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Volume 84

USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 84

C-9A Aircraft, Near and Far-Field Noise

APRIL 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

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Director
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The USAF C-9A is an aircraft that airlifts medical patients and is powered by two JT8D-9A turbofan engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for four engine/power conditions. Near-field data are reported for four 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 total daily exposure of personnel

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with and without standard Air Force ear protectors. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and 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 Lee and Mr. Jerry Speakman for their 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 C-9A is an aircraft that airlifts medical patients and is powered by two JT8D-9A turbofan engines. The aircraft was manufactured by the McDonnell Douglas Corp 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 C-9A 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 loations 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, types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

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

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45333; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

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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), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the C-9A aircraft during ground runup operations of its turbofan engines. For these tests the aircraft was located on a taxiway 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 three engine/power conditions. The ground crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crewmember's head would normally be located. He recorded all of the noise samples on magnetic tape. During analysis of each sample, he determined the root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the four near-field locations where ground crew are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations in the near-field are difficult 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 C-9A 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 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

C-9A Aircraft, Ground Runup, Wright-Patterson AFB
8 October 1974, Tail # 10958

Ground Crew Locations

1	Fire Guard
2	Marshal
3	Telephone Talker
4	*Trim Adjustment*

Aircraft Engine Operation

A	Both Engines Idle
B	Both Engines 1.8 EPR
C	Both Engines 1.9 EPR

Meteorology

Temperature	13.3 C
Bar Pressure	0.742 M Hg
Rel Humidity	47 %
Wind — Speed	1.5 M/Sec (3 Kts)
— Direction	240 Deg

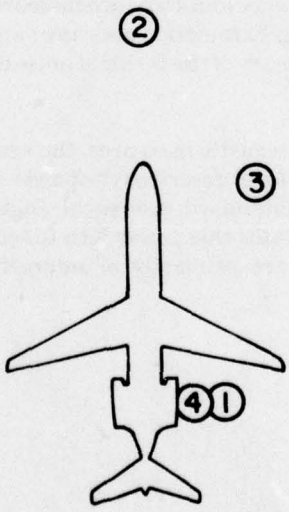


Figure 1. Near-Field Measurement Locations on a Taxiway at Wright-Patterson AFB, OH

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near and far-field during a 1-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup area, ground cover, aircraft orientation and the 19 microphone measurement sites on the semicircle. The center of the 75 meter radius semicircle used in surveying the JT8D-9A engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through engines' exhaust-nozzle exits. The ground runup pad did not have a blast deflector; therefore, the jets' exhausts were in a "free-flow" condition.

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

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

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

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 C-9A 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.

Estimates of noise levels for intermediate power conditions (e.g., 1.75 EPR) and/or different number of engines operating (e.g., single engine) 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 180 degree location for the 1.8 and 2.0 EPR power settings and at the 170, and 180 degree locations for the 1.7 EPR power setting because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below the level measured at the preceding microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 and Figure 11 at idle power).

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

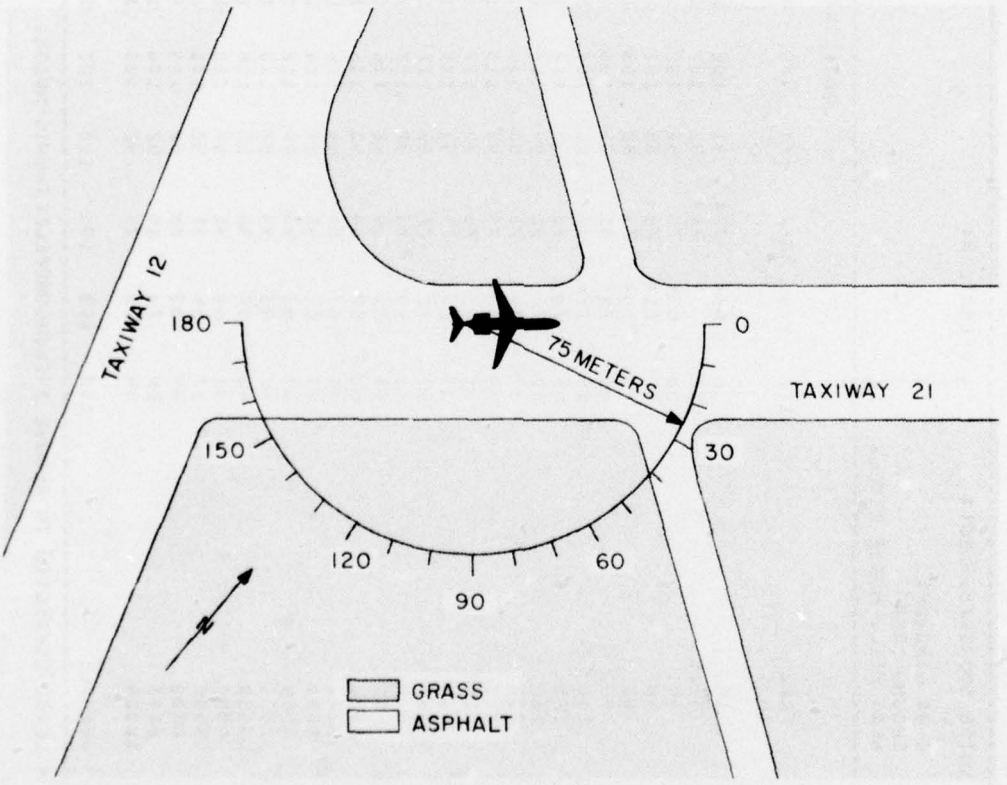


Figure 2. Far-Field Measurement Locations on a Taxiway at Wright-Patterson AFB, OH

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

IDENTIFICATION: OMEGA 3.2 TEST 74-073-001 RUN 01 12 MAR 76 PAGE F1

NOISE SOURCE/SUBJECT: C-9A AIRCRAFT GROUND CREW NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 1/A	2/A	3/A	4/A	4/B	4/C
25	86	65<	70<	91	102	102
31.5	87		74<	92	102	103
40	86	69<	78	90	102	103
50	87	71<	79<	89	102	102
63	89	74<	79	88	103	104
80	88	74<	81	91	106	106
100	85	75<	80	100	109	109
125	85	78	80	93	113	112
160	90	79	81	94	115	116
200	87	74	76	90	114	115
250	89	73	76	93	115	117
315	91	76	78	94	117	118
400	89	78	75	93	115	117
500	90	72	77	95	117	119
630	88	75	83	92	117	117
800	88	74	84	92	116	117
1000	88	82	84	93	116	117
1250	88	88	88	94	116	116
1600	93	87	90	97	114	115
2000	90	83	93	95	112	115
2500	91	93	99	97	113	113
3150	93	97	96	97	115	115
4000	91	88	91	97	112	114
5000	87	84	87	92	111	111
6300	87	83	88	92	110	109
8000	85	79	85	92	108	108
10000	84	73	79	92	105	105
OVERALL	103	100	103	108	127	128

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

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

IDENTIFICATION: OMEGA 3.2 TEST 74-073-001 RUN 01 12 MAR 76 PAGE J1

NOISE SOURCE/SUBJECT: C-9A AIRCRAFT GROUND CREW NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

FREQ (HZ)	1/A	2/A	3/A	4/A	4/B	4/C
31.5	92	71	80	95	106	107
63	93	78	84	94	109	109
125	92	82	85	101	116	118
250	94	79	81	97	120	122
500	94	80	84	98	121	122
1000	93	89	90	98	120	121
2000	96	94	100	101	118	119
4000	96	97	97	100	116	116
8000	90	85	90	96	112	112
OVERALL	103	100	103	108	127	128

TABLE: MEASURES OF HUMAN NOISE EXPOSURE

3

IDENTIFICATION:
OMEGA 3.2
TEST 74-073-001
RUN 01
12 MAR 76
PAGE M1

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

HAZARD/PROTECTION	1/A	2/A	3/A	4/A	4/B	4/C
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	103	99	102	108	127	128
OASLA	102	101	104	106	125	126
T	21	25	15	11	P	P
MINIMUM QPL EAR MUFFS						
OASLA*	77	72	75	83	103	104
T	960	960	960	571	16	15
AMERICAN OPTICAL 1700 EAR MUFFS						
OASLA*	73	66	69	78	97	98
T	960	960	960	960	50	42
V-51R EAR PLUGS						
OASLA*	74	70	72	79	100	101
T	960	960	960	960	30	25
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS						
OASLA*	60	57	59	65	86	87
T	960	960	960	960	339	265
M-133 GROUND COMMUNICATION UNIT						
OASLA*	75	76	78	79	95	99
T	960	960	960	960	42	36
COMMUNICATION						
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)						
PSIL	94	88	92	99	120	121
ANNOYANCE						
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)						
TONE CORRECTION (C IN DB)						
PNLT	117	117	119	122	140	140
C	1	2	2	1	0	0

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

TABLE 4

TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

C-9A Aircraft, Ground Runups, Wright-Patterson AFB
8 October 1974 Tail # 10958

Aircraft Engine Operation

Idle	Both Engines 1.05 EPR, Engine Pressure Ratio 375 C EGT, Exhaust Gas Temperature 1000 LBS/HR FF, Fuel Flow
1.7 EPR Engine Runup	Both Engines 1.7 EPR 460 C EGT 5800 LBS/HR FF
1.8 EPR Engine Runup	Both Engines 1.8 EPR 480 C EGT 6600 LBS/HR FF
1.9 EPR Engine Runup	Both Engines 2.0 EPR 510 C EGT 8000 LBS/HR FF

Meteorology

Temperature	13.3 C
Bar Pressure	0.742 M Hg
Rel Humidity	47 %
Wind — Speed	1.5 M/Sec (3 Kts)
— Direction	240 Deg

TABLE: 5 — MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	65<		65<	70<	73<	68<	68<	68<	72<	68<	68<	70<	68<	68<	70<	73<	73<	73<	71<
31.5			69<	71<	73<	70<	69<	70<	71<	73<	73<	71<	69<	71<	73<	74<	74<	73<	73<
40	72<	67<	73<	75<	78	73<	73<	73<	73<	73<	73<	73<	74<	76<	76<	76<	78	76<	73<
50	72<	73<	75<	76<	76<	76<	73<	71<	69<	71<	73<	76<	76<	74<	74<	76<	74<	73<	70<
63	70<	74<	72<	73<	76<	73<	69<			74<	75<	73<	73<	69<	73<	74<	77<	76<	73<
80	69<	69<	71<	73<	76<	71<	69<		69<	73<	69<	71<	73<	74<	73<	72<	79<	76<	73<
100	70<	72<	70<	71<	74<			69<	69<	71<	70<	71<	71<	71<	71<	71<	74<	73<	70<
125	74<	69<	72<	71<	73<	70<	70<	70<	71<	73<	73<	73<	72<	73<	73<	71<	75<	71<	68<
160	77	72<	75	73<	73<	72<	71<	72<	73<	71<	73<	73<	73<	74<	73<	73<	76	72<	65<
200	74	77	73	71	69	69	66	68	66	69	67	67	67	68	66	69	75	69	66
250	72	77	73	74	70	69	67	68	68	70	69	67	68	69	66	69	76	75	66
315	73	75	72	73	71	69	68	66	67	68	67	65	64	67	67	72	78	73	64
400	70	76	71	70	69	67	67	67	68	66	67	64	61	65	65	68	75	70	64
500	69	73	72	72	70	68	67	69	71	67	69	65	62	63	65	68	73	70	66
630	71	71	71	72	70	68	69	69	70	69	71	64	63	66	67	67	74	71	65
800	73	75	72	74	73	71	68	69	70	72	73	66	63	66	67	69	73	71	66
1000	75	79	76	77	75	72	71	70	70	73	73	67<	64<	65<	67<	67<	73	69	64<
1250	81	82	80	79	76	73	71	70	71	73	72	67	64	66	67	69	72	70	65
1600	80	82	82	83	80	77	75	73	74	78	75	70	67	71	72	74	75	72	69
2000	83	84	88	83	82	82	81	80	73	77	73	71	68	69	69	71	74	71	65
2500	90	89	89	87	84	81	84	84	79	80	76	74	70	69	71	72	76	72	68
3150	84	83	83	83	82	80	79	78	77	80	75	72	70	72	72	73	77	73	69
4000	82	83	84	84	83	80	78	76	77	79	76	73	70	72	72	75	76	73	67
5000	79	79	79	80	78	75	73	73	69	73	70	67	64	67	68	69	71	68	62
6300	77	79	77	77	74	73	70	71	68	71	69	66	63	66	66	68	69	66	61
8000	74	76	74	73	71	70	68	67	66	67	65	63	60	63	63	64	66	62	57
10000	70	71	69	69	67	66	63	63	61	59	56	57	54	56	55	57	58	54	50
OVERALL	93	94	94	93	91	89	88	88	86	88	86	85	84	85	85	86	89	86	83

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	78	79	80	80	81	81	82	86	85	85	85	87	91	95	100	103	103		
31.5	77<	79	78<	79	81	81	82	84	86	87	88	89	92	97	103	105	105		
40	82	82	83	82	84	85	87	85	89	87	88	92	94	100	107	108	107		
50	81	81	83	82	84	85	86	87	87	88	89	93	95	102	107	111	108		
63	81	83	84	84	85	85	87	86	87	90	90	92	96	103	109	113	111		
80	83	84	86	86	87	87	88	88	88	92	93	96	99	105	111	114	112		
100	86	88	87	87	87	88	90	90	91	94	95	98	101	107	112	116	115		
125	88	92	90	89	89	90	91	91	94	95	94	97	100	107	111	113	113		
160	93	93	92	90	90	90	92	91	95	94	94	96	101	106	113	114	114		
200	92	92	91	89	88	89	90	90	92	92	93	96	100	105	108	114	111		
250	85	89	92	89	87	87	88	88	90	91	92	95	98	102	107	112	107		
315	87	89	91	89	87	85	87	89	90	90	91	94	98	101	105	109	105		
400	87	87	89	88	86	84	85	88	89	90	89	93	96	97	103	107	102		
500	86	87	88	87	87	85	87	89	90	92	90	93	97	96	102	106	101		
630	82	87	87	87	87	87	88	88	92	93	91	95	97	95	102	104	99		
800	82	86	87	87	88	87	89	89	91	93	91	96	97	96	102	103	97		
1000	81	82	85	86	87	86	88	89	92	92	93	95	97	94	101	101	95		
1250	83	83	84	86	87	85	89	89	92	91	93	95	97	93	99	98	93		
1600	85	85	87	87	88	87	88	89	91	91	93	96	96	93	98	97	90		
2000	90	90	90	91	89	88	89	89	91	90	92	95	95	91	96	93	88		
2500	93	93	93	93	92	91	90	88	92	90	91	93	92	88	93		86		
3150	94	94	98	97	98	98	96	90	94	95	96	93	93	90	93	91	86		
4000	88	89	92	92	91	89	88	89	93	92	92	92	91	88	91	89	85		
5000	87	85	87	87	87	86	86	84	89	89	90	89	89	84	88	86	84		
6300	87	91	88	89	90	89	86	84	88	86	86	86	86	82	85	83	85		
8000	84	83	84	84	84	83	82	81	86	84	84	83	83	79	83	79	81		
10000	81	81	82	83	83	79	81	77	82	78	78	77	79	74	78	73	82		
OVERALL	102	103	104	103	103	103	103	102	105	105	106	108	111	115	120	123	121		

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 5

MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	78	80	81	83	80	81	85	87	85	85	88	88	93	97	103	105	105	101	
31.5	78<	78<	79	81	81	82	84	84	87	87	88	91	93	100	103	108	107	100	
40	79	81	84	84	84	86	86	88	87	89	90	92	95	102	106	111	112	102	
50	81	82	83	85	85	86	87	88	87	89	90	92	96	101	107	113	113	100	
63	81	83	84	86	85	87	88	87	89	91	93	94	98	105	110	114	116	105	
80	84	85	87	86	87	87	90	90	90	93	94	98	102	107	112	115	118	108	
100	87	88	89	88	89	89	90	91	93	95	96	100	102	108	112	116	121	111	
125	90	93	92	90	88	90	92	93	93	95	97	99	102	107	113	116	119	107	
160	95	96	93	92	91	91	92	94	93	94	98	100	102	108	113	118	119	106	
200	91	93	91	91	89	90	91	91	91	94	95	98	103	107	109	118	116	107	
250	88	91	93	90	88	88	90	90	92	93	95	97	102	105	108	115	113	106	
315	90	91	93	91	89	89	88	90	91	92	94	95	101	104	106	113	111	102	
400	90	89	90	90	87	86	89	89	89	90	93	93	101	102	103	110	110	98	
500	88	90	90	90	89	87	88	90	91	91	94	95	101	103	103	110	108	95	
630	86	88	89	90	90	87	90	91	91	93	96	97	101	103	103	109	106	94	
800	86	87	88	89	90	89	90	92	92	93	96	96	101	101	102	107	104	91	
1000	84	84	87	88	89	88	90	91	90	92	95	95	100	101	101	105	102	89	
1250	86	86	85	89	88	88	90	90	90	92	95	95	98	100	99	104	99	86	
1600	87	86	87	90	90	90	91	90	88	91	96	93	98	98	98	102	98	85	
2000	98	88	90	92	89	89	90	90	88	90	95	91	96	97	96	99	95	82	
2500	93	90	90	93	92	91	92	91	87	90	93	88	94	94	93	95	92	79	
3150	98	96	99	100	101	98	93	95	92	93	98	89	94	94	91	95	90	80	
4000	93	90	91	93	93	91	92	92	89	91	96	86	90	93	89	93	89	78	
5000	89	86	85	88	85	86	85	87	84	90	93	83	88	89	87	89	85	73	
6300	88	85	87	90	87	87	85	86	82	85	89	80	85	85	84	86	82	71	
8000	84	82	83	86	83	82	81	82	79	83	86	75	80	81	81	81	78	66	
10000	81	80	80	83	79	79	78	79	73	76	80	69	75	74	75	75	73	61	
OVERALL	104	103	104	105	104	103	104	104	104	106	108	109	113	117	121	126	127	116	

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE 5 MEASURED SOUND PRESSURE LEVEL (DB)
1/3 OCTAVE BAND
DISTANCE = 75 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 2

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	81	81	81	83	84	84	86	87	87	89	89	93	95	99	105	107	107	103	
31.5	80	80	80	83	83	84	86	87	86	89	90	92	95	101	107	109	109	101	
40	82	83	84	84	84	88	89	88	91	90	94	97	100	105	110	114	113	102	
50	82	84	86	85	85	89	89	90	90	91	94	95	100	107	112	116	115	103	
63	84	85	87	85	86	89	87	90	91	93	94	97	101	108	113	118	118	108	
80	87	88	89	90	89	90	91	92	92	95	97	99	105	110	116	119	119	111	
100	90	92	90	90	90	91	91	93	95	97	98	101	106	112	117	119	121	109	
125	95	95	95	93	91	93	93	94	97	97	100	101	105	111	118	119	120	106	
160	97	98	96	93	93	93	96	96	98	96	100	101	106	111	119	121	121	107	
200	90	93	93	93	92	92	92	94	97	96	98	100	104	111	116	121	118	108	
250	91	93	96	93	91	91	92	92	93	94	98	99	104	110	115	121	118	108	
315	93	93	95	93	91	91	92	93	92	95	98	100	104	109	113	119	118	106	
400	93	91	93	93	90	88	91	92	91	93	96	98	103	106	112	116	114	101	
500	88	91	91	91	90	89	92	93	92	95	98	100	103	107	111	115	112	98	
630	88	91	92	91	92	90	92	93	92	96	99	100	103	107	110	113	110	95	
800	86	88	90	92	92	92	93	94	94	96	99	101	103	107	110	112	109	94	
1000	84	88	88	90	90	90	92	93	93	96	99	100	102	107	109	111	106	91	
1250	84	86	88	89	90	90	91	93	94	96	99	100	101	106	107	109	104	90	
1600	85	87	90	90	91	90	93	93	93	96	99	100	101	105	106	107	103	88	
2000	91	91	90	90	92	90	93	93	94	95	99	98	100	104	103	105	100	83	
2500	90	90	89	90	89	88	91	93	94	94	98	97	99	101	101	102	98	81	
3150	88	89	88	90	90	89	92	92	94	95	98	99	98	101	100	100	97	80	
4000	89	90	91	91	91	89	92	91	95	96	98	99	97	99	98	98	95	77	
5000	84	82	85	84	84	84	86	87	91	93	94	95	93	97	95	95	91	73	
6300	83	80	84	81	82	81	84	85	88	89	90	93	91	93	92	94	89	69	
8000	81	79	83	80	79	79	81	82	85	86	87	89	88	90	89	93	88	66	
10000	78	75	79	75	75	75	77	80	82	81	80	86	84	86	81	90	82	60	
OVERALL	104	104	105	104	104	103	105	106	107	108	111	113	116	121	126	130	129	118	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 6

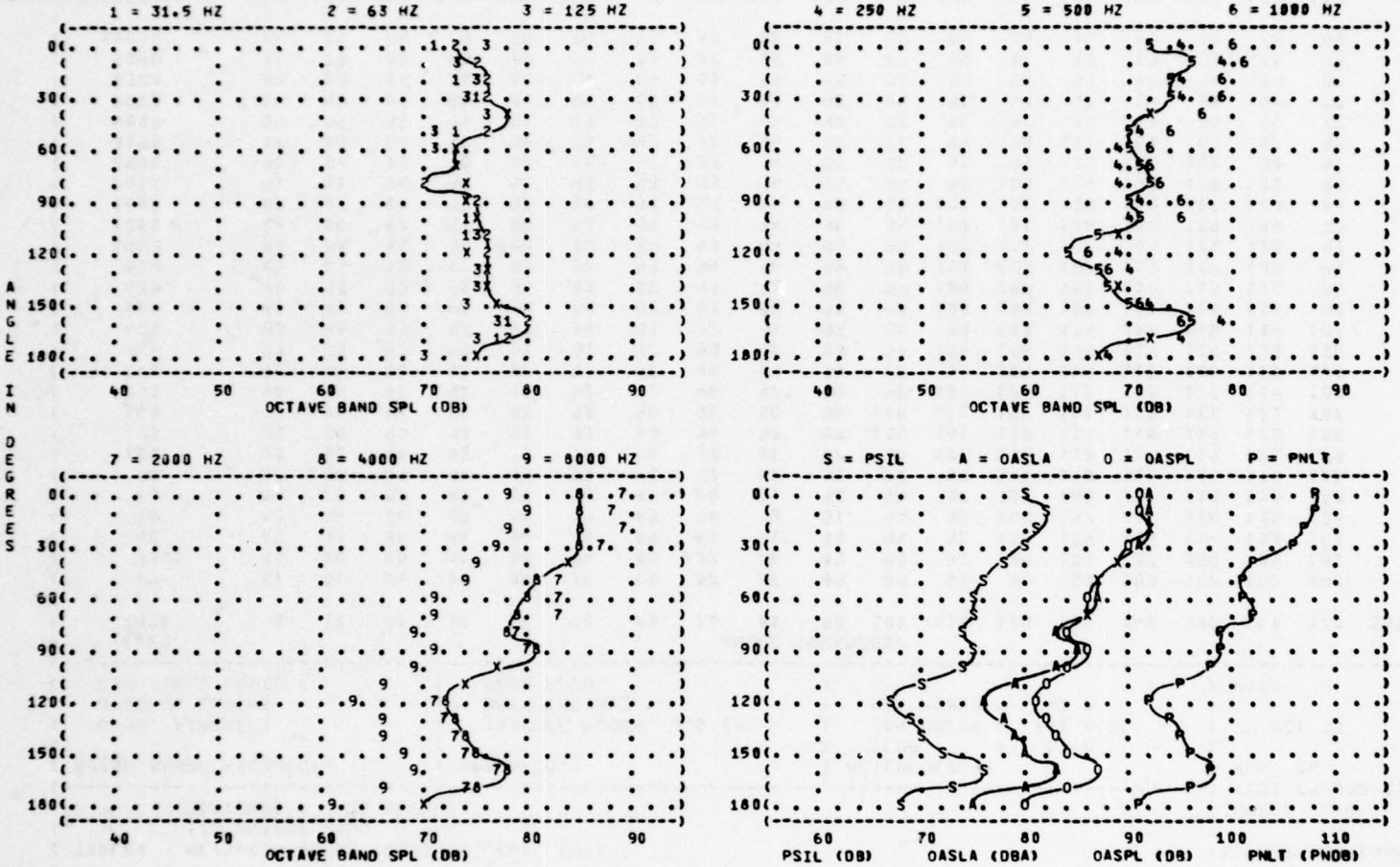


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 6

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

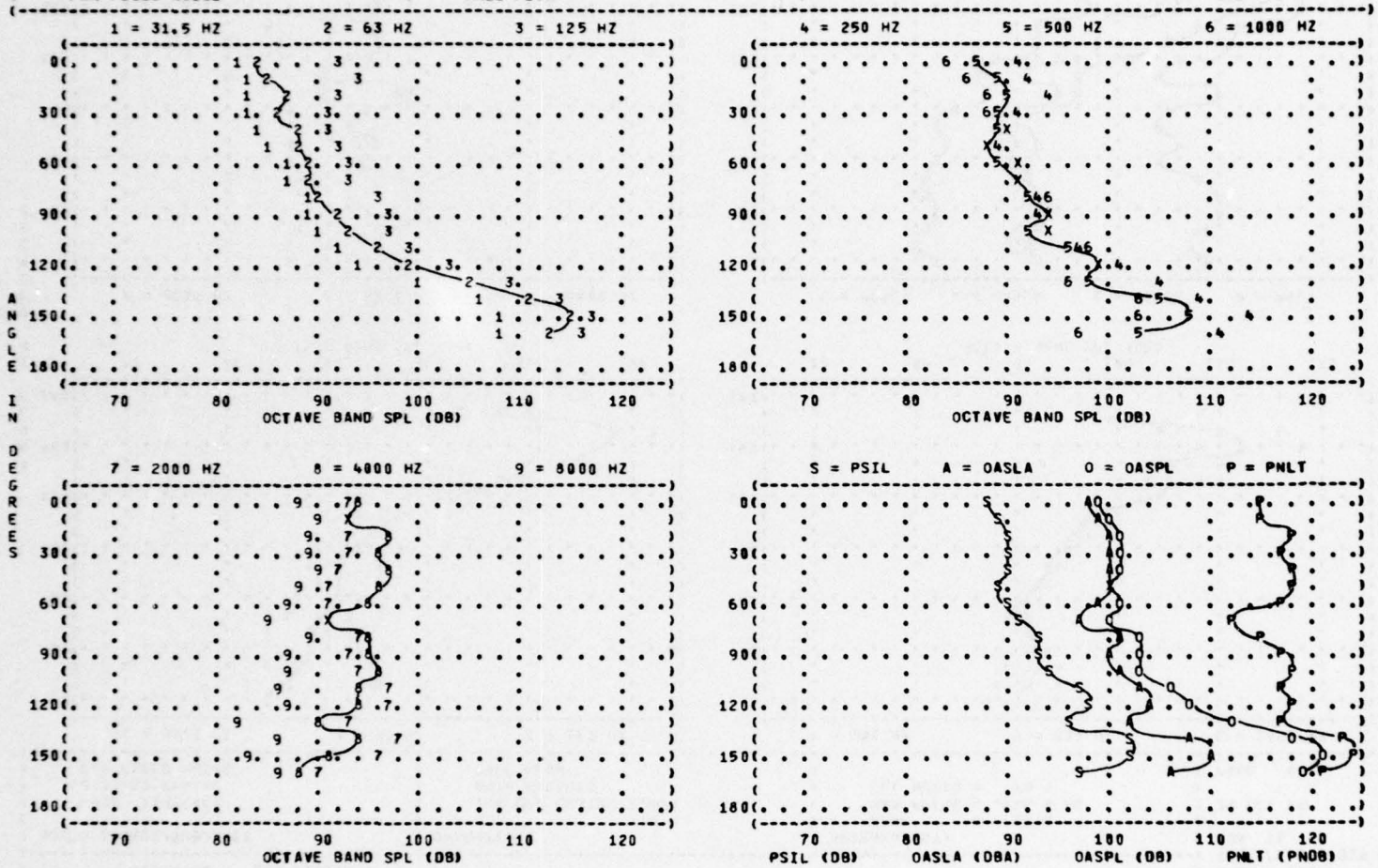


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:

1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:

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

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-015
RUN 03

29 OCT 75

PAGE 6

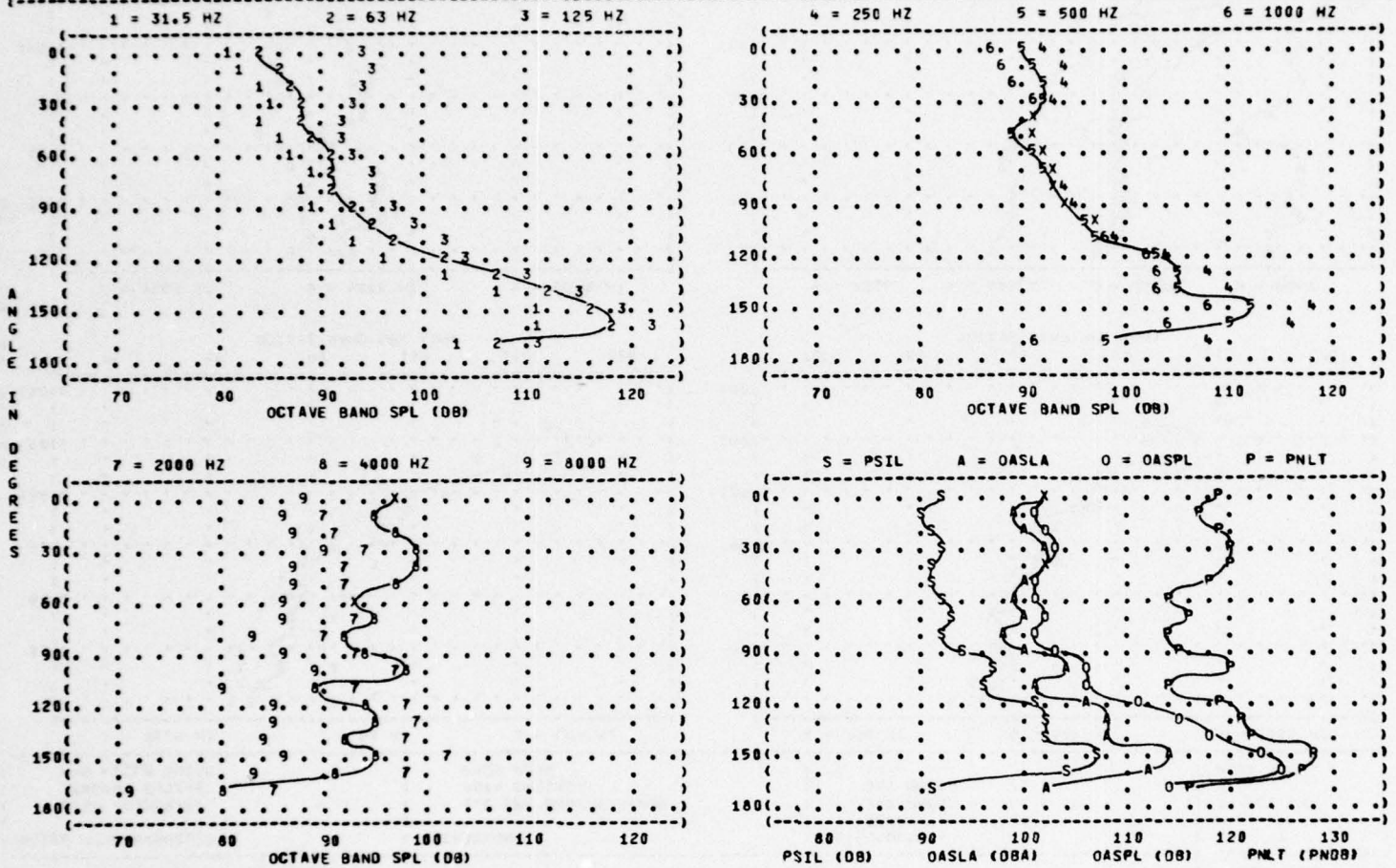


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 6

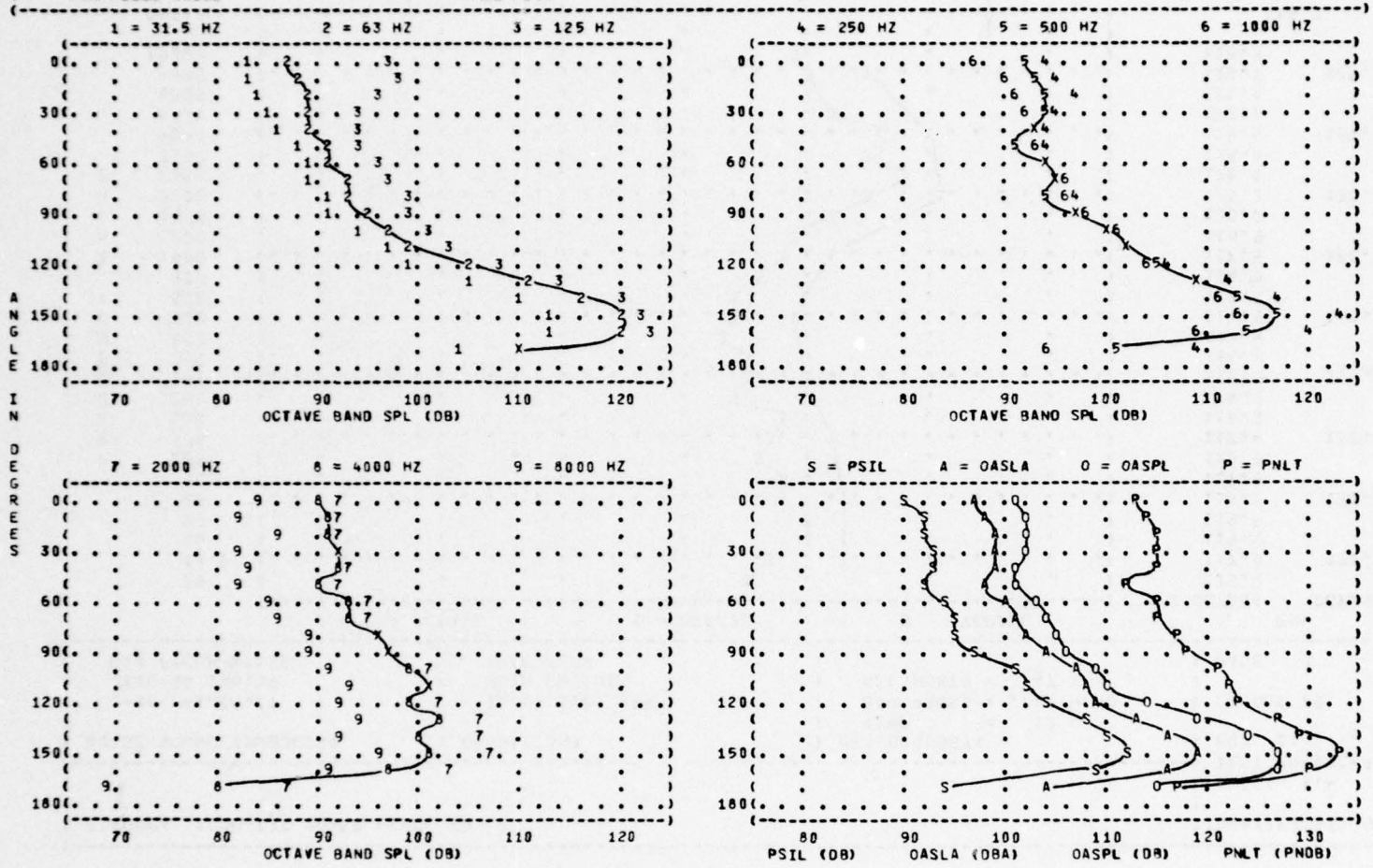


FIGURE: ACOUSTIC POWER LEVEL (PWL)

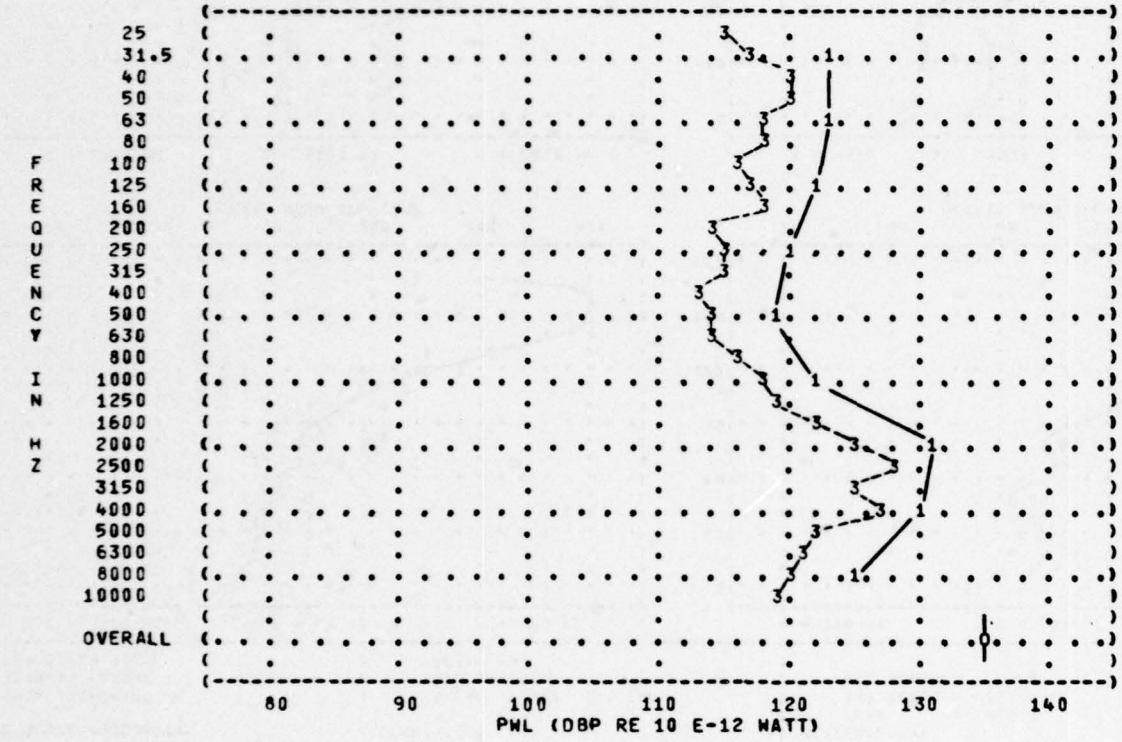
4

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	115.2	
31.5	117.0	122.6
40	119.9	
50	119.5	
63	118.1	123.4
80	117.9	
100	115.9	
125	117.4	122.1
160	118.3	
200	114.2	
250	115.3	119.6
315	114.9	
400	113.4	
500	114.1	118.8
630	114.5	
800	116.0	
1000	117.5	122.4
1250	118.9	
1600	122.2	
2000	125.2	130.6
2500	120.1	
3150	125.4	
4000	126.6	129.8
5000	122.1	
6300	121.4	
8000	120.5	125.1
10000	118.8	
OVERALL		135.2

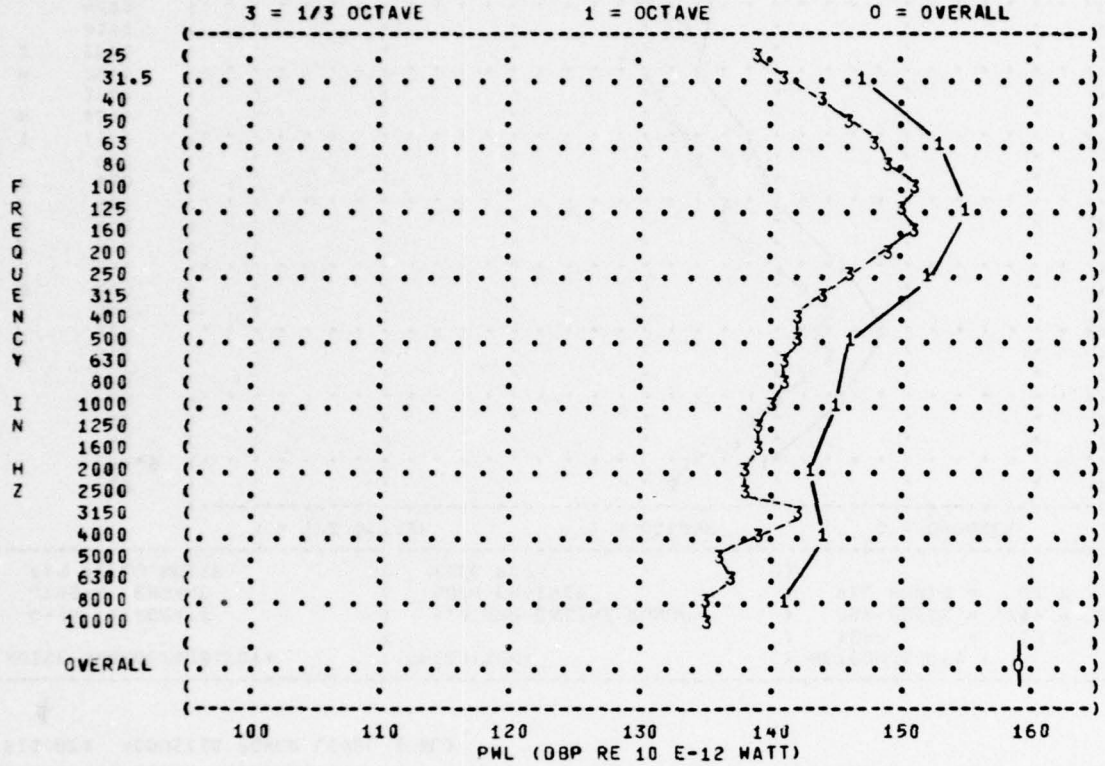
FIGURE: 4 ACOUSTIC POWER LEVEL (PWL)

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	139.1	
31.5	141.5	147.0
40	144.4	
50	146.0	
63	148.1	152.9
80	149.5	
100	151.4	
125	149.6	155.3
160	150.6	
200	148.7	
250	146.4	151.6
315	144.3	
400	142.3	
500	141.6	146.4
630	141.0	
800	140.7	
1000	139.8	144.6
1250	138.8	
1600	138.9	
2000	138.0	143.0
2500	137.6	
3150	141.9	
4000	138.8	144.4
5000	136.1	
6300	136.8	
8000	135.4	140.6
10000	135.1	
OVERALL		159.4

FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

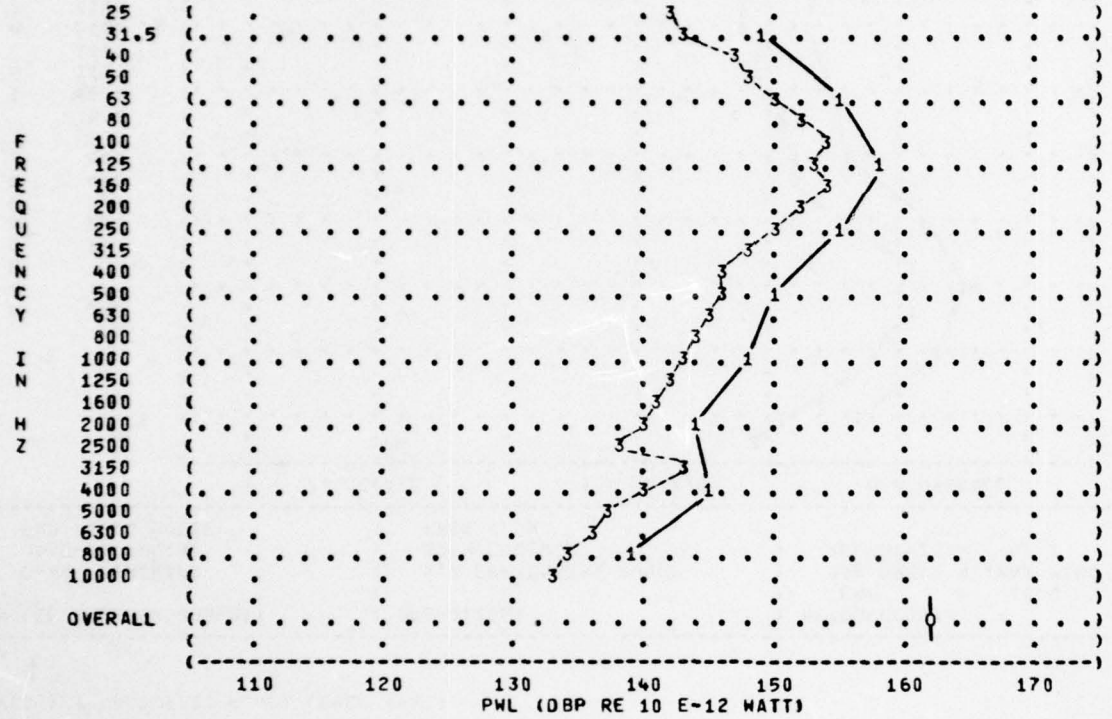
NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 3

3 = 1/3 OCTAVE 1 = OCTAVE 0 = OVERALL



1/3 OCTAVE	PWL OCTAVE
141.8	
143.5	149.3
146.8	
148.2	
150.3	155.1
151.9	
153.8	
152.9	158.3
153.7	
152.3	
149.6	155.1
148.0	
145.7	
145.6	150.2
145.0	
143.9	
142.8	147.7
141.7	
140.9	
139.5	144.5
138.3	
142.8	
139.9	145.2
136.6	
135.9	
134.5	139.4
133.2	
	162.1

FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

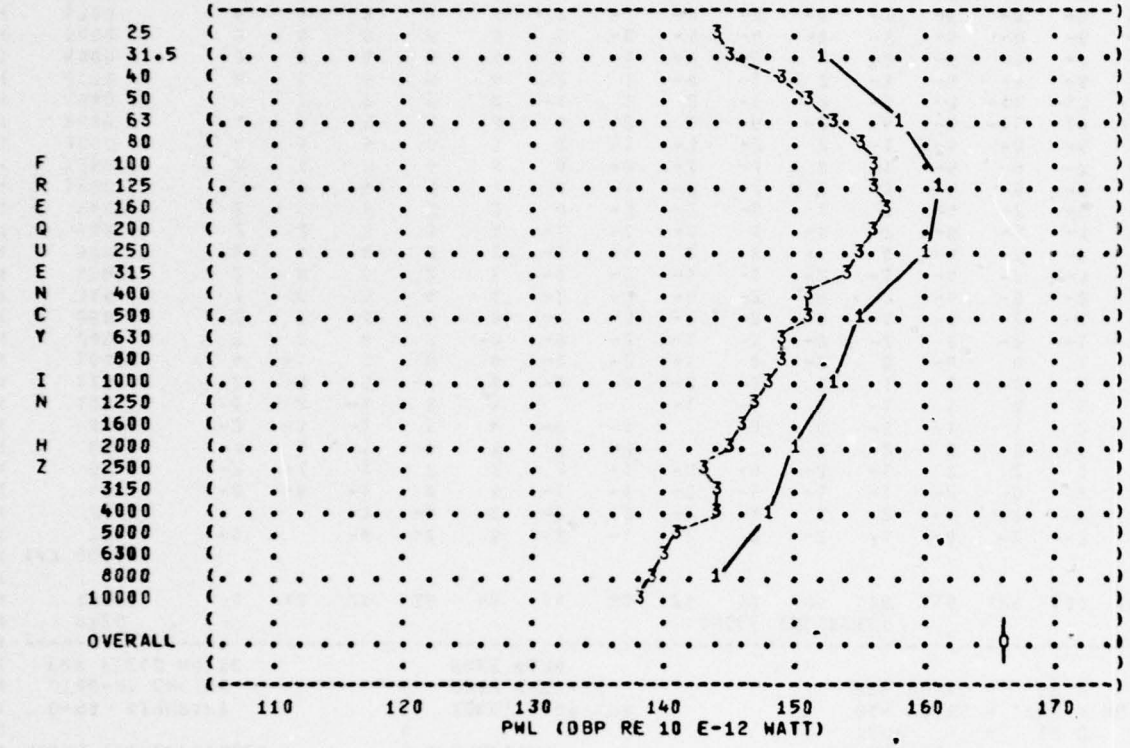
NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 3

3 = 1/3 OCTAVE 1 = OCTAVE 0 = OVERALL



	PWL 1/3 OCTAVE	PWL OCTAVE
25	143.9	
31.5	145.2	151.6
40	149.5	
50	151.4	
63	153.1	158.2
80	155.1	
100	156.1	
125	155.8	161.1
160	156.9	
200	155.6	
250	155.4	159.8
315	154.0	
400	151.3	
500	150.6	155.2
630	149.3	
800	148.9	
1000	148.0	152.8
1250	146.8	
1600	146.3	
2000	144.8	149.7
2500	143.3	
3150	143.6	
4000	144.0	147.8
5000	141.0	
6300	139.8	
8000	139.3	143.9
10000	138.2	
OVERALL	165.8	

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 4

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

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 4

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	-16	-15	-14	-14	-13	-13	-12	-8	-9	-9	-9	-7	-3	1	6	9	9		
31.5	-19	-17	-18	-17	-15	-15	-14	-12	-11	-10	-8	-7	-5	1	7	9	8		
40	-17	-17	-17	-17	-15	-14	-12	-14	-10	-12	-11	-8	-5	0	7	9	8		
50	-20	-20	-18	-18	-17	-16	-15	-14	-14	-12	-12	-8	-6	1	6	11	7		
63	-22	-20	-19	-19	-18	-18	-16	-17	-16	-13	-13	-11	-7	-0	6	10	8		
80	-22	-21	-19	-18	-18	-17	-16	-16	-16	-12	-12	-8	-5	1	7	10	8		
100	-20	-18	-19	-19	-19	-18	-16	-16	-15	-12	-11	-8	-5	1	6	10	9		
125	-16	-13	-14	-16	-16	-14	-13	-13	-10	-10	-10	-8	-5	3	7	9	9		
160	-12	-12	-14	-16	-15	-15	-14	-14	-11	-11	-11	-9	-5	0	7	9	8		
200	-12	-12	-12	-15	-15	-15	-14	-13	-12	-12	-11	-7	-4	1	4	11	7		
250	-16	-12	-9	-12	-14	-14	-13	-13	-11	-10	-9	-6	-3	1	6	11	6		
315	-12	-10	-8	-10	-12	-14	-12	-10	-9	-9	-8	-5	-1	2	6	10	6		
400	-10	-10	-8	-9	-11	-13	-12	-9	-8	-7	-8	-4	-1	-0	6	10	5		
500	-11	-9	-8	-9	-9	-11	-9	-8	-6	-5	-7	-3	1	-1	6	9	5		
630	-13	-9	-9	-9	-9	-9	-7	-7	-4	-3	-4	-1	1	-0	6	8	3		
800	-13	-9	-8	-9	-7	-8	-7	-6	-4	-3	-4	1	1	0	6	7	2		
1000	-14	-12	-9	-9	-8	-9	-6	-6	-3	-2	-1	1	2	-1	6	7	1		
1250	-10	-10	-9	-7	-6	-8	-4	-4	-1	-2	-0	2	4	-0	6	5	-0		
1600	-8	-8	-6	-6	-5	-6	-5	-4	-2	-2	0	3	3	-0	5	4	-3		
2000	-2	-2	-2	-0	-3	-4	-3	-3	-0	-2	-0	3	3	-1	4	1	-4		
2500	2	2	2	2	1	0	-1	-3	1	-1	0	2	1	-3	2		-5		
3150	-0	-0	3	3	3	3	2	-5	-0	0	1	-1	-1	-5	-2	-4	-8		
4000	-2	-2	1	1	1	-2	-2	-2	2	1	1	1	0	-3	1	-2	-6		
5000	-0	-2	-1	-0	-0	-2	-2	-3	1	1	2	1	1	-4	1	-2	-3		
6300	0	5	2	2	3	2	-1	-3	2	-1	-1	-1	-0	-5	-1	-4	-2		
8000	1	-0	1	1	1	-0	-1	-2	3	1	1	-0	-0	-4	-0	-4	-2		
10000	1	1	3	3	3	-0	1	-3	3	-2	-2	-3	-0	-5	-2	-7	2		
OCTAVE																			
31.5	-17	-16	-16	-16	-15	-14	-13	-12	-10	-11	-9	-7	-5	1	7	9	8		
63	-21	-20	-19	-19	-17	-17	-16	-16	-15	-13	-12	-9	-6	0	6	10	8		
125	-15	-14	-15	-17	-17	-16	-14	-14	-12	-11	-11	-8	-5	1	7	9	9		
250	-13	-11	-10	-13	-14	-14	-13	-12	-11	-11	-9	-6	-3	1	5	11	7		
500	-11	-9	-8	-9	-10	-11	-9	-8	-6	-5	-6	-2	0	-0	6	9	4		
1000	-12	-10	-9	-8	-7	-8	-6	-6	-3	-2	-2	1	2	-0	6	7	1		
2000	-2	-2	-1	-1	-2	-3	-3	-3	-1	-2	0	3	3	-1	4	2	-4		
4000	-1	-1	2	2	2	2	1	-4	1	1	1	-0	-1	-4	-1	-3	-7		
8000	1	3	2	2	3	1	-0	-3	2	-0	-0	-1	-0	-5	-1	-4	-1		
OVERALL	-12	-11	-10	-11	-11	-11	-11	-12	-9	-9	-8	-6	-3	1	6	9	8		

TABLE: 6 DIRECTIVITY INDEX (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 4

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

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	-19	-17	-16	-14	-17	-15	-11	-10	-11	-11	-8	-9	-3	0	7	9	9	5	
31.5	-21	-20	-19	-18	-18	-16	-15	-15	-12	-11	-10	-8	-5	1	5	10	9	2	
40	-22	-21	-18	-17	-17	-16	-16	-13	-15	-13	-12	-9	-7	0	5	10	10	0	
50	-22	-21	-20	-18	-18	-17	-16	-15	-16	-14	-13	-11	-7	-2	4	10	10	-3	
63	-24	-22	-21	-19	-20	-18	-17	-18	-16	-14	-12	-11	-7	-0	5	9	11	-0	
80	-23	-21	-20	-21	-19	-20	-17	-16	-17	-14	-12	-9	-4	1	6	8	11	1	
100	-22	-20	-20	-20	-20	-20	-19	-17	-16	-14	-12	-9	-6	-1	4	8	12	2	
125	-18	-15	-16	-17	-19	-18	-16	-15	-15	-13	-10	-8	-5	-0	5	8	12	-0	
160	-14	-13	-16	-17	-17	-17	-17	-14	-16	-14	-11	-9	-6	-1	4	9	11	-3	
200	-16	-14	-16	-16	-18	-17	-16	-16	-16	-13	-12	-9	-4	0	2	11	9	0	
250	-16	-13	-12	-15	-16	-16	-14	-14	-13	-11	-10	-8	-2	1	4	10	8	1	
315	-13	-11	-10	-11	-14	-14	-14	-13	-11	-11	-9	-8	-2	2	3	10	9	-1	
400	-10	-12	-10	-10	-13	-15	-12	-11	-12	-10	-8	-7	0	2	3	9	10	-2	
500	-12	-11	-11	-10	-11	-13	-12	-10	-9	-9	-6	-5	0	2	3	10	8	-5	
630	-14	-11	-11	-10	-10	-12	-10	-8	-8	-7	-4	-3	1	3	4	9	6	-6	
800	-13	-11	-10	-10	-9	-10	-8	-7	-7	-6	-3	-2	2	3	3	9	5	-7	
1000	-13	-14	-11	-9	-9	-9	-7	-6	-7	-5	-2	-2	3	4	3	8	5	-8	
1250	-10	-10	-11	-7	-8	-8	-6	-6	-6	-4	-1	-1	2	4	3	8	3	-10	
1600	-8	-9	-8	-5	-5	-5	-4	-5	-7	-4	1	-2	3	3	3	7	3	-10	
2000	5	-5	-3	-2	-5	-4	-3	-3	-5	-3	1	-3	3	4	2	6	2	-12	
2500	1	-2	-2	1	-0	-1	0	-0	-5	-2	1	-4	2	2	1	3	0	-13	
3150	2	0	3	5	5	2	-3	-1	-4	-3	2	-7	-2	-1	-4	-1	-5	-15	
4000	1	-2	-1	1	1	-0	-0	0	-3	-0	4	-6	-1	1	-2	1	-3	-14	
5000	1	-2	-3	0	-3	-2	-3	-1	-4	2	5	-5	-0	1	-1	1	-3	-15	
6300	3	-0	1	4	1	1	-0	0	-3	-0	3	-6	-1	-1	-2	0	-3	-14	
8000	2	0	1	4	1	0	-1	0	-3	1	4	-7	-2	-1	-1	-1	-4	-16	
10000	3	2	2	5	2	2	0	2	-4	-1	2	-8	-2	-3	-3	-2	-5	-17	
OCTAVE																			
31.5	-21	-20	-18	-17	-17	-16	-14	-13	-13	-12	-11	-9	-5	0	5	10	10	2	
63	-23	-22	-20	-20	-19	-19	-17	-17	-17	-14	-13	-10	-6	-0	5	9	11	-0	
125	-17	-15	-17	-18	-19	-18	-17	-15	-15	-14	-11	-9	-6	-1	4	8	12	0	
250	-15	-13	-13	-14	-16	-16	-15	-15	-14	-12	-10	-8	-3	1	3	10	9	1	
500	-12	-11	-11	-10	-11	-13	-11	-10	-9	-8	-6	-5	1	2	3	9	8	-4	
1000	-12	-12	-10	-9	-8	-9	-7	-6	-7	-5	-2	-2	2	4	3	8	5	-8	
2000	1	-5	-4	-2	-3	-3	-2	-3	-6	-3	1	-2	3	3	2	6	2	-11	
4000	2	-1	2	4	4	1	-2	-1	-4	-1	3	-6	-2	-0	-3	0	-4	-15	
8000	2	0	1	4	1	1	-0	0	-3	-0	3	-6	-1	-1	-2	-0	-4	-15	
OVERALL	-12	-13	-12	-12	-12	-13	-13	-12	-13	-11	-8	-8	-4	0	4	9	10	-0	

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-015
RUN 04

29 OCT 75

PAGE 4

NOISE SOURCE/SUBJECT:

C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:

TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

METEOROLOGY:

TEMP = 13 C
BAR PRESS = .742 M HG
REL HUMID = 47 %

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	-18	-18	-17	-16	-15	-15	-13	-12	-11	-10	-10	-6	-3	1	7	9	9	5	
31.5	-20	-20	-20	-17	-17	-16	-14	-13	-14	-11	-10	-8	-5	1	7	9	9	1	
40	-22	-22	-21	-20	-20	-16	-16	-16	-14	-14	-11	-8	-5	1	6	10	9	-2	
50	-24	-22	-20	-21	-21	-17	-17	-16	-16	-15	-12	-11	-6	1	6	10	9	-3	
63	-24	-22	-21	-23	-22	-19	-21	-18	-17	-15	-14	-11	-7	1	5	10	10	-0	
80	-23	-22	-21	-20	-21	-20	-19	-18	-18	-15	-13	-11	-5	0	6	9	9	1	
100	-21	-19	-21	-21	-21	-20	-20	-18	-16	-14	-13	-10	-5	1	6	8	10	-2	
125	-16	-16	-16	-18	-19	-18	-18	-16	-14	-13	-11	-9	-6	1	7	9	9	-4	
160	-14	-14	-16	-19	-19	-19	-16	-16	-14	-15	-12	-10	-6	-0	7	9	10	-4	
200	-20	-17	-17	-18	-18	-19	-18	-16	-13	-14	-12	-10	-6	1	5	11	8	-2	
250	-19	-17	-14	-17	-19	-19	-18	-18	-17	-16	-12	-11	-6	-0	5	11	8	-2	
315	-16	-16	-14	-16	-17	-18	-17	-16	-17	-14	-11	-9	-4	-0	4	10	9	-3	
400	-13	-15	-13	-13	-16	-18	-15	-14	-15	-13	-10	-8	-3	-0	6	10	8	-5	
500	-17	-14	-14	-14	-15	-17	-14	-12	-13	-10	-7	-6	-2	2	6	10	7	-7	
630	-16	-13	-12	-13	-12	-14	-12	-11	-12	-8	-5	-4	-1	3	6	9	6	-9	
800	-18	-15	-14	-12	-12	-12	-11	-9	-10	-8	-4	-2	-0	3	7	8	5	-10	
1000	-18	-14	-14	-12	-12	-13	-11	-10	-9	-6	-3	-2	-1	5	6	8	4	-11	
1250	-17	-15	-13	-12	-11	-11	-10	-8	-7	-5	-2	-1	0	5	6	8	3	-11	
1600	-15	-13	-10	-10	-9	-11	-7	-7	-7	-5	-1	-0	1	5	5	7	2	-13	
2000	-7	-7	-8	-9	-7	-8	-6	-5	-5	-4	1	-0	1	5	4	6	1	-15	
2500	-7	-7	-8	-7	-8	-9	-5	-4	-3	-2	1	0	2	4	4	5	1	-15	
3150	-8	-7	-8	-6	-7	-8	-5	-4	-3	-2	2	2	2	4	3	3	0	-16	
4000	-7	-6	-5	-4	-4	-7	-4	-4	-1	-0	2	3	1	4	2	2	-1	-19	
5000	-9	-10	-7	-8	-9	-9	-7	-5	-2	1	1	3	1	4	2	3	-2	-19	
6300	-7	-10	-6	-9	-7	-9	-6	-4	-2	-1	1	3	2	4	2	4	-0	-21	
8000	-6	-8	-4	-7	-8	-7	-6	-4	-2	-1	0	2	1	4	2	6	1	-21	
10000	-5	-8	-3	-8	-7	-8	-6	-3	-1	-2	-3	4	1	3	-1	7	-1	-23	
OCTAVE																			
31.5	-21	-20	-20	-18	-18	-16	-15	-14	-13	-12	-10	-7	-4	1	6	9	9	1	
63	-23	-22	-21	-21	-21	-19	-19	-18	-17	-15	-13	-11	-6	1	6	10	9	-0	
125	-16	-16	-17	-19	-20	-19	-17	-17	-15	-14	-12	-10	-6	0	7	9	10	-3	
250	-18	-17	-15	-17	-18	-18	-18	-17	-15	-15	-12	-10	-5	0	5	11	8	-2	
500	-15	-14	-13	-13	-14	-16	-14	-12	-14	-10	-7	-6	-2	1	6	10	7	-6	
1000	-18	-15	-13	-12	-12	-12	-10	-9	-9	-6	-3	-2	-0	4	6	8	4	-11	
2000	-9	-9	-9	-9	-8	-9	-6	-6	-5	-4	0	-0	1	5	5	6	2	-14	
4000	-8	-7	-6	-6	-6	-8	-5	-5	-2	-1	2	3	1	4	3	3	-0	-17	
8000	-6	-9	-5	-8	-7	-8	-6	-4	-2	-1	0	3	2	4	2	5	0	-21	
OVERALL	-17	-16	-15	-16	-17	-17	-15	-14	-13	-12	-9	-8	-4	1	6	10	9	-3	

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

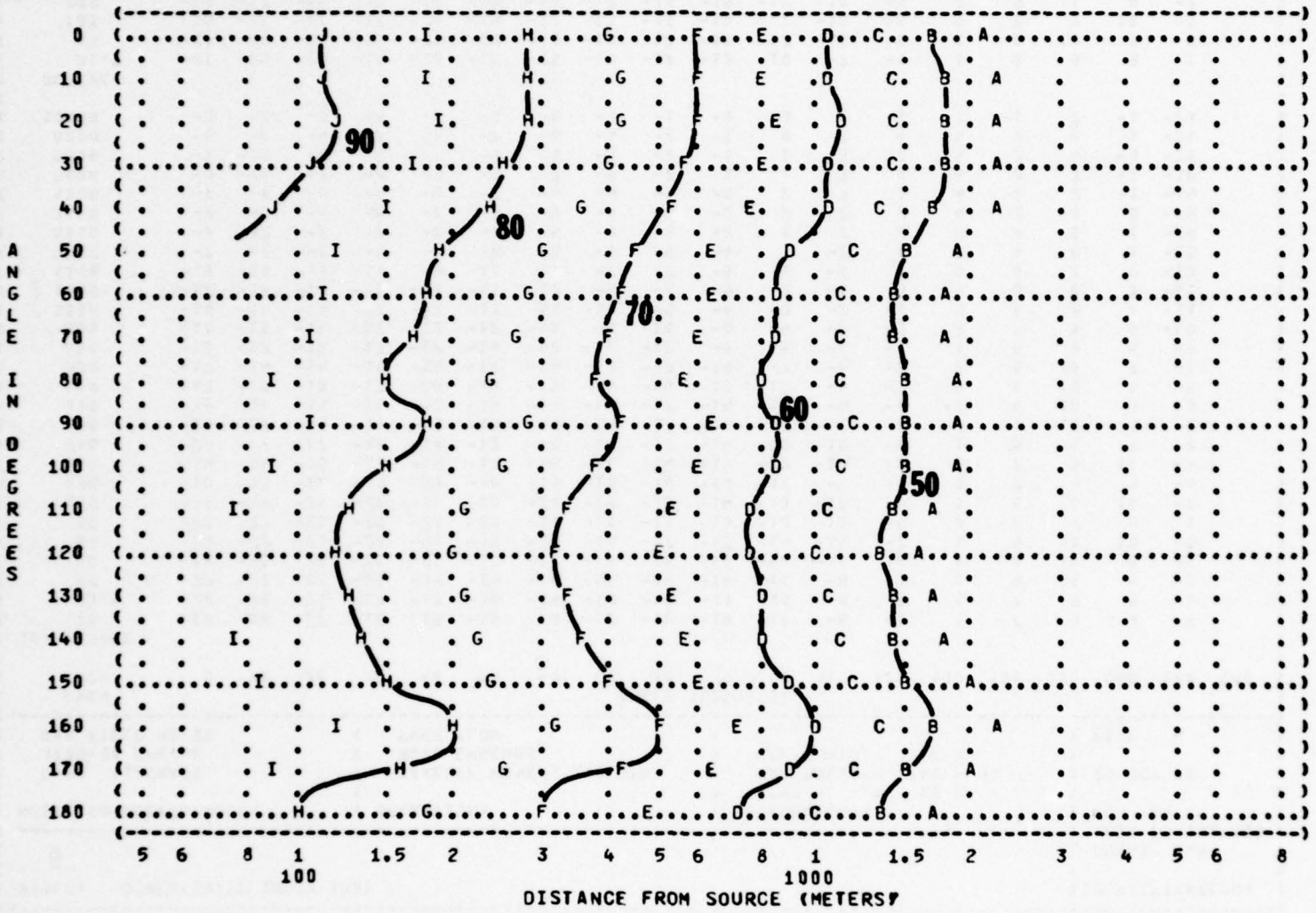


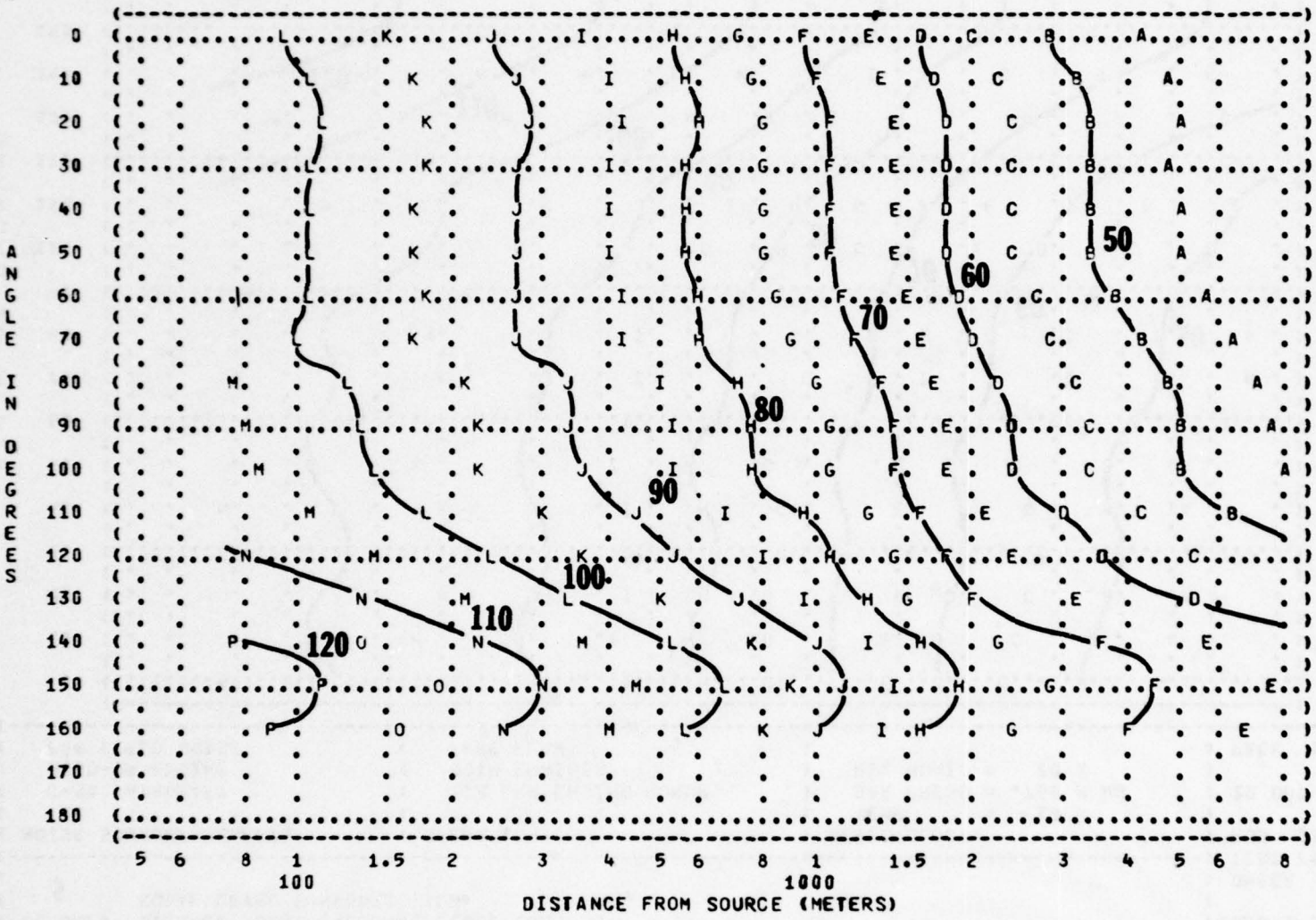
FIGURE 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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
P	120

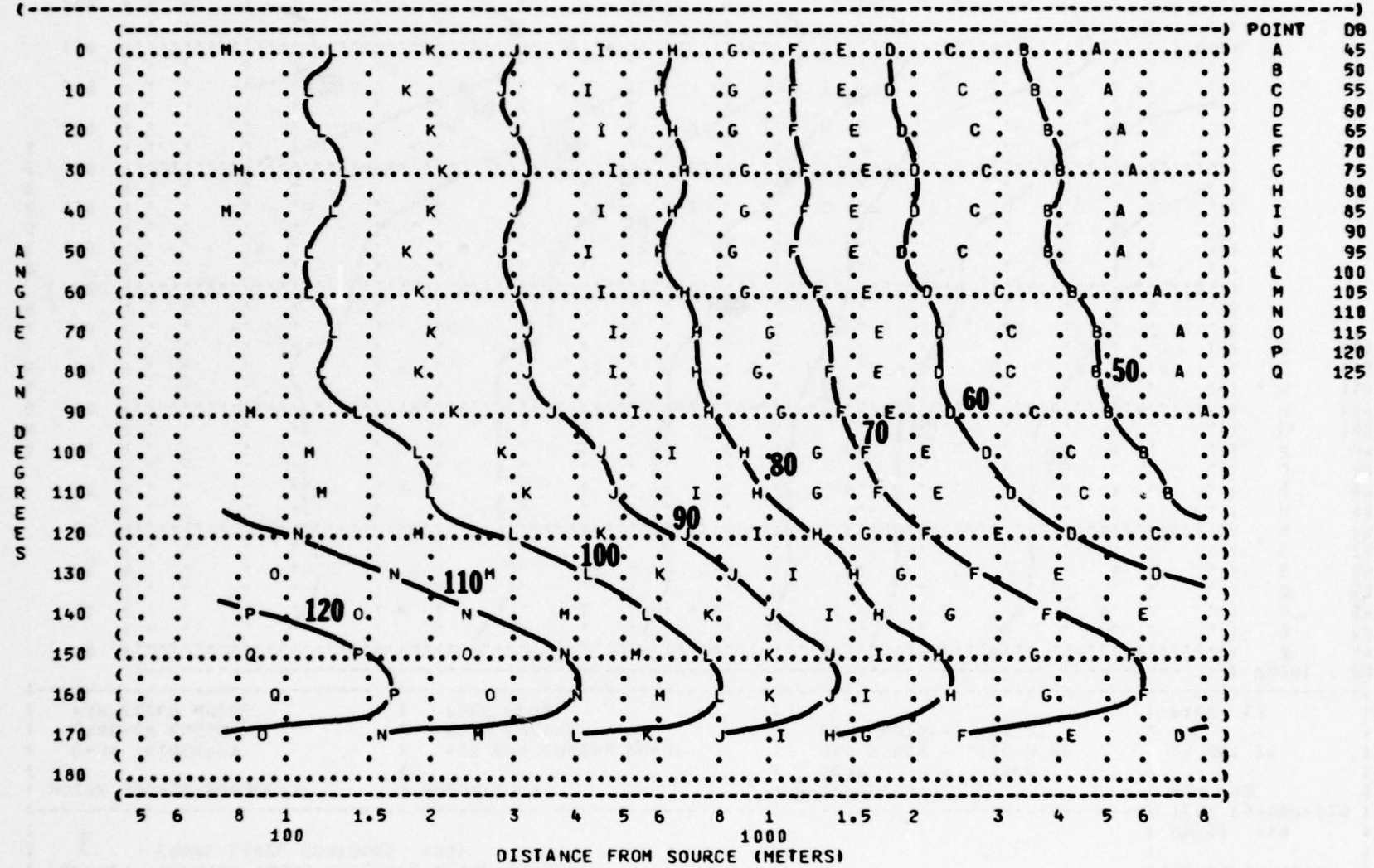
FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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
P	120
Q	125

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 13

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

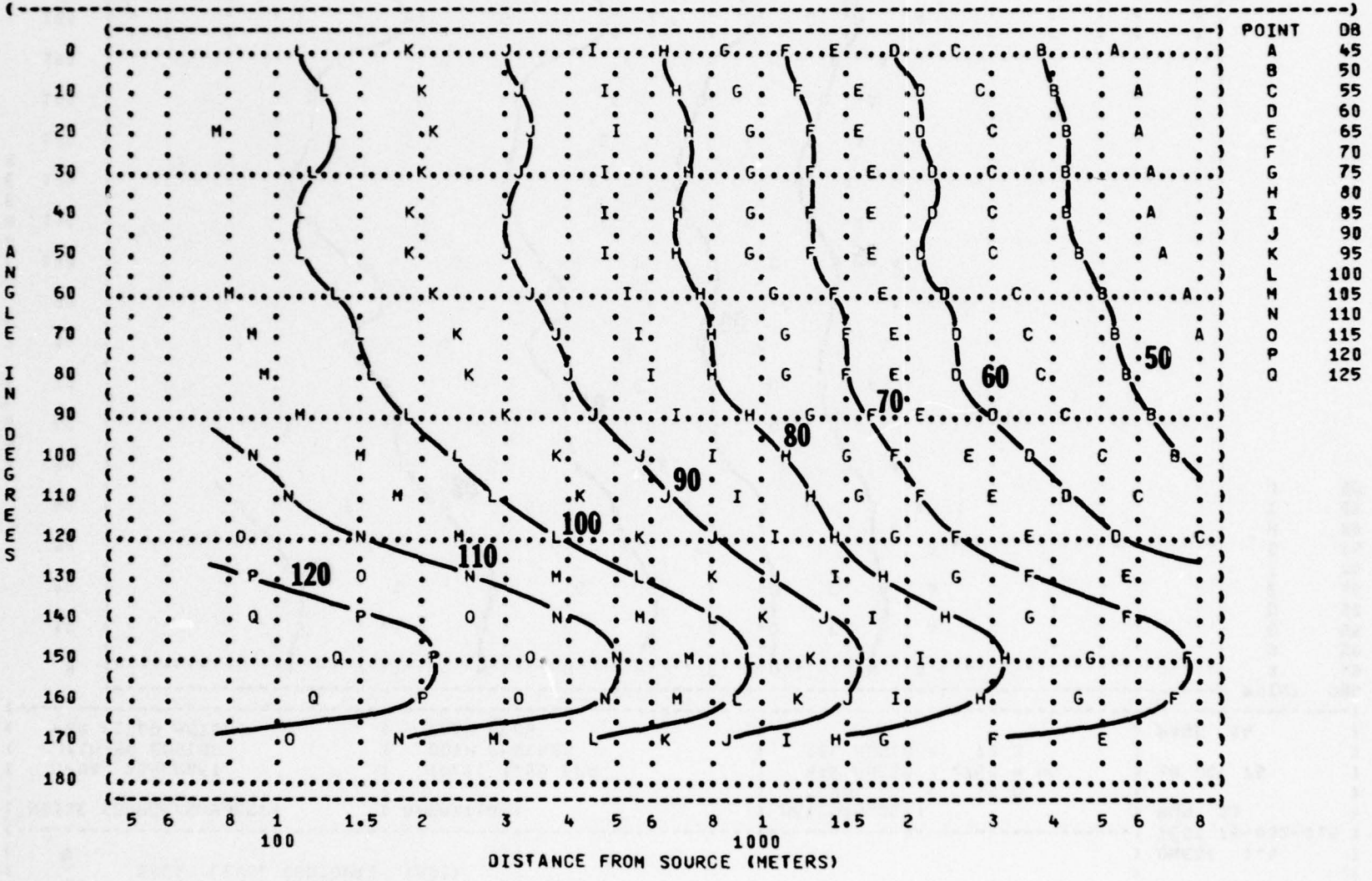


FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
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

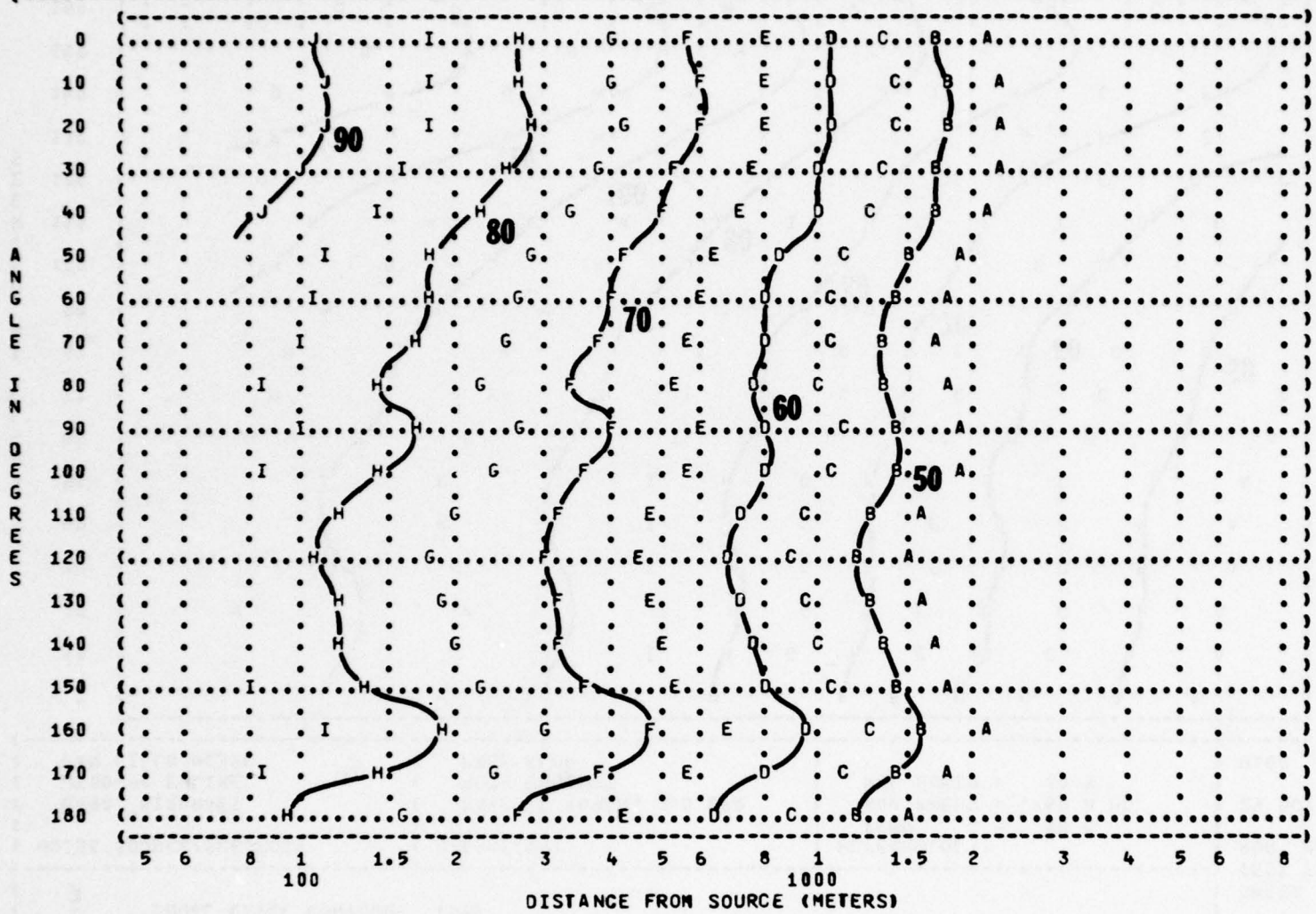


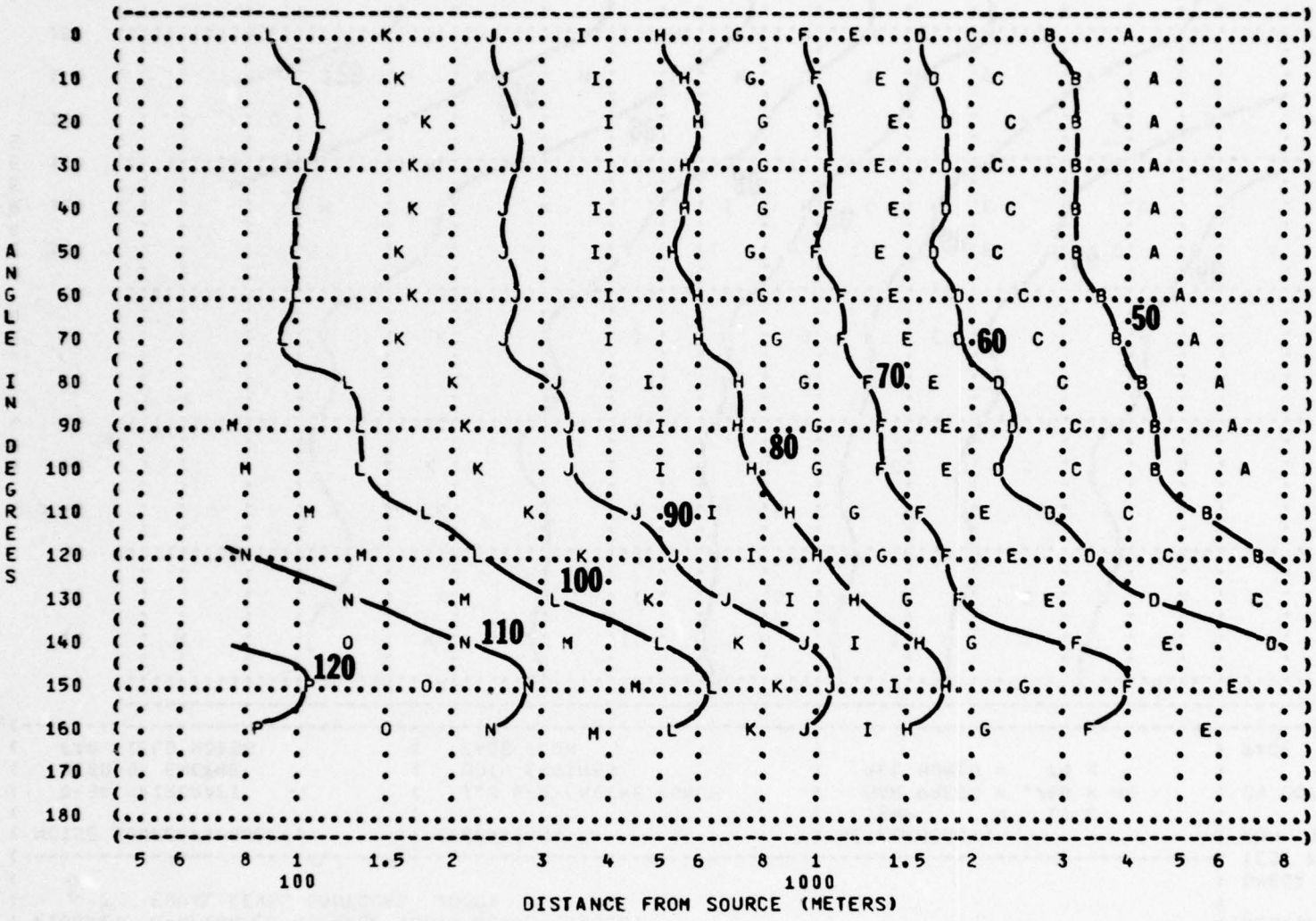
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 14

