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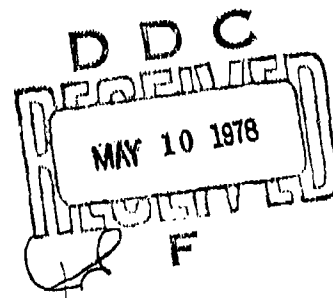
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 91

P-3A Aircraft, Far-Field Noise

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JUNE 1977



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AEROSPACE MEDICAL RESEARCH LABORATORY
AEROSPACE MEDICAL DIVISION
AIR FORCE SYSTEMS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

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FOR THE COMMANDER



HENNING E. VON GIERKE

Director

Biodynamics and Bioengineering Division
Aerospace Medical Research Laboratory

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The USN P-3A is an anti-submarine warfare aircraft powered by four T56-A-14 turboprop engines. This report provides far-field measured and extrapolated data defining both physical and psycho-acoustic measures of the bioacoustic environments produced by this aircraft operating on a ground runup pad for four engine/power conditions. Far-field data measured at 17 locations are normalized to standard meteorological conditions and extrapolated from			

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75-8000 meters to derive sets of equal-value contours as a function of angle and distance from the source. These contours are measures of: overall and 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. 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 723104, Measurement and Prediction of Noise Environments of Air Force Operation.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Capt Nick Farinacci, Mr. Harald Hille, and Mr. Jerry Speakman for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Ellerman of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Peggy Massie and Mr. Mike Patterson for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USN P-3A is an aircraft used for anti-submarine warfare and is powered by four T56-A-14 turboprop engines. The aircraft was manufactured by the Lockheed Aircraft Corporation and the engines by the Allison Division of the General Motors Corporation.

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 P-3A aircraft.

This volume is one of a series published by the 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 USAF/USN 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% relative humidity, 0.760 meter 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), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired the far-field data during a 1-hour test period, thus keeping similar meteorological conditions throughout the test. Figure 1 shows the ground runup area (taxiway), ground cover, aircraft orientation and microphone measurement sites on the semicircle. The center of the 75 meter radius semicircle used in surveying the T56-A-14 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through inboard engines' propeller planes.

Table 1 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 the source where the sound wavefronts 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.

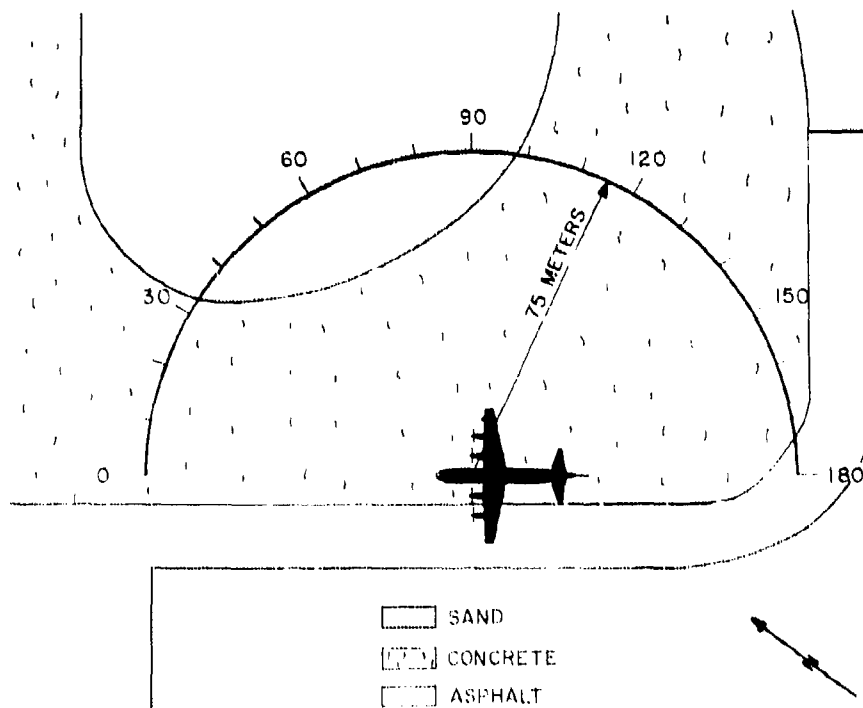


Figure 1. Far-Field Measurement Locations On The Taxiway,
At ALF, San Clemente Island

TABLE 1
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

P-3A Aircraft, Ground Runups, A1F, San Clemente Island
Tail #151355, 15 May 1973

Aircraft Engine Operation

Idle (Low RPM)	#2 & 3 (Inboard) Engines 170 Shaft Horsepower 74 % RPM 611 C Turbine Inlet Temperature 600 LBS/HR, Fuel Flow
Idle (Low RPM)	#1 & 4 (Outboard) Engines 113 Shaft Horsepower 73 % RPM 599 C, TIT 600 LBS/HR, FF
Maximum Power	#2 & 3 (Inboard) Engines 3750 Shaft Horsepower 100 % RPM 965 C, TIT 2120 LBS/HR, FF
Maximum Power	#1 & 4 (Outboard) Engines 3760 Shaft Horsepower 100 % RPM 971 C, TIT 2100 LBS/HR, FF

Meteorology

Temperature	16.7 C
Bar Pressure	0.767 M Hg
Rel Humidity	87 %
Wind --- Speed	1 M/Sec (2 KTS)
--- Direction	340 Deg

RESULTS

Table 2 lists the overall and 1/3 octave band SPL measures 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 2 which provides a compact summary of the far-field noise characteristics of the P-3A aircraft in a standard format.

Figure 3 and Table 3 present two basic acoustic measures, the acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of the noise levels for intermediate power settings (e.g., 90% 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. No data are presented at the 170/180 degree locations for the idle power nor at the 150/160/170/180 locations for the takeoff power settings because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below the level measured at the preceding microphone location.

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 (e.g., Table 2, idle power).

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.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																		
1/3 OCTAVE BAND																		
DISTANCE = 75 METERS																		
NOISE SOURCE/SUBJECTS																		
OPERATIONS																		
IDLE POWER																		
178 ENGINE SHP																		
INBOARD ENGINES																		
TEMP = 17 C																		
BAR PRESS = .767 M HG																		
REL HUMID = 67 %																		
P-3A AIRCRAFT																		
T56-A-18 ENGINE																		
FAR FIELD NOISE																		
PAGE 2																		
IDENTIFICATION:																		
OMEGA 1.4																		
TEST 75-802-841																		
RUN #1																		
08 MAY 75																		
PAGE 2																		
FREQ																		
(HZ)																		
ANGLE (DEGREES)																		
0 18 20 28 48 50 60 78 80 90 100 110 120 130 140 150 160 170 180																		
25	68<	61<	62<	61<	63<	62<	63<	63<	68<	61<	62<	64<	62<	63<	62<	64<	66<	
31.5	78<	71<	71<	70<	67<	69<	67<	68<	66<	65<	64<	65<	64<	64<	62<	63<	68<	
48	83	84	84	83	81	81	81	88	79	79	77	77	77	78	82	79	82	
63	71	71<	72	71	69<	71	71	71	70<	73	72	73	73	74	74	71<	74	
80	74	73	73	72	69	72	70	68<	68<	77	73	74	75	78	76	74	74	
108	84	82	83	81	79	79	74	73	71	73	76	76	79	81	82	82	82	
125	80	80	79	79	75	74	72	72	72	74	76	77	88	79	79	81	78	
168	83	81	81	81	79	78	75	74	75	78	75	77	78	82	83	82	82	
200	84	83	83	81	79	77	74	73	73	75	76	79	83	83	84	84	84	
250	86	86	85	85	80	78	74	75	74	76	78	81	85	84	86	84	84	
315	85	84	84	83	80	78	73	74	74	74	77	79	82	83	83	82	85	
400	83	82	82	82	80	76	74	72	71	72	76	77	81	83	81	83	83	
500	81	81	81	81	78	76	74	73	72	71	74	75	79	92	81	80	81	
638	82	82	79	79	77	77	75	74	76	78	83	85	88	89	87	85	88	
800	77	78	78	78	77	76	72	72	72	73	75	78	82	82	83	84	77	
1000	78	77	76	76	76	75	72	72	71	73	74	76	88	81	82	84	76	
1258	77	77	75	75	74	74	72	71	69	72	75	90	82	83	83	82	76	
1608	76	76	75	74	73	74	71	71	70	72	74	79	81	81	81	81	75	
2008	78	77	76	76	76	76	73	72	72	75	77	78	78	88	88	82	76	
2508	77	76	74	75	75	76	72	73	73	73	76	78	78	78	79	82	74	
3150	78	76	76	74	74	75	72	72	73	73	74	76	76	78	88	82	75	
4000	79	78	78	77	77	79	76	75	76	77	78	76	78	88	88	84	77	
5000	86	87	87	84	82	83	78	78	77	77	79	77	78	80	81	82	77	
6300	83	84	83	81	82	81	78	79	78	78	79	78	79	81	81	82	78	
8000	78	77	78	77	76	79	74	75	76	78	75	73	75	77	78	79	76	
10000	80	81	82	81	79	87	81	84	85	84	82	88	78	77	76	75	72	
OVERALL	95	95	95	94	92	92	89	89	90	98	91	92	94	95	96	96	93	

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																	IDENTIFICATION:			
2		1/3 OCTAVE BAND															OMEGA 1.4			
		DISTANCE = 75 METERS															TEST 75-002-041			
NOISE SOURCE/SUBJECT:		OPERATIONS:					METEOROLOGY:													
		(IDLE POWER					(TEMP = 17 C										(RUN 02			
		(113 ENGINE SHP					(BAR PRESS = .767 M HG										(08 MAY 75			
		(OUTBOARD ENGINES					(REL HUMID = 67 Z										(PAGE 2			
FREQ		0	18	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
(HZ)																				
(25			61<	62<	61<	61<	63<	62<	63<	61<	63<	63<	63<	64<	65<	64<	64<	64<	62<	
(31.5			72<	63<	71<	78<	78<	72<	72<	78<	65<	65<	64<	68<	66<	66<	64<	64<	62<	
(40		70<	77	70	77	77	76	76	81	82	81	79	77	75	68<	69<	78<	78<	68<	
(50		77	78	77	77	76	76	81	82	81	79	77	75	77	76	74	75	75		
(63		71	71	72	72	71	73	72	72	72	72	72	72	73	75	75	73	72		
(80		75	76	75	75	74	73	72	71	70	71	72	74	75	76	75	75	71		
(100		84	83	82	82	81	88	79	77	75	75	76	79	82	82	83	83	77		
(125		84	83	83	83	79	79	76	74	73	75	77	78	81	83	81	82	74		
(160		83	81	81	88	79	77	75	73	73	75	77	79	80	83	83	84	76		
(200		84	83	83	82	81	79	76	74	73	77	78	82	83	85	85	86	76		
(250		86	86	87	86	83	81	88	77	76	76	80	81	83	85	86	86	74		
(315		85	84	84	84	82	80	88	77	75	76	80	81	83	84	85	84	74		
(400		82	81	82	82	80	77	75	73	72	75	78	79	81	83	83	82	73		
(500		88	88	81	81	79	77	75	73	72	73	76	77	80	82	81	80	74		
(630		79	80	80	80	79	77	74	74	75	88	85	82	86	89	86	87	79		
(800		77	78	79	78	78	76	74	74	74	76	79	80	82	82	81	81	74		
(1000		77	78	77	77	77	75	75	74	74	78	80	82	82	81	80	80	73		
(1250		77	77	76	76	76	73	73	73	74	78	78	80	82	81	79	88	73		
(1600		76	76	76	76	77	74	73	73	73	76	78	79	81	79	78	88	73		
(2000		78	77	78	78	77	75	75	75	76	78	79	80	81	80	81	81	74		
(2500		77	77	76	77	76	74	74	74	76	79	78	80	81	79	82	72			
(3150		75	77	77	77	77	74	74	73	75	78	78	80	80	80	88	82	72		
(4000		79	78	78	79	79	76	77	76	78	82	80	80	81	82	88	82	73		
(5000		89	94	90	96	86	84	83	88	84	84	84	84	83	81	88	82	73		
(6300		82	82	82	83	83	88	88	79	81	86	88	89	86	84	88	81	73		
(8000		77	77	76	78	77	76	76	77	79	79	79	79	77	76	78	78	78		
(10000		81	82	82	83	82	81	81	81	81	78	77	76	74	72	72	72	65		
(OVERALL	95	95	96	96	94	92	91	90	90	93	94	94	95	96	95	96	96	88		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)														IDENTIFICATION:	
1/3 OCTAVE BAND															
DISTANCE = 75 METERS															
MOISE SOURCE/SUBJECT:														TEST 75-002-041	
(OPERATIONS:														RUN 03	
(MILITARY POWER															
(3750 ENGINE SHP														TEMP = 17 C	
(INBOARD ENGINES														BAR PRESS = .767 M HG	
(FAR FIELD NOISE														REL HUMID = 67 %	
														PAGE 2	
FREQ (HZ)														ANGLE (DEGREES)	
25	76	76	76	76	76	76	76	76	76	76	76	76	76	81	81
31.5	77	77	81	77	78	77	79	81	82	82	82	84	85	83	82
40	82	83	84	82	81	81	83	83	83	84	85	86	84	85	83
56	86	86	84	85	85	86	88	89	85	87	87	87	87	85	84
63	186	183	182	183	180	185	189	112	118	110	118	189	186	102	99
80	95	92	91	91	88	92	95	97	101	182	182	181	98	94	92
100	93	93	92	91	93	89	88	88	88	88	88	98	92	95	89
125	100	99	98	98	94	98	96	99	183	104	104	182	108	96	91
160	95	95	94	93	98	88	88	83	95	94	96	95	94	94	87
200	99	188	98	97	97	93	92	91	95	93	95	94	95	93	87
250	181	99	99	99	96	93	91	92	94	93	94	94	94	92	86
315	100	99	98	98	95	94	92	91	93	93	94	94	94	94	85
400	97	97	97	96	94	93	93	91	92	92	92	94	94	94	84
500	97	96	95	95	93	92	92	91	92	92	92	94	95	94	84
630	94	94	94	93	92	98	91	90	93	91	92	93	94	93	84
800	93	94	93	93	92	91	91	91	92	91	91	91	92	91	84
1000	93	93	92	92	91	98	98	91	92	91	90	91	91	89	83
1250	93	93	92	92	91	91	98	98	92	90	89	90	90	88	81
1600	92	92	92	92	91	93	98	98	98	98	89	89	88	86	78
2000	92	92	92	92	91	90	84	89	89	87	87	87	86	84	74
2500	92	92	92	92	91	90	88	88	88	89	87	86	85	83	73
3150	91	92	92	91	90	88	88	88	88	89	87	86	86	84	72
4000	89	90	89	89	88	87	86	86	86	87	85	84	83	81	70
5000	89	89	89	88	87	86	85	85	85	85	83	81	80	79	68
6300	98	98	98	98	88	88	87	86	83	81	80	79	78	76	7
8000	85	85	84	84	85	87	87	87	85	84	82	80	78	73	
10000	111	110	109	109	106	107	118	112	112	112	111	109	106	102	
OVERALL	111	110	109	109	106	107	118	112	112	112	111	109	106	102	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			IDENTIFICATIONS:	
1/3 OCTAVE BAND																				
DISTANCE = 75 METERS																			OMEGA 1.4	
NOISE SOURCE/SUBJECT:																			TEST 75-802-041	
(OPERATIONS:																			RUN 84	
(MILITARY POWER																			TEMP = 17 C	
(3768 ENGINE SHP																			BAR PRESS = .767 M HG	
(OUTBOARD ENGINES																			REL HUMID = 67 Z	
(																			PAGE 2	
P-3A AIRCRAFT																				
T56-A-10 ENGINE																				
FAR FIELD NOISE																				
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
25	76	74	77	73	73	76	75	75	76	77	77	78	80	80	79					
31.5	78	78	76	77	77	79	79	79	76	79	79	78	82	81	81					
40	79	79	79	79	80	88	79	78	80	80	82	81	83	83	83					
50	83	83	82	82	81	81	82	82	85	84	87	87	85	84	82					
63	100	98	97	96	98	95	103	103	111	110	113	113	108	101	98					
80	92	90	90	89	91	90	94	95	103	102	105	105	100	94	91					
100	92	92	91	91	88	86	87	86	87	88	89	91	93	93	89					
125	97	97	96	95	98	96	93	91	99	104	106	102	101	96	91					
160	97	97	96	96	94	92	92	89	92	95	97	94	94	94	88					
200	101	101	100	98	97	94	92	94	95	95	95	95	96	96	88					
250	99	101	100	99	97	94	90	92	94	94	95	96	96	95	88					
315	99	100	100	100	98	95	92	92	93	94	95	95	98	95	89					
400	97	98	97	98	96	94	91	91	93	93	95	95	97	94	89					
500	96	96	96	96	94	93	92	91	92	94	94	96	96	94	88					
630	94	96	94	94	93	91	91	90	93	93	9	96	95	94	87					
800	94	95	94	93	93	92	91	91	93	92	94	94	94	93	86					
1000	93	94	93	92	92	91	90	90	92	92	94	94	93	91	84					
1250	92	93	93	92	92	91	90	90	91	91	93	93	92	90	82					
1600	92	92	91	91	92	90	89	89	90	90	91	91	91	88	80					
2000	91	92	92	92	92	90	89	89	90	89	91	91	91	90	88					
2500	92	92	91	92	91	90	89	88	89	87	89	89	88	86	77					
3150	91	91	91	90	90	88	87	87	88	87	88	88	87	85	76					
4000	90	91	90	90	90	88	87	87	88	88	88	88	87	85	76					
5000	88	89	88	88	88	86	85	84	87	85	86	86	85	83	74					
6300	88	88	87	87	87	85	84	83	84	83	83	83	82	80	71					
8000	89	90	89	89	88	86	86	84	84	82	81	80	78	69						
10000	82	83	82	83	83	82	82	82	83	82	81	79	77	74	65					
OVERALL	109	109	108	108	107	105	106	106	112	112	115	114	111	107	102					

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 180 METERS

NOISE SOURCE/SUBJECT 1

OPERATIONS

P-3A AIRCRAFT

170 ENGINE SWP

156-A-18 ENGINE

INBOARD ENGINES

FAR FIELD NOISE

METEOROLOGY

TEMP = 15 C

BAR PRESS = 768 M HG

REL HUMID = 78 Z

IDENTIFICATIONS

OMEGA 1.4

TEST 75-882-841

RUN 81

08 MAY 75

PAGE 6

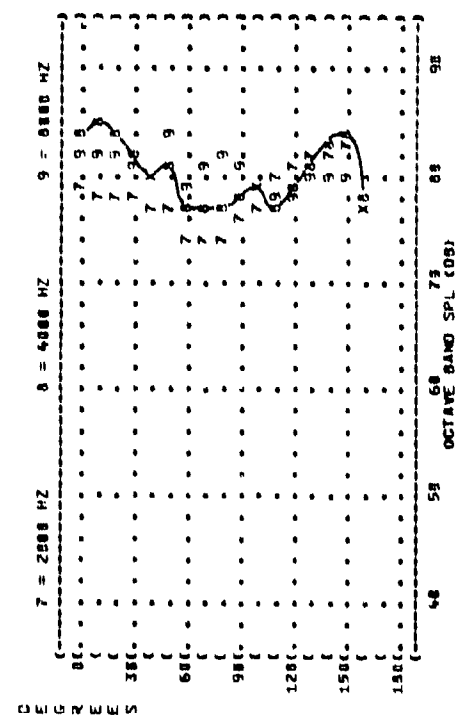
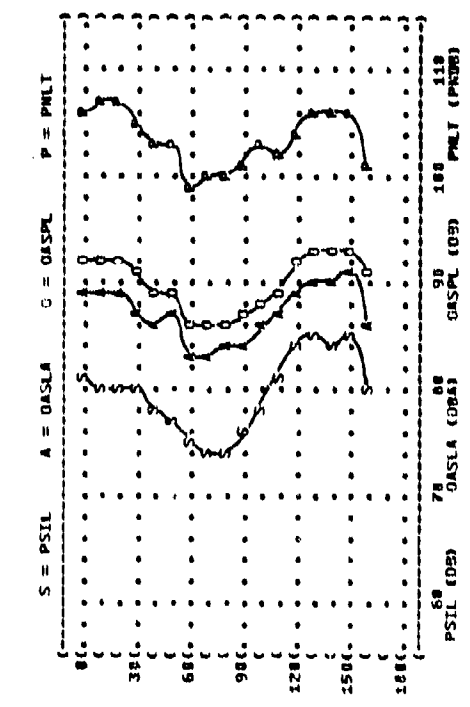
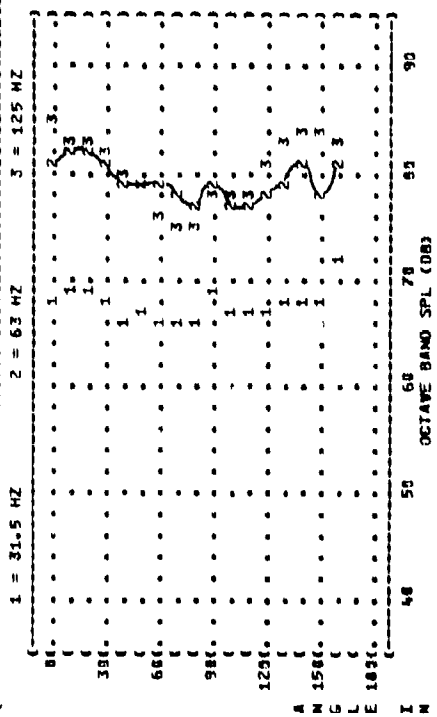
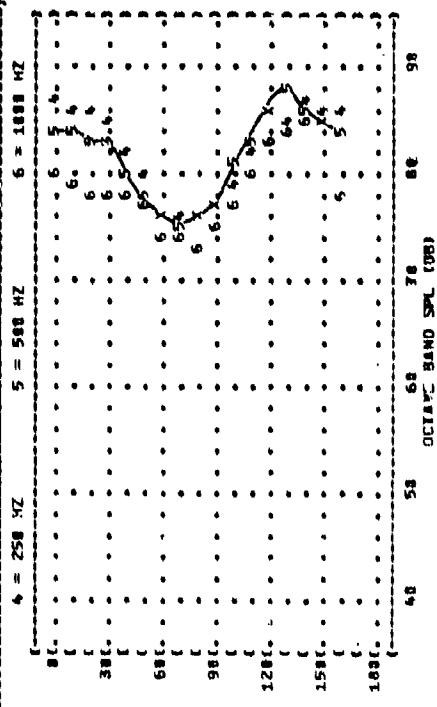


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

OPERATIONS:

9-3A AIRCRAFT

3758 ENGINE SHIP

156-A-10 ENGINE

IMBOARD ENGINES

FAR FIELD NOISE

METEOROLOGICALS:

TEMP = 15 C

BAR PRESS = .768 H MG

REL HUMID = 78 %

OMEGA 1.4

TEST 75-802-841

RUN 83

88 MAY 75

PAGE 6

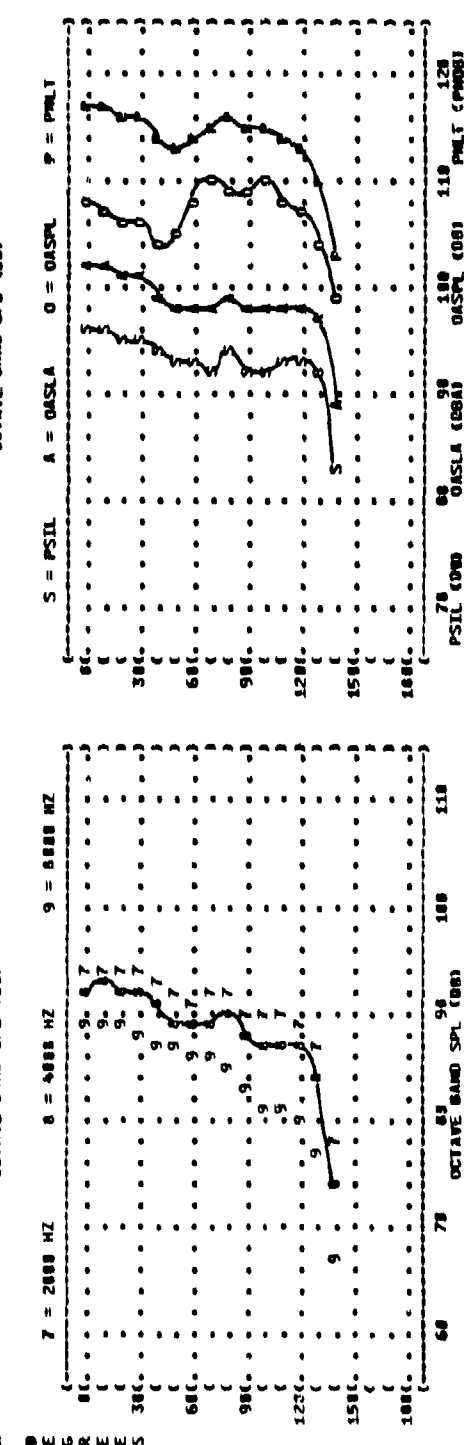
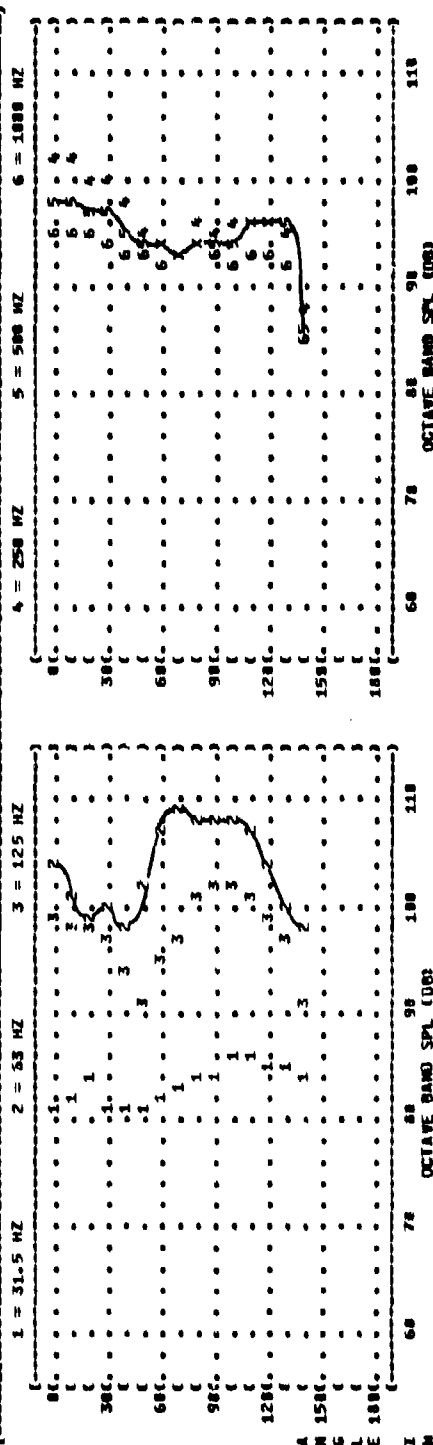


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

P-3A AIRCRAFT

T56-A-18 ENGINE

FAR FIELD NOISE

OPERATIONAL:

MILITARY POWER

3768 ENGINE SHP

OUTBOARD ENGINES

METEOROLOGICAL:

TEMP = 15 C

BAR PRESS = 768 MM HG

REL HUMID = 78 %

IDENTIFICATION:

