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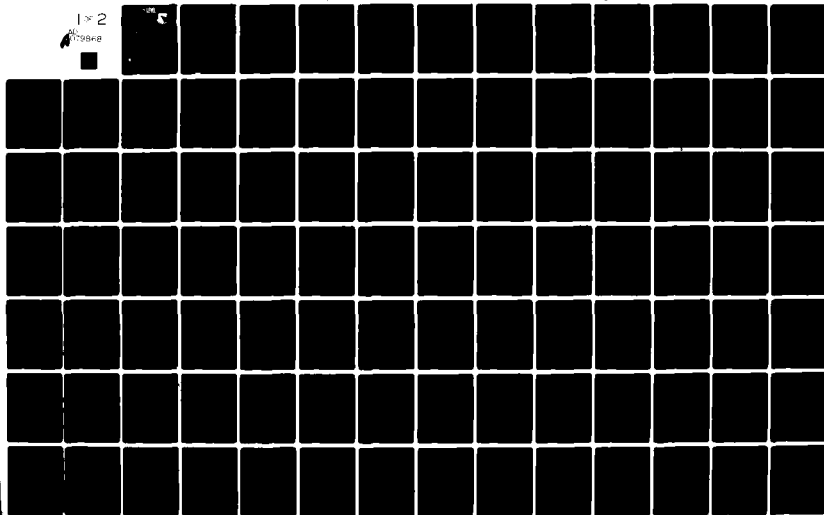
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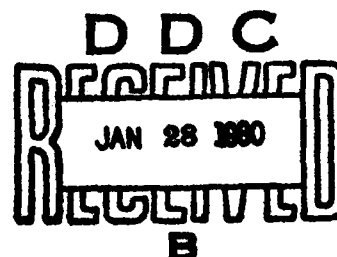
**AMRL-TR-75-50
Volume 128**



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**USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK
Volume 128
T-38 Aircraft In The AF32A-18 Noise Suppressor,
Near And Far-Field Noise**

JULY 1979



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**AEROSPACE MEDICAL RESEARCH LABORATORY
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FOR THE COMMANDER



HENNING E. VON GIERKE

Director

Biodynamics and Bioengineering Division
Aerospace Medical Research Laboratory

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→ band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107, Technology to Define and Assess Environmental Quality of Noise From Air Force Operations.

The author gratefully acknowledges Mr. John Cole and Mr. Robert Powell for their assistance in preparing this report, Mr. Jerry Speakman and Capt Richard Gorman for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Peggy Massie for assistance in typing this report.

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INTRODUCTION

The T-38A is a twin-engine, double-seat, supersonic trainer powered by two General Electric Company J85-GE-5A engines. The aircraft is manufactured by Northrop Corporation and code named the Talon. The AF32A-18 noise suppressor was built by General Acoustics Corporation to provide noise level reduction for all T-38 aircraft during ground runup operations.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the T-38 aircraft operating in the AF32A-18 noise suppressor.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of Air Force aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the AF32A-18 noise suppressor system during ground runup operations of the T-38 aircraft. For these tests the aircraft was located in the suppressor at Laughlin AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the five engine power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the one-third octave band root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the four near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc.).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the T-38 aircraft in the AF32A-18 noise suppressor at the four ground crew locations. This table includes the overall, 1/3 octave-band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

All near-field data are for the meteorological conditions at the time of test but are valid for all typical airbase meteorology because of the short sound propagation distances involved.

TABLE 1
MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

T-38 Aircraft Suppressor Ground Runup, Laughlin AFB Survey
Test #79-733-001, 20 February 1979

Ground Crew Location

1	Wing Tip Position
2	Leak Check Position
3	Engine Maintenance Position
4	Cockpit (Open Canopy)

Aircraft Engine Operation

A	Idle Power (50% RPM), 500 LBS/HR, Fuel Flow
B	80% RPM, 1850 LBS/HR, Fuel Flow
C	90% RPM, 1900 LBS/HR, Fuel Flow
D	Military Power (100% RPM), 2200 LBS/HR, Fuel Flow
E	Afterburner Power, 2200 LBS/HR, Fuel Flow

Meteorology Meteorology

Temperature	9 C
Bar Pressure	.760 M Hg
Rel Humidity	86 %
Wind — Speed	2 M/Sec (4 KTS)
— Direction	120 Deg

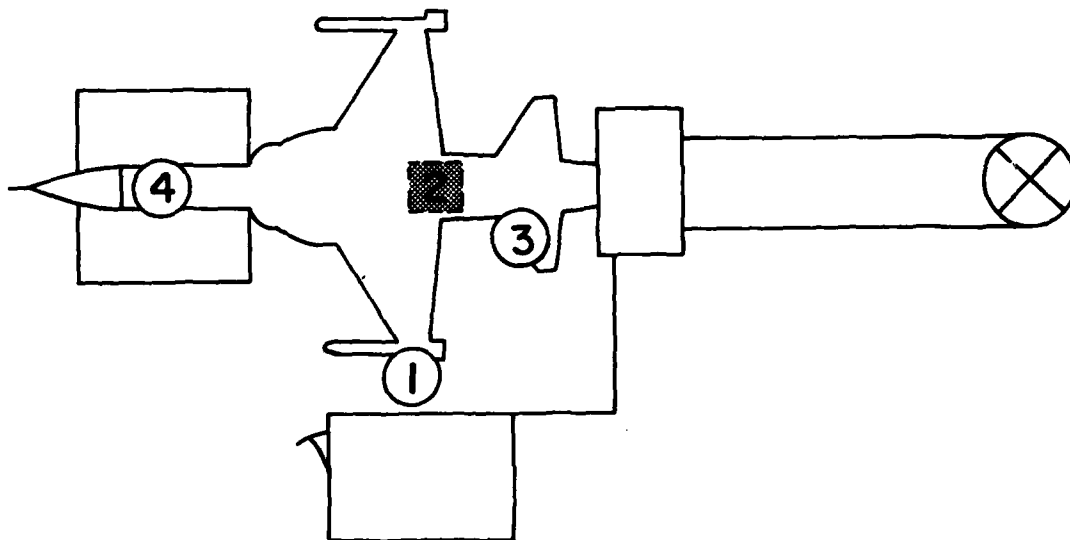


Figure 1. Near-Field Measurement Locations at Laughlin AFB TX

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired far-field data during a 1-2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 100 meter radius semicircle used in surveying the AF32A-18 noise suppressor was on the ground directly below the center of the exhaust stack.

Table 4 provides cockpit readouts of engine characteristics (% RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of their source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the T-38 aircraft operating in the AF32A-18 noise suppressor in a standard format.

Estimates of the noise levels for intermediate power settings (e.g., 95% RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 4 through 10 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low.

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

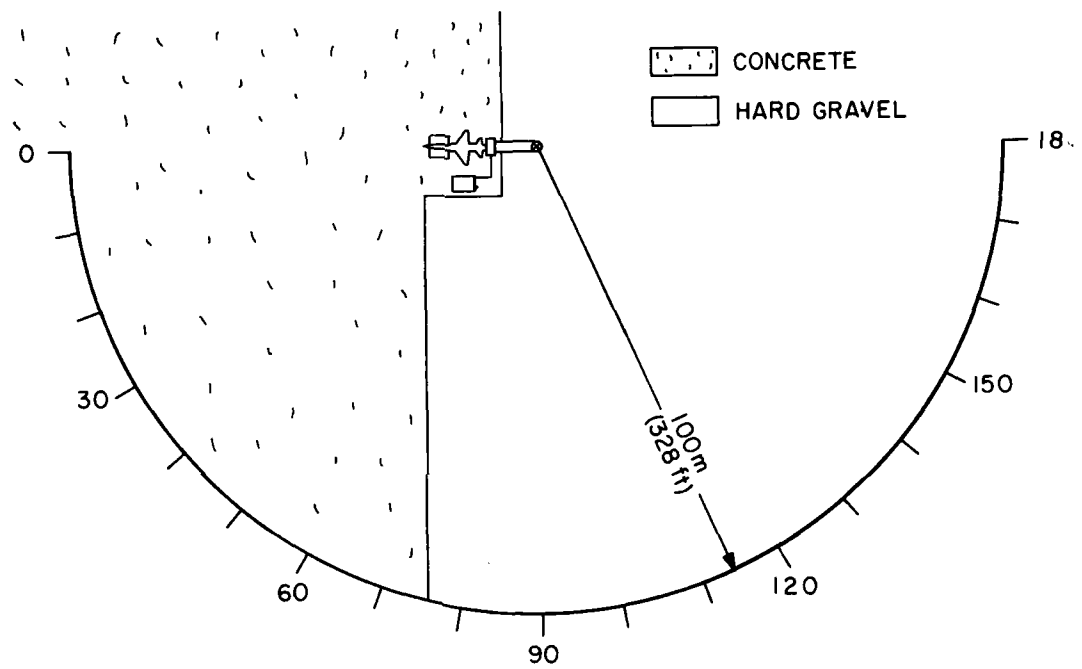


Figure 2. Far-Field Measurement Locations at Laughlin AFB TX

TABLE 3 MEASURED SOUND PRESSURE LEVEL (DB)										IDENTIFICATIONS	
1/3 OCTAVE BAND											
NOISE SOURCE/SUBJECT:											
(T-38 AIRCRAFT IN THE)											
(AF32A-18 SUPPRESSOR)											
(GROUND CREW)											
(NEAR-FIELD NOISE LEVELS)											
LOCATION/CONDITION											
1/A	2/A	3/A	4/A	1/B	2/B	3/B	4/B	1/C	2/C	3/C	4/C
FREQ (HZ)											
25	78	81	79	74	86	89	84	91	94	94	90
31.5	81	87	80	75	95	89	92	100	100	93	95
40	82	94	82	81	91	86	89	96	99	90	96
50	82	97	87	86	85	88	85	90	100	94	91
63	81	93	86	76	87	93	85	92	104	100	89
80	77	92	85	79	86	103	88	89	108	98	93
100	82	93	90	77	90	93	86	92	108	95	91
125	90	93	101	80	94	99	83	95	104	100	87
160	89	94	94	81	92	98	87	95	103	99	91
200	83	96	89	76	92	99	83	91	106	97	85
250	79	91	87	79	93	105	85	95	107	105	89
315	81	95	90	76	93	100	83	95	106	100	86
400	89	100	91	78	95	106	87	98	109	102	87
500	81	91	89	76	95	103	89	101	111	105	93
630	81	91	88	76	94	102	89	100	106	105	93
800	83	93	91	76	96	103	88	100	106	107	94
1000	84	94	92	76	97	105	87	103	108	109	93
1250	86	95	92	78	96	106	87	102	107	109	92
1600	89	95	95	80	97	104	89	101	107	110	92
2000	87	94	94	81	98	106	89	101	106	110	92
2500	89	94	95	81	99	104	90	100	106	109	92
3150	88	93	95	81	99	108	91	99	107	108	91
4000	96	102	99	92	104	109	93	101	108	109	93
5000	88	94	94	82	97	105	87	100	108	107	92
6300	87	93	94	82	101	105	92	97	106	106	91
8000	93	100	97	89	98	103	90	96	107	107	90
10000	85	93	92	81	95	102	88	95	105	104	88
OVERALL	102	109	108	96	110	116	103	113	121	120	106

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)									
1/3 OCTAVE BAND									
IDENTIFICATION:									
3									
NOISE SOURCE/SUBJECT: (OPERATION:)									
(T-38 AIRCRAFT IN THE (D= MILITARY POWER)									
(AF32A-18 SUPPRESSOR (E= AFTERBURNER POWER)									
(GROUND CREW ()									
NEAR-FIELD NOISE LEVELS ()									
LOCATION/CONDITION									
	1/D	2/D	3/D	4/D	1/E	2/E	3/E	4/E	
FREQ (HZ)									
25	94	100	96	92	100	104	103	98	
31.5	99	104	97	98	100	106	100	100	
40	100	102	94	99	102	104	97	101	
50	93	105	97	94	101	112	101	100	
63	94	106	101	90	101	110	108	98	
80	93	111	102	98	98	112	106	101	
100	96	110	98	96	99	111	104	103	
125	99	106	104	88	101	106	106	94	
160	94	106	104	92	102	108	105	94	
200	91	109	98	88	96	112	102	91	
250	94	106	106	89	96	106	106	91	
315	96	106	102	87	96	105	102	87	
400	101	110	102	90	103	113	105	89	
500	105	111	104	96	108	117	107	100	
630	104	110	102	98	110	113	106	104	
800	105	110	104	100	107	113	107	102	
1000	106	111	105	97	108	113	109	99	
1250	105	112	104	95	107	114	109	98	
1600	107	114	105	97	107	114	106	98	
2000	106	112	104	95	106	113	106	96	
2500	103	111	101	94	105	114	104	96	
3150	102	110	100	93	104	114	103	96	
4000	102	110	99	94	104	115	103	96	
5000	97	106	95	90	100	111	100	92	
6300	100	109	95	91	101	113	98	93	
8000	94	103	92	88	97	107	95	90	
10000	91	101	88	83	94	105	92	86	
OVERALL	116	123	116	109	118	126	119	112	
LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.									

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)												
OCTAVE BAND												
IDENTIFICATIONS												
2												
NOISE SOURCE/SUBJECT: (OPERATIONS:)												
T-38 AIRCRAFT IN THE (A= IDLE POWER)												
AF32A-18 SUPPRESSOR (B= 80% RPM)												
GROUND CREW (C= 90% RPM)												
NEAR-FIELD NOISE LEVELS ()												
LOCATION/CONDITION												
1/A 2/A 3/A 4/A 1/B 2/B 3/B 4/B 1/C 2/C 3/C 4/C												
FREQ (HZ)												
31.5	85	95	85	82	96	99	93	94	101	103	97	99
63	85	99	91	87	91	105	96	91	95	110	102	96
125	93	98	102	84	97	106	102	90	99	110	103	95
250	86	99	94	82	97	111	104	89	99	111	106	92
500	90	101	94	81	99	109	107	93	105	114	109	96
1000	89	99	96	81	101	109	110	92	106	112	113	98
2000	93	99	99	86	103	108	111	94	106	111	114	97
4000	97	103	101	92	105	112	113	96	104	112	113	97
6000	94	101	100	90	103	108	112	95	101	111	111	95
OVERALL	102	109	108	96	110	118	118	103	113	121	120	106

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATIONS									
OCTAVE BAND											
2											
NOISE SOURCE/SUBJECT:		OPERATION:									
T-38 AIRCRAFT IN THE		D= MILITARY POWER									
AF32A-18 SUPPRESSOR		E= AFTERBURNER POWER									
GROUND CREW											
NEAR-FIELD NOISE LEVELS											
		LOCATION/CONDITION									
		1/D	2/D	3/D	4/D	1/E	2/E	3/E	4/E		
FREQ (HZ)											
31.5		103	107	100	102	105	109	105	105		
63		98	113	105	100	105	116	110	104		
125		101	112	107	98	105	114	110	104		
250		99	112	108	93	101	114	108	95		
500		100	115	107	101	112	120	111	105		
1000		110	116	109	102	112	118	113	105		
2000		110	117	108	100	111	119	110	101		
4000		106	114	103	97	108	118	107	99		
8000		101	110	97	93	103	114	100	95		
OVERALL		116	123	116	109	118	126	119	112		

TABLE: MEASURES OF HUMAN NOISE EXPOSURE									
3									
IDENTIFICATIONS									
OMEGA 3.2									
TEST 79-733-001									
RUN 02									
06 APR 79									
PAGE H2									
LOCATION/CONDITION									
1/D	2/D	3/D	4/D	1/E	2/E	3/E	4/E		
HAZARD/PROTECTION									
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR									
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR									
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)									
NO PROTECTION									
OASLC	115	123	116	108	118	126	119	112	
OASLA	115	122	114	106	117	125	117	109	
T	2.2	P	2.7	11	P	P	P	6	
MINIMUM QPL EAR MUFFS									
OASLA*	89	98	91	83	92	101	94	87	
T	202	42	143	571	120	25	85	285	
AMERICAN OPTICAL 1700 EAR MUFFS									
OASLA*	83	93	86	78	86	95	89	82	
T	571	101	339	960	339	71	202	679	
V-51R EAR PLUGS									
OASLA*	89	95	88	81	91	98	91	84	
T	202	71	240	807	143	42	143	480	
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS									
OASLA*	75	82	74	67	77	84	78	71	
T	960	679	960	960	960	480	960	960	
H-133 GROUND COMMUNICATION UNIT									
OASLA*	88	95	86	79	89	97	90	82	
T	240	71	339	960	202	50	170	679	
COMMUNICATION									
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)									
PSIL	110	116	108	101	112	119	111	104	
ANNOUNCE									
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNOB)									
TONE CORRECTION (C IN DB)									
PNLT	128	136	128	120	130	140	130	123	
C	1	1	1	1	1	2	1	1	

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.
P ADDITIONAL EAR PROTECTION REQUIRED.

TABLE 4
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

T-38 Aircraft In The AF32-18 Noise Suppressor
Laughlin AFB TX
Test #77-733-001, 1 September 1977

Aircraft Engine Operation

Idle	Single Engine 48 % 517 C, EGT 500 LBS/HR, Fuel Flow
79% RPM	Single Engine 75 % rpm 405 C, EGT 790 LBS/HR, FF
94% RPM	Single Engine 94 % RPM 500 C, EGT 1425 LBS/HR, FF
Military Power	Single Engine 99.5 % RPM 635 C, EGT 2100 LBS/HR, FF
Afterburner Power	Single Engine 100 % RPM 635 C, EGT 2100 LBS/HR, FF

Meteorology

Temperature	30 C
Bar Pressure	.762 M Hg
Rel Humidity	51 %
Wind — Speed	Calm
— Direction	Calm

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATION:																		
5	1/3 OCTAVE BAND	OMEGA 1.4																		
	DISTANCE = 100 METERS	TEST 77-733-001																		
NOISE SOURCE/SUBJECT:		OPERATION:		METEOROLOGY:																
T-38 AIRCRAFT IN THE		IDLE POWER 48% RPM		TEMP = 30 C																
AF32A-18-SUPPRESSOR		SINGLE ENGINE		BAR PRESS = .762 M HG																
ENGINE J85-GE-5A		GROUND RUNUP (SUPPRESSED)		REL HUMID = 51 %																
FAR FIELD NOISE				PAGE 2																
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
25												68<	74<	79	78	74<	73<	74<	75<	
31.5													70<	76	76	68<	71<	70<	72<	
40												66<	71<	76	76	68<	69<	69<	71<	
50	69<	70<	65<	66<	65<	66<	69<	63<	65<	63<	66<	68<	70<	73	72	67<	67<	68<	70<	
63	67<											69<	73<	72<						
80						66<						67<	70<	73<	72<	65<	68<		66<	
100												67<	71<	73<	70<	70<	68<	66<		
125		70	68<	68<	70	68<	66<	64<	59<	55<	63<	66<	69	72	73	70	67<	67<	68<	
160		63<	64<	67	67	66	62<	62<	59<	62<	61<	62<	63<	64<	68	60<	60<	63<	62<	
200		60<	62<	60<	61<	60<	57<	56<	55<			57<	61<	64<	67	58<	56<	58<	56<	
250		59<	58<	61<	59<	58<	57<	58<					59<	64<	64<	57<	55<	61<	57<	
315		61<	62	64	63	59<	58<	58<	55<	56<		51<	57<	62	63	53<				
400		58<	62	62	63	58<	60	56<	55<	52<		49<	55<	60	62					
500		52<	56<	60<	58<	56<	53<	53<												
630		53<	57<	60<	56<	56<	53<													
800		52<	58<	62	58<	57<	55<	53<												
1000		58<	60<	58<	57<	54<	53<													
1250		58<	61<	58<	58<	54<	53<	52<												
1600		54<	65	65	63	62	59<	56<	55<	53<	50<	51<	53<	53<	56<	56<	55<	55<		
2000		54<	63	66	65	64	61	57<	56<	53<	52<	53<	53<	53<	57<	56<	54<	54<		
2500		50<	61	64	64	62	58<	55<	51<			50<	53<	54<	56<	56<	52<	49<		
3150			60<	65	64	63	58<	54<	51<			51<	56<	57<	56<	51<				
4000		60	68	70	68	68	65	64	60	55<	58	58	59	59	62	62	61	60	56	
5000		52	61	63	63	63	60	55	53	48	50	51	53	54	56	56	53	51	48	
6300		52	60	63	62	62	57	52	49	46	46	48	50	53	56	57	54	52	49	
8000		60	66	67	67	64	60	58	55	51	51	52	55	57	60	58	58	57	54	
10000		50	56	58	57	56	50	48	45	41<	42<	43	45	47	50	49	49	48	45	
OVERALL		75	77	78	77	76	75	73	70	68	69	69	74	80	84	84	79	79	78	
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																				

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			
1/3 OCTAVE BAND																			
DISTANCE = 100 METERS																			
NOISE SOURCE/SUBJECT:																			
(T-38 AIRCRAFT IN THE)																			
(AF32A-18-SUPPRESSOR)																			
(ENGINE J85-GE-5A)																			
(FAR FIELD NOISE)																			
FREQ (HZ)																			
ANGLE (DEGREES)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	72<	71<	71<	70<	71<	72<	68<	70<	71<	72<	71<	73<	72<	75<	75<	73<	77	76	72<
31.5	68<	70<	70<	71<	72<	73<	70<	70<	70<	68<	70<	70<	69<	70<	72<	71<	72<	72<	70<
40	70<	70<	71<	71<	72<	73<	71<	69<	71<	70<	72<	71<	69<	70<	72<	72<	73<	72<	71<
50	71<	69<	70<	69<	71<	72<	70<	68<	68<	69<	72<	71<	69<	70<	71<	72<	70<	70<	68<
63	71<	68<	69<	68<	70<	72<	69<			71<	70<	70<	69<	69<	69<	69<	67<	68<	68<
80	67<	66<	67<	65<	68<	70<	68<	65<	65<	65<	66<	66<	65<	66<	66<	66<	65<	67<	66<
100	69<	70<	72<	72<	71<	71<	74<	69<	70<	68<	70<	72<	72<	66<	68<	66<	65<	67<	66<
125	70	70	69	69	69	70	68<	65<	67<	67<	67<	71	73	64<	64<	63<	61<	61<	62<
160	70	71	72	74	72	70	66	67	71	67	69	69	67	64<	63<	63<	62<	61<	62<
200	70	65<	66<	68	67	65<	62<	63<	65<	61<	69	69	67	63<	61<	60<	57<	55<	58<
250	69	69	68	69	68	67	60<	62<	70	65<	67	68	68	60<	59<	59<	56<	55<	55<
315	66	65	67	68	67	66	63	60<	68	61<	68	63	61<	57<	57<	57<	56<	51<	
400	62	62	65	62	60	57<	58<	55<	58<	53<	63	59<	55<	50<	54<	52<			
500	61<	61<	62<	62<	59<	55<	50<	55<	54<		57<	56<							
630	61<	58<	59<	59<	55<	53<	53<	54<	52<	53<	52<								
800	59<	56<	55<	57<	52<	52<	52<	52<	52<	54<	53<								
1000	60<	56<	55<	57<	52<	53<	53<			54<	53<								
1250	59<	56<	53<	55<		51<	51<			52<	55<								
1600	61	61	55<	57<	63					55<	55<	60<	55<	54<	55<	55<	55<	55<	52<
2000	60	58<	55<	58<	52<		50<			54<	60<	55<	55<	55<	56<	56<	57<	57<	52<
2500	58<	57<	52<	55<	49<					49<	54<	54<	51<	55<	57<	57<	54<	52<	
3150	58<	56<	52<	55<						53<				58<	60<	58<	54<	52<	
4000	63	61	56	59	52<	45<	52<	51<		45<	55<	61	55<	53<	62	65	63	61	55<
5000	59	55	50	53	47	40<	46<	47	40<	42<	48	52	50	50	59	61	58	54	52<
6300	63	56	52	55	48	42<	47	49	43<	43<	46	50	49	49	57	60	59	55	54
8000	59	57	52	54	46	38<	46	47	40<	41<	42<	48	47	51	58	60	58	55	50
10000	53	50	45	49	41<	40<	39<	33<	34<	36<	41<	40<	40<	41<	49	51	49	46	44
OVERALL	81	80	81	81	81	81	80	78	80	76	81	81	80	79	80	80	80	80	78

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)		IDENTIFICATION:																		
1/3 OCTAVE BAND																				
5		OMEGA 1.4																		
DISTANCE = 100 METERS		TEST 77-733-001																		
NOISE SOURCE/SUBJECT:		METEOROLOGY:																		
T-38 AIRCRAFT IN THE		TEMP = 30 C																		
AF32A-18-SUPPRESSOR		BAR PRESS = .762 M HG																		
ENGINE J85-GE-5A		REL HUMID = 51 %																		
FAR FIELD NOISE		PAGE 2																		
FREQ (HZ)		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	76	76	75	74	74	74	74	76	76	78	80	75	75	75	79	75	77	75	77	78
31.5	77	76	78	76	74	74	80	78	74	75	77	79	78	78	76	77	76	77	76	76
40	78	79	79	80	80	80	80	80	79	79	80	80	78	78	79	79	78	80	78	80
50	77	78	79	78	78	78	79	77	77	80	80	79	77	78	79	80	79	77	79	79
63	82	81	80	80	80	80	80	80	80	80	80	80	80	80	80	79	79	80	79	82
80	78	76	77	76	76	76	74	76	76	77	77	75	76	76	76	76	76	76	76	76
100	74	76	73	74	73	73	71	73	76	73	71	71	71	71	72	71	71	70	70	69
125	78	77	77	75	74	73	72	74	69	70	70	67	69	71	69	71	67	70	72	72
160	76	73	74	73	71	68	69	69	69	69	69	66	66	68	67	69	68	64	67	68
200	71	70	71	69	67	65	66	66	66	65	65	63	63	62	65	65	64	62	60	63
250	70	69	71	72	67	68	68	68	68	68	69	64	65	62	66	63	64	58	58	57
315	67	68	70	68	64	67	65	67	66	66	66	62	61	59	61	59	59	58	53	52
400	66	69	73	68	65	65	62	62	61	58	58	55	54	54	54	58	57	68	49	
500	64	66	70	67	65	64	61	61	61	57	54	55	53	54	55	55	55	62		
630	65	65	67	64	63	60	60	59	58	52	52	52	52	53	52	52	52	69	53	51
800	63	63	63	64	60	60	60	59	57	51		54	53	54	52	53	53	68	56	54
1000	61	64	61	62	60	58	58	58	54			53	53	54			61	55	53	
1250	59	60	57	59	59	57	56					52	52	52			52	63	56	54
1600	60	63	58	62	60	58	56	50				53	53	53	53	56	57	62	58	56
2000	61	62	57	62	60	59	57	50				54	54	53	53	57	57	61	59	56
2500	59	61	55	62	57	55	55	49				52	51	52	53	55	57	59	56	54
3150	58	59	54	61	57	54	54					51	51	52	53	57	58	60	56	54
4000	62	66	59	64	60	62	56	52	46			54	54	55	57	60	64	64	61	56
5000	60	61	56	64	58	59	55	51	49	51	58	57	58	58	58	61	65	63	63	59
6300	57	58	52	61	55	54	52	47	45	47	52	52	53	53	55	58	60	59	58	54
8000	57	61	55	59	54	53	51	46	43	44	49	49	49	50	56	58	58	58	56	52
10000	52	53	48	54	49	47	45	41	38	40	44	44	44	44	47	52	52	51	50	46
OVERALL	88	87	88	87	87	87	87	86	87	87	86	86	86	86	87	86	86	86	85	87
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																				

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			
1/3 OCTAVE BAND																			
DISTANCE = 100 METERS																			
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:																			
(T-36 AIRCRAFT IN THE) MILITARY POWER 99.5 % RPM) TEMP = 30 C) OMEGA 1.4																			
(AF32A-18-SUPPRESSOR) SINGLE ENGINE) BAR PRESS = .762 M HG) TEST 77-733-001																			
(ENGINE J85-GE-5A) GROUND RUNUP (SUPPRESSED)) REL HUMID = 51 %) RUN 04																			
(FAR FIELD NOISE)																			

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 1		MEASURED SOUND PRESSURE LEVEL (DB)																IDENTIFICATION:			
1/3 OCTAVE BAND		DISTANCE = 100 METERS																OMEGA 1.4			
5																		TEST 77-733-001			
NOISE SOURCE/SUBJECT:		OPERATION:																METEOROLOGY:			
T-38 AIRCRAFT IN THE		MAX POWER AFTERBURNER																TEMP = 30 C			
AF32A-18-SUPPRESSOR		SINGLE ENGINE																BAR PRESS = .762 M HG			
ENGINE J85-GE-5A		GROUND RUNUP (SUPPRESSED)																REL HUMID = 51 %			
FAR FIELD NOISE																		PAGE 2			
FREQ (HZ)		ANGLE (DEGREES)																			
		0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
25	84	83	84	85	82	81	82	83	86	85	86	85	84	84	85	85	85	87	83	85	
31.5	82	82	80	81	81	83	62	83	82	81	82	81	81	81	82	83	83	84	81	82	
40	88	87	87	87	89	86	87	87	89	88	88	88	87	87	86	87	86	89	88	88	
50	88	90	88	89	89	90	89	91	91	89	90	89	89	90	91	91	89	90	90	90	
63	91	88	89	89	89	90	90	89	88	90	90	90	89	93	90	90	91	91	91	90	
80	92	90	90	90	91	92	92	92	91	91	92	91	92	90	91	91	91	92	91	90	
100	89	89	89	88	89	89	90	89	87	86	86	86	86	89	88	90	89	89	89	88	
125	88	87	87	87	86	86	83	85	82	81	83	82	81	82	83	84	84	83	81	81	
160	84	83	84	82	81	80	79	78	78	75	81	80	81	82	84	82	80	80	80	79	
200	80	81	81	81	80	81	79	78	78	75	76	76	78	78	79	81	78	75	77	74	
250	76	77	77	75	73	73	73	74	74	71	72	72	73	74	75	71	70	70	68	68	
315	74	77	77	73	70	71	72	72	71	65	68	70	70	70	71	69	67	63	65	65	
400	73	80	79	79	75	71	70	73	68	63	65	65	66	67	69	65	65	66	63	66	
500	73	81	81	81	75	74	73	71	65	64	65	64	65	67	70	69	65	65	65	66	
630	74	77	77	77	77	71	69	69	70	63	62	62	65	65	65	63	66	66	66	66	
800	69	74	78	75	71	70	69	69	68	63	62	62	64	66	66	65	70	70	69	69	
1000	69	76	78	76	73	70	69	69	67	63	61	62	62	63	62	62	62	66	67	65	
1250	69	74	76	75	72	68	68	69	66	64	60	60	61	63	62	61	61	66	67	65	
1600	67	73	75	75	71	68	68	69	67	64	60	60	62	64	64	64	65	67	67	65	
2000	66	71	74	75	70	66	66	68	66	63	59	59	60	62	64	64	65	66	66	65	
2500	64	73	78	77	70	65	66	68	67	63	57	57	61	62	63	64	63	65	63	64	
3150	62	71	76	75	67	63	64	65	64	60	54	55	58	61	62	62	62	61	60	60	
4000	66	70	75	74	67	63	63	63	63	59	54	55	58	63	65	64	65	62	61	61	
5000	60	67	70	72	65	60	61	60	59	56	52	53	56	61	61	61	60	61	58	58	
6300	65	74	71	71	68	66	66	65	62	60	58	58	61	67	66	66	66	66	63	64	
8000	65	65	64	65	61	54	61	56	54	53	48	48	52	60	58	57	58	54	54	54	
10000	56	57	59	58	55	53	51	50	48	47	42	43	46	52	52	51	51	51	47	47	
OVERALL	98	97	97	97	97	97	97	98	97	97	98	96	98	97	98	97	98	97	98	97	
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																					

FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT: () IDENTIFICATION: ()

T-38 AIRCRAFT IN THE () OMEGA 1.4

AF32A-18-SUPPRESSOR () TEST 77-733-001

ENGINE J85-GE-5A () SINGLE ENGINE () RUN 01

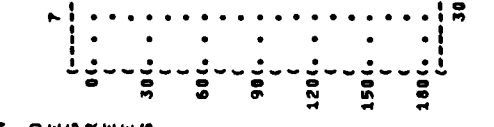
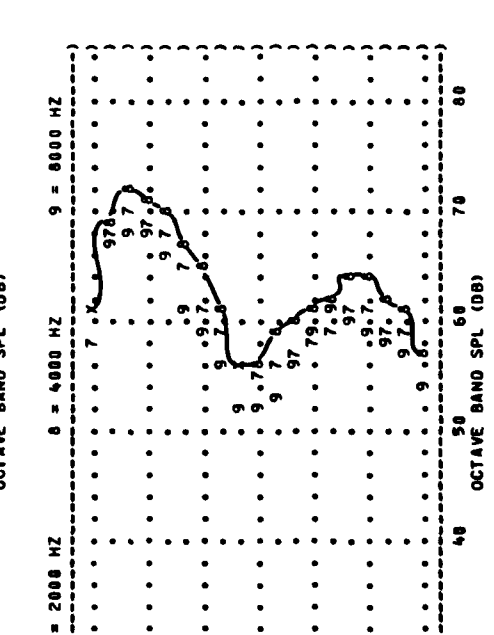
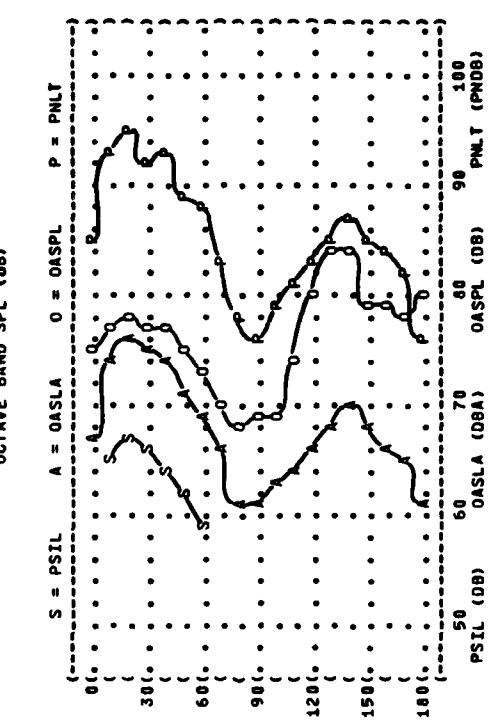
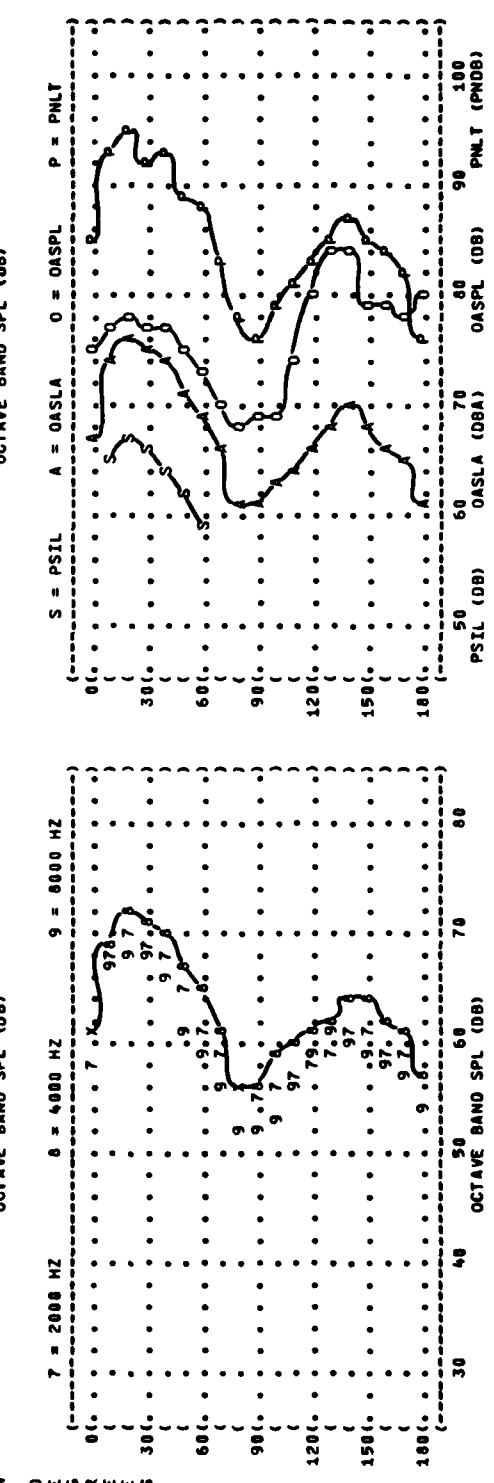
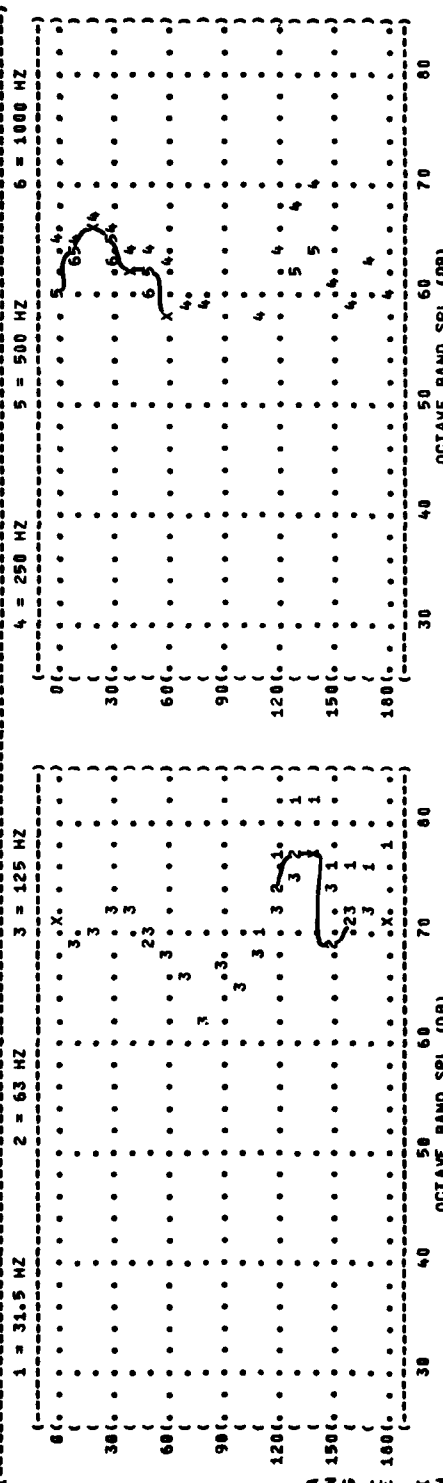
FAR FIELD NOISE () GROUND RUNUP (SUPPRESSED) () 14 SEP 78

() METEOROLOGY: () PAGE 6

() TEMP = 15 C

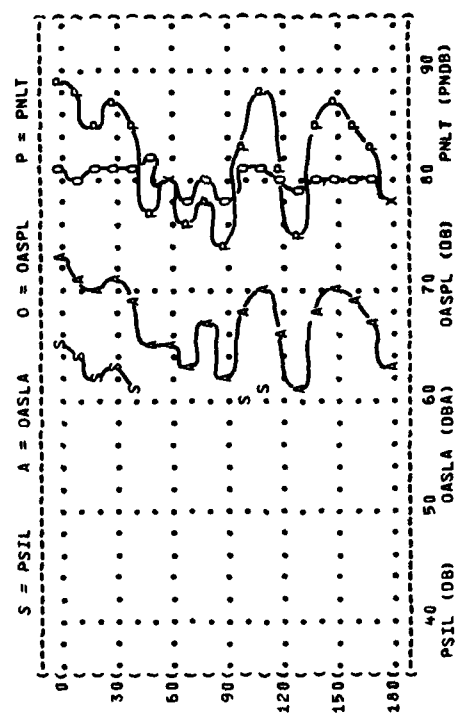
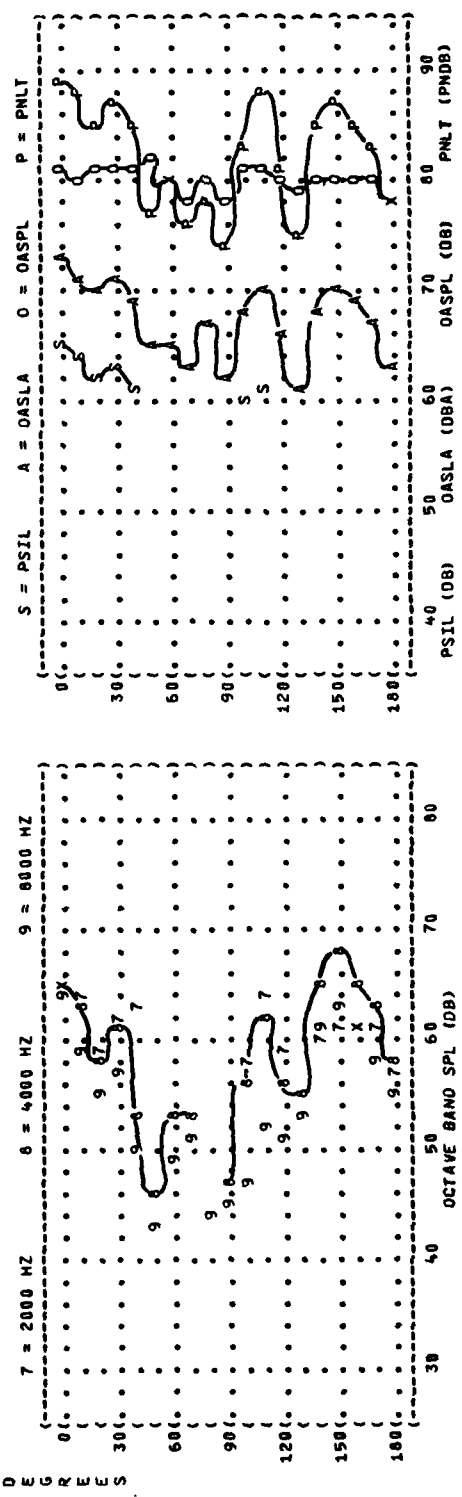
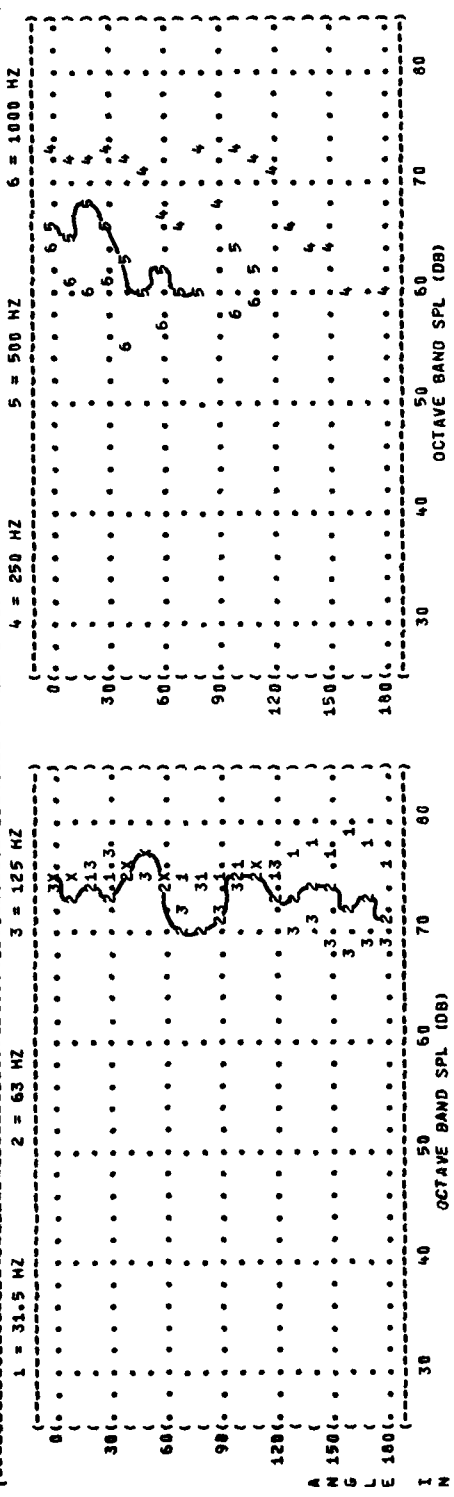
() BAR PRESS = .760 M HG

() REL HUMID = 78 %

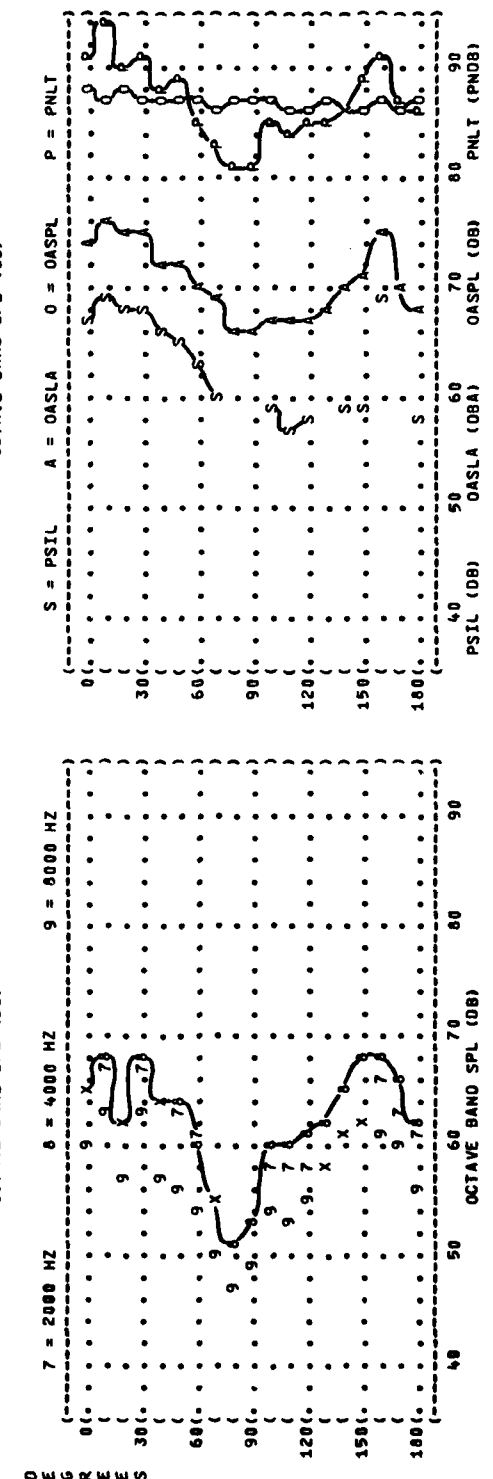
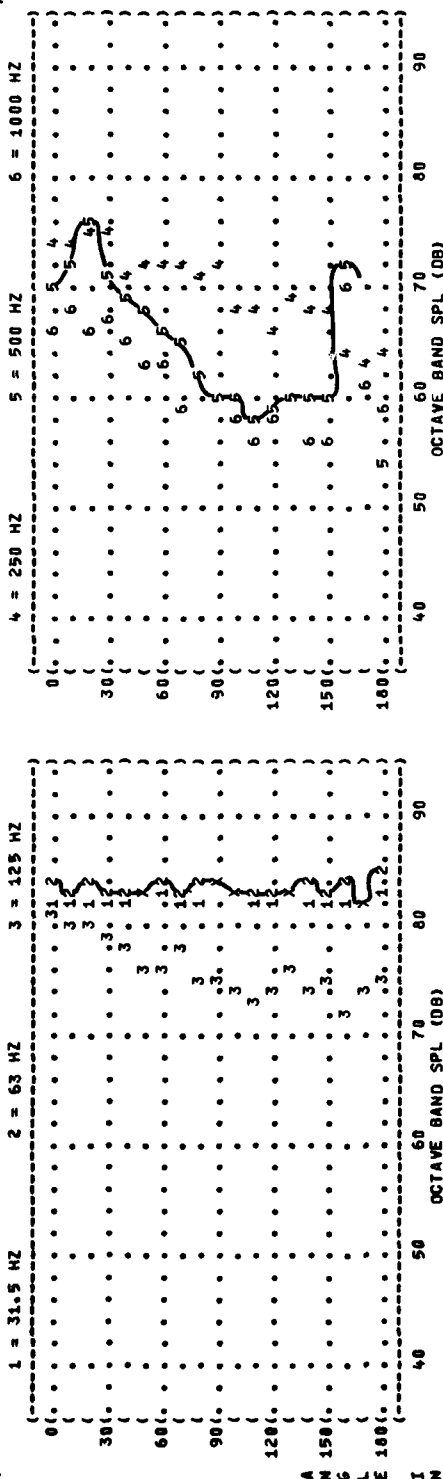


IDENTIFICATION:
 TEST 77-733-001
 RUN 02
 14 SEP 78
 PAGE 6
 METEOROLOGY: TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 78 %
 NOISE SOURCE/SUBJECT: OPERATION: 752 RPM ENGINE RUNUP
 T-38 AIRCRAFT IN THE SINGLE ENGINE
 AF32A-18-SUPPRESSOR GROUND RUNUP (SUPPRESSED)
 ENGINE J85-GE-5A
 FAR FIELD NOISE

DISTANCE = 100 METERS
 3



(FIGURE: NORMALIZED FARFIELD NOISE LEVELS)
 (3) DISTANCE = 100 METERS)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-16-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATION:)
 (942 RPM POWER RUNUP)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1-4)
 (TEST 77-733-001)
 (RUN 03)
 (14 SEP 78)
 (PAGE 6)



PAGE 13

צדד השני - מחלקת המידע

BACKGROUND KNOWLEDGE (SUFFICIENT)

END PAGE TWO
EAB FIVE NOISE

I 58

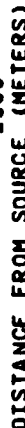


FIGURE 1: OVERALL SOUND PRESSURE LEVEL {OASPL} EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT: (OPERATION: (

T-38 AIRCRAFT IN THE (94X RPM (

AF32A-18-SUPPRESSOR (SINGLE E (

ENGINE J85-GE-5A (GROUND R (

FAR FIELD NOISE (

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 H HG
REL HUMID = 70 %

PAGE 13

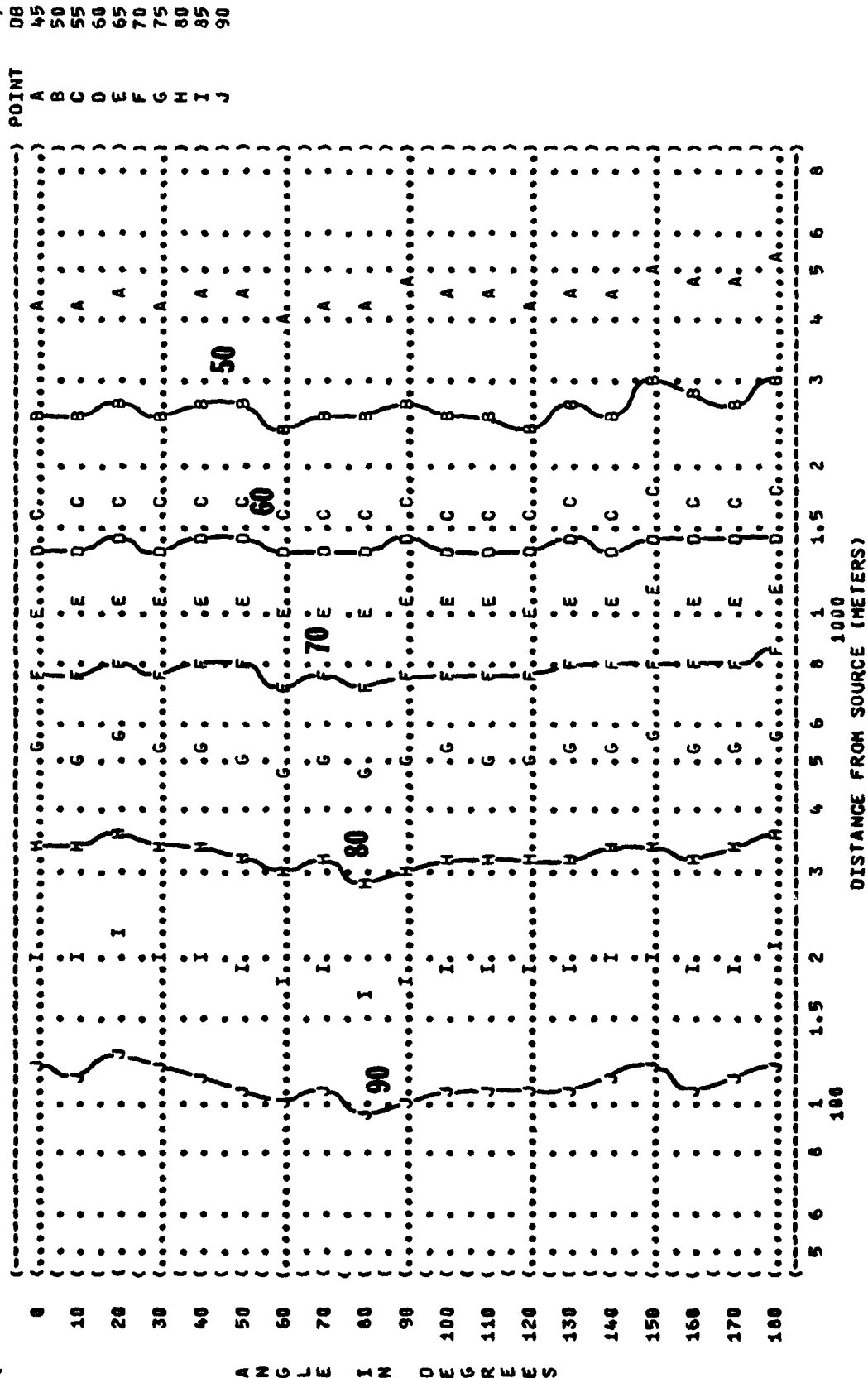
POINT

POINT	A	B	C	D	E	F	G	H	I	J
DB	45	50	55	60	65	70	75	80	85	90

420 JE HZ DEGRWWS

DISTANCE FROM SOURCE (METERS)

```
(-----)
( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL) ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) ) )
( A ) OMEGA 1.4 )
( ) TEST 77-733-001 )
( ) RUN 04 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( T-38 AIRCRAFT IN THE ) TEMP = 15 C )
( AF32A-10-SUPPRESSOR ) SINGLE ENGINE ) BAR PRESS = .760 M HG )
( ENGINE J85-GE-SA ) GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( FAR FIELD NOISE ) ) PAGE 13 )
(-----)
```



IDENTIFICATIONS:

over

1) METEOROLOGY:

TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

PAGE 14

POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80



) IDENTIFICATION:)
))

—

OMEGA 1.4

```
) OMEGA 1.4 )
) TEST 77-733-001 )
) RUN 02 )
```

) RUN 02)
))
) 14 SEP 78)
))

) PAGE 14)

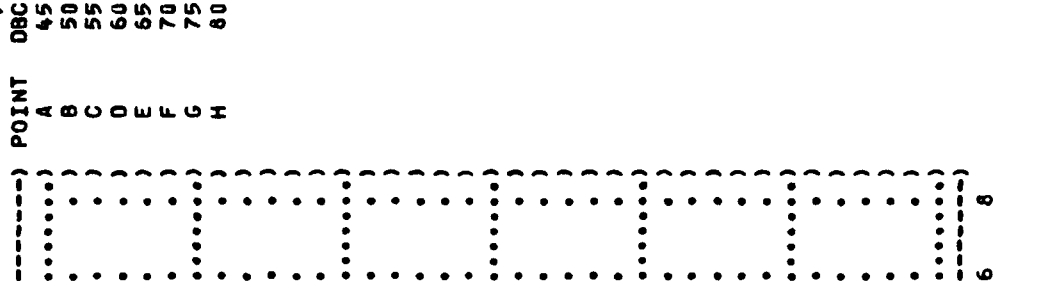
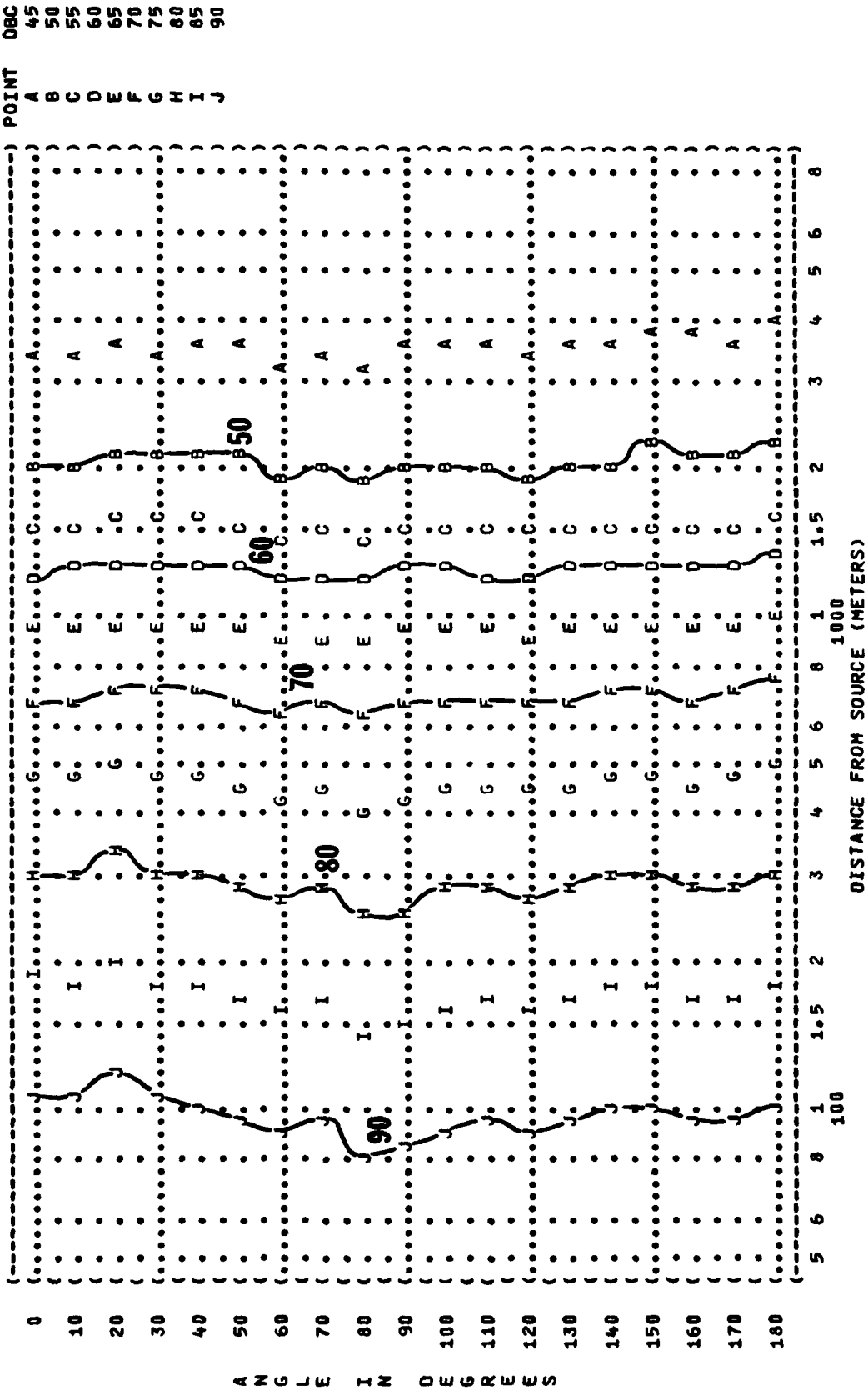