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

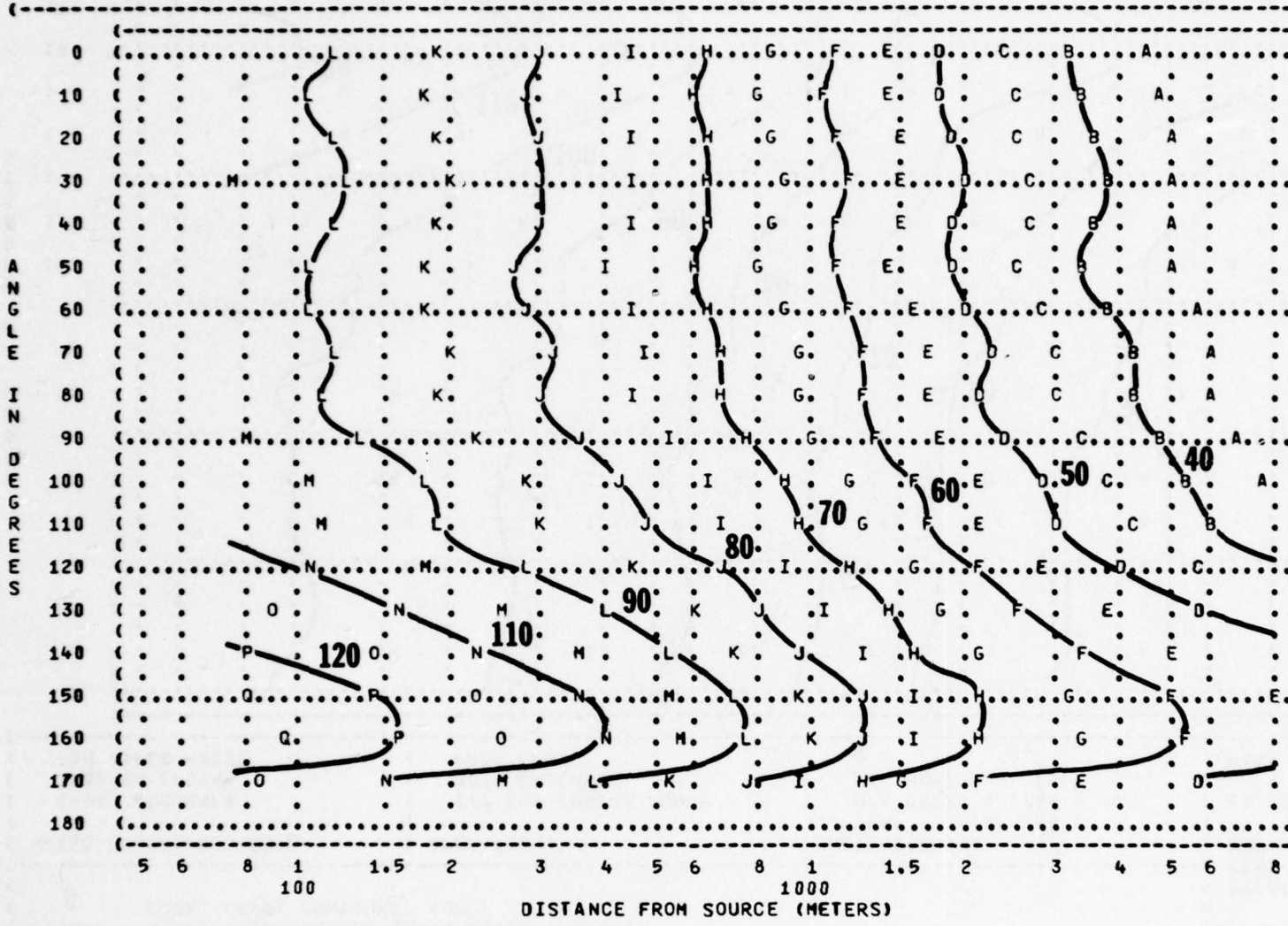


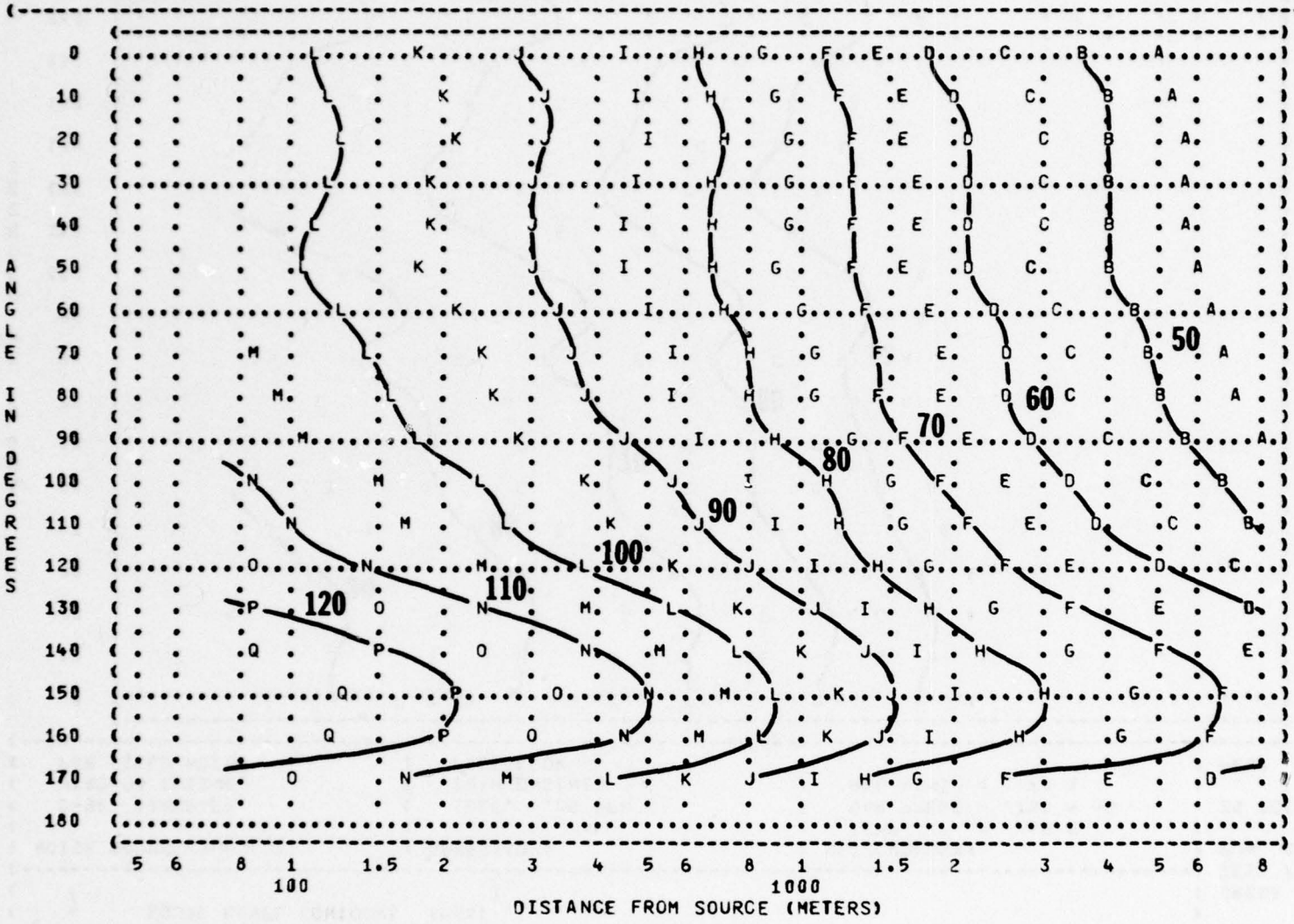
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 14

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

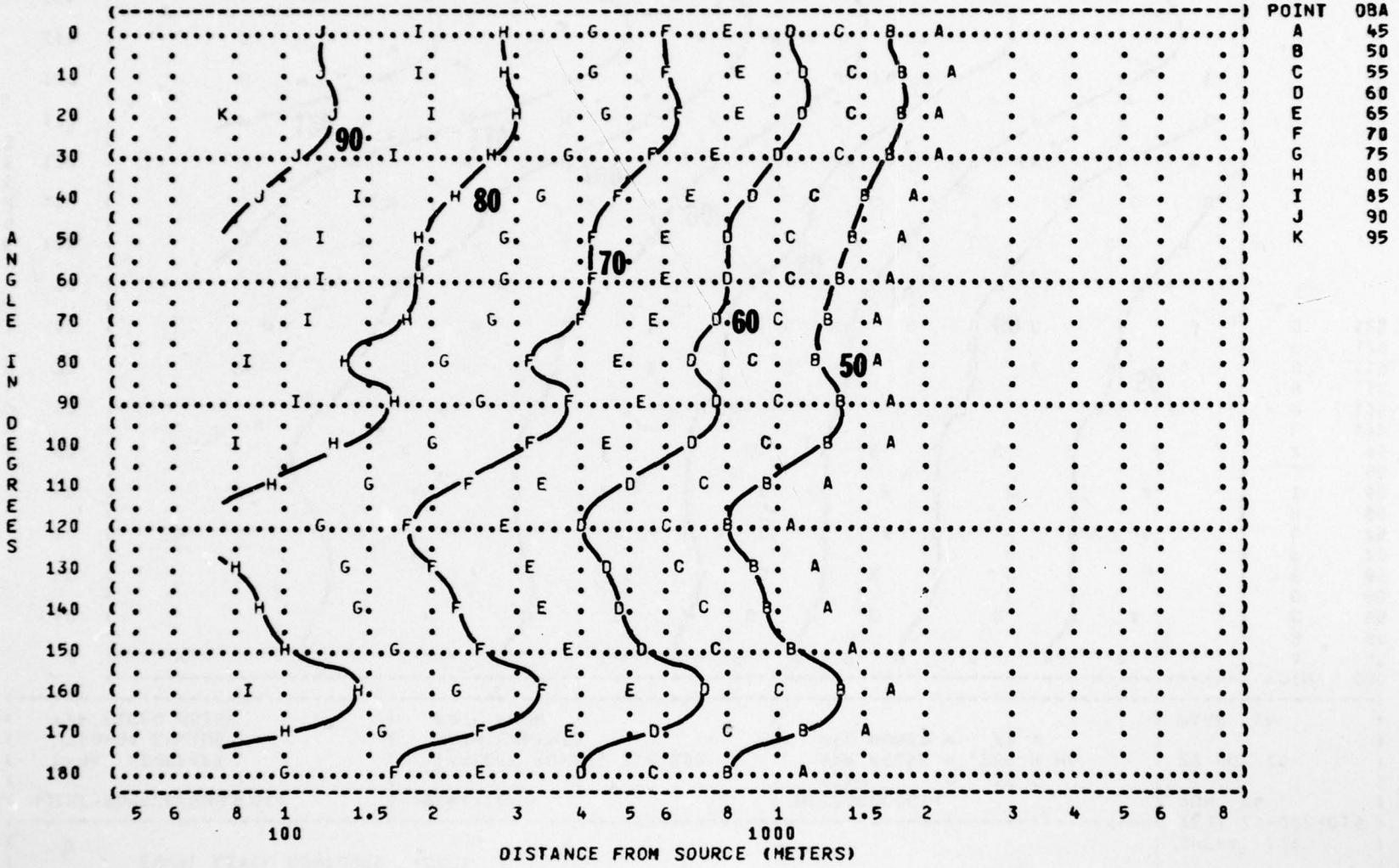


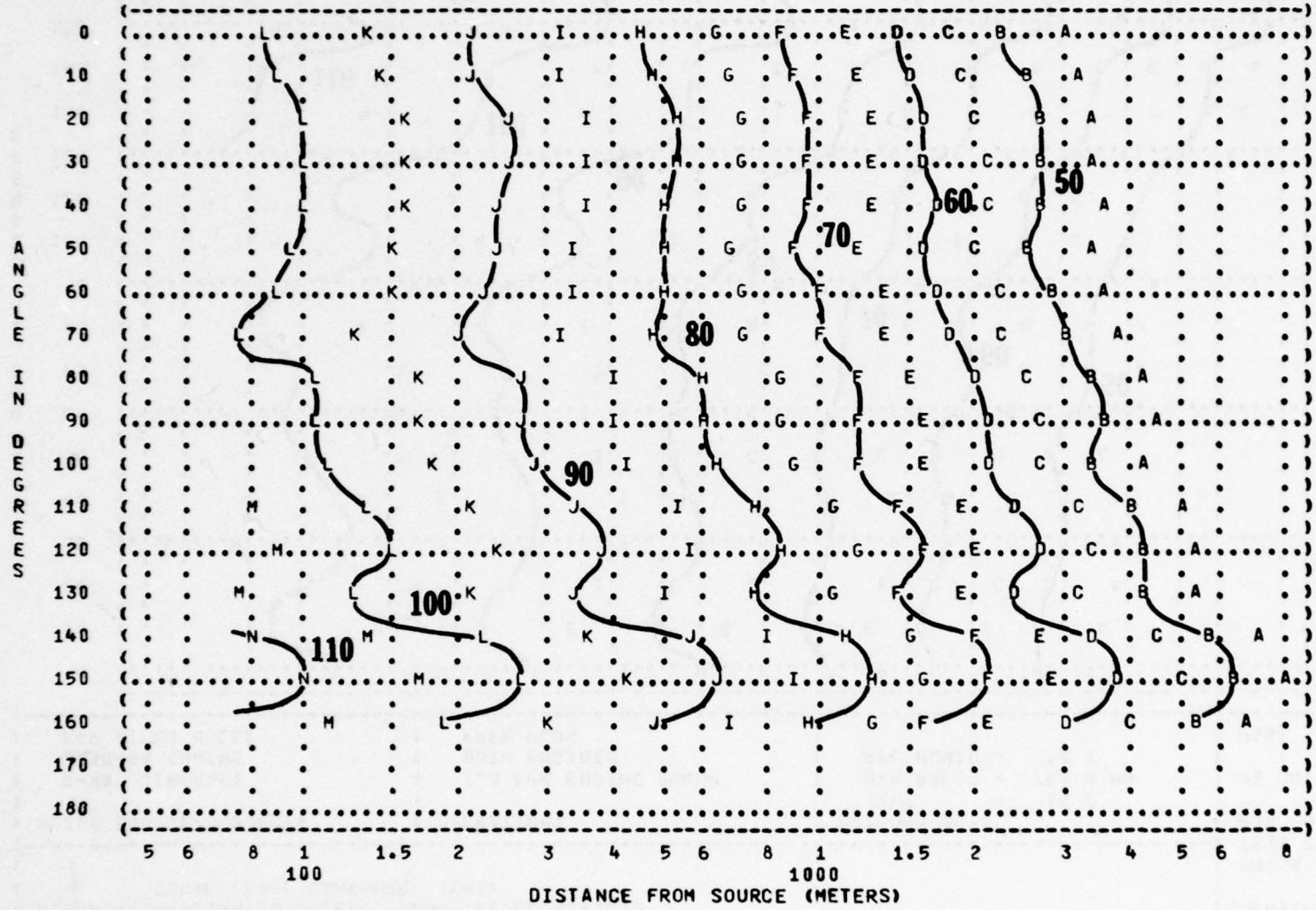
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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

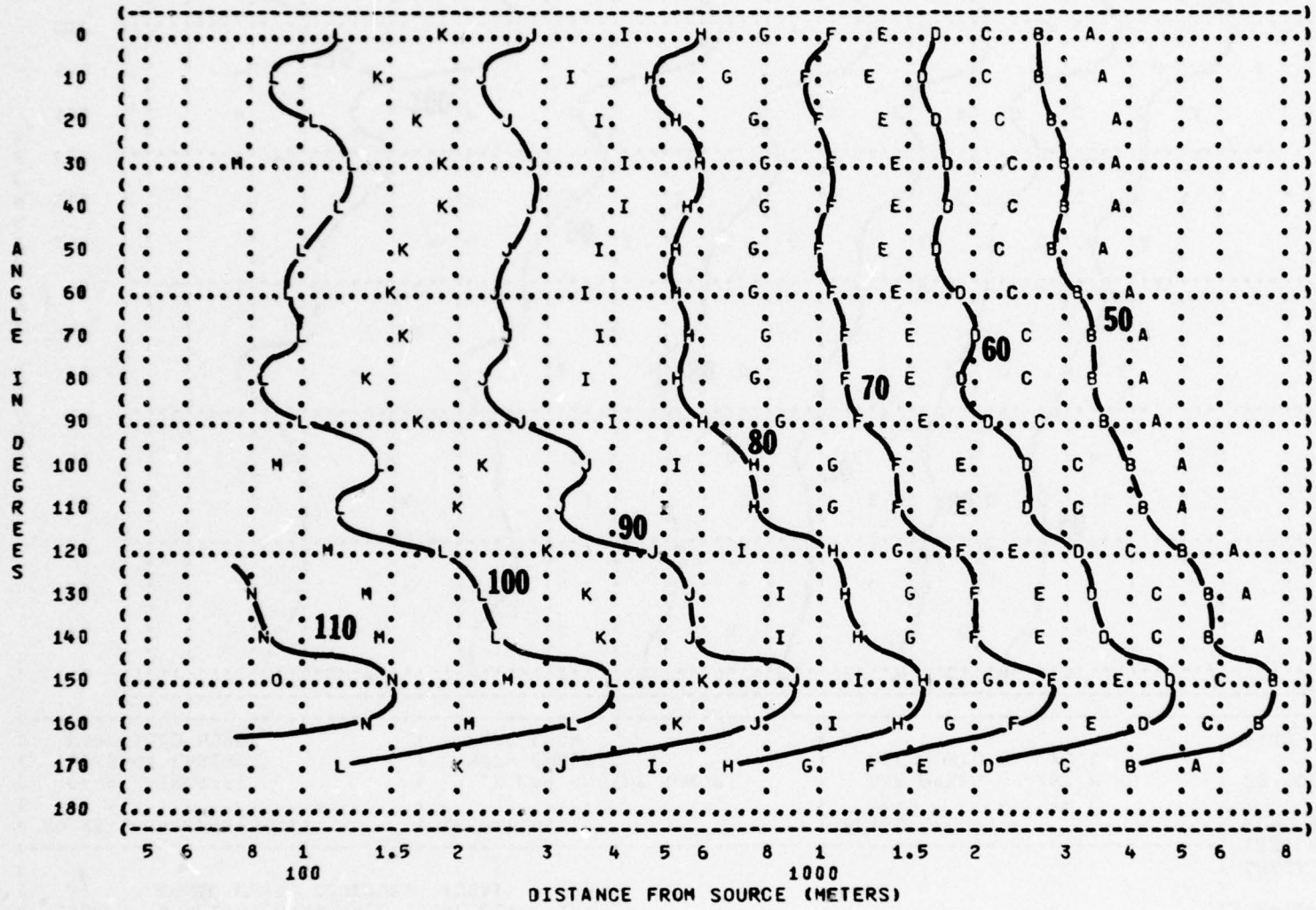
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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



POINT	OBA
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 75-002-015
RUN 04
29 OCT 75
PAGE 15

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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
P	120

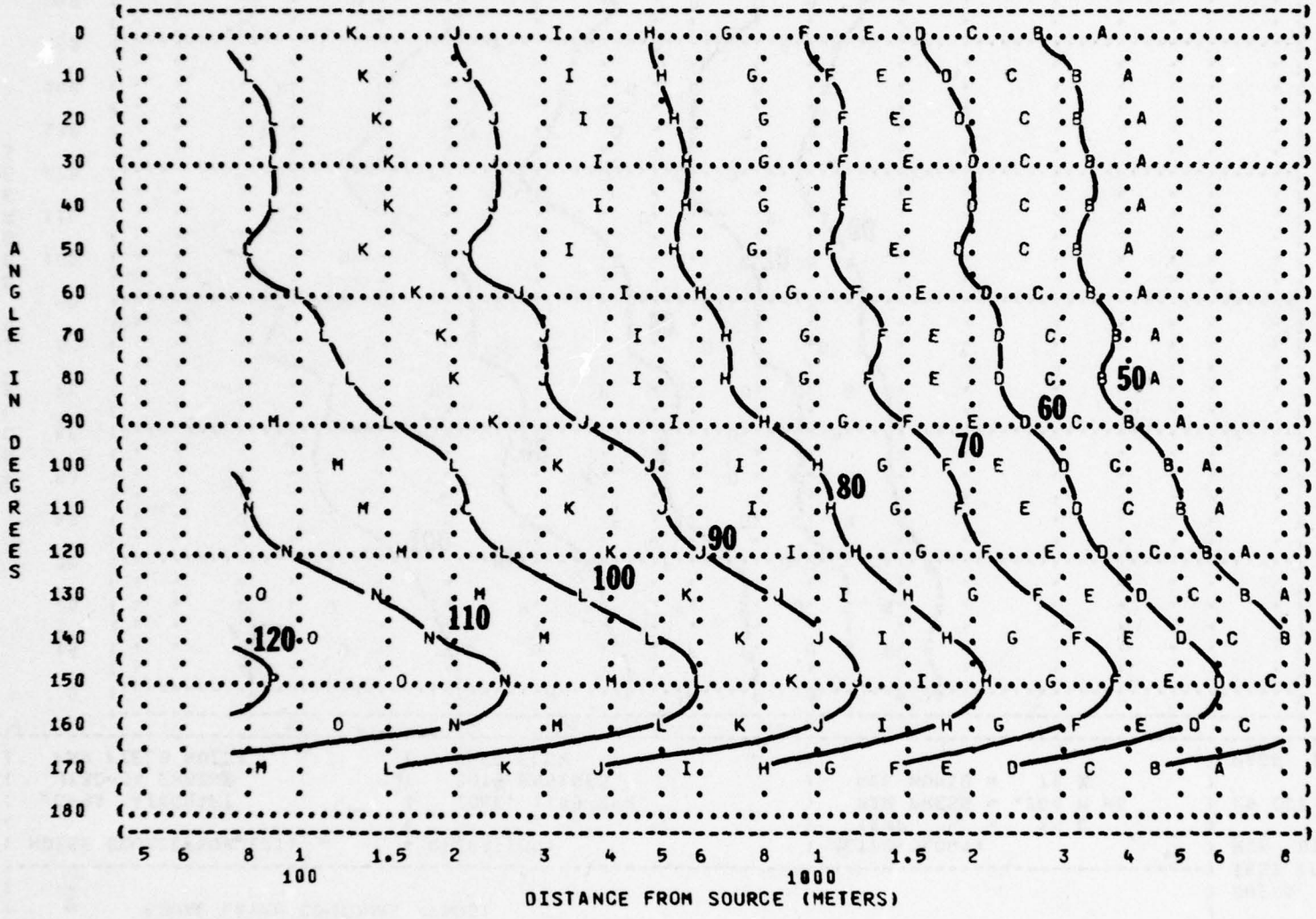


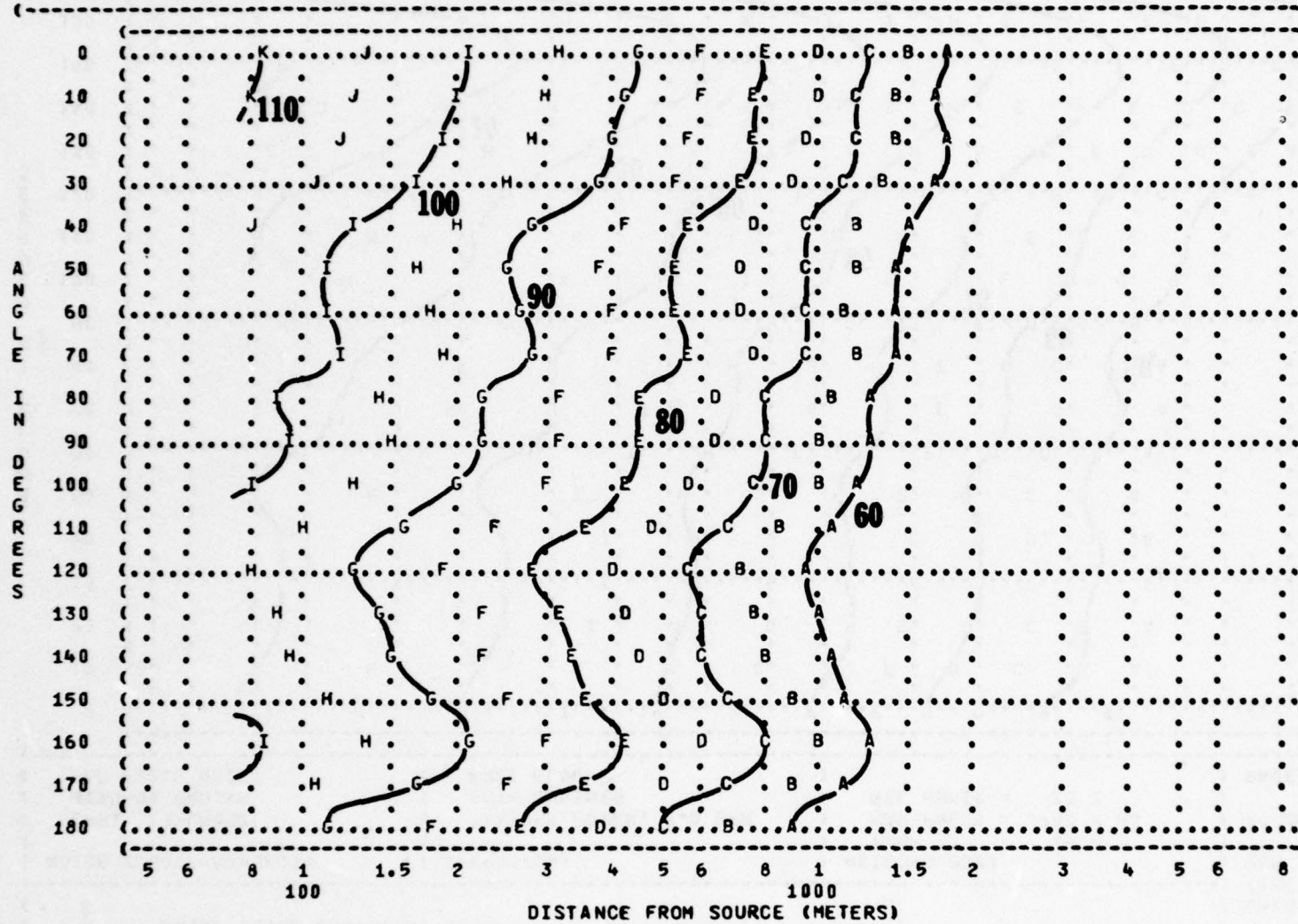
FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 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

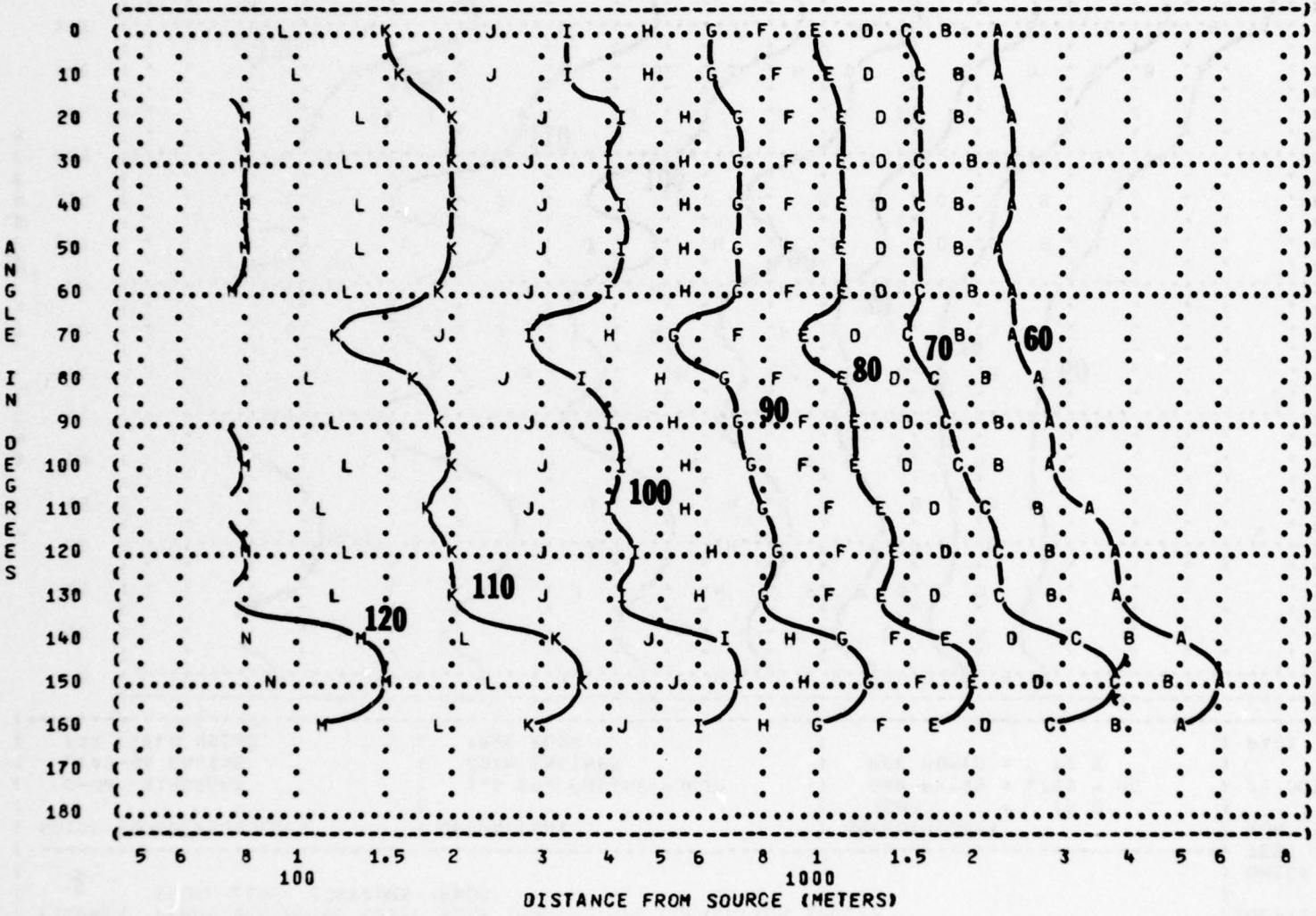
FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
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

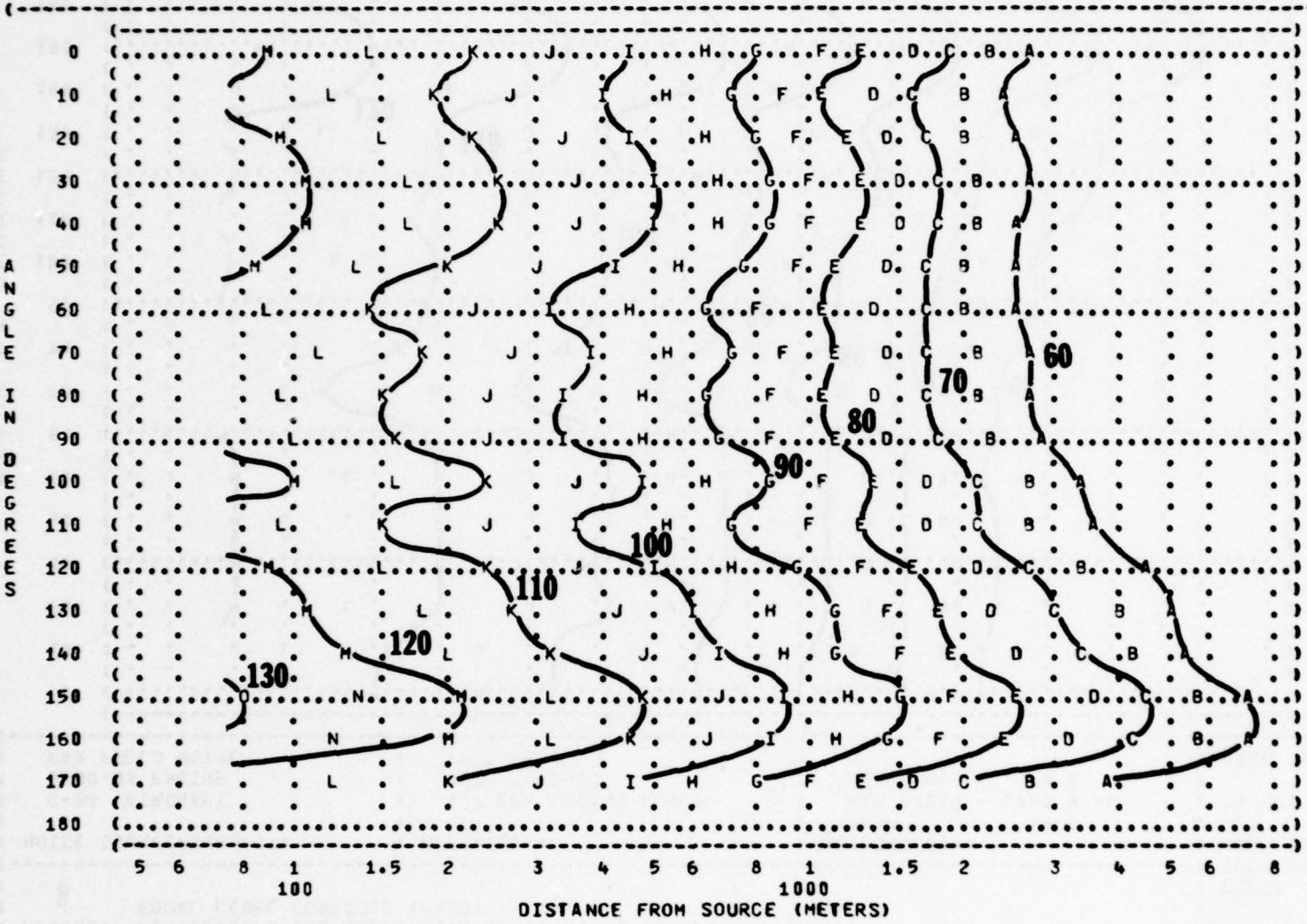
FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
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

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 16

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
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

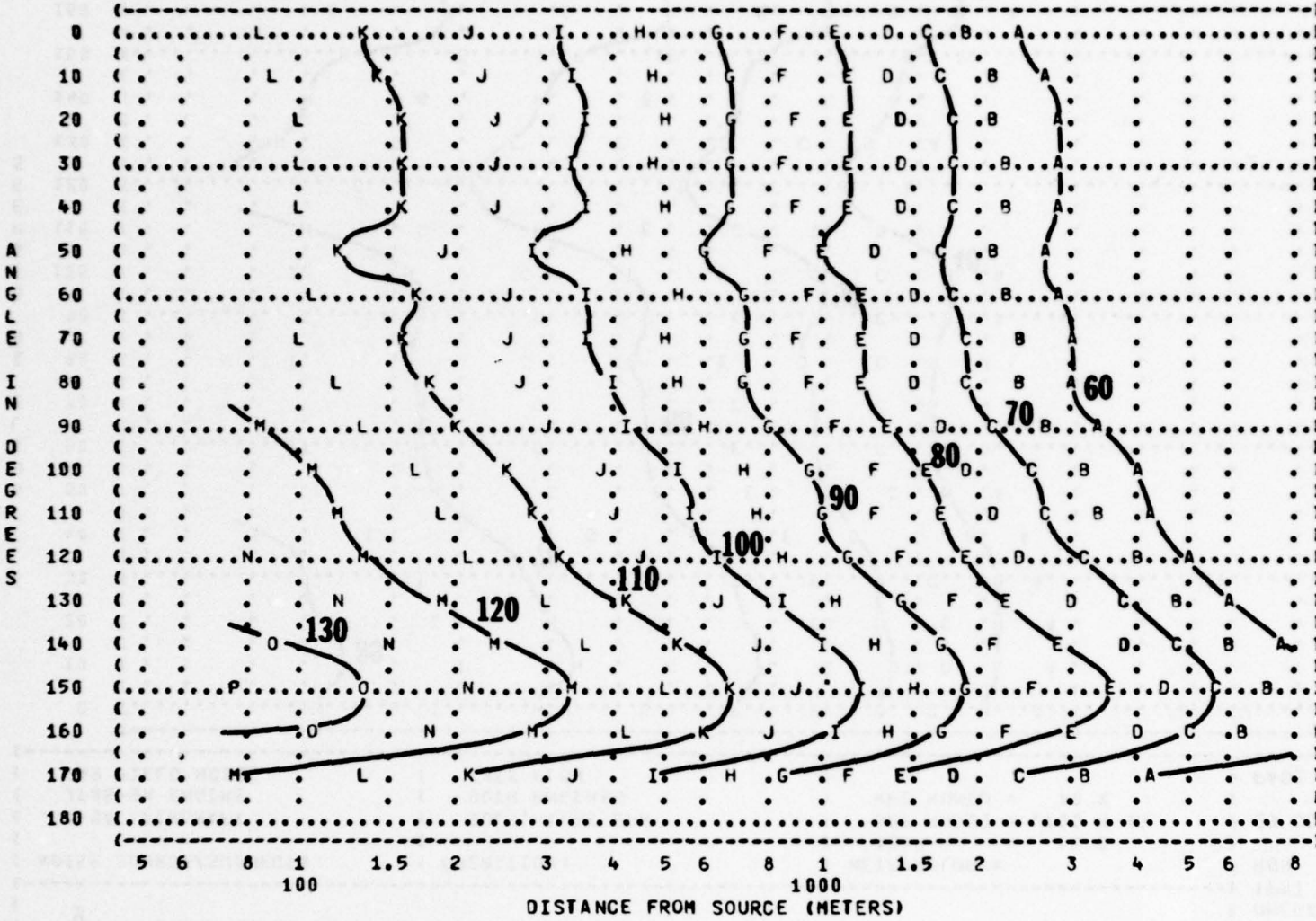


FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

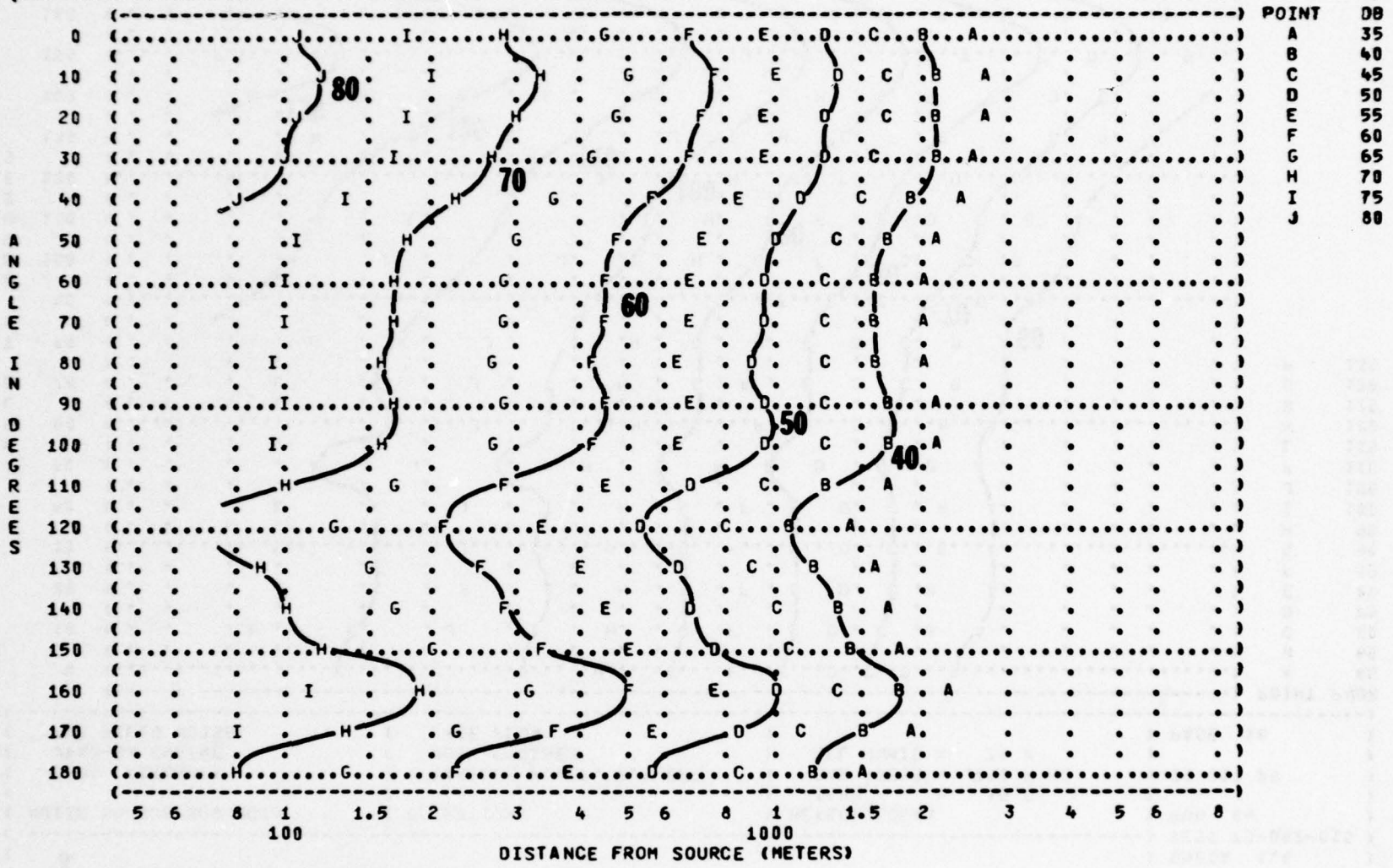


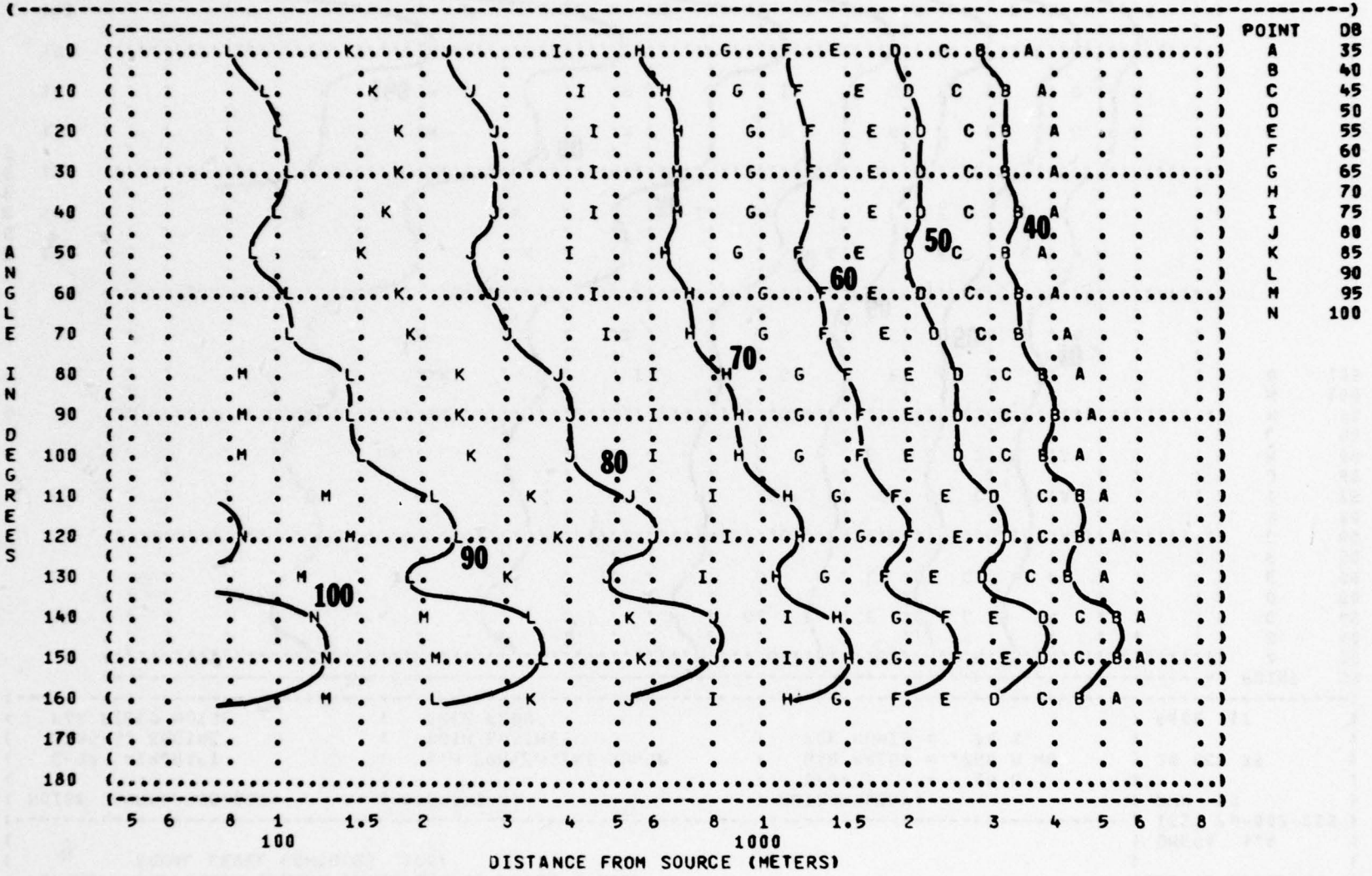
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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