OMEGA 1-4

TEST 75-882-841

RUN 04

88 MAY 75

PAGE 6

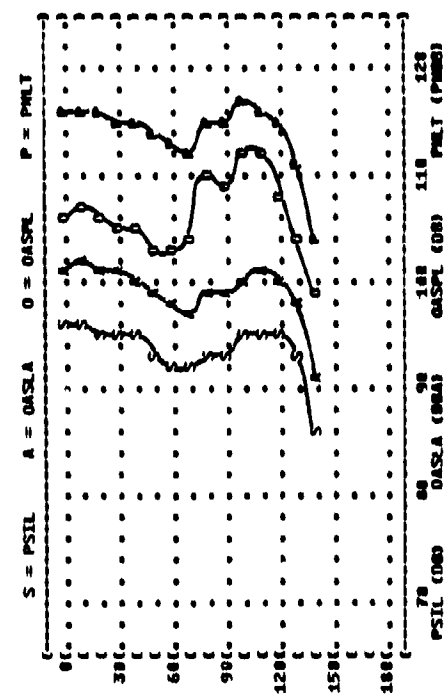
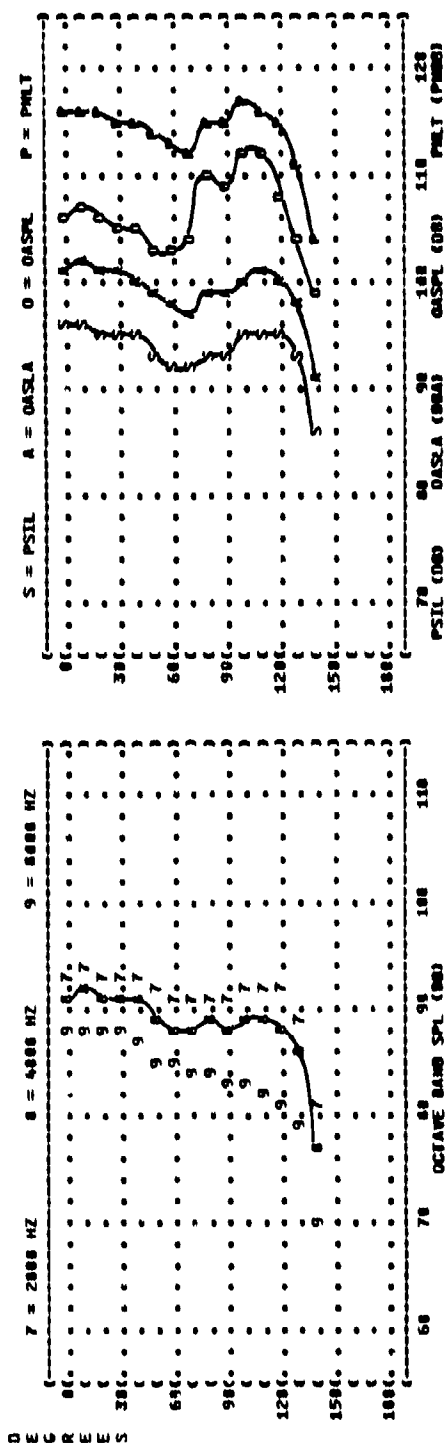
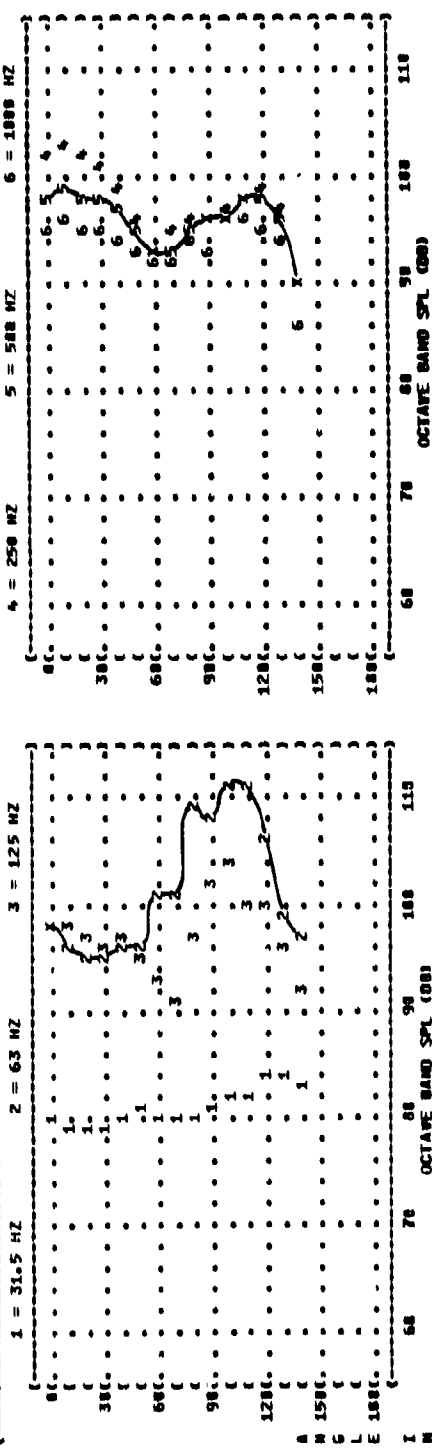


FIGURE 8: ACOUSTIC POWER LEVEL (PWL)

1 OMEGA 1 4

TEST 75-002-041)

1 RUN 16 1

34 25/10 34

END OF

1 PAGE 3)

SECRET

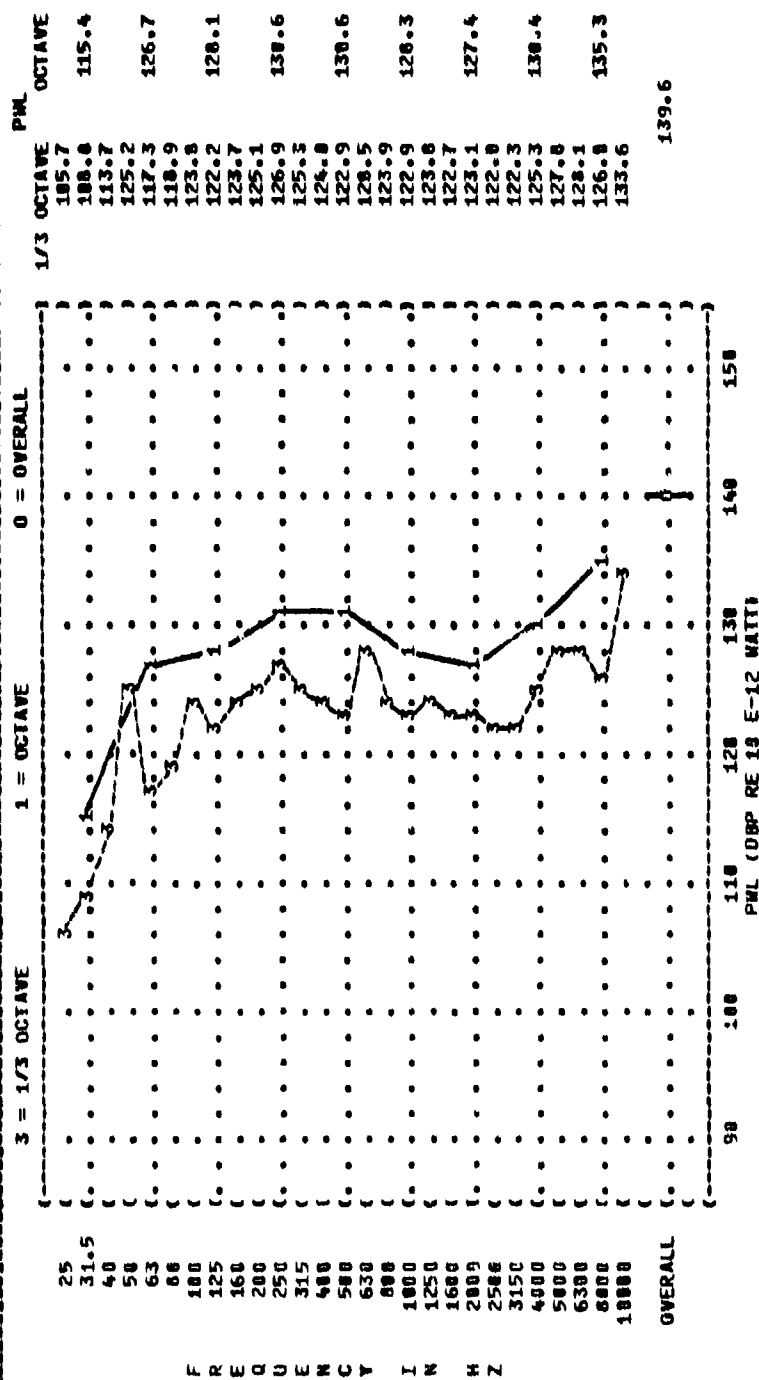


FIGURE: ACOUSTIC POWER LEVEL (PWL)

3

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-061

RUN 02

90 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATIONS:

TEMP = 17 C

BAR PRESS = .767 H HG

REL HUMID = 67 Z

113 ENGINE SHP

OUTBOARD ENGINES

FAR FIELD NOISE

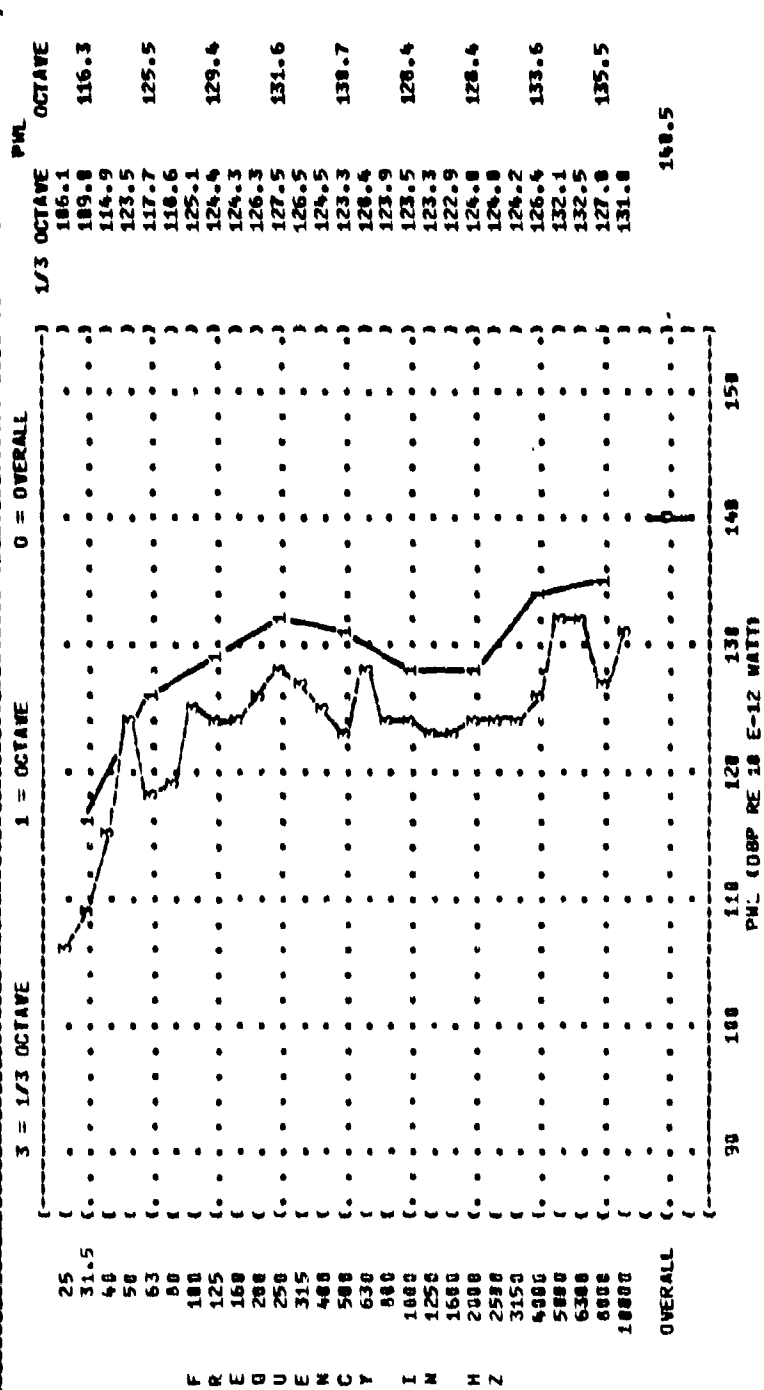


FIGURE: ACOUSTIC POWER LEVEL (PWL)

3

IDENTIFICATION:

OMEGA 1.4

TEST 75-882-841

RUN 83

88 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATIONS:

MILITARY POWER

3758 ENGINE SHIP

INBOARD ENGINES

FIELD NOISE

METEOROLOGY:

TEMP = 17 C

BAR PRESS = .767 M HG

REL HUMID = 67 Z

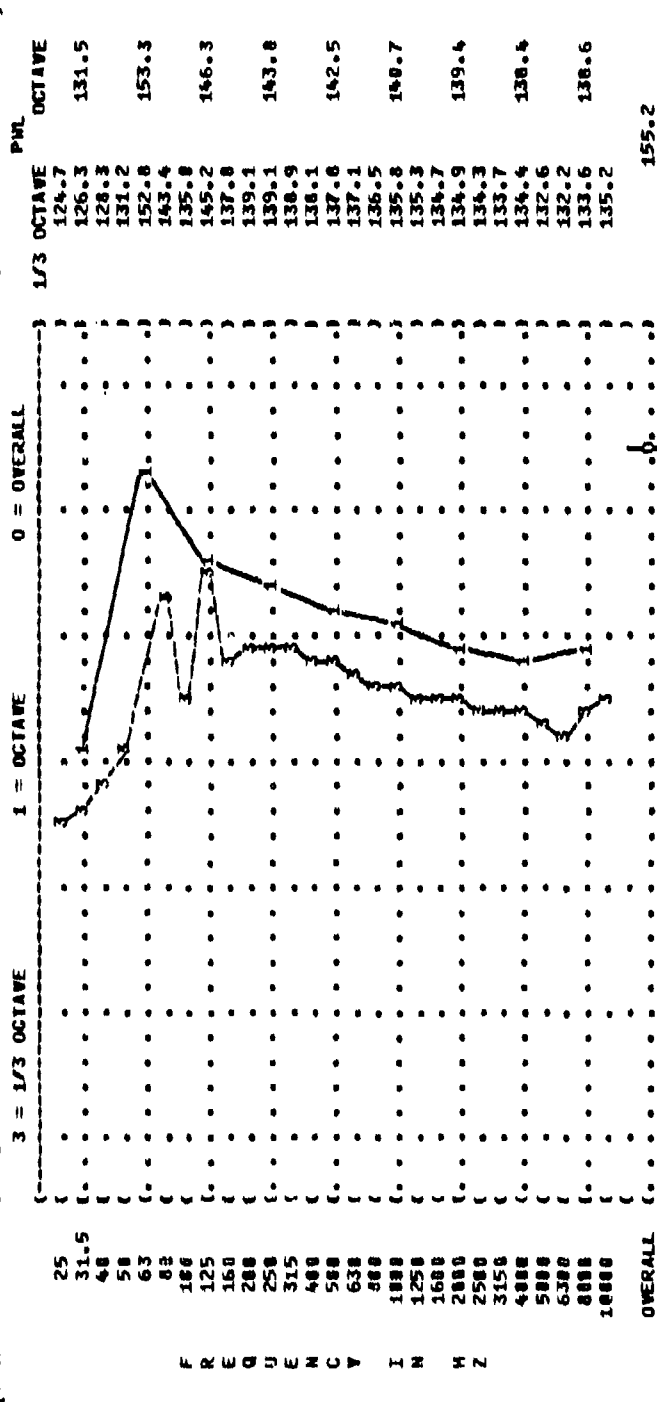


FIGURE: ACOUSTIC POWER LEVEL (PWL)

3

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-041

RUN 04

08 MAY 75

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATIONS:

MILITARY POWER

3760 ENGINE SHIP

OUTBOARD ENGINES

TEMP = 17 C

BAR PRESS = .767 M HG

REL HUMID = 67 Z

P-3A AIRCRAFT

T56-A-18 ENGINE

FAR FIELD NOISE

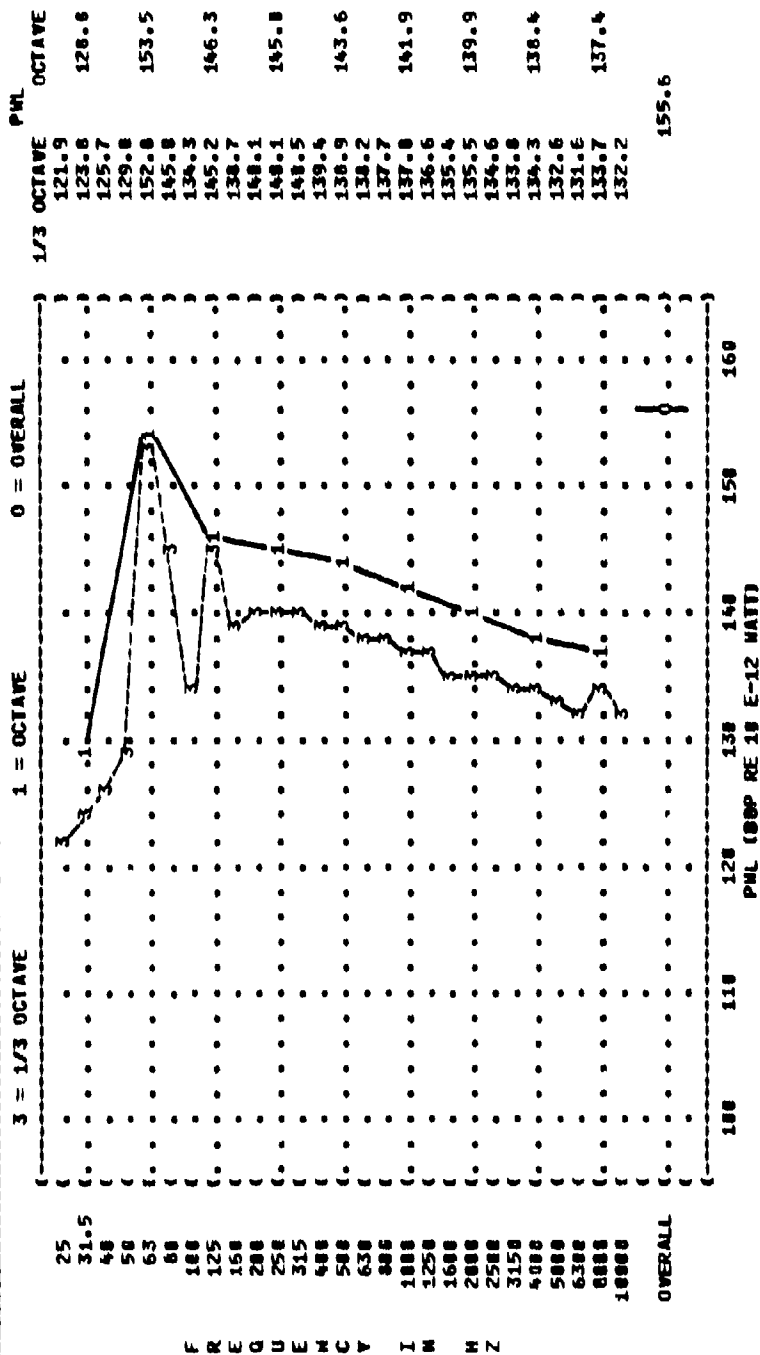
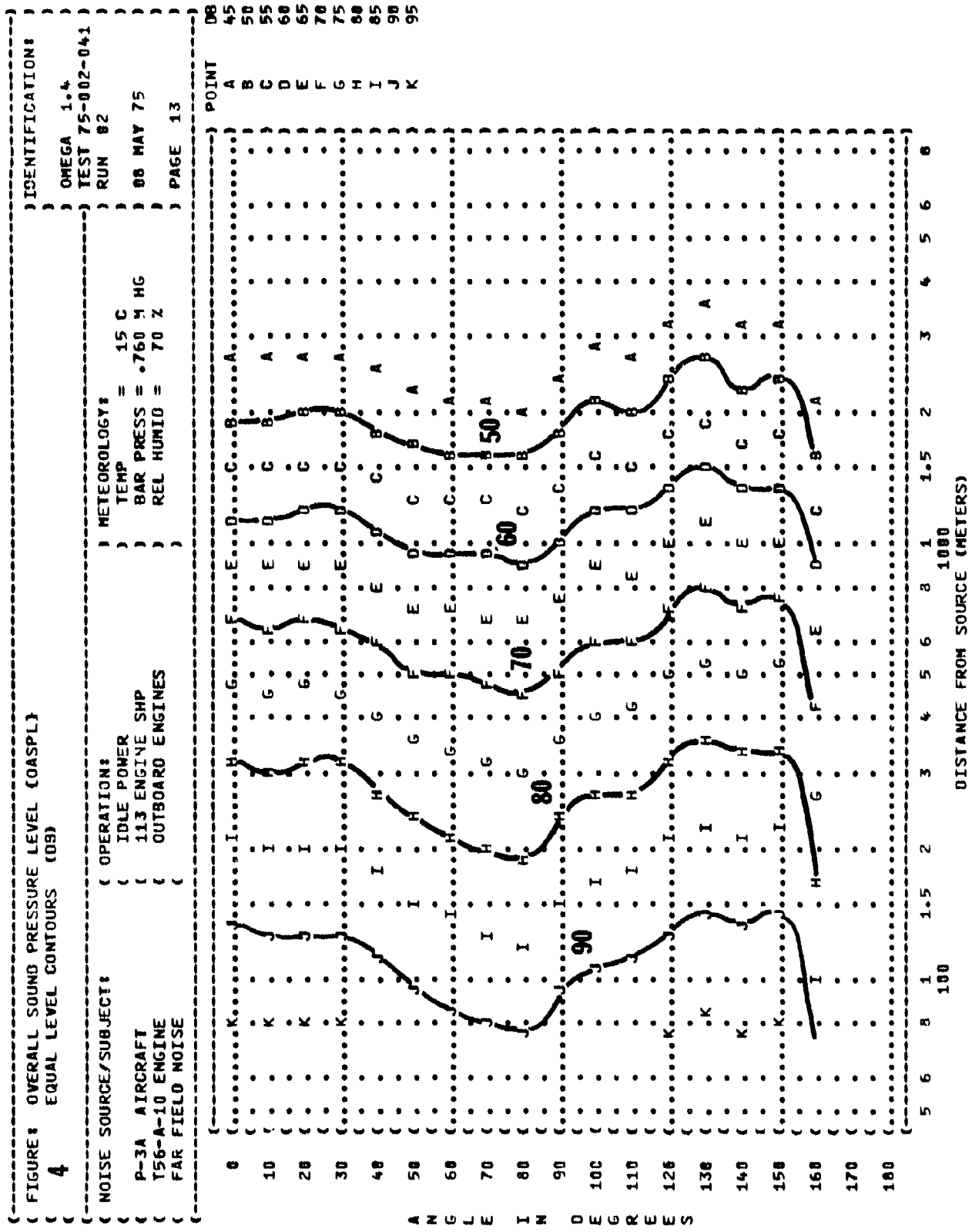


TABLE 3 DIRECTIVITY INDEX (DB)																	IDENTIFICATION:		
3																	OMEGA 1.4		
																	TEST 75-002-041		
																	RUN 01		
NOISE SOURCE/SUBJECT:																	METEOROLOGY:		
((IDLE POWER																	TEMP = 17 C		
((170 ENGINE SHP																	BAR PRESS = .767 M HG		
((INBOARD ENGINES																	REL HUMID = 67 %		
((																	PAGE 4		
FREQ																			
(((MHZ)																	ANGLE (DEGREES)		
((0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																			
1/3 OCTAVE																			
25																			
31.5																	6		
40																	4		
50																	5		
63																	2		
80																	2		
100																	0		
125																	3		
160																	4		
200																	1		
250																	3		
315																	2		
400																	2		
500																	4		
630																	2		
800																	3		
1000																	5		
1250																	2		
1600																	4		
2000																	6		
2500																	2		
3150																	5		
4000																	6		
5000																	5		
6300																	5		
8000																	2		
10000																	-1		
OCTAVE																			
31.5																	5		
63																	2		
125																	3		
250																	3		
500																	1		
1000																	-2		
2000																	-2		
4000																	-2		
8000																	-4		
OVERALL																	1		

TABLE: DIRECTIVITY INDEX (DB)																
3																
NOISE SOURCE/SUBJECT:																
OPERATIONS:																
MILITARY POWER																
3750 ENGINE SHP																
INGOARD ENGINES																
P-3A AIRCRAFT																
T56-A-18 ENGINE																
FAR FIELD NOISE																
TEMP = 17 C																
BAR PRESS = .767 M HG																
REL HUMID = 67 %																
PAGE 4																
IDENTIFICATION:																
OMEGA 1.4																
TEST 75-002-041																
RUN 03																
08 MAY 75																
170 180																
ANGLE (DEGREES)																
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
1/3 OCTAVE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
25	-3	-4	-3	-3	-4	-4	-3	-2	2	0	4	2	2	1	2	1
31.5	-5	-4	-1	-4	-3	-4	-2	-1	0	0	3	3	1	1	1	-8
40	-2	-8	1	-2	-2	-2	-1	0	1	1	1	1	1	1	1	-1
50	0	-2	-1	-1	-1	-1	0	2	3	-1	1	1	1	1	-2	-8
63	-2	-4	-6	-5	-8	-3	1	4	2	2	4	3	-2	1	-6	-6
80	-4	-6	-7	-8	-10	-7	3	-1	3	3	4	3	3	5	-1	-1
100	4	3	2	2	-1	-1	-2	-2	-2	-2	0	0	3	5	-1	-1
125	-8	-1	-2	-2	-6	-10	-4	-4	2	2	4	2	2	1	-6	-9
160	3	3	1	1	-2	-4	-4	-4	2	1	1	2	1	1	-6	-9
200	5	6	4	3	3	-1	-2	-3	1	-1	1	0	1	-1	-7	-7
250	7	5	5	5	2	-1	-3	-2	0	-1	0	0	0	-2	-8	-2
315	6	6	5	4	1	0	-2	-3	0	-1	0	0	1	1	-9	-9
400	5	4	4	3	1	0	-2	-3	0	-1	0	0	1	1	-9	-9
500	4	4	2	3	0	-2	-1	-1	1	0	-1	1	2	2	-9	-9
630	2	3	2	2	1	-2	-1	-1	1	0	0	1	3	2	-7	-7
800	2	3	2	2	1	-2	-1	0	1	0	0	1	1	1	0	-7
1000	2	3	2	2	1	0	0	0	1	0	0	0	1	1	-8	-8
1250	3	3	3	2	1	1	0	0	2	-1	0	0	0	-2	-9	-9
1600	3	3	3	2	2	1	1	1	1	0	0	0	-1	-3	-11	-11
2000	3	3	3	3	2	2	1	1	2	-1	-1	-1	-1	-3	-13	-13
2500	4	4	4	4	3	2	1	1	1	-1	-2	-1	-2	-4	-14	-14
3150	4	4	4	4	3	3	1	1	1	-1	-1	-1	-1	-4	-14	-14
4000	4	4	4	4	3	2	1	1	2	-1	-1	-1	-1	-4	-15	-15
5000	4	5	4	4	4	2	1	1	0	-1	-1	-1	-2	-4	-15	-15
6300	5	5	5	4	3	2	1	1	1	-1	-3	-3	-1	-4	-16	-16
8000	6	6	6	4	4	3	2	2	1	-1	-3	-5	-6	-5	-19	-19
10000	1	1	1	0	2	4	3	3	1	-3	-2	-4	-5	-10	-20	-20
OCTAVE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
31.5	-3	-2	-8	-3	-3	-3	-1	-8	1	1	2	3	1	1	0	0
63	-2	-4	-6	-5	-8	-3	1	4	2	3	4	2	0	-6	-8	-8
125	1	-8	-1	-1	-5	-7	-4	-2	3	3	4	0	0	-1	-7	-7
250	6	6	5	4	2	-1	-2	-3	0	-1	6	0	0	-1	-8	-8
500	4	4	3	3	1	0	0	0	0	0	0	1	2	-2	-8	-8
1000	3	3	2	2	1	0	0	0	2	0	0	0	1	-1	-8	-8
2000	3	3	3	3	2	1	1	1	2	-1	-1	-1	-1	-3	-12	-12
4000	4	4	4	4	3	2	1	1	2	1	-1	-1	-2	-4	-15	-15
8000	4	5	4	4	3	3	2	2	1	-1	-3	-4	-5	-7	-18	-18
OVERALL	1	-8	-1	-1	-3	-3	0	3	2	2	2	1	-1	-3	-8	-8

