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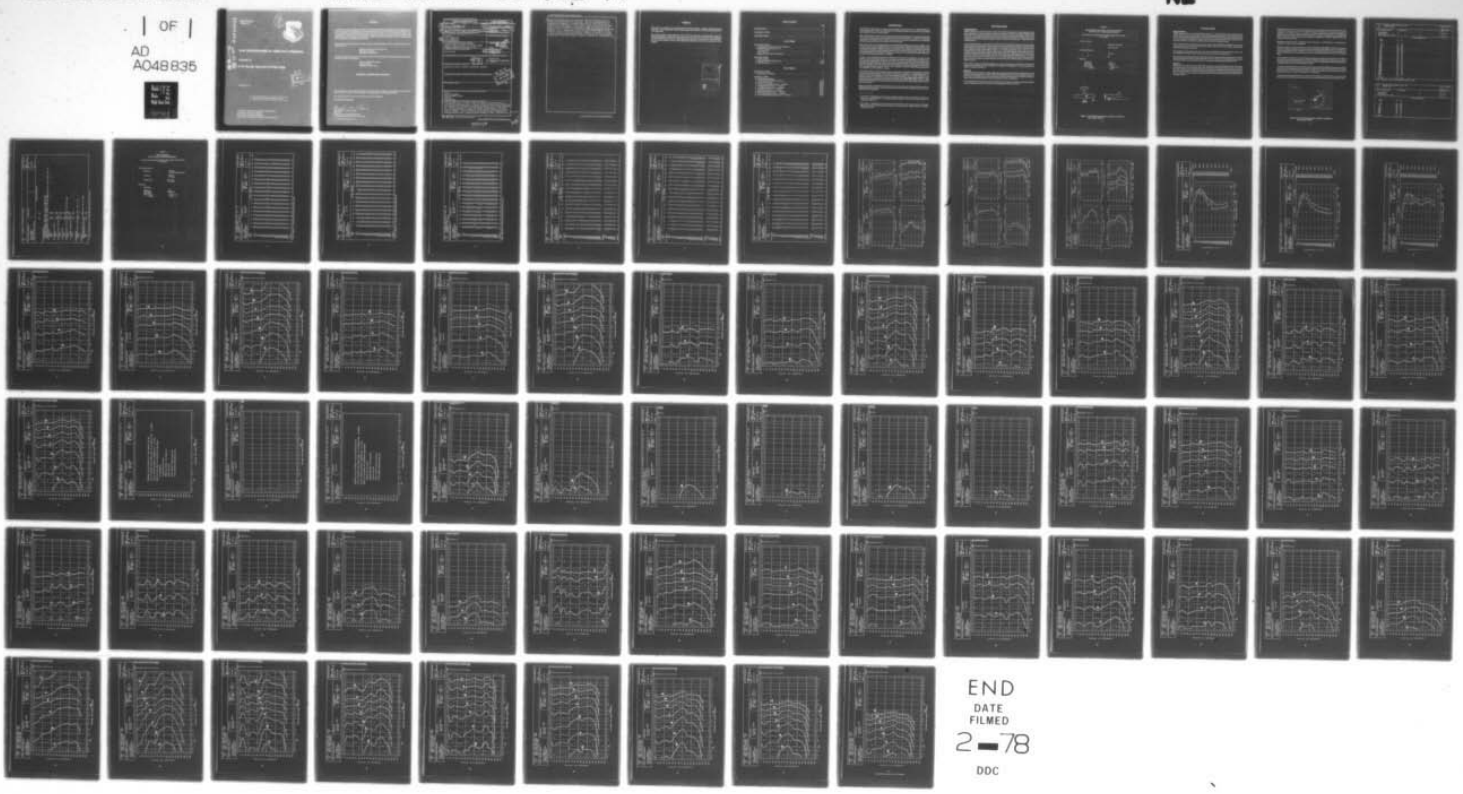

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Volume 77

USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 77

A-1E Aircraft, Near and Far-Field Noise

FEBRUARY 1977

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 Bionics Division
Aerospace Medical Research Laboratory

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The USAF A-1E is a tactical close air support aircraft powered by an R3350-26WD reciprocating engine. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for three engine/power configurations. Near-field data are reported for two locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise

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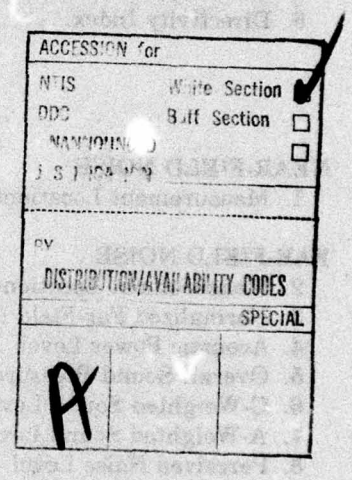
level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 50-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distances 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 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Mr. Robert England for his assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. David Eilerman of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Norma Peachey and Mr. Mike Patterson for assistance in typing and preparation of the graphics.



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INTRODUCTION

The USAF A-1E Skyraider is a tactical close-air-support aircraft powered by an R3350-26WD reciprocating engine. The aircraft was manufactured by McDonnell Douglas and the engine by the Wright Aeronautical Division of Curtiss Wright.

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 A-1E aircraft.

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 2 and 3) 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.

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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 A-1E aircraft during ground runup operations of its reciprocating engine. For these tests the aircraft was located on a concrete runup pad at Hurlburt Field, Eglin AFB, with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the engine condition. 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 two near-field locations where ground crews 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 A-1E aircraft at the two 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

A-1E Aircraft, Ground Runup, Hurlburt Field, Eglin AFB, 6 Aug 1971
Tail # 52436

Ground Crew Location	
1	Engine Start, Fire Guard
2	Wheel Chock Pull
Aircraft Engine Operation	
A	Taxi Power
B	Idle
Meteorology	
Temperature	28.9 C
Bar Pressure	0.763 M Hg
Rel Humidity	73 %
Wind — Speed	1.5 M/Sec (3 kt)
— Direction	55 Deg

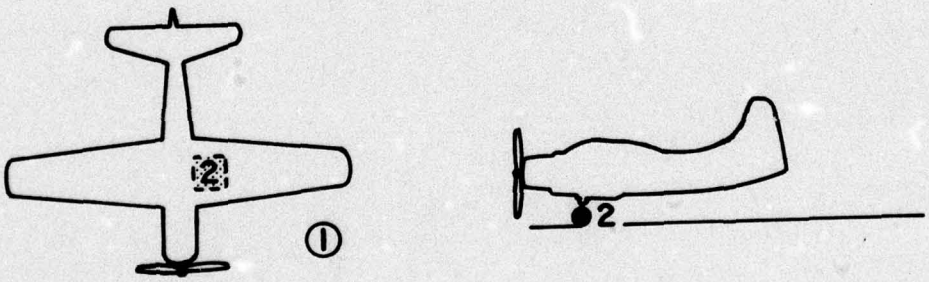

Figure 1. Near-Field Measurement Locations at Hurlburt Field, Eglin AFB FL

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired both near- and far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pads, ground cover, aircraft orientation and the 19 microphone measurement sites on the semicircle. The center of the 30 meter radius semicircle used in surveying the R3350-26WD engine was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the engine's propeller plane.

Table 4 provides cockpit readouts of some engines characteristics (RPM and manifold pressure) 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.

Test personnel acquired far-field noise data at Eglin AFB by using a hand-held microphone(1.7 meters/ 5½ feet above the ground plane and pointed at the source, 0° incidence) and sequentially recording 5 to 10 seconds of data at each far-field location on a portable microphone/tape recorder system.

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 A-1E aircraft in a standard format.

Figure 4 and Table 6 present two acoustic measures, the acoustic power levels and the directivity index, respectively. 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 noise levels for intermediate power settings (e.g., 1800 RPM) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 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 and/or 180 degree locations for the highest 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 at the 160 degree 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 5 and Figure 11 at 1200 RPM).

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.

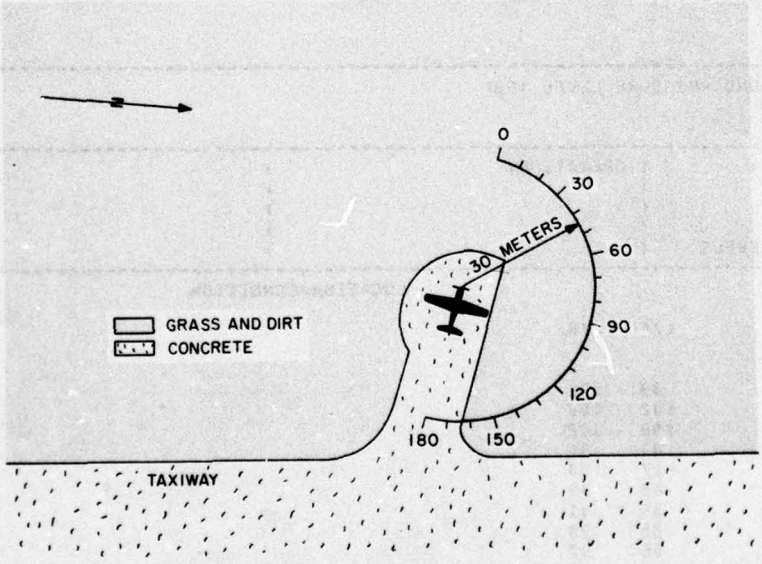

Figure 2. Far-Field Measurement Locations at Hurlburt Field, Eglin AFB FL

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 71-019-001
RUN 01
04 DEC 74
PAGE F1

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 1/A	2/B
25	72	95
31.5	83	91
40	88	100
50	91	99
63	99	106
80	98	101
100	97	100
125	95	97
160	90	90
200	85	86
250	83	88
315	83	91
400	81	90
500	82	87
630	83	86
800	82	84
1000	80	84
1250	80	85
1600	81	86
2000	80	87
2500	81	87
3150	79	85
4000	83	85
5000	81	85
6300	81	88
8000	82	89
10000	80	87
OVERALL	104	110

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 2 MEASURED SOUND PRESSURE LEVEL (DB)
OCTAVE BAND

IDENTIFICATION:
OMEGA 3.2
TEST 71-019-001
RUN 01
04 DEC 74
PAGE J1

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 1/A	2/B
31.5	89	102
63	102	108
125	100	102
250	88	94
500	87	93
1000	85	89
2000	85	91
4000	86	90
8000	86	93
OVERALL	104	110

TABLE: MEASURES OF HUMAN NOISE EXPOSURE

3

IDENTIFICATION:
OMEGA 3.2
TEST 71-019-001
RUN 01
04 DEC 74
PAGE H1

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

	LOCATION/CONDITION	
	1/A	2/B
HAZARD/PROTECTION		
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR		
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR		
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)		
NO PROTECTION		
OASLC	104	109
OASLA	93	98
T	101	42
MINIMUM QPL EAR MUFFS		
OASLA*	81	85
T	807	404
AMERICAN OPTICAL 1700 EAR MUFFS		
OASLA*	77	82
T	960	679
V-51R EAR PLUGS		
OASLA*	69	74
T	960	960
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS		
OASLA*	59	64
T	960	960
H-133 GROUND COMMUNICATION UNIT		
OASLA*	71	76
T	960	960
COMMUNICATION		
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)		
PSIL	86	91
ANNOYANCE		
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)		
TONE CORRECTION (C IN DB)		
PNLT	110	114
C	0	0

* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

TABLE 4

TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

A-1E Aircraft, Ground Runup, Hurlburt Field, Eglin AFB, 6 Aug 1971
Tail # 52436

Aircraft Engine Operation

Idle Power	650 RPM 22 Inches Manifold Pressure
Taxi Power	1200 RPM 20" MAP
Military Power	2800 RPM 52.5" MAP

Meteorology

Meteorology	
Temperature	28.9 C
Bar Pressure	0.763 M Hg
Rel Humidity	73 %
Wind — Speed	1.5 M/Sec (3 kt)
— Direction	55 Deg

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 30 METERS

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
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	69<	72<	71<	74<	72<	68<	70<	69<	73<	71<	73<	72<	76<	74<	72<	71<	78	72<	
31.5	75<	74<	73<	77<	77<	75<	74<	77	77	76<	78	76<	78	79	76<	76<	79	76<	
40	80	83	79	81	82	81	82	82	81	83	82	83	83	83	83	81	83	80	
50	81	83	82	82	83	82	84	81	83	84	84	85	85	85	84	83	77	78	
63	80	81	82	84	85	84	86	85	86	86	87	87	87	88	87	86	82	81	
80	80	82	81	82	82	83	82	81	81	81	82	81	82	83	82	83	82	81	
100	82	83	82	81	82	83	84	82	84	83	83	84	84	86	85	85	84	83	
125	81	81	80	80	80	79	80	80	79	78	78	79	79	83	81	79	81	80	
160	79	79	79	78	78	77	77	77	79	78	76	78	78	82	80	79	80	78	
200	74	72<	75	75	74	71<	73	72<	71<	72<	73	75	74	77	75	75	76	76	
250	69<	67<	69<	68<	68<	67<	69<	66<	67<	66<	67<	68<	68<	71	69<	70	74	72	
315	66	65	66	65	66	64<	70	67	67	68	64<	67	67	68	68	68	71	69	
400	66	66	68	66	68	67	72	70	71	73	70	70	70	71	70	72	72	70	
500	67	66	66	67	69	67	71	68	69	71	70	68	68	70	70	71	71	72	
630	64	62	62	64	62	62	64	61	60	63	64	63	63	64	66	69	68	69	
800	61	62	62	65	63	60	63	64	61	62	63	65	63	67	66	63	65	61	
1000	62	61	61	66	62	62	63	64	62	61	63	64	63	65	65	65	63	61	
1250	62	60	60	65	59	60	64	64	63	63	66	65	63	66	65	62	61	59	
1600	61	60	60	63	62	61	66	64	63	66	66	62	62	66	65	65	63	63	
2000	61	60	62	63	61	62	65	65	63	67	66	65	64	66	67	66	62	62	
2500	60	60	61	64	61	62	66	67	66	67	66	63	63	67	64	65	63	63	
3150	57	59	58	63	61	61	64	67	67	67	67	61	60	64	62	61	61	59	
4000	56	57	57	62	59	59	64	66	68	68	68	61	60	60	62	61	61	59	
5000	55	56	56	59	59	60	63	67	66	68	67	62	60	60	60	59	58	56	
6300	56	57	57	58	59	61	64	67	68	70	67	61	64	61	63	61	60	58	
8000	55	57	58	58	60	61	65	70	71	71	67	63	63	62	63	63	62	59	
10000	53	55	54	55	58	59	63	68	68	69	66	62	60	63	60	61	58	57	
OVERALL	89	90	90	90	91	91	92	90	91	92	92	92	92	93	93	92	91	89	

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 30 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25				67<	67<	67<	66<	66<	67<		67<	66<	70<	66<	69<	68<	68<	75<	81
31.5	76<	79	83	75<	80	74<	78	73<	70<	74<	76<	73<	76<	73<	74<	77	79	78	83
40	82	81	82	80	82	79	80	80	79	80	81	82	82	81	79	79	77	79	81
50	74	76	79	81	82	83	83	84	85	85	86	87	87	86	86	83	79	77	80
63	87	90	89	91	91	91	93	93	93	93	93	94	95	96	93	91	88	84	84
80	89	90	90	90	90	90	91	91	90	89	89	90	90	89	91	92	91	89	84
100	92	93	92	92	91	92	92	91	91	92	93	93	95	96	92	93	91	92	85
125	89	90	91	91	90	89	89	89	88	87	88	89	90	90	90	89	86	83	80
160	90	90	90	89	88	88	87	90	91	90	89	89	90	90	90	89	87	83	79
200	80	83	83	82	81	80	80	82	81	82	82	83	84	84	85	85	82	80	73
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800	74	75	74	73	74	74	74	71	72	72	74	76	76	78	78	78	75	71	67
1000	72	72	72	71	72	73	73	71	70	73	73	75	76	77	76	75	74	68	63
1250	72	73	71	70	71	73	73	72	72	74	73	74	74	76	76	74	72	66	62
1600	71	73	70	69	71	71	71	70	72	73	76	72	73	75	74	73	69	64	59
2000	71	71	71	70	71	72	72	71	71	73	75	73	74	74	75	75	71	64	60
2500	69	71	70	69	69	71	71	72	72	72	73	71	73	73	72	71	69	63	59
3150	67	68	68	68	69	70	73	74	72	75	73	68	69	71	69	69	66	61	57
4000	67	68	68	68	68	70	71	74	74	74	73	69	69	69	69	68	65	61	56
5000	65	66	66	66	67	68	69	70	71	72	71	67	68	67	66	65	62	59	54
6300	65	66	66	66	67	67	70	72	73	73	72	67	68	67	65	65	61	59	55
8000	65	66	66	66	67	69	71	73	73	73	73	68	69	69	67	65	61	59	56
10000	63	64	64	65	65	67	69	71	72	71	70	66	66	67	65	63	59	57	53
OVERALL	97	98	98	98	98	98	98	99	99	99	99	99	100	101	99	99	97	96	92

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 30 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	82	80	84	87	88	88	90	91	93	94	95	95	96	96	92	86	87		
31.5	81	81	81	82	81	82	82	85	84	85	85	85	84	86	85	84	89		
40	87	89	90	92	92	93	93	94	95	96	97	97	97	96	98	99	91		
50	88	90	95	99	100	99	101	103	103	104	105	106	106	106	101	87	88		
63	89	92	95	99	100	102	101	101	101	102	104	106	107	105	106	101	94		
80	96	96	102	103	109	109	107	112	116	118	119	118	117	111	106	102	97		
100	96	96	98	98	98	99	98	99	102	104	105	105	105	105	102	103	97		
125	99	95	94	94	97	100	101	100	96	98	99	102	104	103	104	102	99		
160	105	111	106	100	104	102	98	107	115	118	117	115	114	114	114	110	91		
200	96	100	100	96	98	94	97	97	100	103	104	103	104	105	102	102	98		
250	96	101	100	102	101	97	95	105	106	103	105	111	111	112	107	105	88		
315	97	97	97	98	100	100	99	99	106	107	103	107	109	108	107	104	91		
400	102	96	104	102	101	100	101	102	106	106	105	106	107	108	105	104	88		
500	104	99	100	102	101	101	104	104	105	105	103	100	104	108	102	103	90		
630	97	99	99	97	97	98	100	99	100	101	101	99	103	103	102	100	88		
800	99	95	99	99	99	97	97	101	102	103	103	102	104	105	104	99	85		
1000	97	96	96	97	97	97	99	100	101	103	101	103	103	103	101	97	87		
1250	98	96	97	97	98	98	101	103	104	106	104	105	103	103	102	97	88		
1600	99	97	98	99	100	99	101	103	107	109	107	102	103	103	101	96	88		
2000	102	100	100	100	101	100	103	106	108	110	109	105	105	103	102	97	87		
2500	100	98	101	101	101	100	102	105	106	109	107	105	105	103	102	96	87		
3150	100	97	99	100	100	99	102	105	106	108	107	103	103	101	101	95	83		
4000	100	98	100	101	101	101	103	106	107	109	107	103	103	103	100	94	83		
5000	98	95	98	99	100	98	101	104	104	106	104	101	101	100	97	91	80		
6300	97	94	97	98	99	98	101	102	104	105	103	100	100	99	96	89	79		
8000	96	93	96	97	98	98	100	102	103	105	102	99	99	97	94	88	78		
10000	93	90	93	95	96	96	98	100	100	103	100	96	95	95	92	85	75		
OVERALL	113	114	113	113	115	114	115	118	121	123	123	122	121	120	118	115	106		

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 6 DIRECTIVITY INDEX (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

FREQ (HZ)	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	-3	-1	-2	1	-1	-4	-3	-4	-0	-2	1	-1	4	2	-1	-2	5	-0	
31.5	-1	-3	-4	-0	-0	-2	-3	1	0	-1	1	-1	1	2	-1	-1	2	-1	
40	-2	1	-3	-1	-0	-1	-0	-0	-1	1	-0	1	1	1	1	-1	1	-2	
50	-3	-1	-1	-2	-1	-2	1	-2	-0	0	1	1	1	1	0	-0	-6	-6	
63	-6	-5	-4	-2	-1	-2	-0	-1	0	0	1	1	1	2	1	0	-4	-5	
80	-2	-0	-1	-0	0	1	0	-1	-1	-1	0	-1	0	1	-0	1	0	-1	
100	-2	-0	-1	-2	-1	-1	1	-1	0	-0	-0	0	0	2	2	2	1	-1	
125	1	1	0	-0	-0	-0	0	-0	-1	-1	-1	-0	-1	3	1	-1	1	0	
160	1	1	0	-0	-1	-1	-1	-1	1	-0	-2	-0	-0	3	2	0	2	-1	
200	-0	-1	1	1	0	-3	-1	-2	-2	-1	-1	1	-0	3	1	1	2	2	
250	1	-1	0	-0	-0	-1	0	-2	-1	-3	-2	-1	-0	3	1	2	5	4	
315	-1	-2	-2	-2	-2	-3	3	-0	-1	1	-3	-1	-0	1	1	1	3	2	
400	-4	-4	-3	-4	-2	-3	2	-0	0	2	0	-1	-1	-1	0	-1	2	-0	
500	-3	-3	-3	-3	-0	-2	1	-1	-1	1	1	-2	-1	0	0	2	2	2	
630	0	-2	-2	-0	-2	-2	0	-3	-4	-1	0	-1	-1	0	2	5	4	5	
800	-2	-1	-1	1	-1	-3	-1	1	-2	-1	-0	1	-1	3	3	-0	2	-3	
1000	-1	-3	-3	3	-1	-1	-0	0	-1	-2	-0	0	-1	2	1	2	-0	-2	
1250	-2	-4	-4	1	-4	-4	0	1	-1	-1	3	1	-1	2	1	-1	-3	-5	
1600	-3	-4	-4	-1	-2	-3	2	0	-1	2	2	-2	-2	2	1	1	-1	-1	
2000	-4	-5	-3	-2	-4	-3	0	-0	-2	2	1	-0	-1	1	3	1	-3	-3	
2500	-5	-5	-4	-1	-4	-3	1	2	1	2	1	-2	-2	2	-1	-0	-2	-2	
3150	-7	-6	-6	-2	-4	-4	-1	3	3	3	3	-3	-4	-1	-3	-3	-4	-5	
4000	-8	-7	-7	-3	-6	-5	-0	2	4	4	3	-3	-4	-5	-2	-3	-4	-6	
5000	-9	-8	-8	-5	-5	-4	-1	3	2	4	3	-2	-4	-4	-4	-5	-6	-8	
6300	-9	-8	-8	-7	-6	-4	-1	2	3	5	2	-4	-1	-4	-2	-4	-5	-7	
8000	-12	-10	-9	-9	-7	-6	-2	3	4	5	1	-4	-3	-4	-4	-4	-5	-7	
10000	-11	-10	-10	-9	-7	-6	-1	4	4	4	1	-3	-4	-1	-4	-4	-7	-8	
OCTAVE																			
31.5	-2	0	-3	-1	-0	-1	-1	-0	-0	0	0	0	1	1	1	-1	2	-1	
63	-4	-2	-2	-1	-0	-1	0	-2	-0	0	1	1	1	2	1	0	-3	-4	
125	-0	0	-1	-1	-1	-1	0	-1	0	-1	-1	-0	-0	3	2	1	1	-1	
250	-0	-2	0	0	-0	-3	0	-2	-2	-1	-1	1	-0	3	1	1	3	2	
500	-3	-3	-3	-3	-1	-3	2	-1	-0	2	1	-1	-1	-0	1	2	2	2	
1000	-2	-2	-2	2	-2	-3	-0	1	-1	-1	1	1	-1	2	2	0	-0	-3	
2000	-4	-4	-3	-1	-3	-3	1	1	-0	2	1	-1	-2	2	1	1	-2	-2	
4000	-8	-7	-7	-3	-5	-4	-1	2	3	4	3	-3	-4	-3	-3	-4	-4	-6	
8000	-11	-9	-9	-8	-7	-5	-1	3	4	5	1	-4	-3	-3	-3	-4	-5	-7	
OVERALL	-2	-1	-2	-1	-1	-1	0	-1	-0	0	0	1	1	2	1	0	-0	-2	

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

FREQ (HZ)	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				-1	0	-1	-1	-1	0		-0	-1	2	-1	2	1	1	8	13
31.5	-0	3	6	-1	4	-2	2	-3	-6	-2	-0	-3	0	-3	-2	1	3	2	7
40	1	1	2	-0	1	-1	-0	-1	-1	-1	1	1	2	1	-1	-1	-3	-1	0
50	-11	-9	-6	-4	-3	-2	-1	-0	0	1	1	2	2	2	1	-2	-6	-7	-5
63	-6	-3	-4	-2	-2	-2	0	0	0	0	0	1	2	3	0	-2	-5	-9	-9
80	-1	0	-0	0	0	0	1	1	0	-1	-1	0	-0	-1	1	2	1	-1	-6
100	-1	-0	-0	-1	-1	-1	-1	-1	-2	-0	-0	0	2	3	-1	-0	-2	-0	-8
125	-0	1	2	2	1	0	-0	-0	-1	-2	-1	0	1	1	1	0	-3	-6	-9
160	1	1	1	0	-2	-1	-2	0	2	1	-1	-0	1	0	0	-1	-3	-7	-10
200	-2	1	1	-1	-2	-2	-2	-1	-2	-1	-0	1	1	1	3	2	-0	-3	-9
250	-2	1	1	-0	-1	-1	-0	-0	0	-2	-1	1	2	1	-0	1	-1	-5	-10
315	1	-1	1	-0	-0	-0	-1	-2	-2	0	-2	-2	2	0	1	4	1	-2	-4
400	-0	-2	0	-0	-1	2	0	-0	1	2	-0	-3	-0	-1	0	1	0	-4	-7
500	1	2	1	1	-1	-1	0	-1	-1	-1	1	-3	-0	0	2	1	0	-2	-8
630	-2	1	-1	-2	-1	-3	-4	-4	-3	-3	-0	-1	3	3	3	4	0	-2	-9
800	-1	-0	-1	-2	-1	-1	-1	-4	-3	-3	-1	1	1	3	3	3	0	-4	-8
1000	-2	-2	-2	-3	-1	-1	-1	-3	-3	-1	-1	1	2	4	2	2	0	-6	-11
1250	-1	-0	-2	-3	-2	-1	-0	-1	-1	0	-0	0	1	3	2	1	-1	-7	-11
1600	-1	0	-3	-4	-2	-1	-2	-2	-1	1	3	-1	1	2	1	0	-3	-9	-14
2000	-2	-1	-1	-2	-2	-1	-1	-1	-2	-0	3	1	2	1	2	2	-2	-9	-13
2500	-2	-1	-2	-3	-2	-1	-0	1	0	1	1	-1	2	2	1	-0	-2	-8	-13
3150	-5	-3	-3	-4	-3	-1	2	2	1	3	2	-4	-2	-0	-3	-3	-5	-10	-14
4000	-5	-3	-4	-4	-3	-2	-0	3	3	3	2	-2	-3	-3	-3	-3	-7	-10	-15
5000	-4	-2	-3	-3	-2	-1	0	1	2	3	3	-2	-1	-2	-3	-4	-7	-10	-15
6300	-5	-3	-3	-4	-3	-2	1	2	3	3	3	-3	-2	-2	-4	-5	-8	-10	-14
8000	-5	-4	-4	-4	-4	-2	1	3	3	2	3	-2	-1	-2	-4	-5	-10	-11	-15
10000	-6	-5	-4	-4	-4	-2	1	2	3	3	1	-3	-2	-1	-3	-5	-10	-12	-16
OCTAVE																			
31.5	1	1	3	-0	2	-1	0	-1	-2	-1	0	0	1	-0	-1	-0	-1	1	5
63	-4	-2	-3	-1	-1	-1	0	0	0	0	-0	1	2	2	0	-0	-2	-5	-8
125	-0	0	1	0	-1	-1	-1	-1	-0	-0	-0	0	2	2	0	-0	-2	-2	-8
250	-1	0	1	-0	-1	-1	-1	-1	-1	-1	-1	0	1	1	2	2	0	-3	-8
500	-0	-0	0	-0	-1	0	-0	-1	-0	1	0	-3	0	0	1	2	0	-3	-8
1000	-1	-1	-1	-2	-1	-1	-1	-3	-3	-1	-1	1	1	3	3	2	-0	-5	-10
2000	-2	-1	-2	-3	-2	-1	-1	-1	-1	0	2	-0	1	2	1	1	-3	-9	-13
4000	-4	-3	-3	-3	-3	-1	1	2	2	3	2	-3	-2	-1	-3	-3	-6	-10	-15
8000	-5	-4	-4	-4	-3	-2	1	2	3	3	2	-2	-2	-2	-4	-5	-9	-11	-15
OVERALL	-2	-1	-1	-1	-1	-1	-0	-0	-0	-0	-0	0	2	2	0	-0	-2	-3	-7

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:

A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:

MILITARY POWER
2800 RPM

METEOROLOGY:

TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

FREQ (HZ)	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	-11	-13	-8	-6	-5	-5	-3	-2	1	1	2	2	3	3	-1	-6	-6		
31.5	-3	-3	-3	-2	-3	-2	-2	1	-1	0	1	1	0	2	0	0	4		
40	-8	-7	-6	-4	-4	-3	-3	-2	-0	0	1	2	2	1	3	3	-4		
50	-15	-13	-8	-4	-3	-4	-2	-0	0	1	2	3	3	3	-2	-16	-15		
63	-14	-11	-8	-4	-3	-1	-2	-2	-2	-1	1	3	4	2	3	-2	-9		
80	-19	-19	-13	-11	-6	-5	-7	-2	2	3	4	4	3	-3	-9	-12	-18		
100	-6	-6	-5	-4	-4	-3	-5	-3	-0	2	2	2	3	2	-0	1	-5		
125	-2	-6	-7	-7	-4	-0	0	-1	-4	-3	-1	1	3	2	3	2	-1		
160	-8	-2	-7	-14	-9	-11	-15	-6	2	4	4	1	1	0	0	-3	-23		
200	-5	-1	-1	-5	-4	-7	-4	-5	-2	2	3	1	2	3	0	0	-3		
250	-10	-5	-7	-4	-5	-10	-11	-2	-0	-4	-1	4	4	5	0	-1	-18		
315	-8	-8	-8	-7	-5	-5	-6	-6	1	2	-2	2	4	3	2	-1	-14		
400	-3	-9	-0	-2	-3	-5	-4	-3	1	2	0	1	2	3	0	-1	-17		
500	0	-5	-3	-1	-2	-3	0	0	1	1	-0	-3	0	4	-2	-1	-13		
630	-3	-1	-1	-3	-3	-2	-0	-1	0	0	1	-1	3	3	2	-0	-13		
800	-3	-7	-3	-3	-3	-5	-4	-1	0	1	1	1	3	3	2	-2	-16		
1000	-4	-4	-5	-4	-4	-3	-1	-1	1	2	-0	2	3	2	0	-4	-14		
1250	-4	-7	-6	-5	-4	-4	-1	0	2	3	1	3	1	1	-0	-5	-15		
1600	-5	-7	-6	-5	-4	-5	-3	-0	3	5	4	-2	-1	-1	-3	-8	-16		
2000	-4	-6	-5	-5	-4	-6	-3	0	2	5	4	-1	-1	-2	-4	-8	-19		
2500	-4	-6	-3	-3	-3	-4	-2	0	1	5	2	0	1	-1	-2	-8	-18		
3150	-4	-7	-5	-4	-4	-4	-2	1	3	4	3	-1	-0	-2	-3	-9	-21		
4000	-5	-7	-4	-4	-3	-4	-1	1	3	5	2	-1	-1	-2	-4	-10	-22		
5000	-4	-7	-4	-3	-2	-3	-0	2	2	4	2	-1	-1	-2	-4	-11	-22		
6300	-4	-7	-4	-3	-2	-3	-0	1	3	4	2	-1	-1	-2	-5	-12	-22		
8000	-4	-7	-4	-3	-2	-2	-0	2	2	5	2	-1	-1	-3	-6	-12	-22		
10000	-5	-8	-5	-3	-2	-2	-0	2	2	5	2	-2	-3	-3	-6	-13	-23		
OCTAVE																			
31.5	-8	-8	-6	-4	-4	-3	-3	-1	0	1	1	2	2	2	2	2	-3		
63	-18	-17	-12	-10	-5	-5	-6	-2	1	3	4	4	3	-2	-6	-10	-16		
125	-7	-2	-7	-11	-8	-8	-10	-5	2	4	4	1	1	1	1	-3	-12		
250	-8	-5	-6	-5	-5	-7	-7	-3	-0	0	-1	3	4	4	1	-1	-10		
500	-1	-5	-1	-2	-3	-3	-1	-1	1	1	0	-0	2	4	0	-1	-14		
1000	-4	-6	-4	-4	-4	-4	-2	-0	1	2	1	2	2	2	1	-4	-15		
2000	-4	-6	-5	-4	-4	-5	-3	0	2	5	3	-1	-0	-2	-3	-8	-18		
4000	-4	-7	-4	-4	-3	-4	-1	1	3	4	3	-1	-1	-2	-4	-10	-21		
8000	-4	-7	-4	-3	-2	-2	-0	2	2	4	2	-1	-2	-3	-5	-12	-22		
OVERALL	-7	-6	-6	-6	-5	-5	-5	-2	2	3	3	2	2	1	-1	-4	-14		

