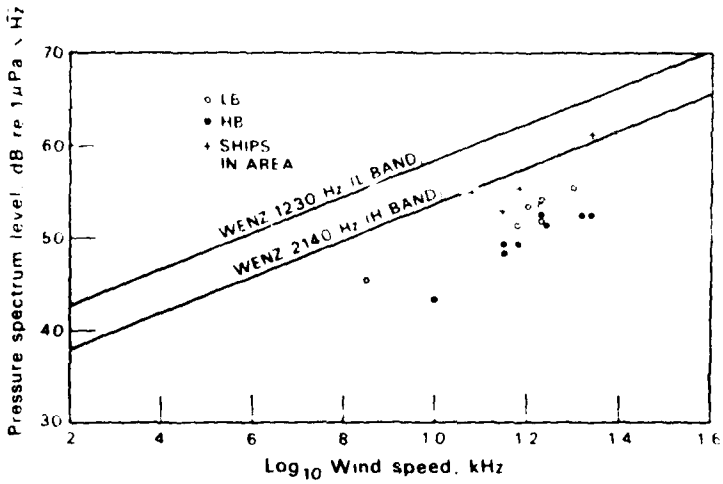


Figure V-4. Single hydrophone power levels compared with Wenz wind-noise curves.

For comparison purposes the corrected single hydrophone RMS levels for all of the LTA groups are plotted in Figure V-4, along with the wind-noise characteristic curves from Wenz[9]. The data is plotted as pressure spectrum level, in dB re 1 $\mu pascal/\sqrt{Hz}$ vs wind speed as $\log_{10}$ (wind speed [knots]). The four circled points represent data that was obtained when there were ships known to be in the area. The other data points fall 8-10 dB below the Wenz sea state curves. This is primarily due to the directivity of the elements. The directivity index for the four element hydrophone tree in an isotropic noise field would be on the order of 5 dB. A higher effective directivity index would be expected for the overhead directional noise. There is also a depth correction to be made which amounts to 1.5 to 2 dB for the 700 m depth of the array. Thus the sound pressure levels observed in the ocean are consistent with the Wenz curves. The wind speed dependence, although represented by a narrow range of speeds still possesses the same general trend as do the Wenz wind speed curves.

Envelope Spectral Processing

Processing of the beamformer detected scans required a number of steps. First of all it was necessary to reformat the data from the beam scan sequence into a set of time sequences for each beam. It was also necessary to inspect the data for telemetry errors, which although infrequent, could give rise to anomalous data values. The first obvious test which was applied, was to reject as an error any value which lay outside of the maximum possible beam output value. For errors of this type the data point was replaced by the average of the two adjacent points. The time sequences of the beam data representing the envelope of beam power were processed with 1024 point FFT transforms. The power spectra generated by the FFT transform were converted from the uniformly spaced frequency power bins to a logarithmic 1/3 octave representation by combining bins into the 1/3 octave subsets. The 0 frequency term of the FFT was retained as a measure of the average power in the 1024 samples of the beam output.

Table V-1. Weighting combinations for the 1/3 octave spectral bands.

1/3 OCTAVE BAND	CENTER FREQUENCY (Hz) LTA	LTA	FFT BINS AVERAGED
			DC TERM
4			
5	24	48	4
6			4
7	3 81	76 2	5
8			6
			8
	152	152	9
			10 THRU 12
			16 THRU 18
		384	19 THRU 23
	24 2	484	24 THRU 29
	30 5	609	30 THRU 36
	38 4	768	37 THRU 45
	48 4	968	46 THRU 57
			58 THRU 72
			73 THRU 91
			91 THRU 114
			115 THRU 143
			144 THRU 180
			181 THRU 227
			228 THRU 286
			287 THRU 360
			361 THRU 454
			454 THRU 572

The lowest frequency in the 1/3 octave spectrum set corresponded to the first frequency bin of the FFT process. The second frequency bin, of course represents one octave greater frequency and, in order to complete the 1/3 octave set, the values of the first bin and second bins were interpolated to provide the missing two 1/3 octave bins in the first octave. The actual weighting combinations used to generate the 1/3 octave set are listed in Table V-1. The number of degrees of freedom in the 1/3 octave bins changes radically over the full range. The first four bins have only the 2 degrees of freedom associated with the single power sample. The next to the highest bin on the other hand, is the sum of 93 FFT frequency bins for a total of 106 degrees of freedom. Further ensemble averaging of successive 1024 point FFT power spectra over the 2-1/2 hour LTA tape increased the number of degrees of freedom in the average.

It was found that telemetry errors that were not detected by the simple threshold test and other possible errors could still give rise to spurious values in the data set and a more sensitive test for these errors was implemented. This consisted of inspecting the set of FFT's that were to be combined in an ensemble average for one beam, in particular looking at the upper ten 1/3 octave frequency bins. The mean and standard deviation σ for each of these upper ten bins was computed, and then the individual spectra of the assemble were compared against the mean and standard deviation. Any spectrum for which the upper 10 bins fell outside of 3σ from the mean was discarded

from the set. The subsequent mean and standard deviation were recomputed and normally the test applied again until no further samples were rejected. Although this reiteration is not normally recommended, a close inspection of the rejected spectra indicated that the rejections were legitimate. This test removed many of the artifacts that appeared in the power spectra and did not significantly reduce the total amount of data that was retained.

The same 1024 point FFT processing was applied to both the LTA and STA tapes. The frequency ranged from .95 to 98 mHz (milli-Hertz) for the LTA tapes and from 19 to 9750 mHz for the STA tapes.

Rather than compute the power spectra for the complete set of beams, a subset consisting of the seven center beams for all 21 elevations was processed and averaged. A complete azimuthal set was also selected for processing using elevation No. 10, which is one elevation set above the horizontal. This azimuthal set represented a sample of the sound field containing distant shipping traffic. Imbedded in the beam scan was the rectified and averaged output of a single element. This single element envelope time series was also processed by the same FFT program as the beam data.

Beam Power

For each of the LTA tapes the DC terms were corrected for the clipper distortion and for a nominal array directivity index so that the DC beam powers could be referenced back to a power spectral density with units of decibels re 1 $\mu pascal/\sqrt{Hz}/steradian$. The basis for correcting the clipper beamformer (DIMUS) output to a pressure level in the water was to essentially invert the normalization process of the DIMUS beamformer, making particular use of the arcsine relationship of the correlation function for a clipper correlator, to apply corrections to the beam power levels observed at the output of the beamformer.

The first correction made use of the detected and averaged single element data that was embedded in the beam scan as a pseudo-beam. The average power, E, of this rectified element signal was used as a normalization reference for the clipper process. The power in a beam, W, as contained in the zero frequency bin of the FFT was corrected by the following equation to remove the clipper normalization.

$$corrected\ \ beampower = \frac{[\pi/2\ (4 \times W/160) + N(1 - \pi/2)]}{4\pi N} \times E \qquad (1)$$

The equation makes use of the fact that the diagonal terms of the DIMUS beam power matrix are unity and that the remaining off-diagonal terms are essentially $2/\pi$ times the normalized cross-correlation coefficient, assuming here that they are all below .5

more or less in correlation value in magnitude. (This assumption is admittedly in error for the lower band where element spacings are less than $1/2\lambda$ and significant correlation near the diagonal can occur).

The sum of the power matrix terms is scaled by a factor $\pi/2$ and the diagonal DIMUS beam power corrected by the term $N \times (1 - \pi/2)$.Other factors in the equation are: A constant, 160, which corrects for the scaling used in the averaging process; The factor 4 which converts the ADA 0,1 clipper output to a - 1, +1 clipper conversion, as assumed for the arcsine relationship; The factor $1/(4\pi N)$ which relates the beam power levels to an angular density. Here the factor N, is taken to represent the nominal array gain. This factor N is, of course, in error for frequencies other than the upper frequency of the array where the element spacings are on the order of $1/2\lambda$. It also is not correct for the beams off the normal of the array where the broadened beams will lead to a reduced directivity index.

No further corrections are made for the element directivity. It turns out that the drop in sensitivity of the elements towards endfire, that is towards the angles that lie close to the plane of the array, applies a correction which is opposite to the effect of the broadening of the beams in these directions, so that a first order correction in essence has been applied to the directional beam power.

It should be cautioned that no attempt has been made to deconvolve the beam pattern from the data. Thus, the vertical beam power spectra plots should not be taken as representing the true directional spectrum. Rather they should be used as a basis of comparison for the different wind conditions and frequency bands investigated. They should also be interpreted in light of the azimuthal patterns recalling that the center seven beams of the azimuthal pattern are averaged to get the near horizontal power for the vertical plot. Thus, the density in the near-horizontal angles of the vertical plot are significantly affected by the shipping traffic and should always be considered in conjunction with the azimuthal plot.

Array Motion

Peaks in the azimuthal directional power plots are broadened by two effects; 1) ship traffic motion during the two-hour recording period, and 2) motion of the array itself, since the set of beams used for the data in this report were not stabilized in true coordinates, but were a relative set referenced to the platform. The envelope spectrum plots are also affected by the array motion. The motion modulates the power on one of the relative beams as it traverses a sharp gradient in the angular power spectrum such as a shipping peak, or the edge of the refraction limited surface noise field. Because the array motion does influence the interpretation of the data, particularly some of the low frequency envelope spectra, the time series of heading and tilt for ADA are included in each data group. The tilt angle records of the array were also analyzed with the same FFT spectrum analysis as used for the beam data. These spectra are also included with

each data group. Notice in these the characteristic resonant frequencies associated with the tilt angle of the array and also considerable low frequency energy that is apparent in the azimuthal angle time series. The azimuthal angle variability is considerably greater for the higher wind states where greater dynamic tension was placed on the mooring line system. A mean heading and RMS deviation for each 1024 second record of both azimuth and elevation are tabulated at the top of the respective time series of the platform motion.

VI. COMMENTS ON THE DATA SET

The envelope spectra and supporting data are grouped by time blocks corresponding to LTA tape. Within each group the sequence is as follows:

A. Environmental summary.

B. Audio spectra for a single element and a beam.

C. Corrected beam power density for a composite vertical set (seven center beams averaged) and the set of azimuthal beams at elevation 10, ($+8^{O}$).

D. Single element envelope spectrum - composite of LTA and STA spectra.

E. Average envelope spectrum of seven central beams for elevation 1, ($+85^{O}$).

F. Average envelope spectrum of seven central beams for elevation 10, ($+8^{O}$).

G. Three-dimensional envelope spectrum. Relative spectral power density vs elevation and frequency, relative beam set.

H. Three-dimensional envelope spectrum relative spectral power density vs elevation and frequency. True bearing stabilized beam set.

I. Three-dimensional envelope spectrum, relative spectral power density vs azimuth and frequency for elevation 10, ($+8^{O}$).

J. One or two three-dimensional envelope spectra, relative spectral power density vs vertical angle for STA tapes.

K. Tabulated data for G.

L. Tabulated data for H.

M. Tabulated data for I.

N. Tabulated data for J.

O. ADA heading vs time.

P. ADA tilt vs time.

Q. ADA tilt power spectrum.

Wind speeds for the data set range from 7 to 22 knots covering Beaufort wind states of 3, 4 and 5. Beaufort 3 includes groups 7A and 7B. Beaufort 4 includes low-

band groups 7D, 8D and 9A, and high-band groups 7C, 8B, 8C and 9B. Low-band groups 8A, 10A, 10C, and 11A, and high-band groups 10B, 10D and 11B belong to Beaufort 5. The data on 6-12 falls between Beaufort 4 and 5. In addition, to the differing wind speeds there is a wide variation in ship traffic noise which is observed in elevations near the horizontal.

Comparing across the group one finds that there is a general increase of the beam power angular spectrum level with wind speed for overhead elevations while horizontal elevations remain essentially independent of wind speed.

Except for two or three cases where ships appeared within the seven central beams used for the elevation plots, in the elevations near horizontal low beam beam-power spectrum levels cluster around 41 dB and the high-band around 32 dB. The ratio of effective frequencies for the two bands is 1.74. In computing the beam power spectrum level, a value of 10 log (N) (the number of elements) was used to represent the directivity index. As pointed out in Section V, this value is only appropriate at the high frequency end of the band. Below that the directivity index will fall off as f^2 so a correction of 20 log (1.74) or 4.8 dB should be introduced leaving a difference in spatial and spectral power densities of 6 dB for the two bands. The frequencies are separated by .8 octaves. Thus a slope of 8 dB/octave would be indicated for the near horizontal elevations, somewhat higher than the 5-6 dB/octave of the Knudsen or Wenz wind speed models.

Several features are characteristic of the envelope spectra. An illustrative example is to be found in the data of Group 7D. In the data of Figure M-4586, in the overhead elevations ($sin\ \theta \approx +1$) a minor peak appears in the spectrum at 150 milliHertz. This is related to the average swell period of about 7 seconds and represents a modulation of the wind noise sources by the shape of the predominent long period waves. This same characteristic peak appears in the STA spectra of M-4688 and M-4689.

The average azimuthal beam power plots of M-4681 show the presence of traffic noise in the seven central beams averaged for the elevation spectra. The presence of this traffic noise gives rise to the large low frequency envelope spectral values near the horizontal in M-4685. M-4686, the envelope spectrum generated from a stabilized beam set shows a signficant reduction in the low frequency envelope of the traffic noise. From this one would infer that the modulation resulting from the azimuthal array motion was a major contribution to the envelope spectrum levels of the beams containing ship traffic. A considerable variability in the envelope spectrum for the near horizontal angles is illustrated by the azimuthal display of M-4687.

During some of the recording periods very low envelope spectral values are observed in certain azimuths. This is particularly noticeable in recordings made with the high-band compared to the low-band filter for two reasons: One is that fewer ships contribute to the background as a result of the difference in absorption for the two fre-

quency bands. The second is that the ship sources that did contribute were resolved with a higher directivity index. An example is in Group 10B. Figure M-4895 shows envelope spectrum levels at 1 mHz to be less than 5 dB above that at 500 mHz. For these azimuthal angles where shipping sources are absent, the background exhibits a much higher degree of stationarity than either the azimuths containing shipping sources or in the overhead elevations where wind-generated noise predominates.

It should be noted that none of the data sets are devoid of shipping traffic sources. During the entire recording period - even with wind speeds approaching 30 knots, there was always at least one ship source in the acoustic field that was observed with the high gain ADA array. One can conclude from this that, if the overhead wind-generated noise is eliminated by the use of high vertical directivity, the residual traffic noise field which remains is a formidable background against which weak targets are to be detected. A highly structural residual field such as this is a prime candidate for attack by adaptive beamforming processing techniques.

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MICROFICHE SECTION

GROUP 7A

Environmental Summary

7 June 1978

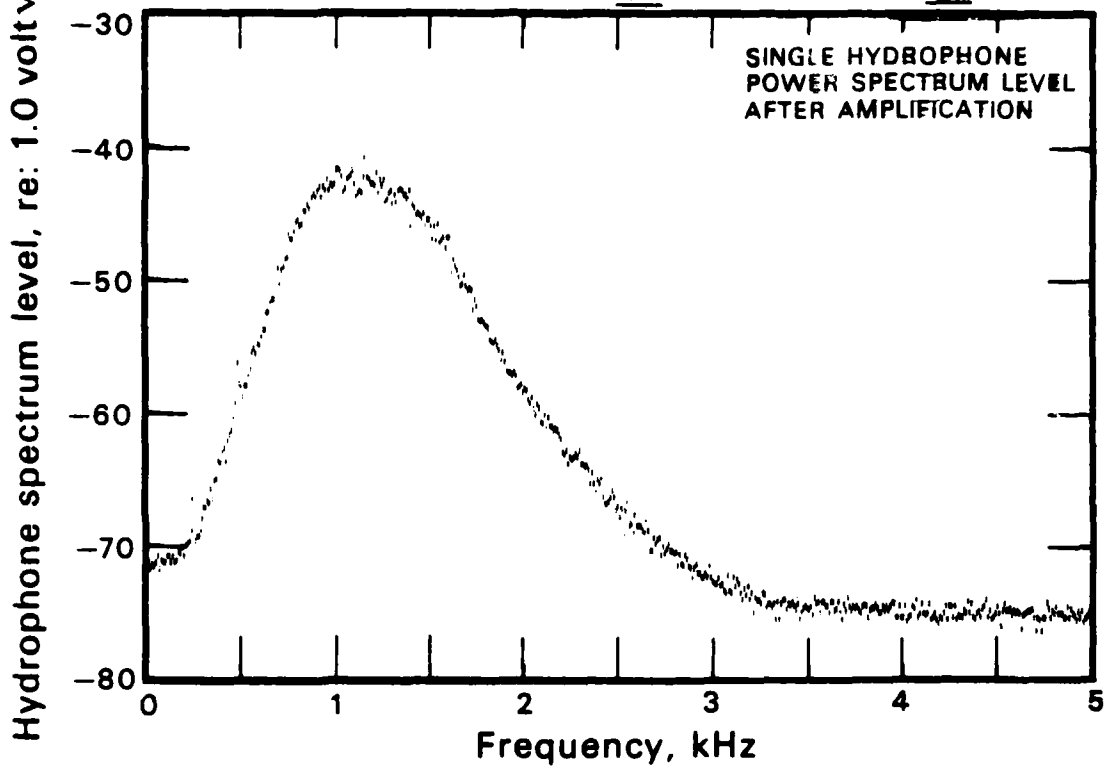
Tapes	Start time	Code
LTA/LOG	01:40:36	07A
STA	01:43:35	07E
STA	03:03:53	07F
Low Band Filter		

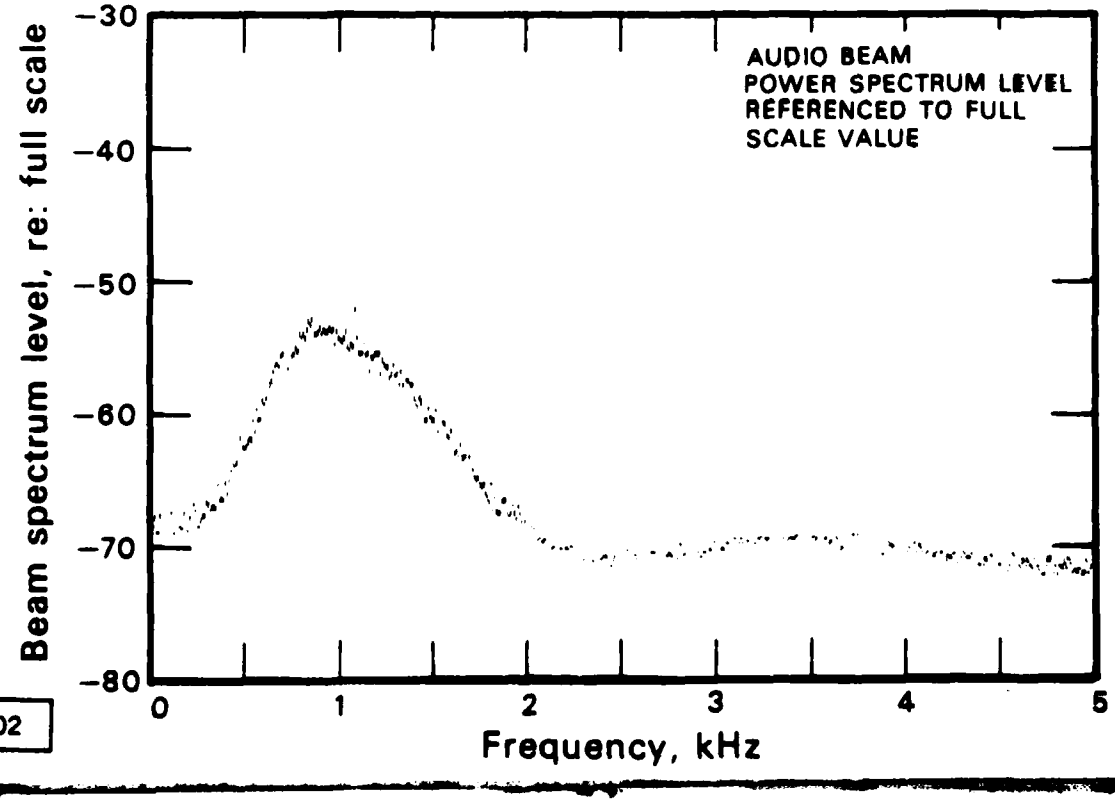
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
02:00	2000	7	315	2-3	6-8	NW	Small chop; no targets

07-JUN-78 02:02:37 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 78 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 245.5 TRUE ELEVATION 80.0
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -13.9 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 97 FOR HYDROPHONE 97

GROUP 7A





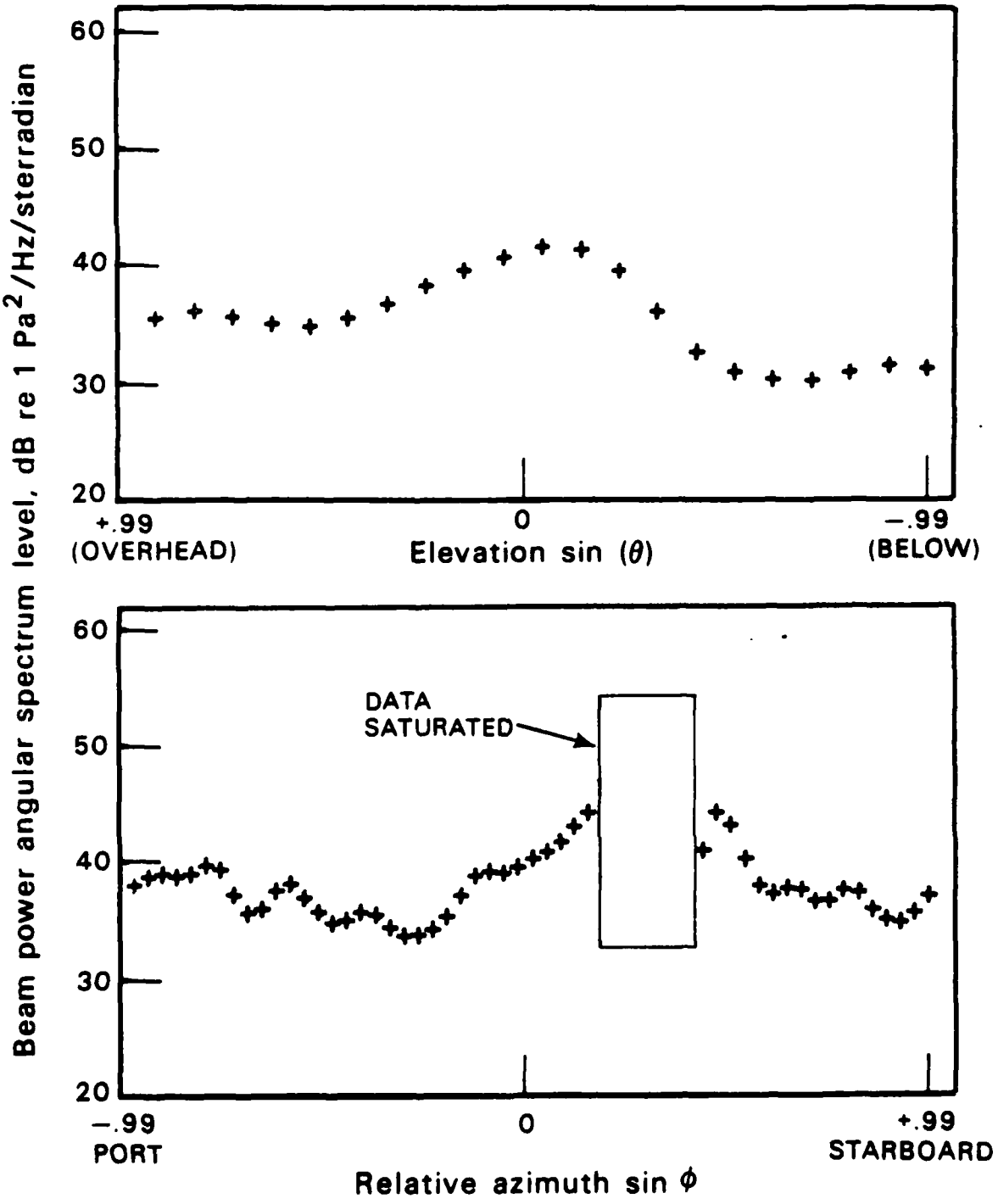
MPL-M-4602

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.

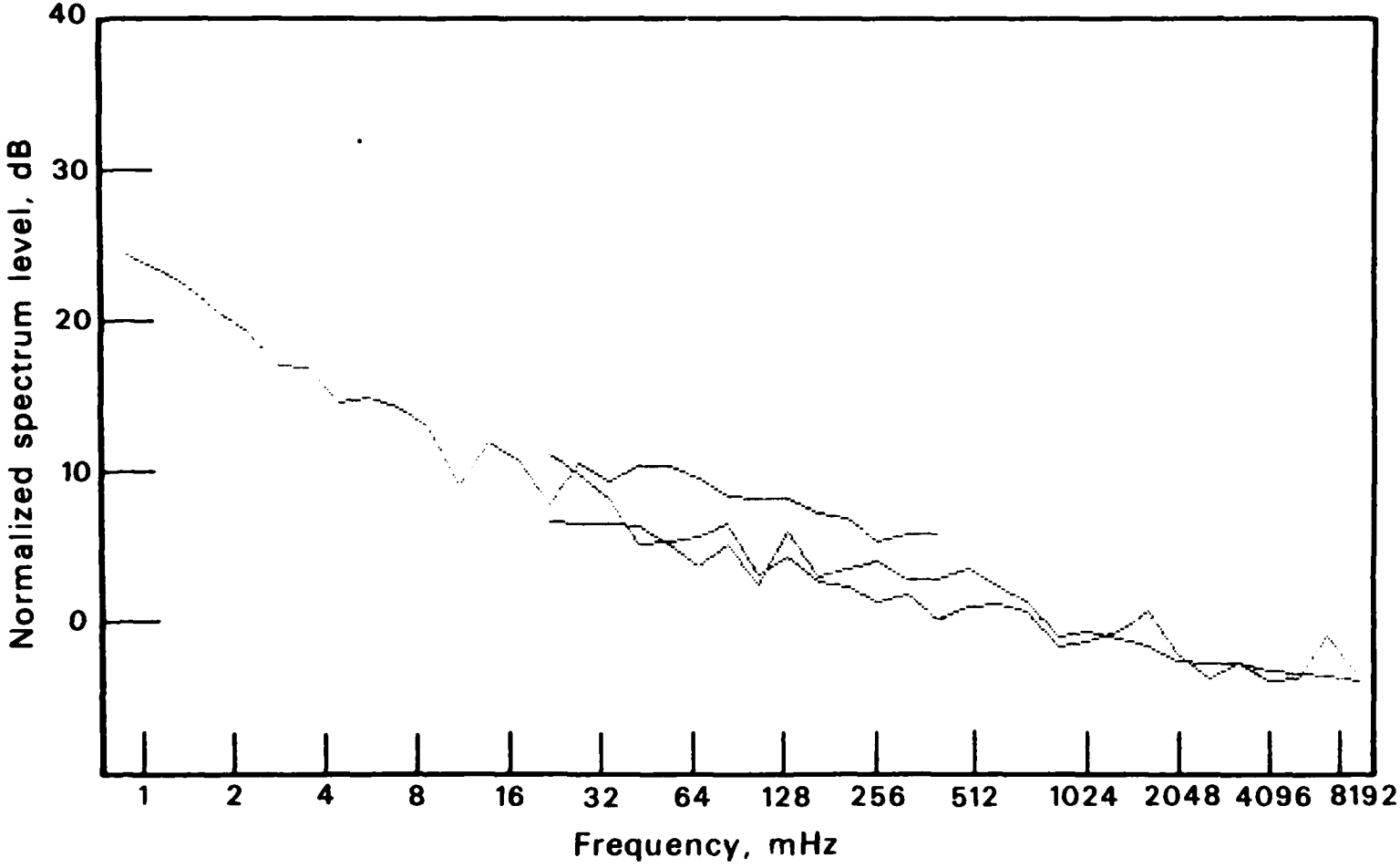
GROUP 7A



MPL-M-4603

MPL-M-4604

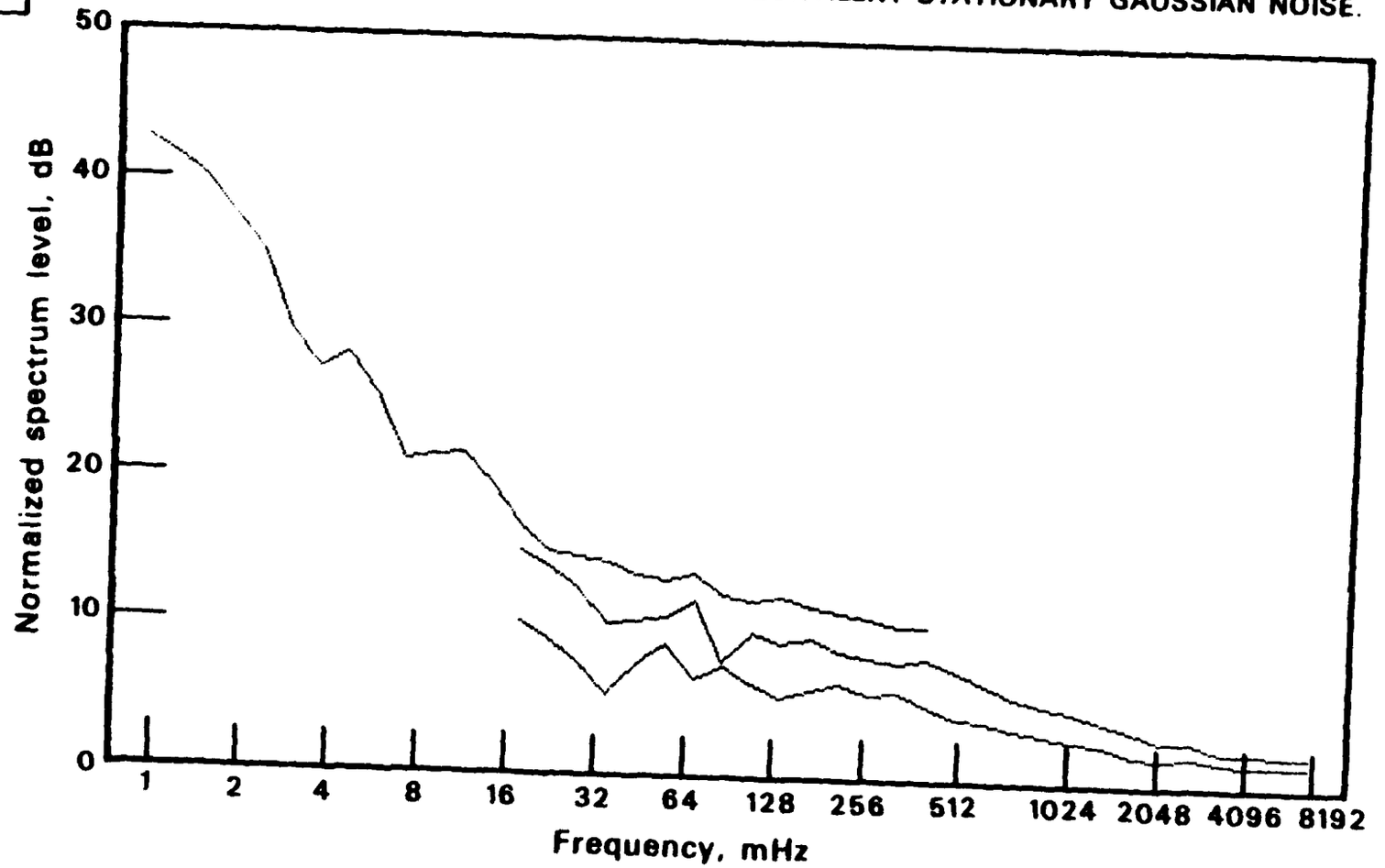
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 7A

MPL-M-4605

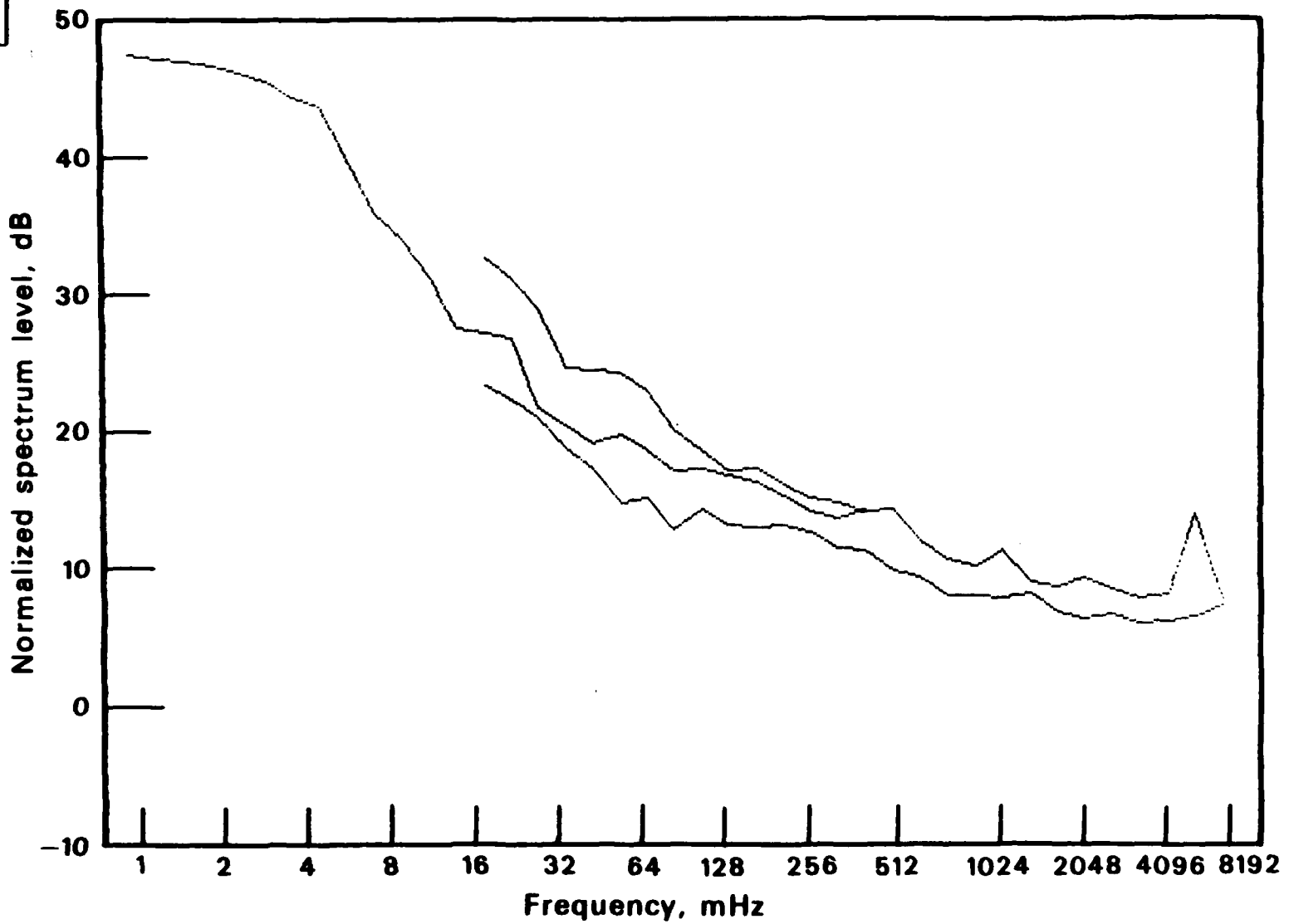
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7A

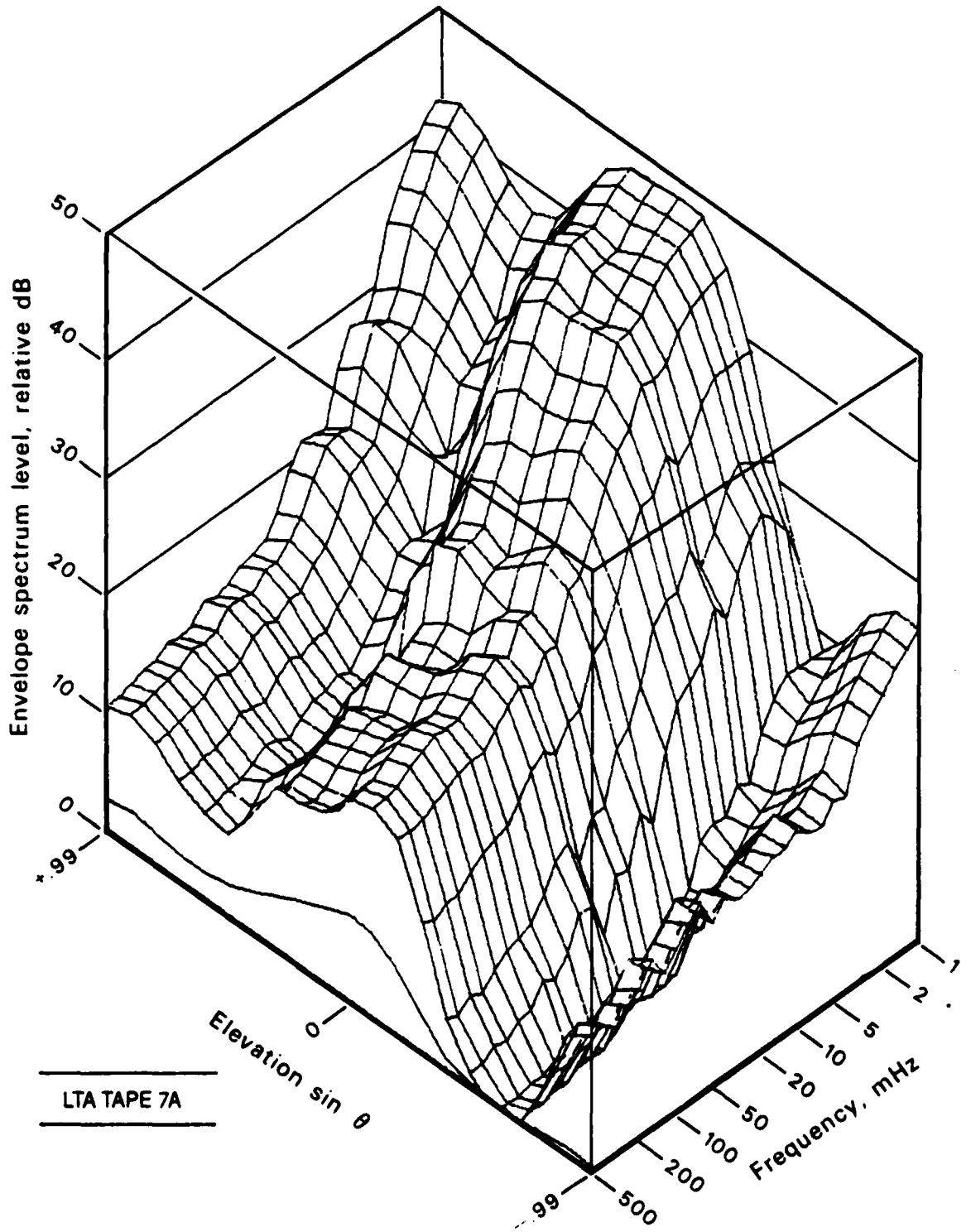
MPL-M-4606

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7A

GROUP 7A

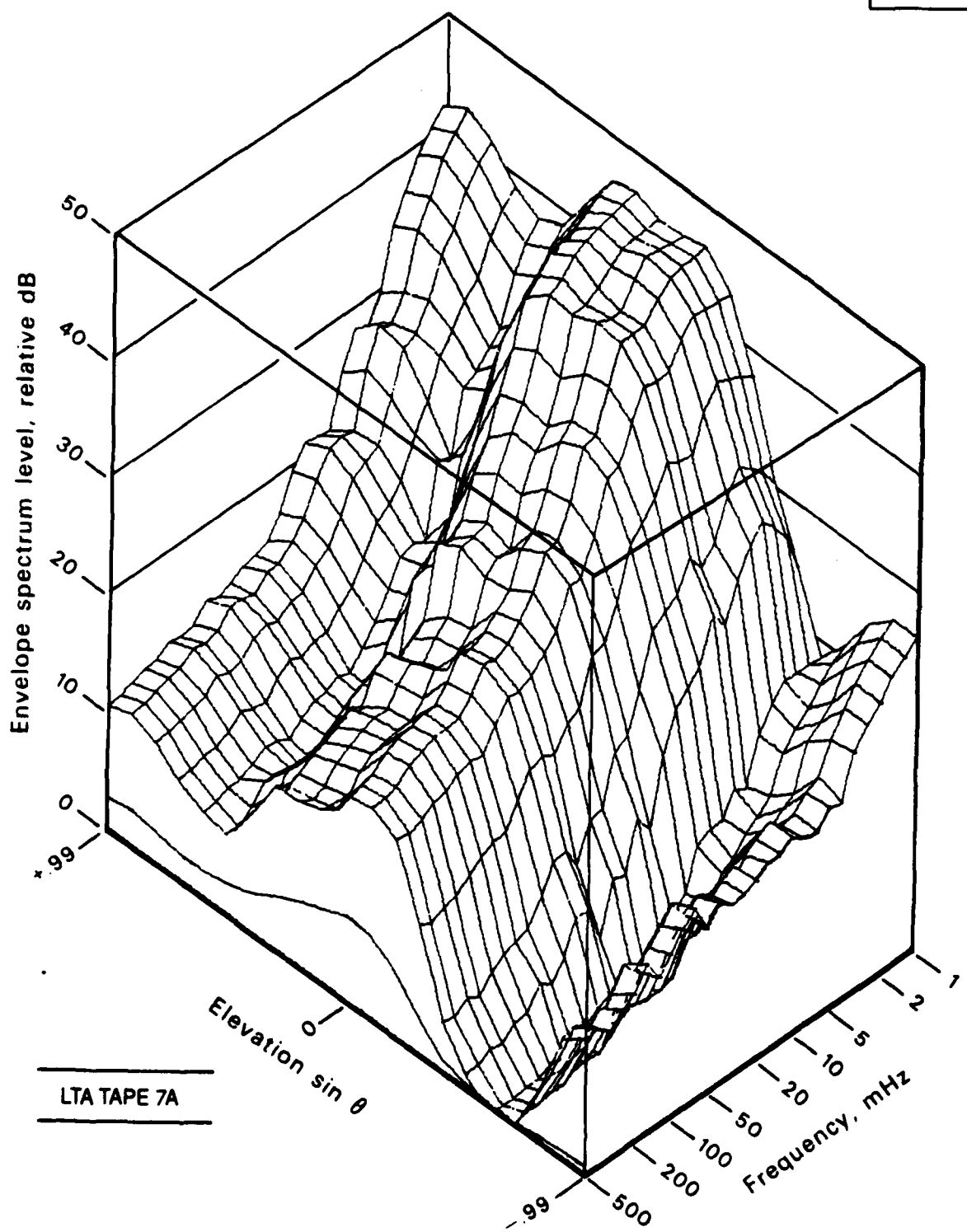


LTA TAPE 7A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4607

GROUP 7A



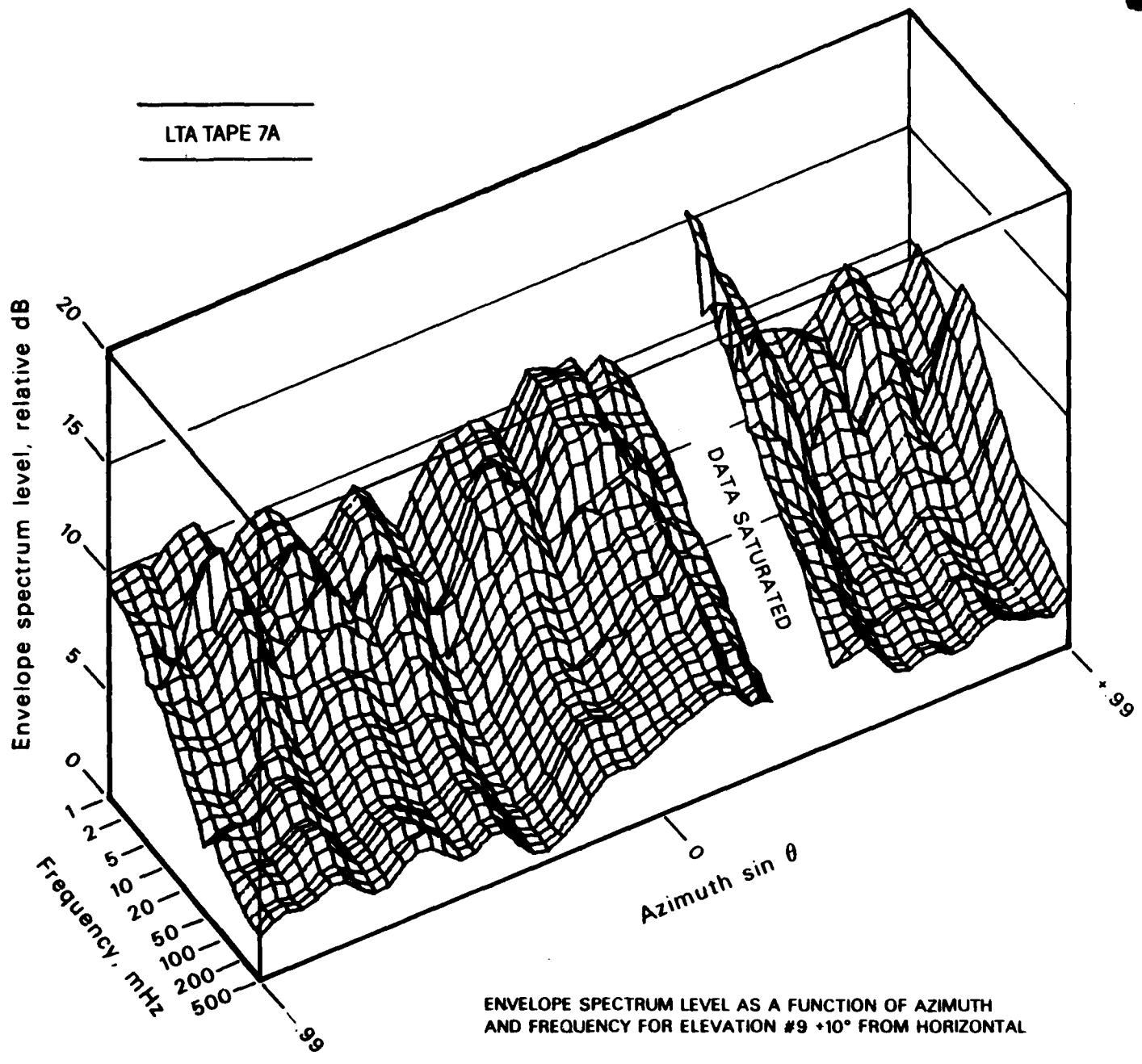
LTA TAPE 7A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY.
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-4608

MPL-M-4609

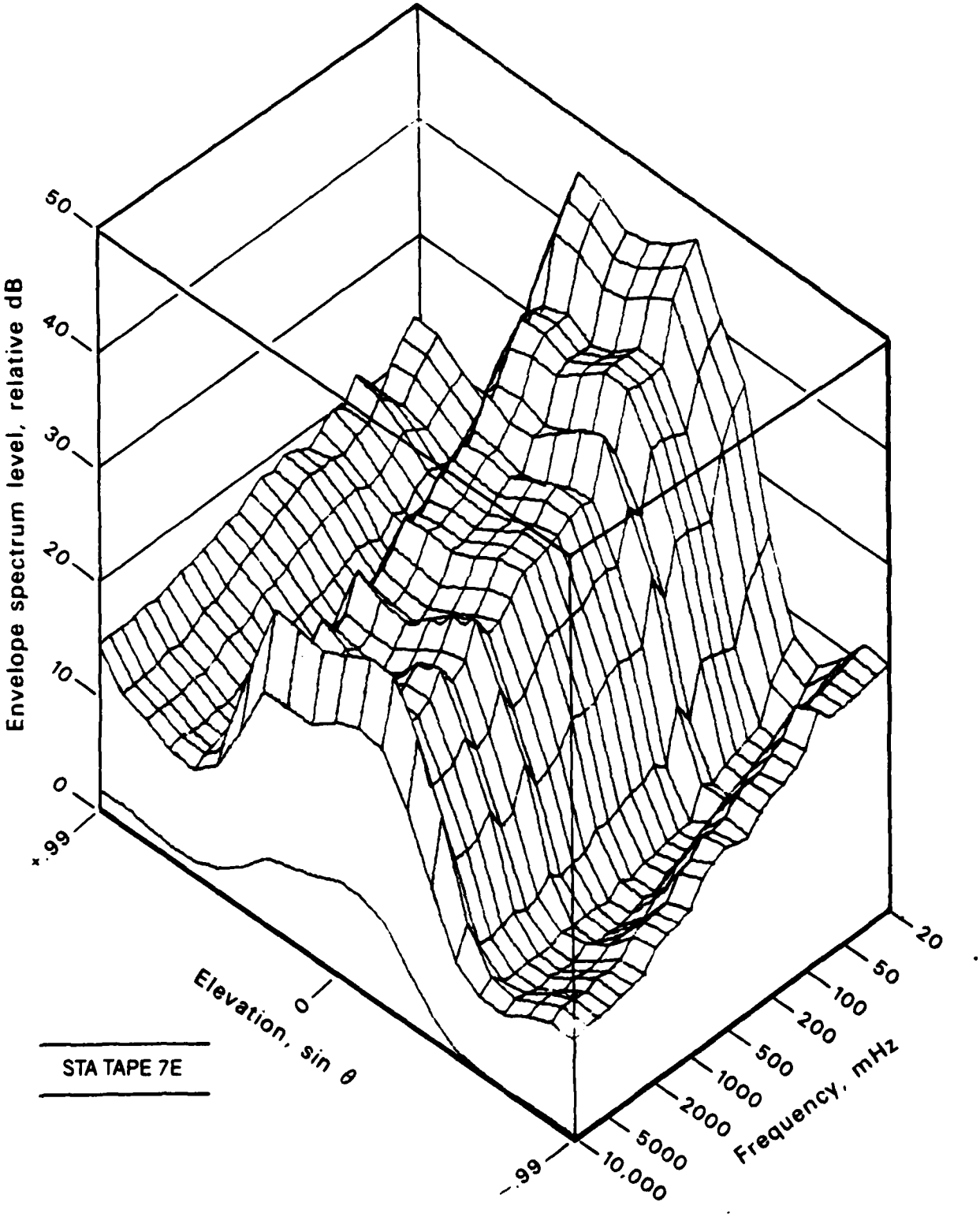
LTA TAPE 7A



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 7A

GROUP 7A

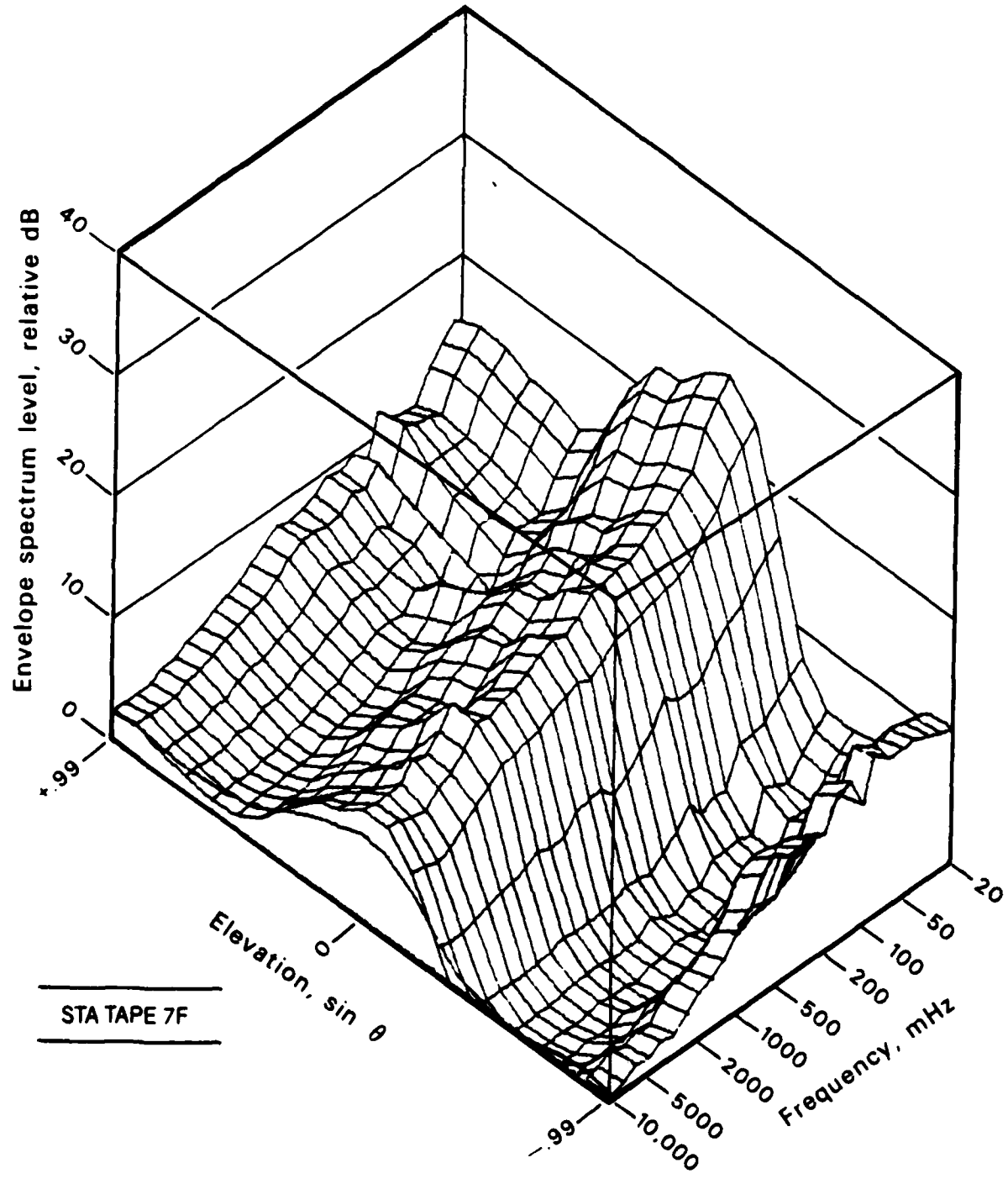


STA TAPE 7E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET

MPL-M-4610

GROUP 7A



STA TAPE 7F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET

MPL-M-4611

GROUP 7A

LTA TAPE 7A

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	65.8	41.6	40.5	38.9	36.5	34.2	29.0	26.3	27.4	24.6
ANGLE +84°	20.2	20.4	20.6	18.7	15.9	14.2	13.8	13.5	12.7	12.3
	12.8	11.3	11.0	11.3	10.6	10.4	10.0	9.5	9.5	
2	66.1	42.8	41.6	40.0	37.4	35.3	30.7	28.6	29.5	26.1
+64°	21.6	21.8	21.6	19.5	16.9	15.6	14.5	14.5	13.3	13.6
	13.6	12.1	11.9	12.1	11.3	11.0	10.6	10.3	10.1	
3	65.8	41.5	40.4	38.8	36.3	34.5	31.6	29.4	28.9	25.2
+53°	21.9	21.1	20.5	17.9	16.0	15.0	13.6	13.5	12.5	12.9
	12.5	11.2	11.0	11.3	10.4	10.0	9.7	9.4	9.2	
4	65.5	39.1	37.9	36.2	33.5	32.3	30.6	28.9	25.8	23.6
+44°	20.4	18.9	18.1	15.7	14.0	12.9	11.6	11.5	10.8	11.3
	10.4	9.2	9.3	9.7	8.7	8.1	8.0	7.5	7.4	
5	65.4	37.9	36.6	34.5	30.6	29.6	28.3	27.7	22.2	22.9
+37°	16.8	17.2	16.8	14.5	12.4	10.9	9.6	10.0	9.5	9.4
	8.5	7.5	8.1	8.3	7.5	6.9	6.8	6.4	6.2	
6	65.8	38.9	37.6	36.0	33.2	32.1	30.7	28.5	26.4	25.0
+30°	19.6	18.4	17.2	15.4	14.3	12.9	9.6	9.7	9.1	9.0
	8.6	7.0	7.6	8.0	8.0	8.2	6.7	5.6	5.8	
7	66.6	42.4	41.5	40.5	39.2	38.9	38.5	36.3	34.7	31.9
+23°	27.6	24.2	22.4	19.7	20.1	19.7	13.4	13.2	12.3	13.6
	13.4	10.6	11.5	11.0	10.7	10.7	9.3	8.4	9.1	
8	67.7	46.1	45.5	44.7	43.7	43.6	43.5	41.3	40.0	37.3
+17°	33.7	30.0	27.8	24.7	24.0	24.2	18.1	17.4	16.4	17.8
	17.0	14.5	15.3	14.4	13.8	13.4	12.6	12.2	12.9	
9	68.8	47.7	47.0	46.1	44.9	44.9	44.8	42.5	41.5	38.4
+12°	35.3	31.6	28.8	25.7	25.3	25.1	19.7	18.3	17.3	18.2
	17.3	15.5	15.9	15.4	14.8	13.9	12.8	12.4	13.0	
10	69.6	47.8	47.0	45.9	44.4	44.1	43.9	41.3	41.4	37.4
+6°	35.0	31.7	28.4	24.6	24.3	23.5	20.2	18.3	18.6	18.9
	17.5	16.0	16.2	16.1	15.6	14.7	13.5	13.0	13.7	
11	70.5	48.2	47.4	46.5	45.4	44.5	43.3	41.6	42.0	38.2
0°	35.6	33.8	30.2	26.7	25.9	22.9	23.0	20.7	21.4	20.9
	19.6	18.5	18.6	18.6	18.2	17.6	16.5	16.4	16.3	
12	70.2	47.9	47.4	46.8	46.1	44.9	43.2	42.5	42.3	39.1
−6°	37.0	35.1	31.8	28.6	27.9	24.3	24.2	21.8	22.5	21.7
	20.4	19.5	19.4	19.4	18.7	18.3	17.3	17.0	17.0	
13	68.8	45.1	44.7	44.3	43.8	42.4	40.5	39.8	40.1	37.1
−12°	35.7	33.5	4	27.4	26.7	23.0	23.0	20.8	21.6	20.7
	19.3	18.1	18.1	17.8	17.2	16.2	16.0	15.7	15.8	
14	66.7	39.4	39.4	39.4	39.4	37.8	35.3	34.0	35.6	32.8
−17°	32.1	30.1	26.4	23.8	22.7	18.8	18.4	16.4	17.4	16.4
	14.7	13.2	12.8	12.3	11.4	10.3	10.2	9.5	10.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 7A

LTA TAPE 7A

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.2	31.3	32.1	32.8	33.4	31.8	29.0	26.7	29.0	26.1
ANGLE −23°	26.0	24.5	20.2	17.4	16.2	12.1	11.9	8.6	10.9	10.1
	8.0	6.3	5.9	5.5	4.5	3.3	3.8	2.8	3.3	
16	63.5	24.6	27.6	29.4	30.6	29.1	26.9	23.8	25.4	21.6
−30°	20.5	19.3	16.0	10.5	12.1	7.9	8.2	3.8	7.0	7.1
	4.4	2.9	3.6	1.8	1.5	0.6	0.8	0.1	0.1	
17	63.3	18.0	18.1	18.1	18.2	16.8	14.7	11.1	11.6	9.8
−37°	9.0	8.9	5.7	4.2	2.9	0.2	0.3	−0.5	0.3	0.1
	−0.8	−1.2	−1.2	−1.2	−1.7	−1.6	−2.0	−1.7	−2.0	
18	63.3	20.5	19.6	18.6	17.2	16.2	15.0	11.6	10.7	10.1
−44°	8.7	8.0	6.4	4.2	4.5	1.9	1.6	1.6	1.9	1.7
	0.6	−0.2	−0.1	−0.2	−0.8	−0.8	−1.1	−0.9	−1.5	
19	63.5	24.1	23.0	21.6	17.4	18.5	17.4	13.8	13.1	12.1
−53°	11.2	12.0	11.2	8.8	9.9	8.7	8.0	8.3	8.1	8.6
	7.3	6.5	5.2	5.7	4.3	4.1	3.7	3.8	3.1	
20	63.7	25.9	25.0	24.0	22.5	21.1	19.1	16.6	16.0	14.8
−64°	14.6	15.7	14.9	14.2	14.0	13.4	13.0	13.6	12.7	14.5
	13.2	12.0	10.6	12.0	10.2	9.7	8.8	9.5	9.2	
21	63.6	25.8	24.9	23.8	22.4	21.2	19.6	15.9	16.3	14.7
−84°	15.0	15.8	15.1	15.0	14.3	13.8	13.6	14.4	13.0	15.4
	14.4	12.8	11.7	13.5	11.6	11.0	9.8	10.8	10.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 7A

LTA TAPE 7A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 1 ANGLE +84°	65.8 20.? 12.9	41.6 20.4 11.3	40.5 20.6 11.0	38.9 18.7 11.3	36.5 15.9 10.6	34.2 14.2 10.4	29.0 13.8 10.0	26.3 13.5 9.5	27.4 12.7 9.5	24.6 12.3
2 +64°	66.1 21.6 13.6	42.8 21.8 12.1	41.6 21.6 11.9	40.0 19.5 12.1	37.4 16.9 11.3	35.3 15.6 11.0	30.7 14.5 10.6	28.6 14.5 10.3	29.5 13.3 10.1	26.1 13.6
3 +53°	65.8 21.9 12.5	41.5 21.1 11.2	40.4 20.5 11.0	38.8 17.9 11.3	36.3 16.0 10.4	34.5 15.0 10.0	31.6 13.6 9.7	29.4 13.5 9.4	28.9 12.5 9.2	25.2 12.9
4 +44°	65.5 20.4 10.4	39.2 18.9 9.2	37.9 18.2 9.3	36.3 15.7 9.7	30.5 13.9 8.7	32.3 12.9 8.1	30.5 11.5 8.0	28.9 11.5 7.6	25.8 10.8 7.4	23.6 11.3
5 +37°	65.4 16.7 8.5	37.9 17.2 7.5	36.6 16.8 8.1	34.5 14.5 8.3	30.6 12.4 7.5	29.6 10.9 6.9	28.4 9.6 6.8	27.7 10.0 6.4	22.3 9.5 6.2	22.9 9.4
6 +30°	65.8 20.2 8.6	38.9 18.8 7.0	37.7 17.4 7.6	35.9 15.5 7.9	32.9 14.3 8.0	31.8 13.0 8.1	30.5 9.6 6.7	28.8 9.7 5.6	26.8 9.1 5.8	24.9 9.1
7 +23°	66.5 28.3 13.3	42.3 24.8 10.5	41.5 23.0 11.4	40.4 19.8 10.9	39.0 20.3 10.7	38.6 20.0 10.7	38.1 13.6 9.2	36.7 13.1 8.4	35.3 12.4 9.1	31.7 13.8
8 +17°	67.7 33.? 17.0	45.8 30.8 14.7	45.2 28.5 15.3	44.5 25.1 14.5	43.7 24.3 13.9	43.5 24.6 13.5	43.2 18.6 12.7	41.8 17.8 12.2	40.7 16.8 12.9	37.1 18.0
9 +12°	68.8 34.6 17.6	46.3 32.8 16.0	46.0 29.9 16.1	45.8 26.3 15.6	45.5 25.9 15.1	45.0 25.7 14.2	44.4 20.4 13.0	43.1 19.4 12.5	42.5 18.0 13.2	38.3 18.7
10 +6°	69.6 34.0 17.??	45.4 32.5 16.5	45.3 29.6 16.4	45.2 25.5 16.2	45.1 25.6 15.??	44.3 24.6 15.0	43.2 20.9 13.7	42.4 19.7 13.2	42.3 18.9 13.9	37.5 19.6
11 0°	70.6 36.1 20.8	45.5 34.9 19.5	45.6 31.6 19.6	45.8 28.8 19.1	46.0 ??.? 18.8	44.6 25.1 18.2	42.7 23.9 17.1	42.7 22.8 16.8	43.1 22.2 16.8	39.4 22.5
12 −6°	70.? 36.3 21.1	46.1 35.9 19.7	45.9 32.0 19.6	45.7 29.3 19.5	45.5 ??.1 19.1	44.4 26.3 18.6	42.8 24.6 17.5	42.8 23.4 17.1	42.9 22.6 17.0	39.8 22.9
13 −12°	68.8 35.? 19.??	43.5 34.8 18.2	43.6 30.5 18.3	43.7 27.7 17.8	43.8 ??.? 17.3	42.5 24.6 16.9	40.5 23.3 16.1	40.4 22.1 15.7	40.6 21.6 15.9	38.1 21.7
14 −17°	66.? 31.? 15.0	37.9 30.6 13.0	38.5 26.4 12.??	39.1 23.6 12.2	39.5 20.? 11.3	37.8 19.3 10.3	34.7 18.7 10.1	34.? 16.8 9.4	35.5 17.3 9.9	33.1 16.9

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 7A

LTA TAPE 7A

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.2	30.2	31.7	32.9	33.8	31.9	28.6	27.2	28.9	26.4
ANGLE −23°	25.5	24.7	20.3	17.1	16.4	12.3	11.9	8.8	10.8	10.5
	8.2	6.2	5.8	5.4	4.5	3.3	3.7	2.9	3.2	
16	63.5	24.6	27.6	29.4	30.6	29.1	26.9	23.8	25.4	21.6
−30°	20.5	19.4	16.0	10.5	12.2	8.0	8.3	3.9	7.0	7.1
	4.4	2.9	3.6	1.8	1.5	0.6	0.8	0.1	0.1	
17	63.3	18.2	18.3	18.3	18.4	17.0	15.1	11.2	11.9	9.9
−37°	9.9	9.1	5.8	4.4	2.9	0.3	0.3	−0.5	0.4	0.1
	−0.8	−1.2	−1.2	−1.2	−1.7	−1.6	−2.0	−1.7	−2.0	
18	63.3	20.7	19.8	18.7	17.3	16.3	15.0	11.9	10.9	10.1
−44°	8.7	8.1	6.4	4.3	4.5	2.0	1.7	1.6	1.9	1.7
	0.6	−0.2	−0.1	−0.2	−0.8	−0.8	−1.1	−1.0	−1.5	
19	63.5	24.1	23.0	21.6	19.4	18.5	17.4	13.8	13.1	12.1
−53°	11.2	12.0	11.2	8.8	9.9	8.7	8.0	8.3	8.1	8.6
	7.3	6.5	5.2	5.7	4.3	4.1	3.7	3.8	3.1	
20	63.7	25.9	25.0	24.0	22.5	21.1	19.1	16.6	16.0	14.8
−64°	14.6	15.7	14.9	14.2	14.0	13.4	13.0	13.6	12.7	14.5
	13.2	12.0	10.6	12.0	10.2	9.7	8.8	9.5	9.2	
21	63.6	25.8	24.9	23.8	22.4	21.2	19.6	15.9	16.3	14.7
−84°	15.0	15.8	15.1	15.0	14.3	13.8	13.6	14.4	13.0	15.4
	14.4	12.8	11.7	13.5	11.6	11.0	9.8	10.8	10.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 7A

GROUP 7A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	67.6	37.4	37.1	36.8	36.5	35.5	34.3	31.9	28.5	28.7
ANGLE −71.3°	27.3	27.2	24.1	22.5	20.0	18.0	16.7	14.3	11.3	13.0
	14.7	11.8	10.9	10.2	9.0	8.2	7.4	7.2	7.0	
2	68.1	38.6	37.6	36.3	34.5	34.4	34.3	31.6	26.3	28.5
−66°	25.9	25.2	22.1	21.9	18.0	16.7	15.7	14.5	12.9	13.8
	13.9	12.4	11.0	11.4	11.2	10.5	8.8	9.2	8.9	
3	68.3	39.1	38.2	37.2	35.8	33.5	28.3	28.2	30.3	29.0
−61.6°	26.1	22.9	21.2	20.2	19.2	15.1	13.7	13.2	12.9	14.0
	12.9	12.0	11.0	11.5	11.4	10.9	9.2	9.6	9.7	
4	68.0	37.4	36.4	35.1	33.4	31.2	26.9	30.5	27.7	27.4
−57.8°	23.8	23.6	20.1	20.0	17.8	13.3	13.8	12.9	11.9	13.4
	12.0	10.5	10.3	11.1	10.1	9.8	8.5	8.8	9.0	
5	68.3	40.4	39.2	37.5	34.6	36.2	37.4	32.2	29.6	29.5
−54.3°	26.7	24.0	21.6	20.2	17.8	15.1	15.9	14.9	13.5	15.0
	13.4	11.4	11.9	12.6	11.9	10.7	9.3	9.7	9.7	
6	68.9	41.9	40.7	39.0	36.3	40.9	43.1	31.9	31.8	32.8
−51.1°	31.7	26.3	24.8	22.1	21.4	17.5	18.2	16.3	16.5	16.8
	15.4	13.4	13.8	14.6	14.4	12.9	11.0	11.3	11.1	
7	68.6	42.2	41.5	40.8	39.7	42.3	43.8	37.3	35.2	35.4
−48.1°	34.3	29.5	25.3	25.1	23.0	18.7	18.5	16.2	16.7	16.9
	15.4	13.4	13.8	14.4	14.4	13.0	11.2	11.1	10.8	
8	66.9	37.9	38.2	38.4	38.6	38.2	37.7	36.8	33.6	35.1
−45.3°	31.6	29.1	23.9	24.3	20.3	18.1	16.3	14.6	13.8	13.7
	12.3	10.5	10.6	10.7	10.9	10.4	9.0	8.4	8.3	
9	65.9	33.2	32.8	32.3	31.8	30.9	29.7	30.7	27.0	29.3
−42.6°	26.0	24.9	21.7	19.2	15.6	14.8	12.9	12.2	10.7	10.0
	9.6	7.9	7.6	8.1	7.6	8.0	7.6	6.8	6.3	
10	66.1	37.0	36.0	34.9	33.3	32.1	30.5	30.9	30.6	27.2
−40.0°	28.0	23.3	21.6	17.6	17.1	15.1	13.5	13.5	11.6	10.9
	10.1	8.8	8.3	8.6	8.6	8.7	7.8	7.3	6.8	
11	67.2	38.8	37.7	36.3	34.2	34.8	35.4	35.5	30.1	29.2
−37.5°	30.1	25.1	22.5	22.5	20.6	17.9	16.3	16.3	13.8	13.6
	12.4	11.0	10.7	11.2	11.3	11.3	9.4	9.8	9.2	
12	67.6	39.4	38.4	37.0	35.1	37.6	39.1	35.3	30.7	33.3
−35.1°	28.1	27.8	22.6	22.5	22.3	18.6	17.8	17.1	15.0	14.9
	13.3	11.9	11.6	12.3	11.9	12.6	10.7	11.9	10.6	
13	66.7	37.0	36.6	36.2	35.8	36.2	36.6	32.8	34.5	34.9
−32.8°	27.7	30.0	23.1	22.7	22.1	18.4	17.8	16.9	15.4	13.9
	12.7	11.0	10.6	11.1	10.6	11.1	10.7	12.3	10.2	
14	65.9	32.3	32.1	31.8	31.5	30.9	30.2	29.6	30.4	31.5
−30.5°	25.1	27.9	21.0	21.9	20.0	17.5	16.2	15.2	14.3	12.5
	11.0	9.2	8.7	9.0	8.3	8.6	9.0	10.2	8.2	
15	65.4	28.4	28.1	27.8	27.5	26.2	24.3	23.6	24.0	26.6
−28.3°	21.1	24.6	20.7	19.4	16.7	14.2	14.1	12.5	11.3	9.9
	9.1	7.2	7.1	6.9	6.7	6.6	6.5	6.7	6.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 7A

GROUP 7A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	65.5	30.3	30.2	30.2	30.2	28.3	24.7	26.6	30.4	24.3
ANGLE −26.1°	24.1	22.5	21.8	18.3	15.6	13.9	14.3	12.4	10.7	10.3
	9.3	7.9	8.1	7.9	7.9	7.7	6.2	6.2	6.1	
17	65.9	34.4	34.6	34.8	35.0	32.9	28.8	30.8	34.8	29.2
−24.0°	30.4	24.7	24.8	21.8	19.7	16.5	15.3	15.0	13.5	12.5
	11.9	10.4	10.4	10.5	10.9	9.8	8.1	8.4	8.2	
18	65.8	37.1	36.7	36.4	36.0	33.9	29.6	32.0	30.4	31.9
−21.8°	30.6	26.7	24.3	21.0	21.1	17.2	14.1	14.9	13.0	12.6
	12.3	10.4	9.8	9.5	10.3	9.1	8.3	8.1	8.0	
19	65.1	34.4	33.8	33.2	32.4	31.1	29.1	29.3	29.6	28.7
−19.8°	24.0	23.5	21.2	17.8	17.2	14.5	11.7	12.3	9.2	9.3
	8.9	7.5	6.4	6.1	6.8	6.2	5.6	4.8	4.6	
20	64.8	29.3	28.2	26.7	24.5	24.4	24.3	21.8	23.0	22.1
−17.7°	14.9	16.3	15.9	12.8	12.0	9.6	7.9	8.0	4.8	4.6
	4.6	4.0	3.2	3.0	3.1	2.5	2.4	2.1	2.0	
21	64.8	26.0	25.2	24.1	22.8	22.5	22.2	18.0	19.4	21.2
−15.7°	13.7	16.9	13.0	11.7	10.5	7.9	6.9	6.6	4.9	4.4
	3.1	3.4	1.9	2.3	2.1	1.4	1.6	1.3	1.2	
22	65.1	31.6	30.5	29.0	26.6	25.5	23.9	21.3	22.2	22.3
−13.7°	18.5	17.8	15.3	15.1	13.5	10.4	8.9	8.8	7.7	6.9
	5.0	5.0	3.1	3.8	3.5	2.6	2.2	2.3	2.5	
23	65.7	35.5	34.4	32.9	30.7	29.6	28.3	28.7	27.1	28.1
−11.7°	25.1	22.5	19.7	17.9	17.5	13.7	13.5	12.5	10.7	9.7
	8.5	7.8	5.9	6.4	6.6	5.1	4.7	4.4	4.5	
24	67.0	38.6	37.7	36.5	35.0	34.5	34.0	35.2	34.0	32.8
−9.7°	26.1	26.7	23.5	21.2	20.8	17.7	17.6	16.0	14.0	13.2
	11.4	11.6	10.2	10.9	10.9	9.7	8.6	7.8	7.5	
25	68.2	38.6	37.7	36.6	35.1	37.0	38.3	37.5	34.7	31.0
−7.8°	28.9	29.2	26.5	23.6	22.3	20.9	19.6	17.8	16.1	15.9
	13.7	14.1	13.2	14.0	14.1	12.7	11.3	10.5	10.1	
26	68.5	39.9	39.1	38.2	37.0	37.8	38.5	37.2	35.3	34.4
−5.8°	33.8	32.1	26.7	24.1	22.6	20.8	19.3	17.1	16.1	15.8
	14.4	14.2	13.7	13.8	14.2	12.6	11.4	10.7	10.4	
27	68.3	39.2	38.5	37.7	36.8	35.6	34.1	34.1	36.1	34.5
−3.9°	30.2	28.9	25.5	21.4	20.4	18.1	17.6	14.2	15.4	13.7
	13.9	12.3	12.7	12.6	13.2	12.2	10.5	10.0	9.8	
28	68.8	35.9	35.3	34.7	33.9	33.4	33.0	32.3	32.4	28.2
−1.9°	27.1	24.7	23.2	21.6	20.1	18.4	17.7	15.7	16.2	15.5
	14.0	12.4	13.0	13.7	13.8	13.6	11.6	11.1	11.2	
29	69.4	40.6	40.4	40.2	39.9	38.1	34.8	38.3	36.6	33.8
0°	28.0	30.7	26.6	22.6	22.7	20.6	19.2	17.4	18.4	17.8
	15.1	14.7	14.6	15.0	14.6	13.9	12.7	12.6	12.4	
30	69.9	44.8	45.0	45.2	45.4	44.0	42.0	41.7	40.3	37.4
+1.9°	31.0	32.3	29.7	26.8	25.0	23.0	21.9	19.7	18.2	19.8
	17.8	17.6	16.9	16.2	15.7	14.8	13.4	13.7	14.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 31 ANGLE +3.9°	70.6 31.5 19.9	44.1 30.3 18.0	44.6 31.1 17.7	45.1 26.6 17.3	45.5 26.6 17.0	43.9 25.1 16.0	41.5 23.2 14.5	41.4 23.4 14.9	40.1 21.7 14.7	37.2 21.3
32 +5.8°	71.8 32.9 21.9	43.0 33.4 19.5	43.8 31.2 18.9	44.5 28.7 18.6	45.1 28.5 18.3	43.5 27.1 17.1	40.9 23.7 15.9	40.5 24.8 16.2	41.5 22.9 16.0	39.2 23.1
33 +7.8°	72.8 33.6 21.5	43.8 34.2 19.4	43.6 30.5 19.3	43.4 28.5 18.8	43.2 28.1 17.7	41.7 26.4 16.8	39.3 23.2 16.2	38.0 25.1 16.7	40.1 21.9 16.6	38.1 23.5
34 +9.7°										
35 +11.7°										
36 +13.7°	DATA SATURATED									
37 +15.7°										
38 +17.7°										
39 +19.8°										
40 +21.8°										
41 +24.0°	70.0 40.8 25.0	61.9 39.8 23.8	60.2 35.8 21.6	57.3 36.2 19.1	45.4 33.4 16.7	49.2 31.5 15.2	51.2 30.5 13.3	45.1 29.0 11.4	45.7 27.5 13.4	43.1 25.8
42 +26.1°	72.9 40.7 20.8	58.4 38.7 19.3	56.7 36.2 17.8	53.9 34.1 17.1	42.6 32.7 15.7	47.6 29.2 14.7	49.8 27.4 13.4	37.0 25.4 13.6	45.0 23.8 13.6	41.4 22.5
43 +28.3°	71.9 41.4 19.5	48.7 39.2 17.8	47.9 32.5 17.5	46.8 33.2 17.0	45.5 30.0 15.6	44.3 28.2 15.2	42.5 24.6 14.5	40.9 23.9 15.1	46.1 23.0 14.7	44.2 22.0
44 +30.5°	69.3 36.9 17.3	46.2 36.1 15.0	45.8 29.2 14.2	45.3 28.8 13.4	44.9 27.8 12.8	44.3 24.5 12.3	43.6 21.9 11.6	39.0 21.0 12.1	41.8 19.0 11.4	41.1 19.0
45 +32.8°	67.5 31.8 12.7	40.0 30.5 10.8	39.4 24.0 9.7	38.7 22.8 9.9	37.8 22.5 9.5	37.5 18.7 8.6	37.1 16.9 7.8	33.1 14.8 7.8	32.2 12.7 7.9	34.6 14.5

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	67.0	34.3	33.4	32.1	30.3	29.6	28.7	24.1	22.1	25.2
ANGLE +35.1°	24.1	21.0	19.5	17.2	16.0	14.5	12.4	11.7	10.1	11.2
	10.2	9.1	8.3	9.1	8.1	7.6	6.6	6.8	7.0	
47	67.3	33.6	32.7	31.5	29.9	29.7	29.4	28.2	21.2	26.5
+37.5°	24.6	20.1	20.0	18.7	16.7	14.1	13.8	13.2	11.9	12.1
	11.3	10.1	9.3	10.3	9.5	8.7	7.7	8.2	8.3	
48	67.2	32.9	33.6	34.3	34.9	33.6	32.0	30.3	30.7	28.1
+40.0°	25.8	21.9	20.6	18.1	17.3	12.9	13.2	11.9	11.7	11.9
	11.0	9.7	9.5	9.9	9.4	8.4	7.3	8.1	8.3	
49	66.6	31.2	31.9	32.5	33.0	32.3	31.5	30.4	28.0	26.9
+42.8°	24.4	21.3	17.8	15.8	13.8	11.5	10.2	9.9	9.0	9.7
	9.0	8.0	7.6	8.2	7.2	6.6	5.8	6.2	6.6	
50	66.6	33.7	32.5	30.8	28.1	28.8	29.4	22.0	20.4	22.9
+45.3°	22.7	21.1	16.8	16.5	15.9	14.2	11.7	12.7	11.1	10.1
	9.4	8.6	7.9	8.9	8.2	7.0	6.6	6.6	7.0	
51	67.2	37.9	37.0	36.0	34.6	34.9	35.1	29.1	26.0	27.9
+48.1°	26.7	24.0	20.6	18.4	19.4	18.1	14.3	15.2	13.8	12.5
	12.0	11.6	10.4	11.5	10.9	9.7	8.9	9.1	9.2	
52	67.1	40.1	39.0	37.5	35.3	35.6	35.9	31.7	26.5	29.1
+51.1°	28.2	26.1	23.5	21.4	19.5	18.0	15.1	14.4	13.3	12.9
	11.8	11.3	10.2	11.0	10.1	9.4	9.4	9.5	9.8	
53	66.1	37.5	36.3	34.5	31.6	32.7	33.6	29.8	30.2	26.8
+54.3°	25.6	22.0	20.5	21.1	17.5	17.4	13.6	12.7	10.5	10.6
	9.5	8.5	8.3	8.5	7.3	7.2	7.4	8.1	8.5	
54	65.6	32.3	31.1	29.5	26.7	26.1	25.4	26.5	24.5	20.8
+57.8°	20.1	19.0	19.0	18.7	15.4	15.9	12.9	11.4	7.8	8.9
	7.9	6.7	6.0	6.5	5.5	5.9	5.6	6.6	7.4	
55	65.4	30.1	29.0	27.3	24.7	23.8	22.8	24.3	22.2	26.9
+61.6°	24.9	25.0	21.4	19.5	18.1	16.3	14.9	12.5	9.5	9.6
	8.7	6.6	6.3	6.7	6.0	6.0	5.5	6.4	6.9	
56	66.0	32.1	31.3	30.4	29.1	27.8	25.8	27.2	31.6	35.1
+66.0°	34.5	34.0	28.4	26.1	24.9	20.3	21.4	18.4	15.1	14.7
	12.2	10.2	9.5	8.7	7.8	6.7	5.9	5.7	5.7	
57	67.0	38.2	37.2	35.9	34.1	32.9	31.4	33.7	37.9	40.8
+71.3°	40.2	39.5	34.2	31.8	29.9	25.9	26.6	23.7	20.5	19.7
	17.2	15.2	14.0	12.6	11.7	10.4	9.2	8.3	8.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 7A

STA TAPE 7E

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	52.0 9.4 6.9	14.2 10.0 6.8	13.1 10.4 6.1	11.6 9.7 5.9	9.3 9.8 6.0	11.5 9.1 5.7	12.9 8.3 5.6	10.6 8.1 5.6	11.3 7.6 5.6	10.2 7.2
2 +64°	52.1 9.9 5.0	14.0 9.7 4.7	13.1 9.9 4.0	11.9 9.4 3.2	10.1 8.7 3.4	11.4 8.5 3.0	12.4 7.5 2.7	10.8 7.0 2.7	10.4 6.4 2.6	9.5 5.3
3 +53°	51.8 8.8 3.7	12.2 8.5 3.8	11.5 8.3 2.9	10.6 8.0 2.3	9.6 7.4 2.4	10.3 7.0 2.1	10.8 6.2 1.9	9.5 5.7 1.9	8.5 5.4 1.9	8.2 4.3
4 +44°	51.5 5.7 2.4	10.8 6.2 2.5	10.1 6.4 1.7	9.2 5.8 1.0	8.0 5.2 1.2	8.4 4.7 0.9	8.7 4.5 0.8	7.9 4.0 1.1	6.6 3.6 0.7	7.1 2.5
5 +37°	51.6 4.0 1.4	12.4 4.7 1.8	11.2 4.7 0.8	9.7 4.2 0.4	7.1 3.5 0.6	7.9 2.9 0.5	8.5 3.1 0.5	6.2 2.6 1.0	5.4 2.3 0.3	6.5 1.4
6 +30°	52.5 8.1 4.0	21.0 8.5 3.8	19.7 8.7 2.8	17.8 7.6 2.6	14.4 6.6 2.9	14.5 6.0 2.5	14.6 5.5 2.4	12.7 4.6 4.8	9.7 3.9 2.2	9.6 3.3
7 +23°	54.0 15.5 10.2	30.3 15.3 8.5	28.9 14.6 7.8	26.7 13.6 8.3	22.2 12.9 7.6	22.4 12.4 7.3	22.5 12.4 7.2	20.9 10.8 11.8	17.5 9.5 6.6	16.5 9.0
8 +17°	56.3 21.1 16.3	37.1 20.7 13.1	35.6 20.1 12.7	33.2 19.4 14.2	27.6 17.9 12.8	27.9 17.6 12.3	28.1 17.9 12.4	26.1 16.0 18.0	23.7 15.0 11.6	23.6 14.3
9 +12°	56.8 21.0 15.1	36.4 21.0 12.8	35.0 20.0 12.3	32.8 18.9 13.0	28.4 18.5 12.2	28.2 17.9 11.6	28.1 18.1 12.0	26.8 15.7 17.8	23.9 14.5 11.6	22.4 13.9
10 +6°	57.5 20.1 14.5	34.8 20.6 12.9	33.3 19.7 11.6	31.2 18.8 10.9	27.0 18.3 11.3	27.1 17.9 10.1	27.2 17.8 11.0	26.6 15.5 17.2	23.0 14.4 11.5	22.6 13.7
11 0°	58.6 20.6 16.3	35.2 21.8 14.3	33.8 21.1 12.9	31.8 19.8 13.3	27.9 19.6 13.0	28.2 19.2 11.9	28.4 18.8 12.6	28.2 16.7 18.3	23.9 15.4 13.1	24.5 15.0
12 −6°	58.6 21.9 18.1	36.6 22.8 15.7	35.3 22.2 14.7	33.3 20.7 16.1	29.7 21.0 15.0	29.8 20.4 14.2	29.9 20.2 14.3	29.8 18.2 19.5	25.1 16.6 14.1	26.2 16.5
13 −12°	57.9 22.2 19.1	38.4 22.5 16.3	36.9 22.2 15.3	34.6 21.3 17.1	29.5 20.9 15.1	29.5 20.5 14.4	29.4 20.4 14.4	29.7 18.8 19.4	24.9 17.5 13.7	27.1 17.1
14 −17°	54.9 17.8 14.5	32.9 18.3 11.4	31.5 17.7 10.6	29.4 16.5 12.4	25.1 16.4 10.9	25.6 16.1 10.4	26.0 16.0 10.2	25.8 14.1 15.3	20.7 12.6 9.6	22.3 12.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 7A

STA TAPE 7E

GE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	52.3	28.5	27.0	24.6	18.9	19.1	19.3	19.3	14.9	17.5
ANGLE −23°	12.2	12.2	12.3	11.7	10.3	10.2	10.3	8.2	7.4	6.7
	9.5	5.9	5.2	7.4	5.7	5.4	5.4	9.9	4.4	
16	50.7	16.8	15.3	13.2	9.0	9.4	9.8	10.1	5.7	7.8
−30°	3.0	4.0	3.0	2.9	2.3	2.0	2.0	0.6	0.5	0.1
	1.1	-0.2	-0.6	-0.1	-0.6	-0.8	-0.8	1.9	-0.7	
17	50.4	9.3	8.1	6.4	3.7	3.2	2.7	2.4	1.5	2.3
−37°	-0.4	-0.4	-0.6	-0.9	-1.0	-1.6	-1.1	-2.1	-1.9	-1.9
	-2.0	-1.9	-2.3	-2.4	-2.2	-2.5	-2.5	-1.5	-2.4	
18	50.3	8.0	6.9	5.5	3.4	3.1	2.7	2.2	1.5	2.4
−44°	1.1	-0.2	-0.1	-0.2	-0.5	-1.4	-1.2	-1.8	-2.1	-2.0
	-2.2	-1.5	-2.3	-2.4	-2.1	-2.5	-2.1	-1.9	-2.4	
19	50.4	10.2	9.6	8.8	7.9	8.0	8.1	7.2	6.9	6.2
−53°	4.6	5.1	4.6	4.1	3.0	2.7	1.2	1.0	-0.0	0.0
	-0.1	-0.2	-0.8	-1.0	-0.8	-1.2	-0.7	-0.9	-1.1	
20	50.5	13.0	12.6	12.3	11.9	11.6	11.3	11.9	9.8	9.2
−64°	8.4	8.3	7.8	6.6	6.2	6.5	5.1	4.6	2.9	2.6
	2.6	2.0	0.8	0.5	0.6	0.2	0.3	0.3	-0.3	
21	50.3	12.5	12.3	12.2	12.0	11.9	11.7	12.9	10.3	9.4
−84°	8.7	8.4	7.8	6.4	6.5	7.0	6.2	5.5	3.7	3.2
	3.1	2.4	0.9	0.6	0.5	0.2	0.1	0.0	-0.3	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7A

STA TAPE 7F

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	52.8 10.2 6.0	16.2 10.5 5.3	15.1 9.7 4.8	13.6 9.4 4.2	11.3 9.0 4.1	11.6 9.4 3.6	11.8 8.5 3.4	13.0 7.6 3.4	8.8 6.9 3.4	10.8 6.4
2 +64°	53.1 10.1 6.1	17.1 10.7 5.8	16.0 9.6 5.2	14.5 9.2 4.6	12.1 9.6 4.4	12.4 9.5 3.8	12.8 8.8 3.8	13.3 7.8 3.9	9.5 7.0 3.7	11.7 6.7
3 +53°	52.7 8.5 5.0	16.8 9.3 4.9	15.7 8.4 4.5	14.1 8.0 3.7	11.7 8.4 3.7	11.7 8.5 3.1	11.7 7.5 3.1	11.6 6.7 3.1	8.5 5.9 3.0	10.5 5.7
4 +44°	52.5 8.7 4.1	15.8 8.3 3.8	14.8 7.9 3.7	13.4 7.3 3.0	11.4 7.6 3.1	11.0 7.5 2.6	10.6 6.5 2.4	10.3 6.0 2.5	7.7 5.2 2.5	9.7 4.9
5 +37°	52.6 7.2 3.7	15.6 7.2 3.2	14.5 7.8 2.9	12.9 6.5 2.6	10.6 6.8 2.4	10.2 6.5 2.1	9.6 5.8 2.1	9.5 5.4 2.1	6.4 4.6 2.0	9.1 4.3
6 +30°	53.0 7.6 3.8	14.6 7.9 3.4	13.5 9.8 2.8	12.0 7.5 2.8	9.8 6.4 2.7	9.8 6.5 2.5	9.8 5.6 2.5	8.4 4.9 2.3	6.2 4.2 2.2	8.4 4.0
7 +23°	53.7 9.1 5.1	16.0 9.4 5.1	15.0 10.9 4.3	13.7 8.7 4.0	11.8 7.6 3.7	11.5 7.7 3.5	11.1 7.0 3.6	10.4 5.8 3.2	8.1 5.3 3.6	9.8 5.3
8 +17°	54.9 11.7 7.9	21.0 11.9 7.6	20.0 11.8 6.8	18.6 11.6 6.0	16.5 10.1 5.7	15.3 10.2 5.3	13.6 9.4 5.1	14.2 8.6 5.4	11.5 8.1 6.2	12.9 8.1
9 +12°	56.0 14.0 8.7	24.2 13.8 8.9	23.2 13.9 7.7	21.8 13.5 7.1	19.6 12.3 7.5	18.1 12.1 6.9	15.7 10.6 7.0	15.9 10.1 7.3	13.6 8.9 8.1	15.1 8.8
10 +6°	56.6 14.9 9.6	24.6 13.8 11.1	23.5 14.5 9.2	22.1 13.4 8.5	19.9 12.4 9.3	18.6 12.8 8.3	16.6 11.5 8.7	16.4 10.6 8.3	14.8 9.5 8.7	15.9 9.5
11 0°	57.4 17.6 12.7	26.9 16.2 14.0	25.7 16.8 12.3	24.1 15.1 11.1	21.4 14.4 11.5	20.4 15.2 10.2	19.0 14.5 10.1	18.8 13.7 9.9	17.6 12.8 10.1	17.4 12.9
12 −6°	57.1 18.4 13.6	28.0 18.1 13.8	26.8 17.9 12.3	25.1 16.7 11.0	22.3 16.0 10.5	21.4 16.4 9.3	20.3 15.8 9.5	20.0 15.1 10.0	19.1 14.4 10.2	18.5 14.1
13 −12°	55.7 16.4 12.0	25.6 16.0 11.8	24.5 15.7 10.7	22.9 14.5 9.8	20.6 13.8 8.9	19.5 14.3 7.7	17.9 13.8 7.4	17.3 13.3 7.7	17.0 12.5 7.9	16.7 12.4
14 −17°	53.1 10.8 5.4	17.6 8.9 4.6	16.7 7.8 4.2	15.6 6.6 4.0	14.2 5.8 3.7	13.3 6.9 3.2	12.2 6.7 2.9	10.3 6.4 2.8	10.0 5.1 3.1	9.9 4.8

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 7A

STA TAPE 7F

PAGE 2

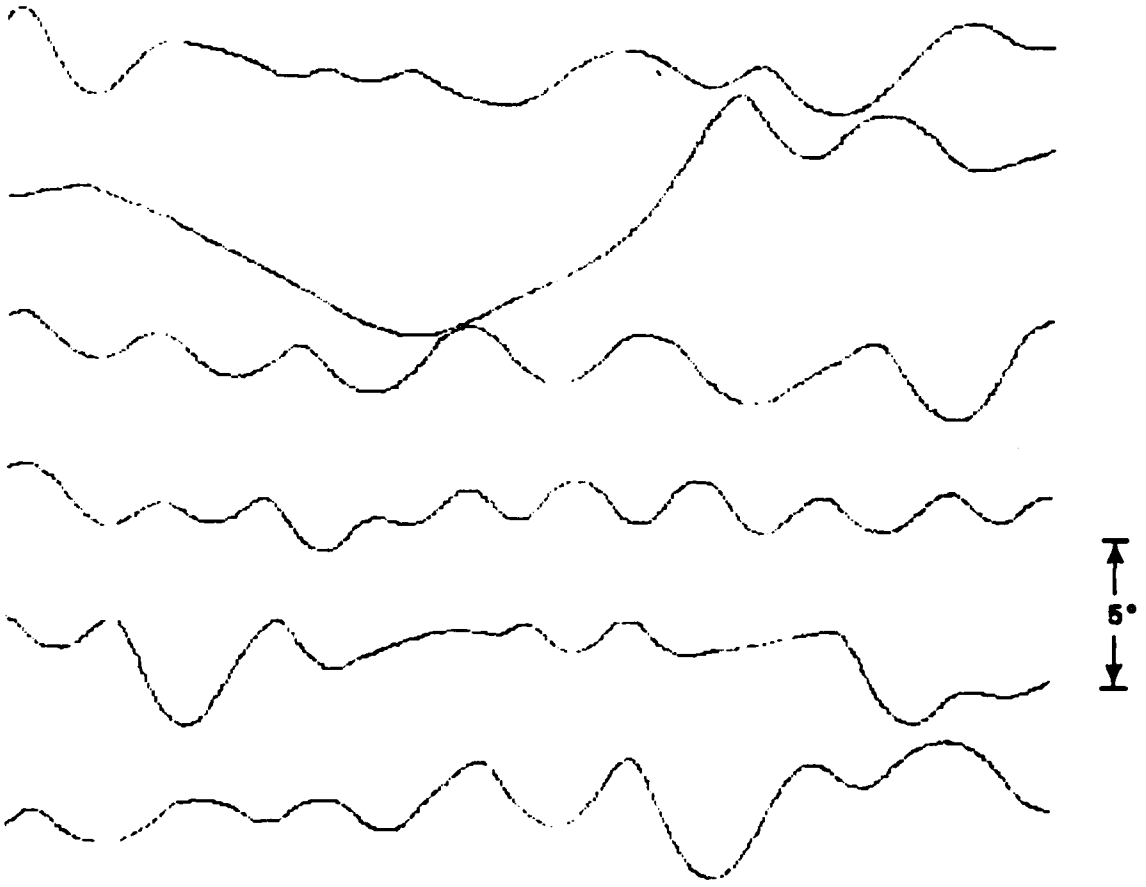
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.1 3.5 −0.3	9.1 2.0 −0.8	8.2 0.8 −1.0	7.2 −0.1 −1.0	5.9 0.2 −1.1	5.8 0.3 −1.1	5.7 −0.3 −1.1	2.5 −0.4 −1.2	2.7 −0.6 −1.1	2.0 −0.6
16 −30°	50.5 0.3 −1.9	6.2 −1.2 −1.9	5.3 −1.0 −2.1	4.0 −2.0 −2.3	2.3 −1.6 −2.3	2.9 −0.9 −2.5	3.4 −1.9 −2.4	0.2 −2.0 −2.4	0.5 −2.1 −2.4	0.3 −1.8
17 −37°	50.4 −0.7 −2.1	6.0 −1.0 −1.9	5.0 −1.4 −2.2	3.8 −1.9 −2.4	2.2 −1.4 −2.2	2.2 −1.3 −2.4	2.3 −1.9 −2.4	0.2 −1.8 −2.4	0.1 −2.4 −2.5	−0.3 −2.0
18 −44°	50.5 −0.7 −1.7	6.5 −0.6 −1.3	5.9 −1.4 −1.8	5.1 −1.6 −1.9	4.2 −0.6 −1.6	3.9 −1.0 −1.9	3.6 −1.4 −2.0	0.9 −1.7 −2.1	0.2 −2.0 −2.0	−0.3 −1.9
19 −53°	50.8 4.7 0.6	8.6 2.5 1.0	8.5 2.7 0.1	8.3 3.1 −0.6	8.1 4.1 −0.2	7.8 3.3 −0.6	7.3 2.6 −0.5	7.2 1.2 −0.9	5.0 0.9 −0.8	4.9 0.4
20 −64°	51.1 11.7 4.6	12.0 9.0 4.3	12.3 9.5 3.3	12.6 9.6 2.1	12.9 9.9 2.4	12.7 10.2 1.8	12.5 9.4 2.2	13.7 7.2 1.4	10.4 6.2 1.2	12.1 5.1
21 −84°	50.9 13.3 5.3	12.2 10.8 4.7	12.7 11.2 3.8	13.1 11.2 2.7	13.5 11.1 2.9	13.4 11.8 2.3	13.3 10.9 2.5	15.0 8.9 1.7	11.0 7.8 1.3	13.6 6.0

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7A

BEARING VS TIME

MEAN & VAR 317 8 0.74 318.0 6.26 318 7 0 49 318.9 0.43
318 1 1 51 318 2 1.21



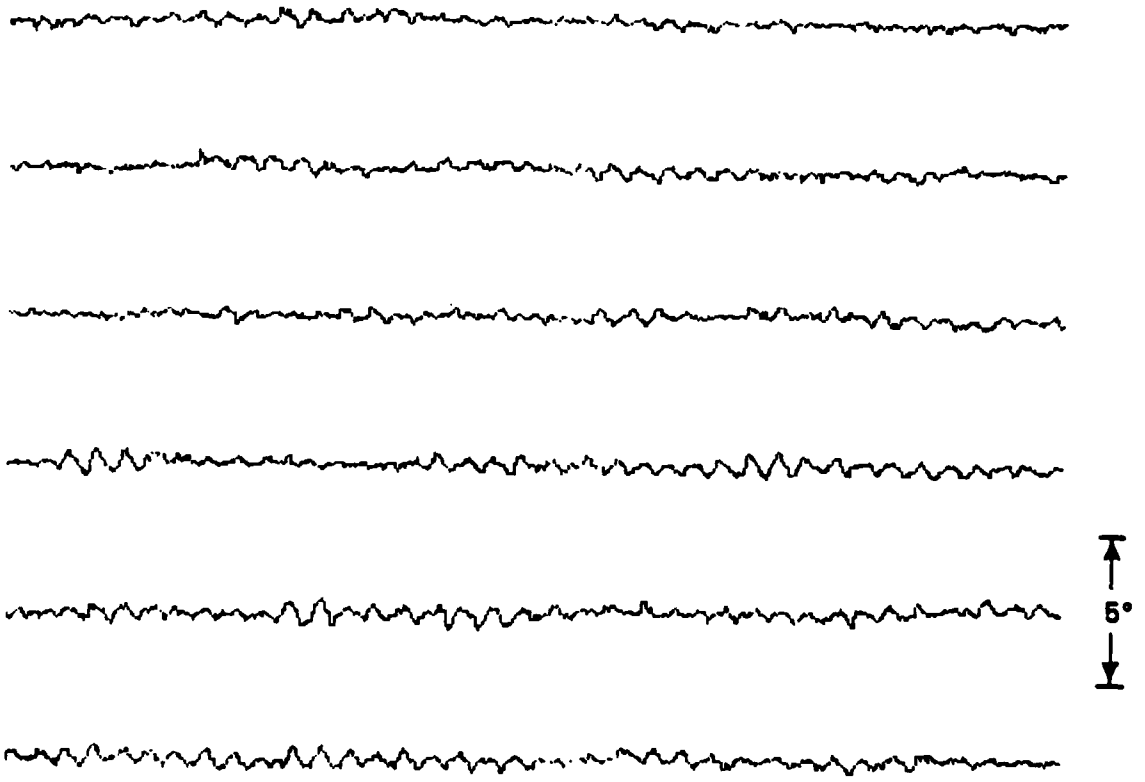
1024 SECONDS

MPL-M-4624

GROUP 7A

ELEVATION VS TIME

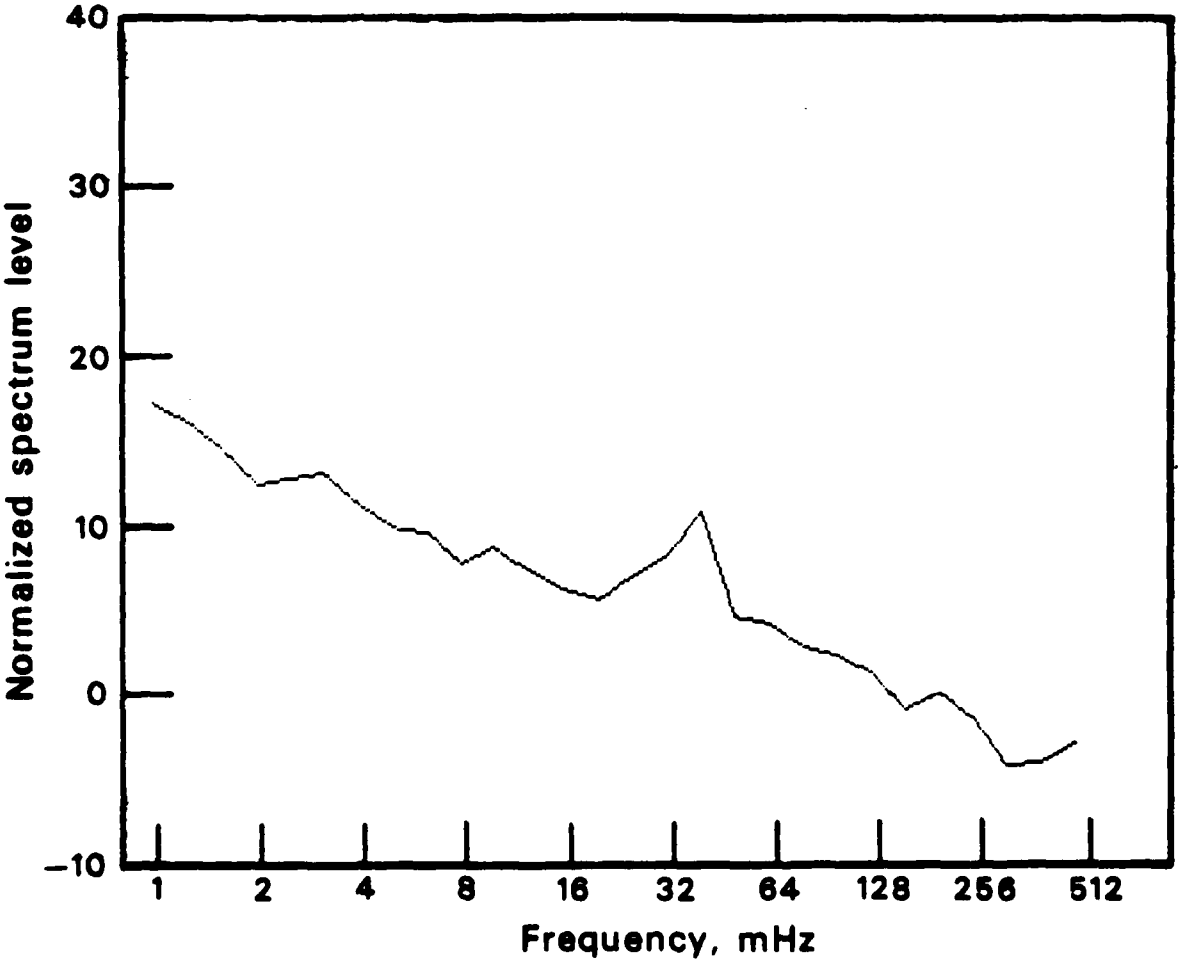
MEAN & VAR. 92.3 -0.07 92.3 -0.05 92.1 -0.07 92.0 -0.04
92.0 -0.05 92.1 -0.09



1024 SECONDS

MPL-M-4625

GROUP 7A



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 7B

Environmental Summary

7 June 1978

Tapes	Start time	Code
LTA/LOG	04:33:37	07B
STA	04:39:43	07C
STA	05:42:48	07H
High Band Filter		

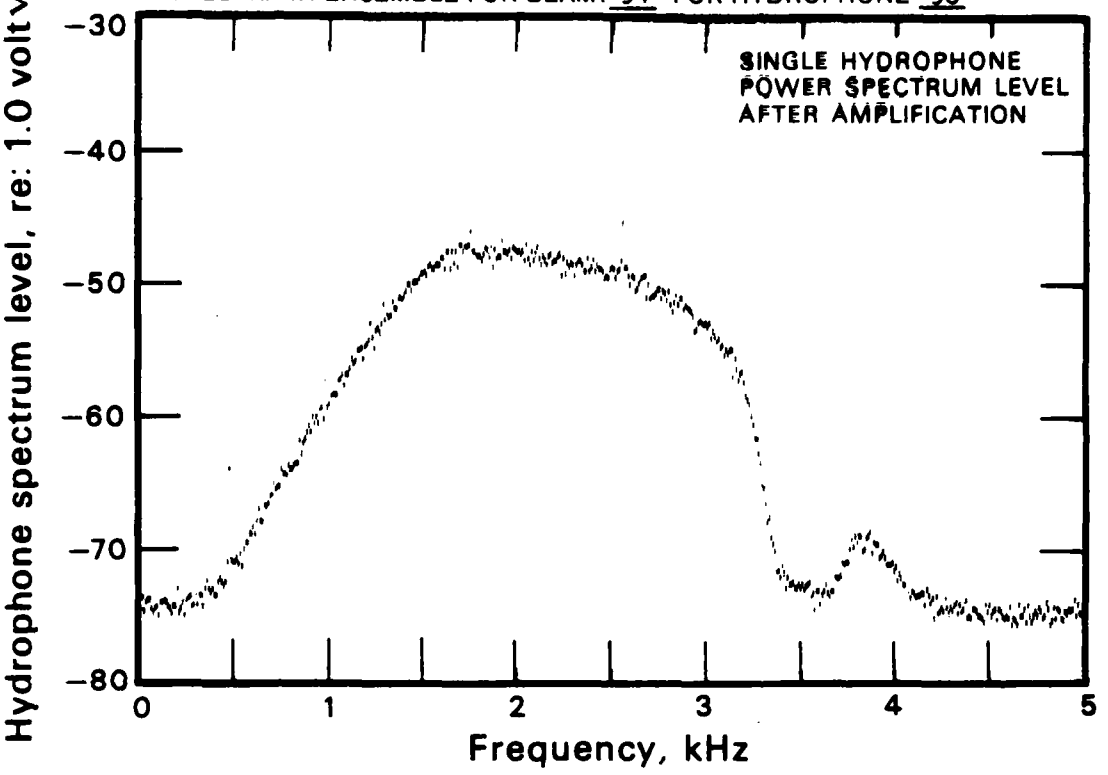
Environment

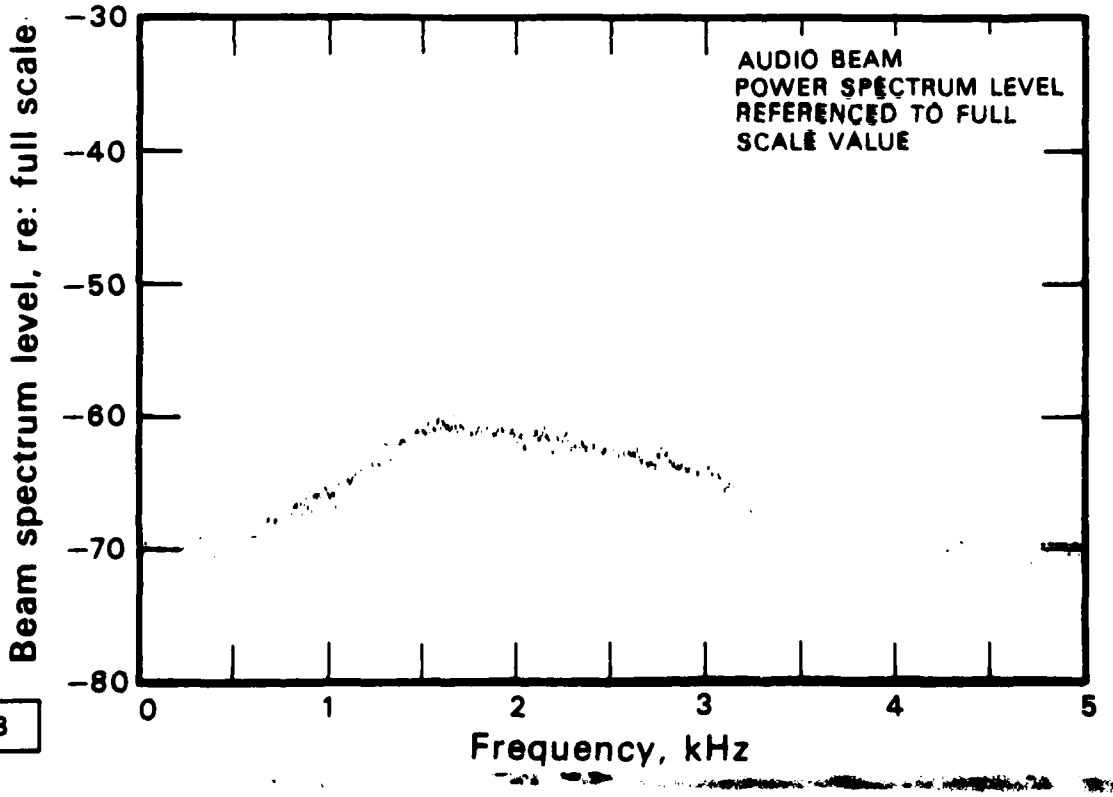
Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
04:00	2100	10	305	2-3	6-8	NW	Small chop
05:00	2100	10	310	2-3	6-8	NW	Ship 18.5nm @ 255 deg.

MPL-M-4627

07-JUN-78 05:01:04 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 78 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 100.0 TRUE BEARING 246.3 TRUE ELEVATION 99.9
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -16.1 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 94 FOR HYDROPHONE 96

GROUP 7B





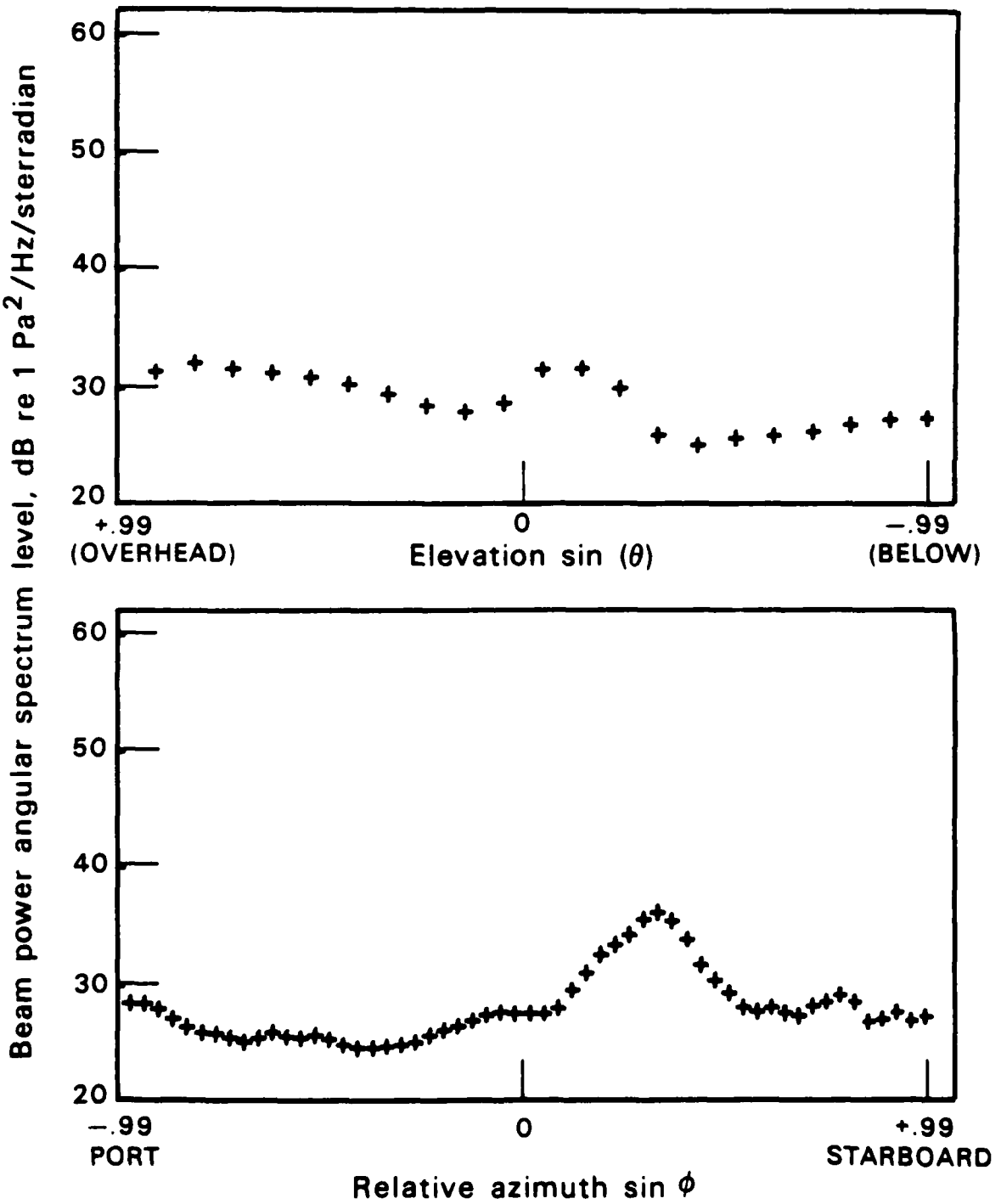
MPL-M-4628

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 7B

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

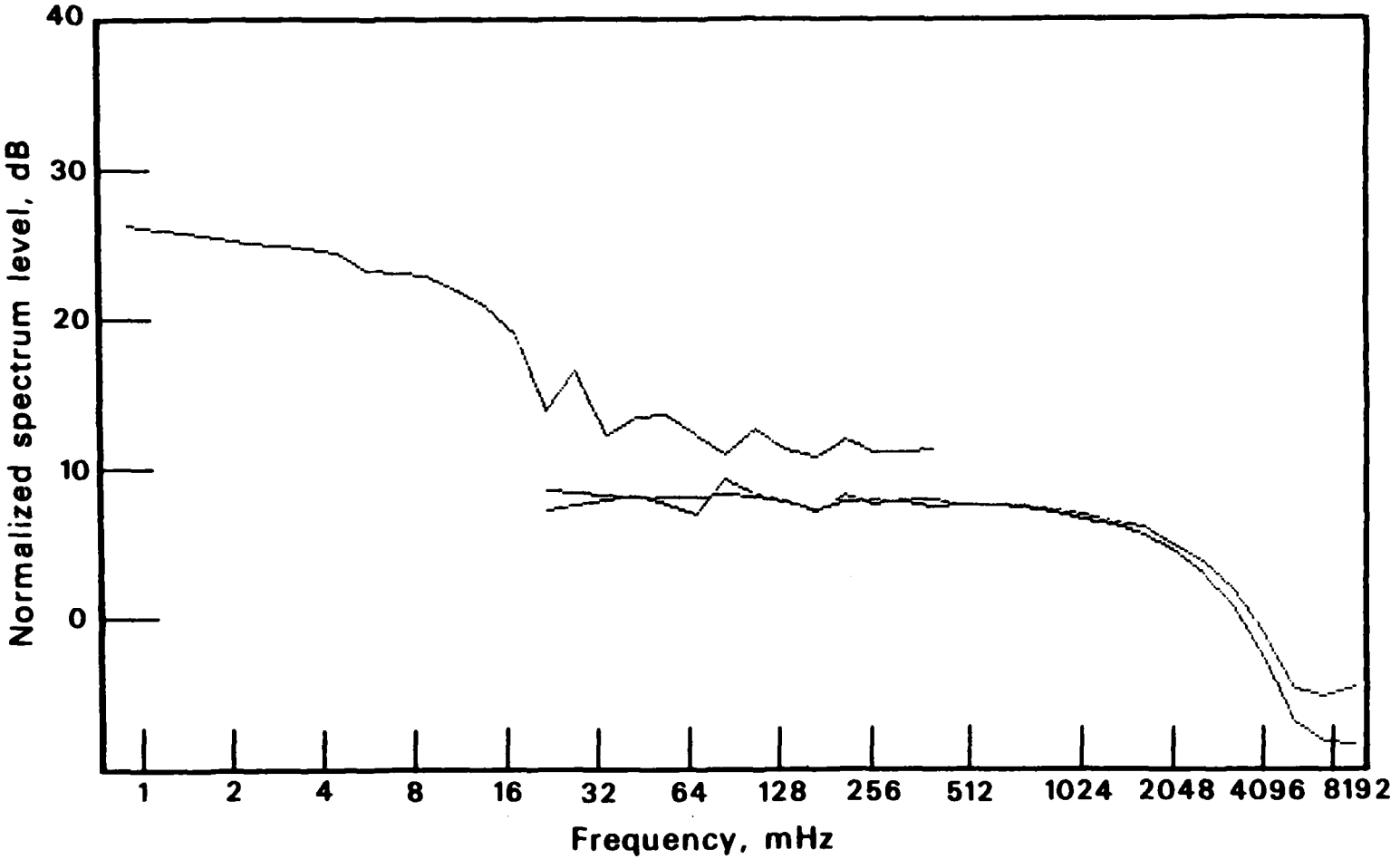
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4629

MPL-M-4630

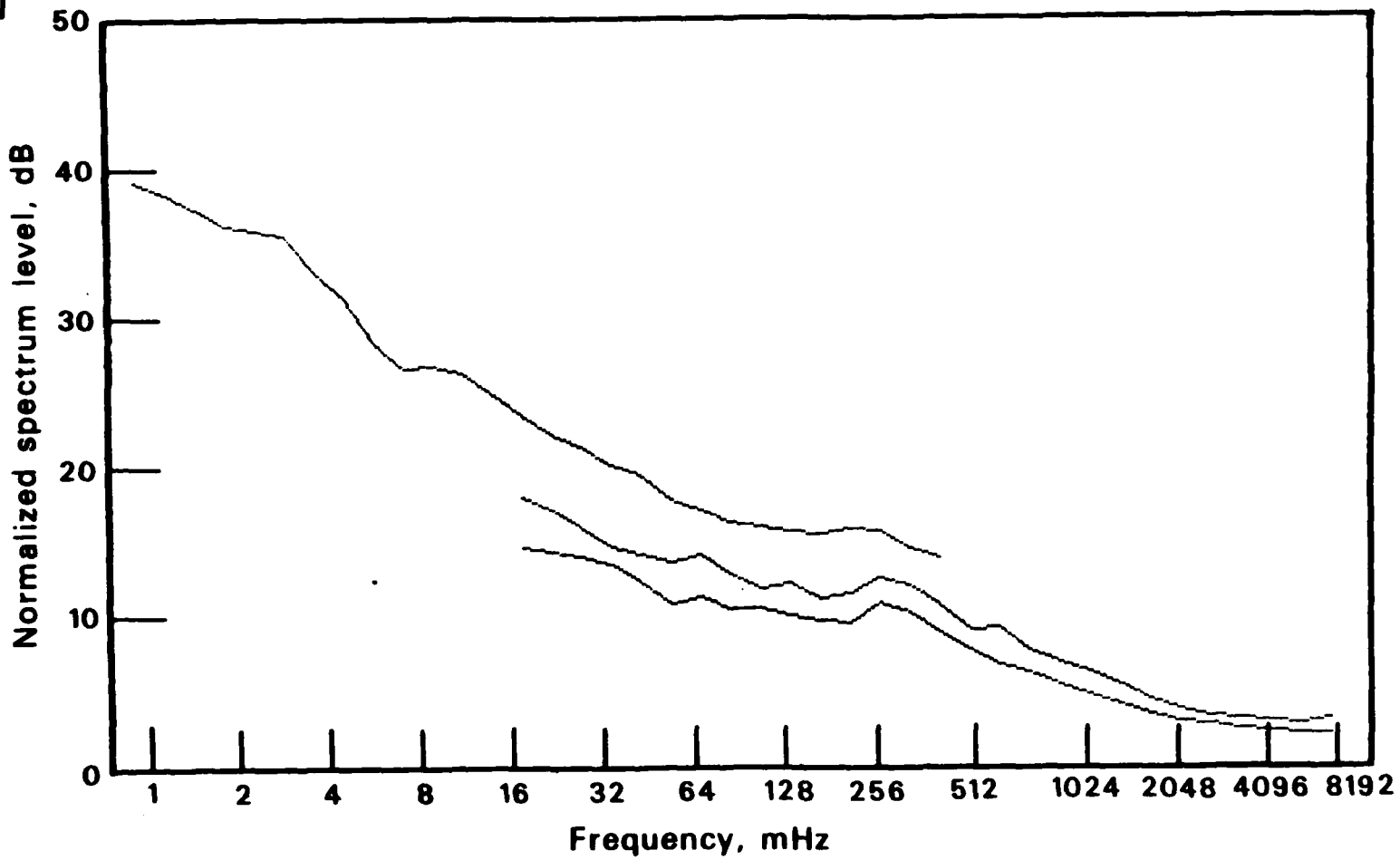
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 7B

MPL-M-4631

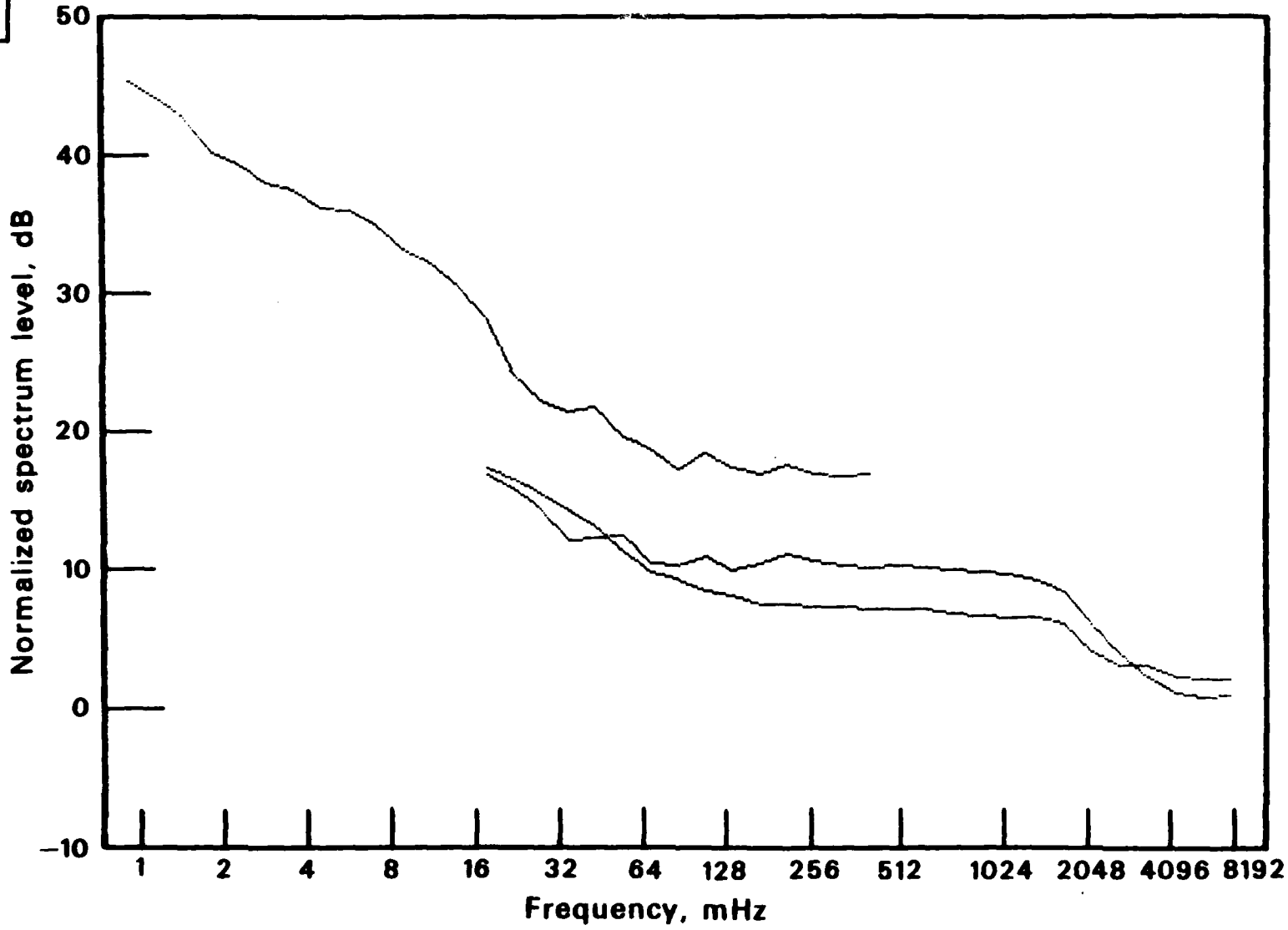
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7B

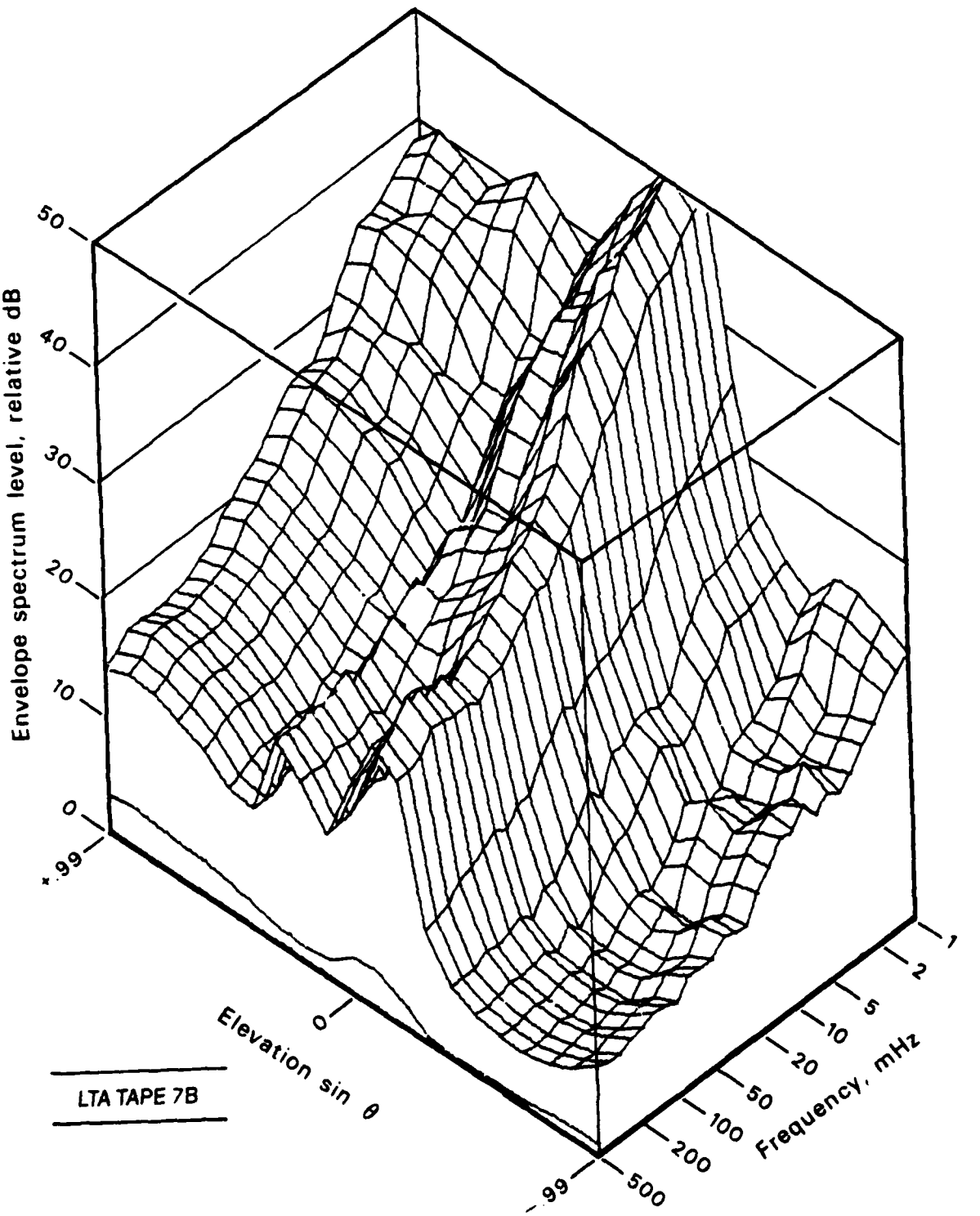
MPL-M-4632

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7B

GROUP 7B

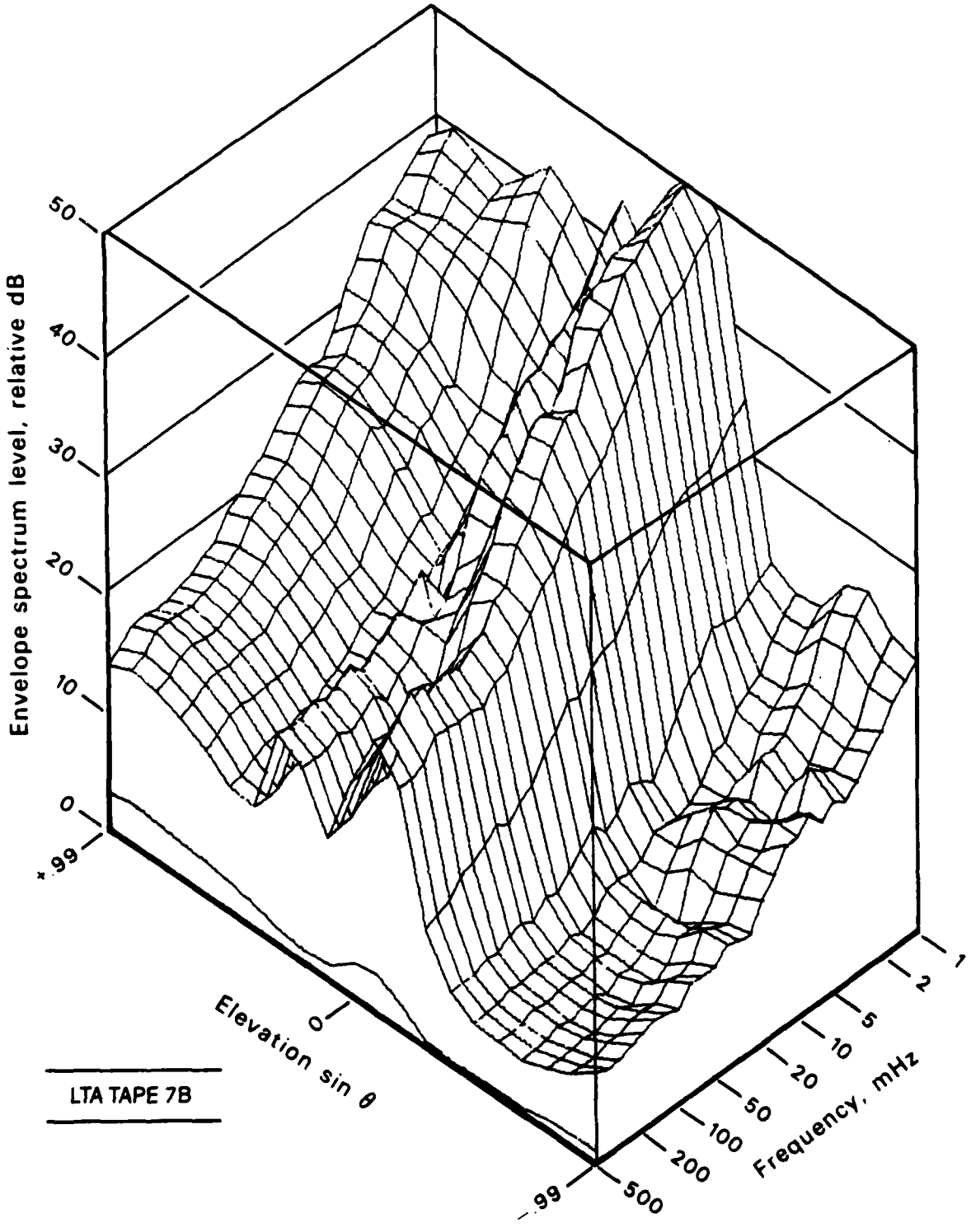


LTA TAPE 7B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET.

MPL-M-4633

GROUP 7B



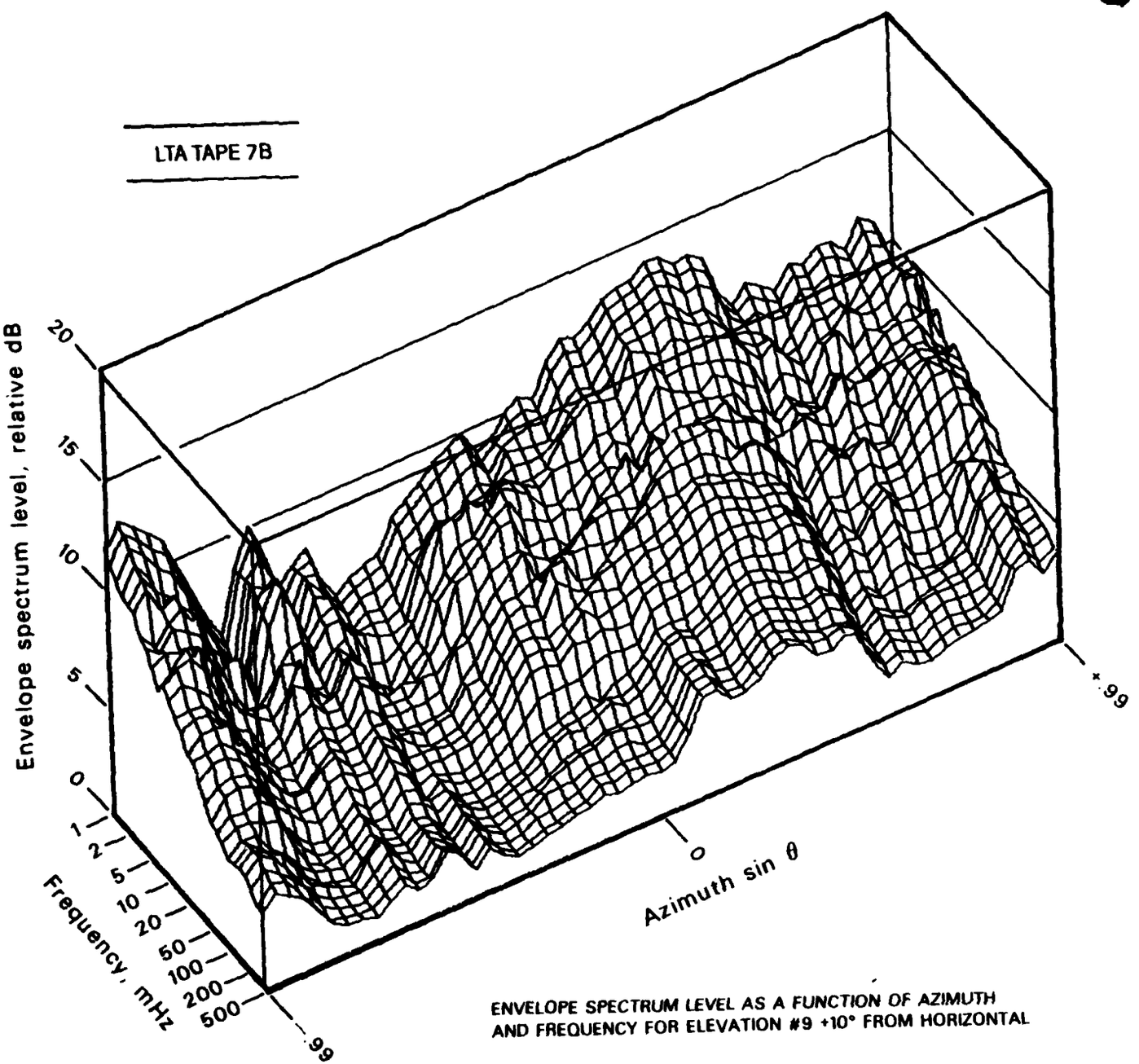
LTA TAPE 7B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4634

MPL-M-4635

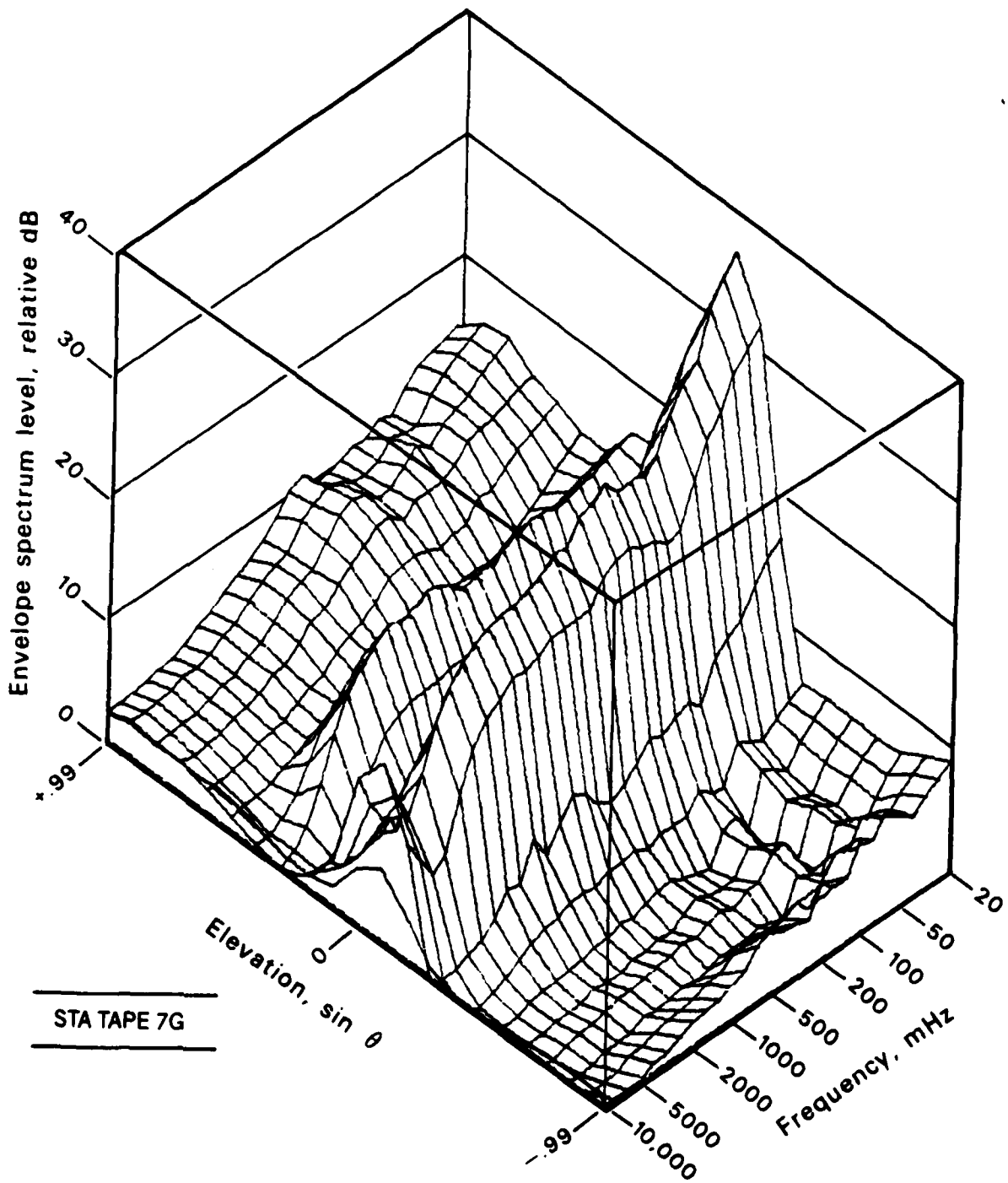
LTA TAPE 7B



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH
AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 7B

GROUP 7B

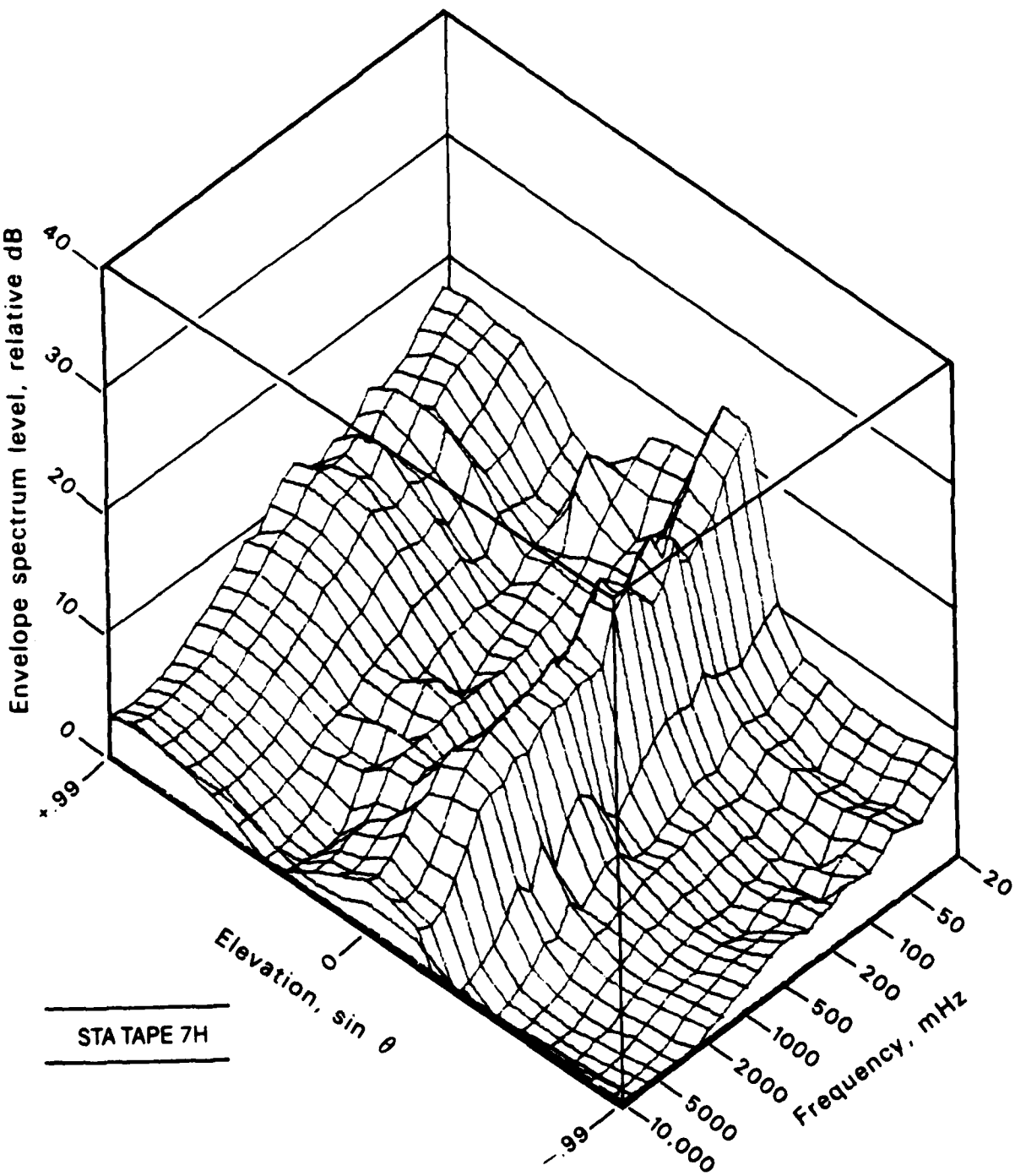


STA TAPE 7G

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4636

GROUP 7B



STA TAPE 7H

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4637

GROUP 7B

LTA TAPE 7B

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66 0	33 8	32 9	32.0	30 7	30 4	30 1	27 6	25 9	22 9
ANGLE +84°	21 3	21 4	20 8	19 6	18 1	16 7	16 0	14 7	14 0	12 3
	11 8	11 0	10 6	10 3	10 1	10 5	10 2	9 0	8 4	
2	66. 4	35 8	34 7	33. 2	30. 8	31 0	31 1	28. 8	26 1	25 0
+64°	23. 1	22. 7	22 1	20 8	19. 3	17 4	16 8	15 8	15 0	13. 2
	12. 6	11. 9	11. 6	11. 2	11. 1	11. 3	11 1	9. 9	9. 3	
3	66. 2	34. 9	34. 2	33. 4	32. 4	31. 5	30. 2	27. 6	25. 3	25 0
+53°	22. 9	22. 3	21. 8	20. 0	18. 6	16. 3	15 7	14. 9	14. 2	13. 0
	12. 4	11. 6	11 0	10 7	10. 7	10. 8	10. 5	9. 6	9. 1	
4	65. 9	33. 7	33. 3	32. 9	32. 4	31. 2	29 6	25. 0	25. 5	23. 9
+44°	21. 0	20. 6	20. 8	19 0	16. 8	14. 8	14. 5	13. 7	12. 7	12. 2
	11. 6	10. 3	10 2	10. 0	9. 6	9. 8	9. 6	8. 7	8. 1	
5	65. 7	35. 9	34. 8	33. 3	30. 9	29. 5	27 4	23. 5	24. 4	22. 4
+37°	20. 6	19. 5	19. 6	17. 3	15. 7	13. 7	13. 5	12. 5	11. 3	10. 5
	10. 1	8. 8	8. 6	8. 7	8. 5	8. 7	8. 3	7. 4	6. 9	
6	65. 3	38. 0	36. 6	34. 4	29. 7	27. 7	23. 7	23. 1	22. 0	20. 1
+30°	18. 3	16. 8	16. 6	15. 5	14. 0	12. 5	12. 2	10. 9	9. 8	8. 4
	8. 2	6. 7	7. 0	6. 7	6. 6	6. 6	6. 1	5. 4	5. 1	
7	64. 9	36. 1	34. 6	32. 4	27. 8	26. 2	23. 9	22. 2	19. 9	18. 0
+23°	15. 7	15. 1	14. 0	13. 8	12. 5	10 5	11. 9	10. 2	9. 9	8. 3
	7. 7	6. 6	7. 1	6. 2	5. 8	5. 8	5. 0	4. 8	4. 8	
8	64. 3	33. 8	32. 5	30. 8	27. 9	27. 8	27. 8	27. 2	26. 0	23. 6
+17°	20. 8	18. 4	16. 4	18. 9	17. 2	13. 1	17. 1	13. 7	15. 4	14. 1
	13. 4	12. 6	13. 6	12. 7	12. 0	12. 5	11. 8	12. 0	12. 1	
9	64. 1	37. 5	36. 6	35. 5	33. 9	33. 6	33. 2	31. 6	30. 6	29. 0
+12°	26. 8	24. 2	21. 4	20. 7	19. 4	16. 9	16. 5	15. 1	14. 4	13. 2
	11. 4	10. 6	11. 4	10. 6	10. 3	10. 5	9. 9	10. 0	10. 0	
10	64. 5	41. 5	40 3	38. 6	35. 8	35. 2	34. 6	32. 2	30. 3	28. 2
+6°	26. 9	24. 7	21. 9	21. 4	20. 5	19 0	18. 0	17. 2	14. 6	12. 1
	9. 0	9. 5	9 5	7. 8	8. 1	7. 6	6. 8	6. 8	6. 6	
11	66. 2	44 5	43. 4	41. 9	39. 5	39. 9	40. 2	38. 0	34. 7	33. 0
0°	32. 7	29. 5	26. 8	24. 8	22. 5	21. 2	20. 5	19. 2	18. 0	15. 7
	14. 4	13. 6	14 5	13. 8	14. 5	13. 8	12. 7	12. 5	12. 3	
12	66. 3	48. 1	47. 2	46. 2	44. 7	44. 3	43. 7	40. 9	38. 4	37. 9
−6°	37. 5	33. 3	29 7	27. 8	26. 3	24. 7	24. 4	22. 1	21. 2	19. 6
	19. 0	17. 9	18 8	18. 5	19. 2	19 2	17 8	17. 3	17. 2	
13	65. 2	46. 1	45. 1	43. 7	41. 9	41 3	40. 8	38. 1	35. 9	33. 6
−12°	32. 6	29 7	28 0	26. 1	25. 1	23. 0	23 0	21. 6	20. 1	18. 7
	18. 4	17. 1	17. 8	17 5	17. 9	17. 9	16. 3	15. 7	15. 7	
14	63. 4	31. 0	29. 9	28 5	26. 3	25 6	24. 6	23. 3	21 4	18 3
−17°	18. 0	16. 8	16 0	15 7	15. 1	13. 5	14 2	12 4	11. 3	9 0
	8. 7	7 5	8. 1	7. 2	6. 4	5. 9	4. 7	4. 2	3. 9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE, RELATIVE BEAM SET

GROUP 7B

LTA TAPE 7B

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	21.2	20.6	20.0	17.3	19.1	18.8	16.5	14.8	11.6
ANGLE −23°	11.1	11.8	11.4	10.4	10.1	7.1	8.4	6.5	4.9	3.1
	3.0	1.1	2.0	1.5	1.0	1.3	0.5	0.5	0.5	
16	63.3	18.4	17.9	17.3	16.6	16.4	16.3	14.0	13.0	10.3
−30°	9.2	10.0	10.4	8.5	6.7	5.5	4.9	3.6	1.6	0.1
	1.2	−0.4	0.4	−0.0	−0.2	−0.0	−0.5	−0.7	−0.6	
17	63.3	16.8	15.7	14.1	11.6	10.8	9.8	9.4	8.7	6.2
−37°	5.8	5.3	7.1	4.5	3.1	2.0	2.4	2.0	0.7	−0.3
	0.4	−0.6	0.0	−0.4	−0.7	−0.5	−0.8	−1.0	−0.9	
18	63.5	19.7	18.4	16.7	13.8	12.3	10.1	8.7	9.0	6.6
−44°	7.7	7.3	8.7	6.3	4.7	1.3	2.5	1.2	0.6	−0.1
	0.2	−0.7	−0.1	−0.6	−0.8	−0.5	−0.9	−1.1	−1.0	
19	63.7	19.8	18.4	16.2	11.7	10.7	9.5	9.2	9.6	7.3
−53°	7.3	7.3	7.3	5.8	4.3	1.3	2.2	2.5	0.9	0.3
	0.8	−0.4	0.3	0.1	−0.3	−0.1	−0.3	−0.4	−0.5	
20	63.9	18.8	17.6	15.8	12.8	11.6	10.0	10.7	11.8	9.5
−64°	9.8	9.9	8.9	7.7	5.8	3.9	4.5	4.5	2.6	2.4
	2.6	1.3	1.4	1.3	0.9	0.9	0.4	0.4	0.5	
21	64.0	17.5	16.5	15.3	13.7	12.5	10.8	9.9	10.7	9.5
−84°	11.1	9.7	9.8	7.8	6.6	4.3	4.6	4.9	3.8	3.7
	3.9	2.3	2.8	2.9	2.5	2.2	1.7	1.7	2.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 7B

LTA TAPE 7B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4 80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66. 0	33. 8	32. 9	32. 0	30. 7	30. 4	30. 1	27. 6	25. 9	22. 9
ANGLE +84°	21. 3	21. 4	20. 8	19. 6	18. 1	16. 7	16. 0	14. 7	14. 0	12. 3
	11. 8	11. 0	10. 6	10. 3	10. 1	10. 5	10. 2	9. 0	8. 4	
2	66. 4	35. 9	34. 7	33. 2	30. 9	30. 9	31. 0	28. 9	26. 1	25. 0
+64°	23. 1	22. 6	22. 1	20. 8	19. 3	17. 4	16. 8	15. 8	15. 0	13. 2
	12. 6	11. 9	11. 6	11. 1	11. 1	11. 3	11. 1	9. 9	9. 4	
3	66. 2	34. 9	34. 1	33. 1	31. 9	31. 2	30. 4	27. 6	25. 4	24. 8
+53°	23. 0	22. 4	22. 0	20. 3	18. 7	16. 8	15. 9	15. 1	14. 3	13. 2
	12. 4	11. 5	11. 1	10. 7	10. 7	10. 8	10. 4	9. 5	9. 0	
4	65. 7	33. 8	33. 2	32. 5	31. 7	30. 8	29. 6	25. 0	24. 7	23. 7
+44°	21. 3	20. 5	21. 2	19. 2	17. 3	15. 0	14. 3	13. 8	12. 8	12. 2
	11. 5	10. 3	10. 3	10. 0	9. 6	9. 8	9. 6	8. 7	8. 1	
5	65. 7	36. 0	35. 0	33. 6	31. 5	30. 1	28. 1	22. 6	23. 1	21. 4
+37°	21. 1	18. 5	18. 9	17. 0	15. 5	13. 1	12. 7	12. 5	11. 2	10. 4
	10. 0	8. 8	8. 6	8. 6	8. 4	8. 6	8. 3	7. 4	6. 9	
6	65. 3	38. 3	36. 9	34. 9	30. 7	28. 7	24. 6	21. 9	20. 6	19. 0
+30°	18. 1	16. 1	16. 2	15. 2	13. 7	11. 7	11. 3	10. 7	9. 4	8. 4
	8. 1	6. 8	7. 0	6. 6	6. 5	6. 5	6. 1	5. 4	5. 1	
7	64. 8	36. 7	35. 2	33. 1	28. 5	26. 8	24. 1	22. 0	19. 9	17. 8
+23°	16. 1	14. 6	14. 1	14. 3	12. 8	10. 9	11. 9	10. 1	9. 8	8. 6
	8. 0	6. 8	7. 2	6. 3	6. 0	5. 8	5. 0	4. 8	4. 8	
8	64. 3	33. 7	32. 2	30. 1	25. 9	25. 2	24. 3	23. 2	20. 0	20. 1
+17°	19. 0	18. 2	17. 5	18. 8	17. 5	13. 0	17. 7	13. 9	15. 6	14. 5
	13. 8	12. 8	14. 0	13. 1	12. 5	13. 1	12. 3	12. 4	12. 5	
9	64. 0	39. 8	38. 6	37. 1	34. 6	33. 7	32. 5	32. 0	30. 6	30. 4
+12°	29. 5	27. 5	26. 5	25. 0	22. 5	18. 5	16. 6	15. 8	16. 1	13. 8
	13. 1	11. 6	12. 8	11. 8	11. 3	11. 8	11. 2	11. 1	11. 2	
10	64. 1	36. 0	35. 0	33. 7	31. 9	31. 7	31. 5	30. 9	29. 6	27. 7
+6°	24. 9	24. 0	24. 8	23. 6	22. 8	21. 2	19. 2	17. 8	15. 8	12. 7
	10. 0	9. 8	9. 6	8. 0	8. 0	7. 5	6. 7	6. 6	6. 4	
11	65. 8	43. 7	43. 1	42. 5	41. 8	41. 7	41. 6	40. 1	39. 7	37. 7
0°	34. 3	31. 9	32. 4	31. 4	29. 3	27. 6	24. 4	22. 5	20. 6	17. 0
	15. 8	15. 2	15. 6	14. 5	15. 2	14. 3	13. 3	13. 0	12. 7	
12	66. 2	46. 7	46. 1	45. 4	44. 7	43. 8	42. 7	42. 4	39. 9	38. 9
−6°	36. 7	33. 5	33. 6	31. 7	27. 7	27. 0	25. 7	22. 8	22. 4	20. 4
	19. 7	18. 7	19. 3	18. 9	19. 5	19. 7	18. 1	17. 6	17. 7	
13	65. 1	44. 1	43. 2	42. 1	40. 6	40. 0	39. 3	37. 4	35. 4	33. 7
−12°	32. 3	30. 3	29. 6	28. 4	26. 5	24. 2	23. 6	21. 9	20. 5	18. 7
	18. 3	16. 9	17. 3	17. 1	17. 3	17. 4	15. 8	15. 1	15. 2	
14	63. 4	29. 9	28. 9	27. 7	25. 9	25. 9	25. 8	25. 0	24. 0	22. 3
−17°	21. 0	19. 3	17. 4	17. 2	16. 4	14. 7	15. 0	13. 1	12. 0	10. 0
	9. 3	8. 1	8. 8	7. 8	7. 1	6. 6	5. 3	4. 8	4. 4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 7B

LTA TAPE 7B

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1 51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	17.2	16.6	15.8	14.9	15.1	15.3	13.0	12.3	10.0
ANGLE −23°	8.0	5.9	6.6	7.1	5.3	4.5	5.6	4.4	3.4	2.2
	2.6	1.3	2.0	1.6	0.8	1.1	0.5	0.5	0.5	
16	63.2	16.1	15.0	13.5	11.3	10.6	9.7	7.7	7.4	5.5
−30°	4.6	4.1	4.3	4.3	2.7	2.4	2.5	2.4	0.8	0.1
	0.6	-0.1	-0.0	-0.1	-0.4	-0.2	-0.6	-0.8	-0.8	
17	63.3	16.3	15.2	13.7	11.4	10.5	9.2	6.5	6.4	5.7
−37°	6.0	4.8	6.6	4.5	3.1	0.7	2.2	1.5	0.9	-0.0
	0.3	-0.4	-0.2	-0.4	-0.6	-0.4	-0.8	-1.0	-0.9	
18	63.5	19.6	18.3	16.6	13.5	12.3	10.6	10.0	10.0	7.0
−44°	8.0	7.9	8.7	6.8	4.8	0.9	2.4	1.6	0.6	0.0
	0.1	-0.7	-0.2	-0.5	-0.8	-0.5	-1.0	-1.1	-1.1	
19	63.7	20.5	19.1	17.1	13.0	11.6	9.5	8.3	8.5	6.5
−53°	7.4	8.3	7.0	6.8	4.4	2.4	2.7	2.6	1.0	0.3
	0.9	-0.3	0.3	0.1	-0.3	-0.1	-0.3	-0.4	-0.4	
20	63.9	18.2	17.0	15.2	12.3	11.4	10.3	11.0	12.1	8.8
−64°	8.9	9.6	7.9	7.4	5.4	3.8	4.2	4.7	2.7	2.3
	2.6	1.4	1.5	1.3	0.9	0.9	0.4	0.4	0.5	
21	64.0	17.5	16.5	15.3	13.7	12.5	10.8	9.9	10.7	9.5
−84°	11.1	9.7	9.8	7.8	6.6	4.3	4.6	4.9	3.8	3.7

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

NP: M 4641

LTA TAPE 7B

GROUP 7B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 1 ANGLE −71.3°	64.3 27.3 13.2	41.4 29.5 12.6	40.4 27.8 10.8	39.1 26.0 11.3	37.3 24.3 11.6	36.9 21.6 11.4	36.5 21.6 10.0	33.5 19.0 8.3	32.5 16.2 8.2	30.2 13.9
2 −66°	64.4 29.2 15.2	46.1 31.4 14.4	45.1 29.4 13.2	43.7 26.0 13.5	41.6 25.6 13.6	40.7 24.1 13.9	39.6 21.8 12.6	30.3 21.2 11.6	30.6 18.2 10.8	31.9 17.6
3 −61.6°	64.2 32.8 14.8	43.8 32.1 14.0	42.7 27.7 12.9	41.0 25.8 11.5	38.4 25.4 12.4	37.0 24.2 12.5	35.0 22.6 11.0	33.6 21.0 10.6	33.7 18.8 9.1	30.8 18.3
4 −57.8°	63.8 32.0 15.6	41.5 28.8 12.9	40.0 25.2 9.4	37.6 22.7 9.4	32.0 22.2 11.0	34.8 23.4 9.0	36.4 20.6 8.8	35.4 19.5 7.4	32.3 18.2 7.8	28.8 17.3
5 −54.3°	63.5 27.7 13.9	39.4 22.1 12.2	37.9 20.7 7.3	35.6 19.4 7.3	30.8 17.4 7.2	30.5 19.3 5.4	30.3 17.8 5.8	32.8 16.1 3.7	30.3 15.3 4.2	23.1 13.6
6 −51.1°	63.3 19.9 7.9	33.5 15.8 6.7	32.2 15.4 4.2	30.3 14.5 3.3	27.0 13.5 3.1	25.4 13.1 2.1	22.9 13.2 1.3	25.4 11.1 0.2	24.5 10.2 0.7	17.5 7.8
7 −48.1°	63.3 16.4 4.0	27.8 13.9 2.0	26.3 11.3 1.7	24.0 12.4 0.8	18.8 11.5 1.6	18.6 9.6 0.4	18.4 9.7 0.0	22.4 8.1 −0.5	18.1 7.5 −0.6	15.6 4.5
8 −45.3°	63.1 14.1 1.3	21.6 9.5 0.6	20.5 8.2 1.0	19.0 8.8 −0.1	16.7 7.9 0.3	18.7 6.1 −0.2	20.1 7.2 −0.8	21.5 5.5 −1.0	13.3 5.0 −0.5	14.5 2.1
9 −42.6°	63.0 12.6 0.8	17.2 11.3 1.2	16.0 10.2 0.1	14.4 8.3 −0.7	11.7 6.5 −0.8	14.8 6.0 −0.4	16.6 7.3 −1.1	11.9 5.3 −1.0	12.9 3.8 −1.5	14.1 1.3
10 −40.0°	63.2 15.7 3.3	28.4 19.3 2.2	28.6 14.4 2.2	28.8 10.4 1.8	29.0 11.0 2.9	27.8 8.9 1.8	26.0 9.8 1.2	24.8 8.5 0.7	16.6 5.5 0.3	20.4 3.8
11 −37.5°	63.3 21.5 5.6	34.9 17.5 5.2	33.5 15.9 4.1	31.3 12.9 4.6	27.1 12.2 5.6	29.8 11.1 4.6	31.5 11.2 3.4	30.9 9.4 2.6	20.9 8.0 2.1	19.7 6.5
12 −35.1°	63.2 14.9 2.8	29.0 13.3 2.7	27.9 13.1 2.1	26.4 11.3 1.9	24.1 10.1 1.8	25.0 9.4 1.7	25.7 8.3 0.7	24.3 7.5 0.2	21.4 6.1 0.1	13.4 3.9
13 −32.8°	63.2 11.9 2.9	21.4 14.3 1.3	20.2 12.6 1.4	18.7 11.3 1.0	16.2 10.9 0.8	16.6 9.6 0.3	16.9 8.1 0.1	17.2 7.1 0.2	14.4 6.3 1.4	13.2 5.1
14 −30.5°	63.2 17.5 6.2	24.3 19.9 5.2	24.6 17.6 3.7	24.9 17.2 3.3	25.2 13.8 3.0	23.6 11.8 3.6	20.9 11.6 3.4	20.7 11.0 4.1	17.2 9.7 4.8	18.8 8.4
15 −28.3°	63.1 16.3 5.5	26.3 17.3 4.1	25.3 15.8 2.9	24.1 15.1 2.6	22.3 11.9 2.1	22.2 11.6 1.7	22.1 9.4 2.0	20.8 8.6 3.0	18.6 7.4 3.5	16.2 6.3

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 16 ANGLE −26.1°	63.0 10.8 2.2	19.4 8.2 1.1	18.6 7.8 −0.2	17.5 6.2 −0.5	16.0 6.5 −0.4	16.1 7.1 −0.8	16.1 5.1 −0.9	16.7 3.9 −1.0	12.5 2.8 −0.7	11.1 1.0
17 −24.0°	62.9 7.9 3.1	15.7 8.0 3.2	15.0 7.2 2.9	14.2 5.6 2.5	13.3 6.4 2.6	13.9 5.1 2.4	14.5 5.0 2.3	10.2 4.2 2.3	7.1 3.6 2.2	8.9 3.8
18 −21.8°	62.9 9.2 0.9	17.8 7.7 0.4	17.0 7.3 0.9	16.1 5.4 0.1	15.0 5.0 −0.1	14.2 3.8 0.2	13.2 4.8 −0.6	9.5 3.7 −0.5	6.1 2.4 −0.4	6.0 1.9
19 −19.8°	62.9 8.3 0.4	18.9 10.4 −0.3	17.9 7.3 −0.3	16.5 5.2 −1.0	14.5 6.0 −1.1	13.5 4.3 −1.2	12.1 4.2 −1.8	11.4 4.0 −2.0	10.7 1.6 −1.6	9.5 1.0
20 −17.7°	63.0 11.8 1.1	19.9 9.7 −0.1	19.0 8.2 0.2	17.8 5.8 0.1	16.2 6.2 −0.4	15.0 5.1 −0.4	13.2 4.8 −1.1	14.7 4.5 −1.3	12.6 2.5 −0.8	11.9 1.2
21 −15.7°	63.0 15.4 1.8	25.4 12.8 1.1	24.4 14.5 1.2	23.2 10.0 1.0	21.4 10.1 0.0	21.7 8.1 0.7	22.0 6.6 0.5	20.0 5.7 −0.2	18.8 4.6 0.1	19.8 3.3
22 −13.7°	63.2 23.0 2.7	27.4 15.6 1.8	26.3 14.9 2.0	24.9 12.5 1.3	22.8 10.5 1.8	25.9 10.0 2.4	27.6 9.2 0.7	29.8 8.2 0.2	22.4 6.5 0.7	22.4 4.9
23 −11.7°	63.4 24.0 4.6	29.4 21.3 3.9	28.5 18.2 3.7	27.4 17.3 2.5	25.8 15.2 3.4	27.2 14.5 2.9	28.2 13.9 1.5	30.4 12.5 1.1	26.2 10.6 1.5	24.6 7.6
24 −9.7°	63.5 26.3 5.7	31.9 24.1 5.5	30.3 21.4 6.0	28.0 20.8 3.9	22.3 19.1 4.5	26.0 17.9 2.9	27.9 17.1 2.2	31.6 15.7 1.6	26.7 14.1 1.9	27.2 10.5
25 −7.8°	63.7 29.7 6.4	33.4 25.3 6.7	32.1 23.7 7.0	30.4 20.7 4.6	27.4 20.3 5.3	28.0 18.3 4.4	28.6 17.2 3.9	30.3 15.9 3.4	29.5 14.3 3.1	30.3 10.7
26 −5.8°	63.9 29.8 7.4	34.7 25.3 7.1	33.5 26.3 6.3	31.9 22.2 4.8	29.3 19.2 5.5	28.5 17.8 4.2	27.4 15.5 3.2	32.4 14.6 3.0	33.1 13.1 2.2	31.9 10.8
27 −3.9°	64.0 23.7 9.2	30.0 23.2 7.5	29.4 19.8 7.6	28.5 23.2 5.9	27.5 25.0 7.1	29.7 23.4 5.5	31.2 17.1 4.1	32.2 16.7 3.7	31.6 16.3 2.8	27.5 11.0
28 −1.9°	64.0 24.1 6.6	31.4 21.3 8.6	32.0 22.3 9.1	32.4 24.9 6.0	32.8 25.3 6.6	31.4 20.9 5.5	29.4 19.1 3.9	30.1 19.8 3.5	29.9 15.3 3.3	26.4 12.4
29 0°	64.0 23.1 9.1	35.1 21.6 7.6	34.3 23.0 7.4	33.3 24.1 6.1	32.0 20.5 6.0	30.8 19.5 4.0	29.2 20.7 3.7	28.7 17.0 3.1	26.5 16.4 2.6	25.0 13.4
30 +1.9°	64.0 20.1 9.5	36.8 23.9 8.8	35.7 26.0 8.5	34.1 24.2 6.3	31.7 19.8 5.9	31.0 21.4 4.5	30.1 20.1 3.9	30.7 17.7 3.8	25.8 15.5 3.4	25.9 12.7

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 7B

GROUP 7B

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	64.2	45.2	34.3	33.2	31.5	32.8	33.8	30.9	27.6	25.1
ANGLE +3.9°	22.6	26.4	26.8	23.4	21.8	22.3	17.1	18.5	15.2	12.7
	11.6	11.6	10.3	8.9	8.4	7.9	7.2	7.3	7.0	
32	65.0	41.1	40.0	38.4	36.0	36.3	36.5	30.8	29.1	29.3
+5.8°	26.7	28.1	27.3	23.3	25.1	23.2	21.9	19.8	19.1	17.5
	15.1	14.4	14.6	13.3	13.0	13.1	12.8	12.8	12.6	
33	65.7	44.0	42.8	41.2	38.7	38.5	38.4	33.5	30.4	30.4
+7.8°	28.7	27.8	26.4	25.3	25.7	23.5	23.5	20.5	20.3	18.0
	15.5	15.1	15.2	13.6	13.6	14.1	13.3	13.3	13.1	
34	66.7	43.3	42.1	40.4	37.7	37.7	37.7	33.4	32.8	29.1
+9.7°	32.9	28.7	25.4	27.9	27.3	24.3	23.3	21.8	19.6	18.4
	15.1	13.8	13.9	12.4	12.1	11.5	10.8	10.4	10.4	
35	67.5	45.0	44.0	42.8	41.0	39.5	37.3	35.1	30.7	29.0
+11.7°	28.4	32.0	29.1	30.7	28.5	25.8	24.4	23.6	20.2	18.9
	16.3	15.4	15.1	12.6	12.1	11.1	10.2	10.0	10.2	
36	68.1	48.0	47.2	46.2	45.0	44.7	44.3	39.1	34.4	33.0
+13.7°	33.9	33.2	32.0	31.4	28.1	27.3	26.8	24.7	22.5	19.7
	18.8	17.5	16.6	15.0	14.2	12.8	12.2	12.0	11.7	
37	69.2	49.0	48.1	47.0	45.5	44.5	43.1	42.1	39.3	34.2
+15.7°	31.3	35.1	33.7	31.4	27.5	29.7	27.6	26.7	23.9	22.3
	21.1	19.4	18.8	17.2	16.6	15.1	14.9	14.2	14.1	
38	69.8	49.3	48.6	47.8	46.8	45.0	41.6	38.7	37.3	35.1
+17.7°	30.0	34.6	33.5	32.0	29.5	28.6	27.8	26.5	24.6	23.5
	21.2	20.1	19.3	17.9	17.1	16.1	15.5	15.2	15.3	
39	69.1	51.3	50.5	49.4	48.1	46.4	43.5	39.0	35.8	35.1
+19.8°	33.4	33.6	33.9	30.5	27.8	28.0	26.6	25.7	24.2	23.2
	20.7	19.5	18.8	16.9	16.0	15.1	14.2	13.9	14.4	
40	67.7	51.2	50.0	48.4	45.8	44.2	41.6	38.9	34.7	34.7
+21.8°	32.7	33.7	32.5	28.3	27.6	27.3	25.1	23.8	23.4	21.1
	19.7	17.9	16.8	15.2	14.5	13.6	12.9	12.4	11.4	
41	66.3	48.6	47.4	45.7	42.7	42.2	41.4	38.0	36.7	34.0
+24.0°	34.6	31.8	28.2	29.5	25.8	24.8	24.5	23.7	22.7	22.0
	19.1	16.7	16.6	14.2	14.1	12.9	11.9	12.0	10.9	
42	65.5	49.2	48.0	46.2	43.2	42.0	40.3	37.5	35.4	33.7
+26.1°	30.6	30.9	28.5	29.4	25.3	24.2	24.0	23.0	22.7	21.9
	20.2	18.3	16.9	15.5	15.0	13.9	11.9	13.1	12.7	
43	64.7	47.5	46.1	44.0	40.0	39.6	39.2	36.2	32.5	29.1
+28.3°	28.7	29.7	26.7	26.1	23.0	23.1	22.7	19.8	20.6	20.4
	18.6	16.5	17.1	13.1	13.9	12.6	11.4	11.5	11.8	
44	64.3	40.4	39.4	38.1	36.1	35.9	35.7	33.8	31.2	28.2
+30.5°	23.5	25.5	23.4	22.0	19.0	17.8	17.1	14.6	15.9	13.2
	13.0	11.8	11.9	7.6	8.6	7.4	6.4	5.7	5.6	
45	64.1	36.6	36.1	35.6	35.0	34.0	32.7	27.5	24.2	25.0
+32.8°	20.7	25.6	20.0	16.7	16.5	13.4	12.5	12.0	11.5	9.8
	8.4	6.6	5.5	4.2	4.3	3.3	2.9	2.5	1.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

LTA TAPE 7B

GROUP 7B

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FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	64.2	39.5	38.3	36.6	33.9	34.2	34.4	30.3	27.4	27.0
ANGLE +35.1°	26.3	27.1	24.0	21.0	19.9	17.0	16.4	14.8	13.1	12.6
	10.1	8.5	8.1	7.0	6.8	5.4	4.9	4.0	3.3	
47	64.0	38.0	36.4	34.0	28.0	29.5	30.7	28.7	24.7	25.4
+37.5°	25.2	24.5	22.5	23.2	22.3	16.1	14.5	11.8	12.3	10.1
	8.6	6.2	6.4	5.1	5.3	4.0	3.4	2.7	1.9	
48	63.9	35.8	34.8	33.5	31.5	30.1	28.2	25.8	23.8	23.8
+40.0°	25.5	22.7	18.5	20.8	20.9	19.5	15.6	15.7	16.0	12.5
	11.8	8.8	6.8	3.9	4.3	3.3	2.2	1.7	1.2	
49	64.3	39.5	38.5	37.3	35.6	33.9	31.3	31.9	27.7	29.2
+42.6°	30.4	26.5	22.2	21.6	23.6	20.0	17.8	18.1	17.8	14.9
	12.9	9.7	7.4	5.3	6.1	4.7	4.0	3.2	2.5	
50	64.5	38.4	37.5	36.2	34.5	33.3	31.8	33.5	25.6	24.4
+45.3°	27.2	24.4	22.8	20.0	20.0	17.8	16.5	14.7	13.9	11.2
	8.4	7.1	6.9	5.8	6.5	5.9	4.7	3.8	3.1	
51	64.8	40.5	39.3	37.6	34.8	34.8	34.9	28.6	26.8	25.9
+48.1°	27.2	24.6	21.1	19.1	20.1	18.0	16.8	14.6	13.0	10.3
	7.5	6.3	6.9	6.6	6.2	5.3	4.0	3.5	3.5	
52	64.5	40.1	38.7	36.4	31.4	32.3	33.0	31.3	28.5	27.4
+51.1°	28.5	27.6	24.5	24.5	24.2	21.5	19.3	16.3	13.1	9.8
	8.3	6.5	7.7	6.4	6.6	5.4	4.0	3.5	3.9	
53	63.7	37.5	36.8	35.8	34.6	33.6	32.2	30.3	30.6	29.8
+54.3°	28.3	29.7	28.5	28.4	27.0	24.1	20.9	16.3	14.2	13.9
	9.4	8.9	8.5	7.1	7.3	5.7	5.3	5.0	4.8	
54	63.8	42.4	41.3	39.8	37.5	36.0	33.5	31.3	31.8	30.4
+57.8°	29.8	30.6	29.7	30.8	29.1	26.0	22.8	17.1	17.7	19.8
	16.5	14.5	15.8	13.4	12.8	11.4	9.8	10.2	10.7	
55	64.1	40.5	39.7	38.6	37.1	37.3	37.4	33.2	31.2	31.4
+61.6°	29.5	29.2	29.3	28.6	29.0	27.4	25.5	20.2	17.9	18.7
	19.9	18.1	17.2	15.9	15.4	14.0	13.0	12.4	11.6	
56	63.8	31.4	31.7	32.0	32.3	34.2	35.5	29.8	31.7	26.9
+66.0°	25.9	27.4	26.6	25.4	26.7	25.8	23.9	23.3	21.0	17.5
	15.3	14.4	14.9	12.9	11.8	11.4	10.2	8.8	7.9	
57	63.9	32.4	32.4	32.4	32.4	30.4	26.6	29.5	25.4	24.0
+71.3°	26.8	25.4	24.3	21.2	22.6	21.0	19.3	19.7	16.1	15.4
	15.4	12.7	13.2	13.1	12.4	12.2	11.4	10.2	10.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 7B

STA TAPE 7G

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	52.3 8.1 2.7	12.8 7.7 2.1	12.4 7.6 1.3	12.0 8.9 0.9	11.6 8.2 0.7	10.5 6.9 0.4	8.9 5.7 0.2	9.3 4.8 0.1	8.5 4.3 0.1	8.6 3.5
2 +64°	52.6 8.4 3.2	14.4 8.4 2.8	13.9 9.1 2.1	13.2 9.4 1.7	12.4 8.8 1.6	11.2 8.1 1.2	9.6 6.2 0.9	9.6 5.8 0.8	9.9 5.2 0.8	8.8 4.3
3 +53°	52.5 8.8 3.1	14.7 8.6 2.7	14.0 9.7 1.9	13.2 10.0 1.8	12.2 9.3 1.3	11.7 7.8 0.9	11.2 6.3 0.7	9.9 6.0 0.6	10.8 5.2 0.5	9.8 4.0
4 +44°	52.5 9.3 2.8	13.2 8.3 2.6	12.8 9.4 1.9	12.3 9.2 1.5	11.8 8.4 1.2	11.6 7.4 0.7	11.4 6.6 0.5	10.0 5.3 0.3	9.4 5.0 0.4	9.2 3.8
5 +37°	52.4 6.9 2.5	12.4 7.3 1.9	12.0 7.7 1.1	11.4 7.6 0.9	10.7 7.2 0.7	9.9 5.9 0.1	8.8 5.1 -0.0	8.9 4.6 -0.3	7.5 4.0 -0.2	7.3 2.8
6 +30°	52.1 5.9 2.6	11.5 5.7 1.5	10.7 5.7 1.1	9.8 6.2 0.4	8.6 5.6 0.0	7.9 4.1 -0.5	7.1 3.8 -0.8	6.4 4.1 -0.8	5.6 3.4 -1.0	5.9 1.9
7 +23°	51.6 8.0 8.0	11.4 6.9 5.8	11.0 5.5 5.2	10.7 5.3 4.2	10.3 3.0 2.0	9.8 5.5 0.0	9.2 7.8 -1.2	9.0 8.8 -1.7	8.5 5.8 -1.7	8.6 5.4
8 +17°	51.2 12.6 12.0	14.6 12.1 11.0	14.2 11.8 10.1	13.7 11.3 8.6	13.2 11.0 6.0	13.0 11.9 2.7	12.7 12.6 -0.3	12.6 12.8 -1.6	12.8 11.6 -2.4	12.9 11.8
9 +12°	51.0 7.0 7.4	14.8 8.2 6.9	13.7 8.9 6.0	12.2 8.3 3.8	9.8 8.1 1.6	10.0 7.9 -0.0	10.2 8.1 -1.3	8.2 7.9 -1.6	8.1 7.7 -1.4	8.8 7.5
10 +6°	51.5 3.6 0.9	17.8 6.1 2.5	16.7 4.6 3.1	15.2 3.8 0.3	12.8 3.6 0.8	11.6 3.1 0.5	10.0 2.4 0.2	7.3 1.7 0.3	6.0 1.3 1.3	5.0 0.7
11 0°	54.6 16.4 10.4	29.6 18.4 10.0	28.5 16.2 9.6	26.9 15.4 8.0	24.3 14.4 7.1	22.8 14.0 5.5	20.4 12.8 4.8	17.7 12.1 6.8	16.6 11.2 9.8	16.1 10.7
12 -6°	56.0 22.2 18.0	35.6 23.5 17.4	34.2 22.6 16.6	32.3 22.2 15.2	28.8 20.4 13.0	27.5 20.4 9.5	25.7 19.3 6.8	23.0 19.0 9.1	22.3 18.5 12.5	22.3 18.3
13 -12°	53.7 19.0 15.5	31.0 19.8 14.3	29.8 19.4 13.4	28.3 18.7 11.5	26.0 16.8 8.6	24.4 16.7 4.3	21.8 16.7 3.4	18.5 16.6 5.3	17.9 15.8 7.3	18.9 15.4
14 -17°	50.6 4.7 3.7	14.9 5.5 0.6	13.9 4.0 0.8	12.4 3.0 -0.9	10.3 2.3 -2.0	9.5 2.9 -2.5	8.6 4.5 -2.9	5.3 5.1 -3.2	6.4 3.4 -3.2	5.8 1.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 7B

STA TAPE 7G

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	50.1	4.4	3.7	2.9	1.9	2.6	3.2	0.2	0.3	1.3
ANGLE −23°	-0.1	-0.1	-0.2	-0.7	-0.1	-0.4	-0.4	-1.0	-0.7	-0.8
	-1.4	-1.6	-2.1	-2.8	-3.5	-4.1	-4.5	-4.8	-5.1	
16	50.2	4.7	3.7	2.6	1.0	1.7	2.3	-1.8	-0.1	-0.6
−30°	-3.0	-2.7	-2.3	-1.8	-2.0	-2.2	-2.9	-2.6	-3.0	-3.2
	-3.4	-3.5	-3.7	-3.8	-4.1	-4.5	-4.7	-4.7	-4.8	
17	50.3	4.6	3.6	2.3	0.5	1.0	1.4	-2.5	-1.0	-0.4
−37°	-2.2	-2.4	-2.2	-1.7	-2.3	-3.0	-3.0	-3.3	-3.2	-3.6
	-3.7	-3.5	-4.0	-4.1	-4.1	-4.4	-4.5	-4.6	-4.6	
18	50.4	4.4	3.6	2.5	1.1	1.8	2.3	-1.4	0.8	0.8
−44°	-1.0	-1.1	-1.9	-1.3	-1.6	-2.1	-1.7	-2.1	-2.5	-2.5
	-2.8	-2.9	-3.2	-3.6	-3.6	-3.9	-4.3	-4.4	-4.4	
19	50.7	4.7	3.7	2.4	0.5	1.6	2.6	-1.0	-0.1	0.3
−53°	-2.6	-2.5	-1.8	-2.1	-2.1	-2.0	-2.5	-2.6	-2.4	-2.8
	-3.0	-2.7	-3.4	-3.4	-3.6	-3.9	-4.0	-4.0	-4.1	
20	50.8	6.0	5.2	4.3	3.2	3.8	4.4	2.5	3.0	1.2
−64°	-0.2	1.0	0.3	0.3	0.4	0.4	0.2	-0.6	-0.7	-1.2
	-1.4	-1.6	-1.9	-2.4	-2.5	-2.9	-3.2	-3.3	-3.3	
21	50.8	7.0	6.4	5.6	4.7	5.8	6.7	5.0	5.8	3.4
−84°	3.2	4.1	1.9	2.2	2.4	3.1	2.5	1.3	0.6	0.2
	-0.0	-0.1	-0.6	-1.3	-1.5	-2.0	-2.3	-2.5	-2.6	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7B

STA TAPE 7H

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.2 10.9 4.9	16.8 9.9 4.1	15.9 10.3 3.1	14.8 11.3 2.4	13.4 10.7 2.0	12.9 9.4 1.7	12.4 7.8 1.5	13.0 7.9 1.5	11.5 6.5 1.8	10.5 5.7
2 +64°	53.7 12.9 5.7	17.2 12.0 4.9	16.6 11.8 3.8	15.8 12.1 3.3	14.9 11.7 3.0	13.7 9.9 2.7	12.1 9.4 2.4	14.3 8.6 2.3	13.3 7.5 2.6	11.4 6.5
3 +53°	53.4 13.5 5.5	16.7 11.5 4.8	16.3 12.4 3.7	15.9 11.7 3.1	15.4 11.4 2.7	14.5 10.0 2.4	13.5 9.5 2.1	14.4 8.5 2.0	12.6 7.1 2.2	11.7 6.4
4 +44°	53.2 11.6 4.8	16.7 10.5 4.4	15.9 11.1 3.3	14.8 11.5 2.5	13.5 10.5 2.2	12.8 9.2 1.7	12.1 8.5 1.5	14.0 8.2 1.4	11.2 6.7 1.7	11.2 5.9
5 +37°	53.0 10.2 4.1	14.9 9.3 3.7	14.0 9.5 2.5	13.0 9.8 1.9	11.6 9.2 1.4	11.3 8.0 1.1	11.0 7.1 0.9	12.5 6.7 0.8	9.8 5.9 1.0	8.9 5.0
6 +30°	52.7 8.4 3.2	12.0 7.9 2.7	11.3 7.6 2.0	10.3 7.5 1.0	9.2 7.3 0.6	9.3 6.0 0.1	9.5 5.6 -0.1	9.8 4.9 -0.1	7.1 4.6 -0.1	7.3 3.3
7 +23°	52.1 6.2 4.1	10.5 6.3 2.2	10.0 5.9 2.4	9.5 5.7 1.0	8.9 5.2 -0.2	8.5 4.4 -0.8	8.0 4.3 -1.3	7.7 5.0 -1.4	6.2 4.5 -1.4	6.2 2.7
8 +17°	51.2 6.1 5.0	11.3 5.6 2.3	13.1 4.9 2.7	14.3 3.9 0.4	15.3 2.9 -1.0	13.1 4.0 -1.4	8.5 5.9 -1.3	8.5 6.2 -1.0	7.7 4.7 -1.0	7.1 2.9
9 +12°	50.8 6.6 4.9	15.9 6.0 4.9	15.1 5.9 4.4	14.1 5.7 2.4	12.8 5.7 1.5	11.5 5.6 1.4	9.8 5.6 0.7	8.3 5.7 0.5	7.7 5.3 0.5	6.9 5.0
10 +6°	51.0 5.0 4.6	16.7 4.3 5.0	15.5 4.2 4.5	13.8 4.2 2.9	11.1 3.7 3.2	10.7 3.6 2.3	10.4 3.6 1.5	8.3 3.9 1.0	7.2 3.6 1.6	5.8 3.4
11 0°	52.1 8.4 8.0	16.8 8.5 8.1	15.9 8.8 7.6	14.8 8.6 6.0	13.2 8.1 5.6	12.2 8.0 4.2	10.9 7.9 2.9	11.2 8.0 2.1	9.8 7.7 2.7	8.8 7.6
12 −6°	51.9 14.3 10.3	22.8 16.2 9.6	21.7 15.2 8.6	20.4 12.9 6.9	18.3 12.0 4.9	16.7 12.4 3.0	14.0 11.6 1.8	16.7 11.1 1.5	15.8 11.1 2.4	13.3 10.8
13 −12°	51.7 15.5 9.6	22.3 16.9 8.2	21.2 15.6 8.1	19.7 11.7 7.2	17.3 11.7 5.2	16.4 11.7 3.2	15.2 11.2 1.6	17.7 11.3 0.9	14.7 10.4 1.5	13.9 9.2
14 −17°	50.3 6.4 3.9	9.4 5.6 0.7	8.6 4.4 1.9	7.7 3.0 0.0	6.5 1.6 -1.5	6.7 2.7 -2.5	6.9 4.8 -3.0	8.1 5.7 -3.5	6.2 4.2 -3.9	6.6 1.0

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 7B

STA TAPE 7H

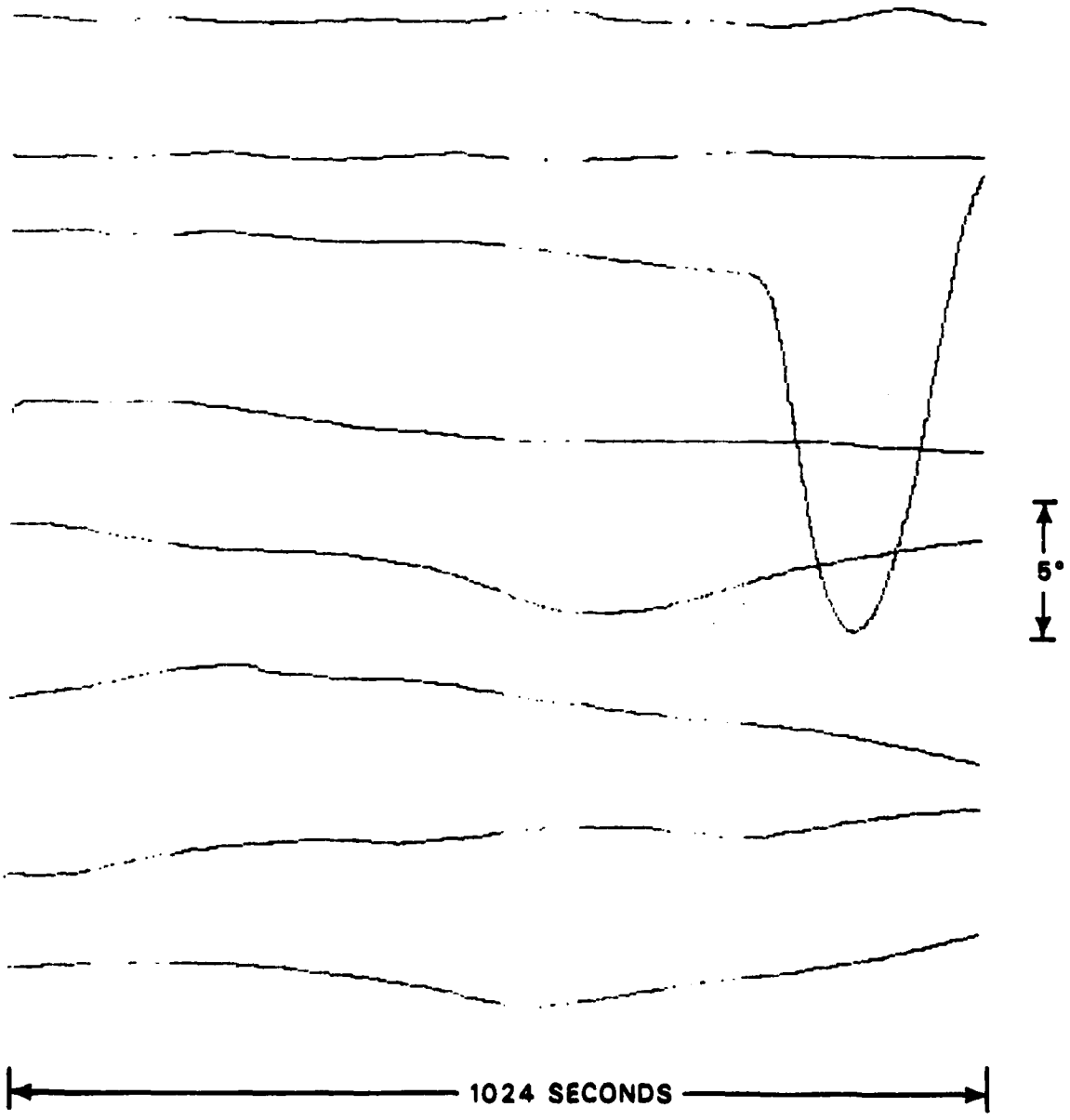
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.0 2.6 0.5	6.2 1.7 −1.6	5.6 1.1 −1.5	4.9 0.3 −2.7	4.1 0.1 −3.6	4.3 0.3 −4.1	4.5 1.5 −4.6	3.5 1.4 −4.8	2.3 0.3 −4.8	2.5 −0.8
16 −30°	50.2 2.0 −1.0	5.9 1.2 −1.8	5.2 1.5 −2.8	4.4 1.1 −3.5	3.4 0.9 −3.9	3.6 0.7 −4.2	3.8 0.5 −4.5	2.6 0.1 −4.5	1.5 −0.3 −4.5	1.5 −0.9
17 −37°	50.3 1.0 −1.9	5.2 0.7 −2.3	4.4 0.6 −2.9	3.4 0.1 −3.7	2.1 −0.1 −4.1	3.0 0.1 −4.2	3.7 −0.3 −4.3	1.5 −0.7 −4.5	1.8 −0.4 −4.4	0.5 −1.2
18 −44°	50.5 0.6 −1.9	5.2 −0.2 −2.2	4.4 0.1 −2.8	3.5 −0.8 −3.5	2.4 −0.7 −3.7	2.7 −0.8 −4.1	3.0 −0.6 −4.1	1.6 −0.9 −4.1	1.2 −1.1 −4.1	−0.0 −1.5
19 −53°	50.8 −0.2 −1.2	5.4 0.6 −1.8	4.6 0.4 −2.4	3.7 0.0 −2.8	2.5 −1.0 −3.3	2.9 −0.7 −3.6	3.2 −0.3 −3.7	1.6 −0.5 −3.7	−0.1 −1.1 −3.6	0.7 −1.1
20 −64°	51.0 −0.0 −0.9	6.1 1.2 −1.2	5.4 1.7 −2.2	4.5 0.7 −2.7	3.5 0.7 −2.9	3.7 0.6 −3.1	3.9 0.4 −3.3	2.7 0.4 −3.2	2.6 0.0 −3.2	1.5 −0.6
21 −84°	51.0 2.9 −0.4	6.3 2.0 −0.8	5.5 1.9 −1.6	4.6 1.4 −2.3	3.5 2.0 −2.5	3.9 2.0 −2.8	4.4 1.6 −3.0	3.3 1.0 −3.1	2.5 0.6 −3.0	2.7 0.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7B

BEARING VS TIME

MEAN & VAR.	318.0	0.82	318.4	0.69	307.9	425.88	326.9	9.66
315.5	23.84	319.9	23.50	315.4	10.49	312.7	10.69	

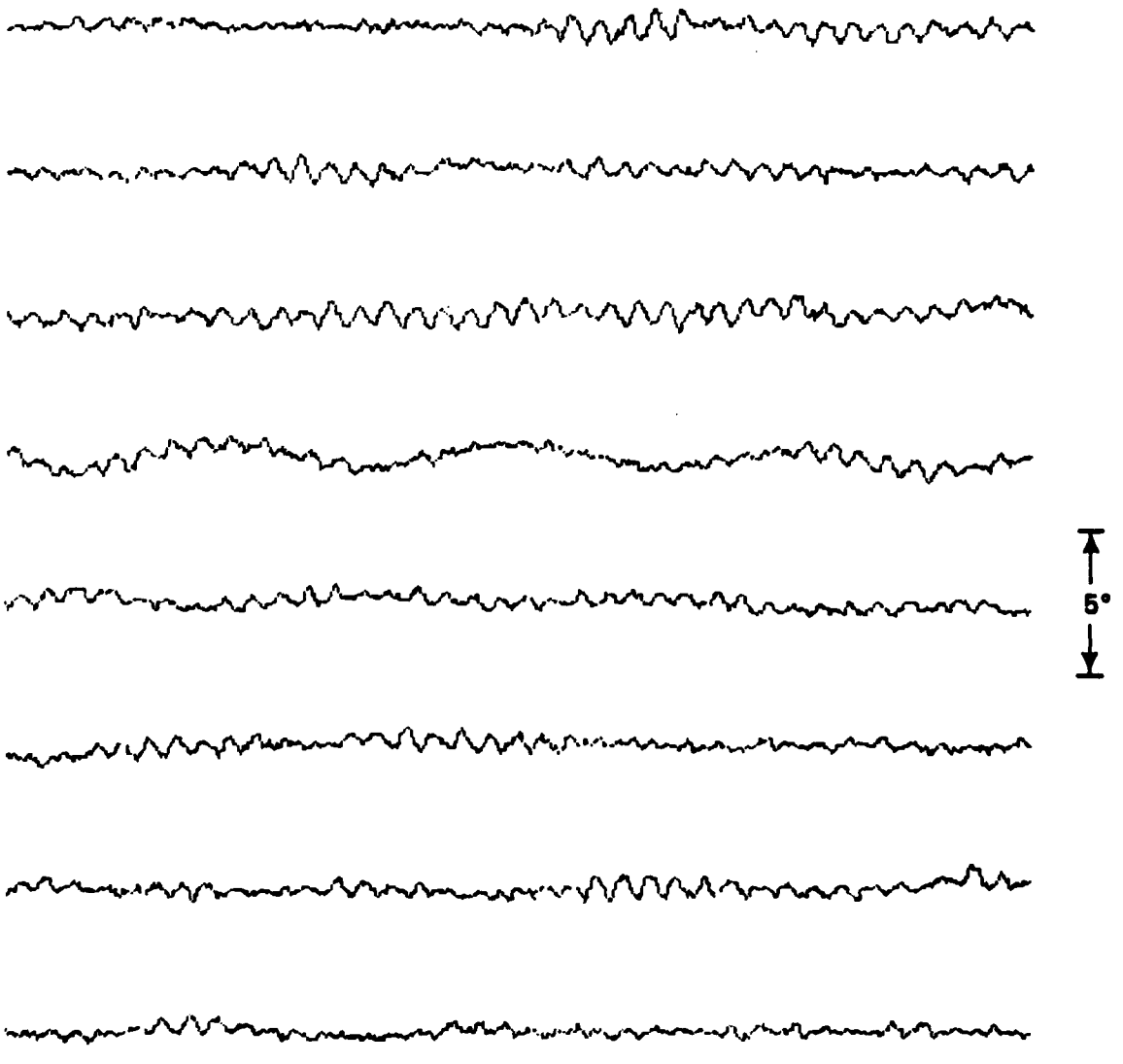


MPL-M-4650

GROUP 7B

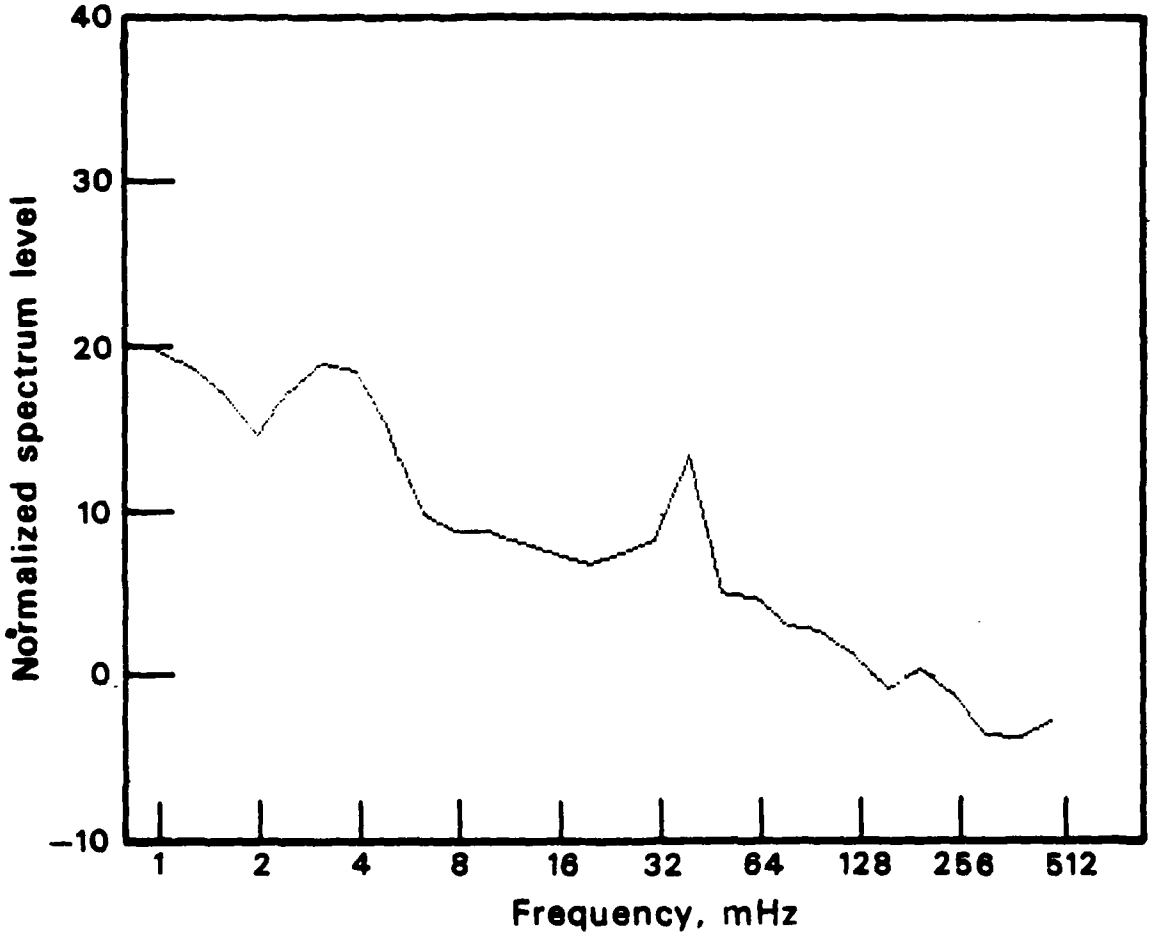
ELEVATION VS TIME

MEAN & VAR.							
92.1	-0.04	92.1	-0.06	92.2	0.00	92.0	0.05
92.1	-0.03	92.1	-0.02	92.2	-0.05	92.2	-0.07



MPL-M-4651

GROUP 7B



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 7C

Environmental Summary

7 June 1978

Tapes	Start time	Code
LTA/LOG	16:15:02	07C
STA	16:17:47	07I
STA	17:17:24	07J
High Band Filter		

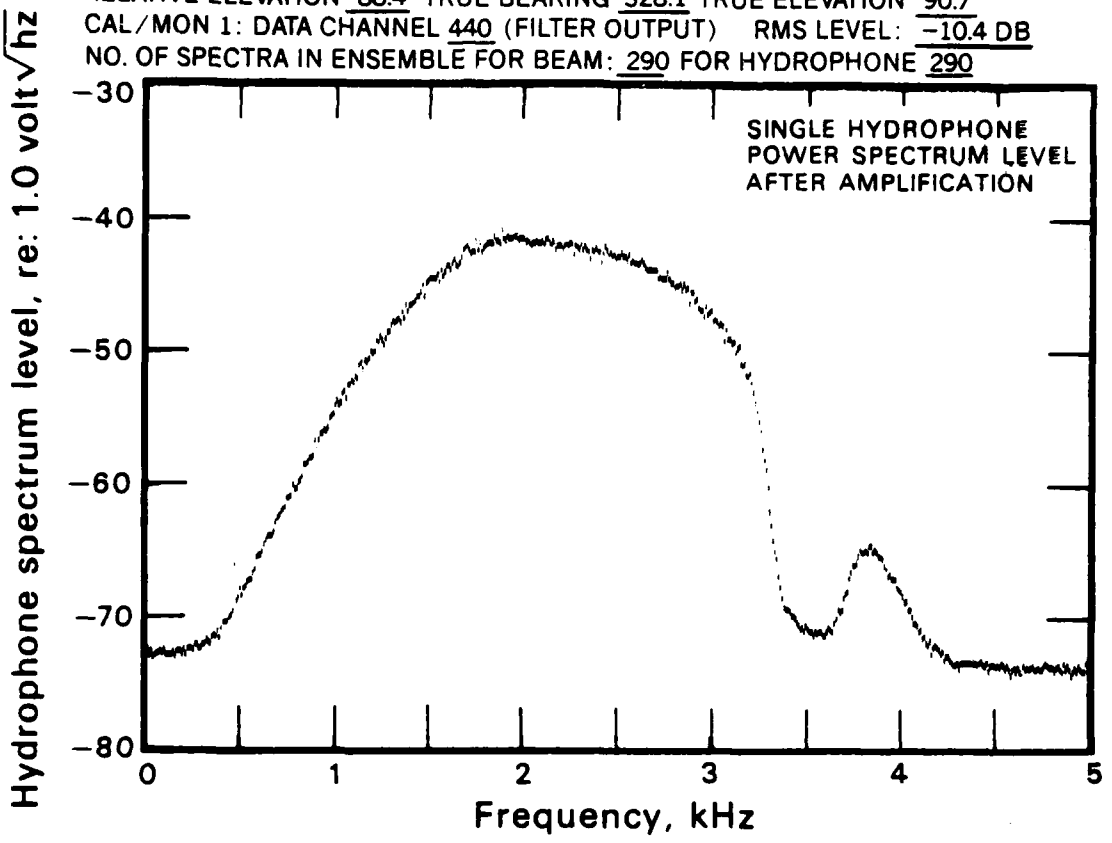
Environment

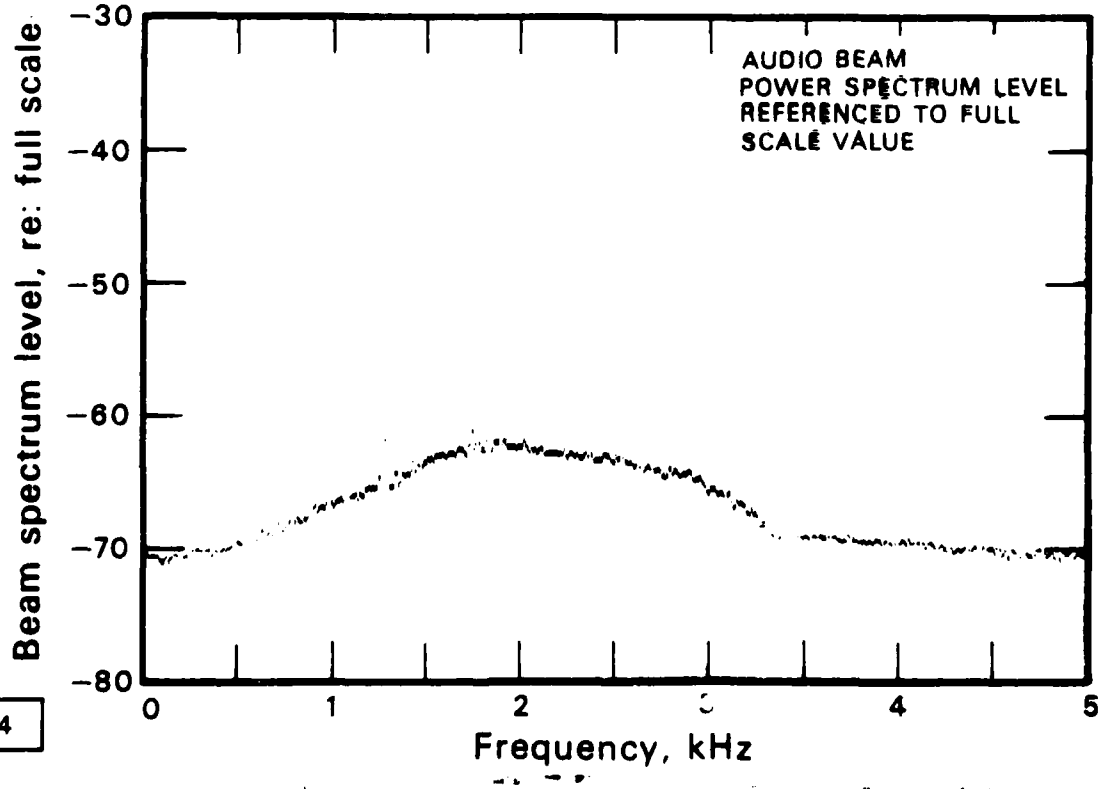
Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
16:00	2200	14	340	2-3	6-7	NW	Small chop; no targets

MPL-M-4653

07-JUN-78 16:30:18 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 78 DB RELATIVE BEARING 15.4
RELATIVE ELEVATION 88.4 TRUE BEARING 328.1 TRUE ELEVATION 90.7
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: −10.4 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 290 FOR HYDROPHONE 290

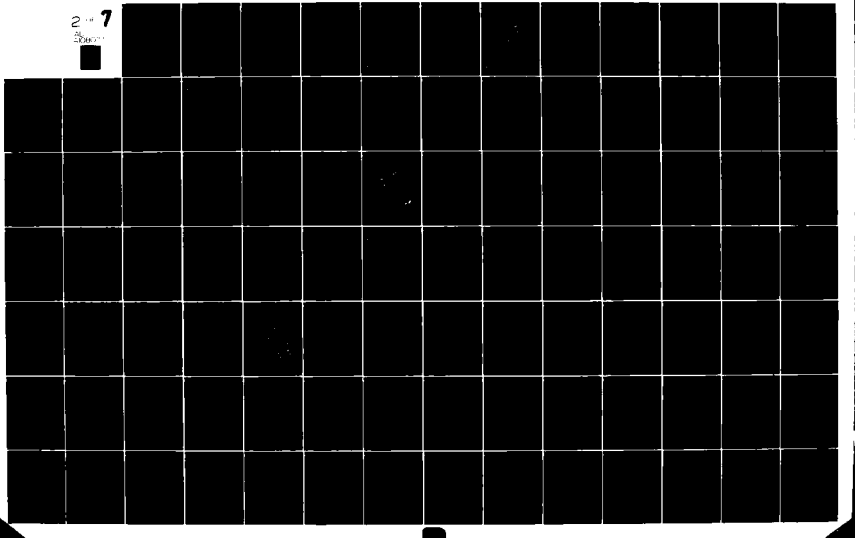
GROUP 7C

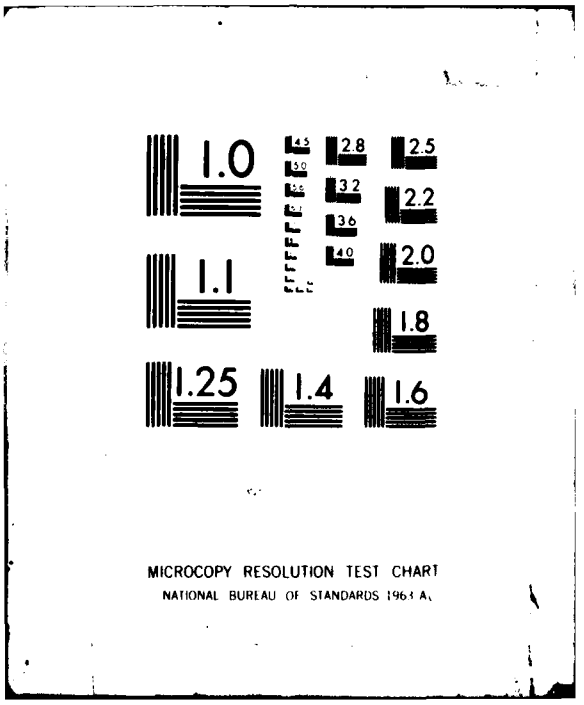




MPL-M-4654

AD-A108 077 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA MARI--ETC F/G 20/1
ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978.(U)
JUL 81 V C ANDERSON N00014-80-C-0077
UNCLASSIFIED SIO-REF-81-13 SBI-AD-E001 179 NL



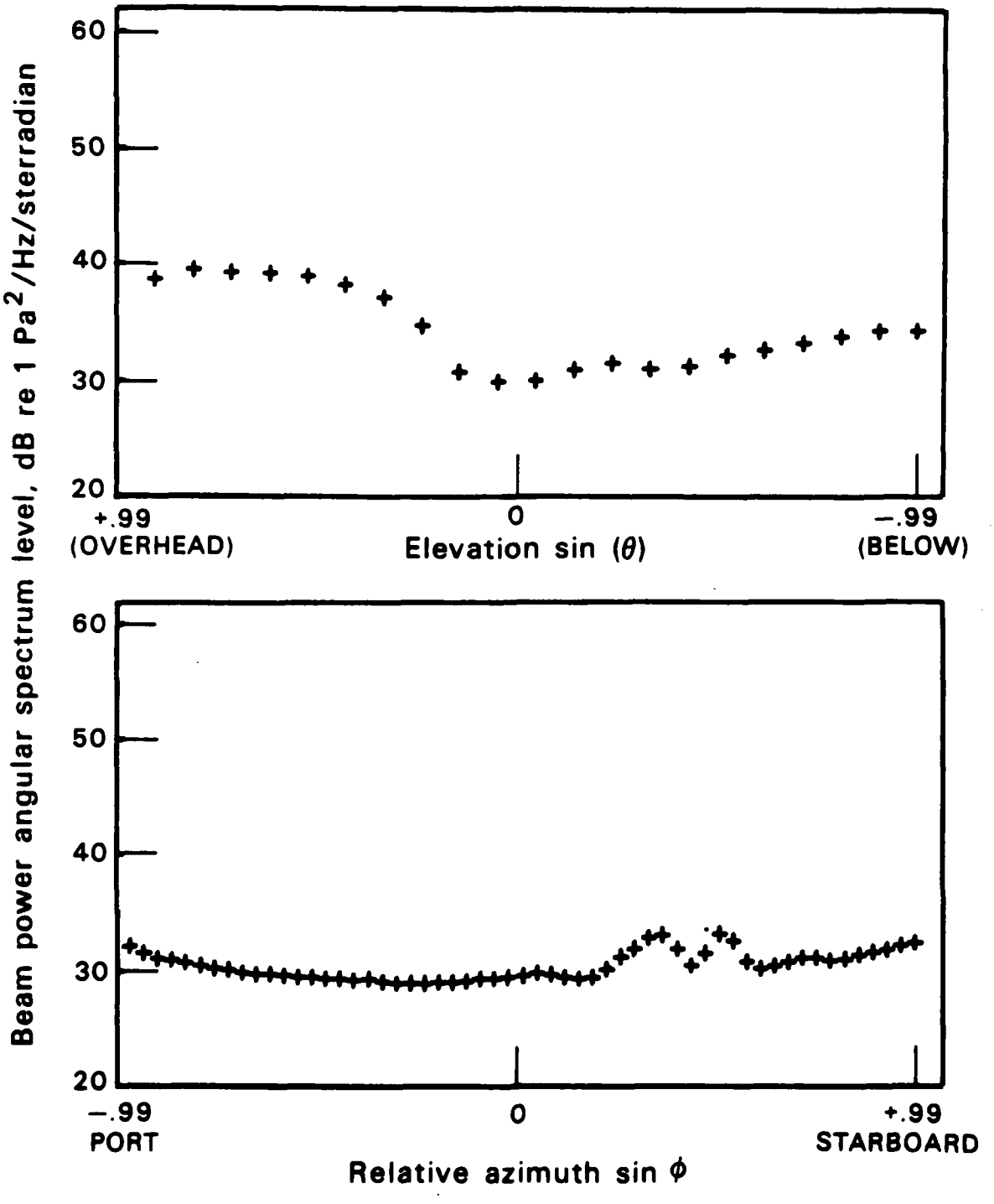

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 7C

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

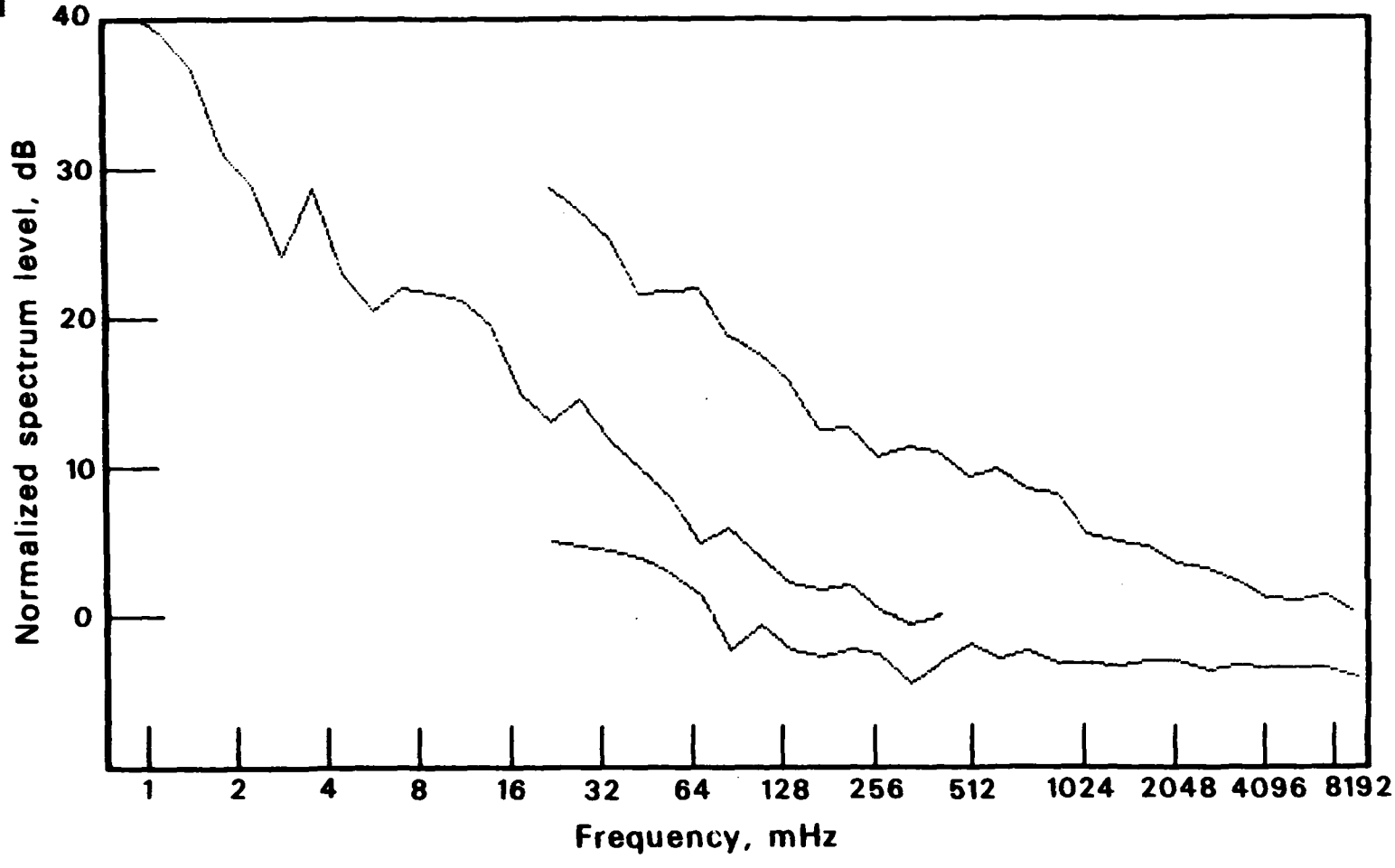
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4655

MPL-M-4656

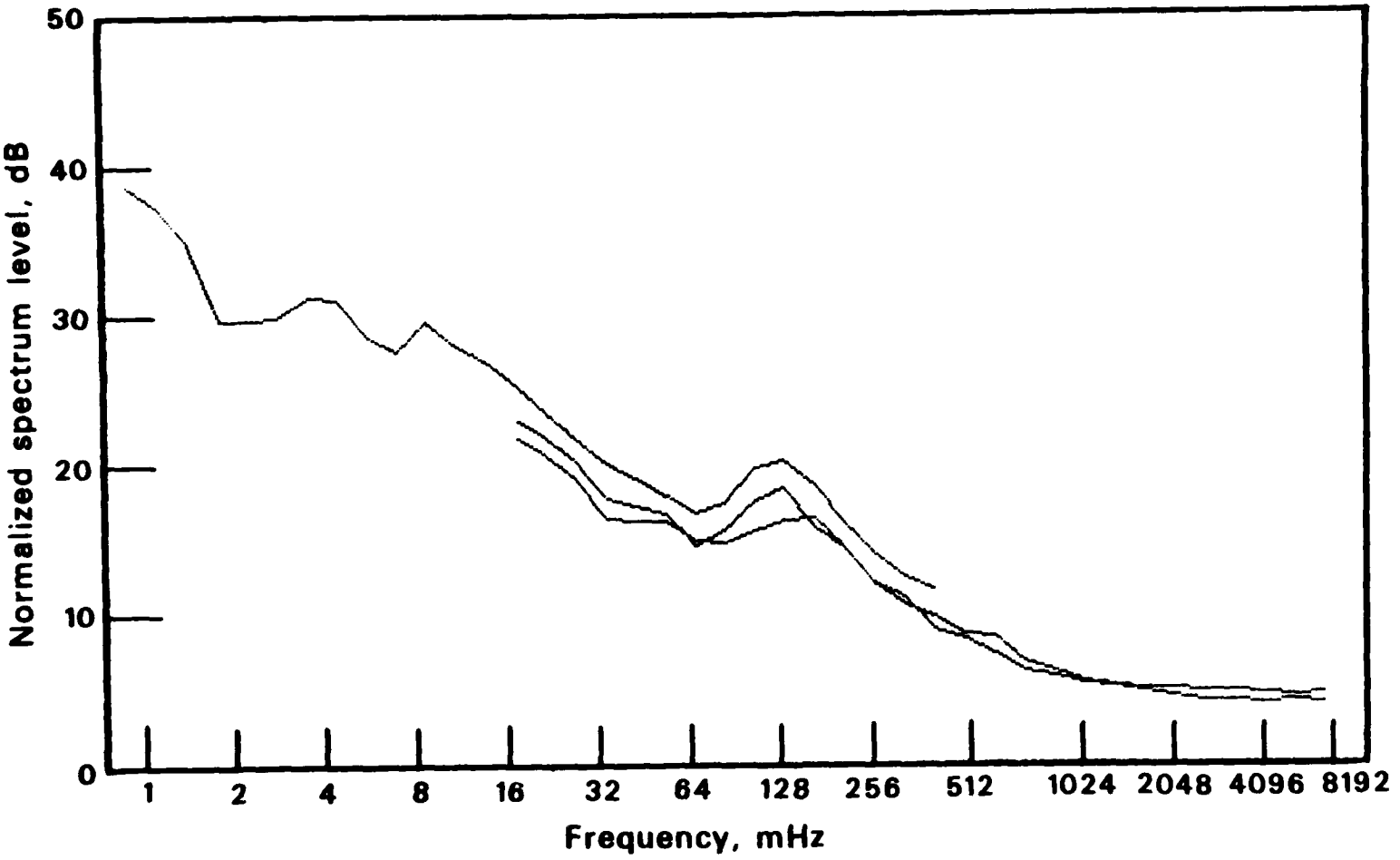
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 7C

MPL-M-4657

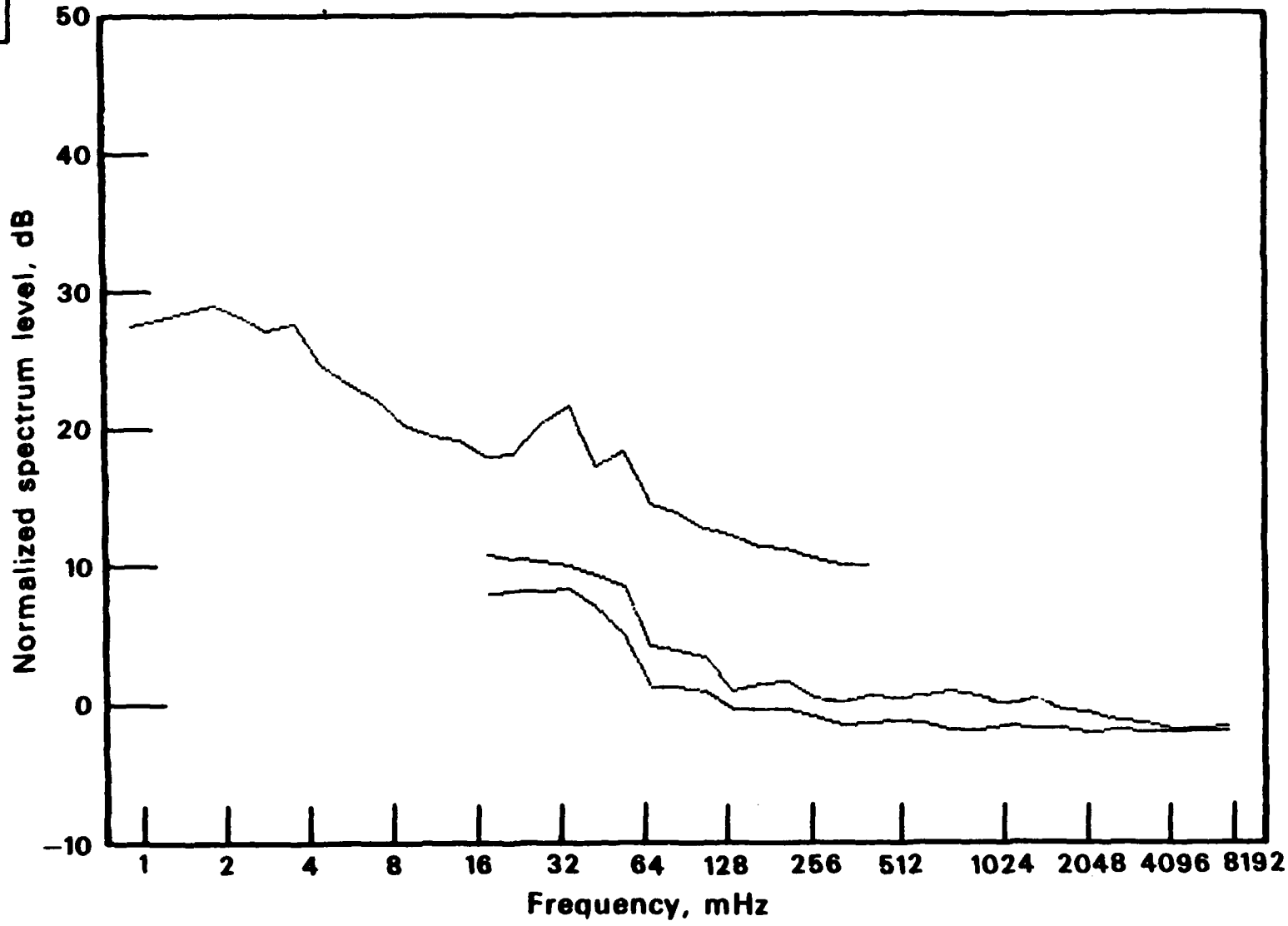
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7C

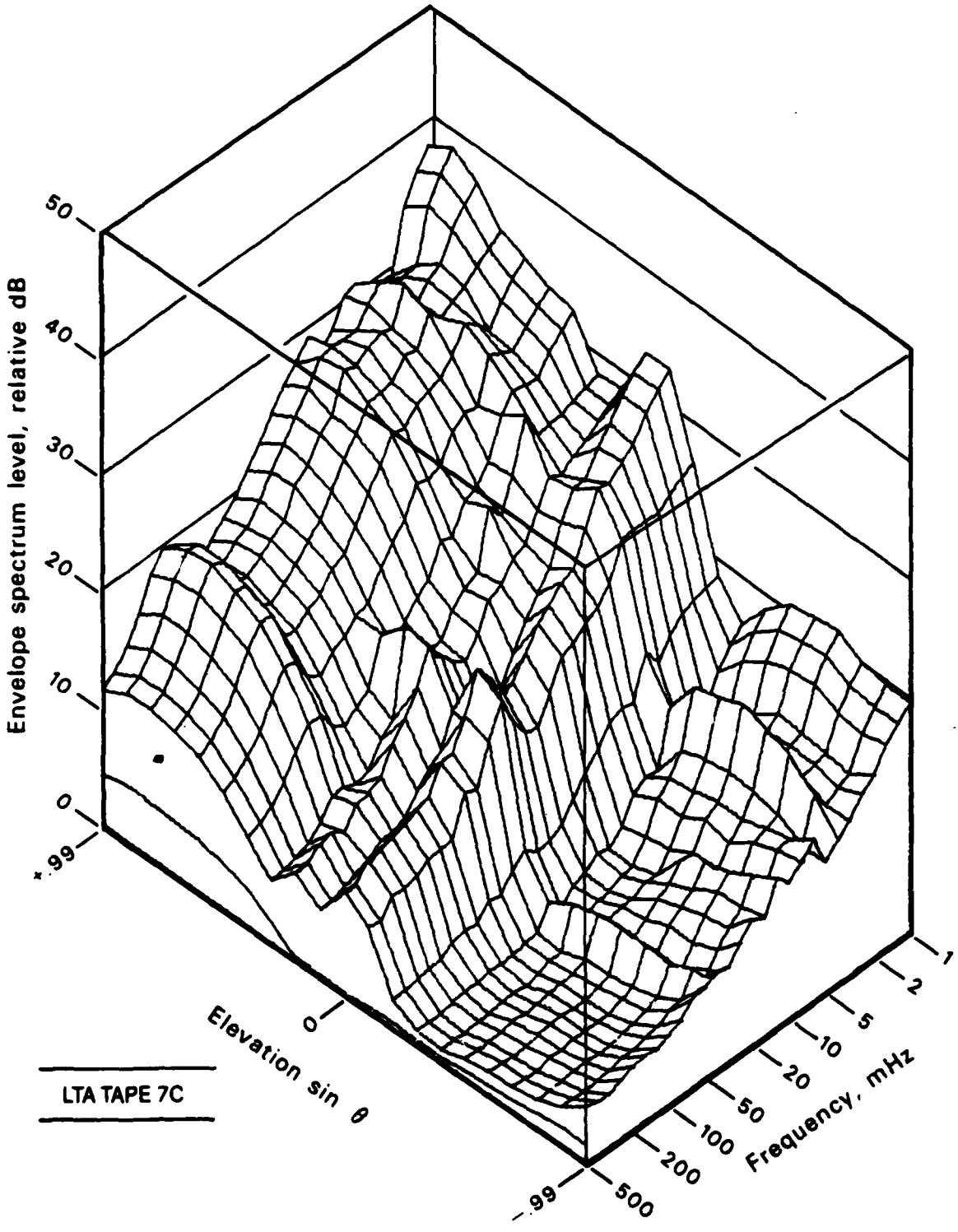
MPL-M-4658

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7C

GROUP 7C

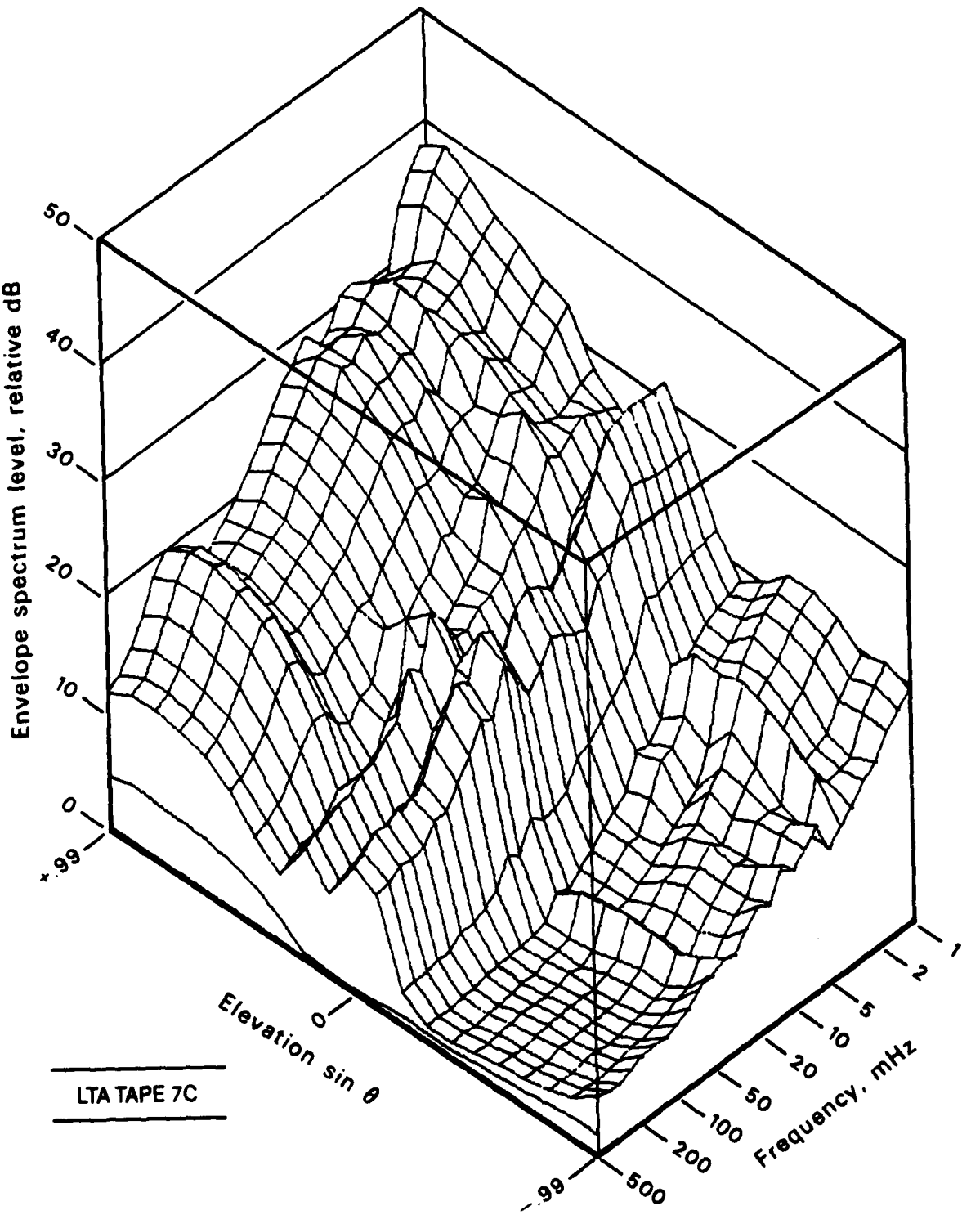


LTA TAPE 7C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4659

GROUP 7C

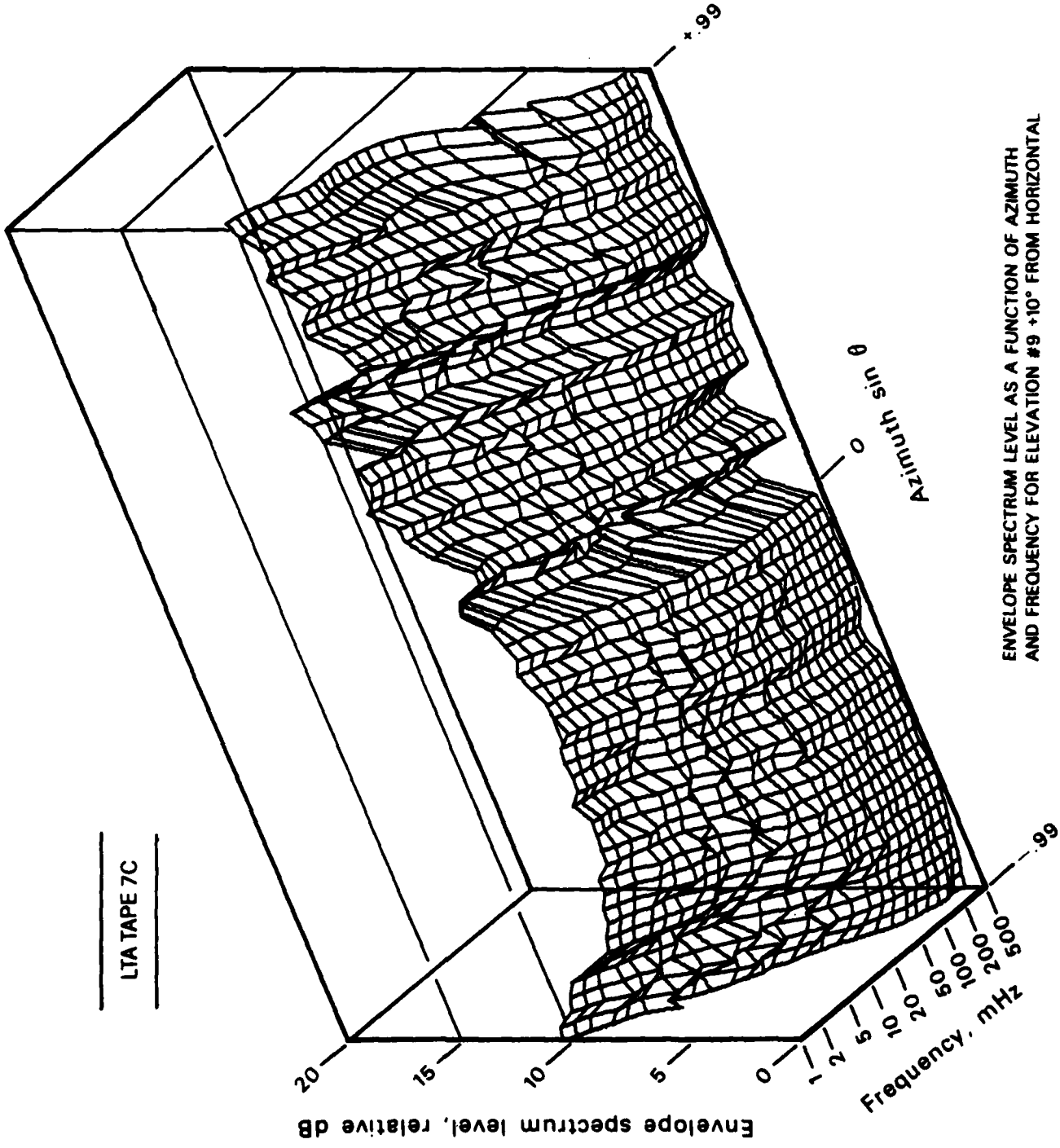


LTA TAPE 7C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY.
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-4660

GROUP 7C

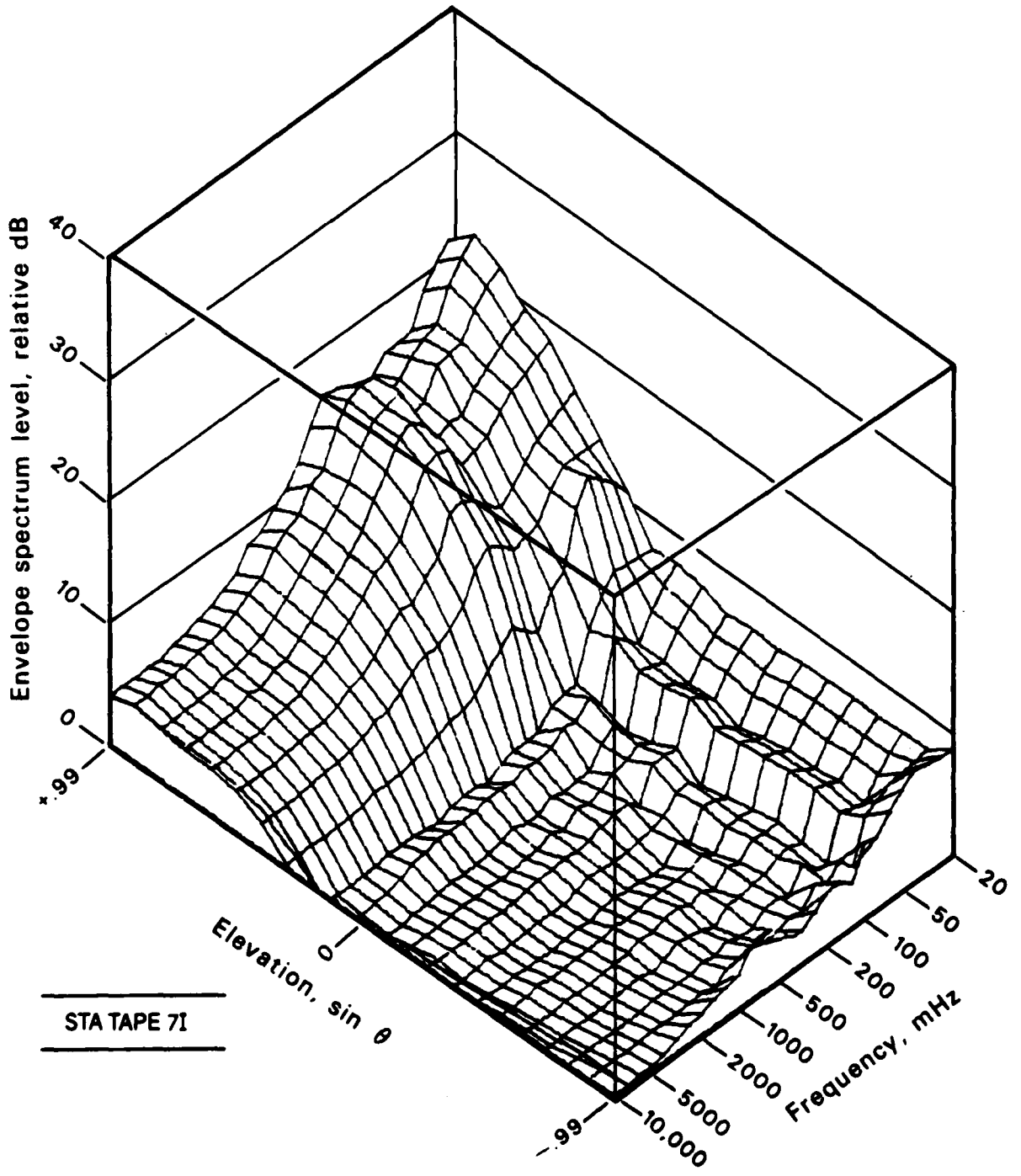


ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

LTA TAPE 7C

MPL-M-4661

GROUP 7C

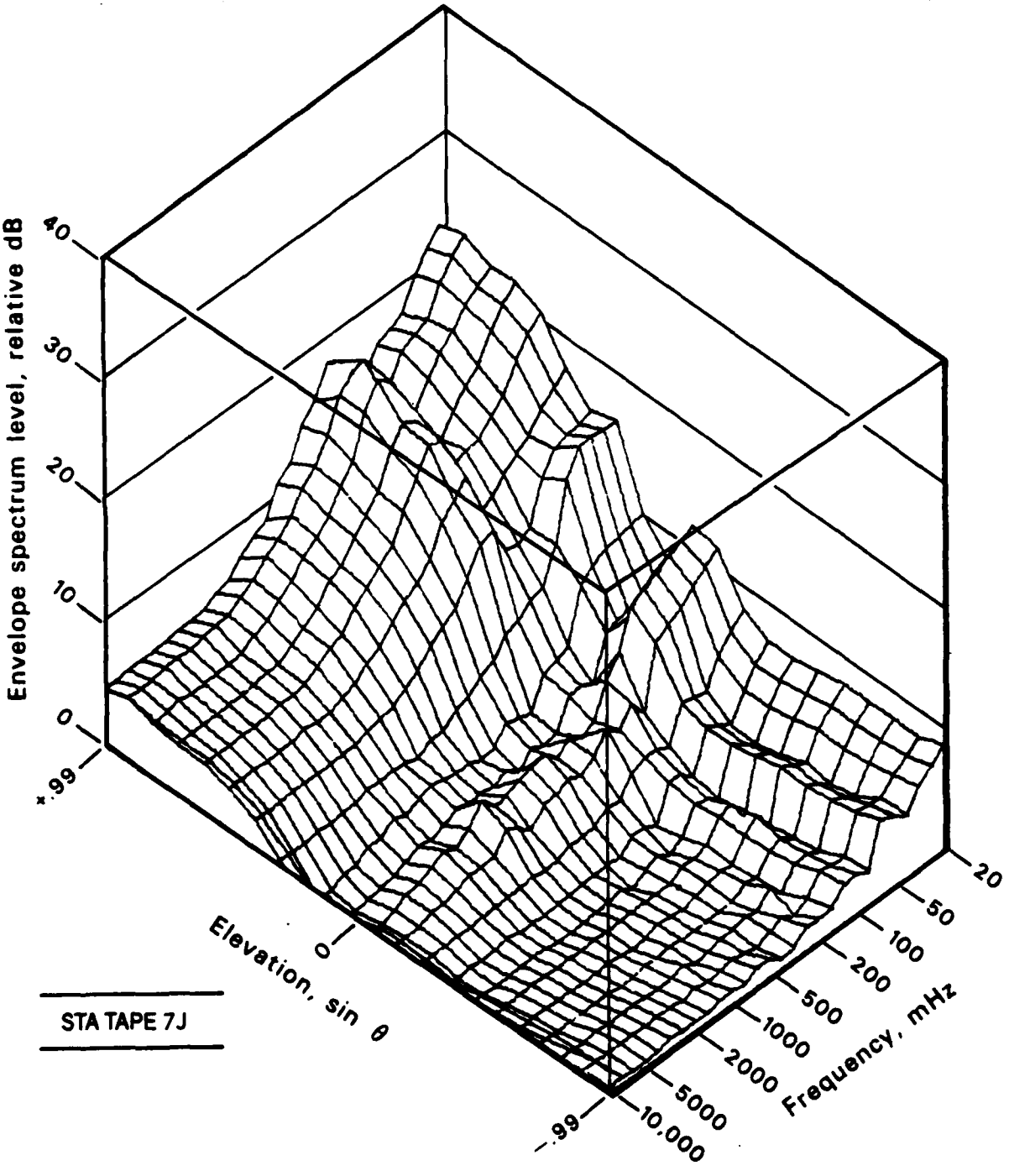


STA TAPE 7I

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4662

GROUP 7C



STA TAPE 7J

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4663

GROUP 7C

LTA TAPE 7C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.9	33.1	31.6	29.3	24.1	24.2	24.3	25.6	25.4	23.0
ANGLE +84°	21.9	23.9	22.3	21.3	17.6	17.8	16.1	14.5	13.4	12.2
	11.1	11.7	14.2	14.6	13.0	10.4	8.4	6.7	6.0	
2	67.5	34.4	33.0	30.8	26.4	26.2	25.9	27.3	26.0	24.5
+64°	24.5	24.5	24.4	22.5	20.7	19.1	17.6	15.7	14.1	13.5
	12.6	13.1	15.6	15.8	14.1	11.7	9.4	7.8	7.2	
3	67.3	32.7	31.7	30.2	28.1	27.3	26.3	28.5	25.4	25.8
+53°	25.3	24.5	24.9	21.6	20.8	18.8	17.7	15.4	14.5	13.9
	12.9	13.0	15.6	16.0	14.2	11.6	9.6	8.0	7.3	
4	67.2	30.1	29.4	28.6	27.5	27.0	26.5	27.5	25.1	25.2
+44°	23.8	23.5	23.4	21.5	20.1	17.9	16.3	15.1	13.8	12.9
	12.0	12.5	15.0	15.2	13.4	10.9	8.8	7.5	6.8	
5	67.1	29.2	28.2	27.0	25.2	26.4	27.4	25.3	24.2	23.7
+37°	23.3	22.1	22.2	20.2	18.6	16.5	14.8	14.2	12.8	12.1
	11.1	11.4	14.0	14.0	12.4	9.9	8.1	6.8	6.1	
6	66.6	28.2	27.3	26.3	25.0	25.5	26.1	22.4	22.6	21.7
+30°	19.6	19.0	19.3	17.1	15.7	14.3	12.0	11.7	10.6	10.0
	8.7	9.3	11.3	11.6	9.8	7.5	6.1	5.0	4.4	
7	65.9	27.7	26.8	25.7	24.1	24.3	24.5	23.1	19.9	18.4
+23°	17.9	15.6	16.0	13.3	12.5	11.2	9.9	11.5	7.6	6.7
	5.8	6.5	8.3	8.2	6.5	4.7	3.3	2.6	2.1	
8	64.5	23.7	23.3	22.9	22.4	22.3	22.1	24.6	20.1	17.3
+17°	18.9	13.9	13.3	12.1	10.3	10.1	10.1	13.8	6.3	5.4
	3.4	3.1	3.5	3.4	1.9	0.8	0.2	-0.0	-0.2	
9	63.0	23.9	23.3	22.5	21.7	21.0	20.1	20.7	18.6	16.4
+12°	15.9	14.3	13.8	11.6	9.9	10.7	11.9	13.5	10.7	8.7
	7.3	5.1	4.5	4.2	2.6	3.3	3.0	2.1	2.0	
10	62.7	28.5	27.5	26.3	24.5	23.2	21.3	21.1	19.0	15.7
+6°	14.2	12.6	10.5	8.3	6.5	7.1	7.8	9.4	6.7	5.7
	4.6	3.0	2.5	2.5	1.7	0.9	0.8	0.2	0.3	
11	62.7	28.5	27.5	26.2	24.3	23.5	22.5	22.7	19.9	17.2
0°	16.7	15.5	14.7	12.8	11.2	11.1	13.0	14.5	11.2	8.7
	8.6	6.4	6.0	5.5	5.2	4.7	4.6	3.2	3.5	
12	63.0	22.0	21.4	20.7	19.8	19.8	19.8	19.7	16.7	15.3
−6°	14.7	13.8	13.3	10.8	8.5	8.9	10.7	13.1	10.3	6.9
	7.4	4.1	4.1	3.8	3.1	2.8	2.9	1.4	1.7	
13	63.2	13.7	13.4	13.0	12.6	11.4	9.8	11.5	7.9	8.2
−12°	7.6	6.0	4.8	3.2	1.7	1.1	0.9	1.7	0.6	-0.6
	-0.4	-1.6	-1.6	-1.9	-2.5	-2.5	-2.8	-3.0	-3.0	
14	63.0	11.0	9.8	8.3	5.7	5.4	4.8	8.4	3.5	3.5
−17°	2.9	0.8	-0.4	-0.1	-0.9	-1.4	-2.7	-1.4	-3.2	-3.4
	-3.7	-3.7	-3.6	-3.8	-3.9	-4.1	-4.3	-4.4	-4.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE, RELATIVE BEAM SET.