TABLE: DIRECTIVITY INDEX (DB)															
3															
IDENTIFICATION:															
OMEGA 1.4															
TEST 75-002-041															
RUN 04															
METEOROLOGY:															
P-3A AIRCRAFT															
156-A-10 ENGINE															
TEMP = 17 C															
BAR PRESS = .767 W HG															
REL HUMID = 67 %															
PAGE 4															
FREQ															
(HZ)															
ANGLE (DEGREES)															
70 80 90 100 110 120 130 140 150 160 170 180															
1/3 OCTAVE															
25	-3	-3	0	-4	-1	-2	-2	-1	0	-0	2	4	3	3	2
31.5	-1	-1	-2	-1	0	0	0	-3	0	0	-1	3	3	3	3
40	-1	-2	-2	-1	-1	-1	-1	-1	-0	1	1	3	3	3	2
50	-1	-1	-1	-3	-3	-2	-2	1	0	3	3	2	0	0	-1
63	-8	-10	-11	-10	-10	-5	-5	3	2	5	5	0	-7	-7	-9
80	-8	-10	-11	-11	-9	-6	-5	3	2	5	5	0	-5	-9	-9
100	3	2	2	1	-1	-3	-2	-2	-2	-0	1	4	3	-0	-9
125	-3	-3	-4	-5	-2	-4	-7	-9	-1	4	6	2	1	-4	-9
160	4	4	2	2	1	-2	-3	-4	2	2	4	0	1	0	-5
200	6	6	5	3	2	-1	-3	-1	0	0	0	1	-1	0	-7
250	4	6	5	4	2	-1	-5	-3	-1	1	2	1	0	-7	-7
315	4	5	4	5	3	-0	-3	-3	-2	-1	-0	2	-0	-6	-6
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500	3	3	2	2	0	-8	-2	-2	-1	1	3	2	0	-5	-5
630	1	3	1	1	-0	-2	-2	-3	0	-0	1	3	1	-6	-6
800	2	2	2	1	1	-1	-1	-1	1	2	2	2	1	-8	-8
1000	1	2	2	1	1	-1	-1	-1	0	2	2	1	-1	-9	-9
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2500	3	4	3	3	3	1	1	0	0	1	0	1	-0	-11	-11
3150	3	4	3	3	3	1	1	0	-1	0	1	0	-0	-11	-11
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5000	3	4	4	4	3	1	1	1	0	1	0	0	-0	-12	-12
6300	4	4	4	4	4	2	2	1	-1	-1	-1	-2	-3	-15	-15
8000	5	6	5	5	5	2	2	0	-2	-2	-3	-4	-6	-15	-15
10000	2	3	2	2	2	1	1	2	1	0	-1	-4	-7	-16	-16
OCTAVE															
31.5	-1	-2	-2	-1	-0	-1	-1	-1	-0	1	1	3	3	2	2
63	-8	-9	-11	-11	-10	-5	-7	-5	3	5	5	0	-6	-9	-9
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250	5	6	5	4	2	-1	-4	-3	-1	0	1	2	-8	-7	-7
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4000	3	4	3	3	3	1	1	1	1	0	1	0	-2	-11	-11
8000	4	5	4	4	4	2	2	1	1	-1	-1	-1	-3	-12	-12
OVERALL	-1	-1	-2	-2	-3	-5	-4	-4	2	2	4	4	1	-3	-8



[illegible]

1) METEOROLOGY:
2) TEMP

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

) PAGE 13



FIGURES: OVERALL SOUND PRESSURE LEVEL (OASPL)
 4
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-041
 RUN 04
 NOISE SOURCE/SUBJECT:
 OPERATIONS:
 MILITARY POWER
 3760 ENGINE SHP
 OUTBOARD ENGINES
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 Z
 P-3A AIRCRAFT
 156-A-10 ENGINE
 FAR FIELD NOISE
 88 MAY 75
 PAGE 13

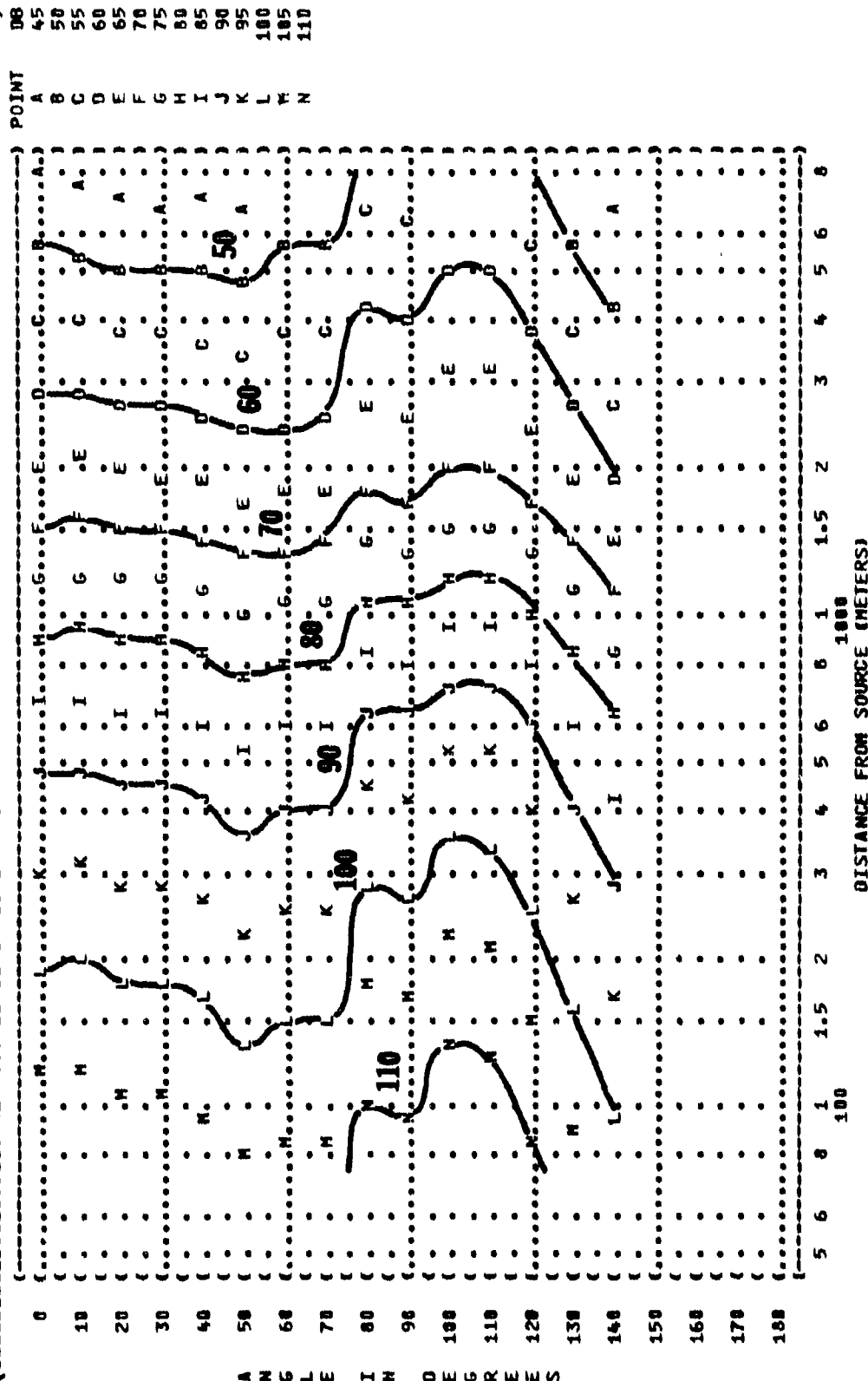


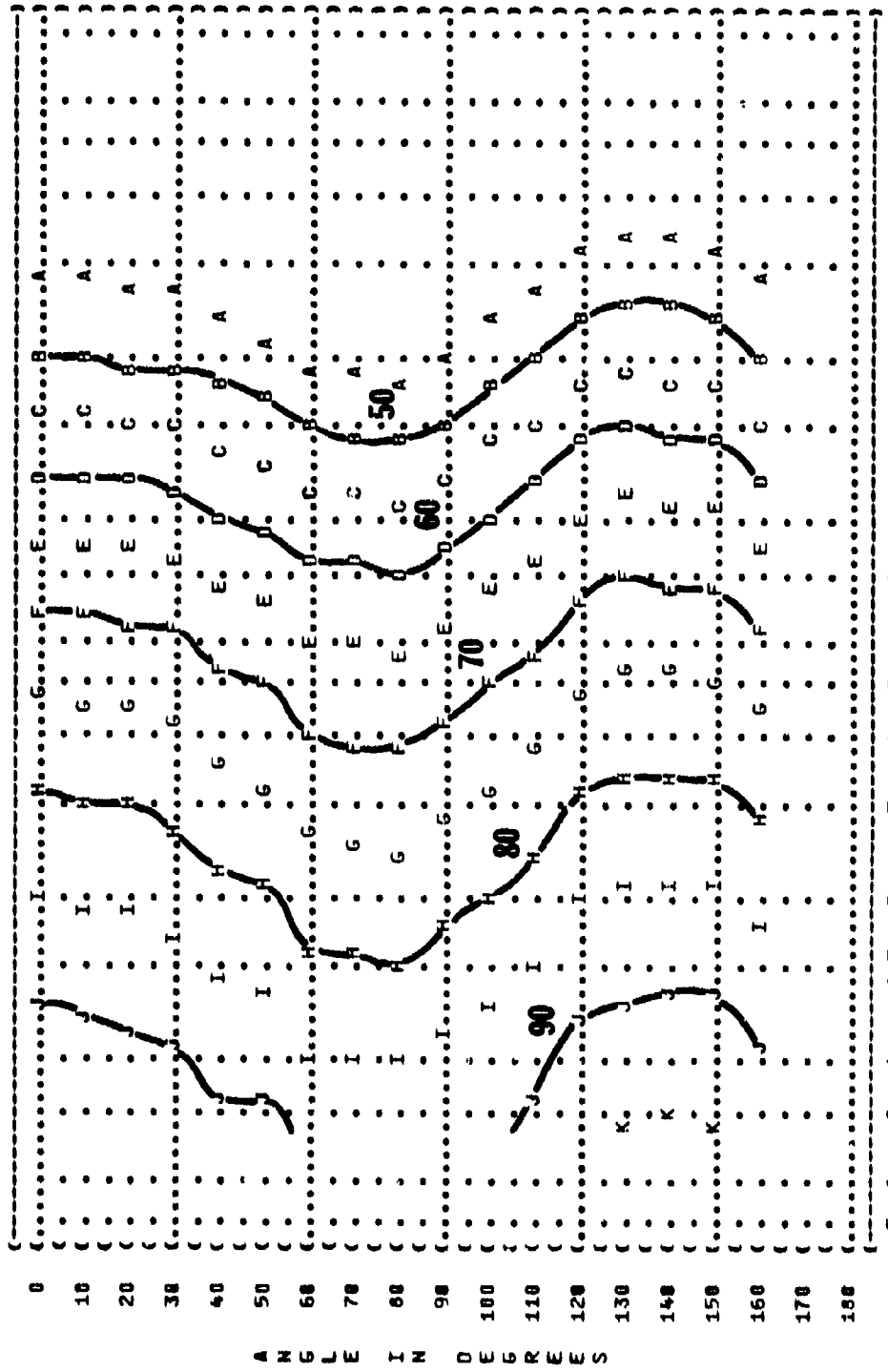
FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
 5 EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATIONS:
) OMEGA 1.4
) TEST 75-002-041
) RUN 81
) 08 MAY 75
) PAGE 14

NOISE SOURCE/SUBJECT:
 ((OPERATIONS:
 ((IDLE POWER
 ((178 ENGINE SHP
 ((INBOARD ENGINES
 ((FAR FIELD NOISE

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

POINT OBC
 A 45
 B 50
 C 55
 D 60
 E 65
 F 70
 G 75
 H 80
 I 85
 J 90
 K 95



DISTANCE FROM SOURCE (METERS)


```

) ) IDENTIFICATION: ) )
) ) ) )
) ) OMEGA 1.4 ) )
) ) TEST 75-002-041 ) )
) ) RUN 03 ) )
) ) ) )
) ) 08 MAY 75 ) )
) ) ) )
) ) PAGE 14 ) )
) ) ) )

```

) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 Z
)

1 RUN 03
1
1 08 MAY 7
1
1 PAGE 14

BAR PRESS = .760 H HG
REL HUMID = 70 Z

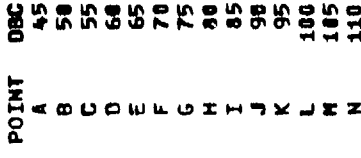


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

5

NOISE SOURCE/SUBJECT:

OPERATIONS:

P-3A AIRCRAFT
T56-A-10 ENGINE
FAR FIELD NOISE

MILITARY POWER
3760 ENGINE SHP
OUTBOARD ENGINES

METEOROLOGY:

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

IDENTIFICATION:

OMEGA 1.4
TEST 75-082-841
RUN 84
88 MAY 75
PAGE 14

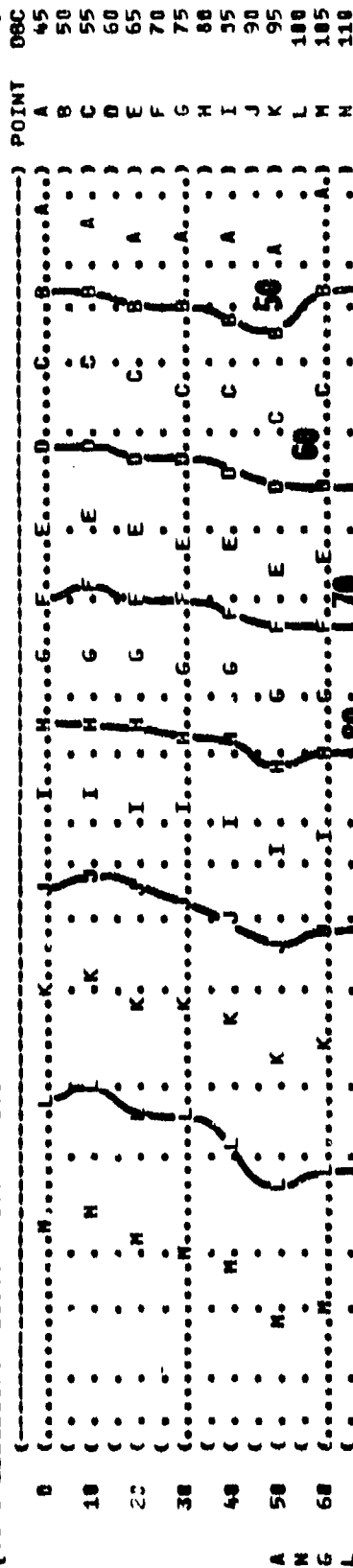


FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
EQUAL LEVEL CONTOURS (DBA)

6

IDENTIFICATION:
OMEGA 1.5
TEST 75-002-041
RUM 01
METEOROLGY:
TEMP = 15 C
BAR PRESS = .760 K HG
REL HUMID = 70 %
P-3A AIRCRAFT
T56-A-10 ENGINE
FAR FIELD NOISE
OPERATION:
IDLE POWER
170 ENGINE SHP
INBOARD ENGINES

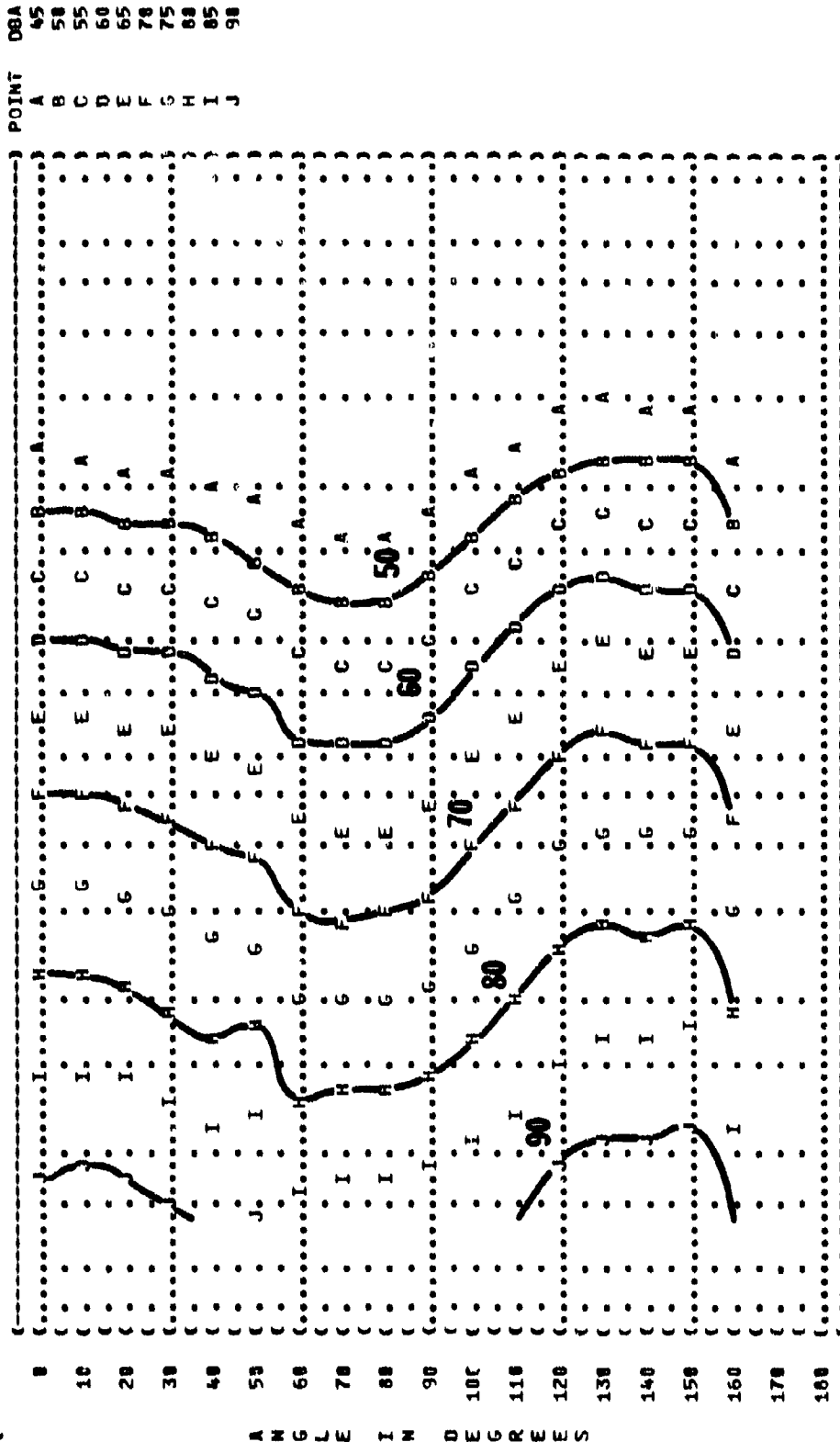
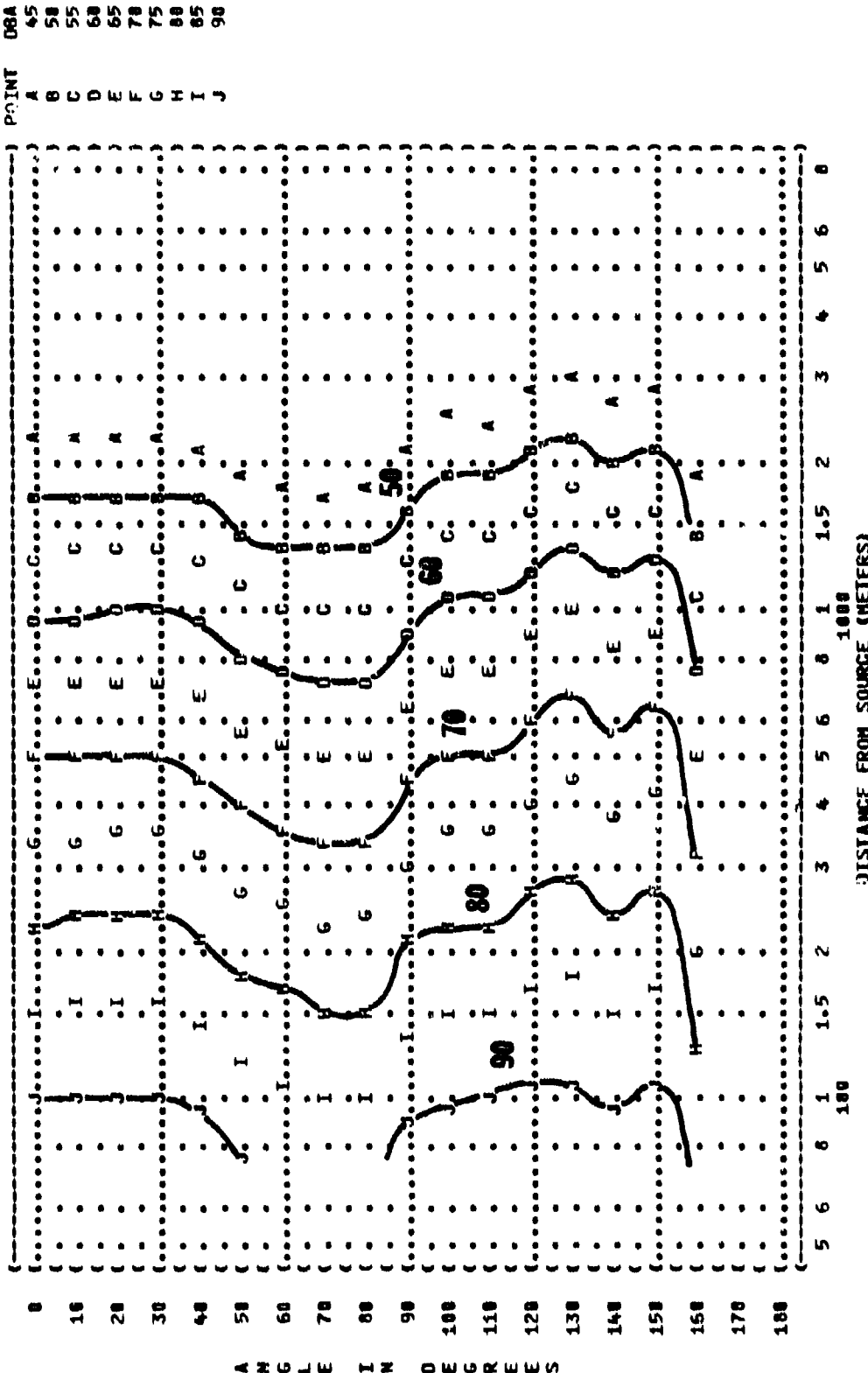


FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
 6
 IDENTIFICATION:
 OMEGA 1.4
 TEST 15-032-041
 RUN 02
 METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 H HG
 REL HUMID = 78 Z
 OPERATION:
 IDLE POWER SHP
 113 ENGINE SHP
 OUTBOARD ENGINES
 NOISE SOURCE/SUBJECT:
 P-3A AIRCRAFT
 T56-A-10 ENGINE
 FAR FIELD NOISE
 PAGE 15




```
(-----)
( ( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL {DASLA} ) IDENTIFICATION: )
( ( 6 EQUAL LEVEL CONTOURS {DBA} ) )
( ( ) )
( ( ) )
( ( ) )
( ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )
( ( ) ) ) TEMP = 15 C )
( ( P-3A AIRCRAFT ) MILITARY POWER ) BAR PRESS = .768 H HG )
( ( T56-A-10 ENGINE ) 3768 ENGINE SHP ) REL HUMID = 70 Z )
( ( FAR FIELD NOISE ) OUTBOARD ENGINES ) )
( ( ) ) ) PAGE 15 )
(-----)
```

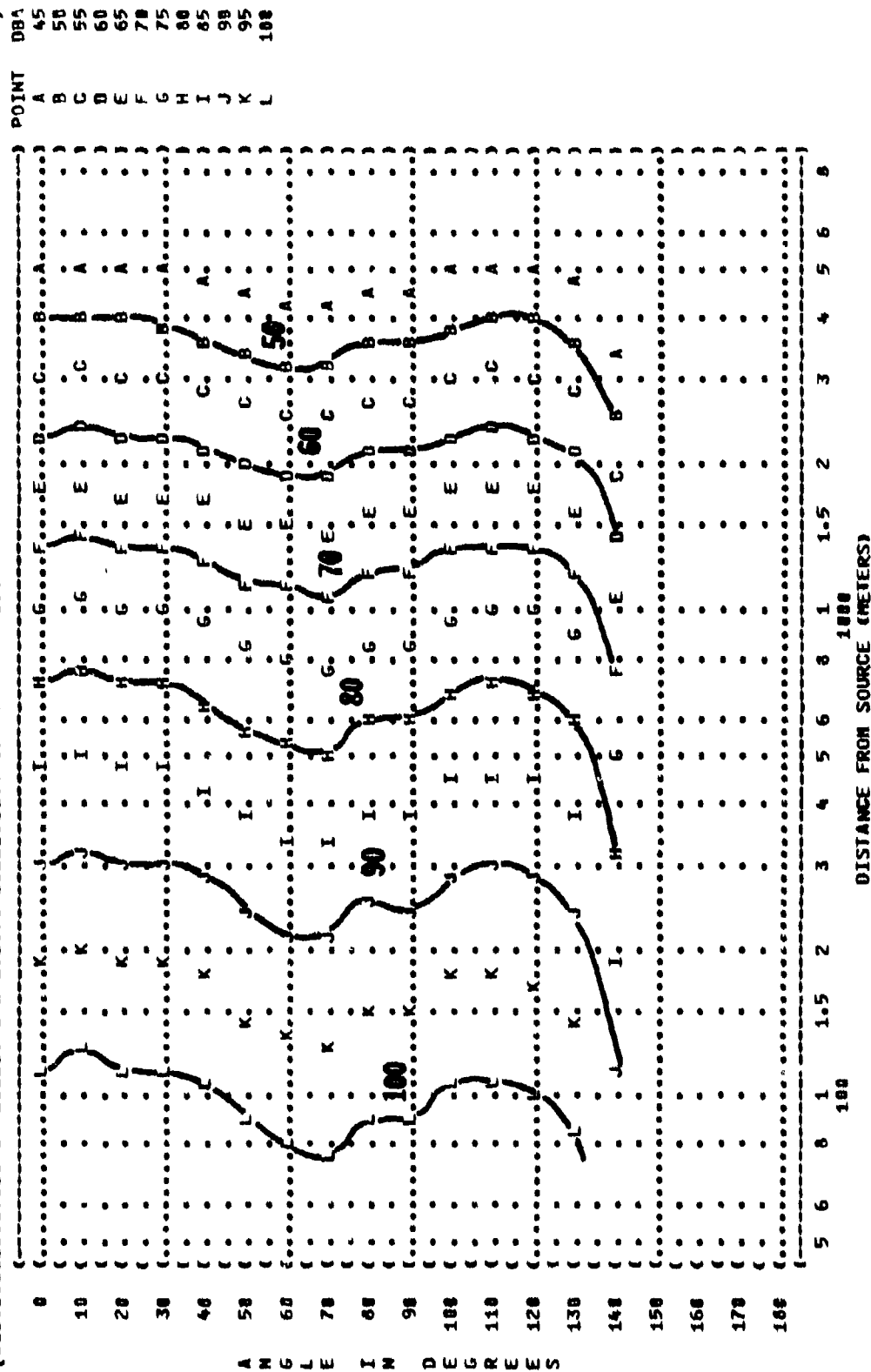
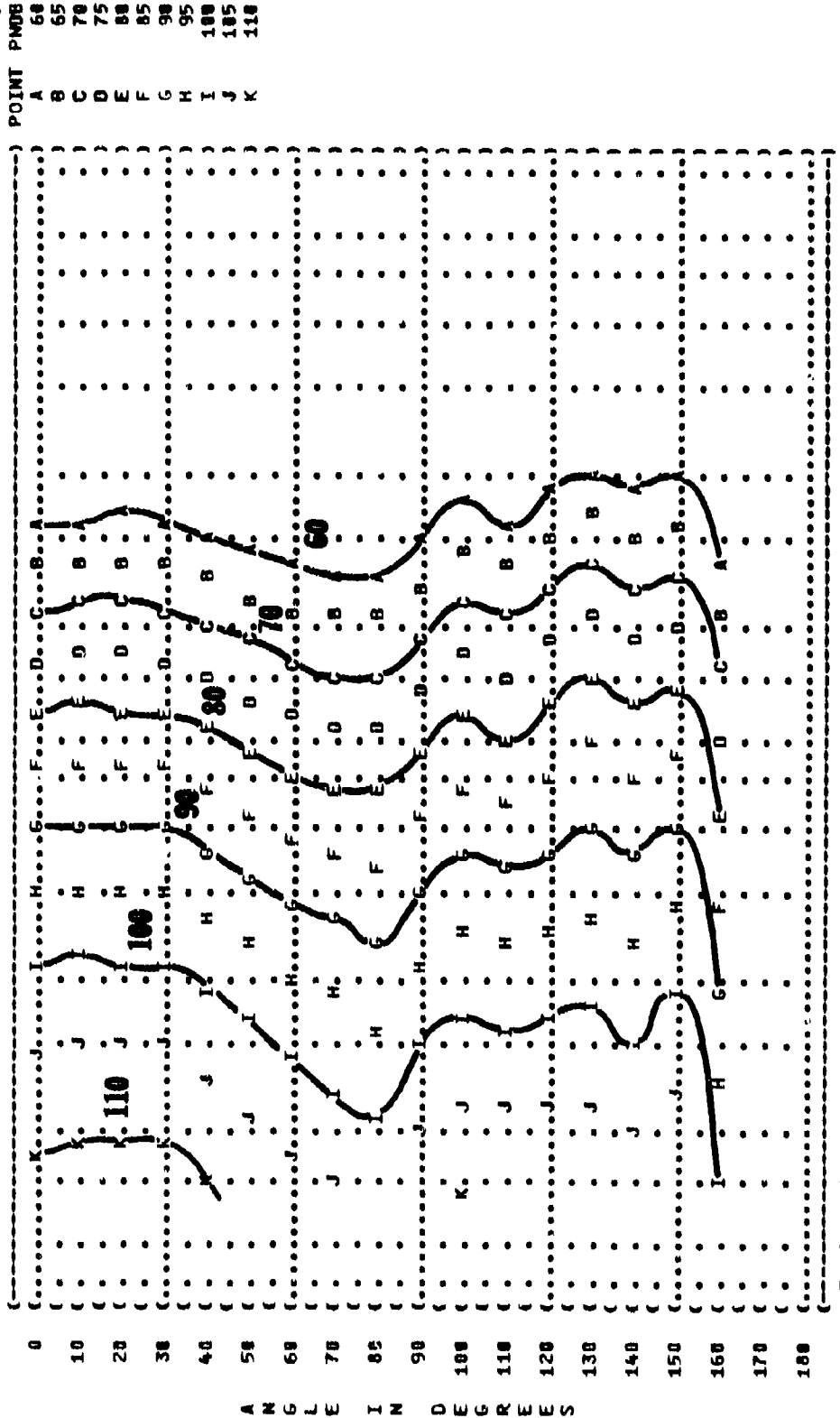


FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PMLT)
 7
 EQUAL LEVEL CONTOURS (PNOB)

NOISE SOURCE/SUBJECT: () IDENTIFICATION:)
 () OMEGA 1.4)
 () TEST 75-002-041)
 () RUN 02)

OPERATION:) METEOROLOGY:)
 () IDLE POWER) TEMP = 15 C)
 () 113 ENGINE SHP) BAR PRESS = .760 M HG)
 () OUTBOARD ENGINES) REL HUMID = 70 Z)
 () FAR FIELD NOISE) PAGE 16)



5 6 8 1 1.5 2 3 4 5 6 8
 100
 DISTANCE FROM SOURCE (METERS)

FIGURE 7
PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATIONS

OMEGA 1.4

TEST 75-002-041

RUN 3

15 C

GH 48 892.