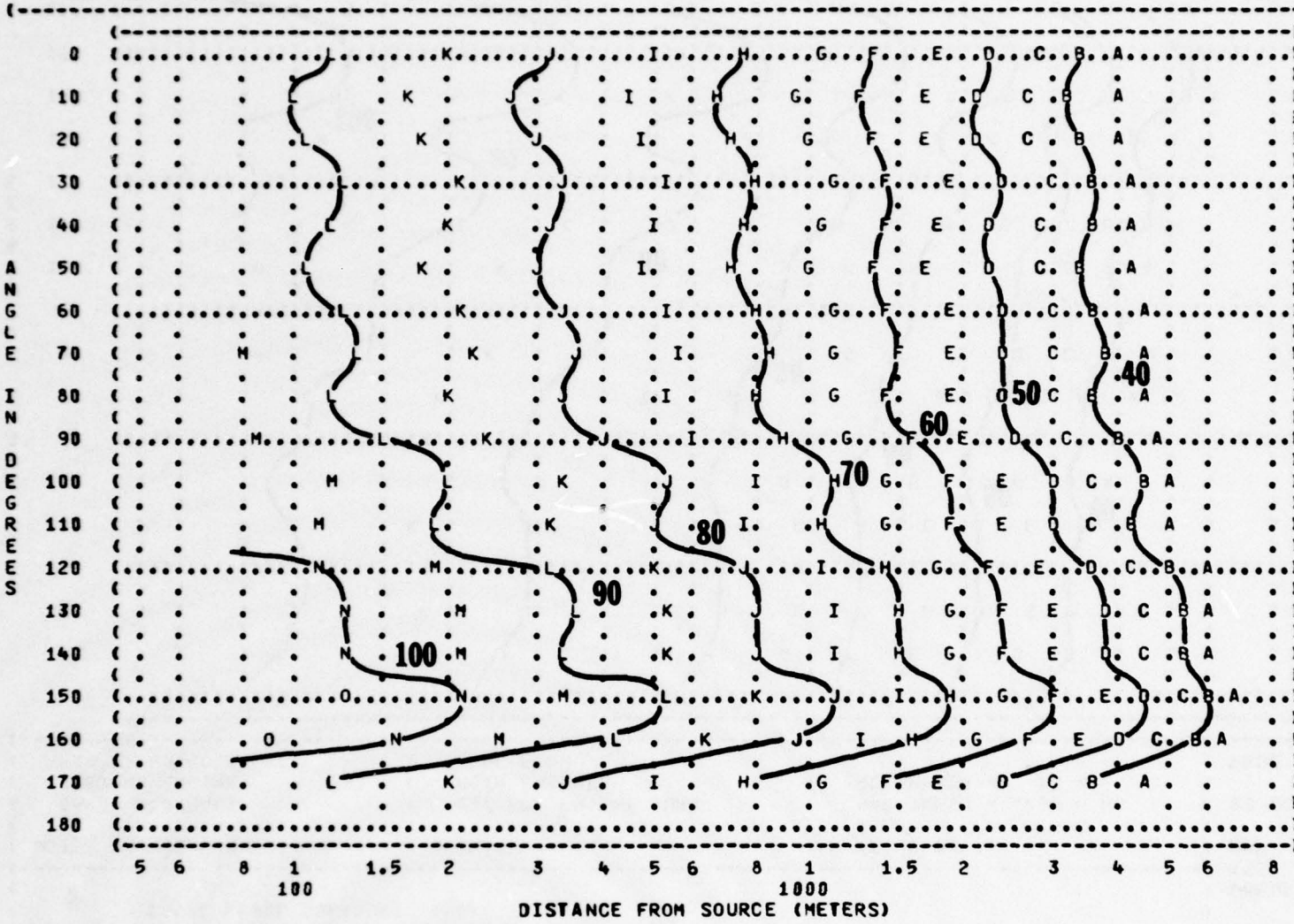
FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 17

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
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

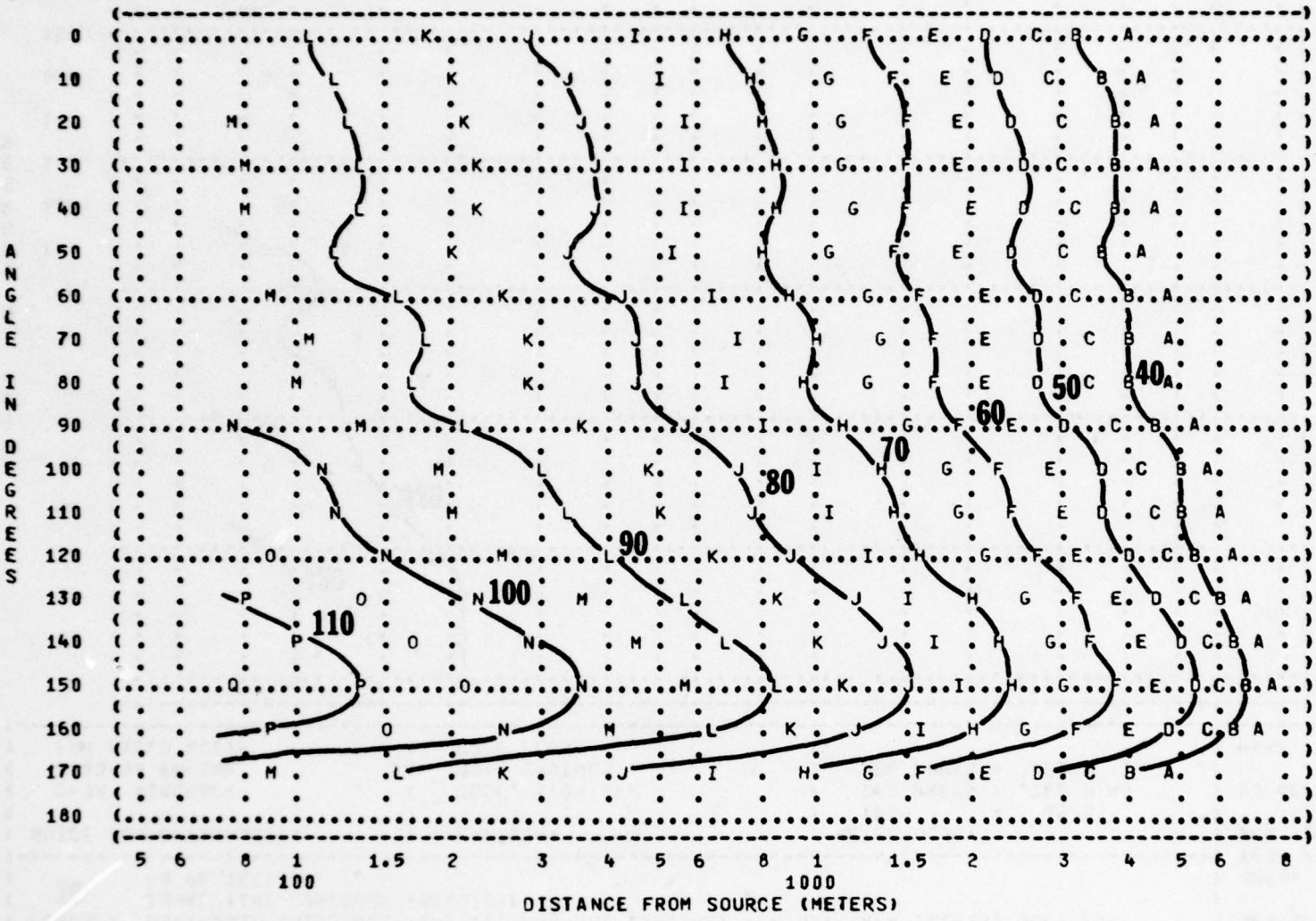
FIGURE 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 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

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 75-002-015
RUN 01
29 OCT 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

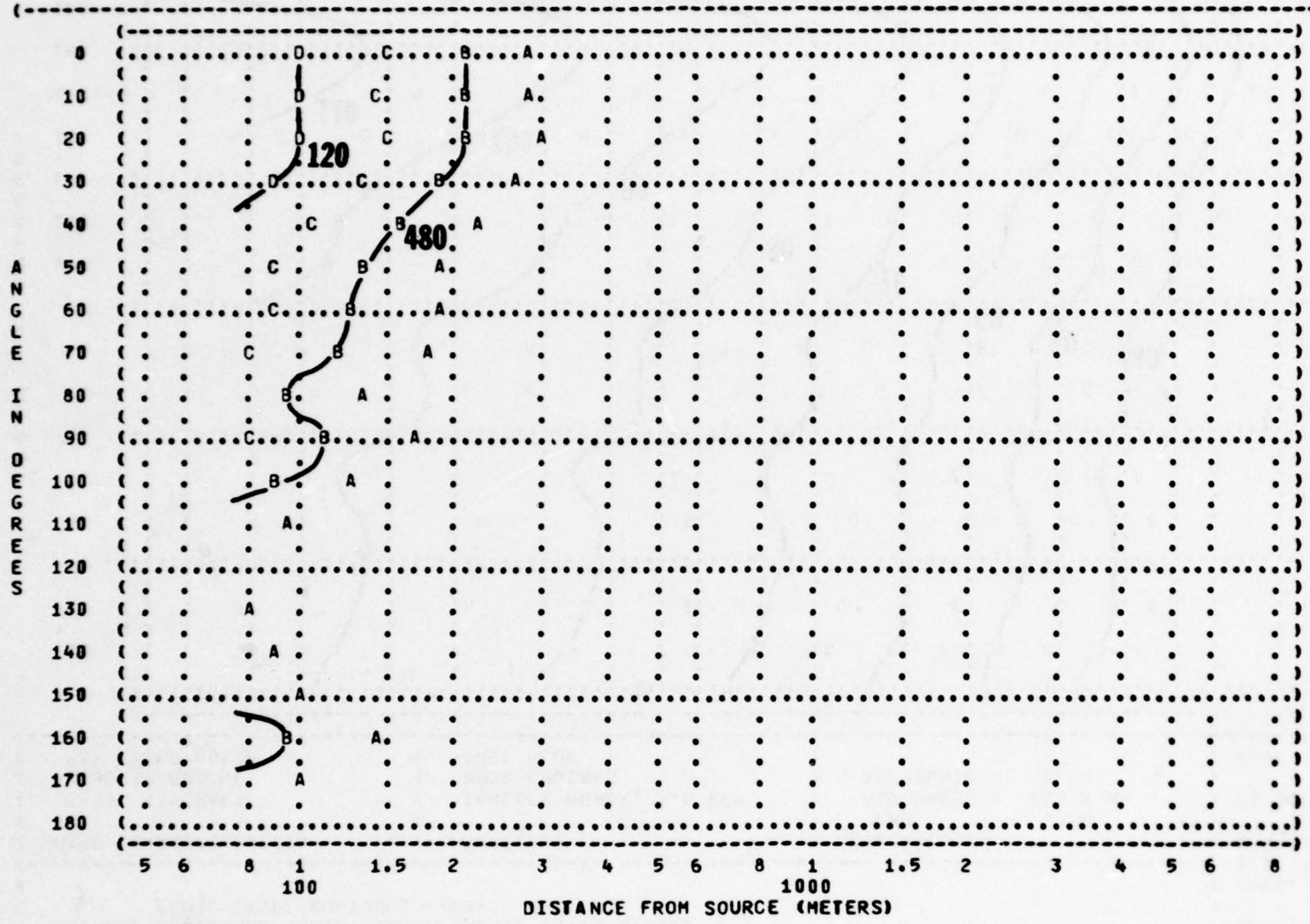


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 8

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

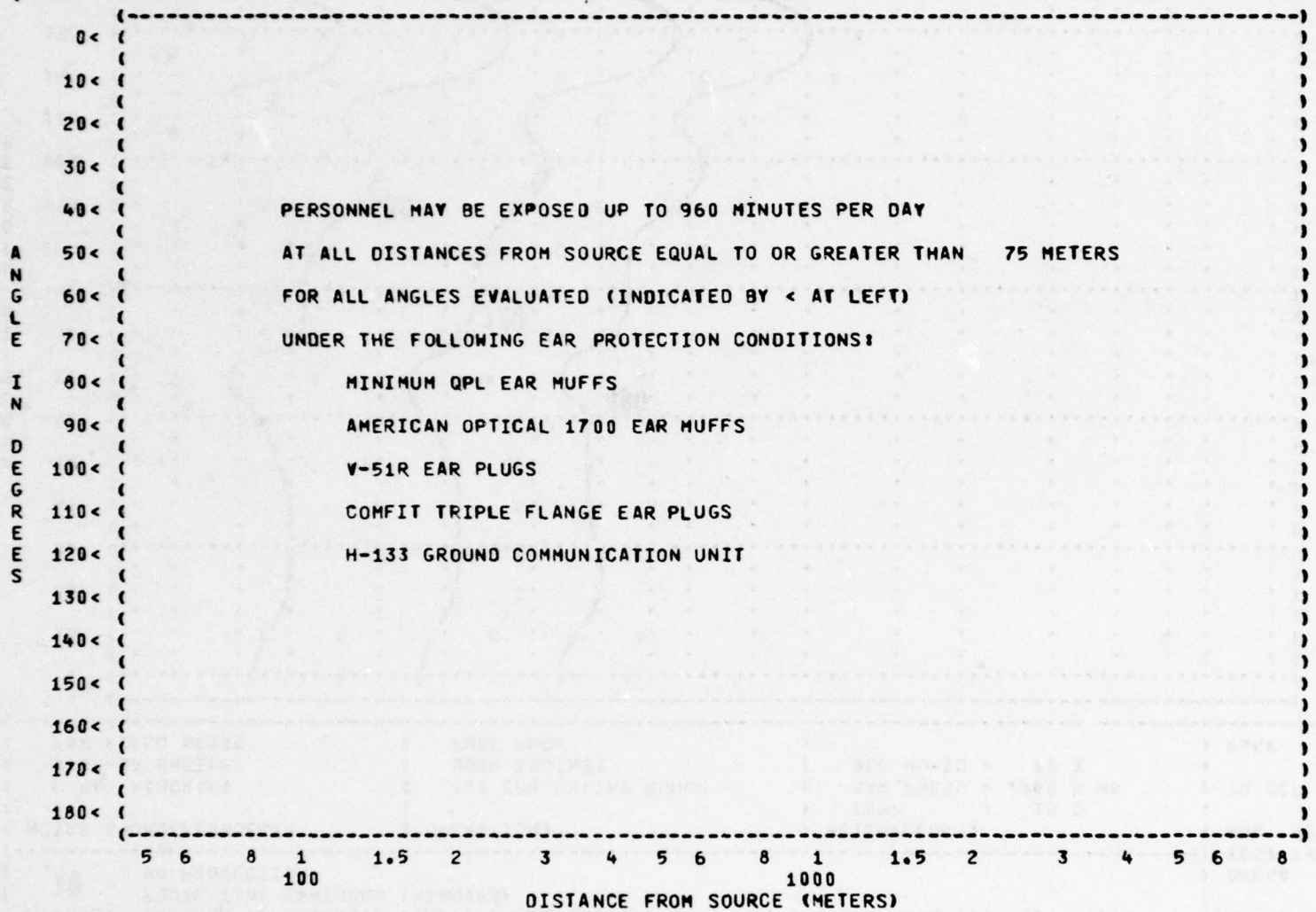


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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

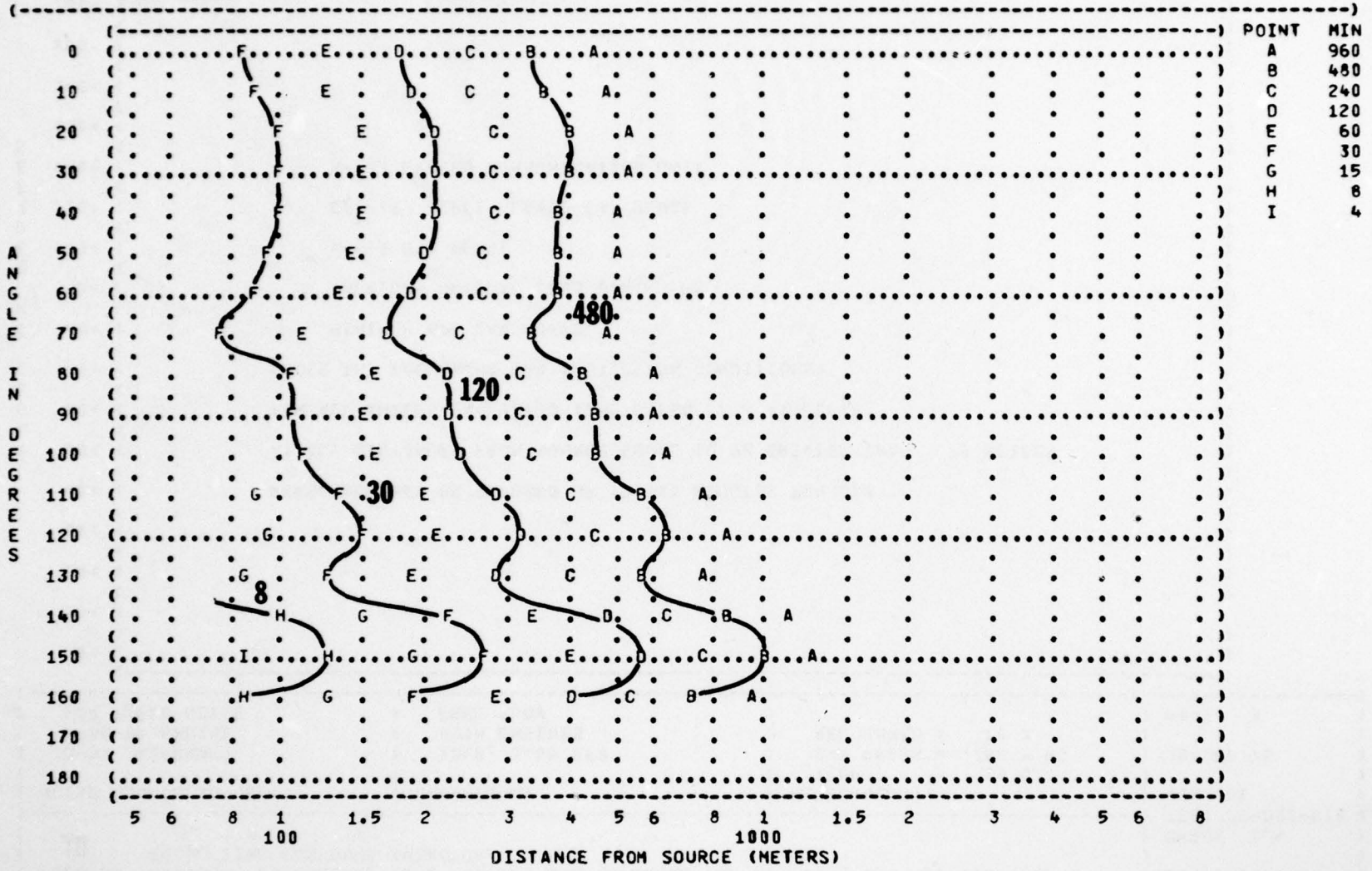


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
MINIMUM QPL EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 8

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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

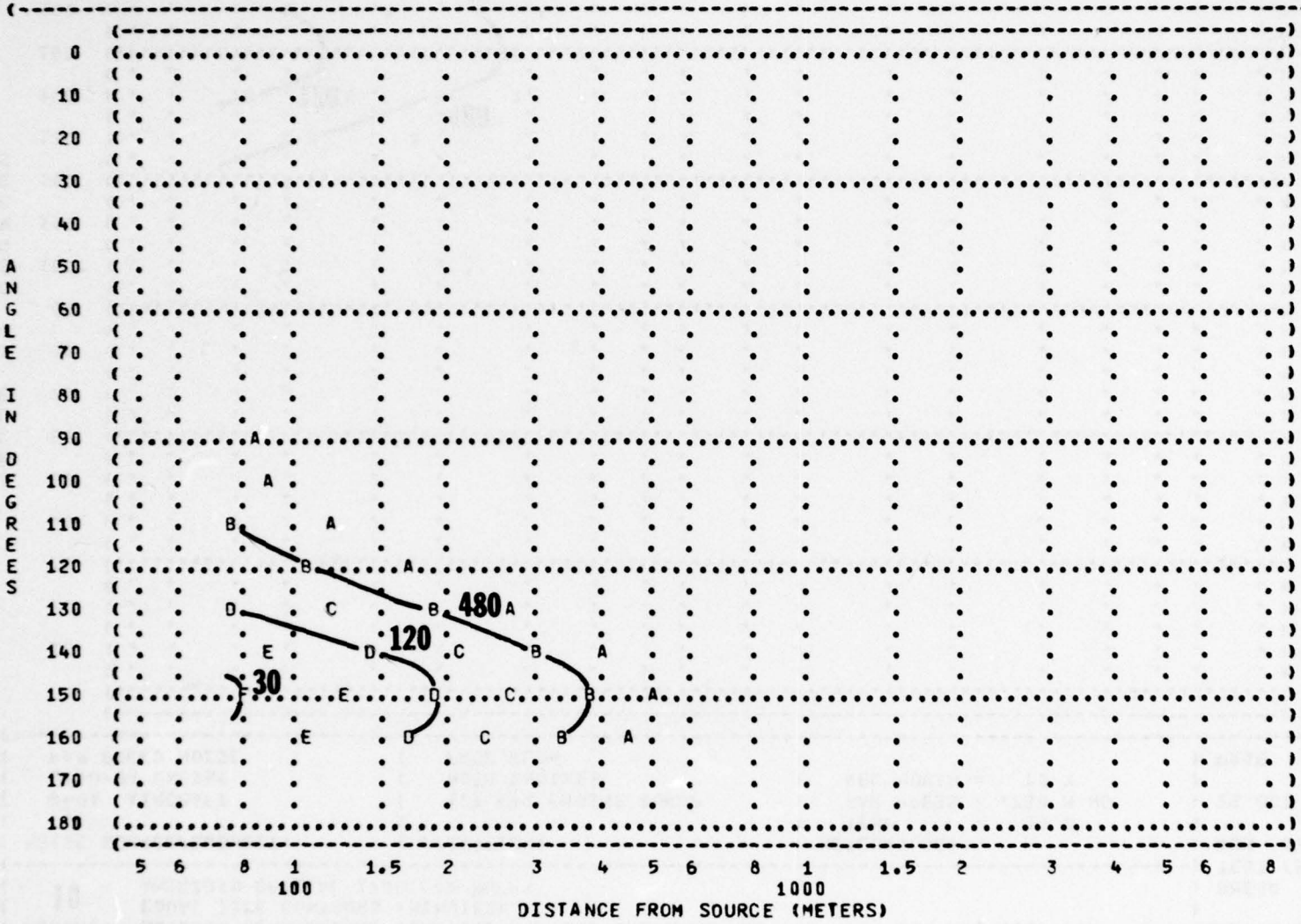


FIGURE: 10

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:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 9

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

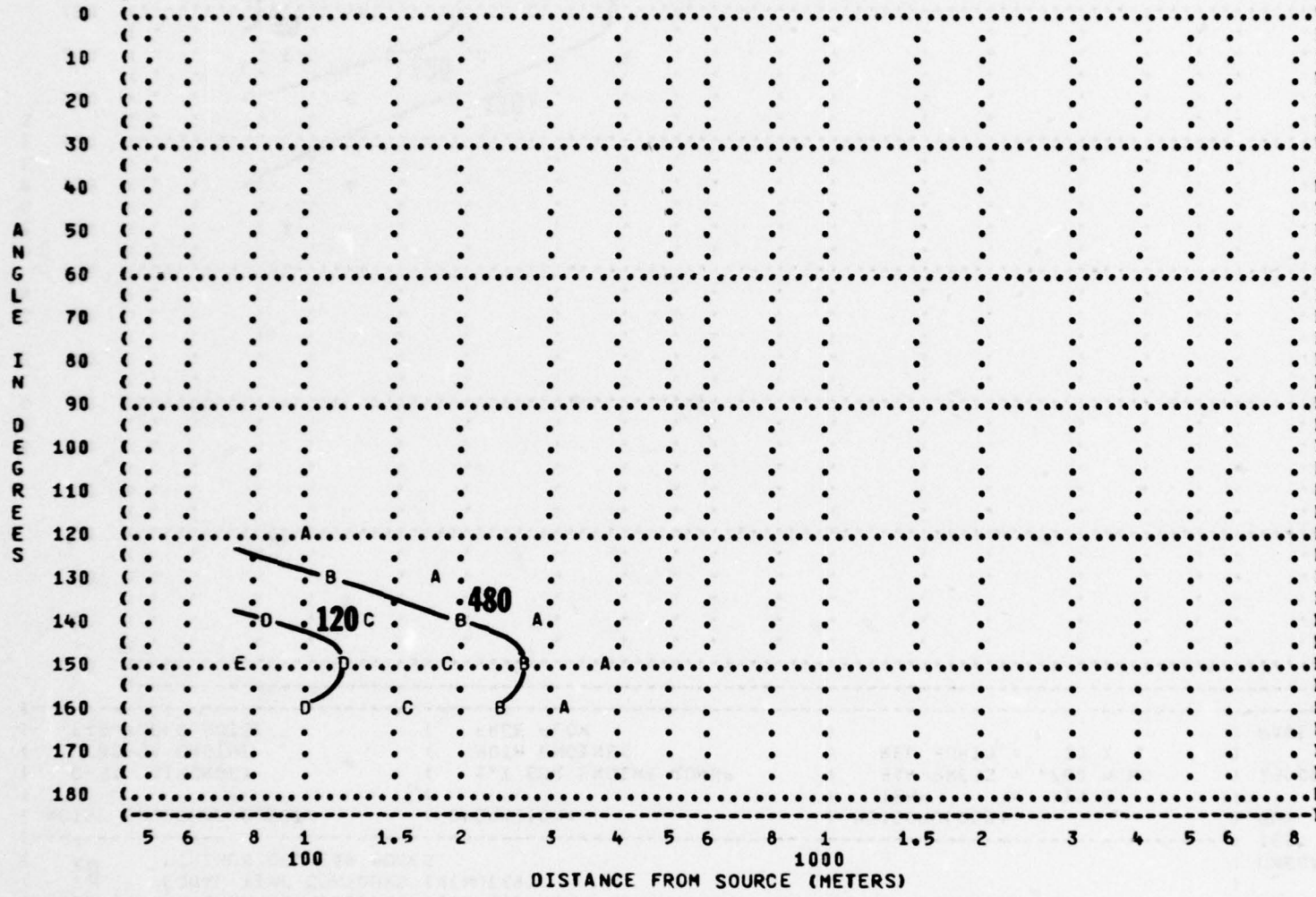


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 10

POINT	MIN
A	960
B	480
C	240

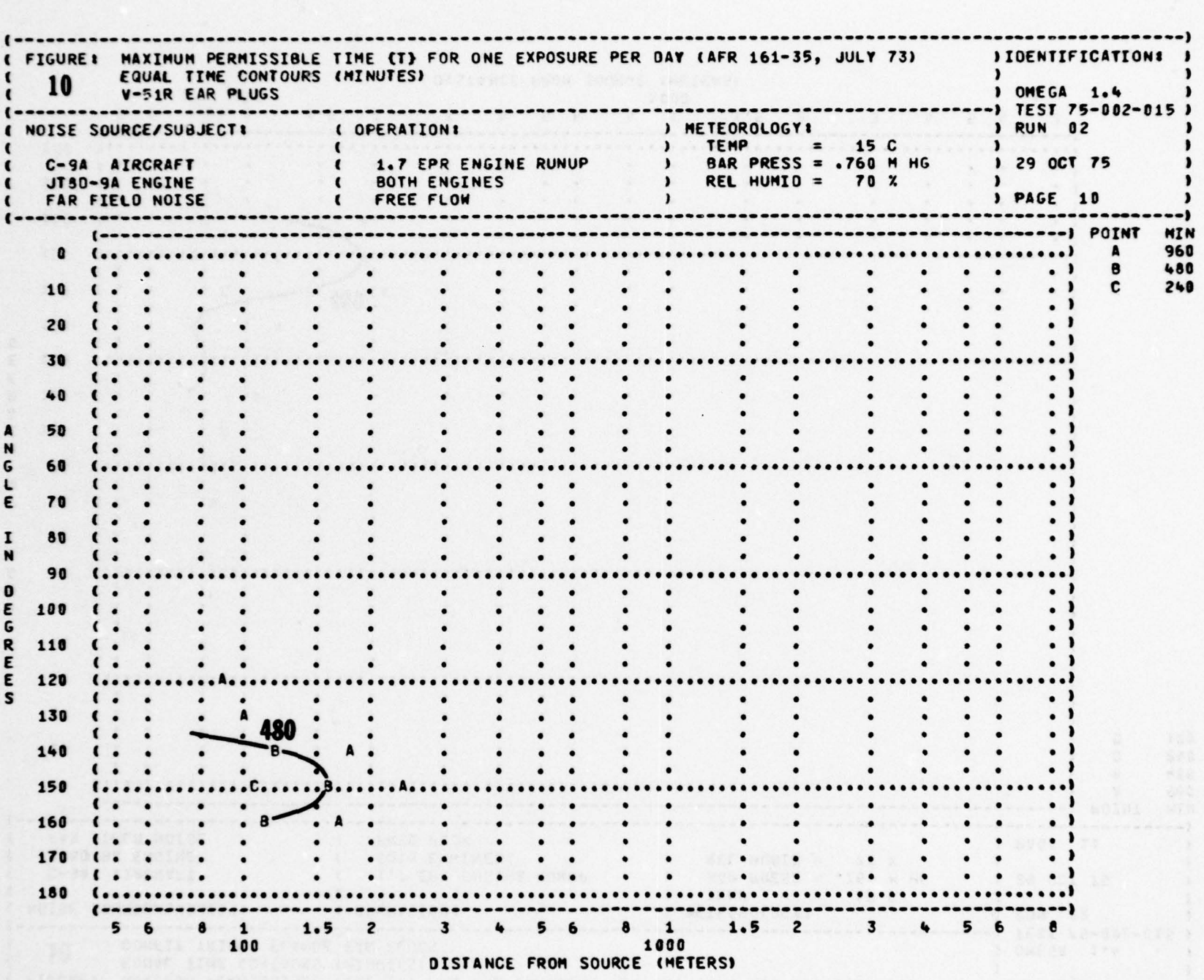


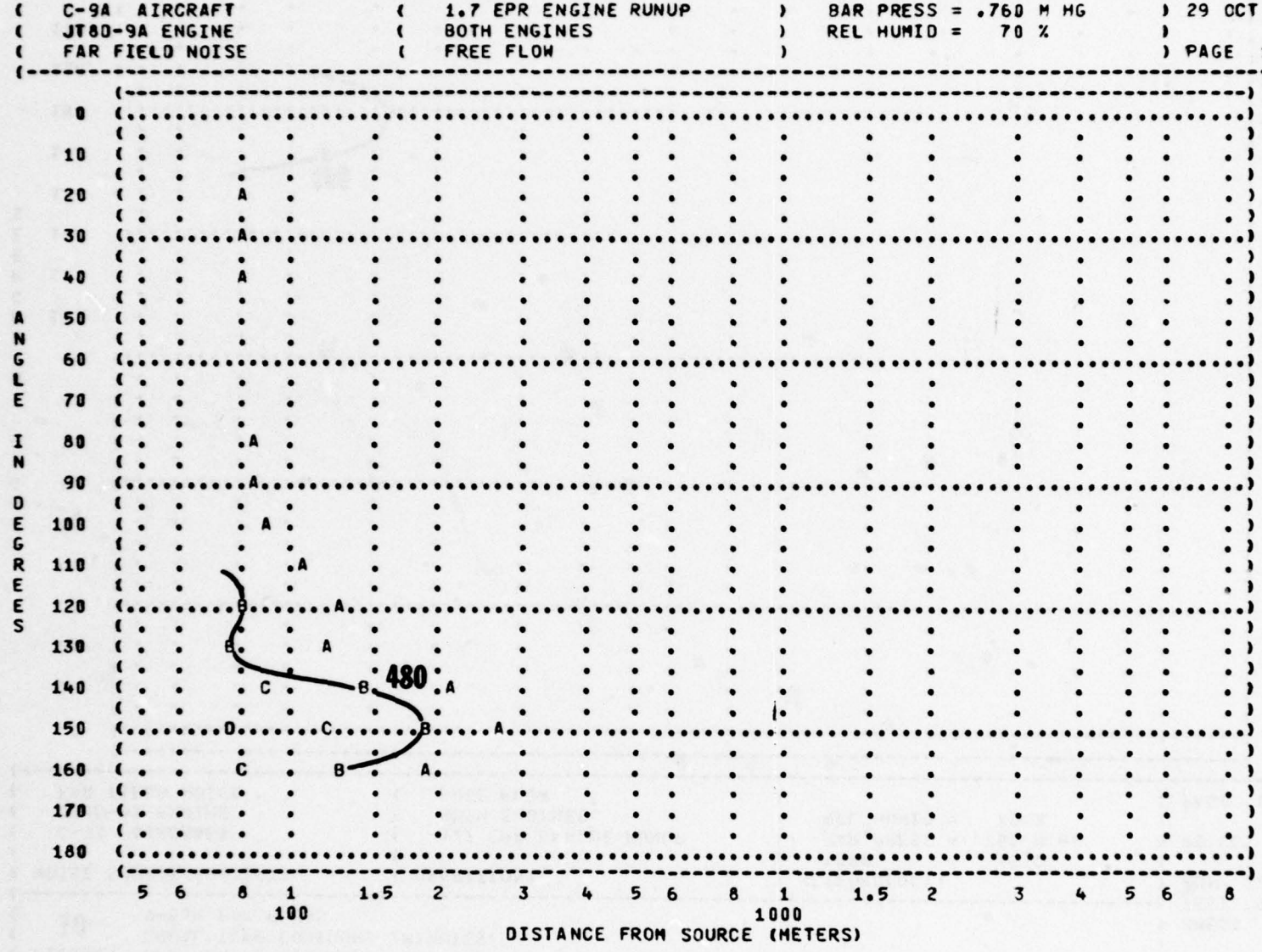
FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 11

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 12

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

POINT	MIN
A	960
B	480
C	240

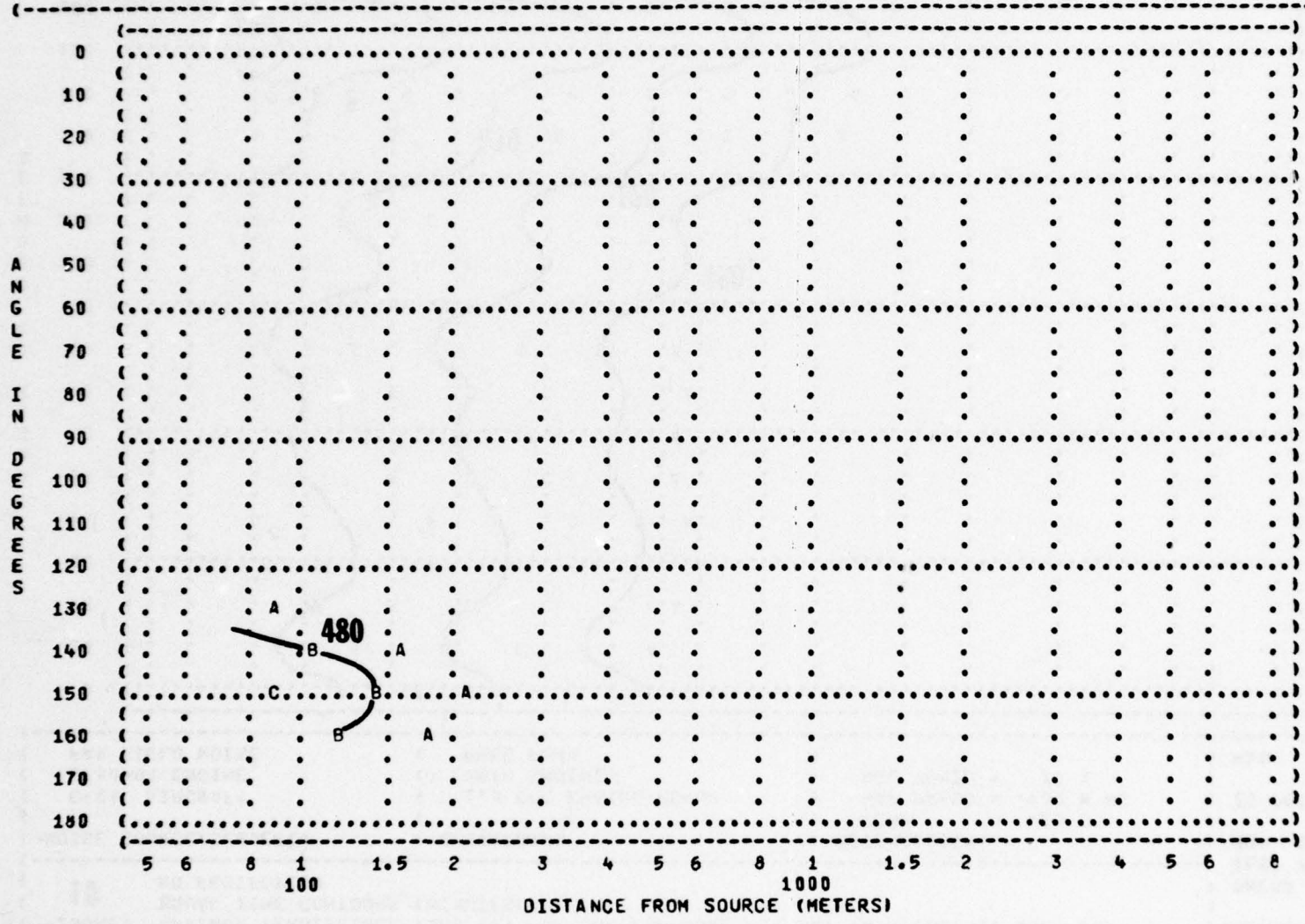


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

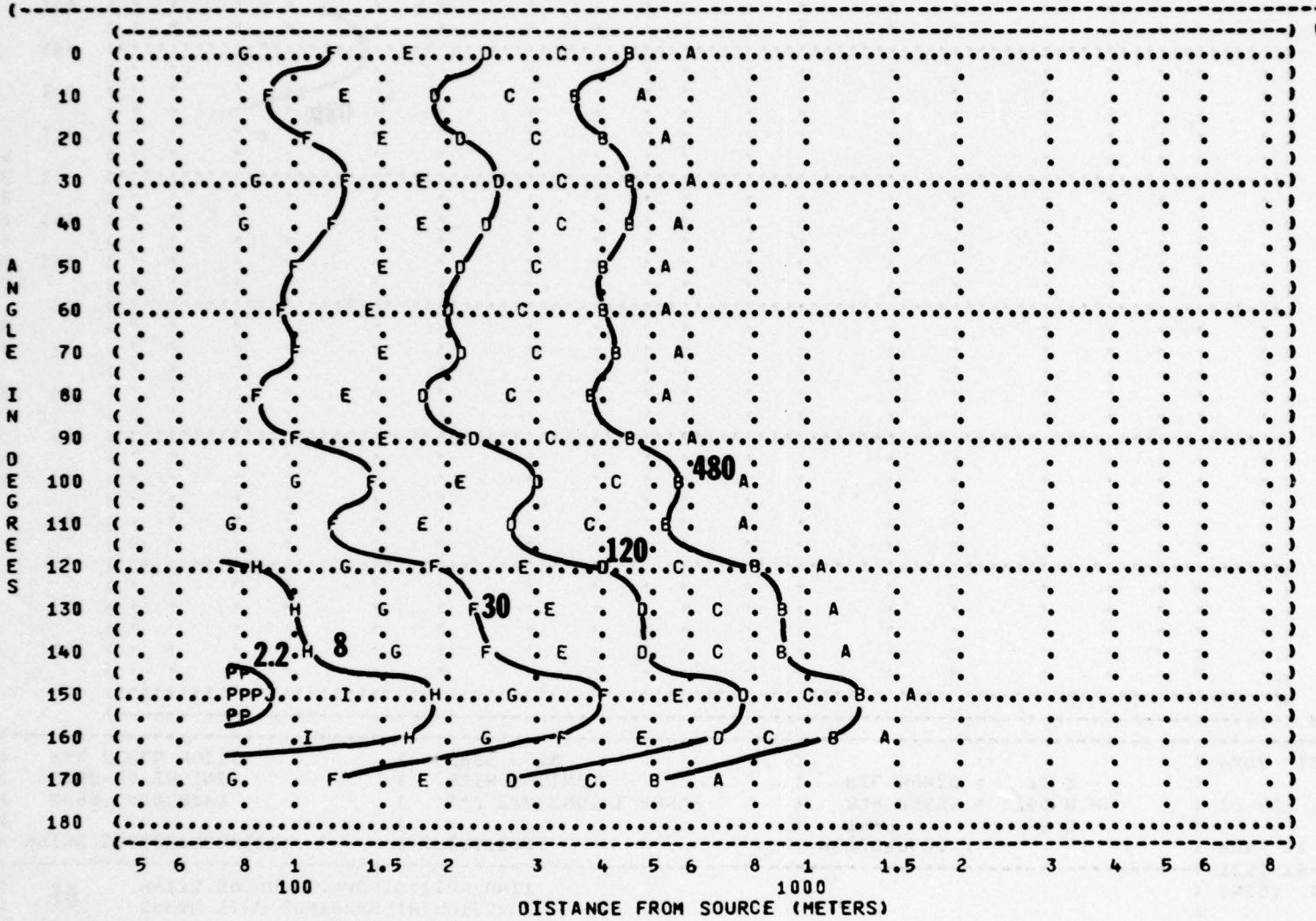
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
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:	MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)	IDENTIFICATION:
10	EQUAL TIME CONTOURS (MINUTES)	
	MINIMUM QPL EAR MUFFS	OMEGA 1.4
		TEST 75-002-015
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:
C-9A AIRCRAFT	1.8 EPR ENGINE RUNUP	TEMP = 15 C
JT8D-9A ENGINE	BOTH ENGINES	BAR PRESS = .760 M HG
FAR FIELD NOISE	FREE FLOW	REL HUMID = 70 %
		RUN 03
		29 OCT 75
		PAGE 8