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 6

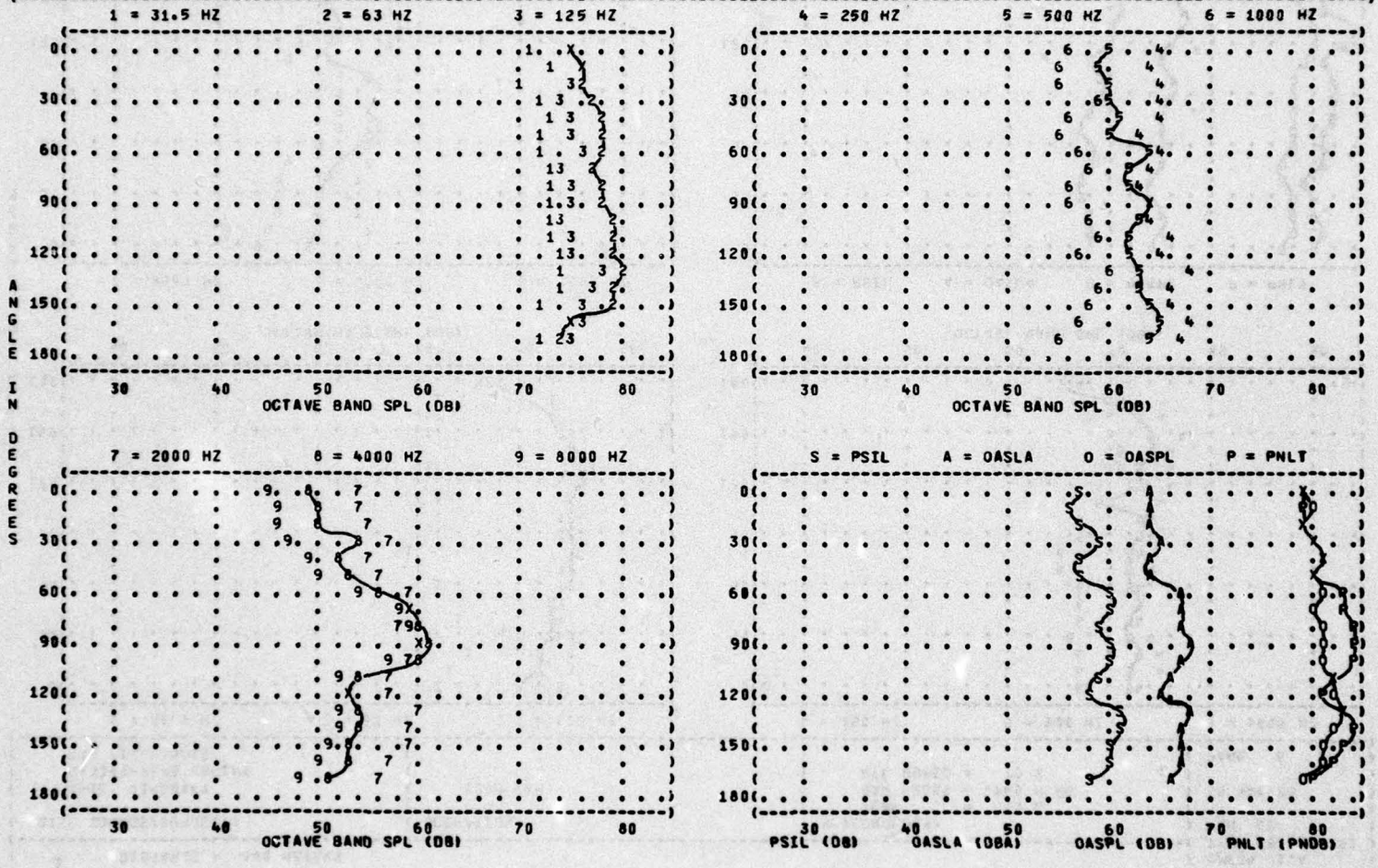


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 6

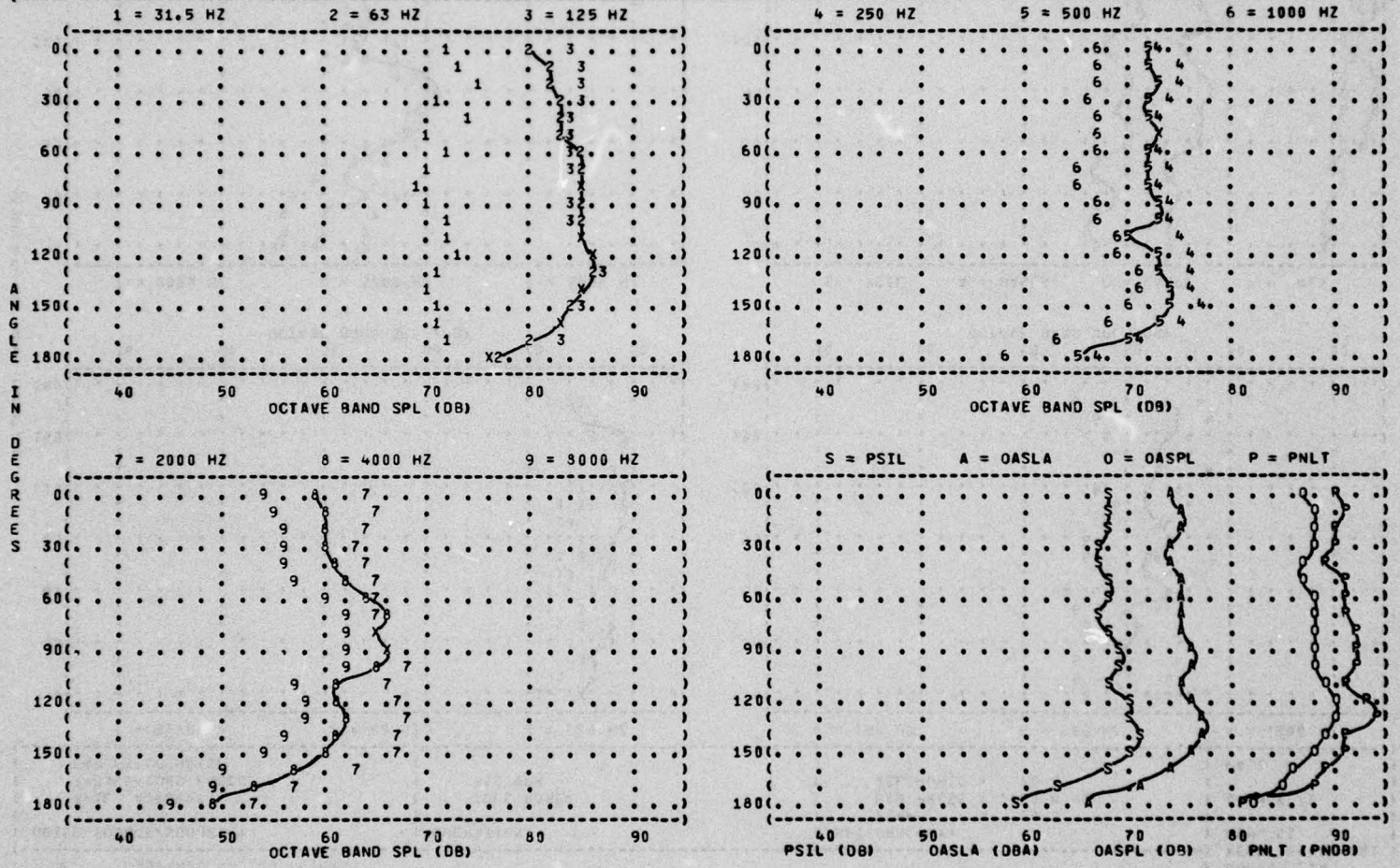


FIGURE: 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 6

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

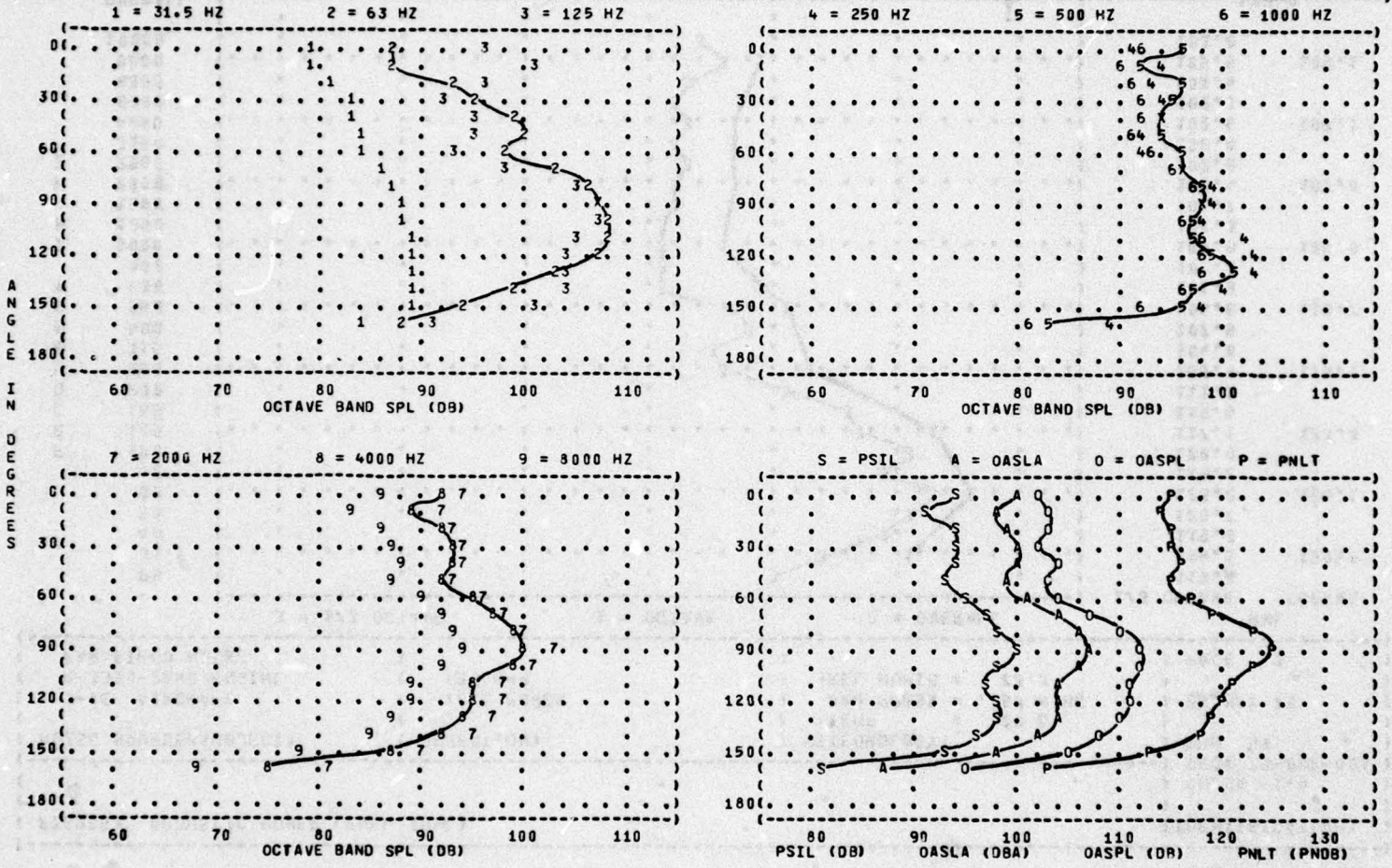


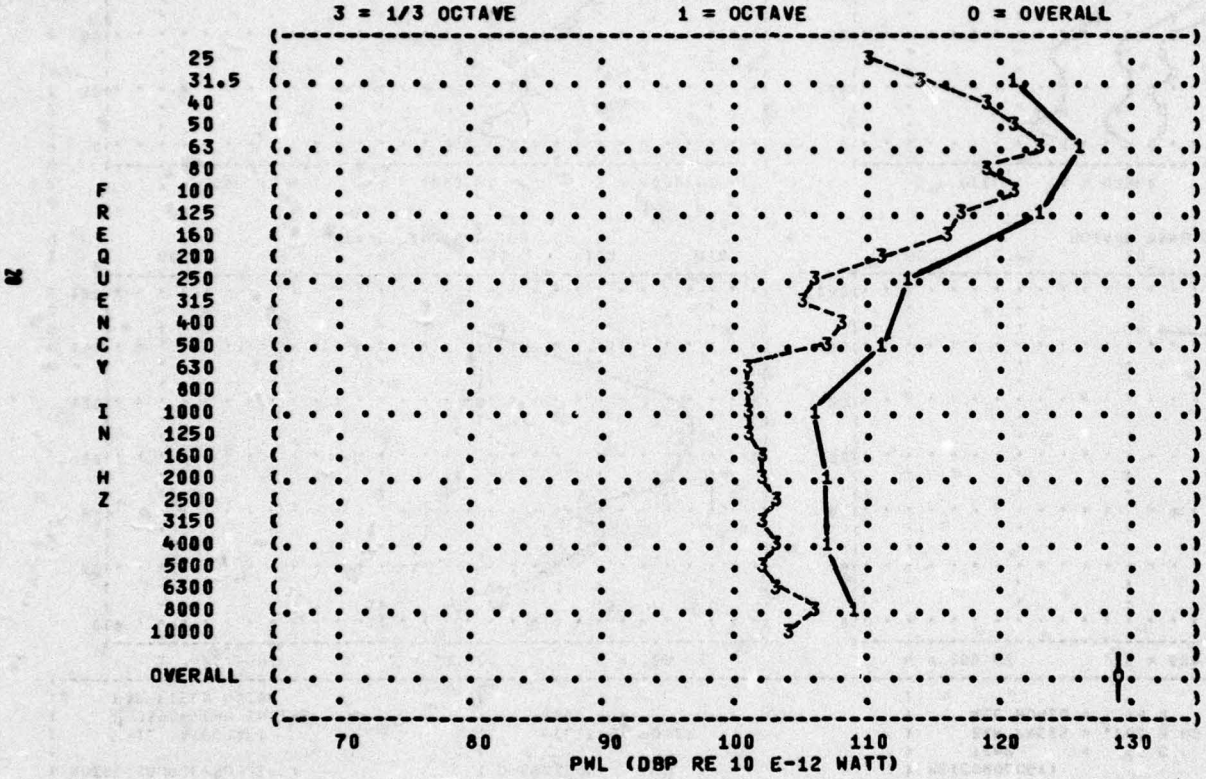
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	110.2	
31.5	114.1	120.8
40	119.3	
50	120.7	
63	123.2	126.1
80	119.2	
100	120.9	
125	117.1	123.3
160	115.9	
200	111.3	
250	105.9	113.1
315	104.8	
400	107.5	
500	106.6	110.7
630	101.5	
800	101.1	
1000	100.9	105.8
1250	101.3	
1600	101.7	
2000	102.4	107.0
2500	102.6	
3150	102.4	
4000	102.6	107.1
5000	102.1	
6300	103.4	
8000	105.5	109.1
10000	103.8	
OVERALL		129.0

FIGURE: ACOUSTIC POWER LEVEL (PWL)

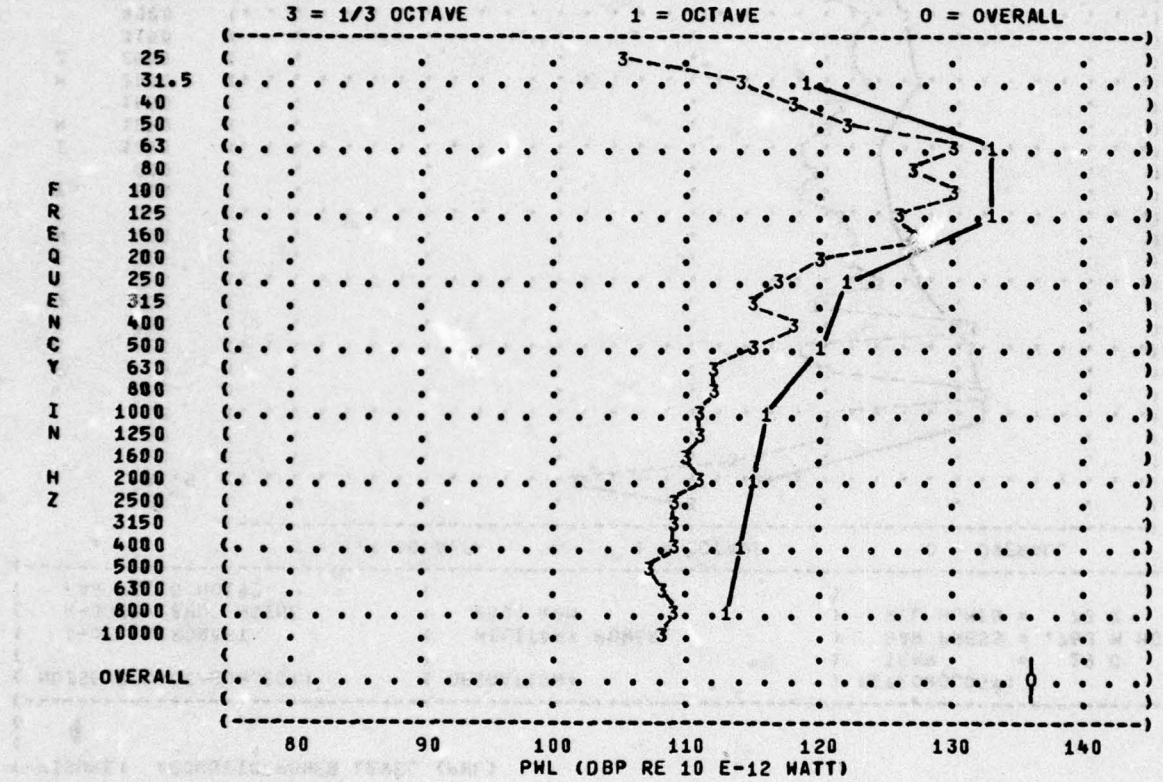
4

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 3



1/3 OCTAVE	PWL OCTAVE
104.7	
113.6	119.3
117.8	
122.0	
130.4	132.6
127.4	
130.0	
126.3	132.7
126.5	
119.8	
116.8	122.5
115.2	
117.9	
115.3	120.4
111.8	
112.5	
111.2	116.3
110.8	
110.0	
110.5	114.8
109.4	
109.3	
109.5	113.5
107.0	
108.0	
109.3	113.2
107.7	
	136.2

FIGURE: ACOUSTIC POWER LEVEL (PWL)

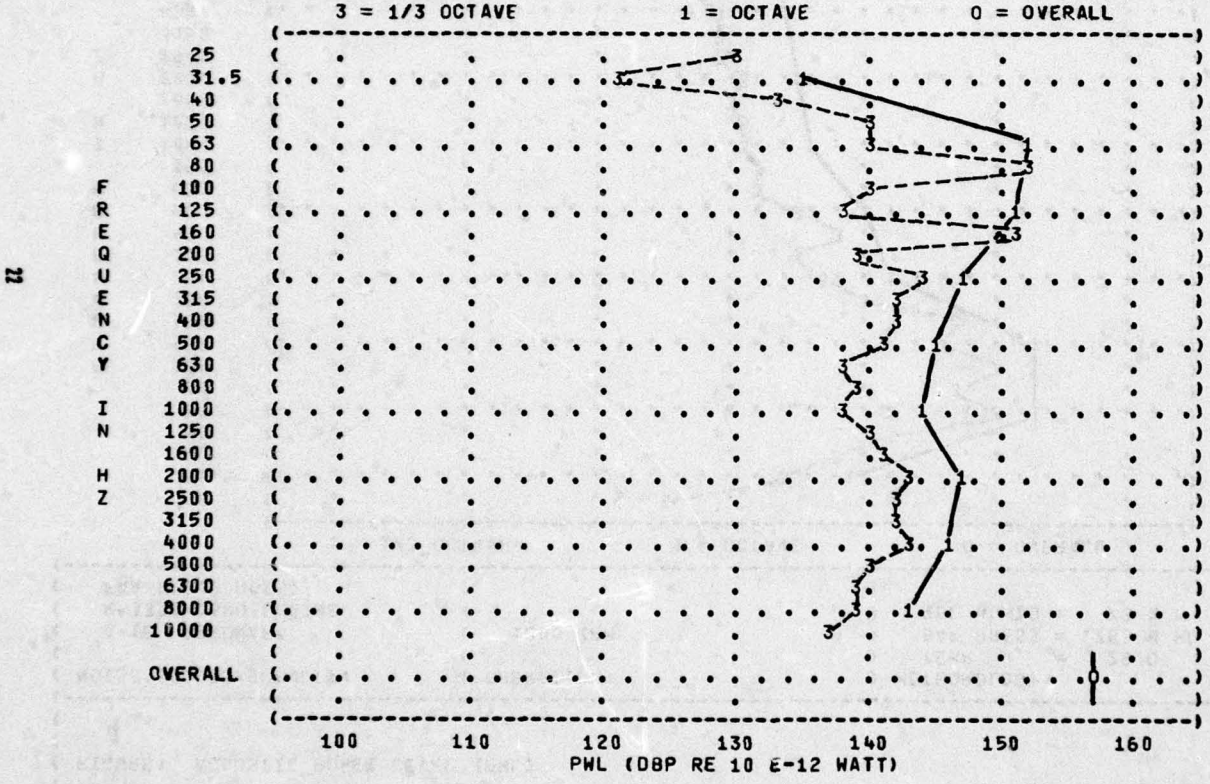
4

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

METEOROLOGY:
TEMP = 29 C
BAR PRESS = .763 M HG
REL HUMID = 73 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	129.9	
31.5	121.5	134.8
40	132.7	
50	140.3	
63	140.4	152.4
80	151.8	
100	139.8	
125	137.7	151.1
160	150.6	
200	138.7	
250	143.8	146.8
315	142.2	
400	141.7	
500	140.7	145.1
630	137.7	
800	139.1	
1000	138.2	144.0
1250	140.1	
1600	141.4	
2000	143.1	147.0
2500	142.1	
3150	141.7	
4000	142.6	146.3
5000	139.9	
6300	139.4	
8000	139.1	143.4
10000	137.2	
OVERALL		157.2

FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 13

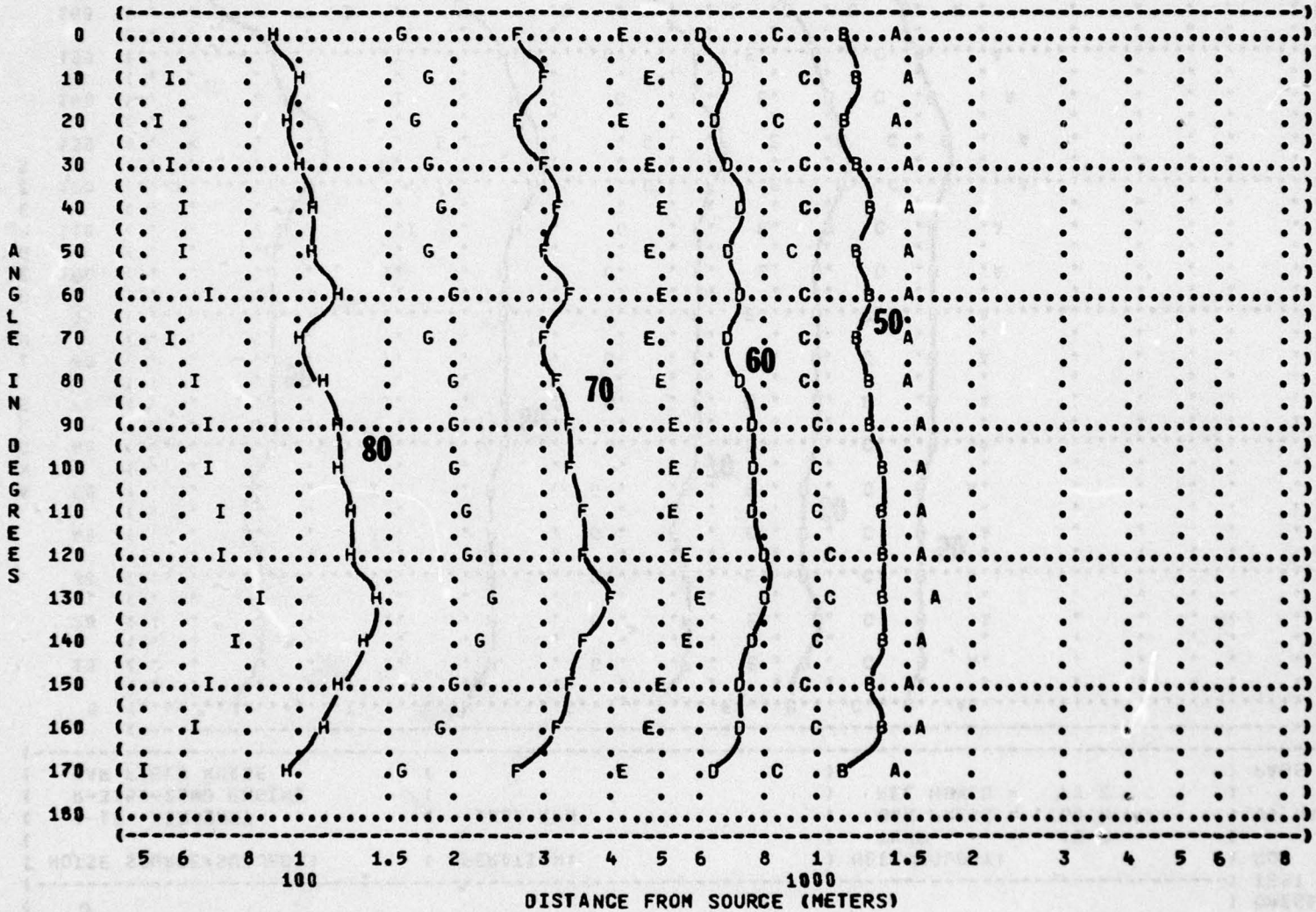


FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 13

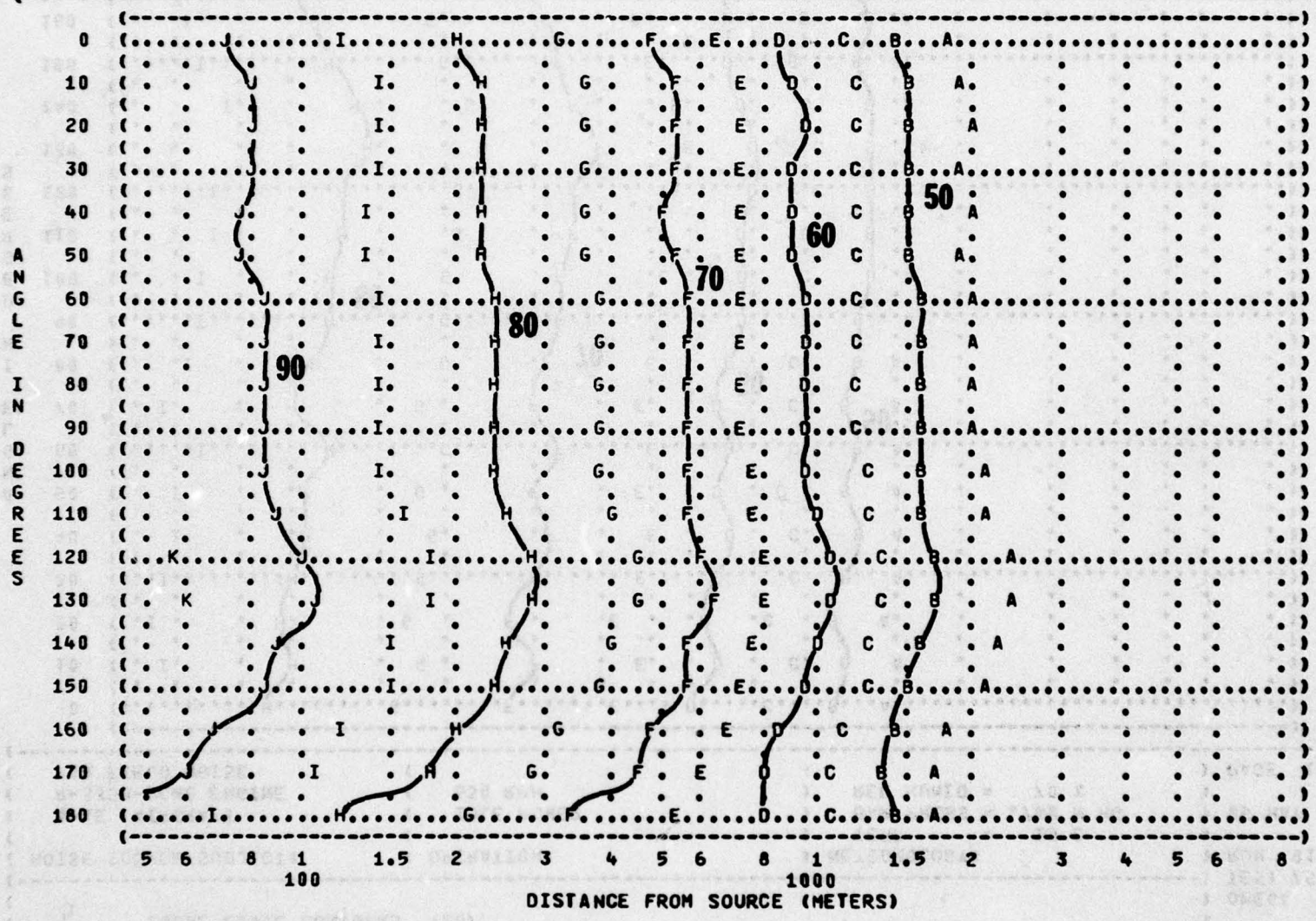


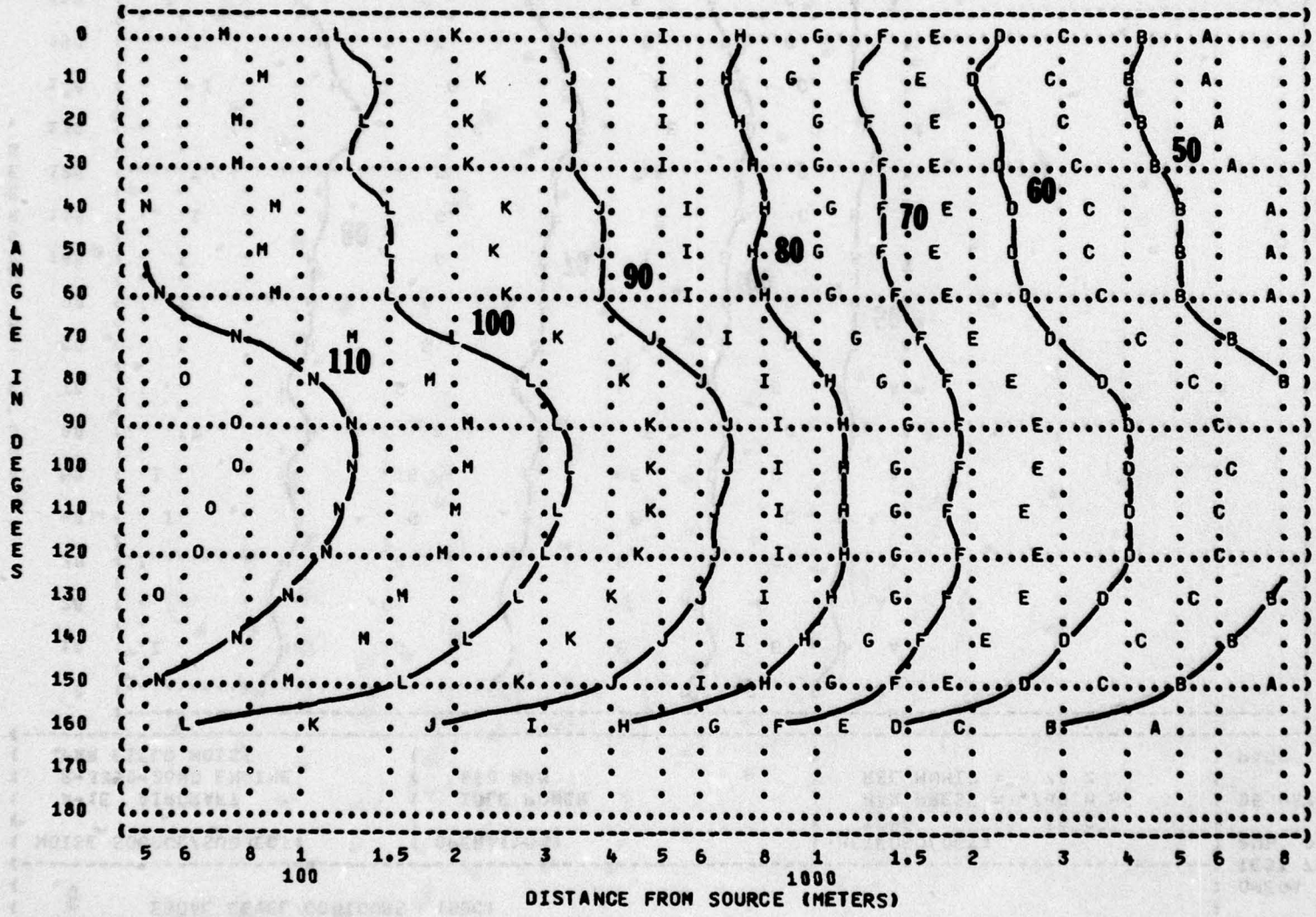
FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