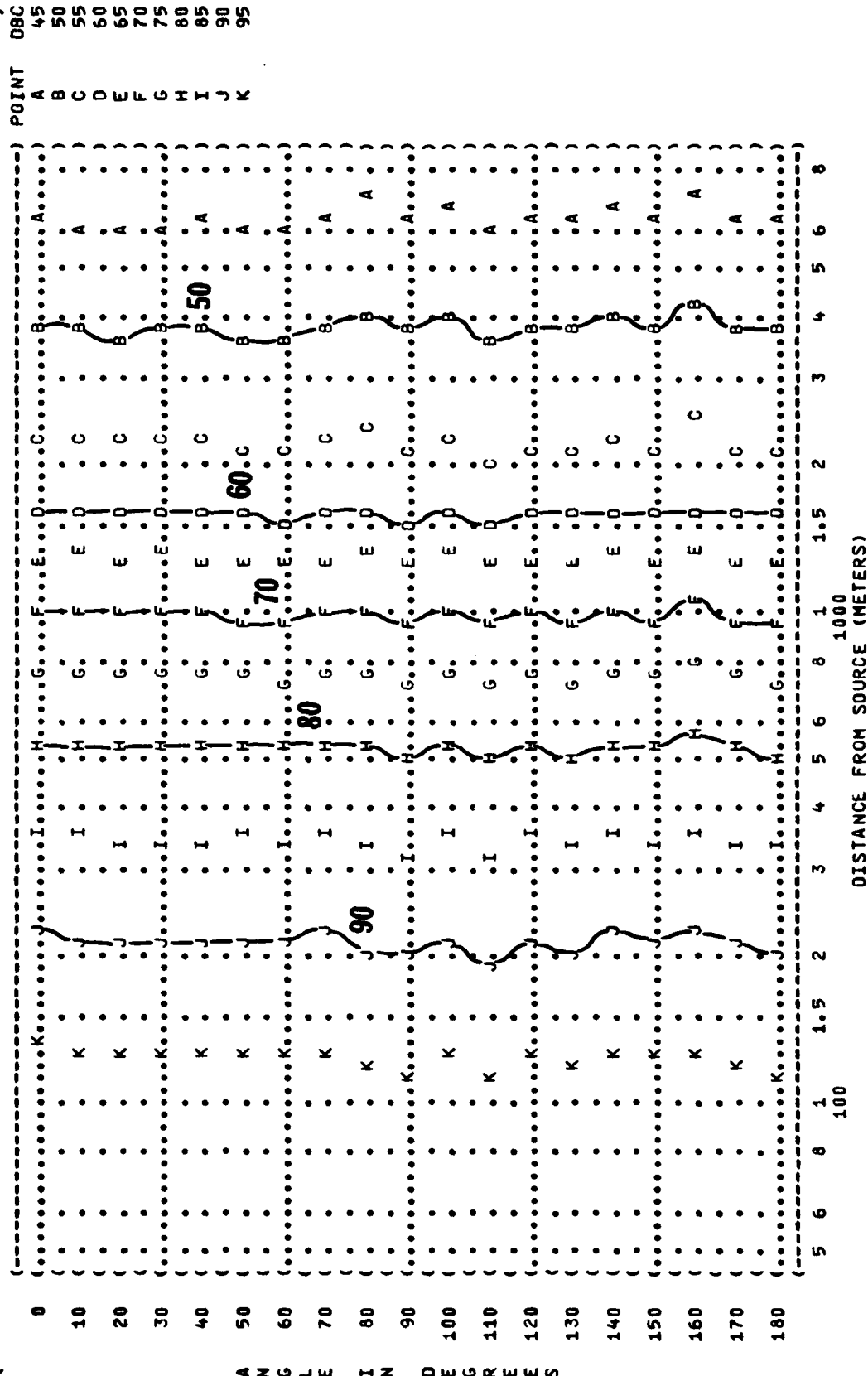
FIGURE 1 C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