GROUP 7C

LTA TAPE 7C

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15, ANGLE −23°	63.1 4.0 -3.8	13.8 1.3 -4.1	12.5 -0.4 -4.0	10.7 -0.5 -4.0	7.4 -1.0 -4.3	7.5 -1.2 -4.3	7.5 -1.6 -4.5	11.4 0.0 -4.3	6.7 -3.4 -4.4	5.0 -3.5
16 −30°	63.5 3.7 -3.2	15.5 1.7 -3.3	14.2 0.3 -3.5	12.2 0.4 -3.6	8.4 -0.2 -3.5	8.0 -0.3 -3.7	7.6 -0.6 -3.8	12.0 0.6 -3.9	7.4 -2.5 -3.8	5.3 -3.2
17 −37°	63.6 5.1 -3.1	15.9 2.9 -3.1	14.6 3.2 -3.0	12.9 1.8 -3.1	7.9 1.2 -3.2	9.0 0.1 -3.4	8.0 -0.7 -3.6	12.8 0.9 -3.5	7.7 -2.5 -3.5	5.9 -2.8
18 −44°	63.9 4.5 -2.9	16.2 3.0 -2.8	14.9 4.5 -2.9	13.0 2.7 -2.9	9.6 2.0 -3.1	9.2 1.1 -3.0	8.7 -0.5 -3.4	12.2 0.9 -3.4	7.6 -2.0 -3.3	5.7 -2.4
19 −53°	64.1 6.2 -2.2	14.9 4.0 -2.4	13.7 5.0 -2.6	12.1 4.0 -2.7	9.3 2.7 -2.5	9.1 1.0 -2.7	8.8 -0.6 -2.8	11.5 0.7 -3.0	7.0 -1.4 -2.9	6.6 -1.9
20 −64°	64.4 6.9 -1.1	14.5 4.4 -1.3	13.3 6.2 -1.7	11.7 4.1 -1.6	9.1 3.1 -2.0	8.5 1.9 -2.1	7.8 0.2 -2.2	9.5 1.7 -2.2	5.8 -0.1 -2.1	7.0 -0.4
21 −84°	64.4 7.3 1.0	14.4 6.2 0.5	13.5 7.4 0.0	12.2 4.8 0.2	10.5 5.3 -0.1	9.4 4.1 -0.5	8.0 2.6 -0.9	7.0 3.0 -0.9	5.8 2.4 -0.6	8.5 2.1

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 7C

LTA TAPE 7C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.9	33.1	31.6	29.3	24.1	24.2	24.3	25.6	25.4	23.0
ANGLE +84°	21.9	23.9	22.3	21.3	17.6	17.8	16.1	14.5	13.4	12.2
	11.1	11.7	14.2	14.6	13.0	10.4	8.4	6.7	6.0	
2	67.5	34.4	33.0	30.9	26.5	26.1	25.6	27.3	26.4	24.7
+64°	24.6	24.5	24.5	22.3	20.7	19.2	17.5	15.7	14.2	13.5
	12.7	13.1	15.6	15.8	14.1	11.7	9.5	7.8	7.2	
3	67.3	33.1	32.0	30.5	26.2	27.3	26.2	28.2	25.8	25.6
+53°	26.3	24.6	25.0	21.7	20.5	18.8	17.5	15.4	14.7	13.9
	12.9	13.1	15.7	16.0	14.2	11.7	9.5	8.0	7.3	
4	67.2	31.2	30.3	29.2	27.8	27.2	26.6	27.8	24.7	25.2
+44°	24.1	24.0	23.1	20.9	17.6	17.9	16.3	14.9	14.0	13.0
	11.9	12.6	15.0	15.2	13.5	10.9	8.8	7.5	6.9	
5	67.1	30.2	29.0	27.5	25.0	25.7	26.3	25.8	22.4	23.7
+37°	21.9	22.2	21.5	20.0	18.1	16.7	14.8	13.9	12.8	12.0
	11.1	11.5	13.9	14.1	12.3	9.9	8.1	6.8	6.2	
6	66.6	28.6	27.5	26.0	23.7	24.8	25.6	22.2	21.9	21.3
+30°	19.1	18.4	18.6	17.0	15.4	14.0	12.1	12.0	10.6	10.0
	8.7	9.3	11.3	11.6	9.7	7.5	6.0	4.9	4.5	
7	65.9	27.8	26.8	25.4	23.2	23.6	23.9	22.6	20.2	18.5
+23°	18.1	15.7	16.0	13.6	12.8	11.0	9.9	11.7	7.9	7.2
	5.8	6.5	8.4	8.2	6.5	4.7	3.2	2.6	2.1	
8	64.5	23.8	23.2	22.6	21.8	22.2	22.6	24.5	20.6	17.7
+17°	19.2	14.7	13.3	12.3	11.0	10.4	10.8	14.1	6.5	6.5
	3.9	3.6	3.5	3.7	2.3	1.3	0.6	0.5	0.1	
9	63.0	21.8	22.4	22.9	23.3	22.5	21.5	22.0	18.9	17.5
+12°	16.5	14.6	13.9	13.4	12.3	12.5	14.7	16.0	11.7	12.6
	8.8	8.1	6.9	6.5	5.6	5.4	4.8	4.4	4.3	
10	62.6	20.1	20.2	20.2	20.2	19.5	18.6	18.1	14.0	13.4
+6°	11.6	10.8	11.3	10.7	8.9	9.1	11.1	12.6	8.5	8.6
	6.0	4.2	3.1	3.0	2.5	2.4	2.0	1.5	1.3	
11	62.6	26.8	26.9	26.9	27.0	26.6	26.3	23.7	20.9	19.5
0°	17.6	16.4	17.4	17.9	16.6	13.9	16.6	17.2	13.7	14.3
	12.4	10.4	8.0	7.3	7.3	6.5	6.7	5.6	5.3	
12	63.0	22.4	22.4	22.4	22.4	22.7	23.0	21.1	17.3	17.0
−6°	13.6	13.9	14.7	15.1	13.1	11.8	13.7	15.9	11.8	12.5
	10.1	8.5	6.9	6.6	5.3	4.8	5.0	4.3	4.1	
13	63.2	16.9	16.6	16.3	16.0	15.6	15.2	15.4	11.7	10.2
−12°	9.0	7.8	6.6	6.1	3.9	3.2	3.0	4.0	1.4	2.1
	-0.1	-0.9	-1.4	-1.6	-2.3	-2.4	-2.7	-2.7	-2.9	
14	63.0	13.7	13.3	12.9	12.4	11.4	10.1	11.0	7.1	5.7
−17°	5.7	3.1	2.1	1.3	0.2	-0.7	-1.6	-1.3	-3.0	-3.5
	-3.6	-3.8	-3.7	-3.9	-4.2	-4.3	-4.4	-4.4	-4.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 7C

LTA TAPE 7C

GE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	15.2	14.4	13.4	12.2	11.3	10.3	13.5	8.8	6.8
ANGLE −23°	6.5	3.9	1.5	1.4	0.4	−0.6	-1.0	0.2	−2.9	−3.3
	−3.4	−3.9	−3.8	−4.0	-4.2	−4.2	-4.5	−4.3	−4.4	
16	63.4	17.2	16.4	15.4	14.2	12.6	10.0	13.0	7.5	4.7
−30°	3.7	2.8	2.0	1.0	0.2	−0.5	-0.7	0.7	−2.7	−3.4
	−3.0	−3.5	−3.5	−3.5	-3.5	−3.8	−3.8	−4.0	−3.9	
17	63.6	17.1	16.2	15.1	13.5	12.5	11.3	13.8	10.3	7.9
−37°	6.6	4.7	4.1	2.3	1.9	0.6	−0.4	1.1	−2.0	−2.5
	−3.0	−2.9	−3.0	−3.1	-3.2	−3.4	−3.6	−3.5	−3.5	
18	63.7	16.3	15.3	14.1	12.3	11.1	9.5	13.0	8.5	7.5
−44°	5.7	4.1	5.0	3.7	2.9	1.1	−0.1	1.1	−1.4	−2.1
	−2.8	−2.7	−2.9	−2.8	-3.0	−3.0	−3.4	−3.3	−3.3	
19	64.1	14.5	13.4	12.0	10.0	9.5	8.9	11.7	6.8	7.0
−53°	6.8	4.4	4.5	3.7	2.5	1.1	−0.6	0.8	−1.5	−1.8
	−2.2	−2.4	−2.6	−2.7	-2.5	−2.7	−2.8	−2.9	−2.9	
20	64.4	15.3	14.1	12.3	9.3	9.0	8.7	9.9	6.0	7.5
−64°	7.1	4.6	5.9	3.8	3.1	1.9	0.4	1.7	−0.1	−0.4
	−1.0	−1.3	−1.7	−1.6	-2.0	−2.1	−2.2	−2.2	−2.1	
21	64.4	14.4	13.5	12.2	10.5	9.4	8.0	7.0	5.8	8.5
−84°	7.3	6.2	7.4	4.8	5.3	4.1	2.6	3.0	2.4	2.1
	1.0	0.5	0.0	0.2	-0.1	−0.5	−0.9	−0.9	−0.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 7C

GROUP 7C

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.3	36.9	35.8	34.3	31.9	30.4	28.2	22.8	26.7	23.3
ANGLE −71.3°	21.1	19.1	17.9	15.7	15.6	13.2	12.2	10.4	8.7	6.6
	4.1	2.3	1.0	0.3	−0.2	−1.0	−1.5	−1.1	−2.1	
2	63.2	36.5	35.2	33.3	30.1	29.1	28.0	22.8	22.8	21.9
−66°	22.4	16.7	14.3	14.8	13.5	10.9	8.7	8.9	5.7	3.8
	2.2	1.2	−0.0	−0.5	−1.4	−1.9	−2.5	−2.2	−2.3	
3	63.0	33.1	31.7	29.6	25.4	25.3	25.2	24.3	19.2	19.5
−61.6°	15.2	16.1	15.6	9.8	10.8	8.2	5.5	5.0	3.7	1.7
	0.6	−0.3	−1.1	−1.7	−2.4	−2.8	−3.2	−3.2	−3.3	
4	63.0	32.5	31.2	29.5	26.6	25.0	22.2	23.4	22.7	20.2
−57.8°	18.0	14.1	11.7	12.9	11.7	6.7	8.5	5.8	3.0	1.2
	−0.3	−0.3	−0.8	−2.2	−3.0	−3.4	−3.7	−3.6	−3.5	
5	62.9	31.0	30.0	28.7	26.8	25.7	24.2	22.5	20.9	21.9
−54.3°	20.4	18.2	16.9	11.9	7.9	6.1	4.6	4.0	4.7	0.9
	−0.2	−1.0	−2.0	−2.2	−3.6	−3.5	−3.4	−4.3	−4.0	
6	62.8	26.4	25.6	24.6	23.4	22.4	21.2	21.7	20.7	18.5
−51.1°	16.4	13.3	13.5	11.2	7.8	5.6	1.1	0.8	0.0	−1.9
	−1.6	−2.5	−3.1	−3.9	−3.8	−4.3	−4.1	−4.3	−4.2	
7	62.8	22.1	21.2	20.0	18.4	17.2	15.5	14.5	13.4	13.3
−48.1°	12.1	9.8	10.6	5.2	5.0	1.3	−2.5	−2.2	−2.5	−2.9
	−4.0	−3.6	−4.1	−4.4	−4.1	−4.5	−4.4	−4.6	−4.6	
8	62.7	21.5	20.5	19.0	16.9	15.7	14.0	12.7	9.9	11.7
−45.3°	8.8	6.8	8.2	3.5	3.0	−0.2	−2.6	−2.4	−2.2	−2.5
	−4.0	−3.6	−3.9	−3.7	−4.2	−5.1	−4.7	−4.9	−4.9	
9	62.7	20.0	19.0	17.7	15.9	15.2	14.3	10.0	9.1	9.1
−42.6°	5.4	2.9	5.9	1.0	0.5	−1.8	−2.7	−3.0	−3.5	−4.1
	−3.7	−4.4	−4.4	−4.5	−4.8	−5.0	−4.7	−5.0	−5.4	
10	62.7	19.9	18.6	16.8	13.6	12.0	9.4	9.0	7.8	7.1
−40.0°	4.2	1.9	1.4	1.6	−1.0	−2.2	−1.6	−2.9	−3.7	−4.4
	−3.7	−4.3	−4.6	−4.7	−4.8	−4.8	−5.1	−5.0	−5.2	
11	62.7	18.5	17.3	15.5	12.3	11.0	9.1	8.3	6.8	7.4
−37.5°	3.8	4.1	4.6	0.1	−0.3	−2.8	−2.5	−2.5	−3.5	−3.6
	−4.2	−4.4	−4.5	−4.4	−4.4	−4.9	−4.5	−5.0	−4.7	
12	62.6	18.7	17.3	15.2	11.0	10.3	9.5	6.1	8.8	6.9
−35.1°	0.1	3.3	3.3	−0.3	−0.3	−0.7	−2.2	−2.3	−4.0	−3.3
	−4.1	−4.1	−4.1	−3.9	−4.6	−5.1	−4.9	−4.8	−4.8	
13	62.6	15.9	15.0	13.9	12.4	11.5	10.5	9.6	5.9	8.1
−32.8°	6.0	4.0	3.6	3.1	0.1	0.1	−2.2	−3.0	−3.2	−4.1
	−4.0	−4.1	−4.6	−3.8	−4.8	−4.7	−5.0	−5.3	−5.2	
14	62.6	15.8	14.7	13.1	10.6	10.6	10.6	9.0	5.1	8.4
−30.5°	5.6	4.1	5.8	3.7	2.3	1.9	−0.3	−1.3	−1.6	−1.4
	−3.0	−4.2	−4.2	−4.5	−4.7	−4.6	−5.0	−4.8	−4.8	
15	62.6	15.6	15.4	15.2	15.0	13.1	9.9	8.5	7.7	8.9
−28.3°	5.4	5.0	6.4	2.4	2.9	1.3	−3.4	−1.7	−2.1	−3.0
	−2.8	−4.2	−3.8	−4.0	−4.3	−4.5	−4.8	−4.9	−5.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 7C

GROUP 7C

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.6	15.3	15.1	15.0	14.9	13.0	9.6	8.1	6.6	7.4
ANGLE −26.1°	2.5	2.9	3.9	1.8	1.6	-1.0	-2.2	-1.5	-2.7	-3.3
	-3.7	-4.2	-4.6	-4.4	-4.2	-4.7	-4.9	-4.9	-5.0	
17	62.6	18.0	17.5	16.9	16.3	15.2	13.6	11.7	7.5	7.0
−24.0°	4.9	5.3	4.3	3.5	3.5	1.1	-1.5	-0.3	-1.5	-2.7
	-1.9	-3.4	-3.7	-3.8	-3.9	-4.4	-4.4	-4.5	-4.2	
18	62.6	15.8	15.2	14.6	13.9	13.3	12.6	13.3	8.3	6.8
−21.8°	3.9	6.0	4.7	4.9	4.3	2.0	0.6	0.9	-0.2	-0.6
	-1.0	-1.7	-2.4	-2.5	-2.7	-2.9	-3.0	-3.1	-2.6	
19	62.5	15.8	15.3	14.8	14.1	13.1	11.8	11.5	7.7	5.9
−19.8°	6.1	4.2	5.2	3.7	2.9	3.1	-0.3	0.6	0.6	-1.2
	-1.4	-1.7	-2.1	-2.0	-2.3	-2.7	-2.7	-2.7	-2.5	
20	62.5	16.0	14.9	13.4	11.1	9.7	7.8	10.3	8.7	5.3
−17.7°	6.1	5.5	3.9	1.5	-0.6	-1.4	-1.7	-1.5	-3.1	-2.7
	-3.0	-2.7	-2.7	-3.4	-3.3	-3.6	-3.9	-4.0	-3.6	
21	62.5	15.6	14.5	13.1	11.0	9.6	7.5	8.6	7.0	3.8
−15.7°	4.9	1.5	1.4	1.3	-1.1	-1.6	-1.9	-2.3	-2.5	-3.8
	-3.8	-4.2	-3.7	-4.0	-4.4	-4.6	-4.6	-4.8	-4.5	
22	62.5	13.2	12.4	11.4	10.1	8.7	6.9	8.6	6.5	5.2
−13.7°	1.3	2.1	0.4	0.1	-0.5	0.4	-1.7	-1.6	-1.8	-2.9
	-2.4	-3.7	-3.3	-4.1	-4.8	-5.2	-5.0	-4.8	-4.8	
23	62.5	14.6	14.0	13.2	12.2	11.2	9.8	8.9	3.1	5.4
−11.7°	1.4	2.9	1.8	0.6	-0.3	-1.2	-2.2	-2.0	-1.5	-2.8
	-2.1	-2.6	-3.1	-4.0	-4.4	-4.7	-4.6	-4.6	-4.9	
24	62.5	14.9	14.6	14.3	13.9	12.0	8.3	6.4	5.5	5.5
−9.7°	2.0	3.5	-0.1	0.0	-2.0	-2.1	-1.8	-3.8	-2.8	-3.8
	-4.1	-3.5	-3.6	-4.0	-4.5	-4.8	-4.9	-4.9	-4.9	
25	62.6	16.5	15.3	13.8	11.3	10.5	9.4	6.7	3.5	5.8
−7.8°	0.5	2.6	0.3	0.9	-0.8	-2.0	-2.7	-2.9	-3.8	-4.0
	-4.6	-4.5	-3.9	-3.8	-4.1	-4.8	-4.8	-4.7	-4.6	
26	62.6	17.7	16.8	15.7	14.3	12.7	10.0	9.3	6.1	5.8
−5.8°	3.8	2.8	3.4	2.3	0.7	0.8	-0.7	-1.4	-1.7	-3.3
	-2.2	-3.1	-3.5	-4.5	-4.5	-4.5	-4.8	-4.7	-4.8	
27	62.6	16.6	15.4	13.6	10.7	10.1	9.5	9.8	6.2	5.9
−3.9°	2.8	2.8	2.9	1.1	0.4	-0.1	-2.5	-2.2	-3.9	-3.9
	-3.4	-4.3	-3.8	-4.5	-4.4	-4.7	-4.7	-4.7	-4.8	
28	62.6	18.0	17.1	16.0	14.5	12.9	10.3	11.3	8.1	7.7
−1.9°	5.1	3.1	3.4	0.5	0.8	0.3	-0.3	-1.4	-2.2	-2.4
	-2.8	-3.1	-3.2	-3.1	-3.5	-3.7	-3.9	-3.9	-4.4	
29	62.7	19.3	19.7	20.0	20.3	19.3	17.9	19.0	17.2	16.2
0°	15.8	13.0	10.2	10.0	10.2	11.4	13.7	13.8	9.5	11.8
	5.1	4.5	3.7	4.5	5.6	5.0	3.0	4.0	4.0	
30	62.7	23.6	24.9	25.9	26.7	25.8	24.7	23.1	19.4	19.0
+1.9°	17.3	15.5	14.8	15.5	16.0	15.9	17.6	19.2	14.0	17.1
	11.6	10.6	9.0	8.5	8.4	7.8	7.0	6.8	6.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.7	22.9	22.9	23.0	23.0	22.5	21.9	22.2	16.7	16.7
ANGLE +3.9°	13.9	14.5	16.0	14.5	10.6	12.5	14.4	16.3	13.1	10.1
	9.2	6.1	5.6	5.4	3.9	4.9	5.4	4.1	3.0	
32	62.6	17.9	17.6	17.2	16.9	16.2	15.4	12.9	10.9	12.0
+5.8°	10.4	8.1	9.4	8.2	7.0	4.3	5.9	3.3	3.5	2.9
	2.9	0.8	-1.3	-2.4	-1.3	-2.3	-2.1	-2.6	-3.4	
33	62.6	17.9	18.3	18.6	18.9	17.6	15.8	15.3	12.8	12.7
+7.8°	12.5	10.5	11.1	10.4	9.3	8.4	7.6	7.1	7.0	5.8
	5.3	3.0	-0.2	-1.2	0.2	-0.6	-0.8	-1.5	-2.4	
34	62.6	24.6	24.3	24.1	23.9	21.8	17.5	18.6	17.1	13.4
+9.7°	14.7	12.4	10.9	10.7	7.9	9.0	7.3	5.3	5.8	5.3
	3.9	4.0	4.2	3.7	3.1	3.3	3.1	3.1	3.1	
35	62.8	28.0	27.4	26.7	25.9	25.0	23.9	21.6	16.6	17.3
+11.7°	15.4	16.1	12.5	12.1	11.9	10.4	8.7	8.5	7.6	7.1
	5.8	5.6	5.4	5.2	5.1	5.0	4.9	4.6	4.7	
36	63.1	28.5	27.4	25.8	23.4	23.2	22.9	21.3	18.4	18.0
+13.7°	17.1	15.6	12.7	9.8	11.5	10.6	8.8	8.2	7.2	5.8
	4.9	4.3	3.6	3.8	3.1	2.9	2.7	2.4	2.6	
37	63.4	32.9	31.8	30.3	28.1	27.4	26.7	22.2	21.3	20.0
+15.7°	16.6	17.0	15.7	13.8	12.2	11.5	10.1	9.1	6.6	5.2
	3.6	2.0	0.9	0.4	-0.1	-0.8	-1.5	-2.0	-2.0	
38	63.7	30.7	29.9	28.9	27.6	27.4	27.2	24.3	21.3	20.5
+17.7°	20.5	14.3	17.2	15.8	14.8	12.1	13.1	10.7	8.3	5.4
	5.2	3.3	1.6	0.8	-0.0	-0.5	-1.4	-1.7	-1.6	
39	63.8	29.9	29.3	28.6	27.8	27.1	26.2	22.2	19.2	19.9
+19.8°	16.8	17.6	15.7	14.4	12.9	12.2	12.2	11.0	8.2	5.0
	4.9	3.5	2.0	0.7	0.5	-0.7	-1.3	-1.1	-1.3	
40	63.3	31.4	30.4	29.1	27.2	27.9	28.5	23.8	23.6	23.4
+21.8°	20.6	20.0	16.9	16.4	14.9	11.8	12.1	10.7	8.6	5.8
	4.8	3.4	1.6	1.8	0.7	-1.1	-1.8	-1.7	-2.0	
41	62.7	24.8	24.7	24.6	24.5	24.7	24.9	24.3	20.4	20.3
+24.0°	17.4	15.3	13.4	12.1	11.7	10.6	8.5	6.8	5.7	3.2
	2.5	0.9	-0.5	-0.3	-1.7	-2.8	-2.9	-3.2	-3.7	
42	63.2	35.3	34.9	34.5	34.1	32.4	29.5	28.5	26.1	26.9
+26.1°	26.1	25.2	20.0	19.8	16.2	15.7	13.2	11.6	12.0	7.5
	6.4	5.0	3.7	3.3	2.1	1.5	-0.3	-0.5	-0.7	
43	63.9	36.2	34.9	32.9	29.1	33.6	35.7	29.4	30.8	26.3
+28.3°	24.9	24.7	22.1	19.9	20.1	19.7	17.1	15.0	14.7	10.9
	9.4	8.1	5.7	5.0	3.5	2.7	1.7	1.7	0.9	
44	63.6	39.0	38.1	36.9	35.4	33.6	30.6	29.6	28.6	26.0
+30.5°	22.7	23.4	19.4	20.9	19.0	18.3	15.3	13.2	13.3	10.7
	8.7	7.3	5.5	4.1	2.9	1.7	1.5	0.6	0.7	
45	63.0	32.7	32.1	31.4	30.6	30.7	30.7	24.7	24.0	18.2
+32.8°	19.8	19.5	15.3	13.9	15.1	16.5	12.4	9.4	10.7	7.4
	4.2	3.7	1.3	0.5	-0.9	-1.2	-1.9	-3.2	-2.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 7C

GROUP 7C

PAGE 4

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.8	21.9	21.5	21.1	20.6	19.6	18.3	18.2	17.6	15.3
ANGLE +35.1°	14.9	14.3	10.8	9.2	5.7	6.5	4.1	1.8	2.4	-1.0
	-2.3	-1.9	-3.7	-4.0	-4.1	-4.1	-4.5	-4.7	-4.7	
47	62.9	23.9	23.0	22.0	20.6	20.1	19.5	20.4	20.7	19.5
+37.5°	17.1	15.5	13.1	8.8	3.4	4.6	3.3	1.5	-0.3	-2.5
	-2.4	-2.4	-3.5	-3.0	-3.9	-4.0	-4.4	-4.8	-4.8	
48	63.0	25.5	24.6	23.5	22.1	23.0	23.8	22.0	23.4	20.3
+40.0°	17.6	16.5	12.9	8.5	8.3	9.2	4.0	4.4	0.1	2.3
	-1.7	-2.5	-3.3	-3.4	-3.4	-3.2	-4.0	-4.3	-4.5	
49	63.1	30.4	29.4	28.2	26.4	25.6	24.6	19.8	20.8	17.8
+42.6°	15.9	11.3	11.3	12.3	15.8	12.7	8.0	8.1	4.0	2.2
	1.0	-0.4	-0.8	-1.1	-1.9	-2.4	-3.2	-4.0	-3.5	
50	63.1	30.2	29.5	28.6	27.5	26.4	24.9	22.6	21.4	20.0
+45.3°	19.6	18.7	14.8	14.0	13.5	10.2	11.2	9.8	8.9	5.0
	2.4	2.5	0.3	0.2	-1.1	-1.6	-2.4	-3.2	-3.2	
51	63.0	27.7	26.9	26.1	25.0	24.2	23.1	21.4	20.4	16.4
+48.1°	15.0	12.8	11.9	10.7	10.6	10.4	8.8	4.1	6.9	5.4
	2.0	1.3	-1.5	-1.9	-2.5	-2.9	-3.5	-3.8	-3.9	
52	63.1	30.6	29.3	27.5	24.6	23.6	22.4	22.1	21.0	18.8
+51.1°	17.9	15.8	14.9	13.6	11.5	11.5	9.2	5.7	4.7	4.1
	0.8	1.8	-0.8	-1.1	-1.8	-2.3	-3.0	-3.0	-2.8	
53	63.2	33.4	32.3	30.9	28.7	27.4	25.8	24.7	23.5	21.9
+54.3°	20.8	17.9	17.3	14.4	14.3	13.2	10.3	7.5	6.1	6.1
	3.0	3.0	-1.1	-0.6	-1.2	-1.7	-2.5	-2.2	-1.8	
54	63.3	31.5	30.4	29.0	26.8	25.2	22.4	22.8	19.9	21.0
+57.8°	21.3	21.4	21.4	20.6	20.9	19.7	17.6	13.4	6.4	4.6
	6.5	0.3	-0.5	-1.5	-2.0	-2.4	-2.7	-2.9	-2.9	
55	63.4	31.9	31.3	30.6	29.8	28.6	27.0	26.7	25.8	25.7
+61.6°	25.6	25.7	25.2	24.6	24.5	23.1	20.9	16.1	6.1	9.0
	9.6	2.0	2.2	-1.4	-2.5	-3.2	-2.7	-3.3	-3.2	
56	63.5	35.2	34.8	34.3	33.7	32.0	29.0	28.4	28.0	28.6
+66.0°	29.1	28.4	28.2	27.5	27.1	25.7	23.4	19.0	9.1	11.9
	12.5	4.7	4.4	-0.1	-1.2	-1.8	-2.9	-3.0	-3.0	
57	63.6	36.5	35.9	35.1	34.2	32.6	30.1	29.6	29.2	29.7
+71.3°	29.3	29.5	28.6	28.4	27.5	26.1	23.6	18.7	8.6	14.5
	14.7	5.8	8.4	2.5	0.9	-1.0	-2.4	-2.7	-2.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

GROUP 7C

STA TAPE 7I

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.7 13.4 2.7	19.0 13.5 2.3	17.8 11.5 1.9	16.2 9.3 1.7	13.6 7.8 1.2	13.5 7.0 1.3	13.4 5.8 1.2	12.2 5.5 1.2	11.9 3.9 1.1	12.8 3.3
2 +64°	54.2 15.1 3.6	20.8 14.5 3.0	19.7 13.1 2.7	18.1 10.2 2.5	15.7 9.7 2.1	15.1 8.0 2.0	14.4 7.4 2.0	13.2 6.6 1.8	12.8 5.0 1.8	14.9 4.3
3 +53°	54.0 14.7 3.0	19.7 14.3 2.5	18.7 12.8 2.2	17.5 10.7 2.0	15.7 9.3 1.6	15.5 8.1 1.5	15.2 7.1 1.5	12.9 6.0 1.3	12.6 4.8 1.4	15.3 3.9
4 +44°	54.0 14.9 2.7	17.6 14.4 2.5	16.9 12.2 1.8	16.1 10.6 1.9	15.0 8.9 1.5	14.0 7.6 1.2	12.6 6.6 1.2	12.6 5.8 1.1	12.1 4.4 1.1	14.0 3.6
5 +37°	54.0 13.8 2.7	16.4 13.3 2.0	15.9 11.0 1.8	15.3 8.8 1.5	14.6 8.0 1.1	13.5 7.4 1.1	12.2 6.2 1.1	11.9 5.1 0.9	11.4 4.2 0.9	13.4 3.4
6 +30°	53.6 11.3 1.7	13.8 11.1 1.1	13.3 8.1 1.1	12.6 7.1 0.9	11.9 5.8 0.7	10.9 5.9 0.5	9.5 4.9 0.5	8.6 3.6 0.4	9.5 2.8 0.5	10.6 2.4
7 +23°	52.9 9.0 0.6	11.2 7.8 0.2	11.3 5.5 0.1	11.3 4.5 -0.1	11.3 3.8 -0.4	9.9 3.8 -0.5	8.0 3.0 -0.5	7.6 2.1 -0.5	7.2 1.4 -0.6	8.4 1.1
8 +17°	51.6 3.9 -1.9	8.5 2.7 -1.8	9.9 1.6 -2.2	11.0 0.3 -2.4	11.8 -0.1 -2.4	9.7 -0.4 -2.6	5.5 -0.7 -2.5	4.6 -1.2 -2.5	1.8 -1.5 -2.6	2.8 -1.7
9 +12°	50.0 -3.4 -4.6	5.1 -3.5 -4.7	5.2 -3.4 -4.7	5.3 -3.8 -5.0	5.4 -4.6 -5.0	4.1 -4.3 -5.0	2.1 -4.3 -5.0	-1.7 -4.5 -5.1	-1.7 -5.0 -5.1	-2.1 -4.9
10 +6°	49.7 -1.7 -3.5	5.3 -2.5 -3.9	4.3 -2.9 -4.0	2.9 -2.7 -4.6	0.8 -3.2 -4.9	2.0 -3.0 -5.2	2.9 -3.1 -5.4	-2.0 -3.4 -5.4	-0.6 -3.4 -5.4	-2.0 -3.6
11 0°	49.7 -3.8 -4.9	4.9 -3.8 -4.8	3.9 -4.0 -4.9	2.7 -3.6 -5.2	0.9 -4.3 -5.2	1.3 -4.3 -5.5	1.7 -3.9 -5.4	-2.8 -4.3 -5.5	-1.4 -4.7 -5.4	-2.4 -4.8
12 −6°	50.0 -2.5 -4.5	4.0 -3.2 -4.7	3.1 -3.6 -4.6	2.0 -3.2 -4.7	0.4 -4.2 -4.8	1.2 -3.7 -4.9	1.9 -4.3 -5.0	-2.3 -4.4 -5.0	-1.6 -4.5 -4.9	-2.2 -4.6
13 −12°	50.3 -3.8 -4.3	4.2 -2.8 -4.3	3.3 -2.9 -4.3	2.2 -3.3 -4.4	0.6 -3.5 -4.5	1.6 -3.8 -4.6	2.3 -3.6 -4.6	-1.2 -3.7 -4.6	-0.9 -3.9 -4.5	-1.0 -4.0
14 −17°	50.2 -3.0 -4.6	4.0 -3.5 -4.6	3.0 -3.8 -4.8	1.7 -3.9 -4.7	-0.2 -3.9 -4.6	0.6 -3.9 -4.7	1.3 -3.8 -4.9	-3.0 -4.2 -4.7	-1.8 -4.5 -4.8	-1.9 -4.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 7C

STA TAPE 71

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	50.3	4.4	3.4	2.2	0.4	1.0	1.5	-2.3	-1.7	-1.7
ANGLE −23°	-3.8	-3.0	-4.3	-4.3	-4.1	-4.1	-3.8	-4.1	-4.4	-4.3
	-4.4	-4.5	-4.5	-4.6	-4.5	-4.6	-4.6	-4.5	-4.5	
16	50.6	4.4	3.5	2.4	0.9	1.4	1.8	-1.9	-1.8	-1.9
−30°	-3.3	-2.7	-3.1	-3.3	-3.3	-3.2	-3.5	-3.6	-3.4	-3.8
	-3.8	-3.9	-3.9	-4.0	-3.9	-4.1	-4.1	-4.1	-4.1	
17	50.8	4.4	3.5	2.4	0.9	1.5	2.1	-1.3	-1.5	-1.3
−37°	-2.5	-2.2	-3.3	-2.7	-3.1	-2.6	-2.8	-3.1	-3.1	-3.4
	-3.6	-3.6	-3.8	-3.8	-3.7	-3.9	-3.8	-3.9	-3.9	
18	50.9	4.3	3.5	2.5	1.3	1.7	2.1	-1.7	-1.3	-1.4
−44°	-2.1	-2.2	-2.5	-2.5	-3.4	-3.1	-2.9	-2.6	-3.2	-3.6
	-3.3	-3.4	-3.4	-3.7	-3.7	-3.6	-3.7	-3.7	-3.7	
19	51.2	4.6	3.7	2.5	0.9	1.3	1.7	-1.9	-1.7	-0.6
−53°	-2.4	-1.8	-2.0	-2.8	-2.8	-2.4	-2.8	-2.7	-3.0	-3.0
	-2.9	-2.9	-3.1	-3.2	-3.3	-3.2	-3.2	-3.3	-3.3	
20	51.4	4.5	4.3	4.1	3.9	3.3	2.7	-0.7	0.6	-0.7
−64°	-0.1	-1.5	-1.3	-1.6	-1.9	-1.5	-1.7	-1.9	-2.5	-2.4
	-2.5	-2.7	-2.7	-2.6	-2.7	-2.8	-2.8	-2.8	-2.9	
21	51.4	6.0	6.2	6.4	6.7	5.8	4.6	3.4	3.5	0.9
−84°	1.7	1.6	0.7	-0.2	0.0	2.0	2.0	1.6	-0.1	-0.4
	-0.6	-1.2	-1.3	-1.8	-2.2	-2.5	-2.5	-2.6	-2.6	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7C

STA TAPE 7J

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	54.1 15.2 2.2	19.8 12.7 1.9	18.7 11.3 1.8	17.1 9.0 1.7	14.7 8.0 1.6	14.2 5.9 1.6	13.6 5.2 1.5	11.5 4.2 1.4	12.5 3.0 1.4	14.4 2.7
2 +64°	54.7 15.8 3.0	20.5 14.5 2.9	19.4 12.1 2.7	17.9 10.2 2.4	15.7 9.1 2.5	15.1 7.5 2.4	14.5 6.4 2.2	12.7 5.6 2.1	13.4 4.5 2.2	16.0 3.7
3 +53°	54.4 16.6 2.9	19.3 14.5 2.1	18.5 11.2 2.0	17.5 9.9 1.9	16.1 8.4 1.9	15.1 7.2 1.7	13.7 6.4 1.9	11.9 5.0 1.7	12.0 4.2 1.6	15.7 3.3
4 +44°	54.3 14.4 1.8	19.4 12.9 1.9	18.3 10.3 1.6	16.9 9.0 1.5	14.8 8.0 1.5	13.8 6.2 1.4	12.4 5.9 1.4	10.8 4.3 1.3	12.0 3.4 1.2	13.9 2.7
5 +37°	54.2 14.1 1.8	18.4 12.1 1.5	17.3 10.1 1.5	15.9 7.9 1.3	13.7 7.0 1.2	12.8 5.9 1.2	11.7 5.1 1.1	11.5 3.6 1.1	11.0 3.2 1.0	13.8 2.4
6 +30°	53.8 10.9 0.7	15.2 9.9 0.8	14.4 7.5 0.8	13.3 6.3 0.5	11.9 5.6 0.5	11.1 4.5 0.5	10.1 3.3 0.4	9.1 2.6 0.4	8.4 1.7 0.3	12.2 1.2
7 +23°	53.0 8.8 -0.4	13.1 6.7 -0.5	12.9 4.9 -0.5	12.6 4.1 -0.6	12.3 3.3 -0.6	10.4 2.0 -0.6	7.1 1.2 -0.7	6.5 0.6 -0.7	6.9 0.3 -0.7	9.2 -0.1
8 +17°	51.4 2.7 -2.1	13.7 1.3 -2.1	13.8 0.7 -2.3	13.9 -0.2 -2.5	13.9 -0.6 -2.6	11.8 -1.6 -2.5	7.2 -1.5 -2.8	4.3 -2.3 -2.7	4.0 -2.1 -2.7	3.1 -1.9
9 +12°	49.8 -2.3 -3.4	7.6 -1.9 -2.9	7.3 -1.6 -3.8	7.1 -2.9 -3.8	6.8 -3.2 -4.5	6.1 -2.7 -4.6	5.3 -2.9 -5.1	1.0 -2.7 -5.1	0.6 -2.3 -5.0	0.2 -2.7
10 +6°	49.6 -2.5 -4.0	5.1 -2.9 -3.8	4.4 -2.4 -4.4	3.6 -3.6 -4.8	2.6 -2.8 -5.0	2.7 -3.3 -5.3	2.7 -3.2 -5.4	-0.7 -3.2 -5.4	-0.1 -3.0 -5.4	-0.3 -3.6
11 0°	49.5 -1.3 -3.1	9.4 -0.8 -2.7	9.0 -1.7 -3.2	8.5 -0.6 -3.8	7.7 -1.0 -4.0	7.2 -1.2 -4.7	6.4 -1.8 -5.0	3.4 -1.9 -5.1	1.7 -0.7 -5.3	-0.9 -2.3
12 −6°	49.9 0.7 -3.4	9.0 -1.0 -3.3	8.2 -1.7 -3.7	7.3 -1.4 -4.2	6.2 -1.8 -4.1	5.6 -1.9 -4.6	4.9 -3.2 -4.7	-0.2 -2.3 -4.7	1.3 -1.7 -4.6	-0.3 -3.2
13 −12°	50.1 -1.5 -4.4	5.4 -3.0 -4.4	4.4 -2.9 -4.5	3.0 -3.7 -4.6	0.9 -3.8 -4.6	1.1 -3.8 -4.7	1.4 -4.2 -4.7	-1.6 -4.4 -4.7	-1.0 -4.1 -4.7	-1.0 -4.3
14 −17°	50.0 -4.5 -5.1	4.2 -3.9 -5.2	3.1 -3.8 -5.0	1.6 -4.8 -5.0	-0.5 -4.9 -5.2	0.2 -4.9 -5.1	0.8 -4.8 -5.2	-2.6 -5.1 -5.2	-1.7 -5.0 -5.1	-1.6 -5.3

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7C

STA TAPE 7J

PAGE 2

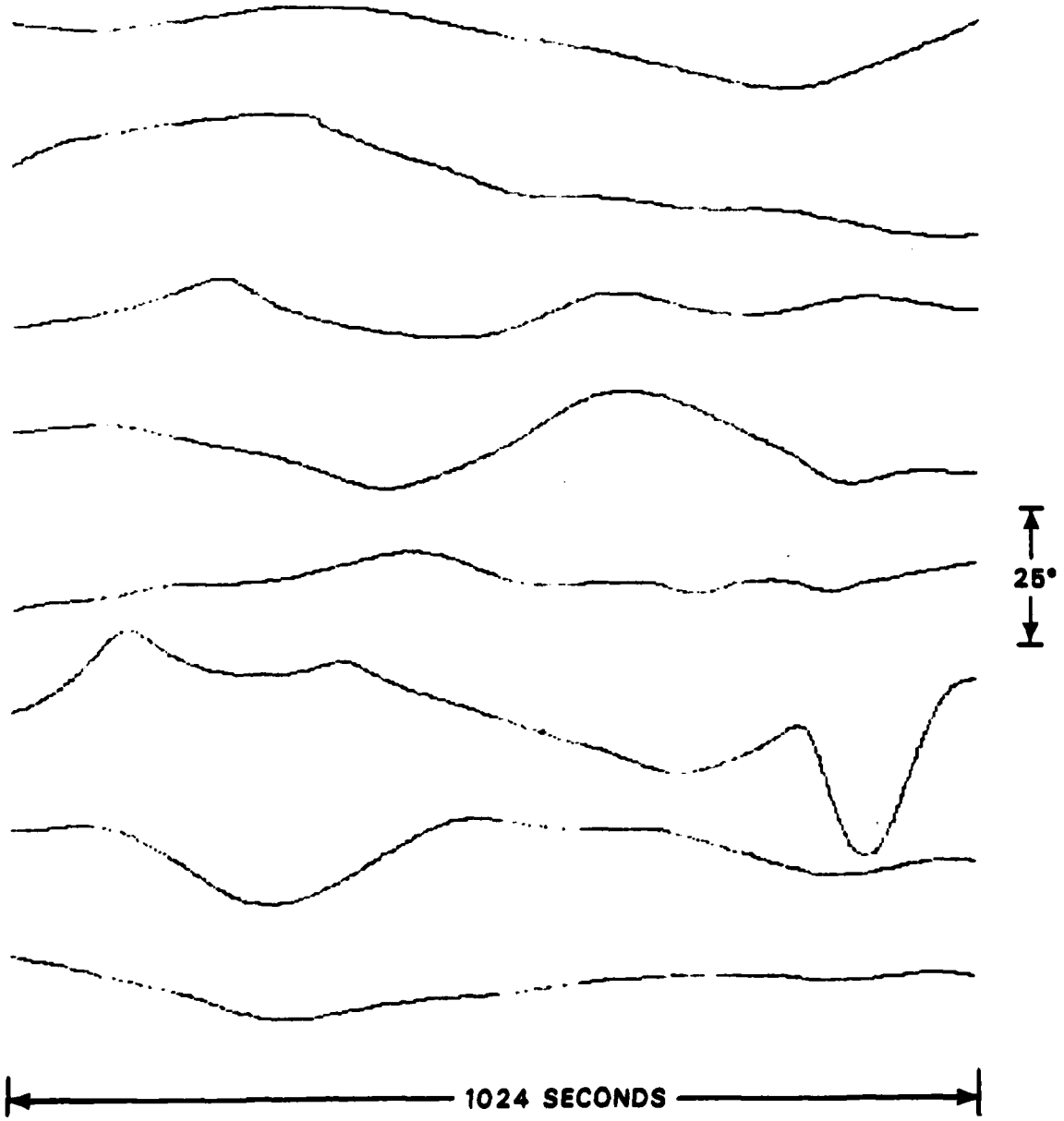
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.0 -3.9 -5.2	4.2 -4.5 -4.9	3.1 -3.9 -4.9	1.6 -4.5 -4.9	-0.6 -5.2 -5.0	0.2 -4.6 -5.1	0.9 -4.9 -5.0	-3.0 -5.0 -5.1	-2.2 -5.1 -5.1	-1.9 -5.1
16 −30°	50.4 -3.2 -4.5	4.6 -3.5 -4.4	3.6 -3.4 -4.4	2.1 -4.2 -4.3	-0.1 -4.2 -4.3	0.7 -4.2 -4.4	1.4 -4.2 -4.5	-3.0 -4.3 -4.5	-1.2 -4.4 -4.5	-1.6 -4.4
17 −37°	50.6 -3.3 -4.0	4.9 -3.1 -4.1	3.9 -3.4 -4.1	2.6 -3.7 -4.1	0.8 -4.1 -4.1	1.4 -3.9 -4.1	1.9 -3.7 -4.1	-2.4 -4.2 -4.2	-0.7 -4.3 -4.2	-1.6 -4.2
18 −44°	50.9 -2.9 -3.7	5.0 -2.7 -3.9	3.9 -3.6 -3.8	2.5 -3.6 -3.8	0.4 -3.5 -3.8	1.1 -3.7 -3.8	1.8 -3.7 -3.8	-1.9 -3.5 -3.8	-1.2 -3.6 -3.7	-1.5 -3.6
19 −53°	51.2 -2.7 -3.3	5.0 -1.6 -3.2	4.0 -2.8 -3.1	2.8 -2.4 -3.1	0.9 -2.8 -3.3	1.5 -2.9 -3.1	2.1 -3.2 -3.2	-1.5 -3.4 -3.2	-0.9 -2.8 -3.2	-1.1 -3.2
20 −64°	51.5 -1.6 -2.9	4.9 -2.4 -2.7	4.2 -1.9 -2.7	3.3 -2.3 -2.7	2.1 -2.8 -2.7	2.3 -2.6 -2.8	2.4 -2.3 -2.7	-0.6 -2.6 -2.7	-0.5 -2.8 -2.7	-0.2 -2.5
21 −84°	51.4 -1.1 -2.4	5.7 -1.3 -2.3	4.8 -1.1 -2.4	3.7 -2.2 -2.2	2.2 -2.4 -2.5	2.8 -1.6 -2.6	3.4 -1.6 -2.6	-0.2 -2.1 -2.5	0.3 -1.9 -2.7	0.0 -2.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7C

BEARING VS TIME

MEAN & VAR.	318.5	21.87	320.7	56.38	313.2	8.46	311.1	28.21
312.1	6.66	315.0	94.87	317.9	22.95	310.1	9.05	

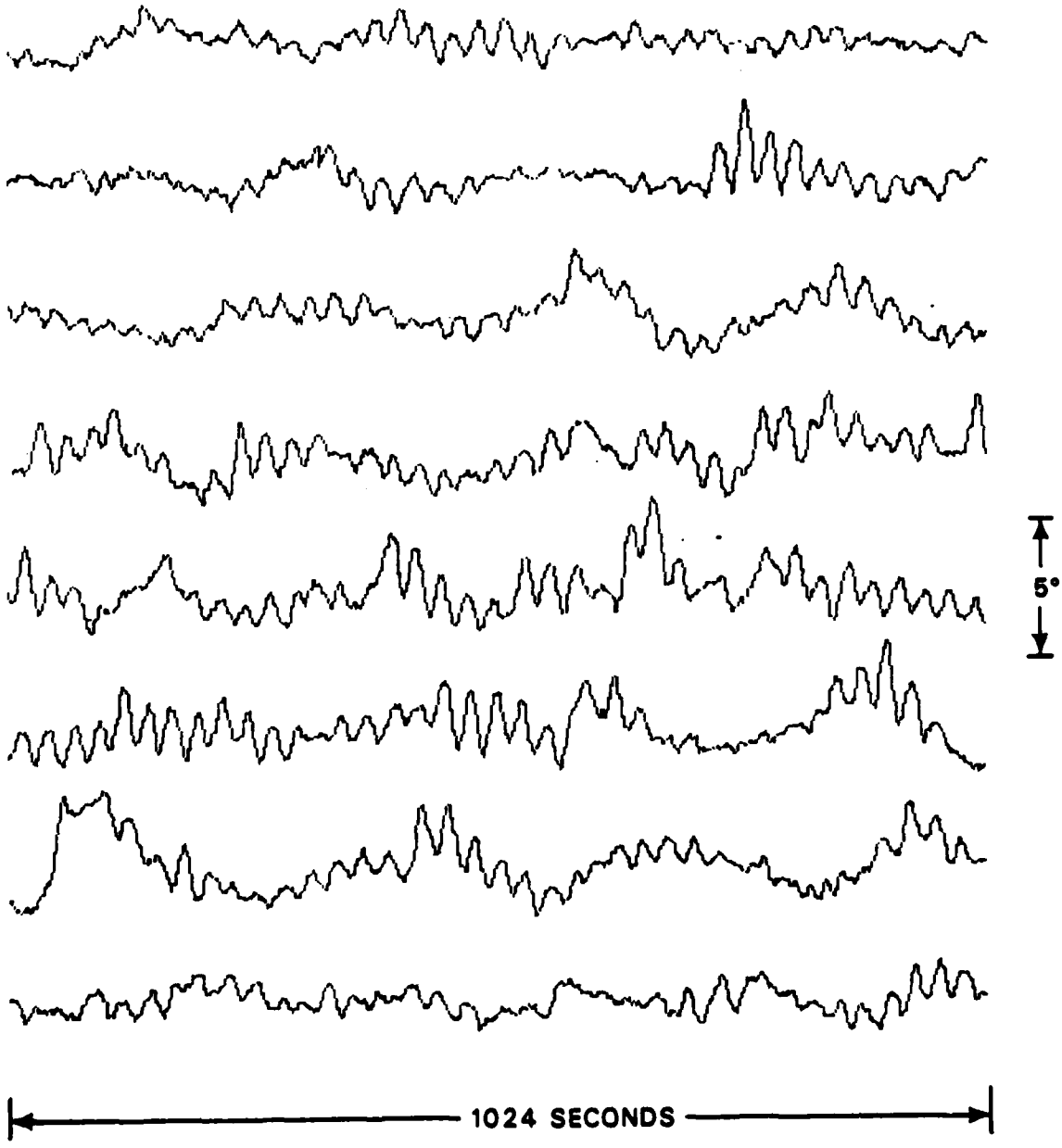


MPL-M-4676

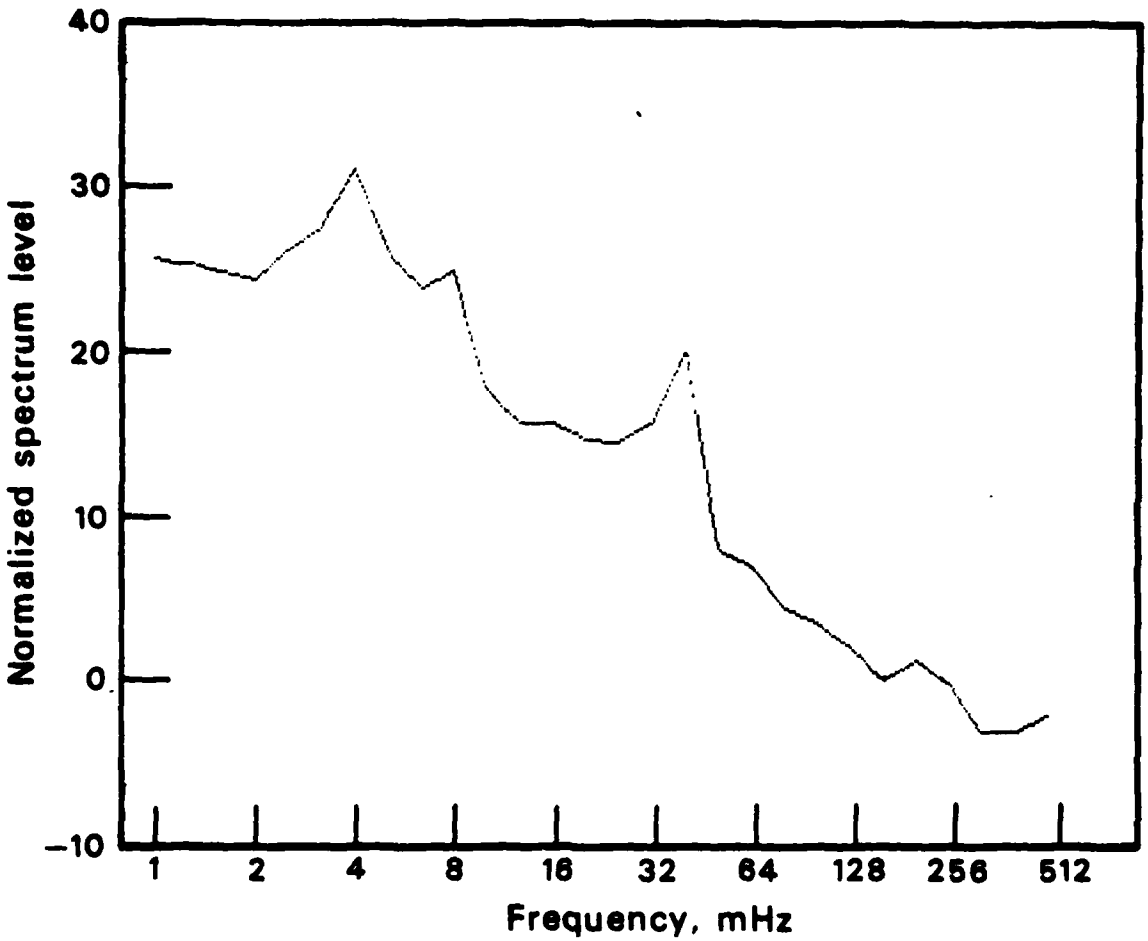
GROUP 7C

ELEVATION VS TIME

MEAN & VAR	92.2	0.10	92.3	0.24	92.4	0.41	92.8	0.55	
92.8	0.60	92.5	0.67	92.5	0.92	92.6	0.17		



MPL-M-4677



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 7D

Environmental Summary

7 June 1978

Tapes	Start time	Code
LTA/LOG	18:57:45	07D
STA	18:58:13	07K
STA	19:51:52	07L
Low Band Filter		

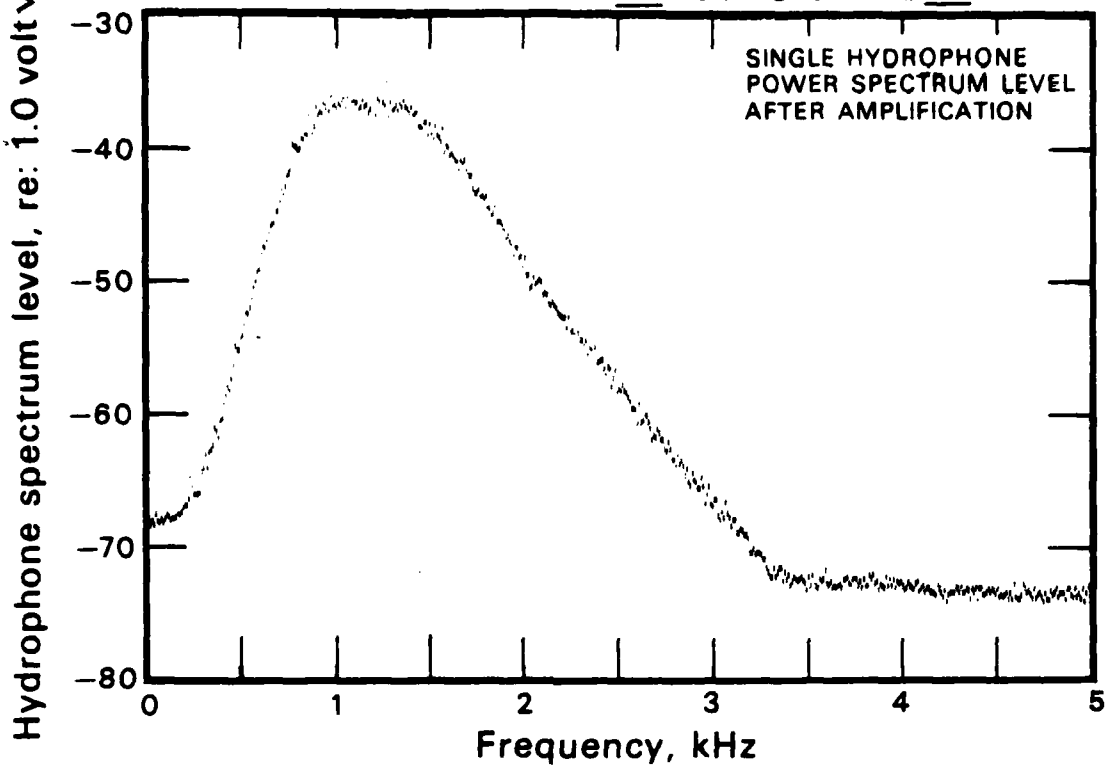
Environment

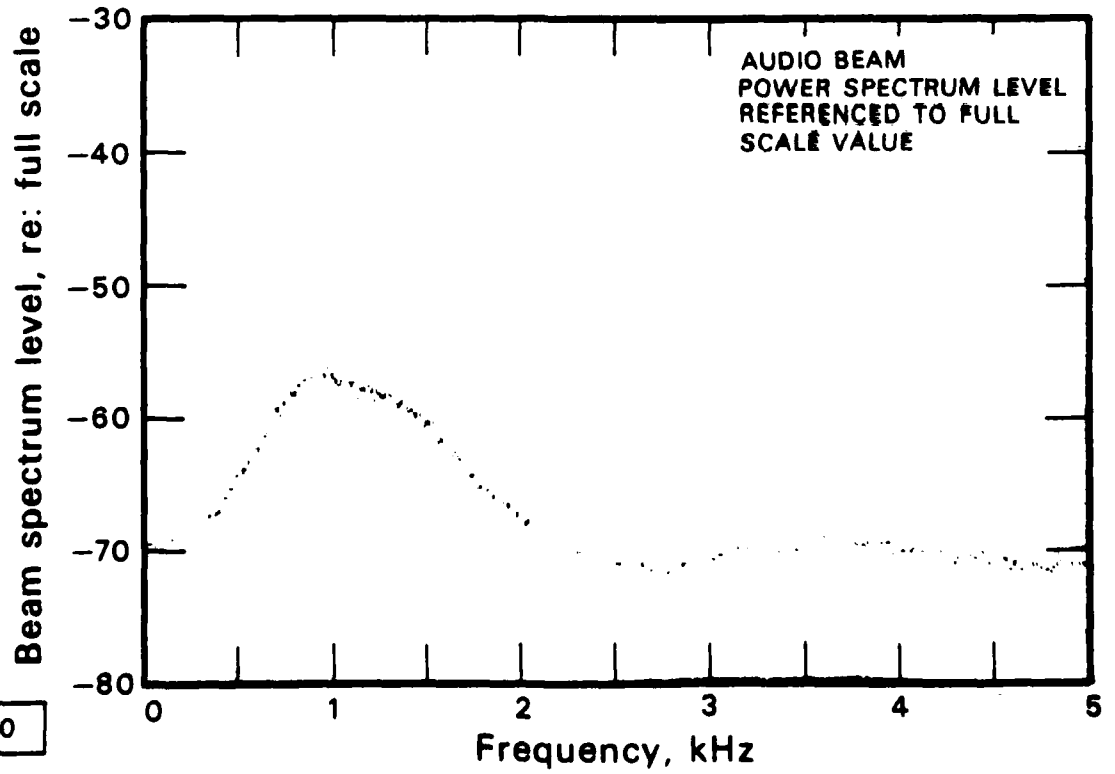
Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
19:00	2200	18	330	4-5	6-7	NW	Chop
20:00	2200	14	320	4-5	6-7	NW	No targets

MPL-M-4679

07-JUN-78 19:18:46 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 78 DB RELATIVE BEARING 303.6
RELATIVE ELEVATION 80.0 TRUE BEARING 258.1 TRUE ELEVATION 80.7
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: −7.4 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 95 FOR HYDROPHONE 97

GROUP 7D





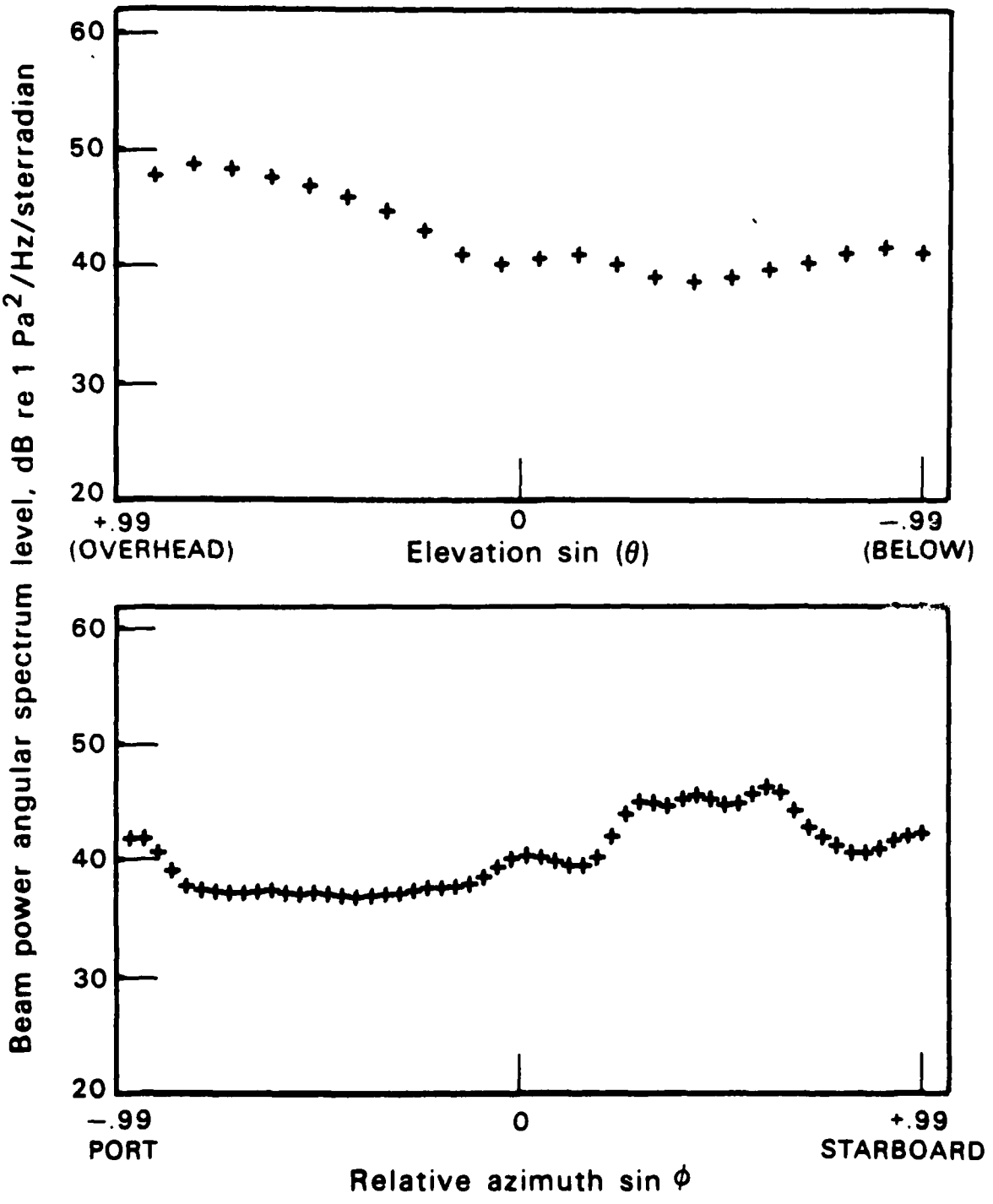
MPL-M-4680

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 7D

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

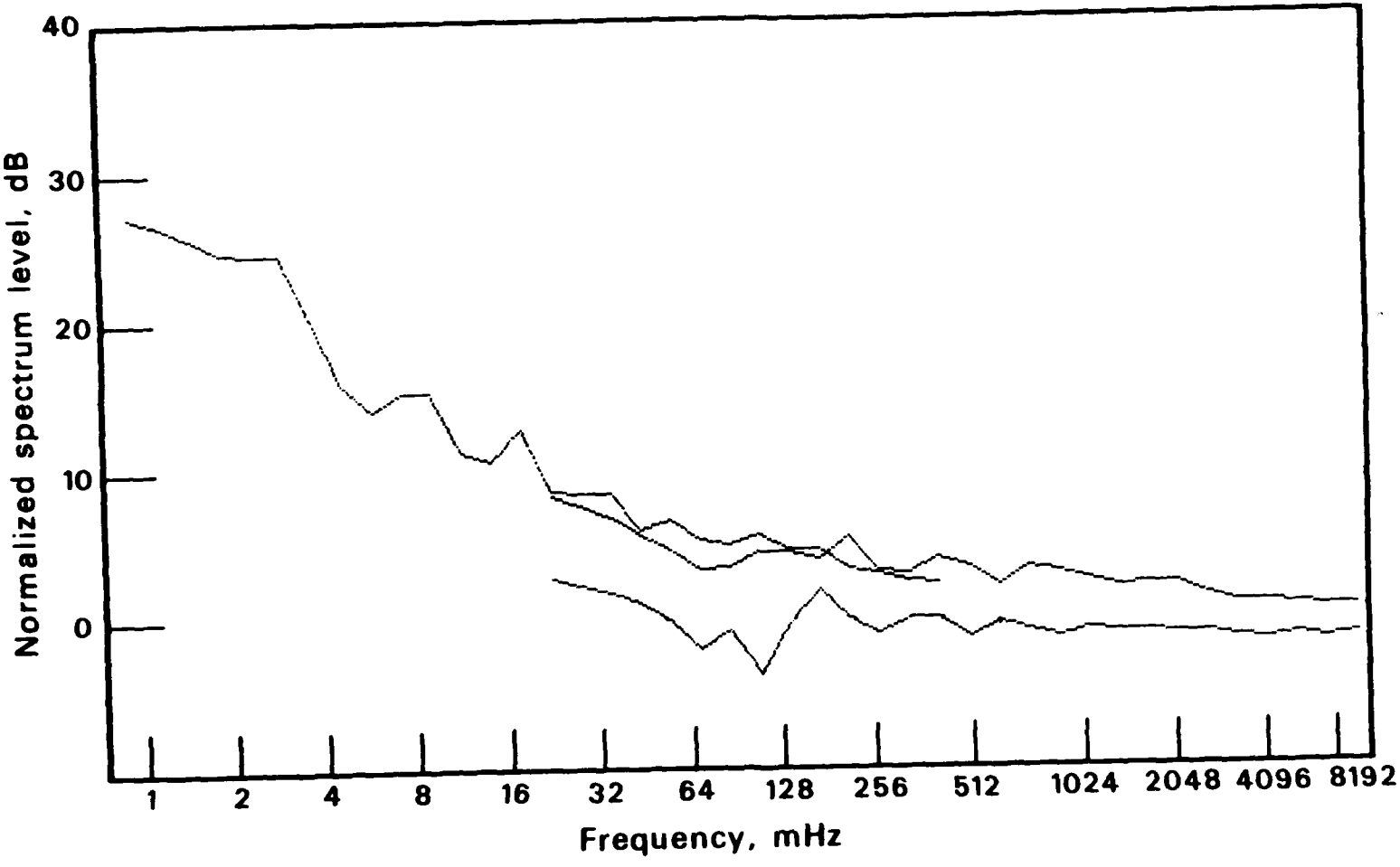
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4681

MPL-M-4682

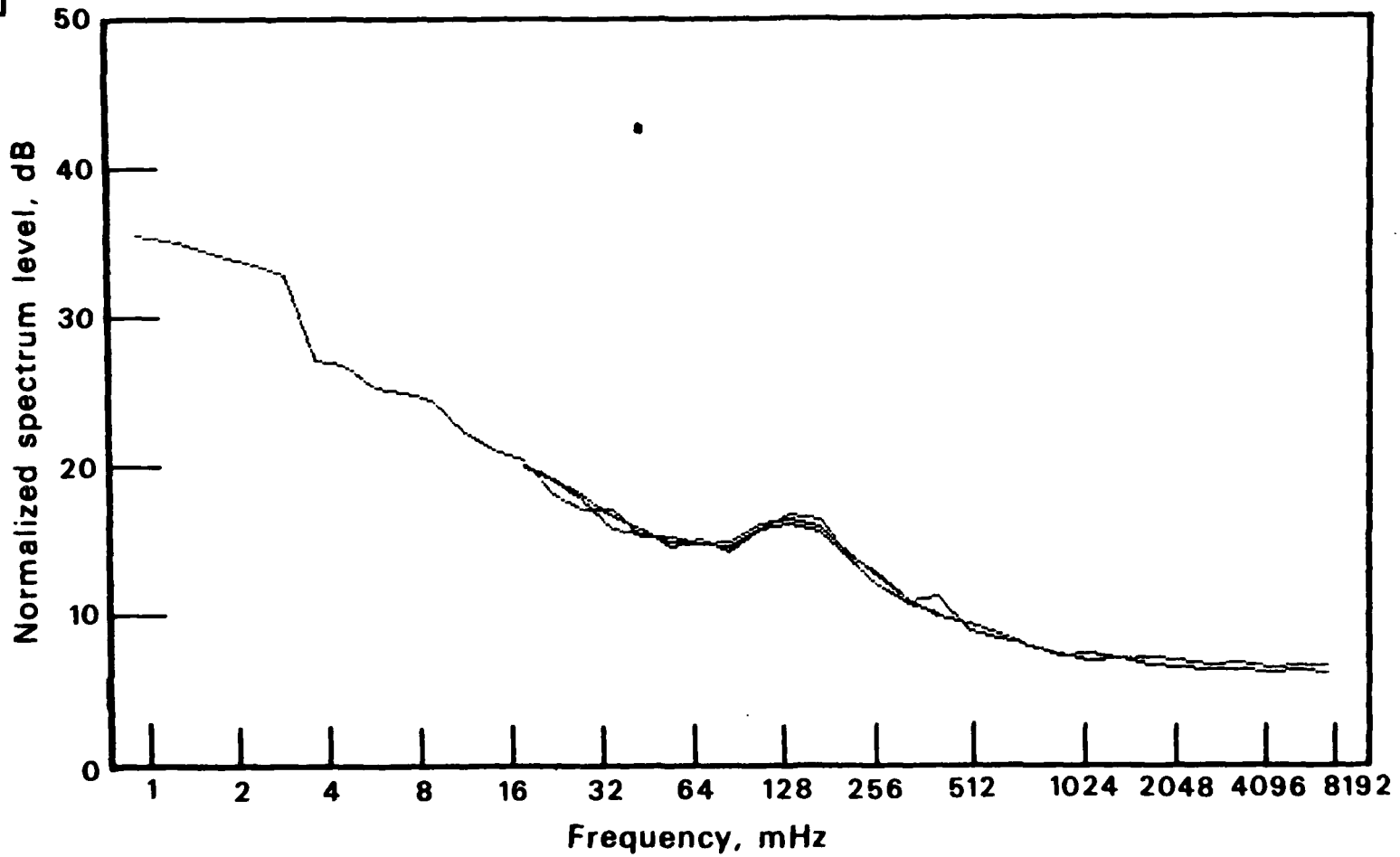
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 7D

MPL-M-4683

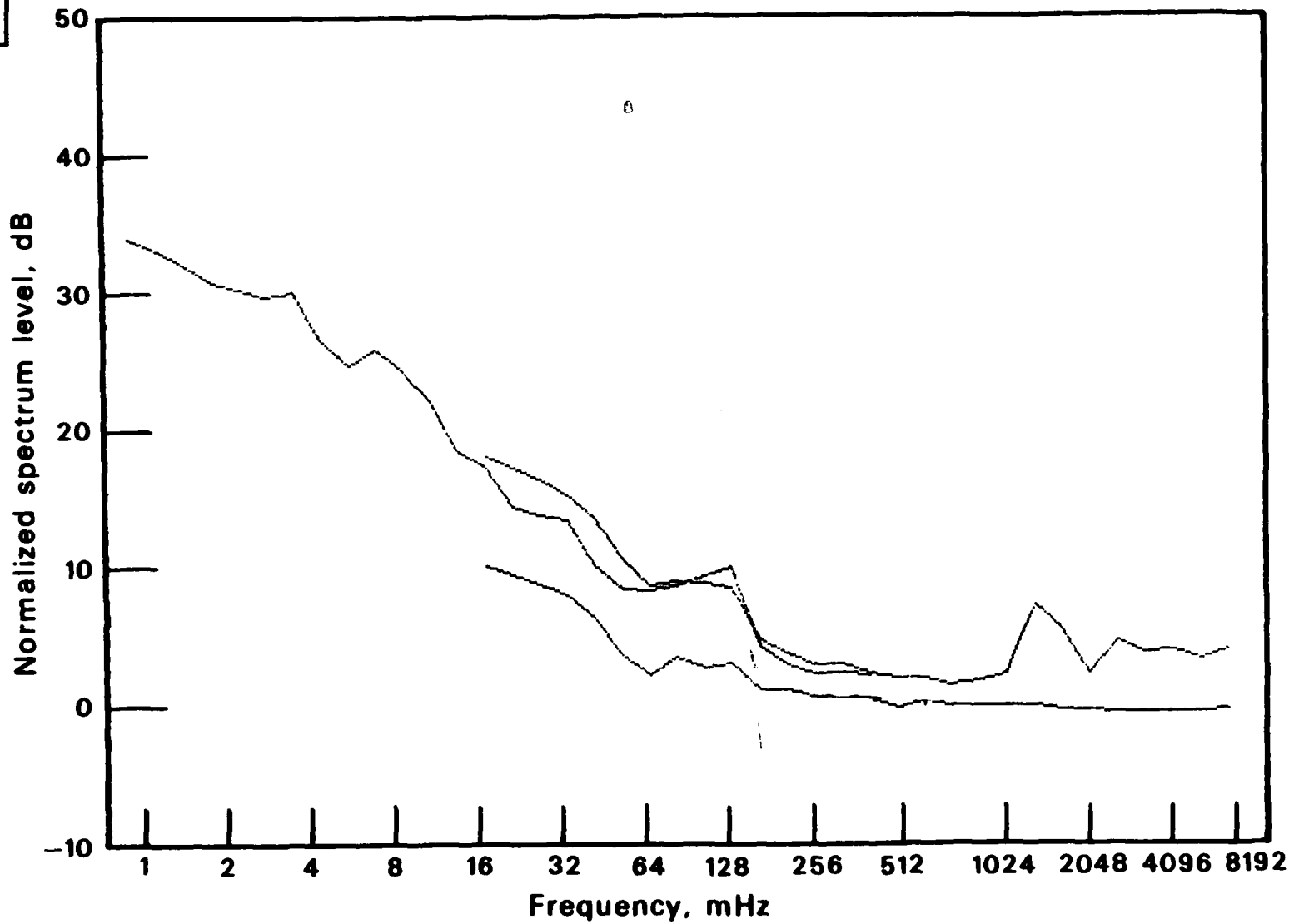
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7D

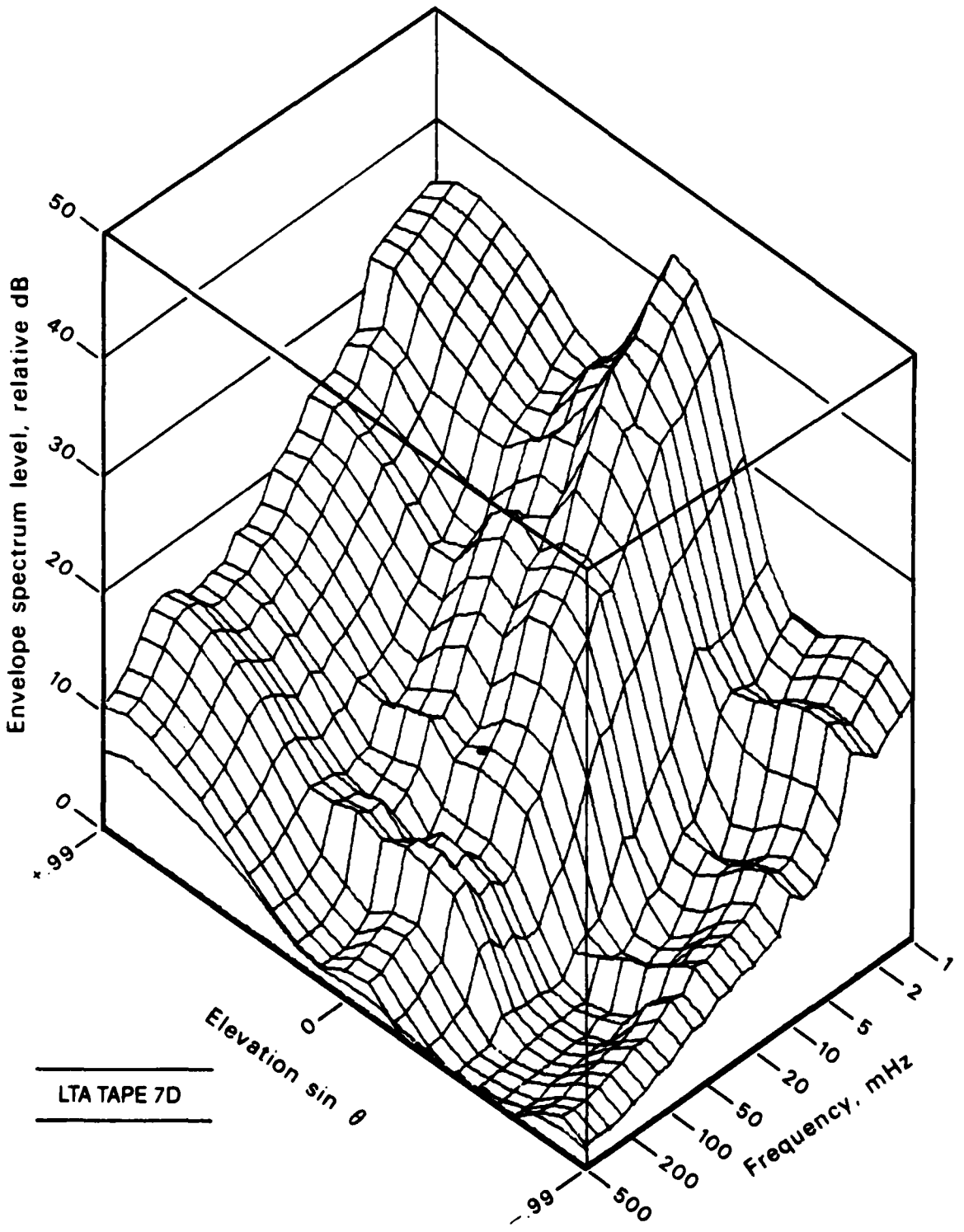
MPL-M-4684

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 7D

GROUP 7D

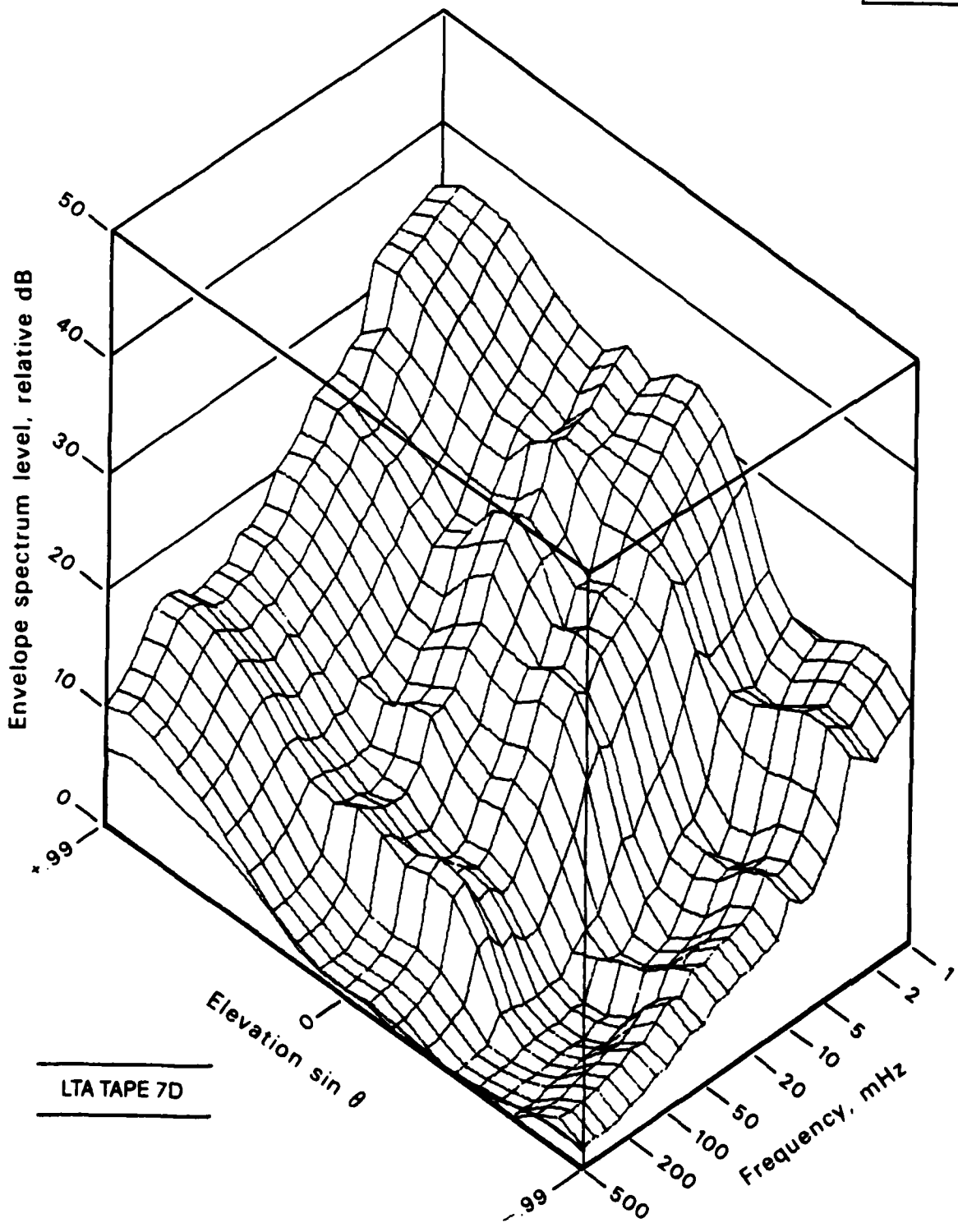


LTA TAPE 7D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4685

GROUP 7D



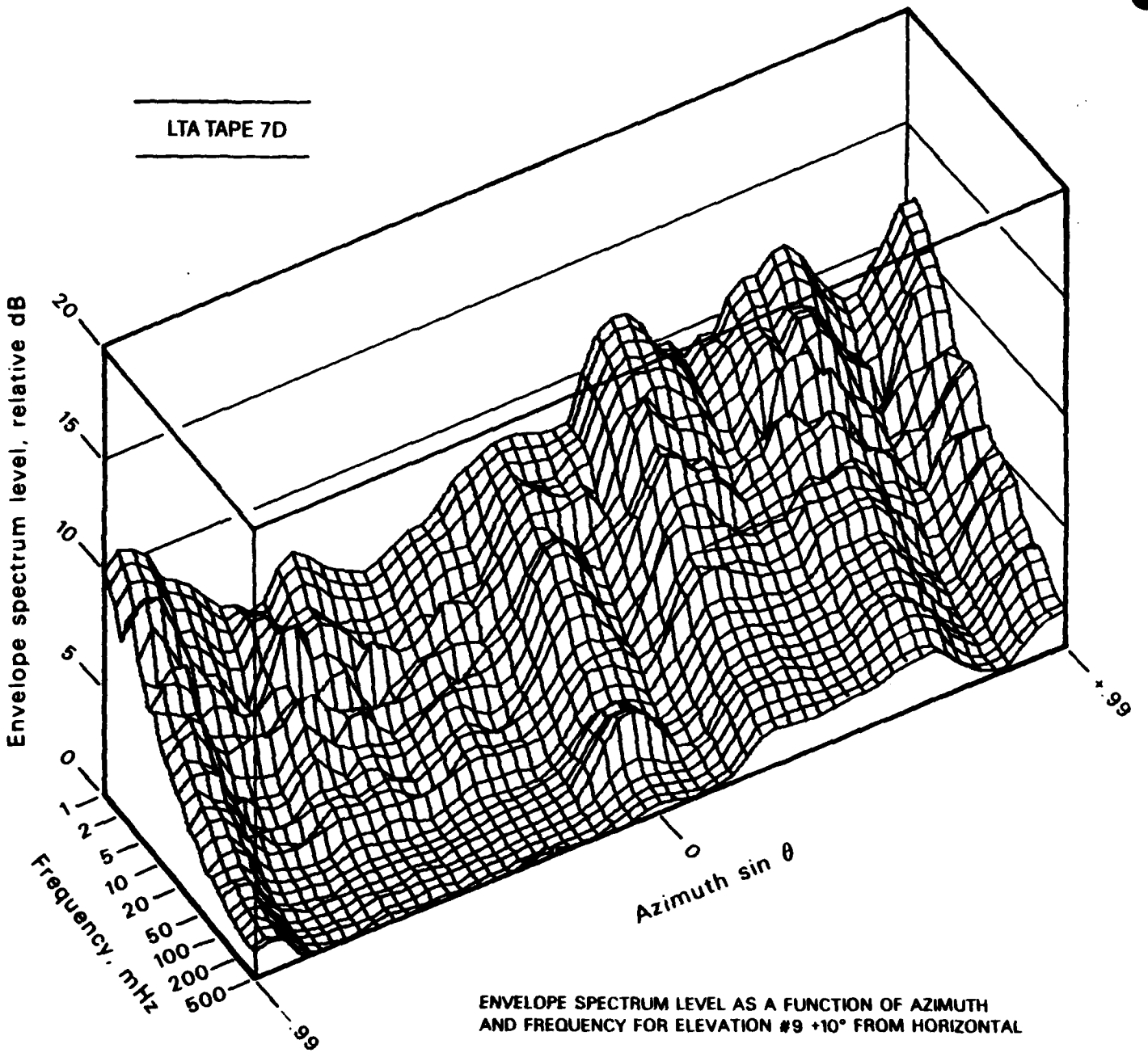
LTA TAPE 7D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4686

MPL-M-4687

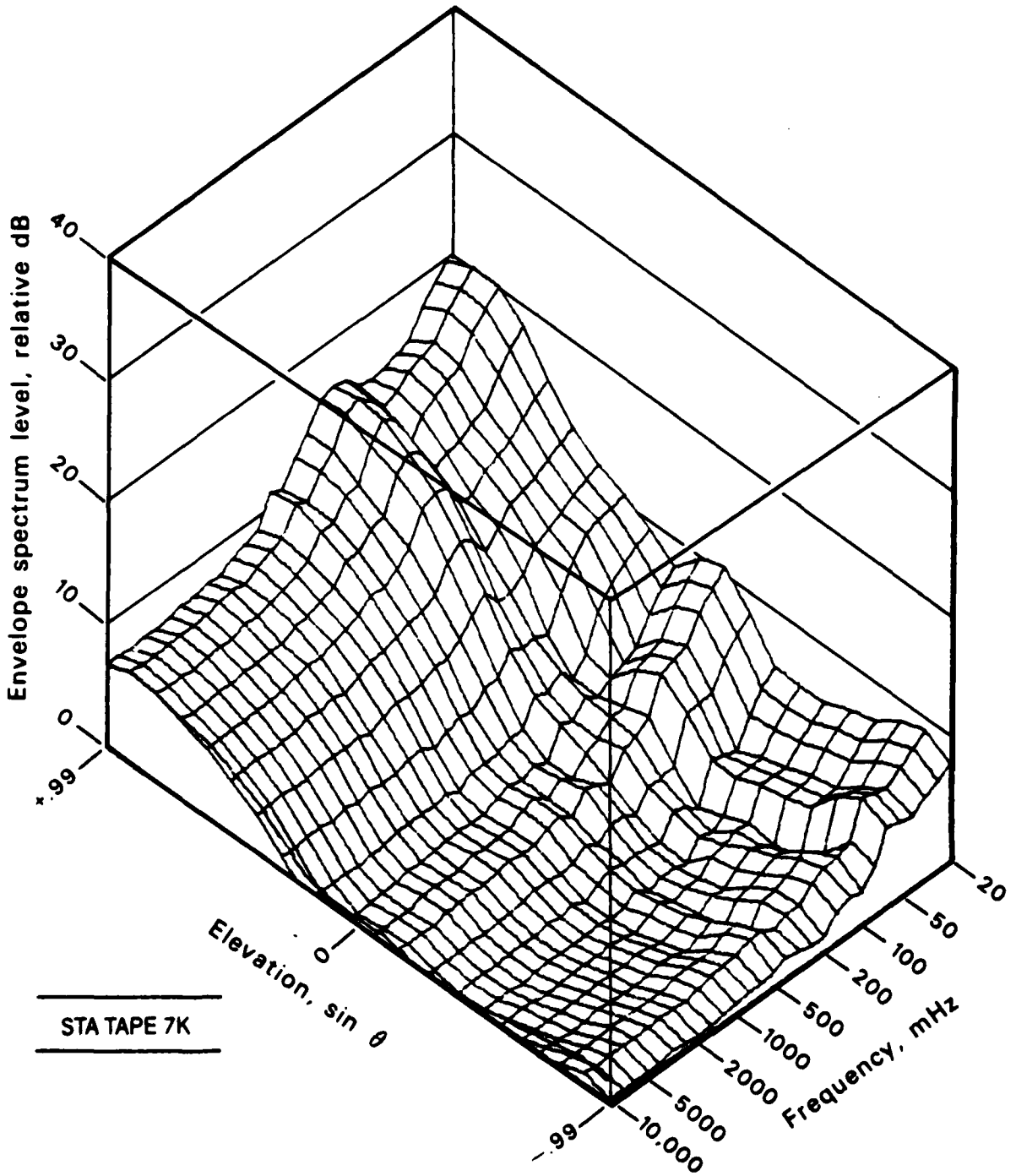
LTA TAPE 7D



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 7D

GROUP 7D

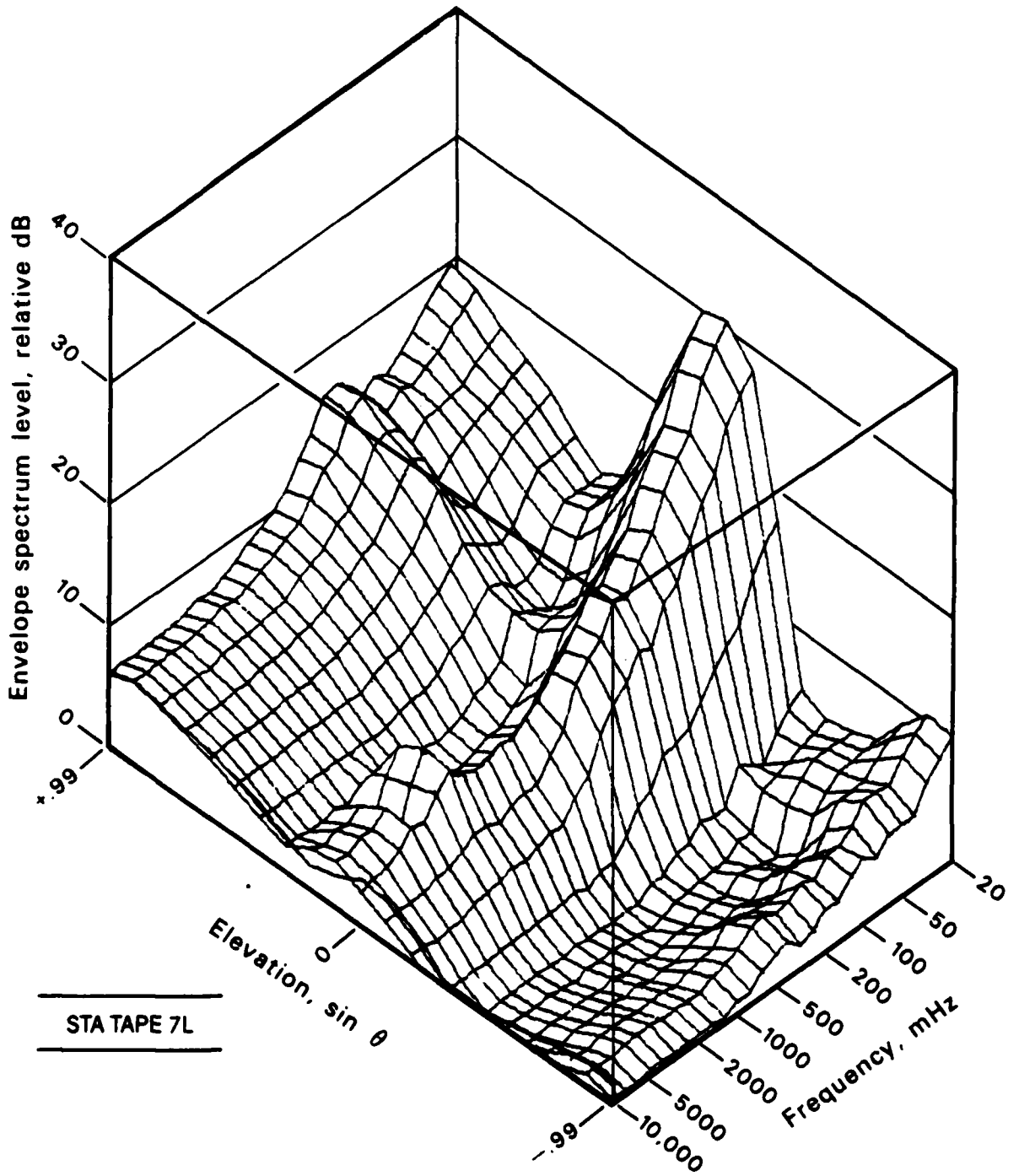


STA TAPE 7K

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4688

GROUP 7D



STA TAPE 7L

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4689

GROUP 7D

LTA TAPE 7D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 1 ANGLE +84°	70.6 25.9 15.8	36.4 25.5 15.6	36.0 23.2 16.8	35.5 22.1 17.1	35.0 21.4 16.6	34.4 19.1 14.8	33.7 18.1 12.9	28.1 18.0 11.7	27.7 16.3 11.1	26.2 16.2
2 +64°	71.4 25.8 16.0	37.9 25.7 16.0	37.3 23.7 17.2	36.5 22.8 17.5	35.6 21.6 17.1	34.9 19.7 15.3	34.0 18.4 13.5	29.8 18.2 12.4	28.9 16.8 11.9	26.2 16.6
3 +53°	71.1 24.6 15.0	38.0 24.8 15.3	37.2 23.2 16.3	36.2 22.0 16.9	34.8 20.4 16.1	33.8 19.1 14.4	32.3 17.6 12.8	28.9 17.1 11.7	28.4 15.8 11.3	25.3 16.2
4 +44°	70.5 23.3 13.7	37.4 23.8 14.3	36.5 21.4 15.1	35.4 20.3 15.7	33.8 18.7 14.7	32.6 17.5 13.1	30.9 16.4 11.6	27.3 15.6 10.7	26.0 14.3 10.2	24.6 15.1
5 +37°	69.9 21.5 11.9	36.2 22.0 12.7	35.3 19.4 13.6	34.2 18.5 14.0	32.6 16.6 13.0	31.5 15.5 11.5	29.8 14.7 10.2	27.1 14.1 9.4	23.9 12.8 9.0	23.1 13.4
6 +30°	69.1 19.6 9.9	34.7 19.9 10.5	33.8 17.6 11.4	32.6 16.4 11.4	31.0 14.1 10.6	30.0 13.4 9.3	28.7 12.5 8.1	26.8 12.7 7.6	23.2 11.1 7.2	21.1 11.1
7 +23°	68.1 20.5 8.3	32.6 20.0 9.0	31.8 17.3 9.2	30.9 15.6 9.4	29.6 13.5 8.1	28.9 11.9 7.0	28.2 11.0 6.0	26.8 12.2 5.7	23.0 9.2 5.5	20.5 8.9
8 +17°	66.8 24.8 7.6	31.7 23.4 8.9	31.4 20.8 9.0	31.1 18.3 9.5	30.9 16.4 5.7	29.7 13.3 4.7	28.2 12.0 3.9	29.0 13.3 3.9	26.0 9.6 3.8	23.5 8.6
9 +12°	65.5 26.5 7.8	33.4 25.0 9.5	33.8 22.4 9.5	34.2 20.0 10.2	34.5 17.9 4.6	33.1 14.6 3.4	30.9 13.2 2.7	30.8 13.8 2.5	28.2 10.4 2.5	25.3 8.9
10 +6°	65.0 24.5 6.7	38.7 23.7 7.7	38.0 21.0 8.4	37.2 19.2 9.2	36.1 15.8 3.6	35.3 12.8 2.6	34.3 12.3 1.9	31.3 11.6 1.8	28.0 8.4 1.9	26.7 6.6
11 0°	65.3 26.7 9.1	45.0 25.5 8.4	43.9 24.2 10.1	42.4 22.7 10.1	40.2 18.5 5.2	39.6 15.1 4.6	39.0 13.5 4.0	36.5 12.3 3.4	33.2 8.3 3.1	30.6 7.0
12 −6°	65.5 27.0 8.8	44.2 26.4 8.1	43.2 24.7 10.4	41.9 23.1 9.5	39.9 19.0 5.5	38.3 15.8 5.2	35.6 13.4 4.3	35.6 12.1 3.6	32.8 8.4 3.4	29.4 7.5
13 −12°	65.0 25.9 7.8	40.5 25.8 7.3	39.6 22.9 9.4	38.3 21.5 8.8	36.6 18.2 3.9	36.0 15.1 3.5	35.2 12.3 2.4	32.5 11.4 1.7	30.4 7.3 1.4	28.2 6.8
14 −17°	64.4 20.6 4.7	32.0 19.6 4.3	31.2 16.9 5.8	30.3 16.5 5.6	29.0 13.6 1.6	28.2 9.9 1.0	27.2 7.7 0.4	26.7 6.5 0.1	24.3 3.8 -0.1	22.2 3.5

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 7D

LTA TAPE 7D

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	64.3 13.5 1.1	24.5 11.5 0.9	23.6 8.9 1.1	22.4 9.3 1.4	20.9 6.3 -0.4	20.7 3.8 -0.4	20.6 3.3 -0.7	21.3 2.3 -0.8	18.2 0.9 -1.1	14.5 0.7
16 −30°	64.5 9.2 0.3	21.3 7.6 0.4	20.4 5.8 0.2	19.2 5.4 0.1	17.7 3.3 -0.4	18.0 2.4 -0.3	18.4 2.6 -0.4	17.2 3.5 -0.6	12.5 0.3 -0.6	9.5 0.4
17 −37°	64.8 9.0 0.3	20.9 7.6 0.6	19.9 5.5 0.4	18.7 3.7 0.2	16.9 3.5 0.1	18.1 2.8 0.2	19.0 3.2 0.1	15.6 4.8 -0.1	9.9 0.9 -0.0	7.5 1.1
18 −44°	65.1 9.2 1.4	22.4 9.1 1.6	21.5 6.7 1.5	20.4 5.4 1.3	19.0 4.9 1.2	19.8 4.3 1.2	20.5 4.2 0.7	15.2 5.6 0.7	10.7 2.0 0.6	8.7 2.1
19 −53°	65.6 10.8 4.2	23.6 11.3 3.6	22.7 9.0 3.7	21.6 8.0 3.3	20.2 7.4 3.2	20.8 7.3 2.8	21.4 6.7 2.4	16.1 7.1 2.5	12.7 5.0 2.6	10.8 5.3
20 −64°	66.0 11.7 6.1	23.4 12.4 5.2	22.6 10.4 5.3	21.5 9.6 4.6	20.0 7.1 4.3	20.9 9.1 3.9	21.6 8.4 3.6	16.6 8.5 3.6	13.8 6.8 3.7	12.0 7.1
21 −84°	65.6 10.7 5.4	21.5 11.8 4.5	20.7 9.0 4.5	19.8 8.6 3.7	18.6 8.0 3.4	19.7 8.0 3.0	20.5 7.4 2.7	15.0 7.2 2.7	12.7 6.1 2.7	11.1 6.0

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 7D

LTA TAPE 7D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.6	36.4	36.0	35.5	35.0	34.4	33.7	28.1	27.7	26.2
ANGLE +84°	25.9	25.5	23.2	22.1	21.4	19.1	18.1	18.0	16.3	16.2
	15.8	15.6	16.8	17.1	16.6	14.8	12.9	11.7	11.1	
2	71.4	38.0	37.3	36.5	35.6	34.9	34.0	30.0	28.7	26.2
+64°	25.9	25.7	23.6	22.8	21.6	19.7	18.3	18.2	16.8	16.6
	16.0	16.1	17.2	17.5	17.1	15.3	13.5	12.4	11.9	
3	71.1	37.9	37.1	36.1	34.7	33.7	32.5	29.1	28.2	25.3
+53°	24.6	24.9	23.1	22.0	20.4	19.1	17.6	17.1	15.8	16.1
	15.1	15.4	16.3	17.0	16.1	14.5	12.8	11.7	11.3	
4	70.5	37.5	36.5	35.2	33.3	32.3	31.1	27.9	25.9	24.8
+44°	23.9	23.8	21.6	20.4	18.9	17.3	16.4	15.5	14.3	15.1
	13.9	14.3	15.1	15.8	14.6	13.1	11.7	10.7	10.1	
5	69.9	36.2	35.2	33.7	31.6	30.7	29.6	26.8	24.4	23.6
+37°	22.1	21.8	19.4	18.8	16.7	15.7	14.8	14.0	12.7	13.3
	12.2	12.7	13.7	14.0	13.0	11.5	10.3	9.4	9.0	
6	69.1	34.6	33.6	32.2	30.3	29.3	28.0	26.0	23.8	21.3
+30°	20.7	20.0	17.7	16.0	14.5	13.5	12.5	12.8	10.9	11.1
	10.1	10.5	11.5	11.4	10.6	9.3	8.1	7.6	7.2	
7	68.1	33.3	32.4	31.3	29.7	28.9	28.0	26.0	23.8	21.6
+23°	22.0	21.3	17.9	15.6	14.7	12.5	11.3	12.3	9.4	9.3
	9.3	9.5	9.9	9.9	8.3	7.1	6.1	5.8	5.6	
8	66.8	32.7	31.7	30.4	28.6	28.3	27.9	29.1	24.9	23.3
+17°	25.3	23.3	21.0	17.8	16.5	13.7	13.1	13.6	10.0	8.7
	8.2	8.8	8.9	9.5	5.8	4.8	4.1	3.9	3.7	
9	65.4	34.6	33.8	32.8	31.4	30.9	30.4	30.8	27.3	25.4
+12°	26.6	25.0	22.8	19.2	17.9	15.0	14.3	14.1	10.7	9.0
	8.9	9.2	9.9	10.6	4.8	3.5	2.8	2.7	2.5	
10	64.8	33.2	32.5	31.6	30.6	30.4	30.2	28.7	24.8	24.0
+6°	24.0	22.7	20.2	18.6	16.7	13.5	12.5	11.2	8.8	7.2
	7.6	7.8	9.0	9.6	3.5	2.5	1.8	1.7	1.6	
11	64.7	35.0	34.1	32.9	31.4	30.4	29.2	26.5	22.3	22.5
0°	19.5	20.6	17.8	18.4	16.1	13.3	11.2	9.9	7.2	6.5
	7.0	7.0	8.9	8.5	3.2	2.3	1.7	1.7	1.6	
12	65.1	35.6	34.7	33.5	31.8	30.5	28.6	27.1	23.5	23.4
−6°	21.3	21.5	19.2	19.7	17.7	14.3	12.3	10.3	7.5	6.9
	7.7	7.5	10.0	9.2	3.5	2.6	2.0	1.8	1.7	
13	64.8	33.8	32.8	31.5	29.7	28.6	27.1	26.9	23.4	22.6
−12°	21.8	21.0	18.5	19.2	17.4	13.7	11.3	8.9	6.6	6.1
	7.3	7.0	9.5	8.7	3.1	2.1	1.6	1.2	1.1	
14	64.4	30.2	29.3	28.1	26.5	25.8	25.0	25.9	22.2	20.4
−17°	19.1	17.7	15.4	15.9	13.7	9.9	7.9	5.6	3.9	3.7
	4.7	4.5	6.2	5.8	1.5	0.9	0.3	-0.0	-0.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE, STABILIZED BEAM SET.

MPL-M-4692

GROUP 7D

LTA TAPE 7D

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.3	24.1	23.3	22.3	21.1	20.7	20.2	21.6	17.7	14.4
ANGLE −23°	13.2	11.6	9.3	9.5	6.7	4.4	3.8	2.5	1.2	1.2
	1.1	1.1	1.5	1.6	-0.3	-0.5	-0.6	-0.9	-1.1	
16	64.5	21.6	20.6	19.4	17.7	18.1	18.5	17.2	12.1	9.9
−30°	9.4	7.9	6.1	5.7	3.4	2.5	2.7	3.4	0.4	0.6
	0.2	0.3	0.3	0.2	-0.3	-0.3	-0.4	-0.6	-0.6	
17	64.8	21.0	20.1	18.9	17.3	18.3	19.1	15.6	10.0	8.1
−37°	9.2	7.7	5.8	3.8	3.4	2.8	3.0	4.7	0.8	1.0
	0.2	0.4	0.4	0.3	0.2	0.2	0.1	-0.1	-0.1	
18	65.1	22.3	21.5	20.4	18.9	19.7	20.4	15.4	10.7	8.8
−44°	9.2	8.9	6.5	5.4	4.9	4.4	4.2	5.4	2.2	2.0
	1.3	1.6	1.5	1.3	1.2	1.2	0.7	0.7	0.6	
19	65.6	23.5	22.7	21.7	20.5	21.0	21.5	16.2	13.1	11.0
−53°	10.8	11.2	9.1	7.8	7.4	7.3	6.7	7.2	5.1	5.3
	4.2	3.7	3.7	3.4	3.2	2.9	2.5	2.5	2.6	
20	66.0	23.4	22.5	21.5	20.1	20.9	21.6	16.5	13.9	12.0
−64°	11.7	12.4	10.3	9.6	9.1	9.0	8.3	8.5	6.8	7.1
	6.1	5.2	5.3	4.6	4.3	3.9	3.6	3.6	3.7	
21	65.6	21.5	20.7	19.8	18.6	19.7	20.5	15.0	12.7	11.1
−84°	10.7	11.8	9.0	8.6	8.0	8.0	7.4	7.2	6.1	6.0
	5.4	4.5	4.5	3.7	3.4	3.0	2.7	2.7	2.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 7D

GROUP 7D

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1 ANGLE −71.3°	66.0	41.4	39.9	37.6	32.4	37.3	39.6	32.8	29.9	26.1
	26.8	22.5	20.7	19.0	16.9	16.3	13.1	12.8	11.6	9.0
	9.7	8.6	8.3	6.8	6.4	5.9	5.5	5.3	6.0	
2 −66°	66.0	44.2	42.7	40.6	36.1	39.6	41.6	37.6	27.8	29.6
	25.6	23.0	23.0	20.8	19.2	17.6	16.2	14.6	13.0	10.9
	9.8	8.9	9.6	8.2	7.6	7.4	6.7	6.3	6.9	
3 −61.6°	65.3	43.2	41.9	40.2	37.1	39.2	40.6	33.4	30.3	28.7
	24.3	25.0	24.0	19.5	19.1	15.0	15.1	14.3	12.5	11.3
	9.7	8.6	8.7	7.5	6.9	5.7	5.9	5.2	6.2	
4 −57.8°	64.4	41.0	39.7	38.0	35.2	34.8	34.3	28.2	29.7	26.1
	23.7	22.8	20.0	17.1	17.6	13.5	13.2	11.4	9.6	9.1
	7.0	5.1	5.1	3.9	3.7	2.8	3.0	2.4	2.6	
5 −54.3°	63.8	35.7	34.5	32.6	29.5	28.5	27.3	23.6	19.2	16.9
	16.6	15.9	12.1	11.0	11.2	9.6	7.2	7.7	5.6	3.5
	2.6	1.6	1.7	0.7	0.4	0.3	0.3	0.3	0.2	
6 −51.1°	63.7	34.2	33.1	31.6	29.2	27.2	23.3	22.9	20.3	15.9
	14.0	11.2	7.5	9.8	6.2	5.6	7.0	4.7	3.0	1.9
	1.0	0.2	0.6	−0.4	−0.6	−0.6	−0.6	−0.9	−1.2	
7 −48.1°	63.6	32.2	30.9	29.1	25.7	24.3	22.1	19.8	18.8	15.2
	14.6	9.7	7.3	6.5	4.3	5.2	4.0	3.7	2.2	1.1
	0.8	−0.2	−0.6	−0.4	−1.2	−1.0	−1.4	−1.5	−1.6	
8 −45.3°	63.6	29.1	27.8	26.0	22.8	21.0	18.0	15.2	16.1	13.5
	15.3	8.7	6.6	5.6	3.2	5.1	2.9	3.5	1.3	0.8
	0.6	−0.8	−0.1	−0.8	−1.2	−1.1	−1.8	−1.5	−1.7	
9 −42.6°	63.6	26.2	25.3	24.0	22.2	19.9	14.2	14.0	16.2	12.4
	14.5	8.6	6.3	5.8	3.6	5.2	2.0	4.0	0.9	0.5
	−0.2	−1.2	−0.4	−0.7	−1.6	−1.6	−1.7	−1.7	−1.7	
10 −40.0°	63.7	25.6	25.8	26.0	26.2	24.3	20.7	19.6	19.1	15.3
	15.2	12.0	9.4	9.5	6.2	6.0	4.1	4.7	1.2	0.8
	0.3	0.1	−0.2	−0.1	−0.8	−1.6	−1.0	−1.0	−0.9	
11 −37.5°	63.7	23.3	24.5	25.4	26.2	26.1	26.0	27.2	18.6	17.3
	18.5	15.2	11.2	11.2	7.0	6.3	6.3	5.4	2.6	2.2
	0.6	0.4	−0.2	−0.5	0.0	−1.1	−0.5	−0.8	−0.9	
12 −35.1°	63.6	24.0	23.5	22.9	22.3	24.0	25.3	27.1	12.2	16.1
	18.4	12.2	13.2	8.4	6.4	6.2	5.8	4.8	3.0	2.0
	0.7	0.3	−0.2	−1.0	−0.6	−1.0	−0.9	−0.7	−0.7	
13 −32.8°	63.6	29.3	28.1	26.6	24.2	23.7	23.2	19.8	14.6	13.0
	15.0	9.6	10.3	5.9	6.5	4.7	4.9	4.2	2.2	1.3
	0.4	0.2	−0.3	−0.6	−0.6	−1.2	−1.3	−1.0	−1.0	
14 −30.5°	63.6	30.7	29.5	27.8	24.8	24.4	24.0	20.0	16.7	11.1
	13.3	13.3	9.0	8.1	7.5	5.2	5.6	4.3	2.6	0.7
	0.3	0.1	−0.2	0.2	−0.3	−0.6	−1.3	−1.2	−1.2	
15 −28.3°	63.6	29.0	27.6	25.6	21.8	22.3	22.8	17.2	17.0	10.7
	12.8	13.1	8.4	7.8	6.7	5.8	5.3	3.8	2.7	−0.0
	−0.2	0.1	−0.5	−0.1	−0.6	−0.8	−1.3	−1.5	−1.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

MPL-M-4694

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	63.5	26.3	24.9	23.0	19.3	19.7	20.0	14.7	11.1	8.3
ANGLE −26.1°	11.4	9.2	7.4	6.0	3.8	4.5	3.7	3.7	1.2	0.2
	-0.5	-0.6	-0.9	-0.9	-0.8	-1.7	-1.7	-1.8	-1.7	
17	63.5	24.2	23.1	21.5	19.0	17.9	16.4	18.6	7.3	8.5
−24.0°	11.5	6.8	6.9	5.5	3.0	3.2	1.8	3.7	0.3	-0.3
	-0.5	-0.3	-0.2	-0.8	-0.7	-1.0	-1.1	-1.1	-0.8	
18	63.5	23.0	21.8	20.2	17.7	16.6	15.0	16.9	10.3	9.7
−21.8°	10.7	8.3	7.3	6.6	5.1	4.3	1.7	4.5	1.2	0.9
	0.4	-0.2	0.0	-0.6	-0.7	-0.7	-1.0	-0.5	0.1	
19	63.5	21.8	20.8	19.6	17.9	16.4	14.0	14.8	11.7	12.5
−19.8°	11.2	8.8	9.9	8.6	5.9	5.9	3.4	5.4	2.1	1.8
	0.9	0.5	-0.0	-0.2	-1.0	-0.7	-1.0	-0.5	1.0	
20	63.6	22.9	21.8	20.4	18.3	17.6	16.9	14.9	13.5	14.8
−17.7°	12.0	10.2	11.7	10.2	7.8	7.9	6.5	6.1	3.6	2.0
	1.2	1.0	0.3	0.2	-0.5	-0.4	-0.6	0.1	2.3	
21	63.7	24.5	23.7	22.6	21.2	19.9	18.1	17.2	13.7	14.7
−15.7°	13.0	11.6	12.0	10.2	8.4	7.9	6.9	6.0	3.1	1.7
	1.5	1.2	0.5	0.1	-0.1	-0.3	-0.7	0.6	3.1	
22	63.8	26.0	25.2	24.3	23.0	21.0	16.9	20.4	15.5	15.0
−13.7°	9.4	11.8	11.4	8.0	6.7	6.5	5.4	5.2	2.8	1.2
	1.1	1.0	0.6	0.1	-0.1	-0.2	-0.7	0.2	2.0	
23	63.8	26.2	25.8	25.3	24.8	22.7	18.6	19.4	16.8	14.4
−11.7°	11.6	11.4	10.7	6.5	4.5	6.0	5.2	5.2	2.7	1.2
	1.4	1.3	0.8	0.3	-0.1	-0.2	-0.5	-0.0	0.5	
24	63.8	28.5	27.5	26.1	24.2	22.4	19.1	18.0	18.4	13.4
−9.7°	13.8	12.1	9.5	7.2	5.4	6.7	4.6	4.8	1.8	1.0
	1.9	1.4	1.0	0.8	0.0	-0.1	-0.6	-0.3	-0.1	
25	64.0	31.7	30.3	28.2	24.0	22.3	19.6	21.2	20.2	15.9
−7.8°	14.9	14.2	10.3	8.7	8.7	7.6	6.0	5.0	2.4	2.3
	2.4	1.9	1.9	1.2	0.1	0.5	-0.3	0.1	-0.1	
26	64.2	33.1	31.8	29.9	26.6	25.5	24.1	24.0	22.1	18.2
−5.8°	17.5	17.6	14.3	12.6	12.4	9.3	7.9	6.6	4.3	4.4
	4.2	4.6	5.2	4.4	1.6	1.3	0.4	0.9	0.6	
27	64.6	34.4	33.7	32.7	31.4	30.4	29.0	27.4	26.3	23.1
−3.9°	23.4	23.4	20.4	18.5	16.8	12.7	11.1	10.5	7.9	7.2
	8.2	8.4	9.3	9.3	3.8	2.7	1.7	1.9	1.4	
28	65.0	35.5	34.9	34.2	33.4	32.8	32.1	29.7	28.9	26.6
−1.9°	27.5	26.9	23.6	21.9	19.6	15.5	13.6	13.4	10.8	8.9
	10.8	10.6	12.1	12.8	5.6	3.7	2.6	2.8	2.5	
29	65.2	35.5	34.4	32.9	30.7	31.5	32.1	29.1	27.5	27.0
0°	28.0	26.7	23.4	22.0	19.5	15.8	14.1	13.4	11.4	9.4
	11.0	10.9	12.3	13.3	5.7	3.8	3.1	2.8	2.7	
30	65.1	34.7	33.6	32.2	29.9	29.9	30.0	28.3	23.6	24.9
+1.9°	25.2	23.7	20.3	20.0	17.7	14.5	14.2	12.8	10.5	8.9
	9.2	9.7	10.7	11.3	4.5	3.1	2.6	2.2	2.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	64.7	33.8	32.8	31.5	29.6	29.1	28.6	28.8	20.9	21.5
ANGLE +3.9°	20.7	19.0	17.1	15.9	14.6	13.9	13.6	10.9	9.4	7.8
	6.5	7.4	7.9	7.4	2.8	2.2	1.9	1.2	1.4	
32	64.7	33.3	32.9	32.5	32.1	31.1	29.8	29.3	23.4	22.2
+5.8°	19.4	17.0	15.3	13.6	11.2	11.2	10.6	8.9	6.8	5.8
	4.2	4.6	4.1	3.5	1.9	1.5	1.2	0.8	1.3	
33	64.7	33.7	33.6	33.5	33.3	31.2	26.8	25.2	25.4	24.4
+7.8°	23.5	21.0	18.0	16.1	16.3	14.2	11.3	11.7	9.7	7.2
	5.7	5.0	4.5	2.9	3.0	2.2	1.2	1.3	1.7	
34	65.1	41.7	41.0	40.3	39.4	38.0	36.0	32.5	28.4	26.4
+9.7°	26.5	27.6	21.2	18.5	21.7	15.7	13.9	16.5	11.5	10.1
	8.0	6.4	6.3	4.3	4.2	4.2	2.6	2.1	2.3	
35	66.2	47.3	46.5	45.5	44.1	42.4	39.6	39.7	37.5	32.0
+11.7°	31.0	32.3	27.2	26.4	26.5	20.8	19.9	19.6	14.3	14.1
	11.8	10.3	8.9	8.6	8.2	7.4	5.9	4.6	4.4	
36	67.6	49.2	48.4	47.3	46.0	43.9	40.1	42.4	41.4	36.2
+13.7°	35.5	36.7	30.9	29.6	28.0	23.9	23.2	22.6	18.1	17.2
	14.8	13.5	11.7	11.6	10.8	10.5	9.1	7.8	7.0	
37	68.3	49.0	48.0	46.6	44.6	43.4	41.6	38.2	37.9	34.0
+15.7°	35.0	35.2	31.5	29.6	26.2	23.3	21.6	23.1	18.5	17.2
	15.4	14.0	12.8	12.1	11.1	11.1	9.3	7.8	7.5	
38	68.2	46.0	45.6	45.2	44.7	43.2	40.9	36.0	35.3	31.2
+17.7°	31.1	31.7	31.0	27.6	25.4	22.6	20.9	21.4	17.6	16.4
	15.1	14.0	12.4	11.5	11.2	10.7	9.2	8.1	7.3	
39	68.1	40.6	41.4	42.1	42.6	40.9	38.2	35.6	34.2	30.3
+19.8°	32.0	31.2	30.3	23.4	24.9	21.6	20.8	19.8	16.4	15.0
	14.2	13.9	12.5	11.9	11.5	10.2	9.0	7.8	6.9	
40	68.6	40.6	40.2	39.8	39.3	37.9	35.9	34.8	32.2	28.2
+21.8°	27.4	26.2	27.9	21.3	21.8	21.3	19.2	18.0	16.3	14.6
	13.3	12.3	11.7	10.6	10.2	9.3	8.1	7.5	6.9	
41	68.8	36.6	35.9	35.1	34.1	33.0	31.5	30.8	27.7	26.4
+24.0°	24.2	24.1	24.2	22.1	20.6	20.0	17.8	17.4	14.9	14.3
	13.0	11.5	10.9	10.2	9.2	8.3	7.7	7.4	7.2	
42	68.6	39.5	38.7	37.8	36.7	35.2	32.9	29.3	28.1	27.2
+26.1°	27.7	25.0	24.6	23.0	21.7	20.1	18.0	16.8	14.9	14.8
	12.9	12.5	10.9	10.1	9.2	8.4	7.8	7.4	7.5	
43	68.2	38.7	39.1	39.5	39.8	37.9	34.3	33.1	31.9	29.2
+28.3°	27.9	26.3	25.4	23.6	21.8	20.6	18.9	16.6	15.3	14.8
	13.4	12.7	11.1	9.9	9.5	8.6	8.1	7.5	7.6	
44	68.3	44.2	43.5	42.5	41.3	40.6	39.8	36.2	27.1	31.3
+30.5°	33.0	28.6	26.7	23.7	25.3	24.5	21.0	21.1	17.6	15.5
	15.0	12.6	12.2	11.1	11.0	9.9	9.0	8.0	7.7	
45	69.0	46.5	45.4	43.8	41.4	41.4	41.4	37.8	38.2	31.3
+32.8°	33.7	30.5	28.9	25.7	25.6	23.7	21.9	22.3	19.0	17.2
	16.5	15.5	13.8	13.7	13.0	11.3	9.8	9.1	8.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	69.5	46.1	44.8	42.9	39.5	38.6	37.5	35.5	40.3	35.7
ANGLE +35.1°	30.1	30.7	29.9	23.9	25.0	24.1	22.3	22.3	18.6	17.6
	16.5	15.9	14.7	15.1	14.7	12.7	11.4	9.8	9.5	
47	69.0	49.2	47.9	46.0	42.7	43.0	43.4	40.2	40.1	37.1
+37.5°	30.4	32.8	31.5	25.4	26.5	24.3	22.9	22.6	18.8	18.7
	17.5	16.3	15.6	14.7	15.1	13.2	11.8	9.9	9.6	
48	67.8	49.5	48.1	46.1	42.1	42.7	43.2	41.6	34.3	37.0
+40.0°	28.7	31.2	29.6	25.7	25.2	22.7	22.6	22.1	18.7	18.1
	18.1	16.1	14.6	12.5	13.4	12.5	11.2	9.3	9.8	
49	66.7	46.6	45.3	43.5	40.3	39.7	39.0	38.6	31.9	31.9
+42.6°	24.7	27.3	25.7	23.4	22.1	21.3	20.4	19.3	16.4	14.5
	15.6	13.4	12.9	9.3	11.1	10.7	9.4	6.7	7.6	
50	66.1	41.7	40.5	38.7	35.8	34.8	33.5	32.3	28.5	26.2
+45.3°	21.0	22.3	23.9	19.4	18.1	15.9	17.6	14.9	12.3	10.3
	10.8	9.1	9.5	7.2	7.4	7.0	5.5	4.0	4.7	
51	65.7	38.0	36.6	34.6	30.9	30.9	30.9	25.8	26.2	25.0
+48.1°	19.9	19.6	21.9	18.2	16.3	12.0	15.4	11.0	9.2	8.6
	8.0	5.8	6.5	5.1	4.6	4.5	2.8	2.5	2.8	
52	65.4	35.0	33.7	31.8	28.3	28.5	28.8	22.3	23.2	19.7
+51.1°	19.1	18.3	17.7	15.3	14.1	11.6	10.7	8.2	6.5	5.8
	5.2	4.0	3.5	2.7	2.9	2.5	1.7	1.8	1.9	
53	65.3	35.5	34.6	33.5	32.0	29.3	20.6	25.0	26.3	20.2
+54.3°	21.4	19.2	14.4	14.7	14.0	12.5	10.1	9.1	8.4	6.3
	6.6	5.9	4.9	5.0	3.9	3.0	2.3	2.2	1.5	
54	65.6	39.4	38.2	36.7	34.4	33.8	33.0	31.9	28.4	25.3
+57.8°	20.6	21.5	13.9	20.5	17.8	15.0	13.2	11.9	12.9	10.2
	10.1	8.9	7.9	8.3	7.5	6.5	4.6	4.3	4.0	
55	66.0	43.3	42.1	40.4	37.5	38.3	39.0	35.8	28.5	30.6
+61.6°	23.0	26.1	21.2	22.0	22.9	16.6	17.8	14.6	16.7	14.5
	11.9	10.8	9.3	11.9	11.0	8.7	7.0	6.2	6.0	
56	66.3	48.2	47.0	45.3	42.6	41.4	37.7	36.0	29.4	31.2
+66.0°	27.1	28.9	25.8	21.8	23.0	19.0	20.4	18.1	17.3	18.4
	12.7	12.5	11.4	13.1	12.1	9.7	7.7	6.7	7.1	
57	66.4	48.0	46.8	45.2	42.6	40.9	38.0	35.0	30.1	29.2
+71.3°	29.7	30.5	28.2	21.9	23.2	20.8	20.9	20.4	19.4	19.1
	14.4	13.6	11.9	12.6	11.6	9.3	7.7	7.2	7.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

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	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 1	57.7	21.2	20.2	18.8	16.9	16.5	16.1	15.8	16.0	17.1
ANGLE +84°	17.5	17.0	15.1	13.7	11.9	12.3	10.0	9.5	9.1	8.4
	8.5	8.2	8.1	8.0	7.7	7.8	7.6	7.7	7.7	
2	58.5	22.1	21.1	19.9	18.2	17.7	17.2	16.2	15.7	17.0
+64°	17.9	17.2	15.0	14.0	12.3	12.8	10.9	10.3	9.8	9.1
	9.3	9.0	8.9	8.7	8.6	8.6	8.5	8.4	8.6	
3	58.2	22.0	20.9	19.6	17.7	17.2	16.7	15.7	13.8	16.8
+53°	17.7	16.2	13.7	13.6	12.0	12.1	10.4	9.9	9.4	9.1
	8.7	8.8	8.4	8.4	8.3	8.2	8.2	8.1	8.4	
4	57.7	20.1	19.1	17.7	15.7	15.1	14.4	14.1	13.6	15.7
+44°	16.4	15.3	12.6	12.2	11.2	11.1	9.8	9.2	8.8	8.6
	7.9	8.0	7.7	7.8	7.6	7.6	7.5	7.4	7.6	
5	57.2	17.3	16.5	15.6	14.4	14.0	13.4	12.2	12.3	14.3
+37°	14.5	13.9	11.5	10.5	9.7	9.8	8.9	8.4	8.1	7.6
	7.7	7.4	7.1	7.0	6.9	6.7	6.8	6.7	6.7	
6	56.3	14.8	14.2	13.6	12.8	12.5	12.2	11.0	9.8	11.4
+30°	12.0	11.0	9.0	8.4	8.2	7.8	7.3	7.2	6.7	6.1
	6.4	6.0	6.2	5.9	5.7	5.6	5.7	5.6	5.4	
7	55.2	13.2	12.7	12.2	11.5	10.9	10.2	8.6	7.9	7.8
+23°	9.3	8.1	6.9	6.0	6.1	5.4	5.3	5.4	5.0	4.3
	4.8	4.4	4.6	4.5	4.2	4.2	4.4	4.3	4.1	
8	53.6	12.1	11.8	11.5	11.2	9.8	7.7	5.1	5.5	5.5
+17°	6.0	4.5	4.2	3.1	3.4	2.9	2.3	2.9	2.7	2.4
	2.3	2.5	2.1	2.4	2.0	2.3	2.3	2.2	2.2	
9	51.9	10.8	10.2	9.5	8.6	7.0	4.3	2.9	4.2	3.3
+12°	3.7	1.7	1.7	1.2	1.1	1.1	0.3	0.8	0.5	0.5
	0.5	0.6	0.2	0.2	-0.1	0.0	0.0	0.1	0.1	
10	51.3	9.2	8.1	6.8	4.7	4.2	3.6	2.8	3.6	2.3
+6°	2.8	0.3	0.9	0.3	0.7	0.4	-0.2	-0.2	-0.1	-0.2
	-0.3	-0.6	-0.4	-0.7	-0.8	-1.0	-1.1	-1.0	-0.9	
11	51.3	11.4	10.3	8.9	6.9	6.5	5.9	3.5	3.4	2.3
0°	1.9	0.5	1.3	0.3	1.2	0.9	0.1	0.1	0.1	0.1
	-0.3	-0.3	-0.2	-0.3	-0.8	-0.6	-0.8	-0.7	-0.3	
12	51.6	12.1	11.1	9.8	7.8	7.4	7.0	4.2	3.2	3.0
−6°	0.9	1.4	1.9	0.2	1.1	0.7	0.2	0.2	0.4	0.1
	-0.1	-0.1	-0.1	-0.2	-0.6	-0.5	-0.6	-0.5	-0.3	
13	51.2	9.8	8.8	7.4	5.4	5.3	5.3	1.7	1.4	1.4
−12°	-0.2	0.5	0.4	-0.5	0.2	-0.5	-0.7	-0.5	-0.5	-0.8
	-0.9	-0.9	-1.2	-1.0	-1.2	-1.2	-1.3	-1.1	-1.2	
14	51.0	6.9	5.8	4.3	2.0	2.5	2.9	-0.5	0.4	0.7
−17°	-1.1	-0.8	-0.5	-0.8	-0.3	-0.9	-1.5	-1.2	-1.3	-1.2
	-1.5	-1.4	-1.9	-1.6	-1.6	-1.6	-1.8	-1.7	-1.7	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

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	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.1 -1.2 -1.3	6.6 -0.9 -1.3	5.7 -1.0 -1.5	4.6 -1.4 -1.7	3.1 -0.6 -1.5	3.0 -1.3 -1.6	2.9 -1.5 -1.6	0.4 -1.2 -1.5	-0.2 -1.4 -1.6	0.2 -1.4
16 −30°	51.4 0.7 -0.9	6.9 -0.5 -0.9	6.0 -0.4 -0.9	5.0 -0.8 -1.2	3.7 -0.2 -0.9	3.7 -0.5 -0.8	3.7 -1.2 -1.0	1.2 -0.9 -0.9	1.4 -0.7 -0.9	0.9 -0.9
17 −37°	51.8 1.2 -0.2	7.7 0.2 -0.2	6.9 0.5 -0.2	5.9 -0.4 -0.3	4.5 0.3 -0.3	4.3 -0.1 -0.3	4.1 -0.5 -0.3	0.9 -0.1 -0.4	1.7 0.0 -0.3	2.1 -0.2
18 −44°	52.2 2.3 0.3	8.2 1.9 0.4	7.4 1.6 0.4	6.3 -0.0 0.5	4.9 1.3 0.3	4.8 0.7 0.1	4.8 0.2 0.3	1.3 0.5 0.4	2.7 0.7 0.3	2.9 0.5
19 −53°	52.7 3.6 1.3	9.7 3.1 1.3	8.9 2.9 1.3	7.8 1.2 1.4	6.5 2.6 1.4	6.8 2.5 1.2	7.2 1.8 1.2	3.3 1.8 1.1	4.1 1.9 1.2	4.2 1.6
20 −64°	53.0 4.4 2.0	10.4 3.3 2.0	9.7 3.3 2.0	8.8 2.8 2.1	7.8 3.4 1.9	8.2 3.4 1.9	8.5 2.8 1.9	5.7 2.7 1.8	5.1 2.6 1.9	4.9 2.2
21 −84°	52.7 3.5 1.4	9.1 2.2 1.4	8.5 2.3 1.4	7.8 2.5 1.7	7.1 2.6 1.3	7.3 2.2 1.4	7.5 2.1 1.3	5.1 2.0 1.3	3.7 1.9 1.2	4.0 1.6

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

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FREQUENCY KEY FOR STA SPECTRA, mHz

	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 1	57.4	21.2	20.3	19.2	17.7	16.9	15.8	16.3	15.5	16.9
ANGLE +84°	18.0	17.6	15.2	13.9	12.1	11.1	10.5	9.9	9.1	8.6
	8.1	8.3	7.7	7.6	7.5	7.4	7.3	7.4	7.3	
2	58.1	20.5	19.8	18.8	17.7	17.0	16.3	16.7	15.6	17.2
+64°	18.4	17.6	15.1	14.5	12.9	11.5	11.0	10.4	9.8	9.2
	8.9	8.9	8.6	8.4	8.1	8.3	8.2	8.0	8.1	
3	57.7	18.8	18.2	17.4	16.5	16.3	16.0	15.8	14.5	16.3
+53°	17.0	16.4	14.3	12.7	12.3	10.9	10.4	10.0	8.9	8.8
	8.5	8.3	8.2	8.1	7.7	7.9	7.7	7.6	7.6	
4	57.2	17.7	17.2	16.6	16.0	15.5	14.9	14.0	13.0	15.4
+44°	16.2	14.9	13.2	11.4	11.0	10.1	9.6	8.7	8.2	8.0
	7.7	7.6	7.5	7.2	7.2	7.0	6.9	6.8	6.8	
5	56.7	16.5	16.1	15.7	15.1	14.2	13.0	11.9	12.1	13.4
+37°	15.1	13.2	11.4	10.7	9.5	8.8	8.5	7.8	7.2	7.0
	6.7	6.6	6.6	6.3	6.3	6.2	6.4	6.2	6.1	
6	55.9	14.3	14.2	14.0	13.9	12.5	10.6	10.0	10.5	11.3
+30°	12.2	10.9	9.6	8.8	7.8	7.1	6.8	6.3	5.6	5.6
	5.6	5.4	5.5	5.5	5.3	5.3	5.3	5.3	5.1	
7	55.1	12.7	12.7	12.7	12.8	11.3	9.1	8.4	8.5	9.7
+23°	10.0	8.7	7.5	7.0	5.8	5.2	5.1	4.8	4.3	4.1
	4.4	4.2	4.4	4.3	4.3	4.2	4.2	4.0	4.2	
8	53.9	13.9	13.7	13.6	13.4	11.8	9.0	7.3	8.1	8.6
+17°	9.5	6.2	5.2	4.7	3.7	3.3	3.1	3.3	2.9	2.9
	3.1	4.2	3.9	3.0	3.3	3.0	3.0	3.2	3.3	
9	53.1	18.9	18.1	17.3	16.2	14.4	11.4	9.4	9.8	9.6
+12°	9.3	5.5	4.4	3.6	3.5	3.0	2.7	2.6	2.2	2.4
	2.9	7.9	6.0	2.9	5.2	4.4	4.6	4.0	4.6	
10	53.8	26.6	25.3	23.5	20.3	18.6	15.9	13.8	12.8	11.4
+6°	10.9	8.6	7.2	5.2	5.1	4.4	4.1	3.6	2.9	3.4
	4.3	9.0	6.9	3.6	6.4	5.3	5.5	4.8	4.9	
11	54.9	32.1	30.7	28.7	25.0	23.6	21.4	18.5	17.1	15.4
0°	15.4	13.5	12.2	11.1	9.5	8.8	7.9	8.2	7.7	7.4
	7.9	8.9	7.5	6.1	6.3	5.2	4.5	4.2	3.9	
12	54.7	32.8	31.4	29.4	25.7	24.3	22.3	19.7	18.1	15.8
−6°	16.1	13.8	12.9	11.5	8.6	7.1	5.4	5.4	5.1	4.5
	4.9	5.0	4.3	3.7	3.6	3.1	2.9	3.1	2.8	
13	53.5	30.2	28.9	27.0	23.7	22.2	19.7	17.0	16.0	13.1
−12°	13.6	11.7	10.6	8.7	6.2	5.1	3.7	3.6	3.3	2.9
	3.0	2.7	2.4	2.2	1.7	1.6	1.4	1.7	1.7	
14	51.7	19.2	17.9	16.0	12.7	11.8	10.5	8.6	7.1	6.6
−17°	6.4	4.2	3.5	1.9	0.5	0.3	-0.3	0.2	-0.0	-0.2
	-0.2	-0.2	-0.3	-0.3	-0.5	-0.4	-0.5	-0.5	-0.5	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 7D

STA TAPE 7L

PAGE 2

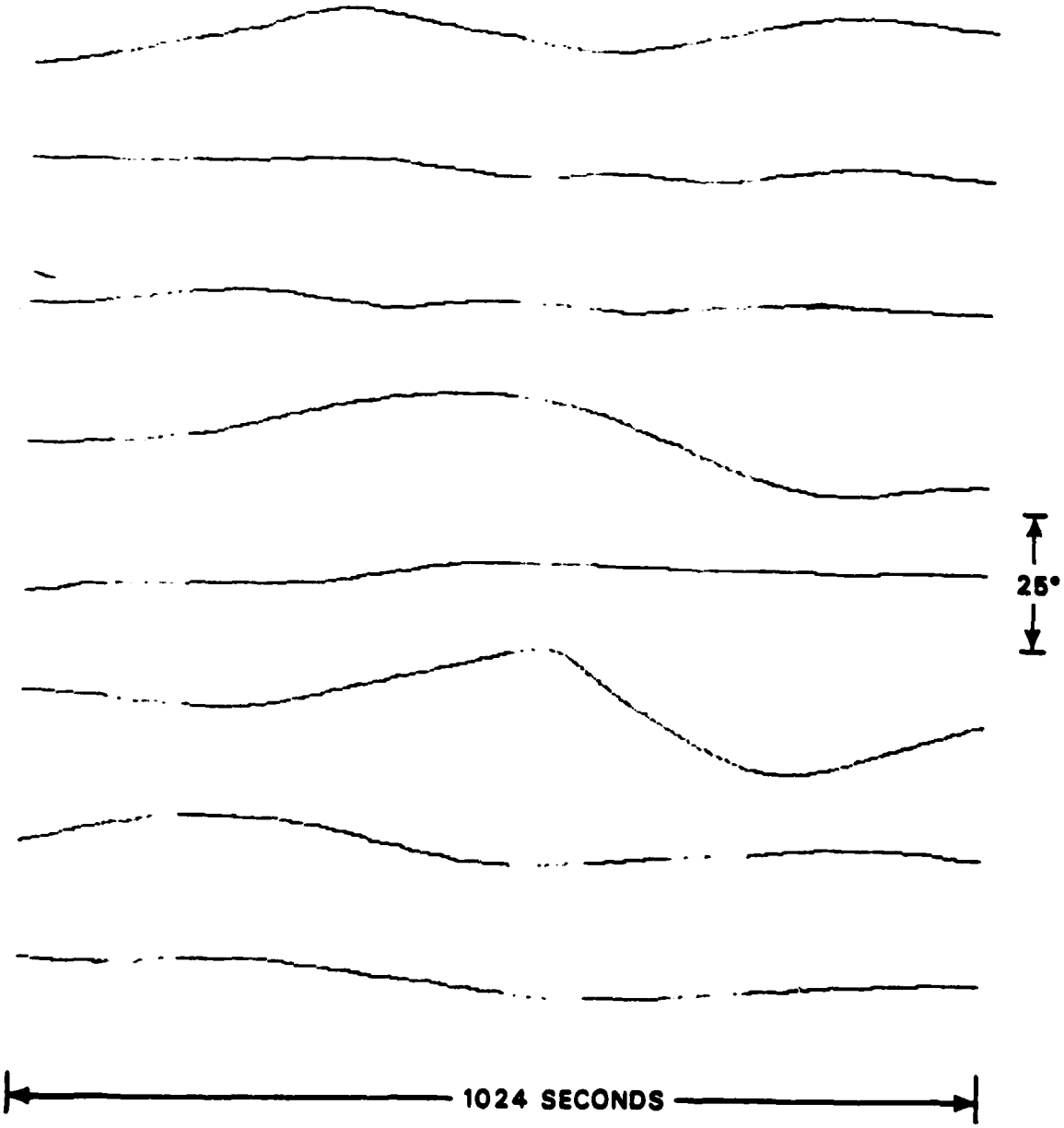
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.2 0.7 -1.5	6.8 0.4 -1.4	5.8 -0.5 -1.4	4.5 -0.5 -1.3	2.7 -1.5 -1.5	3.5 -1.3 -1.4	4.2 -1.5 -1.7	1.4 -1.4 -1.6	1.3 -1.4 -1.4	1.7 -1.2
16 −30°	51.3 -0.2 -1.0	5.7 -0.4 -1.5	5.3 -0.5 -1.2	4.8 -0.6 -1.1	4.3 -1.0 -1.2	3.9 -1.4 -1.1	3.5 -1.2 -1.1	0.7 -1.1 -1.3	0.8 -1.0 -1.3	-0.1 -1.2
17 −37°	51.7 1.1 -0.3	6.1 -0.0 -0.6	6.1 0.3 -0.4	6.2 0.0 -0.4	6.2 -0.3 -0.5	5.1 -0.2 -0.4	3.7 -0.6 -0.6	0.2 -0.8 -0.6	0.5 -0.3 -0.5	0.8 -0.6
18 −44°	52.1 2.0 0.6	6.9 0.9 0.3	6.8 1.3 0.5	6.7 0.9 0.4	6.5 0.9 0.4	5.6 1.1 0.4	4.4 0.9 0.2	2.0 0.3 0.3	1.4 0.3 0.3	2.0 0.1
19 −53°	52.7 4.3 1.6	9.8 3.0 1.5	9.1 2.9 1.4	8.3 3.1 1.6	7.2 3.2 1.6	7.2 3.5 1.5	7.2 2.3 1.2	5.4 2.0 1.4	4.0 1.7 1.3	4.4 1.2
20 −64°	53.0 5.0 2.2	12.1 5.4 2.2	11.1 4.6 2.2	10.0 4.4 2.4	8.4 4.9 2.3	8.5 4.7 2.3	8.5 3.6 1.9	7.3 3.1 2.0	6.3 2.8 2.1	6.3 2.1
21 −84°	52.7 4.7 1.7	11.6 4.8 1.7	10.6 3.7 1.8	9.3 3.2 1.6	7.4 4.2 1.8	7.3 3.8 1.7	7.2 3.2 1.4	6.0 2.3 1.5	6.8 2.2 1.5	5.9 1.7

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 7D

BEARING VS TIME

MEAN & VAR									
313.1	4.61	312.0	10.70	313.?	1.18	313.9	0.76	315.7	37.48
		312.2	41.14	311.3	6.95	306.5	5.57		

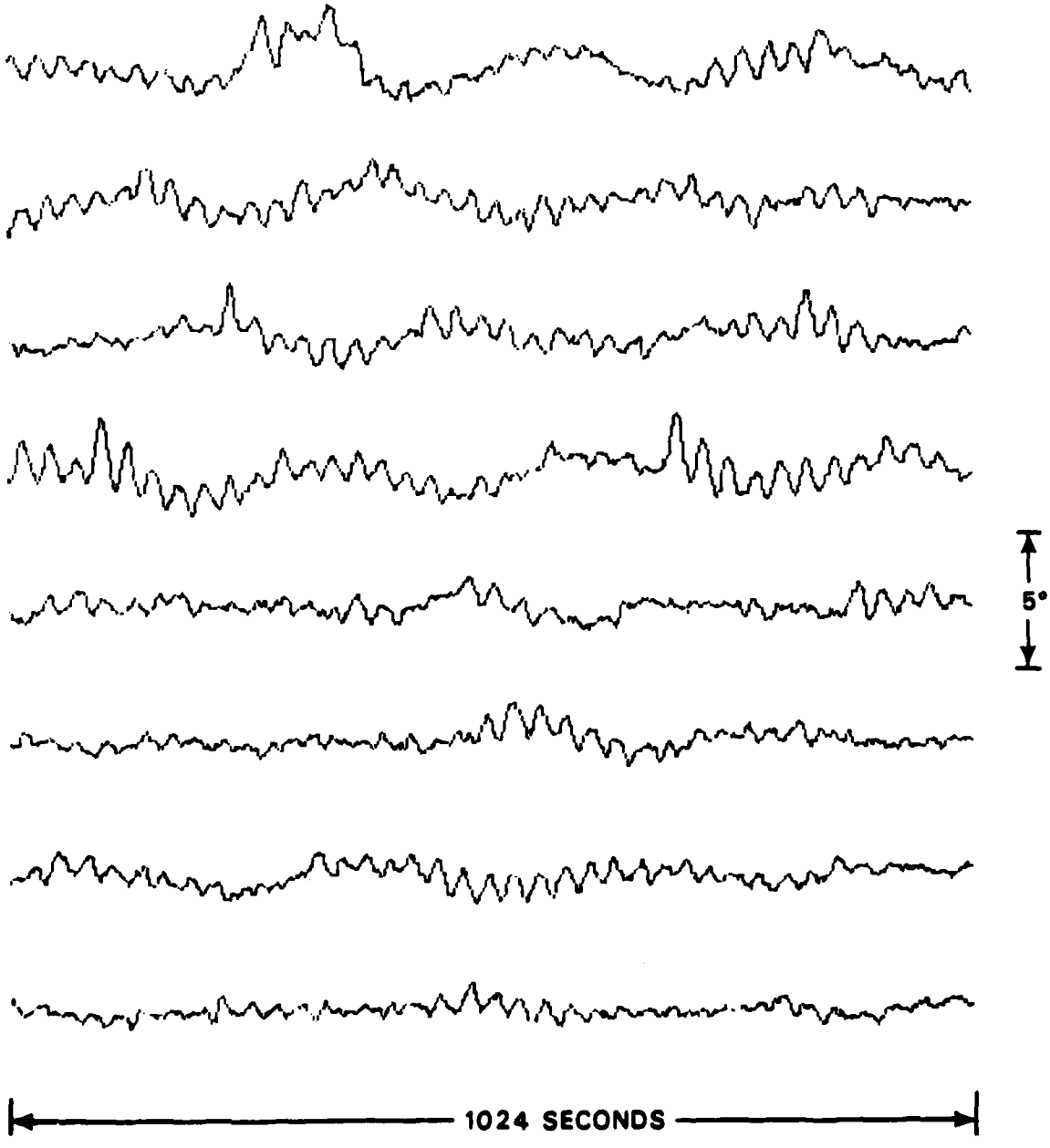


MPL-M-4702

GROUP 7D

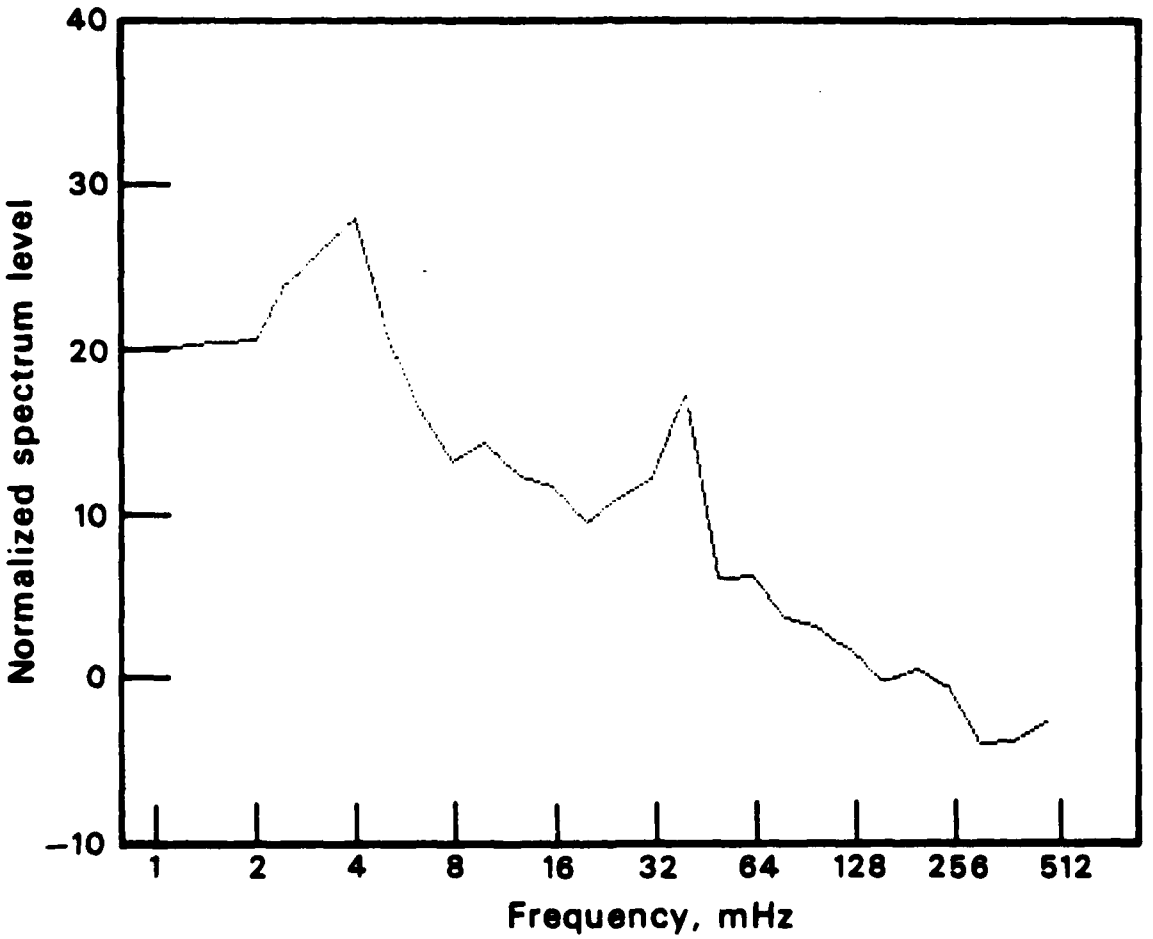
ELEVATION VS TIME

MEAN & VAR.	92.6	0.40	92.6	0.17	92.5	0.17	92.7	0.33	
92.5	0.05	92.4	0.05	92.5	0.09	92.4	-0.03		



MPL-M-4703

GROUP 7D



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 8A

Environmental Summary

8 June 1978

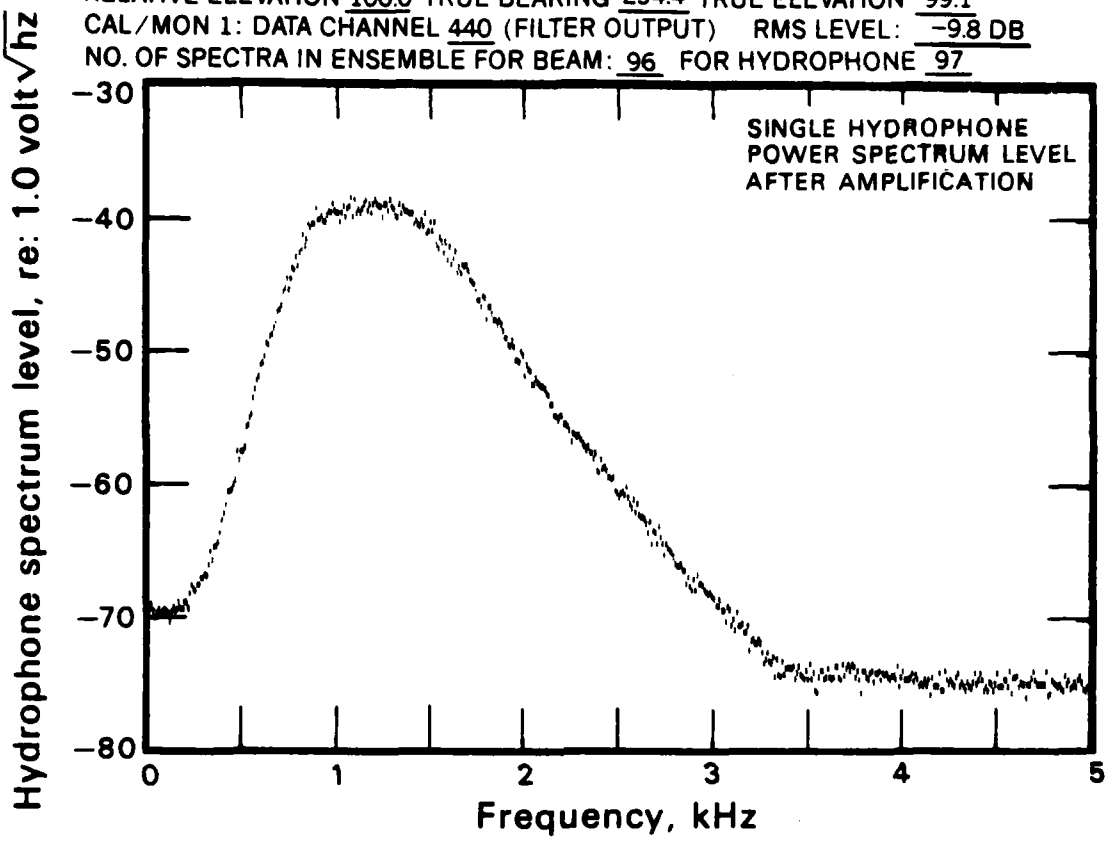
Tapes	Start time	Code
LTA/LOG	04:16:20	08A
STA	04:20:04	08E
STA	05:15:47	08F
Low Band Filter		

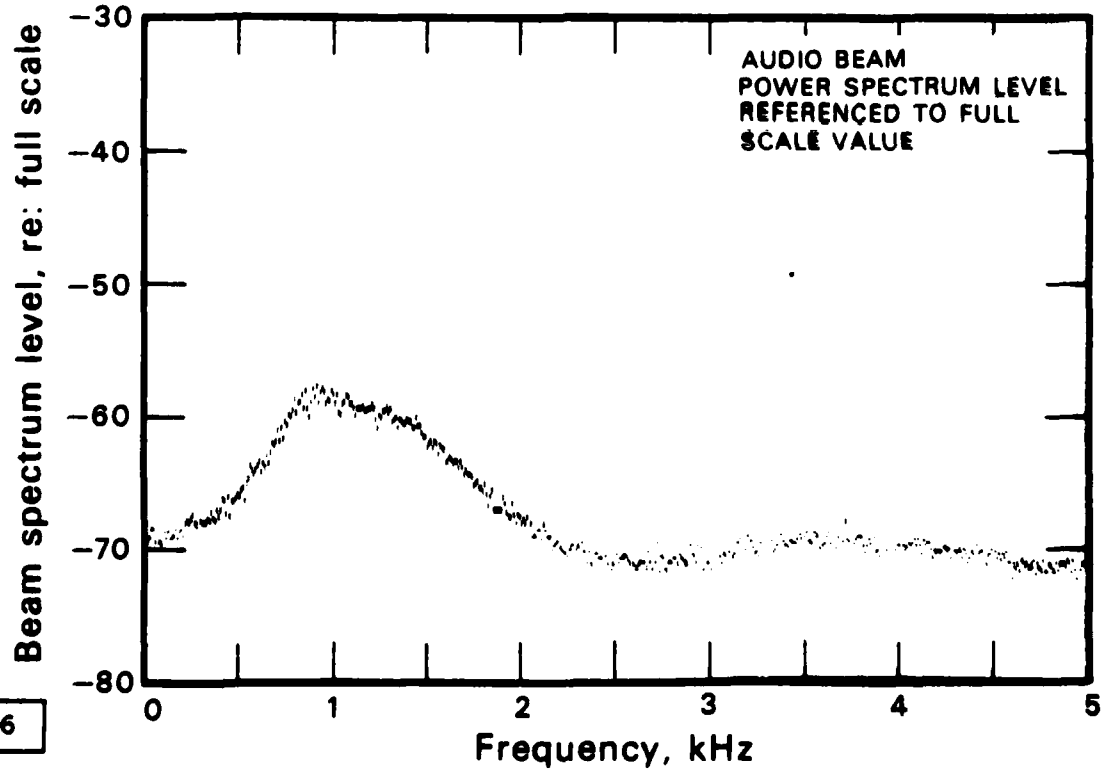
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
04:00	2400	18	340	4-5	6-7	NW	No targets
04:30	2400	20	335	5-7	6-7	NW	Small chop
05:00	2600	20	340	5-7	6-7	NW	

08-JUN-78 05:36:46 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 297.3
RELATIVE ELEVATION 100.0 TRUE BEARING 254.4 TRUE ELEVATION 99.1
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -9.8 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 97

GROUP 8A





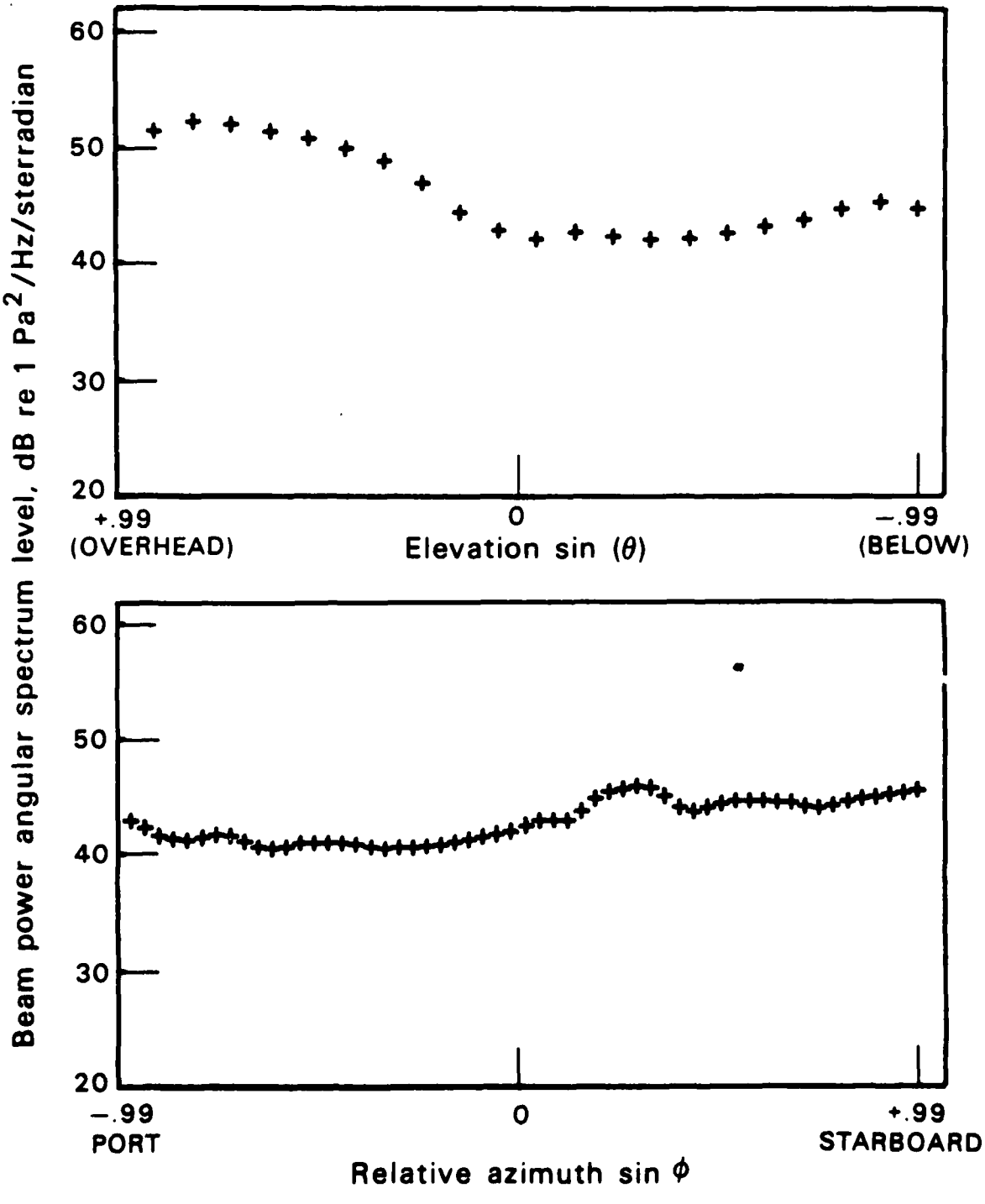
MPL-M-4706

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 8A

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

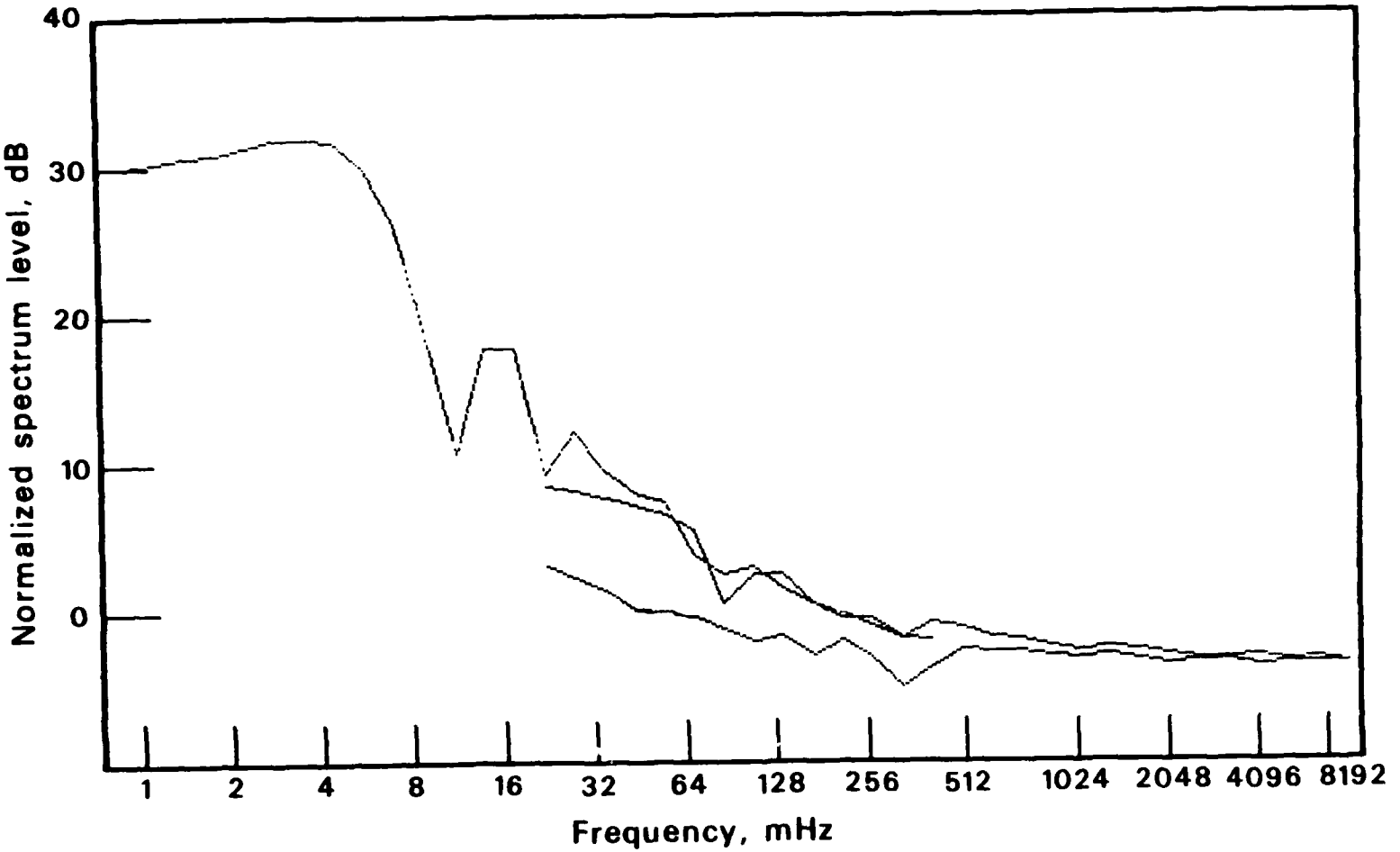
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4707

MPL-M-4708

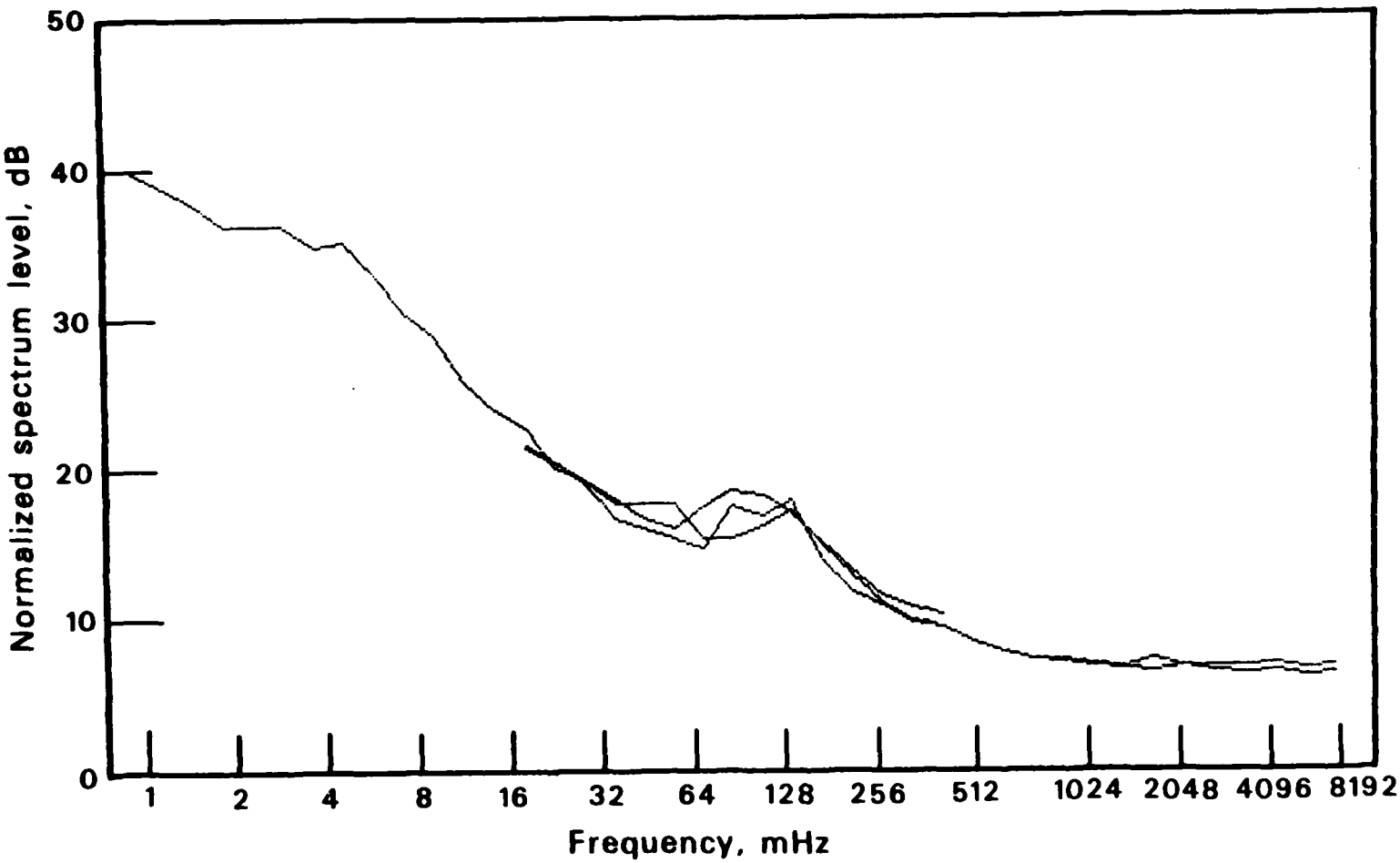
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 8A

MPL-M-4709

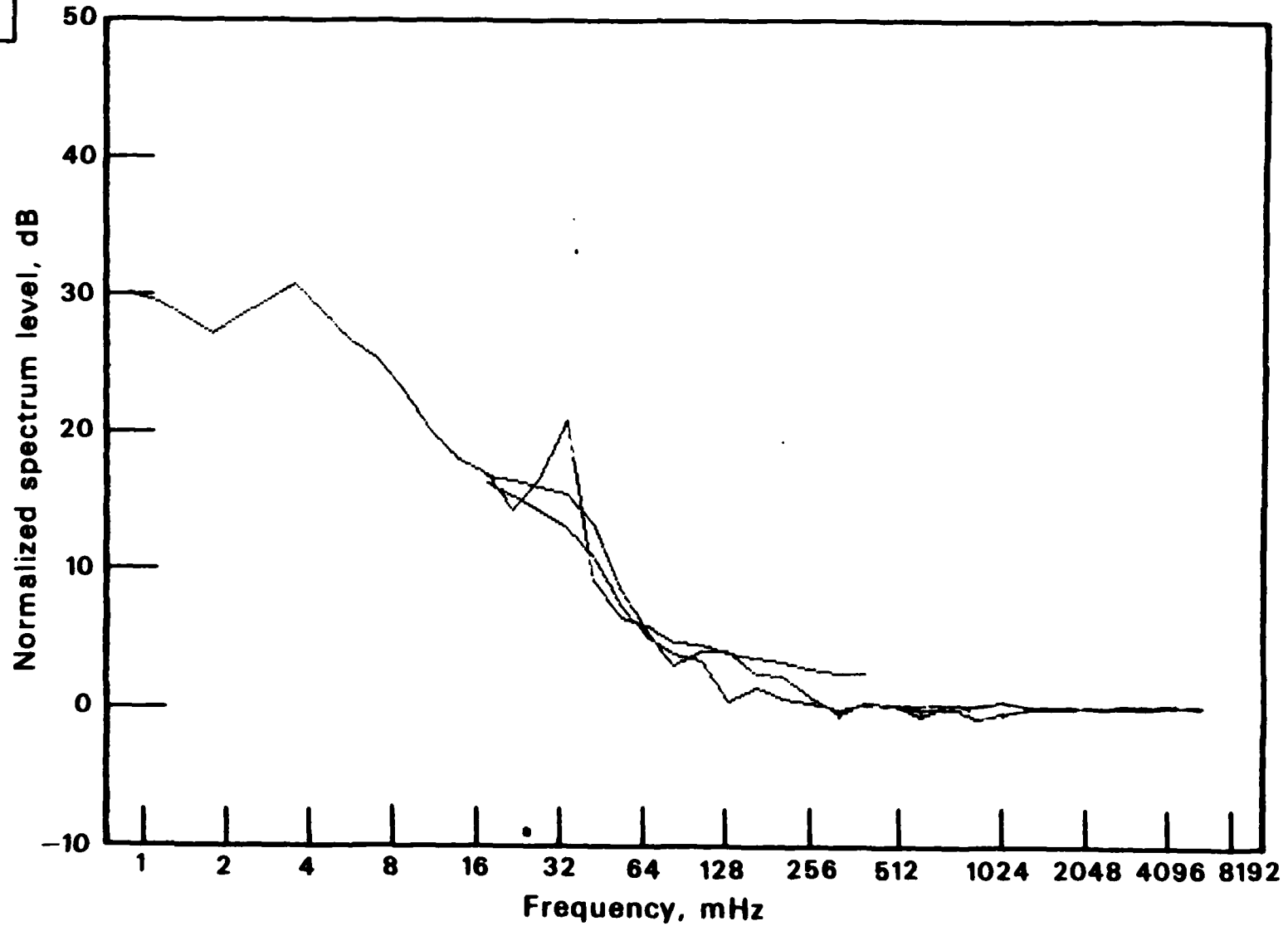
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8A

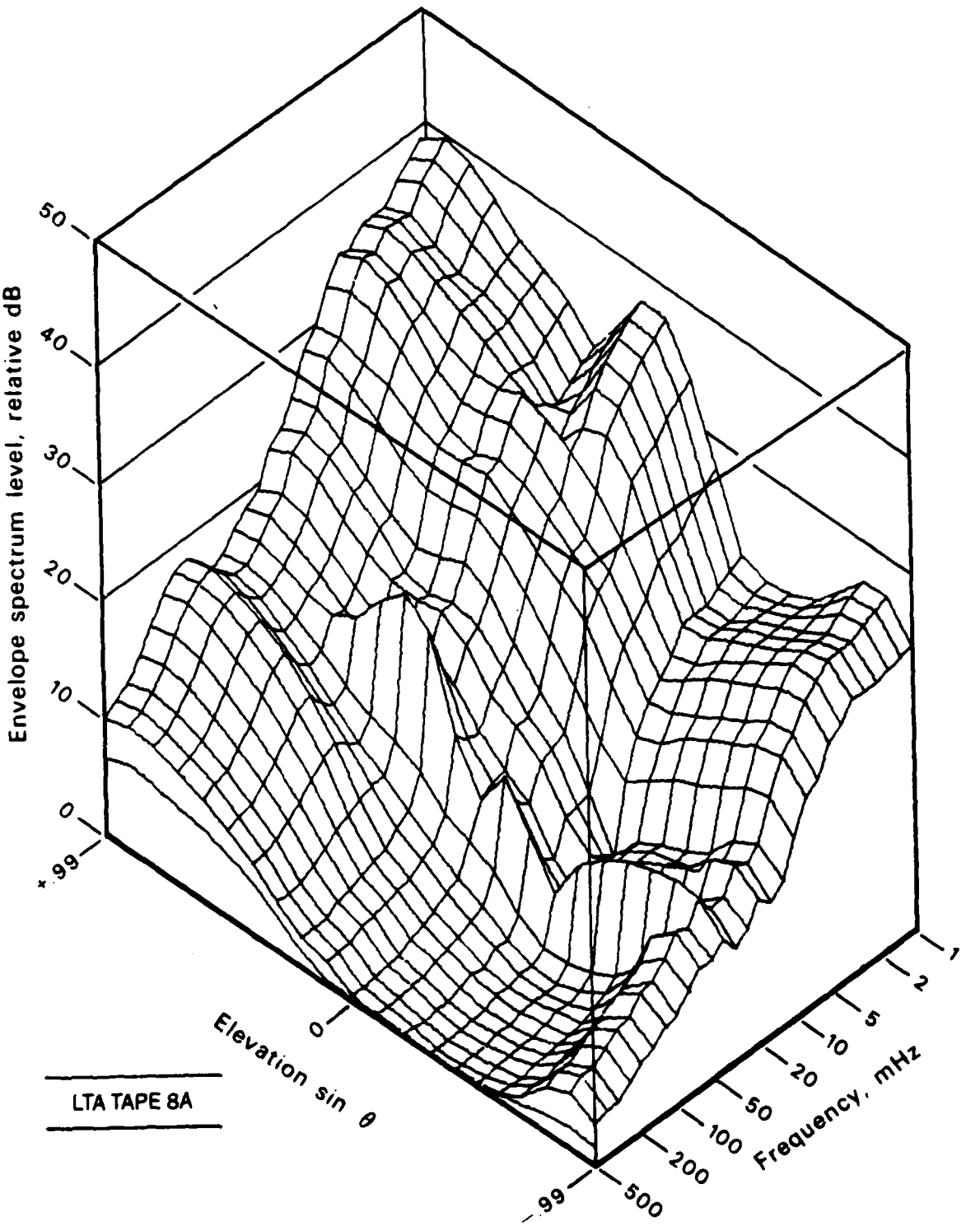
MPL-M-4710

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8A

GROUP 8A

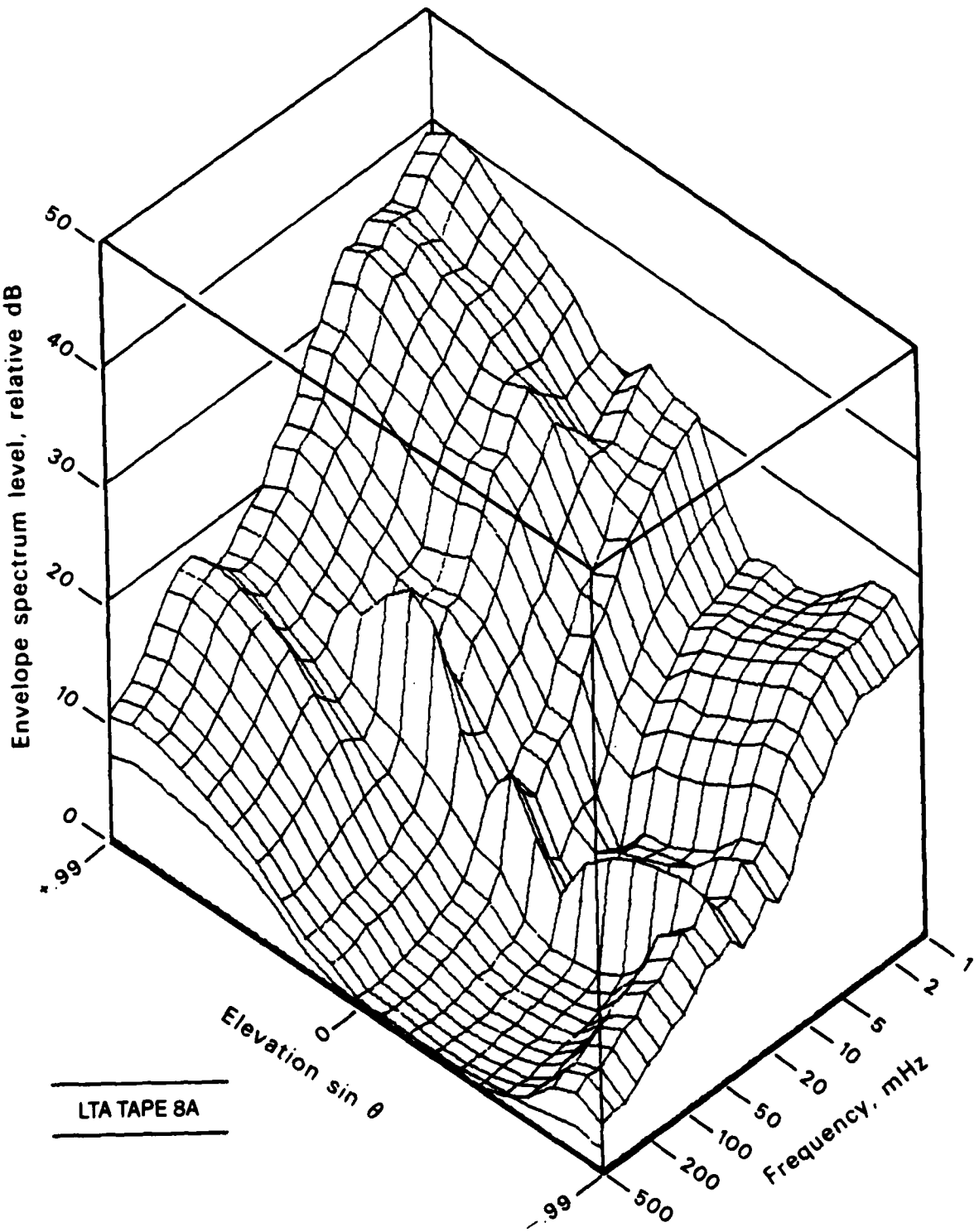


LTA TAPE 8A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4711

GROUP 8A



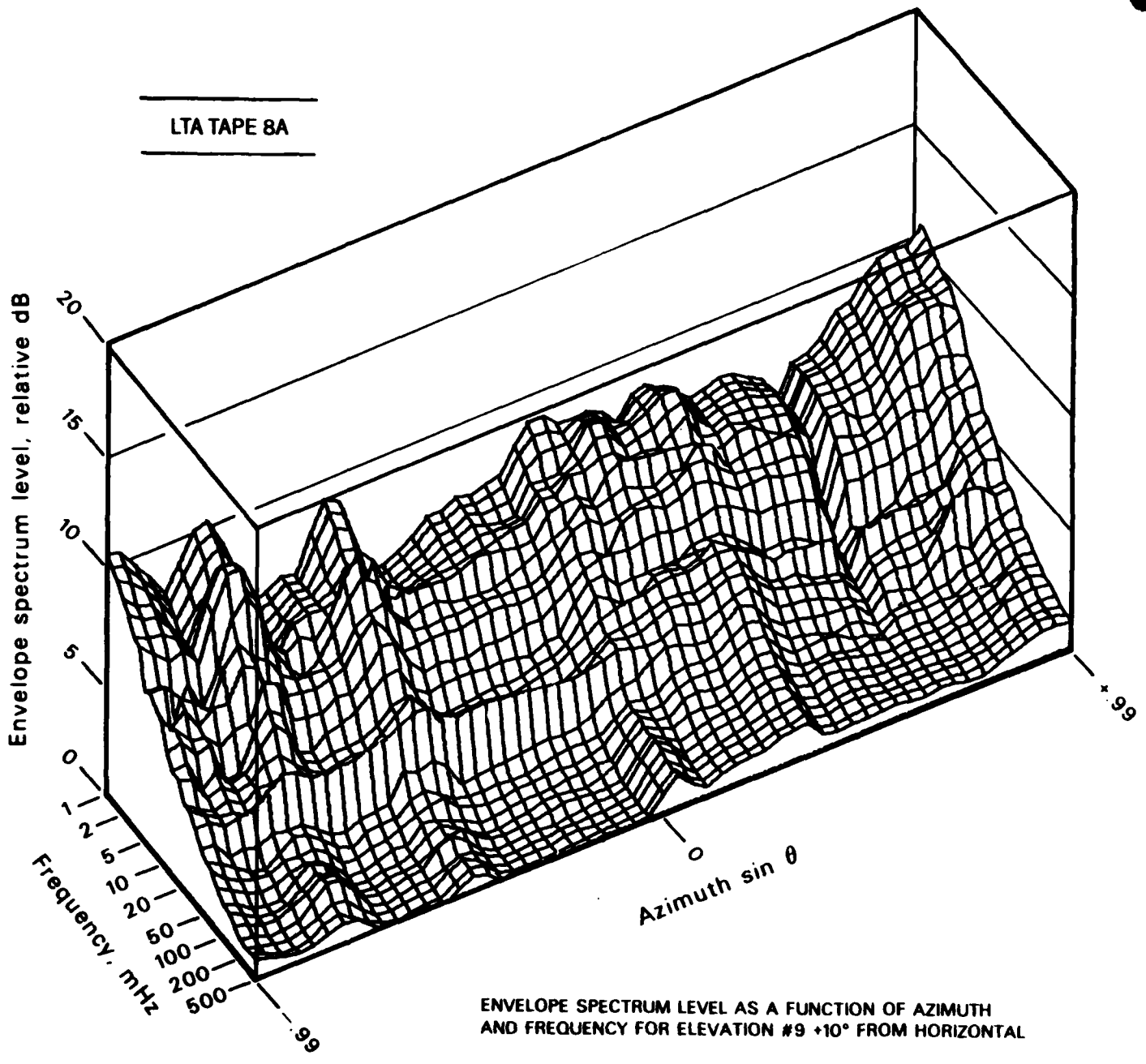
LTA TAPE 8A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA TRUE BEARING STABILIZED BEAM SET

MPL-M-4712

MPL-M-4713

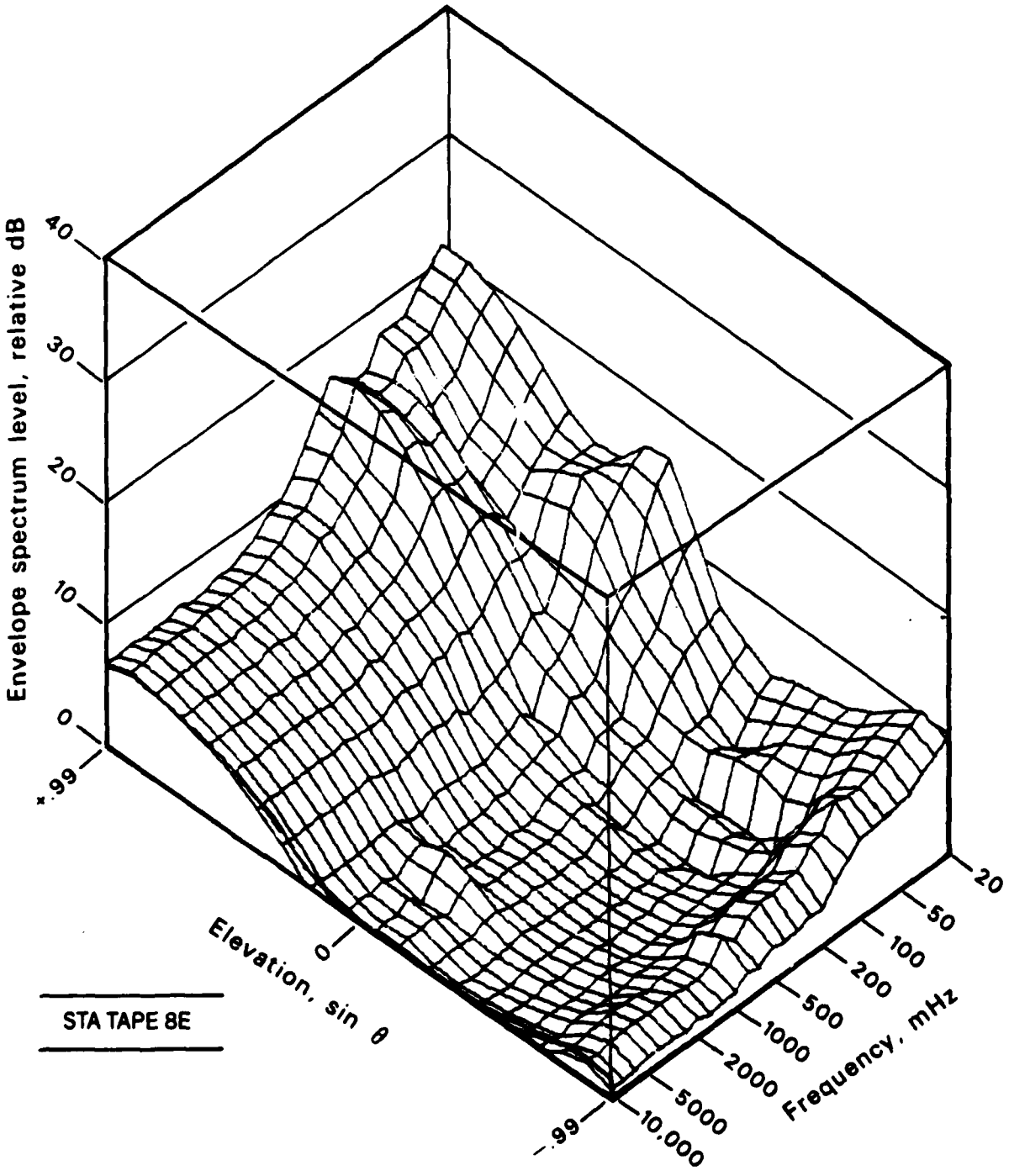
LTA TAPE 8A



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 8A

GROUP 8A

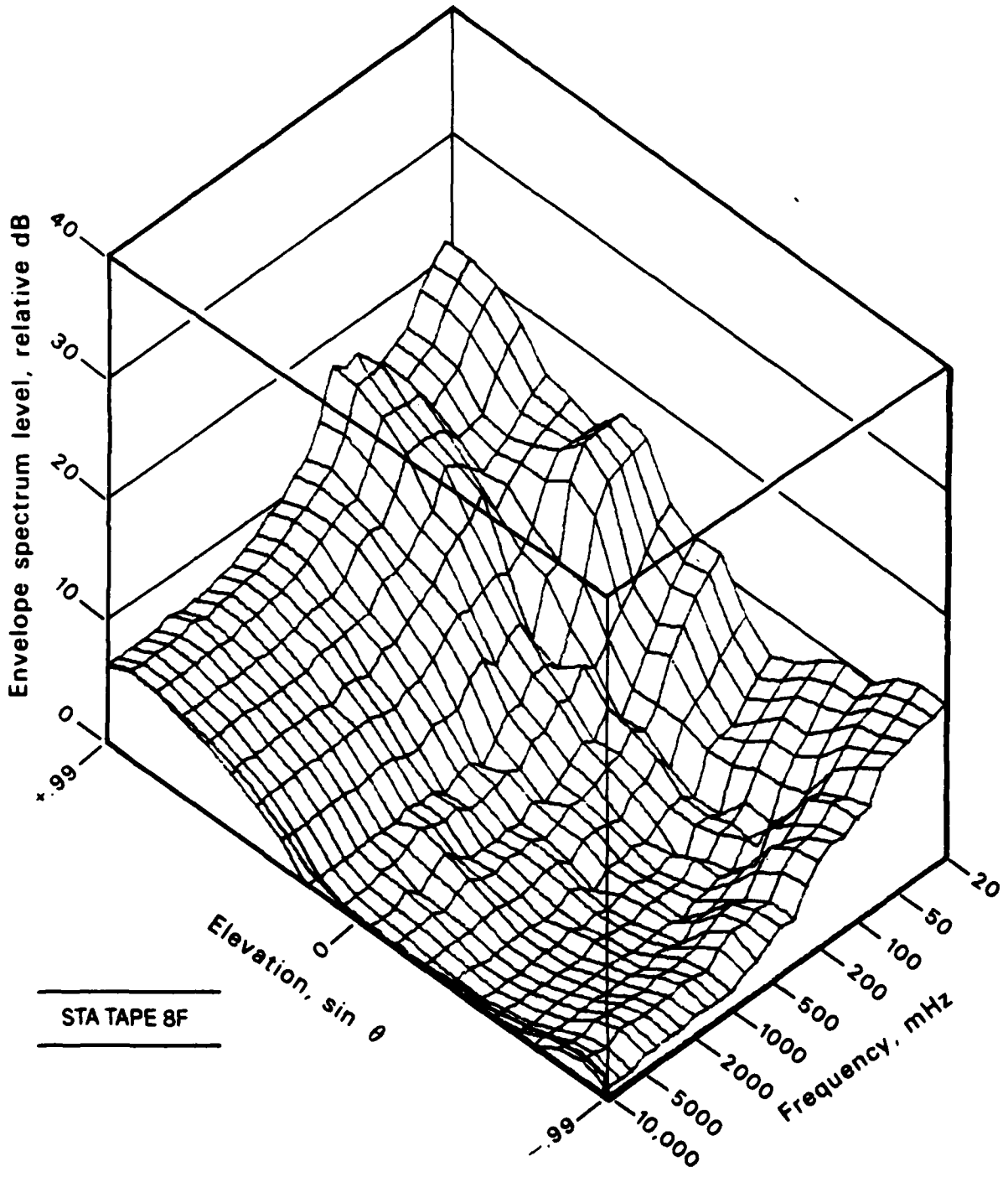


STA TAPE 8E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET.

MPL-M-4714

GROUP 8A



STA TAPE 8F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4715

GROUP 8A

LTA TAPE 8A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.8	39.2	38.3	37.2	35.7	35.7	35.7	34.3	34.6	32.5
ANGLE +84°	30.0	28.5	25.2	23.4	22.3	19.5	18.7	17.6	16.3	15.6
	17.1	18.1	17.7	16.6	14.6	12.7	11.1	10.3	9.7	
2	71.6	40.6	39.6	38.3	36.4	36.6	36.8	35.3	35.6	33.4
+64°	30.2	29.2	25.9	24.3	23.5	20.5	19.4	18.0	16.8	16.6
	17.6	18.7	18.1	17.2	15.2	13.3	11.8	10.9	10.4	
3	71.4	39.9	38.8	37.4	35.2	35.7	36.1	34.7	34.9	32.8
+53°	29.6	28.2	24.4	23.7	22.6	19.9	18.4	17.3	16.3	16.0
	16.9	18.1	17.7	16.5	14.6	12.8	11.4	10.4	10.1	
4	70.9	38.3	37.3	36.0	34.2	34.6	35.0	33.2	32.9	31.4
+44°	29.0	26.7	22.6	22.2	20.5	18.5	17.2	16.3	15.1	14.7
	15.6	17.1	16.7	15.2	13.3	11.7	10.5	9.8	9.4	
5	70.4	36.1	35.5	34.8	34.0	33.9	33.8	31.5	30.3	29.5
+37°	27.5	24.8	20.9	20.4	19.0	16.9	15.7	15.9	13.7	13.1
	14.0	15.8	15.0	13.6	11.8	10.5	9.3	9.0	8.3	
6	69.6	35.1	34.5	33.8	33.0	32.8	32.6	30.7	29.1	27.4
+30°	26.7	23.7	19.5	18.2	18.2	15.2	15.1	17.3	12.1	11.1
	12.1	13.5	12.9	11.4	10.0	8.8	7.8	7.5	7.1	
7	68.7	33.8	33.0	32.1	31.0	31.2	31.3	30.8	29.3	26.7
+23°	26.8	23.8	20.1	17.6	17.9	14.6	16.2	20.2	10.9	9.3
	10.2	10.8	10.3	9.2	7.9	7.2	6.2	5.8	5.8	
8	67.2	31.3	30.6	29.7	28.6	29.4	30.0	31.7	30.0	27.6
+17°	27.1	24.2	21.0	18.3	18.4	15.4	17.8	22.1	10.2	7.9
	7.8	7.4	6.8	6.2	5.3	4.6	3.9	3.8	3.8	
9	65.5	34.6	33.7	32.6	31.2	30.0	28.3	31.1	28.7	26.9
+12°	25.4	22.7	19.8	17.8	16.9	14.2	16.5	20.3	8.9	6.3
	5.5	4.6	4.2	3.7	3.3	3.0	2.4	2.3	2.3	
10	64.6	38.2	37.4	36.5	35.2	33.6	31.1	29.7	26.5	25.6
+6°	23.2	20.5	17.0	15.5	14.0	11.5	11.7	12.8	6.8	4.8
	4.3	3.4	3.1	2.7	2.5	2.3	1.7	1.5	1.6	
11	64.3	38.0	37.2	36.1	34.6	33.5	31.8	27.7	24.5	23.9
0°	21.8	17.9	14.2	12.8	12.7	9.6	9.3	8.7	5.9	3.4
	2.9	2.0	1.7	1.1	0.6	0.5	0.2	0.1	0.2	
12	64.6	34.3	33.5	32.4	31.0	30.2	29.3	25.0	23.0	22.0
−6°	20.0	15.3	12.0	11.4	11.0	8.1	9.2	12.2	4.6	2.4
	1.7	1.2	1.0	0.6	0.1	0.1	-0.3	-0.3	-0.2	
13	64.4	28.1	27.2	26.2	24.8	24.3	23.8	21.3	19.8	18.7
−12°	16.1	11.9	8.4	8.0	7.7	4.8	5.7	8.4	2.3	1.0
	0.7	0.2	0.3	-0.2	-0.5	-0.5	-0.8	-0.6	-0.6	
14	64.3	21.7	21.4	20.7	20.0	19.9	19.7	17.9	16.6	15.3
−17°	13.1	10.0	4.2	5.0	5.7	2.9	3.6	4.8	0.9	0.1
	0.1	-0.2	-0.2	-0.7	-0.8	-0.9	-1.0	-1.0	-1.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8A

LTA TAPE 8A

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.4	21.2	20.8	20.5	20.1	20.0	20.0	18.5	17.8	15.8
ANGLE −23°	13.9	11.4	6.9	6.9	6.7	3.8	5.8	8.8	1.0	-0.1
	-0.1	-0.0	-0.2	-0.5	-0.5	-0.8	-0.8	-0.9	-1.0	
16	64.6	21.5	21.5	21.5	21.5	21.4	21.3	20.1	19.6	16.9
−30°	15.8	13.0	8.2	8.3	8.3	4.7	7.4	10.7	1.7	0.8
	0.4	0.5	0.2	-0.3	-0.2	-0.4	-0.4	-0.5	-0.5	
17	64.9	22.4	22.4	22.5	22.5	22.4	22.3	21.5	20.7	18.2
−37°	17.2	14.0	9.0	8.8	9.4	5.4	8.7	12.0	2.7	2.0
	1.4	0.9	0.7	0.6	0.4	0.4	0.0	0.2	0.2	
18	65.3	24.6	24.3	23.9	23.5	23.4	23.4	22.9	21.8	19.4
−44°	18.3	15.2	10.3	9.5	10.5	7.0	9.5	12.6	4.8	4.8
	3.8	3.0	2.8	2.3	2.2	1.9	1.3	1.5	1.3	
19	65.8	27.0	26.4	25.7	24.8	24.8	24.7	24.3	23.0	20.9
−53°	19.6	16.7	12.9	11.8	12.7	10.0	10.8	13.2	9.2	9.8
	8.2	7.1	7.1	5.9	5.7	5.0	4.2	4.3	3.6	
20	66.2	27.1	26.6	26.0	25.4	25.4	25.4	24.3	23.3	21.2
−64°	20.0	17.2	13.9	13.0	13.8	11.6	11.4	13.0	11.2	11.6
	10.1	8.9	8.7	7.3	7.0	6.1	5.2	5.3	4.5	
21	65.8	24.3	24.0	23.7	23.4	23.4	23.4	21.9	21.1	18.7
−84°	18.0	15.2	12.2	11.1	12.1	10.3	9.5	10.8	10.0	10.0
	8.7	7.4	7.2	6.0	5.5	4.5	3.7	3.7	3.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8A

LTA TAPE 8A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.8	39.2	38.3	37.2	35.7	35.7	35.7	34.3	34.6	32.5
ANGLE +84°	30.0	28.5	25.2	23.4	22.3	19.5	18.7	17.6	16.3	15.6
	17.1	18.1	17.7	16.6	14.6	12.7	11.1	10.3	9.7	
2	71.6	40.6	39.6	38.3	36.5	36.6	36.8	35.3	35.7	33.5
+64°	30.3	29.2	26.1	24.2	23.3	20.6	19.4	17.9	16.8	16.7
	17.6	18.7	18.2	17.2	15.2	13.3	11.8	10.9	10.3	
3	71.4	39.9	38.8	37.4	35.3	35.8	36.3	34.8	35.0	32.8
+53°	29.2	28.3	24.5	23.9	22.3	20.0	18.5	17.3	16.4	16.0
	16.9	18.2	17.7	16.5	14.6	12.8	11.5	10.4	10.1	
4	70.7	38.1	37.2	35.9	34.3	34.6	35.0	33.3	32.6	30.9
+44°	28.5	26.8	23.1	21.4	20.2	18.3	17.2	16.2	15.0	14.5
	15.5	17.1	16.7	15.2	13.2	11.8	10.6	9.8	9.4	
5	70.4	36.7	36.0	35.2	34.1	34.0	34.0	32.3	30.7	29.8
+37°	27.8	25.1	21.5	19.9	19.1	17.1	16.2	15.9	13.8	13.2
	14.1	15.9	14.9	13.5	11.7	10.5	9.4	9.0	8.3	
6	69.6	35.2	34.6	33.9	33.1	32.8	32.6	30.9	29.2	27.7
+30°	26.5	23.7	19.3	18.4	18.1	15.4	15.2	17.3	12.2	11.3
	12.1	13.5	12.7	11.4	9.9	8.8	7.9	7.4	7.1	
7	68.7	33.7	33.0	32.1	31.0	31.1	31.3	31.1	29.5	27.0
+23°	26.6	23.8	20.1	17.9	17.9	14.8	16.2	20.3	11.1	9.5
	10.3	10.9	10.2	9.1	7.9	7.2	6.2	5.8	5.7	
8	67.2	30.7	30.2	29.6	29.0	30.0	30.8	32.0	30.2	27.8
+17°	27.2	24.4	21.2	18.6	18.4	15.4	17.8	22.3	10.2	8.0
	7.9	7.3	6.7	6.1	5.3	4.6	3.9	3.7	3.7	
9	65.5	30.0	29.2	28.2	26.7	28.3	29.3	30.6	28.5	26.4
+12°	25.1	22.7	19.7	17.8	16.8	14.1	16.4	20.6	8.9	6.3
	5.6	4.4	4.2	3.5	3.2	3.0	2.3	2.1	2.1	
10	64.4	32.4	31.3	30.0	28.1	28.1	28.2	26.2	24.5	22.7
+6°	19.7	18.9	16.1	15.3	13.8	11.5	11.8	13.0	7.2	4.9
	4.2	3.5	2.9	2.6	2.3	2.2	1.5	1.2	1.3	
11	64.1	31.1	30.2	29.2	27.9	27.2	26.5	23.2	21.2	20.3
0°	17.5	16.0	13.0	11.5	11.1	9.1	9.4	8.8	5.3	3.1
	2.2	1.7	1.1	0.7	0.2	-0.0	-0.3	-0.4	-0.2	
12	64.4	30.9	30.2	29.5	28.5	27.4	25.8	24.9	22.4	20.2
−6°	18.0	15.9	12.8	11.9	10.7	8.7	9.9	12.4	4.7	2.8
	1.8	1.2	0.7	0.4	-0.0	-0.4	-0.5	-0.5	-0.4	
13	64.4	24.8	24.4	23.9	23.4	22.4	20.9	19.8	17.8	15.9
−12°	14.3	11.0	8.2	8.0	7.0	4.7	5.8	8.2	1.9	0.9
	0.6	-0.0	0.0	-0.4	-0.7	-0.8	-0.8	-0.6	-0.7	
14	64.3	21.5	21.1	20.6	20.1	19.7	19.3	17.6	16.4	15.2
−17°	13.0	10.2	4.6	5.5	6.0	2.7	3.5	4.7	1.0	0.3
	0.1	-0.4	-0.3	-0.8	-0.8	-1.0	-1.0	-1.0	-1.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 8A

LTA TAPE 8A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.4	22.4	22.1	21.7	21.4	21.1	20.8	19.6	18.7	16.8
ANGLE −23°	15.1	12.5	7.6	7.4	7.6	4.1	6.1	8.8	1.2	0.4
	0.4	0.0	−0.1	−0.5	−0.5	−0.8	−0.8	−0.9	−1.0	
16	64.6	21.9	21.9	21.8	21.7	21.6	21.4	20.5	19.5	17.0
−30°	15.9	13.1	8.0	8.2	8.3	4.7	7.5	10.7	1.6	0.8
	0.6	0.4	0.2	−0.3	−0.2	−0.4	−0.4	−0.5	−0.6	
17	64.9	22.6	22.6	22.6	22.7	22.5	22.4	21.6	20.6	18.2
−37°	17.0	14.1	9.1	8.9	9.4	5.4	8.7	11.9	2.8	2.0
	1.3	0.9	0.7	0.7	0.5	0.4	−0.0	0.2	0.2	
18	65.3	24.6	24.3	23.9	23.5	23.5	23.4	22.8	21.7	19.3
−44°	18.1	15.2	10.4	9.3	10.5	7.0	9.5	12.7	5.0	4.9
	3.9	3.2	3.0	2.4	2.3	2.0	1.4	1.5	1.4	
19	65.8	26.8	26.2	25.6	24.8	24.8	24.7	24.3	23.0	20.9
−53°	19.6	16.8	13.0	11.9	12.9	10.1	10.9	13.3	9.4	9.9
	8.4	7.3	7.2	6.0	5.9	5.1	4.3	4.4	3.7	
20	66.2	27.0	26.5	26.0	25.4	25.4	25.4	24.3	23.2	21.2
−64°	20.0	17.2	13.9	13.1	13.8	11.6	11.4	13.0	11.2	11.6
	10.2	8.9	8.7	7.3	7.0	6.1	5.2	5.3	4.5	
21	65.8	24.3	24.0	23.7	23.4	23.4	23.4	21.9	21.1	18.7
−84°	18.0	15.2	12.2	11.1	12.1	10.3	9.5	10.8	10.0	10.0
	8.7	7.4	7.2	6.0	5.5	4.5	3.7	3.7	3.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 8A

GROUP 8A

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	64.7	42.5	41.4	40.1	38.1	36.4	33.6	33.0	26.5	27.3
ANGLE −71.3°	25.6	24.7	20.3	18.2	17.8	14.7	14.7	12.8	10.2	9.2
	8.7	7.0	5.3	4.9	3.9	2.5	2.4	2.7	2.8	
2	64.4	41.7	40.5	38.8	35.8	34.5	32.6	30.7	26.1	27.4
−66°	20.7	22.0	21.2	18.3	16.7	12.7	12.9	12.8	10.3	7.8
	6.5	5.3	4.2	3.7	3.0	2.0	1.7	1.6	2.1	
3	64.0	38.1	37.3	36.3	35.1	33.8	32.0	28.4	18.9	24.1
−61.6°	23.2	19.0	17.8	12.7	12.5	11.5	11.4	11.1	6.6	5.9
	4.9	4.0	2.6	2.1	2.1	1.1	1.0	0.5	1.2	
4	63.9	35.3	34.3	33.0	31.2	30.7	30.1	29.4	24.6	22.2
−57.8°	19.3	18.7	18.6	14.9	13.4	12.3	11.2	11.6	7.3	4.2
	4.3	3.0	1.9	1.8	1.9	1.1	0.6	0.3	0.7	
5	63.9	31.3	30.2	28.9	26.9	26.8	26.8	25.8	19.0	19.9
−54.3°	21.7	16.0	11.0	11.8	11.3	10.5	9.6	12.4	6.7	3.6
	3.9	3.5	1.9	2.3	3.0	1.6	1.2	0.8	1.1	
6	64.0	35.6	34.5	33.1	30.9	33.2	34.7	34.0	24.2	26.7
−51.1°	21.5	17.9	11.3	12.4	12.1	12.4	11.1	14.5	7.9	5.5
	5.3	4.7	4.3	4.0	4.4	4.3	2.5	2.8	2.0	
7	64.1	40.4	39.1	37.1	33.5	38.2	40.3	39.8	32.8	29.8
−48.1°	27.2	18.0	17.3	16.1	14.4	11.9	13.8	16.3	7.3	7.4
	5.0	5.1	6.3	5.8	6.2	6.4	4.0	3.5	2.8	
8	64.0	41.2	40.1	38.7	36.6	38.2	39.4	39.9	36.1	26.5
−45.3°	25.8	24.5	20.6	19.1	14.9	12.4	13.2	15.4	7.5	6.7
	5.4	4.2	5.2	4.4	5.8	5.9	3.5	1.6	2.7	
9	63.8	35.8	35.0	34.0	32.8	32.7	32.6	33.3	31.7	24.7
−42.6°	17.3	23.2	18.5	16.4	12.3	11.9	10.9	13.8	5.4	4.5
	3.8	2.2	1.9	1.5	2.8	2.5	1.0	−0.1	0.6	
10	63.6	26.3	25.5	24.4	23.1	21.7	19.6	23.9	23.6	20.8
−40.0°	18.5	15.4	10.7	10.4	10.1	9.6	10.2	13.1	3.4	2.3
	0.7	−0.5	−0.6	−1.0	−0.4	−0.9	−1.2	−1.4	−1.6	
11	63.6	23.1	22.3	21.3	20.0	20.4	20.7	21.5	19.4	19.0
−37.5°	18.1	15.0	9.6	9.0	8.6	8.6	10.0	13.4	2.7	1.2
	0.4	−0.6	−1.2	−1.1	−1.2	−1.7	−1.7	−2.0	−2.5	
12	63.6	24.0	23.6	23.1	22.6	23.5	24.2	23.3	17.3	19.1
−35.1°	17.6	14.6	12.1	9.9	9.1	9.8	10.1	13.7	3.9	2.9
	1.3	0.3	−0.4	−0.5	−0.7	−1.0	−1.2	−1.6	−1.7	
13	63.8	25.7	25.4	25.1	24.8	25.0	25.2	21.6	19.3	18.7
−32.8°	18.5	16.5	12.6	9.9	9.6	9.9	10.7	14.8	4.4	3.2
	1.4	1.0	−0.4	−0.3	−0.1	−0.3	−1.1	−1.2	−1.3	
14	63.8	24.8	24.9	24.9	24.9	25.0	25.0	25.0	23.4	20.0
−30.5°	19.2	15.9	13.9	10.2	9.3	9.3	10.6	15.0	4.7	3.3
	2.7	0.9	0.4	0.2	0.2	−0.4	−0.9	−1.2	−1.4	
15	63.8	31.6	30.5	29.0	26.8	26.3	25.7	30.9	27.8	24.3
−28.3°	23.1	18.6	16.0	11.6	11.2	11.5	11.3	16.5	9.4	5.5
	3.9	3.8	2.3	1.4	2.0	0.6	1.2	0.4	0.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 8A

GROUP 8A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	63.8	36.4	35.2	33.5	30.7	29.4	27.3	34.3	30.9	25.9
ANGLE −26.1°	26.0	22.3	18.1	14.0	13.5	11.5	11.8	17.9	8.3	6.2
	4.7	3.3	3.5	2.8	4.3	1.8	2.4	2.1	1.8	
17	63.7	35.0	33.9	32.4	30.1	28.8	26.8	31.6	28.7	26.4
−24.0°	22.5	21.7	18.3	14.6	15.8	11.0	12.2	17.6	9.3	4.2
	4.9	2.2	2.0	3.2	2.5	1.4	1.2	1.4	1.0	
18	63.6	26.6	25.7	24.6	22.9	22.6	22.3	26.0	22.3	22.2
−21.8°	17.9	17.1	13.8	13.0	13.0	9.5	11.5	15.1	7.2	2.5
	2.3	0.9	0.5	0.6	−0.4	−0.6	−0.9	−0.8	−1.3	
19	63.6	19.5	19.4	19.2	19.1	20.4	21.4	24.4	20.1	19.4
−19.8°	17.8	14.5	11.9	8.7	9.5	8.4	10.1	14.1	2.9	1.9
	1.3	−0.4	−1.3	−0.8	−1.6	−1.5	−1.7	−1.6	−1.7	
20	63.6	20.2	20.2	20.1	20.1	20.8	21.4	23.4	20.9	18.9
−17.7°	18.2	14.9	12.4	8.8	9.4	7.9	10.4	14.4	3.3	1.8
	0.6	−0.2	−1.3	−1.0	−1.5	−1.5	−1.5	−1.5	−1.2	
21	63.6	21.5	21.5	21.4	21.4	21.9	22.3	23.1	21.3	19.2
−15.7°	18.1	14.4	12.4	9.1	9.5	7.9	10.3	14.4	3.5	1.9
	0.7	0.2	−0.8	−0.7	−1.4	−1.3	−1.5	−1.6	−1.1	
22	63.7	23.4	23.1	22.8	22.4	22.6	22.7	22.9	20.0	19.2
−13.7°	17.8	14.1	12.5	9.5	9.7	8.1	10.5	14.1	3.7	1.7
	1.3	0.6	−0.4	−0.6	−1.2	−1.3	−1.4	−1.3	−1.5	
23	63.7	25.7	25.2	24.6	24.0	23.5	23.0	23.7	19.5	19.4
−11.7°	18.4	14.7	12.0	9.7	9.2	8.3	10.3	13.7	4.0	1.6
	1.3	0.6	0.3	−0.1	−1.3	−0.8	−0.9	−1.2	−1.0	
24	63.8	25.7	25.3	24.9	24.4	24.0	23.5	25.0	19.4	19.5
−9.7°	18.7	14.5	12.1	9.6	9.0	8.1	10.2	13.2	4.3	2.3
	1.7	0.7	0.6	0.4	−0.9	−1.0	−0.7	−1.0	−0.6	
25	63.9	27.1	26.7	26.3	25.9	25.0	23.9	24.4	19.3	19.2
−7.8°	18.7	14.8	11.8	9.8	9.5	8.2	10.4	12.7	4.7	2.9
	1.8	1.1	0.2	0.2	−0.7	−0.8	−1.0	−0.6	−0.3	
26	64.0	26.4	25.9	25.4	24.7	24.7	24.7	23.9	20.2	19.2
−5.8°	18.0	15.3	10.9	10.7	10.0	7.7	9.3	12.6	4.4	3.2
	1.5	1.0	−0.2	0.0	−0.3	−0.7	−1.0	−0.7	−0.6	
27	64.1	27.2	26.4	25.4	24.1	24.7	25.3	23.3	21.3	19.0
−3.9°	18.1	15.4	12.3	11.0	10.8	8.8	9.0	12.3	4.7	3.0
	2.0	1.6	0.4	−0.0	−0.4	−0.5	−0.7	−0.7	−0.4	
28	64.2	27.8	26.9	25.7	24.1	25.0	25.7	23.7	22.4	20.2
−1.9°	19.1	17.3	12.7	12.6	12.4	10.7	10.7	12.9	6.0	3.4
	2.8	1.5	1.6	0.3	0.1	−0.2	−0.3	−0.5	−0.3	
29	64.5	32.2	31.4	30.3	28.9	28.8	28.6	27.4	23.9	23.0
0°	21.3	19.1	17.1	15.7	13.9	12.3	12.8	13.4	7.9	5.2
	5.2	4.3	4.3	3.5	3.6	3.6	2.9	2.7	2.8	
30	64.7	35.3	34.0	32.1	28.6	28.4	28.3	28.3	25.0	25.8
+1.9°	22.7	21.3	20.0	18.9	15.7	14.3	14.7	14.1	8.7	7.1
	7.0	6.9	6.4	6.2	6.5	6.2	5.4	5.1	5.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 8A

GROUP 8A

PAGE 3

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	64.7	35.2	33.9	32.0	29.7	30.0	30.9	28.3	28.0	26.6
ANGLE +3.9°	22.1	22.1	20.4	17.3	16.7	14.5	13.9	13.3	9.0	6.4
	5.7	5.2	5.1	4.6	4.7	4.2	3.3	2.4	2.5	
32	64.0	33.0	32.5	32.0	31.4	31.0	30.5	26.4	26.2	24.5
+5.8°	20.1	21.9	17.3	15.0	17.2	14.8	13.8	12.5	11.1	7.0
	5.8	4.9	3.9	3.0	2.1	1.6	1.2	0.9	0.9	
33	65.2	32.8	33.9	34.8	35.6	34.1	31.8	30.0	27.1	24.9
+7.8°	24.2	21.5	17.4	15.7	17.1	15.7	14.9	12.8	12.8	8.9
	7.5	7.0	5.5	3.9	2.9	2.5	2.3	2.0	2.2	
34	65.0	33.1	33.8	34.3	34.8	33.6	31.8	31.5	28.0	25.7
+9.7°	26.1	22.1	17.3	18.1	18.1	16.4	16.1	14.2	11.9	9.5
	8.3	7.3	5.6	4.8	3.9	3.2	3.2	2.7	2.9	
35	66.2	31.7	31.5	31.2	31.0	30.3	29.5	30.8	26.7	26.0
+11.7°	25.9	22.3	17.7	18.1	18.3	16.1	15.7	13.2	10.8	9.0
	8.2	6.5	5.1	5.1	4.2	3.8	3.4	2.9	3.1	
36	66.4	29.0	30.2	31.1	31.7	30.9	29.8	30.2	25.8	26.2
+13.7°	24.4	21.5	16.9	17.3	17.9	15.4	14.7	12.9	10.7	9.5
	8.2	6.8	5.9	5.5	4.7	4.3	3.8	3.5	3.4	
37	66.6	32.7	32.8	33.0	33.1	31.6	29.1	30.2	27.5	27.0
+15.7°	25.2	21.4	19.0	18.1	18.6	16.5	15.9	13.8	12.6	11.4
	9.7	8.4	7.5	6.9	6.2	5.2	4.7	4.4	4.4	
38	66.5	33.4	34.0	34.6	35.1	33.5	30.9	29.5	26.9	28.9
+17.7°	26.0	22.1	19.4	20.2	19.3	17.5	17.2	15.3	14.6	12.8
	11.1	9.5	8.2	7.5	6.8	5.7	5.1	4.7	4.9	
39	66.0	31.8	33.4	34.5	35.4	34.4	32.9	29.4	30.4	28.9
+19.8°	26.4	22.9	19.3	18.5	19.0	18.2	17.0	15.7	13.7	12.3
	10.7	9.2	8.0	7.5	6.6	5.8	5.5	5.3	5.2	
40	65.4	30.3	30.6	30.9	31.2	30.0	28.3	26.5	29.3	26.3
+21.8°	24.5	21.8	17.3	16.7	17.6	15.0	14.5	12.9	10.4	9.2
	7.7	6.1	5.0	4.1	3.3	3.0	2.4	2.0	2.0	
41	65.2	27.8	27.7	27.6	27.5	27.5	27.5	26.5	24.3	24.2
+24.0°	22.6	20.2	14.9	15.3	15.8	12.3	11.9	10.0	8.1	6.9
	5.4	4.4	3.8	3.5	2.6	2.1	1.7	1.3	1.4	
42	65.4	28.3	28.4	28.6	28.7	28.6	28.5	28.1	24.9	23.7
+26.1°	22.6	18.5	12.6	11.7	13.8	11.2	11.1	9.5	7.9	6.3
	5.5	4.5	4.5	4.2	3.3	2.7	2.4	1.7	1.7	
43	65.6	29.5	29.3	29.1	28.8	28.2	27.5	28.1	25.5	23.4
+28.3°	22.6	18.6	13.0	11.8	14.4	11.5	10.5	9.3	7.2	5.7
	5.7	4.6	4.5	3.9	3.5	2.9	2.6	2.0	1.6	
44	65.8	29.0	28.9	28.8	28.6	28.0	27.1	26.0	25.5	23.2
+30.5°	21.6	18.2	12.9	11.2	13.8	9.5	9.8	8.4	6.8	4.4
	5.5	3.6	3.9	2.8	2.8	2.4	2.1	2.0	1.9	
45	65.7	27.3	27.4	27.5	27.6	27.1	26.6	24.4	25.7	23.0
+32.8°	21.1	17.7	11.4	10.7	13.7	8.8	7.0	7.1	6.6	5.2
	3.9	3.2	3.2	2.2	2.0	1.6	1.8	1.9	2.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	65.7	26.1	26.4	26.6	26.9	26.4	25.8	24.5	24.0	22.0
ANGLE +35.1°	20.6	16.6	9.7	10.1	13.2	8.4	8.3	6.3	6.3	4.7
	3.3	3.7	2.4	1.9	1.9	1.8	1.6	1.8	1.5	
47	65.7	21.2	21.7	22.1	22.4	22.2	22.0	21.6	17.3	13.4
+37.5°	12.0	10.1	7.5	8.0	6.0	5.6	5.0	4.4	3.4	2.8
	2.3	2.7	2.1	1.9	1.9	1.8	1.7	1.5	1.3	
48	65.7	26.7	27.1	27.5	27.8	27.5	27.1	25.9	25.6	23.3
+40.0°	21.2	17.7	10.6	11.4	13.1	8.8	8.5	7.6	6.3	4.3
	4.1	3.1	2.6	2.2	2.1	1.7	1.7	1.6	1.7	
49	65.5	27.3	27.5	27.6	27.8	27.3	26.7	25.7	25.7	22.3
+42.6°	20.8	17.3	9.4	11.3	13.5	9.7	9.3	8.3	5.8	4.3
	4.3	3.2	2.6	1.9	2.0	1.4	1.7	1.2	1.4	
50	65.4	29.3	29.1	28.8	28.5	27.7	26.6	26.3	23.2	21.5
+45.3°	21.0	18.0	10.9	11.2	13.9	10.2	9.3	7.9	4.9	4.2
	3.9	2.9	2.5	2.2	1.7	1.2	1.4	1.0	0.8	
51	65.5	33.0	32.5	31.8	31.0	29.4	26.8	26.3	23.0	22.9
+48.1°	21.4	18.0	11.9	11.8	13.5	10.6	9.3	8.0	6.7	4.7
	4.1	3.6	2.8	3.1	2.1	1.6	1.6	1.3	0.9	
52	65.8	33.6	33.1	32.4	31.7	30.5	28.7	28.1	26.6	25.3
+51.1°	23.2	19.1	15.8	13.2	13.2	10.7	10.2	11.8	9.1	5.1
	3.9	5.0	3.7	3.1	2.7	2.0	2.1	1.9	1.8	
53	66.0	36.7	36.1	35.6	34.9	34.1	33.2	31.9	29.3	26.9
+54.3°	24.0	19.3	15.5	12.8	14.0	12.5	13.4	16.5	9.5	6.7
	5.2	5.2	5.0	3.8	3.9	3.2	2.9	2.8	2.7	
54	66.0	39.0	38.0	36.7	34.8	35.8	36.6	35.3	31.3	26.4
+57.8°	22.7	21.3	16.2	13.1	14.8	12.2	13.4	17.3	7.8	7.1
	5.8	5.0	5.6	4.5	5.7	4.0	4.5	4.1	3.6	
55	66.1	39.6	38.7	37.6	36.1	36.5	36.8	36.6	31.5	30.1
+61.6°	25.3	24.9	18.8	18.6	18.2	16.2	14.5	16.9	10.9	9.0
	8.7	6.3	7.5	6.7	6.1	4.9	4.9	5.0	4.3	
56	66.2	39.4	38.6	37.6	36.3	36.4	36.4	36.4	32.1	29.6
+66.0°	25.4	25.5	22.2	20.0	18.9	18.0	13.9	14.1	11.6	10.1
	9.2	8.1	7.6	7.0	6.3	5.1	4.9	4.7	4.4	
57	66.4	41.9	41.0	39.8	38.1	37.6	37.1	34.7	33.6	28.6
+71.3°	27.7	25.9	22.0	21.8	19.9	17.0	14.3	14.4	12.2	9.9
	9.4	7.9	7.0	6.2	5.9	5.0	4.3	4.0	4.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

GROUP 8A

STA TAPE 8E

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 1	58.0	22.3	21.4	20.3	18.8	18.8	18.7	16.4	16.4	17.3
ANGLE +84°	18.2	16.0	13.9	12.1	10.8	10.5	9.4	8.8	8.3	8.3
	8.0	7.7	8.2	7.7	7.8	7.7	7.9	7.6	7.7	
2	58.8	22.4	21.5	20.4	18.8	18.6	18.4	17.0	16.7	17.6
+64°	19.0	15.8	14.6	13.1	11.6	11.4	10.3	9.7	9.3	9.2
	8.9	8.7	9.0	8.6	8.7	8.8	8.7	8.5	8.4	
3	58.5	21.5	20.4	19.0	16.8	16.3	15.6	17.0	16.2	17.7
+53°	18.2	14.3	13.6	12.3	11.4	11.3	9.8	9.4	9.2	8.7
	8.6	8.6	8.3	8.4	8.4	8.5	8.4	8.2	8.2	
4	58.0	20.0	18.9	17.3	14.8	13.9	12.9	16.0	15.4	16.6
+44°	16.5	13.2	11.9	10.4	10.3	9.8	9.2	8.6	8.6	7.8
	8.0	8.1	7.6	7.9	7.6	7.5	7.8	7.6	7.6	
5	57.4	18.0	17.1	15.8	13.9	13.1	12.1	14.1	13.9	14.3
+37°	13.8	11.6	10.2	9.4	9.1	8.5	7.9	8.0	7.4	7.0
	6.9	7.1	6.9	7.0	6.7	6.7	6.9	6.8	6.9	
6	56.6	16.0	15.3	14.4	13.3	12.2	10.7	12.0	12.3	12.0
+30°	10.1	9.0	8.4	8.1	7.9	7.4	6.5	7.0	6.0	6.0
	5.8	5.9	5.9	6.1	5.9	6.0	5.8	6.0	6.0	
7	55.6	14.8	14.8	14.8	14.7	13.0	10.0	9.7	10.0	9.2
+23°	7.4	6.6	7.2	6.1	6.4	5.3	5.5	5.5	4.6	4.6
	4.6	4.9	4.8	4.8	4.7	4.7	4.6	4.6	4.6	
8	54.1	14.9	15.2	15.5	15.7	13.6	9.3	6.7	7.2	5.8
+17°	4.7	4.0	3.7	2.7	3.8	3.3	3.7	3.5	2.9	2.5
	2.7	3.3	3.1	3.1	2.8	3.1	2.9	2.9	2.8	
9	52.5	17.5	16.6	15.6	14.2	12.3	8.6	6.3	5.1	4.6
+12°	1.6	2.6	1.8	1.4	1.0	1.2	1.0	1.2	1.2	0.3
	0.6	1.1	1.0	0.9	0.7	0.8	0.7	0.7	0.8	
10	51.6	17.8	16.4	14.2	9.9	8.7	7.1	4.1	3.5	3.8
+6°	1.6	1.6	1.0	0.8	-0.2	0.1	-0.3	-0.4	-0.4	-0.8
	-0.5	0.9	0.4	-0.6	-0.1	-0.4	-0.3	-0.6	-0.5	
11	51.2	13.3	12.1	10.4	7.6	6.7	5.7	2.3	2.3	2.1
0°	0.3	0.5	0.6	0.1	-0.8	-1.0	-0.6	-1.2	-1.0	-0.9
	-0.7	1.5	0.6	-1.2	-0.1	-0.7	-0.7	-0.9	-1.0	
12	51.5	8.4	8.0	7.4	6.7	5.5	3.5	2.0	1.9	1.4
−6°	0.1	-0.5	0.2	-0.0	-0.5	-0.7	-0.7	-0.7	-0.7	-0.8
	-0.5	1.0	0.3	-0.9	-0.2	-0.4	-0.4	-0.7	-0.7	
13	51.4	6.9	6.0	4.9	3.3	3.2	3.1	1.4	1.2	0.8
−12°	-0.7	-1.0	0.1	-0.3	-1.0	-0.7	-0.9	-1.0	-0.8	-1.0
	-0.7	-0.4	-0.4	-1.1	-0.7	-1.0	-1.1	-1.0	-1.0	
14	51.3	5.6	4.7	3.5	1.7	2.6	3.2	-0.1	0.8	-0.1
−17°	-1.4	-1.2	-0.7	-1.2	-1.0	-1.1	-1.1	-1.1	-1.1	-1.2
	-1.7	-0.9	-1.2	-1.3	-1.5	-1.6	-1.3	-1.3	-1.4	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 8E

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.3 -1.6 -1.0	6.4 -1.4 -1.1	5.6 -0.8 -1.1	4.6 -1.1 -1.1	3.2 -0.8 -1.4	3.7 -1.2 -1.3	4.1 -0.9 -1.2	0.0 -1.0 -1.2	0.8 -1.1 -1.2	0.1 -1.0
16 −30°	51.6 -1.5 -0.7	6.9 -0.3 -0.7	6.4 -0.6 -0.9	5.9 -0.5 -0.7	5.2 -0.2 -0.9	4.8 -0.7 -0.9	4.3 -0.6 -0.8	0.0 -0.7 -0.8	0.6 -1.0 -1.0	0.7 -0.6
17 −37°	51.9 0.4 -0.1	7.3 0.3 -0.1	7.0 0.4 -0.4	6.6 0.1 -0.4	6.3 0.0 -0.2	5.1 -0.2 -0.2	3.6 -0.2 -0.4	-0.5 -0.3 -0.2	1.6 -0.4 -0.3	1.3 -0.2
18 −44°	52.2 1.8 0.7	8.4 1.3 0.4	8.0 1.5 0.5	7.6 0.8 0.5	7.1 1.2 0.6	6.0 1.2 0.6	4.5 0.6 0.2	2.5 1.1 0.5	3.2 0.7 0.3	2.7 0.7
19 −53°	52.7 5.5 2.1	10.1 4.1 1.8	9.7 4.1 2.1	9.4 4.0 2.2	9.0 4.2 2.1	8.2 3.5 1.9	7.3 2.7 1.8	7.4 3.6 1.5	6.5 2.3 1.9	5.9 2.0
20 −64°	53.1 7.1 2.7	11.5 5.6 2.8	11.0 5.5 2.7	10.4 5.2 2.7	9.7 5.2 2.8	9.3 4.8 2.7	8.9 3.7 2.6	8.8 4.6 2.4	9.3 3.0 2.5	7.3 2.7
21 −84°	52.8 5.4 2.0	10.7 4.0 2.3	10.1 4.2 2.0	9.3 3.7 2.2	8.4 3.6 2.1	8.1 3.7 2.1	7.9 2.8 1.8	7.8 3.2 1.6	7.5 2.4 1.7	6.5 2.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8A

STA TAPE 8F

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.7 19.0 7.8	22.7 15.0 7.7	21.6 12.8 7.5	20.1 12.0 7.8	17.8 10.8 7.5	17.2 10.5 7.4	16.5 9.5 7.4	15.8 8.9 7.2	18.6 8.4 7.4	18.0 8.2
2 +64°	58.6 18.8 8.9	22.8 15.4 8.7	21.7 13.4 8.4	20.2 12.6 8.8	17.8 11.7 8.4	17.2 11.3 8.3	16.4 10.3 8.4	16.6 9.8 8.3	19.1 9.3 8.4	18.9 9.1
3 +53°	58.4 17.7 8.7	22.1 14.6 8.7	21.0 12.5 8.2	19.6 12.4 8.3	17.4 11.7 8.4	16.6 11.0 8.3	15.7 10.1 8.1	17.5 9.6 8.1	17.5 9.3 8.2	17.7 9.1
4 +44°	57.7 16.2 7.9	20.4 13.6 7.8	19.2 11.7 7.8	17.6 11.8 7.6	15.0 11.4 7.6	14.8 9.4 7.7	14.5 8.7 7.5	15.9 8.7 7.4	16.1 8.6 7.5	16.4 8.2
5 +37°	57.4 12.9 6.9	17.6 12.1 7.0	16.8 10.6 7.0	15.9 10.1 7.0	14.7 10.0 6.9	14.0 8.2 7.2	13.2 8.1 7.0	14.2 7.8 6.8	15.3 7.7 6.8	15.9 7.7
6 +30°	56.7 12.3 5.6	17.1 11.3 6.0	16.6 9.8 6.1	16.1 8.9 6.1	15.5 8.1 6.2	14.7 7.1 6.0	13.6 7.1 5.9	12.3 5.8 6.0	14.4 6.2 5.7	12.8 6.5
7 +23°	55.8 9.3 5.2	16.3 8.5 5.1	16.3 8.7 5.0	16.4 7.6 4.9	16.4 6.4 5.1	14.7 5.6 5.0	11.7 5.5 4.9	10.3 4.7 4.9	9.3 4.8 4.6	9.9 5.2
8 +17°	54.4 6.7 3.5	18.7 5.3 3.2	18.7 6.5 3.0	18.6 5.5 3.2	18.6 3.6 3.3	16.1 3.6 3.1	10.1 3.7 3.1	9.6 2.7 3.1	5.1 2.8 3.3	7.4 3.4
9 +12°	52.6 5.3 1.5	18.2 3.6 1.0	17.8 3.5 1.1	17.4 2.0 1.1	16.7 0.6 1.0	14.7 1.6 0.9	9.8 1.3 1.0	6.9 0.4 0.8	4.3 1.3 0.9	5.3 1.2
10 +6°	51.6 4.3 1.4	14.3 2.7 1.9	13.2 2.5 1.2	11.8 0.9 0.5	7.7 1.5 0.6	8.4 1.0 0.0	6.7 0.7 0.1	5.0 0.6 -0.1	5.9 1.4 -0.1	3.8 1.1
11 0°	51.2 2.5 0.3	12.9 1.5 1.3	11.8 0.6 0.6	10.3 -0.3 -0.5	7.9 0.7 0.5	6.4 -0.5 -0.3	4.1 -0.2 -0.3	2.3 -0.4 -0.3	4.0 -0.3 -0.5	2.0 -0.5
12 −6°	51.6 2.0 -0.1	13.0 1.1 0.7	12.1 0.8 0.3	10.9 0.8 -0.5	7.8 0.1 -0.0	7.5 -0.4 -0.3	4.2 0.2 -0.3	2.7 0.0 -0.5	3.5 0.1 -0.5	2.3 -0.3
13 −12°	51.5 1.2 -0.6	9.4 -0.1 -0.2	8.5 0.3 -0.3	7.4 0.4 -0.7	5.8 0.2 -0.6	5.1 -0.9 -0.7	4.2 -0.0 -0.8	1.1 -0.1 -0.8	2.6 -0.5 -0.9	1.6 -0.6
14 −17°	51.4 0.1 -1.1	7.4 -0.7 -1.0	6.5 -0.3 -1.0	5.4 -0.7 -1.1	3.7 -0.7 -1.2	3.7 -1.8 -0.9	3.4 -0.8 -1.0	0.1 -0.3 -1.2	0.9 -1.1 -1.3	0.8 -1.3

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 8A

STA TAPE 8F

PAGE 2

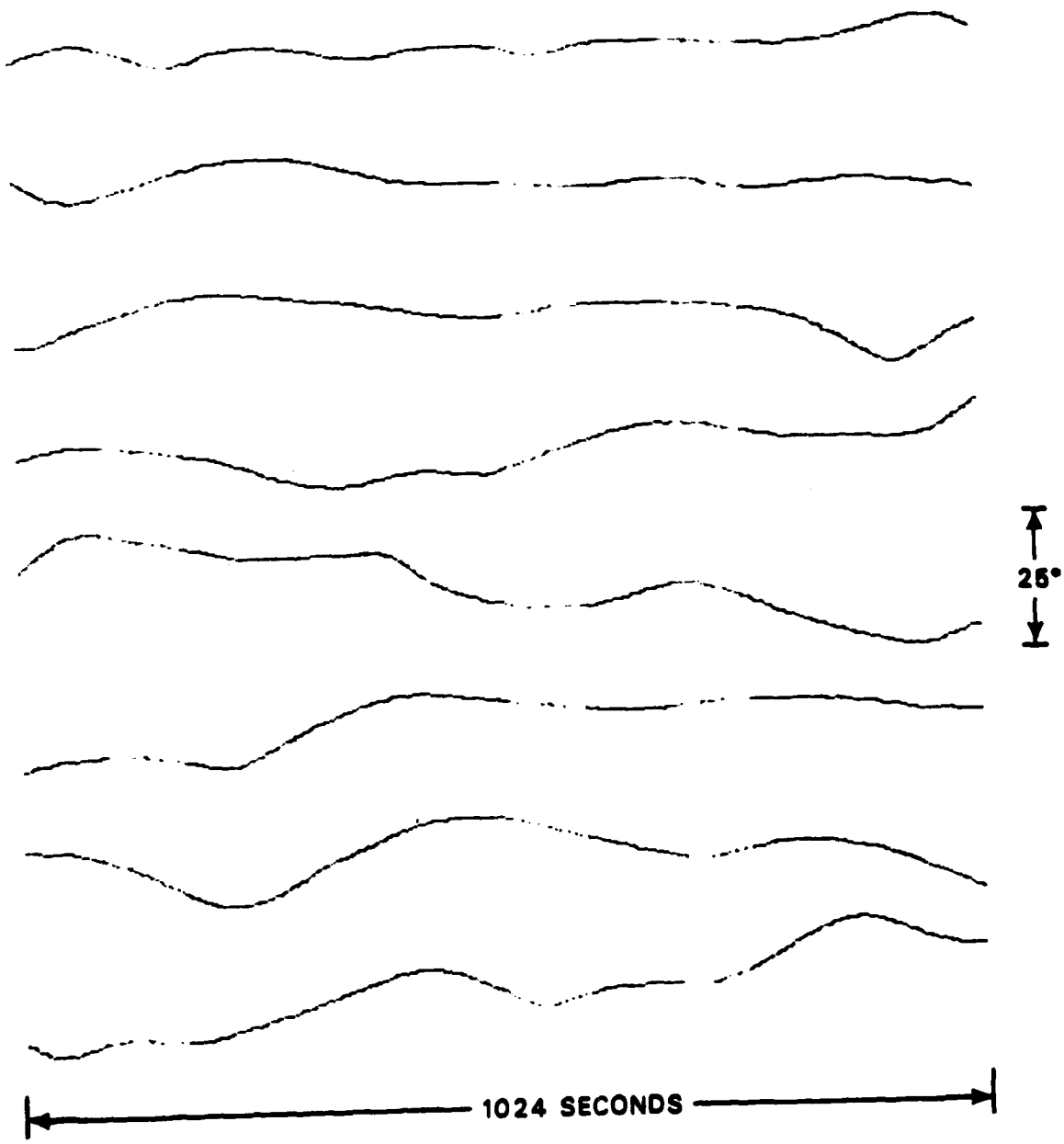
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.4 -1.9 -1.0	8.3 -0.2 -0.9	7.6 -0.8 -0.9	6.8 -0.7 -1.2	5.8 -0.3 -1.0	4.8 -0.6 -1.2	3.6 -0.9 -1.0	0.2 -0.7 -1.0	0.8 -1.1 -1.2	0.8 -0.6
16 −30°	51.7 0.1 -0.7	10.1 0.9 -0.7	9.4 -0.1 -0.7	8.5 -0.2 -0.8	7.5 -0.3 -0.5	6.3 -0.1 -0.7	4.8 -0.6 -0.5	2.8 -0.4 -0.5	1.8 -0.4 -0.5	1.5 -0.1
17 −37°	52.0 0.7 0.3	11.3 0.9 0.1	10.4 0.5 0.0	9.2 0.4 0.0	7.6 -0.3 0.1	6.4 0.1 -0.1	4.8 0.1 -0.1	2.5 0.0 -0.1	1.3 -0.2 -0.1	2.7 0.1
18 −44°	52.3 2.7 0.9	11.1 3.1 0.9	10.6 2.6 0.8	10.1 1.8 0.9	9.4 1.7 0.8	7.9 1.6 0.7	5.7 0.6 0.7	4.8 0.9 0.9	4.7 1.0 0.8	5.1 0.6
19 −53°	52.8 5.9 2.2	13.0 6.4 1.8	12.5 5.1 2.0	12.0 3.4 2.0	11.3 4.0 2.2	10.3 3.8 2.2	8.9 3.0 1.7	7.8 2.4 1.9	8.2 2.2 2.1	6.8 2.0
20 −64°	53.2 7.9 3.0	13.9 7.6 2.7	13.3 6.4 2.6	12.7 4.7 2.7	11.9 4.8 2.7	11.4 4.4 3.0	10.7 4.5 2.2	9.0 3.7 2.4	9.2 2.6 2.5	8.2 2.7
21 −84°	52.8 9.0 2.6	13.8 8.0 2.6	13.5 6.9 2.3	13.2 4.7 2.4	12.9 4.9 2.2	12.6 4.3 2.4	12.2 3.5 1.8	9.7 3.2 1.8	9.4 2.4 1.9	8.7 2.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8A

BEARING VS TIME

MEAN & VAR	319.0	2.27	318.7	5.50	320.0	14.35	317.3	11.36
320.9 51.59	319.7	16.84	317.2	19.15	317.2	40.95		

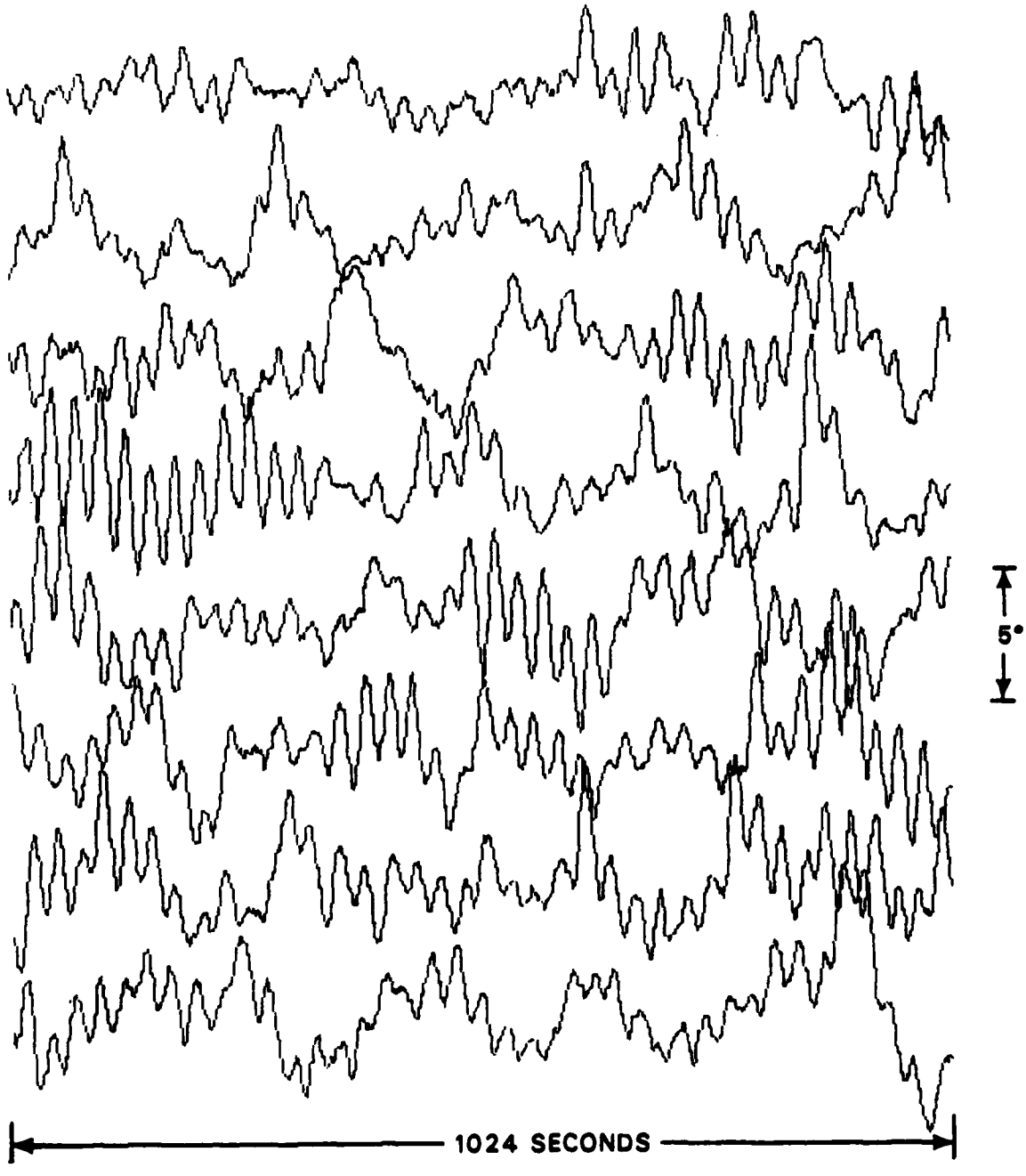


MPL-M-4728

GROUP 8A

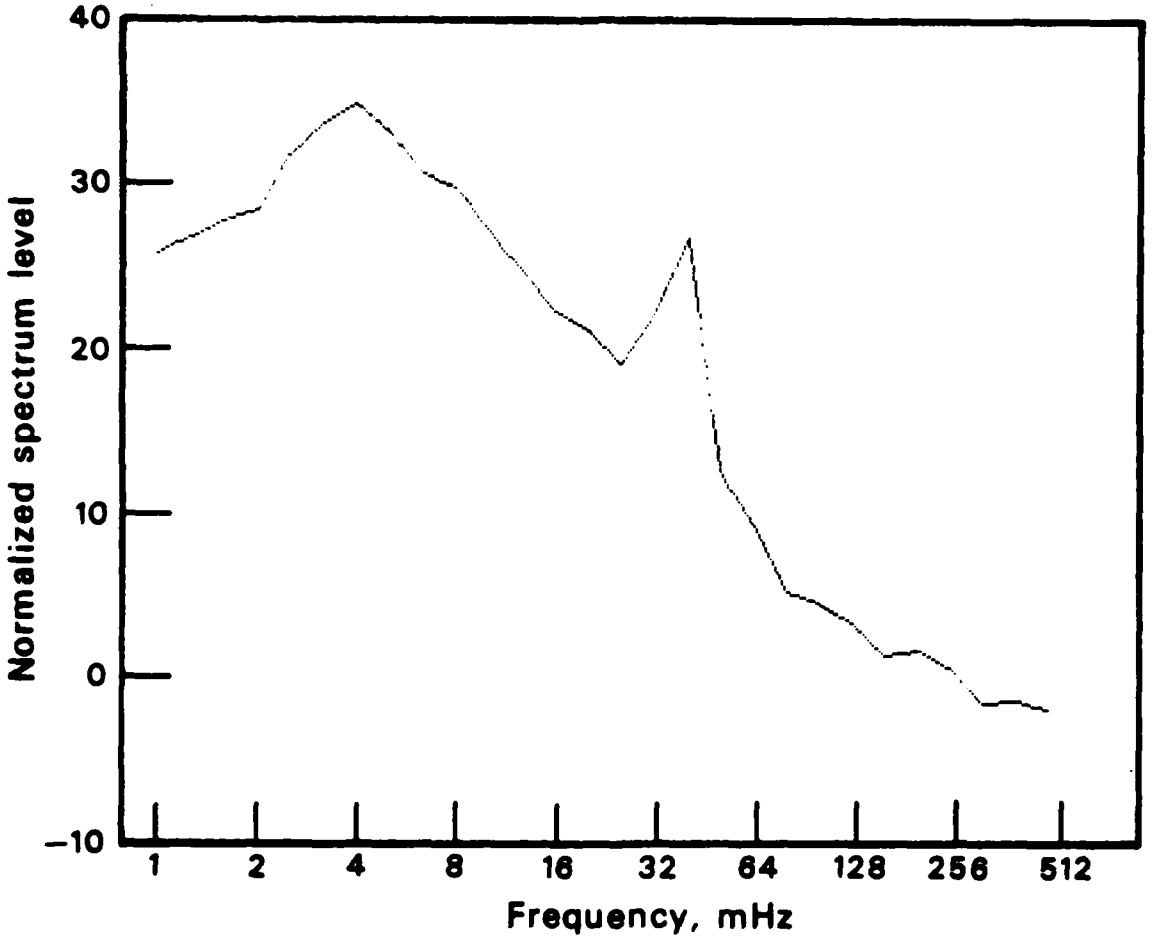
ELEVATION VS TIME

MEAN & VAR.	91.9	0.89	91.7	2.10	92.0	2.07	91.9	2.35
92.2	91.9	2.32	92.2	2.32	91.9	2.86		



MPL-M-4729

GROUP 8A



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 8B

Environmental Summary

8 June 1978

Tapes	Start time	Code
LTA/LOG	06:59:47	08B
STA	07:01:07	08G
STA	07:59:39	08H

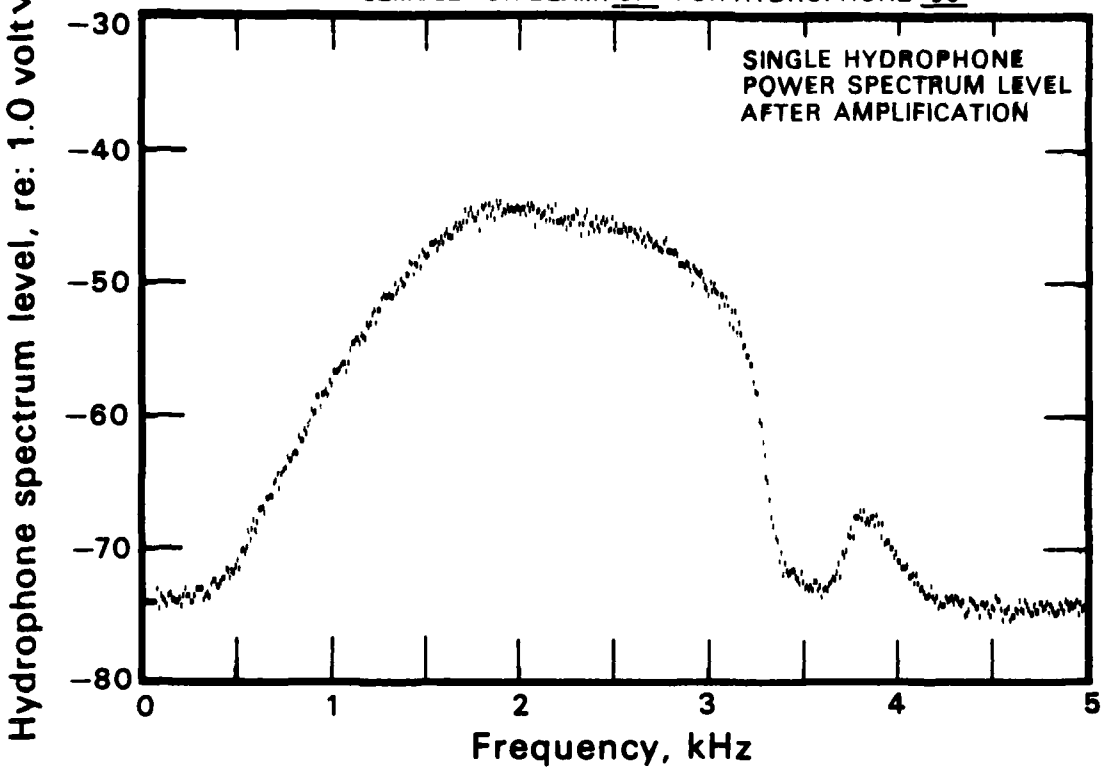
High Band Filter

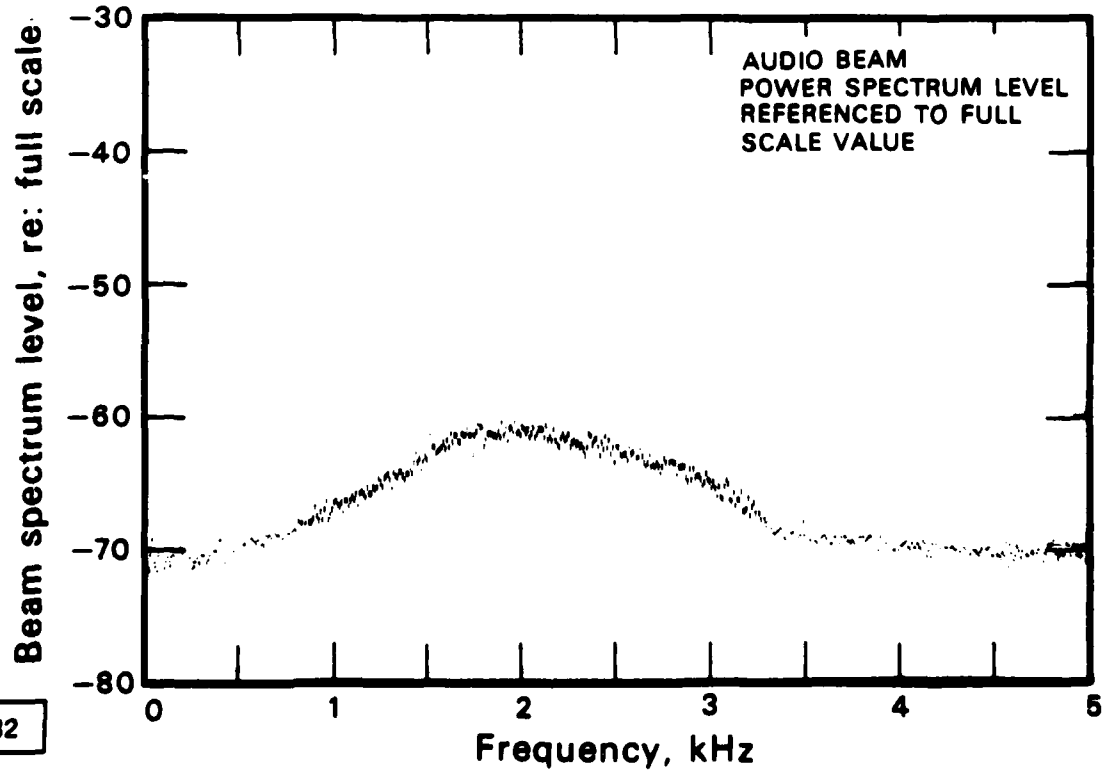
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
07:00	2600	17	330	5-7	6-7	NW	
08:00	2500	17	334	5-7	6-7	NW	
10:00	2400	15	340	5-7	6-7	NW	

08-JUN-78 07:20:31 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 297.3
RELATIVE ELEVATION 80.0 TRUE BEARING 255.1 TRUE ELEVATION 80.8
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -13.3 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 97 FOR HYDROPHONE 96

GROUP 8B





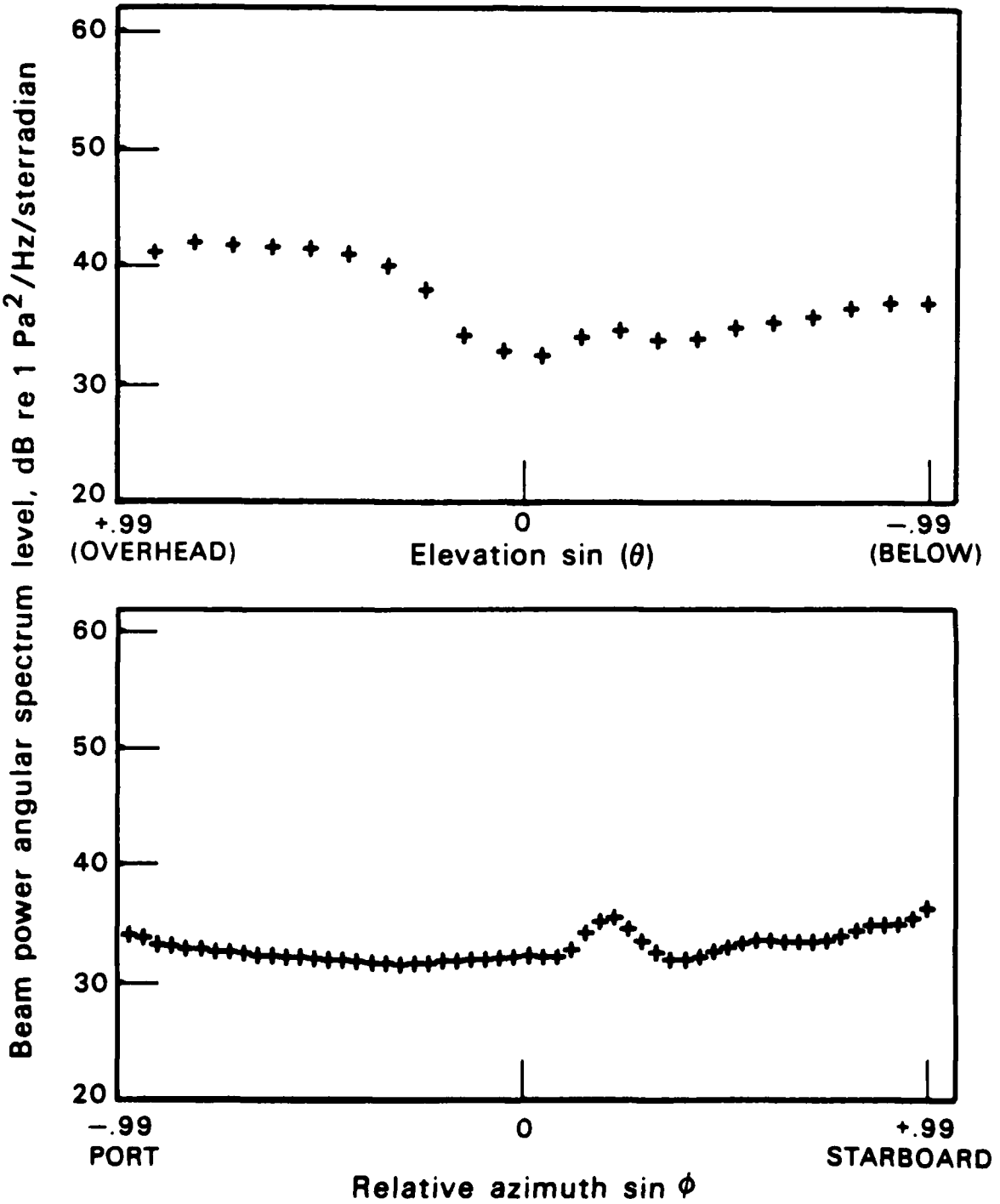
MPL-M-4732

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 8B

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

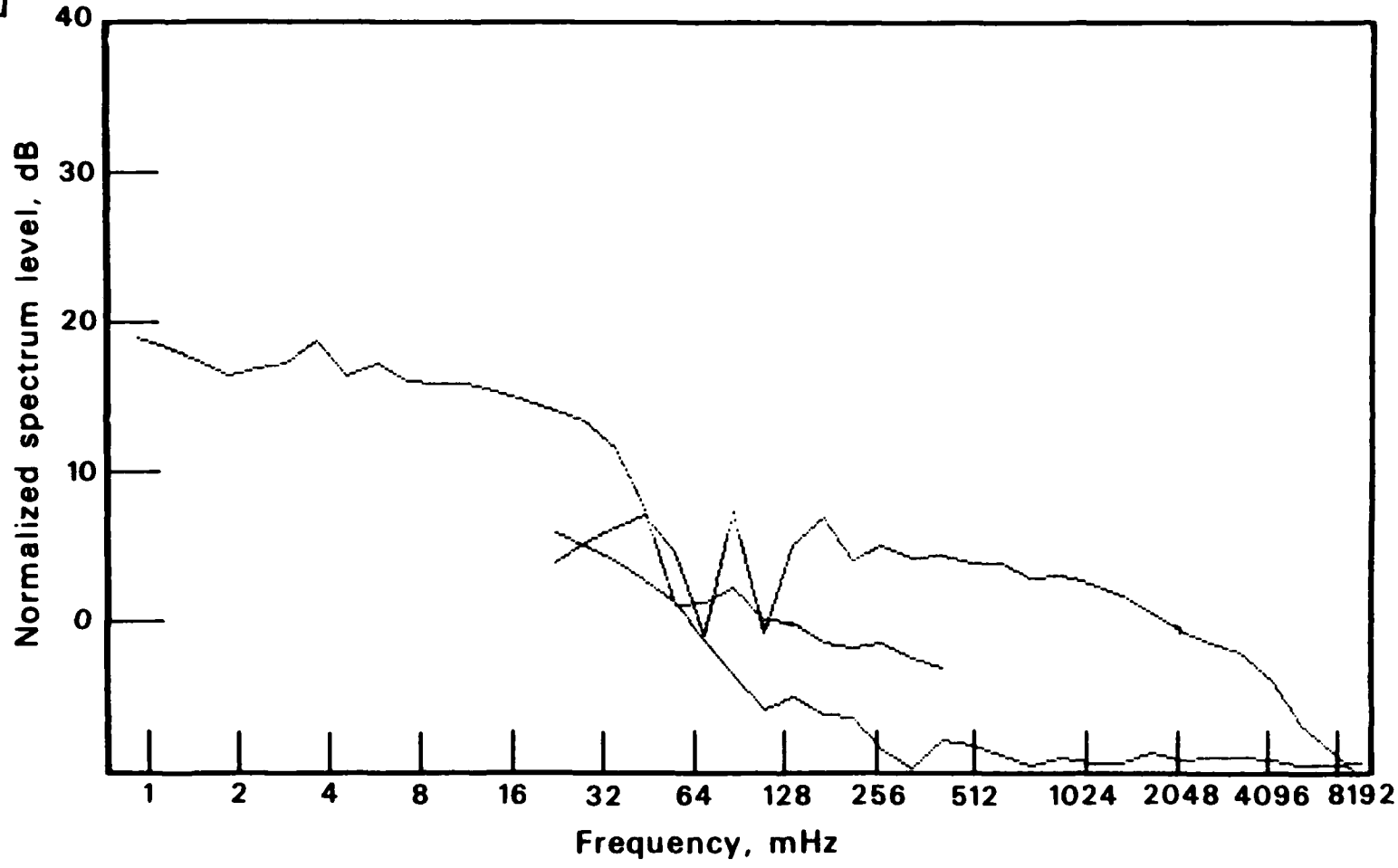
POWER HAS BEEN CORRECTED FOR DIMUS NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4733

MPL-M-4734

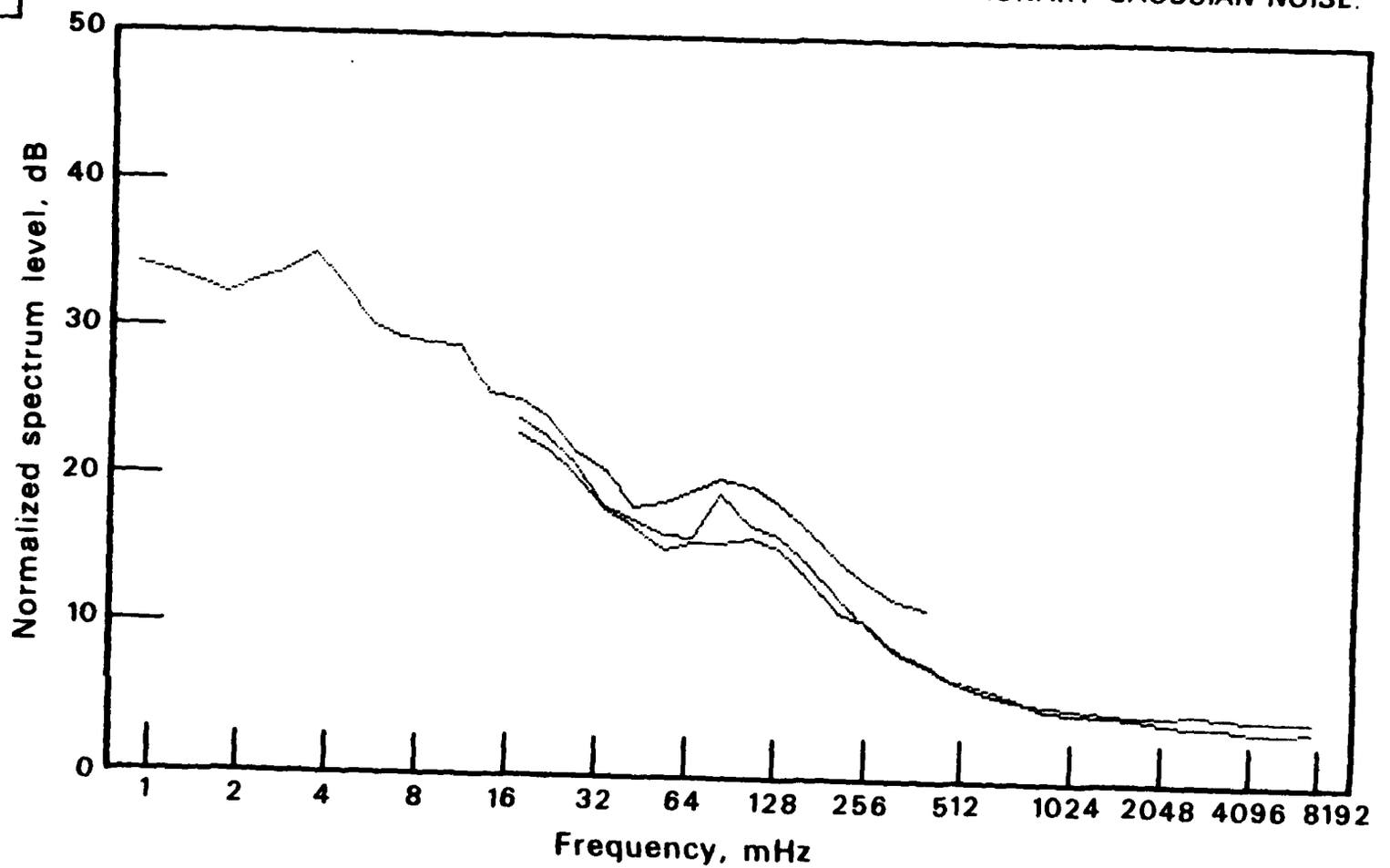
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 8B

MPL-M-4735

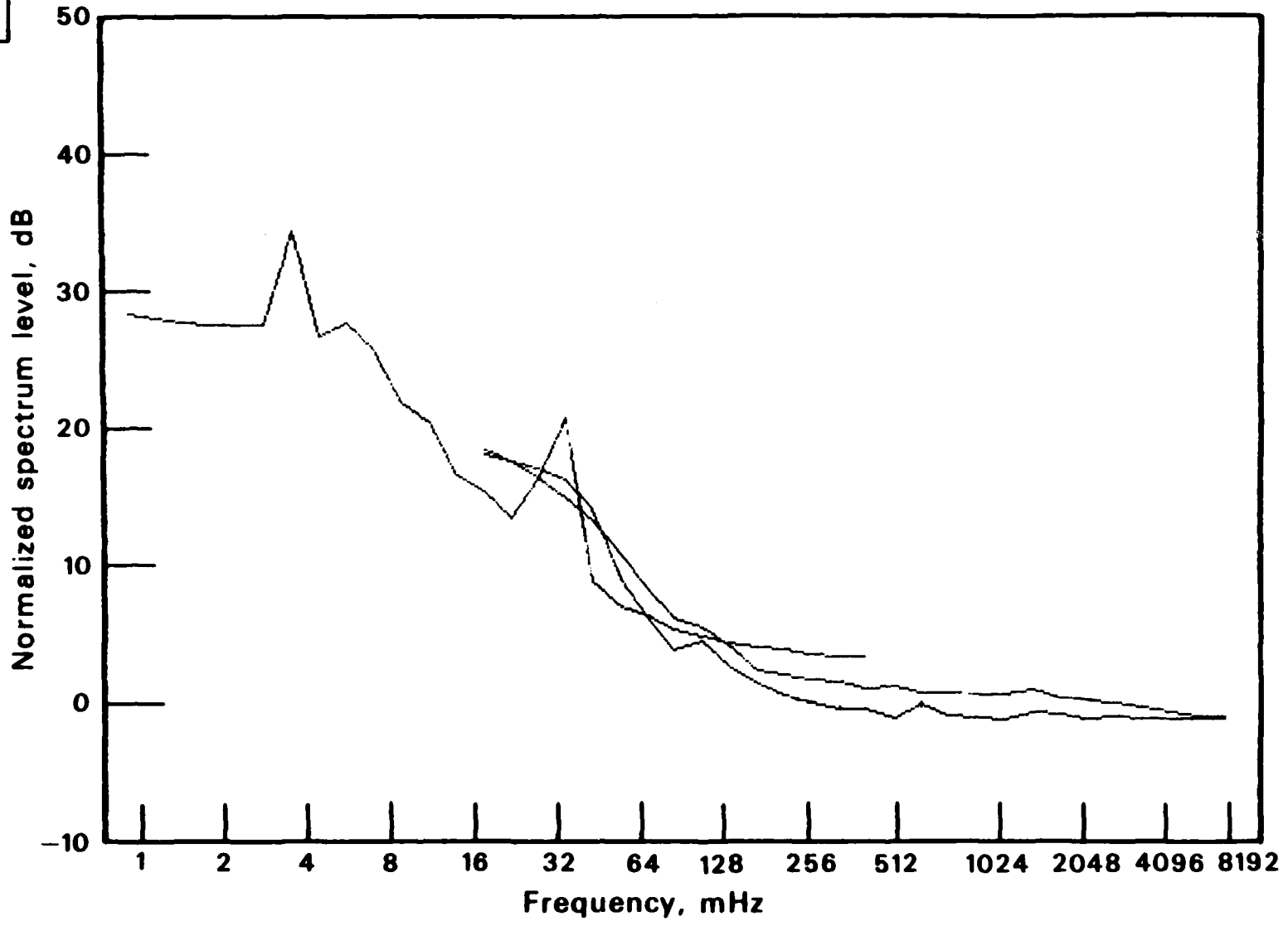
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8B