POINT	DB
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

FIGURE 6: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

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

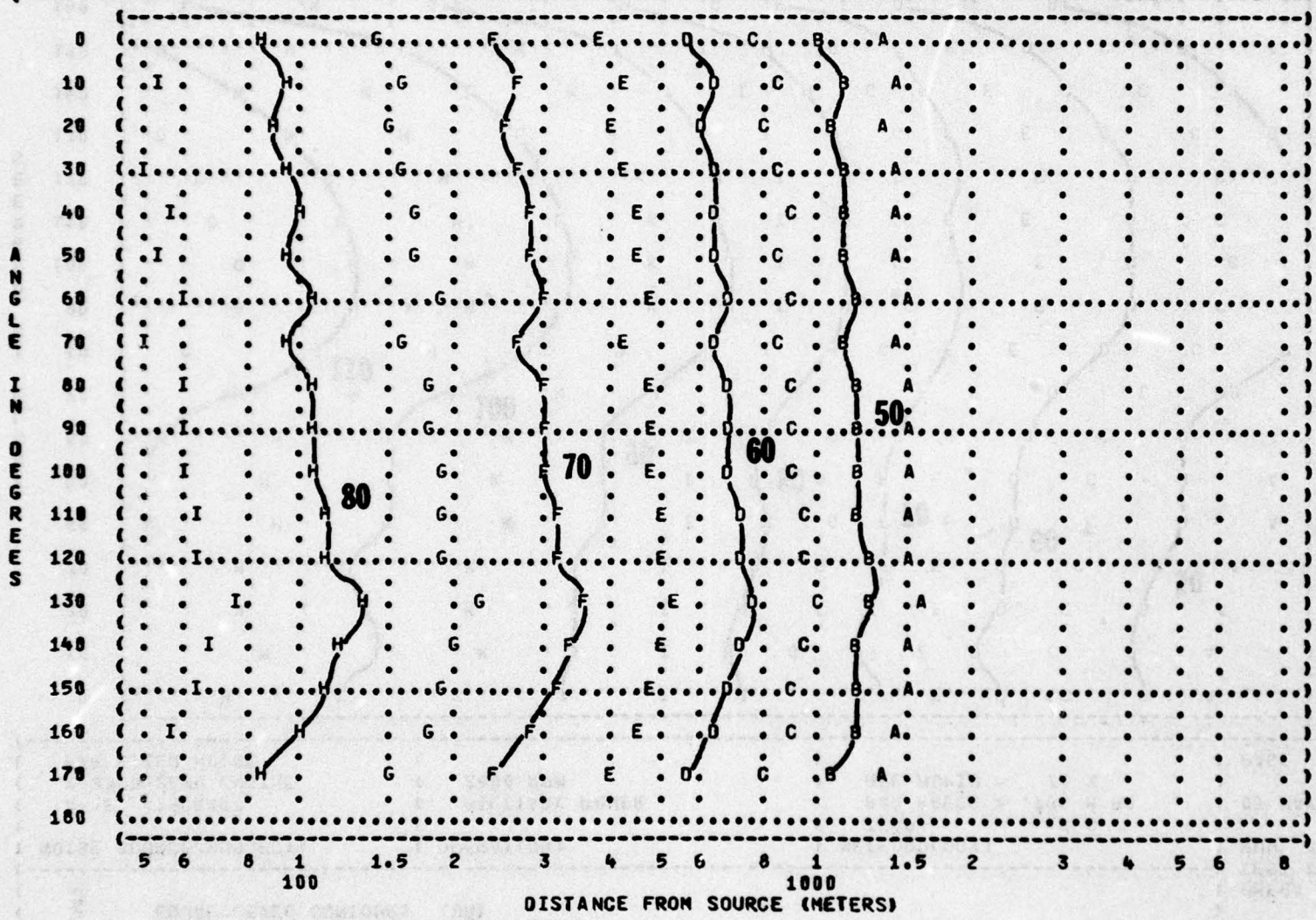


FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

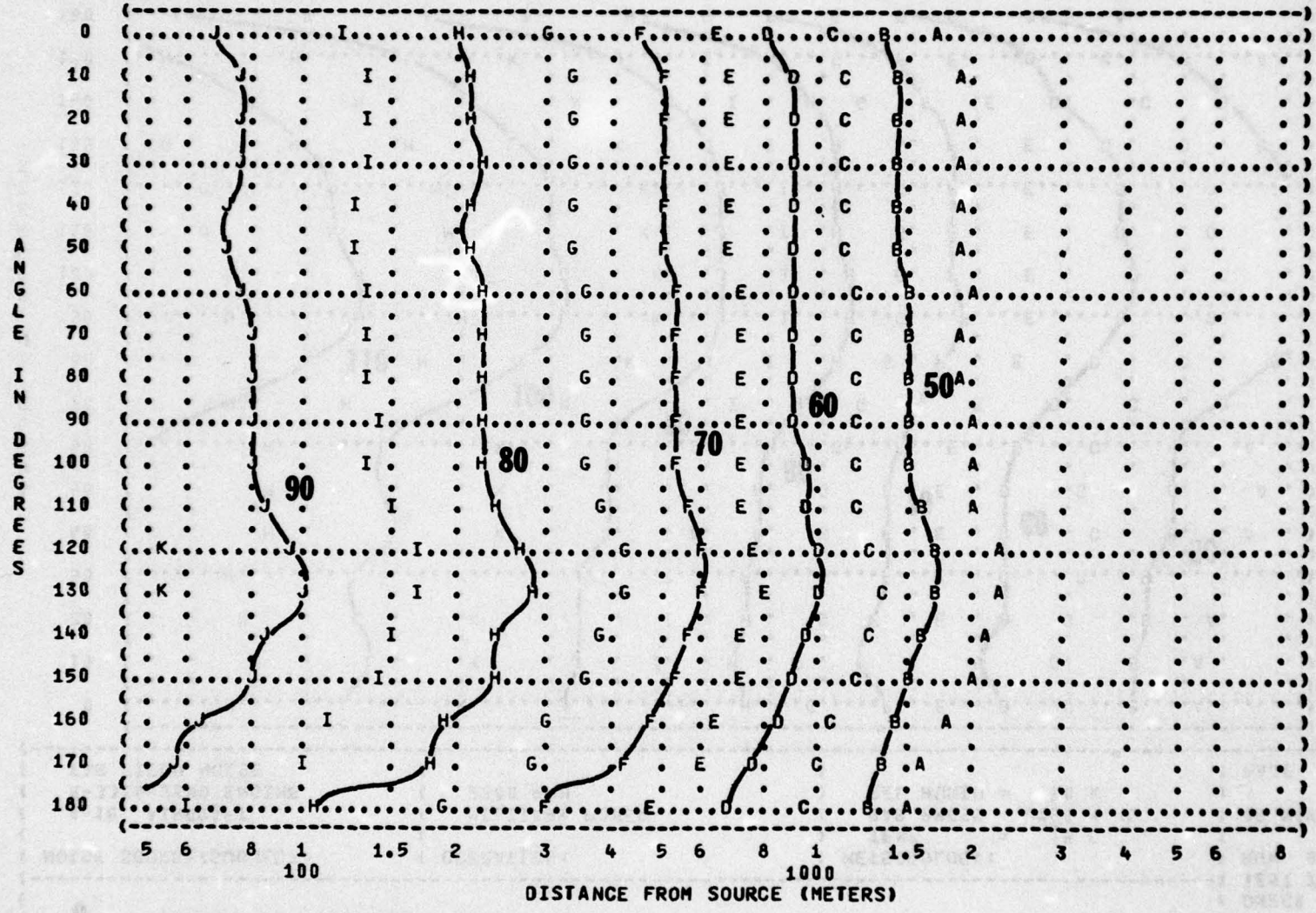


FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

POINT	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110
O	115

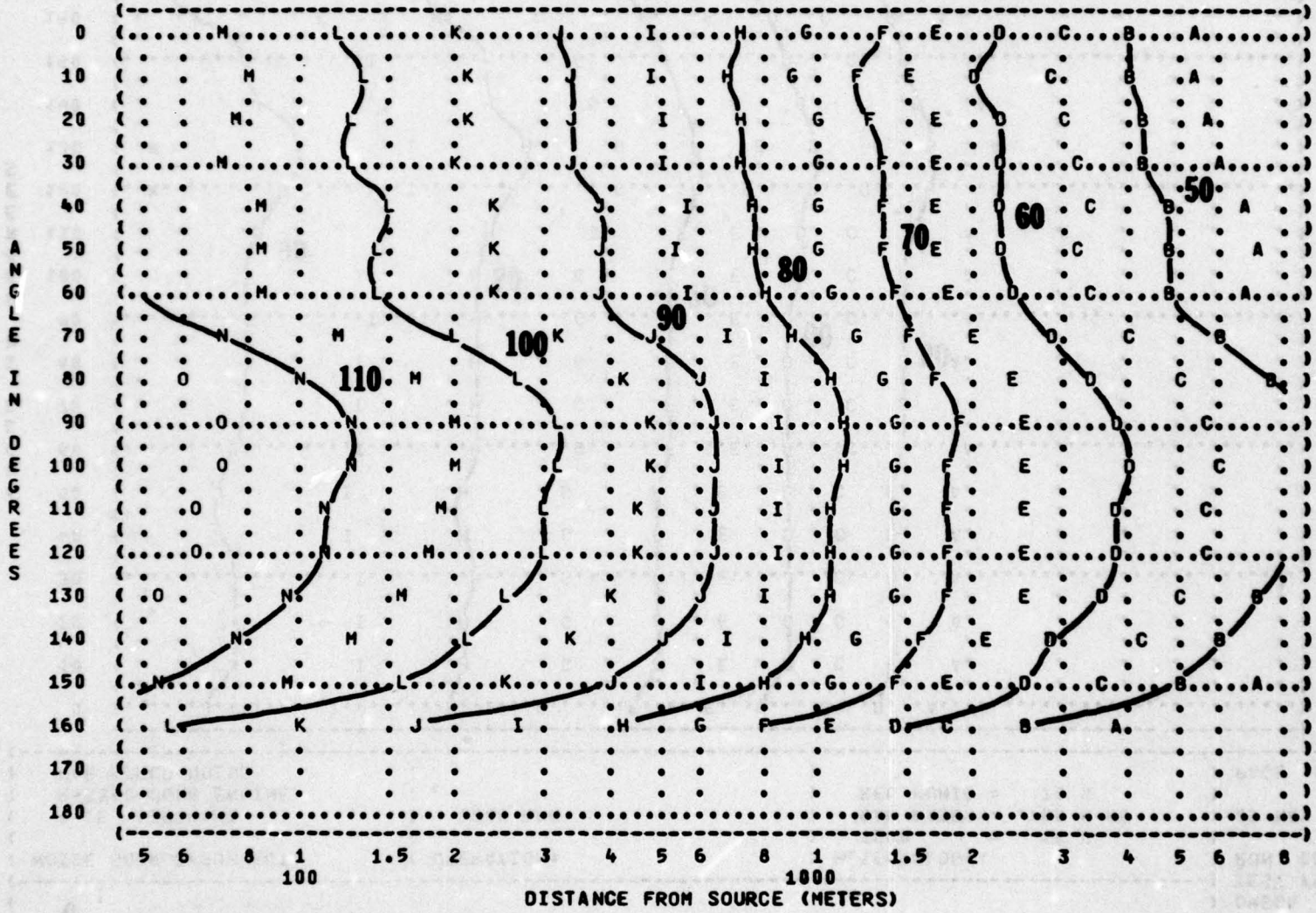


FIGURE 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 15

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

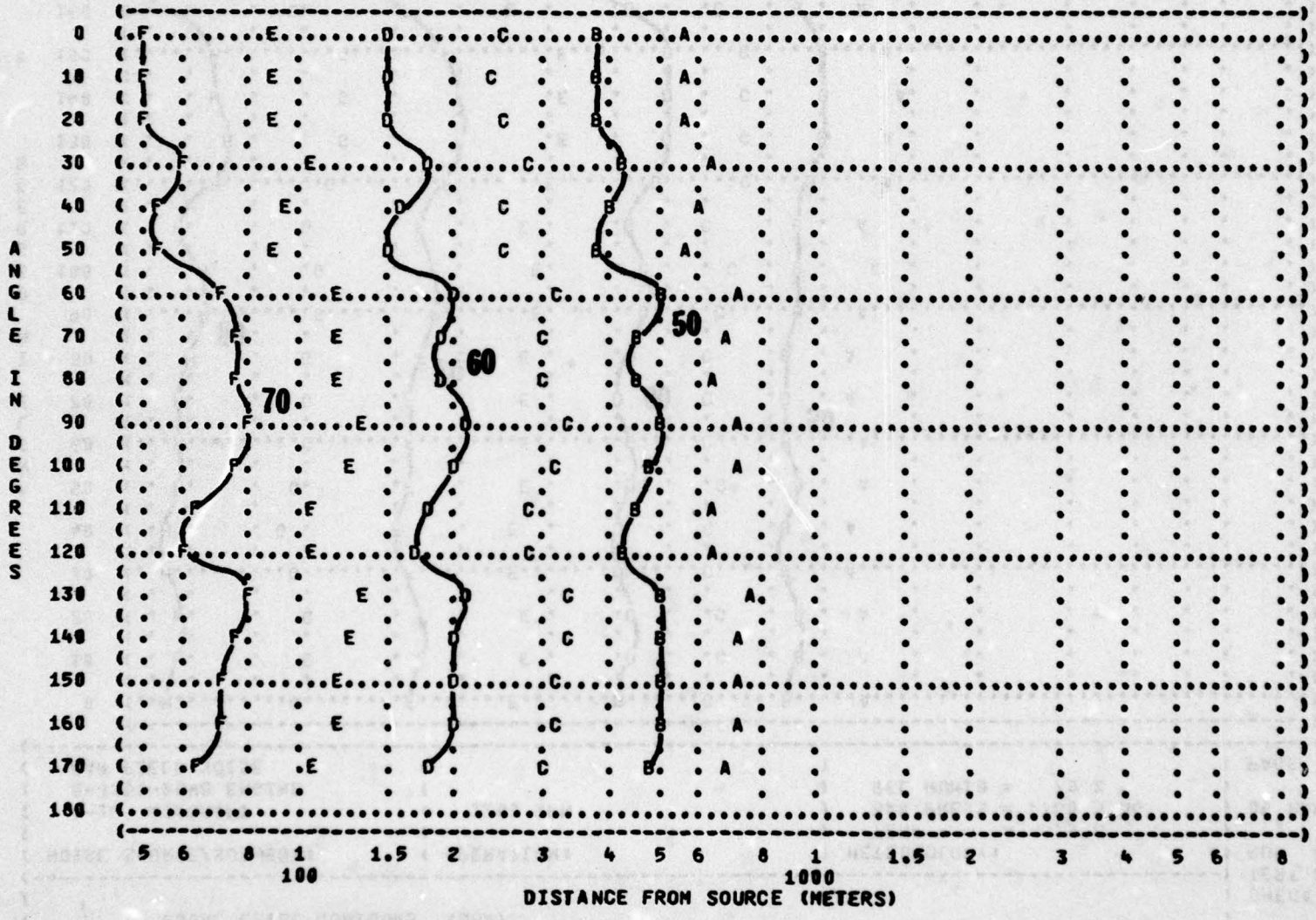


FIGURE: 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 15

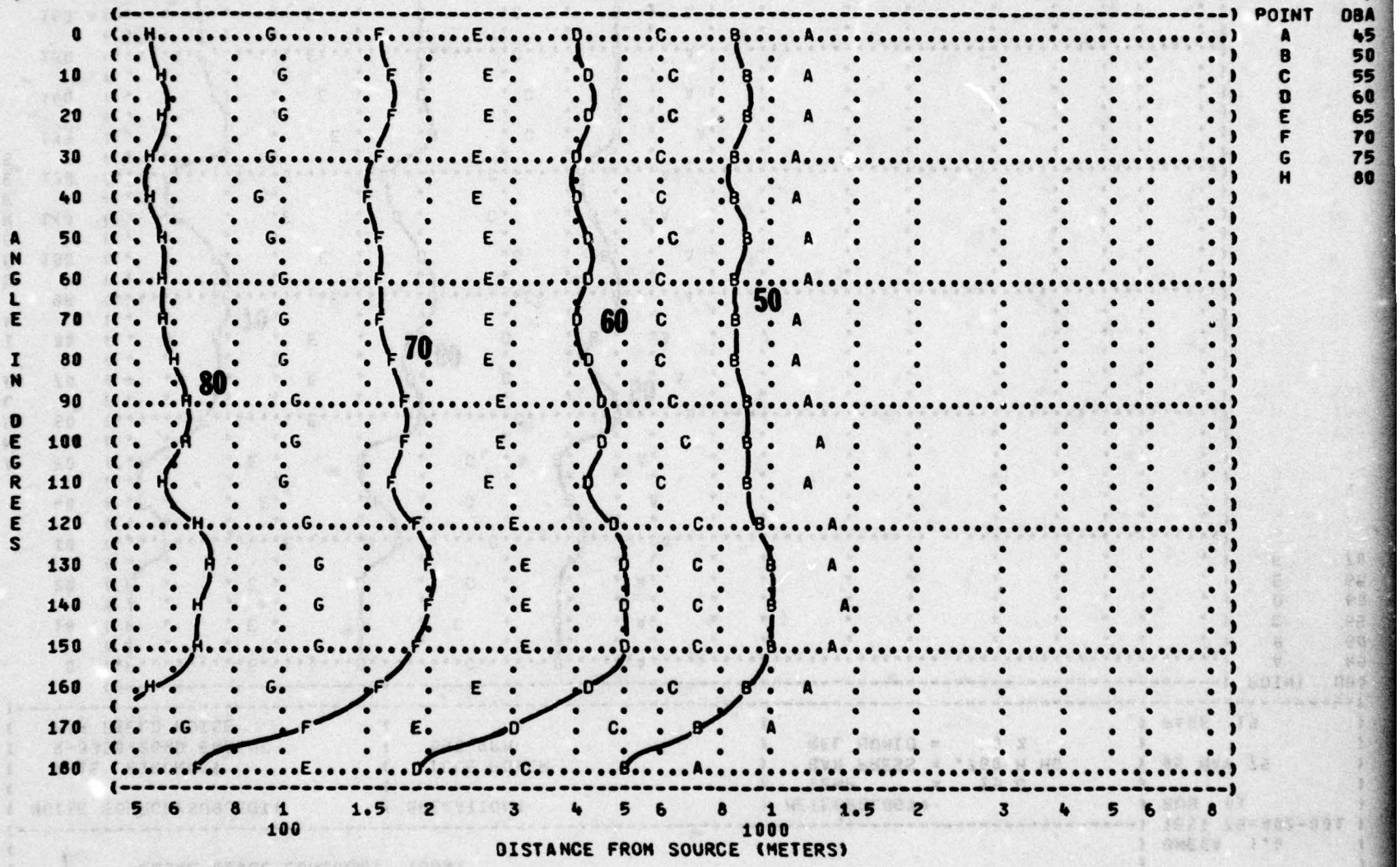


FIGURE: 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

POINT	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90
K	95
L	100
M	105
N	110