702

PAGE 16

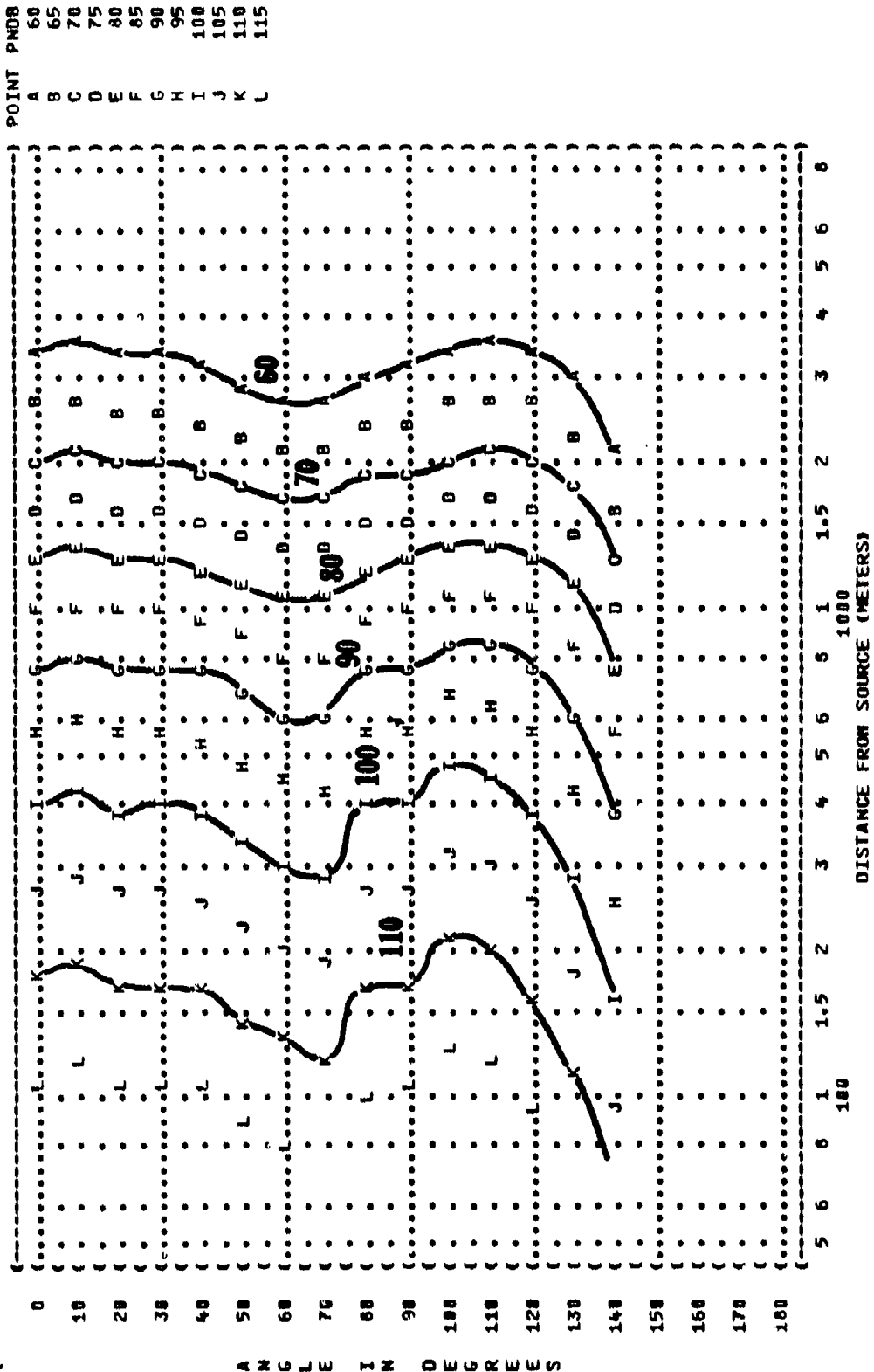
THE

POINT PMSB



FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
 7
 IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-041
 RUN 04
 08 MAY 75
 PAGE 16

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY:
 P-3A AIRCRAFT MILITARY POWER TEMP = 15 C
 T56-A-10 ENGINE 3750 ENGINE SHP BAR PRESS = .760 M HG
 FAR FIELD NOISE OUTBOARD ENGINES REL HUMID = 70 %



DISTANCE FROM SOURCE (METERS)

POINT PNDB
 A 68
 B 65
 C 78
 D 75
 E 80
 F 85
 G 98
 H 95
 I 108
 J 105
 K 110
 L 115

IDENTIFICATION:)
OMEGA 1.4)
TEST 75-002-041)

METEOROLOGICAL

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 Z)
) PAGE 17

POINT



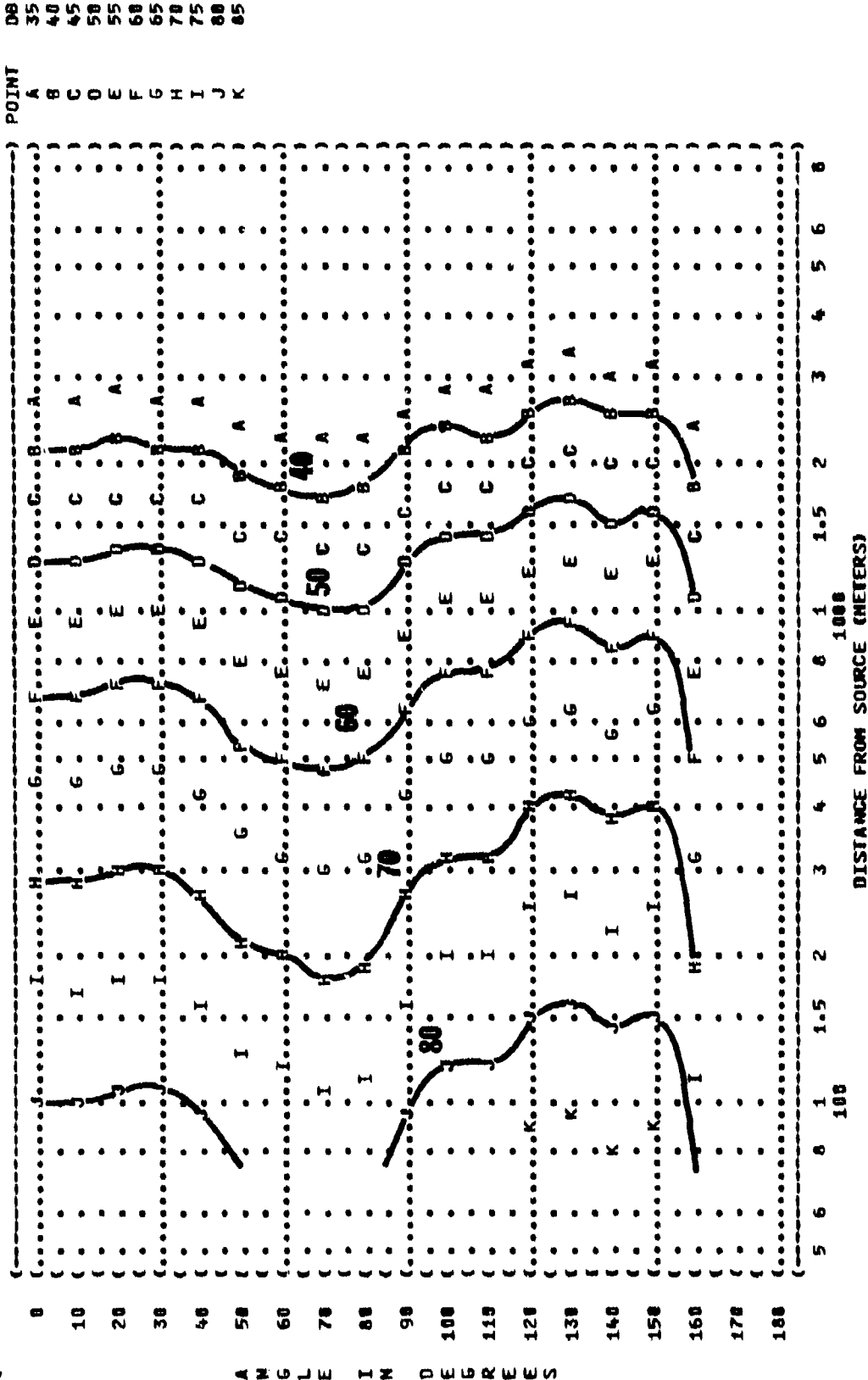
FIGURE 8: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT: P-3A AIRCRAFT, T56-A-10 ENGINE, FAR FIELD NOISE

OPERATION: IDLE POWER, 113 ENGINE SHP, OUTBOARD ENGINES

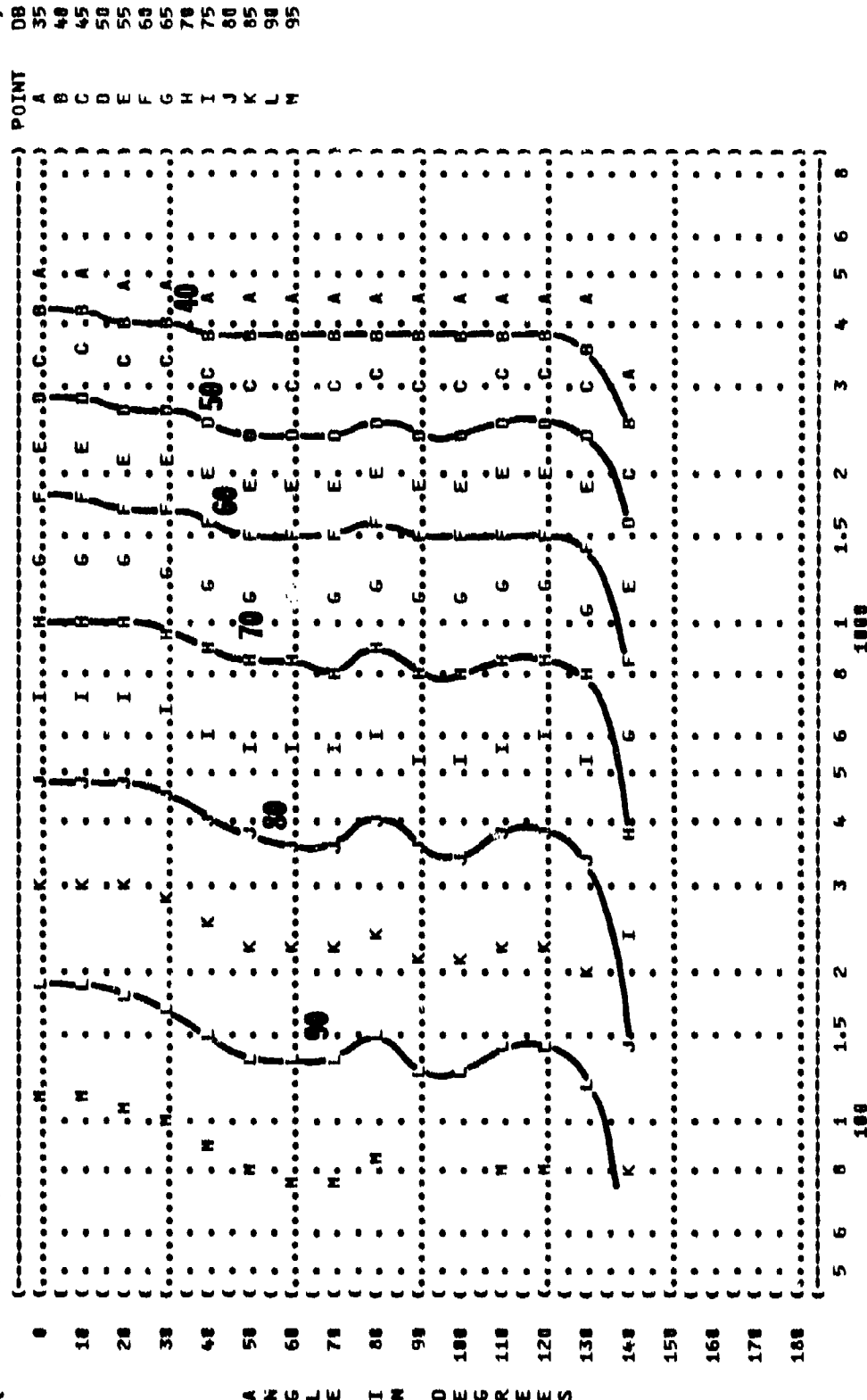
METEOROLOGY: TEMP = 15 C, BAR PRESS = .760 M HG, REL HUMID = 70 %

IDENTIFICATIONS: OMEGA 1.4, TEST 75-802-841, RUN 82, 08 MAY 75, PAGE 17



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

((FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 (8 EQUAL LEVEL CONTOURS (DB)
 ((NOISE SOURCE/SUBJECT: (OPERATIONS: (METEOROLOGY:) IDENTIFICATION:)
 ((P-3A AIRCRAFT (MILITARY POWER (TEMP = 15 C) OMEGA 1.4
 ((T56-A-10 ENGINE (3758 ENGINE SHP (BAR PRESS = .769 M HG) TEST 75-002-041
 ((FAR FIELD NOISE (INBOARD ENGINES (REL HUMID = 70 Z) RUN 03
 ((((08 MAY 75)
 ((((PAGE 17)



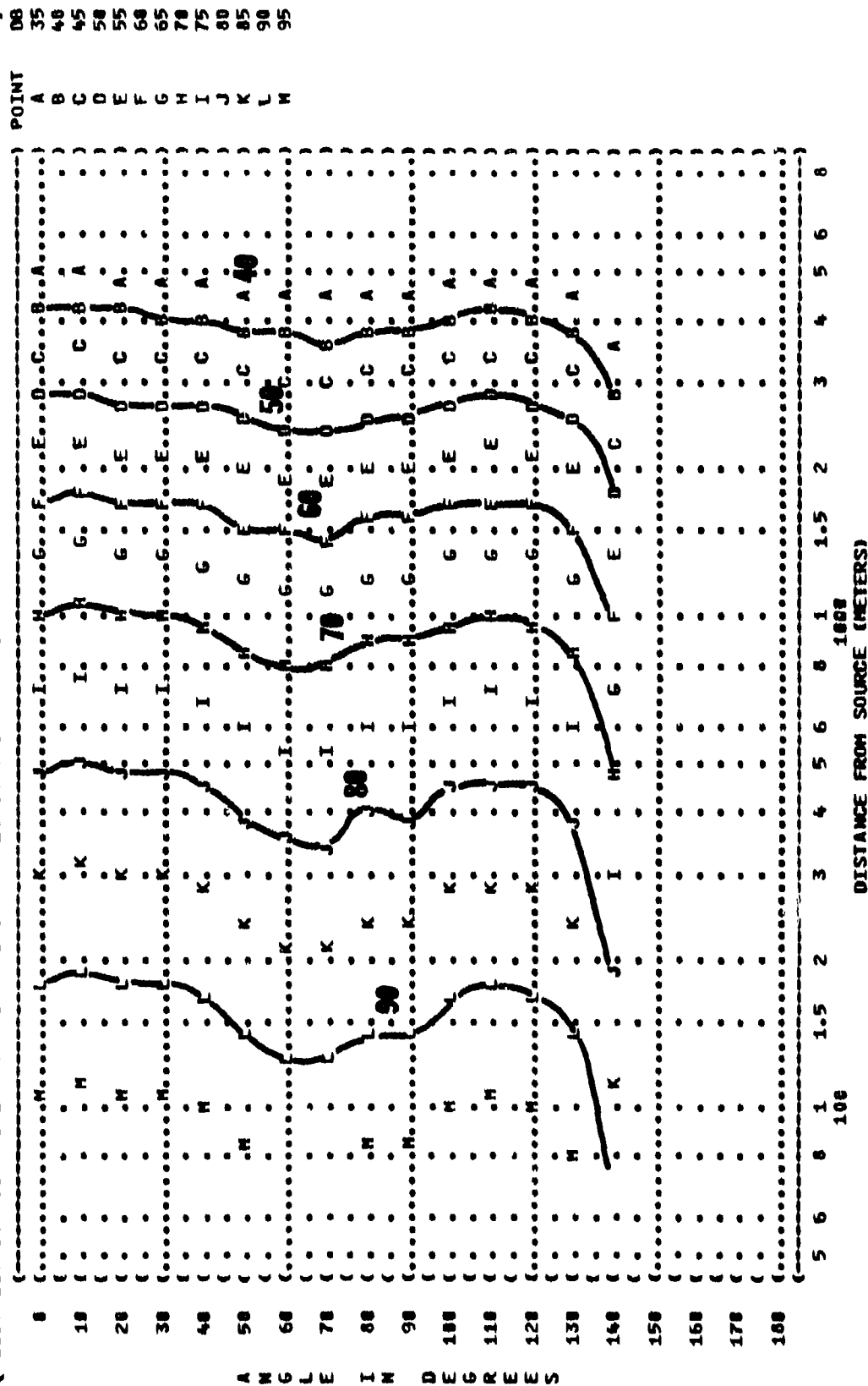
DISTANCE FROM SOURCE (METERS)

FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 8
 EQUAL LEVEL CONTOURS (DB)

IDENTIFICATIONS:
 OMEGA 1.4
 TEST 75-002-041
 RUN 04
 08 MAY 75
 PAGE 17

NOISE SOURCE/SUBJECT:
 OPERATION:
 MILITARY POWER
 3760 ENGINE SHIP
 OUTBOARD ENGINES

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



IDENTIFICATION:)
OMEGA 1.4)

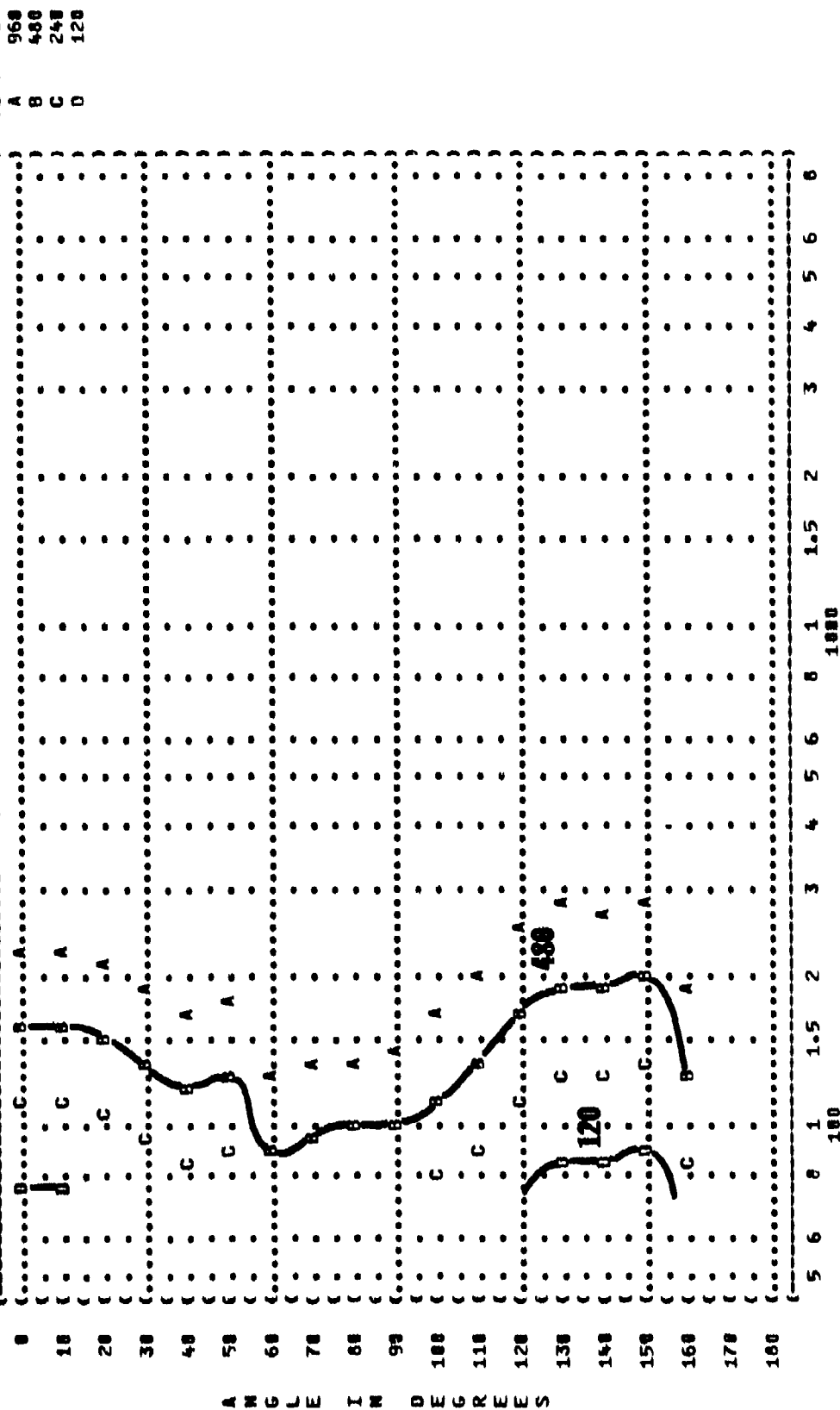
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

1 METEOROLOGICAL

TEMP = 15 C
BAR PRESS = .760 W HG
REL HUMID = 78 %

PAGE 1

MIN INT



DISTANCE FROM SOURCE (METERS)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

9

EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION: OMEGA 1.4
TEST 75-002-041
RUN 01
00 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY:
P-3A AIRCRAFT IDLE POWER TEMP = 15 C
756-A-10 ENGINE 170 ENGINE SHIP BAR PRESS = .760 M HG
FAR FIELD NOISE INBOARD ENGINES REL HUMID = 70 Z

0<
10<
20<
30<
40<
50<
60<
70<
80<
90<
100<
110<
120<
130<
140<
150<
160<
170
180

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
Y-51R EAR PLUGS
COMFII TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

5 6 0 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)

9 EQUAL TIME CONTOURS (MINUTES)

NO PROTECTION

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY: TEMPERATURE = 15 C

P-3A AIRCRAFT IDLE POWER

T56-A-10 ENGINE 113 ENGINE SHP BAR PRESS = .760 M HG

FAR FIELD NOISE OUTBOARD ENGINES REL HUMID = 70 Z

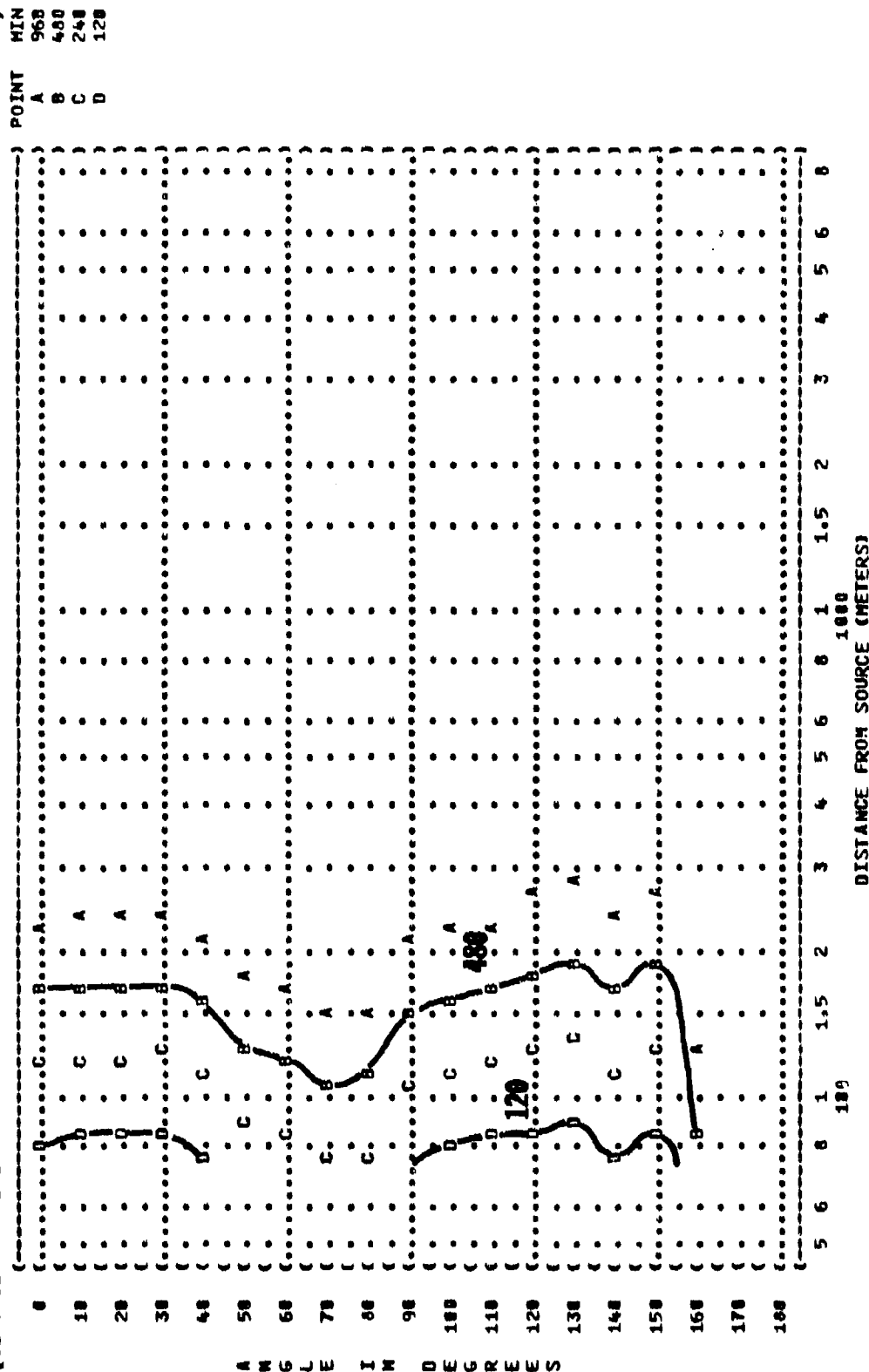
IDENTIFICATION: OMEGA 1.4

TEST 75-002-041

RUN 02

88 MAY 75

PAGE 7



(		) FIGURE:	MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	) IDENTIFICATION:
(	9	) EQUAL TIME CONTOURS (MINUTES)		)
(		)		) OMEGA 1.4
(		)		) TEST 75-002-041
(		) NOISE SOURCE/SUBJECT:	METEOROLOGY:	) RUN 02
(		) OPERATIONS:	TEMP = 15 C	)
(	P-3A AIRCRAFT	) IDLE POWER	BAR PRESS = .768 M HG	) 80 MAY 75
(	T56-A-10 ENGINE	) 113 ENGINE SHP	REL HUMID = 70 Z	)
(	FAR FIELD NOISE	) OUTBOARD ENGINES		) PAGE 0
(		)		)

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 $\angle$ AT LEFT)
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM GPL EAR MUFFS
AMERICAN OPTICAL 1700 EAR MUFFS
V-51R EAR PLUGS
COMFIT TRIPLE FLANGE EAR PLUGS
H-133 GROUND COMMUNICATION UNIT

