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FEB 77 J N COLE, J F ROSE
UNCLASSIFIED AMRL-TR-75-50-VOL-81 NL

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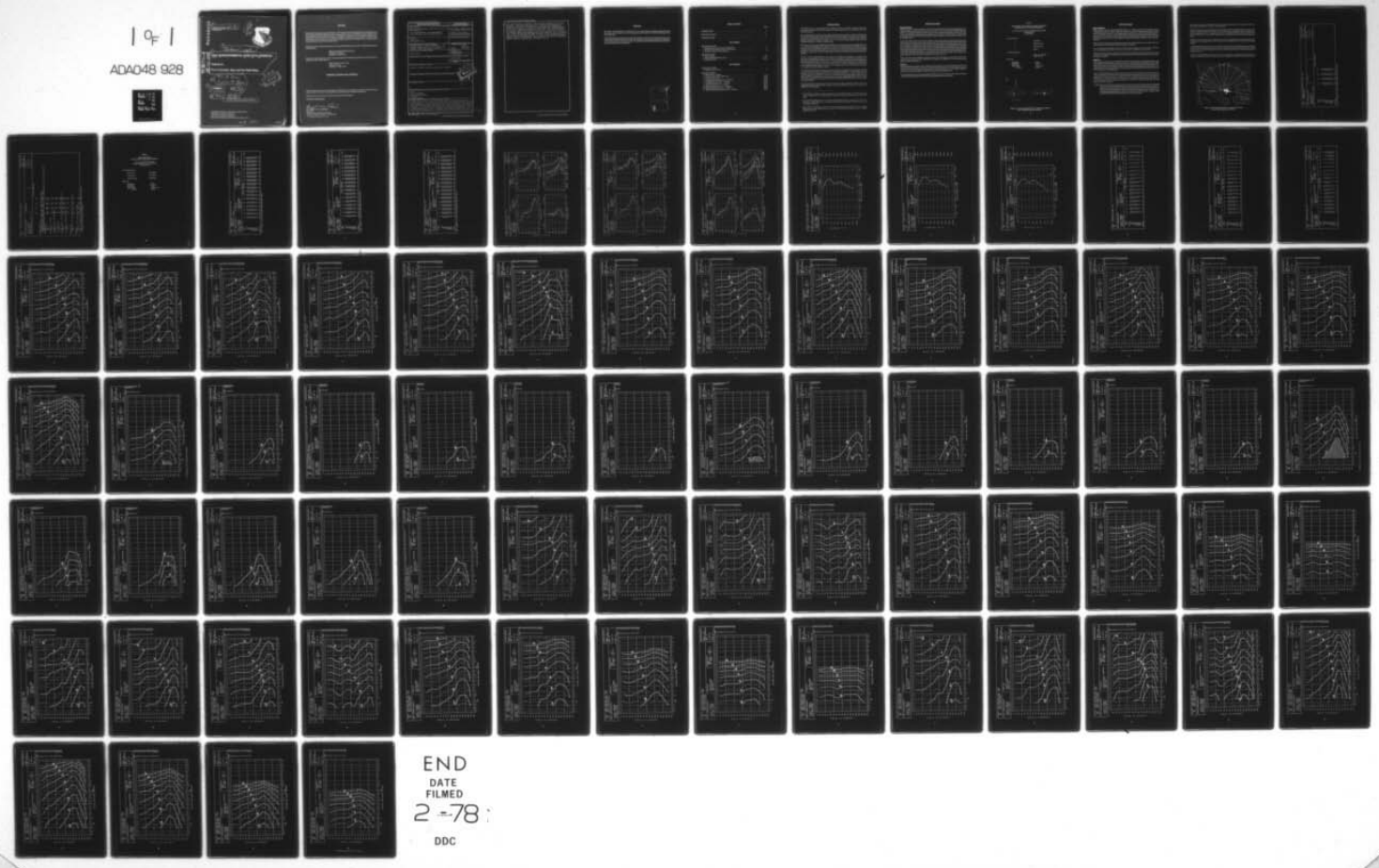

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Volume 81

Technical rept.

USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK.

Volume 81.

F111-A Aircraft, Near and Far-Field Noise.

John N. Cole
Justus F. Rose

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AEROSPACE MEDICAL RESEARCH LABORATORY
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AIR FORCE SYSTEMS COMMAND
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FOR THE COMMANDER

HENNING E. VON GIERKE
Director
Biodynamics and Bionics Division
Aerospace Medical Research Laboratory

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The USAF F-111A is a tactical fighter aircraft powered by two TF30-P-1 turbofan engines. 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 conditions. Near-field data are reported for 4 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 level, and limiting times for

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total daily exposure of personnel with and without standard Air Force ear protectors. Far-field data measured at 11 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distance from the source. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723104, Measurement and Prediction of Noise Environments of Air Force Operations.

The authors gratefully acknowledge Mr. Robert G. Powell for his assistance in preparing this report, 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 F-111A is a tactical fighter-type aircraft powered by two TF30-P-1 turbofan engines. The aircraft was manufactured by the General Dynamics and the engines by Pratt and Whitney, a Division of United Aircraft.

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 F-111A aircraft. These measured data were also published (reference 1) in 1968 in another format.

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 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.

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.

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1. Cole, John N., J. F. Rose, Jr., Maj., *Acoustic Environments of the F-111A Aircraft During Ground Runup,* AMRL-TR-68-14, Aerospace Medical Research Laboratory, Wright-Patterson AFB, Ohio, 1968.

2. 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.

3. 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 F-111A aircraft during ground runup operations of its turbofan engines. For these tests the aircraft was located on a concrete runup pad at Wright-Patterson AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the engines' power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the octave band root-mean-square sound pressure to derive a power-averaged level for each location. Figure 1 shows the four 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 F-111A aircraft at the four ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

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

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

F-111A Aircraft, Ground Runup, Wright-Patterson AFB
29 August 1967
Tail # 63-9775

Ground Crew Location

1	Engine Start
2	Wheel Chock Pull
3	Engine Trimming
4	Marshal

Aircraft Engine Operation

A	Engine #1 at 85% RPM Engine #2 at Idle

Meteorology

Temperature	21 °C
Bar Pressure	0.767 M Hg
Rel Humidity	55 %
Wind — Speed	1.5 M/Sec (3 kt)
— Direction	260 Deg.

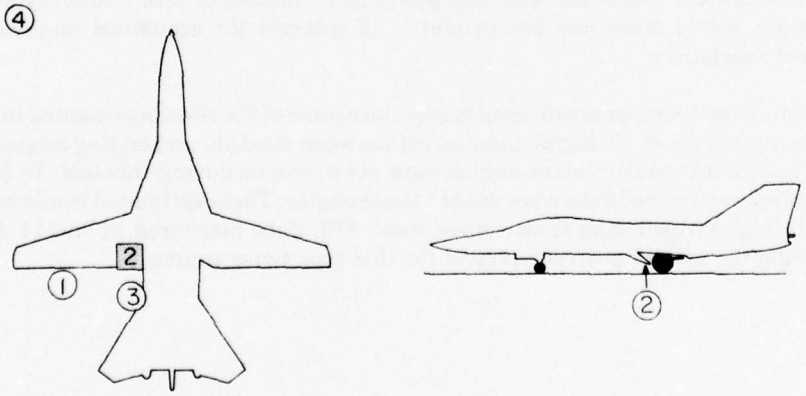

Figure 1. Near-Field Measurement Locations on Runup Pad at Wright-Patterson AFB OH

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired the near- and far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the aircraft, on a concrete runup pad, the ground cover and aircraft orientation relative to 11 microphone measurement sites on a semicircle. The center of the 76 meter radius semicircle used in surveying the TF30-P-1 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the engines' nozzle exits. The ground runup pad did not have a blast deflector; therefore, the engines' exhausts were in a "free-flow" condition.

Table 4 provides cockpit readouts of engines in operation for each far-field test. Also listed in this table are the surface meteorological conditions during data acquisition.

All 11 microphone measurement sites are in the acoustic far-field of the source where the sound wave-fronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape recorder system was used to sequentially record the noise at each far-field location. The microphone was hand-held 1.8 meters (6 feet) above the ground and pointed at the source (0° angle of incidence).

RESULTS

Table 5 lists the overall and octave band SPL measured and estimated* 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 F-111A aircraft in a standard format.

Figure 4 and Table 6 present two basic 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.

*NOTE: The computer software program used to calculate some of the results presented in the handbook requires input data at 10-degree increments between starting and ending angles. As shown in Figure 2, six such measurement angles were not surveyed during this test. To fulfill software requirements estimated data were used at these angles. These estimated levels were derived by interpolating/extrapolating from octave band SPL data measured at the 11 angles and by considering directivity patterns typical for this type noise source.

Estimates of the noise levels for a different number of engines operating (e.g., two engines in A/B) 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.

No data are presented beyond the 170 degree location because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for the 180 angle are 5 to 15 dBA below the level at the 170 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.

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.

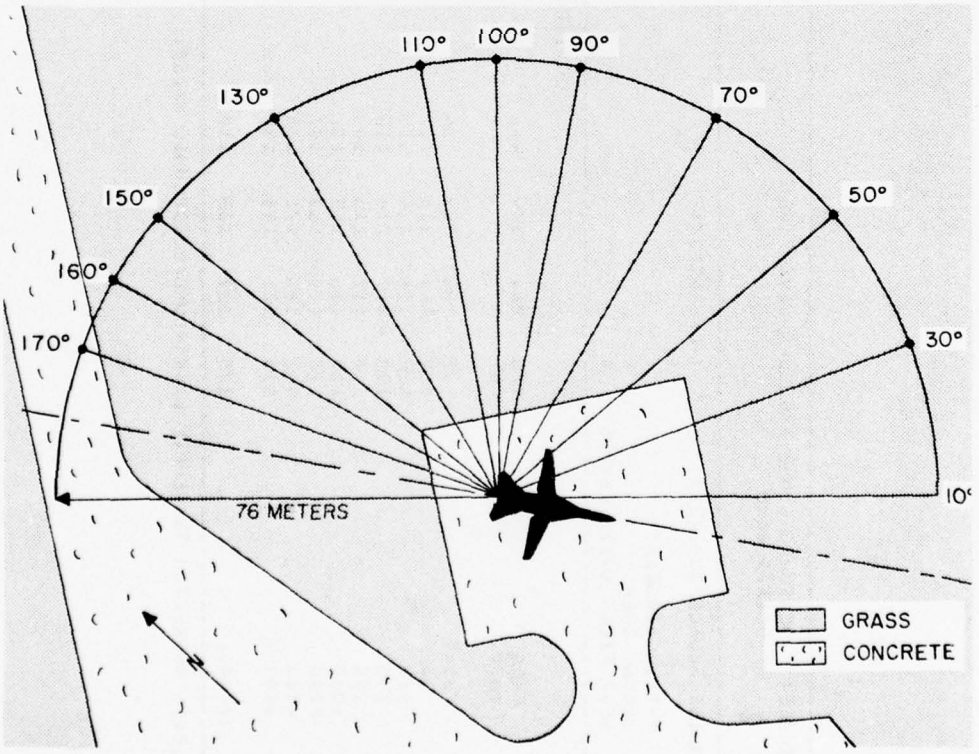

Figure 2. Far-Field Measurement Locations on Runup Pad at Wright-Patterson AFB OH

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

IDENTIFICATION: OMEGA 3.2 TEST 73-002-001 RUN 01 12 MAR 76 PAGE F1

NOISE SOURCE/SUBJECT: F-111A AIRCRAFT GROUND CREW NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

FREQ (HZ)	1/A	2/A	3/A	4/A
31.5	97	99	99	94
63	110	111	110	101
125	116	115	116	109
250	122	117	116	112
500	117	117	116	109
1000	115	116	115	107
2000	113	119	113	107
4000	112	120	121	108
8000	114	121	116	112
OVERALL	125	127	126	116

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURES OF HUMAN NOISE EXPOSURE

3

IDENTIFICATION:
OMEGA 3.2
TEST 73-002-001
RUN 01
12 MAR 76
PAGE H1

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

HAZARD/PROTECTION	1/A	2/A	3/A	4/A
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	125	126	126	117
OASLA	122	126	125	116
T	P	P	P	P
MINIMUM QPL EAR MUFFS				
OASLA*	101	101	101	94
T	25	25	25	85
AMERICAN OPTICAL 1700 EAR MUFFS				
OASLA*	97	97	96	89
T	50	50	60	202
V-51R EAR PLUGS				
OASLA*	97	99	98	90
T	50	36	42	170
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS				
OASLA*	83	85	83	76
T	571	404	571	960
H-133 GROUND COMMUNICATION UNIT				
OASLA*	93	97	94	87
T	101	50	85	285
COMMUNICATION				
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)				
PSIL	115	118	115	108
ANNOYANCE				
PERCEIVED NOISE LEVEL (PNL IN PNDB)				
PNL	135	140	140	130

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

TABLE 4

TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

F-111A Aircraft, Ground Runup
Wright-Patterson AFB, 29 August 1967
Tail # 63-9775

Aircraft Engine Operation

Military Power	Single Engine
Military Power	Both Engines
Afterburner Power	Single Engine

Meteorology

Temperature	21 °C
Bar Pressure	0.767 M Hg
Rel Humidity	55 %
Wind — Speed	1.5 M/Sec (3 Kt)
— Direction	260 Deg.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
OCTAVE BAND
DISTANCE = 76 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
31.5		86	86	86	86	87	88	90	91	92	93	94	97	101	105	108	109	107	
63		87	90	93	95	97	99	98	99	100	100	102	106	110	115	119	120	114	
125		94	98	100	99	99	99	99	100	102	104	105	109	113	117	121	122	112	
250		101	101	100	98	96	97	99	100	101	100	101	105	109	111	113	114	109	
500		96	97	98	98	99	100	101	101	102	104	106	109	112	114	114	113	101	
1000		97	97	98	98	98	99	102	103	104	107	108	110	113	113	112	109	104	
2000		96	96	96	96	97	97	98	99	100	103	105	106	107	105	103	100	98	
4000		96	96	97	97	97	96	97	97	98	100	102	103	103	101	98	95	94	
8000		95	96	97	97	96	95	95	95	96	95	97	97	97	96	95	92	92	
OVERALL		106	106	107	106	107	107	108	109	110	112	113	116	119	122	124	125	118	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
OCTAVE BAND
DISTANCE = 76 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
31.5		88	88	88	89	91	91	92	93	95	94	97	100	103	107	111	113	110	
63		94	94	95	97	100	101	101	101	102	103	107	110	113	117	122	121	113	
125		98	100	101	101	102	102	102	102	104	106	109	112	117	120	123	123	116	
250		103	103	102	100	98	99	102	103	103	101	104	107	110	112	114	117	111	
500		98	99	100	100	100	101	102	103	104	105	108	112	115	116	116	114	105	
1000		98	98	99	99	99	101	104	104	105	108	110	112	114	114	113	111	105	
2000		98	97	97	97	98	99	100	101	103	104	107	108	109	107	105	102	98	
4000		96	97	98	98	98	98	98	99	100	102	103	103	104	102	100	98	93	
8000		97	97	98	98	98	97	96	96	97	98	98	98	98	98	97	93	91	
OVERALL		108	108	108	108	108	109	110	111	112	113	116	119	122	124	127	126	120	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5: MEASURED SOUND PRESSURE LEVEL (DB)
OCTAVE BAND
DISTANCE = 76 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
31.5	98	98	98	99	100	101	102	104	106	106	108	112	117	121	122	121	115		
63	103	103	103	105	108	109	109	110	111	112	117	122	126	128	129	124	116		
125	101	105	107	107	107	107	108	109	111	111	116	123	127	129	130	124	114		
250	103	103	104	101	99	100	103	104	105	106	113	119	123	122	118	115	101		
500	100	101	103	104	105	107	109	111	113	114	119	126	128	122	114	109	95		
1000	99	101	104	105	106	108	110	112	114	116	120	123	123	118	113	107	95		
2000	99	100	101	102	104	105	107	109	112	113	117	118	117	112	105	100	94		
4000	97	98	100	101	103	104	105	107	109	110	113	113	111	105	100	97	91		
8000	96	97	98	99	99	99	99	101	103	104	106	106	104	100	95	92	86		
OVERALL	110	111	112	113	114	115	117	118	120	121	126	131	133	133	133	128	120		

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
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07 MAY 75
PAGE 6

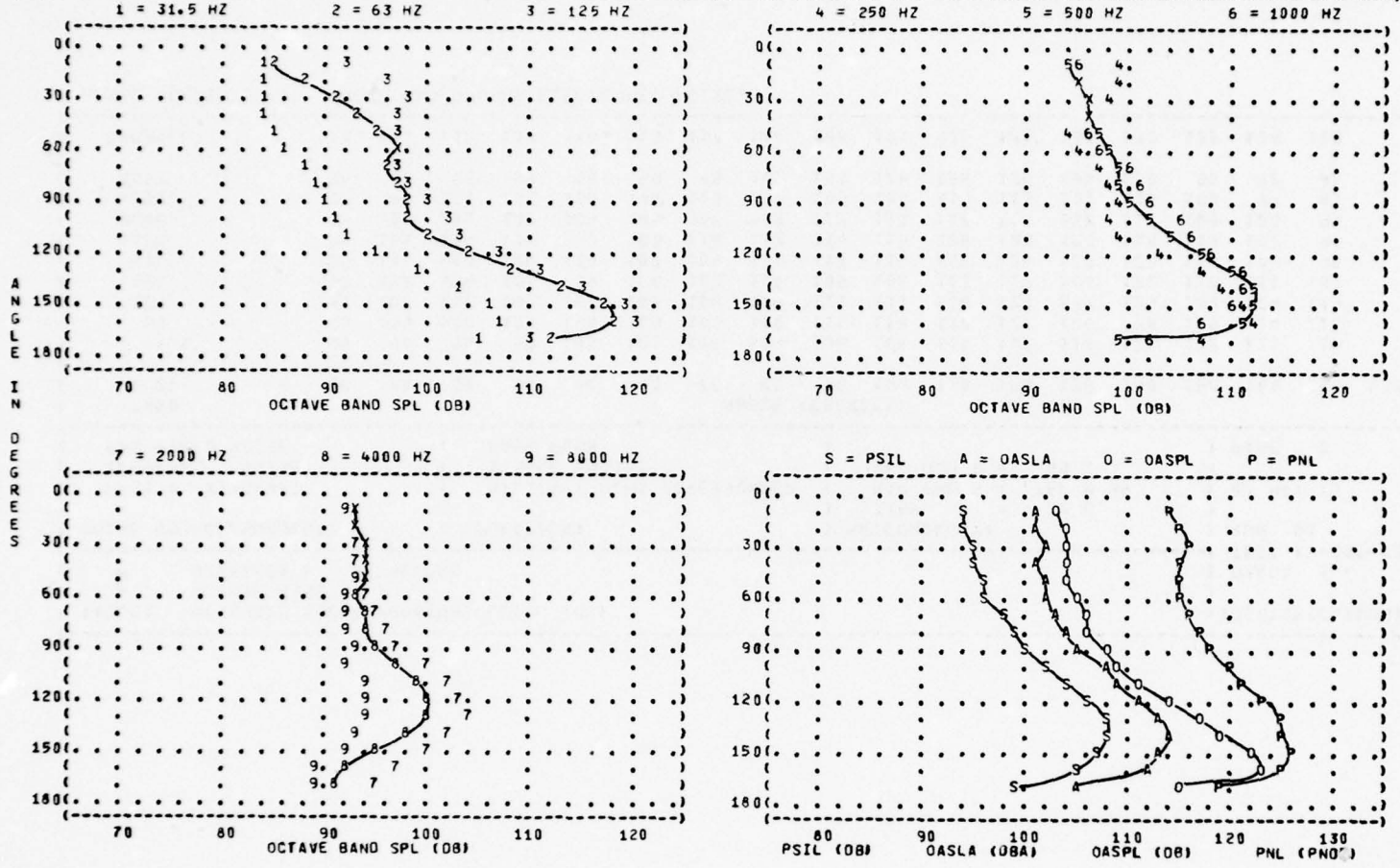

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
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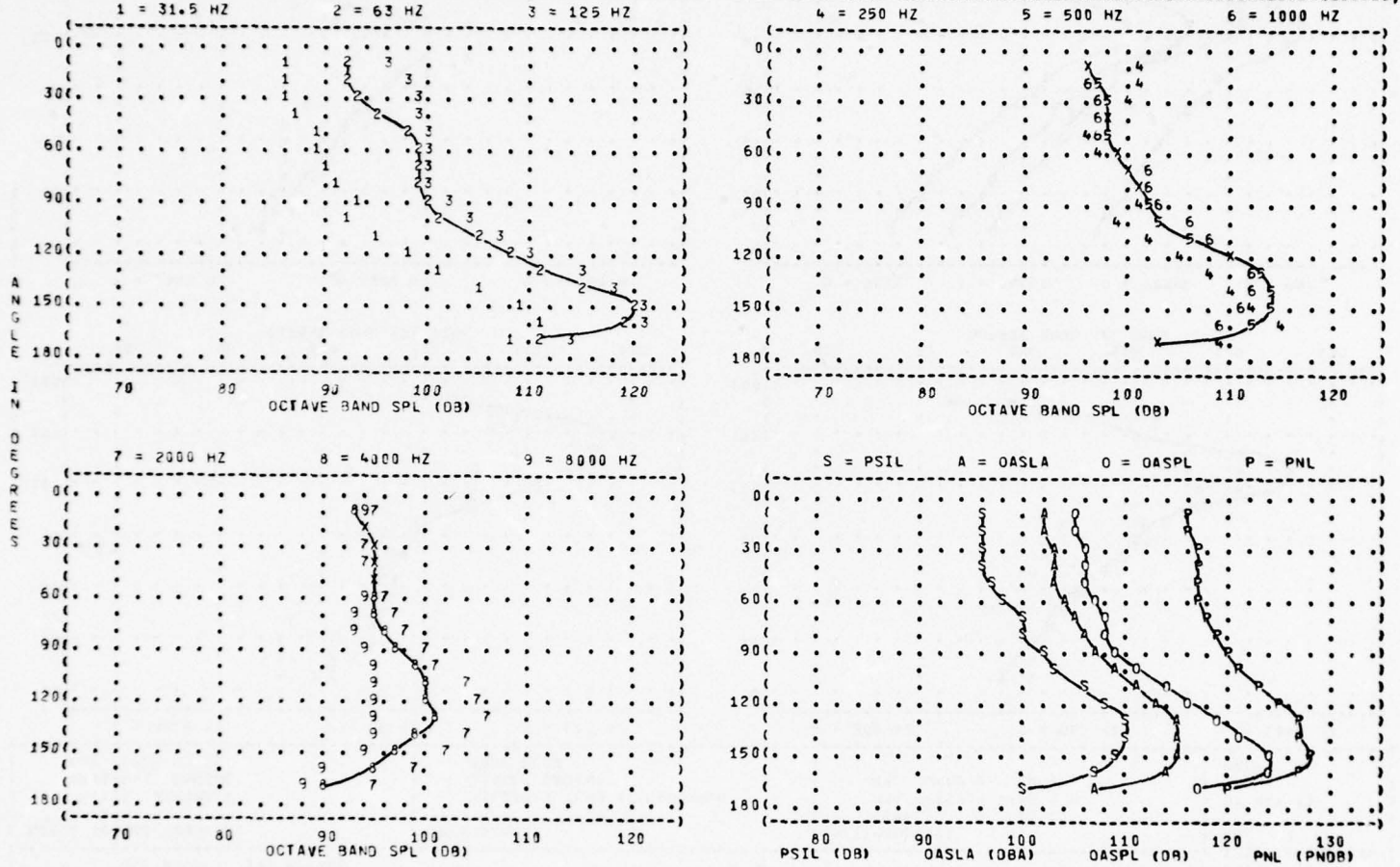


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:

MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:

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

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-036
RUN 03

07 MAY 75

PAGE 6

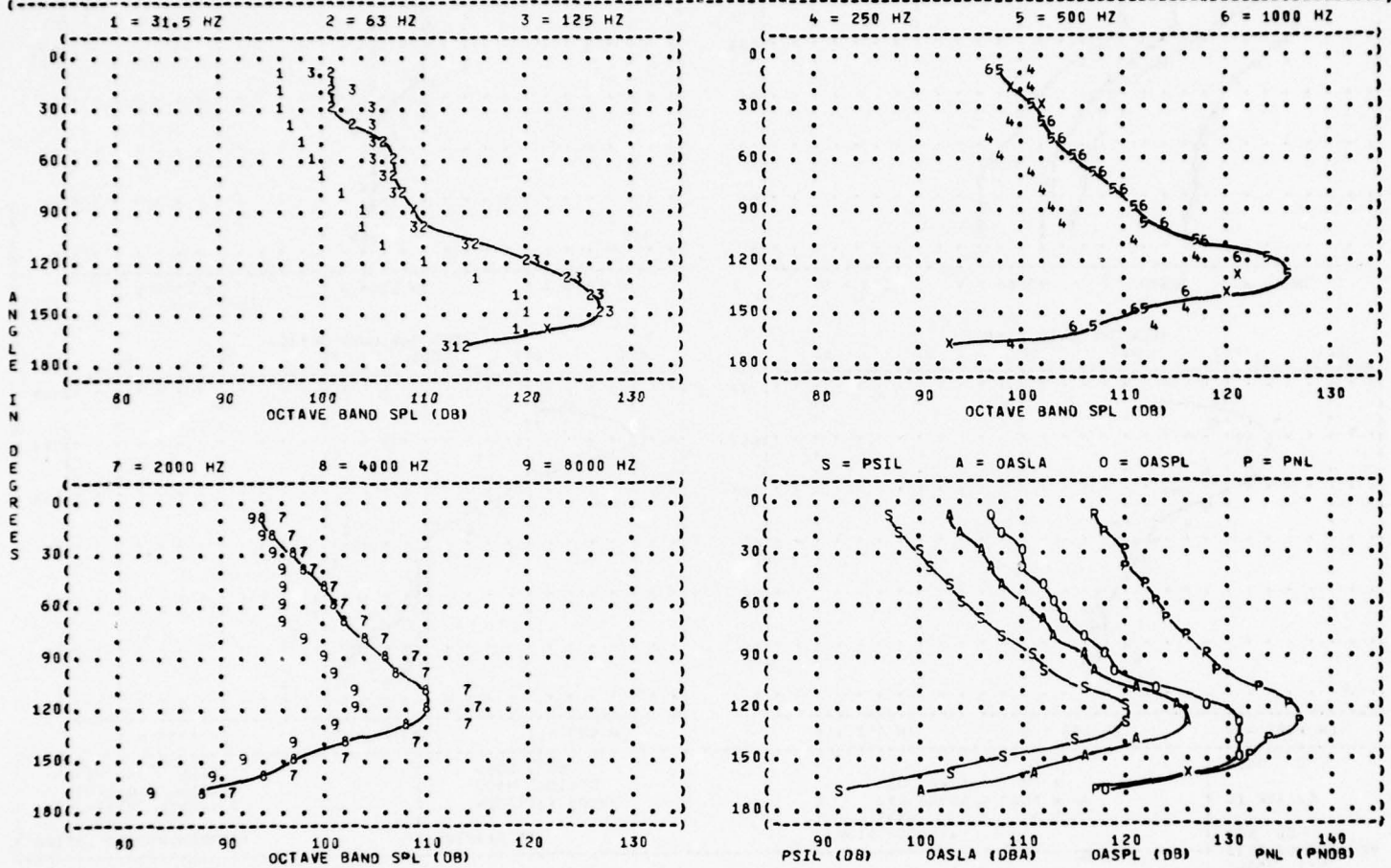


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 3

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

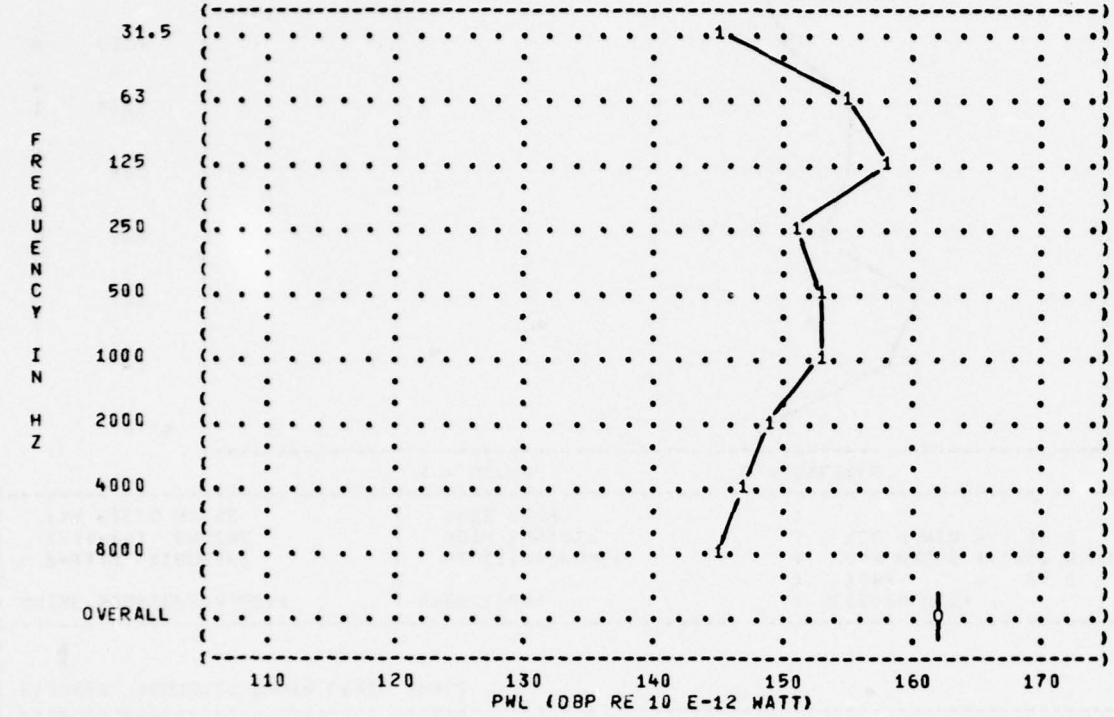


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 3

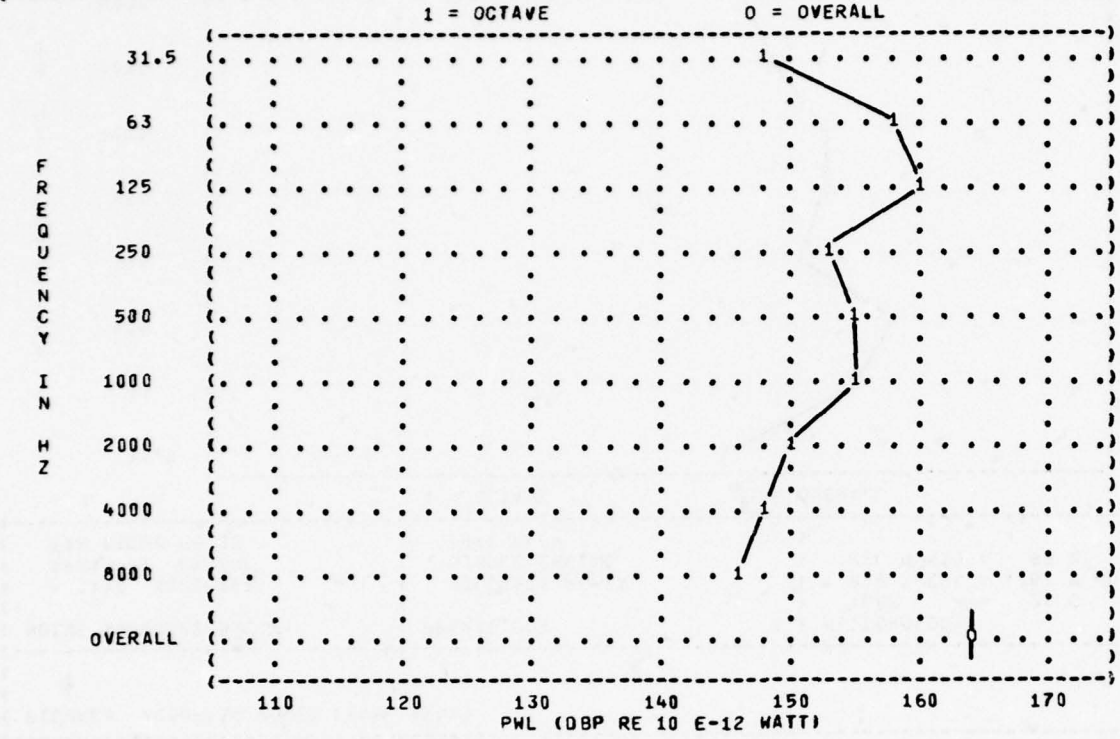


FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 3

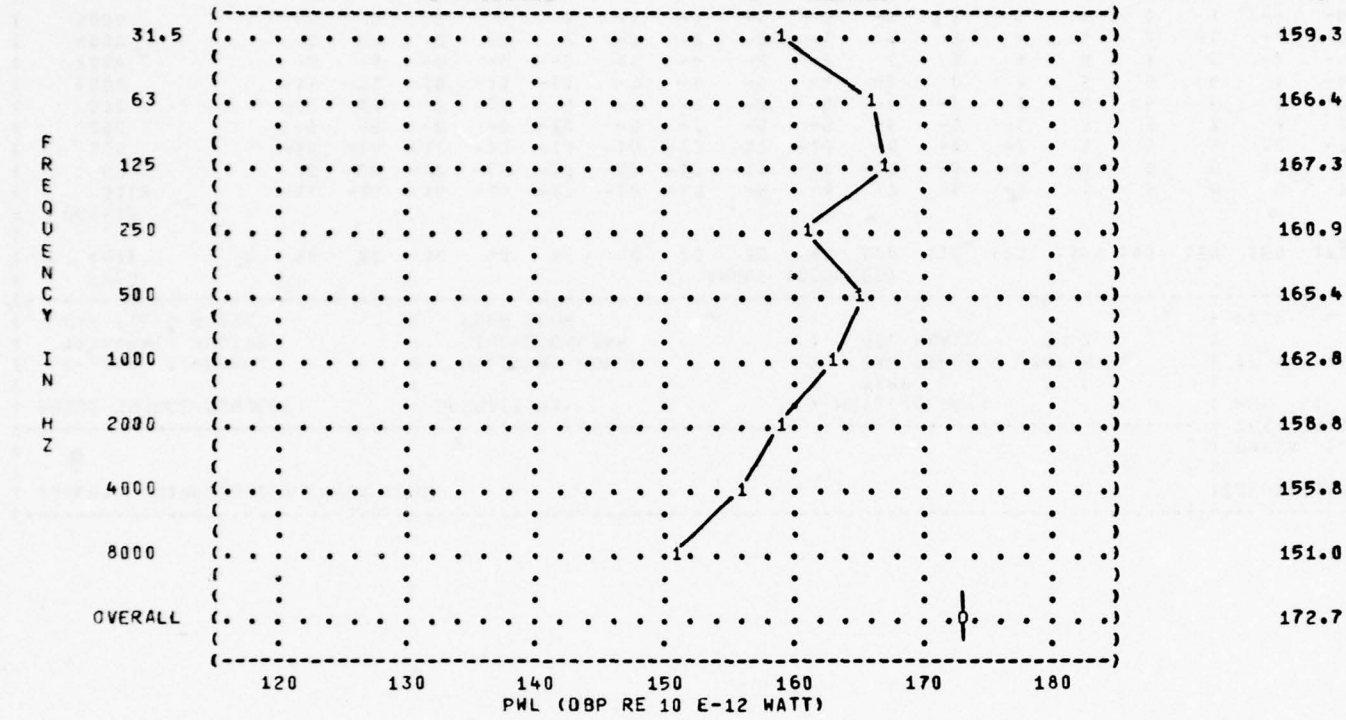


TABLE: 6 DIRECTIVITY INDEX (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
OCTAVE																			
31.5		-14	-14	-14	-14	-13	-12	-10	-9	-8	-7	-6	-3	1	5	8	9	7	
63		-23	-20	-17	-15	-13	-11	-12	-11	-10	-10	-8	-4	-0	5	9	10	4	
125		-18	-14	-12	-13	-13	-13	-13	-12	-10	-8	-7	-3	1	5	9	10	-0	
250		-5	-5	-6	-8	-10	-9	-7	-6	-5	-6	-5	-1	3	5	7	8	3	
500		-12	-11	-10	-10	-9	-8	-7	-7	-6	-4	-2	1	4	6	6	5	-7	
1000		-11	-11	-10	-10	-10	-9	-6	-5	-4	-1	0	2	5	5	4	1	-4	
2000		-6	-6	-6	-6	-5	-5	-4	-3	-2	1	3	4	5	3	1	-2	-4	
4000		-3	-3	-2	-2	-2	-3	-2	-2	-1	1	3	4	4	2	-1	-4	-5	
8000		-1	0	1	1	0	-1	-1	-1	0	-1	1	1	1	0	-1	-4	-4	
OVERALL		-11	-10	-10	-10	-10	-9	-8	-8	-7	-5	-3	-1	3	5	8	8	1	