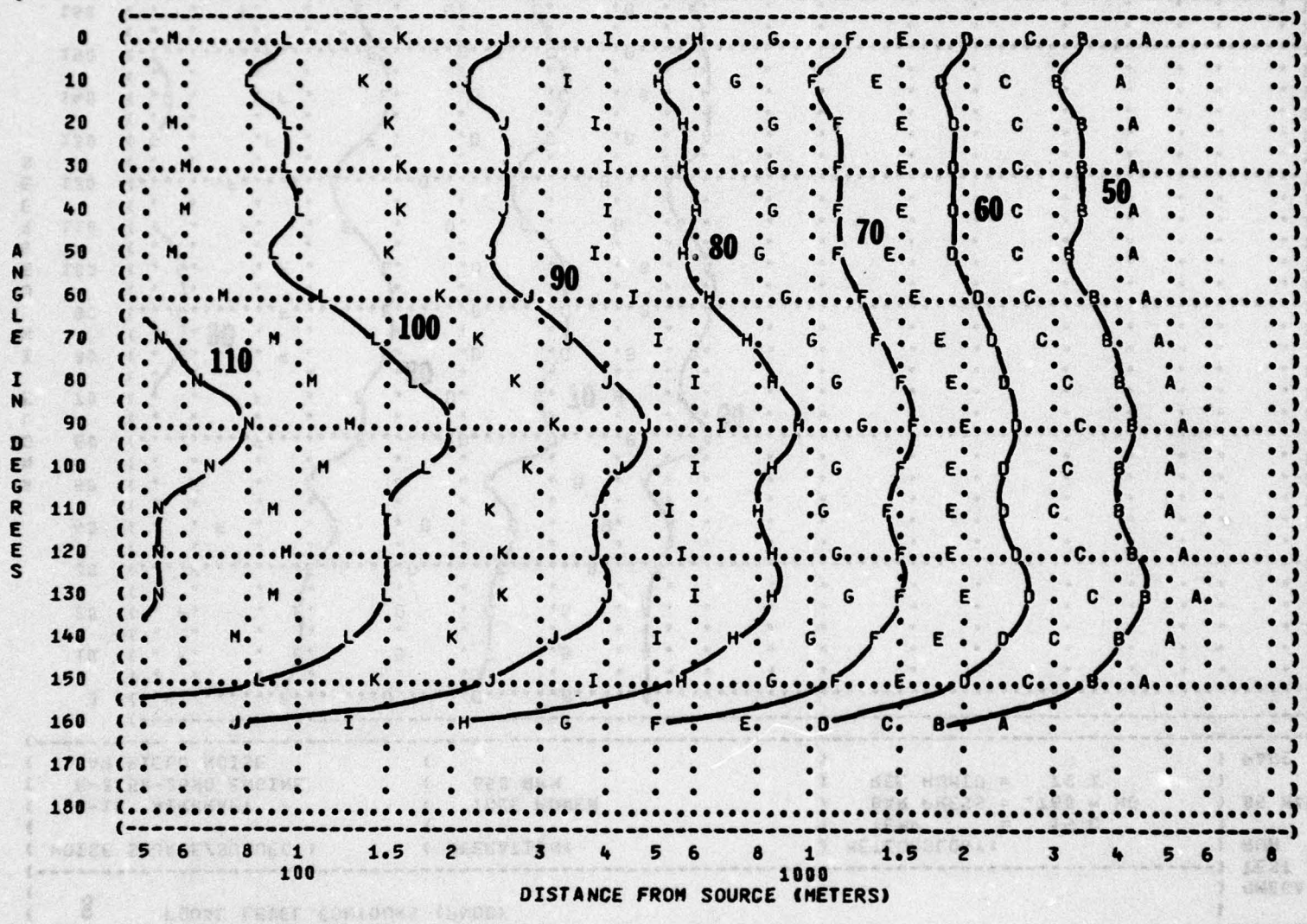


FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01

05 MAY 75

PAGE 16

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90

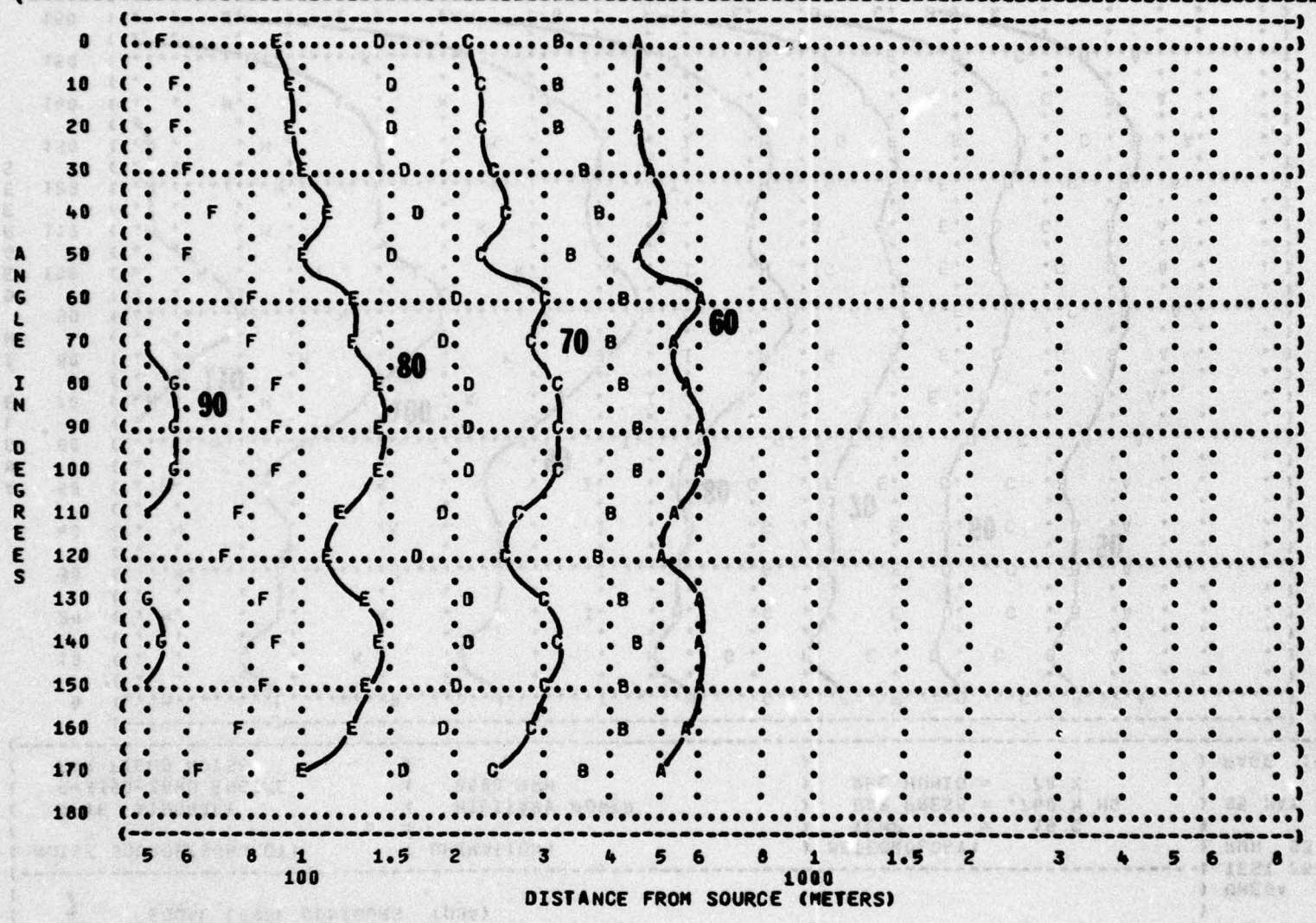


FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 16

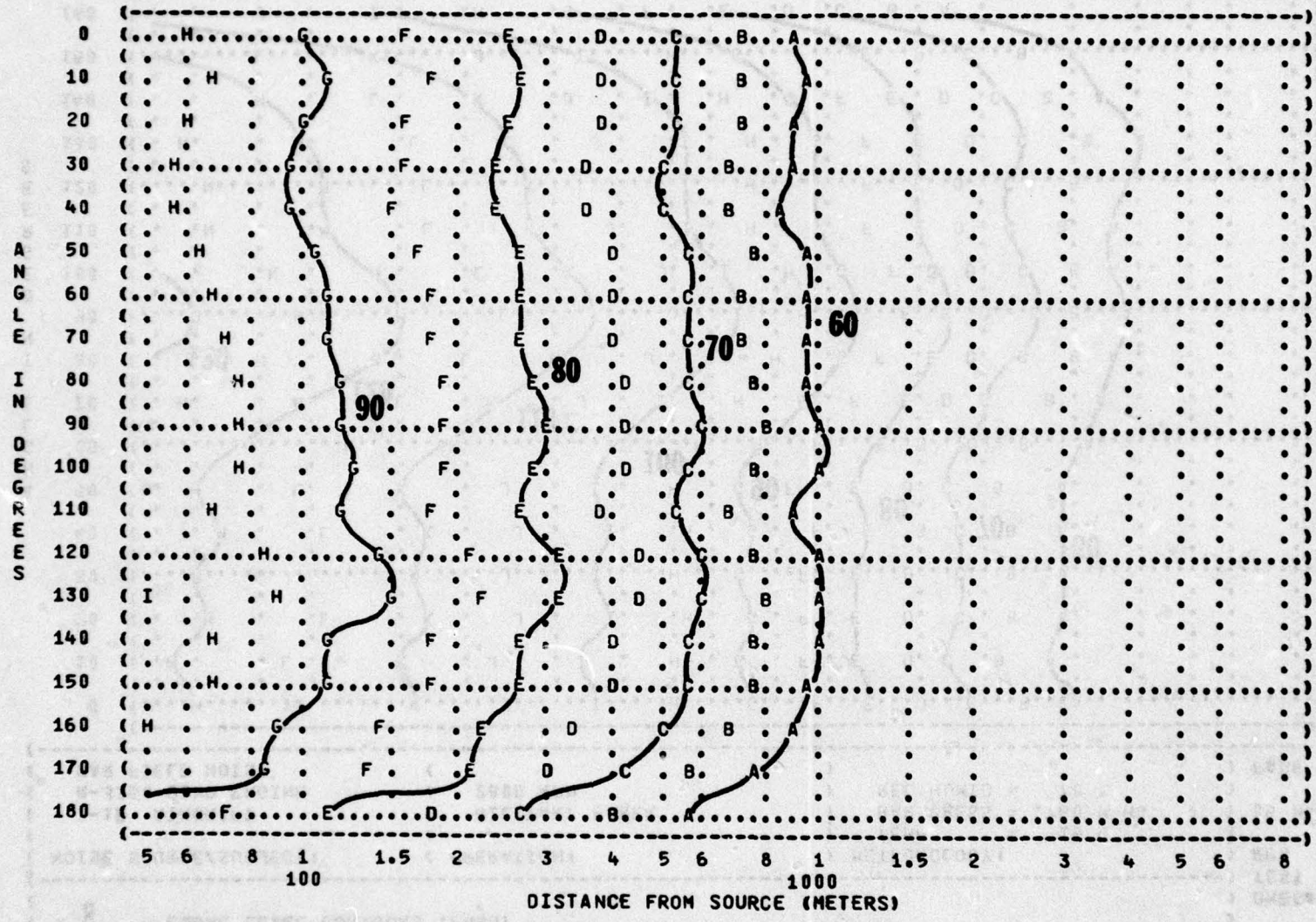


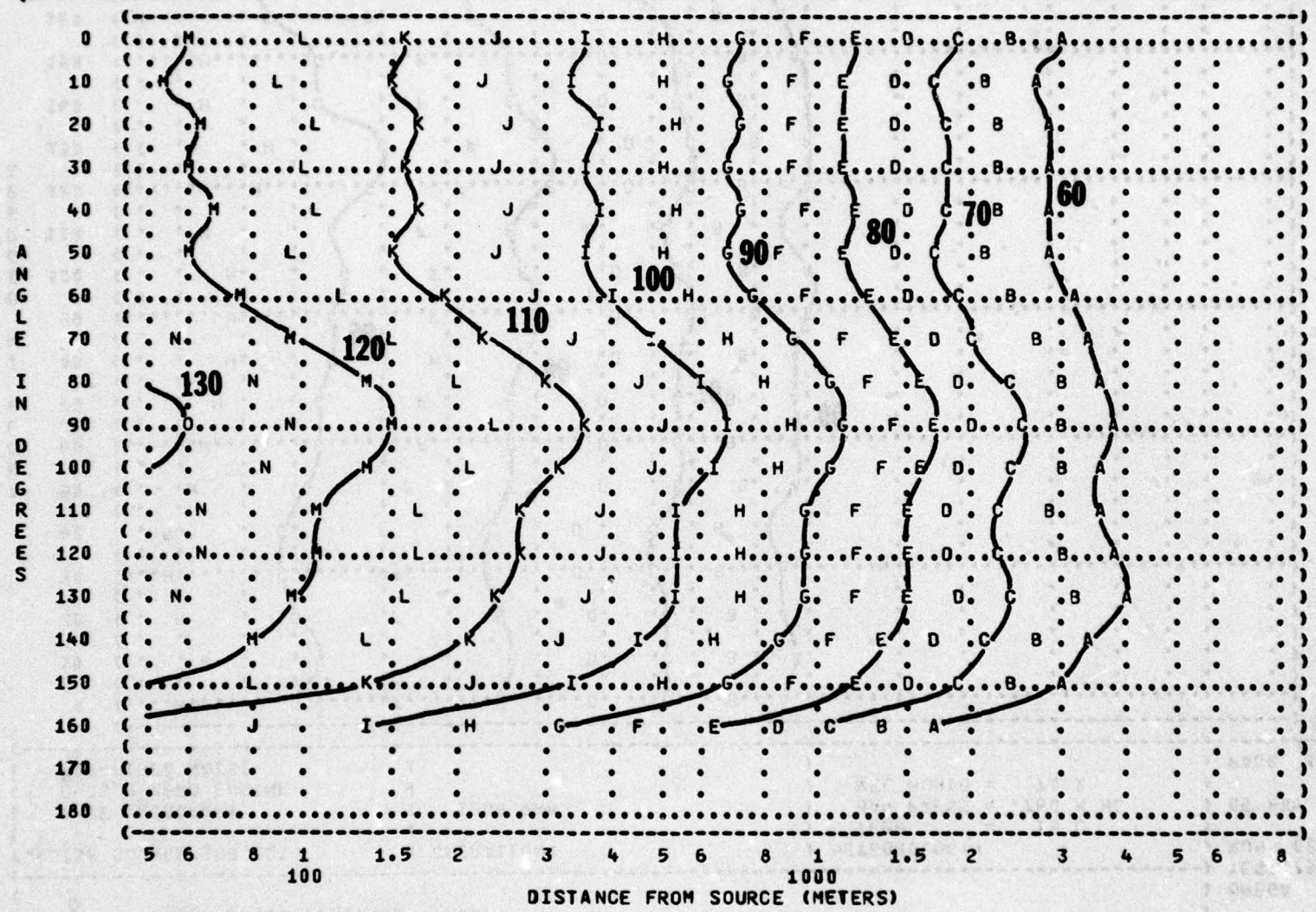
FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100
J	105
K	110
L	115
M	120
N	125
O	130

FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 17

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

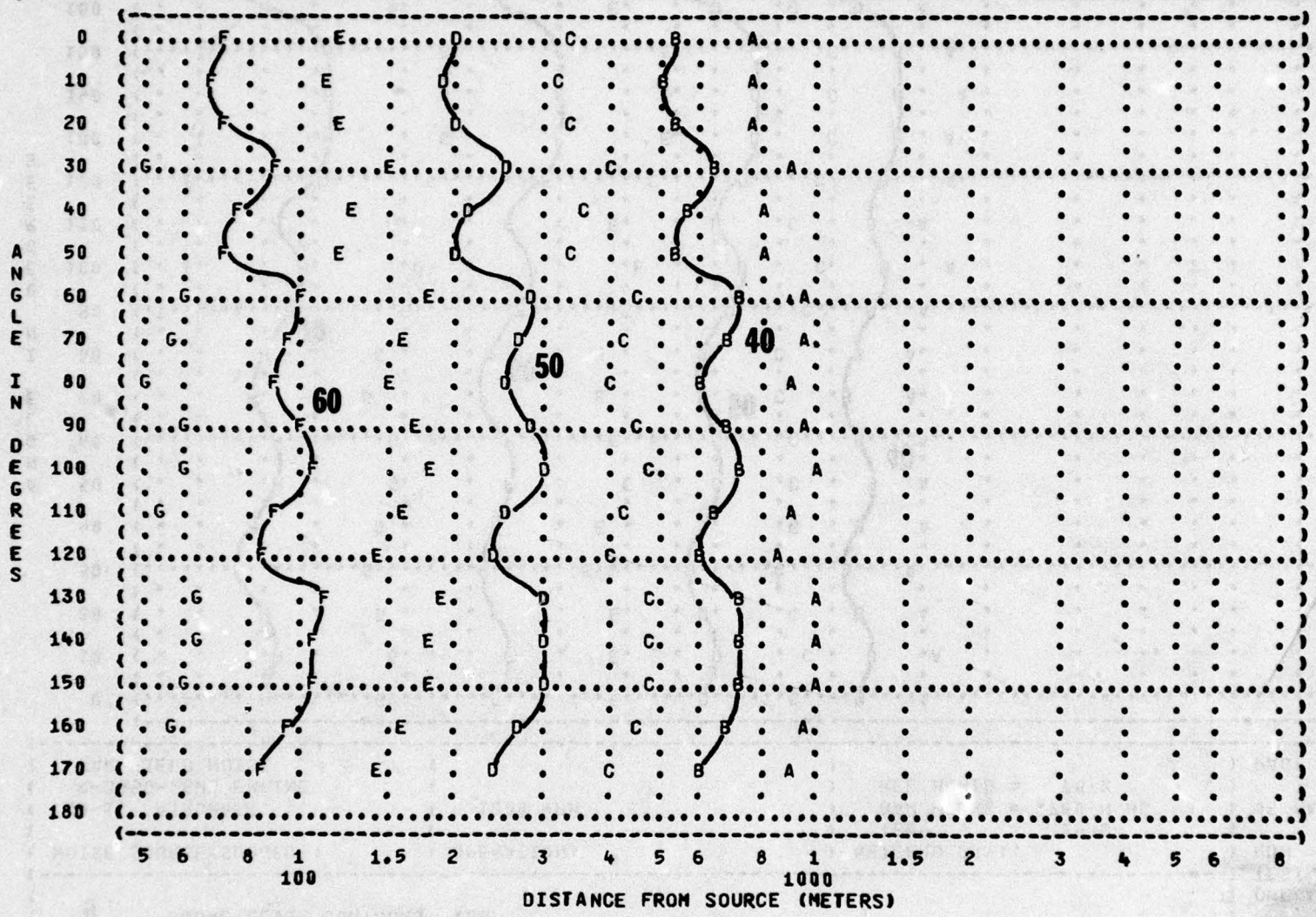


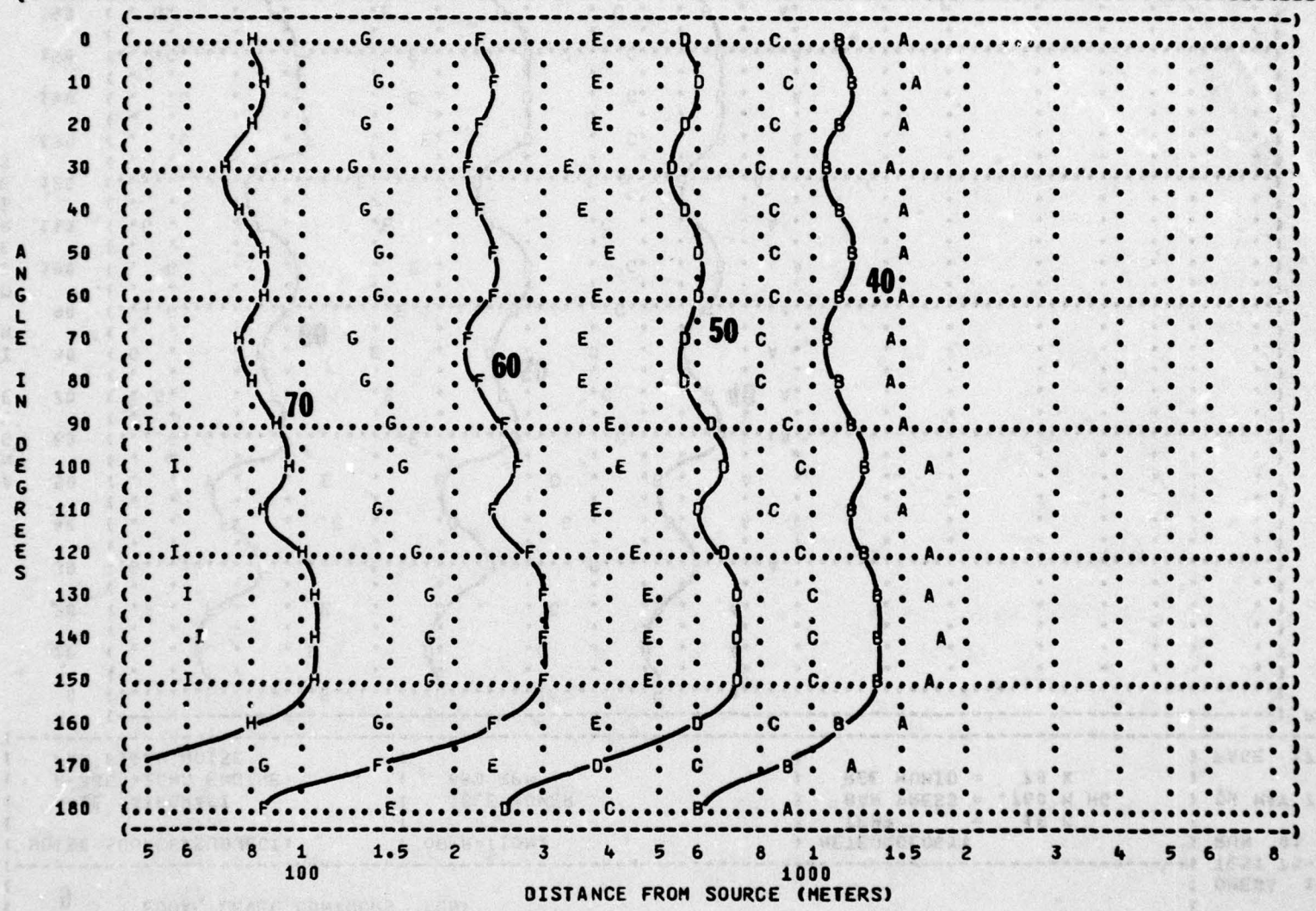
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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



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

FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

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

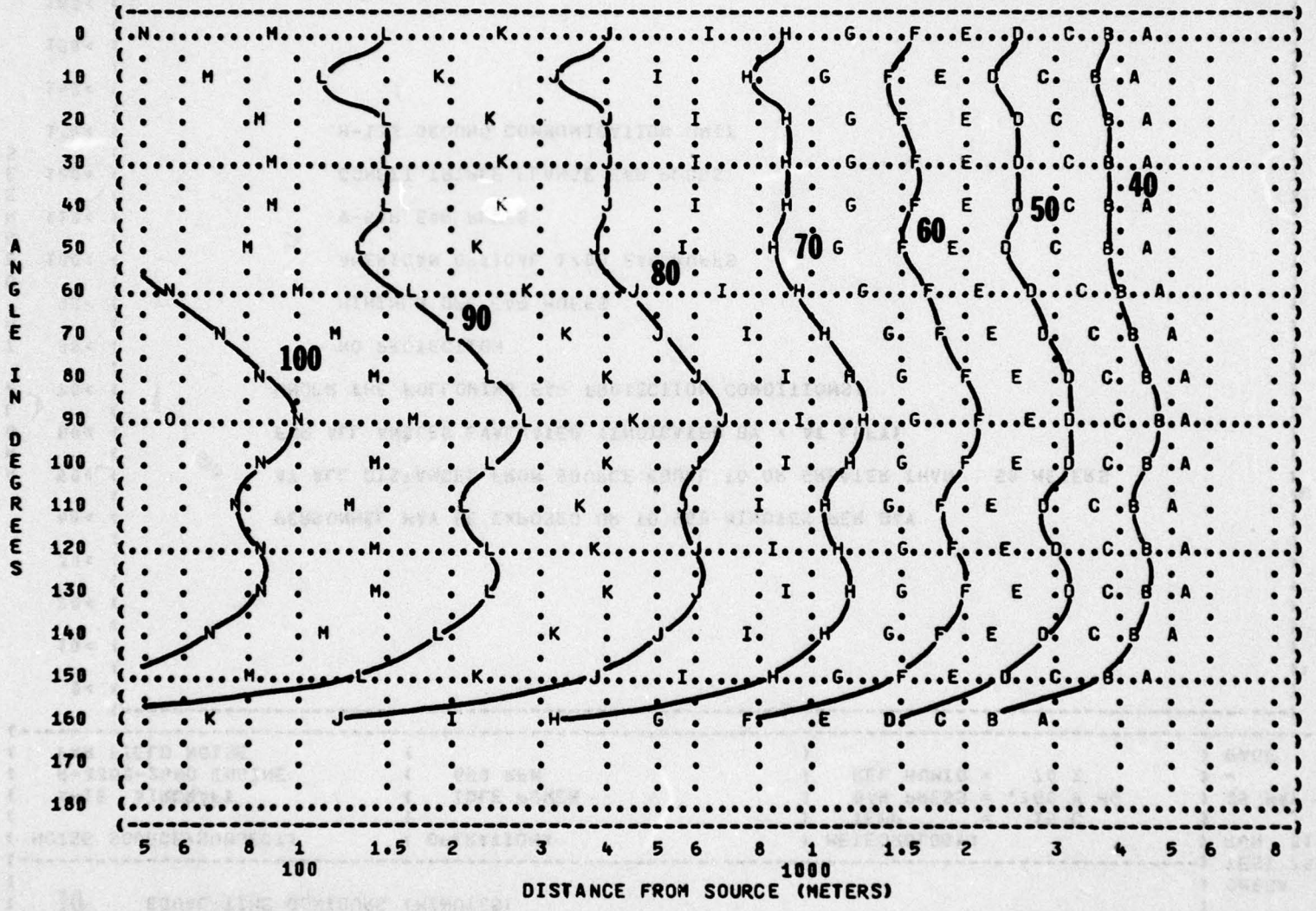


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

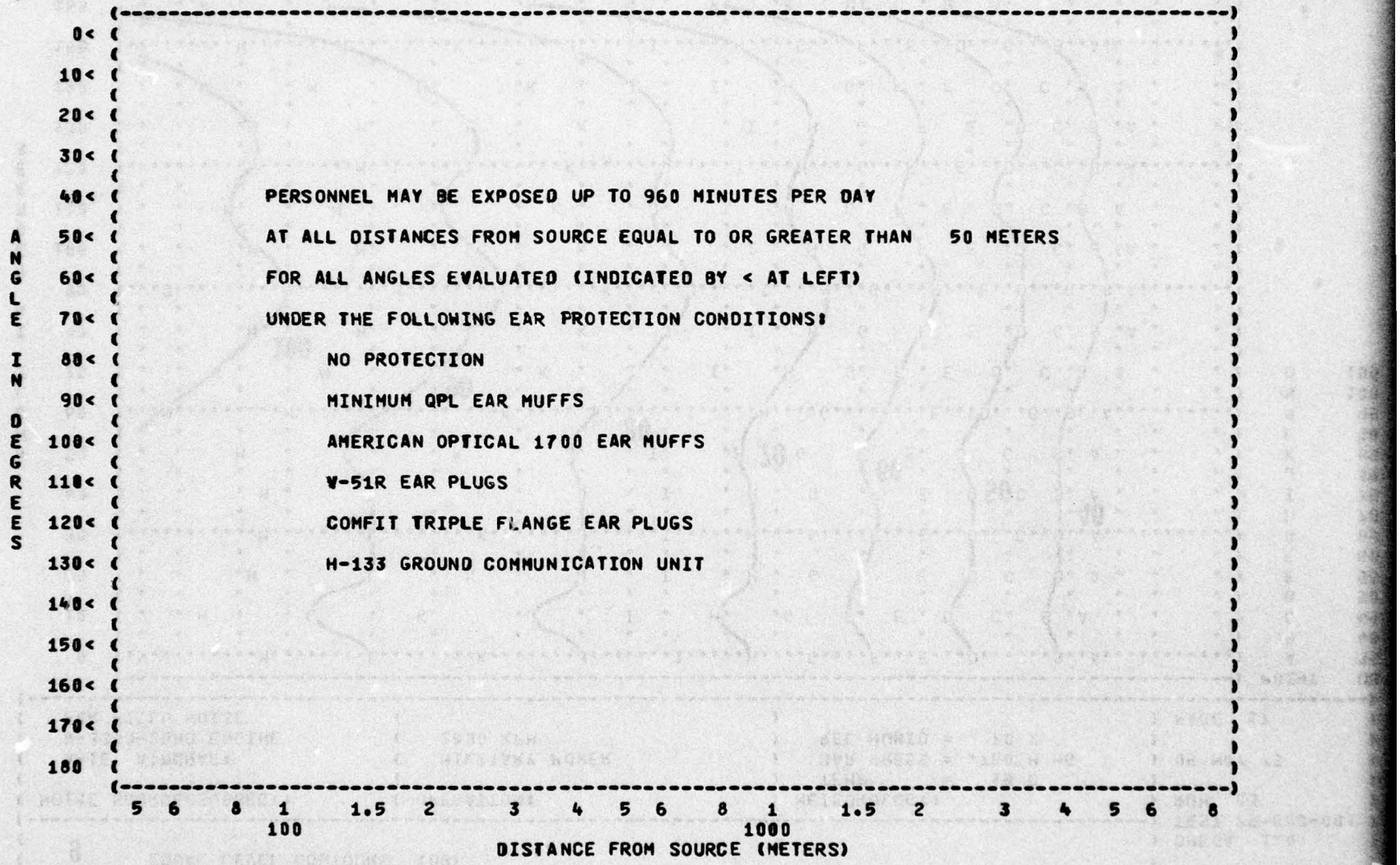


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

POINT	MIN
A	960

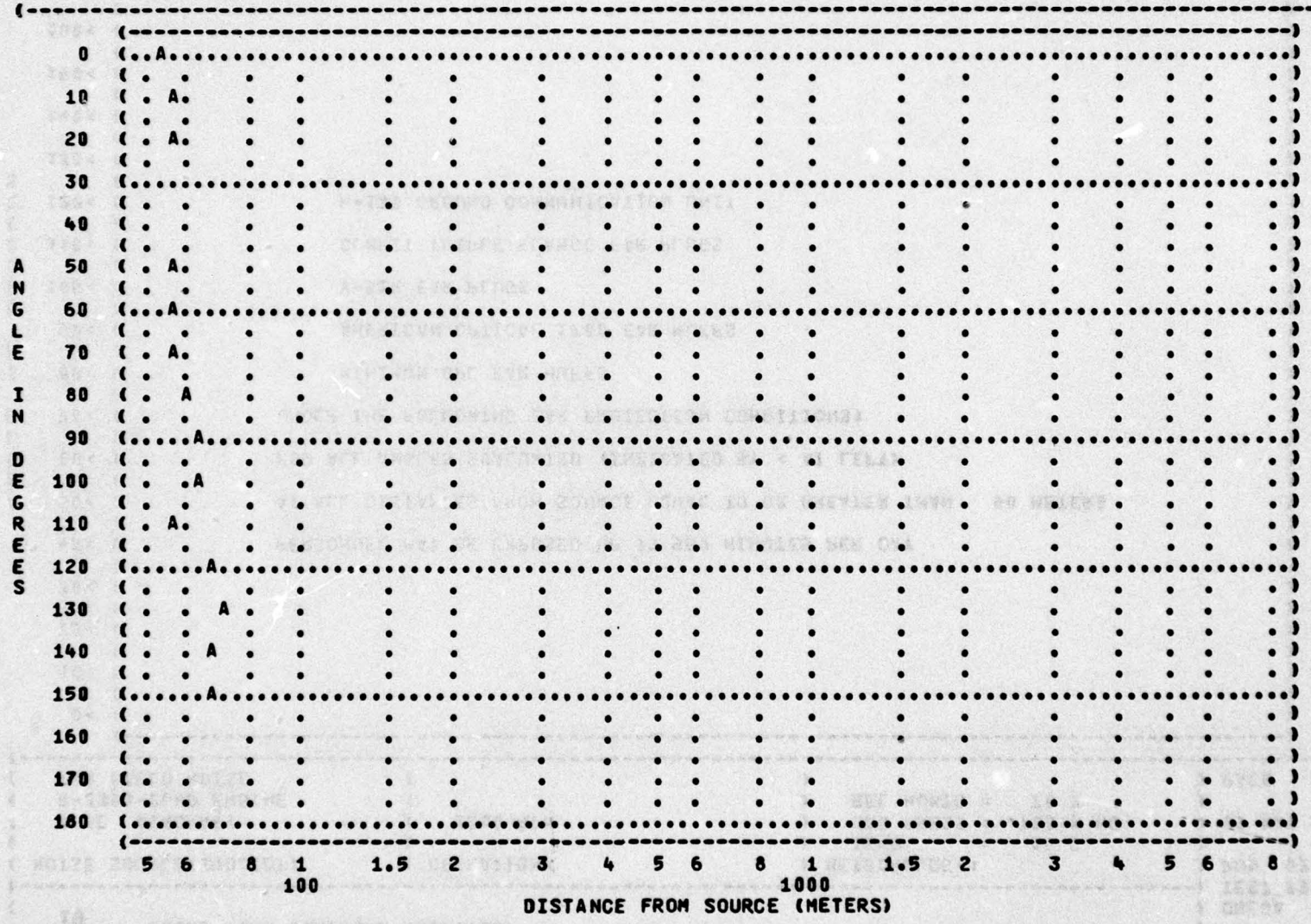


FIGURE: 10	MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) EQUAL TIME CONTOURS (MINUTES)	IDENTIFICATION:
NOISE SOURCE/SUBJECT: A-1E AIRCRAFT R-3350-26WD ENGINE FAR FIELD NOISE	OPERATION: 1200 RPM	METEOROLOGY: TEMP = 15 C BAR PRESS = .760 M HG REL HUMID = 70 %	OMEGA 1.4 TEST 75-802-801 RUN 02 05 MAY 75 PAGE 8

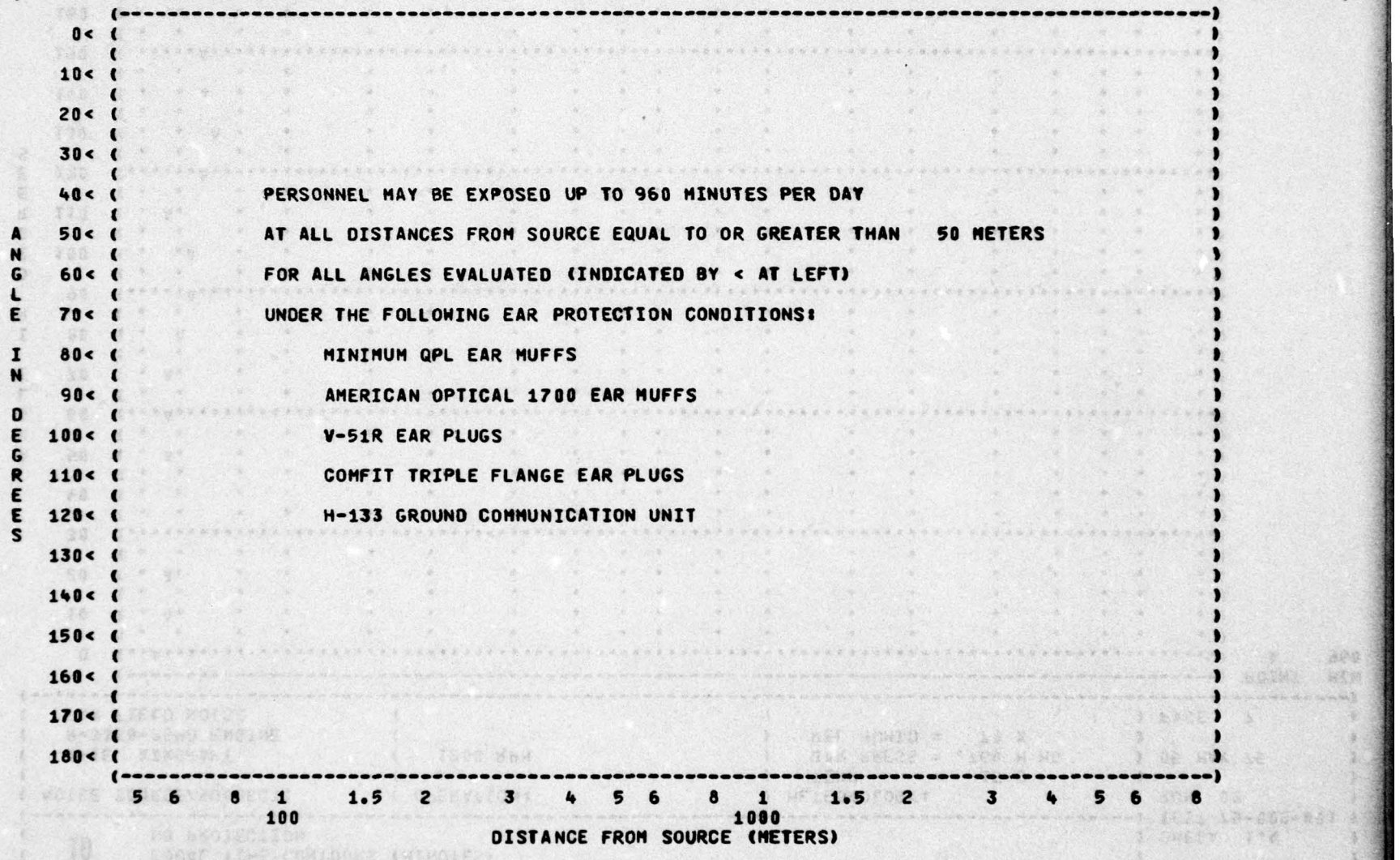


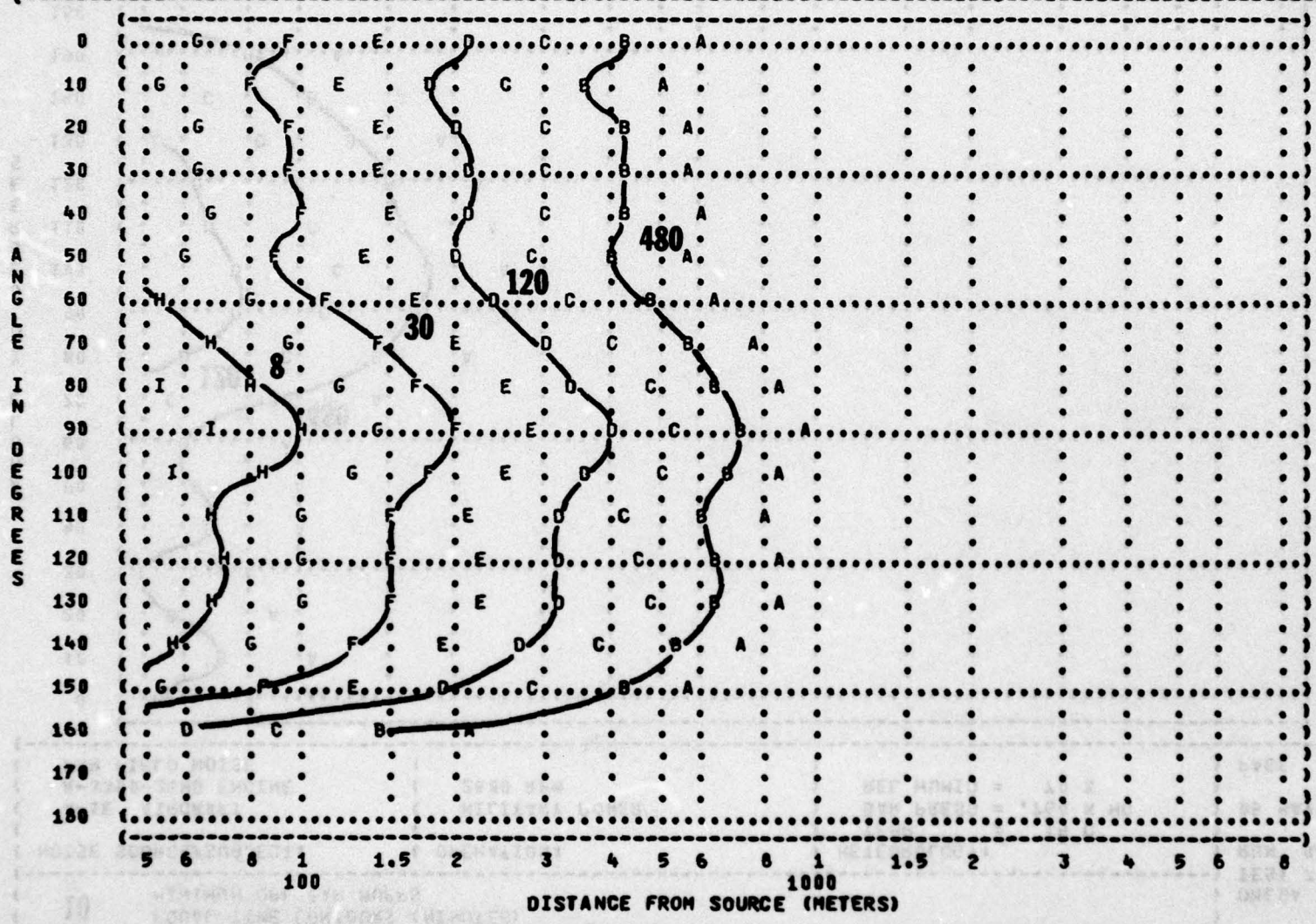
FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30
G	15
H	8
I	4

FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 8

POINT	MIN
A	960
B	480
C	240
D	120

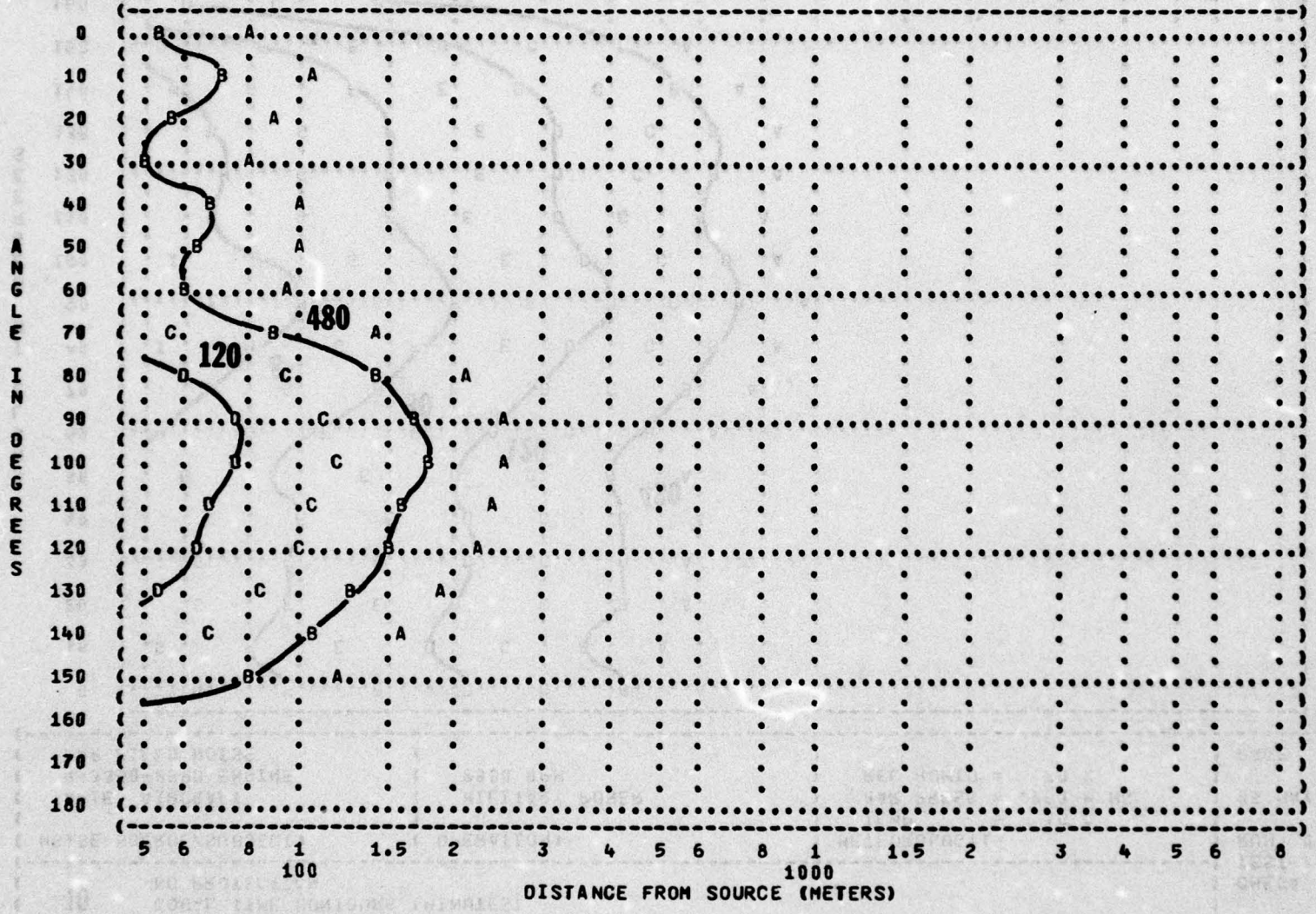


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 9

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

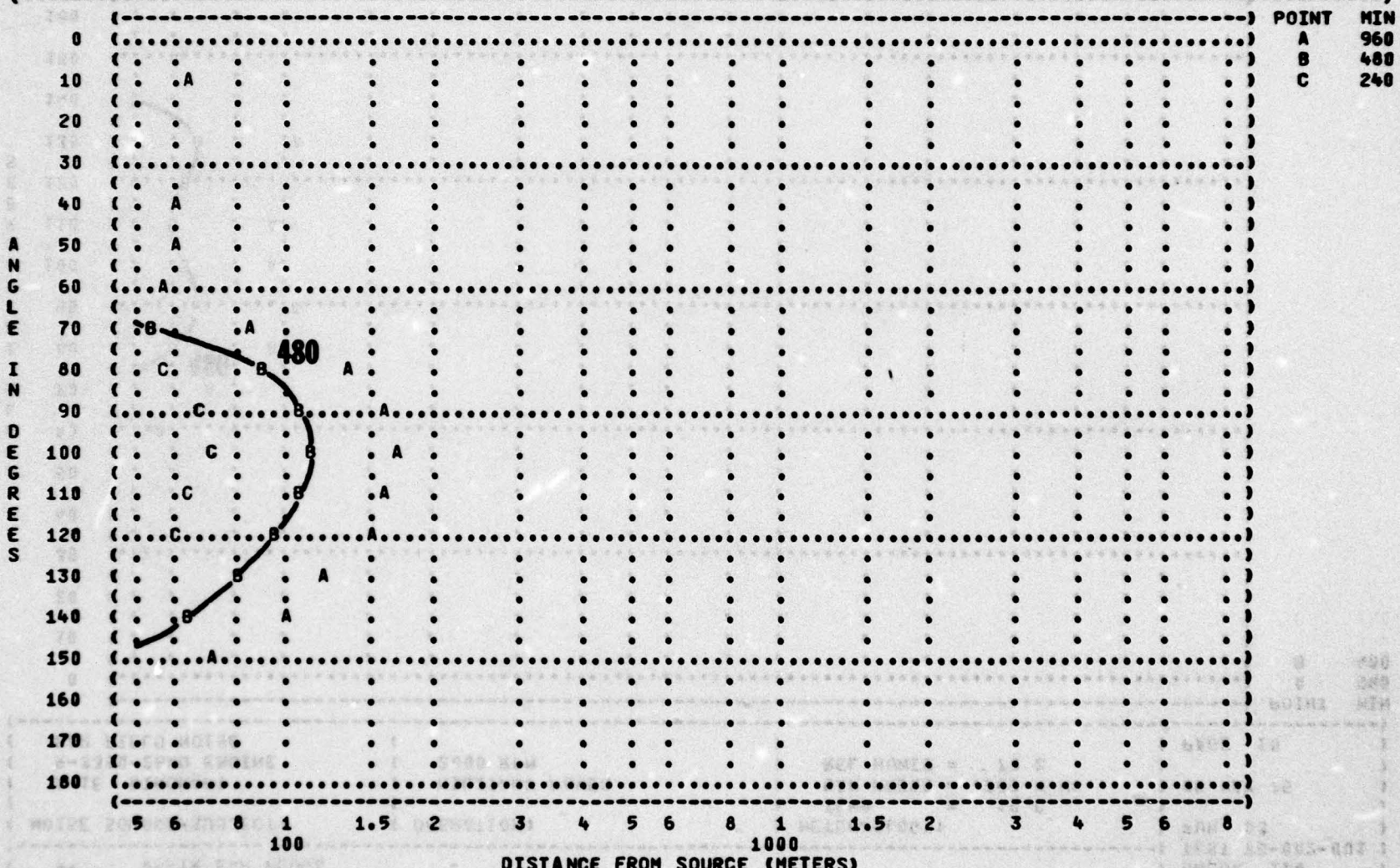


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-882-881
RUN 03
05 MAY 75
PAGE 18

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

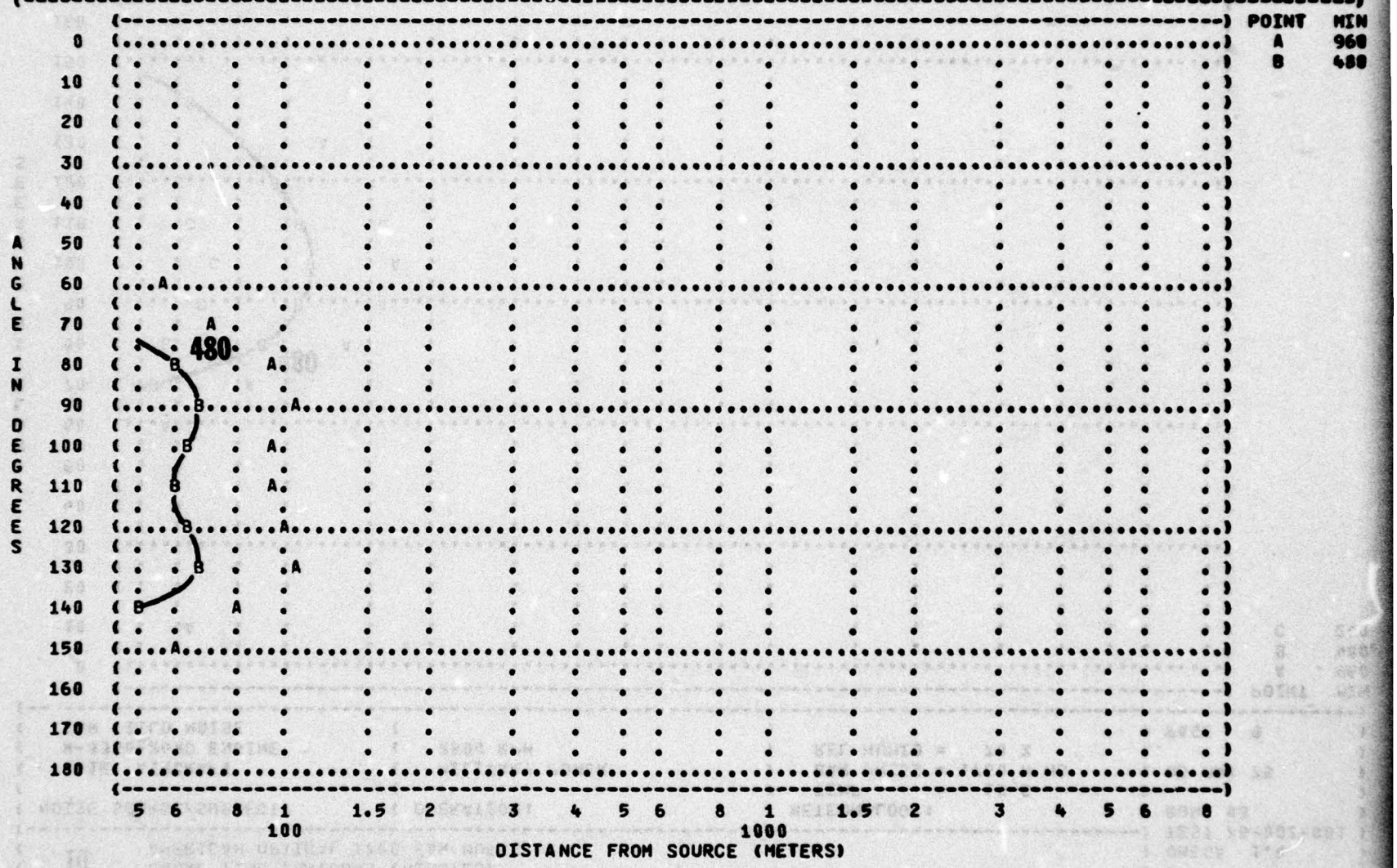


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 11

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

POINT	MIN
A	960
B	480
C	240

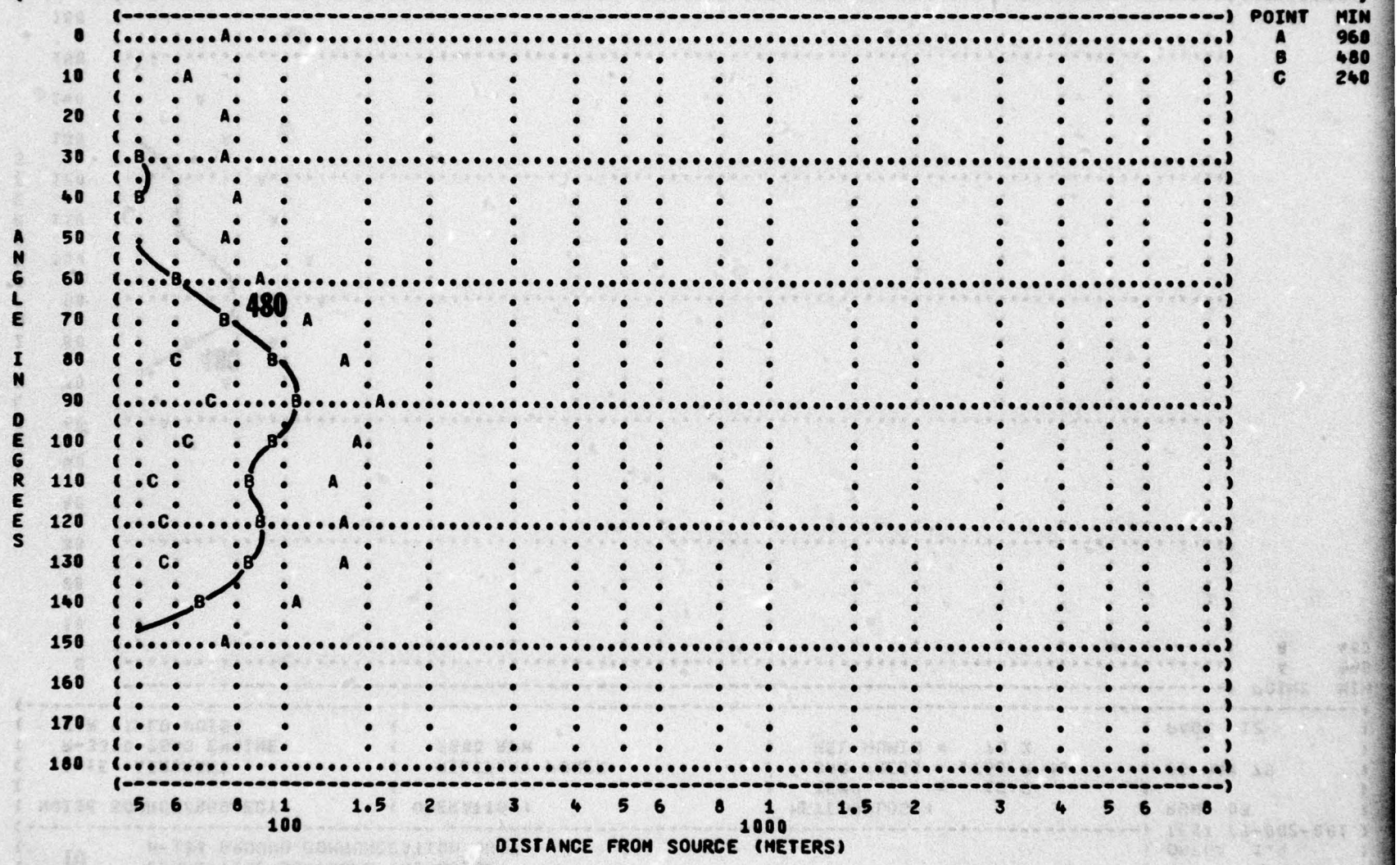


FIGURE: 10

MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03

05 MAY 75

PAGE 12

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

POINT	MIN
A	960
B	480

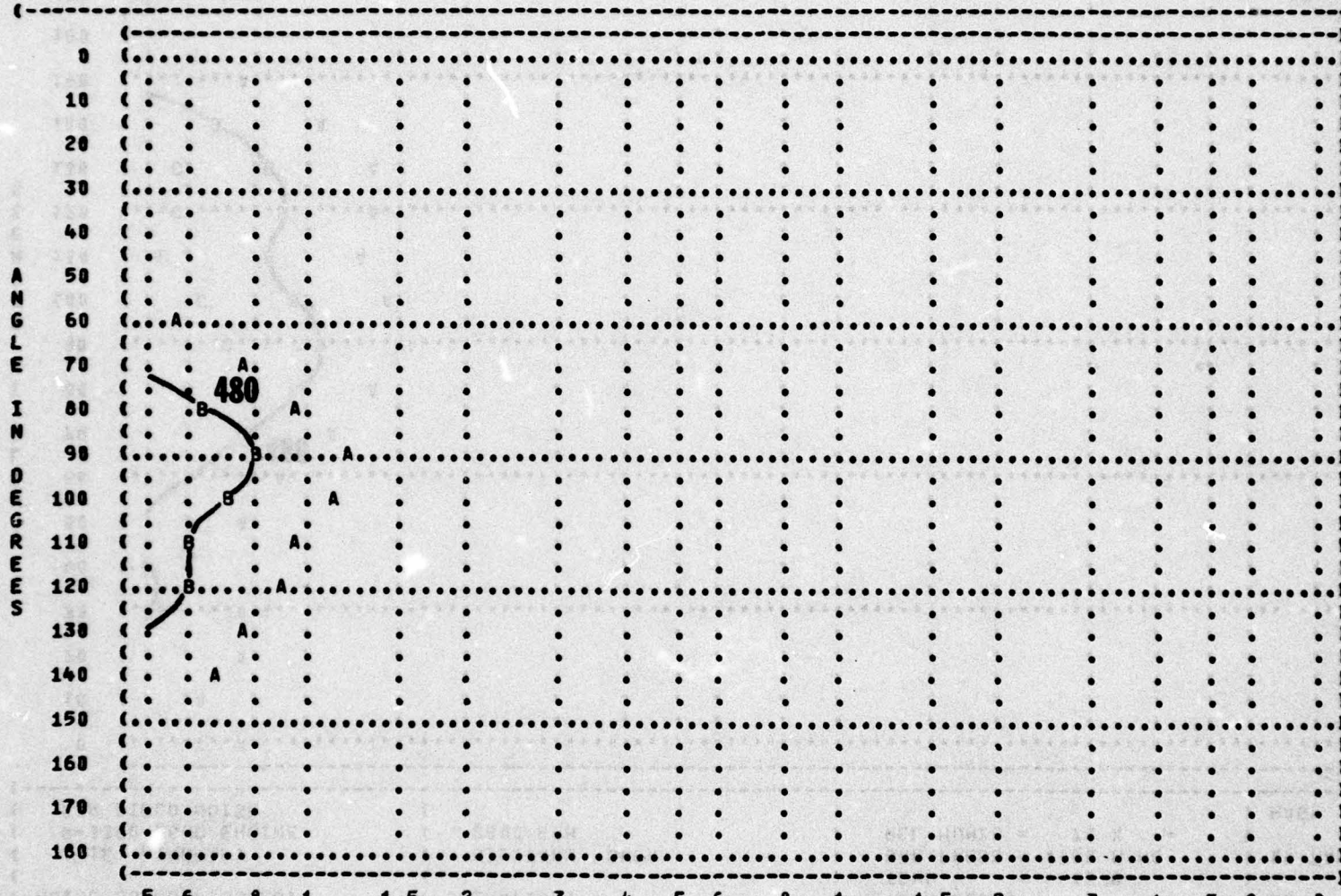


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 18

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

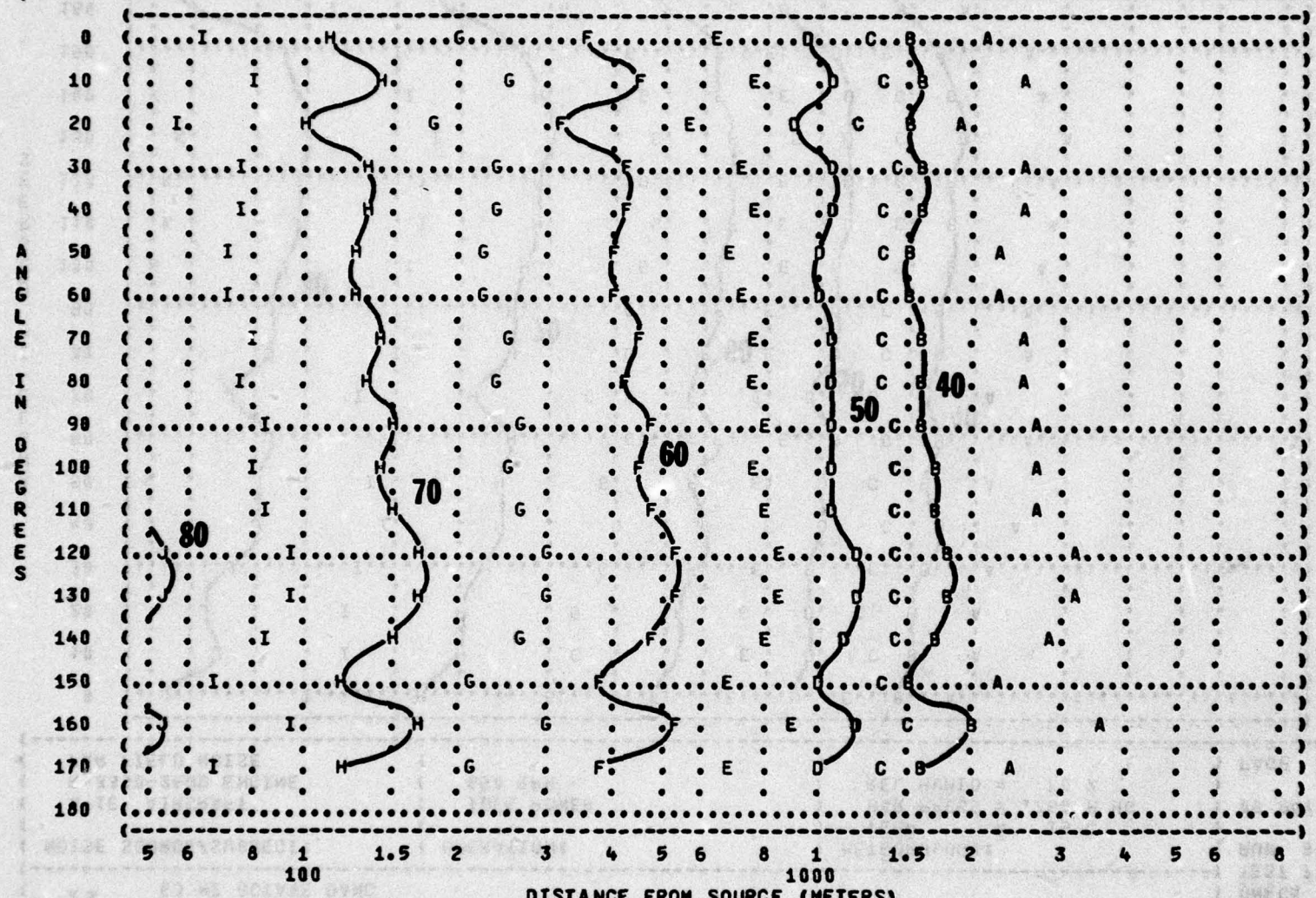


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-882-881 RUN 01 05 MAY 75 PAGE 19

