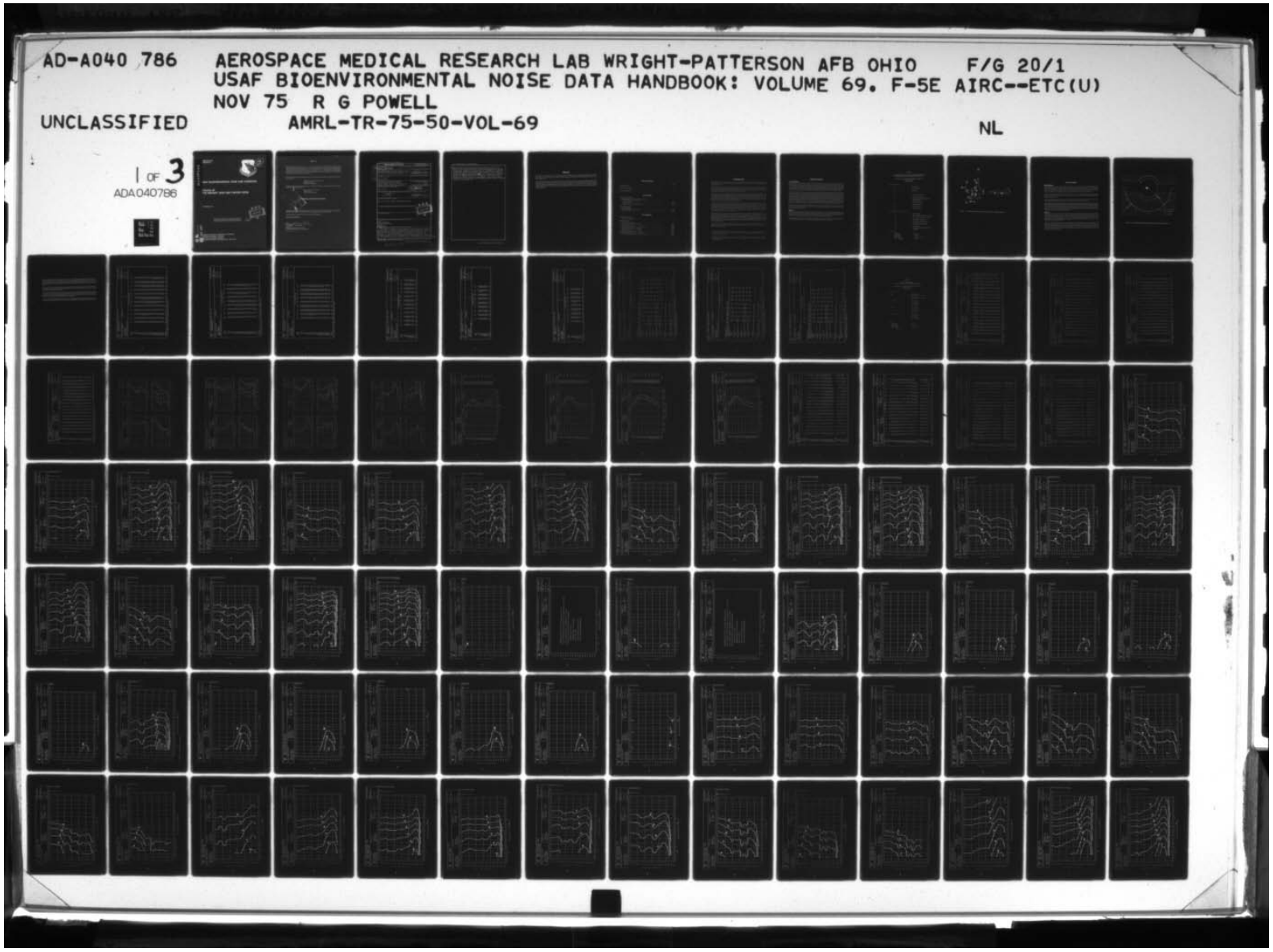
AD-A040 786 AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 69. F-5E AIRC--ETC(U)
NOV 75 R G POWELL

UNCLASSIFIED AMRL-TR-75-50-VOL-69 NL

1 OF 3
ADA040786



AD A040786

AMRL-TR-75-50
Volume 69

12
B.S.

USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK

Volume 69
F-5E AIRCRAFT, NEAR AND FAR-FIELD NOISE

NOVEMBER 1975

DDC
RECEIVED
JUN 21 1977
C

Approved for public release; distribution unlimited

AD No.
DDC FILE COPY

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

NOTICES

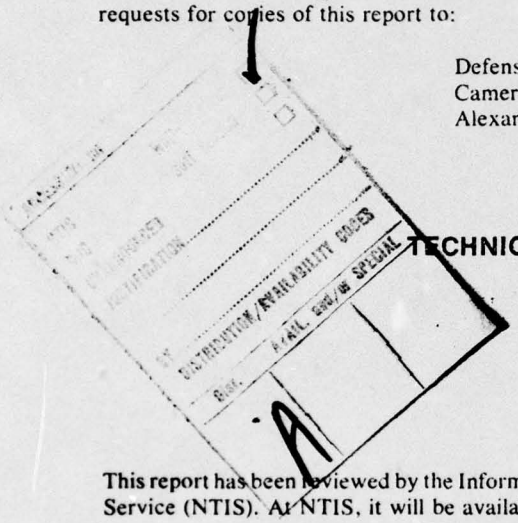
When US Government drawings, specifications, or other data are used for any purpose other than a definitely related Government procurement operation, the Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise, as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Please do not request copies of this report from Aerospace Medical Research Laboratory. Additional copies may be purchased from:

National Technical Information Service
5285 Port Royal Road
Springfield, Virginia 22161

Federal Government agencies and their contractors registered with Defense Documentation Center should direct requests for copies of this report to:

Defense Documentation Center
Cameron Station
Alexandria, Virginia 22314



TECHNICAL REVIEW AND APPROVAL

This report has been reviewed by the Information Office (OI) and is releasable to the National Technical Information Service (NTIS). At NTIS, it will be available to the general public, including foreign nations.

This technical report has been reviewed and is approved for publication.

FOR THE COMMANDER

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

AIR FORCE - 19 MAY 77 - 300

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: AMRL-TR-75-50 Vol 69	2. GOVT ACCESSION NO.
3. RECIPIENT'S CATALOG NUMBER	
4. TITLE *(and Subtitle)*: USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: F-5E Aircraft, Near and Far-Field Noise	5. TYPE OF REPORT & PERIOD COVERED: Volume 69, of a series
6. PERFORMING ORG. REPORT NUMBER	
7. AUTHOR(s): Robert G. Powell	8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Aerospace Medical Research Laboratory, Aerospace Medical Division, Air Force Systems Command, Wright-Patterson AFB, OH 45433	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: 62202F 7231-04-18
11. CONTROLLING OFFICE NAME AND ADDRESS: Same as above	12. REPORT DATE: November 1975
	13. NUMBER OF PAGES: 112
14. MONITORING AGENCY NAME & ADDRESS *(if different from Controlling Office)*	15. SECURITY CLASS. *(of this report)*: Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT *(of this Report)*

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT *(of the abstract entered in Block 20, if different from Report)*

DDC RELEASED JUN 21 1977 C

18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Noise
Noise Environments
Bioenvironmental Noise
Aircraft
F-5E Aircraft

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

The USAF F-5E aircraft is an air superiority fighter powered by 2 J85-GE-21 turbojet engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for four power conditions. Near-field data are reported for 12 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 →

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

009850

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

PREFACE

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

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Capt Nick Farinacci and Mr. Jerry Speakman for their assistance in acquiring the raw data, 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.

Table of Contents

	Page
INTRODUCTION	3
NEAR-FIELD NOISE	4
FAR-FIELD NOISE	7

List of Tables

NEAR-FIELD NOISE	
1. Measurement Locations and Test Conditions	5
2. Measured Sound Pressure Level	
1/3 Octave Band	10-12
Octave Band	13-15
3. Measures of Human Noise Exposure	16-18
FAR-FIELD NOISE	
4. Test Conditions	19
5. Measured Sound Pressure Level	20-23
6. Directivity Index	32-35

List of Figures

NEAR-FIELD NOISE	
1. Measurement Locations	6
FAR-FIELD NOISE	
2. Measurement Locations	8
3. Normalized Far-Field Noise Levels	24-27
4. Acoustic Power Level	28-31
5. Overall Sound Pressure Level — Contours	36-39
6. C-Weighted Sound Level — Contours	40-43
7. A-Weighted Sound Level — Contours	44-47
8. Perceived Noise Level — Contours	48-51
9. Speech Interference Level — Contours	52-55
10. Permissible Exposure Time — Contours	56-71
11. Octave Band Sound Pressure Level — Contours	72-107

INTRODUCTION

The USAF F-5E is an air support, fighter-type aircraft powered by two J85-GE-21 turbojet engines. The aircraft was manufactured by the Northrup Corporation and the engines by United Aircraft, Pratt and Whitney Division.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the F-5E aircraft.

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

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

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

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

---

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

NEAR-FIELD NOISE

MEASUREMENTS

AMRL acquired near-field noise data on the F-5E aircraft during ground runup operations of its turbojet engines and aerospace ground equipment. For these tests the aircraft was located on a concrete runup pad at Edwards AFB, CA, with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the eight engine, aerospace ground equipment, and power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all 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 twelve near-field locations where ground crews 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 F-5E aircraft at the twelve ground crew locations. This table includes the overall, 1/3 octave band, and octave band levels. From these data one can calculate the variety of measures given in Table 3, which are widely used to assess the effects of noise on personnel and their performance.

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

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS
FOR NEAR-FIELD NOISE MEASUREMENTS

F-5E Aircraft, Ground Runup, Edwards AFB, CA
28 January 1974
Tail #11421

Ground Crew Location

1	MD-3 Operator
2	MA-1A Operator
3	Marshall
4	
5	Noise Gear Chock Pull
6	*Ground Intercom Connector*
8	Main Loading Gear Chock Pull and Armament Check
9	Power Unit Hook-up
10	Ground Power Carts
11	Nozzle Observer
12	Engine Trim Panel

Aircraft Engine (and AGE) Operation

A	MD-3 Operating
B	MD-3 and MA-1A, Operating (unloaded)
C	MD-3 and MA-1A Operating (loaded)
D	Both Engines Idle Power
E	Both Engines 80% RPM Power
F	Both Engines Military Power
G	Both Engines
H	Engine #1 91% RPM and Engine #2 Idle Power

Meteorology

Temperature	5.6 C
Bar Pressure	0.706 M Hg
Rel Humidity	53 %
Wind — Speed	<1 M/Sec (<2 Kts)
— Direction	340 Deg

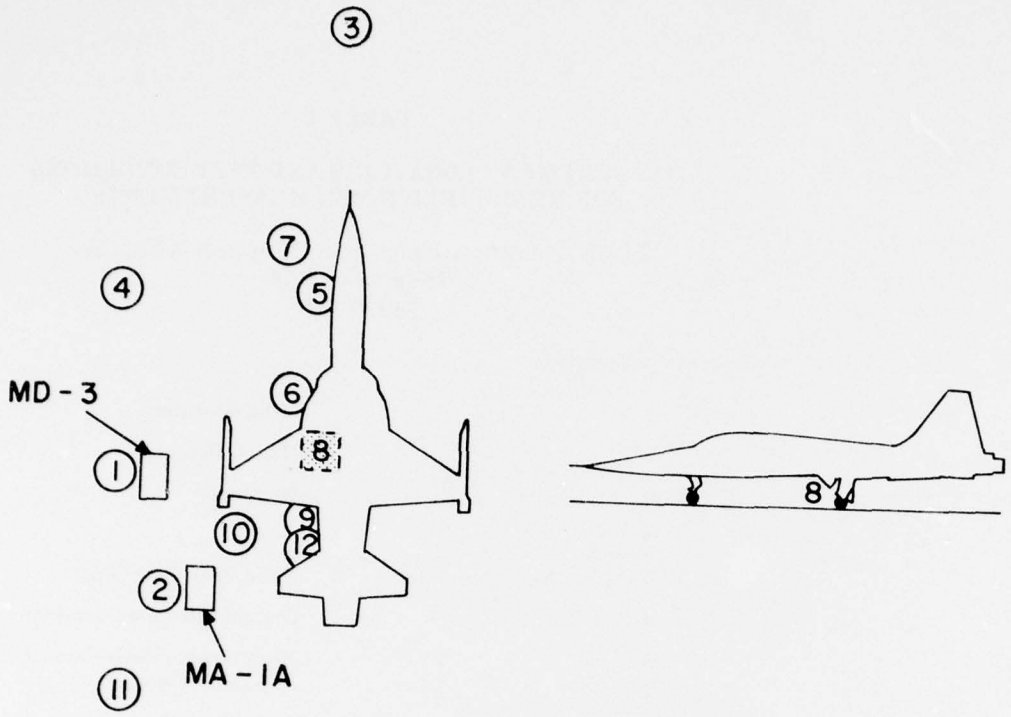


Figure 1. Near-Field Measurement Locations at Pad 18, Edwards AFB, CA

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired both near and far-field data during a 1- 2-hour test period, thus keeping similar meteorological conditions. Figure 2 shows the ground runup pad, ground cover, aircraft orientation and the 19 microphone measurement sites on a semicircle. The center of the 75 meter radius semicircle used in surveying the J85-GE-21 engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines' exhaust-nozzle exits.

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

All microphone measurement sites are in the acoustic far-field of 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 also normalized to 100 meters distance and standard meteorological conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the F-5E aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power level 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.

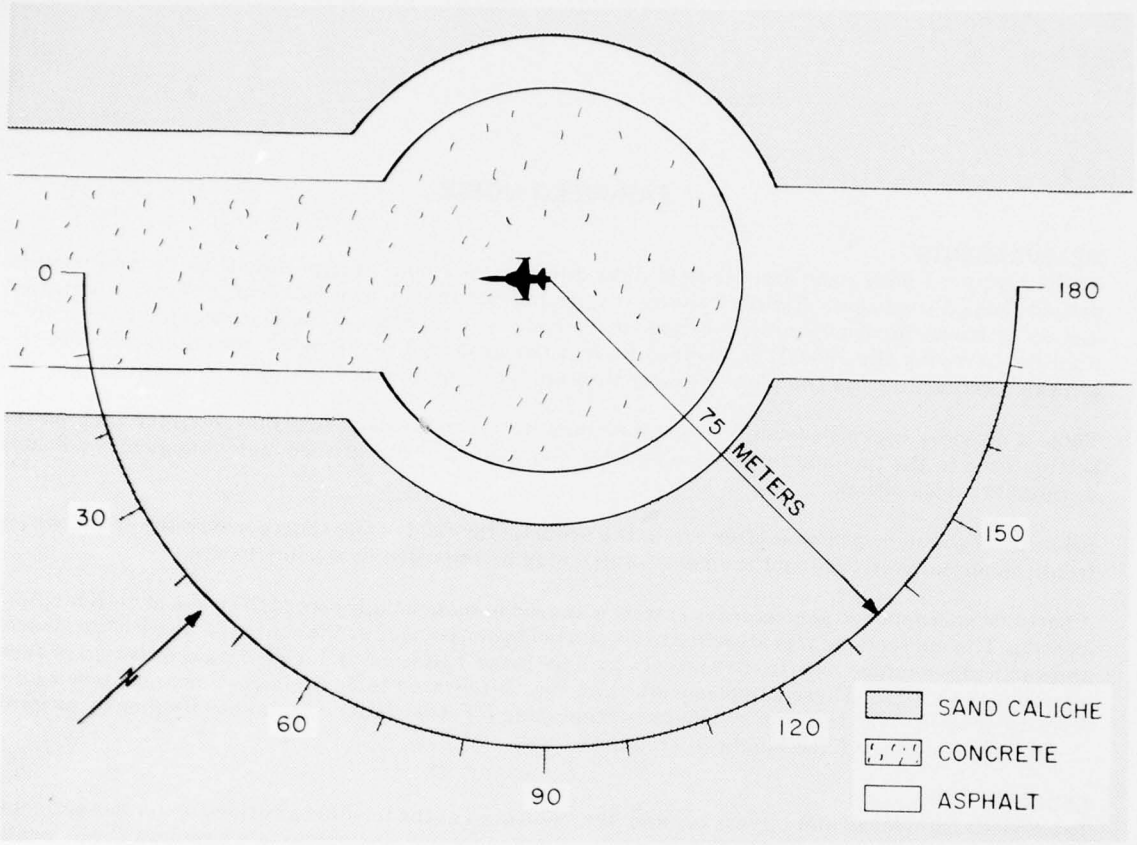


Figure 2. Far-Field Measurement Locations at Pad 18, Edwards AFB, CA

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 higher power settings because of turbulent air flow behind the aircraft.

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.

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

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 01
27 NOV 74
PAGE F1

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

FREQ (HZ)	1/F	2/G	2/H	3/A	3/B	3/C	3/D	4/A	4/B	4/C	4/D	5/A
25	77	81	81	64<	76	86	91	69	76	90	98	69
31.5	81	81	84	66<	73	90	94	73	78	91	99	72
40	86	83	88	72	73	88	96	80	80	94	100	80
50	92	88	91	76	74	90	97	84	80	93	101	84
63	93	90	93	77	77	90	98	79	82	95	103	86
80	88	85	90	80	78	91	99	79	83	96	104	87
100	96	97	99	81	81	92	100	81	85	98	107	87
125	98	100	100	81	85	96	104	85	88	101	109	89
160	98	99	105	81	91	98	106	86	96	101	109	86
200	96	94	100	77	88	99	105	80	94	103	109	83
250	97	95	95	73	86	101	107	78	94	104	110	84
315	91	101	102	77	87	103	109	79	92	104	111	90
400	91	98	103	75	87	104	108	78	88	105	110	90
500	92	93	98	71	82	103	107	75	86	108	111	88
630	89	94	95	76	84	105	108	78	88	112	114	94
800	88	89	93	82	85	103	106	80	89	111	114	95
1000	90	87	89	87	86	106	105	83	89	116	115	98
1250	83	86	87	88	88	106	107	83	88	117	115	100
1600	83	90	88	89	92	105	108	84	89	115	116	103
2000	85	91	89	90	95	104	105	87	90	113	115	102
2500	80	94	90	90	94	102	103	85	90	112	114	103
3150	78	95	91	91	90	100	102	85	89	110	111	104
4000	80	96	93	90	90	99	102	90	88	108	111	106
5000	77	95	92	89	98	97	100	84	94	106	109	102
6300	75	96	94	92	95	98	101	86	95	107	110	106
8000	73	109	105	91	93	97	99	85	91	107	110	105
10000	71	111	107	88	98	95	97	84	97	106	109	103
OVERALL	106	114	113	100	105	115	119	97	105	124	125	114

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

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

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 02
27 NOV 74
PAGE F2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 6/A	7/A	7/B	7/C	7/D	8/A	8/B	9/A	9/B
25	75	69	79	88	96	82	88	86	90
31.5	81	70<	76	90	95	86	90	90	94
40	89	78	80	92	99	94	93	95	95
50	93	83	80	92	100	98	95	101	97
63	92	83	84	93	102	96	97	97	98
80	89	82	85	96	104	91	97	92	96
100	86	81	86	97	106	89	97	90	97
125	91	84	89	101	109	89	98	93	99
160	91	83	93	101	108	96	109	96	104
200	88	79	90	102	109	92	107	89	103
250	83	77	91	103	109	86	103	88	104
315	89	82	91	107	111	94	106	99	113
400	89	82	91	107	111	97	105	97	111
500	87	79	88	107	110	92	104	93	106
630	90	83	89	109	112	90	105	91	105
800	89	87	91	112	113	91	103	91	108
1000	90	92	92	118	114	87	101	88	104
1250	89	92	93	116	115	93	101	88	103
1600	92	94	96	114	116	91	100	87	103
2000	92	95	99	112	113	91	98	86	100
2500	92	94	99	110	111	92	99	92	99
3150	91	95	96	108	109	87	97	85	98
4000	94	98	96	109	110	88	96	86	98
5000	88	94	105	106	108	85	95	82	96
6300	88	99	105	107	109	82	93	80	94
8000	87	98	100	107	108	82	91	81	94
10000	83	96	106	106	108	79	93	80	95
OVERALL	104	106	112	124	124	106	116	107	118