5

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: ()
 T-30 AIRCRAFT IN THE (MILITARY POWER 99.5 % RPM) TEMP = 15 C
 AF32A-18-SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG
 ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
 FAR FIELD NOISE () PAGE 14



```
(-----)
( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC) ) IDENTIFICATION: )
(      5    EQUAL LEVEL CONTOURS (DBC) ) )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( T-38 AIRCRAFT IN THE ) TEMP = 15 C )
( AF32A-18-SUPPRESSOR ) BAR PRESS = .760 M HG )
( ENGINE J85-GE-5A ) GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( FAR FIELD NOISE ) ) PAGE 14 )
(-----)
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IDENTIFICATION:

OMEGA 1-4

METEOROLOGY:
TEMP
BAR PRESS
REL HUMID

RUN 01
14 SEP 78
PAGE 15

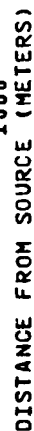


FIGURE:	A-WEIGHTED OVERALL SOUND LEVEL (OASLA)	IDENTIFICATION:
6	EQUAL LEVEL CONTOURS (DBA)	

NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:
T-38 AIRCRAFT IN THE	75% RPM ENGINE RUNUP	TEMP = 15 C
AF32A-18-SUPPRESSOR	SINGLE ENGINE	BAR PRESS = .760 M HG
ENGINE J85-GE-5A	GROUND RUNUP (SUPPRESSED)	REL HUMID = 70 %
FAR FIELD NOISE		

		OMEGA 1.4
		TEST 77-733-001
		RUN 02
		14 SEP 78
		PAGE 15

(NOISE SOURCE/SUBJECT:	(OPERATION:	(METEOROLOGY:	(
(T-38 AIRCRAFT IN THE	(75% RPM ENGINE RUNUP	(TEMP = 15 C	(
(AF32A-18-SUPPRESSOR	(SINGLE ENGINE	(BAR PRESS = .760 M HG	(
(ENGINE J85-GE-5A	(GROUND RUNUP (SUPPRESSED)	(REL HUMID = 70 %	(
(FAR FIELD NOISE	(	(	(

DBA	POINT
45	A
50	B
55	C
60	D
65	E
70	F
75	G

The graph shows a path through points A, B, C, D, E, F, and G. The path starts at A (DBA 45), goes to B (DBA 50), then to C (DBA 55), then to D (DBA 60), then to E (DBA 65), then to F (DBA 70), and finally to G (DBA 75). The path is a series of connected line segments.

ANGLE IN DEGREES

DISTANCE FROM SOURCE (METERS)

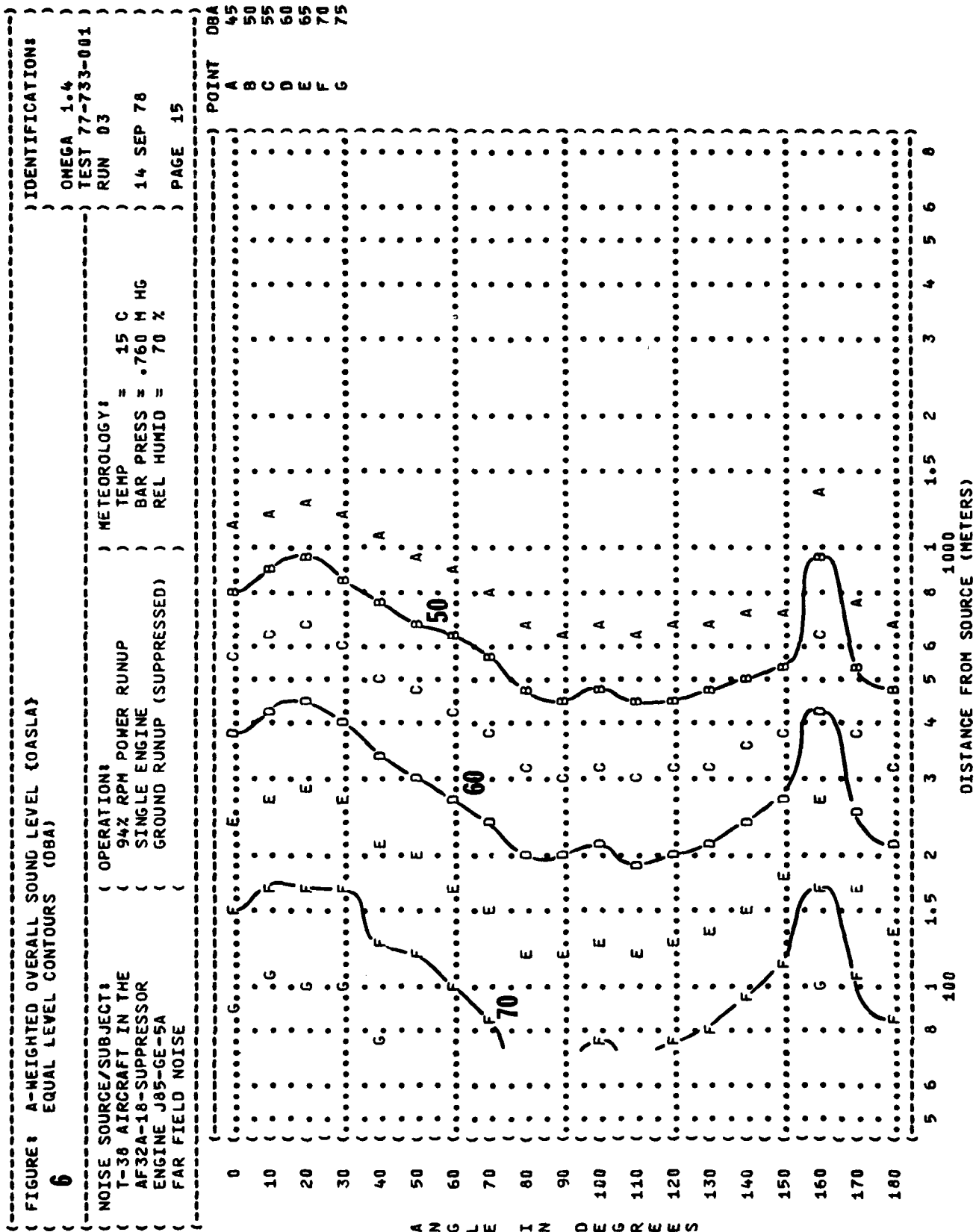
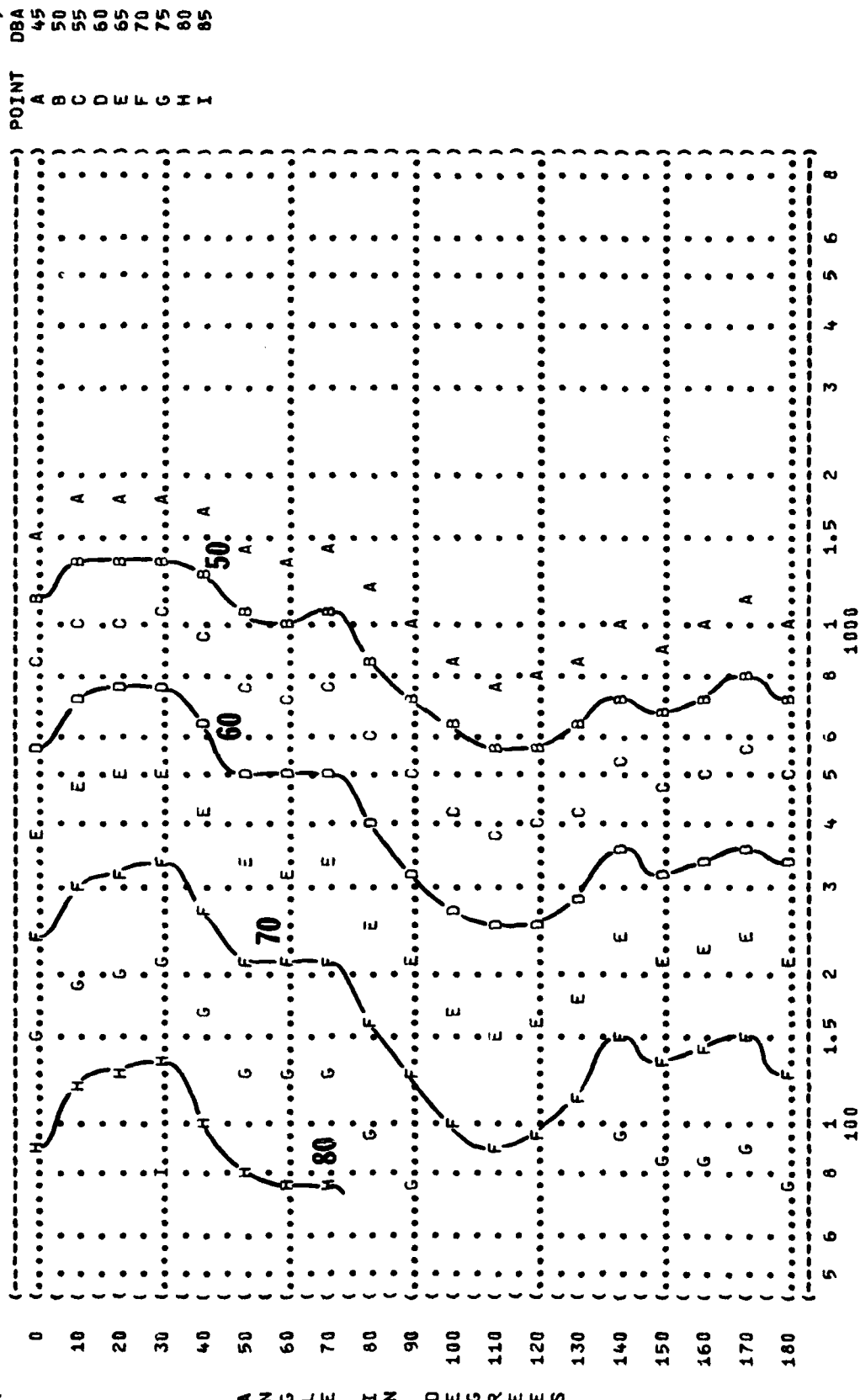


FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 6
 IDENTIFICATION:
 OMEGA 1.4
 TEST 77-733-001
 RUN 04
 14 SEP 78
 PAGE 15

NOISE SOURCE/SUBJECT:
 T-38 AIRCRAFT IN THE
 AF32A-18-SUPPRESSOR
 ENGINE J85-GE-5A
 FAR FIELD NOISE

OPERATIONS:
 MILITARY POWER 99.5 % RPM
 SINGLE ENGINE
 GROUND RUNUP (SUPPRESSED)

METEOLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %



A N G L E I N D E G R E E S

(FIGURE: PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT))
 (7 EQUAL LEVEL CONTOURS (PNDB))
 ()
 () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST 77-733-001)
 () RUN 03)
 ()
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 () OPERATION:) TEMP = 15 C)
 (T-38 AIRCRAFT IN THE))
 (AF32A-10-SUPPRESSOR) SINGLE ENGINE) BAR PRESS = .760 M HG)
 (ENGINE J85-GE-5A) GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %)
 (FAR FIELD NOISE)) PAGE 16)

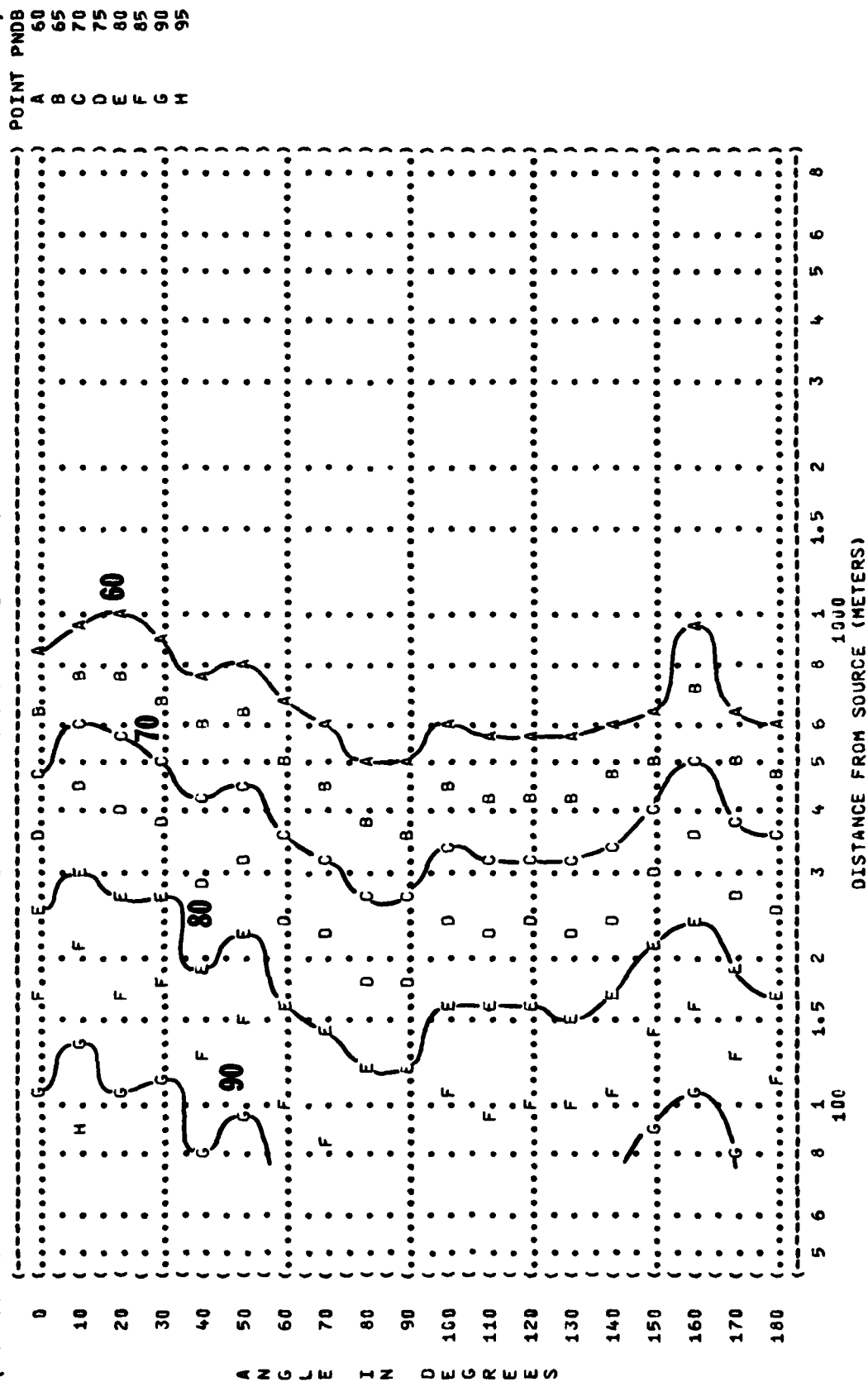
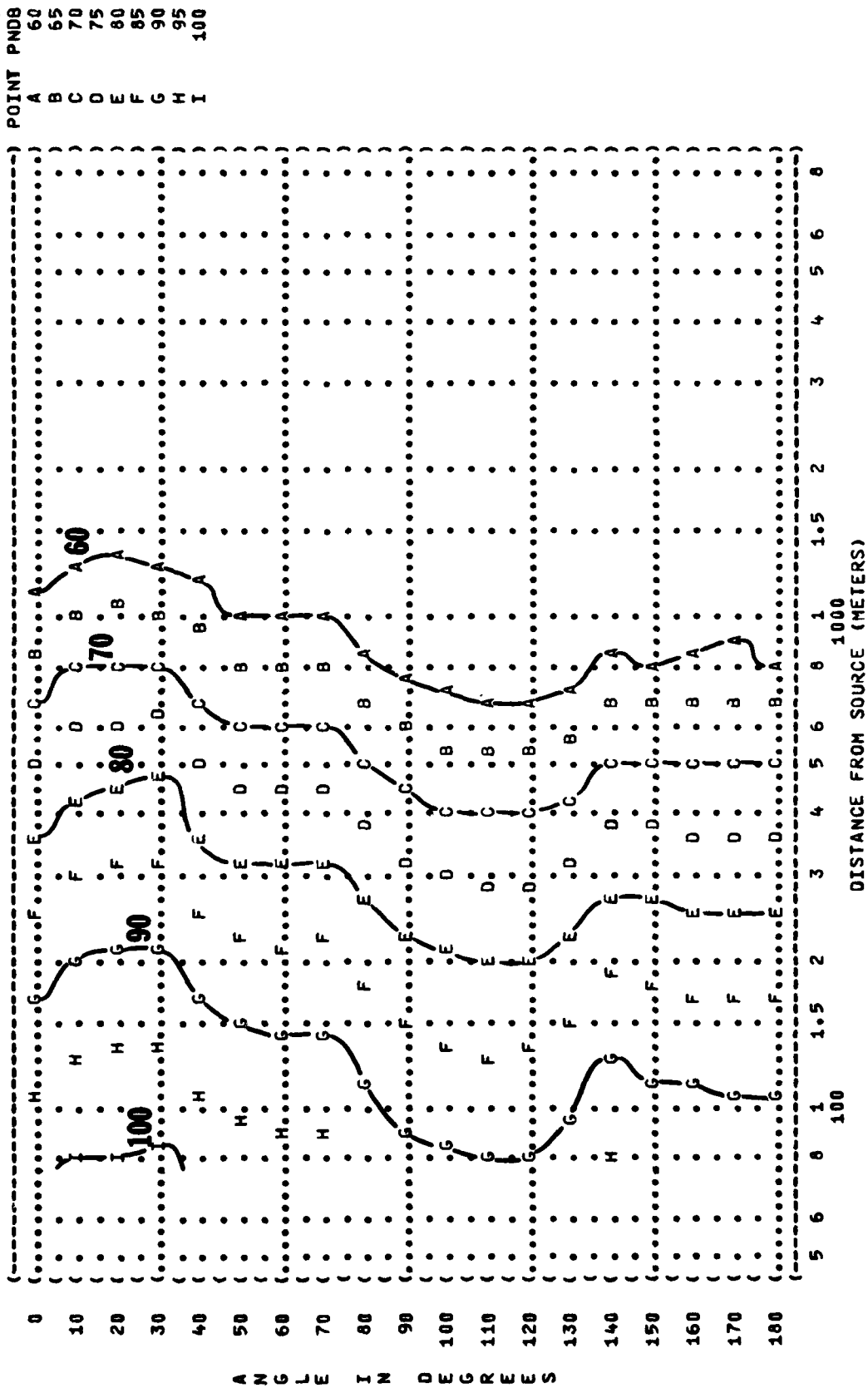
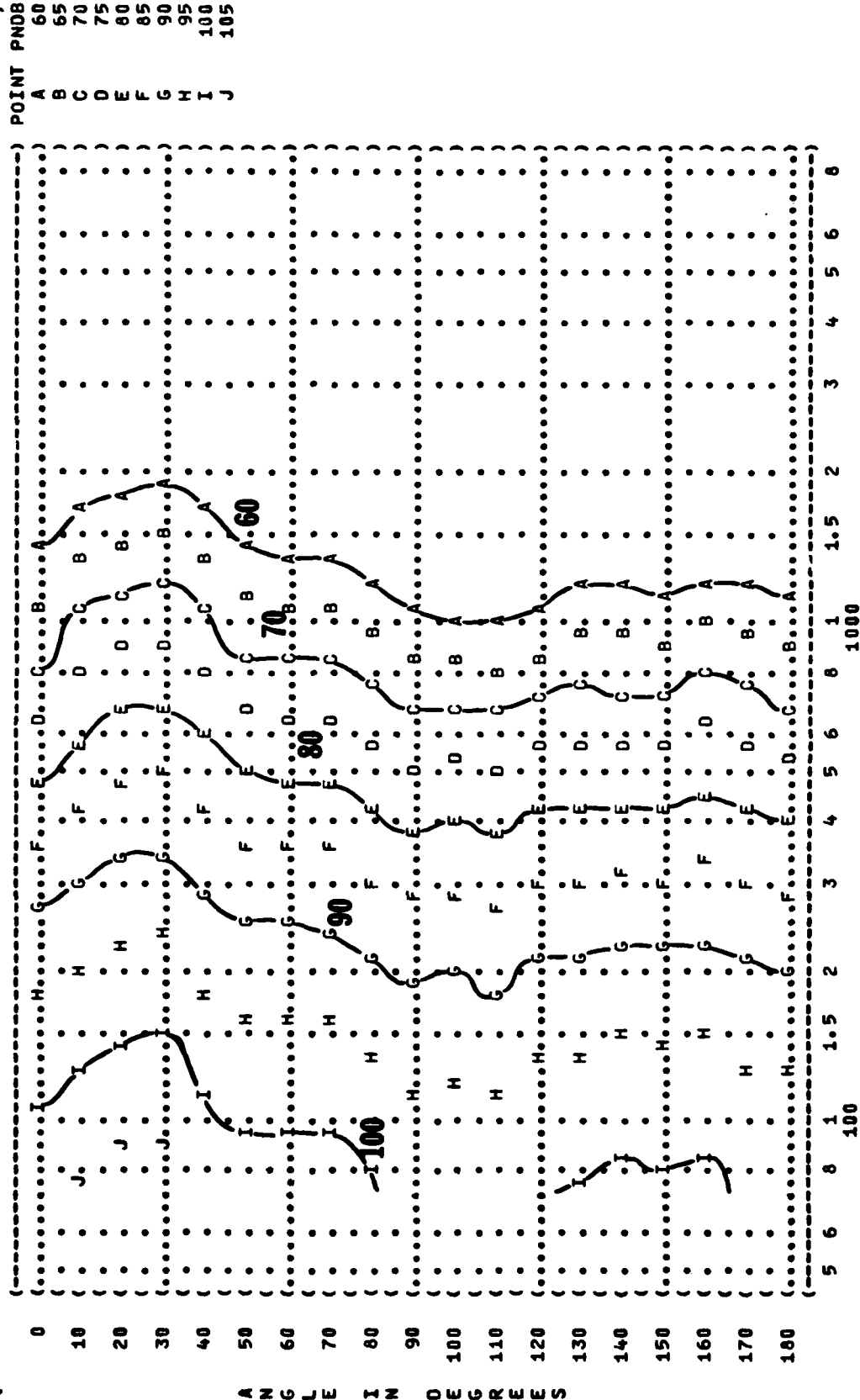
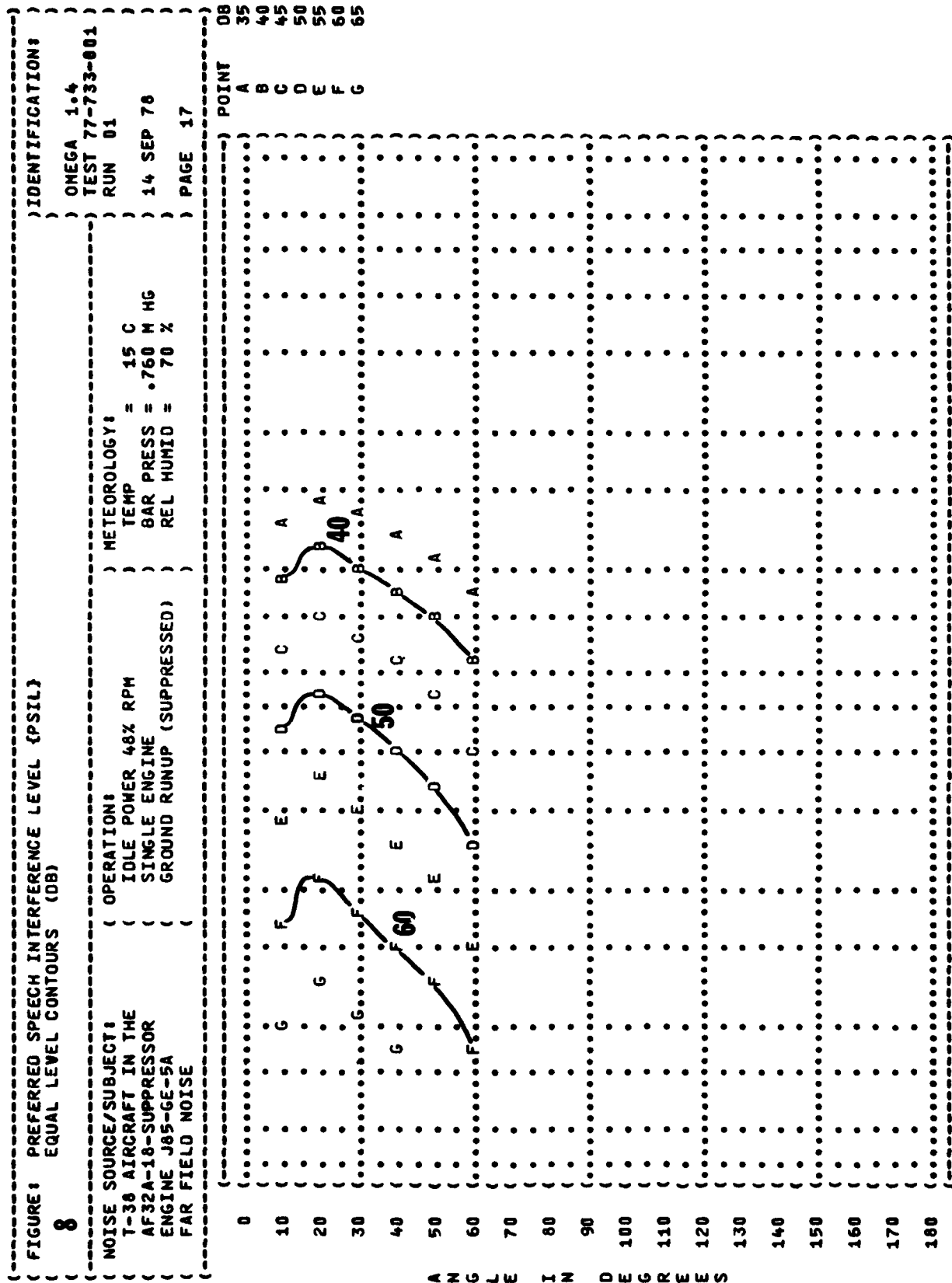


FIGURE: PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT)
 7
 IDENTIFICATION:
 OMEGA 1.4
 TEST 77-733-001
 RUN 04
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 14 SEP 78
 PAGE 16



(FIGURE: PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT)
 (7 EQUAL LEVEL CONTOURS (PNDB)
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (OMEGA 1.4
 (T-38 AIRCRAFT IN THE (MAX POWER AFTERBURNER (TEMP = 15 C TEST 77-733-001
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE (BAR PRESS = .760 M HG RUN 05
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED) (REL HUMID = 70 % 14 SEP 78
 (FAR FIELD NOISE ((PAGE 16)





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( ( FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
( ( EQUAL LEVEL CONTOURS (DB)
( ( 8
( (
( ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY:
( ( T-38 AIRCRAFT IN THE ( 75% RPM ENGINE RUNUP ( TEMP = 15 C
( ( AF32A-18-SUPPRESSOR ( SINGLE ENGINE ( BAR PRESS = .760 M HG
( ( ENGINE J85-GE-5A ( GROUND RUNUP (SUPPRESSED) ( REL HUMID = 70 %
( ( FAR FIELD NOISE ( (
( (
( ( IDENTIFICATION:
( ( )
( ( )
( ( ) OMEGA 1.4
( ( )
( ( ) TEST 77-733-001
( ( ) RUN 02
( ( )
( ( ) 14 SEP 78
( ( )
( ( ) PAGE 17
( ( )

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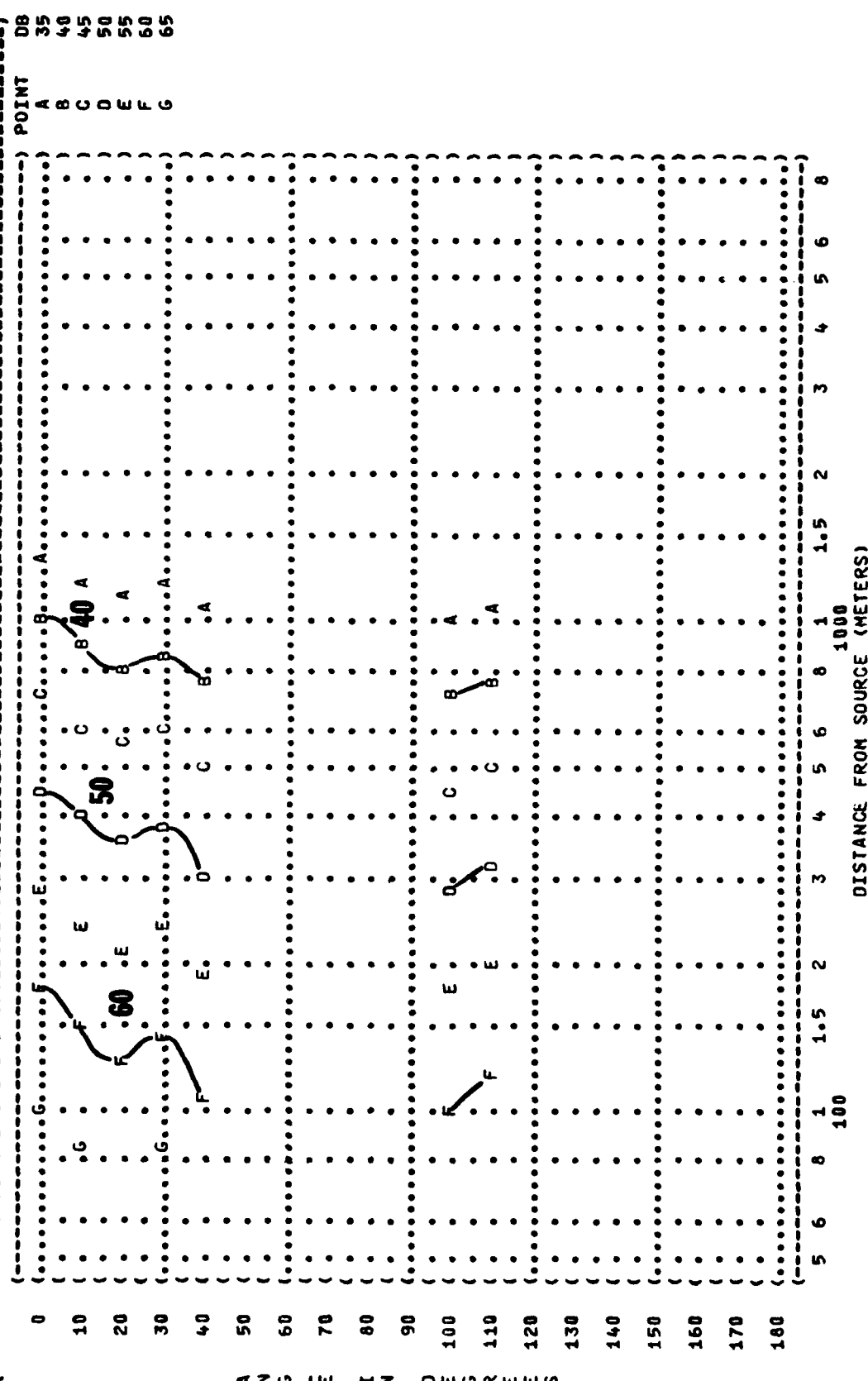


FIGURE 1. PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
0 EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:

OMEGA 1.4

TEST 77-733-001

04
RUN

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

PAGE 17

OPERATIONS

MILITARY POWER 99.5 % RPM