NOISE SOURCE/SUBJECT: A-1E AIRCRAFT R-3350-26WD ENGINE FAR FIELD NOISE

OPERATION: IDLE POWER 650 RPM

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

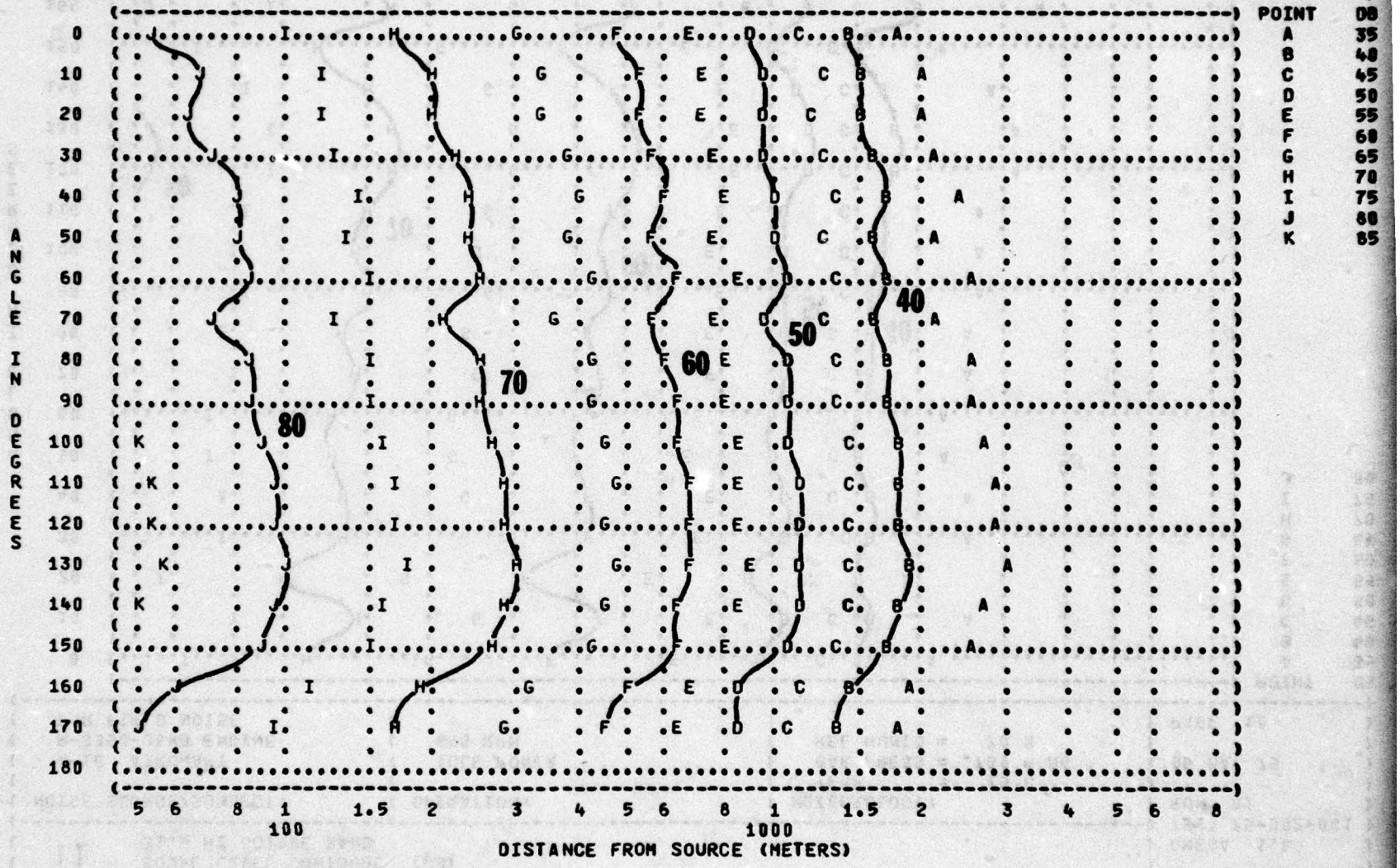


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 20

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

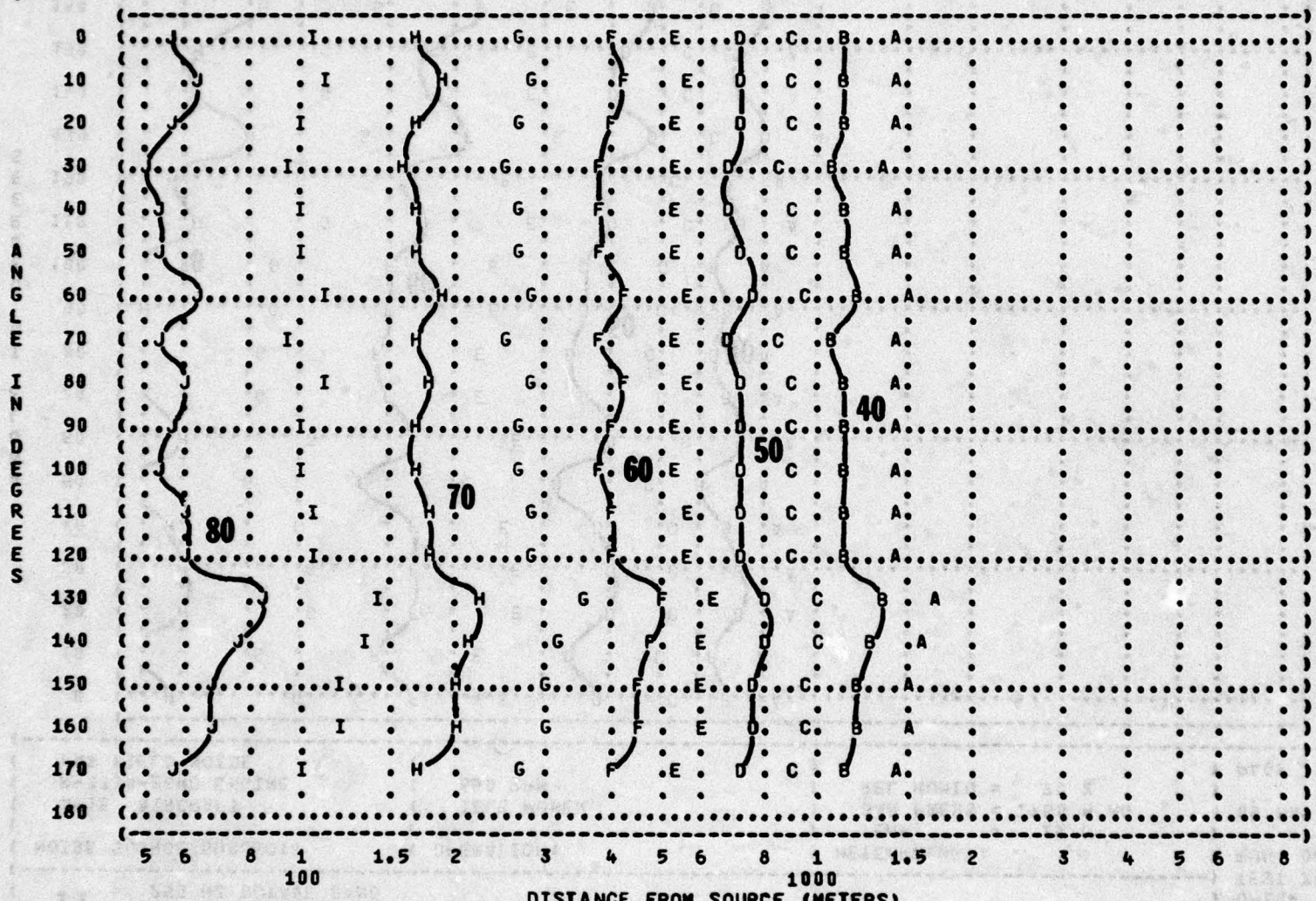


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

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

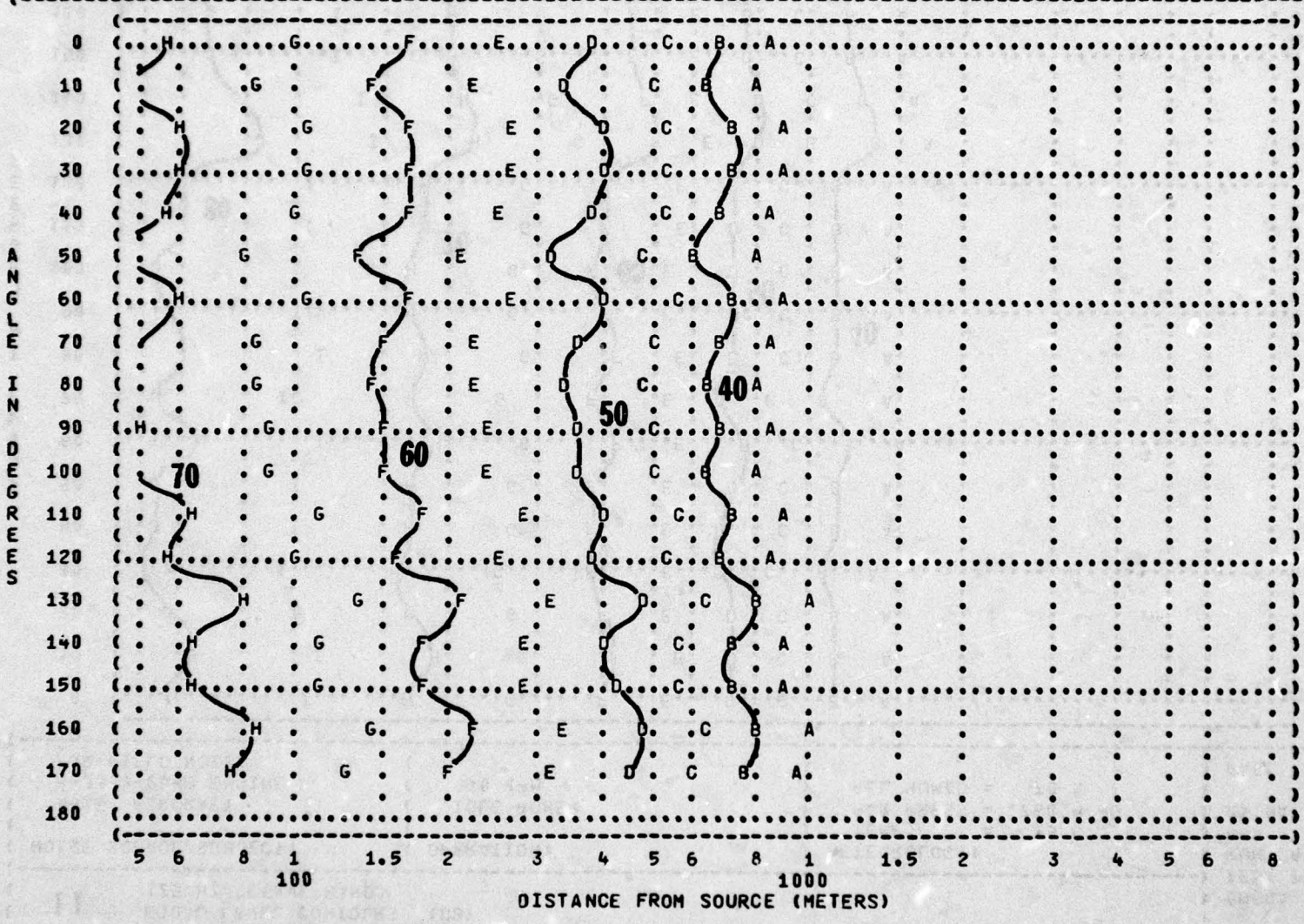


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

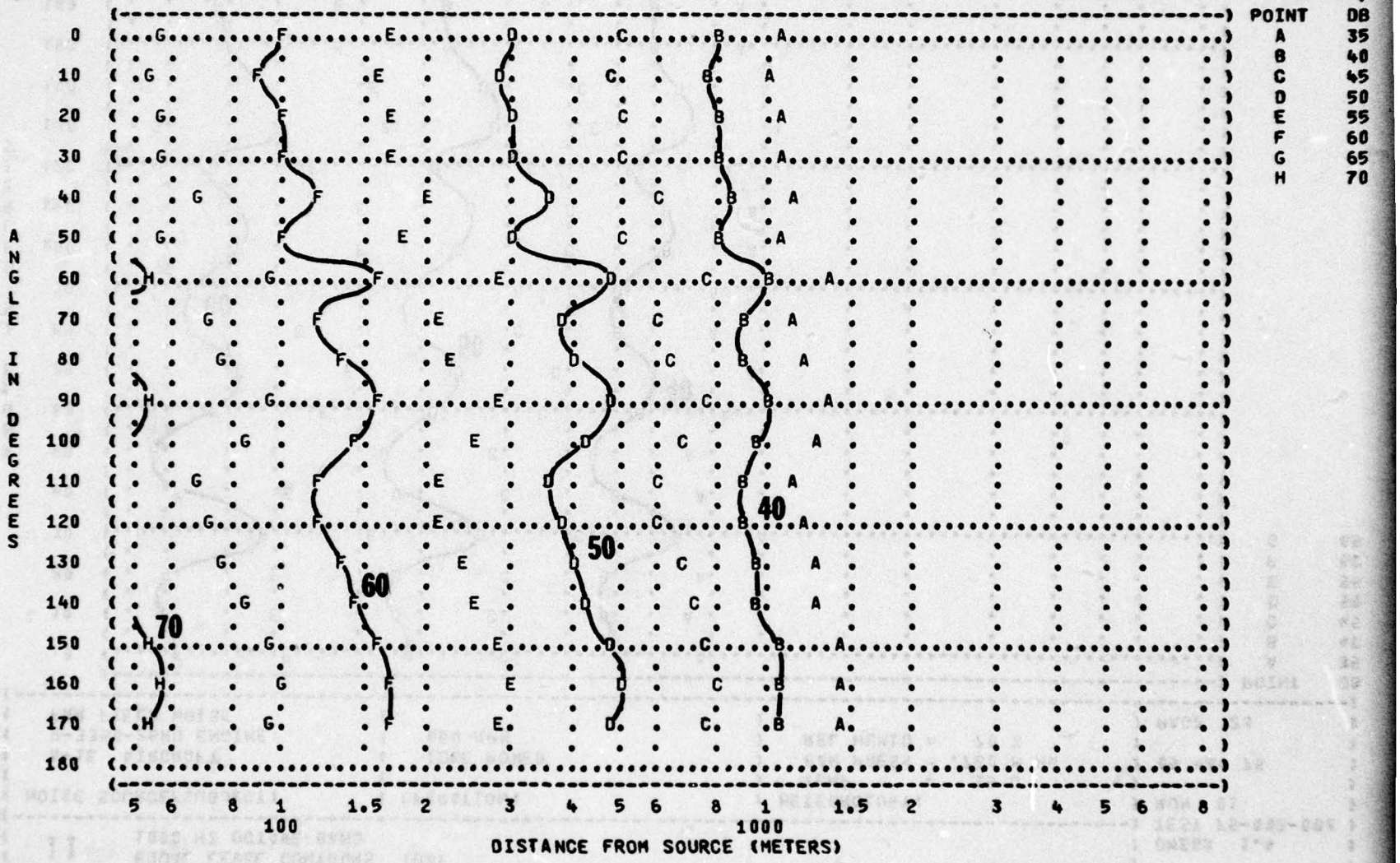


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 23

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

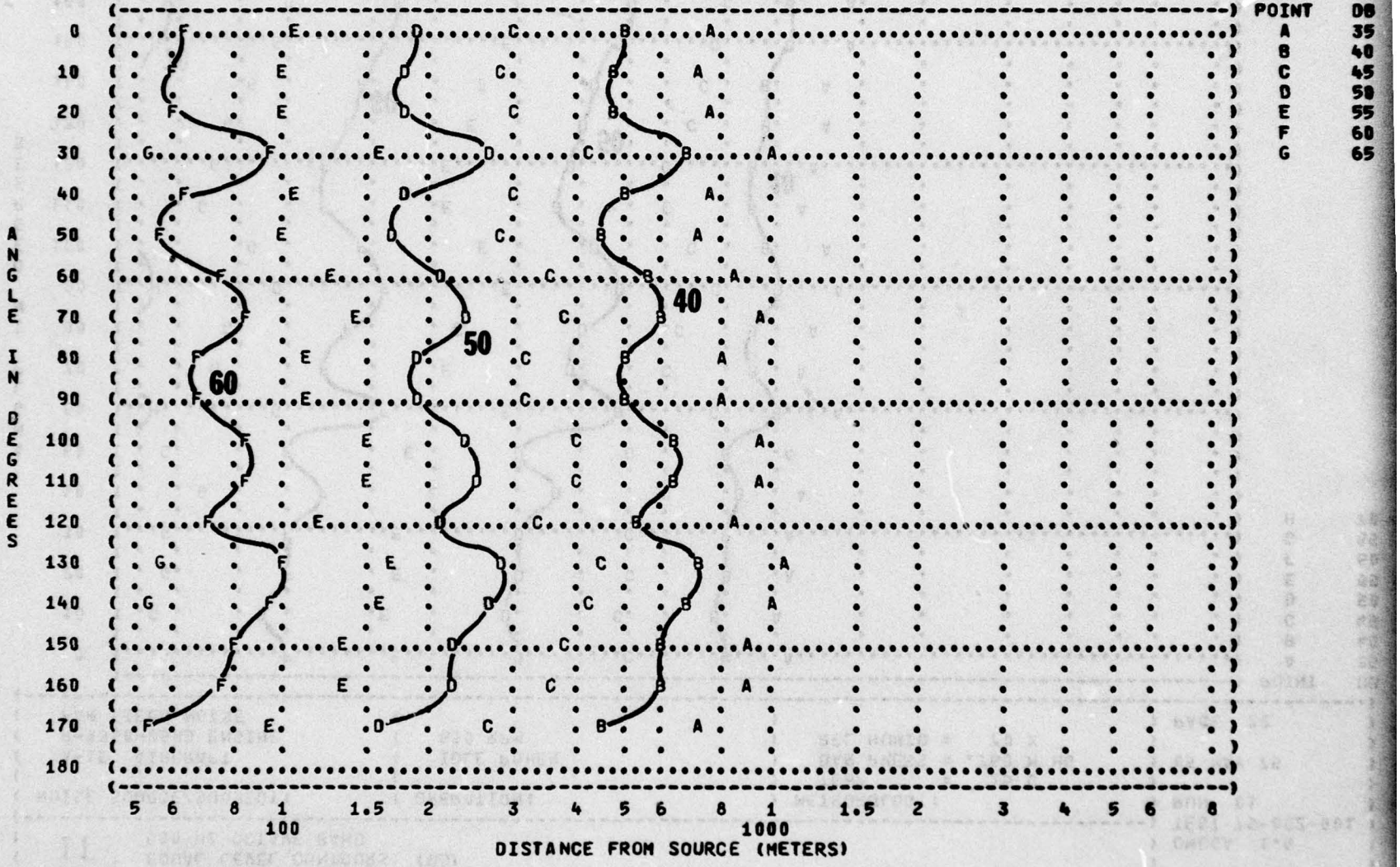


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

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

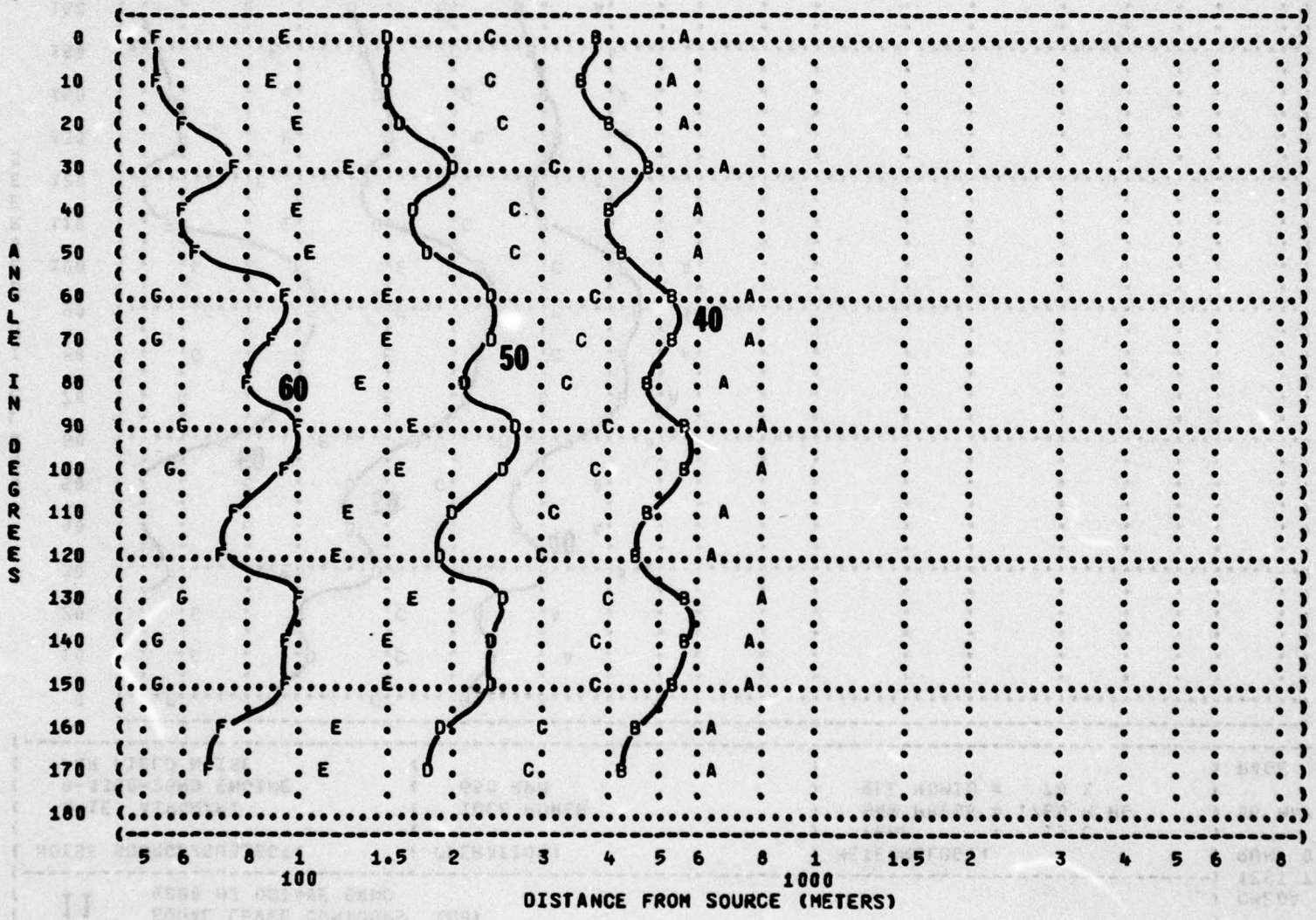


FIGURE: 11

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

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 25

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

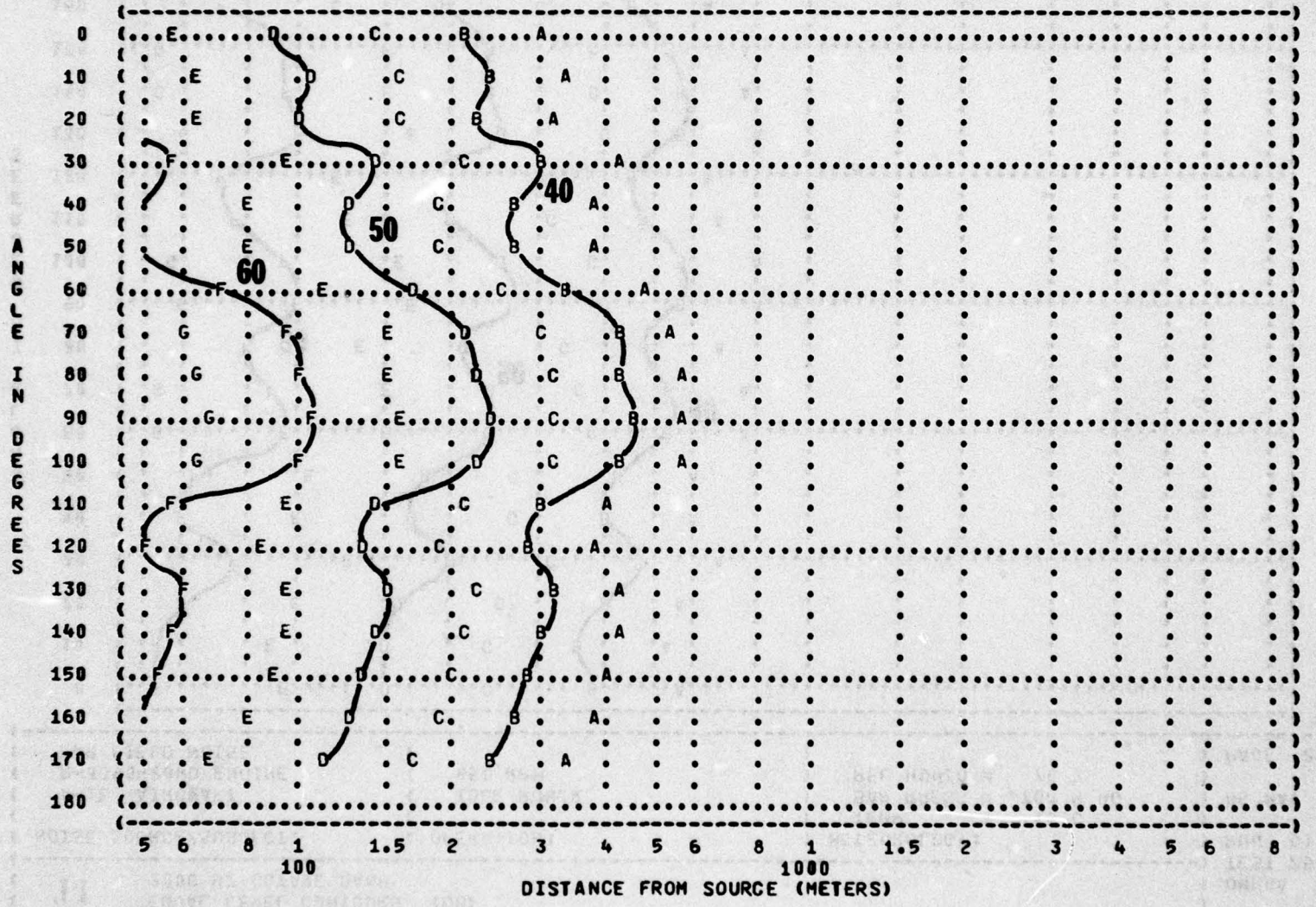


FIGURE: 11

SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
8000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 01
05 MAY 75
PAGE 26

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
650 RPM

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

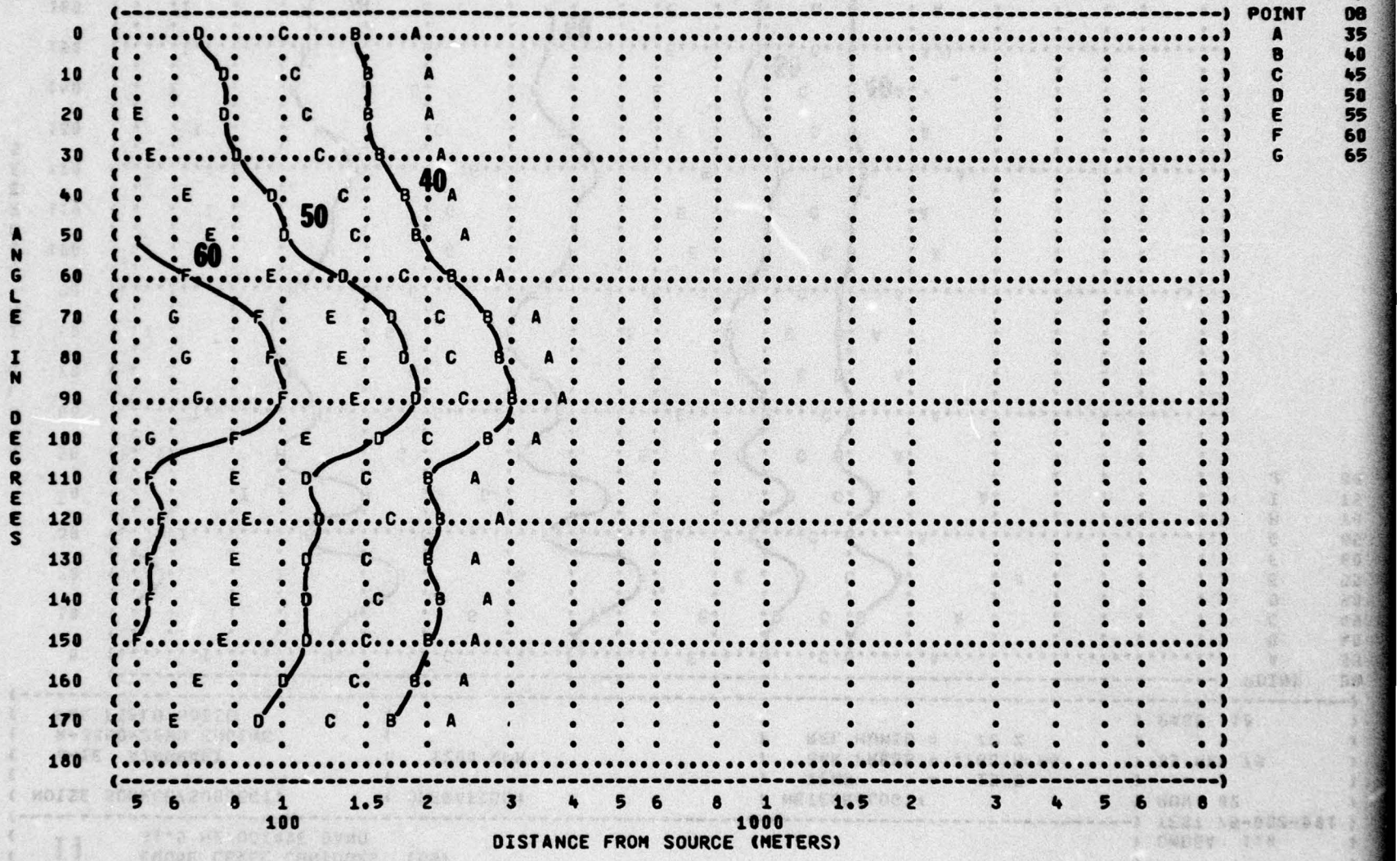


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 18

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

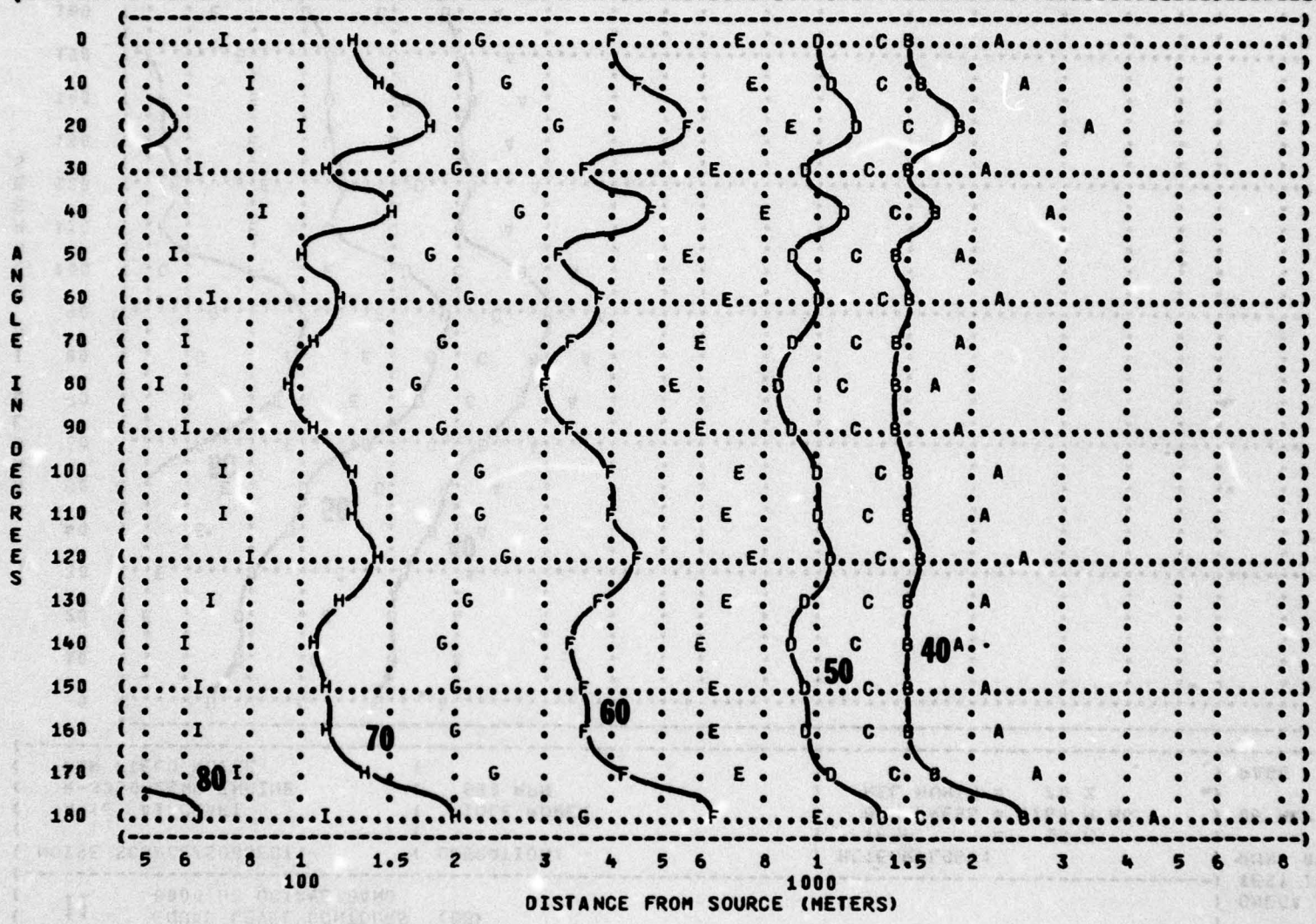


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 19

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

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

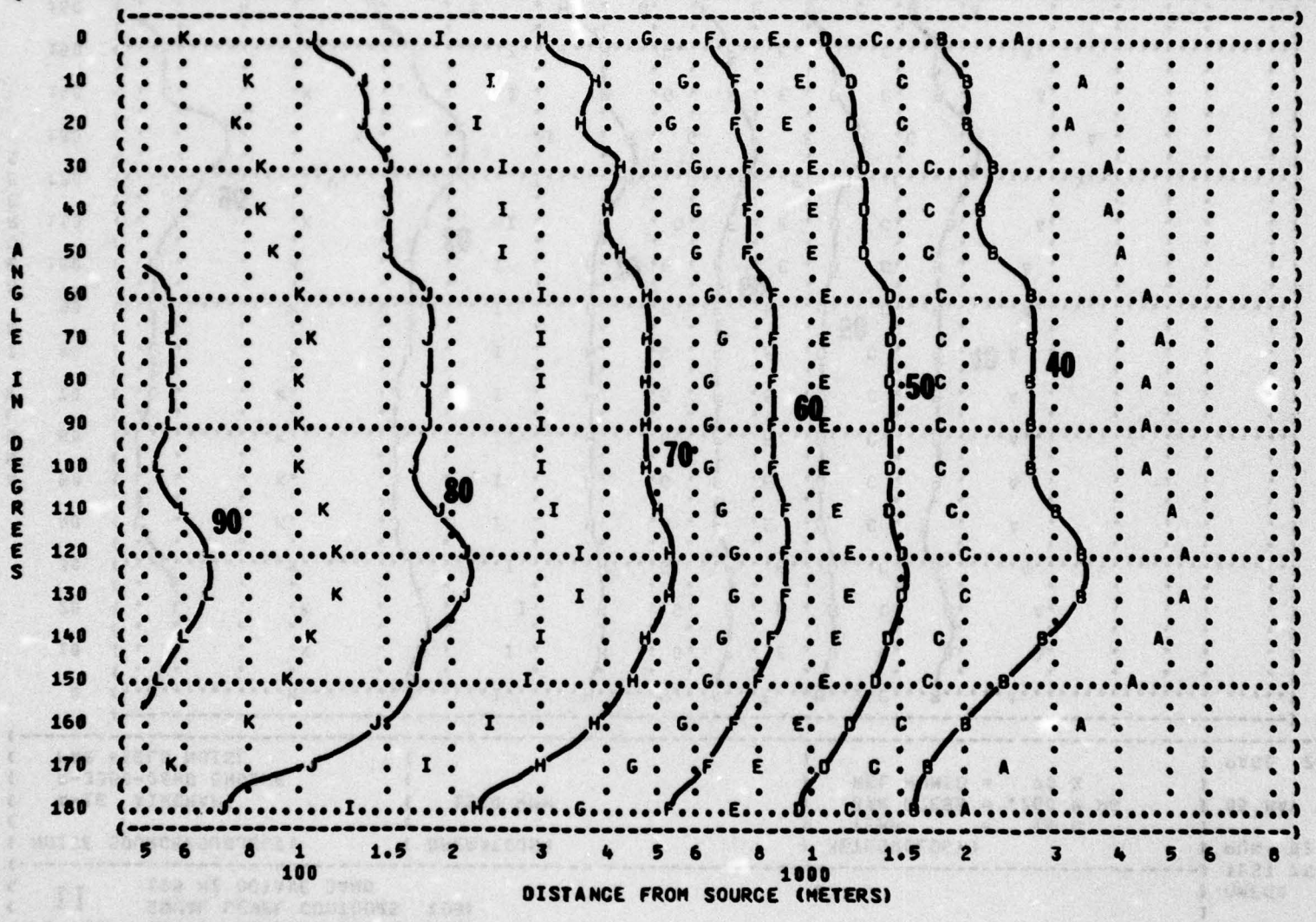


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-001 RUN 02 05 MAY 75 PAGE 20