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
OCTAVE																			
31.5		-15	-15	-15	-14	-12	-12	-11	-10	-8	-9	-6	-3	0	4	8	10	7	
63		-18	-18	-17	-15	-12	-11	-11	-11	-10	-9	-5	-2	1	5	10	9	1	
125		-16	-14	-13	-13	-12	-12	-12	-12	-10	-8	-5	-2	3	6	9	9	2	
250		-5	-5	-6	-8	-10	-9	-6	-5	-5	-7	-4	-1	2	4	6	9	3	
500		-12	-11	-10	-10	-10	-9	-8	-7	-6	-5	-2	2	5	6	6	4	-5	
1000		-11	-11	-10	-10	-10	-8	-5	-5	-4	-1	1	3	5	5	4	2	-4	
2000		-6	-7	-7	-7	-6	-5	-4	-3	-1	-0	3	4	5	3	1	-2	-6	
4000		-5	-4	-3	-3	-3	-3	-3	-2	-1	1	2	2	3	1	-1	-3	-8	
8000		-0	-0	1	1	1	-0	-1	-1	-0	1	1	1	1	1	-0	-4	-6	
OVERALL		-11	-11	-10	-11	-10	-10	-8	-8	-7	-5	-3	-0	3	5	8	8	1	

TABLE: 6 DIRECTIVITY INDEX (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

METEOROLOGY:
TEMP = 21 C
BAR PRESS = .767 M HG
REL HUMID = 55 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
OCTAVE																			
31.5		-16	-16	-16	-15	-14	-13	-12	-10	-8	-8	-6	-2	3	7	8	7	1	
63		-18	-18	-18	-16	-13	-12	-12	-11	-10	-9	-4	1	5	7	8	3	-5	
125		-21	-17	-15	-15	-15	-15	-14	-13	-11	-11	-6	1	5	7	8	2	-8	
250		-12	-12	-11	-14	-16	-15	-12	-11	-10	-9	-2	4	8	7	3	-0	-14	
500		-20	-19	-17	-16	-15	-13	-11	-9	-7	-6	-1	6	8	2	-6	-11	-25	
1000		-18	-16	-13	-12	-11	-9	-7	-5	-3	-1	3	6	6	1	-4	-10	-22	
2000		-14	-13	-12	-11	-9	-8	-6	-4	-1	0	4	5	4	-1	-8	-13	-19	
4000		-11	-10	-8	-7	-5	-4	-3	-1	1	2	5	5	3	-3	-8	-11	-17	
8000		-6	-5	-4	-3	-3	-3	-3	-1	1	2	4	4	2	-2	-7	-10	-16	
OVERALL		-17	-16	-15	-14	-13	-12	-11	-9	-7	-6	-1	4	6	6	6	1	-7	

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 13

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
P	120
Q	125

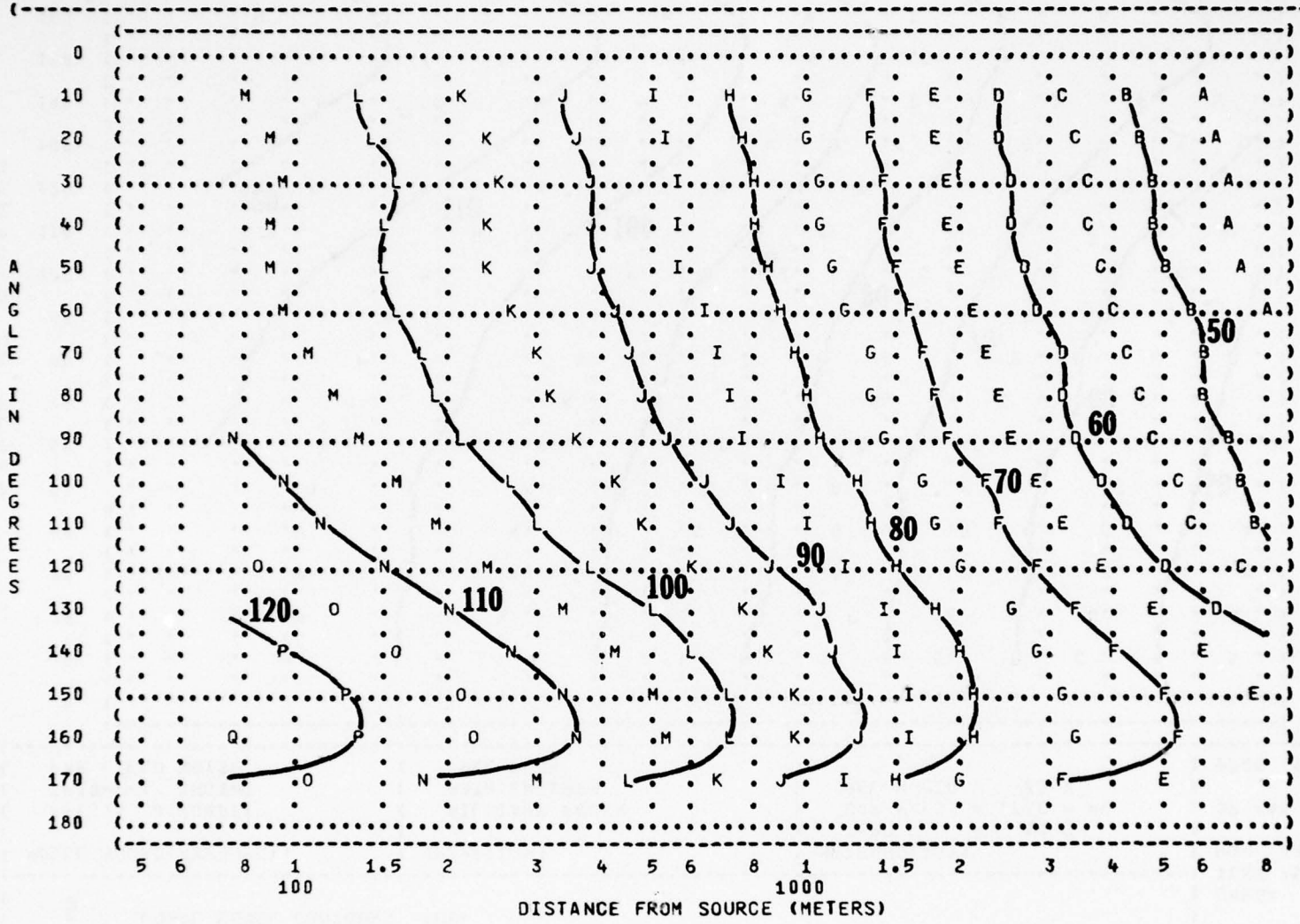


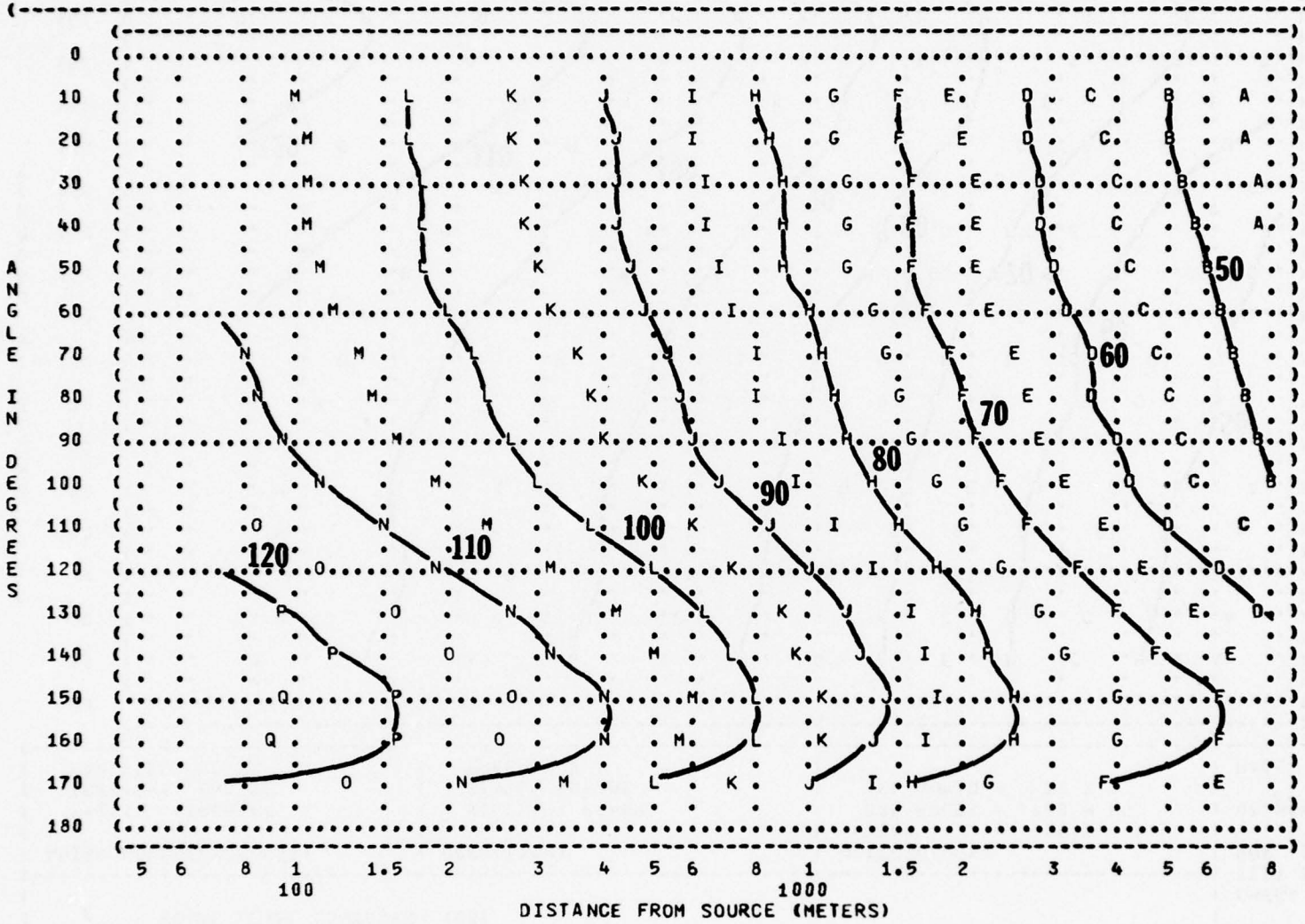
FIGURE: 5 — OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 13



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
P	120
Q	125

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 13

POINT	DB
A	55
B	60
C	65
D	70
E	75
F	80
G	85
H	90
I	95
J	100
K	105
L	110
M	115
N	120
O	125
P	130

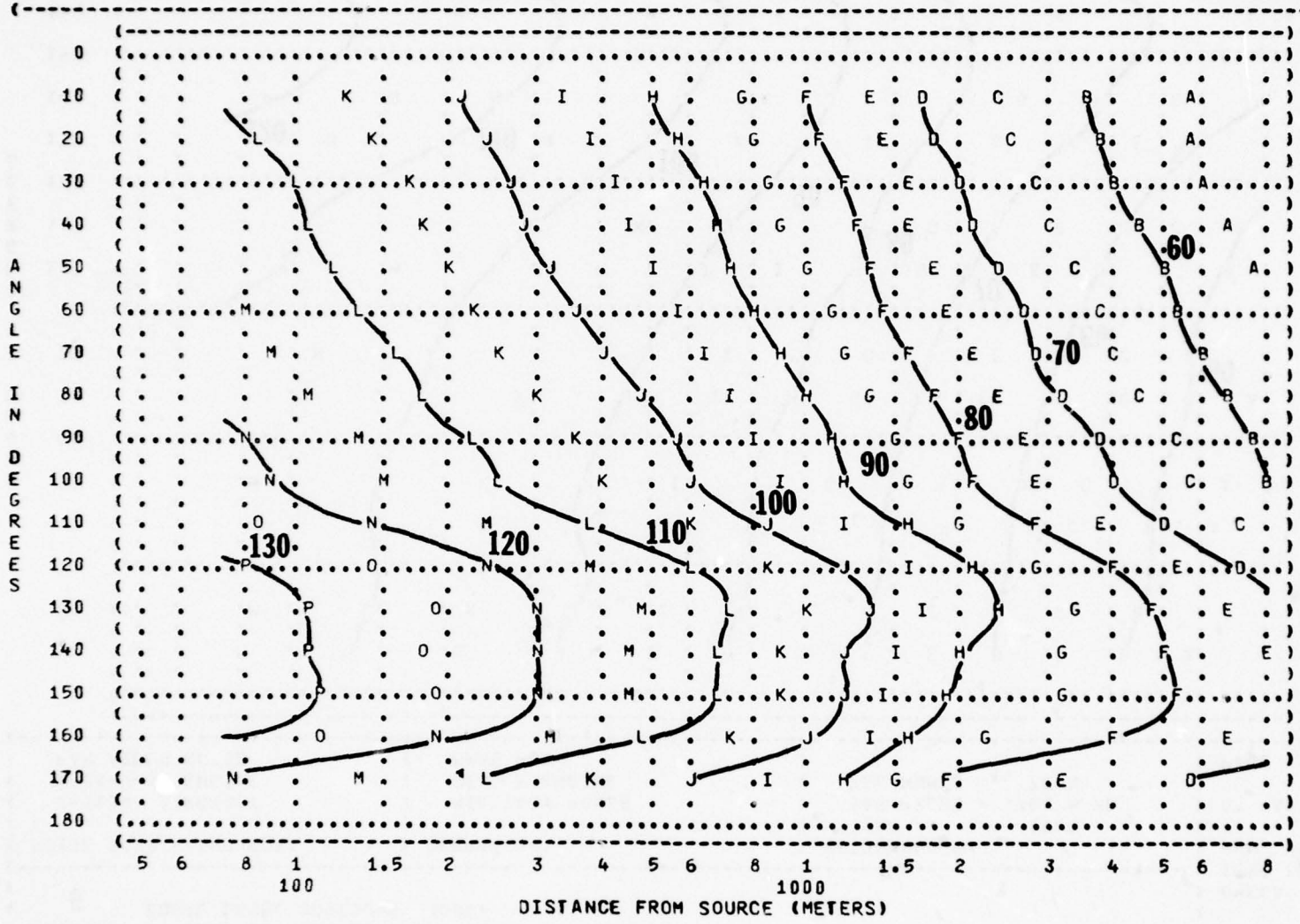


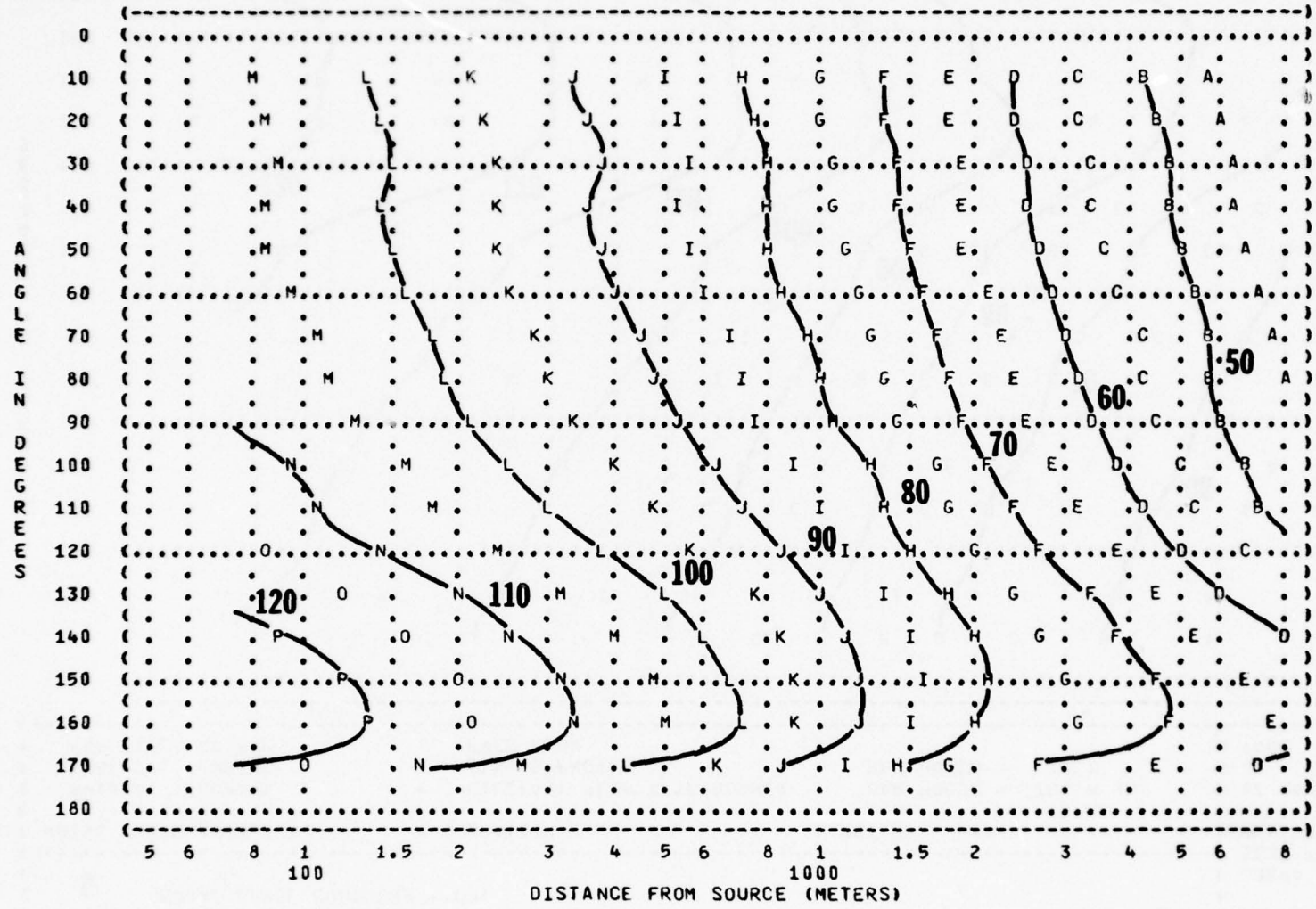
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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
P	120

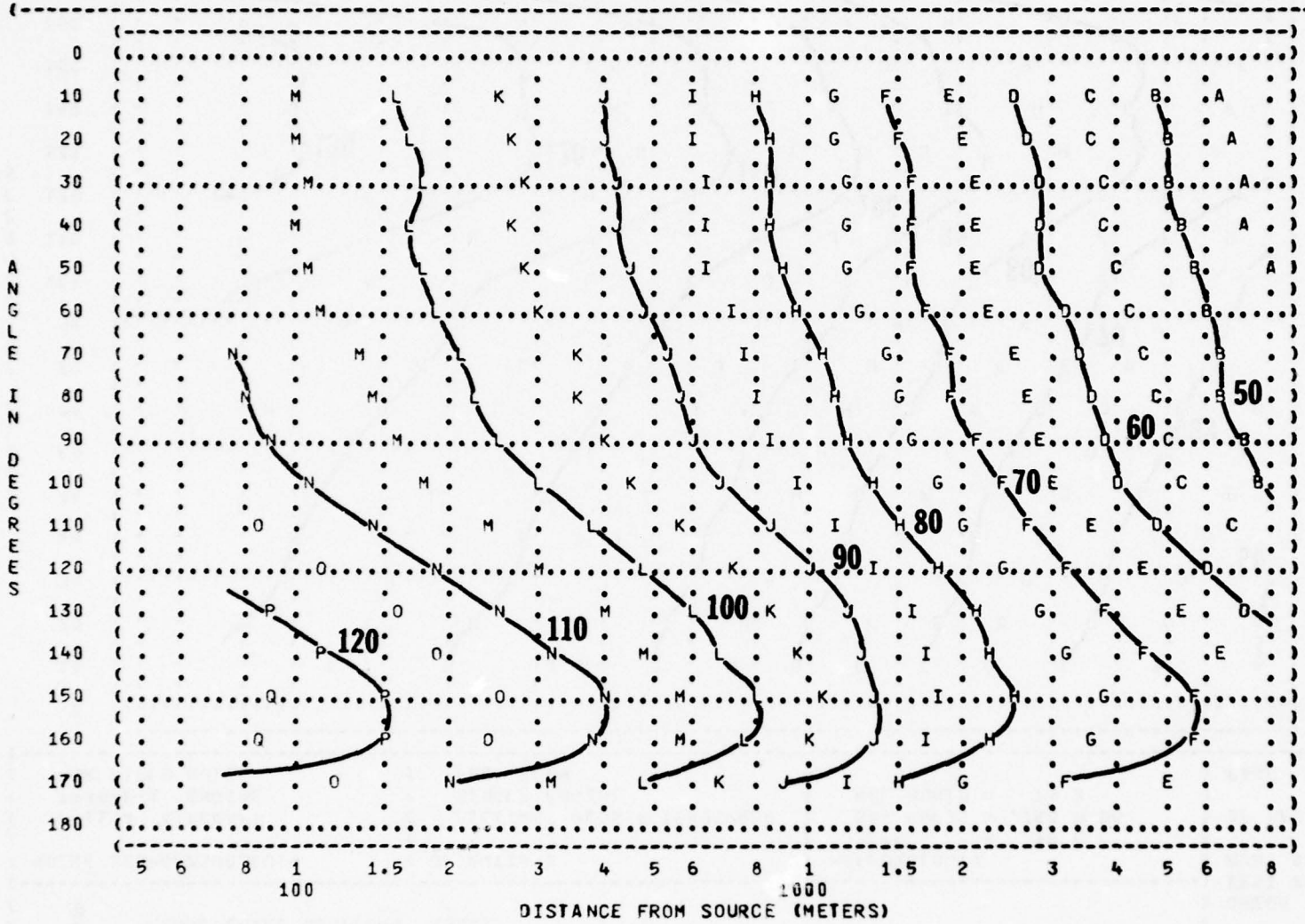
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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
P	120
Q	125

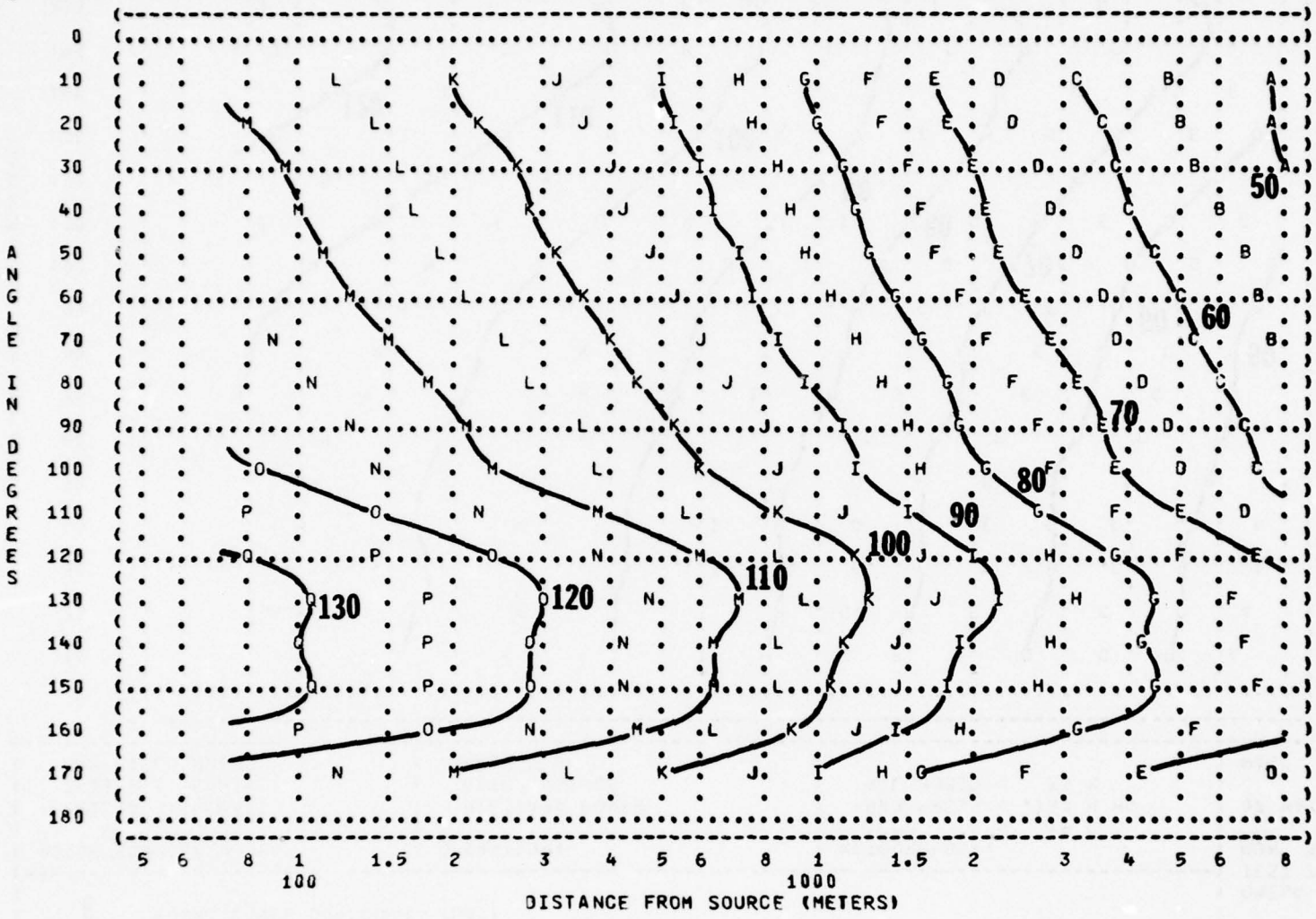
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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



POINT	DBC
A	50
B	55
C	60
D	65
E	70
F	75
G	80
H	85
I	90
J	95
K	100
L	105
M	110
N	115
O	120
P	125
Q	130

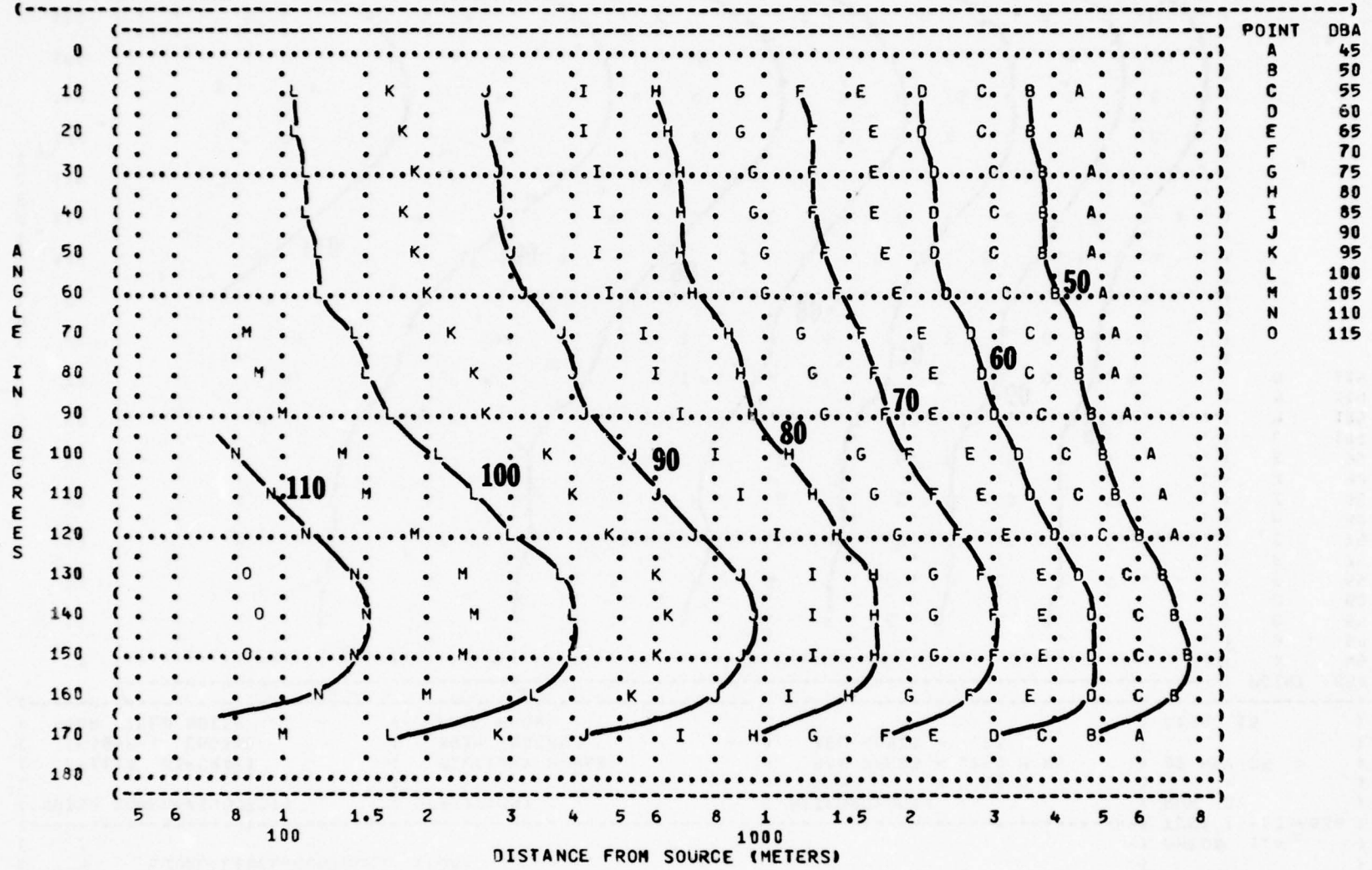
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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
O	115