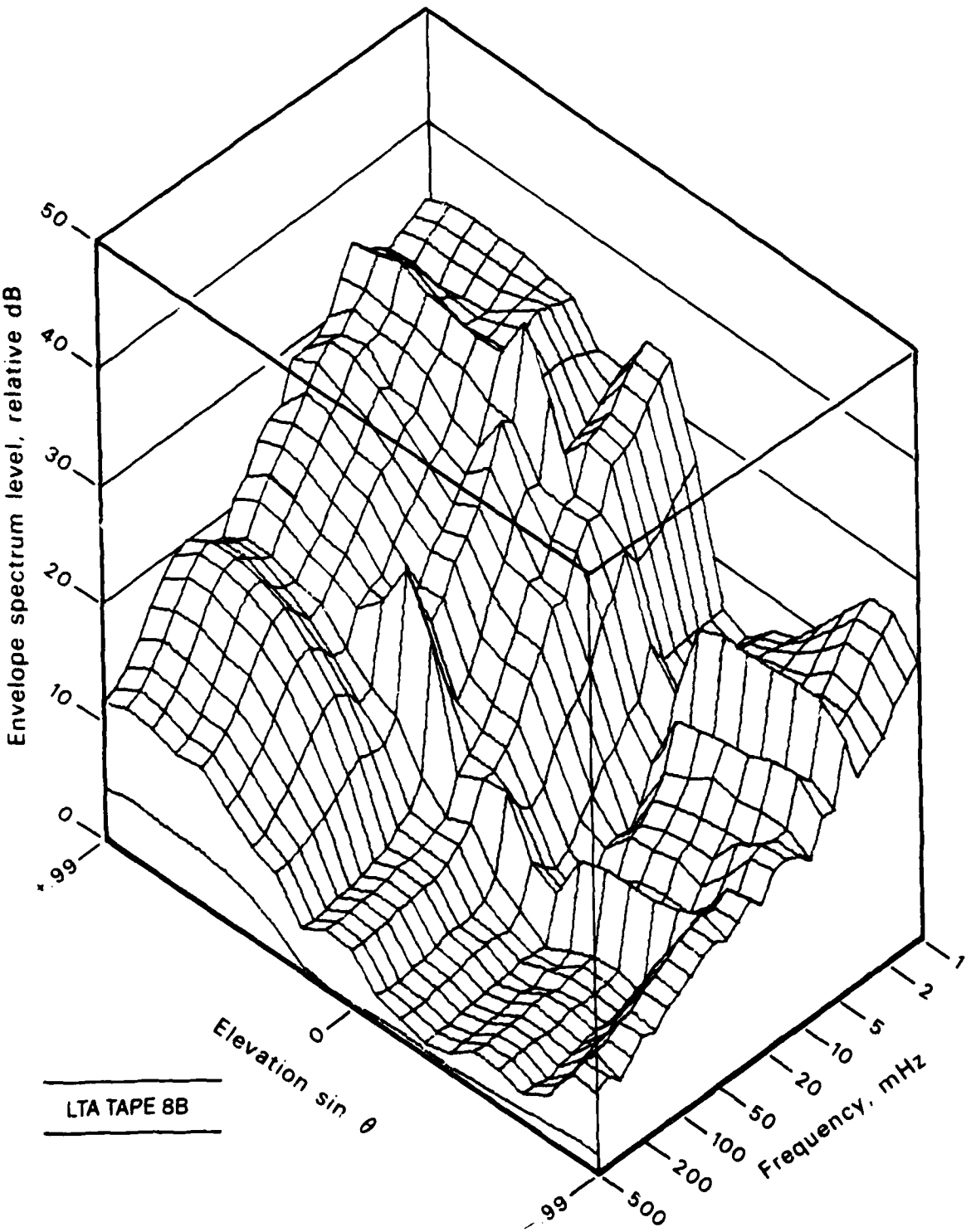
MPL-M-4736

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8B

GROUP 8B

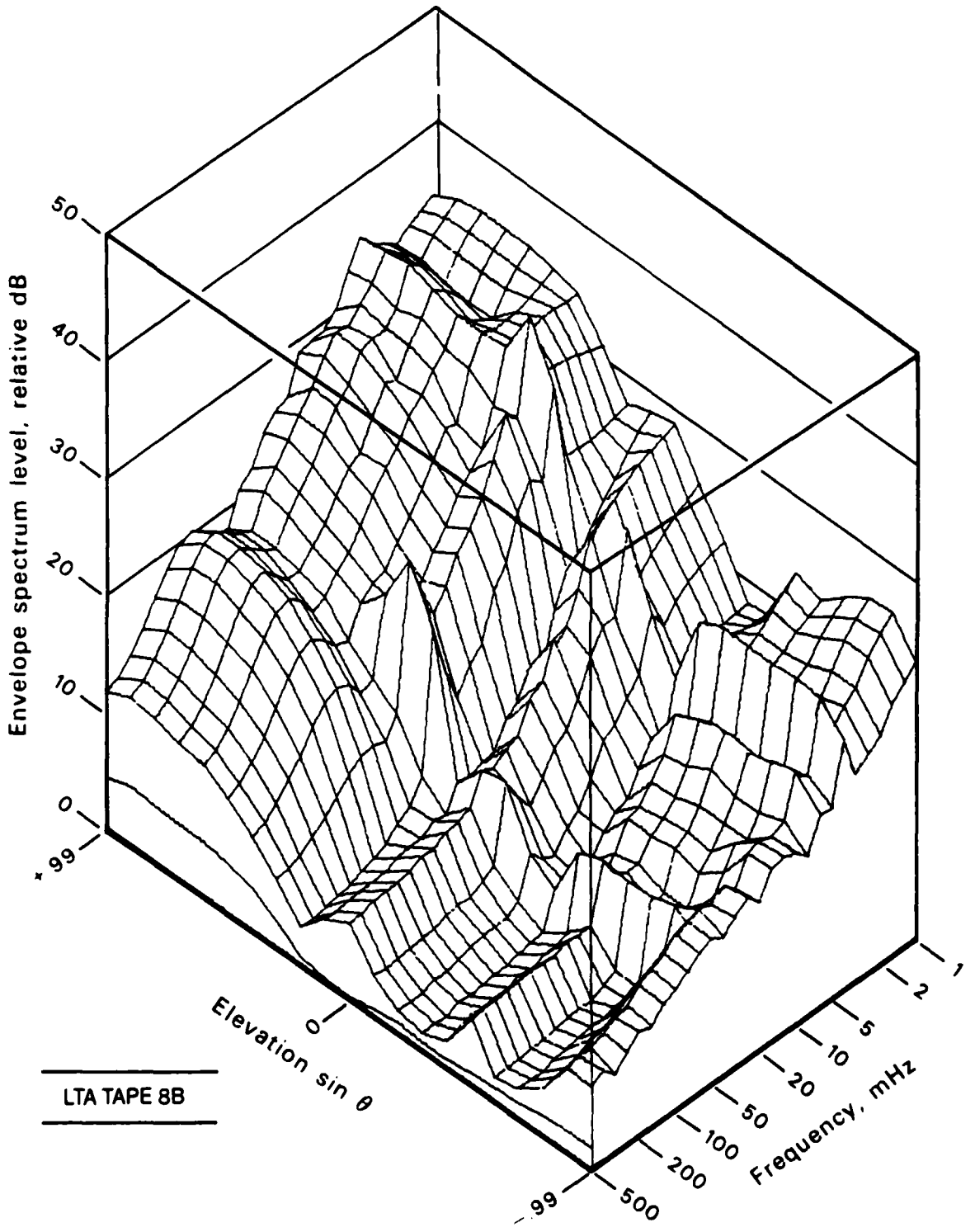


LTA TAPE 8B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL M 4737

GROUP 8B



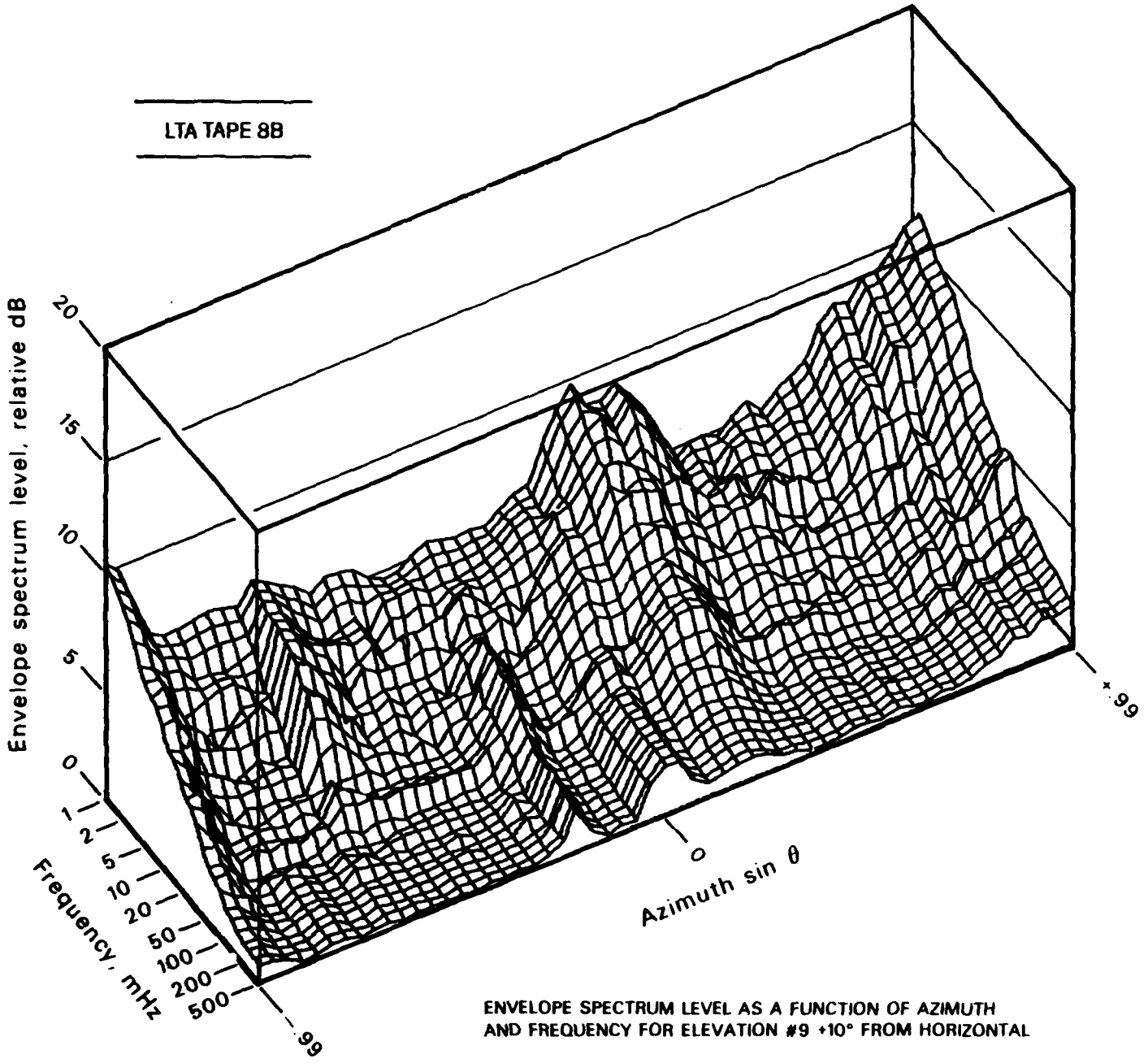
LTA TAPE 8B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-4738

MPL-M-4739

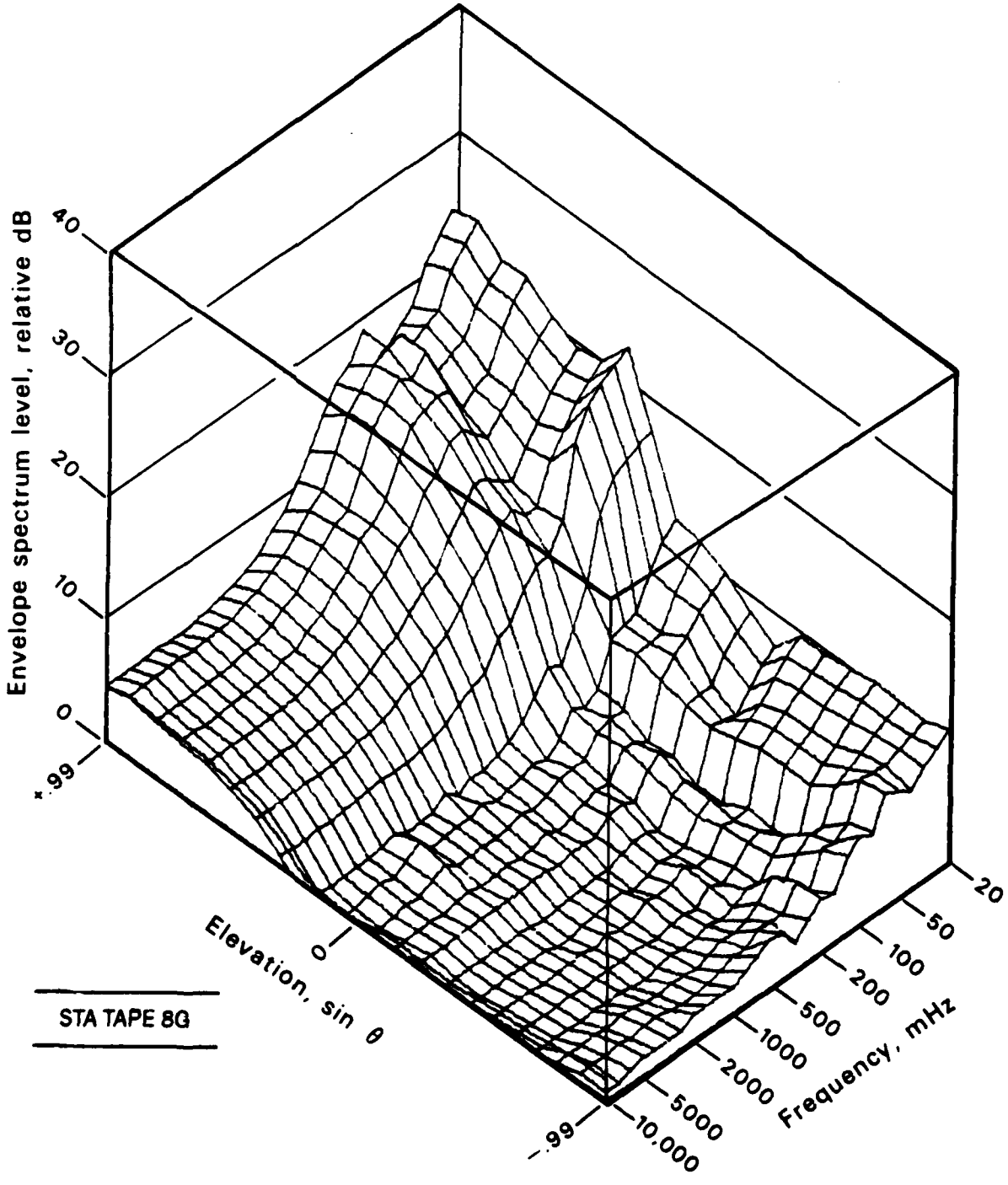
LTA TAPE 8B



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 8B

GROUP 8B

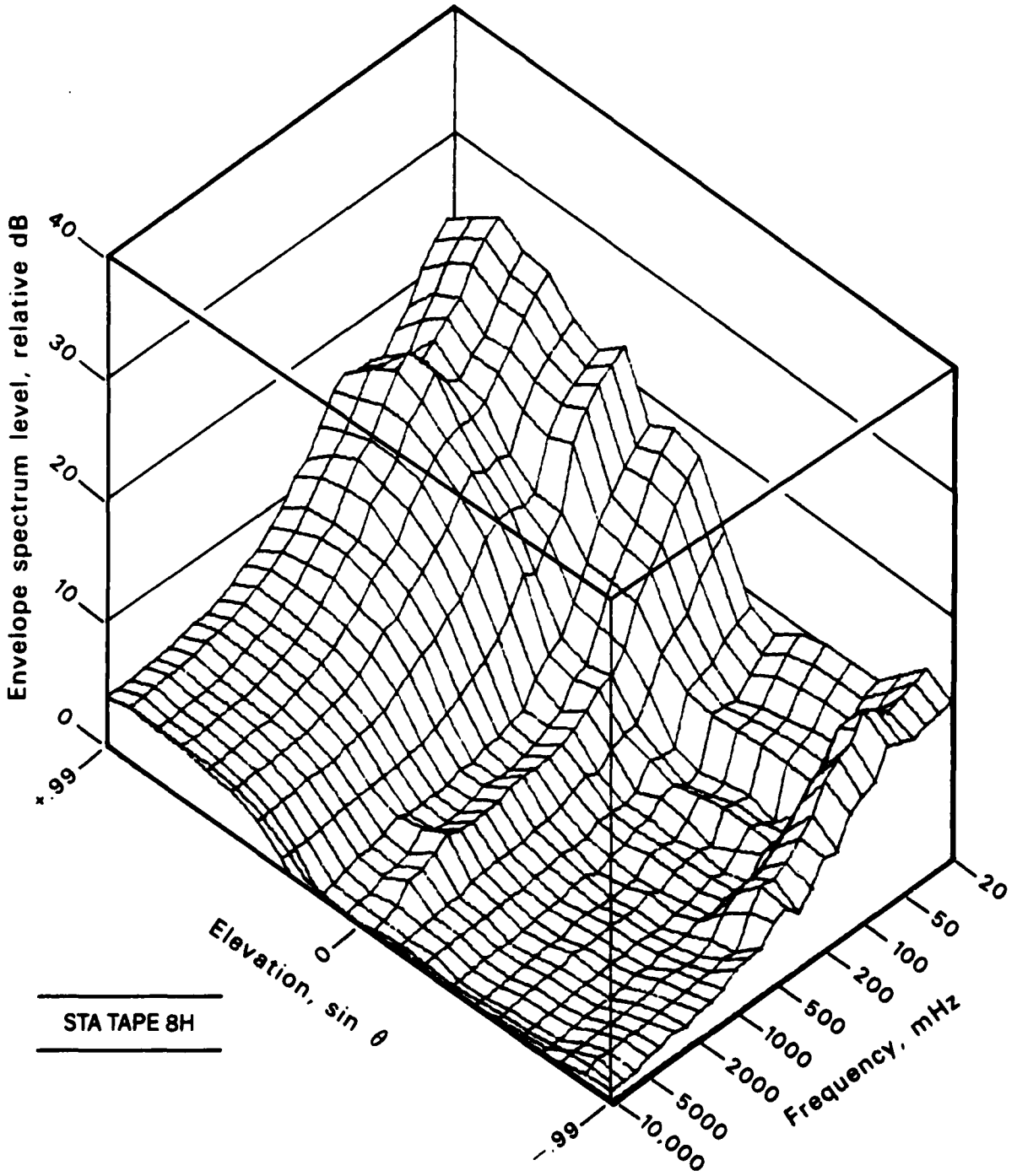


STA TAPE 8G

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4740

GROUP 8B



STA TAPE 8H

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4741

GROUP 8B

LTA TAPE 8B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.8	29.0	28.4	27.8	27.0	27.8	28.5	29.8	27.7	25.1
ANGLE +84°	24.1	23.8	23.7	20.5	20.0	18.9	16.5	15.4	12.8	13.1
	14.0	14.9	14.4	13.1	11.4	9.4	7.8	6.6	6.2	
2	67.4	29.9	29.2	28.3	27.3	28.5	29.4	30.2	28.0	27.0
+64°	25.7	25.9	24.8	23.0	21.0	19.7	18.2	16.6	14.1	14.7
	15.5	16.2	15.9	14.6	12.5	10.6	9.0	7.8	7.2	
3	67.3	30.1	29.3	28.2	26.7	28.5	29.7	30.9	27.6	26.5
+53°	26.2	25.8	23.7	22.5	21.0	19.2	17.5	16.1	14.2	14.7
	15.5	16.3	16.1	14.7	12.5	10.4	8.7	7.5	6.8	
4	67.2	30.0	29.2	28.3	27.2	28.0	28.6	29.8	27.7	26.4
+44°	24.0	24.7	22.9	20.8	19.5	18.0	16.1	15.0	13.4	13.6
	14.5	15.8	15.5	13.8	11.7	9.7	8.0	6.7	6.2	
5	67.1	30.0	29.3	28.5	27.5	27.7	27.8	29.5	27.0	25.8
+37°	23.5	22.8	21.0	20.5	19.0	17.0	15.7	14.4	13.0	12.4
	13.7	14.9	14.5	13.0	11.2	9.2	7.9	6.8	6.4	
6	66.7	29.6	29.4	29.2	29.0	28.6	28.1	28.9	27.1	23.6
+30°	21.8	21.0	19.3	17.9	16.5	14.5	14.1	13.2	10.5	10.6
	12.0	12.9	12.3	11.1	9.0	7.3	6.0	4.8	4.3	
7	66.1	29.3	29.7	30.1	30.5	29.5	28.3	29.1	25.5	22.4
+23°	20.7	19.1	17.7	16.6	14.4	13.2	14.1	15.4	8.6	8.0
	9.6	10.3	9.6	8.3	6.4	5.2	3.9	2.8	2.5	
8	64.8	26.3	26.8	27.2	27.5	27.5	27.4	33.1	25.4	26.2
+17°	22.9	20.3	18.5	17.0	14.8	13.6	16.2	19.5	7.6	5.9
	6.0	6.2	5.4	4.4	3.5	2.9	2.2	1.8	1.7	
9	63.2	26.1	25.4	24.5	23.5	23.1	22.6	28.4	21.5	21.8
+12°	19.9	17.2	15.1	12.1	9.6	8.2	10.7	15.0	3.9	1.6
	1.0	-0.0	-0.4	-0.9	-1.2	-1.2	-1.5	-1.7	-1.5	
10	62.8	29.9	29.0	27.8	26.1	25.6	25.0	21.2	21.1	18.9
+6°	16.4	16.7	13.4	11.4	8.6	6.9	5.8	4.6	1.9	1.3
	0.8	0.5	0.5	0.1	-0.1	-0.2	-0.3	-0.4	-0.3	
11	62.7	29.7	28.7	27.4	25.6	25.0	24.4	21.2	21.3	19.2
0°	16.1	16.1	13.1	11.2	8.4	7.0	5.8	5.8	2.8	1.7
	0.8	0.3	0.3	-0.1	-0.1	-0.4	-0.5	-0.7	-0.6	
12	63.1	22.5	21.6	20.4	19.2	18.3	17.6	19.3	16.2	14.9
−6°	11.5	9.8	8.7	6.9	4.4	3.2	4.1	6.1	-0.4	-1.7
	-2.2	-2.5	-2.2	-2.7	-2.9	-3.0	-3.4	-3.4	-3.0	
13	63.4	11.3	11.2	11.2	11.1	10.9	10.6	12.8	8.7	8.2
−12°	6.1	5.6	3.7	2.2	0.4	-0.4	0.4	1.5	-1.9	-2.8
	-2.5	-2.5	-2.5	-3.0	-3.1	-3.2	-3.7	-3.7	-3.6	
14	63.1	10.3	10.2	10.2	10.1	9.0	7.6	10.0	5.8	5.5
−17°	2.6	1.0	1.4	1.2	-0.6	-1.5	-0.7	0.3	-3.5	-3.5
	-3.4	-3.6	-3.7	-3.7	-3.9	-3.9	-4.2	-4.2	-4.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8B

LTA TAPE 8B

AGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	12.2	12.5	12.8	13.0	12.2	11.1	17.0	8.0	10.6
ANGLE −23°	6.7	5.2	3.9	3.6	0.6	0.2	2.3	4.5	-2.5	-3.1
	-2.5	-3.3	-3.0	-3.2	-3.3	-3.4	-3.6	-3.6	-3.7	
16	63.4	13.1	13.4	13.5	13.7	12.9	11.9	17.8	8.9	11.1
−30°	7.9	6.1	4.8	3.9	1.9	1.1	2.7	5.3	-1.4	-1.6
	-1.8	-2.0	-1.6	-1.8	-2.2	-2.1	-2.2	-2.2	-2.2	
17	63.6	15.7	15.3	14.8	14.3	14.0	13.6	17.9	9.8	11.5
−37°	9.3	6.6	5.2	4.4	2.2	1.4	3.0	5.4	-1.3	-1.5
	-1.7	-1.8	-1.6	-2.0	-2.0	-2.0	-2.0	-2.1	-2.3	
18	63.8	18.3	17.5	16.5	15.2	14.3	13.1	17.9	10.5	11.9
−44°	9.0	6.8	5.4	3.8	2.0	1.3	2.6	5.4	-1.9	-2.1
	-1.8	-2.2	-2.0	-2.3	-2.6	-2.8	-3.1	-2.9	-3.0	
19	64.1	20.9	19.9	18.7	16.9	15.5	13.5	18.3	11.2	12.9
−53°	9.4	7.2	8.1	6.1	4.3	4.6	4.1	6.1	3.2	2.9
	2.1	1.6	0.8	0.2	-0.1	-0.7	-1.3	-1.3	-1.5	
20	64.4	21.0	20.0	18.5	16.2	15.5	14.6	18.0	12.0	13.2
−64°	9.3	9.0	9.5	9.0	6.8	7.9	7.0	7.2	6.9	6.5
	5.6	5.0	4.4	3.4	3.1	2.4	2.1	2.0	1.8	
21	64.4	18.3	17.3	16.0	14.1	13.3	12.2	15.9	10.9	11.0
−84°	8.1	9.2	9.6	9.3	7.2	8.3	7.3	6.4	7.0	6.4
	5.6	4.7	4.3	3.1	3.4	2.3	1.1	2.2	1.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8B

LTA TAPE 8B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.0	29.0	28.4	27.8	27.0	27.8	28.5	29.8	27.7	25.1
ANGLE +84°	24.1	23.8	23.7	20.5	20.0	18.9	16.5	15.4	12.8	13.1
	14.0	14.9	14.4	13.1	11.4	9.4	7.8	6.6	6.2	
2	67.4	30.1	29.3	28.4	27.2	28.4	29.3	30.1	28.0	27.0
+64°	25.0	26.1	24.8	22.8	21.1	19.7	18.2	16.7	14.2	14.6
	15.5	16.3	16.0	14.6	12.6	10.6	9.0	7.8	7.1	
3	67.3	30.5	29.5	28.3	26.6	28.3	29.5	30.5	27.4	26.4
+53°	26.3	25.8	23.7	22.5	21.0	18.9	17.4	16.2	14.1	14.7
	15.5	16.3	16.1	14.7	12.6	10.4	8.8	7.6	6.9	
4	67.2	30.4	29.4	28.2	26.4	27.8	28.9	29.7	27.9	26.3
+44°	24.1	24.6	22.4	20.1	19.5	17.8	16.2	15.0	13.6	13.6
	14.7	15.9	15.4	13.8	11.8	9.8	8.1	6.8	6.2	
5	67.1	30.4	29.5	28.2	26.4	27.1	27.7	29.0	26.9	25.6
+37°	24.3	23.2	21.3	20.3	18.6	16.7	15.2	14.2	12.8	12.3
	14.0	14.8	14.4	12.9	11.1	9.0	7.5	6.2	5.7	
6	66.7	29.9	29.5	29.0	28.5	28.5	28.4	28.9	26.6	22.6
+30°	22.8	21.0	19.1	17.5	16.0	14.4	14.0	13.0	10.4	10.8
	12.2	12.9	12.4	11.0	9.1	7.4	6.0	4.9	4.3	
7	66.1	29.4	29.5	29.5	29.6	29.2	28.8	29.2	24.9	21.8
+23°	20.6	19.3	17.5	15.9	14.3	13.2	13.7	15.3	8.7	8.1
	9.8	10.2	9.6	8.3	6.5	5.2	3.9	2.9	2.5	
8	64.8	26.4	26.7	27.1	27.4	27.5	27.7	33.4	25.3	26.4
+17°	23.2	20.5	18.8	17.3	15.2	13.6	16.3	19.7	7.2	5.5
	5.0	5.6	4.8	3.6	2.6	1.7	0.8	0.5	0.3	
9	63.2	22.8	22.5	22.2	21.9	22.0	22.0	28.8	21.2	22.2
+12°	20.1	16.4	14.8	11.1	9.9	7.9	10.7	15.1	3.2	1.4
	0.7	-0.4	-0.8	-1.3	-1.7	-1.9	-2.1	-2.3	-2.3	
10	62.7	23.6	22.7	21.6	20.0	18.9	17.4	15.4	15.2	12.4
+6°	8.0	9.1	6.7	5.9	3.8	3.6	3.2	3.5	1.5	1.6
	0.7	0.8	0.6	0.2	0.0	0.1	-0.0	-0.3	-0.2	
11	62.6	24.1	23.7	23.3	22.9	22.1	21.2	20.6	19.8	15.8
0°	13.3	13.0	10.1	9.2	6.9	6.4	5.5	6.0	3.5	3.1
	2.9	2.2	2.3	1.8	1.6	1.6	1.4	1.0	0.9	
12	63.1	20.3	19.7	19.1	18.3	17.3	16.0	20.8	14.1	14.0
−6°	12.2	9.1	7.2	6.4	4.6	3.0	4.6	6.4	-0.0	-0.7
	-1.3	-1.2	-1.4	-1.8	-1.9	-2.0	-2.2	-2.2	-2.1	
13	63.3	17.0	16.6	16.1	15.6	14.6	13.3	15.2	10.6	9.3
−12°	7.7	7.1	4.6	2.6	1.7	0.2	0.7	1.8	-1.6	-2.2
	-2.2	-2.3	-2.6	-2.9	-3.1	-3.2	-3.6	-3.7	-3.5	
14	63.1	13.0	12.9	12.8	12.6	11.5	9.9	11.1	5.9	7.3
−17°	5.3	3.5	3.1	2.1	0.4	-0.3	0.0	0.3	-2.8	-3.1
	-3.2	-3.4	-3.6	-3.8	-3.9	-3.7	-4.2	-4.1	-4.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 8B

LTA TAPE 8B

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	13.3	13.6	13.9	14.2	13.5	12.7	17.3	9.4	10.8
ANGLE −23°	8.1	6.5	5.1	4.8	2.5	1.5	3.0	4.9	−1.4	−1.7
	−1.8	−2.3	−2.1	−2.4	−2.6	−2.7	−3.0	−3.1	−3.3	
16	63.4	18.6	17.8	16.8	15.6	15.0	14.3	18.3	10.8	11.8
−30°	8.6	6.6	5.5	4.7	3.2	3.1	3.8	5.6	0.7	0.6
	0.8	0.4	0.5	0.6	0.3	0.3	0.3	0.3	0.4	
17	63.6	17.7	17.1	16.4	15.5	15.0	14.5	18.2	11.1	12.1
−37°	9.8	7.2	5.9	5.2	2.2	1.6	3.0	5.2	−1.7	−2.3
	−2.8	−2.7	−2.8	−3.0	−3.2	−3.2	−3.4	−3.4	−3.5	
18	63.8	19.4	18.6	17.4	15.9	15.1	14.2	18.1	10.7	11.9
−44°	8.7	7.3	5.6	4.4	2.2	1.2	2.8	5.4	−1.7	−2.0
	−1.9	−2.1	−2.1	−2.4	−2.6	−2.8	−3.1	−3.0	−3.0	
19	64.1	20.8	19.9	18.6	16.8	15.2	12.7	18.4	10.8	12.6
−53°	9.0	7.4	7.9	6.2	4.2	4.5	3.8	6.1	2.8	2.4
	1.7	1.4	0.6	0.1	−0.2	−0.7	−1.3	−1.2	−1.5	
20	64.4	21.1	20.0	18.7	16.8	15.9	14.6	18.0	12.2	13.2
−64°	9.7	9.1	9.5	9.1	6.9	7.9	7.0	7.2	6.9	6.6
	5.7	5.0	4.4	3.4	3.2	2.5	2.1	2.0	1.8	
21	64.4	18.3	17.3	16.0	14.1	13.3	12.2	15.9	10.9	11.0
−84°	8.1	9.2	9.6	9.3	7.2	8.3	7.3	6.4	7.0	6.4
	5.6	4.7	4.3	3.1	3.4	2.3	1.1	2.2	1.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 8B

GROUP 8B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.2	36.8	35.9	34.8	33.3	31.7	29.1	25.8	23.9	22.5
ANGLE −71.3°	22.2	20.1	16.8	16.4	14.6	12.0	11.8	9.6	6.6	4.5
	3.3	2.7	0.7	0.1	−1.0	−1.8	−2.0	−2.0	−2.3	
2	63.1	34.3	33.4	32.2	30.6	29.1	27.0	24.3	23.9	23.6
−66°	21.3	20.3	15.6	13.9	11.1	12.2	9.8	6.3	5.9	3.7
	3.5	0.6	−0.2	−0.7	−1.4	−2.0	−2.0	−2.6	−2.4	
3	62.9	27.2	26.6	25.9	25.1	24.4	23.5	21.5	19.0	12.3
−61.6°	12.6	15.9	10.6	7.1	8.1	4.5	3.3	3.2	1.4	1.0
	−1.3	−0.6	−2.5	−2.3	−2.6	−3.7	−3.6	−3.7	−3.3	
4	62.9	20.9	20.1	19.0	17.6	15.5	11.2	11.4	13.2	9.9
−57.8°	6.9	8.0	5.3	4.7	2.8	0.0	−0.5	−0.5	−2.5	−3.3
	−3.3	−3.5	−3.7	−3.8	−4.4	−4.1	−4.4	−4.2	−4.7	
5	62.8	19.5	18.8	18.0	17.0	15.2	11.8	7.1	10.7	8.5
−54.3°	5.1	6.5	3.9	0.6	1.5	0.4	−0.2	0.4	−3.3	−2.2
	−3.4	−4.0	−4.3	−4.2	−3.8	−4.5	−4.3	−4.6	−4.5	
6	62.8	19.5	18.3	16.8	14.2	13.6	12.9	8.4	6.3	7.7
−51.1°	2.1	4.5	3.1	2.1	−0.0	0.5	−0.3	−0.7	−2.8	−2.2
	−1.4	−2.6	−2.6	−2.9	−2.8	−3.3	−3.4	−3.6	−3.7	
7	62.8	20.2	18.9	17.1	14.1	13.9	13.8	7.8	9.1	6.6
−48.1°	3.6	3.2	3.5	1.0	−0.1	0.1	−1.0	0.2	−3.2	−1.6
	−2.3	−2.3	−2.8	−3.0	−2.7	−3.1	−3.2	−3.9	−3.8	
8	62.7	20.5	19.1	17.1	13.2	13.6	14.0	10.6	9.9	6.9
−45.3°	4.8	3.8	2.8	1.4	1.2	−0.8	−1.7	−1.4	−3.3	−3.1
	−3.7	−3.6	−4.0	−4.0	−4.0	−4.2	−4.7	−4.5	−4.4	
9	62.7	19.8	18.5	16.8	13.9	12.9	11.4	10.0	11.5	7.4
−42.6°	3.3	3.8	3.0	0.6	1.1	0.7	−2.1	−0.1	−3.1	−3.8
	−3.7	−3.4	−4.2	−3.8	−4.2	−4.0	−4.4	−4.7	−4.3	
10	62.7	19.1	18.1	16.9	15.1	13.3	10.0	10.6	8.3	6.6
−40.0°	3.6	3.0	2.7	0.4	1.0	−0.8	−0.9	−0.7	−1.1	−2.7
	−2.0	−2.4	−2.0	−3.3	−3.2	−3.4	−3.6	−3.9	−4.1	
11	62.7	23.0	22.3	21.5	20.5	20.5	20.5	19.4	18.6	17.8
−37.5°	15.3	14.8	11.7	6.0	1.3	4.3	3.7	2.1	−1.2	−2.9
	−3.0	−1.4	−2.5	−3.8	−3.7	−4.0	−4.4	−4.4	−4.8	
12	62.6	21.4	21.0	20.4	19.8	19.4	19.0	18.3	16.0	16.4
−35.1°	12.6	13.5	10.7	7.7	1.7	0.2	2.7	1.3	−2.5	−3.5
	−3.9	−3.8	−3.1	−3.4	−4.1	−4.5	−4.7	−4.4	−4.6	
13	62.6	19.7	18.9	17.9	16.6	16.1	15.6	14.8	13.3	12.5
−32.8°	10.0	8.7	7.5	4.8	1.5	−1.2	0.8	1.4	−1.8	−3.9
	−3.3	−3.5	−4.2	−4.3	−4.4	−4.6	−4.8	−4.7	−4.7	
14	62.6	18.4	17.2	15.6	13.1	13.6	14.1	12.9	11.2	9.5
−30.5°	4.8	7.4	4.2	2.2	1.5	−0.9	−1.1	0.3	−2.0	−3.3
	−3.0	−4.4	−4.1	−4.4	−4.5	−4.6	−4.9	−5.0	−4.6	
15	62.6	15.9	14.9	13.4	11.2	12.4	13.4	8.3	6.7	5.3
−28.3°	5.7	2.5	2.1	2.1	−0.5	−1.3	−0.3	0.8	−3.4	−3.3
	−3.1	−3.9	−4.1	−4.4	−4.2	−4.2	−4.4	−4.5	−4.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.6	18.0	16.8	15.2	12.4	12.2	11.9	10.0	10.5	5.7
ANGLE −26.1°	4.9	3.9	2.7	1.5	−0.2	−1.0	−1.1	0.3	−3.2	−3.3
	−3.4	−4.3	−4.3	−4.4	−4.2	−4.3	−4.4	−4.9	−4.9	
17	62.5	17.7	16.6	15.2	13.1	13.0	12.9	11.9	8.5	6.6
−24.0°	6.5	4.8	3.3	−0.3	−0.9	−1.9	−0.5	−0.4	−3.2	−3.0
	−3.5	−4.2	−3.6	−4.7	−4.0	−4.5	−4.7	−4.5	−4.5	
18	62.5	17.1	15.7	13.6	9.5	9.0	8.4	6.9	8.5	5.7
−21.8°	3.9	2.8	0.9	1.4	−1.1	−1.7	−1.7	−0.1	−3.3	−3.5
	−3.8	−4.4	−4.6	−4.6	−4.8	−4.9	−4.8	−4.7	−4.7	
19	62.5	14.8	14.5	14.3	14.0	12.3	9.3	11.5	8.1	5.7
−19.8°	4.8	4.4	2.9	−1.1	−1.5	−1.9	−1.6	−0.4	−3.0	−3.6
	−4.1	−4.2	−4.6	−4.4	−4.5	−4.7	−5.0	−5.0	−4.6	
20	62.5	13.2	13.4	13.6	13.9	11.3	4.6	11.1	9.1	5.6
−17.7°	4.9	3.8	3.3	1.8	−0.9	−1.0	−1.5	−0.7	−3.3	−3.8
	−3.9	−3.8	−4.1	−4.1	−4.7	−4.8	−4.7	−4.8	−4.8	
21	62.5	13.4	13.7	14.0	14.3	12.4	9.1	11.8	8.5	6.3
−15.7°	2.3	4.1	4.3	2.2	2.6	1.1	0.4	1.8	−1.8	−3.1
	−2.6	−2.0	−1.6	−3.5	−2.4	−3.8	−3.9	−4.1	−3.9	
22	62.5	15.4	14.7	13.8	12.7	11.3	9.3	12.1	6.7	8.5
−13.7°	8.4	7.8	4.4	7.6	4.3	4.7	4.0	3.4	1.9	1.0
	−1.3	−2.5	−3.1	−2.2	−3.1	−3.2	−2.1	−2.9	−2.5	
23	62.6	16.8	15.8	14.5	12.8	13.0	13.1	14.7	12.2	9.4
−11.7°	10.3	11.9	10.5	11.3	9.9	9.5	9.7	7.7	6.4	4.6
	3.0	2.6	3.1	3.6	3.0	2.5	3.1	2.8	3.2	
24	62.6	15.8	15.0	14.0	12.8	13.3	13.8	12.9	10.8	9.3
−9.7°	5.4	7.2	7.9	6.5	3.6	6.4	3.8	5.3	2.2	−0.3
	−1.7	−2.5	−2.3	−1.9	−2.8	−3.4	−3.2	−3.1	−3.1	
25	62.6	15.1	14.6	14.0	13.2	12.9	12.5	10.4	11.0	10.8
−7.8°	6.2	3.9	3.6	1.3	1.0	−0.5	−0.6	0.2	−2.3	−3.0
	−3.0	−3.6	−3.6	−3.9	−4.3	−4.6	−4.7	−4.5	−4.7	
26	62.6	15.6	15.1	14.6	13.9	13.5	13.0	12.1	11.3	7.9
−5.8°	3.9	5.7	3.6	1.8	0.8	−0.9	−1.0	1.3	−2.6	−2.4
	−2.7	−2.7	−4.0	−3.8	−3.7	−4.1	−4.4	−4.3	−4.1	
27	62.6	15.0	15.1	15.3	15.4	14.7	13.9	11.8	8.5	11.0
−3.9°	6.0	6.7	5.1	2.2	1.0	0.4	0.1	1.5	−1.1	−2.2
	−2.6	−2.8	−3.7	−3.4	−3.9	−4.1	−4.4	−4.5	−4.5	
28	62.7	16.9	17.1	17.2	17.4	16.5	15.3	12.8	12.9	12.1
−1.9°	8.9	9.5	7.8	5.5	5.8	2.6	3.8	2.7	1.6	2.1
	1.7	1.3	1.2	0.7	0.7	1.0	0.5	0.5	0.8	
29	62.7	18.5	18.5	18.5	18.4	17.4	16.1	15.6	16.2	13.5
0°	11.7	13.1	10.8	8.3	6.0	6.1	6.6	4.7	3.5	4.4
	4.0	3.7	4.0	3.4	3.4	3.5	3.6	3.2	3.3	
30	62.7	19.1	18.6	17.9	17.2	18.8	20.0	18.3	18.4	15.9
+1.9°	15.1	14.8	11.9	10.3	6.6	7.0	7.1	5.5	4.2	4.5
	3.5	4.0	3.7	3.9	3.6	3.5	3.5	3.1	3.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 31 ANGLE +3.9°	62.7 14.9 -0.3	35.4 13.0 0.1	24.3 10.3 -0.7	22.8 9.0 -0.4	20.4 4.9 -1.3	20.5 5.8 -1.2	20.6 3.1 -1.6	17.5 3.5 -1.4	17.7 2.6 -1.5	16.8 0.8
32 +5.8°	62.9 14.1 0.7	30.8 12.8 -0.0	29.7 10.2 -0.2	28.2 9.3 -1.6	26.0 4.4 -2.2	24.9 6.6 -2.6	23.3 5.4 -3.1	21.9 6.5 -3.2	19.2 3.9 -3.2	16.8 1.9
33 +7.8°	63.2 17.9 3.6	34.0 16.0 2.6	32.9 13.6 0.9	31.5 10.9 -0.4	29.3 7.3 -0.4	28.2 9.4 -1.8	26.5 9.4 -2.2	26.8 9.1 -2.5	24.3 7.2 -2.3	22.4 5.5
34 +9.7°	63.6 19.0 5.0	29.1 17.5 3.2	29.8 14.1 1.7	30.4 13.6 0.7	30.9 12.5 -0.0	28.5 12.0 -0.8	22.5 11.0 -1.3	26.5 11.3 -1.6	22.0 8.2 -1.9	23.2 5.3
35 +11.7°	63.7 18.0 4.8	29.0 18.8 2.7	28.4 14.5 1.2	27.6 15.1 0.9	26.8 13.9 -0.0	25.5 11.7 -0.7	23.7 11.8 -1.2	24.3 11.6 -1.5	23.5 8.1 -1.6	22.4 5.6
36 +13.7°	63.4 17.7 3.6	31.1 17.6 2.8	31.0 15.2 1.0	30.9 12.1 0.2	30.8 11.6 -0.9	28.9 11.4 -1.4	25.5 10.7 -2.0	22.3 10.7 -2.6	22.2 7.8 -2.2	21.5 6.9
37 +15.7°	63.0 13.1 1.2	27.8 12.5 0.3	27.8 12.3 -0.7	27.8 9.2 -1.3	27.7 8.9 -2.5	25.8 8.0 -3.2	22.3 8.3 -3.5	18.9 6.3 -3.8	16.7 4.6 -3.4	14.1 3.1
38 +17.7°	62.8 12.7 -0.7	24.3 8.8 -2.3	23.9 9.3 -2.7	23.4 5.5 -3.2	22.9 5.0 -3.6	21.2 3.4 -3.6	19.6 5.2 -3.9	19.4 2.1 -4.0	15.8 1.5 -3.8	13.8 -0.6
39 +19.8°	62.6 10.5 -3.0	19.1 8.4 -3.7	18.9 5.0 -3.7	18.7 3.6 -4.0	18.4 1.8 -4.1	16.4 -0.2 -4.0	12.4 0.7 -4.7	16.5 1.5 -4.6	11.6 -1.4 -4.9	11.2 -1.8
40 +21.8°	62.6 7.7 -4.0	12.6 8.0 -3.5	12.8 6.5 -4.3	13.0 5.4 -4.4	13.2 1.7 -5.0	12.1 0.8 -4.6	10.8 -0.1 -4.8	13.1 0.7 -4.6	13.2 -1.4 -4.9	11.3 -3.3
41 +24.0°	62.7 9.9 -2.5	14.7 7.9 3.4	14.3 6.7 -3.5	14.0 5.9 -3.2	13.6 3.1 -3.9	13.3 2.7 -3.5	13.0 0.9 -4.0	13.5 2.2 -4.7	12.2 -0.8 -4.6	12.4 -1.7
42 +26.1°	62.8 10.0 -1.6	15.0 8.9 -2.4	13.9 5.6 -2.5	12.5 5.6 -3.1	10.3 4.1 -3.4	12.2 2.0 -3.6	13.5 0.7 -3.7	15.5 0.8 -4.0	13.3 -0.7 -4.1	12.1 -1.7
43 +28.3°	62.9 8.5 -2.5	13.7 8.2 -3.2	14.2 5.7 -3.6	14.7 2.9 -3.2	15.2 3.4 -4.2	14.1 1.7 -3.8	12.5 0.2 -3.9	10.4 1.6 -4.5	11.0 -0.5 -4.0	13.2 -2.2
44 +30.5°	63.0 6.7 -3.7	16.2 4.7 3.2	16.1 5.0 -4.3	16.0 2.7 -4.5	15.8 2.3 -4.2	14.4 -0.2 -3.9	12.4 1.1 -4.5	13.7 1.0 -4.4	14.3 -1.9 -4.4	8.6 -3.1
45 +32.8°	63.0 6.7 -2.8	18.0 8.1 -2.9	16.9 5.0 -3.3	15.6 2.5 -3.2	13.5 3.5 -3.3	12.8 1.1 -3.3	12.0 0.2 3.8	12.2 -0.7 -3.5	11.6 -1.7 -3.5	6.7 -2.9

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	63.0	15.1	15.0	14.9	14.8	13.9	12.9	9.9	12.0	5.6
ANGLE +35.1°	4.4	5.4	4.1	3.8	0.4	-0.5	-0.2	-0.7	-2.1	-3.2
	-3.8	-3.4	-4.0	-4.0	-4.5	-3.8	-4.5	-4.5	-4.4	
47	63.0	17.6	17.0	16.3	15.5	14.5	13.1	9.5	9.7	7.8
+37.5°	4.9	6.0	5.1	2.7	2.0	1.0	1.3	-0.3	-2.8	-3.7
	-3.2	-4.1	-4.1	-3.7	-4.1	-4.3	-4.5	-4.4	-4.6	
48	63.0	19.1	18.0	16.6	14.6	13.6	12.2	11.2	9.3	6.7
+40.0°	7.0	6.1	4.7	1.2	1.5	0.6	0.3	-1.5	-1.9	-2.5
	-4.0	-3.7	-3.2	-3.9	-4.5	-3.8	-4.4	-4.1	-3.9	
49	63.0	20.8	20.0	18.9	17.6	16.7	15.4	15.1	13.3	9.1
+42.6°	8.8	5.9	5.0	3.3	2.6	-0.2	-0.5	-0.4	-1.6	-1.7
	-3.0	-4.2	-3.2	-4.0	-3.7	-3.7	-4.2	-4.4	-4.2	
50	63.0	26.3	25.3	24.0	22.1	20.5	18.1	19.2	14.1	14.5
+45.3°	10.9	8.5	4.3	4.9	3.9	2.7	1.6	2.2	-1.0	-1.8
	-1.0	-2.6	-2.4	-2.9	-2.8	-2.8	-3.3	-3.7	-3.6	
51	63.2	29.0	27.7	25.9	22.8	22.3	21.7	21.5	19.5	16.2
+48.1°	10.4	11.5	5.8	7.7	6.1	3.8	3.1	4.6	1.3	0.5
	0.9	-1.6	-0.5	-1.2	-1.5	-1.5	-2.2	-2.4	-2.5	
52	63.3	28.0	26.7	24.8	21.4	21.4	21.5	20.3	16.4	16.3
+51.1°	10.4	10.9	6.2	6.5	5.2	4.5	4.0	3.1	1.8	-0.3
	0.3	-0.6	-0.5	-0.4	-0.7	-1.3	-1.4	-1.5	-1.9	
53	63.5	31.7	30.9	29.9	28.7	27.5	25.8	26.5	21.2	16.9
+54.3°	15.5	13.8	10.7	11.5	8.0	7.3	6.5	7.1	4.4	3.2
	4.1	1.6	2.2	2.1	1.5	1.6	0.8	0.4	0.2	
54	63.5	31.6	30.7	29.6	28.0	26.9	25.5	25.0	20.0	15.5
+57.8°	12.1	12.4	10.4	8.5	6.1	4.5	4.2	7.3	3.3	1.6
	3.0	0.9	1.9	1.2	0.7	0.9	0.2	-0.1	-0.6	
55	63.6	33.8	32.9	31.6	29.9	28.8	27.4	27.0	23.7	21.4
+61.6°	19.1	15.9	13.7	10.2	10.1	9.6	7.9	8.7	5.6	3.2
	5.4	2.0	3.5	2.7	1.8	2.5	1.9	1.7	1.4	
56	63.7	37.3	36.3	34.9	33.0	32.3	31.6	28.9	27.4	23.2
+66.0°	21.2	19.7	16.1	15.3	14.3	12.3	12.4	13.8	6.3	5.0
	5.2	3.3	3.6	2.5	2.1	2.0	1.1	0.9	0.8	
57	64.1	38.4	37.4	36.0	33.9	33.1	32.1	31.5	28.4	26.9
+71.3°	21.7	21.0	18.1	17.1	15.8	13.7	14.9	15.1	8.9	6.3
	7.4	6.0	5.3	4.2	3.8	3.7	2.5	2.0	1.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 8B

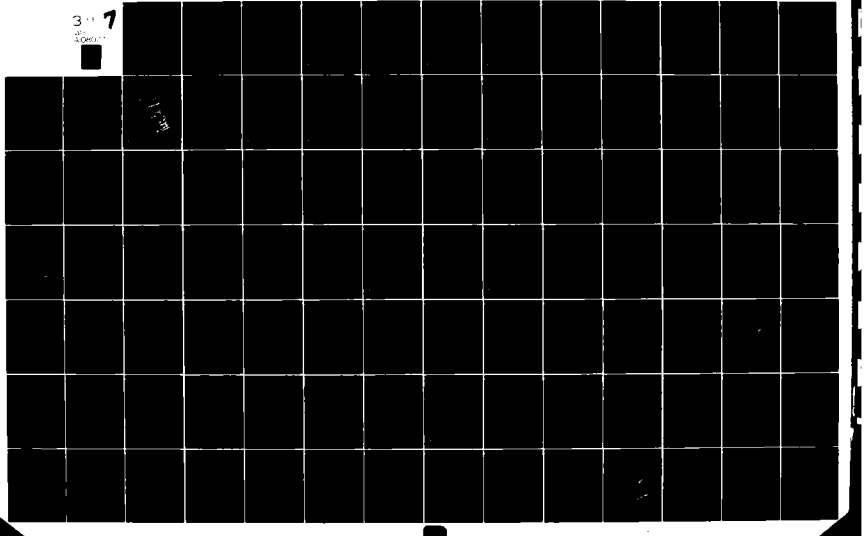
STA TAPE 8G

PAGE 1

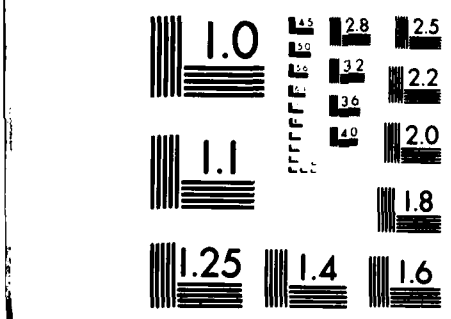
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	54.0 13.2 1.7	20.9 11.3 1.5	19.7 9.2 1.2	18.0 7.3 1.3	15.2 5.5 1.4	14.3 4.6 1.3	13.2 3.4 1.2	13.1 2.8 1.2	16.1 2.3 1.2	13.9 1.9
2 +64°	54.6 14.1 2.4	21.5 12.9 2.3	20.4 10.5 2.3	18.8 8.0 2.1	16.4 7.1 2.1	15.8 5.9 2.0	15.1 4.8 2.0	16.6 4.1 2.0	16.1 3.3 1.9	15.5 3.0
3 +53°	54.4 14.5 2.1	19.8 13.1 2.0	18.8 10.4 1.7	17.4 7.9 1.6	15.5 7.4 1.6	14.9 6.3 1.5	14.4 5.1 1.4	16.6 3.9 1.4	15.1 3.3 1.4	15.7 2.7
4 +44°	54.2 14.1 1.7	19.8 12.0 1.6	18.6 9.5 1.5	17.0 8.1 1.3	14.2 7.6 1.3	13.6 5.8 1.1	12.8 4.9 1.0	14.9 3.6 1.2	15.2 3.0 1.1	14.7 2.2
5 +37°	54.1 11.8 1.6	18.2 10.9 1.2	17.2 8.5 1.0	15.9 7.7 1.0	14.2 6.2 0.9	13.1 5.4 0.8	11.8 3.9 0.9	12.8 3.2 0.8	13.9 2.7 0.9	13.6 2.1
6 +30°	53.6 10.2 0.8	17.0 8.5 0.6	16.0 6.7 0.4	14.8 5.7 0.2	13.1 4.6 0.2	11.8 3.4 0.2	9.7 2.8 0.1	10.4 2.0 0.2	11.4 1.3 0.1	11.6 0.9
7 +23°	52.9 8.0 -0.1	17.5 6.6 -0.5	16.6 5.1 -0.6	15.4 3.7 -0.7	13.9 3.1 -0.6	12.2 1.9 -0.6	9.2 1.5 -0.7	9.1 0.7 -0.7	10.2 0.1 -0.8	9.6 -0.2
8 +17°	51.8 3.9 -1.9	20.1 3.2 -2.0	19.4 1.1 -2.1	18.6 0.7 -2.2	17.6 0.0 -2.4	15.2 -0.9 -2.2	9.5 -1.2 -2.4	7.4 -1.5 -2.4	7.2 -1.9 -2.4	5.9 -1.9
9 +12°	50.1 -0.7 -4.7	14.9 -2.1 -4.1	14.3 -2.9 -4.4	13.7 -3.4 -4.7	13.0 -3.8 -4.6	10.8 -3.9 -4.7	5.6 -4.5 -4.7	2.8 -3.6 -4.6	0.5 -4.4 -4.6	1.1 -4.5
10 +6°	49.7 -2.7 -4.4	9.0 -3.7 -3.2	7.8 -3.4 -4.2	6.1 -3.8 -4.9	3.4 -4.1 -4.5	3.1 -4.3 -4.9	2.6 -3.7 -5.1	-0.8 -4.2 -5.2	-1.6 -4.1 -5.3	-0.9 -4.3
11 0°	49.6 -2.7 -4.4	8.5 -2.9 -3.6	7.3 -3.1 -4.1	5.8 -3.8 -4.8	3.3 -4.1 -4.8	3.2 -3.9 -5.1	3.1 -4.1 -5.2	-0.9 -4.3 -5.4	-1.0 -4.3 -5.4	-1.5 -4.3
12 −6°	50.1 -3.3 -4.6	7.5 -3.3 -4.4	6.7 -3.5 -4.5	5.7 -4.1 -4.7	4.5 -4.4 -4.7	3.5 -3.8 -4.7	2.3 -4.5 -4.8	-2.2 -4.6 -4.9	-1.4 -4.4 -4.9	-1.3 -4.5
13 −12°	50.4 -3.4 -4.2	5.9 -2.9 -4.3	4.9 -3.0 -4.4	3.7 -4.1 -4.4	2.0 -4.0 -4.4	1.9 -4.0 -4.5	1.8 -4.3 -4.5	-1.9 -4.1 -4.4	-0.7 -4.1 -4.5	-1.6 -4.3
14 −17°	50.1 -4.2 -5.1	4.5 -3.7 -4.9	3.6 -3.8 -5.0	2.4 -4.1 -4.9	0.8 -4.6 -4.7	1.1 -4.6 -4.9	1.3 -4.8 -5.0	-2.8 -4.9 -5.0	-1.6 -5.0 -5.1	-2.1 -5.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

AD-A108 077 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA MARI--ETC F/G 20/1
ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978.(U)
JUL 81 V C ANDERSON N00014-80-C-0077
UNCLASSIFIED SIO-REF-81-13 SBI-AD-E001 179 NL



08077



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A.

GROUP 8B

STA TAPE 8G

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	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	50.1	6.8	5.9	4.8	3.4	2.7	1.9	-2.8	-1.6	-2.4
ANGLE −23°	-4.0	-4.1	-3.8	-4.3	-4.8	-4.2	-4.5	-4.7	-4.8	-5.1
	-5.1	-4.7	-4.8	-4.8	-4.8	-4.9	-4.9	-4.8	-4.9	
16	50.4	6.8	6.1	5.2	4.2	3.5	2.6	-1.6	-1.8	-1.7
−30°	-3.4	-3.6	-2.8	-3.5	-3.8	-3.6	-4.3	-4.5	-4.2	-4.6
	-4.3	-4.4	-4.3	-4.6	-4.4	-4.4	-4.4	-4.5	-4.4	
17	50.6	7.0	6.3	5.4	4.2	3.5	2.7	-1.8	-1.2	-1.6
−37°	-2.8	-3.5	-2.8	-4.1	-3.7	-3.9	-4.3	-4.1	-3.9	-4.1
	-4.0	-4.1	-4.3	-4.0	-4.1	-4.2	-4.2	-4.2	-4.2	
18	50.8	7.4	6.6	5.7	4.4	3.6	2.6	-1.7	-0.1	-1.1
−44°	-2.6	-2.4	-3.2	-3.6	-3.8	-3.6	-3.8	-3.5	-3.8	-4.1
	-4.0	-3.8	-4.0	-3.8	-4.0	-3.9	-3.9	-3.9	-3.9	
19	51.1	7.2	6.7	6.0	5.0	4.7	4.0	1.4	1.5	0.6
−53°	-1.1	0.2	-1.3	-2.1	-2.4	-2.3	-2.8	-3.2	-3.0	-2.9
	-3.1	-3.0	-2.6	-2.7	-3.1	-2.8	-2.9	-3.0	-3.0	
20	51.4	7.2	6.7	6.3	5.7	5.9	6.0	3.1	2.2	2.4
−64°	-0.2	1.2	-0.7	-0.7	-0.6	-1.4	-1.4	-2.0	-2.2	-2.4
	-2.4	-2.2	-2.0	-2.1	-2.4	-2.2	-2.4	-2.4	-2.4	
21	51.4	8.0	7.2	6.3	5.2	5.9	6.4	3.8	4.3	3.3
−84°	1.1	1.3	0.4	-0.9	0.6	0.9	0.1	-0.4	-1.0	-1.0
	-1.0	-1.1	-1.7	-1.7	-1.7	-1.6	-2.0	-2.4	-2.4	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8B

STA TAPE 8H

AGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.7 13.0 1.9	20.5 10.7 1.9	19.4 8.7 1.6	17.9 8.0 1.3	15.5 6.2 1.2	14.4 5.3 1.1	12.9 4.2 0.8	13.2 3.6 0.8	13.3 2.9 0.9	13.7 2.2
2 +64°	54.2 13.8 2.9	22.1 11.7 2.6	21.1 10.5 2.5	19.9 9.3 2.1	18.0 7.7 1.9	16.6 6.4 1.8	14.4 5.5 1.7	14.0 4.7 1.6	15.1 4.0 1.5	15.5 3.4
3 +53°	54.1 14.7 2.9	23.5 12.5 2.5	22.5 11.7 2.0	21.1 9.9 1.7	19.1 7.9 1.5	18.2 7.2 1.4	17.2 6.1 1.3	16.2 4.8 1.2	17.6 4.1 1.3	16.7 3.2
4 +44°	54.1 14.6 2.7	22.2 12.4 2.3	21.1 11.1 1.8	19.7 10.1 1.5	17.5 7.9 1.5	16.6 7.5 1.4	15.4 6.3 1.2	15.9 4.9 1.0	17.4 3.8 1.2	15.7 3.2
5 +37°	54.0 13.4 2.3	21.9 11.9 2.0	20.9 10.4 1.6	19.6 8.5 1.3	17.8 7.6 1.3	16.6 6.9 1.0	15.0 5.3 0.9	14.4 4.4 0.8	14.5 3.5 0.8	14.1 2.9
6 +30°	53.7 11.7 1.8	19.5 9.7 1.4	18.8 8.8 0.9	17.9 7.6 0.9	16.7 6.5 0.7	15.0 5.2 0.6	12.0 4.9 0.6	12.5 3.6 0.4	12.1 2.8 0.4	12.9 2.0
7 +23°	53.1 9.5 0.7	18.5 7.5 0.5	17.9 6.0 0.0	17.1 5.4 0.0	16.2 4.3 0.0	14.2 3.7 -0.2	10.4 2.9 -0.3	10.1 2.0 -0.4	10.6 1.3 -0.4	10.4 0.9
8 +17°	51.8 5.1 -1.2	20.3 3.7 -1.4	19.5 2.5 -1.5	18.5 1.7 -1.6	17.3 1.0 -1.8	15.1 0.3 -1.9	10.2 -0.1 -2.1	8.9 -0.8 -2.1	6.6 -0.9 -2.2	7.3 -1.2
9 +12°	50.2 0.9 -2.8	15.2 -0.9 -2.4	14.3 -1.2 -3.0	13.2 -1.6 -3.3	11.7 -1.8 -3.4	10.1 -2.2 -3.8	7.6 -2.1 -4.1	5.0 -2.6 -4.5	2.9 -2.6 -4.5	2.2 -2.7
10 +6°	49.8 -0.2 -2.7	16.4 -0.9 -1.9	15.2 -1.5 -3.1	13.5 -1.8 -3.5	10.8 -2.2 -3.6	9.5 -2.1 -4.3	7.5 -2.0 -4.2	4.5 -2.5 -4.7	2.1 -2.7 -4.9	1.6 -2.8
11 0°	49.7 1.2 -1.1	15.7 0.4 -0.8	14.5 -0.1 -1.6	13.0 -0.3 -2.2	10.6 -0.6 -2.4	9.3 -0.4 -3.8	7.4 -0.6 -4.3	4.2 -1.1 -4.7	2.7 -1.1 -4.7	2.2 -1.3
12 −6°	50.2 -0.5 -3.2	10.9 -1.8 -3.4	9.8 -1.3 -3.7	8.4 -1.8 -3.8	6.3 -2.3 -4.0	5.5 -2.7 -4.1	4.4 -2.7 -4.4	2.0 -2.9 -4.4	0.2 -3.1 -4.5	0.0 -3.0
13 −12°	50.4 -2.5 -3.8	6.2 -2.8 -3.8	5.6 -2.7 -3.9	4.8 -2.8 -4.0	3.8 -3.3 -3.9	3.4 -3.4 -4.2	2.8 -3.2 -4.2	-1.1 -3.5 -4.4	-1.0 -3.6 -4.5	-0.5 -3.9
14 −17°	50.1 -1.5 -4.2	5.3 -2.6 -4.4	4.5 -2.7 -4.6	3.4 -3.3 -4.6	2.1 -3.5 -4.5	2.2 -4.2 -4.7	2.4 -3.6 -4.9	-1.7 -3.7 -4.9	-2.0 -4.1 -4.9	-1.3 -4.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 8B

STA TAPE 8H

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

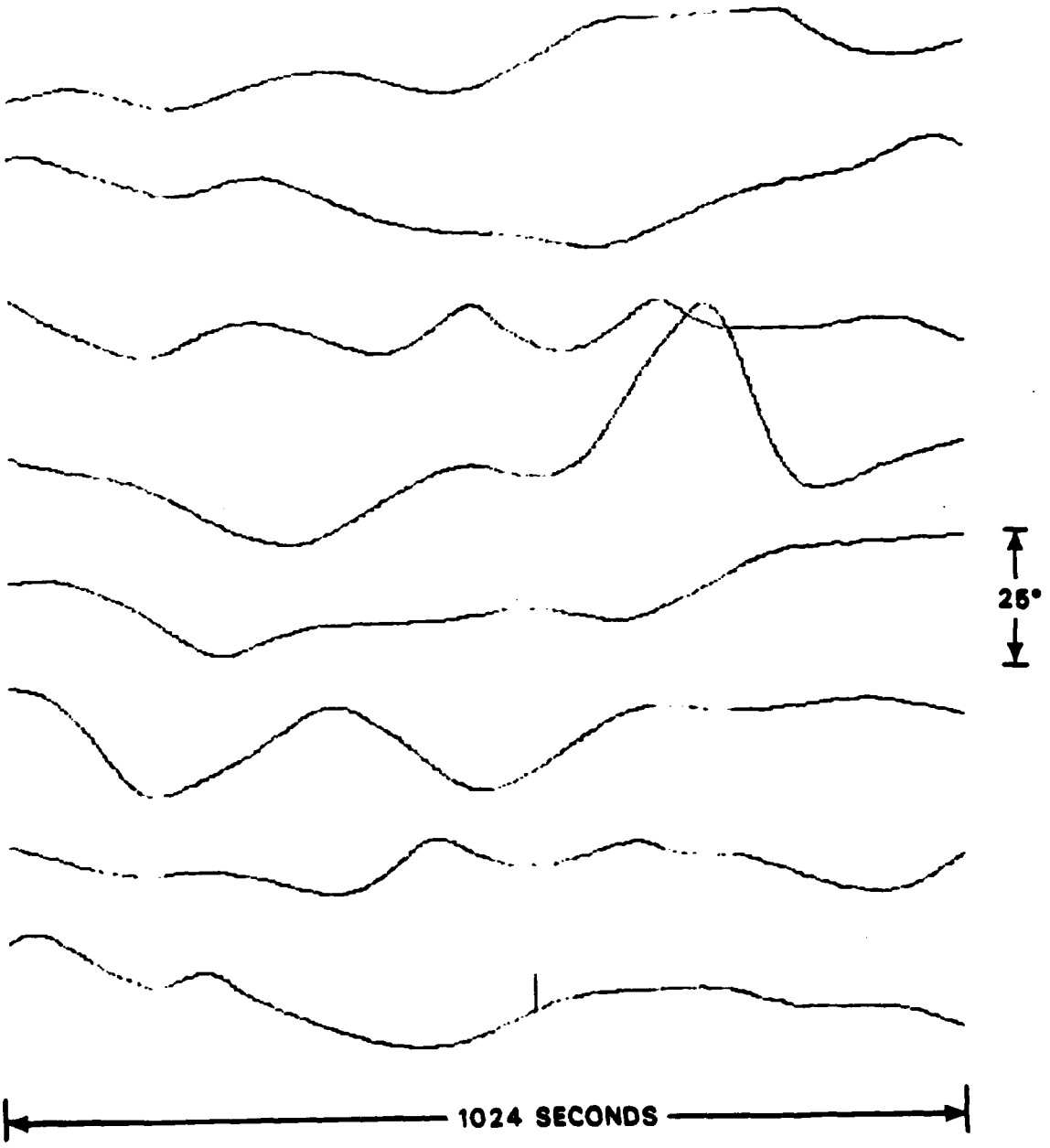
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.1 −1.7 −4.3	6.9 −2.8 −4.2	5.9 −2.5 −4.3	4.7 −2.5 −4.3	3.0 −3.6 −4.5	2.8 −3.7 −4.6	2.6 −3.9 −4.8	−1.1 −3.9 −4.9	−1.3 −3.7 −4.9	−0.7 −3.8
16 −30°	50.4 −2.6 −3.6	7.5 −2.3 −3.5	6.5 −2.4 −3.8	5.3 −2.7 −3.8	3.5 −3.4 −3.9	3.2 −2.8 −4.0	2.8 −3.4 −4.2	−0.7 −3.4 −4.4	−0.5 −3.3 −4.5	−0.2 −3.5
17 −37°	50.6 −1.4 −3.3	7.5 −2.5 −3.6	6.6 −2.2 −3.6	5.5 −2.7 −3.7	4.1 −2.9 −3.9	3.5 −3.0 −4.0	2.8 −3.4 −4.0	−1.4 −3.3 −4.1	−0.6 −3.2 −4.1	−0.2 −3.5
18 −44°	50.8 −0.4 −2.9	7.4 −2.0 −3.3	6.6 −1.9 −3.4	5.6 −2.0 −3.4	4.2 −2.4 −3.4	3.5 −2.1 −3.6	2.7 −2.6 −3.9	0.9 −2.9 −3.9	−0.0 −2.7 −3.9	−0.4 −3.2
19 −53°	51.1 3.1 −1.7	9.4 2.4 −2.2	8.7 1.4 −2.3	7.9 1.4 −2.4	6.9 0.9 −2.5	7.9 0.0 −2.5	8.7 −1.6 −2.7	6.2 −2.2 −2.6	5.9 −2.1 −2.8	4.7 −1.9
20 −64°	51.3 5.8 −1.4	11.3 4.7 −1.5	11.0 3.4 −1.7	10.5 2.8 −1.7	10.0 2.9 −1.8	10.9 1.4 −1.8	11.6 −1.2 −2.0	9.6 −1.0 −1.8	9.1 −1.2 −2.3	7.9 −1.3
21 −84°	51.3 4.4 −0.8	10.1 4.5 −0.8	9.9 2.8 −1.4	9.6 1.5 −1.1	9.3 2.6 −1.6	9.8 2.1 −1.6	10.2 0.8 −2.1	7.8 0.7 −2.2	7.3 0.4 −2.2	6.6 −0.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8B

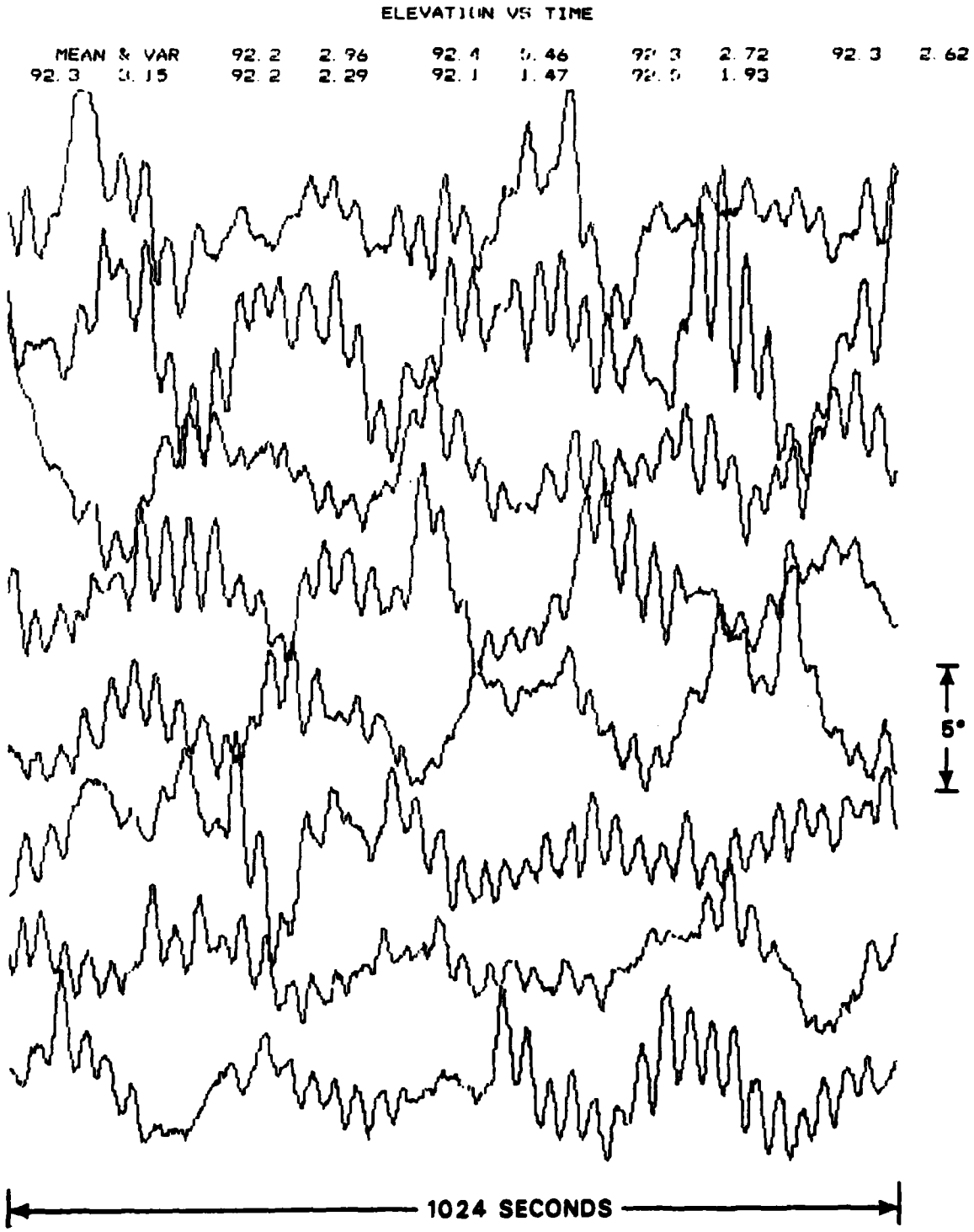
BEARING VS TIME

MEAN & VAR.	320.4	36.27	317.0	34.33	320.6	7.62	316.3	115.82
317.3	41.51	319.9	37.44	318.8	7.00	309.7	28.46	

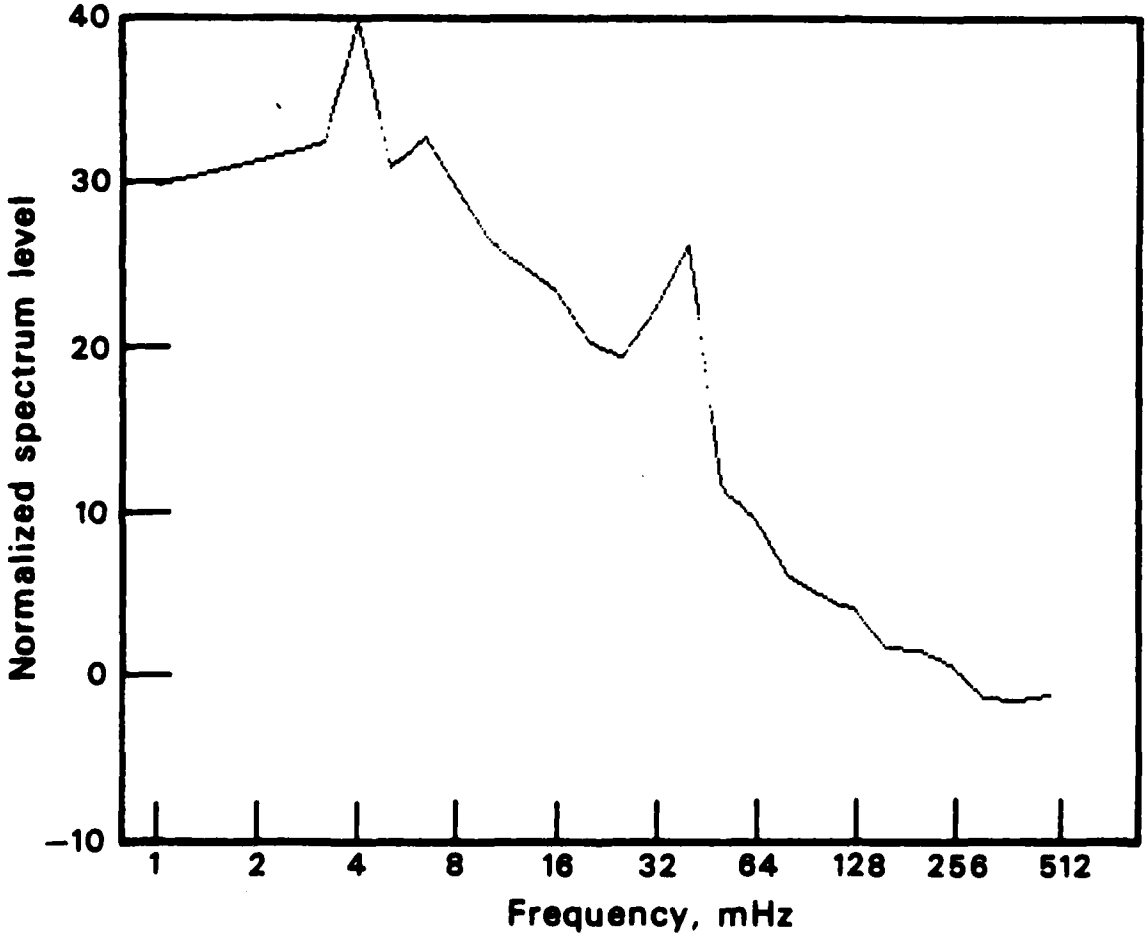


MPL-M-4754

GROUP 8B



MPL-M-4755



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 8C

Environmental Summary

8 June 1978

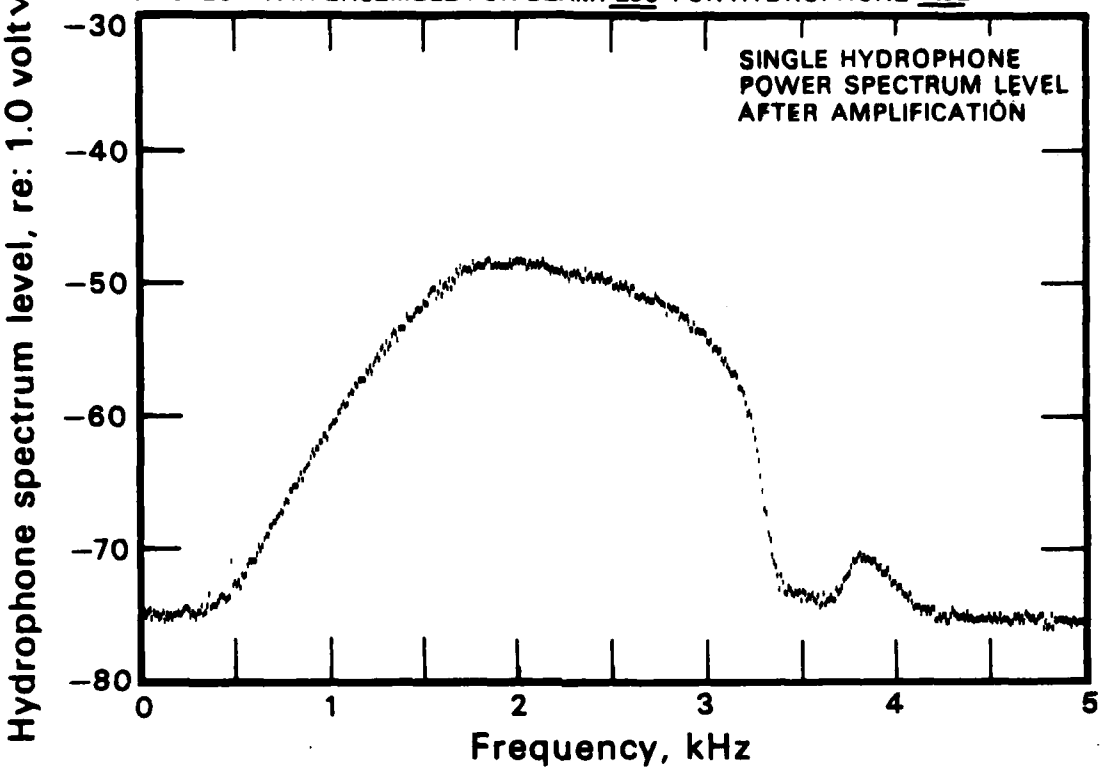
Tapes	Start time	Code
LTA/LOG	15:42:21	08C
STA	16:02:40	08I
STA	16:57:55	08J
High Band Filter		

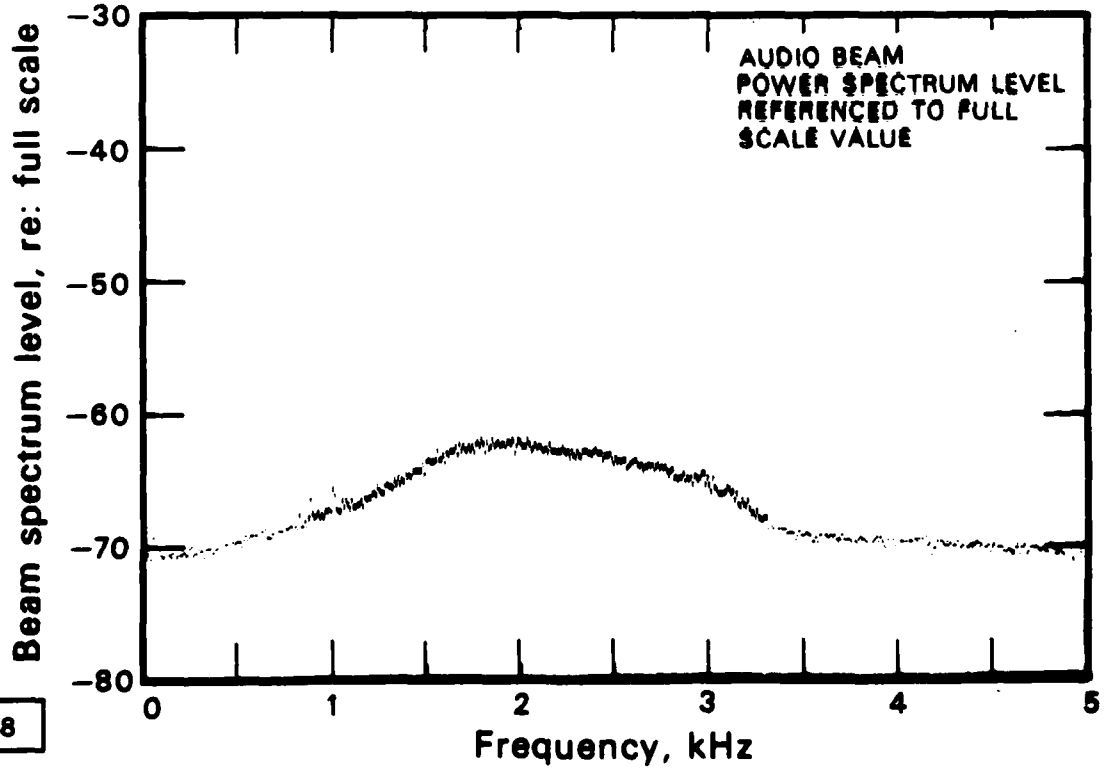
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
15:30	2200	13	330	5-7	6-8	NW	Big chop
16:00	2200	14	325	"	"	"	No targets

08-JUN-78 16:22:09 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 17.8
RELATIVE ELEVATION 87.9 TRUE BEARING 318.1 TRUE ELEVATION 90.2
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -17.3 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 290 FOR HYDROPHONE 292

GROUP 8C





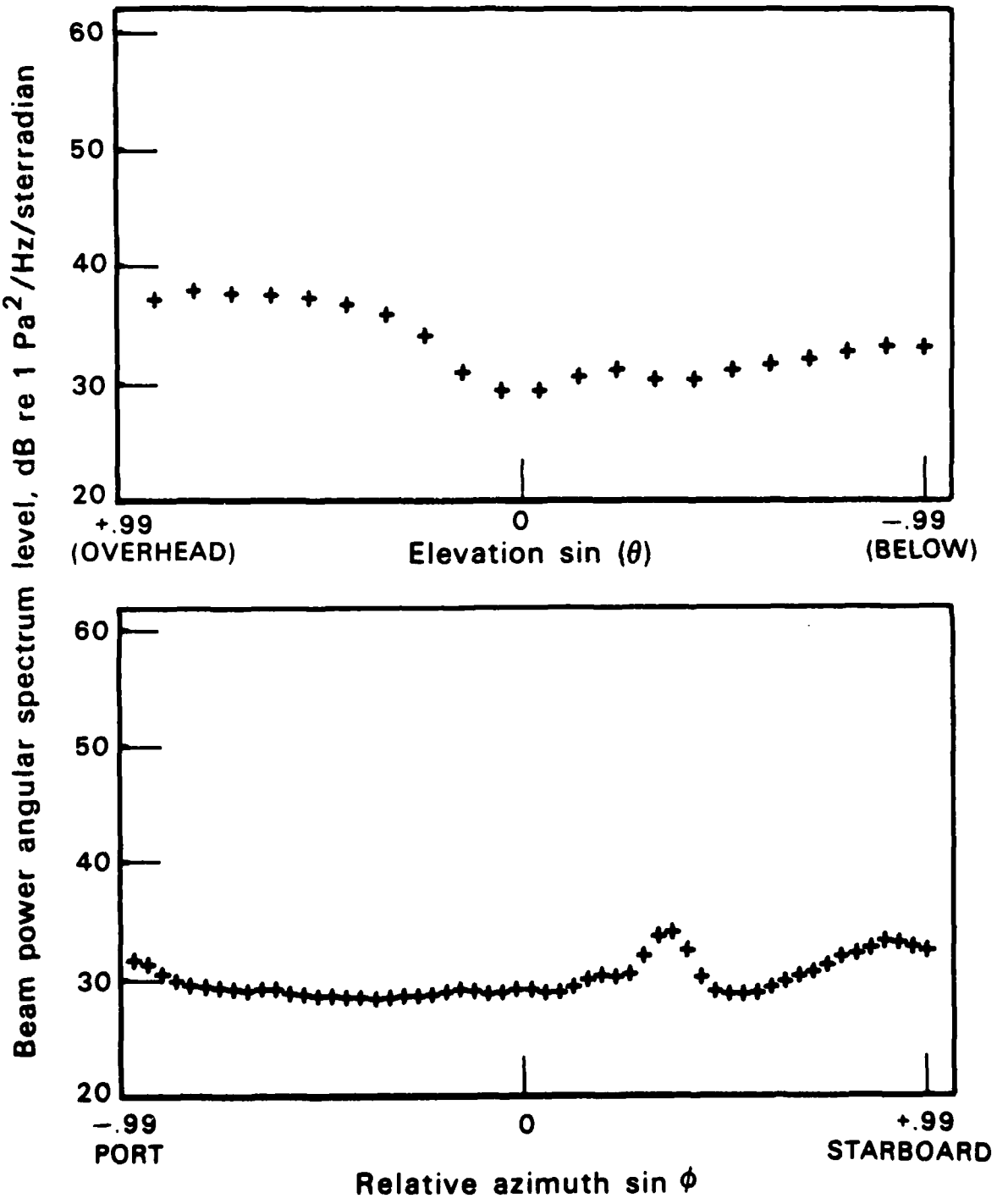
MPL-M-4758

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 8C

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

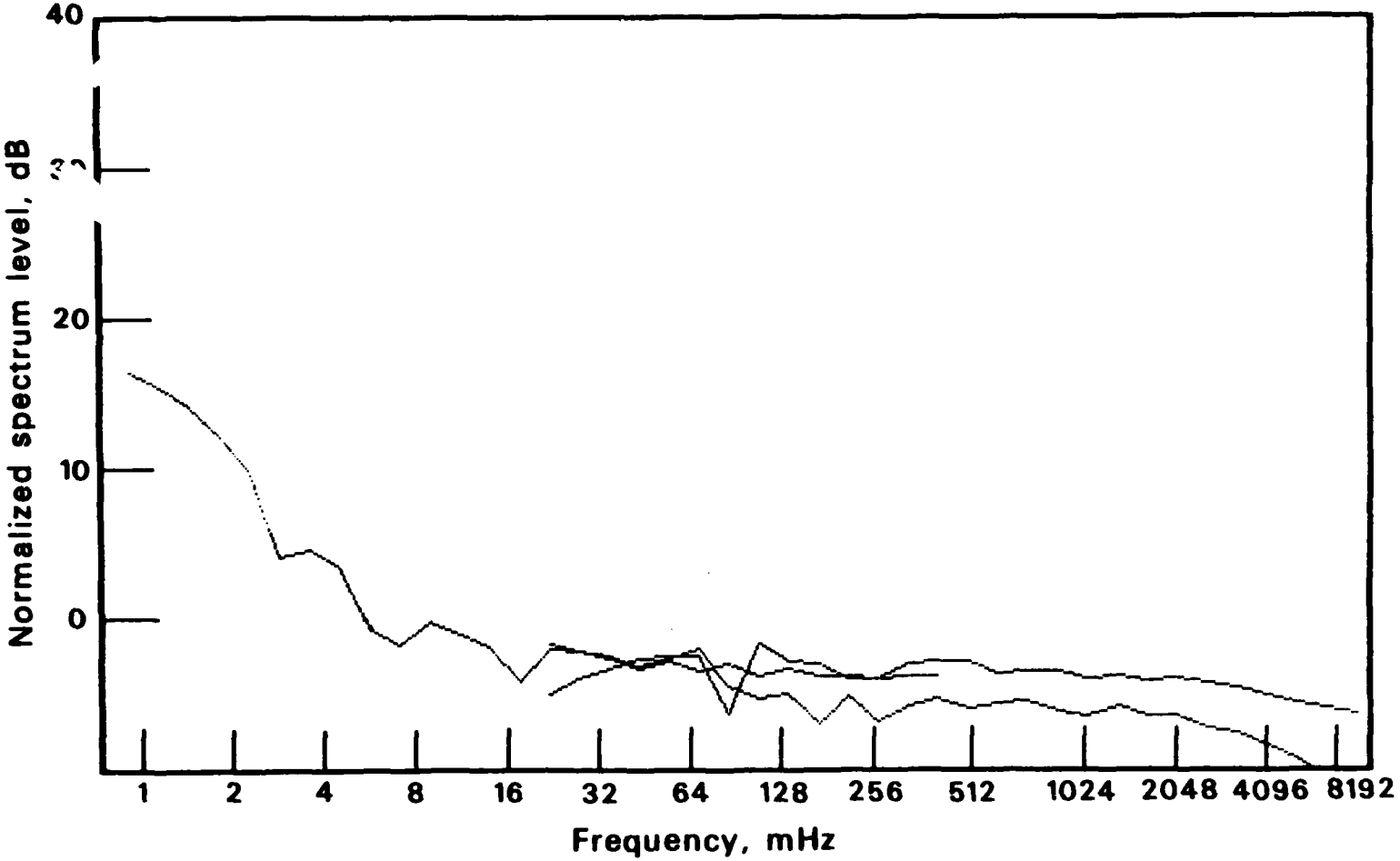
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4759

MPL-M-4760

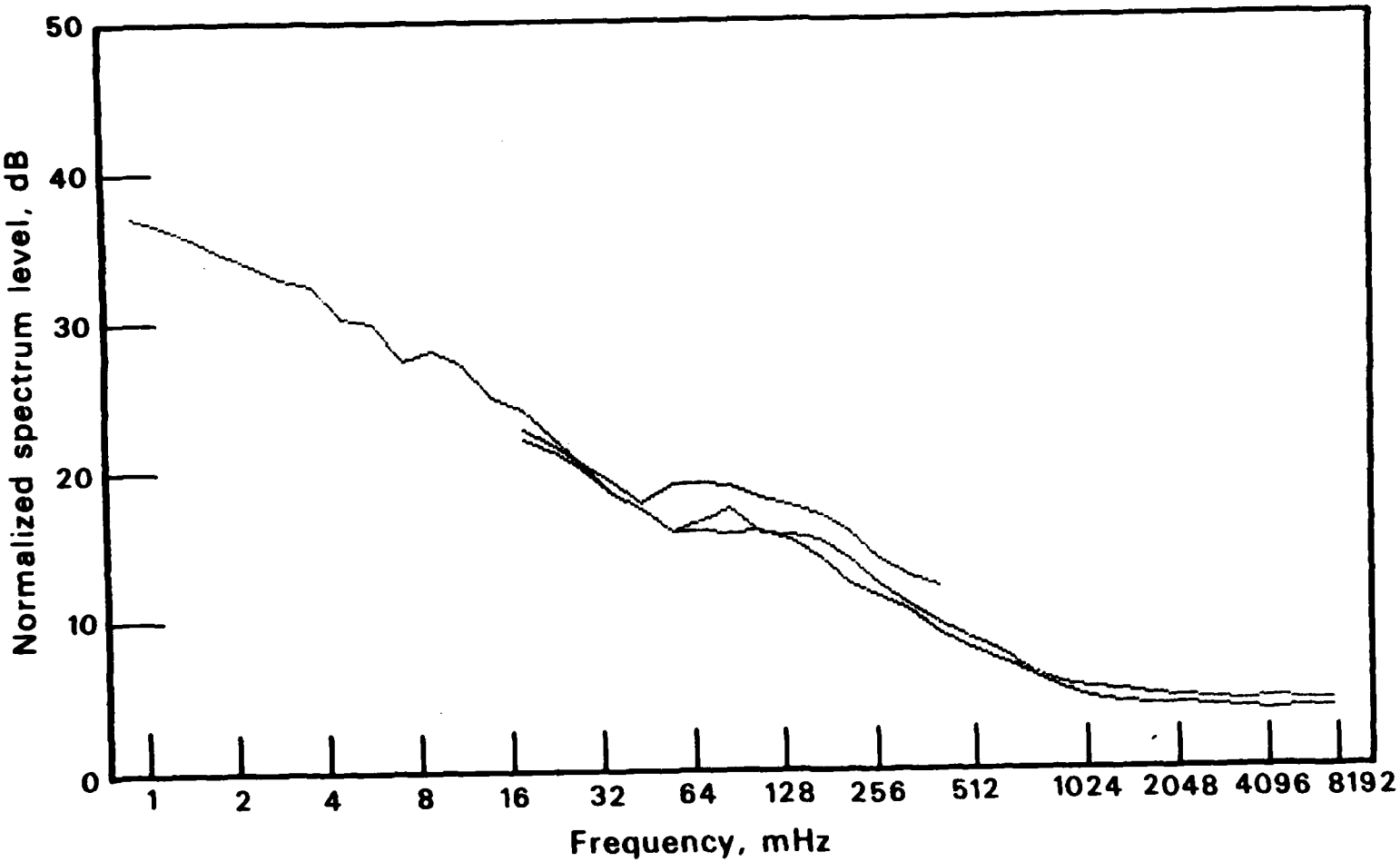
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 8C

MPL-M-4761

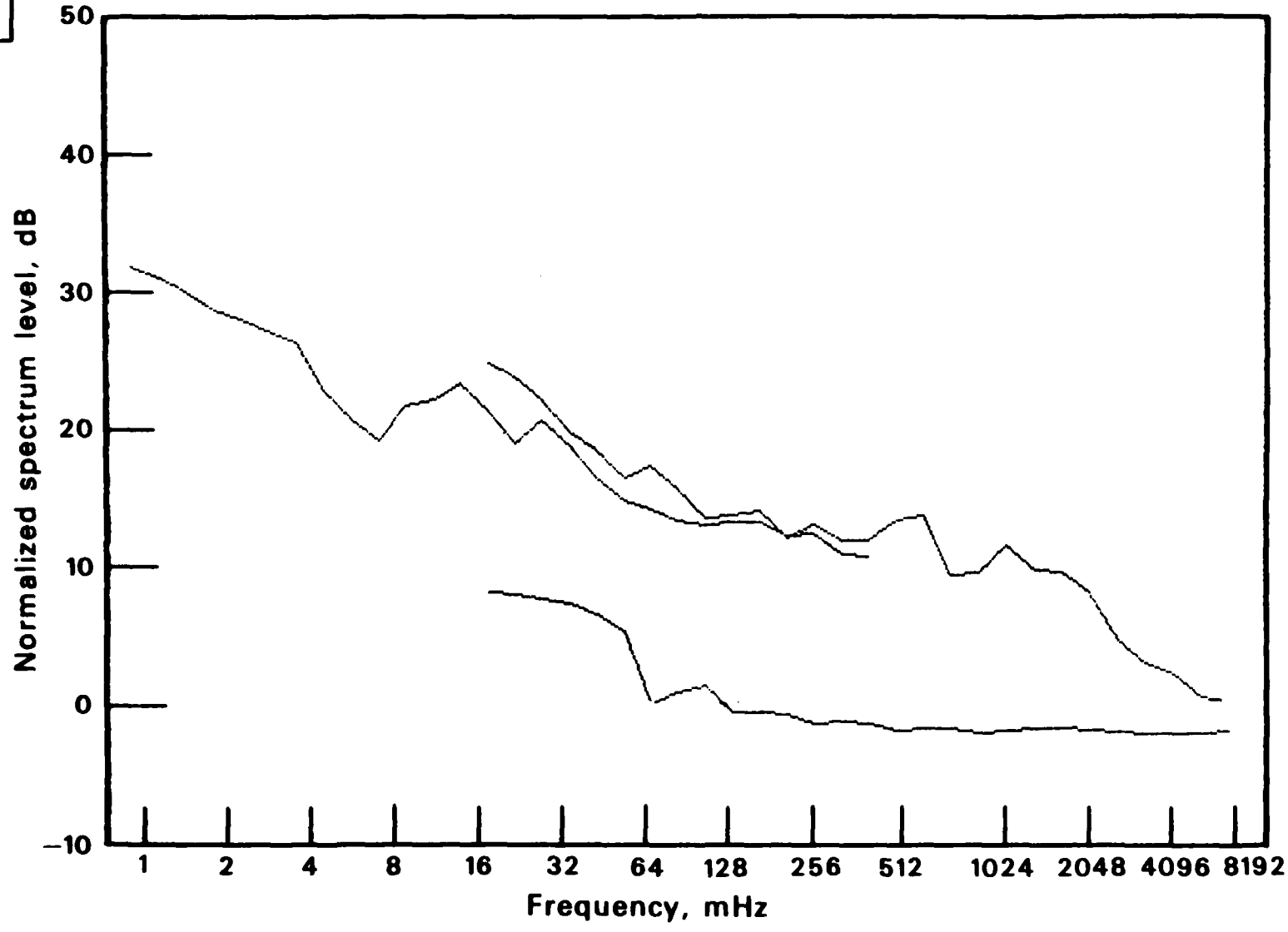
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8C

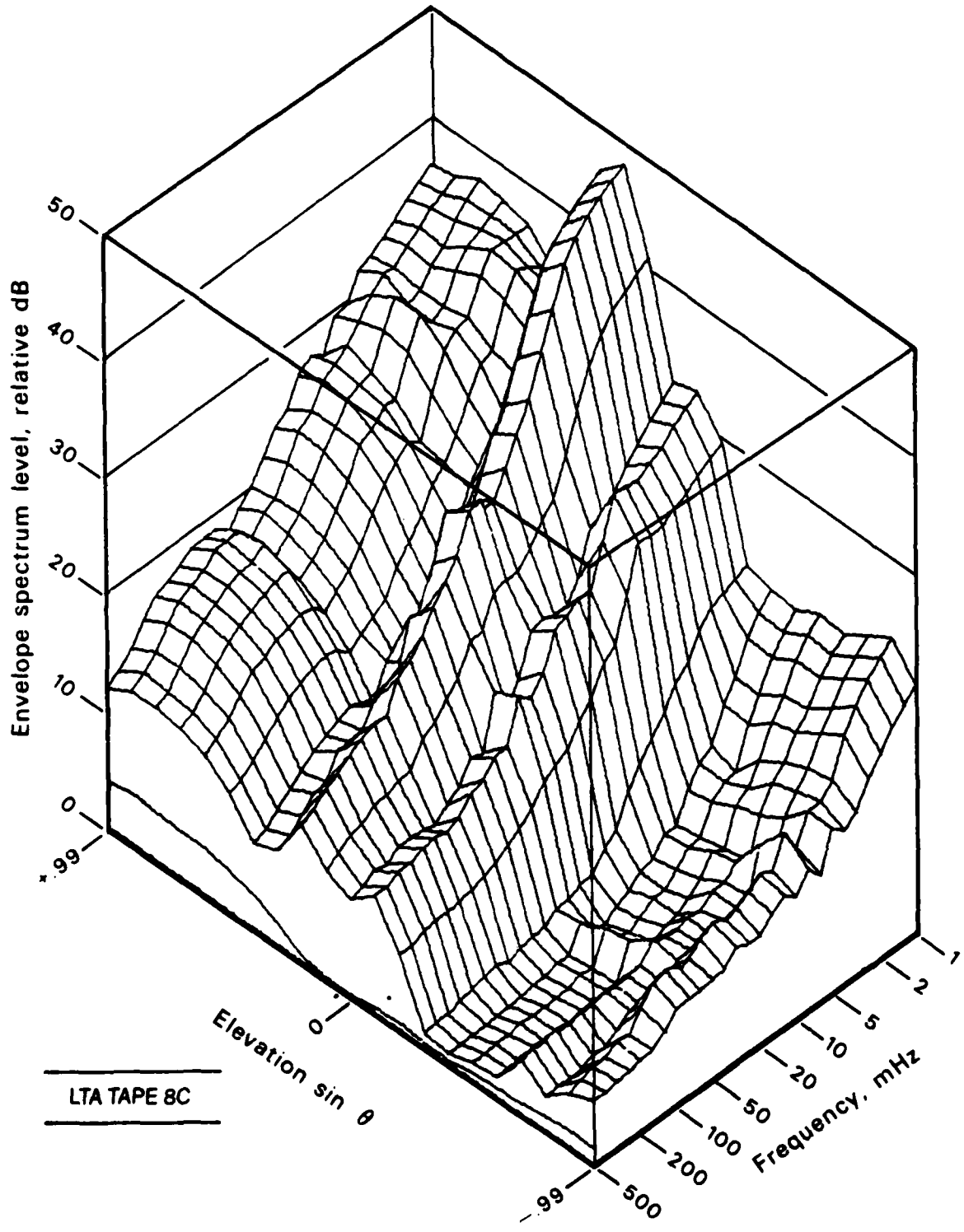
MPL-M-4762

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8C

GROUP 8C

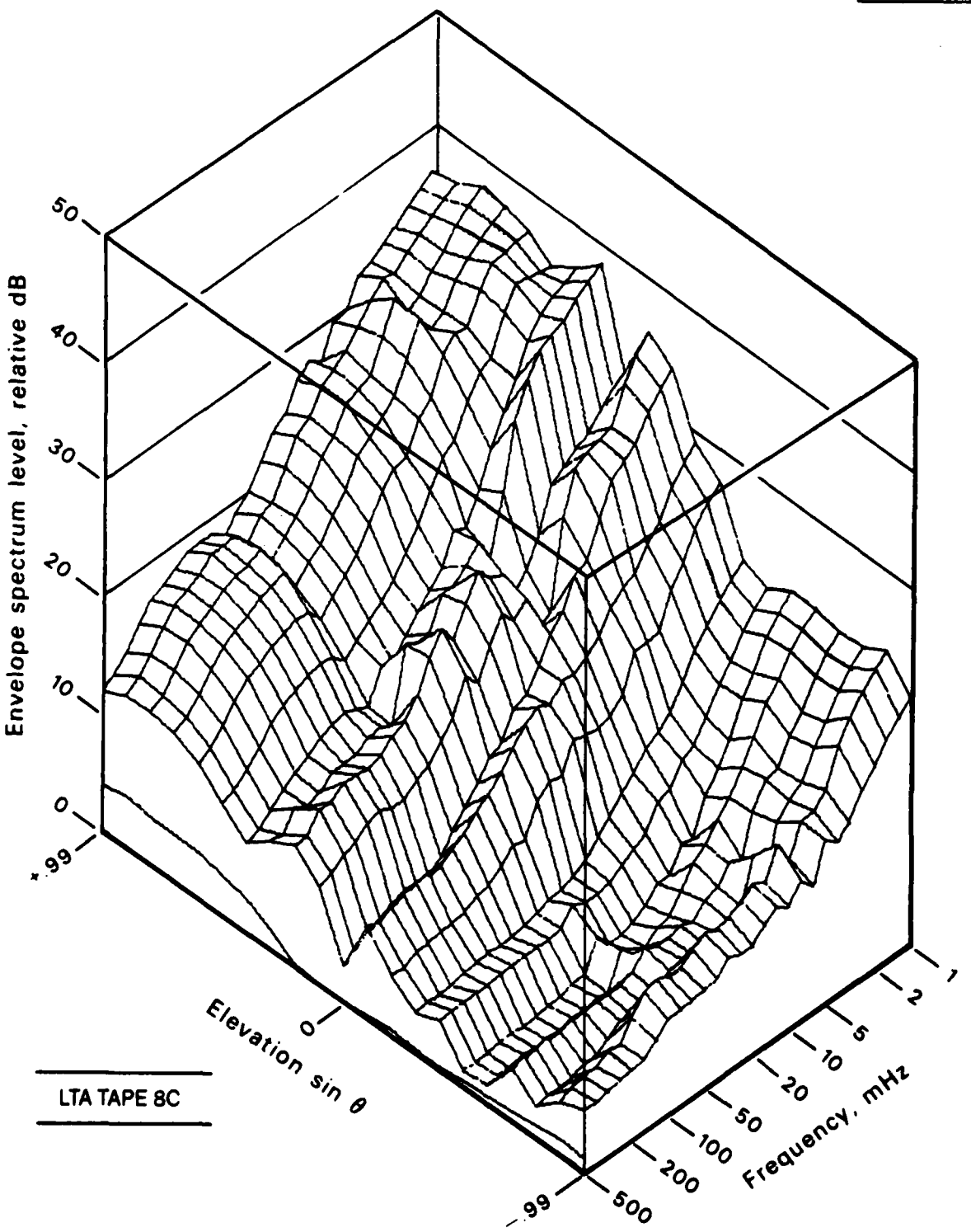


LTA TAPE 8C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4763

GROUP 8C



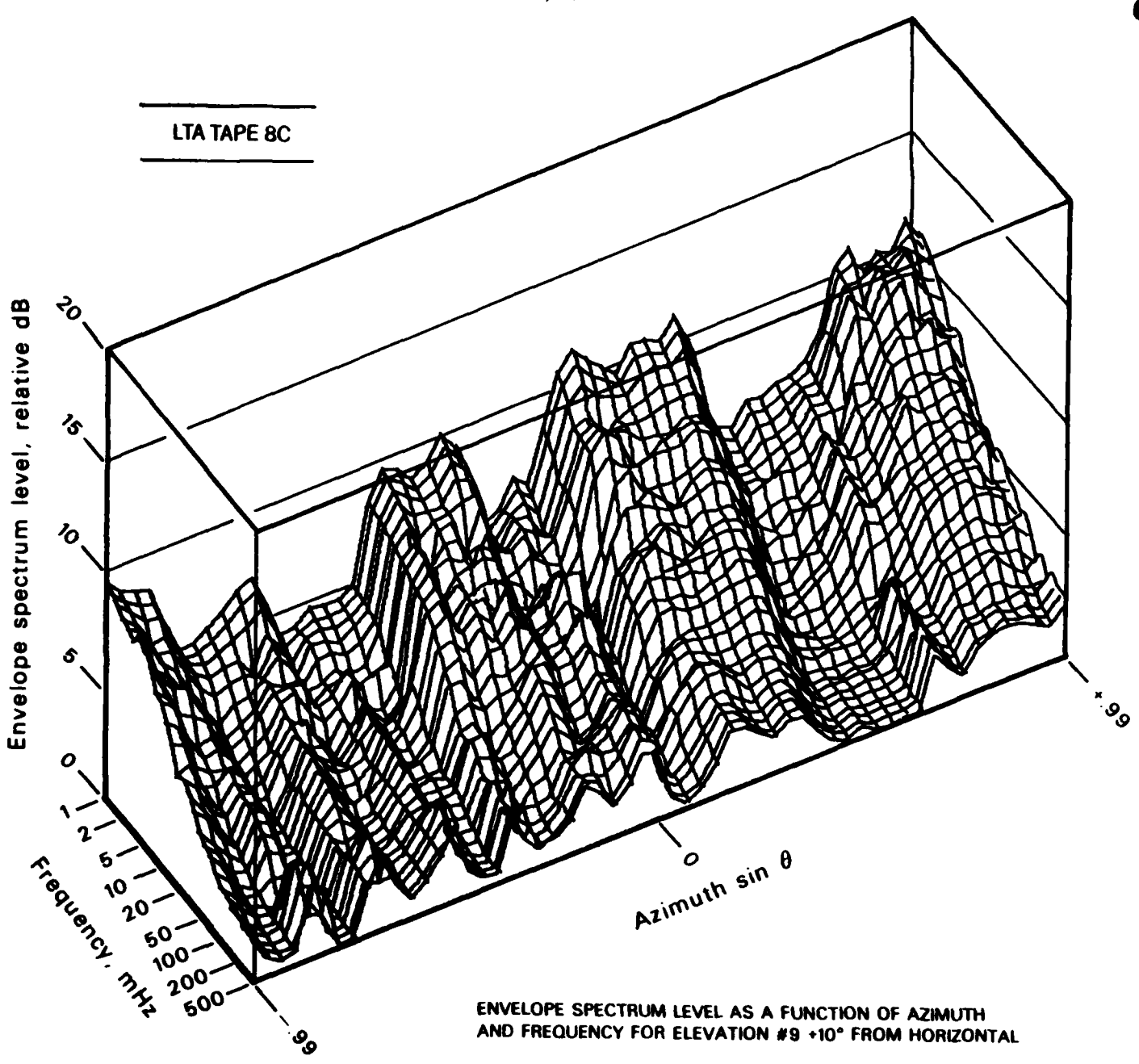
LTA TAPE 8C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4764

MPL-M-4765

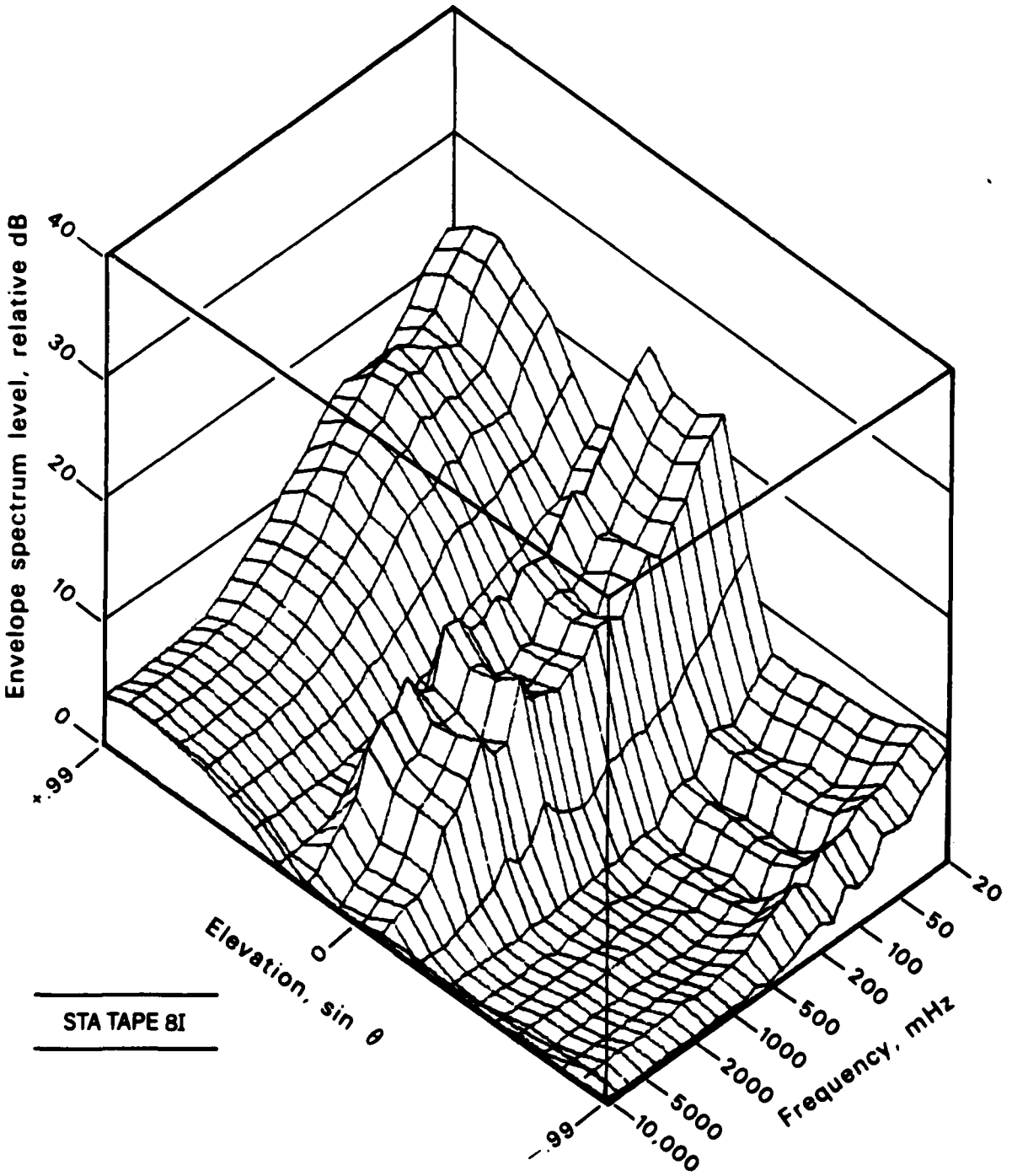
LTA TAPE 8C



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 8C

GROUP 8C

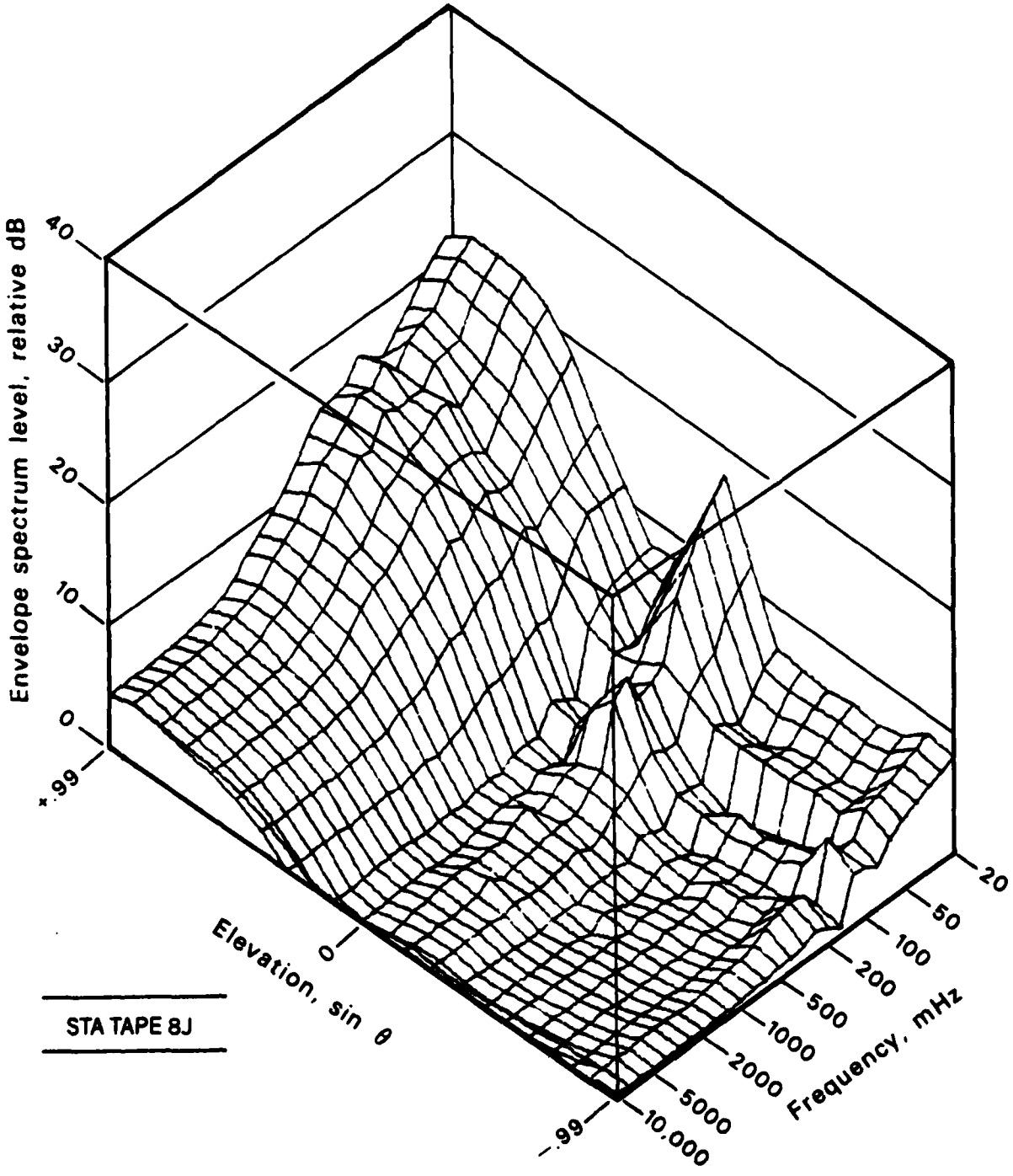


STA TAPE 8I

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4766

GROUP 8C



STA TAPE 8J

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET

MPL-M-4767

GROUP 8C

LTA TAPE 8C

GE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.7	31.7	31.0	30.1	29.1	28.4	27.5	27.0	24.9	24.5
ANGLE +84°	21.9	22.6	21.7	19.5	18.6	16.9	15.0	13.9	12.3	13.6
	13.7	13.4	12.7	12.1	11.6	10.3	8.6	7.3	6.6	
2	67.3	32.1	31.5	30.8	29.9	29.1	28.0	28.1	27.1	25.5
+64°	24.2	23.3	22.7	20.7	19.9	17.8	15.5	14.9	13.5	14.8
	14.8	14.7	13.8	13.1	12.5	11.4	9.8	8.6	7.8	
3	67.1	33.2	32.3	31.2	29.8	28.8	27.5	27.0	28.4	26.2
+53°	23.4	23.1	22.5	20.9	17.5	17.5	15.7	14.6	13.5	15.2
	14.5	14.3	13.9	13.1	12.4	11.5	9.9	8.4	7.8	
4	66.7	32.9	32.4	31.9	31.3	29.8	27.6	26.8	28.4	25.7
+44°	22.5	22.7	21.4	20.7	18.5	16.7	14.9	13.8	12.9	14.5
	14.1	13.8	13.2	12.6	12.0	10.8	9.3	8.0	7.5	
5	66.8	32.3	32.3	32.4	32.4	30.8	28.1	27.8	26.8	23.8
+37°	20.3	21.1	20.1	18.9	17.1	14.9	13.6	12.6	11.5	12.7
	12.8	12.5	12.1	11.5	10.9	9.6	8.3	7.3	6.7	
6	66.4	30.1	30.9	31.6	32.2	30.2	26.7	26.3	24.0	21.7
+30°	19.9	18.8	16.9	15.3	13.9	11.9	11.2	10.4	9.5	10.5
	10.7	10.4	9.8	9.3	8.3	7.2	6.0	5.2	4.8	
7	65.8	31.6	31.3	31.0	30.6	28.9	26.1	23.4	22.0	20.0
+23°	19.3	16.5	14.2	12.6	11.6	9.9	8.8	9.5	6.6	7.2
	7.8	7.3	6.8	6.1	5.2	4.4	3.3	2.4	2.0	
8	64.8	41.4	40.7	39.9	39.0	37.9	36.4	33.3	30.3	27.1
+17°	25.5	22.6	19.6	21.1	21.7	17.9	14.4	14.8	10.9	10.5
	9.7	7.9	7.8	7.6	5.8	5.5	4.3	3.3	2.9	
9	63.4	43.4	42.8	42.1	41.2	40.1	38.5	35.3	32.4	29.0
+12°	26.8	24.6	22.4	23.4	23.2	20.1	18.6	17.1	15.4	14.0
	13.2	10.7	10.7	10.2	9.5	8.7	8.1	7.2	6.5	
10	62.7	36.7	36.1	35.4	34.4	33.1	31.3	28.2	24.9	21.9
+6°	20.7	19.1	17.9	18.0	17.6	15.1	14.8	12.5	11.4	10.0
	9.4	7.4	7.2	6.9	6.6	5.8	5.5	4.8	3.9	
11	62.7	27.5	26.7	25.6	24.3	23.2	21.7	20.5	20.2	16.6
0°	14.9	14.9	15.3	14.9	11.5	9.8	12.0	7.4	7.8	5.9
	5.2	4.2	4.5	4.5	4.5	3.7	4.0	3.3	3.0	
12	63.3	28.2	27.5	26.7	25.6	25.0	24.3	24.5	24.5	21.2
−6°	17.6	17.7	17.0	16.5	13.6	12.2	13.1	9.5	9.2	8.1
	7.5	6.3	5.8	5.9	5.7	5.3	5.3	4.8	4.7	
13	63.5	25.3	24.6	23.9	23.1	22.5	21.8	21.8	21.9	18.0
−12°	14.5	13.6	11.3	10.0	8.4	7.7	7.1	5.6	4.5	3.9
	3.0	2.7	2.2	2.0	1.7	1.3	1.6	1.2	1.2	
14	63.2	16.0	15.6	15.2	14.7	13.4	11.4	10.3	8.6	7.1
−17°	5.6	4.0	1.3	0.6	-0.9	-1.2	-1.6	-1.9	-2.5	-2.7
	-2.8	-3.3	-2.8	-3.0	-3.5	-3.7	-4.0	-4.1	-4.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8C

LTA TAPE 8C

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.2	15.4	14.3	12.7	10.1	8.5	5.7	4.8	3.5	1.0
ANGLE −23°	1.0	−0.3	−0.7	−1.7	−2.2	−3.1	−2.6	−1.4	−3.4	−3.5
	−3.8	−3.8	−4.0	−4.2	−4.2	−4.2	−4.4	−4.5	−4.4	
16	63.5	15.1	14.0	12.5	10.1	8.2	4.9	4.8	3.8	1.4
−30°	1.4	0.2	−0.8	−0.9	−1.8	−2.3	−2.0	−0.6	−3.1	−3.0
	−3.3	−3.6	−3.6	−3.6	−3.4	−3.7	−3.7	−3.8	−3.9	
17	63.6	16.3	15.2	13.7	11.5	9.9	7.3	5.6	4.9	2.0
−37°	2.5	0.8	−0.1	−0.8	−1.0	−1.6	−1.5	−0.0	−3.1	−2.9
	−3.1	−3.1	−3.4	−3.5	−3.5	−3.3	−3.7	−3.7	−3.7	
18	63.8	16.0	15.0	13.7	11.7	10.5	8.6	7.6	5.6	2.3
−44°	3.1	2.1	2.0	1.1	1.1	0.8	1.1	1.5	0.1	−0.1
	−0.3	−0.0	−0.3	−0.2	−0.5	−0.3	−0.5	−0.4	−0.5	
19	64.1	17.3	16.4	15.1	13.2	11.8	9.6	8.3	6.8	3.7
−53°	6.0	2.2	2.0	1.7	1.1	1.1	1.3	1.1	−0.2	−0.3
	−0.4	−0.3	−1.1	−1.8	−1.7	−2.2	−2.3	−2.3	−2.5	
20	64.3	18.6	17.7	16.5	14.9	13.1	10.0	8.9	8.8	6.3
−64°	8.4	5.9	6.4	5.6	5.0	4.7	5.1	4.5	3.6	3.6
	4.0	3.7	2.2	0.6	0.8	0.1	0.1	−0.2	−0.7	
21	64.3	15.9	15.0	13.8	12.2	10.8	8.8	7.9	8.8	5.6
−84°	6.7	5.2	6.0	5.0	4.0	4.0	4.5	3.4	3.3	3.0
	3.0	2.8	1.7	0.8	0.7	0.5	0.3	0.1	0.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8C

LTA TAPE 8C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.7	31.7	31.0	30.1	29.1	28.4	27.5	27.0	24.9	24.5
ANGLE +84°	21.7	22.6	21.7	19.5	18.6	16.9	15.0	13.9	12.3	13.6
	13.7	13.4	12.7	12.1	11.6	10.3	8.6	7.3	6.6	
2	67.3	32.1	31.5	30.8	29.9	29.1	28.0	28.2	27.1	25.5
+64°	24.2	23.3	22.7	20.7	19.9	17.7	15.5	15.0	13.5	14.8
	14.8	14.7	13.8	13.1	12.5	11.4	9.8	8.6	7.8	
3	67.1	33.2	32.4	31.3	29.9	28.9	27.6	27.0	28.7	26.1
+53°	23.7	23.1	22.6	20.5	19.5	17.4	15.8	14.7	13.5	15.2
	14.6	14.4	13.9	13.1	12.4	11.5	9.9	8.4	7.9	
4	66.9	33.0	32.4	31.7	30.9	29.6	27.7	26.8	28.6	25.8
+44°	23.3	22.2	21.2	20.3	18.2	16.7	14.9	14.1	12.8	14.6
	14.1	13.8	13.2	12.6	12.0	10.8	9.3	8.0	7.5	
5	66.0	32.5	32.3	32.1	31.9	30.3	27.9	28.1	26.9	24.0
+37°	22.9	20.4	20.0	18.8	16.7	14.8	13.7	12.6	11.4	12.8
	12.8	12.4	12.0	11.3	10.8	9.5	8.1	6.9	6.3	
6	66.4	30.8	31.1	31.4	31.6	29.8	26.7	26.2	24.3	21.8
+30°	21.0	18.9	16.7	15.0	13.4	12.3	11.3	10.3	9.3	10.3
	10.5	10.2	9.6	9.1	8.2	6.9	5.8	4.8	4.4	
7	65.8	32.3	31.7	31.1	30.4	28.8	26.3	24.2	21.7	19.0
+23°	16.5	17.0	14.4	13.2	12.1	10.8	9.2	9.6	6.9	7.4
	7.8	7.5	7.0	6.3	5.5	4.7	3.7	2.8	2.5	
8	64.7	34.1	33.4	32.5	31.4	30.9	30.3	28.6	25.7	20.2
+17°	15.3	17.4	16.1	15.1	15.1	12.5	12.3	13.0	6.7	7.2
	7.0	6.3	6.3	6.2	5.3	4.8	5.4	3.8	4.0	
9	63.2	26.4	25.6	24.5	23.2	22.5	21.7	20.9	17.4	15.1
+12°	13.7	16.1	16.6	17.9	15.8	13.4	15.1	13.3	10.9	9.4
	8.7	7.8	7.4	7.6	7.7	6.7	6.8	5.3	5.2	
10	62.8	31.2	29.9	28.2	25.3	24.9	24.5	23.8	20.3	12.8
+6°	12.0	15.5	14.3	15.7	13.5	11.2	12.5	9.6	8.4	6.9
	6.5	5.5	5.4	6.0	5.6	4.6	4.4	3.5	3.0	
11	62.8	29.6	28.6	27.2	25.2	24.5	23.6	20.9	18.2	17.5
0°	15.2	13.9	12.0	10.2	7.6	7.5	6.9	5.5	4.0	2.6
	1.3	0.5	0.2	0.7	0.2	-0.4	-0.8	-1.9	-2.2	
12	63.2	24.7	23.7	22.2	20.1	18.8	16.9	16.6	15.5	13.8
−6°	12.7	11.9	12.1	10.7	11.3	10.6	9.2	7.9	6.7	5.9
	4.8	4.1	3.4	3.5	3.4	3.2	2.8	2.1	2.5	
13	63.4	22.7	21.6	20.2	18.0	16.4	13.6	13.4	13.3	10.3
−12°	9.1	8.9	9.0	9.3	7.0	7.1	6.1	3.6	3.8	2.7
	1.7	1.6	1.0	0.8	0.8	0.5	0.5	-0.1	-0.0	
14	63.2	17.4	16.5	15.5	14.0	12.6	10.6	8.7	7.7	7.0
−17°	5.7	4.6	3.3	2.3	1.1	0.3	-0.1	-0.2	-0.6	-1.0
	-1.2	-1.2	-1.1	-1.3	-1.4	-1.7	-1.8	-1.8	-1.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 8C

LTA TAPE 8C

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	63.2 4.8 −0.5	16.5 2.6 −0.6	15.5 2.0 −0.7	14.3 1.4 −0.7	12.5 0.7 −0.9	11.1 0.4 −0.8	9.2 0.5 −0.9	7.4 0.8 −0.9	6.9 −0.4 −1.0	5.0 −0.7
16 −30°	63.5 2.5 −3.4	17.8 0.5 −3.5	16.7 0.6 −3.6	15.2 −0.7 −3.8	13.0 −1.3 −3.7	11.3 −1.8 −3.7	8.5 −1.8 −3.8	6.8 −0.5 −4.0	5.2 −3.0 −3.9	2.2 −3.1
17 −37°	63.6 4.1 −2.9	17.7 3.2 −3.0	16.8 1.5 −3.?	15.6 −0.0 −3.5	14.0 −0.3 −3.5	12.5 −1.2 −3.3	10.3 −1.1 −3.8	8.4 0.1 −3.7	6.6 −2.9 −3.6	5.4 −2.7
18 −44°	63.8 3.8 −0.2	17.3 2.5 −0.0	16.2 2.1 −0.2	14.7 0.9 −0.2	12.6 1.4 −0.5	11.2 1.0 −0.3	9.1 1.1 −0.5	8.8 1.6 −0.4	6.7 0.3 −0.5	3.3 −0.2
19 −53°	64.1 5.9 −0.5	17.4 2.2 −0.3	16.4 1.8 −1.1	15.0 1.4 −1.8	13.1 1.2 −1.8	11.7 1.0 −2.2	9.4 1.5 −2.4	8.5 1.2 −2.3	7.5 −0.0 −2.6	3.7 −0.4
20 −64°	64.3 8.5 4.0	18.6 5.9 3.7	17.7 6.4 2.2	16.6 5.6 0.6	15.0 5.0 0.8	13.3 4.7 0.2	10.2 5.1 0.1	9.1 4.5 −0.2	8.9 3.6 −0.7	6.3 3.6
21 −84°	64.3 6.7 3.0	15.9 5.2 2.8	15.0 6.0 1.7	13.8 5.0 0.8	12.2 4.0 0.7	10.8 4.0 0.5	8.8 4.5 0.3	7.9 3.4 0.1	8.8 3.3 0.2	5.6 3.0

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 8C

GROUP 8C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.6	33.9	33.1	32.1	30.9	30.1	29.2	31.7	31.3	28.5
ANGLE −71.3°	25.0	24.4	22.0	19.2	14.6	15.6	14.3	12.2	9.5	8.4
	7.9	5.9	4.7	4.1	3.2	3.2	2.8	2.9	2.7	
2	63.5	30.9	30.3	29.5	28.7	28.8	29.0	24.1	25.1	23.3
−66°	22.8	22.5	19.9	18.1	15.7	13.0	10.6	9.8	6.7	6.0
	4.9	3.6	1.9	0.8	−0.6	−1.2	−1.7	−1.6	−1.8	
3	63.2	29.8	28.6	26.9	23.9	23.5	23.1	22.4	21.1	17.4
−61.6°	15.5	15.6	12.0	9.4	10.2	7.8	6.8	5.2	3.6	1.3
	0.2	−0.9	−1.4	−1.7	−2.7	−2.7	−3.0	−3.3	−3.3	
4	63.0	29.1	28.1	26.6	24.4	23.0	20.9	18.7	20.0	16.2
−57.8°	11.8	11.0	9.8	8.5	5.4	5.3	2.3	2.3	1.2	0.3
	−1.4	−1.3	−2.3	−2.5	−2.8	−2.2	−3.1	−3.5	−2.8	
5	62.9	22.5	21.9	21.1	20.2	18.5	15.8	16.0	15.1	14.1
−54.3°	12.6	11.6	9.3	10.6	9.2	8.6	8.0	8.1	7.1	6.2
	4.2	0.5	−3.6	1.9	6.9	8.5	5.5	1.4	7.8	
6	62.9	16.0	15.8	15.7	15.6	14.0	11.5	10.1	11.7	9.5
−51.1°	8.9	9.0	8.7	8.1	7.3	7.7	6.7	6.6	5.8	4.6
	2.9	0.0	−3.0	1.0	5.4	7.1	4.4	0.7	6.4	
7	62.8	16.4	15.7	14.8	13.8	11.7	7.8	6.3	5.7	4.0
−48.1°	2.4	2.2	1.0	−0.1	−0.9	−0.9	−2.4	−2.5	−3.4	−3.9
	−3.8	−4.4	−4.6	−4.5	−4.4	−4.8	−5.1	−4.9	−4.8	
8	62.8	17.9	17.1	15.9	14.4	12.8	10.2	7.8	6.9	5.5
−45.3°	4.1	2.4	0.7	−1.3	−1.5	−1.7	−3.0	−2.9	−2.7	−3.5
	−3.6	−3.6	−4.2	−4.1	−4.4	−4.6	−4.9	−4.7	−4.5	
9	62.8	20.0	18.9	17.3	14.8	13.2	10.5	9.5	9.5	7.4
−42.6°	5.7	6.9	6.2	3.6	3.8	5.4	3.9	4.1	3.6	3.6
	3.5	3.4	3.3	3.4	3.7	4.1	3.4	3.1	3.6	
10	62.8	22.7	21.1	18.5	11.5	12.0	12.5	13.1	12.6	12.1
−40.0°	11.4	10.7	10.2	9.9	9.9	9.9	8.6	8.7	7.9	6.4
	4.8	1.8	−1.1	2.7	7.1	8.7	5.9	2.1	8.0	
11	62.8	24.0	22.7	20.8	17.4	16.7	15.8	11.7	13.0	13.1
−37.5°	8.1	10.7	6.8	6.3	7.2	5.5	5.5	4.4	4.5	3.2
	2.7	2.7	2.5	2.8	2.4	2.4	2.1	2.3	2.1	
12	62.8	18.4	17.4	16.2	14.3	13.7	13.0	11.6	12.6	8.8
−35.1°	5.2	5.9	5.9	4.5	3.8	2.2	1.3	1.8	−0.2	−0.3
	−0.7	−1.0	−1.4	−0.4	−0.6	−1.7	−1.8	−2.0	−1.7	
13	62.7	11.5	10.4	8.9	6.7	7.0	7.4	6.4	7.0	5.7
−32.8°	1.9	1.7	1.8	2.7	3.4	2.2	−1.4	2.4	−0.0	1.0
	0.3	−0.2	0.8	0.4	0.4	0.5	0.1	−0.0	0.3	
14	62.7	11.8	12.0	12.2	12.4	10.7	7.8	8.3	7.9	7.3
−30.5°	6.5	5.5	4.7	6.1	4.1	4.0	4.4	4.1	4.2	4.2
	3.8	3.8	3.8	3.7	3.8	3.7	3.7	3.4	3.6	
15	62.7	14.1	13.5	12.8	12.0	10.8	9.2	8.8	11.8	11.2
−28.3°	3.4	9.2	9.9	8.5	8.8	9.3	8.7	8.5	7.7	7.8
	6.2	5.2	4.4	5.4	7.8	8.9	7.0	5.2	8.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

MPL-M-4772

LTA TAPE 8C

GROUP 8D

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.7	13.6	12.9	12.0	10.8	9.5	7.6	5.2	8.0	4.6
ANGLE −26.1°	5.7	3.4	2.3	2.3	3.4	1.9	2.4	1.4	1.4	1.7
	1.1	1.1	0.7	0.3	0.1	-0.2	-0.4	-0.7	-0.7	
17	62.6	13.6	13.3	13.0	12.6	10.8	7.7	6.7	9.4	3.5
−24.0°	2.7	4.1	3.8	4.6	2.6	1.5	2.5	1.5	2.1	1.3
	0.9	1.0	-0.2	-1.5	-2.2	-2.7	-3.1	-3.3	-3.1	
18	62.6	15.3	15.0	14.6	14.2	13.6	12.9	8.5	9.6	7.0
−21.8°	5.2	7.8	10.4	8.7	5.5	4.4	4.1	1.4	1.3	1.2
	1.3	0.1	-0.8	-1.6	-2.7	-3.9	-4.0	-3.8	-3.5	
19	62.6	29.1	28.7	28.2	27.8	27.2	26.6	25.9	25.3	24.3
−19.8°	23.9	23.2	22.6	20.9	18.3	15.6	14.4	10.3	8.1	8.2
	9.6	7.7	5.4	5.5	7.0	5.6	5.1	4.8	5.8	
20	62.7	34.1	33.4	32.7	31.9	30.9	29.5	28.1	28.4	27.9
−17.7°	26.6	25.7	24.1	22.8	17.2	17.3	14.5	11.6	9.4	8.0
	9.8	6.6	3.2	1.7	6.1	2.0	-0.4	-0.4	3.2	
21	62.7	33.1	32.0	30.6	28.4	25.4	8.1	22.1	23.5	18.7
−15.7°	20.1	18.3	17.0	18.4	16.1	12.7	9.7	9.1	5.3	2.7
	3.9	1.7	-0.2	-2.6	0.2	-2.0	-2.7	-3.3	-1.4	
22	62.7	30.2	29.6	28.8	28.0	27.4	26.8	25.8	24.6	22.4
−13.7°	22.3	21.1	21.4	20.8	19.4	16.2	13.4	10.8	7.2	6.9
	4.4	3.9	2.4	1.6	-0.4	-1.6	-2.1	-2.2	-0.9	
23	62.8	32.1	31.1	29.7	27.7	27.7	27.6	25.5	22.9	23.3
−11.7°	18.4	22.1	21.3	18.1	15.7	16.1	12.1	10.9	10.0	9.5
	8.5	6.7	5.2	2.6	0.1	0.4	0.7	0.3	0.9	
24	62.8	36.2	35.2	33.7	31.6	28.9	21.0	19.3	24.6	23.8
−9.7°	19.9	22.2	17.1	23.3	20.1	19.0	13.4	13.6	15.0	14.3
	12.8	11.2	9.3	6.6	5.5	5.7	5.4	5.7	5.9	
25	62.8	32.7	32.1	31.4	30.5	29.4	28.0	24.6	23.0	22.2
−7.8°	19.9	20.0	18.2	16.9	16.5	17.2	17.2	15.9	15.1	12.1
	11.2	8.2	6.8	4.7	5.8	8.1	4.7	4.7	3.9	
26	62.7	19.4	19.8	20.2	20.6	20.0	19.3	14.9	16.2	13.1
−5.8°	13.9	13.2	14.3	13.1	13.0	12.4	11.8	11.2	9.3	6.6
	5.6	4.0	4.1	5.4	5.8	6.1	3.4	0.3	0.2	
27	62.8	16.9	16.6	16.2	15.8	16.9	17.8	15.6	14.4	10.3
−3.9°	12.4	14.0	16.7	13.7	15.0	12.7	12.7	11.6	9.9	7.9
	5.8	5.0	6.2	7.7	7.0	5.8	5.5	3.9	3.0	
28	62.8	18.1	18.8	19.5	20.1	19.9	19.8	17.4	10.7	14.6
−1.9°	12.9	18.6	20.5	21.3	17.9	14.2	18.0	14.1	14.0	11.1
	10.8	10.1	10.2	10.4	11.0	9.3	10.0	9.1	7.7	
29	62.8	22.9	22.1	21.1	19.8	18.1	15.0	15.0	12.6	13.7
0°	12.0	16.9	17.6	21.0	15.0	11.8	16.9	10.2	11.6	9.8
	10.0	8.6	8.5	9.2	8.9	7.4	8.0	7.7	6.9	
30	62.8	20.7	19.6	18.0	15.6	16.3	16.8	13.5	11.6	9.6
+1.9°	7.6	8.8	8.2	12.3	9.0	6.4	8.4	4.9	4.0	3.8
	3.7	2.6	0.4	0.1	2.2	0.3	-1.7	-2.7	-2.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 8C

GROUP 8C

PAGE 3

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.8	39.9	28.6	26.8	23.5	23.5	23.5	20.8	15.7	9.9
ANGLE +3.9°	5.1	11.2	4.6	6.2	4.4	4.7	2.3	0.6	-0.9	-1.2
	-0.9	-1.7	-1.8	-1.8	-3.7	-3.4	-3.5	-4.3	-4.4	
32	62.9	38.7	37.5	35.7	32.5	32.1	31.7	31.4	27.7	16.6
+5.8°	14.8	20.2	15.5	16.8	14.5	13.7	12.3	8.6	4.9	5.0
	5.9	2.2	4.0	3.8	0.2	-1.1	-2.0	-3.5	-2.8	
33	63.1	42.1	40.6	38.4	33.5	33.7	33.8	34.8	31.3	27.2
+7.8°	18.4	25.5	18.3	20.0	19.8	17.7	15.3	13.7	7.7	9.5
	8.8	5.3	7.8	7.2	3.9	2.4	1.9	0.3	0.3	
34	63.2	39.2	37.5	34.9	26.4	30.5	32.6	32.3	28.6	29.1
+9.7°	23.2	25.3	20.1	20.2	21.4	17.3	14.2	14.2	9.6	10.7
	9.8	8.8	9.9	9.1	6.7	6.3	6.1	5.6	5.5	
35	63.2	36.9	35.6	33.8	30.6	31.0	31.4	26.1	27.5	24.1
+11.7°	25.5	23.6	21.9	23.0	19.2	15.6	14.2	12.6	10.3	9.7
	8.8	7.9	9.4	9.1	6.7	5.8	5.5	5.3	5.2	
36	63.2	34.5	33.8	32.9	31.7	30.5	28.9	26.6	28.5	24.1
+13.7°	23.0	22.3	21.0	20.2	16.8	16.0	12.6	12.6	9.9	9.3
	7.2	5.6	7.1	6.8	4.3	3.2	3.0	2.6	3.0	
37	63.8	38.7	37.4	35.6	32.4	30.9	28.6	28.8	28.4	23.6
+15.7°	20.5	22.2	19.4	16.8	18.1	14.8	14.1	13.0	10.2	9.1
	7.2	5.8	5.1	3.6	2.6	2.1	1.5	0.9	1.1	
38	64.6	38.5	37.4	36.0	33.8	31.8	27.8	29.5	28.4	24.4
+17.7°	23.9	23.1	21.2	19.3	18.9	17.0	14.3	13.8	11.2	10.1
	8.5	6.5	6.6	5.1	4.2	3.8	3.6	3.2	3.1	
39	64.7	37.1	36.2	35.0	33.4	32.0	29.9	30.1	30.1	26.1
+19.8°	25.5	24.2	20.2	19.8	19.0	17.3	16.2	13.9	12.1	11.0
	8.2	7.2	6.1	5.3	4.5	4.0	3.7	3.2	3.0	
40	64.0	40.7	39.4	37.4	33.7	32.0	29.2	29.0	28.3	24.3
+21.8°	23.7	22.8	20.1	18.9	18.2	15.7	14.9	13.8	11.0	9.4
	6.7	5.6	3.9	2.6	1.6	0.8	-0.0	-0.4	-0.7	
41	63.2	35.3	33.9	31.8	27.8	26.5	24.6	25.5	21.9	21.8
+24.0°	21.9	17.5	17.0	16.0	13.4	10.9	8.9	8.5	5.5	4.0
	2.2	1.0	0.2	-1.0	-2.0	-2.4	-3.2	-3.2	-3.5	
42	62.8	33.7	22.5	20.7	17.7	16.8	15.6	16.9	13.4	14.4
+26.1°	14.3	10.6	8.5	5.5	3.8	3.8	1.1	0.6	-0.3	-0.6
	-2.8	-3.4	-3.7	-3.8	-3.9	-4.6	-4.9	-4.6	-4.8	
43	62.7	17.2	16.3	15.2	13.8	13.5	13.1	12.3	8.5	9.2
+28.3°	6.2	4.8	2.1	1.3	-0.8	0.1	-1.5	-0.5	-1.7	-2.3
	-3.1	-3.3	-3.2	-3.3	-3.3	-3.7	-3.6	-3.6	-3.2	
44	62.7	15.9	15.2	14.4	13.4	13.3	13.1	13.3	9.9	7.3
+30.5°	7.7	4.7	2.3	1.2	0.7	0.2	-2.2	-2.2	-2.5	-1.7
	-3.7	-4.3	-3.7	-4.1	-4.1	-4.3	-4.8	-5.0	-4.7	
45	62.8	20.0	19.1	17.9	16.3	14.6	11.9	14.4	10.9	9.7
+32.8°	7.0	3.8	5.7	2.9	2.8	-0.0	1.5	-2.7	-2.6	-2.4
	-3.7	-3.4	-3.3	-3.3	-4.1	-4.4	-4.5	-4.8	-5.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 8C

GROUP 8C

PAGE 4

FREQUENCY KEY FOR LTA SPECTRA, mHz

	DC 7.62 76.7	95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 46	62.9	19.4	18.5	17.7	16.5	15.8	14.9	13.6	10.3	9.5
ANGLE +35.1°	10.9	6.5	5.2	4.9	4.5	2.0	0.7	-0.4	-1.8	-2.4
	-3.7	-3.9	-3.3	-3.8	-4.2	-4.5	-4.7	-4.8	-4.7	
47	63.0	20.8	20.0	19.1	17.8	17.1	16.3	14.4	12.9	11.4
+37.5°	10.6	8.9	11.1	9.3	8.7	5.4	3.0	1.6	-0.1	-0.7
	-1.9	-2.5	-1.7	-3.4	-3.6	-4.0	-4.6	-4.3	-4.9	
48	63.2	21.3	21.4	21.5	21.6	20.9	20.1	19.2	19.3	18.1
+40.0°	18.7	17.2	16.9	15.6	14.5	12.5	8.5	1.2	1.9	6.4
	9.3	6.9	2.3	7.2	3.6	7.0	5.7	5.6	4.6	
49	63.3	23.0	22.4	21.7	20.9	20.5	20.1	15.6	16.4	15.2
+42.6°	16.2	13.8	13.2	11.5	12.9	11.1	9.3	5.6	4.1	4.7
	2.5	2.0	2.7	1.9	1.8	2.2	1.6	1.6	1.3	
50	63.5	27.3	28.2	28.9	29.5	26.9	19.8	25.2	22.2	20.9
+45.3°	17.1	16.9	15.3	12.9	15.1	12.5	11.0	10.2	8.2	6.1
	9.7	3.3	2.1	2.5	1.5	0.2	-0.4	-1.5	-1.5	
51	63.8	37.6	37.3	37.0	36.6	34.0	27.0	24.5	22.5	23.2
+48.1°	23.2	21.5	20.3	19.4	17.8	16.0	16.2	15.0	13.5	10.9
	8.4	9.0	8.2	6.3	5.1	3.6	4.0	2.2	2.5	
52	63.9	40.2	38.8	36.8	33.0	32.5	31.9	29.8	28.5	28.8
+51.1°	23.7	25.6	29.9	21.0	19.2	18.2	17.2	16.8	16.2	12.5
	11.1	10.4	8.2	6.9	4.5	3.6	3.8	2.9	4.2	
53	64.1	34.2	36.6	38.1	39.3	37.8	35.7	32.1	32.0	29.3
+54.3°	26.8	24.8	23.3	22.5	20.1	19.3	18.1	17.9	17.2	13.7
	12.3	10.5	9.4	7.9	6.8	4.5	4.8	4.5	4.4	
54	64.4	37.5	37.5	37.6	37.6	38.0	38.4	34.2	30.7	29.4
+57.8°	26.9	26.0	23.9	22.0	21.3	21.3	18.7	17.9	17.5	15.7
	13.1	10.8	9.7	9.9	6.4	4.2	3.4	3.3	3.9	
55	64.4	36.3	38.1	39.4	40.4	37.8	30.3	30.8	33.1	29.2
+61.6°	25.5	26.4	24.6	23.5	22.1	19.3	17.3	17.5	14.8	15.1
	10.7	9.8	8.0	7.0	4.5	4.8	3.7	3.0	2.6	
56	64.2	41.1	39.8	37.9	34.5	33.1	31.2	28.8	28.8	29.5
+66.0°	26.0	24.3	24.2	20.7	20.2	20.4	19.9	13.5	13.6	13.9
	9.7	10.7	7.7	4.8	3.3	3.2	1.8	1.7	1.0	
57	64.0	37.2	36.2	34.9	33.1	31.0	26.7	27.9	28.0	23.8
+71.3°	21.9	19.2	16.6	16.9	14.7	16.0	15.1	12.9	12.2	9.7
	10.4	8.1	4.6	6.7	3.5	5.9	4.6	4.5	3.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs AZIMUTH ANGLE, ELEVATION NUMBER 9

GROUP 8C

STA TAPE 8I

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.6 12.7 2.0	20.1 11.4 1.7	19.1 9.7 1.5	17.8 8.8 1.4	15.9 7.7 1.3	14.8 6.3 1.2	13.4 5.3 1.0	13.3 4.4 1.1	13.1 3.6 1.1	13.4 2.6
2 +64°	54.3 14.1 2.9	21.7 13.0 2.8	20.6 11.9 2.5	19.2 10.6 2.4	16.9 9.4 2.1	16.3 7.4 2.1	15.6 6.3 2.0	16.3 5.5 1.9	15.9 4.6 2.0	15.3 3.6
3 +53°	54.4 13.8 3.1	22.2 13.4 2.8	20.9 12.5 2.5	19.0 11.5 2.2	15.7 7.5 2.2	16.3 7.5 2.0	16.9 6.8 2.0	15.6 5.8 1.9	16.3 4.5 1.9	15.8 3.7
4 +44°	54.3 12.9 2.8	20.5 12.8 2.4	19.3 11.7 2.2	17.7 9.5 1.9	15.1 8.6 1.7	14.7 7.3 1.6	14.3 6.4 1.5	14.9 5.6 1.4	14.1 4.2 1.5	14.6 3.5
5 +37°	54.1 11.3 2.4	19.1 10.9 1.8	17.9 10.3 1.8	16.1 9.1 1.5	13.2 7.4 1.3	13.2 6.0 1.3	13.2 5.4 1.1	13.5 4.0 1.0	12.0 3.4 1.1	12.6 2.7
6 +30°	53.5 9.3 0.9	15.7 8.8 0.6	14.6 7.2 0.5	13.2 6.3 0.4	11.0 5.0 0.3	11.0 4.2 0.3	11.0 3.1 0.1	9.9 2.9 0.1	9.6 1.8 0.1	9.2 1.4
7 +23°	52.8 5.6 -0.3	12.7 5.1 -0.6	11.7 4.4 -0.7	10.5 3.4 -0.7	8.8 2.3 -0.8	8.4 2.0 -0.8	8.0 1.0 -1.0	7.0 0.6 -0.8	6.6 0.0 -0.9	6.2 -0.0
8 +17°	51.7 4.6 1.1	13.4 4.2 -0.0	12.7 2.8 -0.5	11.8 2.6 -0.5	10.7 1.3 -1.6	9.1 1.5 -1.9	6.6 1.5 -2.2	5.0 2.4 -2.3	5.3 0.3 -2.4	4.1 0.1
9 +12°	50.2 11.0 8.0	22.2 11.3 6.9	21.1 9.3 6.8	19.5 10.4 5.2	17.2 7.1 1.8	15.8 9.1 0.2	13.8 10.6 -0.8	14.6 10.9 -2.4	13.0 6.6 -2.7	10.9 6.8
10 +6°	49.8 10.1 6.5	19.8 10.0 4.7	18.8 7.2 4.4	17.4 7.5 3.0	15.3 6.4 -0.5	14.0 6.7 -1.9	12.1 8.5 -2.5	12.2 8.7 -3.5	10.2 5.9 -4.1	9.4 5.6
11 0°	49.8 9.8 6.7	19.5 9.8 5.0	18.4 8.0 3.7	17.0 7.9 3.0	14.7 7.1 -0.0	13.8 6.8 -1.6	12.3 7.5 -2.2	13.4 9.4 -3.2	11.7 5.2 -3.4	8.6 4.9
12 −6°	50.2 10.7 7.7	21.1 10.7 5.3	20.0 9.0 3.5	18.5 8.6 2.8	16.3 7.7 -0.3	14.9 8.3 -1.4	12.9 8.5 -1.4	14.0 11.0 -2.0	12.2 6.3 -2.4	10.0 6.1
13 −12°	50.4 2.6 -0.4	11.0 1.9 -2.0	10.0 1.6 -2.6	8.7 0.1 -3.1	6.7 -0.4 -3.5	5.9 0.1 -4.0	5.0 0.5 -3.9	3.4 2.2 -3.9	3.0 -0.6 -4.1	2.3 -1.3
14 −17°	50.2 -3.6 -4.5	4.3 -3.4 -4.8	3.4 -3.5 -4.7	2.2 -4.1 -4.7	0.6 -4.1 -4.7	1.0 -4.2 -4.7	1.3 -4.3 -4.8	-1.5 -4.4 -4.8	-1.3 -4.6 -4.6	-1.5 -4.7

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 8C

STA TAPE 8I

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.1 -4.1 -5.2	4.3 -3.7 -4.7	3.3 -3.7 -4.8	2.0 -4.7 -4.9	0.1 -4.7 -4.9	0.6 -4.4 -4.8	1.0 -4.2 -4.9	-2.5 -4.4 -4.9	-1.4 -4.6 -4.9	-2.2 -4.7
16 −30°	50.4 -3.9 -4.3	4.8 -3.4 -4.4	3.8 -3.5 -4.4	2.5 -4.2 -4.4	0.7 -4.2 -4.5	0.9 -4.1 -4.5	1.1 -4.3 -4.5	-2.2 -4.2 -4.6	-1.3 -4.5 -4.5	-1.7 -4.3
17 −37°	50.6 -3.2 -3.7	4.9 -3.4 -4.0	4.1 -3.0 -3.9	3.0 -3.8 -3.9	1.7 -3.1 -3.9	1.4 -3.5 -3.8	1.0 -3.6 -3.8	-1.9 -3.8 -3.8	-1.4 -3.6 -3.9	-1.7 -3.6
18. −44°	50.8 -3.8 -3.6	5.2 -2.9 -3.9	4.2 -2.5 -3.8	3.1 -3.4 -3.8	1.4 -3.6 -3.9	1.4 -3.7 -3.8	1.3 -3.8 -4.0	-1.8 -3.6 -3.9	-1.0 -3.8 -3.8	-1.3 -3.7
19 −53°	51.1 -2.3 -3.1	5.8 -1.1 -3.2	5.0 -1.9 -3.2	4.1 -2.1 -3.2	2.9 -2.3 -3.3	2.5 -2.8 -3.2	2.0 -3.1 -3.3	-0.2 -3.1 -3.3	-0.3 -3.0 -3.4	-0.2 -3.1
20 −64°	51.3 0.5 -1.9	7.1 1.4 -2.2	6.4 0.7 -2.3	5.6 0.4 -2.4	4.6 -0.5 -2.4	4.4 -1.3 -2.3	4.2 -1.7 -2.3	3.1 -1.9 -2.3	2.7 -2.2 -2.*	3.0 -2.2
21 −84°	51.3 -1.0 -2.4	6.5 -0.3 -2.5	5.6 -0.8 -2.5	4.6 -1.7 -2.4	3.2 -1.9 -2.5	3.3 -2.4 -2.6	3.4 -1.9 -2.7	1.0 -2.3 -2.7	0.5 -2.4 -2.6	1.3 -2.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8C

STA TAPE 8J

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	54.0 12.8 2.6	19.4 12.5 2.3	18.5 11.2 2.1	17.3 9.5 1.8	15.7 8.0 1.8	14.6 6.9 1.6	13.2 5.9 1.7	13.8 5.0 1.6	14.7 3.7 1.5	13.0 2.8
2 +64°	54.6 14.4 3.5	20.7 12.9 3.2	19.8 11.8 2.8	18.6 11.1 2.6	17.1 9.3 2.6	16.5 7.6 2.5	15.9 6.8 2.4	14.2 6.0 2.3	15.7 4.6 2.3	14.1 3.9
3 +53°	54.4 14.6 3.2	20.6 12.1 2.6	19.6 12.2 2.5	18.2 10.7 2.3	16.1 9.3 2.3	15.8 7.8 2.1	15.6 6.4 2.1	14.1 5.7 1.9	14.2 4.5 1.9	13.9 4.0
4 +44°	54.3 12.7 2.4	20.3 11.6 2.3	19.2 10.9 2.1	17.6 8.9 1.9	15.3 7.8 1.7	14.4 7.4 1.6	13.4 5.9 1.6	14.6 4.7 1.5	14.2 3.9 1.5	13.2 3.4
5 +37°	54.0 11.5 2.0	19.3 11.1 1.6	18.2 9.4 1.5	16.7 8.4 1.3	14.5 7.1 1.2	13.1 6.7 1.2	11.1 5.6 1.0	11.9 4.1 1.1	12.2 3.0 1.0	12.1 2.4
6 +30°	53.5 8.5 1.0	16.7 8.7 0.8	15.7 7.2 0.5	14.5 5.9 0.5	12.9 5.2 0.3	11.6 4.5 0.5	10.0 3.4 0.2	10.0 2.7 0.3	10.8 1.7 0.2	9.8 1.3
7 +23°	52.8 6.0 -0.4	12.6 5.1 -0.7	11.8 3.8 -0.8	10.9 3.7 -0.8	9.8 2.7 -0.8	8.9 1.4 -0.8	7.6 0.9 -1.0	8.5 0.7 -0.9	6.9 -0.2 -0.9	6.1 -0.3
8 +17°	51.5 1.0 -2.4	9.0 0.5 -2.6	8.9 0.4 -2.7	8.9 -0.3 -2.9	8.9 -1.2 -2.7	7.3 -1.7 -2.8	4.7 -2.2 -2.8	2.4 -2.0 -2.8	2.5 -2.4 -2.8	2.1 -2.7
9 +12°	50.0 -3.5 -4.7	5.4 -3.4 -4.6	5.2 -3.6 -4.6	4.9 -4.3 -4.8	4.6 -4.2 -5.0	3.7 -4.4 -5.1	2.6 -4.7 -5.1	-2.7 -4.7 -5.1	-2.0 -4.7 -5.0	-1.4 -4.9
10 +6°	49.7 -4.0 -5.3	5.7 -3.9 -5.0	4.6 -3.5 -5.2	3.2 -4.6 -5.2	1.1 -4.3 -5.3	1.4 -4.3 -5.5	1.8 -4.7 -5.5	-2.7 -4.8 -5.5	-3.0 -5.2 -5.5	-2.0 -5.3
11 0°	49.0 1.3 -4.1	10.3 -2.2 -4.2	9.3 -2.4 -4.3	8.1 -3.3 -4.6	6.3 -3.9 -4.8	4.8 -2.8 -5.0	2.5 -3.5 -5.1	1.3 -4.1 -5.2	-0.6 -3.9 -5.2	1.7 -4.2
12 −6°	50.2 3.7 -3.5	15.6 -1.5 -4.3	14.5 -2.2 -4.4	13.0 -3.6 -4.6	10.8 -3.5 -4.4	8.5 -3.5 -4.6	3.8 -3.7 -4.7	2.9 -3.9 -4.4	2.6 -4.2 -4.8	4.9 -4.4
13 −12°	50.4 -0.8 -4.1	9.6 -2.0 -4.4	8.5 -2.6 -4.3	7.0 -3.8 -4.3	4.6 -4.1 -4.3	3.7 -3.6 -4.4	2.6 -3.9 -4.4	-0.5 -4.1 -4.5	-0.4 -4.3 -4.5	0.2 -4.2
14 −17°	50.1 -4.0 -5.0	4.3 -3.6 -5.0	3.3 -3.2 -4.9	2.0 -4.5 -4.9	0.2 -4.4 -4.9	0.9 -4.6 -4.9	1.5 -4.5 -4.9	-2.5 -5.0 -5.0	-2.2 -4.9 -5.0	-1.9 -4.8

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 8J

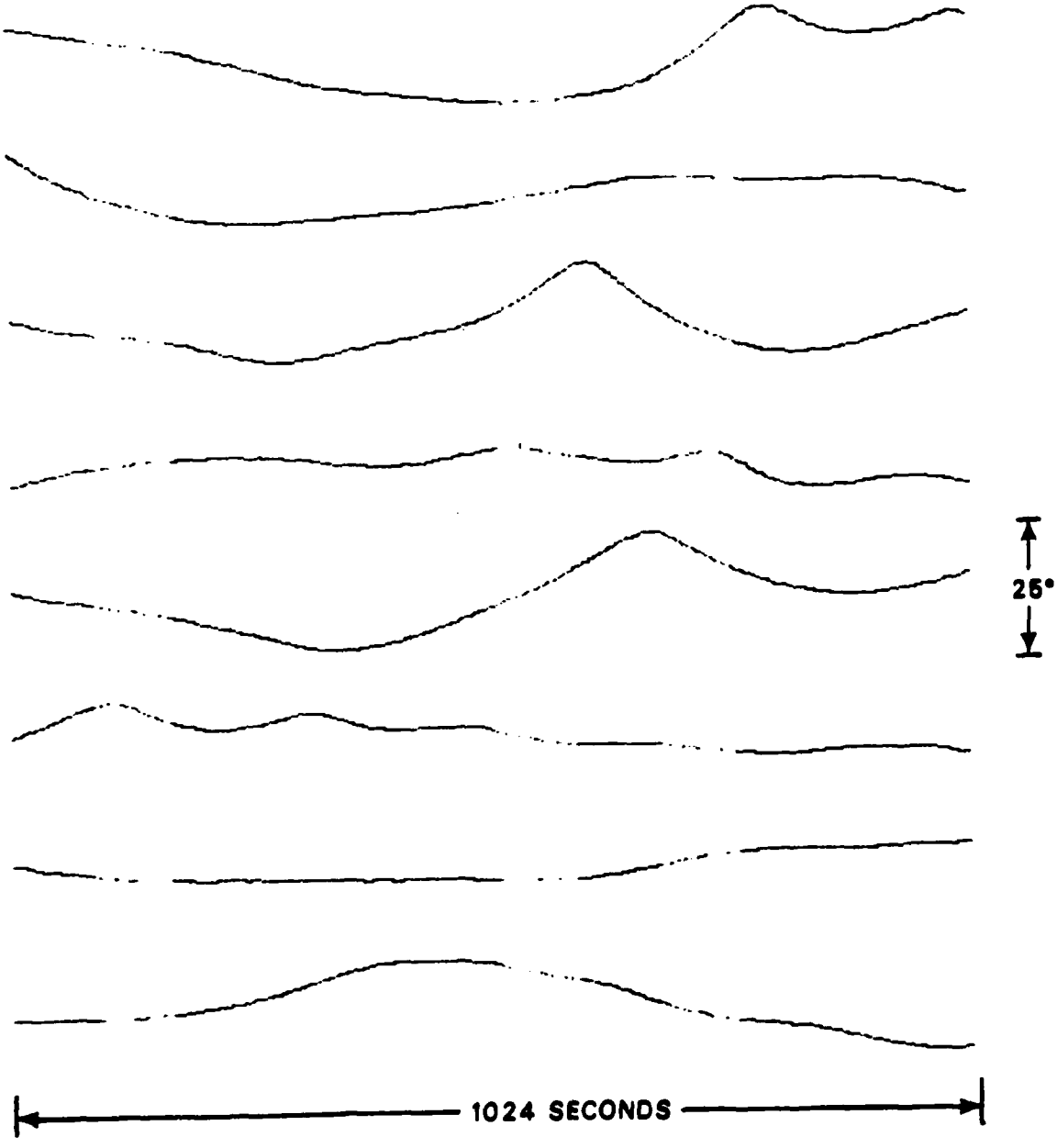
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	50.1	3.8	2.9	1.6	-0.1	0.7	1.3	-3.5	-2.9	-2.1
ANGLE −23°	-4.5	-4.1	-3.9	-4.2	-4.8	-5.0	-4.6	-4.4	-5.2	-4.9
	-4.8	-4.8	-4.8	-4.9	-4.9	-4.9	-4.9	-4.9	-4.9	
16	50.4	3.7	3.0	2.2	1.2	1.3	1.4	-3.4	-1.4	-2.5
−30°	-3.6	-3.5	-4.1	-4.5	-4.2	-4.2	-4.1	-4.5	-4.3	-4.5
	-4.3	-4.5	-4.5	-4.4	-4.6	-4.4	-4.6	-4.5	-4.5	
17	50.6	4.0	3.3	2.5	1.5	1.5	1.4	-2.6	-1.9	-1.9
−37°	-3.1	-3.3	-2.5	-3.3	-3.6	-3.7	-3.6	-4.1	-3.9	-4.1
	-4.0	-4.0	-4.2	-4.1	-4.1	-4.1	-4.2	-4.2	-4.1	
18	50.8	3.7	3.0	2.3	1.4	1.6	1.8	-2.0	-0.9	-1.7
−44°	-2.9	-3.1	-2.5	-3.5	-3.6	-3.3	-3.7	-3.7	-3.7	-3.8
	-3.7	-3.9	-4.0	-3.7	-3.9	-3.8	-3.8	-3.9	-3.8	
19	51.1	4.3	3.6	2.7	1.7	1.7	1.7	-0.8	-0.3	-0.3
−53°	-2.8	-1.8	-2.2	-2.6	-3.1	-2.8	-3.0	-3.1	-3.1	-3.3
	-3.2	-3.3	-3.1	-3.2	-3.3	-3.3	-3.3	-3.3	-3.3	
20	51.3	5.9	5.4	4.8	4.2	3.8	3.4	1.6	1.5	3.2
−64°	-1.5	-0.1	0.1	0.0	-0.6	-1.3	-1.7	-1.8	-2.0	-2.3
	-2.4	-2.3	-2.3	-2.3	-2.3	-2.4	-2.4	-2.5	-2.4	
21	51.3	5.5	5.0	4.5	3.9	3.2	2.4	0.9	1.5	1.7
−84°	-2.0	-1.2	-0.9	-1.4	-1.6	-1.6	-1.9	-1.9	-2.1	-2.3
	-2.2	-2.3	-2.2	-2.2	-2.4	-2.6	-2.4	-2.5	-2.4	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8C

BEARING VS TIME

MEAN & VAR.	309.5	32.70	308.8	10.48	305.7	20.15	312.3	5.43
305.9	32.13	310.2	10.05	304.7	5.29	310.6	28.66	

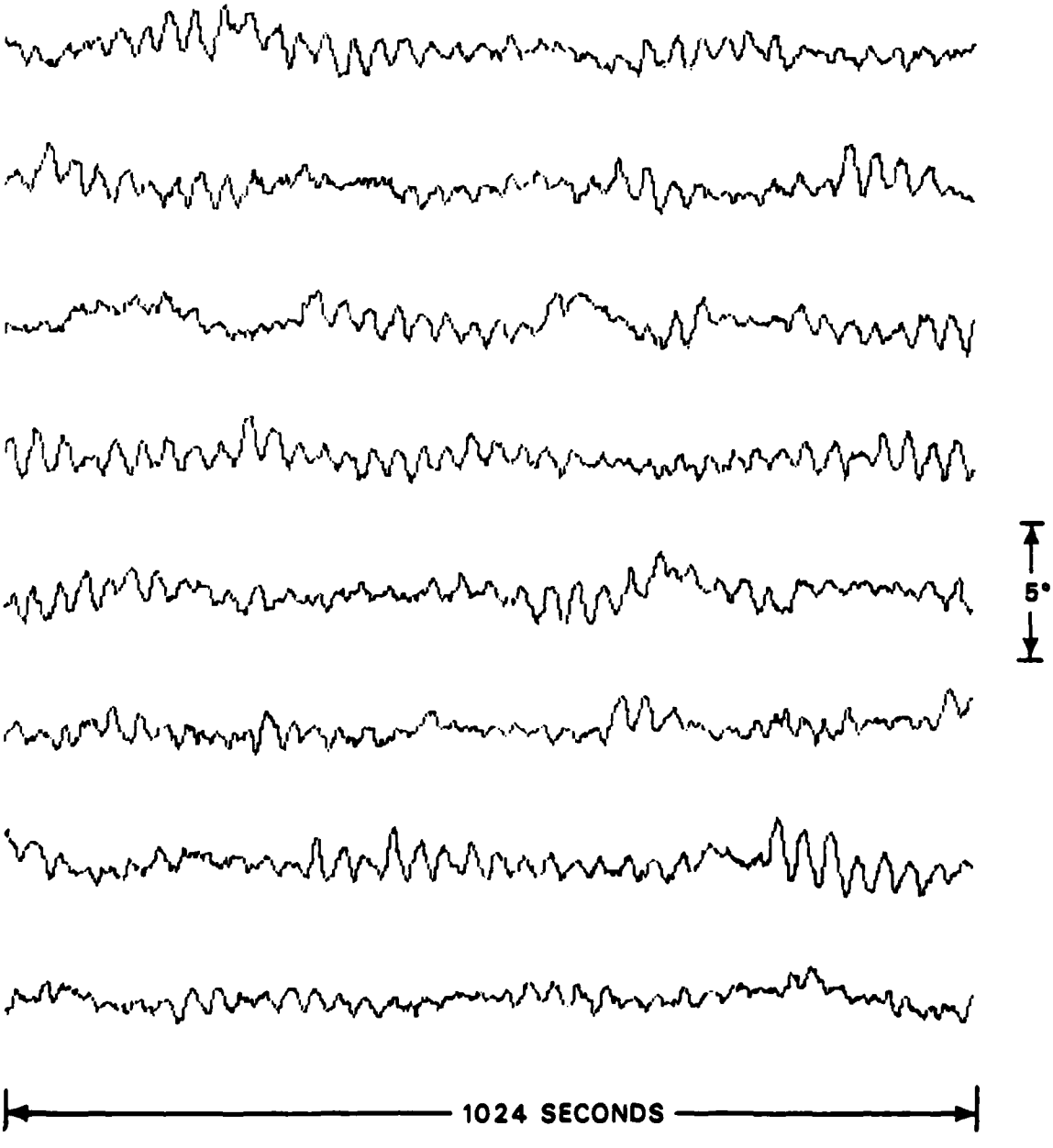


MPL-M-4780

GROUP 8C

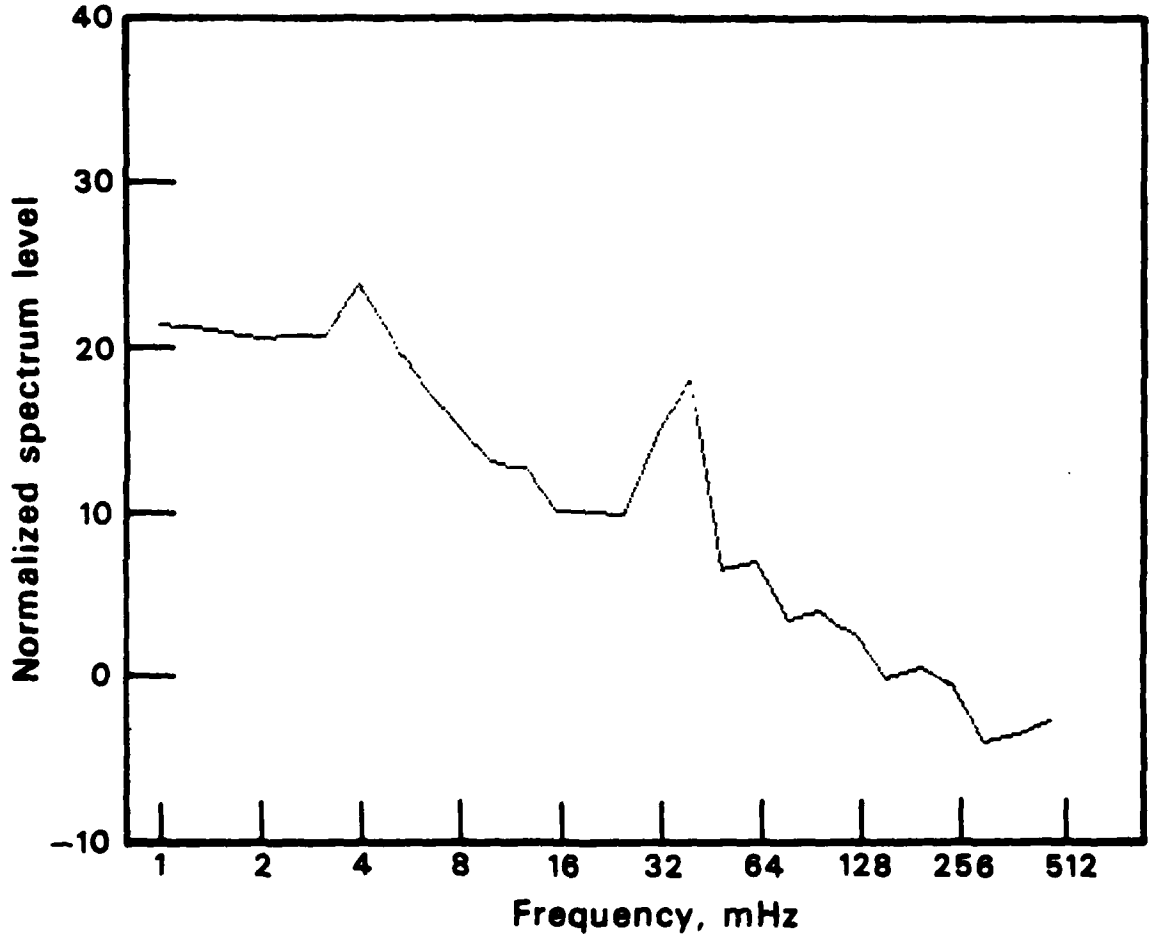
ELEVATION VS TIME

MEAN & VAR							
92.3	0.15	92.3	0.08	92.4	0.16	92.3	0.06



MPL-M-4781

GROUP 8C



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 8D

Environmental Summary

8 June 1978

Tapes	Start time	Code
LTA/LOG	18:28:01	08D
STA	18:28:38	08K
STA	19:30:39	08L

Low Band Filter

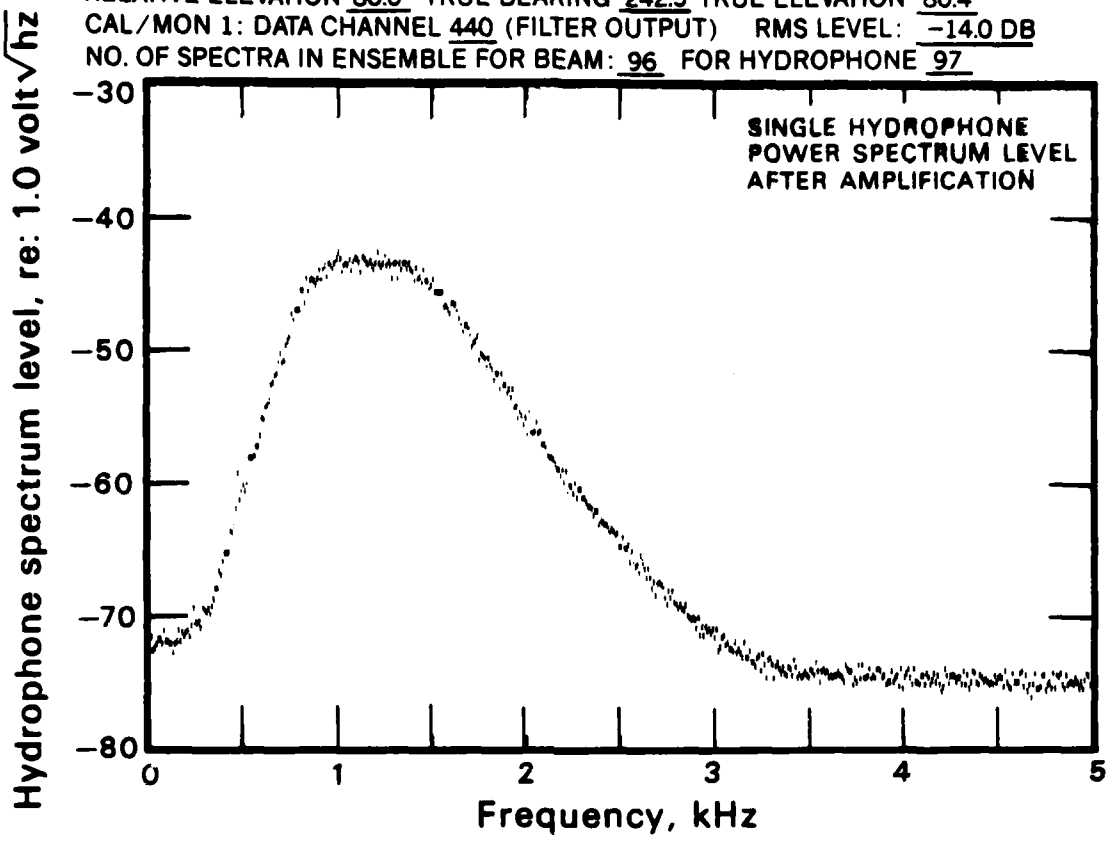
Environment

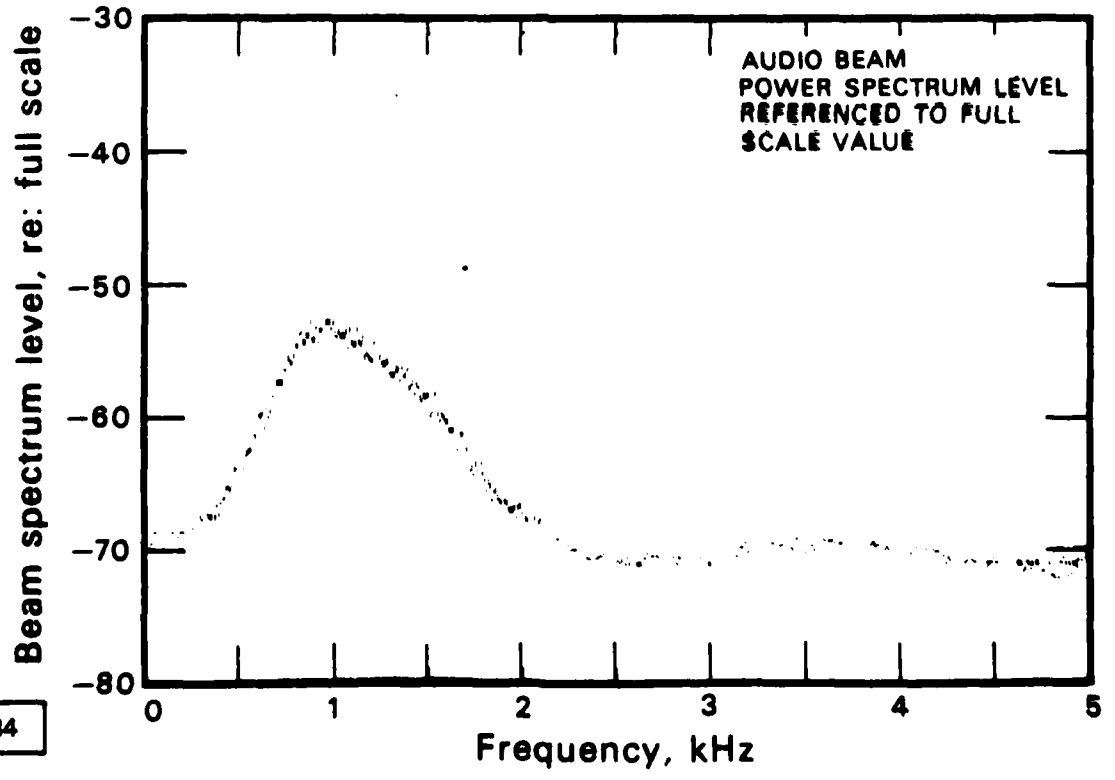
Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
18:00	2200	14	340	5-7	6-8	NW	Big chop
20:00	2200	16	330	"	"	"	No targets

MPL-M-4783

08-JUN-78 18:48:54 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 297.3
RELATIVE ELEVATION 80.0 TRUE BEARING 242.5 TRUE ELEVATION 80.4
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: −14.0 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 97

GROUP 8D





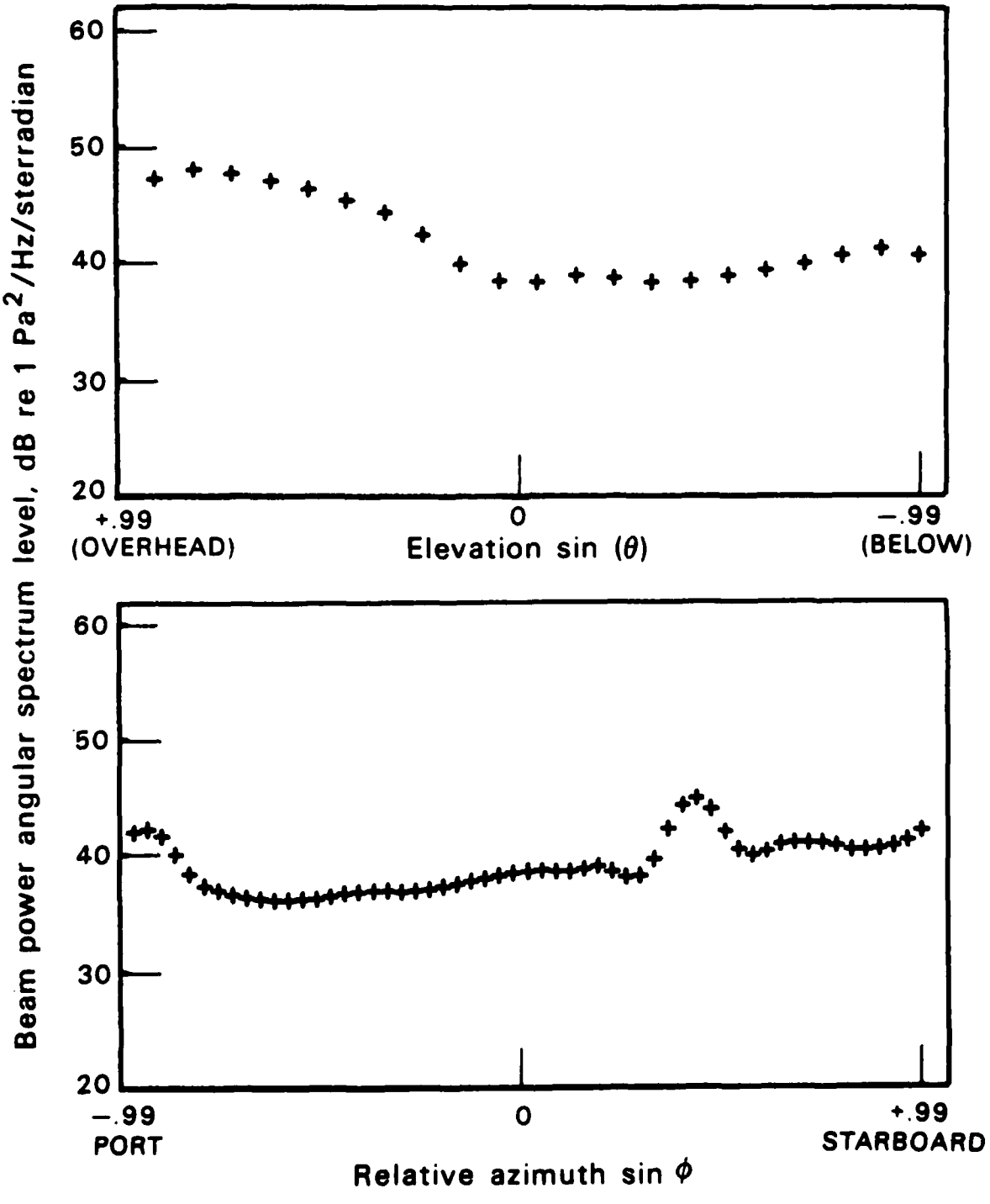
MPL-M-4784

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 8D

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS

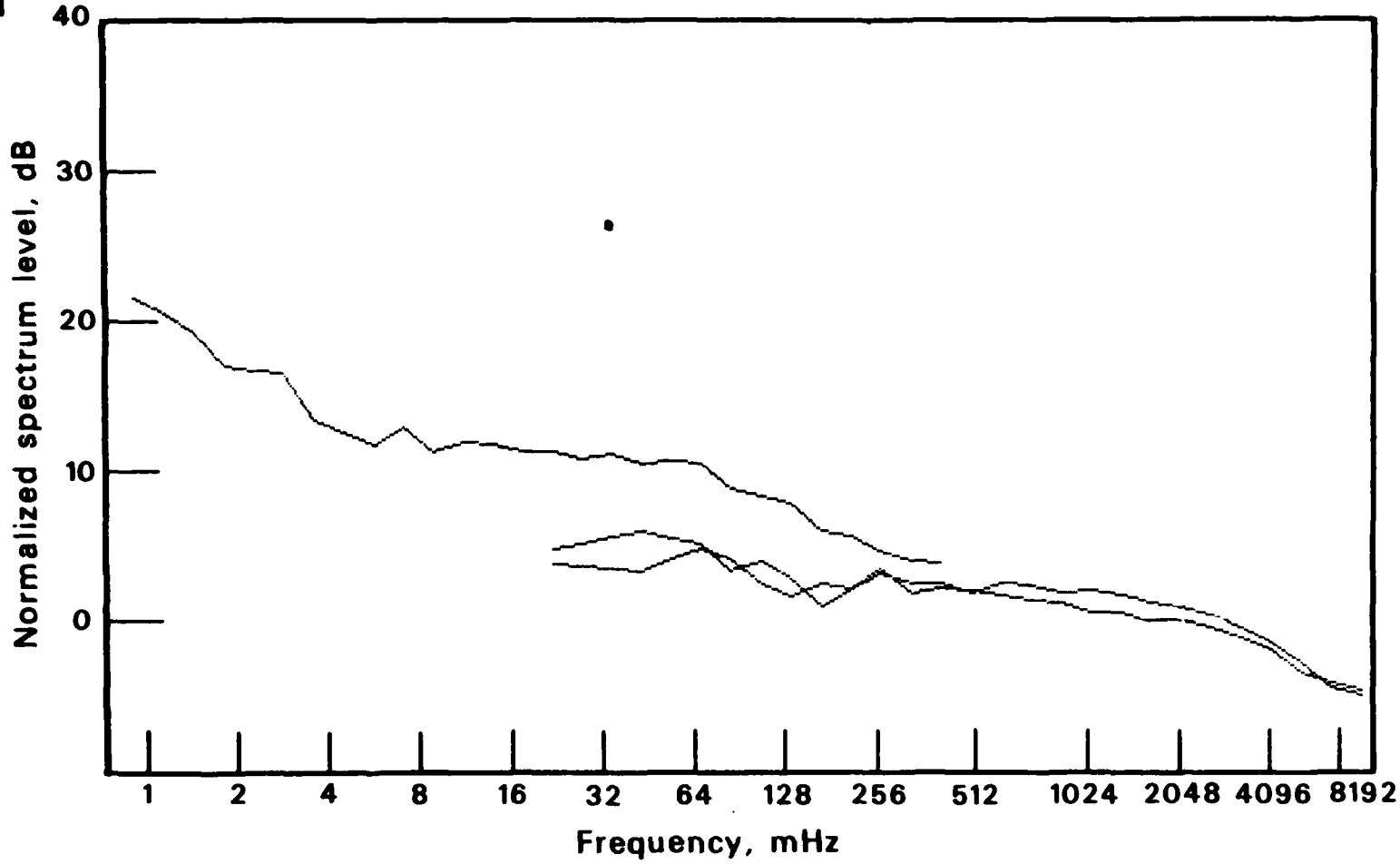
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4785

MPL-M-4786

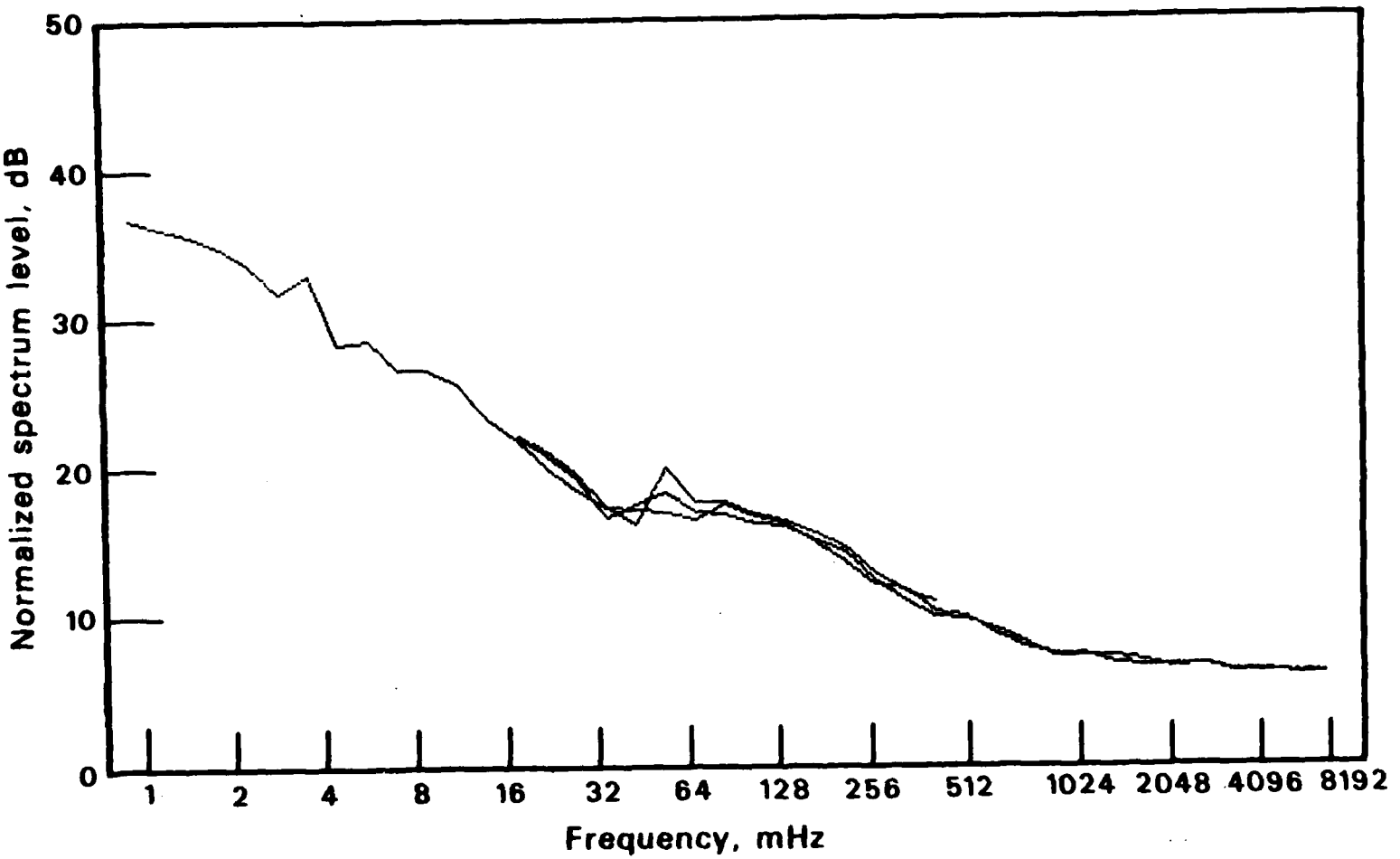
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 8D

MPL-M-4787

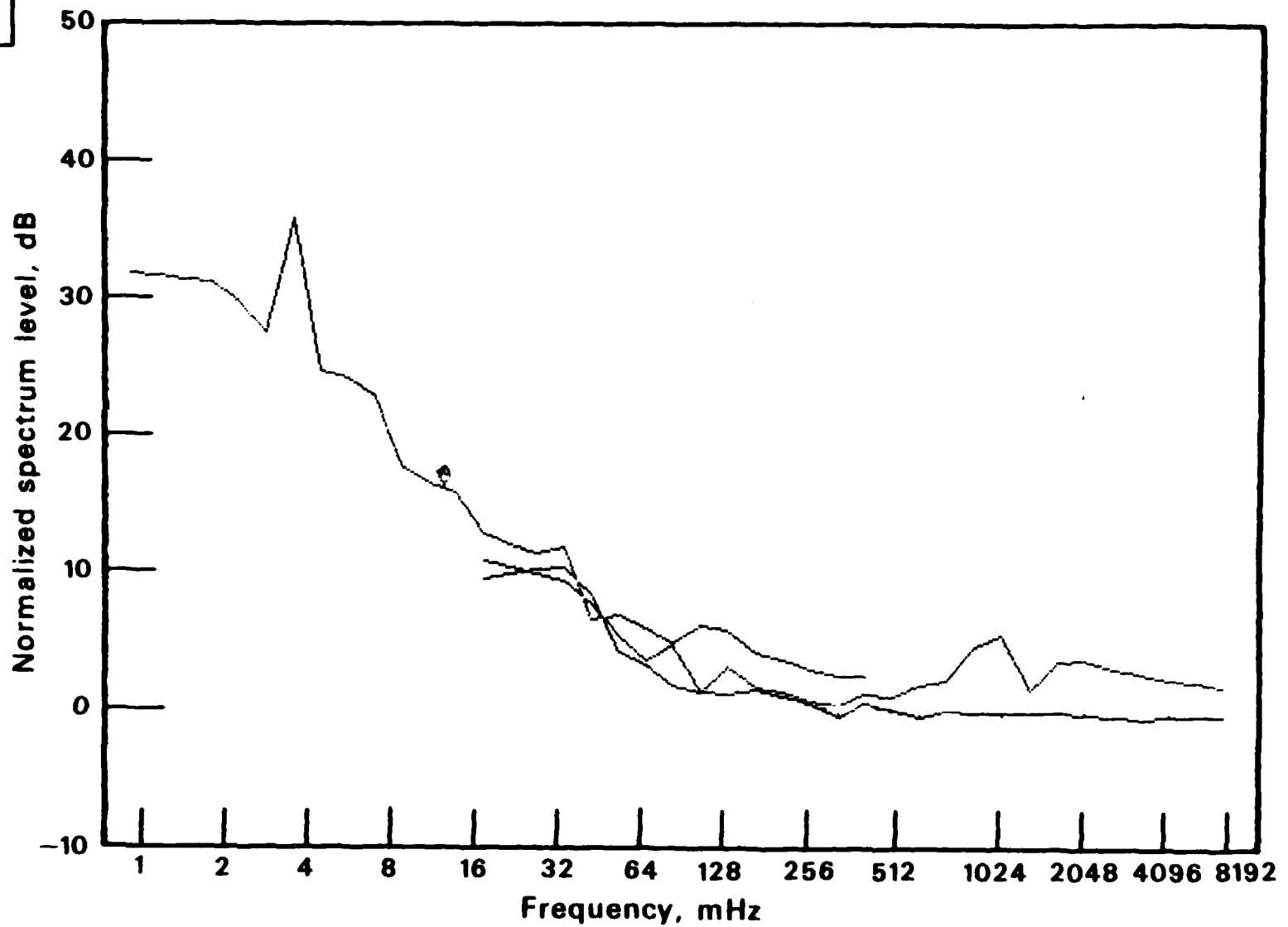
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8D

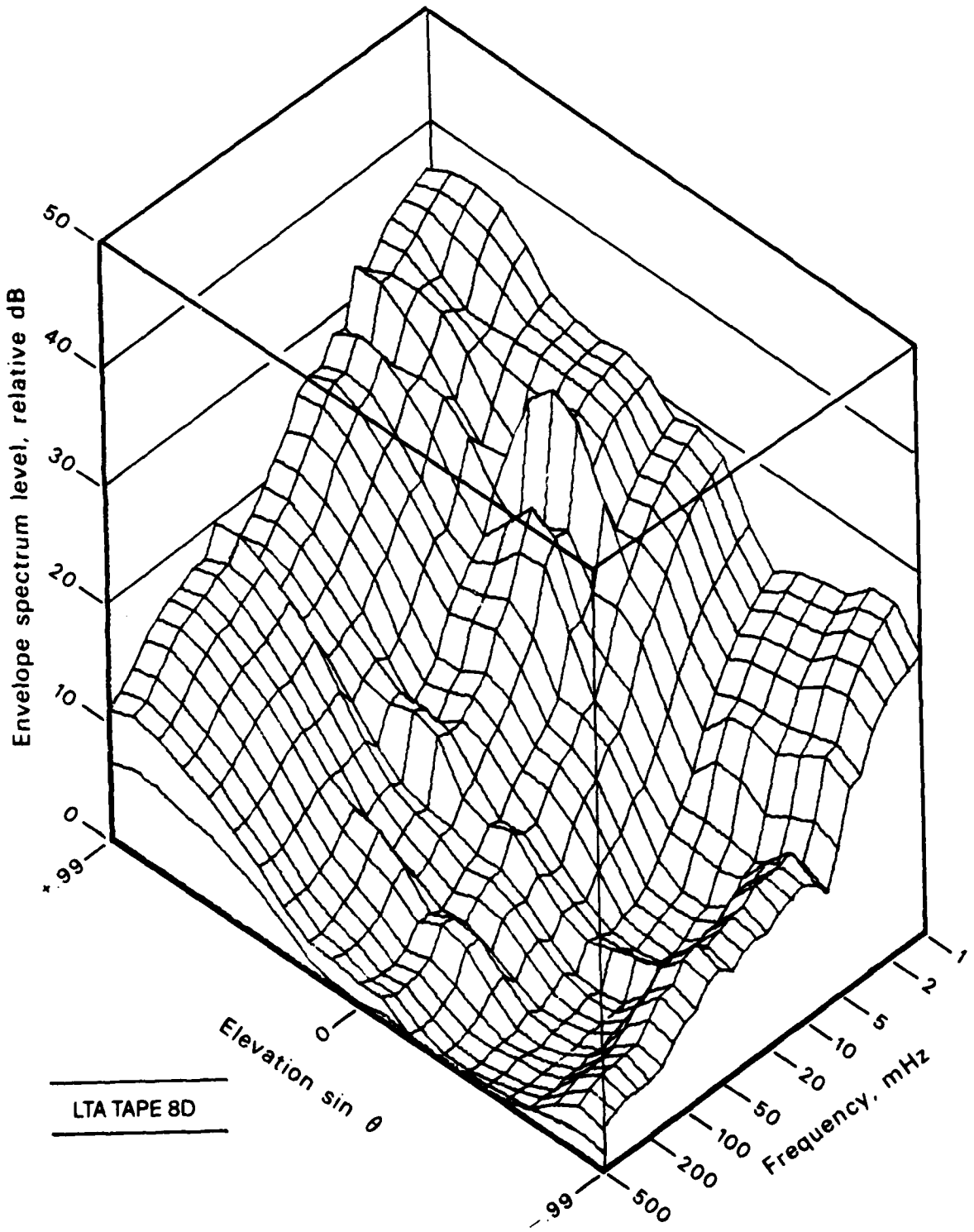
MPL-M-4788

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 8D

GROUP 8D

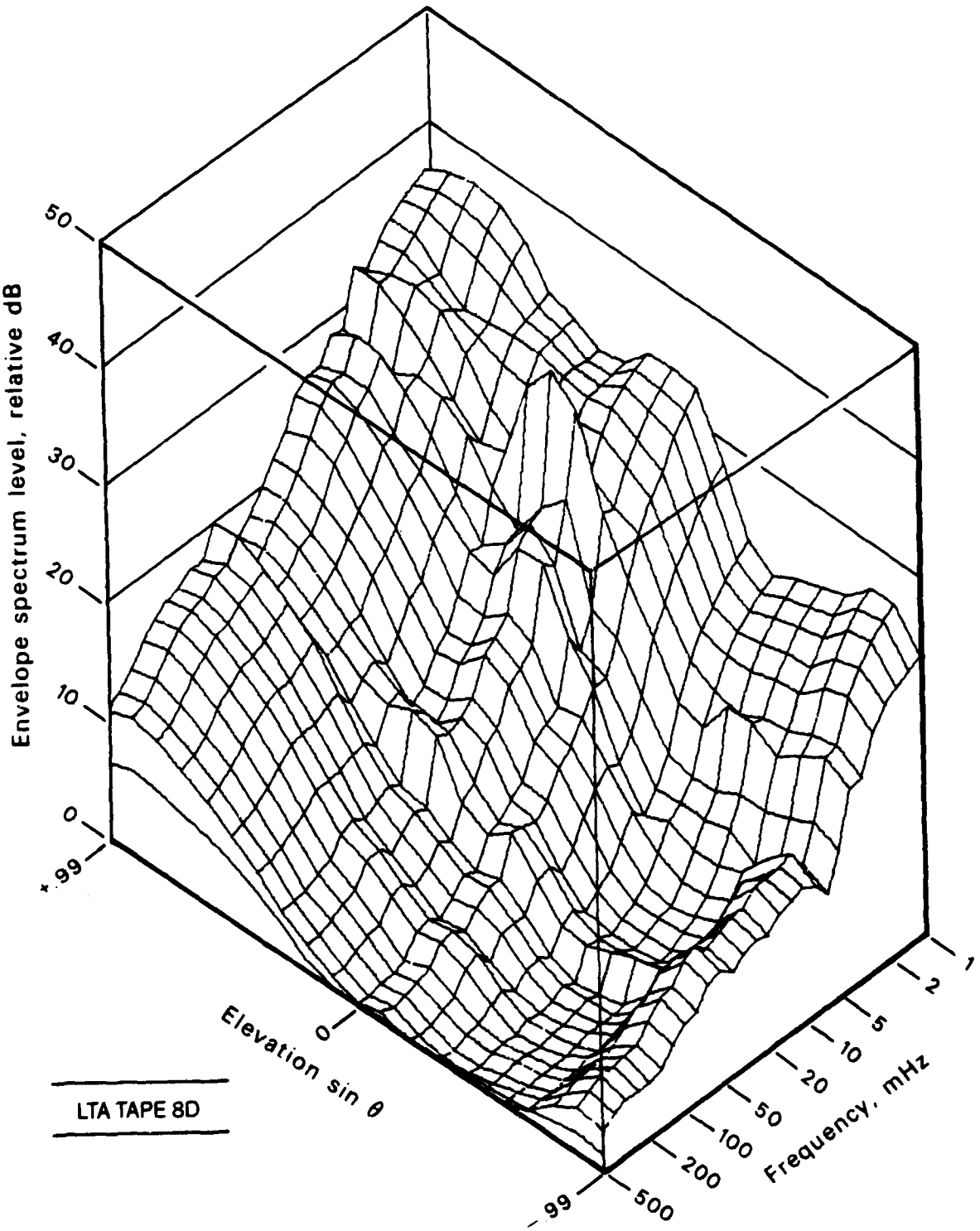


LTA TAPE 8D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4789

GROUP 8D

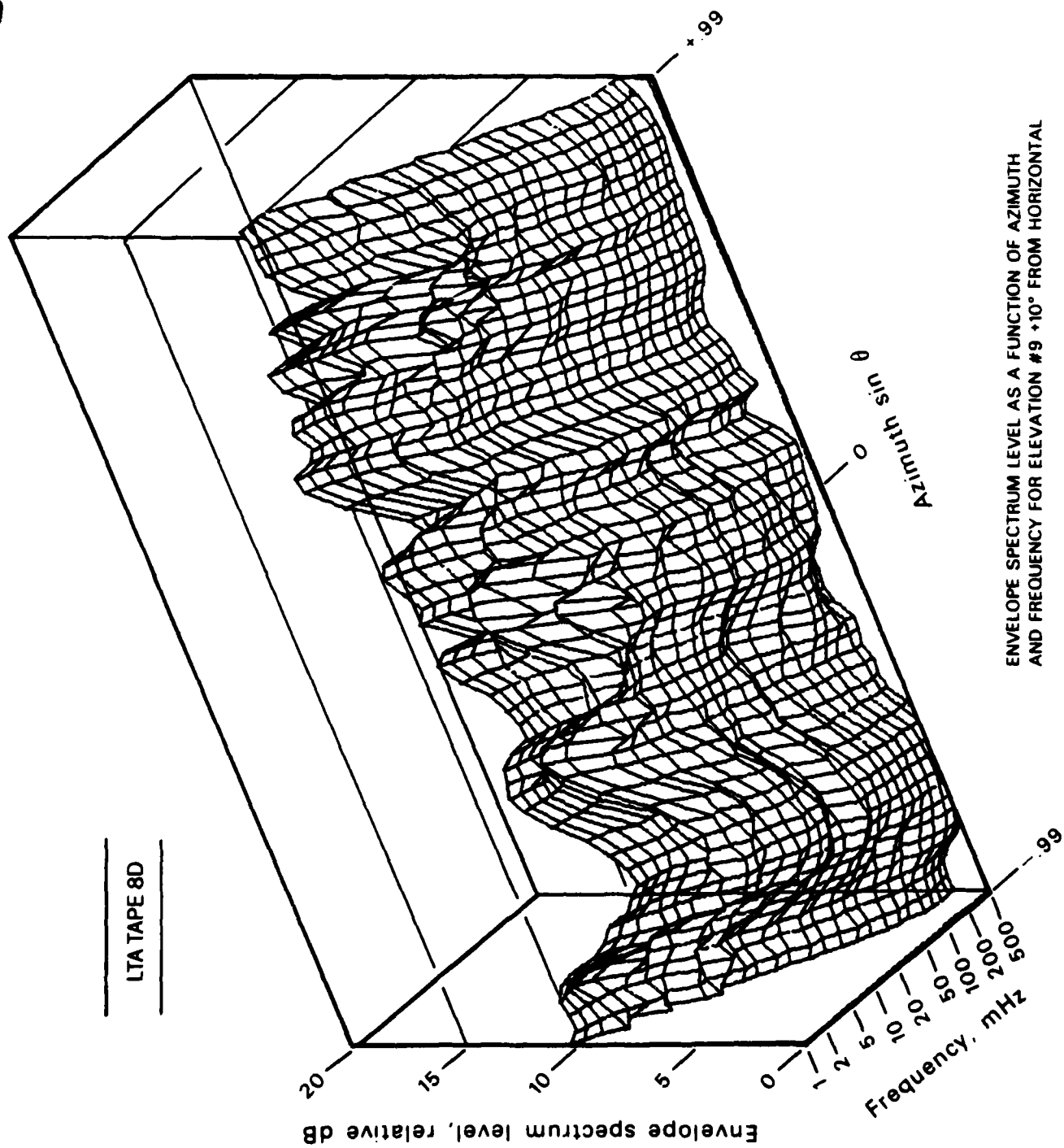


LTA TAPE 8D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

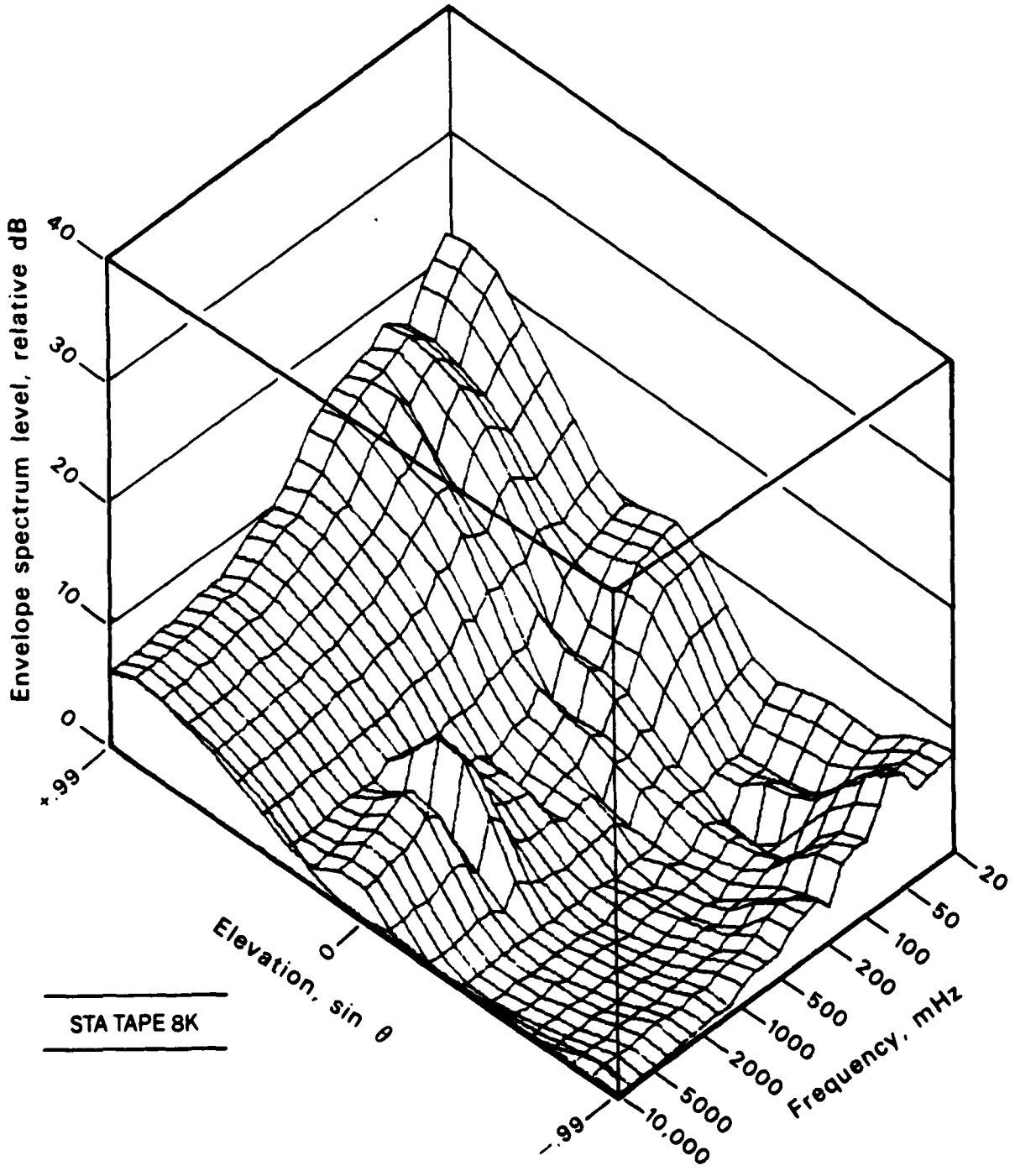
MPL-M-4790

GROUP 8D



MPL-M-4791

GROUP 8D

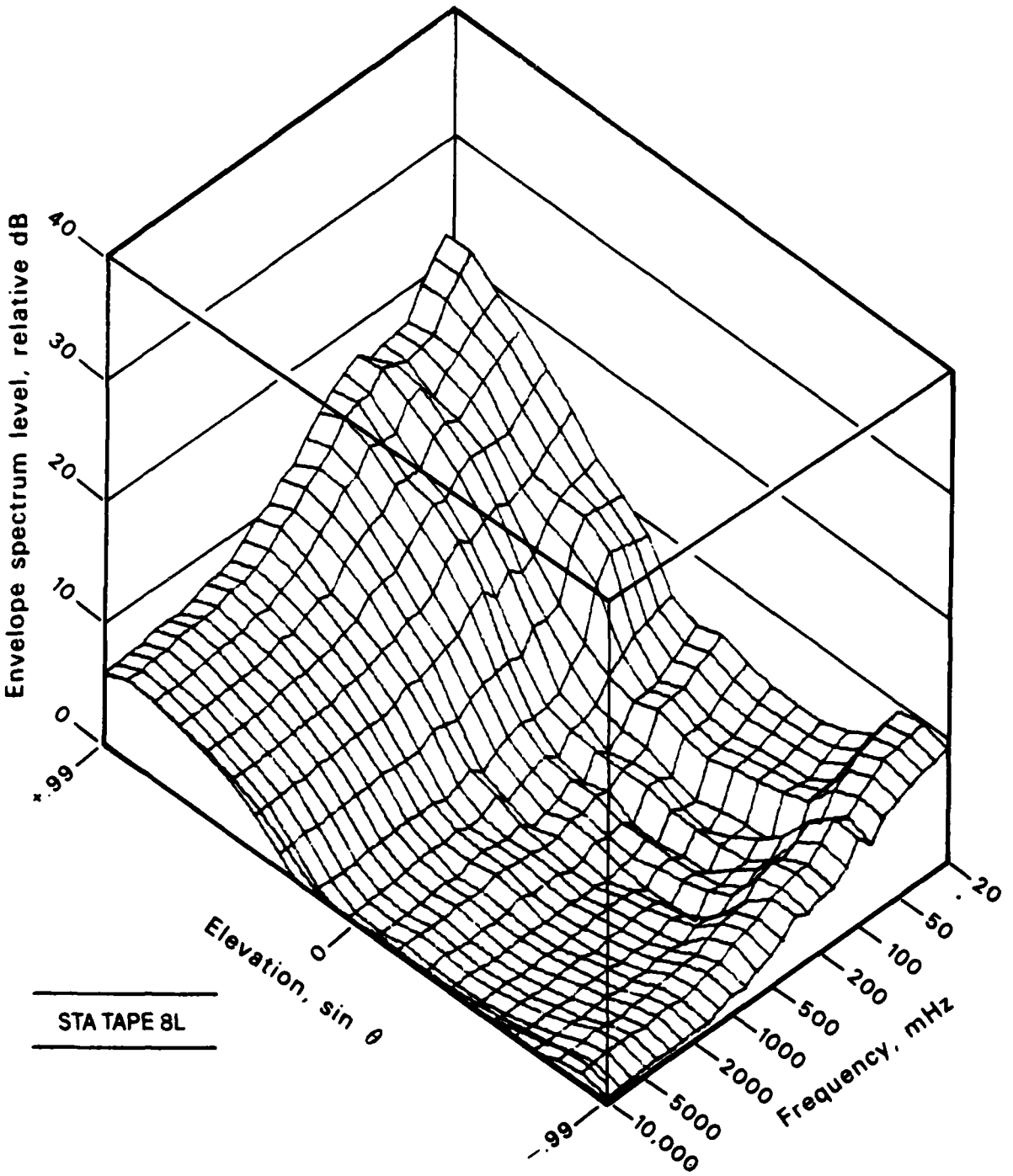


STA TAPE 8K

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET

MPL-M-4792

GROUP 8D



STA TAPE 8L

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4793

GROUP 8D

LTA TAPE 8D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.7	37.2	36.6	36.0	35.2	34.0	32.2	33.3	28.7	29.0
ANGLE +84°	27.1	27.0	26.1	23.7	22.2	20.4	18.8	17.7	16.5	20.3
	18.0	18.0	17.2	16.8	15.9	14.8	13.2	11.9	11.2	
2	71.4	38.2	37.4	36.5	35.2	34.4	33.3	33.2	28.4	30.4
+64°	27.8	27.8	26.5	24.5	22.4	20.6	19.6	18.2	17.1	20.6
	19.1	18.6	17.7	17.3	16.6	15.4	13.8	12.5	11.9	
3	71.2	38.5	37.4	35.8	33.2	33.3	33.4	31.8	28.4	29.9
+53°	27.7	27.0	25.2	23.8	21.3	19.5	18.9	17.5	16.5	19.4
	18.5	17.8	17.0	16.6	15.8	14.6	13.1	11.9	11.4	
4	70.6	38.1	36.8	35.0	31.6	32.3	32.9	30.1	28.9	28.3
+44°	25.6	24.7	22.8	21.0	17.7	17.7	17.0	15.9	15.5	18.0
	16.7	16.1	15.6	15.1	14.3	13.3	11.8	10.9	10.4	
5	70.0	36.4	35.3	33.8	31.6	31.2	30.8	27.6	28.7	26.1
+37°	23.0	22.5	20.8	18.7	17.6	15.5	15.1	14.2	13.8	16.2
	15.0	14.2	14.1	13.6	12.7	11.6	10.4	9.6	9.3	
6	69.2	33.6	33.1	32.6	31.9	30.3	27.6	25.1	26.6	22.8
+30°	20.2	20.0	18.4	15.7	14.0	12.7	13.5	12.6	11.4	13.1
	12.4	11.8	11.8	11.5	10.4	9.5	8.5	7.9	7.8	
7	68.2	32.9	32.6	32.3	32.0	30.0	26.1	25.6	23.4	20.2
+23°	18.9	17.4	15.9	12.9	11.4	10.5	12.2	11.9	9.0	10.2
	9.9	9.4	9.4	9.1	8.0	7.3	6.5	6.2	6.2	
8	66.9	32.4	32.2	32.0	31.8	30.1	27.2	32.0	21.3	22.9
+17°	20.1	17.9	16.6	13.1	12.2	10.2	12.2	12.7	7.3	7.9
	7.5	6.7	8.2	7.0	5.6	5.0	4.2	4.2	4.2	
9	65.2	32.9	32.6	32.2	31.8	30.8	29.4	34.3	23.3	25.6
+12°	22.5	19.2	17.3	14.4	13.1	11.8	11.6	12.0	6.6	6.9
	6.0	5.3	7.7	6.1	4.5	3.7	3.1	2.7	2.7	
10	64.5	32.2	31.8	31.4	31.0	29.6	27.7	32.9	24.3	24.4
+6°	22.7	17.5	15.5	13.6	11.7	11.0	9.0	8.1	6.4	6.2
	4.9	4.2	6.0	5.1	3.3	2.7	2.5	2.2	2.5	
11	64.4	30.0	29.3	28.5	27.6	26.3	24.4	27.4	20.5	18.9
0°	18.5	13.6	12.1	11.0	9.8	8.9	6.9	7.2	5.5	4.9
	3.8	3.0	3.4	3.3	1.8	1.3	1.3	1.5	2.0	
12	64.7	30.6	30.0	29.2	28.2	26.8	24.7	22.6	20.6	16.6
−6°	14.1	13.4	11.5	10.7	9.5	7.4	7.1	8.2	5.6	5.4
	4.6	3.2	4.5	4.5	2.4	1.9	1.6	1.6	2.1	
13	64.5	29.5	28.8	27.9	26.8	25.4	23.4	20.9	19.0	15.5
−12°	12.7	12.2	10.3	9.2	7.7	5.2	5.2	5.8	4.4	4.6
	4.1	2.1	4.2	3.9	1.5	0	0.3	0.1	0.5	
14	64.4	25.2	24.4	23.5	22.3	20.9	19.0	16.8	14.2	11.8
−17°	9.6	9.2	6.9	6.2	5.4	3.5	3.9	3.8	2.4	3.0
	2.6	1.1	2.3	1.7	0.4	-0.2	-0.7	-0.6	-0.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8D

LTA TAPE 8D

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	64.4 7.1 0.9	22.6 5.4 0.1	21.8 3.9 0.7	20.8 3.1 −0.1	17.5 2.8 −0.3	18.1 2.3 −0.3	16.1 2.7 −0.7	13.5 3.0 −0.7	10.5 0.8 −0.5	8.5 1.6
16 −30°	64.7 7.0 0.6	24.0 4.2 0.4	23.2 3.6 0.3	22.1 3.1 −0.2	20.8 2.5 −0.0	19.3 2.1 0.3	16.9 2.9 −0.2	16.1 3.7 −0.2	13.1 0.7 −0.2	8.7 1.1
17 −37°	65.0 6.7 1.0	24.5 4.2 1.0	23.7 3.9 0.7	22.6 2.8 0.6	21.2 2.5 0.5	19.6 2.5 0.5	17.2 3.1 0.3	16.4 4.4 0.5	12.9 1.3 0.4	8.5 1.2
18 −44°	65.3 7.3 2.6	25.0 5.9 2.4	24.1 5.1 1.7	23.0 4.4 1.8	21.6 3.8 1.5	20.0 4.2 1.5	17.3 4.0 1.3	15.7 5.1 1.3	11.3 3.4 1.1	7.9 3.2
19 −53°	65.7 10.2 6.6	26.9 9.6 6.3	26.0 9.6 5.1	24.9 9.4 4.2	23.4 8.0 4.0	21.5 8.1 3.9	18.1 7.6 3.8	17.0 7.7 3.3	12.5 8.1 3.0	9.4 8.0
20 −64°	66.1 12.4 8.6	27.2 12.0 8.3	26.3 11.9 7.2	25.3 11.9 5.8	24.0 10.7 5.6	22.1 10.8 5.5	18.8 10.3 5.5	18.3 9.6 5.0	13.6 10.5 4.3	10.7 10.0
21 −84°	65.7 11.1 7.9	24.1 11.8 7.5	23.5 11.3 6.6	22.9 10.9 5.2	22.1 10.0 4.9	20.4 10.3 4.9	17.5 9.8 4.9	17.2 9.0 4.4	12.6 9.9 3.8	9.6 9.4

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 8D

LTA TAPE 8D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.7	37.2	36.6	36.0	35.2	34.0	32.2	33.3	28.7	29.0
ANGLE +84°	27.1	27.0	26.1	23.7	22.2	20.4	18.8	17.7	16.5	20.3
	18.0	18.0	17.2	16.8	15.9	14.8	13.2	11.9	11.2	
2	71.4	38.2	37.4	36.5	35.2	34.4	33.3	33.2	28.4	30.4
+64°	27.0	27.8	26.5	24.5	22.4	20.6	19.6	18.2	17.1	20.6
	19.1	18.6	17.7	17.3	16.6	15.4	13.8	12.5	11.9	
3	71.2	38.6	37.4	35.9	33.4	33.6	33.8	31.8	27.9	30.1
+53°	27.9	26.9	25.1	23.8	21.2	19.4	18.9	17.3	16.7	19.2
	18.5	17.8	17.0	16.6	15.7	14.7	13.0	11.9	11.4	
4	70.6	38.3	37.0	35.1	31.7	32.5	33.1	30.1	29.0	28.4
+44°	25.6	25.1	22.6	21.2	19.7	18.0	17.0	16.0	15.6	17.8
	16.9	16.1	15.6	15.2	14.3	13.2	11.7	10.8	10.3	
5	70.0	36.7	35.6	34.2	32.0	31.4	30.8	27.8	28.6	26.1
+37°	23.7	22.7	20.4	19.0	17.8	15.5	15.2	14.3	14.0	16.0
	15.0	14.2	14.1	13.7	12.7	11.6	10.4	9.6	9.1	
6	69.2	33.7	33.3	32.8	32.2	30.5	27.7	25.4	26.9	22.7
+30°	21.6	19.9	17.4	16.4	14.2	12.5	13.5	12.7	11.4	13.0
	12.5	11.8	11.8	11.5	10.4	9.4	8.5	7.8	7.5	
7	68.2	33.0	32.7	32.5	32.3	30.2	25.9	25.9	23.7	19.6
+23°	19.8	16.8	14.4	13.4	11.3	10.2	12.3	11.9	9.1	10.1
	9.9	9.3	9.3	9.0	7.9	7.2	6.4	6.1	5.9	
8	66.8	31.6	31.6	31.6	31.6	29.6	25.8	33.1	21.5	21.2
+17°	19.2	16.3	14.7	13.8	11.5	10.3	12.1	12.8	7.2	7.8
	7.2	6.6	7.2	6.7	5.3	4.8	4.2	4.0	3.9	
9	65.2	32.0	31.8	31.6	31.4	29.9	27.8	36.0	24.9	24.3
+12°	23.0	18.1	16.8	16.0	13.1	12.1	11.6	12.1	6.7	7.1
	6.0	5.1	6.2	5.9	4.2	3.7	3.1	2.5	2.6	
10	64.4	34.3	33.6	32.9	31.9	30.3	27.6	34.0	27.0	22.1
+6°	23.0	16.8	15.5	14.7	11.8	11.2	8.7	7.8	5.3	5.9
	4.6	3.7	4.6	4.4	2.6	2.4	1.8	1.2	1.2	
11	64.3	34.4	33.5	32.3	30.6	29.0	26.3	26.5	19.0	16.2
0°	18.1	12.9	12.2	11.4	8.8	7.9	6.9	6.5	4.2	4.6
	3.4	2.2	3.1	2.7	1.1	0.7	0.5	0.3	0.5	
12	64.6	34.1	33.0	31.5	29.2	27.8	25.5	22.3	18.1	15.3
−6°	15.1	13.3	11.6	10.6	8.6	7.5	7.8	8.0	4.9	4.8
	3.9	2.7	3.5	3.2	1.8	1.3	1.0	0.7	1.0	
13	64.5	29.1	28.0	26.7	24.7	23.2	20.9	18.8	14.5	11.9
−12°	10.3	10.7	9.5	7.9	5.9	4.6	5.8	5.4	3.2	3.4
	3.1	1.4	2.9	2.4	0.8	0.3	-0.1	-0.3	0.0	
14	64.3	24.0	23.1	22.0	20.5	19.3	17.5	14.6	10.9	8.7
−17°	7.2	8.1	6.4	4.7	3.7	2.6	3.5	2.9	1.1	1.6
	1.3	0.4	1.2	0.7	-0.1	-0.4	-0.8	-0.8	-0.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 8D

LTA TAPE 8D

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	64.4 8.1 0.3	22.3 6.1 −0.1	21.6 4.3 0.1	20.9 3.3 −0.4	19.9 2.7 −0.4	18.5 2.2 −0.4	16.2 2.7 −0.8	13.9 2.7 −0.7	10.4 0.3 −0.5	8.9 0.8
16 −30°	64.7 7.1 0.6	23.5 5.0 0.3	22.7 3.7 0.4	21.6 3.5 −0.1	20.3 2.8 0.0	18.6 2.2 0.2	15.7 2.9 −0.2	17.1 3.5 −0.2	10.6 0.6 −0.1	8.8 0.9
17 −37°	65.0 7.1 1.1	24.2 5.2 1.1	23.3 4.3 0.8	22.3 3.7 0.6	20.9 2.9 0.6	19.3 2.7 0.5	16.8 3.3 0.4	17.1 4.4 0.5	11.7 1.3 0.5	9.3 1.1
18 −44°	65.3 8.1 2.6	24.9 6.2 2.3	24.0 5.3 1.8	22.8 4.4 1.9	21.1 4.2 1.5	19.6 3.9 1.4	17.2 4.2 1.3	15.6 5.0 1.3	11.8 3.4 1.2	7.9 2.8
19 −53°	65.7 10.6 6.6	27.0 9.7 6.2	26.1 10.2 5.2	24.9 9.4 4.3	23.3 8.1 4.0	21.4 7.9 3.9	18.2 7.7 3.8	17.1 7.6 3.3	12.6 8.0 3.1	9.4 7.7
20 −64°	66.1 12.4 8.6	27.2 12.0 8.3	26.3 11.9 7.2	25.3 11.9 5.8	24.0 10.7 5.6	22.1 10.8 5.5	18.8 10.3 5.5	18.3 9.6 5.0	13.6 10.5 4.3	10.7 10.0
21 −84°	65.7 11.1 7.9	24.1 11.8 7.5	23.5 11.3 6.6	22.9 10.9 5.2	22.1 10.0 4.9	20.4 10.3 4.9	17.5 9.8 4.9	17.2 9.0 4.4	12.6 9.9 3.8	9.6 9.4

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 8D

GROUP 8D

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	66.5	42.6	41.3	39.3	35.7	37.0	38.1	31.8	34.1	28.0
ANGLE −71.3°	26.2	27.6	25.1	23.7	21.5	20.3	17.8	16.2	14.5	13.1
	11.7	10.0	8.8	8.6	7.1	6.9	6.3	6.4	6.7	
2	66.7	40.5	39.7	38.7	37.4	35.9	33.5	32.0	32.8	28.1
−66°	27.7	25.3	23.4	22.8	20.3	19.3	16.7	15.9	14.0	11.6
	11.0	9.7	8.1	7.9	7.0	6.4	6.4	6.6	6.8	
3	66.2	40.5	40.1	39.7	39.2	38.2	36.9	34.2	32.4	26.7
−61.6°	28.2	23.3	24.2	23.9	21.9	20.0	16.9	16.0	13.6	12.9
	12.0	9.8	8.5	7.1	7.1	6.0	6.0	6.0	6.3	
4	65.3	41.2	41.7	42.0	42.4	40.1	34.8	32.7	30.6	26.3
−57.8°	27.9	25.0	25.2	23.9	20.3	19.0	16.5	15.8	13.5	12.3
	11.4	9.1	8.0	6.7	5.6	4.8	4.6	4.3	4.6	
5	64.4	39.9	39.5	39.1	38.6	36.2	30.6	31.8	28.4	24.9
−54.3°	23.7	21.9	21.3	19.9	16.7	16.0	13.8	12.8	11.4	9.7
	9.0	7.5	5.9	5.4	3.4	2.6	1.8	1.5	1.7	
6	63.9	36.5	35.4	33.9	31.5	29.9	27.3	30.1	28.3	22.6
−51.1°	22.9	20.3	16.9	16.2	13.0	12.3	11.4	10.0	8.2	7.6
	6.7	7.0	4.7	4.5	2.4	1.0	0.0	−0.3	−0.1	
7	63.7	31.7	30.2	28.0	22.9	22.7	22.4	24.3	22.7	18.1
−48.1°	19.3	16.1	13.9	12.5	10.2	10.0	9.1	7.4	6.1	5.5
	4.6	5.8	3.0	3.2	1.2	0.1	−0.9	−0.9	−0.9	
8	63.6	28.8	27.4	25.3	21.0	20.0	18.8	14.2	12.1	11.1
−45.3°	12.2	11.3	7.3	8.7	6.6	5.9	6.2	5.1	2.7	3.4
	2.6	2.5	0.6	0.5	−0.0	−1.0	−1.5	−1.5	−1.7	
9	63.5	26.9	25.7	24.1	21.4	20.1	18.3	14.5	10.8	9.2
−42.6°	10.9	8.5	6.2	6.3	4.6	4.2	4.9	4.0	1.0	1.8
	1.5	1.0	−0.6	−1.1	−1.4	−1.3	−1.9	−1.9	−1.7	
10	63.4	22.4	21.8	21.0	20.1	18.3	15.1	12.5	9.3	8.5
−40.0°	8.9	6.6	4.7	4.3	3.6	3.2	4.5	4.2	−0.4	0.8
	−0.0	−0.5	−0.8	−1.2	−1.4	−1.8	−2.3	−1.9	−2.0	
11	63.4	20.7	20.0	19.1	18.0	16.1	12.7	14.4	8.5	8.3
−37.5°	7.5	6.5	5.0	3.5	3.1	2.9	3.8	5.3	0.1	0.4
	−0.1	−0.5	−1.0	−1.1	−1.0	−1.7	−2.1	−1.9	−1.9	
12	63.4	18.3	17.7	16.9	16.1	14.0	10.2	13.0	10.3	7.6
−35.1°	8.6	7.3	5.5	3.4	3.8	2.7	3.9	5.6	0.6	1.0
	−0.1	−0.2	−0.5	−1.1	−1.3	−1.7	−2.0	−2.1	−1.8	
13	63.4	19.0	18.2	17.1	15.7	14.7	13.4	12.7	10.4	9.0
−32.8°	7.5	8.5	5.7	5.0	4.7	5.3	5.1	7.0	2.1	2.2
	1.7	0.4	0.3	−0.4	−0.8	−0.9	−1.3	−1.4	−1.5	
14	63.5	21.6	20.4	18.9	16.4	16.1	15.8	16.3	11.3	11.7
−30.5°	7.8	9.7	7.2	6.0	5.1	7.1	8.5	8.9	2.9	4.3
	4.0	3.1	2.7	2.3	1.9	2.0	1.1	0.8	0.9	
15	63.5	24.4	23.2	21.5	18.6	17.8	16.9	20.2	18.2	13.1
−28.3°	11.1	13.6	10.9	8.0	7.2	10.0	11.7	11.9	5.9	6.7
	8.7	5.5	5.8	5.5	4.5	4.8	3.6	3.1	3.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

MPL-M-4798

LTA TAPE 8D

GROUP 8D

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	63.6	29.6	29.0	28.3	27.5	27.2	26.8	28.2	25.7	21.6
ANGLE −26.1°	20.2	18.8	14.7	11.4	12.0	13.7	14.5	14.8	10.1	9.3
	12.0	7.7	8.4	7.1	5.6	5.5	4.1	3.7	3.7	
17	63.7	33.4	33.0	32.6	32.1	32.2	32.4	33.7	31.7	26.3
−24.0°	23.5	20.0	16.6	15.3	13.0	15.3	14.0	14.6	11.0	10.4
	11.7	10.1	9.6	8.1	7.2	6.4	5.7	3.9	3.5	
18	63.7	34.8	34.1	33.3	32.3	33.4	34.3	36.5	33.3	26.2
−21.8°	23.9	22.3	20.5	20.0	15.3	16.4	14.8	15.2	12.9	11.8
	12.9	12.1	11.4	9.2	8.6	7.3	6.5	4.8	4.6	
19	63.7	34.0	32.3	29.7	21.2	28.9	31.5	35.4	32.0	22.4
−19.8°	22.1	22.8	20.4	20.4	15.7	15.5	14.9	14.4	12.7	12.1
	12.9	12.1	10.4	8.8	7.3	6.2	5.5	4.4	3.9	
20	63.7	33.5	32.6	31.5	30.0	29.1	28.1	31.3	29.3	25.8
−17.7°	22.4	19.0	20.2	18.3	16.6	16.1	15.2	14.7	14.1	13.9
	14.5	12.3	9.1	9.1	5.5	5.0	3.6	4.3	3.9	
21	63.7	31.0	30.1	28.9	27.3	26.5	25.6	26.3	25.3	25.4
−15.7°	23.3	21.1	21.3	18.8	17.7	17.1	15.3	15.1	14.4	14.9
	15.5	12.7	8.4	9.6	4.7	4.4	4.4	6.7	6.4	
22	63.8	27.3	26.6	25.8	24.7	23.6	22.0	21.4	18.9	20.5
−13.7°	20.3	20.1	20.4	19.0	18.6	17.2	15.4	14.8	13.4	14.3
	14.6	11.8	7.6	8.8	4.1	4.2	3.9	6.8	7.1	
23	63.9	27.4	27.2	27.0	26.8	24.9	21.5	21.8	17.8	18.5
−11.7°	19.5	19.7	19.6	18.5	19.3	16.3	14.5	14.2	11.7	12.4
	12.2	9.7	6.3	6.7	3.8	3.9	4.2	6.2	6.8	
24	64.0	28.6	28.3	28.0	27.7	25.5	21.0	22.1	15.4	17.7
−9.7°	17.9	19.3	19.6	17.4	18.6	16.1	13.6	13.4	10.6	10.8
	10.0	7.7	5.4	4.9	3.9	3.8	4.4	5.8	6.8	
25	64.1	30.4	29.7	29.0	28.1	26.2	22.9	23.4	18.1	17.3
−7.8°	16.5	17.6	17.6	15.3	16.6	14.9	12.1	11.0	8.6	8.6
	7.1	5.5	3.7	3.0	2.8	2.5	3.2	4.1	6.0	
26	64.2	34.9	33.8	32.4	30.4	29.6	28.6	30.2	27.7	21.8
−5.8°	22.1	17.3	15.0	14.6	14.4	13.2	9.6	8.3	5.9	6.7
	4.7	4.0	3.1	2.1	2.3	2.1	2.5	2.1	3.9	
27	64.3	37.7	36.3	34.2	30.2	32.1	33.4	35.6	31.8	24.3
−3.9°	27.5	18.9	14.9	15.4	13.9	13.5	8.3	7.9	5.8	6.7
	6.0	3.6	3.6	3.4	3.0	2.9	3.2	2.0	2.9	
28	64.5	35.4	34.0	31.9	27.7	31.1	32.9	37.1	26.5	24.1
−1.9°	26.8	13.3	16.9	16.3	13.8	13.0	7.7	8.7	5.9	5.9
	4.9	2.4	3.1	3.4	3.2	2.5	3.5	1.9	2.3	
29	64.5	28.9	28.3	27.5	26.7	26.1	25.4	36.8	30.3	21.5
0°	21.0	19.7	18.3	17.8	12.0	12.5	9.6	8.8	6.1	6.7
	4.5	3.7	3.0	3.0	2.5	3.2	2.2	1.8	2.0	
30	64.6	37.6	36.4	34.8	32.1	32.1	32.1	36.2	35.0	27.1
+1.9°	18.6	18.9	16.1	17.1	11.0	11.6	12.0	7.8	6.8	6.6
	4.4	5.2	3.5	3.1	2.6	4.5	2.3	2.4	1.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D C 7 62 76 7	95 9 60 96 7	1 20 12 1 122	1.51 15 2 154	1.90 19 2 194	2.40 24 2 244	3 02 30 5 307	3 81 38 4 387	4 80 48 4 487	6 05 60 9
AZIMUTH 31 ANGLE +3.9°	64 5 17 3 4 2	46 1 16 2 4 9	35 2 16 7 5 4	33 5 14 7 5 0	31 3 12 2 3 3	31 2 9 5 3 7	31 1 8 9 2 0	32 5 7 9 1 7	32 4 5 8 1 1	25 5 5 4
32 +5.8°	64 5 21 4 7 2	48 2 20 1 5 3	37 2 17 7 9 1	35 1 17 8 9 1	32 0 12 5 4 9	30 1 10 1 2 8	26 7 10 5 2 6	28 9 10 0 1 5	22 8 7 6 1 1	21 2 9 9
33 +7.8°	64 7 23 2 10 0	40 8 22 3 8 5	39 5 20 9 12 3	37 6 20 8 12 2	34 3 15 8 7 7	32 4 13 4 5 6	29 8 13 4 5 5	29 8 11 7 4 3	25 9 11 6 3 7	25 1 13 0
34 +9.7°	64 7 26 7 11 2	39 6 23 9 10 7	38 6 21 0 13 5	37 3 20 3 13 3	35 4 16 7 9 4	33 0 16 3 8 5	27 2 14 2 8 4	29 6 13 7 7 3	28 0 12 6 7 8	27 6 14 6
35 +11.7°	64 5 26 5 10 2	34 5 24 5 9 8	35 0 20 1 12 1	35 4 18 5 11 6	35 8 16 5 8 3	33 2 15 0 7 7	25 4 14 4 7 2	27 2 11 8 6 4	27 5 10 4 6 8	28 1 12 8
36 +13.7°	64 2 22 1 7 7	28 7 21 2 7 2	29 6 19 0 8 3	30 4 15 1 7 4	31 1 12 5 5 3	29 1 11 5 4 7	25.3 11 9 3.8	20 9 9 5 3 5	24 2 7 4 3 4	27 1 8.4
37 +15.7°	64 3 22 4 8 8	31 8 20 0 7 9	30 7 19 8 8 1	29 1 16 4 7 2	26 6 13 9 6 2	26 1 13 2 5 3	25 6 12.2 5 7	25 2 10 6 5 3	25.3 9 5 5 5	25 9 8.0
38 +17.7°	65 1 26 9 12 0	42 3 25 6 10 2	41 2 25 1 8 7	39 8 23 5 7 7	37 7 21.4 6 8	36 0 19 7 6 0	33 3 18.2 5 9	34 3 15.7 5 4	28.6 14 9 5 5	26 6 12 7
39 +19.8°	66 7 30 1 15 2	48 3 28 8 13 1	47 2 29 1 11 3	45 6 27 9 9 9	43 1 25 4 8 3	41 0 24 1 7 5	36 8 21 3 7 1	38 9 19 3 6 7	34 1 18 2 6 4	30 8 16.1
40 +21.8°	68 3 30 9 15 8	49 1 29 4 13 8	47 9 28 6 12 3	46 2 28 0 11 1	43 3 25 9 9 5	41 2 24 7 8 6	37 2 21 3 8 4	38 2 19 8 8 2	35 2 18 8 7 9	31 0 16 8
41 +24.0°	68 8 28 9 14 7	45 2 28 7 12 6	44 1 28 3 11 1	42 6 26 0 11 0	40 4 25 0 9 4	38 9 22 2 8 4	36.8 21 0 8 1	35 5 18 9 8 4	31 7 17 9 7 8	30 4 16 0
42 +26.1°	68 0 28 7 14 5	43 7 28 5 12 5	43 2 27 4 10 8	42 6 25 9 10 0	42 0 25 3 8 8	40 6 24 3 8 2	38 4 21 4 7 2	37 0 19 0 7 4	32 0 18 5 7 0	32 2 15 9
43 +28.3°	66 6 30 3 14 1	46 1 28 1 12 0	45 5 27 5 10 5	44 7 27 3 9 0	43 7 24 6 7 9	41 6 24 9 7 2	37 5 19 5 6 0	35 4 18 6 5 8	34 4 18 1 5 6	30 8 15 3
44 +30.5°	65 6 30 3 12 2	45 1 26 4 9 7	44 5 26 1 8 8	43 8 25 4 7 8	42 7 22 1 6 1	40 7 21 5 5 6	36 1 17 1 4 9	34 1 16 6 4 5	33 7 16 1 4 3	26 9 13 7
45 +32.8°	65 2 29 5 11 0	48 7 26 2 9 6	38 3 23 2 7 7	39 1 22 9 7 1	39 3 21 4 5 4	37 3 19 3 4 8	33 4 16 2 4 3	32 2 15 6 4 2	28 4 15 8 3 8	24 6 13 4

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs AZIMUTH ANGLE, ELEVATION NUMBER 9

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	65.5	44.6	43.0	40.4	33.3	34.8	35.9	34.2	22.4	24.9
ANGLE +35.1°	24.3	24.2	22.9	24.4	20.7	18.2	15.3	14.2	14.1	12.1
	9.8	7.9	7.5	5.8	5.6	4.5	3.7	3.5	3.5	
47	65.9	46.0	44.9	43.4	41.1	39.7	37.8	36.1	27.8	27.6
+37.5°	29.9	23.9	25.0	19.2	20.8	17.5	15.0	14.8	12.4	11.5
	9.2	7.7	7.1	5.9	5.0	4.4	3.8	3.5	3.4	
48	65.9	41.9	40.9	39.8	38.2	37.0	35.6	34.1	25.8	27.3
+40.0°	27.3	26.0	21.5	21.0	21.5	17.5	16.2	15.4	13.8	12.4
	9.5	7.4	6.5	6.6	5.2	3.9	3.6	3.5	3.4	
49	65.9	36.7	36.3	36.0	35.5	34.7	33.7	27.4	22.9	23.6
+42.6°	18.4	19.8	17.9	19.0	16.4	15.1	12.0	10.8	9.7	9.2
	7.0	5.6	5.0	4.2	3.8	2.9	2.7	2.8	2.7	
50	65.9	42.4	41.8	41.0	40.0	37.7	32.3	29.7	21.4	23.3
+45.3°	12.4	19.7	19.9	20.5	14.7	14.9	14.1	11.6	11.6	10.1
	8.8	6.7	5.2	4.3	4.0	3.7	3.4	3.1	2.9	
51	65.8	38.0	37.3	36.4	35.2	32.5	23.3	26.3	18.1	19.9
+48.1°	10.6	17.8	20.1	18.6	16.2	14.5	15.1	12.8	12.4	10.3
	8.9	6.3	5.7	4.6	3.4	3.7	2.7	2.5	2.6	
52	65.6	28.8	28.9	29.0	29.0	26.8	22.1	18.6	15.8	15.4
+51.1°	13.9	16.1	17.5	15.5	15.2	13.3	14.7	12.1	11.8	9.4
	7.4	4.9	5.2	4.9	2.9	2.8	2.7	1.9	2.2	
53	65.6	35.1	33.9	32.3	29.6	28.6	27.4	27.3	22.3	21.2
+54.3°	16.5	16.8	16.9	16.3	15.0	13.5	13.3	11.9	10.9	7.9
	5.4	3.7	4.8	4.3	2.7	2.5	2.9	1.6	1.7	
54	65.6	38.8	37.4	35.4	31.7	30.7	29.4	29.6	25.8	22.6
+57.8°	22.1	18.8	19.4	16.6	16.6	14.4	13.3	12.1	10.7	8.5
	6.3	5.0	5.0	4.2	3.0	2.9	3.0	1.6	1.9	
55	65.8	39.2	37.9	36.2	33.1	32.1	30.8	28.3	27.2	22.8
+61.6°	23.2	20.1	20.8	17.6	17.0	15.0	13.8	11.7	10.8	9.6
	7.4	6.4	5.8	4.4	3.7	3.4	3.1	2.7	2.2	
56	66.1	39.0	38.2	37.2	36.0	35.4	34.7	28.5	30.9	26.8
+66.0°	24.8	22.0	22.1	20.7	19.6	16.8	16.0	13.8	12.6	11.7
	9.2	8.2	7.4	5.3	5.0	4.1	3.7	3.7	3.5	
57	66.6	40.0	40.0	40.0	39.9	38.5	36.2	31.7	32.6	31.9
+71.3°	31.3	27.7	25.8	23.8	24.4	19.9	19.8	17.9	17.0	15.6
	13.3	10.8	10.1	8.0	7.2	6.0	5.6	5.3	5.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 8D

STA TAPE 8K

AGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.6 17.6 8.8	23.6 16.5 8.7	22.4 15.7 8.4	20.8 13.9 8.0	19.2 12.4 8.1	19.1 11.5 7.8	19.8 11.2 7.6	18.6 10.6 7.5	18.4 9.8 7.6	17.8 8.8
2 +64°	58.4 18.2 9.5	24.0 17.2 9.7	22.8 16.0 9.3	21.1 14.2 8.9	19.4 13.4 8.7	19.5 12.2 8.7	20.4 11.9 8.5	19.8 11.4 8.5	19.0 10.6 8.4	18.8 9.9
3 +53°	58.2 17.0 9.1	23.4 16.5 9.4	22.2 14.7 9.1	20.5 13.1 8.8	17.8 13.0 8.4	19.0 11.9 8.6	19.9 11.5 8.2	19.0 10.7 8.3	17.5 10.3 8.2	18.9 9.8
4 +44°	57.6 15.3 8.4	20.7 15.1 8.3	19.7 13.3 8.3	18.5 12.3 8.1	16.8 11.8 7.7	18.1 11.1 7.6	19.1 10.4 7.5	17.5 9.7 7.5	14.8 9.4 7.5	17.2 9.1
5 +37°	57.1 14.6 7.8	18.2 13.2 7.5	17.4 12.4 7.4	16.4 11.1 7.4	15.2 10.5 7.0	16.3 9.6 6.9	17.2 9.4 6.8	16.0 8.9 6.8	12.8 8.2 6.7	14.6 8.2
6 +30°	56.4 12.8 7.0	15.6 10.8 6.6	14.9 11.0 6.4	14.0 9.1 6.2	12.9 9.8 6.1	13.7 8.0 6.0	14.4 8.0 5.9	13.6 7.6 5.9	11.5 6.9 5.6	11.9 7.0
7 +23°	55.4 9.6 5.3	12.8 8.0 5.2	12.3 8.5 4.9	11.6 6.8 4.8	10.8 6.5 4.9	11.2 6.3 4.7	11.6 6.3 4.6	9.9 6.0 4.7	9.9 5.4 4.5	9.2 5.4
8 +17°	54.0 5.7 4.3	11.4 5.1 3.3	11.1 4.9 3.5	10.7 4.0 3.6	10.3 3.9 3.6	9.6 4.1 3.3	8.8 3.6 3.0	5.5 3.7 3.1	7.8 3.6 3.1	5.7 3.9
9 +12°	52.2 4.4 6.8	12.2 2.9 2.7	11.8 2.6 4.7	11.3 1.9 4.9	10.7 1.6 4.3	9.1 2.4 3.9	6.7 2.3 3.5	4.9 3.0 3.3	6.1 3.4 3.0	2.6 6.0
10 +6°	51.5 3.6 9.2	12.8 2.5 3.2	12.5 2.1 6.2	12.1 1.0 6.8	11.7 0.3 5.8	9.9 2.7 5.2	6.9 3.0 5.0	5.1 3.5 4.2	6.0 4.1 4.1	2.3 7.8
11 0°	51.4 3.3 8.8	11.7 1.5 2.9	11.5 1.5 5.6	11.3 1.1 6.4	11.1 0.4 5.2	9.5 2.4 4.9	7.1 2.5 4.7	4.6 2.9 4.2	4.8 3.6 4.1	2.7 7.3
12 −6°	51.8 2.4 5.5	8.8 -0.0 1.6	8.6 1.4 3.0	8.4 1.1 3.4	8.2 0.7 2.8	7.1 1.5 2.3	5.5 1.3 2.4	3.0 1.3 2.1	3.5 2.0 2.1	2.2 4.4
13 −12°	51.6 1.7 1.6	6.0 -0.6 -0.1	5.5 0.5 0.6	5.0 0.3 0.5	4.4 0.2 0.3	4.1 0.1 0.0	3.7 -0.3 0.0	1.5 0.0 0.1	2.2 0.2 -0.0	1.3 0.8
14 −17°	51.4 0.6 -0.8	5.3 -0.7 -0.8	4.4 -1.0 -0.7	3.3 -0.8 -0.9	1.7 -1.2 -0.8	1.7 -1.1 -1.1	1.7 -0.7 -1.0	1.0 -1.0 -1.0	1.4 -0.6 -1.0	1.1 -1.0

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 8D

STA TAPE 8K

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D C 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15	51.4	6.1	5.1	3.8	2.0	2.0	2.0	-0.4	0.6	1.0
ANGLE −23°	-0.3	-0.6	-0.1	-1.2	-0.7	-0.5	-0.6	-1.2	-1.1	-0.8
	-0.8	-0.8	-1.0	-1.1	-0.8	-1.0	-1.0	-1.0	-1.1	
16	51.6	6.7	5.6	4.2	2.1	3.0	3.7	-0.8	0.8	1.1
−30°	0.3	0.0	-0.1	-0.3	-0.3	-0.2	-0.4	-0.9	-0.6	-0.3
	-0.3	-0.5	-0.8	-0.4	-0.7	-0.7	-0.6	-0.7	-0.7	
17	51.8	6.7	5.7	4.4	2.6	3.4	4.1	0.9	0.8	1.4
−37°	0.9	0.6	-0.2	0.2	-0.1	0.6	-0.0	-0.2	-0.2	-0.1
	0.1	0.0	-0.2	-0.2	-0.0	-0.3	-0.1	-0.3	-0.3	
18	52.1	6.7	6.1	5.4	4.7	4.9	5.2	3.7	1.5	2.4
−44°	2.3	1.6	1.3	1.2	0.7	1.1	1.0	0.8	0.5	0.4
	0.6	0.6	0.3	0.3	0.5	0.3	0.4	0.2	0.2	
19	52.6	8.2	7.7	7.3	6.7	7.3	7.7	6.6	4.8	4.6
−53°	4.8	3.1	2.9	3.3	2.0	2.2	1.6	1.7	1.5	1.3
	1.3	0.9	1.2	1.2	1.2	0.9	1.1	1.0	0.9	
20	52.9	9.2	9.0	8.9	8.7	9.5	10.1	8.5	6.9	6.8
−64°	6.6	3.9	4.3	4.8	4.2	3.5	3.0	2.8	2.6	2.1
	2.3	1.9	2.0	2.1	1.9	1.7	1.7	1.7	1.6	
21	52.7	9.6	9.4	9.2	8.9	10.8	12.2	9.8	7.7	7.8
−84°	7.2	4.4	5.7	5.1	4.7	3.6	3.5	3.5	3.0	2.0
	2.2	2.1	2.0	1.9	1.7	1.5	1.5	1.3	1.3	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8D

STA TAPE 8L

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.3 17.4 8.6	23.5 16.1 8.0	22.4 14.8 7.7	20.9 13.3 7.8	19.6 12.9 7.7	18.4 11.5 7.3	18.3 11.1 7.4	17.7 9.9 7.1	18.7 9.1 7.1	17.9 8.6
2 +64°	58.1 17.8 9.5	23.6 17.1 8.9	22.5 15.5 8.8	21.1 14.5 8.7	19.0 13.7 8.6	18.6 12.4 8.3	18.3 11.8 8.3	18.7 10.6 8.0	19.1 9.9 8.1	17.7 9.5
3 +53°	57.8 16.1 9.0	21.7 16.4 8.4	20.9 14.7 8.4	20.1 14.3 8.3	18.9 12.9 8.1	18.0 12.1 7.9	16.8 10.8 7.7	18.3 10.1 7.8	17.9 9.5 7.7	16.0 8.9
4 +44°	57.4 14.4 8.3	20.4 14.6 7.9	19.7 13.0 7.6	19.0 12.6 7.4	18.1 11.9 7.4	17.4 11.1 7.2	16.4 9.3 7.3	16.8 9.4 7.2	16.5 8.9 7.1	14.4 8.2
5 +37°	56.9 13.8 7.3	18.5 12.7 7.3	17.7 11.6 7.0	16.7 10.5 6.8	15.4 10.4 6.7	15.5 9.9 6.6	15.5 8.6 6.5	15.6 8.3 6.5	14.9 7.9 6.5	13.5 7.6
6 +30°	56.2 12.2 6.1	16.4 11.0 6.1	15.6 9.5 6.0	14.7 8.6 5.9	13.5 8.6 5.6	13.0 7.8 5.6	12.4 7.5 5.5	12.9 6.9 5.5	12.4 6.7 5.6	11.4 6.7
7 +23°	55.3 9.7 5.0	14.0 8.8 4.9	13.7 7.5 4.7	13.3 7.1 4.7	13.0 6.5 4.4	11.6 6.0 4.6	9.6 6.2 4.4	9.0 5.3 4.3	9.8 5.1 4.4	8.3 5.1
8 +17°	53.7 5.2 3.2	12.4 5.1 2.9	12.6 4.8 2.9	12.7 4.3 2.8	12.9 3.3 2.7	10.9 3.5 2.6	7.1 3.8 2.7	6.5 2.9 2.5	6.5 2.8 2.5	5.0 3.0
9 +12°	52.2 2.0 0.8	10.6 2.4 0.8	10.9 2.0 0.7	11.2 1.4 0.7	11.5 0.4 0.4	9.4 1.5 0.3	5.3 0.9 0.4	4.2 0.5 0.5	2.7 0.9 0.4	2.3 0.8
10 +6°	51.4 0.3 -0.1	7.0 1.0 -0.2	6.7 0.7 -0.4	6.3 0.3 -0.5	5.9 -0.4 -0.6	5.1 0.7 -0.7	4.1 -0.2 -0.8	2.4 -0.5 -0.8	1.9 0.1 -0.8	1.7 -0.2
11 0°	51.3 -0.3 -0.8	6.1 0.7 -0.5	5.4 -0.2 -0.7	4.6 -0.6 -0.8	3.7 -1.1 -1.0	3.6 -0.1 -0.9	3.5 -0.3 -1.0	1.8 -0.3 -1.0	0.8 -0.1 -0.9	1.5 -0.4
12 −6°	51.6 0.5 -0.5	6.7 0.7 -0.5	6.1 0.1 -0.3	5.4 0.1 -0.6	4.7 -0.4 -0.6	4.4 -0.6 -0.6	4.2 -0.3 -0.6	1.8 -0.2 -0.6	1.4 -0.1 -0.5	1.4 0.1
13 −12°	51.5 -0.8 -0.7	5.9 0.0 -0.8	5.3 -0.3 -0.7	4.6 -0.1 -0.9	3.7 -0.8 -0.8	3.6 -1.0 -0.7	3.5 -0.5 -0.9	0.9 -0.6 -1.0	1.5 -0.6 -0.9	1.6 -0.3
14 −17°	51.4 -1.0 -0.9	5.5 0.1 -0.9	4.9 -0.6 -0.9	4.3 -0.7 -1.1	3.5 -1.1 -1.0	3.3 -0.9 -0.9	3.1 -1.0 -0.9	0.3 -0.8 -1.1	0.5 -0.9 -1.0	1.1 -1.0