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

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

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 03
27 NOV 74
PAGE F3

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

FREQ (HZ)	10/A	10/B	10/C	10/D	11/A	11/B	11/C	11/D	12/E
25	77	88	104	107	73	85	102	110	100
31.5	83	86	103	109	79	89	100	112	100
40	89	90	103	110	85	89	101	113	98
50	93	92	102	109	89	90	102	115	96
63	88	91	103	109	86	92	103	117	93
80	86	91	104	111	85	94	106	119	93
100	86	95	106	114	86	96	108	123	96
125	93	100	110	118	91	99	110	125	101
160	96	108	112	118	93	104	111	125	104
200	90	107	113	117	88	100	112	126	104
250	86	107	113	118	87	99	109	127	106
315	84	104	115	118	86	94	112	125	107
400	84	100	115	118	86	96	117	126	107
500	82	96	117	119	82	100	122	124	107
630	83	94	119	120	82	101	122	128	106
800	82	94	117	120	83	99	117	131	104
1000	82	96	119	121	83	96	119	133	104
1250	81	97	124	121	83	97	119	133	102
1600	83	97	125	123	78	95	119	130	103
2000	82	94	123	123	74	95	119	131	102
2500	83	94	121	122	75	94	119	130	100
3150	84	93	118	120	75	92	116	127	98
4000	88	93	119	121	78	92	118	128	99
5000	84	96	117	118	75	90	115	125	97
6300	82	94	114	117	75	89	113	122	103
8000	83	92	115	118	79	90	114	124	97
10000	79	95	113	115	81	90	111	121	92
OVERALL	102	114	132	133	99	111	130	141	117

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

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

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 01
27 NOV 74
PAGE J1

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

FREQ (HZ)	1/F	2/G	2/H	3/A	3/B	3/C	3/D	4/A	4/B	4/C	4/D	5/A
31.5	88	87	90	73	79	93	99	81	83	97	104	81
63	96	93	96	83	82	95	103	86	86	100	108	90
125	102	103	107	86	92	101	108	89	96	105	113	92
250	100	103	105	81	92	106	112	84	98	108	114	92
500	95	100	104	79	89	109	112	82	92	114	116	96
1000	92	93	95	91	91	110	111	87	93	120	119	103
2000	88	97	94	94	98	108	110	90	94	118	120	107
4000	83	100	96	95	99	104	106	92	96	113	115	109
8000	78	113	109	95	101	101	104	90	100	111	114	109
OVERALL	106	114	113	100	105	115	119	97	105	124	125	114

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

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 02
27 NOV 74
PAGE J2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

FREQ (HZ)	LOCATION/CONDITION 6/A	7/A	7/B	7/C	7/D	8/A	8/B	9/A	9/B
31.5	90	79	83	95	102	95	95	96	98
63	96	87	88	99	107	101	101	102	102
125	94	87	95	105	113	97	110	99	106
250	92	85	96	109	114	97	110	100	113
500	93	86	94	113	116	99	109	99	113
1000	94	95	97	121	119	95	106	94	110
2000	97	99	103	117	118	96	104	94	106
4000	96	101	106	112	114	91	101	89	102
8000	91	102	109	111	113	86	97	85	99
OVERALL	104	106	112	124	124	106	116	107	118

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

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 03
27 NOV 74
PAGE J3

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

FREQ (HZ)	10/A	10/B	10/C	10/D	11/A	11/B	11/C	11/D	12/E
31.5	90	93	108	113	86	93	106	116	104
63	94	96	108	115	92	97	109	122	99
125	98	109	115	122	96	105	114	129	106
250	92	110	118	122	92	103	116	131	110
500	87	102	122	124	88	104	126	131	111
1000	86	100	125	125	88	102	123	137	108
2000	87	100	128	127	81	99	124	135	106
4000	91	99	123	124	81	96	121	132	103
8000	86	99	119	121	83	94	118	127	104
OVERALL	102	114	132	133	99	111	130	141	117

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 01
27 NOV 74
PAGE H1

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

	1/F	2/G	2/H	3/A	3/B	3/C	3/D	4/A	4/B	4/C	4/D	5/A
HAZARD/PROTECTION												
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR												
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR												
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)												
NO PROTECTION												
OASLC	105	112	112	100	104	115	118	97	104	123	125	113
OASLA	98	112	109	101	104	114	116	97	103	124	125	114
T	42	3.8	6	25	15	2.7	P	50	18	P	P	2.7
MINIMUM OPL EAR MUFFS												
OASLA*	83	90	90	74	80	90	94	72	81	96	99	87
T	571	170	170	960	960	170	85	960	807	60	36	285
AMERICAN OPTICAL 1700 EAR MUFFS												
OASLA*	78	87	86	68	75	84	89	67	76	91	94	82
T	960	285	339	960	960	480	202	960	960	143	85	679
V-51R EAR PLUGS												
OASLA*	75	84	83	71	75	89	91	68	75	97	98	84
T	960	480	571	960	960	202	143	960	960	50	42	480
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS												
OASLA*	62	74	71	58	63	75	77	55	63	84	85	72
T	960	960	960	960	960	960	960	960	960	480	404	960
H-133 GROUND COMMUNICATION UNIT												
OASLA*	73	83	81	73	76	87	89	69	75	97	97	86
T	960	571	807	960	960	285	202	960	960	50	50	339
COMMUNICATION												
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)												
PSIL	92	96	98	88	93	109	111	86	93	117	119	102
ANNOYANCE												
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)												
TONE CORRECTION (C IN DB)												
PNLT	113	126	124	114	120	127	129	113	119	135	138	129
C	1	1	1	1	2	0	0	2	2	0	0	1

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

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 02
27 NOV 74
PAGE H2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

	LOCATION/CONDITION								
	6/A	7/A	7/B	7/C	7/D	8/A	8/B	9/A	9/B
HAZARD/PROTECTION									
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR									
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR									
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)									
NO PROTECTION									
OASLC	103	105	110	123	124	106	116	107	118
OASLA	102	106	111	124	124	102	112	101	115
T	21	11	4.5	P	P	21	3.8	25	2.2
MINIMUM OPL EAR MUFFS									
OASLA*	78	80	86	96	99	81	92	82	94
T	960	960	339	60	36	807	120	679	85
AMERICAN OPTICAL 1700 EAR MUFFS									
OASLA*	74	74	81	90	93	77	87	78	89
T	960	960	807	170	101	960	285	960	202
V-51R EAR PLUGS									
OASLA*	75	77	81	98	97	77	88	78	92
T	960	960	807	42	50	960	240	960	120
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS									
OASLA*	61	65	71	85	84	63	73	63	76
T	960	960	960	404	480	960	960	960	960
H-133 GROUND COMMUNICATION UNIT									
OASLA*	75	78	82	96	96	75	84	74	86
T	960	960	679	60	60	960	480	960	339
COMMUNICATION									
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)									
PSIL	95	94	98	117	118	97	107	96	109
ANNOYANCE									
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)									
TONE CORRECTION (C IN DB)									
PNLT	118	121	127	136	136	117	126	118	128
C	1	1	2	2	0	1	1	2	1

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

TABLE: 3 MEASURES OF HUMAN NOISE EXPOSURE

IDENTIFICATION:
OMEGA 3.2
TEST 73-068-011
RUN 03
27 NOV 74
PAGE H3

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
GROUND CREW
NEAR FIELD NOISE LEVELS

OPERATION:

LOCATION/CONDITION

	10/A	10/B	10/C	10/D	11/A	11/B	11/C	11/D	12/E
HAZARD/PROTECTION									
C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DBC) AT EAR									
A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DBA) AT EAR									
MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)									
NO PROTECTION									
OASLC	101	114	132	132	99	111	130	141	117
OASLA	96	108	132	132	92	107	130	141	114
T	60	8	P	P	120	9	P	P	2.7
MINIMUM QPL EAR MUFFS									
OASLA*	78	91	105	107	76	87	105	115	92
T	960	143	13	9	960	285	13	2.2	120
AMERICAN OPTICAL 1700 EAR MUFFS									
OASLA*	74	86	99	102	72	82	99	110	87
T	960	339	36	21	960	679	36	5	285
V-51R EAR PLUGS									
OASLA*	70	84	104	105	69	83	104	115	90
T	960	480	15	13	960	571	15	2.2	170
AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS									
OASLA*	57	70	91	91	56	69	89	102	75
T	960	960	143	143	960	960	202	21	960
H-133 GROUND COMMUNICATION UNIT									
OASLA*	70	81	104	105	67	80	101	114	86
T	960	807	15	13	960	960	25	2.7	339
COMMUNICATION									
PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)									
PSIL	87	101	125	126	86	102	124	134	109
ANNOYANCE									
PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PNDB)									
TONE CORRECTION (C IN DB)									
PNLT	113	123	144	146	107	121	143	154	128
C	1	1	0	0	1	1	0	0	1

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

TABLE 4

TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

F-5E Aircraft, Ground Runups, Edwards AFB, CA
28 January 1974
Tail #11421

Aircraft Engine Operation

Idle	Both Engines
	50 % RPM NC (Core Speed)
	390 C EGT
	490 LBS/HR FF (Fuel Flow)
80% Runup	Both Engines
	80 % RPM NC
	340 C EGT
	900 LBS/HR FF
Military	All Engines
	100 % RPM NC
	670 C EGT
	3150 LBS/HR FF
Afterburner	Both Engines
	100 % RPM NC
	670 C EGT
	10,000 LBS/HR FF

Meteorology

Temperature	5.6 C
Bar Pressure	0.706 M Hg
Rel Humidity	53 %
Wind — Speed	<1 M/Sec (< 2 kts)
— Direction	340 °

TABLE: 5

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
80% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 5 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	58<	56<				57<											58<	56<	58<
31.5																	63<		
40	62<	63<	62<	64<	63<	64<	64<	64<	62<	61<	63<	64<	63<	64<	64<	64<	66<	64<	63<
50	67<	67<	67<	68<	67<	68<	66<	67<	67<	66<	67<	67<	65<	68<	68<	70	70	68<	66<
63	65<	66<	66<	66<	66<	66<	65<	65<	65<	65<	64<	66<	66<	65<	67<	68	67<	66<	64<
80	64<	65<	65<	65<	62<	62<	64<	62<	61<	60<	63<	63<	65<	64<	66<	67<	67<	65<	63<
100	67<	67<	68<	65<	65<	66<	64<	63<	64<	63<	65<	64<	65<	67<	69<	69<	69<	66<	64<
125	70	71	72	71	69	70	69	71	71	69	69	69	69	71	70	70	70	67<	62<
160	71	71	73	72	71	71	71	73	72	73	74	75	73	72	71	72	70	69<	62<
200	67<	67<	68<	66<	66<	67<	64<	68<	67<	66<	68<	68<	69<	67<	67<	65<	63<	62<	
250	64<	66<	66<	66<	66<	66<	65<	63<	65<	63<	64<	64<	66<	68	64<	60<	58<	60<	57<
315	68	69	68	66	66	65	66	67	66	63	66	66	70	69	66	63	61	64	57<
400	67	68	67	65	65	62	63	62	63	59	63	65	68	67	64	62	61	63	53<
500	65	66	65	61	60	59	58	54<	57	54<	58	62	65	64	61	59	59	60	53<
630	69	69	68	62	62	61	56	53	58	53	56	60	64	63	60	58	58	58	55
800	70	70	67	65	62	62	57	55	59	54	55	58	62	61	61	59	58	57	49
1000	71	69	68	67	65	64	58	56	58	53	55	57	59	59	59	56	56	55	48
1250	72	69	70	67	66	63	60	58	58	51	51	53	56	55	56	54	53	52	44<
1600	74	71	73	71	70	67	62	57	59	53	54	53	55	55	56	54	53	51	44<
2000	75	73	73	71	71	68	63	60	61	53	53	52	53	53	54	53	54	51	44
2500	74	73	72	71	70	66	61	59	59	52	55	54	52	53	55	53	55	52	45
3150	74	73	72	72	69	66	62	59	61	52	55	55	54	54	55	52	54	51	44
4000	73	72	74	73	74	70	64	67	65	59	57	58	52	53	55	55	56	52	45
5000	68	67	68	65	66	61	56	58	57	50	51	51	47	47	49	48	49	46	40<
6300	69	68	68	66	64	58	51	50	52	41<	44	45	44	45	45	41<	44	43	34<
8000	66	65	66	64	63	57	49	48	49	38<	43<	43<	43<	43<	41<	39<	41<	40<	
10000	58	57	57	54	54	48	42<	40<	41<		36<	39<	38<	37<	36<				
OVERALL	84	83	83	82	81	80	78	78	78	77	78	79	79	79	78	78	78	76	73

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	64<	64<	66<	63<	61<	64<	64<	64<	63<	65<	63<	65<	68	71	71	72	75	73	
31.5			62<	61<		62<	63<	64<	63<	64<	63<	65<	69<	71<	74	76	77	77	
40	63<	63<	63<	64<	64<	66<	66<	66<	66<	67<	67<	68<	72	74	77	80	80	75	
50	64<	63<	65<	66<	66<	66<	66<	66<	65<	67<	67<	69<	74	76	80	81	80	74	
63	66<	65<	67<	67<	69	68	68	69	68	69	69	70	73	77	81	82	82	71	
80	68<	69	69	70	68<	71	71	70	69	71	71	72	76	80	83	84	83	66<	
100	70<	72	71<	71	70<	72	70<	71	72	74	74	75	77	81	85	87	84	65<	
125	74	75	75	75	74	75	74	74	76	77	76	77	79	83	87	90	85	62<	
160	82	81	82	82	80	81	81	81	83	82	83	84	85	85	87	90	86	62<	
200	78	78	79	80	79	80	79	80	80	80	81	83	84	85	83	89	85	60<	
250	78	80	82	83	82	81	81	80	81	80	79	80	82	84	83	85	81	59<	
315	77	79	80	79	80	79	79	78	78	78	77	79	82	83	83	83	79	55<	
400	77	79	78	79	78	75	77	75	77	75	75	77	79	80	80	79	76	53<	
500	73	73	75	74	73	70	71	72	73	73	72	74	76	78	79	78	74	51<	
630	75	74	75	75	74	70	71	72	73	73	69	72	74	76	78	76	72	50<	
800	75	73	73	74	72	69	70	71	72	71	69	70	72	74	76	74	69	48<	
1000	72	72	72	71	68	68	68	69	71	70	67	68	71	73	75	73	67	45<	
1250	72	72	72	71	68	67	68	70	69	69	64	65	66	72	72	69	64	42<	
1600	75	74	74	72	70	70	67	70	69	71	64	67	66	72	71	69	63	43<	
2000	79	77	77	75	72	72	67	70	68	69	63	67	65	71	69	66	62	42<	
2500	78	77	75	74	72	70	66	69	68	68	62	66	63	69	67	64	61	41<	
3150	73	73	72	72	69	68	65	69	68	69	62	66	62	66	64	64	60	39<	
4000	72	72	72	71	68	68	64	67	66	66	57	63	59	64	62	61	57	36<	
5000	76	77	76	74	72	71	65	67	66	64	56	60	54	58	59	58	57	37<	
6300	74	74	73	73	71	70	65	66	65	63	54	57	51	55	57	56	55	33<	
8000	68	67	66	65	63	61	57	58	58	58	48	54	47	53	53	52	49		
10000	67	67	66	65	62	60	55	56	57	55	46	51	43<	49	51	48	46		
OVERALL	89	89	90	90	88	88	88	88	89	88	88	89	91	93	94	97	93	82	

< 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 75-002-027
RUN 03
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	77	78	77	77	76	78	78	80	80	78	79	81	86	89	94	94	94	92	
31.5	77	76	76	78	78	79	80	80	80	82	81	84	89	90	95	98	98	93	
40	78	78	76	78	80	81	81	83	82	82	82	85	89	95	99	100	99	90	
50	79	78	77	80	80	80	82	83	83	83	85	87	91	97	102	103	100	86	
63	80	80	80	80	82	83	83	83	85	86	86	89	95	99	104	105	101	84	
80	83	82	82	83	82	84	85	85	86	88	87	91	97	102	107	107	102	80	
100	85	84	84	86	84	86	87	87	88	91	89	93	99	105	111	108	103	80	
125	86	86	87	87	87	89	88	89	90	92	92	96	101	107	113	109	105	82	
160	88	88	88	89	86	89	89	90	91	92	95	99	103	106	112	112	105	82	
200	90	90	90	89	89	89	90	90	92	93	96	101	105	106	108	110	105	78	
250	92	92	91	91	91	91	91	91	93	94	96	99	106	108	106	110	106	79	
315	93	95	95	92	92	90	91	92	94	95	97	101	106	109	109	110	107	78	
400	94	96	95	94	93	91	91	91	95	95	96	100	107	106	108	110	106	79	
500	93	95	96	95	92	89	91	91	95	94	96	99	106	107	106	109	104	79	
630	96	95	97	97	94	90	92	92	96	96	95	99	105	106	109	108	102	78	
800	97	95	98	96	92	89	93	92	95	95	93	99	102	104	106	107	100	77	
1000	99	100	101	99	96	91	94	92	95	95	93	98	101	102	104	105	98	75	
1250	96	97	99	100	98	94	96	94	95	95	91	96	96	99	102	104	96	74	
1600	93	95	96	97	95	95	99	97	97	97	92	96	98	99	100	103	95	73	
2000	92	93	95	95	94	93	97	99	100	97	92	96	98	97	98	101	94	70	
2500	90	90	92	93	92	90	93	96	97	96	90	94	96	96	96	99	92	70	
3150	86	87	89	91	90	86	90	94	95	95	88	93	94	93	94	96	89	67	
4000	87	85	87	89	89	86	90	93	94	95	88	91	94	92	93	96	88	66	
5000	82	80	82	83	83	81	85	88	89	90	84	88	91	88	90	94	86	62	
6300	82	78	80	81	81	79	83	85	87	87	81	85	87	86	85	90	81	56	
8000	78	75	77	76	78	76	80	83	84	85	78	83	86	84	83	86	80	52	
10000	70	69	70	72	72	70	75	79	79	80	73	80	82	80	80	84	76	51	
OVERALL	106	106	107	107	105	103	105	106	107	107	106	110	115	117	120	120	116	98	

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 75-002-027
RUN 04
07 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	82	85	83	84	85	85	88	87	86	88	89	91	95	100	104	104	104	95	
31.5	84	85	85	85	88	87	88	88	88	92	90	93	98	103	106	106	104	93	
40	85	86	87	87	88	89	88	90	90	93	91	96	102	105	108	108	104	89	
50	87	87	87	87	86	88	88	89	90	91	92	98	105	109	110	109	104	86	
63	89	88	89	89	90	89	90	92	92	94	95	100	107	111	112	109	104	83	
80	92	91	90	91	92	92	92	94	93	94	98	103	110	114	113	111	104	83	
100	93	92	92	93	94	93	94	96	95	96	99	107	114	118	116	114	106	84	
125	95	95	94	95	95	97	96	97	96	99	102	107	116	120	119	116	108	85	
160	95	95	96	95	94	96	96	97	98	100	104	107	115	120	119	117	108	90	
200	95	95	95	94	94	95	96	97	97	99	104	110	114	117	117	116	107	82	
250	97	97	97	96	96	96	97	97	98	99	104	111	116	115	116	115	106	83	
315	97	98	97	97	97	96	97	98	100	100	105	110	117	117	115	113	104	82	
400	96	99	100	98	97	94	96	97	99	100	104	110	115	115	115	111	103	81	
500	96	98	99	97	96	93	95	97	99	100	103	108	114	113	113	109	101	81	
630	98	98	99	99	96	93	96	98	100	100	103	107	113	112	111	107	99	81	
800	96	97	97	98	95	93	96	98	99	100	101	105	111	109	109	105	98	78	
1000	94	96	96	97	95	93	96	97	99	100	99	104	109	108	108	104	96	76	
1250	95	96	96	97	97	93	96	97	98	100	98	103	109	107	106	102	96	74	
1600	96	97	97	96	97	94	96	96	99	100	98	101	108	105	106	101	95	75	
2000	94	96	97	97	96	93	99	100	101	100	98	100	107	103	104	99	92	72	
2500	91	91	93	93	94	90	96	99	99	98	96	97	105	100	102	98	90	72	
3150	89	88	90	91	91	88	94	96	97	96	94	95	104	98	100	95	87	70	
4000	88	88	90	91	91	88	94	97	97	97	93	94	104	96	99	93	85	69	
5000	84	83	85	86	86	84	91	93	93	94	89	91	102	95	97	91	80	65	
6300	82	80	82	83	83	81	88	90	91	91	86	87	100	90	94	87	75	60	
8000	78	76	78	79	79	77	85	87	88	90	84	86	99	90	92	85	73	54	
10000	73	71	74	75	75	72	81	84	84	86	82	83	98	88	91	85	69	48	
OVERALL	108	108	109	109	108	106	109	110	111	112	114	119	125	127	127	124	117	99	

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS
IDENTIFICATION:

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 6

NOISE SOURCE/SUBJECT:
F-8E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

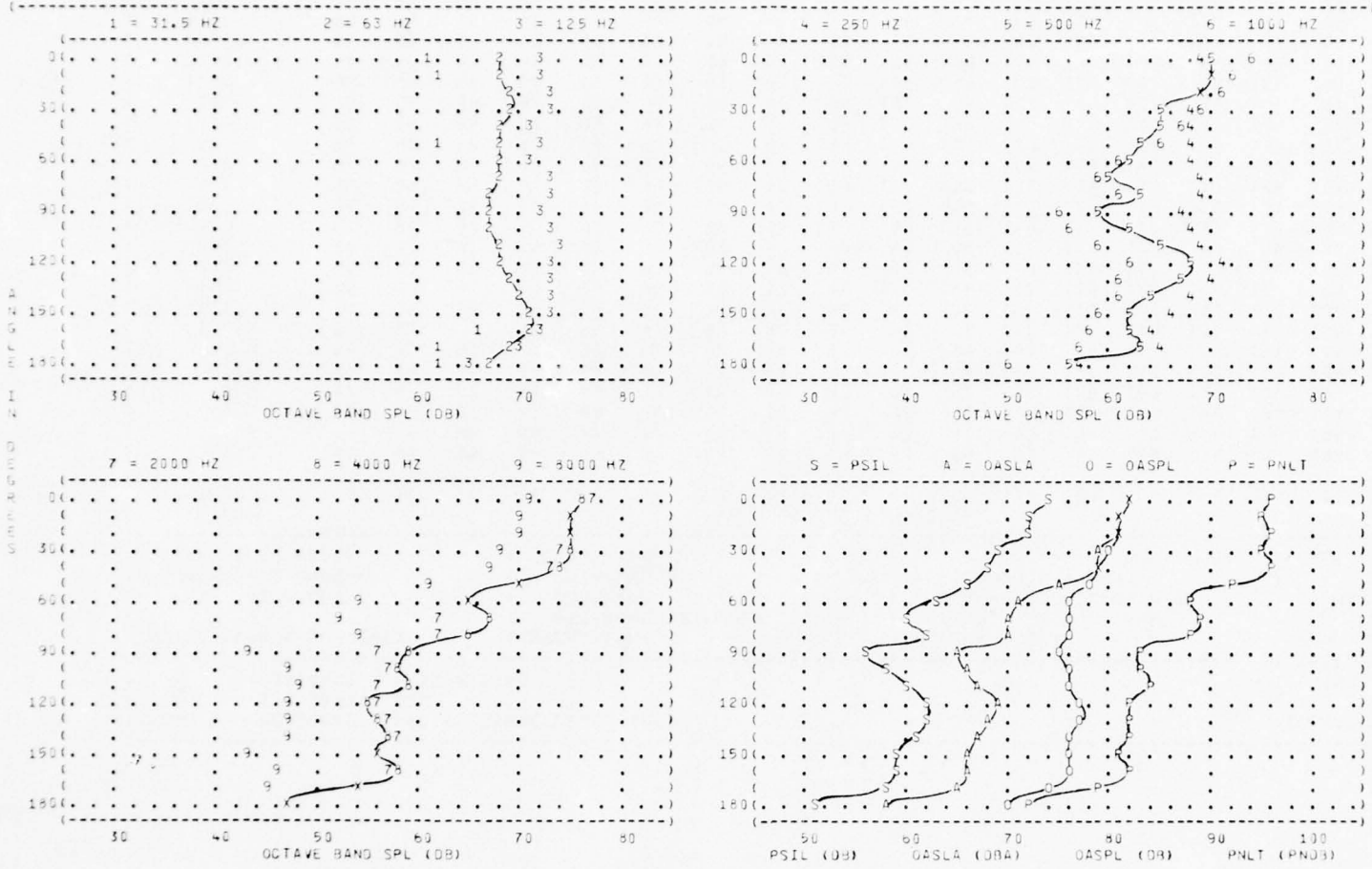


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:

80% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:

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

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-027
RUN 02

07 MAY 75

PAGE 6

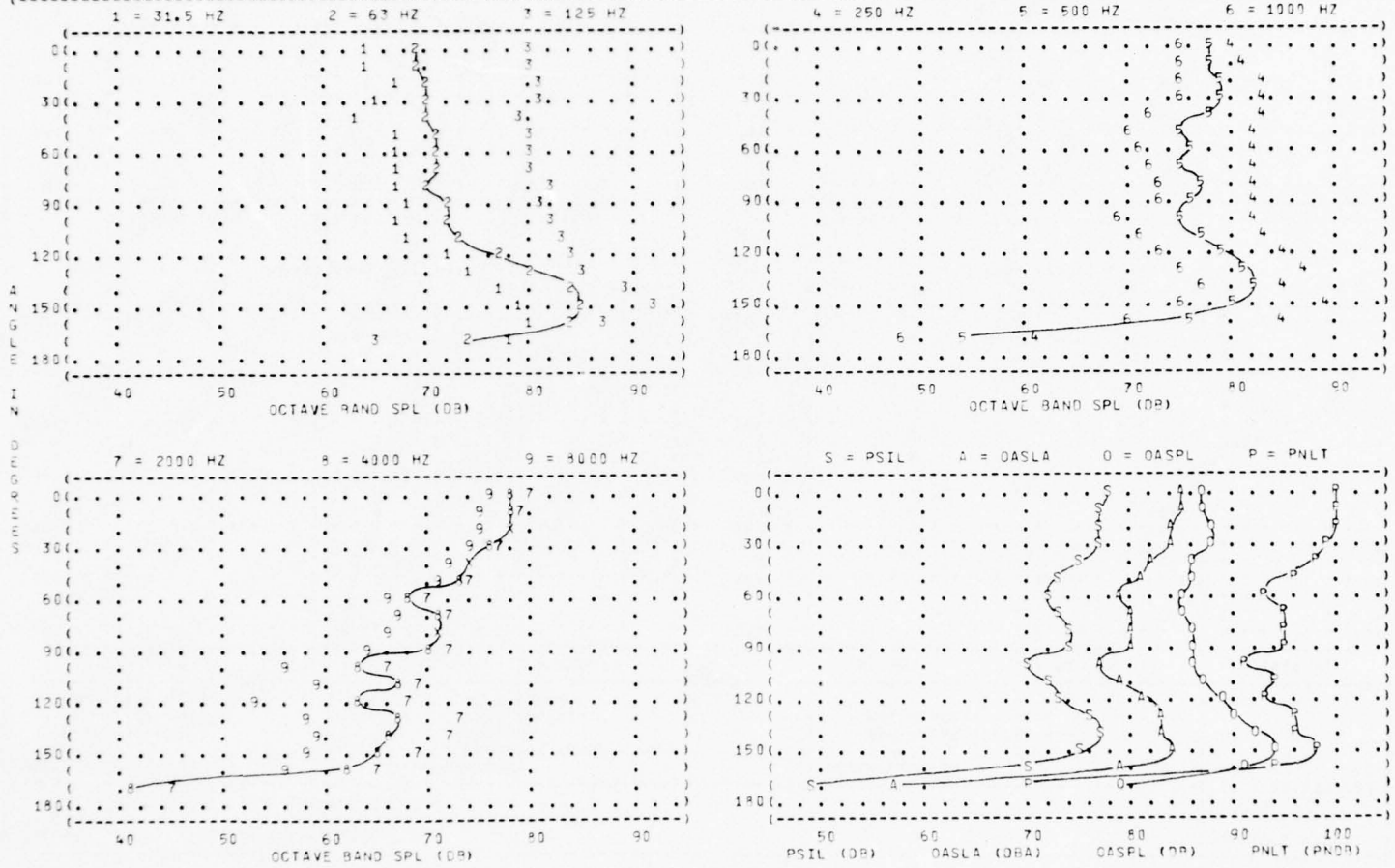


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 6

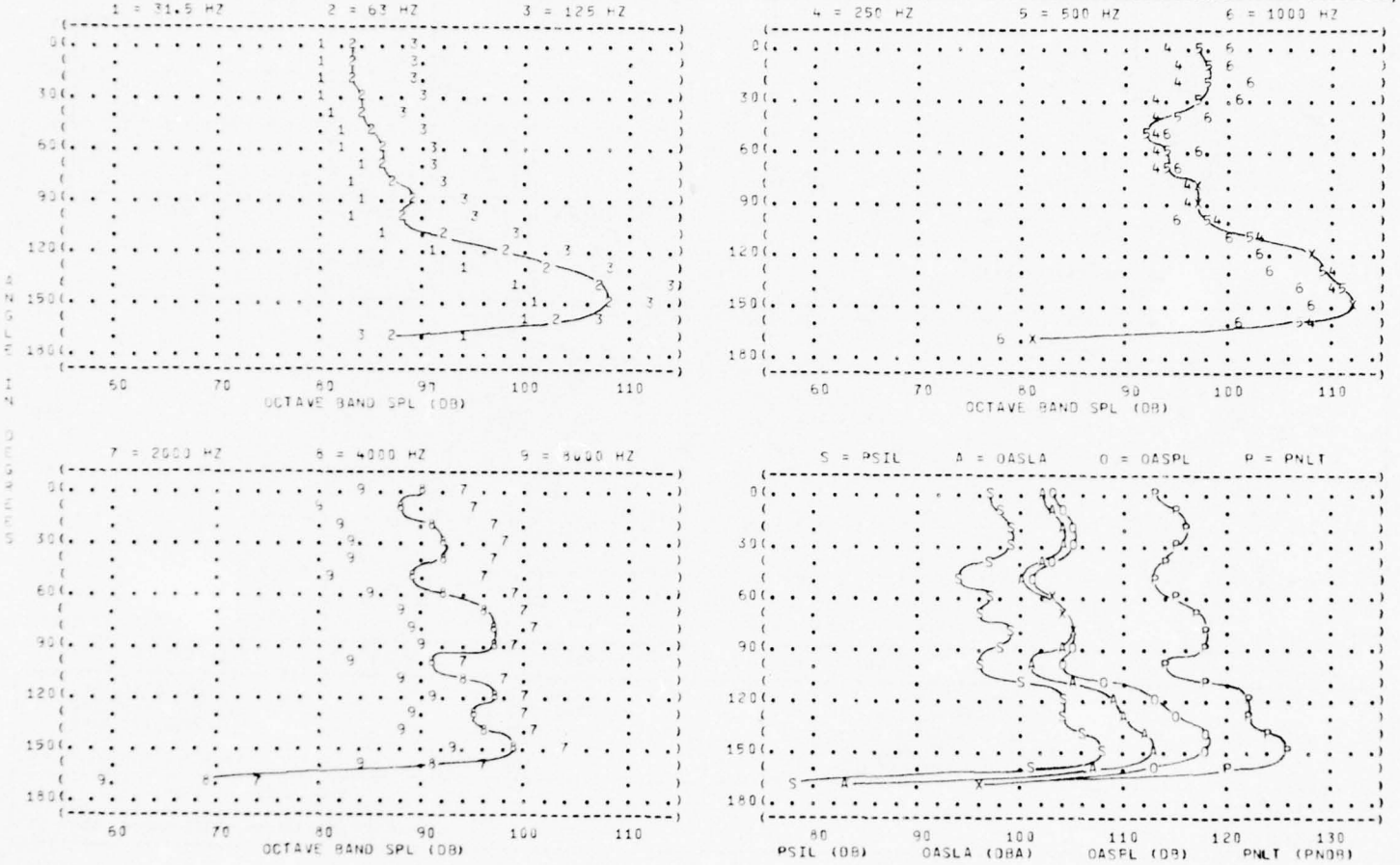


FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

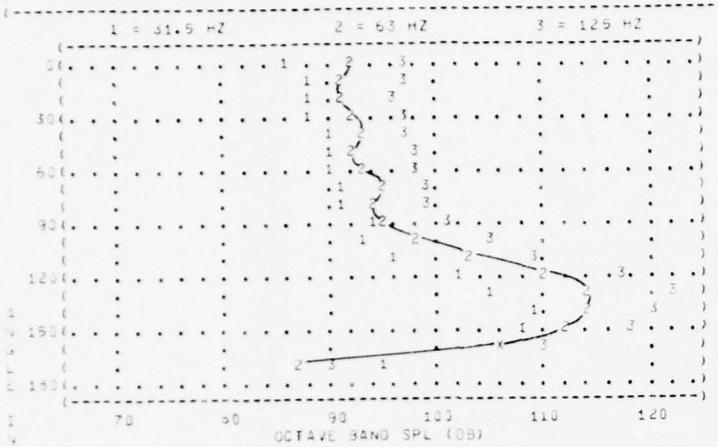
DISTANCE = 100 METERS

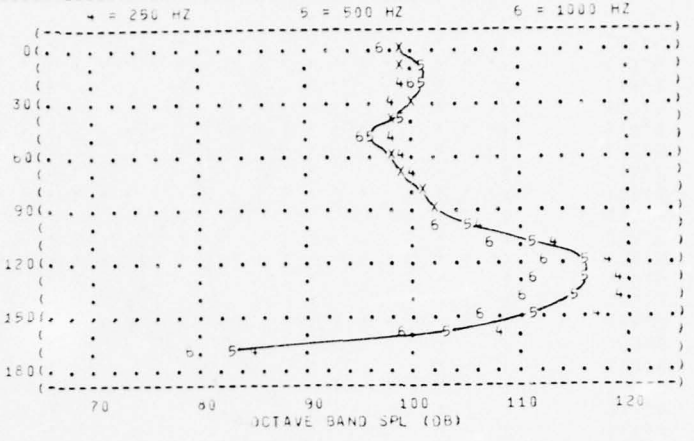
NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

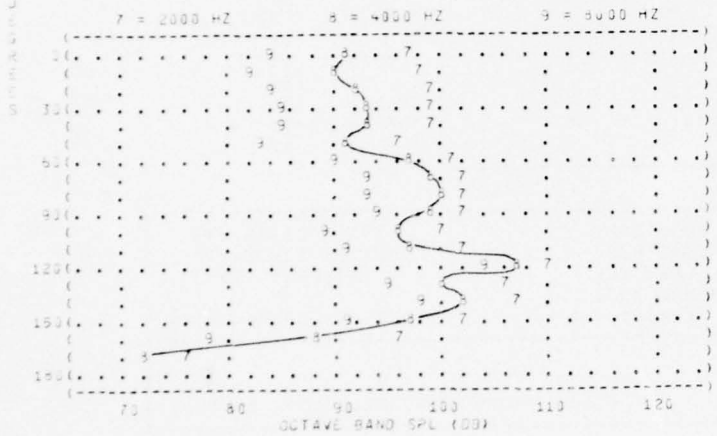
OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 6







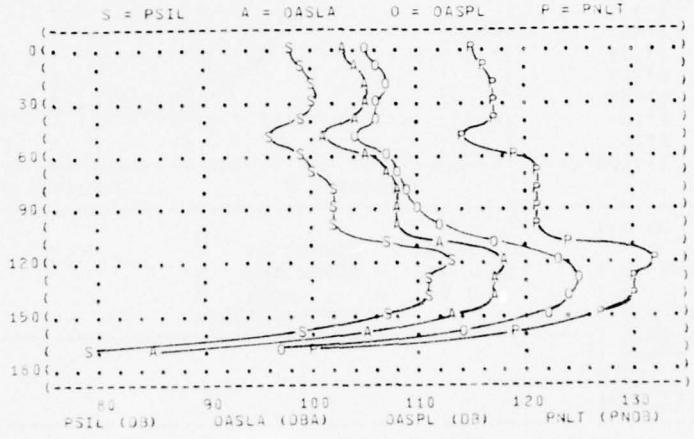


FIGURE: ACOUSTIC POWER LEVEL (PWL)

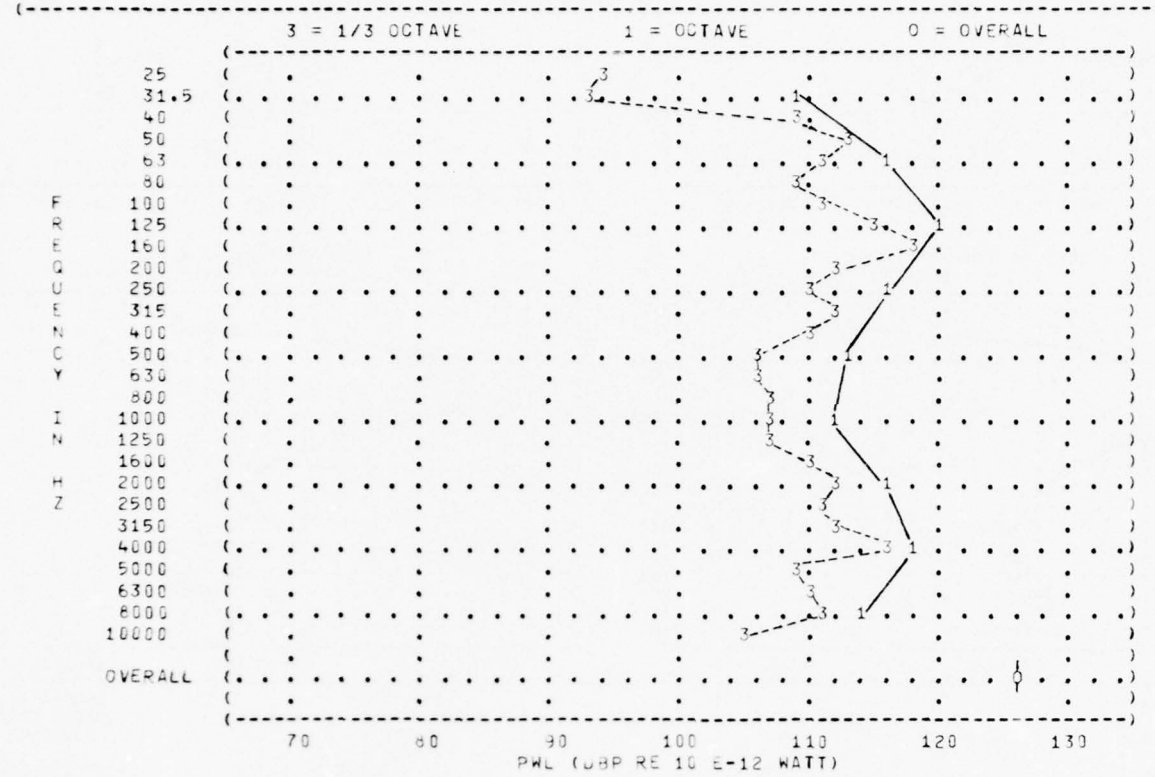
4

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 3



	PWL 1/3 OCTAVE	PWL OCTAVE
25	93.5	
31.5	93.3	109.3
40	109.0	
50	112.8	
63	111.2	116.1
80	109.2	
100	111.1	
125	115.4	120.3
160	117.8	
200	112.4	
250	110.3	116.4
315	112.0	
400	109.8	
500	106.3	112.6
630	106.4	
800	106.5	
1000	106.9	111.7
1250	107.4	
1600	110.5	
2000	111.6	115.9
2500	111.2	
3150	112.5	
4000	116.0	118.2
5000	109.3	
6300	110.1	
8000	110.6	114.0
10000	105.4	
OVERALL		125.6

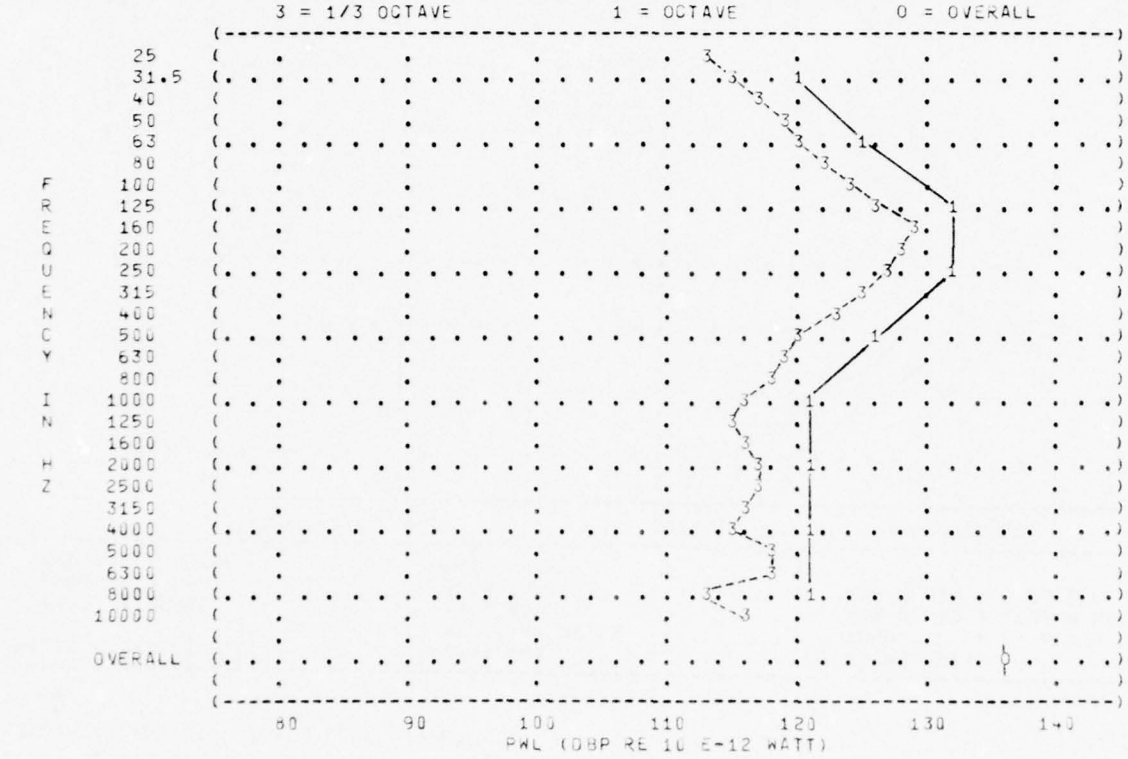
FIGURE: ACOUSTIC POWER LEVEL (PWL) 4

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 3



PWL	1/3 OCTAVE	OCTAVE
	112.9	
	114.6	120.2
	117.4	
	118.6	
	119.9	125.2
	122.0	
	124.0	
	126.4	131.9
	129.3	
	127.9	
	127.0	131.6
	125.4	
	122.9	
	120.0	125.8
	119.4	
	117.6	
	116.3	121.2
	114.9	
	115.8	
	116.9	121.2
	115.5	
	115.6	
	115.2	121.2
	118.0	
	118.1	
	113.2	121.0
	116.0	
	136.4	

FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

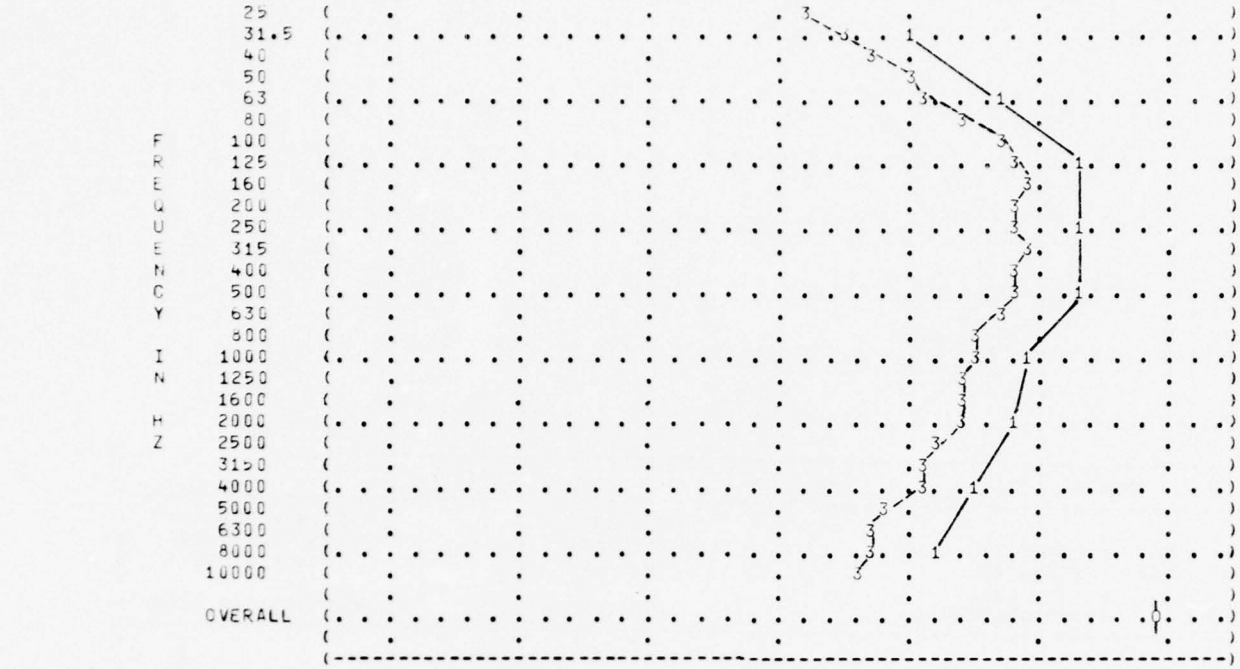
NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 3

3 = 1/3 OCTAVE 1 = OCTAVE O = OVERALL



	PWL 1/3 OCTAVE	PWL OCTAVE
25	132.2	
31.5	134.9	140.0
40	137.3	
50	139.6	
63	141.5	146.7
80	143.8	
100	146.9	
125	148.5	152.8
160	148.7	
200	147.7	
250	147.8	152.8
315	148.5	
400	148.4	
500	147.7	152.6
630	147.4	
800	145.5	
1000	144.8	149.5
1250	143.7	
1600	143.8	
2000	143.7	148.0
2500	142.0	
3150	140.9	
4000	141.2	145.0
5000	137.8	
6300	136.8	
8000	137.2	141.6
10000	136.4	
OVERALL		159.1

FIGURE: ACOUSTIC POWER LEVEL (PWL)

4

NOISE SOURCE/SUBJECT:

F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

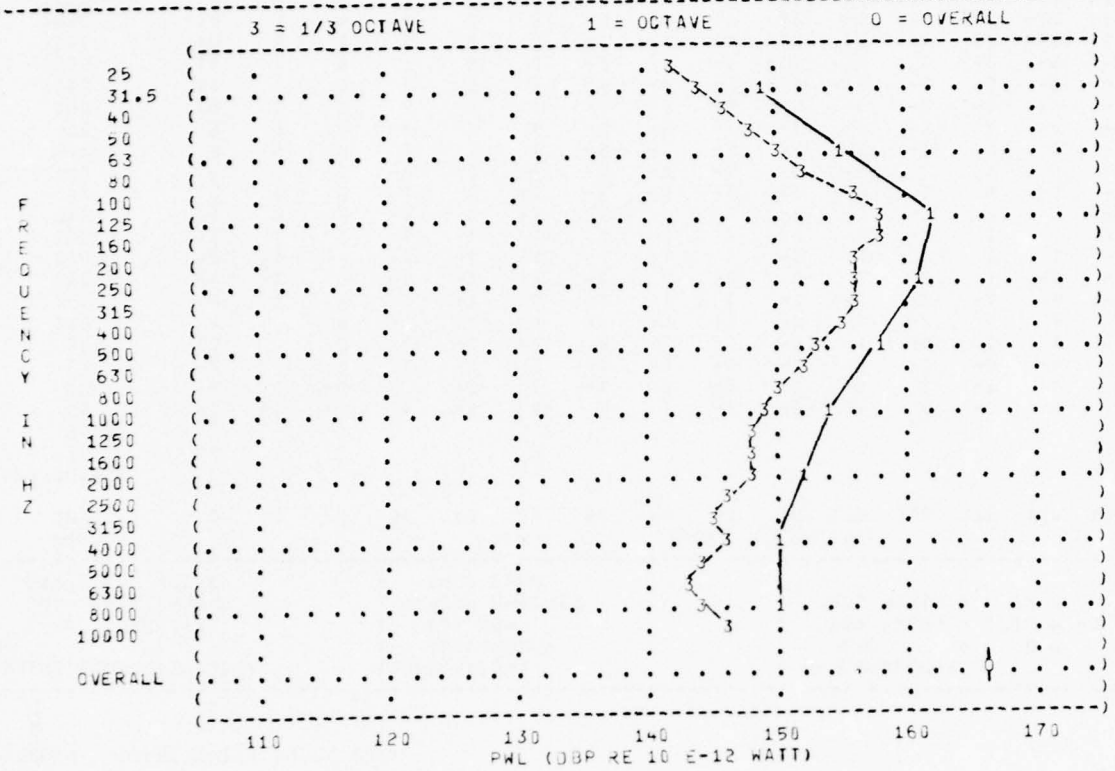
METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-027
RUN 04

07 MAY 75

PAGE 3



PWL 1/3 OCTAVE	PWL OCTAVE
141.8	
143.9	149.0
145.9	
148.1	
149.9	155.2
152.2	
155.6	
157.9	161.9
157.7	
156.1	
155.6	160.7
156.1	
154.7	
153.2	158.2
152.0	
150.3	
149.1	154.1
148.3	
148.1	
147.5	152.1
146.2	
145.1	
145.9	149.9
144.2	
143.4	
144.5	149.7
146.4	
	166.5

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:

OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

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

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

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	-4	-3	-2	-5	-7	-4	-3	-3	-4	-2	-4	-3	1	3	3	5	7	6	
31.5			-7	-8		-7	-6	-5	-6	-6	-6	-4	-0	2	5	7	8	7	
40	-9	-9	-8	-8	-8	-6	-6	-6	-6	-5	-5	-4	-0	2	5	8	8	3	
50	-9	-10	-8	-7	-8	-7	-8	-7	-8	-6	-6	-4	0	2	6	7	7	1	
63	-8	-9	-7	-8	-6	-6	-6	-6	-7	-5	-6	-4	-1	3	7	7	7	-4	
80	-8	-8	-8	-7	-8	-5	-5	-7	-7	-6	-6	-5	-1	4	6	8	7	-10	
100	-8	-7	-8	-7	-8	-6	-8	-7	-6	-5	-4	-3	-1	2	7	8	5	-14	
125	-7	-6	-6	-6	-7	-6	-7	-7	-5	-4	-5	-4	-2	2	6	9	4	-19	
160	-2	-3	-2	-1	-4	-3	-3	-3	-1	-2	-1	-0	1	1	3	7	2	-21	
200	-4	-4	-3	-2	-3	-2	-3	-2	-2	-2	-1	0	2	3	0	7	2	-22	
250	-3	-2	0	1	1	-0	-1	-1	-0	-1	-2	-1	1	2	1	3	-0	-23	
315	-3	-1	-0	-1	-0	-1	-1	-2	-2	-2	-3	-1	2	3	3	3	-1	-25	
400	-0	2	1	1	1	-2	-1	-3	-0	-2	-3	-1	2	3	3	2	-2	-25	
500	-1	-1	0	-0	-2	-5	-4	-3	-2	-2	-3	-0	2	4	5	4	-0	-24	
630	1	-0	1	1	1	-4	-3	-2	-0	-1	-4	-1	1	2	4	3	-2	-24	
800	3	1	1	2	0	-3	-2	-1	0	-1	-3	-2	0	2	4	2	-3	-24	
1000	1	2	2	1	-2	-3	-3	-1	0	-0	-4	-2	0	3	5	2	-3	-25	
1250	3	3	3	2	-1	-2	-1	1	0	0	-5	-4	-3	3	3	-0	-5	-27	
1600	6	5	5	3	1	0	-2	0	-1	1	-6	-3	-4	2	2	-1	-6	-26	
2000	9	7	7	4	2	2	-3	-0	-2	-1	-8	-3	-5	1	-1	-4	-8	-28	
2500	9	8	6	5	3	1	-3	-0	-1	-1	-8	-3	-6	-0	-3	-5	-8	-28	
3150	6	5	5	4	2	1	-3	1	1	2	-6	-1	-6	-1	-4	-4	-8	-28	
4000	6	6	6	5	2	2	-2	1	0	-0	-9	-3	-7	-2	-4	-5	-9	-30	
5000	8	9	8	6	4	3	-3	-1	-2	-4	-12	-8	-14	-10	-9	-10	-11	-31	
6300	8	7	7	6	5	4	-1	-1	-1	-4	-12	-10	-16	-12	-9	-10	-12	-33	
8000	9	8	7	6	4	2	-2	-1	-1	-1	-11	-5	-12	-6	-6	-7	-10		
10000	9	9	8	7	4	2	-3	-2	-2	-4	-12	-7	-15	-9	-7	-11	-12		
OCTAVE																			
31.5	-8	-8	-6	-7	-9	-6	-6	-5	-6	-5	-5	-4	-0	2	5	7	8	5	
63	-9	-9	-8	-7	-7	-6	-6	-7	-7	-6	-6	-5	-1	3	6	8	7	-4	
125	-4	-4	-3	-3	-5	-4	-4	-4	-2	-3	-2	-1	-0	1	5	8	3	-19	
250	-3	-2	-1	-0	-1	-1	-2	-2	-2	-2	-2	-0	1	3	1	5	1	-23	
500	0	1	1	1	0	-3	-2	-2	-1	-2	-3	-1	1	3	4	3	-1	-24	
1000	2	2	2	2	-1	-3	-2	-1	0	-0	-4	-2	-0	2	4	2	-3	-25	
2000	8	7	6	4	2	1	-3	-0	-1	-0	-7	-3	-5	1	-0	-3	-8	-27	
4000	7	7	7	5	3	2	-2	0	-0	-0	-8	-4	-8	-3	-5	-6	-9	-30	
8000	8	8	7	6	4	4	-2	-1	-1	-3	-12	-8	-15	-10	-8	-10	-12		
OVERALL	-1	-1	-1	-1	-2	-2	-3	-3	-2	-2	-3	-1	1	2	4	6	3	-9	

TABLE: DIRECTIVITY INDEX (DB)

6

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 4

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

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	-10	-9	-10	-10	-10	-9	-8	-7	-6	-7	-8	-6	-1	2	7	7	7	5	
31.5	-12	-13	-12	-12	-12	-11	-10	-10	-9	-7	-8	-6	-1	0	6	9	8	3	
40	-14	-14	-14	-14	-12	-11	-11	-9	-10	-10	-10	-7	-3	3	7	8	7	-2	
50	-15	-16	-17	-14	-14	-15	-12	-11	-11	-11	-10	-7	-3	3	8	9	6	-8	
63	-16	-16	-16	-16	-14	-13	-13	-13	-11	-10	-10	-7	-1	3	8	9	5	-12	
80	-15	-16	-16	-15	-16	-15	-13	-13	-13	-10	-11	-7	-1	3	8	9	4	-18	
100	-17	-17	-17	-16	-17	-16	-14	-15	-13	-11	-12	-9	-2	4	10	7	2	-21	
125	-17	-17	-16	-16	-16	-14	-15	-14	-13	-11	-11	-7	-2	4	10	6	2	-21	
160	-16	-15	-15	-14	-17	-14	-14	-13	-12	-11	-8	-4	-0	2	8	8	2	-21	
200	-13	-13	-12	-13	-14	-13	-13	-12	-10	-9	-6	-1	3	4	6	8	3	-24	
250	-10	-10	-11	-12	-12	-11	-12	-11	-9	-9	-6	-3	4	6	4	7	4	-23	
315	-10	-8	-8	-11	-11	-13	-12	-11	-9	-8	-6	-2	3	6	0	7	4	-25	
400	-9	-7	-8	-9	-10	-12	-12	-12	-8	-8	-7	-3	4	3	6	7	3	-24	
500	-9	-8	-7	-8	-10	-13	-12	-12	-8	-8	-7	-3	4	5	5	7	2	-24	
630	-6	-6	-5	-5	-8	-12	-9	-10	-8	-6	-7	-3	3	4	7	7	1	-23	
800	-3	-5	-4	-4	-7	-11	-7	-8	-5	-5	-7	-1	3	4	6	7	0	-22	
1000	0	1	2	0	-3	-8	-5	-7	-4	-4	-6	-1	2	3	5	6	-1	-24	
1250	-2	-0	2	2	0	-3	-2	-4	-3	-3	-7	-2	0	1	4	6	-1	-24	
1600	-5	-3	-1	-0	-2	-2	1	-0	-0	-1	-5	-1	0	1	3	6	-2	-24	
2000	-5	-4	-2	-2	-3	-4	-0	2	3	0	-5	-1	1	0	1	4	-3	-27	
2500	-5	-5	-2	-2	-2	-5	-2	1	2	1	-5	-1	1	1	1	4	-3	-25	
3150	-5	-6	-4	-2	-3	-5	-3	1	2	2	-5	-0	1	0	1	3	-4	-26	
4000	-5	-7	-5	-3	-3	-6	-2	1	2	3	-4	-1	2	-0	1	4	-4	-26	
5000	-6	-8	-6	-5	-5	-7	-3	0	1	2	-4	0	3	-0	2	6	-2	-26	
6300	-3	-7	-5	-4	-4	-6	-2	0	2	2	-4	-0	2	1	-0	5	-4	-29	
8000	-5	-8	-6	-5	-5	-7	-3	0	1	2	-5	0	3	1	0	5	-3	-31	
10000	-8	-10	-9	-7	-6	-9	-4	0	0	2	-6	1	3	1	1	5	-3	-28	
OCTAVE																			
31.5	-12	-12	-12	-12	-11	-10	-10	-9	-9	-8	-9	-6	-2	2	7	8	7	2	
63	-15	-16	-16	-15	-15	-14	-13	-13	-12	-10	-11	-7	-1	3	8	9	4	-12	
125	-16	-16	-16	-15	-17	-15	-14	-14	-13	-11	-10	-6	-1	3	9	7	2	-21	
250	-11	-10	-10	-12	-12	-12	-12	-11	-9	-9	-6	-2	3	5	5	7	4	-24	
500	-8	-7	-6	-7	-9	-12	-11	-11	-7	-7	-7	-3	4	4	6	7	2	-24	
1000	-1	-1	0	-0	-3	-7	-4	-6	-4	-4	-6	-1	2	3	5	7	-0	-23	
2000	-5	-4	-2	-1	-3	-3	0	1	2	0	-5	-1	1	1	2	5	-3	-25	
4000	-5	-7	-4	-3	-3	-5	-2	1	2	2	-4	-0	2	-0	1	4	-4	-26	
8000	-4	-8	-6	-5	-5	-7	-3	0	1	2	-5	0	3	1	0	5	-4	-29	
OVERALL	-8	-7	-6	-6	-8	-10	-8	-7	-6	-6	-7	-3	2	4	7	7	2	-15	

TABLE: DIRECTIVITY INDEX (DB)

6

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 6 C
BAR PRESS = .706 M HG
REL HUMID = 53 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 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	-15	-11	-13	-12	-11	-11	-9	-10	-10	-8	-7	-5	-1	4	7	7	7	-2	
31.5	-14	-14	-13	-14	-10	-12	-10	-11	-10	-7	-9	-6	-0	4	6	8	5	-6	
40	-15	-15	-14	-13	-13	-11	-12	-11	-11	-8	-9	-5	2	4	8	7	3	-12	
50	-16	-16	-16	-16	-15	-15	-14	-14	-13	-12	-10	-5	2	6	8	6	1	-17	
63	-16	-16	-15	-15	-14	-15	-14	-13	-12	-11	-9	-4	3	7	8	5	-0	-21	
80	-15	-16	-16	-16	-15	-15	-15	-12	-14	-13	-8	-3	3	8	7	4	-3	-24	
100	-17	-18	-18	-17	-16	-17	-16	-14	-15	-14	-11	-3	4	8	6	4	-4	-26	
125	-17	-17	-18	-17	-18	-16	-16	-15	-15	-13	-10	-5	4	8	7	4	-5	-27	
160	-17	-17	-17	-16	-18	-17	-16	-15	-15	-12	-8	-5	2	6	6	5	-4	-22	
200	-15	-15	-15	-16	-16	-15	-15	-14	-13	-12	-7	-1	3	7	7	5	-4	-28	
250	-13	-13	-13	-14	-14	-14	-13	-13	-12	-11	-6	1	6	5	6	5	-4	-27	
315	-13	-13	-13	-14	-14	-15	-14	-12	-11	-10	-6	-1	7	7	5	3	-6	-29	
400	-13	-10	-9	-11	-12	-15	-13	-12	-10	-9	-5	1	6	6	5	2	-6	-28	
500	-12	-10	-9	-11	-11	-15	-13	-11	-8	-8	-5	0	7	6	5	1	-7	-27	
630	-9	-8	-8	-7	-10	-13	-10	-8	-7	-6	-4	0	7	6	5	0	-7	-26	
800	-9	-8	-7	-6	-9	-11	-8	-7	-5	-4	-4	1	7	5	5	0	-6	-26	
1000	-9	-8	-5	-6	-8	-10	-8	-7	-4	-3	-4	1	6	5	4	1	-7	-27	
1250	-7	-6	-5	-5	-5	-10	-6	-5	-4	-3	-4	1	6	4	4	-1	-7	-28	
1600	-6	-5	-5	-4	-4	-7	-4	-3	-3	-2	-4	-0	5	3	4	-1	-7	-27	
2000	-6	-5	-4	-4	-5	-8	-1	-1	-0	-1	-3	-1	6	2	3	-1	-8	-29	
2500	-8	-8	-6	-6	-5	-9	-3	0	0	-1	-3	-2	6	1	3	-1	-9	-27	
3150	-8	-9	-7	-6	-6	-9	-3	-1	0	-1	-3	-2	7	1	3	-2	-10	-27	
4000	-9	-9	-7	-6	-6	-9	-3	-0	0	0	-4	-3	7	-0	2	-4	-12	-27	
5000	-10	-11	-10	-8	-8	-10	-3	-1	-1	-0	-5	-3	8	0	3	-3	-14	-29	
6300	-10	-12	-10	-9	-9	-11	-4	-1	-1	-0	-6	-5	8	-2	3	-4	-17	-32	
8000	-12	-14	-13	-11	-11	-13	-6	-3	-3	-1	-6	-4	9	-0	1	-5	-17	-36	
10000	-15	-17	-15	-14	-14	-16	-8	-4	-4	-3	-7	-6	9	-1	2	-4	-20	-41	
OCTAVE																			
31.5	-15	-14	-14	-13	-12	-11	-11	-11	-10	-7	-9	-5	1	4	8	7	5	-6	
63	-15	-15	-16	-16	-15	-15	-15	-13	-13	-12	-9	-4	3	7	7	5	-1	-21	
125	-17	-18	-18	-18	-17	-16	-16	-15	-15	-13	-10	-5	3	8	6	4	-4	-25	
250	-14	-14	-14	-15	-15	-15	-14	-13	-12	-11	-6	-0	5	6	6	4	-5	-28	
500	-11	-10	-9	-10	-11	-15	-12	-11	-8	-8	-5	1	6	6	5	1	-7	-27	
1000	-8	-7	-6	-6	-8	-10	-7	-6	-5	-3	-4	1	6	5	4	0	-7	-27	
2000	-6	-6	-5	-4	-5	-8	-3	-2	-1	-1	-3	-1	6	3	4	-1	-8	-27	
4000	-8	-9	-8	-6	-6	-9	-3	-1	0	-0	-4	-3	7	0	2	-3	-11	-28	
8000	-12	-13	-12	-10	-10	-12	-5	-2	-2	-1	-6	-5	9	-1	2	-5	-17	-34	
OVERALL	-13	-12	-12	-12	-13	-14	-12	-11	-10	-9	-7	-1	5	7	6	4	-4	-21	