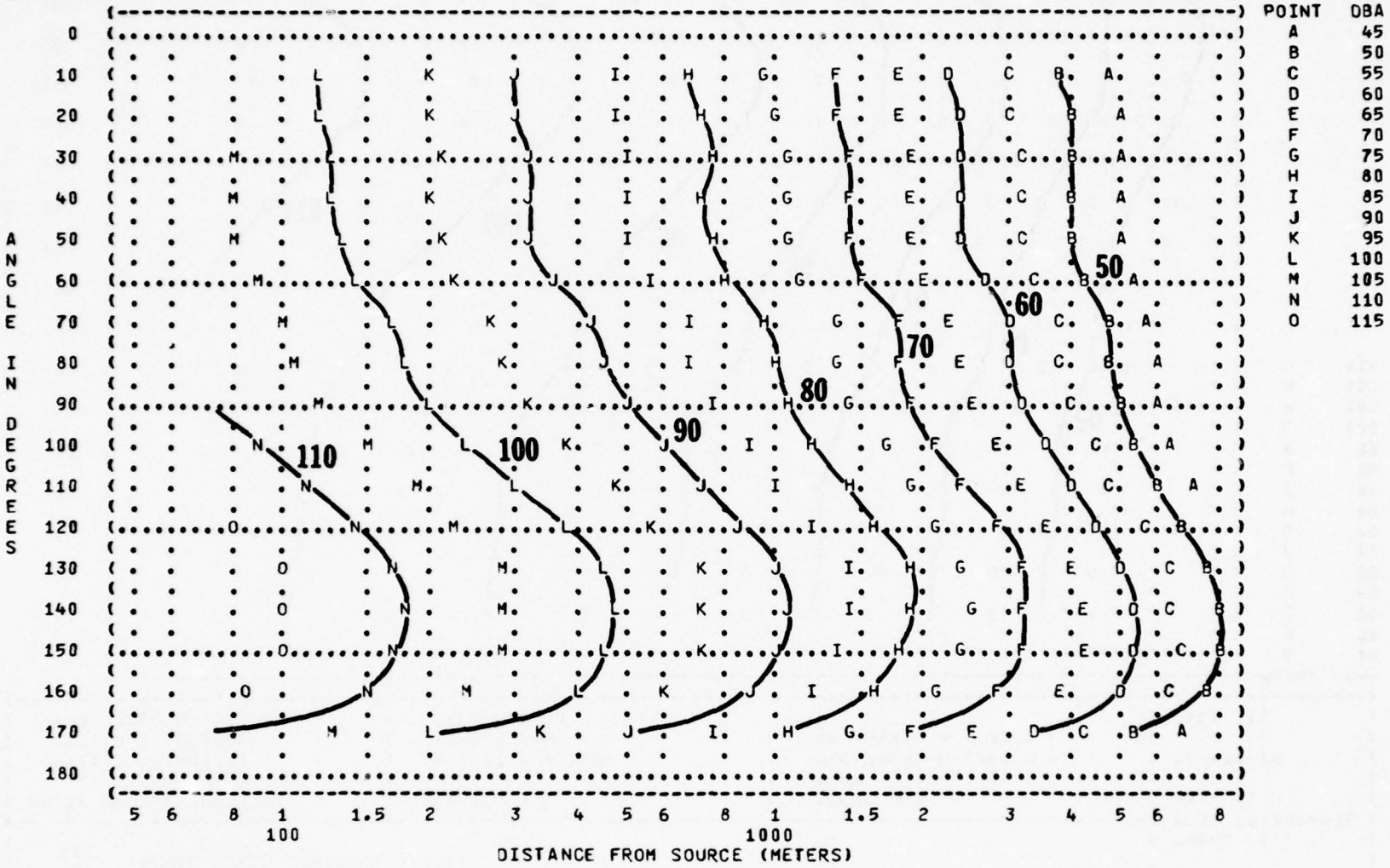
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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
O	115

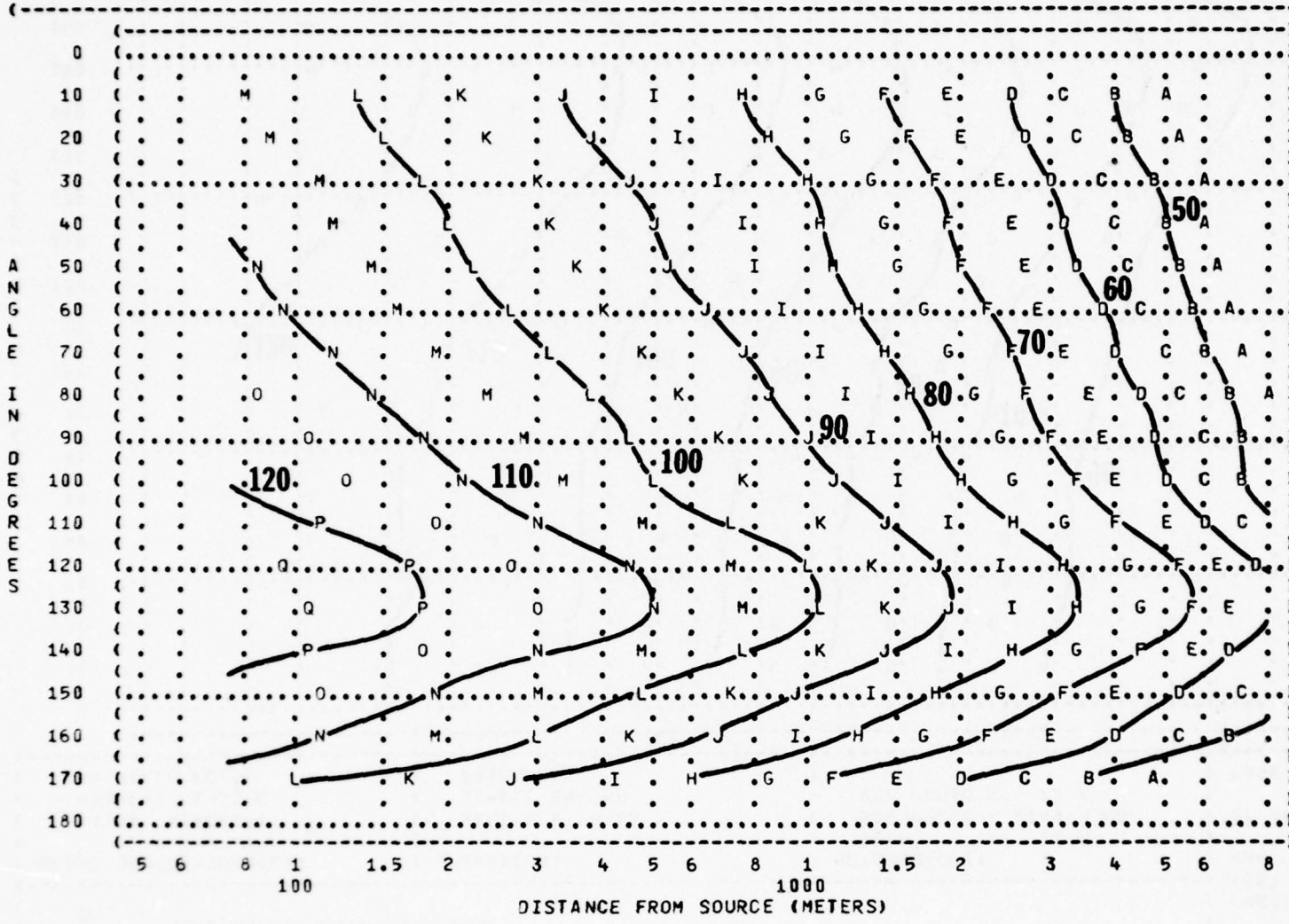
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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
O	115
P	120
Q	125

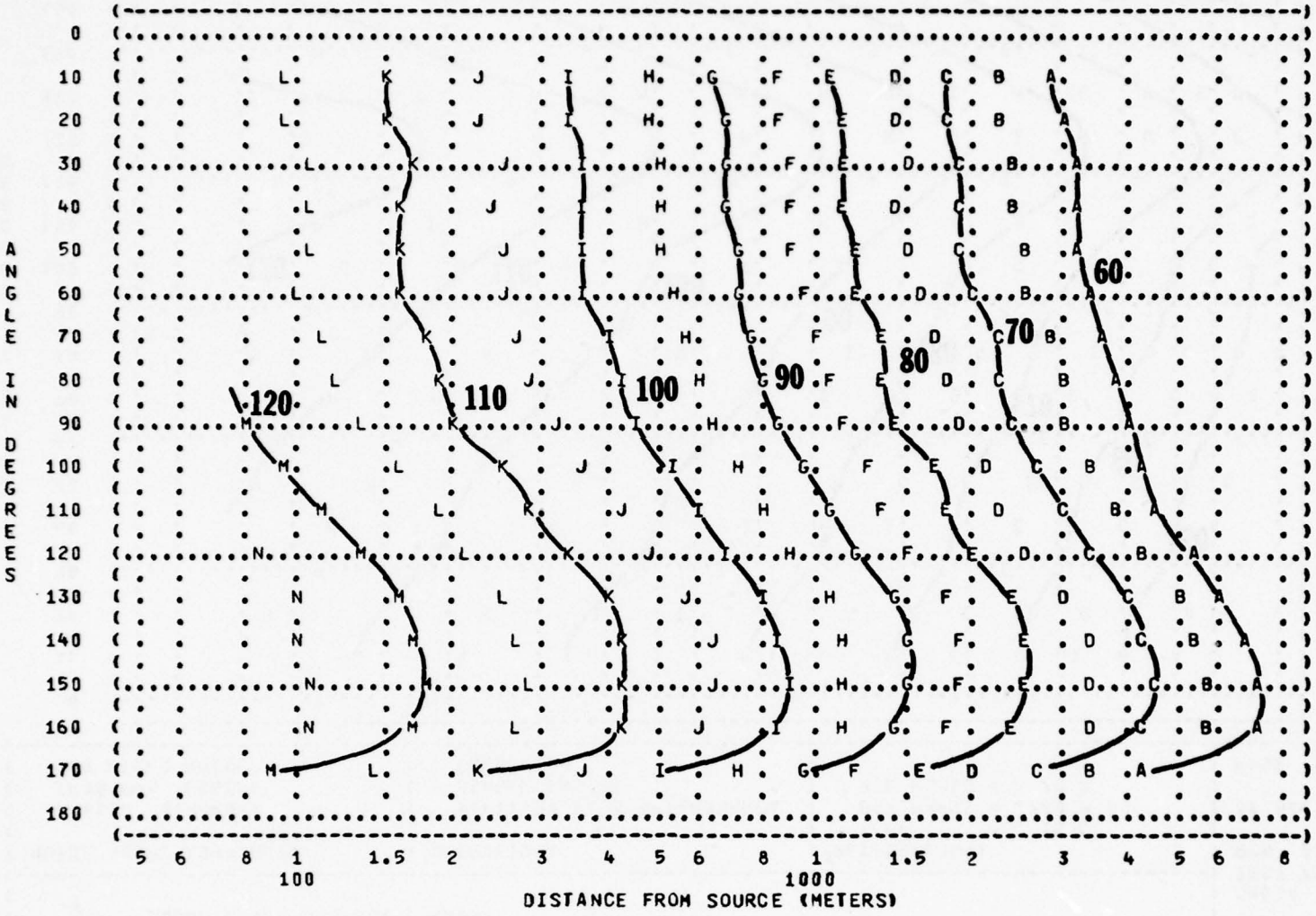
FIGURE 8 PERCEIVED NOISE LEVEL (PNL) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

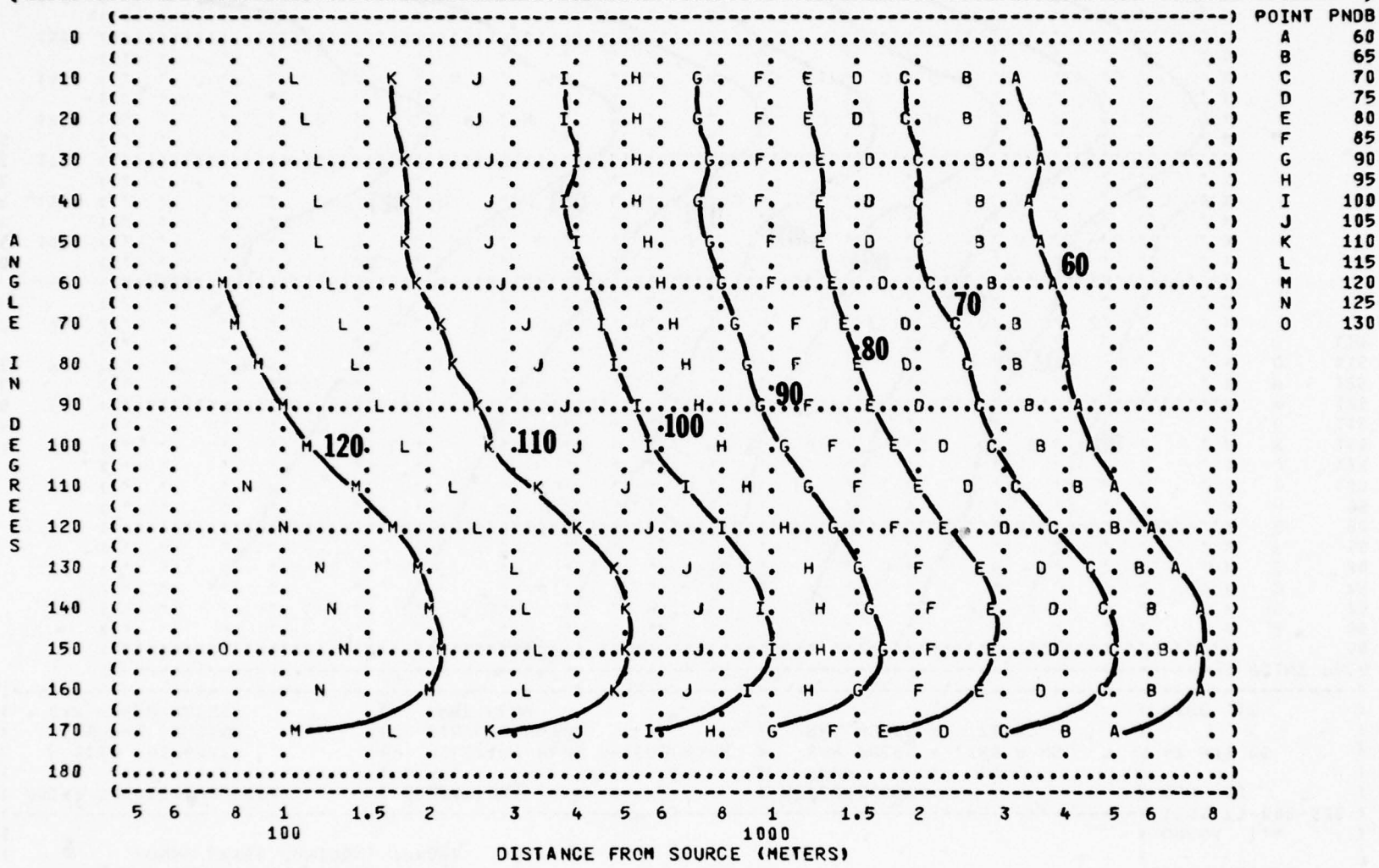
FIGURE 8 PERCEIVED NOISE LEVEL (PNL) EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 16



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

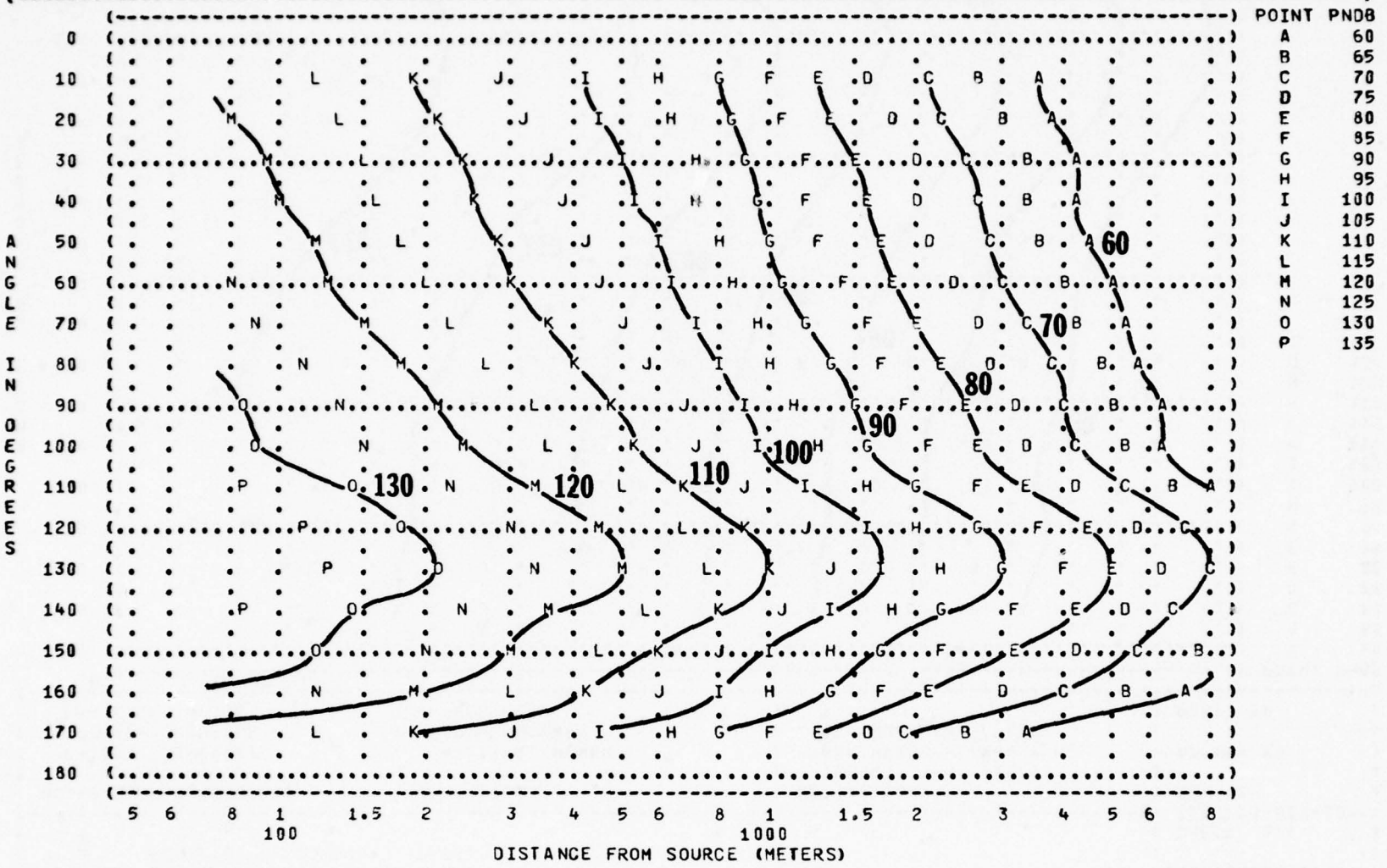
FIGURE 8: PERCEIVED NOISE LEVEL (PNL) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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
P	135

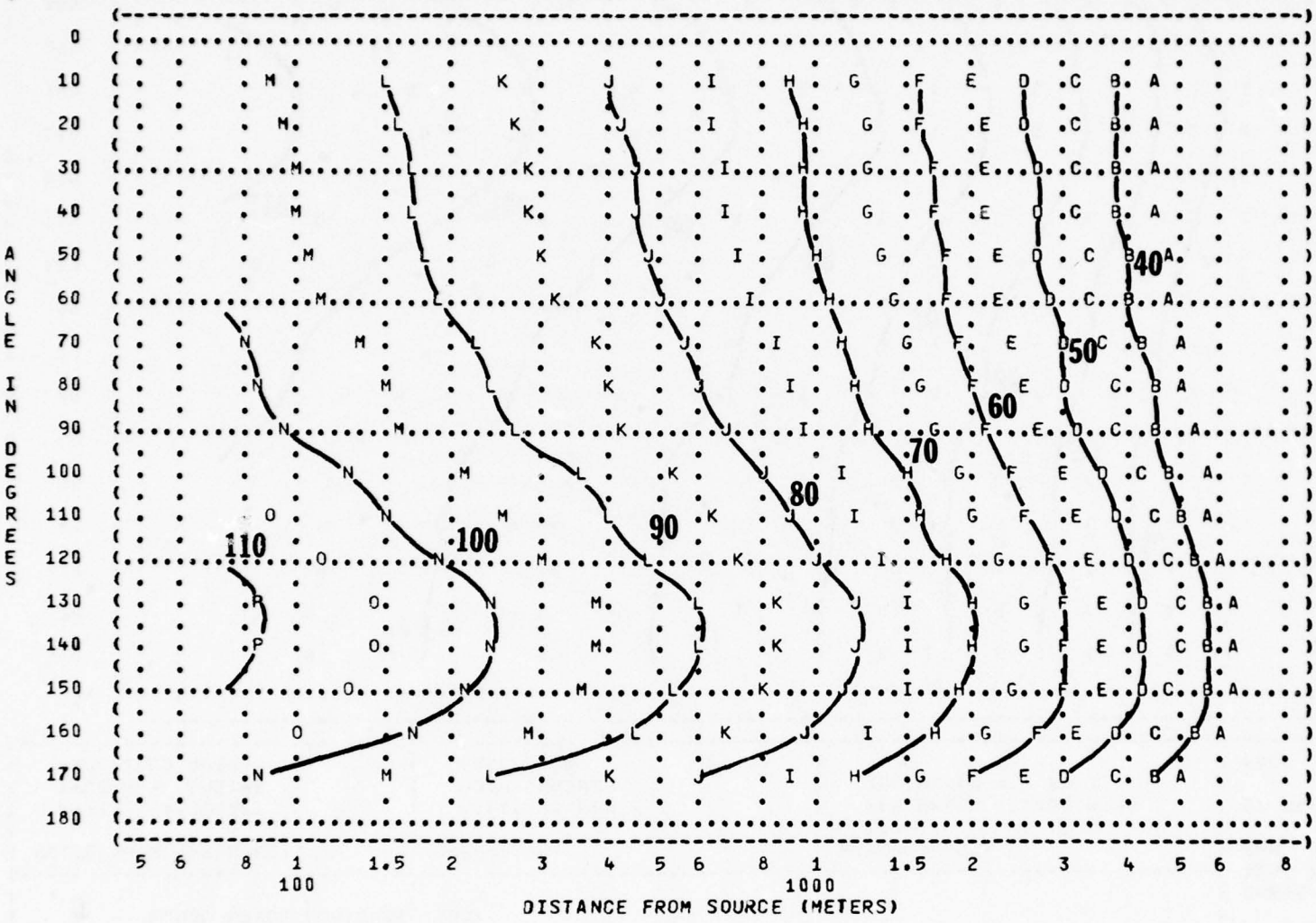
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

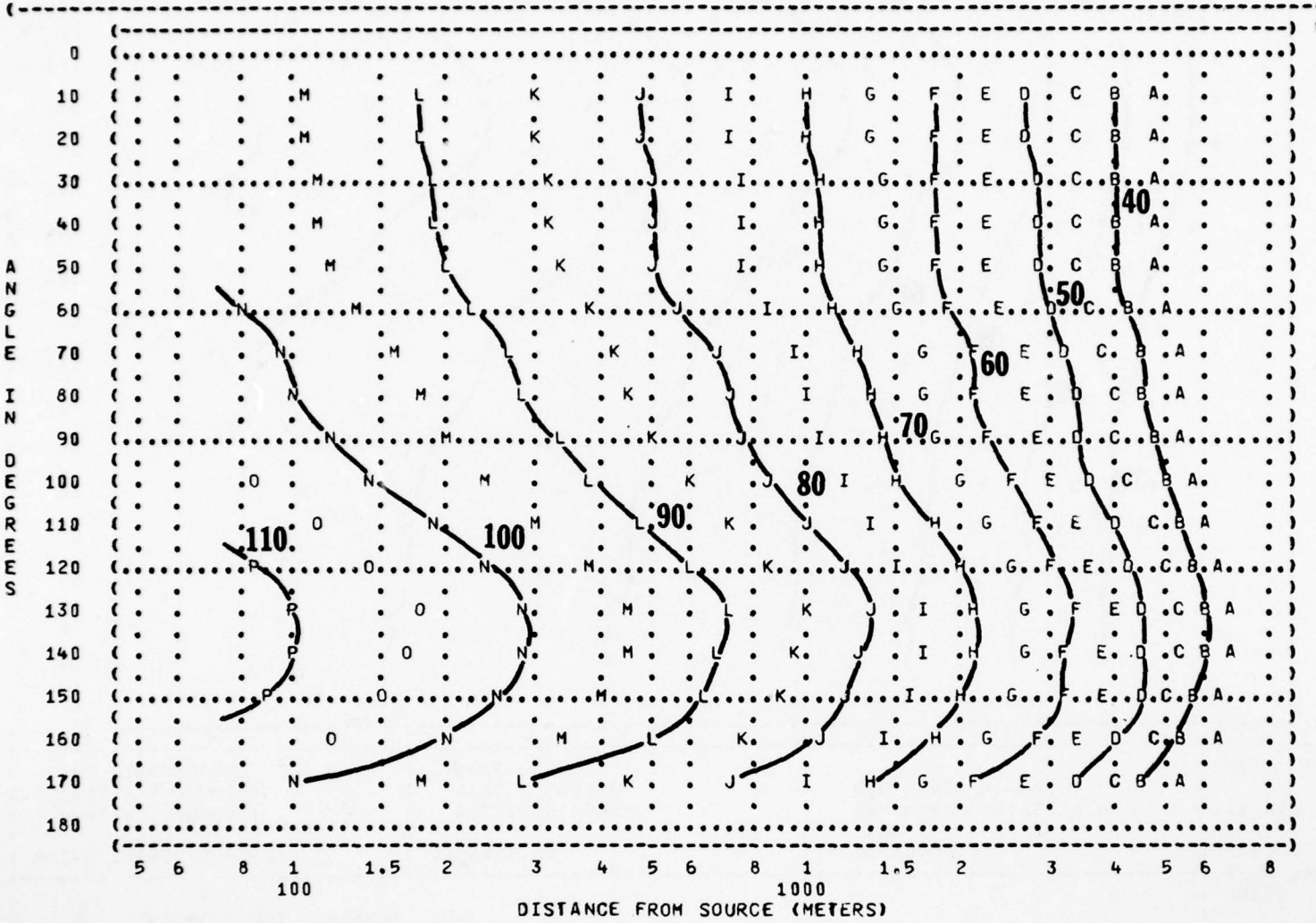
FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 17



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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 17

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
Q	115
R	120

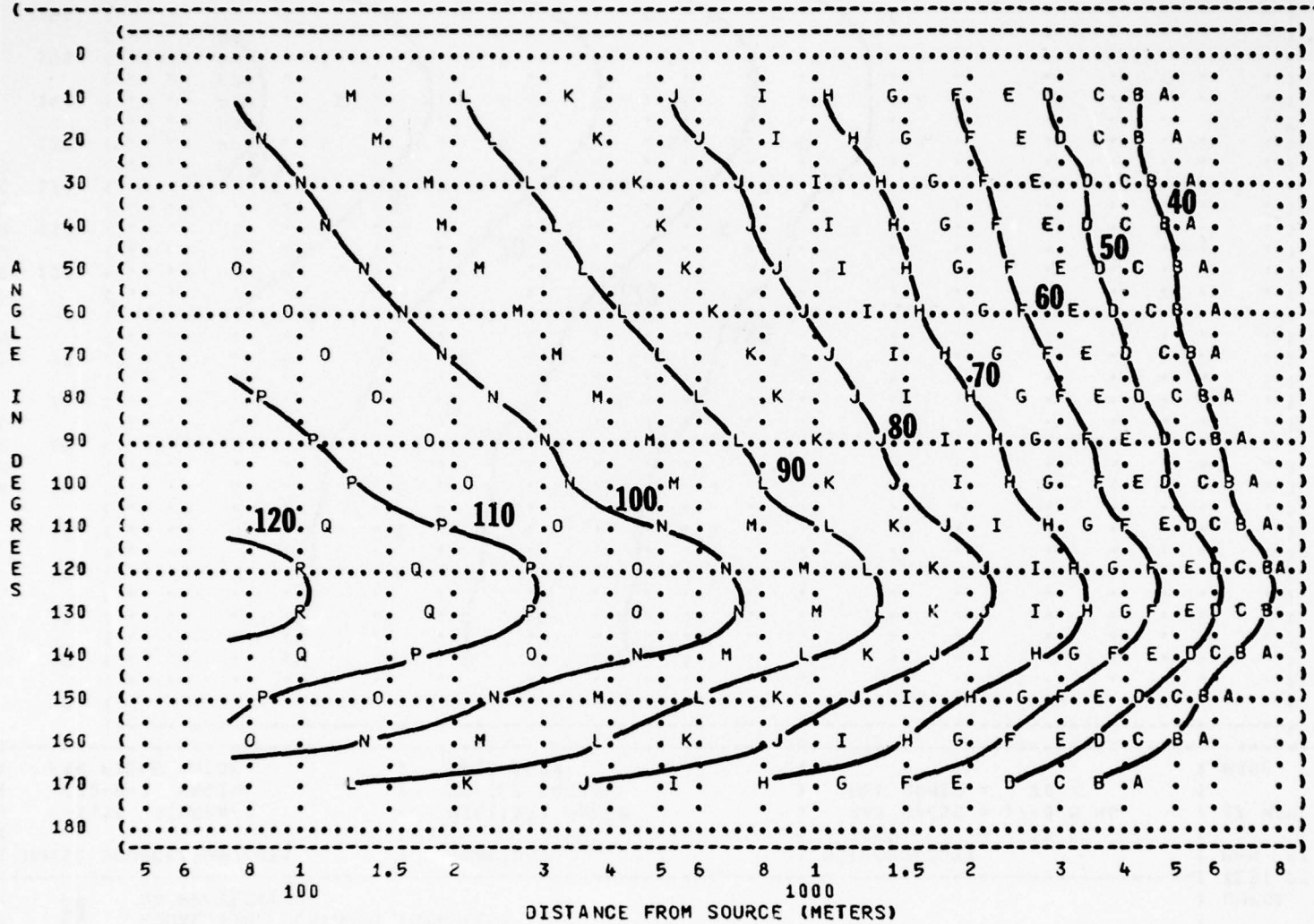


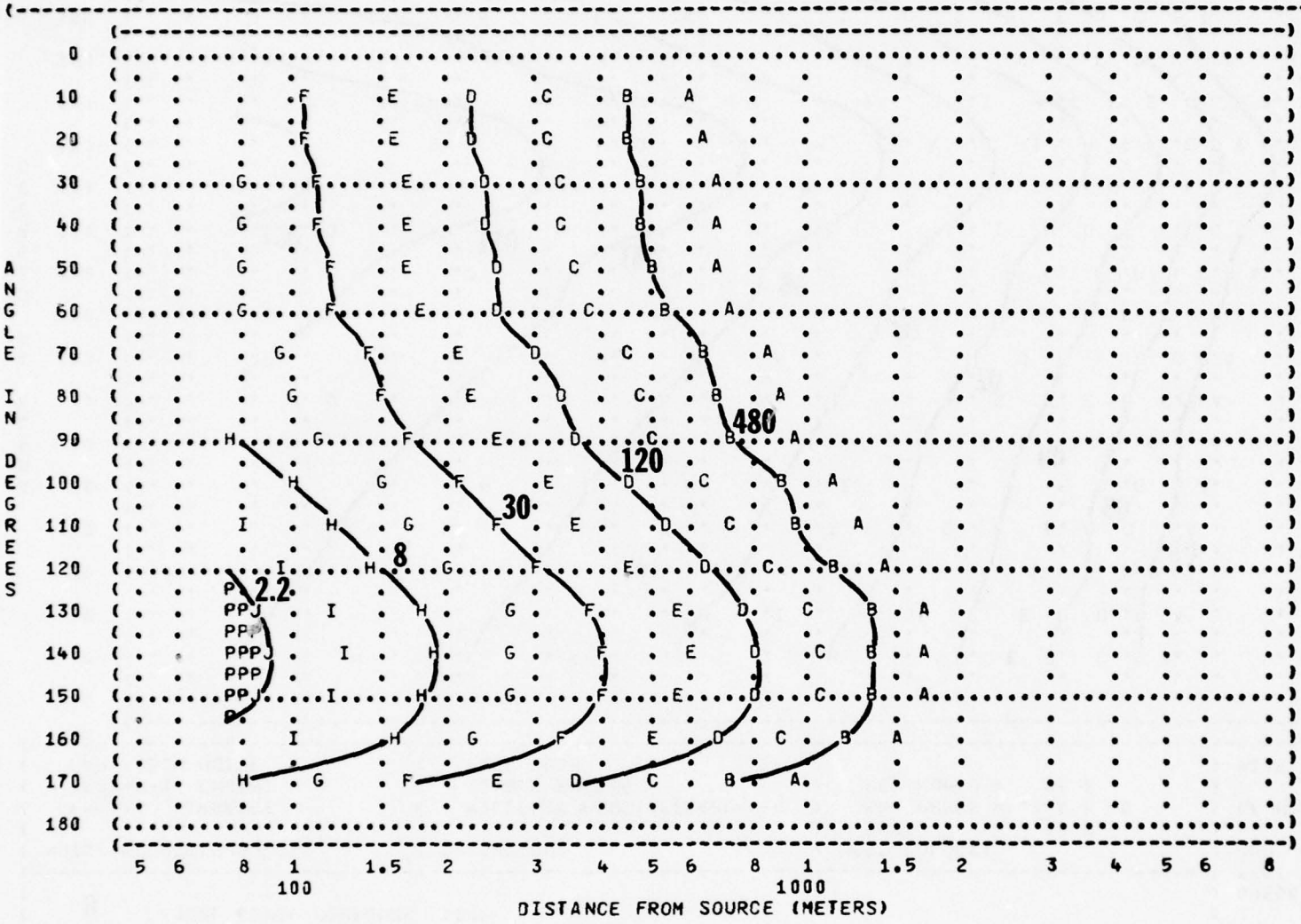
FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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
J	2.2

P ADDITIONAL EAR PROTECTION REQUIRED.