NOISE SOURCE/SUBJECT: A-1E AIRCRAFT R-3350-26WD ENGINE FAR FIELD NOISE

OPERATION: 1200 RPM

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

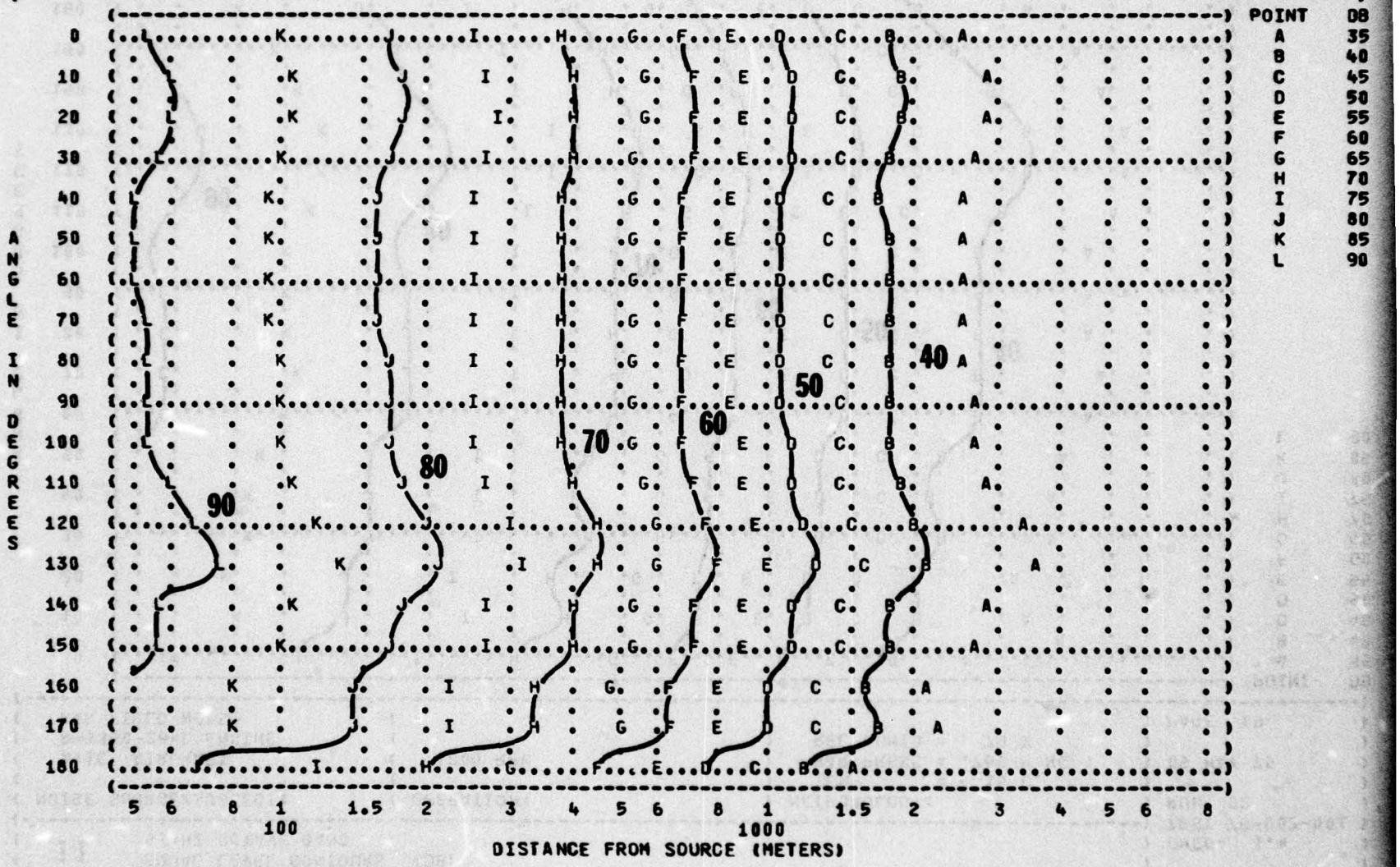


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-082-001
RUN 02
05 MAY 75
PAGE 21

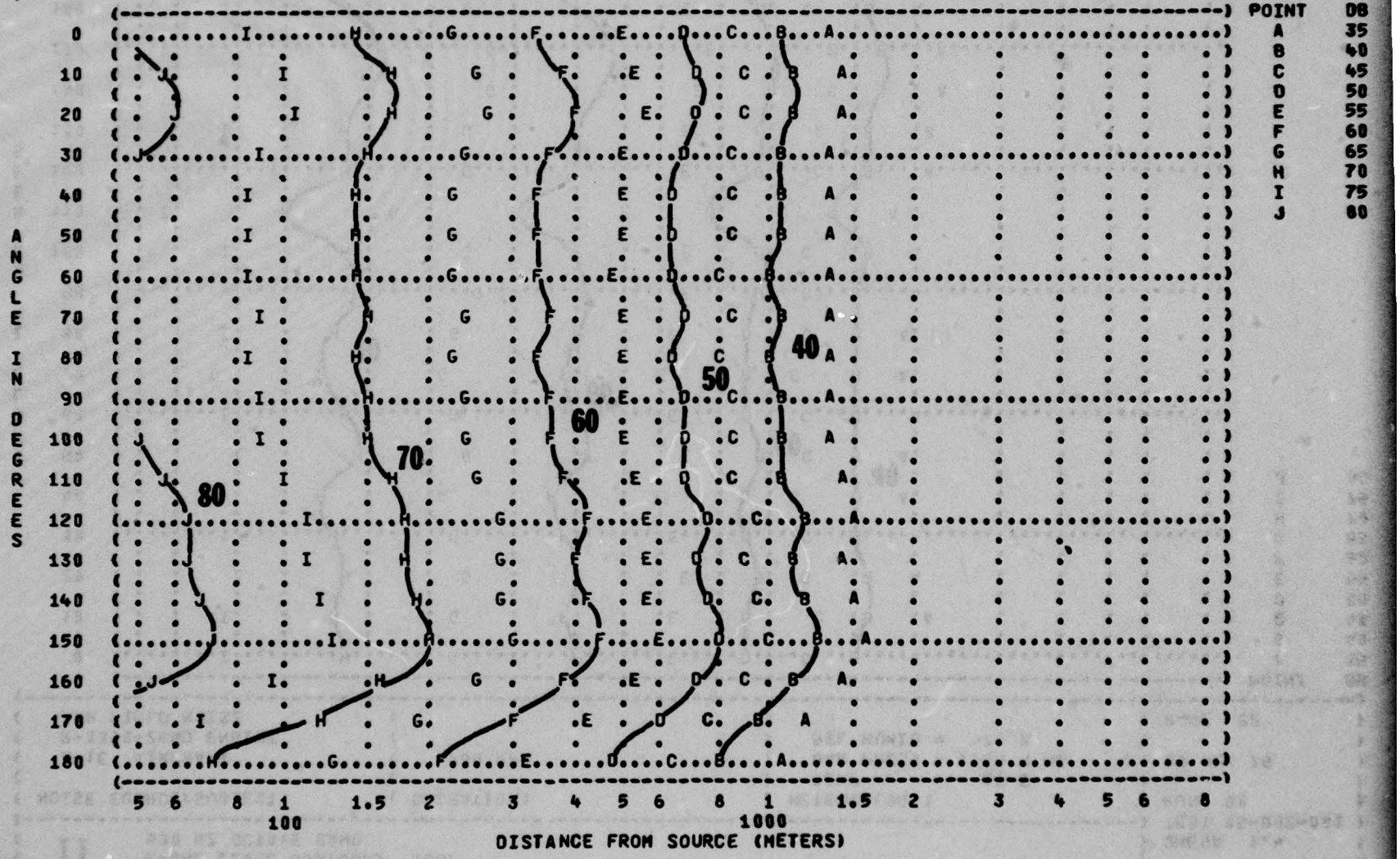


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-882-881
RUN 02
05 MAY 75
PAGE 22

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

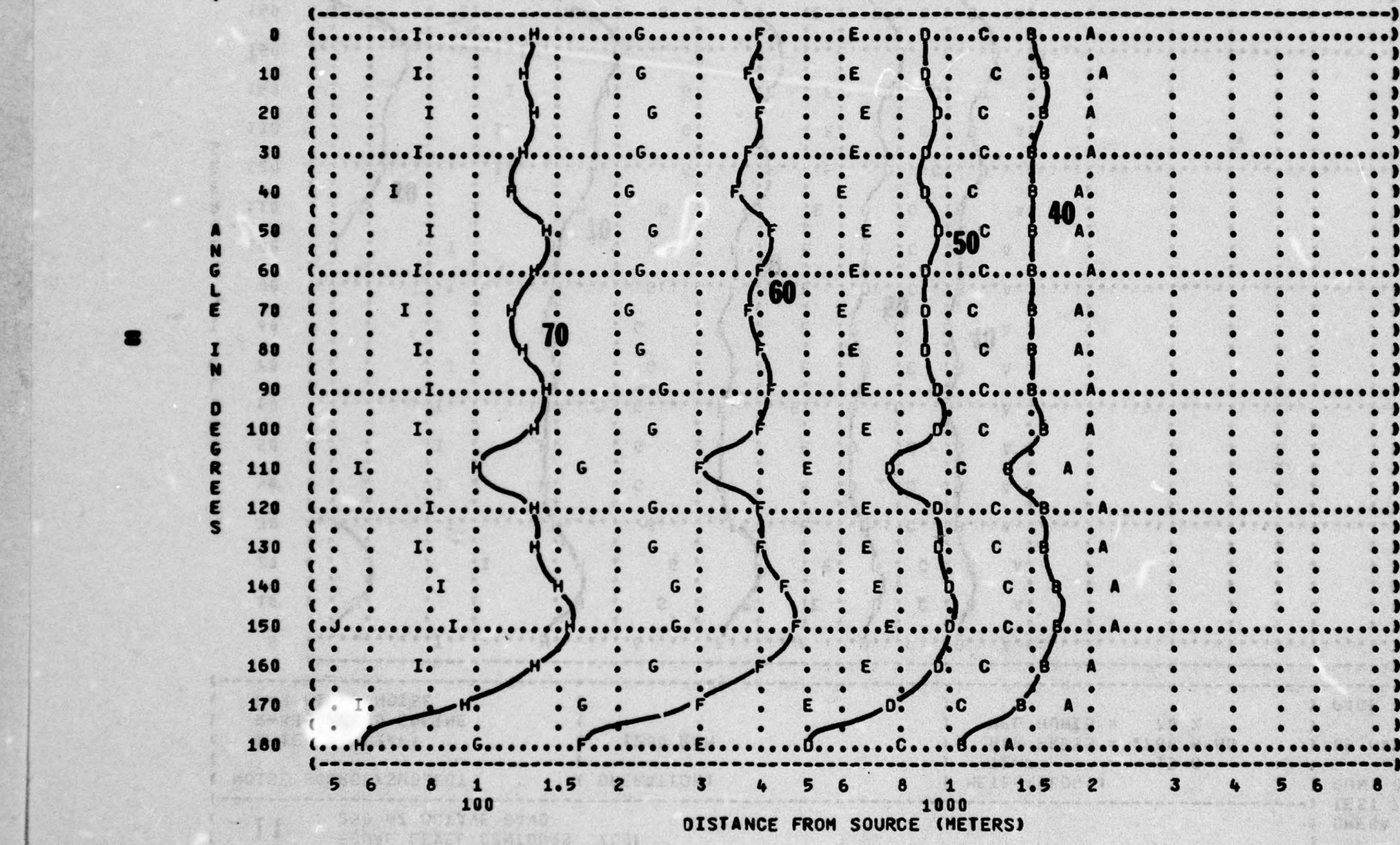


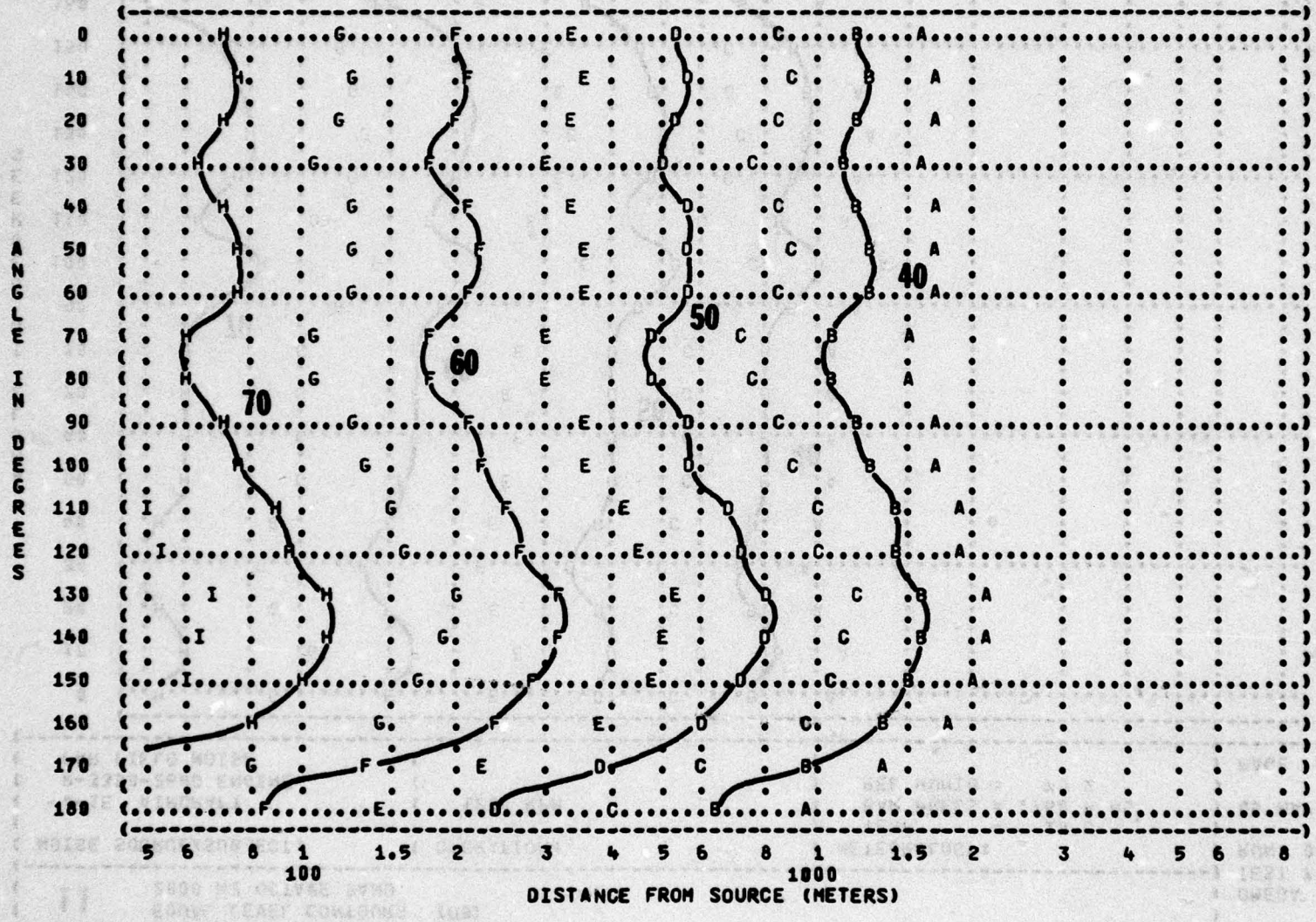
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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



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

FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

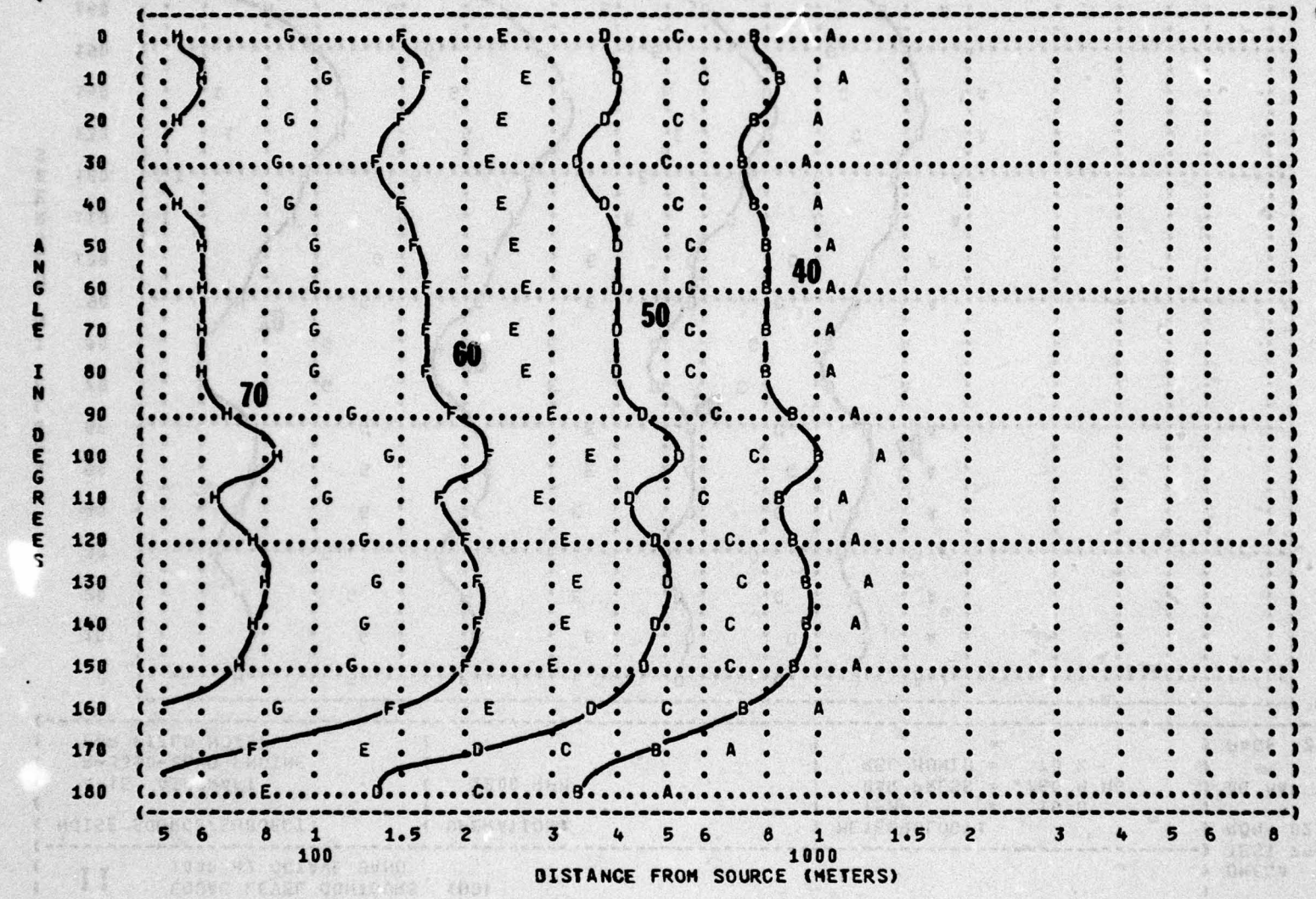


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 02
05 MAY 75
PAGE 25

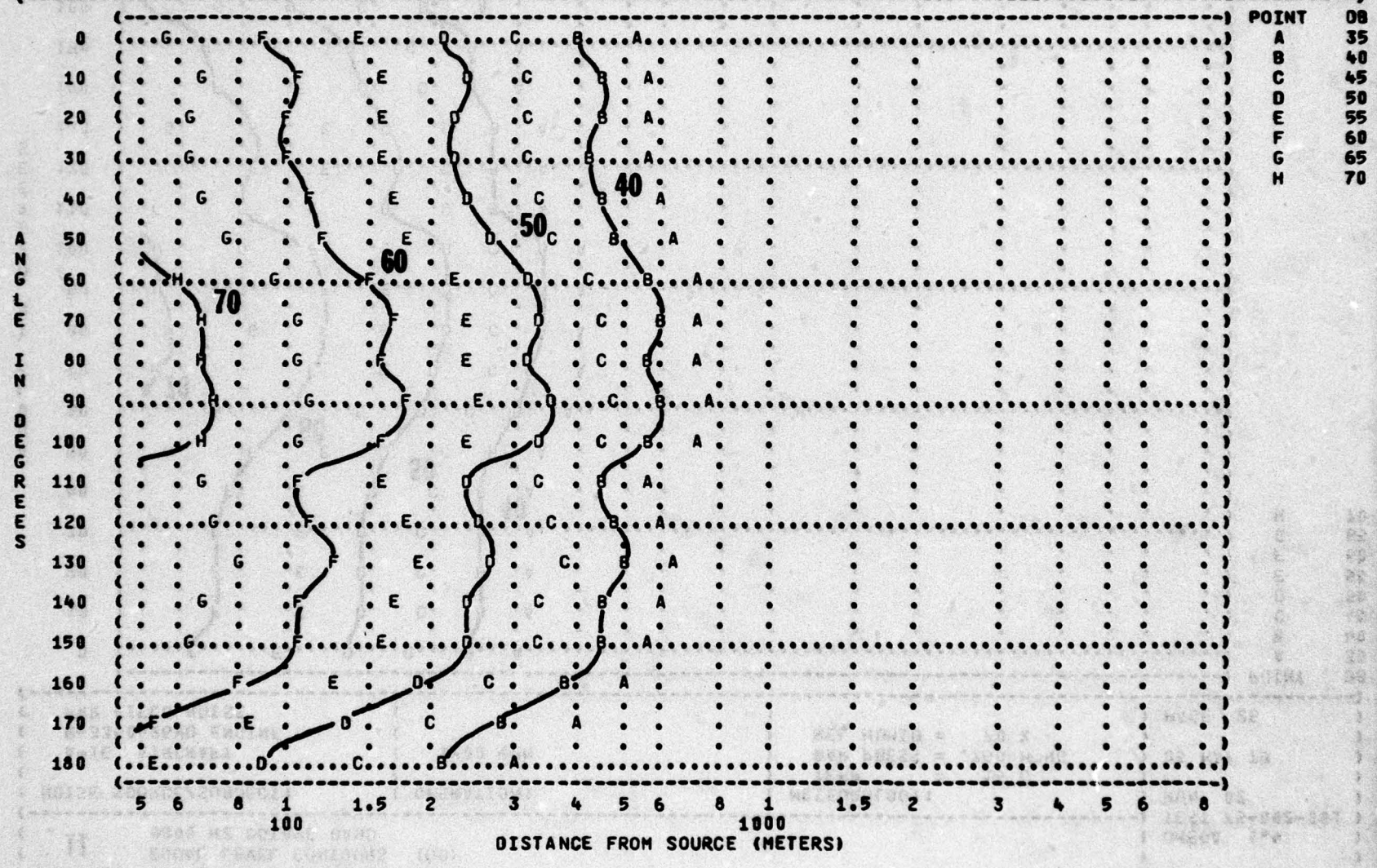


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
1200 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-082-001
RUN 02
05 MAY 75
PAGE 26

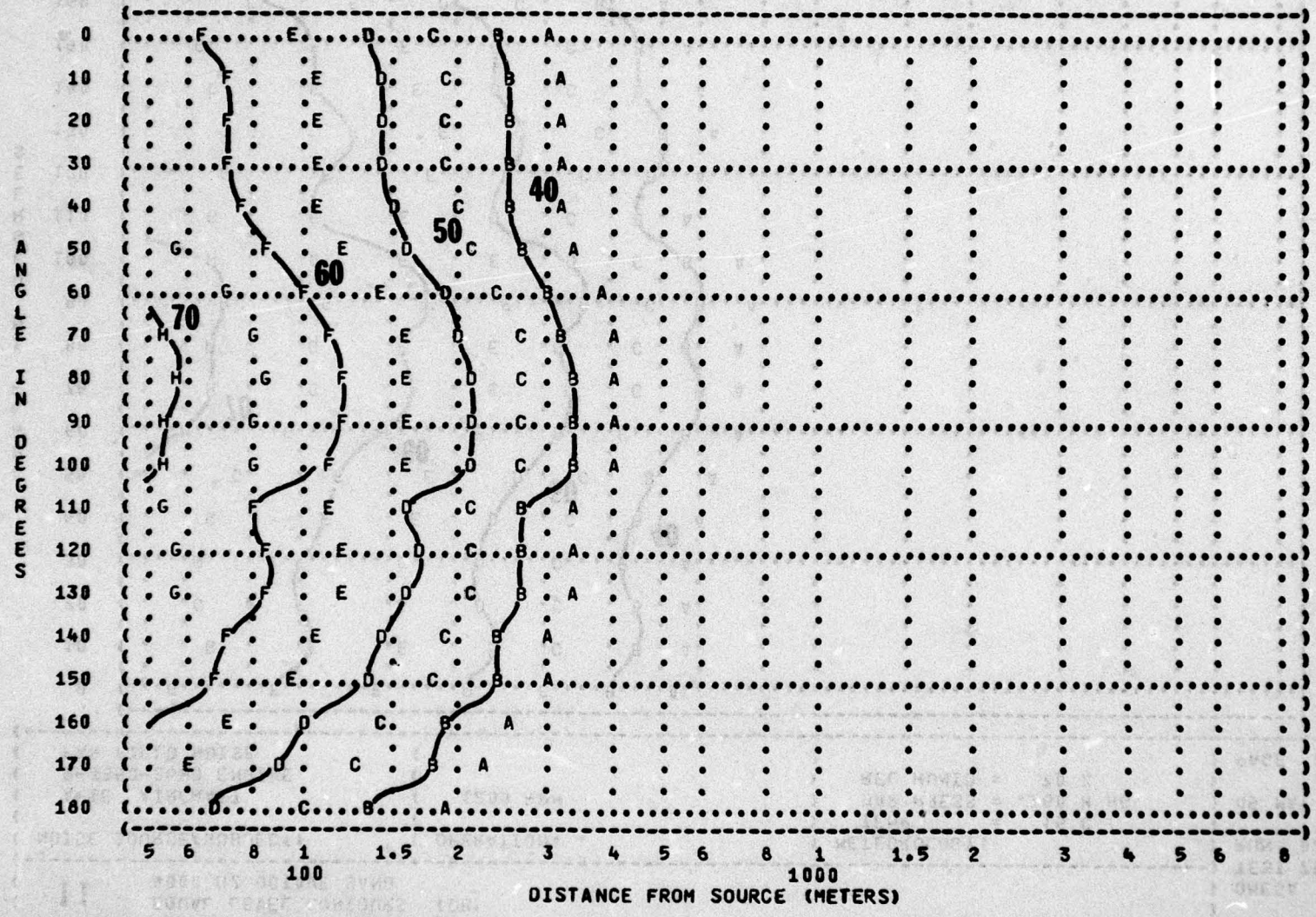


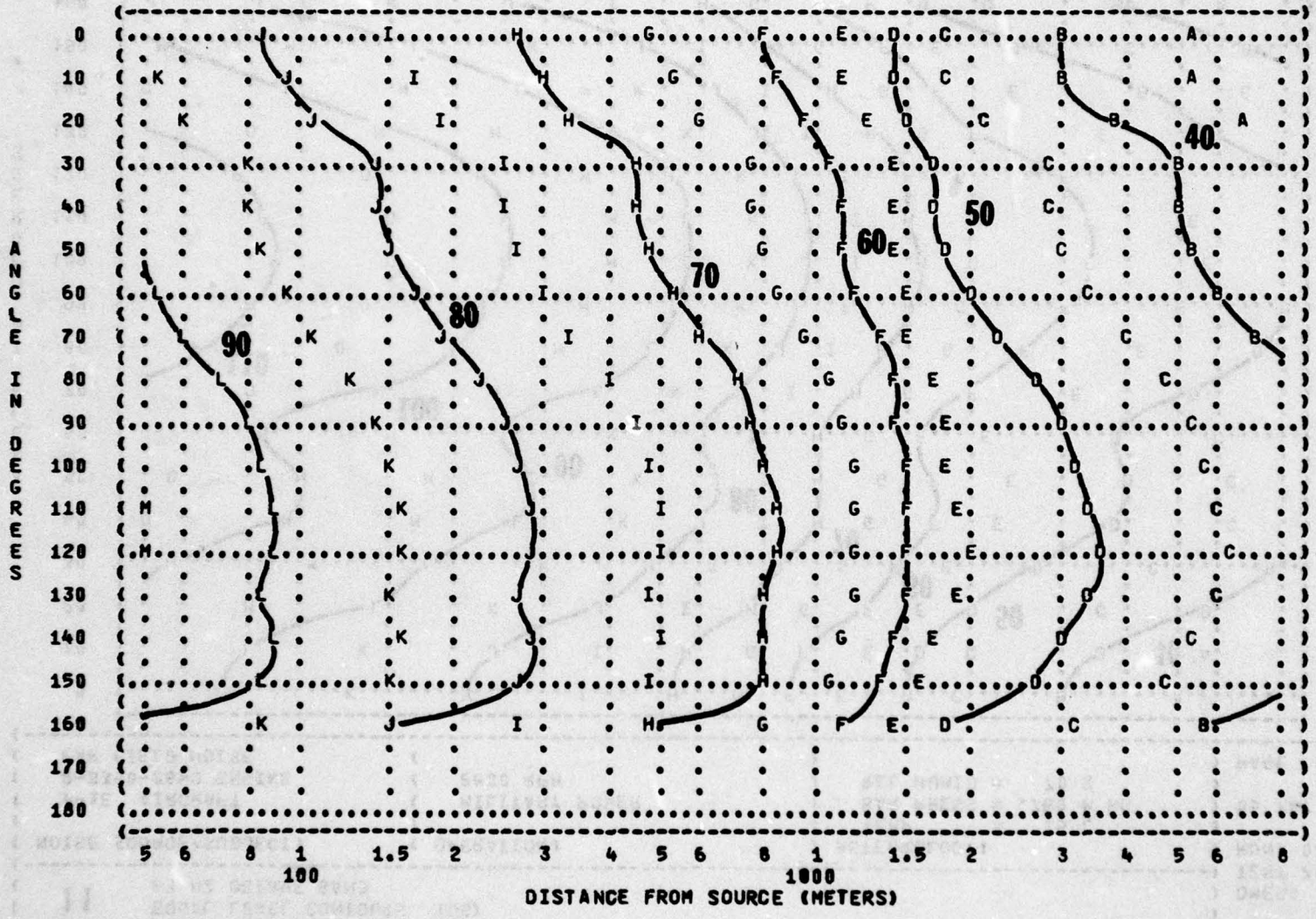
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-001 RUN 03 05 MAY 75 PAGE 18