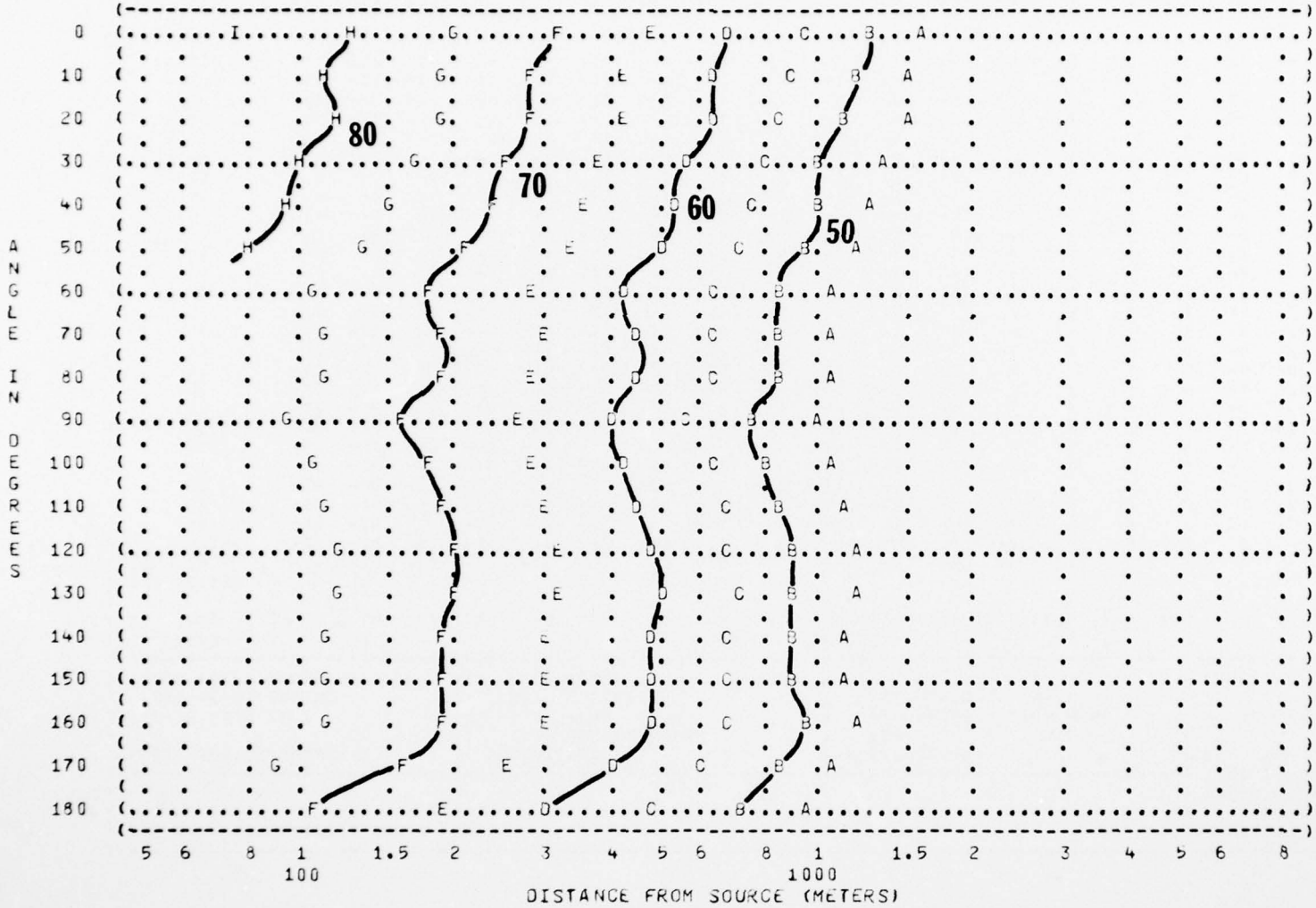
FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
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

NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	RUN 02
F-5E AIRCRAFT	80% RPM	TEMP = 15 C	
J85-GE-21 ENGINE	BOTH ENGINES	BAR PRESS = .760 M HG	07 MAY 75
FAR FIELD NOISE	FREE FLOW	REL HUMID = 70 %	PAGE 13

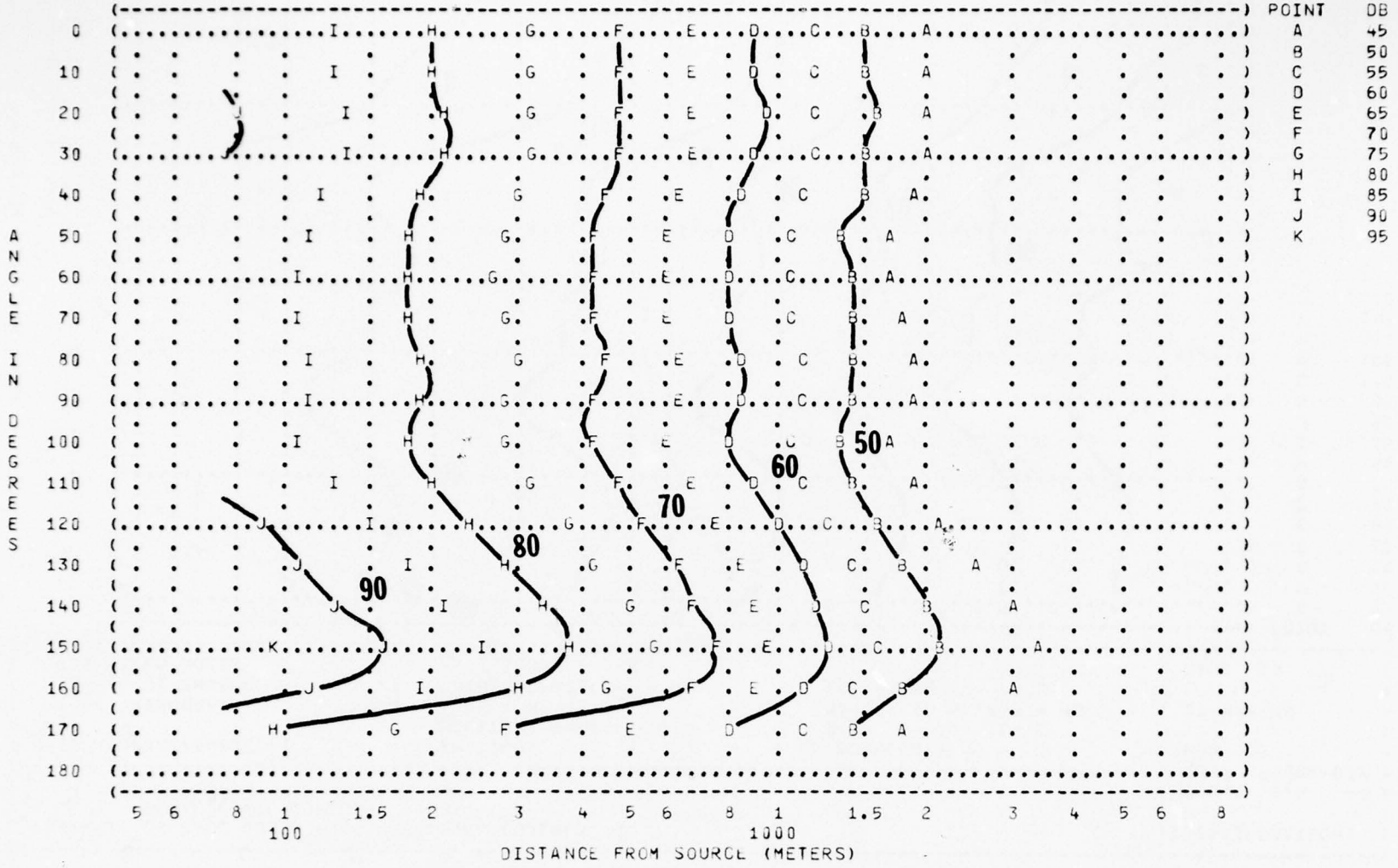


FIGURE: 5	OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)	IDENTIFICATION:
		OMEGA 1.4

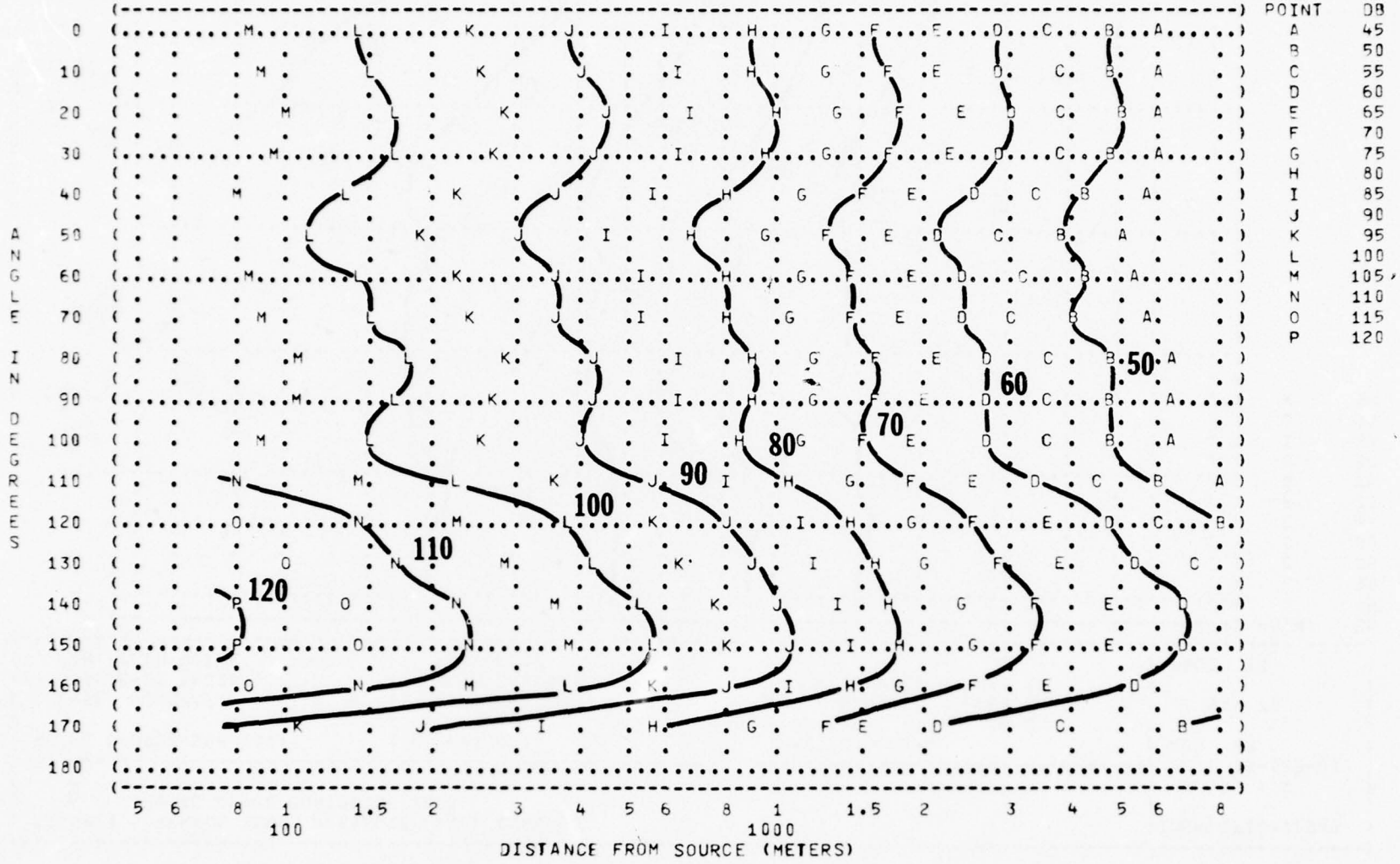
FIGURE 5: OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

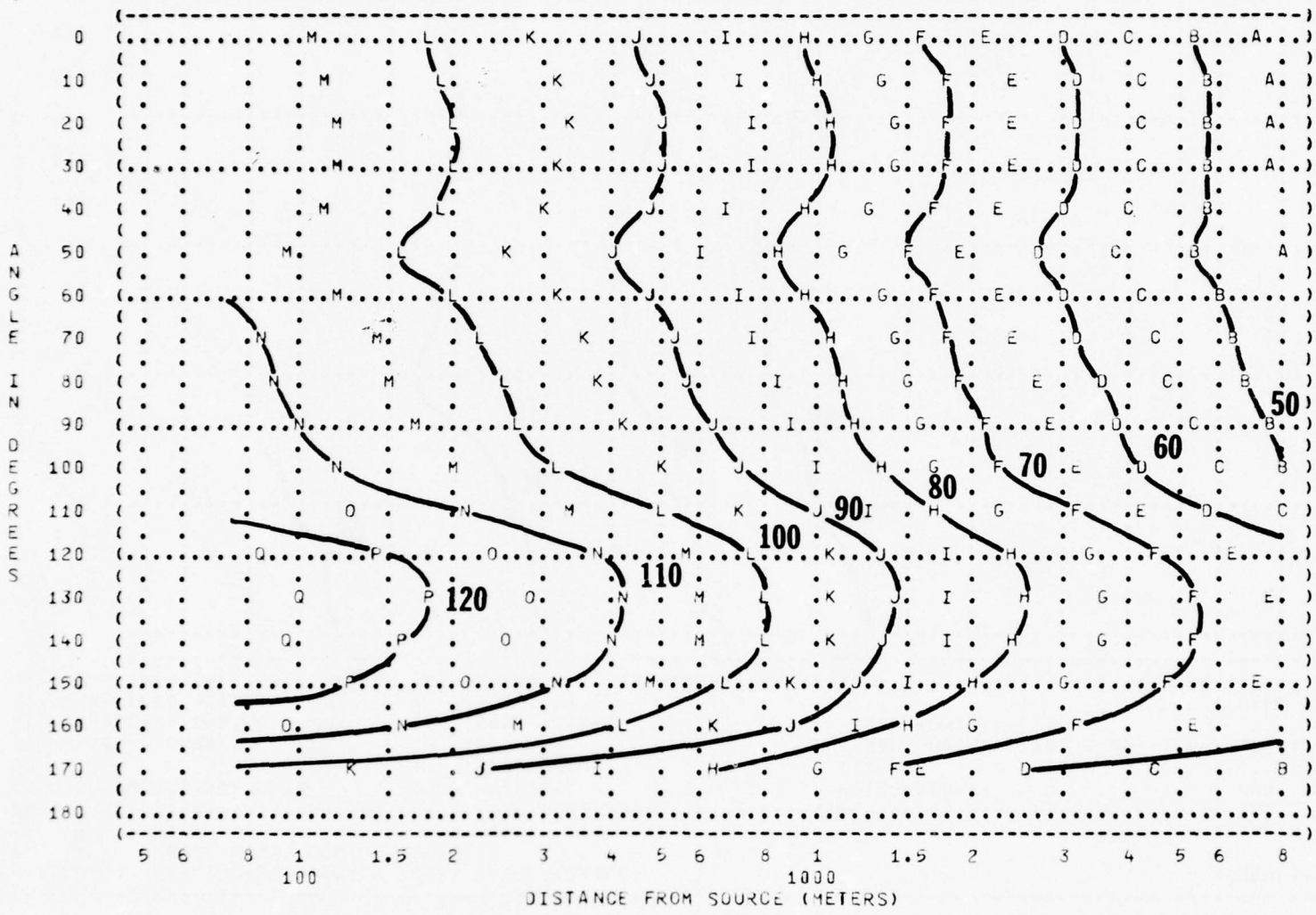
FIGURE: 5 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 13

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
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: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 14