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

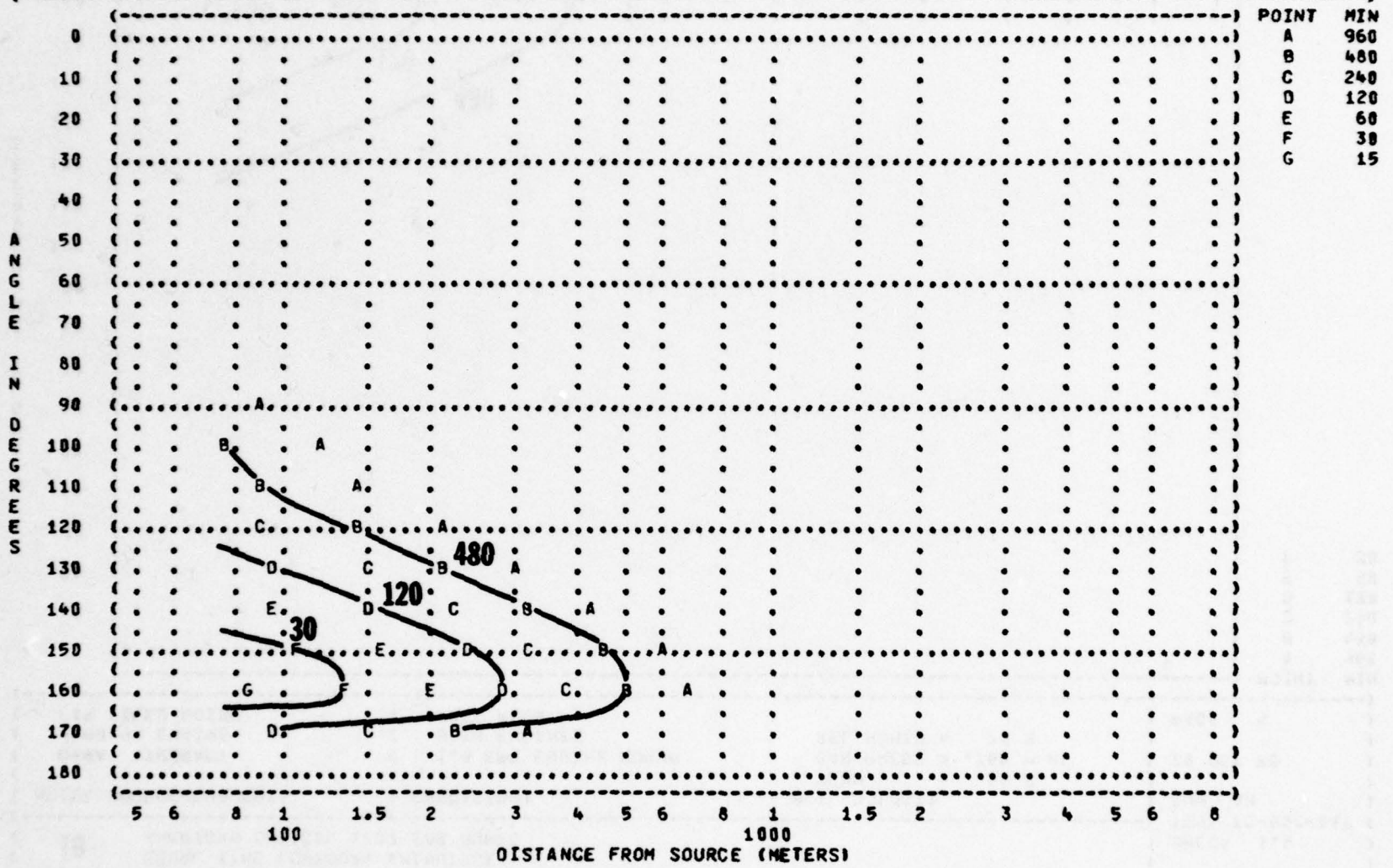


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 9

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

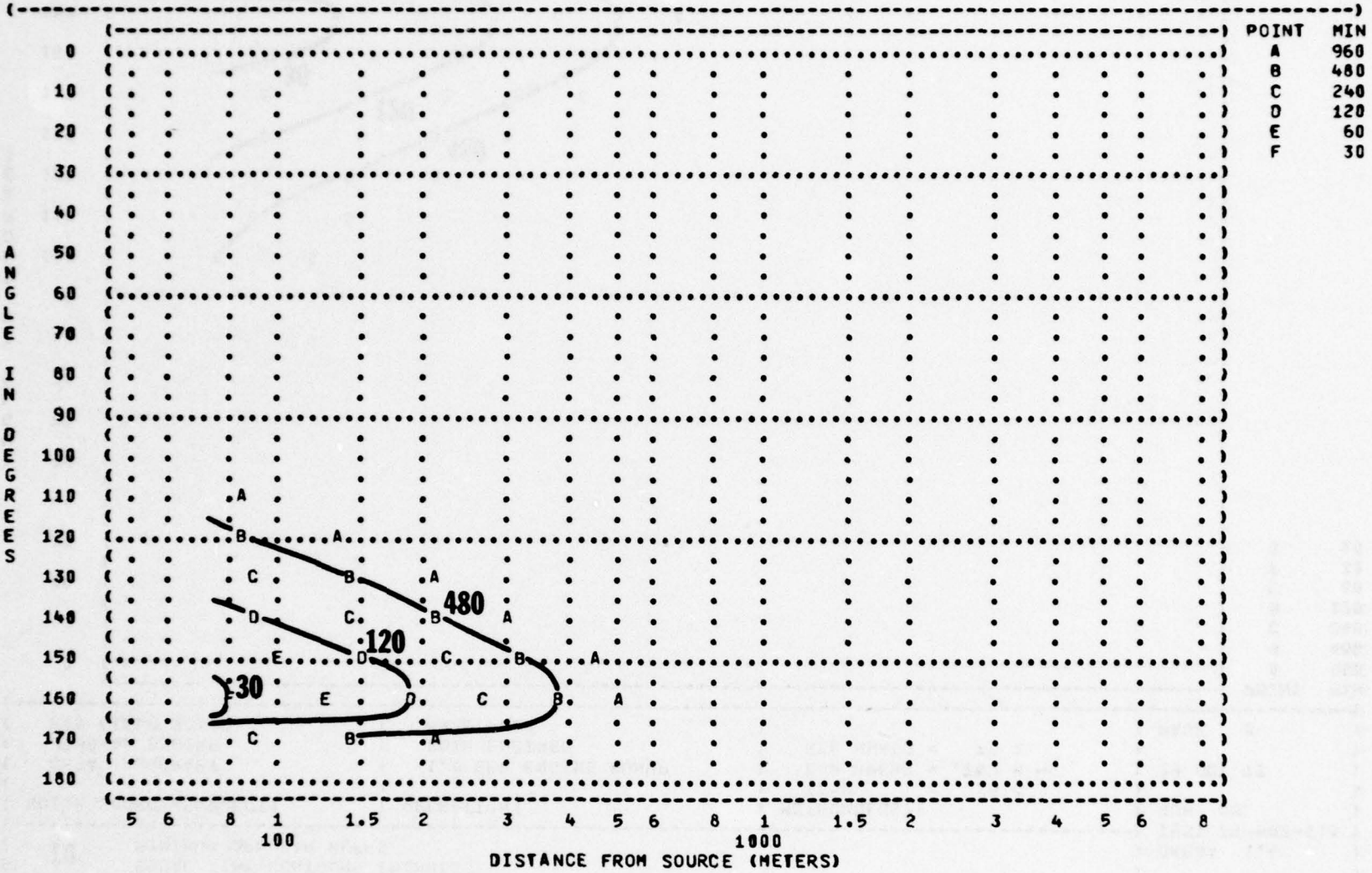


FIGURE: 10

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 10

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
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

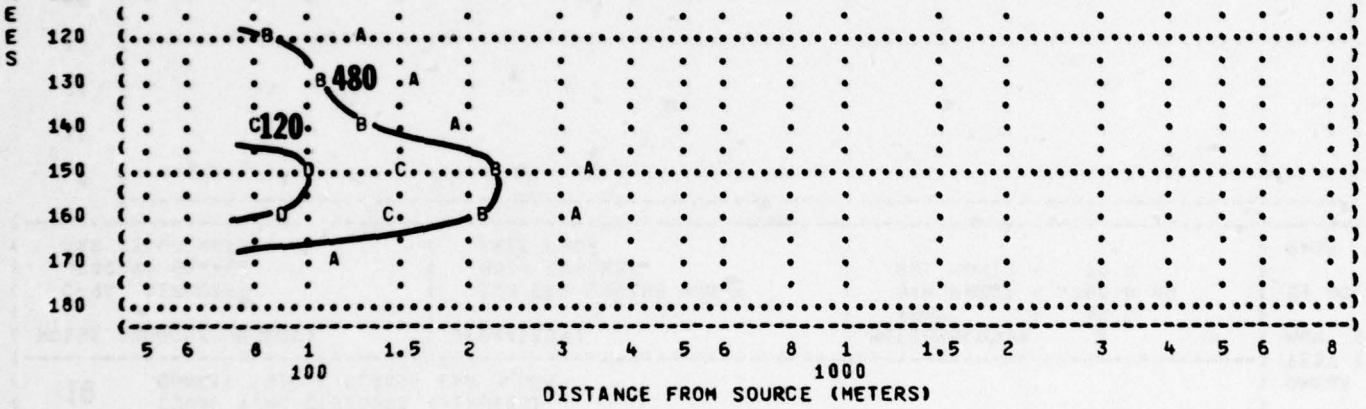


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 11

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

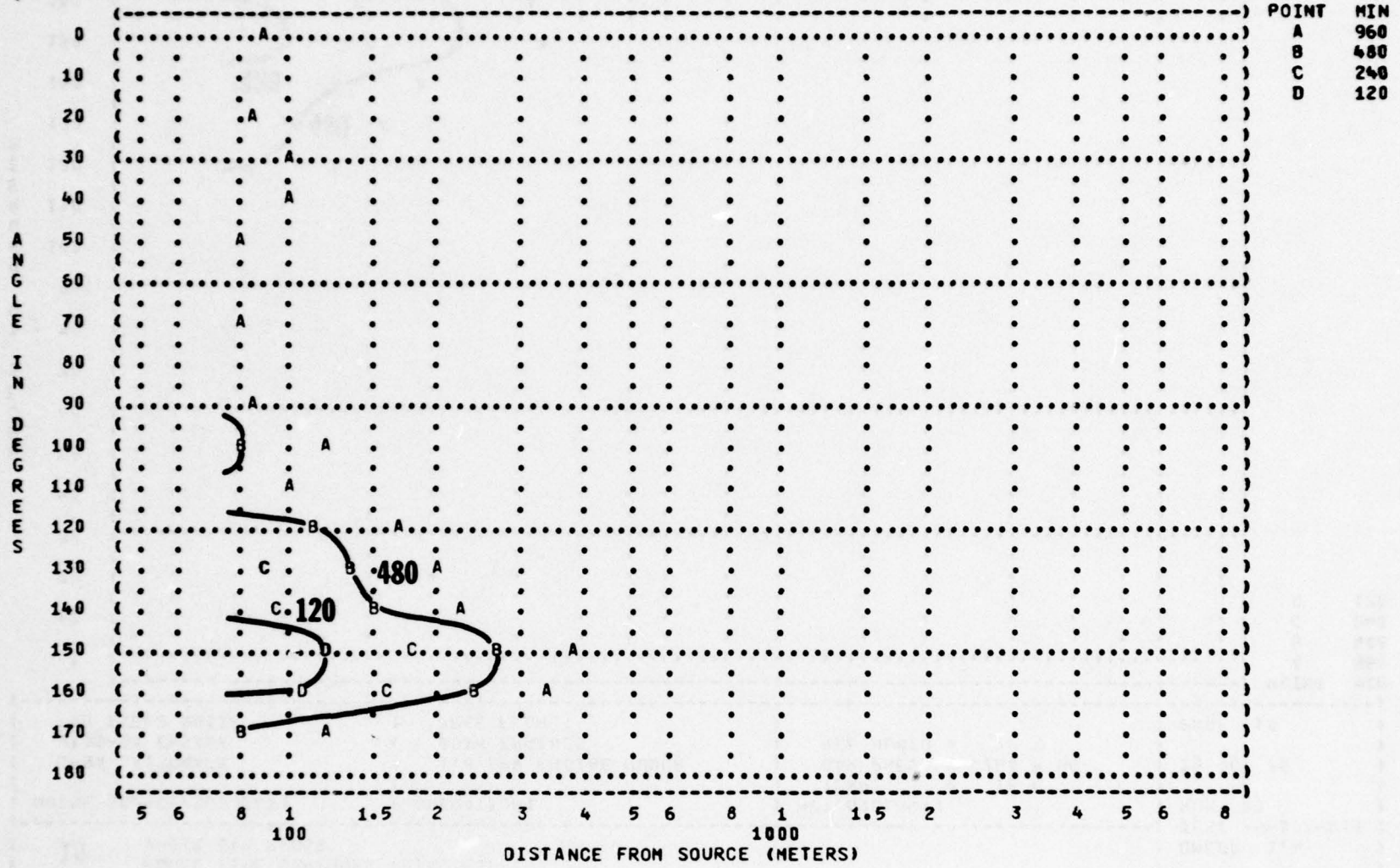


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 12

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

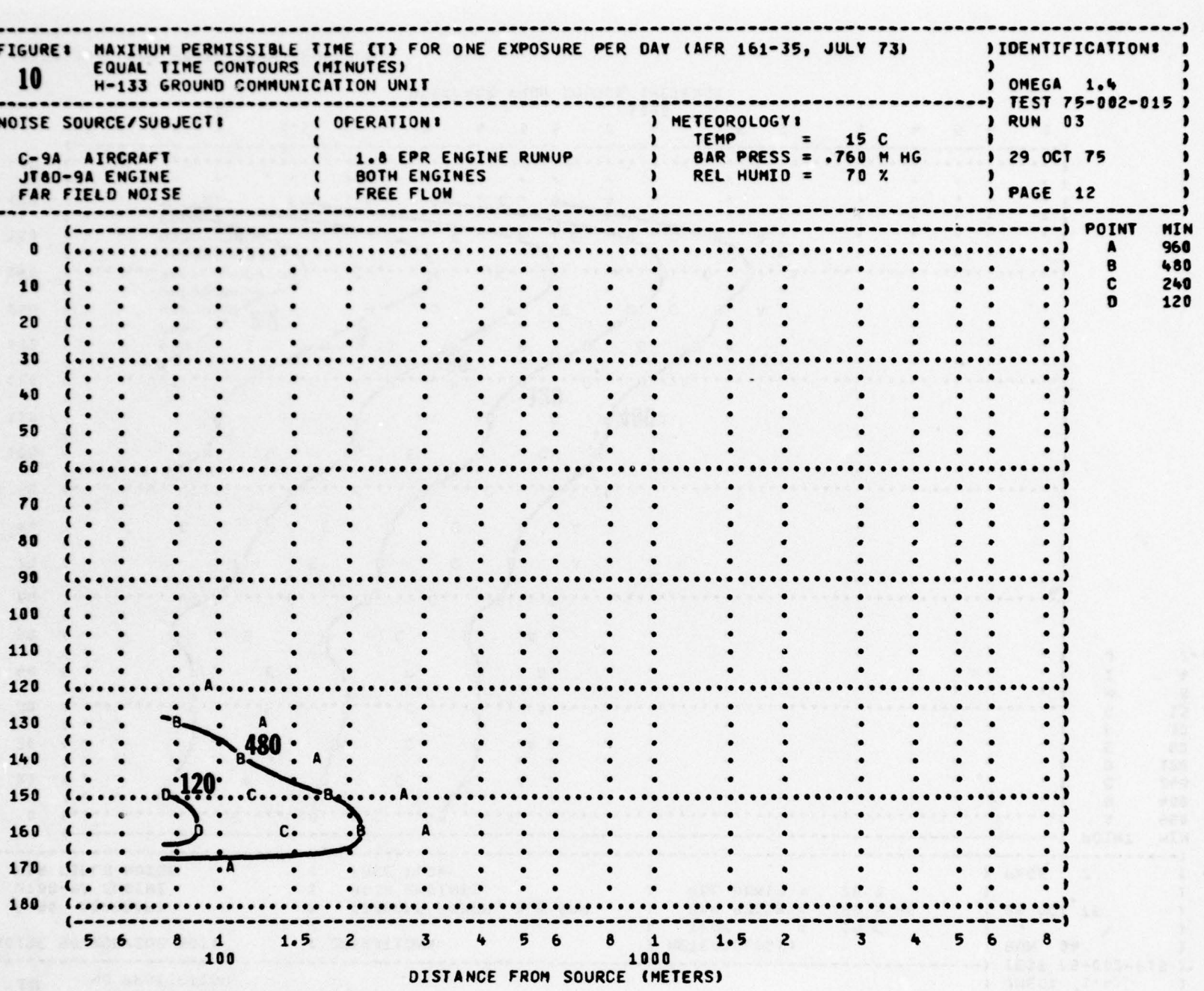


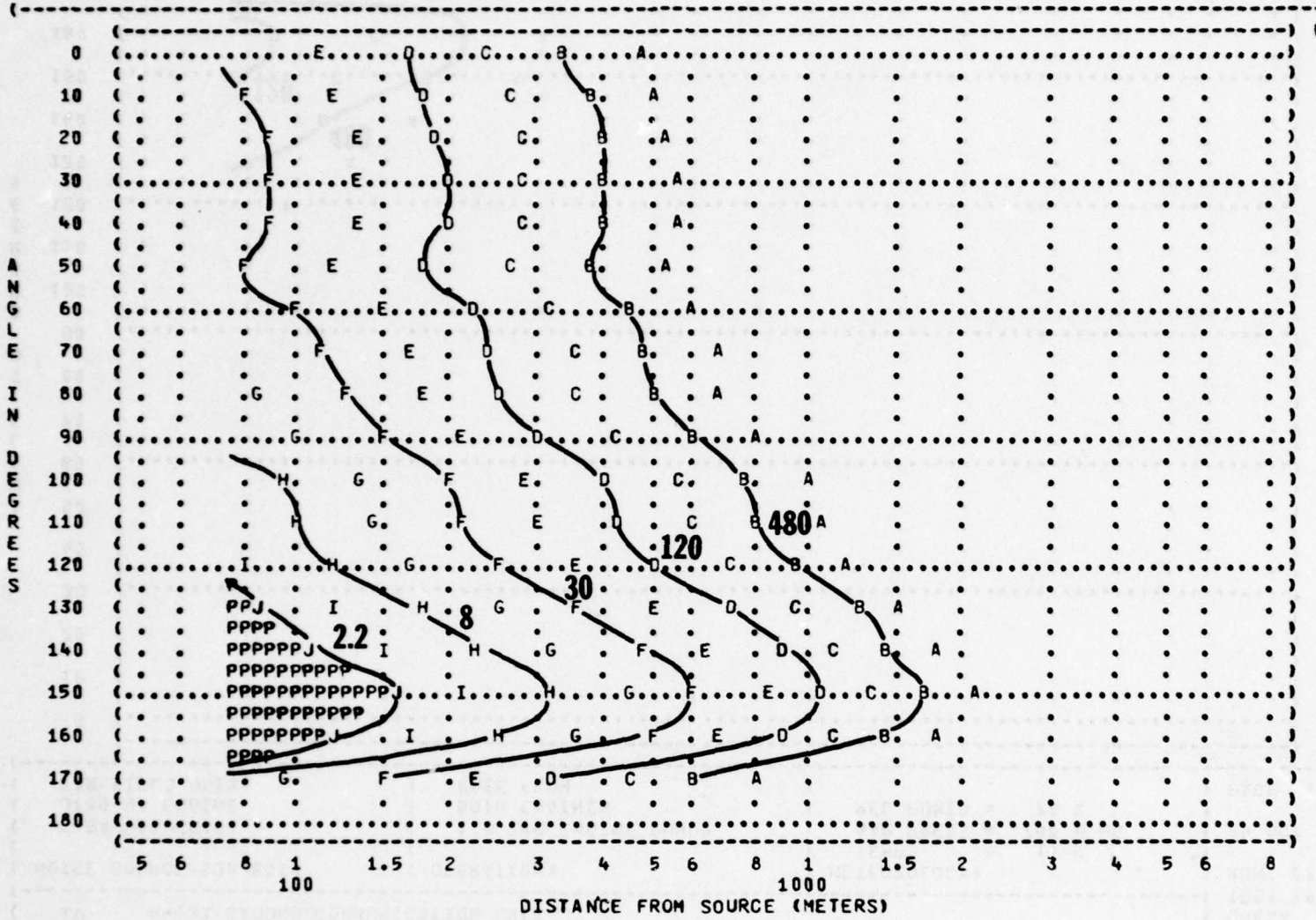
FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 7

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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 75-002-015
RUN 04
29 OCT 75
PAGE 8

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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

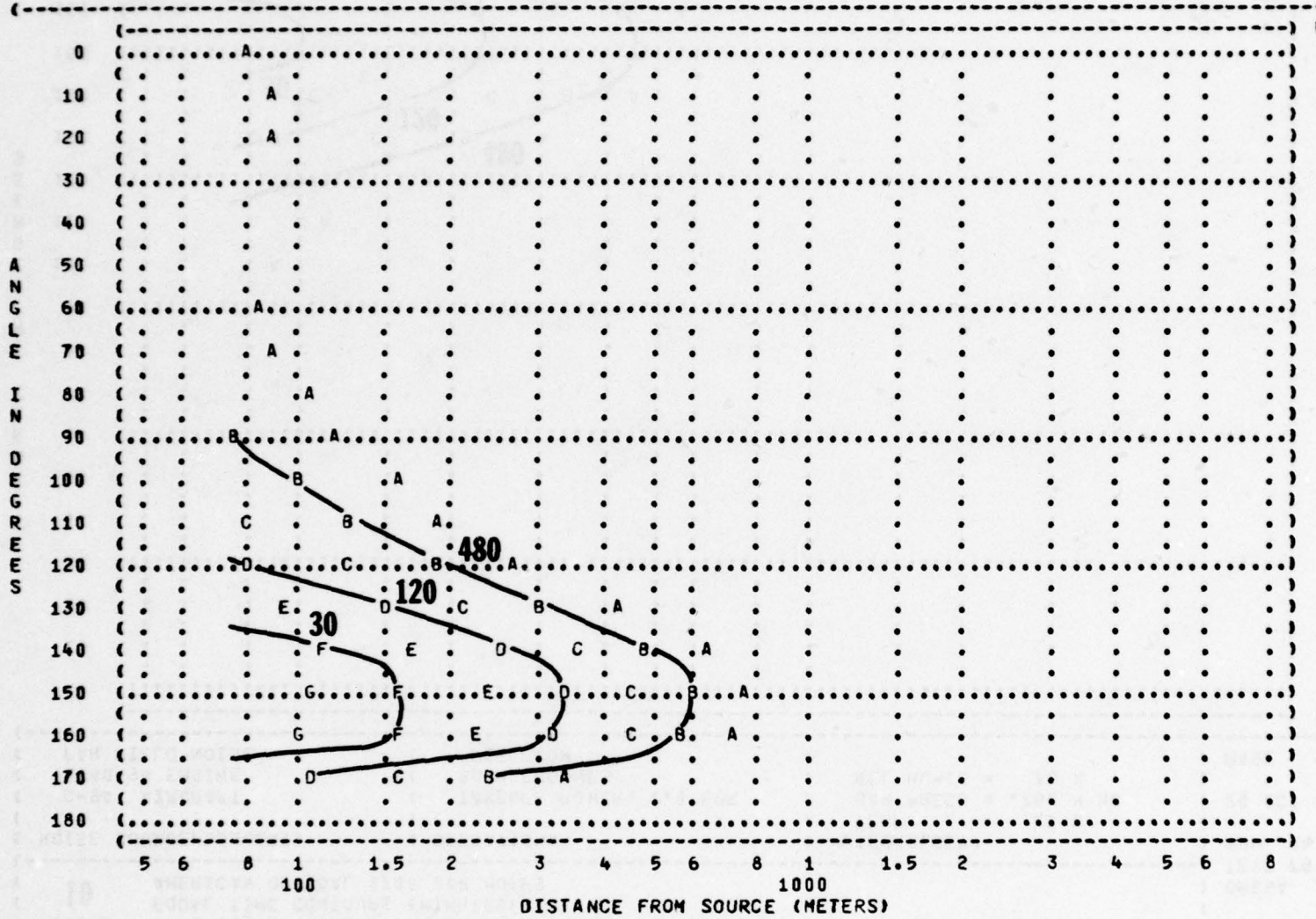


FIGURE: 10

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 75-002-015
RUN 04
29 OCT 75
PAGE 9

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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

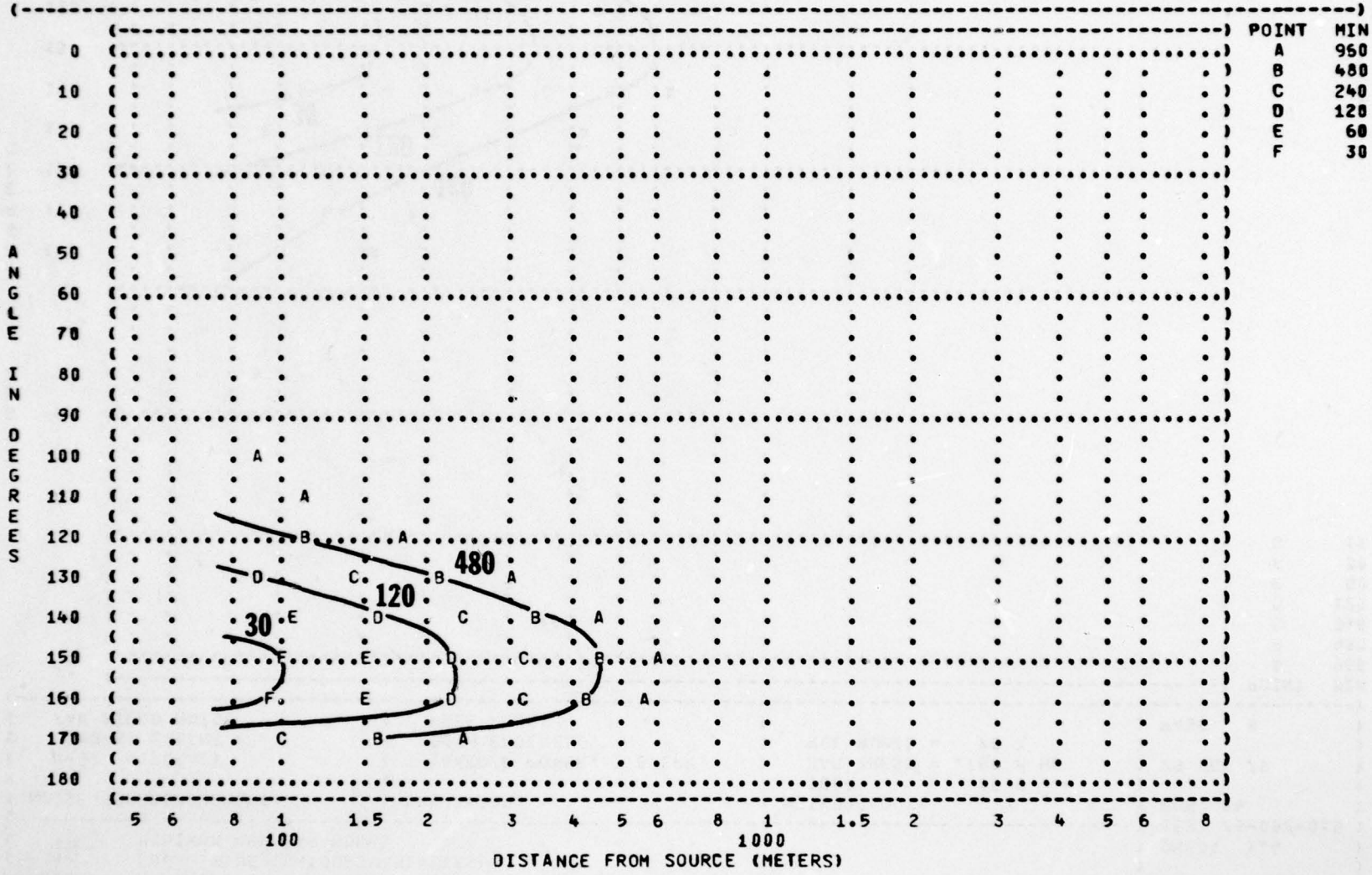


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 10

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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

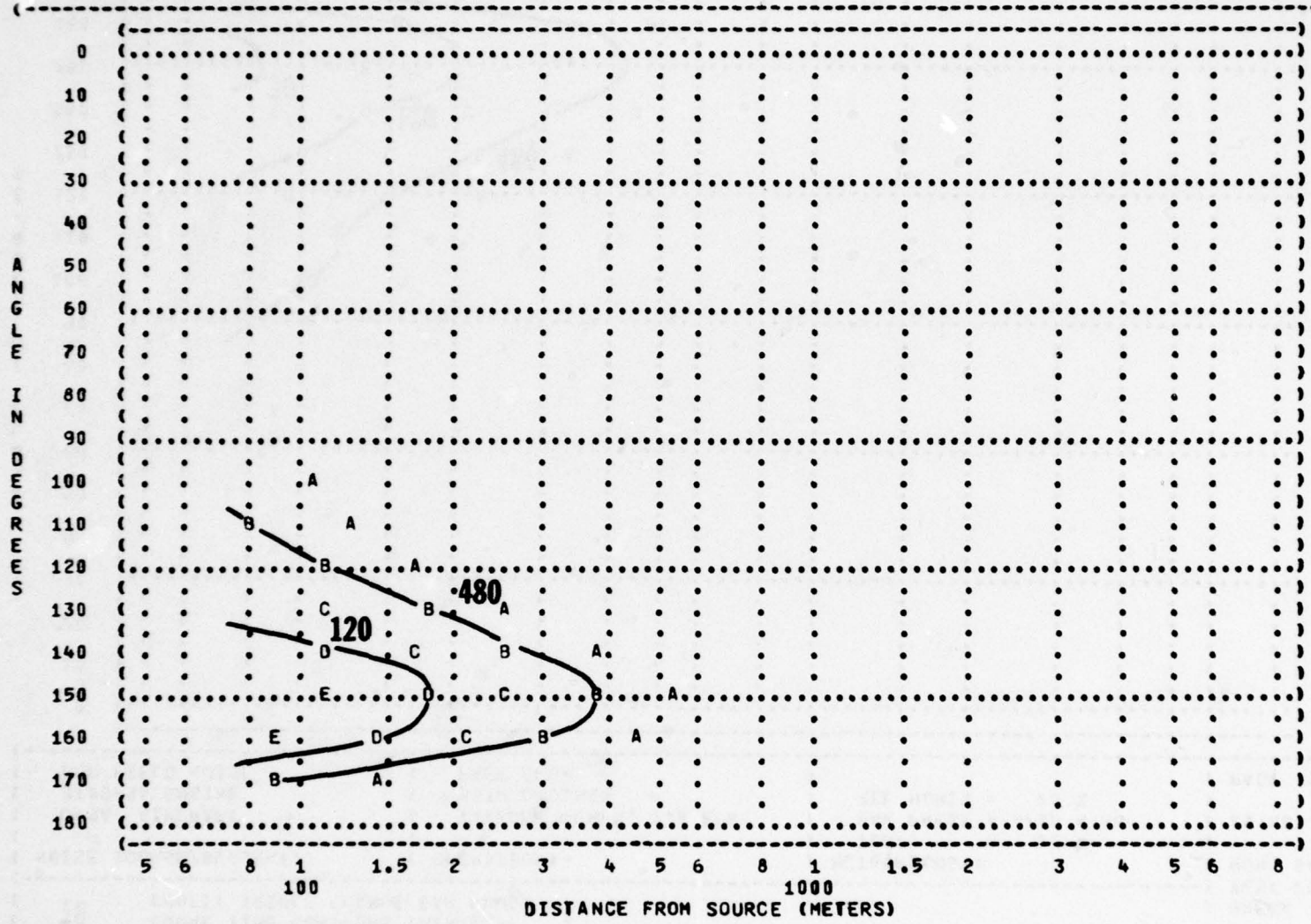


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
COMFIT TRIPLE FLANGE EAR PLUGS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 11

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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

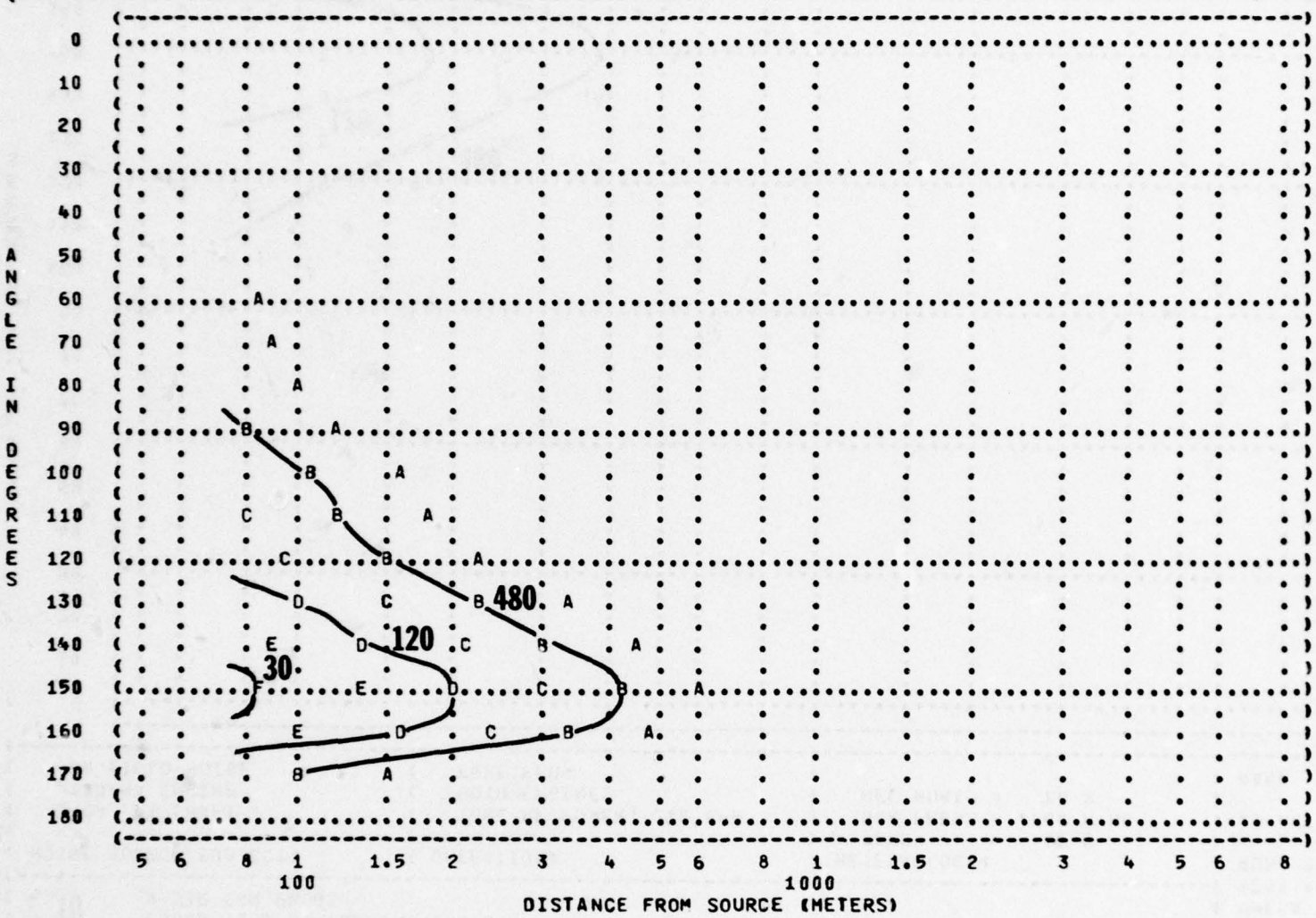


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 75
PAGE 12

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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

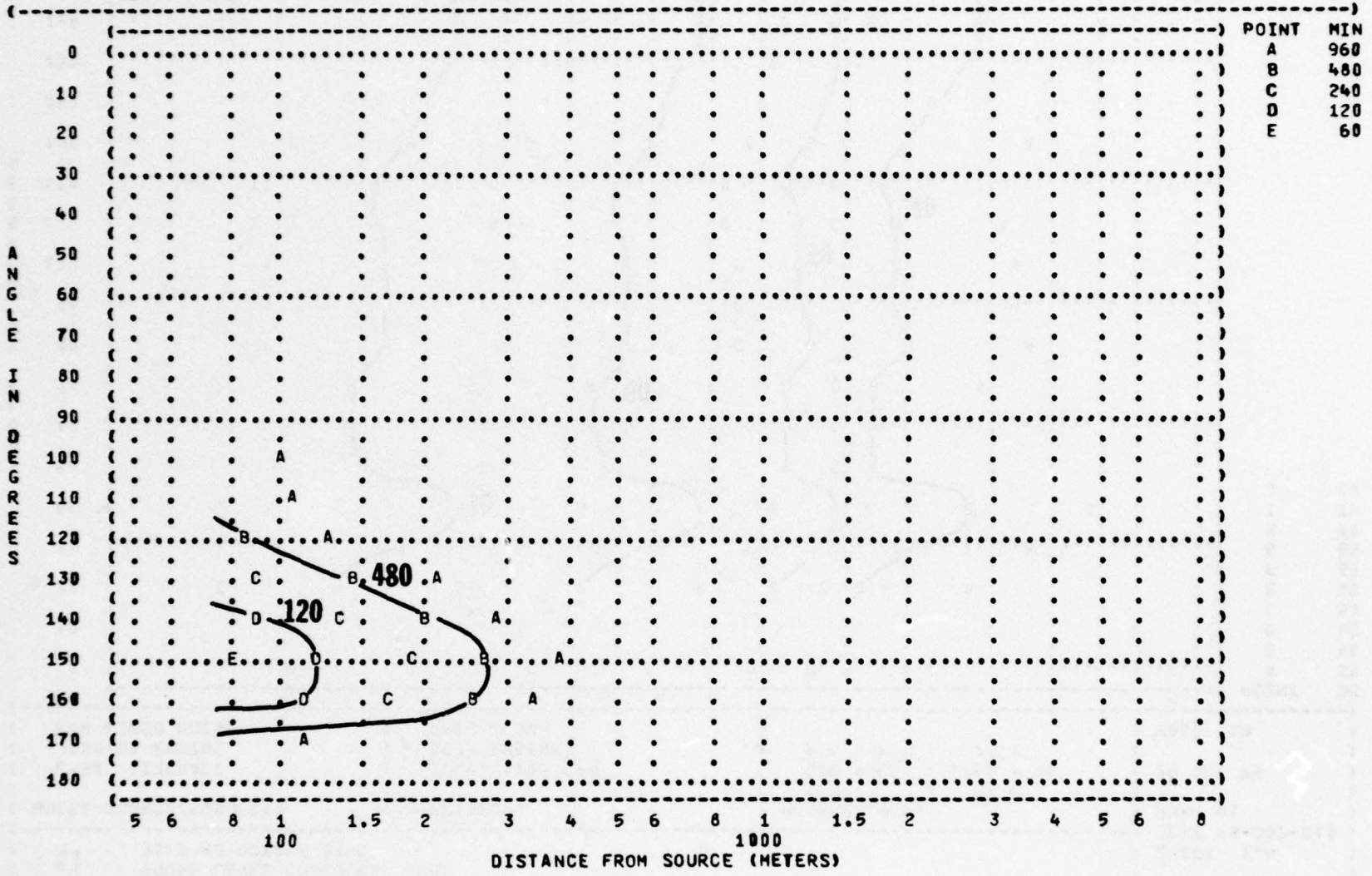


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 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