NOISE SOURCE/SUBJECT: A-1E AIRCRAFT R-3350-26WD ENGINE FAR FIELD NOISE

OPERATION: MILITARY POWER 2800 RPM

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



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

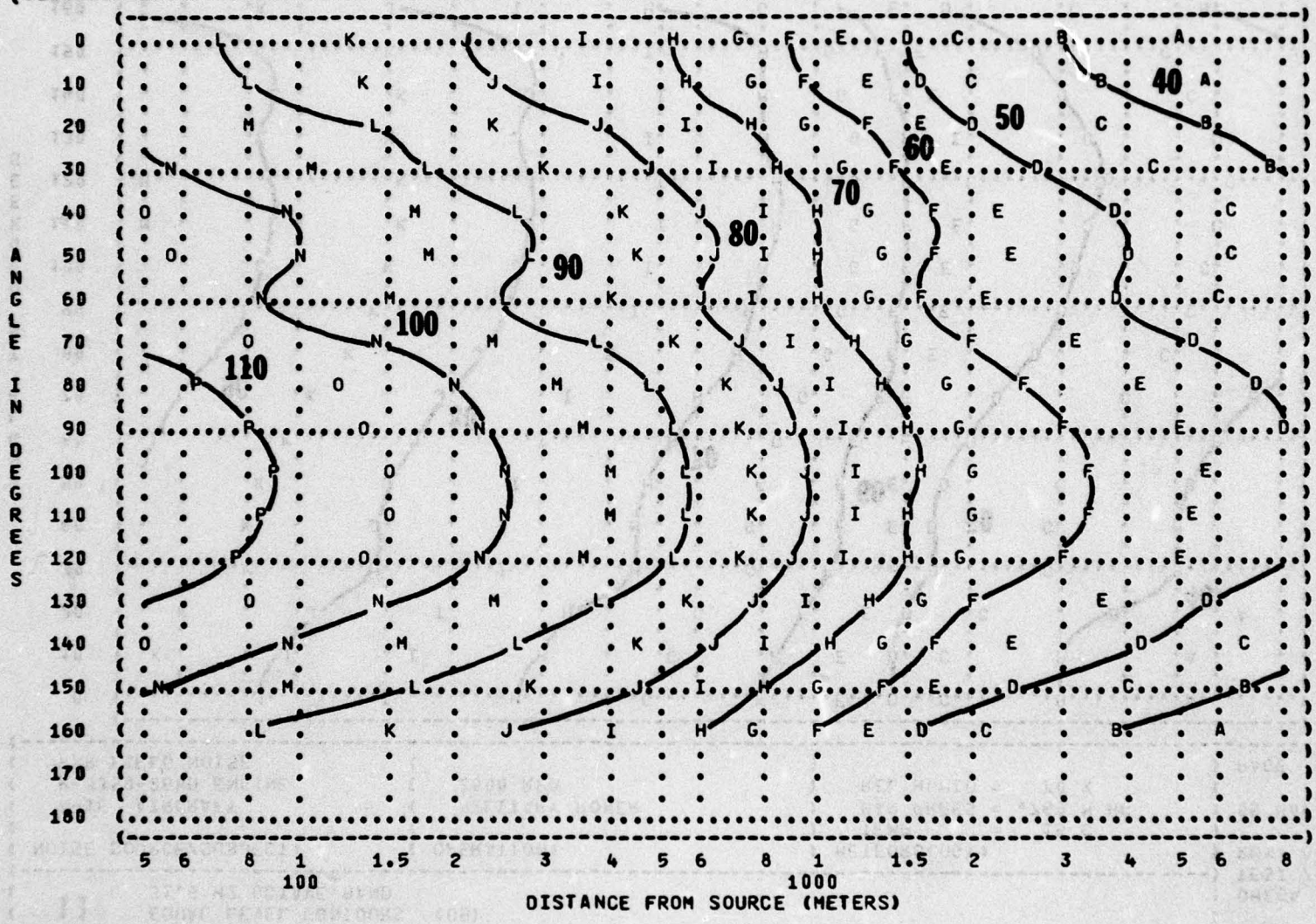
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 19

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

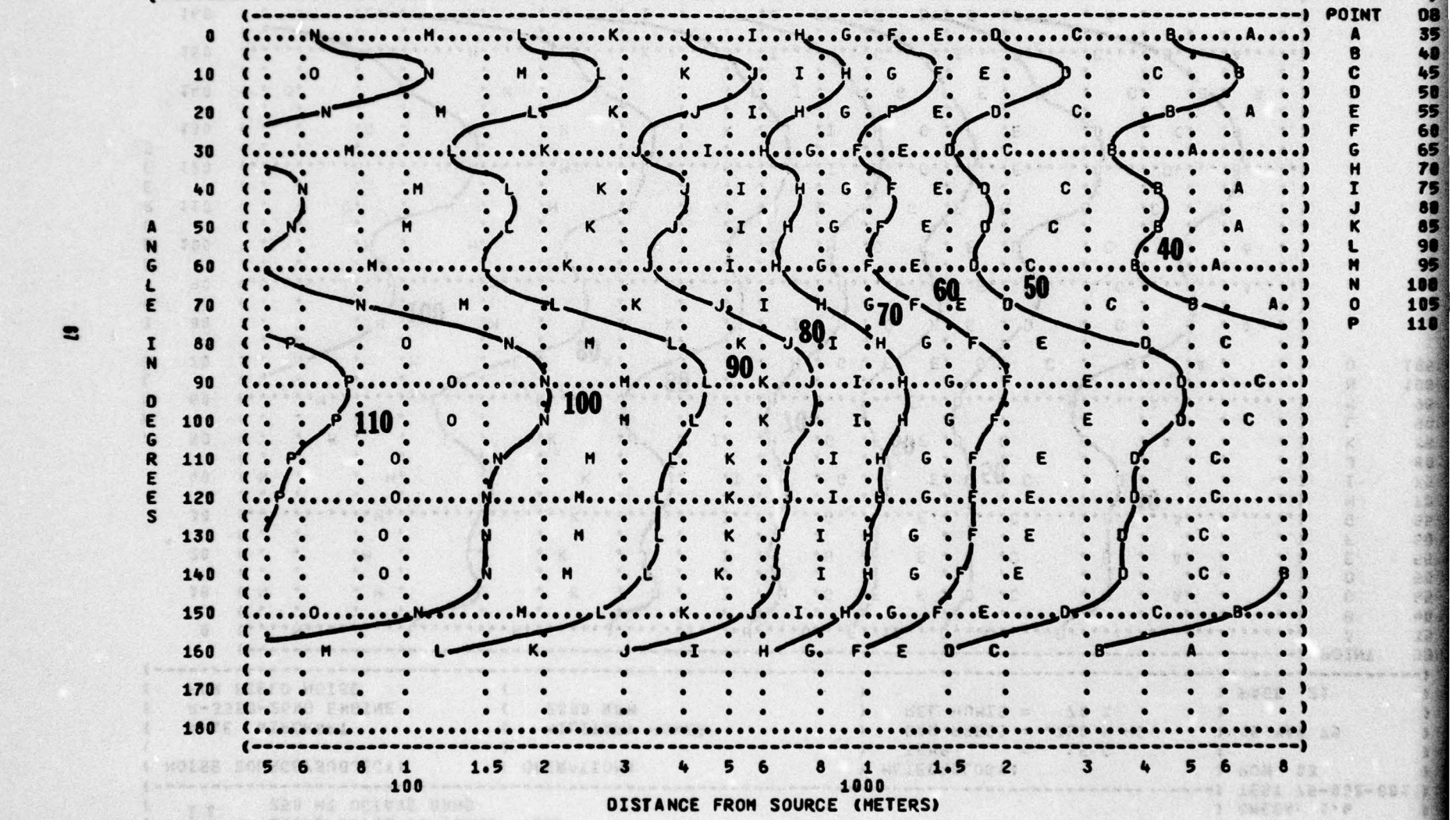
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 20



POINT	08
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110

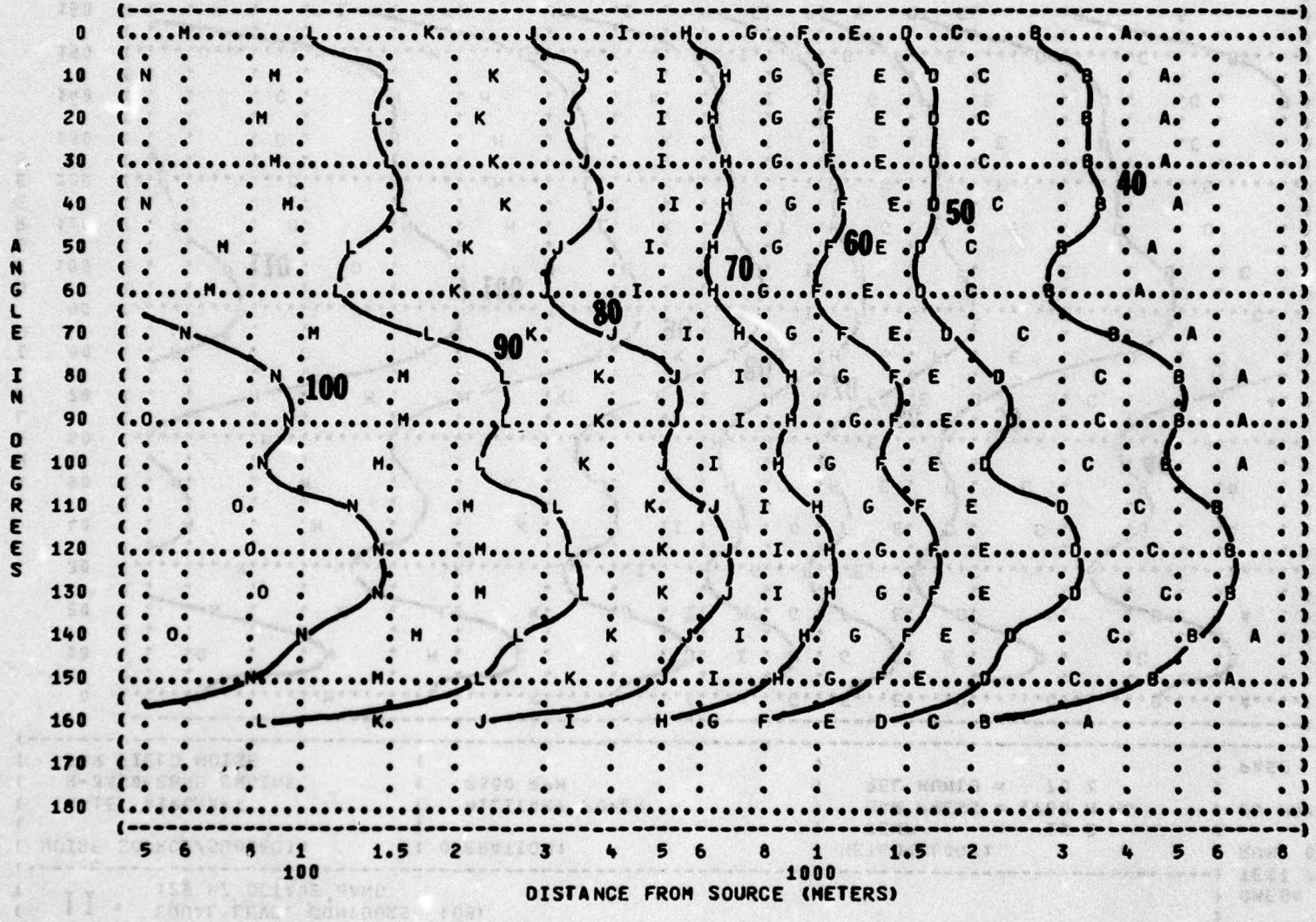
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-082-081
RUN 03
05 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



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

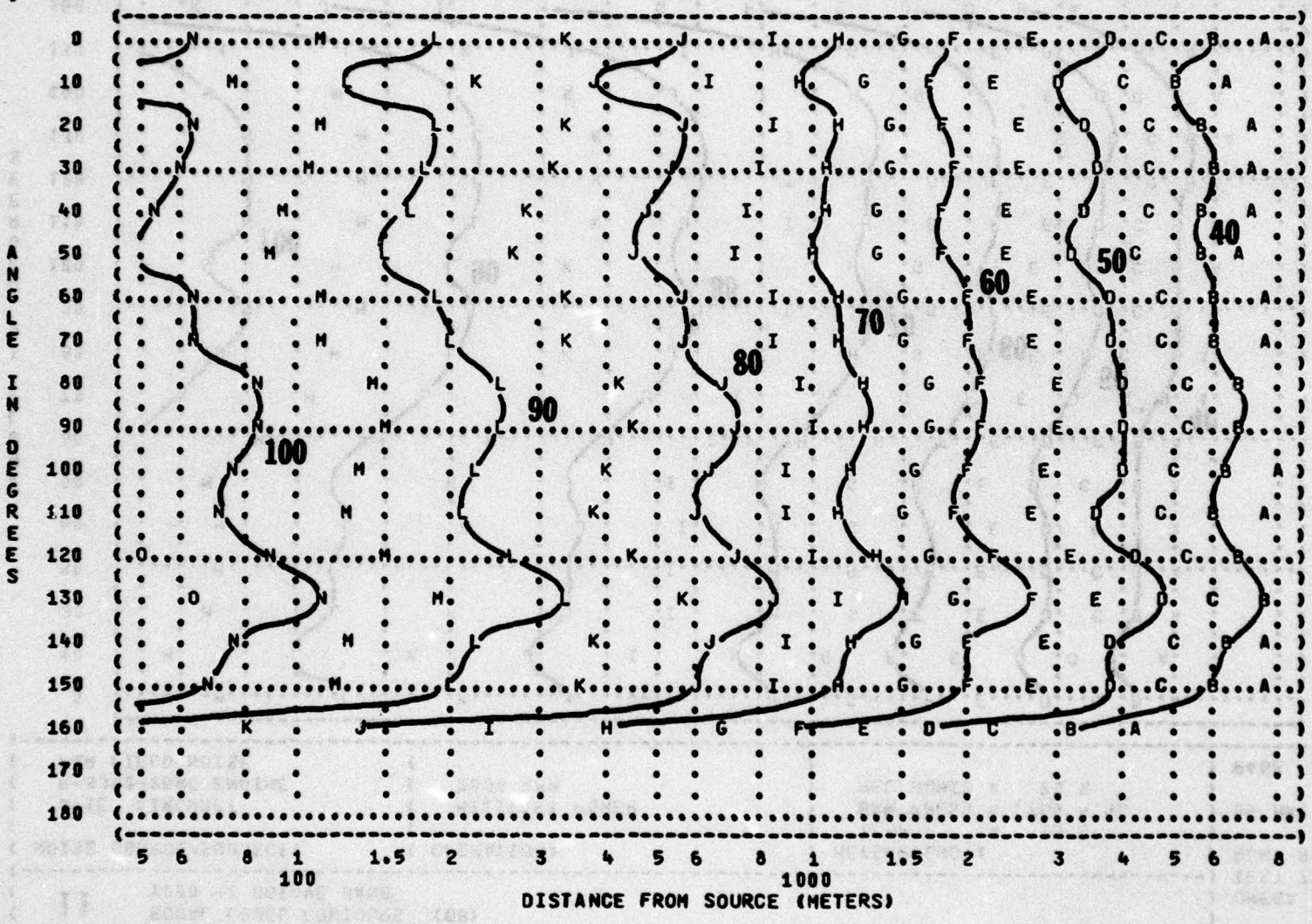
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



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

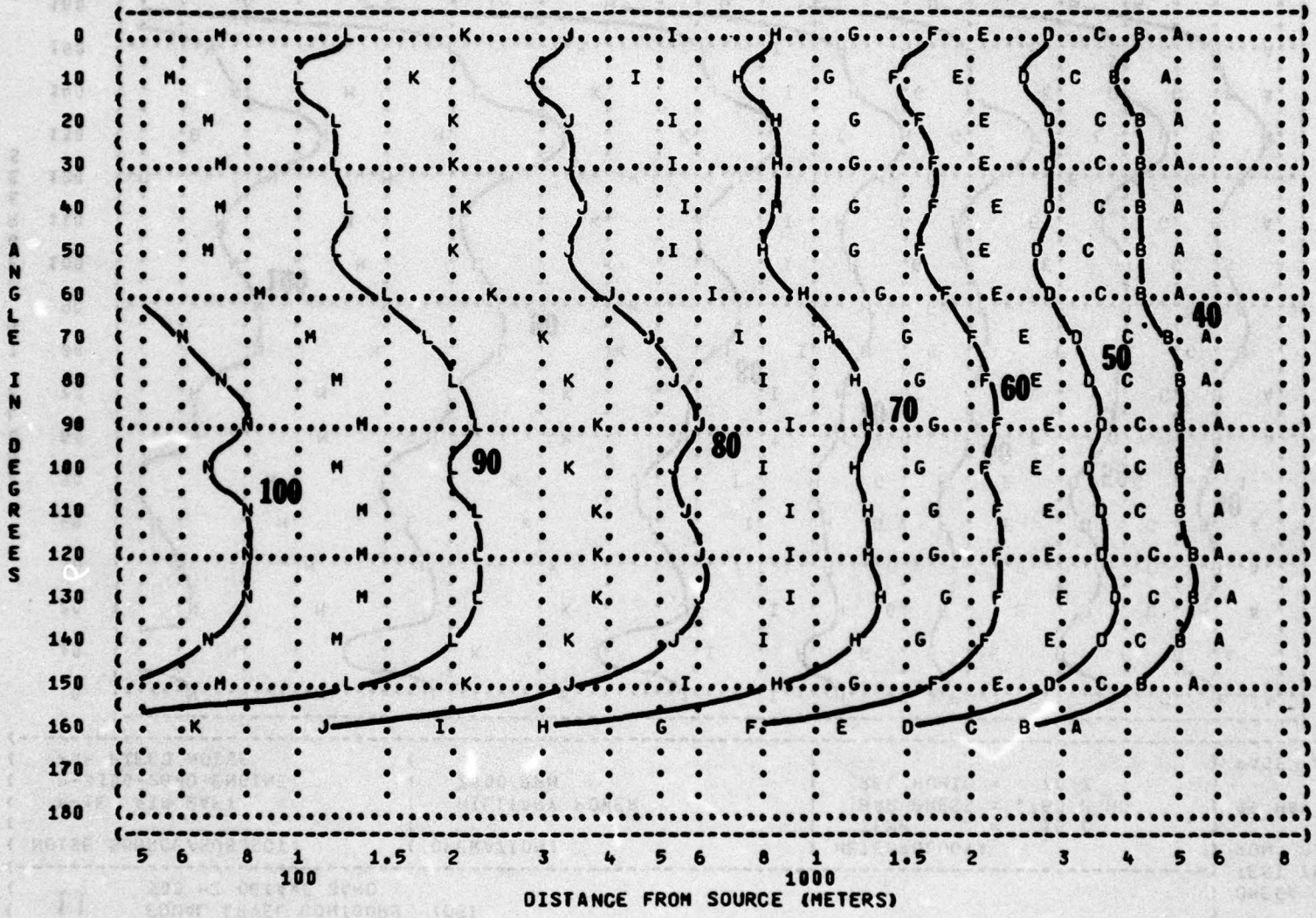
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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



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

FIGURE: 11

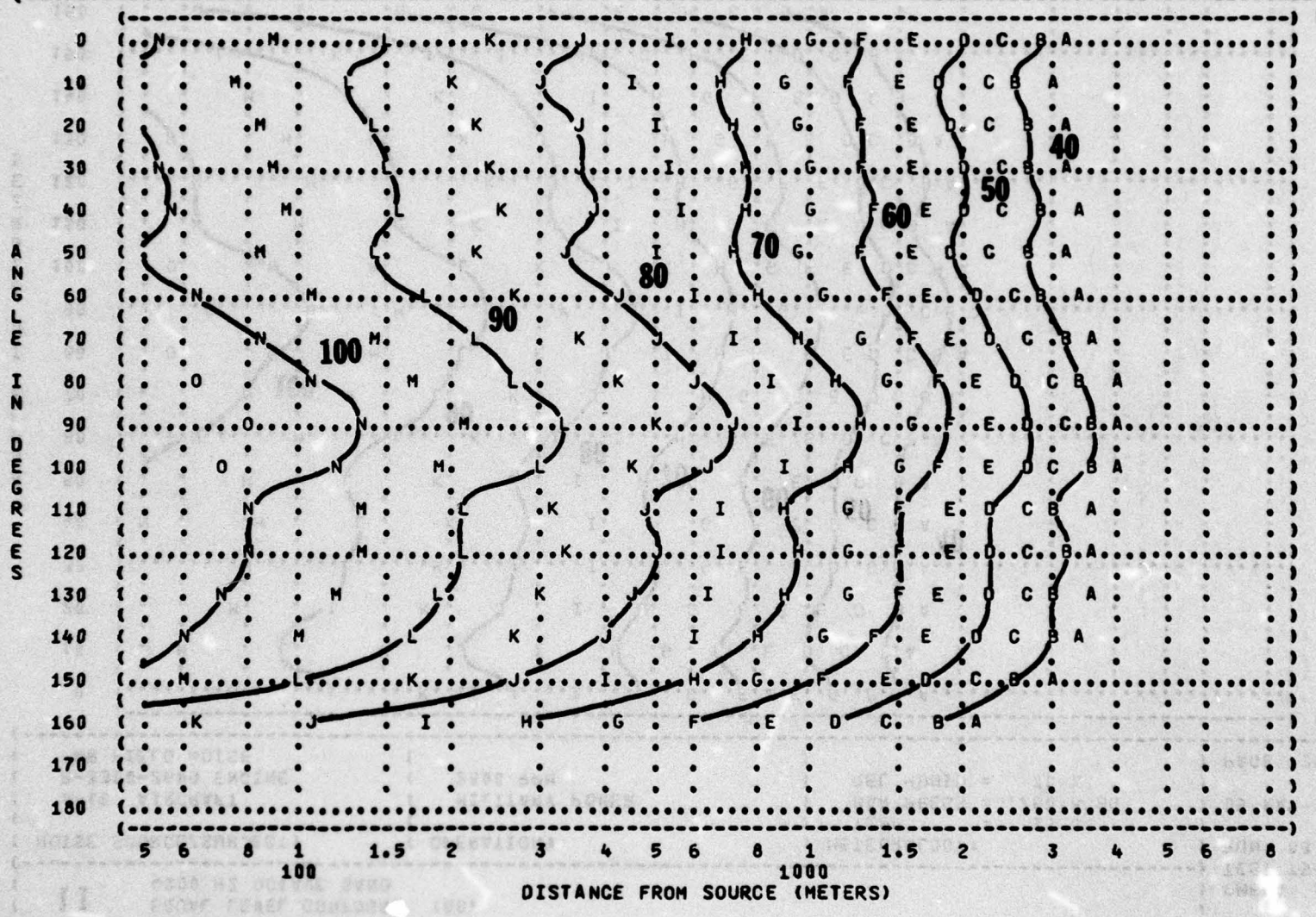
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 24



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

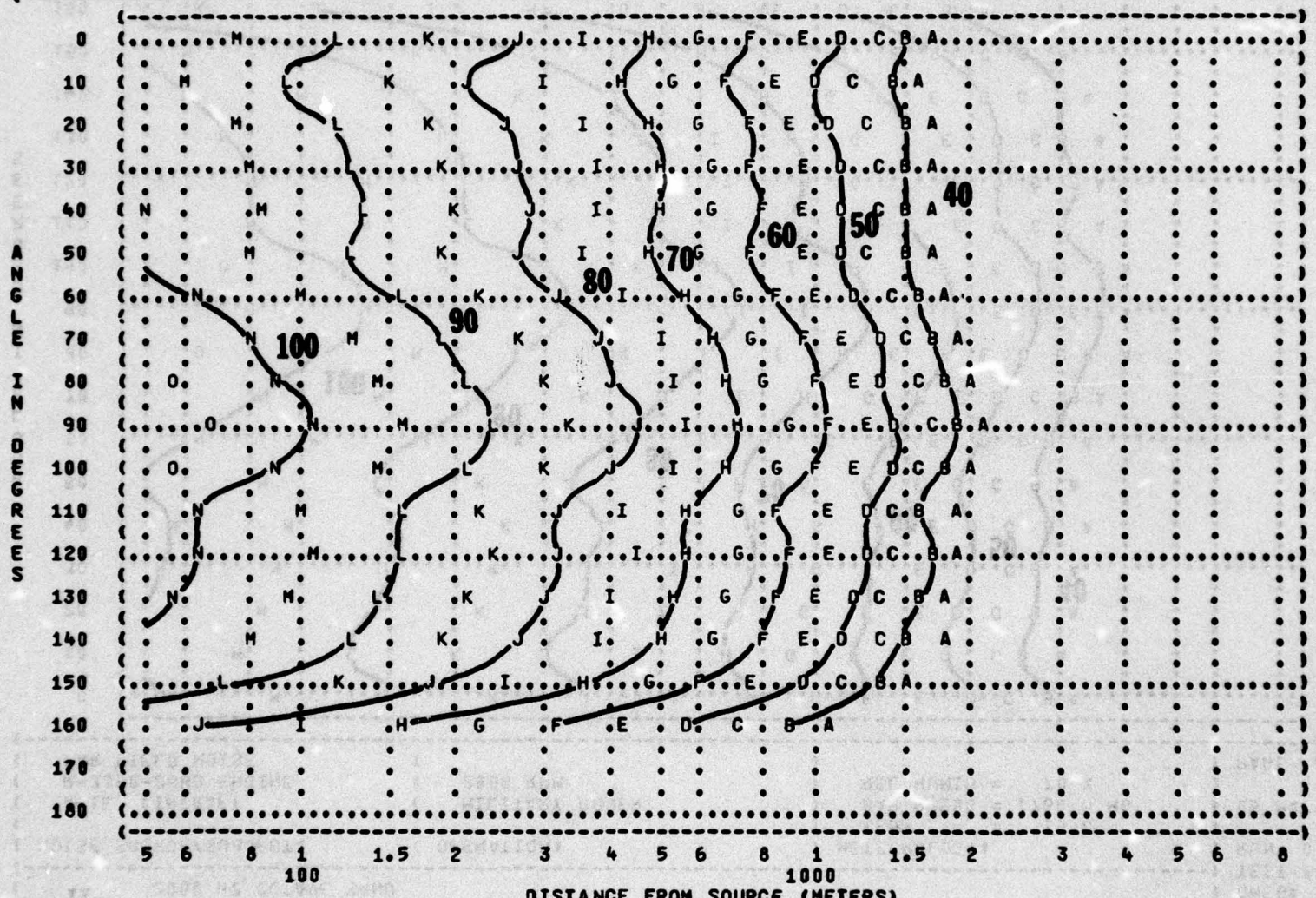
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 25



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

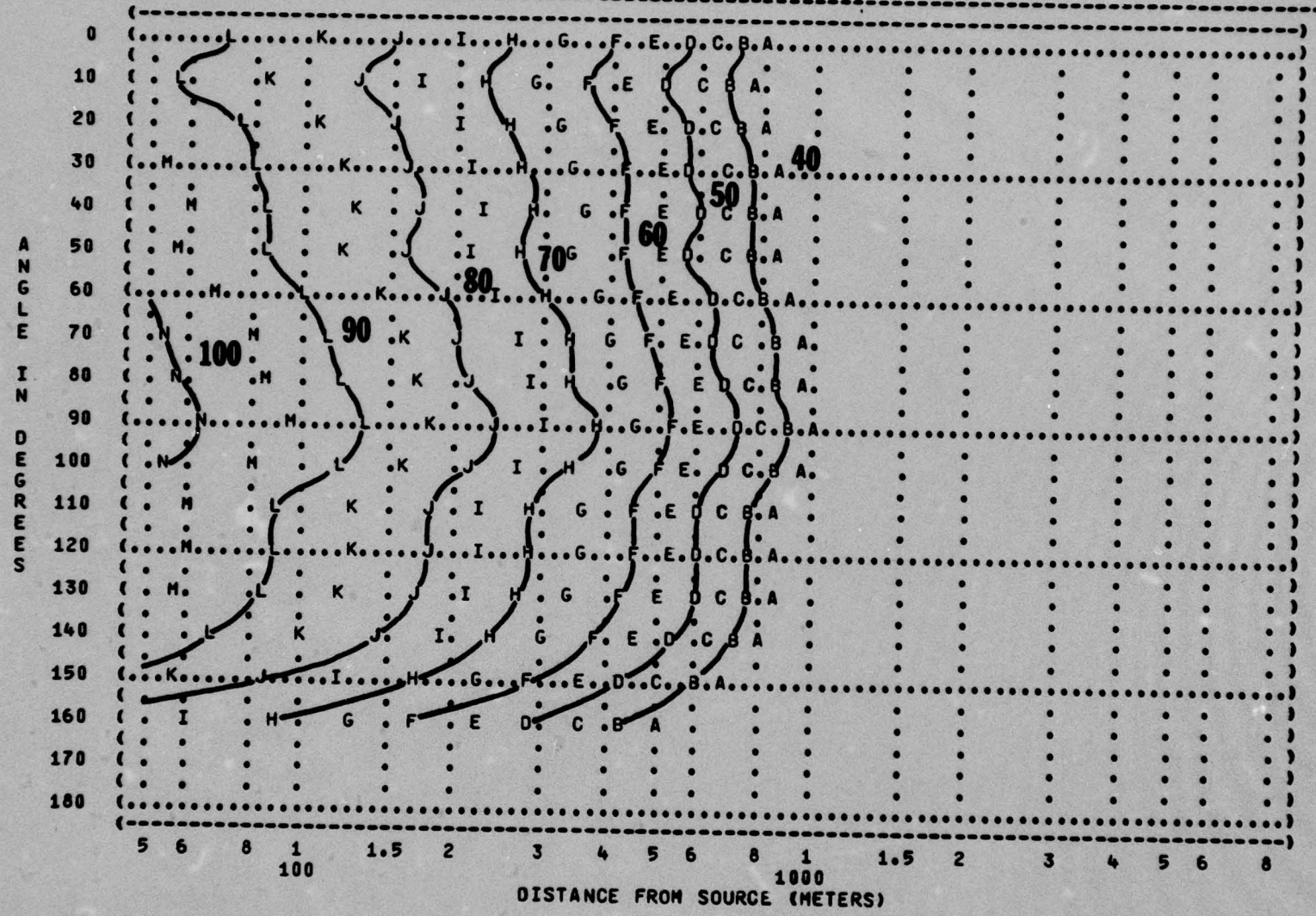
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
A-1E AIRCRAFT
R-3350-26WD ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
2800 RPM

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-001
RUN 03
05 MAY 75
PAGE 26



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

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