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

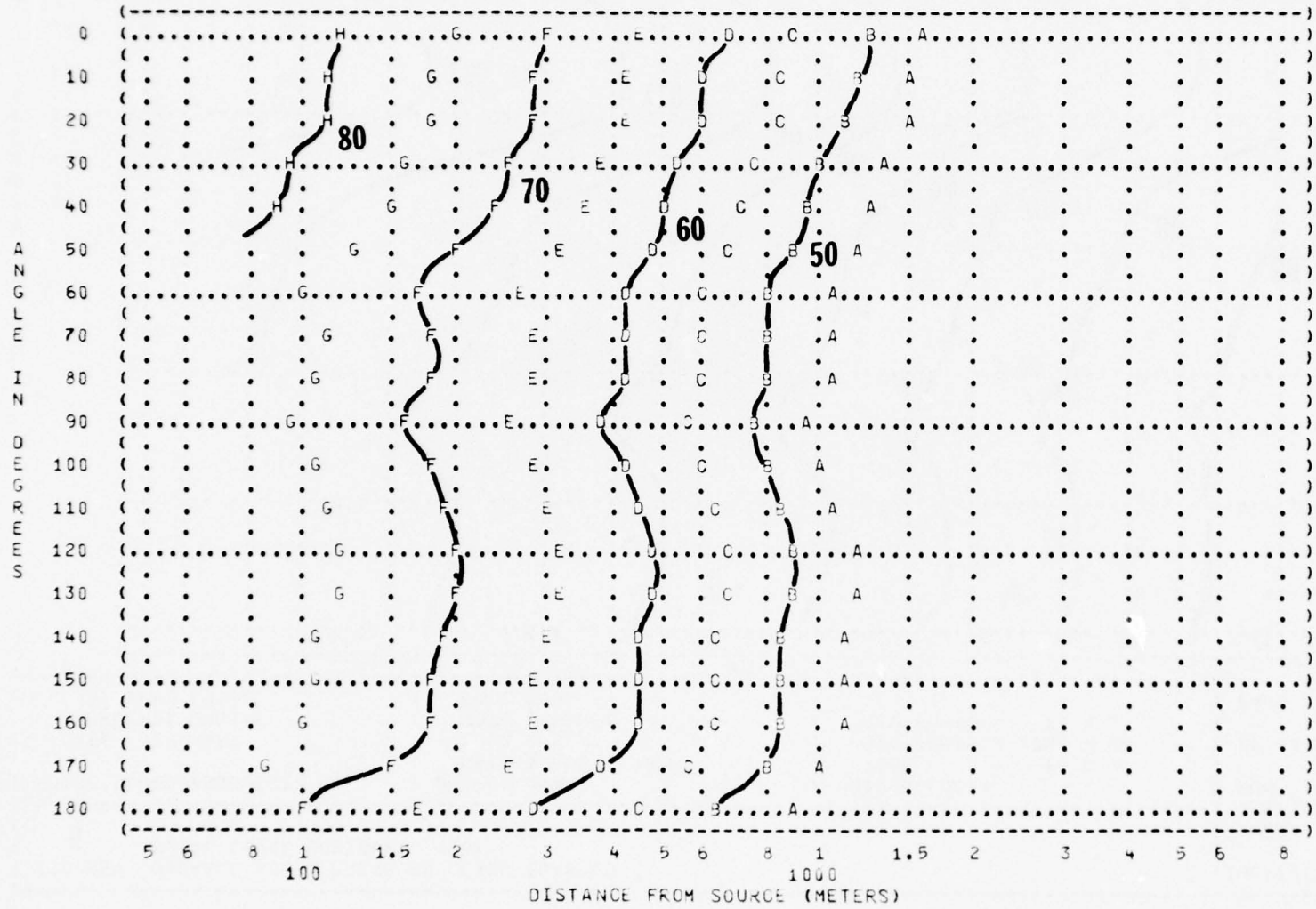


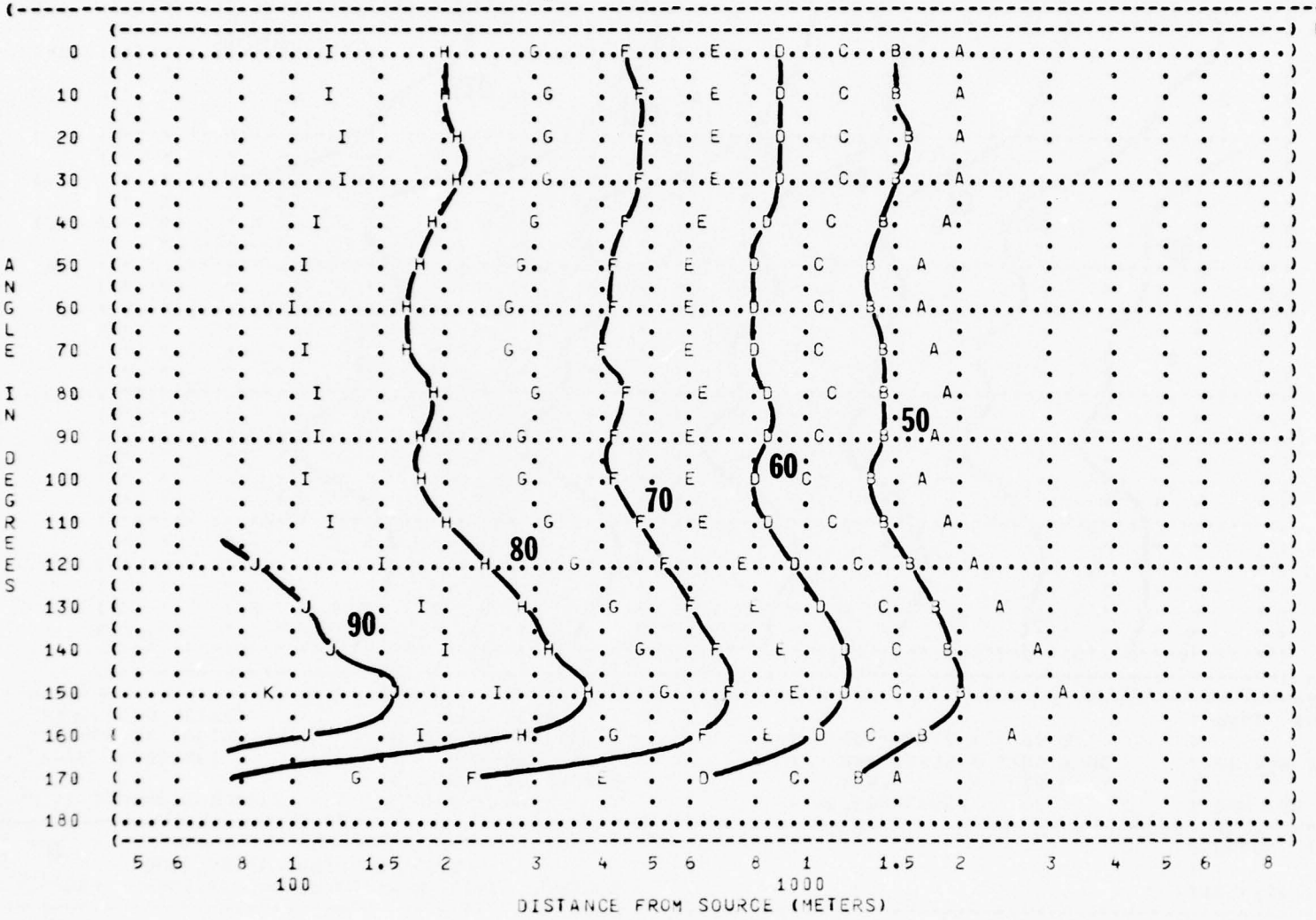
FIGURE: 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
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

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

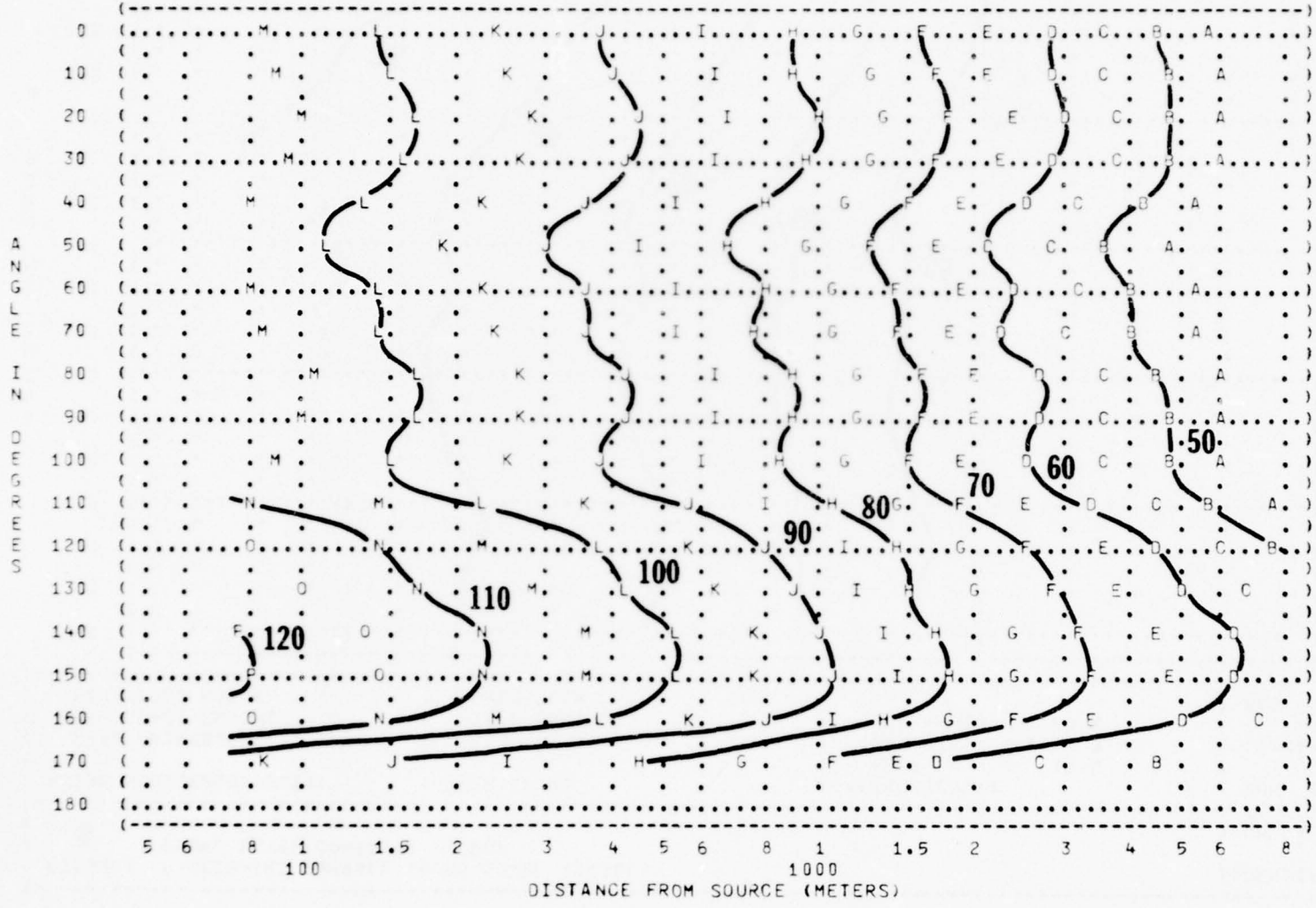


FIGURE 6 C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 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

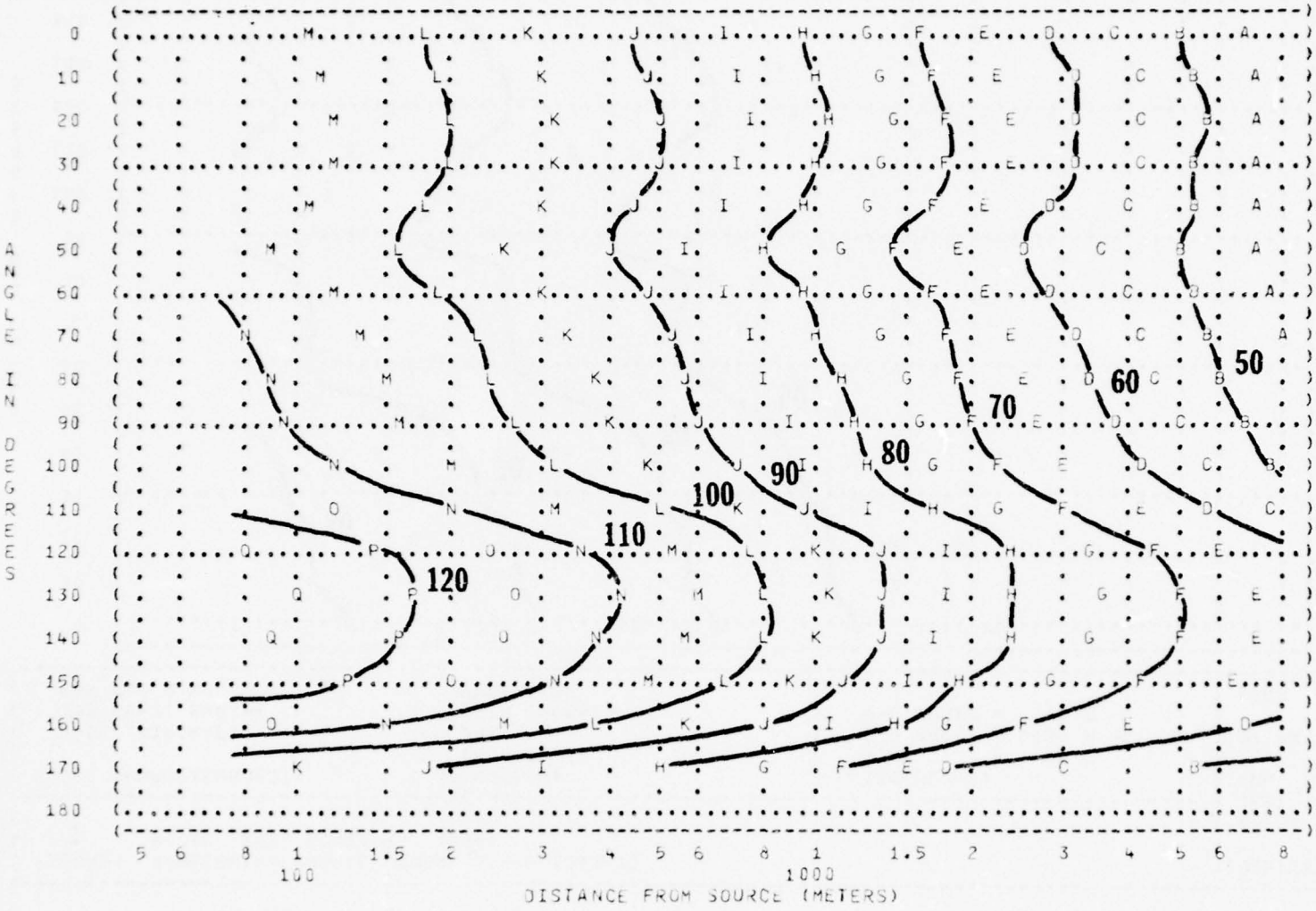


FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
>0% RPM
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

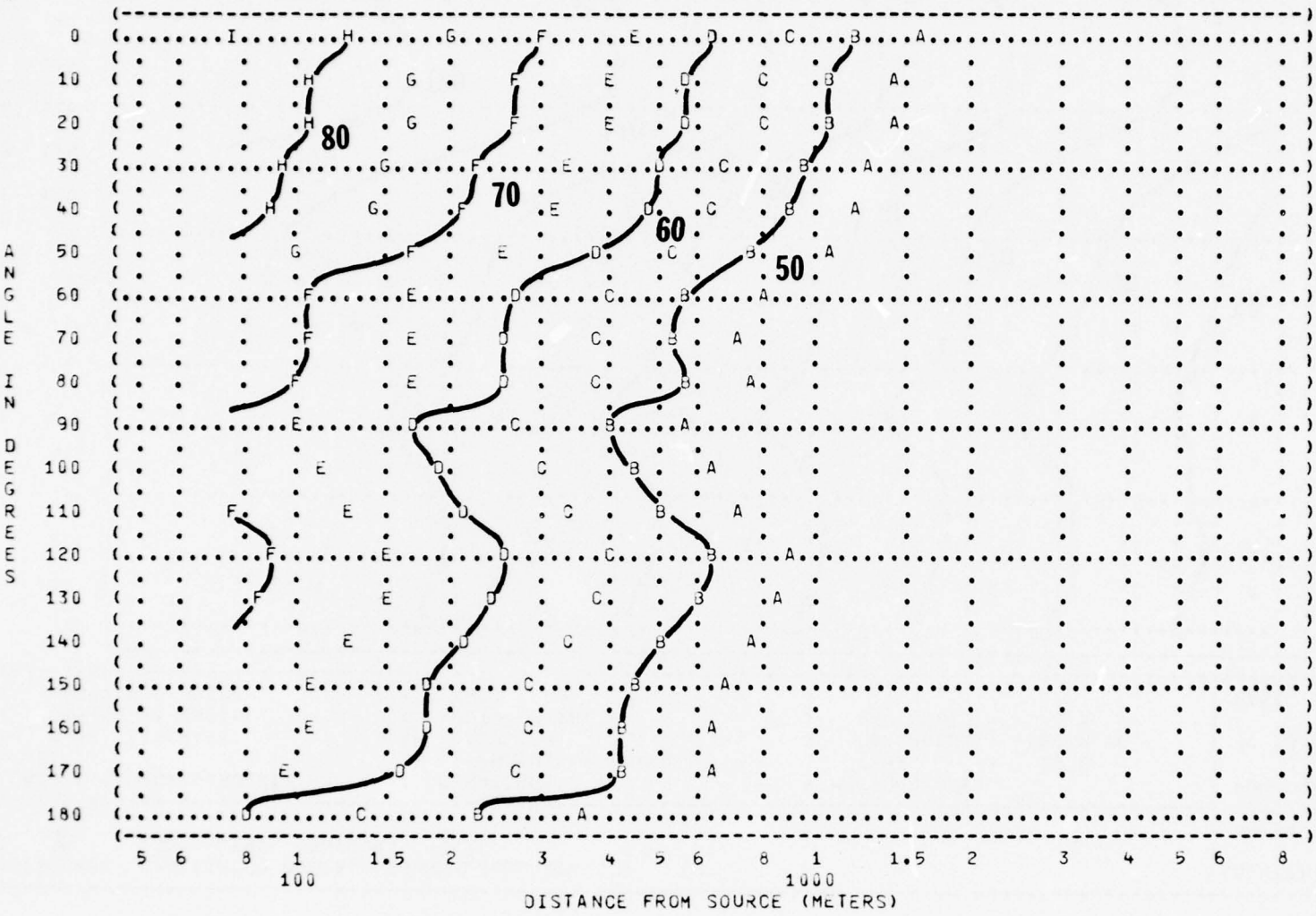


FIGURE: 7 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
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