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 8D

STA TAPE 8L

GE 2

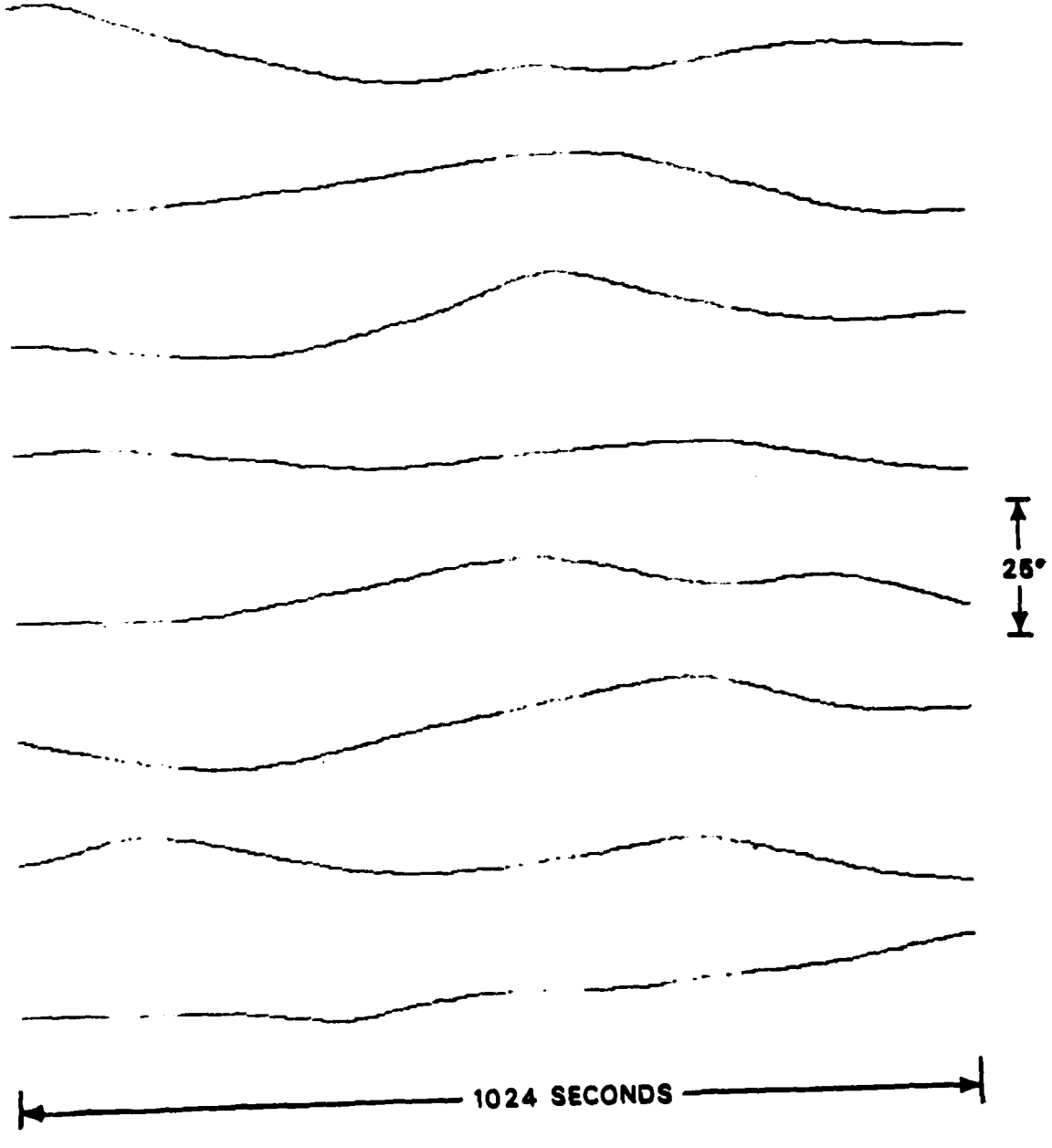
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15	51.6	5.4	5.0	4.6	4.1	4.0	3.8	0.9	0.0	0.9
ANGLE −23°	−0.5	0.0	−0.0	−1.0	−0.4	−0.3	−0.3	−0.4	−0.6	−0.7
	−0.8	−0.7	−0.8	−0.8	−0.7	−0.7	−0.8	−0.8	−0.7	
16	51.8	5.4	5.1	4.8	4.4	4.3	4.3	1.4	1.1	1.0
−30°	−0.4	0.3	0.4	−0.9	0.1	0.2	0.1	−0.0	−0.0	−0.5
	−0.1	−0.2	−0.2	−0.5	−0.4	−0.3	−0.4	−0.3	−0.2	
17	52.1	6.1	5.7	5.1	4.5	4.6	4.8	1.4	2.4	1.3
−37°	1.3	0.7	1.0	−0.7	0.6	0.9	0.5	0.4	0.5	0.2
	0.6	0.4	0.5	0.2	0.3	0.3	0.2	0.3	0.2	
18	52.5	7.4	6.9	6.4	5.8	5.7	5.5	2.1	4.0	2.9
−44°	2.8	2.1	2.1	1.3	1.7	1.7	1.1	1.2	1.2	0.9
	1.0	0.8	1.1	0.9	0.8	1.0	0.9	0.9	0.9	
19	53.0	10.9	10.5	10.0	7.5	8.8	8.0	6.0	6.8	5.8
−53°	5.7	5.7	5.1	4.0	3.7	3.5	3.1	2.3	2.3	2.1
	2.0	1.8	1.9	1.7	1.8	2.0	1.8	1.7	1.7	
20	53.3	11.2	11.0	10.8	10.5	9.7	8.8	7.9	8.6	7.2
−64°	6.2	6.1	5.7	5.5	4.7	4.2	3.9	3.1	3.1	2.5
	2.5	2.4	2.3	2.2	2.4	2.4	2.4	2.2	2.1	
21	52.7	10.7	10.4	10.1	7.9	9.3	8.7	7.1	8.3	6.6
−84°	5.0	5.7	5.1	5.5	4.3	3.7	3.2	2.6	2.6	2.2
	1.7	1.9	1.9	1.7	1.8	1.8	1.7	1.6	1.6	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 8D

BEARING VS TIME

MEAN & VAR.	302.2	18.29	307.0	16.13	305.0	21.16	304.2	3.38
305.0	12.65	302.8	26.09	304.5	8.33	302.2	15.41	

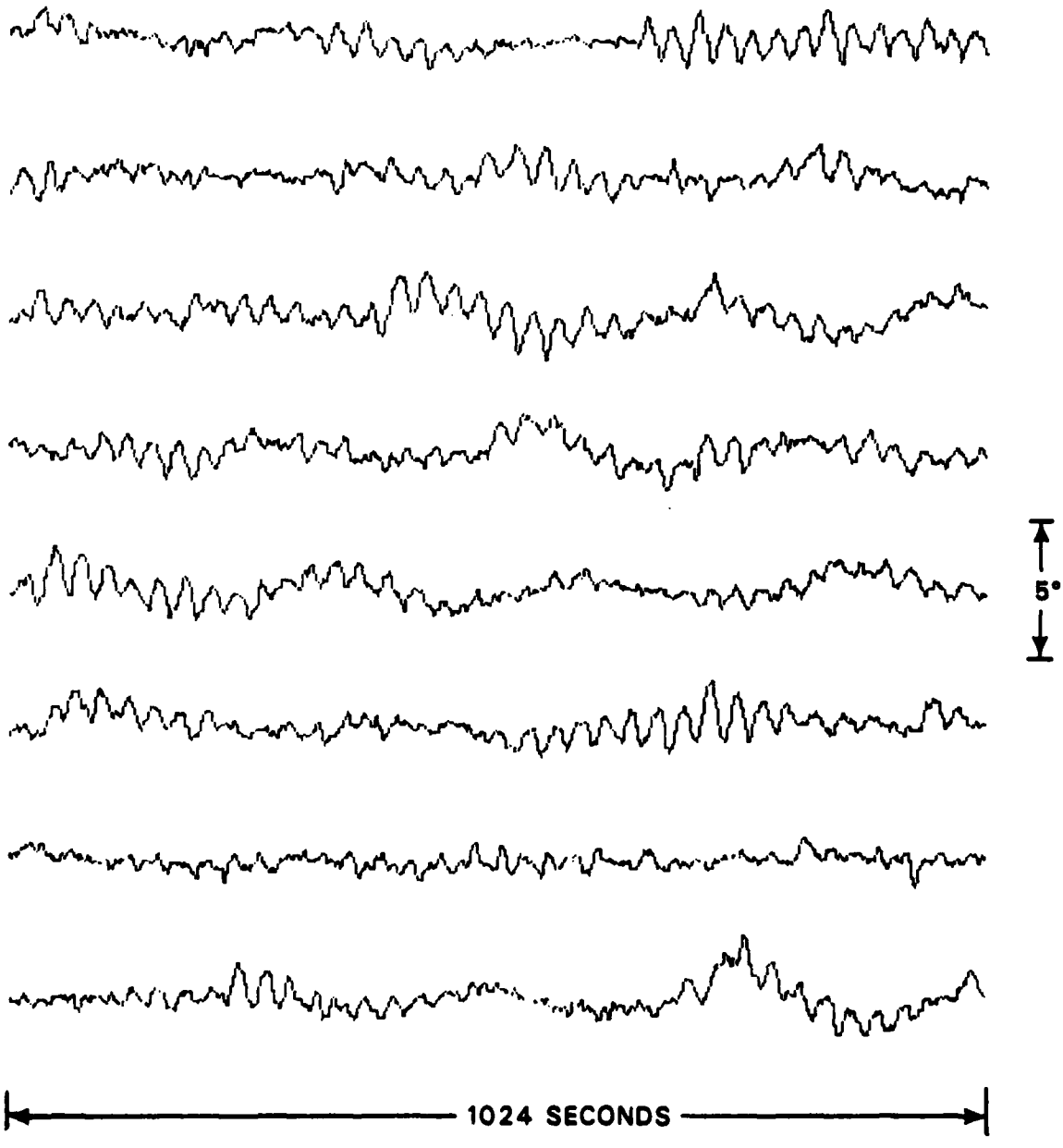


MPL-M-4806

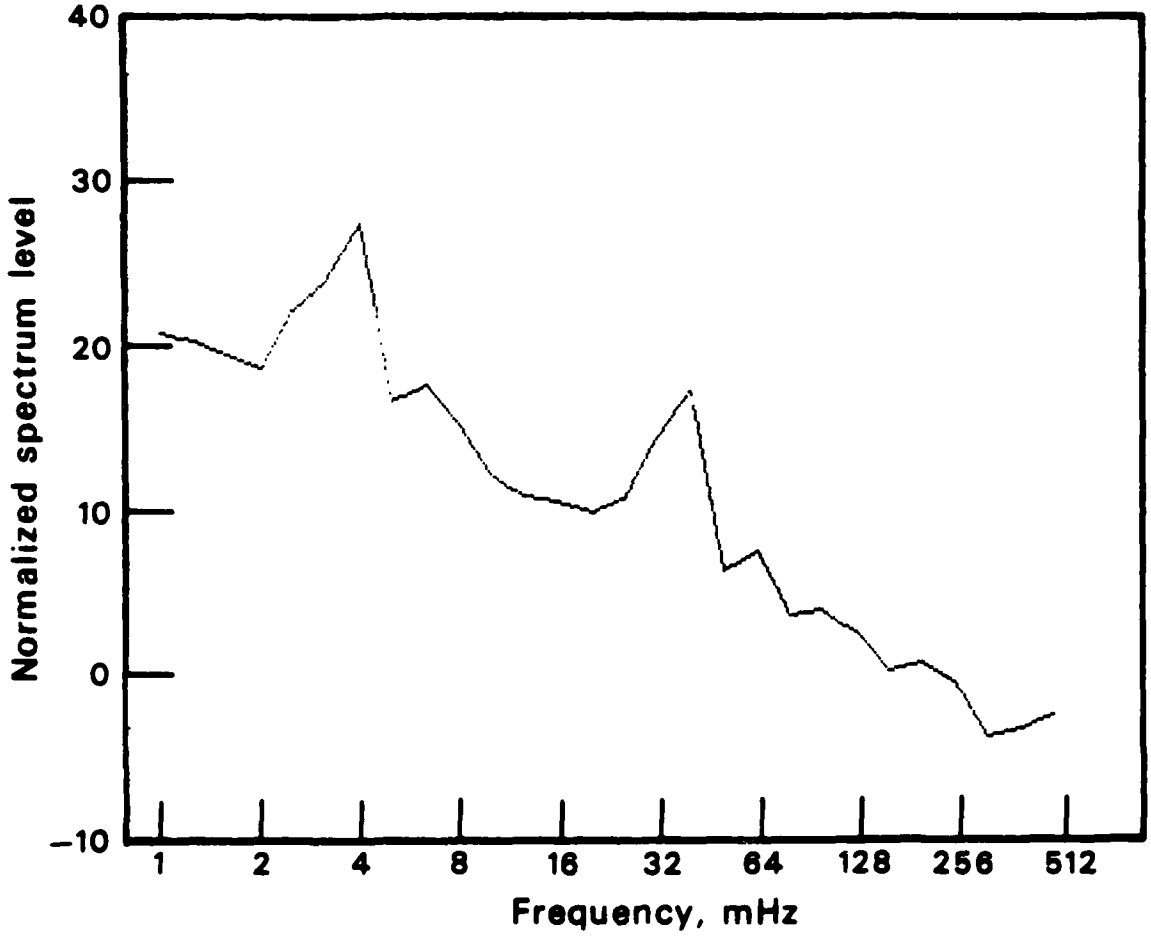
GROUP 8D

ELEVATION VS TIME

MEAN & VAR	92.4	0.11	92.5	0.10	92.5	0.21	92.4	0.12
92.4	0.19	92.5	0.16	92.5	0.01	92.5	0.22	



MPL-M-4807



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 9A

Environmental Summary

9 June 1978

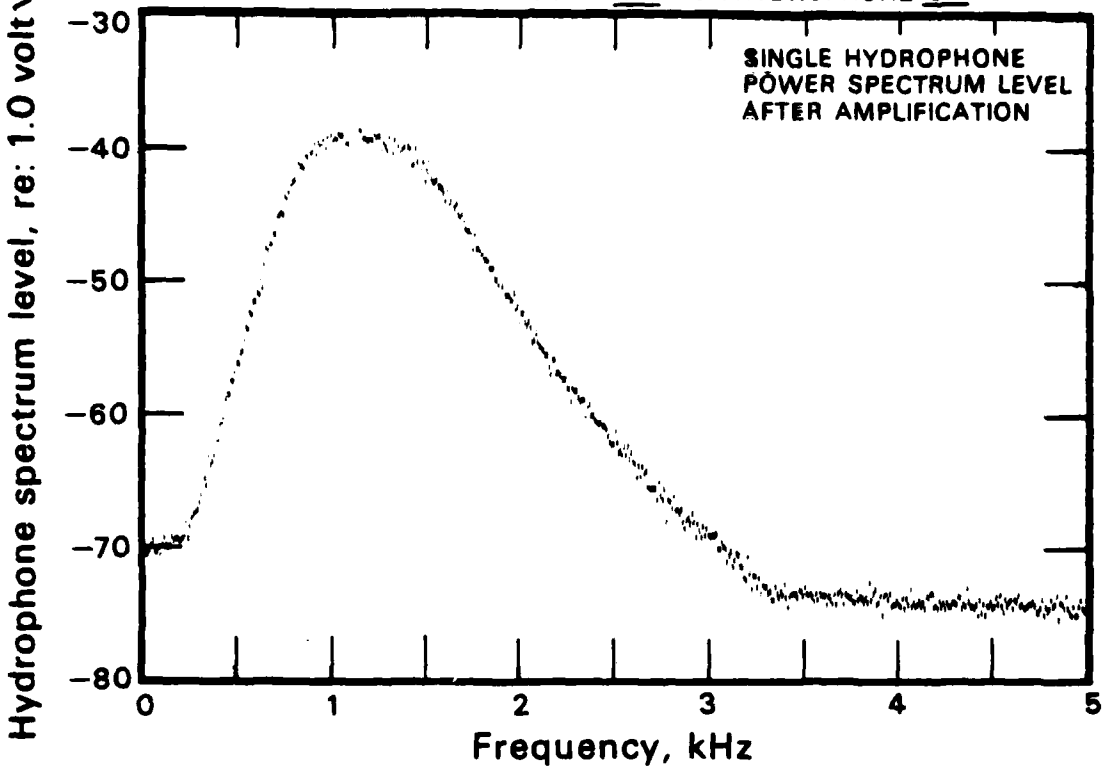
Tapes	Start time	Code
LTA/LOG	15:56:38	09A
STA	15:58:22	09C
STA	16:59:56	09D
Low Band Filter		

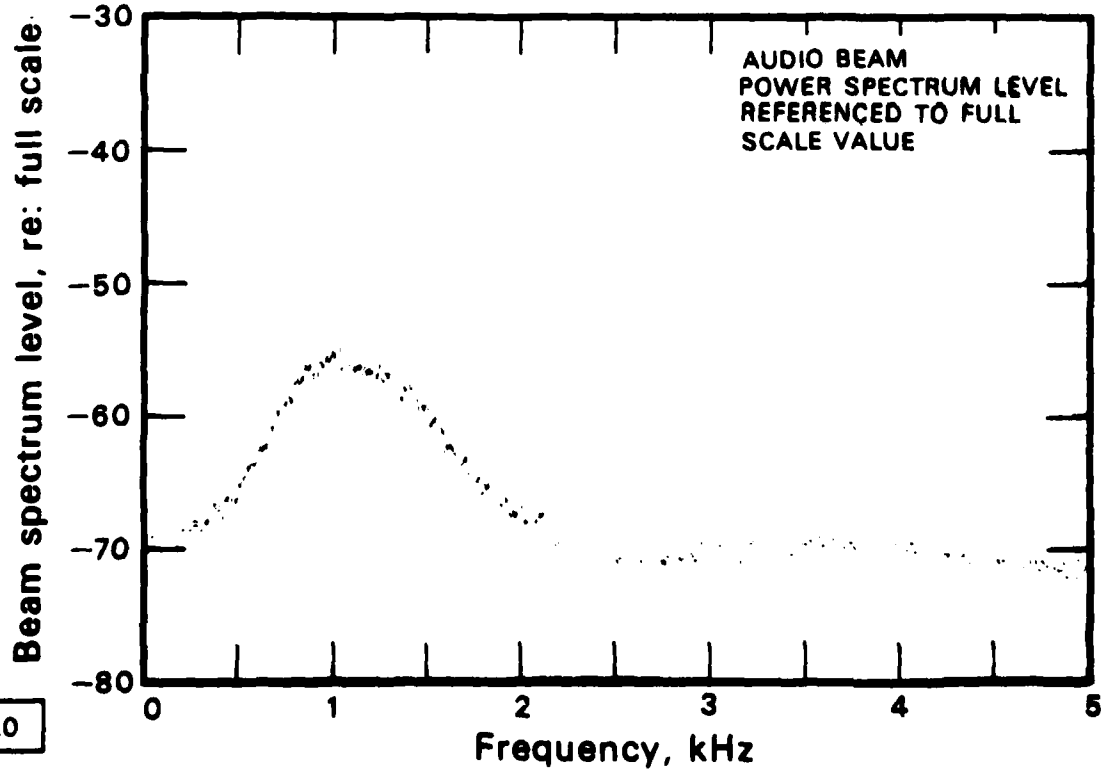
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
15:30 @271	2200	12	335	3-5	5-7	NW	Chop; Ship 8 nm
16:00 271	2200	15	340	"	"	"	Ship 9 nm @
18:00	2300	15	340	"	"	"	No targets

09-JUN-78 16:19:14 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 190.4 TRUE ELEVATION 80.1
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: −10.2 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 97 FOR HYDROPHONE 97

GROUP 9A





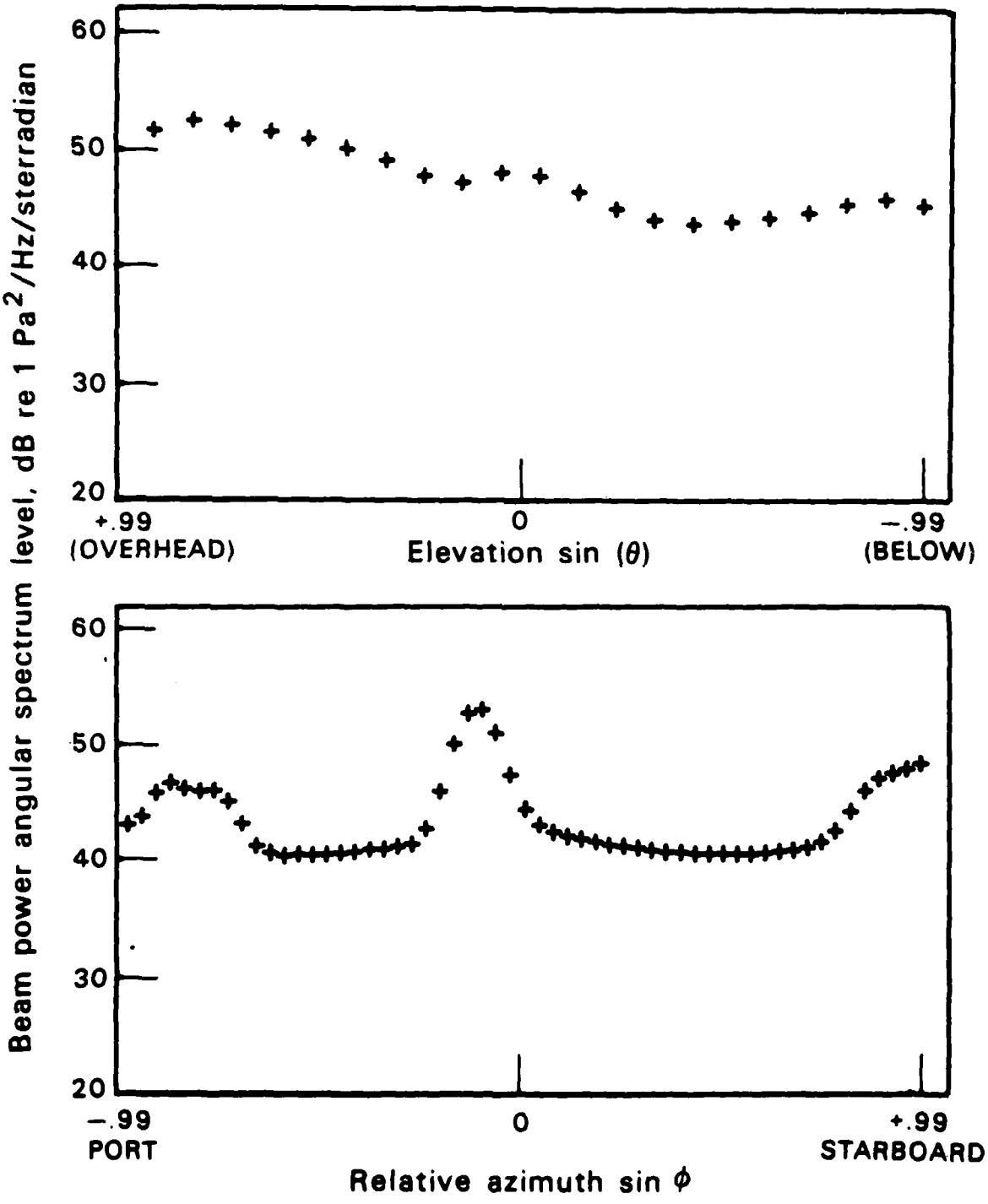
MPL-M-4810

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 9A

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS

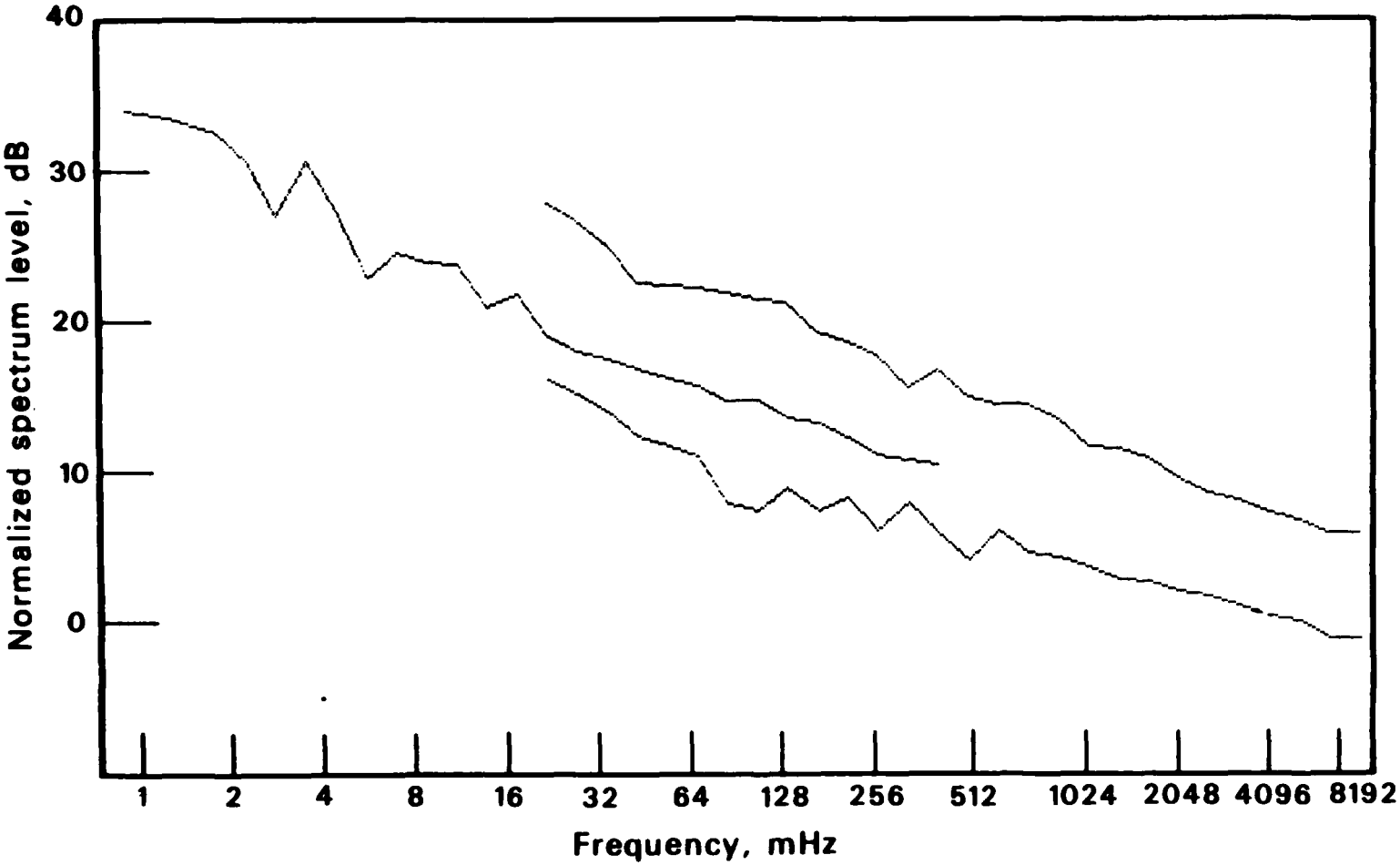
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4811

MPL-M-4812

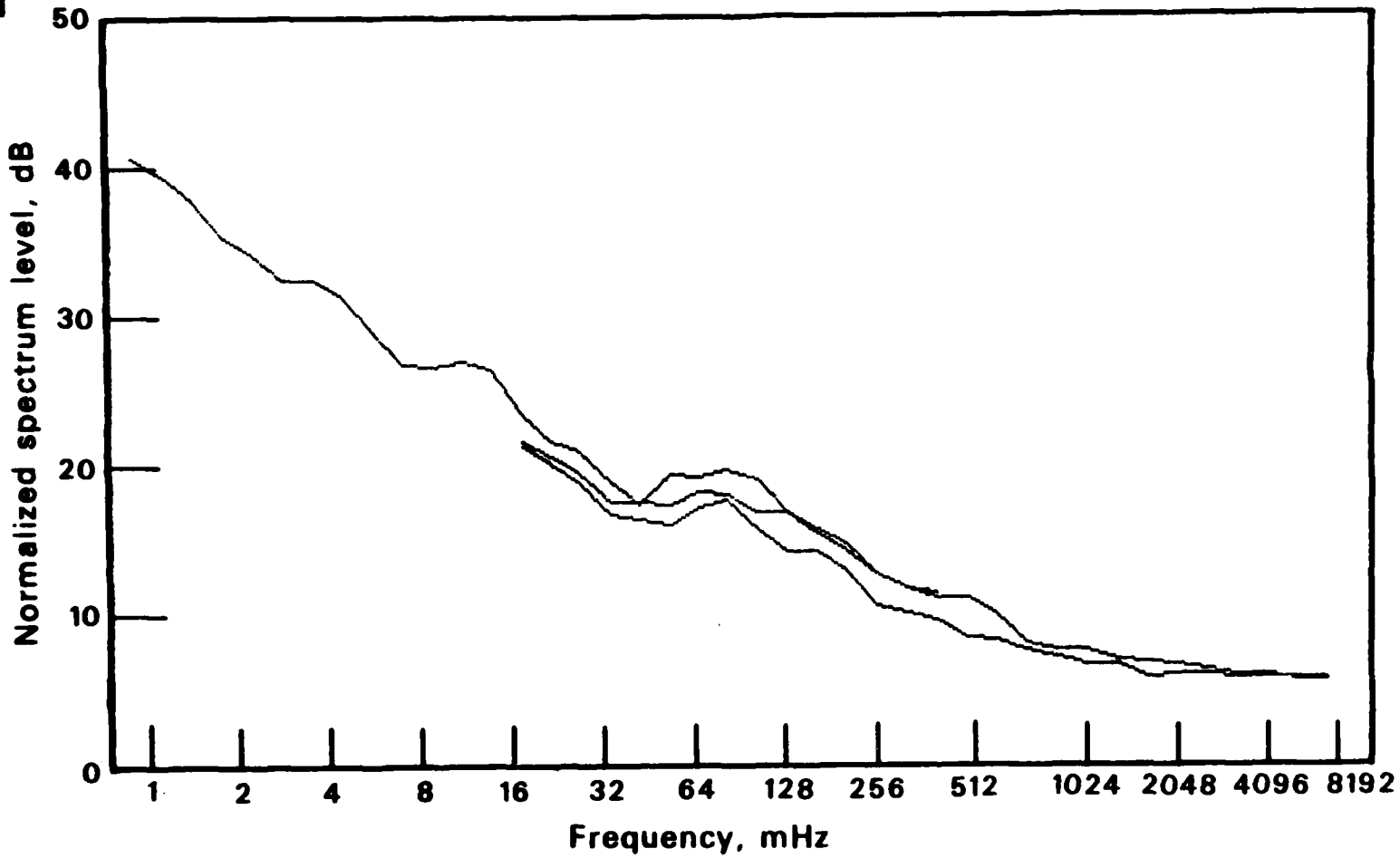
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 9A

MPL-M-4813

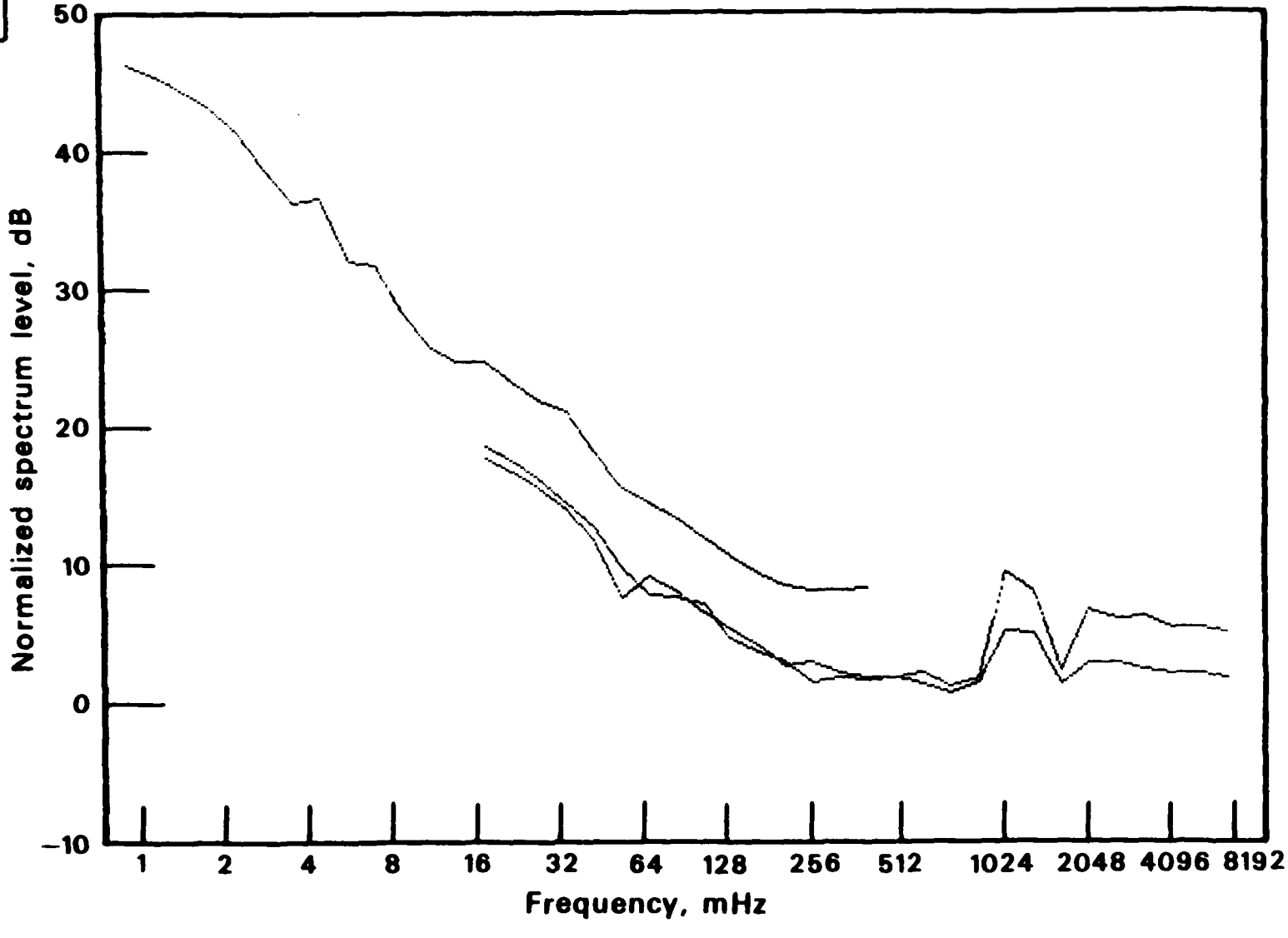
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 9A

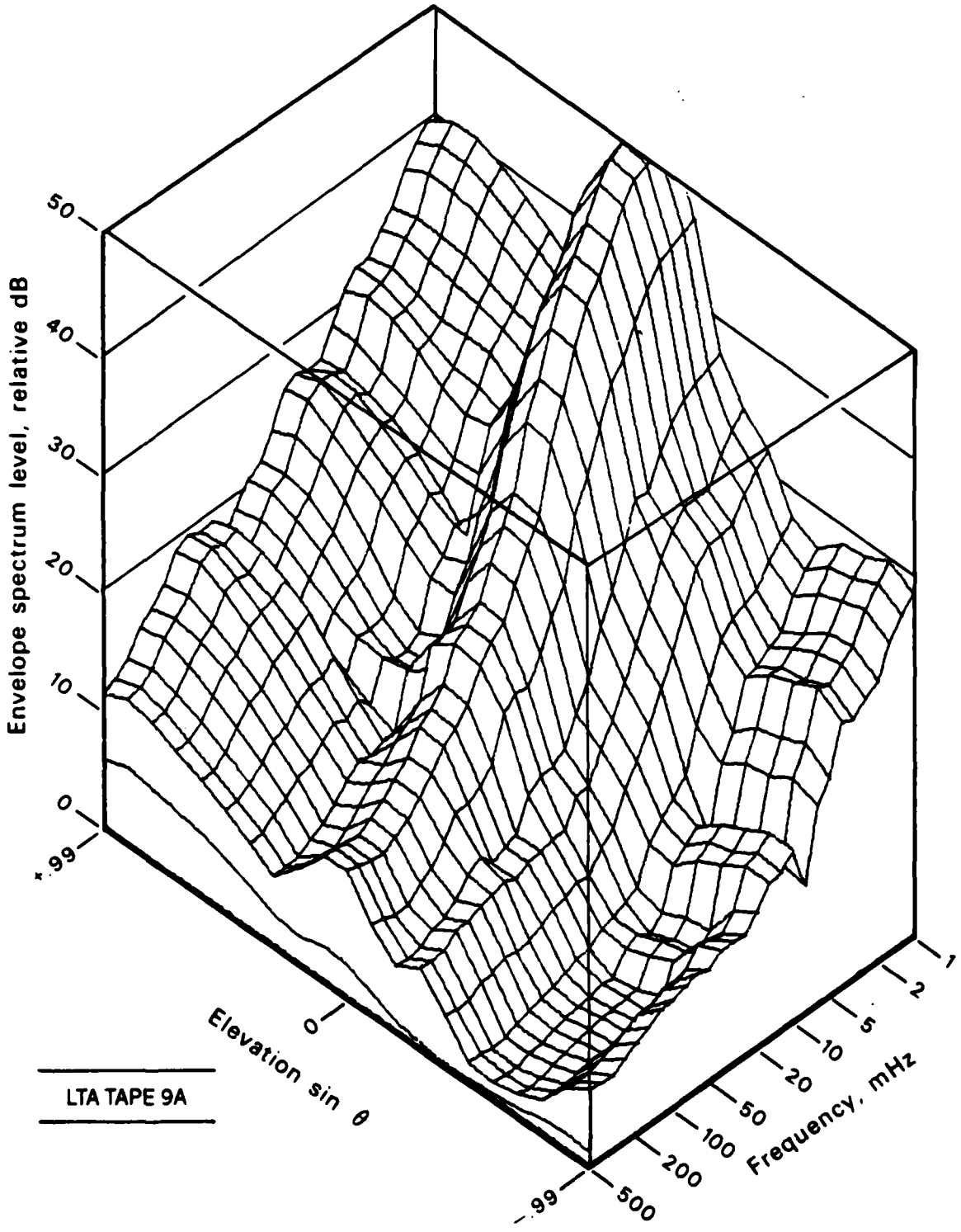
MPL-M-4814

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 9A

GROUP 9A

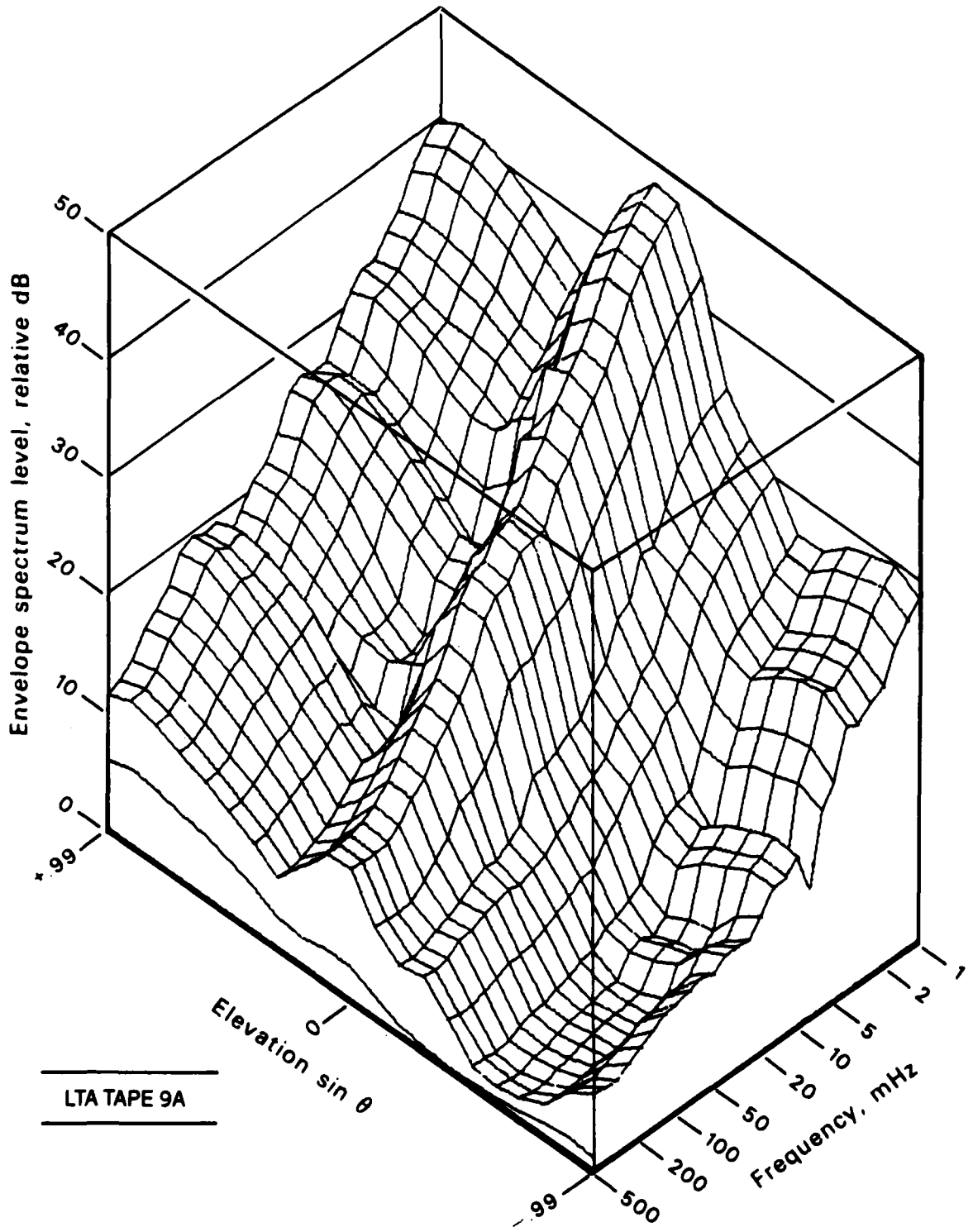


LTA TAPE 9A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4815

GROUP 9A



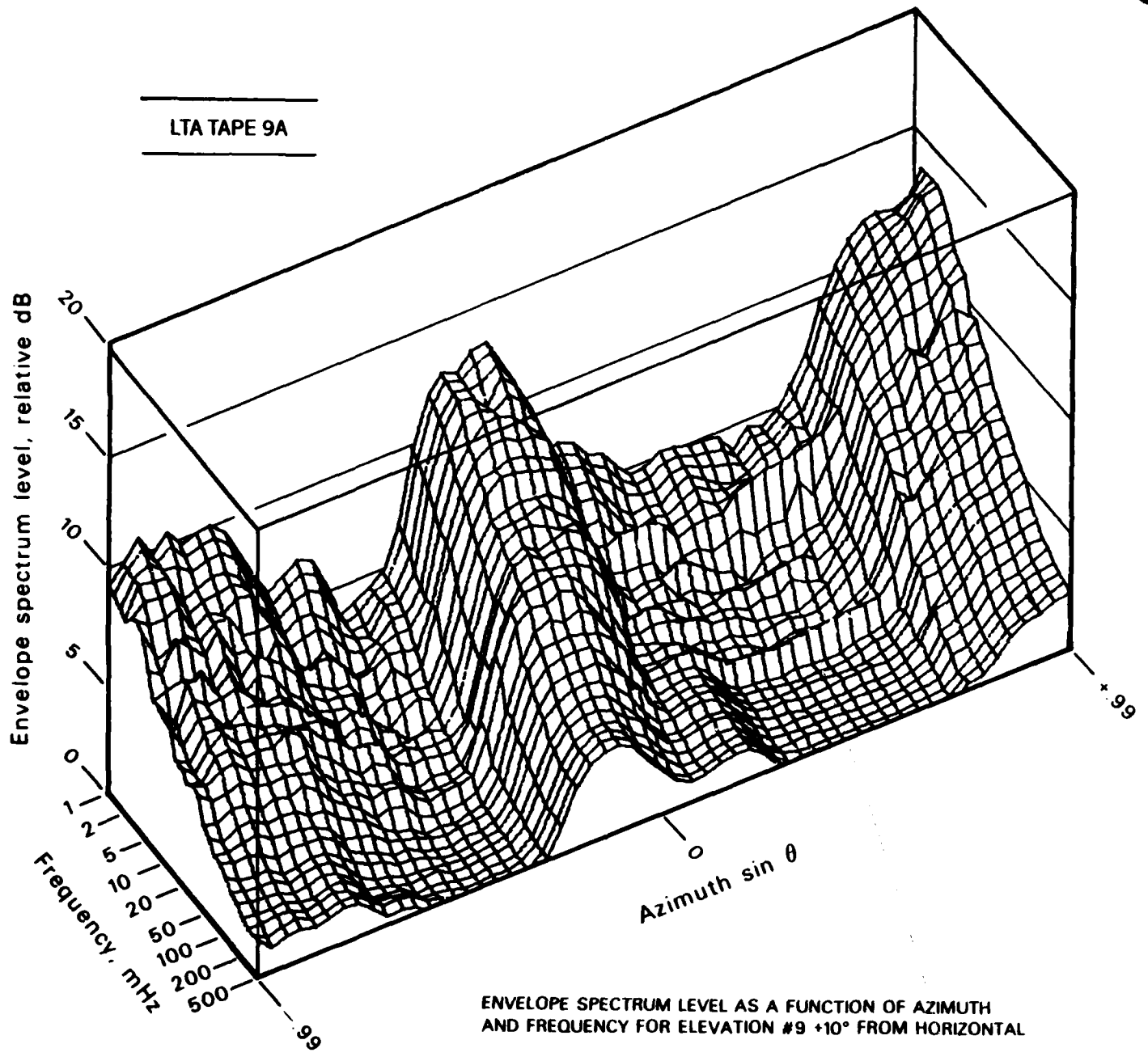
LTA TAPE 9A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4816

MPL-M-4817

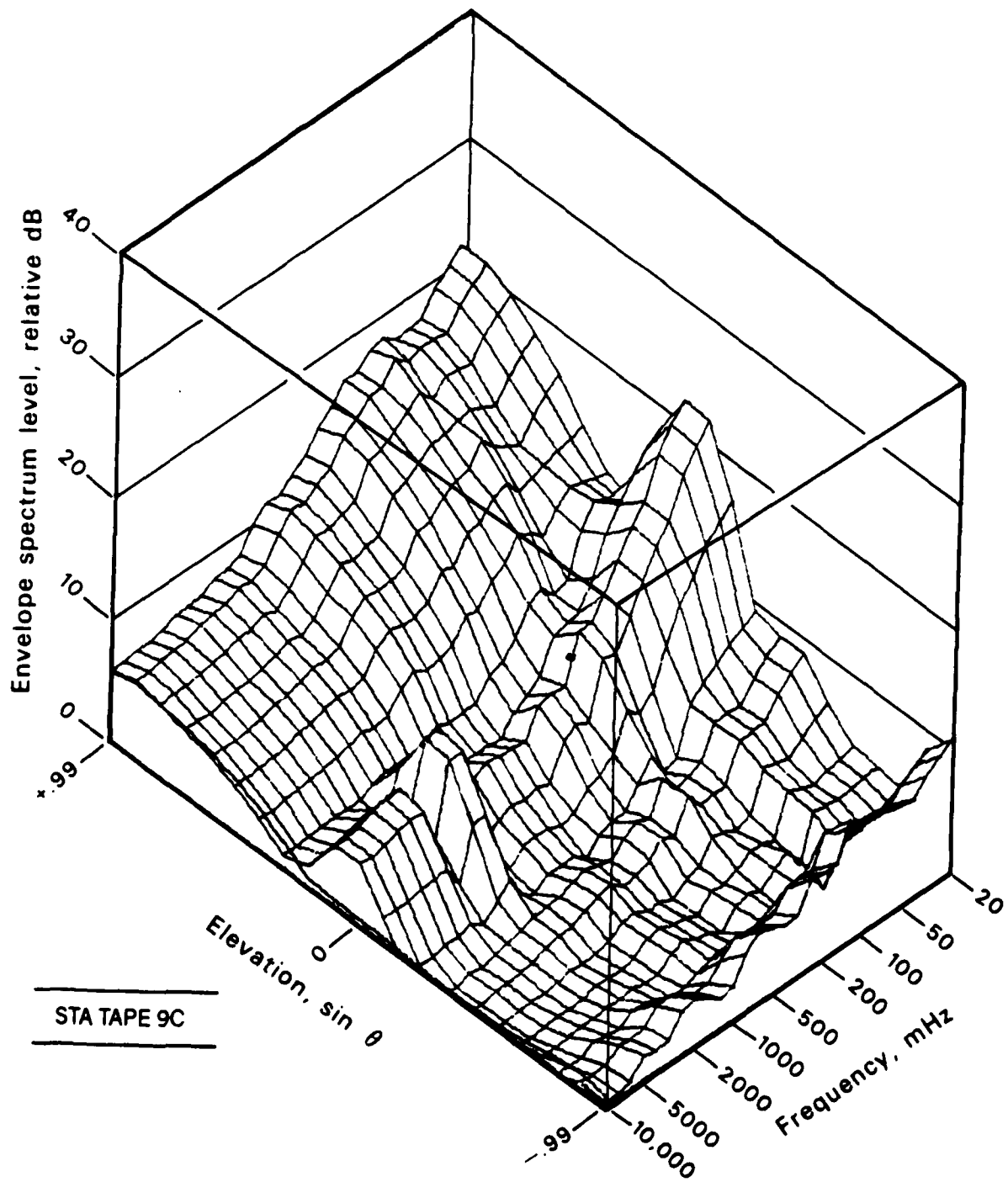
LTA TAPE 9A



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 9A

GROUP 9A

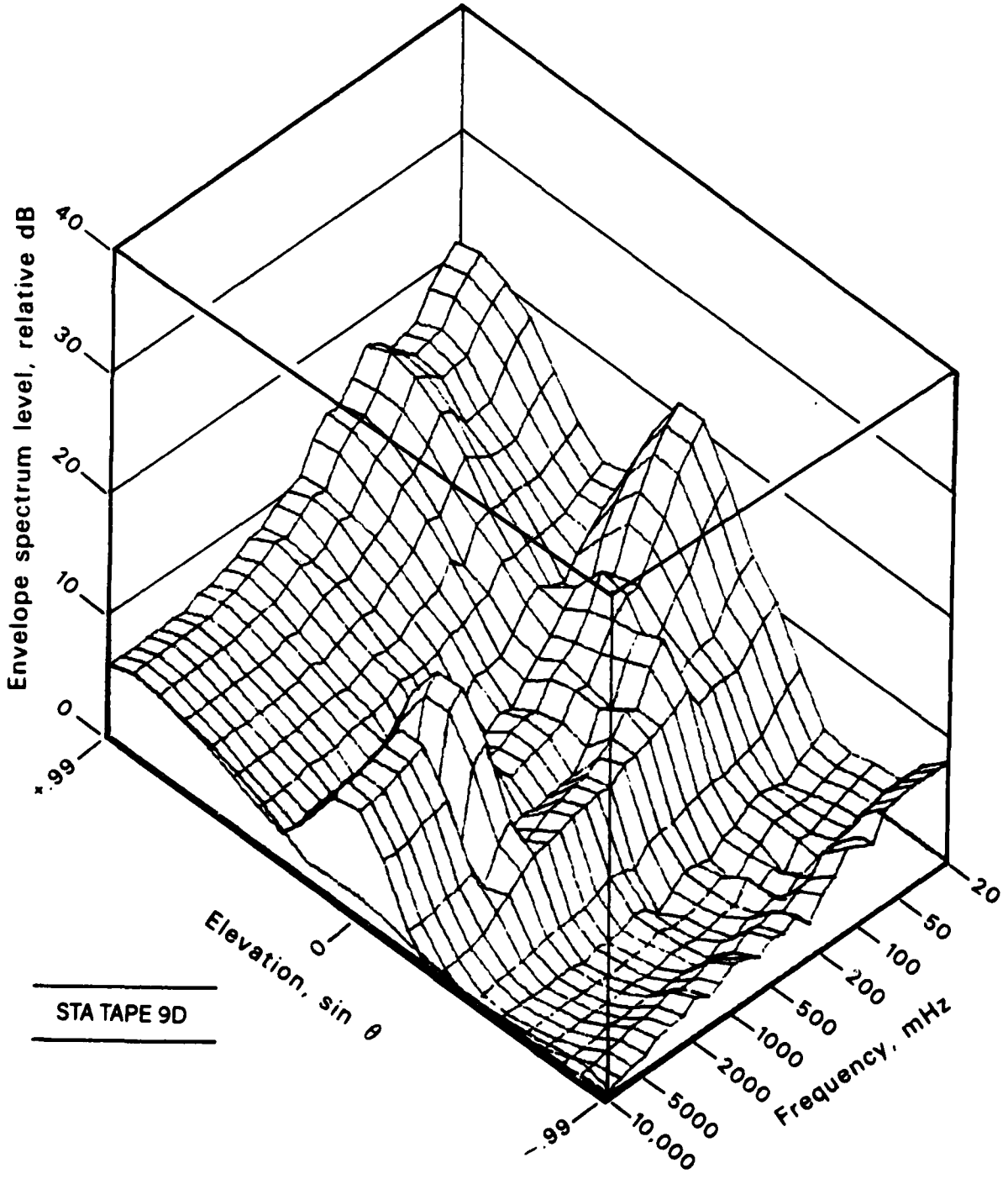


STA TAPE 9C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4818

GROUP 9A



STA TAPE 9D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4819

GROUP 9A

LTA TAPE 9A

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.5	40.5	39.3	37.7	35.2	34.0	32.4	32.3	31.1	28.8
ANGLE +84°	26.6	26.4	26.8	26.2	23.4	21.5	20.8	18.8	17.3	19.4
	19.2	19.7	19.0	16.8	15.6	14.6	12.7	11.7	11.3	
2	71.2	41.7	40.5	38.8	35.8	34.6	32.9	32.4	32.0	28.8
+64°	27.0	27.6	27.6	26.8	24.4	21.8	21.0	19.4	17.7	20.1
	19.5	20.0	19.4	17.3	16.1	15.1	13.3	12.4	12.1	
3	70.9	41.7	40.5	38.7	35.7	34.3	32.2	31.6	31.5	27.7
+53°	26.5	27.4	26.9	25.4	23.6	21.4	20.2	18.7	16.8	19.7
	18.6	18.9	18.3	16.4	15.6	14.2	12.7	11.8	11.6	
4	70.4	40.9	39.7	38.1	35.5	33.9	31.5	30.5	30.2	26.9
+44°	25.8	26.1	25.0	23.9	21.7	19.9	18.9	17.3	15.5	18.7
	17.8	17.4	16.8	15.2	14.7	13.2	11.6	10.8	10.5	
5	69.7	39.7	38.6	37.0	34.6	33.4	31.6	29.6	28.6	25.8
+37°	24.4	24.6	23.6	22.4	19.3	17.8	17.0	16.0	14.2	17.4
	16.5	15.8	15.1	13.7	13.3	11.9	10.4	9.7	9.6	
6	69.2	38.3	37.3	35.9	33.8	32.8	31.5	29.2	27.8	24.7
+30°	22.5	23.1	21.6	20.4	16.6	15.4	15.1	15.3	12.9	15.1
	14.0	13.8	13.1	11.9	11.4	10.3	9.2	8.5	8.4	
7	68.4	36.7	35.8	34.7	33.2	31.9	29.9	28.6	28.3	24.7
+23°	20.3	21.9	20.0	18.9	14.9	14.1	14.1	14.8	11.5	12.7
	11.9	12.3	11.3	10.3	9.7	8.8	8.0	7.3	7.1	
8	67.3	39.4	39.2	39.0	38.8	37.1	34.3	32.8	32.6	29.6
+17°	24.7	24.3	20.9	18.7	16.0	14.2	14.4	15.4	10.7	10.6
	10.1	10.4	9.5	8.1	7.2	6.6	5.8	5.7	5.6	
9	66.9	49.7	49.3	49.0	48.6	47.0	44.4	42.4	40.9	37.8
+12°	34.1	31.6	26.6	24.4	22.1	19.5	19.2	19.1	14.8	13.6
	12.8	11.5	10.6	9.4	8.3	7.4	7.4	7.6	7.8	
10	67.5	54.0	53.6	53.2	52.7	51.1	48.6	46.5	44.8	41.7
+6°	38.2	35.1	29.8	27.7	25.3	22.6	21.5	20.5	17.8	16.4
	15.6	13.7	12.6	11.5	10.7	9.9	10.1	10.3	10.4	
11	67.4	53.7	53.3	52.8	52.3	50.7	48.2	46.1	44.5	41.4
0°	37.8	34.7	29.3	27.3	24.8	22.3	21.4	20.0	17.5	16.1
	15.4	13.8	12.5	11.2	10.4	9.8	10.0	10.4	10.7	
12	66.4	48.1	47.6	47.1	46.6	45.1	42.9	40.5	39.2	36.0
−6°	32.6	29.8	24.7	22.8	20.3	18.2	18.3	17.4	13.8	12.6
	11.8	11.8	10.1	8.5	7.9	6.8	6.6	7.0	7.3	
13	65.5	38.1	37.6	37.0	36.2	35.0	33.2	30.7	30.7	27.4
−12°	24.2	21.9	18.0	15.8	13.6	12.9	12.7	11.8	9.2	8.8
	8.2	9.4	8.7	7.3	6.6	6.2	5.4	5.1	5.3	
14	64.9	34.3	33.7	32.2	30.1	30.0	29.9	28.7	27.0	23.7
−17°	21.1	18.5	16.1	14.3	11.8	11.6	9.5	9.5	9.1	9.0
	8.3	8.7	8.4	8.1	7.6	7.6	6.7	6.4	6.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

LTA TAPE 9A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.8	32.6	31.7	30.4	28.6	28.4	28.2	26.9	24.2	21.2
ANGLE −23°	18.8	16.2	14.0	12.3	9.7	8.7	7.0	7.3	6.7	6.4
	5.8	5.2	5.1	5.2	4.7	4.5	3.8	3.8	3.9	
16	64.8	28.2	27.3	26.1	24.3	23.9	23.4	22.3	19.5	16.3
−30°	12.8	11.5	10.4	9.0	6.0	5.5	5.0	4.7	3.7	3.5
	3.1	2.7	2.4	2.1	1.7	1.2	1.1	1.3	1.4	
17	65.0	27.1	26.0	24.5	22.1	21.5	20.7	20.5	16.5	14.4
−37°	8.9	10.5	9.6	8.7	5.3	4.2	4.9	4.5	2.7	2.9
	2.5	2.4	2.2	1.8	1.5	1.4	0.9	1.0	1.2	
18	65.3	29.0	27.8	26.2	23.5	22.9	22.1	22.1	18.4	16.0
−44°	11.0	12.2	11.4	10.5	6.3	5.1	5.9	5.2	3.1	3.1
	2.9	2.9	2.6	2.3	2.1	1.8	1.4	1.3	1.6	
19	65.9	29.2	28.2	26.9	25.0	23.9	22.5	22.9	18.9	16.3
−53°	11.3	13.1	12.0	11.6	6.8	5.6	6.3	6.3	4.1	3.2
	3.3	3.1	2.9	2.8	2.8	2.6	2.4	2.4	2.5	
20	66.1	30.4	29.2	27.7	25.3	24.4	23.4	23.9	19.9	17.5
−64°	10.9	14.4	13.4	13.0	7.9	8.7	8.9	9.1	7.7	7.5
	7.5	6.9	6.8	6.3	5.7	5.2	4.7	4.7	5.0	
21	65.7	29.1	27.9	26.3	23.8	23.0	22.0	22.5	18.3	16.7
−84°	10.5	14.2	13.2	13.0	11.2	10.0	10.2	10.1	9.3	9.6
	9.3	9.0	8.8	8.1	7.4	6.8	6.0	6.1	6.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 9A

LTA TAPE 9A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.5	40.5	39.3	37.7	35.2	34.0	32.4	32.3	31.1	28.8
ANGLE +84°	26.6	26.4	26.8	26.2	23.4	21.5	20.8	18.8	17.3	19.4
	19.2	19.7	19.0	16.8	15.6	14.6	12.7	11.7	11.3	
2	71.2	41.7	40.5	38.8	35.8	34.6	32.9	32.3	32.0	28.8
+64°	26.9	27.6	27.8	26.8	24.3	21.8	21.0	19.4	17.8	20.1
	19.5	20.0	19.3	17.3	16.1	15.1	13.3	12.4	12.1	
3	70.9	41.8	40.5	38.7	35.6	34.3	32.2	31.7	31.4	27.6
+53°	26.8	27.5	26.8	25.4	23.5	21.5	20.3	18.6	16.8	19.7
	18.7	18.9	18.2	16.4	15.6	14.2	12.6	11.8	11.6	
4	70.4	40.9	39.7	38.0	35.1	33.7	31.6	30.9	30.3	26.4
+44°	25.7	26.2	24.9	23.8	21.9	19.9	18.8	17.4	15.6	18.7
	17.8	17.4	16.8	15.2	14.6	13.2	11.6	10.8	10.5	
5	69.9	39.6	38.4	36.8	34.2	33.1	31.5	29.8	28.6	25.6
+37°	23.8	24.8	23.6	22.2	19.2	17.8	16.9	16.1	14.4	17.4
	16.4	15.9	15.1	13.8	13.3	11.9	10.4	9.8	9.6	
6	69.2	38.0	36.8	35.3	32.8	32.0	31.0	28.8	27.7	24.4
+30°	22.0	23.1	21.4	20.5	16.3	15.5	15.2	15.3	13.0	15.1
	14.0	14.0	13.1	11.9	11.5	10.4	9.4	8.6	8.5	
7	68.4	36.3	35.3	33.9	31.9	30.9	29.5	27.8	28.0	23.8
+23°	20.0	21.3	20.0	18.9	14.9	14.1	14.2	14.8	11.6	12.7
	11.8	12.2	11.3	10.2	9.6	8.8	8.1	7.4	7.3	
8	67.3	38.3	37.5	36.7	35.5	33.7	30.7	29.7	30.6	25.9
+17°	20.6	21.1	20.9	19.3	16.8	15.2	15.3	16.0	11.4	10.8
	10.4	10.5	9.5	8.2	7.3	6.6	6.0	5.7	5.8	
9	67.0	46.1	45.3	44.2	42.9	41.3	38.6	36.2	36.5	31.9
+12°	31.7	28.4	25.7	24.7	24.6	23.1	21.7	21.0	18.2	15.4
	14.3	13.3	11.8	10.4	9.2	8.3	8.0	8.0	8.2	
10	67.6	48.5	47.7	46.6	45.1	43.4	40.6	38.7	37.4	35.6
+6°	33.4	31.7	29.1	28.5	26.3	26.5	25.9	24.4	21.5	19.3
	17.9	16.4	14.7	13.3	12.0	11.3	10.9	10.8	10.8	
11	67.5	48.2	47.4	46.3	44.7	43.2	40.4	38.3	36.6	34.7
0°	32.8	31.3	28.5	28.2	27.8	26.0	25.6	24.2	21.1	19.1
	17.6	16.2	14.4	13.2	11.8	11.0	10.8	10.8	11.0	
12	66.4	43.4	42.5	41.4	39.9	38.3	35.8	33.5	31.9	30.2
−6°	28.3	26.4	24.1	23.3	22.8	21.1	20.8	20.3	16.3	14.7
	13.3	12.8	10.8	9.5	8.5	7.4	7.1	7.3	7.5	
13	65.5	35.4	34.7	33.9	33.0	31.4	28.8	26.2	26.3	23.0
−12°	22.1	19.2	17.7	15.8	15.3	14.5	14.0	13.7	10.4	9.5
	8.8	9.0	8.2	7.4	6.8	6.4	5.8	5.5	5.7	
14	64.7	32.4	31.7	30.9	29.8	28.5	26.6	25.3	22.7	19.8
−17°	18.8	16.7	16.1	13.9	12.9	12.3	10.8	10.2	9.1	8.6
	8.1	8.3	8.0	7.7	7.1	7.0	6.3	6.0	6.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 9A

LTA TAPE 9A

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.8	30.8	30.1	29.2	28.2	27.1	25.7	23.9	21.1	17.4
ANGLE −23°	16.8	14.9	14.1	12.8	10.9	9.8	8.1	7.9	7.0	6.4
	5.9	5.3	5.1	5.2	4.5	4.2	3.7	3.7	4.0	
16	64.8	27.1	26.3	25.4	24.2	23.4	22.6	21.3	18.0	14.7
−30°	11.7	11.3	10.9	9.4	6.7	6.0	5.4	5.0	3.8	3.7
	3.1	2.7	2.4	2.2	1.8	1.3	1.0	1.3	1.3	
17	65.0	27.2	26.1	24.7	22.7	21.8	20.8	20.6	17.0	14.6
−37°	9.5	10.9	9.7	8.8	5.5	4.5	5.0	4.6	2.8	2.9
	2.5	2.4	2.2	1.9	1.5	1.4	0.9	1.0	1.2	
18	65.3	29.1	27.9	26.4	23.9	23.2	22.3	22.3	18.7	16.1
−44°	11.4	12.5	11.4	10.7	6.5	5.3	5.9	5.3	3.2	3.0
	2.9	2.9	2.6	2.3	2.0	1.8	1.4	1.3	1.6	
19	65.8	29.8	28.7	27.3	25.1	24.2	22.9	23.5	19.5	16.7
−53°	11.5	13.4	12.4	11.8	7.1	5.9	6.5	6.4	4.2	3.4
	3.3	3.2	2.9	2.8	2.8	2.6	2.4	2.4	2.5	
20	66.1	30.4	29.3	27.7	25.3	24.5	23.5	24.0	20.0	17.5
−64°	10.9	14.4	13.4	12.9	9.8	8.5	8.8	9.1	7.6	7.3
	7.3	6.8	6.7	6.1	5.6	5.1	4.7	4.7	5.0	
21	65.7	29.1	27.9	26.3	23.8	23.0	22.0	22.5	18.3	16.7
−84°	10.5	14.2	13.2	13.0	11.2	10.0	10.2	10.1	9.3	9.6
	9.3	9.0	8.8	8.1	7.4	6.8	6.0	6.1	6.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 9A

GROUP 9A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	64.3	37.4	36.6	35.8	34.7	36.3	37.5	36.5	30.9	26.7
ANGLE −71.3°	26.8	26.8	25.6	20.9	20.9	19.1	20.0	19.6	15.4	14.1
	12.3	12.2	11.0	9.3	8.5	7.3	6.3	6.5	7.0	
2	64.7	40.5	40.4	40.4	40.3	38.5	35.5	30.8	29.2	27.5
−66°	21.2	23.3	21.1	19.3	18.6	18.3	18.9	17.5	14.4	12.4
	11.9	11.3	9.1	8.5	7.7	6.8	6.3	5.2	4.4	
3	65.9	44.0	43.0	41.7	39.7	38.1	35.5	31.4	34.4	28.3
−61.6°	28.8	27.3	24.7	23.6	21.8	21.9	20.4	17.6	16.0	14.0
	12.4	11.5	8.9	8.3	7.4	6.6	6.6	5.9	5.6	
4	66.5	40.0	39.8	39.6	39.4	38.2	36.6	32.8	32.1	26.9
−57.8°	30.2	25.3	24.4	23.5	23.9	22.1	20.9	18.8	15.7	14.2
	12.9	10.3	9.0	8.2	7.2	6.9	6.7	6.5	5.8	
5	66.1	42.9	41.4	39.2	34.2	33.1	31.6	30.5	29.3	26.1
−54.3°	25.1	25.3	21.2	22.9	20.8	19.3	18.4	16.9	13.7	12.5
	11.0	8.7	7.0	6.6	6.1	5.8	5.3	5.2	4.9	
6	66.0	39.7	38.7	37.3	35.2	34.5	33.6	32.9	32.7	29.6
−51.1°	27.7	26.1	23.5	22.1	20.6	19.9	17.8	16.2	14.7	12.8
	11.1	9.6	7.5	7.5	6.5	5.5	5.8	5.4	5.5	
7	66.1	40.7	39.6	38.3	36.4	34.7	32.0	32.6	27.5	24.4
−48.1°	22.8	23.7	23.2	20.2	20.3	19.1	17.4	16.6	14.0	12.6
	10.7	9.3	8.0	7.7	7.2	6.4	6.6	6.3	6.5	
8	65.5	41.0	39.9	38.4	36.2	35.2	33.9	28.5	27.0	27.1
−45.3°	25.0	21.4	21.9	19.9	19.6	21.3	16.6	15.9	15.0	10.8
	9.9	9.4	7.8	7.4	6.6	6.6	6.0	6.2	6.1	
9	64.4	38.6	37.6	36.2	34.1	33.7	33.3	28.2	22.5	25.4
−42.6°	23.5	21.6	21.5	18.2	19.4	19.3	16.7	15.1	13.1	10.5
	8.6	7.9	6.1	5.2	4.6	4.4	3.9	4.3	3.9	
10	63.6	33.6	32.5	31.0	28.5	28.4	28.3	28.4	26.8	23.6
−40.0°	19.8	19.0	19.5	17.9	18.1	14.7	12.6	11.5	10.1	8.3
	5.8	4.7	3.9	2.4	1.3	1.2	1.8	2.2	1.5	
11	63.4	28.6	27.8	26.8	25.5	25.3	25.1	24.4	23.4	20.5
−37.5°	17.5	15.8	17.3	17.5	15.1	12.7	10.1	8.9	8.4	6.7
	5.1	3.2	2.5	0.8	0.6	0.8	1.6	2.4	1.7	
12	63.3	24.5	23.5	22.4	20.7	19.6	18.0	17.9	16.5	15.7
−35.1°	14.2	14.2	14.1	15.1	13.7	10.3	9.2	8.1	6.4	5.3
	4.3	2.2	1.7	0.3	0.1	0.6	1.1	2.0	1.2	
13	63.3	26.3	25.4	24.2	22.6	20.4	15.7	18.4	15.0	13.7
−32.8°	13.1	12.3	10.6	10.2	11.4	7.8	7.2	5.8	3.7	3.0
	2.0	0.8	0.4	−0.6	−0.8	−1.2	−0.7	0.1	−0.8	
14	63.3	28.2	27.0	25.3	22.5	20.9	18.3	18.1	13.4	13.8
−30.5°	12.9	13.4	11.7	8.7	11.2	8.8	6.0	6.3	4.3	1.5
	1.3	0.8	0.3	−0.8	−0.7	−1.0	−1.1	−0.6	−1.3	
15	63.3	27.1	25.8	23.7	17.9	18.1	14.9	15.4	13.3	12.8
−28.3°	10.1	11.7	10.0	7.1	7.9	7.2	5.8	6.1	3.7	0.7
	0.5	−0.5	−0.6	−1.1	−0.6	−1.3	−1.3	−1.4	−1.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 16 ANGLE −26.1°	63.4 7.9 −0.5	21.9 7.5 −1.5	20.8 5.2 −1.8	19.2 5.4 −1.5	16.6 5.7 −1.8	14.7 2.6 −2.1	11.2 3.1 −2.3	12.2 3.1 −1.8	9.6 0.8 −2.4	7.4 −1.0
17 −24.0°	63.4 5.7 −1.1	15.2 6.4 −1.7	15.0 5.4 −1.9	14.7 5.9 −1.7	14.5 4.1 −2.0	13.2 1.1 −2.2	11.5 1.6 −2.3	12.8 1.3 −2.3	9.7 −0.2 −2.5	9.3 −0.7
18 −21.8°	63.5 7.8 −0.7	16.4 3.3 −1.1	15.7 5.6 −1.6	14.8 4.6 −1.6	13.6 4.3 −1.7	14.2 2.2 −2.0	14.6 1.2 −2.1	14.4 2.1 −2.1	13.2 −0.1 −2.5	9.3 −1.2
19 −19.8°	63.5 9.2 −0.4	17.9 4.6 −1.3	18.0 5.8 −1.3	18.1 4.4 −1.4	18.2 3.6 −1.5	17.2 1.8 −2.0	15.7 1.4 −2.2	13.9 2.2 −2.0	10.3 −0.0 −2.1	9.4 −0.6
20 −17.7°	63.6 7.6 −0.1	19.9 6.2 −0.5	19.4 4.7 −0.9	18.8 4.8 −0.6	18.1 3.6 −1.1	17.1 2.5 −1.7	15.7 2.3 −1.6	13.1 2.9 −1.7	11.0 1.0 −1.8	8.8 0.1
21 −15.7°	63.7 14.1 3.3	27.1 11.8 2.6	25.9 8.6 2.0	24.3 6.7 1.9	21.7 8.0 1.2	20.8 7.0 0.4	19.7 10.0 0.3	20.2 9.0 0.1	19.9 4.6 0.0	15.1 4.2
22 −13.7°	64.2 22.6 11.5	39.9 20.4 10.6	39.0 19.2 9.1	37.7 16.9 7.5	35.8 18.0 6.8	34.1 17.1 5.5	31.3 21.0 5.2	30.8 19.8 5.3	29.6 13.1 5.0	26.4 13.7
23 −11.7°	66.1 31.6 18.6	48.4 29.9 16.7	47.5 27.5 15.4	46.5 25.9 13.2	45.1 27.0 12.5	43.2 26.1 11.3	39.7 27.6 10.7	38.3 26.8 10.7	36.0 21.1 10.7	34.2 20.9
24 −9.7°	69.1 35.5 21.6	51.4 35.4 20.1	51.0 33.8 17.9	50.6 32.1 16.2	50.1 32.4 15.6	48.1 30.5 14.6	44.2 30.2 14.2	42.9 28.8 14.3	40.7 25.7 14.0	39.1 23.7
25 −7.8°	71.5 36.4 22.3	50.3 35.5 20.7	49.9 35.3 18.9	49.6 33.7 17.9	49.2 33.4 16.3	48.2 31.8 15.7	47.1 30.5 15.8	44.6 28.2 15.8	41.1 26.7 15.4	41.4 24.0
26 −5.8°	71.7 37.1 22.5	53.2 35.9 20.6	51.9 35.3 19.1	50.0 31.9 18.0	46.6 31.7 16.8	47.0 31.1 15.8	47.4 30.9 15.7	44.8 29.7 15.6	42.3 25.4 15.5	41.0 24.0
27 −3.9°	69.9 36.5 22.3	53.4 36.8 20.6	52.7 33.9 18.5	51.9 32.7 17.0	51.0 32.3 15.6	49.2 30.6 14.9	46.3 30.2 14.3	43.2 28.7 14.1	41.5 26.4 14.3	40.1 23.3
28 −1.9°	67.1 36.2 20.0	49.0 34.3 18.4	48.8 32.4 16.3	48.6 33.6 14.5	48.4 31.7 13.3	46.7 29.8 11.8	43.7 27.7 11.2	43.2 25.2 10.6	40.4 24.5 10.6	39.2 22.3
29 0°	65.2 34.3 16.1	44.0 32.2 16.1	43.7 32.4 13.7	43.3 32.0 11.6	42.9 29.7 11.7	42.1 28.2 9.8	41.0 24.0 9.0	41.2 21.2 7.6	39.0 20.8 7.8	38.4 20.1
30 +1.9°	64.4 30.9 11.1	35.7 29.5 13.0	35.8 29.2 9.7	35.9 28.6 8.5	35.9 26.8 8.5	35.6 24.6 6.7	35.2 20.0 6.3	35.0 16.4 4.6	33.7 16.9 4.9	33.1 16.6

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	64.2	29.6	29.3	28.9	28.6	27.9	27.0	26.4	26.2	24.3
ANGLE +3.9°	24.0	23.0	22.4	21.8	20.7	18.6	15.0	12.0	11.7	11.1
	7.9	8.4	6.6	5.8	5.6	4.7	3.8	3.4	3.5	
32	64.0	30.2	29.3	28.0	26.2	24.3	20.8	18.5	16.6	14.5
+5.8°	13.9	11.5	11.3	10.0	9.9	8.8	8.3	8.5	7.9	7.0
	6.9	6.5	6.4	5.3	5.2	4.3	3.6	3.7	3.9	
33	63.9	29.0	28.1	27.1	25.6	24.0	21.4	17.8	14.2	13.1
+7.8°	13.1	9.7	11.1	9.3	8.9	8.2	7.8	8.6	8.2	7.6
	7.3	7.2	7.2	6.0	6.0	5.1	4.4	4.6	4.8	
34	63.8	25.9	25.0	24.0	22.6	20.8	17.6	19.1	13.3	11.1
+9.7°	10.3	9.6	11.7	9.9	7.8	8.8	8.1	9.4	8.0	7.9
	7.5	7.5	7.4	6.2	6.5	5.6	5.1	5.1	5.2	
35	63.7	25.0	23.7	22.0	18.8	17.2	14.4	18.5	13.2	11.6
+11.7°	11.0	10.0	10.7	9.6	6.9	8.0	7.4	9.2	7.6	7.1
	6.8	7.1	6.6	5.9	6.0	5.3	5.1	5.2	5.2	
36	63.6	21.6	20.5	18.9	16.4	15.3	13.9	18.7	12.9	11.2
+13.7°	11.8	9.6	8.4	8.5	4.6	6.3	6.2	7.8	5.5	5.0
	4.9	4.8	4.2	3.9	3.6	3.0	3.1	3.0	3.2	
37	63.6	19.0	18.4	17.8	17.0	16.2	15.1	17.2	8.3	13.1
+15.7°	8.1	8.9	6.4	8.1	5.1	3.7	4.3	5.6	2.5	1.9
	2.2	1.9	1.5	1.1	0.5	-0.1	0.3	0.2	0.3	
38	63.5	19.3	18.5	17.5	16.1	15.6	15.0	13.9	11.8	12.1
+17.7°	8.3	6.2	5.8	6.1	3.9	3.6	2.4	4.3	0.4	0.5
	0.2	0.2	-0.1	-0.8	-1.2	-1.5	-1.2	-1.5	-1.0	
39	63.5	21.0	20.3	19.4	18.3	17.2	15.8	15.0	12.0	9.9
+19.8°	6.6	6.3	6.2	5.9	4.0	3.1	2.3	4.0	0.1	0.3
	-0.3	-0.2	-0.9	-1.3	-1.5	-1.7	-1.9	-1.9	-1.7	
40	63.4	20.7	20.3	19.9	19.4	18.4	17.2	15.3	10.6	8.0
+21.8°	5.7	7.7	5.2	5.0	2.7	2.1	2.1	3.8	-0.1	-0.2
	-0.5	-0.2	-1.0	-1.2	-1.6	-1.3	-2.2	-2.1	-2.0	
41	63.4	19.9	19.3	18.6	17.7	16.7	15.5	15.1	11.3	7.3
+24.0°	5.5	6.2	4.1	3.1	2.1	0.4	1.7	3.5	-0.8	-0.7
	-0.7	-1.0	-1.7	-1.4	-1.7	-1.7	-2.2	-2.1	-2.0	
42	63.4	19.8	18.9	17.7	16.0	15.8	15.6	18.2	12.3	4.0
+26.1°	5.4	6.8	4.9	2.7	2.6	1.1	1.1	3.9	-0.2	-0.8
	-0.4	-1.1	-1.4	-1.5	-1.7	-1.9	-2.2	-2.1	-1.8	
43	63.4	19.5	18.4	17.0	14.8	16.2	17.2	18.9	10.4	6.8
+28.3°	5.5	7.6	4.6	2.3	2.8	1.8	2.0	4.5	-0.6	-0.5
	-0.5	-0.7	-1.4	-1.4	-1.9	-1.8	-2.3	-1.9	-1.9	
44	63.4	16.0	15.8	15.7	15.5	15.7	15.9	19.9	11.2	8.2
+30.5°	6.7	8.1	6.3	1.9	2.1	1.2	1.2	4.4	-0.6	-0.9
	-0.7	-0.3	-1.7	-1.4	-2.1	-2.3	-2.3	-2.1	-1.9	
45	63.4	19.0	18.5	17.9	17.2	15.9	14.0	20.1	10.7	7.7
+32.8°	4.8	8.4	4.8	3.3	2.0	0.7	1.3	4.7	-0.7	-0.5
	-0.7	-0.5	-1.4	-1.6	-2.1	-2.1	-2.3	-2.2	-2.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 9A

GROUP 9A

PAGE 4

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	63.4	17.9	18.0	18.0	18.0	16.6	14.5	20.7	17.0	9.1
ANGLE +35.1°	7.8	6.4	4.0	4.8	3.3	1.9	1.5	4.8	0.2	0.0
	-0.9	-0.2	-1.5	-1.5	-2.0	-1.7	-2.3	-2.1	-2.2	
47	63.5	20.0	20.2	20.4	20.6	18.9	15.9	21.6	13.2	9.3
+37.5°	9.4	7.8	7.9	7.2	5.8	3.5	2.9	4.7	0.4	0.7
	-0.3	-0.5	-1.3	-1.3	-1.9	-1.6	-2.0	-2.1	-2.0	
48	63.5	23.5	22.5	21.2	19.2	18.7	18.1	22.6	18.1	13.5
+40.0°	12.6	11.8	10.5	9.4	8.6	5.1	5.6	5.1	1.0	1.0
	0.6	0.4	-0.1	-0.7	-1.2	-1.2	-1.7	-2.1	-2.1	
49	63.6	28.2	27.4	26.5	25.3	25.0	24.7	25.7	22.5	20.0
+42.6°	19.6	17.7	16.7	15.5	13.9	10.8	10.4	8.3	2.9	3.9
	3.2	1.5	1.8	0.3	-0.2	-0.8	-1.6	-1.3	-1.4	
50	63.8	36.1	35.4	34.6	33.6	33.0	32.3	32.3	30.1	28.1
+45.3°	27.4	26.2	24.9	23.9	22.0	19.5	18.5	15.1	9.9	11.0
	10.0	5.5	7.0	4.4	3.6	2.5	0.4	0.7	1.1	
51	64.3	41.7	40.9	39.9	38.7	37.7	36.5	36.2	33.9	30.6
+48.1°	29.9	28.3	25.2	23.9	19.7	16.6	19.2	17.1	13.4	12.0
	10.3	8.5	7.5	5.4	4.4	2.9	2.3	2.0	1.4	
52	65.1	45.5	44.5	43.3	41.7	40.6	39.1	38.4	36.2	32.1
+51.1°	30.7	27.9	24.7	25.0	21.6	19.9	21.6	17.9	15.6	13.6
	11.8	10.7	9.6	7.5	6.0	5.0	4.1	3.6	3.5	
53	66.2	47.8	46.8	45.6	44.0	43.1	41.9	40.4	38.7	34.5
+54.3°	35.1	33.2	28.3	25.6	25.5	23.6	23.0	20.9	17.7	17.3
	14.5	13.1	12.6	10.3	8.7	7.0	6.5	5.9	6.2	
54	67.0	48.3	47.8	47.2	46.6	45.6	44.2	42.4	38.7	32.7
+57.8°	33.1	33.5	30.8	30.3	26.2	25.8	24.1	21.1	18.8	18.6
	16.7	15.0	13.7	11.7	10.0	9.0	8.0	7.2	7.7	
55	67.4	47.5	48.1	48.6	49.1	47.8	46.0	42.7	39.4	36.5
+61.6°	38.3	35.2	31.5	29.6	28.6	24.9	25.4	22.2	20.0	18.8
	17.1	15.8	13.8	12.2	10.3	10.3	8.9	8.2	8.3	
56	67.6	48.3	50.2	51.5	52.5	51.0	48.5	44.2	42.1	42.6
+66.0°	39.9	35.0	35.5	31.5	30.7	26.5	26.6	24.7	22.8	19.8
	18.7	16.7	14.7	13.5	11.4	11.1	10.3	9.6	9.4	
57	67.9	52.9	53.1	53.3	53.4	52.0	49.8	45.9	44.3	43.4
+71.3°	37.4	38.0	34.9	33.7	30.3	27.8	26.2	24.8	22.4	21.2
	19.9	16.7	15.2	13.5	12.8	11.4	10.6	10.6	9.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 9A

STA TAPE 9C

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.6 19.0 9.6	23.7 17.5 8.9	22.7 16.4 8.8	21.5 14.9 8.7	19.7 13.9 8.3	19.6 13.1 8.0	19.5 13.1 8.0	20.3 11.9 7.7	20.1 10.2 7.7	18.9 9.7
2 +64°	58.3 19.1 10.4	23.6 17.9 9.7	22.7 17.3 9.7	21.6 15.3 9.4	20.1 14.6 8.9	20.2 13.9 8.7	20.3 13.9 8.7	19.8 12.7 8.4	20.9 10.9 8.3	19.2 10.2
3 +53°	57.9 17.7 9.7	22.6 17.0 9.2	21.7 16.7 9.2	20.6 14.2 8.7	19.2 13.8 8.5	19.3 13.3 8.3	19.5 13.4 8.1	18.3 11.9 8.1	19.5 10.3 8.0	18.6 9.4
4 +44°	57.4 16.6 9.0	20.9 15.8 8.6	20.0 15.4 8.1	18.8 12.7 7.9	17.1 12.6 7.8	17.7 12.2 7.5	18.2 12.5 7.3	17.9 10.9 7.3	17.6 9.5 7.3	17.4 8.7
5 +37°	56.9 15.4 8.4	19.1 14.1 7.9	18.2 13.8 7.5	17.0 11.7 7.4	15.5 11.3 7.0	16.1 11.2 6.7	16.6 11.5 6.6	18.0 10.3 6.6	16.3 8.7 6.7	16.0 8.3
6 +30°	56.2 13.9 7.4	16.4 11.8 7.1	16.1 12.1 6.6	15.7 10.3 6.6	15.2 9.7 6.0	14.9 9.8 5.9	14.4 10.1 5.8	15.9 9.2 5.7	15.3 7.6 5.7	14.0 7.2
7 +23°	55.3 11.4 6.1	14.0 9.8 5.7	14.4 10.0 5.4	14.7 8.2 5.2	15.0 7.7 5.0	13.8 7.6 4.8	12.2 8.3 4.7	13.3 7.5 4.5	13.9 6.0 4.6	12.2 5.7
8 +17°	54.0 8.3 4.3	13.2 7.0 3.9	14.0 6.5 3.4	14.7 4.9 3.2	15.3 4.9 3.4	13.5 4.7 3.2	10.2 5.1 3.1	9.7 4.6 3.0	11.0 3.5 3.0	10.2 3.7
9 +12°	52.6 6.6 7.2	20.6 5.6 7.0	19.6 4.9 3.3	18.4 3.5 4.8	16.6 3.8 4.8	14.8 3.7 4.3	11.8 3.9 4.0	9.8 3.3 4.0	9.6 2.7 3.7	9.2 3.5
10 +6°	52.3 7.3 11.0	24.6 7.4 10.8	23.3 7.1 5.6	21.5 4.8 8.0	19.3 5.0 8.0	16.9 5.0 7.6	15.0 5.2 7.1	12.8 4.6 6.9	11.2 4.1 6.9	11.1 5.5
11 0°	52.3 5.9 10.6	24.3 6.4 10.5	23.0 5.8 4.6	21.3 3.0 7.6	19.2 3.3 7.7	16.8 3.0 7.4	14.7 3.3 7.1	12.5 2.6 6.8	10.2 1.9 7.1	10.4 3.8
12 −6°	52.3 4.7 6.8	19.3 3.6 6.5	18.3 3.3 2.5	17.0 2.0 4.4	15.2 1.6 4.2	13.5 2.1 4.2	10.8 2.1 3.9	7.8 2.0 3.9	6.6 0.9 3.9	7.6 2.1
13 −12°	52.1 3.7 3.0	11.7 2.3 1.9	11.0 2.1 0.7	10.3 1.6 1.5	9.3 0.4 1.1	8.5 1.3 1.1	7.5 1.3 0.8	3.7 1.3 0.9	3.3 0.4 1.1	5.3 1.0
14 −17°	51.9 5.7 1.4	11.1 3.0 0.9	10.2 3.5 0.6	9.0 3.0 0.3	7.5 1.7 0.1	7.5 2.0 0.2	7.5 2.5 0.2	4.9 2.1 -0.1	4.5 1.7 -0.0	4.1 1.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 9A

STA TAPE 9C

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.7 5.7 1.4	11.2 3.1 1.0	10.3 3.8 0.7	9.2 2.5 0.5	7.7 2.1 0.3	7.6 2.0 0.3	7.6 2.8 -0.0	4.5 2.4 -0.0	4.5 2.0 -0.1	4.3 1.5
16 −30°	52.0 3.8 0.5	8.6 2.2 0.6	7.9 1.8 0.4	7.1 0.8 0.2	6.1 1.3 0.3	6.4 1.2 0.2	6.7 1.9 -0.0	3.6 1.8 -0.0	3.1 0.9 0.0	3.5 0.5
17 −37°	52.2 2.8 0.7	6.6 2.3 0.9	6.3 2.4 0.6	5.9 1.1 0.4	5.6 1.6 0.6	6.0 1.8 0.4	6.4 2.1 0.3	3.1 2.0 0.4	3.5 1.1 0.3	3.5 0.9
18 −44°	52.5 2.5 1.5	6.3 2.9 1.3	6.1 2.7 1.3	5.9 1.1 1.1	5.8 1.8 1.2	6.0 1.9 1.1	6.1 2.6 0.9	2.5 2.2 0.9	4.4 1.2 0.7	3.5 1.1
19 −53°	52.7 2.3 2.0	5.9 3.1 2.5	5.7 2.9 2.6	5.3 2.8 2.0	5.0 2.5 2.0	5.0 2.5 2.2	5.0 2.5 1.6	2.0 2.0 1.6	4.3 1.7 1.6	3.8 1.6
20 −64°	53.1 7.2 4.1	10.9 7.4 4.7	10.2 7.1 4.5	9.3 5.8 3.4	8.2 5.4 3.2	8.4 5.8 3.4	8.5 5.9 2.5	8.6 4.8 2.4	8.8 3.6 2.5	9.7 3.4
21 −84°	52.8 9.4 5.3	13.3 9.3 5.8	12.5 9.4 5.6	11.5 7.2 4.0	10.3 7.1 3.7	10.6 7.6 4.0	10.9 7.9 2.7	11.1 6.9 2.4	11.4 4.8 2.3	12.2 4.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 9A

STA TAPE 9D

P. E 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.0 16.3 8.7	23.3 16.3 8.6	22.2 15.0 7.9	20.8 12.6 8.1	18.8 12.1 8.0	18.5 11.6 7.9	18.2 10.5 7.8	19.3 10.4 7.8	19.8 9.6 7.8	17.8 9.1
2 +64°	58.5 16.2 9.5	23.8 16.4 9.4	22.9 15.2 8.8	21.6 12.8 8.9	19.8 13.1 8.8	19.5 12.2 8.8	19.1 11.2 8.7	19.9 11.3 8.6	20.7 10.5 8.6	18.2 10.1
3 +53°	58.3 16.4 9.4	23.0 15.6 9.0	22.0 14.1 8.6	20.8 12.3 8.6	19.1 12.6 8.5	18.9 11.2 8.4	18.7 10.8 8.4	19.5 11.0 8.3	20.1 10.0 8.3	18.1 9.5
4 +44°	57.7 15.2 8.7	21.6 14.8 8.2	20.5 12.9 7.9	19.1 12.0 7.8	16.8 11.2 7.8	16.6 10.1 7.7	16.4 10.3 7.7	18.1 9.9 7.5	18.7 9.2 7.6	16.8 8.5
5 +37°	57.2 13.2 8.0	18.7 13.5 7.4	17.8 11.8 7.2	16.7 10.9 7.1	15.2 10.3 7.1	15.2 9.1 6.9	15.2 9.2 7.0	15.9 8.7 6.9	16.6 8.3 6.9	14.9 7.6
6 +30°	56.5 10.5 7.0	15.9 11.7 6.8	15.3 10.0 6.5	14.6 9.4 6.3	13.7 7.1 6.3	13.8 8.1 6.0	13.8 7.8 6.1	13.5 8.0 5.9	13.6 7.4 6.0	13.2 6.7
7 +23°	55.7 9.8 6.4	14.1 9.5 6.1	13.6 8.6 5.7	12.9 8.6 5.5	12.2 7.7 5.6	12.0 7.4 5.3	11.8 7.2 5.2	11.8 7.4 5.0	11.5 6.6 5.0	11.7 6.2
8 +17°	54.5 7.9 6.0	14.7 6.7 5.1	14.0 6.3 4.2	13.1 6.3 4.3	12.0 5.1 4.4	10.9 5.2 4.7	9.2 5.0 4.5	9.7 5.1 4.1	10.4 4.3 4.2	9.7 4.4
9 +12°	53.3 7.4 11.6	19.9 6.2 10.0	18.9 4.7 4.3	17.7 5.0 8.6	15.0 4.1 7.9	13.9 3.8 8.1	9.7 3.9 7.4	11.2 4.1 7.4	10.1 3.2 7.0	8.6 3.9
10 +6°	53.5 8.7 15.0	23.6 7.9 13.7	22.4 6.0 6.3	20.8 6.0 12.3	18.4 5.6 11.7	16.5 4.9 11.3	12.9 4.7 10.9	14.0 5.6 10.9	11.5 4.6 10.4	9.4 6.2
11 0°	53.5 8.2 15.1	23.6 8.4 13.8	22.4 6.5 6.5	20.6 5.9 12.4	17.7 5.6 11.8	16.1 5.3 11.6	13.6 4.9 11.0	13.4 5.9 10.8	12.1 4.8 10.7	10.0 6.2
12 −6°	53.3 7.8 12.2	20.1 8.4 10.8	18.9 5.9 4.5	17.3 4.4 9.5	14.8 4.2 9.1	13.5 4.0 8.9	11.7 3.6 8.1	10.4 3.9 8.0	12.7 3.4 8.0	10.9 4.2
13 −12°	52.7 9.2 7.1	15.4 9.7 5.9	14.4 8.2 3.1	13.0 7.2 4.9	11.0 6.5 4.4	10.7 6.5 4.4	10.4 6.0 4.0	9.3 5.8 3.7	13.6 5.0 3.7	11.9 4.7
14 −17°	52.3 9.1 5.7	13.1 8.9 4.9	12.2 8.3 3.9	11.1 8.2 3.1	7.6 7.2 2.0	9.5 7.2 1.6	9.4 7.0 1.4	8.8 6.8 1.3	10.8 6.3 1.0	9.9 5.9

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 9A

STA TAPE 9D

PAGE 2

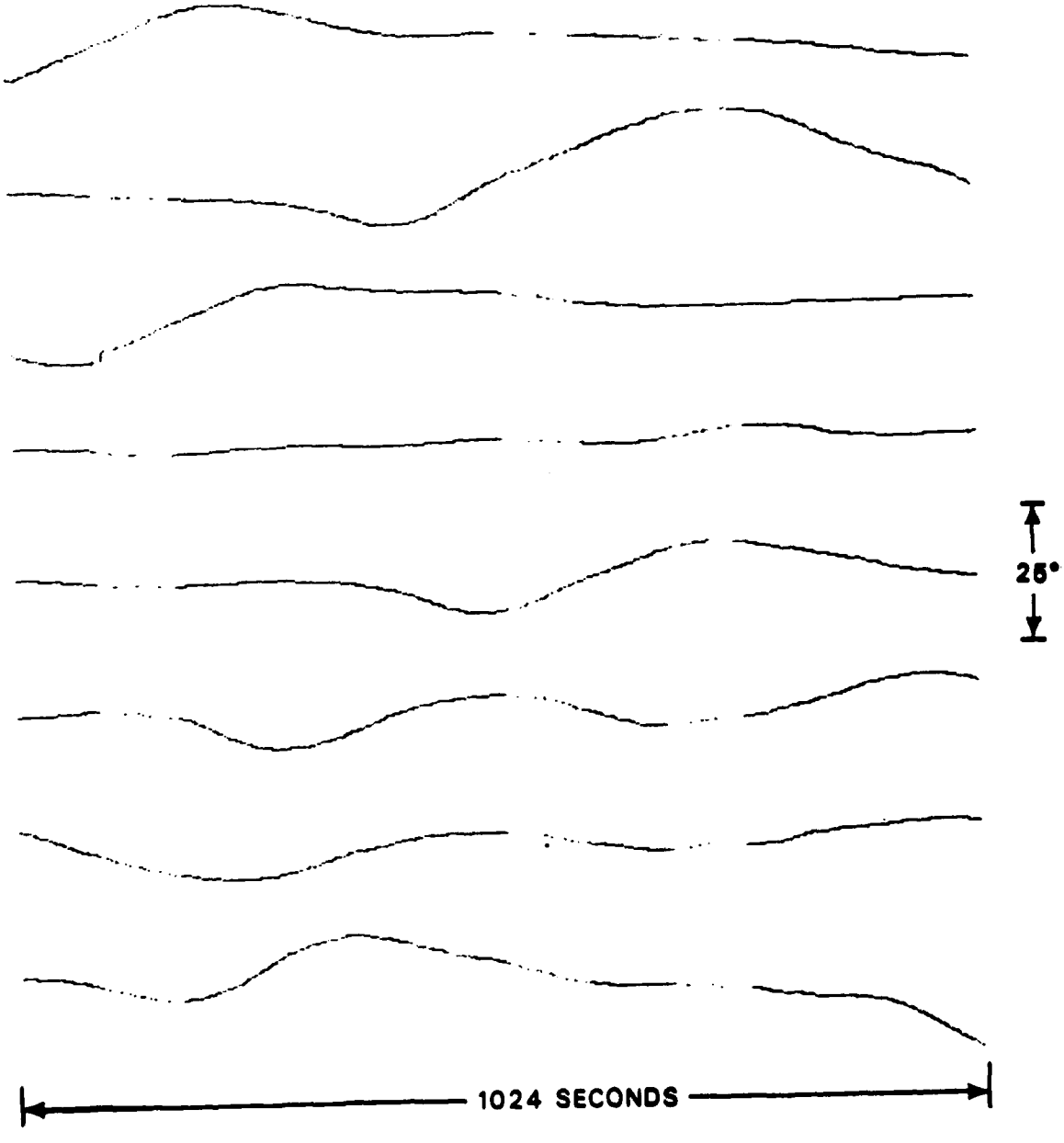
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C 152 1540	19.0 192 1940	24 0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	52.0 4.1 1.4	9.0 3.5 1.2	8.2 3.5 0.8	7.1 3.3 0.6	5.7 1.7 0.4	5.3 2.3 0.3	4.9 2.5 0.0	4.5 1.8 0.0	4.7 1.5 −0.1	4.3 1.4
16 −30°	52.0 1.1 −0.2	5.5 1.3 0.1	4.8 1.6 0 0	4.1 0.7 −0.0	3.2 −0.3 −0.1	3.5 0.6 −0.1	3.8 1.0 −0.0	3.5 0.3 −0.1	2.5 0.1 −0.1	2.1 0.2
17 −37°	52.2 0.8 0.3	5.0 1.9 0.4	4.6 1.6 0.3	4.2 1.0 0.4	3.8 0.8 0.4	3.8 0.6 0.3	3.7 1.2 0.3	3.6 0.7 0.3	2.6 0.5 0.4	2.3 0.5
18 −44°	52.5 1.7 1.2	5.6 3.3 1.0	5.3 1.8 0.9	4.9 1.6 0.9	4.5 1.3 0.9	4.0 1.1 0.8	3.5 1.4 0.8	3.5 1.4 0.7	1.5 1.1 0.7	2.8 0.8
19 −53°	52.7 2.4 1.8	5.8 3.3 2.2	5.5 2.7 2.0	5.1 2.9 1.9	4.8 2.1 2.0	4.6 2.4 1.7	4.5 1.8 1.7	3.3 1.8 1.5	3.0 2.1 1.5	3.5 2.0
20 −64°	53.2 5.6 3.7	8.5 5.3 4.1	8.5 4.2 3.7	8.5 5.0 3.4	8.5 4.6 3.4	8.3 4.8 3.0	8.0 3.8 2.8	6.1 4.0 2.4	7.1 4.4 2.3	7.1 3.8
21 −84°	52.8 7.4 4.6	10.3 6.4 5.1	10.4 4.8 4.4	10.4 6.2 4.3	10.5 5.4 4.0	10.3 5.7 3.4	10.0 5.0 3.1	7.9 5.6 2.7	9.1 5.9 2.3	9.0 4.8

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 9A

BEARING VS TIME

MEAN & VAR.	269.0	11.57	266.2	39 59	267.4	13.74	269.8	0.90
269.0	10.30	266 8	10 24	266.5	7 21	267.2	25 23	

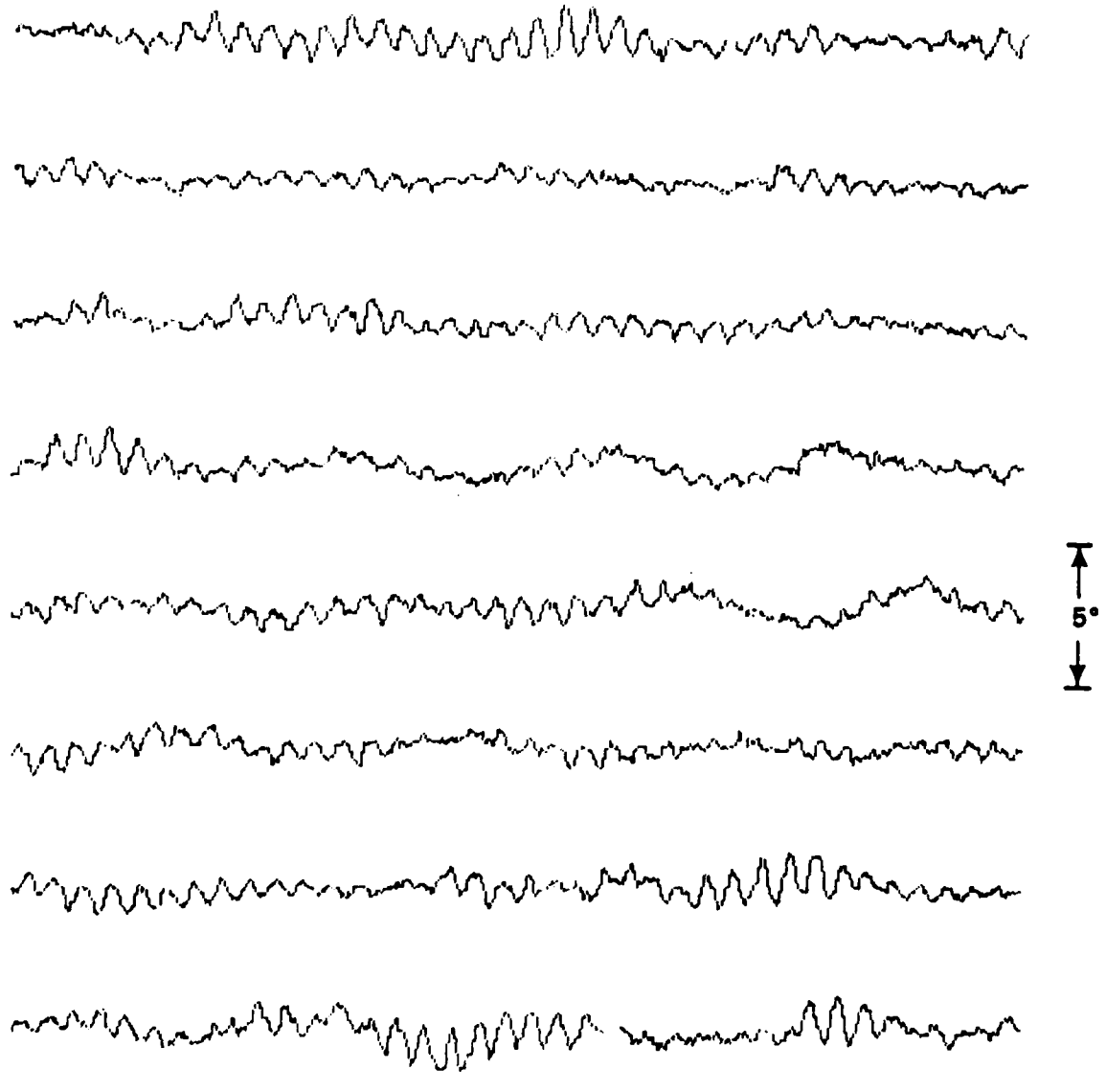


MPL-M-4832

GROUP 9A

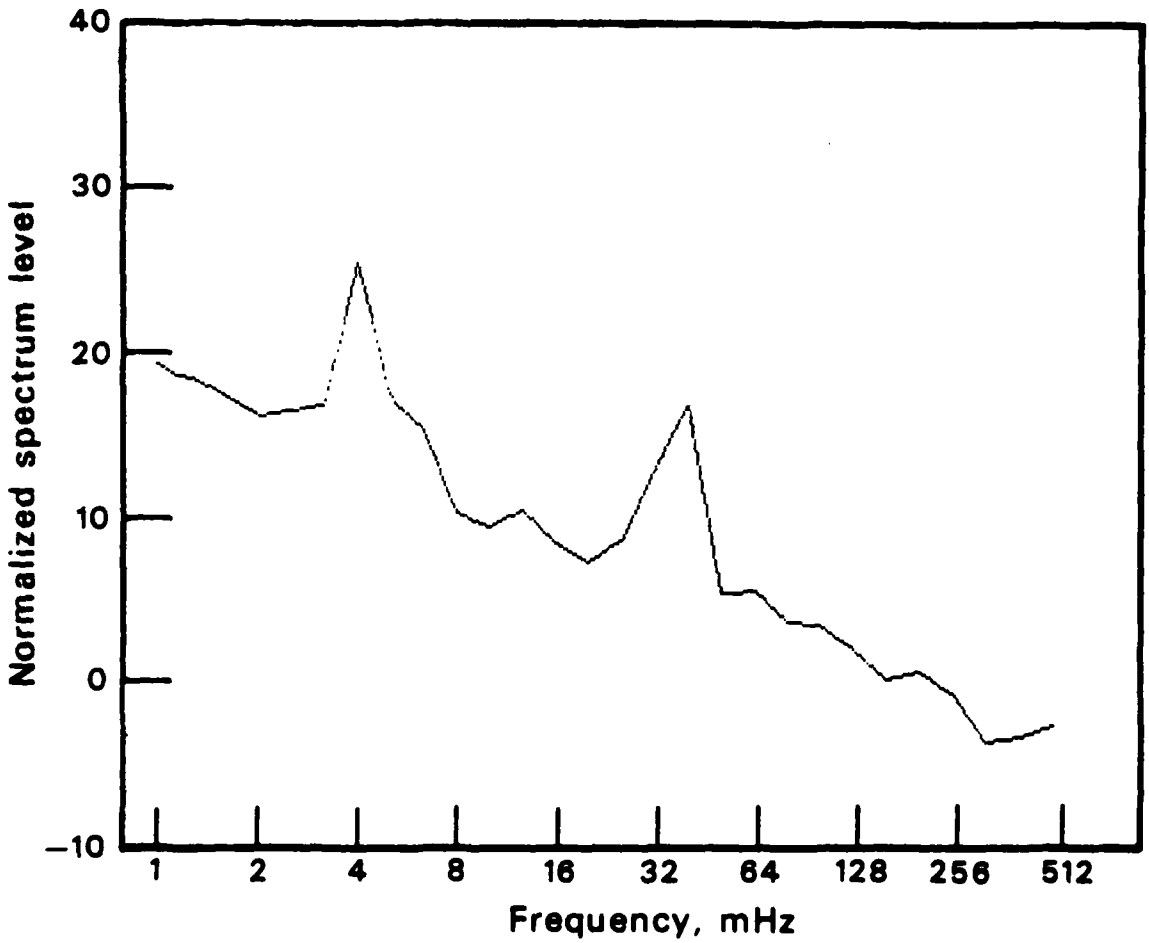
ELEVATION VS TIME

MEAN & VAR	92.6	0.06	92.7	0.01	92.6	0.01	92.6	0.08	
92.8	0.06	92.9	0.04	93.1	0.09	93.2	0.14		



MPL M-4833

GROUP 9A



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 9B

Environmental Summary

9 June 1978

Tapes	Start time	Code
LTA/LOG	18:38:11	09B
STA	18:41:01	09E
STA	19:43:13	09F
High Band Filter		

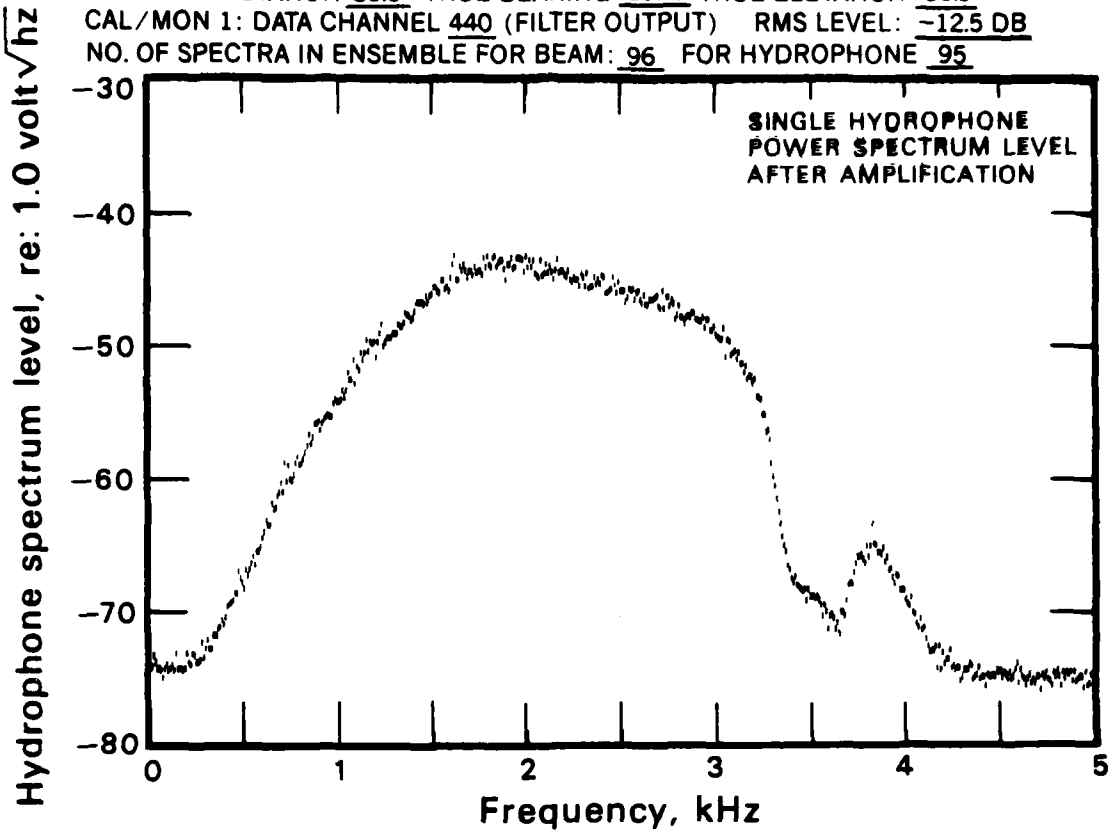
Environment

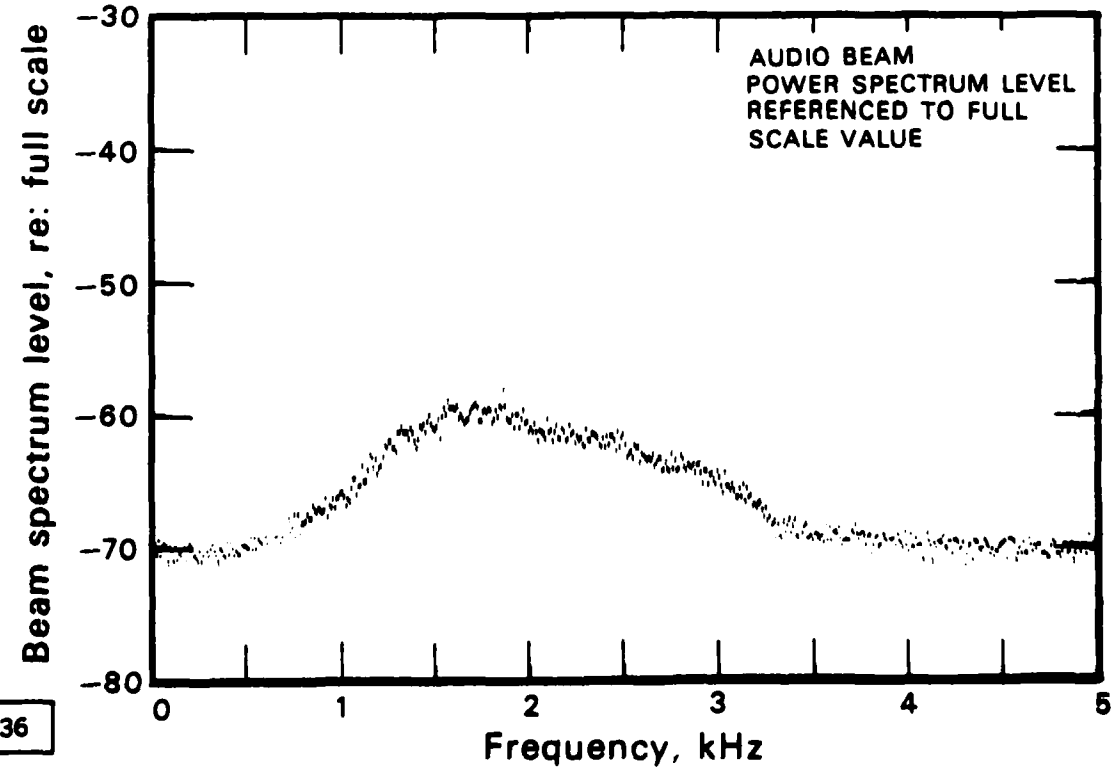
Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
18:30	2300	14	335	3-5	5-7	NW	No targets
21:00	2300	17	330	"	"	"	Chop

MPL-M-4835

09-JUN-78 19:00:44 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 297.3
RELATIVE ELEVATION 80.0 TRUE BEARING 207.7 TRUE ELEVATION 80.9
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -12.5 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 95

GROUP 9B





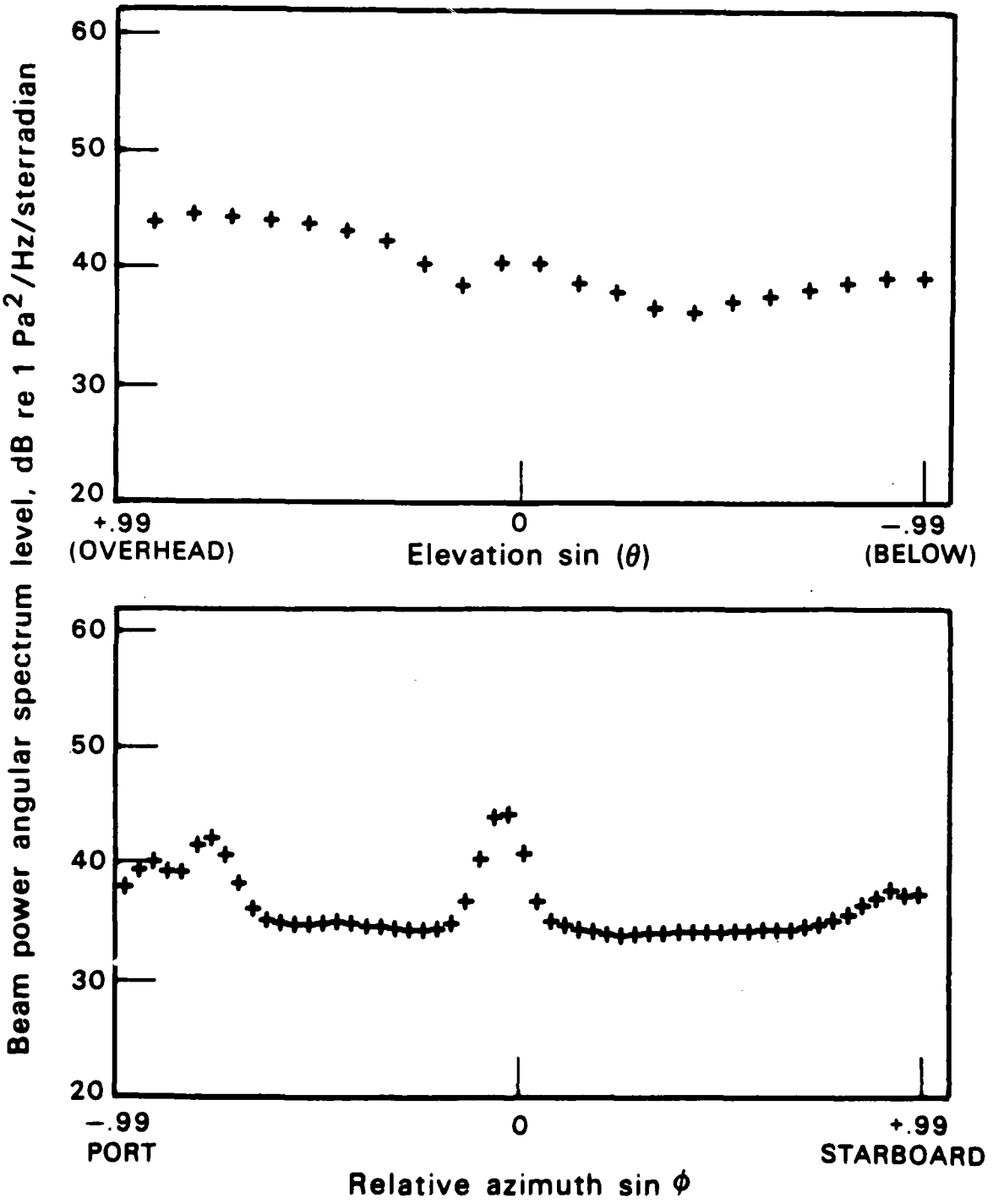
MPL-M-4836

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.

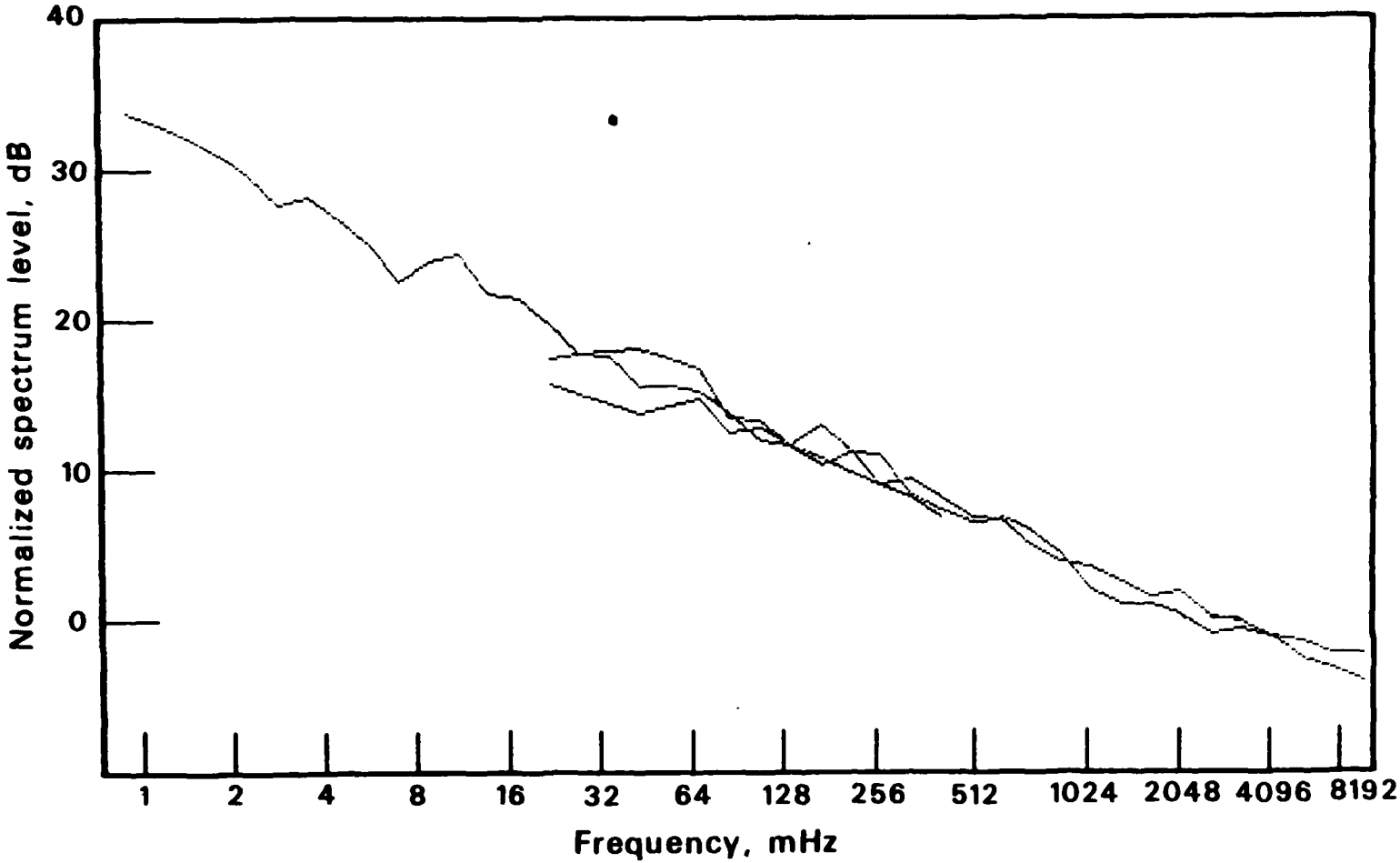
GROUP 9B



MPL-M-4837

MPL-M-4838

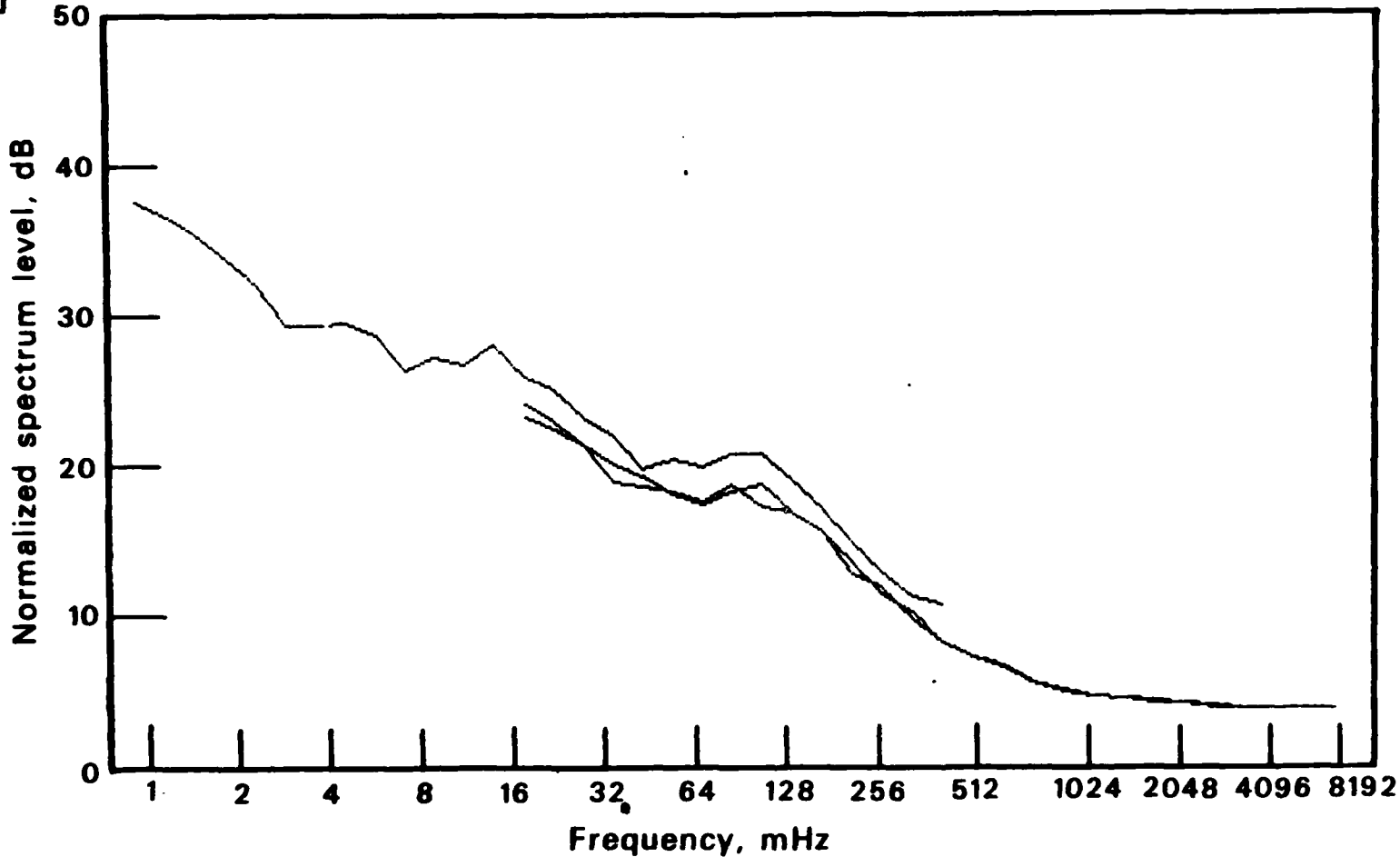
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 9B

MPL-M-4839

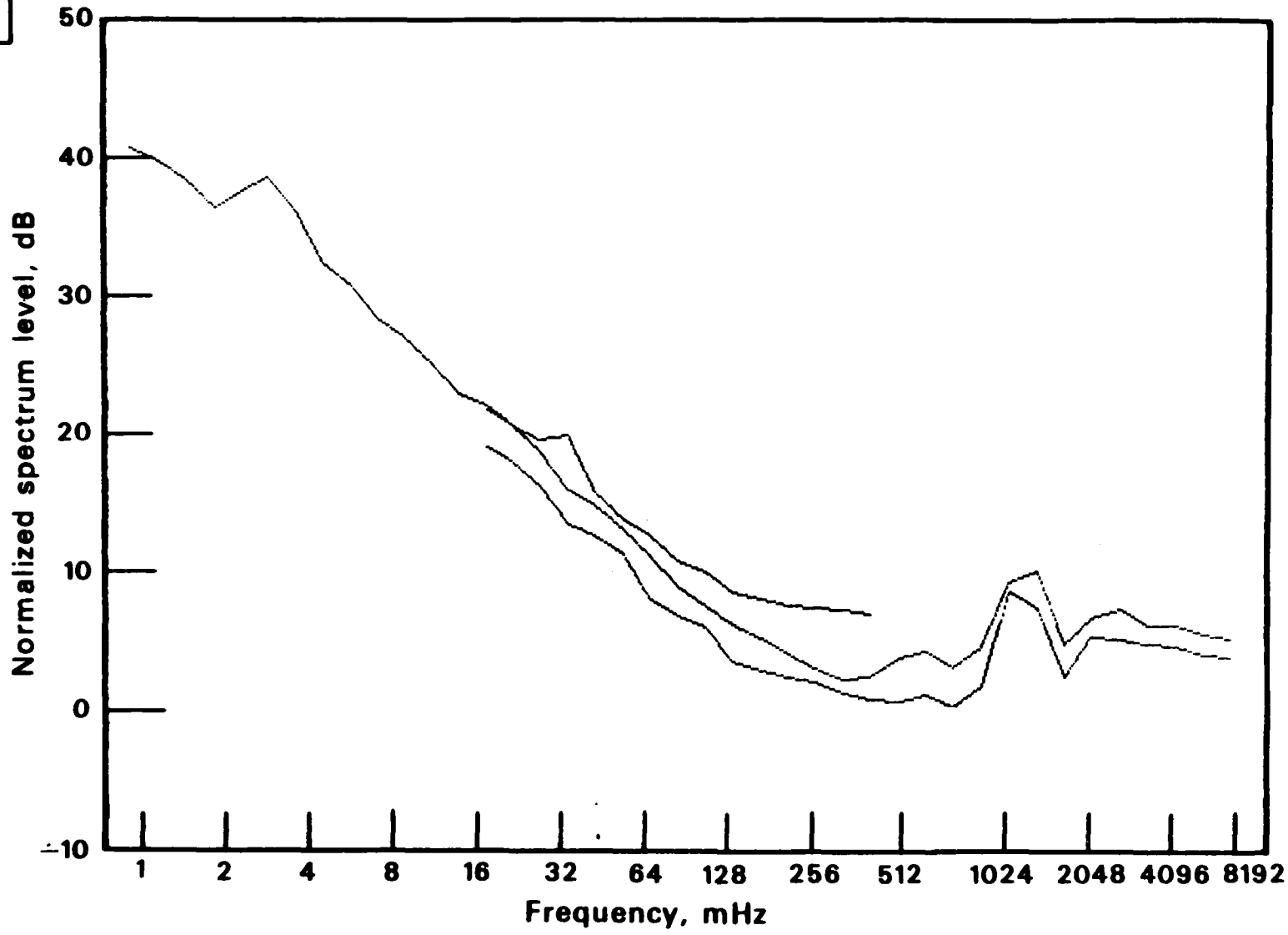
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 9B

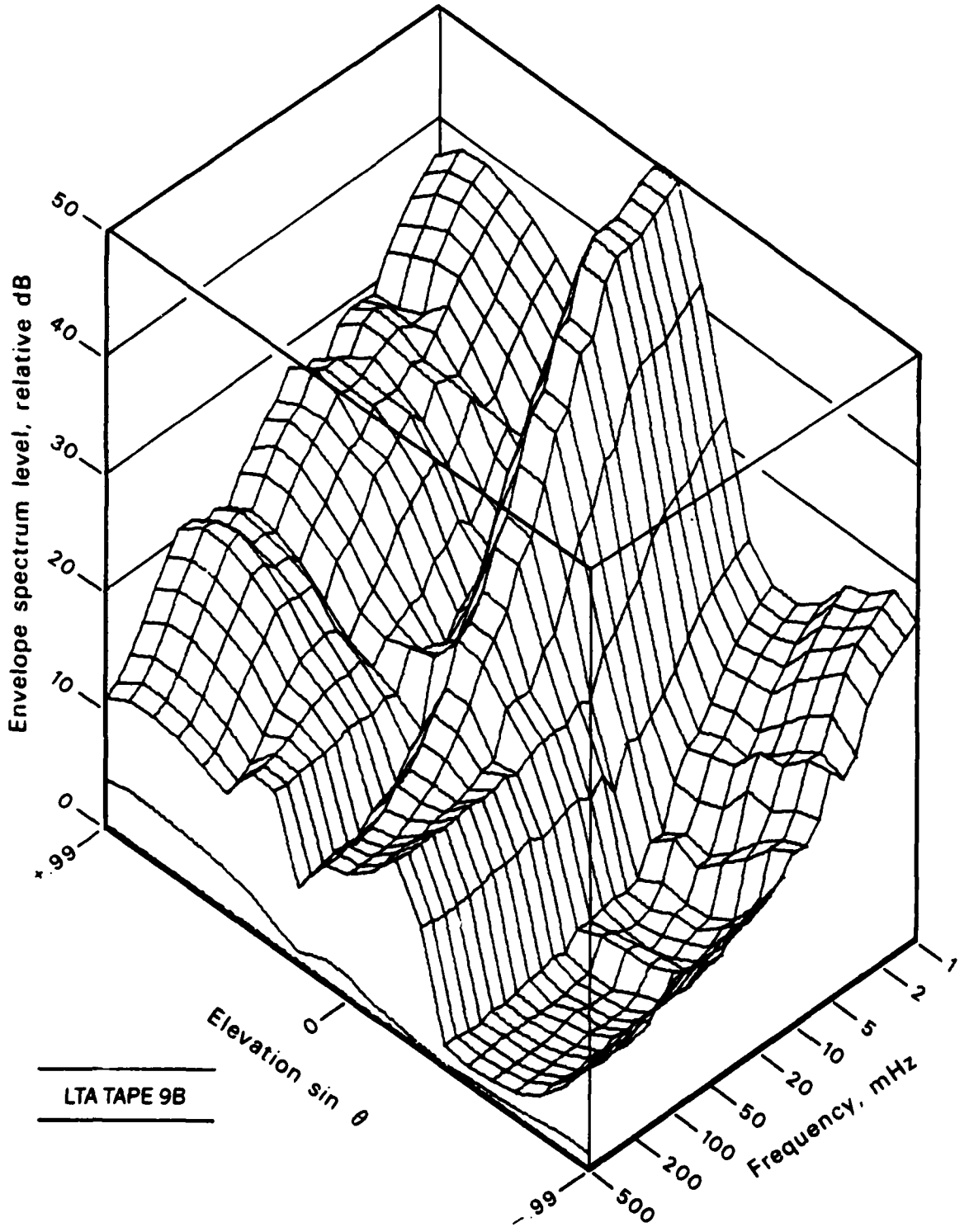
MPL-M-4840

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 9B

GROUP 9B

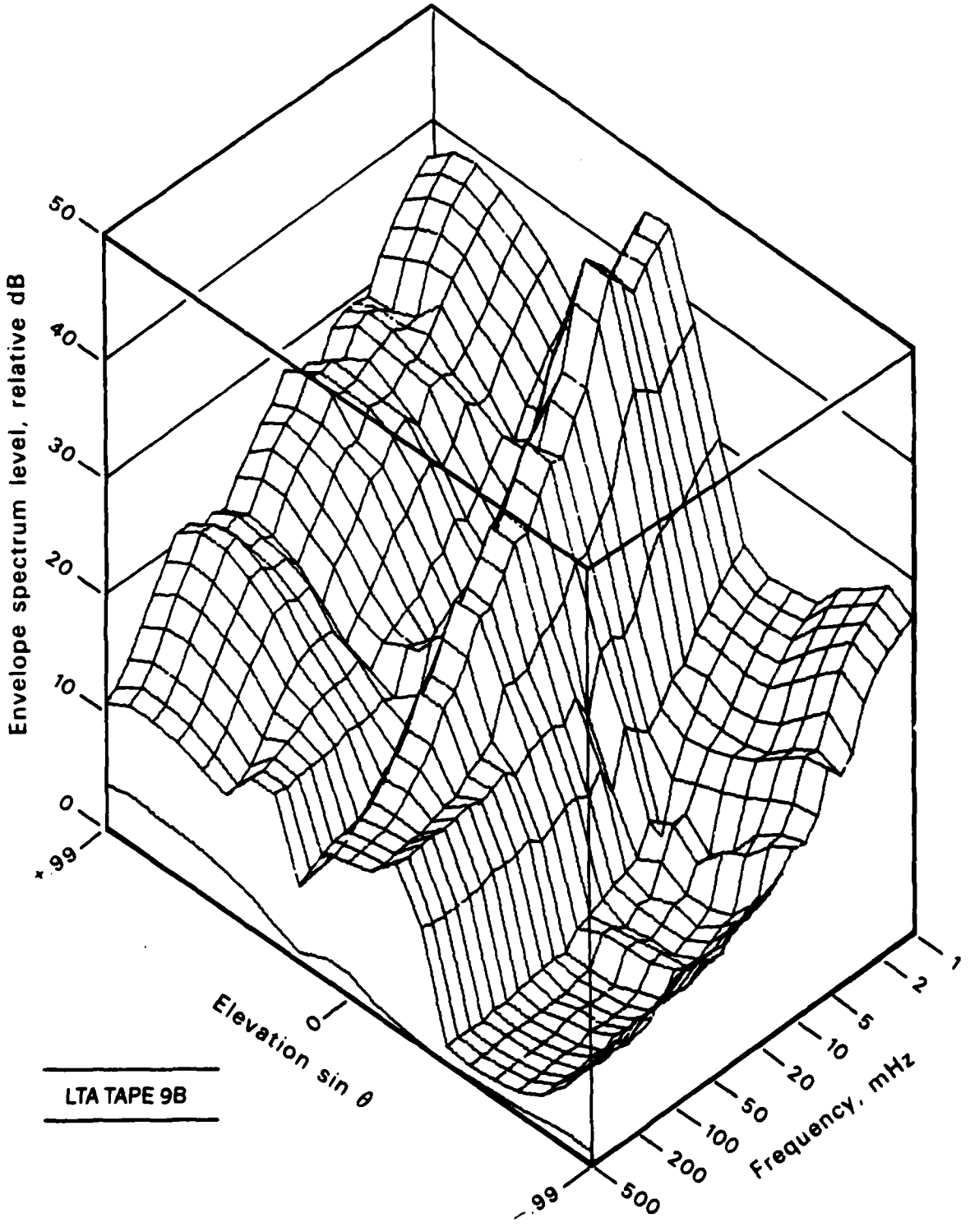


LTA TAPE 9B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4841

GROUP 9B

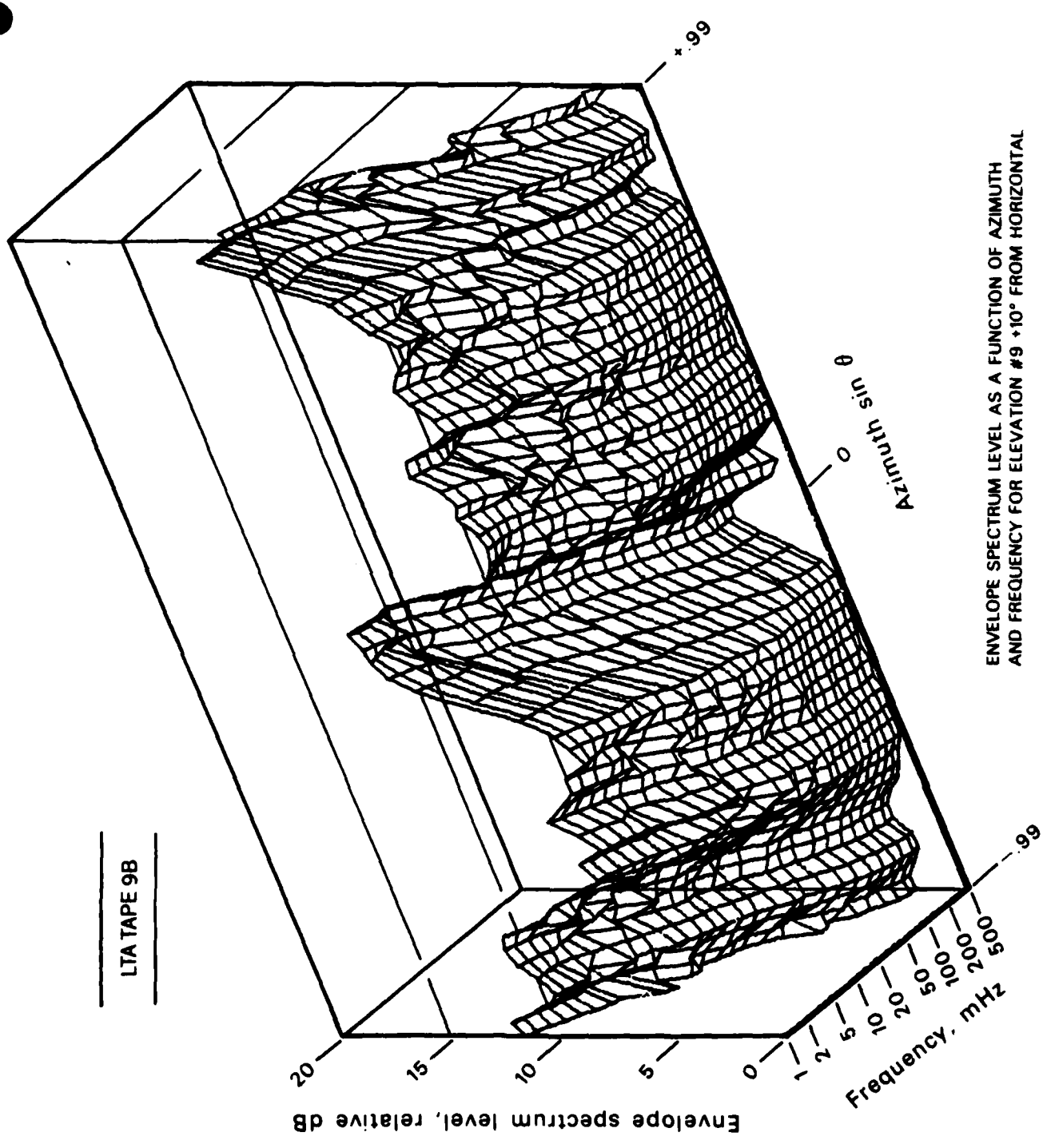


LTA TAPE 9B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4842

GROUP 9B

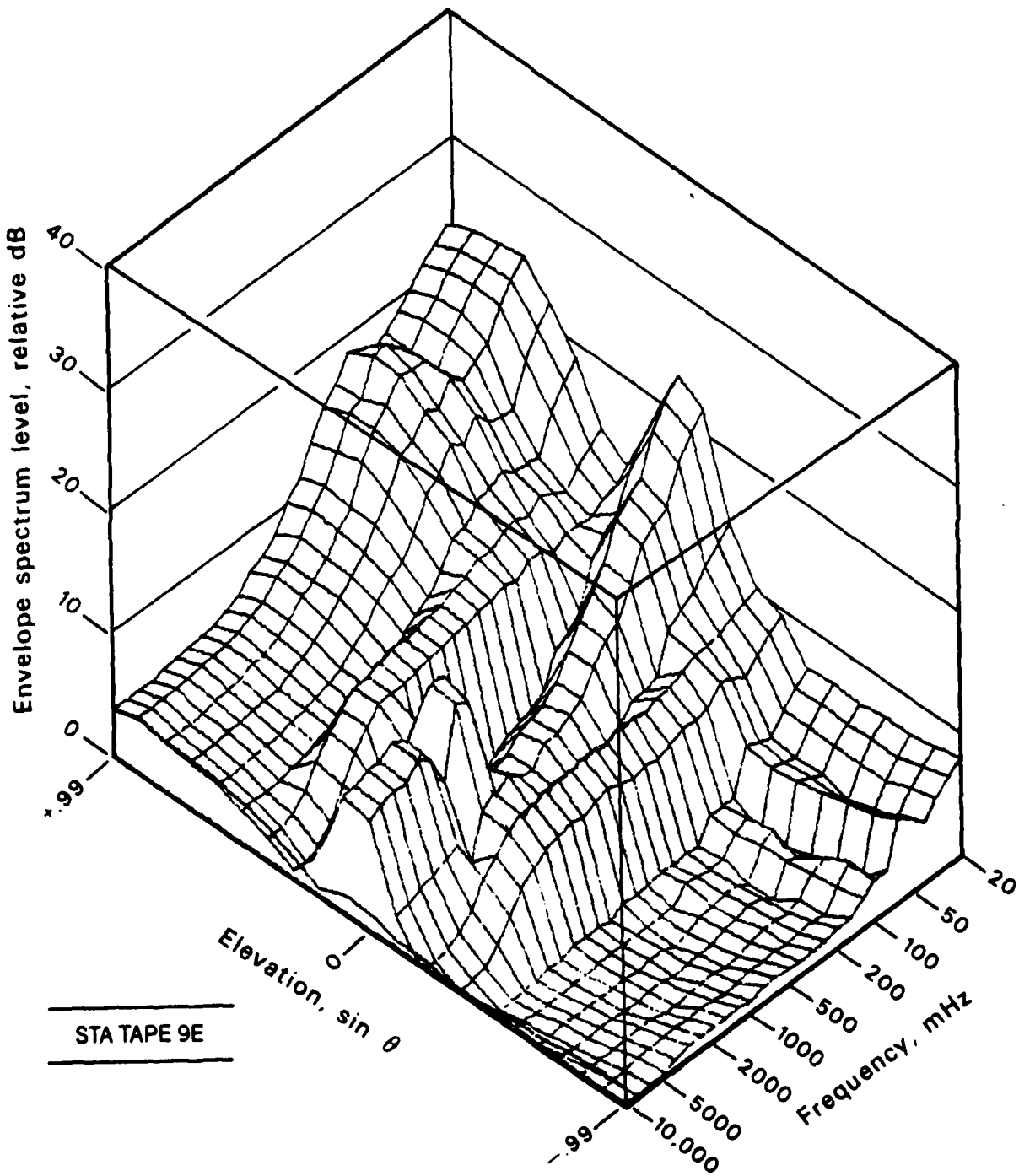


ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

LTA TAPE 9B

MPL-M-4843

GROUP 9B

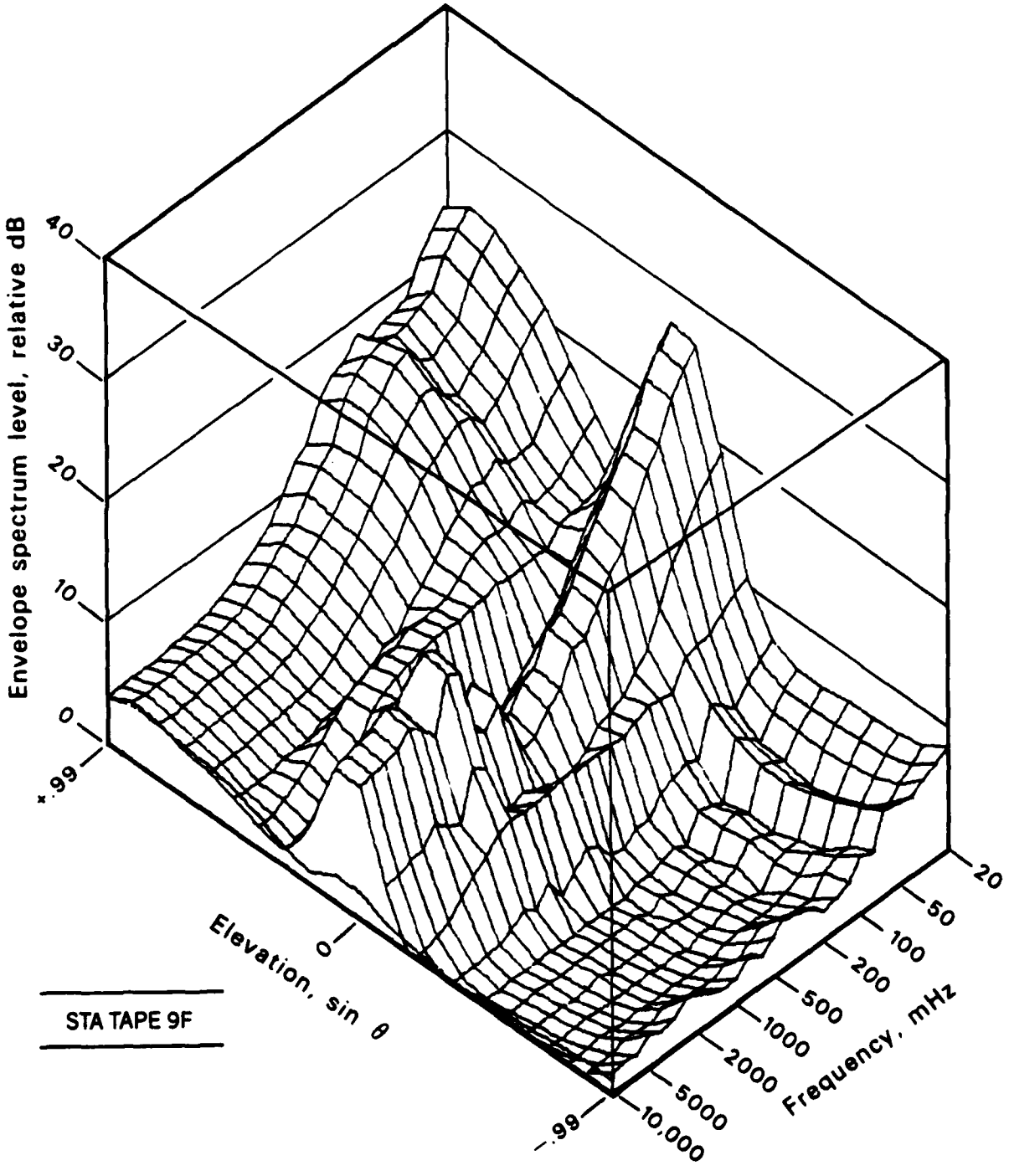


STA TAPE 9E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4844

GROUP 9B



STA TAPE 9F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4845

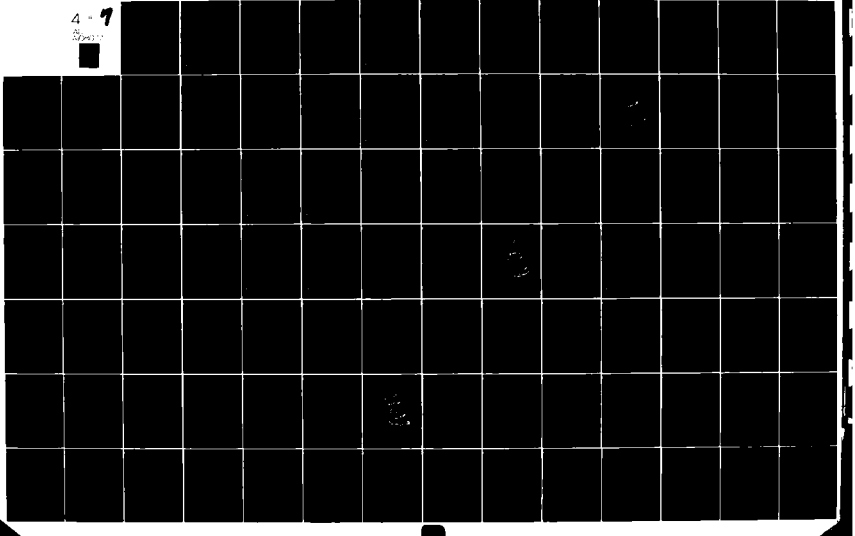
GROUP 9B

LTA TAPE 9B

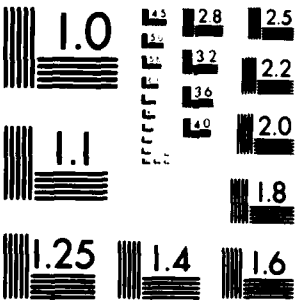
	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.8	32.6	31.7	30.5	28.8	27.1	24.4	24.5	24.6	23.9
ANGLE +84°	21.5	22.3	21.9	23.2	21.0	20.1	18.3	17.0	14.9	15.4
	15.0	15.8	15.8	14.1	12.1	10.0	8.0	6.2	5.8	
2	67.4	34.5	33.5	32.2	30.2	28.3	24.6	25.4	26.1	25.5
+64°	23.3	23.9	23.7	24.4	22.1	21.5	20.0	18.2	16.0	16.6
	16.1	17.3	17.4	15.3	13.5	11.3	9.2	7.7	6.9	
3	67.2	34.8	33.9	32.8	31.2	29.3	25.5	25.3	25.8	25.4
+53°	24.8	23.9	23.6	23.8	22.3	21.1	19.8	18.1	15.6	16.2
	16.0	17.8	17.3	15.2	13.5	11.5	9.2	7.7	7.0	
4	67.0	34.0	33.1	32.1	30.6	29.4	27.8	26.1	24.6	25.0
+44°	23.6	23.6	23.6	21.6	21.3	19.8	18.1	16.8	14.5	15.7
	15.6	16.4	16.2	14.3	12.7	10.7	8.7	7.2	6.6	
5	66.9	33.0	31.9	30.5	28.5	27.4	25.8	24.1	24.6	24.7
+37°	22.2	23.5	22.1	21.1	20.5	17.7	16.3	15.3	12.6	14.8
	14.6	14.9	14.8	12.9	11.6	9.6	7.7	6.3	5.7	
6	66.5	31.2	30.2	29.0	27.2	25.6	23.0	22.7	24.4	21.4
+30°	20.0	20.9	20.0	18.7	17.4	15.2	13.7	12.4	10.7	12.3
	12.6	12.3	11.9	10.6	9.2	7.6	5.9	5.1	4.9	
7	65.9	29.0	27.9	26.5	24.5	22.8	20.0	22.6	20.8	18.3
+23°	16.4	17.5	16.0	15.4	13.3	13.0	12.1	11.6	10.0	11.2
	10.8	10.9	10.6	10.1	9.3	8.8	8.3	8.0	8.2	
8	64.7	28.4	27.4	26.3	24.7	24.0	23.2	22.7	19.9	17.1
+17°	15.4	15.2	12.3	12.5	10.5	11.1	11.4	12.3	8.9	9.4
	8.3	8.9	9.0	8.5	8.3	8.2	8.1	7.8	8.0	
9	63.7	38.0	37.4	36.6	35.7	35.6	35.6	33.8	30.6	29.3
+12°	25.7	24.6	21.1	17.6	15.6	13.2	12.4	13.0	7.4	6.3
	4.4	3.5	3.4	2.1	1.8	1.5	1.6	1.5	1.2	
10	64.8	45.1	44.5	43.8	42.9	42.8	42.6	41.0	37.2	36.4
+6°	32.6	31.2	27.5	23.7	21.8	18.8	16.9	16.0	12.6	10.9
	9.3	7.7	7.2	5.7	5.0	4.7	4.9	5.0	4.7	
11	64.8	45.1	44.5	43.8	42.9	42.7	42.5	40.8	36.9	36.2
0°	32.2	30.8	27.2	23.2	21.7	18.5	16.8	15.4	12.6	10.8
	9.4	7.8	7.1	6.2	5.5	5.3	5.5	5.3	5.3	
12	64.0	37.9	37.2	36.3	35.2	34.9	34.6	33.2	28.9	28.6
−6°	24.9	23.2	20.0	16.6	15.7	13.1	13.0	13.1	9.2	9.0
	8.2	7.8	7.8	7.5	7.2	7.2	7.1	7.0	7.0	
13	63.7	27.9	27.1	26.1	24.8	24.1	23.3	21.8	19.2	17.9
−12°	16.0	15.1	11.5	12.1	11.0	11.1	11.0	10.5	9.6	10.2
	9.8	9.7	9.9	9.6	9.5	9.3	9.4	9.4	9.5	
14	63.2	18.9	18.2	17.5	16.6	15.5	14.0	11.9	10.7	9.5
−17°	9.2	8.8	5.1	7.3	6.0	6.6	6.4	5.8	5.5	6.1
	5.6	5.5	5.6	5.2	4.9	4.8	4.7	4.8	5.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

AD-A108 077 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA MARI--ETC F/G 20/1
ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978.(U)
JUL 81 V C ANDERSON N00014-80-C-0077
UNCLASSIFIED SIO-REF-81-13 SBI-AD-E001 179 NL



08077



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A.

GROUP 9B

LTA TAPE 9B

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	16.4	15.6	14.7	13.6	12.2	9.9	8.1	7.5	5.2
ANGLE −23°	1.6	1.7	-0.8	-1.2	-0.9	-1.2	-1.5	-1.5	-2.8	-2.5
	-2.9	-3.0	-3.3	-3.5	-3.4	-3.8	-3.7	-3.5	-3.4	
16	63.4	16.3	15.7	14.9	14.0	12.7	10.6	9.1	8.3	5.1
−30°	3.0	3.3	0.3	-1.3	-1.7	-1.7	-1.1	-0.7	-3.2	-3.2
	-3.5	-3.6	-3.6	-3.6	-3.6	-3.5	-3.6	-3.7	-3.8	
17	63.6	17.7	16.9	15.9	14.6	13.0	10.3	8.8	9.0	6.0
−37°	2.6	2.3	-0.1	-0.3	-1.3	-1.8	-0.6	-0.4	-3.0	-2.9
	-3.0	-2.7	-2.9	-3.2	-3.4	-3.4	-3.5	-3.4	-3.5	
18	63.8	20.8	19.9	18.8	17.4	15.6	12.6	10.6	11.5	9.0
−44°	4.3	4.3	0.2	-0.1	-0.5	-1.2	-0.2	-0.3	-2.0	-2.5
	-2.6	-2.6	-2.4	-2.8	-2.7	-2.8	-2.9	-3.0	-3.1	
19	64.1	21.6	20.9	20.0	19.0	17.4	14.7	12.5	12.0	8.7
−53°	6.7	6.0	1.5	1.6	0.6	0.1	0.0	0.6	-1.2	-1.4
	-1.3	-1.4	-1.3	-1.9	-1.7	-2.0	-1.8	-1.7	-2.0	
20	64.4	23.4	22.7	21.9	20.9	19.2	16.3	13.7	13.9	10.3
−64°	8.4	8.4	4.2	3.5	3.5	2.8	2.9	2.1	1.4	1.6
	1.7	1.5	1.1	0.3	1.0	0.3	0.5	0.5	0.3	
21	64.3	22.2	21.5	20.7	19.8	17.8	14.2	13.0	14.3	10.9
−84°	9.4	9.7	8.3	7.3	7.6	6.7	6.8	5.1	5.2	5.8
	6.0	5.8	5.0	3.7	4.8	3.8	4.0	3.9	3.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 9B

LTA TAPE 9B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.8	32.6	31.7	30.5	28.8	27.1	24.4	24.5	24.6	23.9
ANGLE +84°	21.5	22.3	21.9	23.2	21.0	20.1	18.3	17.0	14.9	15.4
	15.0	15.8	15.8	14.1	12.1	10.0	8.0	6.2	5.8	
2	67.4	34.5	33.4	32.1	30.2	28.2	24.6	25.3	26.0	25.5
+64°	23.4	23.9	23.7	24.4	22.1	21.5	20.0	18.2	16.0	16.6
	16.1	17.3	17.4	15.3	13.5	11.3	9.2	7.7	6.9	
3	67.2	34.8	33.9	32.8	31.2	29.2	25.5	25.4	25.8	25.2
+53°	24.7	23.8	23.7	23.8	22.3	21.1	19.9	18.1	15.6	16.2
	16.0	17.8	17.3	15.2	13.5	11.5	9.2	7.7	7.0	
4	67.0	34.0	33.1	32.1	30.6	29.5	27.9	26.1	24.9	24.9
+44°	23.6	23.4	23.6	21.4	21.4	20.1	18.0	16.5	14.6	15.8
	15.6	16.5	16.2	14.3	12.7	10.7	8.7	7.2	6.6	
5	66.7	32.8	31.8	30.3	28.2	27.0	25.4	24.3	24.9	24.5
+37°	22.0	23.4	22.5	20.7	20.4	18.0	16.4	15.0	12.6	14.9
	14.6	15.0	14.7	12.9	11.6	9.6	7.7	6.3	5.7	
6	66.5	31.2	30.3	29.0	27.1	25.6	23.2	23.1	24.0	21.2
+30°	20.0	21.0	19.9	18.0	17.2	15.5	13.7	12.3	10.6	12.4
	12.6	12.4	11.9	10.7	9.2	7.7	5.9	5.1	4.9	
7	65.9	28.6	27.6	26.4	24.7	23.1	20.7	21.8	20.1	18.5
+23°	16.8	17.2	15.6	15.2	13.3	12.9	12.0	11.5	9.8	11.3
	10.7	10.7	10.5	10.0	9.2	8.7	8.2	7.8	8.0	
8	64.8	27.3	26.5	25.5	24.2	23.3	22.2	22.0	18.2	16.0
+17°	15.2	14.9	12.0	12.4	10.4	11.3	11.4	12.5	8.9	9.4
	8.8	8.7	8.8	8.4	8.2	8.1	7.9	7.7	8.0	
9	64.0	35.4	34.4	33.1	31.2	32.4	33.3	30.8	27.1	25.5
+12°	23.1	21.8	19.8	17.6	16.8	15.3	14.2	14.7	10.4	8.5
	7.2	5.4	4.7	3.2	2.6	2.1	1.9	1.7	1.5	
10	65.0	41.0	40.2	39.1	37.7	39.5	40.8	37.7	32.5	30.9
+6°	27.4	28.7	26.3	24.0	23.6	21.8	19.8	19.4	16.9	14.4
	13.8	11.2	10.0	8.4	7.3	6.5	6.3	6.1	5.8	
11	65.1	41.3	40.4	39.3	37.9	39.4	40.6	37.4	32.6	30.6
0°	28.1	28.4	26.2	23.9	23.6	21.7	19.7	19.5	16.7	14.5
	13.8	11.3	10.0	8.7	7.5	7.0	6.8	6.5	6.5	
12	64.1	34.4	33.5	32.3	30.7	31.6	32.4	29.9	24.8	23.4
−6°	21.3	21.1	18.7	17.4	16.8	15.0	14.6	14.8	11.0	10.2
	9.5	8.4	8.1	7.7	7.3	7.3	7.2	7.0	7.1	
13	63.7	26.0	25.2	24.1	22.7	22.2	21.7	19.7	16.3	14.9
−12°	15.4	15.0	10.1	12.6	10.9	11.5	11.2	10.7	9.5	10.4
	9.7	9.5	9.8	9.5	9.3	9.5	9.3	9.1	9.3	
14	63.2	18.2	17.3	16.3	14.7	13.6	11.7	11.1	9.4	8.1
−17°	8.9	10.0	5.1	7.8	6.1	6.8	6.7	5.8	5.2	6.2
	5.9	5.4	5.5	5.1	4.8	4.8	4.7	4.8	5.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 9B

LTA TAPE 9B

GE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	16.9	16.3	15.5	14.6	13.5	12.0	9.8	8.3	5.4
ANGLE −23°	1.1	3.2	0.8	0.4	-0.0	−0.5	-1.1	-1.6	-2.8	-2.6
	-2.8	-2.9	-3.2	-3.5	-3.4	-3.7	-3.6	-3.5	-3.5	
16	63.4	17.2	16.5	15.5	14.4	13.0	10.9	9.6	8.8	6.3
−30°	4.5	4.4	1.9	-0.5	-0.4	-1.5	-0.8	-0.6	-2.9	-3.1
	-3.4	-3.5	-3.5	-3.6	-3.6	-3.4	-3.7	-3.7	-3.8	
17	63.6	17.6	16.8	15.9	14.7	13.3	11.2	9.7	9.5	7.1
−37°	2.5	2.6	0.6	0.4	-0.6	-1.1	-0.4	-0.3	-2.8	-2.9
	-3.0	-2.7	-2.8	-3.3	-3.3	-3.4	-3.5	-3.5	-3.5	
18	63.8	20.4	19.5	18.4	16.9	15.2	12.3	10.5	10.6	8.0
−44°	4.1	5.0	0.8	-0.1	-0.4	-1.0	-0.1	-0.2	-1.9	-2.4
	-2.5	-2.6	-2.4	-2.8	-2.8	-2.8	-2.9	-3.0	-3.1	
19	64.1	21.7	21.0	20.1	19.0	17.2	14.2	12.4	12.3	9.4
−53°	7.1	6.0	1.7	1.5	0.8	0.0	0.2	0.7	-1.1	-1.4
	-1.3	-1.4	-1.3	-1.9	-1.7	-2.0	-1.8	-1.7	-2.0	
20	64.4	23.4	22.7	21.9	20.9	19.1	16.2	13.6	13.9	10.5
−64°	8.6	8.4	4.2	3.5	3.5	2.7	2.9	2.2	1.4	1.6
	1.7	1.5	1.1	0.3	1.0	0.3	0.5	0.5	0.3	
21	64.3	22.2	21.5	20.7	19.8	17.8	14.2	13.0	14.3	10.9
−84°	9.4	9.7	8.3	7.3	7.6	6.7	6.8	5.1	5.2	5.8
	6.0	5.8	5.0	3.7	4.8	3.8	4.0	3.9	3.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 9B

GROUP 9B

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 1 ANGLE −71.3°	63.6 25.3 11.4	41.5 30.2 11.3	40.6 25.3 12.2	39.5 24.7 8.1	38.1 26.0 7.5	36.7 24.7 5.6	34.8 22.9 4.4	33.6 22.2 3.7	32.6 20.3 3.9	26.7 17.2
2 −66°	64.2 34.9 15.7	43.4 30.1 11.5	42.6 24.1 8.5	41.6 25.8 9.6	40.3 24.3 6.9	39.5 21.3 6.6	38.7 21.2 5.1	38.2 19.8 4.2	38.6 16.8 4.1	36.4 16.2
3 −61.6°	64.6 24.5 9.9	35.5 27.4 8.1	35.3 22.6 6.3	35.1 22.1 4.6	34.9 21.0 4.0	33.2 18.9 2.9	30.6 17.1 2.7	31.1 15.7 2.4	28.6 13.1 2.1	26.2 12.0
4 −57.8°	64.2 21.9 7.0	33.1 21.3 5.4	32.5 19.9 4.0	31.8 18.6 2.4	30.9 17.7 1.5	32.1 16.2 0.9	33.0 14.8 0.7	26.2 12.5 0.0	27.0 10.1 0.2	25.4 10.0
5 −54.3°	64.2 24.4 8.3	35.5 23.1 6.3	35.4 21.1 4.6	35.3 19.8 3.5	35.2 19.3 1.9	33.7 17.2 1.6	31.4 15.4 0.6	30.1 14.3 −0.0	27.9 12.0 0.4	26.2 10.6
6 −51.1°	65.3 28.5 10.6	38.1 25.7 8.8	37.4 23.2 7.4	36.5 22.1 5.9	35.3 21.8 4.5	35.4 19.9 3.5	35.4 18.0 3.5	35.2 17.1 2.9	27.7 13.6 2.7	30.3 12.1
7 −48.1°	65.7 22.5 10.1	39.5 23.8 7.4	38.7 22.8 6.2	37.7 21.1 5.0	36.5 20.9 4.3	34.6 18.1 3.8	31.3 19.1 3.2	30.1 15.9 2.5	30.8 12.4 2.7	28.8 11.7
8 −45.3°	64.9 26.7 9.2	38.6 22.9 7.2	37.1 20.6 5.9	34.6 19.9 4.0	28.3 18.3 3.5	29.8 18.4 2.5	30.9 17.6 1.4	31.9 15.6 1.2	26.7 11.4 1.0	23.6 9.9
9 −42.6°	63.8 22.3 5.5	29.9 21.2 4.7	30.6 18.6 3.0	31.2 15.2 1.9	31.8 15.6 1.0	30.6 13.8 −0.0	28.9 12.8 −0.6	27.4 11.8 −1.2	21.5 8.3 −1.3	22.3 6.1
10 −40.0°	63.0 13.2 2.5	23.5 15.0 0.6	24.6 12.8 0.1	25.5 11.1 −0.7	26.2 11.5 −1.6	25.6 9.1 −1.8	24.9 7.0 −2.5	17.7 7.5 −2.8	16.1 4.9 −2.6	17.1 3.2
11 −37.5°	62.7 9.0 −1.1	17.4 11.4 −2.1	16.7 8.5 −2.0	16.0 5.6 −2.8	15.1 5.4 −2.9	15.1 4.3 −3.6	15.2 3.5 −3.7	10.1 1.8 −3.7	8.6 0.2 −3.5	10.1 −0.4
12 −35.1°	62.7 2.8 −3.8	17.1 5.3 −4.2	16.3 6.5 −4.4	15.4 0.2 −4.3	14.2 1.8 −4.5	13.0 1.9 −4.7	11.3 −1.6 −5.0	10.3 −1.9 −5.0	8.1 −2.2 −4.8	4.7 −3.7
13 −32.8°	62.6 7.8 −3.9	19.3 7.1 −4.1	18.6 2.1 −4.4	17.8 3.5 −4.7	16.7 −2.1 −5.0	15.5 −3.1 −4.9	13.9 −2.0 −5.0	13.9 −3.7 −5.2	13.6 −2.5 −5.0	9.9 −4.2
14 −30.5°	62.6 0.6 −4.4	14.1 1.1 −4.7	13.3 3.1 −4.7	12.4 1.3 −4.9	11.3 −0.8 −4.6	10.2 −2.7 −4.8	8.7 −2.3 −5.2	5.3 −3.6 −4.9	3.6 −3.9 −4.8	2.0 −4.0
15 −28.3°	62.7 4.0 −4.0	17.4 3.7 −4.0	16.4 4.9 −4.6	15.0 3.3 −4.6	13.0 0.8 −4.9	13.7 0.1 −4.7	14.2 −1.3 −4.7	11.9 −1.1 −4.7	7.7 −2.5 −5.2	6.9 −3.0

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.7	21.6	20.6	19.4	17.7	16.4	14.7	11.9	11.0	9.0
ANGLE −26.1°	4.7	8.3	6.0	4.9	3.4	2.5	1.2	1.5	−0.4	−1.9
	−3.5	−2.7	−3.2	−3.8	−4.0	−3.7	−4.5	−4.3	−4.4	
17	62.7	18.4	17.8	17.0	16.0	15.0	13.7	10.8	10.2	6.6
−24.0°	4.9	9.2	5.6	3.5	3.6	0.5	0.1	−0.9	−1.2	−3.5
	−3.4	−3.1	−3.7	−4.2	−4.0	−4.3	−4.8	−4.4	−5.0	
18	62.6	15.1	14.3	13.2	11.7	11.0	10.2	12.3	13.2	7.0
−21.8°	3.7	4.9	4.1	1.6	0.4	1.4	−2.0	−1.4	−2.0	−4.7
	−4.0	−3.9	−3.6	−4.4	−4.2	−4.3	−4.7	−4.8	−4.3	
19	62.6	15.4	14.2	12.7	10.3	9.8	9.3	13.5	10.3	3.8
−19.8°	3.9	3.8	4.3	0.8	−0.5	−1.6	−1.2	−2.0	−2.5	−3.5
	−4.1	−3.9	−3.9	−4.5	−4.5	−4.7	−4.3	−4.8	−4.5	
20	62.6	10.6	10.9	11.2	11.4	10.7	9.9	10.0	8.3	6.1
−17.7°	4.1	2.6	−0.5	1.1	−2.5	−1.5	−3.2	−3.6	−3.4	−3.5
	−4.0	−4.3	−4.2	−4.3	−4.7	−4.9	−4.9	−4.7	−4.8	
21	62.6	12.6	11.7	10.7	9.3	8.2	6.9	6.8	5.5	5.1
−15.7°	1.0	2.8	0.2	0.5	−2.3	−2.1	−2.6	−2.3	−4.1	−3.9
	−4.4	−4.5	−4.6	−4.5	−4.9	−4.8	−4.9	−5.3	−4.8	
22	62.6	14.4	13.4	12.2	10.4	9.5	8.4	7.8	8.6	6.1
−13.7°	4.0	2.6	1.2	0.9	0.0	−0.2	−1.3	−3.1	−2.6	−4.2
	−4.2	−4.3	−4.3	−5.0	−4.7	−4.7	−5.0	−5.0	−5.1	
23	62.6	19.5	19.0	18.3	17.6	17.2	16.8	16.9	16.3	15.3
−11.7°	15.1	11.3	9.8	7.9	8.0	7.3	4.6	3.1	1.8	−0.1
	−1.0	−2.4	−3.3	−3.5	−3.8	−4.3	−4.9	−4.7	−5.0	
24	62.7	28.2	27.8	27.4	27.0	25.8	24.0	27.4	26.0	25.2
−9.7°	22.6	19.2	16.5	14.4	16.2	13.3	10.3	8.6	6.8	6.2
	3.8	2.5	0.0	−2.1	−1.1	−2.2	−3.1	−3.3	−3.4	
25	63.3	36.2	35.3	34.1	32.5	32.2	31.9	35.1	31.9	31.0
−7.8°	29.2	25.3	21.4	17.7	20.9	17.9	16.1	14.5	11.6	11.7
	9.0	7.8	5.1	3.2	3.0	1.9	1.8	1.0	1.1	
26	64.8	40.6	39.5	38.0	35.7	39.8	41.8	40.1	32.8	32.4
−5.8°	31.0	29.3	25.5	25.1	24.5	23.8	21.3	20.1	17.0	15.7
	14.0	12.1	10.0	8.5	7.4	6.5	6.4	5.8	5.8	
27	67.1	42.3	42.7	43.1	43.4	42.7	41.7	38.1	34.4	34.3
−3.9°	28.8	30.6	30.3	26.3	26.7	24.1	23.9	22.8	20.2	18.1
	16.7	13.8	13.1	11.5	10.3	9.3	9.6	9.5	9.3	
28	67.3	43.0	41.9	40.2	37.6	41.5	43.5	41.7	37.4	35.2
−1.9°	33.0	31.2	28.2	28.0	26.4	25.6	23.4	22.7	20.1	18.0
	17.1	14.8	13.7	11.8	10.9	10.2	9.9	9.9	9.4	
29	65.1	44.6	44.2	43.7	43.1	43.3	43.6	41.1	34.8	32.6
0°	30.3	31.0	27.5	25.7	25.6	22.5	19.9	21.0	18.1	15.4
	16.0	12.7	10.9	9.9	8.2	7.4	6.5	6.0	5.7	
30	63.3	35.2	34.8	34.4	33.9	33.1	32.2	29.4	25.3	25.0
+1.9°	20.2	22.4	21.5	20.6	19.3	16.3	13.8	15.3	13.4	9.4
	9.0	6.7	5.5	3.4	2.6	2.0	0.4	−0.2	−0.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 31 ANGLE +3.9°	62.8 9.2 4.1	20.9 8.3 4.0	19.9 5.9 3.9	18.6 6.5 3.2	16.6 5.8 3.0	15.7 6.6 2.3	14.4 5.3 0.7	13.1 4.3 -0.9	9.6 4.4 -2.5	11.3 4.5
32 +5.8°	62.7 6.8 2.4	16.5 6.6 2.7	16.3 1.5 2.4	16.1 3.3 2.5	15.9 4.5 2.1	15.1 4.7 1.9	14.2 3.8 1.6	10.1 3.4 0.9	7.4 2.6 0.8	10.6 3.1
33 +7.8°	62.6 3.3 -1.1	14.4 5.1 -1.0	14.9 0.9 -0.8	15.4 2.4 -1.3	15.8 2.5 -1.4	13.7 1.7 -1.8	9.4 0.3 -1.5	11.2 -0.6 -1.9	8.4 -0.4 -2.0	5.8 -0.6
34 +9.7°	62.6 -0.3 -3.2	13.1 2.2 -3.6	13.2 1.9 -4.1	13.2 0.2 -4.4	13.3 -1.5 -4.3	11.7 -1.0 -4.7	9.2 -2.1 -5.1	9.0 -2.3 -4.8	8.2 -3.8 -5.0	4.4 -3.7
35 +11.7°	62.5 -2.5 -4.1	12.5 4.4 -4.6	12.3 0.9 -4.7	12.2 -0.7 -4.2	12.0 -2.3 -5.3	11.3 -2.4 -4.9	10.5 -2.5 -5.3	8.1 -2.4 -5.2	6.9 -3.5 -5.0	6.1 -3.8
36 +13.7°	62.5 5.0 -4.2	13.2 6.1 -4.6	12.8 -0.5 -4.2	12.3 2.7 -4.8	11.8 -0.4 -5.2	10.6 -1.5 -5.1	8.8 -1.6 -5.2	10.5 -3.5 -5.0	7.9 -3.7 -5.0	6.8 -3.7
37 +15.7°	62.5 9.0 -4.6	15.9 6.3 -4.2	15.1 2.1 -4.5	14.1 4.5 -4.4	12.8 1.9 -4.8	12.0 1.6 -4.5	11.2 -0.4 -5.0	7.0 -1.3 -5.2	7.1 -3.5 -5.0	7.7 -3.5
38 +17.7°	62.5 4.8 -4.6	14.9 6.3 -4.0	13.7 3.4 -4.5	11.9 2.4 -4.7	8.9 -0.5 -4.8	8.8 0.4 -4.6	8.6 -1.2 -4.9	9.6 -2.4 -4.9	11.4 -2.6 -4.8	8.9 -3.9
39 +19.8°	62.5 6.8 -3.1	16.9 5.1 -3.3	15.5 4.6 -3.3	13.3 2.7 -3.1	9.0 1.8 -3.8	13.7 0.5 -3.6	15.9 1.4 -4.0	13.0 -0.5 -4.2	6.3 -2.0 -3.8	10.2 -2.9
40 +21.8°	62.6 2.7 -2.3	21.4 6.4 -1.9	20.7 6.6 -3.6	19.8 2.6 -3.0	18.8 2.9 -3.6	19.2 2.8 -4.2	19.6 1.3 -4.3	20.4 2.1 -4.4	13.1 -0.4 -4.2	10.7 -2.0
41 +24.0°	62.6 7.9 -3.5	21.0 4.8 -4.5	20.4 4.7 -3.3	19.8 2.7 -3.9	19.1 0.9 -3.8	18.8 -0.0 -4.4	18.4 0.9 -4.8	17.7 2.0 -4.5	14.5 -0.7 -4.0	13.2 -3.4
42 +26.1°	62.6 3.2 -4.3	15.3 5.3 -3.9	14.3 0.2 -4.4	13.1 -2.3 -4.6	11.3 0.3 -4.9	10.7 0.0 -5.0	9.9 -1.3 -5.3	10.7 -1.7 -5.0	11.0 -2.9 -5.3	9.4 -3.5
43 +28.3°	62.6 3.8 -4.8	11.6 -0.3 -4.3	10.4 -1.0 -5.0	8.6 -2.5 -4.8	5.5 -1.5 -5.0	4.5 -3.9 -4.9	3.2 -2.9 -5.5	5.6 -3.7 -5.1	6.4 -4.1 -5.1	2.1 -4.3
44 +30.5°	62.6 5.0 -4.8	13.0 3.7 -4.5	11.8 0.6 -5.3	10.1 0.1 -5.0	7.2 -0.8 -4.9	6.7 -1.2 -4.9	6.1 -2.9 -5.2	9.1 -2.5 -5.6	8.1 -4.1 -5.3	7.6 -4.1
45 +32.8°	62.6 6.2 -4.0	16.0 5.0 -4.9	14.9 5.4 -4.7	13.5 1.0 -5.1	11.4 2.4 -5.1	10.7 -1.6 -5.0	10.0 -2.6 -4.9	10.6 -2.4 -5.1	9.8 -4.0 -5.0	7.6 -3.5

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.6	17.8	16.7	15.3	13.1	12.9	12.8	14.5	14.4	13.4
ANGLE +35.1°	5.6	4.8	4.5	3.6	-0.2	-0.4	-2.8	-1.4	-2.6	-2.6
	-3.8	-4.4	-4.3	-4.8	-4.9	-4.9	-4.8	-5.4	-5.2	
47	62.6	16.4	15.1	13.3	10.0	11.0	11.9	10.5	13.0	11.8
+37.5°	9.2	7.7	4.1	5.9	3.8	0.5	-1.4	-2.7	-3.0	-3.4
	-3.9	-4.4	-4.5	-4.7	-5.0	-5.1	-4.9	-5.1	-5.0	
48	62.6	13.9	14.4	14.8	15.2	14.8	14.5	14.1	7.6	7.0
+40.0°	5.8	7.0	3.0	3.7	-0.4	-1.5	-1.8	-2.8	-3.9	-4.4
	-3.9	-4.5	-4.5	-5.0	-4.8	-4.9	-5.4	-5.4	-5.0	
49	62.7	13.9	13.1	12.1	10.9	14.4	16.4	14.2	7.1	6.5
+42.6°	4.9	7.4	4.5	2.8	3.2	1.4	1.0	0.5	-0.9	-2.1
	-2.9	-3.6	-3.1	-3.9	-4.1	-4.2	-3.9	-4.2	-4.1	
50	62.7	17.9	17.5	17.1	16.6	17.3	17.9	14.9	8.1	11.8
+45.3°	6.9	10.7	12.3	14.3	8.9	9.1	10.4	8.7	6.1	5.1
	3.5	1.5	0.8	0.9	0.3	-0.2	0.6	0.0	0.2	
51	62.8	21.0	19.9	18.6	16.5	15.8	15.0	12.6	14.8	13.4
+48.1°	9.8	11.8	13.5	15.5	9.3	11.7	11.1	9.9	7.6	5.4
	3.3	2.4	1.9	1.9	0.8	-0.1	0.8	1.5	2.2	
52	63.0	23.6	22.9	22.0	21.0	22.1	22.9	17.9	16.5	15.8
+51.1°	12.3	11.2	7.7	5.6	7.9	6.8	3.7	2.2	2.2	0.3
	-1.1	-2.0	-2.1	-2.5	-2.6	-3.1	-3.0	-2.5	-2.6	
53	63.2	31.2	31.3	31.4	31.5	31.5	31.6	30.4	29.2	28.5
+54.3°	26.4	24.7	20.1	12.4	7.9	13.1	11.3	5.4	8.6	7.1
	3.5	3.3	0.2	-0.1	-0.9	-0.9	-2.3	-2.9	-2.6	
54	63.4	35.1	35.0	34.9	34.8	34.9	35.1	33.5	32.1	30.1
+57.8°	27.5	22.5	13.2	18.4	17.0	9.9	8.8	7.2	5.8	3.6
	2.1	1.8	-1.2	-2.1	-2.3	-3.3	-3.3	-3.6	-3.6	
55	63.7	44.2	44.0	43.9	43.8	43.5	43.2	42.1	40.6	38.0
+61.6°	33.6	26.0	27.3	29.8	24.1	23.6	18.8	19.7	16.8	15.8
	13.8	10.4	9.0	6.5	4.6	2.2	0.8	-0.1	-0.4	
56	63.5	36.6	36.0	35.3	34.5	33.8	33.0	30.0	22.9	25.7
+66.0°	31.9	34.0	32.7	24.2	27.8	28.2	23.1	20.5	15.0	15.5
	17.5	8.4	13.6	9.6	8.1	6.6	5.6	4.2	4.1	
57	63.6	37.9	37.1	36.1	34.9	34.6	34.2	34.5	34.0	33.6
+71.3°	32.8	31.2	27.7	24.9	17.4	12.9	12.1	10.6	17.2	18.0
	14.8	11.9	10.0	8.0	6.1	3.5	3.3	3.8	1.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 9B

STA TAPE 9E

AGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1	54.0	20.9	20.1	19.1	17.7	16.8	15.8	15.1	16.0	16.4
ANGLE +84°	14.6	13.3	11.2	9.1	7.8	5.9	4.9	4.3	3.2	2.6
	2.2	2.1	1.9	1.8	1.6	1.4	1.4	1.4	1.3	
2	54.5	21.8	21.0	19.9	18.6	17.4	15.7	16.8	17.8	17.5
+64°	14.8	14.2	11.9	9.9	8.6	7.1	5.8	5.3	4.1	3.5
	3.1	2.8	2.6	2.6	2.3	2.2	2.1	2.1	2.1	
3	54.2	22.1	21.2	20.2	18.8	17.5	15.6	17.1	17.2	17.4
+53°	15.7	14.5	12.5	9.4	8.4	6.8	5.8	5.2	4.0	3.3
	2.7	2.6	2.2	2.0	1.7	1.6	1.5	1.5	1.5	
4	54.1	22.6	21.5	20.0	17.7	17.0	16.2	17.2	15.4	15.8
+44°	14.2	13.7	11.2	9.6	8.0	6.7	5.7	4.6	3.7	3.1
	2.5	2.0	1.9	1.7	1.5	1.5	1.2	1.2	1.2	
5	53.9	20.2	18.9	17.0	13.7	13.9	14.2	15.6	13.8	14.7
+37°	13.0	11.9	9.5	8.0	7.2	6.1	4.7	3.8	2.9	2.4
	2.0	1.8	1.5	1.2	1.2	1.0	0.8	0.8	0.9	
6	53.4	17.2	16.0	14.2	11.3	11.4	11.5	12.4	11.6	11.3
+30°	9.9	9.7	7.8	6.4	5.7	5.0	3.7	3.1	2.8	2.1
	1.7	1.7	1.1	0.8	0.6	0.3	0.2	0.2	0.1	
7	52.7	12.8	12.0	11.1	7.8	10.5	11.1	10.1	10.6	10.2
+23°	9.6	9.6	8.8	8.6	8.0	7.9	7.5	7.5	7.5	7.0
	6.7	6.4	5.4	4.3	2.6	0.8	-0.2	-0.6	-0.6	
8	51.7	10.9	10.4	9.8	9.2	9.3	9.3	8.6	9.3	9.2
+17°	8.3	8.8	8.2	8.1	7.9	7.6	7.4	7.2	6.9	6.6
	6.7	6.5	5.5	3.9	2.0	-0.2	-1.5	-2.1	-2.0	
9	50.7	16.4	15.2	13.5	10.8	9.9	8.6	5.2	4.1	3.3
+12°	0.8	0.0	-0.4	-0.8	-1.6	-2.1	-2.2	-1.8	-2.6	-1.1
	5.7	4.6	-0.4	2.3	2.2	2.0	1.7	1.1	0.9	
10	51.4	21.4	20.1	18.4	15.3	14.4	13.4	10.6	8.9	7.2
+6°	5.6	3.6	2.6	2.2	1.7	0.7	0.2	1.2	0.4	2.7
	11.0	11.0	4.8	7.8	8.5	7.5	7.7	7.1	7.0	
11	51.4	20.2	18.9	17.2	14.3	13.6	12.7	10.2	7.9	7.0
0°	5.6	3.7	3.2	2.4	2.4	0.9	1.1	2.0	1.1	3.0
	10.3	10.9	5.2	7.5	8.5	7.3	7.4	7.0	6.6	
12	50.7	12.1	11.2	10.1	8.7	7.9	7.1	3.9	3.5	3.4
−6°	2.3	1.5	1.2	0.9	0.8	0.6	0.6	0.4	-0.3	-0.1
	4.3	3.3	-0.0	2.0	1.7	1.1	0.7	0.3	-0.0	
13	50.6	8.3	7.8	7.3	6.7	6.6	6.5	5.9	5.3	5.2
−12°	4.8	5.1	5.1	4.5	4.8	4.8	4.6	4.5	4.4	4.0
	3.8	3.1	1.9	0.7	-1.1	-2.2	-2.7	-2.9	-3.0	
14	50.2	7.4	6.6	5.7	4.5	5.2	5.7	4.2	4.0	4.1
−17°	3.5	3.1	3.2	3.0	3.2	3.6	3.3	2.7	3.1	2.7
	2.4	1.5	0.7	-0.8	-2.5	-3.7	-3.9	-4.1	-4.1	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 9B

STA TAPE 9E

GE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.1 -3.5 -4.0	4.4 -3.3 -4.5	3.6 -3.4 -4.4	2.5 -3.3 -4.7	1.1 -3.5 -4.8	1.5 -3.6 -4.9	1.9 -3.6 -4.9	-1.6 -4.3 -5.0	-1.6 -3.9 -4.8	-1.6 -4.1
16 −30°	50.4 -3.0 -4.1	4.6 -3.3 -4.4	3.7 -3.1 -4.3	2.5 -2.9 -4.5	0.8 -4.0 -4.4	1.1 -4.0 -4.5	1.5 -4.1 -4.3	-3.2 -4.1 -4.4	-1.1 -4.2 -4.5	-1.8 -4.2
17 −37°	50.6 -3.7 -3.9	4.4 -3.0 -4.0	3.5 -3.0 -3.9	2.4 -3.3 -3.9	0.9 -3.4 -4.0	1.4 -4.0 -3.9	1.8 -4.3 -4.1	-3.1 -3.8 -4.1	-0.7 -3.8 -4.1	-1.3 -4.1
18 −44°	50.7 -3.6 -3.6	4.8 -2.7 -3.7	3.7 -2.5 -3.7	2.3 -2.9 -3.6	0.1 -3.0 -3.6	1.3 -3.5 -3.7	2.2 -3.6 -3.6	-2.2 -3.7 -3.6	-1.6 -3.9 -3.7	-1.2 -3.6
19 −53°	51.2 -2.1 -3.3	4.6 -2.5 -3.3	3.6 -2.3 -2.9	2.3 -2.3 -2.9	0.5 -2.6 -3.0	1.8 -3.0 -3.1	2.9 -3.1 -3.1	-1.5 -2.9 -3.3	-0.1 -3.0 -3.2	-0.8 -3.0
20 −64°	51.4 -2.0 -2.1	5.1 -1.7 -2.3	4.3 -1.9 -2.1	3.2 -2.2 -2.3	1.7 -1.9 -2.4	2.6 -2.1 -2.5	3.3 -2.1 -2.7	-1.2 -2.4 -2.8	0.9 -2.4 -2.9	-0.5 -2.3
21 −84°	51.3 -0.7 -1.4	5.6 -0.9 -1.3	4.9 -1.1 -1.4	3.9 -1.1 -1.5	2.6 -1.3 -1.8	3.6 -1.2 -2.2	4.4 -1.1 -2.4	1.0 -1.0 -2.7	0.9 -1.5 -2.8	0.1 -1.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 9B

STA TAPE 9F

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.7 13.8 2.4	22.8 11.9 2.1	21.5 11.3 1.8	19.7 10.4 1.7	16.6 7.3 1.4	16.8 5.9 1.4	17.0 4.5 1.3	15.3 4.2 1.4	14.7 3.0 1.2	14.4 2.4
2 +64°	54.5 15.4 3.2	23.8 13.8 2.8	22.7 12.0 2.6	21.0 10.9 2.2	18.3 7.2 1.6	18.4 7.5 2.1	18.5 6.2 2.1	17.9 5.5 2.0	17.0 4.7 2.1	17.1 3.4
3 +53°	54.4 15.6 2.8	23.6 14.9 2.3	22.3 12.1 2.3	20.6 10.3 2.4	17.6 8.3 2.2	17.1 8.1 1.9	16.6 7.0 1.7	18.5 5.1 1.6	17.8 4.5 1.8	17.3 3.4
4 +44°	54.1 14.6 2.3	21.3 13.8 1.6	20.2 11.6 1.5	18.6 10.5 1.7	16.2 8.6 1.3	15.6 7.6 1.3	14.9 6.2 1.4	15.9 4.8 1.2	16.1 3.9 1.1	15.2 2.7
5 +37°	53.7 13.1 2.0	20.2 12.6 1.6	19.2 10.6 1.5	17.9 9.2 1.1	16.2 8.1 1.3	15.5 6.0 1.1	14.7 5.0 1.0	16.1 4.2 0.9	16.5 3.6 0.9	14.9 2.2
6 +30°	53.4 10.0 1.5	17.9 9.5 1.4	16.8 8.1 0.6	15.4 6.0 0.2	13.3 5.9 0.4	12.7 3.6 0.1	12.1 3.7 0.0	13.7 2.7 0.1	11.8 1.9 0.1	12.6 1.6
7 +23°	52.8 6.4 0.4	12.8 6.0 0.6	11.9 4.5 0.3	10.6 3.8 -0.2	8.9 2.5 -0.2	8.6 1.7 -0.4	8.2 2.1 -0.5	8.2 1.3 -0.4	6.6 0.9 -0.4	8.0 0.2
8 +17°	51.7 6.7 4.1	9.2 6.2 3.7	9.1 5.9 1.9	8.9 5.5 1.0	8.8 5.5 0.6	8.7 5.4 0.5	8.6 5.4 0.4	6.5 5.3 -0.1	5.6 4.8 0.0	5.9 4.5
9 +12°	51.0 0.6 7.0	16.0 1.5 6.7	14.9 0.2 1.8	13.4 -0.1 4.1	11.0 -1.0 4.2	10.3 -0.8 3.3	9.5 1.9 3.2	4.9 1.8 2.5	6.6 -0.1 1.9	4.3 2.5
10 +6°	52.3 5.4 13.0	22.3 6.8 12.9	21.0 3.1 8.2	19.0 4.6 10.6	15.2 2.4 10.0	14.9 1.9 9.7	14.6 6.4 9.8	10.4 7.9 9.1	12.0 5.5 8.5	8.5 8.6
11 0°	52.2 5.0 12.5	22.0 6.7 12.5	20.6 3.0 7.7	18.3 3.7 10.0	13.6 1.9 10.5	13.7 1.1 9.2	13.8 6.0 9.0	9.9 7.7 8.4	11.1 5.3 8.4	8.0 7.6
12 −6°	51.1 2.5 6.1	15.2 2.4 6.0	13.8 2.0 2.0	11.9 1.0 3.1	8.2 1.0 3.2	7.7 1.0 2.3	7.2 1.9 1.9	3.8 2.4 1.5	4.7 1.2 1.3	4.0 2.0
13 −12°	50.7 0.3 1.3	7.9 1.0 0.7	7.0 1.3 -0.5	5.8 0.4 -0.8	4.1 1.2 -1.5	4.6 1.5 -2.8	5.0 1.2 -3.3	1.7 0.7 -3.3	2.3 0.7 -3.3	2.9 0.8
14 −17°	50.2 -3.0 -5.0	4.3 -3.0 -4.3	3.4 -3.7 -4.8	2.2 -4.1 -4.6	0.6 -4.7 -4.7	1.8 -3.5 -4.9	2.7 -3.5 -4.8	-1.8 -4.3 -4.9	-1.1 -4.7 -4.8	-2.0 -4.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 9F

FREQUENCY KEY FOR STA SPECTRA, mHz

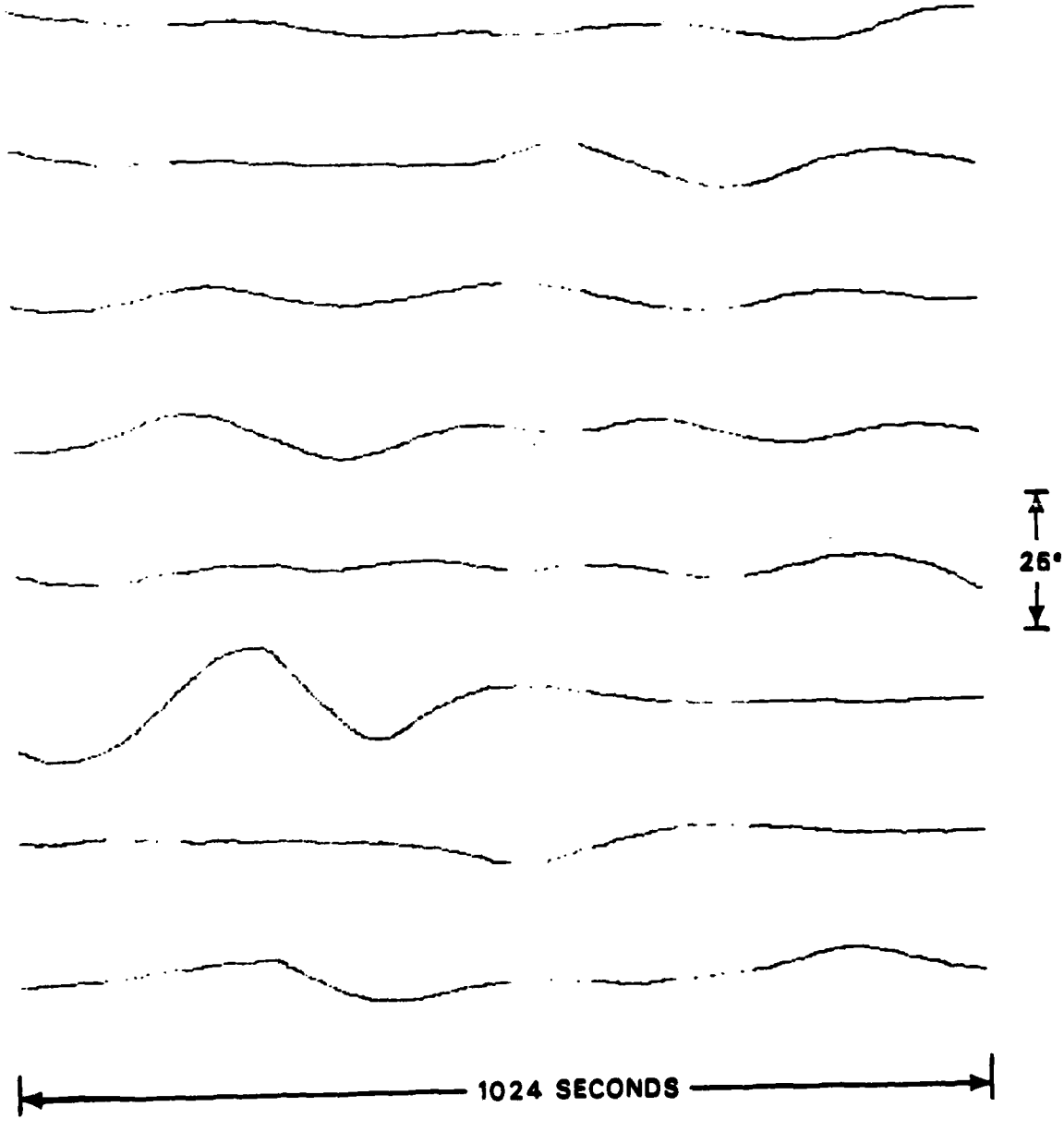
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.1 −3.7 −4.4	3.7 −3.1 −4.5	3.0 −4.1 −4.5	2.2 −3.8 −4.8	1.2 −4.9 −4.9	1.5 −5.1 −4.8	1.8 −4.6 −4.9	−3.6 −4.6 −4.9	−1.7 −4.5 −4.9	−1.4 −4.6
16 −30°	50.4 −4.1 −4.4	3.7 −3.7 −4.4	3.0 −3.3 −4.3	2.2 −4.3 −4.5	1.2 −4.5 −4.4	1.3 −4.8 −4.5	1.3 −3.7 −4.5	−1.6 −4.4 −4.6	−1.2 −4.5 −4.6	−1.8 −4.1
17 −37°	50.6 −4.0 −4.2	3.9 −2.9 −3.7	3.0 −3.5 −4.1	1.9 −3.8 −4.2	0.4 −3.9 −4.0	0.9 −3.4 −4.2	1.3 −3.4 −4.0	−1.7 −4.2 −4.2	−1.9 −4.3 −4.3	−1.7 −4.1
18 −44°	50.8 −3.6 −3.7	4.1 −3.4 −3.4	3.4 −3.5 −3.5	2.4 −2.7 −3.6	1.3 −3.4 −3.6	1.6 −3.2 −3.6	1.9 −3.9 −3.8	−1.2 −3.3 −3.7	−2.5 −3.8 −3.8	−1.6 −3.7
19 −53°	51.1 −2.7 −2.9	4.6 −2.4 −2.6	3.8 −2.3 −2.5	2.9 −2.1 −2.9	1.8 −1.3 −2.8	2.4 −2.0 −3.0	3.0 −3.1 −2.9	−0.3 −3.0 −3.3	0.4 −3.1 −3.1	−1.9 −2.9
20 −64°	51.3 0.4 −1.4	6.1 −0.7 −0.0	5.5 −0.8 0.1	4.7 1.0 −1.0	3.8 1.3 −1.0	4.3 −0.0 −0.7	4.8 −1.3 −1.6	2.5 −0.1 −1.9	2.7 −1.8 −2.0	1.0 −1.5
21 −84°	51.3 0.7 1.5	8.4 1.0 3.2	8.0 3.0 3.5	7.6 4.3 2.1	7.0 4.8 1.3	7.4 3.2 2.4	7.7 0.9 0.5	4.7 3.2 1.0	4.7 0.9 0.6	2.5 0.7

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 9B

BEARING VS TIME

MEAN & VAR	270.6	3.34	269.0	4.34	269.1	2.95	269.4	4.43
268.3	2.02	270.2	22.45	268.7	3.02	270.2	5.38	

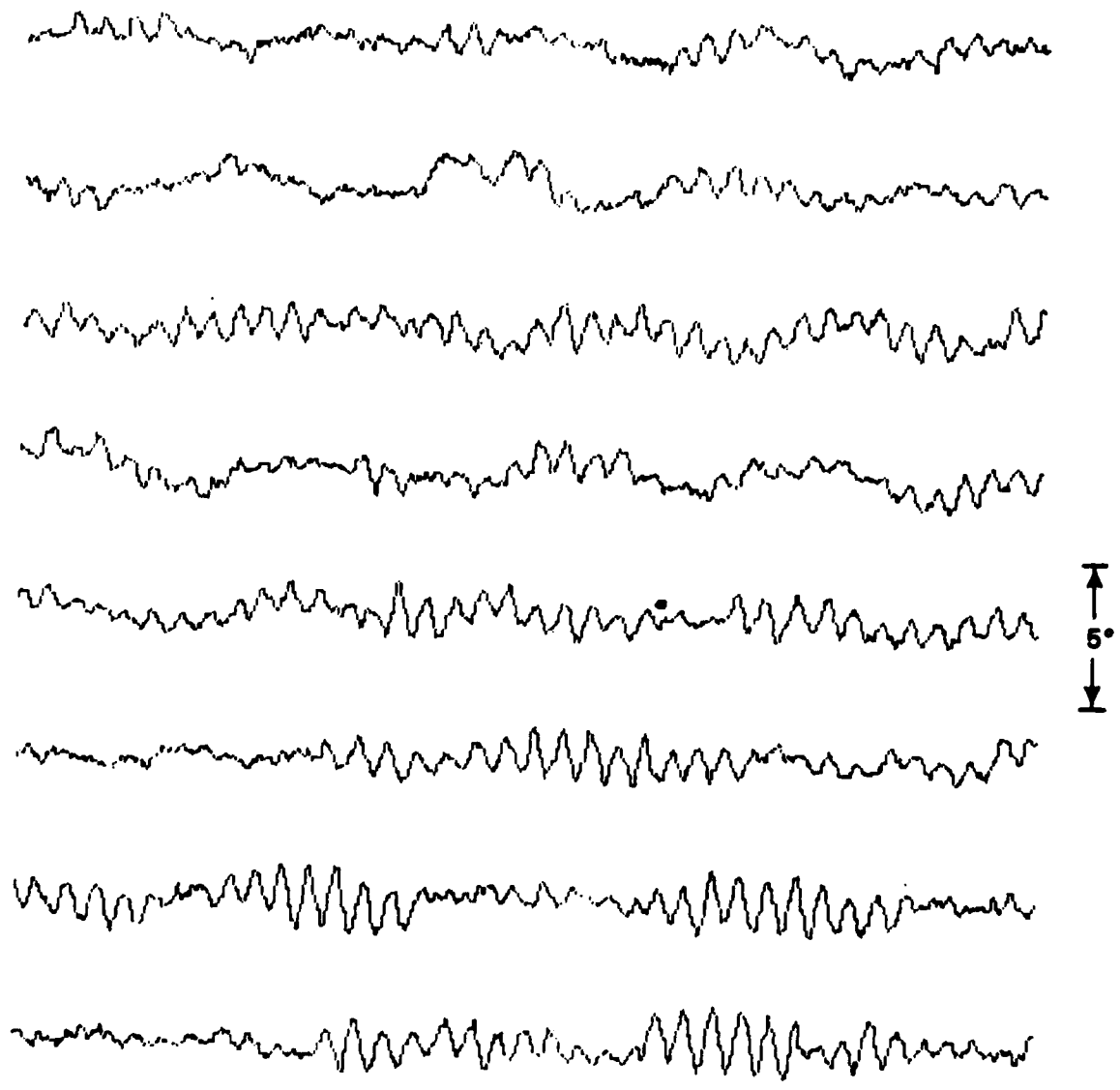


MPL-M-4858

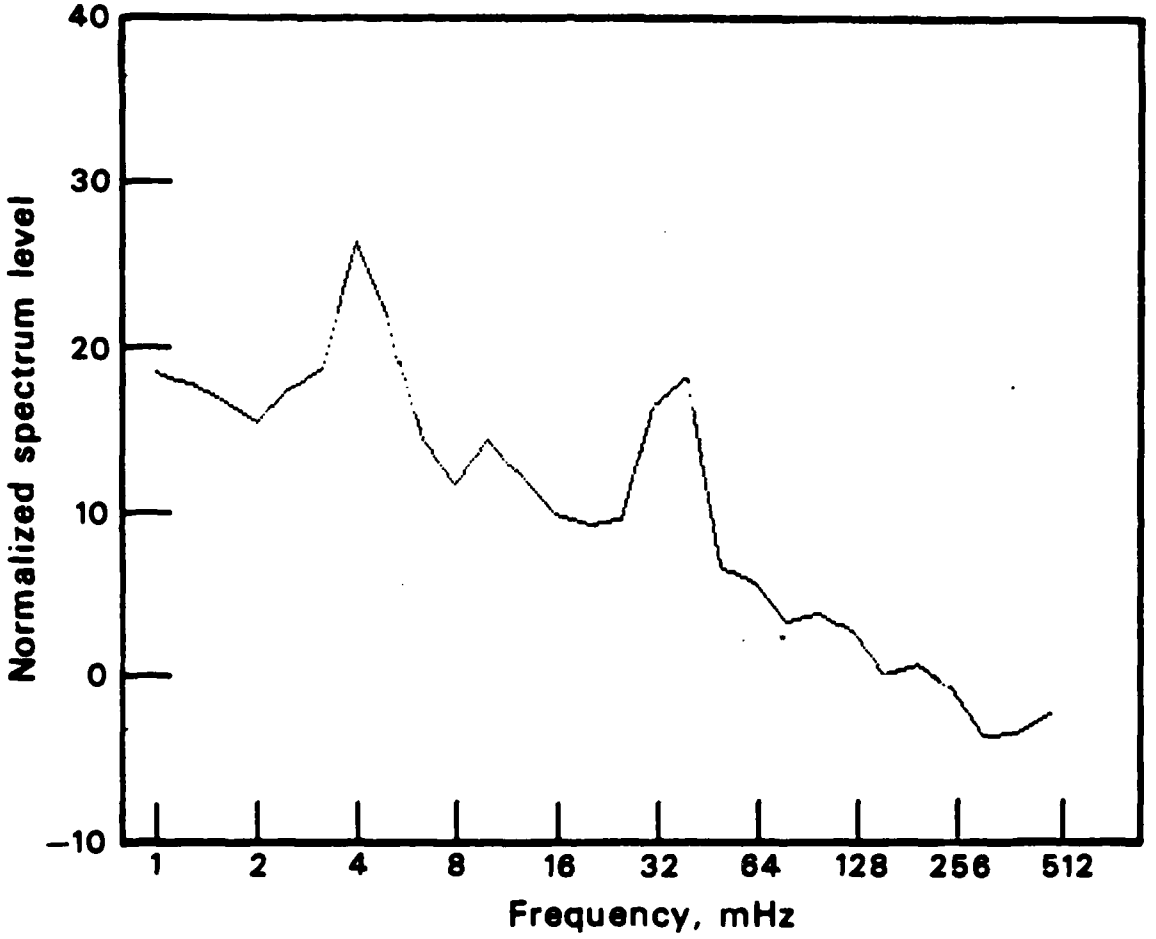
GROUP 9B

ELEVATION VS TIME

MEAN & VAR	92.7	0.07	92.7	0.17	92.6	0.17	92.8	0.18	
92.7	0.11	92.6	0.07	92.4	0.18	92.5	0.13		



MPL-M-4859



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 10A

Environmental Summary

10 June 1978

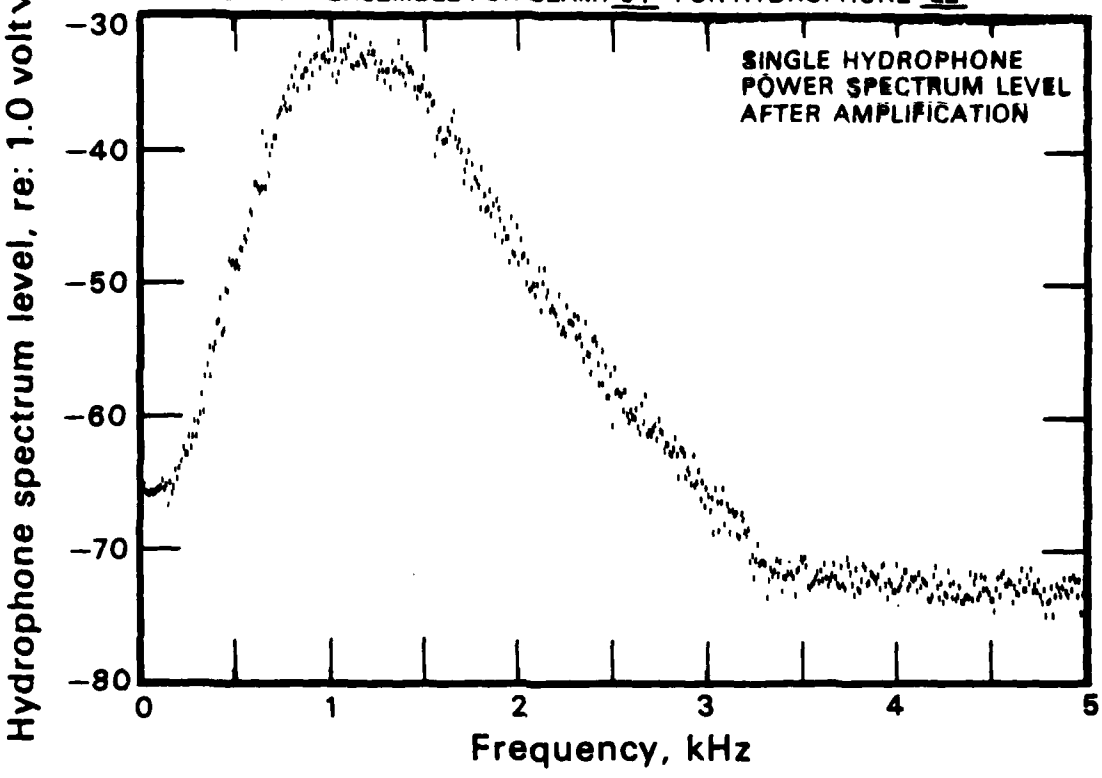
Tapes	Start time	Code
LTA/LOG	03:58:53	10A
STA	03:59:35	10E
STA	05:04:12	10F
Low Band Filter		

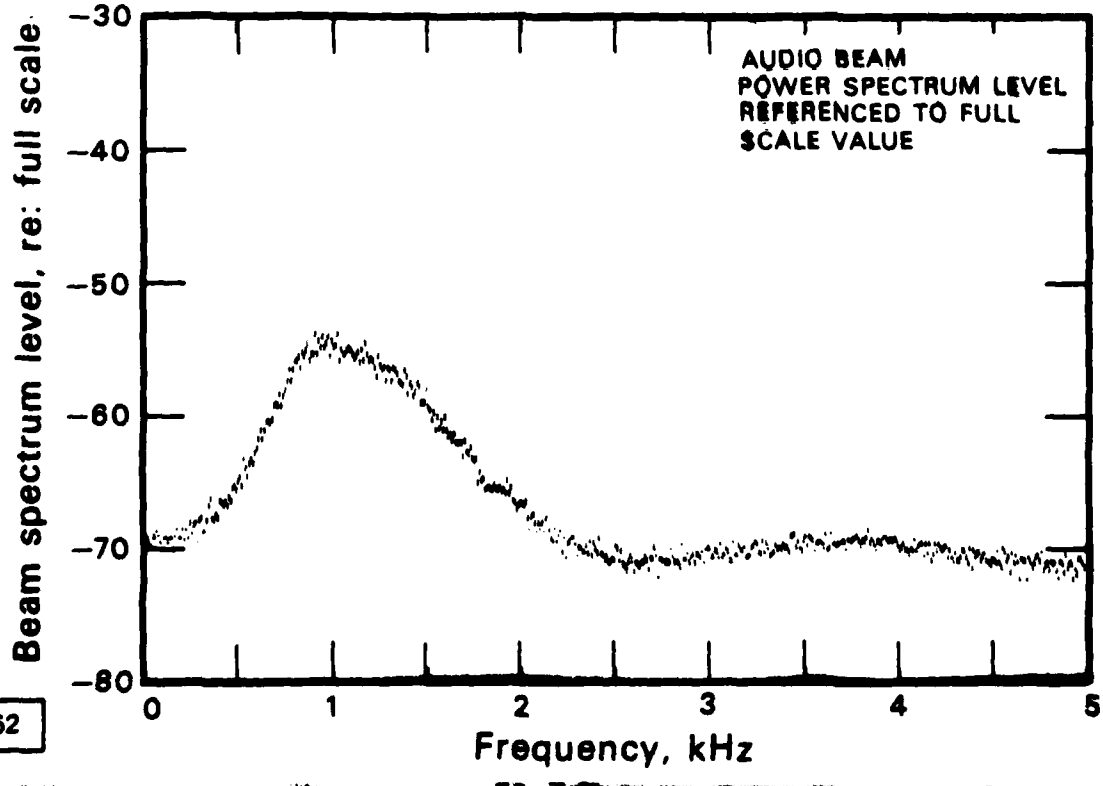
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
03:45	2500	22	340	6-8	6-8	NW	Chop
04:00	2500	22	"	"	"	"	No targets
06:00	2500	21	325	"	"	"	Rough

10-JUN-78 04:21:25 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 198.7 TRUE ELEVATION 78.9
CAL/MON 1: DATA CHANNEL 440 (FILTER OUTPUT) RMS LEVEL: -4.0 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 94 FOR HYDROPHONE 22

GROUP 10A





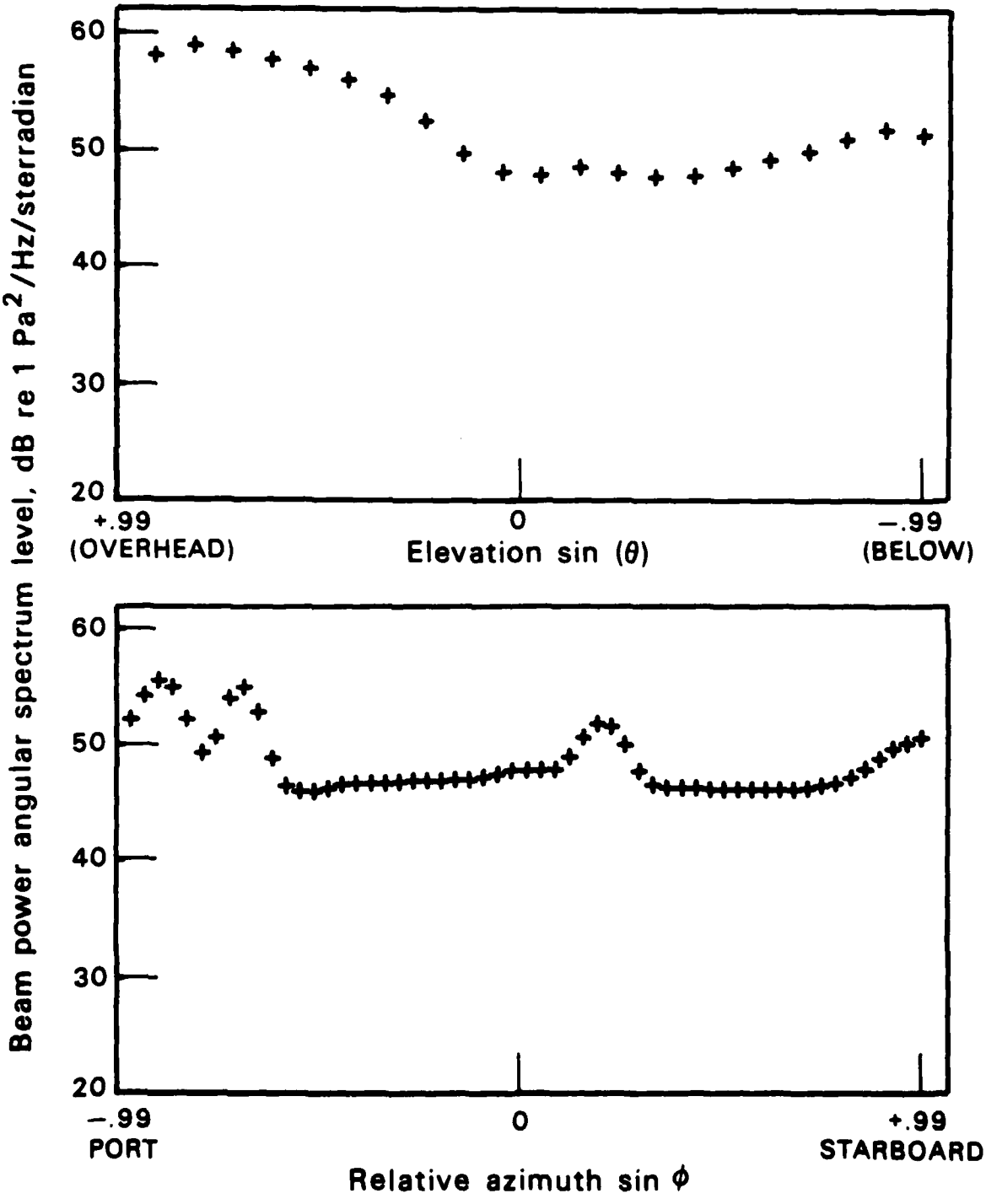
MPL-M-4862

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 10A

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

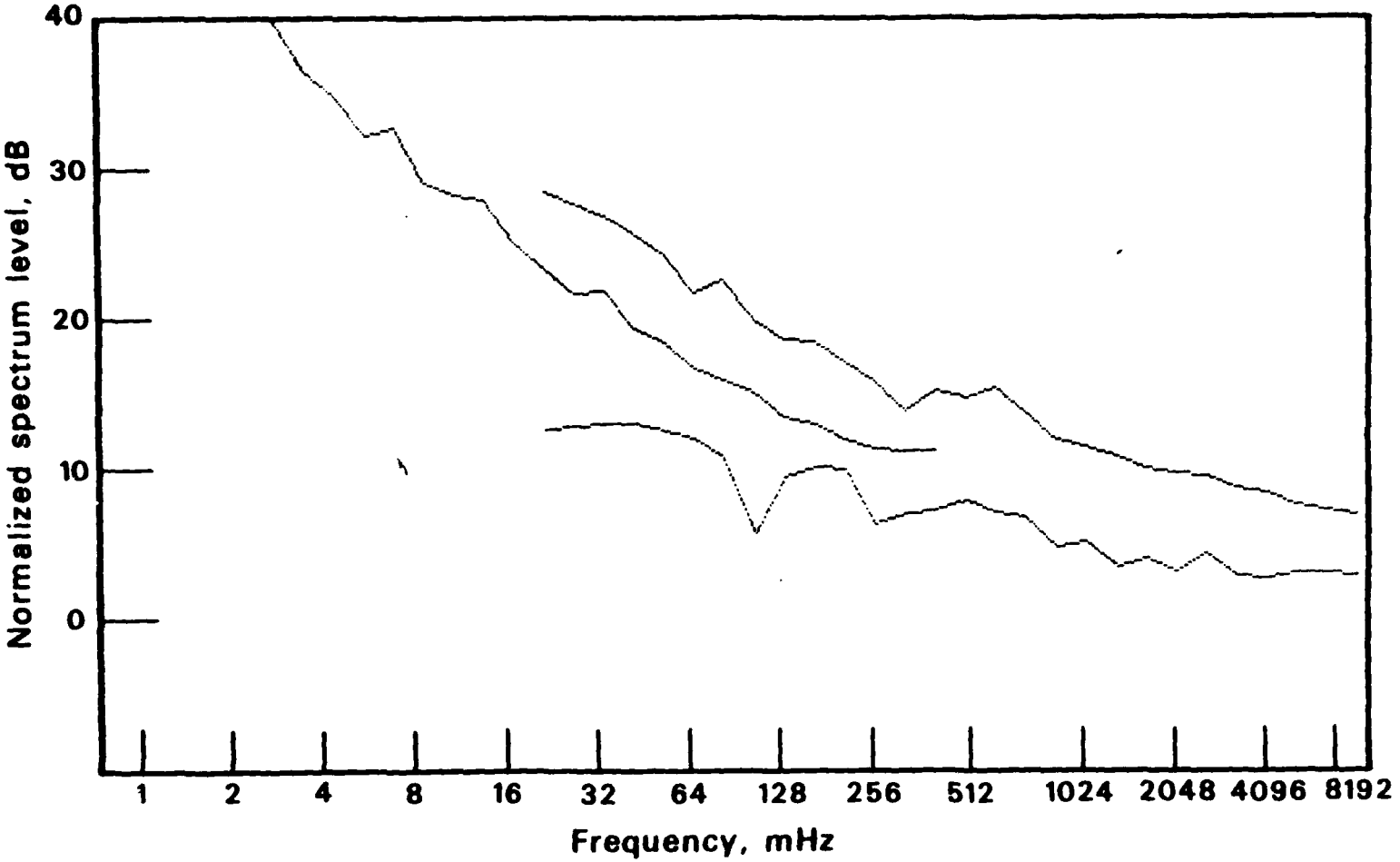
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4863

MPL-M-4864

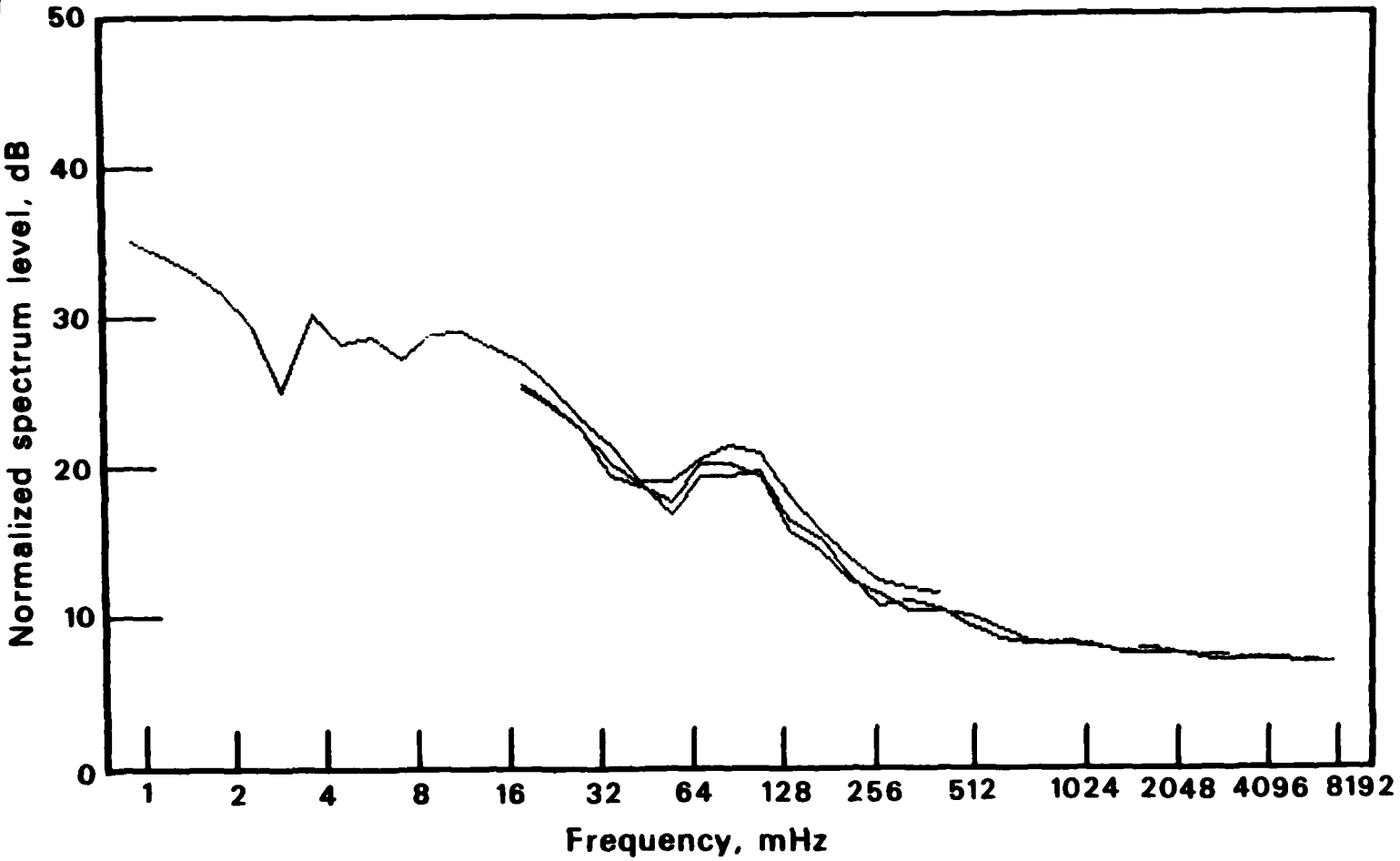
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 10A

MPL-M-4865

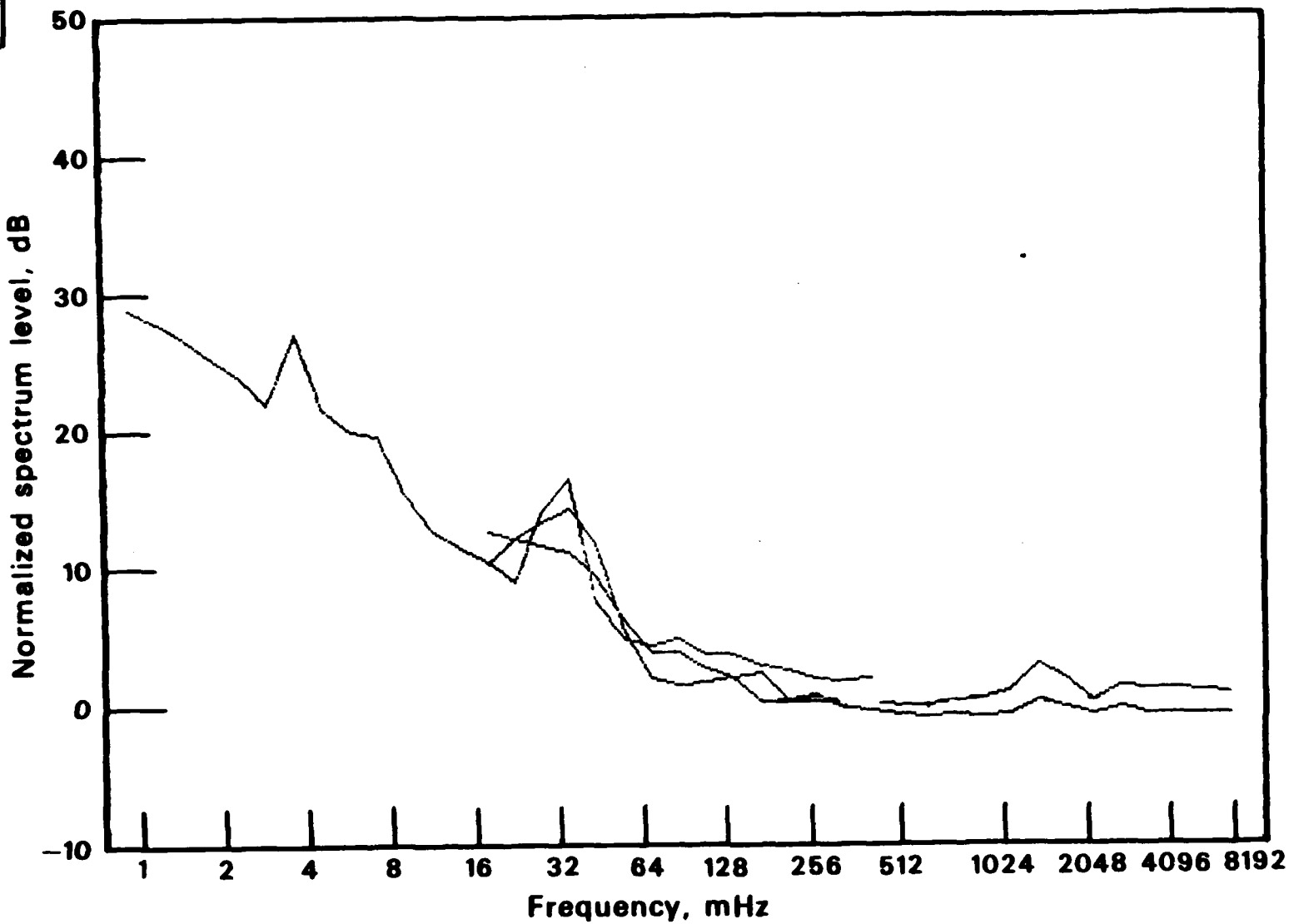
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10A

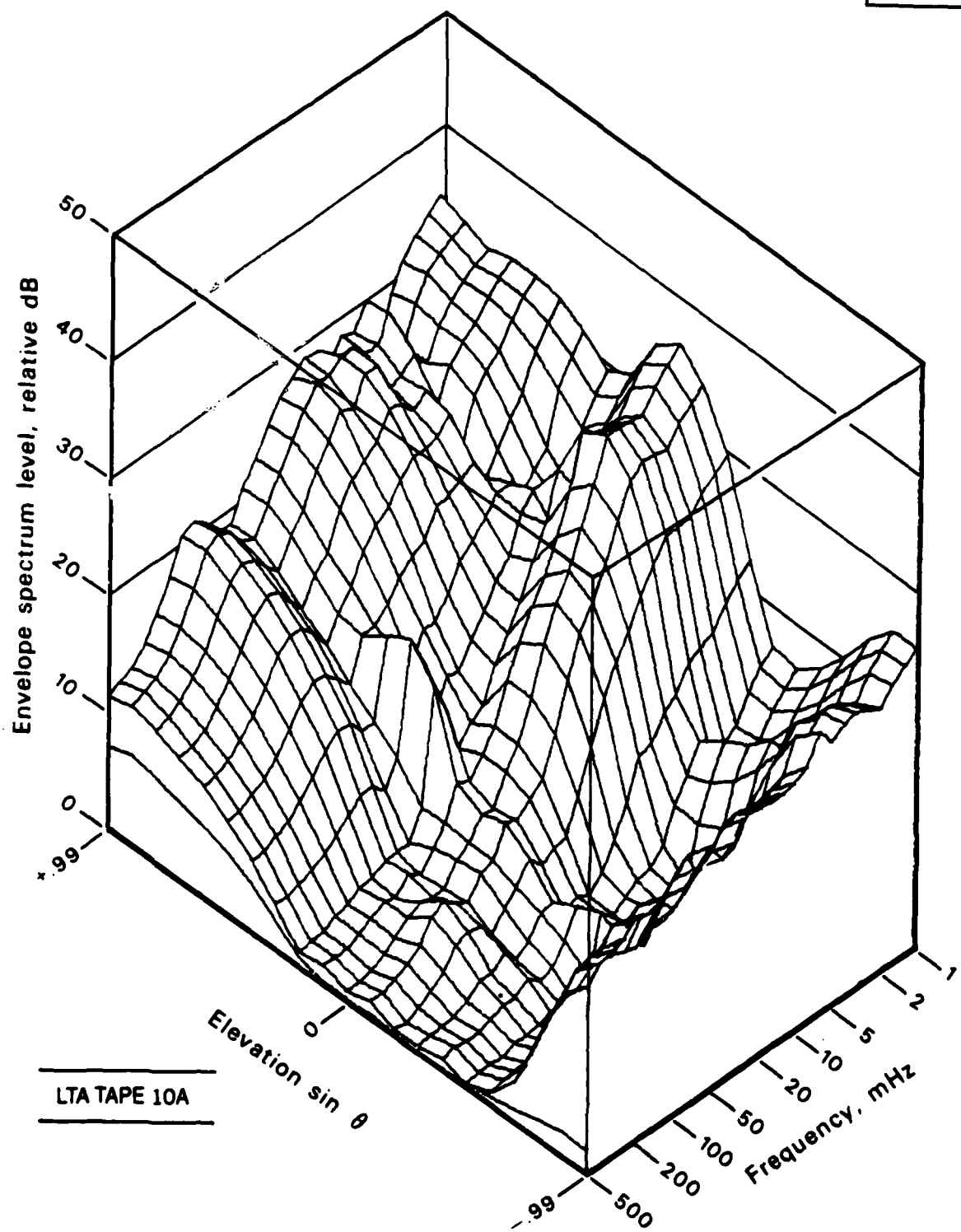
MPL-M-4866

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10A

GROUP 10A

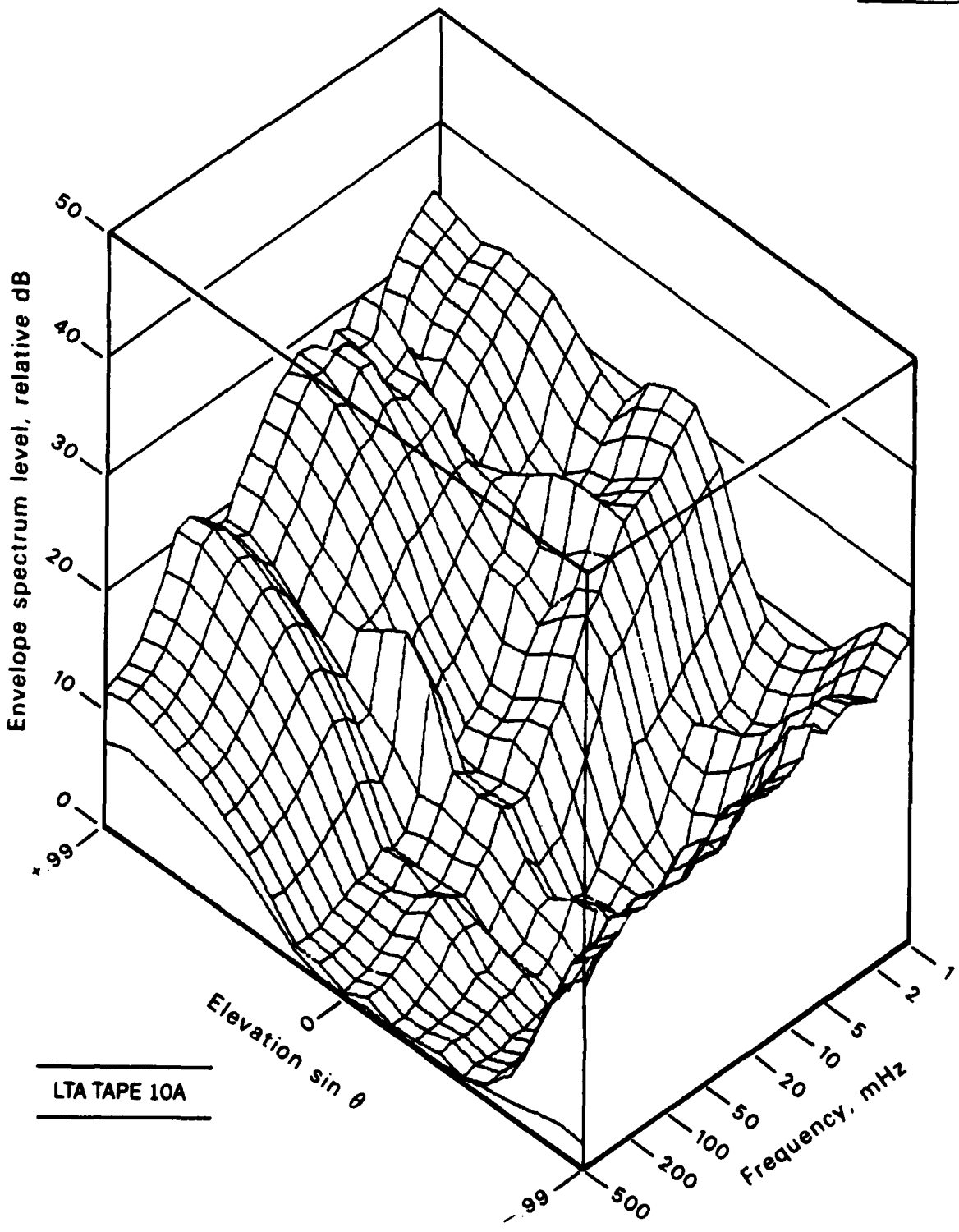


LTA TAPE 10A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET.