SINGLE ENGINE

GROUND RUNUP (SUPPRESSED)

FAR FIELD NOISE

ISE SOURCE/SUBJECT:

T-38 AIRCRAFT IN THE

AF32A-18-SUPPRESSOR

ENGINE J85-GE-5A

FAR FIELD NOISE

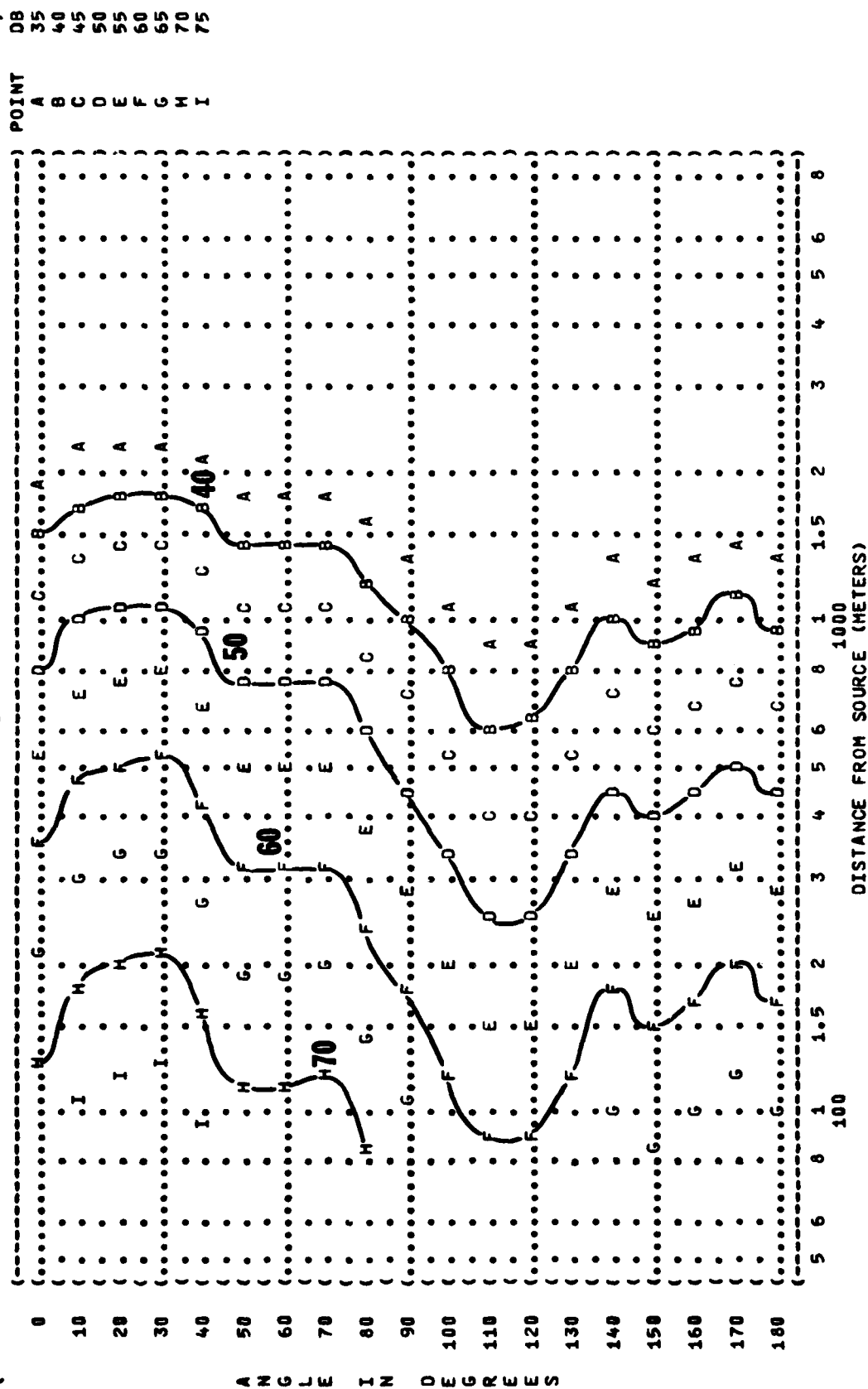


FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
EQUAL LEVEL CONTOURS (DB)

8

IDENTIFICATION:

OMEGA 1.4

TEST 77-733-001

RUN 05

14 SEP 78

PAGE 17

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

OPERATION:

MAX POWER AFTERBURNER

SINGLE ENGINE

GROUND RUNUP (SUPPRESSED)

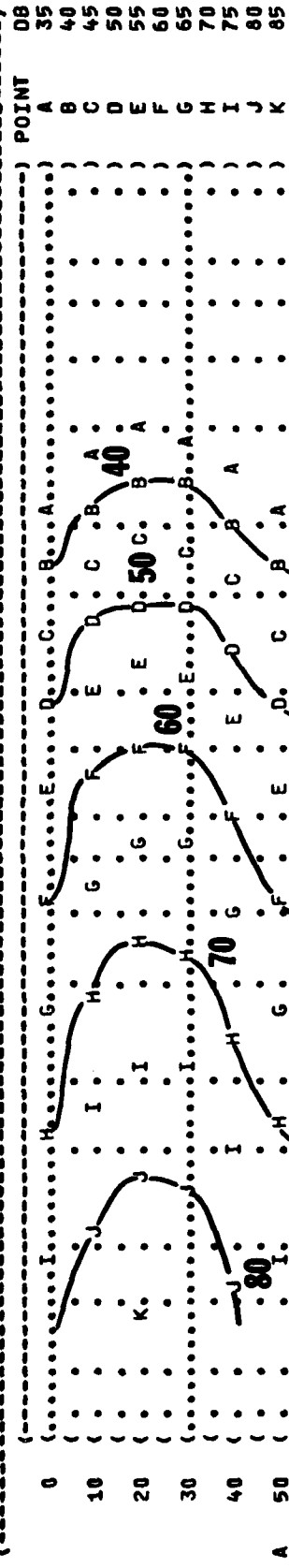
NOISE SOURCE/SUBJECT:

T-38 AIRCRAFT IN THE

AF32A-18-SUPPRESSOR

ENGINE J85-GE-5A

FAR FIELD NOISE



5 6 8 1 1.5 2 3 4 5 6 8 100 1000

DISTANCE FROM SOURCE (METERS)

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

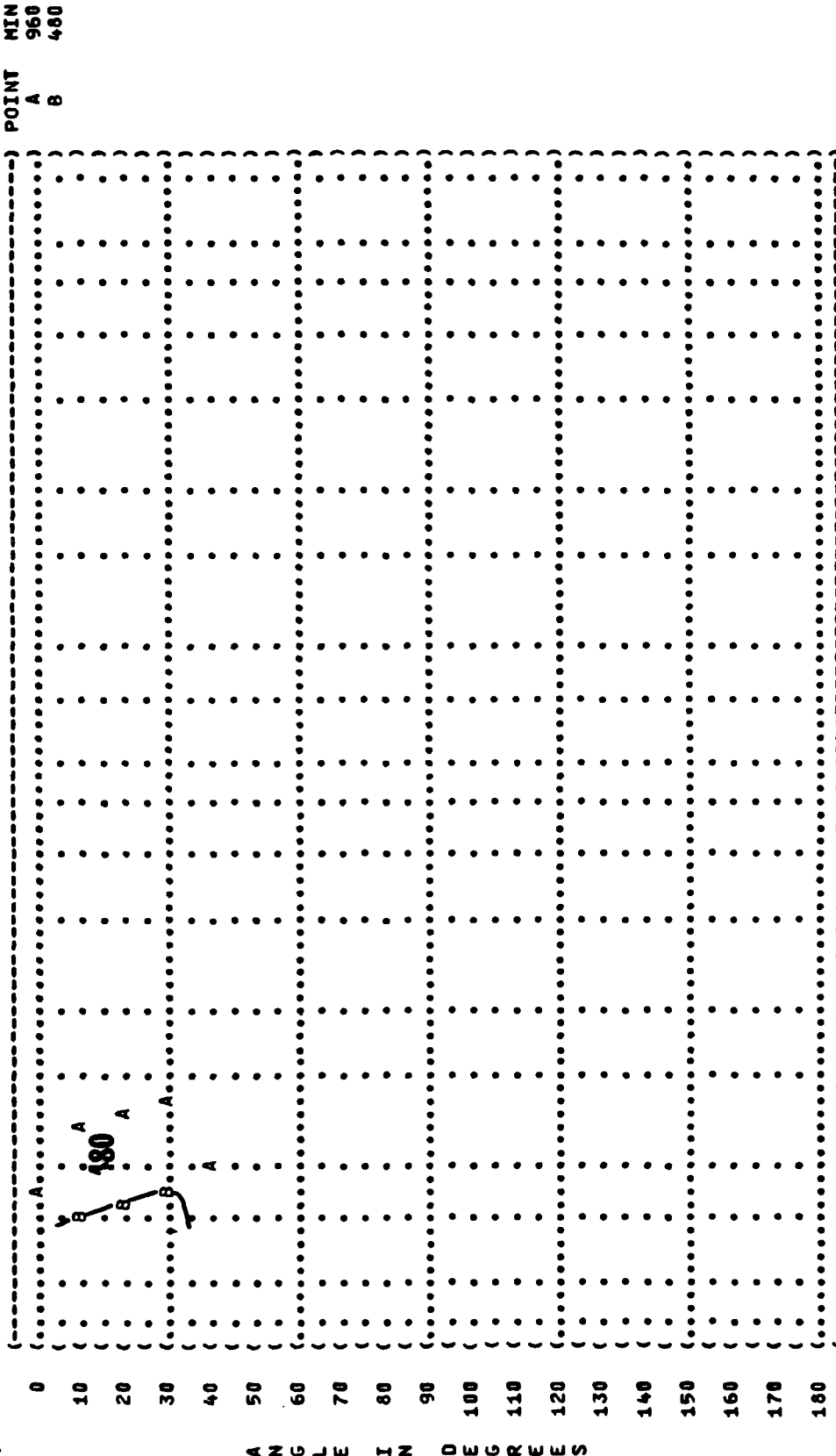
NO PROTECTION
MINIMUM QPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

NO PROTECTION
MINIMUM QPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

5 6 8 1 1.5 2 3 4 5 6 8 100 1000

DISTANCE FROM SOURCE (METERS)

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (9 EQUAL TIME CONTOURS (MINUTES)))
 (NO PROTECTION) OMEGA 1.4)
 () TEST 77-733-001)
 () RUN 04)
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (7-38 AIRCRAFT IN THE) TEMP = 15 C)
 (AF32A-10-SUPPRESSOR) BAR PRESS = .760 M HG)
 (ENGINE J85-GE-5A) REL HUMID = 70 %)
 (FAR FIELD NOISE))
 () PAGE 7)



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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( 9 ) ) )
( ) ) OMEGA 1.4 )
( ) ) TEST 77-733-001 )
( ) ) RUN 04 )
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )
( T-38 AIRCRAFT IN THE ) MILITARY POWER 99.5 % RPM ) TEMP = 15 C )
( AF32A-18-SUPPRESSOR ) SINGLE ENGINE ) BAR PRESS = .760 M HG )
( ENGINE J85-GE-5A ) GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( FAR FIELD NOISE ) ) PAGE 8 )
(-----)
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02

10

202

30 ✓

402

502

209

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802

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300

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202

304

402

502

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PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY

AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS

FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)

UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS

AMERICAN OPTICAL 1700 EAR MUFFS

V-51R EAR PLUGS

COMFIT TRIPLE FLANGE EAR PLUGS

H-133 GROUND COMMUNICATION UNIT

	5	6	8	1	1.5	2	3	4	5	6	8
1	1.5	2	3	4	5	6	8	1	1.5	2	3
2	3	4	5	6	8	1	1.5	2	3	4	5
3	4	5	6	8	1	1.5	2	3	4	5	6
4	5	6	8	1	1.5	2	3	4	5	6	8
5	6	8	1	1.5	2	3	4	5	6	8	1
6	8	1	1.5	2	3	4	5	6	8	1	1.5
8	1	1.5	2	3	4	5	6	8	1	1.5	2

1000
DISTANCE FROM SOURCE (METERS)

PAGE 8

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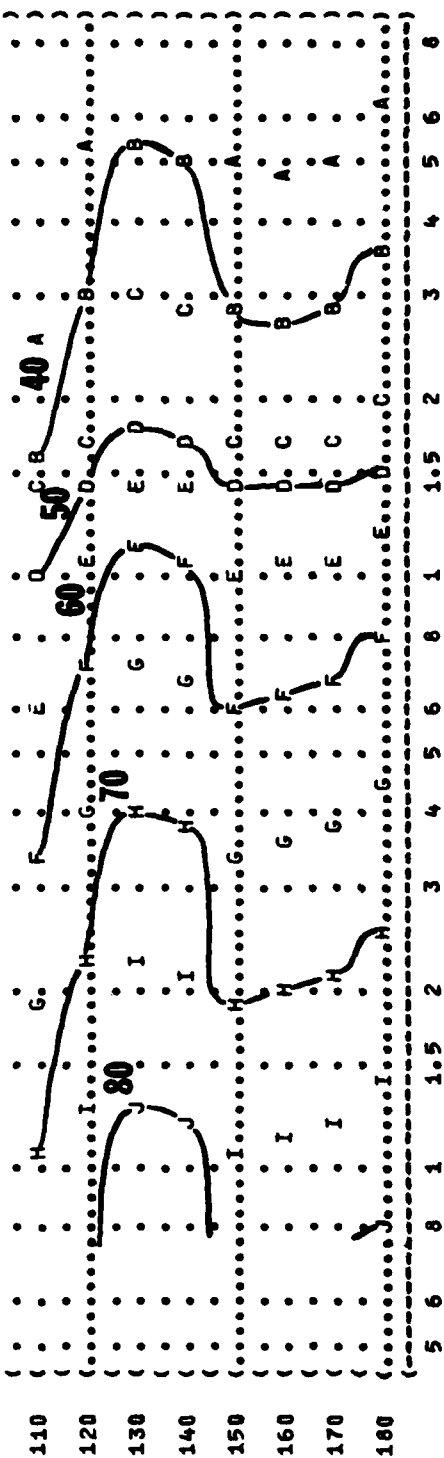
H-133 GROUND COMMUNICATION UNIT

DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (10 EQUAL LEVEL CONTOURS (DB))
 (31.5 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE POWER 482 RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 01)
 (14 SEP 70)
 (PAGE 10)

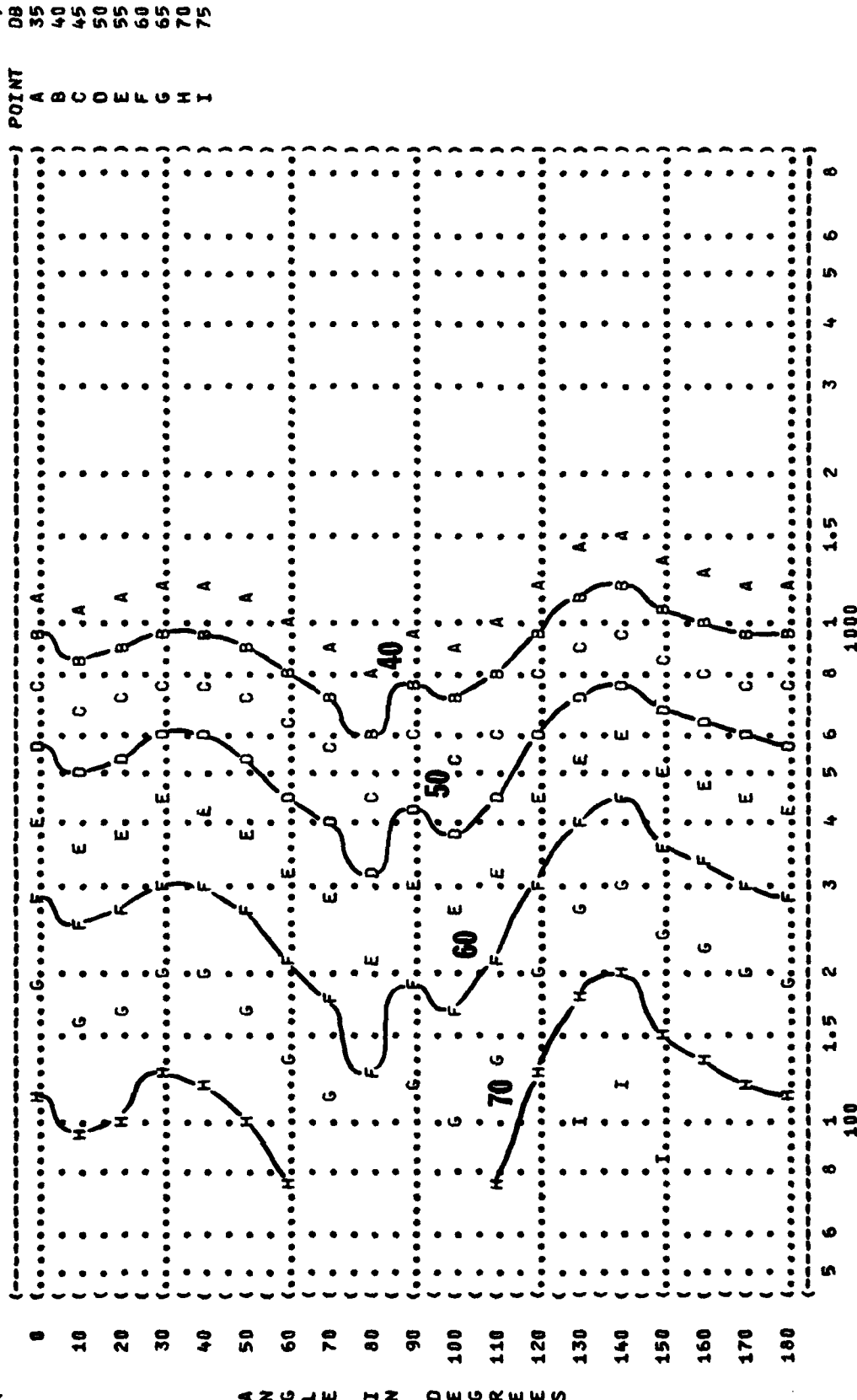
DB	POINT
35	A
40	B
45	C
50	D
55	E
60	F
65	G
70	H
75	I
80	J

ANGLE IN DEGREES

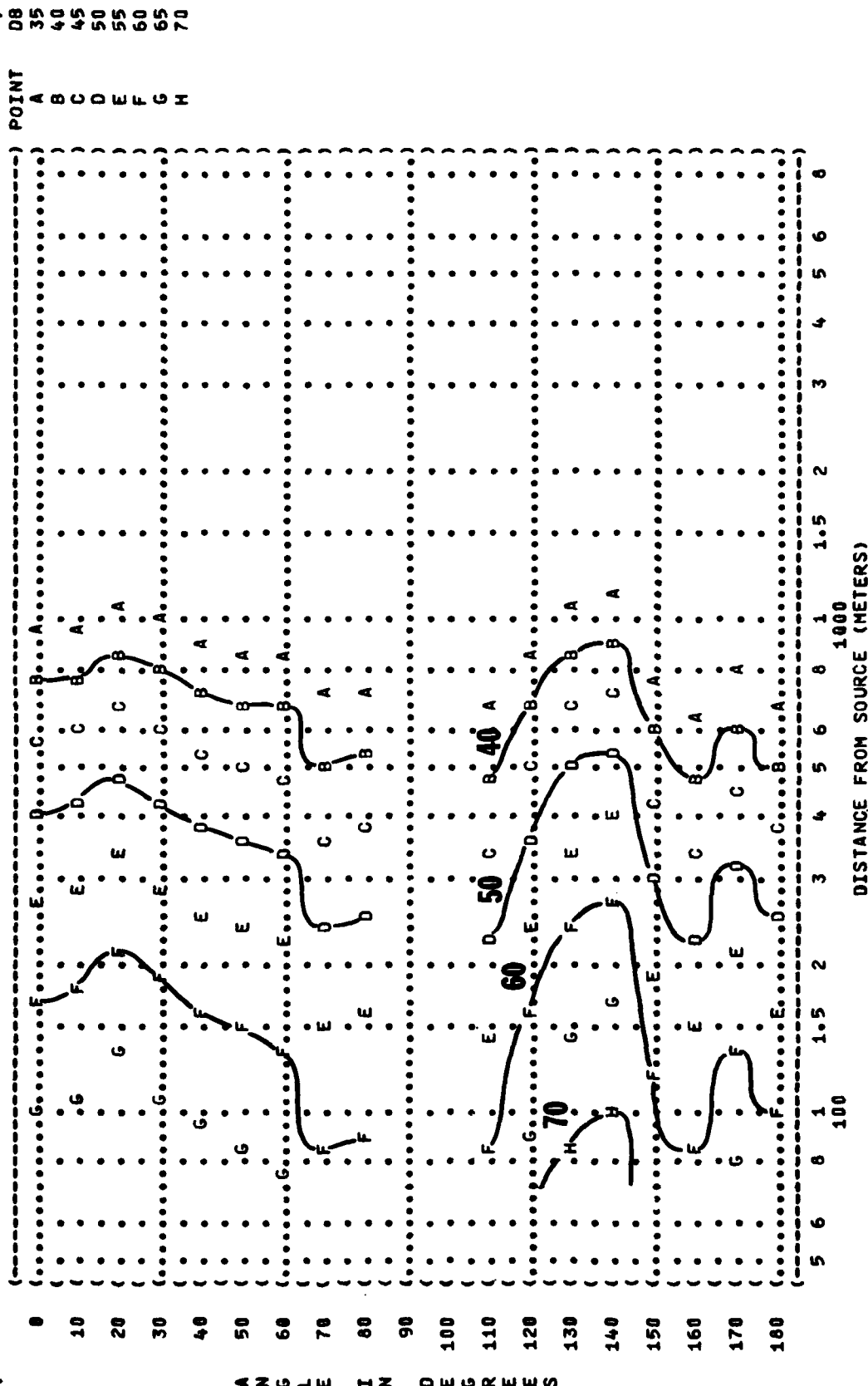


DISTANCE FROM SOURCE (METERS)

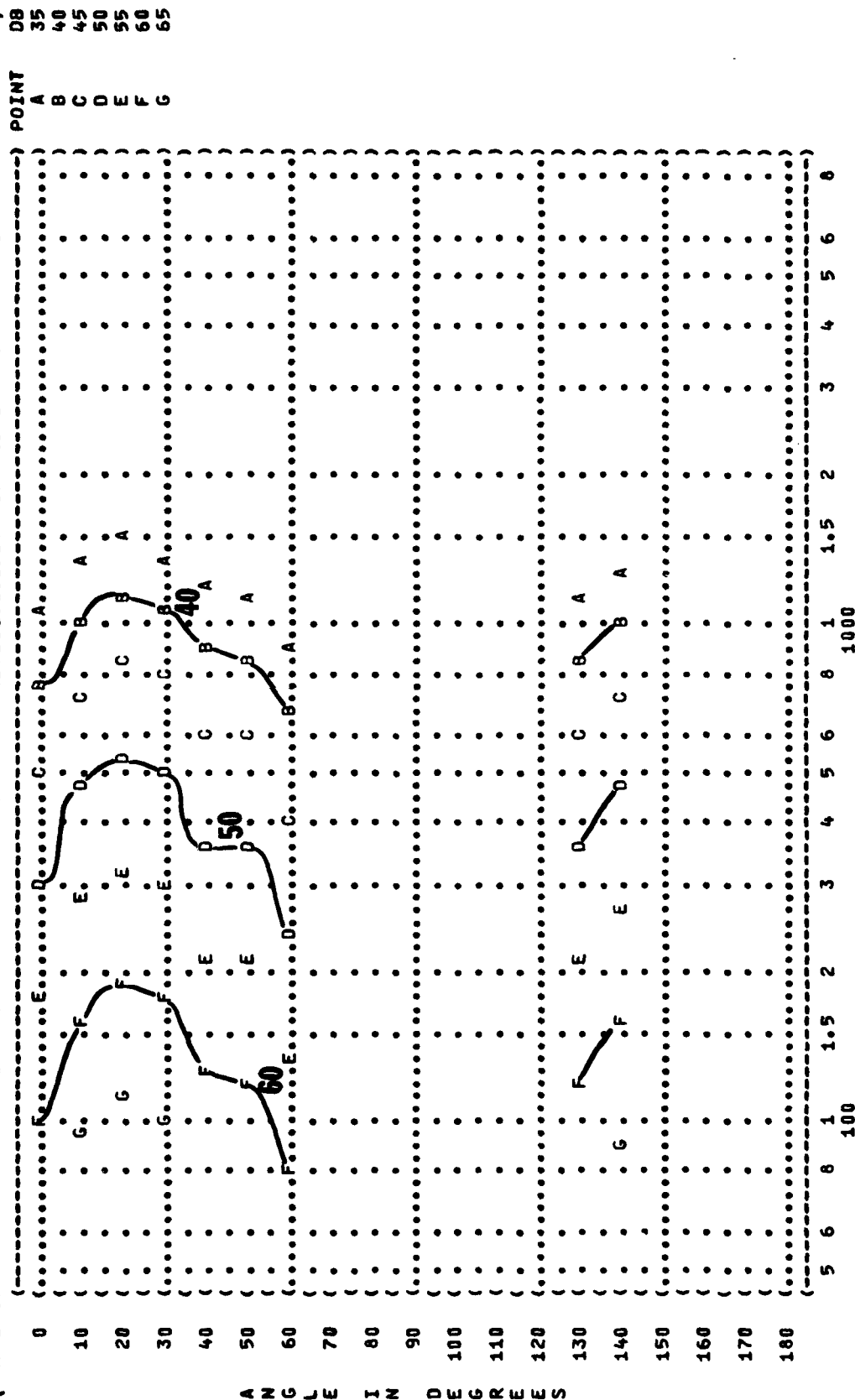
(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-38 AIRCRAFT IN THE
 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (IDLE POWER 48% RPM
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 01
 (14 SEP 78
 (PAGE 20



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 (T-38 AIRCRAFT IN THE (IDLE POWER 48X RPM) TEMP = 15 C
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
 (FAR FIELD NOISE () PAGE 21)

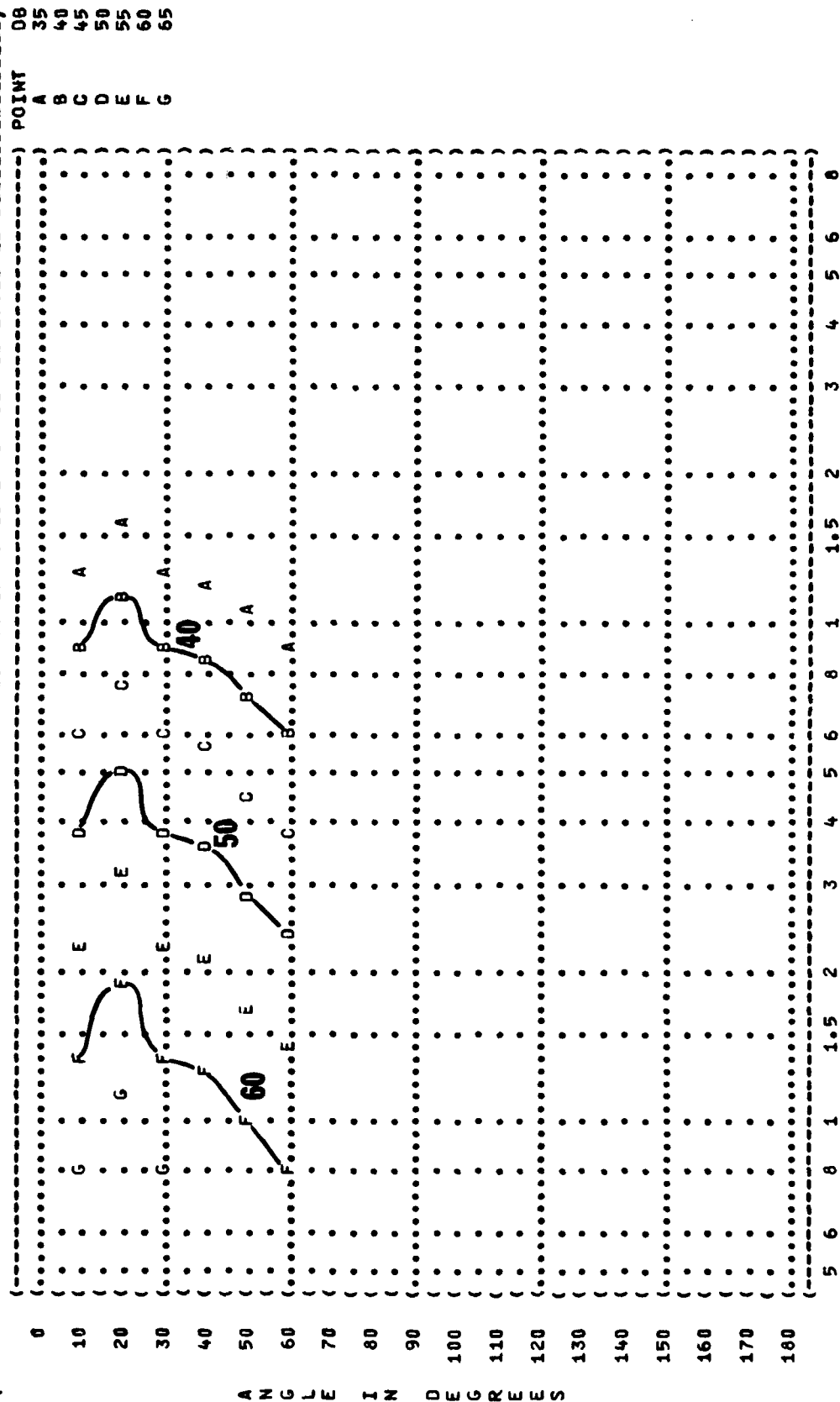


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (10 EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 01)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (PAGE 22)

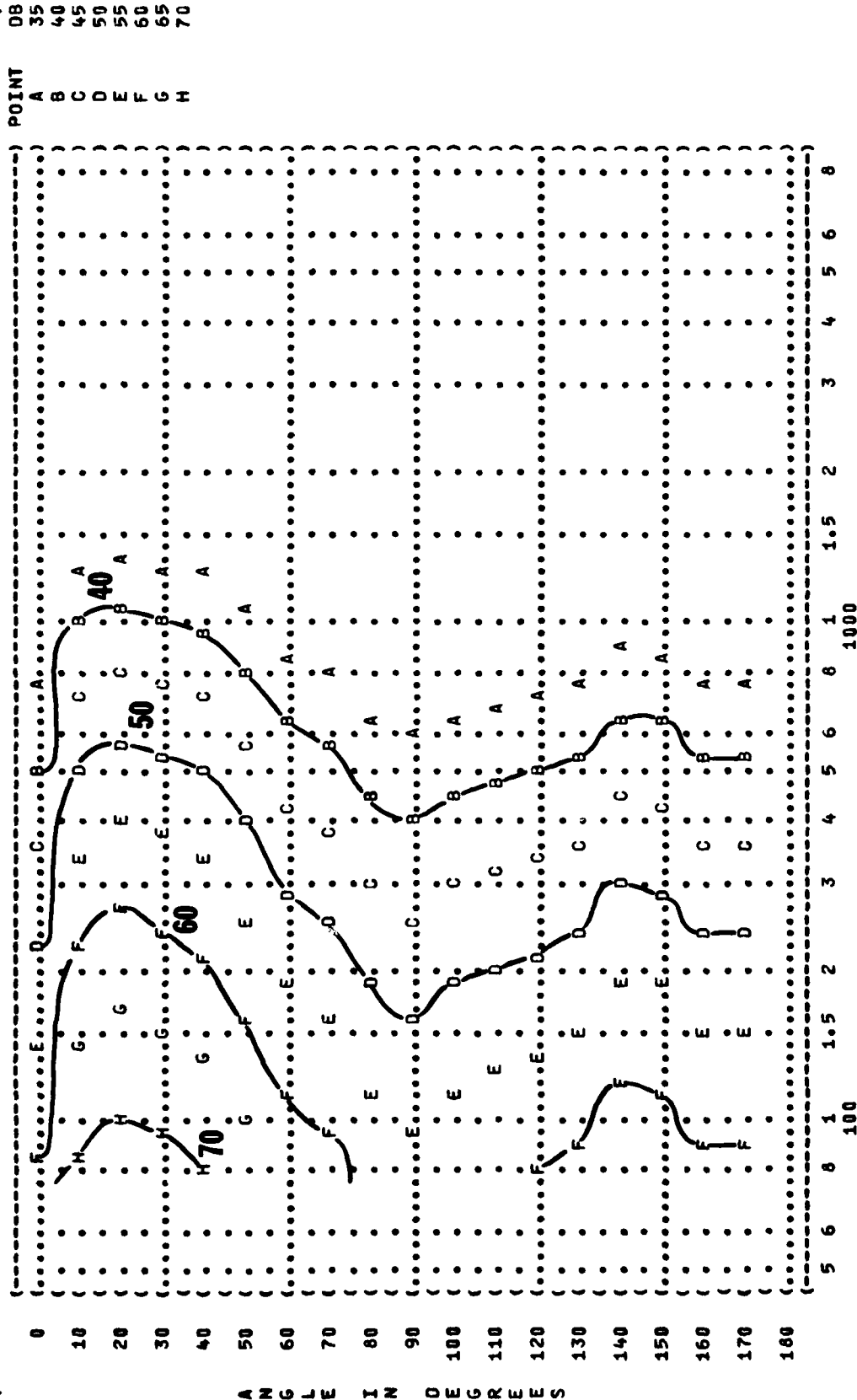


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (10 EQUAL LEVEL CONTOURS (DB))
 (1000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATION:)
 (IDLE POWER 48% RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 01)
 (14 SEP 78)
 (PAGE 23)

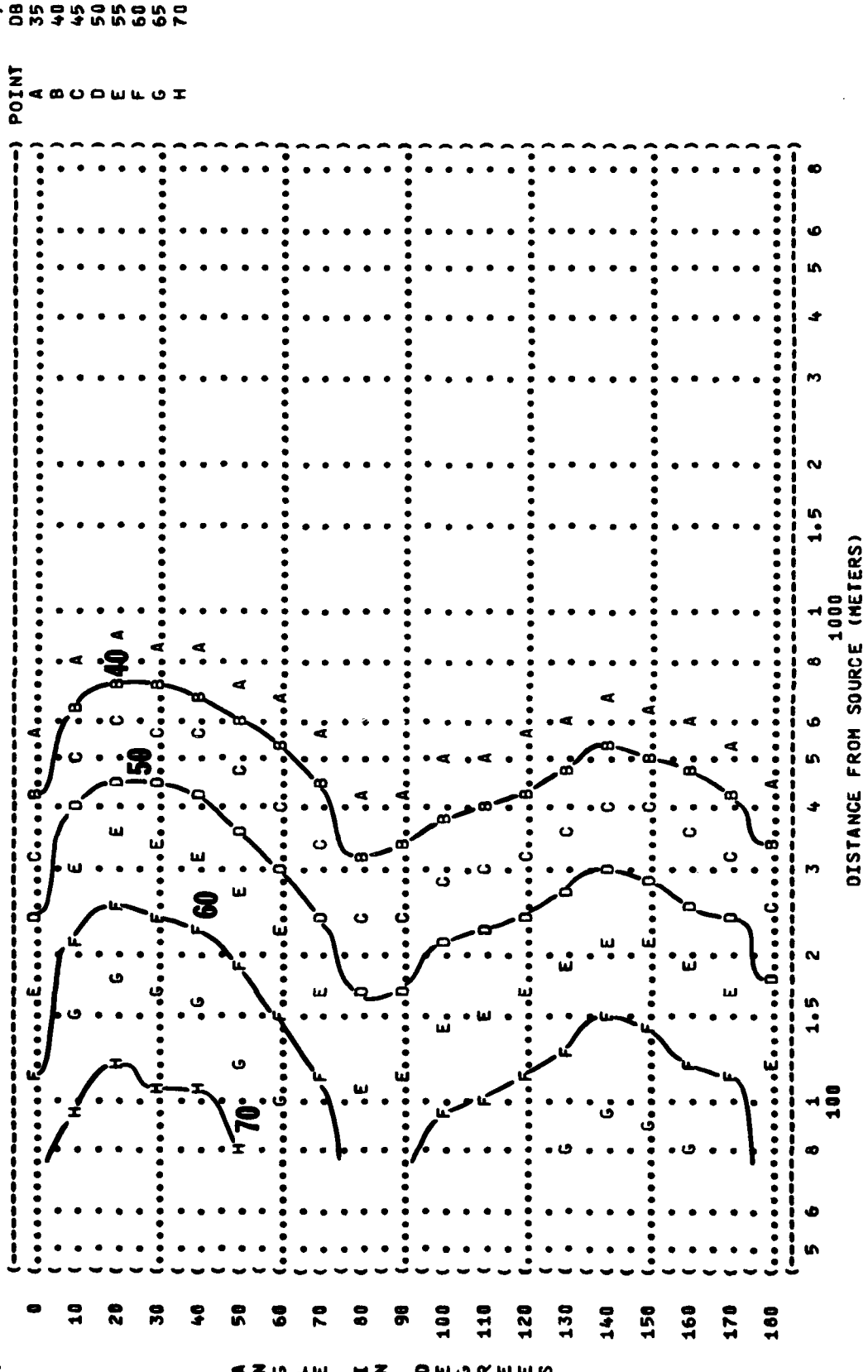


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (IDENTIFICATION: ()
 (T-38 AIRCRAFT IN THE (IDLE POWER 48X RPM (TEMP = 15 C ()
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE (BAR PRESS = .760 M HG ()