3 4 5 6 8 1 1.5 2 3 4 5 6 8
1000
DISTANCE FROM SOURCE (METERS)

	MIN	POINT
0		
A		
B		

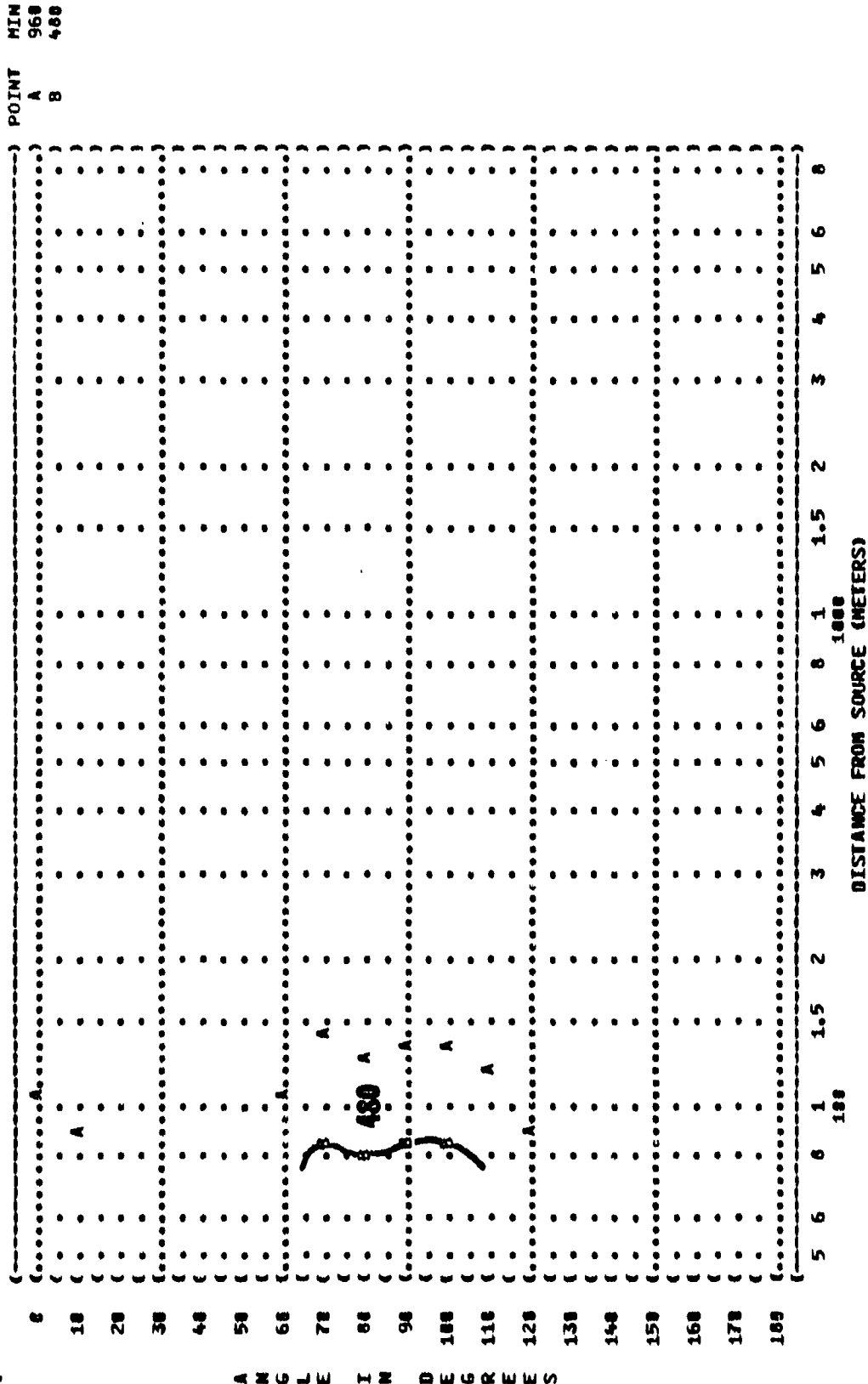
11 20

[illegible][illegible][illegible][illegible][illegible]

DISTANCE FROM SOURCE (METERS)															
100				1000											
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	4	5	6	8	1	1.5	2	3	4

1. The first part of the paper is devoted to the study of the properties of the function $f(x)$ defined by the equation

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (9) EQUAL TIME CONTOURS (MINUTES))
 (AMERICAN OPTICAL 1700 EAR MUFFS)
 (NOISE SOURCE/SUBJECT:) OPERATIONS:) METEOROLOGY:)
 (P-3A AIRCRAFT) MILITARY POWER) TEMP = 15 C)
 (T56-A-18 ENGINE) 3750 ENGINE SHP) BAR PRESS = .760 M HG)
 (FAR FIELD NOISE) INBOARD ENGINES) REL HUMID = 70 %)
 ()) RUN 03)
 ()) 80 MAY 75)
 ()) PAGE 9)
 ()) POINT MIN



DISTANCE FROM SOURCE (METERS)

FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)

IDENTIFICATION:

9

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY:

P-3A AIRCRAFT MILITARY POWER TEMP = 15 C

T56-A-10 ENGINE 3750 ENGINE SHP BAR PRESS = .760 H HG

FAR FIELD NOISE INBOARD ENGINES REL HUMID = 70 %

OMEGA 1.4

TEST 75-082-041

RUN 03

08 MAY 75

PAGE 12

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:

H-123 GROUND COMMUNICATION UNIT

0<

10<

20<

30<

40<

50<

60<

70<

80<

90<

100<

110<

120<

130<

140<

150

160

170

180

A

N

G

L

E

I

N

D

E

G

R

E

E

S

5 6 8 1 1.5 2 3 4 5 6 8

180 1000

DISTANCE FROM SOURCE (METERS)

KNOWLEDGE IN COUNTRIES



ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

DISTANCE FROM SOURCE (METERS)

(10) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:

	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)	(N)	(O)	(P)	(Q)	(R)	(S)	(T)	(U)	(V)	(W)	(X)	(Y)	(Z)	(AA)	(AB)	(AC)	(AD)	(AE)	(AF)	(AG)	(AH)	(AI)	(AJ)	(AK)	(AL)	(AM)	(AN)	(AO)	(AP)	(AQ)	(AR)	(AS)	(AT)	(AU)	(AV)	(AW)	(AX)	(AY)	(AZ)	(BA)	(BB)	(BC)	(BD)	(BE)	(BF)	(BG)	(BH)	(BI)	(BJ)	(BK)	(BL)	(BM)	(BN)	(BO)	(BP)	(BQ)	(BR)	(BS)	(BT)	(BU)	(BV)	(BW)	(BX)	(BY)	(BZ)	(CA)	(CB)	(CC)	(CD)	(CE)	(CF)	(CG)	(CH)	(CI)	(CJ)	(CK)	(CL)	(CM)	(CN)	(CO)	(CP)	(CQ)	(CR)	(CS)	(CT)	(CU)	(CV)	(CW)	(CX)	(CY)	(CZ)	(DA)	(DB)	(DC)	(DD)	(DE)	(DF)	(DG)	(DH)	(DI)	(DJ)	(DK)	(DL)	(DM)	(DN)	(DO)	(DP)	(DQ)	(DR)	(DS)	(DT)	(DU)	(DV)	(DW)	(DX)	(DY)	(DZ)	(EA)	(EB)	(EC)	(ED)	(EE)	(EF)	(EG)	(EH)	(EI)	(EJ)	(EK)	(EL)	(EM)	(EN)	(EO)	(EP)	(EQ)	(ER)	(ES)	(ET)	(EU)	(EV)	(EW)	(EX)	(EY)	(EZ)	(FA)	(FB)	(FC)	(FD)	(FE)	(FF)	(FG)	(FH)	(FI)	(FJ)	(FK)	(FL)	(FM)	(FN)	(FO)	(FP)	(FQ)	(FR)	(FS)	(FT)	(FU)	(FV)	(FW)	(FX)	(FY)	(FZ)	(GA)	(GB)	(GC)	(GD)	(GE)	(GF)	(GG)	(GH)	(GI)	(GJ)	(GK)	(GL)	(GM)	(GN)	(GO)	(GP)	(GQ)	(GR)	(GS)	(GT)	(GU)	(GV)	(GW)	(GX)	(GY)	(GZ)	(HA)	(HB)	(HC)	(HD)	(HE)	(HF)	(HG)	(HH)	(HI)	(HJ)	(HK)	(HL)	(HM)	(HN)	(HO)	(HP)	(HQ)	(HR)	(HS)	(HT)	(HU)	(HV)	(HW)	(HX)	(HY)	(HZ)	(IA)	(IB)	(IC)	(ID)	(IE)	(IF)	(IG)	(IH)	(II)	(IJ)	(IK)	(IL)	(IM)	(IN)	(IO)	(IP)	(IQ)	(IR)	(IS)	(IT)	(IU)	(IV)	(IW)	(IX)	(IY)	(IZ)	(JA)	(JB)	(JC)	(JD)	(JE)	(JF)	(JG)	(JH)	(JI)	(JJ)	(JK)	(JL)	(JM)	(JN)	(JO)	(JP)	(JQ)	(JR)	(JS)	(JT)	(JU)	(JV)	(JW)	(JX)	(JY)	(JZ)	(KA)	(KB)	(KC)	(KD)	(KE)	(KF)	(KG)	(KH)	(KI)	(KJ)	(KK)	(KL)	(KM)	(KN)	(KO)	(KP)	(KQ)	(KR)	(KS)	(KT)	(KU)	(KV)	(KW)	(KX)	(KY)	(KZ)	(LA)	(LB)	(LC)	(LD)	(LE)	(LF)	(LG)	(LH)	(LI)	(LJ)	(LK)	(LL)	(LM)	(LN)	(LO)	(LP)	(LQ)	(LR)	(LS)	(LT)	(LU)	(LV)	(LW)	(LX)	(LY)	(LZ)	(MA)	(MB)	(MC)	(MD)	(ME)	(MF)	(MG)	(MH)	(MI)	(MJ)	(MK)	(ML)	(MM)	(MN)	(MO)	(MP)	(MQ)	(MR)	(MS)	(MT)	(MU)	(MV)	(MW)	(MX)	(MY)	(MZ)	(NA)	(NB)	(NC)	(ND)	(NE)	(NF)	(NG)	(NH)	(NI)	(NJ)	(NK)	(NL)	(NM)	(NN)	(NO)	(NP)	(NQ)	(NR)	(NS)	(NT)	(NU)	(NV)	(NW)	(NX)	(NY)	(NZ)	(OA)	(OB)	(OC)	(OD)	(OE)	(OF)	(OG)	(OH)	(OI)	(OJ)	(OK)	(OL)	(OM)	(ON)	(OO)	(OP)	(OQ)	(OR)	(OS)	(OT)	(OU)	(OV)	(OW)	(OX)	(OY)	(OZ)	(PA)	(PB)	(PC)	(PD)	(PE)	(PF)	(PG)	(PH)	(PI)	(PJ)	(PK)	(PL)	(PM)	(PN)	(PO)	(PP)	(PQ)	(PR)	(PS)	(PT)	(PU)	(PV)	(PW)	(PX)	(PY)	(PZ)	(QA)	(QB)	(QC)	(QD)	(QE)	(QF)	(QG)	(QH)	(QI)	(QJ)	(QK)	(QL)	(QM)	(QN)	(QO)	(QP)	(QQ)	(QR)	(QS)	(QT)	(QU)	(QV)	(QW)	(QX)	(QY)	(QZ)	(RA)	(RB)	(RC)	(RD)	(RE)	(RF)	(RG)	(RH)	(RI)	(RJ)	(RK)	(RL)	(RM)	(RN)	(RO)	(RP)	(RQ)	(RR)	(RS)	(RT)	(RU)	(RV)	(RW)	(RX)	(RY)	(RZ)	(SA)	(SB)	(SC)	(SD)	(SE)	(SF)	(SG)	(SH)	(SI)	(SJ)	(SK)	(SL)	(SM)	(SN)	(SO)	(SP)	(SQ)	(SR)	(SS)	(ST)	(SU)	(SV)	(SW)	(SX)	(SY)	(SZ)	(TA)	(TB)	(TC)	(TD)	(TE)	(TF)	(TG)	(TH)	(TI)	(TJ)	(TK)	(TL)	(TM)	(TN)	(TO)	(TP)	(TQ)	(TR)	(TS)	(TT)	(TU)	(TV)	(TW)	(TX)	(TY)	(TZ)	(UA)	(UB)	(UC)	(UD)	(UE)	(UF)	(UG)	(UH)	(UI)	(UJ)	(UK)	(UL)	(UM)	(UN)	(UO)	(UP)	(UQ)	(UR)	(US)	(UT)	(UU)	(UV)	(UW)	(UX)	(UY)	(UZ)	(VA)	(VB)	(VC)	(VD)	(VE)	(VF)	(VG)	(VH)	(VI)	(VJ)	(VK)	(VL)	(VM)	(VN)	(VO)	(VP)	(VQ)	(VR)	(VS)	(VT)	(VU)	(VV)	(VW)	(VX)	(VY)	(VZ)	(WA)	(WB)	(WC)	(WD)	(WE)	(WF)	(WG)	(WH)	(WI)	(WJ)	(WK)	(WL)	(WM)	(WN)	(WO)	(WP)	(WQ)	(WR)	(WS)	(WT)	(WU)	(WV)	(WW)	(WX)	(WY)	(WZ)	(XA)	(XB)	(XC)	(XD)	(XE)	(XF)	(XG)	(XH)	(XI)	(XJ)	(XK)	(XL)	(XM)	(XN)	(XO)	(XP)	(XQ)	(XR)	(XS)	(XT)	(XU)	(XV)	(XW)	(XX)	(XY)	(XZ)	(YA)	(YB)	(YC)	(YD)	(YE)	(YF)	(YG)	(YH)	(YI)	(YJ)	(YK)	(YL)	(YM)	(YN)	(YO)	(YP)
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(	P-3A	AIRCRAFT	(	170	ENGINE SHIP
(	T56-A-10	ENGINE	(		INBOARD ENGINES

((FAR FIELD NOISE

1. OPERATION:

(IDLE POWER

170 ENGINE SHIP
(INBOARD ENGINES)

.....

() METEOROLOGICAL

TEMP

BAK PRESS = .766 H HB
REL HUMID = 70 Z

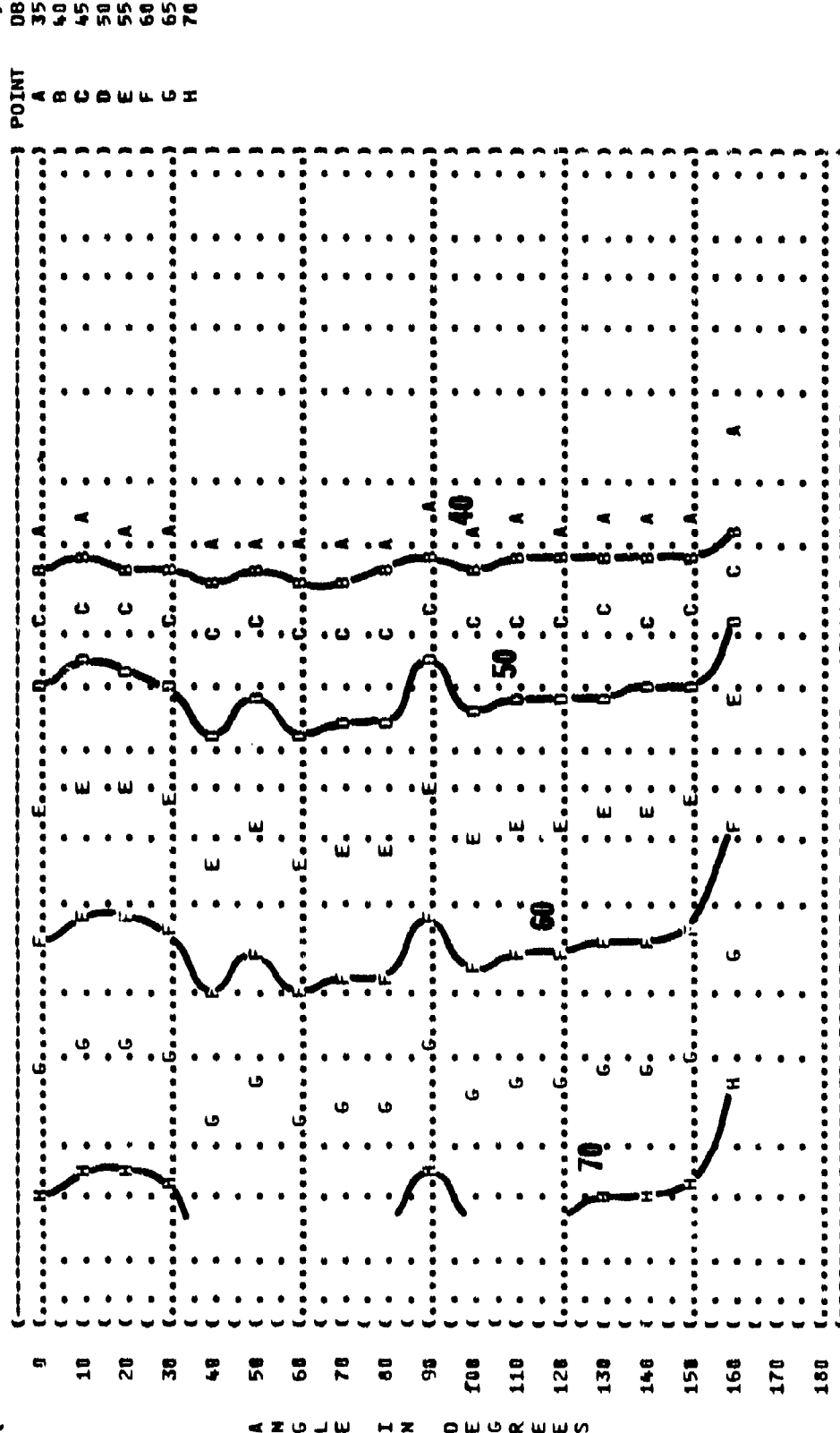
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IDENTIFICATIONS:

OMEGA 1.4

TEST 75-002-041

UN KUN



DISTANCE FROM SOURCE (METERS)

FIGURE: SOUND PRESSURE LEVEL {SPL}
EQUAL LEVEL CONTOURS (DB)
10 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:)
(IDLE POWER) TEMP = 15 C))
(178 ENGINE SHP) BAR PRESS = .760 H HG))
(INBOARD ENGINES) REL HUMID = 70 Z))
()))
P-3A AIRCRAFT))
T56-A-10 ENGINE))
FAR FIELD NOISE))
PAGE 19))