MPL-M-4867

GROUP 10A



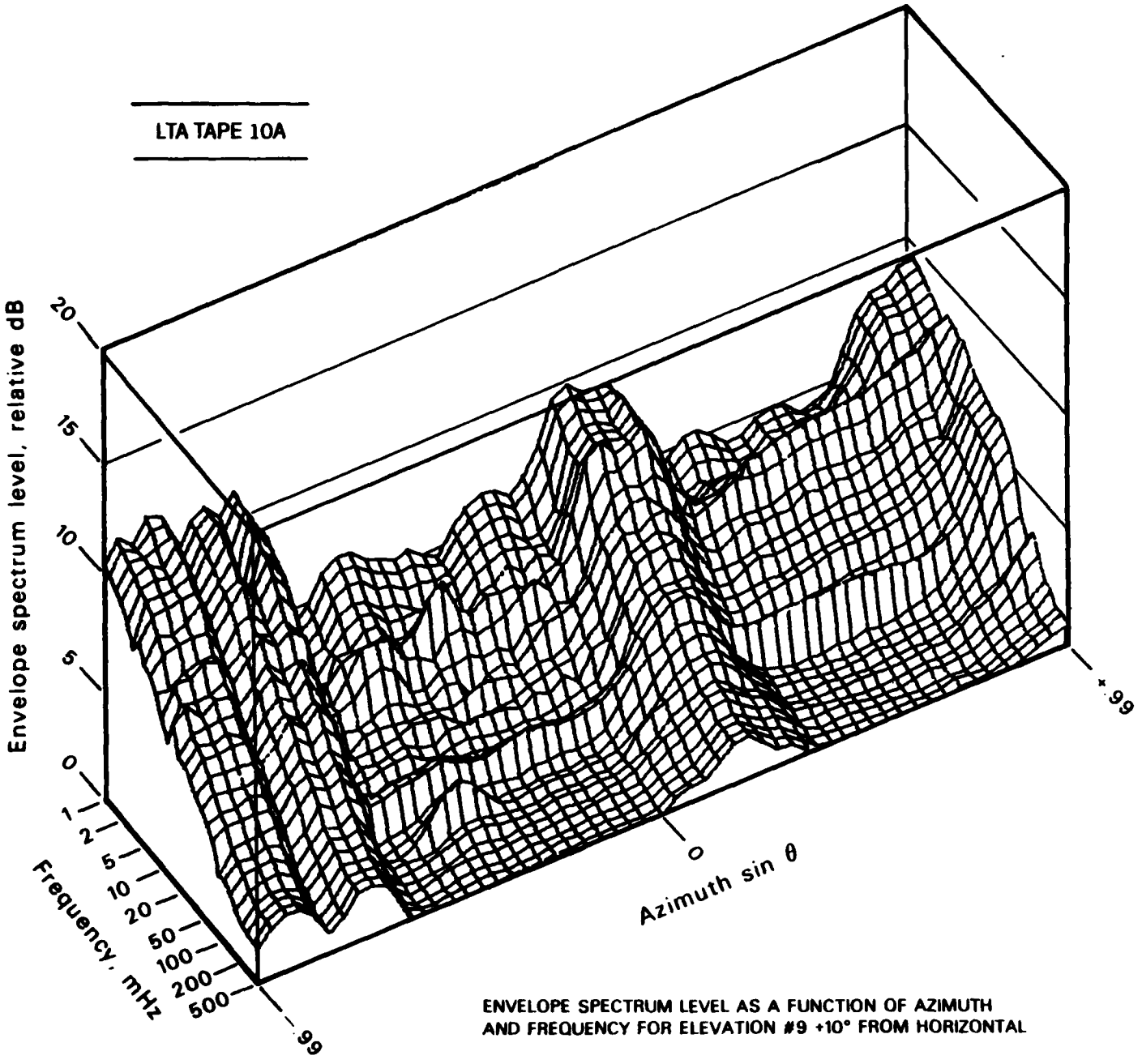
LTA TAPE 10A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY.
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4868

MPL-M-4869

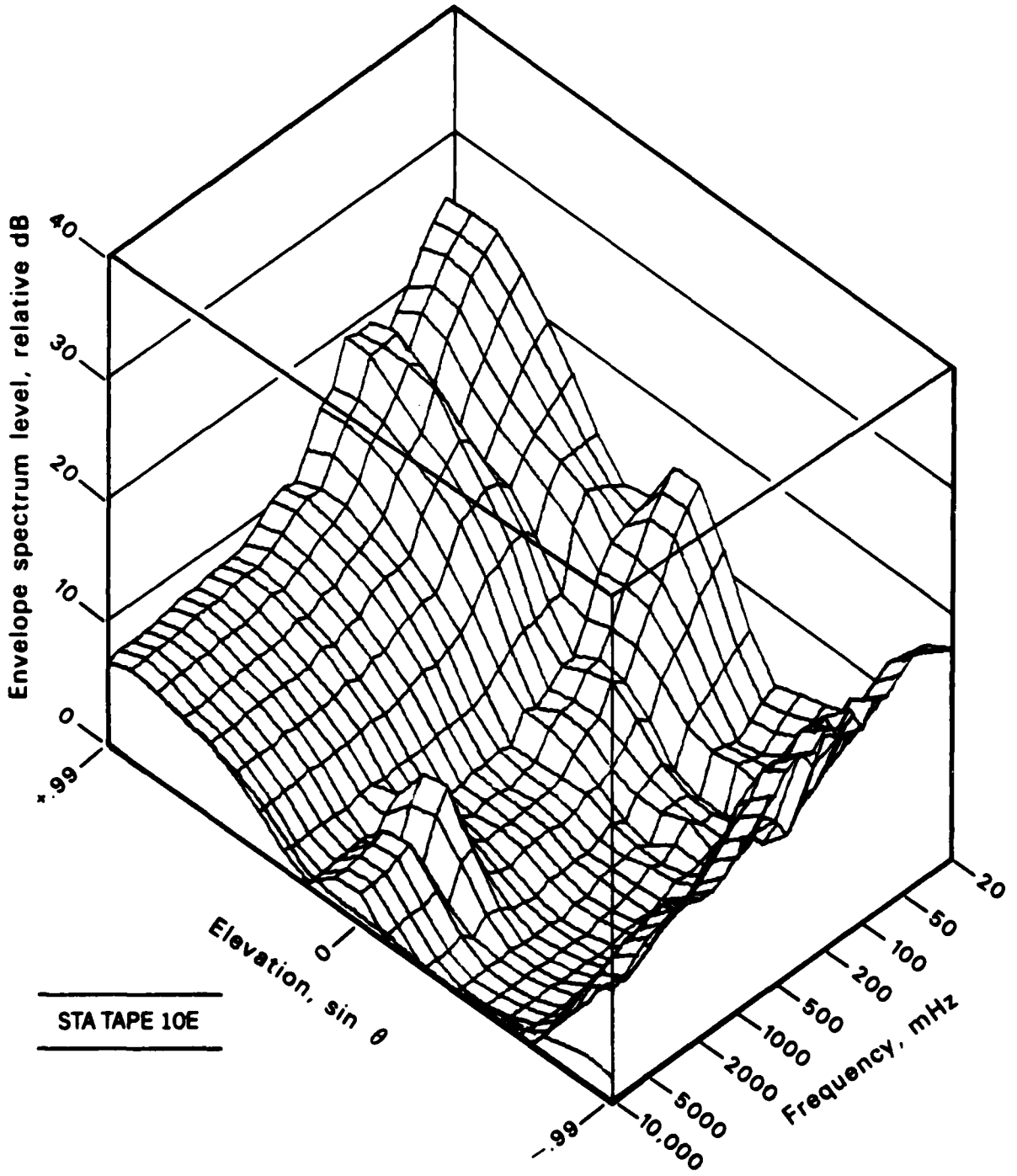
LTA TAPE 10A



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 10A

GROUP 10A

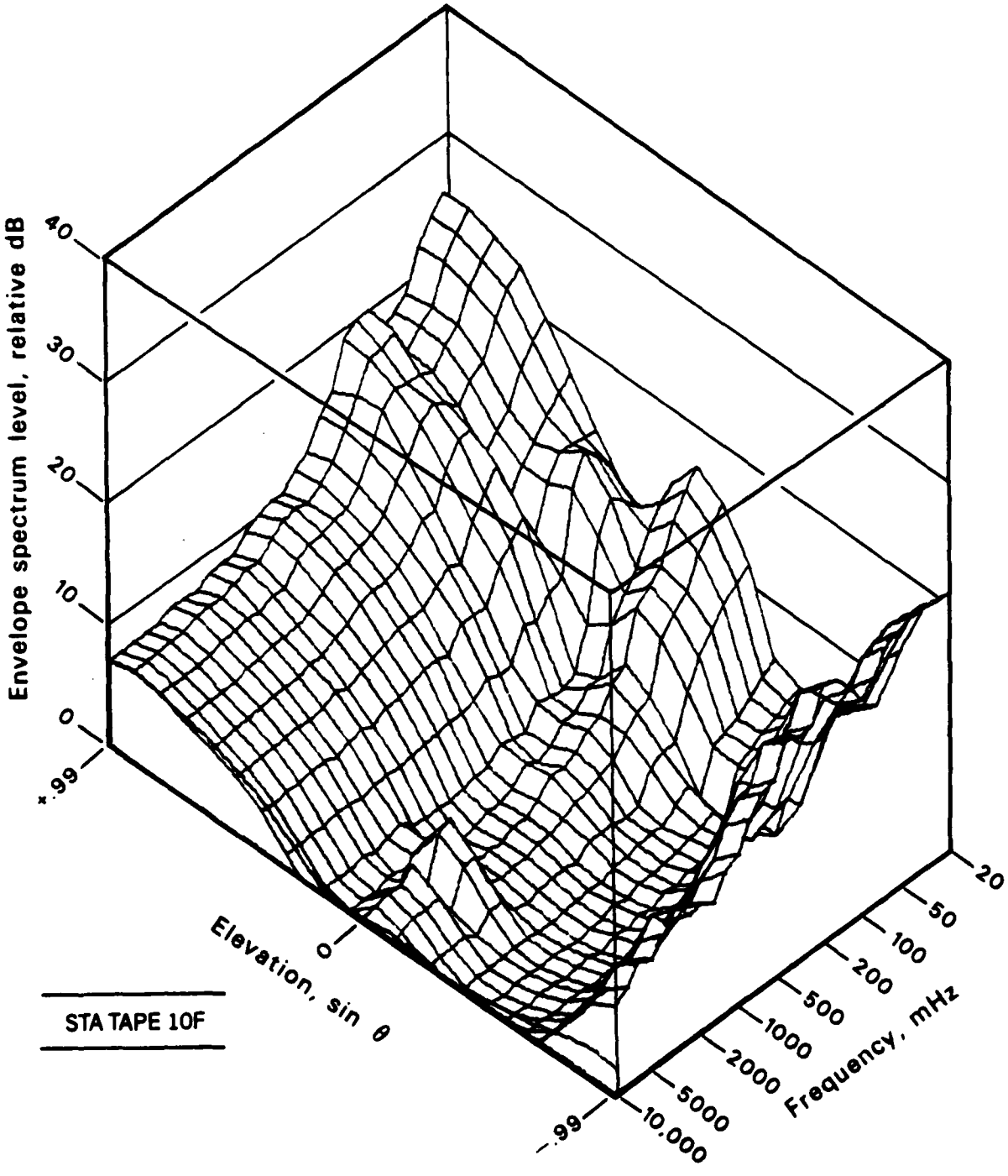


STA TAPE 10E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4870

GROUP 10A



STA TAPE 10F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4871

GROUP 10A

LTA TAPE 10A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 1 ANGLE +84°	71.0 26.6 19.7	34.4 28.4 20.8	33.5 28.4 20.4	32.4 27.5 17.5	30.9 26.5 15.1	28.8 24.8 13.2	24.5 22.6 11.8	29.7 20.7 11.3	27.7 18.4 10.9	28.1 18.5
2 +64°	71.7 29.3 20.6	33.6 29.2 21.2	33.0 28.3 20.5	32.3 28.5 17.9	31.4 26.9 15.4	29.5 24.9 13.8	26.0 22.9 12.5	29.9 20.9 11.9	28.2 18.6 11.5	28.0 19.0
3 +53°	71.3 29.3 19.8	32.8 29.3 20.2	32.2 27.0 19.2	31.4 27.7 17.0	30.6 25.7 14.8	29.1 23.9 13.3	26.7 21.2 11.9	28.2 19.8 11.3	27.0 17.3 10.9	26.7 18.4
4 +44°	70.6 27.5 18.5	33.4 27.8 18.8	32.6 25.7 17.6	31.6 24.8 15.6	30.2 23.8 13.8	29.2 22.0 12.2	27.9 19.0 10.9	25.3 17.8 10.3	27.3 15.6 10.0	26.3 17.0
5 +37°	70.0 25.2 16.7	33.5 25.2 17.1	32.5 23.9 16.0	31.2 22.3 13.9	29.3 21.4 12.3	28.2 19.9 10.8	26.8 17.5 9.8	22.8 15.9 9.2	26.7 14.0 9.1	25.5 15.6
6 +30°	69.2 22.6 14.3	33.0 22.3 14.5	31.8 20.2 13.4	30.0 19.5 11.8	27.1 18.4 10.1	25.7 16.8 9.0	23.6 15.7 8.3	21.9 15.5 7.6	24.0 12.0 7.4	23.4 13.3
7 +23°	68.2 20.2 11.7	31.7 19.1 11.7	30.3 17.1 10.6	28.2 15.5 9.2	23.9 15.5 7.8	22.7 13.2 6.8	21.1 15.2 6.4	23.0 17.0 5.7	22.9 10.4 5.6	21.6 10.2
8 +17°	66.6 18.2 7.7	29.9 16.3 7.6	28.5 14.7 6.7	26.3 12.6 5.7	21.9 12.8 4.8	21.5 10.3 4.0	21.0 15.7 3.6	23.9 18.3 3.3	22.7 8.7 3.3	19.7 6.6
9 +12°	64.8 18.0 3.6	30.9 16.0 3.5	29.9 13.9 2.8	28.4 11.2 2.6	26.2 10.4 2.0	25.8 8.9 1.6	25.4 12.8 1.0	27.2 15.5 0.9	23.2 5.9 0.8	20.7 3.6
10 +6°	64.1 21.7 3.1	35.1 19.8 4.0	34.1 17.4 2.6	32.8 14.9 2.9	30.9 11.6 2.2	30.9 9.8 1.5	31.0 8.2 1.0	32.0 8.8 0.9	27.6 6.1 1.0	24.4 4.6
11 0°	64.0 23.6 3.4	36.6 21.6 3.3	35.7 18.7 3.7	34.5 14.7 3.1	32.7 11.6 2.0	33.0 9.9 1.3	33.2 7.4 0.6	33.1 7.6 0.4	29.7 5.9 0.4	26.6 5.1
12 −6°	64.3 22.4 3.7	34.7 20.4 4.3	33.8 17.2 5.3	32.7 13.2 4.6	31.3 10.0 2.9	31.5 9.0 2.0	31.7 8.0 1.3	30.7 8.4 0.9	28.0 5.9 1.0	25.1 5.4
13 −12°	64.1 18.7 2.5	30.1 16.4 3.9	29.3 12.7 4.1	28.3 9.2 3.7	27.0 6.5 2.0	26.9 6.3 1.1	26.8 5.5 0.5	25.0 6.8 −0.0	23.0 5.0 0.0	20.6 4.0
14 −17°	63.9 12.0 1.8	22.3 8.7 3.1	21.5 6.3 2.0	20.3 4.3 2.1	18.4 2.9 1.1	17.9 3.5 0.4	17.3 3.0 0.3	15.2 4.5 0.2	14.4 4.3 0.1	12.4 2.5

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 10A

LTA TAPE 10A

AGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	64.0 5.7 1.4	16.6 4.6 2.3	15.5 4.3 1.4	14.1 3.6 1.5	11.9 2.9 1.0	11.1 3.4 0.6	10.2 4.2 0.6	12.7 5.6 0.8	10.5 3.4 0.5	8.6 1.9
16 −30°	64.3 4.3 0.6	16.1 4.4 0.9	15.2 3.8 0.6	13.9 3.9 0.3	12.2 2.9 0.4	11.5 3.3 −0.1	10.6 4.7 −0.0	14.2 6.7 0.1	11.3 1.8 −0.3	8.5 0.3
17 −37°	64.6 6.3 1.4	17.7 5.5 1.4	16.7 4.3 1.5	15.4 4.7 1.3	13.6 3.2 1.4	13.1 3.9 0.9	12.5 5.8 1.0	15.4 7.2 0.9	13.0 2.3 0.6	9.5 1.3
18 −44°	65.1 8.4 4.3	20.2 8.7 4.3	19.1 7.4 4.6	17.7 7.2 4.5	15.5 6.6 4.6	15.6 7.2 4.0	15.7 8.0 3.9	17.3 8.5 3.7	15.5 5.7 2.9	12.6 4.9
19 −53°	65.7 14.3 10.4	23.2 14.1 10.8	22.1 13.4 11.2	20.7 13.0 10.7	18.6 13.4 11.1	19.3 13.2 10.2	19.8 12.2 10.0	20.4 11.4 9.7	18.7 12.6 8.4	17.9 11.6
20 −64°	66.2 19.3 16.0	25.4 18.9 16.4	24.4 18.5 16.6	23.1 18.3 16.1	21.3 18.9 16.6	22.0 18.6 15.4	22.6 17.1 15.2	22.7 16.2 14.9	21.4 18.2 13.5	22.2 17.1
21 −84°	65.9 21.6 18.5	25.4 21.0 18.8	24.6 20.8 19.0	23.6 20.7 18.4	22.3 21.5 18.9	22.5 21.0 17.7	23.6 19.4 17.4	23.2 18.8 17.2	22.4 20.6 15.7	24.0 19.4

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 10A

LTA TAPE 10A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4 80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	71.0	34 4	33. 5	32. 4	30. 9	28. 8	24. 5	29. 7	27. 7	28 1
ANGLE +84°	26. 6	28. 4	28. 4	27. 5	26. 5	24. 8	22. 6	20. 7	18. 4	18. 5
	19. 9	20. 8	20. 4	17. 5	16. 1	13. 2	11. 8	11. 3	10. 9	
2	71. 7	33. 6	33. 0	32. 3	31. 4	29. 5	26. 0	29. 9	28. 2	28. 0
+64°	29. 3	29. 2	28. 3	28. 5	26. 7	24. 9	22. 9	20. 9	18. 6	19. 0
	20. 6	21. 2	20. 5	17. 9	15. 4	13. 8	12. 5	11. 9	11. 5	
3	71. 3	32. 8	32. 2	31. 4	30. 5	29. 0	26. 6	28. 3	27. 2	26. 8
+53°	29. 3	29. 3	27. 0	27. 7	25. 6	23. 8	21. 2	19. 8	17. 4	18. 4
	19. 8	20. 2	19. 2	17. 0	14. 8	13. 3	11. 9	11. 3	10. 9	
4	70. 6	33. 7	32. 8	31. 8	30. 5	29. 4	27. 9	25. 8	27. 5	26. 8
+44°	27. 6	27. 6	25. 7	25. 2	23. 7	22. 0	19. 1	17. 8	15. 6	17. 1
	18. 6	18. 8	17. 6	15. 6	13. 8	12. 2	10. 9	10. 3	10. 0	
5	70. 0	33. 3	32. 4	31. 2	29. 6	28. 5	27 1	23. 4	26. 7	25. 8
+37°	25. 2	24. 9	24. 0	22. 8	21. 3	19. 7	17. 6	15. 9	14. 0	15. 7
	17. 0	17. 1	16. 0	13. 9	12. 3	10. 8	9. 8	9. 3	9. 1	
6	69. 2	32. 9	31. 7	30. 0	27. 2	26. 1	24. 7	22. 5	23. 8	23. 6
+30°	22. 6	21. 4	20. 6	20. 0	18. 1	16. 7	15. 7	15. 6	12. 2	13. 3
	14. 4	14 7	13. 5	11. 8	10. 3	9. 0	8. 4	7. 6	7. 5	
7	68. 2	31 2	29 9	27. 9	24. 2	23. 3	22. 0	23. 3	23. 3	21. 8
+23°	20. 3	18. 6	17 3	15. 6	15. 2	13. 3	15. 2	17. 0	10. 7	10. 4
	11. 7	12. 0	10. 7	9. 4	7. 7	6. 9	6. 5	5. 8	5. 7	
8	66. 6	29 3	28. 0	26. 1	22. 5	21. 7	20. 7	24. 7	22. 9	19. 6
+17°	19. 0	16. 4	14. 7	13. 0	12. 6	10. 5	15. 8	18. 4	9. 2	6. 9
	7. 6	8. 2	6. 7	6. 0	4. 7	4. 2	3. 7	3. 3	3. 4	
9	64 8	28 1	27 2	26. 0	24. 4	23 1	21. 1	26. 3	20. 8	19. 1
+12°	18 8	14 7	11 8	10. 6	7. 6	8. 2	13. 2	15. 7	6. 7	4. 0
	3 4	4. 0	2. 8	2. 7	2. 0	1. 6	1. 0	0. 9	0. 9	
10	63 7	31 3	30. 0	28 2	25. 0	24 5	23. 9	27. 0	21. 4	17. 7
+6°	16. 7	15 0	12 0	10. 7	10. 2	7. 8	8. 4	9. 2	7. 1	4. 9
	3. 4	4 4	2 7	3. 0	2. 2	1. 4	0 7	0. 6	0. 7	
11	63 8	32 3	31 1	29. 4	26. 7	26. 4	26. 0	27. 0	23. 4	20. 7
0°	19. 0	16 7	13 5	12 5	11 3	8. 4	8. 2	8. 7	6. 4	4. 7
	3 4	3. 2	3 6	2. 9	1. 8	1 0	0. 2	-0. 0	-0. 2	
12	64 2	32 2	31 3	30 0	28 2	27 8	27 3	26. 5	24. 3	22. 0
−6°	20 7	17 7	14 6	13. 0	10 3	8. 7	8. 5	9. 1	6. 3	5. 5
	3 7	4 4	5 3	4 5	2 8	1 9	1. 2	0. 8	0. 7	
13	64. 0	28 4	27 6	26. 6	25. 3	24. 7	23. 9	22. 5	20. 5	19 1
−12°	18. 4	14. 4	11 3	8 8	6 1	5 6	4 9	6. 4	4. 7	3. 5
	2. 0	3 7	3 9	3 5	1. 7	1 0	0. 3	-0. 2	-0 1	
14	63 7	21 9	21 0	19 7	18 0	17 2	16 1	14. 6	13 7	12. 3
−17°	12 3	8 0	6 4	4 0	2 5	2 8	2 5	4 3	4. 0	2. 0
	1 3	2. 9	1 7	1 9	0 7	0 3	0 1	0. 1	-0. 1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 10A

LTA TAPE 10A

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	95	1.20	1.51	1.90	2.40	3.02	3.81	4 80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.0	18.3	17.2	15.8	13.6	12.9	12.2	13.7	11.8	9.4
ANGLE −23°	6.7	5.7	5.3	4.1	3.0	3.3	4.3	5.6	3.3	1.7
	1.1	2.2	1.3	1.4	0.6	0.6	0.5	0 8	0.4	
16	64.3	17.7	16.6	15.1	13.0	12.4	11.6	14.6	11.5	8.8
−30°	4.3	4.6	4.2	4.1	2.6	3.3	4.9	6.7	1.8	0.4
	0.5	0.9	0.7	0.3	0.4	−0.1	−0.0	0.1	−0.3	
17	64.6	18.3	17.3	16.0	14.1	13.6	13.0	15.6	13.2	9.9
−37°	6.3	5.5	4.4	4.8	3.3	4.0	5.8	7.2	2.3	1.4
	1.5	1.3	1.5	1.3	1.4	1.0	1.0	0.9	0.6	
18	65.1	20.4	19.2	17.8	15.5	15.6	15.6	17.3	15.4	12.6
−44°	8.5	8.6	7.2	7.2	6.5	7.0	7.9	8.5	5.7	4.9
	4.3	4.3	4.6	4.5	4.6	4.0	4.0	3.7	2.9	
19	65.7	23.2	22.2	20.8	18.8	19.3	19.8	20.4	18.7	17.9
−53°	14.4	14.1	13.4	13.0	13.4	13.2	12.2	11.4	12.6	11.6
	10.4	10.8	11.2	10.7	11.1	10.2	10.0	9.7	8.4	
20	66.2	25.4	24.4	23.1	21.3	22.0	22.6	22.7	21.4	22.2
−64°	19.3	18.9	18.5	18.3	18.9	18.6	17.1	16.2	18.2	17.1
	16.0	16.4	16.6	16.1	16.6	15.4	15.2	14.9	13.5	
21	65.9	25.4	24.6	23.6	22.3	23.0	23.6	23.2	22.4	24.0
−84°	21.6	21.0	20.8	20.7	21.5	21.0	19.4	18.8	20.6	19.4
	18.5	18.8	19.0	18.4	18.9	17.7	17.4	17.2	15.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 10A

GROUP 10A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	66.3	41.9	41.1	40.0	38.6	36.7	33.2	35.4	32.5	32.0
ANGLE −71.3°	29.9	26.7	23.7	28.2	23.3	22.9	21.7	20.1	18.8	17.4
	15.5	10.6	10.9	9.8	8.0	6.7	6.3	6.0	6.0	
2	67.7	45.8	45.0	44.0	42.7	41.8	40.6	39.3	36.9	34.8
−66°	29.5	32.0	29.3	30.2	26.5	25.7	24.6	22.6	20.5	18.5
	17.3	14.5	13.2	12.3	10.4	9.4	8.9	8.9	8.6	
3	68.8	43.6	43.6	43.6	43.5	42.3	40.5	39.4	35.8	35.4
−61.6°	31.4	31.7	28.7	27.2	26.8	25.0	24.2	22.2	20.0	18.1
	17.1	14.8	13.0	12.5	11.2	10.3	10.1	10.0	10.1	
4	68.4	47.5	46.3	44.6	41.9	41.4	40.7	40.0	36.9	35.7
−57.8°	32.1	33.6	28.9	29.5	26.8	25.6	24.7	22.1	19.7	19.4
	17.4	14.9	13.9	12.6	11.3	9.8	10.0	9.8	9.9	
5	66.3	46.5	46.0	45.6	45.0	43.8	41.9	40.0	39.4	35.4
−54.3°	32.5	32.6	30.1	28.5	26.8	24.0	24.2	21.8	20.3	18.2
	16.8	15.1	12.8	11.1	10.1	8.7	8.0	7.8	7.7	
6	64.6	37.9	37.7	37.4	37.1	36.2	35.1	34.1	32.6	30.3
−51.1°	28.8	27.7	24.6	22.1	20.5	19.4	19.2	16.9	15.1	13.7
	12.3	10.2	7.8	6.3	6.1	4.8	3.2	3.3	3.4	
7	65.3	43.2	42.7	42.0	41.2	40.0	38.2	37.8	36.2	34.3
−48.1°	30.7	30.9	27.1	27.1	24.1	22.7	21.2	19.5	17.6	17.5
	15.1	12.0	10.6	9.4	8.3	7.2	5.7	5.1	5.2	
8	67.6	44.9	44.9	44.8	44.8	43.5	41.6	39.4	39.4	35.6
−45.3°	33.2	33.6	30.2	29.3	26.3	24.8	25.0	22.8	20.5	18.8
	17.6	15.8	12.9	12.1	11.0	9.9	8.9	8.6	8.5	
9	68.4	42.0	40.6	38.6	34.7	34.4	34.1	36.5	34.8	32.4
−42.6°	31.6	30.8	27.6	25.9	24.8	22.7	22.4	20.6	18.4	17.1
	16.1	13.9	11.8	10.9	10.0	9.2	8.9	8.8	8.7	
10	66.7	45.6	45.2	44.8	44.4	43.2	41.4	40.9	39.1	36.6
−40.0°	33.4	32.9	28.5	29.8	27.9	25.1	25.2	22.5	19.9	19.0
	17.4	14.9	13.3	11.7	10.3	9.1	8.6	8.1	7.6	
11	64.3	38.9	39.4	39.9	40.3	39.3	38.0	36.8	35.6	33.2
−37.5°	30.2	30.3	25.7	25.5	23.1	21.6	21.7	19.4	17.2	14.7
	14.1	12.4	9.3	8.4	7.1	5.5	4.8	4.2	3.8	
12	63.3	22.3	25.2	26.9	28.2	27.0	25.3	24.9	23.9	22.8
−35.1°	20.3	19.9	16.7	14.6	11.8	9.9	10.9	9.5	6.4	3.1
	3.7	3.0	0.5	0.1	−0.1	−1.3	−1.3	−1.5	−1.8	
13	63.2	15.9	14.6	12.9	10.0	11.6	12.7	14.4	13.0	10.6
−32.8°	4.9	6.3	7.2	4.1	4.9	3.6	6.0	5.3	−1.6	−1.9
	−1.7	−1.4	−2.0	−1.8	−2.3	−2.7	−2.3	−2.3	−2.6	
14	63.2	17.1	16.3	15.5	14.4	12.3	7.9	13.7	11.0	11.2
−30.5°	8.7	6.2	6.4	6.0	5.1	3.0	5.1	5.3	−0.6	−1.0
	−1.9	−1.4	−1.6	−2.0	−2.2	−2.3	−2.5	−2.1	−2.5	
15	63.3	19.6	18.6	17.3	15.5	15.9	16.2	16.6	14.6	12.4
−28.3°	8.1	8.4	6.6	5.6	5.8	4.6	5.7	6.2	−0.4	−0.5
	−0.6	−1.6	−1.2	−1.9	−1.5	−2.3	−1.9	−2.1	−2.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 10A

GROUP 10A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	63.4	24.1	23.1	21.9	20.2	18.7	16.2	17.5	19.2	15.1
ANGLE −26.1°	9.0	8.4	6.7	6.1	6.2	4.2	6.2	6.6	0.5	1.4
	2.4	-1.4	-0.6	-1.5	-0.8	-1.5	-1.9	-1.9	-2.0	
17	63.4	26.0	24.9	23.4	21.1	20.1	18.8	17.6	19.2	16.1
−24.0°	10.4	7.9	7.0	6.7	6.2	4.3	6.4	7.2	2.2	3.9
	6.3	0.1	0.4	-0.5	-0.6	-1.2	-1.7	-1.7	-1.6	
18	63.4	25.6	24.5	23.0	20.5	19.7	18.7	18.2	18.6	14.2
−21.8°	9.6	7.5	8.4	5.4	4.5	5.7	7.0	7.9	3.8	5.2
	8.2	1.3	1.0	0.1	-0.7	-1.2	-1.4	-1.6	-1.8	
19	63.4	23.5	22.3	20.7	18.1	16.8	14.9	15.2	14.1	9.3
−19.8°	8.1	7.7	7.6	4.6	3.7	4.8	6.1	6.6	3.1	4.1
	6.4	1.3	1.2	-0.3	-0.8	-1.6	-1.8	-1.4	-1.4	
20	63.5	22.3	21.2	19.8	17.8	16.5	14.6	16.4	13.2	8.8
−17.7°	7.8	7.3	7.5	6.5	4.7	3.9	5.0	5.6	1.8	2.0
	3.3	0.6	0.5	-1.0	-0.8	-1.4	-1.8	-1.5	-1.8	
21	63.5	21.0	19.9	18.4	16.0	16.8	17.5	21.6	11.6	11.0
−15.7°	9.4	6.7	5.5	6.0	5.0	3.8	3.9	5.3	1.6	0.2
	0.7	0.0	-0.1	-0.4	-0.6	-0.8	-1.5	-1.1	-1.7	
22	63.5	21.7	20.4	18.4	14.7	15.6	16.3	23.6	15.0	11.1
−13.7°	9.1	7.6	3.9	6.5	4.1	3.2	4.9	6.0	1.2	0.3
	-0.1	-0.1	-0.3	-0.2	-0.8	-1.0	-1.0	-1.1	-1.8	
23	63.5	19.8	18.8	17.6	15.9	15.0	13.9	17.4	15.2	11.5
−11.7°	5.2	8.8	4.6	6.0	3.6	3.2	5.1	6.7	0.6	0.1
	0.5	-0.2	0.1	-0.3	-0.5	-1.1	-0.9	-1.1	-1.4	
24	63.5	18.5	18.3	18.1	17.8	16.2	13.5	15.8	12.9	10.2
−9.7°	8.1	8.6	4.7	5.8	3.4	3.6	5.0	7.3	1.6	0.6
	0.9	0.4	0.6	0.1	-0.3	-0.8	-0.9	-0.8	-1.3	
25	63.6	22.5	21.8	21.1	20.1	18.8	17.0	17.6	13.5	10.7
−7.8°	9.1	7.9	5.0	4.7	3.8	3.4	5.0	6.8	1.5	0.4
	0.8	0.2	0.5	0.0	-0.2	-0.4	-0.9	-0.8	-1.4	
26	63.7	25.1	24.2	23.1	21.7	20.1	17.5	17.3	14.4	9.1
−5.8°	7.8	7.1	6.4	6.4	3.4	3.6	4.5	5.8	1.8	0.1
	0.5	-0.1	0.2	-0.5	0.0	-0.4	-0.6	-0.7	-0.9	
27	63.8	26.3	25.3	24.0	22.2	21.2	19.9	17.4	16.4	12.3
−3.9°	10.4	8.5	7.1	5.2	3.6	3.0	4.4	5.6	1.4	0.7
	0.8	0.3	0.4	0.3	0.2	-0.5	-1.0	-0.7	-1.2	
28	63.9	25.9	24.9	23.7	22.0	20.2	17.2	15.4	18.5	12.4
−1.9°	13.2	8.0	7.8	7.4	4.4	3.0	5.1	5.8	1.4	0.6
	0.8	0.1	0.3	0.6	-0.1	-0.3	-0.6	-0.9	-0.9	
29	63.9	23.7	22.7	21.4	19.4	19.4	19.4	17.2	16.0	14.5
0°	13.6	9.2	7.9	5.3	5.0	4.0	5.3	6.6	2.6	2.1
	1.2	1.3	1.0	1.2	0.4	0.4	-0.2	-0.5	-0.9	
30	63.9	26.4	25.1	23.2	19.8	19.1	18.2	18.2	18.6	13.5
+1.9°	14.7	13.0	10.0	10.0	5.6	4.7	7.1	8.3	6.1	4.2
	2.9	4.8	2.3	3.2	2.3	1.9	1.3	1.1	1.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	64.0	31.0	29.6	27.4	22.7	23.5	24.1	25.8	21.4	17.1
ANGLE +3.9°	17.6	16.2	12.7	10.5	11.3	7.7	9.2	10.6	10.0	6.7
	4.5	7.2	3.9	4.9	3.9	2.6	2.0	1.7	2.5	
32	64.5	38.0	36.8	35.2	32.6	32.3	31.9	34.7	28.1	24.1
+5.8°	22.9	21.8	18.4	16.5	16.7	14.0	13.6	14.0	12.1	9.8
	7.6	8.1	6.5	6.0	5.3	3.8	2.7	2.7	2.6	
33	65.4	39.3	38.3	37.2	35.6	35.2	34.8	36.5	31.9	29.0
+7.8°	25.3	24.8	22.1	21.5	18.9	18.2	17.2	17.0	13.5	12.4
	10.1	9.4	7.7	7.4	6.8	5.6	4.9	4.9	4.6	
34	66.1	37.0	36.5	35.8	35.1	34.8	34.3	33.4	31.3	29.6
+9.7°	27.9	23.8	23.1	22.8	20.2	19.2	19.0	18.8	15.5	13.8
	11.7	10.8	9.1	9.1	8.5	7.3	7.1	7.0	7.0	
35	66.0	36.5	35.7	34.8	33.6	33.6	33.6	34.0	33.2	28.7
+11.7°	27.9	25.7	24.2	22.9	21.7	19.0	18.8	18.9	15.5	14.4
	12.1	11.5	9.7	9.4	8.8	7.4	7.3	7.2	7.2	
36	65.0	35.9	36.3	36.6	37.0	36.2	35.3	36.2	34.1	29.7
+13.7°	25.5	26.0	22.5	23.0	20.4	19.0	18.0	17.1	14.1	13.1
	11.6	10.5	8.2	7.7	7.1	5.9	5.6	5.4	5.1	
37	63.9	29.3	30.3	31.0	31.7	31.8	31.8	30.8	28.6	26.7
+15.7°	22.2	22.3	18.7	18.4	17.0	16.2	15.5	12.8	11.3	9.8
	8.8	8.1	5.8	5.9	5.1	4.4	3.8	3.2	2.8	
38	63.4	19.0	19.8	20.5	21.1	21.8	22.5	22.7	20.1	19.3
+17.7°	17.2	15.9	12.8	11.5	10.8	9.5	9.9	10.0	6.3	5.6
	5.8	5.2	4.7	4.7	4.2	3.8	3.1	2.6	2.4	
39	63.3	15.8	15.3	14.8	14.3	14.8	15.3	19.8	17.5	14.7
+19.8°	14.2	11.5	9.9	8.8	7.5	6.2	7.0	9.1	3.1	3.1
	3.1	2.6	2.6	2.5	2.1	1.8	1.0	0.8	0.4	
40	63.3	18.8	17.9	16.8	15.4	15.8	16.2	18.1	18.2	14.8
+21.8°	12.9	11.0	9.5	8.4	7.1	4.9	6.8	8.9	1.4	1.0
	0.8	-0.1	0.2	0.2	-0.5	-0.5	-1.0	-1.2	-1.6	
41	63.3	21.0	20.0	18.7	16.9	17.7	18.4	18.6	19.7	15.9
+24.0°	14.4	11.3	11.0	8.8	7.9	6.0	6.7	9.4	0.7	0.4
	0.3	-0.6	-0.7	-0.3	-1.1	-1.6	-1.4	-1.8	-1.7	
42	63.3	21.2	20.0	18.3	15.6	17.5	18.8	20.4	21.1	15.9
+26.1°	15.4	11.9	12.1	9.1	8.3	5.8	6.1	9.4	-0.2	0.2
	-0.2	-0.6	-0.9	-0.7	-0.9	-1.3	-1.6	-1.9	-2.1	
43	63.3	19.1	18.2	17.1	15.6	16.9	17.8	22.0	20.3	15.7
+28.3°	14.6	12.4	11.3	8.8	9.0	5.6	6.4	9.0	-0.1	-0.4
	-0.6	-0.4	-1.1	-1.3	-1.0	-1.4	-1.9	-2.1	-2.6	
44	63.3	16.9	16.5	16.0	15.5	16.5	17.3	22.4	20.2	15.5
+30.5°	14.9	12.6	11.6	9.5	9.3	6.2	6.0	9.2	-0.2	-0.4
	-0.9	-1.1	-1.1	-1.7	-1.4	-1.6	-1.9	-2.0	-2.1	
45	63.3	17.0	16.6	16.2	15.8	17.4	18.5	23.5	20.8	17.0
+32.8°	14.9	12.7	12.0	9.9	9.9	6.4	6.2	9.3	0.5	-1.0
	-1.0	1.1	-1.0	-1.9	-2.0	-1.9	-2.3	-2.2	-2.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 10A

GROUP 10A

PAGE 4

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	63.3	18.9	18.9	18.8	18.7	18.7	18.7	23.9	21.6	17.5
ANGLE +35.1°	16.9	13.8	12.2	10.5	10.5	6.8	6.0	9.5	-0.0	-0.6
	-0.7	-1.4	-0.9	-1.9	-2.2	-1.9	-2.0	-2.4	-2.6	
47	63.3	19.6	19.1	18.5	17.8	18.9	19.7	24.6	22.1	18.3
+37.5°	16.1	13.9	12.9	10.9	10.9	7.4	6.7	9.4	0.8	-0.3
	-0.1	-1.1	-1.3	-1.9	-2.2	-2.2	-2.2	-2.3	-2.6	
48	63.3	19.2	18.9	18.6	18.3	18.5	18.7	24.7	22.0	18.1
+40.0°	16.7	14.5	12.6	11.0	10.8	7.7	6.5	9.1	0.1	-0.2
	-0.7	-0.9	-1.0	-1.5	-1.8	-2.5	-2.5	-2.1	-2.6	
49	63.4	16.8	17.7	18.4	19.1	19.0	19.0	24.8	22.1	17.7
+42.6°	16.2	14.4	12.6	11.2	11.1	7.6	6.0	9.1	0.5	0.3
	-0.7	-0.8	-0.8	-1.2	-1.2	-2.0	-2.0	-2.2	-2.5	
50	63.4	17.5	17.9	18.4	18.8	19.1	19.4	25.2	21.6	17.9
+45.3°	16.7	14.3	13.0	12.1	11.1	8.3	6.0	8.4	1.4	0.1
	-0.0	-1.0	-0.7	-1.4	-1.5	-1.9	-1.4	-1.5	-1.8	
51	63.5	18.6	20.4	21.6	22.6	21.3	19.6	25.1	22.0	17.6
+48.1°	17.7	15.1	13.5	12.5	11.5	8.6	6.0	8.2	1.9	0.5
	0.1	-0.5	-0.7	-1.3	-1.3	-2.1	-1.8	-1.5	-1.6	
52	63.7	24.3	24.6	25.0	25.2	23.8	21.5	26.3	23.5	18.6
+51.1°	18.7	16.1	14.5	13.2	12.5	9.6	7.0	8.9	3.0	1.6
	0.7	0.2	1.0	-0.4	-1.0	-1.5	-1.8	-1.2	-1.7	
53	64.0	30.2	29.9	29.6	29.2	27.4	24.4	27.4	24.5	20.2
+54.3°	20.3	17.9	15.6	15.2	13.8	11.0	8.8	9.9	5.3	4.1
	2.9	1.8	2.7	1.2	0.3	-0.3	-0.7	-0.4	-0.9	
54	64.5	33.0	32.7	32.3	31.9	30.0	26.7	28.4	24.7	21.4
+57.8°	20.8	18.5	17.0	17.0	15.4	13.2	11.7	11.5	8.5	6.6
	5.0	3.4	3.9	2.6	1.3	0.9	0.1	0.5	0.4	
55	64.9	33.3	32.8	32.2	31.5	29.9	27.3	28.8	26.1	22.0
+61.6°	20.5	18.0	19.1	20.1	19.0	18.1	16.5	16.0	14.4	10.8
	7.9	4.5	5.8	4.5	2.5	1.8	1.2	1.6	1.3	
56	65.2	35.4	34.5	33.4	31.8	30.9	29.7	31.5	29.1	25.7
+66.0°	24.5	23.1	23.7	24.6	24.0	23.5	22.6	22.0	20.2	16.8
	11.8	6.7	9.3	7.8	3.6	3.4	2.1	2.5	2.1	
57	65.4	35.9	35.1	34.3	33.1	32.1	30.7	33.0	32.2	31.2
+71.3°	31.5	29.3	27.6	27.0	26.1	25.0	25.3	24.3	22.0	18.7
	12.5	9.5	12.3	9.4	5.8	5.4	3.6	3.9	2.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 10A

STA TAPE 10E

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	58.0 17.4 9.2	26.3 16.4 8.9	25.2 13.8 9.0	23.7 11.8 8.7	21.3 12.1 8.5	20.0 11.6 8.3	18.0 10.6 8.3	20.6 9.6 8.2	20.4 9.4 8.0	20.8 9.3
2 +64°	58.7 17.9 9.9	26.6 16.6 9.5	25.7 14.7 9.6	24.5 12.7 9.5	22.8 12.7 9.1	21.3 12.3 9.0	18.9 11.2 9.0	21.2 10.5 9.0	20.9 10.0 8.8	20.8 10.0
3 +53°	58.3 17.5 9.4	26.5 16.3 9.1	25.5 14.0 9.1	24.2 12.7 9.0	22.4 12.1 8.7	20.6 11.6 8.8	17.6 10.7 8.5	20.1 10.4 8.6	20.8 9.6 8.4	19.0 9.9
4 +44°	57.8 16.3 8.5	24.6 15.3 8.3	23.5 12.7 8.4	22.1 11.7 8.2	19.9 11.3 8.0	18.3 10.9 8.0	15.8 9.9 7.8	18.5 9.7 7.7	20.2 8.8 7.6	17.4 9.2
5 +37°	57.2 15.0 7.6	22.1 13.5 7.5	21.1 10.9 7.6	19.7 10.6 7.6	17.8 10.5 7.5	16.4 10.0 7.3	14.2 8.8 7.1	16.6 8.8 7.1	17.5 7.9 7.1	16.2 8.4
6 +30°	56.4 13.6 6.5	19.2 11.1 6.3	18.5 9.1 6.3	17.6 9.2 6.2	16.5 8.6 6.4	15.3 8.4 6.1	13.6 7.4 6.1	14.7 7.4 6.0	14.9 6.5 6.0	14.0 7.0
7 +23°	55.3 10.5 5.1	15.8 8.6 4.9	15.8 7.4 5.0	15.8 6.7 4.7	15.8 6.3 4.9	14.0 6.5 4.6	11.0 5.9 4.6	12.0 5.5 4.5	11.8 5.1 4.4	10.9 5.4
8 +17°	53.8 6.0 2.7	13.0 5.2 2.9	13.7 4.0 2.9	14.2 3.4 2.4	14.8 3.4 2.6	12.5 3.3 2.6	7.6 3.3 2.5	7.6 3.0 2.5	6.9 2.9 2.6	7.0 3.0
9 +12°	52.2 2.8 1.6	13.4 3.2 3.6	13.0 1.0 2.6	12.6 1.3 1.0	12.0 1.0 2.0	10.2 1.0 1.8	7.1 0.7 1.8	4.6 0.7 1.6	4.7 1.0 1.5	3.6 1.2
10 +6°	51.7 3.8 3.3	17.3 3.2 6.7	16.2 1.2 5.0	14.6 0.9 2.1	12.1 0.4 4.4	10.5 0.8 3.9	7.8 0.8 3.6	5.8 0.4 3.3	5.7 1.0 3.3	3.9 1.7
11 0°	51.6 3.6 3.2	17.5 2.6 7.1	16.2 1.3 5.5	14.5 0.9 2.2	11.6 0.9 4.7	10.1 0.7 4.2	7.8 0.6 3.8	5.5 0.7 3.6	6.3 0.5 3.6	4.0 1.3
12 −6°	51.7 2.0 0.8	13.5 1.2 3.6	12.4 1.4 3.1	11.1 0.5 0.3	9.1 0.3 2.3	7.9 0.6 1.6	6.4 0.5 1.7	3.8 0.5 1.5	4.6 −0.2 1.3	3.2 0.0
13 −12°	51.3 1.3 −0.7	8.3 −0.2 0.1	7.6 0.5 0.3	6.8 −0.3 −0.9	5.8 −0.5 −0.0	5.0 −0.4 −0.6	4.1 −0.5 −0.5	1.1 −0.6 −0.5	2.5 −1.0 −0.6	2.0 −0.9
14 −17°	51.0 1.3 −1.4	5.2 −0.7 −1.4	4.5 0.0 −1.2	3.7 −0.2 −1.3	2.8 −0.4 −1.3	3.1 −0.5 −1.5	3.5 −1.2 −1.3	0.3 −1.1 −1.5	1.3 −1.6 −1.5	1.3 −1.3

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 10A

STA TAPE 10E

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.0 2.1 −1.2	5.8 0.7 −1.3	5.1 −0.0 −1.1	4.2 0.4 −1.2	3.2 −0.2 −1.2	3.5 −0.5 −1.3	3.8 −0.9 −1.3	0.3 −0.9 −1.3	1.2 −1.3 −1.2	1.1 −1.2
16 −30°	51.4 1.2 −0.8	6.4 0.8 −0.8	5.9 0.5 −0.9	5.3 0.6 −0.6	4.6 −0.0 −0.9	4.0 −0.5 −0.9	3.3 −0.4 −0.9	1.4 −0.6 −0.7	1.9 −0.7 −0.8	1.4 −1.0
17 −37°	51.7 2.7 0.2	7.1 1.8 0.1	6.5 2.0 0.3	5.8 1.8 0.2	5.0 1.6 0.0	4.4 0.8 −0.0	3.7 0.8 0.0	2.4 0.2 0.1	1.6 0.1 −0.1	3.1 −0.3
18 −44°	52.1 6.8 1.8	9.2 5.4 1.4	8.7 5.2 1.9	8.2 5.2 2.1	7.5 4.9 1.7	6.8 4.0 1.7	6.0 3.3 1.8	5.5 2.5 1.7	3.8 2.0 1.5	5.8 1.4
19 −53°	52.8 13.9 6.4	14.5 13.2 5.7	14.2 12.1 6.6	13.9 11.9 6.6	13.6 12.3 6.1	12.8 10.4 6.5	11.9 10.0 6.2	13.0 8.7 5.9	11.0 7.7 5.3	13.0 6.8
20 −64°	53.2 17.4 10.7	17.4 17.6 10.4	17.6 16.2 11.3	17.8 16.6 11.2	18.1 16.5 10.7	17.4 14.9 10.5	16.6 14.0 10.1	17.3 13.0 9.3	14.8 12.0 9.2	17.4 11.0
21 −84°	53.0 18.6 12.5	18.5 19.2 12.5	19.2 18.0 13.4	19.8 18.5 13.2	20.3 18.0 12.7	19.5 16.8 12.4	18.4 15.9 11.7	18.8 14.8 10.7	17.1 13.8 10.3	19.4 12.9

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10A

STA TAPE 10F

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.9 16.8 9.2	26.6 15.5 8.5	25.3 13.4 8.6	23.5 12.5 8.6	20.4 11.4 8.1	19.7 11.5 8.0	18.8 11.1 8.0	21.3 10.3 7.9	21.2 9.3 7.9	20.4 9.3
2 +64°	58.5 17.9 9.8	26.6 15.8 9.3	25.4 13.9 9.4	23.7 12.8 9.2	20.8 12.1 8.8	19.9 12.2 8.7	18.6 12.0 8.6	20.9 11.2 8.5	20.3 10.0 8.6	20.2 10.2
3 +53°	58.1 18.1 8.9	25.7 15.3 9.0	24.6 13.4 8.9	23.1 12.2 8.7	20.8 12.0 8.3	19.8 11.7 8.2	18.3 11.5 8.1	18.9 10.8 8.0	18.9 9.4 8.2	19.2 9.6
4 +44°	57.5 15.6 8.2	24.8 14.5 8.3	23.6 12.4 7.9	21.9 11.5 7.8	17.2 11.2 7.5	18.2 10.7 7.4	17.0 10.6 7.5	18.0 9.7 7.3	18.8 8.8 7.3	17.7 8.5
5 +37°	56.9 12.8 7.6	22.0 12.7 7.2	20.8 11.0 7.0	19.2 10.3 7.0	16.6 9.9 6.9	15.6 9.8 6.7	14.2 9.5 6.7	17.3 8.6 6.4	17.2 8.1 6.5	15.3 7.5
6 +30°	56.1 9.8 6.6	18.8 10.3 6.0	17.9 9.4 5.8	16.8 8.3 5.9	15.4 8.1 5.8	14.1 8.2 5.7	12.3 7.6 5.7	15.7 7.2 5.4	14.2 6.9 5.5	12.5 6.1
7 +23°	55.1 7.8 5.0	15.6 7.7 4.6	15.7 7.8 4.2	15.9 5.9 4.5	16.1 6.3 4.5	14.2 6.2 4.2	10.7 5.6 4.3	12.9 5.4 4.0	11.4 5.2 4.1	10.3 4.6
8 +17°	53.5 4.3 2.5	12.4 4.1 2.4	14.9 4.7 2.1	16.4 3.5 2.4	17.6 3.2 2.4	15.1 3.2 2.1	8.5 3.0 2.1	8.0 2.9 2.1	6.3 2.6 2.0	6.9 2.5
9 +12°	51.7 2.7 -0.1	11.1 0.9 0.8	12.9 1.1 0.4	14.1 1.4 -0.1	15.1 0.3 0.4	12.6 0.2 -0.1	6.0 -0.1 -0.1	2.7 -0.3 -0.0	2.2 -0.1 -0.1	2.4 -0.2
10 +6°	51.0 2.3 -1.0	15.6 1.1 0.8	14.5 0.6 0.4	13.0 1.2 -1.1	10.7 -0.0 -0.1	9.4 -0.6 -0.6	7.5 -0.5 -0.4	3.8 -1.1 -0.6	3.7 -1.4 -0.8	2.4 -1.3
11 0°	51.0 3.2 -0.5	18.4 2.0 4.2	17.1 1.6 3.6	15.4 1.7 -0.6	12.3 0.4 2.5	11.5 -0.2 1.6	10.3 -0.3 1.6	6.5 -0.9 1.3	5.6 -0.7 1.2	3.5 -0.9
12 −6°	51.3 2.1 -0.6	16.7 1.6 2.4	15.5 1.0 2.4	14.0 0.8 -0.7	11.7 0.3 1.2	10.6 -0.3 0.9	7.2 -0.3 0.9	5.2 -0.7 0.6	4.6 -0.8 0.4	3.5 -1.0
13 −12°	51.0 -0.2 -1.3	13.1 -0.4 0.1	12.3 -0.2 0.1	11.3 -0.2 -1.2	10.0 0.2 -0.5	8.5 -1.1 -0.7	5.2 -0.9 -0.7	2.9 -1.0 -0.9	2.8 -1.3 -1.0	2.2 -1.5
14 −17°	50.7 -0.5 -1.8	6.7 -0.4 -1.6	5.9 -0.5 -1.6	5.1 -0.8 -1.7	4.0 -0.7 -1.8	3.6 -1.5 -1.7	3.2 -1.3 -1.9	-0.3 -1.4 -1.7	1.4 -1.6 -1.8	0.5 -1.8

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10A

STA TAPE 10F

PAGE 2

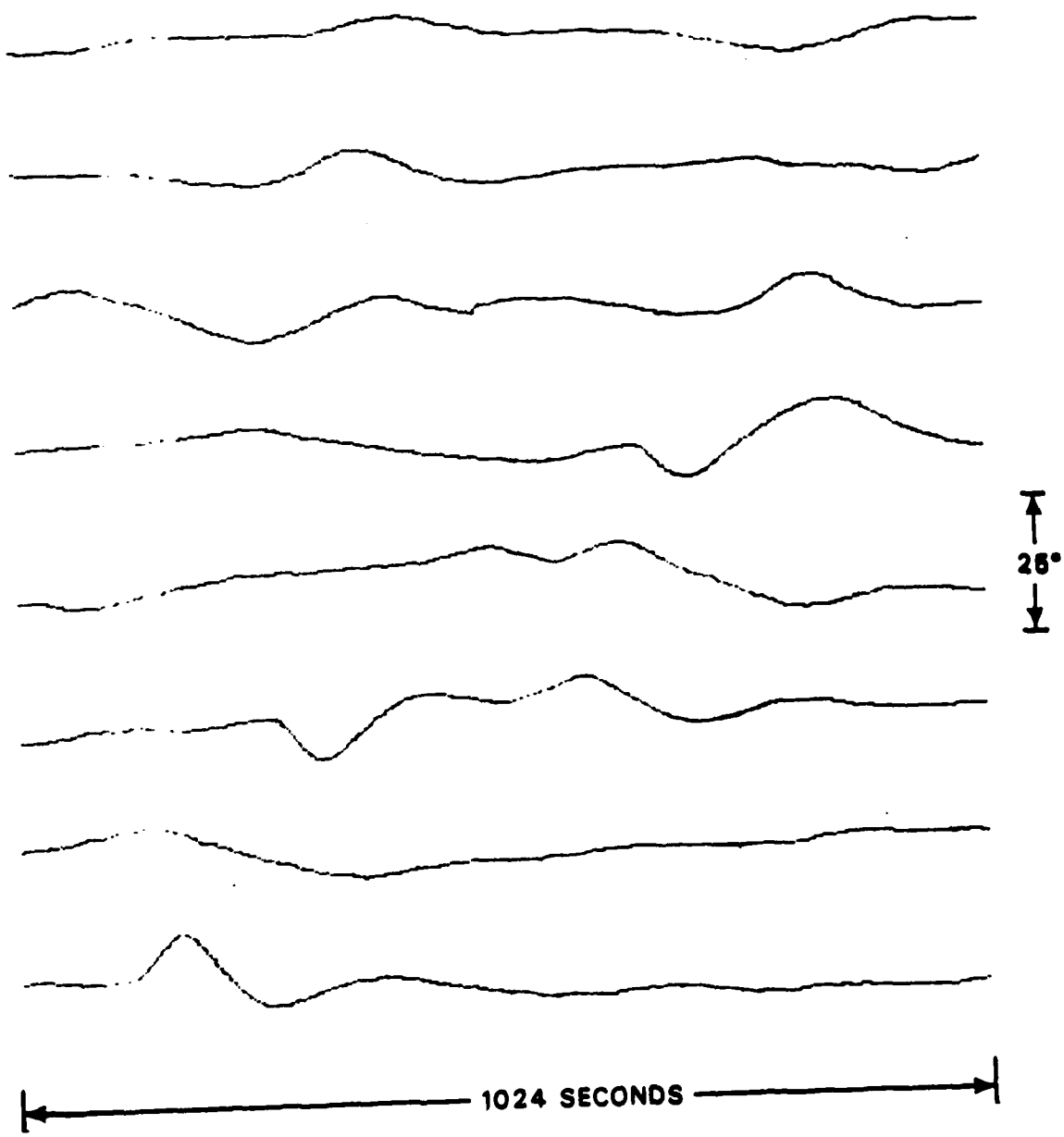
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.7 −0.1 −1.6	5.8 −0.3 −1.6	5.4 −0.6 −1.7	4.9 −0.8 −1.5	4.3 −0.7 −1.6	3.7 −1.2 −1.9	3.0 −0.9 −1.6	−0.9 −1.4 −1.7	0.8 −1.5 −1.8	0.1 −1.8
16 −30°	51.2 0.5 −0.9	6.2 0.0 −1.0	6.2 0.2 −1.2	6.2 −0.3 −1.1	6.2 −0.2 −1.0	5.0 −0.8 −1.3	3.2 −0.4 −1.2	−0.5 −0.9 −1.1	0.8 −0.7 −1.3	0.7 −1.4
17 −37°	51.6 3.0 −0.2	6.8 2.9 −0.3	7.3 1.6 −0.5	7.6 1.5 −0.2	8.0 1.7 −0.3	6.3 1.1 −0.4	3.6 0.5 −0.3	0.9 0.4 −0.4	2.4 0.0 −0.4	2.0 −0.5
18 −44°	52.0 7.3 1.5	8.6 7.8 1.6	9.4 6.0 1.2	10.0 5.9 1.6	10.6 6.3 1.3	9.2 4.6 0.9	7.1 4.0 1.1	4.9 3.3 0.9	6.1 2.2 0.9	6.0 1.5
19 −53°	52.7 14.2 5.3	14.6 14.9 5.5	14.9 12.5 5.1	15.3 12.5 5.9	15.5 13.4 4.8	14.8 10.7 4.1	14.0 10.2 4.5	12.3 8.8 3.8	12.2 7.0 3.9	13.0 5.9
20 −64°	53.2 19.5 9.2	20.0 20.2 9.6	20.1 17.5 9.3	20.3 17.4 10.6	20.4 18.2 9.1	19.9 15.4 8.0	19.3 15.0 8.7	17.6 13.5 7.4	16.8 11.5 7.0	18.2 10.6
21 −84°	53.0 21.8 10.7	22.5 22.4 11.5	22.6 19.6 11.3	22.7 19.5 12.7	22.8 20.3 11.2	22.3 17.3 9.9	21.7 17.0 10.7	20.0 15.5 9.2	18.7 13.4 8.2	20.4 12.7

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10A

BEARING VS TIME

MEAN & VAR.	268.9	3.48	269.3	2.16	269.0	6.90	268.2	9.80	
269.0	13.85	269.0	8.91	268.5	6.39	268.5	8.05		

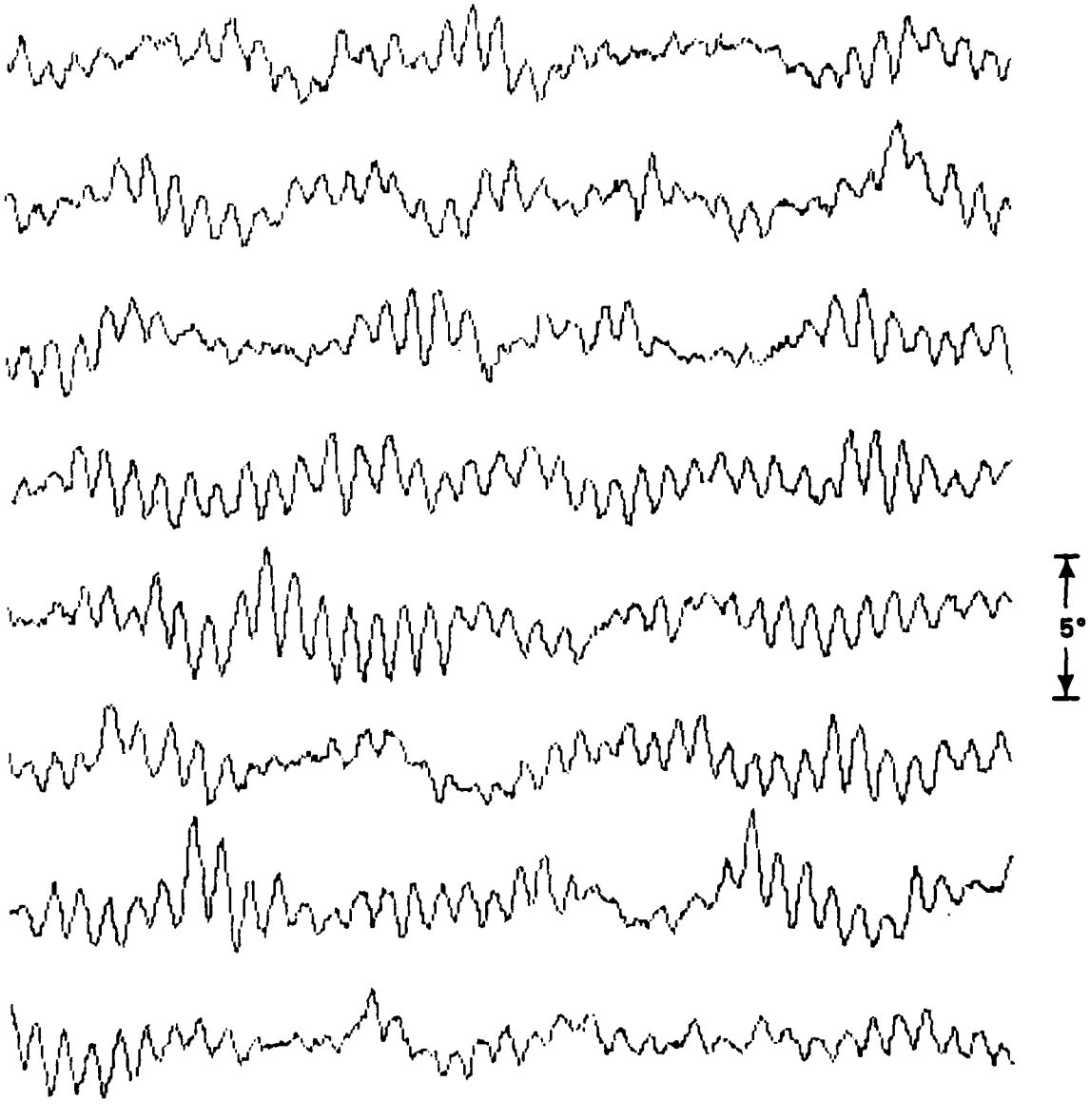


MPL-M-4884

GROUP 10A

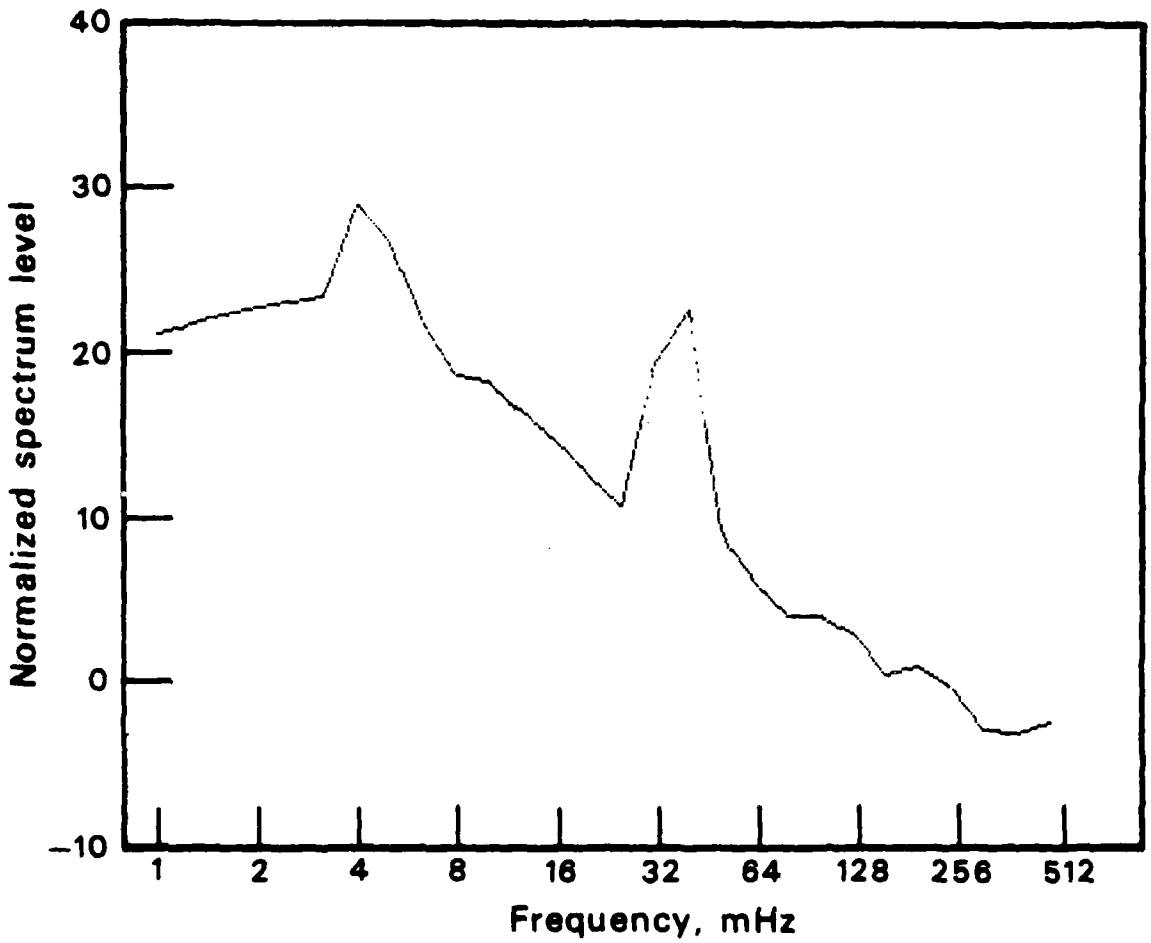
ELEVATION VS TIME

MEAN	% VAR									
92.7	0.31	92.7	0.48	92.6	0.41	92.7	0.45	92.7	0.41	92.8	0.47	93.0	0.68	92.9	0.28



MPL-M-4885

GROUP 10A



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 10B

Environmental Summary

10 June 1978

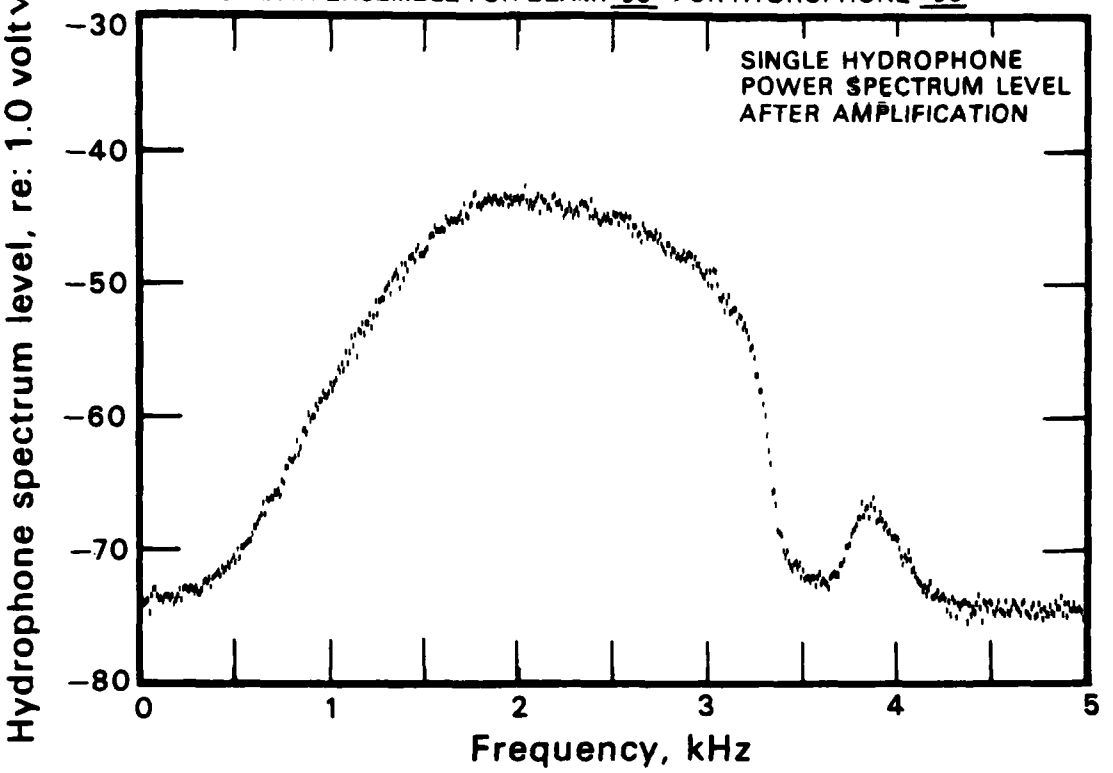
Tapes	Start time	Code
LTA/LOG	06:43:28	10B
STA	06:46:28	10C
STA	07:44:07	10H
High Band Filter		

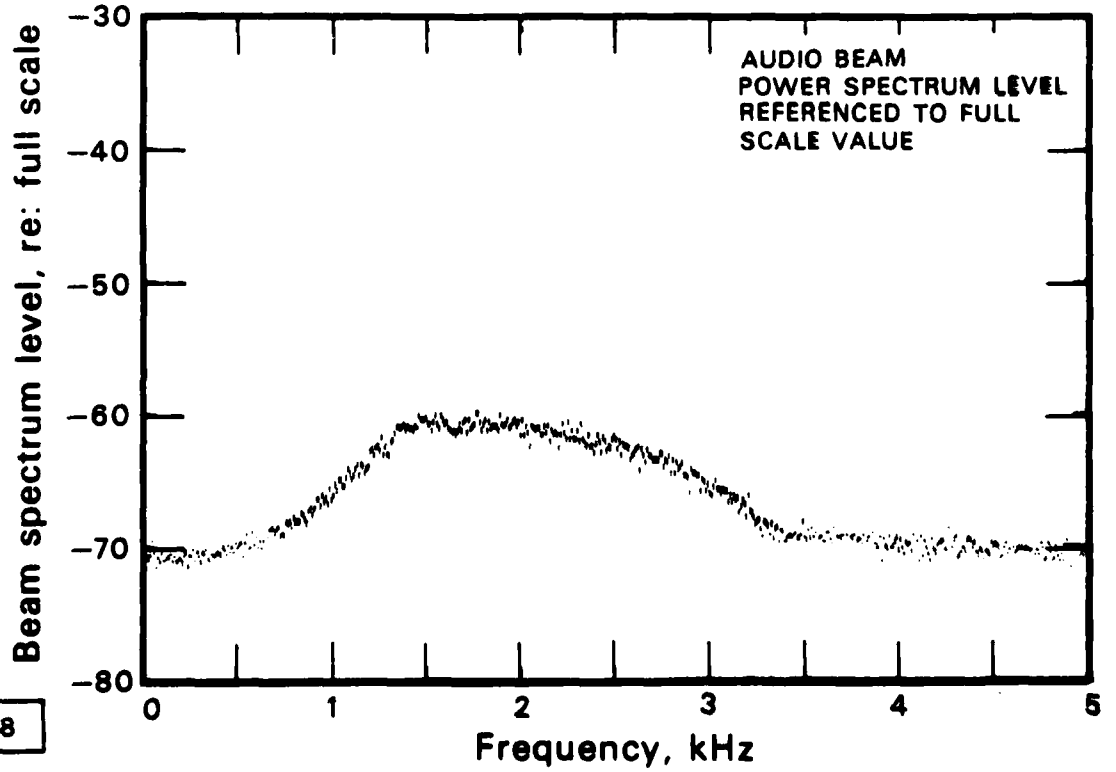
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
07:00	2400	21	325	6-8	6-8	NW	Chop
08:00	2400	20	"	"	"	"	

10-JUN-78 07:11:03 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 198.0 TRUE ELEVATION 81.6
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -12.6 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 96

GROUP 10B





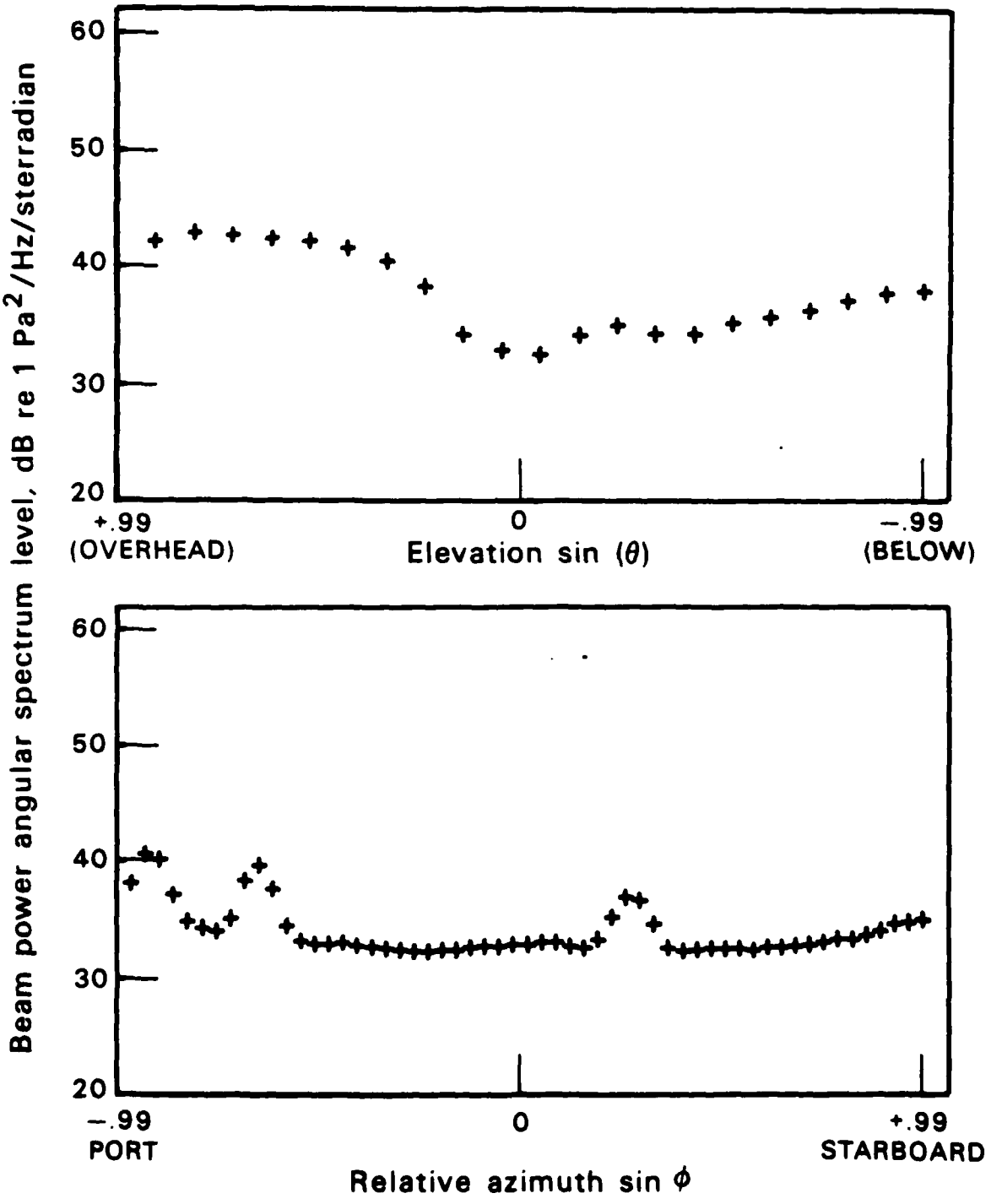
MPL-M-4888

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 10B

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

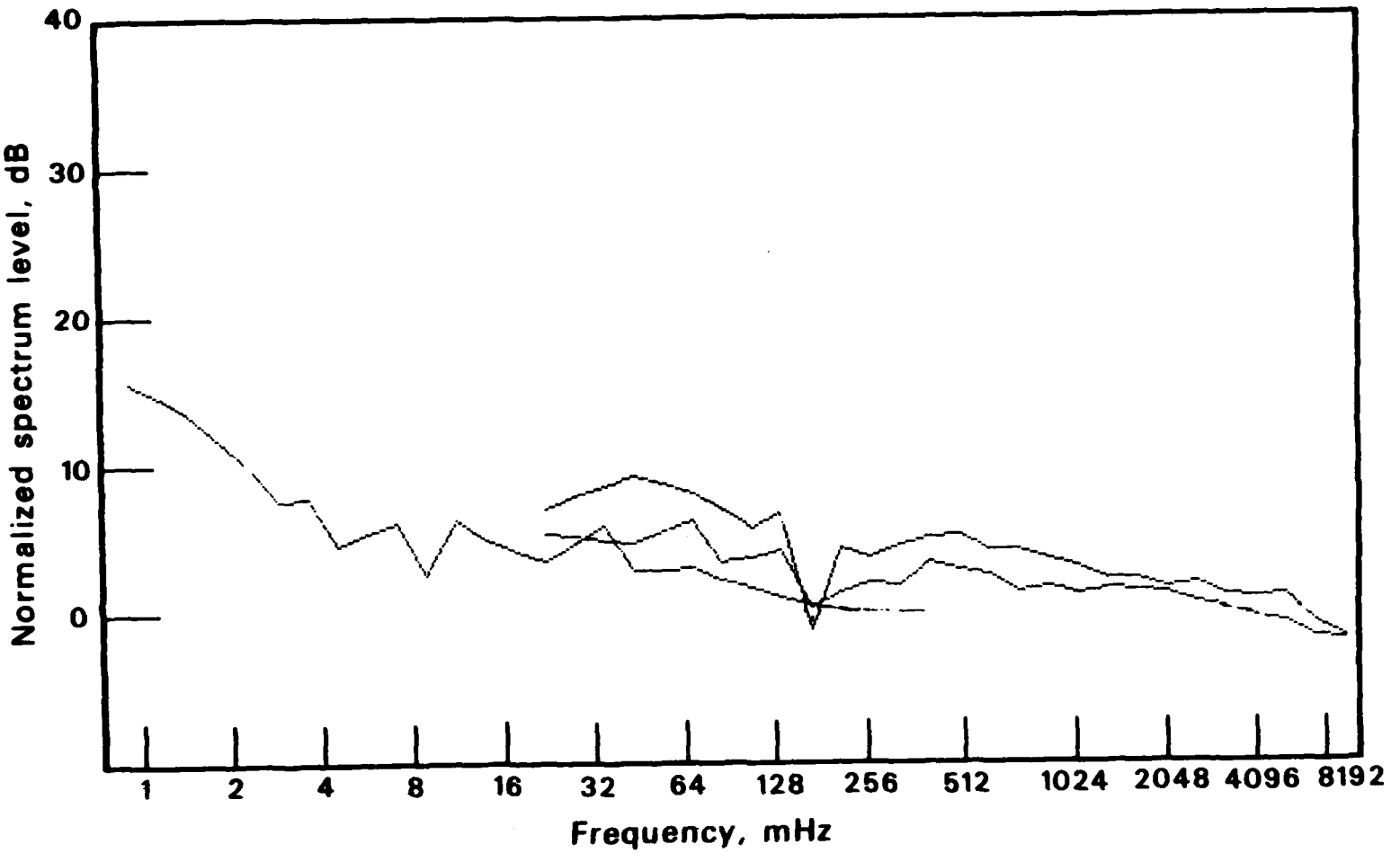
POWER HAS BEEN CORRECTED FOR DIMUS NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4889

MPL-M-4890

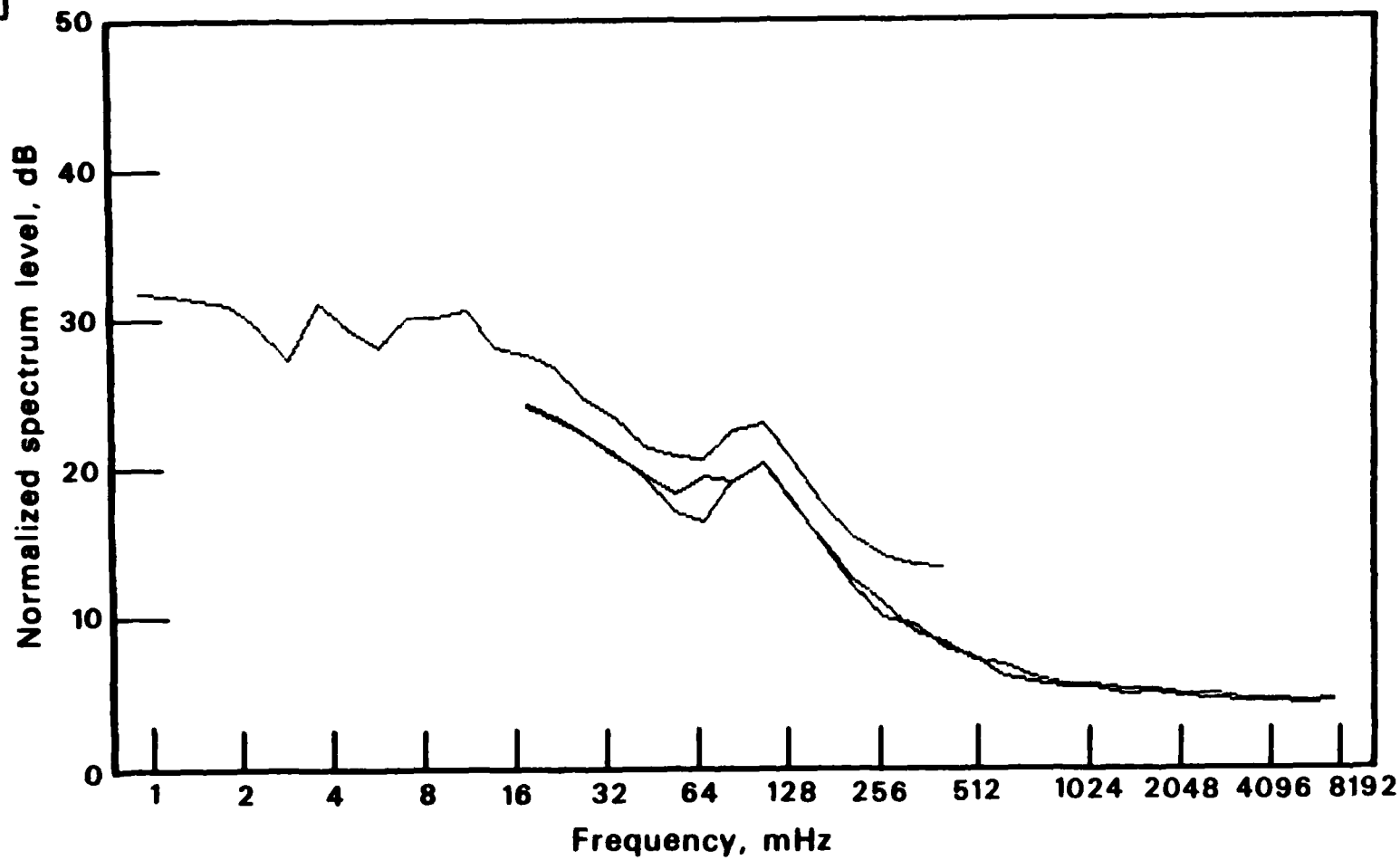
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 10B

MPL-M-4891

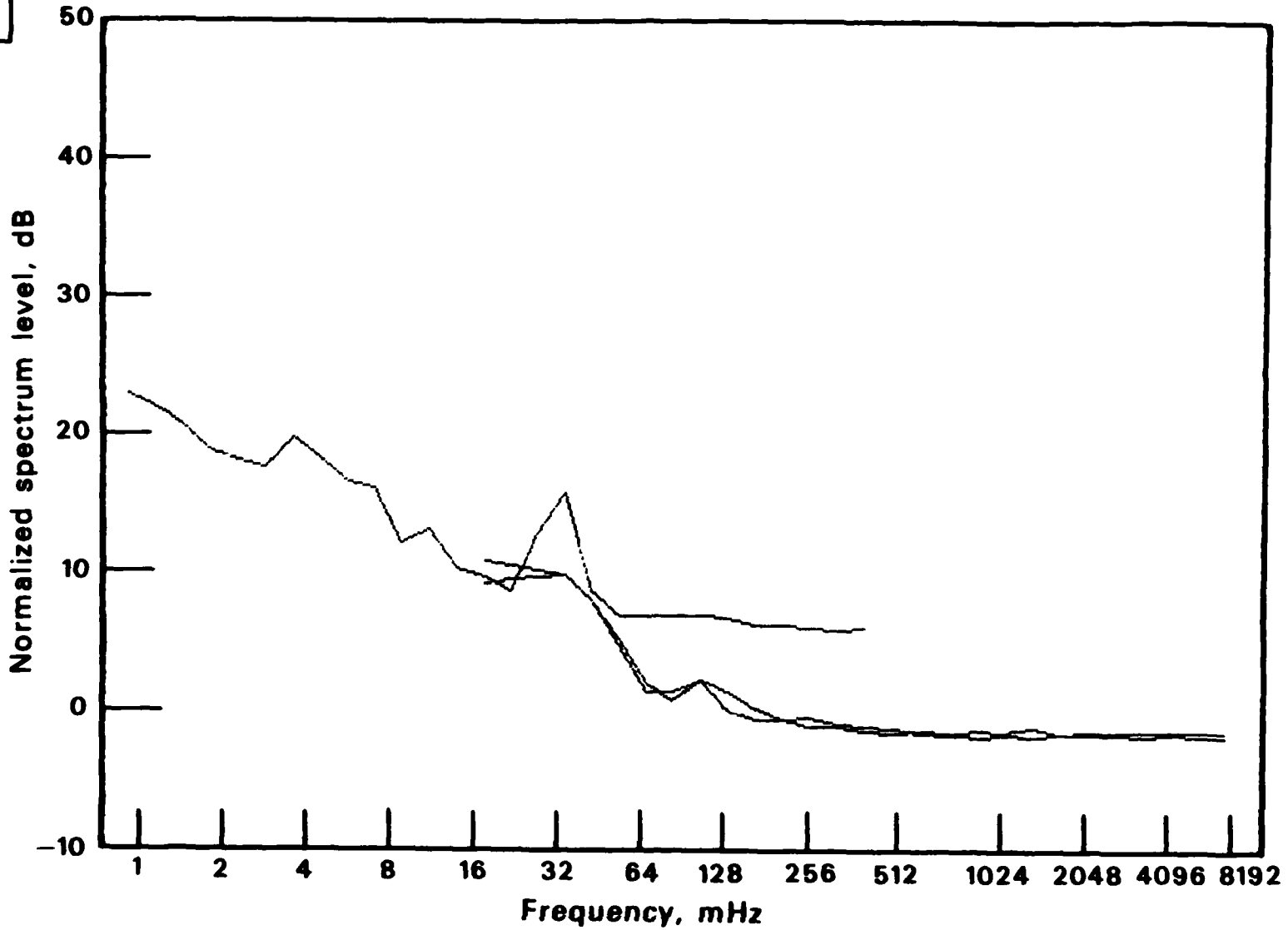
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10B

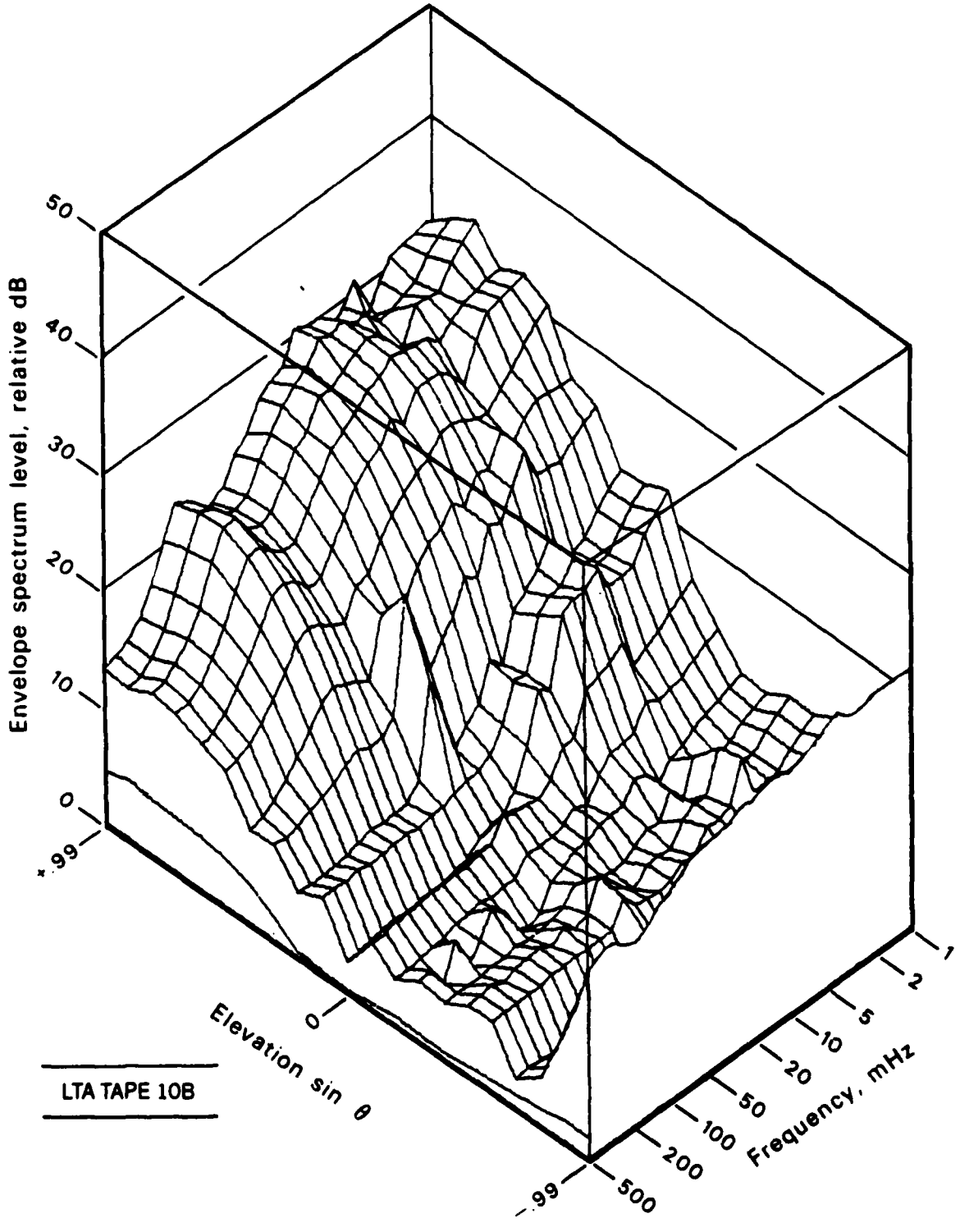
MPL-M-4892

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10B

GROUP 10B

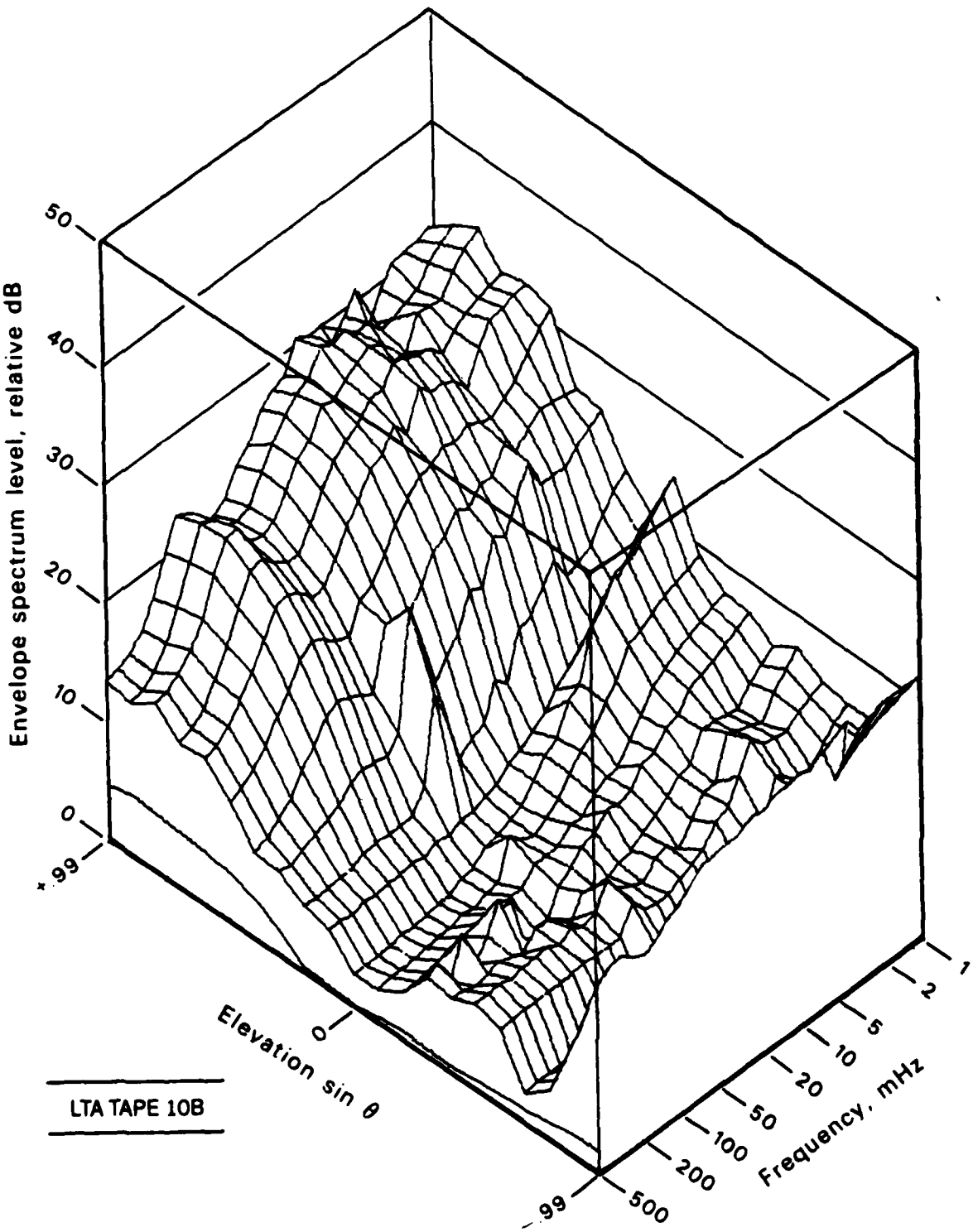


LTA TAPE 10B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4893

GROUP 10B



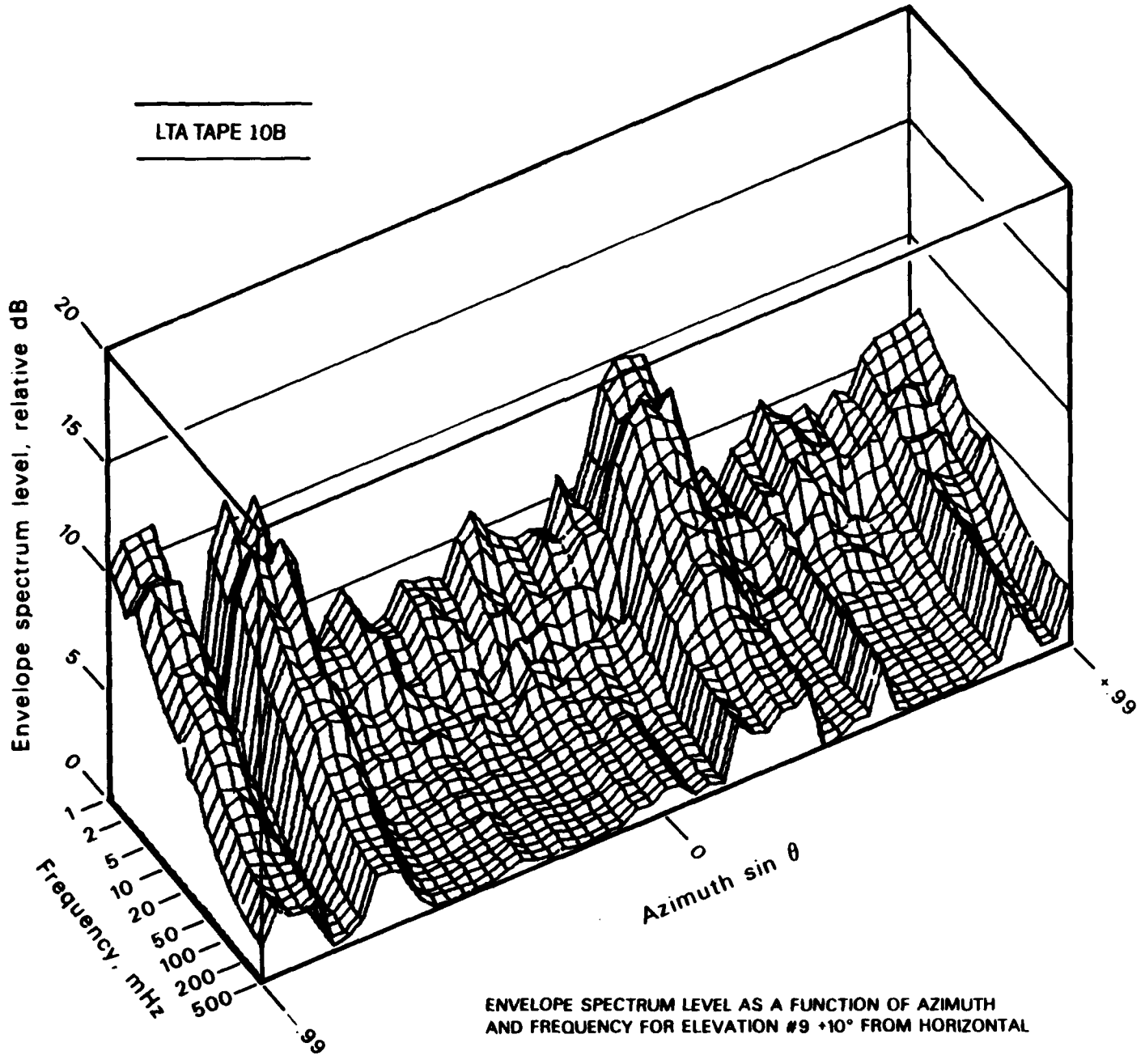
LTA TAPE 10B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-4894

NPL-M-4895

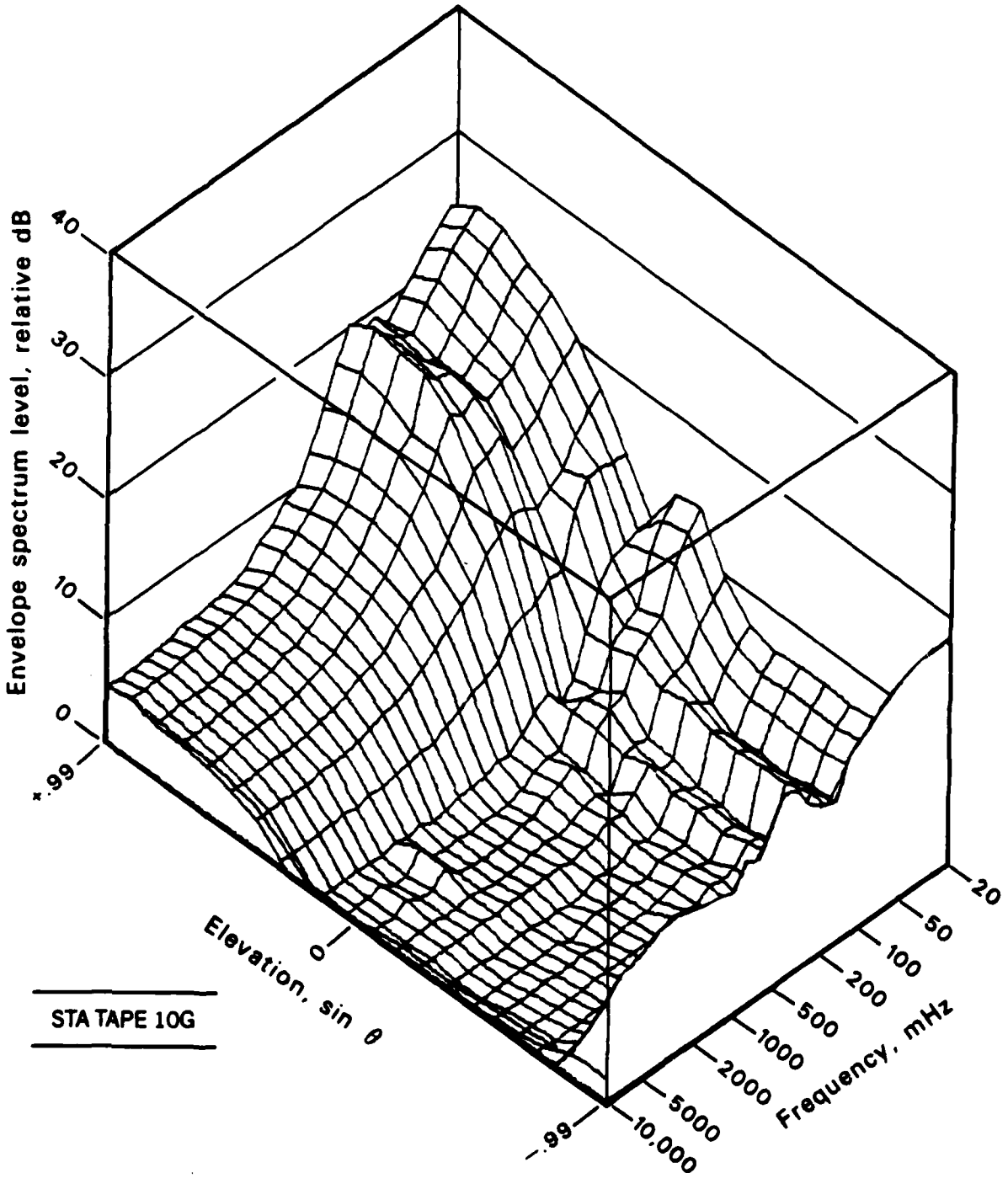
LTA TAPE 10B



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 10B

GROUP 10B

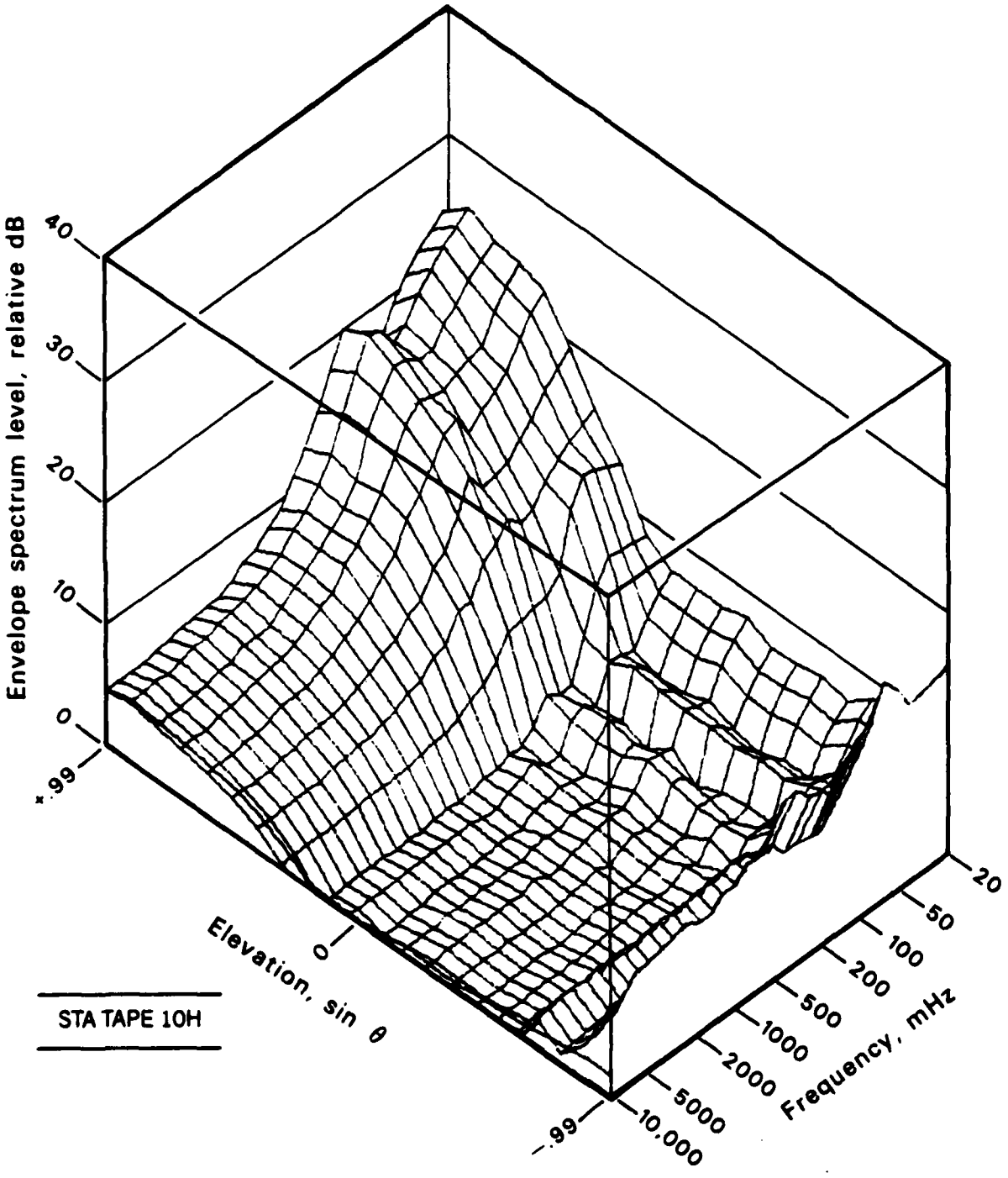


STA TAPE 10G

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4896

GROUP 10B



STA TAPE 10H

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4897

GROUP 10B

LTA TAPE 10B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 1 ANGLE +84°	67.0 24.9 15.4	26.5 24.8 17.2	26.3 25.4 17.7	26.0 22.9 15.2	25.7 22.4 12.1	24.2 21.4 10.0	21.9 19.3 8.8	25.8 18.1 8.2	24.2 16.2 8.0	22.8 15.4
2 +64°	67.5 26.1 16.5	28.3 25.5 18.0	27.4 26.0 18.4	26.4 24.1 15.8	25.0 23.5 12.8	24.5 22.4 10.4	23.9 20.7 8.8	23.7 19.0 7.9	25.2 16.9 7.6	25.0 16.3
3 +53°	67.3 26.0 16.9	29.4 25.4 18.7	28.5 24.6 18.5	27.2 23.8 16.2	25.6 24.0 13.1	25.8 21.5 11.1	26.0 20.8 9.8	23.1 18.8 8.9	23.5 16.9 8.7	25.6 16.5
4 +44°	67.2 25.8 16.5	26.7 24.9 17.6	26.5 24.4 17.4	26.3 23.2 15.1	26.1 22.3 12.8	25.2 21.5 10.8	24.2 19.7 9.4	25.2 17.6 8.6	25.3 15.8 8.3	25.7 15.7
5 +37°	67.0 24.6 15.3	27.7 22.2 16.0	27.4 23.4 15.5	27.1 21.7 13.5	26.7 21.1 11.5	25.0 19.8 9.8	21.9 18.0 8.3	23.6 15.9 7.3	24.5 14.2 7.2	24.5 13.9
6 +30°	66.5 22.1 13.1	26.6 20.7 13.5	25.8 20.3 12.9	24.7 19.3 11.1	23.2 18.0 9.6	22.3 16.6 8.2	21.0 14.4 7.1	21.1 14.1 6.5	21.9 11.7 6.2	22.3 12.2
7 +23°	65.8 17.3 9.4	21.6 18.3 9.9	21.8 16.9 9.2	22.0 16.3 7.5	22.2 15.1 6.0	21.1 12.7 4.8	19.6 12.2 3.7	21.6 13.2 3.0	19.1 8.2 2.6	19.4 8.9
8 +17°	64.5 17.1 5.4	20.7 13.4 5.8	20.0 14.1 5.2	19.2 11.5 4.5	18.2 10.2 4.0	18.3 8.2 3.5	18.5 12.5 3.0	21.3 16.3 2.7	18.9 6.5 2.9	16.6 5.4
9 +12°	62.9 11.1 1.1	16.7 7.3 1.0	15.8 8.5 1.2	14.6 5.3 0.7	13.1 4.3 0.4	12.6 2.9 0.3	12.0 7.2 0.3	15.2 10.3 0.1	13.4 2.5 0.2	12.1 1.2
10 +6°	62.6 12.3 1.3	16.9 7.9 1.5	15.9 8.1 1.3	14.8 5.0 1.3	13.1 3.1 1.1	12.9 2.4 1.4	12.8 2.4 1.1	14.9 2.0 1.1	13.3 1.6 1.2	13.1 1.6
11 0°	62.5 13.7 -2.0	17.8 7.9 -2.2	16.8 8.8 -2.1	15.5 4.5 -2.4	13.6 1.5 -2.4	13.5 0.3 -2.7	13.3 0.2 -2.7	15.5 -0.4 -2.9	14.4 -1.3 -2.9	14.3 -1.5
12 −6°	63.0 8.7 0.9	11.5 5.3 1.1	10.9 5.1 0.8	10.2 3.2 0.9	7.3 2.3 0.8	8.6 2.5 0.7	7.9 2.6 0.7	10.6 3.3 0.7	9.5 1.4 0.4	9.1 1.3
13 −12°	63.2 4.3 -0.4	8.8 3.5 0.0	8.2 1.8 -0.2	7.6 2.3 -0.4	6.8 1.5 -0.9	6.6 1.3 -1.0	6.3 1.2 -1.2	7.0 1.3 -1.4	5.1 -0.1 -1.5	4.9 -0.1
14 −17°	63.0 3.9 -1.9	6.2 2.3 0.6	5.9 2.2 1.6	5.5 2.1 -0.5	5.1 1.5 -1.9	4.5 1.4 1.1	3.8 0.9 -1.9	3.3 0.2 -0.1	2.1 -1.7 -0.2	3.5 -2.2

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

MPL-M-4898

LTA TAPE 10B

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.0	6.1	5.6	5.0	4.2	3.5	2.7	5.1	1.9	3.6
ANGLE −23°	1.7	1.8	1.0	0.5	0.3	0.7	1.1	1.5	0.3	0.0
	-0.2	-0.4	-0.2	-0.5	-0.4	-0.6	-0.5	-0.5	-0.6	
16	63.3	7.2	6.5	5.7	4.6	4.6	4.6	7.4	3.9	3.9
−30°	3.3	1.4	1.6	1.6	0.3	1.2	1.8	3.7	1.2	0.5
	1.4	0.5	1.3	1.0	0.8	0.4	0.9	0.7	0.7	
17	63.5	7.2	6.4	5.6	4.5	4.3	4.2	7.9	4.4	4.1
−37°	4.1	2.4	2.6	1.7	1.6	1.7	2.0	3.1	1.1	1.1
	1.0	1.2	1.1	1.0	0.8	0.9	0.8	0.7	0.7	
18	63.7	8.3	7.4	6.2	4.7	4.1	3.4	7.6	3.4	3.4
−44°	3.0	1.1	0.7	-0.6	-0.8	-0.7	-0.0	1.3	-1.9	-2.0
	-2.3	-2.3	-2.4	-2.8	-2.9	-2.8	-2.7	-2.7	-2.9	
19	64.0	10.3	9.6	8.7	7.5	6.8	5.9	9.7	4.2	4.8
−53°	5.9	3.8	3.3	1.5	1.9	1.8	2.0	2.3	0.3	0.1
	-0.2	-0.3	-0.9	-1.0	-1.2	-1.0	-0.7	-1.0	-1.3	
20	64.4	13.4	13.1	12.7	12.3	11.5	10.6	13.6	5.3	10.2
−64°	11.2	9.8	9.7	9.1	8.9	9.1	8.5	7.5	7.8	7.9
	6.8	6.1	5.6	4.5	4.3	4.7	5.5	5.2	4.3	
21	64.4	17.0	17.0	17.1	17.1	16.7	16.1	17.7	7.7	15.5
−84°	15.9	15.6	16.0	15.9	15.2	15.5	14.9	14.7	14.5	14.4
	13.4	12.6	12.0	10.8	10.4	10.9	11.7	11.5	10.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE, RELATIVE BEAM SET

GROUP 10B

LTA TAPE 10B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 1 ANGLE +84°	67.0 24.7 15.4	26.5 24.8 17.2	26.3 25.4 17.7	26.0 22.9 15.2	25.7 22.4 12.1	24.2 21.4 10.0	21.9 19.3 8.8	25.8 18.1 8.2	24.2 16.2 8.0	22.8 15.4
2 +64°	67.5 26.1 16.5	28.3 25.5 18.0	27.4 26.0 18.4	26.4 24.1 15.8	25.0 23.5 12.8	24.5 22.4 10.4	23.9 20.7 8.8	23.7 19.0 7.9	25.2 16.9 7.6	25.0 16.3
3 +53°	67.3 26.2 17.0	29.3 25.4 18.7	28.4 24.7 18.6	27.2 23.7 16.2	25.6 23.9 13.2	25.7 21.7 11.3	25.9 20.8 10.0	23.3 18.8 9.2	23.3 17.0 9.1	25.5 16.6
4 +44°	67.2 26.0 16.4	27.0 24.6 17.5	26.6 24.5 17.3	26.3 23.1 14.8	25.9 22.4 12.3	25.0 21.3 10.2	23.9 19.6 8.5	25.1 17.5 7.4	25.2 15.6 7.0	25.8 15.7
5 +37°	67.0 25.5 15.3	27.6 22.2 16.0	27.3 23.7 15.5	27.0 22.0 13.5	26.7 21.4 11.5	25.1 19.5 9.8	22.4 18.1 8.3	23.7 16.0 7.4	24.4 14.3 7.2	24.3 14.1
6 +30°	66.5 21.8 12.8	26.9 20.9 13.3	25.9 20.7 12.5	24.7 19.6 10.6	22.7 18.0 9.1	22.2 16.3 7.3	21.2 14.5 6.1	21.5 13.8 5.2	22.2 11.6 4.7	21.4 11.8
7 +23°	65.8 18.0 9.3	21.5 18.5 9.7	21.7 17.0 9.1	21.9 16.4 7.3	22.1 14.3 6.0	21.0 12.7 4.3	19.7 12.1 3.2	21.2 13.2 2.4	19.2 8.2 2.0	19.2 8.7
8 +17°	64.5 16.7 5.0	20.9 13.4 5.2	20.3 13.7 4.8	19.4 10.9 3.7	18.4 9.6 3.9	18.5 7.8 2.7	18.5 12.5 2.0	21.1 16.1 1.5	18.7 6.0 1.7	16.2 4.8
9 +12°	63.0 10.5 1.1	17.4 6.6 1.2	16.3 7.6 1.2	15.0 4.6 0.9	13.1 4.0 0.9	12.6 3.1 0.5	12.0 7.1 0.3	14.1 10.2 0.2	12.7 3.0 0.3	10.9 1.2
10 +6°	62.6 4.0 -0.1	15.1 3.8 0.0	14.2 3.0 -0.2	12.9 2.5 -0.2	11.1 1.5 -0.4	10.3 1.3 -0.2	9.3 0.7 -0.5	7.9 0.7 -0.4	7.1 0.2 -0.4	5.9 0.2
11 0°	62.5 7.3 -1.9	19.7 4.7 -2.0	18.8 4.0 -2.1	17.6 2.6 -2.4	16.0 1.2 -2.3	15.6 0.8 -2.6	15.2 0.3 -2.6	13.4 -0.1 -2.8	12.1 -1.0 -2.8	7.9 -1.3
12 −6°	63.0 6.0 -1.6	14.3 5.1 -1.5	13.9 3.9 -1.9	13.6 2.5 -2.0	13.1 1.6 -2.1	12.4 0.8 -2.3	11.6 1.2 -2.4	11.2 2.3 -2.4	8.8 -1.0 -2.6	7.7 -1.2
13 −12°	63.2 4.4 -0.3	12.6 4.3 -0.0	12.2 3.6 -0.2	11.7 2.4 -0.4	11.2 2.6 -0.0	10.6 1.4 -1.0	9.9 1.4 -1.2	9.1 1.3 -1.3	7.4 0.0 -1.5	6.0 0.1
14 −17°	63.0 6.0 -1.2	12.3 4.6 2.5	11.8 4.2 3.4	11.1 4.4 1.0	10.4 3.3 0.7	10.0 2.8 2.8	9.5 1.8 -0.5	8.0 0.8 1.6	7.6 -1.1 1.3	6.3 -2.1

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 10B

LTA TAPE 10B

GE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.0	11.0	10.2	9.2	7.9	8.1	8.3	8.2	6.1	5.7
ANGLE −23°	4.0	3.9	3.2	2.3	2.0	1.6	1.5	1.9	0.2	0.9
	1.7	1.6	0.3	0.8	1.1	0.7	0.5	0.8	1.0	
16	63.3	12.2	11.2	9.9	8.1	8.5	8.9	9.4	5.9	5.7
−30°	4.2	2.5	3.5	3.1	1.8	2.2	2.9	4.3	2.3	1.7
	2.5	1.7	2.3	2.2	2.0	1.7	2.1	1.9	1.9	
17	63.5	10.7	10.2	9.6	8.7	9.1	9.2	10.3	8.0	6.0
−37°	5.4	3.8	3.3	2.8	2.3	2.3	2.5	3.7	1.6	1.6
	1.5	1.7	1.5	1.5	1.4	1.3	1.4	1.3	1.2	
18	63.7	10.3	9.4	8.4	7.1	7.1	7.2	8.6	5.2	4.5
−44°	3.2	1.6	1.3	−0.2	−0.7	−0.5	0.2	1.3	−1.9	−2.0
	−2.2	−2.3	−2.4	−2.8	−2.9	−2.8	−2.7	−2.7	−2.9	
19	64.0	10.3	9.6	8.7	7.6	6.8	5.8	9.8	4.2	4.8
−53°	5.8	3.9	3.3	1.6	1.9	1.8	2.0	2.3	0.2	0.2
	−0.2	−0.3	−0.9	−0.9	−1.2	−1.0	−0.7	−1.0	−1.3	
20	64.4	13.4	13.1	12.7	12.3	11.5	10.6	13.6	5.3	10.2
−64°	11.2	9.8	9.7	9.1	8.9	9.1	8.5	7.5	7.8	7.9
	6.8	6.1	5.6	4.5	4.3	4.7	5.5	5.2	4.3	
21	64.4	17.0	17.0	17.1	17.1	16.7	16.1	17.7	7.7	15.5
−84°	15.9	15.6	16.0	15.9	15.2	15.5	14.9	14.7	14.5	14.4
	13.4	12.6	12.0	10.8	10.4	10.9	11.7	11.5	10.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 10B

GROUP 10B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 1 ANGLE −71.3°	64.5 23.5 7.0	35.8 22.0 5.5	34.7 20.7 4.2	33.2 19.5 3.1	30.8 20.2 2.2	32.6 15.2 1.8	33.9 15.4 1.3	29.4 14.2 1.0	27.5 10.3 0.8	25.7 9.0
2 −66°	65.9 27.6 12.4	39.9 27.6 11.3	38.8 25.1 9.4	37.3 24.5 8.2	35.2 23.5 7.6	36.7 22.1 7.2	37.9 19.6 6.8	36.7 18.7 6.7	32.4 15.6 6.4	30.1 13.8
3 −61.6°	65.6 27.7 12.5	40.2 27.4 10.3	39.3 26.6 8.5	38.1 25.9 7.4	36.5 24.6 6.1	36.8 22.7 5.0	37.0 20.8 4.2	33.0 18.4 4.1	33.3 14.8 4.2	32.1 14.9
4 −57.8°	64.0 28.6 11.2	40.5 24.4 10.0	39.1 25.1 7.0	37.2 22.9 6.1	33.4 22.0 5.8	35.2 20.4 4.5	36.4 19.2 4.3	32.7 16.4 3.7	31.4 13.9 3.9	30.2 11.9
5 −54.3°	63.1 23.3 6.6	29.2 17.6 6.4	28.0 18.2 5.9	26.5 15.5 5.6	23.9 12.7 5.0	23.6 10.4 5.3	23.2 10.6 5.1	21.3 11.4 4.9	21.9 8.2 5.2	23.5 7.5
6 −51.1°	63.0 4.9 −2.8	12.8 1.9 −3.1	12.8 2.8 −3.9	12.8 1.7 −3.7	12.8 0.7 −3.9	12.2 −0.3 −4.0	11.3 0.7 −4.1	9.1 0.1 −4.2	10.1 −1.5 −4.4	8.4 −2.2
7 −48.1°	62.9 2.1 −2.9	9.5 3.7 −3.0	9.1 2.2 −3.7	8.8 3.0 −3.4	8.4 2.6 −3.9	9.2 1.2 −3.4	9.9 −0.6 −3.7	7.6 −1.1 −4.3	9.1 −2.6 −3.9	8.6 −2.0
8 −45.3°	63.2 20.4 4.0	31.4 18.0 3.5	30.2 18.8 1.2	28.5 16.7 0.2	25.6 16.3 −0.6	28.2 14.2 −1.3	29.8 12.8 −2.0	27.8 10.1 −2.2	24.4 6.7 −1.8	23.5 6.8
9 −42.6°	64.6 27.9 10.0	39.4 25.7 9.5	38.0 24.2 7.4	35.9 21.9 6.5	31.7 21.2 5.8	34.7 19.5 5.6	36.5 17.5 4.9	33.6 17.2 4.9	30.9 13.1 4.8	29.4 11.8
10 −40.0°	65.3 25.8 9.6	31.7 23.7 9.3	31.9 21.5 7.1	32.1 21.0 6.2	32.3 21.0 5.5	33.0 19.4 5.2	33.7 17.8 5.1	31.7 18.2 4.8	27.2 13.4 4.8	26.4 11.5
11 −37.5°	64.2 28.5 9.6	38.0 24.7 9.1	36.5 22.7 6.9	34.3 20.8 5.7	29.7 21.8 4.9	34.3 18.2 4.6	36.5 17.9 3.9	34.0 17.0 3.9	31.3 12.0 3.4	29.5 11.8
12 −35.1°	63.0 19.5 4.8	29.9 17.4 3.2	28.6 16.9 1.7	26.7 17.6 0.3	23.3 16.7 −1.0	29.2 14.5 −1.2	31.6 13.1 −2.4	26.6 11.0 −2.4	23.5 8.7 −2.6	22.4 6.9
13 −32.8°	62.7 5.1 −2.8	14.8 3.2 −3.0	13.6 5.1 −3.6	11.7 6.1 −3.7	8.5 5.5 −4.2	14.6 3.7 −4.2	17.0 1.4 −4.8	13.1 −0.6 −4.3	10.4 −0.5 −4.8	8.9 −2.0
14 −30.5°	62.6 0.1 −3.9	11.6 0.5 −4.6	11.4 −0.4 −4.6	11.2 −0.7 −5.0	10.9 −2.4 −4.7	9.7 −3.6 −4.7	8.1 −3.3 −5.2	7.3 −4.7 −4.8	4.8 −3.5 −5.0	3.9 −4.5
15 −28.3°	62.6 3.3 −4.8	5.7 0.5 −4.2	7.4 0.1 −4.8	8.7 0.5 −5.1	9.6 −2.7 −4.7	9.1 −2.0 −5.1	8.6 −2.2 −5.2	6.0 −3.3 −5.0	4.2 −4.4 −5.1	4.2 −4.1

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.6	10.8	10.5	10.1	9.6	8.9	7.9	7.1	7.1	2.5
ANGLE −26.1°	2.0	0.2	-0.1	-0.3	-2.4	-1.8	-3.4	-3.6	-3.5	-3.3
	-3.7	-4.1	-4.4	-4.9	-4.9	-4.6	-4.7	-5.2	-5.0	
17	62.6	14.8	14.3	13.7	13.1	12.1	10.8	8.8	8.0	2.8
−24.0°	2.2	2.0	0.6	-0.7	-2.1	-2.8	-2.2	-3.3	-2.8	-2.6
	-4.0	-3.7	-3.4	-4.5	-4.5	-4.3	-4.9	-4.6	-4.9	
18	62.6	10.1	10.1	10.0	10.0	10.9	11.7	9.3	7.2	6.3
−21.8°	4.1	-0.2	-0.6	0.8	-1.1	-1.7	-1.9	-1.6	-2.6	-1.9
	-3.4	-3.7	-3.2	-3.8	-3.8	-3.9	-3.9	-3.6	-4.0	
19	62.5	5.6	6.2	6.7	7.2	6.2	5.0	2.2	3.4	3.3
−19.8°	1.5	0.0	0.2	1.2	-1.7	-1.8	-1.5	-1.9	-3.0	-2.4
	-2.9	-3.2	-2.2	-2.8	-3.2	-3.0	-2.7	-3.1	-3.2	
20	62.5	6.7	6.7	6.6	6.6	5.7	4.6	3.2	3.1	1.4
−17.7°	1.8	-0.1	-0.3	-1.3	-2.9	-2.7	-2.8	-3.6	-3.4	-3.4
	-3.4	-4.6	-4.2	-4.3	-4.4	-4.0	-4.3	-4.2	-4.2	
21	62.5	11.7	11.4	11.1	10.8	9.7	8.0	5.7	4.8	0.7
−15.7°	-0.6	-0.2	-0.6	-1.8	-1.7	-1.5	-2.5	-3.3	-2.6	-3.5
	-3.9	-3.6	-3.7	-4.0	-3.9	-4.2	-4.6	-4.5	-4.7	
22	62.5	10.5	10.6	10.7	10.8	9.2	6.4	5.3	5.5	4.2
−13.7°	1.9	0.1	-0.8	1.3	-0.2	-1.4	-2.9	-3.5	-3.2	-3.6
	-3.4	-3.6	-4.0	-3.6	-3.7	-4.0	-3.8	-4.0	-4.2	
23	62.5	10.2	9.4	8.4	7.2	7.6	8.0	4.3	-1.1	3.4
−11.7°	1.3	-0.5	-2.1	-1.0	-2.3	-2.7	-3.2	-2.7	-4.0	-4.1
	-4.2	-4.8	-4.5	-4.4	-4.6	-4.3	-4.6	-4.9	-5.0	
24	62.5	8.7	8.4	8.0	7.5	6.1	3.9	5.0	1.4	0.2
−9.7°	-1.2	-1.0	-1.3	-1.7	-3.5	-2.3	-3.2	-3.9	-3.6	-3.8
	-4.0	-4.4	-4.4	-4.5	-4.6	-4.8	-4.7	-5.1	-4.9	
25	62.6	15.4	14.5	13.5	12.0	10.5	8.0	8.1	5.7	1.9
−7.8°	4.0	-0.6	-0.7	1.9	-0.8	-1.0	-2.8	-3.3	-2.7	-3.5
	-4.0	-3.3	-4.4	-4.7	-4.0	-4.8	-4.4	-4.7	-4.6	
26	62.6	18.8	17.3	14.8	8.8	7.6	6.1	8.8	2.1	5.6
−5.8°	5.0	3.6	3.4	2.4	0.0	-0.8	-1.4	-2.2	-2.3	-2.5
	-3.3	-3.6	-4.0	-4.5	-3.9	-4.2	-4.4	-4.5	-4.6	
27	62.6	14.4	12.9	10.7	6.2	5.5	4.6	4.7	2.6	4.8
−3.9°	0.4	3.5	2.1	0.3	-0.2	0.6	-1.0	-1.1	-1.3	-2.4
	-2.1	-2.3	-2.2	-2.7	-2.8	-2.4	-3.0	-2.8	-2.7	
28	62.6	12.2	11.5	10.6	9.5	9.0	8.5	6.8	4.8	6.2
−1.9°	4.2	1.6	-0.4	1.2	-0.4	-0.5	-1.6	-1.9	-2.0	-2.5
	-1.6	-1.8	-2.2	-2.3	-3.0	-2.5	-2.9	-2.6	-2.8	
29	62.6	10.7	9.9	9.1	8.0	7.3	6.5	7.7	6.1	4.3
0°	2.5	2.7	1.2	0.2	0.1	-0.7	0.5	0.1	-0.9	-0.1
	-1.3	0.7	-0.9	-0.6	-1.1	-1.4	-1.2	-1.2	-1.1	
30	62.7	11.2	11.9	12.5	13.1	11.5	8.8	8.0	9.2	5.4
+1.9°	0.5	3.1	3.5	1.4	1.4	0.3	-0.8	0.2	-0.6	-0.0
	-0.5	-0.6	-0.6	-0.8	-1.0	-1.1	-1.2	-1.3	-1.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 10B

GROUP 10B

PAGE 3

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 31 ANGLE +3.9°	62.7 1.3 -3.7	10.3 2.6 -3.5	10.7 2.3 -3.8	11.0 0.4 -4.1	11.4 -1.0 -4.3	11.0 -1.4 -4.5	10.6 -1.3 -5.0	7.2 -2.0 -4.8	8.6 -2.9 -4.3	5.6 -4.4
32 +5.8°	62.6 4.8 -3.0	18.5 3.4 -2.9	17.5 1.7 -2.7	16.0 1.4 -2.9	13.9 0.6 -3.7	13.9 -0.8 -3.1	13.9 -1.5 -3.9	10.2 -1.4 -3.4	6.7 -2.4 -3.6	1.8 -2.4
33 +7.8°	62.6 2.1 -3.4	13.5 5.3 -3.1	14.0 4.6 -3.5	14.4 4.7 -3.6	14.8 1.7 -4.2	14.4 2.5 -4.3	14.0 1.1 -4.6	14.6 -0.1 -4.6	13.4 -2.6 -4.3	10.3 -2.6
34 +9.7°	62.7 18.9 5.5	21.4 14.5 6.1	21.3 13.0 5.6	21.2 11.2 5.1	21.1 11.7 5.1	23.6 9.4 5.0	25.2 9.4 5.1	25.4 9.6 5.0	21.9 6.0 5.1	19.7 6.9
35 +11.7°	63.3 24.7 5.4	32.1 21.2 5.5	31.2 18.1 4.4	30.1 15.5 3.7	28.7 14.9 2.8	30.3 12.6 2.8	31.4 12.6 2.2	31.7 13.4 2.3	28.4 8.4 2.4	26.0 7.9
36 +13.7°	63.9 26.9 7.3	35.6 21.6 6.1	34.3 20.8 4.9	32.6 20.5 3.8	29.8 18.8 2.9	32.7 16.0 2.4	34.4 16.5 1.8	32.7 16.0 1.6	29.5 10.7 1.4	27.1 9.2
37 +15.7°	63.8 22.5 8.8	34.7 24.4 8.1	34.0 20.7 6.2	33.3 18.1 5.4	32.4 19.4 5.1	31.7 17.4 4.4	30.9 15.8 4.2	30.9 16.3 4.0	28.5 10.9 4.1	28.0 9.9
38 +17.7°	63.1 22.7 7.6	34.1 20.9 6.4	32.9 18.7 5.7	31.1 19.7 5.1	28.1 17.9 4.8	32.2 14.2 4.6	34.3 13.5 4.1	29.0 12.2 3.7	27.7 9.1 3.9	24.6 8.7
39 +19.8°	62.6 15.0 6.4	22.7 12.9 7.1	22.2 11.6 6.6	21.7 11.6 6.0	21.2 12.2 5.6	22.6 9.0 6.0	23.7 8.2 5.8	18.9 7.8 5.8	17.9 6.1 5.8	16.5 5.9
40 +21.8°	62.5 2.6 -4.2	14.0 0.2 -3.5	13.1 -0.4 -4.3	11.9 0.8 -4.5	10.3 -1.1 -4.3	10.7 -1.2 -4.7	11.1 -2.2 -5.0	9.5 -2.9 -4.8	7.3 -3.3 -5.4	1.4 -4.3
41 +24.0°	62.5 2.6 -3.7	8.0 2.4 -4.2	7.4 2.0 -3.7	6.8 0.4 -5.1	6.0 -0.8 -4.5	7.6 -0.1 -4.9	8.8 -2.5 -4.5	8.6 -2.1 -4.5	6.4 -3.3 -4.7	4.0 -4.1
42 +26.1°	62.6 2.5 -2.8	9.2 -0.6 -3.2	9.2 -0.5 -3.3	9.2 0.8 -3.0	7.2 -0.3 -3.7	8.0 -0.7 -3.6	6.4 -1.5 -3.9	8.8 -1.9 -3.4	6.2 -2.4 -3.2	1.7 -2.4
43 +28.3°	62.6 4.0 -2.6	5.1 1.5 -3.1	5.0 0.2 -2.9	4.9 1.3 -3.3	4.8 0.9 -3.1	5.3 1.4 -2.8	5.8 0.1 -3.0	5.4 -1.1 -2.7	5.6 -1.5 -3.3	4.5 -1.7
44 +30.5°	62.6 7.7 5.4	10.5 4.9 5.8	10.1 6.1 5.6	9.8 6.8 5.4	9.4 6.0 5.2	9.2 6.0 5.3	9.0 6.1 5.4	9.6 6.0 5.3	7.0 5.5 5.3	7.6 5.7
45 +32.8°	62.5 4.4 -4.0	11.1 1.1 -3.4	10.2 1.6 -3.6	9.1 0.9 -4.2	7.6 -1.6 -3.9	7.5 -1.9 -4.4	7.3 -2.4 -4.2	8.7 -1.5 -4.3	6.6 -3.2 -4.3	3.6 -3.9

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.6	16.8	16.1	15.3	14.3	13.3	12.0	13.8	11.4	5.0
ANGLE +35.1°	7.1	4.3	2.2	1.5	0.2	-0.6	-1.4	-1.5	-3.1	-3.3
	-3.9	-4.4	-4.5	-4.7	-4.9	-4.7	-4.8	-5.1	-5.1	
47	62.6	13.3	14.0	14.6	15.1	14.1	12.8	9.9	10.0	9.1
+37.5°	6.8	4.7	2.9	3.4	1.2	-1.9	-1.7	-1.7	-3.7	-3.5
	-3.9	-4.2	-4.5	-4.0	-4.9	-5.2	-5.5	-4.9	-4.8	
48	62.6	11.7	11.7	11.8	11.8	11.6	11.3	11.1	10.3	7.6
+40.0°	2.3	2.9	2.5	2.6	-0.3	-0.9	-1.4	-2.4	-3.5	-3.7
	-3.9	-4.8	-4.2	-4.7	-4.7	-4.8	-4.9	-5.1	-4.9	
49	62.7	13.1	12.1	10.8	8.8	10.9	12.4	11.3	5.6	2.4
+42.6°	4.1	1.4	0.7	1.3	-0.8	-2.2	-2.6	-2.6	-3.4	-3.4
	-4.3	-4.1	-4.3	-4.5	-5.0	-4.6	-4.8	-5.0	-4.9	
50	62.7	9.4	8.6	7.7	6.4	6.4	6.3	9.7	7.0	0.8
+45.3°	2.0	1.4	2.0	-1.2	-1.2	-2.5	-2.4	-3.4	-3.1	-4.3
	-5.0	-4.0	-4.9	-4.2	-4.5	-4.7	-4.8	-5.1	-5.0	
51	62.8	13.4	12.4	11.1	9.2	8.8	8.3	11.8	7.6	4.8
+48.1°	2.5	3.4	1.5	2.3	0.4	0.1	-0.8	-1.1	-2.2	-3.4
	-3.1	-2.8	-3.3	-3.3	-3.1	-3.1	-3.5	-3.4	-3.5	
52	62.8	11.6	11.8	12.0	12.3	11.9	11.4	10.6	7.7	6.5
+51.1°	4.8	4.7	4.3	2.0	2.6	1.2	0.4	-0.4	-1.0	-1.7
	-1.5	-2.4	-2.2	-2.5	-2.5	-2.4	-2.6	-3.0	-3.4	
53	62.8	17.2	16.7	16.1	15.4	14.6	13.4	15.2	11.4	11.7
+54.3°	10.8	9.4	10.0	11.1	9.5	9.3	9.2	8.9	8.7	8.8
	8.3	8.4	8.2	7.9	7.6	6.9	5.7	4.3	3.5	
54	63.0	19.6	18.2	16.2	12.3	15.6	17.4	15.0	10.1	11.3
+57.8°	10.0	7.1	8.2	8.0	7.1	6.9	5.7	5.8	5.5	5.1
	4.6	4.8	4.8	4.5	4.1	3.8	3.4	3.2	2.8	
55	63.1	19.8	18.7	17.3	15.0	15.3	15.6	13.6	10.1	11.5
+61.6°	12.2	8.3	6.7	6.5	6.0	4.1	2.8	1.4	0.2	-1.3
	-2.7	-2.3	-2.7	-3.1	-3.3	-3.3	-3.6	-3.7	-3.7	
56	63.2	20.3	19.3	17.9	16.0	14.0	10.2	13.1	11.4	9.7
+66.0°	7.4	7.5	7.0	7.6	6.4	4.9	3.5	1.0	1.1	-0.3
	-2.2	-2.6	-3.0	-3.4	-3.1	-3.9	-3.7	-4.1	-3.6	
57	63.3	21.3	20.3	19.2	17.5	16.6	15.6	16.9	14.5	13.7
+71.3°	11.0	11.4	11.1	13.7	11.5	9.9	9.1	7.4	6.1	5.2
	4.5	4.0	4.1	3.3	3.9	3.3	3.6	3.7	3.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 10B

STA TAPE 10G

AGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	54.0 15.1 2.5	21.6 12.1 2.2	20.7 9.3 2.3	19.6 7.3 1.9	18.1 6.7 1.7	17.0 5.3 1.6	15.6 4.7 1.5	16.7 3.3 1.5	16.4 2.9 1.5	17.6 2.6
2 +64°	54.5 15.8 3.7	23.0 13.1 2.8	22.1 10.1 2.9	20.8 8.4 2.5	19.1 7.4 2.3	17.9 6.4 2.1	16.2 5.4 2.2	16.7 4.3 2.0	17.6 3.9 2.1	18.8 3.4
3 +53°	54.3 15.2 2.7	22.8 12.9 2.4	21.7 10.7 2.3	20.3 8.6 1.9	18.2 7.7 1.8	17.1 6.3 1.7	15.5 5.4 1.7	16.1 4.3 1.5	17.5 3.8 1.4	18.4 3.4
4 +44°	54.1 13.8 2.7	21.4 12.9 2.2	20.4 10.4 1.9	19.1 8.8 1.8	17.3 7.1 1.7	16.5 5.8 1.4	15.5 5.1 1.3	16.8 4.4 1.2	16.9 3.5 1.2	18.2 2.9
5 +37°	54.0 13.8 2.3	20.4 11.4 1.8	19.5 9.9 1.5	18.2 8.1 1.3	16.5 6.5 1.3	15.9 5.5 1.2	15.2 4.6 1.1	16.3 3.8 0.8	15.4 3.1 0.9	16.3 2.6
6 +30°	53.5 10.7 1.2	18.2 8.8 1.0	17.2 7.2 0.7	15.9 6.6 0.6	14.0 5.6 0.5	13.4 4.5 0.6	12.6 3.2 0.4	14.6 2.7 0.3	13.5 2.4 0.3	13.1 1.7
7 +23°	53.0 8.4 0.1	15.6 6.3 -0.1	14.5 5.5 -0.2	13.1 4.3 -0.2	11.1 3.4 -0.5	10.3 2.5 -0.4	9.4 1.8 -0.4	10.1 1.2 -0.6	10.3 1.0 -0.5	9.2 0.5
8 +17°	51.6 3.5 -2.2	11.6 1.7 -2.1	11.7 1.0 -2.5	11.8 0.6 -2.3	11.9 -0.3 -2.4	9.8 -0.7 -2.4	5.6 -1.4 -2.5	5.6 -1.4 -2.5	4.5 -1.7 -2.5	4.1 -1.8
9 +12°	50.0 -1.8 -4.8	7.8 -2.9 -4.5	7.5 -3.7 -4.8	7.1 -3.6 -4.7	6.8 -4.1 -4.7	5.0 -4.2 -4.8	2.1 -4.5 -4.8	-1.1 -4.7 -4.8	-2.4 -4.9 -4.8	-0.9 -4.5
10 +6°	49.6 -3.3 -5.0	11.3 -3.3 -3.5	9.9 -3.6 -5.0	7.9 -4.5 -5.2	4.1 -4.9 -4.4	3.3 -5.1 -4.8	2.3 -4.9 -4.8	-0.7 -5.2 -5.0	-0.5 -4.9 -5.0	-0.9 -5.1
11 0°	49.6 -3.6 -4.7	11.6 -2.5 -3.7	10.3 -3.2 -4.7	8.4 -3.7 -4.7	4.7 -4.4 -4.0	4.1 -4.5 -4.8	3.0 -5.0 -4.7	0.7 -4.9 -4.9	0.1 -5.0 -4.8	-1.0 -4.9
12 −6°	50.0 -4.0 -4.7	7.4 -3.4 -4.5	6.4 -3.6 -4.7	4.9 -4.1 -4.8	2.8 -4.5 -4.5	2.4 -4.4 -4.6	1.9 -4.5 -4.7	-1.5 -4.8 -4.8	-1.3 -4.8 -4.8	-1.5 -4.8
13 −12°	50.2 -2.3 -4.3	5.0 -3.4 -4.5	3.9 -3.2 -4.3	2.6 -4.0 -4.5	0.7 -4.1 -4.6	1.5 -4.5 -4.5	2.2 -4.1 -4.5	-1.8 -4.3 -4.5	-1.8 -4.3 -4.6	-0.8 -4.4
14 −17°	50.0 -3.8 -4.8	4.3 -4.2 -4.6	3.2 -3.5 -4.9	1.7 -4.3 -5.0	-0.6 -4.7 -4.8	0.5 -4.4 -4.9	1.3 -4.9 -4.9	-2.6 -5.2 -5.0	-2.0 -4.9 -5.0	-1.7 -5.0

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 10B

STA TAPE 10G

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.0 −3.6 −4.5	4.5 −3.6 −4.6	3.4 −3.5 −4.7	1.9 −4.3 −4.7	−0.4 −4.0 −4.8	0.5 −4.3 −4.8	1.3 −4.4 −4.9	−2.7 −4.3 −4.8	−1.8 −4.5 −4.9	−1.5 −5.1
16 −30°	50.3 −3.6 −4.1	4.6 −3.3 −4.2	3.4 −3.0 −4.3	1.8 −3.7 −4.2	−0.9 −3.9 −4.3	0.5 −4.1 −4.3	1.5 −4.1 −4.3	−3.3 −4.2 −4.3	−2.0 −4.4 −4.4	−2.0 −4.4
17 −37°	50.5 −2.6 −3.7	4.3 −2.9 −3.9	3.3 −2.7 −4.0	1.9 −3.5 −4.1	−0.2 −3.3 −4.1	0.8 −3.1 −4.1	1.6 −3.9 −4.1	−2.5 −3.8 −4.1	−1.5 −3.8 −4.0	−1.2 −3.8
18 −44°	50.7 −3.1 −3.7	4.7 −3.3 −3.8	3.6 −3.0 −3.8	2.2 −2.7 −3.6	−0.1 −2.9 −3.8	1.3 −2.7 −3.6	2.3 −3.7 −3.8	−1.0 −3.2 −3.7	−1.4 −3.6 −3.9	−0.9 −3.8
19 −53°	51.1 −2.7 −2.6	4.9 −2.0 −2.6	4.1 −1.2 −2.7	3.0 −0.8 −2.6	1.6 −0.8 −2.5	1.8 −2.1 −2.7	1.9 −2.7 −2.5	−1.2 −2.0 −2.7	0.2 −2.8 −2.9	−0.2 −2.6
20 −64°	51.4 2.0 1.8	9.9 3.5 1.9	9.6 4.1 2.0	9.2 5.4 2.5	8.8 5.8 2.4	8.2 4.3 1.7	7.6 2.1 1.5	5.9 2.8 1.6	5.9 1.7 0.8	5.4 1.5
21 −84°	51.5 8.3 7.6	15.9 9.4 7.9	15.8 10.0 8.3	15.7 12.0 8.4	15.6 12.4 8.2	15.0 10.6 7.5	14.4 8.1 7.0	13.1 9.1 6.7	12.6 7.2 5.5	11.8 7.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10B

STA TAPE 10H

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	54.1 15.0 2.8	21.4 12.2 2.5	20.6 9.8 2.5	19.5 8.3 2.1	18.2 6.3 2.0	16.7 5.5 1.8	14.4 4.5 1.7	13.8 4.1 1.7	16.4 3.3 1.7	17.5 2.8
2 +64°	54.7 16.1 3.6	23.1 13.4 3.4	22.3 10.8 3.1	21.4 9.1 2.9	20.3 7.6 2.6	19.0 6.8 2.3	17.1 5.6 2.4	16.4 4.9 2.3	18.2 4.4 2.1	18.4 3.9
3 +53°	54.5 15.7 3.2	21.7 13.5 3.1	21.0 10.2 2.5	20.0 8.6 2.6	18.8 7.6 2.2	17.8 6.6 2.0	16.5 5.6 1.8	16.4 5.0 1.8	17.3 4.1 1.7	17.4 3.3
4 +44°	54.2 14.7 2.8	21.4 12.8 2.6	20.3 10.6 2.4	18.9 8.9 2.1	16.8 7.7 1.7	16.4 6.8 1.6	16.1 5.2 1.3	15.4 4.8 1.4	15.6 3.9 1.3	16.0 3.2
5 +37°	53.8 13.0 1.9	20.5 11.2 2.0	19.5 9.9 1.8	18.1 7.7 1.4	16.1 6.7 1.1	15.3 5.3 1.0	14.4 4.5 0.8	13.3 3.7 0.8	15.3 3.1 0.7	14.6 2.6
6 +30°	53.3 10.2 1.0	17.4 7.9 0.9	16.4 7.3 0.7	15.3 5.4 0.5	13.7 4.8 0.3	12.7 3.5 0.1	11.5 3.1 -0.0	11.3 2.2 -0.0	10.9 1.8 0.0	12.6 1.3
7 +23°	52.7 7.7 -0.0	13.7 5.3 -0.3	13.2 5.3 -0.3	12.6 3.2 -0.8	11.9 2.9 -0.7	10.7 1.6 -0.8	9.2 1.3 -0.9	8.8 0.7 -0.9	9.9 0.4 -1.0	8.6 -0.1
8 +17°	51.5 3.4 -2.0	10.7 1.8 -2.1	11.2 0.6 -2.2	11.6 -0.1 -2.3	12.0 -0.7 -2.4	9.8 -1.3 -2.3	5.3 -1.3 -2.4	4.2 -1.5 -2.5	3.9 -1.9 -2.5	3.6 -2.0
9 +12°	49.9 -3.0 -4.9	6.2 -3.8 -5.1	6.4 -3.8 -4.9	6.6 -4.2 -4.9	6.8 -4.2 -4.8	4.9 -4.6 -5.0	1.5 -4.7 -5.0	-1.7 -4.6 -5.1	-1.8 -4.7 -5.1	-1.0 -5.1
10 +6°	49.6 -3.8 -4.4	4.7 -4.1 -4.5	3.7 -2.9 -4.5	2.3 -3.7 -4.6	0.4 -4.0 -4.7	0.6 -4.6 -4.7	0.9 -4.7 -4.8	-2.1 -4.4 -4.7	-1.2 -4.3 -4.8	-1.7 -4.4
11 0°	49.5 -4.1 -4.9	4.7 -3.9 -4.7	3.5 -3.5 -4.8	2.0 -3.8 -5.2	-0.4 -4.0 -5.1	1.0 -4.8 -5.4	2.0 -4.7 -5.4	-2.0 -4.7 -5.5	-1.0 -4.8 -5.6	-2.2 -4.9
12 -6°	49.9 -3.4 -4.6	4.6 -4.2 -4.8	3.5 -3.8 -4.7	2.0 -3.6 -4.6	-0.3 -4.1 -4.9	0.7 -4.1 -4.9	1.5 -4.2 -5.0	-2.8 -4.5 -4.9	-1.4 -4.5 -4.9	-1.9 -4.7
13 -12°	50.2 -2.5 -4.2	5.2 -3.2 -4.2	4.1 -3.1 -4.4	2.7 -3.4 -4.3	0.5 -3.7 -4.4	0.9 -3.9 -4.4	1.3 -4.3 -4.6	-1.1 -4.3 -4.6	-0.9 -3.8 -4.5	-0.6 -4.3
14 -17°	50.0 -3.4 -4.6	4.1 -3.6 -4.6	3.0 -3.2 -4.5	1.7 -3.6 -4.6	-0.4 -4.3 -4.7	0.6 -4.0 -4.8	1.4 -4.2 -4.7	-3.0 -4.3 -4.8	-1.4 -4.4 -4.9	-1.2 -4.6

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 10B

STA TAPE 10H

PAGE 2

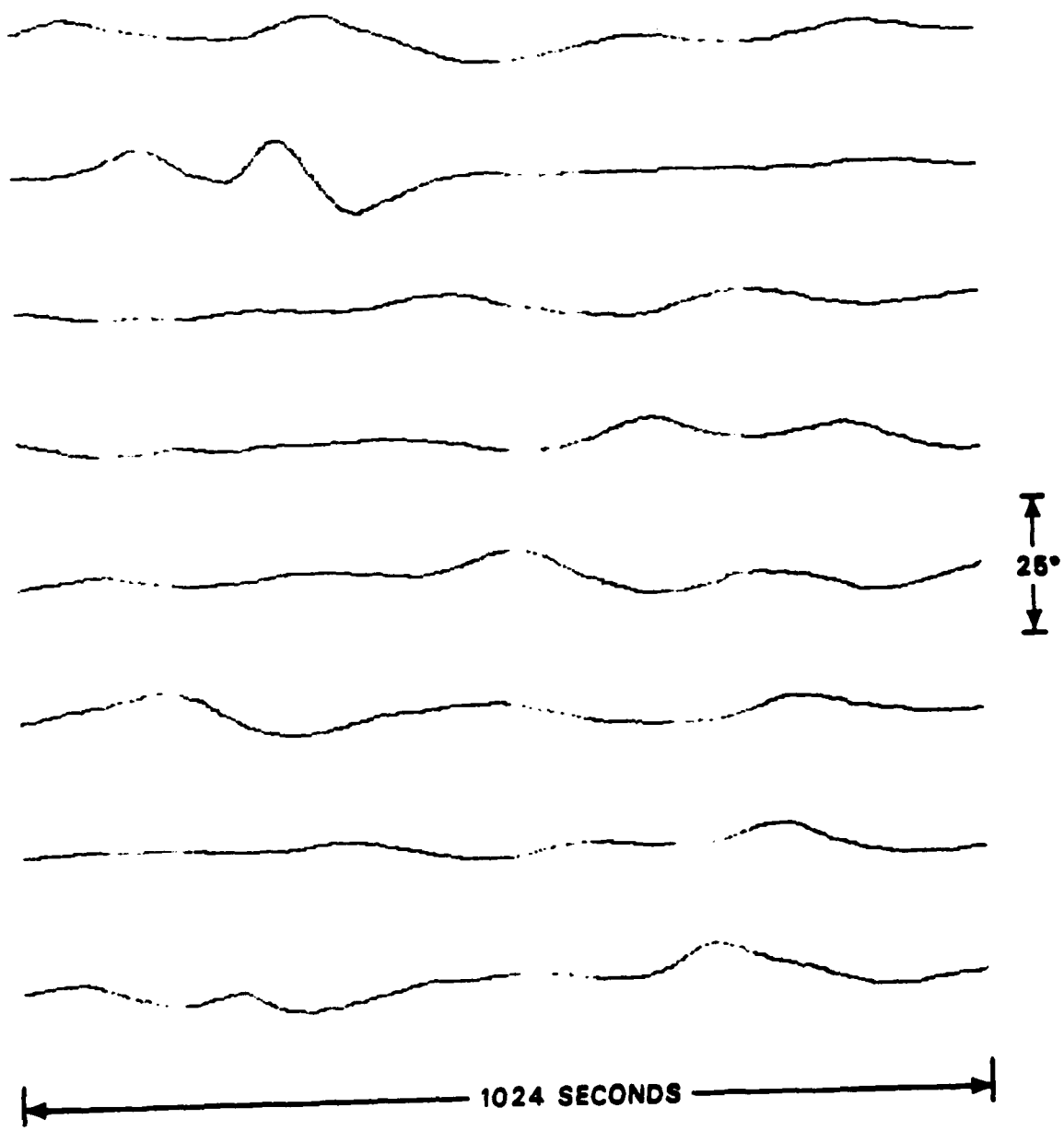
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.0 −3.3 −4.8	4.3 −3.3 −4.6	3.1 −3.6 −4.6	1.6 −3.7 −4.7	−1.0 −4.4 −4.8	0.2 −4.1 −4.9	1.1 −4.3 −4.8	−1.9 −4.1 −5.0	−1.7 −4.5 −5.0	−1.7 −4.7
16 −30°	50.3 −2.1 −4.3	4.7 −3.5 −4.1	3.6 −2.8 −4.3	2.2 −3.8 −4.1	0.0 −3.9 −4.3	0.9 −3.7 −4.4	1.6 −3.7 −4.4	−1.6 −3.8 −4.5	−2.2 −3.9 −4.5	−1.6 −4.2
17 −37°	50.5 −2.8 −4.1	4.1 −2.6 −3.7	3.1 −2.6 −4.1	1.8 −3.2 −4.0	−0.0 −3.7 −4.1	0.8 −3.2 −4.1	1.4 −3.8 −4.1	−1.7 −3.8 −4.2	−1.2 −4.0 −4.0	−1.4 −4.0
18 −44°	50.7 −0.4 −0.4	5.8 0.3 −0.3	4.8 0.5 −0.3	3.6 0.2 −0.3	1.7 0.3 −0.5	2.0 0.1 −0.4	2.3 −0.0 −0.4	1.0 −0.1 −0.5	1.6 −0.1 −0.4	0.8 −0.2
19 −53°	51.0 −1.0 −1.6	5.7 −0.4 −1.6	4.6 −0.1 −1.5	3.0 −0.0 −1.7	0.6 −0.4 −1.7	1.9 −1.0 −1.8	2.9 −1.1 −1.8	0.9 −1.2 −1.9	0.7 −1.3 −2.1	0.6 −1.1
20 −64°	51.3 3.7 1.3	8.3 4.1 1.4	7.4 4.1 1.9	6.2 5.5 1.3	4.7 5.1 1.1	7.2 3.7 1.0	8.8 2.7 0.9	6.6 2.9 0.2	6.1 2.2 0.1	5.0 2.0
21 −84°	51.4 10.2 6.2	13.0 10.0 6.5	12.6 10.3 7.1	12.3 11.4 6.6	12.0 11.3 6.3	13.9 9.4 6.1	15.3 8.1 5.9	12.6 8.5 4.7	12.2 7.3 4.7	11.1 7.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10B

BEARING VS TIME

MEAN & VAR.	269.2	6.05	269.2	6.13	268.8	1.80	269.1	2.59
267.6	3.97	269.6	4.20	269.2	1.91	268.7	6.73	

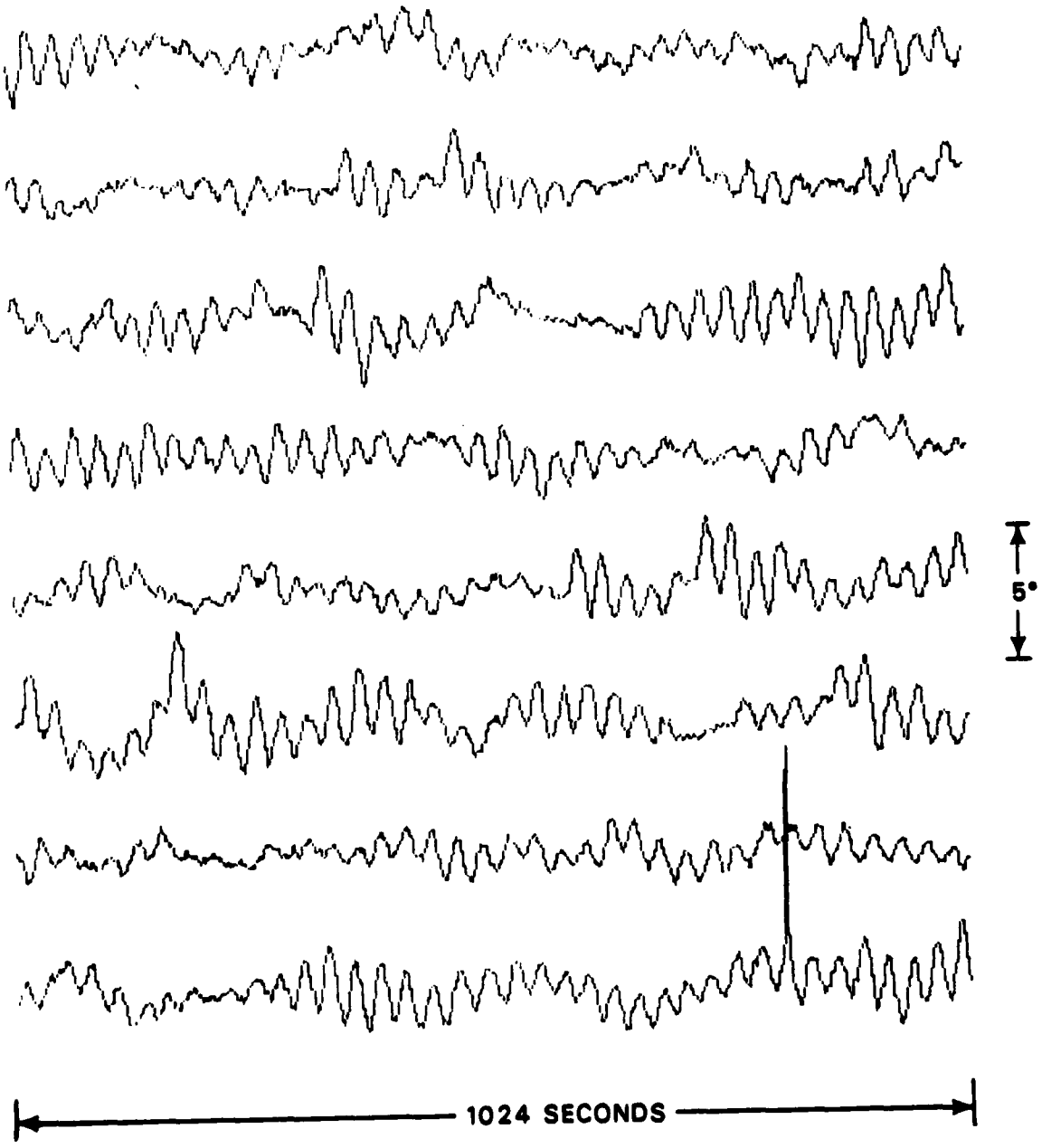


MPL-M-4910

GROUP 10B

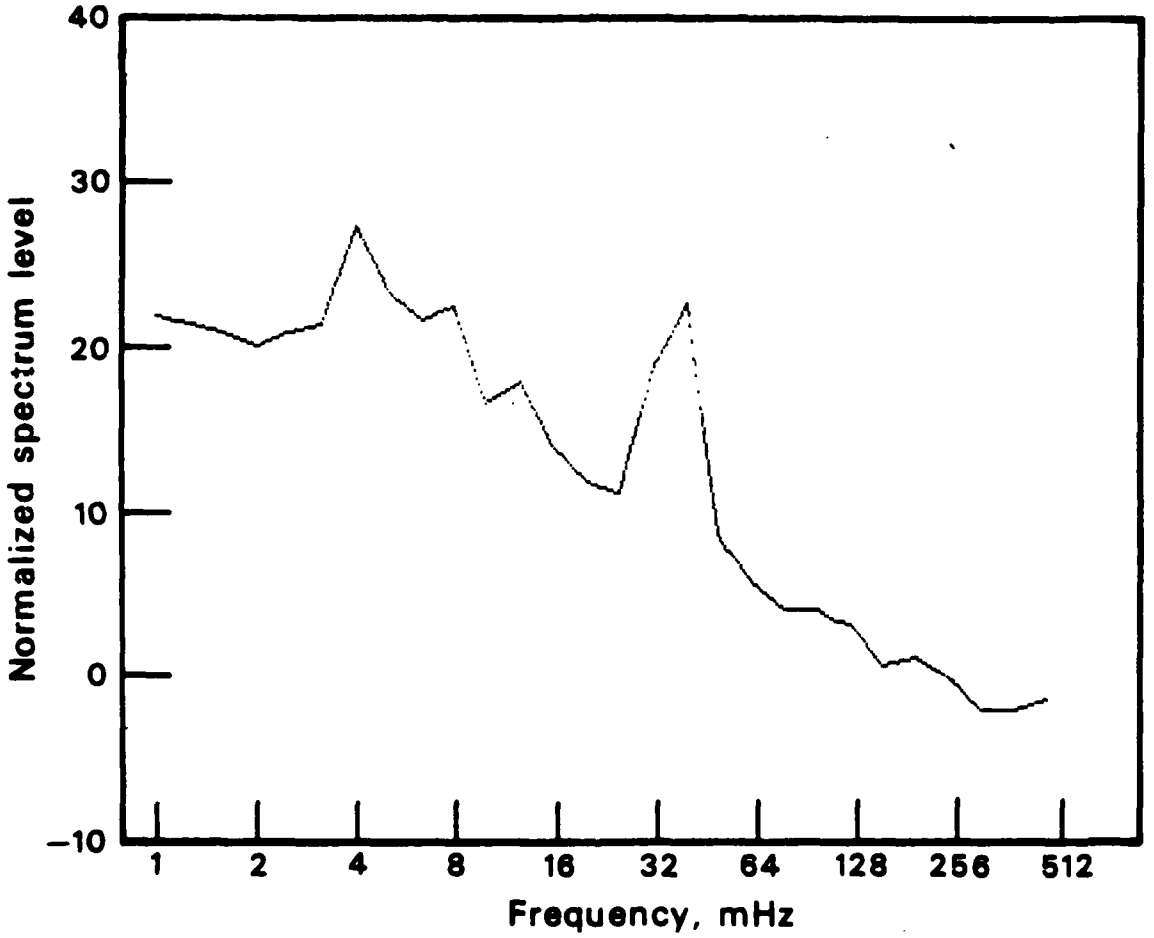
ELEVATION VS TIME

MEAN	% VAR	92.7	0.28	92.1	0.22	92.5	0.48	92.4	0.27
92.4	0.18	92.5	0.74	92.4	0.14	92.4	0.50		



MPL-M-4911

GROUP 10B



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 10C

Environmental Summary

10 June 1978

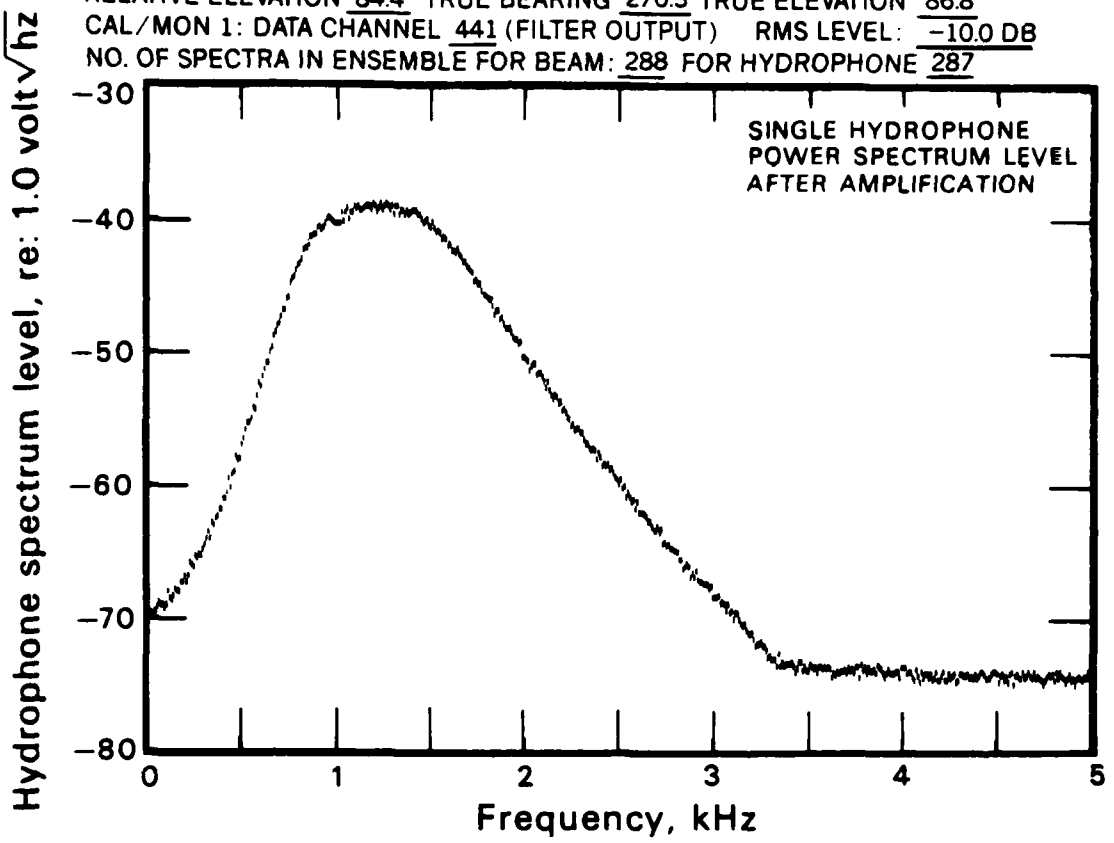
Tapes	Start time	Code
LTA/LOG	14:57:19	10C
STA	14:57:33	10I
STA	16:02:19	10J
Low Band Filter		

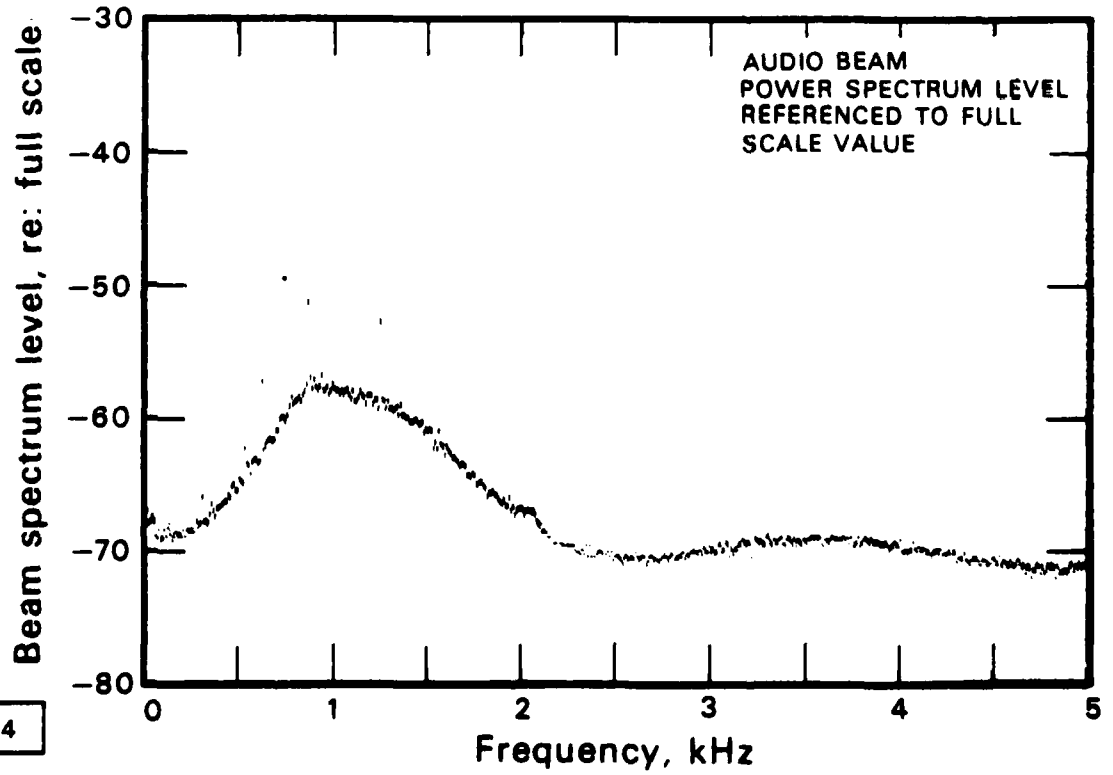
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
14:30	2400	22	340	6-8	6-8	NW	Chop; No targets
16:00	2500	21	335	"	"	"	
17:00	2500	20	330	8-12	6-10	NW	

10-JUN-78 15:34:51 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 1.0
RELATIVE ELEVATION 84.4 TRUE BEARING 270.3 TRUE ELEVATION 86.8
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: −10.0 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 288 FOR HYDROPHONE 287

GROUP 10C





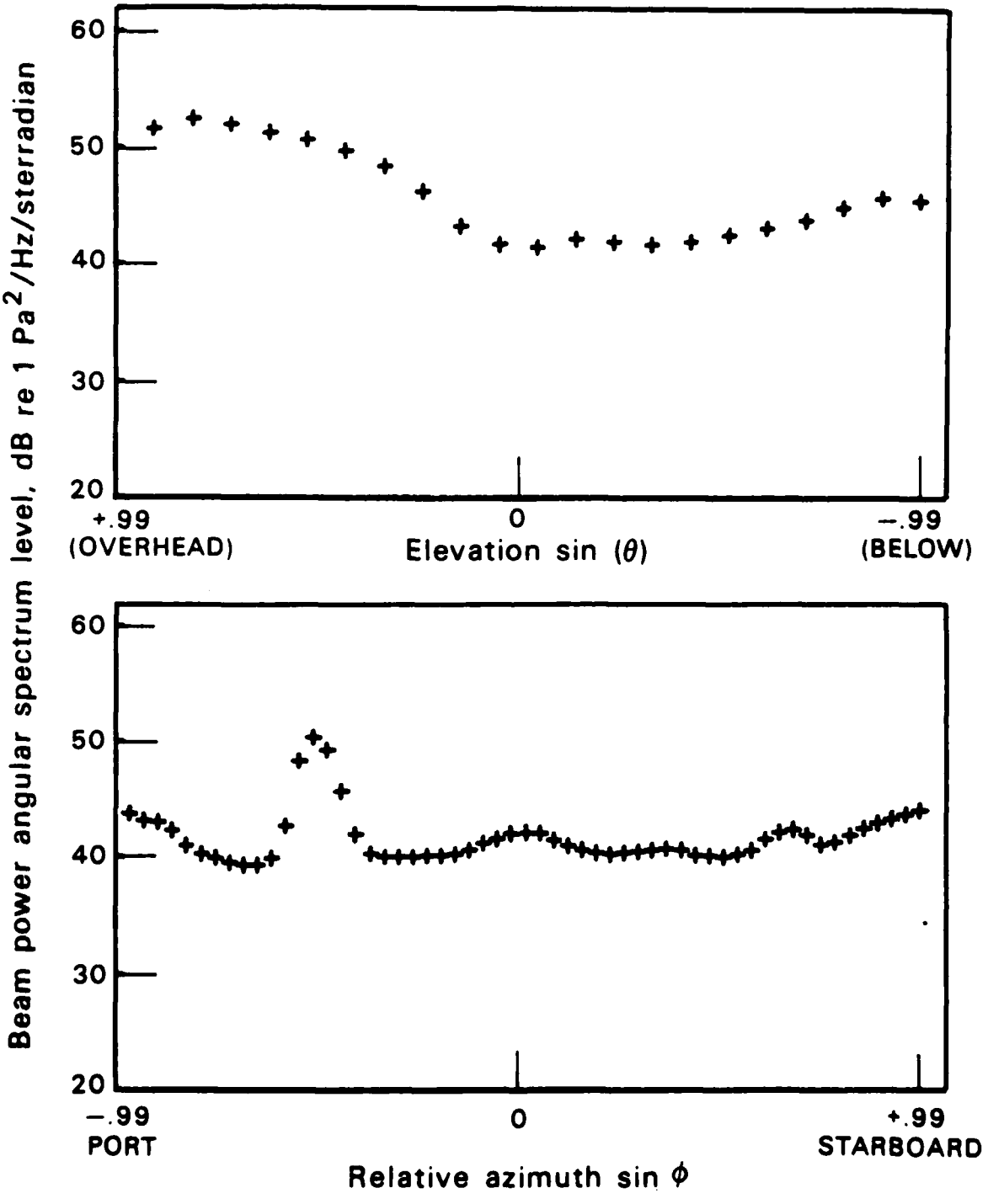
MPL-M-4914

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 10C

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

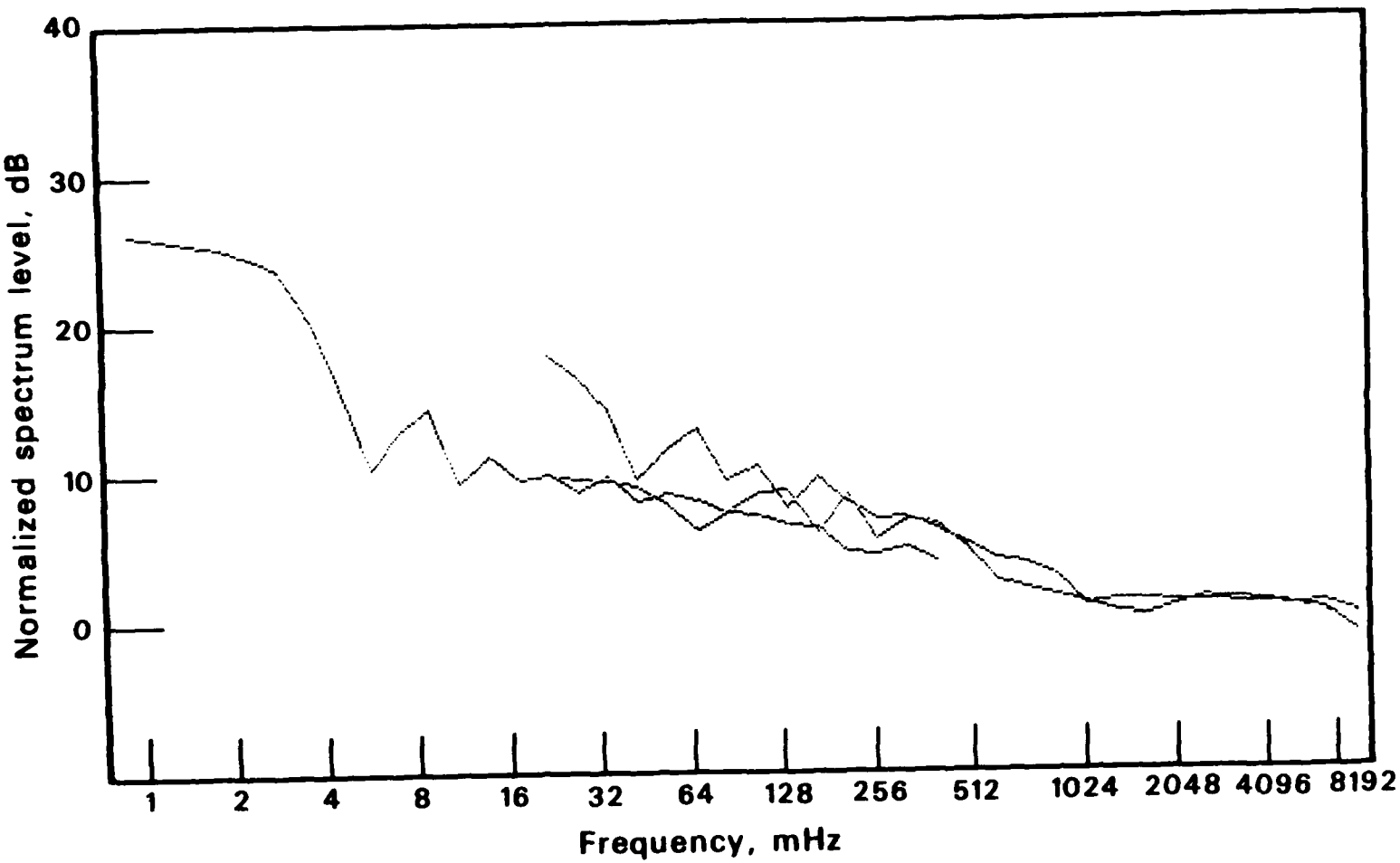
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4915

MPL-M-4916

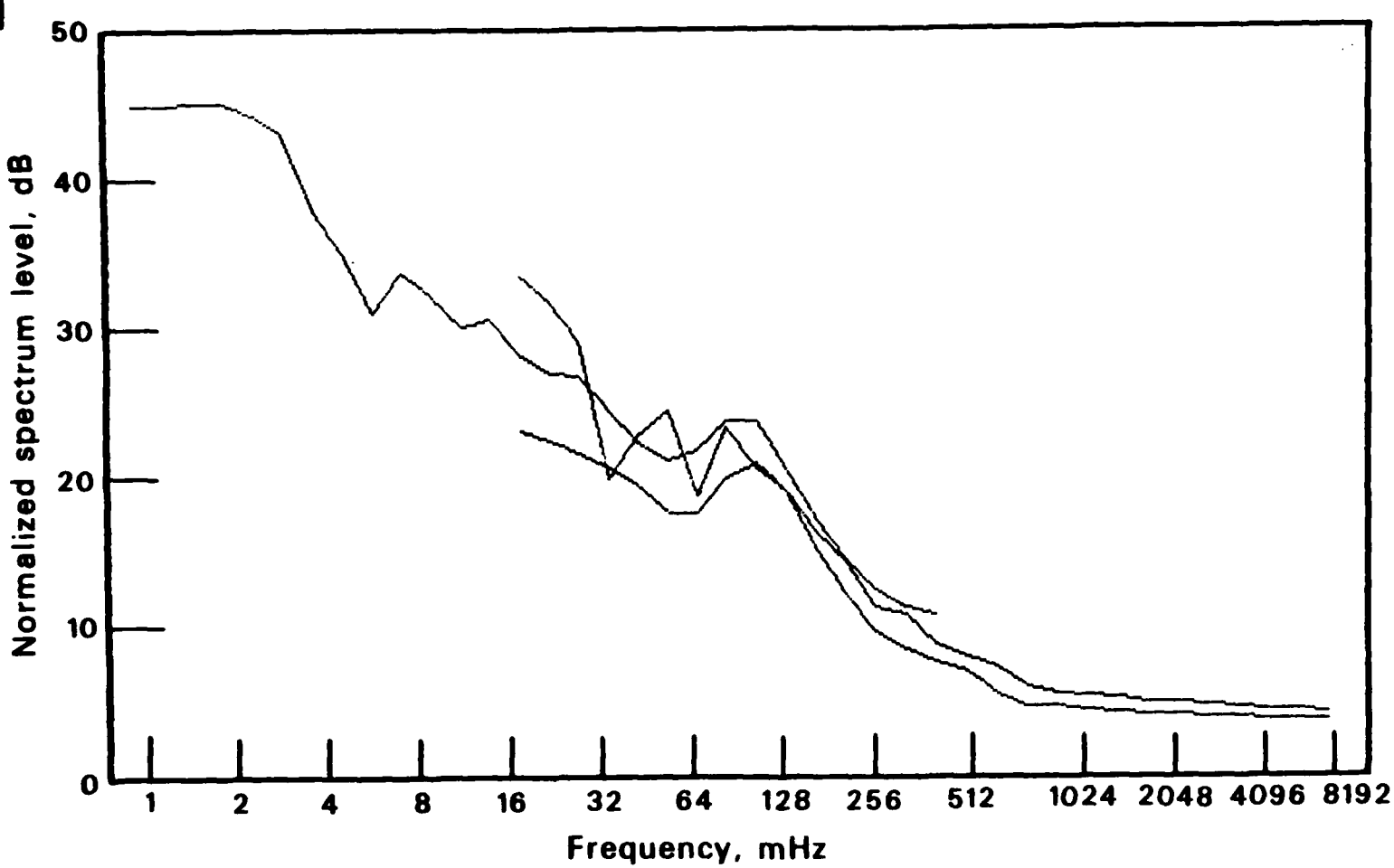
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 10C

MPL-M-4917

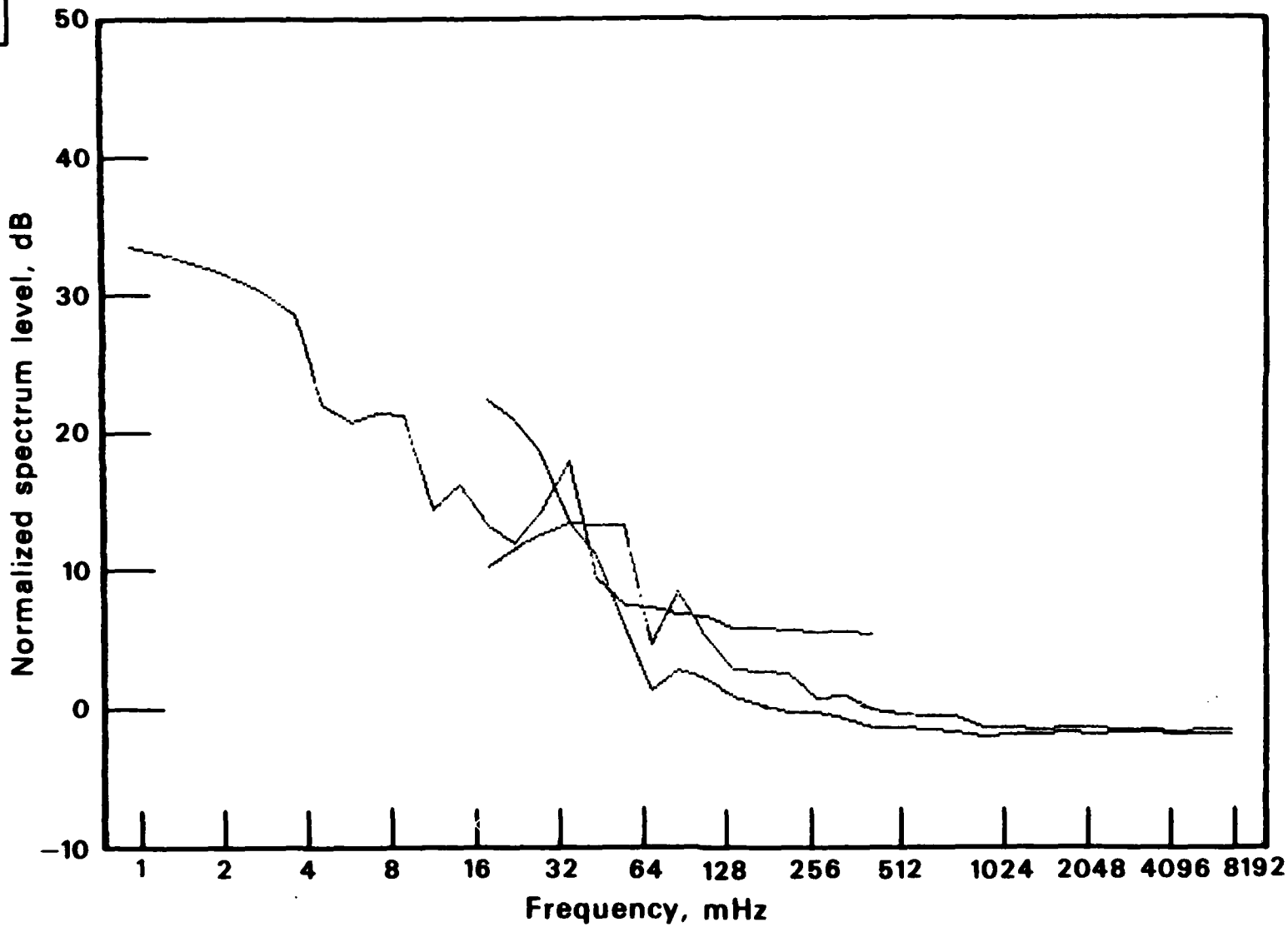
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10C

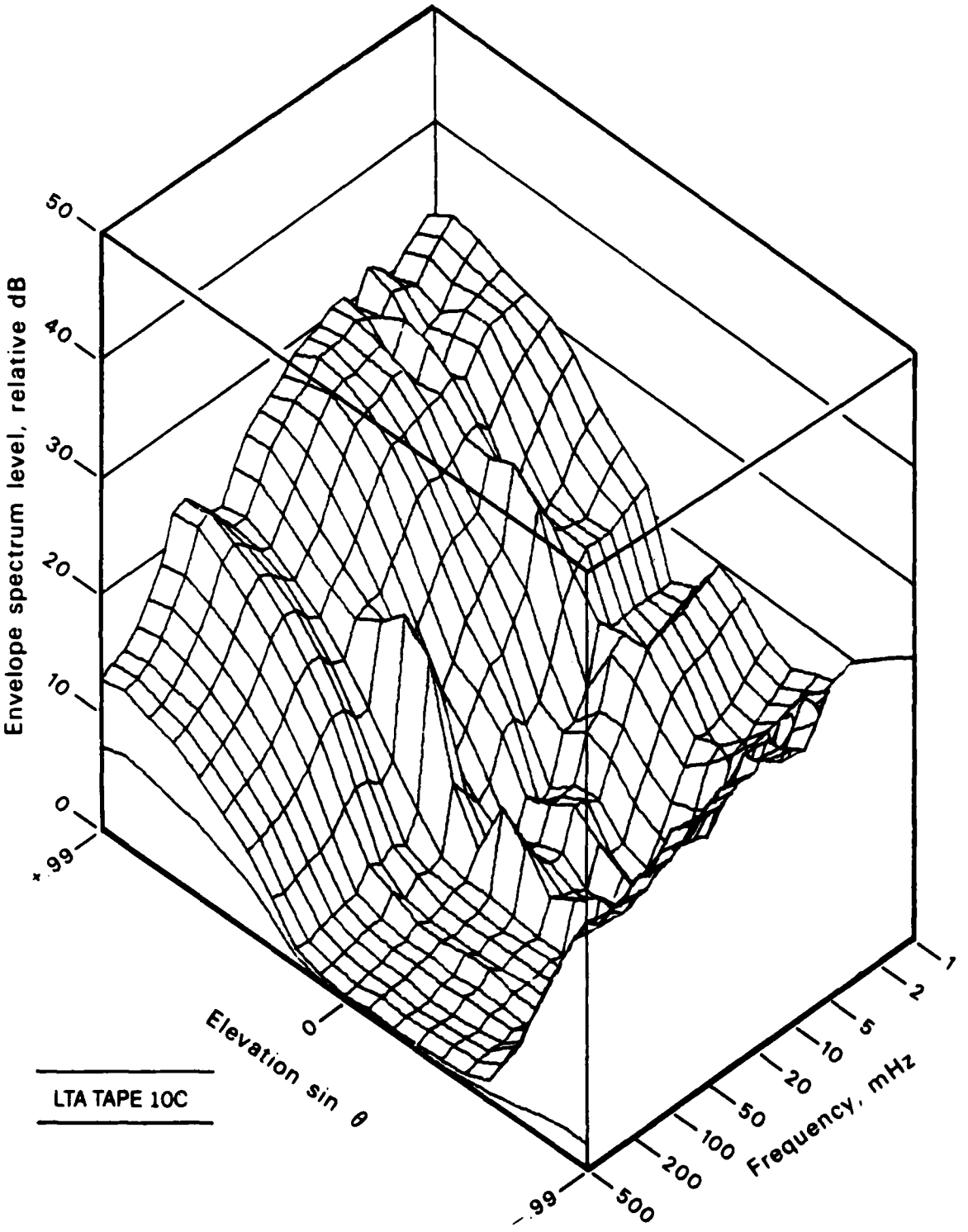
MPL-M-4918

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10C

GROUP 10C

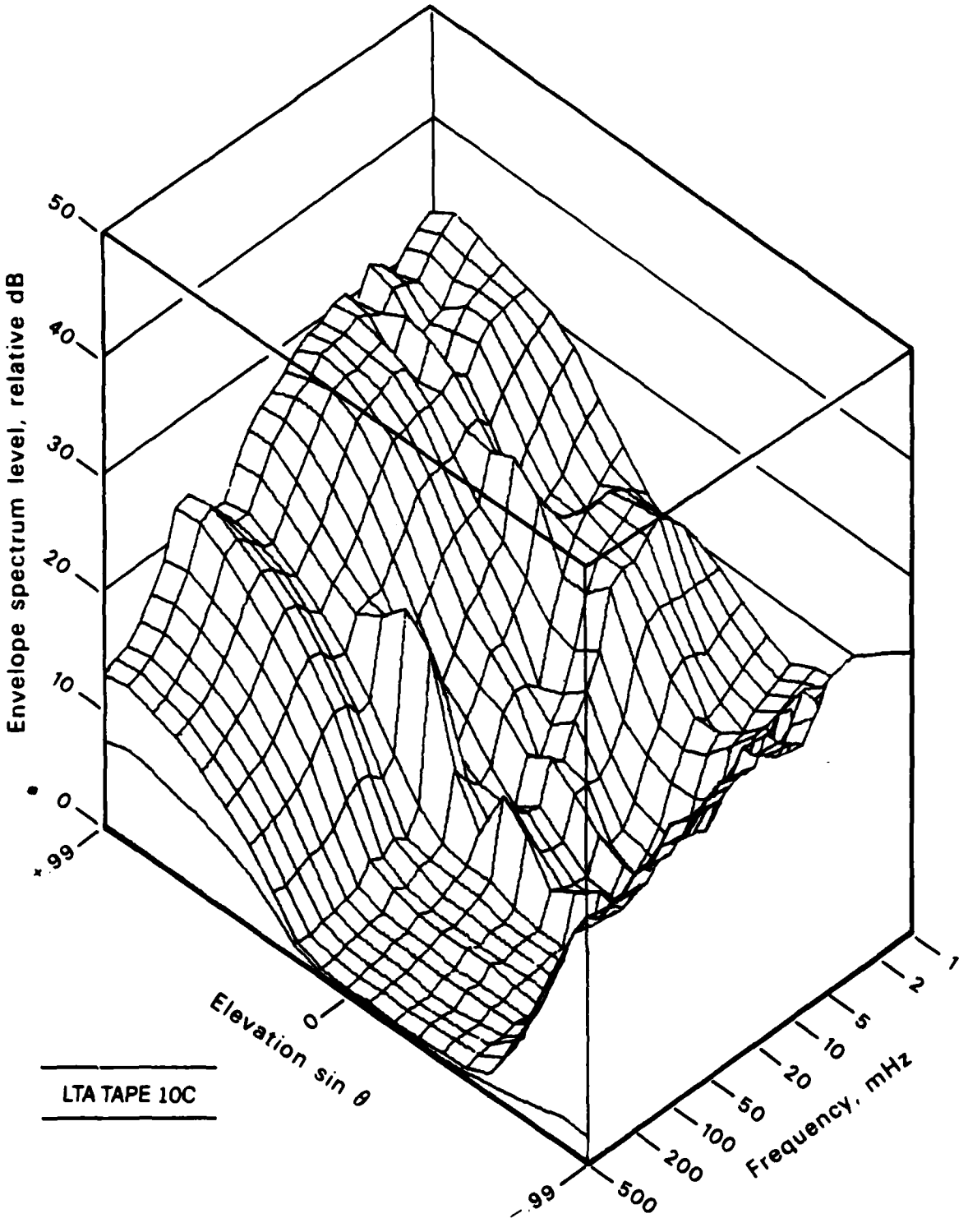


LTA TAPE 10C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4919

GROUP 10C

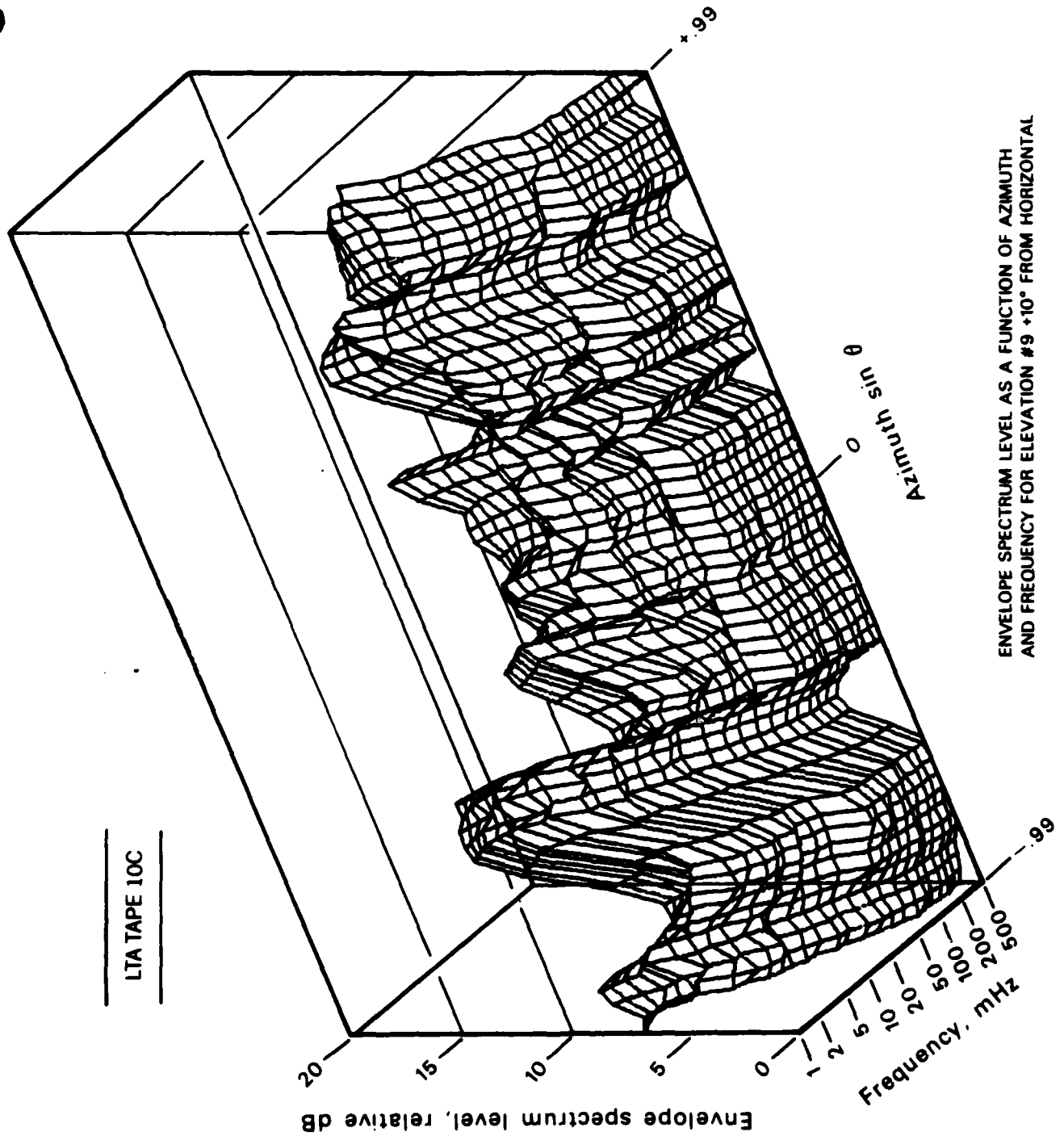


LTA TAPE 10C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4920

GROUP 10C

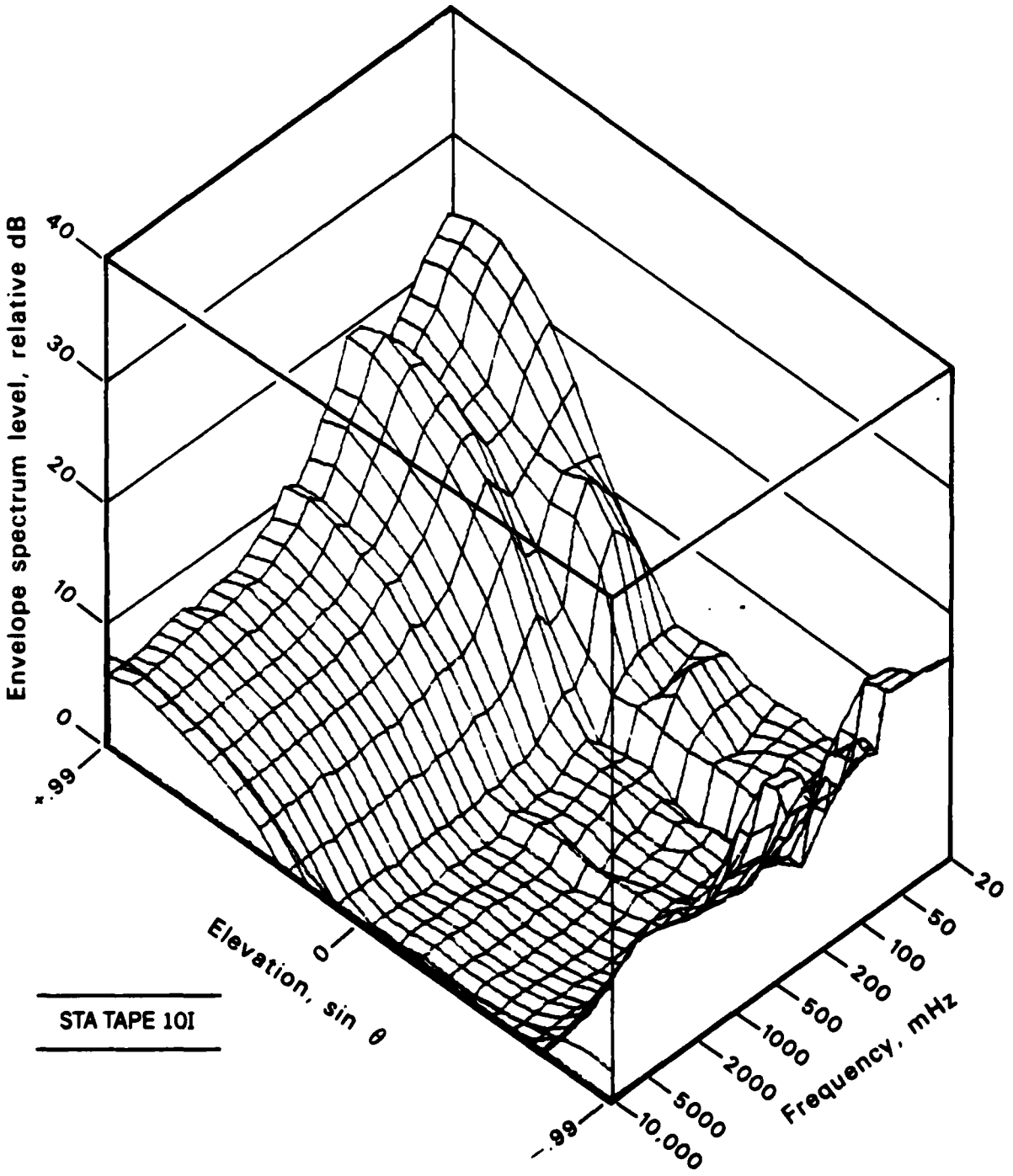


ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

LTA TAPE 10C

MPL-M-4921

GROUP 10C

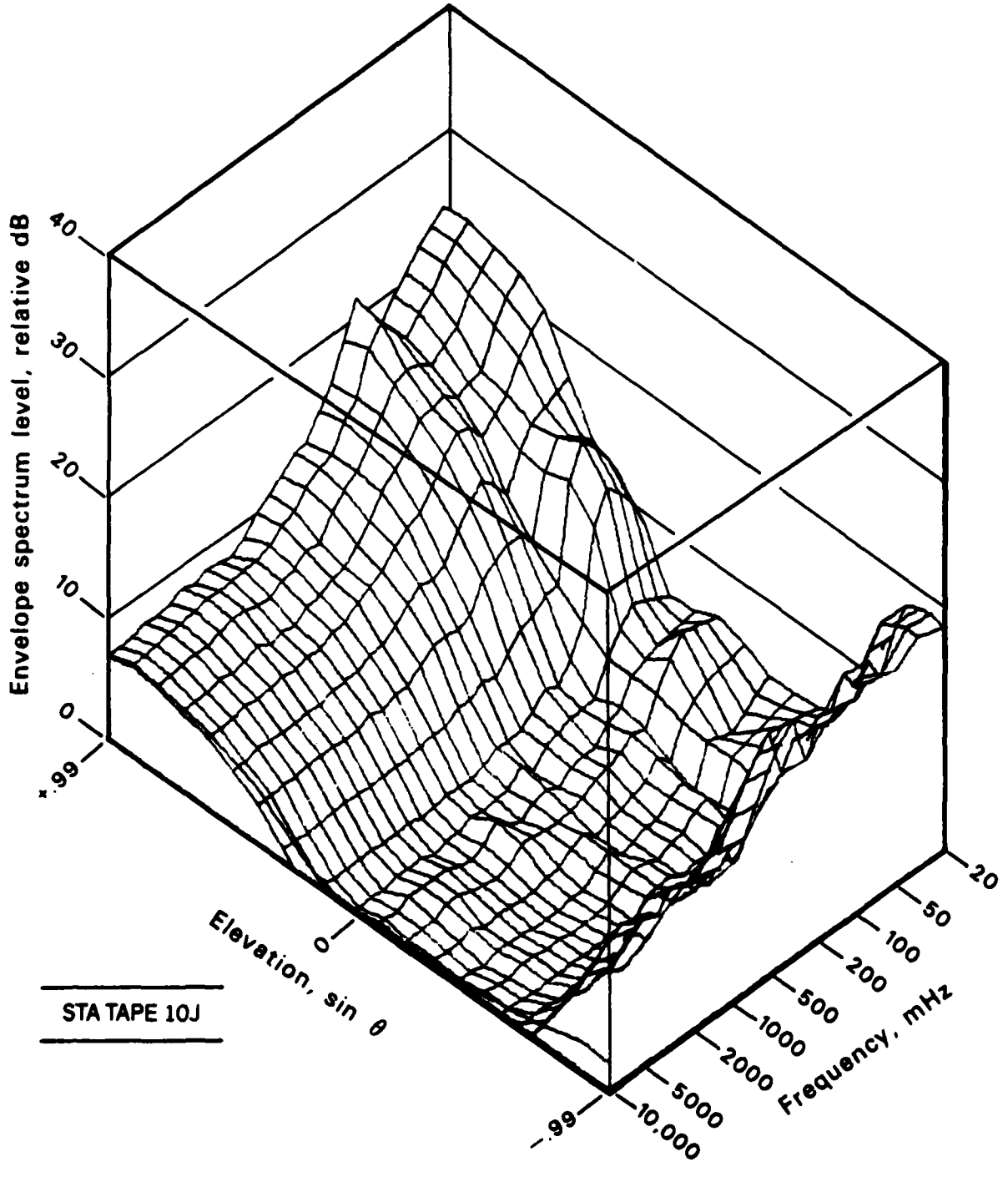


STA TAPE 10I

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4922

GROUP 10C



STA TAPE 10J

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4923

GROUP 10C

LTA TAPE 10C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.9	31.9	31.1	30.1	28.8	30.1	31.1	28.3	30.0	29.8
ANGLE +84°	29.1	28.7	28.0	26.9	25.9	25.3	24.1	21.9	19.4	19.5
	20.5	22.2	21.8	18.0	15.9	14.1	12.9	12.4	11.9	
2	71.6	33.2	32.3	31.2	29.6	30.0	30.4	28.9	29.6	30.1
+64°	29.5	29.2	29.2	27.6	26.9	25.6	24.3	22.1	19.9	19.8
	21.0	22.6	21.9	18.4	16.5	14.6	13.3	12.7	12.3	
3	71.3	32.6	31.6	30.4	28.7	28.2	27.5	30.2	27.3	29.6
+53°	29.2	28.7	28.8	28.1	26.7	24.7	22.7	20.8	18.8	19.2
	20.4	21.3	20.5	17.5	15.7	14.0	12.7	11.9	11.5	
4	70.6	31.6	31.2	30.8	30.3	28.9	26.6	29.7	27.1	28.8
+44°	29.0	28.0	27.6	27.0	25.1	22.8	20.4	19.0	17.4	18.3
	19.4	19.9	18.7	16.4	14.5	13.0	12.1	11.3	10.8	
5	70.0	31.1	30.9	30.7	30.5	29.2	27.5	28.3	27.5	27.3
+37°	26.9	26.3	26.1	24.6	22.5	20.3	18.6	17.5	15.8	16.4
	17.9	18.1	16.8	14.7	12.8	11.6	10.7	9.9	9.3	
6	69.2	30.5	29.7	28.9	27.7	26.4	24.5	25.7	25.4	24.2
+30°	23.4	23.6	23.0	20.8	19.0	17.1	16.9	16.3	13.5	13.8
	15.4	15.3	14.2	12.3	10.6	9.6	8.9	8.2	7.6	
7	68.2	28.8	27.8	26.5	24.7	23.0	20.2	23.4	25.1	21.1
+23°	20.6	20.2	19.2	16.8	14.9	13.8	16.3	17.6	10.8	10.7
	12.2	12.3	11.2	9.3	8.0	7.2	6.7	6.2	5.9	
8	66.6	25.7	24.7	23.3	21.4	20.4	19.0	23.5	26.0	19.5
+17°	18.4	16.7	15.5	12.7	10.9	10.9	16.6	19.7	7.8	6.6
	7.5	7.6	6.7	5.1	4.3	4.1	3.6	3.1	3.3	
9	64.7	23.8	22.8	21.6	19.9	20.1	20.4	21.9	23.8	17.3
+12°	15.3	13.3	13.0	11.4	8.9	7.4	13.7	17.5	4.9	2.8
	3.5	2.6	3.3	1.6	1.4	1.1	0.8	0.3	0.5	
10	64.0	21.9	21.4	20.8	20.1	20.1	20.2	18.7	16.6	12.5
+6°	9.9	8.6	10.0	9.3	5.8	4.9	6.5	8.2	2.5	2.0
	2.3	1.1	2.4	0.8	0.7	0.3	0.1	-0.2	-0.3	
11	63.7	15.0	15.1	15.1	15.2	15.0	14.8	16.0	11.1	8.9
0°	8.8	4.6	4.1	5.4	2.4	3.5	3.2	3.9	1.9	1.8
	1.2	0.7	1.3	0.4	0.4	0.0	-0.1	-0.5	-0.6	
12	64.2	16.0	15.5	15.0	14.3	13.9	13.3	16.5	15.5	11.3
−6°	10.2	6.4	6.2	6.1	3.4	3.8	6.4	8.9	2.0	1.4
	1.1	0.7	1.1	0.6	0.5	0.1	-0.0	-0.1	-0.3	
13	64.1	19.6	19.0	18.4	17.7	17.6	17.4	16.6	14.6	11.4
−12°	9.4	6.6	7.3	7.7	4.3	4.0	5.2	7.2	1.7	1.1
	1.3	0.7	1.5	0.3	0.4	-0.3	-0.4	-0.3	-0.6	
14	64.0	18.1	17.5	16.7	15.9	15.6	15.2	14.1	12.1	9.3
−17°	7.0	4.3	4.1	5.8	2.5	3.1	3.5	4.0	1.3	1.4
	1.3	0.8	1.6	0.5	0.6	-0.2	-0.1	-0.0	-0.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 10C

LTA TAPE 10C

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.1	15.7	14.9	14.0	12.8	12.3	11.8	12.0	10.2	7.9
ANGLE −23°	5.0	3.6	2.8	4.5	2.6	2.8	4.5	5.3	1.4	1.5
	1.2	1.1	1.1	0.6	0.6	0.0	0.1	0.2	-0.2	
16	64.4	14.9	14.2	13.4	12.4	11.4	10.0	12.8	11.9	8.7
−30°	5.2	3.8	3.3	4.3	2.6	2.8	5.4	7.1	1.4	1.4
	1.3	1.0	0.9	0.4	0.7	0.4	0.4	0.2	-0.0	
17	64.7	15.8	15.3	14.7	14.0	12.4	9.8	14.8	14.1	10.4
−37°	5.8	6.0	5.0	5.6	3.8	4.3	6.5	7.4	2.9	3.2
	2.5	2.4	2.3	1.8	2.3	1.9	2.2	1.5	0.9	
18	65.1	16.5	16.4	16.3	16.2	14.3	10.8	17.0	16.6	12.7
−44°	8.7	9.9	8.3	10.1	7.9	8.7	9.7	8.8	7.3	7.8
	6.8	6.5	6.7	6.1	6.3	5.9	6.5	5.6	4.6	
19	65.7	18.5	19.1	19.6	20.1	18.0	14.0	19.9	20.3	16.7
−53°	14.3	15.5	14.9	16.9	14.7	15.1	15.0	13.7	14.2	14.6
	13.4	12.8	12.9	12.2	12.2	11.6	12.4	11.7	10.3	
20	66.3	21.6	22.4	23.0	23.6	21.8	18.8	22.0	23.7	21.4
−64°	19.4	20.4	20.9	22.4	20.3	20.8	20.2	19.4	19.7	2 2
	18.9	18.1	18.1	17.2	17.0	16.5	17.4	16.8	15.0	
21	66.1	23.4	24.1	24.7	25.3	23.8	21.6	22.8	25.6	23.7
−84°	21.8	22.7	23.6	25.1	22.9	23.4	22.7	22.2	22.4	22.7
	21.5	20.7	20.6	19.6	19.5	18.9	19.8	19.2	17.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 10C

LTA TAPE 10C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.7	31.9	31.1	30.1	28.8	30.1	31.1	28.3	30.0	29.8
ANGLE +84°	29.1	28.7	28.0	26.9	25.7	25.3	24.1	21.9	19.4	19.5
	20.5	22.2	21.8	18.0	15.7	14.1	12.9	12.4	11.9	
2	71.6	33.2	32.3	31.2	29.6	30.0	30.4	28.9	29.6	30.1
+64°	29.5	29.2	29.2	27.6	26.7	25.6	24.3	22.1	19.9	19.8
	21.0	22.6	21.9	18.4	16.5	14.6	13.3	12.7	12.3	
3	71.3	32.6	31.6	30.4	28.7	28.2	27.5	30.2	27.3	29.6
+53°	29.2	28.7	28.8	28.1	26.7	24.7	22.7	20.8	18.8	19.2
	20.4	21.3	20.5	17.5	15.7	14.0	12.7	11.9	11.5	
4	70.6	31.8	31.4	30.9	30.4	28.8	26.3	29.6	26.8	28.7
+44°	29.0	28.1	27.6	27.1	25.1	22.7	20.4	19.0	17.4	18.3
	19.4	20.0	18.6	16.4	14.5	13.1	12.1	11.3	10.9	
5	70.0	31.3	31.0	30.8	30.5	29.2	27.3	28.3	27.4	27.1
+37°	27.1	26.5	26.2	24.5	22.5	20.2	18.5	17.5	15.8	16.5
	17.9	18.1	16.7	14.7	12.8	11.7	10.7	9.9	9.3	
6	69.2	30.6	29.9	29.0	27.8	26.5	24.5	25.7	25.6	24.2
+30°	24.0	23.7	23.1	20.8	17.0	17.1	16.8	16.3	13.6	13.9
	15.2	15.4	14.2	12.3	10.6	9.7	8.9	8.3	7.7	
7	68.7	29.0	28.0	26.7	24.9	23.3	20.7	23.3	25.3	21.3
+23°	20.8	20.2	19.1	16.9	15.1	13.9	16.4	17.6	11.0	10.7
	12.2	12.3	11.2	9.3	8.0	7.3	6.8	6.3	5.9	
8	66.6	26.0	25.0	23.7	21.7	20.8	19.8	23.2	26.2	19.7
+17°	18.6	16.7	15.5	13.0	11.2	10.8	16.6	19.7	7.8	6.5
	7.6	7.7	6.8	5.1	4.3	4.1	3.6	3.1	3.3	
9	64.7	23.4	22.6	21.6	20.2	20.6	20.9	22.3	24.1	17.8
+12°	15.7	14.0	13.8	11.5	9.5	7.4	13.9	17.5	4.8	2.8
	3.5	2.7	3.2	1.5	1.3	1.0	0.8	0.3	0.5	
10	64.0	20.9	21.9	22.7	23.3	23.2	23.0	21.5	18.9	15.3
+6°	10.8	11.6	11.8	10.7	6.6	5.9	7.1	8.8	3.1	2.4
	2.5	1.4	2.1	0.8	0.6	0.3	0.2	-0.2	-0.4	
11	63.7	19.1	21.2	22.6	23.7	23.0	22.2	21.4	18.9	14.6
0°	11.6	9.6	7.4	8.6	4.8	5.7	4.7	4.7	2.7	2.2
	1.6	1.0	1.4	0.5	0.5	0.1	0.1	-0.4	-0.5	
12	64.2	20.0	21.8	23.0	24.0	23.0	21.5	21.6	20.9	16.1
−6°	13.3	11.5	8.7	9.7	6.3	6.4	7.5	9.4	2.8	2.0
	1.6	1.1	1.3	0.7	0.5	0.1	0.0	-0.2	-0.3	
13	64.1	18.8	18.8	18.8	18.8	19.0	19.1	18.4	15.7	11.6
−12°	9.3	8.1	8.3	8.1	4.8	4.8	5.5	7.4	1.9	1.4
	1.4	0.9	1.4	0.4	0.4	-0.3	-0.3	-0.3	-0.5	
14	64.0	17.3	16.7	16.0	15.2	15.7	16.1	15.1	11.8	9.9
−17°	5.7	5.0	4.5	5.9	3.2	3.2	3.6	4.1	1.5	1.5
	1.3	0.9	1.5	0.5	0.6	-0.2	-0.1	-0.0	-0.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 10C

LTA TAPE 10C

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.1	15.9	15.3	14.6	13.7	13.1	12.4	13.2	11.2	9.0
ANGLE −23°	6.0	4.5	3.3	4.9	3.0	3.0	4.6	5.4	1.5	1.5
	1.3	1.1	1.0	0.6	0.6	0.0	0.1	0.2	-0.2	
16	64.4	14.9	14.4	13.8	13.1	12.1	10.8	13.3	12.2	9.2
−30°	5.3	4.2	3.2	4.3	2.7	2.9	5.4	7.1	1.6	1.5
	1.3	1.1	0.9	0.5	0.7	0.4	0.4	0.2	-0.0	
17	64.7	16.0	15.5	15.0	14.4	12.7	9.8	14.8	14.4	10.7
−37°	6.2	6.2	5.2	5.7	3.8	4.3	6.5	7.4	3.0	3.1
	2.5	2.5	2.2	1.8	2.3	1.9	2.2	1.5	0.9	
18	65.1	16.5	16.4	16.3	16.2	14.2	10.4	17.0	16.8	12.8
−44°	8.7	9.9	8.3	10.1	7.9	8.6	9.7	8.8	7.3	7.8
	6.9	6.5	6.7	6.1	6.3	5.9	6.5	5.6	4.6	
19	65.7	18.5	19.1	19.6	20.1	18.0	14.0	19.9	20.3	16.7
−53°	14.3	15.5	14.9	16.9	14.7	15.1	15.0	13.7	14.2	14.6
	13.4	12.8	12.9	12.2	12.2	11.6	12.4	11.7	10.3	
20	66.3	21.6	22.4	23.0	23.6	21.8	18.8	22.0	23.7	21.4
−64°	19.4	20.4	20.9	22.4	20.3	20.8	20.2	19.4	19.7	20.2
	18.9	18.1	18.1	17.2	17.0	16.5	17.4	16.8	15.0	
21	66.1	23.4	24.1	24.7	25.3	23.8	21.6	22.8	25.6	23.7
−84°	21.8	22.7	23.6	25.1	22.9	23.4	22.7	22.2	22.4	22.7
	21.5	20.7	20.6	19.6	17.5	18.9	19.8	19.2	17.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 10C

GROUP 10C

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 1 ANGLE −71.3°	65.0 20.2 5.8	26.5 16.8 4.7	28.2 15.7 3.4	29.4 14.9 3.6	30.4 13.4 3.6	29.6 13.4 3.0	28.7 10.6 2.6	26.1 10.3 3.2	26.3 8.5 2.9	20.7 7.0
2 −66°	64.7 16.3 4.3	25.1 15.3 3.7	25.4 14.2 2.6	25.7 14.9 1.9	25.9 13.1 2.2	24.5 11.1 1.7	22.2 9.0 1.8	23.5 8.5 1.9	25.1 6.2 2.0	19.7 4.8
3 −61.6°	64.6 18.5 5.2	30.5 15.0 3.7	29.3 12.7 2.4	27.6 15.4 2.1	24.7 12.6 2.1	24.2 11.5 1.4	23.6 9.7 1.5	19.4 9.5 1.6	21.9 7.4 1.3	18.3 5.8
4 −57.8°	64.3 19.3 5.0	31.9 18.1 3.5	31.0 15.6 2.7	29.9 16.6 2.0	28.3 14.1 1.7	29.2 12.4 1.3	29.9 11.0 1.1	25.3 9.7 1.0	22.8 8.1 0.9	21.8 6.6
5 −54.3°	63.7 20.0 2.3	28.3 15.6 1.6	27.8 14.9 0.7	27.2 14.7 −0.1	26.6 11.9 0.2	27.2 11.0 0.0	27.8 9.1 −0.7	26.0 7.6 −0.8	23.4 5.4 −0.6	21.0 3.8
6 −51.1°	63.4 16.8 0.3	20.5 14.6 −0.2	21.6 11.6 −0.5	22.5 11.5 −1.5	23.2 9.9 −0.7	21.6 10.5 −1.0	18.9 8.7 −1.6	22.2 6.1 −1.5	22.5 1.1 −1.6	18.8 0.7
7 −48.1°	63.3 14.0 −0.2	14.7 11.9 −0.5	17.5 10.2 −1.1	19.2 10.9 −1.5	20.4 7.9 −0.9	17.8 9.4 −1.4	10.0 8.3 −1.4	17.0 6.2 −1.6	20.7 0.8 −1.9	15.1 −0.1
8 −45.3°	63.2 12.2 −2.1	13.3 9.5 −1.5	15.0 9.0 −2.1	16.2 9.0 −1.9	17.2 6.6 −1.7	15.0 8.2 −2.3	10.1 6.4 −2.3	17.0 5.6 −2.5	20.4 −0.6 −2.6	12.1 −2.1
9 −42.6°	63.1 10.5 −2.7	13.5 8.5 −1.7	13.9 7.8 −2.4	14.4 8.0 −1.8	14.8 5.8 −2.4	12.9 7.9 −2.4	9.5 6.1 −2.5	16.1 5.4 −2.6	18.6 −2.4 −2.8	12.3 −1.5
10 −40.0°	63.1 10.4 −2.4	13.6 9.6 −2.3	13.1 7.6 −2.0	12.5 8.2 −2.0	11.8 5.8 −1.7	11.1 7.3 −2.4	10.3 6.3 −2.3	15.5 5.3 −2.6	17.6 −2.1 −2.9	13.1 −1.9
11 −37.5°	63.3 16.3 −0.0	22.4 13.4 −0.4	21.8 13.0 −0.2	21.0 12.6 −1.8	20.2 9.6 −1.1	22.4 8.6 −1.6	23.9 8.4 −1.8	21.3 6.4 −2.0	21.9 1.6 −1.9	19.0 0.3
12 −35.1°	64.5 27.1 12.1	37.3 28.9 10.3	37.6 27.2 8.4	37.9 26.5 6.6	38.2 23.1 5.8	39.1 22.2 4.4	39.9 19.8 4.2	37.0 19.2 3.7	36.1 16.1 3.4	34.3 13.4
13 −32.8°	68.1 35.0 18.0	44.6 34.2 16.3	45.2 30.6 14.5	45.7 31.9 12.7	46.2 29.4 11.7	45.6 27.2 10.9	45.0 24.5 10.4	44.2 25.0 10.2	41.0 22.0 9.7	41.2 19.3
14 −30.5°	69.8 35.4 18.7	45.2 34.5 16.9	45.4 31.2 15.6	45.6 31.0 14.2	45.8 29.5 13.4	44.4 27.1 12.5	42.3 26.7 12.2	39.5 26.0 12.0	38.8 22.3 11.2	39.4 20.2
15 −28.3°	68.7 33.0 18.2	45.2 35.8 16.1	44.7 30.8 14.8	44.0 31.1 13.2	43.2 29.3 12.4	44.3 27.8 11.5	45.1 25.6 11.2	44.4 25.3 10.7	41.5 21.9 10.1	39.9 19.7

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANG . ELEVATION NUMBER 9.

LTA TAPE 10C

GROUP 10C

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 16 ANGLE −26.1°	66.2 35.6 16.7	43.6 32.9 15.4	44.1 30.0 13.4	44.5 32.1 11.4	44.9 28.2 10.0	44.6 26.3 9.2	44.2 24.7 8.2	40.8 24.5 7.8	40.9 21.4 7.1	40.6 17.9
17 −24.0°	64.1 32.3 12.7	43.7 30.0 11.7	43.2 26.9 10.4	42.6 24.8 9.0	42.0 23.3 7.7	41.2 22.8 7.1	40.3 21.6 6.6	38.0 19.2 6.5	37.5 16.7 6.2	35.5 14.5
18 −21.8°	63.4 8.0 1.3	29.2 12.2 0.2	28.7 7.7 0.8	28.2 8.0 −0.4	27.5 5.2 −0.1	26.4 4.8 −0.9	24.9 6.8 −1.0	23.8 7.9 −1.3	21.0 2.1 −1.4	13.6 1.3
19 −19.8°	63.3 12.0 −0.2	17.6 11.0 −0.3	16.8 8.8 0.1	15.7 7.6 −0.9	14.2 4.9 −0.6	14.0 2.1 −1.2	13.8 4.6 −1.0	13.0 7.3 −1.2	13.5 0.4 −1.6	12.7 0.4
20 −17.7°	63.3 5.8 −1.0	12.4 4.0 −0.4	11.3 3.5 0.0	9.9 2.0 −1.4	7.9 1.8 −0.6	9.1 0.5 −1.2	10.0 4.8 −1.2	9.8 7.6 −1.4	5.2 −0.1 −1.6	6.7 −0.2
21 −15.7°	63.3 5.8 0.1	9.9 3.5 −0.1	10.2 2.7 −0.0	10.6 2.9 −0.4	10.8 2.3 −0.2	11.2 0.4 −0.9	11.4 5.3 −1.1	10.1 7.7 −1.4	6.1 0.5 −1.4	5.5 0.3
22 −13.7°	63.4 3.5 1.0	10.2 4.1 0.2	9.4 2.6 −0.0	8.4 3.8 −0.6	7.1 2.2 0.0	8.8 1.1 −0.5	10.0 5.4 −0.7	8.2 8.3 −1.5	4.1 1.0 −1.7	3.1 0.-
23 −11.7°	63.4 6.8 0.7	13.6 6.1 0.7	12.6 3.4 0.7	11.3 3.7 −0.1	9.3 2.6 0.3	11.4 1.5 0.2	12.9 5.8 −0.2	11.2 8.3 −1.1	5.8 1.4 −0.9	5.8 1.1
24 −9.7°	63.4 11.5 1.6	18.1 9.2 1.2	17.7 4.9 1.3	17.4 4.8 0.7	17.0 4.2 1.1	18.5 3.0 0.7	19.6 5.9 0.4	16.5 8.5 −0.4	15.4 2.6 −0.4	13.7 2.0
25 −7.8°	63.6 15.2 2.6	23.4 11.6 1.3	23.8 8.6 2.7	24.2 9.9 1.2	24.5 9.4 1.6	25.2 7.8 0.6	25.9 7.6 0.3	23.0 8.4 −0.2	21.0 4.0 0.3	19.5 3.1
26 −5.8°	63.8 11.5 4.0	24.9 11.8 1.6	25.7 15.7 3.4	26.4 15.1 1.6	27.0 9.4 1.5	27.8 8.9 0.6	28.4 9.2 0.6	25.5 8.6 0.1	21.6 3.9 0.5	19.2 2.7
27 −3.9°	63.9 8.2 1.2	15.9 8.4 0.8	19.3 5.6 1.0	21.1 7.3 0.5	22.4 3.6 0.8	21.2 3.0 0.1	19.3 4.4 0.4	17.5 7.2 −0.1	16.0 1.4 −0.7	8.0 1.7
28 −1.9°	64.2 9.5 1.7	16.6 9.8 0.9	17.7 7.3 2.0	18.5 6.1 0.3	19.3 5.7 0.2	20.4 3.8 −0.1	21.2 5.8 −0.1	20.2 7.9 −0.2	16.9 2.8 −0.7	10.8 1.8
29 0°	64.1 9.6 1.4	15.6 10.1 0.8	15.2 6.1 1.6	14.8 6.7 0.4	14.3 5.5 0.1	14.1 3.9 0.0	13.9 4.1 −0.2	13.0 7.9 −0.2	18.2 2.4 −0.6	12.9 0.9
30 +1.9°	64.1 10.2 1.4	18.3 11.1 1.2	19.8 10.8 1.5	21.0 8.8 0.3	21.9 5.7 0.2	21.3 5.3 0.4	20.6 6.1 −0.3	18.1 8.9 −0.6	17.9 3.3 −0.7	17.2 1.8

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 10C

GROUP 10C

PAGE 3

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	63.7	17.2	20.5	22.3	23.6	22.7	21.5	18.6	15.6	15.7
ANGLE +3.9°	11.5	11.7	11.5	8.8	5.2	6.6	6.6	9.2	2.9	2.7
	1.7	1.7	1.7	0.7	0.6	0.5	0.5	-0.4	-0.6	
32	63.7	18.4	19.0	19.5	20.0	19.9	19.7	17.3	13.5	13.4
+5.8°	9.2	11.1	9.2	8.1	6.0	6.4	7.6	9.6	2.9	3.2
	2.5	1.5	1.5	1.0	0.6	0.5	0.0	-0.4	-0.6	
33	63.5	15.9	16.7	17.4	17.9	17.0	15.8	17.1	16.7	12.4
+7.8°	9.6	8.8	8.5	6.5	6.5	6.4	7.6	9.8	3.3	3.3
	3.0	1.7	1.5	0.8	0.9	0.5	0.4	-0.4	-0.7	
34	63.5	17.4	17.4	17.5	17.6	16.1	13.9	17.3	17.4	13.2
+9.7°	9.1	9.5	10.0	6.9	6.6	5.8	7.9	9.9	2.7	2.5
	1.9	0.9	0.9	-0.2	0.9	0.4	0.2	-0.7	-0.9	
35	63.4	20.6	19.7	18.7	17.3	15.6	12.5	18.6	19.6	13.3
+11.7°	11.5	11.9	11.0	8.0	7.7	7.7	9.2	10.7	4.2	4.1
	3.0	1.6	1.7	0.5	1.8	1.1	0.7	-0.2	-0.3	
36	63.4	20.7	19.9	19.0	17.8	17.1	16.2	19.1	20.8	17.2
+13.7°	13.5	15.9	15.2	13.9	13.6	13.4	13.4	14.1	10.5	10.8
	10.4	9.2	7.7	7.7	8.2	7.6	6.8	6.3	7.0	
37	63.5	20.2	20.3	20.4	20.4	19.4	18.0	18.9	18.3	17.8
+15.7°	12.8	12.7	13.9	10.4	10.7	10.5	9.9	11.8	6.9	7.0
	7.3	7.2	6.7	5.7	5.6	5.3	5.5	4.8	4.4	
38	63.5	27.5	26.7	25.7	24.4	22.6	19.3	20.5	15.6	18.7
+17.7°	15.6	14.4	16.2	10.4	13.0	12.7	9.4	10.5	6.2	5.0
	5.5	4.8	4.1	2.4	2.4	2.5	2.2	1.0	-0.1	
39	63.6	31.7	30.4	28.7	25.9	24.7	23.2	21.1	19.6	21.6
+19.8°	19.6	19.3	19.8	17.1	18.1	17.4	15.7	15.7	13.7	13.1
	12.4	11.2	9.3	8.8	7.6	5.6	4.2	3.3	1.2	
40	63.5	27.7	26.6	25.1	22.9	21.9	20.7	19.4	20.7	21.9
+21.8°	17.5	16.3	15.9	13.5	13.7	11.5	9.6	11.7	7.3	6.5
	6.0	5.0	4.0	4.4	3.4	1.7	1.5	0.6	-0.3	
41	63.4	16.5	15.7	14.8	13.7	14.0	14.4	16.5	20.6	17.0
+24.0°	13.9	14.1	12.7	9.7	9.7	7.7	7.6	11.3	5.5	5.7
	5.1	5.0	4.8	5.1	4.7	4.3	4.4	4.1	4.1	
42	63.4	13.1	14.2	15.1	15.8	14.9	13.8	20.7	22.4	18.0
+26.1°	13.7	15.6	14.9	12.1	12.7	11.6	11.3	12.9	8.5	7.3
	6.0	4.4	3.5	3.7	4.2	4.1	3.6	2.8	2.9	
43	63.3	9.8	10.8	11.6	12.3	11.1	9.3	19.9	24.5	16.8
+28.3°	16.0	12.9	12.7	9.3	8.4	7.7	6.3	10.9	1.5	1.3
	0.8	0.8	1.5	-0.1	-0.1	-0.7	-0.5	-0.9	-1.9	
44	63.4	19.5	19.1	18.7	18.2	17.1	15.6	22.4	24.9	19.1
+30.5°	16.7	14.2	13.5	10.5	10.9	9.1	8.0	11.9	3.3	2.8
	1.4	0.7	1.6	0.9	1.1	0.6	0.2	-0.5	-1.1	
45	63.5	28.6	27.8	26.7	25.2	24.5	23.5	25.9	23.5	22.8
+32.8°	19.8	16.4	15.4	12.3	11.8	9.5	8.0	12.5	3.6	4.4
	2.4	1.8	3.5	3.1	1.6	2.0	0.6	-0.3	-0.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

LTA TAPE 10C

GROUP 10C

PAGE 4

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	64.0	34.5	33.3	31.7	29.2	30.1	30.8	30.9	25.8	26.9
ANGLE +35.1°	24.7	22.5	19.2	19.1	16.0	13.2	12.0	14.4	9.0	9.0
	8.4	7.0	9.3	8.7	5.7	6.3	5.4	4.4	4.0	
47	64.2	35.1	34.0	32.5	30.2	34.1	36.1	31.1	28.6	27.9
+37.5°	27.4	25.2	21.6	21.1	19.1	15.7	14.8	15.6	11.5	11.1
	10.5	9.1	11.7	11.0	7.6	8.1	7.3	6.2	5.7	
48	64.3	33.7	33.0	32.2	31.2	35.7	37.9	29.9	29.9	28.2
+40.0°	26.5	26.7	23.4	20.1	19.4	16.8	15.5	15.3	11.9	9.9
	9.9	8.7	11.4	10.8	6.9	7.5	6.5	5.4	5.0	
49	64.1	31.0	31.1	31.3	31.4	33.7	35.2	29.4	28.1	28.1
+42.6°	23.5	25.4	23.2	19.1	17.6	16.9	14.2	13.7	10.3	8.5
	8.1	7.5	9.5	8.6	5.4	5.6	4.7	3.6	3.6	
50	63.7	25.5	25.1	24.7	24.2	25.7	26.8	24.6	24.9	23.1
+45.3°	21.1	18.9	18.4	15.2	15.1	12.6	10.2	11.2	5.1	4.6
	2.8	2.6	3.8	2.1	1.7	1.7	1.1	−0.4	−0.7	
51	63.8	21.7	21.5	21.3	21.0	21.0	21.0	24.0	23.4	19.9
+48.1°	19.8	15.9	14.7	13.1	12.6	9.5	9.5	10.2	2.6	2.7
	1.9	0.7	1.3	0.2	0.2	0.6	−0.2	−1.0	−0.9	
52	64.1	24.7	24.5	24.3	24.1	23.1	21.9	25.0	24.0	21.1
+51.1°	19.3	15.7	14.3	13.1	12.1	10.5	9.3	10.2	3.9	3.4
	3.1	2.3	1.6	0.4	0.5	1.0	0.3	−0.6	−0.3	
53	64.4	23.8	24.3	24.6	25.0	23.4	20.8	24.3	26.3	20.4
+54.3°	18.9	15.5	13.8	12.7	12.1	10.5	8.5	9.7	4.0	3.5
	2.8	2.1	1.6	1.0	0.9	0.7	0.1	−0.0	−0.2	
54	64.6	23.9	24.6	25.1	25.7	24.4	22.7	24.4	26.1	20.8
+57.8°	20.3	16.1	13.9	12.5	12.2	10.9	9.1	9.2	4.9	3.7
	2.6	2.4	2.2	1.0	0.7	0.5	0.5	0.1	−0.1	
55	64.8	23.5	24.6	25.4	26.1	24.8	22.9	24.0	27.1	20.5
+61.6°	20.9	17.0	14.8	12.6	11.7	11.4	9.0	7.0	4.9	4.9
	5.4	4.8	4.7	4.1	4.2	3.8	4.0	3.6	3.4	
56	65.0	22.9	25.0	26.4	27.5	26.4	24.8	25.8	30.1	22.2
+66.0°	22.2	18.5	17.1	15.5	13.8	13.3	11.2	7.1	5.1	5.6
	6.0	4.7	5.0	4.6	4.2	4.1	4.0	3.8	3.7	
57	65.2	21.2	23.7	25.3	26.4	25.5	24.3	26.0	30.0	23.7
+71.3°	21.1	19.4	18.7	17.3	15.8	15.0	12.4	8.2	7.2	6.4
	6.6	5.6	6.1	5.9	5.3	5.1	4.9	4.8	4.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 10C

STA TAPE 10I

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.9 18.8 9.4	26.4 16.8 8.6	25.4 14.3 9.2	24.0 12.8 9.1	22.0 13.5 8.7	20.8 11.5 8.4	19.0 10.9 8.2	20.4 10.0 8.1	22.3 9.4 8.2	22.1 9.4
2 +64°	58.6 19.1 9.7	27.3 17.5 9.6	26.2 15.1 9.7	24.6 13.1 9.5	22.3 13.7 9.4	21.1 12.3 9.1	19.6 11.5 8.9	21.8 10.7 8.8	23.1 10.2 8.9	22.1 10.3
3 +53°	58.3 18.2 9.2	27.2 16.3 9.4	25.9 14.3 9.1	24.0 12.4 8.9	20.7 13.2 9.0	19.9 11.7 8.7	18.9 10.6 8.4	21.6 10.3 8.3	21.9 9.8 8.4	20.8 9.7
4 +44°	57.7 16.4 8.4	25.7 14.7 8.5	24.4 13.2 8.3	22.5 12.0 8.2	18.9 12.0 8.1	18.6 10.7 7.9	18.2 9.8 7.8	20.4 9.7 7.6	20.0 9.1 7.7	18.9 8.8
5 +37°	57.1 15.0 7.8	23.5 12.9 7.7	22.2 11.9 7.5	20.5 11.0 7.5	17.5 11.2 7.4	17.2 9.8 7.0	16.9 9.0 6.9	18.8 8.8 6.9	18.8 8.2 6.8	17.2 8.0
6 +30°	56.3 12.5 6.7	19.8 10.2 6.4	18.9 9.4 6.4	17.8 8.6 6.3	16.3 7.2 6.1	15.4 7.9 6.0	14.2 7.4 5.9	15.4 7.0 5.7	17.0 6.8 5.7	14.9 6.6
7 +23°	55.2 9.8 4.8	15.4 7.6 4.5	15.7 6.9 4.6	15.9 6.7 5.0	16.2 6.7 4.6	14.3 5.7 4.6	11.2 5.7 4.6	11.4 5.1 4.4	13.9 5.2 4.3	12.1 5.1
8 +17°	53.5 5.0 2.3	11.3 4.1 2.0	14.1 3.6 2.0	15.8 3.8 2.3	17.0 2.9 2.0	14.5 2.5 2.1	7.8 2.7 2.1	7.1 2.2 2.0	8.7 2.6 1.9	7.2 2.4
9 +12°	51.6 1.0 -0.5	8.5 0.4 -0.8	11.3 0.4 -0.5	13.0 -0.1 -0.5	14.3 -0.0 -0.6	11.8 -0.4 -0.6	5.3 -0.4 -0.7	3.5 -0.6 -0.7	3.6 -0.3 -0.7	2.3 -0.4
10 +6°	50.7 0.1 -1.7	5.7 -0.7 -1.8	5.7 -0.4 -1.4	5.7 -0.9 -1.4	5.7 -0.3 -1.5	4.7 -1.6 -1.6	3.6 -1.6 -1.8	0.3 -1.4 -1.9	1.3 -1.6 -1.8	0.9 -1.3
11 0°	50.0 0.5 -1.4	5.8 0.1 -1.5	5.2 -0.3 -1.4	4.6 -0.2 -1.3	3.8 0.2 -1.3	3.9 -1.0 -1.7	4.0 -1.2 -1.8	0.6 -1.3 -1.8	0.8 -1.7 -1.9	1.0 -1.4
12 −6°	51.2 0.7 -0.9	6.3 0.0 -1.2	6.7 -0.1 -1.2	7.1 -0.9 -1.0	7.4 0.3 -1.0	5.9 -1.1 -1.2	3.6 -1.2 -1.5	1.1 -1.1 -1.3	0.8 -1.3 -1.2	1.0 -1.1
13 −12°	51.1 -0.3 -1.4	5.3 -0.1 -1.4	5.2 -0.8 -1.4	5.2 -1.5 -1.3	5.1 -0.1 -1.3	4.3 -1.6 -1.4	3.3 -1.1 -1.6	-0.2 -1.3 -1.4	0.8 -1.1 -1.6	0.6 -1.5
14 −17°	51.0 -0.3 -1.3	5.0 -0.3 -1.5	4.5 -0.5 -1.5	3.9 -0.7 -1.2	3.2 0.1 -1.2	3.4 -0.9 -1.5	3.6 -1.1 -1.5	-0.8 -1.3 -1.5	0.5 -1.3 -1.6	1.0 -1.3

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 10C

STA TAPE 10I

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.1 0.7 −1.2	5.3 0.0 −1.2	5.2 −0.3 −1.1	5.0 −0.0 −1.0	4.8 0.3 −1.0	4.3 −0.6 −1.3	3.6 −0.9 −1.2	−0.3 −1.1 −1.3	1.3 −1.4 −1.3	0.6 −1.3
16 −30°	51.4 0.4 −0.8	5.1 0.3 −0.6	5.4 0.0 −0.8	5.6 0.5 −0.6	5.8 0.3 −0.6	4.8 0.1 −0.8	3.4 −0.2 −0.8	0.3 −0.7 −0.8	1.2 −0.8 −0.8	0.6 −1.0
17 −37°	51.8 1.8 0.1	5.6 1.0 0.2	5.7 1.2 −0.0	5.8 1.5 0.3	5.9 2.1 0.3	5.3 1.0 0.1	4.6 0.4 −0.0	0.6 0.4 0.1	1.2 −0.1 0.2	1.8 0.0
18 −44°	52.2 4.2 1.5	7.9 3.4 1.8	7.5 3.3 1.7	7.0 4.5 2.4	6.4 5.5 2.1	7.2 3.4 1.8	7.9 2.1 1.6	1.9 2.3 1.5	3.4 1.6 1.8	4.1 1.4
19 −53°	52.8 7.7 5.4	11.8 8.7 5.7	11.5 7.4 5.8	11.2 10.3 7.0	10.8 11.6 6.3	12.7 8.3 5.8	14.1 6.4 5.3	7.8 6.4 4.9	9.1 5.6 4.8	9.9 5.2
20 −64°	53.3 12.1 10.1	16.6 14.0 10.4	16.8 12.7 10.8	16.9 15.8 12.0	17.1 17.0 11.2	18.4 13.3 10.4	19.4 11.3 9.8	13.5 11.2 9.2	15.0 10.4 8.7	15.5 10.1
21 −84°	53.0 14.9 12.6	19.4 16.7 12.8	19.6 15.4 13.2	19.9 18.3 14.4	20.0 19.5 13.7	21.1 15.9 12.8	22.0 13.8 12.0	15.8 13.6 11.3	17.7 12.7 10.8	18.1 12.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10C

STA TAPE 10J

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.8 17.8 9.7	25.8 16.1 9.2	25.0 14.3 9.6	23.9 14.1 9.1	22.5 13.0 8.8	21.4 12.2 9.0	19.8 11.5 8.5	21.0 10.1 8.3	23.4 9.4 8.5	20.6 9.6
2 +64°	58.5 18.0 10.2	26.1 16.7 10.0	25.1 14.8 10.2	24.0 14.4 9.8	22.3 13.5 9.6	21.4 12.3 9.6	20.1 11.9 9.3	21.5 10.9 9.2	22.8 10.4 9.0	21.4 10.3
3 +53°	58.3 18.1 9.6	25.4 16.4 10.0	24.4 15.0 10.0	23.0 14.0 9.6	21.0 12.7 9.3	20.2 11.2 9.3	19.2 11.2 9.1	20.1 10.5 8.9	20.4 10.2 8.8	19.9 9.5
4 +44°	57.7 16.7 8.8	24.7 15.7 8.6	23.4 14.7 9.1	21.7 12.9 8.6	18.9 11.7 8.3	18.5 10.5 8.5	18.0 10.3 8.3	18.9 9.6 8.2	18.6 9.4 8.1	18.4 8.7
5 +37°	57.1 15.0 8.2	23.2 13.6 8.0	22.1 13.2 8.2	20.6 12.2 7.9	18.3 11.0 7.8	17.4 10.4 7.9	16.2 9.8 7.6	17.8 8.9 7.5	18.0 8.8 7.5	16.8 8.2
6 +30°	56.3 12.9 6.9	19.0 10.7 6.4	18.5 10.2 6.5	18.0 10.5 6.4	17.4 9.7 6.3	15.7 8.5 6.4	12.9 7.8 6.4	14.5 7.6 6.2	15.6 7.0 6.1	14.3 6.9
7 +23°	55.3 10.2 5.1	15.1 8.0 5.1	16.2 7.5 5.2	17.0 7.8 5.2	17.8 7.7 5.1	15.5 6.7 5.0	10.4 5.9 5.0	11.7 5.9 4.9	11.7 5.3 4.8	11.1 5.6
8 +17°	53.7 5.5 2.6	13.7 4.3 2.5	16.1 4.6 2.6	17.7 3.9 2.6	18.8 3.7 2.6	16.2 3.0 2.4	8.2 3.1 2.4	8.2 2.9 2.5	7.2 2.8 2.5	6.8 2.7
9 +12°	51.8 2.2 0.3	11.1 1.4 0.2	13.7 1.2 0.1	15.3 1.3 0.3	16.5 0.6 0.2	13.9 0.2 0.1	6.7 0.3 0.0	4.2 0.4 0.2	2.8 0.1 0.0	3.4 -0.1
10 +6°	51.0 1.7 -1.0	6.6 1.4 -0.5	7.2 0.1 -0.6	7.7 1.3 -0.5	8.2 0.1 -1.0	6.9 -0.1 -0.8	5.2 -0.4 -0.9	2.5 -0.1 -0.8	2.3 -0.6 -0.9	2.3 -0.6
11 0°	50.9 1.5 -0.4	6.9 1.1 0.1	6.6 0.2 0.1	6.4 0.8 0.0	6.1 0.5 0.1	5.7 -0.3 -0.5	5.2 0.2 -0.3	3.3 1.1 -0.4	2.7 -0.1 -0.4	1.4 -0.6
12 −6°	51.2 2.0 -0.6	7.8 1.6 -0.3	8.1 0.9 0.0	8.4 0.5 0.0	8.7 0.3 -0.5	7.3 0.3 -0.6	5.1 0.6 -0.7	2.8 0.7 -0.7	3.2 -0.4 -0.6	2.4 -0.7
13 −12°	51.1 1.0 -0.8	7.0 0.7 -0.9	6.7 0.3 -1.1	6.4 -0.2 -0.5	6.1 0.7 -0.9	5.3 0.2 -1.1	4.2 -0.5 -0.8	1.6 -0.6 -1.1	2.7 -1.0 -1.0	1.5 -1.0
14 −17°	51.0 0.5 -1.2	5.7 0.5 -1.0	5.0 0.1 -1.0	4.2 -0.3 -1.0	3.2 0.7 -1.4	3.6 -0.0 -1.3	4.0 -1.0 -1.1	0.5 -1.0 -1.2	2.1 -1.2 -1.1	1.6 -1.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 10J

PAGE 2

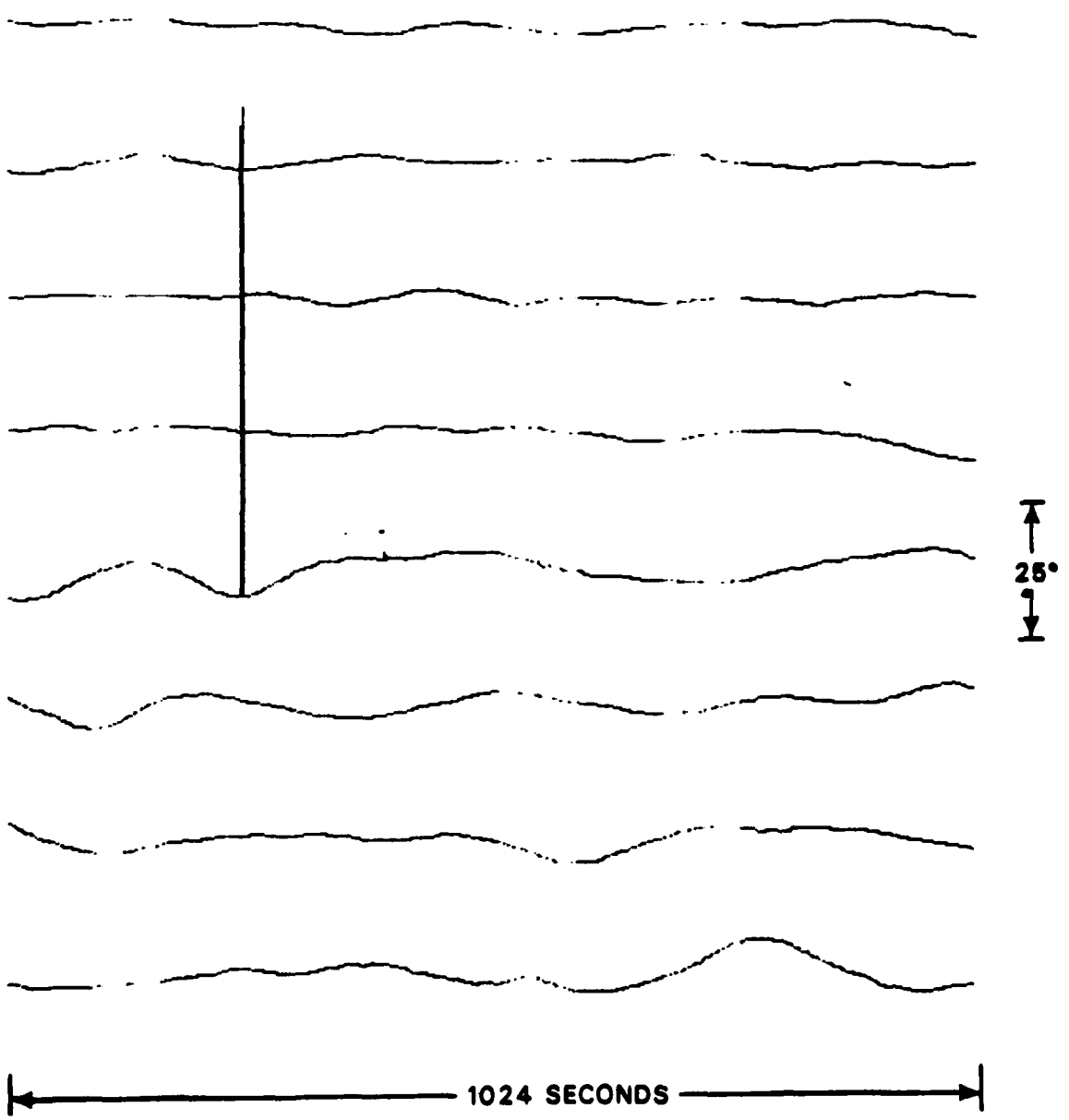
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.0 0.7 −0.6	5.9 0.7 −0.7	5.5 0.1 −0.5	5.2 0.6 −0.4	4.8 0.6 −0.9	4.5 0.3 −0.8	4.2 −0.5 −0.6	0.8 −0.7 −0.7	2.2 −0.8 −0.6	1.8 −1.0
16 −30°	51.3 0.3 −0.6	6.0 0.6 −0.6	6.2 0.1 −0.6	6.5 0.9 −0.5	6.7 0.7 −0.7	5.5 0.6 −0.6	3.8 −0.6 −0.5	1.2 −0.5 −0.5	1.4 −0.5 −0.5	2.0 −0.6
17 −37°	51.6 1.3 0.4	7.3 2.4 0.2	7.2 0.8 0.5	7.2 2.9 0.6	7.2 2.1 0.2	6.0 1.4 0.6	4.4 0.9 0.5	2.8 0.8 0.4	2.1 0.9 0.3	2.2 0.1
18 −44°	52.0 4.6 1.9	9.4 5.4 2.0	9.3 4.2 2.6	9.1 7.0 2.7	9.0 5.8 2.3	8.3 4.3 2.8	7.4 3.4 2.5	7.0 2.8 2.1	5.5 2.7 1.7	5.2 2.5
19 −53°	52.7 10.7 6.2	13.4 11.1 6.0	14.1 9.5 7.1	14.6 13.3 7.3	15.2 11.7 6.4	14.0 10.5 7.2	12.5 8.6 6.6	13.5 7.1 5.8	11.4 7.3 5.5	11.4 6.5
20 −64°	53.2 16.5 11.0	17.9 16.6 10.6	19.3 14.6 11.9	20.4 18.8 12.2	21.2 17.5 10.9	19.7 16.0 11.7	17.3 13.9 11.1	19.3 11.9 10.0	16.8 12.1 9.5	17.1 11.1
21 −84°	53.0 19.1 13.4	20.2 19.3 13.0	21.9 17.1 14.3	23.2 21.3 14.6	24.1 20.0 13.2	22.5 18.6 14.0	19.6 16.4 13.4	21.7 14.4 12.4	19.3 14.5 11.7	19.7 13.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10C

BEARING VS TIME

MEAN & VAR.	269.0	0.67	268.7	0.84	268.9	0.73	268.5	2.35
268.6	13.85	269.3	3.95	268.8	3.45	268.6	6.68	

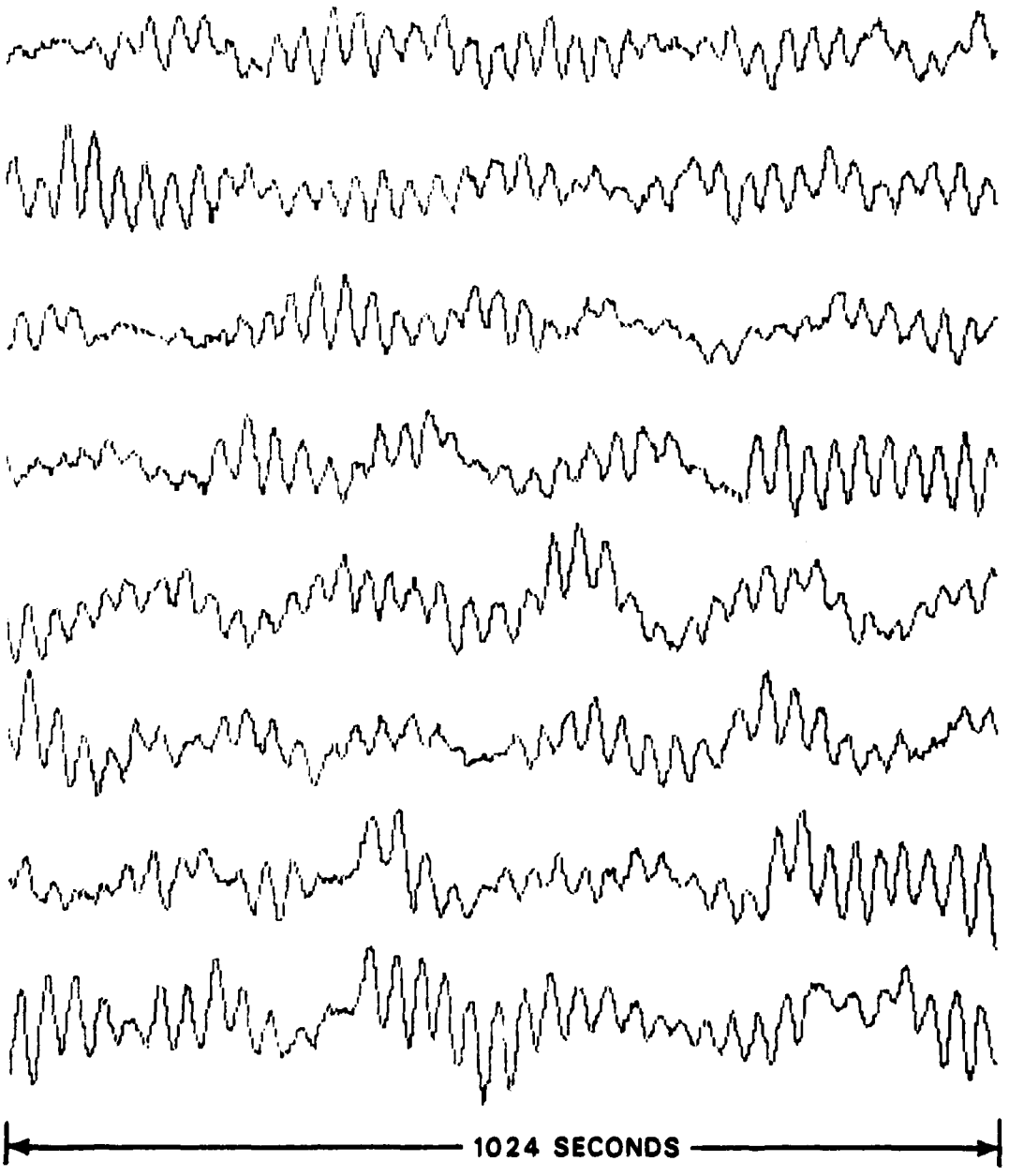


MPL-M-4936

GROUP 10C

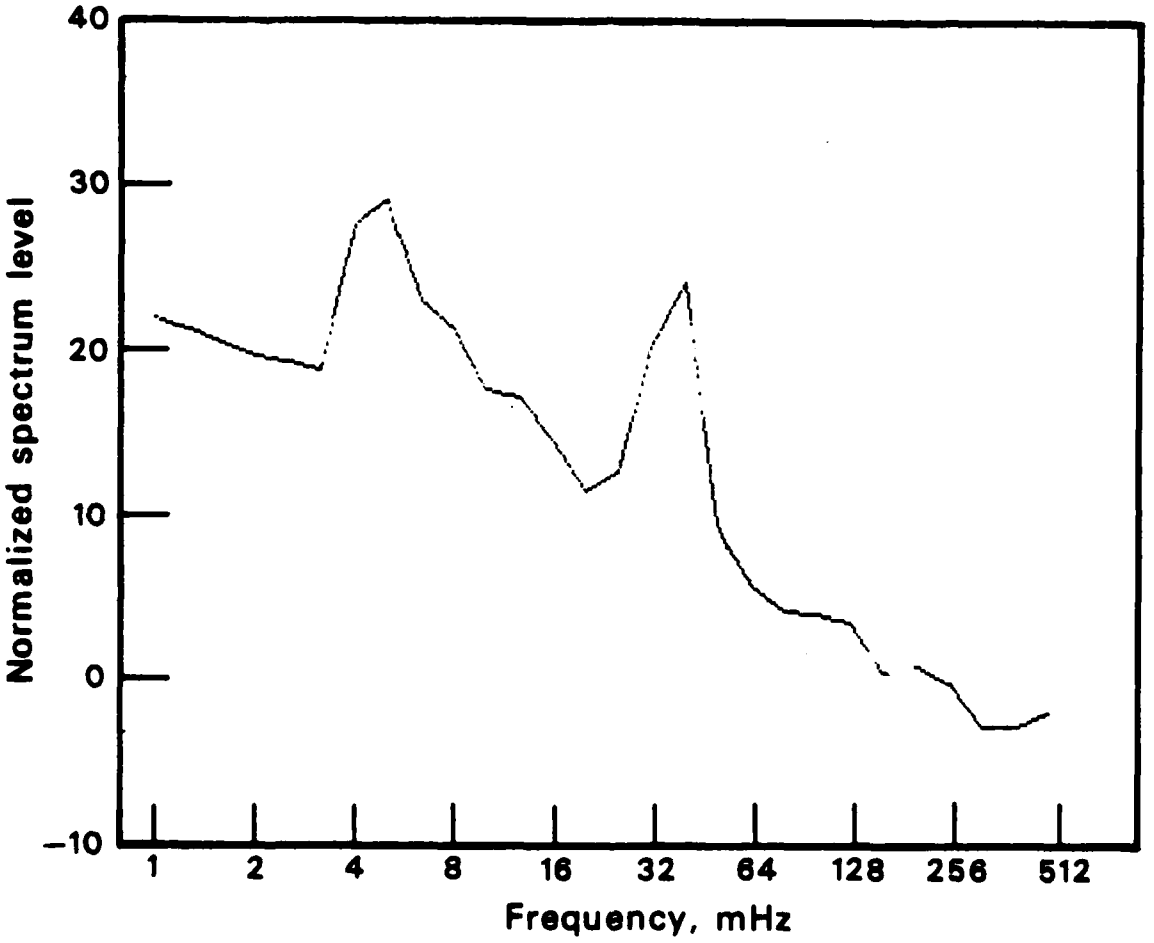
ELEVATION VS TIME

MEAN % VAR	92.7	0.27	92.0	0.37	92.8	0.31	92.6	0.50	
92.6	0.75	92.5	0.53	92.6	0.60	92.4	0.92		



MPL-M-4937

GROUP 10C



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 10D

Environmental Summary

10 June 1978

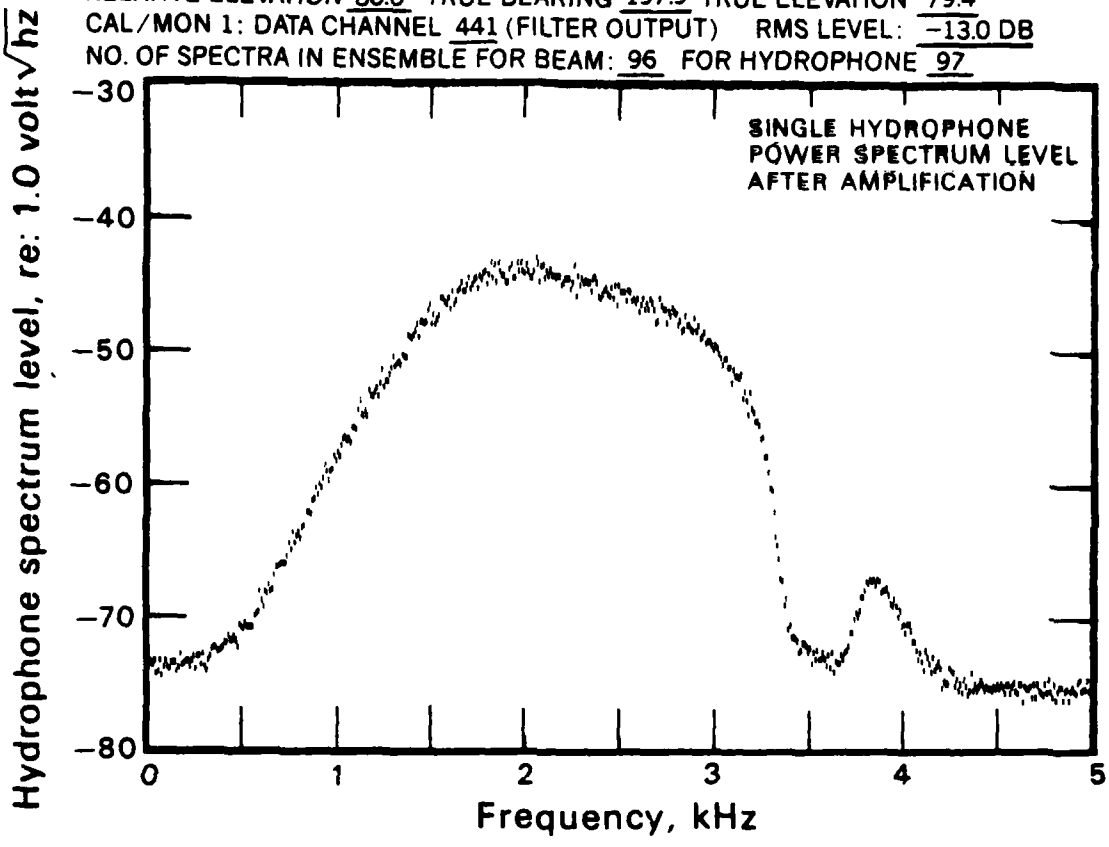
Tapes	Start time	Code
LTA/LOG	17:38:36	10D
STA	17:40:58	10K
STA	18:31:19	10L
High Band Filter		

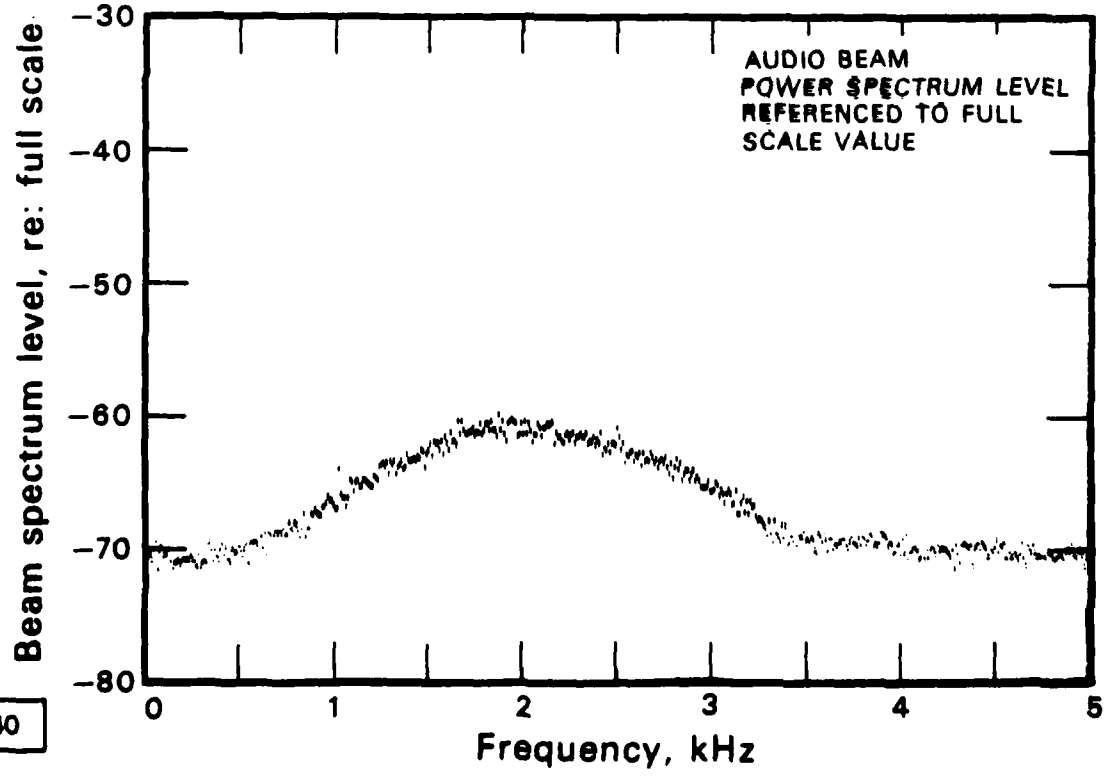
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
18:00	2500	22	325	8-12	6-10	NW	Chop
19:30	2500	21	"	"	"	"	No targets

10-JUN-78 17:59:48 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 197.9 TRUE ELEVATION 79.4
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: −13.0 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 97

GROUP 10D





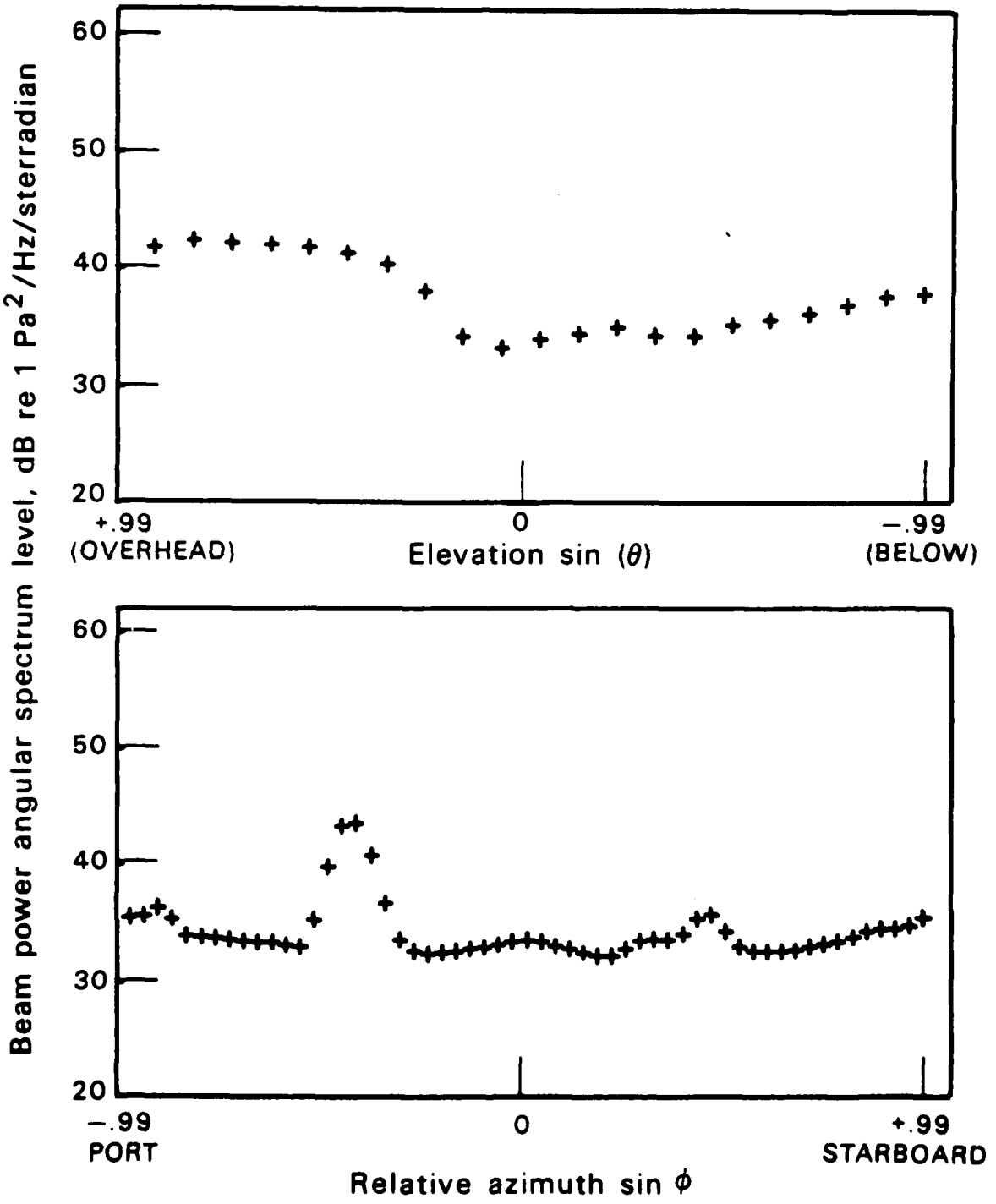
MPL-M-4940

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 10D

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

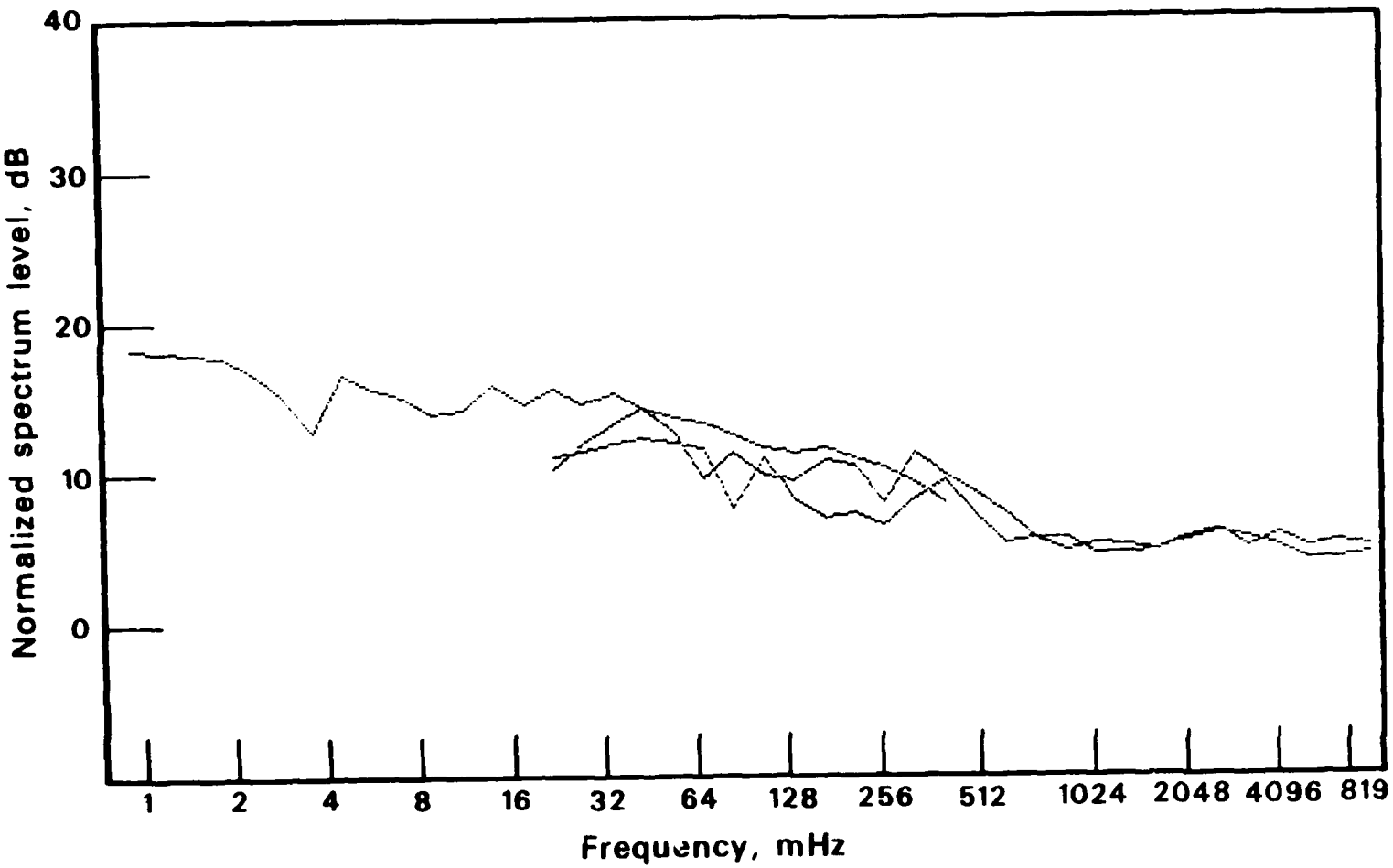
POWER HAS BEEN CORRECTED FOR DIMUS NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4941

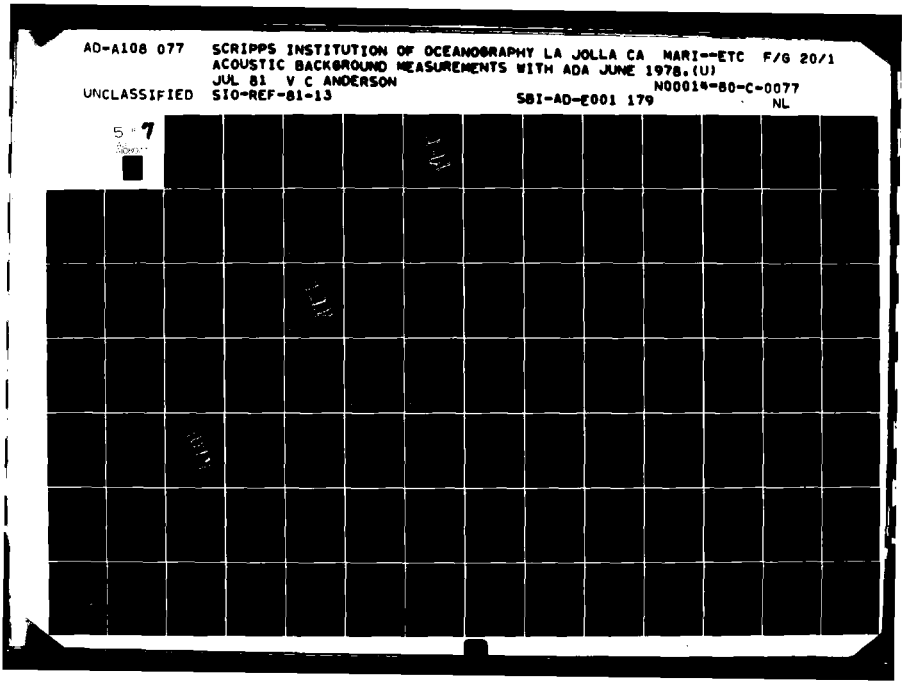
MPL-M-4942

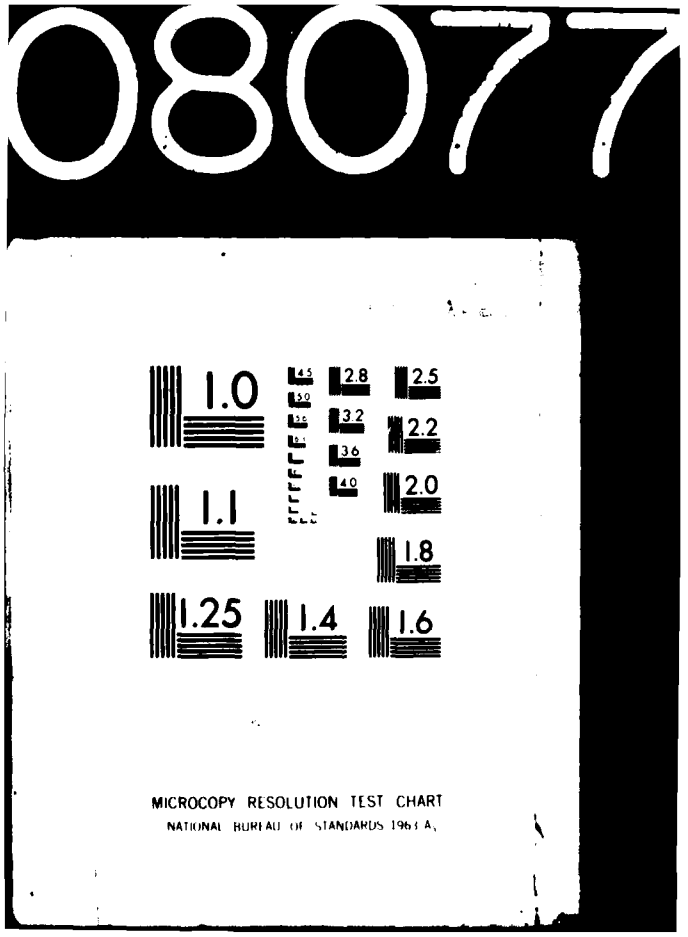
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 10D

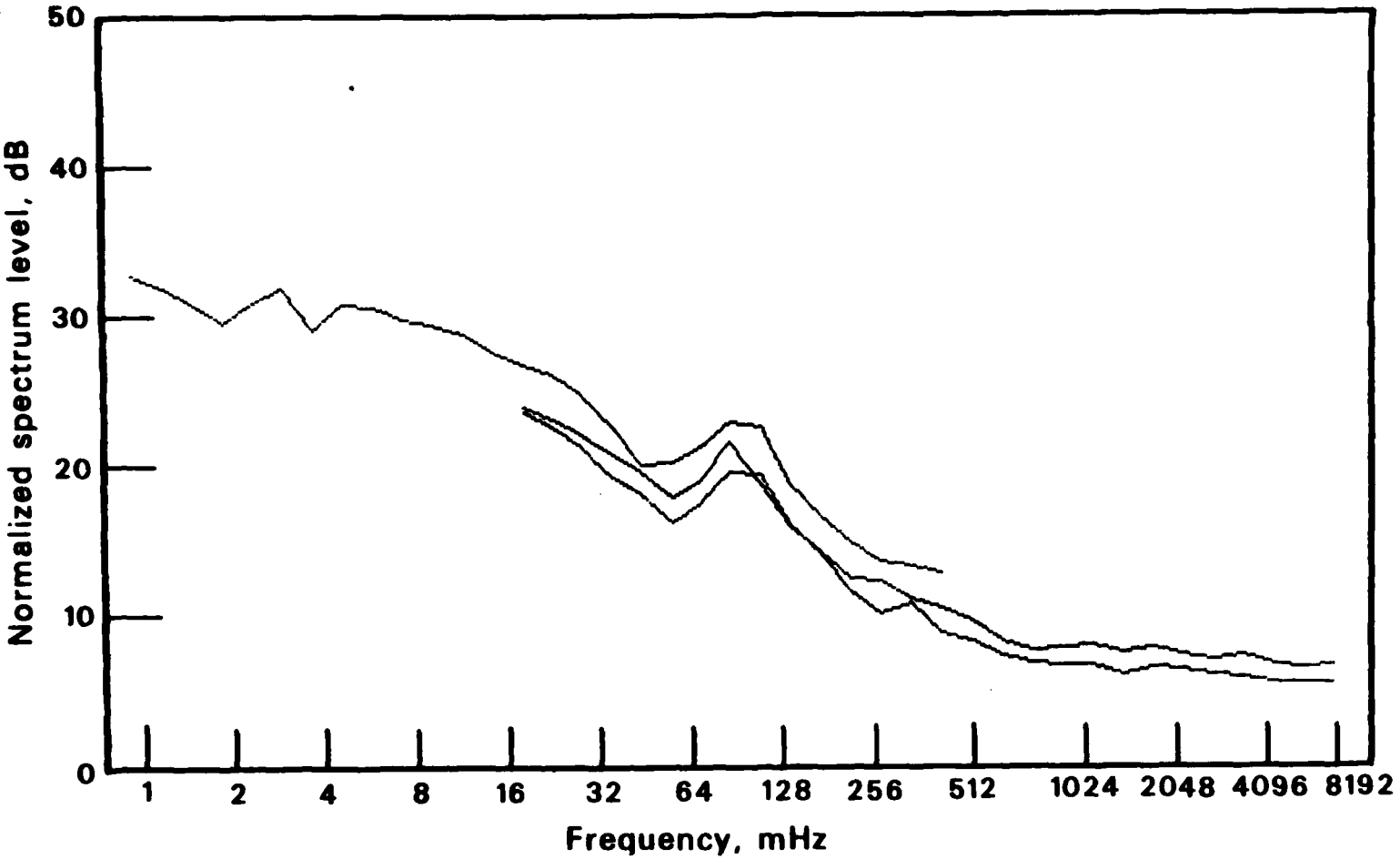
AD-A108 077 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA MARI--ETC F/G 20/1
ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978.(U)
JUL 81 V C ANDERSON N00014-80-C-0077
UNCLASSIFIED SIO-REF-81-13 SBI-AD-E001 179 NL




08077
1.0
1.1
1.25
1.4
1.6
2.8
3.2
3.6
4.0
2.5
2.2
2.0
1.8
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