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED) (REL HUMID = 70 % ()
 (FAR FIELD NOISE ((PAGE 24 ()
 (TEST 77-733-001 (RUN 01 ()
 (OMEGA 1.4 ()



A N
 G L
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 E E
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(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (10 4000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATIONS:)
 (IDLE POWER 48% RPM)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 01)
 (14 SEP 78)
 (PAGE 25)

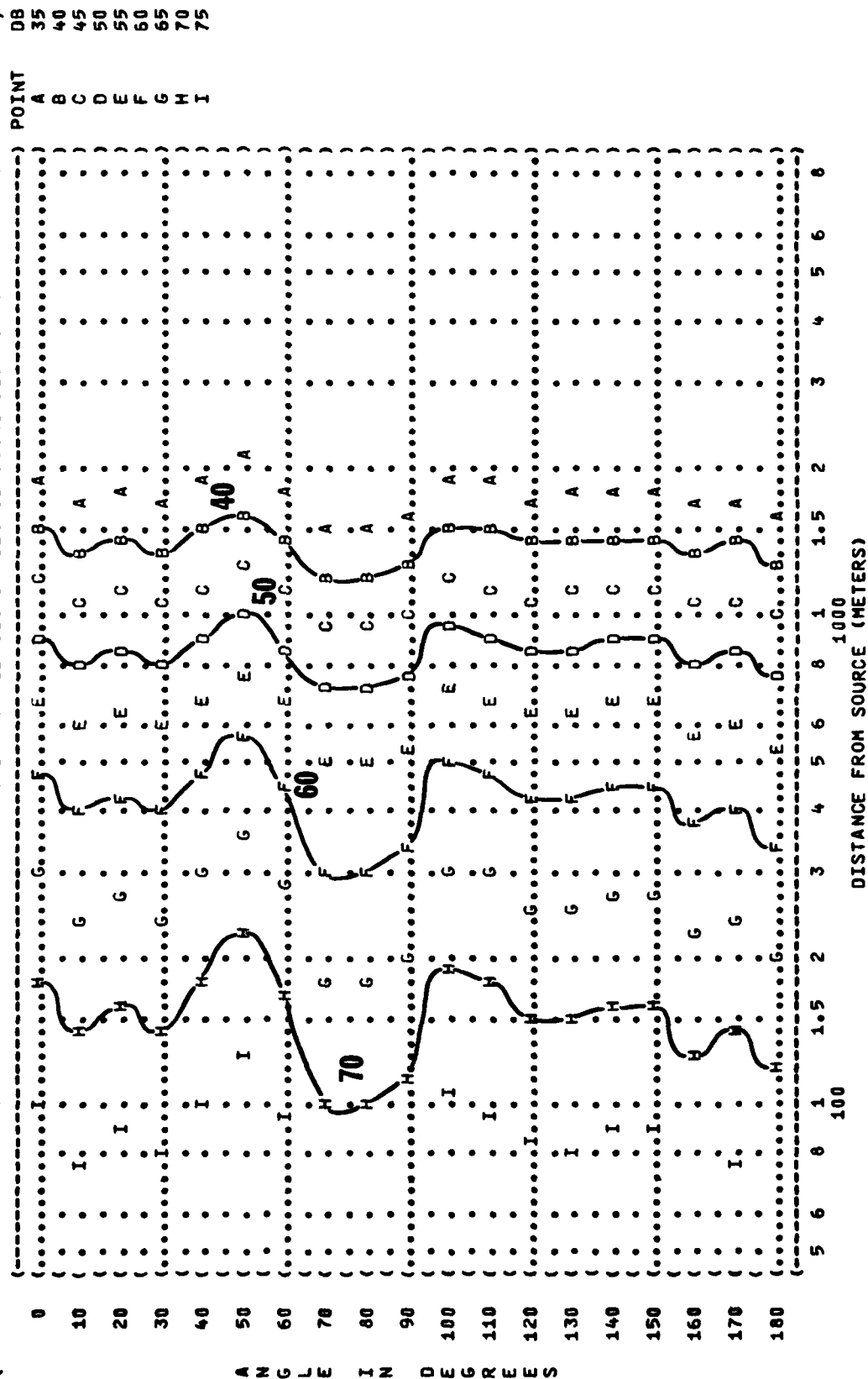


Abstract

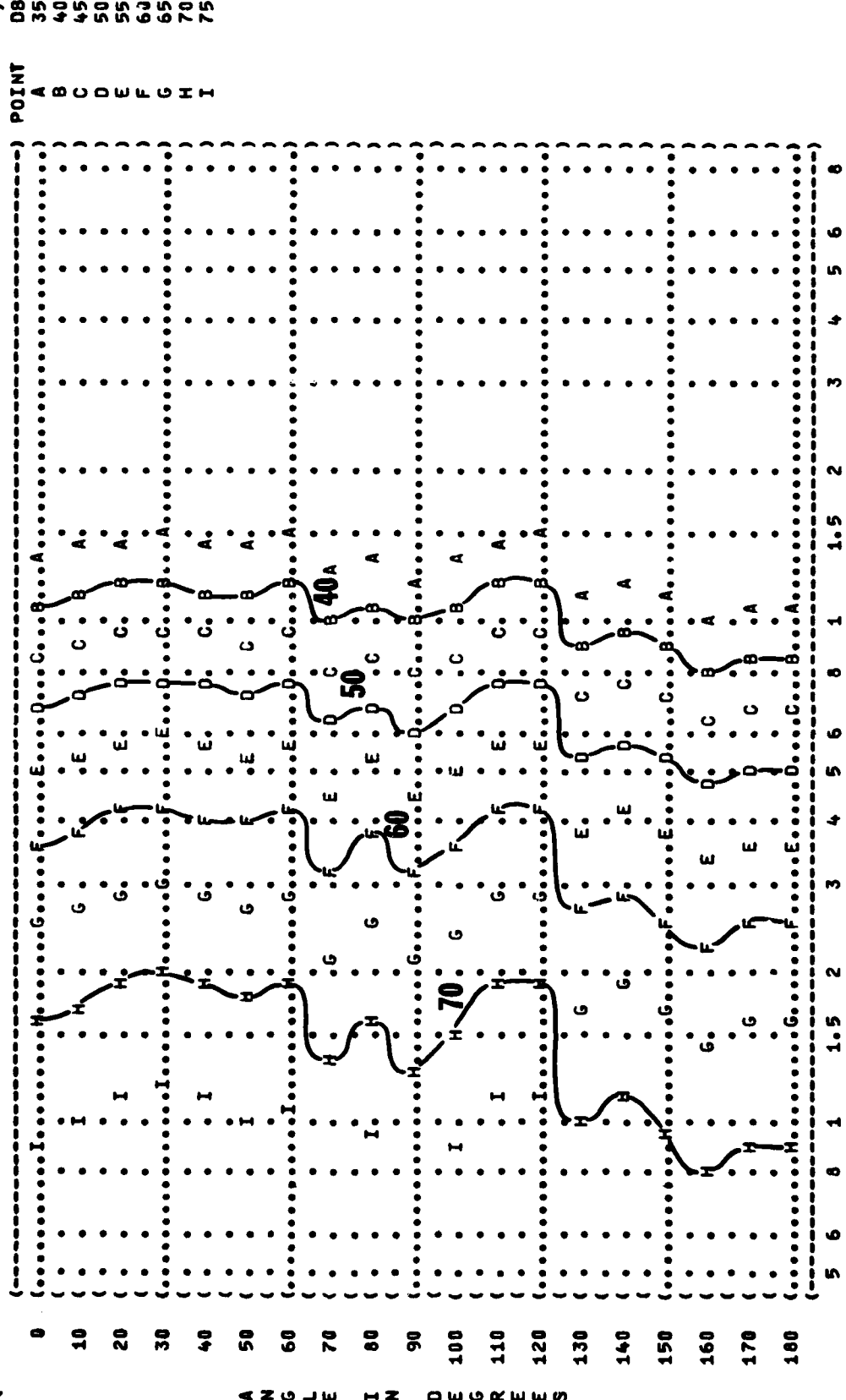


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(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-38 AIRCRAFT IN THE
 (AF32A-16-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATIONS:
 (75% RPM ENGINE RUNUP
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 H HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 02
 (14 SEP 78
 (PAGE 19

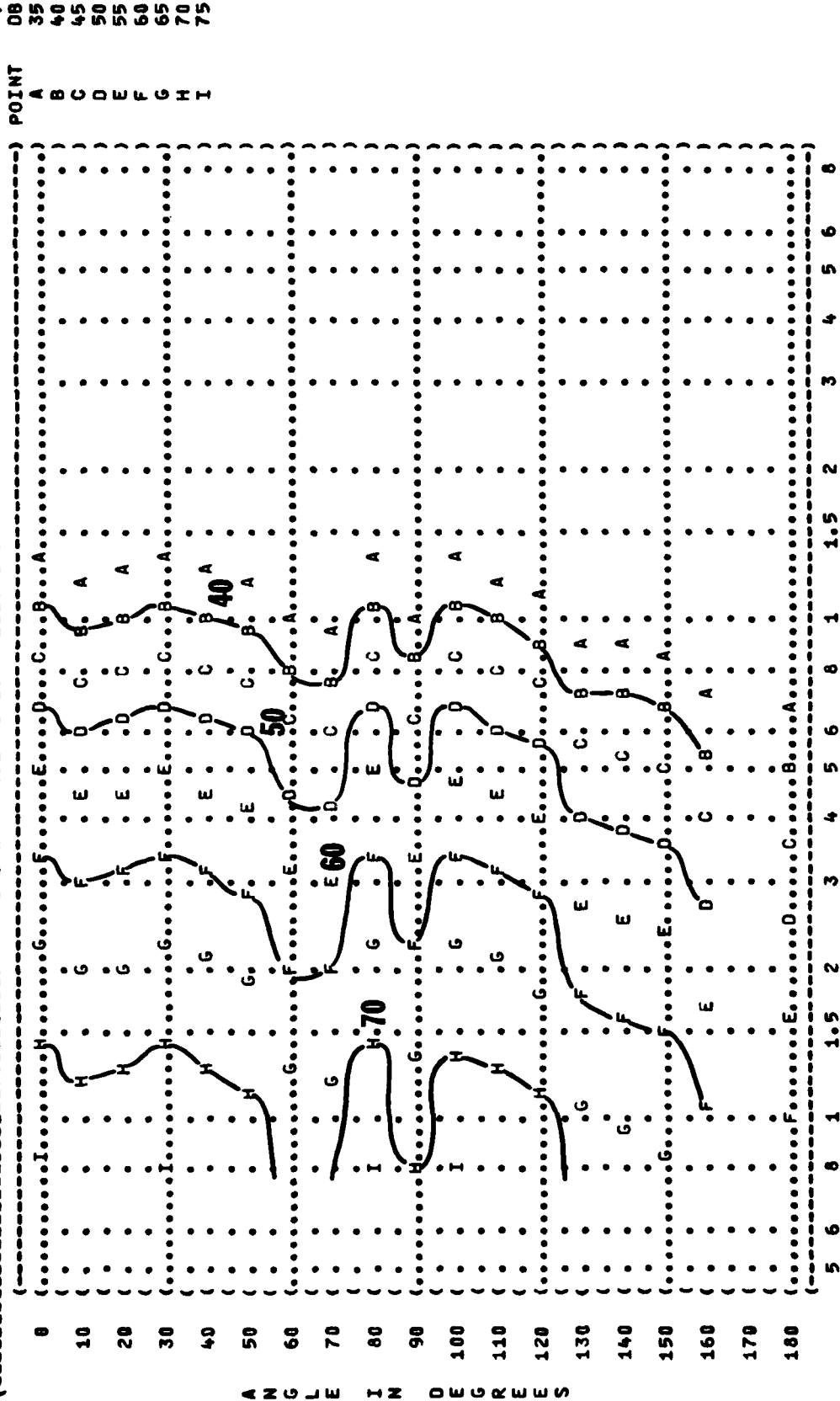


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-38 AIRCRAFT IN THE
 (AF32A-10-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (75% RPM ENGINE RUNUP
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 02
 (14 SEP 78
 (PAGE 20



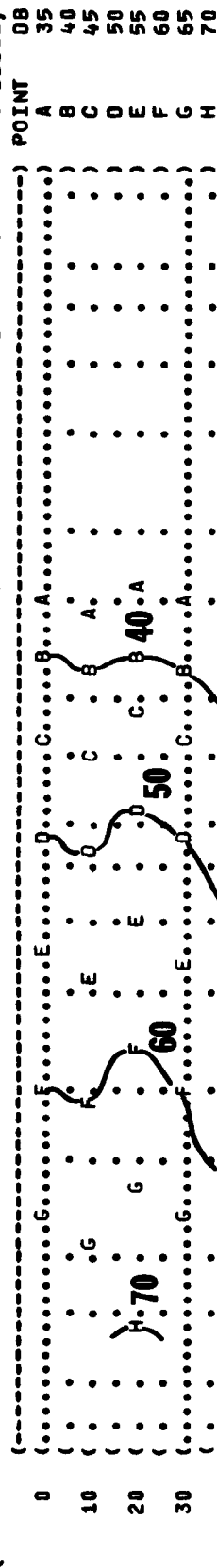
DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (7-38 AIRCRAFT IN THE
 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (75% RPM ENGINE RUNUP
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATIONS:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 02
 (14 SEP 78
 (PAGE 21



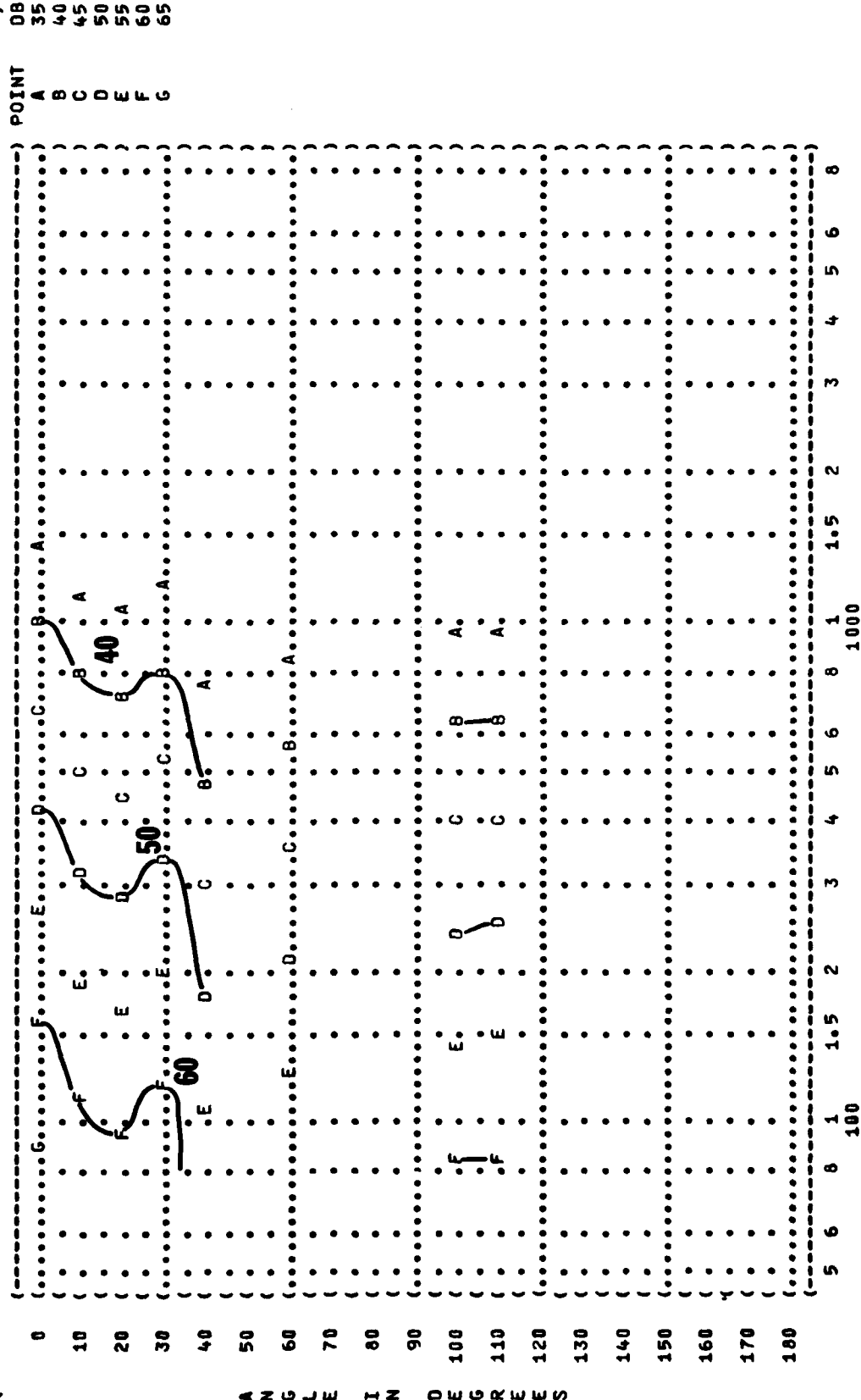
DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (10 EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATION:)
 (75% RPM ENGINE RUNUP)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 02)
 (14 SEP 78)
 (PAGE 22)

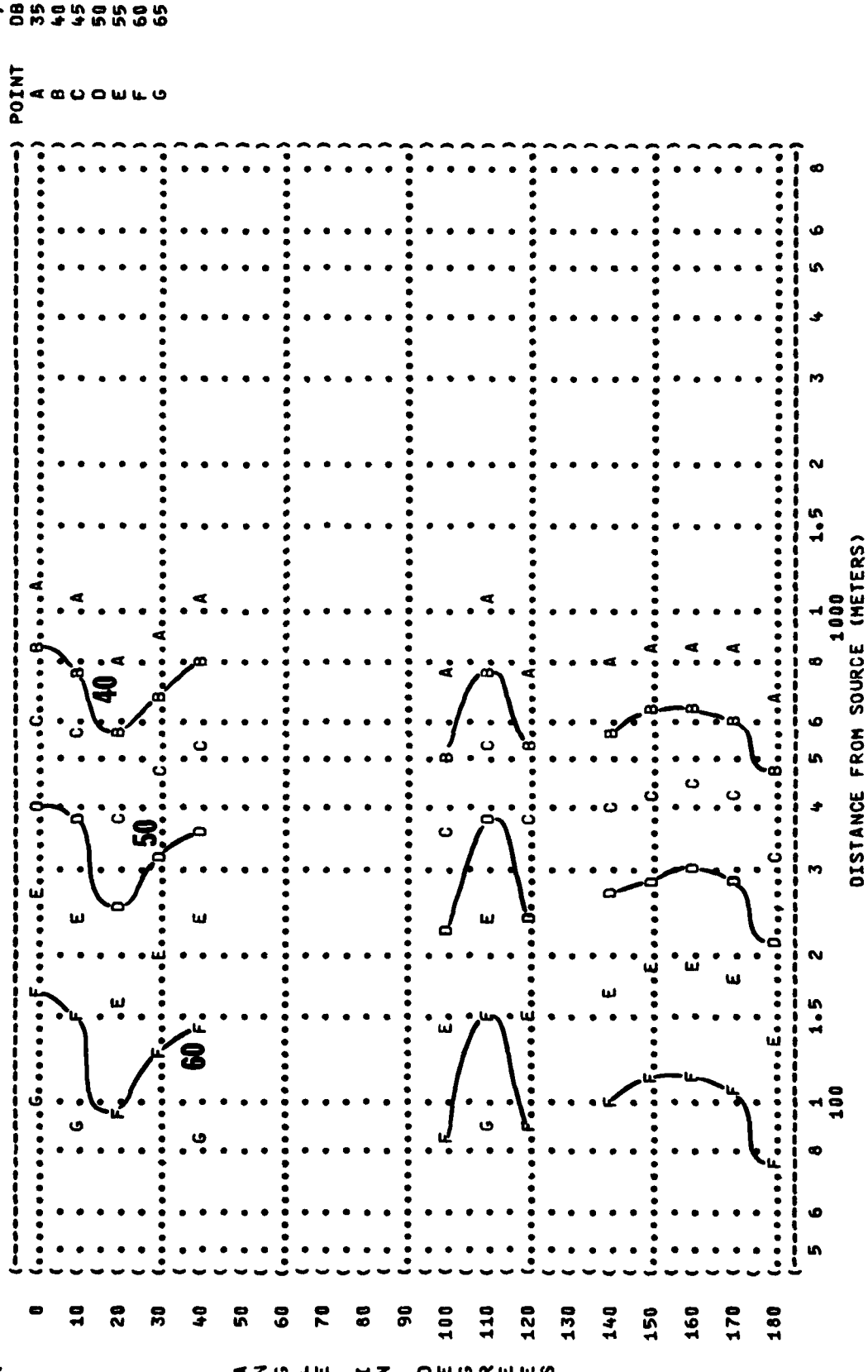


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (10 EQUAL LEVEL CONTOURS (DB)))
 (1000 HZ OCTAVE BAND))
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:)
 (T-38 AIRCRAFT IN THE) TEMP = 15 C)
 (AF32A-18-SUPPRESSOR) BAR PRESS = .760 M HG)
 (ENGINE J85-GE-5A) GROUND RUNUP (SUPPRESSED))
 (FAR FIELD NOISE) REL HUMID = 70 %)
 () PAGE 23)
 () TEST 77-733-001)
 () RUN 02)

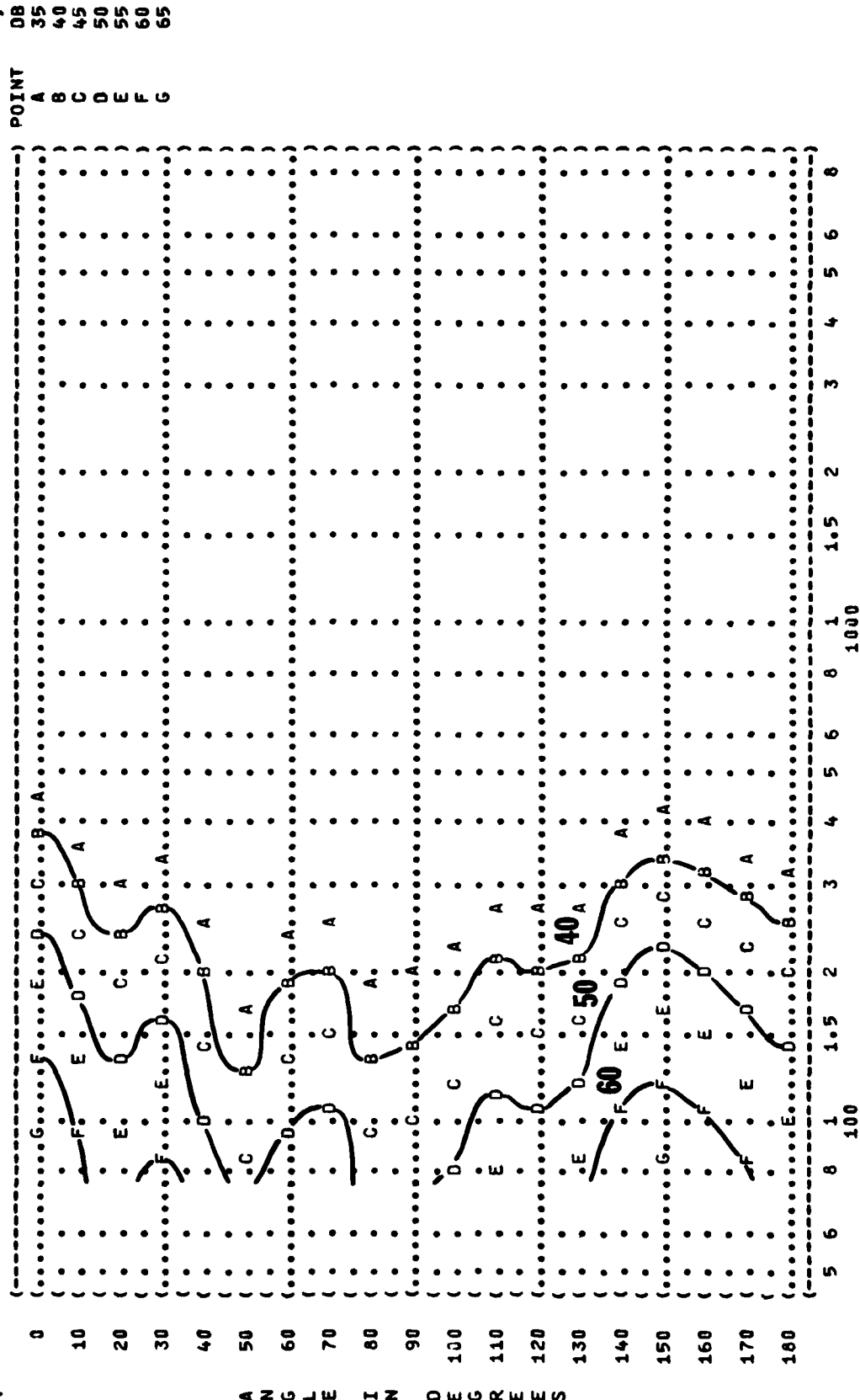


) FIGURE: SOUND PRESSURE LEVEL (SPL)
) EQUAL LEVEL CONTOURS (DB)
) 10 2000 HZ OCTAVE BAND
) IDENTIFICATION:
) OMEGA 1.4
) TEST 77-733-001
) RUN 02
) NOISE SOURCE/SUBJECT:
) T-38 AIRCRAFT IN THE) OPERATION:
) AF32A-18-SUPPRESSOR) 75% RPN ENGINE RUNUP) TEMP = 15 C
) ENGINE J85-G2-5A) SINGLE ENGINE) BAR PRESS = .760 M HG
) FAR FIELD NOISE) GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
) PAGE 24

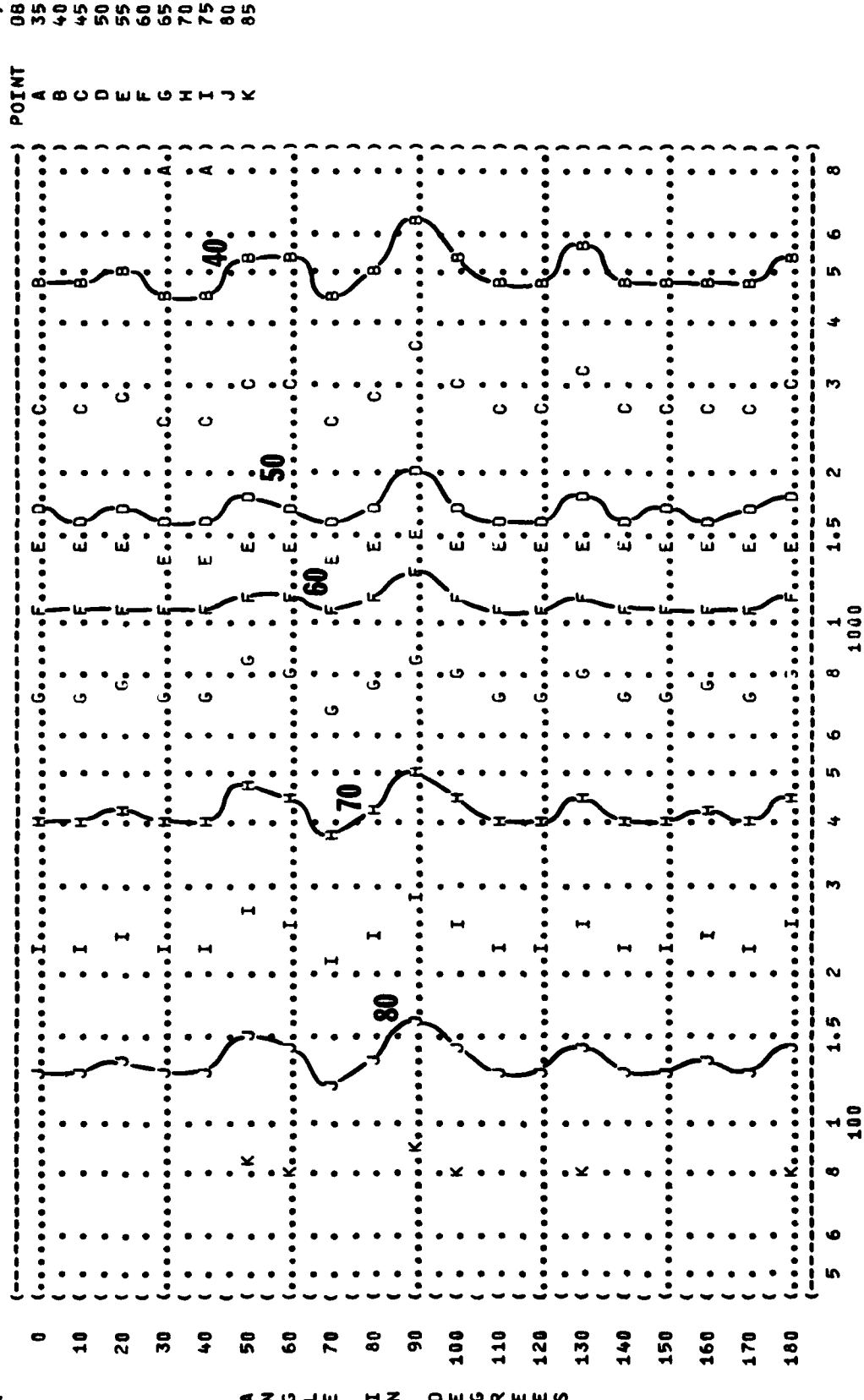


A N G L E I N D E G R E E S

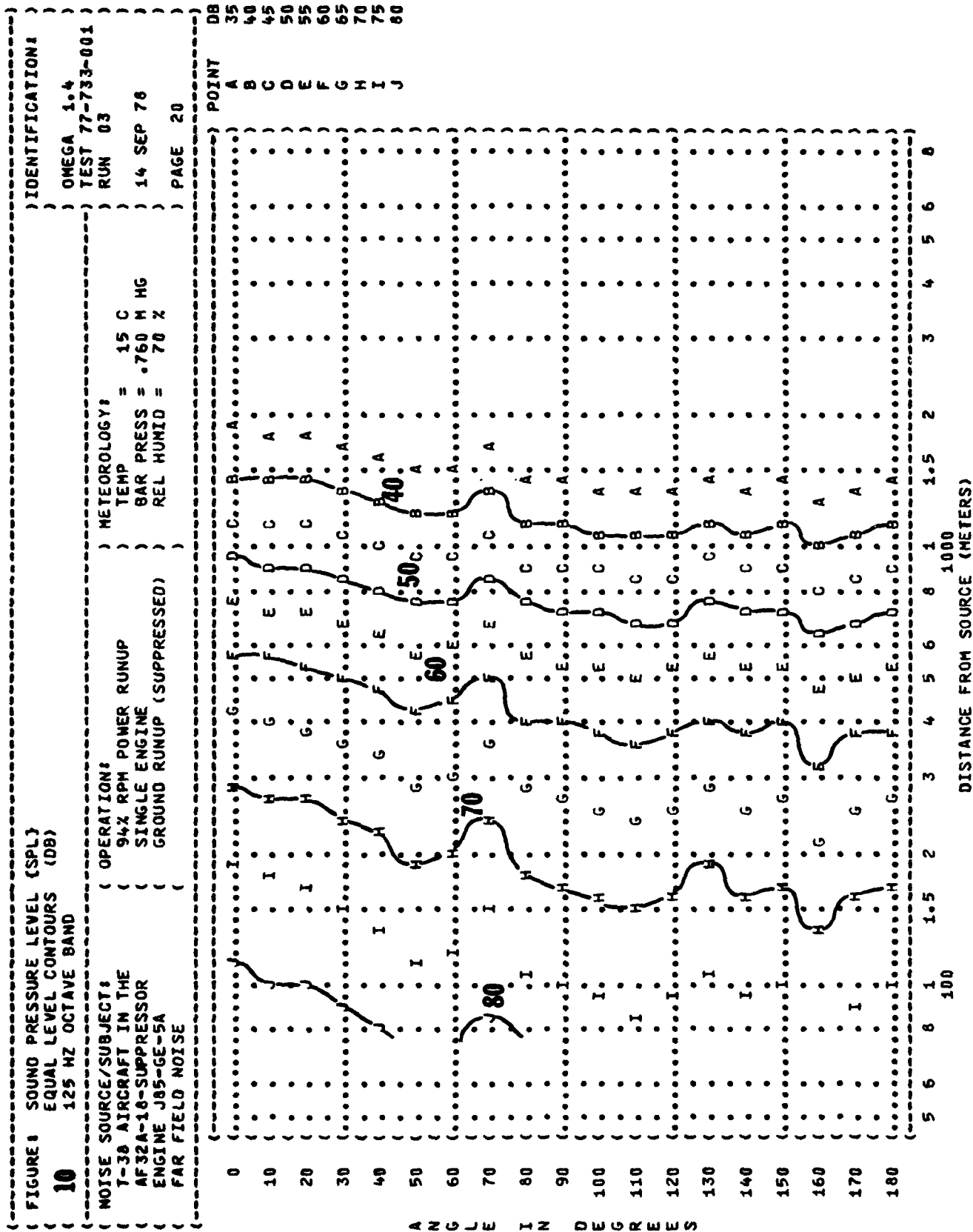
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 (EQUAL LEVEL CONTOURS (DB)
 (10 8000 HZ OCTAVE BAND
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 02
 (NOISE SOURCE/SUBJECT:
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 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (75% RPM ENGINE RUNUP
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 26



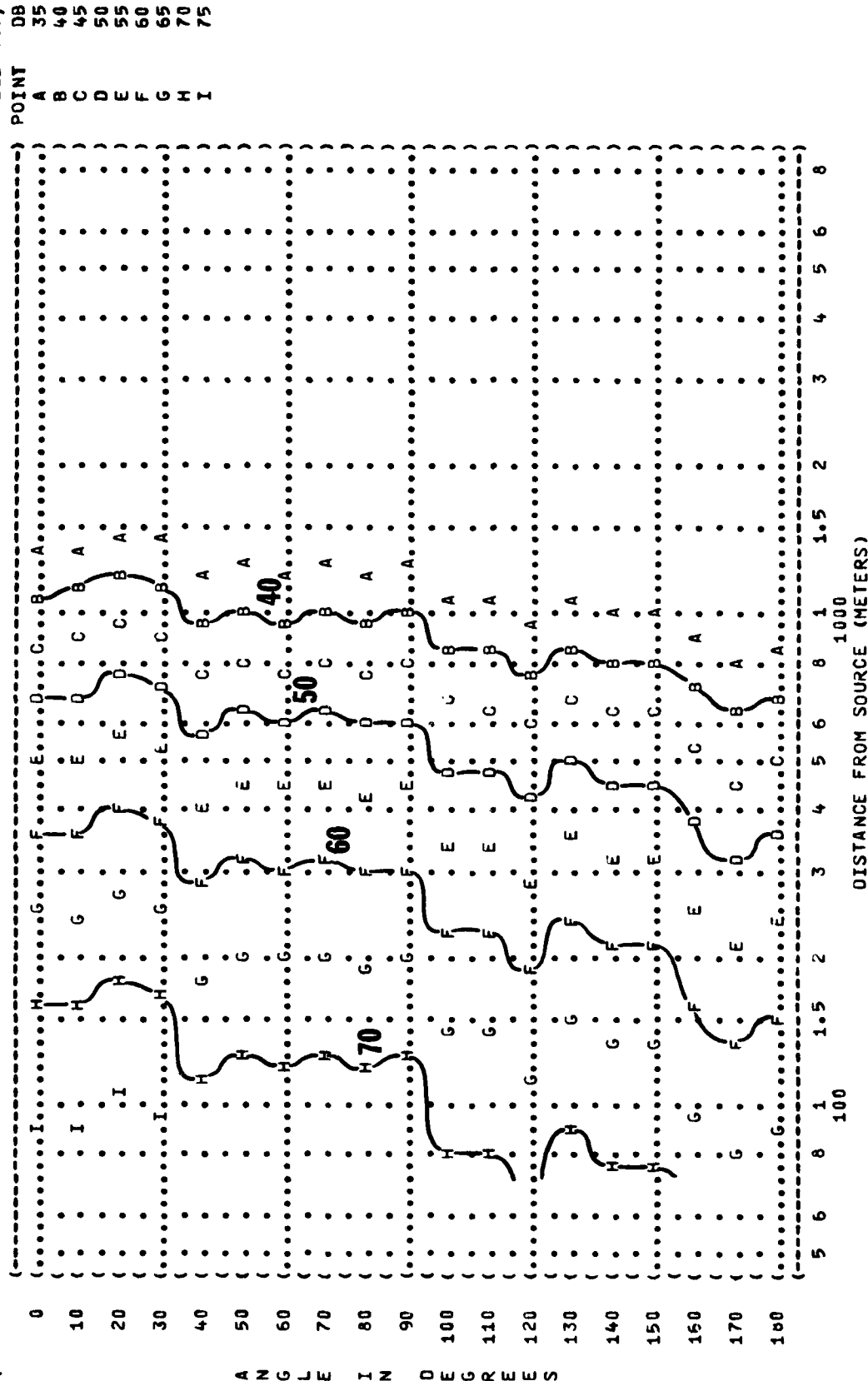
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 (10 EQUAL LEVEL CONTOURS (DB))
 (31.5 HZ OCTAVE BAND)
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 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATION:)
 (94% RPM POWER RUNUP)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 03)
 (14 SEP 78)
 (PAGE 18)



A N G L E I N D E G R E E S



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY: (POINT DB
 (T-38 AIRCRAFT IN THE (94% RPM POWER RUNUP (TEMP = 15 C
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE (BAR PRESS = .760 H HG
 (ENGINE J35-G5-5A (GROUND RUNUP (SUPPRESSED) (REL HUMID = 70 %
 (FAR FIELD NOISE ((PAGE 21)



10 SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
500 M2 OCTAVE BAND

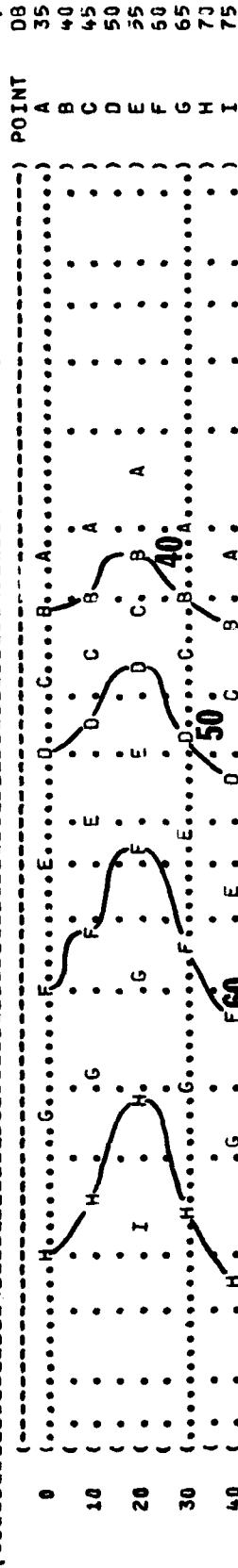
IDENTIFICATION:
OMEGA 1.4
TEST 77-733-001
RUN 03

SOURCE/SUBJECT:
1-10 AIRCRAFT IN THE
AF32A-10-SUPPRESSOR
ENGINE J65-GE-5A
FAR FIELD NOISE

OPERATIONS:
(94% RPM POWER RUNUP
(SINGLE ENGINE
(GROUND RUNUP (SUPPRESSED)
(

METEOROLOGY:
(TEMP = 15 C
(BAR PRESS = .760 M HG
(REL HUMID = 70 %
(

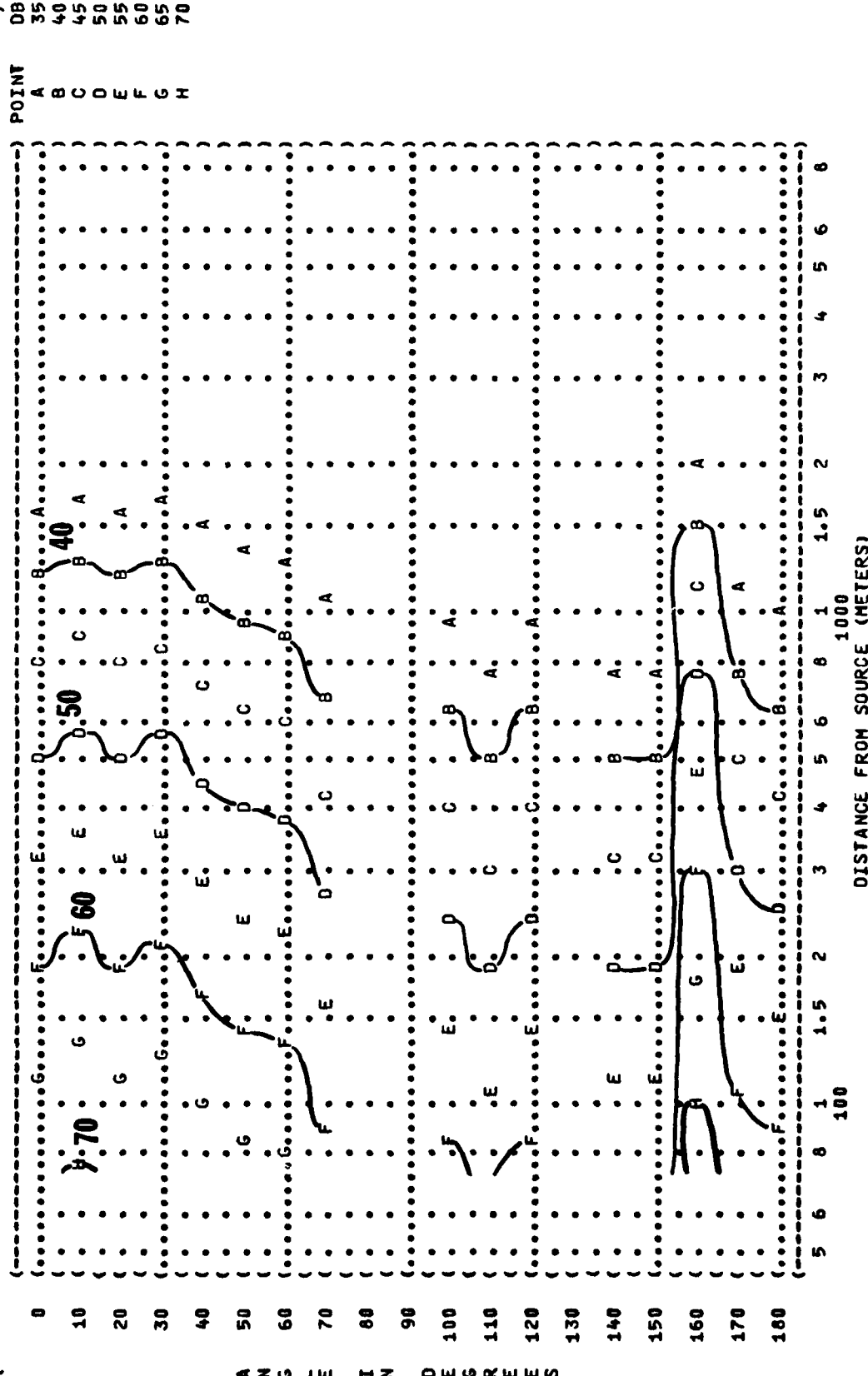
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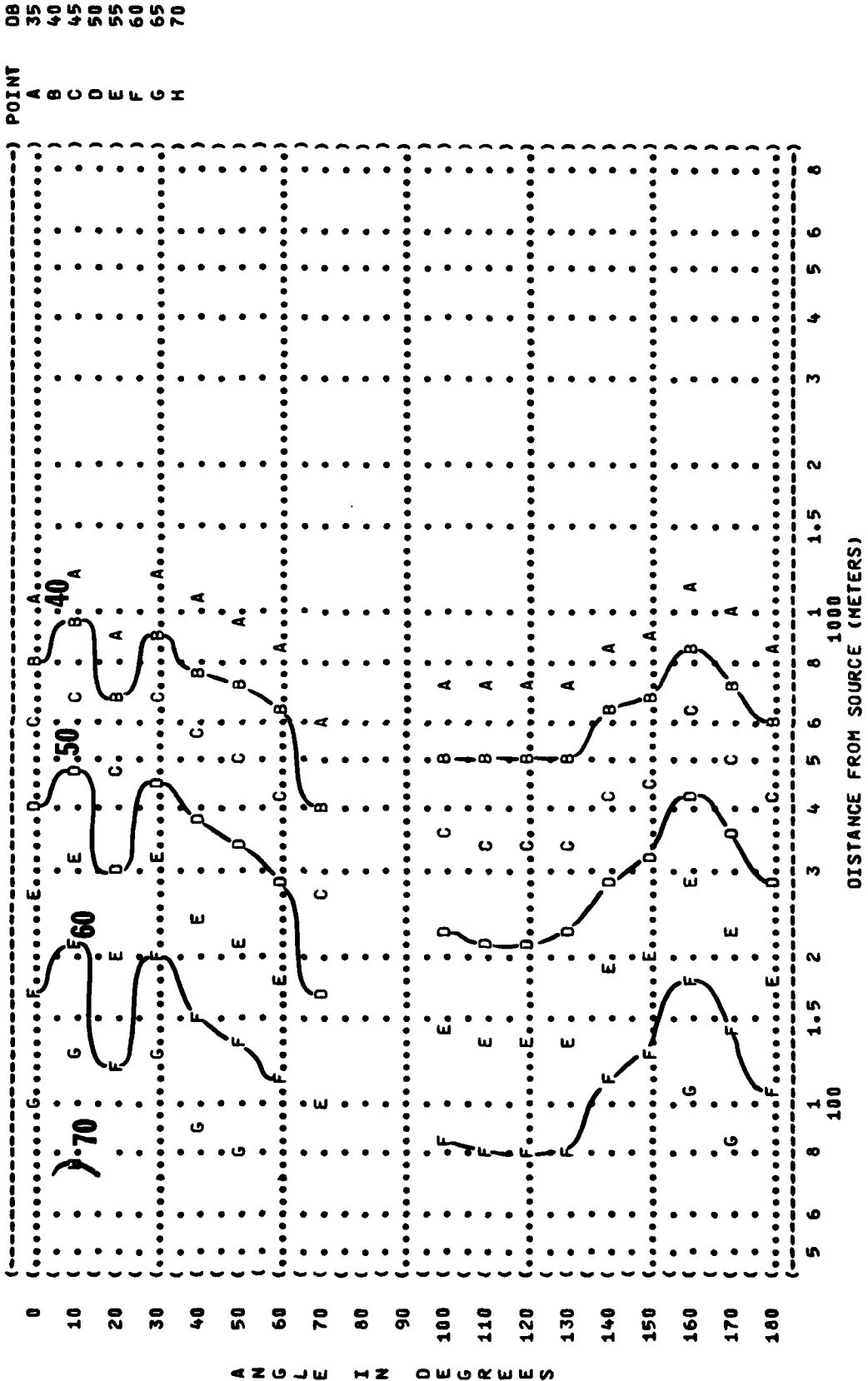
A N G L E I N D E G R E E S

DISTANCE FROM SOURCE (METERS)

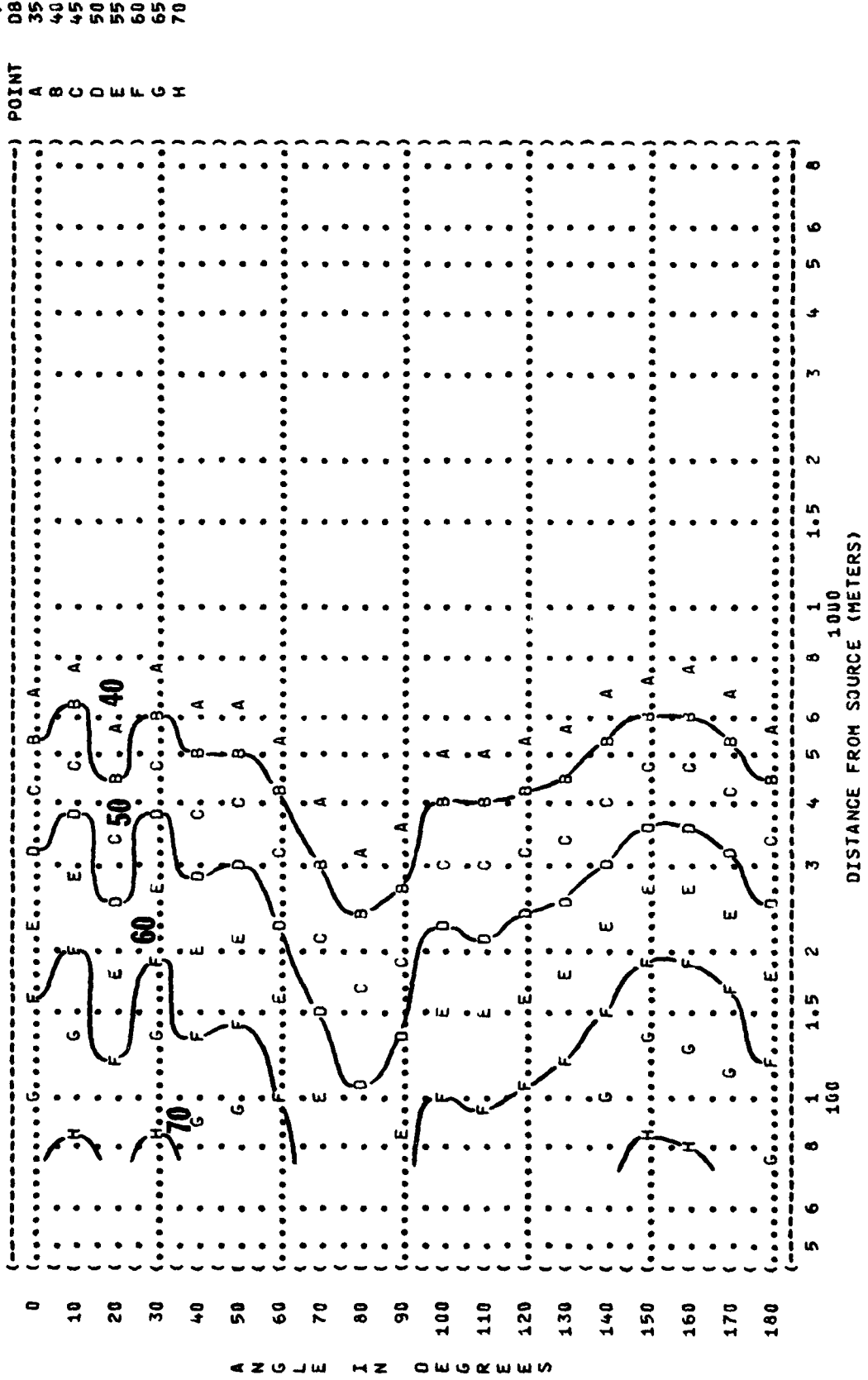