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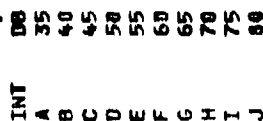
( OPERATION:
( IDLE POWER
( 170 ENGINE SHP
( INBOARD ENGINES
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 Z
) RUN 01
) 08 MAY 75
) PAGE 19

```

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

(170 ENGINE SHP
(INBOARD ENGINES

08 MAY 75
PAGE 19



RESUME IN DEGREE

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 ((IDLE POWER
 (P-3A AIRCRAFT (170 ENGINE SHP
 (Y56-A-10 ENGINE (INBOARD ENGINES
 (FAR FIELD NOISE ((

) IDENTIFICATION:
)
) OMEGA 1.4
) TEST 75-002-041
) RUN 01
)
)
) 08 MAY 75
)
) PAGE 21
)

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

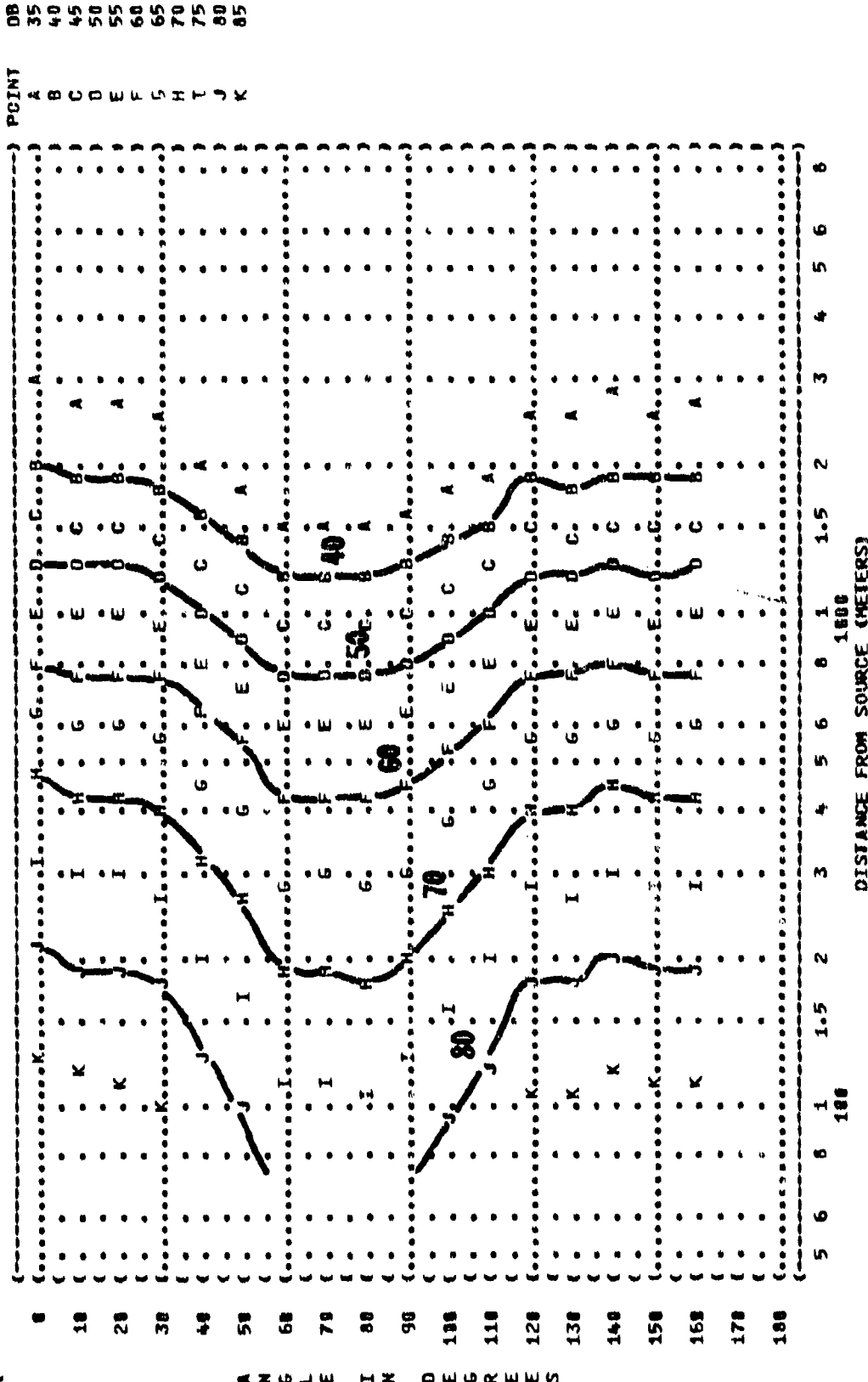
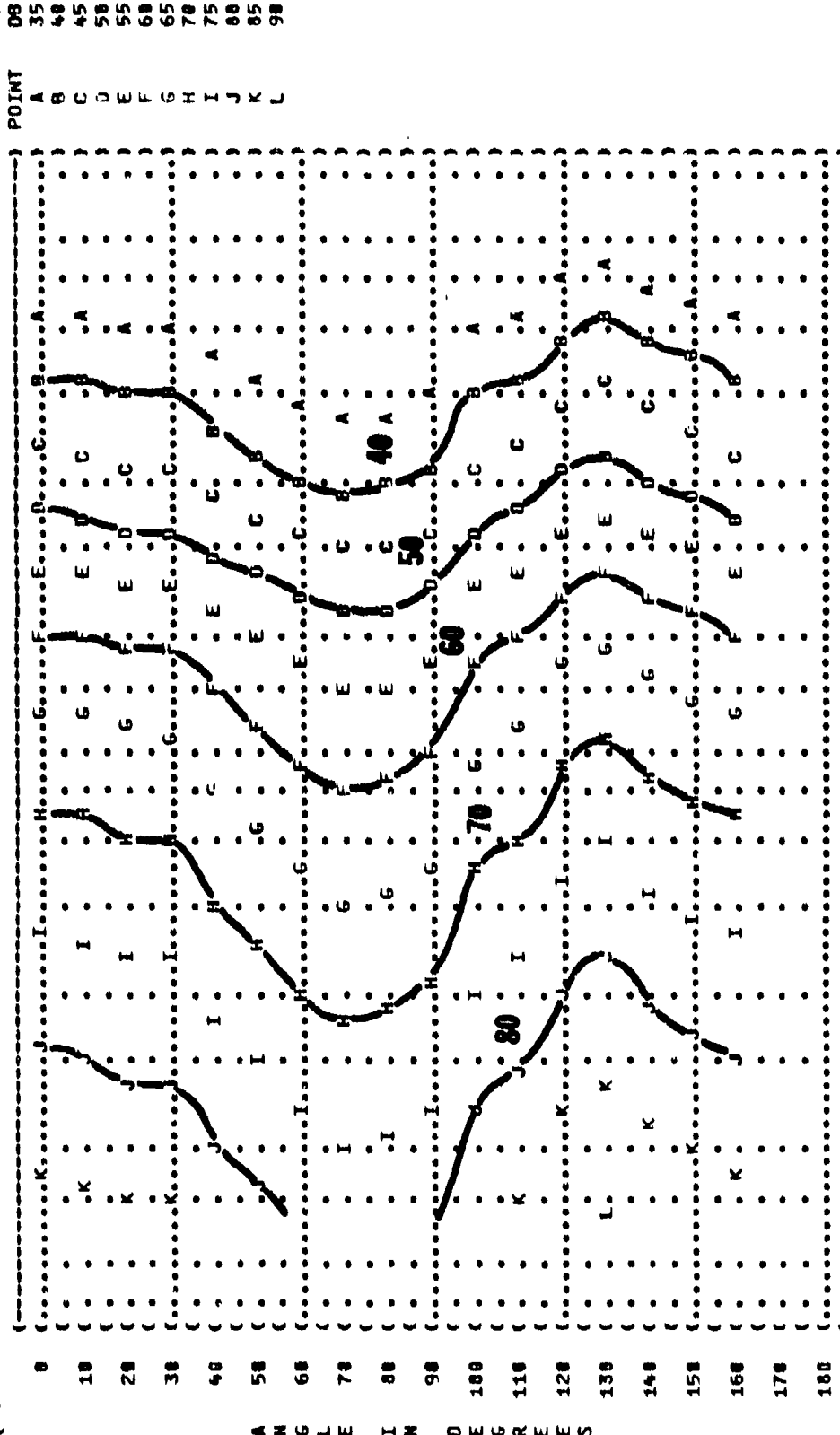


FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 500 HZ OCTAVE BAND

IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-D-1
 RUN 81
 88 MAY 75
 PAGE 22

MOISE SOURCE/SUBJECT:
 () OPERATIONS:
 () IDLE POWER
 () 170 ENGINE SHP
 () INBOARD ENGINES
 () P-3A AIRCRAFT
 () T56-A-10 ENGINE
 () FAR FIELD NOISE

METEOROLOGIST:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 Z



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

FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: OPERATIONS: METEOROLOGY:
 P-3A AIRCRAFT IDLE POWER TEMP = 15 C
 156-A-10 ENGINE 170 ENGINE SHP BAR PRESS = .768 H MG
 FAR FIELD NOISE INBOARD ENGINES REL HUMID = 70 Z

IDENTIFICATION:
 OMEGA 1.4
 TEST 75-802-041
 RUN 02
 08 MAY 75
 PAGE 23

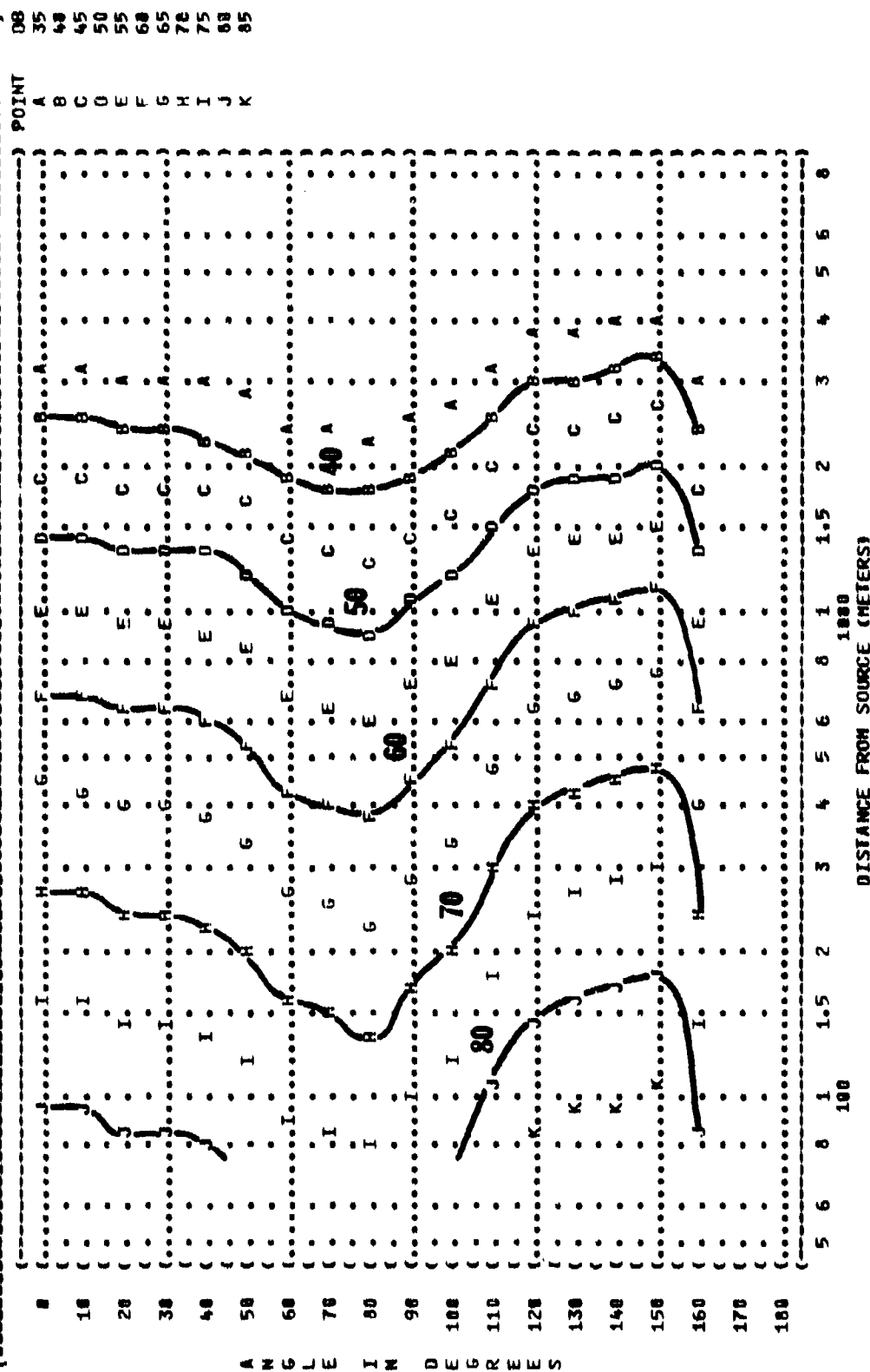
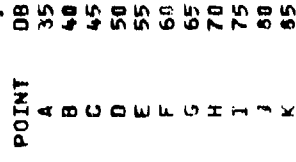
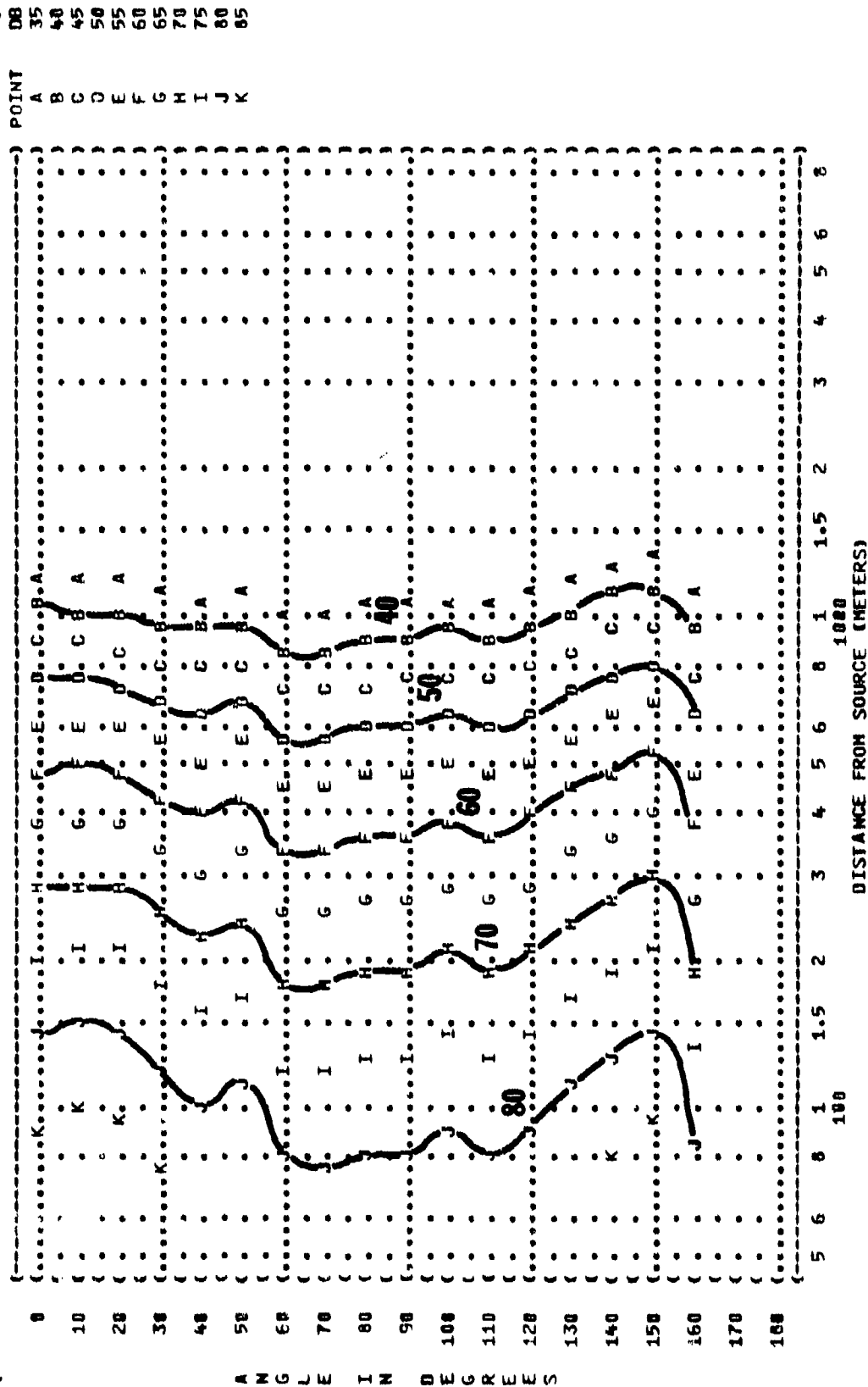


FIGURE	SOUND PRESSURE LEVEL {SPL}	IDENTIFICATION
10	EQUAL LEVEL COUNTURS (DB)	
	2000 HZ OCTAVE BAND	
		OMEGA 1.4
		TEST 75-002-041
		RUN 01
		66 MAY 75
		PAGE 24

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .768 H HG
REL HUMID = 70 %
RUN #1
E6 MAY 75
PAGE 24

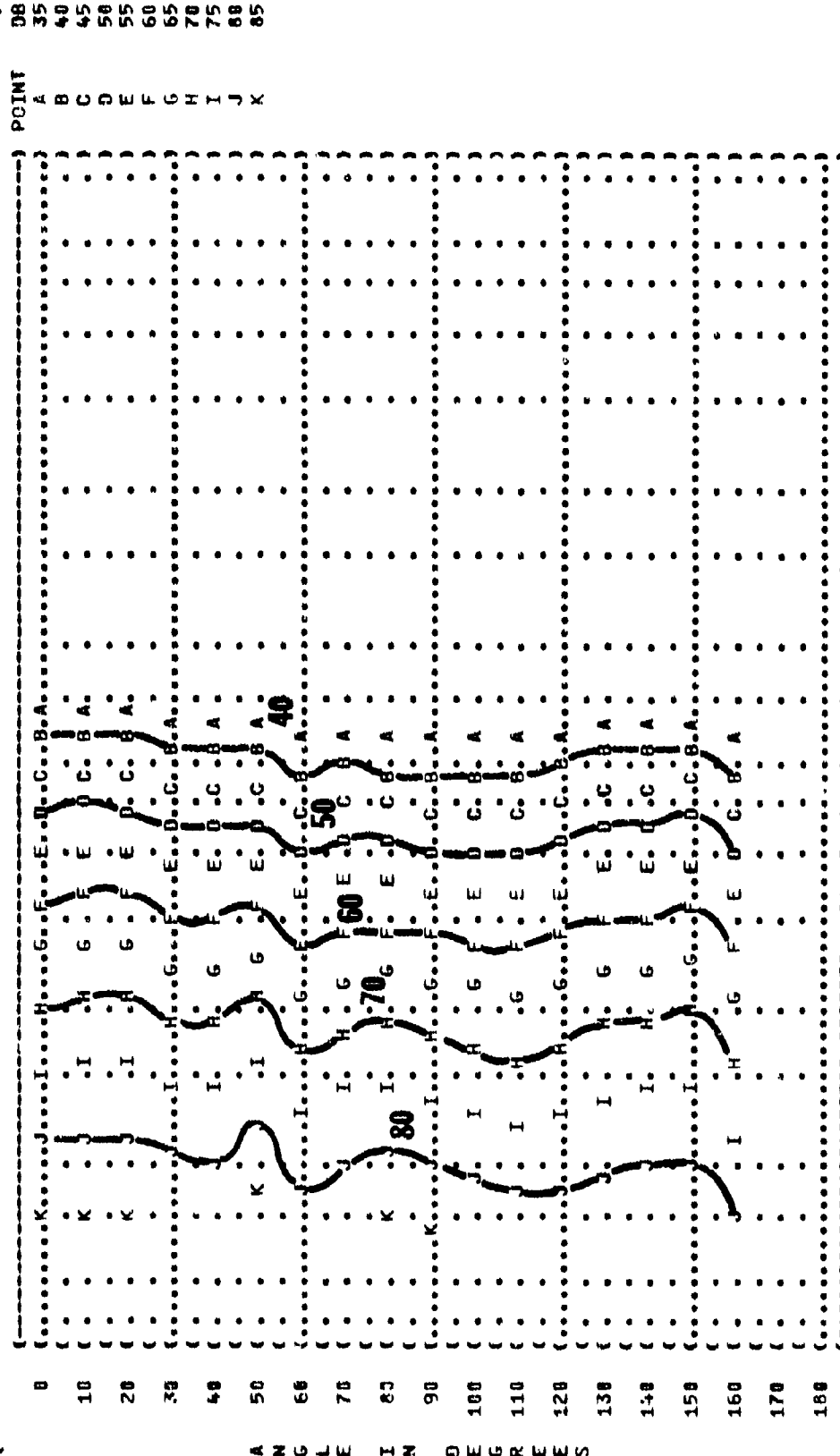


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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
(    10 EQUAL LEVEL CONTOURS (DB) ) )
(    400 HZ OCTAVE BAND ) OMEGA 1.4 )
(-----) TEST 75-082-041 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 81 )
( OPERATION: ) TEMP = 15 C )
( IDLE POWER ) BAR PRESS = .760 M HG )
( 170 ENGINE SHP ) REL HUMID = 70 % )
( INBOARD ENGINES ) ) PAGE 25 )
( FAR FIELD NOISE ) )
```



66

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (P-3A AIRCRAFT (IDLE POWER
 (T56-A-10 ENGINE (170 ENGINE SHP
 (FAR FIELD NOISE (INBOARD ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-041
 (RUN 01
 (08 MAY 75
 (PAGE 26
 (POINT



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

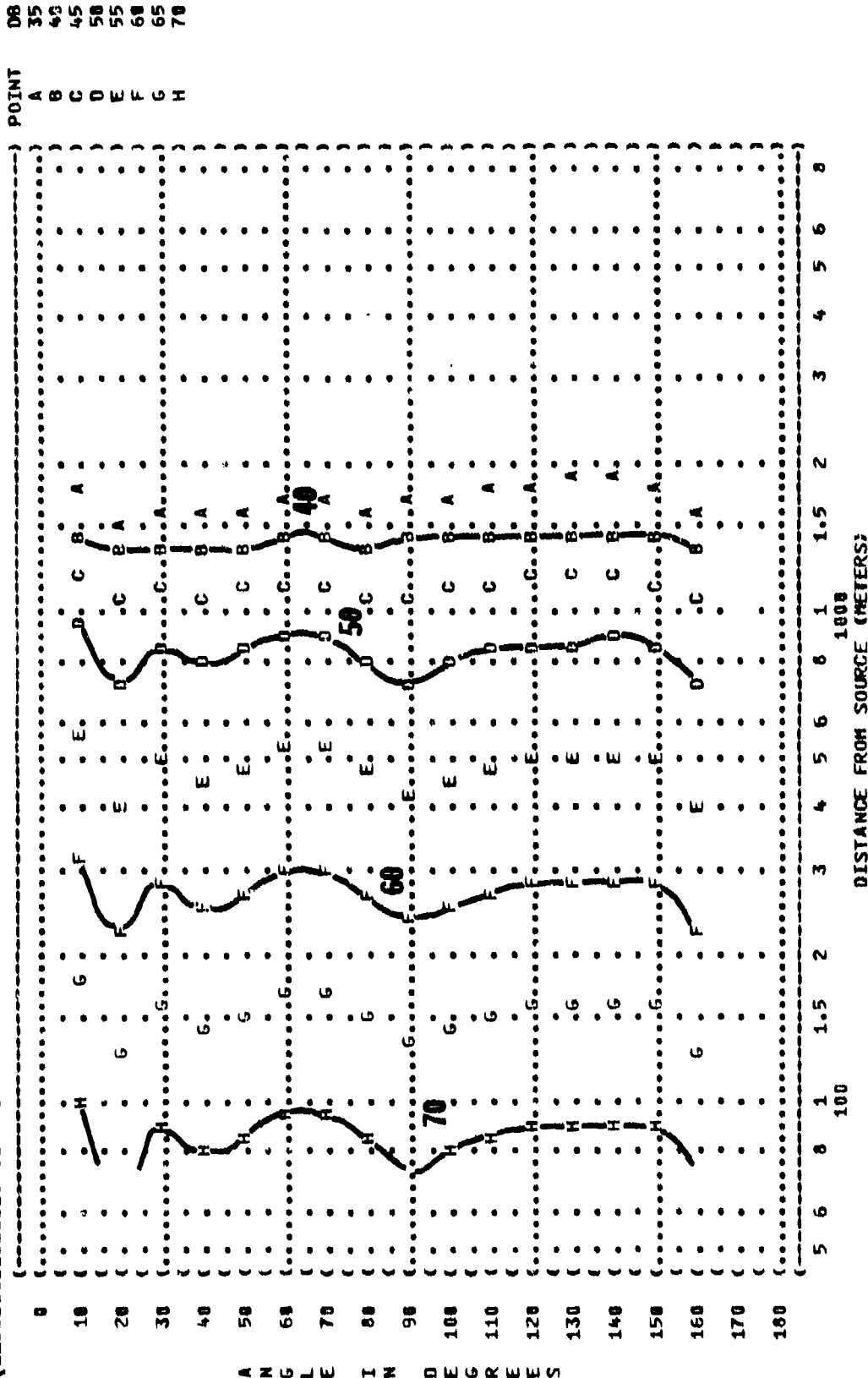
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FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 63 HZ OCTAVE BAND

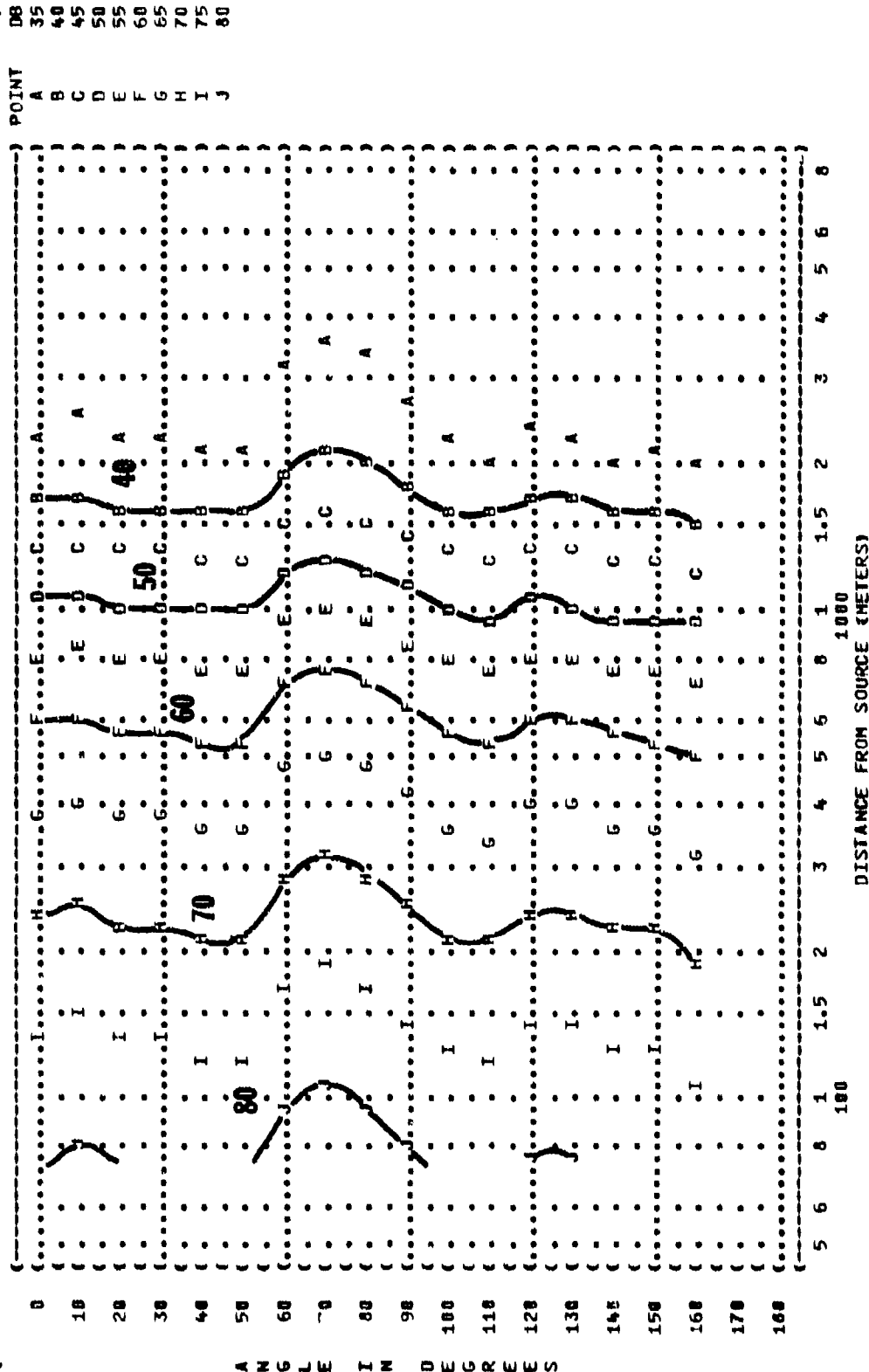
IDENTIFICATION:
 OMEGA 1.4
 TEST 75-002-041

NOISE SOURCE/SUBJECT:

OPERATION:
 IDLE POWER
 113 ENGINE SHP
 OUTBOARD ENGINES

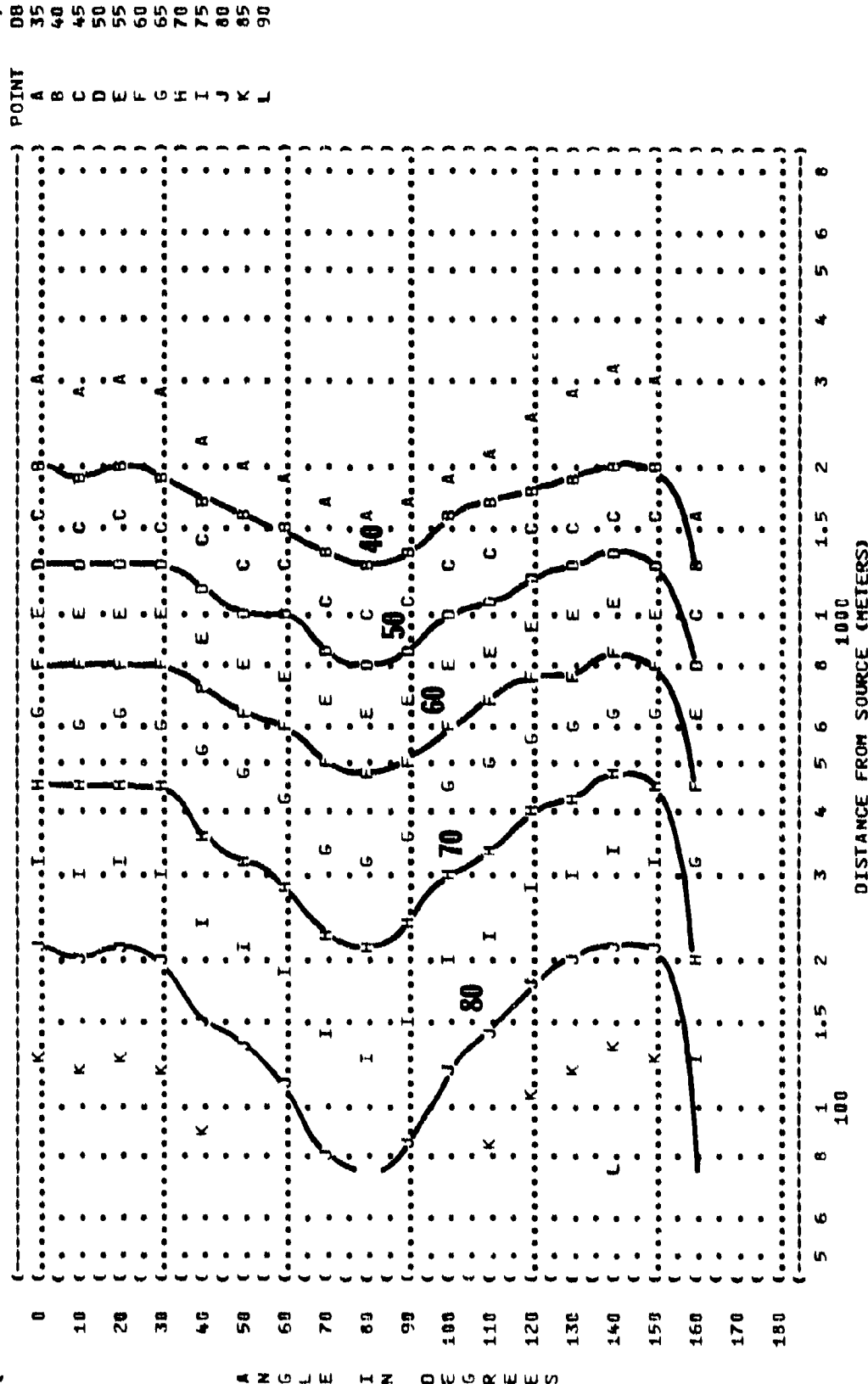
METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

RUN 02
 08 MAY 75
 PAGE 19



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

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT:
 (OPERATION:
 ((IDLE POWER
 ((113 ENGINE SHP
 (P-3A AIRCRAFT
 (T56-A-10 ENGINE
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 Z
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-002-041
 (RUN 02
 (03 MAY 75
 (PAGE 21



(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (10 EQUAL LEVEL CONTOURS (DB))
 (500 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (P-34 AIRCRAFT)
 (T56-A-10 ENGINE)
 (FAR FIELD NOISE)
 (OPERATIONS)
 (IDLE POWER)
 (113 ENGINE SHP)
 (OUTBOARD ENGINES)
 (METEOROLOGY)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST 75-002-041)
 (RUN 02)
 (08 MAY 75)
 (PAGE 22)

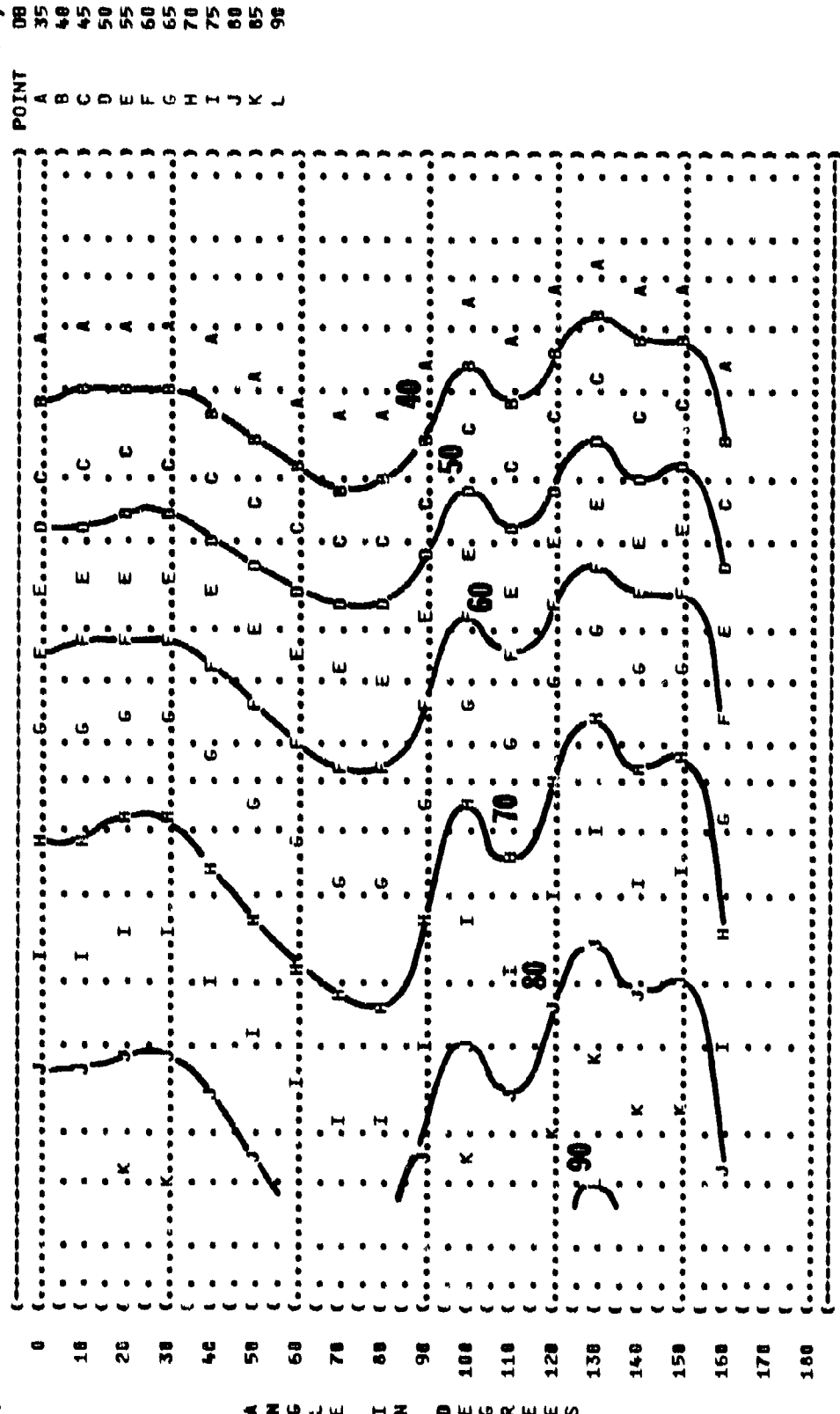


FIGURE: SOUND PRESSURE LEVEL {SPL}
 10 EQUAL LEVEL CONTOURS (DB)
 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: () IDENTIFICATION: ()
 () () OMEGA 1.4
 () () TEST 75-002-041
 () () RUN 82

OPERATIONS: () METEOROLOGY: ()
 () () TEMP = 15 C
 () () BAR PRESS = .750 H HG
 () () REL HUMID = 70 Z
 () ()