MPL-M-4943

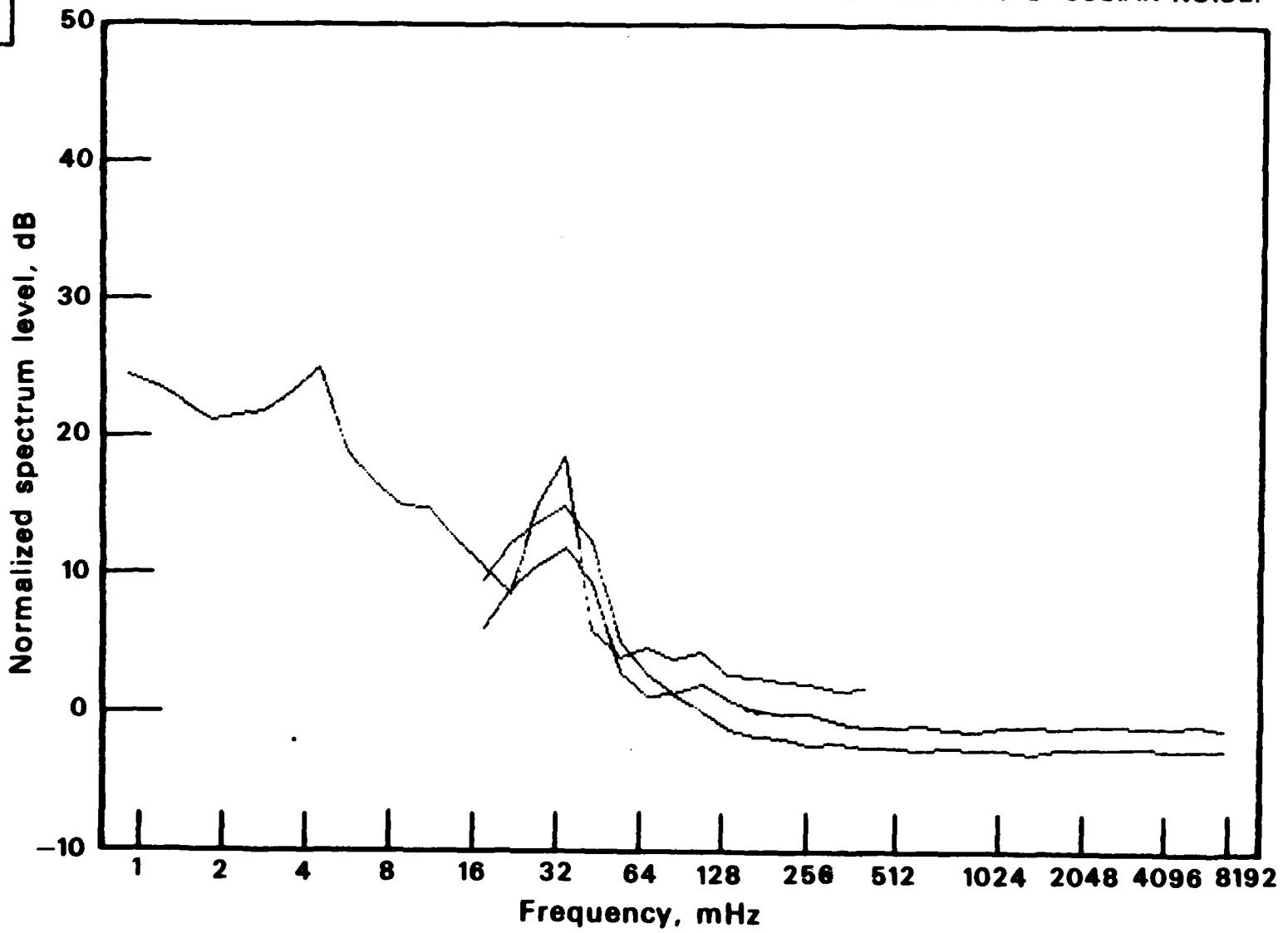
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10D

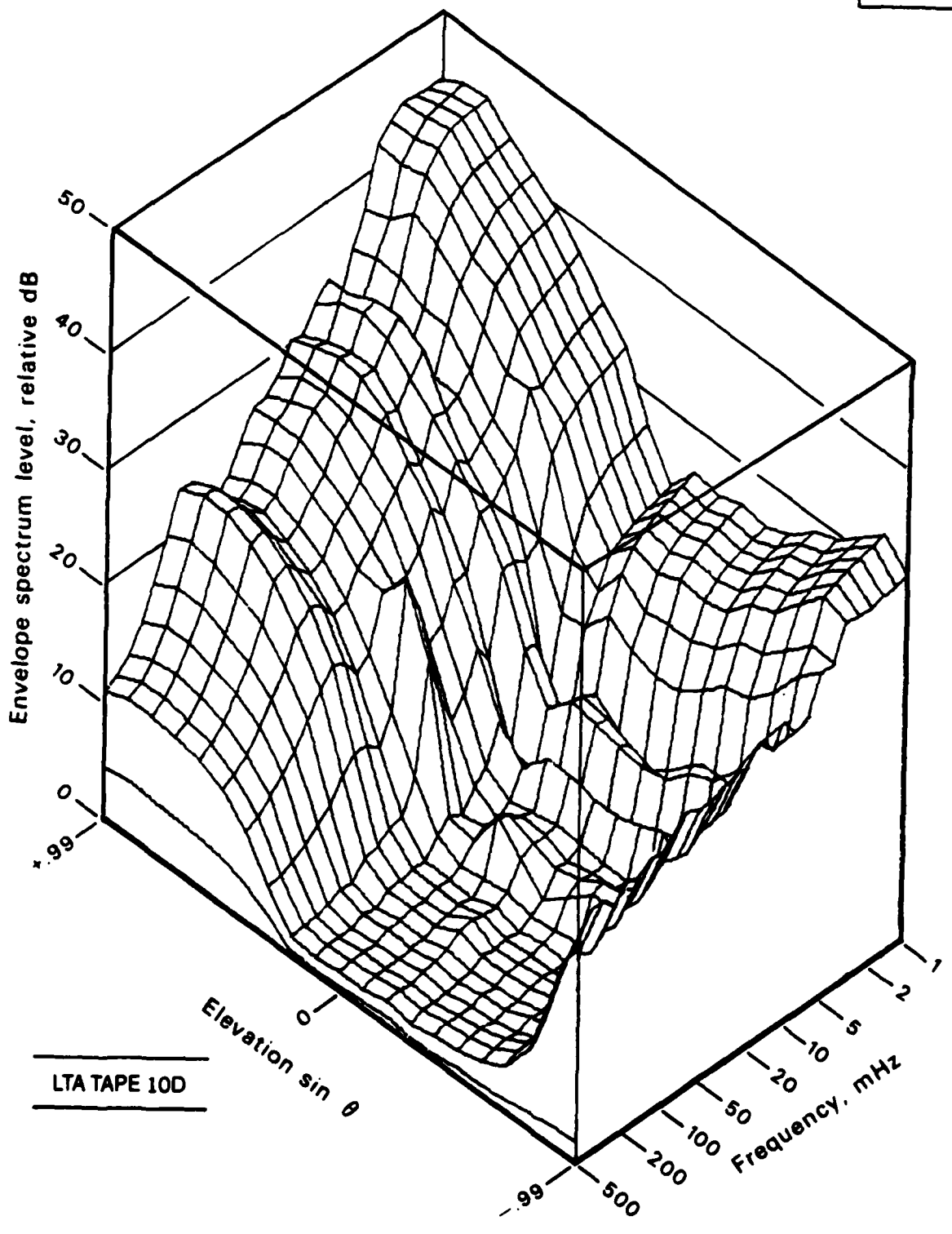
MPL-M-4944

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 10D

GROUP 10D

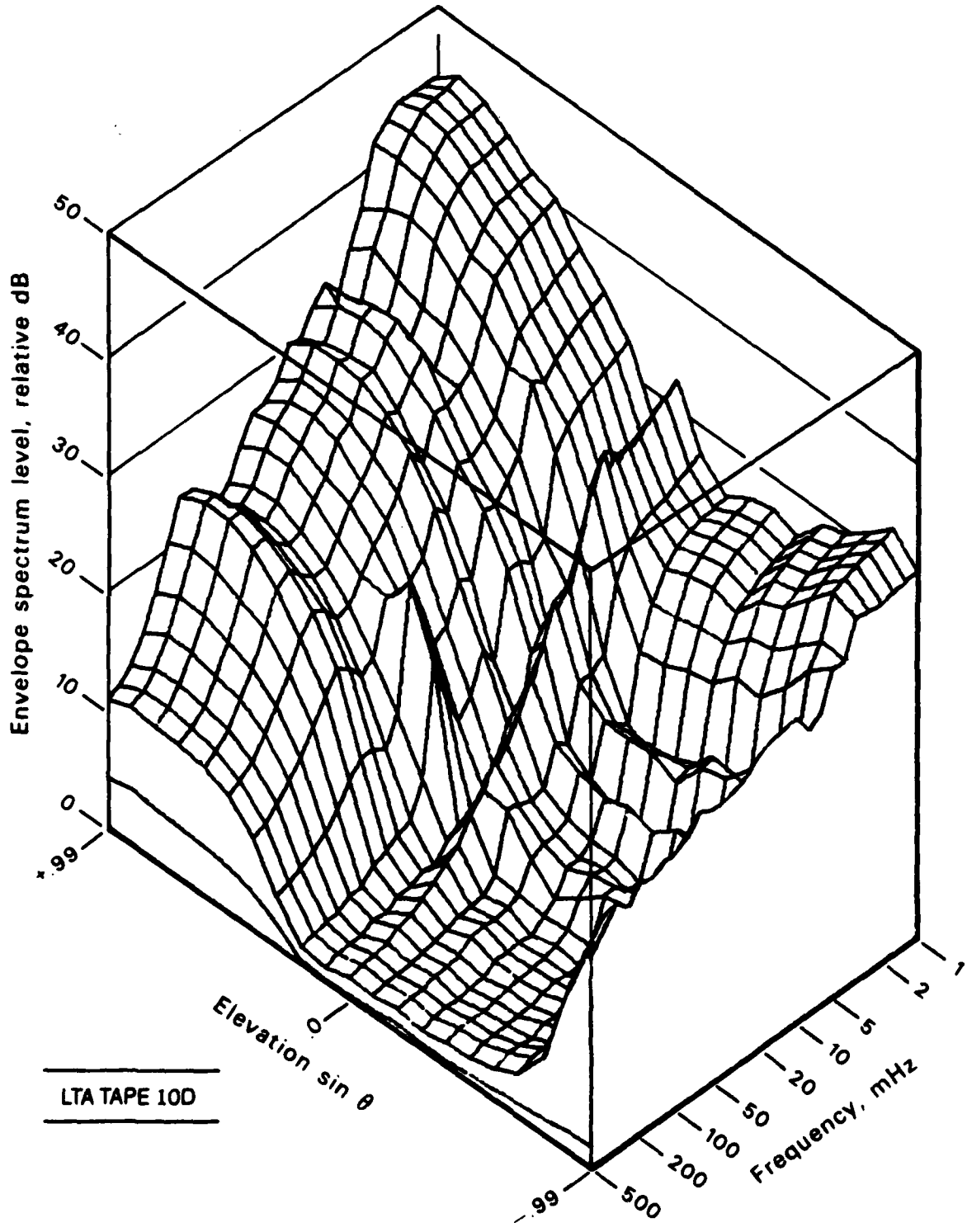


LTA TAPE 10D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4945

GROUP 10D



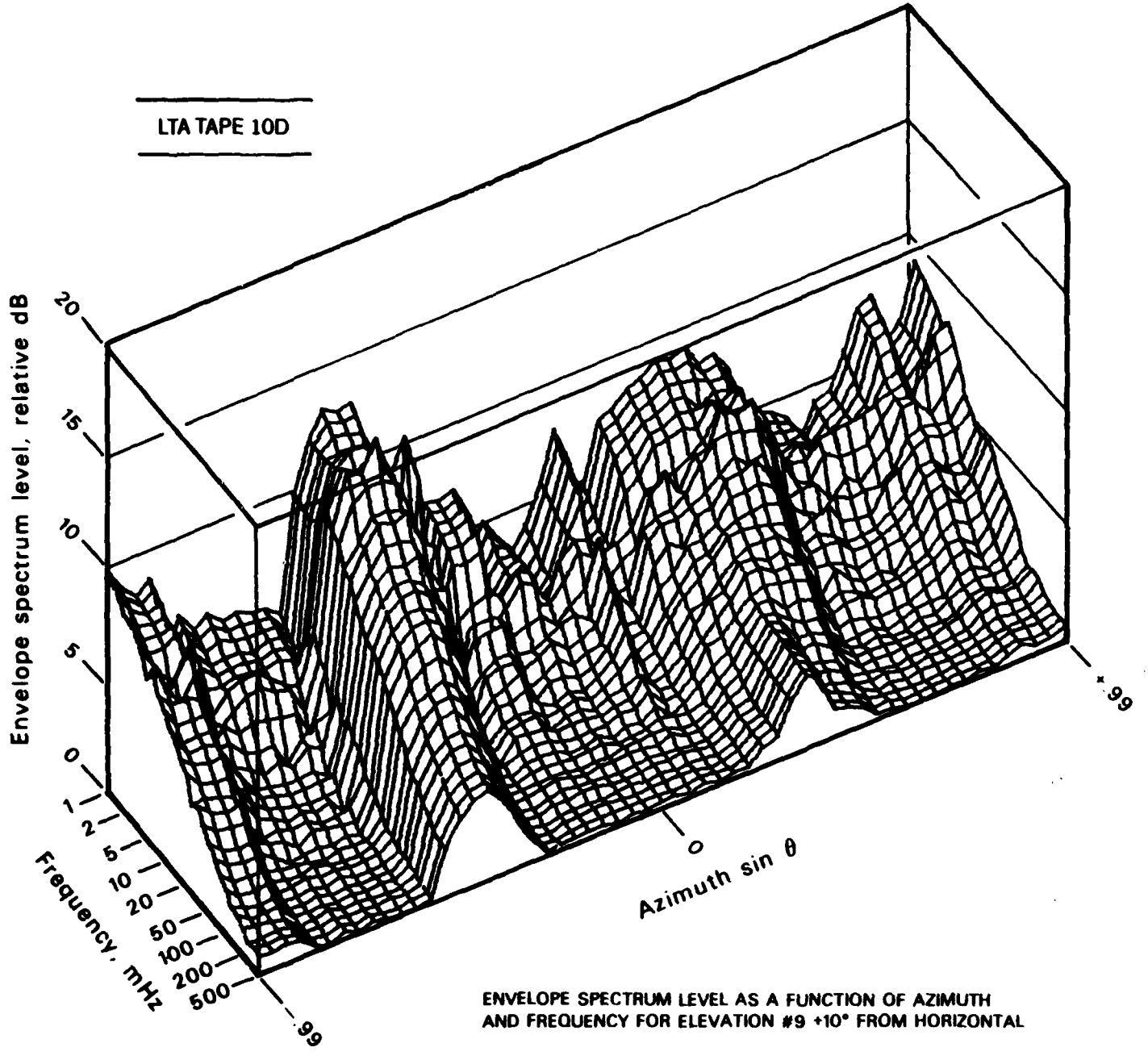
LTA TAPE 10D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4946

MPL-M-4947

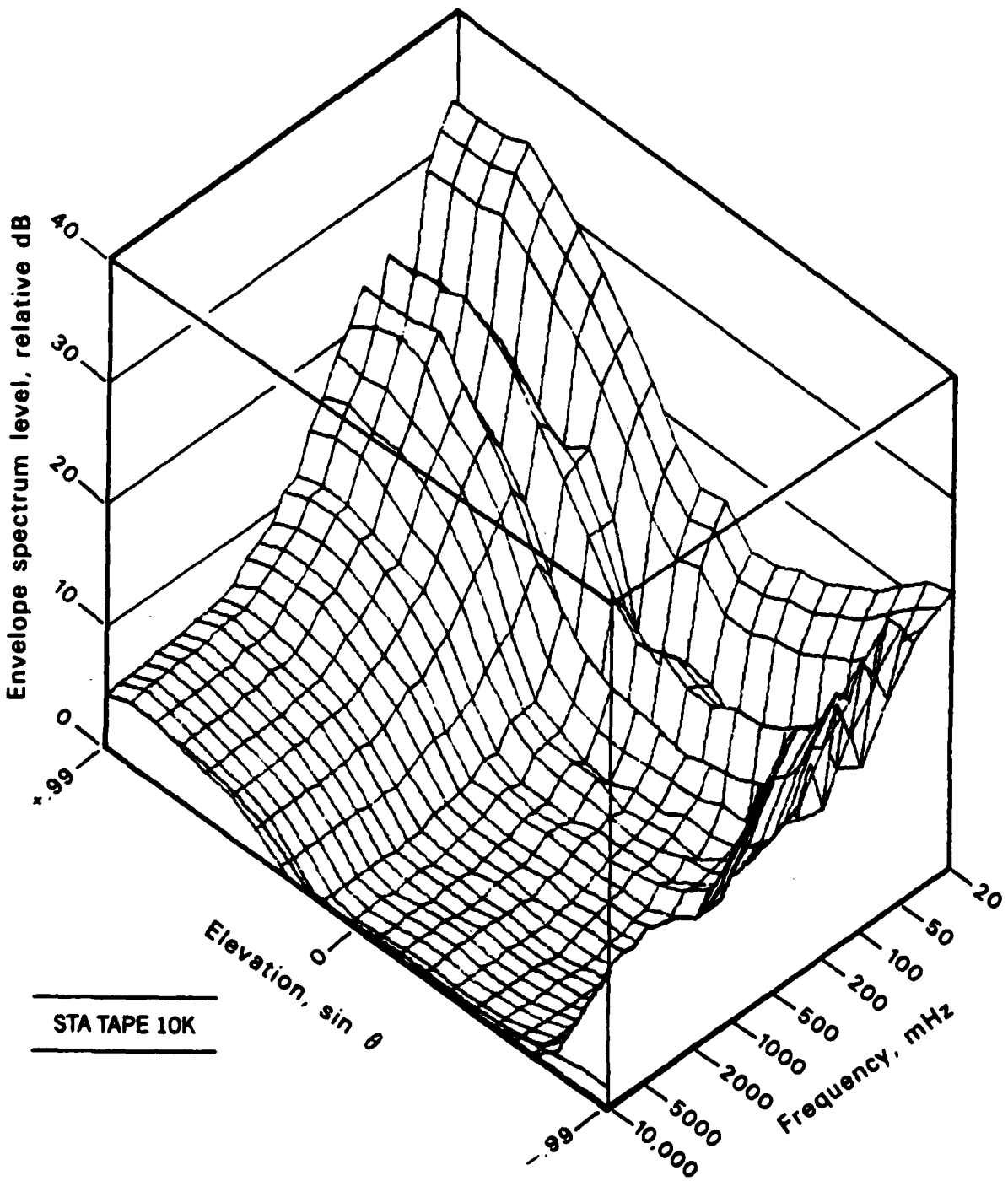
LTA TAPE 10D



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 10D

GROUP 10D

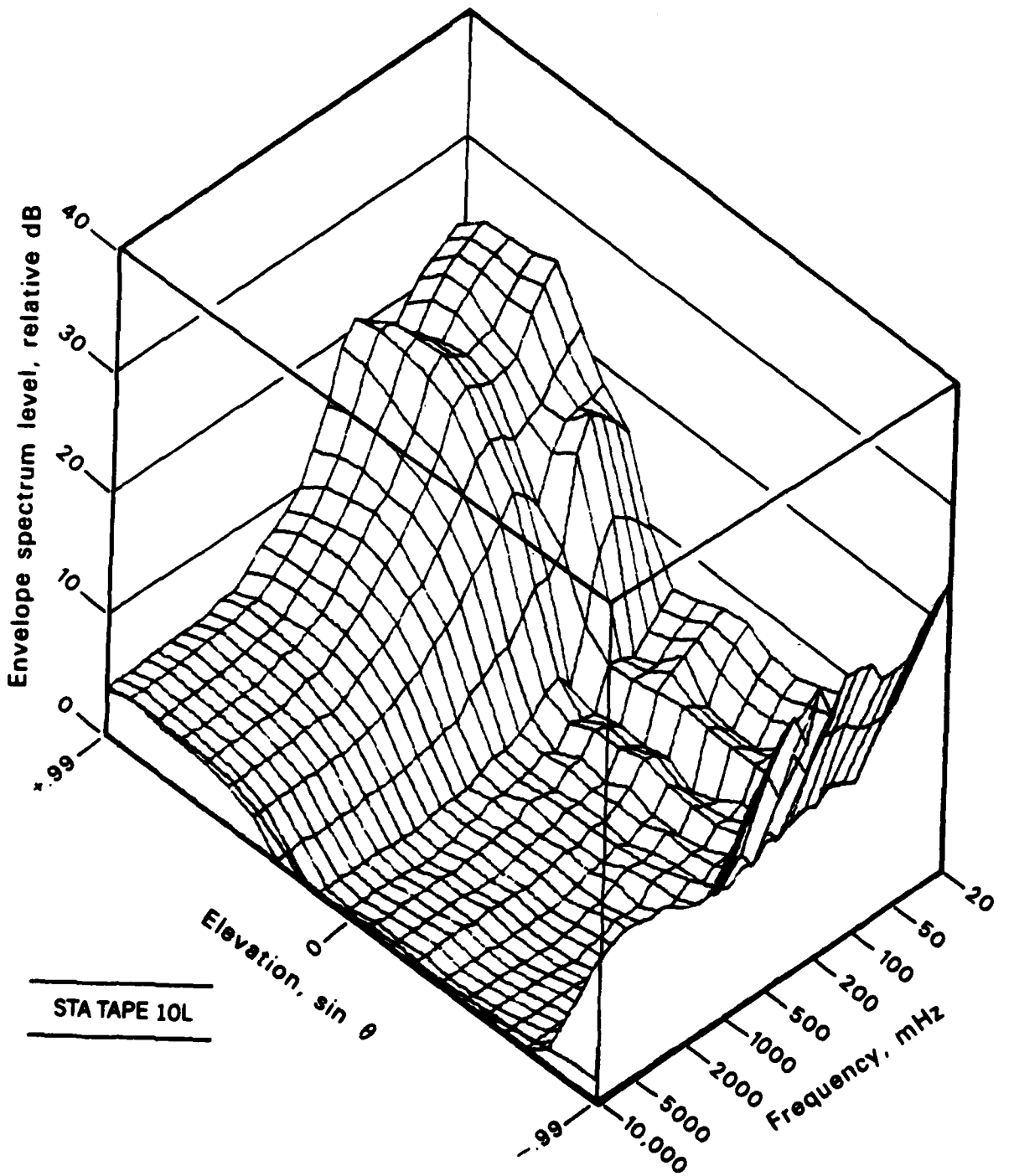


STA TAPE 10K

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4948

GROUP 10D



STA TAPE 10L

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4949

GROUP 10D

LTA TAPE 10D

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.9	39.2	39.3	39.3	39.3	38.4	37.3	32.3	29.6	25.7
ANGLE +84°	28.3	26.9	24.9	25.3	22.7	21.7	21.5	19.2	16.9	15.9
	16.5	18.5	18.7	15.4	11.9	9.2	7.2	6.1	5.5	
2	67.4	40.4	40.1	39.9	39.7	38.5	36.9	32.9	30.3	27.3
+64°	28.6	28.5	25.9	26.0	24.2	22.8	21.8	20.3	18.0	17.1
	17.7	19.5	19.6	16.2	13.0	10.3	8.2	6.9	6.2	
3	67.2	40.7	40.5	40.3	40.2	39.1	37.6	35.0	30.1	27.2
+53°	29.6	29.1	26.9	26.7	24.3	23.5	21.8	20.5	18.3	17.5
	18.4	19.6	19.6	15.9	12.9	10.4	8.5	7.1	6.2	
4	67.1	38.7	38.5	38.3	38.1	37.2	36.0	33.8	29.0	26.5
+44°	29.7	28.4	26.5	26.5	23.7	22.6	20.3	19.1	17.2	16.5
	17.5	18.9	18.5	14.8	12.1	9.7	8.0	6.6	5.9	
5	66.9	37.1	36.8	36.6	36.2	35.1	33.6	31.9	28.9	25.2
+37°	28.3	26.5	24.5	25.0	22.3	20.5	19.1	17.8	15.8	15.2
	16.2	17.5	16.7	13.7	11.0	9.2	7.4	6.1	5.5	
6	66.6	35.5	35.2	34.8	34.4	33.5	32.5	29.6	26.6	25.1
+30°	24.4	24.7	21.3	22.1	20.4	18.9	17.1	15.7	13.7	13.1
	14.7	15.3	13.9	11.4	9.3	7.7	6.0	5.0	4.4	
7	65.9	33.3	32.8	32.2	31.5	30.8	30.0	27.2	23.9	22.8
+23°	21.5	22.5	18.4	19.7	16.8	15.2	15.1	15.3	10.7	9.6
	11.2	11.8	10.3	8.3	6.3	5.2	3.9	2.8	2.3	
8	64.6	30.5	30.0	29.5	28.8	27.9	26.8	27.2	22.3	20.8
+17°	19.3	19.4	14.8	14.8	11.9	10.8	14.8	17.8	7.1	4.6
	5.5	5.5	4.3	2.5	1.4	0.4	-0.3	-0.8	-1.1	
9	63.0	28.2	27.8	27.3	26.8	25.9	24.9	23.1	16.6	15.3
+12°	16.0	16.0	8.9	10.6	7.3	5.7	8.4	12.3	2.9	0.1
	-0.2	-0.9	-1.4	-2.7	-2.6	-3.3	-3.5	-3.6	-3.8	
10	62.8	22.9	22.6	22.2	21.8	20.9	19.8	16.5	11.6	5.0
+6°	10.1	10.4	2.4	5.8	2.4	1.4	-0.3	0.2	-0.8	-2.3
	-2.1	-2.5	-2.7	-3.5	-3.7	-3.8	-3.9	-3.9	-4.1	
11	63.0	19.1	18.8	18.5	18.1	17.5	16.7	14.3	11.9	4.9
0°	6.3	7.0	2.1	3.2	0.9	0.1	0.3	-0.4	-1.8	-2.3
	-2.3	-2.8	-2.6	-3.0	-3.1	-3.6	-3.6	-3.7	-3.9	
12	63.1	21.8	21.4	20.9	20.4	19.7	19.0	17.3	14.3	8.2
−6°	8.7	9.0	3.2	5.4	1.4	1.8	2.8	3.3	-1.4	-2.4
	-2.2	-2.5	-2.7	-3.1	-3.2	-3.5	-3.6	-3.5	-3.8	
13	63.3	21.3	20.9	20.6	20.2	19.3	18.1	15.4	12.9	6.4
−12°	8.4	8.5	3.9	5.4	1.9	1.7	1.7	1.0	-1.2	-1.7
	-1.6	-1.3	-1.6	-2.5	-2.8	-3.0	-3.3	-3.3	-3.4	
14	63.1	22.0	21.6	21.3	20.9	20.1	19.1	15.8	12.1	3.2
−17°	7.5	8.1	2.0	4.8	1.8	0.8	1.0	-0.9	-1.7	-2.4
	-2.2	-2.5	-2.3	-3.0	-3.1	-3.4	-3.5	-3.4	-3.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 10D

LTA TAPE 10D

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	21.6	21.3	20.9	20.5	19.7	18.7	15.9	12.4	4.5
ANGLE −23°	6.8	7.8	2.0	4.9	1.5	1.4	1.6	0.7	−1.5	−1.9
	−2.2	−2.2	−2.3	−2.8	−2.7	−3.0	−3.1	−3.0	−3.4	
16	63.4	22.4	22.0	21.6	21.2	20.3	19.3	16.8	13.8	6.4
−30°	8.4	8.3	2.4	5.6	1.5	1.5	2.9	2.5	−1.0	−2.0
	−2.1	−1.9	−2.1	−2.5	−2.6	−2.8	−2.7	−2.8	−3.2	
17	63.6	24.2	23.9	23.5	23.1	22.4	21.4	18.8	15.8	7.3
−37°	10.4	10.3	4.1	6.5	3.2	3.0	3.3	2.8	−0.1	−1.0
	−1.0	−1.4	−1.3	−1.9	−1.7	−2.3	−2.1	−2.2	−2.6	
18	63.8	25.0	24.6	24.2	23.7	23.1	22.3	19.3	16.2	8.0
−44°	10.7	11.2	5.0	7.1	3.9	3.7	4.0	3.1	0.9	0.6
	0.3	−0.5	−0.4	−0.8	−0.8	−1.4	−1.0	−1.1	−1.6	
19	64.1	26.8	26.5	26.2	25.9	25.3	24.5	21.3	18.2	10.1
−53°	13.0	13.5	7.4	9.8	6.8	6.5	6.6	4.5	4.6	4.6
	4.2	3.1	3.0	2.6	2.7	1.8	2.5	2.5	1.3	
20	64.4	28.5	28.2	27.9	27.6	27.2	26.7	23.2	21.2	15.3
−64°	16.3	17.6	13.6	15.2	13.5	13.4	13.2	12.1	12.4	12.9
	11.7	10.9	10.8	10.0	10.3	9.0	10.0	10.0	8.4	
21	64.5	26.4	26.2	26.0	25.8	25.9	26.0	23.0	23.0	20.0
−84°	19.2	20.9	18.8	20.5	17.0	19.1	18.7	18.3	18.2	18.8
	17.8	16.6	16.7	15.9	16.3	14.8	15.9	15.8	14.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 10D

LTA TAPE 10D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.7	39.2	39.2	39.3	37.3	38.4	37.2	32.3	29.7	25.7
ANGLE +84°	28.2	26.9	24.9	25.3	22.7	21.7	21.5	19.2	16.9	15.8
	16.5	18.5	18.7	15.4	11.7	9.1	7.0	6.0	5.6	
2	67.4	40.8	40.5	40.3	40.1	38.9	37.4	33.8	31.2	27.2
+64°	28.5	28.4	26.0	26.6	24.3	23.1	22.0	20.5	18.1	17.1
	17.9	19.6	19.7	16.3	13.0	10.3	8.2	7.0	6.4	
3	67.2	40.0	39.9	39.7	37.5	38.4	36.9	34.5	29.9	27.0
+53°	29.2	28.8	26.3	26.7	24.1	23.4	21.7	20.5	18.2	17.3
	18.3	19.6	19.6	15.9	12.7	10.3	8.4	7.1	6.3	
4	67.1	38.6	38.4	38.2	38.0	37.1	36.0	33.9	29.0	26.9
+44°	29.4	28.3	26.6	26.4	23.6	22.7	20.4	19.1	17.2	16.7
	17.5	18.8	18.5	14.8	12.1	9.7	8.0	6.8	6.1	
5	66.9	37.0	36.8	36.5	36.3	35.2	33.6	31.9	28.7	25.8
+37°	28.2	26.5	24.6	25.0	22.2	20.6	19.5	17.3	15.7	15.4
	16.3	17.5	16.6	13.8	11.1	9.2	7.4	6.3	5.7	
6	66.6	36.2	35.8	35.3	34.8	34.0	33.0	30.0	26.8	25.7
+30°	25.0	25.0	21.6	23.2	20.4	18.8	17.4	15.5	13.7	13.3
	14.8	15.3	13.8	11.5	9.4	7.8	6.0	5.2	4.7	
7	65.9	33.5	32.9	32.3	31.5	30.8	29.9	27.5	24.1	22.9
+23°	21.9	22.3	18.7	19.8	16.4	15.2	14.8	15.1	10.6	9.8
	11.2	12.0	10.4	8.4	6.4	5.2	3.9	2.9	2.5	
8	64.6	31.2	30.6	30.0	27.2	28.3	27.1	27.8	22.2	20.8
+17°	19.4	19.6	14.5	15.1	11.9	11.1	14.8	17.9	7.3	4.9
	5.6	5.6	4.4	2.6	1.4	0.6	-0.2	-0.7	-1.1	
9	63.0	28.4	27.9	27.3	26.7	25.8	24.8	23.2	16.5	15.3
+12°	16.1	15.9	8.8	10.7	7.4	6.0	8.6	12.4	3.1	0.3
	-0.2	-0.9	-1.4	-2.4	-2.5	-3.2	-3.3	-3.5	-3.9	
10	62.8	23.3	22.7	22.1	21.3	20.6	19.7	17.3	13.7	8.7
+6°	10.5	10.3	4.7	5.6	2.6	1.5	0.2	-0.2	-0.8	-2.1
	-2.0	-2.5	-2.7	-3.3	-3.2	-3.8	-3.8	-3.9	-4.2	
11	63.0	28.0	27.3	26.4	25.4	25.3	25.3	26.4	24.3	19.3
0°	17.1	16.4	13.3	11.2	8.7	6.8	6.2	4.4	3.0	1.1
	0.3	-0.6	-1.3	-1.9	-2.3	-2.9	-3.2	-3.3	-3.5	
12	63.1	23.2	22.7	22.1	21.5	21.1	20.7	19.8	17.3	11.7
−6°	10.8	10.7	6.2	7.0	3.8	3.5	3.8	4.0	-0.7	-1.8
	-2.0	-2.2	-2.5	-2.8	-3.0	-3.3	-3.5	-3.5	-3.8	
13	63.3	20.9	20.7	20.5	20.2	19.4	18.5	16.0	12.7	7.1
−12°	7.9	8.9	4.6	5.9	2.7	2.1	2.0	1.4	-1.0	-1.4
	-1.9	-1.3	-1.6	-2.5	-2.7	-2.8	-3.2	-3.3	-3.4	
14	63.1	22.2	21.8	21.4	21.0	20.2	19.3	16.3	13.0	5.7
−17°	8.1	8.7	3.4	5.1	2.2	1.4	1.3	-0.6	-1.3	-2.3
	-2.1	-2.4	-2.3	-3.0	-3.1	-3.4	-3.4	-3.5	-3.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 10D

LTA TAPE 10D

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	63.1 8.3 −1.9	22.7 9.1 −2.2	22.3 3.7 −2.3	21.8 5.8 −2.6	21.4 2.3 −2.7	20.6 2.0 −2.9	19.7 2.3 −2.9	16.9 1.0 −2.9	14.0 −1.0 −3.4	7.0 −1.6
16 −30°	63.4 8.5 −2.0	21.9 8.0 −1.8	21.5 3.0 −2.1	21.1 5.1 −2.6	20.6 1.5 −2.6	19.9 1.5 −2.8	19.0 2.7 −2.8	17.1 2.5 −2.8	14.4 −1.0 −3.2	8.1 −1.9
17 −37°	63.6 10.9 −0.9	24.3 10.8 −1.5	24.0 5.2 −1.3	23.6 6.9 −1.9	23.2 3.4 −1.7	22.5 3.3 −2.3	21.5 3.5 −2.1	19.1 3.0 −2.2	16.4 −0.1 −2.7	8.6 −0.9
18 −44°	63.8 10.7 0.4	25.0 11.3 −0.5	24.6 5.3 −0.4	24.2 7.1 −0.7	23.8 4.0 −0.8	23.1 3.8 −1.3	22.3 4.0 −1.0	19.5 3.2 −1.1	16.1 1.0 −1.7	8.5 0.5
19 −53°	64.1 12.7 4.1	26.7 13.6 3.1	26.5 7.4 3.0	26.2 9.7 2.6	25.9 6.7 2.8	25.2 6.4 1.9	24.5 6.4 2.6	21.3 4.4 2.5	18.3 4.6 1.2	10.2 4.4
20 −64°	64.4 16.1 11.9	28.5 17.6 10.8	28.2 13.5 10.7	27.9 15.2 10.1	27.5 13.5 10.4	27.1 13.4 9.1	26.7 13.1 10.1	23.2 12.0 10.1	21.3 12.4 8.3	15.3 12.8
21 −84°	64.5 19.1 17.8	26.4 20.9 16.6	26.2 18.8 16.7	26.0 20.5 15.9	25.7 19.0 16.3	25.9 19.1 14.8	26.0 18.6 15.9	23.0 18.2 15.8	23.1 18.2 14.1	20.0 18.8

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 10D

GROUP 10D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.4	34.9	33.9	32.6	30.7	30.2	29.7	27.8	23.9	27.1
ANGLE −71.3°	23.6	22.2	20.4	18.6	16.9	15.2	10.9	11.9	9.7	7.7
	6.2	4.4	2.9	0.9	0.7	-0.4	-1.7	-1.4	-1.7	
2	63.5	30.8	30.0	28.9	27.5	26.4	24.8	23.8	23.7	22.8
−66°	20.5	18.2	16.1	15.7	14.7	12.5	10.9	9.5	7.6	5.1
	3.9	2.1	0.6	-0.1	-0.9	-0.8	-2.0	-1.9	-2.1	
3	63.8	28.1	27.7	27.3	26.9	26.0	24.8	18.7	21.4	18.3
−61.6°	20.9	18.2	16.2	15.7	13.8	11.6	10.1	8.5	7.0	4.4
	3.1	2.1	0.6	-0.8	-0.9	-1.3	-1.7	-1.5	-1.4	
4	63.4	30.4	29.5	28.4	26.9	26.6	26.4	23.9	26.3	23.1
−57.8°	19.5	17.7	16.1	14.8	14.1	11.4	9.2	9.0	6.9	4.5
	3.2	1.9	0.7	-0.4	-0.9	-2.1	-2.1	-2.3	-2.1	
5	62.9	14.3	13.1	11.5	8.9	16.7	19.3	14.8	15.0	13.4
−54.3°	8.8	10.0	9.2	4.2	7.1	5.8	2.9	1.2	0.1	-1.7
	-2.4	-3.2	-3.5	-3.6	-3.6	-4.2	-4.3	-4.2	-4.3	
6	62.9	21.4	20.6	19.5	18.1	16.5	14.1	10.9	7.7	11.0
−51.1°	9.3	6.1	5.5	5.0	3.5	1.7	-0.8	-0.4	-1.8	-2.8
	-3.0	-3.0	-3.7	-3.9	-4.2	-4.2	-4.3	-4.5	-4.9	
7	62.9	17.7	17.0	16.0	14.8	14.2	13.5	13.8	11.3	8.8
−48.1°	6.6	4.7	2.2	2.0	1.2	0.7	-0.2	-1.1	-3.6	-2.8
	-3.5	-2.7	-3.6	-3.6	-4.0	-3.5	-3.8	-3.8	-3.8	
8	62.8	19.6	18.5	17.2	15.1	14.7	14.3	15.1	13.3	9.6
−45.3°	5.5	2.6	1.7	1.3	0.3	-0.8	-1.0	-3.2	-3.5	-3.6
	-2.8	-3.6	-4.3	-4.3	-4.5	-4.5	-4.7	-4.9	-4.8	
9	62.8	17.0	16.5	15.8	15.1	14.5	13.9	15.2	13.7	9.0
−42.6°	5.6	3.9	1.1	0.5	-0.5	-0.4	-0.9	-1.3	-3.2	-4.0
	-3.7	-3.3	-3.5	-3.9	-4.3	-4.2	-4.3	-4.0	-3.9	
10	62.8	17.6	16.7	15.6	14.1	13.8	13.5	13.0	11.9	8.5
−40.0°	1.2	1.9	0.9	0.4	-1.2	-1.5	-2.3	-1.8	-3.9	-3.4
	-4.2	-4.1	-4.4	-4.5	-4.6	-4.7	-4.8	-5.0	-4.8	
11	62.8	16.5	16.1	15.7	15.2	14.6	14.0	10.9	11.3	8.0
−37.5°	4.4	4.5	1.1	0.4	-0.8	-0.5	-2.1	-2.5	-3.2	-3.5
	-4.1	-3.8	-4.5	-4.4	-4.4	-5.0	-4.5	-5.0	-4.8	
12	62.7	16.2	15.7	15.3	14.7	13.9	13.0	9.6	6.4	3.1
−35.1°	6.7	2.9	-0.3	0.9	-0.8	-3.6	-1.6	-3.0	-4.0	-3.6
	-3.4	-3.6	-4.4	-4.7	-4.7	-4.8	-5.0	-4.8	-5.1	
13	62.7	14.0	12.8	11.2	8.5	12.8	14.9	18.0	14.2	13.7
−32.8°	7.3	11.9	7.6	9.6	7.0	6.3	3.3	2.1	1.5	-0.6
	-1.8	-2.0	-3.1	-2.9	-3.5	-3.8	-4.3	-4.5	-4.5	
14	63.4	35.0	34.6	34.2	33.6	34.7	35.6	39.4	36.7	35.7
−30.5°	31.9	31.6	28.7	26.3	24.3	23.7	22.7	21.2	18.7	16.7
	14.9	12.3	9.5	9.1	7.1	6.1	4.6	3.9	3.4	
15	65.6	43.4	43.4	43.4	43.4	43.9	44.3	45.5	45.8	41.9
−28.3°	35.6	36.4	32.9	32.1	29.6	29.1	27.0	25.7	23.6	21.1
	18.5	16.8	14.8	13.2	12.1	10.6	9.3	8.6	7.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 10D

GROUP 10D

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	68.0	47.9	46.9	45.5	43.6	45.4	46.6	43.8	44.9	43.7
ANGLE −26.1°	39.6	39.6	36.6	34.1	32.1	31.0	29.2	27.9	25.6	23.6
	20.0	19.2	17.5	15.3	14.1	12.8	11.5	10.8	10.3	
17	68.2	46.5	45.7	44.8	43.5	45.2	46.4	46.5	50.5	43.7
−24.0°	39.5	38.5	36.3	33.1	31.6	31.1	29.2	28.2	27.1	24.1
	21.0	19.4	17.9	15.5	14.6	13.1	12.0	11.3	11.2	
18	66.1	47.0	45.8	44.0	41.2	43.2	44.6	42.3	42.3	42.4
−21.8°	38.6	39.5	35.1	34.1	30.0	29.1	27.6	26.6	24.5	21.2
	18.5	17.1	15.3	13.5	11.9	10.9	9.4	8.7	8.2	
19	63.9	38.4	37.6	36.6	35.4	37.4	38.7	32.1	48.5	35.9
−19.8°	33.6	32.8	29.6	26.6	25.9	25.5	20.9	20.8	19.6	16.2
	14.1	12.2	10.0	9.3	7.2	5.7	4.7	4.0	4.0	
20	62.8	28.3	27.3	26.2	24.6	24.6	24.6	25.0	39.5	25.9
−17.7°	25.3	30.9	25.1	25.5	19.2	17.6	15.7	12.4	10.7	8.1
	5.8	4.7	3.3	2.2	0.8	−0.8	−1.1	−1.4	−1.2	
21	62.6	22.8	22.2	21.5	20.7	19.3	17.1	11.7	13.2	10.7
−15.7°	9.5	6.8	5.0	3.9	3.1	0.7	−0.9	−0.6	−1.7	−2.1
	−2.6	−3.0	−3.3	−3.6	−4.0	−3.9	−4.3	−4.2	−4.5	
22	62.6	5.1	5.8	6.4	6.9	6.0	4.8	0.3	5.3	2.7
−13.7°	2.8	1.2	−2.8	−0.1	−1.4	−1.9	−2.6	−2.9	−2.3	−3.1
	−3.2	−3.1	−3.2	−4.0	−4.0	−4.5	−4.7	−4.7	−4.4	
23	62.6	23.2	22.6	21.9	21.0	19.7	17.9	9.3	2.5	10.4
−11.7°	9.5	4.3	5.1	2.7	2.1	0.5	0.2	0.4	−1.4	−2.0
	−2.4	−3.0	−2.7	−3.3	−3.2	−4.0	−4.0	−4.1	−4.1	
24	62.6	22.9	22.0	21.5	20.8	19.4	17.4	11.0	4.9	10.8
−9.7°	10.0	6.3	5.9	3.8	1.9	1.0	0.8	0.1	−0.8	−1.5
	−2.2	−2.8	−2.1	−2.6	−3.5	−3.6	−3.8	−3.8	−4.0	
25	62.7	23.5	23.2	22.8	22.3	20.8	18.4	12.0	6.5	10.2
−7.8°	10.1	6.0	5.7	5.3	3.1	0.4	1.0	−0.0	−1.1	−1.9
	−2.6	−2.9	−2.8	−3.1	−2.9	−3.7	−3.5	−3.9	−4.1	
26	62.7	9.7	9.3	8.9	8.4	8.0	7.5	10.7	9.4	5.7
−5.8°	3.5	2.1	−0.1	−0.8	−0.4	−1.4	−2.7	−1.6	−2.3	−3.1
	−2.8	−3.5	−3.5	−3.2	−3.0	−4.2	−3.6	−3.9	−4.7	
27	62.7	15.7	14.8	13.7	12.1	11.8	11.5	13.8	12.9	6.5
−3.9°	3.1	3.5	1.0	1.4	−1.7	−1.3	−1.5	−1.5	−2.6	−3.0
	−2.6	−3.3	−3.0	−3.6	−3.8	−3.9	−4.0	−4.0	−4.2	
28	62.8	11.8	11.9	12.1	12.2	12.5	12.8	12.6	11.6	7.3
−1.9°	4.5	4.9	3.0	1.0	−0.2	−0.2	−1.0	−1.5	−2.5	−2.2
	−2.4	−3.5	−3.1	−4.0	−3.9	−3.5	−4.2	−4.1	−4.3	
29	62.8	8.2	7.2	5.8	3.9	4.3	4.7	5.7	7.1	4.5
0°	5.7	2.7	1.0	−0.0	−1.4	−1.6	−2.3	−2.2	−2.8	−3.7
	−3.4	−2.9	−2.7	−3.6	−3.7	−4.2	−4.0	−4.1	−4.2	
30	62.8	11.7	10.8	9.6	7.9	7.8	7.7	12.6	9.8	7.1
+1.9°	6.5	3.6	2.1	1.0	0.1	−0.5	−1.1	−1.4	−1.5	−2.6
	−3.3	−2.6	−2.9	−3.2	−3.5	−3.6	−4.0	−4.5	−4.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 10D

GROUP 10D

PAGE 3

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.7	18.4	17.7	16.8	15.8	15.2	14.6	15.3	14.2	8.9
ANGLE +3.9°	4.5	4.9	2.6	3.0	1.9	1.3	-0.8	-1.1	-1.9	-3.1
	-3.0	-2.6	-3.5	-3.6	-3.7	-4.0	-3.9	-4.2	-4.6	
32	62.7	27.0	26.2	25.2	23.9	22.3	19.9	14.3	12.5	17.1
+5.8°	14.2	10.8	10.2	7.8	6.2	4.1	0.7	1.8	0.2	-1.0
	-2.1	-2.7	-2.4	-3.7	-3.2	-4.0	-3.9	-3.8	-4.0	
33	62.6	8.8	8.8	8.8	8.7	7.5	5.9	10.9	6.4	5.5
+7.8°	6.7	2.6	1.2	0.2	-0.7	-1.8	-1.7	-1.8	-2.7	-3.9
	-2.8	-3.7	-3.6	-4.3	-4.0	-4.3	-4.7	-4.3	-4.7	
34	62.5	14.7	13.7	12.3	10.3	9.9	9.4	11.5	9.5	6.1
+9.7°	3.5	2.3	1.8	1.7	0.5	0.1	-1.2	-2.0	-2.4	-2.4
	-3.1	-3.7	-3.9	-4.3	-4.3	-4.7	-4.6	-4.6	-4.2	
35	62.5	25.1	24.2	23.2	21.8	20.2	17.8	13.0	10.8	15.1
+11.7°	14.1	11.2	7.9	5.1	4.9	3.2	1.0	1.8	-0.2	-0.7
	-2.4	-2.5	-2.6	-3.0	-3.4	-3.4	-3.9	-4.1	-4.2	
36	62.7	26.1	25.4	24.6	23.6	22.2	20.1	18.9	18.7	16.5
+13.7°	16.2	14.0	9.8	8.9	8.3	6.9	5.5	4.2	4.0	2.0
	0.3	0.1	-0.7	-0.8	-1.3	-1.2	-1.5	-1.5	-1.9	
37	62.8	28.6	28.0	27.1	26.1	25.3	24.3	19.0	22.6	16.8
+15.7°	16.2	12.4	13.7	12.2	10.0	7.4	8.7	6.7	4.6	3.2
	2.4	1.7	0.7	-0.1	-0.4	-0.6	-0.5	-0.5	-0.9	
38	62.9	29.9	29.1	28.0	26.6	25.7	24.6	20.1	17.8	18.7
+17.7°	17.4	16.9	13.9	12.5	12.5	10.4	9.5	9.2	7.3	6.7
	5.7	5.6	5.1	4.9	4.6	4.7	4.4	4.3	4.4	
39	62.9	31.6	30.8	29.7	28.3	27.2	25.7	21.7	22.9	23.0
+19.8°	18.8	17.4	15.4	15.3	15.6	12.7	13.1	12.6	9.8	9.6
	8.8	8.9	8.7	8.5	8.5	8.3	8.1	7.8	7.8	
40	63.0	30.8	30.1	29.1	27.9	26.4	24.3	23.7	23.3	26.1
+21.8°	20.8	21.3	19.1	16.5	15.8	14.4	13.3	12.8	10.8	9.5
	8.3	7.8	7.2	6.9	6.8	6.9	6.6	6.5	6.5	
41	63.5	32.0	30.6	28.5	24.5	26.9	28.5	27.9	30.2	26.3
+24.0°	23.0	21.4	19.3	17.0	15.4	14.0	11.7	10.9	10.1	6.9
	6.0	4.1	3.1	1.6	0.8	0.4	0.3	-0.2	-0.4	
42	63.6	27.8	27.5	27.1	26.7	25.9	24.8	26.5	26.9	25.3
+26.1°	20.7	22.9	19.7	17.1	14.5	14.0	12.4	11.2	9.7	7.4
	4.5	3.7	3.0	1.1	0.7	-0.5	-0.8	-1.3	-1.0	
43	63.1	28.7	27.9	26.9	25.5	27.2	28.4	26.3	29.0	24.6
+28.3°	21.5	18.9	18.0	16.2	13.9	11.7	9.9	10.3	8.5	5.9
	4.0	2.5	1.3	0.0	-0.7	-1.3	-2.2	-2.3	-2.2	
44	62.7	25.1	24.1	22.8	21.0	20.5	19.8	18.8	24.4	19.4
+30.5°	15.3	14.5	11.8	10.1	8.0	6.1	3.5	3.6	2.5	-0.6
	-1.2	-1.6	-2.0	-3.7	-4.0	-3.7	-4.1	-4.3	-4.4	
45	62.6	15.4	14.9	14.3	13.7	13.2	12.6	15.6	16.9	10.2
+32.8°	9.6	6.4	5.1	4.9	3.5	0.1	-0.6	-1.0	-2.7	-4.0
	-3.5	-3.9	-4.4	-4.2	-4.5	-4.9	-4.7	-4.3	-4.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.6	14.5	13.9	13.2	12.3	12.2	12.0	12.9	10.9	10.7
ANGLE +35.1°	7.3	7.6	6.1	5.3	3.1	3.4	0.7	-0.2	-2.0	-3.6
	-4.3	-3.7	-4.1	-4.6	-4.3	-4.4	-4.8	-5.1	-5.2	
47	62.6	13.6	13.0	12.4	11.7	13.1	14.1	12.3	9.3	10.2
+37.5°	6.2	8.9	4.7	4.7	2.1	0.6	-0.4	0.0	-2.8	-3.3
	-3.5	-4.0	-4.5	-5.0	-4.9	-5.1	-5.3	-5.2	-5.1	
48	62.7	11.6	11.9	12.1	12.4	12.0	11.5	15.2	13.7	6.5
+40.0°	8.3	5.0	2.4	2.2	-0.0	-0.7	-1.7	-1.5	-3.7	-4.7
	-4.6	-4.2	-4.2	-4.6	-4.9	-4.5	-5.4	-4.9	-5.0	
49	62.7	6.8	7.5	8.1	8.7	9.3	9.9	15.6	11.7	9.3
+42.6°	6.8	4.4	2.6	2.2	0.9	-0.3	-1.2	-1.1	-3.4	-3.9
	-4.6	-4.3	-4.3	-4.6	-4.3	-4.7	-5.2	-4.9	-4.8	
50	62.8	12.3	11.8	11.2	10.5	10.1	9.5	15.7	11.8	7.6
+45.3°	7.3	4.2	2.9	2.9	2.2	-1.4	-1.1	-0.9	-3.1	-3.1
	-3.5	-4.0	-4.3	-4.5	-4.7	-4.6	-4.9	-4.8	-5.0	
51	62.8	13.2	12.9	12.6	12.3	12.7	13.0	16.2	12.1	10.4
+48.1°	6.9	8.6	4.6	4.1	2.2	1.6	-0.0	0.0	-1.9	-2.9
	-4.0	-4.1	-3.5	-4.4	-4.6	-4.6	-4.6	-4.8	-4.3	
52	63.0	19.4	18.4	17.2	15.4	14.9	14.2	17.7	15.4	12.2
+51.1°	8.5	10.3	6.8	6.2	4.2	3.1	1.0	1.4	-0.7	-2.8
	-2.5	-3.7	-3.1	-3.8	-4.2	-4.0	-4.5	-4.6	-4.7	
53	63.1	26.2	25.5	24.7	23.7	21.9	18.9	18.1	18.1	17.9
+54.3°	13.1	12.6	10.6	10.0	8.3	6.5	3.4	2.9	1.1	-0.3
	-1.5	-1.6	-1.7	-2.2	-3.2	-3.6	-3.7	-3.6	-3.7	
54	63.2	27.4	26.6	25.7	24.5	22.7	19.7	19.0	17.3	17.9
+57.8°	14.4	14.0	11.0	10.7	9.2	7.2	4.7	2.8	2.3	0.3
	-0.6	-1.2	-0.7	-1.7	-2.8	-3.2	-2.8	-3.1	-2.9	
55	63.2	18.1	17.4	16.6	15.6	14.6	13.2	21.5	20.7	14.5
+61.6°	13.7	12.9	8.2	8.4	5.5	5.9	3.3	0.8	-0.6	-1.2
	-1.3	-2.4	-1.8	-2.3	-3.4	-3.4	-3.3	-4.1	-4.0	
56	63.2	20.6	20.4	20.2	19.9	19.2	18.3	25.2	22.8	17.3
+66.0°	13.2	13.0	8.6	7.6	8.1	7.2	4.8	3.6	1.5	-0.0
	-1.0	-2.4	-1.9	-2.7	-3.0	-3.3	-3.4	-3.7	-3.8	
57	63.5	30.0	29.3	28.6	27.6	26.4	24.8	26.6	23.5	21.6
+71.3°	16.8	15.7	13.4	13.4	13.6	12.5	9.2	8.2	6.7	4.8
	1.3	-0.6	0.1	-0.5	-1.9	-2.2	-2.8	-2.5	-2.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 10D

STA TAPE 10K

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	54.3 17.2 3.3	31.5 14.3 3.1	29.8 12.3 2.8	27.1 9.2 2.8	16.0 8.7 2.7	20.8 6.8 2.5	22.5 6.0 2.4	16.8 5.3 2.3	21.3 4.0 2.2	18.7 3.5
2 +64°	54.2 16.9 4.3	31.5 15.2 4.0	29.9 13.1 3.7	27.3 9.8 3.4	20.2 7.7 3.5	21.4 7.8 3.4	22.3 6.9 3.2	17.0 6.1 3.3	21.3 5.1 3.0	20.1 4.2
3 +53°	54.0 17.3 3.6	31.6 14.5 3.8	30.0 13.1 3.3	27.3 9.9 3.3	17.5 9.7 3.2	21.4 8.0 3.1	22.7 7.0 2.9	18.6 6.1 2.9	21.5 5.0 2.8	20.8 4.0
4 +44°	54.5 16.2 3.1	32.4 14.3 3.4	30.7 12.0 2.8	27.9 9.1 2.9	17.6 9.1 2.6	21.5 7.7 2.5	23.5 6.4 2.5	18.0 6.1 2.4	22.0 4.5 2.3	20.0 3.4
5 +37°	54.2 15.0 2.7	30.6 13.1 2.6	28.9 10.2 2.0	26.2 8.1 2.2	17.5 8.1 2.0	20.4 6.6 2.0	22.2 5.6 1.9	16.7 4.8 1.8	19.2 3.8 1.7	16.9 2.9
6 +30°	53.0 13.5 2.1	28.6 11.3 2.0	26.9 9.2 1.5	24.2 7.4 1.6	15.5 6.6 1.3	18.6 5.2 1.3	20.4 4.2 1.2	14.7 3.6 1.2	16.7 2.7 1.3	15.3 2.1
7 +23°	53.1 9.9 0.9	26.5 8.6 0.5	24.9 7.0 0.4	22.2 5.2 0.2	14.1 4.4 0.3	16.2 3.0 0.2	17.6 2.9 0.2	11.7 2.0 0.2	13.6 1.1 -0.0	12.1 0.6
8 +17°	51.8 4.8 -1.5	23.3 4.2 -1.7	21.9 2.9 -1.5	19.8 1.5 -1.6	10.6 0.8 -1.5	15.0 0.0 -1.7	14.3 0.2 -1.6	7.2 -0.4 -1.7	9.0 -1.1 -1.6	7.2 -1.6
9 +12°	50.2 0.6 -3.7	20.4 0.4 -3.9	18.9 0.4 -3.8	16.5 -1.5 -3.8	11.2 -1.4 -3.8	11.2 -2.4 -3.9	11.2 -2.7 -4.0	2.4 -2.9 -3.9	6.4 -2.9 -3.9	2.9 -3.7
10 +6°	49.9 -0.5 -4.2	16.7 -0.7 -4.1	15.0 -1.0 -4.1	12.3 -2.7 -4.4	3.2 -2.1 -4.2	6.0 -2.4 -4.4	7.7 -3.1 -4.4	-0.2 -3.4 -4.3	4.2 -3.7 -4.5	1.1 -4.0
11 0°	50.1 -1.6 -3.9	14.4 -0.8 -3.9	12.8 -1.5 -4.2	10.1 -2.7 -4.0	1.9 -2.7 -4.0	4.0 -2.7 -4.3	5.5 -3.4 -4.3	-1.2 -3.4 -4.1	3.2 -3.8 -4.2	0.3 -4.0
12 −6°	50.2 -1.8 -4.0	15.0 -0.7 -4.1	13.4 -1.5 -4.1	10.8 -2.8 -3.8	3.8 -2.5 -3.9	5.1 -2.4 -3.9	6.1 -3.3 -3.9	-0.6 -3.5 -4.0	2.9 -3.5 -4.0	0.0 -3.6
13 −12°	50.4 -0.8 -3.8	12.3 -1.9 -3.6	10.8 -1.6 -3.6	8.5 -2.0 -3.7	3.4 -2.1 -3.7	4.1 -2.6 -3.8	4.7 -3.3 -4.0	-1.2 -3.2 -3.9	2.6 -3.9 -3.8	0.3 -3.6
14 −17°	50.2 -1.1 -4.0	12.6 -1.3 -4.1	11.0 -1.9 -3.8	8.5 -2.0 -4.1	1.5 -2.2 -4.0	3.4 -2.7 -4.0	4.7 -3.3 -4.2	-1.7 -3.6 -4.1	2.1 -3.7 -4.1	0.6 -4.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 10D

STA TAPE 10K

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.2 −0.0 −4.3	13.7 −1.0 −4.1	12.1 −1.4 −3.8	9.5 −1.8 −4.0	7.7 −1.8 −3.9	4.3 −2.5 −3.9	5.9 −2.8 −4.0	−1.2 −3.2 −3.9	2.8 −3.5 −3.9	0.7 −3.8
16 −30°	50.4 −0.1 −3.8	14.1 −1.5 −3.7	12.4 −0.5 −3.5	9.8 −1.8 −3.7	8.2 −1.2 −3.7	4.6 −2.7 −3.6	6.2 −2.7 −3.7	−1.2 −3.3 −3.7	3.2 −3.2 −3.7	1.5 −3.8
17 −37°	50.7 0.5 −3.1	15.3 0.0 −3.2	13.7 −0.2 −3.3	11.1 −0.6 −3.3	9.5 −0.4 −3.1	5.8 −1.8 −3.1	7.2 −2.1 −3.1	0.1 −2.7 −3.0	4.2 −2.7 −3.2	1.6 −3.1
18 −44°	50.9 2.5 −2.6	16.6 1.3 −2.5	14.9 1.1 −2.4	12.3 1.0 −2.4	11.1 1.3 −2.4	7.2 −0.6 −2.2	9.0 −1.0 −2.4	2.0 −1.8 −2.2	5.3 −2.0 −2.4	2.6 −2.6
19 −53°	51.2 5.4 −0.3	18.5 5.0 −0.7	16.9 5.1 −0.2	14.2 5.7 −0.2	13.6 4.8 −0.1	9.7 2.8 −0.0	11.8 2.7 −0.4	4.3 1.1 −0.2	8.9 0.6 −0.5	5.9 −0.3
20 −64°	51.6 13.2 4.5	20.3 12.0 3.8	18.9 12.0 4.4	16.8 12.8 4.9	12.8 12.2 5.1	15.5 9.5 5.5	17.2 8.9 4.5	11.8 7.6 4.9	15.3 6.8 4.4	12.3 4.8
21 −84°	51.7 19.1 8.8	21.0 17.8 8.4	20.4 17.6 9.3	19.8 18.5 9.9	17.0 17.9 10.1	21.0 15.3 10.7	22.4 14.3 9.7	17.7 12.8 9.9	20.4 12.1 9.4	17.8 9.6

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10D

STA TAPE 10L

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 1	53.5	20.4	19.7	18.9	17.9	16.7	15.0	14.9	17.3	18.2
ANGLE +84°	16.5	12.4	9.4	7.0	5.7	4.9	4.3	2.8	1.9	1.9
	1.5	1.4	1.3	1.3	1.1	1.1	0.9	0.9	0.9	
2	54.1	22.2	21.5	20.8	19.9	18.5	16.4	16.9	18.7	18.7
+64°	16.5	13.1	10.4	8.6	6.9	6.0	4.8	3.7	2.7	2.7
	2.3	2.1	2.1	1.8	1.8	1.7	1.5	1.5	1.6	
3	54.0	22.3	21.7	20.9	20.0	18.8	17.2	18.2	19.1	18.4
+53°	15.3	13.2	10.7	9.0	7.5	6.5	4.9	4.2	2.9	2.6
	2.3	2.0	1.7	1.6	1.6	1.4	1.3	1.3	1.2	
4	53.9	22.5	21.5	20.3	18.4	18.1	17.6	18.2	19.2	17.9
+44°	14.2	12.6	10.3	9.5	8.0	6.5	5.1	3.9	3.2	2.4
	2.4	1.9	1.4	1.4	1.3	1.2	1.1	1.1	1.1	
5	53.9	23.4	22.2	20.5	17.7	17.3	16.9	17.4	18.0	16.8
+37°	13.7	11.8	10.2	8.5	7.3	5.8	4.8	3.8	2.9	2.1
	2.1	1.6	1.2	1.2	1.3	1.0	1.0	0.8	0.9	
6	53.6	19.5	18.5	17.1	15.3	14.6	13.7	14.6	15.0	14.1
+30°	12.0	10.0	8.6	6.7	5.1	4.8	3.6	2.8	2.2	1.2
	0.9	1.0	0.8	0.7	0.6	0.5	0.5	0.4	0.3	
7	52.9	16.3	16.0	15.7	15.4	13.4	9.8	11.2	12.3	10.5
+23°	8.6	7.4	5.7	4.5	3.9	2.5	1.8	1.2	0.7	0.3
	-0.1	-0.3	-0.1	-0.3	-0.3	-0.5	-0.4	-0.5	-0.5	
8	51.5	14.0	15.5	16.6	17.5	14.9	7.7	6.0	5.8	4.4
+17°	2.4	2.2	1.0	0.4	-1.1	-1.3	-1.6	-1.8	-2.2	-2.3
	-2.5	-2.4	-2.7	-2.6	-2.7	-2.7	-2.6	-2.7	-2.8	
9	50.0	7.4	8.7	9.7	10.5	8.2	2.9	-1.6	-0.0	-0.7
+12°	-2.0	-2.7	-3.3	-3.2	-3.8	-4.4	-4.4	-4.5	-4.7	-5.0
	-4.9	-4.9	-4.8	-4.9	-4.8	-4.8	-4.9	-4.9	-4.9	
10	49.7	3.8	2.9	1.8	0.4	0.8	1.2	-2.3	-2.0	-1.7
+6°	-3.3	-2.8	-3.6	-3.6	-4.0	-3.8	-4.5	-4.6	-5.0	-5.3
	-5.4	-5.4	-5.1	-5.1	-5.0	-5.2	-5.1	-5.3	-5.2	
11	49.7	4.4	3.6	2.6	1.3	1.4	1.5	-1.7	-0.9	-0.7
0°	-2.3	-2.5	-3.6	-3.2	-3.1	-4.0	-4.0	-4.2	-4.4	-4.6
	-4.8	-4.6	-4.7	-4.7	-4.6	-4.8	-4.7	-4.8	-4.8	
12	50.1	5.3	4.8	4.2	3.5	2.8	1.9	-1.8	-1.3	-0.7
−6°	-2.8	-2.9	-3.1	-3.0	-3.6	-3.8	-3.9	-4.2	-4.6	-4.7
	-4.7	-4.6	-4.5	-4.6	-4.5	-4.6	-4.7	-4.7	-4.7	
13	50.3	5.6	4.5	3.0	0.0	1.6	2.3	-1.4	-0.3	0.0
−12°	-1.7	-2.4	-3.1	-3.1	-3.6	-3.4	-3.8	-4.1	-4.4	-4.2
	-4.2	-4.1	-4.5	-4.1	-4.2	-4.3	-4.3	-4.3	-4.3	
14	50.1	4.4	3.4	2.1	0.4	1.3	2.0	-2.7	-1.6	-0.6
−17°	-2.5	-2.5	-3.4	-3.0	-3.6	-3.7	-4.0	-4.5	-4.7	-4.7
	-4.7	-4.7	-4.8	-4.6	-4.7	-4.8	-4.7	-4.7	-4.9	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 10D

STA TAPE 10L

PAGE 2

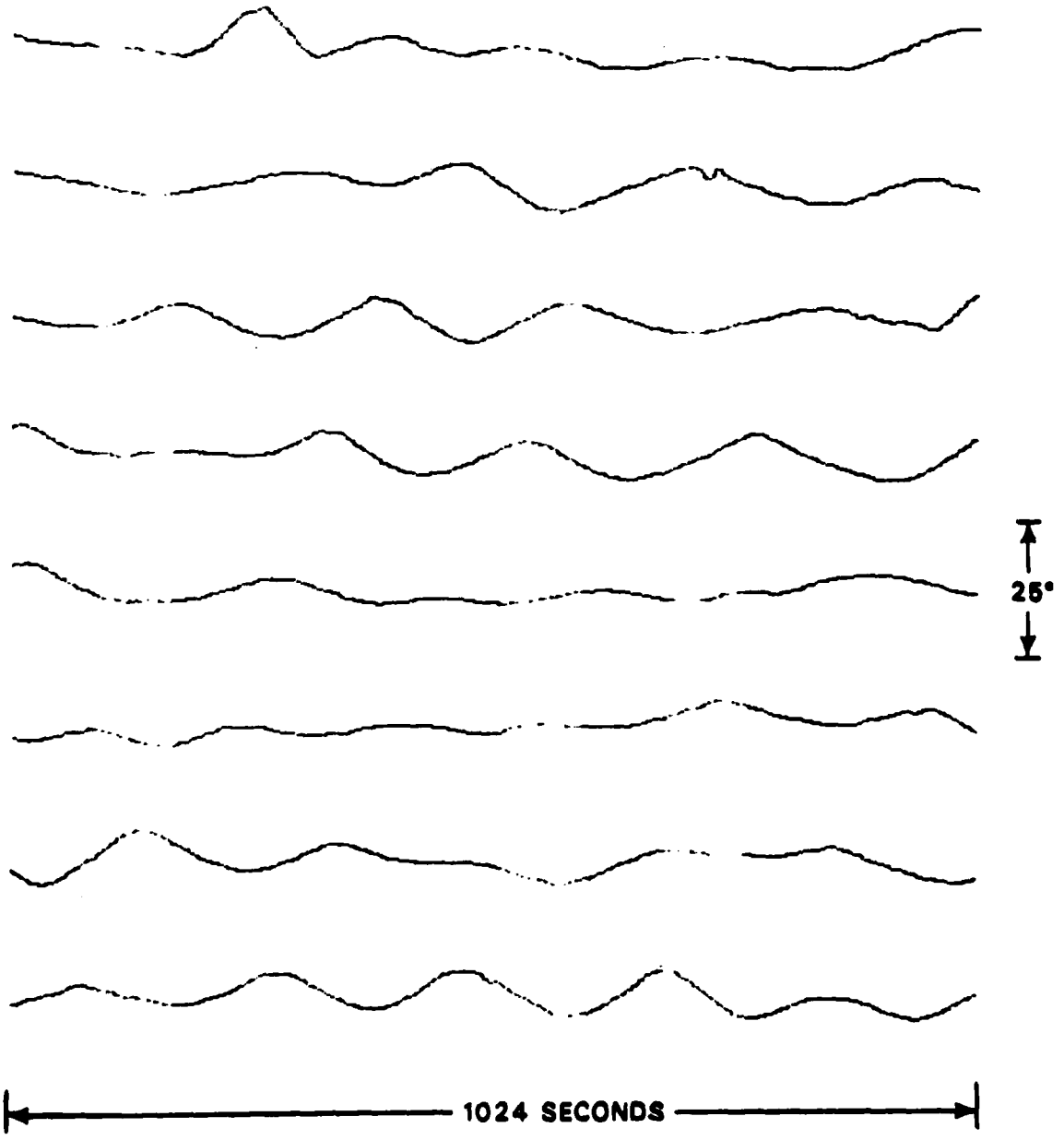
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.1 −2.6 −4.7	4.2 −1.6 −4.6	3.2 −2.6 −4.8	2.0 −2.6 −4.6	0.3 −2.4 −4.6	1.2 −3.0 −4.6	1.9 −4.0 −4.5	−1.9 −3.9 −4.6	−1.5 −4.4 −4.6	−1.0 −4.6
16 −30°	50.4 −2.1 −4.5	4.9 −1.9 −4.3	4.1 −2.3 −4.2	3.1 −2.1 −4.2	1.8 −2.1 −4.1	1.9 −3.4 −4.1	1.9 −3.6 −4.2	−0.4 −3.3 −4.1	−1.1 −3.9 −4.2	−0.9 −4.1
17 −37°	50.6 −1.1 −3.9	5.7 −1.4 −3.8	4.8 −2.1 −3.5	3.6 −1.2 −3.6	2.0 −2.0 −3.6	2.0 −2.6 −3.7	2.0 −2.9 −3.6	−1.3 −3.1 −3.6	−0.0 −3.5 −3.7	−0.2 −3.9
18 −44°	50.8 −0.3 −3.6	6.0 −0.2 −3.6	5.0 −1.0 −3.3	3.7 −0.3 −3.1	1.8 −1.1 −3.2	2.1 −1.7 −3.1	2.4 −2.5 −3.1	−1.0 −3.0 −3.3	0.3 −3.1 −3.3	0.7 −3.5
19 −53°	51.0 3.2 −2.1	8.3 4.5 −2.1	7.2 2.4 −1.6	5.8 4.1 −1.5	3.7 3.0 −1.5	4.4 1.4 −1.5	5.0 0.1 −1.3	4.0 −0.9 −1.5	4.3 −1.4 −1.6	4.1 −2.1
20 −64°	51.4 10.2 2.6	14.8 12.6 2.9	13.7 9.5 3.6	12.4 12.1 4.1	10.4 11.2 3.8	10.8 9.3 4.1	11.1 6.8 4.5	12.2 5.5 4.0	12.1 4.7 3.6	12.4 2.7
21 −84°	51.5 16.4 8.2	21.1 19.3 8.3	20.1 15.7 9.1	18.9 18.6 9.8	17.1 17.4 9.6	16.9 15.5 10.0	16.8 13.1 10.1	18.8 11.5 9.7	19.0 10.4 9.1	19.1 7.9

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 10D

BEARING VS TIME

MEAN & VAR.		267.8	6.27	270.0	4.75	268.9	4.61	268.7	6.73
267.4	3.86	269.2	4.23	269.7	6.38	268.1	6.34		

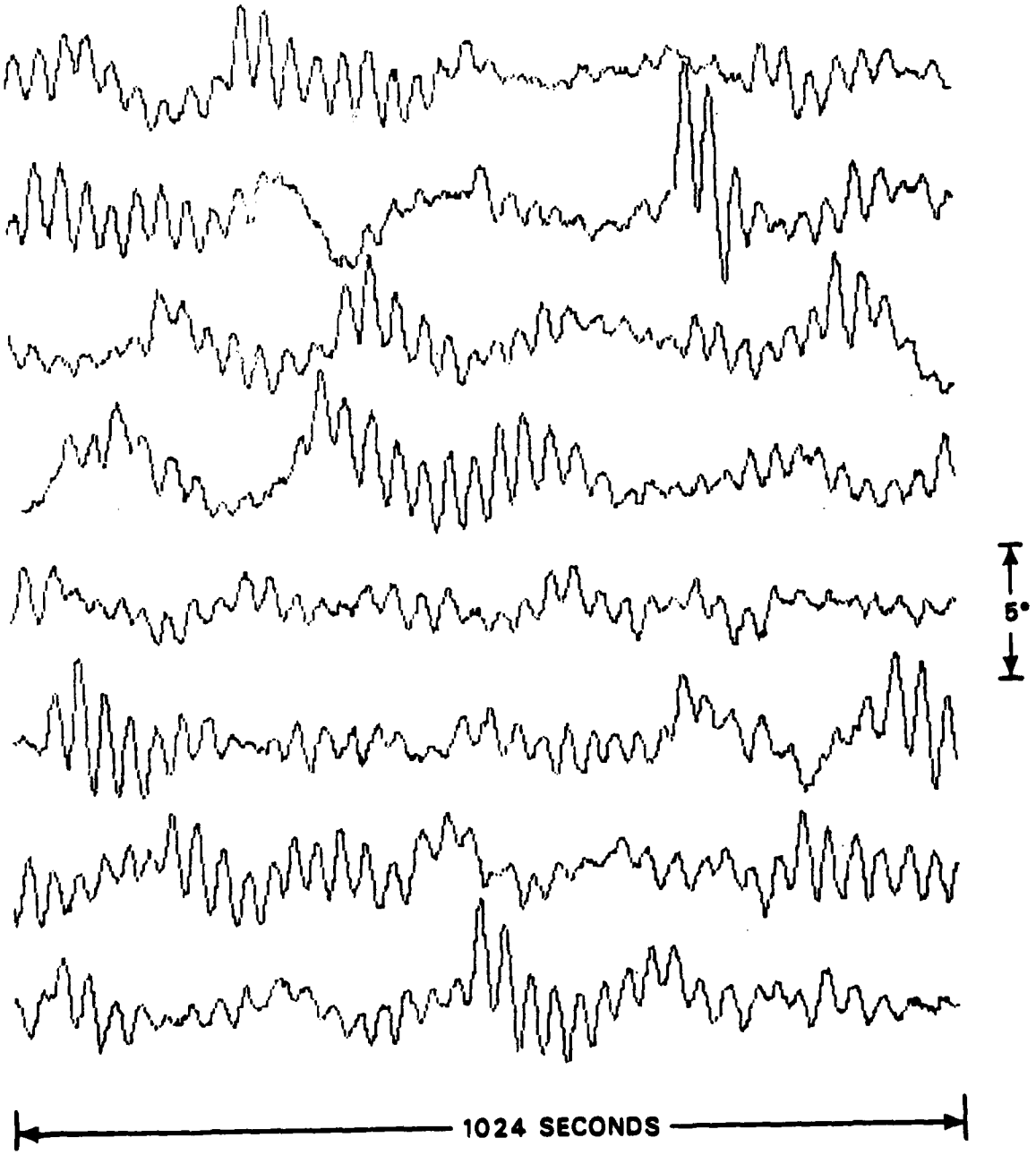


MPL-M-4962

GROUP 10D

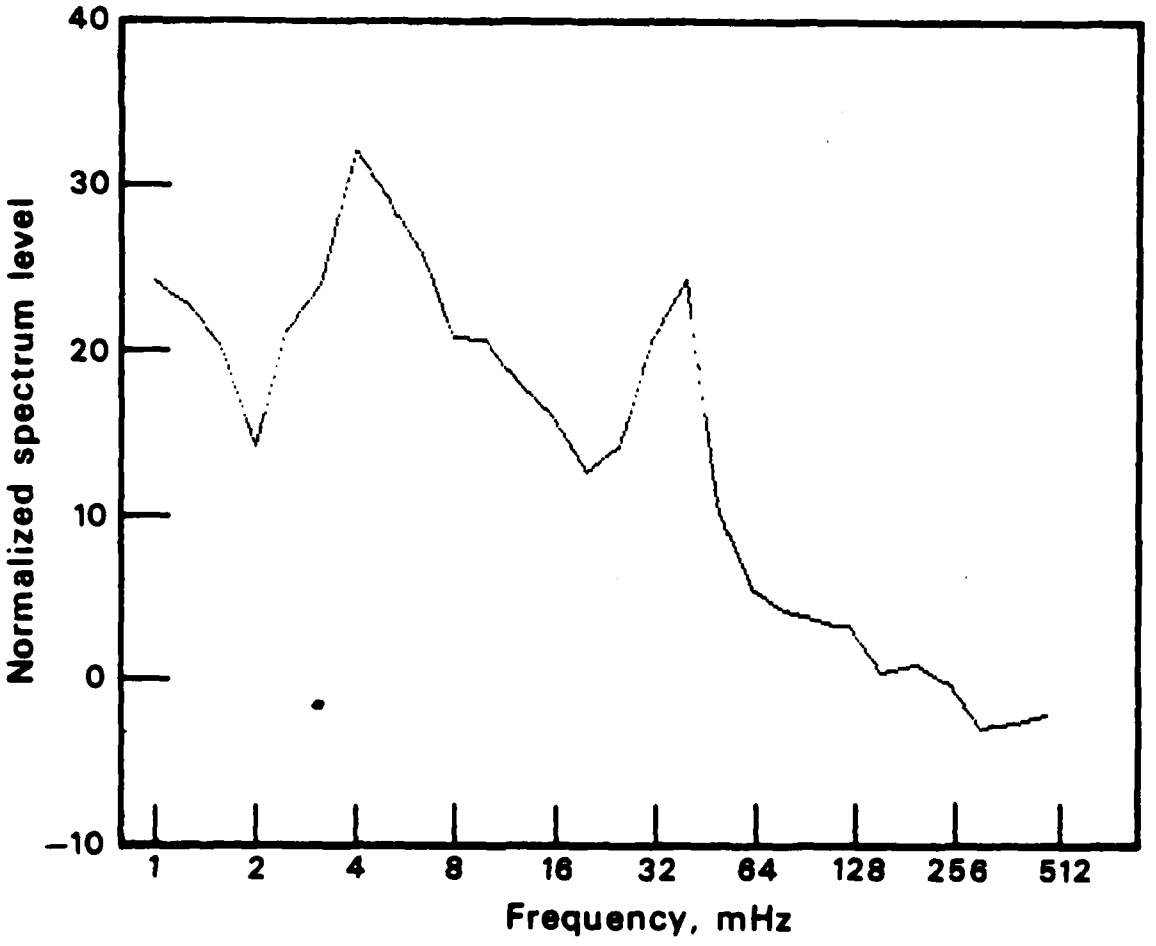
ELEVATION VS TIME

MEAN & VAR	92.3	0.56	92.6	1.15	92.5	0.85	92.4	1.14
92.3	0.75	92.3	0.80	92.2	0.68	92.2	0.69	



MPL-M-4963

GROUP 10D



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 11A

Environmental Summary

11 June 1978

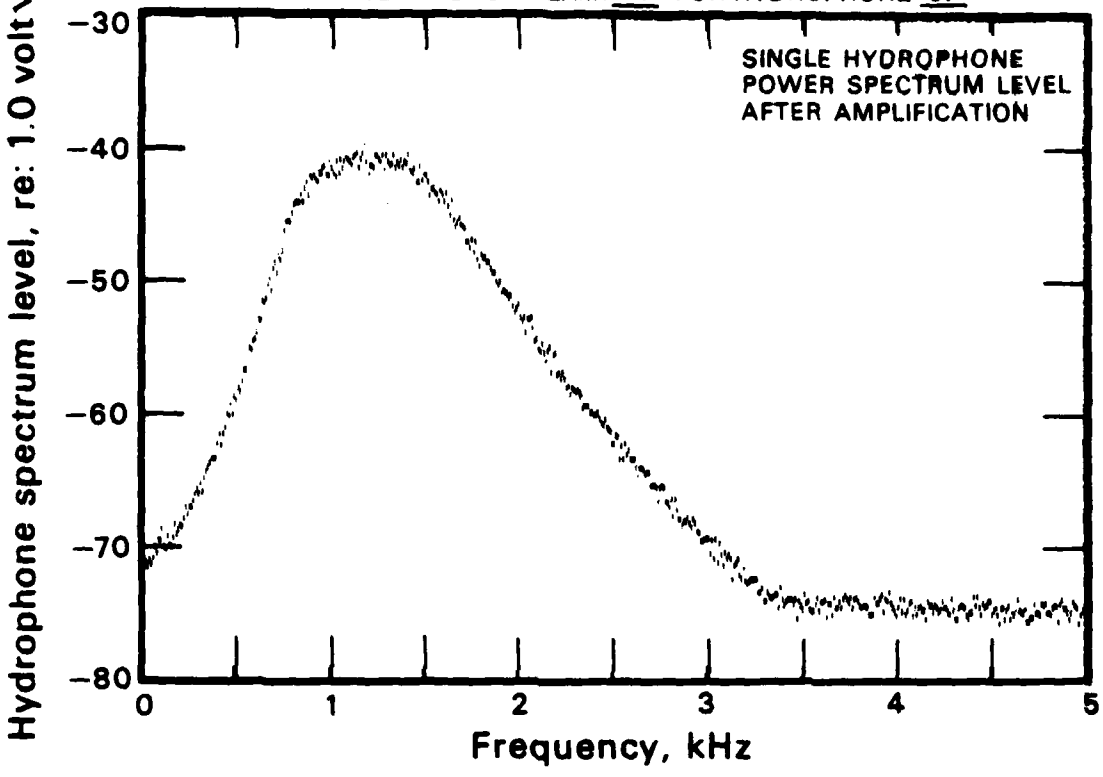
Tapes	Start time	Code
LTA/LDG	06:04:55	11A
STA	06:06:44	11C
STA	07:04:48	11D
Low Band Filter		

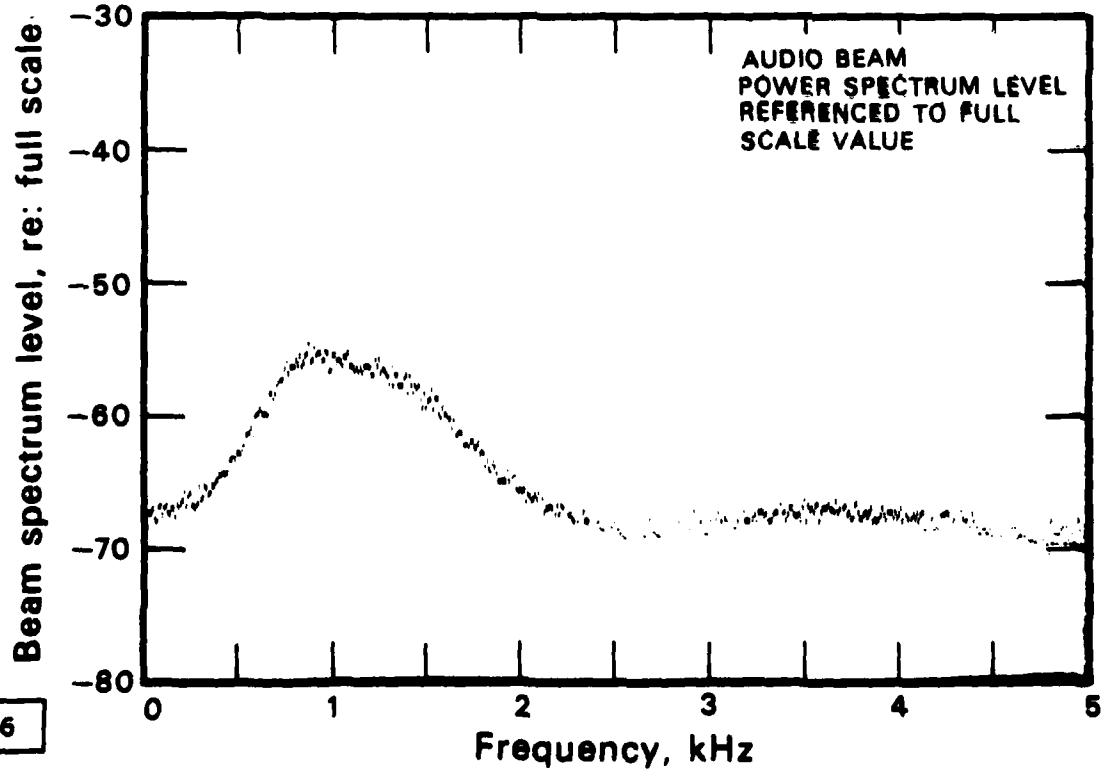
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
06:00	2300	16	335	6-10	6-9	NW	Chop
07:00	2300	17	325	"	"	"	No targets

11-JUN-78 06:21:09 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 303.6
RELATIVE ELEVATION 80.0 TRUE BEARING 254.7 TRUE ELEVATION 80.6
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -11.7 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 97

GROUP 11A





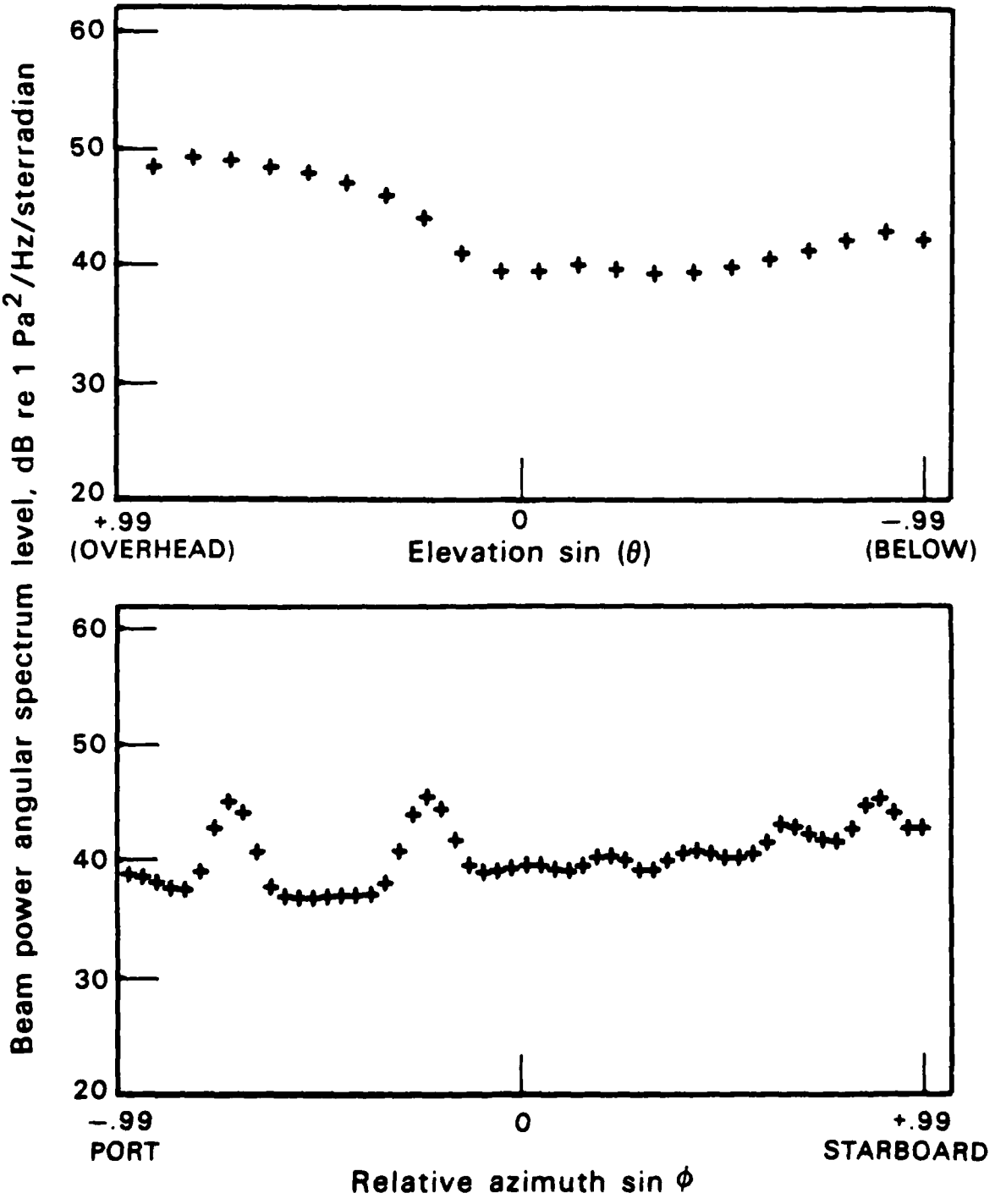
MPL-M-4966

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 11A

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

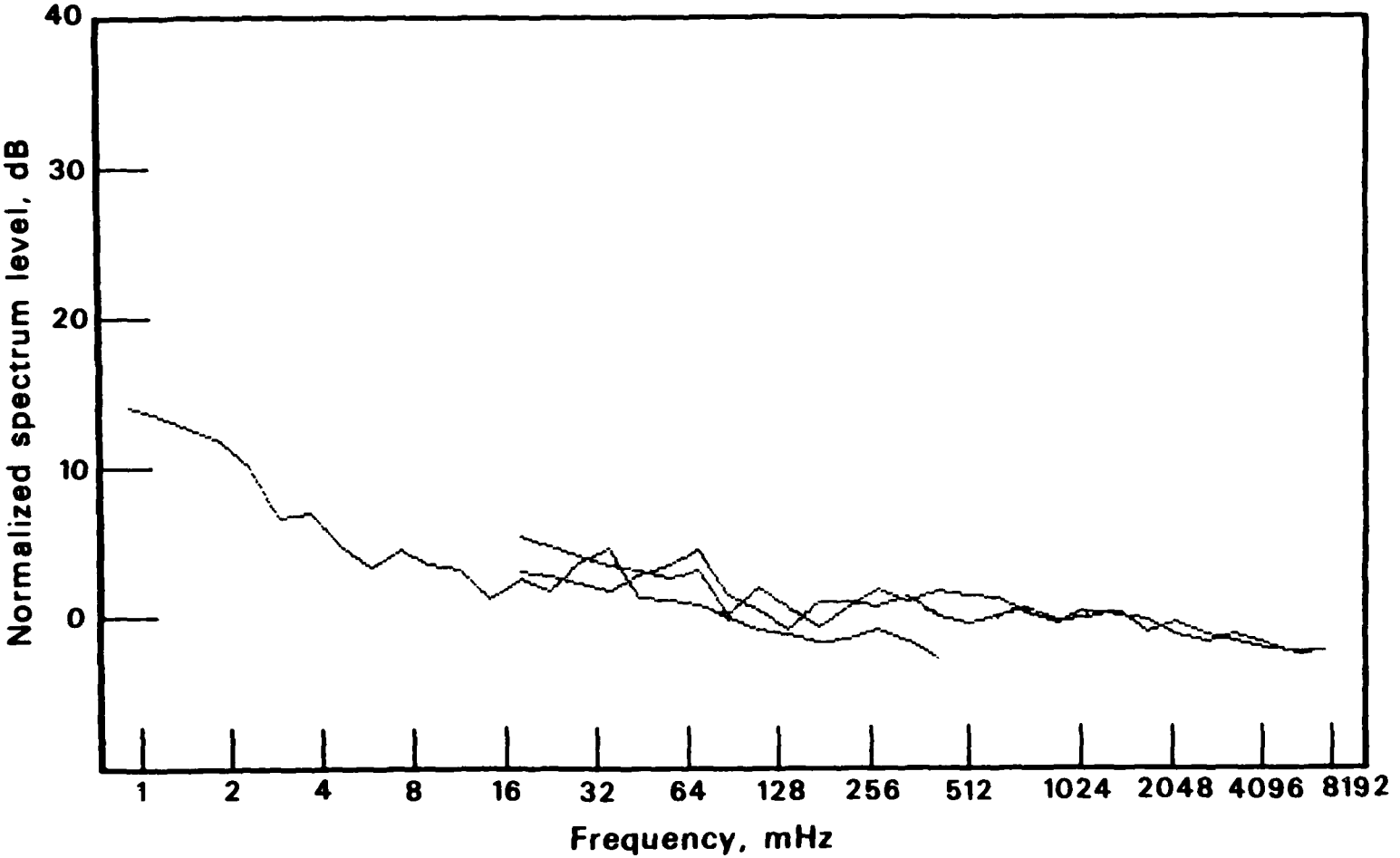
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4967

MPL-M-4968

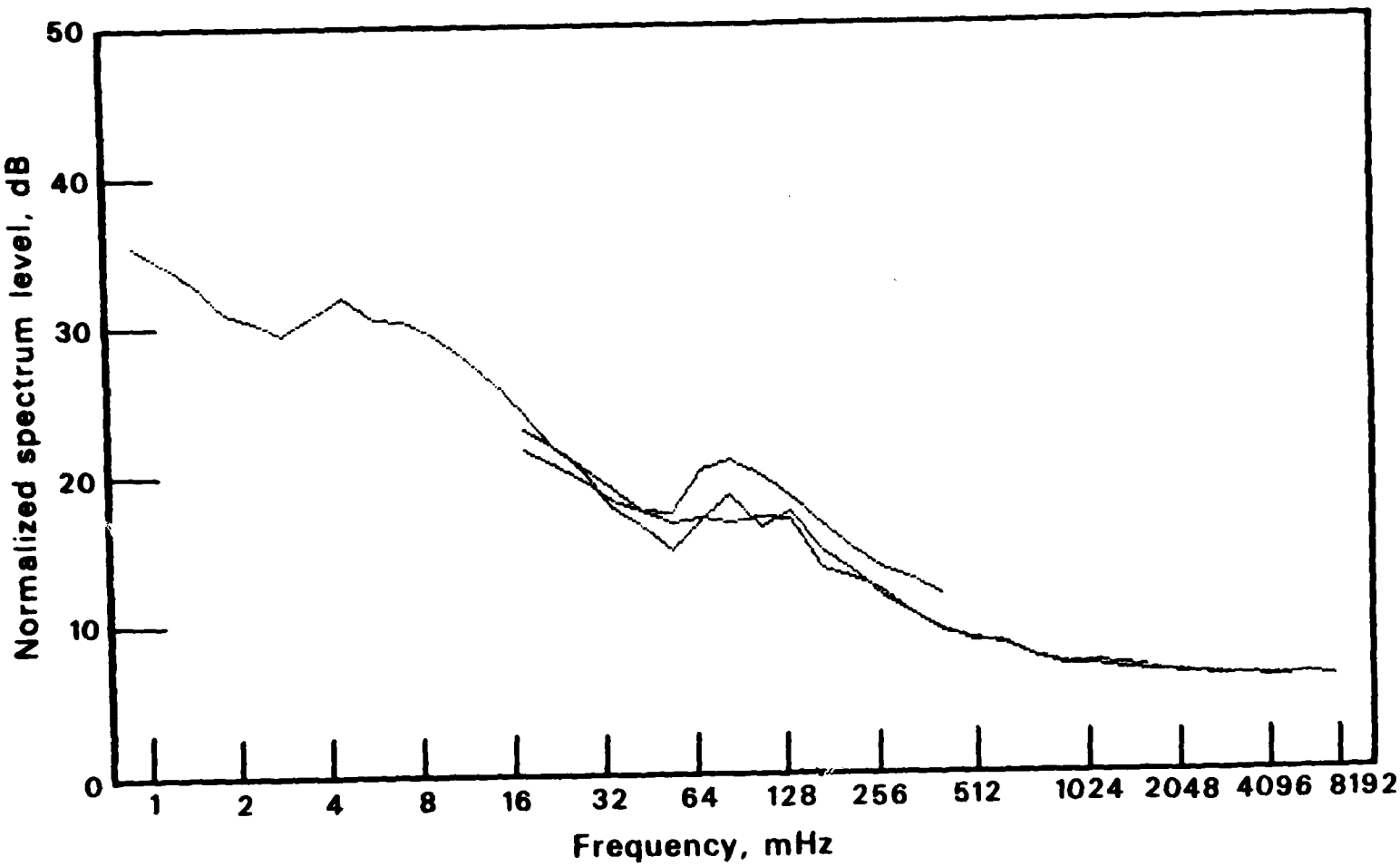
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 11A

MPL-M-4969

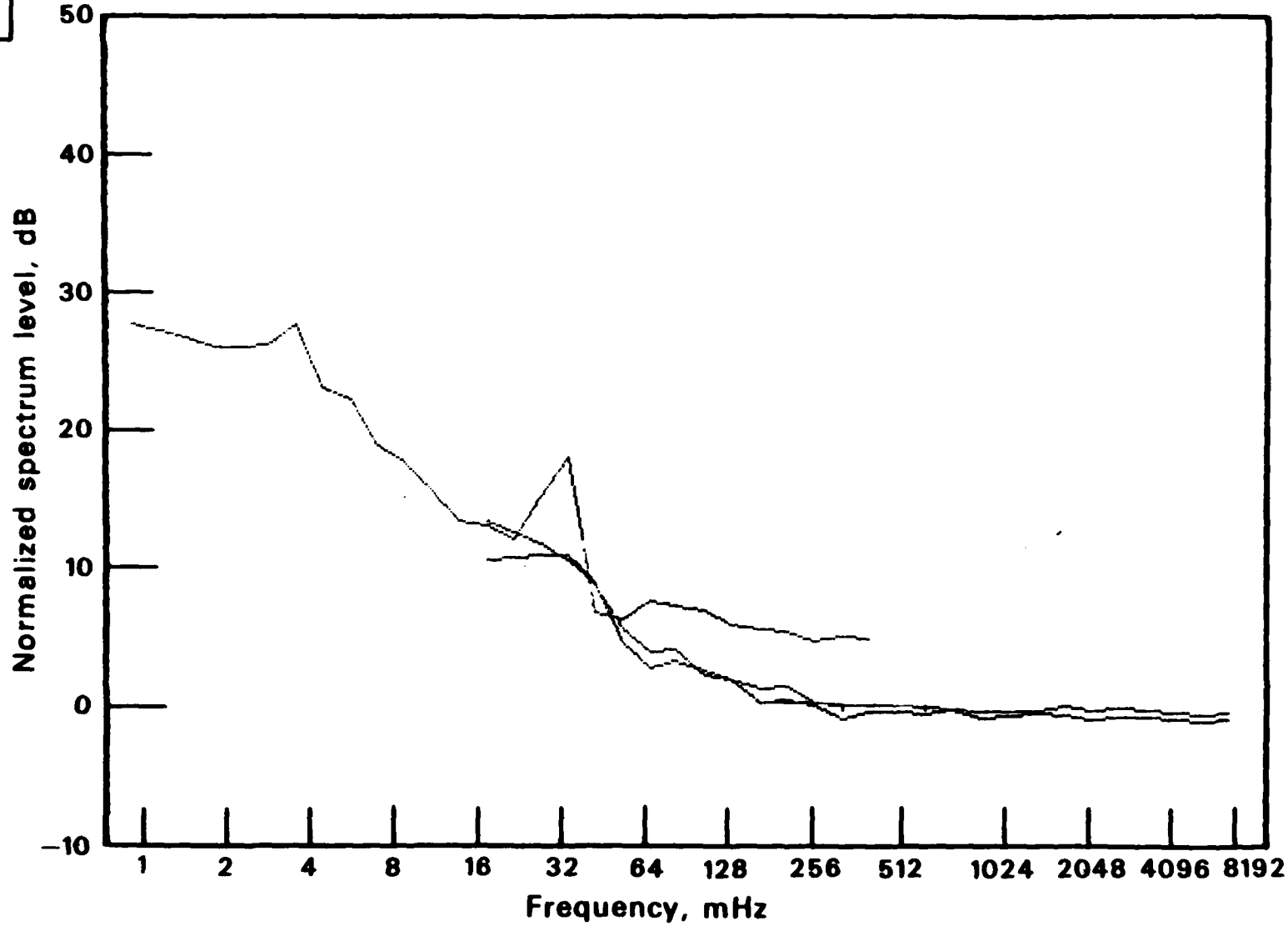
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 11A

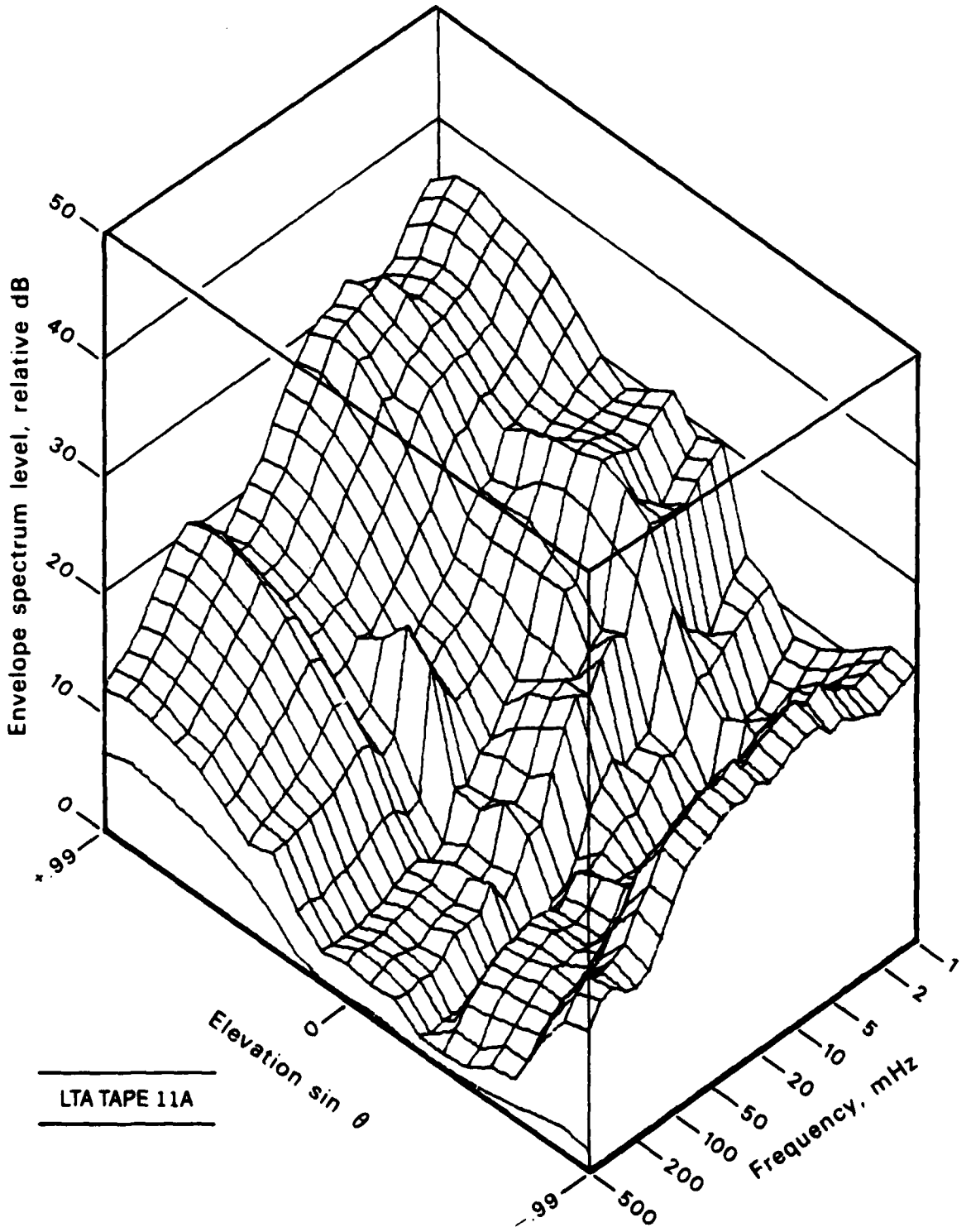
MPL-M-4970

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 11A

GROUP 11A

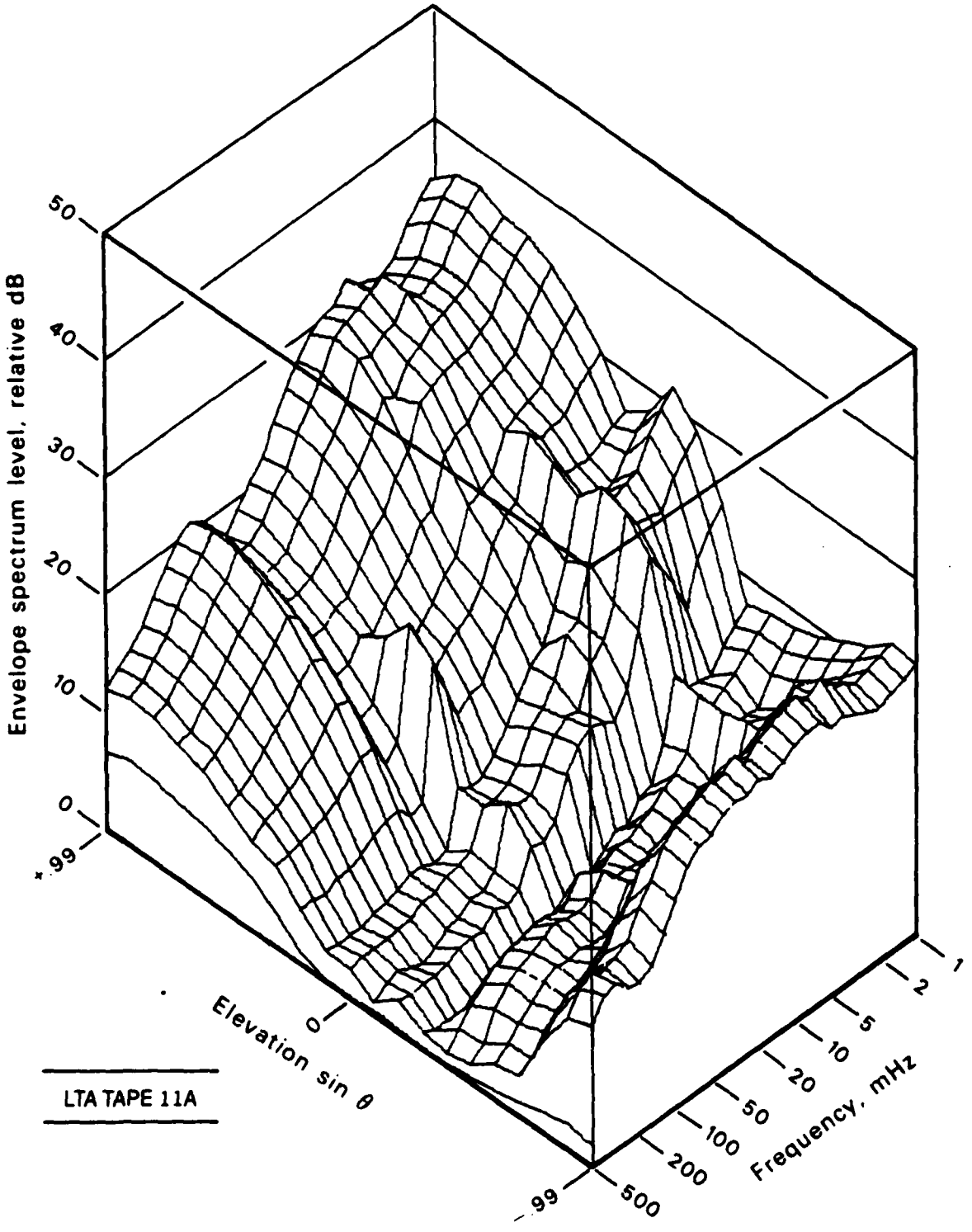


LTA TAPE 11A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4971

GROUP 11A



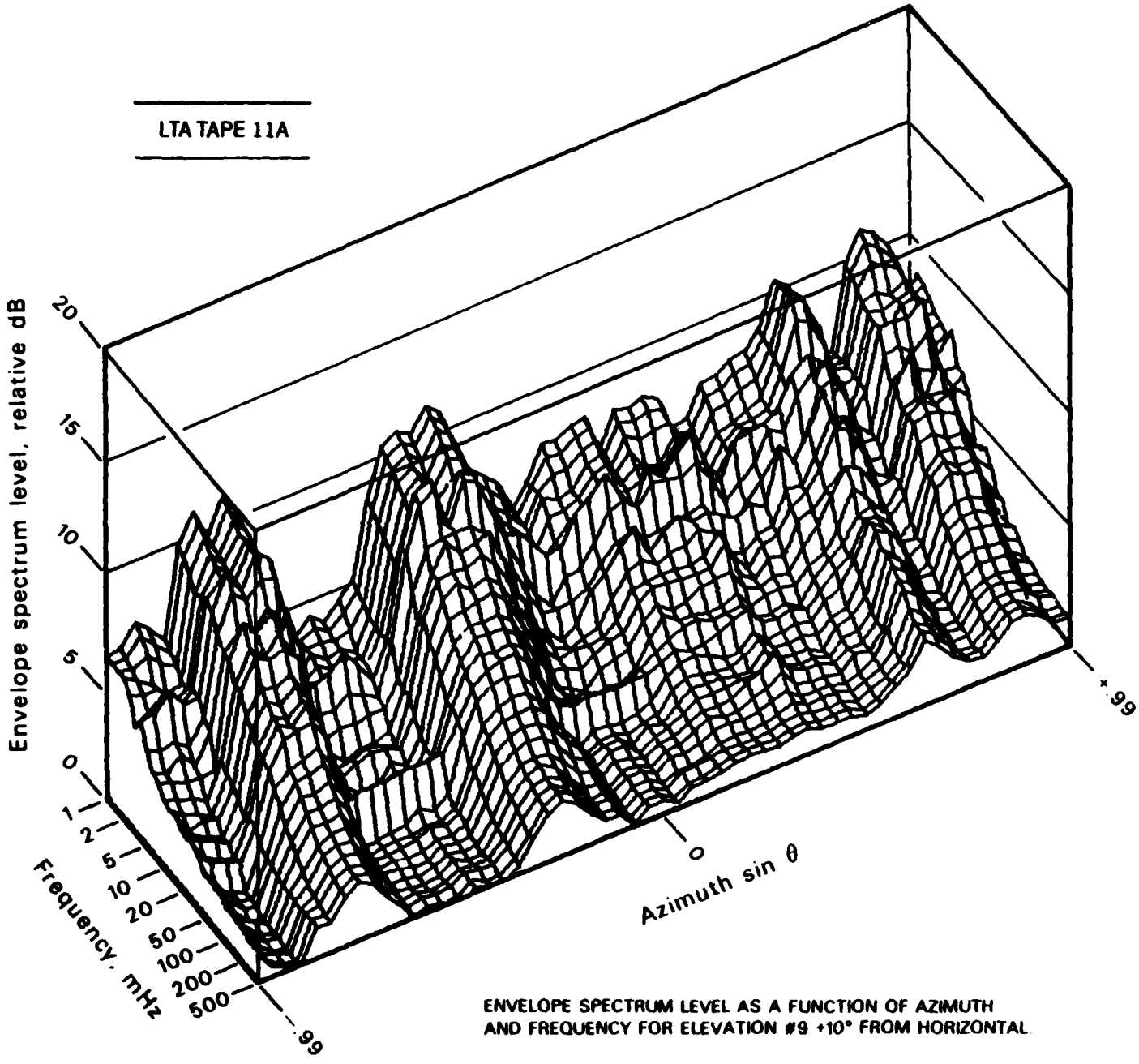
LTA TAPE 11A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA TRUE BEARING STABILIZED BEAM SET

MPL-M-4972

MPL-M-4973

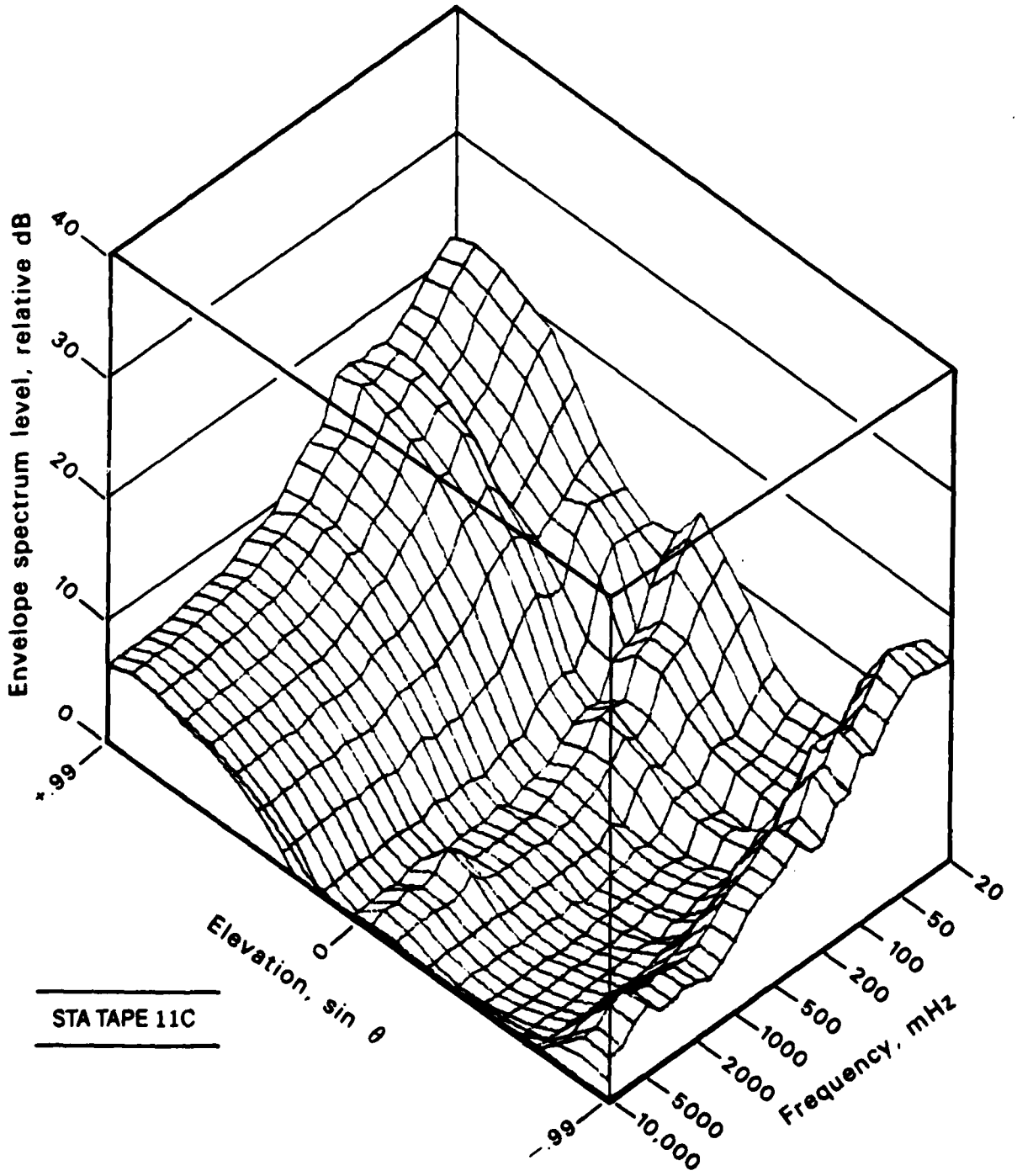
LTA TAPE 11A



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 11A

GROUP 11A

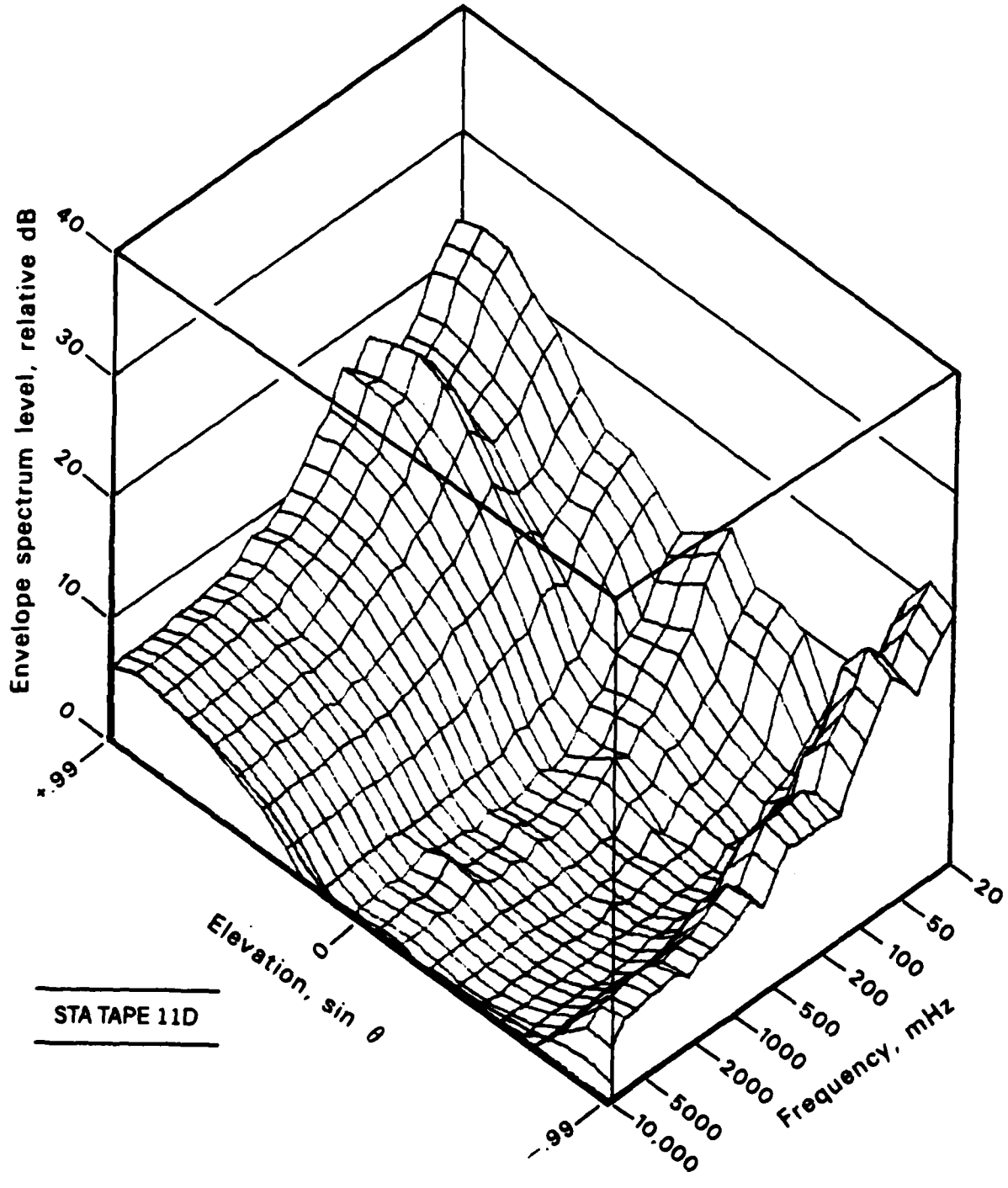


STA TAPE 11C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4974

GROUP 11A



STA TAPE 11D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-4975

GROUP 11A

LTA TAPE 11A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.3	34.4	33.3	32.0	29.7	29.2	28.5	29.8	30.9	29.5
ANGLE +84°	29.3	28.5	26.9	25.2	23.1	20.8	19.5	17.9	16.4	16.2
	19.1	19.7	18.8	17.2	15.5	13.7	12.4	11.5	10.6	
2	71.0	36.2	35.1	33.6	31.4	30.5	29.5	32.0	31.3	30.6
+64°	30.3	29.5	27.3	25.3	23.7	21.2	19.9	18.1	17.1	17.0
	19.4	20.4	19.1	17.8	16.1	14.3	13.1	11.9	11.2	
3	70.8	36.4	35.3	34.0	32.1	31.5	30.9	32.0	30.2	29.9
+53°	28.9	29.2	26.3	24.4	23.1	20.5	19.1	17.0	16.6	16.6
	18.7	20.2	18.3	17.2	15.6	13.8	12.7	11.4	10.8	
4	70.3	35.5	34.6	33.4	31.8	31.3	30.8	30.6	29.5	28.9
+44°	26.8	27.3	24.5	22.9	21.5	19.1	17.4	16.2	15.7	15.7
	17.8	19.0	17.2	16.0	14.6	13.0	12.0	10.5	10.2	
5	69.8	35.0	34.0	32.5	30.4	29.9	29.3	29.3	28.8	28.3
+37°	26.9	24.5	22.7	20.8	19.2	17.5	15.5	15.2	14.4	14.2
	16.8	17.4	16.0	14.7	13.3	11.9	11.0	10.0	9.4	
6	69.1	33.8	32.7	31.2	29.0	28.2	27.2	27.5	25.8	25.6
+30°	23.7	21.1	20.0	18.1	16.5	15.3	13.8	14.2	12.6	12.2
	14.6	15.1	13.8	12.3	11.4	10.4	9.1	8.1	7.7	
7	68.2	32.0	31.0	29.6	27.7	26.9	26.1	26.1	22.8	22.5
+23°	21.0	18.2	17.1	15.7	14.7	13.0	13.7	15.6	10.7	10.0
	12.4	12.7	11.4	9.8	8.9	8.3	7.6	7.1	6.1	
8	66.7	29.7	29.0	28.2	27.3	26.8	26.3	27.7	23.4	22.5
+17°	20.4	17.9	15.8	15.0	14.5	13.3	15.5	18.3	9.4	8.5
	10.2	10.2	9.4	8.3	7.9	7.5	7.1	7.0	6.8	
9	64.8	28.2	28.0	27.9	27.8	27.7	27.7	28.4	25.5	22.9
+12°	20.6	17.7	14.5	13.1	12.3	11.8	13.6	16.3	5.4	5.0
	6.0	6.0	5.2	4.4	3.9	3.8	3.1	3.4	3.3	
10	64.0	29.6	29.2	28.7	28.3	28.6	29.0	28.7	26.2	21.3
+6°	20.4	16.1	12.7	11.5	9.2	8.7	6.7	7.1	3.2	2.4
	3.2	3.1	2.4	1.8	1.6	1.1	1.1	1.1	1.2	
11	64.0	31.0	30.3	29.5	28.5	28.9	29.3	29.5	25.9	20.5
0°	20.5	16.1	14.2	13.9	11.7	9.7	6.9	6.8	4.6	3.6
	4.6	3.5	3.3	2.8	2.4	2.1	2.0	2.1	1.8	
12	64.3	28.5	27.6	26.5	24.9	26.0	26.9	28.7	24.4	17.9
−6°	16.7	15.1	15.8	14.8	13.1	9.6	8.1	8.9	4.3	3.6
	4.6	3.2	3.1	2.6	1.8	2.0	2.2	2.0	1.4	
13	64.1	29.5	28.7	27.8	26.5	26.6	26.8	27.1	23.0	18.9
−12°	19.7	18.4	15.9	16.7	14.6	11.5	7.8	7.5	4.9	3.4
	5.7	3.9	3.6	3.6	2.2	1.7	1.7	1.4	1.6	
14	63.9	21.3	20.3	18.9	16.7	17.8	18.7	21.3	17.8	12.1
−17°	11.5	10.7	12.0	10.5	8.8	5.5	3.6	3.4	0.6	0.7
	1.1	0.3	0.4	0.6	0.1	−1.0	−0.3	−0.6	−0.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 11A

LTA TAPE 11A

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.0	20.3	19.8	19.2	18.4	17.6	16.6	16.7	12.6	11.6
ANGLE −23°	12.2	10.6	8.9	9.2	8.5	7.6	6.9	7.4	5.9	5.6
	6.1	5.9	5.5	5.4	4.7	3.8	2.7	1.1	−0.2	
16	64.2	17.2	16.3	15.1	13.4	13.2	12.9	14.5	9.0	9.8
−30°	8.8	7.8	6.2	6.8	6.8	7.0	6.9	8.3	6.5	6.0
	6.1	6.6	6.1	5.6	5.1	4.5	3.0	1.0	0.2	
17	64.6	17.8	16.8	15.5	13.6	13.6	13.6	15.9	11.1	11.0
−37°	9.8	9.3	8.1	8.6	7.9	8.0	8.5	9.1	6.7	6.2
	6.1	6.4	6.0	6.5	5.8	4.7	3.7	2.7	1.7	
18	65.0	19.0	18.2	17.2	15.9	15.9	15.9	17.7	13.9	14.4
−44°	13.6	12.1	11.8	11.0	11.1	11.1	11.5	10.4	9.4	9.3
	8.7	7.8	7.3	6.3	5.7	5.3	4.4	2.8	2.0	
19	65.6	20.6	20.2	19.7	19.1	19.8	20.5	21.8	19.7	20.5
−53°	20.0	19.2	18.7	17.5	18.7	18.0	18.0	17.4	16.7	16.3
	15.5	13.3	12.2	10.3	7.6	9.0	9.1	8.0	6.7	
20	66.0	22.3	21.9	21.5	21.1	21.9	22.5	23.8	22.7	23.6
−64°	23.3	22.6	22.1	21.2	22.2	21.5	21.5	21.1	20.3	19.9
	19.0	16.7	15.1	13.0	12.2	12.0	12.4	11.6	10.0	
21	65.6	21.8	21.4	20.9	20.3	20.8	21.3	22.0	21.6	22.9
−84°	22.7	22.3	21.6	21.1	21.7	21.0	21.2	20.8	19.9	19.5
	18.6	16.3	14.2	12.2	11.5	11.8	12.8	12.5	10.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET

GROUP 11A

LTA TAPE 11A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	70.3	34.4	33.3	32.0	29.7	29.2	28.5	29.8	30.9	29.5
ANGLE +84°	29.3	28.5	26.9	25.2	23.1	20.8	17.5	17.9	16.4	16.2
	19.1	19.7	18.8	17.2	15.5	13.7	12.4	11.5	10.6	
2	71.0	36.2	35.1	33.6	31.4	30.5	27.5	32.0	31.3	30.6
+64°	30.3	29.5	27.3	25.3	23.7	21.2	19.9	18.1	17.1	17.0
	19.4	20.4	19.1	17.8	16.1	14.3	13.1	11.9	11.2	
3	70.8	36.6	35.5	34.1	32.0	31.5	30.9	32.1	30.2	29.9
+53°	28.9	29.2	26.3	24.4	23.1	20.4	19.1	17.1	16.6	16.7
	18.7	20.2	18.3	17.3	15.6	13.9	12.8	11.6	11.0	
4	70.3	35.5	34.6	33.5	31.9	31.4	30.9	30.5	29.6	29.0
+44°	26.7	27.2	24.7	22.9	21.7	19.1	17.4	16.3	15.7	15.7
	17.8	19.1	17.2	15.9	14.6	13.0	12.0	10.5	10.2	
5	69.8	35.3	34.3	32.9	30.8	30.1	29.3	29.1	28.9	28.3
+37°	27.7	24.2	22.7	20.5	19.4	17.4	15.6	15.2	14.3	14.2
	16.7	17.4	16.0	14.7	13.3	11.9	10.9	10.0	9.4	
6	69.1	34.2	33.1	31.5	29.0	28.5	27.8	27.6	26.0	25.6
+30°	24.7	20.6	20.3	18.0	16.6	15.4	13.8	14.2	12.6	12.3
	14.6	15.1	13.8	12.4	11.4	10.4	9.1	8.1	7.7	
7	68.2	32.3	31.2	29.8	27.6	27.1	26.5	25.9	23.0	22.3
+23°	21.7	18.1	17.3	15.6	14.6	13.2	13.7	15.7	10.7	10.1
	12.5	12.8	11.5	9.9	9.0	8.3	7.6	7.2	6.2	
8	66.7	29.7	28.9	27.9	26.6	26.3	26.1	27.2	22.0	21.4
+17°	19.7	17.1	15.5	14.7	13.9	12.5	15.1	18.3	8.9	7.6
	9.7	9.6	8.7	7.5	6.9	6.4	6.0	5.8	5.5	
9	64.8	26.1	25.6	25.1	24.4	24.5	24.5	26.1	21.4	20.6
+12°	17.2	16.1	13.9	11.8	11.5	10.4	13.4	16.5	5.1	4.7
	5.9	5.6	5.2	4.2	3.9	3.7	3.1	3.4	3.3	
10	63.9	27.6	26.6	25.4	23.7	23.5	23.4	24.7	19.8	16.4
+6°	14.0	13.1	11.0	9.3	7.7	6.5	6.3	7.1	2.4	1.9
	2.5	2.6	2.0	1.5	1.4	0.9	1.0	0.9	1.1	
11	63.9	31.2	30.1	28.6	26.2	25.8	25.3	27.0	21.3	17.0
0°	16.6	13.3	11.7	10.6	8.3	7.4	6.8	7.0	3.9	3.3
	3.1	2.4	2.3	1.7	1.6	1.4	1.4	1.4	1.1	
12	64.2	28.8	27.7	26.3	24.0	24.3	24.6	26.3	19.3	16.6
−6°	15.4	12.0	12.3	11.5	9.7	7.8	7.8	8.8	3.5	2.5
	2.6	1.7	1.5	0.6	0.0	0.4	0.9	0.6	-0.3	
13	64.0	24.0	22.6	20.7	17.0	20.2	22.0	23.9	18.4	14.0
−12°	12.0	12.6	12.9	12.1	10.4	7.1	6.1	6.3	3.4	2.9
	3.3	2.2	2.3	2.1	1.5	1.1	1.3	1.1	1.4	
14	63.9	16.7	15.8	14.6	12.9	13.1	13.3	15.2	10.0	7.2
−17°	6.7	5.2	5.4	4.5	3.5	2.6	2.0	2.3	0.1	0.2
	0.2	-0.1	-0.1	0.4	-0.0	-1.1	-0.4	-0.6	-0.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 11A

LTA TAPE 11A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4 80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	64.0	17.4	16.7	15.7	14.5	13.9	13.1	14.9	10.9	9.6
ANGLE −23°	9.2	8.1	7.5	7.0	7.0	6.4	6.4	7.0	5.4	5.2
	5.5	5.4	5.0	4.9	4.4	3.4	2.4	1.0	−0.2	
16	64.2	17.6	16.6	15.1	13.0	13.1	13.2	14.8	9.7	9.8
−30°	8.5	8.2	6.5	7.0	7.1	7.3	7.3	8.7	7.0	6.6
	6.7	7.2	6.6	6.0	5.4	4.9	3.4	1.2	0.3	
17	64.6	18.4	17.4	16.1	14.3	14.2	14.0	15.5	11.6	11.1
−37°	10.0	9.5	8.2	8.8	7.8	8.1	8.5	9.1	6.7	6.2
	6.1	6.4	6.1	6.4	5.7	4.7	3.7	2.6	1.7	
18	65.0	19.5	18.7	17.6	16.2	16.0	15.7	17.6	13.9	14.5
−44°	13.5	12.4	11.9	11.2	11.2	11.2	11.7	10.4	9.5	9.4
	8.7	7.8	7.3	6.3	5.7	5.3	4.4	2.9	2.0	
19	65.6	20.5	20.1	19.5	18.9	19.7	20.3	21.6	19.7	20.6
−53°	19.9	19.2	18.7	17.6	18.7	18.0	18.0	17.4	16.7	16.3
	15.5	13.3	12.2	10.3	9.6	9.0	9.2	8.0	6.7	
20	66.0	22.3	21.9	21.5	21.1	21.9	22.5	23.8	22.7	23.6
−64°	23.3	22.6	22.1	21.2	22.2	21.5	21.5	21.1	20.3	19.9
	19.0	16.7	15.1	13.0	12.2	12.0	12.4	11.6	10.0	
21	65.6	21.8	21.4	20.9	20.3	20.8	21.3	22.0	21.6	22.9
−84°	22.7	22.3	21.6	21.1	21.7	21.0	21.2	20.8	19.9	19.5
	18.6	16.3	14.2	12.2	11.5	11.8	12.8	12.5	10.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 11A

GROUP 11A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.7	23.6	23.6	23.7	23.8	21.6	17.3	19.6	15.7	12.8
ANGLE −71.3°	12.2	10.3	9.7	9.9	9.0	8.3	8.7	7.9	6.3	6.2
	5.8	5.6	4.7	4.7	4.5	4.3	3.7	3.6	3.4	
2	63.5	24.5	23.8	23.0	22.1	20.8	18.9	20.2	14.3	11.6
−66°	11.3	9.1	7.8	6.2	6.5	7.0	5.0	5.4	1.8	2.8
	2.2	1.2	1.4	1.1	1.0	0.3	-0.0	-0.1	0.2	
3	63.3	27.8	26.4	24.4	20.3	20.6	21.0	22.8	15.0	14.0
−61.6°	10.2	8.4	6.8	6.9	5.2	5.8	3.7	4.6	-0.0	-0.1
	-0.2	-1.3	-0.2	-1.2	-1.3	-1.8	-1.2	-1.6	-0.9	
4	63.2	25.5	24.1	21.9	17.5	17.0	16.5	19.5	13.1	10.9
−57.8°	9.8	7.1	5.5	6.1	4.0	4.1	2.6	3.2	-0.9	-1.1
	-1.2	-2.5	-1.6	-2.2	-1.8	-2.5	-2.2	-2.3	-1.6	
5	63.1	32.5	21.5	20.2	18.4	19.0	19.6	19.4	17.1	15.9
−54.3°	10.3	13.3	11.7	11.0	9.5	8.0	8.5	8.7	6.0	5.5
	5.1	4.3	3.9	4.1	3.6	3.6	4.1	4.1	4.0	
6	63.8	38.9	37.7	36.1	33.5	34.3	34.9	34.2	31.2	29.4
−51.1°	28.7	25.7	25.6	23.1	21.2	19.5	18.6	17.7	15.5	13.6
	11.2	10.0	8.4	6.8	5.6	5.0	4.5	4.0	3.7	
7	65.8	43.5	42.5	41.2	39.4	38.4	37.2	40.4	37.3	31.3
−48.1°	34.6	30.9	30.5	26.3	25.4	23.7	23.3	22.2	17.8	17.0
	15.3	13.7	12.4	10.1	9.7	8.6	7.9	7.3	7.1	
8	67.5	37.8	37.5	37.2	36.8	36.3	35.6	35.7	35.0	30.4
−45.3°	31.8	28.6	29.3	25.6	23.5	22.3	22.2	22.7	18.6	17.2
	15.0	13.8	12.2	11.5	10.8	10.0	9.3	8.9	8.9	
9	66.7	43.9	43.1	42.1	40.7	40.9	41.1	41.5	37.4	33.9
−42.6°	34.3	31.4	30.0	26.8	26.0	24.6	24.8	23.2	19.9	18.2
	16.0	14.5	12.7	11.5	10.2	9.2	8.4	7.9	7.5	
10	64.6	40.1	39.5	38.8	38.0	37.3	36.4	38.9	37.0	27.6
−40.0°	33.7	27.3	27.5	22.4	22.6	20.8	20.9	19.2	15.3	13.3
	12.7	10.8	8.8	8.0	6.5	5.1	5.4	4.5	3.8	
11	63.2	28.6	28.0	27.4	26.5	25.6	24.4	27.8	26.7	20.4
−37.5°	25.0	16.1	16.6	14.0	11.7	11.0	10.5	9.6	6.0	4.0
	4.8	3.2	2.5	2.6	1.9	1.6	2.5	1.8	1.2	
12	62.9	14.5	14.3	14.2	14.0	12.6	10.6	13.1	13.3	7.5
−35.1°	10.2	3.9	2.4	2.9	0.1	3.9	4.3	7.2	-1.9	-2.1
	-1.7	-1.7	-1.5	-2.0	-2.0	-2.4	-2.5	-2.7	-2.6	
13	62.8	13.9	13.0	11.9	10.3	11.2	11.9	13.0	8.8	6.0
−32.8°	4.5	3.1	2.8	0.7	0.4	3.3	5.2	7.0	-1.6	-1.4
	-1.7	-1.3	-1.4	-2.1	-2.7	-2.2	-2.0	-2.2	-2.5	
14	62.8	13.2	13.5	13.7	14.0	13.0	11.7	14.3	8.7	7.0
−30.5°	2.0	3.5	4.1	0.5	-0.7	1.8	4.8	7.0	-1.0	-1.2
	-1.5	-1.9	-2.4	-2.7	-3.0	-2.8	-2.2	-2.6	-3.1	
15	62.9	16.0	15.0	13.7	11.9	11.3	10.6	16.8	10.5	6.3
−28.3°	3.2	4.5	4.8	0.7	0.7	2.7	5.9	7.5	-0.8	-1.5
	-1.0	-1.9	-2.5	-2.0	-2.5	-2.4	-2.1	-2.5	-3.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 11A

GROUP 11A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 16 ANGLE −26.1°	62.9 3.1 0.3	13.8 3.8 −0.8	13.5 4.5 −0.6	13.0 3.4 −0.8	12.6 2.1 −0.6	11.8 2.8 −1.0	10.9 5.9 −0.6	13.3 7.4 −0.8	9.2 1.3 −1.0	7.2 −0.7
17 −24.0°	62.9 3.9 −0.6	16.8 2.7 −1.1	15.6 3.4 −1.3	13.9 1.7 −1.4	10.9 0.2 −1.9	11.0 2.2 −1.7	11.1 5.7 −1.3	9.7 7.6 −1.9	7.8 −0.3 −1.6	7.0 −0.9
18 −21.8°	63.0 10.5 0.7	19.3 10.8 0.2	18.5 8.7 −1.1	17.5 6.2 −1.5	16.3 5.2 −1.8	16.0 4.9 −1.4	15.6 5.9 −1.4	16.1 8.0 −1.8	16.6 1.8 −2.0	11.7 0.5
19 −19.8°	63.3 21.3 6.5	32.5 23.8 4.9	31.7 20.3 3.7	30.6 19.1 2.3	29.2 16.3 1.5	28.1 13.6 1.4	26.4 13.4 0.8	31.3 12.7 0.2	31.1 10.5 −0.2	25.8 7.2
20 −17.7°	64.6 29.1 12.0	41.1 29.6 10.1	40.3 27.1 8.9	39.4 24.7 7.2	38.2 21.5 6.0	37.0 19.9 5.6	35.5 19.2 4.4	40.1 17.7 3.6	39.2 16.3 3.7	32.7 13.4
21 −15.7°	66.7 33.8 13.9	42.5 29.7 12.5	41.8 28.9 11.0	40.9 25.2 9.8	39.8 23.7 8.8	39.6 22.6 8.4	39.4 21.1 7.4	41.5 19.2 7.3	40.9 18.0 7.0	33.2 15.1
22 −13.7°	67.8 31.1 14.1	41.0 29.4 13.0	40.0 26.7 11.8	38.7 25.8 10.1	36.7 23.3 9.9	36.2 22.5 9.0	35.7 20.2 8.7	32.5 20.2 8.9	33.2 18.3 8.4	33.4 16.1
23 −11.7°	67.0 31.3 14.4	45.1 30.6 12.6	44.3 27.8 11.5	43.3 26.5 9.5	42.0 23.7 8.7	40.5 22.4 7.8	38.1 20.8 7.2	40.8 20.4 7.3	40.1 17.6 6.9	33.2 15.5
24 −9.7°	65.2 32.5 12.3	42.8 27.6 10.5	42.1 25.5 9.0	41.2 23.4 7.2	40.0 21.6 5.6	39.2 19.9 4.8	38.1 19.2 4.1	39.2 17.0 4.2	38.9 14.5 4.1	30.6 12.8
25 −7.8°	64.0 26.3 8.6	36.2 22.9 7.3	35.6 20.7 5.4	34.9 18.4 4.1	34.1 16.3 2.6	33.6 15.6 1.8	33.2 13.2 1.9	33.1 11.2 1.5	32.6 8.3 1.6	25.5 7.0
26 −5.8°	63.7 18.4 5.1	30.3 19.0 4.8	29.5 16.4 4.2	28.6 13.5 3.0	27.5 12.5 2.2	28.0 11.5 1.9	28.5 8.1 1.8	28.3 7.7 1.6	25.8 3.9 1.6	21.8 3.1
27 −3.9°	63.8 11.8 1.0	28.1 12.3 0.5	26.8 10.3 −0.1	24.9 8.0 −0.8	21.3 6.0 −0.4	22.6 6.4 −1.0	23.6 5.9 −1.2	25.6 6.7 −1.2	20.4 0.0 −1.1	16.3 0.3
28 −1.9°	63.9 10.3 1.8	25.5 8.5 2.3	24.2 7.7 1.7	22.4 7.3 1.0	19.1 4.7 1.0	19.2 3.6 0.9	19.3 6.5 0.6	22.3 7.4 0.8	14.2 2.3 0.8	12.2 1.5
29 0°	64.0 7.4 1.8	20.0 7.2 2.1	19.7 8.3 1.0	19.4 6.0 1.0	19.0 3.2 1.2	17.6 3.1 0.9	15.2 5.4 0.4	19.2 6.7 0.6	11.0 1.9 0.9	12.1 1.8
30 +1.9°	64.0 9.5 0.0	23.7 8.1 −0.2	24.0 7.8 0.2	24.3 7.7 −0.3	24.6 6.1 −0.2	22.6 4.1 −0.7	18.9 4.1 −0.7	19.6 6.6 −0.8	15.3 1.5 −0.6	12.3 0.7

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 11A

GROUP 11A

PAGE 3

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 31 ANGLE +3.9°	63.9 14.3 2.2	29.5 8.8 1.4	28.2 8.0 1.5	26.4 9.0 1.5	23.3 6.6 1.4	22.5 3.7 0.2	21.6 5.1 1.4	24.6 6.8 0.7	15.6 1.9 1.1	13.5 1.5
32 +5.8°	63.8 16.2 1.6	29.1 13.2 2.3	27.9 10.3 1.8	26.3 9.5 1.5	23.8 7.6 1.2	23.7 5.4 0.3	23.6 6.4 1.4	26.4 6.6 0.8	19.3 3.0 1.3	16.9 2.2
33 +7.8°	64.0 19.8 3.6	30.6 16.6 3.7	29.7 14.8 3.0	28.6 13.7 3.0	27.1 11.3 1.9	26.7 9.6 1.0	26.3 8.2 1.8	29.3 8.0 1.4	23.7 6.4 1.8	19.4 5.2
34 +9.7°	64.4 22.6 5.9	31.1 17.9 5.3	30.3 15.0 4.2	29.3 15.3 4.2	28.1 13.3 3.1	27.6 12.8 2.1	27.1 9.7 2.2	25.1 9.0 2.2	24.8 7.8 2.3	20.2 6.7
35 +11.7°	64.5 16.6 5.7	24.2 15.8 5.1	23.9 15.2 3.8	23.7 14.9 3.2	23.4 11.4 3.2	23.0 10.7 2.4	22.7 10.7 1.8	20.2 7.8 2.4	22.5 8.1 2.5	18.0 6.0
36 +13.7°	64.2 19.5 5.4	30.2 16.8 5.2	29.2 15.1 4.2	28.0 14.6 3.3	26.3 11.8 2.9	25.2 10.7 2.3	23.7 11.1 1.8	27.6 8.1 2.2	25.7 7.1 2.3	18.5 5.3
37 +15.7°	63.9 21.1 4.6	29.3 17.1 5.3	28.0 14.9 5.8	26.1 14.4 4.5	22.6 13.4 3.2	23.2 10.1 2.4	23.7 9.8 2.0	24.6 8.8 2.1	25.3 5.5 2.2	19.1 5.1
38 +17.7°	63.8 19.2 4.5	30.5 19.0 5.3	29.0 15.2 7.0	26.8 14.5 5.3	21.8 13.6 4.0	23.4 9.9 3.2	24.5 9.9 2.8	27.8 10.2 2.7	24.5 5.5 2.9	19.2 6.2
39 +19.8°	64.3 19.8 7.2	29.0 17.3 7.0	28.1 18.8 9.8	27.0 18.0 7.0	25.6 13.8 4.8	27.3 11.3 4.1	28.6 10.3 3.2	30.1 11.0 2.8	26.2 7.9 3.1	19.8 7.9
40 +21.8°	64.6 17.9 4.6	22.5 12.5 4.5	22.6 13.2 5.3	22.8 11.2 3.8	22.9 10.0 2.8	22.6 8.0 2.7	22.3 7.1 2.5	23.8 7.6 2.0	22.5 5.7 2.0	15.3 5.5
41 +24.0°	64.7 16.5 4.2	23.4 11.4 3.9	22.4 9.7 4.1	21.2 9.0 3.2	19.4 8.6 2.7	18.7 8.8 2.6	17.9 6.5 1.9	19.6 6.9 2.1	16.8 5.8 1.9	12.5 5.0
42 +26.1°	64.6 17.9 4.1	28.6 13.6 3.9	27.4 13.1 4.1	25.7 12.1 3.0	23.1 9.9 2.7	22.7 9.0 2.8	22.2 7.6 2.0	25.5 8.0 2.0	19.1 6.3 1.9	17.0 5.3
43 +28.3°	64.4 16.1 2.7	28.7 14.3 3.0	27.6 13.6 2.9	26.0 11.0 2.4	23.7 9.3 1.8	24.5 8.5 1.6	25.3 5.8 1.1	26.0 6.5 0.9	21.4 5.5 1.0	19.7 4.5
44 +30.5°	64.4 26.3 6.1	30.4 19.8 5.2	29.3 17.6 4.5	27.7 16.6 5.0	25.1 12.7 2.6	24.8 11.1 2.6	24.4 9.6 2.1	26.3 9.0 1.8	26.5 8.2 2.1	23.7 6.6
45 +32.8°	64.6 22.3 6.6	31.0 18.9 5.4	29.9 19.1 4.5	28.3 17.4 4.2	26.0 15.6 4.0	25.5 11.9 3.7	24.9 12.0 3.0	28.5 11.3 3.8	25.0 9.3 4.1	20.4 7.0

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 11A

GROUP 11A

PAGE 4

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	65.1	34.1	33.6	33.0	32.4	31.2	29.5	33.4	30.7	23.9
ANGLE +35.1°	26.9	23.6	22.3	19.9	20.0	15.6	13.8	13.0	13.3	11.9
	9.3	8.3	7.4	7.1	8.3	6.6	5.1	5.8	6.1	
47	66.2	41.5	41.7	41.9	42.1	39.4	30.4	35.5	33.5	31.9
+37.5°	32.8	29.2	28.6	22.0	24.1	21.5	17.6	18.3	19.0	18.7
	16.7	17.1	16.0	15.1	14.3	12.2	11.0	10.7	10.3	
48	66.0	39.3	39.8	40.1	40.5	37.7	27.9	33.2	34.3	32.4
+40.0°	24.4	28.3	27.0	21.3	22.6	18.7	18.4	17.9	17.3	17.4
	14.5	15.0	14.4	12.9	12.4	10.5	9.4	9.2	8.0	
49	65.6	32.8	33.6	34.3	34.9	32.3	24.9	26.8	29.6	27.8
+42.6°	19.5	23.7	22.1	18.4	18.6	14.9	16.6	15.0	13.0	13.5
	11.0	10.6	10.3	8.4	8.3	6.5	5.5	5.8	5.2	
50	65.3	23.3	24.3	25.1	25.8	23.4	17.8	21.0	20.9	19.0
+45.3°	16.3	16.0	14.6	11.9	11.5	8.6	9.6	8.3	5.6	7.0
	5.7	4.6	5.2	3.3	3.5	3.1	2.7	2.9	3.2	
51	65.2	24.7	24.8	25.0	25.1	24.9	24.7	24.5	18.1	18.5
+48.1°	16.5	14.1	15.3	15.4	14.5	11.2	9.4	9.7	7.5	6.8
	4.6	5.1	4.1	3.2	3.2	2.9	2.2	2.7	2.9	
52	65.9	39.3	38.4	37.3	35.8	35.3	34.7	35.3	31.1	27.5
+51.1°	28.2	25.5	25.2	25.2	22.9	18.9	19.1	18.5	14.5	13.6
	11.7	10.7	8.7	7.3	6.7	6.0	4.6	5.1	4.6	
53	67.3	44.2	42.8	40.7	36.4	34.5	31.1	35.1	31.9	29.4
+54.3°	32.7	26.0	27.0	26.0	23.6	21.3	21.1	20.1	16.2	14.8
	13.7	11.4	10.0	8.4	8.3	7.6	7.0	7.4	6.9	
54	67.8	42.6	41.2	39.1	35.0	35.4	35.8	34.5	29.4	27.7
+57.8°	23.2	25.6	25.0	25.0	21.6	21.1	18.9	18.8	16.0	14.6
	13.1	10.8	9.7	8.5	8.3	7.6	7.2	7.4	7.3	
55	66.9	39.0	38.3	37.5	36.4	36.2	35.9	36.9	32.0	26.3
+61.6°	29.5	25.1	26.3	23.8	21.5	19.8	19.3	18.5	14.7	13.4
	12.4	10.5	9.4	7.9	7.1	7.0	5.8	5.7	5.9	
56	66.0	29.1	28.9	28.6	28.2	26.9	24.9	25.6	23.8	21.3
+66.0°	23.5	18.7	19.0	16.8	15.5	13.5	12.6	11.2	8.7	7.7
	6.6	6.2	4.8	4.3	3.9	4.4	3.1	3.3	3.7	
57	65.9	31.8	30.9	29.9	28.5	27.9	27.1	29.0	23.7	23.6
+71.3°	21.3	14.0	13.6	15.4	13.0	9.6	9.5	6.5	7.4	6.0
	4.4	4.7	3.8	3.4	3.4	3.8	3.0	3.1	3.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 11A

STA TAPE 11C

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.1 17.9 8.2	22.8 14.6 7.9	21.9 14.0 7.7	20.8 13.1 7.4	17.3 11.5 7.3	18.6 10.3 7.2	17.7 9.9 7.2	18.1 9.5 7.2	17.8 8.6 7.0	18.2 8.1
2 +64°	57.9 18.6 9.1	23.6 15.2 8.7	22.7 14.7 8.6	21.4 13.4 8.3	19.6 11.9 8.1	18.6 11.6 8.0	17.3 10.6 8.1	19.3 10.4 8.0	18.6 9.5 7.9	18.0 9.1
3 +53°	57.7 17.7 8.7	23.1 15.4 8.3	22.0 14.2 8.2	20.5 12.9 8.1	18.2 11.4 7.8	17.5 11.8 7.7	16.6 10.5 7.8	19.0 10.0 7.6	19.0 9.1 7.6	17.6 8.9
4 +44°	57.2 17.0 8.0	22.0 15.1 7.6	20.9 13.2 7.5	19.4 12.5 7.3	17.1 10.8 7.1	16.2 11.1 7.1	15.1 9.9 7.1	18.1 9.1 7.0	18.3 8.4 6.8	16.5 8.0
5 +37°	56.7 15.4 7.2	21.1 13.5 7.0	19.9 12.3 6.8	18.4 11.4 6.6	16.1 10.0 6.5	14.8 9.8 6.4	12.8 9.0 6.5	16.5 8.3 6.3	17.6 7.6 6.3	15.3 7.1
6 +30°	55.9 13.1 5.9	18.1 10.5 6.1	17.1 9.8 5.7	15.8 9.2 5.4	13.9 8.2 5.6	12.9 7.6 5.4	11.6 7.6 5.4	13.5 7.2 5.2	14.8 6.2 5.3	13.4 5.9
7 +23°	54.7 10.2 4.3	14.8 8.4 4.6	14.1 7.4 4.2	13.3 6.7 4.3	12.3 6.0 4.3	11.5 5.8 4.2	10.4 5.6 4.1	11.5 5.6 3.9	12.0 4.8 4.1	11.3 4.2
8 +17°	53.5 6.1 2.3	12.5 4.7 2.4	12.8 4.2 2.2	13.0 3.7 2.4	13.3 2.9 2.3	11.4 3.1 2.2	7.9 2.8 2.2	7.8 3.3 2.1	8.8 2.9 1.9	7.9 2.0
9 +12°	51.6 2.5 -0.3	11.1 0.8 -0.1	11.3 0.9 -0.2	11.4 0.6 -0.5	11.5 -0.3 -0.3	9.4 0.1 -0.4	5.1 0.2 -0.5	3.3 -0.0 -0.6	3.7 0.4 -0.6	3.2 -0.4
10 +6°	50.9 1.0 -1.1	11.6 -0.2 -0.8	10.4 -0.5 -0.9	8.6 -0.6 -1.4	5.7 -1.4 -1.2	5.2 -0.8 -1.5	4.7 -1.2 -1.5	2.0 -1.2 -1.6	2.3 -1.1 -1.5	1.7 -1.4
11 0°	51.1 1.8 0.7	14.8 1.1 1.7	13.5 0.5 0.3	11.6 -0.2 -0.1	8.2 -0.7 0.5	7.5 -0.4 0.0	6.8 -0.6 0.2	3.7 -0.5 -0.4	4.0 -0.7 -0.3	3.8 -0.7
12 −6°	51.3 2.0 -0.2	12.6 0.9 1.0	11.6 0.3 0.0	10.1 -0.3 -0.2	7.2 -0.3 0.1	7.4 -0.7 -0.0	6.7 -0.4 -0.2	3.8 -0.4 -0.4	2.8 -0.5 -0.4	3.5 -0.5
13 −12°	51.1 1.3 -1.2	10.1 -0.7 -0.8	9.0 0.0 -1.0	7.6 -1.2 -1.0	5.4 -0.9 -1.1	5.0 -1.0 -1.1	4.6 -1.0 -1.2	2.6 -1.1 -1.3	1.9 -1.0 -1.2	2.8 -1.1
14 −17°	50.9 -0.5 -1.6	6.6 -0.9 -1.7	5.8 -0.6 -1.6	4.6 -1.2 -1.6	3.1 -1.3 -1.6	3.2 -1.8 -1.5	3.3 -1.9 -1.6	1.2 -1.4 -1.7	1.5 -1.8 -1.6	1.3 -1.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 11A

STA TAPE 11C

PAGE 2

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.7 -1.0 -1.8	5.4 -0.7 -1.5	4.7 -0.7 -1.6	4.0 -1.0 -1.6	3.0 -1.2 -1.7	3.0 -1.1 -1.6	2.9 -1.4 -1.6	0.6 -1.3 -1.5	0.8 -1.7 -1.6	1.1 -1.6
16 −30°	51.2 -0.5 -1.2	5.7 -0.2 -1.0	5.0 -0.2 -1.0	4.2 -0.4 -1.2	3.2 -0.8 -1.3	2.9 -0.5 -1.2	2.6 -1.2 -1.1	0.4 -0.9 -1.1	1.3 -1.2 -1.2	1.1 -1.0
17 −37°	51.5 0.4 -0.4	5.8 0.5 -0.3	5.2 0.7 -0.4	4.5 0.4 -0.6	3.6 -0.1 -0.6	3.1 0.2 -0.5	2.5 -0.7 -0.5	1.4 -0.1 -0.6	2.6 -0.1 -0.5	1.7 -0.2
18 −44°	51.7 2.5 0.4	7.8 3.0 0.5	7.9 2.7 0.6	8.1 2.5 0.5	8.2 1.7 0.4	7.0 1.6 0.5	5.2 1.2 0.5	4.8 1.3 0.5	6.2 1.1 0.4	4.4 0.6
19 −53°	52.5 9.7 2.8	14.1 7.9 2.9	14.5 6.7 2.9	14.9 7.6 3.0	15.2 7.0 3.0	13.9 5.9 3.2	12.2 5.1 3.1	11.2 4.7 2.5	12.6 3.9 2.4	10.1 3.3
20 −64°	52.7 13.2 5.1	17.8 10.4 5.3	18.2 9.7 5.6	18.6 10.9 5.2	18.9 10.1 5.3	17.7 9.1 6.1	16.1 8.5 5.7	14.9 7.7 4.6	15.5 6.5 4.5	13.2 5.5
21 −84°	52.5 12.0 5.0	17.5 9.6 5.5	17.8 9.7 5.8	18.0 11.0 5.4	18.3 7.2 5.3	17.3 9.3 6.4	16.0 8.8 5.7	14.2 8.2 4.4	14.9 6.6 4.3	12.3 5.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 11A

STA TAPE 11D

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	57.1 18.5 8.0	24.2 15.8 7.7	23.0 14.5 7.5	21.4 12.9 7.5	18.8 11.4 7.1	17.6 10.4 7.2	16.0 9.6 7.0	17.9 9.7 7.1	19.7 8.6 6.9	17.5 8.0
2 +64°	57.9 18.6 8.6	25.0 15.9 8.7	23.8 15.2 8.3	22.1 13.4 8.4	19.3 12.1 8.1	18.2 11.3 8.0	16.6 10.4 7.8	18.8 10.5 7.8	20.6 9.4 7.9	18.3 8.9
3 +53°	57.6 18.4 8.1	24.8 15.3 8.6	23.5 14.7 8.1	21.8 13.1 8.1	18.9 11.9 7.9	17.9 11.1 7.8	16.6 10.3 7.6	19.8 10.1 7.5	21.3 9.1 7.4	18.4 8.4
4 +44°	57.2 16.7 7.6	22.7 14.3 8.0	21.6 13.9 7.4	20.1 12.1 7.4	17.9 11.5 7.3	17.2 10.6 7.1	16.4 10.1 7.0	18.9 9.1 6.9	20.3 8.2 6.9	17.5 7.4
5 +37°	56.7 14.6 6.8	21.0 12.8 7.3	20.0 12.3 6.9	18.6 10.6 6.6	16.6 10.6 6.4	16.0 9.6 6.5	15.4 9.2 6.2	16.8 8.1 6.3	17.9 7.3 6.3	16.0 7.1
6 +30°	55.9 12.3 5.6	17.9 10.6 6.0	16.9 10.3 5.9	15.5 9.5 5.5	13.5 8.5 5.5	13.2 8.0 5.7	12.8 7.4 5.3	13.8 6.8 5.3	15.0 6.1 5.1	13.6 6.3
7 +23°	55.1 9.1 4.6	15.9 8.6 4.7	15.0 8.2 4.7	13.9 8.0 4.4	12.4 6.5 4.3	11.6 6.2 4.4	10.7 5.6 4.3	11.9 5.4 4.1	12.0 4.8 4.1	10.0 4.9
8 +17°	53.7 6.3 2.6	15.6 5.9 2.6	14.9 5.3 2.8	13.9 4.8 2.6	12.8 3.8 2.4	11.1 3.4 2.4	8.2 3.3 2.3	8.9 3.1 2.4	8.6 2.7 2.3	6.4 2.8
9 +12°	51.8 2.5 0.2	13.9 1.7 0.1	13.2 2.0 0.4	12.3 0.9 0.1	11.2 0.7 0.3	9.4 0.6 0.1	6.2 0.6 -0.0	4.5 0.4 -0.1	4.6 0.3 -0.0	2.8 0.2
10 +6°	51.0 0.0 -0.6	11.8 -0.5 0.1	10.7 0.1 -0.7	9.3 -0.6 -0.9	7.0 -0.7 -0.5	6.4 -0.9 -0.9	5.7 -0.3 -1.0	3.3 -1.2 -1.3	2.7 -0.6 -1.2	1.4 -0.6
11 0°	51.1 1.3 -0.4	13.4 0.5 0.9	12.2 0.1 -0.2	10.5 -0.2 -0.7	7.8 -0.6 -0.3	7.0 -0.5 -0.7	5.8 0.1 -0.7	4.1 -0.9 -0.9	3.4 -0.5 -0.8	1.5 -0.8
12 −6°	51.3 2.7 -0.3	15.3 1.7 0.5	14.0 0.5 -0.1	12.2 0.3 -0.6	9.0 -0.2 0.1	7.7 -0.4 -0.5	5.8 0.3 -0.6	4.2 -0.7 -0.5	3.8 -0.1 -0.7	2.1 -0.6
13 −12°	51.1 1.1 -0.8	11.9 1.2 -0.5	10.7 -0.7 -0.8	9.1 -0.4 -0.9	6.5 -0.8 -0.7	5.5 -0.9 -1.0	4.0 -0.7 -1.1	3.3 -1.0 -1.3	3.4 -0.7 -1.3	1.3 -0.8
14 −17°	51.0 -0.5 -1.2	12.0 0.5 -0.9	10.6 -1.0 -1.1	8.7 -0.6 -1.2	5.1 -1.2 -1.3	4.1 -1.1 -1.4	2.9 -1.3 -1.4	1.9 -1.4 -1.5	2.0 -1.4 -1.7	1.1 -1.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 11A

STA TAPE 11D

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

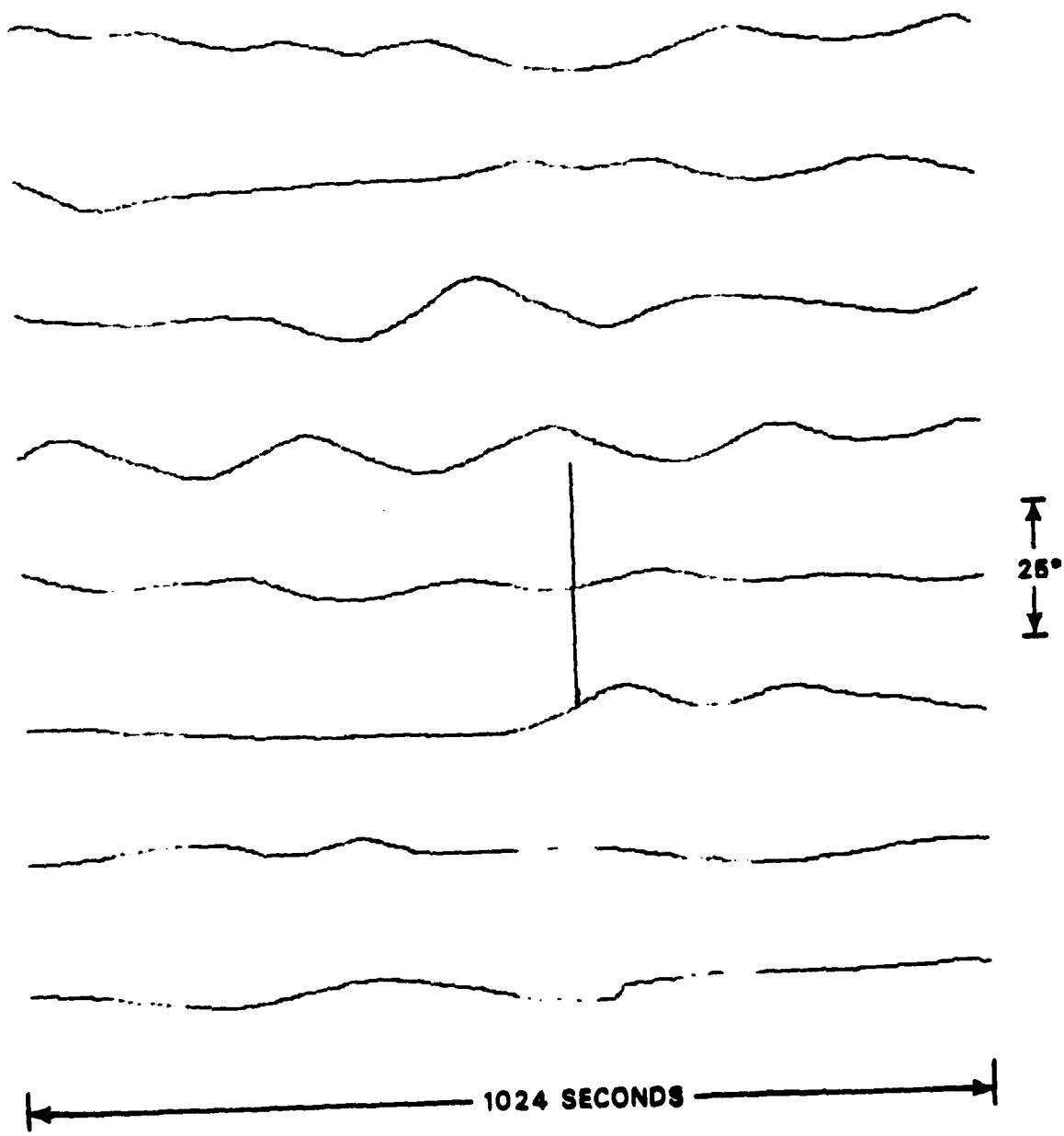
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	51.1 −0.1 −0.7	11.1 −0.1 −1.2	9.8 −0.3 −1.1	7.7 −0.4 −1.2	3.7 −0.7 −1.2	3.2 −1.0 −1.4	2.5 −0.5 −1.3	1.4 −1.2 −1.2	1.3 −1.3 −1.3	0.8 −1.2
16 −30°	51.3 −0.6 −0.8	6.6 −0.4 −0.8	5.7 −0.6 −1.0	4.6 −0.4 −0.8	3.1 −0.6 −0.9	2.6 −0.8 −0.9	2.0 −0.8 −0.9	0.0 −0.7 −0.9	0.5 −0.6 −0.8	0.7 −0.9
17 −37°	51.6 0.0 −0.3	6.7 0.6 −0.5	6.1 0.5 −0.1	5.3 0.4 −0.1	4.5 0.1 −0.2	4.3 0.5 −0.1	4.0 0.1 −0.3	1.4 0.3 −0.4	0.9 −0.1 −0.2	1.9 −0.1
18 −44°	52.1 3.0 1.1	12.1 4.3 1.0	11.0 3.5 1.2	9.5 3.3 1.2	7.3 2.9 1.2	8.9 2.7 1.1	10.0 1.8 1.0	7.3 2.0 0.8	5.4 1.6 0.9	5.9 1.4
19 −53°	52.7 9.1 4.4	19.8 10.3 4.4	18.6 9.7 4.2	17.0 9.6 4.6	14.4 7.1 4.5	16.5 7.7 4.4	17.9 5.7 4.2	14.9 6.5 3.9	13.3 5.8 3.5	12.8 4.9
20 −64°	53.0 11.7 7.2	22.9 12.7 7.0	21.8 12.6 6.6	20.2 12.4 7.1	17.9 12.3 7.1	19.8 10.5 7.0	21.1 8.3 6.6	18.6 9.3 6.5	16.9 8.6 5.4	15.5 7.7
21 −84°	52.6 11.5 7.7	21.7 11.7 7.5	20.6 11.7 6.8	19.2 11.6 7.7	17.1 11.8 7.4	18.8 10.3 7.4	20.1 8.2 7.0	18.0 9.5 7.0	16.1 8.8 5.4	14.1 8.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 11A

BEARING VS TIME

MEAN & VAR.		310.0	6.72	310.6	3.88	308.1	5.48	310.6	6.38
309.9	1.69	309.8	9.92	309.2	2.89	309.5	3.23		

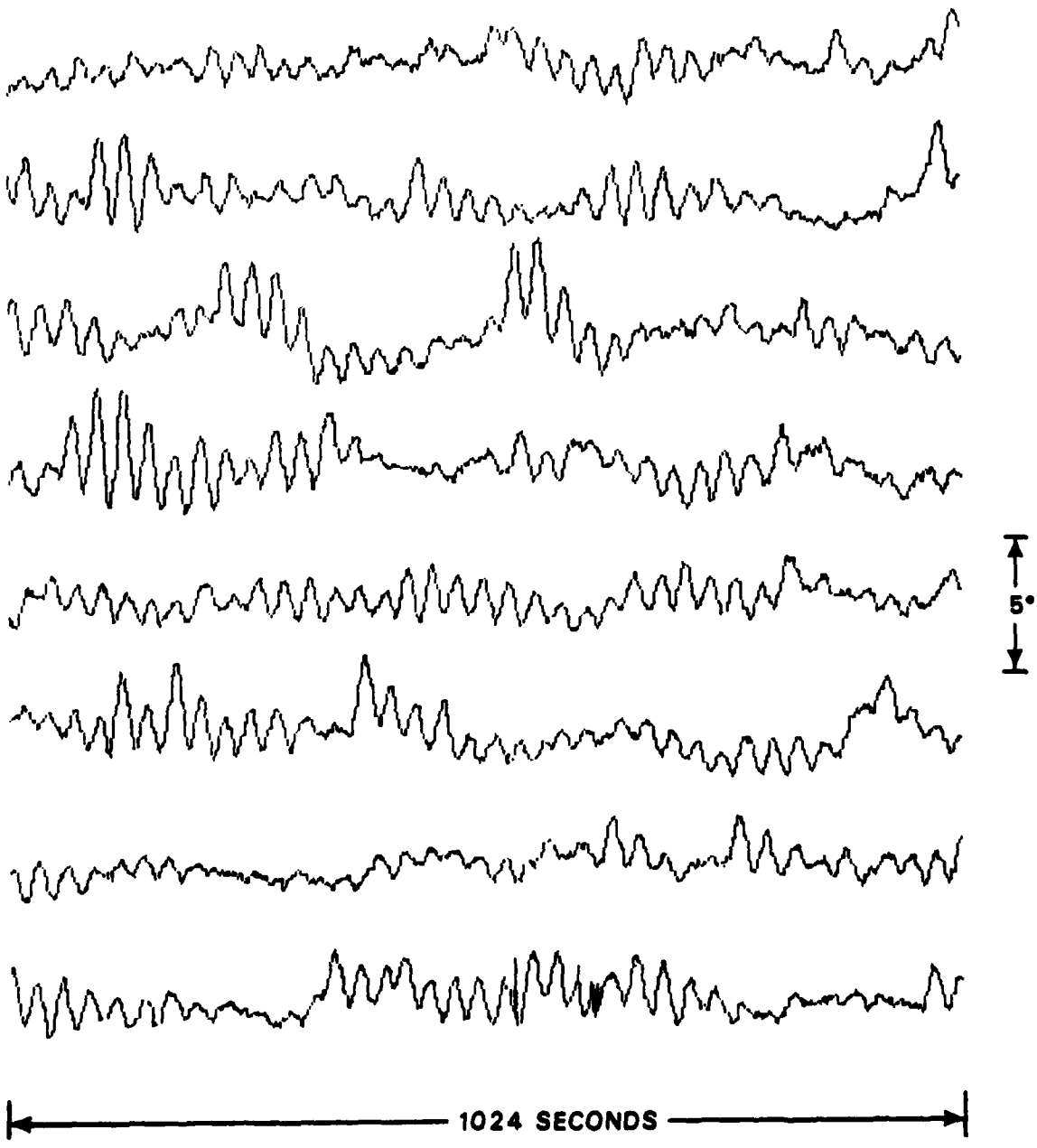


MPL-M-4988

GROUP 11A

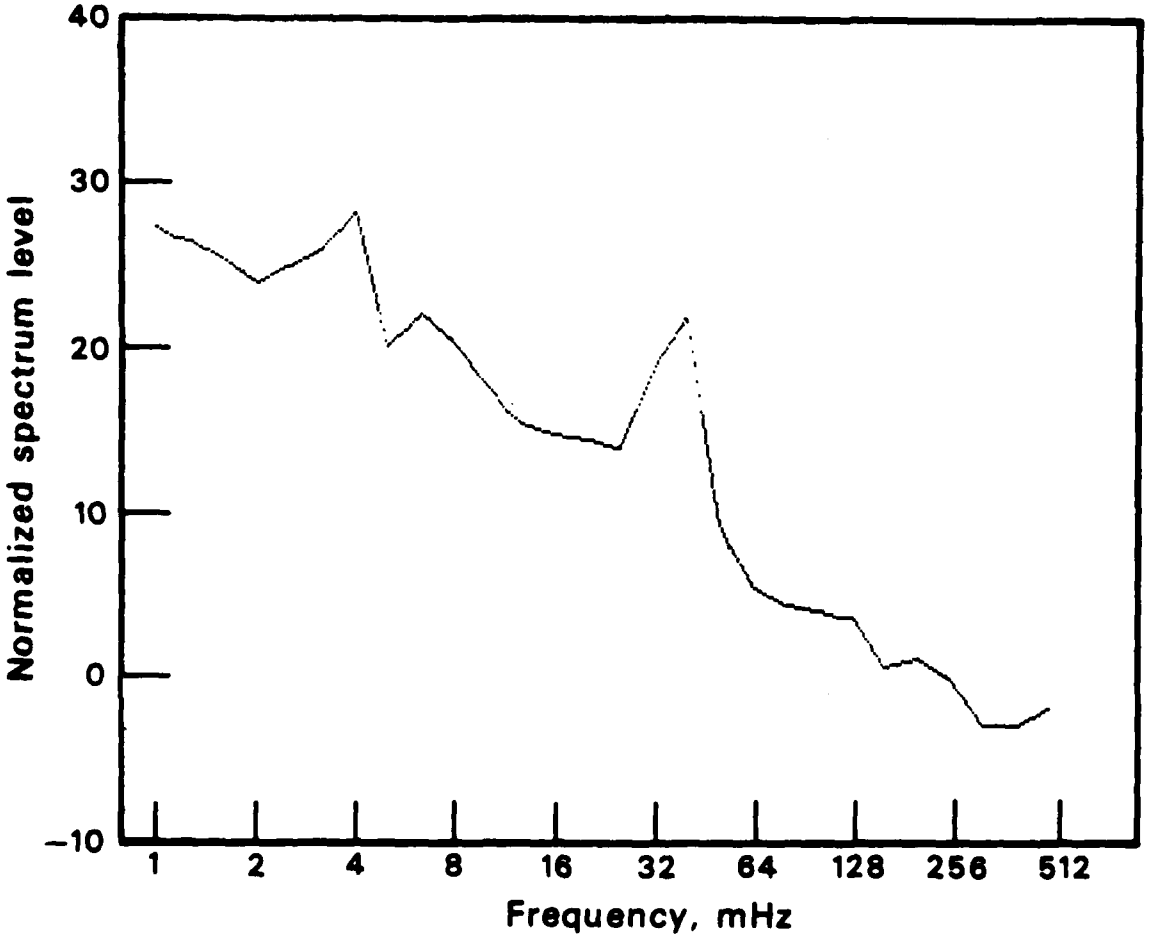
ELEVATION VS TIME

MEAN & VAR.	92.3	0.25	92.2	0.48	92.5	0.80	92.3	0.55
92.3	0.13	92.1	0.65	92.2	0.17	92.1	0.36	



MPL-M-4989

GROUP 11A



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 11B

Environmental Summary

11 June 1978

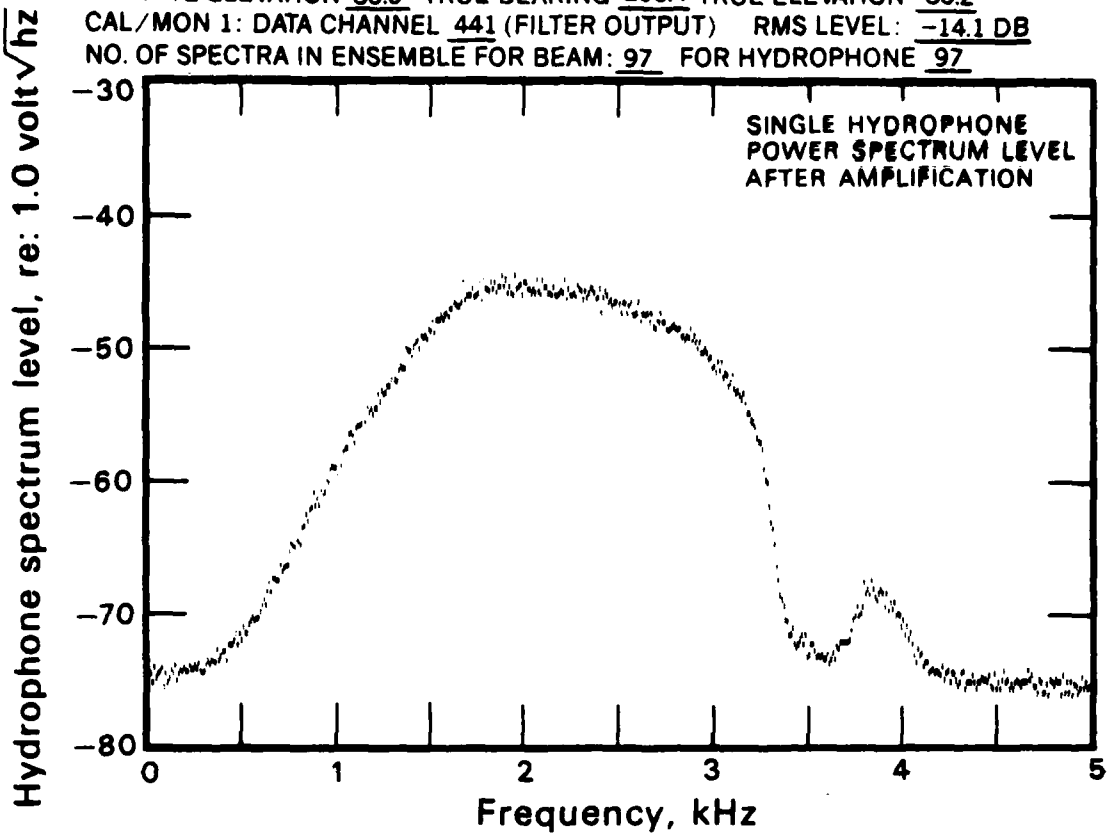
Tapes	Start time	Code
LTA/LOG	08:38:39	11B
STA	08:39:41	11E
STA	09:40:04	11F
High Band Filter		

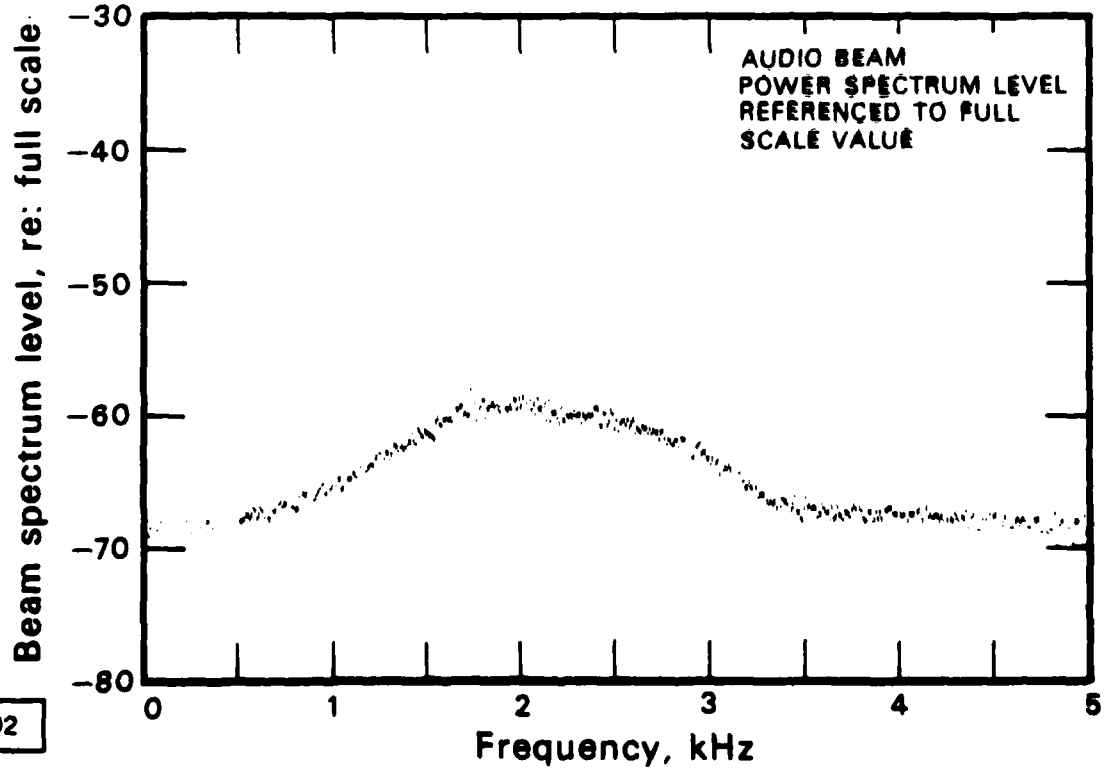
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
08:00	2200	18	330	6-10	6-8	NW	Chop
10:00	2200	16	325	"	"	"	
11:00	2200	16	330	"	"	"	

11-JUN-78 08:57:29 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 308.9
RELATIVE ELEVATION 80.0 TRUE BEARING 256.4 TRUE ELEVATION 80.2
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -14.1 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 97 FOR HYDROPHONE 97

GROUP 11B





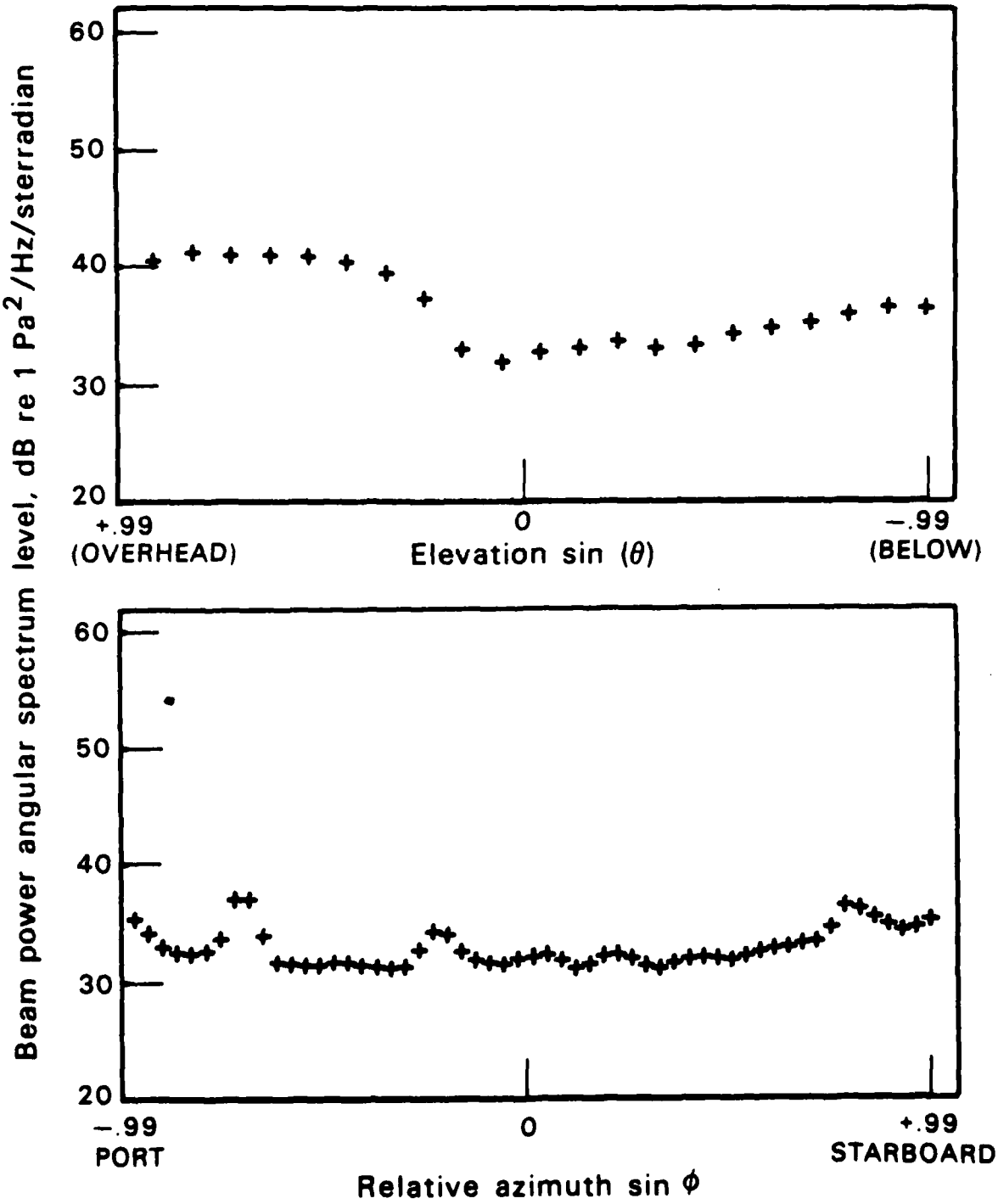
MPL-M-4992

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 11B

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

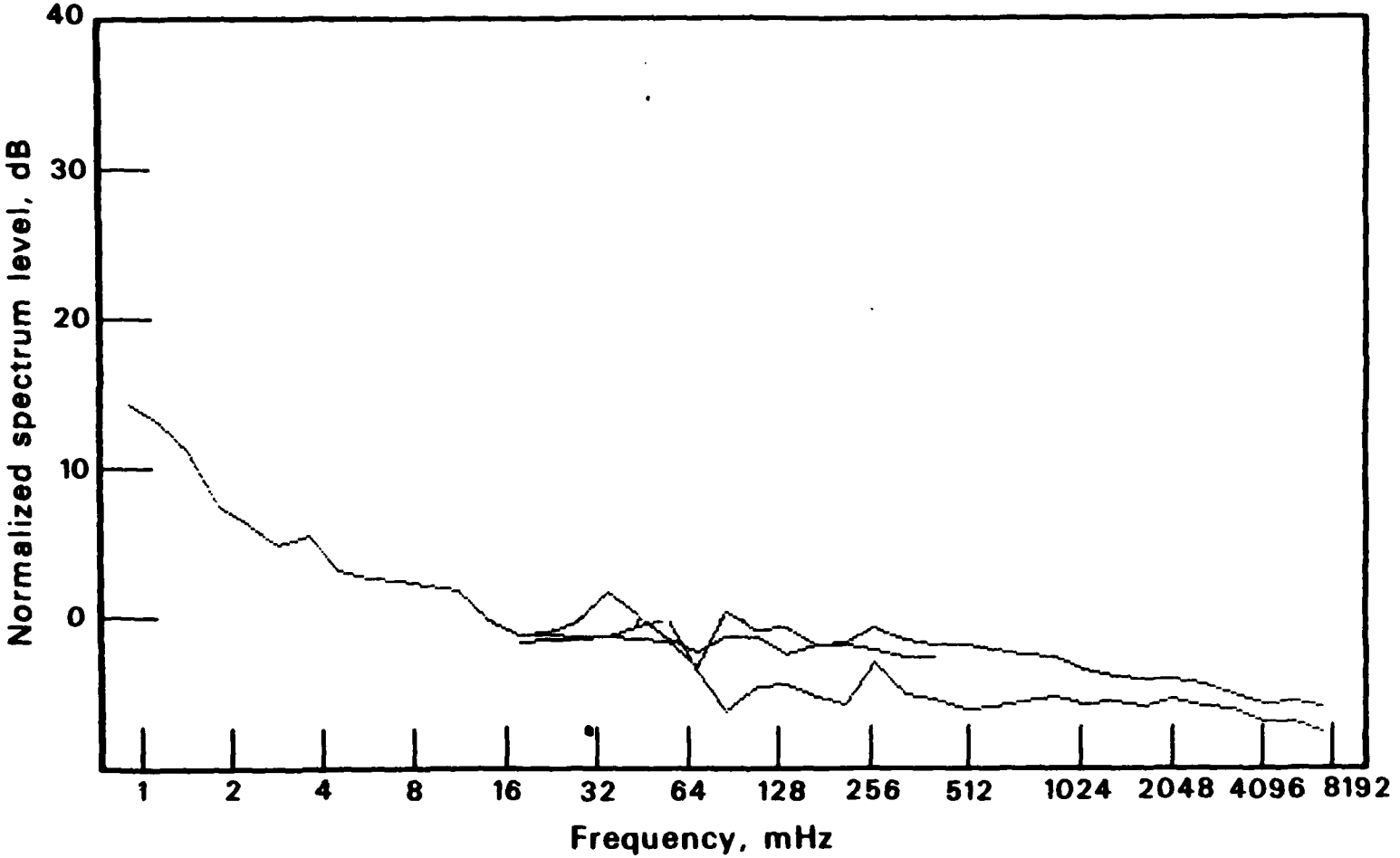
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-4993

MPL-M-4994

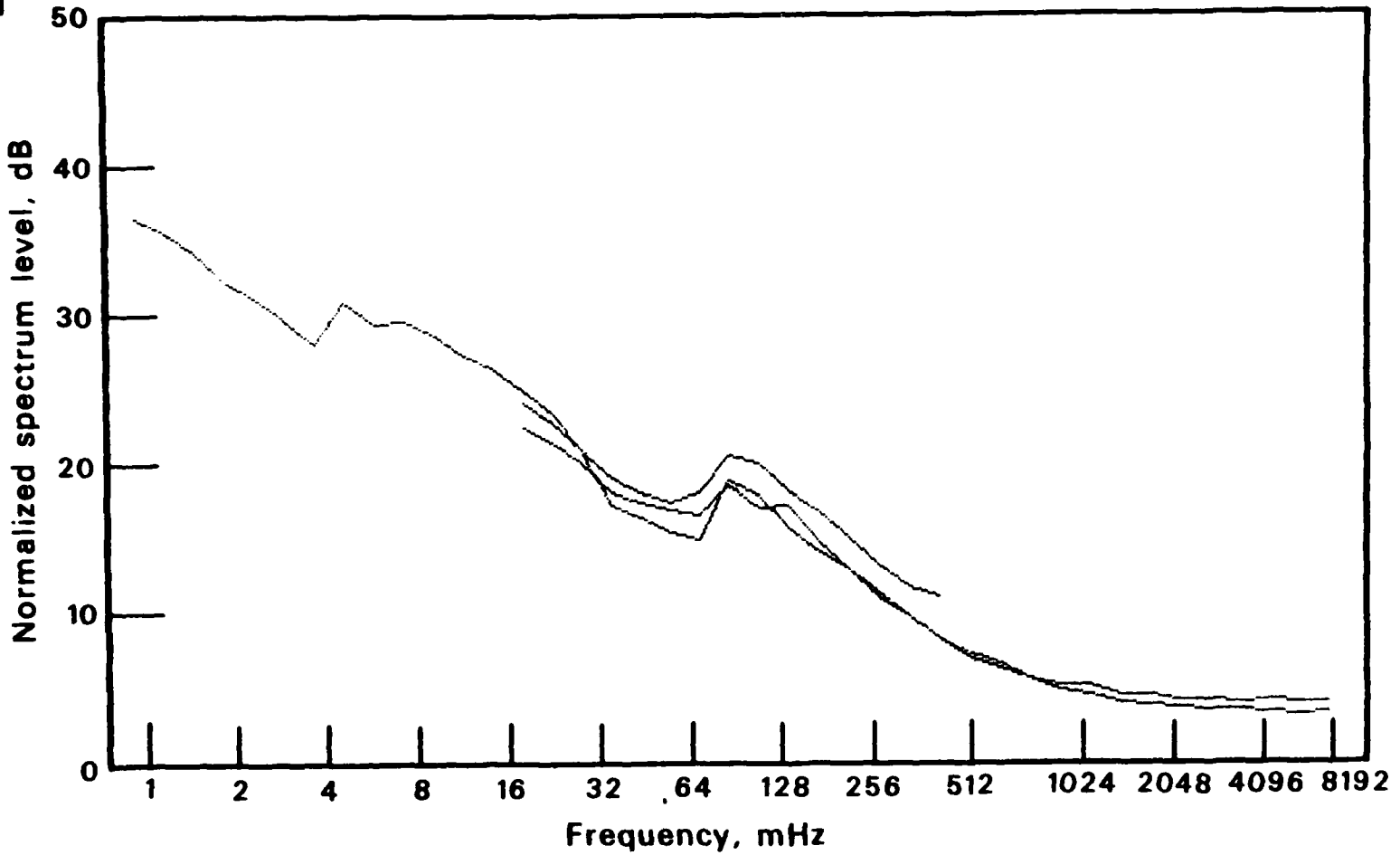
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 11B

MPL-M-4995

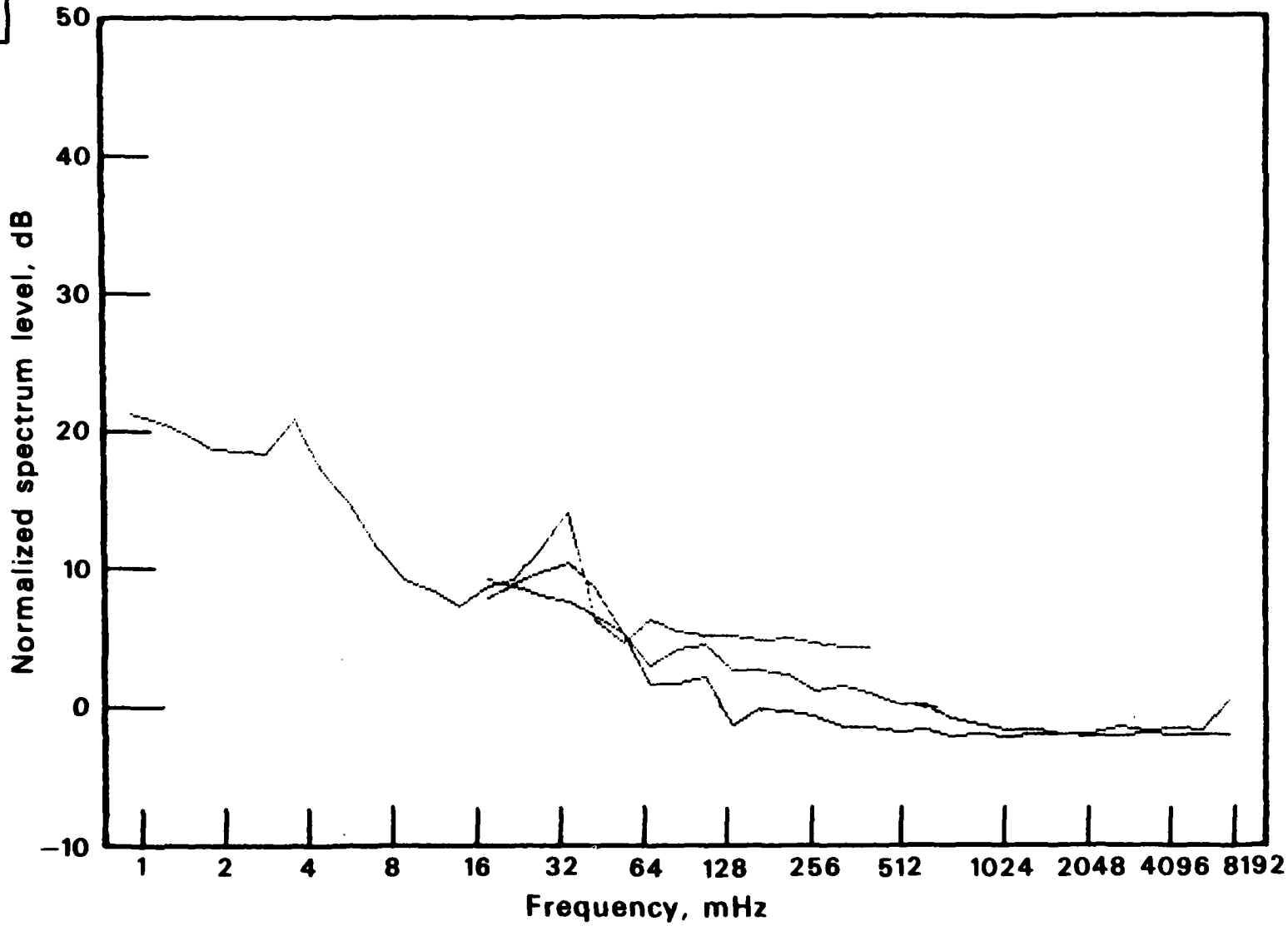
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 11B

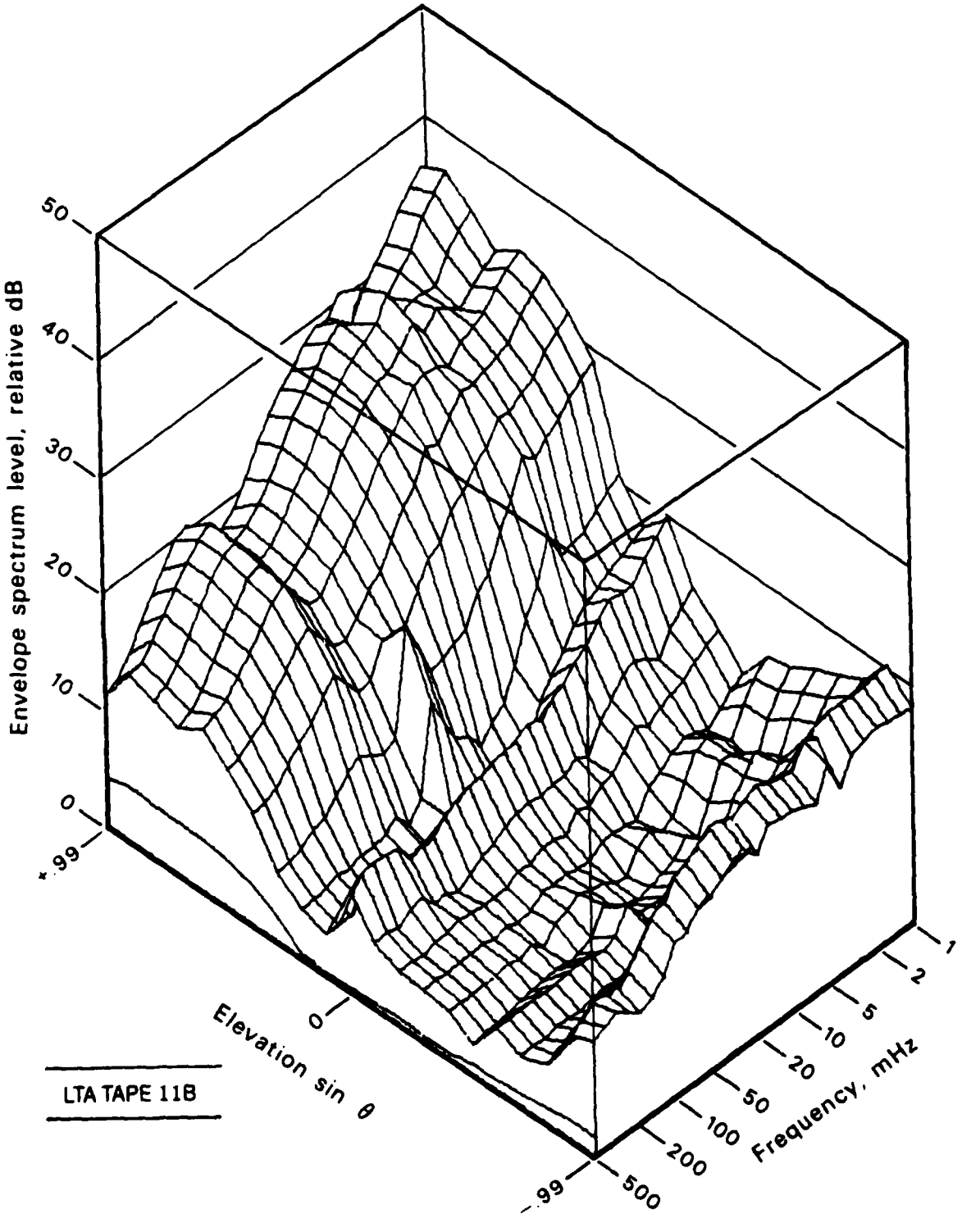
MPL-M-4996

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 11B

GROUP 11B

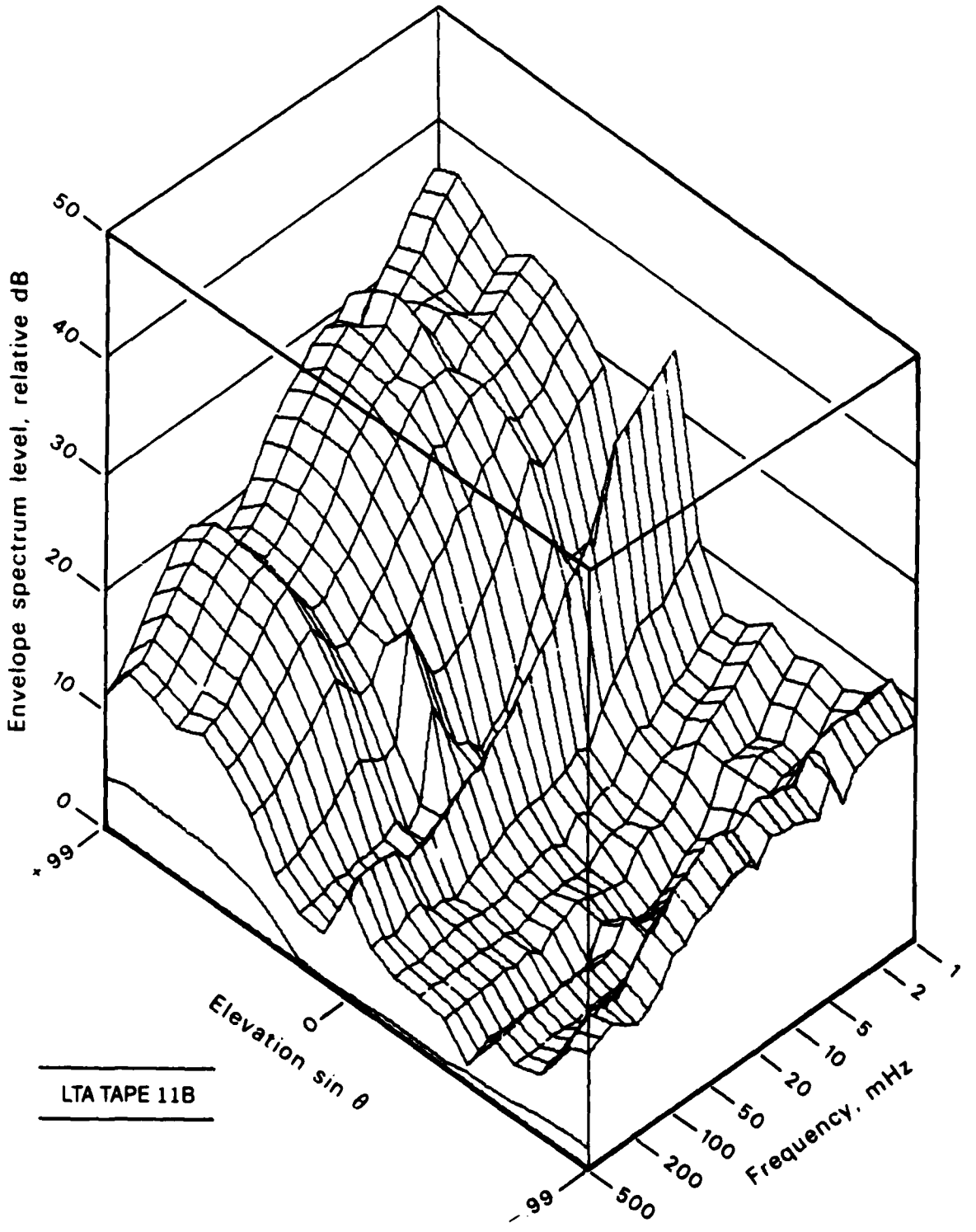


LTA TAPE 11B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-4997

GROUP 11B



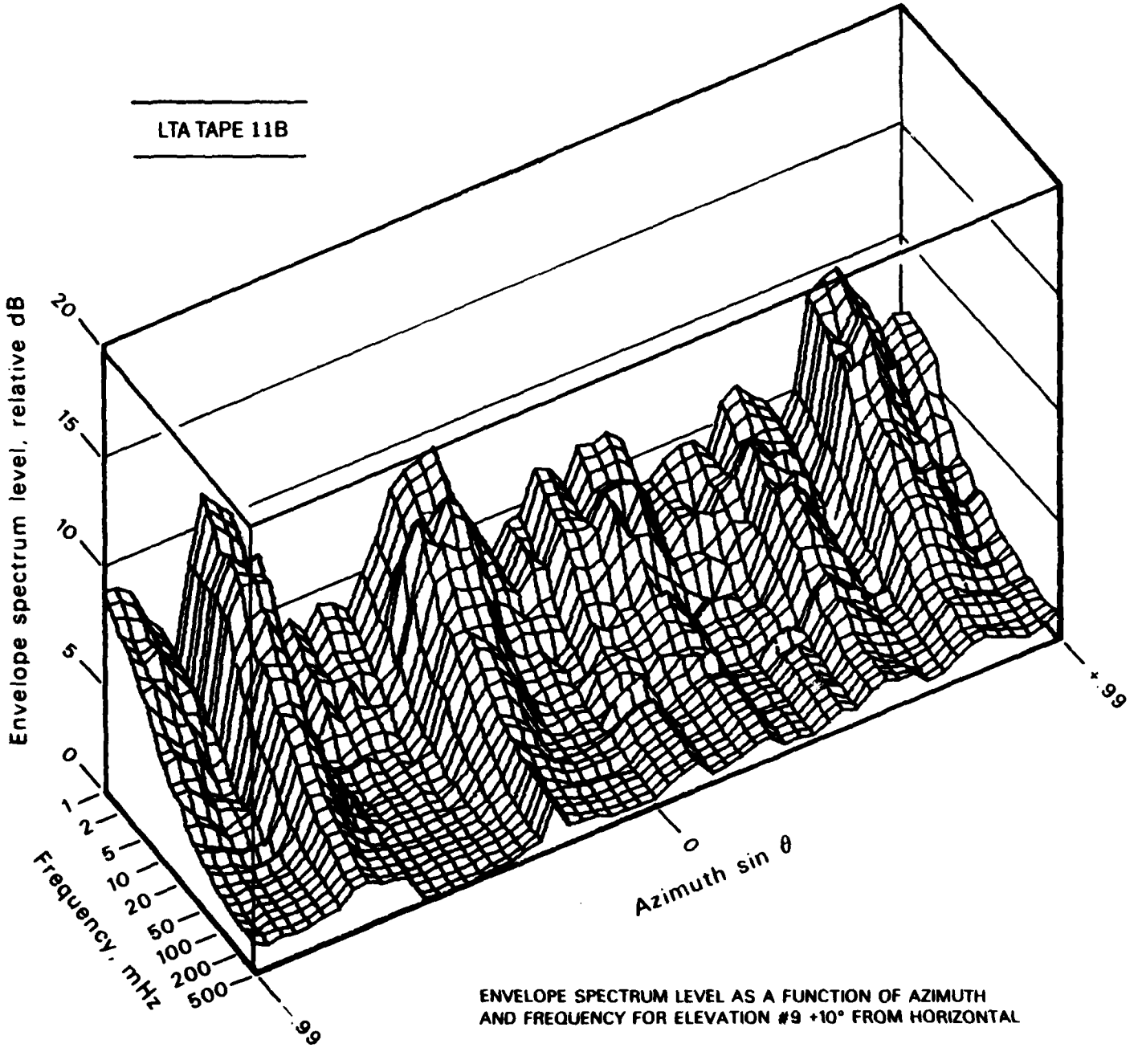
LTA TAPE 11B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET

MPL-M-4998

MPL-M-4999

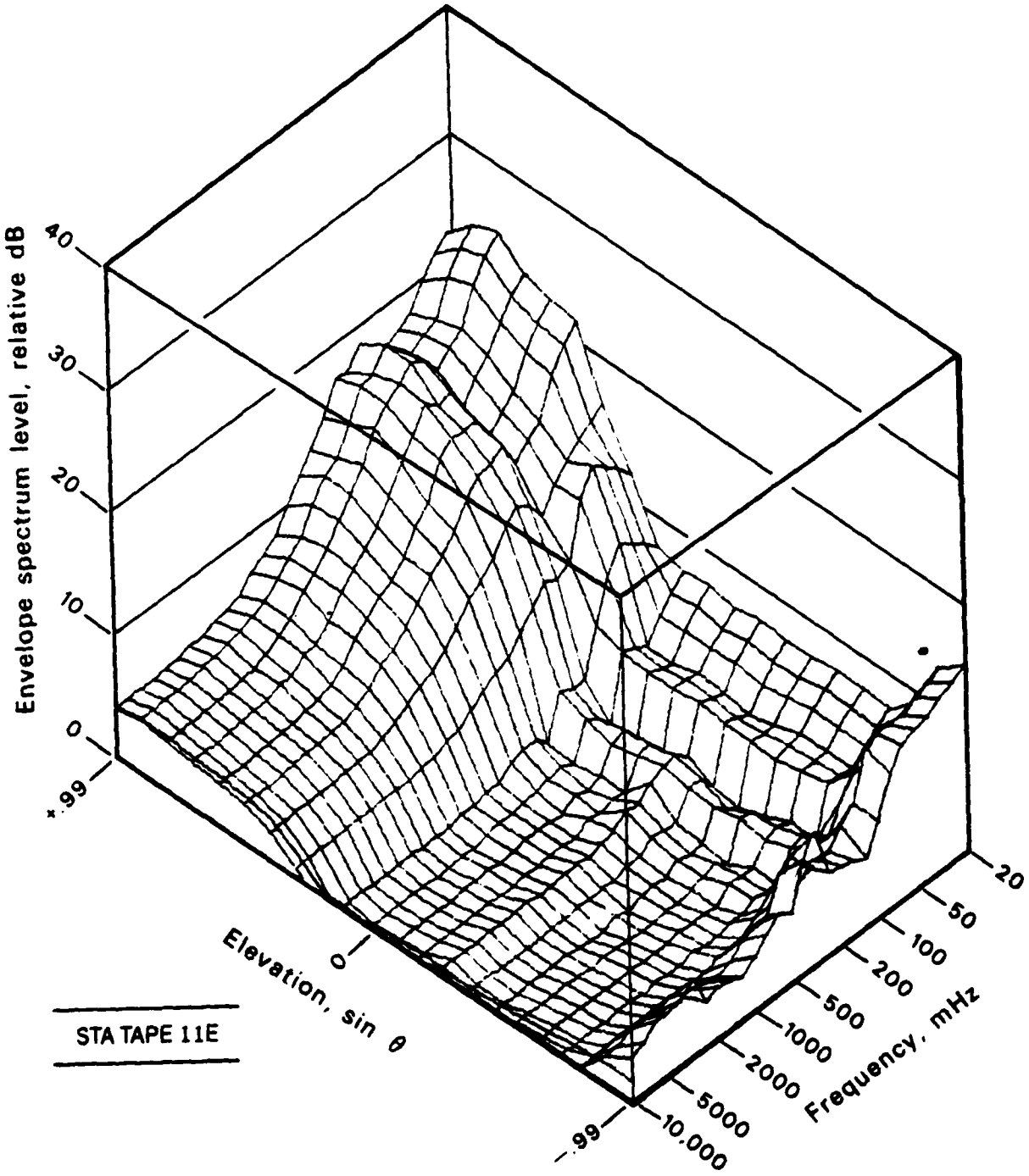
LTA TAPE 11B



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 11B

GROUP 11B

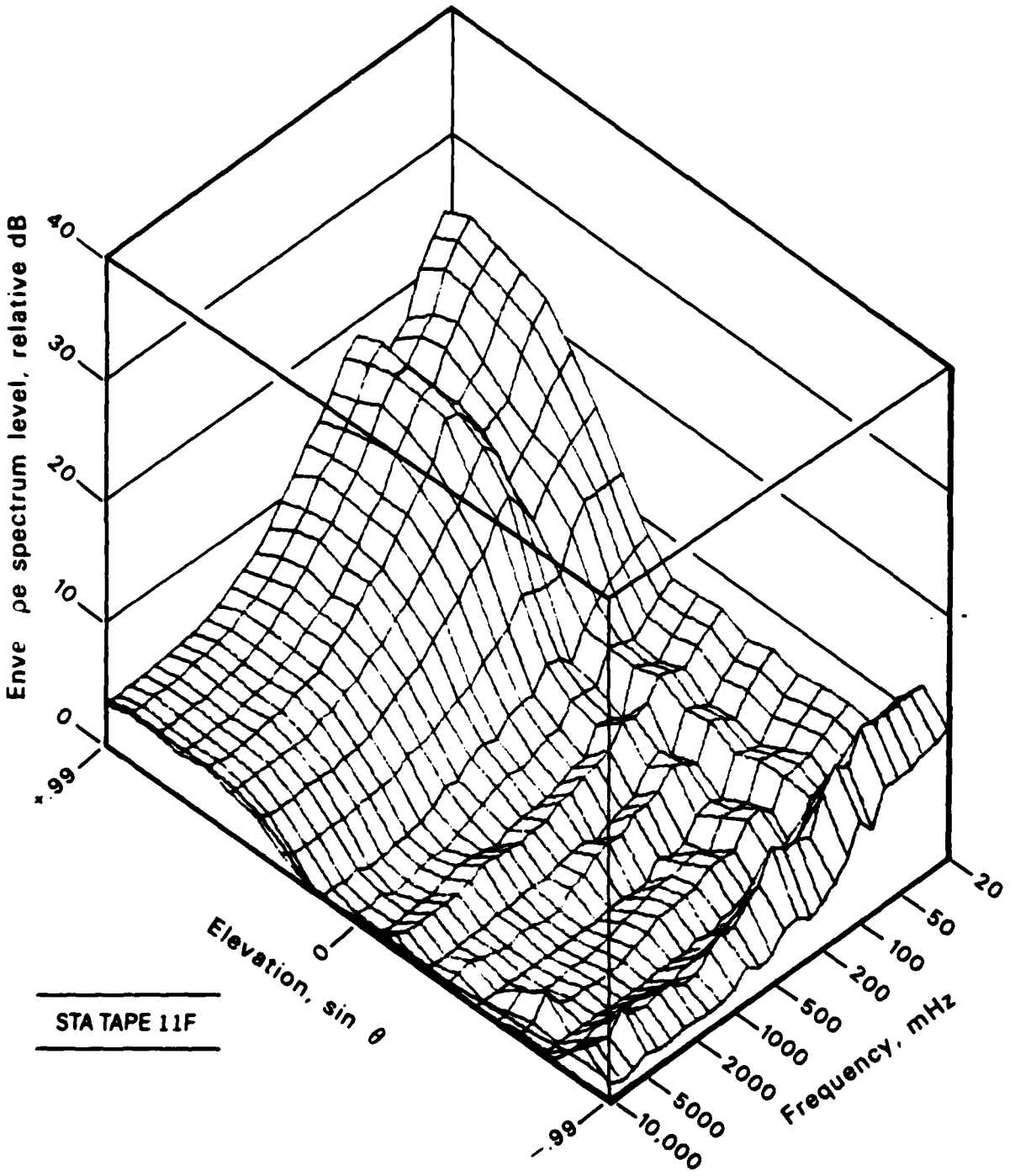


STA TAPE 11E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-5000

GROUP 11B



STA TAPE 11F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-5001

GROUP 11B

LTA TAPE 11B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.3	31.5	30.5	29.1	27.1	26.1	24.7	23.0	25.9	24.3
ANGLE +84°	24.5	23.7	22.2	21.3	19.8	18.3	15.8	14.0	13.0	12.3
	13.0	15.5	14.9	13.2	11.7	10.0	8.2	6.6	6.0	
2	66.7	32.5	31.4	30.0	27.9	26.8	25.3	26.4	27.7	25.3
+64°	26.3	25.2	23.9	22.5	21.1	19.2	17.2	15.9	14.7	14.1
	15.3	17.1	16.6	15.2	13.8	12.3	10.8	9.6	9.4	
3	66.8	30.7	29.6	28.3	26.3	26.5	26.7	26.0	28.7	26.8
+53°	26.0	25.1	24.1	22.8	21.2	19.1	17.6	15.8	14.4	14.1
	15.4	17.0	16.5	15.2	13.7	11.8	10.2	9.0	8.6	
4	66.7	28.5	27.7	26.9	25.8	26.6	27.3	26.0	27.7	26.0
+44°	24.8	24.7	23.6	22.2	21.0	18.3	16.8	15.0	13.9	13.2
	15.0	16.5	16.0	14.3	12.9	11.1	9.3	8.3	7.6	
5	66.6	30.0	29.2	28.2	26.9	26.4	25.9	24.4	25.2	25.4
+37°	25.0	23.3	22.0	20.8	18.6	17.0	15.4	14.3	12.9	12.9
	14.4	16.2	15.3	14.0	12.5	11.1	10.0	9.4	9.0	
6	66.3	29.3	28.4	27.3	25.7	25.2	24.7	24.4	24.5	23.0
+30°	21.5	22.0	19.5	18.3	16.1	14.2	13.3	11.7	10.5	10.7
	12.3	13.9	13.1	11.7	10.4	8.8	7.9	7.0	6.8	
7	65.7	27.5	26.6	25.6	24.2	23.5	22.7	22.9	21.0	20.3
+23°	18.8	18.0	16.0	15.3	13.3	10.9	11.0	11.1	8.6	8.2
	9.7	11.2	10.1	8.5	7.5	6.4	5.1	4.7	4.5	
8	64.4	24.7	23.9	23.1	22.0	21.1	20.1	21.0	18.0	15.9
+17°	13.1	12.2	9.8	9.4	8.7	8.5	11.2	14.0	4.8	4.2
	4.8	5.6	4.8	3.6	2.5	2.1	1.3	0.9	0.8	
9	62.6	16.4	15.7	14.8	13.7	13.4	13.1	15.7	12.1	9.8
+12°	6.5	4.0	3.0	1.9	3.6	4.0	6.2	8.8	1.2	-0.5
	1.0	0.2	-0.0	0.0	-0.4	-0.2	-0.6	-0.8	-0.9	
10	62.3	13.2	12.7	12.2	11.6	11.0	10.3	9.3	7.6	6.3
+6°	4.8	1.7	0.4	-0.5	0.8	1.0	0.0	-1.6	1.1	-1.3
	0.0	-0.4	-0.8	-1.1	-1.3	-1.2	-1.7	-1.7	-1.6	
11	62.5	15.5	14.6	13.5	11.9	12.0	12.2	11.2	9.7	9.1
0°	7.8	7.2	6.6	6.6	6.0	5.8	5.6	5.2	5.2	4.3
	4.0	2.9	3.0	2.7	4.2	4.4	4.5	4.3	3.4	
12	62.7	10.9	9.9	8.7	6.9	7.6	8.2	7.9	6.5	5.3
−6°	2.9	3.6	2.8	2.8	2.6	2.8	2.6	2.2	1.5	1.2
	0.4	-0.5	0.2	0.1	1.4	1.1	0.1	0.5	0.4	
13	62.9	8.8	8.1	7.4	6.5	6.1	5.7	4.8	5.6	4.2
−12°	3.0	2.7	1.7	2.0	0.6	1.1	1.1	0.5	0.5	-0.1
	-0.2	-0.1	-0.0	0.0	-0.2	-0.5	-0.6	-0.5	-0.5	
14	62.7	6.2	5.5	4.7	3.7	4.1	4.5	3.8	3.0	2.5
−17°	0.3	0.6	0.7	0.8	-0.1	-0.1	0.2	-0.1	0.2	-0.7
	-1.1	-0.6	-0.9	-0.6	-0.7	-0.7	-0.9	-0.8	-0.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 11B

LTA TAPE 11B

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.7	9.2	8.1	6.5	4.2	5.2	6.1	5.5	3.7	1.2
ANGLE −23°	0.9	1.7	0.9	-0.9	-0.5	0.1	0.3	0.7	0.0	-0.4
	-1.7	-0.7	-1.2	-0.8	-1.0	-1.1	-1.2	-1.2	-1.1	
16	63.1	9.7	8.5	6.6	3.5	4.9	5.9	6.1	3.3	0.9
−30°	1.9	0.4	0.1	-0.3	-0.6	-0.3	0.1	1.2	-1.0	-1.6
	-1.7	-1.5	-1.7	-1.8	-2.0	-2.2	-2.3	-2.4	-2.6	
17	63.2	10.9	9.8	8.2	5.6	6.7	7.6	6.1	4.8	2.8
−37°	3.1	1.9	1.7	1.2	1.1	1.0	1.2	2.5	0.6	0.2
	0.4	0.6	0.5	0.2	0.3	0.4	0.3	0.3	0.3	
18	63.4	11.8	10.7	9.2	7.0	7.6	8.1	7.0	5.8	4.0
−44°	2.1	2.0	1.5	0.7	0.5	0.9	1.0	1.8	-0.2	-0.5
	-0.3	-0.2	-0.4	-0.7	-0.5	-0.5	-0.7	-0.7	-0.8	
19	63.7	13.0	12.2	11.3	10.1	10.9	11.5	9.7	9.8	7.4
−53°	5.7	6.4	6.6	5.7	5.7	5.8	6.3	5.2	4.1	4.3
	3.2	2.6	1.7	0.8	0.9	0.6	0.3	0.0	-0.1	
20	64.0	15.7	15.5	15.4	15.3	15.3	15.3	14.0	14.4	12.3
−64°	12.9	12.9	13.5	13.0	12.1	12.8	12.9	12.0	11.2	10.8
	9.6	8.7	7.1	5.6	5.1	5.2	5.2	4.3	3.9	
21	64.0	13.4	13.6	13.8	13.9	13.5	13.0	10.9	13.8	11.1
−84°	11.6	12.0	12.1	12.4	10.5	11.5	11.2	10.6	9.8	9.5
	8.3	8.0	6.0	4.8	4.2	5.0	5.8	5.3	4.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 11B

LTA TAPE 11B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.3	31.5	30.5	29.1	27.1	26.1	24.7	23.0	25.9	24.3
ANGLE +84°	24.5	23.7	22.2	21.3	19.8	18.3	15.8	14.0	13.0	12.3
	13.0	15.5	14.9	13.2	11.7	10.0	8.2	6.6	6.0	
2	66.7	32.5	31.4	30.0	27.9	26.8	25.3	26.4	27.7	25.3
+64°	26.3	25.2	23.9	22.5	21.1	19.2	17.2	15.9	14.7	14.1
	15.3	17.1	16.6	15.2	13.8	12.3	10.8	9.6	9.4	
3	66.8	30.6	29.6	28.3	26.3	26.5	26.6	26.1	28.8	26.8
+53°	25.9	25.1	24.1	22.9	21.2	19.1	17.7	15.8	14.4	14.1
	15.4	17.0	16.5	15.2	13.7	11.8	10.2	9.0	8.6	
4	66.7	28.5	27.7	26.8	25.7	26.5	27.2	26.1	27.8	25.9
+44°	24.7	24.7	23.6	22.1	21.0	18.4	16.8	15.0	14.0	13.2
	15.0	16.5	16.0	14.3	12.7	11.0	9.3	8.3	7.6	
5	66.6	29.9	29.2	28.4	27.3	26.7	26.0	24.4	25.5	25.2
+37°	25.1	23.8	21.9	20.6	18.8	16.9	15.2	14.3	12.8	12.8
	14.3	16.1	15.2	13.8	12.3	10.9	9.6	8.9	8.6	
6	66.3	29.3	28.4	27.2	25.7	25.2	24.6	24.7	24.4	23.2
+30°	21.7	22.3	19.1	17.7	16.3	14.4	13.3	11.7	10.7	10.8
	12.4	14.0	13.2	11.7	10.4	8.9	8.1	7.2	7.0	
7	65.7	27.6	26.7	25.5	23.8	23.2	22.4	23.4	21.0	20.7
+23°	18.3	18.0	16.0	15.0	13.1	11.0	11.1	11.1	8.6	8.3
	9.6	11.2	10.1	8.5	7.5	6.4	5.2	4.7	4.6	
8	64.4	24.9	24.1	23.1	21.8	20.9	19.9	21.4	18.2	16.0
+17°	13.5	12.2	10.0	9.4	8.6	8.6	11.1	14.0	4.8	4.2
	4.8	5.6	4.8	3.7	2.6	2.1	1.3	0.9	0.8	
9	62.6	16.4	15.6	14.7	13.6	13.5	13.3	15.8	12.1	9.6
+12°	6.4	4.2	3.3	2.1	3.6	4.1	6.2	8.9	1.1	-0.5
	1.1	0.2	-0.0	0.0	-0.4	-0.2	-0.6	-0.8	-0.9	
10	62.3	17.0	16.1	15.1	13.7	13.0	12.2	9.6	7.6	5.7
+6°	4.2	2.6	2.5	1.1	2.4	2.9	1.5	-1.0	1.4	-0.1
	0.5	-0.0	-0.6	-1.1	-1.1	-1.1	-1.5	-1.5	-1.3	
11	62.5	30.8	30.0	29.1	28.0	27.3	26.5	23.0	19.9	18.0
0°	16.8	14.0	13.2	11.6	10.2	8.7	8.1	6.8	6.3	5.5
	4.8	3.6	3.5	3.0	4.4	4.6	4.6	4.5	3.6	
12	62.7	15.9	15.1	14.0	12.6	12.4	12.1	10.4	8.9	7.2
−6°	4.5	4.8	4.0	3.5	3.2	3.2	2.9	2.4	1.6	1.3
	0.5	-0.4	0.2	0.1	1.4	1.1	0.1	0.6	0.5	
13	62.9	11.0	10.3	9.5	8.5	7.9	7.2	5.8	6.2	5.0
−12°	3.0	3.0	2.0	2.4	0.7	1.3	1.3	0.6	0.6	-0.1
	-0.2	-0.1	-0.0	0.1	-0.2	-0.3	-0.6	-0.4	-0.5	
14	62.7	11.5	10.6	9.6	8.2	7.7	7.1	5.2	5.1	4.2
−17°	2.5	1.7	1.7	1.3	0.1	0.1	0.2	0.1	0.2	-0.6
	-1.1	-0.6	-0.9	-0.5	-0.6	-0.7	-0.9	-0.8	-0.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 11B

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.7	13.1	12.3	11.3	10.0	9.3	8.5	7.3	5.2	3.2
ANGLE −23°	2.5	2.8	1.7	−0.1	0.0	0.2	0.6	0.9	0.2	−0.3
	−1.5	−0.5	−1.1	−0.6	−1.0	−1.0	−1.2	−1.2	−1.2	
16	63.1	11.7	10.7	9.2	7.0	6.8	6.7	6.8	3.8	1.9
−30°	1.3	0.0	−0.8	−1.3	−1.6	−1.1	−0.5	0.6	−2.2	−2.7
	−3.0	−2.9	−3.0	−2.9	−3.2	−3.4	−3.4	−3.4	−3.7	
17	63.2	12.5	11.5	10.1	8.0	8.2	8.3	7.1	5.1	3.3
−37°	3.3	2.2	2.0	1.5	1.1	1.0	1.2	2.5	0.4	0.2
	0.4	0.4	0.5	0.2	0.2	0.2	0.3	0.2	0.3	
18	63.4	11.9	10.8	9.4	7.3	7.6	8.0	7.2	5.9	4.1
−44°	2.3	2.0	1.5	0.8	0.5	0.9	1.1	1.9	−0.2	−0.5
	−0.3	−0.2	−0.4	−0.7	−0.6	−0.5	−0.7	−0.8	−0.8	
19	63.7	12.9	12.2	11.2	10.0	10.8	11.4	9.7	9.7	7.3
−53°	5.7	6.5	6.6	5.7	5.7	5.8	6.3	5.2	4.1	4.3
	3.2	2.6	1.7	0.8	0.9	0.6	0.3	0.0	−0.1	
20	64.0	15.7	15.5	15.4	15.3	15.3	15.3	14.0	14.4	12.3
−64°	12.9	12.9	13.5	13.0	12.1	12.8	12.9	12.0	11.2	10.8
	9.6	8.7	7.1	5.6	5.1	5.2	5.2	4.3	3.9	
21	64.0	13.4	13.6	13.8	13.9	13.5	13.0	10.9	13.8	11.1
−84°	11.6	12.0	12.1	12.4	10.5	11.5	11.2	10.6	9.8	9.5
	8.3	8.0	6.0	4.8	4.2	5.0	5.8	5.3	4.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 11B

GROUP 11B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.5	30.8	29.8	28.5	26.5	25.8	25.0	22.8	21.0	19.8
ANGLE −71.3°	16.5	13.5	12.5	10.1	9.7	9.4	6.2	4.7	4.3	3.0
	2.8	1.7	1.2	1.0	0.6	0.4	0.2	0.4	0.1	
2	63.0	30.4	29.2	27.4	24.3	23.6	22.6	21.1	21.5	16.8
−66°	14.3	13.1	13.4	10.2	7.8	6.2	6.0	3.0	3.3	1.6
	1.5	0.9	0.2	0.1	−0.7	−0.9	−1.1	−0.7	−1.3	
3	62.6	28.5	27.4	26.0	23.8	24.1	24.3	20.1	17.9	14.2
−61.6°	11.6	10.3	11.0	9.2	7.3	4.2	4.1	1.6	2.6	1.2
	1.0	0.5	0.8	0.1	−0.0	−0.1	−0.5	−0.7	−0.6	
4	62.5	22.8	22.1	21.3	20.3	19.8	19.3	16.0	14.0	13.2
−57.8°	11.7	8.6	4.5	4.4	3.7	1.1	1.1	0.3	0.9	−0.4
	0.2	−0.5	−0.2	−0.7	−0.7	−0.5	−0.7	−1.3	−1.4	
5	62.4	19.7	19.2	18.6	18.0	17.1	16.1	16.2	12.9	8.6
−54.3°	5.3	4.3	2.7	3.2	2.8	2.3	1.5	−0.7	1.1	−1.3
	0.6	−0.3	0.1	−0.4	−0.5	−0.3	−0.8	−1.0	−1.1	
6	62.5	13.8	13.1	12.3	11.3	11.5	11.6	9.3	9.0	7.6
−51.1°	6.5	3.6	2.6	1.7	1.9	2.8	1.9	−1.1	1.6	−0.9
	1.2	0.1	0.2	0.0	0.1	−0.0	−0.3	−0.5	−0.5	
7	62.8	29.4	29.3	29.2	29.1	29.1	29.1	27.8	27.8	22.7
−48.1°	20.3	16.6	13.9	12.1	11.0	10.0	9.3	6.4	5.3	3.9
	3.6	2.5	2.0	1.5	1.2	1.3	0.6	0.5	−0.0	
8	64.2	41.0	39.6	37.7	34.2	35.0	35.7	34.1	33.1	27.7
−45.3°	23.7	22.9	23.4	22.2	18.0	18.1	16.0	14.5	12.5	10.2
	9.4	7.5	6.0	5.9	4.8	4.1	2.7	2.7	2.4	
9	64.3	38.0	36.7	35.0	32.2	32.6	33.0	32.7	32.7	29.0
−42.6°	28.6	24.7	22.4	21.3	18.3	16.9	16.7	14.6	12.0	10.5
	8.6	7.8	6.6	5.7	5.2	4.3	2.9	2.9	2.7	
10	62.9	35.1	33.9	32.0	28.8	32.2	34.1	31.2	31.5	27.0
−40.0°	23.7	22.0	21.2	19.2	15.7	13.4	12.7	10.9	9.5	7.1
	5.7	5.0	3.8	3.3	2.2	1.9	1.2	1.1	1.3	
11	62.3	17.9	17.1	16.2	15.0	16.5	17.6	12.8	14.4	12.2
−37.5°	11.1	8.4	6.3	6.8	6.5	6.1	4.2	2.3	4.0	1.5
	2.8	1.3	2.1	0.9	1.1	1.1	0.8	0.5	0.9	
12	62.2	6.6	7.2	7.7	8.2	6.8	4.8	7.7	5.9	4.3
−35.1°	2.0	0.9	−0.1	0.3	1.3	2.4	1.1	−1.6	2.7	−0.7
	1.2	0.7	1.2	0.1	0.7	0.6	0.2	−0.0	0.2	
13	62.2	9.1	8.1	6.8	5.0	3.6	1.6	1.3	−2.4	−0.0
−32.8°	−2.0	−2.1	−1.9	−2.8	−2.5	−3.3	−4.5	−3.3	−3.2	−4.8
	−4.2	−4.0	−4.4	−4.5	−4.7	−4.4	−4.8	−5.1	−4.8	
14	62.2	11.7	10.7	9.5	7.6	7.2	6.7	5.1	3.6	0.3
−30.5°	−3.0	−3.0	−2.1	−3.3	−3.6	−4.8	−3.9	−4.2	−4.2	−3.7
	−4.2	−4.5	−4.2	−4.5	−4.9	−5.1	−5.0	−5.4	−4.9	
15	62.3	8.3	7.5	6.5	5.2	5.2	5.3	1.1	0.8	−0.5
−28.3°	−1.5	−2.3	−1.1	−2.9	−3.5	−3.8	−3.8	−3.7	−4.1	−3.8
	−4.5	−4.9	−4.6	−4.8	−4.7	−4.6	−5.2	−5.2	−5.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.3	12.1	11.0	9.6	7.4	6.4	5.1	5.6	2.3	0.9
ANGLE −26.1°	-0.7	-2.3	-3.0	-3.4	-3.6	-4.0	-4.1	-4.0	-4.0	-4.1
	-4.4	-5.0	-4.6	-4.6	-4.7	-4.5	-5.4	-5.3	-5.2	
17	62.2	11.4	10.2	8.7	6.2	5.7	5.2	0.7	0.9	0.4
−24.0°	-0.8	-2.9	-2.8	-2.8	-3.0	-3.1	-3.1	-3.3	-4.2	-4.1
	-4.4	-4.5	-4.8	-4.7	-5.0	-4.9	-5.1	-5.5	-5.1	
18	62.2	9.0	8.2	7.3	6.1	4.9	3.2	3.5	0.5	1.1
−21.8°	-2.7	-2.4	-3.1	-3.9	-2.2	-3.0	-4.0	-4.7	-4.5	-5.0
	-4.0	-4.6	-4.3	-5.0	-4.7	-4.7	-4.8	-5.1	-4.6	
19	62.2	14.8	13.7	12.3	10.1	10.0	9.9	5.1	6.1	3.5
−19.8°	0.9	1.0	-1.2	-0.7	-1.5	-2.1	-3.6	-3.6	-3.0	-3.9
	-4.1	-3.9	-4.4	-4.5	-4.4	-4.5	-4.9	-4.9	-4.6	
20	62.2	20.0	19.1	17.9	16.2	20.1	22.1	14.9	17.3	11.0
−17.7°	9.4	6.8	7.0	7.4	5.9	2.2	2.0	0.8	-0.8	-0.5
	-1.7	-2.9	-2.7	-3.4	-4.0	-3.8	-4.0	-4.1	-3.6	
21	62.6	27.7	26.5	24.8	21.9	26.4	28.6	25.9	21.8	20.6
−15.7°	14.6	15.7	14.6	12.3	10.3	9.2	6.6	4.8	2.8	2.4
	0.9	0.0	-1.6	-1.7	-2.4	-2.7	-3.3	-3.1	-3.1	
22	63.1	30.2	29.3	28.0	26.1	25.1	23.9	23.9	25.8	21.8
−13.7°	19.6	17.4	14.8	15.2	13.8	11.0	9.3	8.2	6.5	5.9
	5.0	5.2	3.9	3.8	3.8	3.3	3.2	2.9	2.9	
23	62.9	30.9	29.7	28.0	25.1	28.5	30.3	28.6	23.3	21.2
−11.7°	18.6	16.6	14.3	12.7	12.2	10.4	9.5	7.8	5.1	4.6
	2.6	1.9	0.7	0.2	-1.2	-1.0	-1.2	-1.3	-2.1	
24	62.5	32.3	31.2	29.7	27.3	27.4	27.5	26.4	22.6	21.5
−9.7°	17.6	16.0	13.4	9.9	9.0	7.6	7.3	4.5	2.9	2.5
	0.8	0.5	-0.1	-1.4	-1.4	-2.1	-2.1	-2.4	-2.3	
25	62.3	23.6	22.6	21.4	19.6	21.5	22.8	18.7	16.4	15.8
−7.8°	12.0	7.8	7.2	6.2	3.9	3.2	1.9	-0.5	-2.1	-1.9
	-2.7	-1.4	-2.3	-3.0	-2.2	-3.0	-2.6	-3.1	-2.6	
26	62.3	14.1	13.4	12.4	11.3	10.4	9.3	9.4	5.8	3.9
−5.8°	3.8	1.2	0.8	-0.9	-0.3	-1.4	-2.3	-2.5	-2.7	-2.7
	-2.8	-2.9	-2.8	-3.5	-3.0	-3.6	-3.5	-3.6	-3.7	
27	62.2	13.4	13.0	12.4	11.8	10.8	9.5	7.2	5.6	4.8
−3.9°	1.6	0.8	-0.1	-0.2	-1.8	-2.2	-2.5	-3.7	-2.9	-3.4
	-3.1	-2.8	-2.9	-4.0	-3.1	-3.3	-3.7	-3.9	-3.8	
28	62.3	8.6	8.2	7.7	7.2	7.4	7.6	4.3	5.1	3.9
−1.9°	2.0	1.8	0.9	-0.2	-1.6	-2.2	-1.9	-2.6	-2.9	-3.3
	-3.0	-3.3	-3.0	-4.3	-3.4	-3.3	-3.6	-3.6	-3.9	
29	62.4	13.1	13.0	12.8	12.7	11.7	10.4	5.8	4.9	3.6
0°	-1.3	-1.1	-0.7	-1.8	-1.5	-3.1	-2.7	-3.2	-3.5	-3.0
	-2.1	-3.0	-2.9	-3.9	-3.9	-3.4	-3.7	-3.7	-4.0	
30	62.4	13.5	12.5	11.1	9.0	9.5	10.0	6.2	3.7	2.0
+1.9°	1.0	1.2	0.1	-0.9	0.9	1.6	-0.3	-1.9	0.4	-2.0
	-0.5	-0.4	-1.6	-1.6	-1.6	-1.9	-2.1	-2.1	-2.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.3	20.6	19.7	18.5	16.8	16.2	15.6	13.3	11.5	7.8
ANGLE +3.9°	6.7	5.1	5.3	2.8	2.4	1.9	1.7	-0.5	1.9	-0.4
	0.8	0.3	-0.1	-0.9	-1.1	-0.8	-1.5	-1.6	-1.3	
32	62.2	19.5	18.7	17.6	16.1	15.4	14.5	12.6	9.9	7.7
+5.8°	6.4	1.9	4.0	1.9	2.3	2.8	1.2	-0.3	3.2	-0.1
	0.9	0.5	0.0	0.0	-0.2	0.2	-0.6	-0.9	-0.5	
33	62.3	15.6	15.0	14.4	13.7	14.0	14.3	14.5	10.7	10.2
+7.8°	4.8	4.7	3.8	2.2	2.0	0.6	-0.7	-2.1	-1.7	-3.5
	-2.8	-2.6	-2.5	-3.5	-3.1	-3.4	-3.5	-3.9	-3.5	
34	62.4	21.6	20.5	19.0	16.7	18.2	19.2	19.2	17.7	12.5
+9.7°	7.6	4.6	4.8	3.9	2.7	1.6	2.0	-0.2	-0.3	-2.1
	-2.1	-2.3	-2.3	-3.1	-3.1	-3.1	-3.2	-3.2	-3.3	
35	62.5	20.7	20.0	19.0	17.8	18.8	19.6	13.8	12.7	14.1
+11.7°	11.0	9.0	6.5	5.3	4.7	2.9	1.0	1.9	0.0	-0.9
	-0.6	-1.5	-1.6	-2.0	-2.5	-2.9	-2.9	-2.9	-2.4	
36	62.4	22.0	20.8	19.2	16.7	17.9	18.9	19.0	16.8	13.2
+13.7°	7.5	4.5	6.5	5.4	3.5	3.0	1.2	1.2	2.0	-0.1
	0.4	0.3	-0.3	-0.7	-0.9	-0.7	-1.4	-1.5	-1.4	
37	62.2	19.5	18.4	17.1	15.0	15.3	15.5	11.0	10.3	8.3
+15.7°	5.2	3.5	2.9	2.0	1.5	1.8	-0.1	-0.6	2.4	-1.0
	0.4	-0.1	-0.0	-0.3	-0.5	-0.2	-0.9	-1.3	-1.1	
38	62.2	9.6	8.9	8.2	7.3	7.3	7.3	5.2	5.0	3.8
+17.7°	2.1	-1.6	-0.7	-1.1	-1.4	-2.6	-2.0	-3.3	-3.3	-2.5
	-3.0	-3.3	-3.1	-3.8	-3.0	-3.4	-3.4	-3.5	-3.6	
39	62.3	10.0	9.8	9.7	9.5	9.3	9.0	8.5	5.2	4.0
+19.8°	-0.1	0.4	1.5	-0.7	-0.9	-1.6	-2.1	-3.7	-3.5	-3.1
	-3.3	-3.0	-2.8	-3.7	-3.2	-2.9	-3.3	-3.5	-3.6	
40	62.4	12.5	11.6	10.5	9.1	9.1	9.1	10.2	4.2	4.9
+21.8°	-1.9	-0.3	1.3	-1.6	-1.7	-2.7	-2.3	-3.2	-3.8	-4.0
	-3.7	-3.6	-3.8	-3.9	-3.7	-4.0	-4.2	-4.3	-4.2	
41	62.4	14.0	12.5	10.3	5.6	5.7	5.8	8.9	6.1	2.5
+24.0°	3.2	-0.3	-0.5	-0.9	-0.4	-0.5	-1.4	-2.4	0.1	-2.1
	-1.3	-1.3	-1.3	-1.9	-1.8	-1.9	-2.3	-2.7	-2.7	
42	62.4	13.8	12.8	11.6	10.0	10.3	10.5	8.9	7.8	6.6
+26.1°	3.6	1.3	1.3	-0.9	0.1	0.3	-0.0	-1.6	0.8	-1.4
	0.1	-0.4	-0.7	-1.2	-1.1	-0.7	-1.2	-1.4	-1.7	
43	62.3	10.8	10.7	10.7	10.6	11.5	12.2	10.2	6.7	7.5
+28.3°	7.0	7.9	5.6	4.8	4.1	2.7	1.3	-1.5	-1.0	-0.9
	-2.0	-1.8	-2.2	-2.9	-2.6	-2.2	-2.9	-2.7	-2.7	
44	62.4	19.0	17.9	16.6	14.6	16.6	17.9	17.8	16.5	14.7
+30.5°	13.8	14.3	11.0	9.9	9.0	9.2	6.0	3.9	5.2	2.6
	2.8	2.6	1.3	0.4	-0.0	-0.1	-0.4	0.0	-0.3	
45	62.5	20.8	19.6	17.9	15.0	15.3	15.6	14.7	14.6	11.9
+32.8°	13.3	15.4	13.9	13.5	12.1	8.6	6.5	6.1	6.6	4.5
	5.3	3.9	1.7	1.2	0.7	1.0	0.5	0.8	0.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.6	17.7	17.0	16.2	15.2	14.1	12.4	15.2	12.1	13.8
ANGLE +35.1°	10.9	12.2	10.2	10.2	8.2	7.4	4.8	3.9	3.8	2.7
	2.7	1.5	-0.1	-0.2	-0.6	-0.9	-0.9	-1.0	-0.7	
47	62.6	15.6	15.2	14.7	14.1	13.1	11.7	12.6	11.1	11.3
+37.5°	6.6	6.2	5.3	5.3	5.4	5.0	3.4	1.8	2.5	1.1
	0.3	0.4	-0.5	-1.4	-2.6	-2.4	-1.7	-1.2	-0.4	
48	62.7	10.6	10.3	10.0	9.6	7.9	5.0	6.2	3.5	5.1
+40.0°	-0.6	1.8	-1.1	0.3	-0.2	0.5	-0.3	-2.1	0.1	-1.7
	-1.7	-1.8	-2.1	-2.1	-2.6	-2.2	-3.2	-3.2	-3.0	
49	62.8	15.5	15.2	14.8	14.4	13.2	11.6	13.7	11.1	10.0
+42.6°	8.8	6.1	4.8	3.8	2.4	3.0	2.1	-0.5	0.1	-1.4
	-0.9	-1.0	-1.0	-1.8	-2.2	-2.0	-2.5	-2.6	-2.5	
50	63.2	31.7	31.2	30.6	29.9	28.3	25.8	28.5	26.3	22.0
+45.3°	18.7	15.4	14.9	14.5	11.4	10.4	10.2	7.1	5.6	5.4
	2.6	2.4	1.1	0.4	0.6	-0.4	-0.7	-0.8	-0.9	
51	63.9	33.7	32.3	30.2	26.0	26.5	26.9	22.9	27.4	22.5
+48.1°	21.0	20.2	19.3	19.1	15.9	12.9	12.0	11.0	8.7	7.0
	4.5	3.1	2.7	2.4	2.7	1.7	0.5	0.8	0.7	
52	63.8	34.5	33.6	32.4	30.7	31.1	31.5	30.4	27.9	24.5
+51.1°	22.9	19.0	18.3	15.9	16.0	13.8	11.8	11.3	8.1	6.5
	4.5	3.4	2.3	1.9	1.6	0.7	0.3	1.0	0.9	
53	63.5	29.8	28.8	27.4	25.6	25.8	26.0	24.0	22.1	18.6
+54.3°	18.0	16.4	14.9	10.9	12.0	10.9	10.1	9.2	6.7	4.3
	3.4	1.8	0.4	1.0	0.7	-0.3	-0.9	-0.3	-0.5	
54	63.3	26.1	25.6	25.0	24.4	22.7	19.9	22.3	17.1	16.8
+57.8°	14.9	13.6	14.3	12.0	12.2	9.5	8.7	5.4	3.5	2.6
	1.7	0.3	-0.6	0.1	-0.2	-1.0	-1.6	-1.1	-1.4	
55	63.1	19.6	18.9	18.1	17.1	15.9	14.1	11.5	9.8	8.0
+61.6°	7.8	7.8	5.8	3.9	6.3	3.9	0.4	-0.1	0.4	-0.8
	-0.0	-0.6	-1.8	-1.3	-1.1	-1.6	-1.9	-2.0	-2.5	
56	63.2	21.6	20.8	19.8	18.6	17.8	16.8	14.9	12.4	9.6
+66.0°	3.7	5.7	4.9	1.6	2.8	2.5	1.3	-0.7	0.4	-1.0
	-0.1	-1.3	-1.5	-0.9	-0.8	-1.0	-1.8	-1.6	-1.7	
57	63.4	20.9	20.5	20.2	19.9	19.3	18.6	12.6	10.0	9.5
+71.3°	6.2	5.8	5.8	3.6	4.3	4.1	2.3	0.9	1.0	0.6
	0.6	0.1	-1.2	-0.5	-1.3	-1.4	-1.3	-0.7	-0.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 11B

STA TAPE 11E

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.3 14.1 1.8	19.2 11.6 1.2	18.2 9.7 1.3	16.8 8.3 0.9	14.8 6.6 0.7	14.2 5.0 0.7	13.6 4.1 0.8	13.3 3.4 0.7	15.4 2.4 0.7	13.9 1.9
2 +64°	53.8 14.7 2.4	21.2 12.3 2.0	20.0 10.4 1.8	18.4 9.7 1.6	15.7 8.2 1.3	15.2 6.2 1.3	14.5 5.4 1.3	15.6 4.3 1.2	16.8 3.3 1.2	15.0 2.7
3 +53°	53.7 14.8 1.9	22.0 13.5 1.5	20.8 11.3 1.4	19.1 9.6 1.2	16.4 8.3 1.1	15.5 6.7 1.0	14.4 5.4 0.9	16.1 4.7 0.9	16.7 3.3 0.9	15.7 2.6
4 +44°	53.5 13.5 1.5	20.0 12.1 1.5	18.9 10.1 1.0	17.6 8.4 0.9	15.6 7.4 0.8	14.5 6.3 0.7	12.9 5.3 0.5	14.9 3.7 0.6	14.5 2.6 0.5	15.5 2.4
5 +37°	53.3 13.0 1.0	19.3 10.2 0.9	18.2 9.1 0.5	16.6 7.4 0.5	14.0 6.2 0.4	13.1 5.6 0.3	12.0 4.7 0.1	14.1 3.6 0.2	14.0 2.2 0.2	14.1 1.5
6 +30°	53.1 11.1 0.5	19.0 9.4 0.5	17.8 8.1 0.2	16.1 7.1 0.2	13.1 5.8 0.1	12.2 4.5 -0.0	11.1 3.4 -0.3	13.3 3.0 -0.1	12.6 1.8 -0.1	12.4 1.1
7 +23°	52.7 7.8 -0.4	13.6 6.7 -0.6	13.0 5.9 -0.6	12.2 4.5 -0.7	11.3 3.4 -0.7	10.0 2.4 -0.8	8.1 1.8 -0.8	9.8 1.2 -0.8	10.5 0.4 -0.9	9.6 -0.1
8 +17°	51.4 3.0 -2.2	9.4 1.7 -2.2	10.6 1.3 -2.3	11.5 0.6 -2.3	12.3 -0.2 -2.4	10.2 -1.1 -2.5	5.9 -1.3 -2.4	5.2 -1.9 -2.5	5.7 -1.9 -2.5	4.4 -2.2
9 +12°	49.6 -4.6 -5.5	4.6 -3.4 -5.2	5.7 -3.6 -5.4	6.6 -4.0 -5.4	7.3 -4.7 -5.5	5.4 -4.8 -5.3	2.1 -5.1 -5.4	-1.6 -5.0 -5.5	-1.6 -5.4 -5.5	-1.1 -5.4
10 +6°	49.3 -4.9 -5.7	4.1 -4.4 -5.8	3.1 -4.6 -5.8	1.9 -4.9 -5.6	0.2 -5.1 -5.7	0.9 -5.2 -5.8	1.4 -5.1 -5.9	-3.9 -5.5 -5.9	-2.6 -5.8 -5.8	-1.9 -5.6
11 0°	49.4 -4.4 -5.4	4.4 -4.9 -5.4	3.4 -4.4 -5.6	2.1 -5.3 -5.5	0.3 -5.1 -5.5	0.7 -5.1 -5.6	1.1 -5.1 -5.6	-3.6 -5.3 -5.7	-2.1 -5.4 -5.7	-2.7 -5.3
12 −6°	49.6 -4.4 -5.2	3.9 -4.3 -5.1	3.1 -4.6 -5.1	2.1 -4.3 -5.3	0.7 -5.0 -5.2	1.1 -5.1 -5.2	1.2 -5.0 -5.3	-3.5 -5.2 -5.3	-1.9 -5.0 -5.4	-2.2 -5.2
13 −12°	49.8 -2.2 -4.3	4.4 -3.1 -4.5	3.5 -2.9 -4.5	2.3 -3.9 -4.5	0.7 -4.1 -4.6	1.1 -4.5 -4.5	1.5 -4.2 -4.5	-2.3 -4.4 -4.6	-1.3 -4.5 -4.5	-1.6 -4.6
14 −17°	49.7 -4.0 -5.1	4.1 -3.9 -5.2	3.2 -3.7 -5.3	2.0 -4.5 -5.2	0.4 -4.6 -5.3	0.8 -5.0 -5.1	1.2 -4.9 -5.2	-3.3 -5.1 -5.2	-1.9 -4.9 -5.2	-2.0 -5.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 11B

STA TAPE 11E

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	49.7	4.2	3.4	2.3	0.7	1.0	1.1	-3.7	-2.9	-2.1
ANGLE −23°	-4.3	-4.5	-4.1	-4.8	-4.7	-4.8	-5.3	-4.9	-5.5	-5.4
	-5.3	-5.1	-5.1	-5.3	-5.2	-5.3	-5.3	-5.3	-5.3	
16	50.0	4.5	3.7	2.8	1.6	1.3	1.0	-3.0	-1.8	-1.6
−30°	-4.6	-3.8	-4.1	-4.4	-4.8	-4.7	-4.9	-4.8	-4.8	-4.7
	-4.6	-4.8	-4.7	-4.7	-4.7	-4.8	-4.7	-4.7	-4.8	
17	50.2	4.4	3.7	2.7	1.6	1.5	1.5	-2.0	-1.6	-2.0
−37°	-3.4	-3.4	-3.2	-4.4	-4.2	-4.3	-4.1	-4.3	-4.4	-4.4
	-4.2	-4.5	-4.3	-4.4	-4.3	-4.3	-4.4	-4.5	-4.5	
18	50.4	4.2	3.4	2.6	1.6	1.7	1.9	-2.1	-0.8	-1.2
−44°	-3.4	-3.3	-3.1	-3.6	-3.6	-4.0	-4.0	-3.7	-4.0	-4.1
	-4.0	-4.2	-3.9	-4.0	-4.2	-4.0	-4.1	-4.2	-4.1	
19	50.7	6.1	5.5	4.9	4.1	4.1	4.1	2.5	0.4	0.5
−53°	-1.2	-1.8	-1.1	-1.5	-1.8	-2.7	-2.6	-2.7	-3.1	-3.1
	-2.9	-3.1	-2.9	-2.9	-3.1	-2.9	-3.1	-3.2	-3.3	
20	51.0	10.5	10.0	9.5	8.9	8.9	8.8	8.4	4.7	3.5
−64°	2.2	2.2	2.5	4.1	3.3	0.8	0.5	0.2	-0.8	-1.3
	-1.0	-0.9	-0.6	0.0	-0.6	-0.2	-0.3	-0.9	-1.0	
21	51.0	12.1	11.5	10.9	10.1	9.8	9.4	7.6	4.6	2.2
−84°	2.8	3.1	3.4	7.5	5.7	2.3	3.1	2.2	1.0	0.1
	0.6	0.9	0.3	3.0	2.0	1.8	1.8	0.9	0.3	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 11B

STA TAPE 11F

AGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.2 13.1 1.7	21.4 11.3 1.2	20.0 10.2 1.1	18.1 8.4 0.9	14.6 7.0 0.8	13.8 5.5 0.6	12.7 4.3 0.6	12.1 3.5 0.4	16.3 2.9 0.6	15.1 2.0
2 +64°	53.6 13.7 2.2	22.4 12.2 1.9	21.2 10.6 1.7	19.5 9.7 1.6	16.6 7.8 1.2	15.4 6.7 1.1	13.8 5.3 1.2	13.7 4.2 1.1	17.2 3.4 1.2	16.1 2.9
3 +53°	53.5 15.0 2.4	21.5 12.7 1.7	20.5 10.8 1.6	19.2 9.6 1.3	17.4 8.0 1.1	15.9 7.3 1.1	13.5 5.9 1.0	14.9 4.9 0.8	16.7 4.0 1.1	16.6 3.0
4 +44°	53.5 14.4 2.2	20.8 13.1 1.6	19.7 10.3 1.4	18.1 9.3 1.1	15.6 7.8 0.9	14.7 6.6 0.9	13.7 5.1 0.8	14.3 4.4 0.8	16.7 3.8 0.8	16.4 2.7
5 +37°	53.5 13.2 2.2	20.0 11.7 2.0	18.7 10.4 1.5	16.9 9.1 1.4	13.9 7.3 1.2	13.4 6.8 1.0	12.8 5.6 0.8	14.3 4.4 0.9	15.9 3.8 1.2	16.0 2.5
6 +30°	53.3 10.9 1.5	17.3 10.2 1.2	16.2 8.6 0.7	14.8 7.5 0.7	12.6 6.0 0.7	11.6 5.4 0.6	10.2 3.9 0.6	13.3 3.6 0.5	14.5 2.5 0.5	12.7 2.2
7 +23°	52.7 8.5 -0.1	14.1 7.8 -0.2	13.4 6.2 -0.5	12.7 5.3 -0.4	11.7 4.4 -0.3	10.4 3.1 -0.5	8.3 2.5 -0.5	10.2 1.8 -0.5	11.9 1.1 0.1	10.8 0.2
8 +17°	51.5 3.8 -1.9	10.1 3.2 -2.0	10.1 2.5 -2.2	10.0 1.2 -2.3	10.0 0.9 -2.2	8.2 0.4 -2.4	5.3 -0.2 -2.3	5.1 -0.7 -2.3	5.4 -0.9 -1.6	5.8 -1.7
9 +12°	49.8 -0.1 -4.4	6.5 -0.1 -4.5	6.0 -0.5 -4.8	5.4 -1.6 -4.9	4.8 -1.2 -4.3	3.8 -1.7 -4.6	2.5 -2.7 -4.4	0.3 -2.6 -4.7	1.4 -3.6 -2.5	1.6 -4.1
10 +6°	49.4 -1.5 -4.8	4.3 -1.6 -4.9	3.5 -2.3 -5.3	2.6 -2.7 -5.6	1.5 -2.4 -4.9	1.9 -2.7 -5.2	2.3 -3.4 -5.1	-0.3 -3.8 -5.4	0.0 -4.3 -3.3	0.1 -4.9
11 0°	49.6 -2.5 -4.0	4.4 -2.6 -4.3	3.6 -3.2 -4.9	2.5 -3.6 -4.9	1.2 -3.8 -5.0	1.7 -3.8 -5.1	2.3 -4.0 -5.1	-1.4 -4.6 -4.9	-0.6 -4.2 -4.4	-0.5 -4.1
12 −6°	49.7 -0.3 -2.5	4.7 -0.8 -3.2	4.0 -1.1 -3.4	3.1 -1.7 -3.5	2.0 -1.8 -3.5	2.5 -2.5 -3.6	3.0 -2.7 -3.6	1.4 -2.9 -3.1	0.9 -2.7 -2.7	1.3 -2.5
13 −12°	49.9 -2.7 -4.5	3.6 -2.9 -4.4	2.8 -3.4 -4.7	1.8 -4.2 -4.7	0.6 -3.6 -4.8	1.2 -3.7 -4.9	1.7 -3.9 -4.8	-1.5 -4.4 -4.5	-0.4 -4.2 -4.4	-1.1 -4.2
14 −17°	49.7 -0.8 -4.6	4.3 -1.1 -4.4	3.4 -1.3 -4.9	2.3 -2.2 -4.6	0.9 -2.2 -4.3	1.5 -2.5 -3.8	2.1 -3.3 -4.1	-0.8 -3.8 -4.6	0.0 -4.8 -3.5	0.7 -4.9