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 (10 EQUAL LEVEL CONTOURS (DB))
 (1000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-18-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATION:)
 (94% RPM POWER RUNUP)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 03)
 (14 SEP 78)
 (PAGE 23)



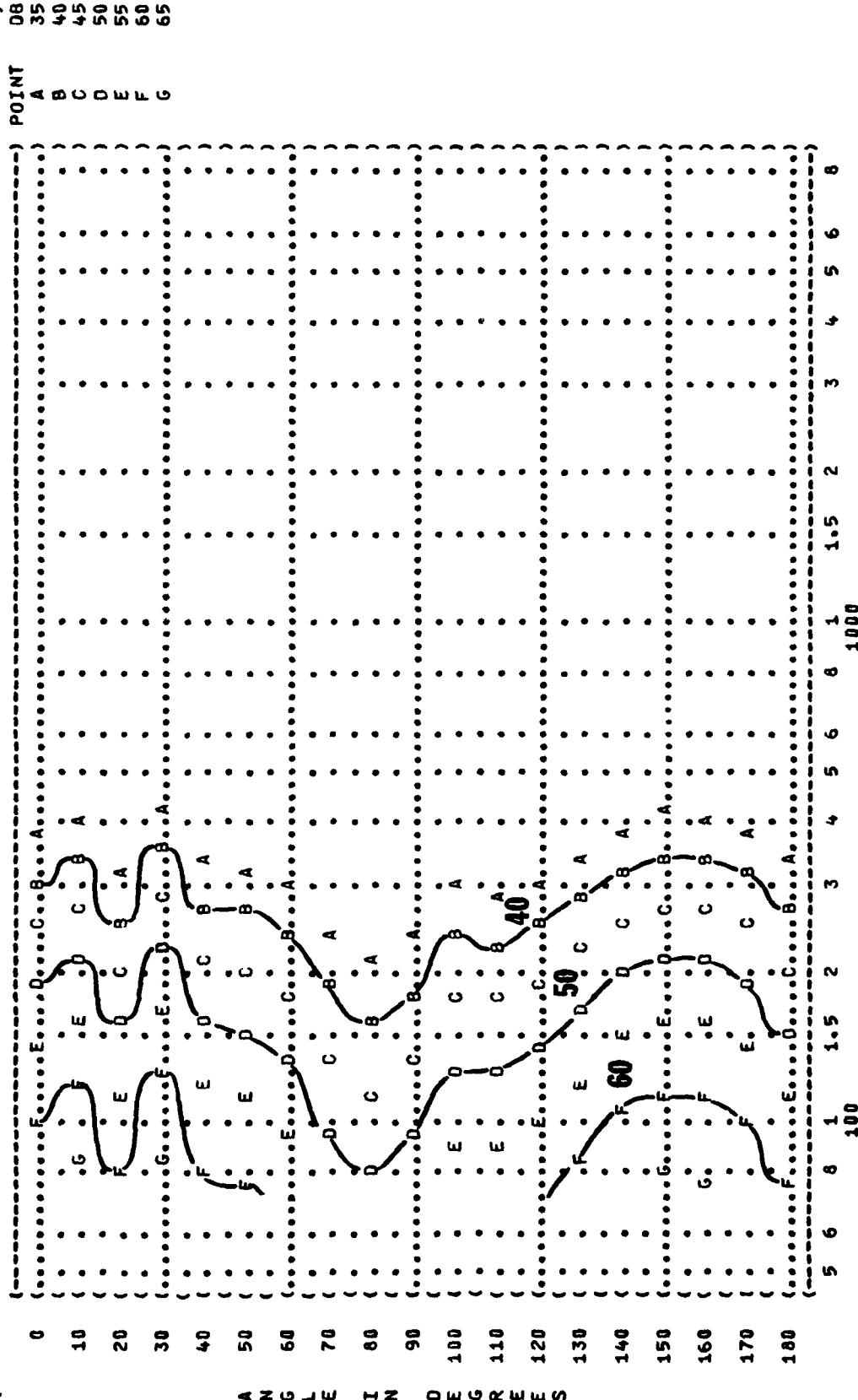
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 (EQUAL LEVEL CONTOURS (DB)
 (10 2000 HZ OCTAVE BAND
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 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (94% RPM POWER RUNUP
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 03
 (14 SEP 78
 (PAGE 24



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-38 AIRCRAFT IN THE
 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (94% RPM POWER RUNUP
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 03
 (14 SEP 78
 (PAGE 25



(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 ((10 EQUAL LEVEL CONTOURS (DB)))
 ((8000 HZ OCTAVE BAND))
 ((NOISE SOURCE/SUBJECT:))
 ((T-38 AIRCRAFT IN THE))
 ((AF32A-18-SUPPRESSOR))
 ((ENGINE J85-GE-5A))
 ((FAR FIELD NOISE))
 ((OPERATION:))
 ((94% RPM POWER RUNUP))
 ((SINGLE ENGINE))
 ((GROUND RUNUP (SUPPRESSED)))
 ((METEOROLOGY:))
 ((TEMP = 15 C))
 ((BAR PRESS = .760 M HG))
 ((REL HUMID = 70 %))
 ((PAGE 26))
 ((TEST 77-733-001))
 ((RUN 03))
 ((OMEGA 1.4))
 (())



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( ( ( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( ( ( EQUAL LEVEL CONTOURS (DB) ) ) )
( ( ( 10 ) ) )
( ( ( 31.5 HZ OCTAVE BAND ) ) )
( ( ( NOISE SOURCE/SUBJECT: ) ) )
( ( ( T-38 AIRCRAFT IN THE ) ) )
( ( ( AF32A-18-SUPPRESSOR ) ) )
( ( ( ENGINE J85-GE-5A ) ) )
( ( ( FAR FIELD NOISE ) ) )
( ( ( OPERATION: ) ) )
( ( ( MILITARY POWER 99.5 % RPM ) ) )
( ( ( SINGLE ENGINE ) ) )
( ( ( GROUND RUNUP (SUPPRESSED) ) ) )
( ( ( METEOROLOGY: ) ) )
( ( ( TEMP = 15 C ) ) )
( ( ( BAR PRESS = .760 M HG ) ) )
( ( ( REL HUMID = 70 % ) ) )
( ( ( OMEGA 1.4 ) ) )
( ( ( TEST 77-733-001 ) ) )
( ( ( RUN 04 ) ) )
( ( ( PAGE 18 ) ) )

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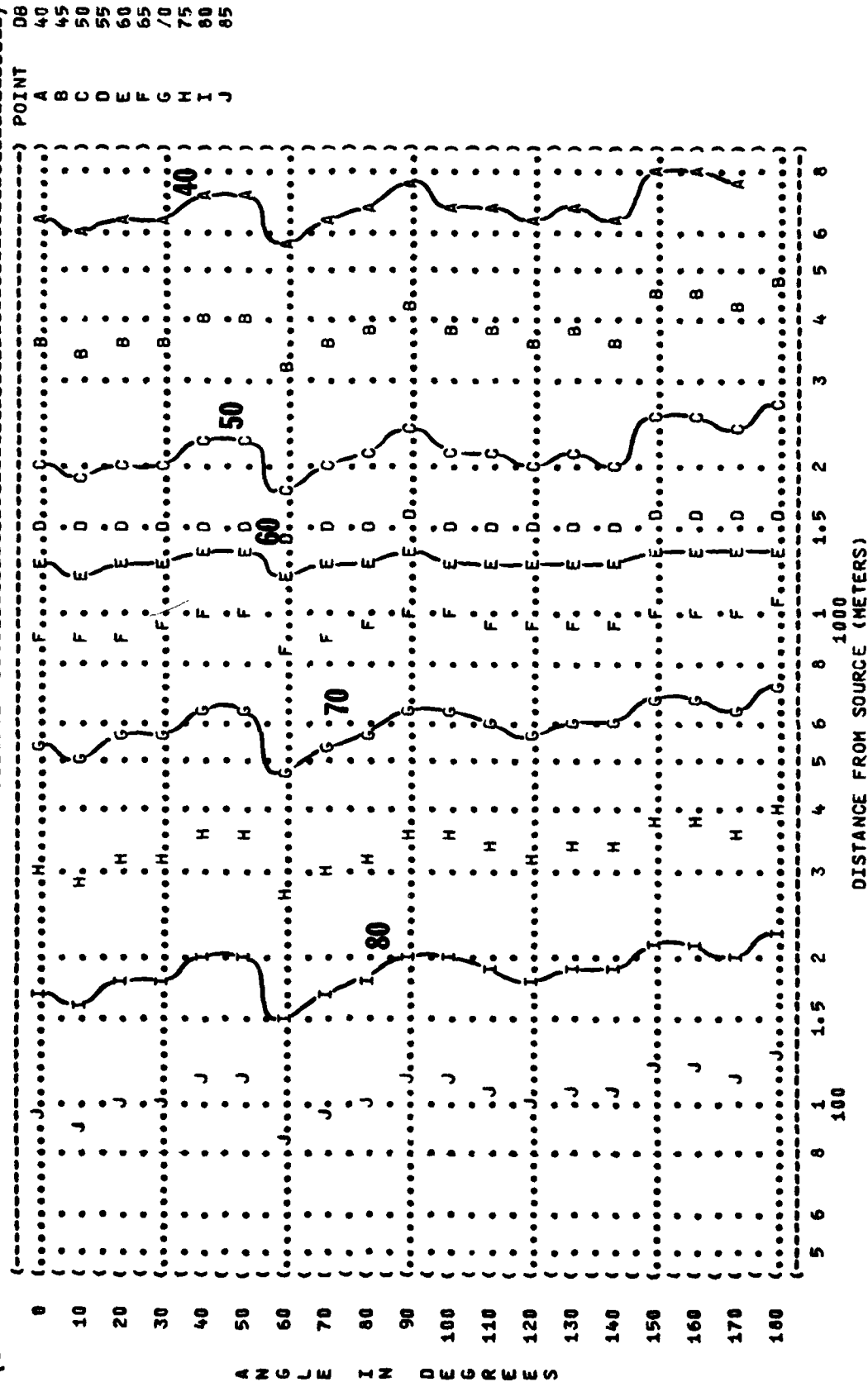
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((AF32A-18-SUPPRESSOR	((SINGLE ENGINE	) BAR PRESS = .760 H HG	))
((ENGINE J85-GE-5A	((GROUND RUNUP (SUPPRESSED)	) REL HUMID = 70 %	)) 14 SEP 78
((FAR FIELD NOISE	(	)	)) PAGE 18

((NOISE SOURCE/SUBJECT:	(OPERATION:	) METEOROLOGY:	)
((T-38 AIRCRAFT IN THE	((MILITARY POWER 99.5 % RPM	) TEMP = 15 C	)) RUN 04
((AF32A-18-SUPPRESSOR	((SINGLE ENGINE	) BAR PRESS = .760 H HG	))
((ENGINE J85-GE-5A	((GROUND RUNUP (SUPPRESSED)	) REL HUMID = 70 %	)) 14 SEP 78
((FAR FIELD NOISE	(	)	)) PAGE 18

((NOISE SOURCE/SUBJECT:	(OPERATION:	) METEOROLOGY:	)
((T-38 AIRCRAFT IN THE	((MILITARY POWER 99.5 % RPM	) TEMP = 15 C	)) RUN 04
((AF32A-18-SUPPRESSOR	((SINGLE ENGINE	) BAR PRESS = .760 H HG	))
((ENGINE J85-GE-5A	((GROUND RUNUP (SUPPRESSED)	) REL HUMID = 70 %	)) 14 SEP 78
((FAR FIELD NOISE	(	)	)) PAGE 18

((NOISE SOURCE/SUBJECT:	(OPERATION:	) METEOROLOGY:	)
((T-38 AIRCRAFT IN THE	((MILITARY POWER 99.5 % RPM	) TEMP = 15 C	)) RUN 04
((AF32A-18-SUPPRESSOR	((SINGLE ENGINE	) BAR PRESS = .760 H HG	))
((ENGINE J85-GE-5A	((GROUND RUNUP (SUPPRESSED)	) REL HUMID = 70 %	)) 14 SEP 78
((FAR FIELD NOISE	(	)	)) PAGE 18

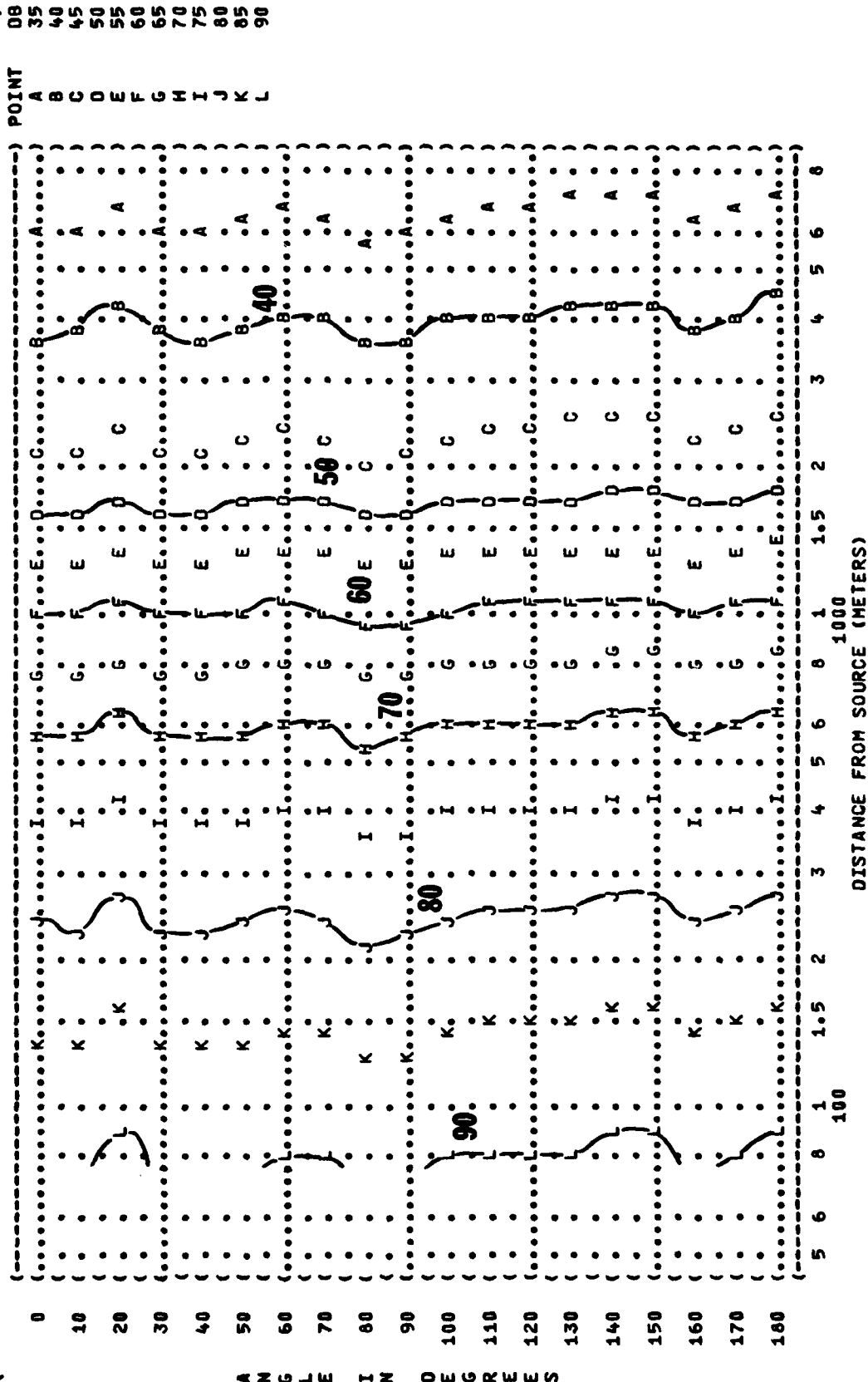
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((T-38 AIRCRAFT IN THE	((MILITARY POWER 99.5 % RPM	) TEMP = 15 C	)) RUN 04
((AF32A-18-SUPPRESSOR	((SINGLE ENGINE	) BAR PRESS = .760 H HG	))
((ENGINE J85-GE-5A	((GROUND RUNUP (SUPPRESSED)	) REL HUMID = 70 %	)) 14 SEP 78
((FAR FIELD NOISE	(	)	)) PAGE 18



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(-----)
( ( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) )
( ( 10 ) OMEGA 1.4 )
( ( 63 HZ OCTAVE BAND ) )
(-----)
( ( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ( T-38 AIRCRAFT IN THE ) TEMP = 15 C )
( ( AF32A-18-SUPPRESSOR ) SINGLE ENGINE ) BAR PRESS = .760 M HG )
( ( ENGINE J85-GE-5A ) GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( ( FAR FIELD NOISE ) ) )
(-----)

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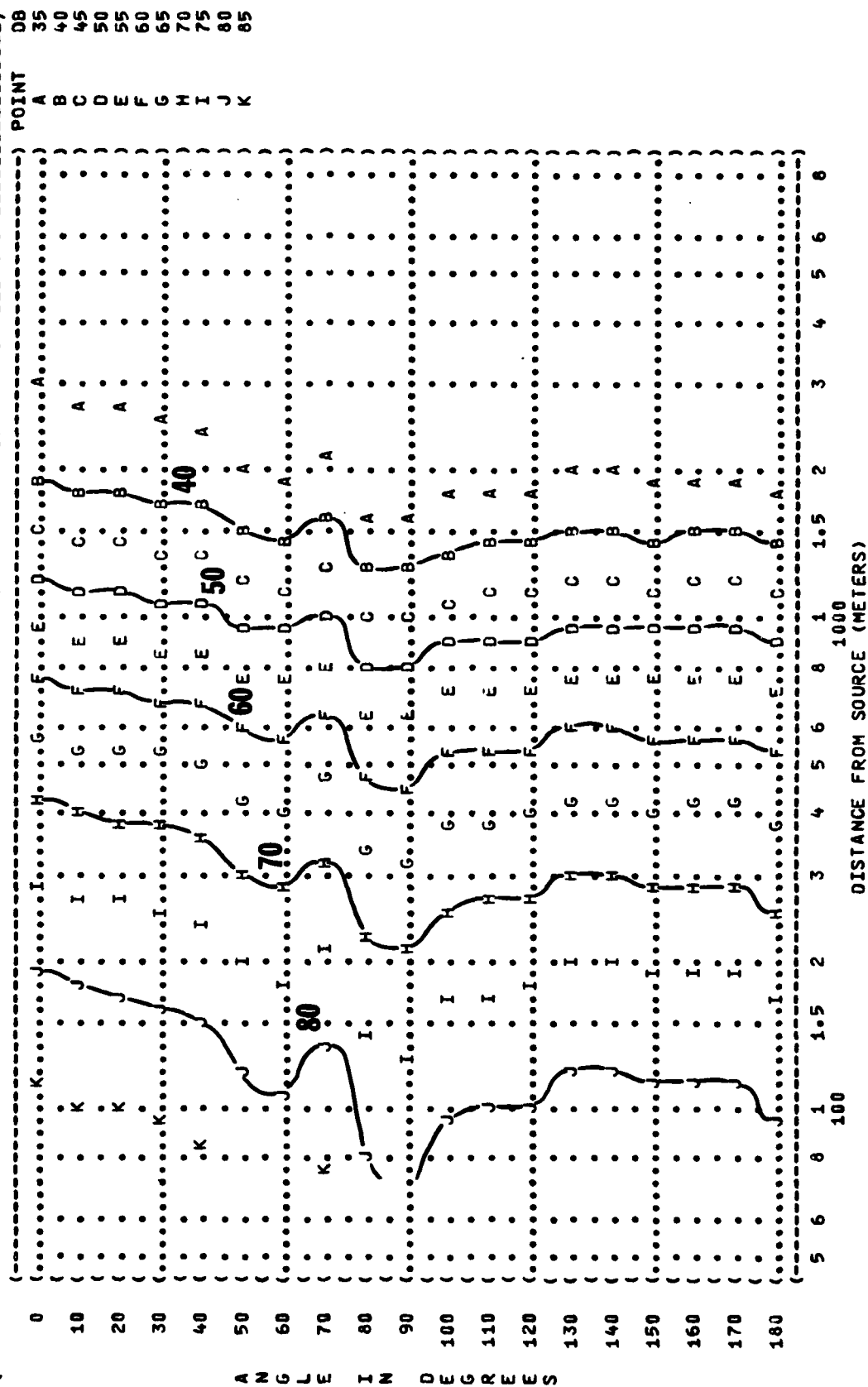
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FIGURE 10 SOUND PRESSURE LEVEL {SPL} EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:

OMEGA 1.4

TEST 77-733-001

40 RUN

TEMP = 15 C

14 SEP 78

REL HUMID = 70 %

PAGE 21

.....

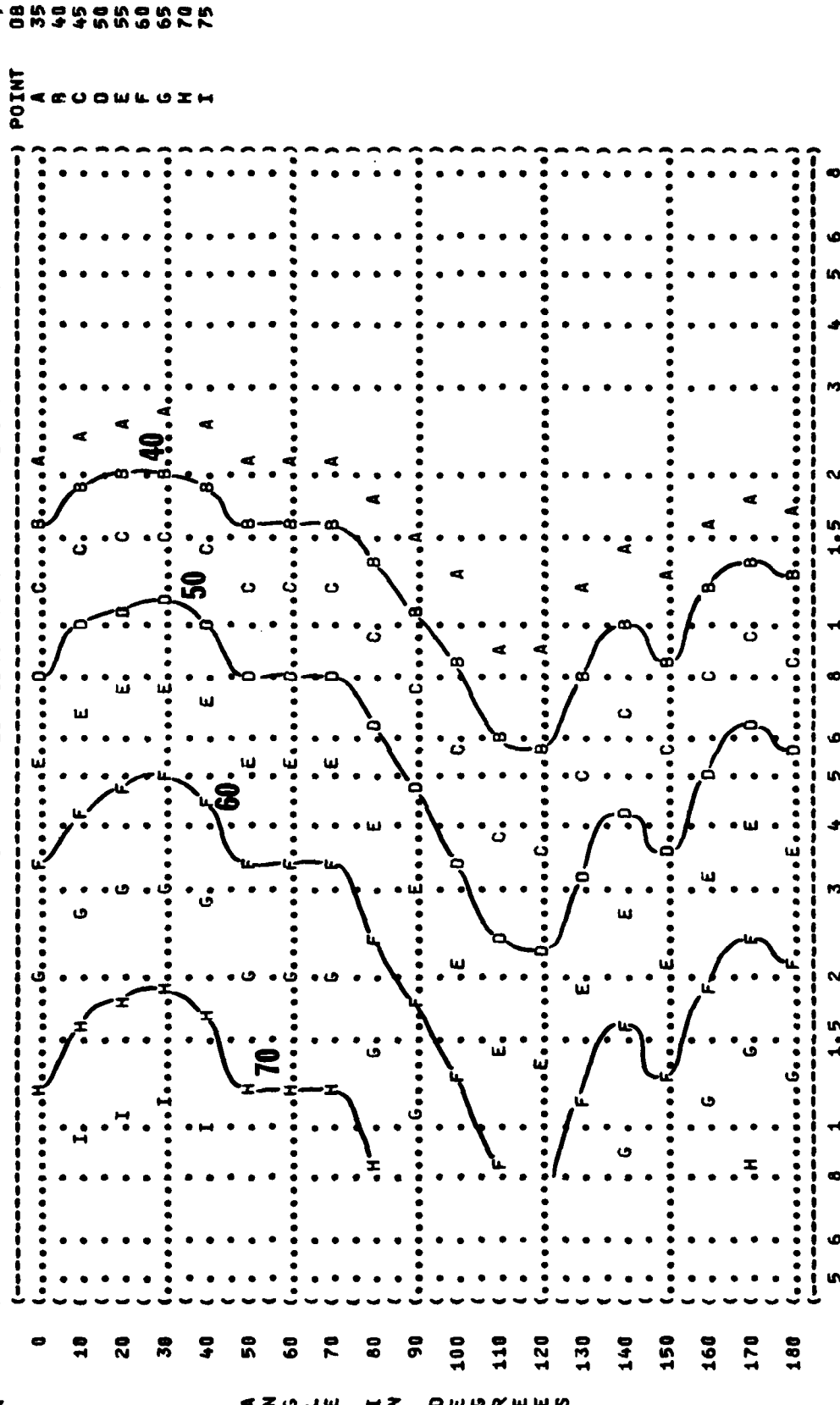
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35	A
40	B
45	C
50	D
55	E
60	F
65	G
70	H
75	I
80	J