P-3A AIRCRAFT
 T56-A-10 ENGINE
 FAR FIELD NOISE

() PAGE 23

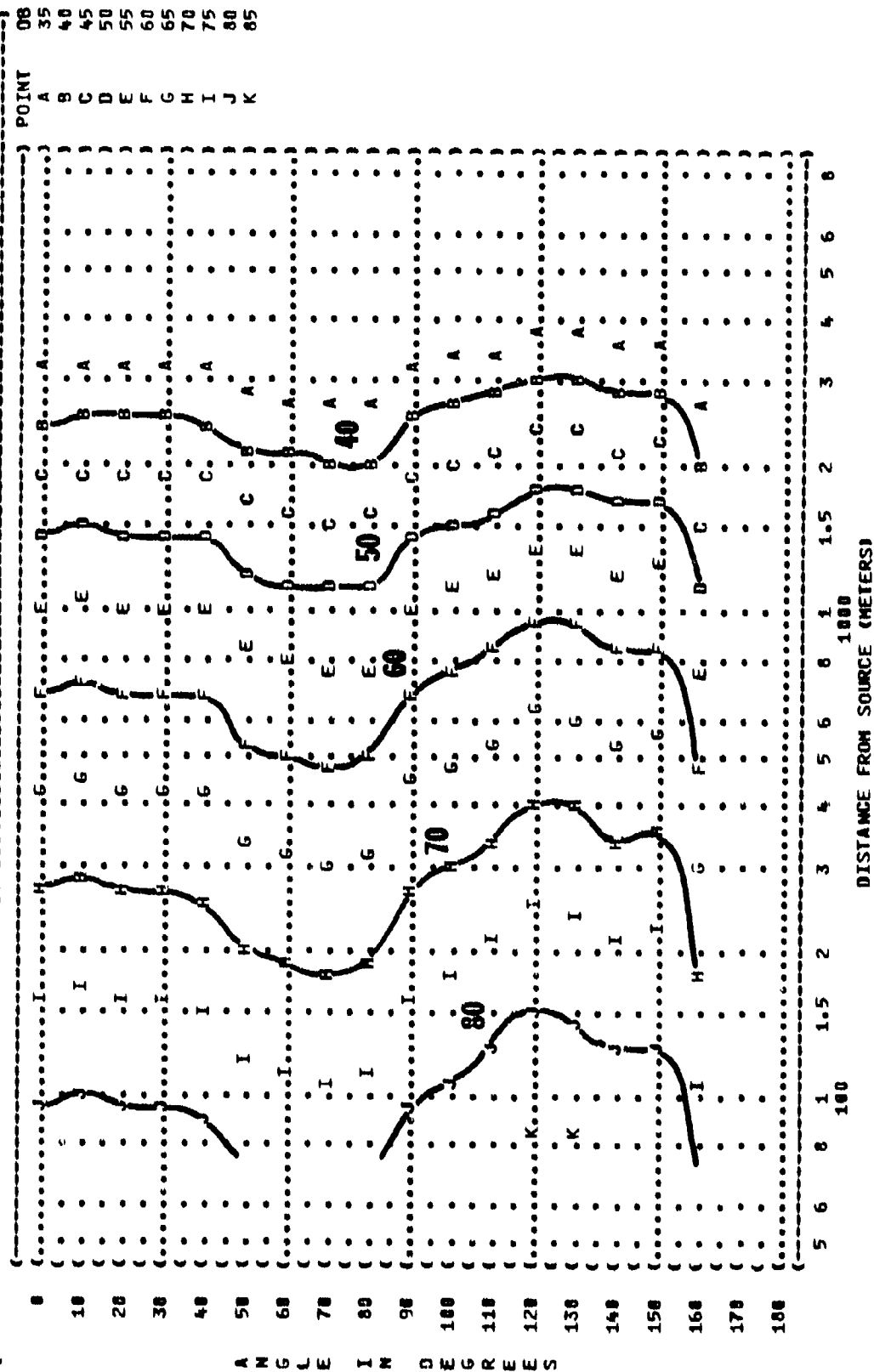
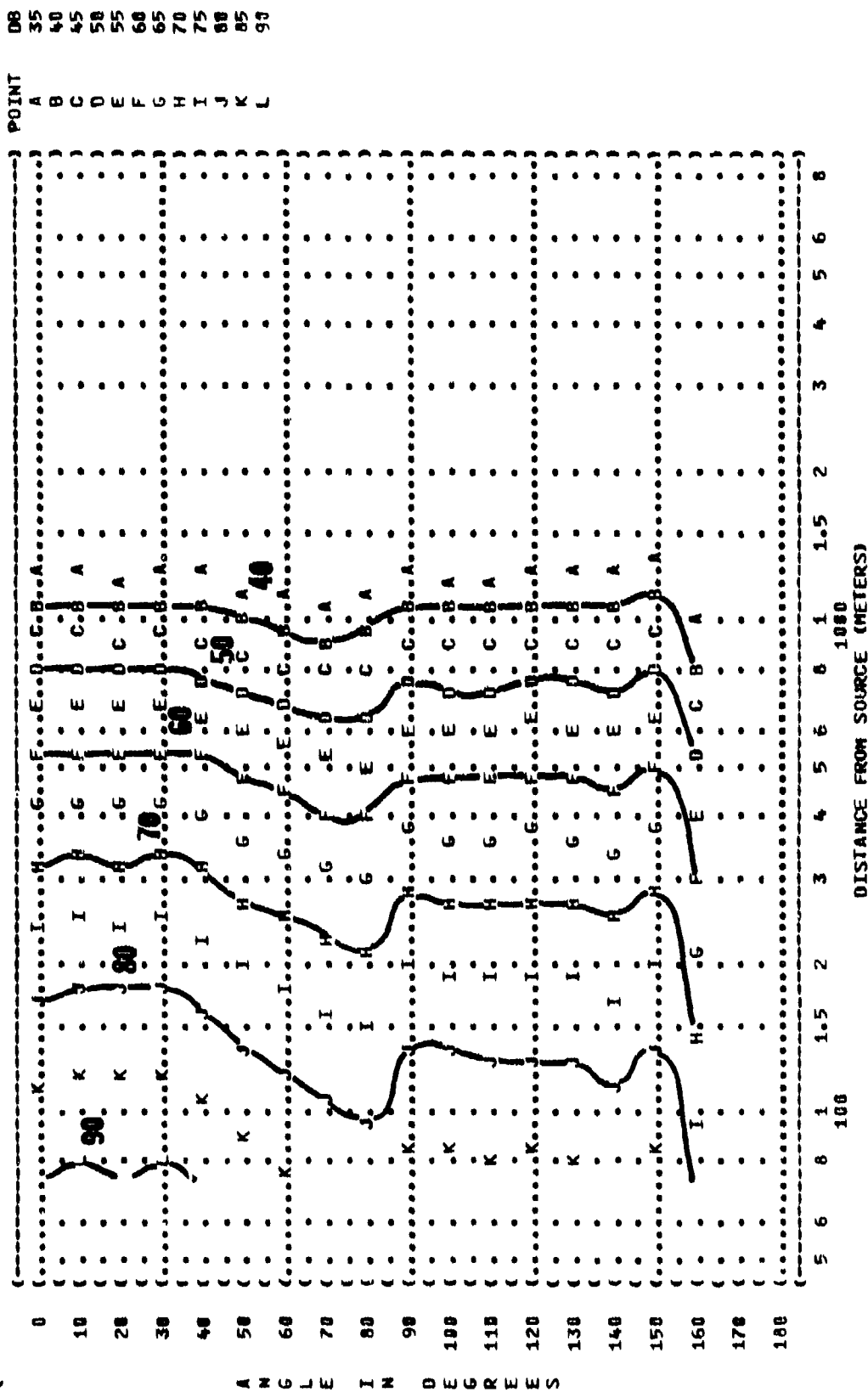


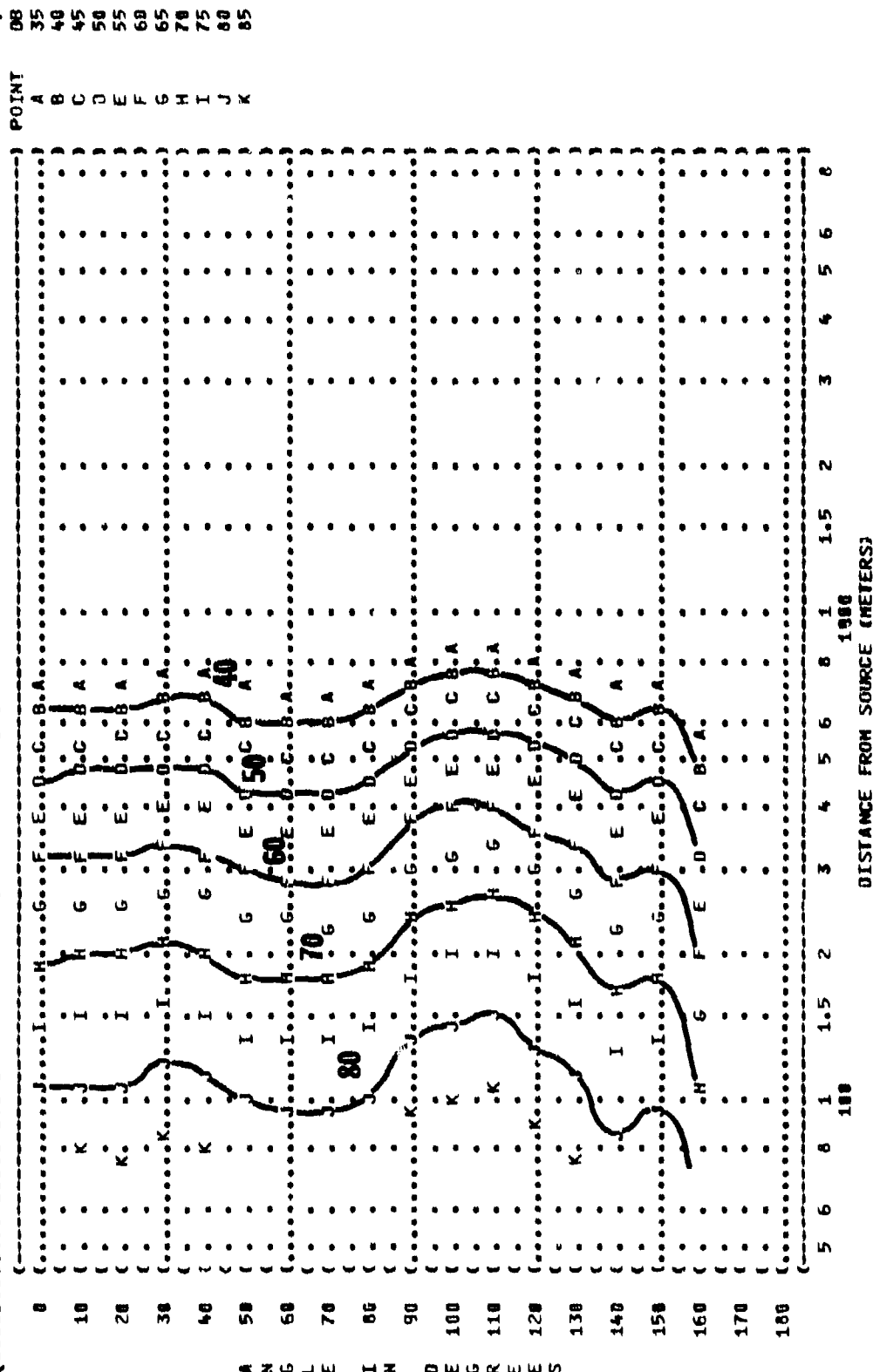
FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
4000 HZ OCTAVE BAND

IDENTIFICATIONS:
OMEGA 1.4
TEST 75-002-041

NOISE SOURCE/SUBJECT: P-3A AIRCRAFT
OPERATIONS: IDLE POWER
113 ENGINE SHP
T56-A-10 ENGINE
OUTBOARD ENGINES
FAR FIELD NOISE
METEOROLOGY: TEMP = 15 C
BAR PRESS = .766 M HG
REL HUMID = 70 %
RUN 82
88 MAY 75
PAGE 25



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (P-3A AIRCRAFT (IDLE POWER
 (156-A-10 ENGINE (113 ENGINE SHIP
 (FAR FIELD NOISE (OUTBOARD ENGINES
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .768 H HG
 (REL HUMID = 70 Z
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-802-041
 (RUN 02
 (08 MAY 75
 (PAGE 26




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( ( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) )
( ( 10 ) )
( ( 63 HZ OCTAVE BAND ) )
( ( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ( OPERATION: ) TEMP = 15 C )
( ( MILITARY POWER ) BAR PRESS = .760 M HG )
( ( P-3A AIRCRAFT ) REL HUMID = 70 % )
( ( T56-A-10 ENGINE ) )
( ( FAR FIELD NOISE ) PAGE 19 )
```

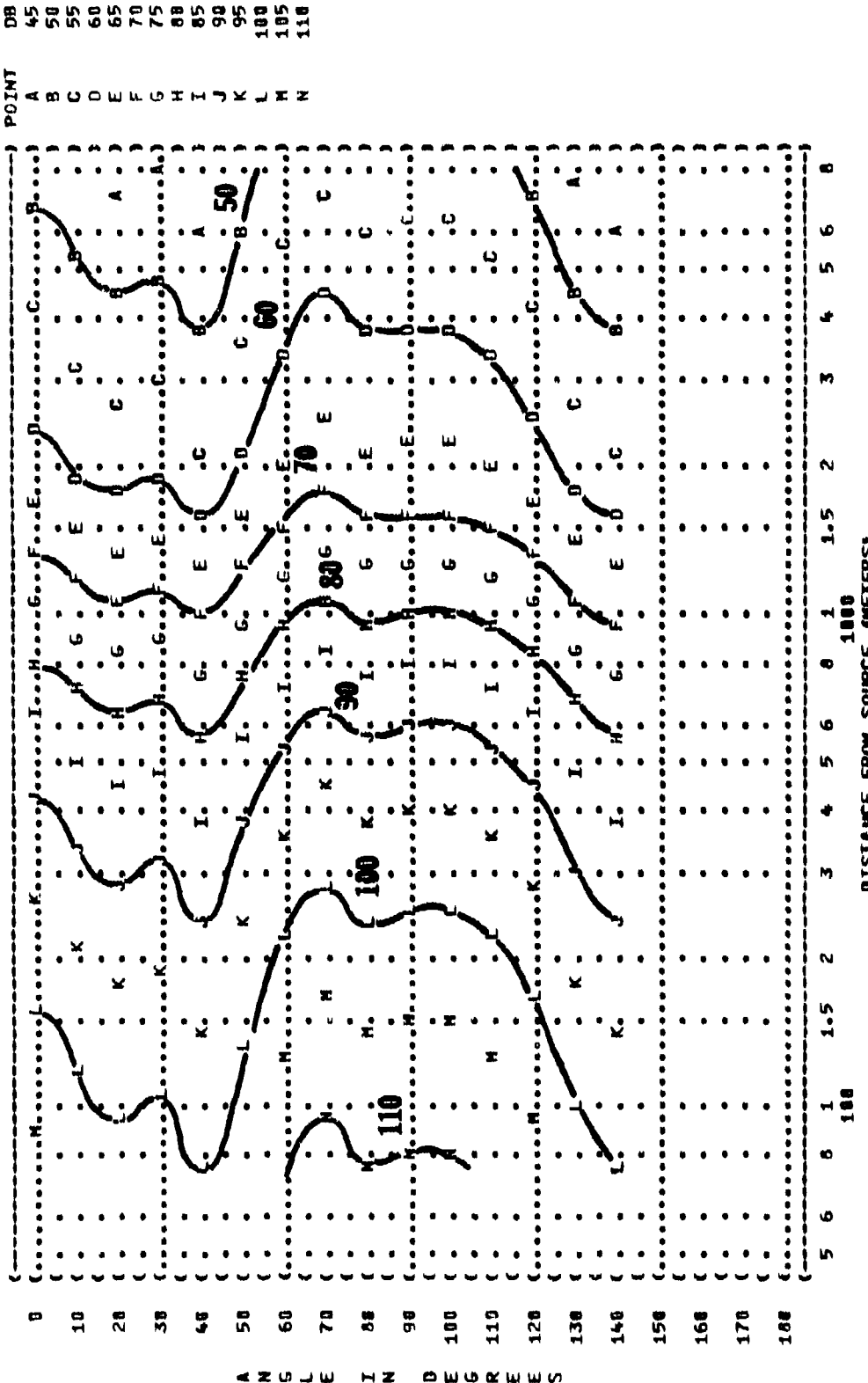


FIGURE: SOUND PRESSURE LEVEL (SP L)
EQUAL LEVEL CONTOURS (dB)
125 HZ OCTAVE BAND

NCISE SOURCE/SUBJECT: (OPERATIONS) METEOROLOGY:) RUN 83

C-3A AIRCRAFT
(3750 ENGINE SHP
) BAR PRESS = .768 M HG
) 08 MAY 75

Y56-A-10 ENGINE (INBOARD ENGINES) REL. HUMID = 70 Z

FAR FIELD NOISE ()

OPERATIONS

(MILITARY POWER) TEMP = 15 C

3750 ENGINE SHP

INBOARD ENGINES

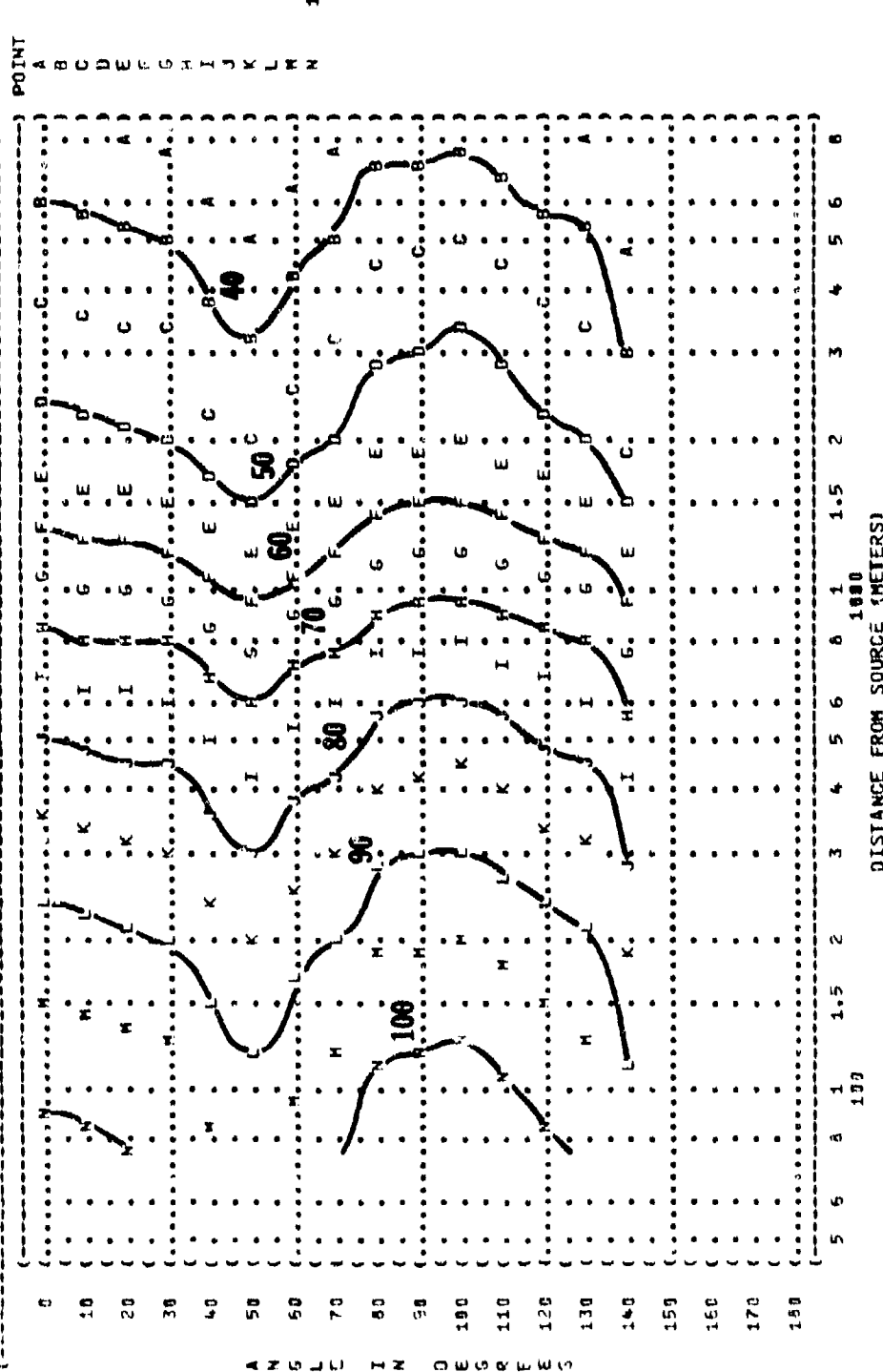
METEOROLOGY: 1 RUN 83

TEMP = 15 C)

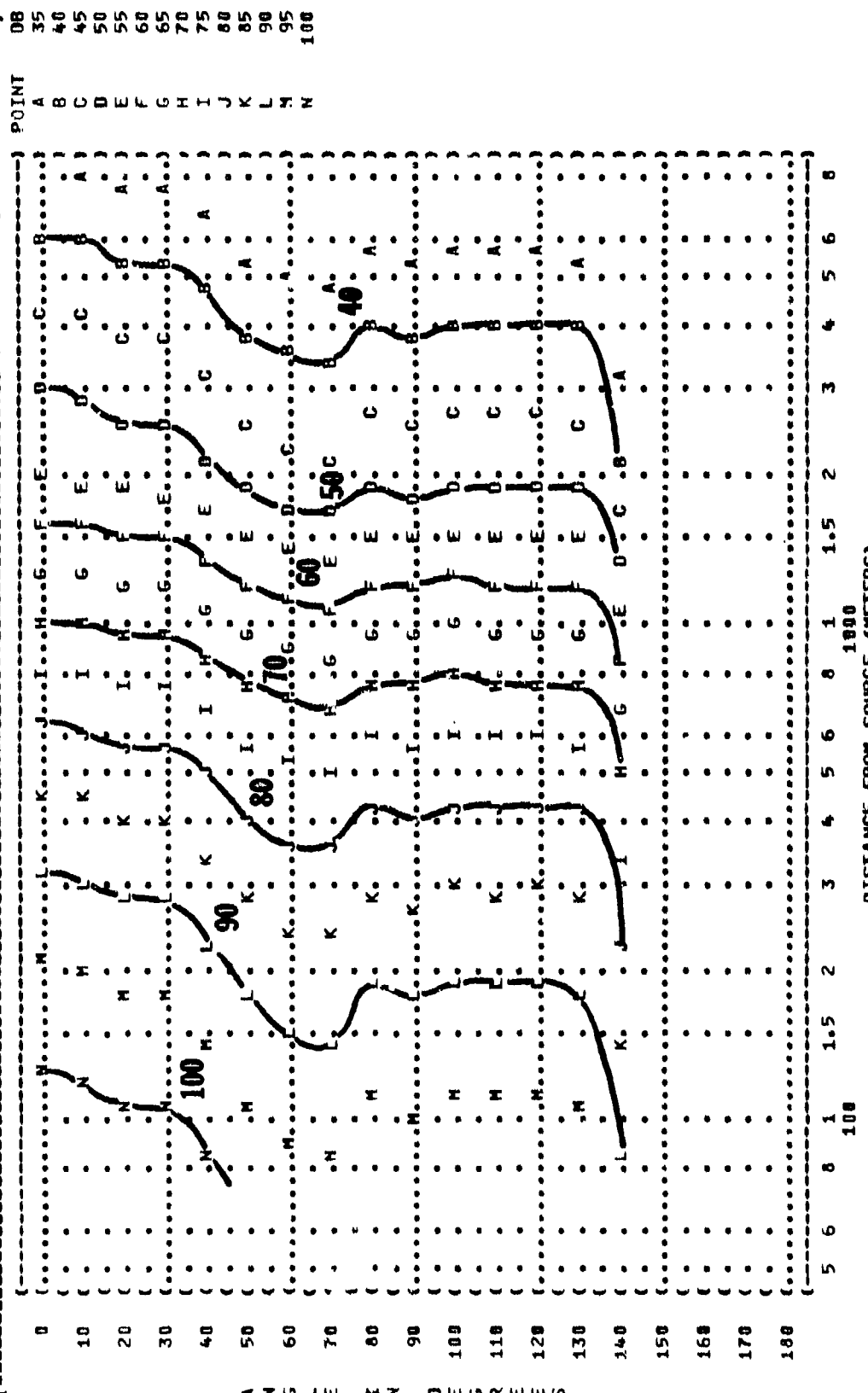
BAR PRESS = .768 M HG) 08 MAY 75

REL. HUMID = 78 Z

1 PAGE 20



(	FIGURE:	SOUND PRESSURE LEVEL {SPL}	) IDENTIFICATION# :
(		EQUAL LEVEL CONTOURS (DB)	))
(	10	250 HZ OCTAVE BAND	) OMEGA 1.4
(			) TEST 75-002-841
(	NOISE SOURCE/SUBJECT:	(OPERATION:	) RUN #3
(		(MILITARY POWER	))
(	P-3A AIRCRAFT	(3750 ENGINE SHP	) BAR PRESS = .760 M HG
(	T56-A-10 ENGINE	(INBOARD ENGINES	) REL HUMID = 70 %
(	FAR FIELD NOISE	(	) PAGE 21



FAR FIELD NOISE



DISTANCE FROM SOURCE (METERS)