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:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 8

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30

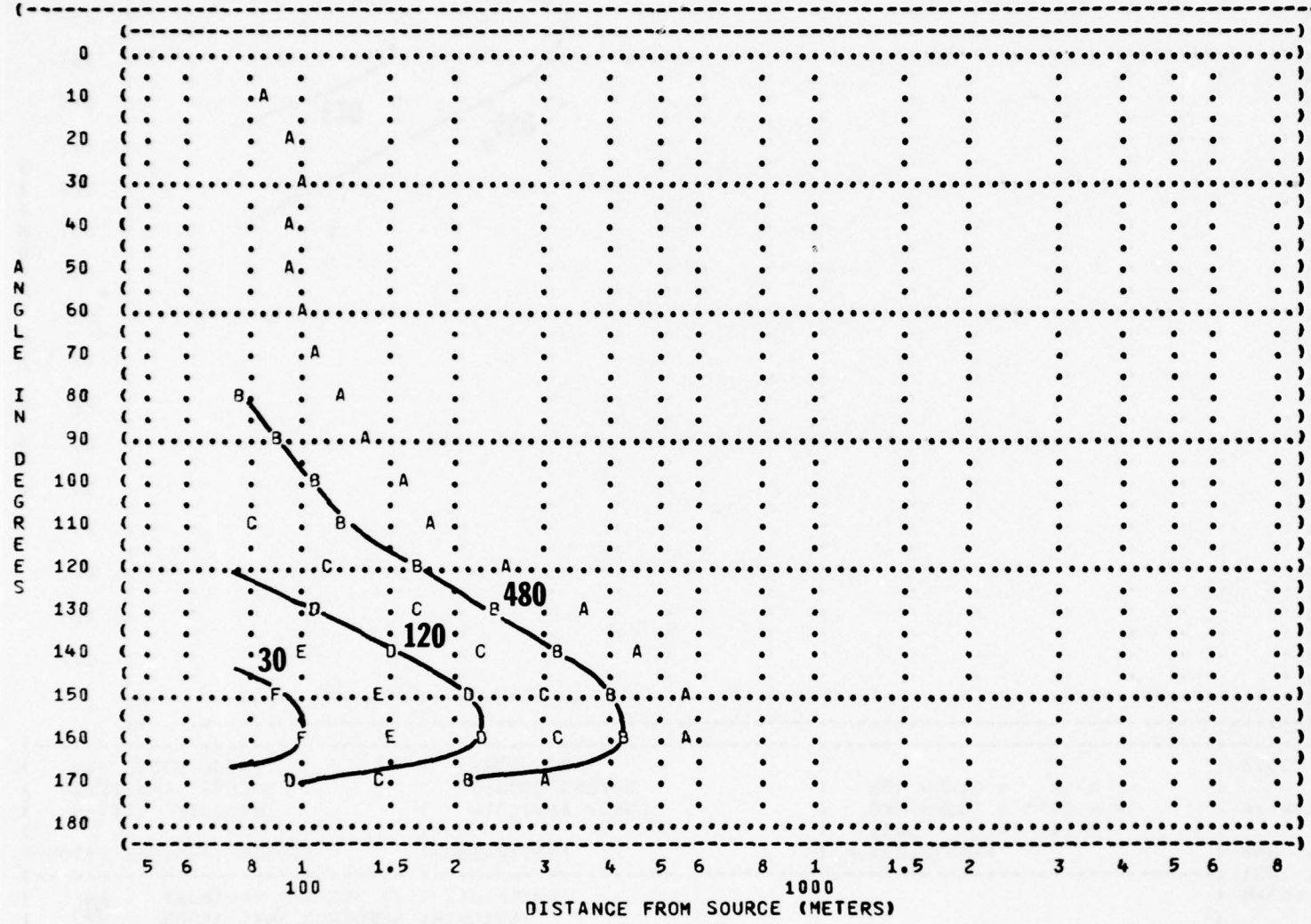


FIGURE: 10

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 9

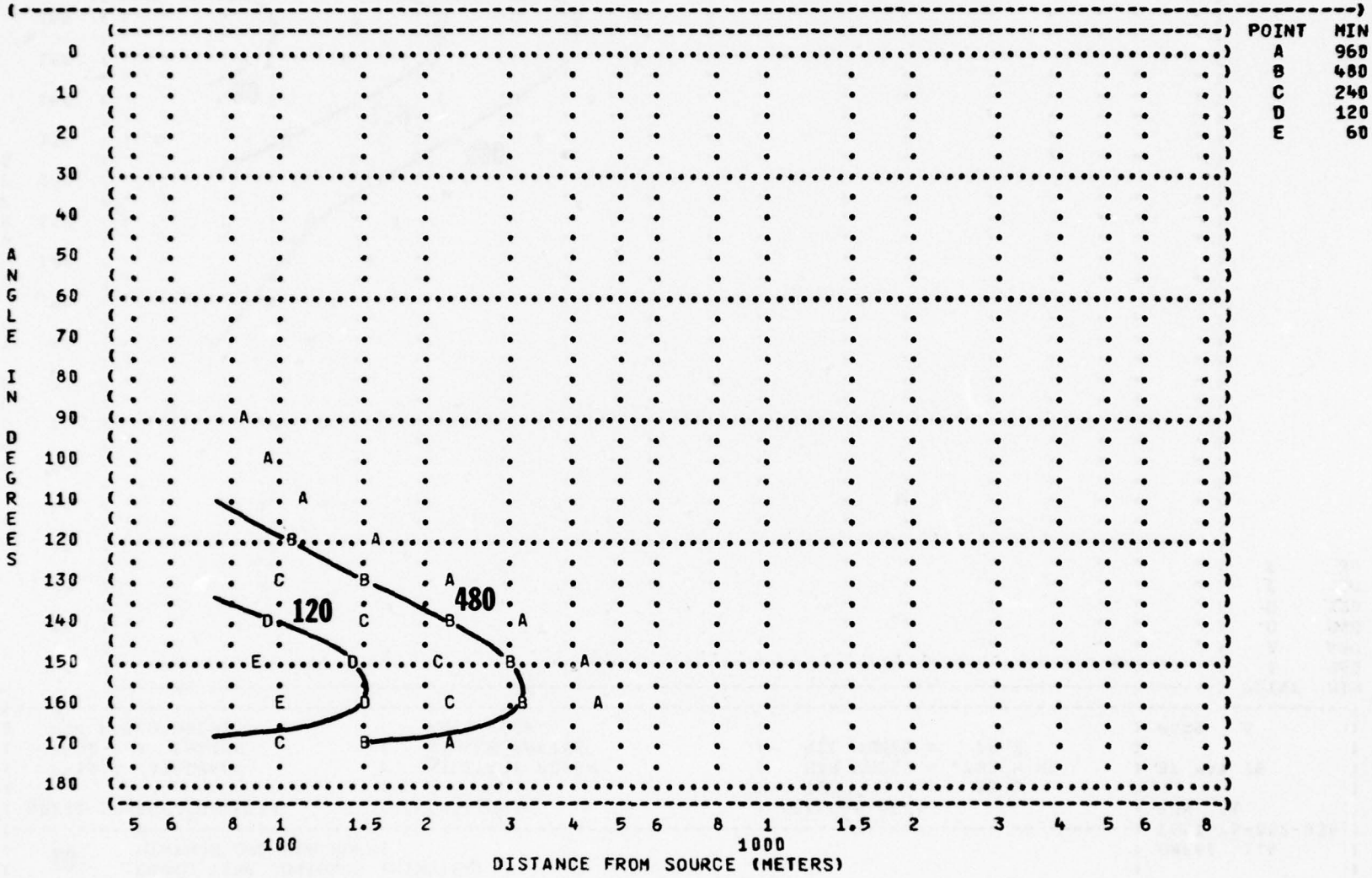


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 10

POINT	MIN
A	960
B	480
C	240
D	120

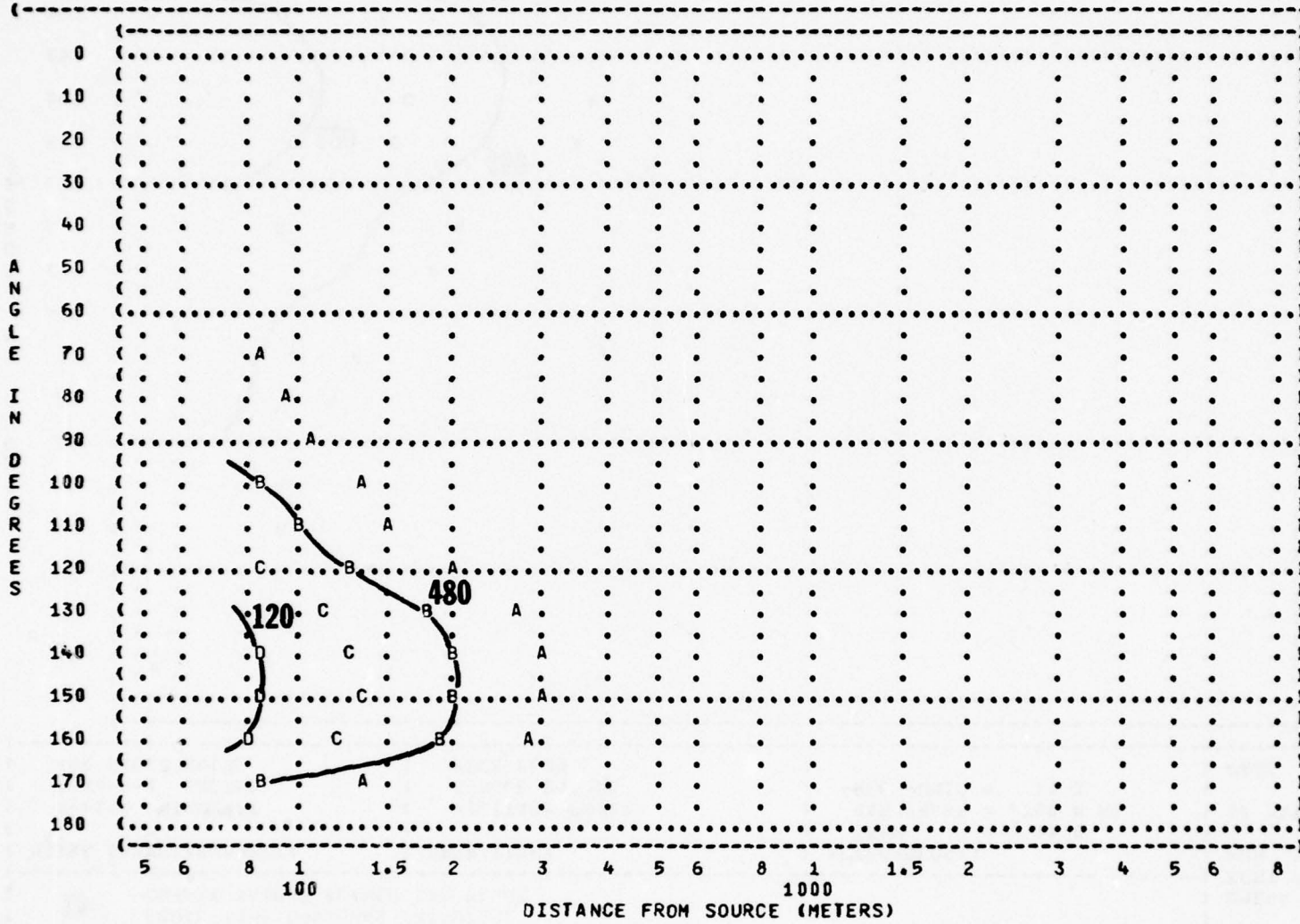


FIGURE: 10

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 11

POINT	MIN
A	960
B	480
C	240
D	120

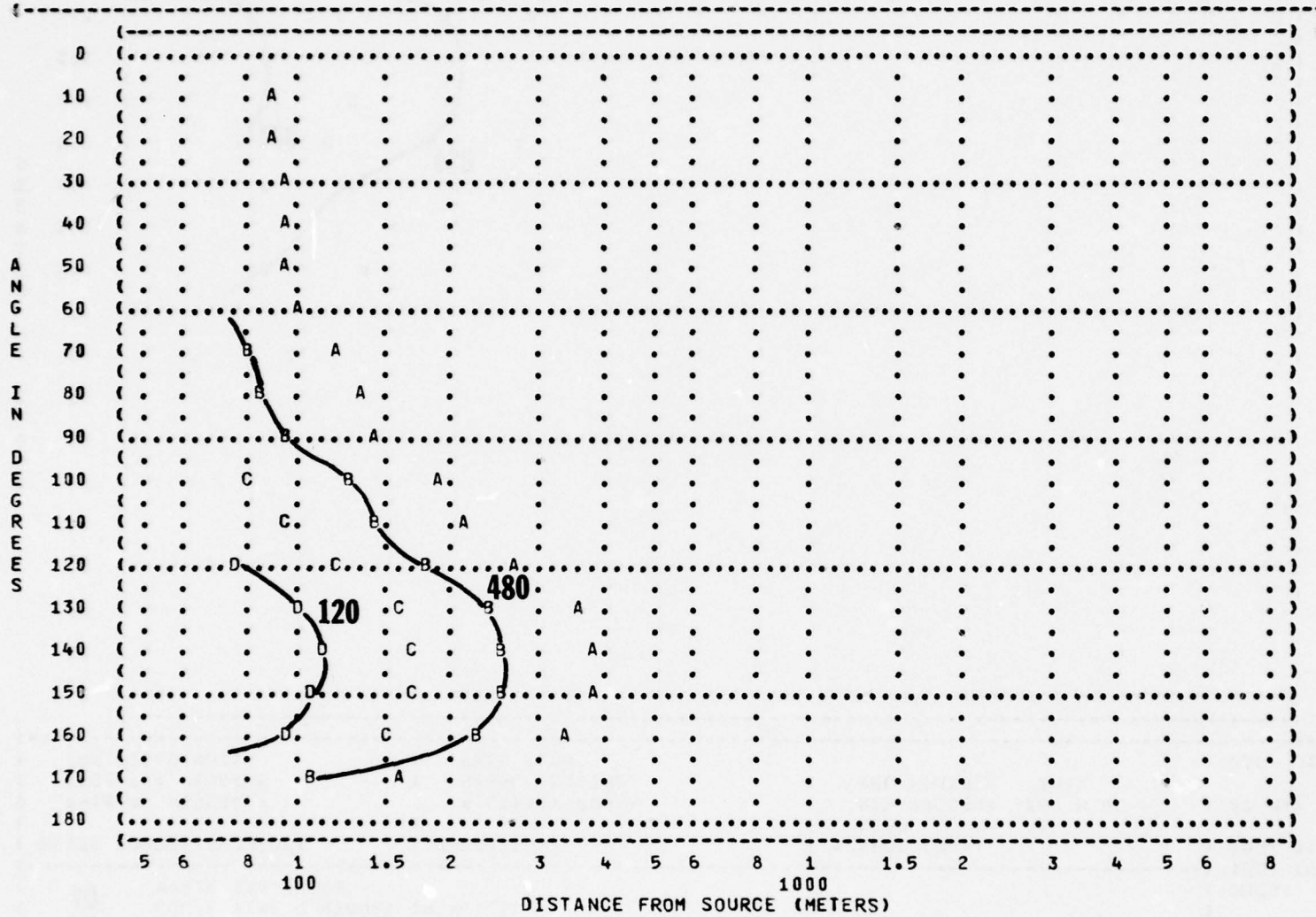


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 12

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

POINT	MIN
A	960
B	480
C	240

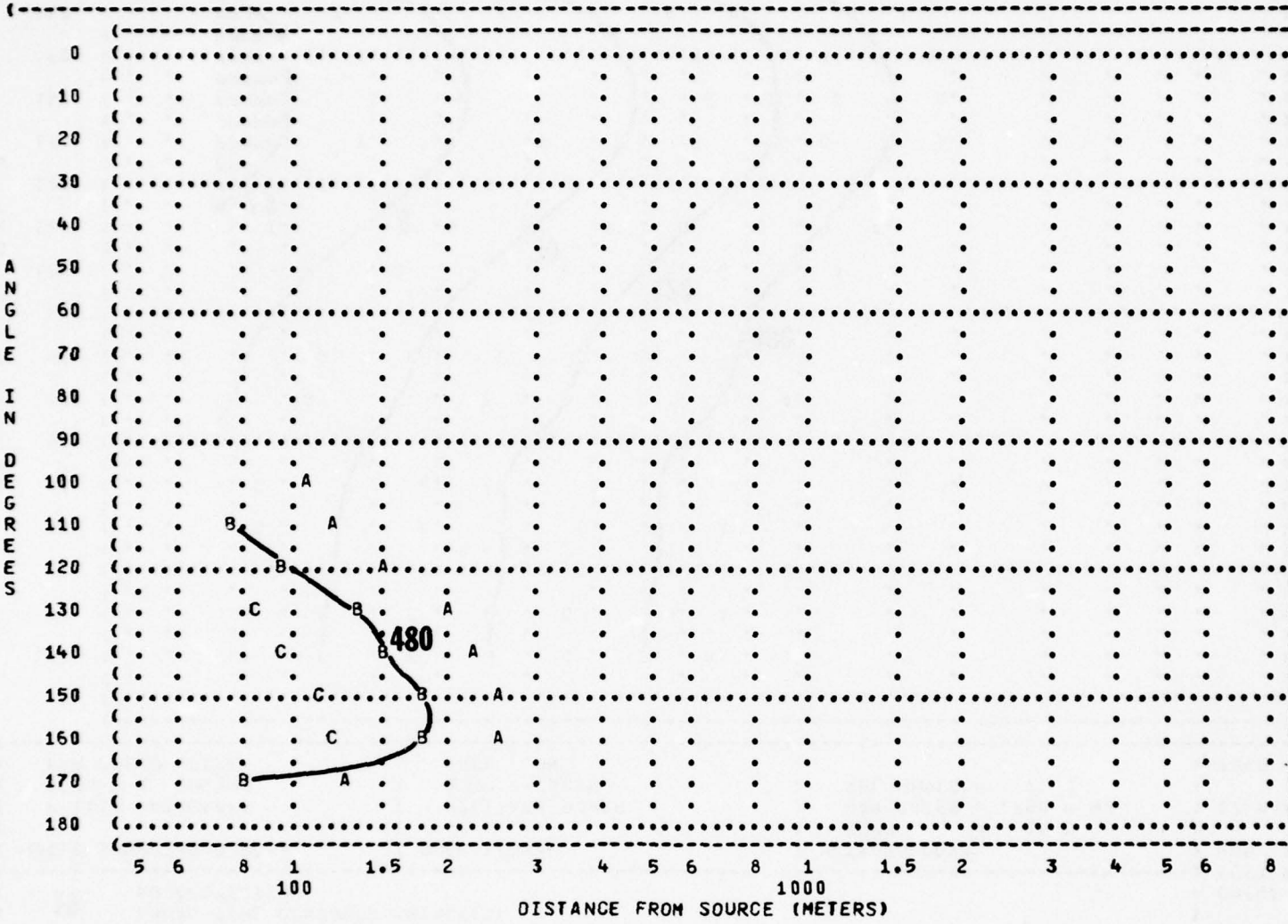


FIGURE: 10

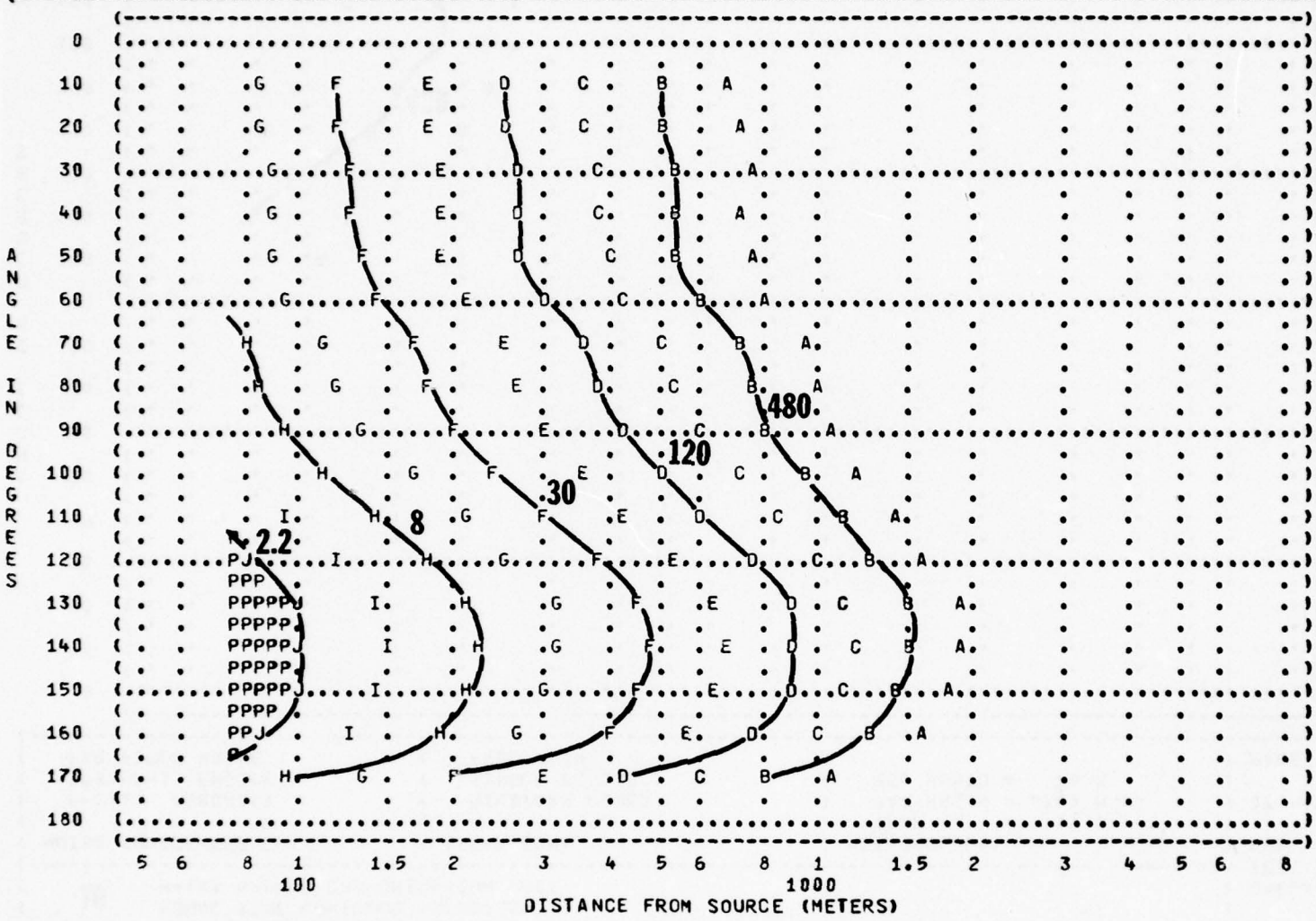
MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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
J	2.2

P ADDITIONAL EAR PROTECTION REQUIRED.