420 JH HZ 04044444

DISTANCE FROM SOURCE (METERS)

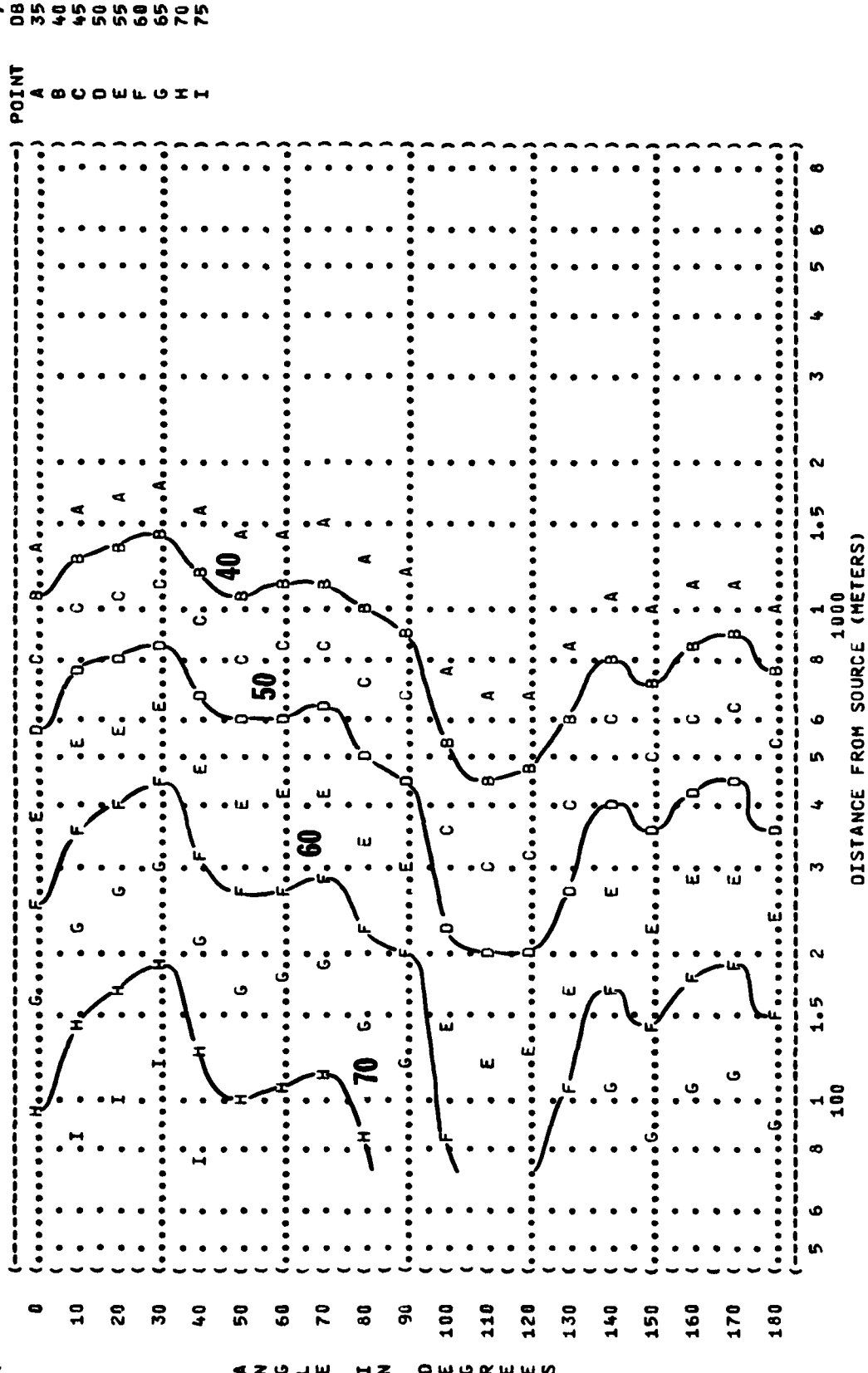
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(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (1000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 (T-38 AIRCRAFT IN THE (MILITARY POWER 99.5 % RPM) TEMP = 15 C
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
 (FAR FIELD NOISE () PAGE 23)

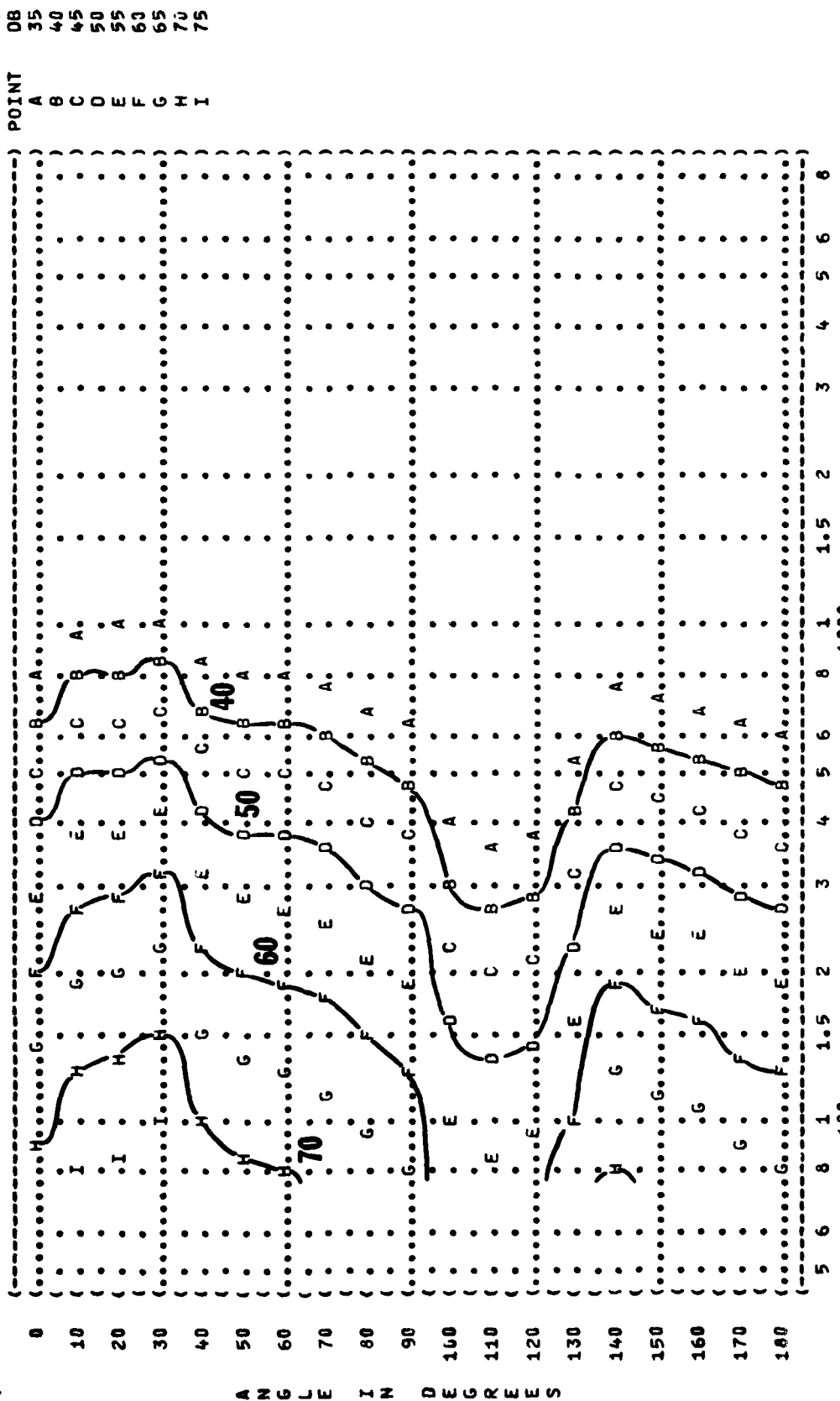


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 (T-38 AIRCRAFT IN THE (MILITARY POWER 99.5 % RPM) TEMP = 15 C
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
 (FAR FIELD NOISE ()) PAGE 24)

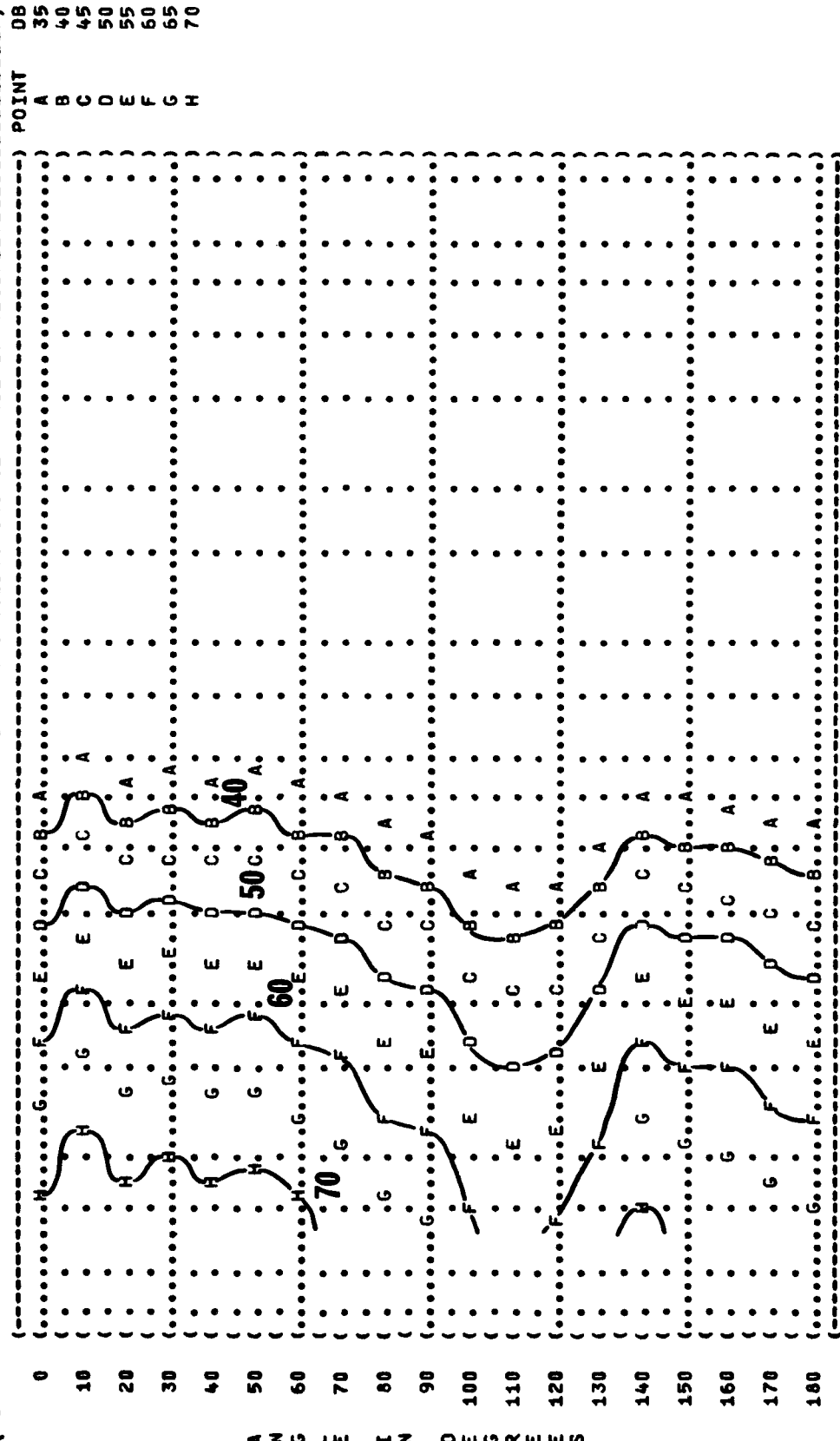


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 4000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATIONS:) METEOROLOGY:)
 (T-38 AIRCRAFT IN THE (MILITARY POWER 99.5 % RPM) TEMP = 15 C
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
 (FAR FIELD NOISE ()) PAGE 25)



DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-30 AIRCRAFT IN THE
 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (MILITARY POWER 99.5 % RPM
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 04
 (14 SEP 78
 (PAGE 26



(POINT DB
 (A 35
 (B 40
 (C 45
 (D 50
 (E 55
 (F 60
 (G 65
 (H 70

A N G L E I N D E G R E E S

AD-A079 868

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OH F/G 1/3
USAF BIODENVIRONMENTAL NOISE DATA HANDBOOK, VOLUME 128, T-38 AIR--ETC(U)
JUL 79 R A LEE
AMRL-TR-75-50-VOL-128

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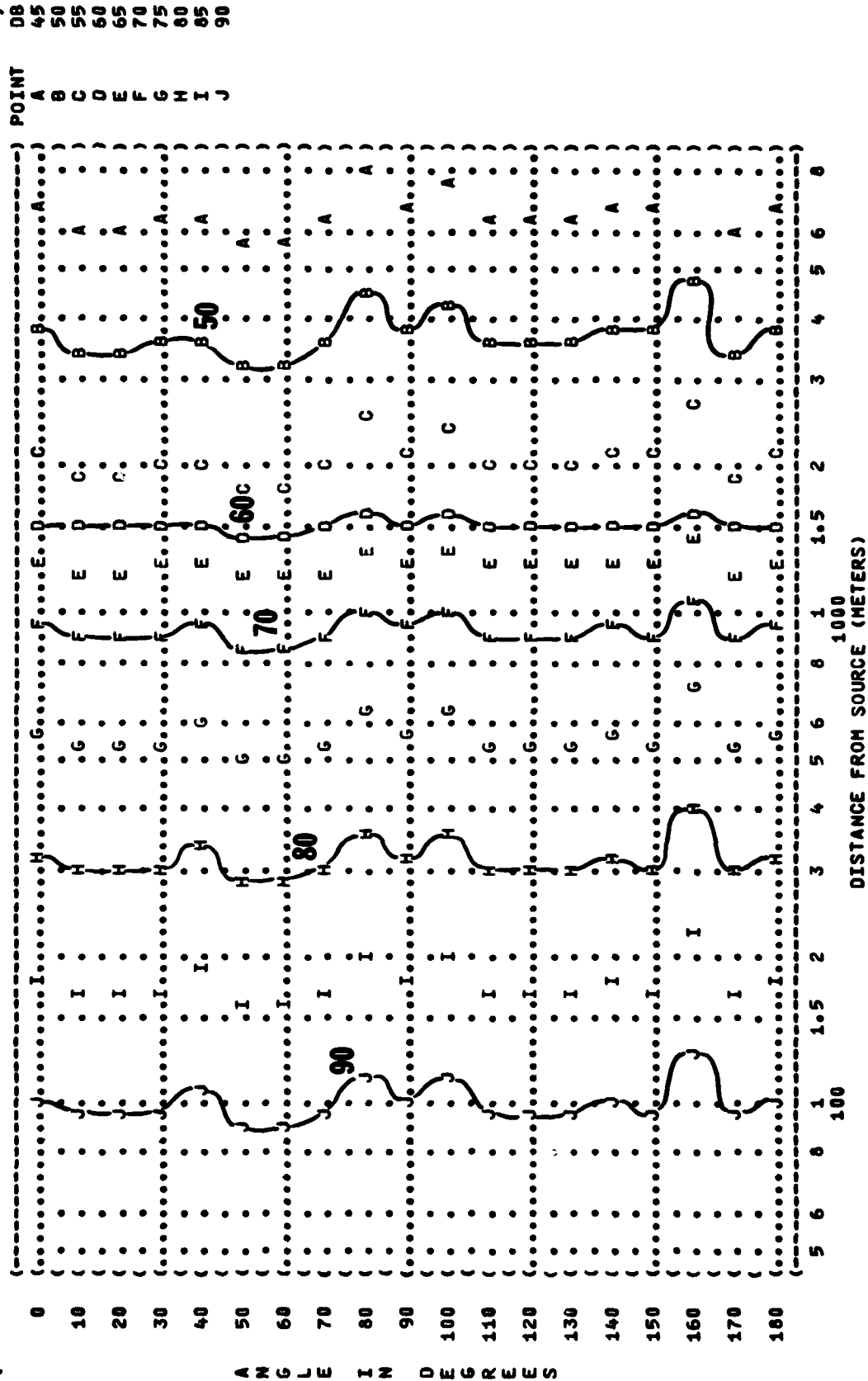
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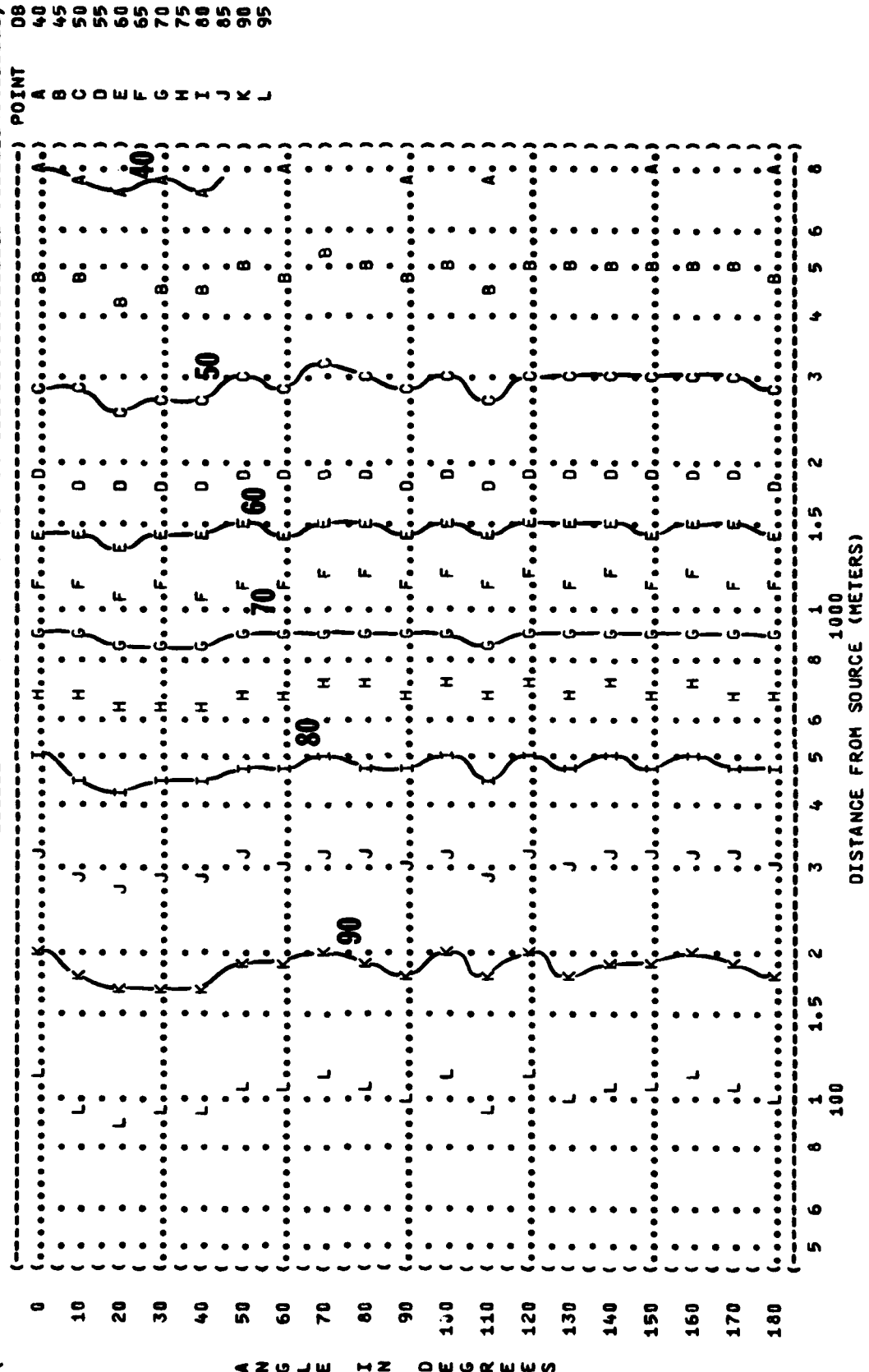
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(-----)
( ( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) )
( ( 10 ) OMEGA 1.4 )
( ( 31.5 HZ OCTAVE BAND ) TEST 77-733-001 )
( ( NOISE SOURCE/SUBJECT: ) )
( ( T-38 AIRCRAFT IN THE ) )
( ( AF32A-18-SUPPRESSOR ) )
( ( ENGINE J85-GE-5A ) )
( ( FAR FIELD NOISE ) )
( ( OPERATION: ) METEOROLOGY: )
( ( MAX POWER AFTERBURNER ) TEMP = 15 C )
( ( SINGLE ENGINE ) BAR PRESS = .760 M HG )
( ( GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( ( ) ) )
(-----)

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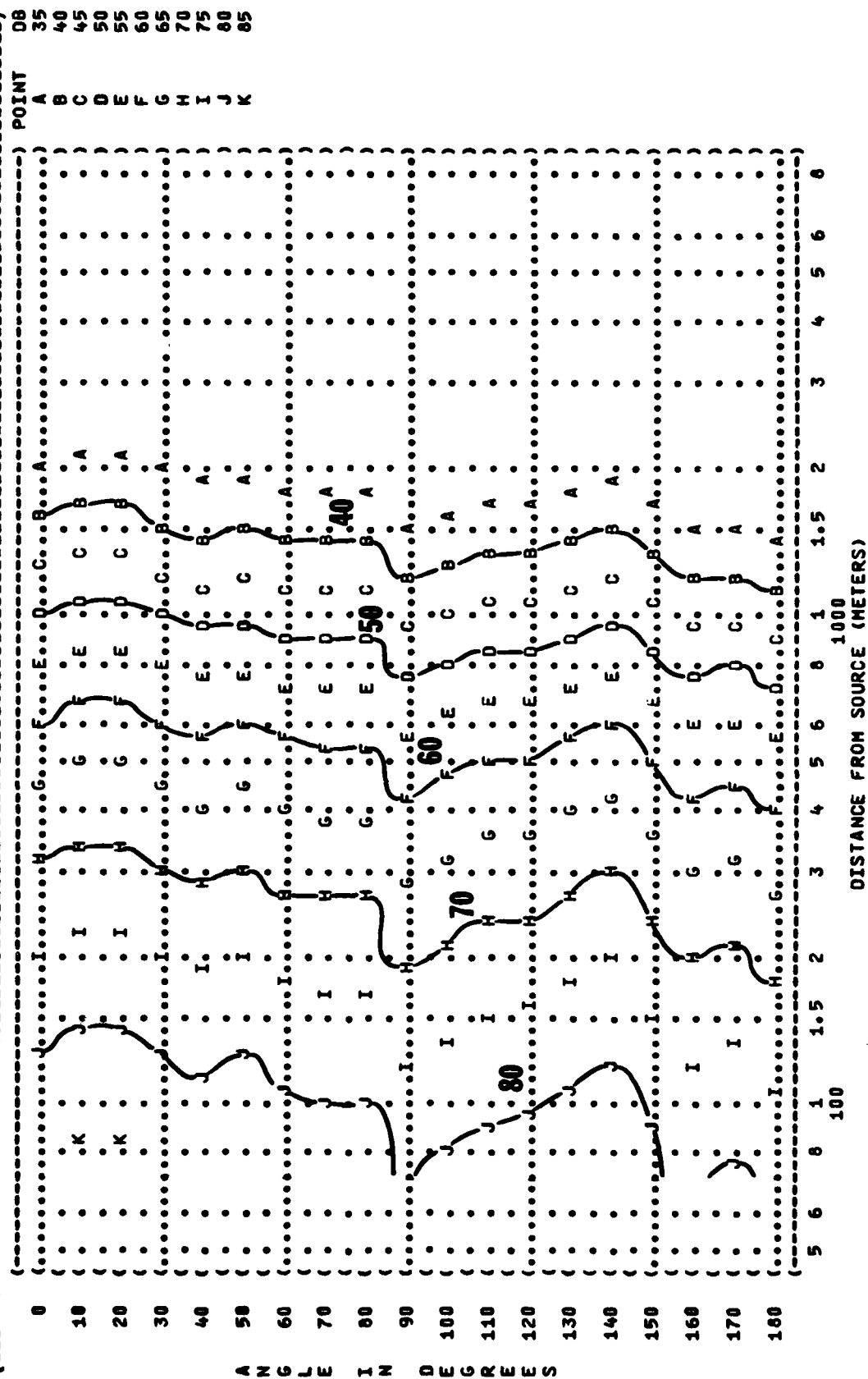


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (63 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (T-38 AIRCRAFT IN THE (MAX POWER AFTERBURNER) TEMP = 15 C
 (AF32A-18-SUPPRESSOR (SINGLE ENGINE) BAR PRESS = .760 M HG
 (ENGINE J85-GE-5A (GROUND RUNUP (SUPPRESSED)) REL HUMID = 70 %
 (FAR FIELD NOISE ()
 () IDENTIFICATION:
 () OMEGA 1.4
 (TEST 77-733-001
 (RUN 05
 (14 SEP 78
 ()
 () PAGE 19
 ()



A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-38 AIRCRAFT IN THE
 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATION:
 (MAX POWER AFTERBURNER
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 05
 (14 SEP 76
 (PAGE 21



IDENTIFICATION: OMEGA 1.4

RUN 05
14 SEP 70
PAGE 22

TEOROLOGY: = 15 C
TEMP
BAR PRESS = .760 M HG
REL HUMID = 70 %

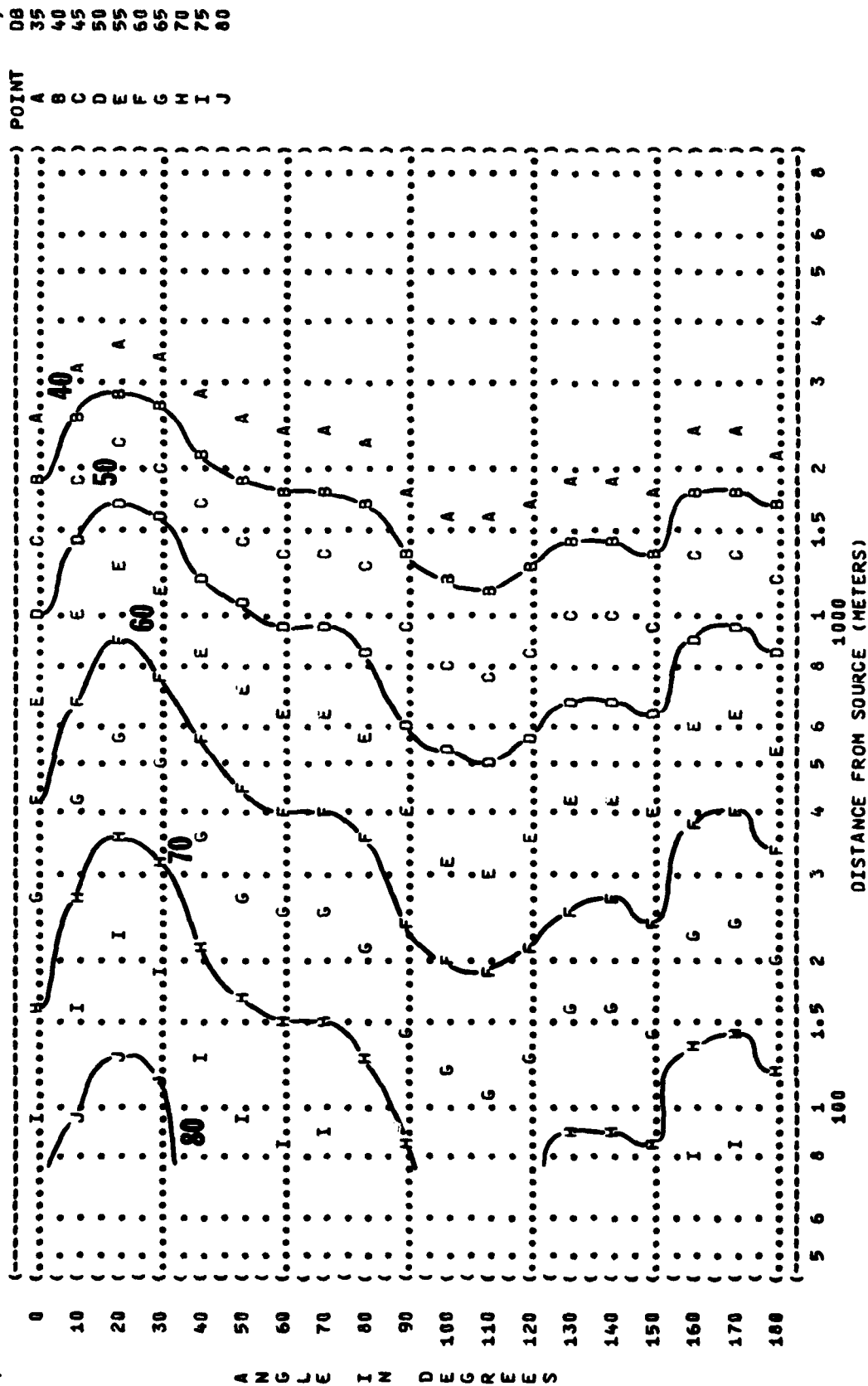
) RUN 05
)
) 14 SEP 7
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(-----)
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( ( 1000 HZ OCTAVE BAND ) )
(-----)
( ( NOISE SOURCE/SUBJECT: ) )
( ( T-38 AIRCRAFT IN THE ) )
( ( AF32A-18-SUPPRESSOR ) )
( ( ENGINE J85-GE-5A ) )
( ( FAR FIELD NOISE ) )
(-----)
( ( OPERATION: ) METEOROLOGY: )
( ( MAX POWER AFTERBURNER ) TEMP = 15 C )
( ( SINGLE ENGINE ) BAR PRESS = .760 M HG )
( ( GROUND RUNUP (SUPPRESSED) ) REL HUMID = 70 % )
( ( ) )
(-----)
( ( PAGE 23 ) )
(-----)

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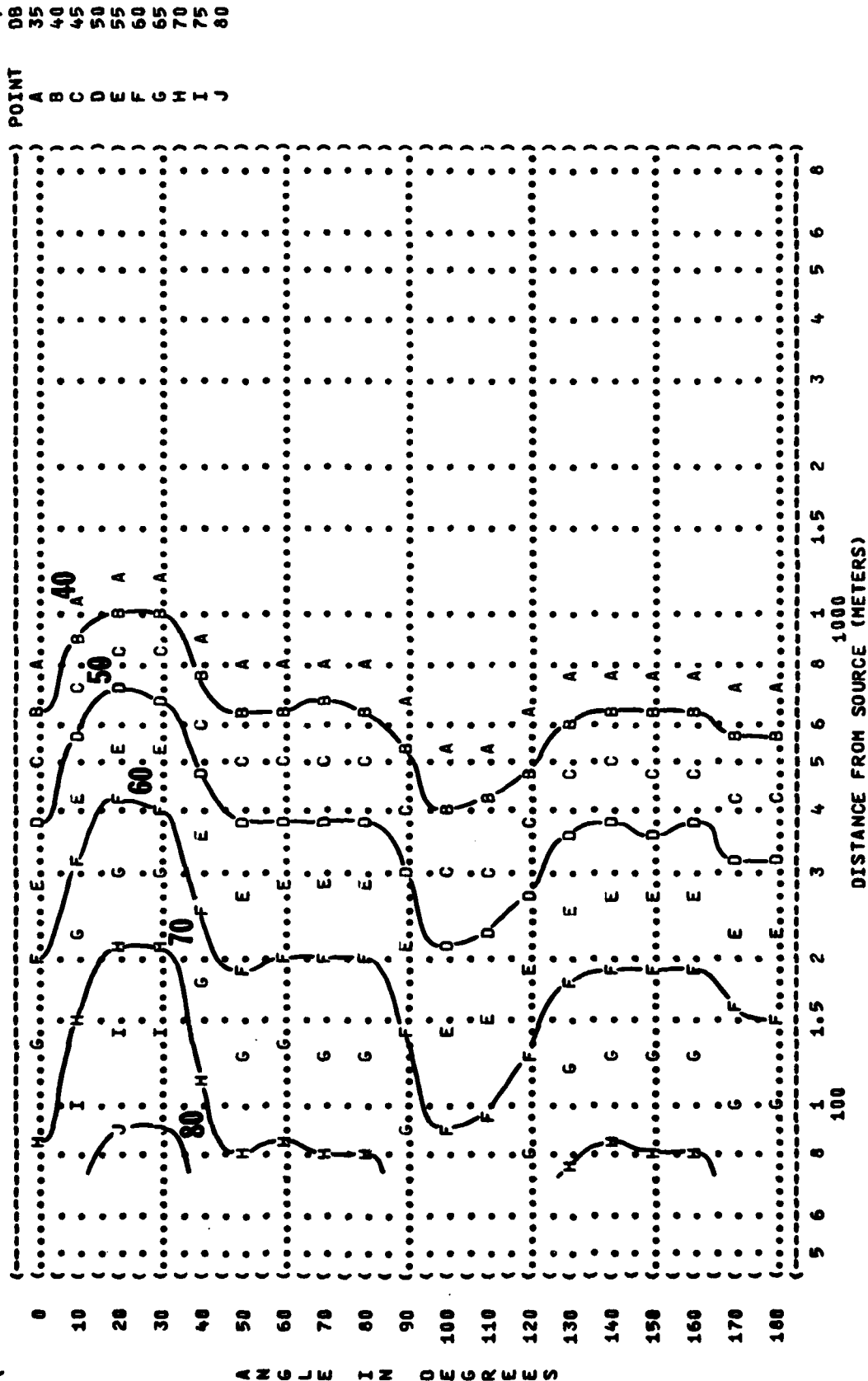
IDENTIFICATIONS
OMEGA 1.4

TEOROLOGY: = 15 C
TEMP = .760 M HG
BAR PRESS = 70 %
REL HUMID

RUN 05
 14 SEP 78
 PAGE 24



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (10 EQUAL LEVEL CONTOURS (DB))
 (4000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (T-38 AIRCRAFT IN THE)
 (AF32A-16-SUPPRESSOR)
 (ENGINE J85-GE-5A)
 (FAR FIELD NOISE)
 (OPERATIONS:)
 (MAX POWER AFTERBURNER)
 (SINGLE ENGINE)
 (GROUND RUNUP (SUPPRESSED))
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 77-733-001)
 (RUN 05)
 (14 SEP 78)
 (PAGE 25)



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (T-38 AIRCRAFT IN THE
 (AF32A-18-SUPPRESSOR
 (ENGINE J85-GE-5A
 (FAR FIELD NOISE
 (OPERATIONS:
 (MAX POWER AFTERBURNER
 (SINGLE ENGINE
 (GROUND RUNUP (SUPPRESSED)
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 77-733-001
 (RUN 05
 (14 SEP 78
 (PAGE 26