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

MPL-M-5012

STA TAPE 11F

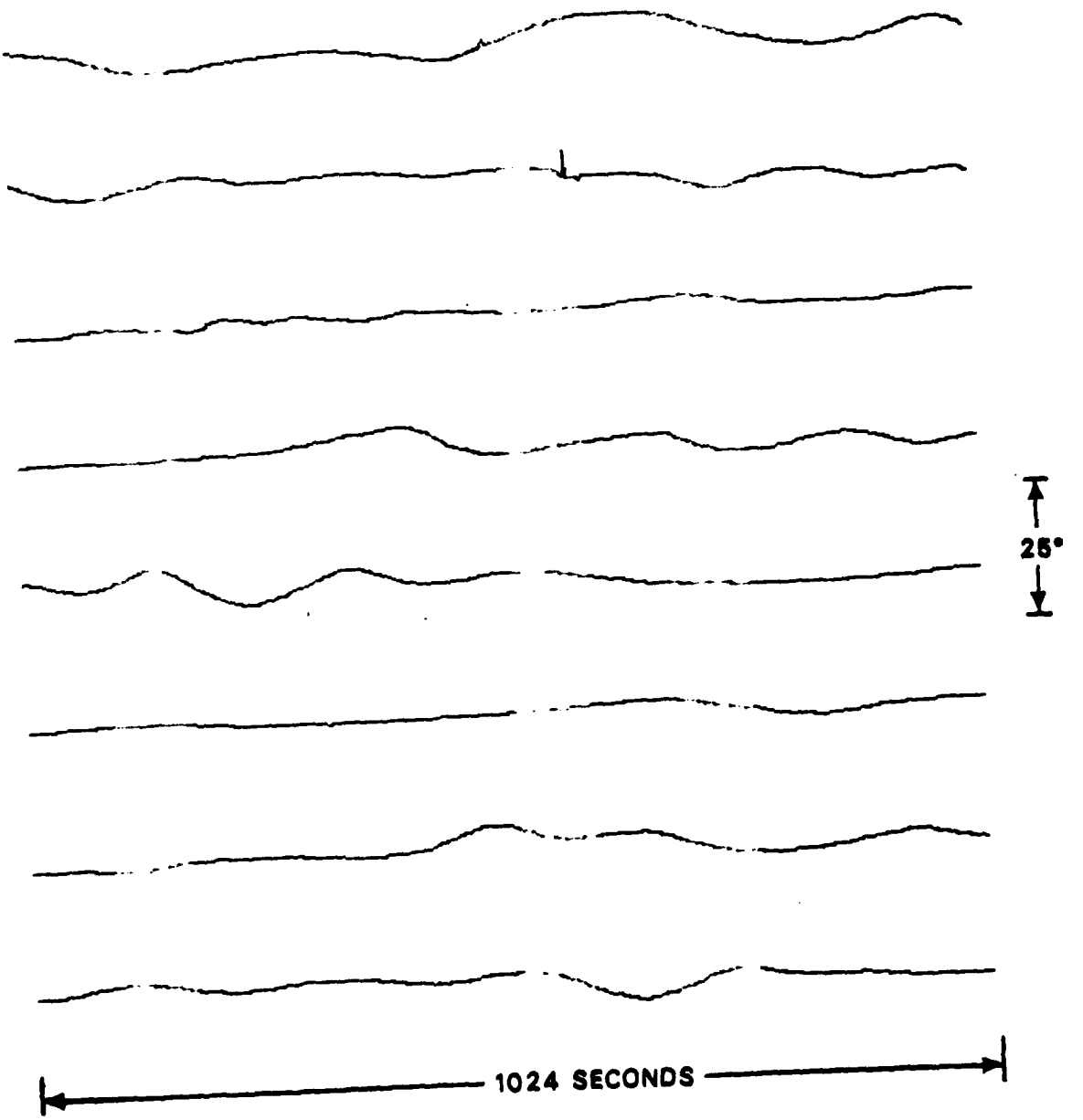
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	49.7 -3.6 -4.9	3.7 -3.8 -4.9	2.8 -3.3 -4.9	1.6 -4.7 -4.9	0.1 -4.8 -4.9	0.5 -4.6 -4.9	0.9 -4.6 -4.9	-2.2 -5.0 -4.9	-1.5 -4.8 -4.9	-2.1 -4.9
16 −30°	50.1 -3.0 -4.5	4.2 -2.2 -4.5	3.4 -2.3 -4.6	2.4 -2.7 -4.7	1.2 -2.7 -4.2	1.5 -3.0 -3.3	1.8 -3.5 -4.4	-1.1 -3.6 -4.5	-0.8 -4.1 -3.7	-0.8 -4.4
17 −37°	50.2 -1.3 -4.1	4.3 -1.2 -4.1	3.7 -1.2 -3.8	3.0 -2.1 -4.1	2.3 -3.0 -3.5	2.1 -2.2 -2.1	1.9 -2.3 -3.7	-0.3 -2.9 -3.9	0.8 -3.4 -2.6	0.5 -3.9
18 −44°	50.4 -3.5 -4.1	4.0 -2.9 -4.1	3.2 -3.2 -4.2	2.1 -3.4 -4.0	0.7 -3.9 -4.0	1.1 -3.6 -4.0	1.5 -3.9 -4.0	-2.5 -3.8 -4.1	-0.9 -3.9 -4.1	-1.3 -4.0
19 −53°	50.7 0.1 -2.4	7.8 -0.0 -2.0	7.0 0.2 -1.9	6.1 0.4 -2.1	5.0 -0.9 -2.2	5.3 -1.3 -1.8	5.6 -1.8 -2.3	2.1 -1.9 -2.4	3.9 -2.1 -2.2	2.0 -2.5
20 −64°	51.0 4.1 -0.6	10.2 4.8 0.3	10.2 4.8 0.2	10.2 5.6 -0.1	10.2 3.3 -0.0	10.2 2.5 1.2	10.3 1.3 -0.5	7.8 1.5 -0.3	8.8 0.7 0.2	7.1 -0.5
21 −84°	50.9 1.7 -1.4	8.0 0.9 -1.4	7.7 0.5 -1.3	7.4 1.2 -1.5	7.0 0.7 -1.5	6.9 -0.4 -1.1	6.9 -0.7 -1.8	4.2 0.1 -2.0	5.6 -1.0 -1.4	3.2 -1.5

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 11B

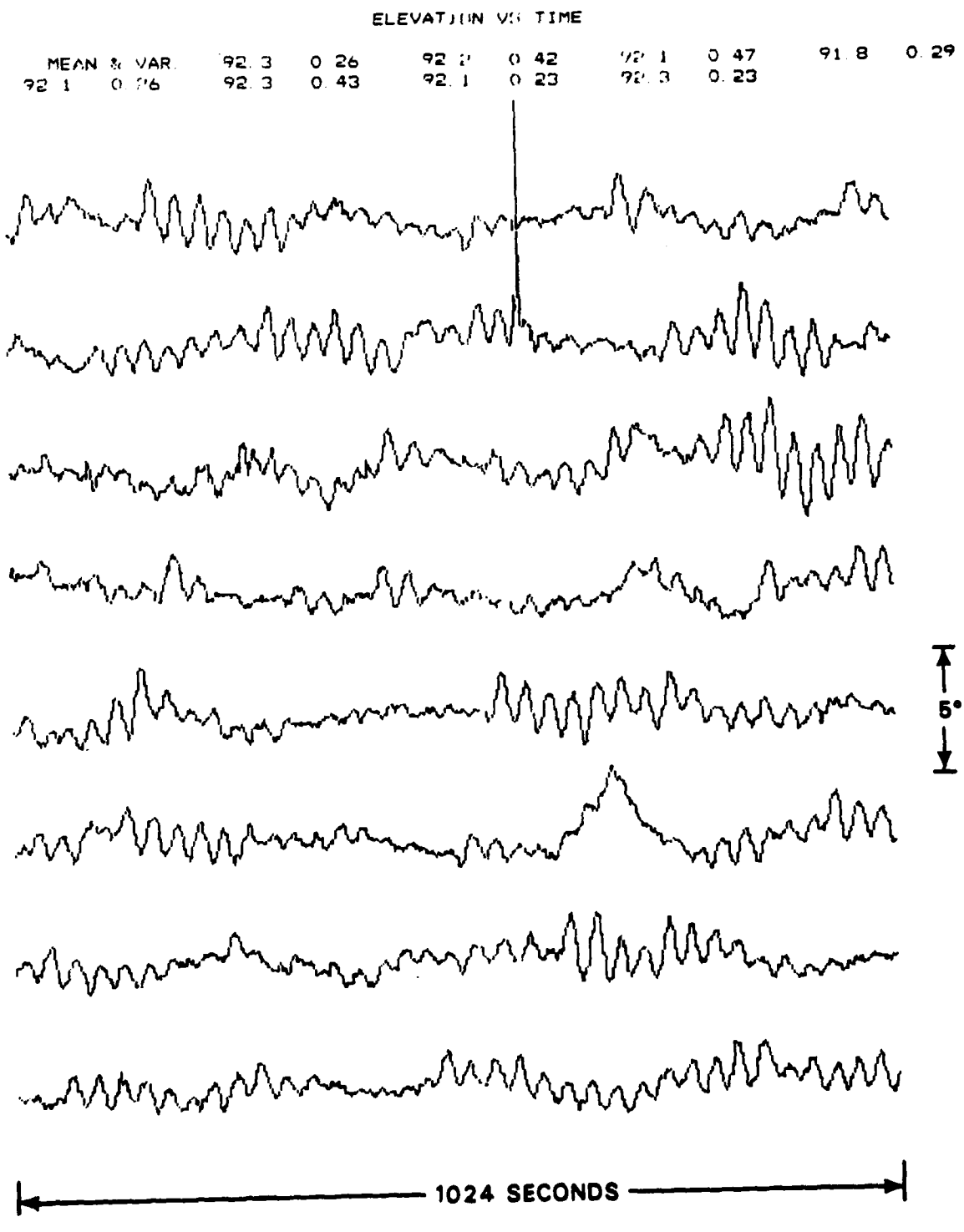
BEARING VS TIME

MEAN & VAR.	310.0	6.38	309.0	2.22	309.3	1.27	312.1	2.57
308.8	3.49	308.9	0.89	311.0	3.05	310.0	2.38	

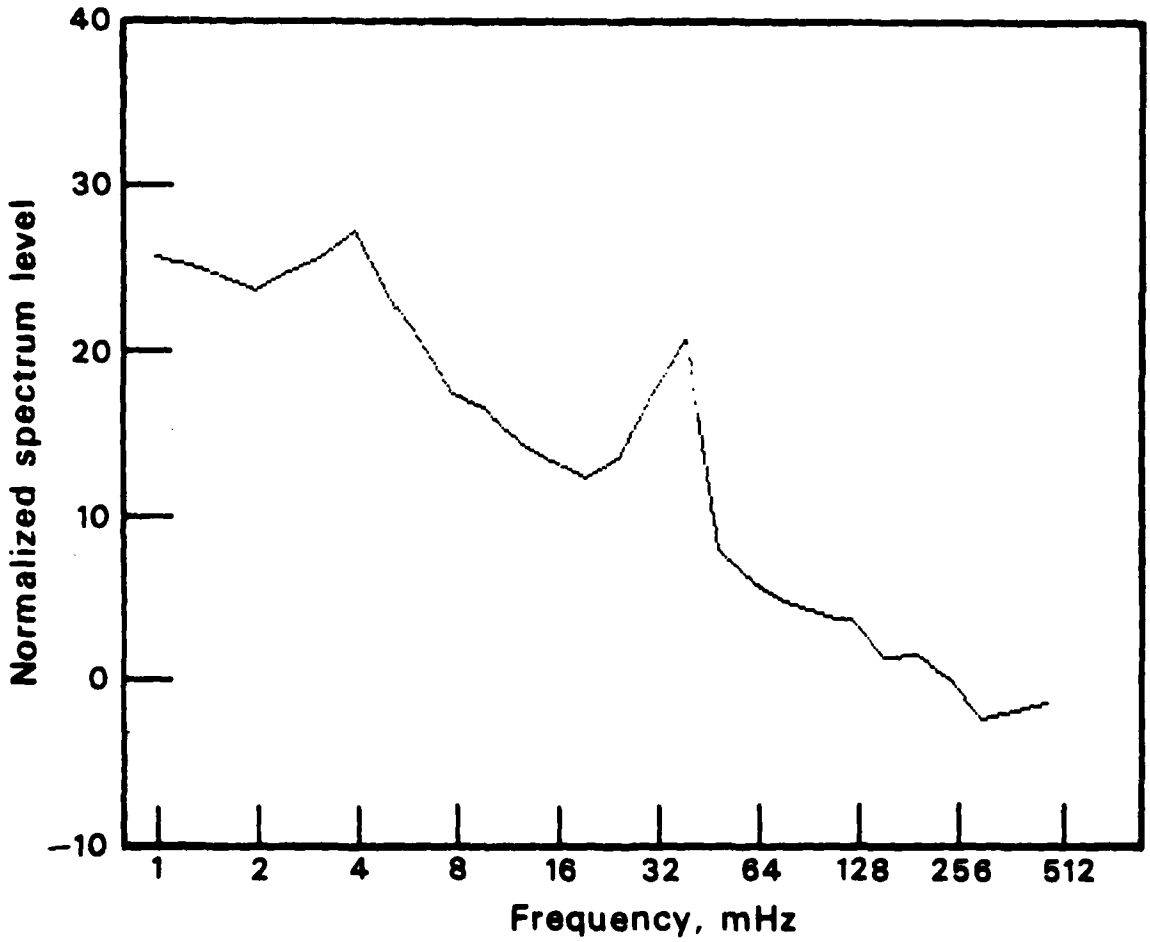


MPL-M-5014

GROUP 11B



MPL-M-5015



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 12A

Environmental Summary

12 June 1978

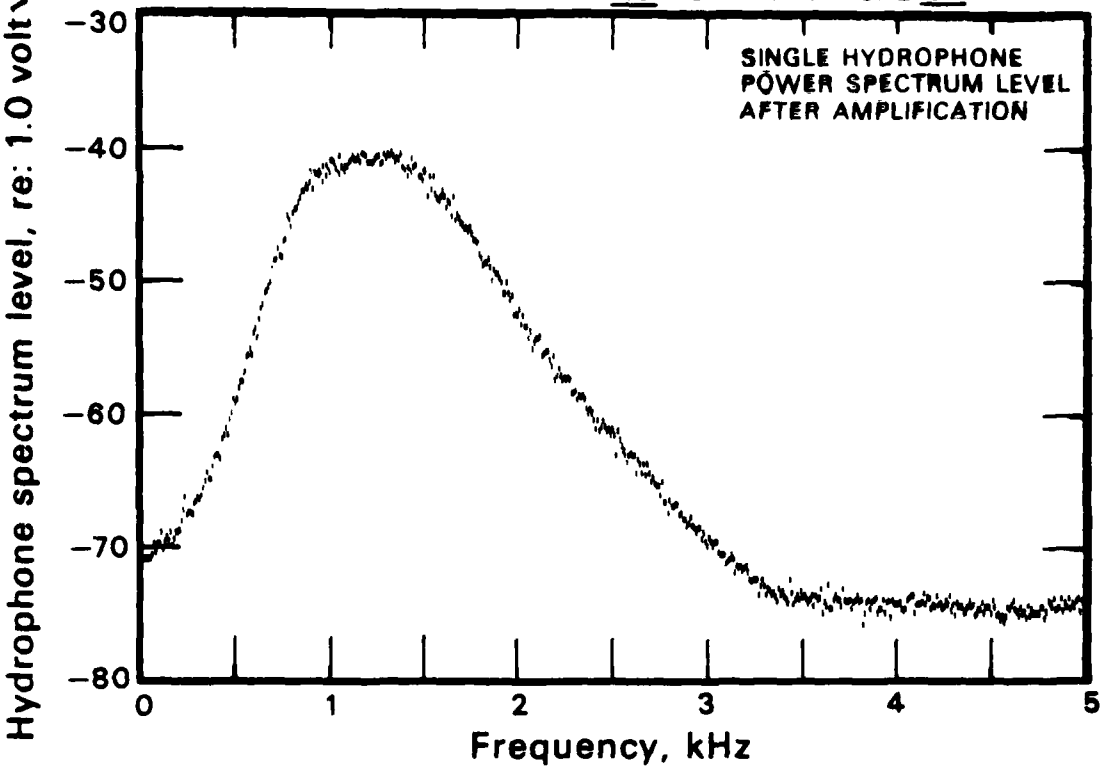
Tapes	Start time	Code
LTA/LOG	04:09:13	12A
STA	04:10:48	12G
Low Band Filter		

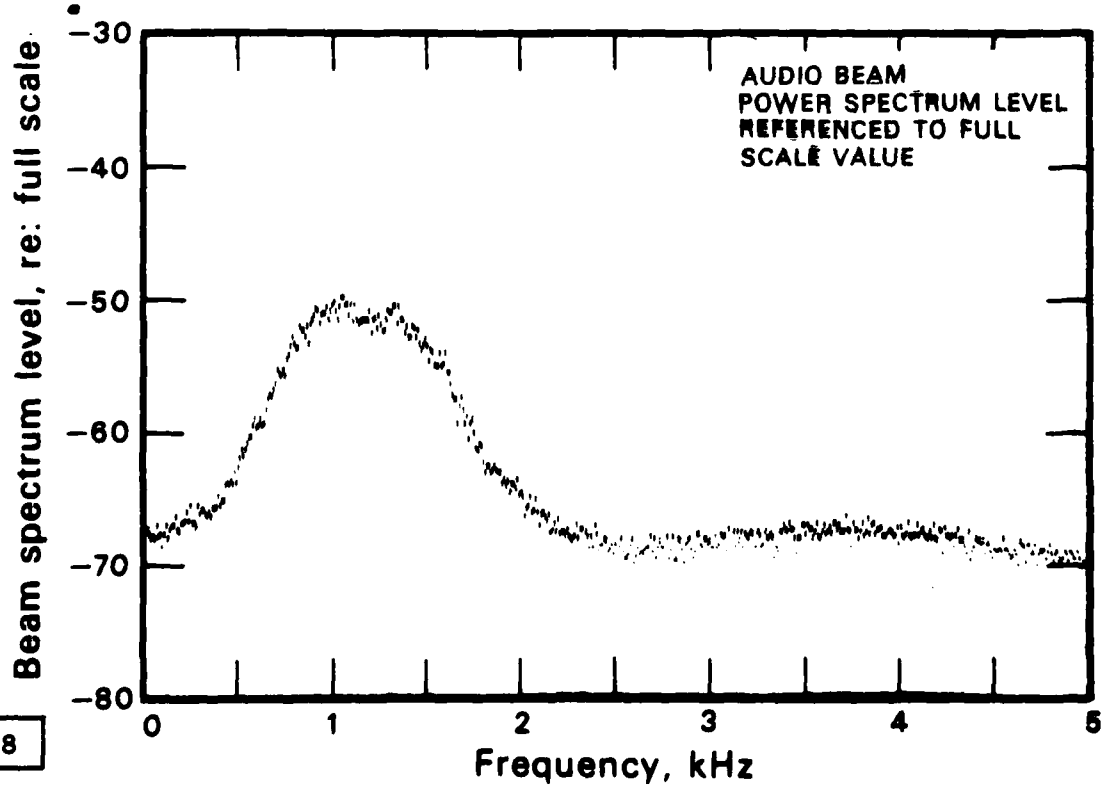
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
04:00	1000	17	340	5-7	6-7	NW	Chop

12-JUN-78 04:25:50 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 48.1 TRUE ELEVATION 79.7
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -11.5 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 97

GROUP 12A





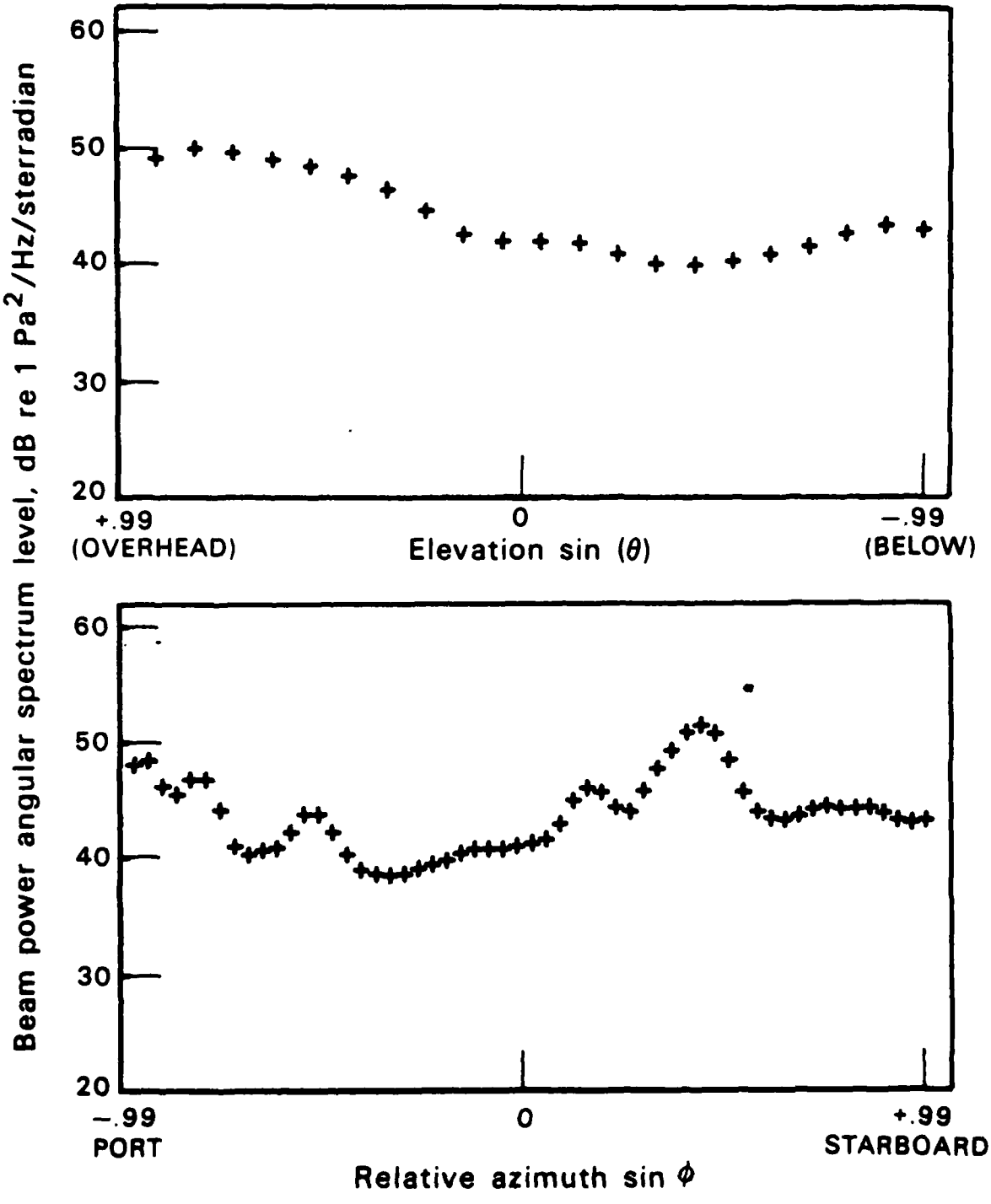
MPL-M-5018

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 12A

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

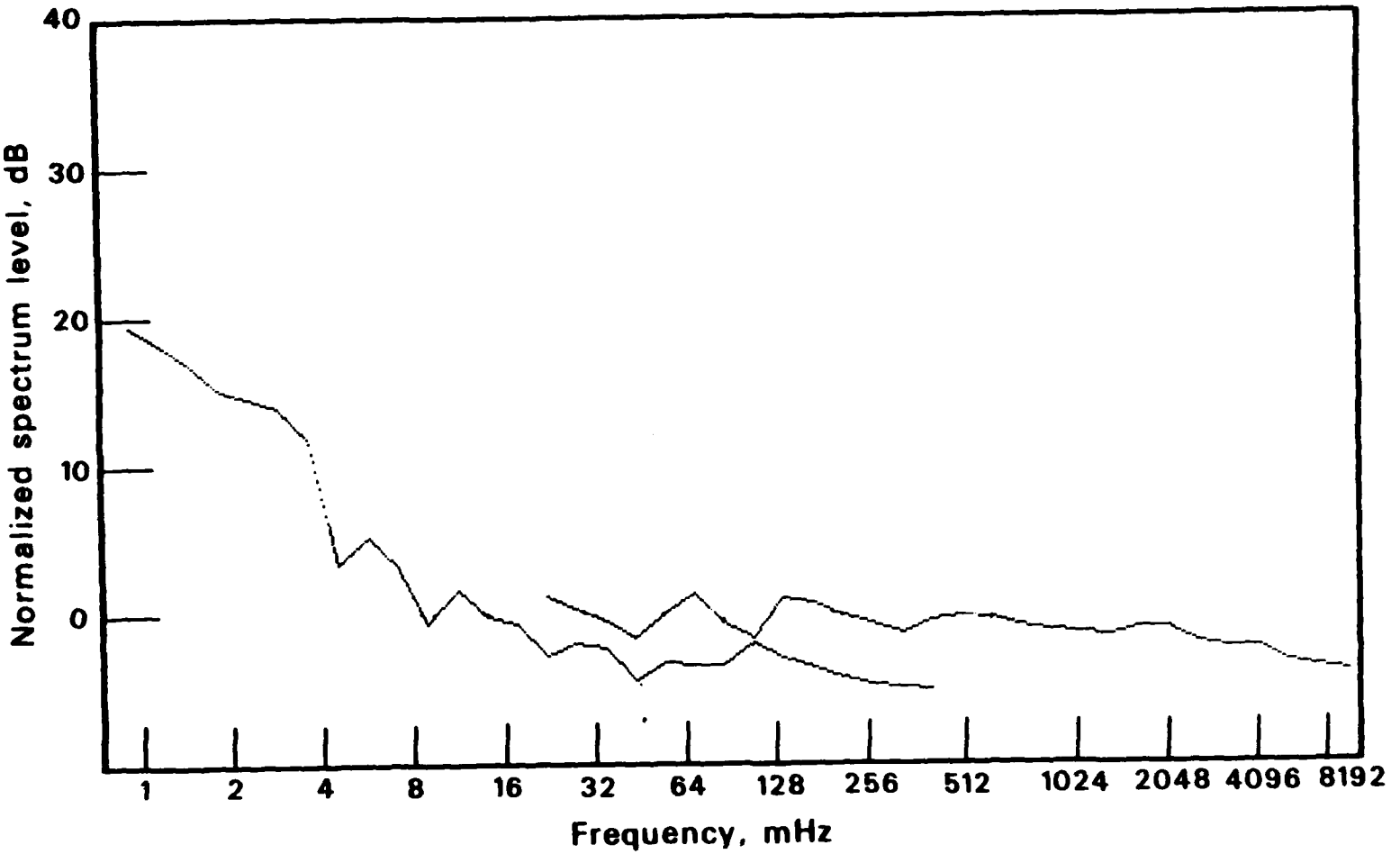
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-5019

MPL-M-5020

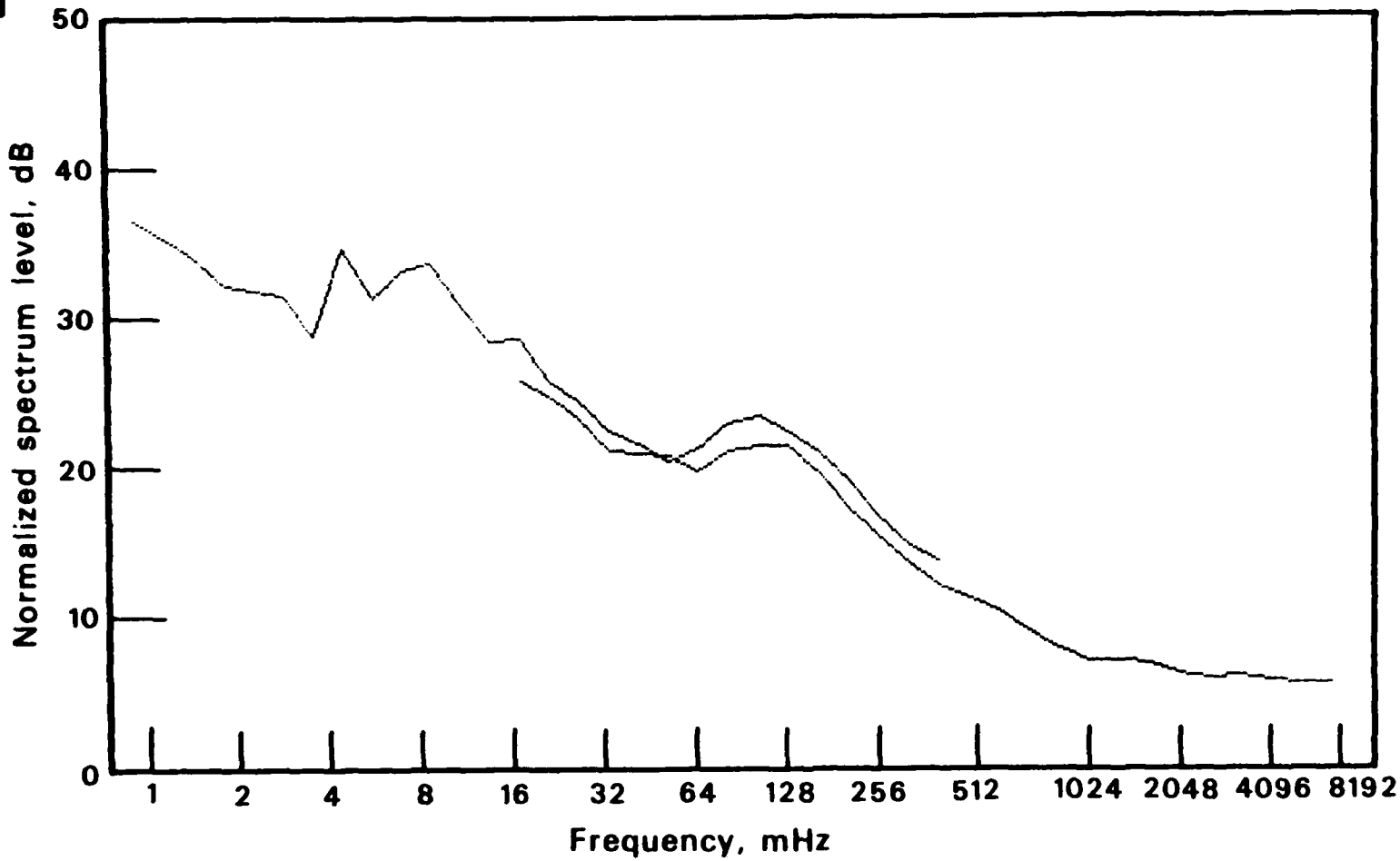
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 12A

MPL-M-5021

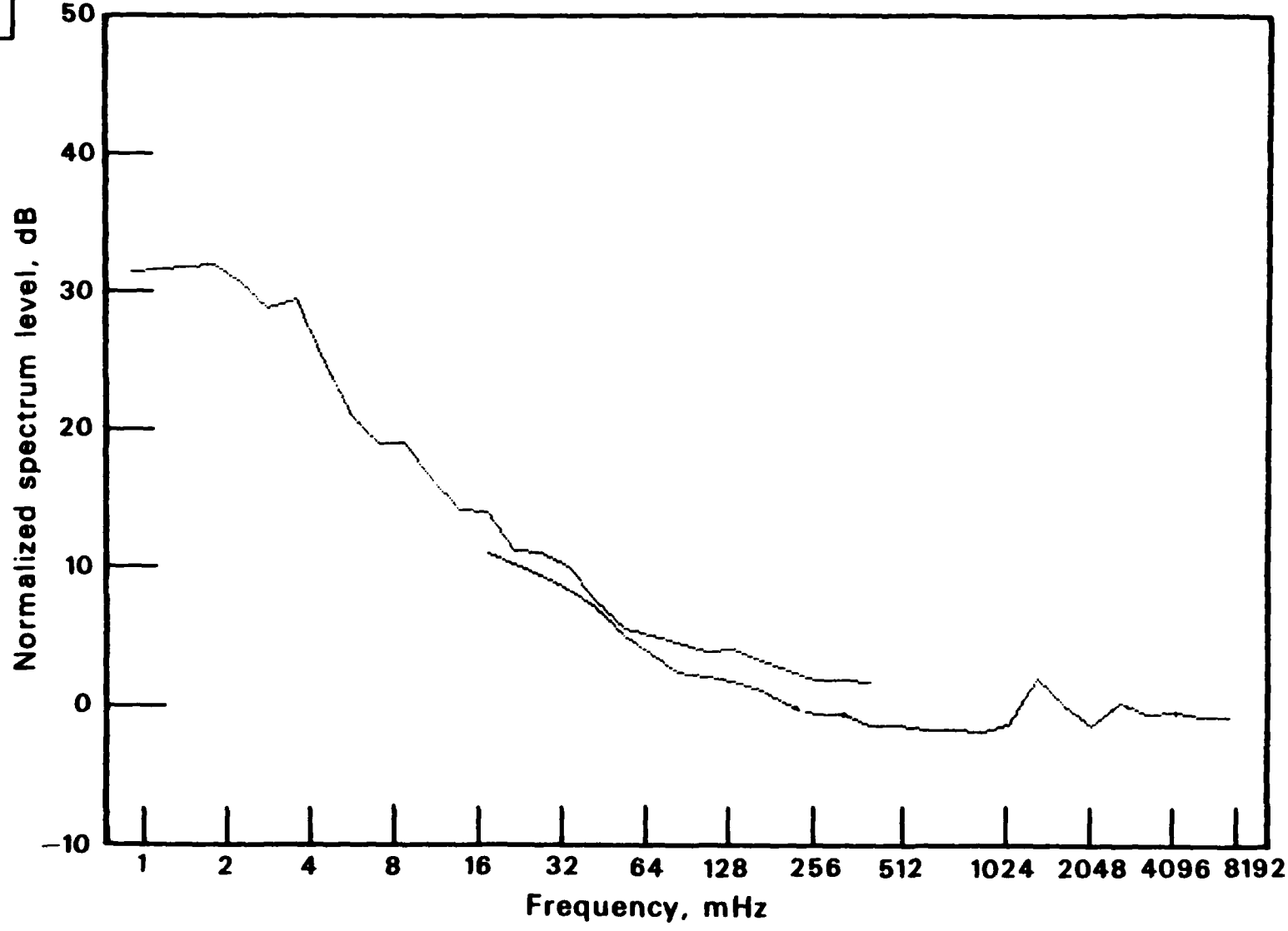
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12A

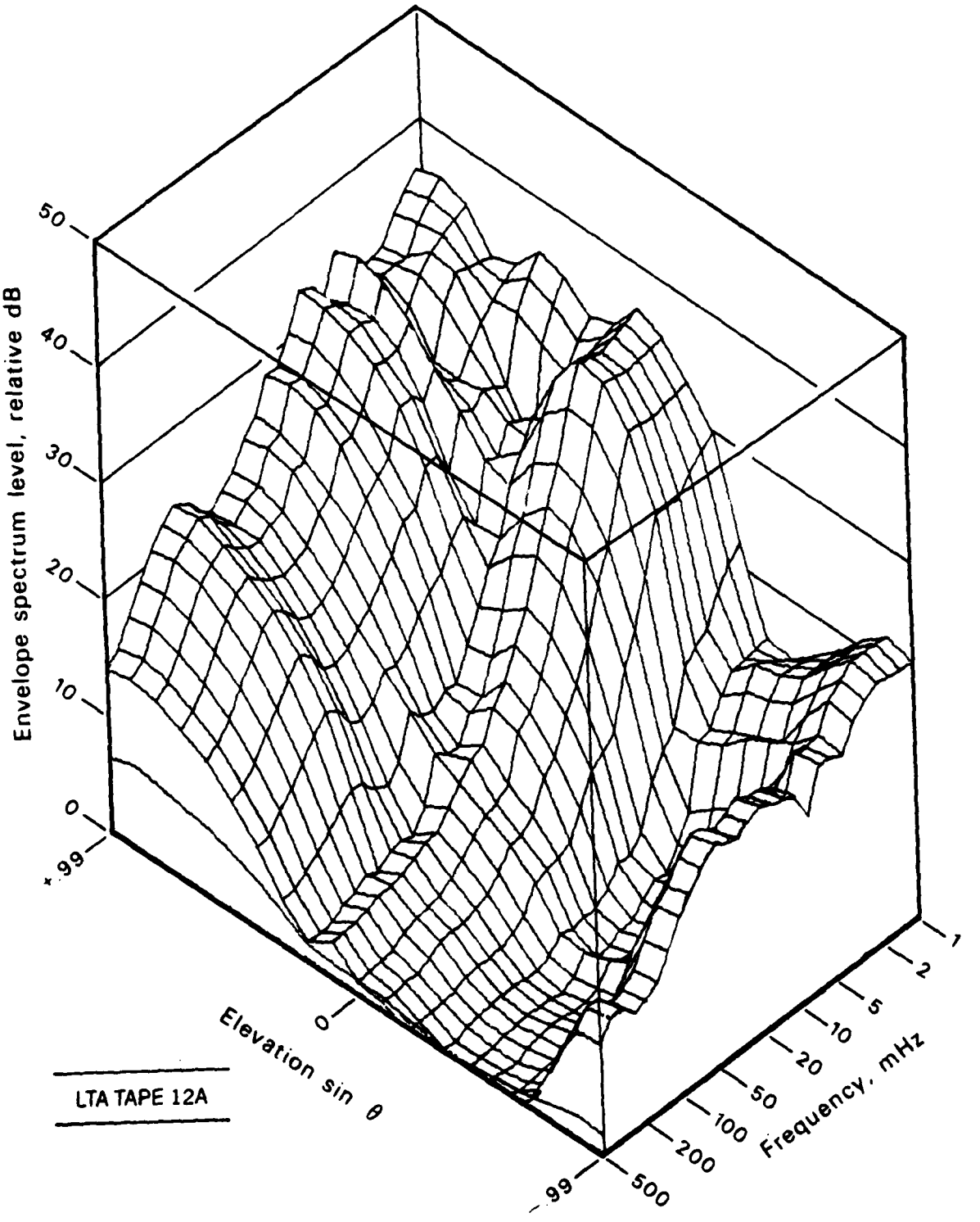
MPL-M-5022

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12A

GROUP 12A

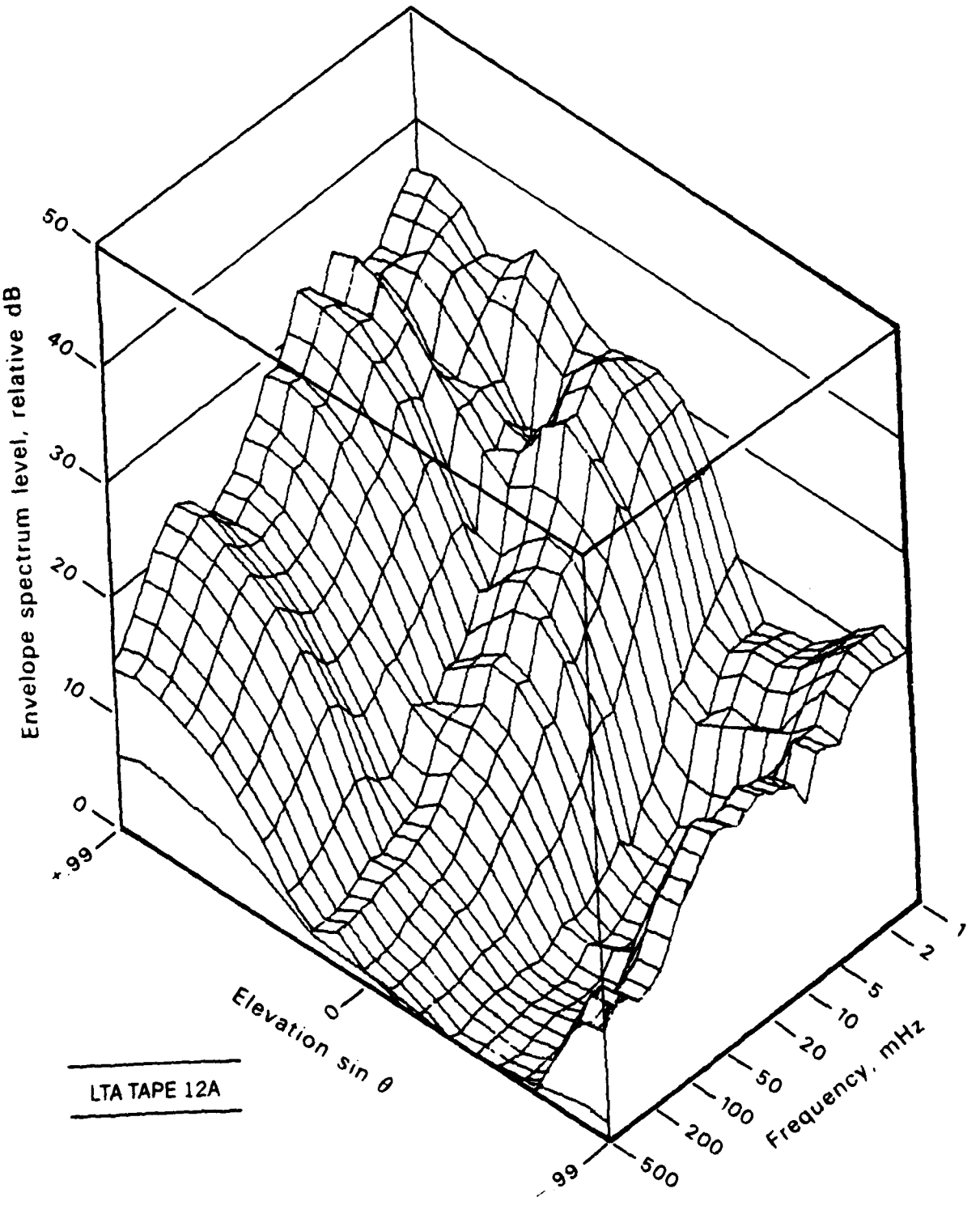


LTA TAPE 12A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-5023

GROUP 12A

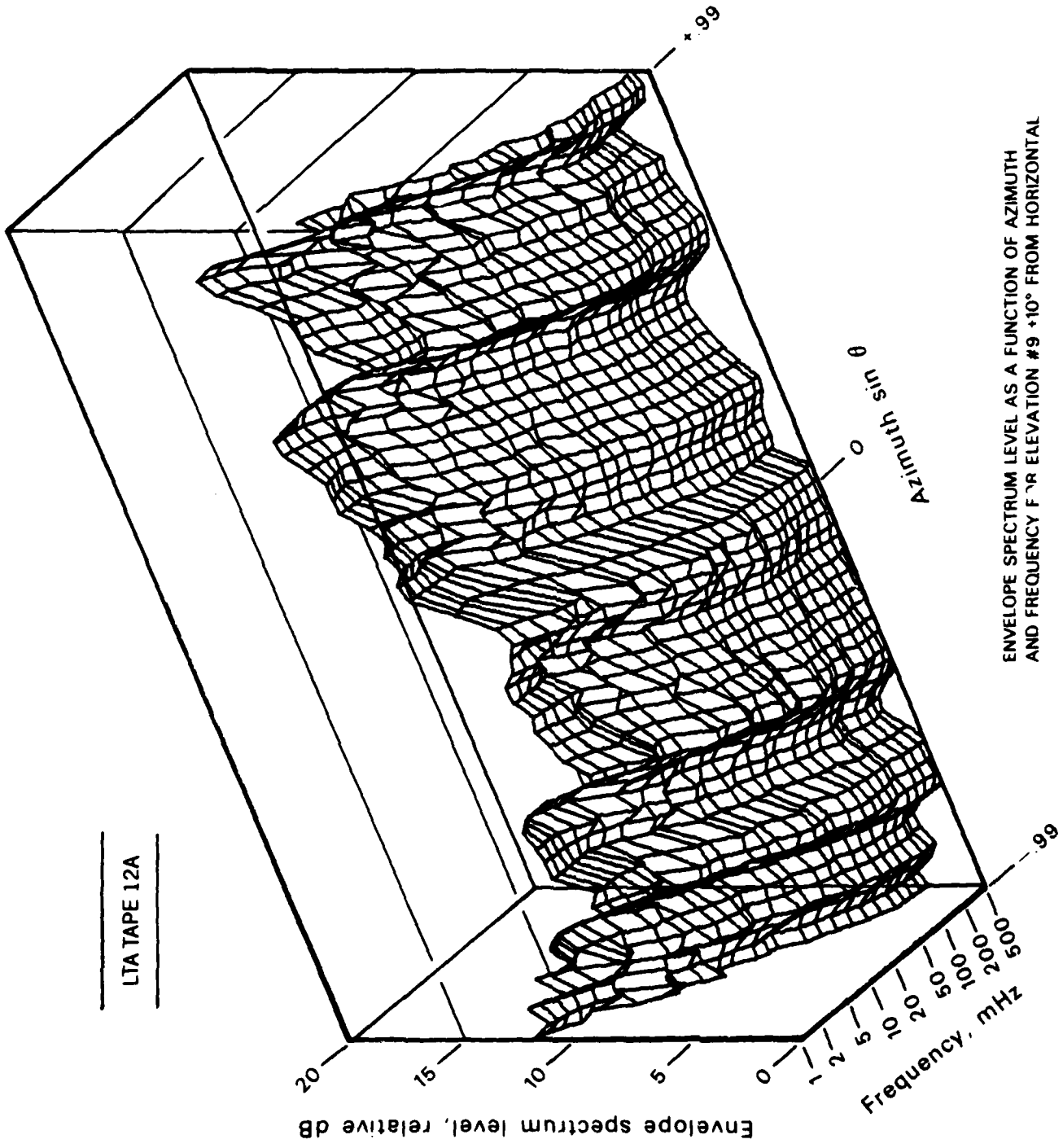


LTA TAPE 12A

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA TRUE BEARING STABILIZED BEAM SET

MPL-M-5024

GROUP 12A

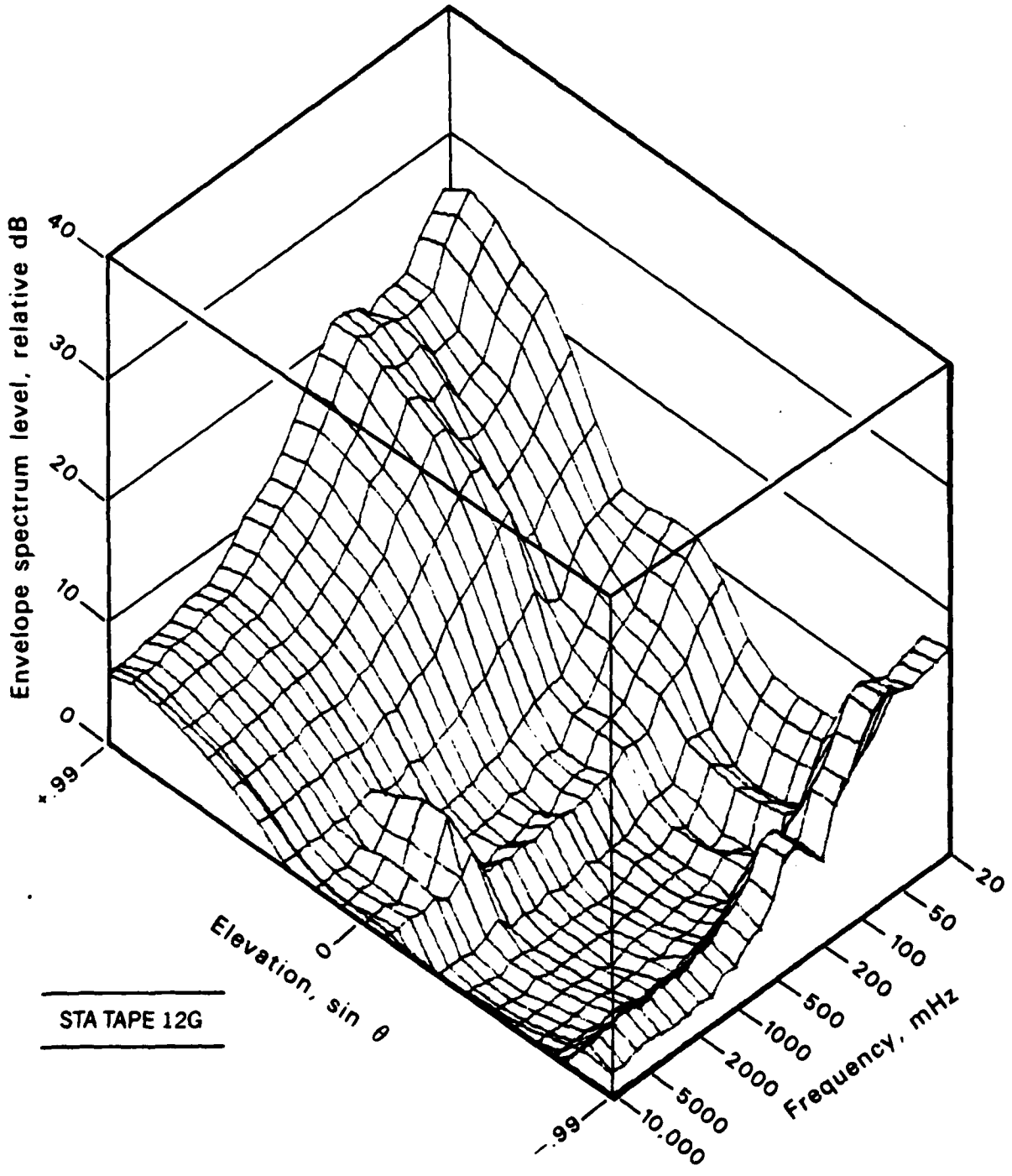


ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

LTA TAPE 12A

MP[illegible] M 5025

GROUP 12A



STA TAPE 12G

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET

MPL-M-5026

GROUP 12A

LTA TAPE 12A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	69.7	36.3	35.3	33.9	32.0	31.7	31.4	28.7	34.6	31.2
ANGLE +84°	33.0	33.5	30.7	28.4	28.5	25.7	24.4	22.3	21.6	20.4
	21.2	22.8	23.4	22.4	20.9	19.0	16.8	14.7	13.8	
2	70.6	37.0	36.0	34.6	32.5	32.4	32.4	28.9	35.5	32.0
+64°	33.0	33.3	30.9	28.8	29.0	25.6	25.0	22.5	22.0	20.7
	21.7	23.0	23.7	22.5	21.5	19.3	17.2	15.2	14.2	
3	70.3	36.0	35.5	35.0	34.3	33.0	31.1	29.4	34.7	32.3
+53°	32.7	32.6	30.0	28.1	28.3	24.6	24.6	21.7	21.4	20.8
	20.7	21.6	22.7	21.8	20.8	18.5	16.4	14.7	13.8	
4	69.8	32.8	33.2	33.6	33.9	31.8	27.8	29.0	32.8	31.1
+44°	30.8	31.2	28.3	26.6	26.6	23.1	22.3	20.1	19.6	19.2
	19.5	20.4	21.4	20.6	19.3	17.1	15.1	13.5	12.7	
5	69.3	33.6	32.9	32.0	30.9	29.6	27.6	28.3	30.2	28.0
+37°	29.1	29.1	25.4	24.6	23.4	21.6	19.7	18.2	17.5	17.1
	17.6	18.9	19.9	19.0	17.2	15.4	13.4	12.1	11.4	
6	68.6	36.2	34.7	32.4	26.8	27.5	28.1	27.1	27.8	23.3
+30°	25.6	25.2	22.4	22.0	19.9	18.5	16.9	15.8	14.9	14.3
	14.6	16.5	17.4	16.1	14.2	13.0	11.1	9.8	9.2	
7	67.6	35.4	33.8	31.1	22.9	25.1	26.6	24.4	25.0	20.1
+23°	21.6	20.2	18.3	17.4	16.1	14.4	13.4	13.6	11.7	10.9
	11.4	13.3	13.9	12.6	10.9	9.5	8.4	7.1	6.8	
8	66.3	33.4	32.0	30.0	26.3	27.6	28.5	26.2	24.1	20.3
+17°	18.4	15.9	13.5	10.8	11.1	10.0	10.2	11.6	7.8	6.5
	7.1	8.3	8.4	7.6	6.4	5.4	4.5	3.7	3.6	
9	65.0	34.1	33.7	33.3	32.9	33.1	33.4	31.0	27.5	23.7
+12°	21.0	16.9	13.8	11.0	10.5	8.3	8.5	9.3	5.5	3.7
	4.0	3.8	2.9	3.3	2.6	2.2	1.6	1.4	1.4	
10	64.7	36.9	36.5	36.0	35.5	35.9	36.3	32.9	28.8	25.9
+6°	22.4	18.6	16.2	13.8	12.3	9.9	9.3	8.0	6.7	5.4
	5.2	4.6	4.0	3.7	3.6	3.2	3.0	2.7	2.7	
11	64.6	35.8	35.6	35.5	35.3	35.5	35.8	32.6	27.9	25.2
0°	21.3	17.6	15.0	12.6	11.6	7.8	6.9	6.8	5.6	4.4
	3.6	2.8	2.6	2.4	1.8	1.1	1.0	0.8	0.7	
12	64.6	33.3	33.1	32.8	32.6	32.8	32.9	29.5	24.6	22.0
−6°	17.7	14.8	12.9	10.1	9.0	6.5	5.5	5.4	3.8	2.8
	2.3	1.8	1.9	1.7	1.0	0.4	0.5	0.2	0.3	
13	64.1	30.4	29.5	28.5	27.1	27.1	27.2	22.6	18.6	16.1
−12°	11.3	10.3	9.5	6.9	4.8	4.3	4.1	3.5	1.5	0.7
	0.3	0.2	0.3	0.1	-0.4	-0.2	-0.7	-0.7	-0.8	
14	63.7	22.3	21.1	19.6	17.1	16.3	15.2	10.7	9.5	7.7
−17°	4.0	2.9	2.9	1.4	0.5	0.5	0.2	0.6	-0.5	-1.1
	-1.1	-0.9	-1.0	-0.9	-1.2	-1.3	-1.8	-1.7	-1.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12A

LTA TAPE 12A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	63.6 2.0 −1.2	15.4 2.1 −1.3	15.2 1.1 −1.1	15.1 0.2 −1.4	14.9 −0.0 −1.4	13.4 −0.6 −1.7	11.3 −0.8 −1.7	11.0 0.3 −1.8	5.6 −1.0 −2.0	3.6 −1.6
16 −30°	63.8 0.4 −1.1	14.9 2.5 −0.9	15.6 0.9 −0.7	16.3 0.7 −1.0	16.8 0.8 −1.2	15.2 0.2 −1.7	12.4 0.3 −1.6	12.0 1.0 −1.5	7.3 −0.6 −1.6	3.9 −1.1
17 −37°	64.1 1.7 −0.6	16.8 3.1 −0.2	17.0 1.8 −0.0	17.2 1.3 −0.6	17.3 1.5 −0.8	15.8 1.5 −0.9	13.5 1.8 −1.1	14.1 2.2 −1.1	8.8 0.0 −0.8	5.3 −0.3
18 −44°	64.4 5.2 2.0	18.5 4.9 2.2	18.5 4.2 1.2	18.5 3.2 0.8	18.5 4.3 0.8	16.9 4.1 0.4	14.5 3.3 0.1	15.2 4.0 0.2	11.1 3.5 0.1	6.9 2.5
19 −53°	65.0 11.2 10.4	20.8 11.9 9.4	20.8 12.2 7.4	20.8 12.3 6.0	20.7 13.1 5.5	19.6 12.4 5.1	18.0 11.6 5.8	16.5 12.5 5.7	14.7 12.8 4.7	13.6 11.8
20 −64°	65.5 15.1 15.6	22.6 17.1 14.5	22.6 17.6 12.2	22.7 17.9 10.4	22.8 18.5 9.7	21.9 17.8 9.2	20.8 17.3 10.4	18.6 18.2 10.3	18.3 18.4 9.0	18.6 17.1
21 −84°	65.3 15.3 16.1	21.7 17.7 15.0	21.9 18.4 12.7	22.1 18.6 10.8	22.3 19.2 10.0	21.4 18.5 9.7	20.4 18.0 10.8	18.4 18.9 10.8	18.9 19.1 9.4	19.1 17.6

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12A

LTA TAPE 12A

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4 80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	69.9	36.3	35.3	33.9	32.0	31.7	31.4	28.7	34.6	31.2
ANGLE +84°	33.0	33.5	30.7	28.4	28.5	25.7	24.4	22.3	21.6	20.4
	21.2	22.8	23.4	22.4	20.7	19.0	16.8	14.7	13.8	
2	70.6	37.0	36.0	34.6	32.5	32.4	32.4	28.9	35.5	32.0
+64°	33.0	33.3	30.9	28.8	29.0	25.6	25.0	22.5	22.0	20.7
	21.7	23.0	23.7	22.5	21.5	19.3	17.2	15.2	14.2	
3	70.3	36.0	35.5	35.0	34.3	33.0	31.1	29.4	34.7	32.3
+53°	32.7	32.6	30.0	28.1	28.3	24.6	24.6	21.7	21.4	20.8
	20.9	21.6	22.7	21.8	20.8	18.5	16.4	14.7	13.8	
4	69.8	33.1	33.3	33.5	33.8	31.7	27.9	28.9	32.7	31.2
+44°	30.6	31.2	28.3	26.5	26.5	23.3	22.3	20.2	19.6	19.2
	19.6	20.3	21.4	20.6	17.3	17.1	15.1	13.5	12.7	
5	69.3	33.8	33.0	32.0	30.8	29.5	27.5	28.2	30.2	28.0
+37°	28.9	29.1	25.5	24.4	23.4	21.6	19.7	18.2	17.5	17.0
	17.7	18.8	19.9	19.0	17.2	15.5	13.4	12.1	11.4	
6	68.5	36.2	34.7	32.4	27.1	27.5	27.9	27.5	27.6	23.2
+30°	25.0	25.0	22.6	22.1	19.6	18.9	16.8	15.7	15.0	14.2
	14.6	16.4	17.5	16.0	14.2	13.0	11.1	9.8	9.2	
7	67.6	35.3	33.7	31.0	23.3	25.1	26.4	24.8	25.4	18.9
+23°	20.7	20.4	18.6	17.7	16.1	14.9	13.5	13.5	11.8	10.9
	11.5	13.2	14.0	12.5	10.9	9.6	8.4	7.1	6.8	
8	66.4	32.4	31.2	29.4	26.3	26.1	25.8	25.9	23.6	18.3
+17°	16.2	16.8	13.8	12.2	12.3	10.1	10.7	11.5	7.9	6.8
	7.1	8.3	8.6	7.6	6.5	5.3	4.4	3.8	3.6	
9	65.1	31.5	31.7	31.9	32.1	30.8	28.8	29.6	25.2	21.0
+12°	19.1	19.1	16.4	14.2	14.0	11.2	11.0	10.0	7.5	5.5
	5.0	4.6	3.9	4.0	3.2	2.5	1.9	1.8	1.7	
10	64.0	32.1	33.0	33.8	34.4	33.1	31.2	31.3	25.3	22.9
+6°	21.0	20.5	18.7	15.7	15.5	12.8	11.6	9.6	9.1	7.1
	5.7	5.3	4.4	4.3	4.0	3.3	3.2	2.9	3.0	
11	64.7	32.4	32.6	32.7	32.8	31.2	28.4	29.4	24.3	22.3
0°	21.7	18.9	19.4	14.9	15.2	11.6	10.7	8.8	8.1	6.2
	4.6	3.7	3.7	2.8	2.3	1.5	1.2	1.0	1.0	
12	64.6	31.3	31.0	30.7	30.4	28.6	25.5	26.8	22.5	19.6
−6°	18.3	16.1	17.1	12.5	12.4	9.7	8.4	7.0	5.9	4.3
	3.1	2.4	2.5	1.8	1.3	0.8	0.6	0.4	0.5	
13	64.1	27.1	26.9	26.8	26.7	25.2	22.8	21.5	17.8	15.2
−12°	12.6	12.4	11.7	8.6	7.6	5.4	4.6	4.2	2.6	1.7
	0.7	0.6	0.5	0.1	-0.3	-0.5	-0.5	-0.6	-0.7	
14	63.7	20.5	19.6	18.5	16.7	15.5	13.5	13.0	9.3	6.8
−17°	5.5	2.8	4.0	2.4	1.4	0.6	0.3	0.4	-0.3	-1.0
	-0.7	-0.8	-1.1	-0.9	-1.1	-1.3	-1.8	-1.7	-1.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 12A

LTA TAPE 12A

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.6	16.0	15.9	15.8	15.8	14.2	11.7	11.8	7.6	4.3
ANGLE −23°	3.5	2.7	2.0	1.2	0.1	−0.4	−0.6	0.2	−0.8	−1.5
	−1.3	−1.3	−1.1	−1.3	−1.5	−1.7	−1.7	−1.9	−1.9	
16	63.0	16.5	16.8	17.1	17.3	15.9	13.9	12.8	7.6	5.1
−30°	1.7	3.1	1.2	1.4	0.7	0.1	0.4	1.0	−0.7	−1.0
	−1.1	−0.9	−0.7	−1.1	−1.2	−1.8	−1.6	−1.5	−1.6	
17	64.1	16.9	17.1	17.2	17.4	15.9	13.5	14.1	8.8	5.3
−37°	1.5	3.0	1.8	1.4	1.3	1.5	1.8	2.2	0.0	−0.3
	−0.5	−0.2	0.0	−0.6	−0.8	−0.9	−1.1	−1.1	−0.8	
18	64.4	18.5	18.5	18.5	18.5	17.0	14.5	15.2	11.2	6.8
−44°	5.2	4.9	4.3	3.4	4.2	4.1	3.4	4.0	3.4	2.5
	2.0	2.1	1.2	0.8	0.8	0.4	0.1	0.2	0.1	
19	65.0	20.8	20.8	20.8	20.7	19.6	18.0	16.5	14.7	13.6
−53°	11.2	11.9	12.2	12.3	13.1	12.4	11.6	12.5	12.8	11.8
	10.4	9.4	7.4	6.0	5.5	5.1	5.8	5.7	4.7	
20	65.5	22.6	22.6	22.7	22.8	21.9	20.8	18.6	18.3	18.6
−64°	15.1	17.1	17.6	17.9	18.5	17.8	17.3	18.2	18.4	17.1
	15.6	14.5	12.2	10.4	9.7	9.2	10.4	10.3	9.0	
21	65.3	21.7	21.9	22.1	22.3	21.4	20.4	18.4	18.9	19.1
−84°	15.3	17.7	18.4	18.6	19.2	18.5	18.0	18.9	19.1	17.6
	16.1	15.0	12.7	10.8	10.0	9.7	10.8	10.8	9.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 12A

GROUP 12A

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 1 ANGLE −71.3°	69.0 33.4 16.9	48.0 30.0 15.5	46.9 27.5 13.7	45.4 29.7 12.6	43.2 28.7 11.1	43.5 25.4 10.9	43.7 24.3 10.7	37.0 24.1 10.5	35.1 19.8 10.2	31.9 18.6
2 −66°	69.3 33.9 17.3	44.3 31.7 15.6	43.8 30.4 14.4	43.2 28.3 13.4	42.6 27.3 12.1	40.8 25.1 12.0	37.8 24.5 11.6	40.2 24.3 11.3	28.5 20.5 11.5	33.3 18.8
3 −61.6°	67.4 33.7 14.1	46.9 29.0 12.9	45.9 30.6 11.3	44.6 26.3 11.0	42.6 24.1 10.3	40.4 22.5 9.3	35.7 20.3 8.4	38.8 18.9 8.1	30.8 18.6 8.1	29.9 16.4
4 −57.8°	66.9 22.2 9.7	38.9 23.8 10.0	37.6 20.4 8.1	35.9 20.6 7.6	33.0 21.3 7.1	33.6 19.0 6.4	34.2 15.0 5.8	35.1 15.2 6.0	29.0 13.4 5.9	28.6 10.8
5 −54.3°	67.9 25.9 11.5	43.4 23.6 10.5	41.8 22.5 9.1	39.2 21.5 8.5	31.1 21.8 8.1	31.7 18.9 7.8	32.2 17.0 7.1	34.7 16.0 7.9	29.9 13.4 7.6	26.5 12.4
6 −51.1°	67.9 27.6 12.0	35.3 25.7 10.4	36.6 24.0 9.6	37.6 22.3 8.8	38.5 21.9 8.3	37.3 18.3 7.6	35.8 16.7 7.2	34.2 16.4 7.9	29.9 13.5 7.9	29.3 12.1
7 −48.1°	66.0 32.2 12.1	38.7 27.8 10.7	39.6 27.4 9.2	40.3 25.5 8.4	41.0 24.6 6.7	40.2 20.1 6.0	39.4 18.4 5.6	37.1 18.2 5.2	32.5 15.5 5.4	29.8 12.9
8 −45.3°	64.1 22.9 5.9	31.5 20.2 4.9	32.1 19.5 3.4	32.6 17.0 3.5	33.1 18.7 1.5	32.5 13.5 1.1	31.8 12.3 1.0	27.9 11.0 0.8	25.2 9.2 0.7	19.9 5.9
9 −42.6°	63.8 16.2 1.0	25.0 11.4 1.3	24.0 10.3 0.7	22.5 9.1 1.0	20.5 8.2 0.8	22.4 6.0 0.3	23.7 4.7 −0.1	21.3 5.0 −0.7	18.2 3.1 −0.3	17.4 1.8
10 −40.0°	63.9 15.9 1.4	27.8 12.8 1.3	26.6 10.2 1.2	24.9 10.0 1.4	22.1 6.5 1.8	21.8 5.3 0.6	21.5 5.0 0.1	24.7 5.1 −0.2	17.0 3.0 −0.5	16.8 2.0
11 −37.5°	64.1 16.9 2.8	25.9 12.0 2.4	25.8 11.4 1.7	25.7 11.9 1.6	25.6 8.7 2.1	24.7 6.6 0.6	23.6 7.4 0.4	26.5 7.4 0.0	22.6 4.1 −0.2	17.8 2.7
12 −35.1°	64.8 25.3 7.0	32.8 18.6 6.4	32.7 18.7 3.7	32.6 17.6 3.6	32.5 15.1 4.6	32.6 13.9 3.5	32.7 12.6 2.8	31.3 12.9 2.7	28.9 9.8 2.5	25.0 8.0
13 −32.8°	65.7 21.6 8.7	33.0 22.9 8.1	33.1 19.4 5.7	33.1 18.9 6.4	33.1 15.9 6.7	32.4 16.0 5.5	31.5 14.0 5.0	29.6 13.1 5.2	28.0 11.7 5.6	22.9 10.1
14 −30.5°	65.7 16.2 8.5	33.6 23.1 7.5	33.5 18.2 6.4	33.4 18.8 6.8	33.3 16.5 7.3	31.6 15.7 5.9	28.9 13.8 5.0	30.2 11.7 5.4	23.7 11.8 5.4	24.2 9.7
15 −28.3°	64.8 20.8 7.1	34.7 20.6 6.0	35.9 20.0 5.5	36.8 17.8 5.2	37.6 17.0 5.8	36.5 13.7 4.3	35.0 13.2 3.3	34.2 11.4 3.4	27.1 10.6 3.2	23.5 8.2

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	63.8	30.5	31.7	32.7	33.5	32.4	31.1	30.4	22.9	19.9
ANGLE −26.1°	19.9	18.1	18.2	16.1	14.9	10.1	11.0	8.7	7.0	5.4
	4.2	4.0	3.8	3.2	2.8	2.1	0.8	0.4	0.5	
17	63.2	22.5	22.5	22.6	22.6	22.2	21.7	20.4	15.8	13.0
−24.0°	13.8	12.1	11.4	10.3	7.5	3.8	5.3	3.8	1.8	1.2
	0.3	0.9	0.6	0.7	−0.4	−0.4	−1.4	−1.6	−1.0	
18	63.1	18.3	17.1	15.3	12.2	12.9	13.4	13.3	11.5	5.8
−21.8°	6.5	2.5	4.0	3.2	0.5	0.7	0.0	1.8	−1.5	−1.0
	−0.7	−0.1	−1.2	−0.6	−2.0	−2.1	−2.1	−2.1	−1.9	
19	63.0	18.6	17.1	14.8	9.8	11.6	12.9	13.6	12.7	5.3
−19.8°	4.6	2.2	3.1	3.0	0.1	1.9	0.9	2.7	−1.5	−0.3
	−0.9	−0.4	−1.2	−0.0	−1.5	−1.8	−1.8	−2.3	−2.0	
20	63.1	22.1	20.8	19.0	15.7	16.5	17.2	16.1	14.3	9.3
−17.7°	7.9	2.9	4.7	3.0	1.8	2.4	2.4	3.7	−0.1	0.2
	−0.1	0.4	−0.7	−0.2	−1.2	−1.4	−1.1	−1.5	−1.5	
21	63.3	23.4	22.5	21.4	19.9	20.6	21.2	18.8	15.9	11.0
−15.7°	12.1	7.2	6.3	5.9	4.5	5.0	3.6	5.2	2.1	1.0
	0.2	0.8	0.3	0.8	−0.9	−0.7	−0.4	−1.1	−0.9	
22	63.4	25.0	24.1	23.0	21.5	22.7	23.6	17.5	16.7	11.4
−13.7°	10.5	11.5	8.1	6.7	4.8	7.4	5.6	5.3	4.4	1.5
	1.5	0.9	1.7	1.1	−0.2	−0.0	−0.2	−0.6	0.0	
23	63.6	24.1	23.8	23.4	23.0	22.4	21.6	15.3	20.8	16.8
−11.7°	14.2	11.6	11.6	8.5	7.0	7.2	6.0	5.4	5.5	2.4
	2.2	1.3	2.2	1.7	0.4	0.9	0.2	−0.2	0.7	
24	63.8	26.7	26.6	26.5	26.4	26.7	26.9	22.3	22.5	21.3
−9.7°	16.5	13.6	14.4	10.5	8.2	8.1	7.0	6.3	5.5	3.3
	2.3	2.0	2.1	1.9	1.5	1.7	0.8	0.5	0.8	
25	64.0	27.0	26.1	25.0	23.4	26.0	27.6	23.4	19.8	23.0
−7.8°	19.7	15.0	15.4	10.8	9.2	8.3	6.5	6.3	5.4	3.0
	2.7	2.7	2.1	2.1	2.4	2.4	1.4	0.9	0.5	
26	64.0	24.5	23.6	22.5	20.9	22.5	23.7	21.8	17.4	18.5
−5.8°	16.9	9.9	9.7	8.6	5.8	6.1	5.2	3.5	3.7	2.0
	1.7	1.3	1.5	0.7	1.5	1.2	0.5	−0.3	0.0	
27	64.0	23.9	23.8	23.5	23.3	22.2	20.7	18.6	15.2	13.0
−3.9°	13.4	9.6	7.6	4.8	4.8	3.9	4.6	3.2	1.3	0.2
	1.1	−0.3	0.0	−0.2	0.4	0.1	−0.4	−0.6	−0.5	
28	64.1	22.3	20.8	18.4	12.8	15.4	17.0	15.3	15.2	8.2
−1.9°	10.3	6.7	7.3	5.7	2.4	3.6	2.1	3.8	1.6	0.7
	1.1	−0.2	−0.3	0.1	−0.2	−0.0	−0.1	−0.4	−0.7	
29	64.2	24.2	23.0	21.2	18.2	17.3	16.1	16.3	18.9	10.7
0°	11.3	9.9	8.8	4.4	2.4	4.0	2.8	3.4	0.0	0.4
	1.5	0.6	−0.2	0.2	−0.1	−0.1	−0.2	−0.4	−0.4	
30	64.4	30.5	31.0	31.5	31.9	30.4	28.0	26.3	23.0	19.0
+1.9°	17.4	15.8	13.6	11.2	10.1	8.9	7.1	5.2	3.9	2.6
	2.8	2.2	1.8	1.6	0.9	0.3	0.1	−0.2	0.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	65.2	37.7	37.5	37.2	37.0	36.6	36.3	36.8	30.5	27.0
ANGLE +3.9°	28.2	24.1	22.6	20.6	18.4	16.7	15.6	13.2	12.4	10.9
	8.7	8.3	6.9	7.1	7.0	6.0	6.3	5.7	5.9	
32	66.6	38.7	38.6	38.5	38.3	39.4	40.3	39.4	30.8	27.4
+5.8°	27.2	26.7	25.0	22.2	21.1	17.8	16.8	14.5	14.2	11.8
	10.2	9.3	8.3	7.9	6.9	5.7	5.8	5.2	5.0	
33	67.3	36.7	37.0	37.3	37.5	36.6	35.3	32.8	26.5	30.4
+7.8°	25.7	25.4	24.6	19.3	20.4	17.1	16.7	14.4	13.9	10.6
	10.2	9.7	8.6	7.9	8.0	6.2	6.1	6.0	5.5	
34	67.1	38.8	39.2	39.5	39.7	38.0	34.9	36.5	25.6	31.5
+9.7°	28.2	22.8	21.8	19.6	18.9	16.5	15.4	14.6	11.8	10.6
	9.9	8.9	7.7	7.2	7.0	5.9	5.1	5.2	4.8	
35	66.1	37.4	39.1	40.3	41.3	40.0	38.1	36.9	28.3	28.3
+11.7°	27.0	24.0	21.4	19.7	18.1	16.3	14.9	14.2	10.7	10.2
	8.4	6.9	5.9	5.7	5.2	4.7	3.9	3.4	3.5	
36	65.9	39.5	38.4	36.8	34.4	32.2	27.8	34.5	31.9	30.1
+13.7°	25.6	22.9	23.8	21.1	20.6	16.1	16.1	14.5	11.1	11.1
	7.6	7.4	5.7	5.4	4.9	4.5	3.9	2.7	3.1	
37	67.1	43.5	43.4	43.2	43.0	41.0	37.0	40.3	34.2	32.1
+15.7°	27.6	24.8	25.3	22.6	23.8	18.4	17.8	16.8	14.4	11.7
	10.6	9.2	7.8	7.5	7.4	6.8	5.8	5.2	5.3	
38	68.7	43.9	44.3	44.7	45.1	43.2	39.7	41.0	34.8	32.0
+17.7°	29.9	27.2	25.7	23.9	23.7	21.3	18.8	17.8	15.6	13.1
	12.0	11.0	9.8	9.4	9.1	8.4	7.8	7.5	7.1	
39	70.0	43.7	44.1	44.5	44.9	43.5	41.5	42.1	36.5	32.8
+19.8°	32.7	28.6	26.6	26.1	23.3	22.3	19.2	18.9	16.6	14.6
	13.1	13.0	10.8	10.7	10.5	10.0	9.1	9.4	8.5	
40	71.4	46.3	45.9	45.4	44.9	44.1	43.1	46.4	40.1	34.5
+21.8°	33.1	30.4	29.2	27.6	24.5	23.6	19.9	20.3	18.1	15.4
	13.9	13.8	12.2	12.0	12.4	11.8	10.6	10.4	9.6	
41	72.0	49.2	48.5	47.6	46.5	44.3	39.7	44.8	40.0	37.3
+24.0°	30.2	33.5	31.4	28.8	26.0	24.1	22.8	20.4	19.1	17.5
	15.9	14.5	13.5	13.1	12.9	11.9	11.4	10.6	10.3	
42	71.3	49.8	49.4	48.9	48.3	46.2	42.1	40.8	34.2	38.2
+26.1°	36.1	33.5	29.2	29.1	25.3	24.2	22.2	21.1	17.7	17.8
	15.9	14.7	13.7	13.0	13.1	11.9	11.3	10.1	10.0	
43	69.3	46.4	46.7	46.9	47.1	46.3	45.2	45.5	38.7	36.1
+28.3°	37.3	31.8	30.1	28.3	26.9	23.7	22.0	21.1	17.1	16.9
	15.7	13.6	12.7	12.2	12.1	10.2	9.0	8.5	8.2	
44	67.1	37.9	39.9	41.2	42.3	42.2	42.1	41.4	34.4	28.5
+30.5°	31.9	28.6	28.1	24.8	23.6	21.2	19.1	18.3	14.8	13.6
	12.6	10.1	9.7	9.3	8.4	7.2	6.0	5.2	5.1	
45	65.9	25.9	28.1	29.6	30.7	31.7	32.6	30.8	25.5	16.1
+32.8°	21.4	20.7	21.1	17.9	16.1	14.8	12.2	11.9	9.4	7.7
	6.9	5.5	5.4	4.9	3.8	3.4	3.1	2.7	2.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 12A

GROUP 12A

PAGE 4

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
AZIMUTH 46 ANGLE +35.1°	65.5 17.0 3.0	25.6 13.2 2.7	25.7 14.0 3.5	25.8 9.4 2.7	25.9 7.8 2.2	25.2 7.2 1.9	24.4 4.4 1.5	25.5 4.7 1.6	17.3 4.0 1.4	15.1 3.4
47 +37.5°	65.4 17.1 2.6	29.8 13.8 3.0	28.9 14.1 3.0	27.7 9.5 2.9	26.1 10.4 2.6	25.5 7.1 2.1	24.8 5.5 1.1	24.9 5.8 1.4	20.6 4.5 1.2	16.5 3.1
48 +40.0°	65.6 20.0 4.0	36.0 16.7 3.5	34.6 15.9 4.2	32.3 14.6 4.1	27.5 11.4 5.0	26.8 9.8 3.1	26.0 8.1 2.6	28.1 7.5 2.4	27.0 5.7 2.7	20.6 5.2
49 +42.6°	66.0 22.8 5.9	37.7 20.6 4.6	36.2 16.0 6.3	33.9 15.0 6.0	28.9 13.5 6.5	28.2 11.9 4.6	27.2 11.3 4.2	30.4 8.8 3.5	29.1 7.5 3.7	21.7 8.1
50 +45.3°	66.3 26.4 7.8	38.3 20.4 6.0	36.8 18.2 6.5	34.7 17.3 7.0	30.2 17.6 7.2	29.7 14.3 5.6	29.1 12.2 4.6	34.8 11.8 4.2	24.6 9.9 4.5	25.1 8.3
51 +48.1°	66.0 21.6 8.3	43.2 23.2 5.2	41.9 18.1 6.1	39.9 17.7 6.1	36.1 18.0 5.7	35.0 13.7 5.1	33.7 13.3 4.8	32.5 12.2 4.0	27.6 10.1 4.0	26.4 7.6
52 +51.1°	66.0 20.9 12.5	49.7 25.9 8.5	48.2 19.2 7.3	46.1 21.7 7.2	41.5 24.4 6.4	40.4 18.4 7.0	39.0 16.8 7.5	26.0 15.9 6.8	31.6 14.3 7.4	30.8 9.7
53 +54.3°	66.1 30.4 14.3	51.7 29.1 10.9	50.1 22.3 9.6	47.6 23.5 9.3	40.7 26.8 8.7	39.9 21.7 9.2	39.1 17.3 10.1	27.3 17.7 9.4	36.4 16.7 9.9	31.0 11.2
54 +57.8°	65.8 32.0 11.5	48.2 28.0 8.2	46.5 23.9 7.0	43.6 21.1 6.0	31.0 24.8 5.7	33.3 20.2 5.9	34. 15.2 6.7	31.1 16.2 6.3	35.2 14.6 6.8	28.4 10.1
55 +61.6°	65.4 25.9 6.0	37.3 21.9 4.9	35.7 19.0 4.3	33.2 18.3 4.1	26.8 17.5 3.3	25.8 14.3 2.9	24.4 10.9 2.6	28.9 11.4 2.8	27.5 9.8 2.9	23.9 7.5
56 +66.0°	65.3 11.6 2.5	24.2 10.8 3.2	25.1 9.0 2.9	25.9 7.0 3.2	26.6 6.1 2.6	25.4 7.5 1.9	23.9 4.9 1.4	21.9 4.2 1.8	22.0 5.3 1.7	16.6 3.0
57 +71.3°	65.4 13.1 3.3	29.3 14.2 3.3	28.3 10.9 3.1	26.8 10.9 3.7	24.7 10.1 2.8	25.4 9.8 2.1	26.0 5.2 2.2	21.2 4.7 2.5	19.0 5.3 3.2	15.2 3.7

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

STA TAPE 12G

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 1	56.9	27.7	26.6	25.2	23.0	22.9	22.7	21.8	23.0	23.4
ANGLE +84°	23.4	21.5	19.3	17.4	15.5	14.1	13.2	12.4	11.0	9.8
	9.1	9.0	8.8	8.2	7.9	8.0	7.6	7.5	7.5	
2	57.6	29.0	27.7	26.0	23.0	22.6	22.3	22.7	23.1	22.9
+64°	23.6	21.7	19.5	18.0	16.1	14.6	13.7	12.8	11.5	10.4
	9.7	9.7	9.6	8.9	8.8	8.8	8.3	8.3	8.2	
3	57.3	28.1	26.8	24.8	21.2	21.0	20.7	22.2	21.6	21.8
+53°	22.6	20.6	18.5	17.4	15.5	14.0	12.6	11.9	10.7	10.1
	9.3	9.4	9.2	8.5	8.5	8.5	8.1	7.9	7.9	
4	56.8	26.0	24.8	23.1	20.1	19.4	18.6	20.5	19.7	20.8
+44°	21.3	18.9	17.2	16.6	14.0	12.8	11.5	10.6	9.5	8.9
	8.5	8.7	8.5	7.8	7.7	7.7	7.3	7.1	7.3	
5	56.4	25.0	23.8	22.1	19.3	18.5	17.5	17.3	18.0	19.7
+37°	19.7	17.6	16.1	15.4	12.8	11.7	10.7	9.4	8.5	7.9
	7.7	7.7	7.6	7.1	6.9	6.8	6.5	6.5	6.3	
6	55.6	21.5	20.5	19.1	17.0	16.2	15.1	14.5	17.2	17.4
+30°	16.4	14.8	13.9	12.5	10.7	9.6	8.9	7.5	7.3	6.2
	6.1	6.3	6.2	5.7	5.5	5.6	5.4	5.4	5.2	
7	54.6	17.2	16.6	15.9	15.0	13.7	11.9	11.8	15.1	13.9
+23°	12.5	11.4	10.5	9.3	7.5	6.9	6.5	5.3	5.4	4.5
	4.3	4.5	4.7	4.2	4.2	4.2	4.0	4.0	4.0	
8	53.2	13.1	12.8	12.5	12.1	10.5	7.7	8.1	9.9	8.7
+17°	7.5	7.2	5.6	5.1	4.1	3.5	3.0	2.5	2.9	2.0
	2.0	2.8	2.6	2.1	2.4	2.1	2.2	2.1	2.2	
9	51.8	13.0	12.3	11.4	10.3	9.0	7.1	5.8	4.3	4.0
+12°	3.6	3.0	2.0	1.3	1.3	0.6	0.5	0.2	0.1	0.1
	0.6	3.8	1.9	0.3	2.0	1.1	1.4	1.1	1.1	
10	51.2	13.5	12.4	10.9	8.5	7.8	6.9	4.7	3.2	3.1
+6°	1.1	1.4	1.2	-0.2	0.2	-0.4	-0.5	-0.6	-0.9	-1.1
	-0.2	5.0	2.4	-0.5	2.6	1.1	1.2	0.9	1.0	
11	51.2	13.5	12.4	10.8	8.3	7.3	5.9	4.1	3.7	3.1
0°	1.1	1.0	0.6	-0.9	0.4	-0.2	-0.8	-0.4	-1.1	-0.7
	-0.1	5.2	2.2	-0.4	2.5	0.9	1.6	1.3	1.1	
12	51.1	11.4	10.4	8.9	6.7	6.2	5.6	3.2	3.0	3.2
−6°	2.0	1.7	1.4	1.1	1.5	1.4	1.0	1.3	0.9	1.3
	1.1	3.7	2.4	1.2	2.1	1.6	1.8	1.7	1.8	
13	50.8	8.0	6.9	5.2	2.7	3.1	3.2	0.4	0.4	0.3
−12°	-0.6	-1.1	-1.2	-1.3	-0.9	-1.5	-1.6	-1.2	-1.8	-1.5
	-1.9	-0.5	-1.2	-1.8	-1.4	-1.4	-1.4	-1.6	-1.5	
14	50.5	6.4	5.2	3.6	1.0	1.9	2.7	0.1	-1.1	-0.3
−17°	-1.3	-1.3	-1.0	-1.9	-2.2	-2.3	-2.0	-2.0	-2.0	-2.1
	-2.2	-1.9	-1.8	-2.4	-2.0	-1.8	-2.1	-2.1	-2.0	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 12A

STA TAPE 12G

PAGE 2

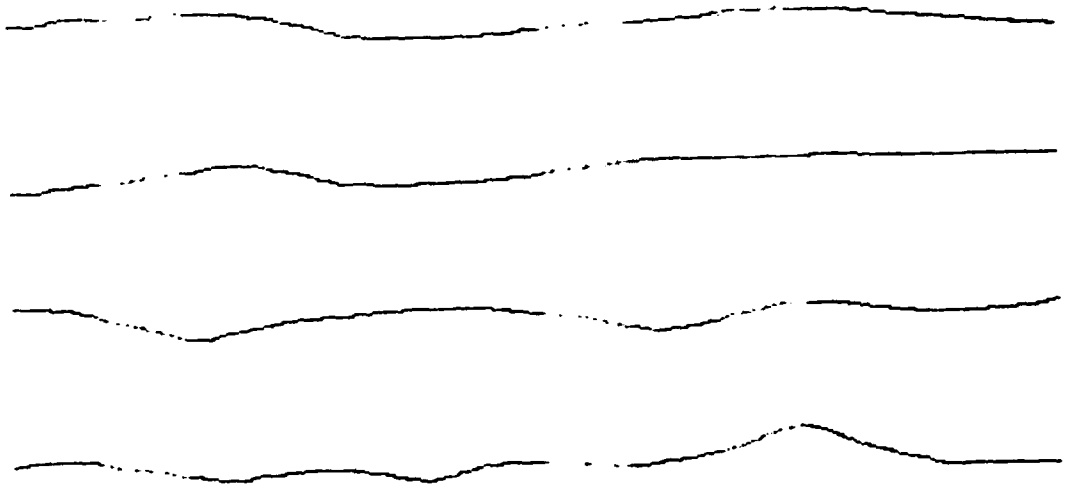
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	50.6	6.1	4.9	3.3	0.7	1.6	2.3	-0.8	-1.4	-0.1
ANGLE −23°	-1.3	-1.3	-1.4	-1.5	-1.9	-1.7	-2.1	-1.9	-2.0	-2.0
	-2.0	-2.0	-1.6	-2.2	-2.0	-1.8	-2.1	-2.1	-2.1	
16	50.8	6.3	5.1	3.5	0.9	1.8	2.5	-0.6	-0.1	0.2
−30°	-0.9	-1.4	-1.2	-1.4	-1.7	-1.4	-1.5	-1.7	-2.3	-1.8
	-1.8	-1.6	-1.4	-1.7	-1.5	-1.6	-1.6	-1.7	-1.7	
17	51.1	6.5	5.5	4.2	2.3	2.6	3.0	-1.1	1.1	0.5
−37°	-1.3	-0.5	-0.3	-0.9	-1.0	-0.8	-1.5	-1.0	-1.3	-1.1
	-1.3	-0.9	-0.9	-1.1	-1.1	-1.0	-1.2	-1.1	-1.1	
18	51.5	7.3	6.4	5.3	3.9	4.1	4.4	3.8	3.2	2.2
−44°	0.5	0.5	0.5	0.4	-0.0	0.2	-0.0	-0.5	-0.5	-0.7
	-0.7	-0.3	-0.2	-0.6	-0.3	-0.4	-0.4	-0.6	-0.3	
19	52.1	13.5	12.9	12.2	11.3	12.1	12.8	12.8	10.6	8.5
−53°	7.7	4.5	5.1	6.5	5.9	4.3	3.6	2.6	2.1	2.1
	1.3	1.9	1.8	1.6	1.8	1.9	1.8	1.5	1.5	
20	52.6	18.5	18.2	17.8	17.3	17.8	18.3	18.1	15.7	13.5
−64°	12.5	8.9	9.9	11.4	10.9	8.7	7.5	6.7	5.6	5.7
	4.8	5.1	5.0	4.7	4.9	5.1	4.9	4.5	4.7	
21	52.3	18.9	18.6	18.3	18.0	18.4	18.8	18.0	16.2	13.8
−84°	12.6	8.7	9.9	11.3	11.2	8.4	6.8	6.4	5.1	5.1
	4.0	4.2	4.0	3.9	4.0	4.2	4.1	3.5	3.8	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 12A

BEARING VS TIME

MEAN & VAR. 319.4 2.41 320.2 2.52 319.1 2.11 319.6 3.88



25°

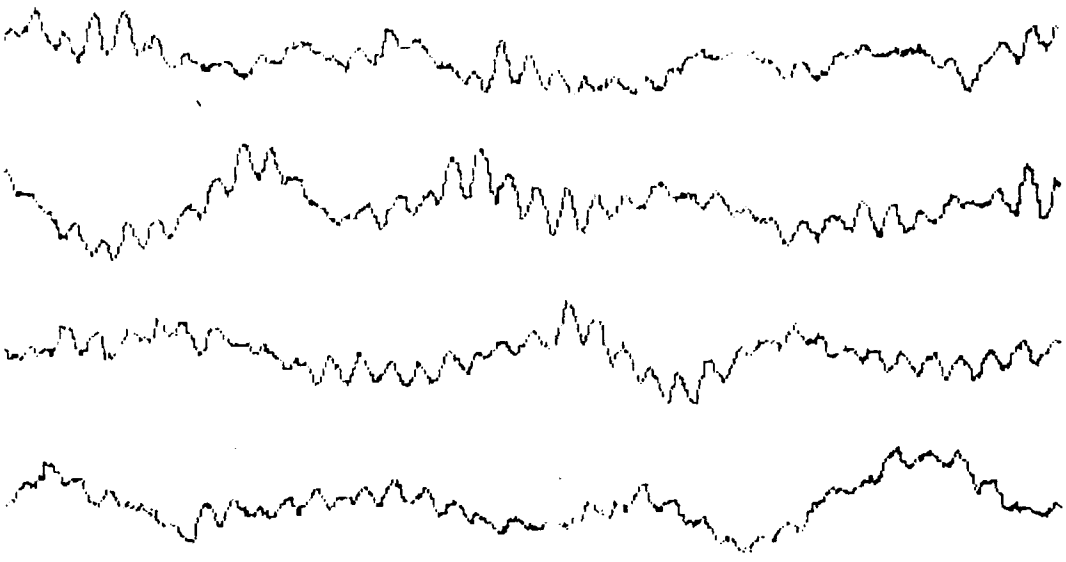
1024 SECONDS

MPL-M-5038

GROUP 12A

ELEVATION VS TIME

MEAN & VAR 92.1 0.31 92.7 0.50 92.8 0.32 92.9 0.45

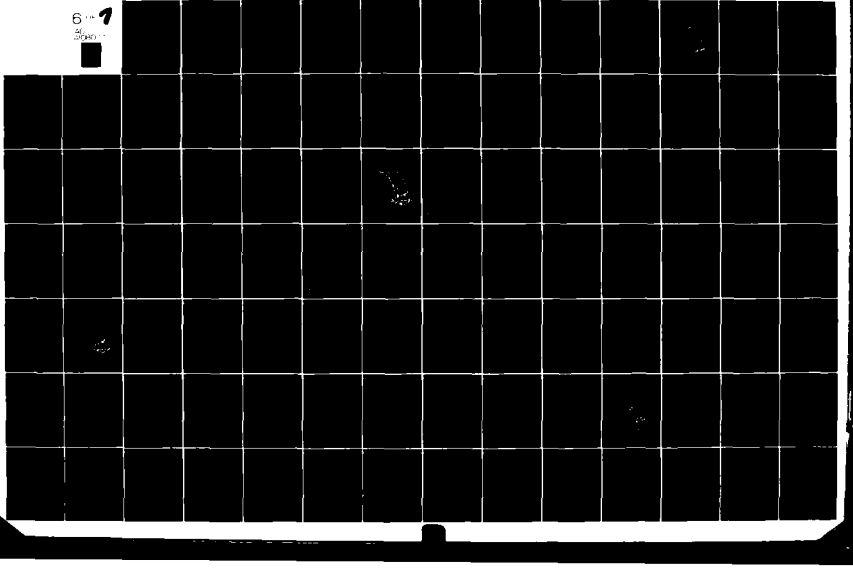


5°

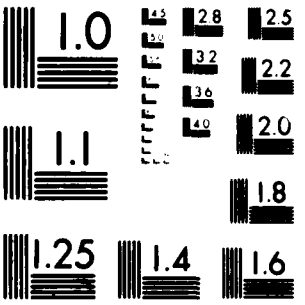
1024 SECONDS

MPL-M-5039

AD-A108 077 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA MARI--ETC F/G 20/1
ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978.(U)
JUL 81 V C ANDERSON N00014-80-C-0077
UNCLASSIFIED SIO-REF-81-13 SBI-AD-E001 179 NL

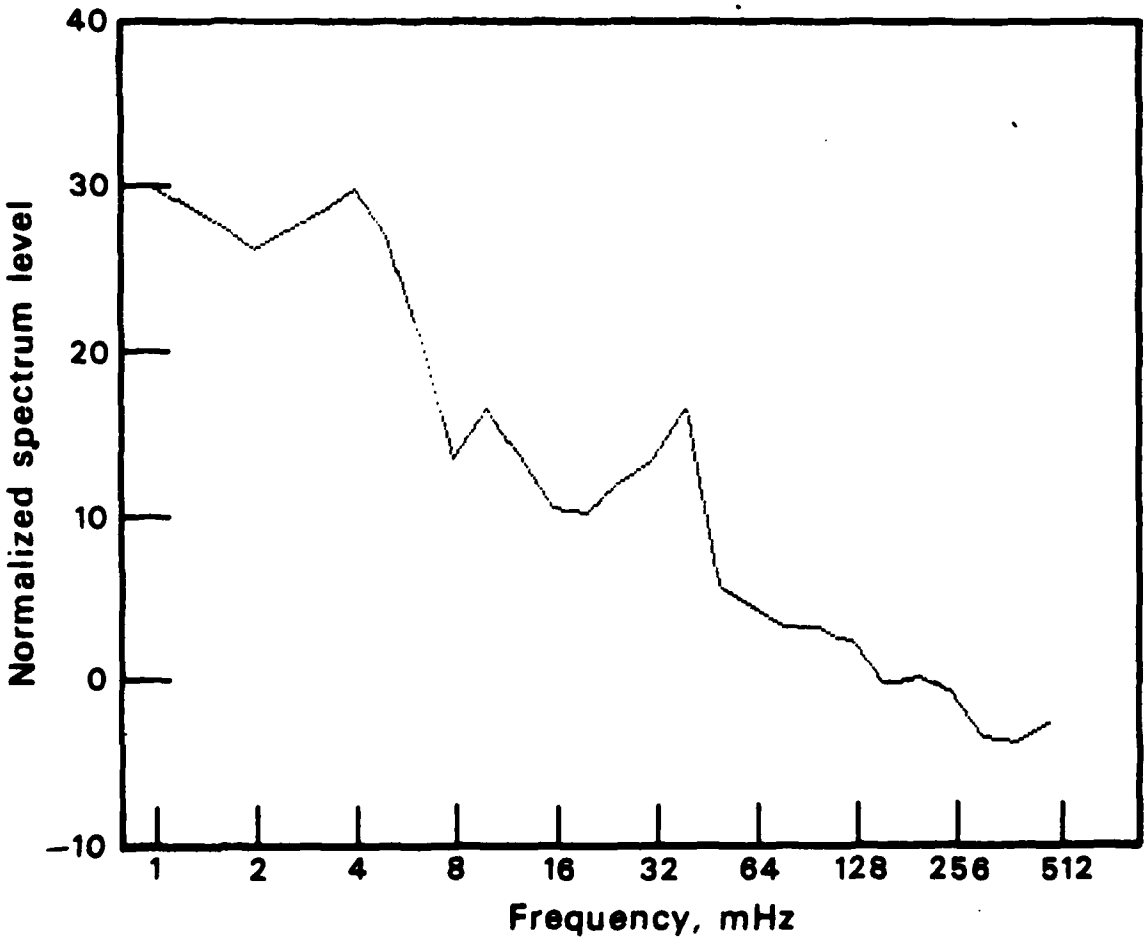


08077



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

GROUP 12A



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 12B

Environmental Summary

12 June 1978

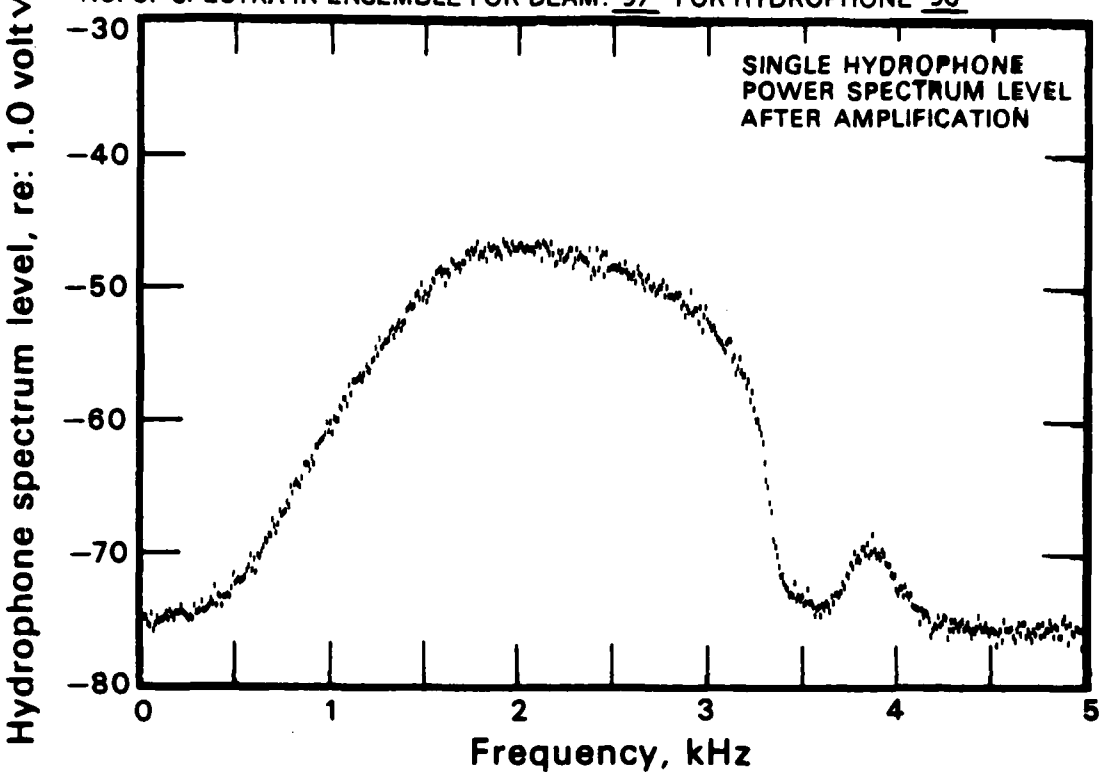
Tapes	Start time	Code
LTA/LOG	05:25:03	12B
STA	05:25:43	12H
High Band Filter		

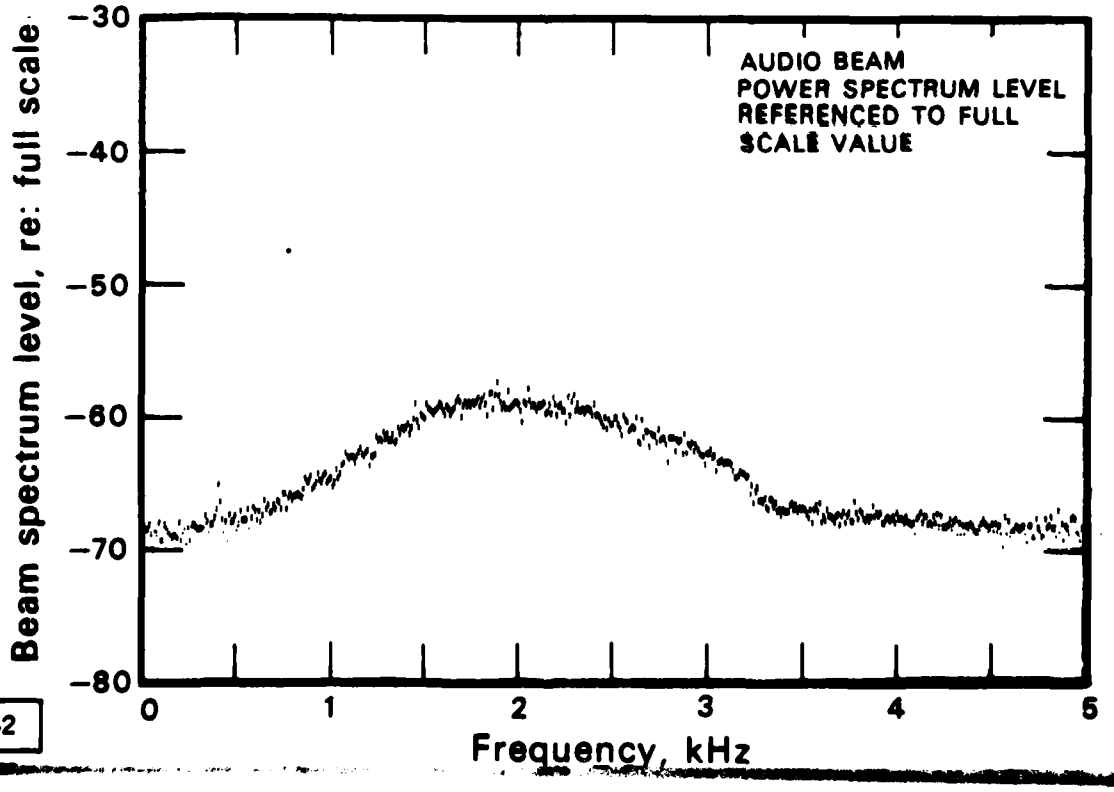
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
06:00	1000	15	340	5-7	6-7	NW	Chop

12-JUN-78 05:39:07 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 248.6 TRUE ELEVATION 80.0
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -15.9 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 97 FOR HYDROPHONE 96

GROUP 12B





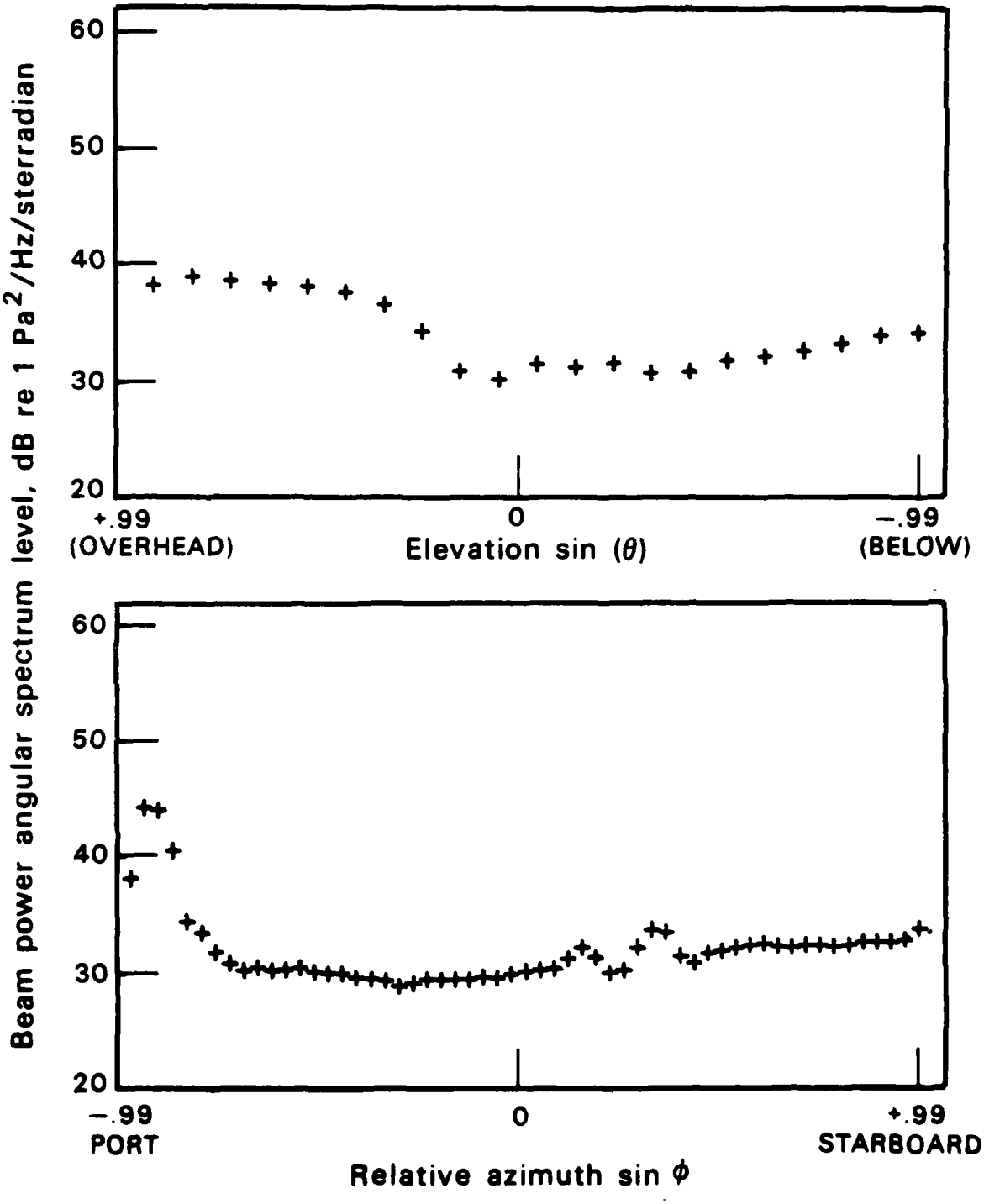
MPL-M-5042

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 12B

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

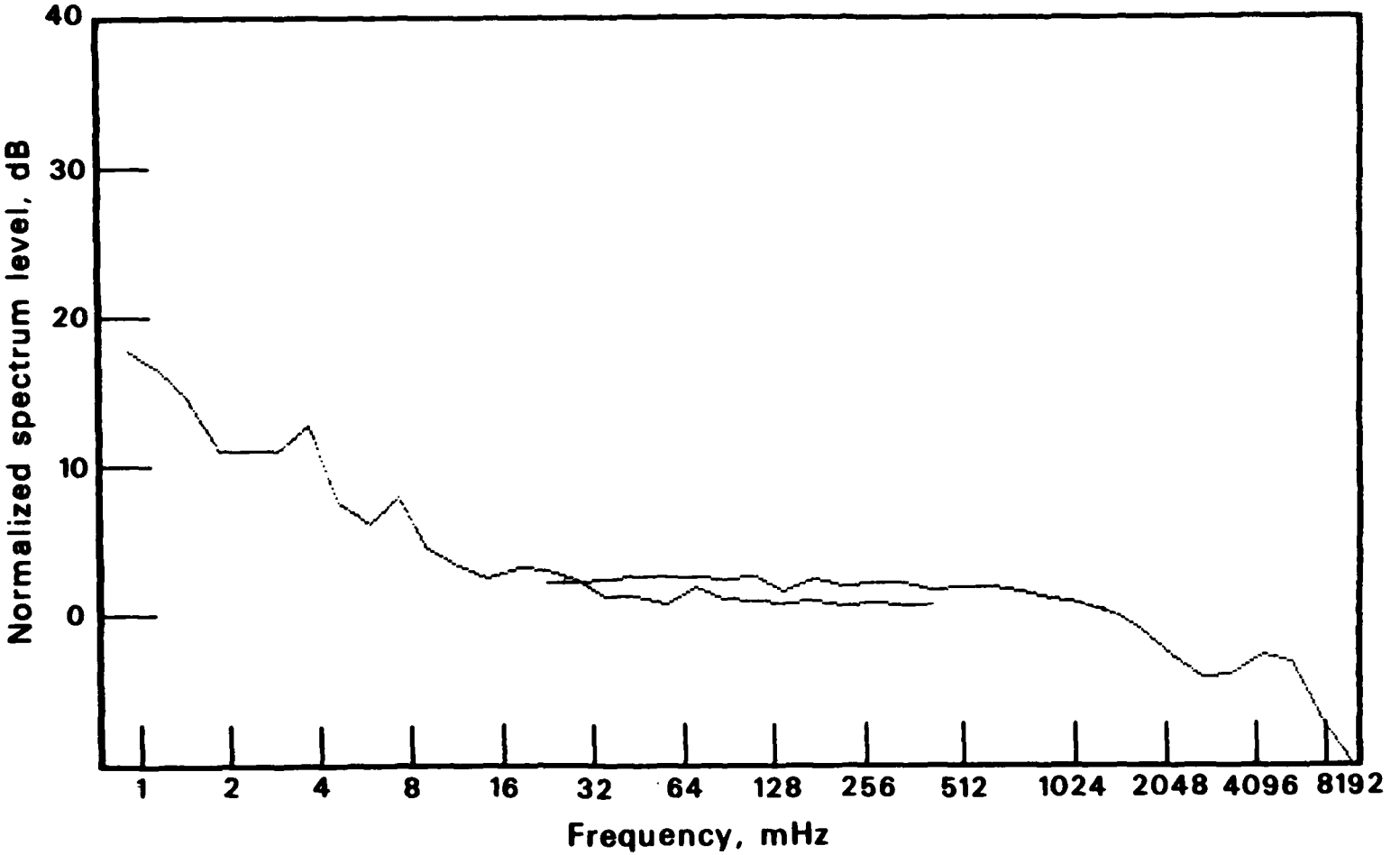
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-5043

MPL-M-5044

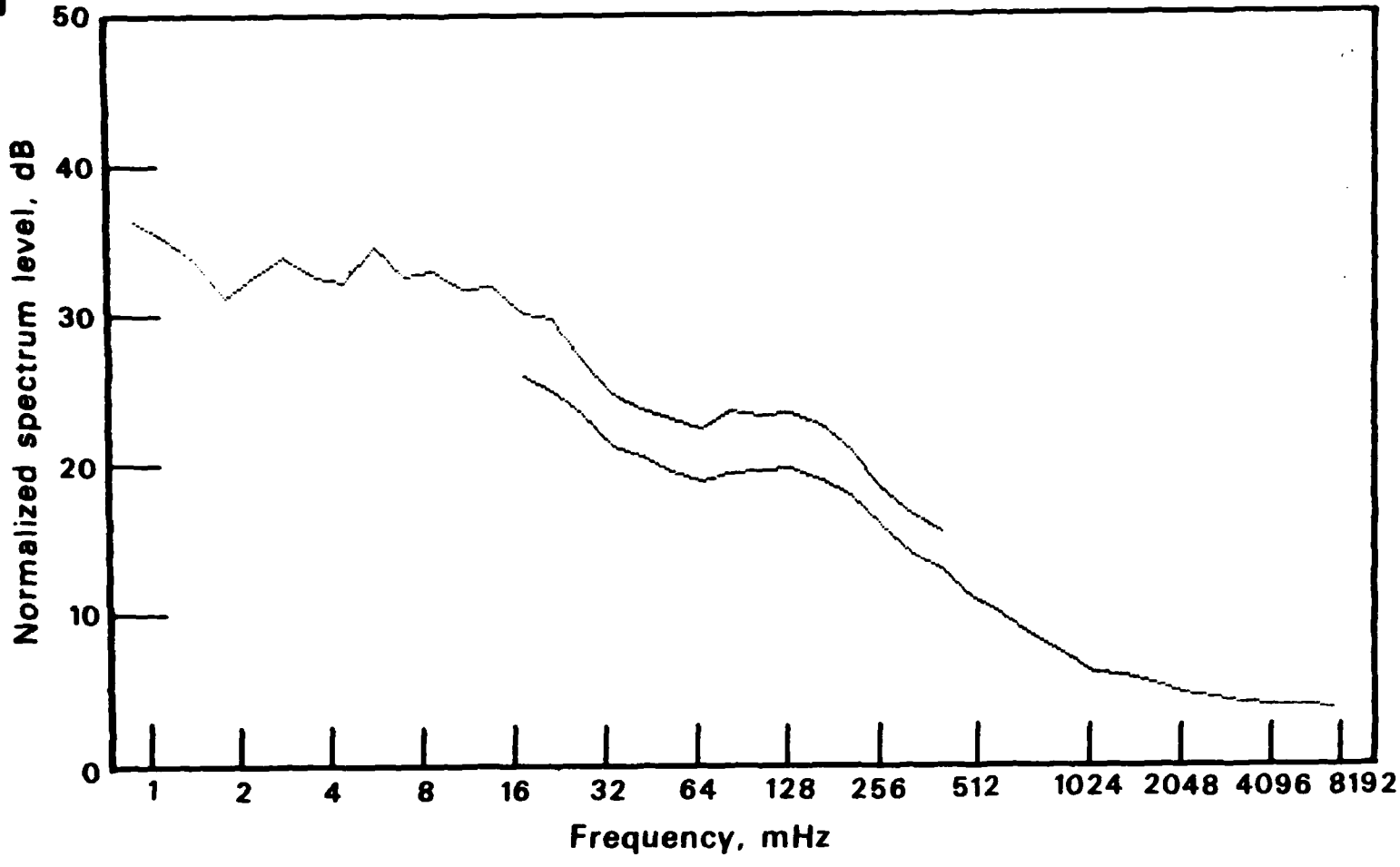
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 12B

MPL-M-5045

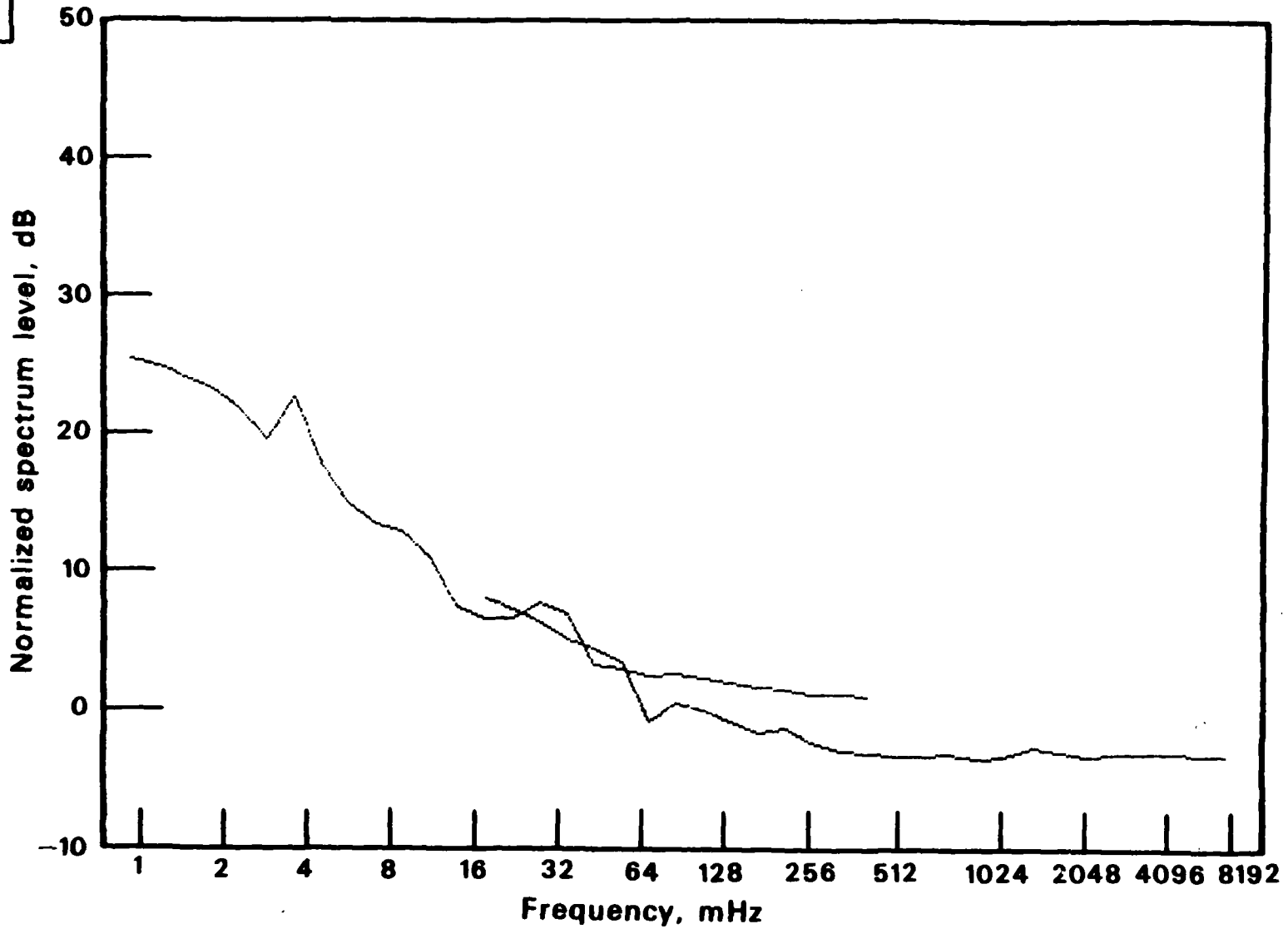
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12B

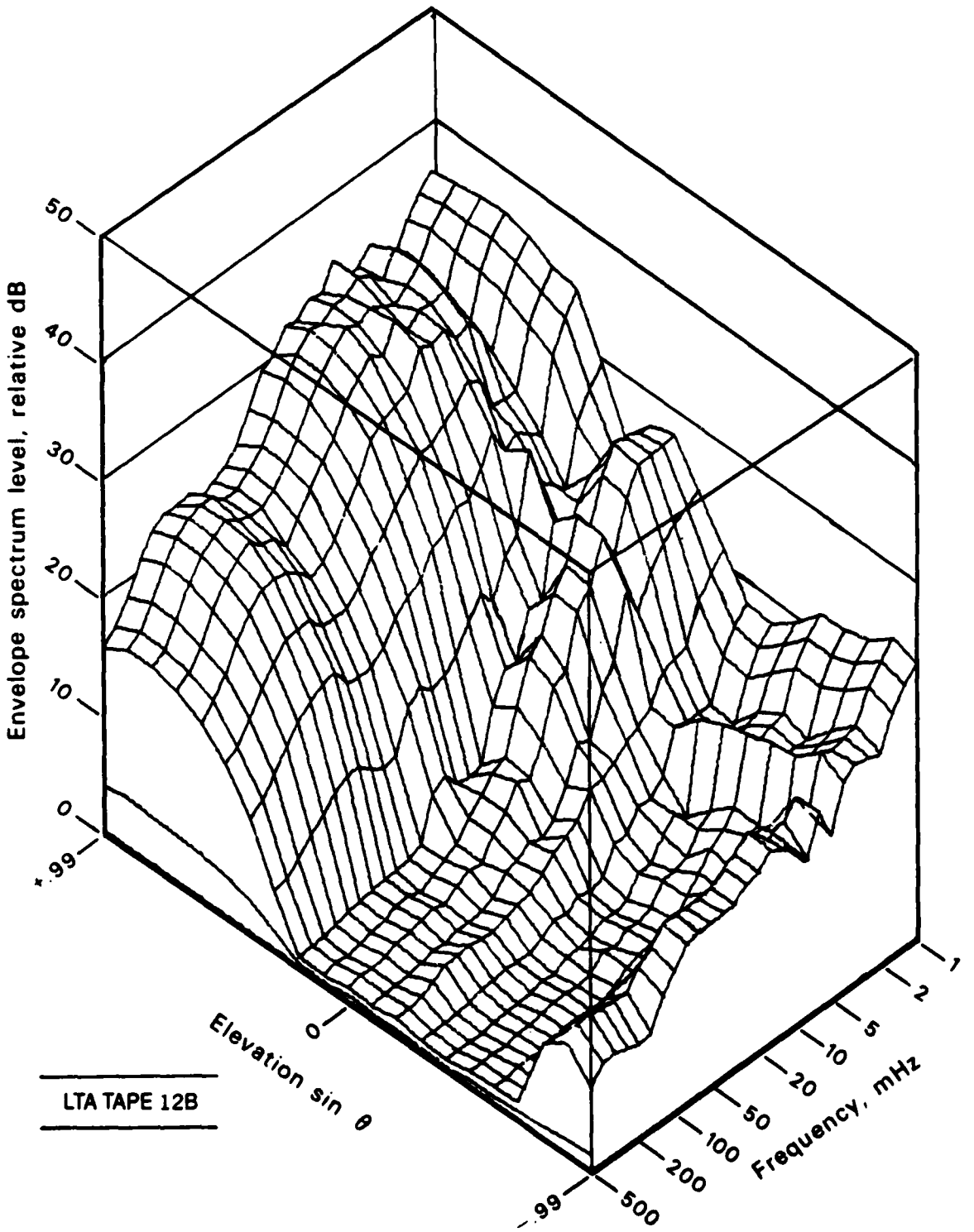
MPL-M-5046

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12B

GROUP 12B

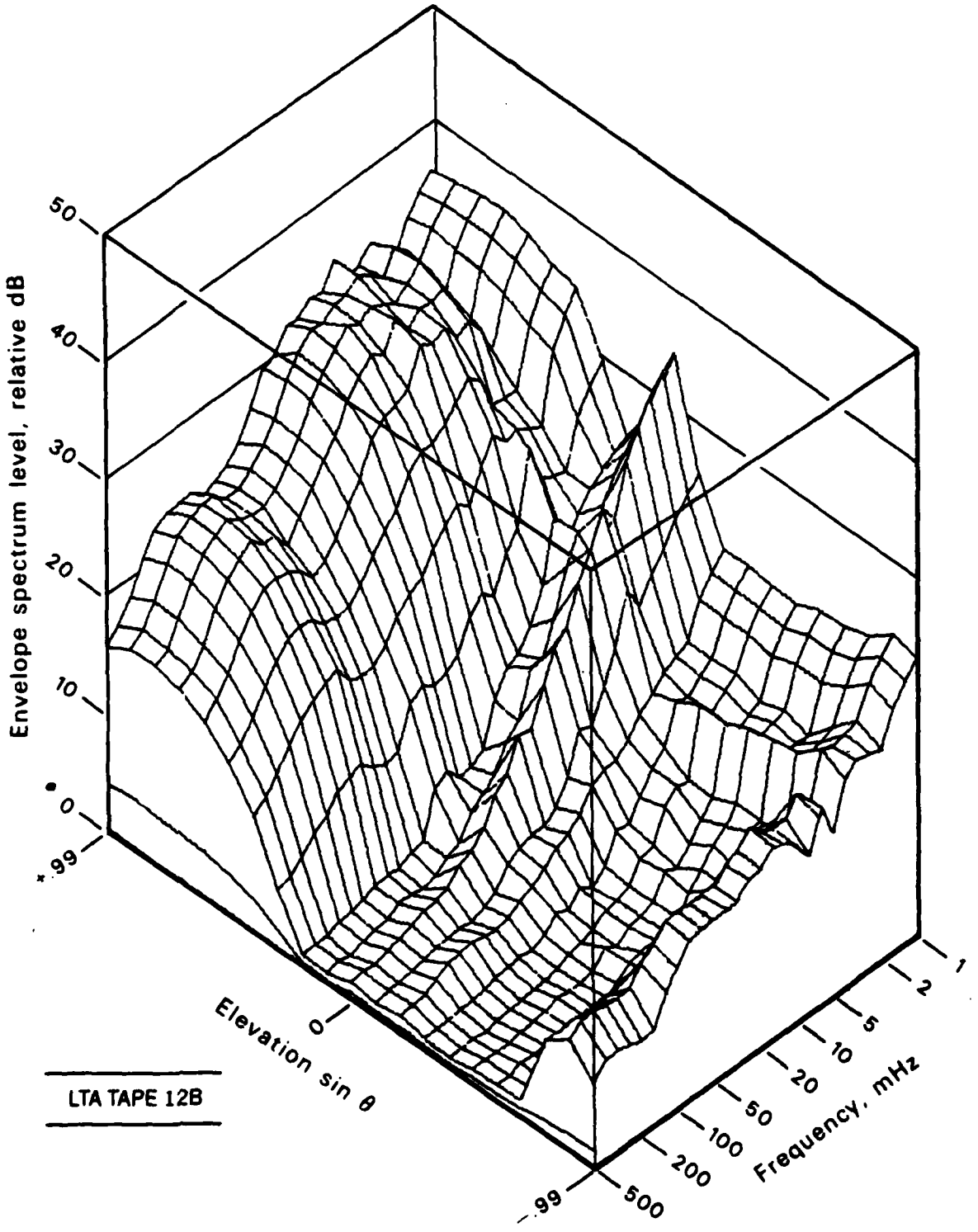


LTA TAPE 12B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-5047

GROUP 12B



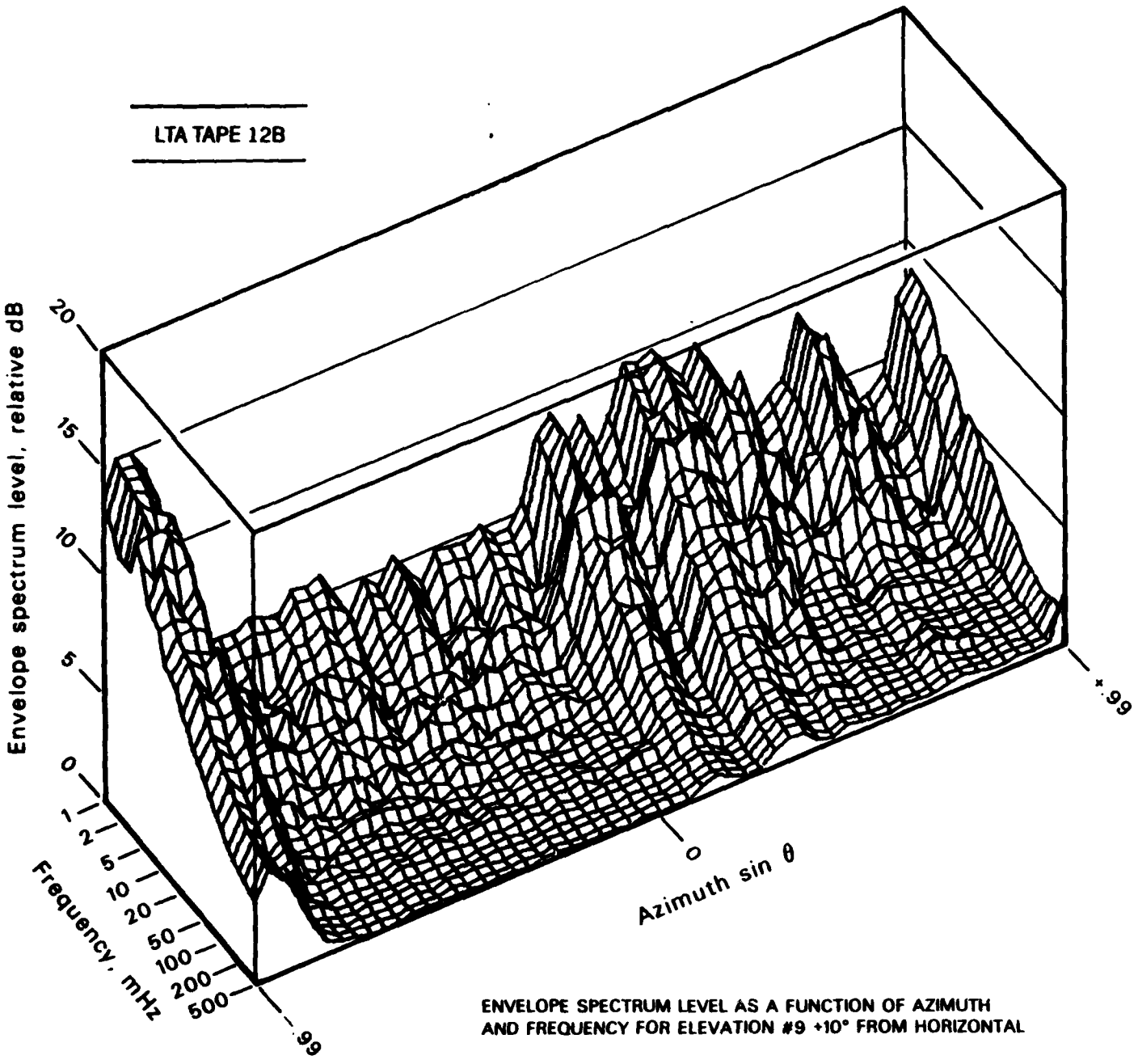
LTA TAPE 12B

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY.
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-5048

MPL-M-5049

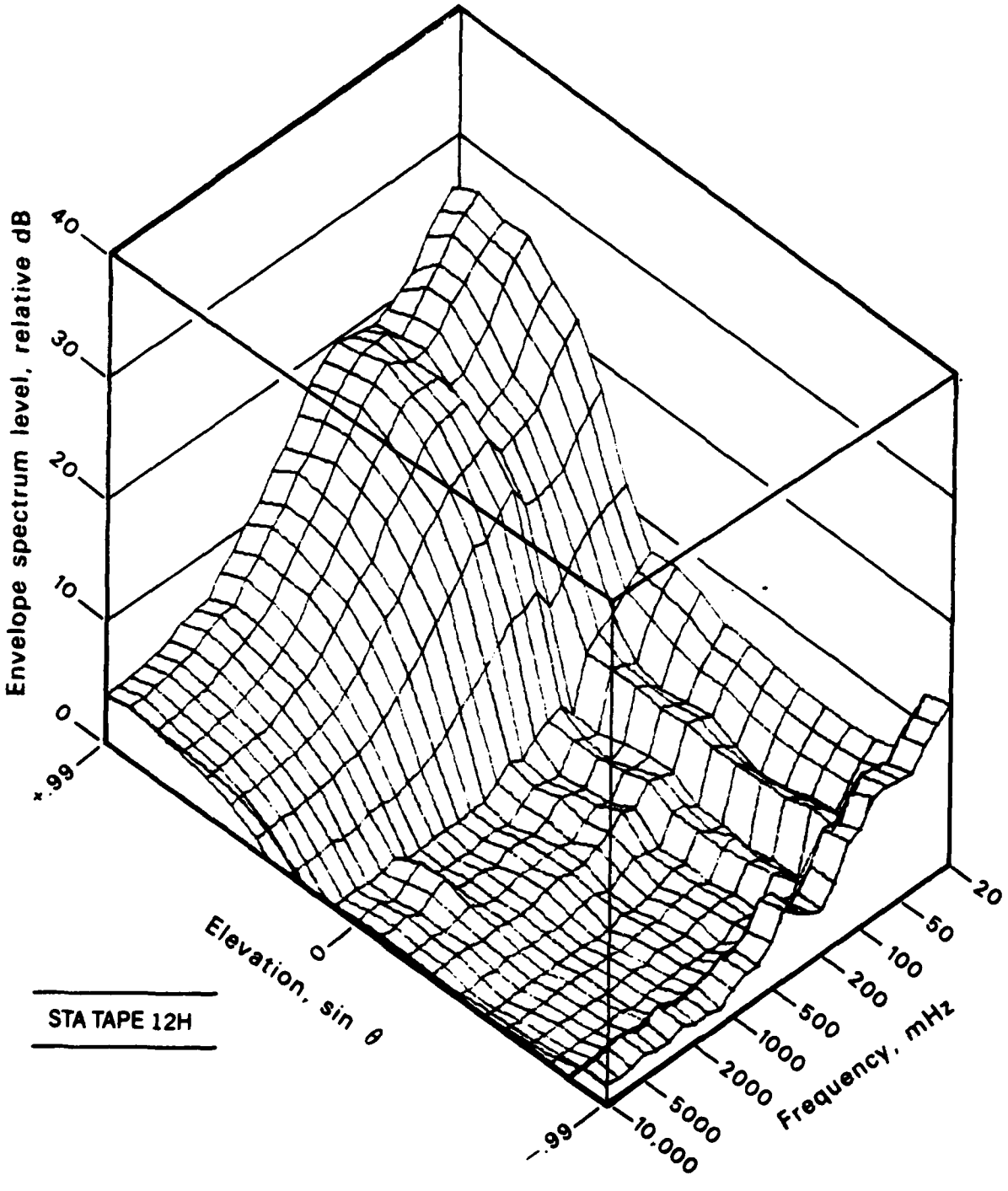
LTA TAPE 12B



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 12B

GROUP 12B



STA TAPE 12H

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-5050

GROUP 12B

LTA TAPE 12B

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.1	30.7	29.6	28.0	25.6	27.1	28.2	26.9	26.6	28.9
ANGLE +84°	27.0	27.2	26.1	26.3	24.5	24.0	21.5	19.1	18.1	17.4
	16.8	17.9	17.7	17.7	16.9	15.3	12.7	10.9	9.8	
2	66.5	31.1	30.1	28.7	26.6	28.1	29.3	27.4	28.4	29.0
+64°	28.2	28.0	27.3	27.4	26.2	24.6	22.1	20.4	19.2	18.2
	18.1	19.0	19.1	18.7	17.8	16.2	13.7	11.9	11.1	
3	66.3	31.5	30.1	28.2	24.7	27.8	29.5	28.3	27.4	28.1
+53°	28.7	27.9	28.6	27.2	26.0	24.3	21.9	20.3	18.9	18.2
	18.2	18.5	19.3	18.5	17.7	16.0	13.7	11.7	11.2	
4	66.2	31.7	30.2	28.0	23.4	26.8	28.7	28.2	28.5	27.4
+44°	29.0	26.7	27.5	26.2	25.0	22.6	21.4	19.7	17.9	16.3
	17.8	17.9	19.0	18.0	17.1	15.2	12.8	11.3	10.5	
5	66.0	31.0	29.6	27.5	23.4	25.8	27.3	26.7	28.3	27.7
+37°	28.2	25.2	24.6	24.3	23.1	20.4	18.9	16.9	15.7	15.0
	16.3	17.0	17.2	17.0	15.7	14.0	11.9	10.4	9.2	
6	65.6	30.0	28.5	26.3	21.5	21.6	21.7	24.4	25.4	23.7
+30°	23.1	22.1	22.0	20.2	19.0	17.5	16.2	14.3	13.1	13.0
	13.1	14.3	14.3	14.1	12.9	11.5	9.6	7.9	7.1	
7	65.0	29.4	27.9	25.4	19.1	20.1	20.9	20.1	22.4	20.1
+23°	18.1	18.2	16.7	16.1	14.2	13.3	12.3	10.5	9.6	9.4
	9.7	11.4	11.0	10.3	9.3	8.0	6.2	4.9	4.0	
8	63.8	24.7	23.2	21.0	16.0	17.2	18.1	21.5	15.0	13.9
+17°	10.7	12.2	10.5	8.3	7.3	6.9	8.0	6.8	3.3	3.1
	3.7	4.8	4.6	3.9	2.7	1.8	0.5	-0.5	-0.8	
9	62.5	19.5	19.3	19.0	18.7	17.0	14.3	17.0	11.0	10.9
+12°	7.1	7.2	4.8	0.4	0.2	0.3	1.7	0.8	-2.7	-3.2
	-3.4	-3.4	-3.7	-3.9	-4.1	-4.4	-4.7	-4.8	-4.9	
10	62.4	22.2	22.5	22.7	22.9	21.0	17.3	19.0	15.5	13.8
+6°	11.0	9.8	6.1	2.5	1.7	0.7	-0.4	-1.9	-2.6	-3.3
	-3.9	-3.5	-3.6	-4.2	-4.3	-4.7	-5.0	-4.8	-5.1	
11	62.7	22.9	22.8	22.7	22.5	20.4	16.2	18.7	15.0	13.6
0°	9.2	8.7	4.7	2.2	2.7	0.8	-0.4	-2.1	-1.9	-2.6
	-3.4	-3.1	-3.3	-3.6	-3.9	-4.2	-4.5	-4.4	-4.6	
12	62.6	19.6	18.9	18.1	17.2	15.5	12.8	15.5	10.1	8.3
−6°	4.7	5.2	2.3	0.1	-0.8	-0.4	-1.2	-1.5	-2.9	-3.3
	-3.6	-3.5	-3.9	-3.8	-4.0	-4.4	-4.5	-4.5	-4.8	
13	62.8	16.0	14.7	12.9	9.9	9.6	9.2	6.9	5.8	5.4
−12°	4.3	3.7	3.5	1.5	0.9	0.2	-0.7	-1.7	-2.0	-2.3
	-2.8	-2.8	-2.5	-2.7	-2.8	-3.1	-4.0	-4.4	-4.3	
14	62.5	12.9	11.6	9.7	6.8	6.3	6.3	6.6	3.2	1.9
−17°	1.7	0.4	0.2	-1.9	-2.4	-2.0	-2.9	-2.6	-3.4	-4.0
	-4.0	-3.9	-4.1	-4.3	-4.6	-4.8	-4.9	-4.9	-4.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12B

LTA TAPE 12B

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	62.6 1.0 -4.1	12.5 -0.7 -4.5	11.2 -0.7 -4.7	9.4 -2.3 -4.6	6.1 -2.7 -4.8	6.1 -2.5 -5.0	6.0 -3.2 -4.9	8.7 -3.5 -5.0	1.0 -3.6 -5.0	2.1 -4.3
16 −30°	62.9 0.6 -3.8	14.1 0.1 -3.8	12.9 0.0 -4.0	11.3 -1.6 -4.4	8.7 -2.1 -4.4	8.3 -2.0 -4.6	7.8 -2.8 -4.6	9.7 -2.4 -4.6	3.1 -3.6 -4.6	2.2 -3.9
17 −37°	63.0 2.8 -3.7	16.3 1.4 -3.6	15.0 0.1 -3.9	13.2 -1.2 -3.9	10.0 -1.6 -4.1	9.6 -1.7 -4.1	9.2 -1.9 -4.1	10.5 -2.2 -4.4	4.9 -3.1 -4.4	3.7 -3.7
18 −44°	63.1 2.2 -3.3	16.4 1.4 -3.3	15.0 1.9 -3.8	13.0 -1.5 -3.7	9.1 -0.4 -3.6	9.2 -0.9 -3.9	9.3 -1.6 -4.2	11.1 -2.4 -4.2	4.8 -2.6 -4.2	4.6 -2.8
19 −53°	63.4 6.7 2.9	17.0 4.3 2.7	15.8 4.6 2.5	14.1 4.4 2.4	11.4 3.9 2.3	11.0 3.5 2.3	10.5 3.3 2.4	11.5 3.2 2.2	5.1 2.9 2.3	7.1 3.1
20 −64°	63.7 9.5 8.1	18.6 9.2 6.7	17.5 9.8 5.8	15.9 10.9 4.5	13.4 9.6 4.4	13.0 9.1 4.5	12.7 8.2 4.7	13.2 8.0 4.6	8.9 7.9 3.8	10.9 8.1
21 −84°	63.8 7.7 7.8	18.0 9.2 6.2	16.8 10.1 4.9	15.2 10.7 2.4	12.4 9.6 2.2	12.7 9.3 2.6	13.0 8.3 2.9	12.1 8.2 2.7	8.3 8.2 1.4	11.0 8.1

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12B

LTA TAPE 12B

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.1	30.7	29.6	28.0	25.6	27.1	28.2	26.9	26.6	28.9
ANGLE +84°	27.0	27.2	26.1	26.3	24.5	24.0	21.5	19.1	18.1	17.4
	16.8	17.9	17.7	17.7	16.9	15.3	12.7	10.9	9.8	
2	66.5	31.1	30.1	28.7	26.6	28.1	29.3	27.4	28.4	29.0
+64°	28.2	28.0	27.3	27.4	25.2	24.6	22.1	20.4	19.2	18.2
	18.1	19.0	19.1	18.7	17.8	16.2	13.7	11.9	11.1	
3	66.3	31.5	30.1	28.2	24.7	27.8	29.5	28.3	27.4	28.1
+53°	28.7	27.9	28.6	27.2	26.0	24.3	21.9	20.3	18.9	18.2
	18.2	18.5	19.3	18.5	17.7	16.0	13.7	11.7	11.2	
4	66.2	31.7	30.2	28.0	23.4	26.8	28.7	28.2	28.5	27.4
+44°	29.0	26.7	27.5	26.2	25.0	22.6	21.4	19.7	17.9	16.3
	17.8	17.9	19.0	18.0	17.1	15.2	12.8	11.3	10.5	
5	66.0	31.0	29.6	27.5	23.4	25.8	27.3	26.7	28.3	27.7
+37°	28.2	25.2	24.6	24.3	20.1	20.4	18.9	16.9	15.7	15.0
	16.3	17.0	17.2	17.0	15.7	14.0	11.9	10.4	9.2	
6	65.6	30.0	28.5	26.2	21.4	21.5	21.6	24.4	25.5	24.1
+30°	22.9	22.0	21.9	20.8	18.6	17.5	16.1	14.3	13.1	13.1
	13.2	14.3	14.4	14.1	12.9	11.5	9.6	8.0	7.1	
7	65.0	29.5	27.9	25.5	19.7	20.4	20.9	20.7	22.0	20.1
+23°	17.4	18.3	17.1	15.9	14.2	13.5	12.4	10.6	9.6	9.4
	9.8	11.5	11.0	10.4	9.3	7.9	6.2	4.9	4.0	
8	63.9	24.6	23.2	21.2	17.3	17.7	18.1	21.6	15.4	14.0
+17°	11.1	12.2	10.8	8.2	7.4	7.1	7.8	6.9	3.5	3.2
	3.8	4.8	4.4	3.9	2.5	1.8	0.5	-0.5	-0.9	
9	62.5	19.7	19.0	18.3	17.4	15.9	13.8	17.0	12.0	9.1
+12°	7.6	7.2	5.1	1.6	0.0	0.7	1.9	1.2	-2.5	-2.9
	-3.4	-3.2	-3.5	-4.0	-4.2	-4.3	-4.8	-4.8	-4.9	
10	62.3	23.1	22.3	21.3	20.1	18.2	14.7	17.3	15.1	11.4
+6°	8.6	8.5	4.8	3.8	1.8	0.7	-0.2	-2.1	-2.6	-3.4
	-3.8	-3.6	-3.5	-4.2	-4.4	-4.7	-5.0	-4.9	-5.1	
11	62.7	29.8	28.8	27.5	25.5	23.4	19.2	20.7	18.0	15.9
0°	12.8	11.8	9.2	6.3	6.4	4.0	2.9	0.8	-0.4	-1.0
	-2.2	-2.6	-2.7	-3.3	-3.6	-3.9	-4.2	-4.2	-4.4	
12	62.6	20.7	19.7	18.4	16.5	15.1	13.0	15.3	10.9	8.4
−6°	5.8	6.1	2.8	0.8	0.1	-0.0	-0.4	-1.0	-2.6	-3.2
	-3.7	-3.5	-3.7	-3.8	-4.0	-4.3	-4.5	-4.5	-4.8	
13	62.7	15.7	14.5	12.8	10.1	9.5	8.9	7.8	6.8	5.2
−12°	4.4	4.2	3.6	1.8	0.7	0.3	-0.6	-1.5	-2.0	-2.5
	-2.8	-2.7	-2.4	-2.7	-2.8	-3.5	-4.0	-4.3	-4.3	
14	62.5	15.7	14.5	12.8	10.0	9.2	8.2	8.6	5.4	4.2
−17°	2.6	1.0	1.1	-1.2	-2.3	-1.6	-2.7	-2.4	-3.4	-4.1
	-3.7	-3.9	-4.0	-4.3	-4.6	-4.6	-4.8	-4.9	-4.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 12B

LTA TAPE 12B

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.6	15.5	14.3	12.8	10.3	9.4	8.4	9.6	4.0	4.2
ANGLE −23°	3.2	0.5	0.2	-1.5	-1.8	-2.1	-2.9	-3.4	-3.6	-4.2
	-4.3	-4.5	-4.6	-4.6	-4.8	-5.0	-4.9	-5.0	-4.9	
16	62.7	15.4	14.2	12.4	9.2	8.7	8.1	9.6	4.0	2.8
−30°	1.4	0.1	0.5	-1.4	-1.9	-2.0	-2.9	-2.3	-3.6	-3.9
	-3.7	-3.7	-4.1	-4.3	-4.4	-4.6	-4.6	-4.6	-4.6	
17	63.0	16.3	15.0	13.2	10.0	9.6	9.2	10.5	4.9	3.7
−37°	2.8	1.4	0.1	-1.2	-1.6	-1.7	-1.9	-2.2	-3.1	-3.7
	-3.7	-3.6	-3.9	-3.9	-4.1	-4.1	-4.1	-4.4	-4.4	
18	63.1	16.4	15.0	13.0	7.1	9.2	9.3	11.1	4.8	4.6
−44°	2.2	1.4	1.9	-1.5	-0.4	-0.9	-1.6	-2.4	-2.6	-2.8
	-3.3	-3.3	-3.8	-3.7	-3.6	-3.9	-4.2	-4.2	-4.2	
19	63.4	17.0	15.8	14.1	11.4	11.0	10.5	11.5	5.1	7.1
−53°	6.7	4.3	4.6	4.4	3.9	3.5	3.3	3.2	2.9	3.1
	2.9	2.7	2.5	2.4	2.3	2.3	2.4	2.2	2.3	
20	63.7	18.6	17.5	15.9	13.4	13.0	12.7	13.2	8.9	10.9
−64°	9.5	9.2	9.8	10.9	9.6	9.1	8.2	8.0	7.9	8.1
	8.1	6.7	5.8	4.5	4.4	4.5	4.7	4.6	3.8	
21	63.8	18.0	16.8	15.2	12.4	12.7	13.0	12.1	8.3	11.0
−84°	7.7	9.2	10.1	10.7	7.6	9.3	8.3	8.2	8.2	8.1
	7.0	6.2	4.9	2.4	2.2	2.6	2.9	2.7	1.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 12B

GROUP 12B

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	66.0	47.6	46.4	44.7	41.8	41.8	41.8	48.0	45.8	39.2
ANGLE −71.3°	38.2	37.1	32.1	31.4	30.1	26.9	25.3	22.8	21.6	19.4
	17.7	15.8	14.5	12.6	11.6	10.8	10.1	9.3	8.6	
2	70.8	54.9	54.3	53.5	52.7	51.8	50.7	48.5	41.6	45.7
−66°	42.9	38.1	36.4	34.9	34.3	32.5	30.8	27.8	25.6	24.3
	22.1	21.1	18.7	17.7	16.2	15.5	14.6	14.2	13.8	
3	70.7	54.6	53.8	52.8	51.5	49.2	44.2	48.4	48.5	42.9
−61.6°	36.8	36.9	36.7	33.3	31.8	27.7	28.0	26.4	23.0	21.5
	20.4	17.6	16.3	14.4	13.4	11.6	11.7	11.3	11.0	
4	67.7	50.9	49.9	48.5	46.5	47.6	48.5	46.4	45.6	44.2
−57.8°	40.3	39.2	35.2	32.4	34.5	31.0	29.5	27.1	27.0	23.8
	21.7	19.8	18.1	16.5	15.0	13.5	12.8	12.1	11.9	
5	63.9	36.7	36.0	35.2	34.1	34.7	35.3	30.3	31.9	28.9
−54.3°	29.3	25.1	22.5	21.4	21.6	17.2	18.8	15.3	13.6	12.5
	9.5	7.7	6.0	4.4	3.6	2.4	1.7	1.5	0.6	
6	63.4	28.5	27.9	27.1	26.3	23.7	16.3	22.5	20.0	14.6
−51.1°	16.3	13.8	11.8	7.8	7.3	7.2	5.0	4.1	2.3	0.8
	-0.9	-1.3	-1.7	-2.0	-2.6	-3.4	-3.5	-3.0	-3.6	
7	62.8	25.4	24.5	23.4	22.0	20.5	18.3	21.0	20.8	15.8
−48.1°	13.0	12.9	11.3	6.5	7.6	5.3	2.4	2.0	1.3	0.3
	-1.4	-2.8	-3.9	-3.5	-3.2	-4.3	-4.2	-4.7	-4.4	
8	62.5	13.8	13.3	12.7	12.1	13.0	13.8	12.7	10.8	5.1
−45.3°	4.7	3.2	0.6	-0.0	2.0	-0.6	-2.4	-3.6	-3.0	-3.9
	-4.9	-4.0	-4.5	-5.2	-4.9	-5.0	-5.3	-5.0	-4.9	
9	62.4	14.9	13.6	11.9	8.8	10.3	11.4	8.6	7.9	6.3
−42.6°	5.6	2.0	-1.1	-2.5	0.9	-2.7	-3.0	-3.6	-4.0	-5.3
	-3.5	-4.1	-4.1	-4.8	-5.3	-5.4	-5.2	-5.1	-5.6	
10	62.4	14.6	13.7	12.5	11.0	8.7	3.8	6.9	2.6	4.6
−40.0°	4.9	2.8	1.1	-1.8	-3.1	-1.2	-1.9	-3.4	-5.5	-3.2
	-4.3	-4.1	-4.0	-4.9	-5.2	-4.7	-5.2	-5.2	-5.7	
11	62.4	16.2	14.5	11.9	4.1	5.0	5.8	6.9	7.9	2.5
−37.5°	2.7	-0.9	-1.3	-1.5	-4.5	-3.0	-3.7	-3.4	-3.8	-4.0
	-4.3	-5.1	-4.6	-5.1	-5.0	-5.2	-5.6	-5.8	-5.5	
12	62.4	15.2	13.8	11.6	6.9	6.5	6.2	3.8	3.5	5.5
−35.1°	2.6	1.5	-2.0	-0.5	-1.4	-3.6	-3.2	-2.1	-3.7	-3.9
	-4.2	-4.4	-5.0	-5.0	-5.2	-5.1	-5.3	-5.1	-4.9	
13	62.4	14.1	13.6	13.0	12.3	10.8	8.3	10.3	9.9	4.6
−32.8°	3.8	4.4	3.3	-0.8	1.2	-1.4	-2.7	-2.1	-4.2	-3.2
	-4.4	-4.4	-4.4	-3.9	-4.9	-4.8	-4.9	-5.2	-4.9	
14	62.3	18.2	16.9	15.2	12.1	10.7	8.5	10.1	7.2	5.4
−30.5°	3.7	2.2	2.1	-2.2	0.0	-3.3	-3.0	-2.0	-3.3	-4.1
	-5.0	-5.2	-4.6	-4.7	-5.1	-5.3	-5.6	-5.2	-5.0	
15	62.3	17.4	16.6	15.7	14.5	12.6	9.1	8.3	5.5	1.6
−28.3°	5.0	2.8	-0.4	-1.5	-3.2	-3.8	-2.8	-2.9	-4.5	-4.7
	-4.3	-3.6	-4.3	-4.8	-4.9	-5.4	-4.8	-4.8	-5.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.3	18.5	17.1	15.1	11.1	10.6	10.0	6.8	8.2	5.3
ANGLE −26.1°	8.5	1.0	1.8	-0.7	0.0	-1.9	-3.0	-3.7	-4.6	-3.9
	-4.2	-4.2	-3.6	-4.4	-5.2	-5.2	-5.1	-5.4	-4.9	
17	62.2	13.6	13.6	13.5	13.5	11.4	7.3	7.7	4.8	5.4
−24.0°	1.5	0.6	-0.9	-2.6	-2.8	-3.1	-4.5	-3.2	-5.0	-4.7
	-4.8	-4.6	-4.9	-4.7	-5.7	-5.1	-4.9	-5.2	-5.5	
18	62.2	9.2	8.1	6.4	3.7	3.8	3.9	3.8	-1.1	0.9
−21.8°	-1.3	-1.6	-0.3	-2.7	-2.2	-3.8	-3.1	-4.9	-4.0	-4.2
	-3.2	-4.4	-4.0	-4.9	-5.0	-5.1	-5.2	-5.4	-5.1	
19	62.1	14.7	13.4	11.5	8.3	6.8	4.4	3.1	3.1	1.8
−19.8°	4.0	-0.3	2.5	-1.7	-2.0	-1.6	-4.1	-3.9	-4.4	-4.9
	-5.2	-4.5	-3.9	-4.5	-5.1	-4.9	-5.6	-5.5	-5.3	
20	62.1	12.2	11.5	10.6	9.5	9.4	9.4	6.7	2.7	2.5
−17.7°	1.1	2.1	0.8	-1.8	0.2	-1.1	-1.6	-4.2	-5.1	-4.1
	-4.3	-3.7	-3.9	-5.0	-4.8	-5.2	-5.3	-5.2	-5.6	
21	62.1	16.6	16.2	15.7	15.2	13.4	10.4	6.5	3.8	0.2
−15.7°	1.3	3.1	-0.3	-1.6	-1.3	-2.9	-2.6	-5.0	-3.4	-4.0
	-4.8	-4.0	-4.5	-4.7	-5.6	-5.3	-5.6	-5.5	-4.9	
22	62.2	13.0	12.1	10.9	9.2	8.3	7.2	7.9	3.1	4.2
−13.7°	1.7	-0.2	1.1	0.2	-2.8	-2.1	-3.5	-3.4	-4.0	-4.6
	-4.0	-4.9	-4.3	-4.3	-5.2	-5.1	-4.9	-5.0	-5.0	
23	62.2	9.4	8.1	6.3	3.1	3.4	3.6	1.0	5.5	1.0
−11.7°	1.8	-0.1	0.0	-3.9	-1.3	-2.4	-1.8	-3.1	-3.5	-3.1
	-3.7	-3.9	-4.7	-5.1	-4.8	-4.9	-5.2	-5.2	-5.0	
24	62.2	14.4	12.8	10.2	3.4	5.2	6.5	4.9	-0.5	3.7
−9.7°	3.5	-2.5	0.1	-2.5	-1.0	-2.5	-1.7	-2.4	-3.9	-3.7
	-3.5	-4.1	-4.1	-4.3	-4.3	-4.9	-5.1	-5.5	-5.3	
25	62.2	13.7	12.6	11.0	8.6	7.2	5.3	5.8	5.3	1.1
−7.8°	2.4	0.4	-0.5	-3.1	-3.1	-3.2	-2.6	-3.8	-3.5	-3.7
	-4.1	-4.0	-4.4	-4.9	-5.1	-5.1	-5.2	-5.2	-5.2	
26	62.2	13.5	12.0	9.5	3.5	3.5	3.5	1.1	7.0	3.1
−5.8°	3.5	1.6	1.7	-0.5	-1.5	-3.4	-1.7	-4.5	-3.8	-4.4
	-3.7	-3.5	-3.7	-4.8	-4.6	-5.2	-5.2	-5.2	-5.2	
27	62.2	15.8	14.6	13.1	10.8	9.6	7.9	5.1	5.7	4.0
−3.9°	0.9	0.7	0.6	-0.6	-1.1	-2.9	-4.3	-2.9	-3.9	-4.9
	-4.8	-4.1	-5.1	-4.1	-4.6	-5.4	-5.3	-5.1	-5.5	
28	62.3	12.7	12.1	11.5	10.8	8.9	5.2	5.3	3.3	1.4
−1.9°	-1.8	0.3	-1.3	-1.2	-0.5	-3.0	-3.6	-3.8	-3.5	-4.2
	-4.3	-4.8	-4.4	-4.5	-4.7	-4.7	-5.2	-5.2	-4.8	
29	62.4	12.8	11.8	10.3	8.2	6.2	2.7	3.1	3.4	4.9
0°	-1.1	0.1	-1.9	-1.8	-2.5	-1.3	-3.3	-2.8	-3.2	-3.7
	-4.0	-4.6	-3.5	-4.5	-4.4	-4.8	-5.1	-4.7	-5.4	
30	62.4	17.0	15.4	12.7	4.5	6.4	7.7	10.1	10.1	7.2
+1.9°	2.6	4.6	1.2	1.7	-0.9	-1.3	-1.7	-3.3	-4.5	-3.8
	-4.2	-3.6	-2.9	-4.6	-4.4	-4.9	-5.4	-4.7	-5.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.4	27.6	26.5	24.9	22.4	20.3	16.1	20.2	21.4	16.0
ANGLE +3.9°	12.3	11.9	7.7	4.8	3.9	1.1	0.4	-1.1	-1.7	-2.9
	-4.5	-3.3	-3.1	-4.5	-4.3	-4.4	-4.5	-4.9	-5.3	
32	62.7	30.2	30.0	29.8	29.6	27.6	23.9	25.5	22.4	18.3
+5.8°	16.6	16.9	10.5	10.5	9.7	7.9	6.9	3.4	1.5	1.2
	-1.1	-0.7	-1.9	-2.0	-3.6	-3.1	-4.0	-3.7	-3.7	
33	62.9	23.3	22.5	21.6	20.3	20.1	19.9	20.4	23.9	15.6
+7.8°	13.8	17.9	13.6	8.6	10.5	8.9	8.1	3.8	3.9	2.3
	1.4	-0.0	-0.7	-0.9	-2.7	-2.4	-3.3	-3.3	-2.9	
34	62.7	27.7	27.1	26.5	25.8	23.6	19.0	21.2	21.7	15.9
+9.7°	17.4	11.7	10.2	8.7	5.0	6.1	4.5	3.3	0.9	-0.2
	-1.4	-1.7	-2.5	-3.2	-3.3	-3.7	-3.7	-4.0	-4.0	
35	62.3	20.4	19.2	17.7	15.2	15.8	16.3	15.5	12.1	10.9
+11.7°	10.1	6.9	4.7	1.3	3.1	0.4	-0.3	-2.2	-3.3	-2.6
	-4.3	-3.2	-4.2	-4.1	-5.3	-4.9	-5.2	-5.2	-5.1	
36	62.4	25.7	24.3	22.2	17.8	16.5	14.7	19.7	21.8	15.6
+13.7°	9.2	13.7	6.9	4.1	2.9	1.0	2.0	-0.1	-1.7	-3.0
	-2.9	-3.6	-3.3	-5.0	-4.4	-4.6	-5.0	-5.0	-4.9	
37	62.9	33.8	32.8	31.7	30.1	28.6	26.2	27.3	28.7	22.0
+15.7°	20.5	21.0	13.4	13.6	12.9	9.5	9.8	7.0	5.1	4.3
	1.6	1.4	-0.2	-1.9	-0.8	-2.0	-2.5	-2.8	-2.8	
38	63.5	32.7	31.5	29.8	27.1	28.6	29.7	26.4	26.5	23.6
+17.7°	20.2	18.8	16.4	14.2	13.1	12.1	10.6	8.3	5.4	5.8
	2.5	2.1	1.6	-0.1	-0.4	-0.9	-0.7	-0.8	-1.5	
39	63.4	34.2	34.0	33.7	33.3	30.9	25.1	26.6	28.6	21.8
+19.8°	23.2	20.2	15.8	14.9	15.3	12.9	9.6	8.5	5.1	4.6
	3.7	1.7	0.3	0.4	-0.3	-1.3	-1.3	-1.1	-1.7	
40	62.7	30.4	29.4	28.1	26.2	24.6	22.0	26.7	25.0	20.3
+21.8°	18.9	15.9	14.9	12.2	12.0	8.1	6.9	4.9	3.7	1.5
	1.3	-0.9	-2.4	-2.2	-2.8	-3.8	-3.6	-3.9	-4.0	
41	62.5	27.0	26.2	25.1	23.7	23.8	23.9	22.6	20.3	17.0
+24.0°	13.7	13.3	14.2	12.8	8.3	4.5	6.4	0.3	-0.4	0.4
	-2.2	-2.3	-3.8	-3.2	-3.6	-3.7	-4.3	-5.0	-4.7	
42	62.8	32.0	31.5	31.0	30.4	30.2	29.9	27.2	24.4	19.8
+26.1°	8.2	11.6	14.4	14.0	9.0	7.2	7.2	1.8	0.4	1.3
	-0.9	-1.0	-2.2	-3.2	-1.4	-2.9	-3.0	-3.9	-3.6	
43	62.9	27.2	26.8	26.5	26.1	26.3	26.5	25.2	23.4	21.5
+28.3°	18.9	17.1	12.6	4.3	7.3	9.5	2.0	4.1	1.8	0.1
	0.5	-1.9	-2.7	-3.3	-2.5	-3.8	-3.8	-4.2	-4.1	
44	63.0	16.7	15.5	13.9	11.3	13.0	14.2	13.3	13.5	10.0
+30.5°	7.7	6.4	4.3	-1.9	-0.8	-0.5	-1.8	-2.1	-2.7	-3.7
	-2.7	-3.2	-4.1	-4.2	-4.1	-4.5	-4.3	-4.6	-4.3	
45	63.0	23.7	22.3	20.4	16.7	14.3	8.2	8.2	5.9	9.5
+32.8°	5.0	4.0	-1.5	-0.2	-0.3	-1.0	-2.5	-2.5	-3.1	-3.7
	-3.0	-4.0	-2.9	-3.1	-3.4	-3.9	-4.2	-4.5	-4.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	63.1	14.3	13.3	11.9	10.0	12.6	14.2	4.4	7.8	6.6
ANGLE +35.1°	6.1	4.8	3.7	0.6	-0.9	-1.2	-1.9	-2.0	-3.0	-2.4
	-2.8	-3.7	-3.9	-3.7	-3.7	-4.0	-4.2	-4.4	-4.1	
47	63.0	17.0	15.9	14.2	11.5	9.8	6.7	13.5	11.1	1.7
+37.5°	3.8	4.1	1.3	0.5	-1.3	-1.3	-2.7	-3.0	-3.2	-3.5
	-3.0	-3.4	-3.9	-4.2	-4.1	-4.1	-4.3	-4.7	-4.2	
48	63.0	19.1	18.9	18.6	18.3	16.9	15.0	13.2	13.8	9.6
+40.0°	4.5	6.1	-0.5	-3.6	-2.5	-4.2	-3.0	-2.7	-2.4	-3.7
	-3.8	-4.1	-4.7	-3.5	-4.2	-3.7	-4.2	-4.3	-4.3	
49	63.0	29.9	29.7	29.5	29.2	27.4	24.4	22.5	17.7	15.5
+42.6°	13.6	9.0	1.9	0.9	-1.5	-2.4	-1.2	-0.1	-1.4	-2.4
	-2.8	-4.3	-2.3	-3.2	-1.9	-1.8	-3.7	-3.4	-3.8	
50	63.0	16.5	23.9	26.5	28.1	25.1	9.8	15.0	17.6	11.7
+45.3°	6.6	5.9	5.2	2.2	0.5	-0.7	-1.0	-0.8	-2.9	-2.5
	-2.9	-2.2	-1.9	-2.0	-1.3	-3.0	-3.1	-3.5	-3.2	
51	63.0	23.8	22.5	20.7	17.5	15.5	11.6	18.3	19.1	14.3
+48.1°	8.9	9.5	3.4	0.2	-1.3	-1.5	-1.5	-1.5	-2.9	-3.5
	-3.1	-3.1	-3.6	-4.0	-2.8	-4.0	-4.0	-3.8	-3.7	
52	63.1	16.7	16.2	15.5	14.7	12.7	8.7	11.3	5.4	4.7
+51.1°	6.3	4.0	2.4	-0.5	-0.5	-1.2	-2.4	-2.1	-3.2	-3.0
	-3.8	-3.3	-4.2	-3.7	-3.2	-4.2	-4.4	-4.2	-4.2	
53	63.2	9.0	8.9	8.7	8.6	8.0	7.3	6.8	4.5	1.8
+54.3°	-0.8	-1.2	-1.1	-2.7	-3.1	-2.4	-2.5	-3.8	-3.3	-3.3
	-4.2	-3.7	-4.2	-3.6	-4.2	-3.8	-4.2	-4.0	-4.4	
54	63.1	9.7	8.3	6.2	1.9	4.9	6.6	2.8	3.4	0.8
+57.8°	0.8	-0.9	0.0	-2.0	-4.1	-1.6	-3.4	-2.7	-3.3	-3.7
	-3.5	-3.7	-3.3	-3.7	-3.9	-4.1	-4.0	-4.2	-4.0	
55	63.1	12.6	11.5	10.0	7.8	8.2	8.5	5.2	3.7	-1.7
+61.6°	-2.4	2.5	-1.1	-2.3	-2.2	-1.3	-2.4	-1.3	-2.4	-3.8
	-3.8	-4.0	-4.0	-4.0	-3.8	-4.2	-4.7	-4.2	-4.3	
56	63.2	25.3	24.4	23.3	21.8	19.7	15.3	14.3	14.6	8.7
+66.0°	7.6	7.8	5.6	3.0	1.9	0.9	1.8	-1.4	-2.4	-2.0
	-1.5	-2.5	-3.7	-3.4	-3.2	-3.7	-4.0	-4.3	-4.0	
57	63.6	28.8	28.4	27.8	27.2	24.9	19.6	20.6	19.2	17.1
+71.3°	12.1	14.8	14.0	12.6	10.4	11.1	8.7	6.3	4.6	4.2
	2.9	1.3	0.6	0.4	-0.7	-0.6	0.3	0.0	3.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 12B

STA TAPE 12H

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	53.3 18.0 4.0	24.1 17.0 3.8	23.0 16.0 3.5	21.6 14.1 2.7	19.4 17.1 2.4	18.7 11.0 2.1	17.8 9.1 1.9	17.1 8.0 1.8	17.5 6.5 1.8	17.7 5.4
2 +64°	53.7 18.5 5.0	25.2 17.7 4.7	24.3 16.6 4.2	23.1 15.0 3.3	21.5 13.0 3.0	20.3 12.2 2.8	18.6 10.3 2.6	17.7 9.2 2.4	18.7 7.5 2.4	18.7 6.3
3 +53°	53.4 19.3 4.9	24.5 18.1 4.2	23.7 17.0 3.7	22.7 15.3 3.1	21.4 13.8 2.5	20.4 11.9 2.4	19.0 10.5 2.1	18.0 8.9 1.9	18.0 7.3 1.9	18.6 6.0
4 +44°	53.3 18.0 4.4	24.6 17.7 3.6	23.5 15.9 3.1	22.0 14.5 2.6	19.6 13.1 2.1	18.5 11.4 1.9	16.9 9.8 1.7	16.7 8.0 1.4	18.1 7.3 1.6	18.0 5.4
5 +37°	53.2 17.2 3.4	22.4 16.1 3.1	21.2 14.4 2.4	19.6 13.2 1.7	16.9 12.0 1.5	16.3 9.4 1.4	15.6 8.7 1.3	14.5 7.4 1.0	17.6 5.9 1.0	17.3 4.5
6 +30°	52.9 14.7 2.0	20.8 14.0 1.5	19.7 12.6 1.1	18.1 11.3 0.8	15.6 9.6 0.6	15.2 7.8 0.6	14.7 6.8 0.3	14.2 5.6 0.3	16.0 4.1 0.2	15.1 3.0
7 +23°	52.2 10.6 0.2	16.5 10.8 0.1	15.5 9.1 -0.4	14.1 7.9 -0.6	12.1 6.6 -0.6	11.7 4.9 -0.9	11.3 3.7 -0.8	11.2 2.7 -0.9	13.3 1.5 -1.0	12.2 0.6
8 +17°	51.0 5.4 -2.5	10.2 4.0 -2.6	9.7 3.0 -3.0	9.2 1.7 -3.2	8.5 0.7 -2.9	7.4 -0.3 -3.1	5.8 -1.2 -3.0	4.4 -1.9 -3.1	6.4 -2.2 -3.2	5.6 -2.6
9 +12°	49.6 -2.7 -5.5	6.1 -3.8 -4.7	5.3 -3.4 -5.2	4.4 -4.4 -5.4	3.1 -5.1 -5.2	2.4 -5.3 -5.2	1.4 -5.4 -5.3	-3.0 -5.4 -5.5	-1.7 -5.3 -5.4	-2.1 -5.6
10 +6°	49.4 -4.3 -5.2	6.4 -4.3 -3.7	5.2 -3.9 -4.5	3.5 -4.6 -5.4	0.6 -5.6 -4.8	1.1 -5.2 -4.8	1.5 -5.3 -5.1	-3.2 -5.8 -5.2	-2.8 -5.6 -5.1	-2.2 -5.6
11 0°	49.0 -3.7 -5.0	5.7 -3.5 -3.5	4.5 -3.3 -4.1	2.8 -4.5 -5.0	-0.0 -4.9 -4.4	0.9 -4.6 -4.6	1.7 -4.6 -4.6	-2.5 -5.3 -4.7	-3.1 -4.9 -4.7	-2.2 -5.0
12 −6°	49.8 -3.6 -4.9	4.5 -3.3 -4.3	3.5 -3.7 -4.6	2.2 -4.7 -5.0	0.3 -4.4 -4.7	0.8 -4.4 -4.8	1.3 -4.7 -4.9	-2.0 -4.6 -4.8	-2.3 -4.9 -4.8	-1.8 -5.1
13 −12°	49.7 -2.6 -4.0	4.5 -2.1 -4.6	3.6 -3.2 -4.8	2.4 -3.7 -4.7	0.8 -4.2 -4.6	1.2 -4.2 -4.7	1.6 -4.1 -4.8	-1.8 -4.4 -4.7	-1.4 -4.8 -4.7	-1.2 -4.8
14 −17°	49.7 -4.4 -5.2	4.1 -4.1 -5.1	3.0 -3.7 -4.9	1.7 -4.3 -5.1	-0.3 -5.1 -5.0	0.5 -4.6 -5.3	1.2 -4.6 -5.3	-3.1 -5.0 -5.2	-2.4 -5.2 -5.3	-2.2 -5.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 12H

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

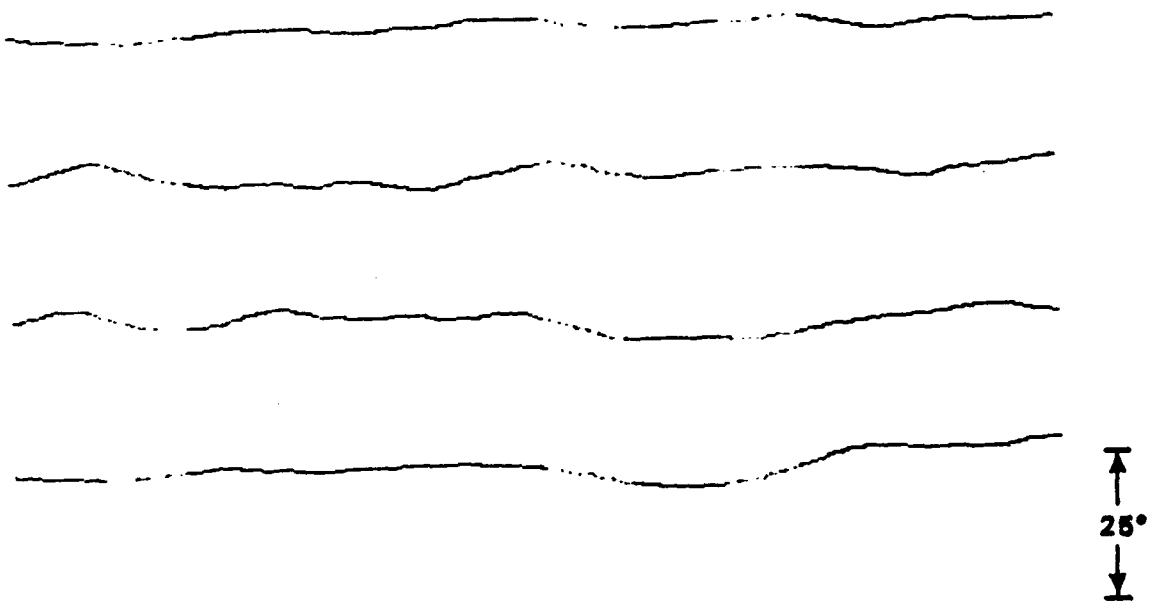
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	49.7	3.9	2.7	1.2	-1.2	0.2	1.2	-3.0	-2.8	-2.2
ANGLE −23°	-4.1	-3.9	-4.6	-4.8	-5.1	-4.8	-5.3	-5.3	-5.2	-5.2
	-5.2	-5.2	-5.2	-5.3	-5.4	-5.4	-5.3	-5.3	-5.4	
16	50.0	3.8	2.7	1.3	-0.8	0.4	1.3	-3.7	-1.9	-2.2
−30°	-4.2	-3.8	-3.9	-4.0	-4.5	-4.4	-4.5	-4.8	-4.6	-4.9
	-4.6	-4.5	-4.6	-4.9	-4.8	-4.8	-4.8	-4.9	-4.9	
17	50.2	3.7	2.8	1.6	0.0	0.8	1.4	-3.1	-2.2	-1.8
−37°	-3.7	-3.4	-3.5	-3.7	-4.2	-4.2	-4.0	-4.5	-4.4	-4.4
	-4.7	-4.4	-4.4	-4.6	-4.3	-4.5	-4.5	-4.5	-4.5	
18	50.4	4.0	3.1	1.9	0.2	1.3	2.2	-3.1	-1.8	-1.3
−44°	-3.6	-3.4	-3.2	-4.1	-4.0	-4.0	-3.9	-4.1	-4.1	-4.3
	-4.5	-4.3	-4.2	-4.2	-4.2	-4.2	-4.2	-4.4	-4.3	
19	50.6	4.8	3.9	2.7	1.1	1.5	1.8	-1.6	-0.8	-0.4
−53°	-2.8	-2.7	-2.8	-2.5	-2.8	-2.8	-3.0	-3.4	-3.2	-3.6
	-3.7	-3.2	-3.5	-3.7	-3.5	-3.5	-3.5	-3.7	-3.5	
20	50.7	10.8	9.9	8.8	7.3	7.5	7.7	6.9	5.2	5.4
−64°	3.1	1.7	1.7	3.0	3.3	1.3	0.5	0.7	0.1	-0.3
	-0.5	-0.4	0.2	-0.5	-0.3	-0.1	-0.2	-0.5	-0.4	
21	51.0	11.4	10.5	9.4	8.0	8.2	8.3	8.1	6.2	5.8
−84°	3.2	1.8	2.2	2.9	3.8	1.7	0.7	0.7	0.1	-0.7
	-0.3	-0.5	0.1	-0.5	-0.5	-0.1	-0.5	-0.6	-0.4	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 12B

BEARING VS TIME

MEAN & VAR.	319.3	0.82	320.1	1.67	320.5	4.32	320.3	3.63

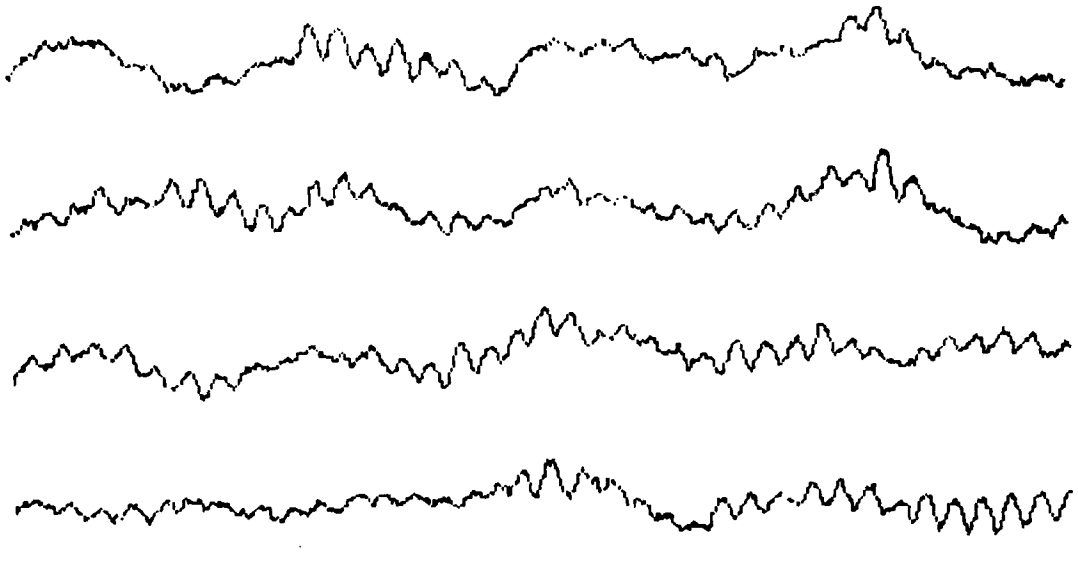


MPL-M-5061

GROUP 12B

ELEVATION VS TIME

MEAN & VAR 93.2 0.32 92.7 0.36 92.6 0.16 92.5 0.15

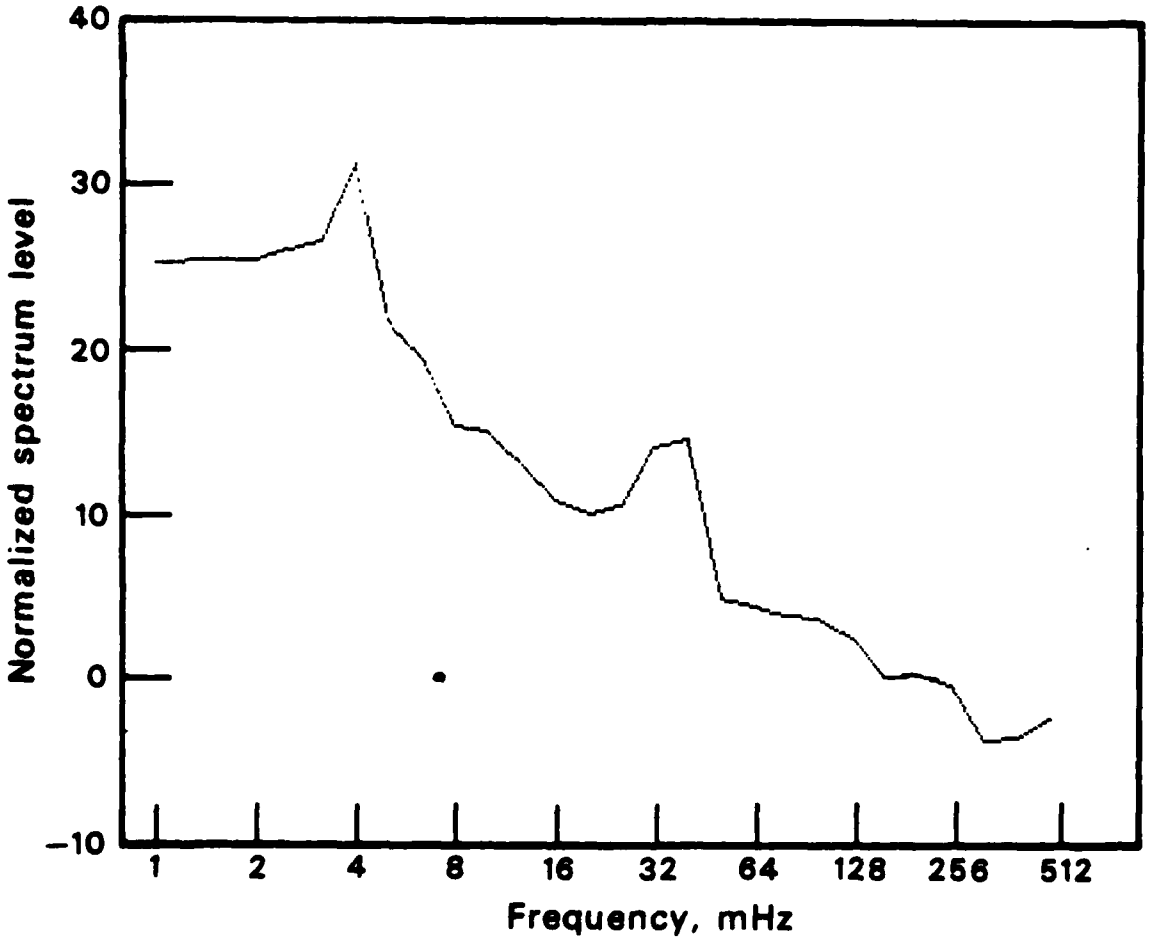


5°

1024 SECONDS

MPL-M-5062

GROUP 12B



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 12C

Environmental Summary

12 June 1978

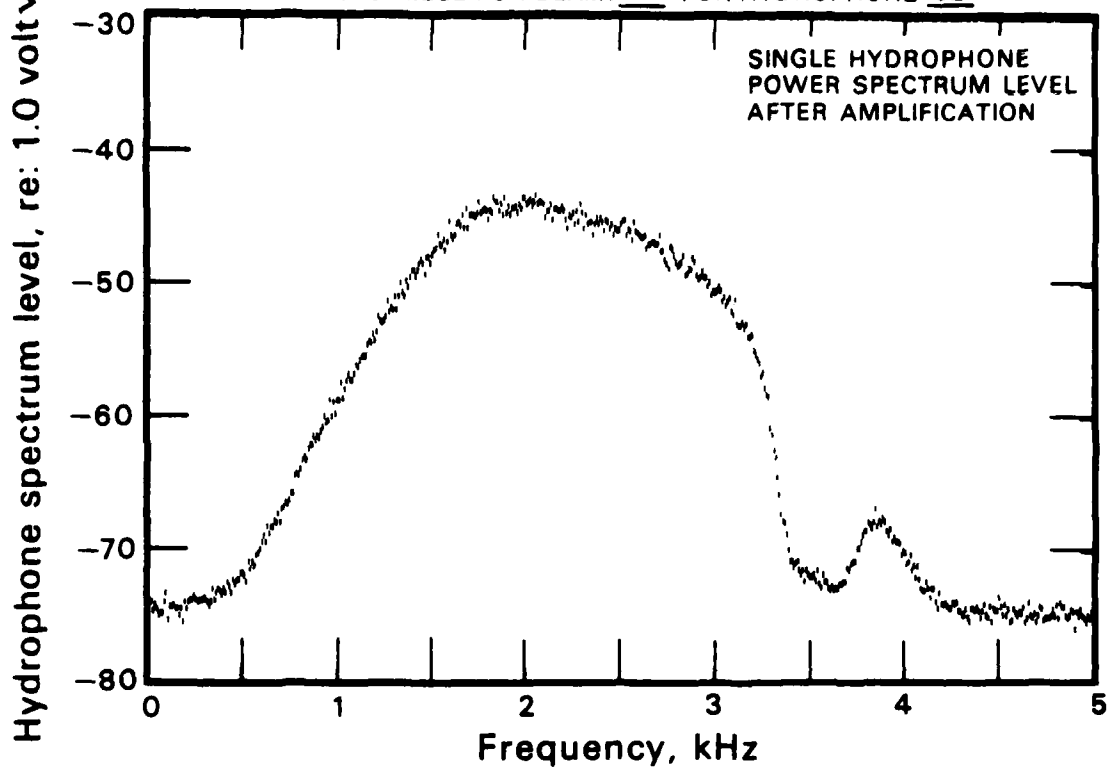
Tapes	Start time	Code
LTA/LOG	10:59:03	12C
STA	10:59:31	12I
High Band Filter		

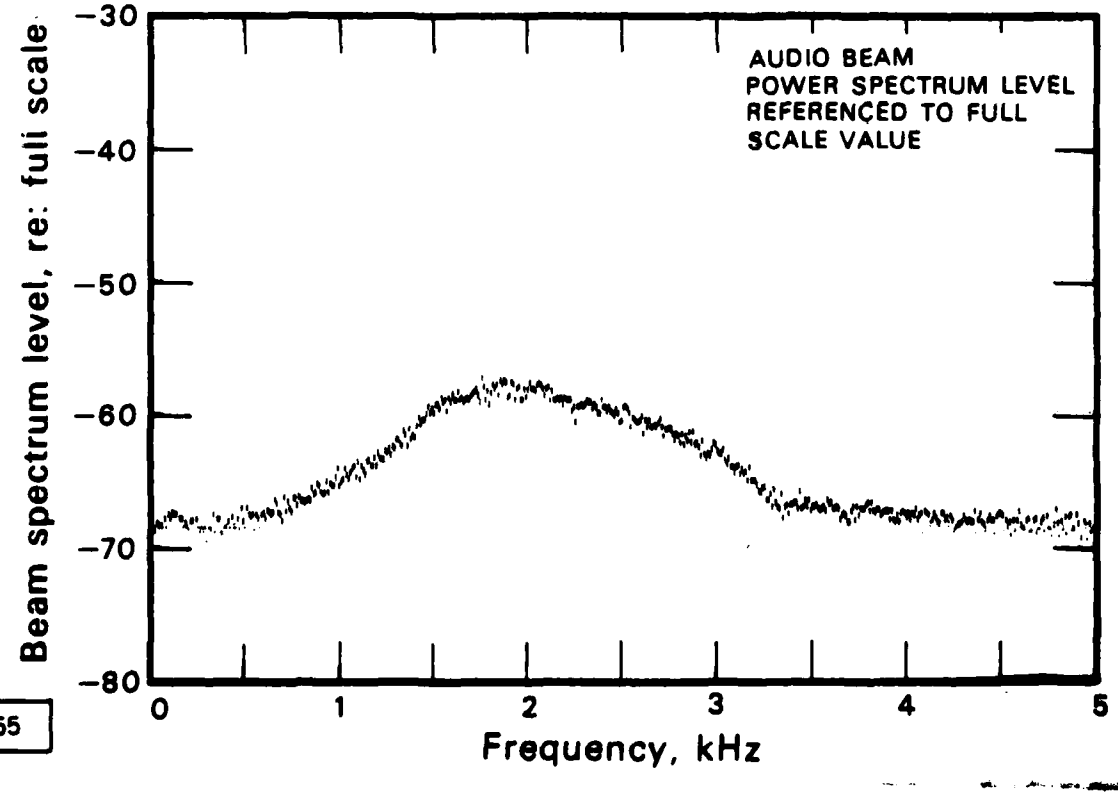
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
10:00	700	15	330	5-7	6-7	NW	Chop

12-JUN-78 11:11:17 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 251.4 TRUE ELEVATION 78.8
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -13.2 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 92 FOR HYDROPHONE 92

GROUP 12C





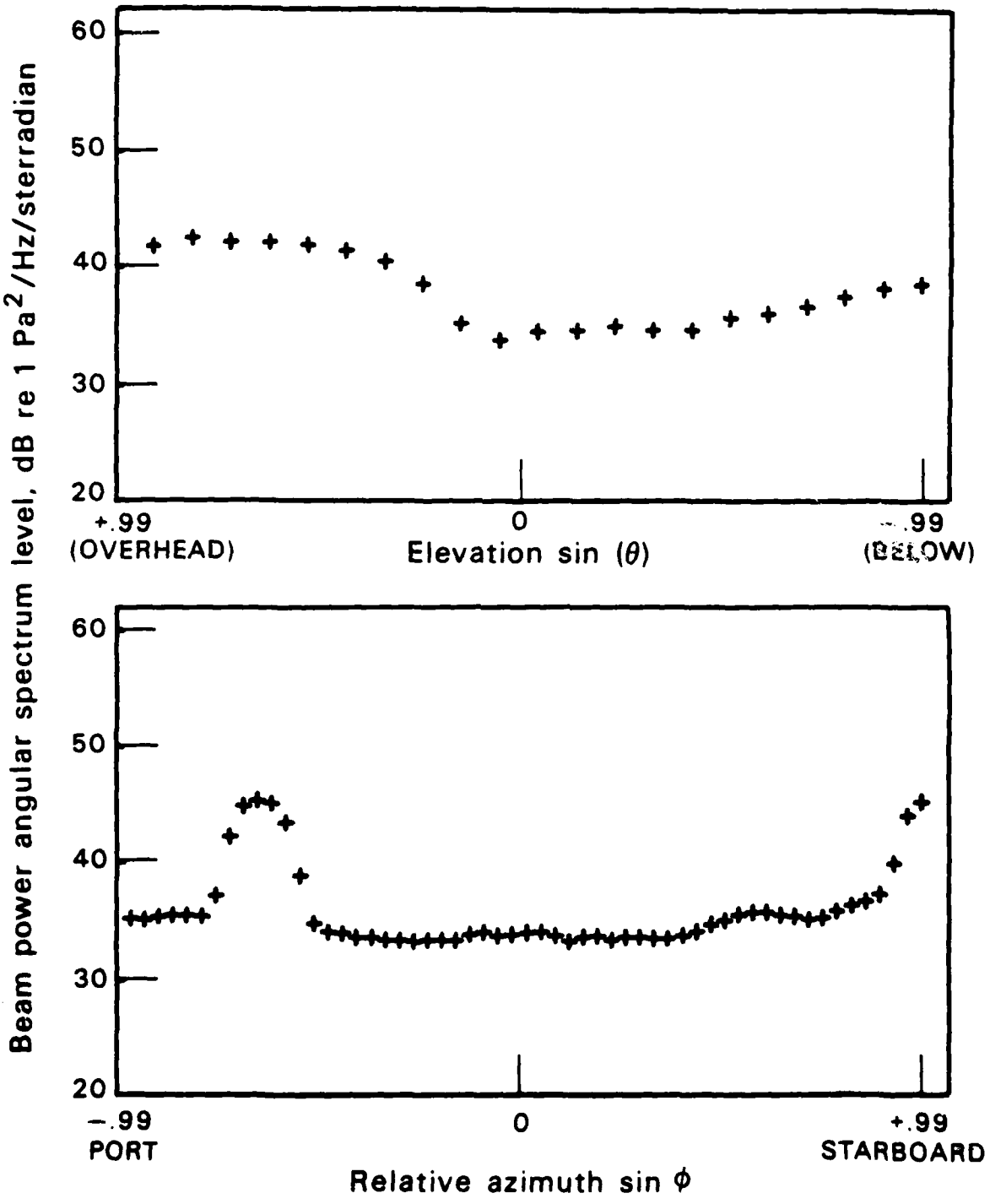
MPL-M-5065

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.

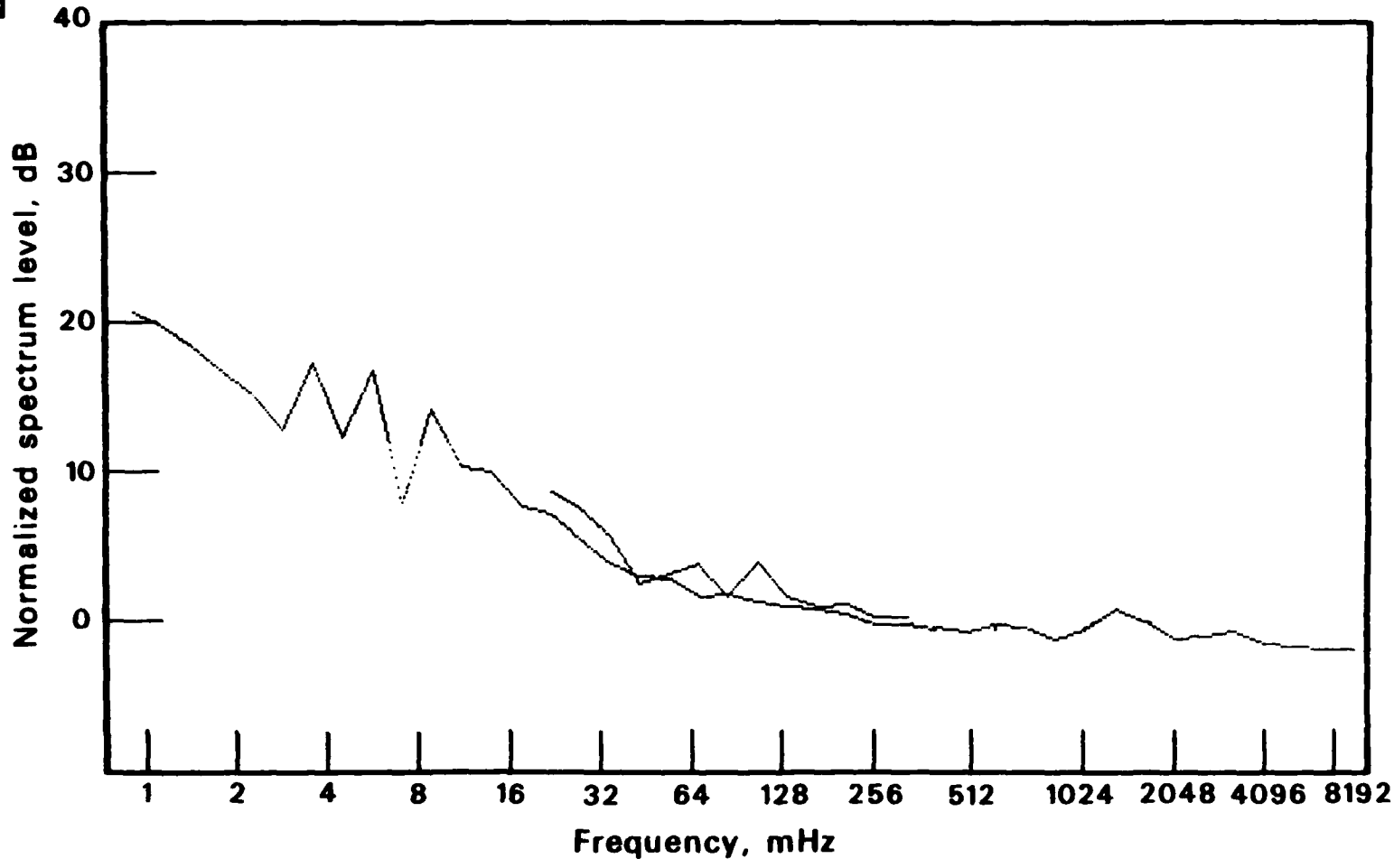
GROUP 12C



MPL-M-5066

MPL-M-5067

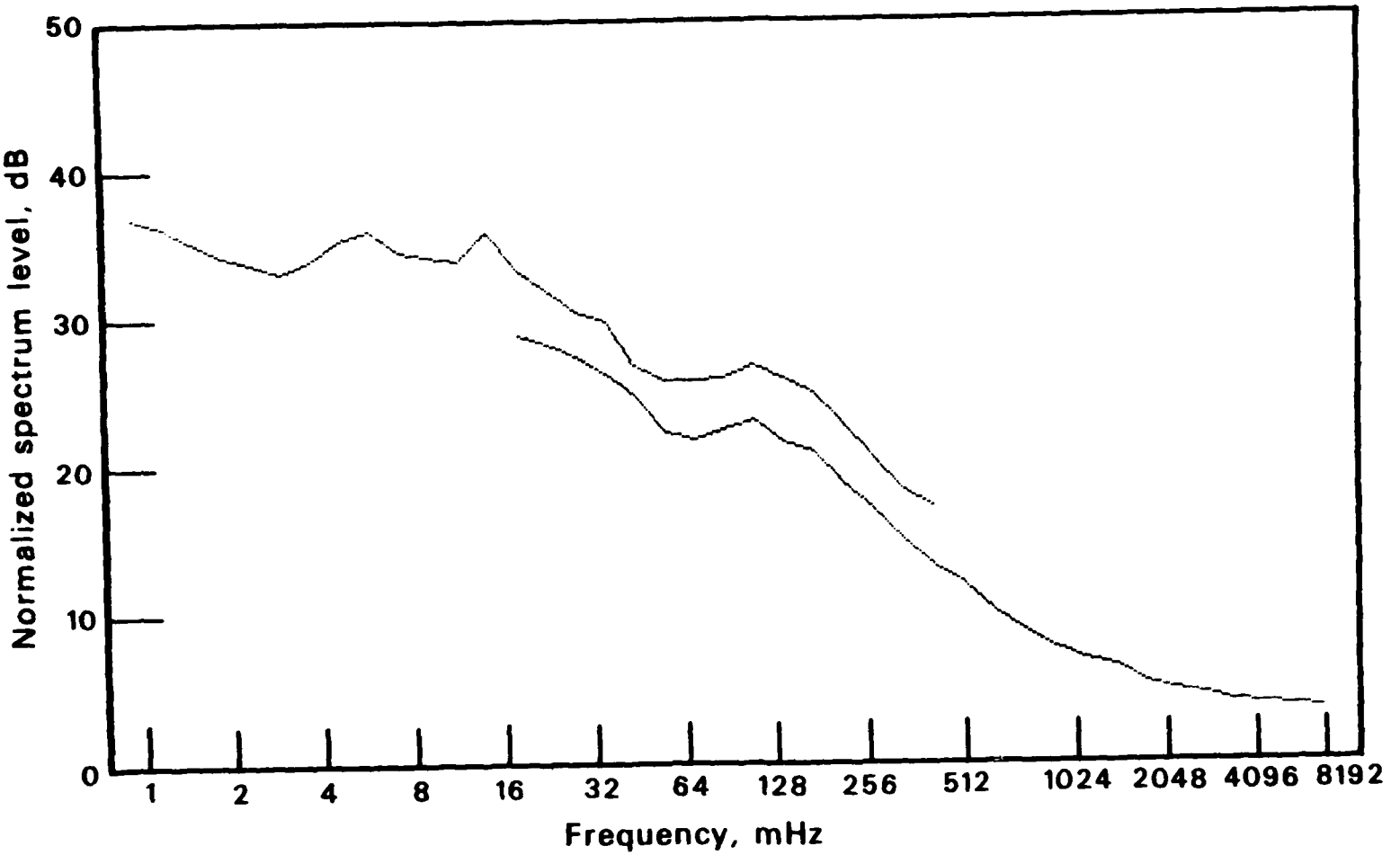
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 12C

MPL-M-5068

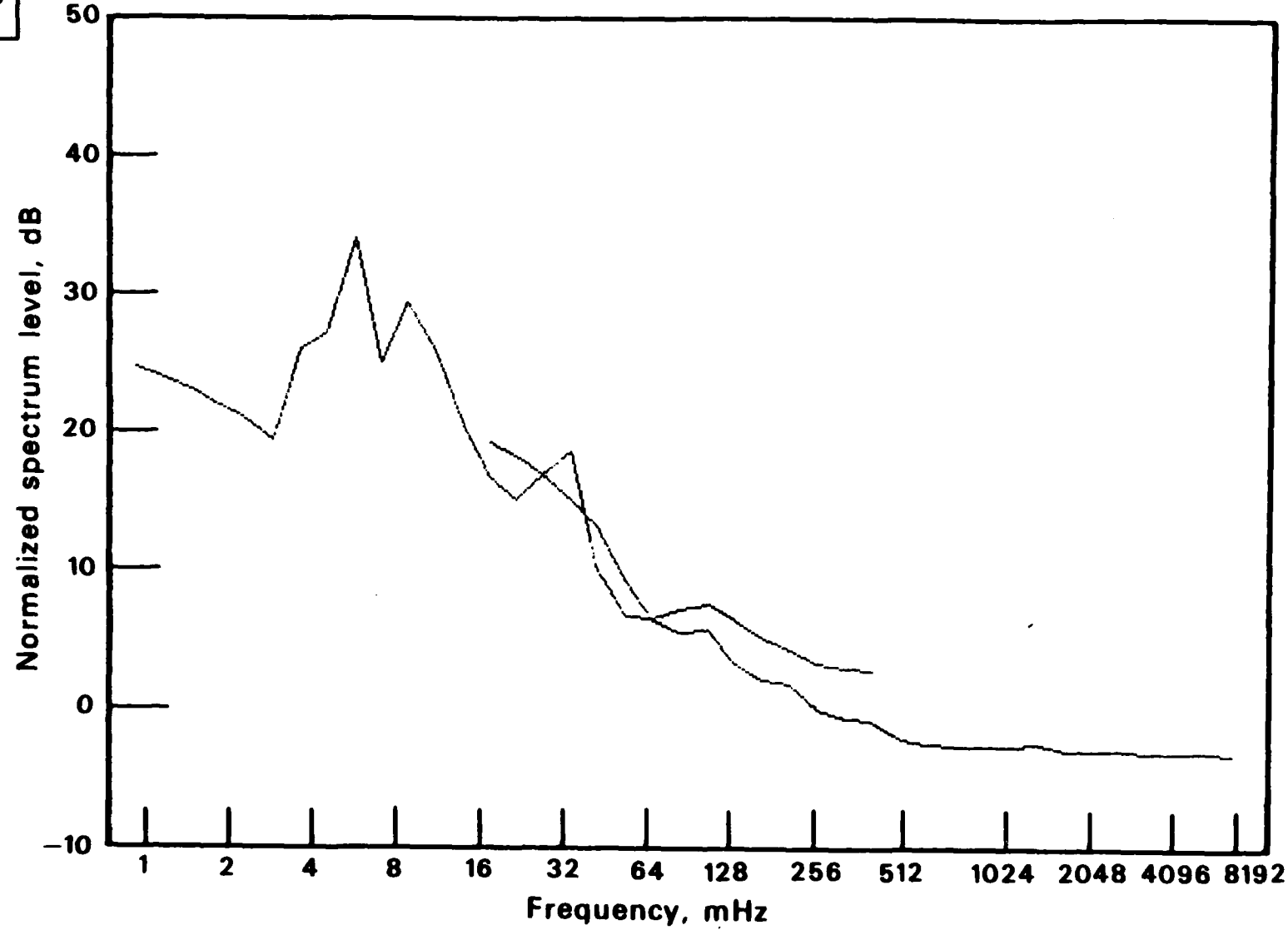
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12C

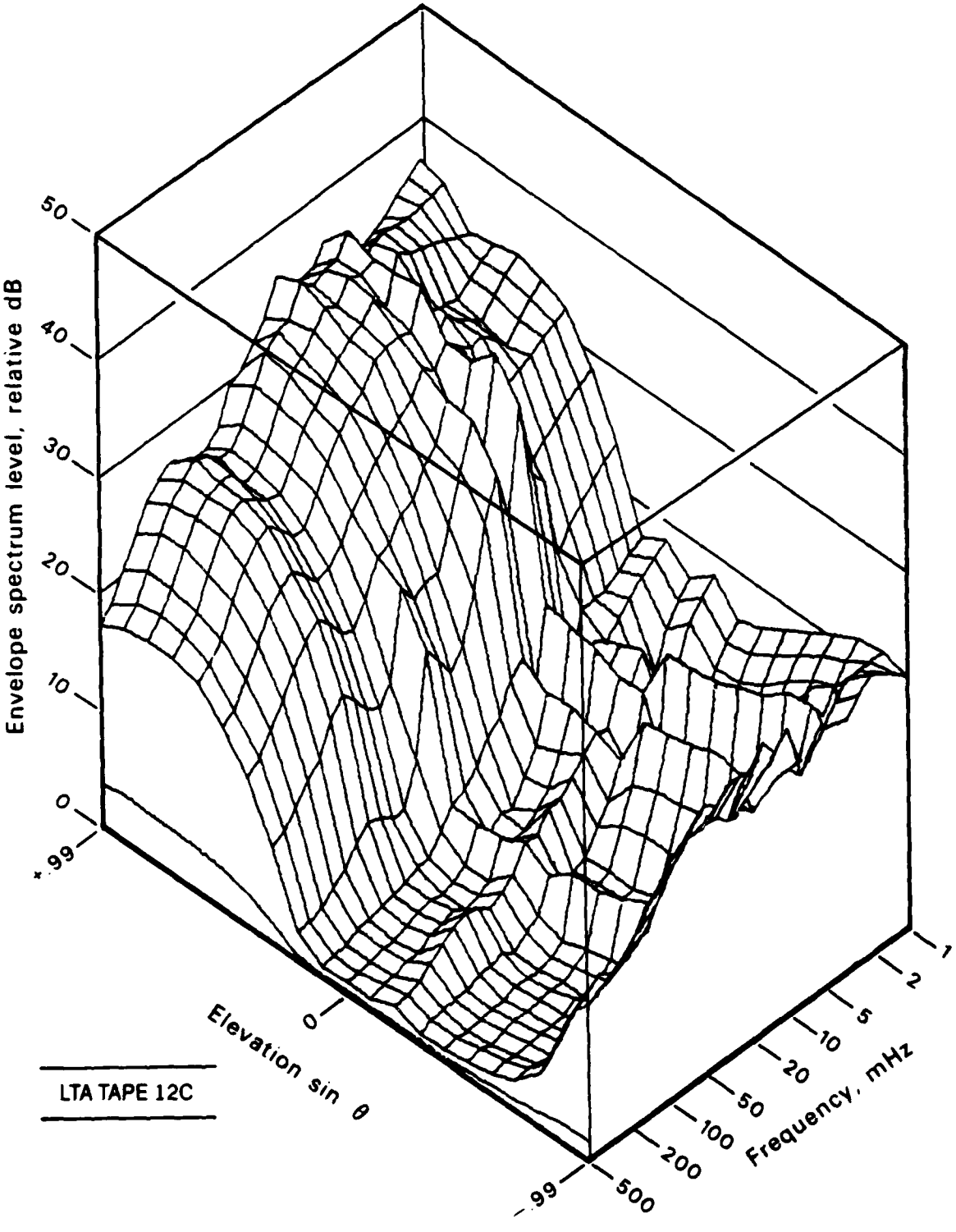
MPL-M-5069

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12C

GROUP 12C

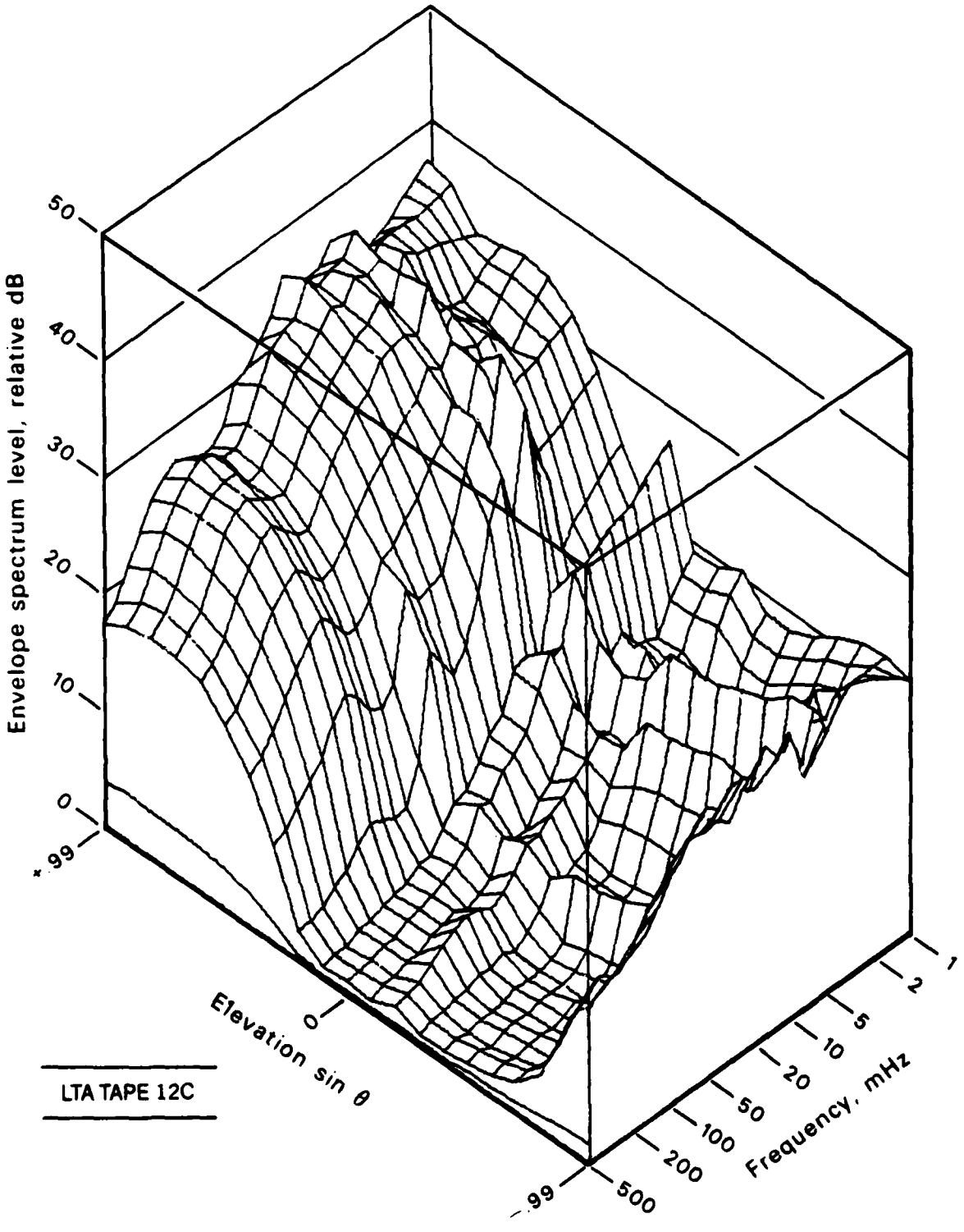


LTA TAPE 12C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-5070

GROUP 12C



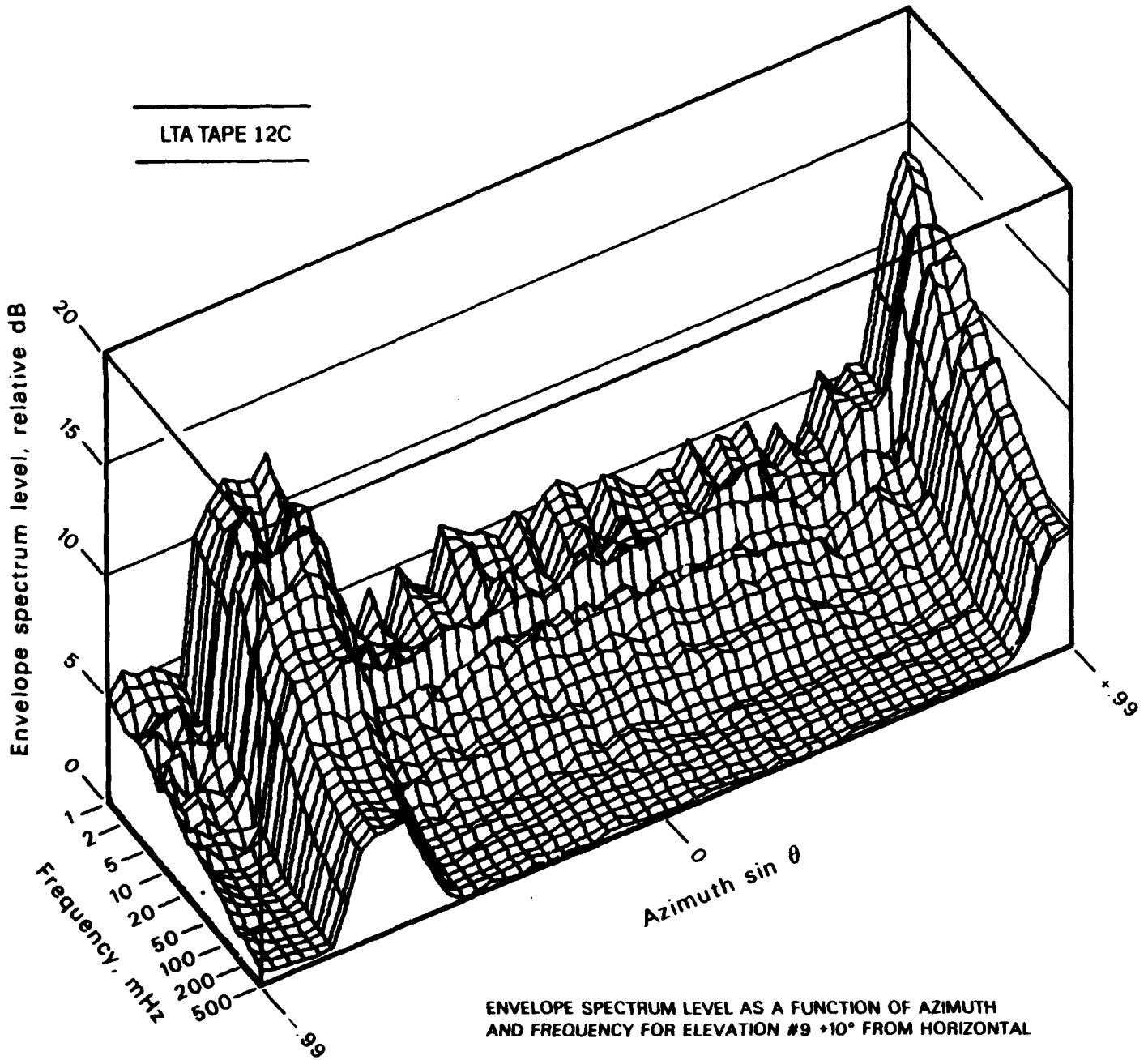
LTA TAPE 12C

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-5071

MPL-M-5072

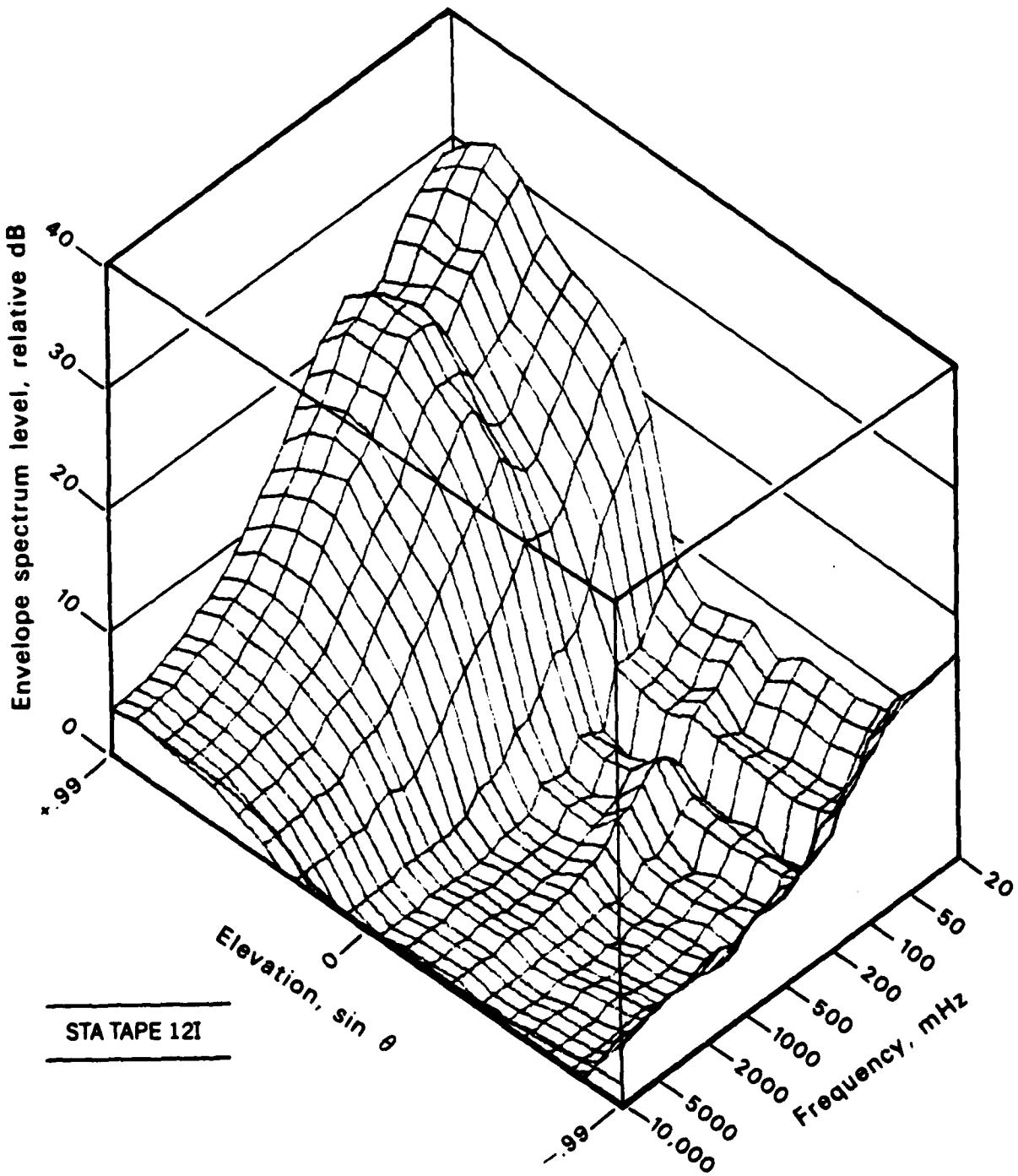
LTA TAPE 12C



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 12C

GROUP 12C



STA TAPE 12I

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET

MPL-M-5073

GROUP 12C

LTA TAPE 12C

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	65.7	31 7	31 0	30. 1	29. 1	28. 5	27 8	28. 7	30. 0	30 7
ANGLE +84°	29 3	29 0	28 6	30. 6	27. 7	26 5	25. 0	24. 4	21 5	20 3
	20. 3	20. 5	21 4	20. 6	17 5	17. 5	15 2	12. 9	11. 8	
2	66. 3	31 1	30. 9	30. 7	30. 5	30. 6	30. 8	30. 5	29. 5	33. 1
+64°	31. 4	31. 2	30 6	31. 7	27. 2	28. 9	27. 9	25. 6	23. 1	21. 6
	21. 6	22 8	23. 2	22. 0	20. 7	18. 9	16. 4	14. 4	13. 1	
3	66. 1	28. 3	28 8	29. 3	27. 7	30. 1	30. 4	31 2	27. 0	32. 1
+53°	31. 5	32. 0	30 4	30. 9	29. 6	28. 1	27. 4	25. 3	22. 8	21. 3
	21. 0	22. 6	22. 6	22. 1	20. 9	19. 1	16. 3	14. 7	13. 4	
4	66. 1	28. 8	28 1	27 3	26. 4	26. 6	26. 8	29. 1	28. 7	32. 2
+44°	30. 1	31. 6	30 3	29. 6	28. 6	27 3	26. 0	24. 8	22. 3	20. 8
	21. 0	21. 8	22. 5	22. 2	20. 9	18. 3	15. 8	14. 5	13. 3	
5	66. 0	29. 3	28. 5	27. 4	25. 9	26. 7	27. 5	28. 7	26. 7	32. 6
+37°	29. 5	29. 9	29. 6	29. 1	27. 4	26. 5	25. 2	23. 4	21. 5	19. 3
	19. 4	20. 5	21. 7	21. 1	19. 5	17 4	14. 9	13. 5	12. 7	
6	65. 6	28. 7	27 9	26. 8	25. 3	26. 6	27. 6	27. 3	28. 3	29. 3
+30°	27. 5	28. 6	26. 7	25. 6	24. 5	23. 5	21. 9	20. 5	18. 6	17. 2
	16. 8	18. 2	19. 3	18. 4	17. 2	15. 0	12. 8	10. 9	10. 1	
7	65. 1	27. 7	27. 2	26. 6	25. 9	25. 4	24. 9	22. 4	27. 1	29. 1
+23°	23. 7	27. 3	24. 1	22. 9	20. 9	20. 4	18. 6	18. 1	15. 2	13. 3
	13. 8	15. 4	16. 5	15. 3	13. 7	11. 7	9. 9	8. 2	7. 4	
8	64. 0	23 9	23. 3	22. 5	21. 6	20. 8	19 8	22. 7	25. 3	31. 3
+17°	23. 8	26. 9	23 4	19. 2	15. 9	15. 8	15. 2	17. 0	9. 4	7. 9
	8. 6	10 4	11 4	9. 9	7. 4	6. 2	4. 6	3. 4	2. 7	
9	62. 7	18. 9	18. 1	17. 2	16. 0	14. 7	13. 0	20. 1	21. 5	28. 3
+12°	19. 4	23. 7	20 2	15. 0	11. 1	9. 5	11. 3	13. 0	4. 2	0. 7
	0. 7	1 5	1 8	0. 7	-0. 8	-1 6	-2. 6	-3. 1	-3. 1	
10	62. 3	12. 2	11. 6	10. 8	7. 9	9. 8	9. 8	5. 4	9. 1	12. 5
+6°	5. 9	9 3	8. 1	5. 6	4. 6	2 9	1. 6	0. 9	-0. 5	-2. 1
	-2. 2	-2 7	-3 0	-3. 3	-3. 7	-3. 8	-4. 4	-4. 6	-4. 7	
11	62. 5	13. 4	12. 7	11. 8	10. 7	9. 7	8. 4	9. 3	7. 6	12. 0
0°	4 1	7 7	3 9	1 9	-0. 0	0 3	-0 9	0. 8	-2. 0	-2. 7
	-3 0	-2 8	-3 0	-3. 5	-4. 0	-4 1	-4 4	-4. 6	-4. 5	
12	62. 5	11 6	10 4	8. 6	5. 7	5 5	5 3	10. 3	8. 4	11. 4
−6°	3 9	7 8	4 8	2 2	1. 3	0 2	0 1	1 1	-1 9	-2. 4
	-2. 9	-2. 3	-2 6	-2 9	-3. 6	-3 7	-4. 1	-4. 2	-4. 7	
13	62. 6	13 3	12 2	10 7	8 4	7 8	7 0	11 2	9 1	10. 4
−12°	6. 7	7 2	6 1	4 9	3 7	3 6	2 2	2 2	0. 1	-0. 7
	-1. 4	-0. 4	-0 3	-0. 8	-1. 5	-2 1	-3. 2	-3. 6	-3. 7	
14	62. 5	10 3	9 7	8. 1	5. 6	5 2	4 7	8 3	5 7	10. 6
−17°	4 3	6 2	3 3	1 9	0. 1	-0 4	-0 6	0 7	-2. 0	-2 7
	-3 8	-3. 0	-3 5	-3. 4	-4 0	-4 1	-4 3	-4 4	-4. 8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12C

LTA TAPE 12C

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.5	11.5	10.2	8.4	5.0	5.3	5.4	10.7	9.4	15.3
ANGLE −23°	5.5	10.9	6.2	3.5	0.3	-0.2	0.3	2.3	-2.8	-3.6
	-3.7	-3.7	-3.7	-4.2	-4.1	-4.3	-4.6	-4.4	-4.7	
16	62.8	12.8	11.5	9.5	5.8	5.5	5.3	11.1	9.8	15.5
−30°	5.2	11.2	7.1	3.9	0.2	0.0	0.5	2.2	-2.0	-2.9
	-3.4	-3.4	-3.4	-3.7	-3.7	-3.9	-4.3	-3.9	-4.3	
17	62.9	14.1	12.9	11.4	9.0	7.9	6.2	12.1	10.9	15.7
−37°	6.1	11.8	7.4	4.0	1.0	0.4	1.2	3.0	-1.6	-2.5
	-3.4	-2.7	-3.2	-3.5	-3.3	-3.5	-3.7	-3.5	-3.8	
18	63.2	15.3	14.3	12.9	10.8	9.6	8.0	13.5	12.4	16.8
−44°	8.0	12.5	8.0	4.4	1.6	-0.4	1.2	4.1	-0.6	-1.8
	-2.8	-2.2	-2.4	-2.9	-2.8	-3.2	-3.2	-2.7	-3.0	
19	63.5	16.4	15.3	13.9	11.7	10.4	8.4	14.8	12.9	17.5
−53°	8.2	12.2	8.3	4.1	3.3	1.2	2.4	6.0	2.5	1.8
	0.2	0.4	-0.3	-0.6	-0.5	-0.9	-0.9	-0.2	-0.9	
20	63.8	16.7	16.7	16.6	16.6	15.4	13.8	18.3	16.2	19.3
−64°	12.5	13.9	13.3	14.2	11.8	13.0	12.7	12.9	12.7	12.0
	10.6	9.5	7.9	6.8	5.8	5.5	4.8	5.3	4.5	
21	64.0	16.2	17.1	17.9	18.6	17.5	16.1	19.7	18.0	19.5
−84°	15.6	19.1	17.7	19.4	17.3	18.1	17.9	16.8	17.8	16.7
	15.1	13.9	12.2	10.6	9.6	9.5	9.0	9.9	9.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET

GROUP 12C

LTA TAPE 12C

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	65.7	31.7	31.0	30.1	29.1	28.5	27.8	28.7	30.0	30.7
ANGLE +84°	29.3	29.0	28.6	30.6	27.9	26.5	25.0	24.4	21.5	20.3
	20.3	20.5	21.4	20.6	19.5	17.5	15.2	12.9	11.8	
2	66.3	31.1	30.9	30.7	30.5	30.6	30.8	30.5	29.5	33.1
+64°	31.4	31.2	30.6	31.7	29.2	28.9	27.9	25.6	23.1	21.6
	21.6	22.8	23.2	22.0	20.7	18.9	16.4	14.4	13.1	
3	66.1	28.3	28.8	29.3	29.7	30.1	30.4	31.2	27.0	32.1
+53°	31.5	32.0	30.4	30.9	29.6	28.1	27.4	25.3	22.8	21.3
	21.0	22.6	22.6	22.1	20.9	19.1	16.3	14.7	13.4	
4	66.1	28.8	28.1	27.3	26.3	26.6	26.8	29.0	28.6	32.2
+44°	30.1	31.6	30.3	29.7	28.5	27.4	25.9	24.8	22.3	20.8
	21.0	21.8	22.5	22.1	20.9	18.3	15.8	14.5	13.3	
5	65.9	29.4	28.5	27.3	25.8	26.8	27.6	28.9	26.8	32.7
+37°	29.2	30.0	29.6	29.3	27.1	26.5	25.1	23.4	21.5	19.1
	19.4	20.5	21.7	21.2	19.5	17.5	14.9	13.5	12.7	
6	65.6	29.0	28.0	26.8	25.0	26.6	27.7	27.5	28.1	29.3
+30°	27.8	28.7	26.6	25.7	24.4	23.4	22.0	20.5	18.8	17.2
	16.8	18.2	19.3	18.5	17.1	15.0	12.9	10.9	10.2	
7	65.0	27.3	26.8	26.3	25.7	25.3	24.9	22.7	27.0	29.0
+23°	24.1	27.0	24.3	22.9	21.1	19.9	18.5	17.9	15.1	13.6
	13.7	15.4	16.6	15.3	13.7	11.8	9.8	8.3	7.4	
8	64.0	23.9	23.3	22.5	21.5	21.1	20.6	22.9	25.5	31.3
+17°	23.8	26.9	23.5	19.3	16.0	15.6	15.2	16.9	9.4	8.0
	8.6	10.7	11.5	9.9	7.5	6.1	4.7	3.4	2.8	
9	62.7	19.0	18.3	17.4	16.3	15.2	13.7	20.4	21.6	28.3
+12°	19.3	23.7	20.2	15.0	11.1	9.5	11.2	13.0	4.2	0.9
	0.7	1.4	1.8	0.6	-0.8	-1.5	-2.5	-3.0	-3.0	
10	62.3	15.4	14.5	13.3	11.8	12.1	12.3	11.0	11.4	13.4
+6°	7.4	9.7	9.0	6.0	4.9	3.2	1.7	1.2	-0.3	-1.9
	-1.9	-2.7	-3.0	-3.2	-3.7	-3.8	-4.5	-4.5	-4.8	
11	62.5	22.3	21.5	20.5	19.3	18.8	18.4	17.8	16.8	17.0
0°	11.2	11.6	8.8	5.9	4.7	4.0	2.2	2.6	-0.2	-1.3
	-1.9	-2.3	-2.6	-3.1	-3.6	-3.7	-4.1	-4.4	-4.4	
12	62.5	14.0	12.9	11.4	8.9	9.3	9.6	11.6	10.3	12.4
−6°	5.4	8.6	5.5	3.0	2.2	0.4	0.3	1.3	-1.6	-2.2
	-2.8	-2.3	-2.6	-2.9	-3.7	-3.7	-4.1	-4.2	-4.7	
13	62.6	14.1	13.0	11.5	9.2	9.0	8.7	11.5	8.7	10.8
−12°	6.7	7.1	5.8	4.9	4.0	3.3	2.3	2.2	0.4	-0.5
	-1.2	-0.5	-0.3	-0.8	-1.5	-2.4	-3.1	-3.5	-3.8	
14	62.5	15.4	14.1	12.0	9.1	9.2	10.2	10.6	8.6	11.9
−17°	6.2	7.4	4.9	2.6	0.9	0.4	0.4	0.7	-1.4	-2.6
	-3.6	-3.0	-3.4	-3.3	-3.9	-4.1	-4.2	-4.4	-4.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 12C

LTA TAPE 12C

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.5	13.2	11.9	10.0	6.6	7.5	8.2	11.3	10.1	15.6
ANGLE −23°	6.1	11.1	6.4	3.6	0.3	0.1	0.5	2.4	-2.7	-3.4
	-3.7	-3.7	-3.7	-4.1	-4.2	-4.2	-4.5	-4.4	-4.6	
16	62.8	13.1	11.8	9.9	6.6	6.9	7.2	11.9	10.3	15.7
−30°	5.7	11.2	7.3	4.0	0.6	0.3	0.4	2.3	-1.9	-3.0
	-3.4	-3.4	-3.4	-3.7	-3.7	-3.9	-4.3	-3.9	-4.3	
17	62.7	14.1	13.0	11.4	9.1	7.9	6.3	12.1	10.9	15.7
−37°	6.1	11.7	7.5	4.1	1.1	0.4	1.2	3.0	-1.6	-2.5
	-3.5	-2.7	-3.2	-3.5	-3.3	-3.5	-3.7	-3.6	-3.8	
18	63.2	15.4	14.3	12.9	10.8	9.6	7.9	13.6	12.4	16.8
−44°	7.9	12.5	8.0	4.5	1.6	-0.4	1.3	4.1	-0.6	-1.8
	-2.7	-2.3	-2.4	-2.9	-2.8	-3.2	-3.2	-2.7	-3.0	
19	63.5	16.4	15.3	13.9	11.7	10.4	8.4	14.8	12.9	17.5
−53°	8.2	12.2	8.3	4.1	0.3	1.2	2.4	6.0	2.5	1.8
	0.2	0.4	-0.3	-0.6	-0.5	-0.9	-0.9	-0.2	-0.9	
20	63.8	16.7	16.7	16.6	16.6	15.4	13.8	18.3	16.2	19.3
−64°	12.5	13.9	13.3	14.2	11.8	13.0	12.7	12.9	12.7	12.0
	10.6	9.5	7.9	6.8	5.8	5.5	4.8	5.3	4.5	
21	64.0	16.2	17.1	17.9	18.6	17.5	16.1	19.7	18.0	19.5
−84°	15.6	19.1	17.7	19.4	17.3	18.1	17.9	16.8	17.8	16.7
	15.1	13.9	12.2	10.6	9.8	9.5	9.0	9.9	9.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 12C

GROUP 12C

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30 5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	62.7	13.1	12.5	11.7	10.7	11.2	11.6	11.6	10.9	9.5
ANGLE −71.3°	7.2	9 2	8.1	6.3	5.3	3.9	4 3	4.0	3.4	2.9
	1.9	1.5	0.3	-1.1	-1.5	-0.9	-1.9	-2.4	-3.1	
2	62.6	16.6	15 1	12.9	7.9	10.2	11.6	13.0	3.7	10.4
−66°	8.6	4.4	4.7	2.4	3.9	2.0	3.0	-0.1	0.5	0.3
	-0.0	-0.8	-1.6	-2.9	-2.3	-2.7	-3.6	-3.4	-3.9	
3	62.7	14.9	14.0	13.0	11.7	12.5	13.1	8.7	11.1	10.7
−61.6°	3.6	6.0	5.9	3.8	1.5	1.5	0.0	-0.7	-0.9	-1.7
	-2.1	-2.4	-2.2	-3.3	-3.0	-3.8	-3.6	-3.8	-4.1	
4	62.7	15.3	14.0	12.3	9.3	12.4	14.2	13.3	10.4	3.5
−57.8°	4.7	5.3	2.5	0.7	1.6	0.5	-0.7	-1.7	-1.8	-1.9
	-3.2	-2.6	-3.1	-3.3	-3.6	-4.1	-4.2	-4.2	-4.5	
5	62.7	13.2	12.4	11.5	10.2	8.5	5.4	7.9	9.0	9.1
−54.3°	6.3	3.5	3.6	2.2	0.7	-2.1	-0.1	-1.4	-1.7	-3.5
	-3.4	-3.3	-3.9	-3.5	-4.1	-4.7	-4.5	-4.5	-4.7	
6	62.7	11.0	9.9	8.4	6.1	7 8	9.1	5.0	10.0	10.5
−51.1°	7.7	5.7	7.2	6.7	0.1	1.9	0.8	-0.8	-0.8	-2.5
	-2.5	-2.9	-3.1	-3.3	-3.7	-4.2	-4.1	-4.7	-4.2	
7	63.3	35.5	34.5	33.2	31.5	31.2	30.9	28.5	34.8	35.0
−48.1°	31.4	26.0	27.5	23.2	19.5	18.1	18.7	16.6	15.1	12.1
	10.3	8.5	6.6	5.5	5.6	3.6	3.2	2.3	2.8	
8	66.1	40.0	39.7	39.4	39.1	40.4	41.5	37.7	40.4	40.1
−45.3°	39.5	34.1	31.8	28.9	27.5	26.5	26.6	23.7	21.0	19.3
	17.3	15.7	14.3	13.3	12.2	10.9	11.5	10.7	10.9	
9	68.0	43.6	42.7	41.6	40.1	43.0	44.7	37.9	38.2	38.3
−42.6°	32.8	34.7	32.5	30.5	28.6	27.8	25.8	24.7	22.1	17.8
	17.7	16.3	15.0	14.7	13.4	13.2	13.2	12.9	12.8	
10	68.4	42.0	40.9	39.4	37.1	36.3	35.5	34.3	36.4	40.1
−40.0°	33.4	35.3	33.8	30.0	28.5	26.9	26.6	25.4	21.4	17.2
	15.5	14.9	13.9	13.1	12.5	12.6	12.0	11.8	12.6	
11	68.2	41.1	39.6	37.4	32.5	32.2	31.8	37.8	36.4	40.8
−37.5°	36.4	36.7	34.2	28.9	27.9	27.1	27.4	28.3	18.8	17.1
	16.0	14.2	12.8	12.3	11.4	11.3	11.5	12.2	12.9	
12	67.0	44.8	43.5	41.7	38.5	40.6	42.0	38.6	40.6	41.0
−35.1°	39.1	35.1	32.3	28.9	27.8	27 8	27.0	27.3	19.7	18.4
	15.6	14.4	12.6	12.2	11.5	9.7	10.5	10.8	10.3	
13	64.1	35.1	35.4	35.6	35.9	38 5	40.2	33.7	37.2	36.5
−32.8°	33.1	29.8	27.3	24.4	23.2	23.2	21.9	21.1	16.1	13.8
	12.1	10.2	8.4	7.6	7.2	5.9	5.0	4.6	4 5	
14	62.5	19.9	21 2	22.2	23.1	26.3	28.2	22.9	22.8	22.8
−30.5°	20 0	18.4	15.9	14.4	11.1	10.5	8.5	8.2	4.3	3.0
	2.2	-0 2	-1 2	-1.6	-2.3	-2.5	-3.2	-3.5	-3.4	
15	62.3	10.1	10.8	11 4	11.9	11 5	11.0	5.3	5.4	11.9
−28.3°	3 9	8.5	5 8	2 8	2 1	0 1	-0.2	0.3	-2.4	-3.7
	-2.8	-3.8	-3 9	-4 7	-4.6	-4.9	-5.3	-4.9	-5.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.3	12.3	11.2	9.6	7.2	7.1	7.1	8.3	11.3	12.2
ANGLE −26.1°	4.8	6.9	5.9	5.3	1.1	1.8	−0.4	1.5	−1.8	−3.1
	−3.1	−4.1	−4.3	−4.7	−4.9	−4.8	−4.9	−5.0	−5.3	
17	62.2	13.9	12.7	10.9	8.1	9.5	10.6	8.9	6.4	10.3
−24.0°	4.5	6.6	5.5	2.5	1.9	0.4	−0.1	−0.9	−3.1	−4.3
	−3.6	−3.6	−3.8	−5.1	−4.1	−4.9	−5.4	−5.0	−4.4	
18	62.2	6.0	6.7	7.4	7.9	6.9	5.6	6.0	11.6	10.1
−21.8°	4.6	7.4	4.5	4.3	2.7	1.2	1.6	−0.4	−1.8	−2.0
	−3.2	−4.1	−3.5	−5.0	−4.5	−4.8	−5.3	−5.1	−5.3	
19	62.2	13.0	11.7	9.7	6.1	7.0	7.8	6.9	8.2	10.8
−19.8°	4.6	7.9	6.4	1.9	2.4	1.5	0.4	−0.8	−1.7	−2.9
	−3.4	−4.1	−3.6	−4.5	−4.2	−4.3	−5.1	−4.9	−5.4	
20	62.2	4.1	4.8	5.4	5.9	6.5	7.0	5.6	8.9	11.8
−17.7°	3.3	6.2	5.2	3.8	1.4	−0.6	−0.4	1.0	−1.7	−3.8
	−3.6	−3.7	−3.7	−4.3	−4.1	−4.7	−5.0	−4.6	−4.8	
21	62.1	14.4	13.3	11.7	9.1	8.3	7.3	6.9	7.2	12.9
−15.7°	2.8	8.4	5.2	3.1	3.1	0.7	0.7	0.4	−1.1	−3.2
	−4.1	−3.0	−4.3	−4.6	−4.3	−4.5	−5.3	−5.2	−5.5	
22	62.2	10.5	10.5	10.5	10.6	10.0	9.4	5.8	7.3	13.0
−13.7°	4.7	8.2	7.6	4.1	1.8	1.1	0.3	1.1	−1.8	−2.4
	−3.6	−3.5	−3.8	−4.2	−4.3	−4.8	−4.5	−5.3	−4.9	
23	62.2	8.8	9.2	9.6	10.0	8.9	7.5	3.2	9.0	11.2
−11.7°	7.2	9.6	8.2	3.8	3.1	1.4	1.5	1.0	−0.4	−2.0
	−3.1	−4.0	−3.7	−3.7	−3.7	−4.3	−4.7	−5.1	−4.8	
24	62.2	18.9	17.8	16.4	14.3	12.4	8.8	7.6	9.1	12.3
−9.7°	7.2	11.0	6.6	5.4	4.4	3.6	1.9	2.2	−0.8	−1.5
	−2.5	−2.8	−3.0	−3.2	−3.5	−3.9	−4.1	−4.8	−5.2	
25	62.3	17.0	16.8	16.7	16.5	15.6	14.4	9.9	10.6	12.2
−7.8°	8.9	8.4	8.9	6.7	5.0	4.5	2.0	1.7	0.4	−1.4
	−3.4	−2.5	−2.6	−3.1	−3.0	−3.5	−4.2	−4.5	−4.2	
26	62.3	15.1	13.7	11.6	7.3	11.0	13.0	14.9	14.4	13.2
−5.8°	7.5	9.5	10.3	7.3	4.7	1.8	0.6	1.6	0.3	−0.6
	−1.5	−2.8	−2.3	−2.9	−3.4	−3.7	−4.2	−3.9	−4.4	
27	62.2	14.1	13.1	11.8	9.9	12.4	14.0	4.1	8.4	13.2
−3.9°	5.4	10.7	8.3	6.7	4.2	3.5	1.9	1.5	0.3	−0.9
	−1.7	−2.8	−3.4	−2.6	−3.6	−3.7	−4.2	−4.9	−4.6	
28	62.3	12.0	11.4	10.7	9.8	9.6	9.3	5.5	6.5	11.0
−1.9°	7.7	8.6	7.7	5.6	4.9	3.3	0.4	0.6	−0.7	−3.2
	−2.8	−3.4	−2.9	−2.5	−3.9	−3.9	−4.2	−4.5	−4.9	
29	62.3	15.9	15.0	13.9	12.5	10.5	6.8	4.6	6.9	12.3
0°	9.2	9.4	8.4	5.2	4.7	3.6	2.0	0.9	−0.6	−2.0
	−1.6	−2.1	−3.0	−3.9	−3.3	−4.2	−4.8	−4.3	−4.9	
30	62.3	12.7	11.5	9.8	7.0	7.6	8.0	4.8	10.8	14.4
+1.9°	6.0	10.5	9.4	5.7	5.6	2.9	1.1	1.1	−1.0	−1.6
	−1.0	−1.6	−2.5	−3.7	−3.6	−3.6	−4.4	−4.8	−5.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.3	16.5	16.0	15.4	14.7	13.5	11.8	13.3	15.4	15.8
ANGLE +3.9°	7.0	8.6	9.4	6.4	4.5	2.5	2.8	1.6	-0.0	-2.1
	-2.4	-3.1	-3.5	-3.2	-3.8	-3.7	-4.5	-4.4	-4.8	
32	62.1	18.0	17.1	15.9	14.3	15.3	16.0	14.7	9.7	12.6
+5.8°	7.9	10.1	9.1	4.8	5.7	4.3	2.2	1.0	-0.1	-3.3
	-2.7	-3.3	-3.3	-3.7	-4.6	-4.1	-4.9	-4.6	-4.5	
33	62.2	16.0	15.5	14.9	14.2	12.5	9.6	9.2	9.1	13.1
+7.8°	9.4	10.4	9.8	6.3	4.0	2.8	1.8	0.6	-2.5	-2.7
	-3.2	-4.1	-3.9	-3.6	-4.2	-4.7	-4.6	-4.9	-4.6	
34	62.2	9.5	9.0	8.3	7.6	9.8	11.3	12.0	12.8	13.9
+9.7°	5.2	7.7	8.9	6.6	4.3	1.9	0.8	0.6	-1.0	-2.7
	-3.8	-4.7	-4.2	-4.7	-4.5	-4.4	-4.5	-5.0	-4.7	
35	62.2	15.8	14.8	13.6	11.8	13.2	14.2	12.4	11.0	13.3
+11.7°	5.3	9.5	9.0	7.0	5.2	3.0	3.0	-0.1	-1.9	-2.7
	-3.7	-4.1	-4.5	-3.9	-4.3	-4.4	-5.4	-5.4	-5.0	
36	62.2	14.3	13.3	11.9	9.8	9.5	9.2	3.5	6.3	13.7
+13.7°	8.2	9.7	8.9	4.8	4.1	1.2	1.4	0.8	-1.4	-3.4
	-4.1	-2.9	-4.6	-4.0	-4.6	-5.1	-5.4	-5.7	-5.3	
37	62.2	11.7	11.0	10.2	9.2	8.8	8.5	7.0	8.0	14.7
+15.7°	6.5	9.8	9.8	4.5	3.5	0.9	1.4	1.6	-0.9	-3.3
	-4.0	-3.6	-3.7	-4.2	-5.1	-4.3	-4.8	-5.0	-4.7	
38	62.2	10.3	10.4	10.5	10.6	8.9	6.1	5.2	5.7	14.1
+17.7°	6.0	8.7	9.4	4.4	4.3	1.2	0.8	0.6	-1.7	-3.5
	-4.4	-3.9	-3.9	-4.2	-4.8	-5.4	-5.4	-5.4	-5.6	
39	62.2	12.2	11.6	11.0	10.3	9.6	8.7	6.2	8.6	14.7
+19.8°	6.4	9.4	8.9	5.1	4.3	1.0	1.3	0.6	-1.8	-4.1
	-3.8	-4.3	-4.4	-3.8	-4.4	-5.2	-5.2	-5.0	-5.2	
40	62.3	11.3	10.5	9.5	8.2	8.6	8.9	7.8	9.0	14.6
+21.8°	6.2	9.2	9.4	6.1	4.7	1.2	1.3	0.4	-1.0	-3.5
	-3.4	-4.3	-3.7	-4.5	-4.6	-4.6	-6.0	-5.3	-5.6	
41	62.4	15.7	14.8	13.5	11.7	12.5	13.2	8.3	11.5	14.3
+24.0°	7.8	8.5	8.3	4.4	4.2	1.4	1.1	1.0	-1.1	-3.5
	-3.9	-4.1	-4.0	-4.1	-4.6	-5.0	-5.6	-5.2	-5.2	
42	62.5	10.7	10.3	9.9	9.4	10.9	12.1	5.1	11.0	13.1
+26.1°	8.6	5.8	8.1	5.8	4.5	2.6	0.6	0.1	-1.6	-3.4
	-4.1	-4.4	-3.8	-3.8	-4.6	-4.4	-4.5	-5.1	-4.4	
43	62.6	14.3	13.5	12.5	11.2	13.2	14.6	10.6	10.8	13.3
+28.3°	8.0	7.3	8.0	5.7	4.3	2.3	1.2	0.6	-1.1	-3.1
	-3.8	-3.8	-3.7	-4.1	-4.9	-4.5	-4.6	-5.2	-4.5	
44	62.7	12.3	11.8	11.2	10.5	12.8	14.4	9.5	11.4	11.0
+30.5°	8.2	5.4	7.3	5.4	2.7	0.5	0.6	-1.1	-1.9	-2.5
	-3.8	-3.8	-3.4	-4.1	-3.8	-4.5	-4.4	-4.7	-4.8	
45	62.8	14.4	13.5	12.4	10.8	9.5	7.8	4.8	7.0	10.4
+32.8°	7.2	5.6	6.5	3.4	2.4	-1.1	-0.4	-0.4	-1.2	-2.7
	-3.4	-3.4	-4.1	-3.2	-4.1	-4.4	-4.4	-5.1	-4.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.8	5.7	7.0	8.0	8.8	9.1	9.5	6.9	5.4	6.9
ANGLE +35.1°	5.2	2.3	6.0	4.8	1.7	0.1	-1.2	-1.1	-2.9	-3.6
	-4.0	-4.3	-3.5	-4.0	-4.0	-4.1	-4.6	-4.6	-4.8	
47	62.8	11.9	11.7	11.5	11.3	10.3	9.1	7.7	7.1	9.1
+37.5°	4.7	5.1	2.0	2.6	0.2	-0.8	-0.5	-2.6	-2.3	-3.2
	-3.6	-4.3	-3.8	-4.1	-3.6	-4.2	-4.4	-5.0	-4.8	
48	62.7	4.0	6.4	8.0	9.1	8.6	8.1	8.9	4.5	11.2
+40.0°	6.0	6.8	5.2	2.5	0.6	-1.1	-1.0	-0.7	-3.0	-2.8
	-3.8	-3.3	-3.3	-4.3	-3.8	-4.3	-4.6	-4.8	-4.5	
49	62.6	10.2	10.0	9.7	9.5	8.2	6.5	7.9	6.5	12.6
+42.6°	3.9	8.4	6.1	2.9	0.7	0.8	-0.3	-0.1	-2.4	-4.1
	-3.4	-3.9	-3.7	-4.2	-4.8	-4.4	-4.9	-5.0	-4.7	
50	62.7	18.0	17.5	16.9	16.2	14.4	11.5	5.9	10.8	13.6
+45.3°	5.7	10.0	9.3	3.9	3.1	2.8	1.6	-0.5	-2.0	-3.5
	-3.4	-4.0	-3.0	-4.0	-4.3	-4.2	-4.8	-4.3	-4.5	
51	62.8	13.9	14.5	15.1	15.5	15.8	16.1	3.4	9.8	12.4
+48.1°	9.1	7.4	6.7	5.2	4.2	2.8	0.1	-0.8	-1.4	-2.6
	-2.0	-3.2	-2.9	-3.8	-4.2	-3.9	-4.0	-4.5	-4.8	
52	63.0	17.2	16.6	16.0	15.3	15.2	15.1	7.4	9.4	9.6
+51.1°	9.3	6.4	4.7	5.3	3.8	3.4	1.9	-0.4	-0.5	-1.5
	-2.5	-3.2	-1.7	-3.3	-4.0	-3.9	-4.2	-3.9	-4.7	
53	63.2	16.1	15.7	15.2	14.8	16.8	18.1	2.9	11.8	13.4
+54.3°	10.4	9.0	6.0	8.2	6.9	5.5	4.1	2.6	1.0	-0.2
	-0.5	-2.0	-2.3	-2.6	-2.8	-3.4	-3.4	-4.0	-3.5	
54	63.4	29.9	29.4	28.9	28.2	31.7	33.6	26.5	28.3	28.4
+57.8°	24.8	23.1	19.3	19.6	19.6	19.4	17.7	13.3	10.2	7.6
	6.7	7.3	4.7	3.4	1.6	1.0	0.8	-1.5	-0.2	
55	64.7	44.6	43.4	41.8	39.1	43.3	45.3	36.7	40.3	38.4
+61.6°	33.6	30.4	23.2	29.8	28.6	25.9	23.9	19.7	19.3	18.8
	15.5	14.9	12.9	13.4	11.3	12.0	11.8	8.2	10.6	
56	67.4	51.8	50.2	47.7	41.4	42.7	43.8	37.7	40.0	36.0
+66.0°	33.4	31.2	32.8	32.5	27.8	29.1	26.4	23.6	23.8	20.4
	19.3	17.1	17.5	15.5	15.1	14.2	14.5	13.5	14.0	
57	68.4	48.4	47.0	44.8	40.5	41.0	41.5	39.7	39.7	39.1
+71.3°	34.3	34.9	33.3	32.1	28.6	29.9	27.3	24.2	23.7	21.9
	20.3	18.8	17.5	16.1	14.3	14.3	14.2	14.4	14.9	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

GROUP 12C

STA TAPE 12I

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	52.9 20.6 5.7	28.0 20.0 5.3	27.2 17.8 4.2	26.4 16.1 3.7	25.3 13.9 3.2	23.8 12.4 2.8	21.3 11.0 2.6	20.8 9.1 2.4	21.5 7.7 2.3	22.2 6.6
2 +64°	53.4 22.7 6.7	30.2 22.2 6.2	29.2 19.9 5.0	28.0 17.7 4.7	26.2 15.2 4.1	24.7 14.0 3.6	22.5 12.6 3.3	22.0 10.7 3.1	23.1 9.3 3.1	23.9 7.6
3 +53°	53.2 23.0 6.0	31.5 22.2 5.8	30.3 20.1 4.7	28.5 18.5 4.1	25.4 17.2 3.6	24.6 15.0 3.0	23.7 13.7 2.8	22.6 11.7 2.6	23.9 9.6 2.6	23.8 7.8
4 +44°	53.2 23.7 6.4	30.3 22.0 5.6	29.3 20.5 4.5	28.1 18.0 3.6	26.4 16.8 3.4	25.3 15.8 2.8	23.9 13.7 2.6	21.9 11.8 2.5	23.7 9.6 2.3	23.9 7.5
5 +37°	53.0 21.3 5.5	27.0 20.2 4.9	26.0 18.0 3.5	24.5 15.6 3.0	22.4 14.3 2.9	21.6 13.0 2.3	20.6 11.4 2.1	19.7 9.8 2.0	21.2 8.1 1.9	21.2 6.2
6 +30°	52.0 19.8 4.3	25.5 17.8 3.7	24.6 16.5 2.1	23.3 14.2 2.0	21.4 12.3 1.9	19.9 10.8 1.3	17.7 9.7 1.3	17.4 7.9 1.0	18.2 6.2 1.0	20.1 4.6
7 +23°	52.3 15.5 2.7	24.6 14.5 2.1	23.5 13.2 0.7	22.0 11.7 0.6	19.7 10.2 0.8	18.1 8.2 0.3	15.4 7.1 0.3	15.0 5.2 0.1	16.1 3.6 0.1	17.7 2.7
8 +17°	51.2 10.1 -0.3	23.0 8.6 -0.7	21.7 7.2 -1.8	20.0 6.3 -1.6	17.1 5.3 -1.6	15.6 3.7 -1.9	13.0 2.0 -1.8	11.7 1.0 -1.9	11.8 -0.4 -2.0	12.2 -0.8
9 +12°	49.7 1.9 -4.2	18.0 0.6 -4.1	17.0 0.3 -4.5	15.7 -1.5 -4.6	13.8 -2.2 -4.6	11.7 -2.3 -4.6	7.7 -3.8 -4.7	5.0 -4.0 -4.7	4.2 -4.2 -4.8	4.3 -4.3
10 +6°	49.3 -3.1 -5.2	7.3 -3.0 -5.2	6.2 -2.8 -5.6	4.8 -4.5 -5.5	2.6 -4.7 -5.6	2.6 -4.6 -5.6	2.6 -5.2 -5.6	-2.1 -5.4 -5.7	-1.5 -5.5 -5.7	-1.1 -5.4
11 0°	49.3 -3.6 -4.6	5.4 -3.3 -4.6	4.6 -3.1 -5.1	3.6 -4.6 -5.0	2.3 -4.8 -5.1	2.2 -4.8 -5.1	2.0 -4.9 -5.2	-2.8 -4.8 -5.1	-1.2 -5.2 -5.1	-1.4 -4.9
12 −6°	49.5 -2.4 -4.8	6.0 -3.1 -4.7	5.0 -3.4 -5.1	3.7 -4.1 -5.0	1.9 -4.4 -5.0	1.8 -4.9 -5.1	1.6 -4.7 -5.2	-2.0 -5.0 -5.0	-1.7 -4.9 -5.1	-0.9 -5.1
13 −12°	49.6 0.1 -4.5	6.7 -0.9 -4.4	5.9 -1.3 -5.0	4.9 -2.8 -4.8	3.6 -3.3 -4.8	3.1 -3.7 -4.8	2.6 -4.1 -4.9	-0.4 -4.4 -4.9	0.9 -4.6 -5.0	1.5 -4.8
14 −17°	49.4 -3.0 -5.2	5.1 -3.7 -5.3	4.2 -3.3 -5.3	3.0 -4.7 -5.3	1.3 -5.1 -5.3	1.9 -4.7 -5.4	2.3 -4.9 -5.4	-2.1 -5.1 -5.4	-0.9 -5.2 -5.4	-1.6 -5.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 12C

STA TAPE 121

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

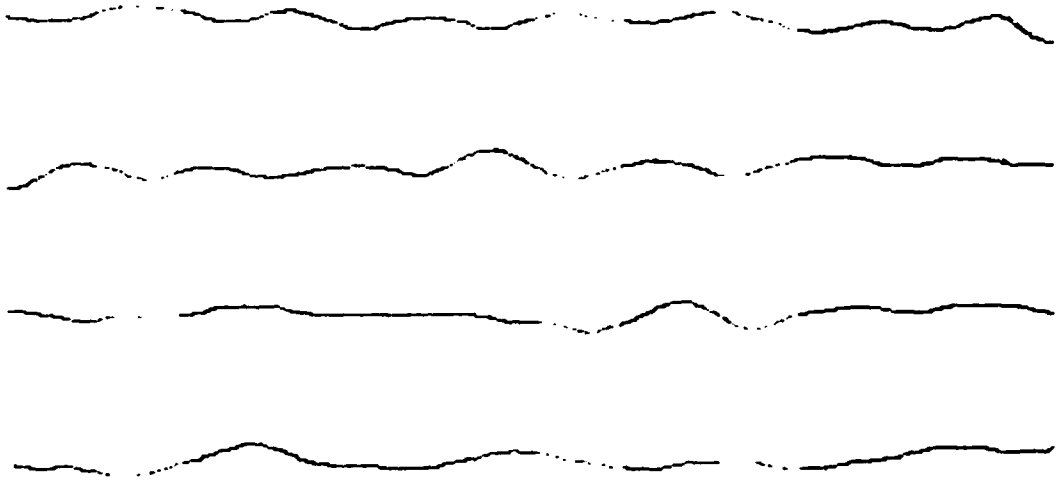
	D.C.	19.0	24.0	30.2	38.1	48.0	60.5	76.2	96.0	121
	152	192	242	305	384	484	609	768	967	1220
	1540	1940	2440	3070	3870	4880	6140	7740	9750	
ELEVATION 15	49.4	6.7	5.5	4.0	1.4	1.7	2.1	-2.3	-1.2	-1.5
ANGLE −23°	-4.3	-3.9	-3.8	-4.8	-5.2	-5.0	-5.5	-5.2	-5.4	-5.4
	-5.1	-5.0	-5.4	-5.3	-5.1	-5.3	-5.3	-5.3	-5.4	
16	49.8	6.6	5.5	4.1	1.9	1.8	1.8	-1.5	-1.4	-1.6
−30°	-3.1	-3.5	-3.8	-4.5	-4.4	-4.5	-4.7	-4.7	-5.0	-4.9
	-4.6	-4.4	-4.8	-4.7	-4.6	-4.7	-4.8	-4.7	-4.8	
17	49.9	6.3	5.3	3.9	1.9	1.7	1.6	-2.7	-1.3	-1.1
−37°	-3.4	-3.5	-3.1	-3.6	-4.3	-4.4	-4.7	-4.7	-4.7	-4.5
	-4.0	-4.0	-4.6	-4.6	-4.5	-4.5	-4.5	-4.6	-4.7	
18	50.0	6.9	5.8	4.4	2.3	2.2	2.2	-2.0	-1.3	-1.0
−44°	-2.9	-2.5	-3.2	-3.8	-4.1	-3.5	-4.1	-4.2	-4.3	-4.2
	-3.7	-3.8	-4.0	-4.2	-4.2	-4.2	-4.3	-4.3	-4.3	
19	50.4	7.6	6.6	5.2	3.3	3.3	3.4	-0.2	-0.4	0.0
−53°	-1.7	-1.6	-1.6	-2.3	-2.8	-2.6	-2.8	-3.1	-3.0	-3.0
	-2.8	-2.6	-3.1	-3.0	-3.0	-3.1	-3.1	-3.3	-3.4	
20	50.7	12.2	11.8	11.5	11.1	11.0	10.9	8.8	8.0	6.8
−64°	6.6	4.6	3.8	3.2	2.9	3.2	2.6	1.3	1.3	1.2
	1.6	1.8	1.2	0.7	1.0	1.0	0.6	0.4	0.6	
21	50.9	15.6	15.5	15.3	15.2	15.3	15.4	13.1	12.5	10.9
−84°	10.0	8.1	7.5	6.7	6.1	7.1	6.4	5.4	5.5	5.1
	5.6	5.6	5.0	4.7	4.7	4.8	4.4	4.2	4.3	