```
IDENTIFICATION:
```

```
OMEGA 1.4
```

```
TEST 75-002-041
```

```
RUN 03
```

```
88 MAY 75
```

```
PAGE 24
```

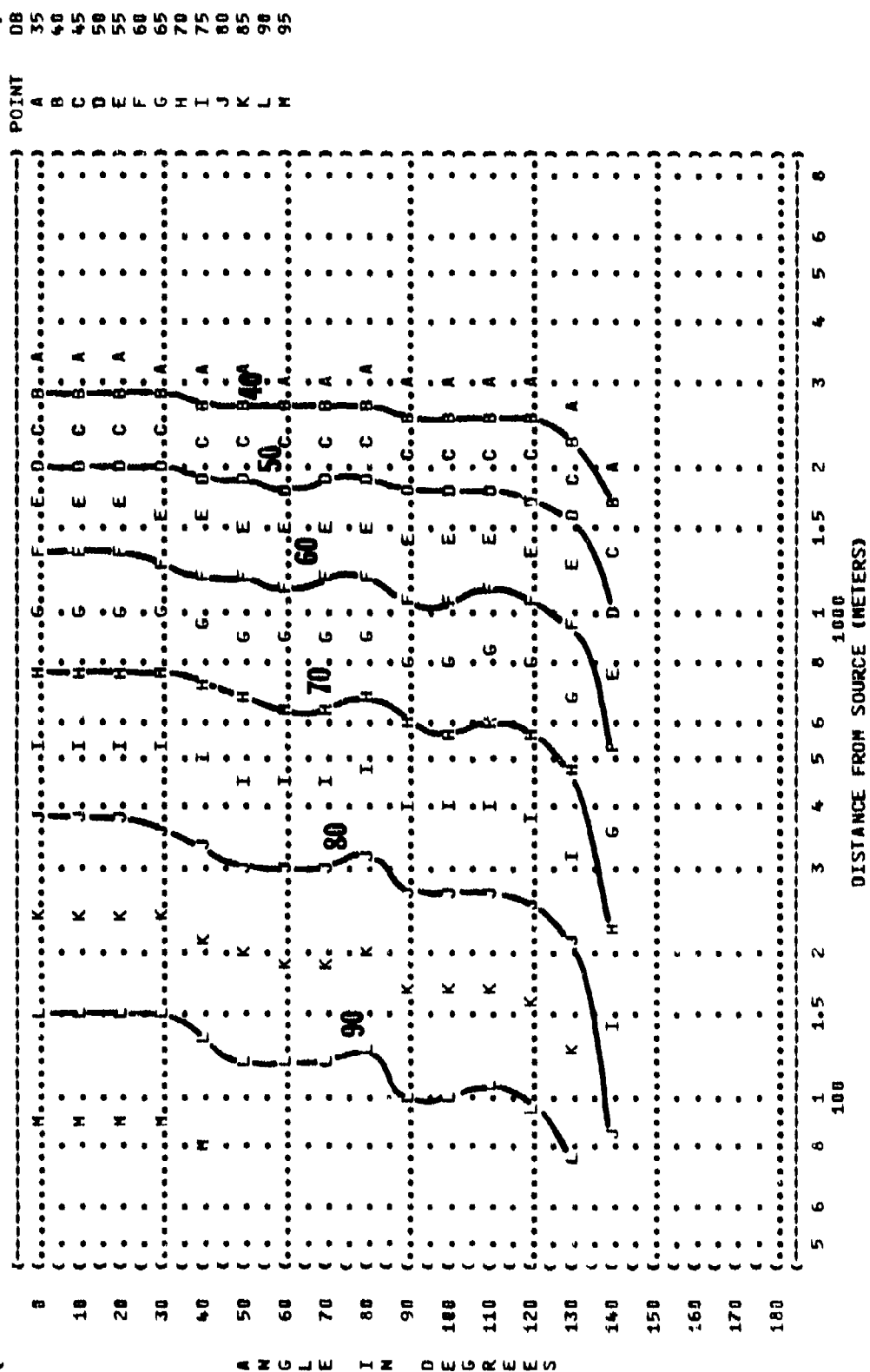
), RUN 03
),
), 98 MAY 75
),
), PAGE 24
)

1 METEOROLOGY:
1 TEMP = 15 C
1 BAR PRESS = .760 M HG
1 REL HUMID = 70 Z
1

(OPERATIONS
(MILITARY POWER
(3750 ENGINE SHP
(INBOARD ENGINES
(

NOISE SOURCE/SUBJECT:

P-3A AIRCRAFT
T56-A-10 ENGINE
FAR FIELD NOISE



DB	POINT
35	A
40	B
45	C
50	D
55	E
60	F
65	G
70	H
75	I
80	J
85	K
90	L
95	M

FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 8888 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: () OPERATIONS: () METEOROLOGY: ()
 () MILITARY POWER () TEMP = 15 C
 () P-3A AIRCRAFT () 3750 ENGINE SHP () BAR PRESS = .760 M HG
 () T56-A-18 ENGINE () INBOARD ENGINES () REL HUMID = 70 %
 () FAR FIELD NOISE () PAGE 26

IDENTIFICATION: ()
 () OMEGA 1.4
 () TEST 75-082-041
 () RUN 03
 () 98 MAY 75
 ()

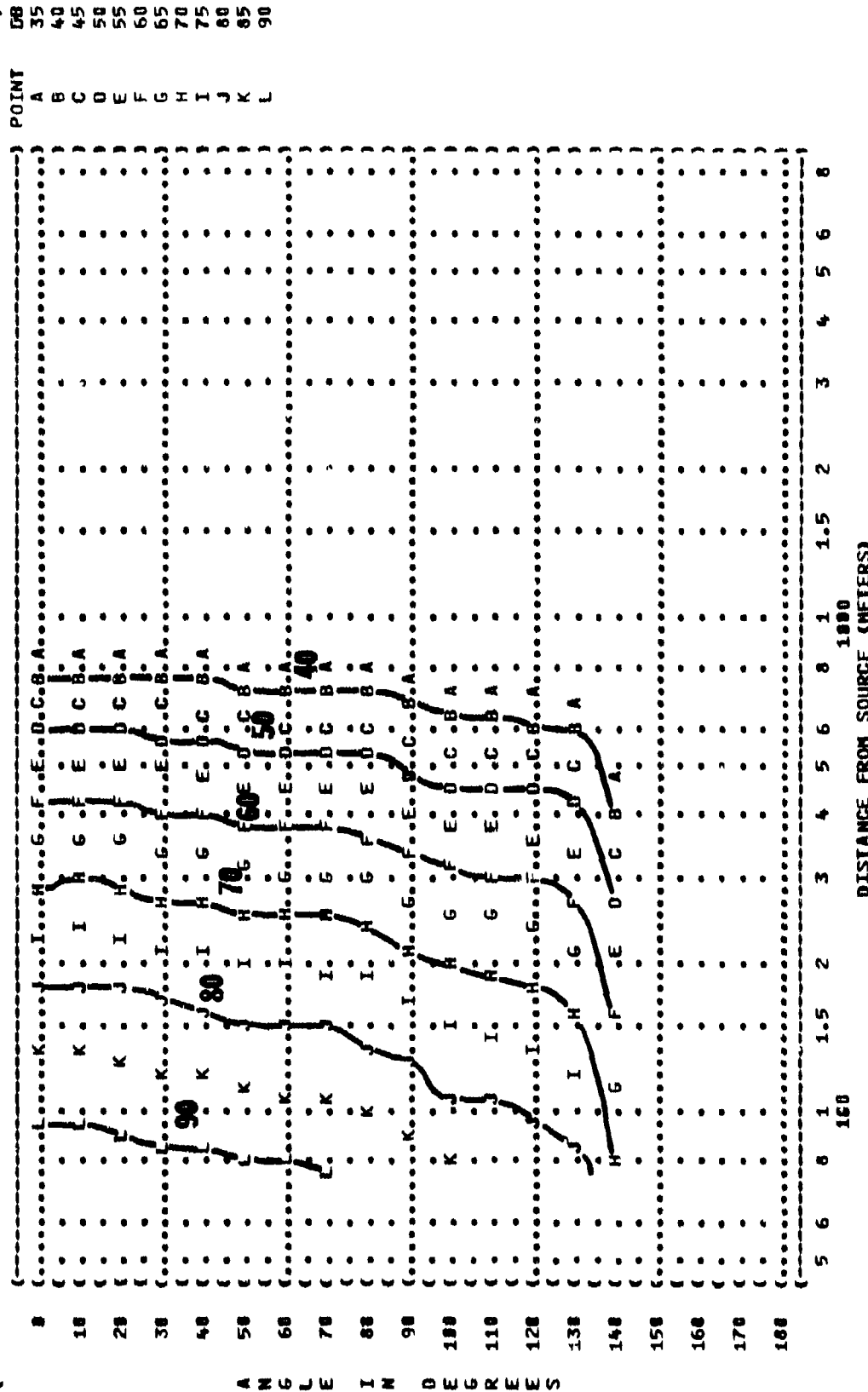


FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: (OPERATIONS:) METEOROLOGY:) IDENTIFICATION:)
 (P-3A AIRCRAFT (MILITARY POWER))
 (T56-A-10 ENGINE (3760 ENGINE SHP))
 (FAR FIELD NOISE (OUTBOARD ENGINES))

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

OMEGA 1.4
 TEST 75-002-041
 RUN 04
 08 MAY 75
 PAGE 18

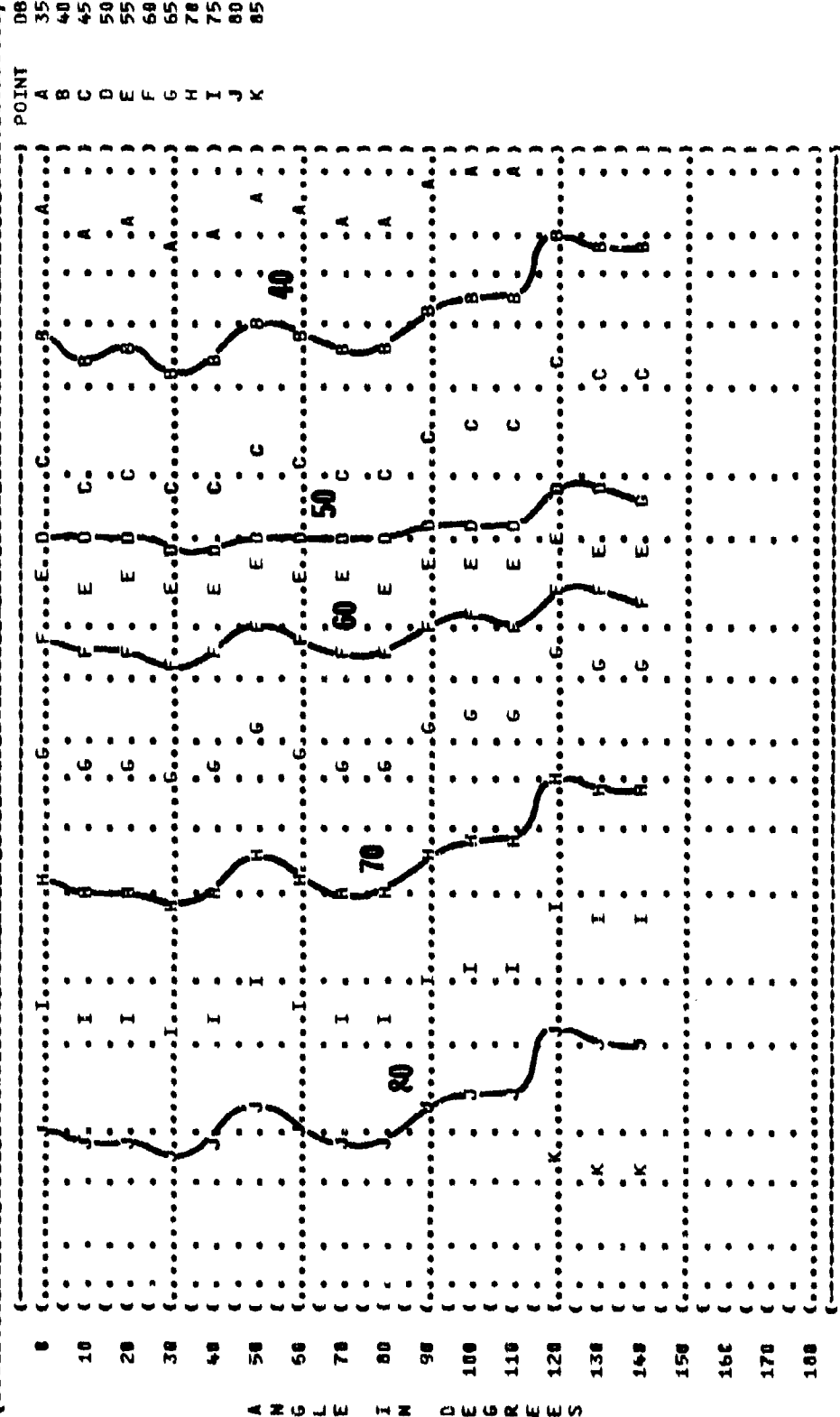
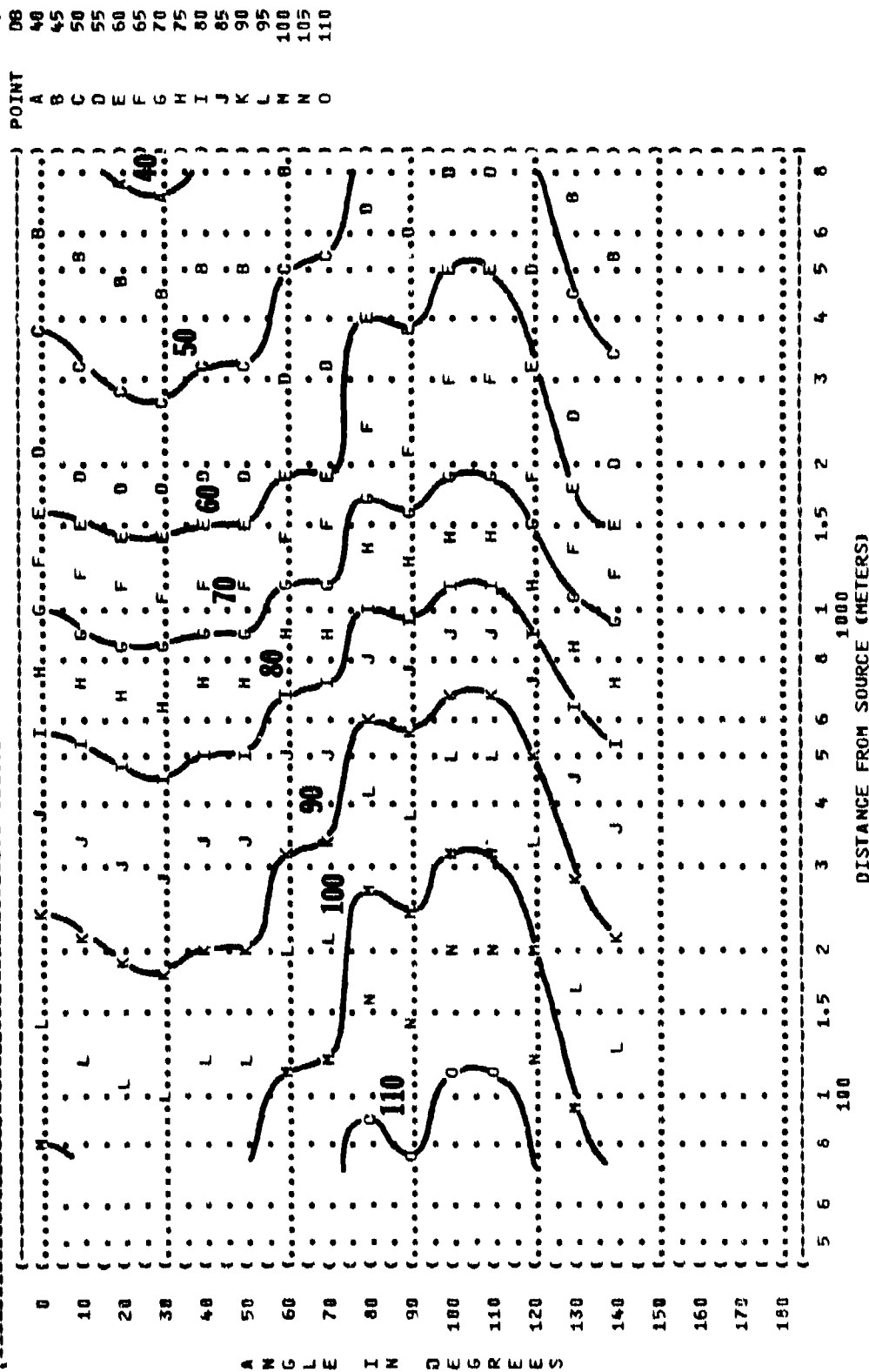


FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
63 HZ OCTAVE BAND

10

IDENTIFICATION:)
OMEGA 1.4)
TEST 75-002-041)
RUN 04)
METEOROLOGY:)
TEMP = 15 C)
BAR PRESS = .760 M HG)
REL HUMID = 70 %)
OPERATION:)
MILITARY POWER)
3760 ENGINE SHP)
OUTBOARD ENGINES)
NOISE SOURCE/SUBJECT:)
P-3A AIRCRAFT)
T56-A-10 ENGINE)
FAR FIELD NOISE)
PAGE 19)



DB	POINT
35	A
40	B
45	C
50	D
55	E
60	F
65	G
70	H
75	I
80	J
85	K
90	L
95	M
100	N
105	O

The graph displays the relationship between DB (vertical axis) and POINT (horizontal axis). The vertical axis ranges from 35 to 180, and the horizontal axis ranges from A to O. The graph shows several curves and points labeled with letters A through O. Key points include A, B, C, D, E, F, G, H, I, J, K, L, M, N, O. The curves represent different levels or states, with some labeled 40, 50, 60, 70, 80, 90, 100. The graph is divided into sections by vertical lines at points A, B, C, D, E, F, G, H, I, J, K, L, M, N, O.

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (P-3A AIRCRAFT (MILITARY POWER
 (T56-A-10 ENGINE (3760 ENGINE SHP
 (FAR FIELD NOISE (OUTBOARD ENGINES
 (METEOROLOGY: = 15 C
 (TEMP
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 22
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST 75-802-041
 (RUN 04
 (08 MAY 75
 (

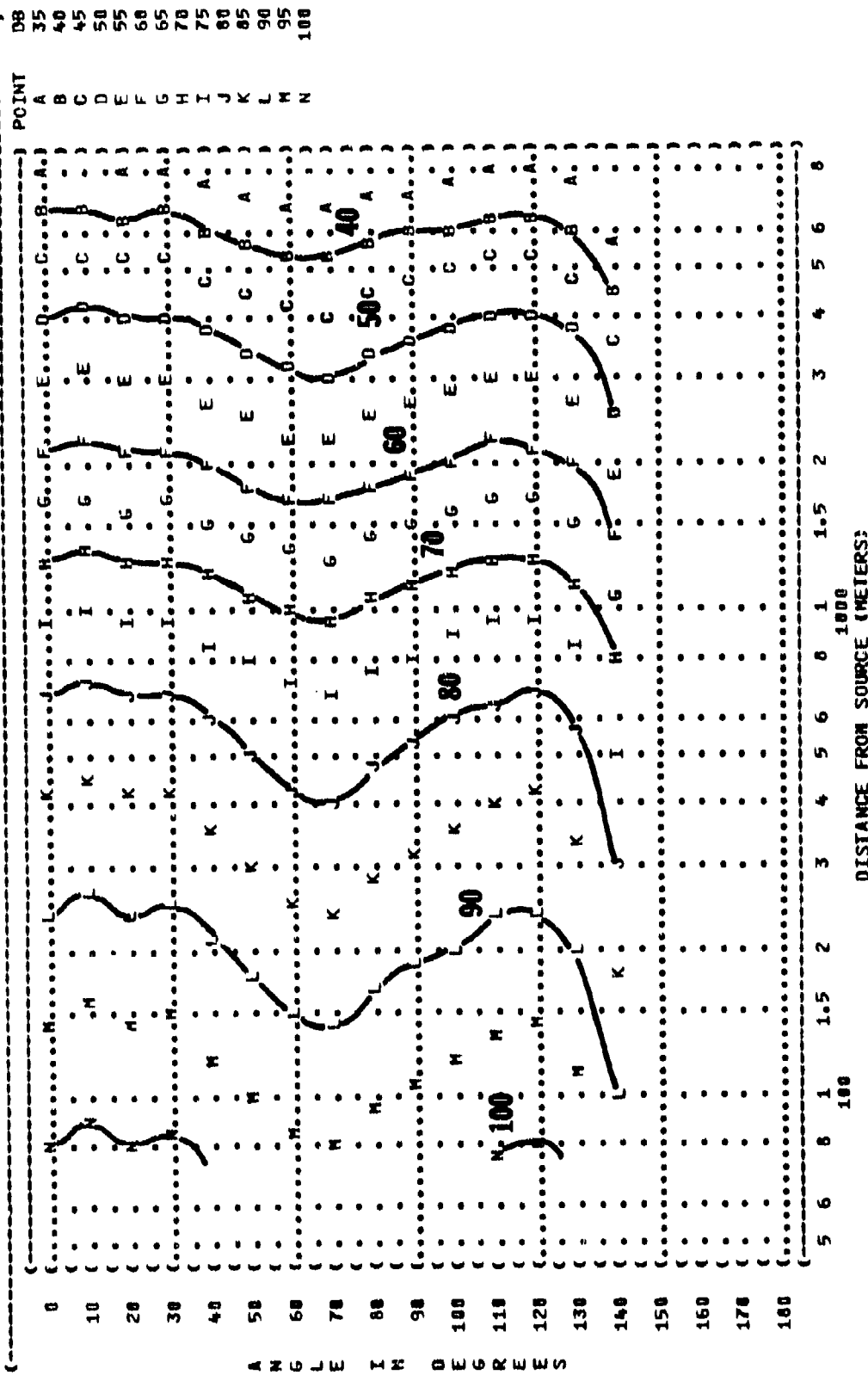


FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
1000 HZ OCTAVE BAND

10

IDENTIFICATIONS:
OMEGA 1.4
TEST 75-002-041

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

P-3A AIRCRAFT
T56-A-10 ENGINE
FAR FIELD NOISE

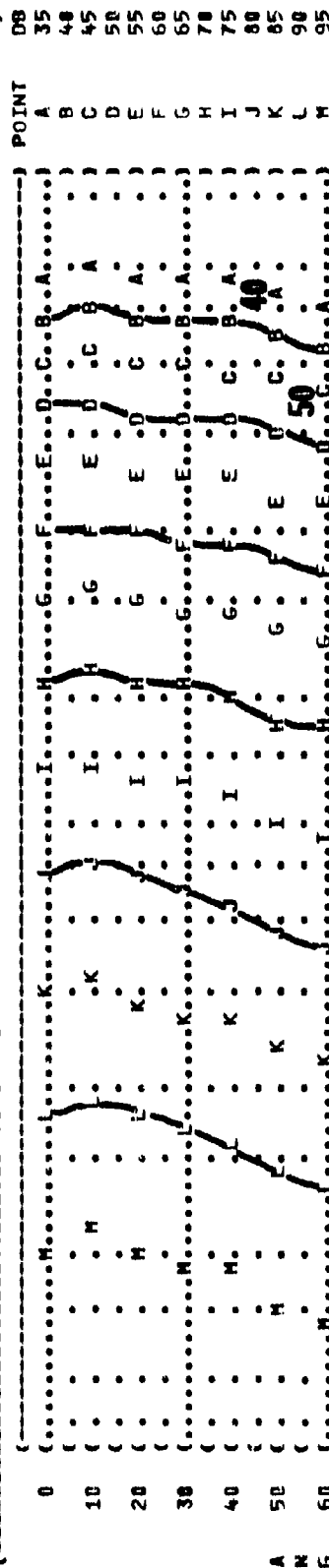
MILITARY POWER
3760 ENGINE SHP
OUTBOARD ENGINES

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

RUN 04

08 MAY 75

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: () IDENTIFICATION: ()
 () P-3A AIRCRAFT () MILITARY POWER () TEMP = 15 C () OMEGA 1.4
 () T55-A-10 ENGINE () 3760 ENGINE SHP () BAR PRESS = .760 M HG () TEST 75-002-041
 () FAR FIELD NOISE () OUTBOARD ENGINES () REL HUMID = 70 Z () RUN 04
 () () () () 00 MAY 75 () () () ()
 () () () () PAGE 24 () () () ()

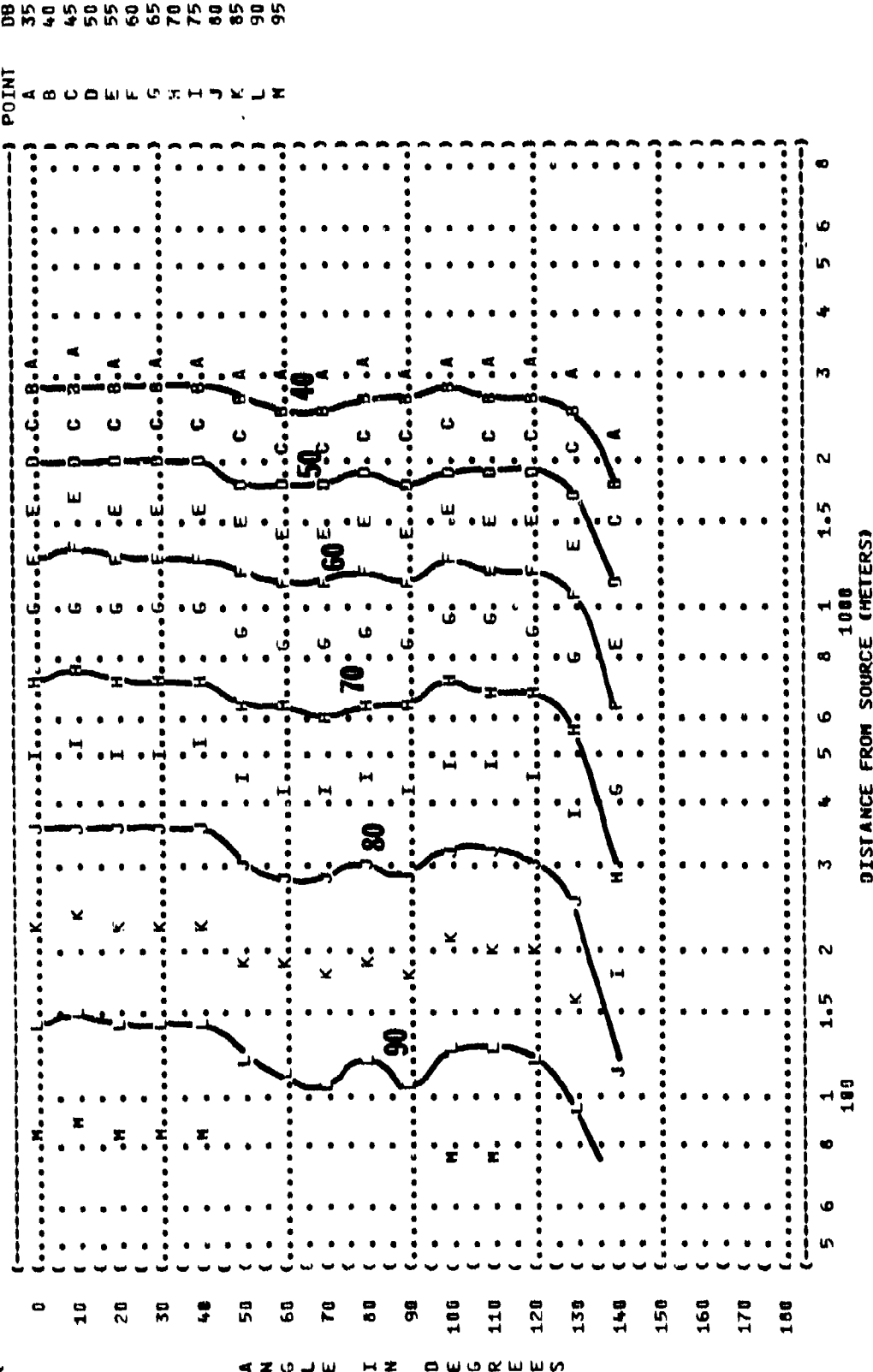
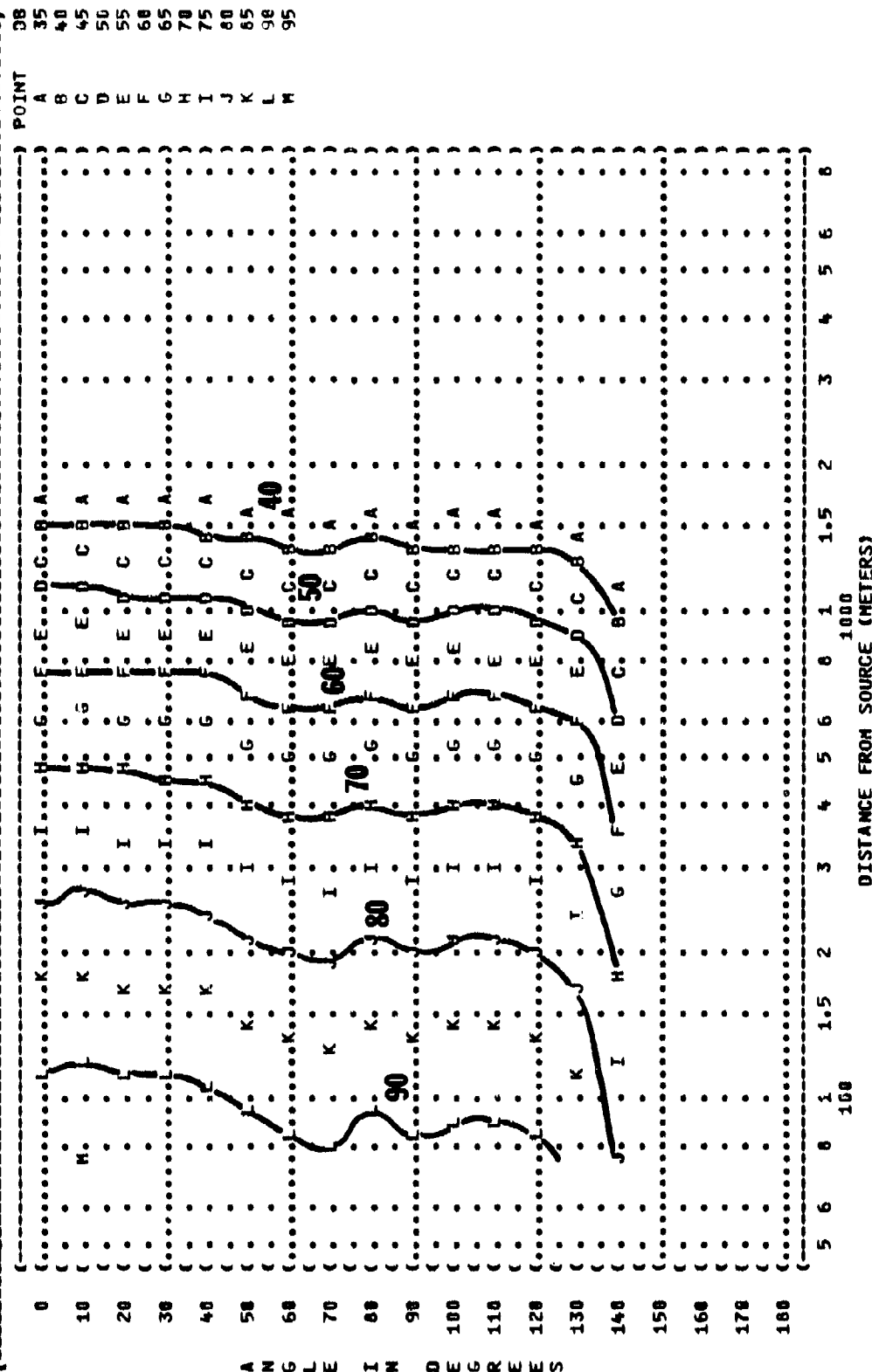


FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY: IDENTIFICATION:
 P-3A AIRCRAFT MILITARY POWER TEMP = 15 C
 T56-A-10 ENGINE 3760 ENGINE SHP BAR PRESS = .760 M HG
 FAR FIELD NO1 E OUTBOARD ENGINES REL HUMID = 70 %
 TEST 75-002-041
 RUN 04
 08 MAY 75
 PAGE 25



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (8800 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (P-3A AIRCRAFT (MILITARY POWER
 (T56-A-10 ENGINE (3760 ENGINE SHP
 (FAR FIELD NOISE (OUTBOARD ENGINES
 (METEOROLOGY: = 15 C
 (TEMP
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 26
 (IDENTIFICATION:)
 ()
 () OMEGA 1.4
 () TEST 75-002-041
 () RUN 04
 () 08 MAY 75
 ()
 ()
 ()