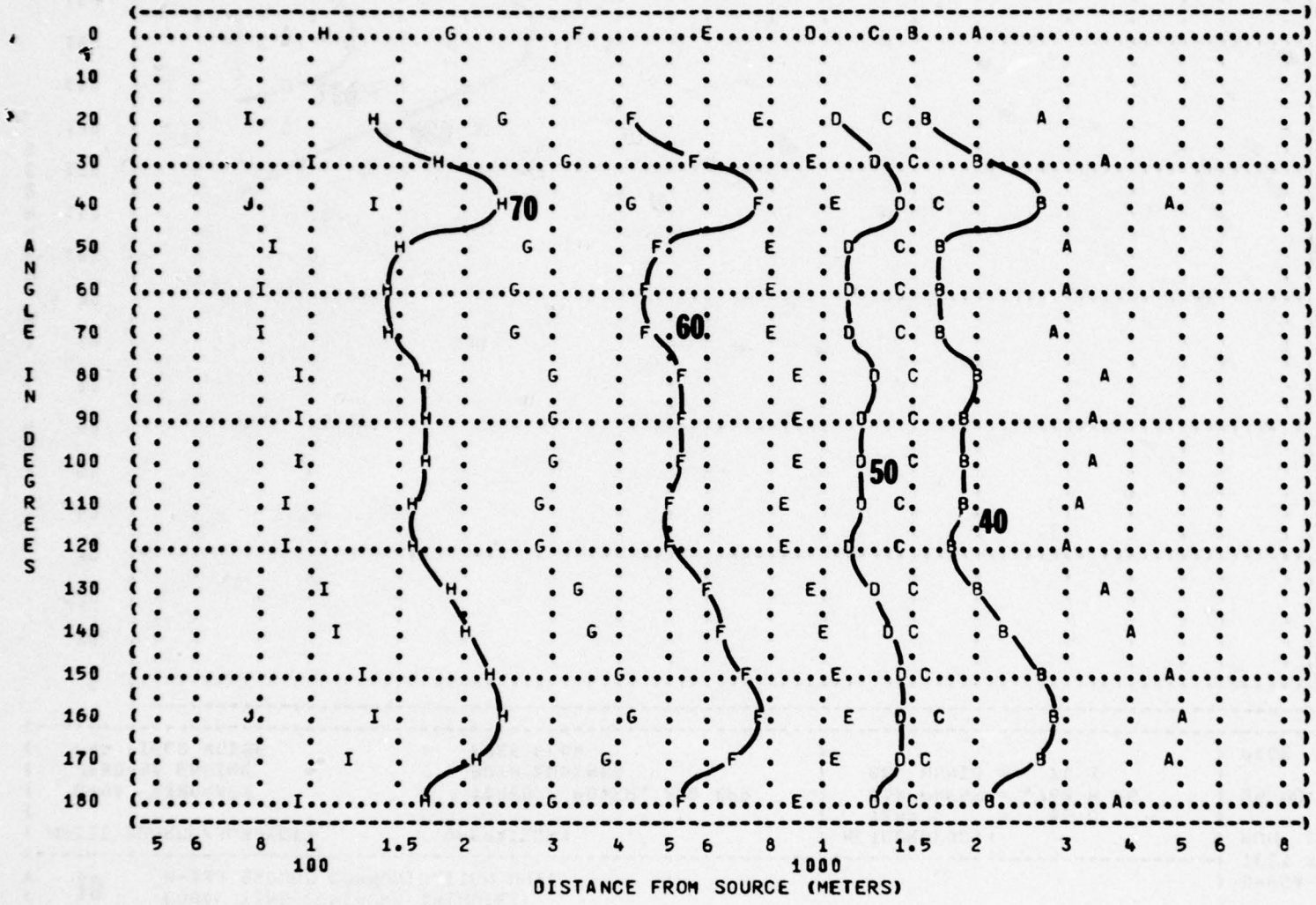


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 19

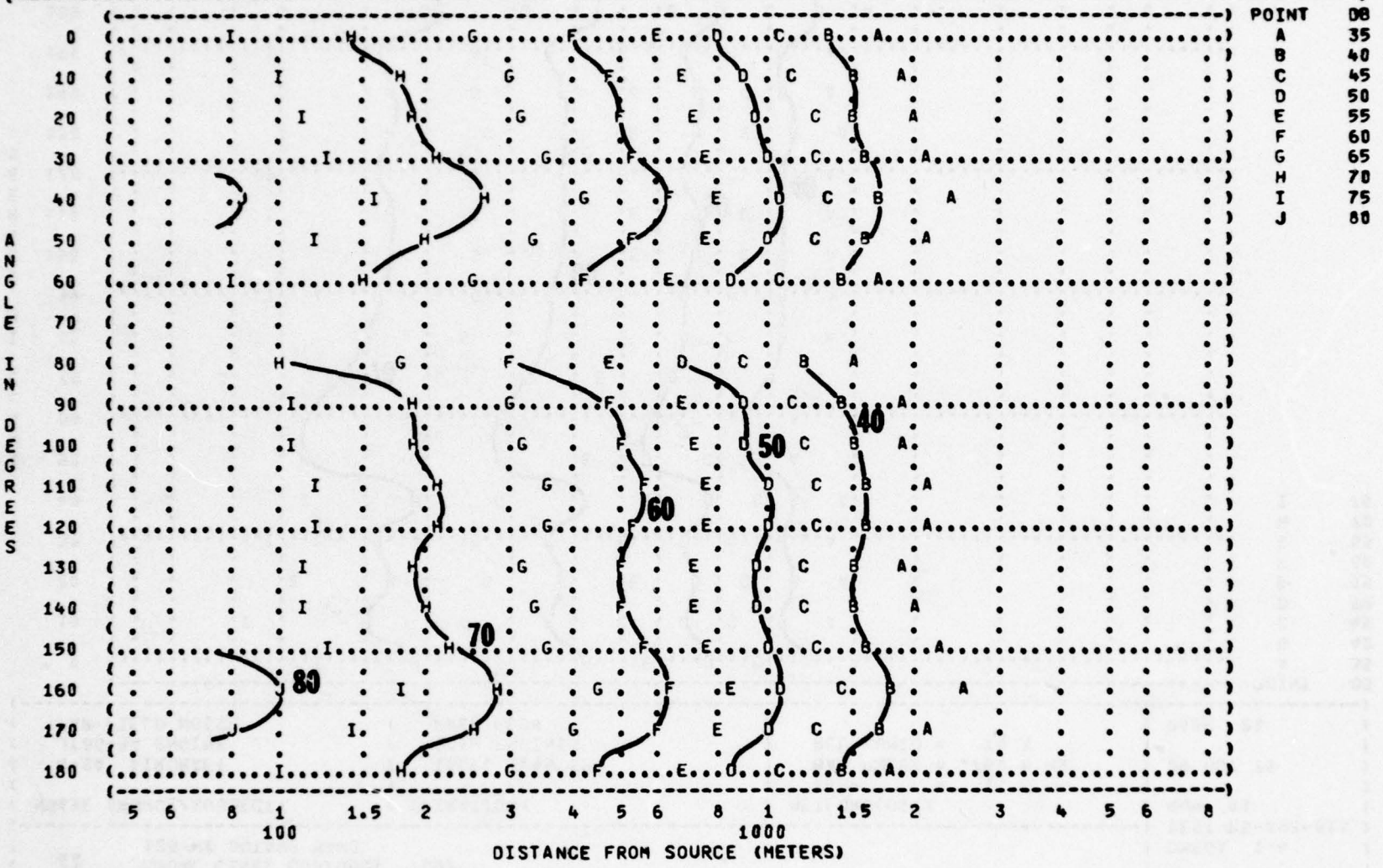


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 20

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

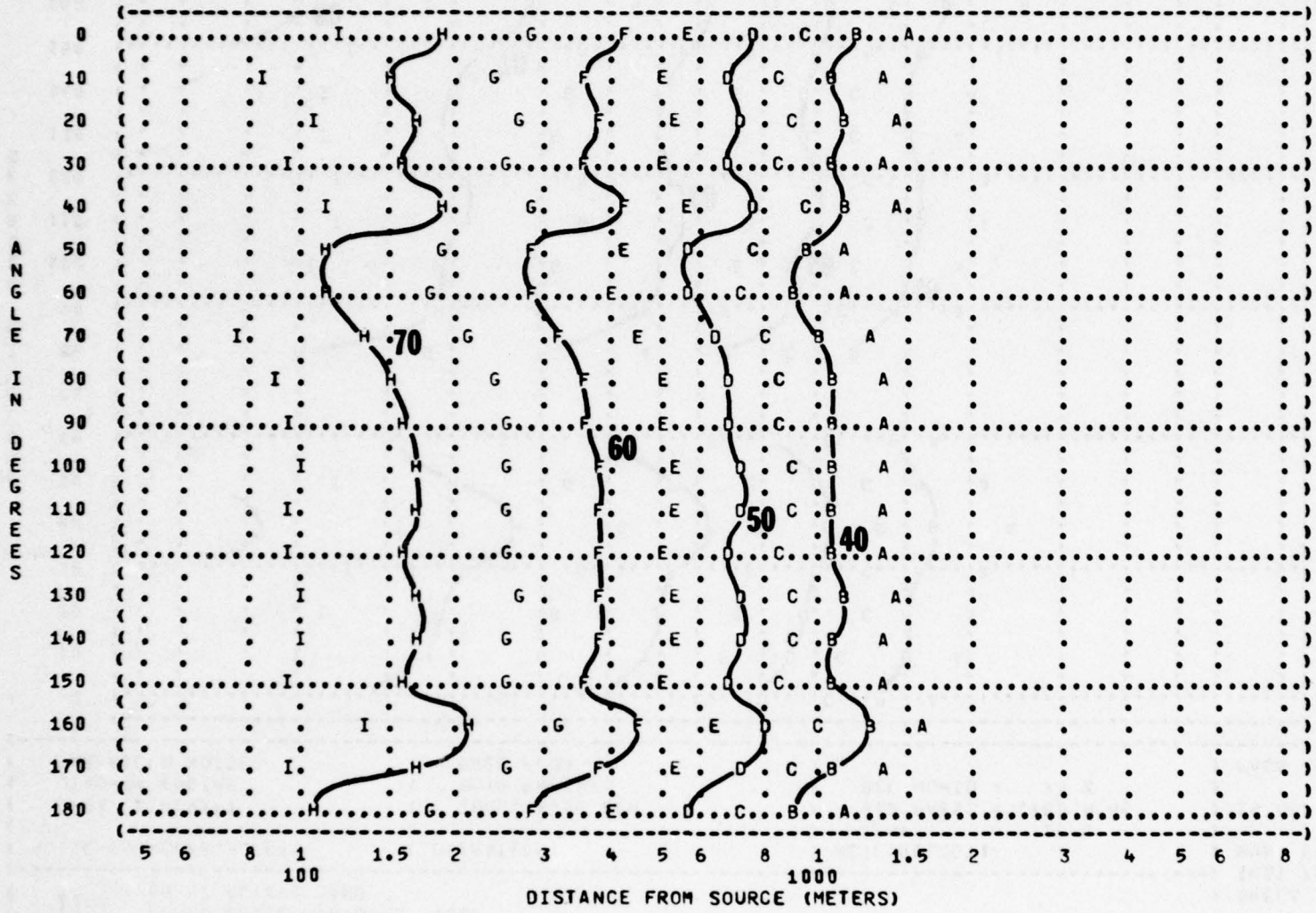


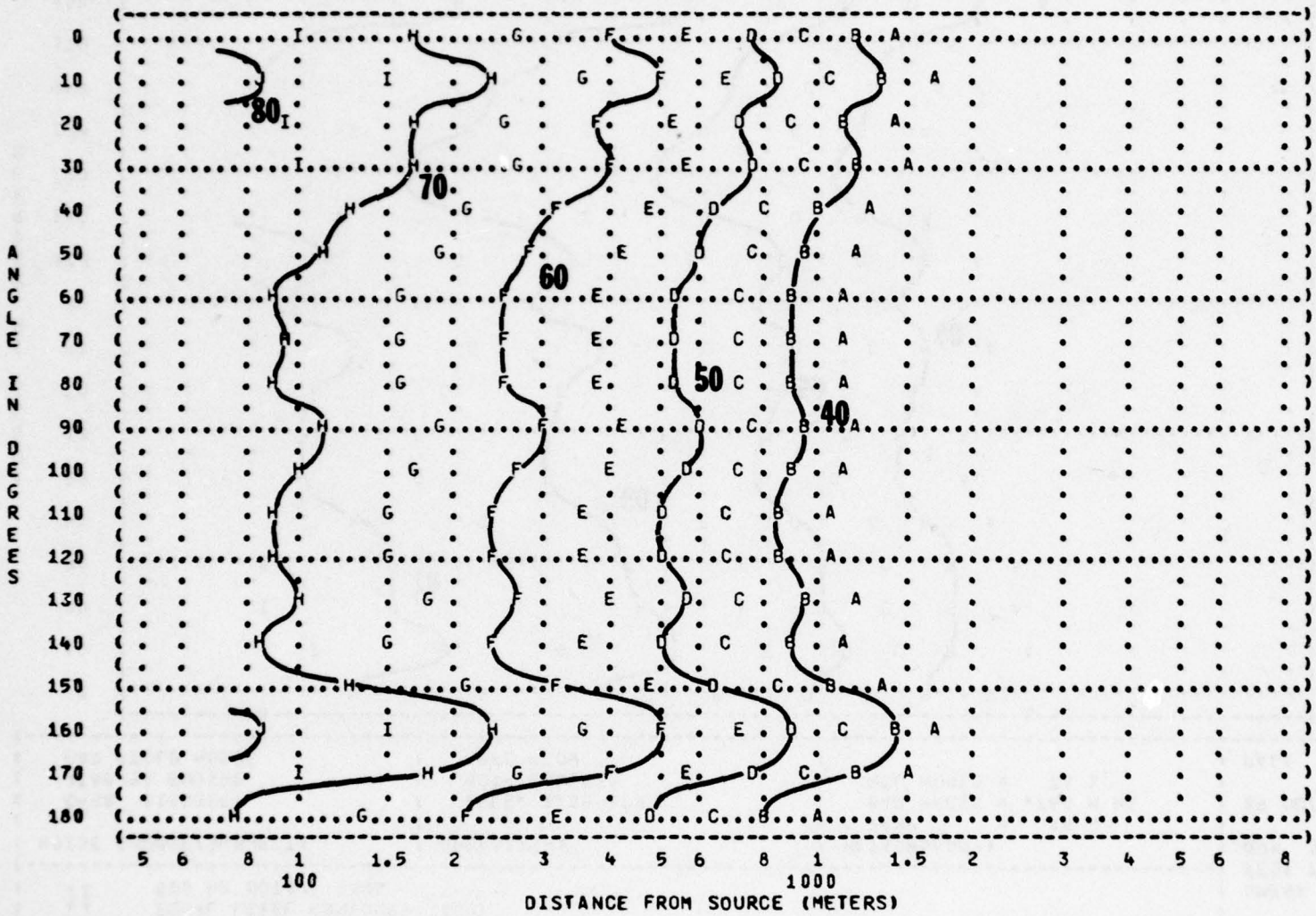
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 21

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
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

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 22

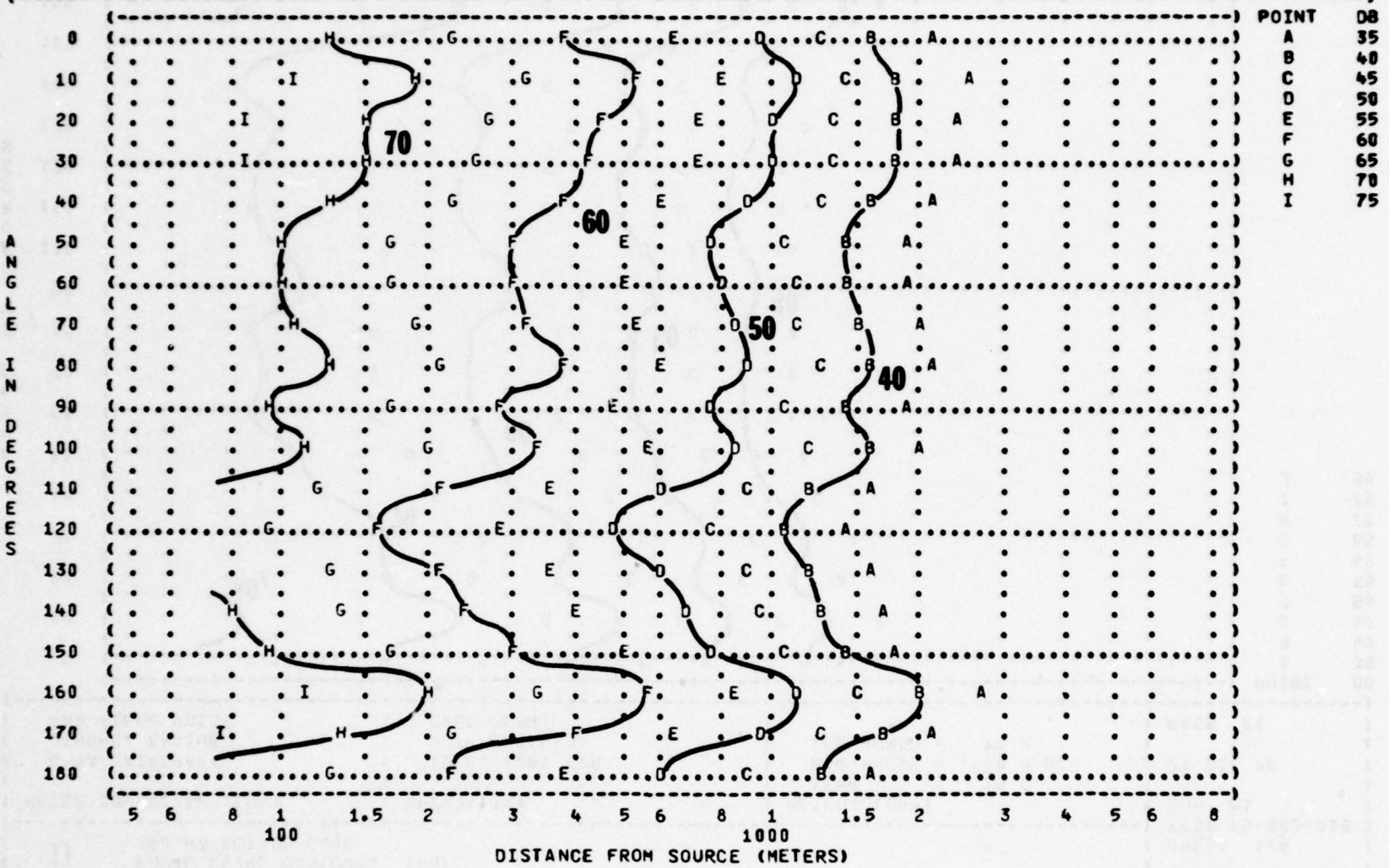


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 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

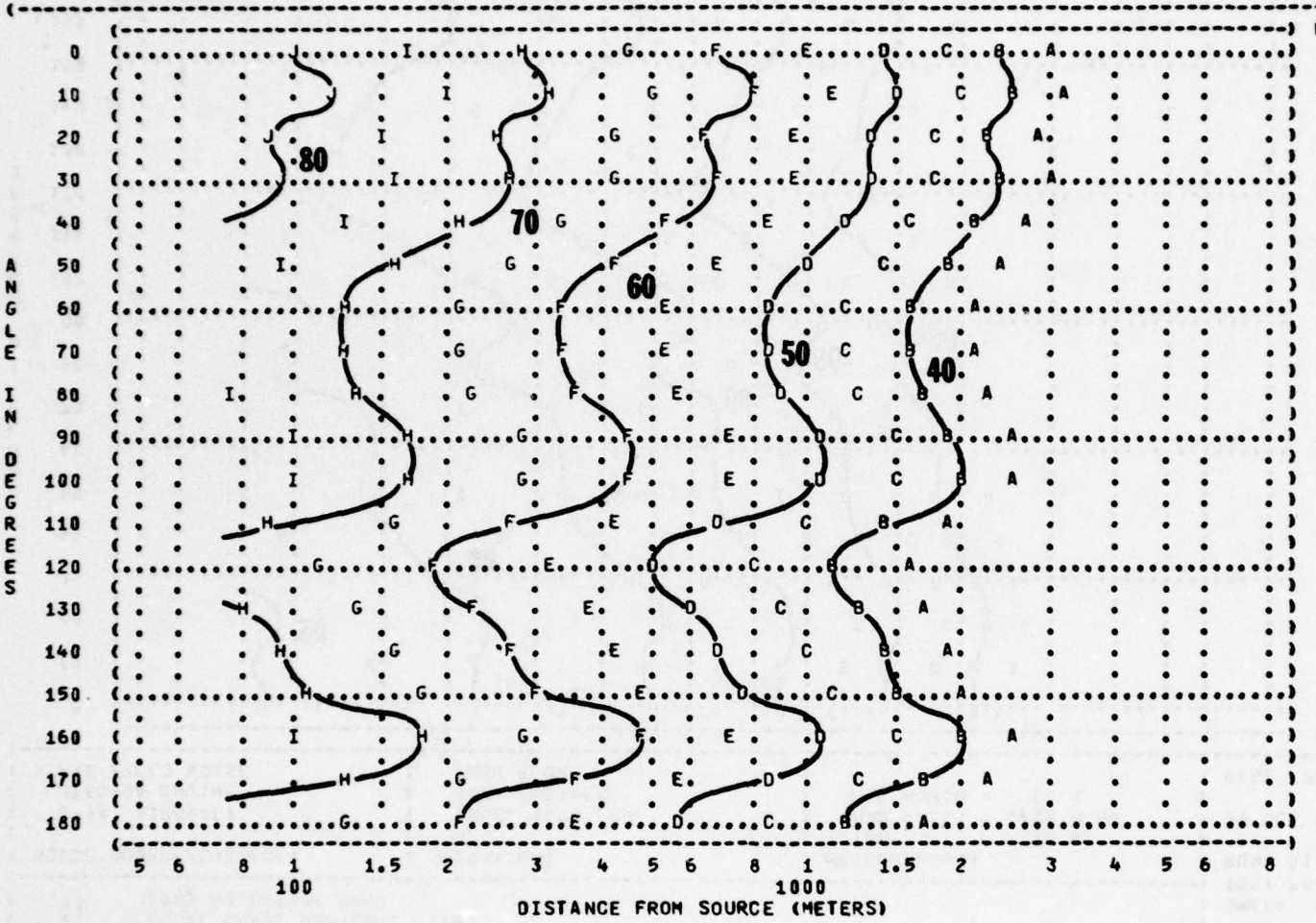


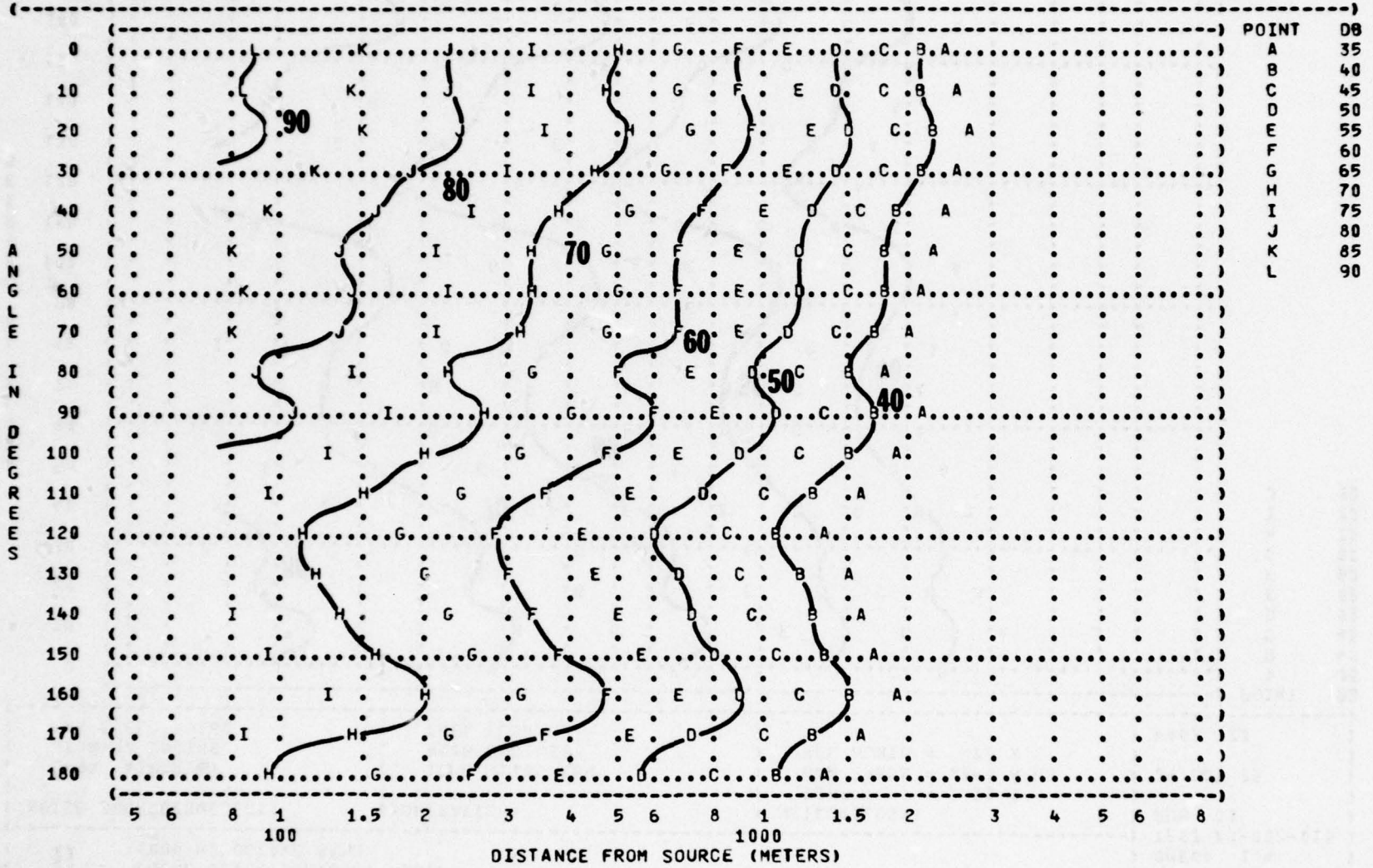
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-015 RUN 01 29 OCT 75 PAGE 24

NOISE SOURCE/SUBJECT: C-9A AIRCRAFT; JT8D-9A ENGINE; FAR FIELD NOISE

OPERATION: IDLE, 1.05 EPR; 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

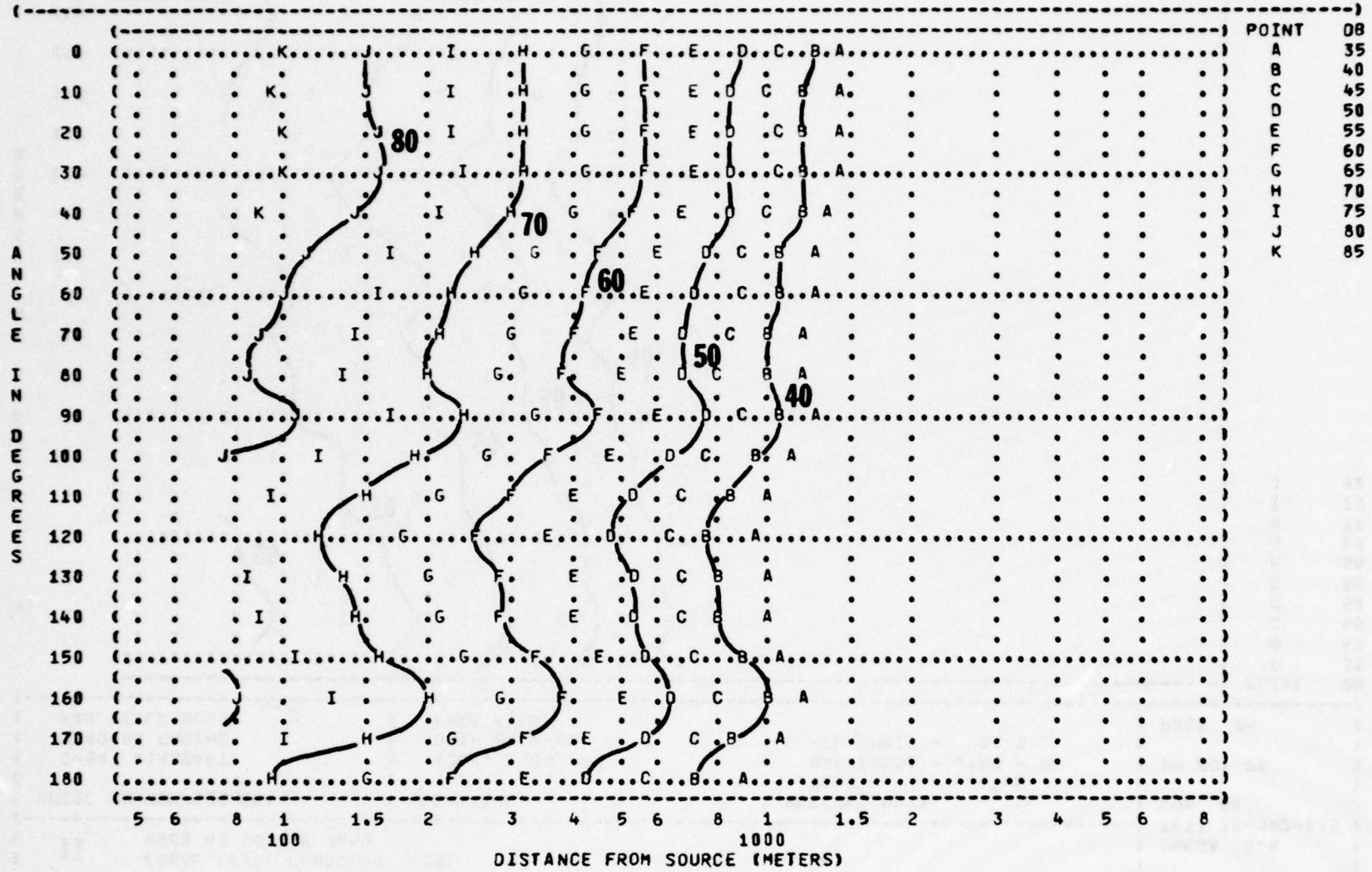
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 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

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE, 1.05 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 01
29 OCT 75
PAGE 26

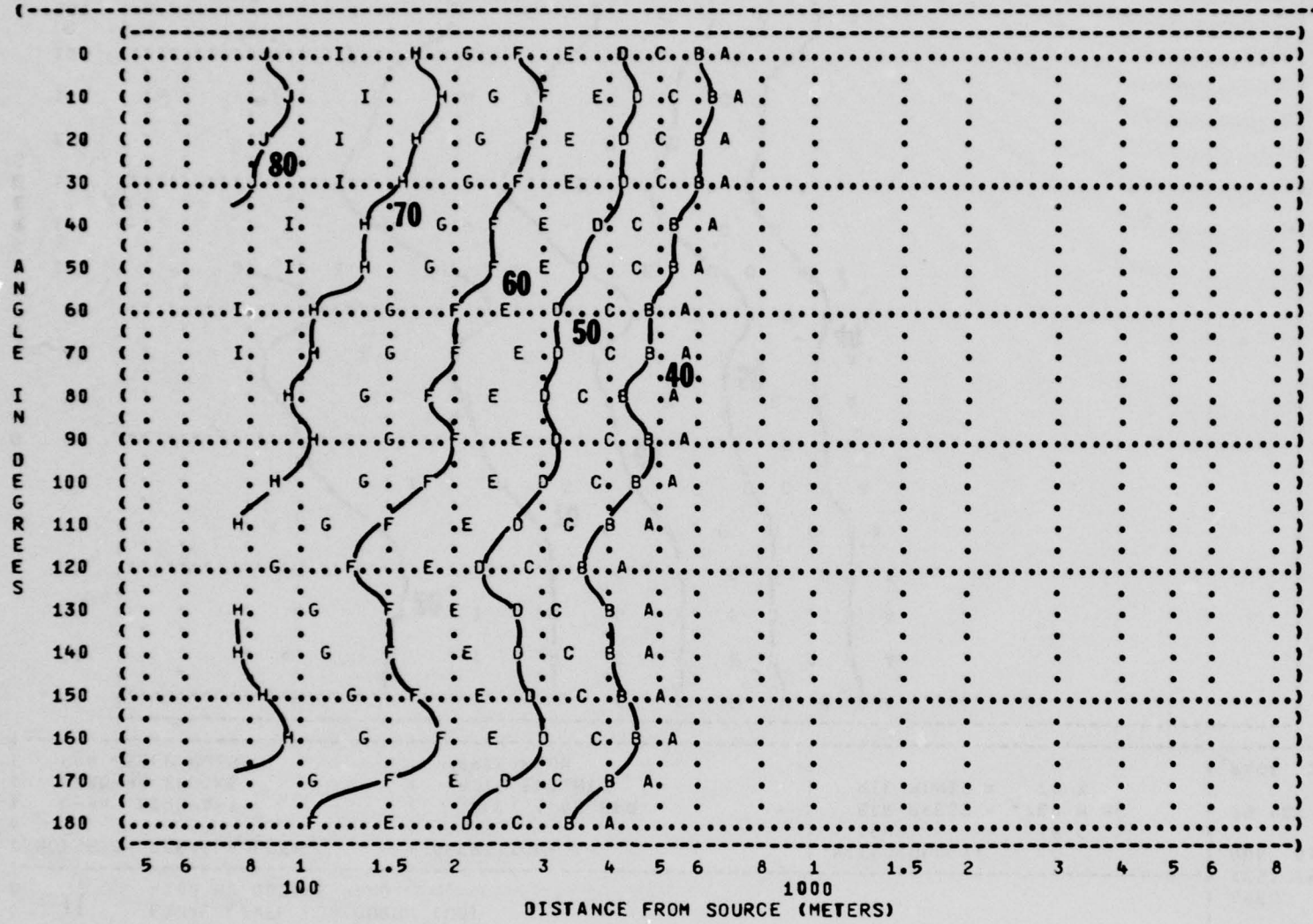


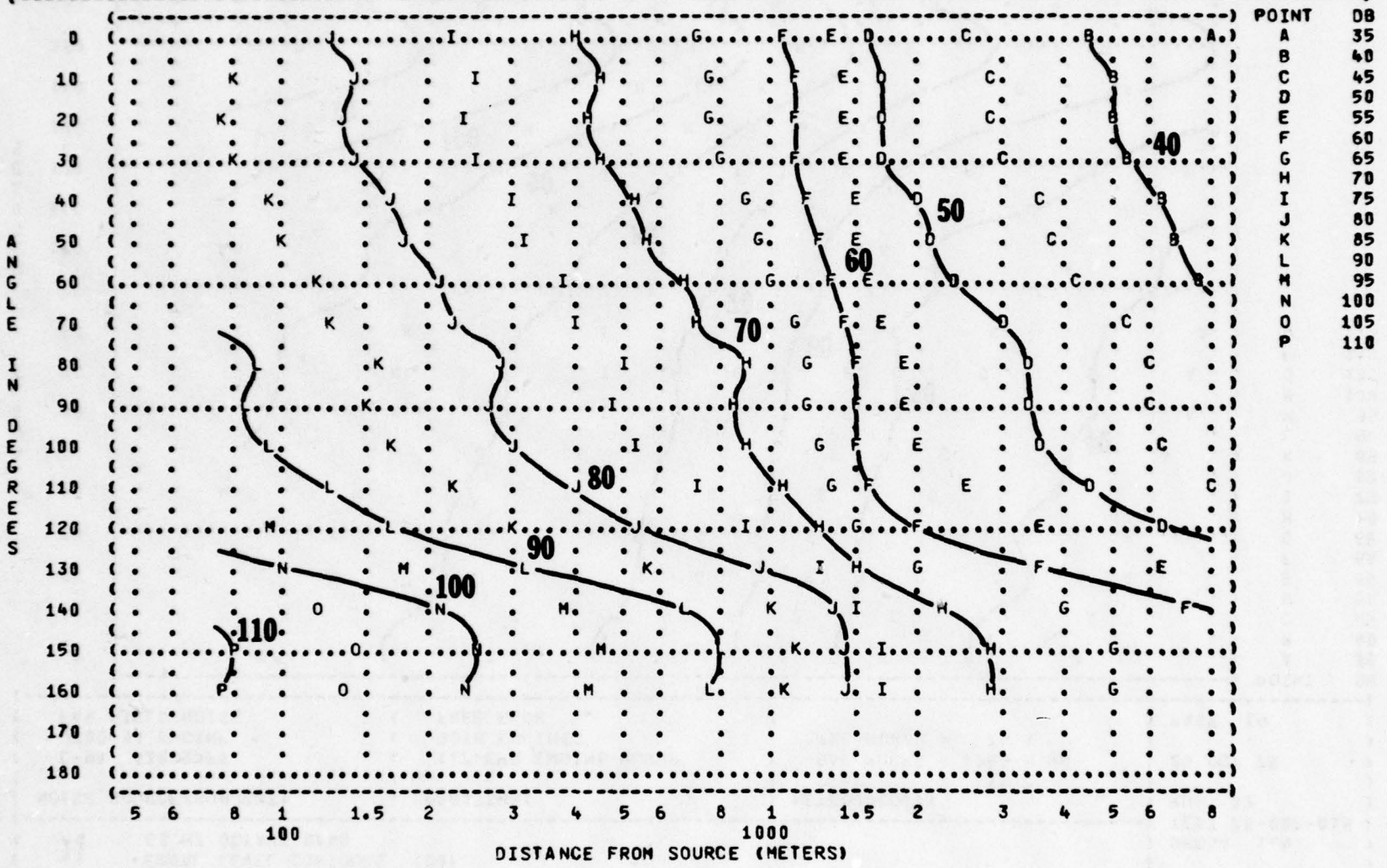
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 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
K	85
L	90
M	95
N	100
O	105
P	110

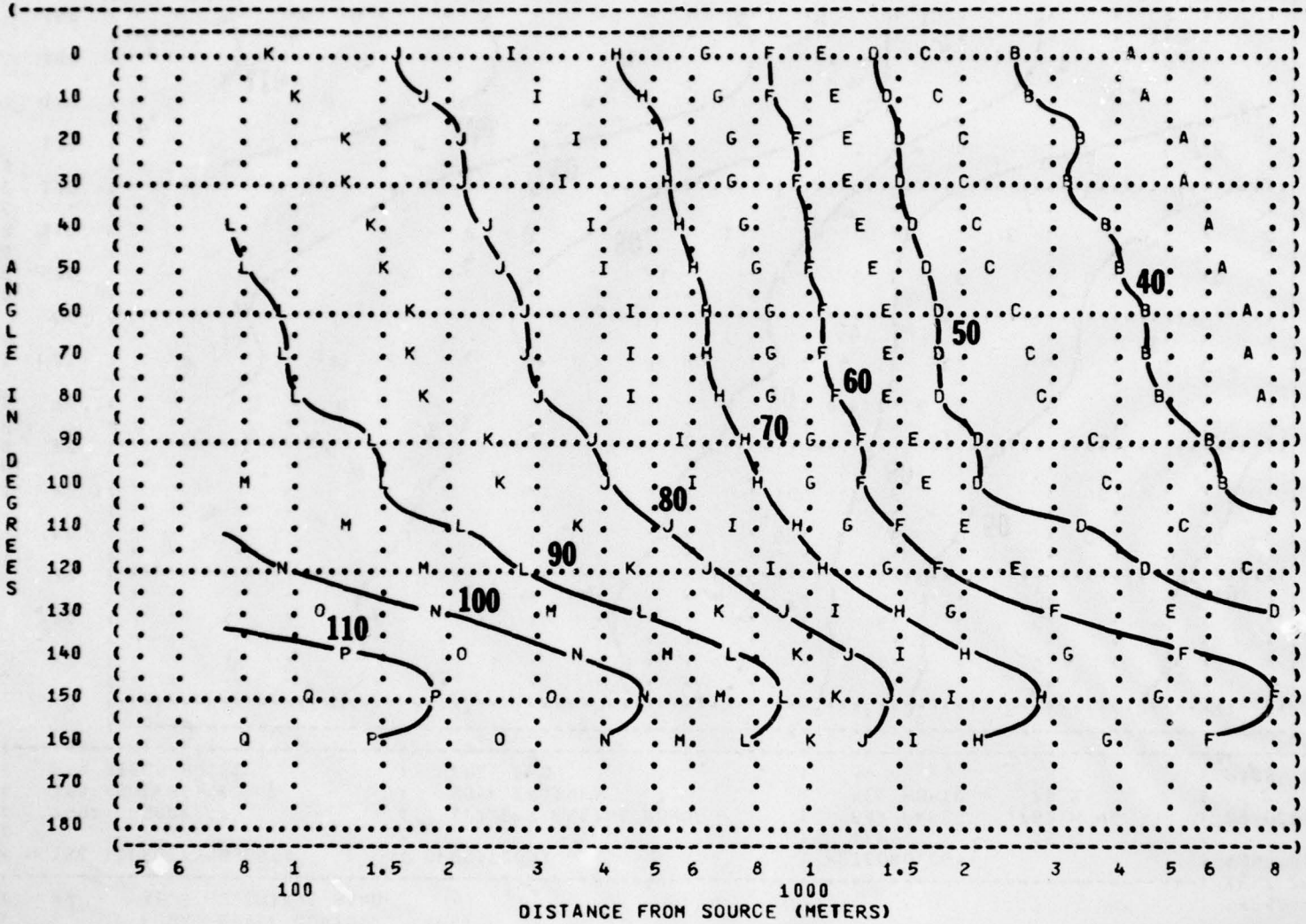
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 19

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
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

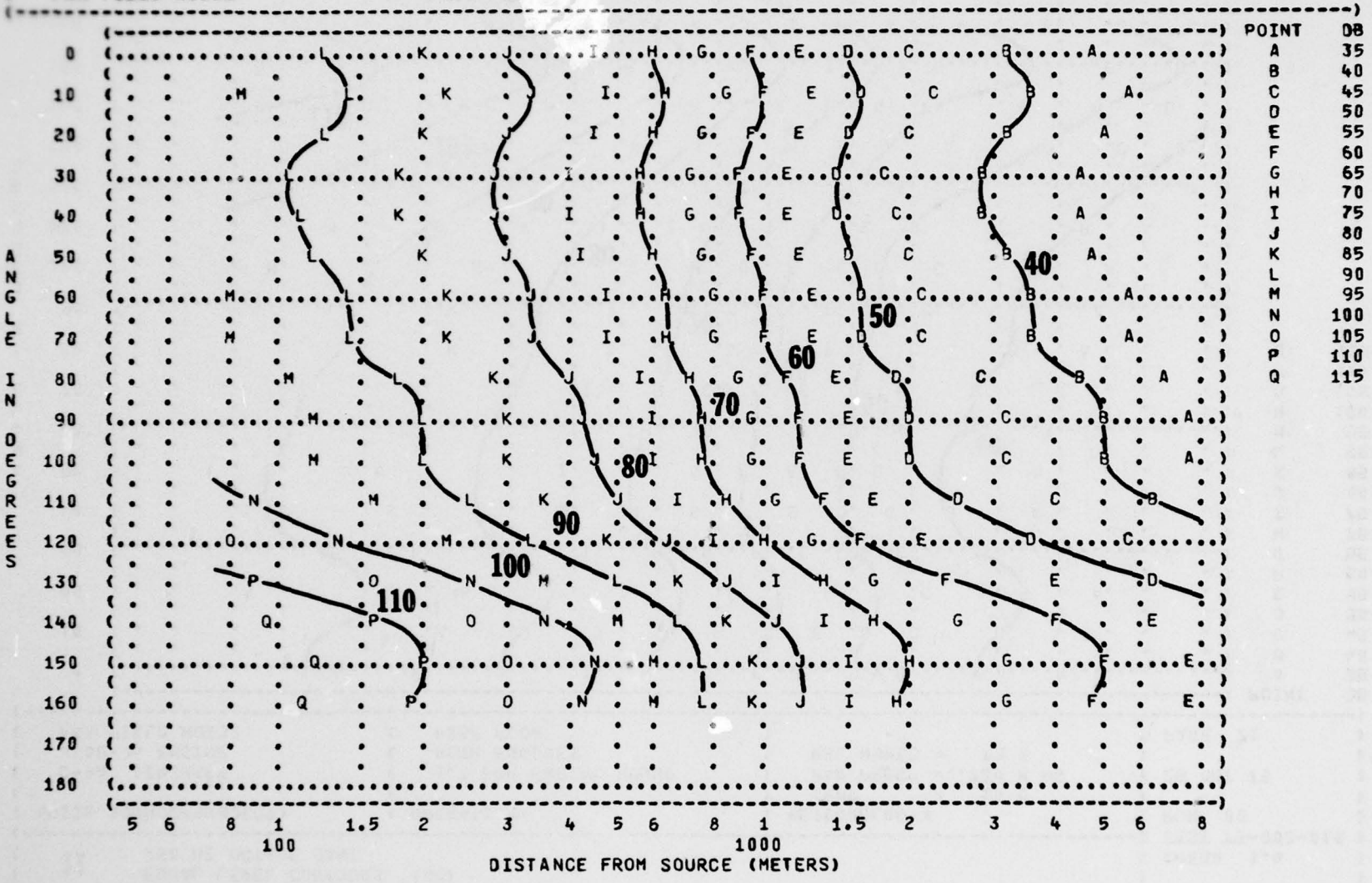
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 20

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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



POINT	DB
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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