FIGURE: 10

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

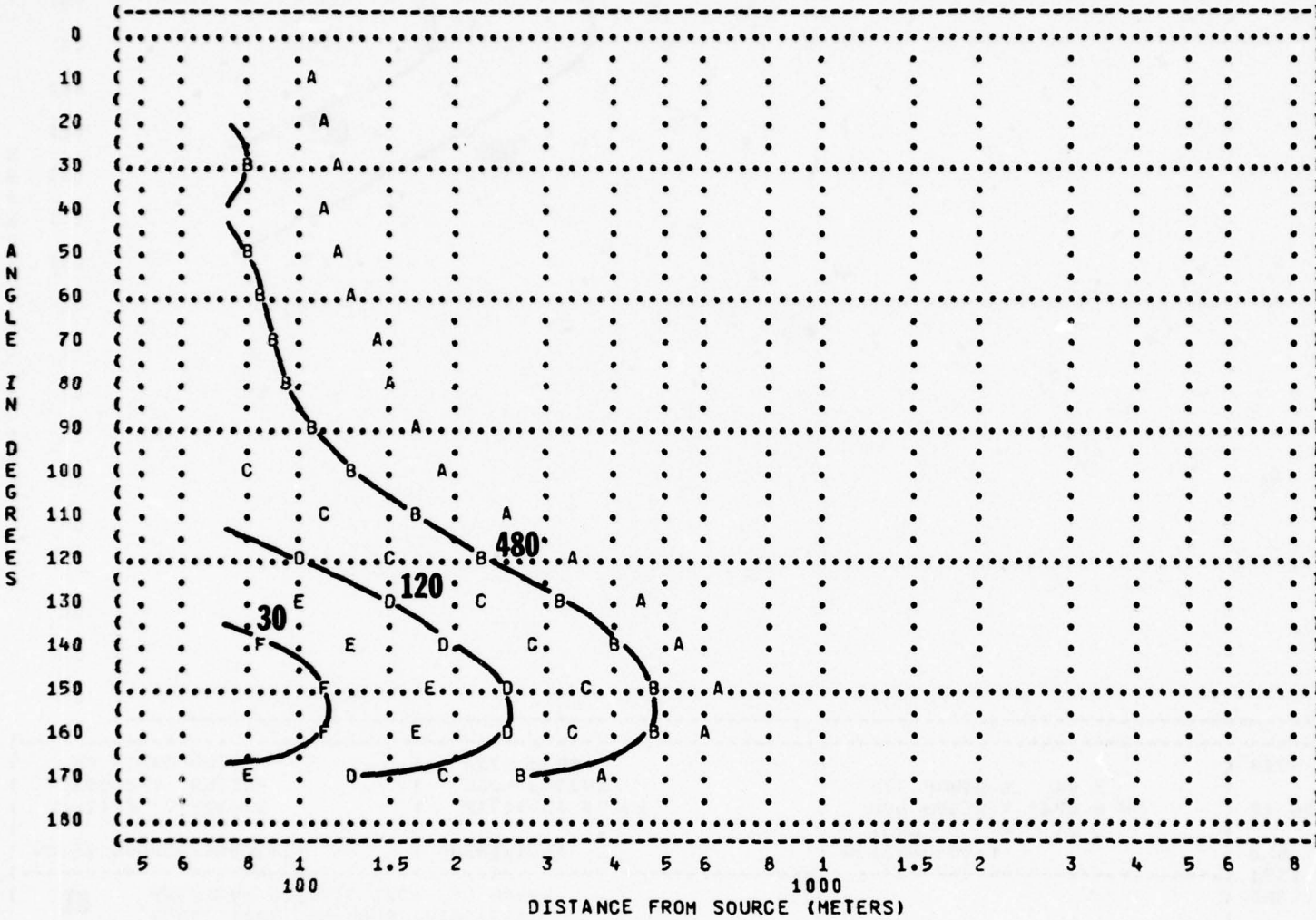


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 9

POINT	MIN
A	960
B	480
C	240
D	120
E	60

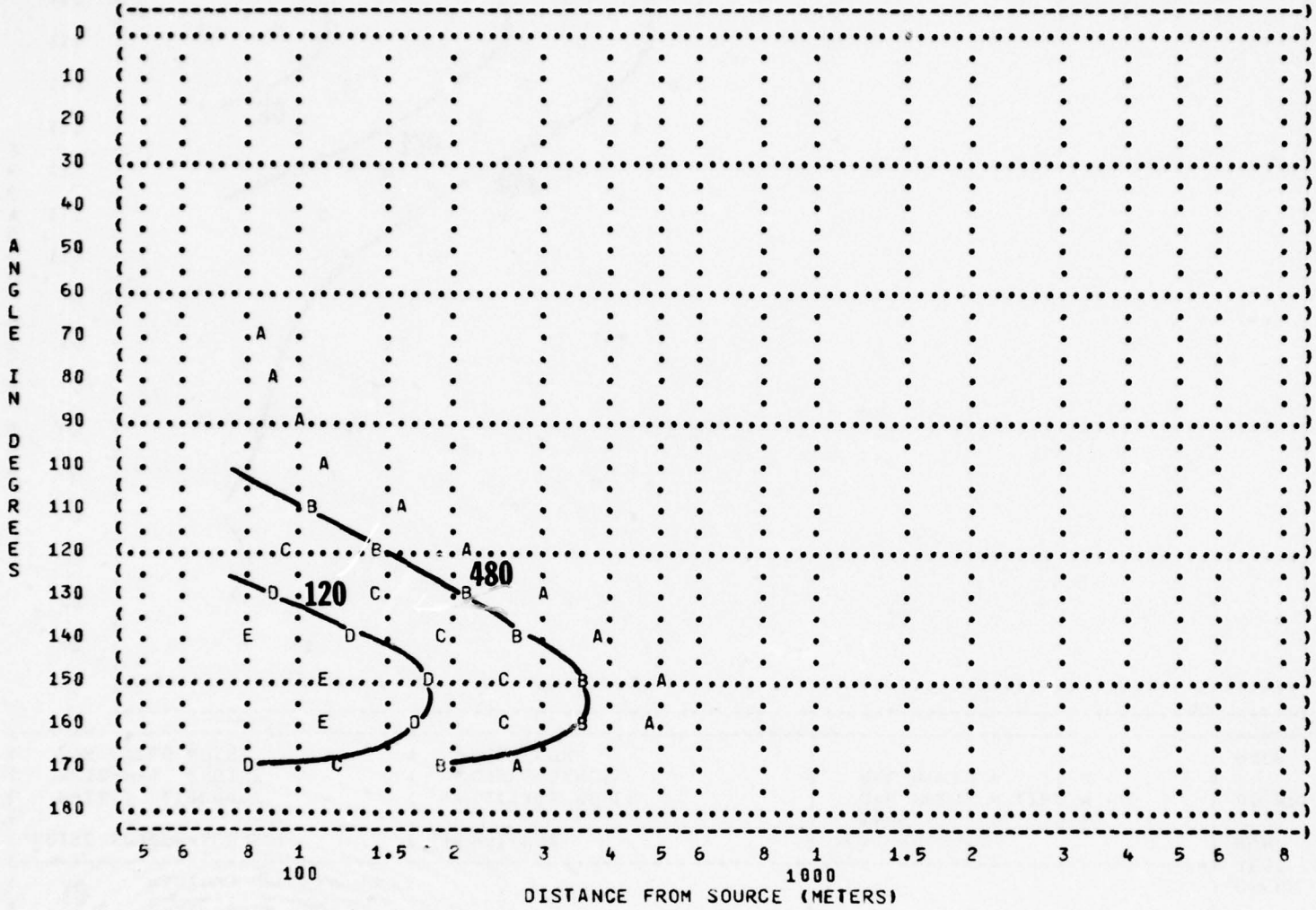


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 10

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

POINT	MIN
A	960
B	480
C	240
D	120

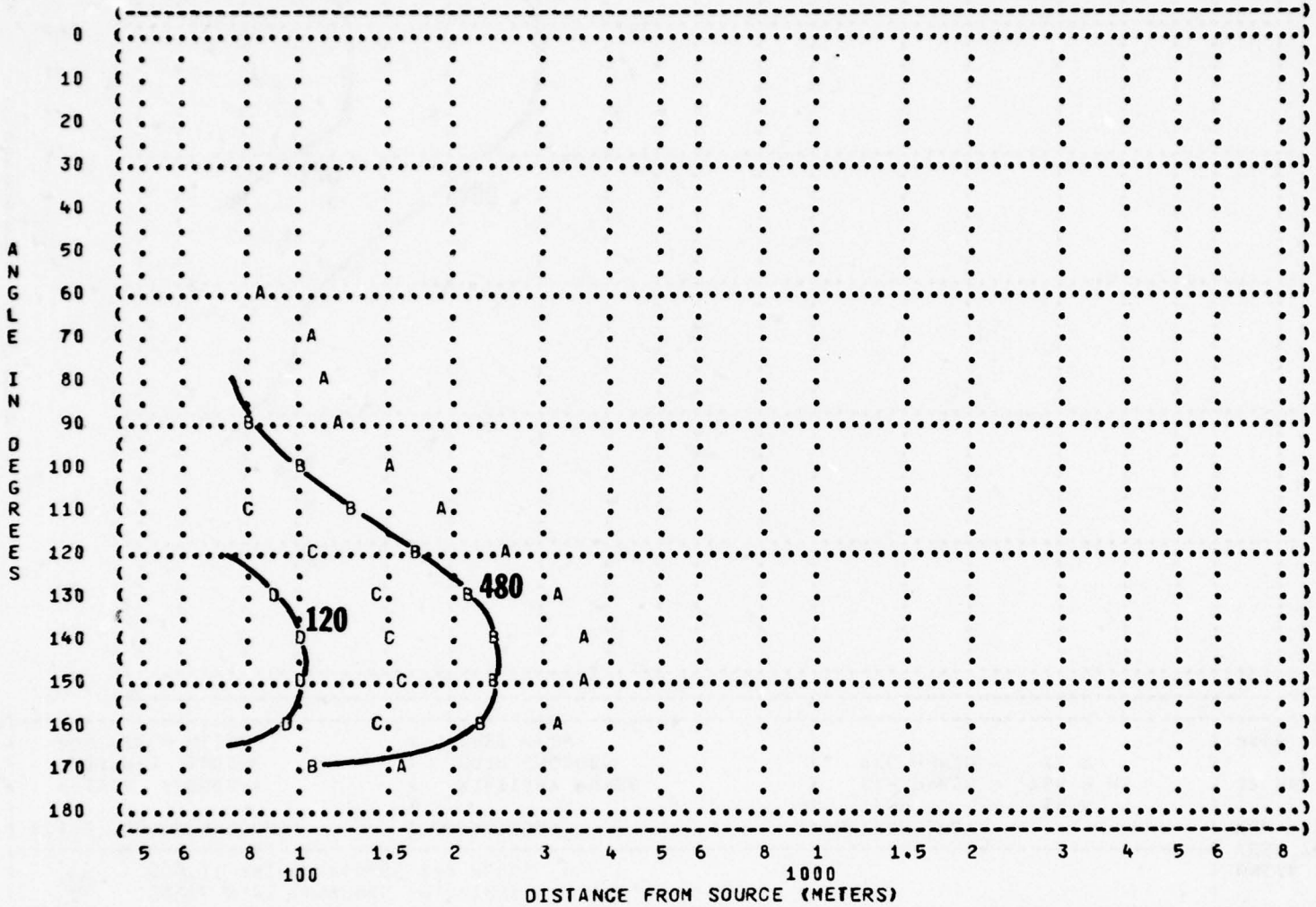


FIGURE: 10

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 11

POINT	MIN
A	960
B	480
C	240
D	120
E	60

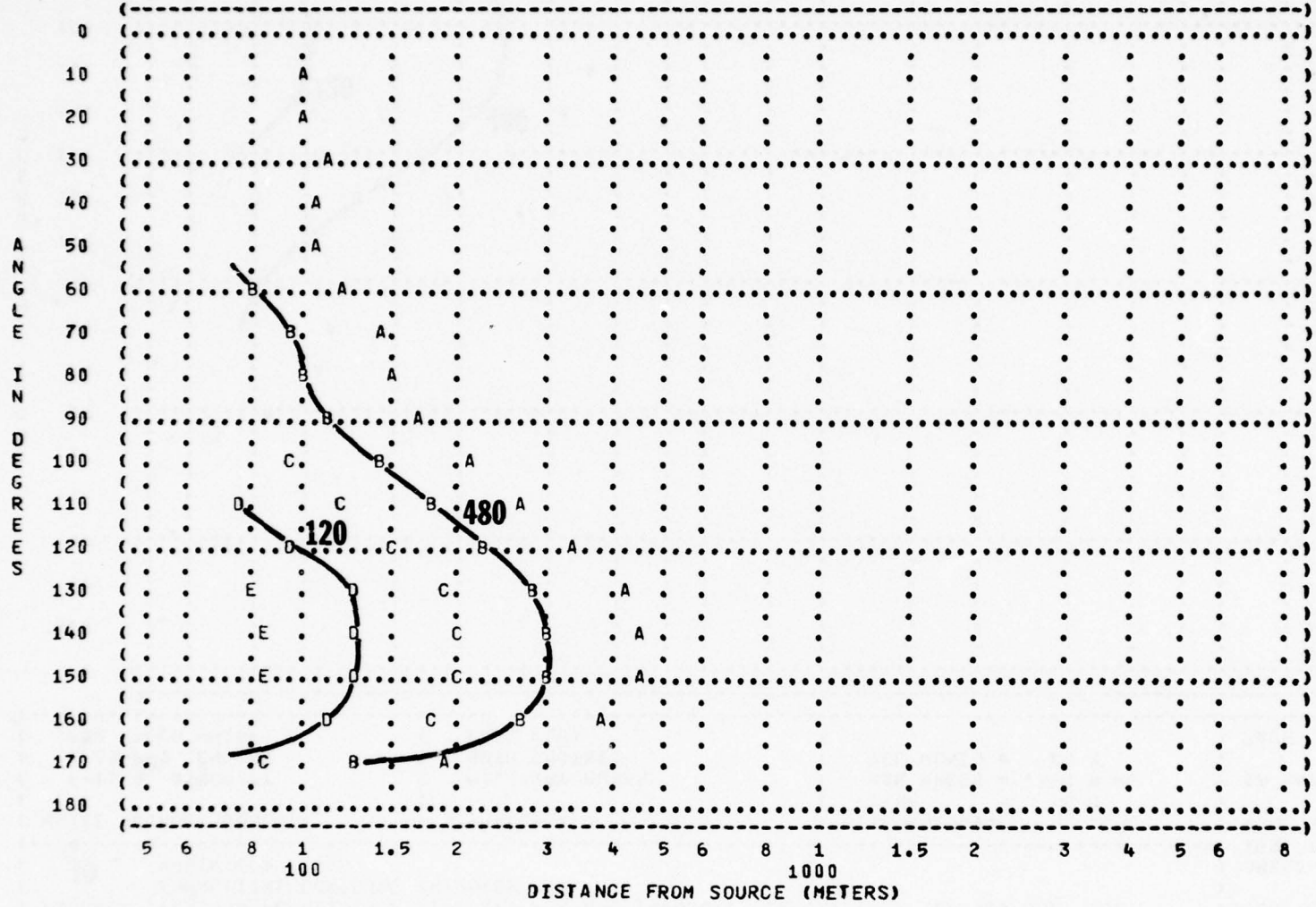


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 12

POINT	MIN
A	960
B	480
C	240
D	120

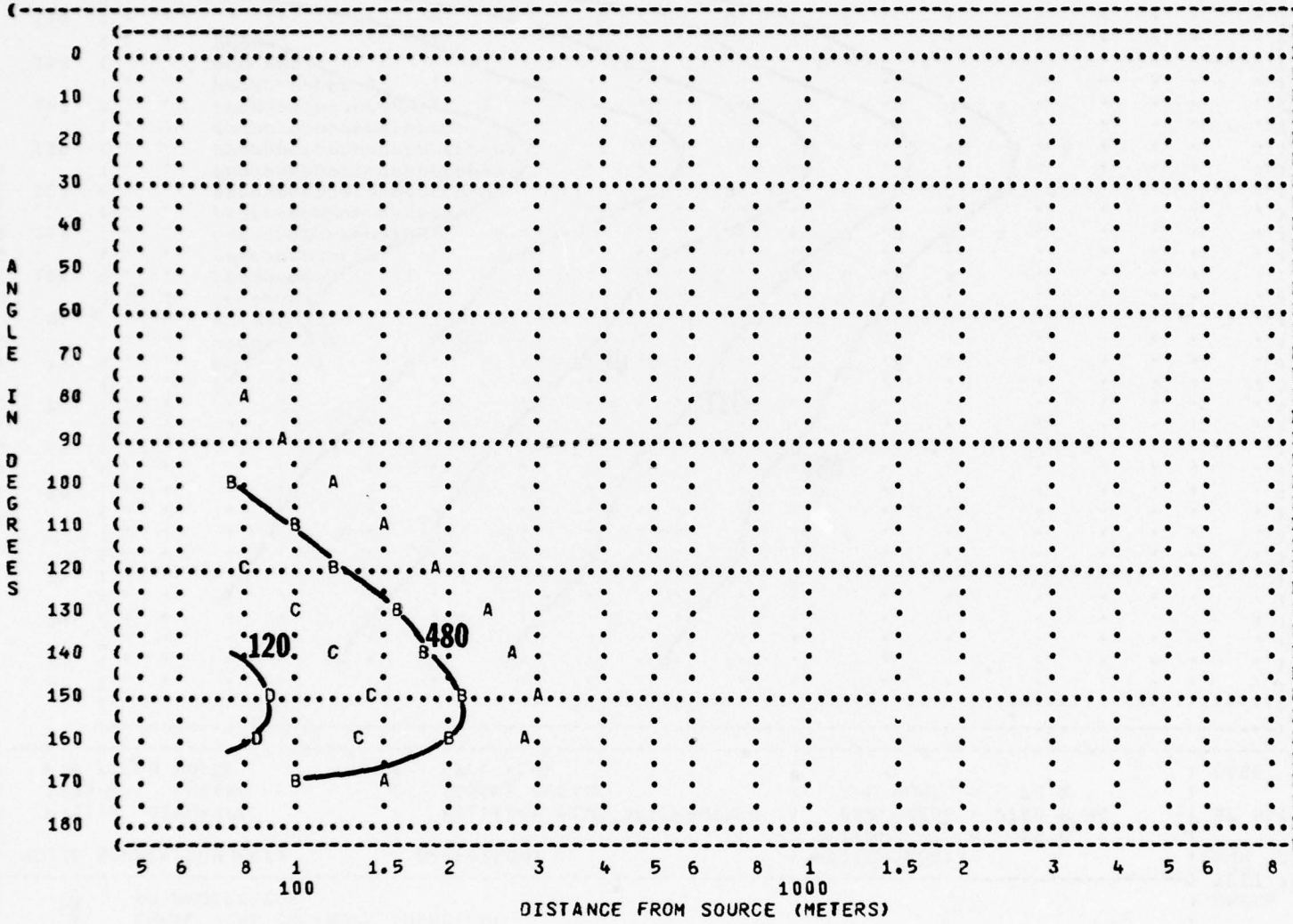


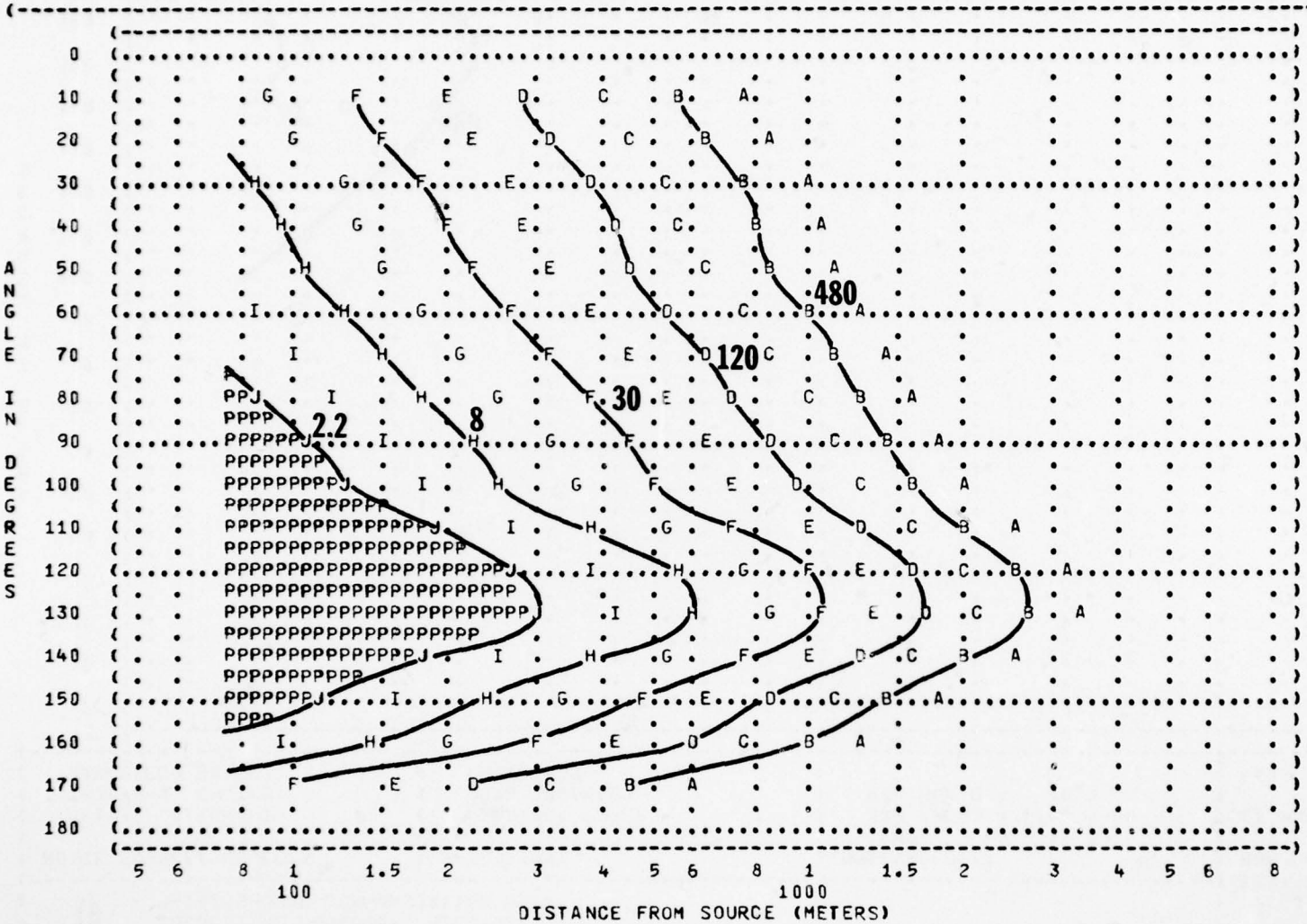
FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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
J	2.2

P ADDITIONAL EAR PROTECTION REQUIRED.

FIGURE: 10

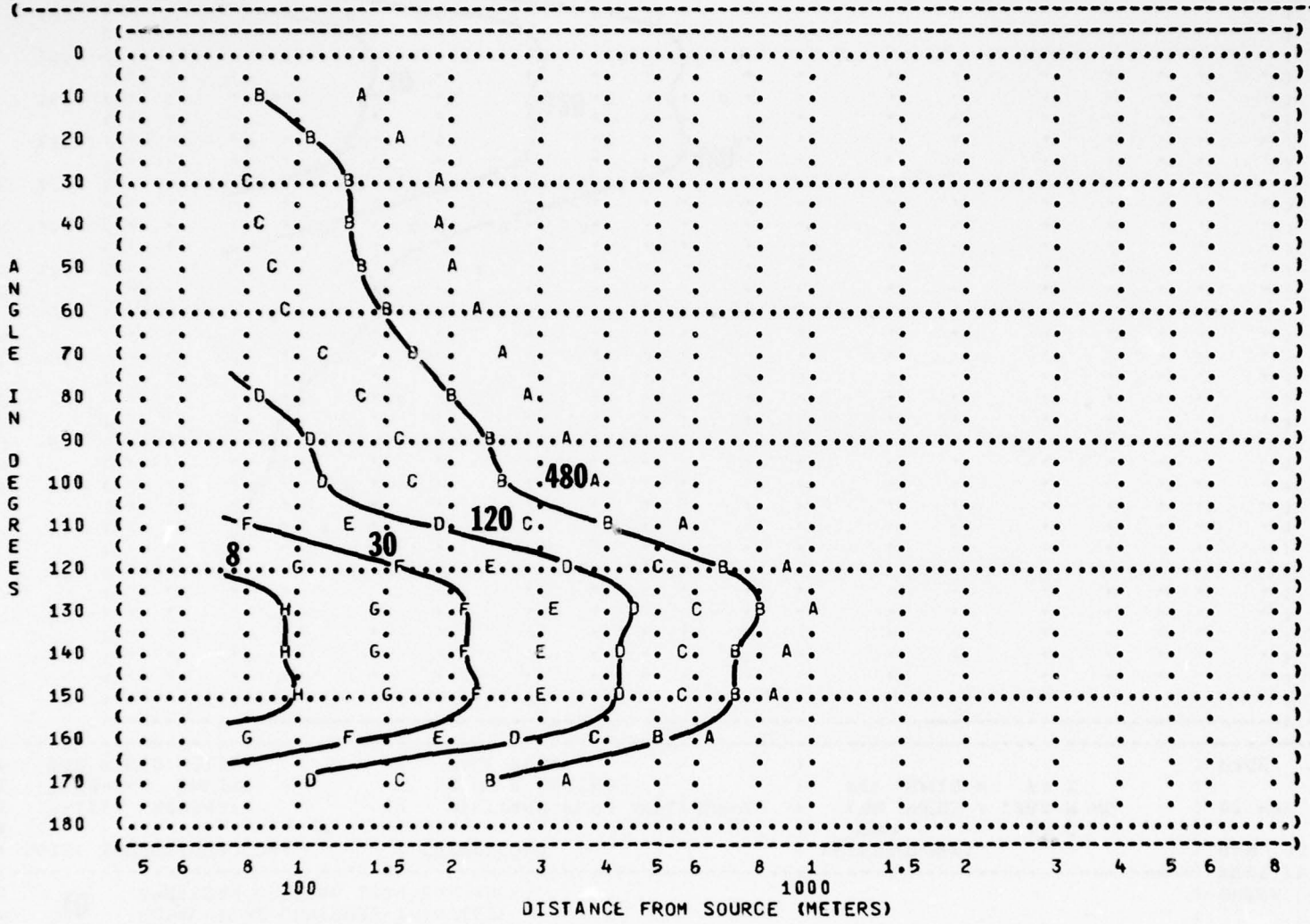
MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 8



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

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 75-002-036
RUN 03
07 MAY 75
PAGE 9

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

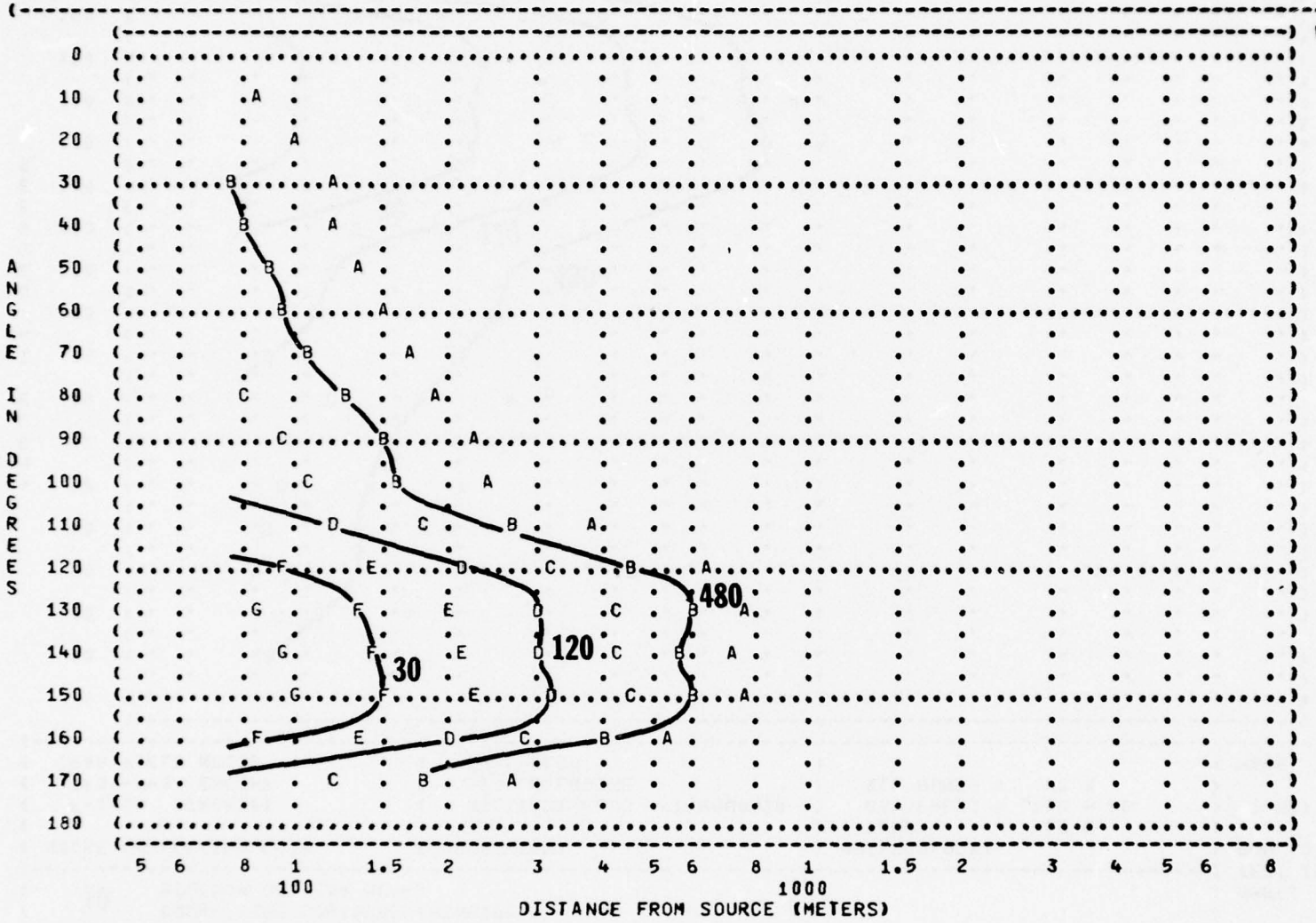


FIGURE: 10

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 75-002-036
RUN 03
07 MAY 75
PAGE 10

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

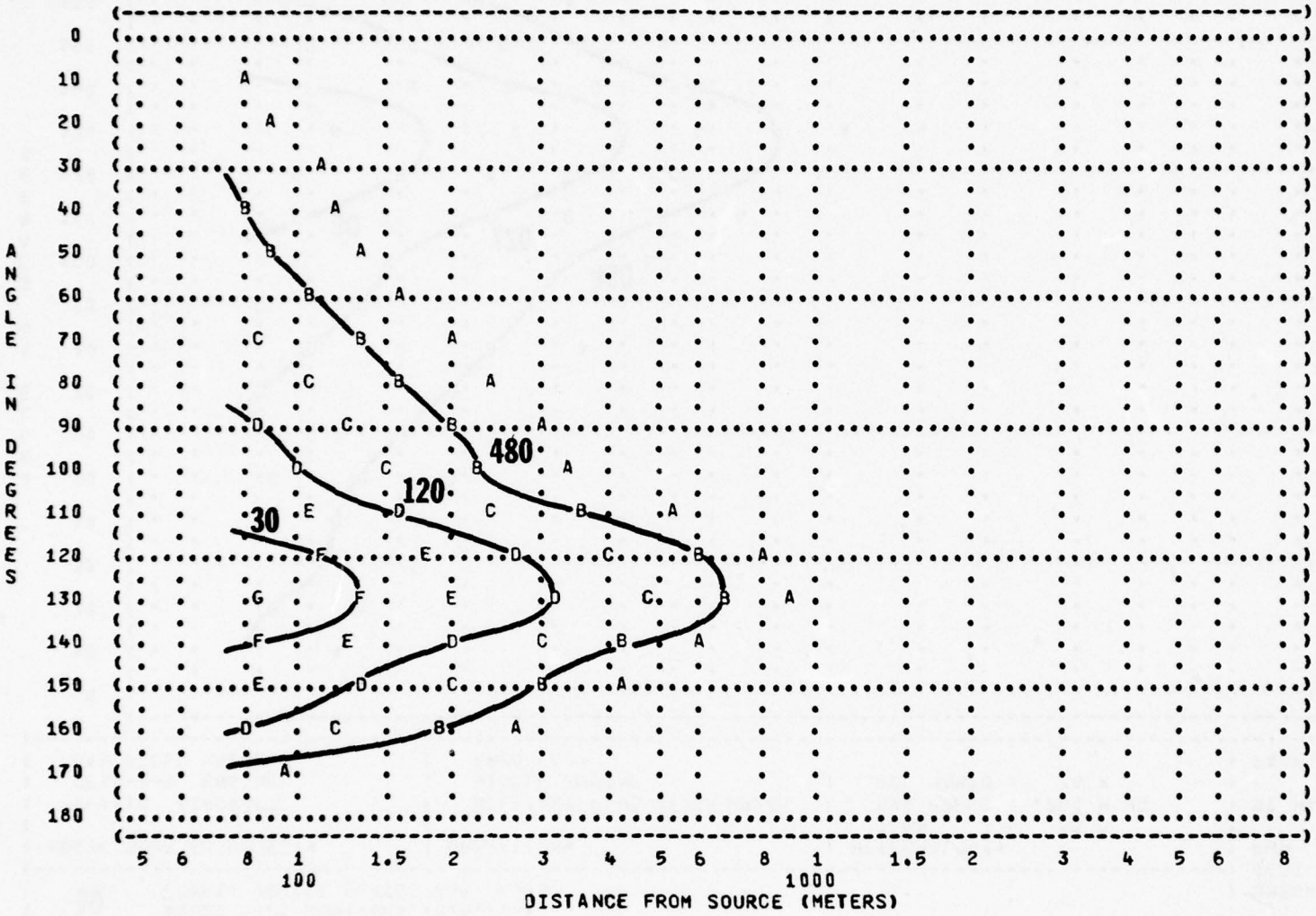


FIGURE: 10

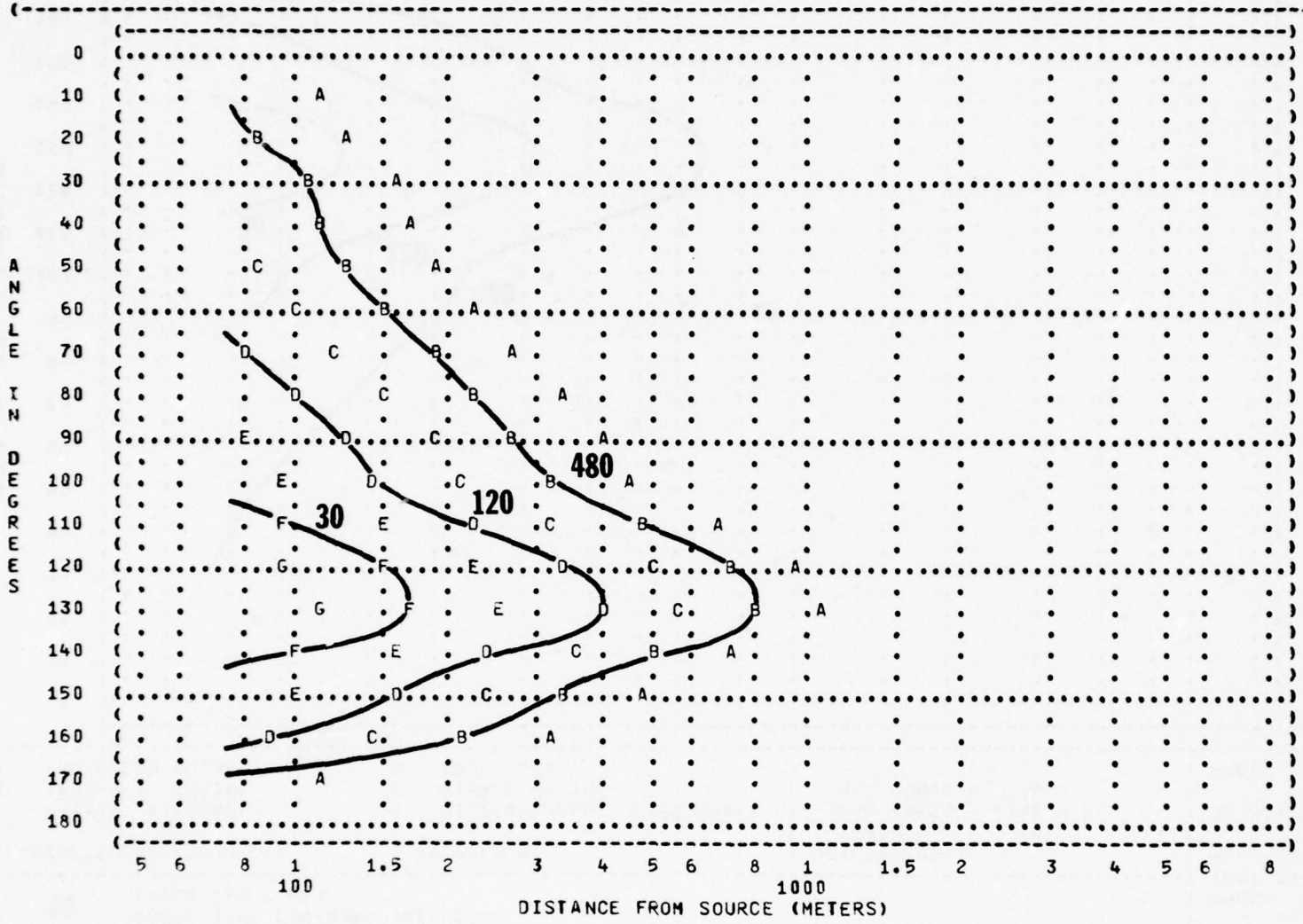
MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 11