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 12C

BEARING VS TIME

MEAN & VAR 319.9 1.63 319.6 1.87 319.4 1.59 320.2 2.09

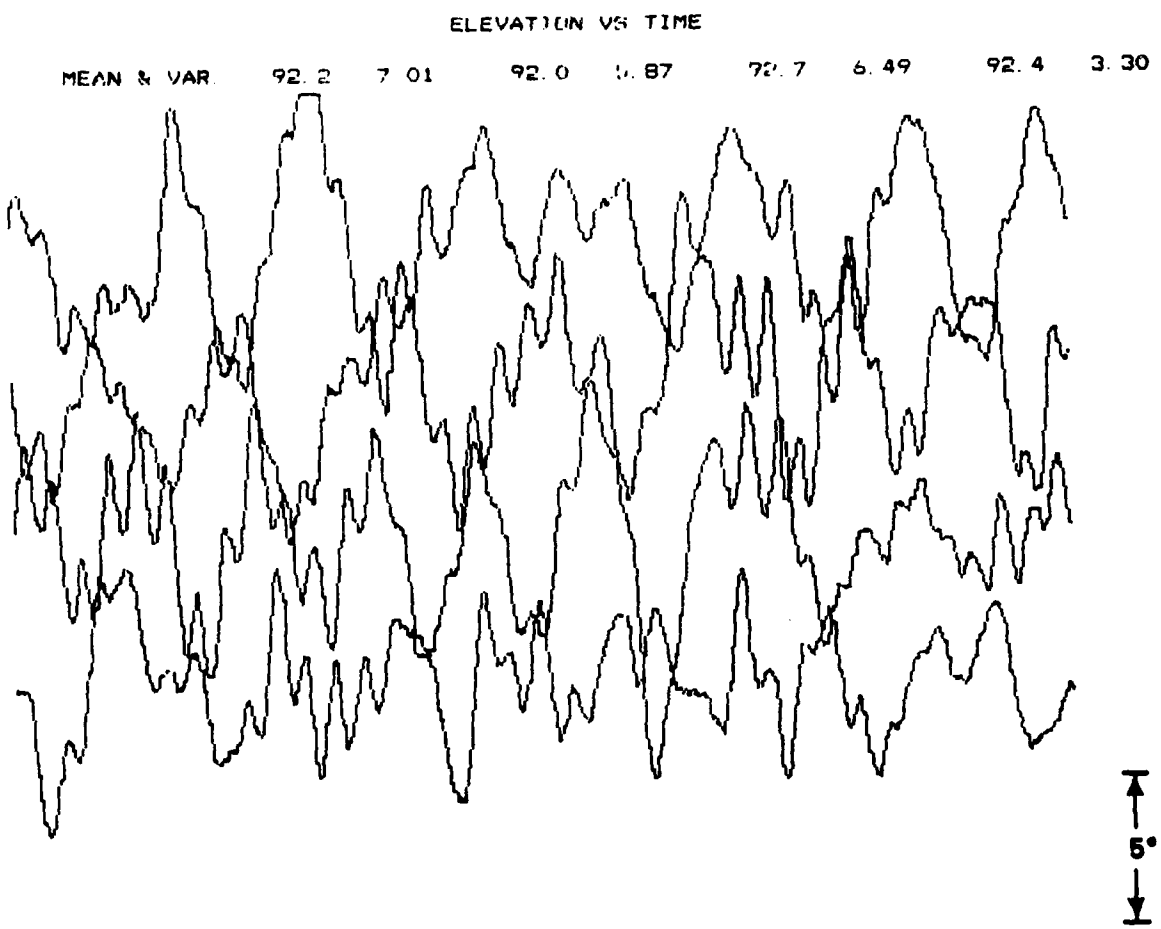


26°

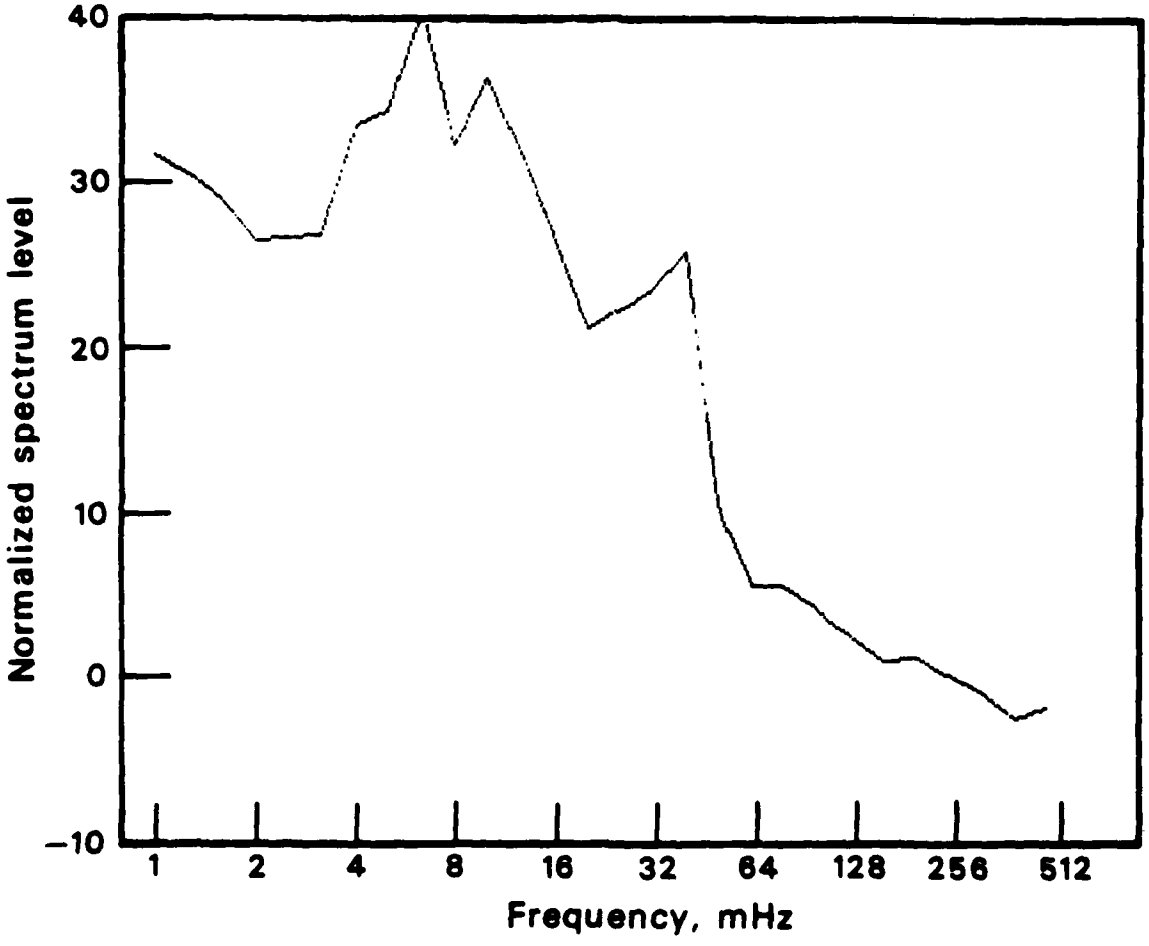
1024 SECONDS

MPL-M-5084

GROUP 12C



MPL-M-5085



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 12D

Environmental Summary

12 June 1978

Tapes	Start time	Code
LTA/LOG	12:16:02	12D
STA	12:16:35	12J

Low Band Filter

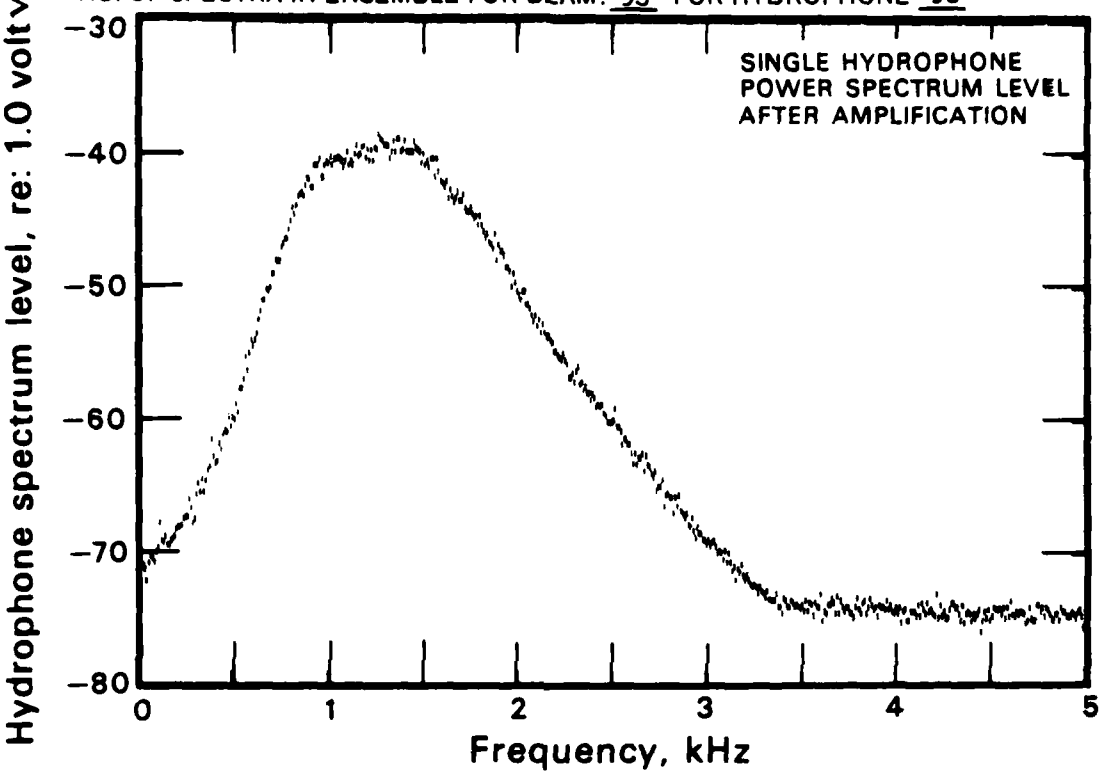
Environment

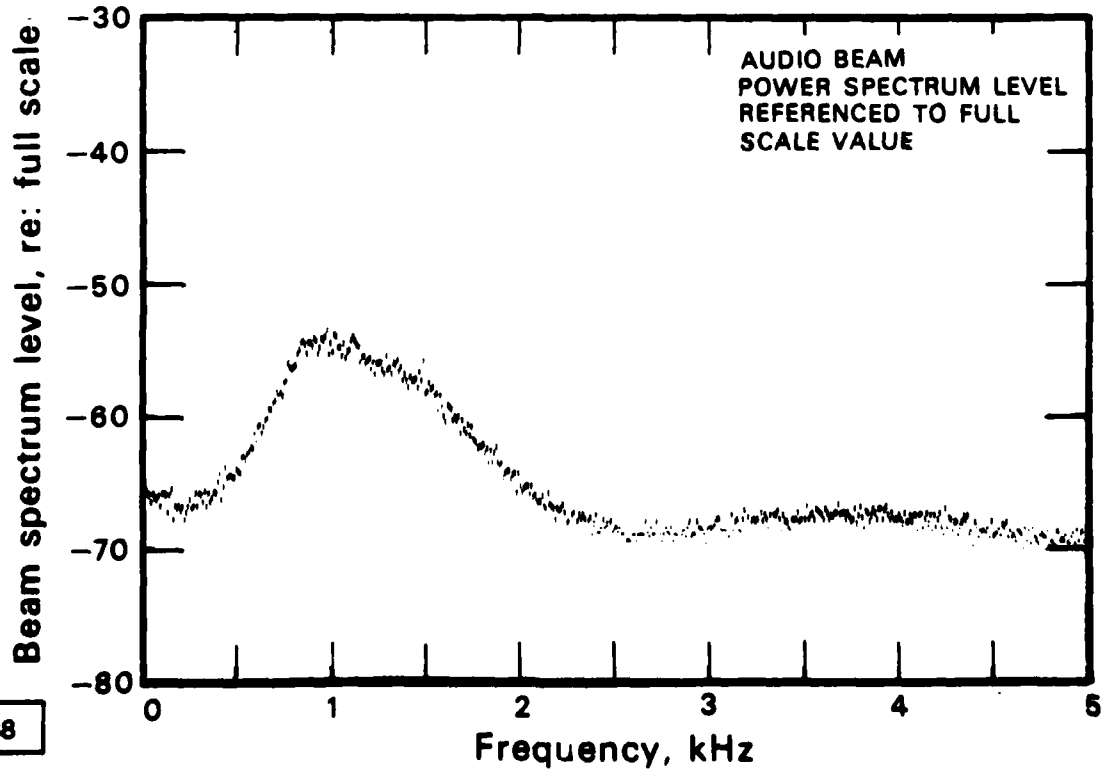
Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
12:00	600	15	330	5-7	6-7	NW	Chop

MPL-M-5087

12-JUN-78 12:28:50 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 289.2
RELATIVE ELEVATION 80.0 TRUE BEARING 249.0 TRUE ELEVATION 81.1
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: −10.4 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 93 FOR HYDROPHONE 96

GROUP 12D





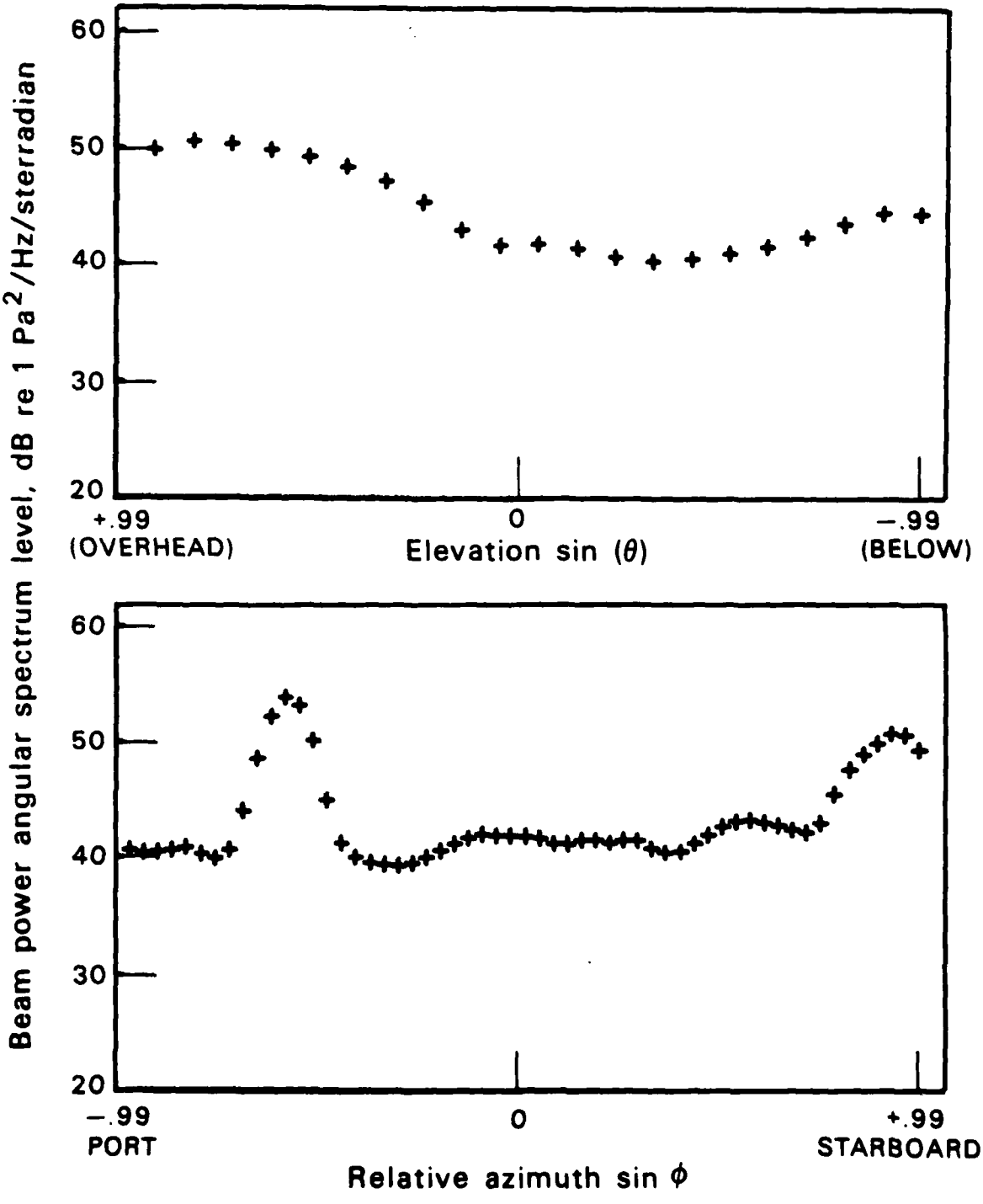
MPL-M-5088

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 12D

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

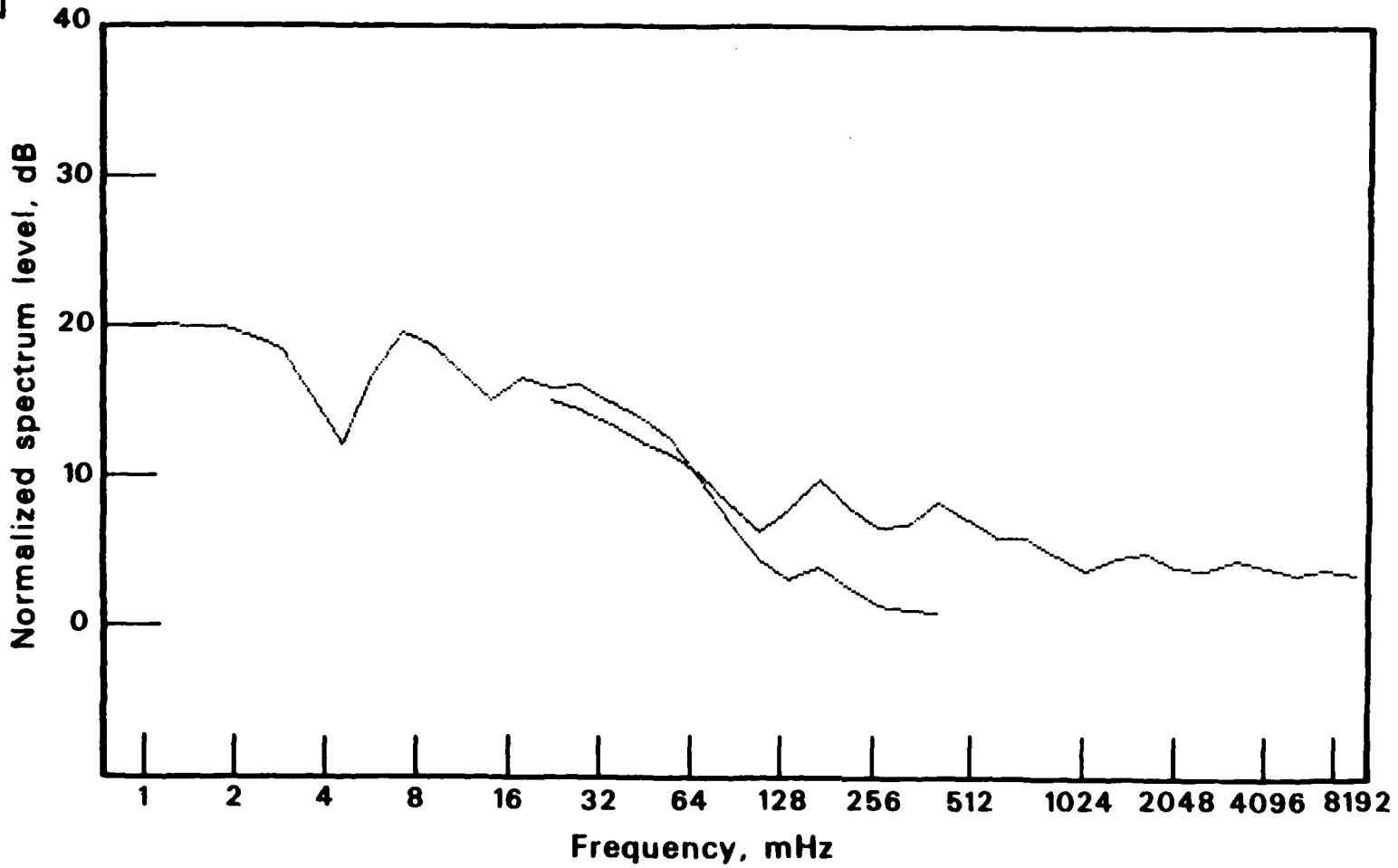
POWER HAS BEEN CORRECTED FOR DIMUS NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-5089

MPL-M-5090

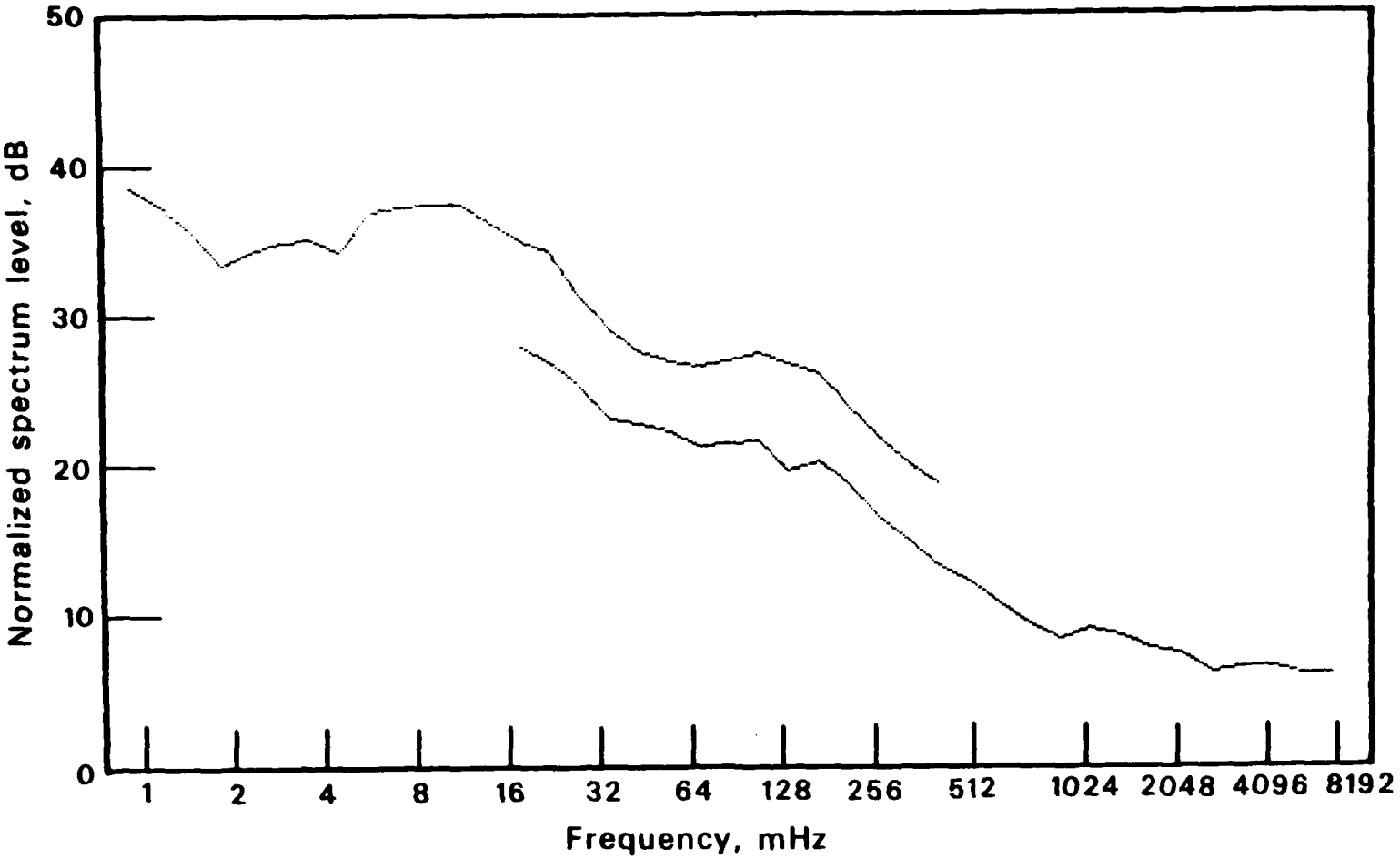
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 12D

MPL-M-5091

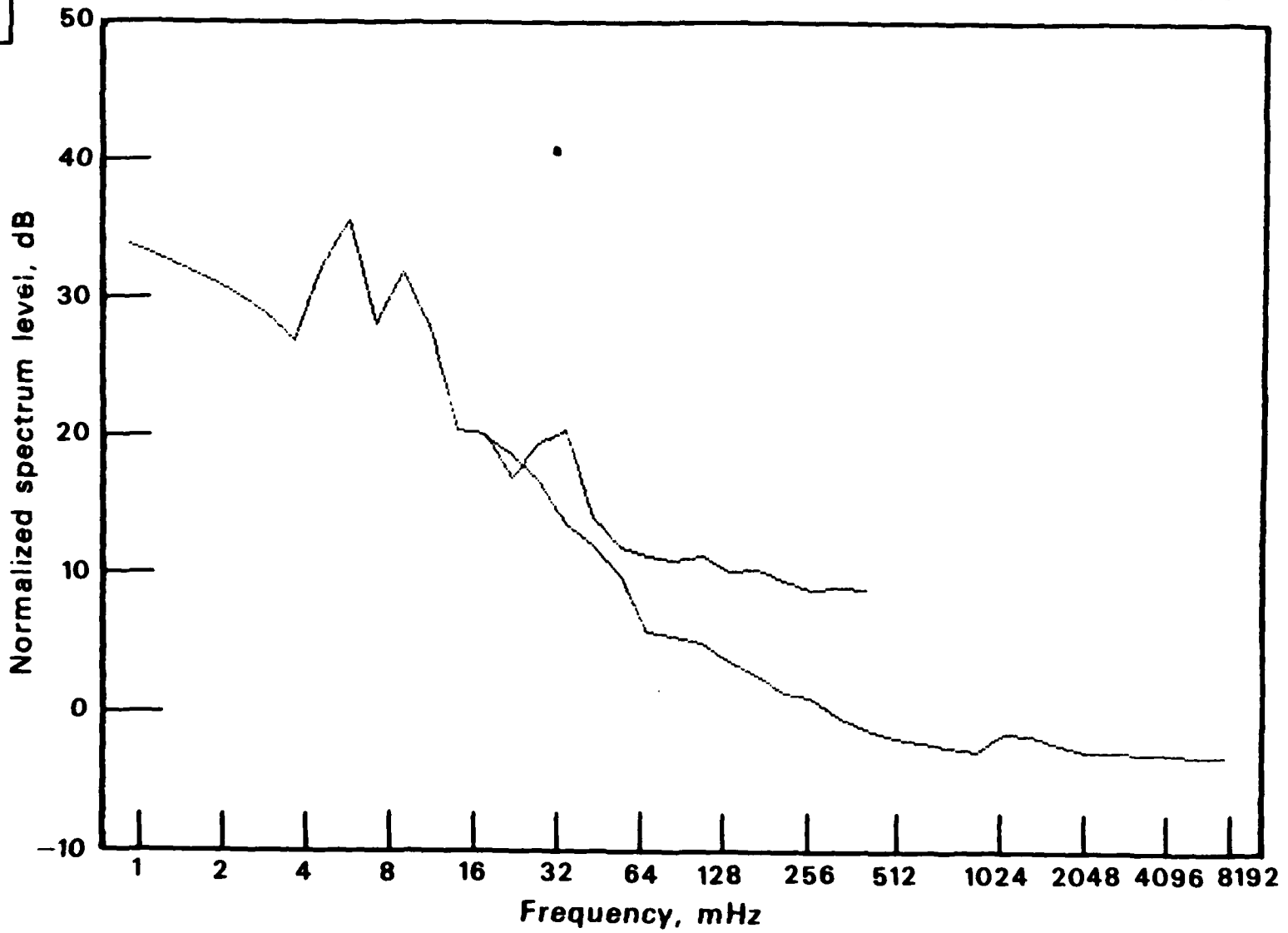
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12D

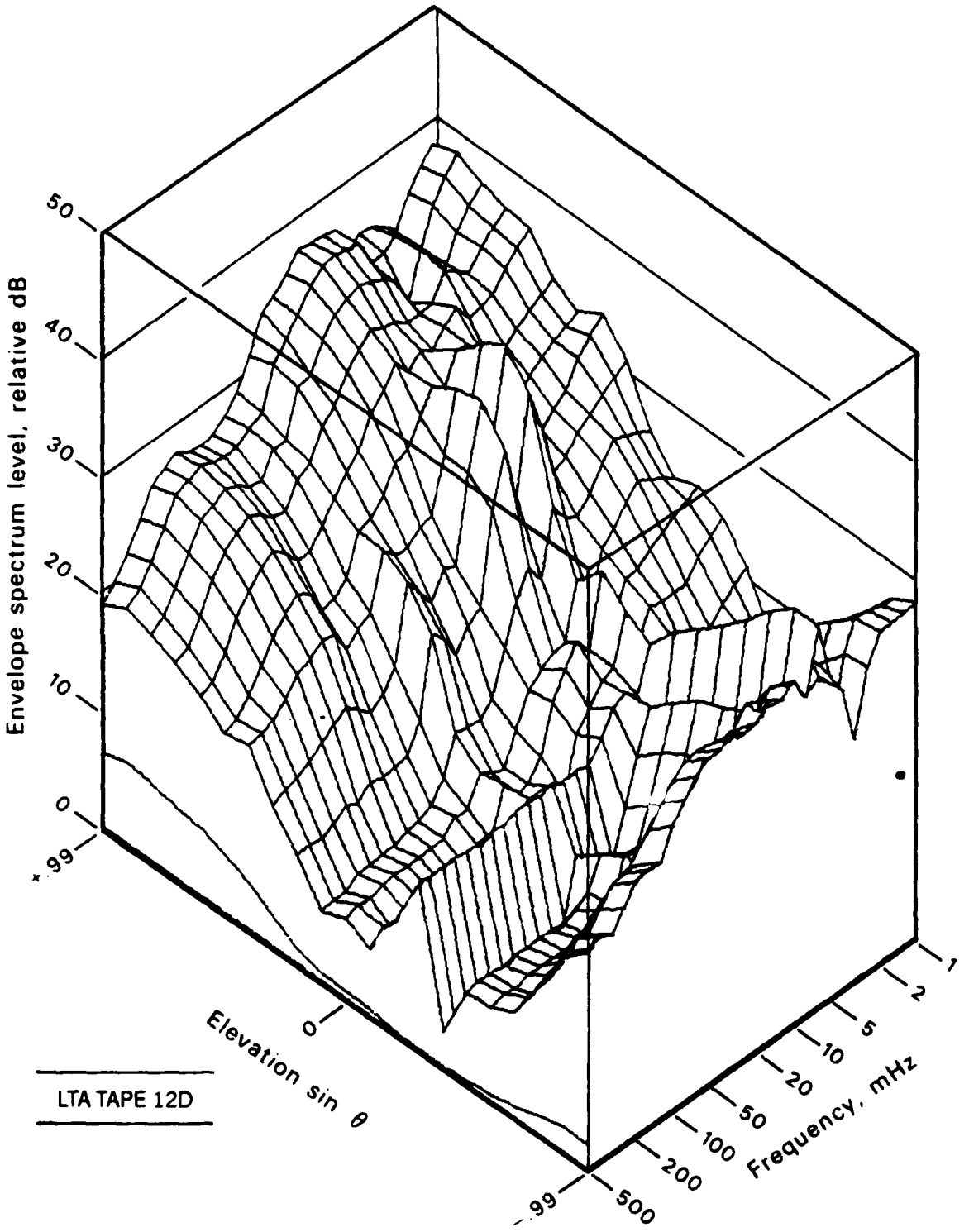
MPL-M-5092

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12D

GROUP 12D

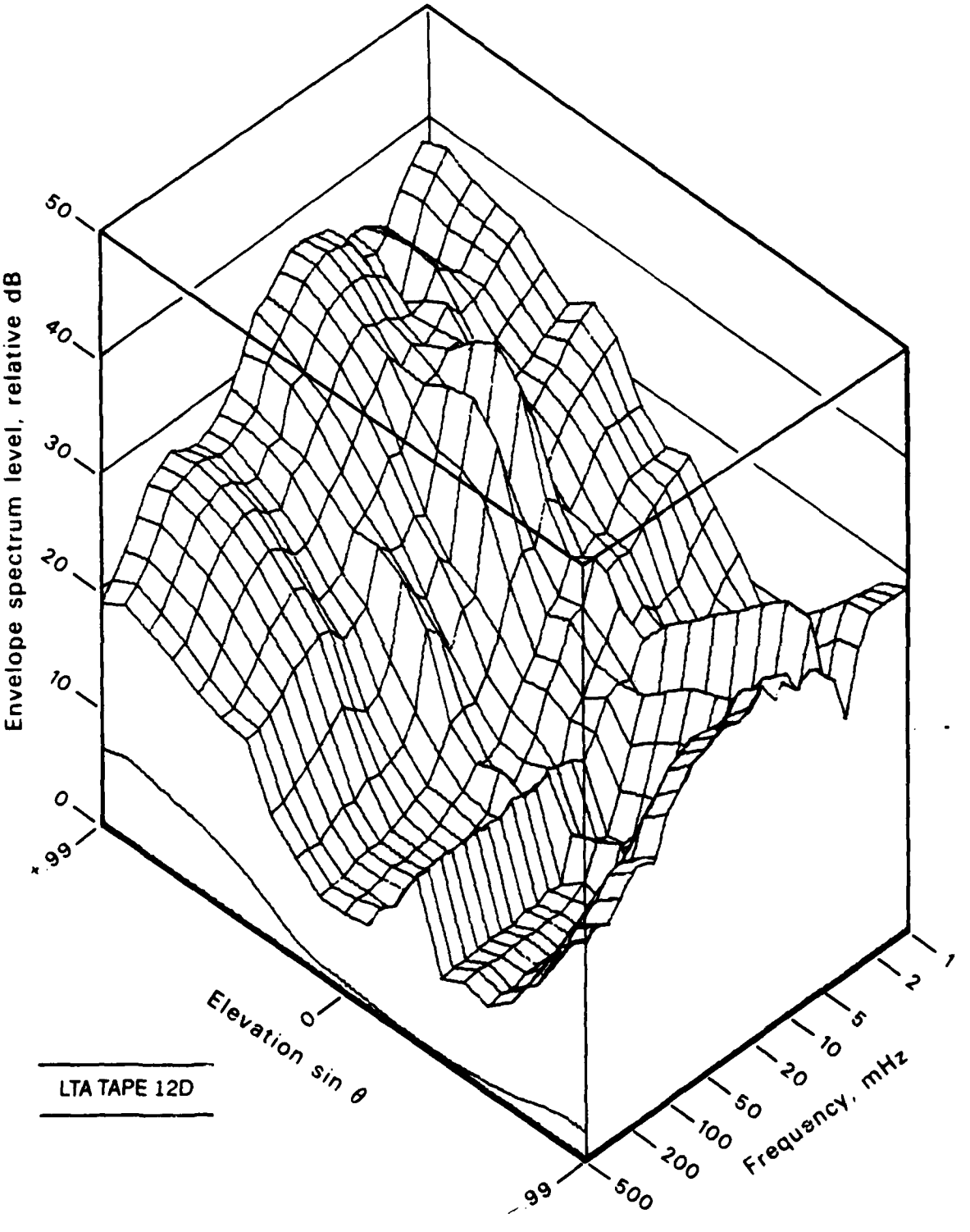


LTA TAPE 12D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-5093

GROUP 12D

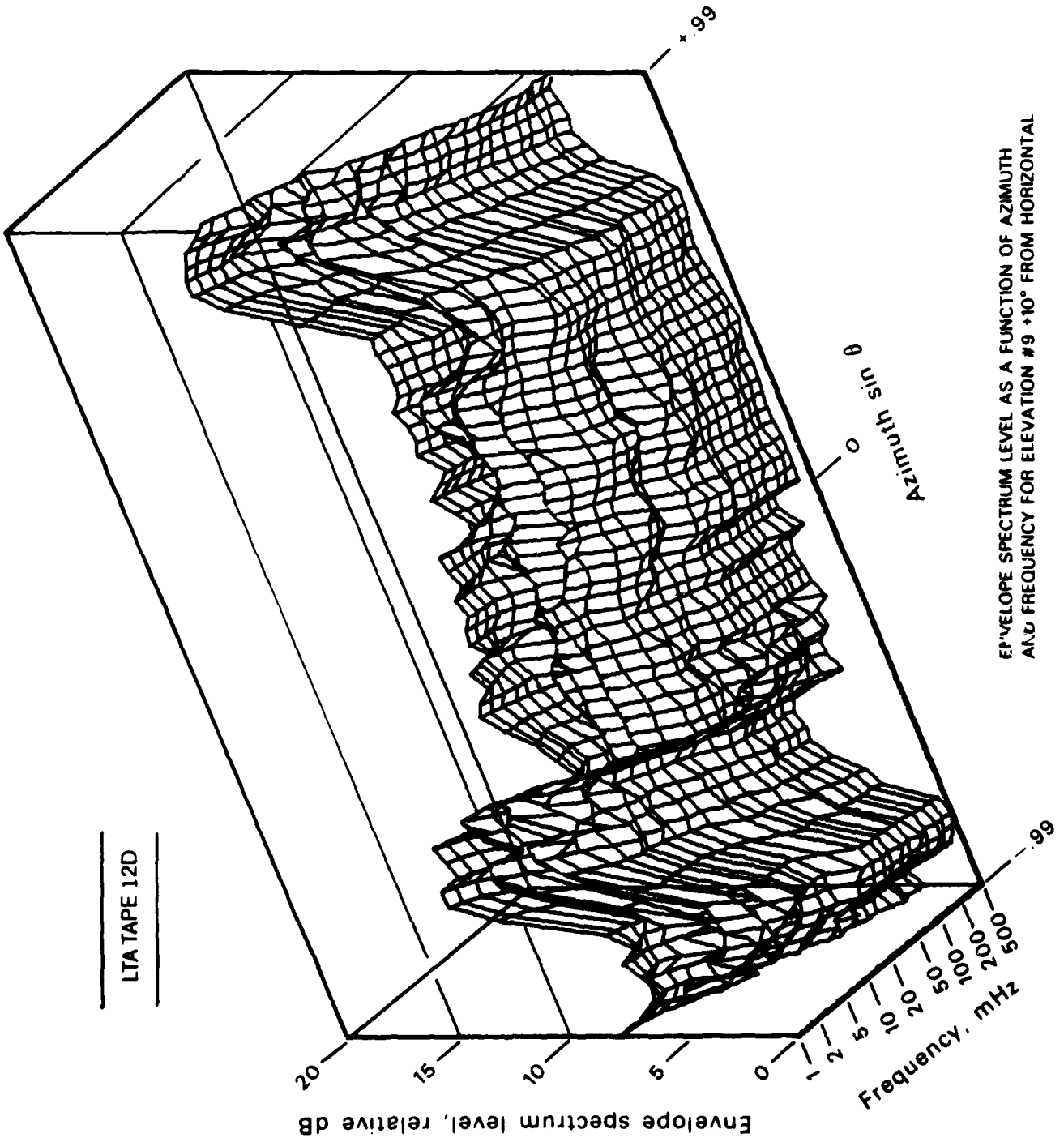


LTA TAPE 12D

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA TRUE BEARING STABILIZED BEAM SET

MPL-M-5094

GROUP 12D

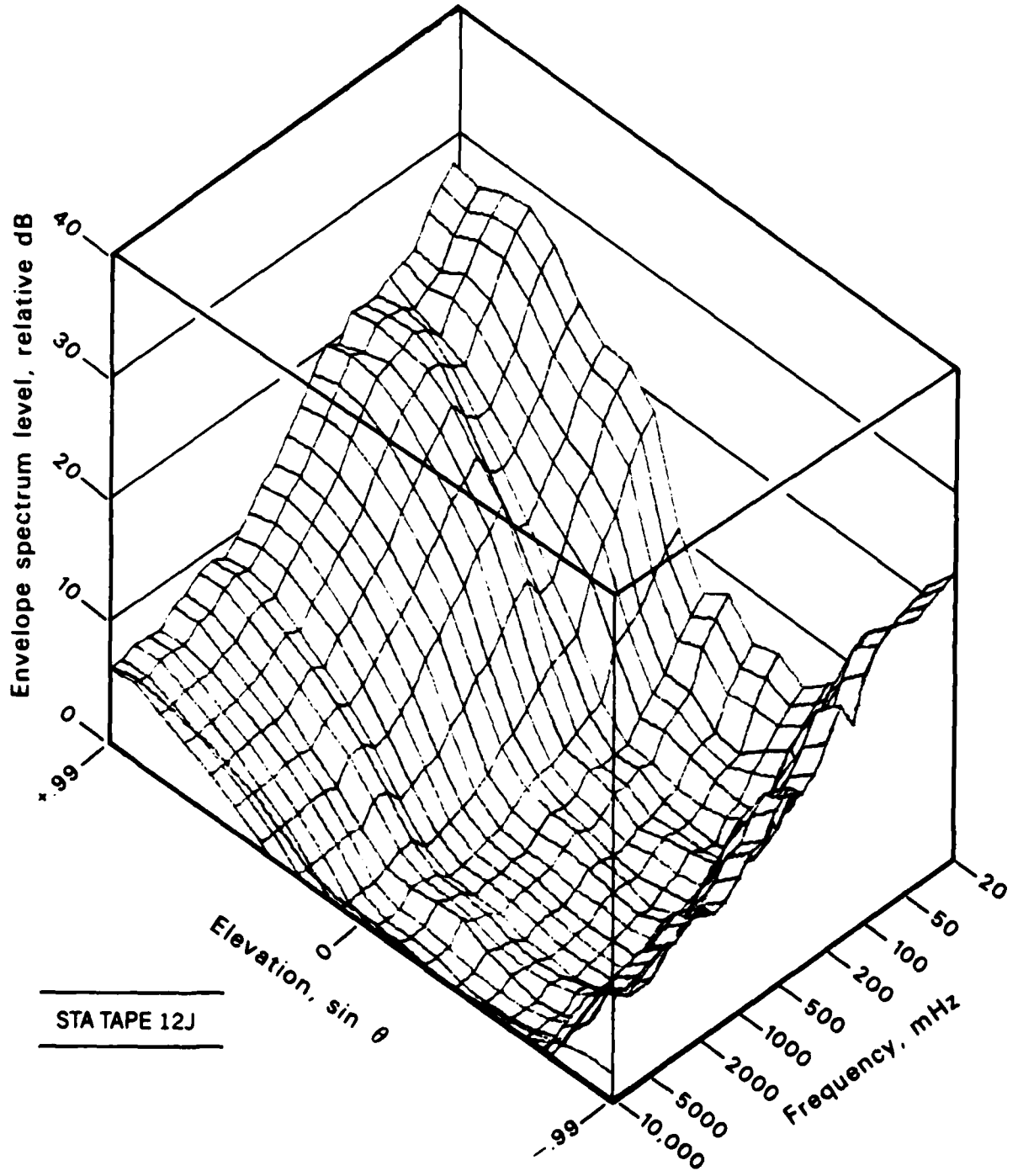


ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

LTA TAPE 12D

MPL-M-5095

GROUP 12D



STA TAPE 12J

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-5096

GROUP 12D

LTA TAPE 12D

AGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 1 ANGLE +84°	69.5 35.4 24.8	36.7 35.5 24.9	35.5 35.6 25.6	33.9 34.2 25.0	31.5 33.1 24.3	32.5 32.4 22.1	33.3 29.6 20.0	33.4 27.1 18.1	32.2 25.8 17.0	35.1 24.9
2 +64°	70.2 35.6 25.2	37.4 35.9 25.5	36.2 35.7 25.9	34.4 34.7 25.4	31.3 33.0 25.0	32.8 31.7 22.8	34.0 30.2 20.6	33.1 26.7 19.1	33.1 26.2 18.2	35.4 25.3
3 +53°	69.9 34.5 24.1	36.3 34.8 25.0	35.2 34.5 25.4	33.6 33.7 24.7	31.1 32.4 24.3	33.0 30.1 22.1	34.3 29.7 20.0	30.4 25.9 18.2	32.9 25.9 17.3	33.9 24.0
4 +44°	69.5 32.5 23.0	35.7 32.7 24.1	34.8 33.3 24.5	33.7 32.3 23.8	32.3 31.1 23.0	33.2 28.9 21.2	34.0 27.9 19.0	31.9 25.4 17.0	31.8 24.7 16.4	31.7 22.8
5 +37°	69.0 31.6 20.8	35.3 30.4 22.2	34.4 32.0 23.0	33.4 30.3 22.3	32.0 27.0 21.1	31.7 26.6 19.5	31.4 25.4 17.3	32.9 23.9 15.5	32.1 22.3 15.0	30.8 20.9
6 +30°	68.3 29.9 17.9	32.5 30.6 20.2	31.9 28.8 20.9	31.2 26.7 19.8	30.4 26.2 18.6	29.6 24.2 16.8	28.7 23.0 15.1	30.7 22.6 13.7	32.0 19.4 13.3	32.3 18.3
7 +23°	67.4 28.5 16.1	31.2 31.8 18.2	30.7 27.1 18.4	30.2 22.6 17.5	29.6 22.3 16.9	28.7 21.3 15.6	27.5 21.3 14.4	27.1 22.5 14.0	31.0 17.9 13.9	34.5 17.2
8 +17°	66.0 28.1 12.2	32.5 32.3 13.2	31.4 27.0 14.1	30.1 19.7 13.3	28.2 20.1 12.5	27.3 18.0 11.6	26.2 19.6 10.9	26.5 21.3 10.6	31.2 14.7 10.0	35.6 13.0
9 +12°	64.6 24.9 9.0	30.0 29.6 8.8	29.3 25.2 9.2	28.5 17.6 8.2	27.6 16.8 8.6	26.7 15.0 7.7	25.5 17.1 7.3	24.8 18.3 7.4	29.4 11.5 7.3	33.1 9.3
10 +6°	63.9 19.3 5.8	25.5 21.0 5.7	26.0 18.7 5.2	26.5 15.5 5.0	26.9 12.0 5.0	25.6 10.9 4.8	23.8 11.0 4.1	22.4 11.1 4.1	23.1 8.1 3.9	24.8 6.5
11 0°	63.9 15.4 5.9	22.8 15.2 5.8	23.6 14.5 5.7	24.3 13.4 5.7	24.7 10.7 5.7	23.7 8.1 5.4	22.2 8.7 5.1	21.2 9.3 5.2	17.0 7.0 4.8	19.9 6.9
12 −6°	63.8 16.2 4.7	23.7 17.7 4.4	23.2 16.0 4.7	22.6 13.8 4.9	21.9 9.9 5.2	21.1 8.3 4.6	20.2 7.8 3.7	20.1 9.7 4.7	17.5 5.7 3.7	22.2 5.7
13 −12°	63.5 16.2 6.5	22.4 15.6 7.7	21.6 14.1 8.0	20.5 12.6 7.2	19.1 8.1 6.8	19.0 9.5 7.9	19.0 8.5 6.6	19.2 10.0 7.4	16.6 7.5 7.3	20.2 6.8
14 −17°	63.9 15.3 12.5	19.7 16.2 12.0	18.9 15.6 12.2	17.9 13.7 12.2	16.7 12.2 12.1	16.3 12.3 12.2	15.8 11.9 12.2	17.9 12.8 12.1	15.7 12.4 12.2	18.9 12.6

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12D

LTA TAPE 12D

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.4	15.4	16.2	16.8	17.3	14.9	8.5	14.6	17.2	21.5
ANGLE −23°	12.7	16.5	12.9	9.2	5.5	5.4	5.3	8.0	2.9	2.9
	1.8	2.2	1.5	1.9	1.9	1.4	1.2	1.3	1.0	
16	63.6	15.6	17.3	18.6	19.5	16.9	9.0	15.0	18.8	23.3
−30°	16.3	18.3	14.8	11.0	7.6	7.9	9.0	9.7	7.2	6.4
	5.9	6.0	6.1	6.0	6.1	5.9	6.0	6.2	5.9	
17	63.9	16.9	18.8	20.1	21.2	18.6	11.3	15.5	20.7	25.0
−37°	17.2	20.0	16.1	12.2	8.9	9.4	9.2	11.3	7.5	7.8
	6.4	6.8	6.5	6.6	6.6	6.6	6.2	6.4	6.1	
18	64.3	19.2	20.7	21.8	22.7	20.0	11.9	17.3	22.9	27.0
−44°	18.0	20.8	16.5	13.8	10.7	11.1	10.6	13.7	10.8	10.6
	9.6	8.9	8.0	8.6	8.5	8.0	7.1	7.6	7.1	
19	65.0	22.6	23.3	24.0	24.6	21.8	12.1	19.7	24.2	29.2
−53°	21.1	21.9	19.0	20.7	17.9	18.0	17.4	19.4	18.3	17.6
	16.4	15.2	13.1	13.8	13.5	12.4	11.0	11.6	10.8	
20	65.6	25.9	26.1	26.3	26.5	24.0	17.6	23.4	26.2	30.9
−64°	25.0	25.5	24.2	25.7	24.0	23.8	24.3	24.4	24.2	23.4
	22.1	20.7	18.2	18.4	18.1	16.7	15.3	15.8	14.8	
21	65.5	27.0	26.9	26.8	26.7	24.3	18.9	23.7	25.7	30.7
−84°	25.3	27.6	26.7	27.4	26.3	26.1	26.7	26.2	26.1	25.3
	24.0	22.4	20.0	20.2	19.8	18.3	16.8	17.3	16.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12D

LTA TAPE 12D

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	69.5	36.7	35.5	34.0	31.5	32.4	33.1	33.2	32.3	35.0
ANGLE +84°	35.4	35.6	35.6	34.4	33.0	32.4	29.6	27.2	25.8	25.0
	24.7	25.0	25.6	25.0	24.3	22.0	20.0	18.2	16.9	
2	70.2	37.4	36.2	34.4	31.3	32.8	33.9	32.9	33.3	35.4
+64°	35.7	36.0	35.7	34.8	33.0	31.7	30.2	26.8	26.2	25.3
	25.2	25.6	25.9	25.3	25.0	22.8	20.7	19.1	18.2	
3	69.7	36.3	35.2	33.6	31.1	33.0	34.3	30.1	33.0	33.9
+53°	34.8	34.8	34.6	33.8	32.4	30.0	29.7	26.0	25.9	24.0
	24.1	25.1	25.4	24.7	24.3	22.1	20.0	18.3	17.4	
4	69.5	35.7	34.8	33.7	32.1	33.1	33.8	31.8	31.4	31.6
+44°	32.6	32.7	33.4	32.4	31.4	28.9	27.8	25.5	24.8	22.8
	23.1	24.2	24.5	23.8	22.9	21.3	19.0	17.1	16.4	
5	69.0	35.2	34.4	33.5	32.3	31.9	31.4	32.9	31.6	30.9
+37°	31.7	30.5	32.2	30.3	29.0	26.8	25.1	24.0	22.2	21.0
	21.0	22.3	22.9	22.3	21.1	19.6	17.3	15.5	14.9	
6	68.3	33.1	32.4	31.7	30.8	29.9	28.9	30.4	32.0	31.9
+30°	30.7	30.4	29.0	26.0	26.3	24.3	22.9	22.3	19.3	18.6
	18.3	20.3	20.9	19.8	18.7	17.3	15.6	14.3	14.1	
7	67.4	31.4	30.9	30.2	27.4	28.7	27.9	27.6	31.2	34.2
+23°	28.9	31.7	27.1	22.2	22.8	21.1	21.3	22.4	17.9	17.0
	16.5	18.1	18.3	17.4	16.9	15.6	14.5	14.0	13.9	
8	66.1	33.0	32.2	31.2	29.9	29.0	27.8	26.9	31.6	35.4
+17°	27.9	32.2	26.8	19.4	20.7	17.8	19.0	20.9	14.7	12.5
	11.8	12.7	13.7	12.5	11.6	10.6	9.7	9.1	8.8	
9	64.6	31.5	30.8	30.0	27.0	27.9	26.5	24.5	29.8	33.2
+12°	25.7	29.6	25.3	18.0	17.7	14.6	17.0	18.1	11.7	9.5
	9.0	8.6	8.9	7.7	7.9	7.1	6.4	6.5	6.5	
10	63.9	27.0	27.1	27.2	27.2	25.9	23.8	22.3	24.1	25.0
+6°	21.5	21.8	19.7	16.2	13.5	11.7	11.9	11.3	9.3	7.5
	7.1	6.3	5.9	5.6	5.6	5.4	4.8	4.6	4.6	
11	63.9	25.0	24.8	24.7	24.6	23.2	21.3	21.8	20.7	21.2
0°	18.8	17.8	15.2	13.7	11.9	9.8	9.1	9.3	7.7	7.3
	5.4	5.9	5.9	5.5	5.7	5.3	5.0	5.0	4.6	
12	63.8	25.6	25.0	24.3	20.5	22.4	21.1	21.3	20.8	22.8
−6°	19.3	18.9	16.0	14.2	11.1	9.5	7.8	10.2	7.3	6.7
	6.2	5.9	5.6	5.8	5.1	5.7	4.8	5.7	5.0	
13	63.5	22.8	21.7	20.3	18.1	17.9	17.6	18.6	17.2	20.1
−12°	17.8	16.4	14.4	13.1	7.2	10.4	8.0	9.5	8.0	7.0
	7.4	7.5	8.2	7.5	7.2	7.8	7.0	7.5	7.5	
14	63.3	20.1	19.1	17.7	15.6	15.2	14.6	17.7	15.2	18.7
−17°	16.0	16.2	15.8	13.4	11.8	12.6	11.9	12.9	12.4	12.6
	12.8	12.0	12.2	12.2	12.2	12.2	12.2	12.1	12.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 12D

LTA TAPE 12D

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.4	16.8	17.1	17.3	17.6	15.3	10.4	14.7	16.8	21.3
ANGLE −23°	13.4	16.7	13.1	9.9	6.8	7.2	7.2	9.1	5.5	5.8
	5.3	5.4	5.1	5.2	5.2	5.0	4.9	5.0	4.8	
16	63.6	16.3	17.6	18.6	19.4	16.8	9.6	14.7	18.5	23.2
−30°	16.3	18.5	14.8	10.9	7.3	7.8	8.7	9.8	7.1	6.4
	6.0	6.1	6.0	6.0	6.0	5.9	6.0	6.2	5.9	
17	63.7	17.2	18.9	20.1	21.0	18.4	10.8	15.3	20.5	25.2
−37°	17.2	20.2	16.2	11.8	8.8	8.9	8.4	11.2	6.8	6.9
	6.0	6.0	5.8	5.9	5.9	5.9	5.4	5.6	5.3	
18	64.3	19.7	20.9	21.8	22.6	19.9	11.3	17.3	22.6	26.9
−44°	18.0	21.0	16.7	13.7	11.0	10.9	10.3	13.8	10.6	10.5
	9.7	9.1	8.0	8.6	8.5	8.0	7.1	7.6	7.1	
19	65.0	22.9	23.6	24.2	24.7	22.0	12.8	19.7	23.8	29.0
−53°	21.0	22.1	18.5	20.8	18.3	18.0	17.5	19.6	18.1	17.6
	16.4	15.4	12.8	13.8	13.4	12.3	11.0	11.6	10.9	
20	65.6	26.3	26.5	26.7	27.0	24.5	18.3	23.3	25.6	30.7
−64°	24.7	25.5	23.2	25.9	24.4	23.9	24.5	24.6	24.0	23.5
	22.0	20.9	17.9	18.4	18.1	16.7	15.3	15.8	14.8	
21	65.5	27.4	27.4	27.4	27.4	25.1	19.8	23.7	25.0	30.6
−84°	24.9	27.4	25.7	27.7	26.6	26.2	26.9	26.4	25.9	25.4
	23.9	22.7	19.7	20.3	17.8	18.3	16.8	17.3	16.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 12D

GROUP 12D

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.4	30.3	29.8	29.3	28.7	28.0	27.1	29.5	26.4	28.0
ANGLE −71.3°	28.9	26.0	23.6	23.6	19.4	18.6	16.0	16.1	13.5	11.8
	12.7	11.2	10.2	10.5	8.6	7.6	8.5	7.8	7.9	
2	63.3	25.5	25.6	25.8	25.9	23.9	20.1	17.3	17.5	21.0
−66°	18.3	16.1	14.5	17.5	15.7	16.1	13.9	13.0	10.1	12.2
	8.7	11.5	10.9	10.1	10.6	9.9	10.5	10.0	10.0	
3	63.4	22.4	22.6	22.8	23.0	22.0	20.8	10.0	15.4	21.8
−61.6°	15.4	15.5	11.9	15.2	13.0	12.6	10.5	10.0	8.3	8.3
	7.5	8.2	7.8	7.4	7.4	7.2	7.0	7.2	7.2	
4	63.4	19.4	22.0	23.6	24.8	23.2	20.7	18.8	16.5	17.4
−57.8°	12.3	10.9	12.4	11.8	10.1	10.8	8.2	7.0	4.0	2.5
	1.2	2.6	0.6	1.5	1.2	0.4	0.3	0.1	−0.2	
5	63.5	21.3	21.7	22.0	22.2	19.6	11.6	8.4	10.8	16.4
−54.3°	10.7	11.7	7.2	9.2	9.9	10.1	8.2	7.6	3.4	1.7
	1.1	0.7	0.5	0.2	−0.3	−0.7	−1.6	−1.0	−1.3	
6	63.3	23.9	23.6	23.3	22.9	21.6	19.6	14.8	13.7	17.2
−51.1°	9.2	14.0	11.2	6.3	7.8	7.5	7.8	7.3	1.3	1.1
	0.2	0.6	−0.7	−0.4	−1.9	−1.0	−2.0	−1.8	−2.3	
7	63.1	20.4	21.3	22.0	22.6	19.9	11.3	18.0	13.2	18.4
−48.1°	7.1	16.8	14.9	12.2	12.8	12.4	12.1	11.9	7.2	2.6
	1.6	1.8	1.3	0.8	0.8	0.2	−0.6	−0.6	−0.9	
8	63.4	25.1	24.2	23.0	21.3	25.5	27.6	26.0	27.5	29.3
−45.3°	26.1	25.9	26.1	25.6	25.2	24.8	23.0	22.3	19.6	15.2
	11.9	12.9	12.4	9.2	10.9	9.8	8.9	8.9	8.2	
9	65.1	43.1	41.6	39.4	34.8	39.5	41.7	35.5	36.2	40.6
−42.6°	38.4	34.9	33.2	31.7	32.0	30.7	29.2	28.0	25.7	20.8
	19.0	19.1	17.5	13.0	14.2	12.6	11.5	10.9	9.9	
10	68.4	50.8	49.4	47.5	43.7	47.0	48.9	44.1	38.9	44.9
−40.0°	42.6	39.7	34.6	31.0	32.0	29.3	30.5	27.5	26.4	23.0
	23.9	21.9	18.2	17.9	16.8	16.8	15.8	15.3	15.0	
11	71.6	51.3	49.8	47.4	42.2	46.4	48.5	44.6	40.7	45.5
−37.5°	38.6	39.5	37.0	32.1	32.3	31.1	31.9	28.1	27.7	25.2
	24.4	23.2	20.5	19.7	19.1	19.9	18.8	18.5	17.9	
12	73.0	46.8	45.4	43.4	39.6	40.7	41.5	42.7	38.6	37.3
−35.1°	30.5	37.4	36.4	36.0	32.6	31.7	31.1	31.2	28.4	25.4
	25.6	23.1	22.0	20.5	18.6	19.3	18.4	18.0	17.6	
13	72.4	48.0	46.7	44.6	40.6	46.1	48.4	44.6	45.7	46.1
−32.8°	34.2	42.9	35.3	38.2	32.2	35.2	33.3	31.3	30.0	29.0
	27.5	24.6	22.6	21.3	21.2	19.9	18.9	19.3	18.8	
14	69.7	49.4	48.1	46.2	42.7	48.2	50.5	46.4	44.1	46.7
−30.5°	45.3	39.5	36.3	34.8	36.6	33.7	32.0	30.5	29.4	26.4
	25.3	24.4	21.8	19.9	19.6	19.2	19.2	18.7	17.8	
15	65.7	42.7	41.3	39.4	35.8	42.4	44.9	42.5	36.8	40.1
−28.3°	38.1	33.8	32.8	28.9	31.2	28.2	26.4	24.1	23.4	21.9
	18.7	19.1	16.7	15.1	14.5	13.5	13.8	13.7	12.7	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	63.7	32.5	31.1	29.0	24.9	30.7	33.1	31.1	24.6	27.6
ANGLE −26.1°	23.1	23.7	22.9	19.6	19.5	18.0	18.2	15.5	16.3	15.1
	14.9	14.3	13.7	13.4	12.9	12.0	10.2	9.2	6.7	
17	63.2	23.3	22.6	21.8	20.7	19.8	18.6	16.7	21.6	22.8
−24.0°	16.0	21.4	17.7	12.6	11.7	11.1	11.7	11.2	8.7	13.7
	11.9	7.5	10.2	10.8	10.6	9.2	9.5	10.1	8.4	
18	63.0	21.4	21.2	20.9	20.7	18.3	12.1	16.3	21.7	23.5
−21.8°	15.7	22.0	18.0	13.9	12.0	10.8	11.0	10.1	8.3	11.7
	11.3	5.7	9.3	10.3	9.5	8.4	9.0	9.8	8.6	
19	62.9	18.2	18.7	19.2	19.6	17.4	12.4	13.6	21.2	23.7
−19.8°	14.7	22.1	17.9	13.6	12.5	10.7	10.2	11.3	7.2	7.7
	7.1	5.3	4.6	5.9	6.0	6.5	5.5	5.5	6.1	
20	62.9	20.7	21.0	21.3	21.5	19.9	17.2	17.9	22.8	24.5
−17.7°	15.9	22.7	18.0	15.6	11.5	10.9	12.0	11.6	7.8	9.8
	5.9	7.2	7.8	7.2	6.1	7.4	7.1	6.8	7.0	
21	63.0	23.2	23.9	24.6	25.1	23.8	22.0	22.0	24.2	24.3
−15.7°	17.0	23.2	18.8	16.6	13.6	13.4	14.6	13.7	11.1	11.9
	9.5	8.5	6.4	4.1	4.7	9.2	11.6	10.3	4.4	
22	63.2	27.8	27.4	27.1	26.7	25.8	24.6	24.0	25.6	24.5
−13.7°	17.1	23.0	20.1	15.6	13.1	12.8	12.0	12.4	9.0	8.0
	7.3	7.4	6.3	6.7	6.3	5.9	6.2	6.2	5.8	
23	63.4	31.1	30.3	29.4	28.2	27.2	26.1	24.6	26.6	25.0
−11.7°	21.1	23.4	20.4	16.5	13.0	14.6	13.1	13.1	9.5	8.4
	8.1	8.4	7.2	7.0	6.9	6.4	6.6	6.1	6.2	
24	63.7	29.9	29.1	28.2	27.0	26.7	26.5	19.7	25.8	26.1
−9.7°	22.3	22.9	20.4	16.8	16.4	14.8	12.7	13.0	10.0	8.9
	8.8	9.0	8.3	7.7	7.8	7.7	6.6	6.8	6.7	
25	63.9	27.3	27.9	28.4	28.9	28.7	28.6	19.9	21.8	24.8
−7.8°	23.2	22.3	22.0	17.7	17.1	15.8	14.0	12.8	12.0	10.7
	9.0	8.8	8.7	7.9	8.4	8.2	6.8	6.9	6.3	
26	64.0	29.6	30.0	30.3	30.7	29.7	28.3	21.7	21.7	24.3
−5.8°	24.6	22.5	22.4	17.1	15.0	15.0	14.3	12.2	11.2	8.8
	6.8	6.7	6.0	5.5	5.6	5.9	3.7	3.2	2.9	
27	64.0	23.4	25.1	26.3	27.2	26.1	24.6	22.3	25.7	25.8
−3.9°	24.7	24.1	21.2	16.7	14.7	12.5	13.5	12.8	11.2	8.7
	8.6	8.2	7.2	7.2	6.8	7.0	6.3	6.2	6.3	
28	64.0	27.5	27.4	27.2	27.1	24.7	18.9	20.2	23.8	25.2
−1.9°	21.0	22.7	19.3	15.4	13.0	12.3	13.4	13.3	9.8	8.2
	7.9	8.1	7.0	6.5	6.7	6.7	6.4	6.2	6.3	
29	64.0	27.0	26.4	25.7	25.0	23.2	20.2	20.8	21.7	24.4
0°	19.5	21.6	19.0	14.9	11.1	11.1	11.1	11.8	6.2	5.5
	4.3	3.2	4.3	2.8	2.7	2.1	1.4	1.4	0.4	
30	63.9	25.5	25.2	24.9	24.6	22.7	19.5	20.5	22.0	26.2
+1.9°	18.9	20.2	20.0	13.7	11.8	9.9	9.7	9.9	5.5	5.1
	3.4	1.7	3.8	2.1	2.7	2.1	0.7	0.5	0.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

LTA TAPE 12D

GROUP 12D

PAGE 3

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	63.7	26.9	26.7	26.5	26.2	24.0	19.3	22.5	25.1	25.6
ANGLE +3.9°	15.9	20.8	17.9	15.1	12.3	9.1	9.0	10.4	5.6	3.4
	2.6	1.8	2.8	2.5	2.1	0.9	0.3	0.1	0.2	
32	63.7	24.4	24.6	24.7	24.8	25.4	25.9	25.4	25.7	26.3
+5.8°	14.7	17.5	17.5	14.7	13.3	7.5	9.2	10.9	5.2	5.2
	4.3	2.5	3.1	2.0	1.1	0.9	1.2	0.6	0.3	
33	63.8	26.0	25.7	25.5	25.2	24.9	24.7	20.0	23.0	23.4
+7.8°	12.1	19.3	17.4	14.5	12.6	9.2	10.6	11.1	7.1	5.5
	4.6	3.4	3.7	3.1	2.2	1.6	1.1	1.7	0.9	
34	63.8	26.6	26.0	25.3	24.4	22.0	16.3	19.0	21.3	22.9
+9.7°	14.6	19.9	16.2	12.9	10.7	9.0	10.2	10.0	6.9	4.1
	4.0	3.4	3.6	2.7	2.2	1.1	1.2	1.6	0.6	
35	63.7	19.7	20.9	21.8	22.6	21.0	18.5	14.2	22.9	22.7
+11.7°	15.9	18.7	15.4	11.2	9.9	8.7	8.7	9.3	4.7	1.8
	2.5	3.0	2.6	2.3	1.7	0.7	0.6	0.9	0.4	
36	63.8	17.0	17.7	18.3	18.9	19.4	19.9	15.4	22.3	21.6
+13.7°	15.4	19.2	15.6	10.9	8.9	7.5	7.2	8.1	4.8	2.0
	2.3	2.5	2.4	1.9	1.6	0.2	0.7	0.6	0.2	
37	63.9	20.2	19.3	18.1	16.5	17.5	18.4	14.9	20.3	23.6
+15.7°	16.2	20.0	19.1	11.6	7.7	7.4	4.5	7.6	3.2	3.2
	2.8	1.8	2.6	2.3	1.6	0.4	0.3	0.8	-0.0	
38	63.5	23.6	22.9	22.0	20.9	19.7	18.2	14.0	21.9	25.0
+17.7°	15.0	21.4	18.5	12.0	10.6	9.1	8.8	10.3	2.5	2.5
	3.6	1.3	2.2	1.8	1.6	0.1	0.2	0.6	0.5	
39	63.4	20.8	20.1	19.4	18.4	17.7	16.8	18.1	22.7	25.1
+19.8°	16.4	21.7	18.4	13.9	10.9	9.4	8.6	10.1	4.3	1.6
	2.9	1.9	2.1	1.8	1.1	-0.1	-0.5	-0.6	0.0	
40	63.4	18.6	18.1	17.6	17.0	19.3	20.8	20.4	23.7	25.5
+21.8°	18.8	21.3	18.0	13.8	11.1	8.8	8.9	10.4	5.6	2.0
	3.1	2.8	1.7	1.0	1.1	-0.1	-0.7	-0.2	-0.8	
41	63.7	22.8	21.6	20.1	17.8	23.4	25.7	24.2	24.6	25.9
+24.0°	21.1	19.9	17.5	13.1	10.8	8.9	9.8	10.8	5.9	3.2
	2.6	2.6	2.7	1.9	1.3	0.1	-0.3	-0.6	-0.3	
42	64.1	21.9	20.8	19.5	17.6	24.5	27.1	25.2	24.3	24.4
+26.1°	21.0	18.1	16.4	12.5	11.0	8.8	9.3	9.3	6.2	4.1
	3.3	3.2	3.4	2.2	2.0	1.2	0.5	-0.0	0.1	
43	64.4	22.3	20.8	18.7	14.4	23.3	26.0	24.6	22.4	21.1
+28.3°	19.5	16.9	16.1	11.8	9.8	8.0	8.0	8.2	6.6	4.2
	3.9	4.0	2.7	2.5	2.4	1.9	1.8	1.3	0.8	
44	64.7	23.9	22.6	20.6	17.0	20.5	22.4	20.4	20.2	17.0
+30.5°	15.5	16.5	15.8	10.1	8.2	7.9	7.7	7.4	6.1	4.2
	3.7	4.2	3.4	3.4	2.6	2.0	2.4	1.7	1.6	
45	64.7	21.7	20.7	19.4	17.4	17.3	17.2	17.8	18.3	13.7
+32.8°	14.0	15.3	15.1	8.1	7.0	6.6	6.2	5.6	5.2	4.1
	3.3	3.8	3.3	3.7	2.9	1.8	1.7	2.2	1.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	64.7	21.6	20.7	19.5	18.0	16.6	14.7	15.7	16.7	16.2
ANGLE +35.1°	14.7	14.6	13.7	7.3	6.5	6.8	5.3	5.4	5.5	3.8
	2.9	3.4	3.5	2.2	1.8	1.0	0.6	1.5	1.7	
47	64.5	21.6	20.6	19.2	17.1	16.2	15.0	13.6	16.7	18.3
+37.5°	14.1	15.2	13.8	7.4	8.0	7.6	5.9	6.0	5.2	3.0
	2.5	2.9	3.3	2.1	1.3	1.5	0.9	1.0	1.0	
48	64.3	22.6	21.3	19.5	16.1	15.6	15.0	14.5	18.5	20.5
+40.0°	15.0	16.9	14.2	9.0	9.5	7.6	7.2	6.5	4.5	3.0
	2.3	2.7	2.9	2.3	1.3	1.4	0.8	0.8	0.4	
49	64.2	22.4	22.0	21.5	21.0	22.0	22.8	18.9	22.0	22.3
+42.6°	18.5	19.1	15.3	15.0	11.3	9.5	9.8	7.2	7.5	4.1
	4.8	2.4	3.5	3.1	1.7	1.2	1.1	1.0	0.4	
50	64.7	34.3	33.8	33.4	32.8	33.2	33.5	30.6	28.9	29.7
+45.3°	31.9	24.7	23.4	21.5	20.5	19.9	18.2	17.8	15.8	13.3
	13.0	11.1	9.8	9.1	7.5	7.0	5.8	5.7	4.3	
51	66.2	46.7	45.9	45.0	43.8	41.5	35.9	35.9	33.5	36.7
+48.1°	40.4	31.5	27.1	25.9	29.9	28.1	26.4	26.0	23.8	20.8
	20.1	20.2	17.4	17.1	15.7	14.6	13.3	13.4	11.8	
52	67.8	51.2	50.4	49.6	48.4	47.1	45.0	39.9	40.9	39.2
+51.1°	41.5	35.1	31.8	30.4	33.4	31.0	29.8	27.4	26.9	23.8
	23.8	22.1	20.3	19.9	18.6	17.9	15.6	16.4	13.8	
53	68.9	51.4	50.7	49.9	48.9	48.6	48.2	39.2	43.6	39.9
+54.3°	39.5	37.4	34.9	32.9	34.9	30.9	30.5	28.3	27.7	25.9
	24.7	23.3	22.1	20.3	19.3	18.9	17.1	17.2	15.5	
54	69.8	50.4	49.5	48.3	46.7	45.7	44.4	32.7	38.2	37.6
+57.8°	36.3	32.2	33.1	33.7	31.6	28.4	29.1	26.4	25.4	25.1
	23.6	22.0	21.2	19.9	18.2	17.7	16.5	16.5	14.6	
55	70.4	49.6	48.4	46.7	44.0	42.7	40.7	35.7	31.5	38.1
+61.6°	35.9	32.7	31.7	32.6	30.6	29.4	28.2	25.7	24.2	23.8
	21.9	20.7	20.5	19.6	17.9	17.1	16.6	16.2	15.5	
56	70.3	46.4	45.0	42.9	38.6	38.9	39.1	40.0	34.9	35.9
+66.0°	36.4	34.3	31.0	32.3	28.4	29.6	27.3	25.6	24.1	23.9
	21.8	20.3	19.5	18.3	17.2	16.6	16.8	16.5	16.2	
57	69.2	44.3	43.4	42.3	40.7	40.7	40.8	39.0	38.2	36.7
+71.3°	37.3	31.7	31.4	29.3	27.0	26.1	26.5	24.0	23.8	20.6
	19.8	18.2	16.8	16.3	15.1	14.8	15.6	14.9	14.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9

GROUP 12D

STA TAPE 12J

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	56.5 23.0 13.2	32.1 24.4 12.8	31.0 22.8 11.9	29.5 20.8 11.5	27.3 17.1 10.3	26.9 17.4 10.5	26.4 16.5 10.6	25.5 14.9 10.1	25.5 13.6 10.1	25.7 12.6
2 +64°	57.2 24.5 13.4	31.6 25.0 13.0	30.5 23.4 11.8	29.1 21.2 11.7	27.0 17.5 10.6	26.2 17.9 10.8	25.2 16.9 10.8	26.0 15.5 10.2	26.1 14.3 10.4	26.1 13.2
3 +53°	56.7 25.3 12.6	32.5 24.6 12.1	31.5 22.9 11.0	30.2 21.1 10.6	28.2 18.8 10.0	26.7 17.4 9.9	24.4 16.3 9.8	25.7 15.2 9.4	26.3 13.9 9.4	25.7 12.5
4 +44°	56.4 24.2 11.5	32.9 23.3 10.8	31.7 21.6 9.8	30.1 19.9 9.3	27.5 17.6 9.0	26.0 16.2 8.8	23.6 15.2 8.6	24.1 13.8 8.3	25.2 12.7 8.4	25.4 11.1
5 +37°	55.7 22.6 10.4	31.3 21.1 9.4	30.0 19.3 8.2	28.2 18.0 8.0	25.0 15.9 7.9	23.6 14.6 7.7	21.7 13.6 7.6	21.5 12.1 7.2	22.3 11.3 7.2	23.9 9.6
6 +30°	55.1 19.9 8.6	28.1 19.0 7.9	26.9 17.0 6.5	25.3 15.6 6.6	22.7 13.6 6.7	21.4 12.5 6.2	19.5 11.3 6.1	18.8 9.9 6.1	19.1 8.8 6.0	21.3 7.9
7 +23°	54.2 17.2 6.8	26.1 16.2 6.6	24.9 14.2 4.8	23.3 12.9 5.2	20.7 11.5 5.2	19.3 10.2 4.8	17.2 8.3 4.8	15.8 7.3 4.6	15.9 6.2 4.7	18.8 5.8
8 +17°	52.7 12.8 4.1	25.8 11.1 4.4	24.5 9.3 2.8	22.7 8.7 3.1	19.5 7.0 3.0	17.9 6.1 2.7	15.2 4.5 2.6	12.5 4.2 2.6	12.0 3.4 2.7	13.9 3.0
9 +12°	51.5 7.3 1.7	23.5 6.2 1.7	22.3 5.0 1.1	20.4 4.5 0.6	17.2 3.0 0.6	15.7 2.2 0.5	13.3 1.6 0.4	9.5 1.3 0.2	9.0 0.9 0.2	8.5 0.6
10 +6°	50.0 3.6 0.5	15.2 3.0 0.8	14.2 2.7 0.9	12.8 2.5 -0.2	10.6 1.5 -0.3	10.1 0.7 -0.4	9.1 0.5 -0.5	5.4 0.1 -0.8	5.0 -0.2 -0.6	4.1 -0.5
11 0°	51.0 3.4 0.5	11.3 2.0 0.8	10.3 1.8 1.2	8.9 2.0 -0.1	7.0 1.1 -0.3	6.1 0.3 0.0	4.9 0.3 -0.4	3.3 -0.0 -0.6	3.2 0.0 -0.2	3.0 -0.4
12 −6°	50.8 2.0 0.2	12.8 1.6 0.4	11.6 1.2 1.3	9.9 1.9 -0.4	7.0 1.3 -0.5	6.2 0.3 -0.5	5.2 0.1 -0.7	3.2 0.1 -0.8	3.5 -0.2 -0.6	2.8 -0.5
13 −12°	50.5 1.5 -0.1	10.2 1.0 -0.3	9.1 0.7 0.1	7.5 1.0 -1.0	5.1 1.1 -1.1	4.8 0.0 -1.2	4.6 -0.5 -1.3	2.6 -0.5 -1.4	2.3 -0.6 -1.0	1.8 -1.2
14 −17°	50.3 2.2 -0.8	10.9 1.5 -0.6	9.6 0.5 -0.5	7.8 0.6 -1.1	4.7 0.6 -1.3	4.4 0.3 -1.1	4.1 -0.7 -1.4	2.5 -0.8 -1.5	2.0 -1.0 -1.0	1.9 -1.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 12J

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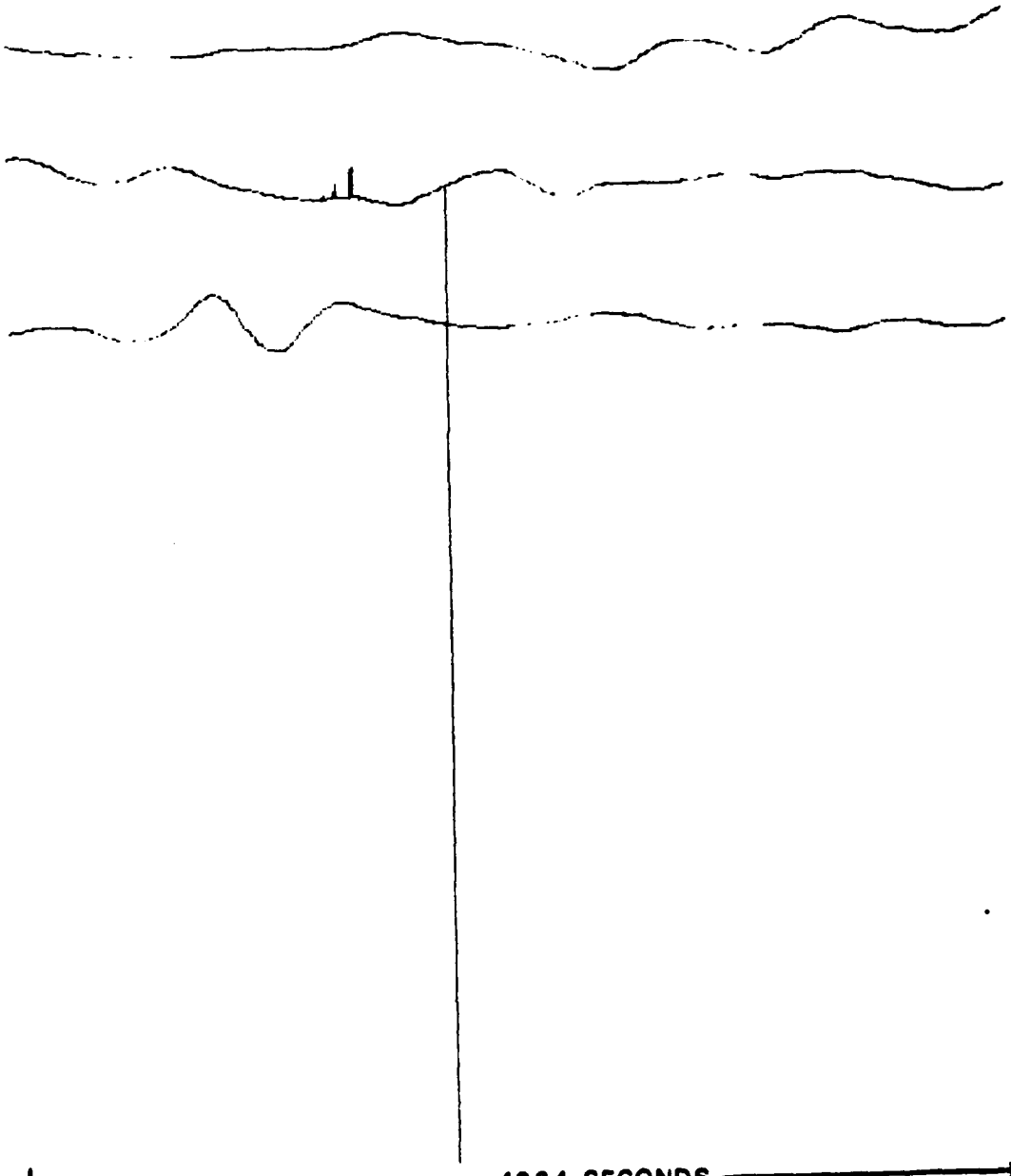
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	50.1 2.5 −0.5	9.6 1.4 −0.3	8.8 0.9 −1.1	7.8 0.1 −1.0	6.5 0.3 −1.1	5.4 −0.1 −1.3	3.8 −0.5 −1.3	3.1 −0.9 −1.3	1.7 −0.9 −0.9	1.9 −1.4
16 −30°	50.6 3.0 0.2	11.4 1.8 0.2	10.5 1.2 −0.8	9.4 1.0 −0.4	8.0 1.2 −0.7	6.4 0.5 −0.6	4.0 −0.3 −0.7	4.3 −0.7 −0.7	2.6 −0.8 −0.6	2.3 −1.1
17 −37°	50.7 5.8 1.3	13.3 3.8 1.4	12.4 3.2 0.4	11.4 2.4 0.7	9.9 3.6 0.3	8.4 2.5 0.6	6.0 1.3 0.4	6.5 1.3 0.1	4.7 0.6 0.1	4.0 0.0
18 −44°	51.3 10.8 3.6	14.2 8.8 4.2	13.9 8.0 3.5	13.5 6.9 3.3	13.1 8.4 3.0	12.5 7.3 3.2	11.9 5.6 2.7	12.1 5.2 2.4	9.8 4.2 2.5	8.2 2.9
19 −53°	52.0 17.2 7.8	19.5 15.0 8.9	19.3 13.6 8.3	19.2 12.6 7.7	19.0 13.9 7.8	19.3 12.9 7.8	19.6 10.8 7.2	19.4 10.5 6.5	17.4 9.2 7.1	14.4 8.0
20 −64°	52.6 21.8 11.7	25.5 19.5 12.9	25.1 17.6 12.3	24.7 16.7 11.6	24.2 17.7 11.8	24.7 16.7 11.6	25.2 14.9 11.1	24.6 14.6 10.5	22.8 13.3 11.2	19.4 12.2
21 −84°	52.6 23.6 13.6	28.0 21.3 14.8	27.5 19.3 14.2	27.0 18.6 13.5	26.4 17.6 13.8	26.8 18.6 13.3	27.2 16.8 12.9	26.5 16.6 12.4	24.8 15.1 13.1	21.2 13.9

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 12D

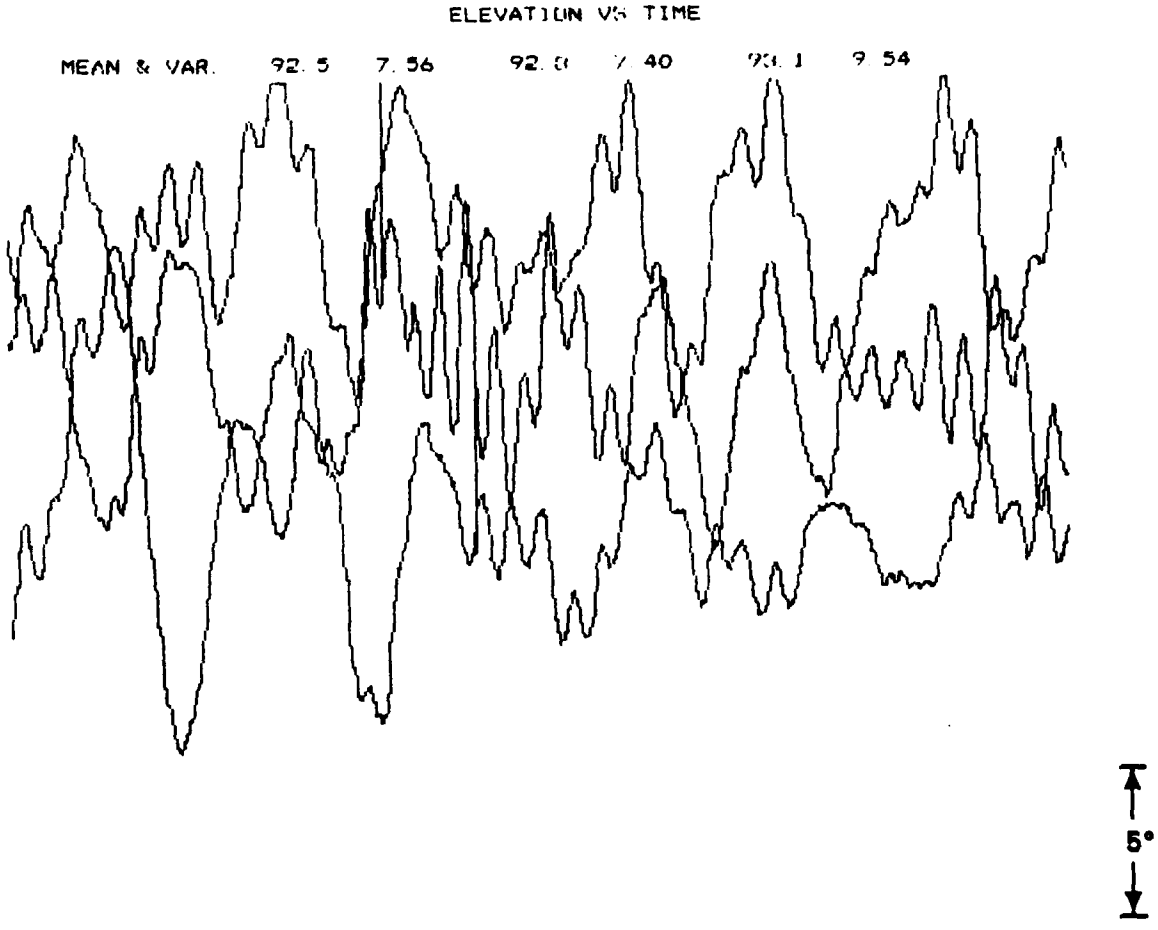
BEARING VS TIME

MEAN & VAR 319.2 4.24 319.5 103.92 317.3 3.81

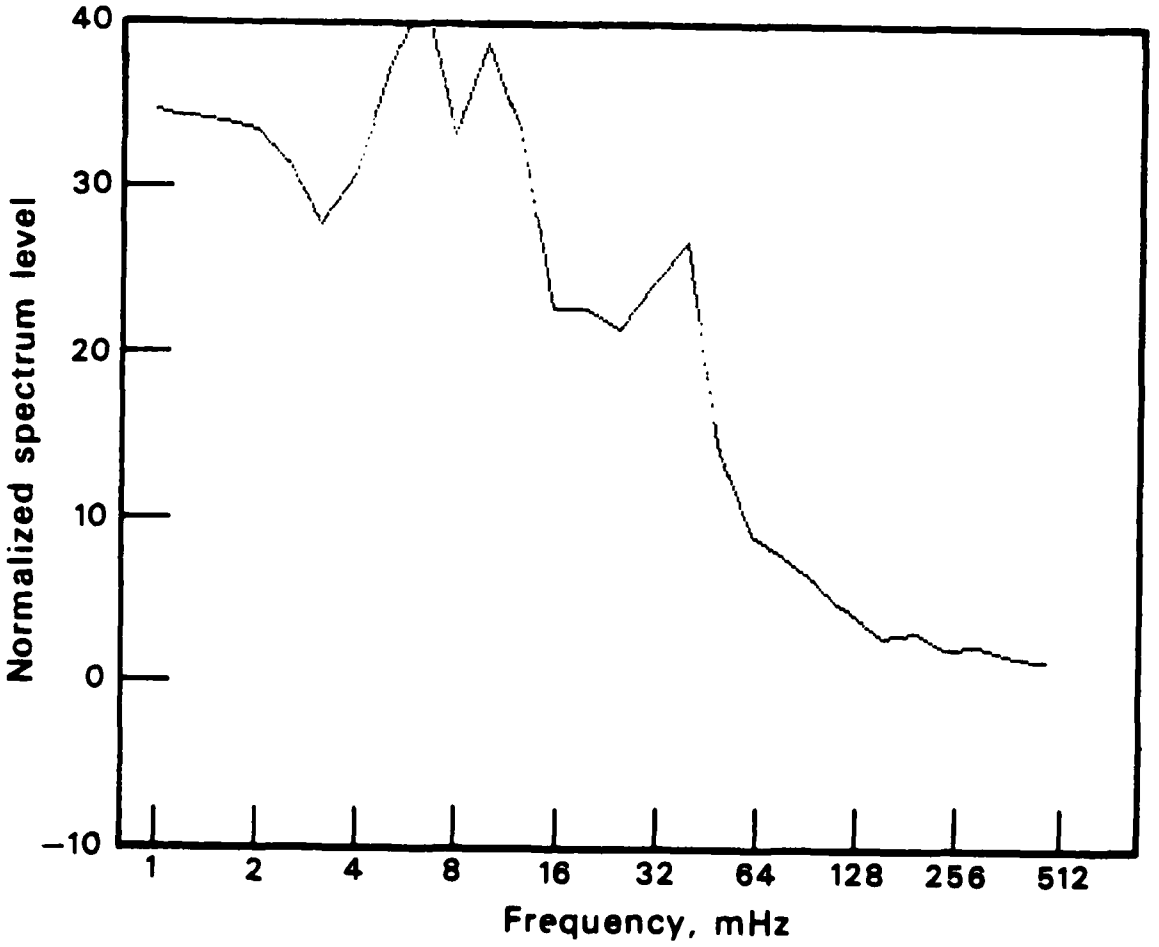


MPL-M-5107

GROUP 12D



MPL-M-5108



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 12E

Environmental Summary

12 June 1978

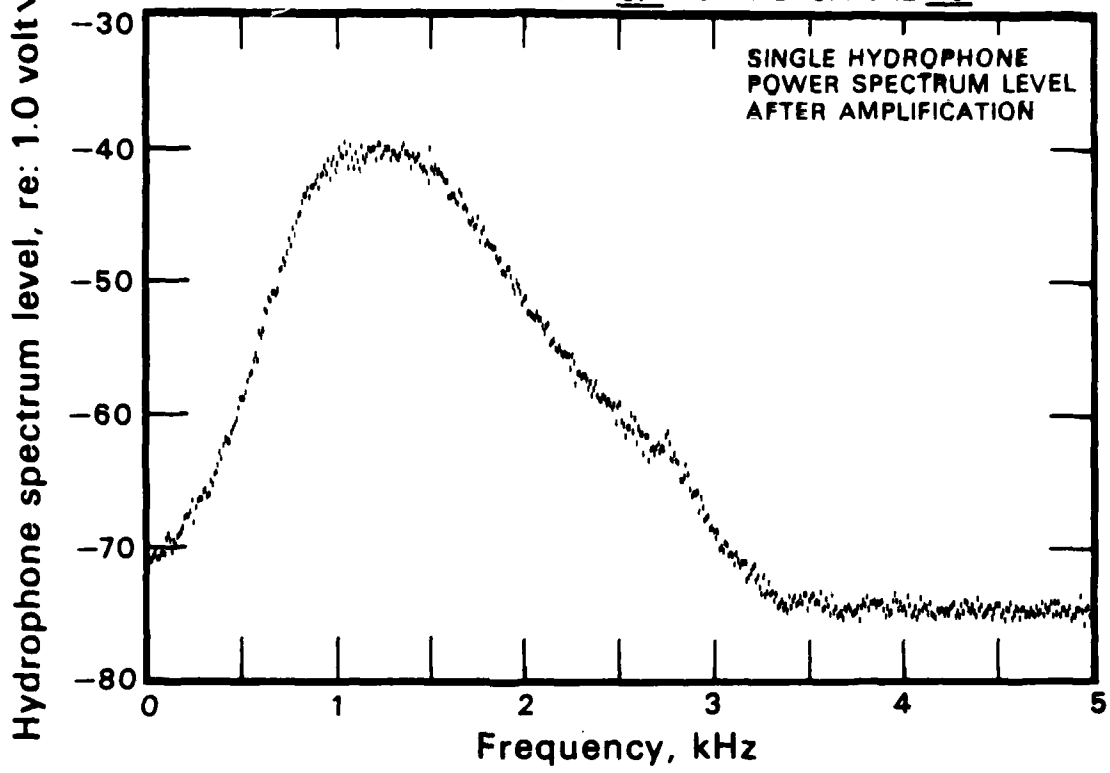
Tapes	Start time	Code
LTA/LOG	13:38:04	12E
STA	13:29:50	12K
Low Band Filter		

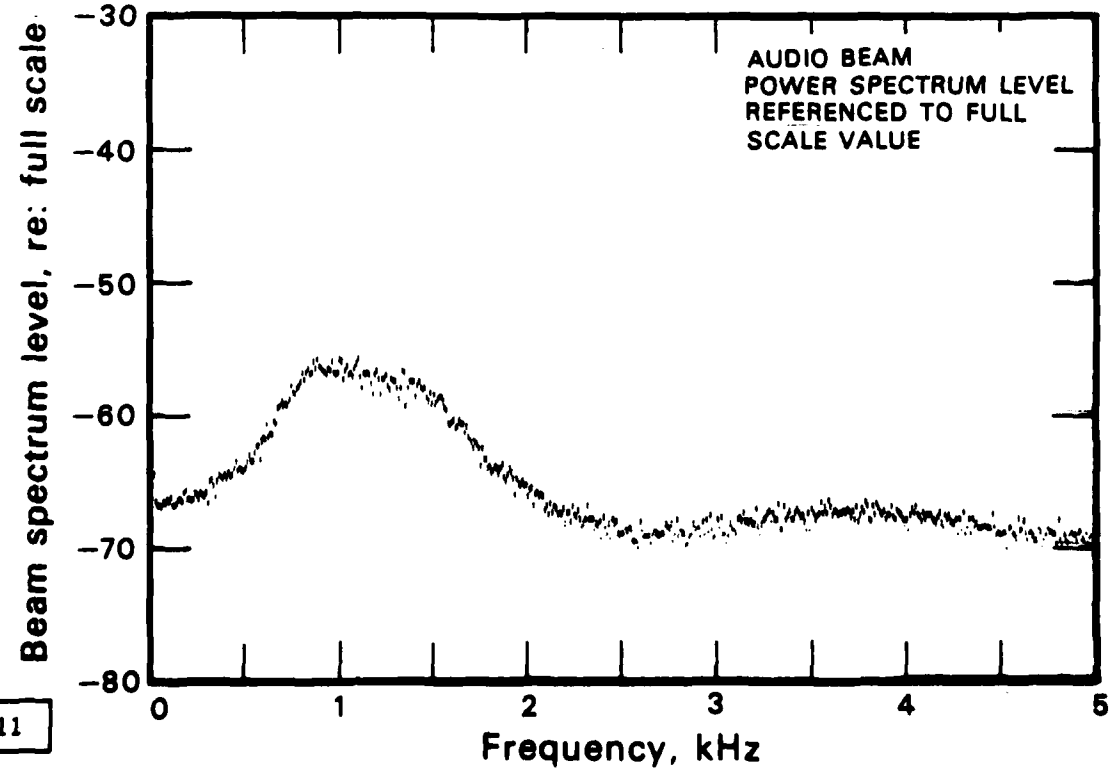
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
14:00	550	17	350	5-7	6-7	NW	Chop

12-JUN-78 13:42:31 DIGITAL FILTER 4 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 297.3
RELATIVE ELEVATION 80.0 TRUE BEARING 164.3 TRUE ELEVATION 82.3
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -11.1 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 97 FOR HYDROPHONE 95

GROUP 12E





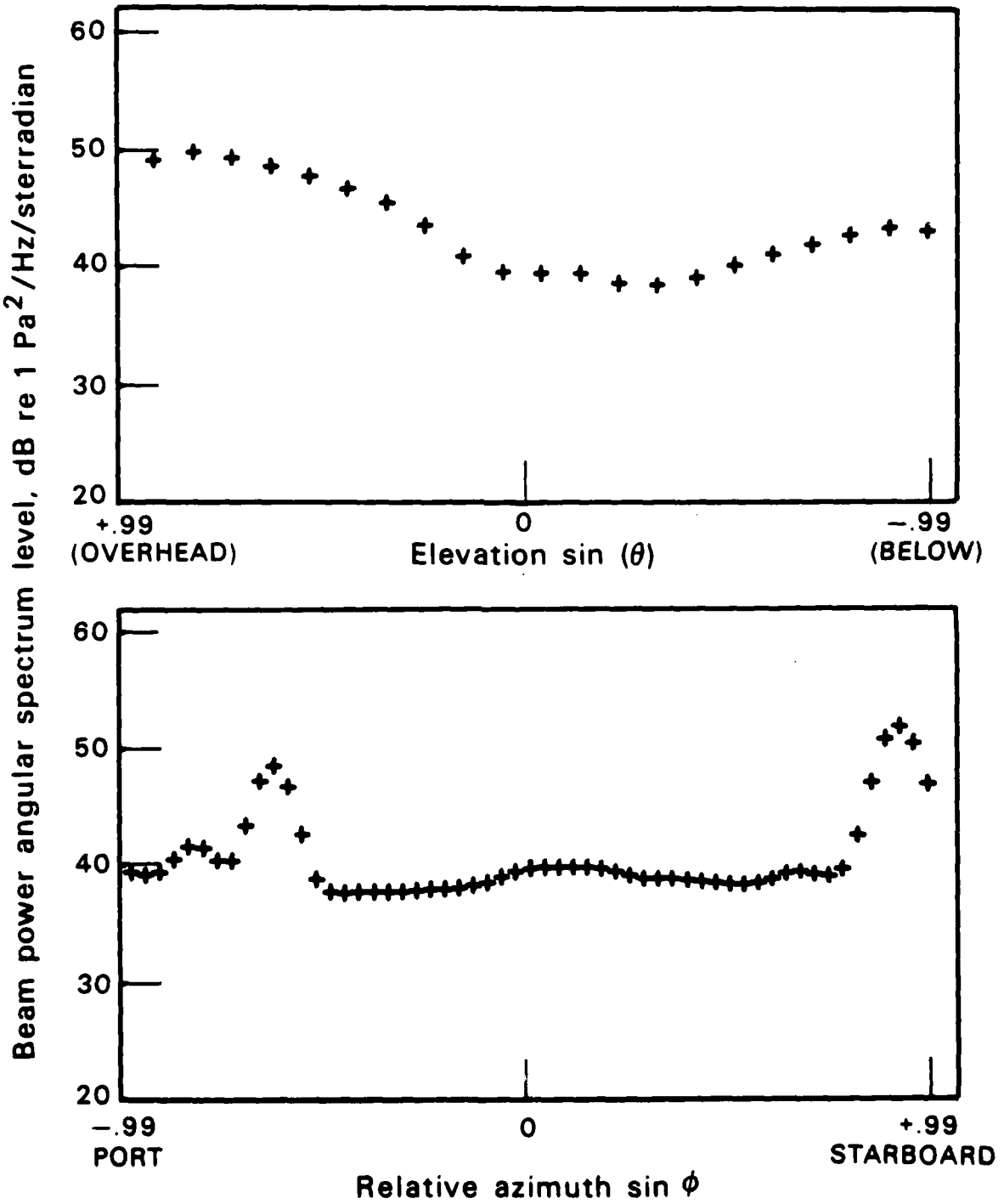
MPL-M-5111

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 12E

CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

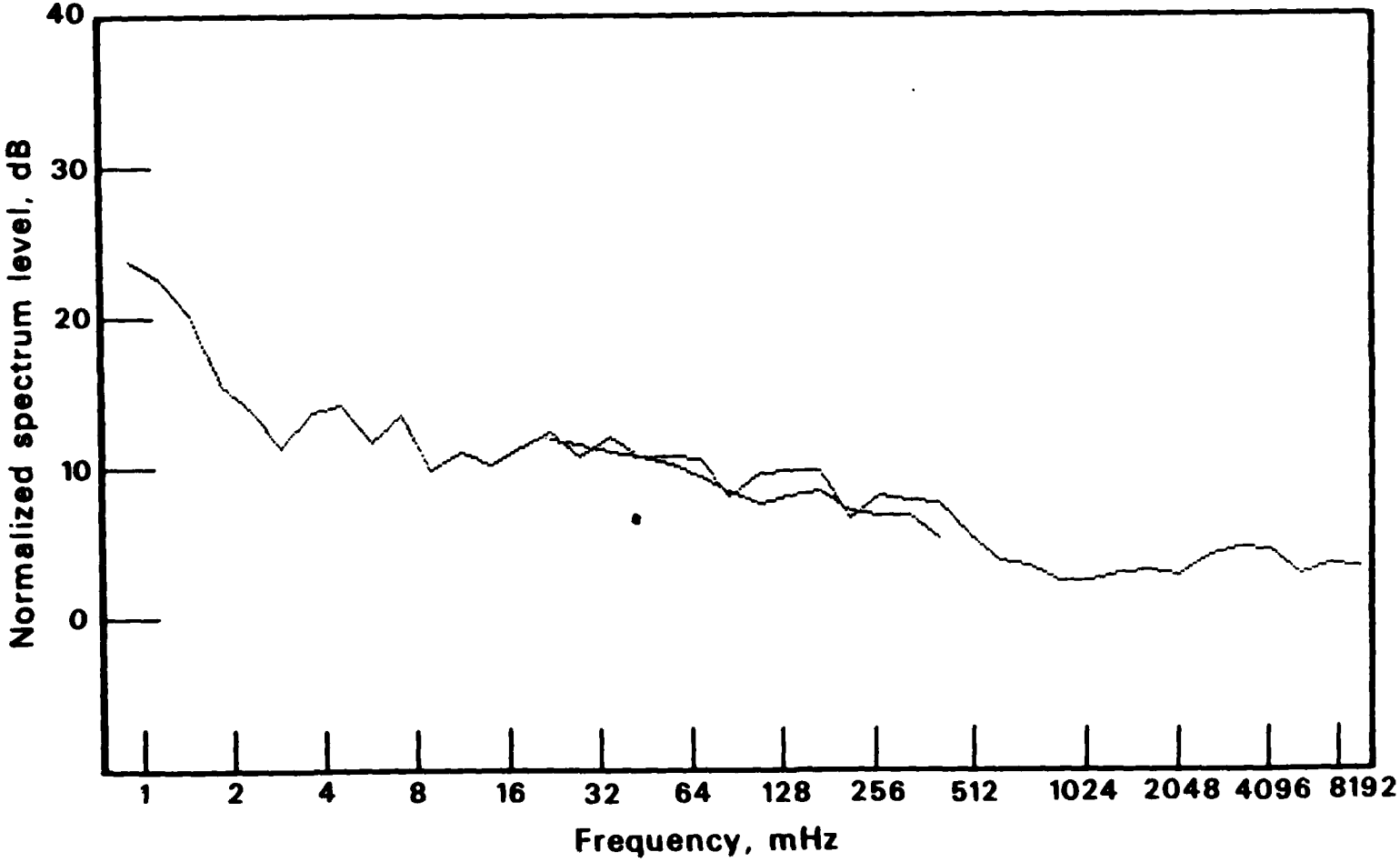
POWER HAS BEEN CORRECTED FOR DIMUS
NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.



MPL-M-5112

MPL-M-5113

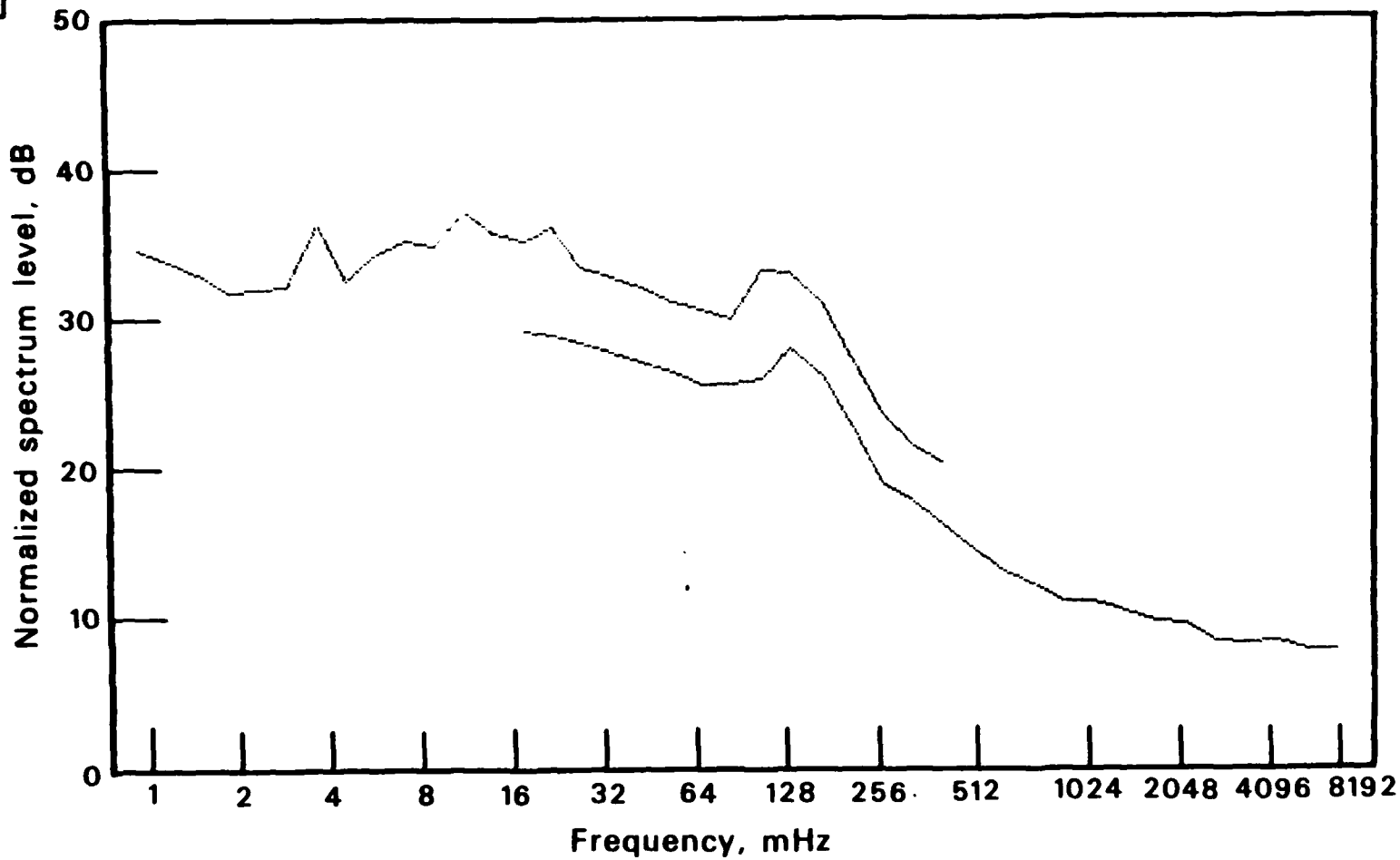
SINGLE ELEMENT COMPOSITE ENVELOPE
SPECTRA FROM LTA AND STA DATA TAPES



GROUP 12E

MPL-M-5114

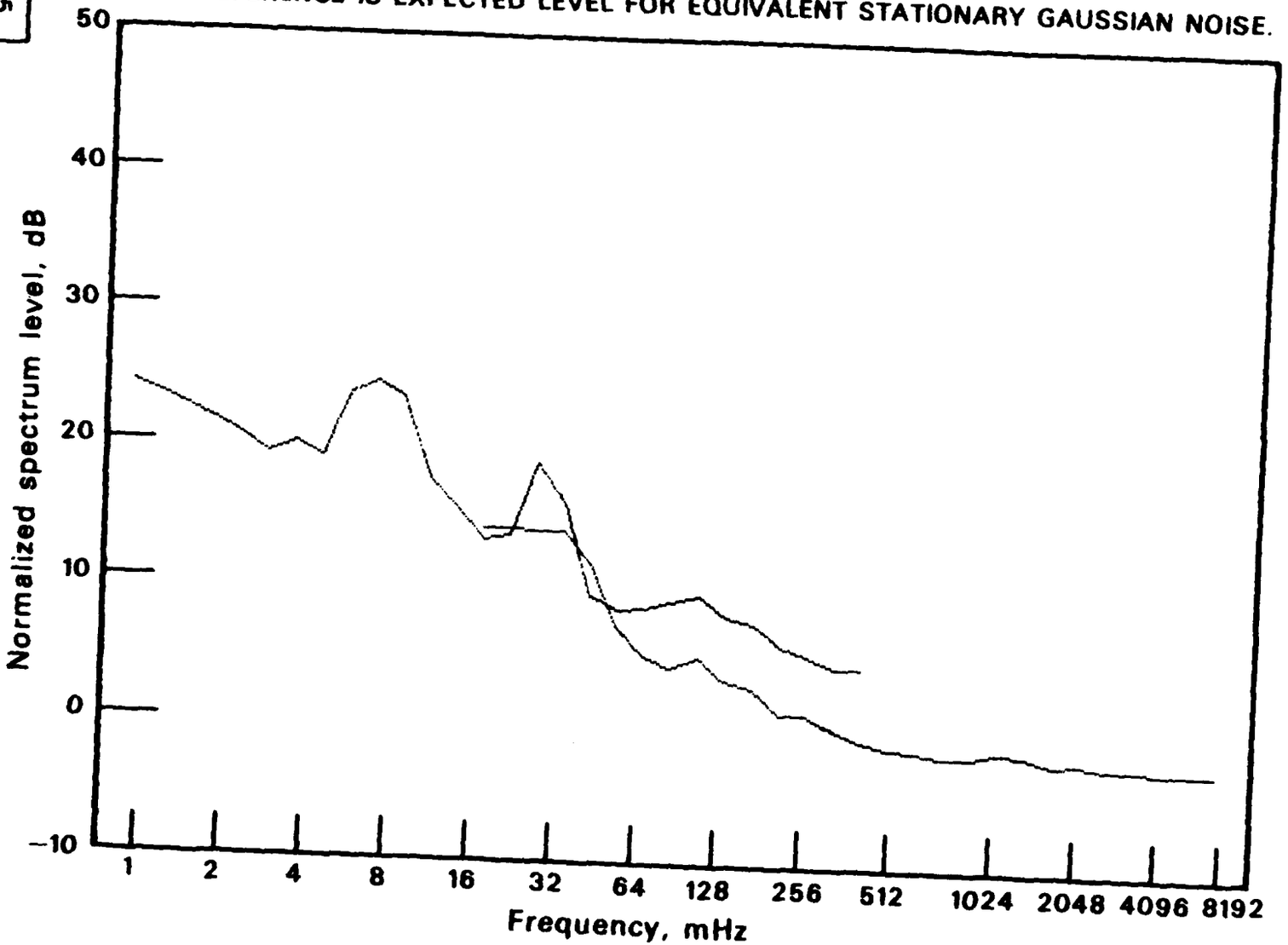
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12E

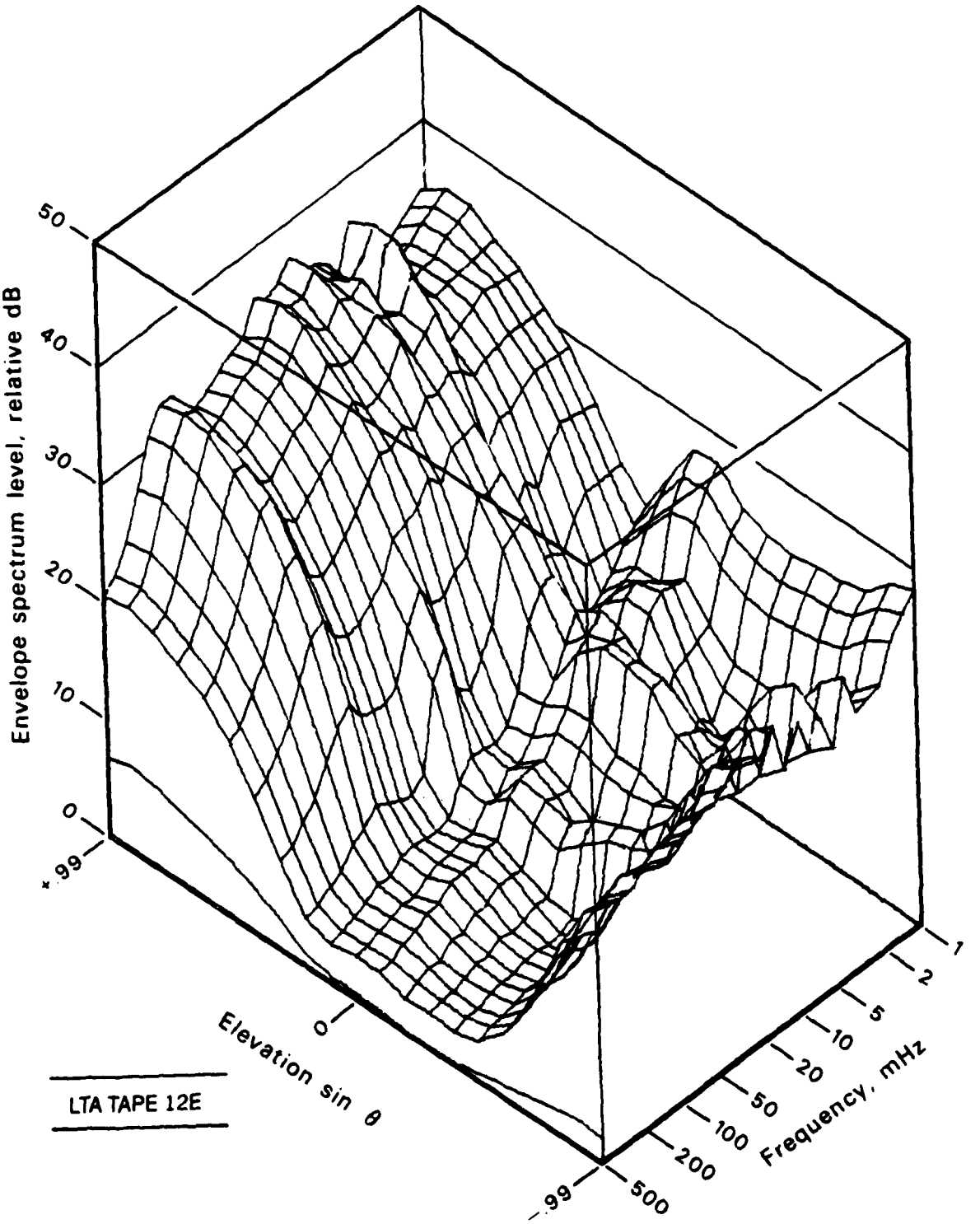
MPL-M-5115

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12E

GROUP 12E

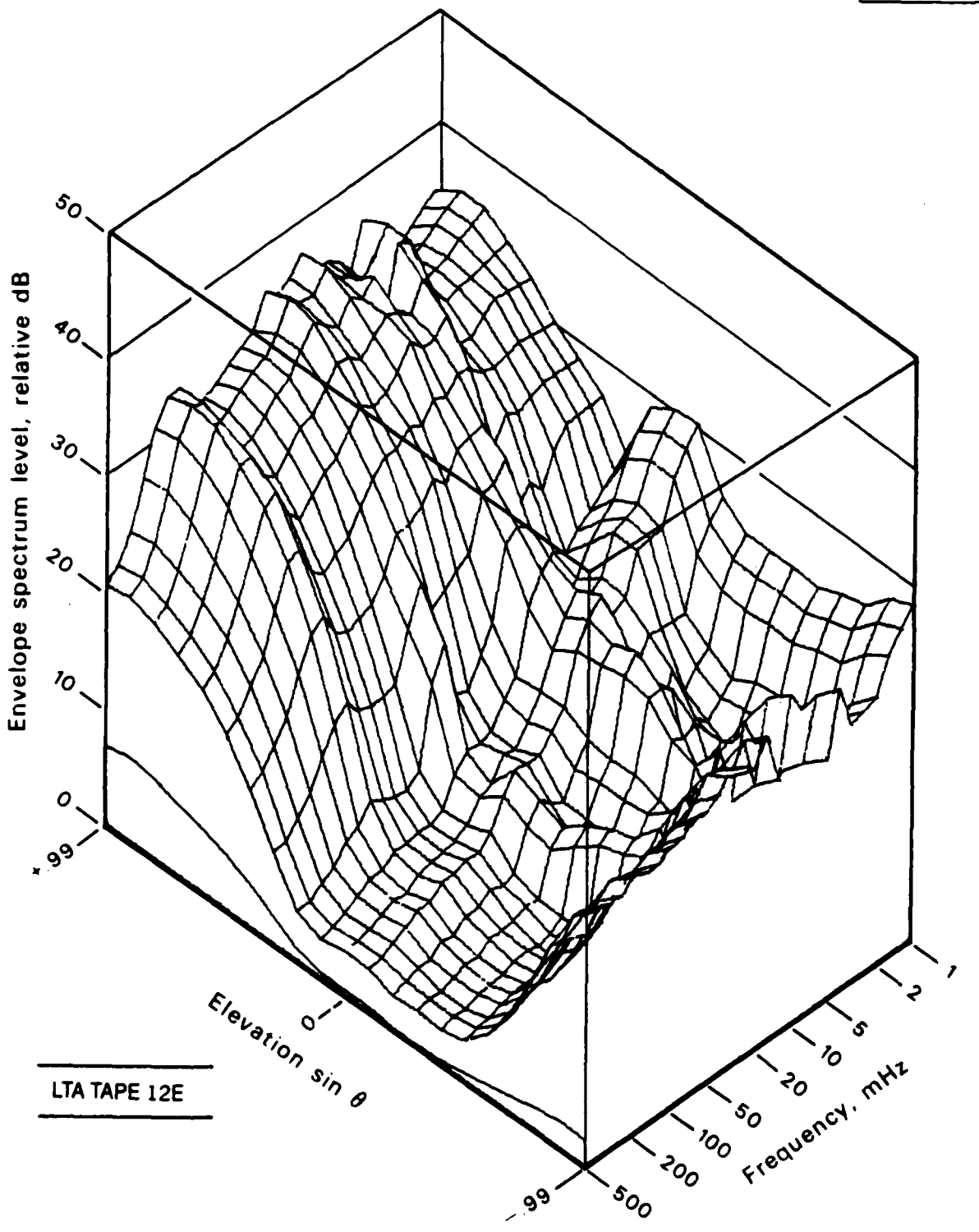


LTA TAPE 12E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET

MPL-M-5116

GROUP 12E



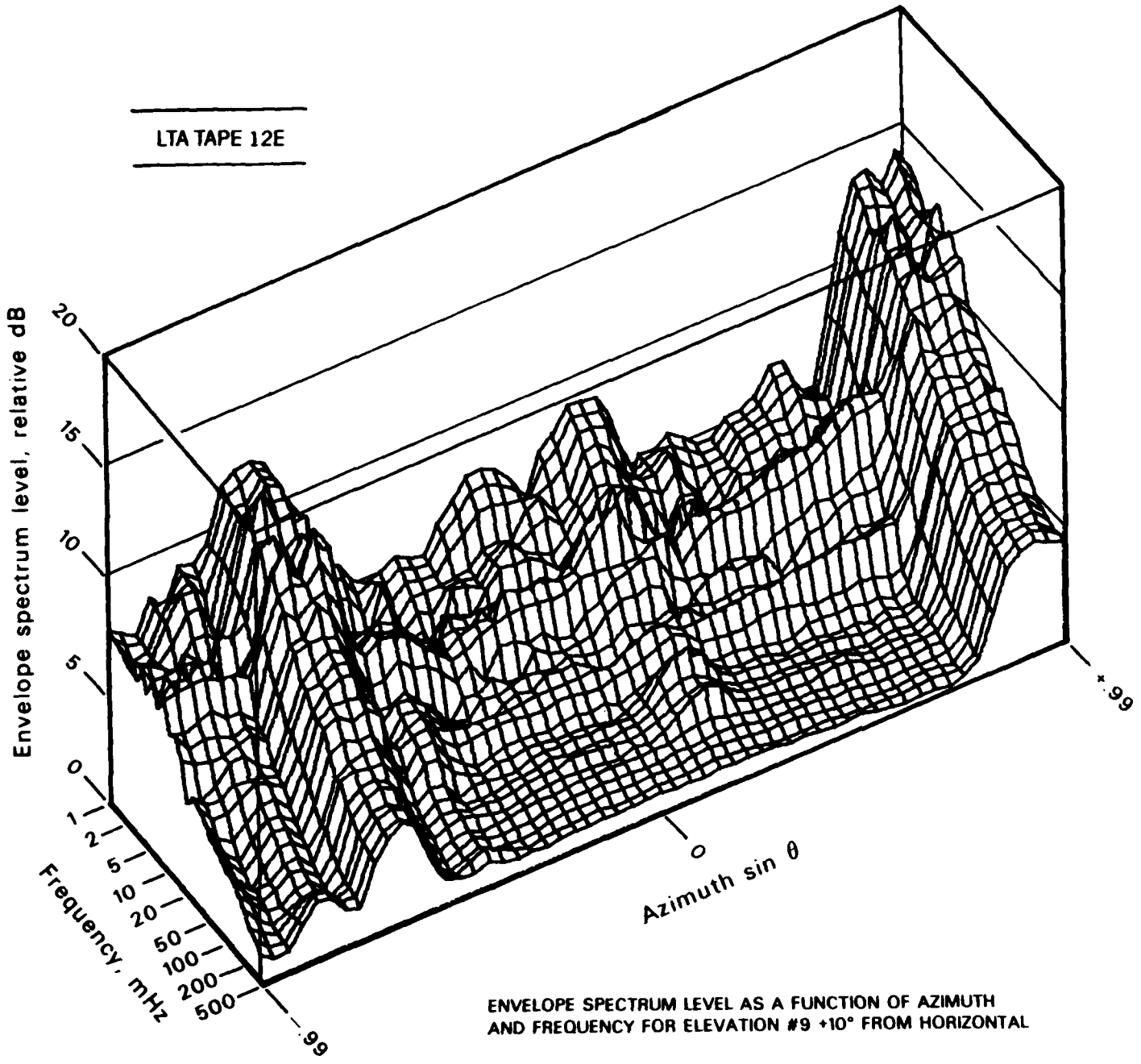
LTA TAPE 12E

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA TRUE BEARING STABILIZED BEAM SET

MPL-M-5117

MPL-M-5118

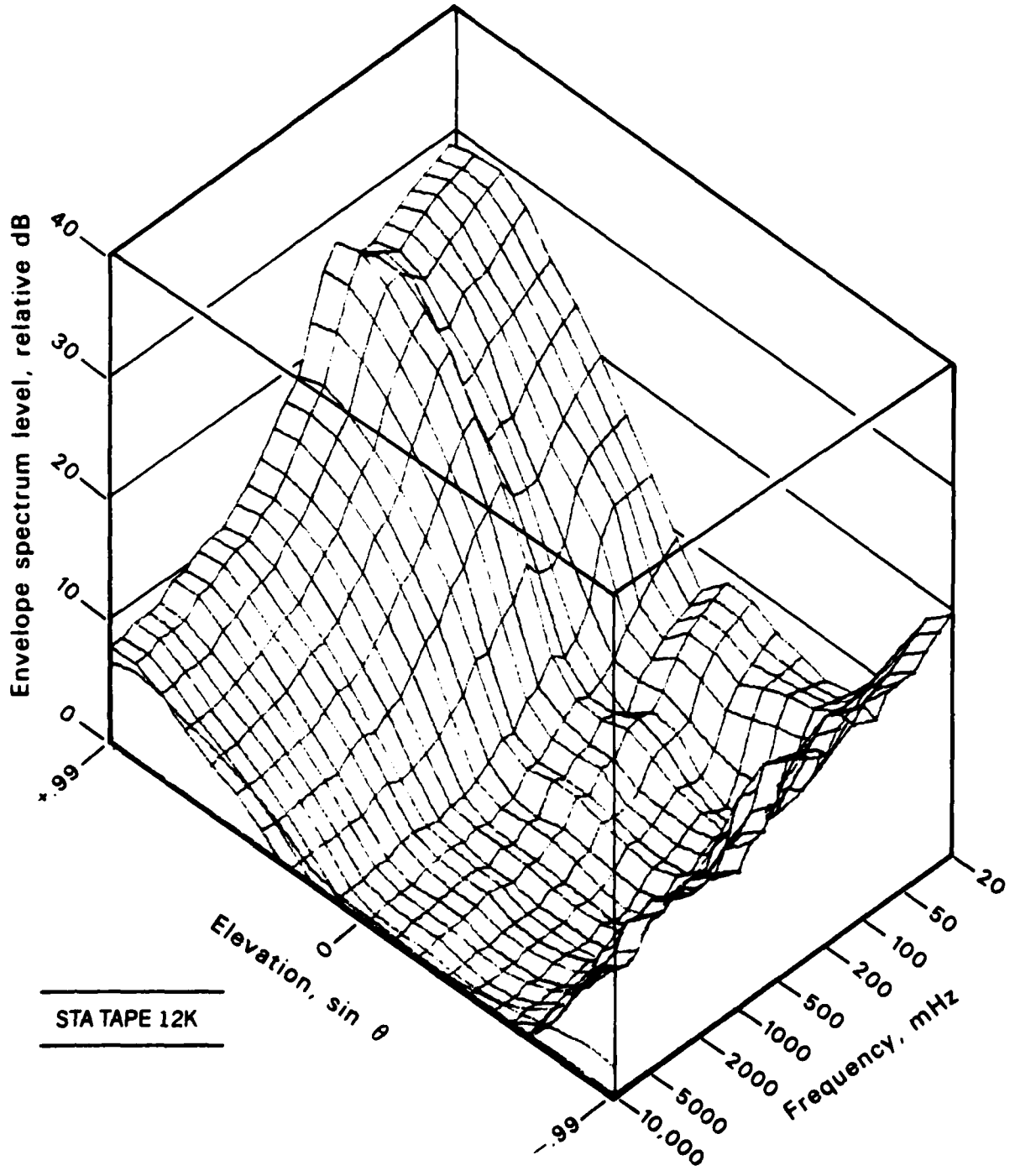
LTA TAPE 12E



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 12E

GROUP 12E



STA TAPE 12K

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-5119

GROUP 12E

LTA TAPE 12E

PAGE 1

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	69.4	31.6	30.8	29.9	28.7	28.9	29.0	33.3	29.4	31.2
ANGLE +84°	32.1	31.7	34.1	32.7	32.0	32.9	30.3	29.7	28.9	28.0
	27.5	26.7	29.9	29.7	27.8	24.1	20.4	18.2	17.2	
2	70.0	33.0	32.3	31.6	30.7	30.1	29.6	34.5	32.3	31.1
+64°	32.2	32.9	34.5	32.8	32.8	33.9	31.7	30.2	29.8	28.8
	27.8	27.2	30.0	30.4	28.3	24.5	20.7	18.4	17.6	
3	69.6	33.0	32.4	31.8	31.0	30.8	30.5	34.4	35.1	30.1
+53°	33.6	32.6	33.3	31.5	32.3	33.4	31.6	30.0	29.3	28.1
	27.0	26.7	29.1	30.0	27.3	23.3	19.9	17.7	16.9	
4	68.9	31.5	31.3	31.2	31.0	30.7	30.5	31.6	33.9	31.2
+44°	31.7	32.7	31.3	30.2	30.5	31.5	29.8	28.4	27.9	26.6
	25.4	25.7	28.2	28.2	25.4	21.5	18.6	16.4	15.6	
5	68.3	30.5	30.6	30.7	30.8	30.2	29.4	28.7	32.1	30.9
+37°	29.8	31.9	29.5	28.6	28.3	29.7	28.0	26.4	25.6	24.3
	23.1	24.1	26.9	26.2	22.9	19.5	17.0	14.9	14.1	
6	67.5	28.5	28.5	28.6	28.6	28.3	27.9	27.3	28.4	29.0
+30°	28.0	28.3	26.4	27.5	26.3	26.5	25.0	23.1	21.7	20.5
	19.9	20.6	23.3	22.7	19.4	16.3	14.3	12.3	11.7	
7	66.6	26.6	26.7	26.8	26.9	26.0	25.0	25.2	23.0	26.1
+23°	25.8	25.5	23.1	24.4	22.6	22.1	21.5	18.9	17.5	16.5
	16.2	16.7	19.1	18.2	15.3	12.5	10.7	9.1	8.3	
8	65.3	23.1	23.3	23.5	23.7	22.1	19.7	21.0	18.3	23.5
+17°	22.1	22.7	18.4	17.8	16.4	16.5	18.6	16.0	11.8	11.0
	11.0	11.3	13.2	11.8	9.6	7.4	6.0	4.7	4.3	
9	63.9	19.4	19.4	19.3	19.2	17.7	15.4	16.1	16.3	21.1
+12°	20.2	19.6	13.8	11.8	9.6	10.6	15.1	12.7	5.5	4.5
	4.8	5.4	5.9	4.6	4.0	2.4	1.9	1.0	0.8	
10	63.3	17.2	16.3	15.2	13.7	12.7	11.4	12.2	13.6	17.4
+6°	16.8	14.8	9.6	7.3	6.5	6.7	7.0	5.4	3.1	2.7
	2.9	3.0	2.9	2.0	1.9	1.2	0.7	0.1	-0.0	
11	63.2	21.1	19.9	18.3	15.7	15.2	14.7	14.8	12.1	15.6
0°	13.5	11.1	9.8	7.8	6.2	6.5	4.7	5.0	3.4	3.3
	3.1	3.0	2.6	1.6	1.8	1.2	0.9	0.3	0.3	
12	63.2	24.8	23.3	21.0	15.8	16.6	17.3	16.6	13.7	17.0
−6°	15.7	14.9	11.0	9.5	8.0	8.1	7.8	7.1	4.1	4.1
	3.6	3.5	3.5	2.4	2.3	1.6	1.2	0.5	0.3	
13	62.9	25.0	23.6	21.5	17.4	17.6	17.9	16.7	13.0	16.4
−12°	16.6	16.9	11.2	9.5	6.8	7.0	7.4	6.1	3.0	3.3
	3.2	2.3	2.3	1.3	1.5	0.5	0.6	0.1	-0.4	
14	62.9	22.6	21.2	19.1	14.9	14.3	13.6	13.0	10.5	14.5
−17°	16.4	16.6	9.7	8.8	5.3	4.8	6.9	5.3	2.0	2.1
	1.5	1.3	1.5	0.7	0.8	0.3	-0.1	-0.1	-0.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12E

LTA TAPE 12E

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	63.1	21.8	20.3	18.0	12.9	11.4	9.3	10.4	8.7	14.3
ANGLE −23°	16.3	16.1	9.7	8.4	5.8	4.4	8.6	7.2	1.7	1.1
	0.9	1.1	1.0	0.7	0.6	0.4	-0.1	-0.1	-0.6	
16	63.5	21.4	19.9	17.7	12.8	10.8	7.2	9.2	10.4	12.6
−30°	12.9	13.4	8.8	9.0	6.2	4.1	9.6	8.9	1.8	1.5
	1.1	1.6	1.5	1.3	1.3	1.0	0.6	0.4	0.1	
17	64.0	21.8	20.3	18.0	13.0	11.2	7.9	12.0	13.2	12.8
−37°	10.0	12.5	9.1	10.1	7.9	5.7	10.4	9.6	3.6	3.2
	3.5	3.9	3.5	3.1	3.5	3.3	2.5	2.3	2.1	
18	64.4	22.0	20.5	18.3	13.7	12.2	10.0	14.4	12.9	14.8
−44°	12.4	15.6	11.4	13.6	10.5	9.7	12.7	10.9	7.2	7.3
	7.5	8.0	7.2	7.1	7.6	7.2	6.5	6.6	5.7	
19	64.8	22.6	21.2	19.1	15.1	14.2	13.2	17.2	13.1	17.1
−53°	17.2	19.7	13.5	17.2	14.6	14.9	16.7	14.7	12.8	12.9
	12.7	13.1	12.3	12.4	12.8	12.0	11.8	11.9	10.6	
20	65.2	24.6	23.3	21.3	17.6	17.1	16.7	20.7	15.4	19.3
−64°	20.7	23.3	16.4	21.1	18.6	19.5	20.4	18.7	17.5	17.7
	17.0	17.1	16.4	16.4	16.9	16.0	15.9	16.1	14.6	
21	65.0	25.5	24.3	22.6	17.7	19.3	18.8	22.7	17.2	20.4
−84°	22.8	25.1	18.4	22.9	20.7	21.8	22.3	20.8	19.9	20.1
	19.3	19.2	18.4	18.5	17.0	18.0	17.9	18.1	16.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET

GROUP 12E

LTA TAPE 12E

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	69.4	31.6	30.8	29.9	28.7	28.9	29.0	33.3	29.4	31.2
ANGLE +84°	32.1	31.7	34.1	32.7	32.0	32.9	30.3	29.7	28.9	28.0
	27.5	26.7	29.9	29.7	27.8	24.1	20.4	18.2	17.2	
2	70.0	33.0	32.3	31.6	30.7	30.1	29.6	34.5	32.3	31.1
+64°	32.2	32.9	34.5	32.8	32.8	33.9	31.7	30.2	29.8	28.8
	27.8	27.2	30.0	30.4	28.3	24.5	20.7	18.4	17.6	
3	69.6	33.0	32.5	31.8	31.0	30.7	30.4	34.4	35.1	30.2
+53°	33.6	32.5	33.3	31.5	32.3	33.4	31.7	30.0	29.3	28.1
	27.0	26.7	29.1	30.0	27.3	23.3	19.9	17.7	16.9	
4	68.9	31.6	31.4	31.1	30.8	30.5	30.2	31.7	33.5	31.1
+44°	32.0	32.5	31.4	30.2	31.0	31.3	29.9	28.2	27.9	26.5
	25.2	25.8	28.3	28.2	25.4	21.5	18.7	16.5	15.6	
5	68.3	30.0	30.2	30.4	30.5	29.6	28.5	28.8	31.8	30.7
+37°	30.4	31.8	29.8	28.7	28.3	29.2	27.7	26.1	25.6	24.3
	22.7	24.1	26.8	26.0	22.8	19.4	17.1	14.9	14.1	
6	67.5	27.7	27.8	28.0	28.1	27.8	27.4	27.7	28.8	29.0
+30°	27.8	28.3	26.7	27.3	26.1	26.2	24.9	23.3	21.5	20.7
	19.8	20.7	23.3	22.7	19.5	16.2	14.3	12.4	11.6	
7	66.6	26.1	26.1	26.1	26.2	25.6	25.0	25.7	23.5	26.2
+23°	25.8	25.4	23.2	24.3	22.7	21.8	21.8	18.9	17.2	16.7
	16.1	16.9	19.1	18.2	15.4	12.5	10.7	9.2	8.4	
8	65.3	24.2	24.1	24.1	24.0	22.4	19.8	21.1	19.5	24.7
+17°	23.2	23.1	18.6	17.8	16.9	16.0	19.0	15.7	11.7	11.2
	11.2	11.5	13.1	11.7	7.8	7.3	5.9	4.6	4.5	
9	63.8	20.7	20.0	19.1	18.0	17.1	15.8	16.6	15.5	20.3
+12°	21.0	20.2	14.2	12.2	7.7	10.2	15.4	12.4	5.7	4.8
	5.0	5.4	6.0	4.5	3.9	2.4	1.8	1.0	0.9	
10	63.2	26.3	25.1	23.4	20.5	19.5	18.2	15.8	14.8	18.6
+6°	18.6	16.1	11.0	9.7	7.7	7.3	7.4	6.0	3.8	3.2
	3.3	3.0	3.0	2.1	2.1	1.4	0.7	0.2	-0.0	
11	63.1	27.6	26.3	24.6	21.7	21.2	20.7	17.5	16.7	17.7
0°	16.2	14.0	11.2	9.2	7.6	7.9	6.1	5.7	4.0	3.3
	3.2	2.9	2.6	1.8	1.9	1.3	0.8	0.4	0.4	
12	63.2	27.8	26.4	24.5	20.9	20.8	20.6	17.2	16.4	18.8
−6°	17.5	15.4	11.3	9.9	8.5	8.5	8.7	7.3	4.8	3.8
	3.8	3.4	3.3	2.4	2.4	1.6	1.1	0.5	0.2	
13	62.7	23.0	21.6	19.4	15.8	15.2	15.3	15.5	13.5	15.8
−12°	16.8	15.7	10.0	8.2	6.1	6.6	7.7	6.1	2.8	2.6
	2.8	2.1	2.0	1.1	1.3	0.5	0.4	-0.0	-0.4	
14	62.9	21.3	19.9	17.8	13.7	12.6	11.3	13.8	10.3	14.4
−17°	17.7	16.2	9.7	8.4	6.0	4.7	6.8	5.6	2.0	2.0
	1.6	1.4	1.5	0.7	0.7	0.2	-0.2	-0.2	-0.3	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

GROUP 12E

LTA TAPE 12E

PAGE 2

FREQUENCY KEY FOR LTA SPECTRA, mHz

	D.C. 7.62 76.7	.95 9.60 96.7	1.20 12.1 122	1.51 15.2 154	1.90 19.2 194	2.40 24.2 244	3.02 30.5 307	3.81 38.4 387	4.80 48.4 487	6.05 60.9
ELEVATION 15 ANGLE −23°	63.1 16.0 0.7	21.3 15.7 1.3	19.8 10.0 1.0	17.5 8.4 0.7	12.4 5.7 0.5	11.4 4.4 0.4	10.1 8.5 −0.1	11.1 7.3 −0.2	9.5 2.0 −0.4	15.1 1.2
16 −30°	63.5 13.0 1.0	21.3 13.6 1.6	19.9 9.2 1.4	17.8 8.8 1.3	13.7 6.4 1.2	11.9 4.1 0.9	8.8 9.6 0.5	10.3 8.9 0.4	9.7 2.0 0.0	13.6 1.4
17 −37°	64.0 9.7 3.6	21.1 12.9 3.8	19.7 8.7 3.6	17.7 10.5 3.2	13.9 7.8 3.5	12.4 6.1 3.3	10.1 10.4 2.5	13.0 9.6 2.3	12.8 3.7 2.1	13.7 3.2
18 −44°	64.4 12.2 7.5	22.0 15.7 7.9	20.6 11.1 7.3	18.5 14.0 7.1	14.4 10.6 7.6	13.5 9.8 7.2	12.4 12.6 6.5	14.6 10.9 6.6	12.3 7.2 5.7	15.2 7.3
19 −53°	64.8 17.2 12.7	22.6 19.8 13.0	21.2 13.4 12.3	19.0 17.2 12.4	14.7 14.7 12.8	14.1 14.9 12.0	13.4 16.7 11.8	17.1 14.8 11.9	13.2 12.8 10.5	17.0 13.0
20 −64°	65.2 20.7 17.0	24.6 23.3 17.1	23.3 16.4 16.4	21.3 21.1 16.4	17.6 18.6 16.9	17.1 19.5 16.0	16.7 20.4 15.9	20.7 18.7 16.1	15.4 17.5 14.6	19.3 17.7
21 −84°	65.0 22.8 19.3	25.5 25.1 19.2	24.3 18.4 18.4	22.6 22.9 18.5	17.7 20.7 17.0	19.3 21.8 18.0	18.8 22.3 17.9	22.7 20.8 18.1	17.2 19.9 16.6	20.4 20.1

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 12E

GROUP 12E

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	63.2	27.5	27.2	26.8	26.4	26.9	27.4	27.9	24.5	28.0
ANGLE −71.3°	24.5	26.9	22.0	22.6	19.7	13.3	15.6	14.7	13.6	11.8
	11.2	10.2	9.3	9.0	7.6	6.1	4.3	3.0	1.9	
2	63.1	25.8	24.7	23.3	21.1	24.4	26.2	23.7	22.9	27.9
−66°	27.7	27.3	21.0	19.5	18.0	12.6	12.9	11.5	9.3	7.9
	7.4	5.9	6.3	5.5	5.0	3.3	2.1	0.9	−0.1	
3	63.2	24.3	24.1	23.8	23.5	24.0	24.5	23.0	21.7	28.6
−61.6°	27.4	27.8	21.7	20.2	17.0	14.2	12.8	11.5	7.7	5.4
	4.6	2.8	3.8	2.9	2.6	1.3	0.9	0.4	0.0	
4	63.6	30.1	29.7	29.3	28.9	26.8	22.5	27.1	22.7	28.1
−57.8°	29.1	27.7	23.2	19.5	17.0	17.2	14.5	13.2	10.0	8.3
	6.8	5.6	4.1	4.1	2.3	2.6	3.1	3.7	3.6	
5	64.1	27.0	30.0	31.7	32.9	31.0	27.3	25.0	22.7	24.0
−54.3°	28.2	26.3	20.6	18.1	18.1	17.5	14.0	14.8	12.1	10.7
	9.7	8.1	6.1	6.1	4.1	3.9	5.4	6.8	6.9	
6	64.1	33.6	33.4	33.1	32.9	30.9	27.3	22.2	29.3	20.8
−51.1°	19.6	26.2	20.5	19.4	18.9	14.5	13.9	13.8	12.2	10.5
	9.4	8.0	6.7	5.5	4.7	4.1	5.2	6.6	6.7	
7	63.6	32.7	31.3	29.1	24.5	24.7	25.0	24.8	28.1	22.8
−48.1°	23.4	24.8	18.1	17.1	16.7	13.1	12.7	12.0	9.5	7.9
	6.5	5.8	4.0	3.0	2.3	1.8	2.4	3.5	3.2	
8	63.6	35.7	35.7	35.7	35.7	34.8	33.7	32.4	29.7	26.6
−45.3°	28.2	30.9	28.4	24.3	23.3	19.6	19.3	17.1	15.2	14.0
	11.4	8.9	9.3	6.4	5.2	3.9	3.8	3.4	2.5	
9	65.2	44.6	44.0	43.3	42.4	44.4	45.8	41.5	41.9	36.9
−42.6°	40.1	37.1	35.6	30.5	30.2	26.4	25.8	23.5	22.7	22.8
	19.2	16.0	16.8	13.7	12.6	11.0	10.7	9.8	9.2	
10	67.8	46.5	45.1	43.1	39.3	46.2	48.8	41.2	43.1	40.9
−40.0°	43.3	37.9	32.9	31.1	31.1	28.2	26.4	26.3	24.8	24.0
	20.6	17.8	17.9	16.1	15.1	13.9	13.8	12.9	12.8	
11	68.7	47.1	46.8	46.5	46.2	44.7	42.2	38.1	36.3	35.9
−37.5°	37.0	36.7	35.2	35.6	30.9	29.7	28.6	27.4	24.5	21.8
	19.6	18.7	17.1	16.2	16.2	14.2	14.8	14.0	14.8	
12	67.5	45.5	45.4	45.3	45.2	44.1	42.6	39.8	41.3	41.4
−35.1°	44.7	39.9	36.0	32.7	29.7	28.5	27.7	26.8	24.2	23.1
	19.7	18.3	16.9	14.8	14.8	12.9	13.4	12.5	13.0	
13	64.7	39.8	39.1	38.3	37.2	39.5	41.0	29.7	38.7	38.5
−32.8°	40.7	34.8	31.7	26.4	24.6	22.0	19.2	22.9	21.6	20.8
	15.5	14.7	13.3	11.2	10.2	9.1	8.7	7.8	8.0	
14	63.0	29.0	28.6	28.1	27.6	28.9	29.8	19.3	26.2	25.4
−30.5°	25.2	23.3	21.0	18.0	15.8	12.6	11.9	13.3	11.0	9.5
	6.1	4.8	4.4	3.5	2.5	1.6	1.0	0.8	1.1	
15	62.6	23.8	23.0	22.0	20.6	19.4	17.9	11.6	16.9	18.7
−28.3°	19.6	19.5	15.1	12.2	10.9	8.9	9.1	10.1	6.8	5.6
	3.5	2.0	1.7	1.2	0.1	−0.7	−1.3	−0.4	0.2	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.6	22.2	20.8	18.8	15.1	15.0	14.9	9.6	16.5	20.0
ANGLE −26.1°	21.2	21.5	15.2	12.0	13.8	12.8	11.5	11.4	10.2	8.8
	5.3	4.3	3.1	2.2	1.0	0.4	0.0	0.8	0.0	
17	62.6	21.7	20.1	17.7	12.0	14.3	15.9	14.0	15.6	19.3
−24.0°	20.5	21.1	17.8	13.5	13.1	12.5	12.4	11.8	10.4	8.3
	5.0	3.7	2.8	2.8	1.6	1.6	1.1	2.4	1.1	
18	62.6	17.8	16.4	14.4	10.6	14.3	16.3	8.5	13.9	16.5
−21.8°	20.2	19.7	15.4	10.4	11.1	10.1	9.3	8.2	6.7	4.9
	1.4	1.6	1.7	2.0	0.3	0.4	−0.4	0.9	−0.1	
19	62.6	16.2	17.5	18.5	19.4	17.7	15.0	7.1	13.6	16.7
−19.8°	17.1	16.8	14.6	8.3	7.7	7.3	8.0	5.9	4.2	3.4
	2.5	1.3	1.8	1.1	0.6	0.2	−0.6	−0.4	−0.7	
20	62.6	17.2	16.0	14.4	11.7	11.0	10.3	12.2	11.9	11.5
−17.7°	15.3	14.6	12.5	3.8	5.8	6.5	7.4	6.3	2.4	2.3
	2.4	1.5	1.5	0.8	0.8	0.2	−0.8	−0.9	−0.4	
21	62.6	18.7	17.8	16.6	15.0	13.5	11.4	10.6	9.2	13.6
−15.7°	12.3	12.2	9.3	7.8	5.0	4.8	7.2	6.6	3.2	3.4
	2.0	2.0	1.7	1.4	1.4	0.2	−0.5	−0.5	−0.8	
22	62.7	17.3	16.6	15.8	14.8	12.2	4.4	14.4	15.2	14.1
−13.7°	14.1	12.9	11.6	7.2	7.7	4.9	7.1	6.9	4.2	3.1
	2.1	2.5	2.5	1.8	1.7	0.9	0.2	0.0	−0.3	
23	62.7	16.7	16.1	15.5	14.8	15.7	16.5	13.2	13.8	13.1
−11.7°	15.5	14.7	7.6	9.3	7.3	6.8	6.9	6.6	4.0	4.0
	3.2	2.8	2.5	2.0	1.5	1.1	0.6	−0.1	−0.1	
24	62.7	21.7	20.4	18.5	15.3	15.8	16.3	12.0	14.1	15.7
−9.7°	15.2	15.5	12.7	7.4	7.8	7.8	7.2	6.2	4.0	3.6
	3.5	3.5	2.7	2.3	1.7	1.4	0.6	0.2	−0.2	
25	62.8	24.5	23.0	20.7	15.6	15.2	14.8	15.7	9.3	16.0
−7.8°	19.2	16.2	12.4	6.8	8.8	7.2	7.6	6.0	3.4	3.1
	3.2	2.7	3.5	2.0	2.0	1.4	0.6	0.3	−0.1	
26	62.9	27.7	26.2	23.8	18.1	18.2	18.2	18.6	9.9	16.4
−5.8°	18.1	16.3	11.1	11.2	8.3	9.2	7.5	6.8	4.2	3.1
	3.5	2.7	3.4	2.0	1.9	1.4	0.8	−0.1	−0.0	
27	63.1	27.8	26.3	23.9	18.4	19.7	20.8	18.0	14.4	16.2
−3.9°	17.7	16.0	11.8	9.2	7.6	8.6	7.5	6.4	4.2	3.0
	3.2	2.8	3.0	1.6	2.1	1.3	0.5	−0.1	0.0	
28	63.2	26.8	25.3	23.0	17.5	17.8	18.0	18.0	9.1	16.8
−1.9°	17.6	15.5	9.4	8.5	8.9	8.9	7.3	5.9	3.6	2.5
	3.2	2.5	2.9	1.4	1.9	1.4	0.5	0.2	0.2	
29	63.3	24.0	23.3	22.6	21.7	19.9	16.6	16.4	10.2	15.2
0°	16.6	15.7	8.8	8.9	7.8	7.3	7.8	5.5	4.1	1.8
	3.2	3.0	2.3	2.6	2.0	1.2	1.0	0.3	0.3	
30	63.4	19.0	20.9	22.2	23.2	20.9	15.3	13.8	15.1	17.4
+1.9°	17.1	17.3	11.8	9.2	7.2	5.0	7.1	6.6	2.9	2.9
	2.8	3.0	2.8	1.7	1.9	1.0	0.6	0.2	−0.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	63.4	26.7	25.3	23.3	19.4	18.5	17.3	16.7	18.3	22.8
ANGLE +3.9°	20.8	17.0	12.9	11.9	7.8	6.4	8.4	6.8	4.0	4.5
	4.0	4.2	3.5	2.8	2.0	1.7	0.5	0.2	-0.1	
32	63.4	28.7	27.3	25.2	21.0	21.1	21.3	19.9	21.7	26.4
+5.8°	23.9	16.7	15.7	13.5	9.8	8.3	9.7	7.5	5.0	7.2
	7.6	6.6	4.8	4.9	2.7	1.6	1.3	0.6	-0.2	
33	63.4	32.8	31.7	30.2	27.8	26.3	23.9	19.9	23.0	28.2
+7.8°	26.3	16.4	16.3	13.2	9.3	8.0	11.2	8.7	6.2	9.1
	10.8	7.6	6.0	6.8	3.2	1.6	1.4	0.7	0.3	
34	63.3	32.2	31.3	30.2	28.5	26.8	23.8	21.6	24.5	26.8
+9.7°	19.1	16.4	17.5	13.9	8.4	8.9	10.3	9.8	7.2	9.0
	11.4	7.4	7.0	8.0	3.4	2.0	1.2	0.4	0.1	
35	63.2	31.9	30.7	28.9	26.0	24.1	20.5	20.3	24.5	21.1
+11.7°	16.7	18.4	16.5	12.3	9.5	9.9	8.5	8.7	6.3	7.6
	9.2	5.9	6.3	6.9	2.5	2.0	0.9	0.3	0.2	
36	63.1	27.3	26.0	24.2	20.9	19.4	16.9	13.7	17.0	16.3
+13.7°	17.0	18.5	12.1	5.1	8.8	9.7	8.6	6.4	3.7	4.5
	4.8	3.8	3.8	3.3	2.0	1.4	0.7	-0.2	0.1	
37	63.0	14.6	16.4	17.6	18.6	18.0	17.2	11.3	10.9	13.4
+15.7°	14.6	11.9	10.2	8.6	8.3	7.5	8.9	5.9	3.4	2.8
	2.8	2.5	2.5	2.2	1.4	0.6	0.2	-0.7	-0.0	
38	63.0	18.6	18.5	18.5	18.4	16.3	11.6	10.5	17.5	14.5
+17.7°	18.1	14.8	10.3	10.8	7.3	6.4	9.3	5.6	3.8	2.3
	2.8	2.2	2.0	1.7	1.1	0.6	0.4	-0.8	-0.5	
39	63.0	18.0	19.3	20.3	21.1	19.3	16.0	11.8	17.5	16.0
+19.8°	17.8	17.1	8.6	11.6	7.5	6.9	9.4	5.5	3.1	2.7
	2.5	1.6	1.8	1.3	1.0	0.5	0.2	-0.9	-0.3	
40	63.0	20.1	18.9	17.4	15.1	15.0	15.0	12.6	10.2	16.1
+21.8°	17.3	17.6	10.3	10.0	8.1	6.5	9.6	6.5	2.6	2.1
	1.9	1.8	2.0	1.0	0.2	0.5	-0.1	-0.8	-0.7	
41	62.9	18.1	16.8	15.0	11.7	10.3	8.4	10.5	11.3	16.3
+24.0°	18.1	17.2	10.0	10.4	7.3	7.3	10.1	6.6	1.7	0.9
	1.6	1.5	1.6	0.7	0.4	0.3	-0.6	-0.9	-1.0	
42	62.9	15.8	15.3	14.6	13.8	12.9	11.7	9.0	12.4	17.5
+26.1°	19.0	17.5	9.1	10.4	5.9	7.8	9.7	6.2	1.8	1.4
	1.5	1.1	1.6	1.1	-0.1	-0.6	-1.1	-1.3	-0.9	
43	62.8	15.7	15.3	14.8	14.3	14.9	15.4	6.9	13.1	18.3
+28.3°	20.2	18.5	11.5	6.2	5.8	7.7	10.7	5.2	3.1	1.9
	1.9	1.0	1.4	1.7	-0.2	-0.2	-1.1	-1.4	-0.4	
44	62.9	18.3	18.2	18.1	18.0	16.6	14.5	5.7	14.3	19.9
+30.5°	20.9	17.9	12.3	7.9	6.9	8.3	10.6	4.3	3.0	1.0
	1.6	0.7	1.4	1.4	-0.2	-0.7	-1.1	-1.4	-1.4	
45	62.9	18.7	18.6	18.5	18.5	17.0	14.9	10.7	15.8	21.1
+32.8°	21.9	18.7	12.9	11.1	6.7	8.8	11.2	4.6	2.7	0.9
	1.2	-0.1	0.3	0.2	-0.0	-1.2	-1.7	-1.4	-1.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	63.0	20.2	19.8	19.3	18.8	18.0	16.8	14.4	17.8	20.4
ANGLE +35.1°	21.5	19.9	14.6	11.2	7.4	9.2	11.7	4.5	2.8	1.0
	0.3	-0.2	-0.1	-0.4	-0.2	-1.3	-1.7	-1.5	-2.0	
47	63.2	24.5	23.2	21.5	18.6	17.0	14.5	15.4	18.5	18.9
+37.5°	22.3	21.7	13.8	12.9	8.8	9.1	11.3	5.3	2.1	0.3
	0.7	0.2	0.2	0.1	-0.2	-1.0	-1.4	-1.4	-1.8	
48	63.2	24.3	23.5	22.6	21.5	19.2	13.8	19.6	17.7	24.4
+40.0°	25.1	23.7	15.0	14.3	10.1	10.0	11.0	4.8	2.4	1.5
	1.2	0.3	0.3	0.1	-0.7	-1.1	-1.1	-1.1	-1.8	
49	63.1	16.4	17.8	18.9	19.7	17.5	12.8	18.9	17.9	25.7
+42.6°	26.7	25.3	16.6	13.9	9.5	10.5	11.6	3.7	1.1	0.5
	0.4	-0.3	-0.3	0.1	-0.2	-1.1	-1.4	-1.5	-2.4	
50	63.1	16.7	17.5	18.1	18.7	16.9	13.8	15.6	21.1	25.5
+45.3°	26.9	25.7	17.1	14.2	9.5	11.3	11.3	4.3	2.7	0.7
	1.3	0.9	0.7	0.4	-0.4	-0.8	-1.9	-1.6	-1.6	
51	63.3	29.5	29.7	29.9	30.1	28.0	23.6	21.9	26.3	24.2
+48.1°	26.7	26.4	22.0	19.8	17.7	15.2	15.8	9.4	11.0	8.3
	8.4	5.5	4.4	3.3	3.3	1.3	0.9	-0.0	0.3	
52	64.7	43.1	42.5	41.7	40.7	39.2	37.0	35.9	36.2	35.3
+51.1°	31.1	32.9	34.4	30.6	27.7	25.9	23.4	20.2	21.7	19.5
	18.1	14.6	13.7	11.5	11.2	9.5	9.2	7.7	7.3	
53	67.8	51.6	50.5	48.9	46.6	47.0	47.3	45.6	45.0	42.8
+54.3°	42.1	39.8	40.1	35.3	32.6	32.4	30.0	27.3	27.4	25.9
	23.7	20.0	19.9	17.3	16.8	16.1	15.4	14.4	14.0	
54	71.0	52.3	50.6	48.0	40.6	47.5	50.1	45.6	47.4	43.9
+57.8°	46.2	40.0	36.3	33.8	34.2	31.9	30.8	28.9	27.7	27.2
	23.7	21.0	21.3	19.0	17.9	18.0	17.3	17.0	16.4	
55	72.0	48.5	47.7	46.8	45.7	45.0	44.2	36.7	40.5	40.8
+61.6°	42.0	40.5	38.5	35.2	33.6	30.6	30.2	28.5	27.4	25.2
	23.3	21.4	20.1	19.1	18.5	17.5	17.5	17.8	17.1	
56	70.7	53.5	52.2	50.4	47.3	47.1	46.9	47.2	45.9	42.5
+66.0°	42.1	39.5	39.3	35.8	33.3	32.5	31.4	29.6	27.4	26.4
	23.8	21.9	20.7	18.6	18.7	17.8	16.9	16.8	15.9	
57	67.7	49.3	47.8	45.5	40.3	46.4	48.8	43.9	46.1	43.3
+71.3°	43.6	36.6	35.7	33.1	32.3	30.1	26.9	28.8	25.3	25.1
	22.4	19.3	18.6	16.3	15.8	15.1	14.6	14.9	14.8	

GROUP 12E

STA TAPE 12K

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	43.3 15.5 -1.3	16.7 15.9 -1.5	16.4 14.6 -3.7	16.1 6.3 -4.4	15.8 2.9 -4.0	15.8 2.9 -4.2	15.8 2.9 -3.4	16.1 0.1 -5.5	10.7 2.0 -4.9	13.2 -1.5
2 +64°	43.4 17.0 -0.4	18.1 17.3 -0.3	17.3 12.0 -2.3	16.3 10.7 -3.8	14.9 7.4 -2.6	16.8 2.7 -3.9	18.1 3.0 -3.7	14.5 0.3 -5.0	14.6 0.6 -5.4	15.1 -0.1
3 +53°	43.5 17.5 0.3	18.8 17.4 -0.6	17.6 12.4 -1.8	15.9 10.3 -3.3	13.0 4.0 -1.7	15.4 1.6 -3.9	17.0 4.2 -4.5	7.9 -1.0 -4.3	12.0 -1.1 -4.8	16.5 -0.5
4 +44°	43.5 16.0 -0.6	16.9 15.8 -0.5	15.5 14.3 -1.5	13.6 9.4 -2.5	7.9 3.3 -2.6	13.5 4.7 -4.1	15.5 3.6 -3.4	16.1 0.4 -3.9	9.8 1.4 -4.2	16.0 0.1
5 +37°	43.3 15.5 -1.2	13.0 12.3 0.7	11.9 14.3 -0.6	10.4 8.2 -1.8	8.2 5.5 -3.1	12.9 7.0 -3.8	15.1 5.5 -3.3	19.2 1.7 -3.7	4.6 2.5 -3.8	13.3 0.9
6 +30°	43.3 16.4 -1.3	8.0 13.8 0.1	9.9 12.4 -1.6	11.2 2.3 -1.5	12.2 2.1 -2.7	14.0 6.1 -3.6	15.3 6.7 -3.5	16.0 2.7 -3.6	7.6 1.9 -3.4	11.3 -0.5
7 +23°	43.3 19.4 -1.8	9.4 16.0 -1.3	15.6 8.4 -2.7	18.0 9.4 -3.0	17.6 5.5 -2.9	18.6 5.1 -5.2	17.3 5.3 -4.3	7.0 -0.3 -4.0	17.8 0.6 -4.1	11.9 -1.5
8 +17°	44.1 13.2 -0.9	6.9 17.2 -0.2	15.3 14.9 -2.3	18.0 7.0 -3.6	17.6 2.9 -3.4	18.1 5.0 -3.5	15.7 2.5 -2.9	15.3 2.9 -5.2	5.1 4.3 -4.0	12.1 -0.0
9 +12°	44.2 13.8 -0.2	11.9 17.8 0.4	13.8 11.7 -1.8	15.0 11.4 -2.8	16.0 7.5 -2.3	16.5 4.7 -3.9	17.0 2.4 -2.6	15.8 1.6 -4.5	10.5 1.8 -4.5	14.5 1.4
10 +6°	44.1 14.3 0.4	13.1 17.8 -0.2	12.0 9.0 -1.8	10.5 10.0 -2.7	9.3 5.7 -1.9	14.5 2.8 -3.7	17.0 2.9 -4.1	13.5 -0.8 -4.1	8.7 -1.7 -4.4	16.4 0.4
11 0°	44.0 13.9 -0.8	9.5 16.2 0.4	8.2 13.4 -1.8	6.4 9.8 -1.8	3.2 5.4 -2.8	15.4 4.7 -3.6	18.3 2.7 -3.9	14.3 1.6 -3.3	8.7 2.2 -3.8	15.5 1.3
12 −6°	43.7 14.8 -0.7	10.2 11.5 1.2	8.7 16.0 -1.6	6.3 8.1 -1.4	0.9 7.8 -3.5	16.4 7.0 -3.4	19.4 5.1 -3.5	17.6 3.5 -3.0	8.0 4.2 -3.7	12.3 2.0
13 −12°	44.0 17.3 0.3	15.6 14.1 1.1	15.2 14.4 -1.9	14.7 4.8 -0.8	14.2 6.3 -3.0	17.7 7.7 -3.5	19.6 5.5 -3.4	15.9 4.2 -3.4	11.1 3.0 -3.5	12.4 1.4
14 −17°	44.1 20.5 -0.3	13.0 16.6 -0.4	17.5 6.1 -1.7	19.6 10.1 -2.3	21.1 7.5 -2.5	19.6 6.2 -4.3	17.2 4.9 -4.1	4.5 1.1 -3.6	18.6 0.9 -4.0	14.0 0.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

GROUP 12E

STA TAPE 12K

PAGE 2

FREQUENCY KEY FOR STA SPECTRA, mHz

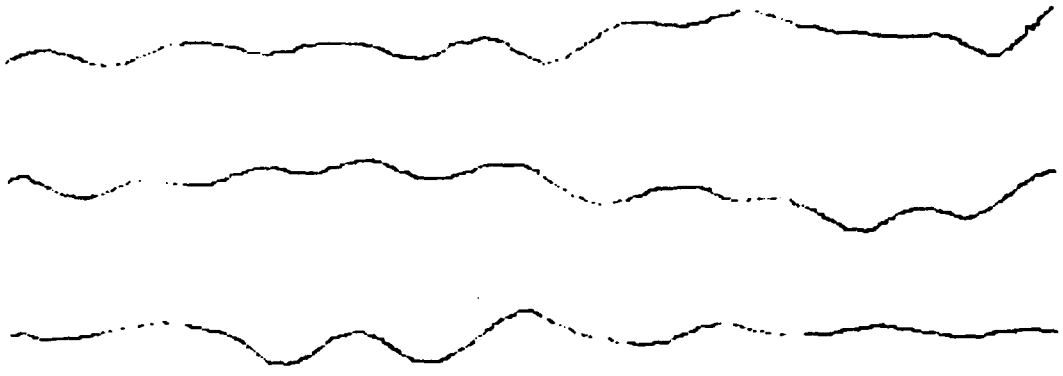
	D.C 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	43.7 10.1 −2.4	11.9 15.3 −0.8	16.5 13.4 −2.9	18.7 3.2 −4.4	20.1 7.6 −3.8	17.9 6.1 −3.9	13.3 1.3 −5.0	4.1 3.5 −4.2	0.2 3.1 −5.0	9.8 −0.0
16 −30°	43.7 11.0 −1.5	9.4 13.4 −1.5	12.7 8.4 −2.6	14.6 6.0 −2.9	15.9 5.4 −3.6	14.7 5.2 −4.9	13.0 1.1 −4.3	10.0 1.6 −4.4	0.9 0.7 −5.3	8.3 0.7
17 −37°	43.8 10.3 −0.1	4.3 13.1 −1.9	8.9 7.8 −3.0	11.1 6.9 −2.7	12.6 5.5 −3.3	14.3 2.3 −4.6	15.5 1.3 −4.7	15.1 −0.0 −4.5	−13.4 −2.6 −4.9	10.9 −0.2
18 −44°	43.6 5.6 −1.4	11.4 12.8 −1.3	10.6 12.2 −2.9	9.6 6.2 −3.1	8.3 2.8 −4.1	14.5 2.7 −4.3	17.0 3.3 −4.8	13.9 2.0 −4.7	−0.6 1.0 −5.1	6.2 0.3
19 −53°	43.6 8.4 −1.2	18.0 11.3 −0.6	16.4 15.4 −2.4	13.7 6.2 −2.6	5.1 4.2 −4.1	16.0 6.1 −4.5	18.9 3.1 −4.3	11.4 2.5 −4.1	5.2 2.5 −4.1	1.5 0.8
20 −64°	43.6 15.4 0.4	21.7 12.6 −0.7	20.7 15.0 −2.4	19.2 4.5 −2.8	17.1 5.8 −4.3	18.1 7.5 −4.1	19.0 1.8 −5.1	11.3 1.7 −4.5	7.5 0.4 −4.3	8.2 0.4
21 −84°	43.6 19.2 −0.3	20.6 14.6 −1.1	20.9 10.5 −2.2	21.2 11.3 −3.4	21.5 7.7 −3.9	19.1 5.9 −4.5	13.6 2.9 −5.8	0.1 1.4 −4.8	14.8 −1.9 −5.1	14.0 −0.1

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 12E

BEARING VS TIME

MEAN & VAR 225.7 5.15 228.3 [illegible] 43 229.3 3.77



25°

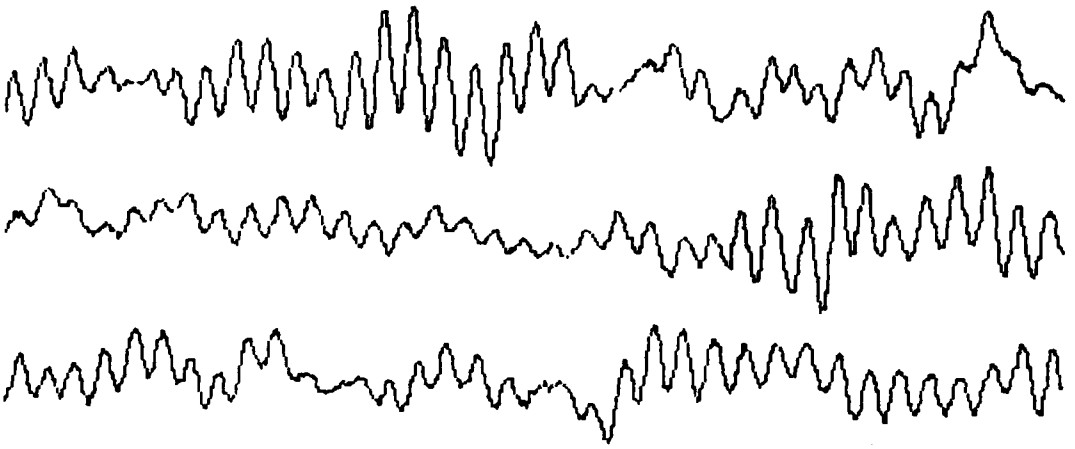
1024 SECONDS

MPL-M-5130

GROUP 12E

ELEVATION VS TIME

MEAN & VAR. 92.3 0.73 91.7 0.54 91.9 0.49

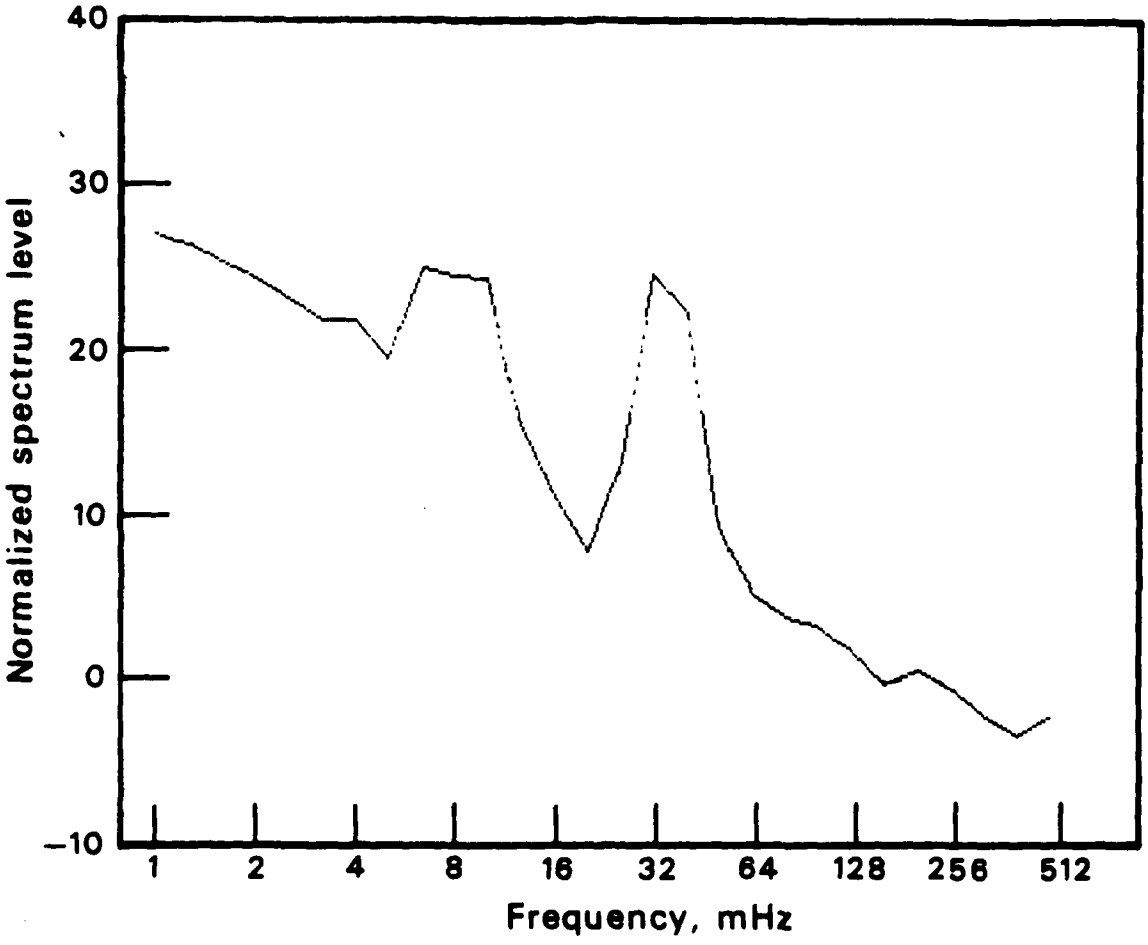


5°

1024 SECONDS

MPL-M-5131

GROUP 12E



POWER SPECTRUM OF ELEVATION ANGLE.

GROUP 12F

Environmental Summary

12 June 1978

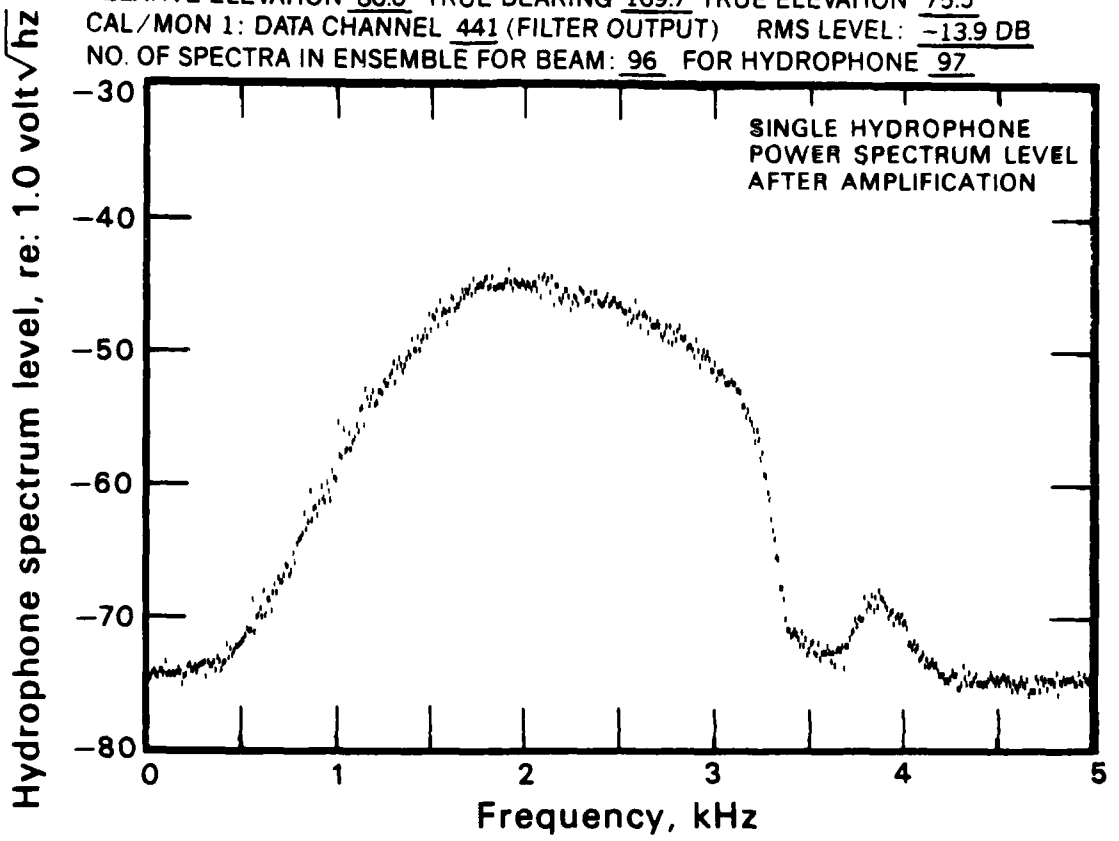
Tapes	Start time	Code
LTA/LOG	14:38:24	12F
STA	14:29:00	12L
Low Band Filter		

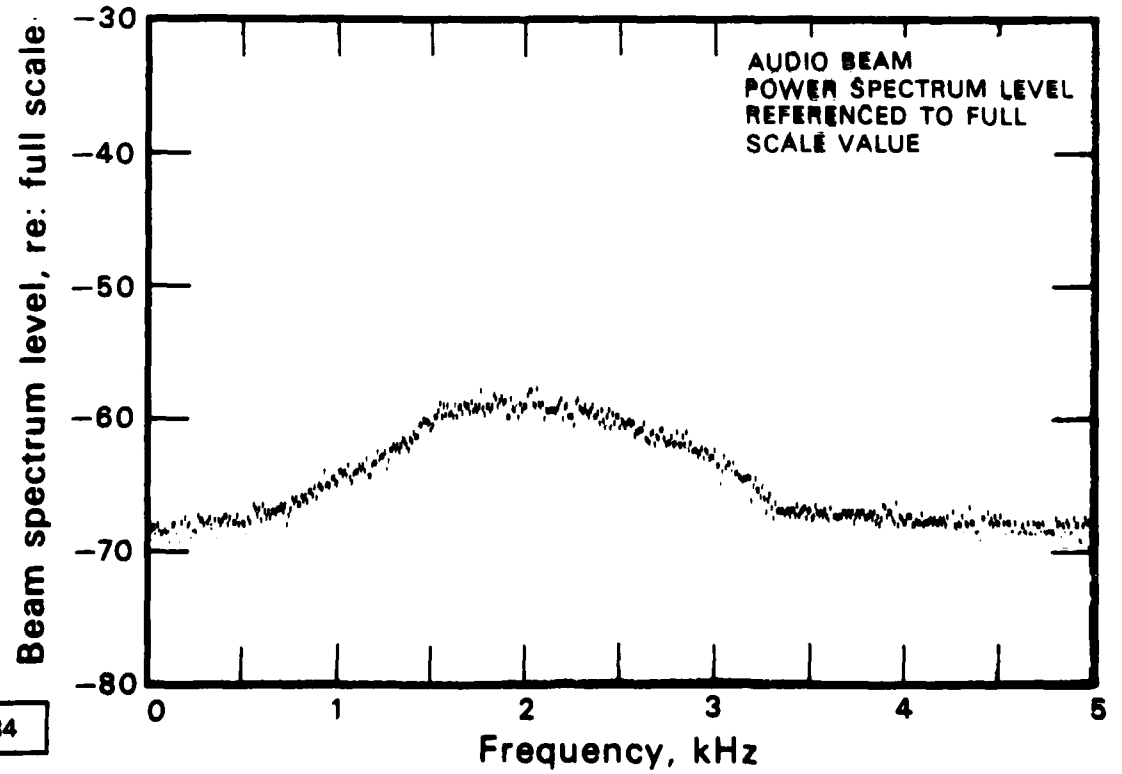
Environment

Time	Depth (ft.)	Wind Speed (kts)	Wind Dir. (deg.)	Wave Height (ft.)	Wave Period (sec.)	Wave Dir.	Comments
14:30	530	17	350	5-7	6-7	NW	Chop
15:30	300	12	340	"	"	"	

12-JUN-78 14:41:27 DIGITAL FILTER 5 WITH NOTCH
DIRECTIONAL MODE GAIN: 72 DB RELATIVE BEARING 297.3
RELATIVE ELEVATION 80.0 TRUE BEARING 169.7 TRUE ELEVATION 75.5
CAL/MON 1: DATA CHANNEL 441 (FILTER OUTPUT) RMS LEVEL: -13.9 DB
NO. OF SPECTRA IN ENSEMBLE FOR BEAM: 96 FOR HYDROPHONE 97

GROUP 12F





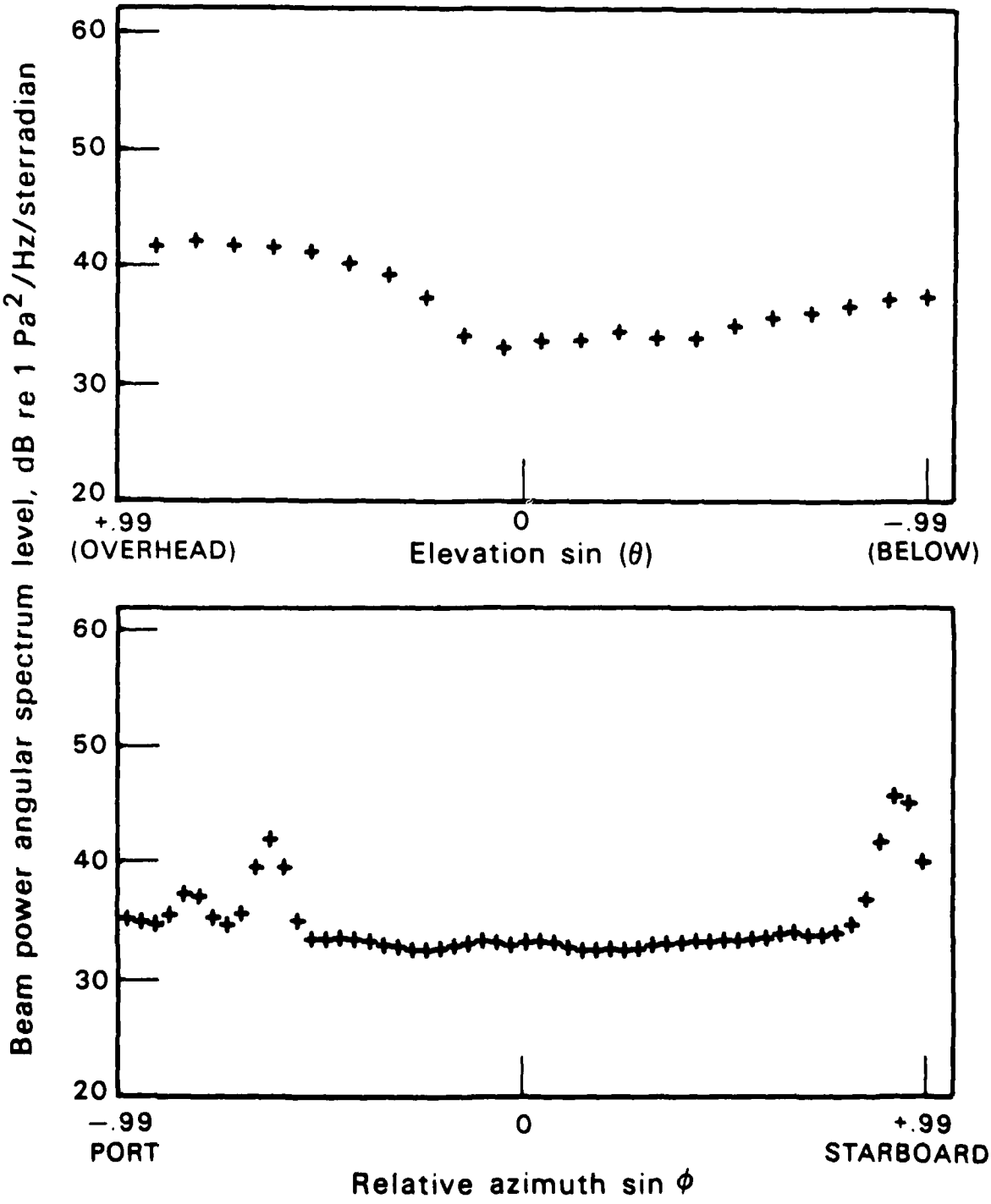
MPL-M-5134

ADA DIMUS BEAM POWER SPECTRUM LEVEL
vs. ELEVATION (UPPER) AND AZIMUTH (LOWER).

GROUP 12F

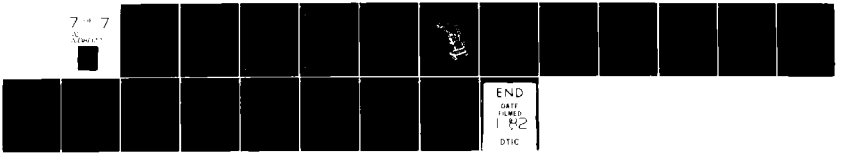
CROSSES INDICATE INDIVIDUAL BEAM POWER LEVELS.

POWER HAS BEEN CORRECTED FOR DIMUS NORMALIZATION, DISTORTION AND DIRECTIVITY INDEX.

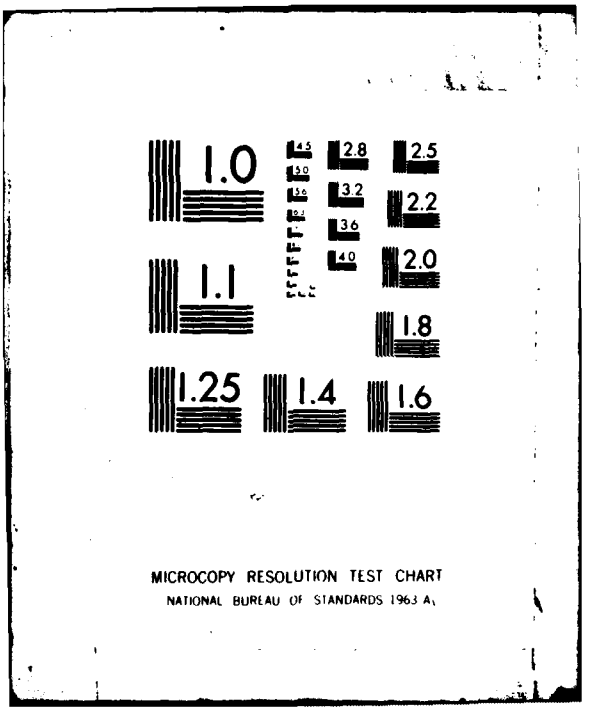


MPL-M-5135

AD-A108 077 SCRIPPS INSTITUTION OF OCEANOGRAPHY LA JOLLA CA MARI--ETC F/G 20/1
ACOUSTIC BACKGROUND MEASUREMENTS WITH ADA JUNE 1978.(U)
JUL 81 V C ANDERSON N00014-80-C-0077
UNCLASSIFIED SIO-REF-81-13 SBI-AD-E001 179 NL

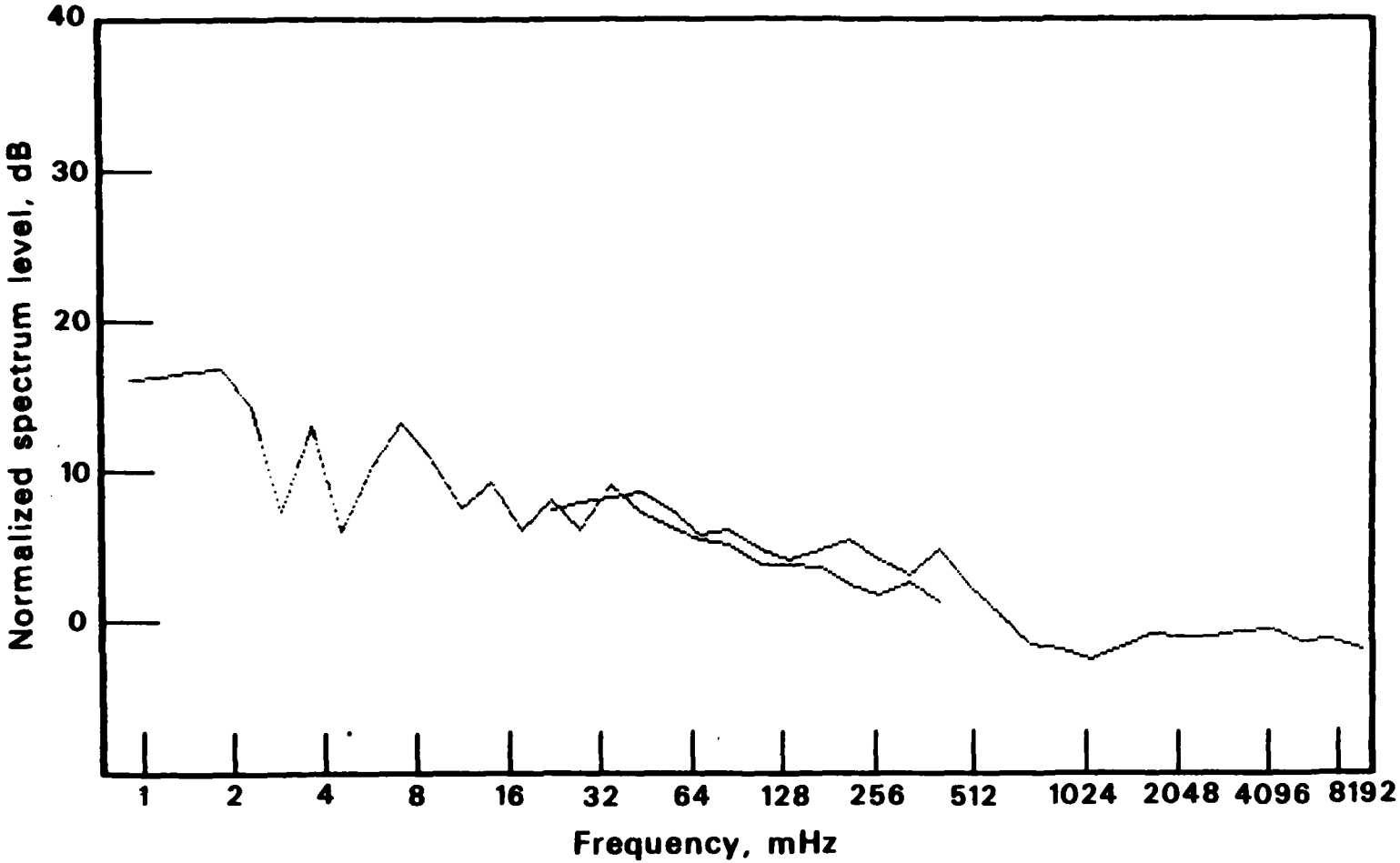


END
DATE FILMED
1 82
DTIC


1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

MPL-M-5136

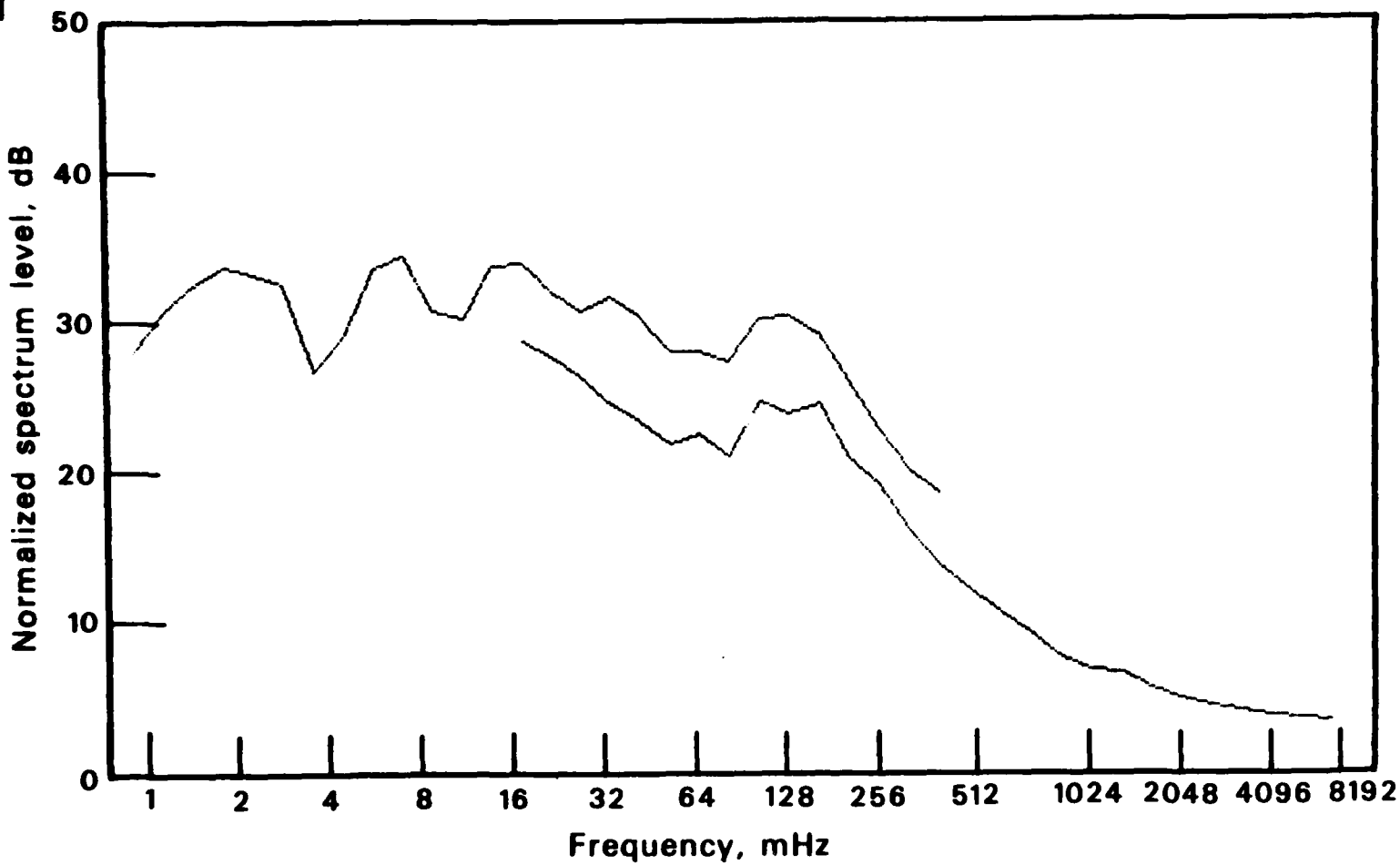
SINGLE ELEMENT COMPOSITE ENVELOPE SPECTRA FROM LTA AND STA DATA TAPES



GROUP 12F

MPL-M-5137

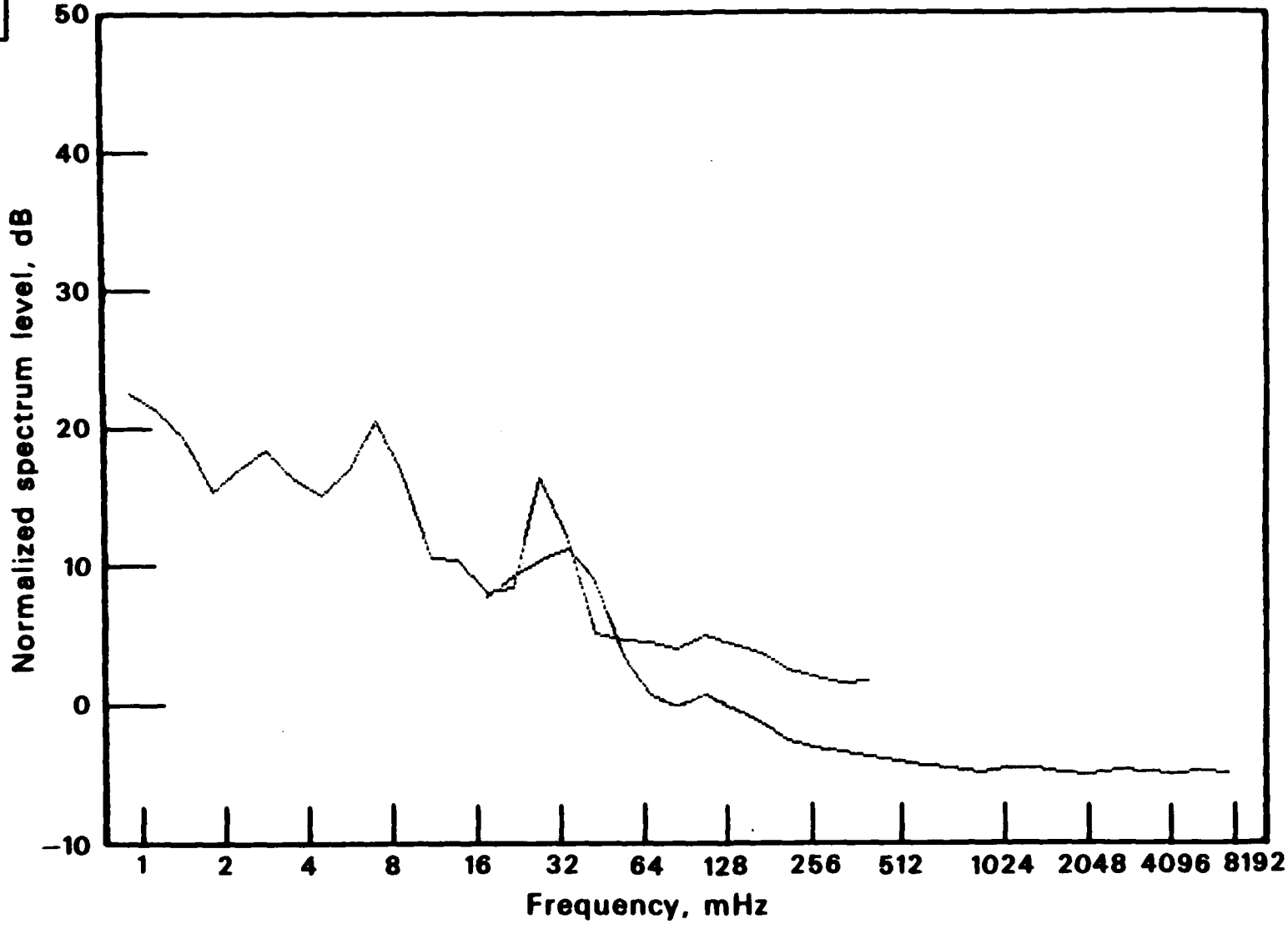
COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #1 (+84°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12F

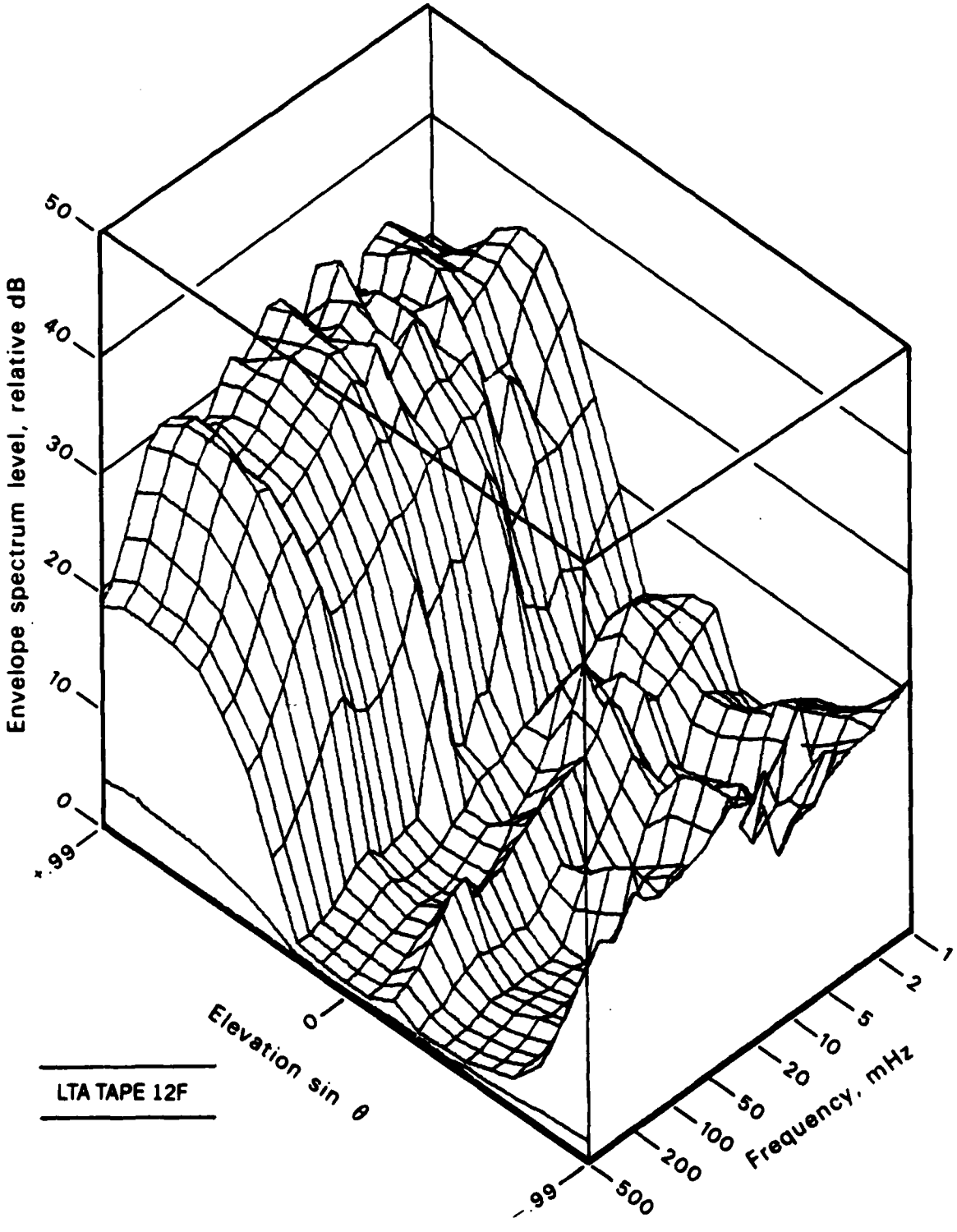
MPL-M-5138

COMPOSITE BEAM ENVELOPE SPECTRA FROM LTA AND STA TAPE DATA.
7 CENTRAL BEAMS IN ELEVATION #9 (+6°) COMBINED.
DB REFERENCE IS EXPECTED LEVEL FOR EQUIVALENT STATIONARY GAUSSIAN NOISE.



GROUP 12F

GROUP 12F

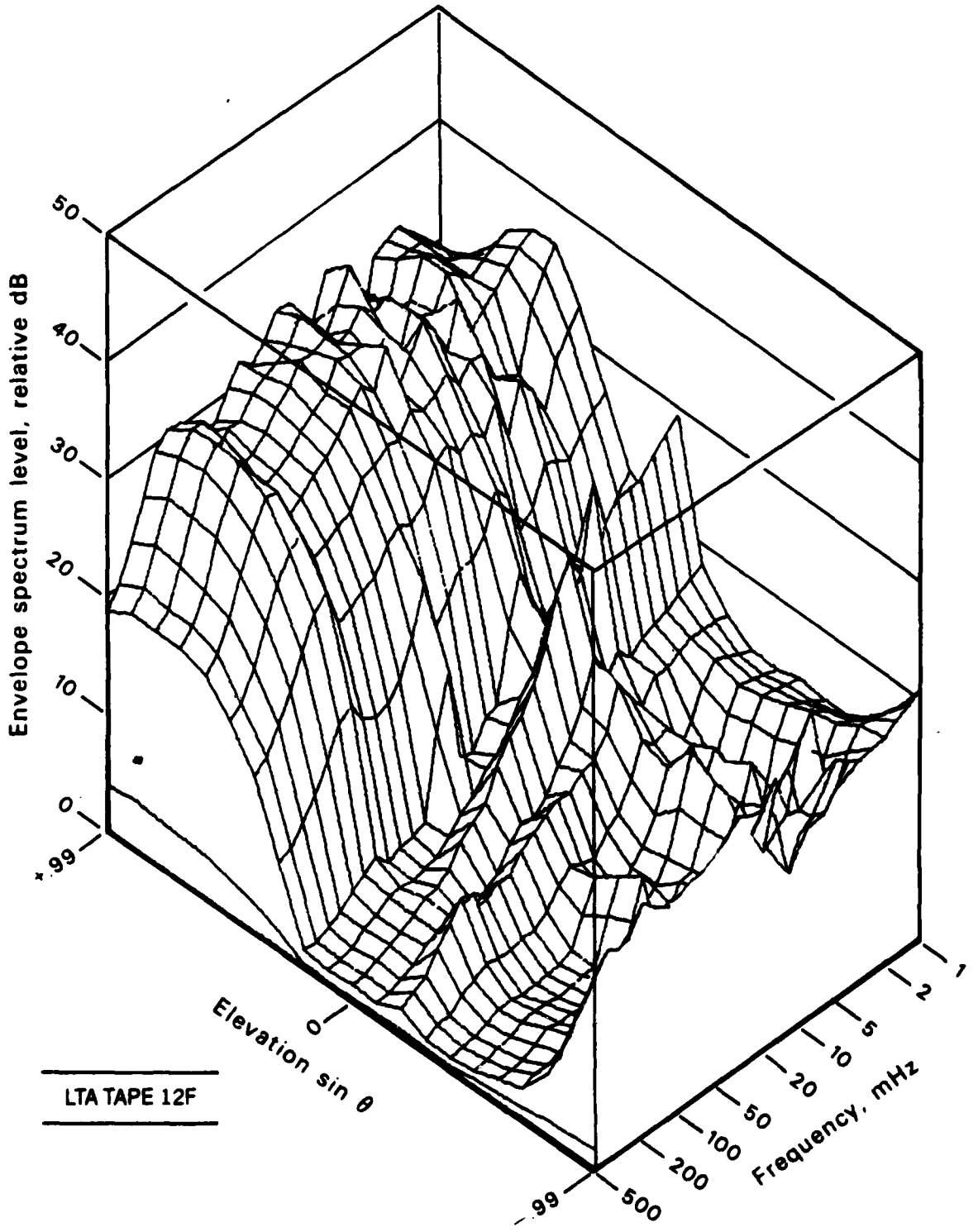


LTA TAPE 12F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA RELATIVE BEAM SET.

MPL-M-5139

GROUP 12F



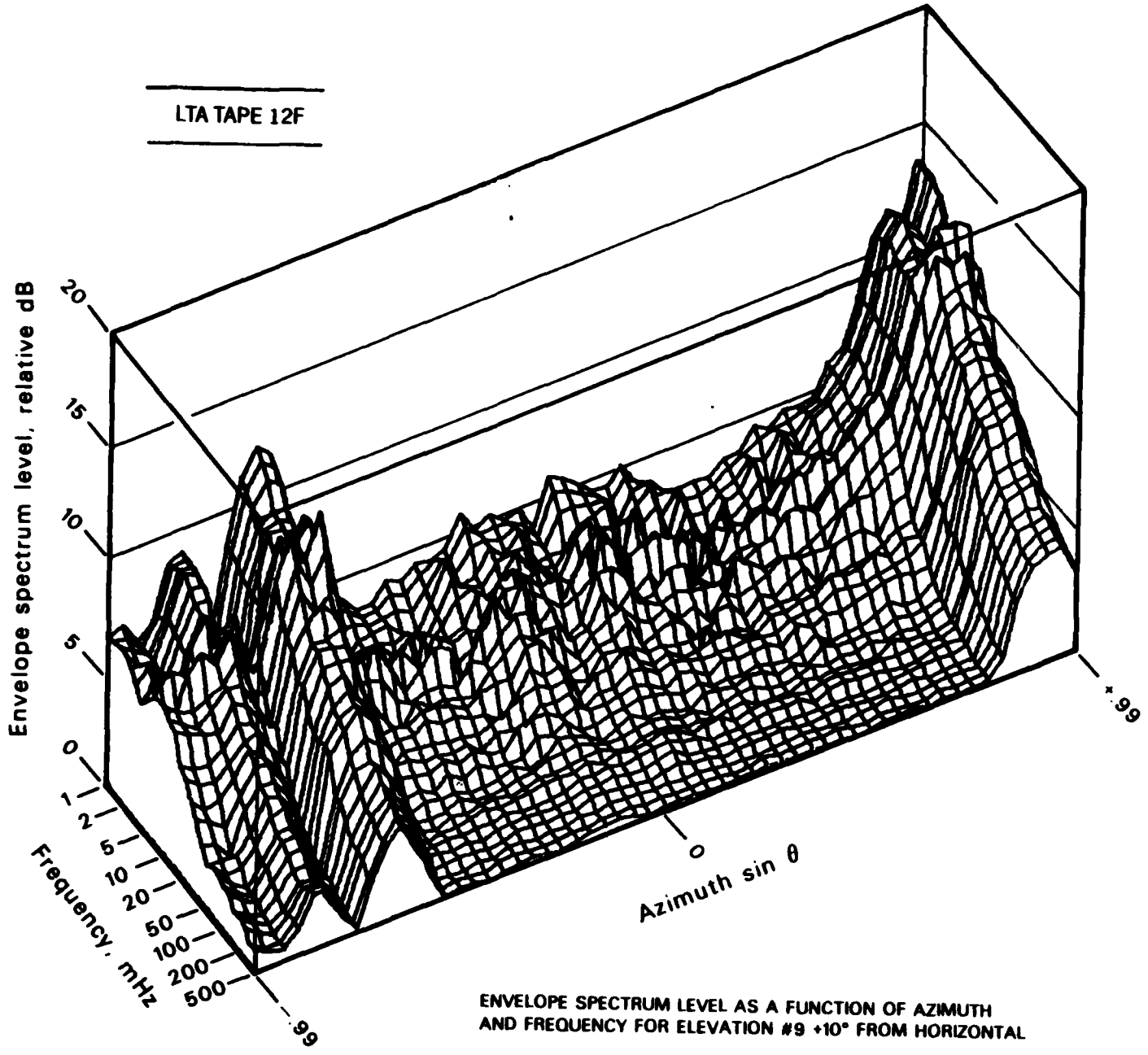
LTA TAPE 12F

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY
SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. TRUE BEARING STABILIZED BEAM SET.

MPL-M-5140

MPL-M-5141

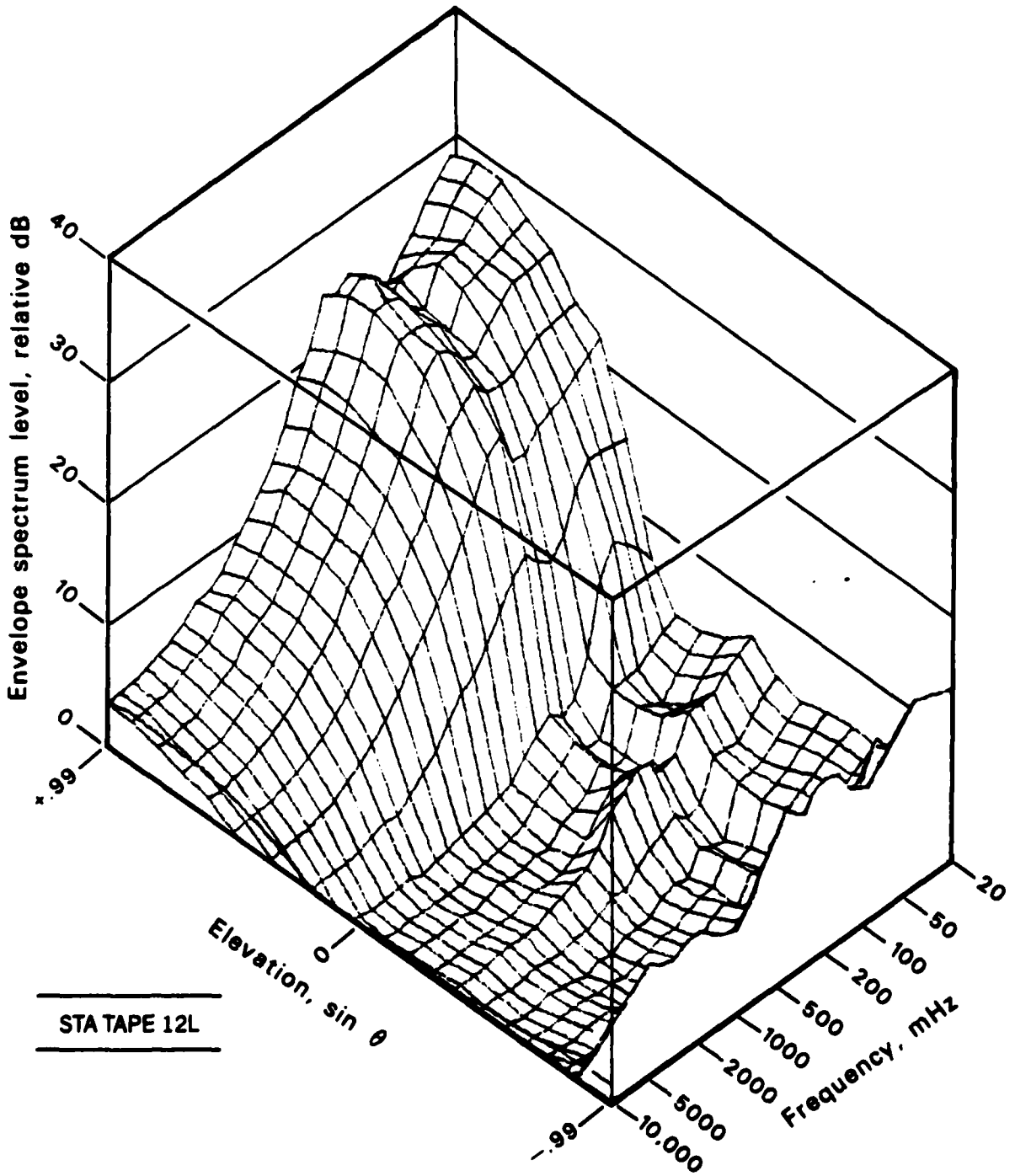
LTA TAPE 12F



ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF AZIMUTH AND FREQUENCY FOR ELEVATION #9 +10° FROM HORIZONTAL

GROUP 12F

GROUP 12F



STA TAPE 12L

ENVELOPE SPECTRUM LEVEL AS A FUNCTION OF ELEVATION ANGLE AND FREQUENCY. SEVEN CENTRAL BEAMS ARE AVERAGED TO SMOOTH THE DATA. RELATIVE BEAM SET.

MPL-M-5142

GROUP 12F

LTA TAPE 12F

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.0	22.8	25.6	27.3	20.5	28.0	27.3	21.5	23.9	28.4
ANGLE +84°	29.1	25.5	25.1	28.6	29.7	26.8	25.5	26.5	25.1	22.9
	22.9	22.1	25.1	25.2	24.1	20.8	17.7	14.8	13.4	
2	66.4	24.6	26.4	27.7	28.7	28.7	28.7	24.6	27.1	27.3
+64°	31.1	28.4	26.5	28.4	29.7	27.9	27.0	26.7	26.1	24.4
	24.5	23.2	26.6	26.6	25.0	22.1	19.0	15.9	14.6	
3	66.1	26.8	27.5	28.1	28.6	29.6	30.4	27.4	25.9	29.1
+53°	28.5	29.7	28.5	28.0	29.3	28.9	28.8	27.3	26.2	24.8
	23.9	23.5	26.3	26.8	25.3	22.0	18.7	15.5	14.5	
4	66.0	30.1	29.7	29.2	28.7	29.7	30.4	27.7	28.1	29.4
+44°	25.9	28.9	27.7	29.2	29.2	29.6	27.6	26.6	25.7	24.4
	23.7	23.4	25.0	26.7	24.4	21.7	17.9	15.6	14.4	
5	65.8	31.7	31.0	30.1	28.9	28.2	27.3	30.4	26.8	29.1
+37°	30.4	28.5	26.6	30.4	27.6	28.9	27.7	26.0	24.9	24.0
	23.0	22.4	24.9	25.1	22.7	20.1	17.0	14.7	13.6	
6	65.2	31.4	30.1	28.0	24.0	23.8	23.6	27.0	26.7	26.0
+30°	26.8	26.1	24.9	26.9	24.3	25.3	23.9	23.1	21.6	20.9
	20.2	19.8	22.6	21.8	19.8	17.0	14.0	11.8	11.0	
7	64.6	27.8	26.4	24.4	20.5	23.8	25.6	20.5	25.1	24.1
+23°	24.8	23.3	23.6	22.9	21.0	20.3	20.4	19.1	17.7	16.8
	16.1	16.2	19.3	17.8	15.6	13.0	10.6	8.5	7.7	
8	63.6	21.5	20.9	20.2	19.4	19.4	19.4	16.7	15.6	19.4
+17°	21.9	17.5	15.4	16.2	14.2	12.8	16.6	12.4	10.4	9.2
	8.5	9.2	11.2	10.1	7.6	5.4	3.8	2.3	1.8	
9	62.5	15.0	13.9	12.5	10.4	11.1	11.6	9.0	10.0	10.9
+12°	15.6	10.4	5.9	5.9	2.4	3.3	10.6	6.0	-0.8	-1.2
	-1.5	-1.8	-0.8	-1.3	-2.3	-3.3	-3.8	-4.2	-4.2	
10	62.3	7.3	7.4	7.4	7.4	6.4	5.1	5.1	4.5	4.3
+6°	3.7	3.3	2.9	2.0	1.8	1.4	-0.2	-0.7	-1.7	-2.2
	-2.4	-2.5	-1.8	-2.0	-2.8	-3.3	-4.0	-4.4	-4.6	
11	62.4	8.7	9.3	9.8	10.3	8.4	4.6	5.5	4.0	5.3
0°	7.8	3.7	1.6	0.2	-0.9	-0.6	0.1	-0.6	-1.6	-2.5
	-2.7	-2.6	-2.5	-2.9	-3.3	-3.5	-3.9	-4.6	-4.7	
12	62.5	10.1	9.9	9.7	9.4	7.6	4.4	7.9	5.6	7.4
−6°	11.0	7.7	3.3	2.6	1.4	0.7	1.5	-0.1	-1.2	-1.8
	-2.1	-2.2	-1.1	-2.1	-2.4	-3.4	-4.0	-4.3	-4.6	
13	62.6	10.5	9.7	8.8	7.7	7.1	6.4	7.8	4.8	7.7
−12°	9.5	7.1	5.9	5.7	5.2	4.7	4.1	3.3	2.6	1.5
	1.3	0.7	2.8	2.5	1.2	-0.3	-2.0	-2.8	-3.4	
14	62.5	4.5	5.4	6.2	6.0	5.0	1.7	3.2	2.1	4.2
−17°	6.0	4.0	2.3	0.9	-0.7	-0.2	1.1	-0.0	-1.5	-2.2
	-1.9	-2.2	-2.1	-1.7	-2.4	-3.0	-3.9	-4.0	-4.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12F

LTA TAPE 12F

PAGE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.5	3.2	4.9	6.1	7.1	5.4	2.5	1.3	2.0	3.6
ANGLE −23°	3.8	1.9	-0.9	-1.1	-1.7	-1.7	1.7	-0.8	-3.1	-3.6
	-3.6	-3.4	-3.7	-3.6	-3.4	-3.9	-4.3	-4.5	-4.5	
16	62.8	4.7	6.3	7.4	8.3	6.5	3.4	4.0	0.9	4.7
−30°	7.1	4.5	0.7	0.5	-0.7	-1.1	3.6	0.4	-3.2	-3.0
	-2.7	-3.2	-3.0	-2.9	-3.1	-3.6	-3.7	-4.2	-4.3	
17	63.1	8.4	9.2	9.8	10.4	8.0	2.7	5.5	2.6	6.3
−37°	8.0	5.0	2.4	2.1	-0.0	-0.6	5.0	1.7	-2.0	-1.9
	-2.5	-2.6	-2.3	-2.5	-2.0	-2.9	-3.3	-3.5	-3.5	
18	63.3	9.2	10.0	10.7	11.3	9.0	3.8	4.7	3.6	5.7
−44°	8.1	5.4	2.8	2.5	2.1	0.4	4.3	1.5	-1.1	-1.4
	-1.4	-2.3	-1.5	-1.7	-1.3	-2.0	-2.4	-2.5	-2.8	
19	63.5	10.4	11.2	11.8	12.3	10.2	5.8	4.7	2.9	7.7
−53°	9.4	8.0	5.3	5.8	3.8	2.8	6.5	3.4	0.6	0.6
	1.4	0.5	0.4	1.3	1.8	0.9	0.4	0.7	-0.3	
20	63.8	12.8	13.1	13.3	13.6	12.0	9.5	8.1	8.6	10.0
−64°	14.3	13.0	8.5	10.7	9.5	9.2	10.8	8.6	7.3	7.2
	7.2	6.9	6.5	7.5	8.5	6.8	6.1	6.7	5.1	
21	63.9	15.8	15.3	14.7	14.0	13.8	13.6	14.2	15.0	14.6
−84°	20.8	18.5	13.6	17.1	15.1	15.5	16.1	15.1	14.1	13.6
	13.6	13.1	12.7	13.4	14.6	12.9	12.0	12.7	11.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. RELATIVE BEAM SET.

GROUP 12F

LTA TAPE 12F

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 1	66.0	22.8	25.6	27.3	28.5	28.0	27.3	21.5	23.9	28.4
ANGLE +84°	29.1	25.5	25.1	28.6	28.7	26.8	25.5	26.5	25.1	22.9
	22.9	22.1	25.1	25.2	24.1	20.8	17.7	14.8	13.4	
2	66.4	24.6	26.4	27.7	28.7	28.7	28.7	24.6	27.1	27.3
+64°	31.1	28.4	26.5	28.4	29.7	27.9	27.0	26.7	26.1	24.4
	24.5	23.2	26.6	26.6	25.0	22.1	19.0	15.9	14.6	
3	66.1	26.9	27.5	28.1	28.6	29.6	30.4	27.4	25.8	29.1
+53°	28.6	29.7	28.5	28.1	27.3	28.8	28.8	27.3	26.2	24.8
	23.7	23.4	26.2	26.8	25.3	22.0	18.6	15.6	14.5	
4	66.0	30.4	29.9	29.3	28.6	29.6	30.4	27.7	28.2	29.4
+44°	26.0	28.9	27.5	29.4	27.2	29.6	27.5	26.5	25.7	24.5
	23.7	23.3	25.1	26.7	24.5	21.7	18.0	15.6	14.5	
5	65.0	31.9	31.1	30.1	28.9	28.0	26.9	30.5	26.7	29.2
+37°	30.7	28.5	26.4	30.7	27.6	28.9	27.7	26.0	24.9	24.1
	23.0	22.4	24.9	25.2	22.9	20.1	17.1	14.7	13.6	
6	65.2	32.1	30.6	28.2	23.0	23.7	24.3	27.0	27.4	26.1
+30°	27.7	26.6	26.0	26.7	24.9	25.1	24.1	23.8	21.7	21.1
	20.4	20.0	22.7	22.0	19.8	17.2	14.2	11.9	11.1	
7	64.6	28.2	26.9	25.0	21.5	24.0	25.6	21.5	25.2	23.0
+23°	24.1	23.1	24.5	23.6	21.0	20.0	20.5	19.5	17.6	17.1
	16.3	16.0	19.2	18.1	15.6	13.0	10.8	8.8	7.9	
8	63.6	22.3	21.4	20.3	18.7	19.3	19.9	16.8	15.6	19.2
+17°	20.8	17.5	16.1	16.0	14.2	12.5	16.9	13.0	10.2	8.9
	8.5	9.0	11.0	10.0	7.6	5.4	3.8	2.3	1.9	
9	62.5	17.0	15.7	13.7	9.8	11.6	12.8	10.6	9.6	11.4
+12°	15.0	11.1	5.0	4.8	2.5	2.9	10.9	6.4	-0.6	-1.0
	-1.2	-1.7	-0.7	-1.4	-2.0	-3.1	-3.7	-4.2	-4.0	
10	62.3	15.8	14.9	13.8	12.3	12.4	12.5	10.6	14.3	10.7
+6°	11.8	8.5	7.2	5.4	3.7	3.2	1.6	0.9	-0.4	-1.4
	-1.6	-2.0	-1.7	-1.8	-2.6	-3.1	-4.0	-4.3	-4.4	
11	62.4	24.7	23.9	22.9	21.6	21.5	21.4	19.9	24.1	17.0
0°	19.2	16.8	13.3	10.4	8.5	7.6	5.8	3.2	2.4	1.5
	-0.1	-0.9	-1.1	-1.9	-2.6	-3.0	-3.6	-4.1	-4.2	
12	62.5	13.4	12.9	12.3	11.7	11.3	10.7	9.9	11.2	9.5
−6°	12.1	8.6	6.5	5.0	3.0	2.0	2.3	1.2	-0.6	-1.2
	-1.8	-1.8	-1.2	-2.0	-2.3	-3.3	-3.8	-4.2	-4.3	
13	62.6	10.7	10.7	10.8	10.9	10.3	9.8	9.8	7.9	9.4
−12°	11.4	7.9	6.3	5.9	4.9	5.0	4.4	3.7	2.8	1.6
	1.7	1.0	2.2	2.6	1.0	-0.4	-1.9	-2.7	-3.3	
14	62.5	8.9	9.5	9.9	10.3	8.9	6.6	4.9	7.5	6.8
−17°	7.7	5.2	3.1	2.2	0.7	0.9	1.6	0.5	-0.9	-1.9
	-1.8	-2.0	-2.0	-1.8	-2.4	-2.9	-3.9	-4.0	-4.5	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

MPL-M-5145

GROUP 12F

LTA TAPE 12F

GE 2

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
ELEVATION 15	62.5	8.7	9.1	9.5	7.8	7.9	4.4	4.4	7.6	5.5
ANGLE −23°	7.0	3.7	1.7	0.6	-1.0	-0.4	2.0	-0.5	-2.7	-3.4
	-3.4	-3.5	-3.7	-3.3	-3.4	-3.9	-4.3	-4.4	-4.6	
16	62.8	9.5	9.7	10.0	10.2	8.4	5.5	6.8	8.8	6.0
−30°	10.1	5.7	2.2	0.5	-0.7	-0.6	3.6	0.8	-2.7	-2.8
	-3.0	-3.2	-3.0	-2.9	-3.1	-3.6	-3.7	-4.1	-4.3	
17	63.1	9.0	9.8	10.4	10.9	8.7	3.8	8.1	4.1	6.9
−37°	8.6	5.5	2.6	2.4	0.4	-0.7	5.1	1.8	-2.0	-1.9
	-2.5	-2.7	-2.3	-2.4	-2.0	-2.9	-3.3	-3.5	-3.4	
18	63.3	9.1	10.3	11.2	11.9	9.5	3.9	6.8	3.4	5.9
−44°	8.4	5.7	3.2	2.9	2.3	0.4	4.3	1.7	-1.3	-1.3
	-1.4	-2.2	-1.5	-1.6	-1.2	-2.0	-2.4	-2.5	-2.8	
19	63.5	10.5	11.1	11.7	12.2	10.1	5.7	5.0	2.3	7.8
−53°	9.5	8.0	5.2	5.9	3.8	2.8	6.5	3.4	0.6	0.7
	1.3	0.5	0.4	1.3	1.9	0.9	0.4	0.7	-0.3	
20	63.8	12.8	13.1	13.3	13.6	12.0	9.5	8.1	8.6	10.0
−64°	14.3	13.0	8.5	10.7	9.5	9.2	10.8	8.6	7.3	7.2
	7.2	6.9	6.5	7.5	8.5	6.8	6.1	6.7	5.1	
21	63.9	15.8	15.3	14.7	14.0	13.8	13.6	14.2	15.0	14.6
−84°	20.8	18.5	13.6	17.1	15.1	15.5	16.1	15.1	14.1	13.6
	13.6	13.1	12.7	13.4	14.6	12.9	12.0	12.7	11.1	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE. STABILIZED BEAM SET.

LTA TAPE 12F

GROUP 12F

PAGE 1

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 1	62.9	20.9	21.3	21.7	22.1	20.7	18.6	16.7	19.3	23.3
ANGLE −71.3°	25.7	21.1	19.7	18.7	14.0	12.9	10.2	8.2	4.5	2.4
	3.5	3.2	2.4	2.3	0.3	0.5	0.0	−1.9	−1.4	
2	62.7	22.0	21.1	20.0	18.6	20.1	21.2	16.8	21.0	22.7
−66°	24.7	18.8	18.0	17.5	12.4	10.8	7.8	6.7	3.9	2.4
	1.0	0.6	0.2	0.2	−1.3	−1.5	−1.7	−3.4	−2.8	
3	62.7	18.2	18.2	18.2	18.2	17.4	16.5	12.6	13.1	19.5
−61.6°	23.2	18.1	16.3	16.5	12.0	10.1	8.3	4.7	0.8	2.0
	1.0	−1.2	−1.3	−1.2	−2.2	−2.7	−3.2	−3.4	−3.4	
4	62.9	20.6	22.5	23.8	24.8	24.1	23.4	22.2	24.3	22.2
−57.8°	26.3	19.3	18.6	15.5	14.0	12.7	11.2	9.5	8.1	5.4
	4.1	2.6	2.6	1.5	0.4	−1.1	−0.8	−0.6	−0.9	
5	63.6	29.9	30.6	31.3	31.8	30.5	28.8	28.2	29.4	22.4
−54.3°	23.2	20.6	21.3	19.9	17.3	15.6	15.4	13.6	11.2	10.5
	8.3	6.6	6.0	5.1	3.5	2.6	2.9	4.1	4.4	
6	63.5	31.1	31.0	30.9	30.8	29.9	28.8	21.4	25.4	26.7
−51.1°	28.1	24.5	20.9	18.4	16.8	16.5	13.1	13.0	11.1	9.5
	8.9	6.6	6.3	5.4	3.6	2.1	3.1	3.9	4.4	
7	62.8	20.8	20.6	20.3	20.0	18.4	15.8	22.3	27.1	20.8
−48.1°	20.0	17.7	16.6	14.8	11.7	11.3	10.1	8.7	7.5	5.5
	3.3	2.6	0.8	−0.1	−0.5	−1.4	−2.0	−2.1	−1.7	
8	62.6	13.7	13.3	12.8	12.2	9.7	2.7	11.7	17.2	17.5
−45.3°	20.5	15.8	11.4	13.0	8.3	7.9	4.0	2.5	0.4	−0.1
	−2.2	−2.7	−2.7	−2.4	−3.8	−3.9	−4.5	−4.8	−4.7	
9	63.0	29.4	28.7	27.9	26.9	26.5	26.1	25.9	25.6	25.3
−42.6°	33.4	28.3	26.2	24.9	20.5	21.7	17.6	15.3	15.0	16.0
	14.7	8.9	9.0	7.2	4.3	4.4	3.6	2.0	2.8	
10	64.7	40.4	39.2	37.5	34.8	35.8	36.6	34.2	38.5	34.4
−40.0°	42.1	37.2	33.9	29.4	26.8	26.7	24.7	22.7	20.4	19.5
	18.6	15.1	13.7	11.4	9.4	9.6	8.5	7.7	8.2	
11	66.3	44.8	43.4	41.3	37.0	36.6	36.1	34.9	35.3	34.0
−37.5°	35.7	32.7	28.8	31.5	26.3	26.3	25.0	23.9	22.1	21.0
	21.3	17.5	14.6	15.2	13.3	12.0	12.5	11.1	10.7	
12	64.8	42.4	41.2	39.4	36.3	35.2	33.7	39.0	39.6	37.7
−35.1°	43.4	37.8	30.7	28.4	27.6	25.4	24.3	18.7	19.2	18.9
	18.7	15.3	12.3	12.0	9.5	10.1	9.1	8.8	8.8	
13	62.3	28.4	27.5	26.4	24.8	24.6	24.4	29.4	32.1	25.2
−32.8°	29.3	26.3	20.1	21.0	19.5	16.8	16.4	15.6	15.2	12.8
	12.3	11.0	6.7	6.9	4.4	3.5	2.0	2.3	1.9	
14	62.3	14.1	13.0	11.5	9.0	9.5	10.0	10.1	13.2	11.3
−30.5°	13.6	10.8	8.2	6.6	5.5	3.2	3.9	2.9	−0.7	−2.1
	−2.6	−2.8	−3.4	−3.7	−3.6	−4.6	−4.9	−5.2	−5.3	
15	62.3	14.4	13.3	11.8	9.6	8.7	7.4	7.0	8.4	11.9
−28.3°	13.7	11.2	8.2	3.7	2.0	0.4	2.0	1.1	−1.6	−2.7
	−3.2	−3.5	−4.1	−3.7	−3.6	−4.5	−5.2	−4.8	−5.0	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 16	62.3	12.8	11.3	8.9	3.2	6.5	8.3	8.1	5.9	13.3
ANGLE −26.1°	14.8	10.2	4.0	4.2	3.1	2.4	1.9	0.3	-0.9	-1.5
	-3.5	-4.2	-3.6	-3.4	-4.3	-4.0	-5.2	-4.9	-4.9	
17	62.3	11.1	10.2	9.0	7.3	7.2	7.1	2.8	11.8	10.1
−24.0°	10.0	5.4	0.8	3.5	2.8	1.9	0.7	0.0	-2.3	-2.3
	-3.3	-2.8	-3.5	-3.7	-3.7	-4.3	-4.6	-5.3	-5.7	
18	62.3	8.2	8.1	8.0	7.9	7.3	6.6	5.3	8.3	10.8
−21.8°	4.7	3.9	5.3	5.1	4.7	1.9	0.9	1.2	-0.2	-2.0
	-1.8	-3.5	-3.1	-3.5	-4.7	-4.7	-5.1	-4.3	-5.2	
19	62.2	8.2	8.2	8.2	8.2	6.2	2.2	8.4	10.6	7.4
−19.8°	7.8	5.0	3.6	5.0	3.2	1.0	0.2	-0.4	-2.1	-3.1
	-3.3	-2.7	-2.3	-3.4	-3.6	-4.5	-4.3	-4.2	-4.8	
20	62.2	11.4	10.2	8.5	5.7	7.0	8.0	2.9	10.9	6.0
−17.7°	10.7	5.0	3.9	3.8	3.3	0.9	0.6	0.7	-0.5	-3.1
	-3.3	-2.6	-3.2	-3.0	-3.5	-3.5	-4.2	-4.8	-4.5	
21	62.1	10.2	8.9	7.2	4.3	4.1	3.9	7.7	8.8	5.3
−15.7°	9.5	3.8	2.9	2.4	2.1	0.1	-1.5	-0.5	-1.9	-2.7
	-3.2	-3.5	-2.8	-3.5	-3.4	-3.7	-5.0	-4.8	-4.9	
22	62.1	12.4	11.6	10.6	9.2	8.3	7.1	6.4	6.9	4.8
−13.7°	1.9	7.3	2.3	4.4	1.6	1.3	0.7	-1.4	-2.4	-1.8
	-2.6	-3.0	-2.6	-3.6	-3.7	-4.1	-4.4	-4.7	-5.1	
23	62.2	11.8	13.2	14.3	15.1	13.5	10.9	7.5	8.0	6.2
−11.7°	10.9	6.0	5.6	5.0	-0.4	2.5	0.1	2.0	-2.5	-2.9
	-2.5	-2.2	-2.0	-3.4	-3.7	-3.7	-4.7	-4.3	-4.7	
24	62.2	13.0	12.2	11.2	9.9	11.1	12.1	12.5	6.9	10.1
−9.7°	16.0	10.1	7.6	4.7	2.0	3.8	-0.1	2.6	0.4	-2.3
	-1.0	-2.2	-1.8	-3.0	-3.4	-3.9	-3.8	-4.5	-4.2	
25	62.3	18.3	16.9	14.8	10.7	10.0	9.1	10.6	14.6	14.4
−7.8°	10.6	12.6	10.2	9.2	6.6	4.9	2.6	2.5	-0.4	0.5
	-0.9	-1.9	-2.0	-1.8	-2.7	-2.7	-4.1	-4.0	-4.0	
26	62.3	14.4	14.6	14.9	15.1	13.7	11.6	12.8	15.9	14.1
−5.8°	16.6	11.9	8.3	9.3	4.3	3.5	2.2	0.7	1.2	-0.1
	-0.4	-1.5	-1.2	-2.0	-2.8	-2.7	-3.5	-4.1	-3.6	
27	62.3	16.1	15.1	13.8	12.1	14.2	15.7	9.8	13.6	11.8
−3.9°	6.9	7.1	9.4	5.0	5.2	3.9	2.7	1.8	-1.4	-1.3
	-1.4	-1.2	-2.4	-1.5	-2.2	-3.2	-3.7	-3.8	-4.2	
28	62.2	14.0	14.7	15.2	15.8	14.1	11.3	13.3	10.7	9.8
−1.9°	9.7	7.9	5.1	1.6	1.5	0.3	-1.0	0.0	-1.5	-3.1
	-2.4	-2.3	-1.5	-2.5	-3.1	-3.3	-3.9	-4.6	-5.1	
29	62.3	14.7	13.4	11.5	8.2	9.4	10.3	9.5	11.6	7.2
0°	2.9	4.2	2.0	2.3	0.4	2.7	0.7	0.1	-0.8	-1.8
	-2.4	-3.2	-2.2	-2.0	-3.0	-3.8	-4.3	-4.3	-4.6	
30	62.3	10.4	10.1	9.7	9.3	8.5	7.5	5.4	9.4	8.3
+1.9°	4.7	5.1	5.1	4.3	4.1	2.8	0.4	0.6	-0.4	-0.6
	-1.8	-2.0	-1.7	-1.6	-2.6	-3.1	-4.0	-4.4	-4.4	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 31	62.3	18.6	17.0	14.7	9.1	12.0	13.8	11.1	14.5	10.2
ANGLE +3.9°	12.5	10.1	6.6	4.6	3.8	5.3	2.4	1.2	0.0	-2.2
	-1.4	-1.9	-1.1	-1.3	-1.6	-2.6	-4.4	-4.6	-4.4	
32	62.2	17.4	16.3	14.8	12.4	14.5	15.9	7.2	17.4	10.6
+5.8°	12.6	6.2	8.0	6.7	3.4	1.9	2.0	0.2	-0.3	-2.0
	-1.7	-2.1	-1.7	-2.3	-3.5	-3.6	-4.1	-4.4	-4.8	
33	62.1	15.3	14.7	14.0	13.1	12.2	11.1	12.3	12.5	8.0
+7.8°	10.4	9.2	4.4	1.3	1.3	0.3	0.0	-1.6	-1.0	-2.9
	-3.0	-3.2	-3.2	-2.8	-4.0	-3.7	-4.5	-4.6	-5.1	
34	62.2	12.9	13.4	13.9	14.3	11.6	3.4	3.5	9.9	4.9
+9.7°	4.1	5.4	3.2	2.6	1.5	1.6	1.3	0.6	-2.2	-3.6
	-2.7	-3.1	-2.6	-3.9	-4.2	-4.8	-5.0	-5.2	-4.6	
35	62.2	12.7	11.1	8.6	1.5	12.0	14.8	8.5	11.6	7.1
+11.7°	4.7	4.1	4.5	3.9	0.6	-0.5	0.4	-0.4	-1.1	-1.8
	-4.1	-3.9	-2.5	-3.9	-4.3	-4.2	-5.1	-5.0	-4.8	
36	62.2	15.5	14.6	13.5	12.0	10.3	7.6	11.1	11.7	2.1
+13.7°	8.2	5.5	1.8	1.8	0.3	-0.2	-0.4	-2.0	-2.8	-2.1
	-3.3	-3.1	-3.9	-3.9	-4.1	-4.1	-5.2	-4.2	-4.7	
37	62.2	11.3	12.7	13.7	14.5	12.4	8.2	6.2	10.5	5.1
+15.7°	7.9	4.4	3.1	-2.8	1.8	0.7	-0.6	-0.3	-2.5	-2.6
	-2.6	-2.9	-3.3	-3.4	-4.3	-4.1	-4.9	-5.0	-4.9	
38	62.3	10.6	9.2	7.0	2.3	3.5	4.4	9.2	8.6	1.7
+17.7°	4.3	4.1	-0.7	2.1	-1.3	1.2	-0.6	-1.2	-2.9	-1.6
	-2.5	-4.2	-2.9	-3.1	-4.3	-3.9	-4.9	-4.7	-5.0	
39	62.3	7.8	9.3	10.4	11.3	9.7	7.3	-2.5	8.4	5.4
+19.8°	2.1	3.6	3.2	2.5	-0.8	-0.9	-0.2	-1.1	-2.2	-2.1
	-3.8	-4.5	-3.4	-3.4	-4.2	-4.5	-4.5	-4.5	-4.9	
40	62.3	7.5	6.4	4.9	2.5	2.8	3.1	7.6	2.3	3.6
+21.8°	0.0	7.2	1.6	-0.8	-2.0	-1.1	-0.7	-0.7	-3.0	-3.7
	-4.2	-4.4	-3.5	-3.0	-4.6	-4.8	-4.8	-4.6	-5.1	
41	62.3	7.5	6.2	4.4	1.3	5.8	8.0	6.3	8.8	5.2
+24.0°	4.0	5.4	2.4	2.0	0.3	0.7	-1.3	-2.2	-3.6	-2.8
	-3.8	-3.0	-4.2	-4.6	-4.6	-4.4	-5.2	-4.6	-5.1	
42	62.4	7.3	7.1	6.9	6.6	4.8	1.6	4.9	7.3	5.1
+26.1°	5.9	3.3	3.6	0.8	0.7	0.7	0.4	0.7	-2.8	-4.0
	-2.8	-3.8	-3.4	-3.2	-4.6	-4.3	-5.4	-5.0	-5.3	
43	62.4	9.5	8.9	8.2	7.3	6.8	6.1	7.4	9.9	2.7
+28.3°	6.4	4.3	5.8	2.5	0.7	1.4	0.4	-0.6	-0.9	-1.7
	-3.9	-3.6	-3.2	-3.0	-4.7	-4.6	-4.9	-5.4	-5.2	
44	62.4	9.6	10.4	11.1	11.7	9.8	6.4	5.8	7.2	6.2
+30.5°	10.2	3.3	4.3	4.1	1.4	1.6	0.7	0.6	-3.3	-2.6
	-3.2	-3.6	-3.4	-3.4	-4.9	-4.8	-4.8	-4.6	-4.7	
45	62.4	13.4	11.9	9.7	4.7	7.8	9.6	10.1	13.7	7.3
+32.8°	10.2	4.5	4.4	-0.0	1.1	4.1	2.3	-0.3	-2.9	-2.7
	-3.6	-4.2	-3.6	-3.5	-4.6	-4.9	-4.3	-5.0	-4.8	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

	FREQUENCY KEY FOR LTA SPECTRA, mHz									
	D.C.	.95	1.20	1.51	1.90	2.40	3.02	3.81	4.80	6.05
	7.62	9.60	12.1	15.2	19.2	24.2	30.5	38.4	48.4	60.9
	76.7	96.7	122	154	194	244	307	387	487	
AZIMUTH 46	62.4	11.7	12.8	13.7	14.5	12.7	9.5	7.7	12.2	7.5
ANGLE +35.1°	8.0	6.1	4.1	5.8	1.7	2.9	1.9	0.8	-2.4	-2.7
	-2.7	-4.2	-3.3	-4.2	-4.5	-4.4	-5.1	-5.2	-4.3	
47	62.6	14.1	13.2	12.0	10.4	11.3	12.0	13.6	15.4	10.3
+37.5°	11.5	8.0	9.8	6.4	2.4	3.0	1.6	1.4	-1.6	-2.9
	-3.6	-2.1	-3.8	-4.6	-4.1	-4.0	-5.1	-5.2	-5.4	
48	62.6	13.7	14.3	14.8	15.3	13.4	10.2	11.1	13.7	11.5
+40.0°	14.4	9.6	10.9	6.6	2.5	5.1	2.3	2.3	-0.2	-1.8
	-3.0	-3.3	-3.4	-4.4	-3.8	-4.7	-4.7	-4.5	-4.8	
49	62.5	14.0	15.1	16.0	16.7	15.8	14.7	15.5	16.1	14.6
+42.6°	17.0	12.7	10.6	4.2	4.0	3.3	2.8	2.4	-1.9	-2.4
	-3.5	-3.4	-3.4	-3.5	-3.8	-4.6	-4.6	-5.2	-5.2	
50	62.5	19.4	19.3	19.1	19.0	18.1	16.9	18.2	19.9	16.8
+45.3°	18.8	14.9	12.8	9.1	5.6	5.2	3.3	1.7	-1.6	-2.2
	-2.7	-3.7	-3.9	-3.3	-4.2	-4.5	-4.8	-4.8	-4.9	
51	62.6	21.1	22.1	22.8	23.5	21.8	19.1	20.1	21.9	19.8
+48.1°	20.8	16.7	13.9	9.8	6.2	4.9	5.1	1.9	0.2	-1.4
	-1.6	-2.9	-2.9	-3.7	-3.5	-4.5	-4.7	-4.8	-4.8	
52	62.8	29.1	29.4	29.7	30.0	29.4	28.6	29.4	29.0	27.3
+51.1°	27.1	25.0	22.0	19.8	14.6	10.4	11.9	11.3	7.4	9.1
	6.8	4.0	4.9	3.0	1.9	0.7	-1.1	-1.3	-1.7	
53	63.6	38.8	40.0	40.9	41.6	40.5	39.0	40.0	39.6	36.3
+54.3°	38.8	31.6	28.4	26.6	23.2	22.9	20.7	17.5	19.8	21.4
	19.7	15.2	13.7	12.0	10.9	9.7	7.8	6.6	7.2	
54	66.4	42.6	43.5	44.3	45.0	43.8	42.3	40.2	42.8	37.4
+57.8°	45.6	38.9	37.1	32.3	31.7	32.1	28.1	26.3	26.0	25.9
	23.5	20.3	18.7	18.0	15.4	15.0	12.8	12.4	12.4	
55	69.5	39.3	40.2	41.0	41.7	40.9	39.9	46.0	45.1	43.1
+61.6°	42.6	40.1	39.0	33.9	34.0	32.6	30.7	28.8	26.9	25.8
	23.8	20.9	19.1	18.7	16.7	15.3	14.7	14.2	13.7	
56	69.0	50.5	50.4	50.3	50.3	48.5	45.3	44.8	47.3	39.1
+66.0°	44.1	40.3	35.6	34.9	32.7	31.2	29.7	28.7	27.9	27.2
	24.6	21.0	19.4	19.4	16.1	16.0	15.2	14.3	14.2	
57	65.3	42.6	41.7	40.6	39.1	39.0	38.8	41.0	45.3	32.8
+71.3°	39.9	34.3	33.8	28.1	29.1	27.4	26.3	22.9	22.3	20.3
	19.0	16.6	13.7	13.3	12.0	10.8	9.7	9.2	8.6	

NUMERICAL DATA FOR LTA ENVELOPE SPECTRUM LEVEL vs. AZIMUTH ANGLE, ELEVATION NUMBER 9.

GROUP 12F

STA TAPE 12L

PAGE 1

	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 1 ANGLE +84°	52.7 24.1 7.0	29.0 24.8 6.8	28.0 21.1 5.7	26.6 19.4 5.0	24.7 16.2 4.6	23.5 13.9 4.2	22.0 12.2 3.8	22.7 10.7 3.7	21.2 9.4 3.6	25.0 7.8
2 +64°	53.4 27.1 7.7	29.9 26.1 7.3	28.9 22.4 5.6	27.7 20.4 5.2	26.9 17.3 4.6	25.4 14.9 3.8	24.8 13.8 3.7	24.6 11.7 3.6	23.5 10.0 3.5	26.3 8.6
3 +53°	53.1 26.6 7.5	29.8 26.3 6.6	29.1 23.1 5.4	28.2 20.3 4.7	27.1 17.3 4.0	26.9 15.2 3.2	26.8 13.6 3.2	23.6 11.5 2.8	24.4 10.0 2.8	26.1 8.2
4 +44°	53.0 25.5 6.7	28.2 25.4 6.1	27.7 22.9 4.8	27.3 19.4 4.2	26.8 17.2 3.4	26.4 15.0 2.7	26.0 12.9 2.5	23.2 11.7 2.2	24.7 9.6 2.2	25.4 8.2
5 +37°	52.7 25.4 6.2	27.0 24.0 5.0	26.9 20.5 3.9	26.8 18.6 3.3	26.7 16.1 2.6	25.7 14.2 2.1	24.4 12.7 1.8	22.9 10.9 1.5	23.2 8.8 1.6	24.6 7.1
6 +30°	52.2 22.2 4.1	24.2 21.1 3.0	24.0 18.5 2.0	23.8 15.4 1.4	23.6 13.8 1.0	22.9 11.4 0.6	21.9 10.4 0.4	21.8 8.5 0.2	22.0 6.8 0.2	23.3 5.0
7 +23°	51.6 19.5 1.5	22.8 16.8 0.8	22.1 14.3 -0.1	21.3 12.1 -0.4	20.2 10.3 -0.9	19.7 8.7 -0.9	19.1 7.0 -1.1	17.7 5.1 -1.3	17.8 3.6 -1.3	20.6 2.4
8 +17°	50.7 11.0 -1.7	16.0 9.1 -2.3	16.1 6.9 -3.0	16.3 5.3 -3.0	16.5 4.4 -3.0	14.7 2.9 -3.1	11.6 1.1 -3.2	10.1 0.1 -3.3	10.9 -1.2 -3.2	12.3 -2.1
9 +12°	49.5 -0.6 -5.0	7.6 -1.6 -5.0	9.1 -3.0 -5.3	10.2 -3.4 -5.4	11.1 -3.8 -5.1	8.7 -4.1 -5.3	3.2 -4.4 -5.4	0.4 -4.8 -5.3	-0.5 -4.9 -5.4	0.4 -5.3
10 +6°	49.2 -1.4 -5.6	4.3 -2.2 -5.7	3.7 -3.2 -5.5	2.9 -4.3 -5.7	2.0 -4.7 -5.6	2.0 -5.0 -5.6	1.9 -5.2 -5.7	-1.6 -5.2 -5.7	-1.7 -5.6 -5.8	-0.4 -5.6
11 0°	49.3 -2.3 -5.2	4.4 -3.1 -5.4	3.4 -3.4 -5.4	2.3 -4.7 -5.3	0.7 -4.5 -5.3	1.4 -4.8 -5.4	2.0 -5.0 -5.5	-1.5 -4.6 -5.5	-1.7 -5.1 -5.5	-0.8 -5.5
12 −6°	49.4 -0.3 -5.2	5.4 -1.7 -5.2	4.5 -3.2 -5.3	3.5 -4.0 -5.4	2.0 -4.6 -5.3	2.3 -4.8 -5.4	2.6 -4.6 -5.4	-1.4 -4.7 -5.5	-1.6 -5.2 -5.5	0.1 -5.1
13 −12°	49.6 2.6 -4.6	7.0 1.5 -4.5	6.3 0.6 -4.9	5.5 -1.7 -4.9	4.5 -3.6 -5.0	4.5 -3.1 -4.9	4.5 -3.6 -4.9	1.6 -3.9 -5.0	1.2 -4.6 -5.1	2.4 -4.6
14 −17°	49.5 -1.3 -5.1	5.2 -1.8 -5.2	4.4 -2.8 -5.5	3.3 -3.7 -5.2	2.0 -3.6 -5.3	2.1 -4.5 -5.3	2.1 -4.9 -5.4	-1.0 -5.0 -5.3	-1.5 -5.3 -5.4	-0.4 -5.2

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE.

STA TAPE 12L

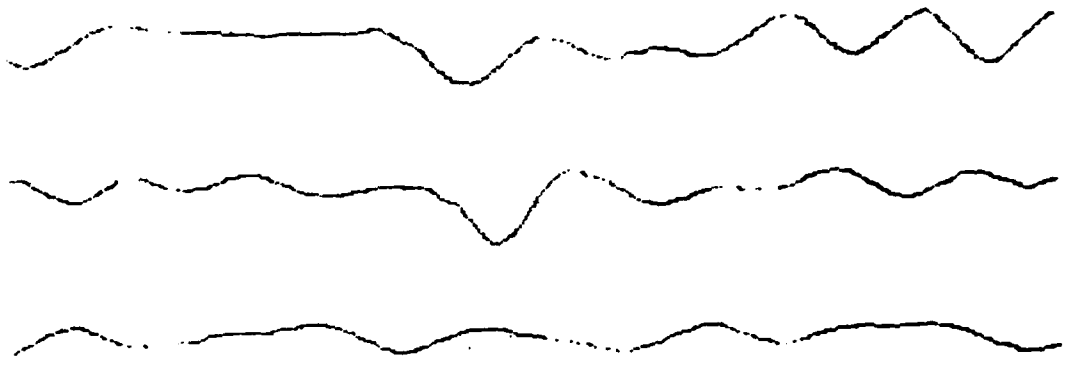
	FREQUENCY KEY FOR STA SPECTRA, mHz									
	D.C. 152 1540	19.0 192 1940	24.0 242 2440	30.2 305 3070	38.1 384 3870	48.0 484 4880	60.5 609 6140	76.2 768 7740	96.0 967 9750	121 1220
ELEVATION 15 ANGLE −23°	49.4 −3.4 −5.1	4.5 −3.2 −5.0	3.8 −3.7 −5.4	2.9 −4.5 −5.4	1.7 −4.6 −5.2	1.8 −4.7 −5.5	1.6 −5.4 −5.5	−2.6 −5.1 −5.4	−2.3 −5.6 −5.5	−1.7 −5.4
16 −30°	49.8 −2.8 −4.7	5.1 −2.8 −4.7	4.5 −3.2 −4.8	3.7 −4.0 −5.0	2.7 −4.1 −4.9	2.1 −4.4 −5.0	1.5 −4.7 −5.0	−1.7 −5.1 −4.9	−2.0 −4.9 −5.0	−1.0 −5.0
17 −37°	50.0 −2.8 −4.1	5.3 −1.8 −4.1	4.9 −2.3 −4.1	4.3 −3.3 −4.5	3.7 −3.2 −4.3	3.1 −3.4 −4.3	2.3 −3.9 −4.3	−1.0 −4.4 −4.3	−1.3 −4.6 −4.3	−0.7 −4.6
18 −44°	50.2 −1.1 −3.4	5.3 −1.0 −3.4	4.8 −1.2 −3.4	4.4 −2.6 −3.8	3.8 −2.0 −3.6	3.2 −2.7 −3.4	2.6 −3.1 −3.6	−0.5 −3.5 −3.7	−1.0 −3.8 −3.8	−0.2 −3.8
19 −53°	50.5 1.6 −1.7	6.3 1.9 −1.5	6.1 1.4 −1.2	5.8 0.4 −2.0	5.6 1.2 −1.9	4.7 −0.1 −1.5	3.5 −0.6 −2.0	2.1 −1.4 −2.0	1.0 −2.1 −2.4	1.0 −2.4
20 −64°	50.7 7.9 2.8	9.7 8.3 3.6	9.9 7.8 3.6	10.0 5.7 2.7	10.1 8.1 3.0	9.1 5.9 3.6	7.9 4.5 2.7	8.7 3.3 2.2	6.4 2.1 1.6	6.2 2.0
21 −84°	50.8 14.1 8.1	14.5 14.5 9.1	14.9 13.9 9.1	15.4 11.7 8.2	15.8 14.3 8.5	14.7 11.9 9.3	13.4 10.3 8.2	14.9 8.6 7.4	12.4 7.2 6.7	12.1 7.4

NUMERICAL DATA FOR STA ENVELOPE SPECTRUM LEVEL vs. ELEVATION ANGLE

GROUP 12F

BEARING VS TIME

MEAN & VAR. 227.6 8.63 227.7 6.44 227.3 3.20



25°

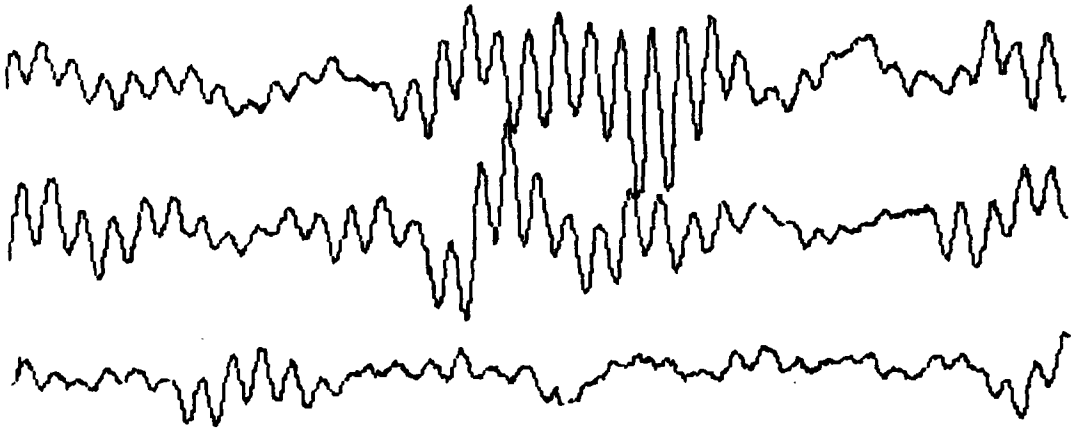
1024 SECONDS

MPL-M-5153

GROUP 12F

ELEVATION VS TIME

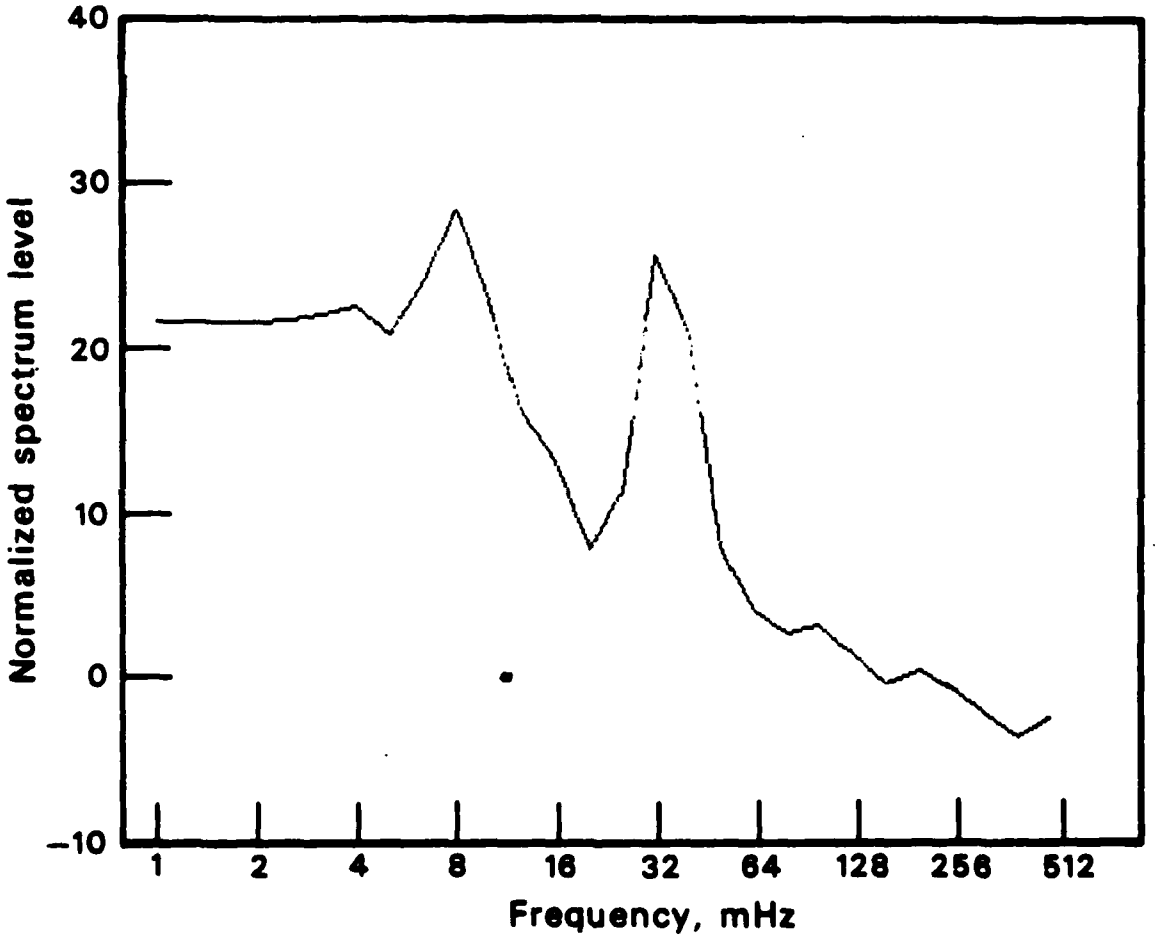
MEAN & VAR. 92.2 0.93 92.3 0.80 92.5 0.16



5°

1024 SECONDS

MPL-M-5154



POWER SPECTRUM OF ELEVATION ANGLE.


DATE
ILME
8