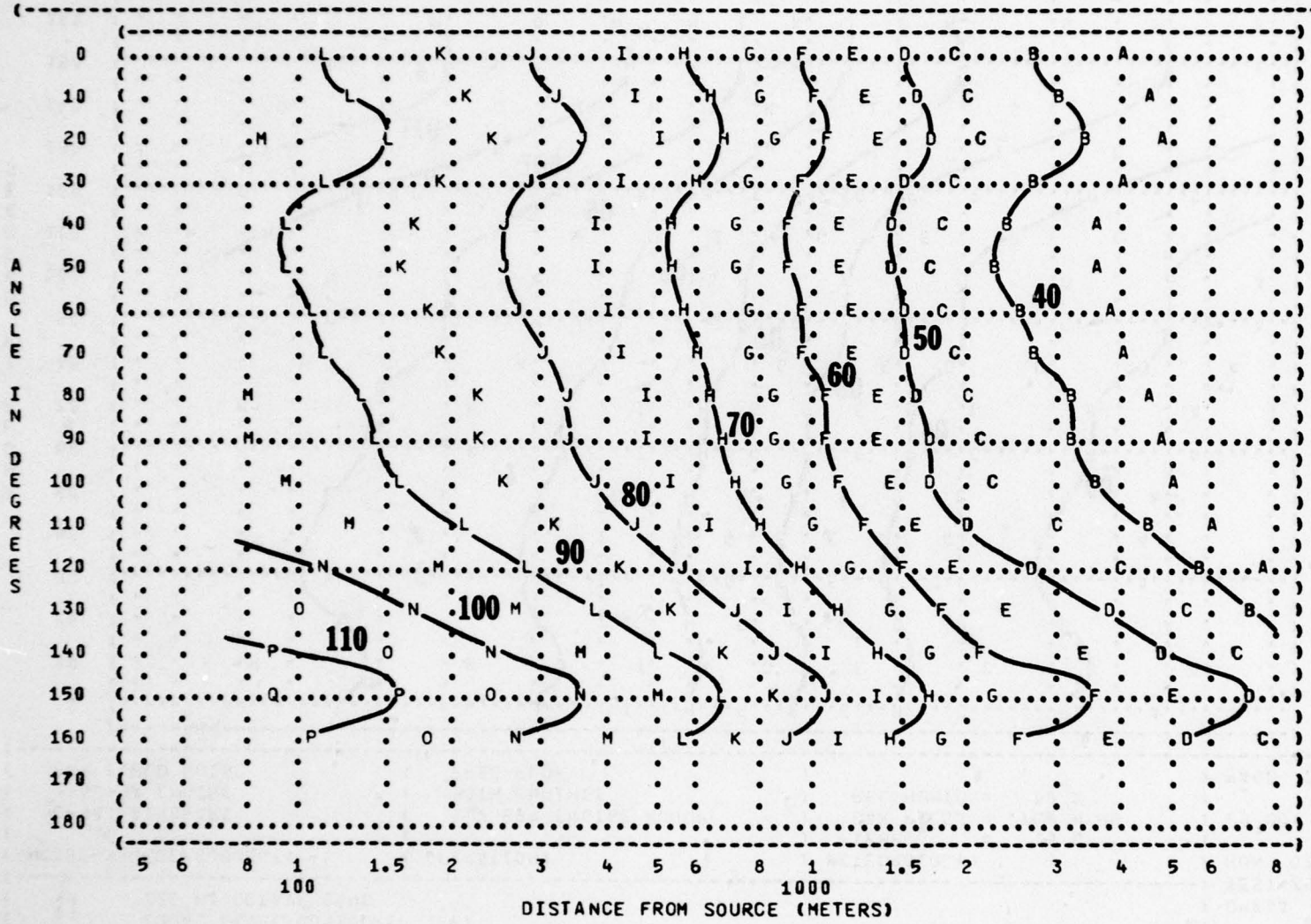
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 21



POINT	DB
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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

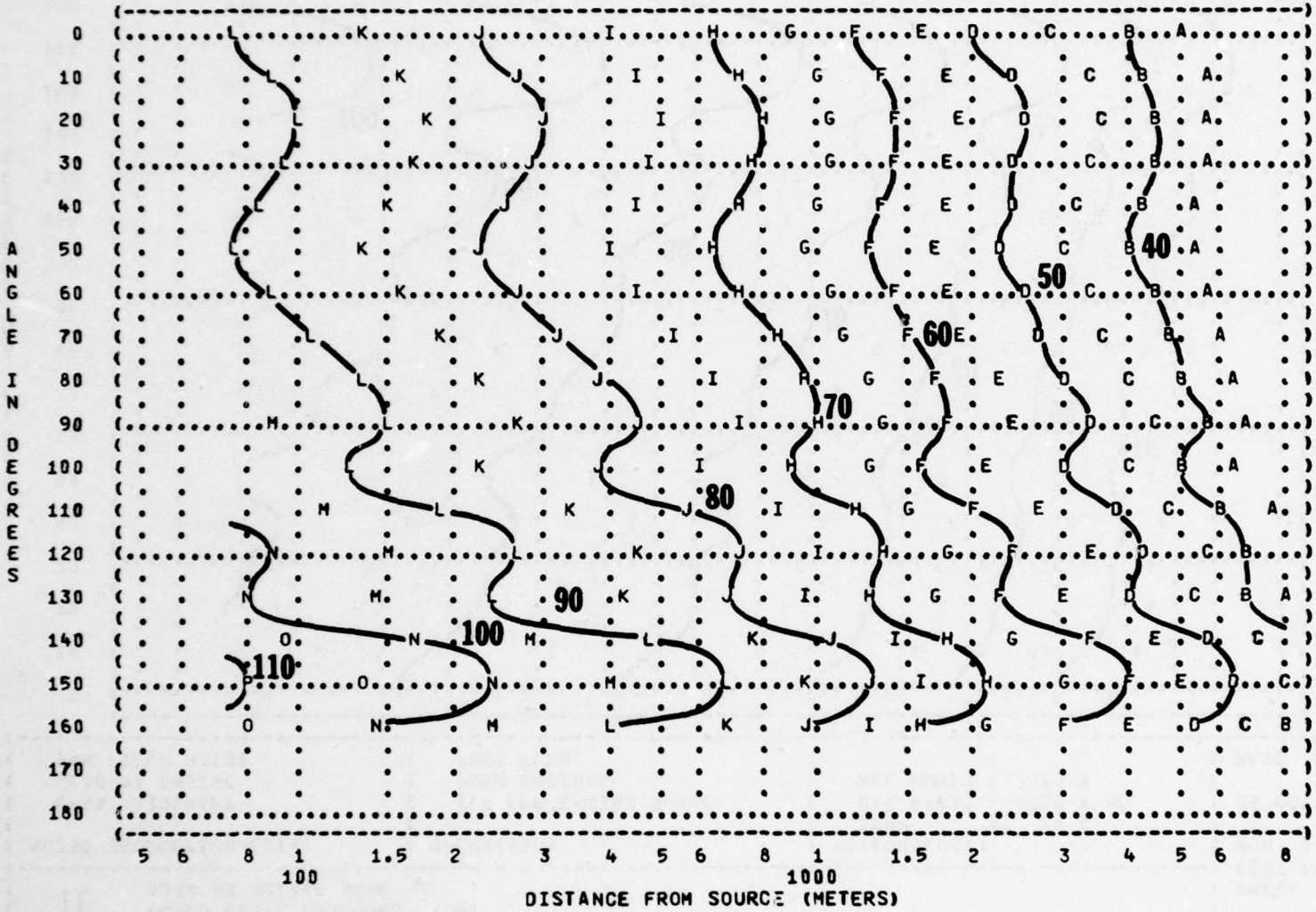
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 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

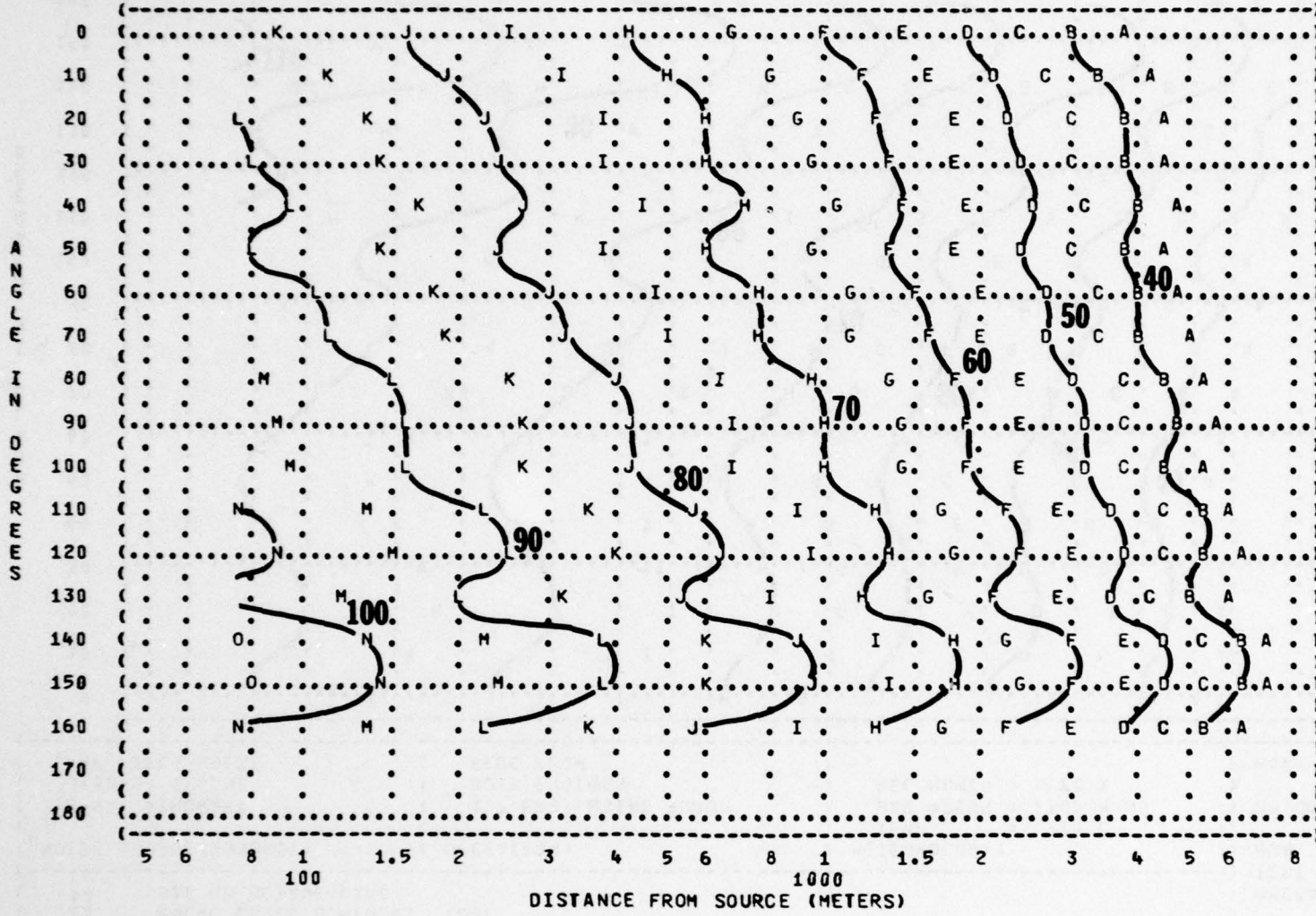
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-015 RUN 02 29 OCT 75 PAGE 23

NOISE SOURCE/SUBJECT: C-9A AIRCRAFT; JT8D-9A ENGINE; FAR FIELD NOISE

OPERATION: 1.7 EPR ENGINE RUNUP; 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

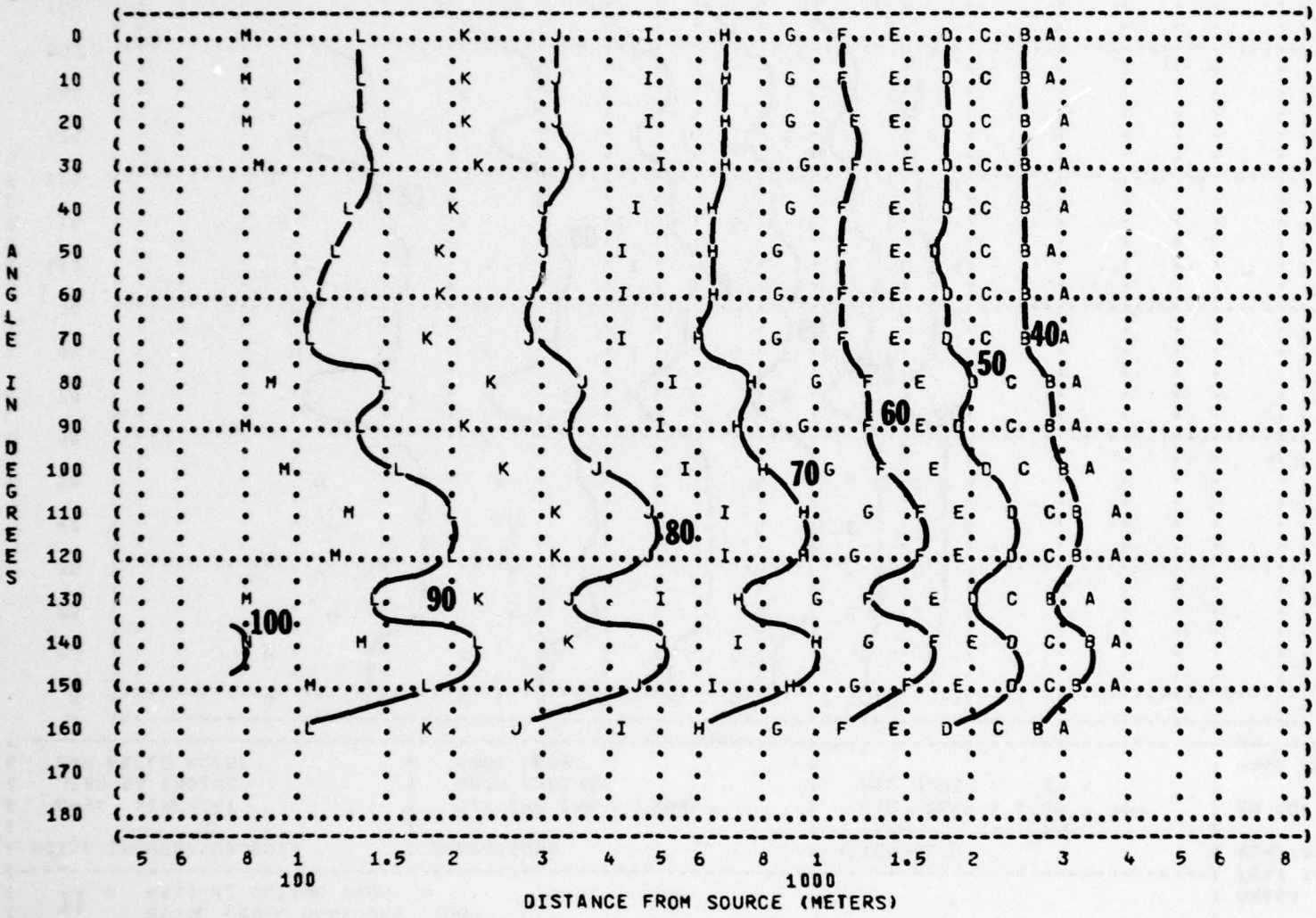
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 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

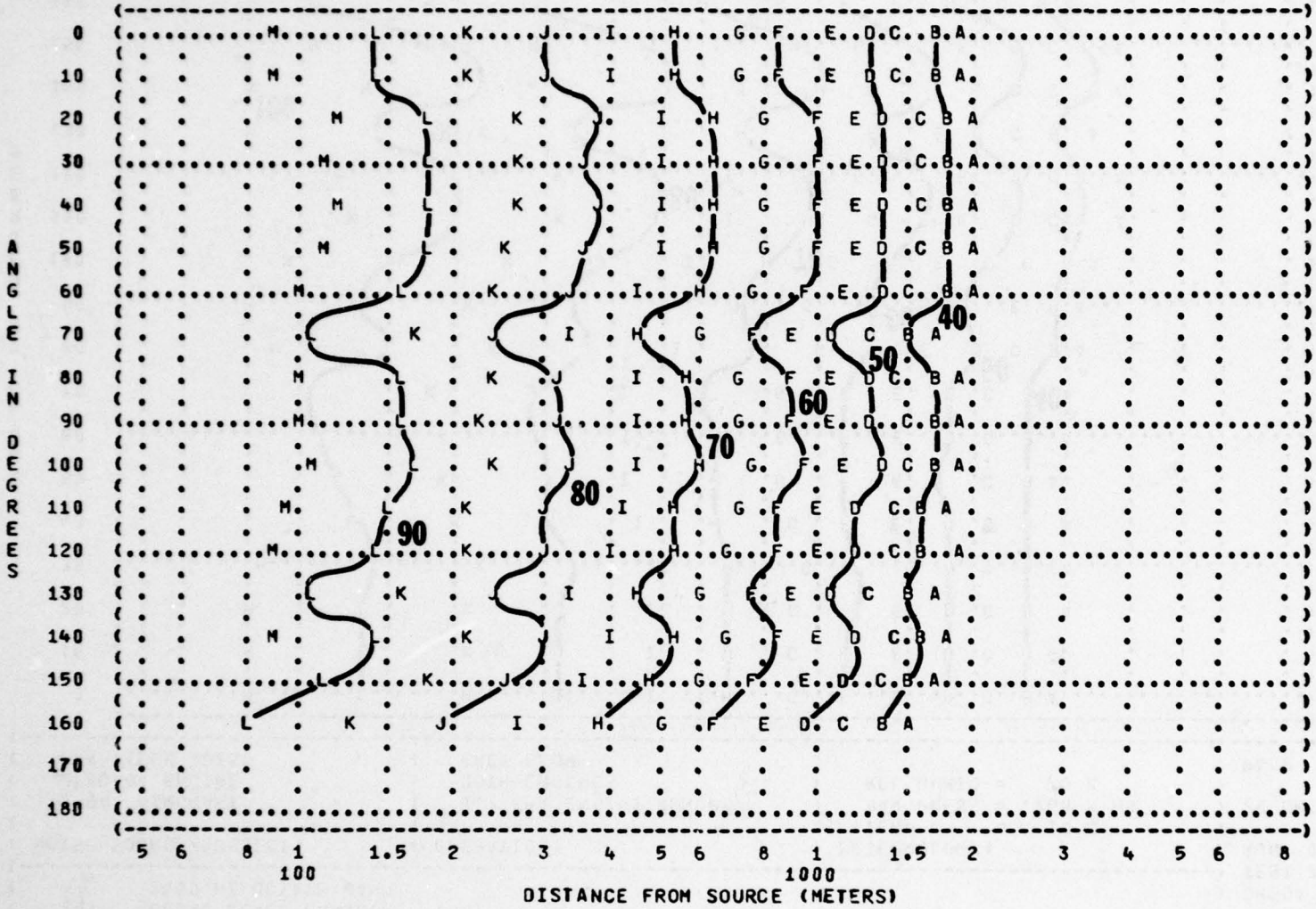
FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 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

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.7 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 02
29 OCT 75
PAGE 26

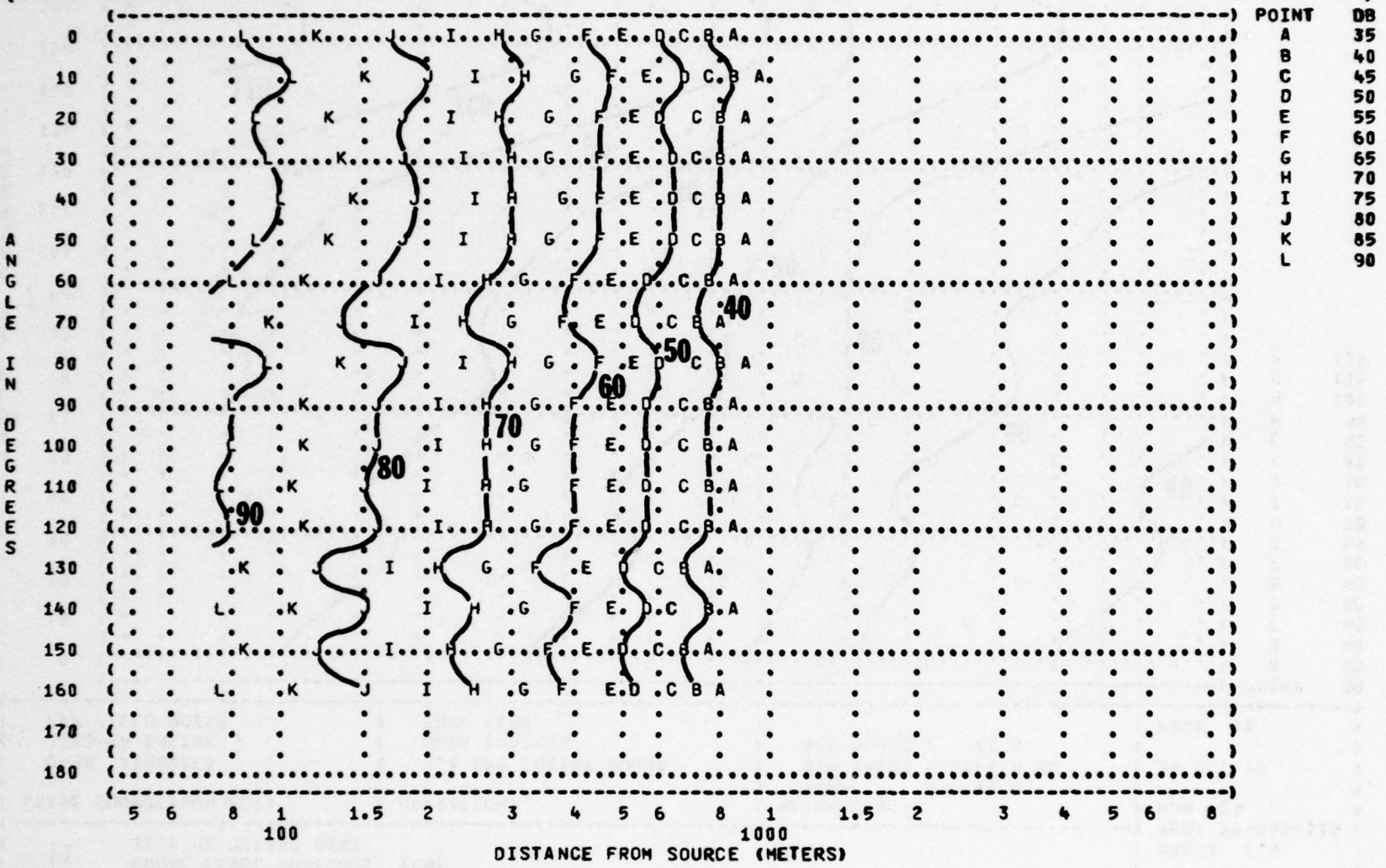


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 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
K	85
L	90
M	95
N	100
O	105
P	110

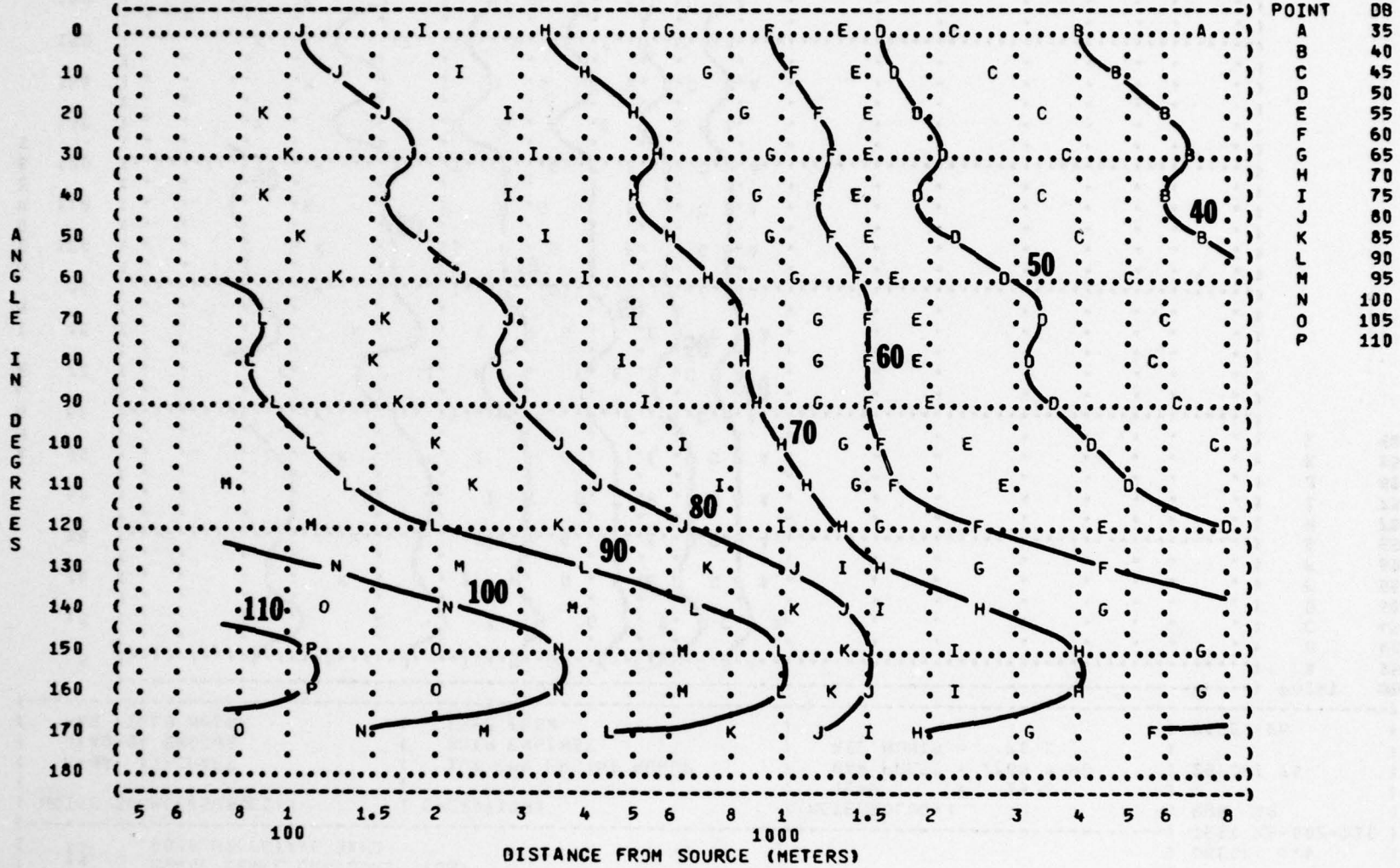


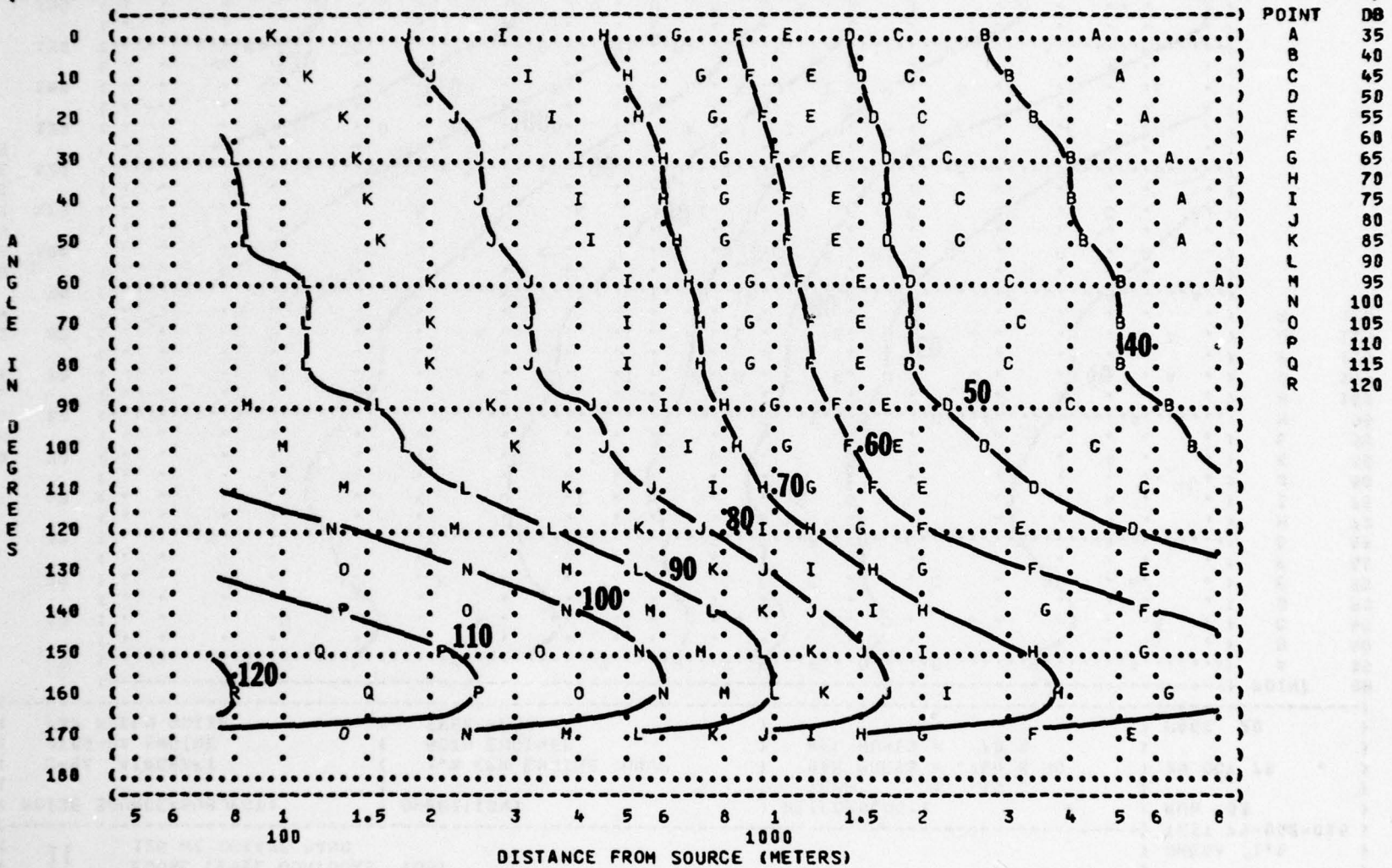
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.6 TEST 75-002-015 RUN 03 29 OCT 75 PAGE 19

NOISE SOURCE/SUBJECT: C-9A AIRCRAFT; JT8D-9A ENGINE; FAR FIELD NOISE

OPERATION: 1.8 EPR ENGINE RUNUP; 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
R	120

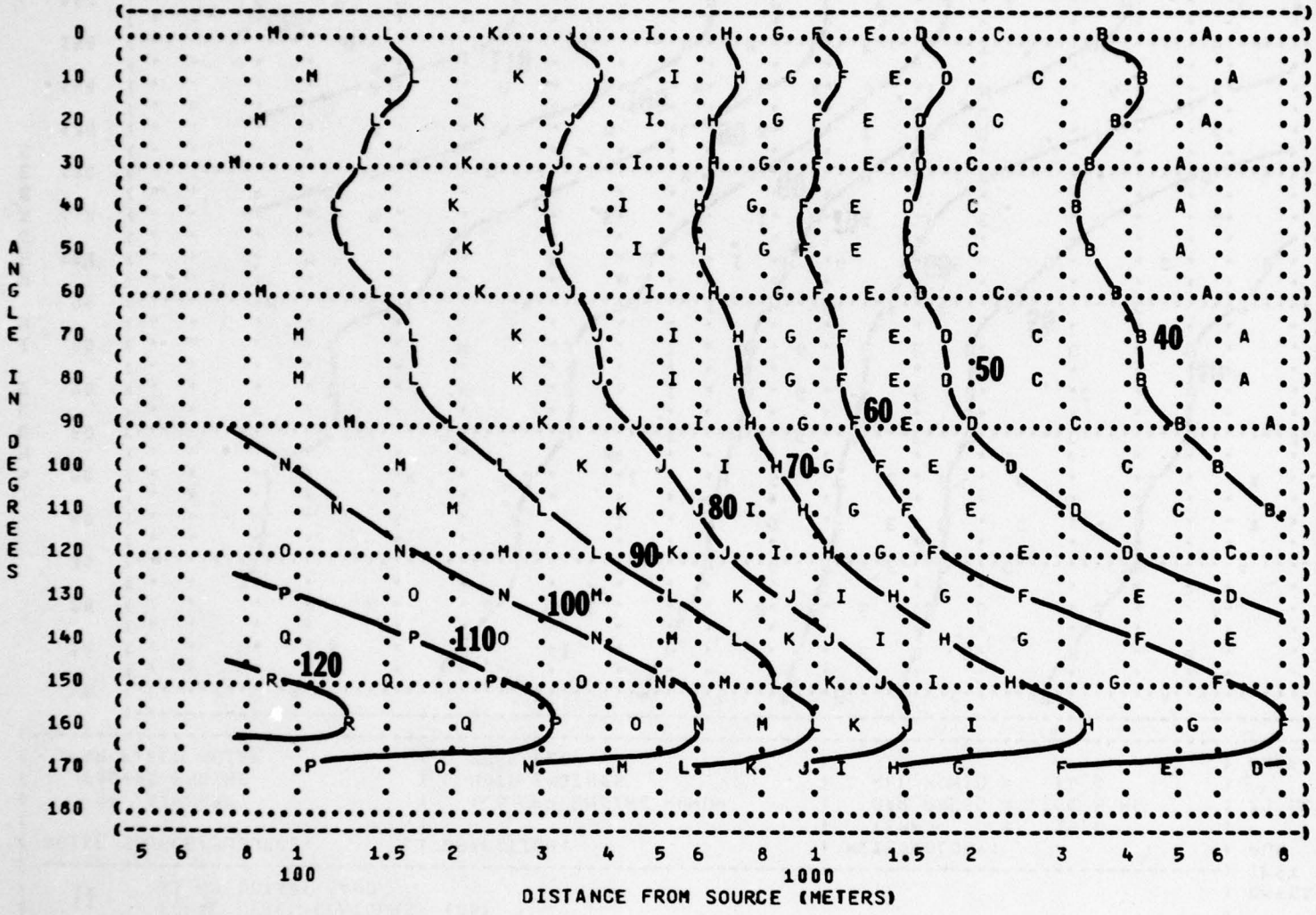
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 20

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
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
R	120

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 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

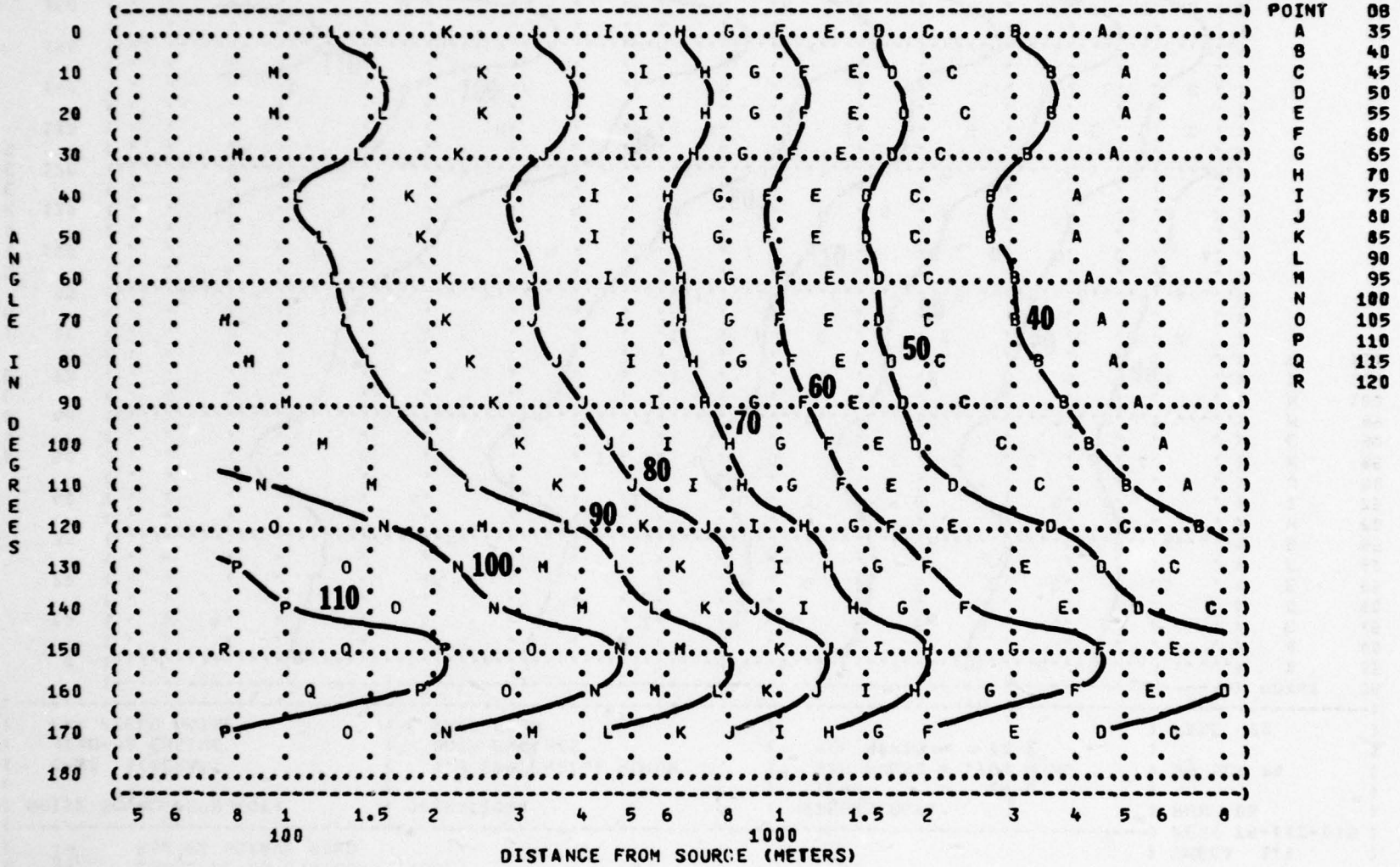


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 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

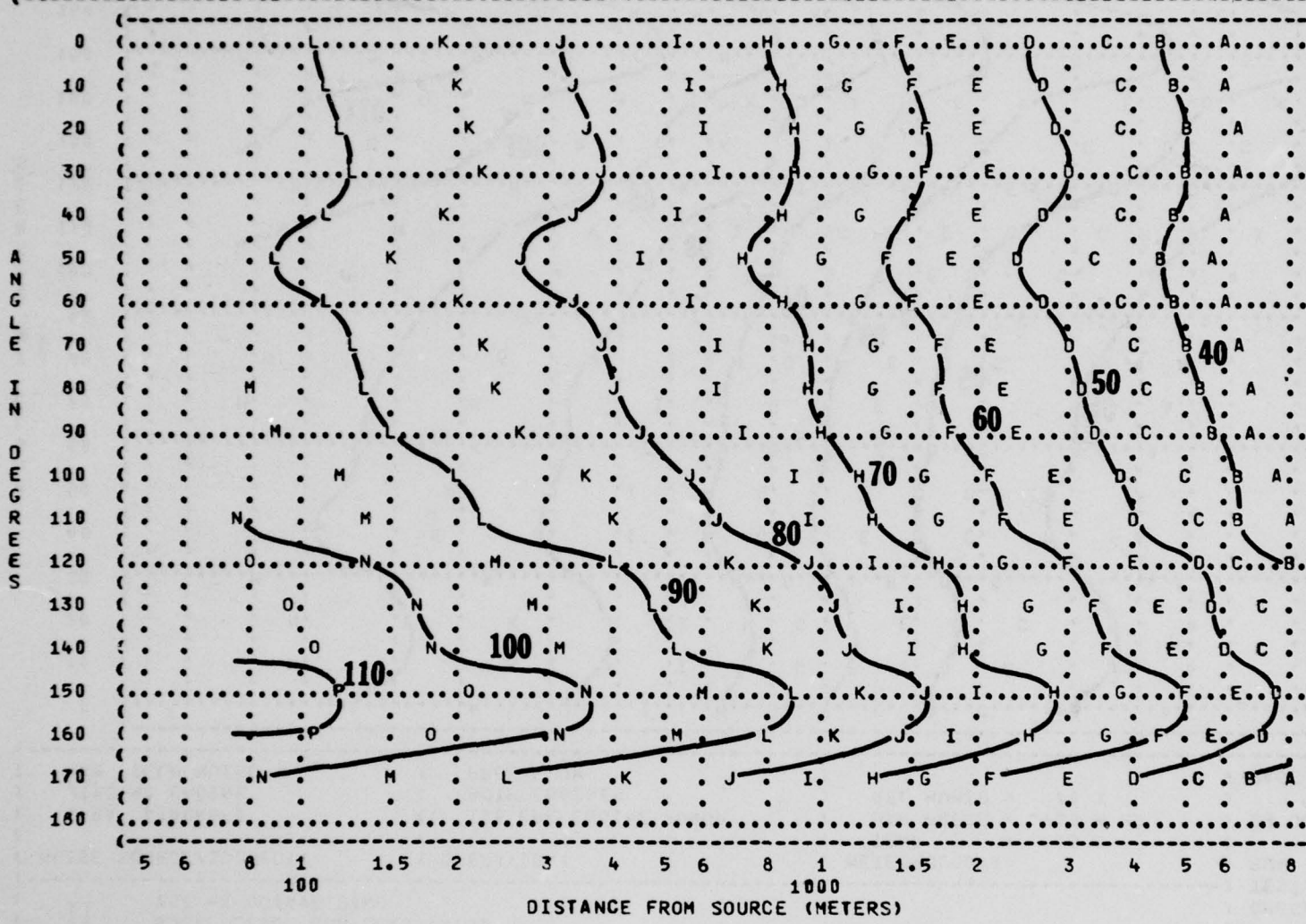


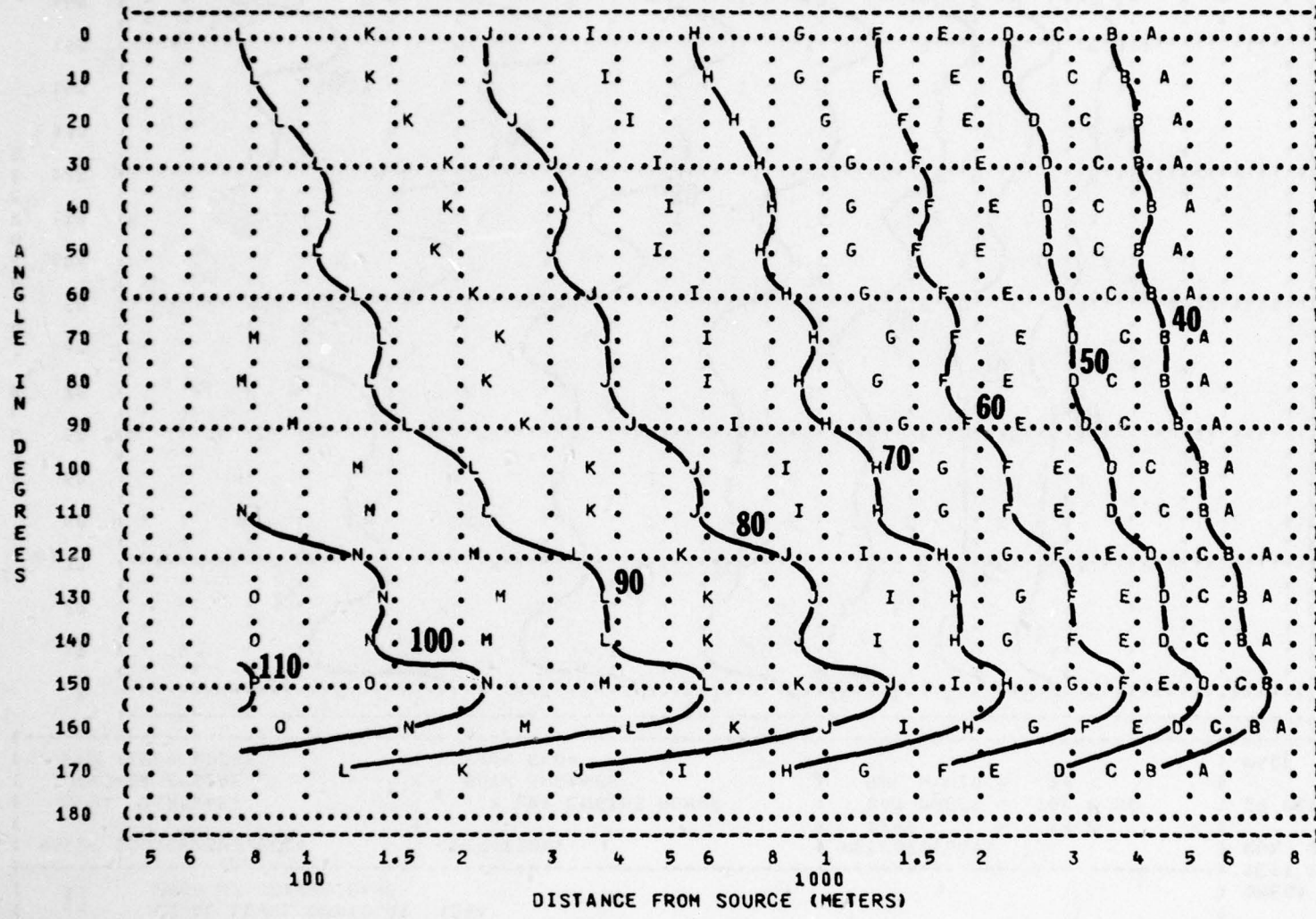
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-015 RUN 03 29 OCT 75 PAGE 23