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 12

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30

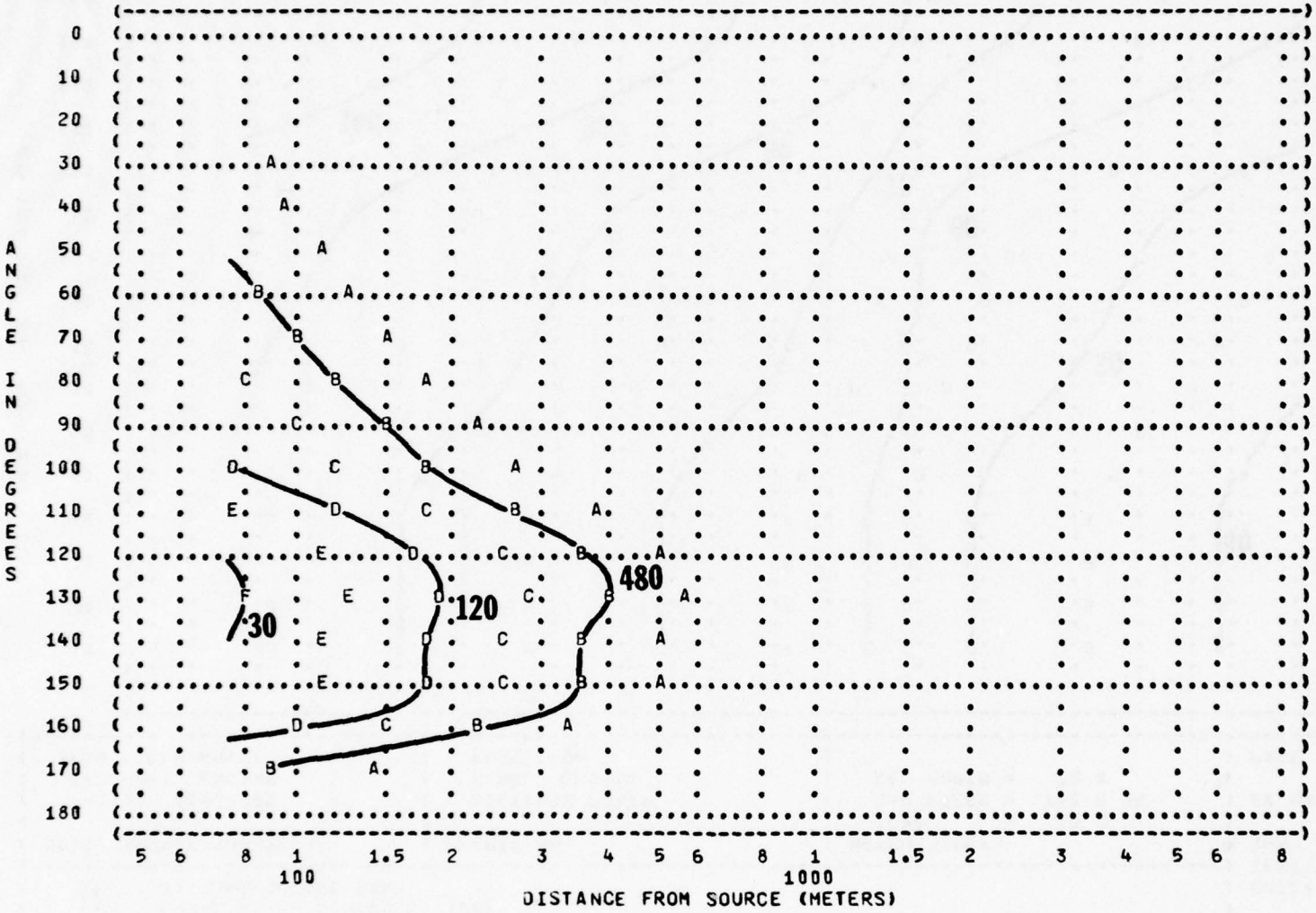


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 18

POINT	DB
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

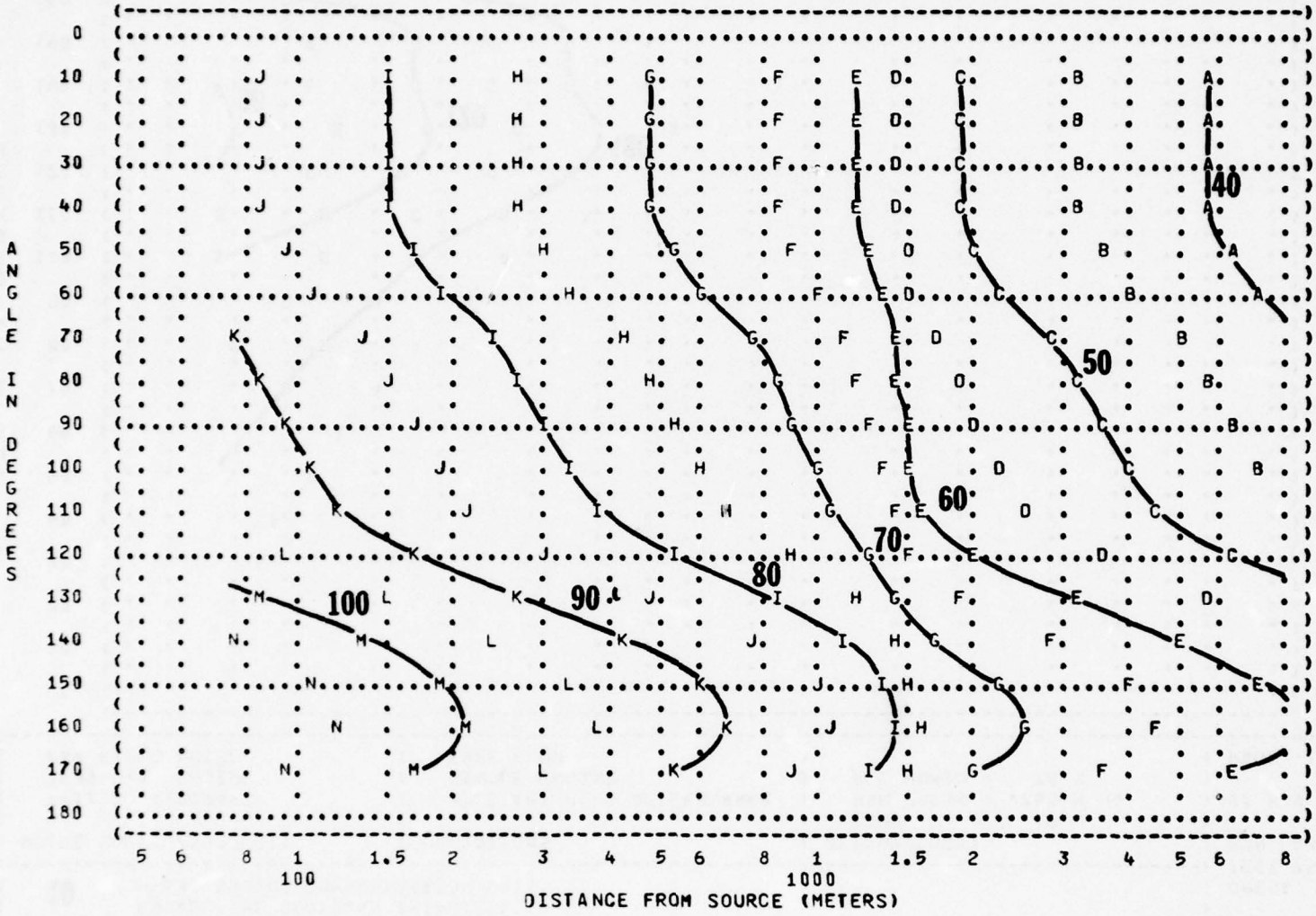


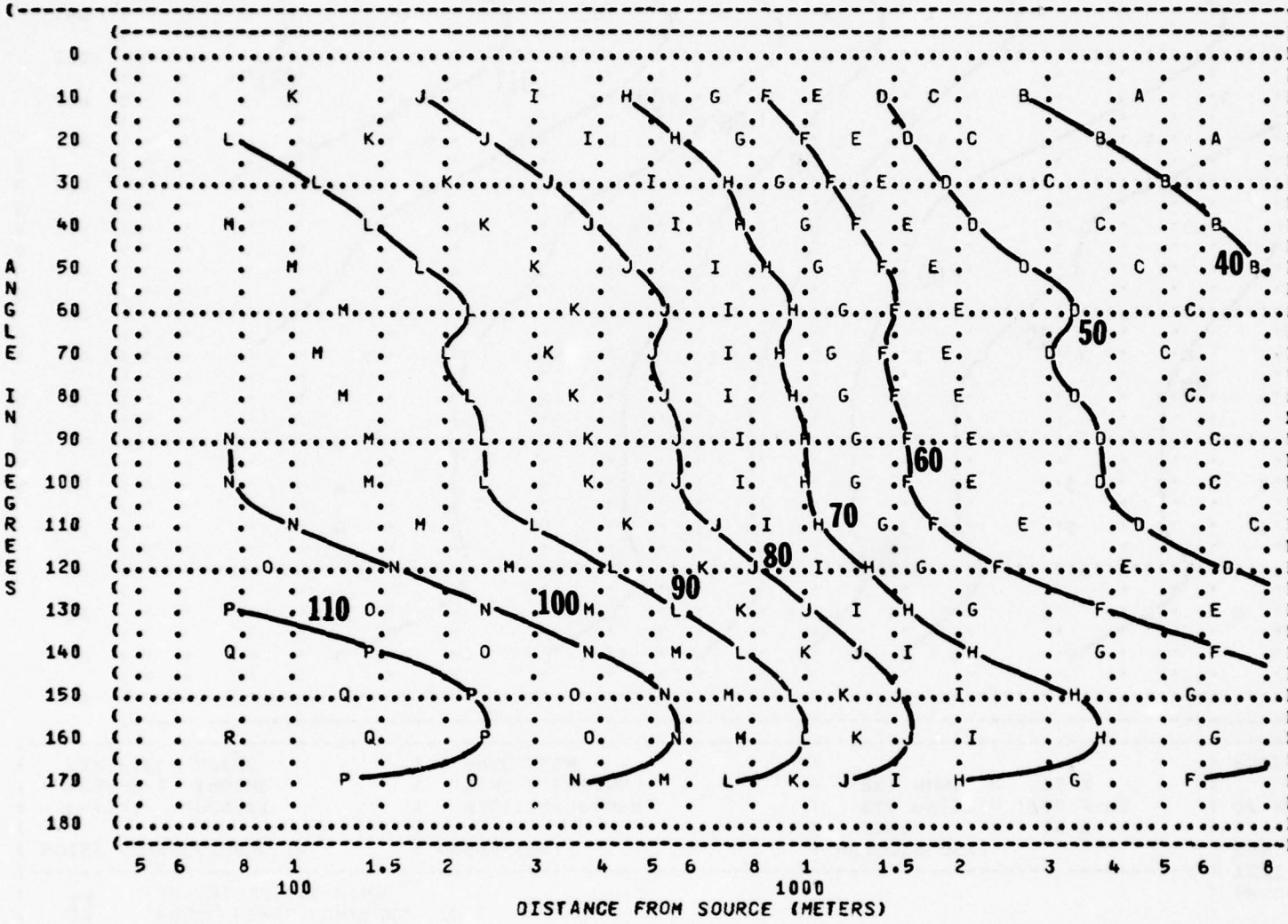
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 19



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
Q	115
R	120

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 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
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120

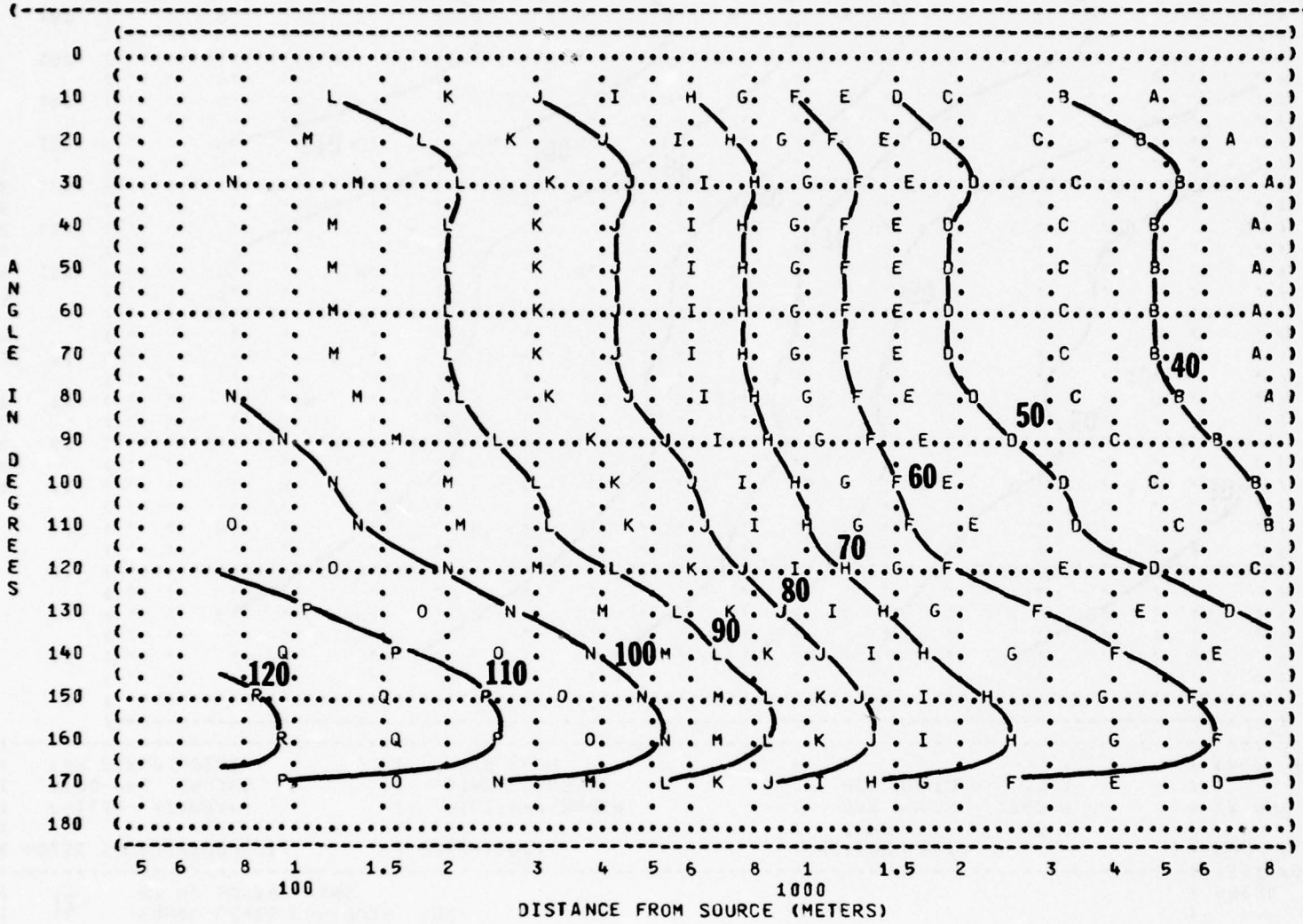


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 21

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

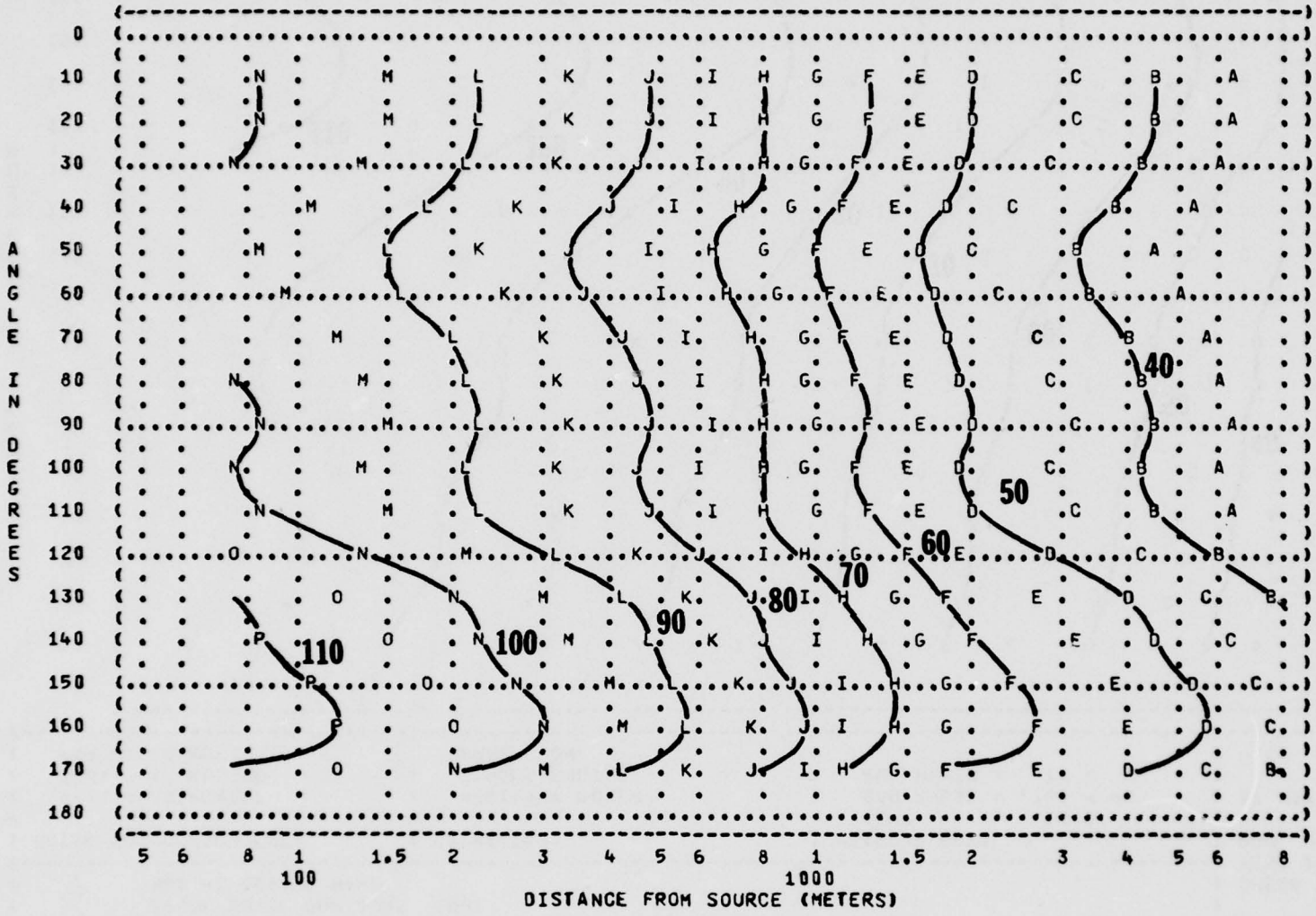


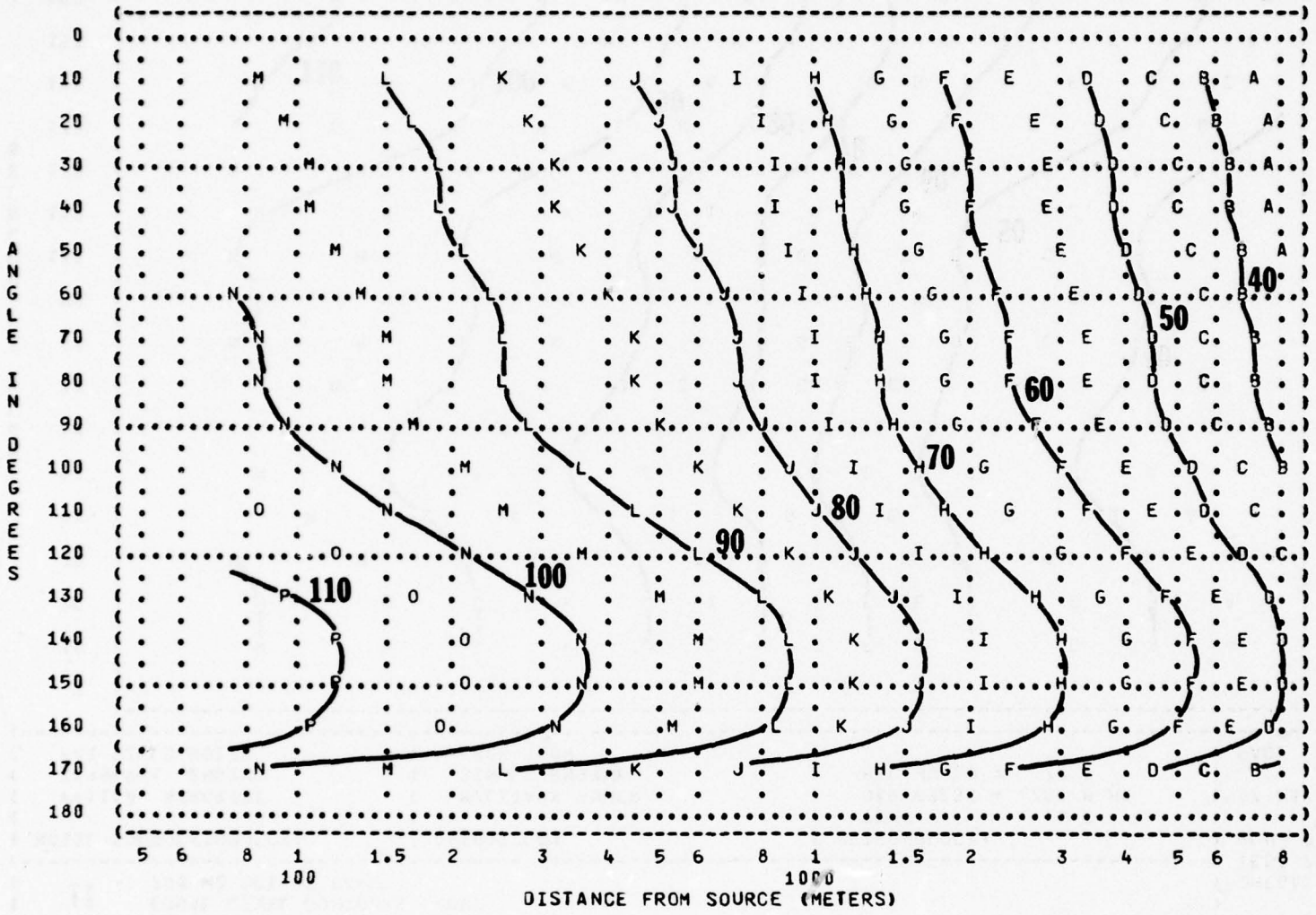
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-036 RUN 01 07 MAY 75 PAGE 22

NOISE SOURCE/SUBJECT: F-111A AIRCRAFT TF30-P-1 ENGINE FAR FIELD NOISE

OPERATION: MILITARY POWER SINGLE ENGINE FREE FLOW

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

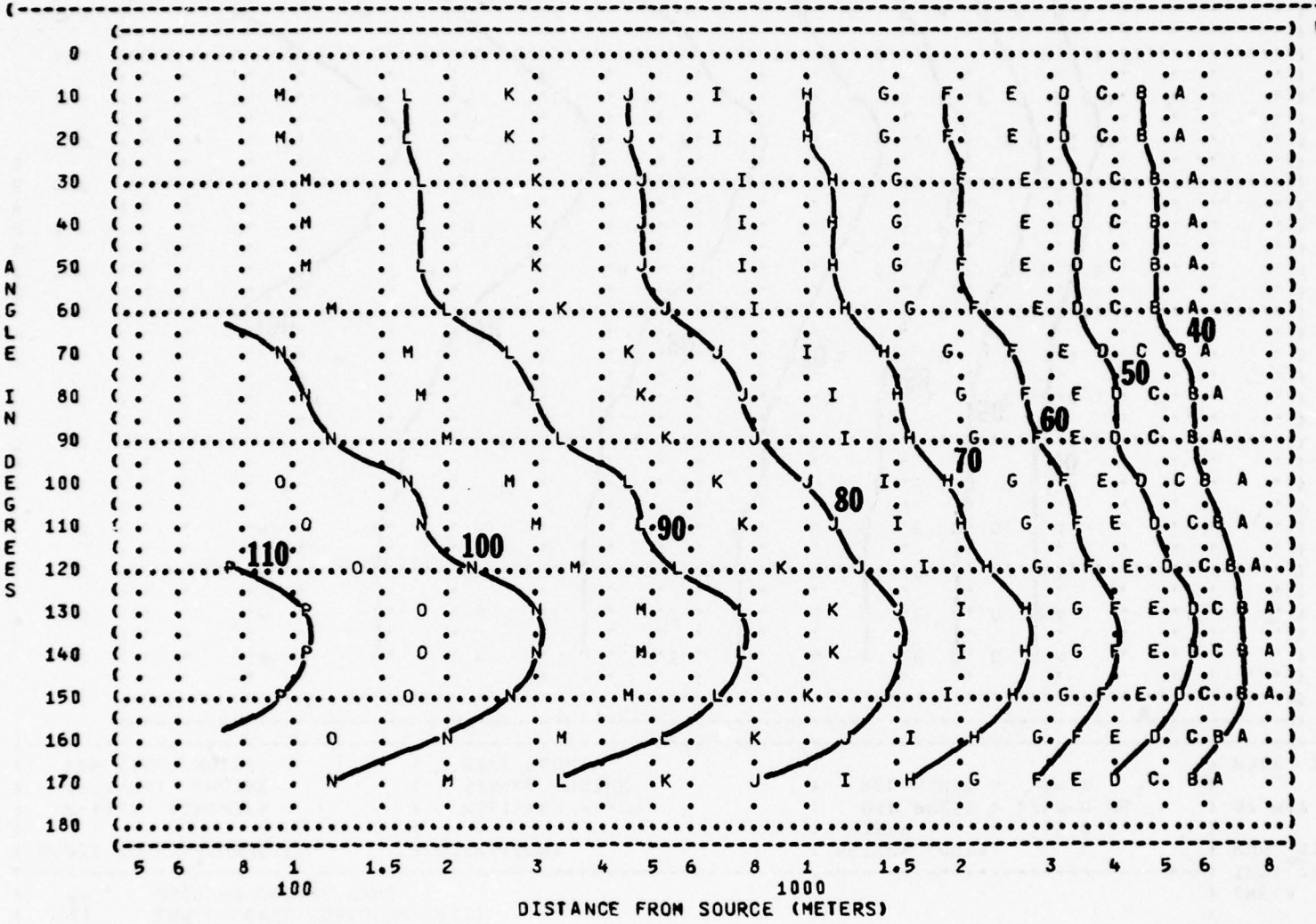
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 MAY 75
PAGE 23



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

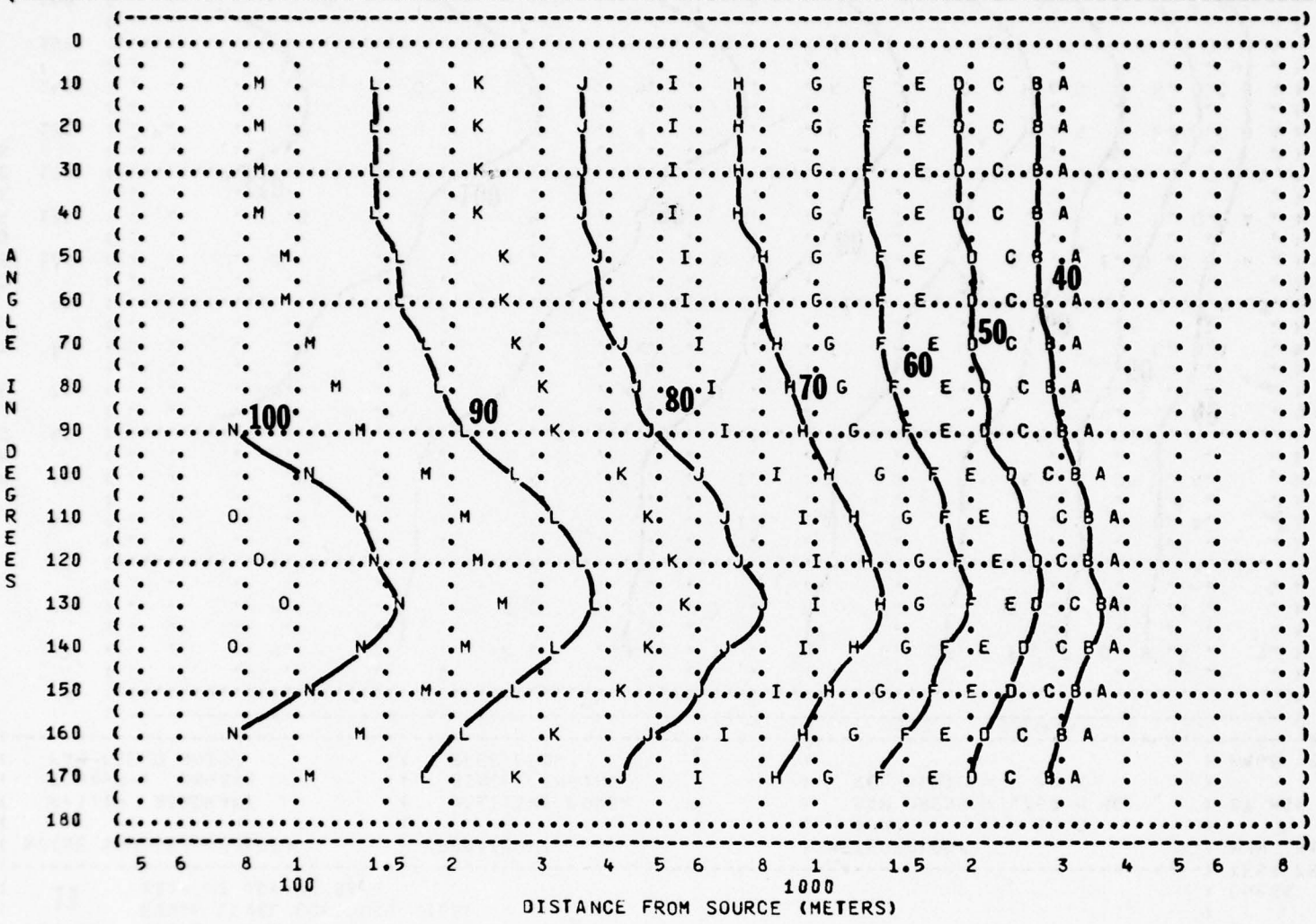
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 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

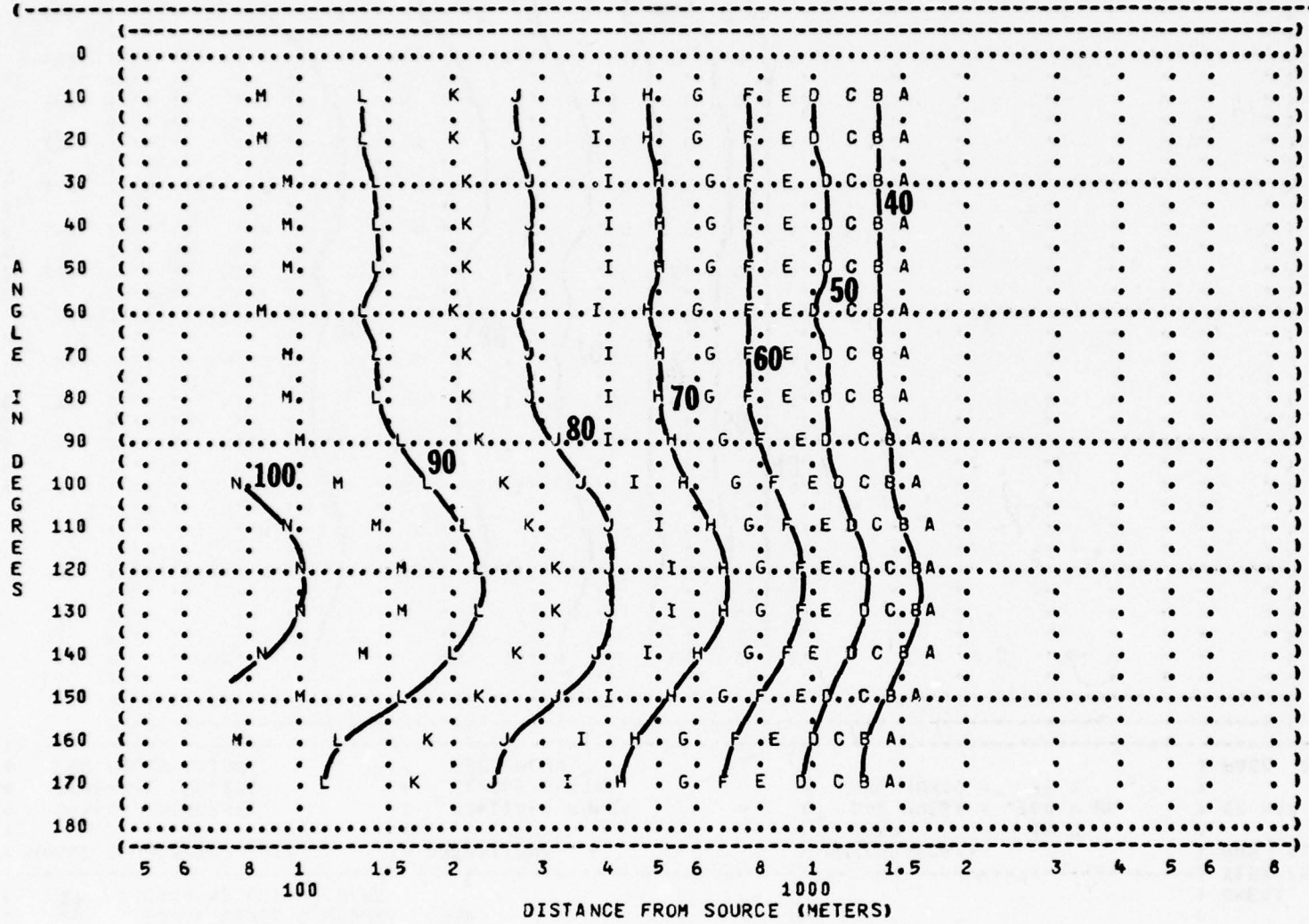
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 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

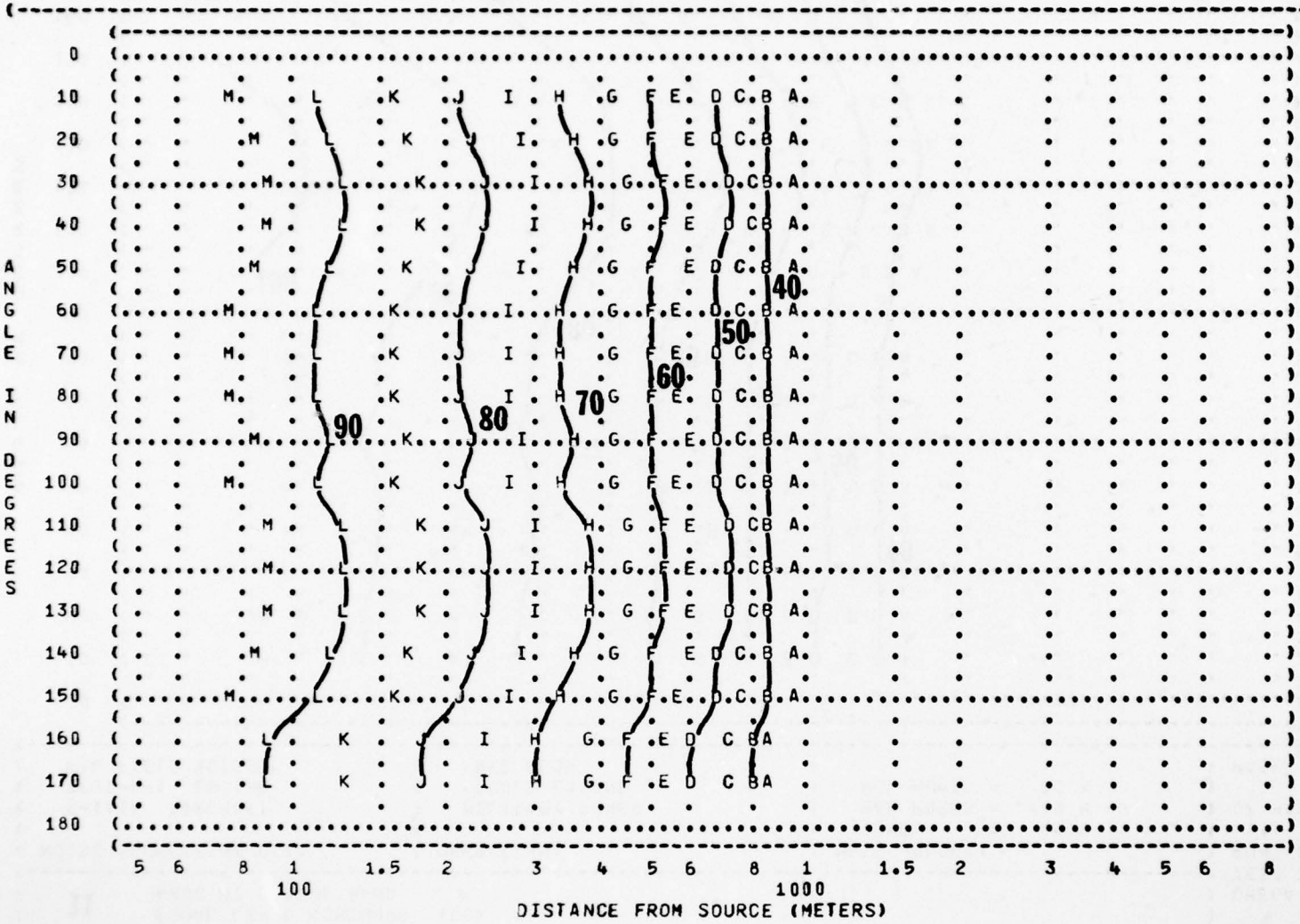
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 01
07 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