NOISE SOURCE/SUBJECT: C-9A AIRCRAFT; JT8D-9A ENGINE; FAR FIELD NOISE

OPERATION: 1.8 EPR ENGINE RUNUP; 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

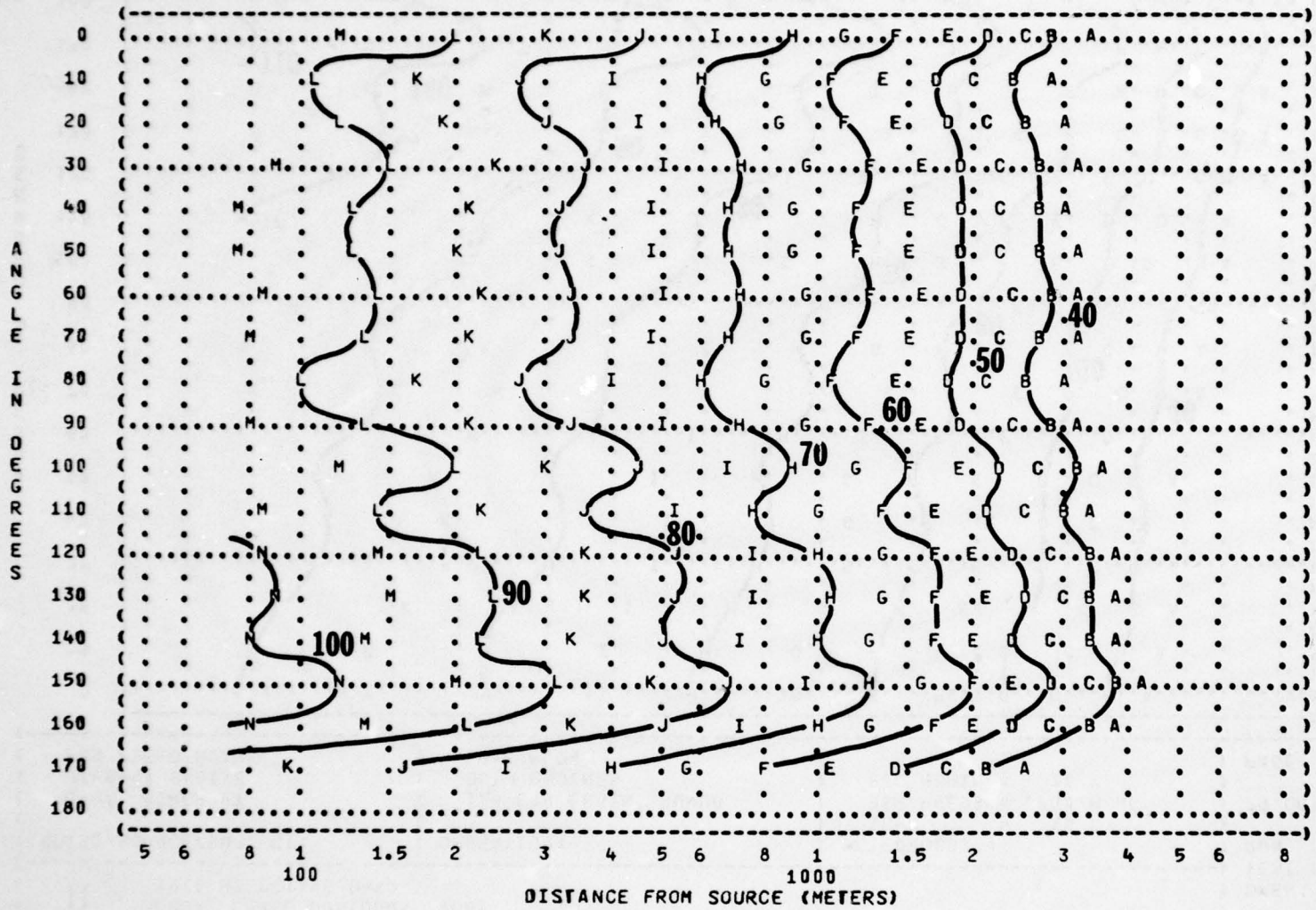
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 24



POINT	DB
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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

AD-A048 838 AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 84. C-9A AIRC--ETC(U)
APR 77 R G POWELL

UNCLASSIFIED AMRL-TR-75-50-VOL-84 NL

2 OF 2
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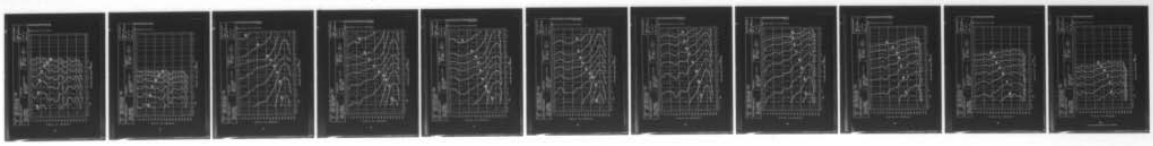

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DATE
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2-78
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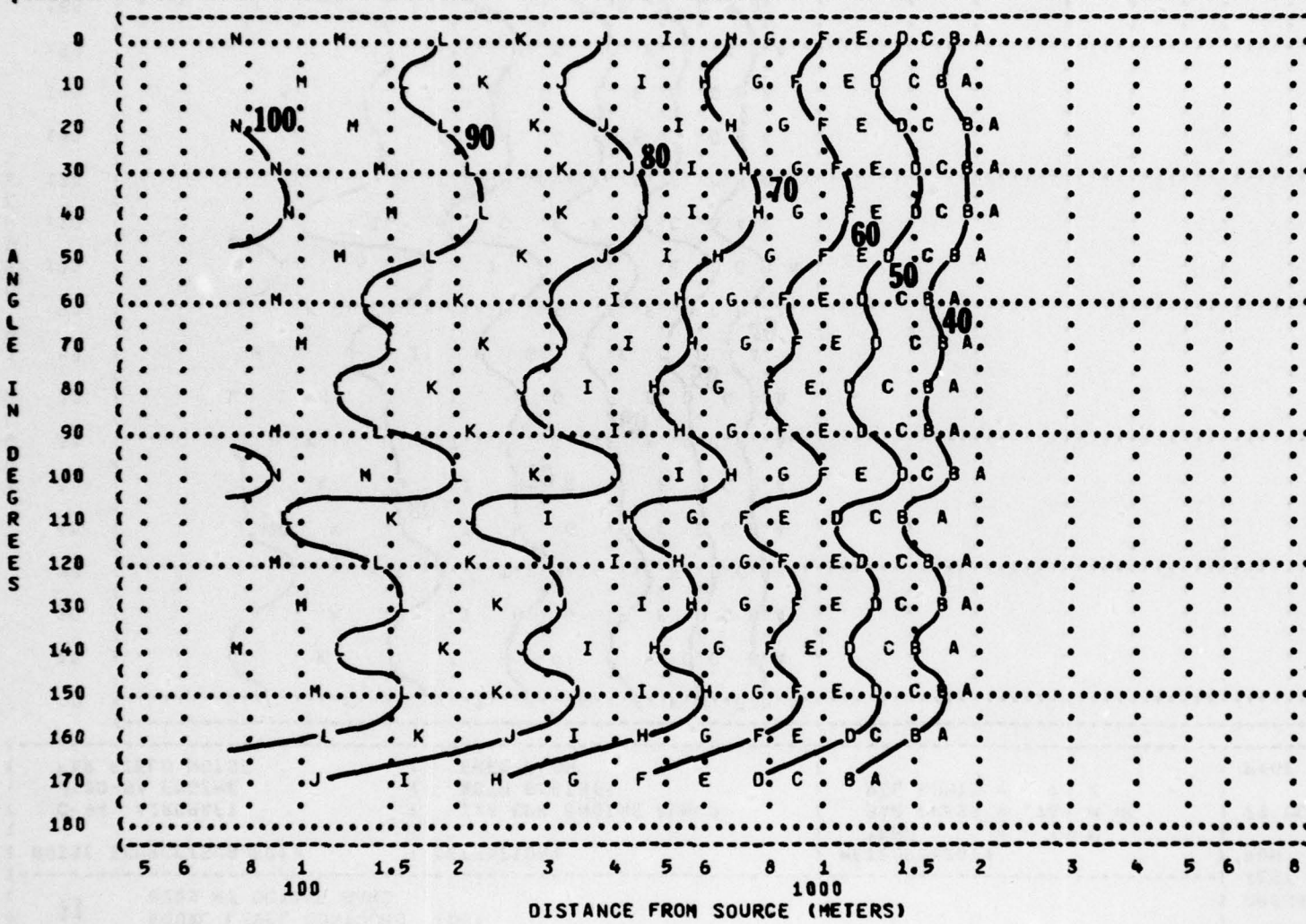
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 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:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
1.8 EPR ENGINE RUNUP
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 03
29 OCT 75
PAGE 26

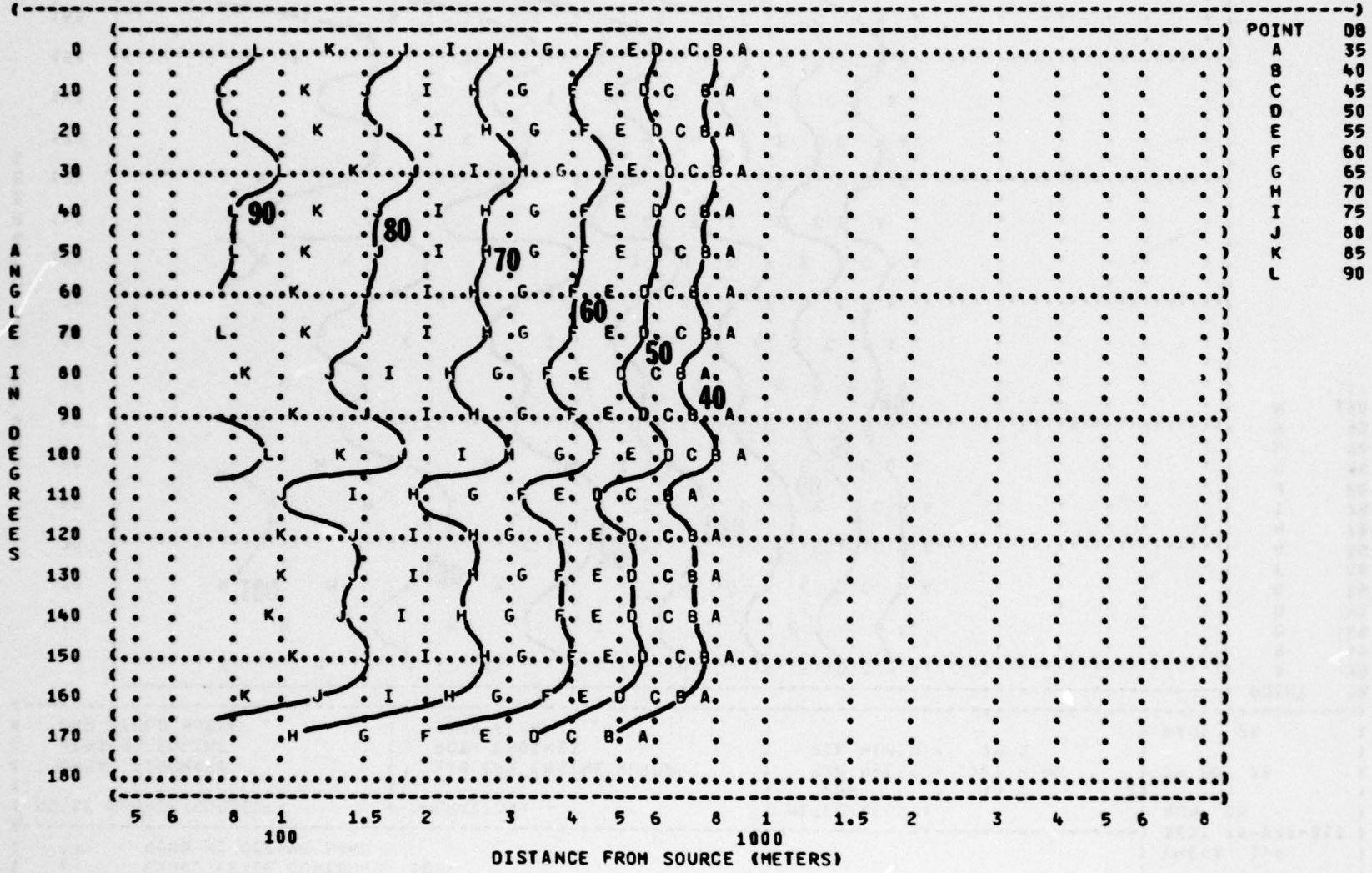


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 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
P	115

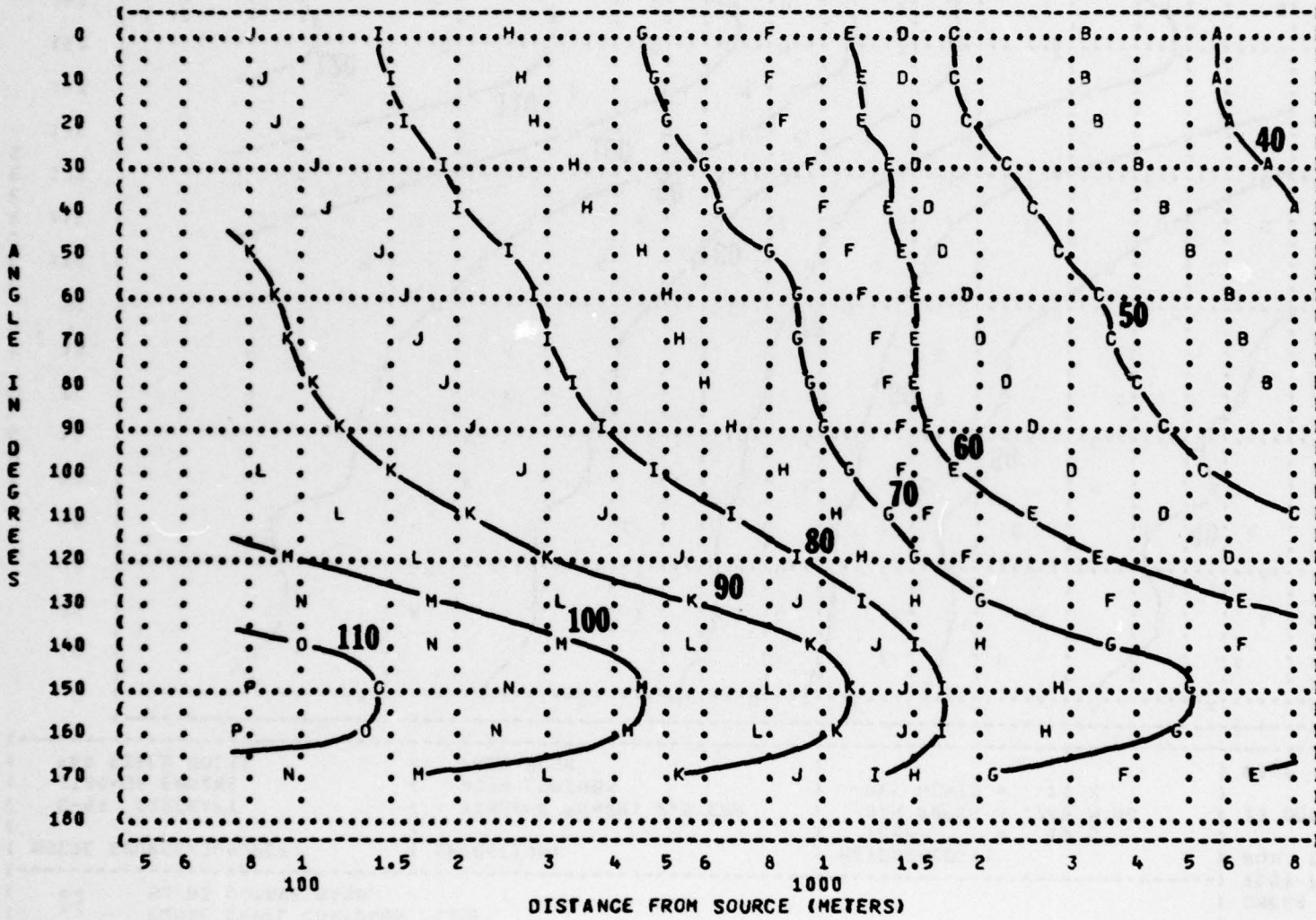


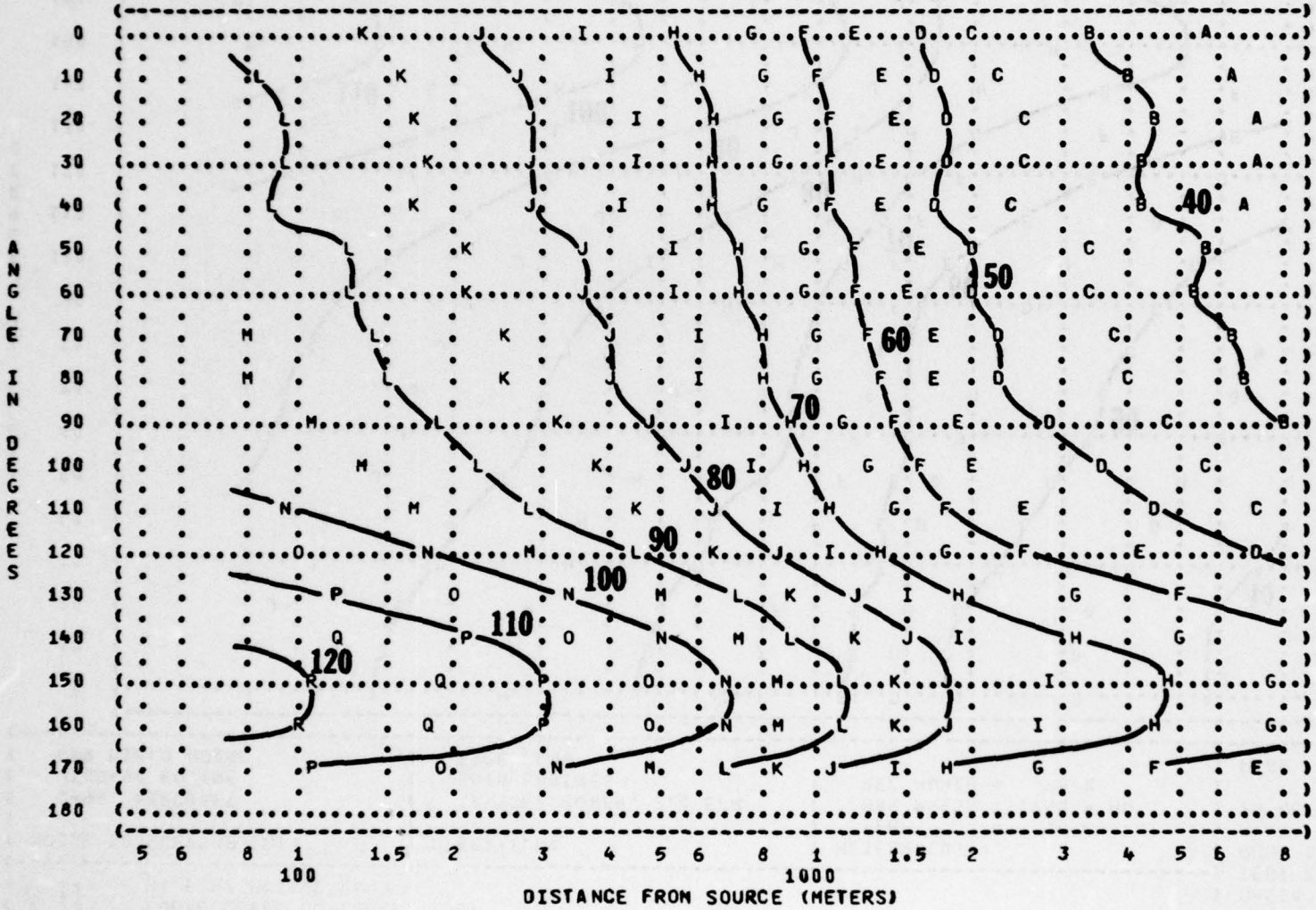
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
29 OCT 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:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
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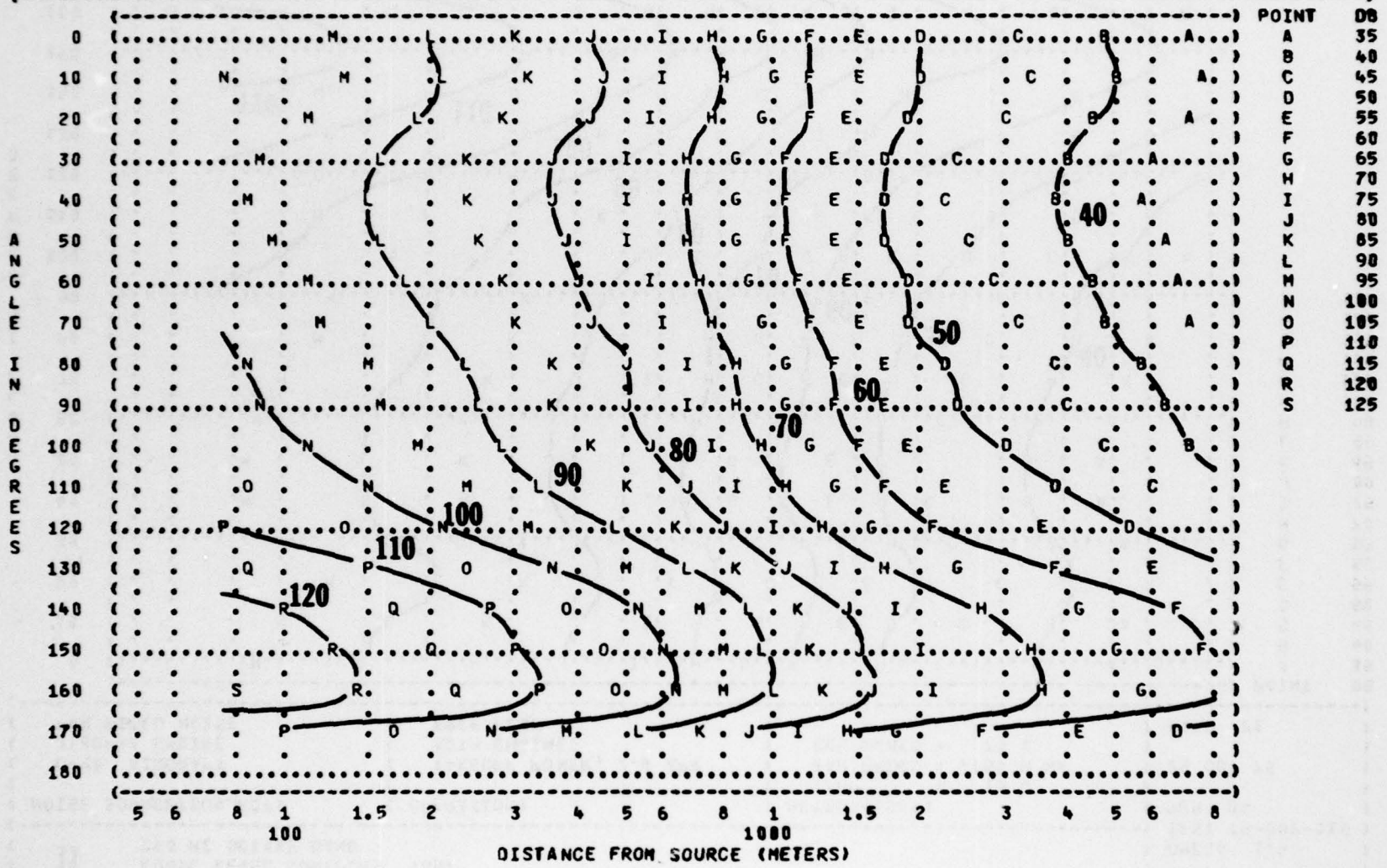

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120
S	125

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
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RUN 04
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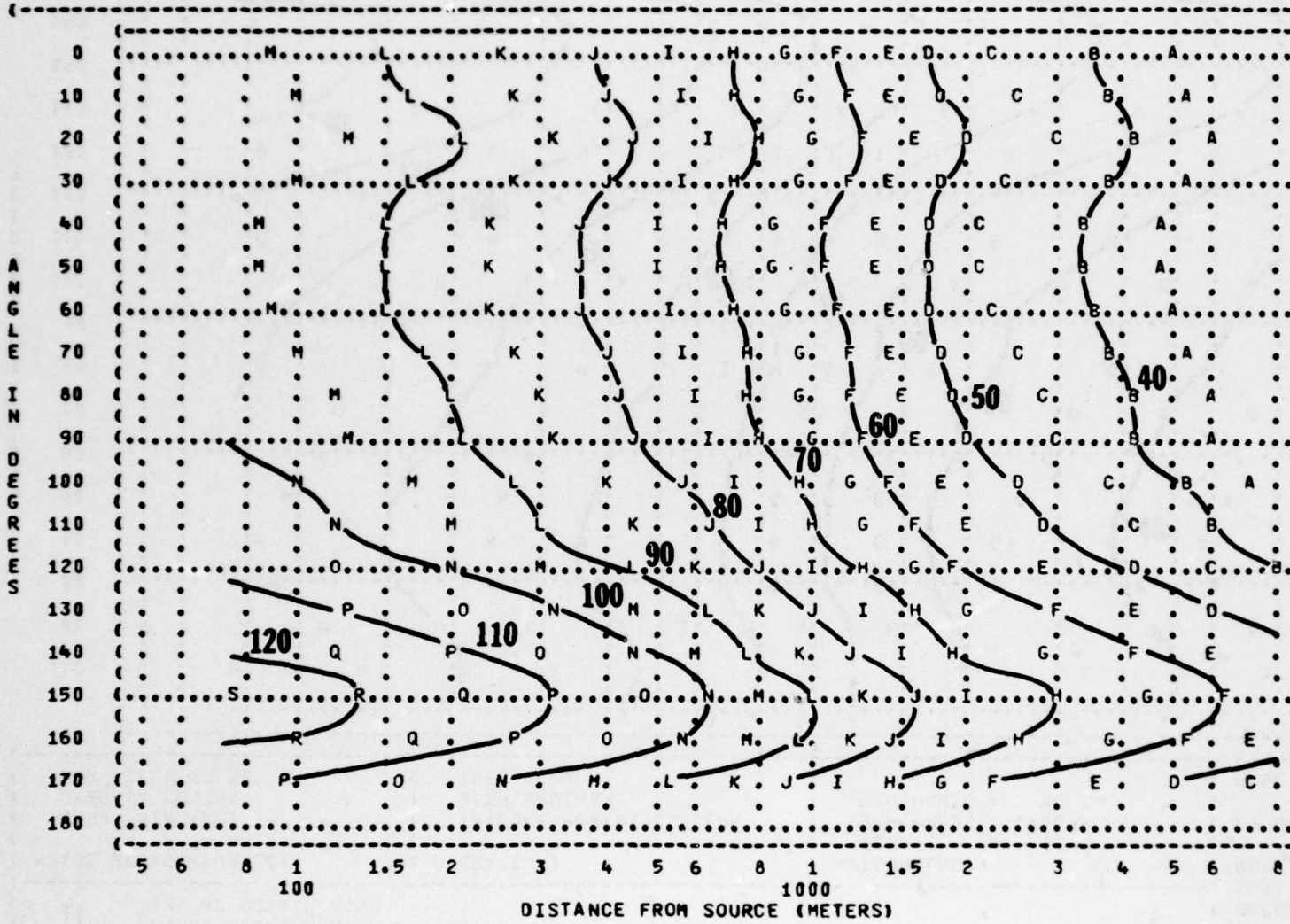

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115
R	120
S	125

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
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RUN 04
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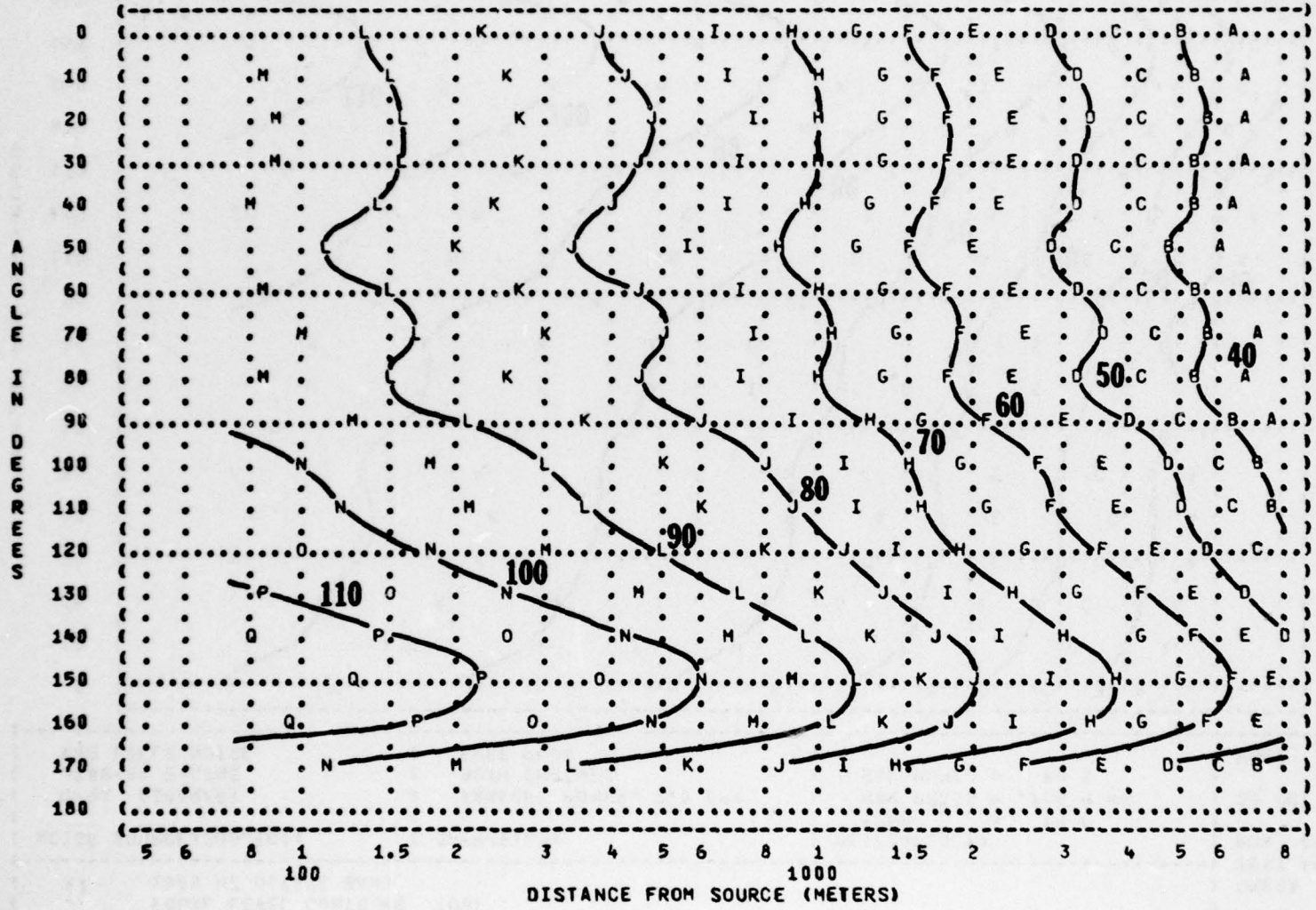

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115

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

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
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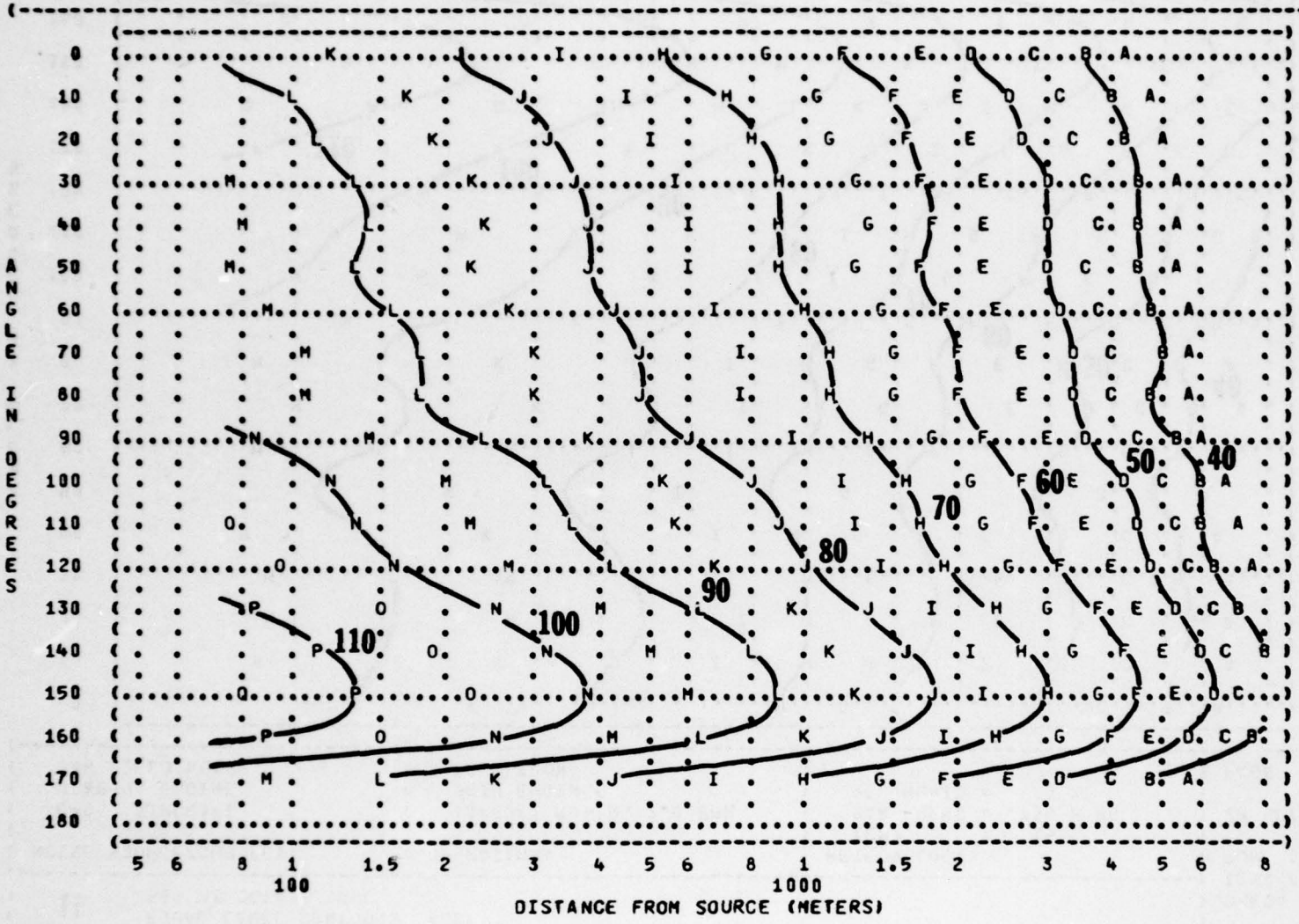

POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
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NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
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

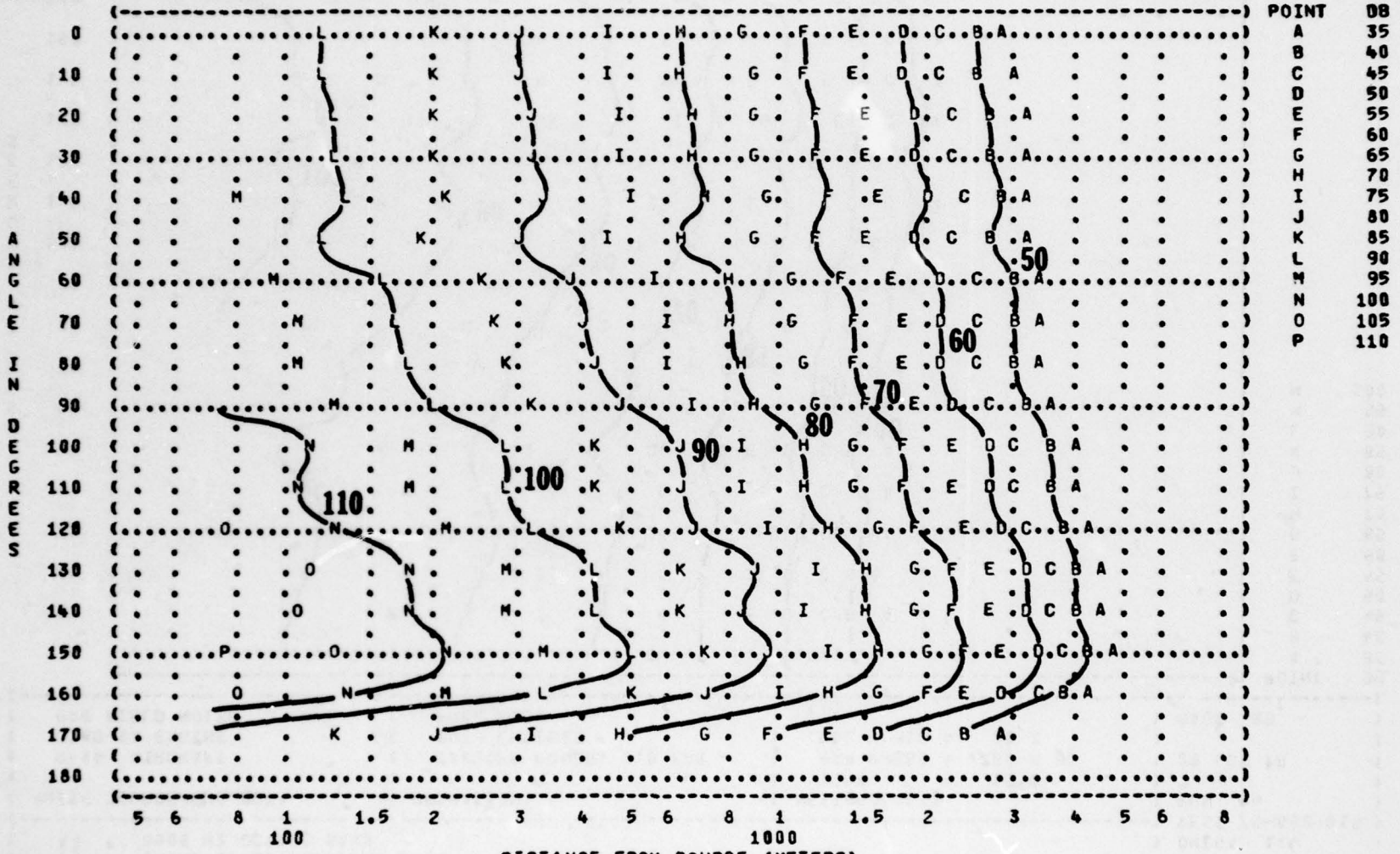

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
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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

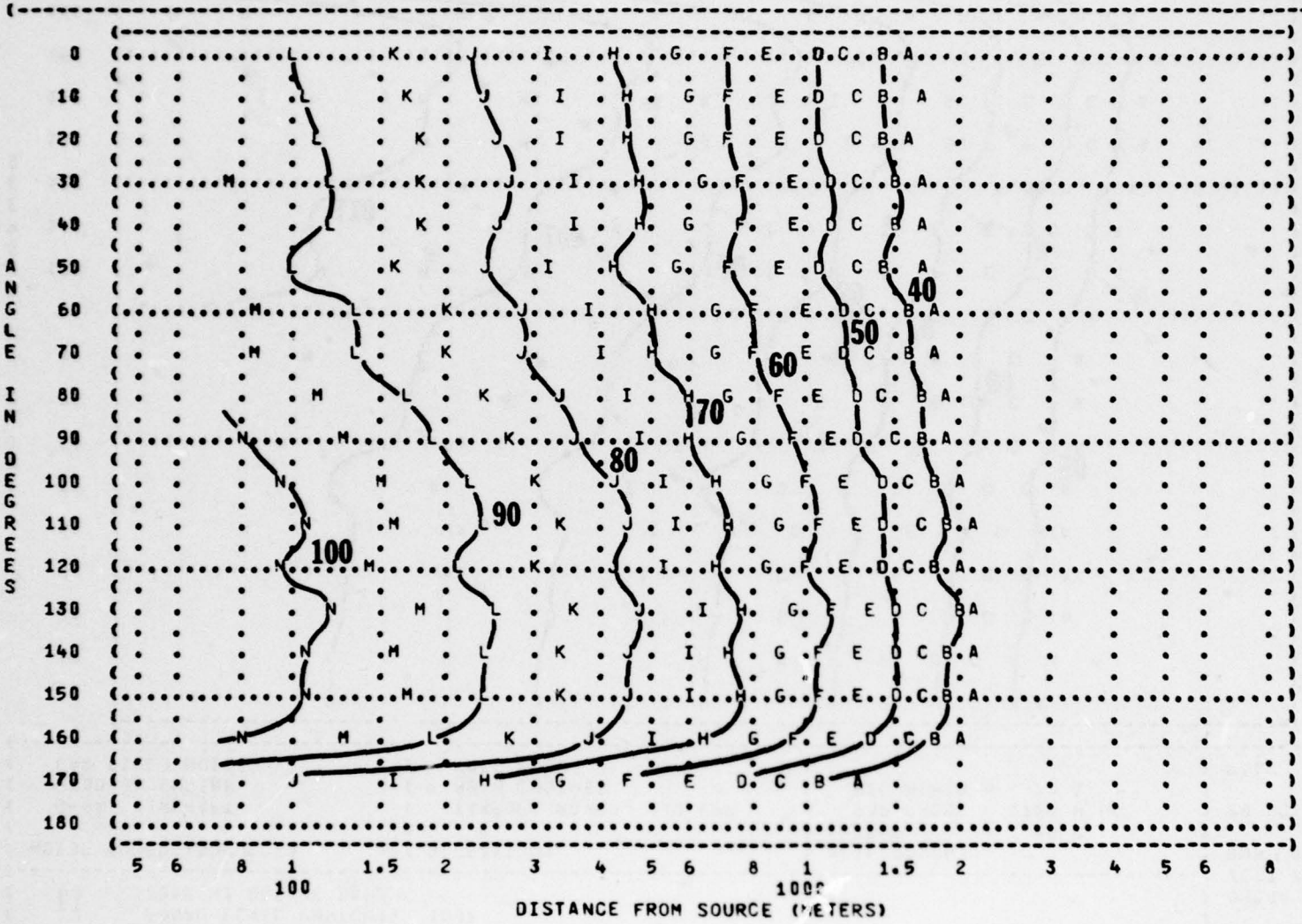

FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
C-9A AIRCRAFT
JT8D-9A ENGINE
FAR FIELD NOISE

OPERATION:
TAKEOFF POWER, 2.0 EPR
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-015
RUN 04
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