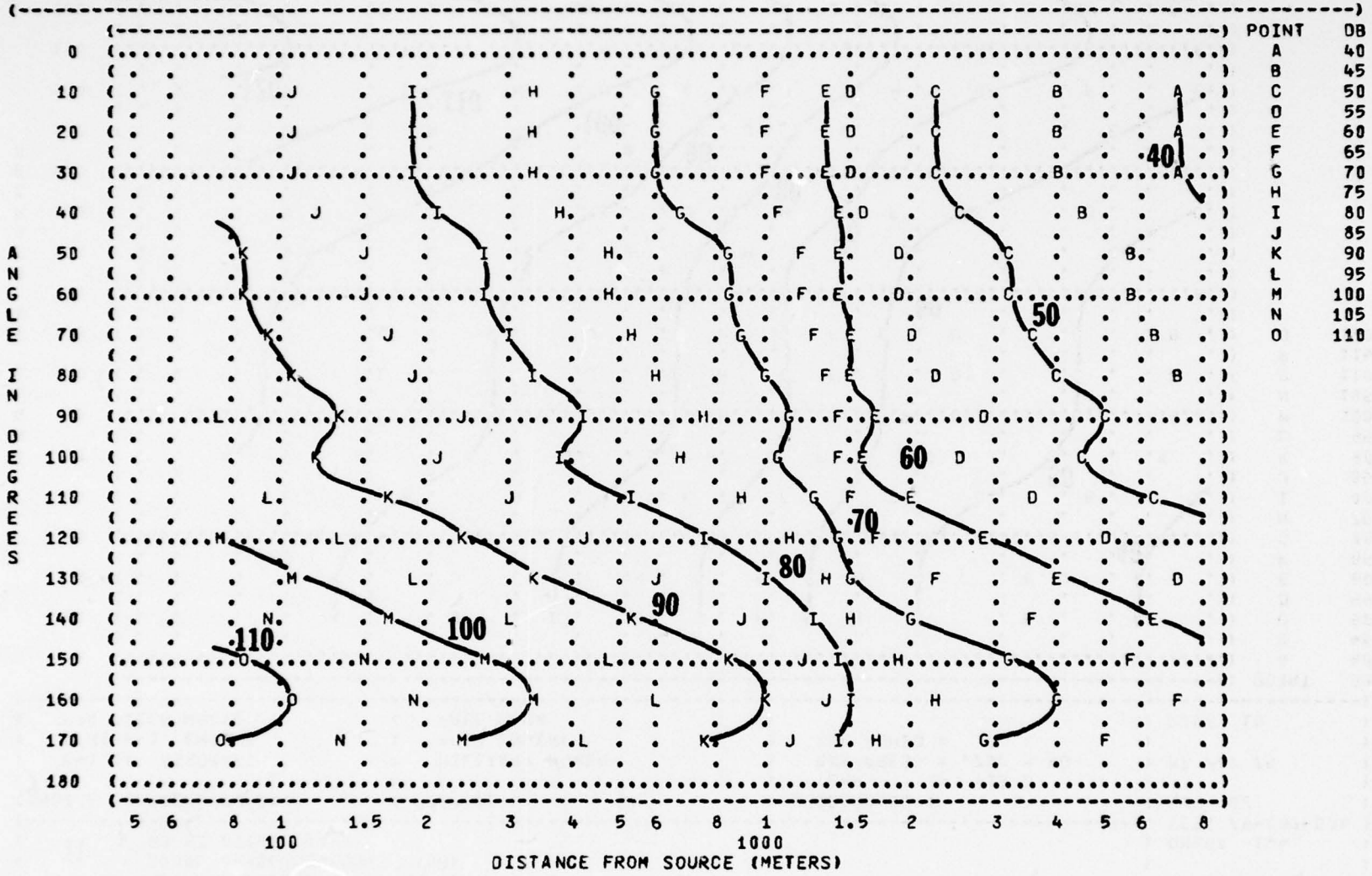
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 18



POINT	DB
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	110

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 19

POINT	DB
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	110
P	115
Q	120

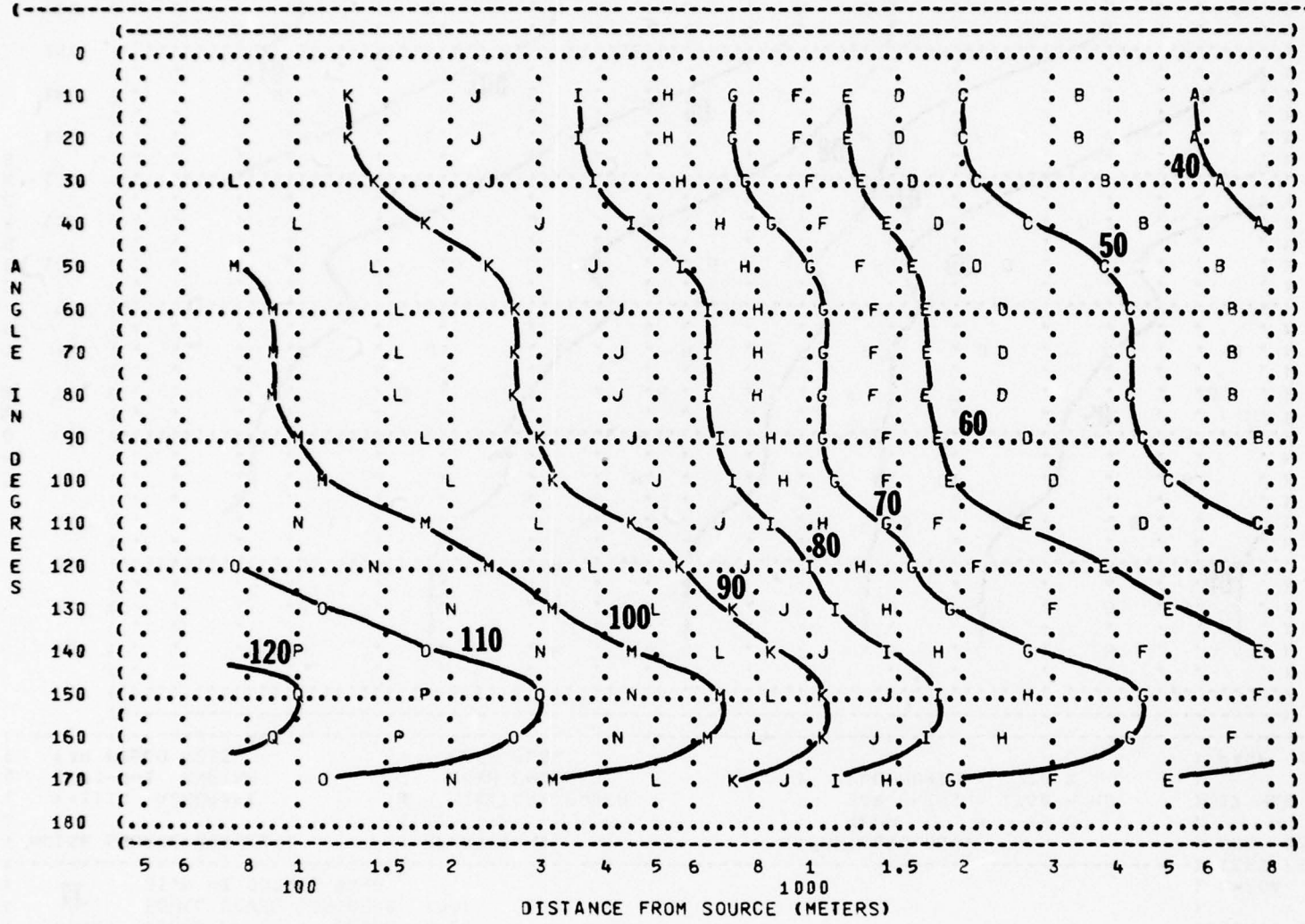


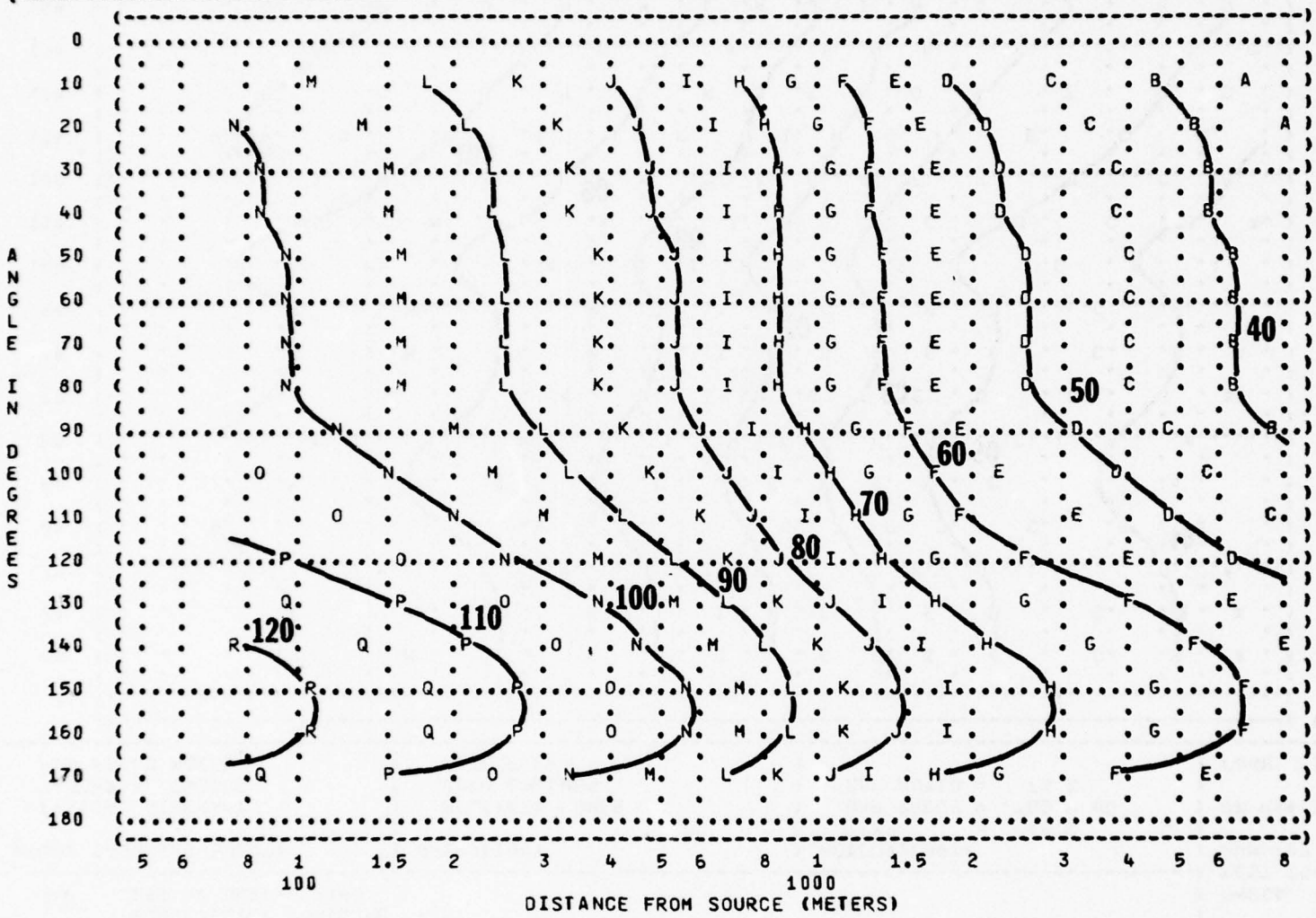
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 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
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120

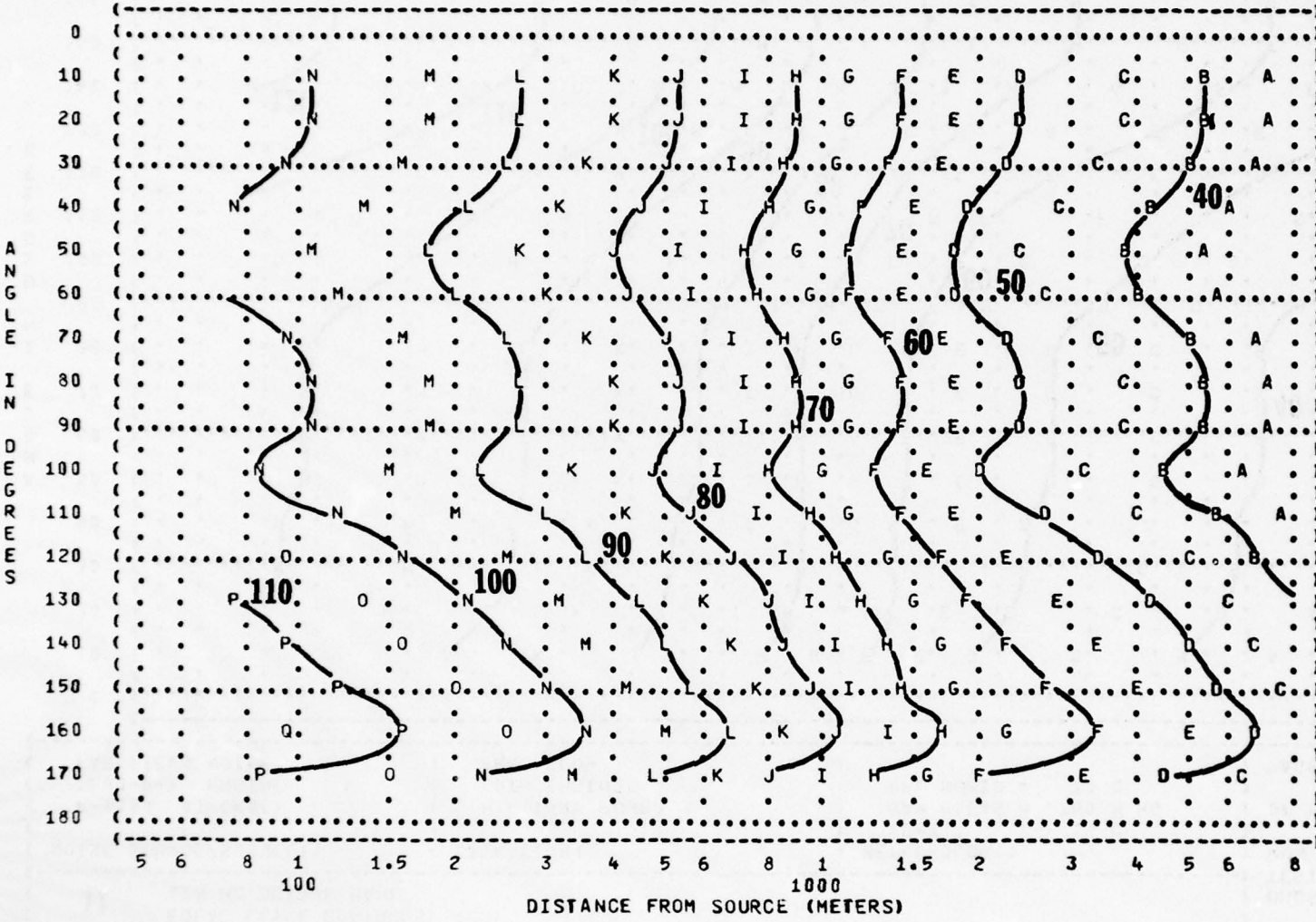
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 21



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
Q	115

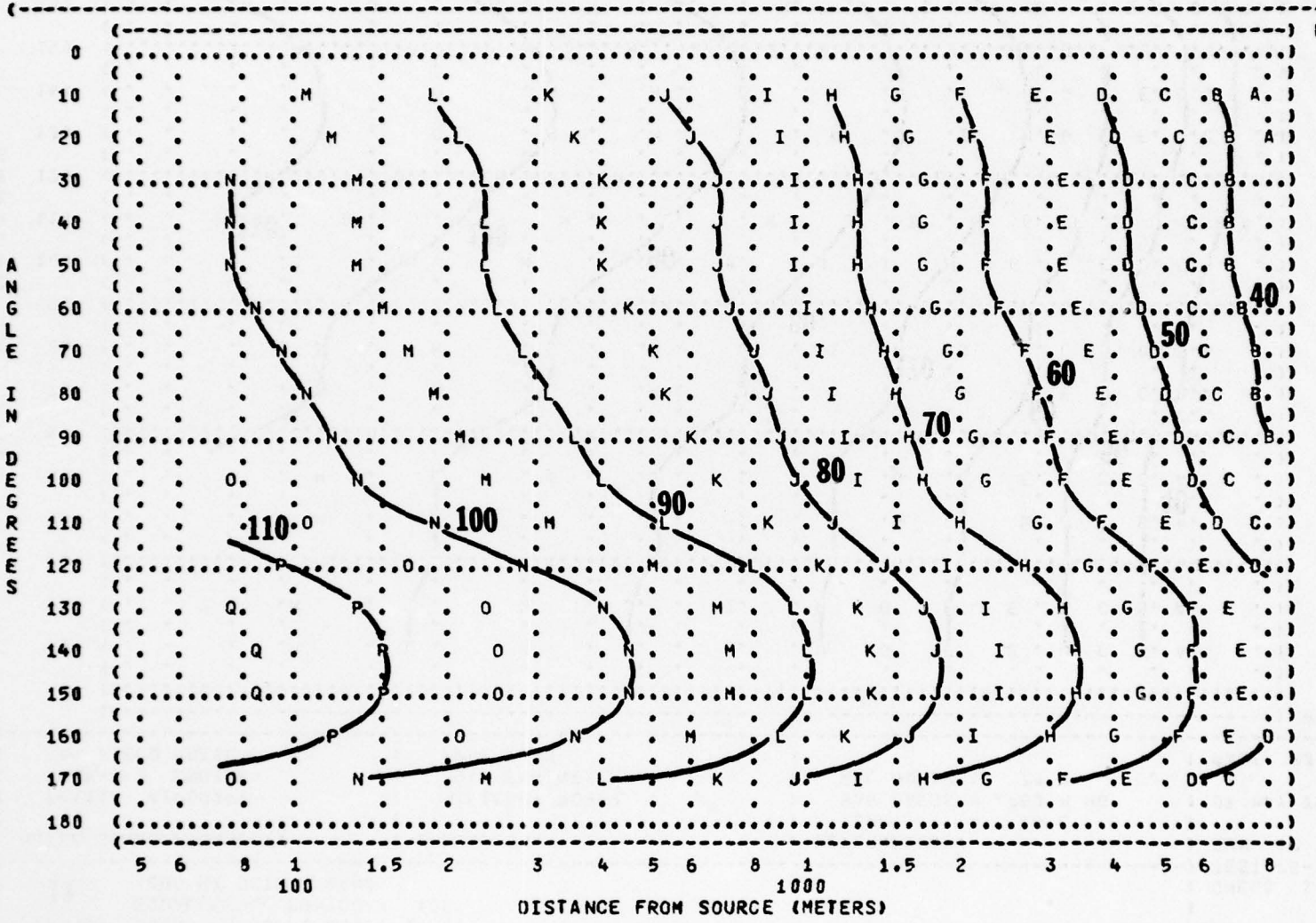
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-036 RUN 02 07 MAY 75 PAGE 22

NOISE SOURCE/SUBJECT: F-111A AIRCRAFT; TF30-P-1 ENGINE; FAR FIELD NOISE

OPERATION: MILITARY POWER; BOTH ENGINES; FREE FLOW

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
Q	115

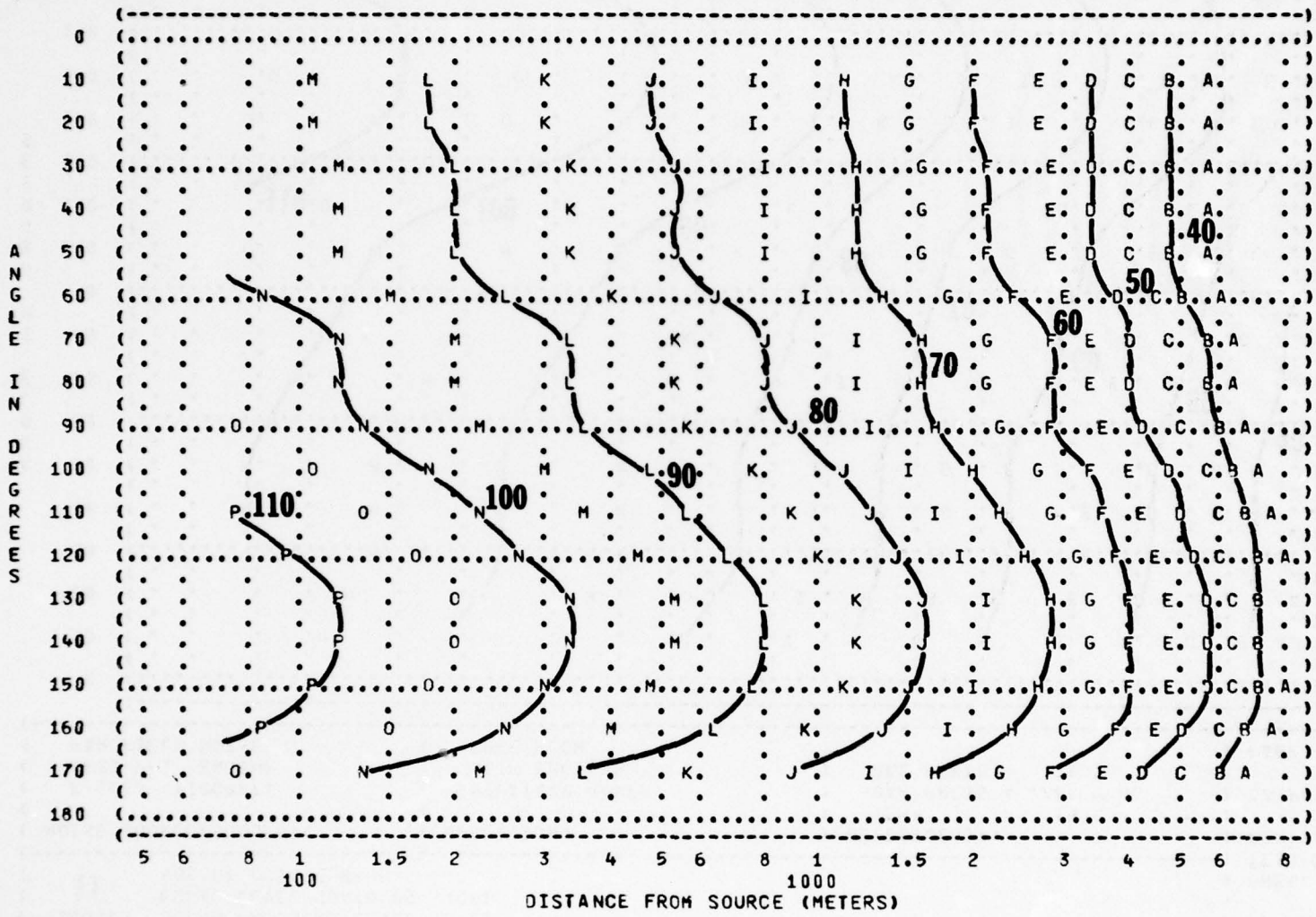
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 23



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

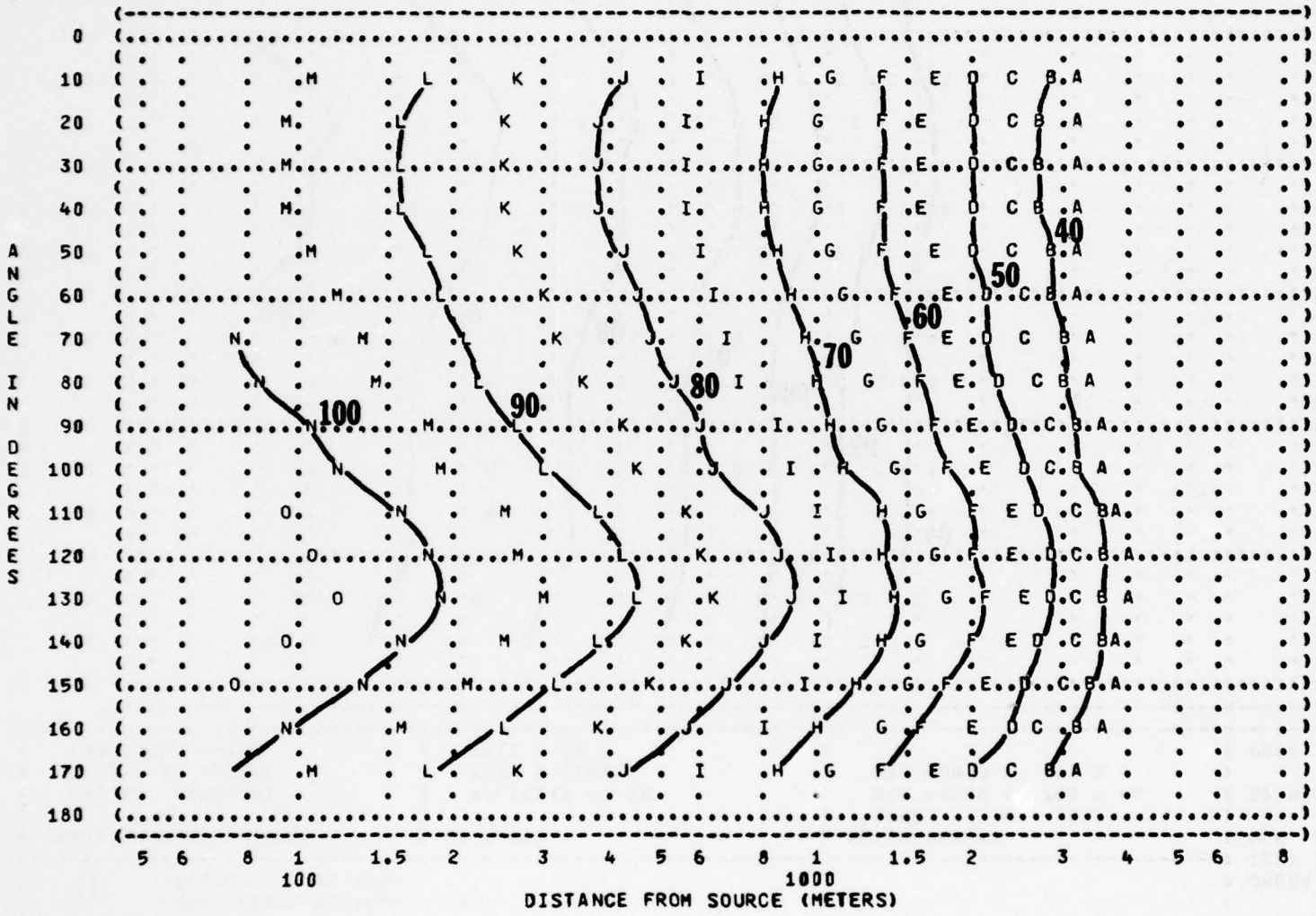
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 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

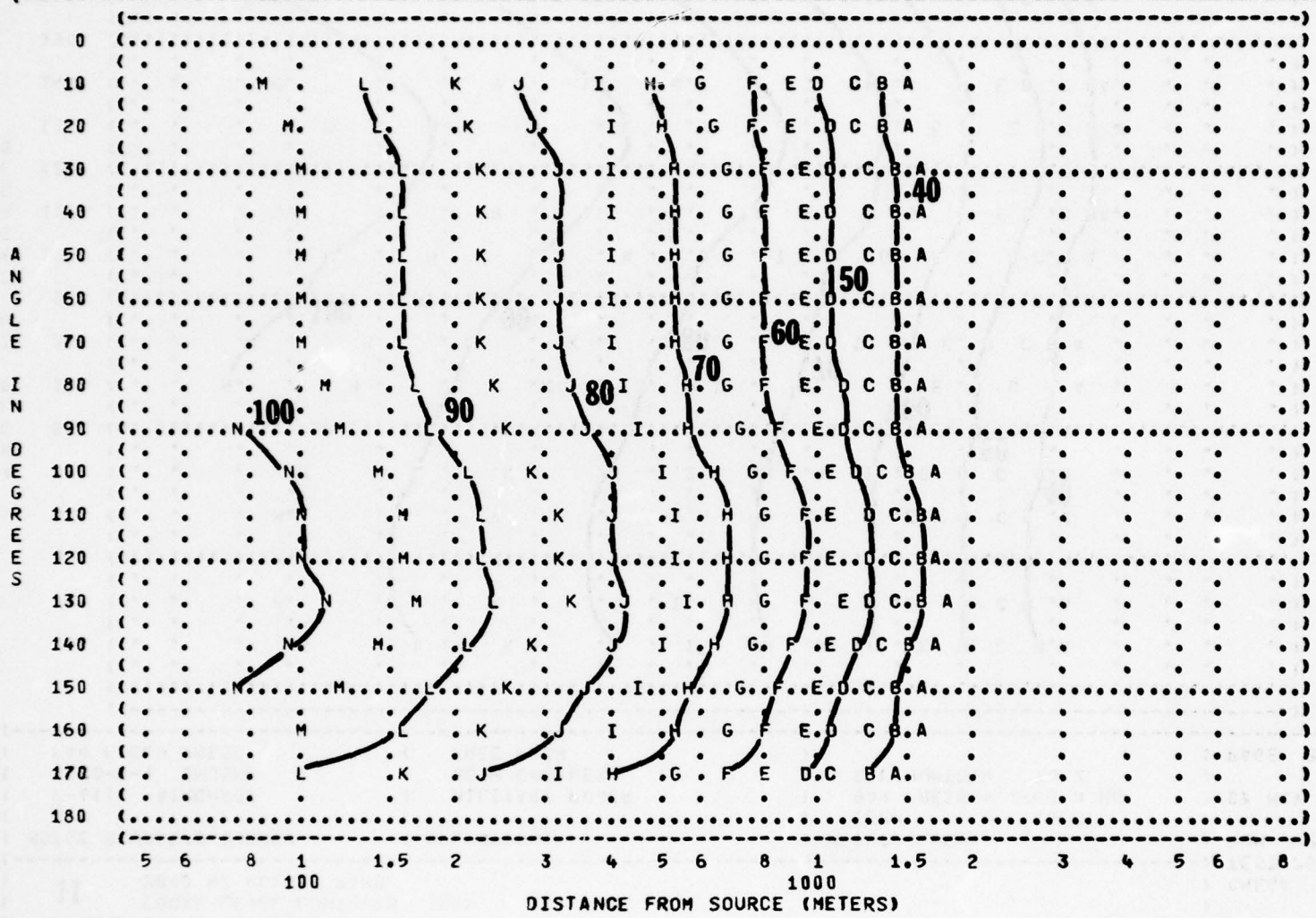
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 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

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 02
07 MAY 75
PAGE 26

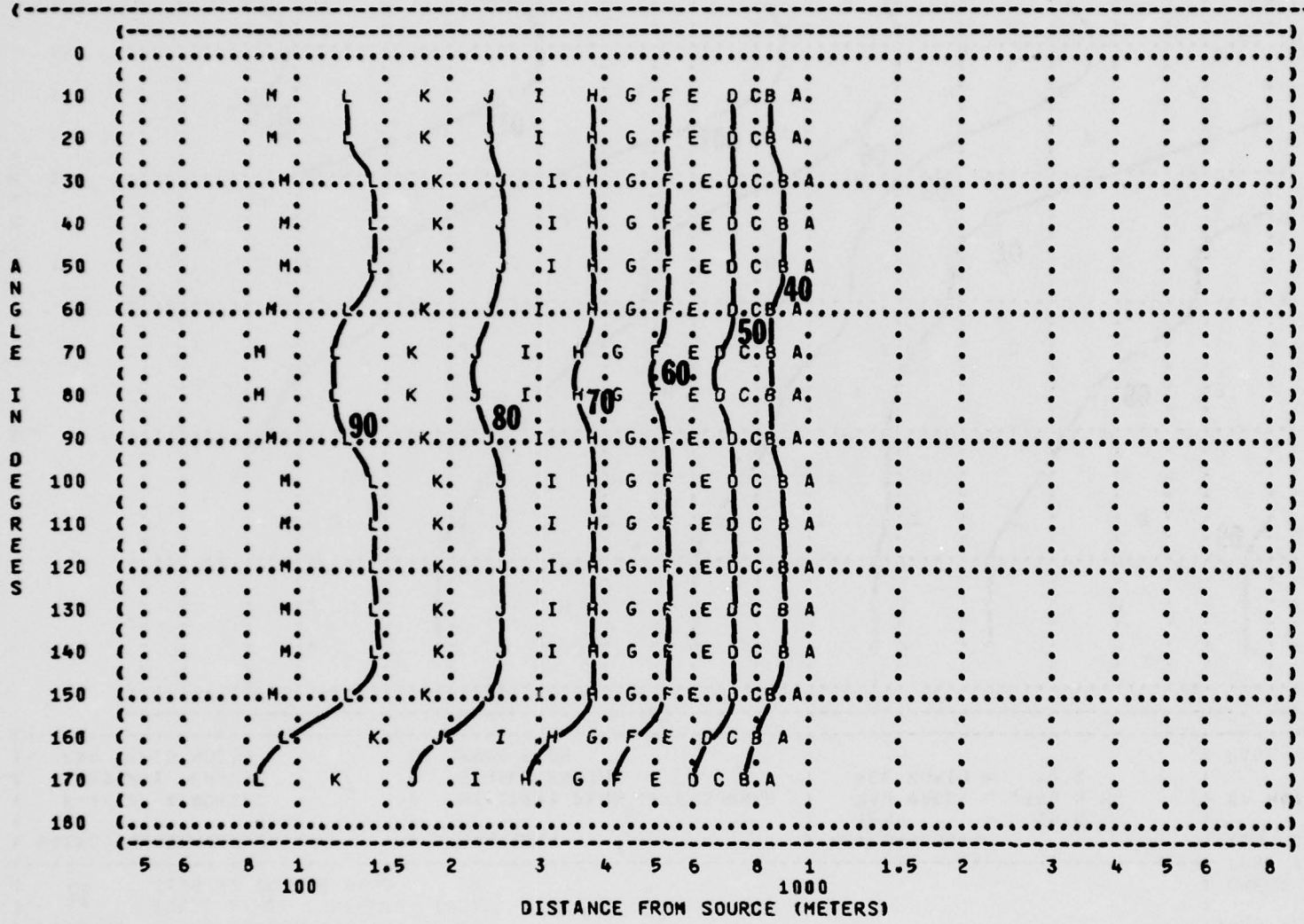


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 18

POINT	DB
A	50
B	55
C	60
D	65
E	70
F	75
G	80
H	85
I	90
J	95
K	100
L	105
M	110
N	115
O	120

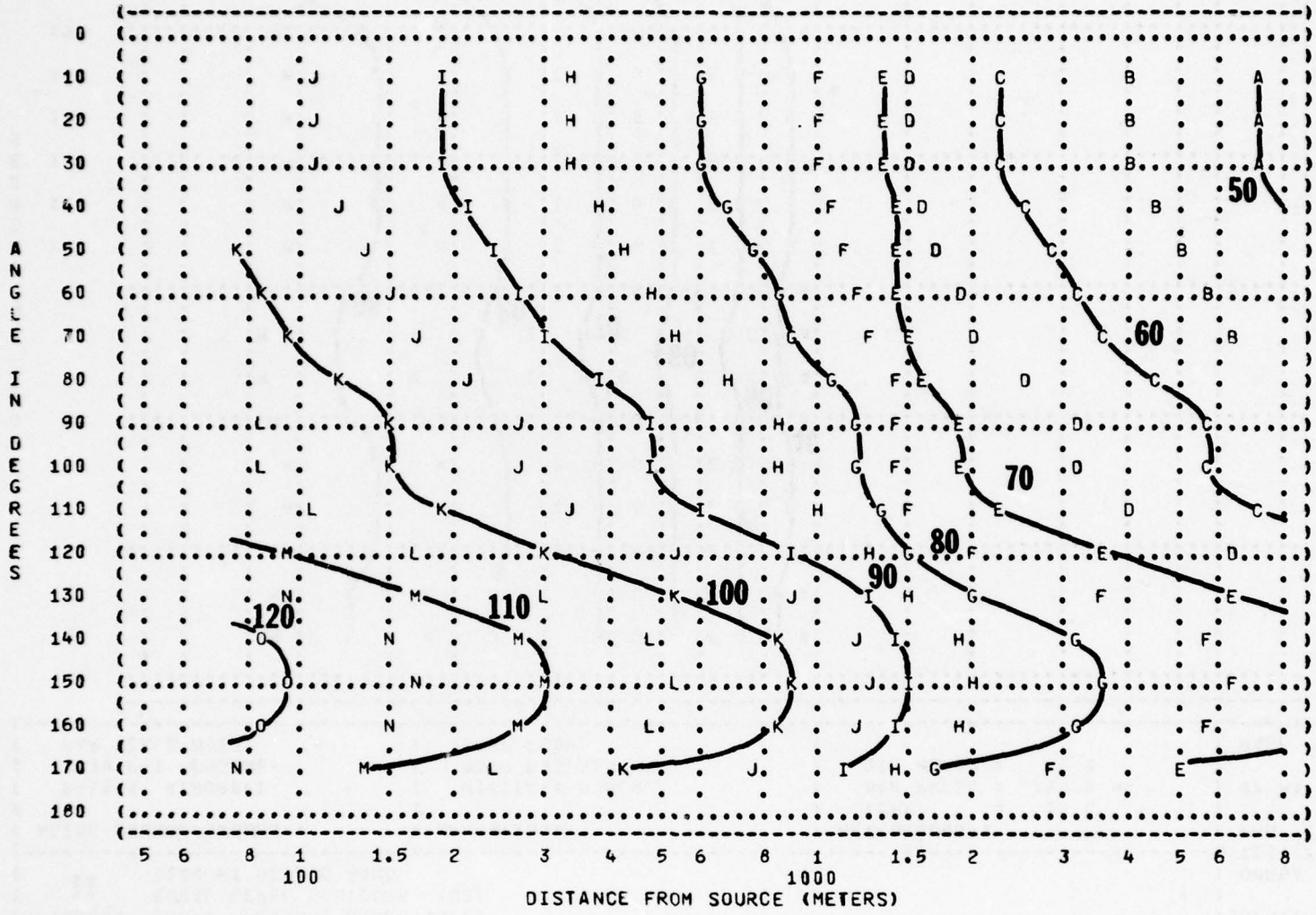


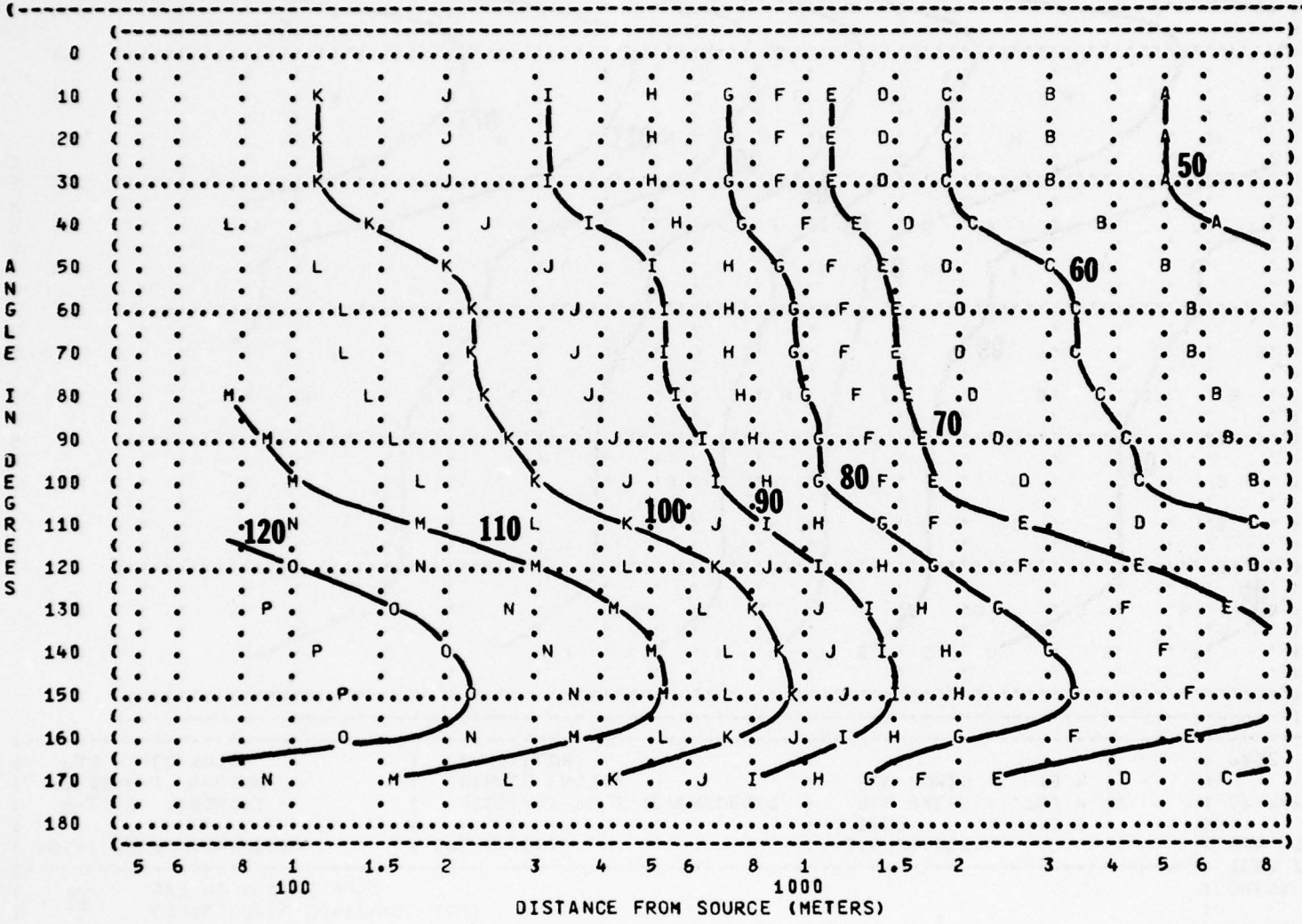
FIGURE 11: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 19



POINT	DB
A	50
B	55
C	60
D	65
E	70
F	75
G	80
H	85
I	90
J	95
K	100
L	105
M	110
N	115
O	120
P	125

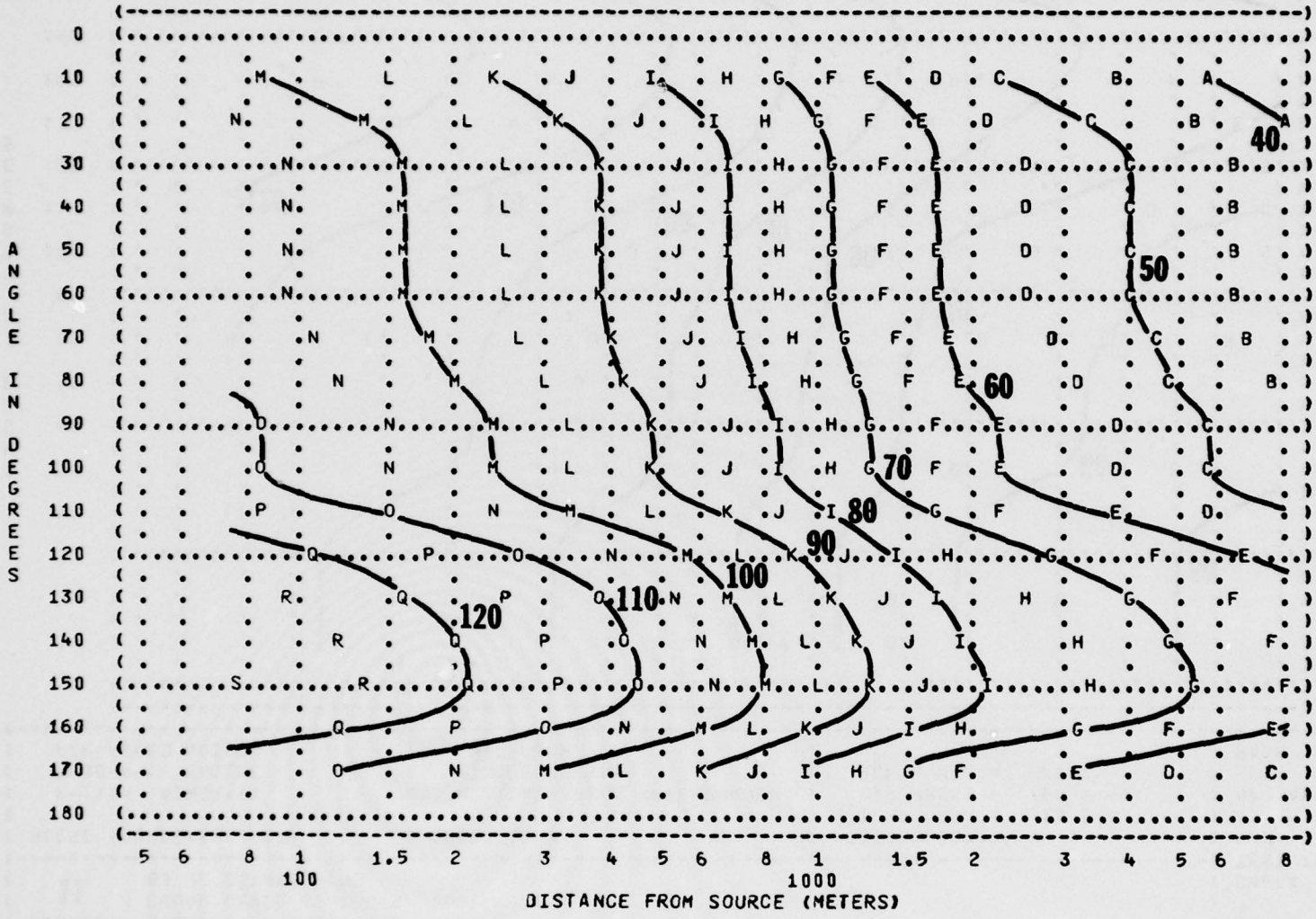
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 20

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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



POINT	DB
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	110
P	115
Q	120
R	125
S	130

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 21

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
Q	115
R	120

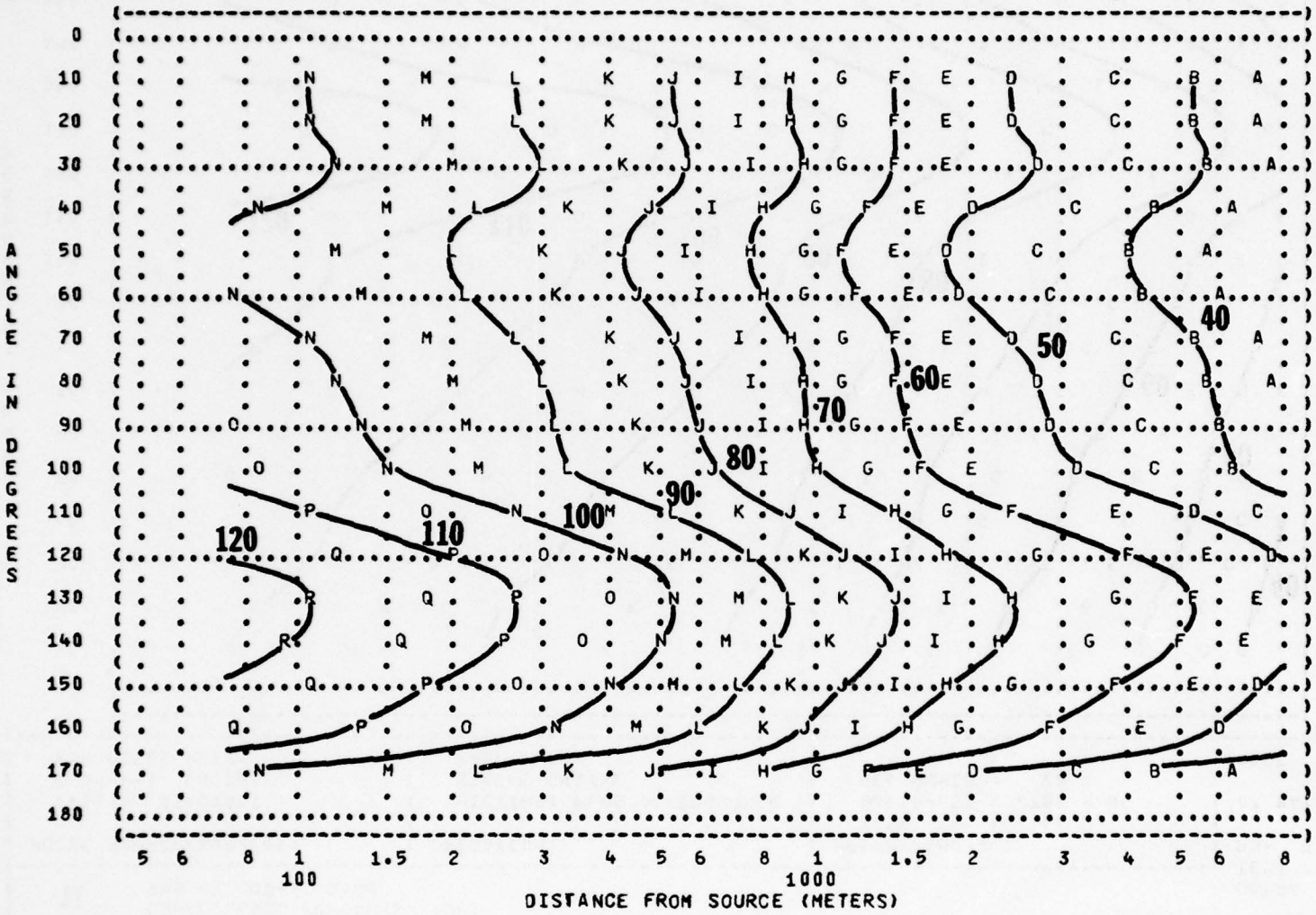


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 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
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120
S	125

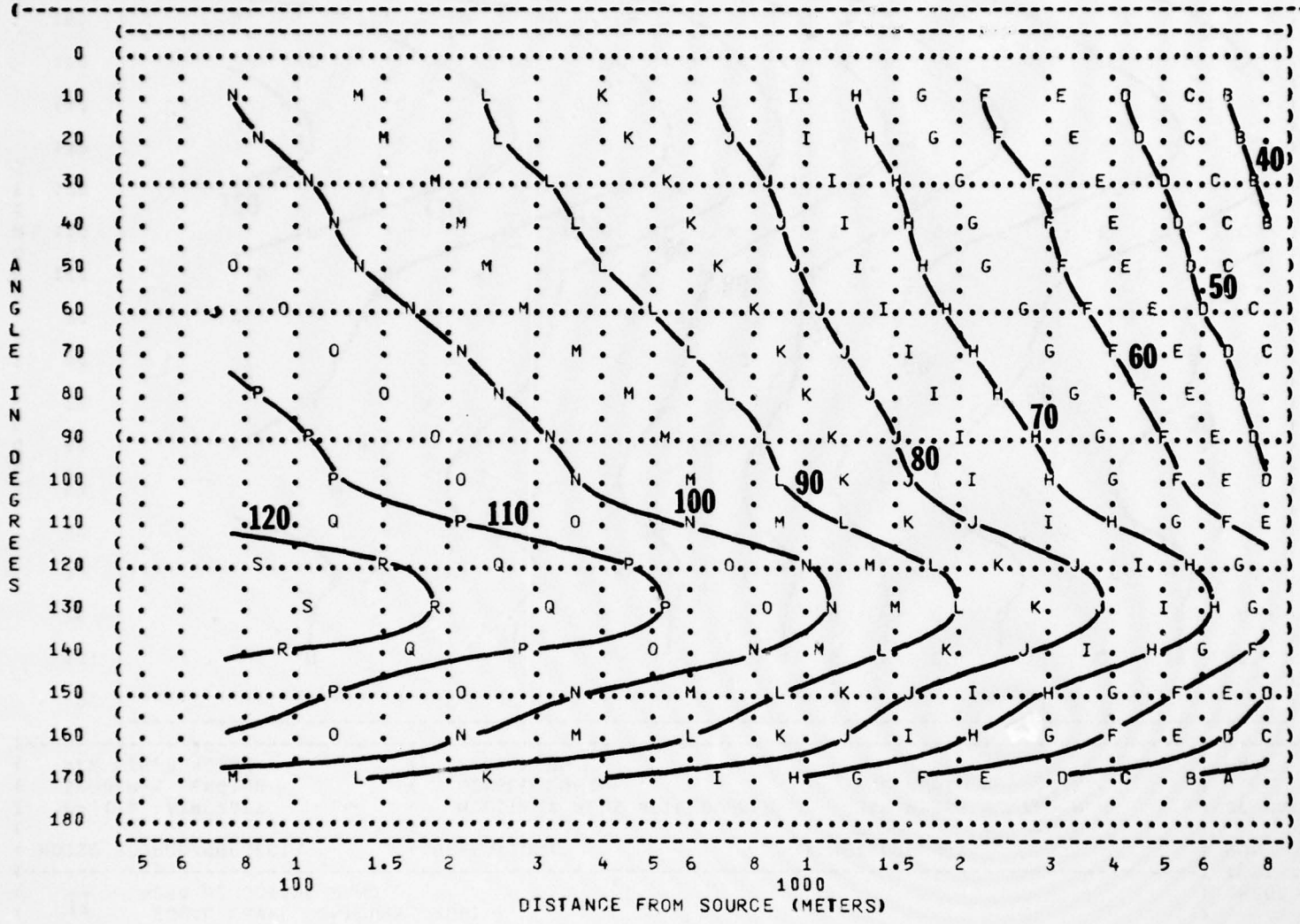


FIGURE: 11

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 23

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
Q	115
R	120

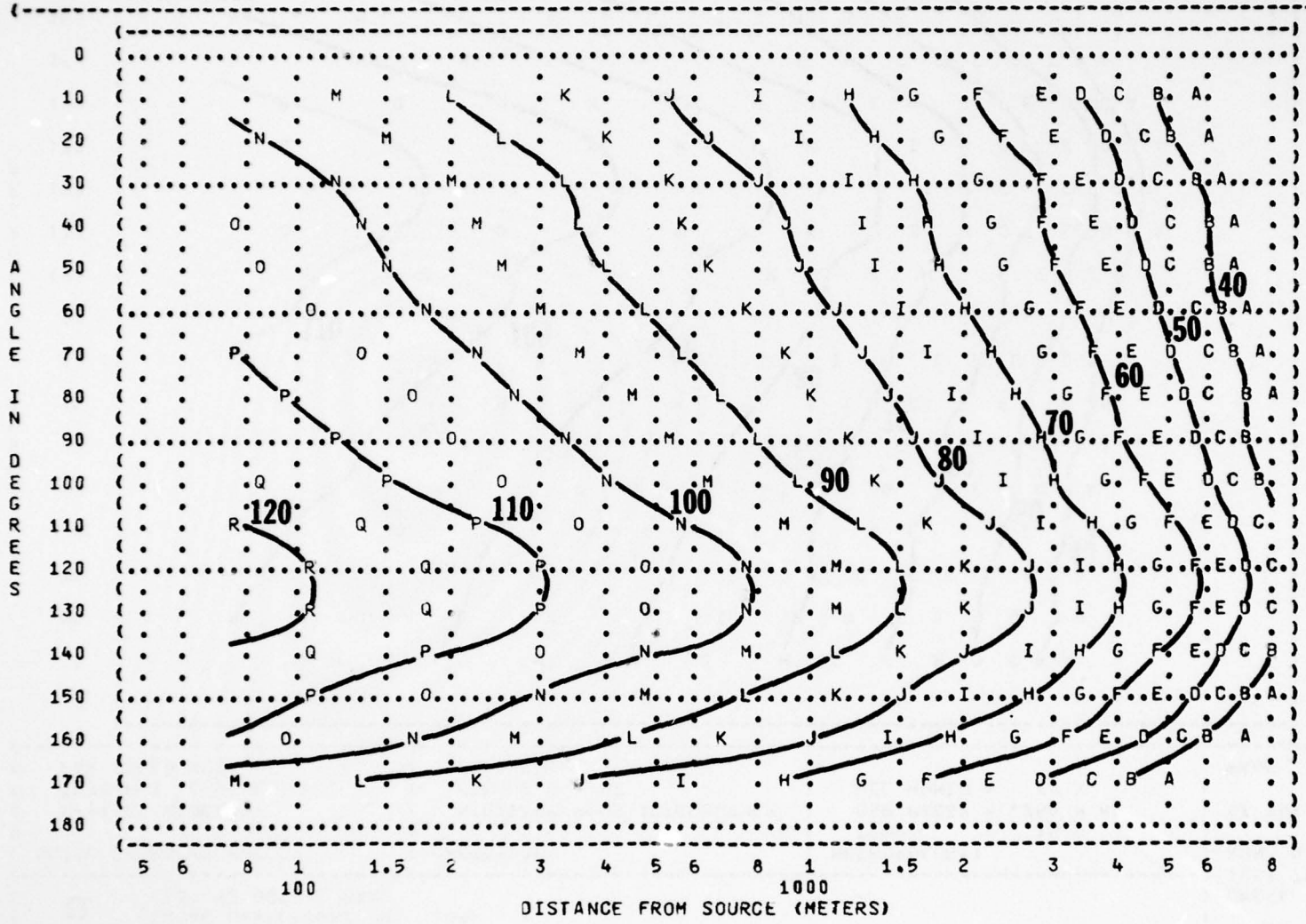


FIGURE: 11

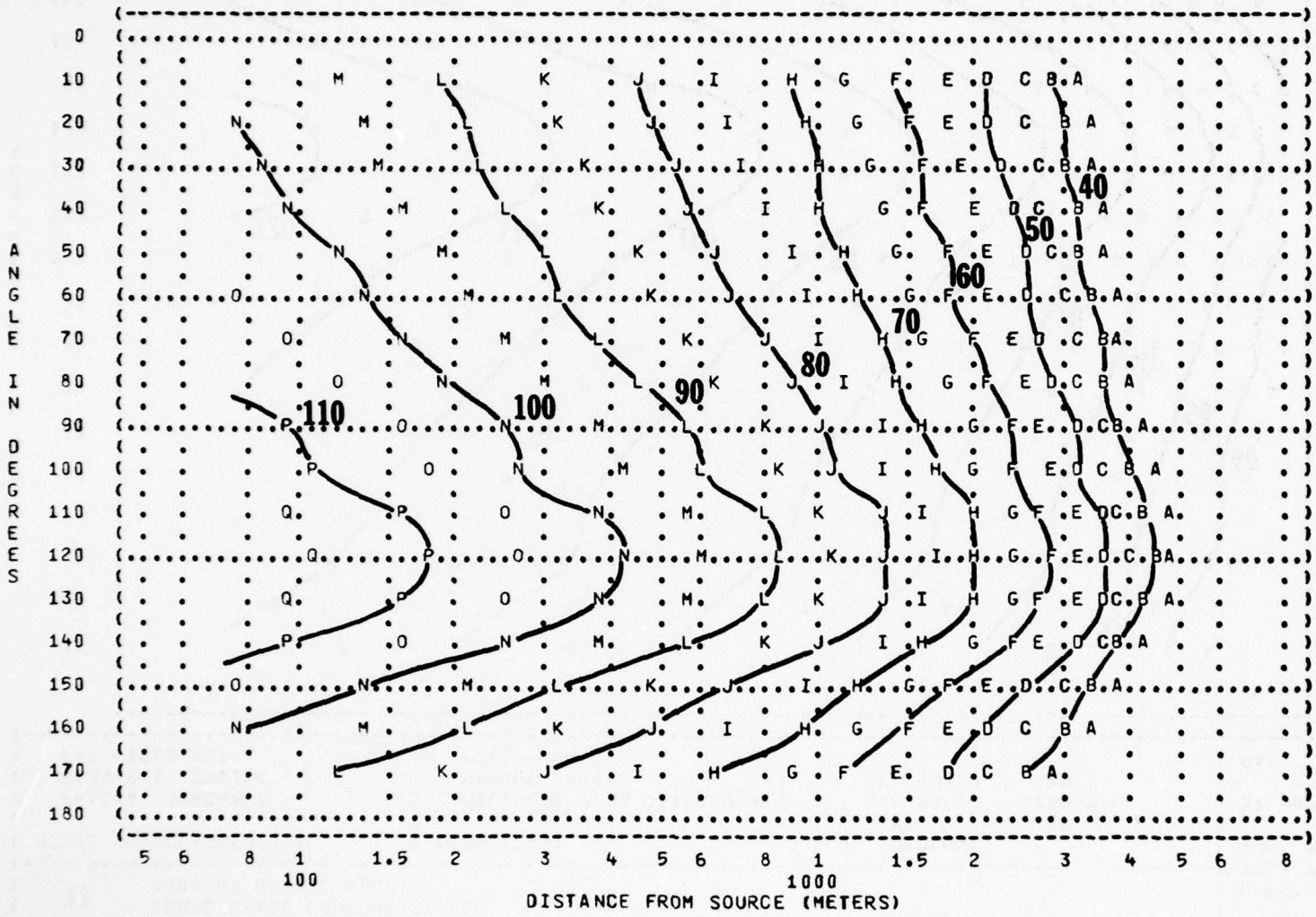
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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
Q	115

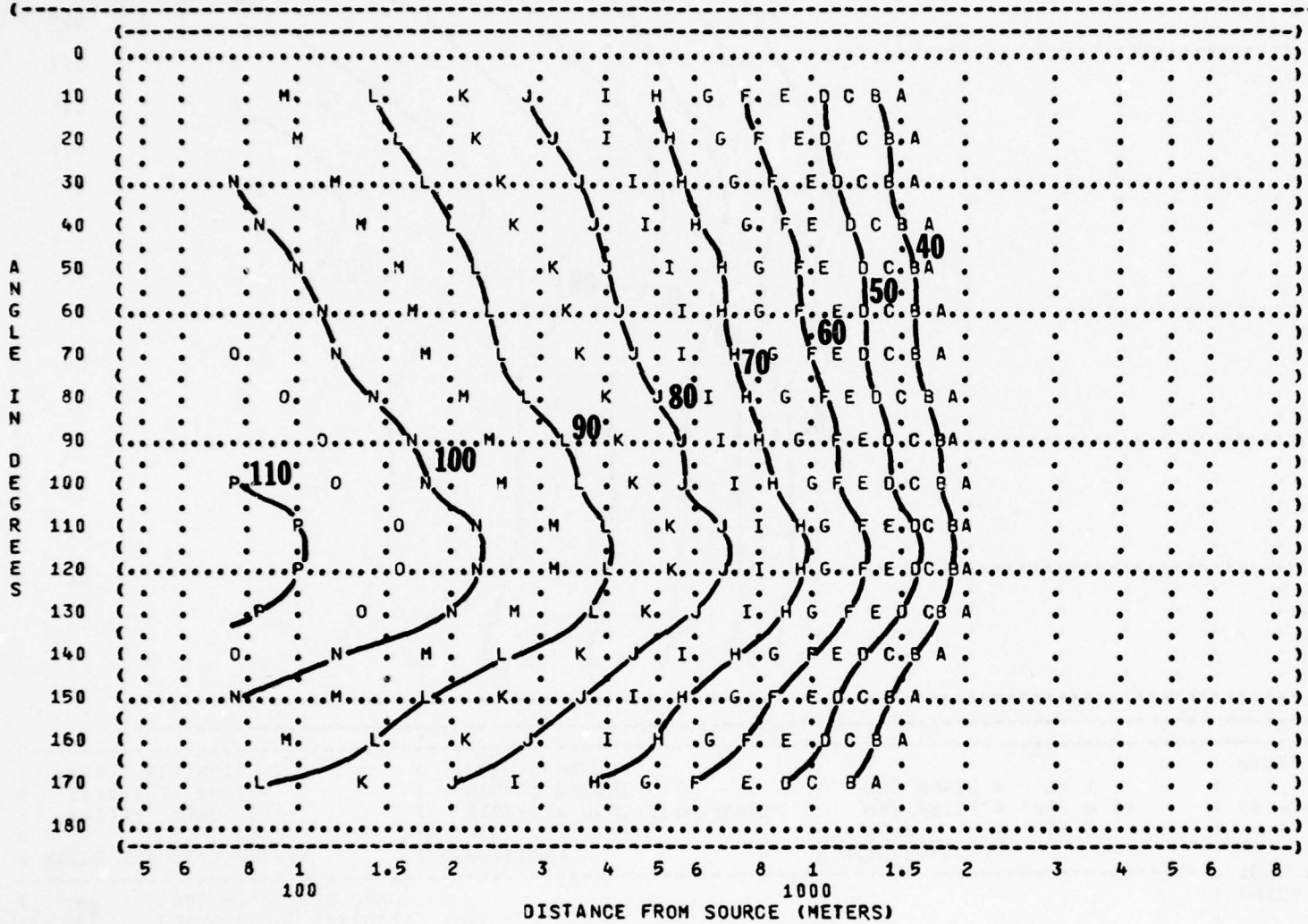
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-036
RUN 03
07 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
P	110

FIGURE: 11

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

NOISE SOURCE/SUBJECT:
F-111A AIRCRAFT
TF30-P-1 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY PLUS AFTERBURNER
SINGLE ENGINE
FREE FLOW

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

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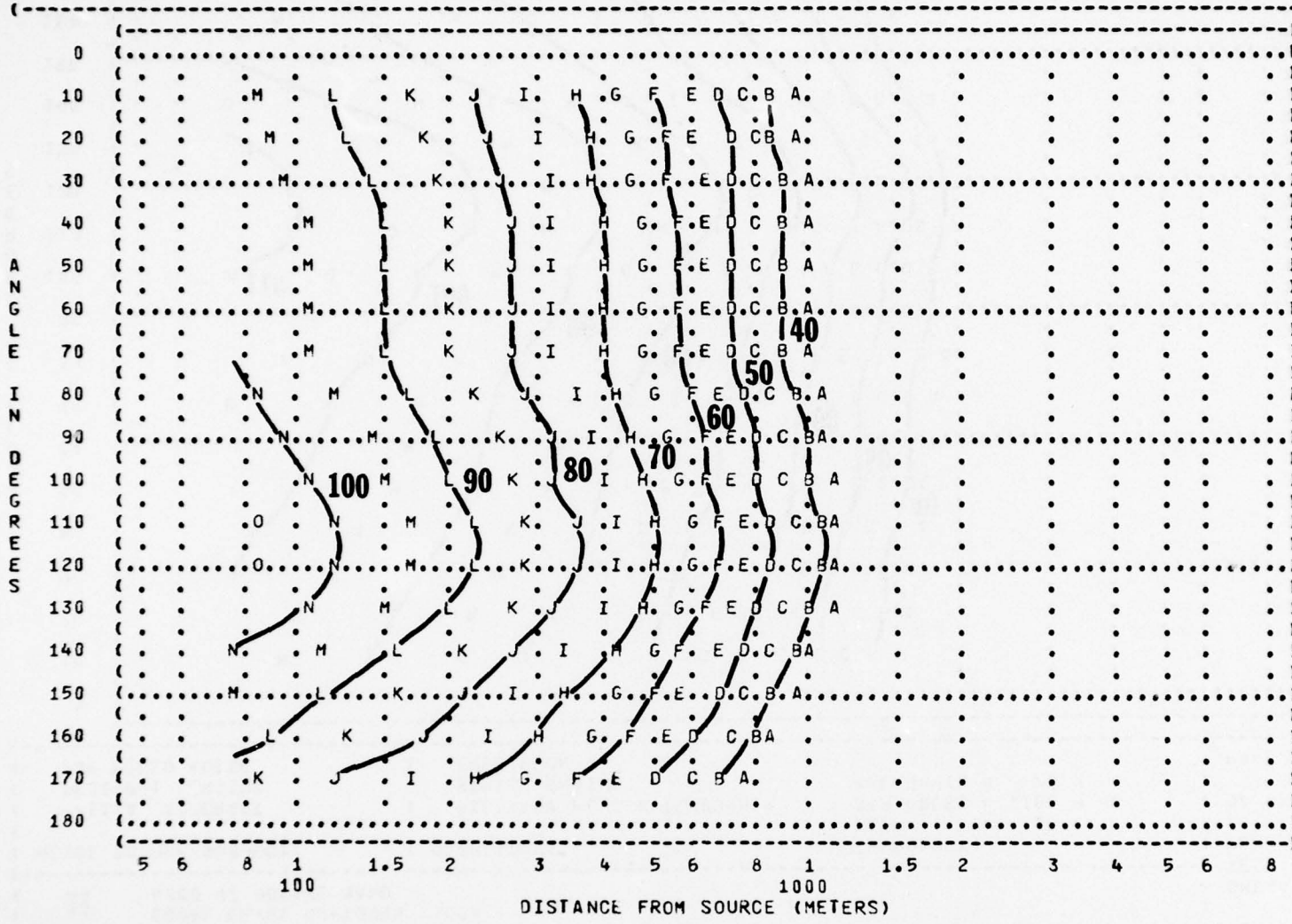

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