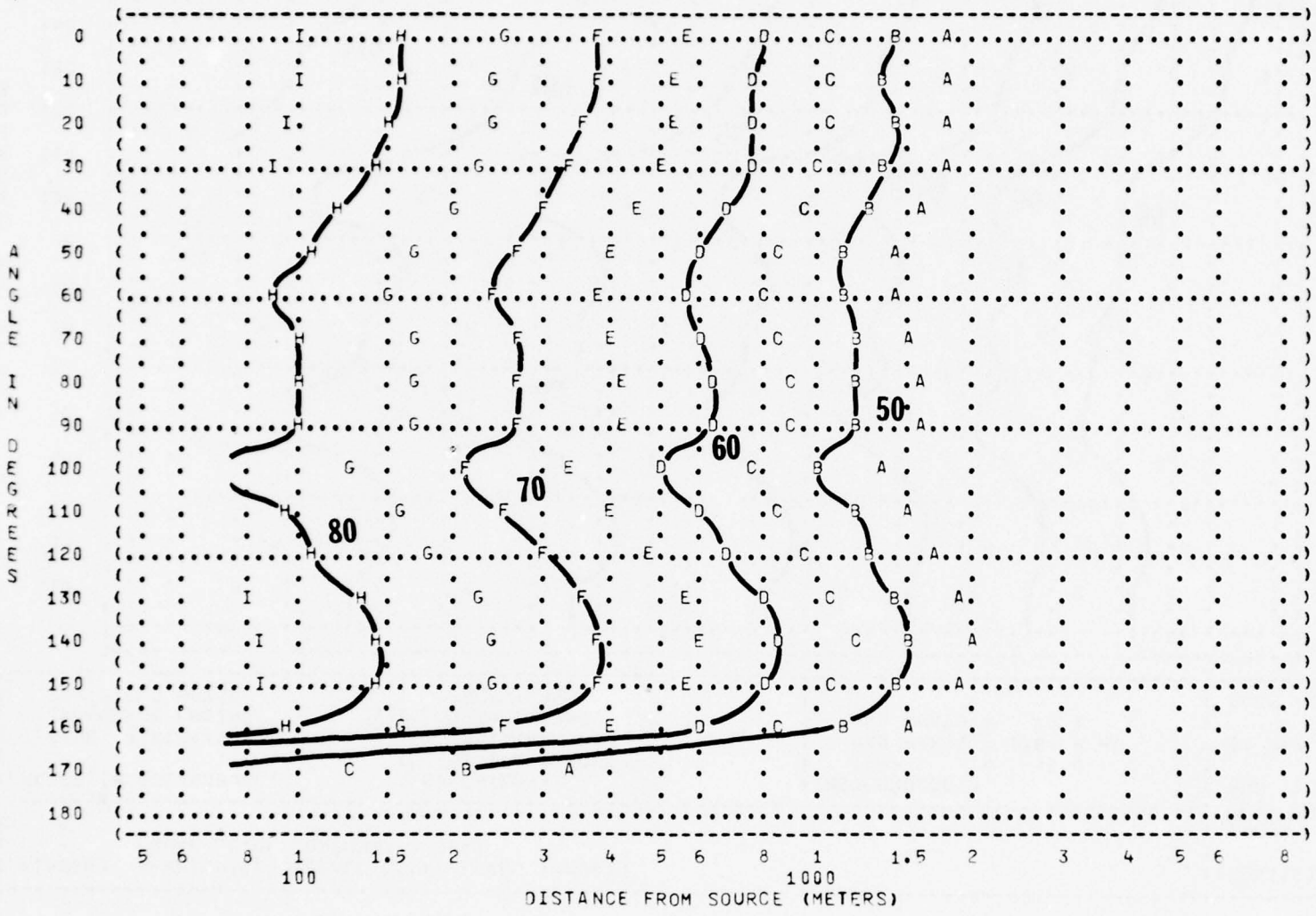


FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

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

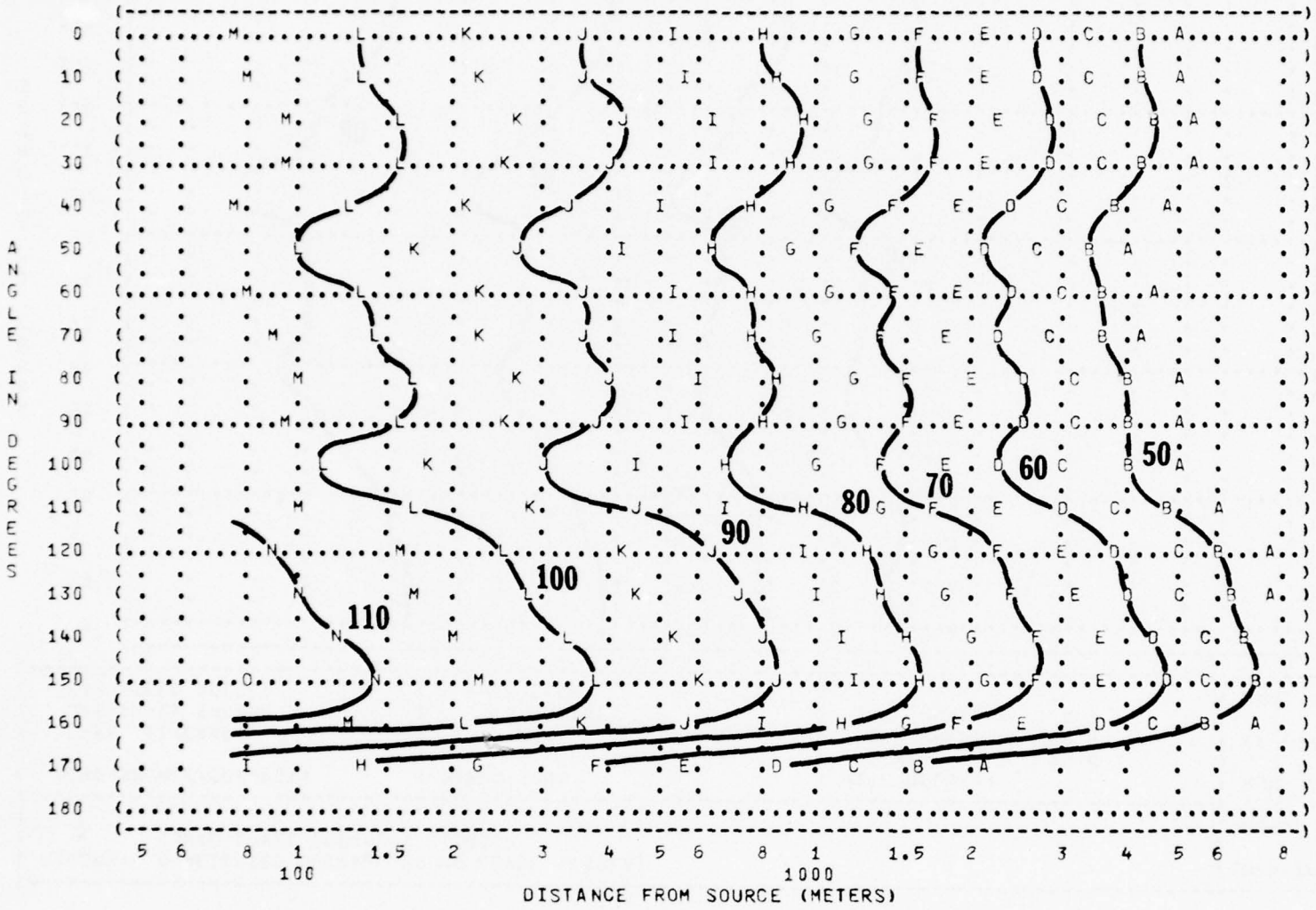


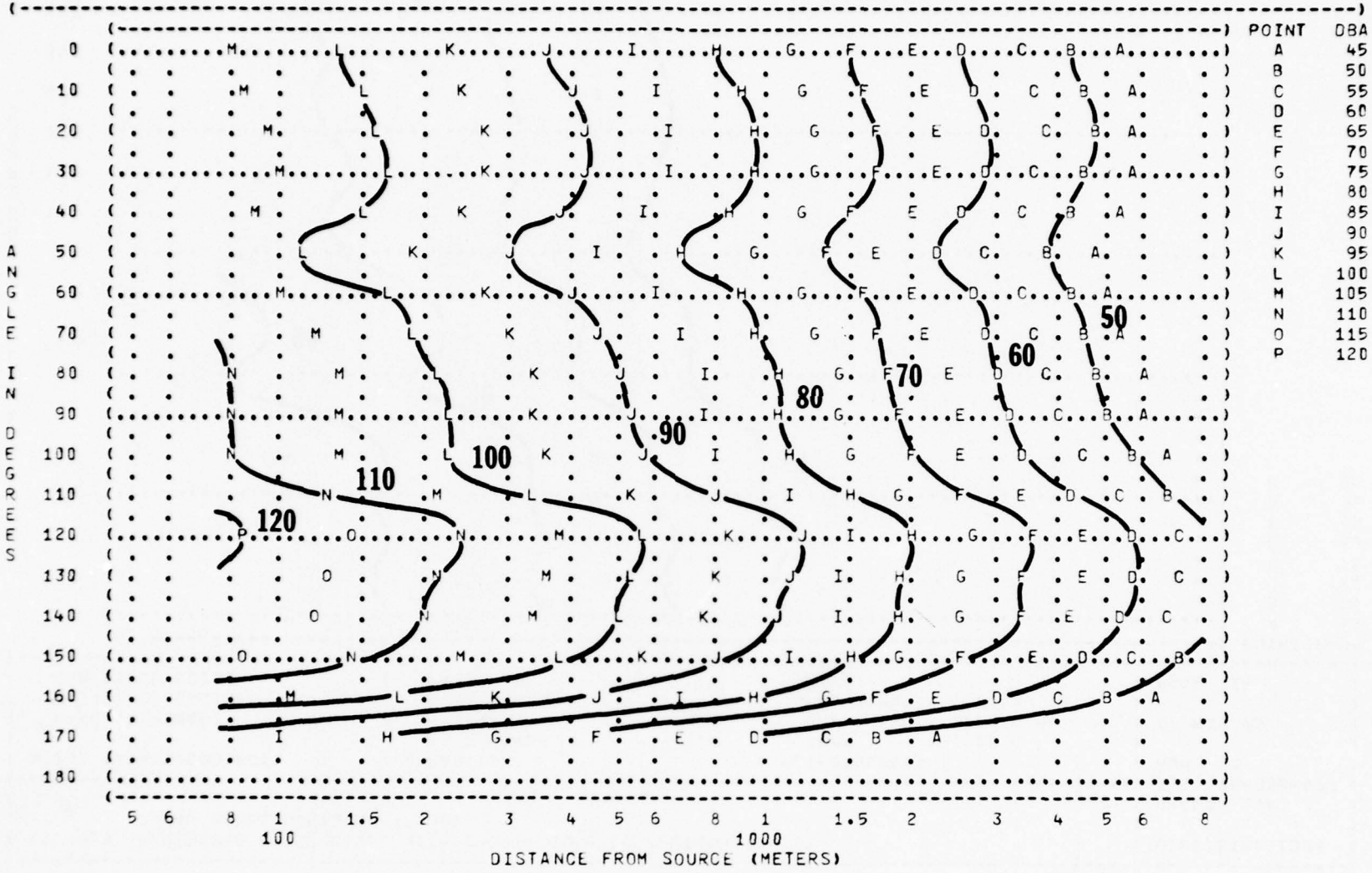
FIGURE 7: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
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)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
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

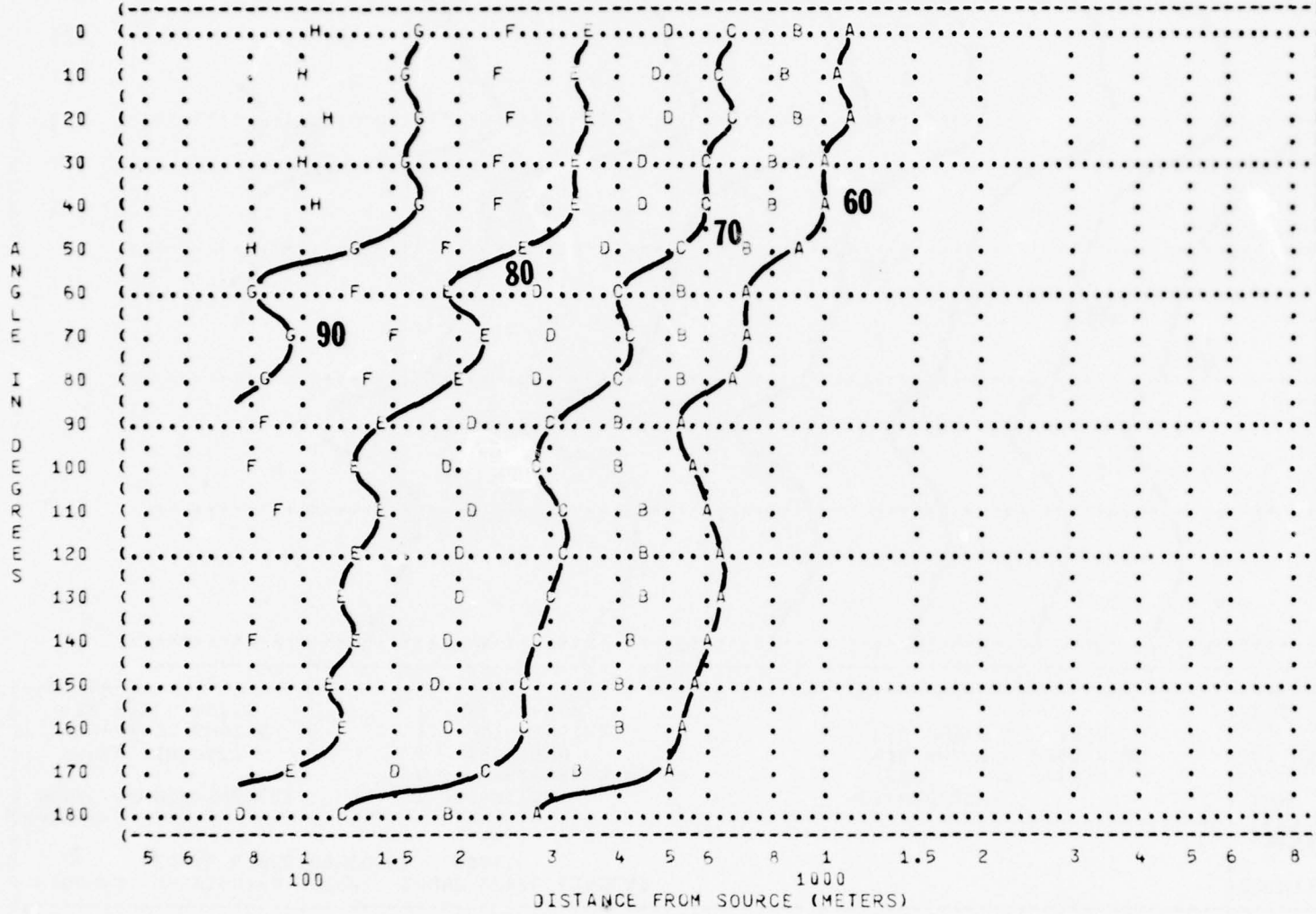


FIGURE 8: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 16

POINT	PNDB
A	60
B	65
C	70
D	75
E	80
F	85
G	90
H	95
I	100

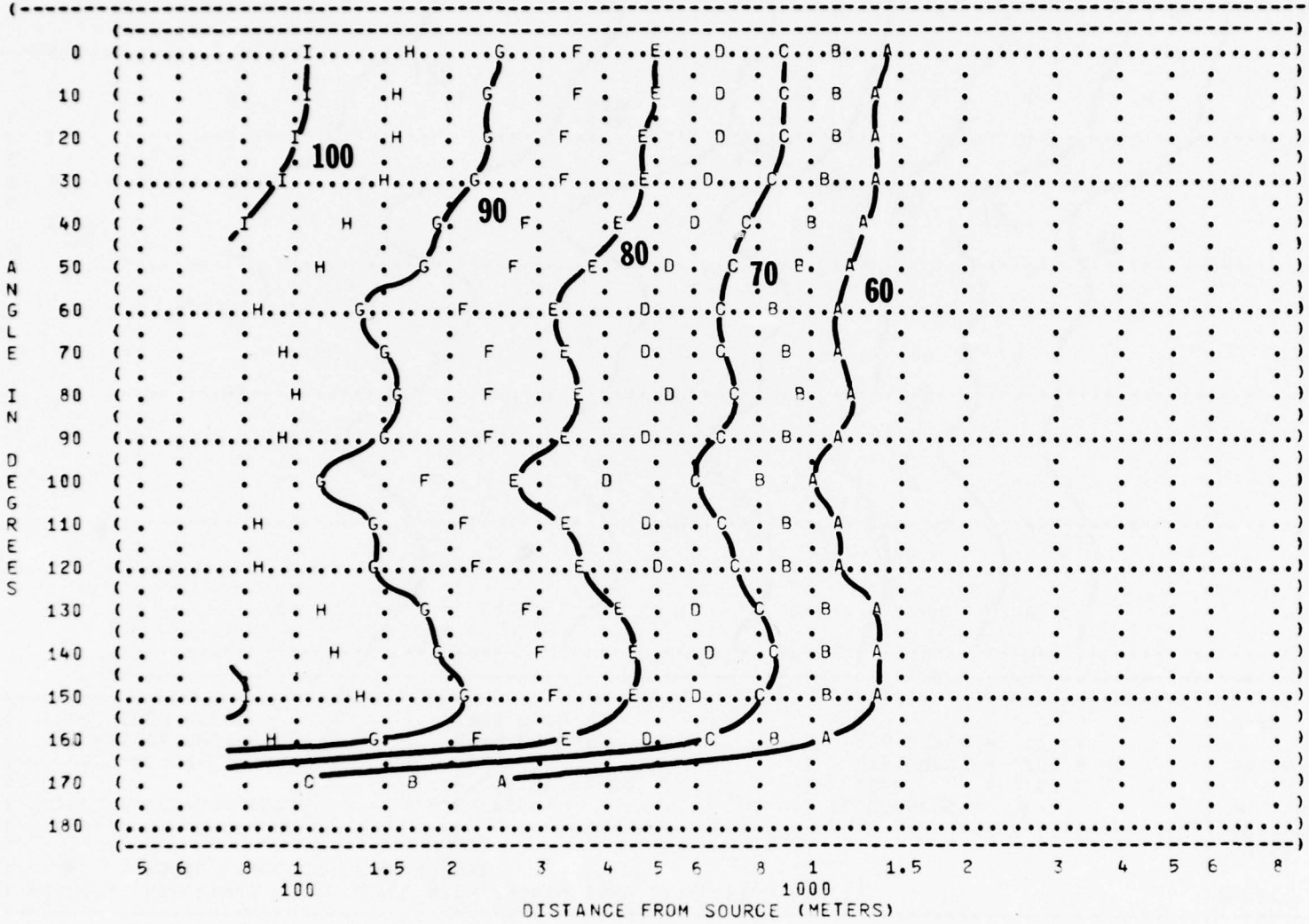


FIGURE 8 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

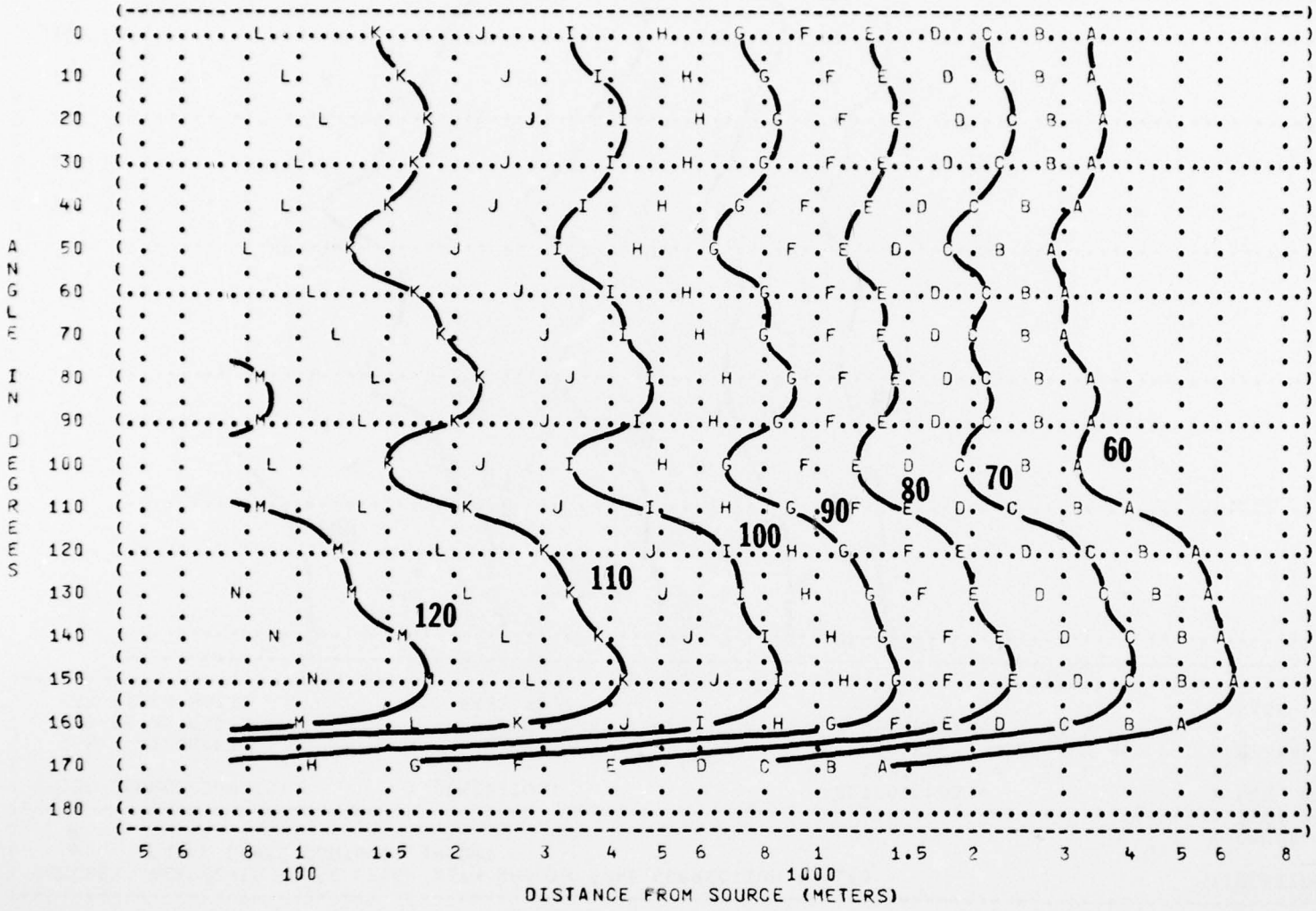
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

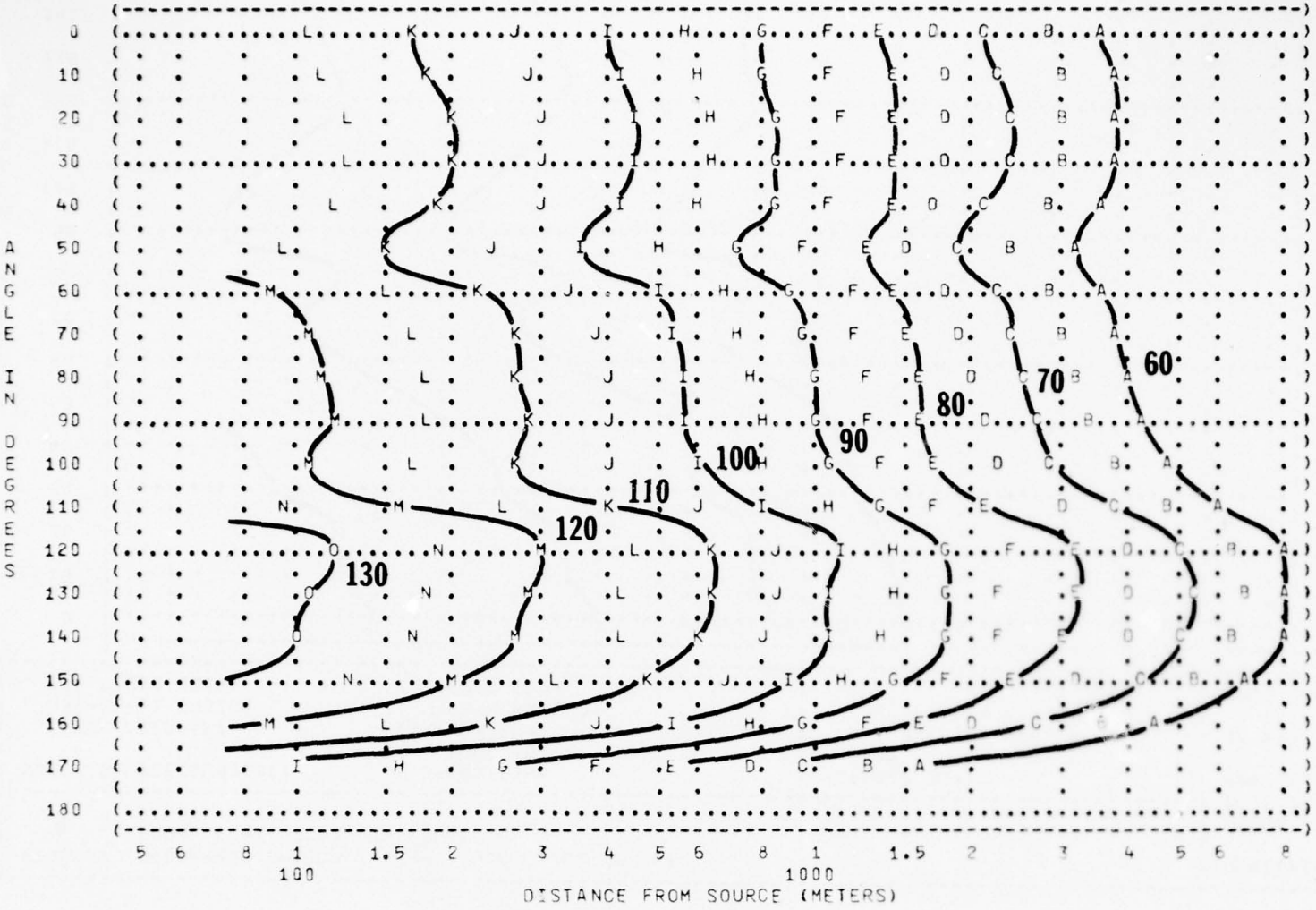
OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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



NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:	RUN 04
F-5E AIRCRAFT	AFTERBURNER POWER	TEMP = 15 C	
J85-GE-21 ENGINE	100% RPM	BAR PRESS = .760 M HG	07 MAY 75
FAR FIELD NOISE	BOTH ENGINES	REL HUMID = 70 %	
	FREE FLOW		PAGE 16



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

FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)	IDENTIFICATION:
9 EQUAL LEVEL CONTOURS (DB)	
	OMEGA 1.4
	TEST 75-002-027
NOISE SOURCE/SUBJECT: OPERATION: METEOROLOGY:	RUN 01

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
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

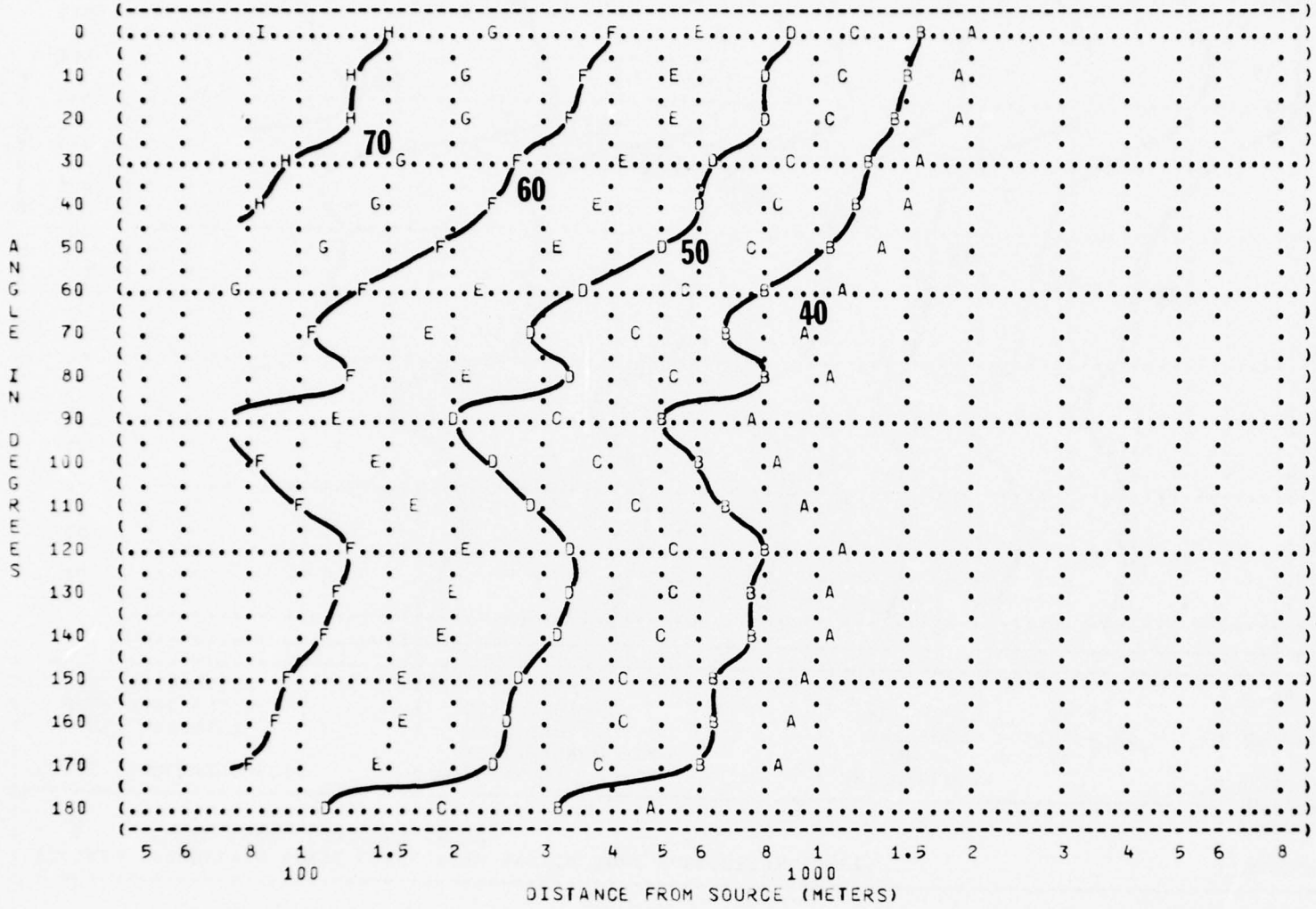


FIGURE: 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
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

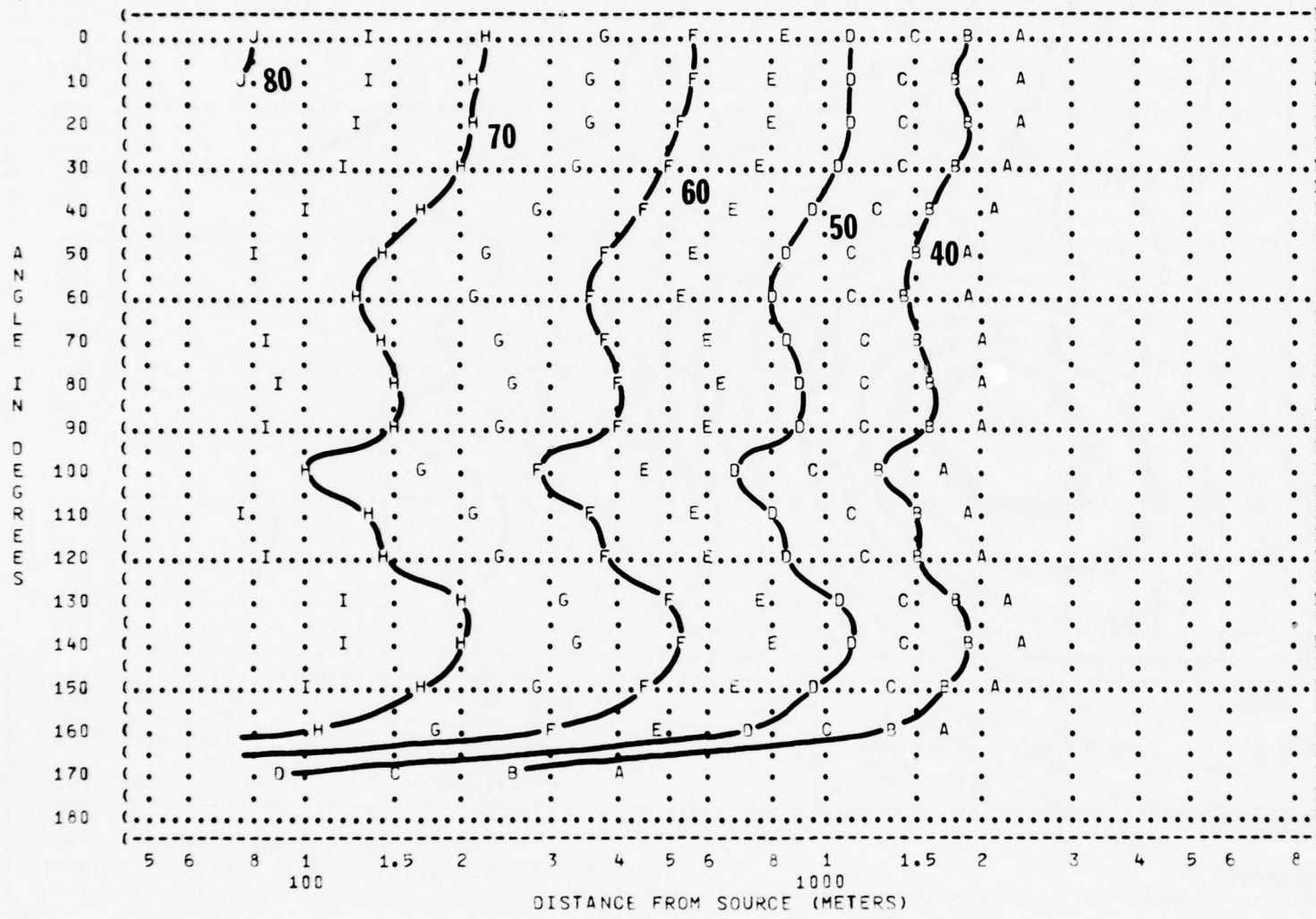


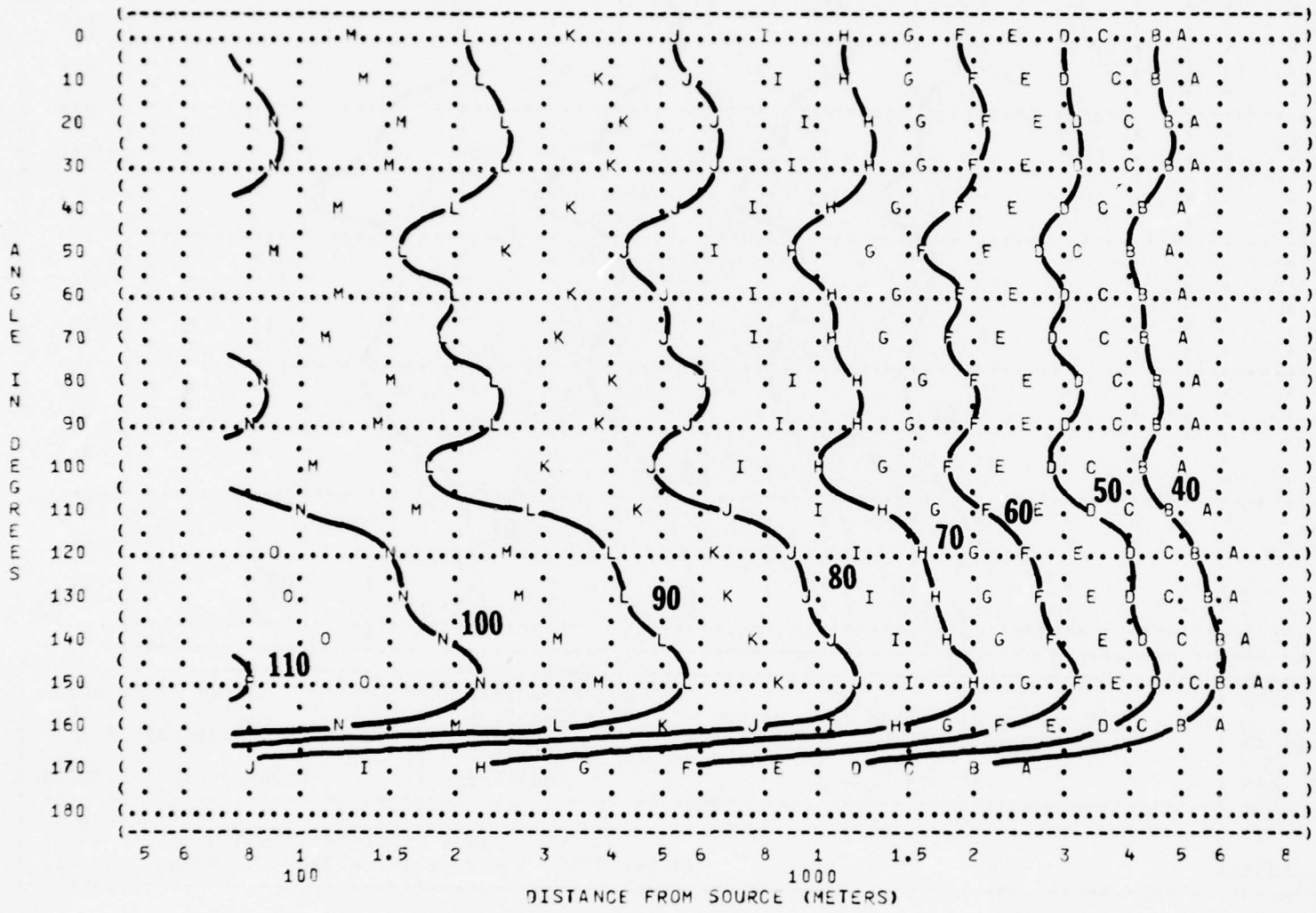
FIGURE 9: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 17

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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: 9 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 17

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

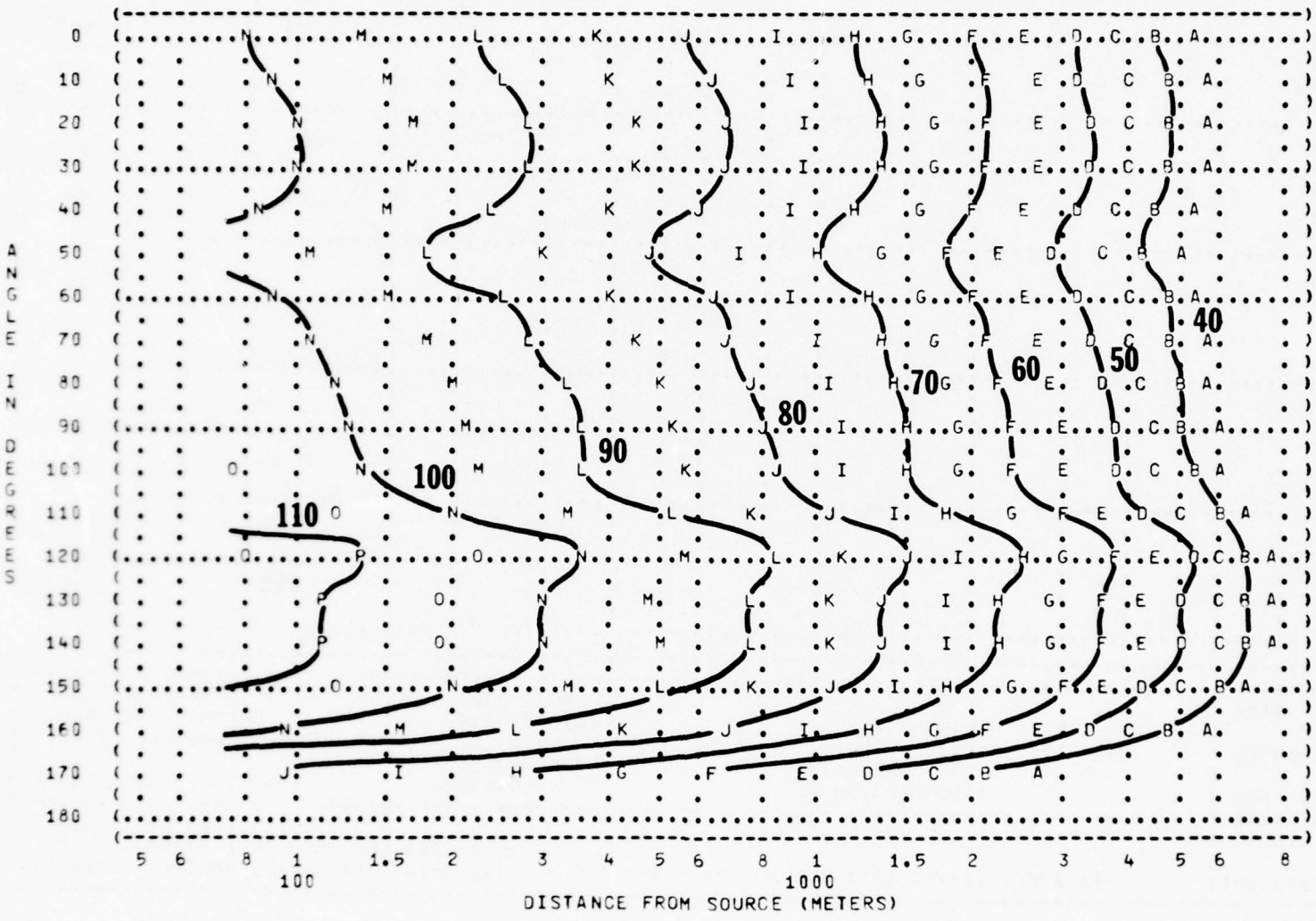


FIGURE: 10

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 75-002-027
RUN 01
07 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

POINT	MIN
A	960
B	480

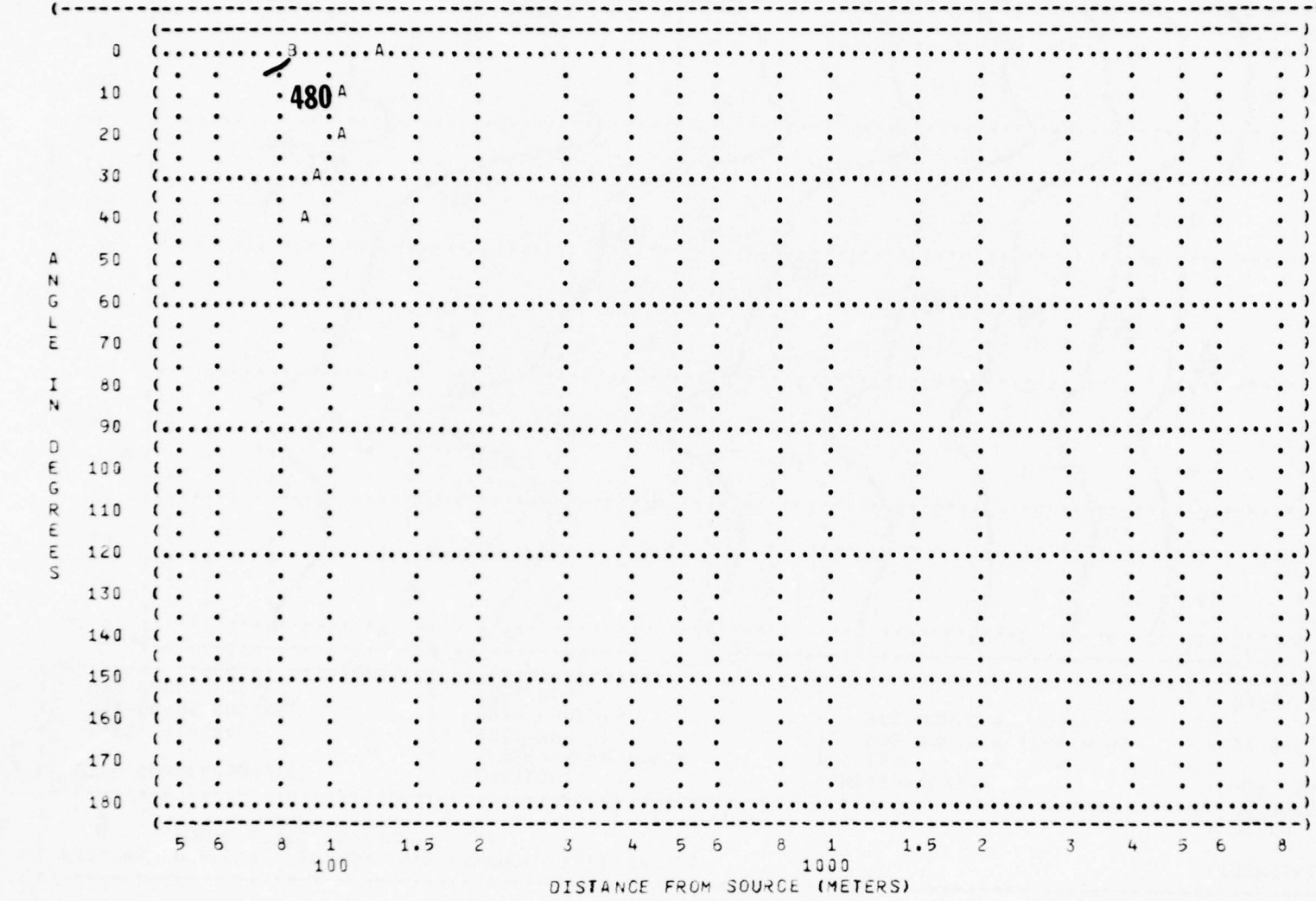


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

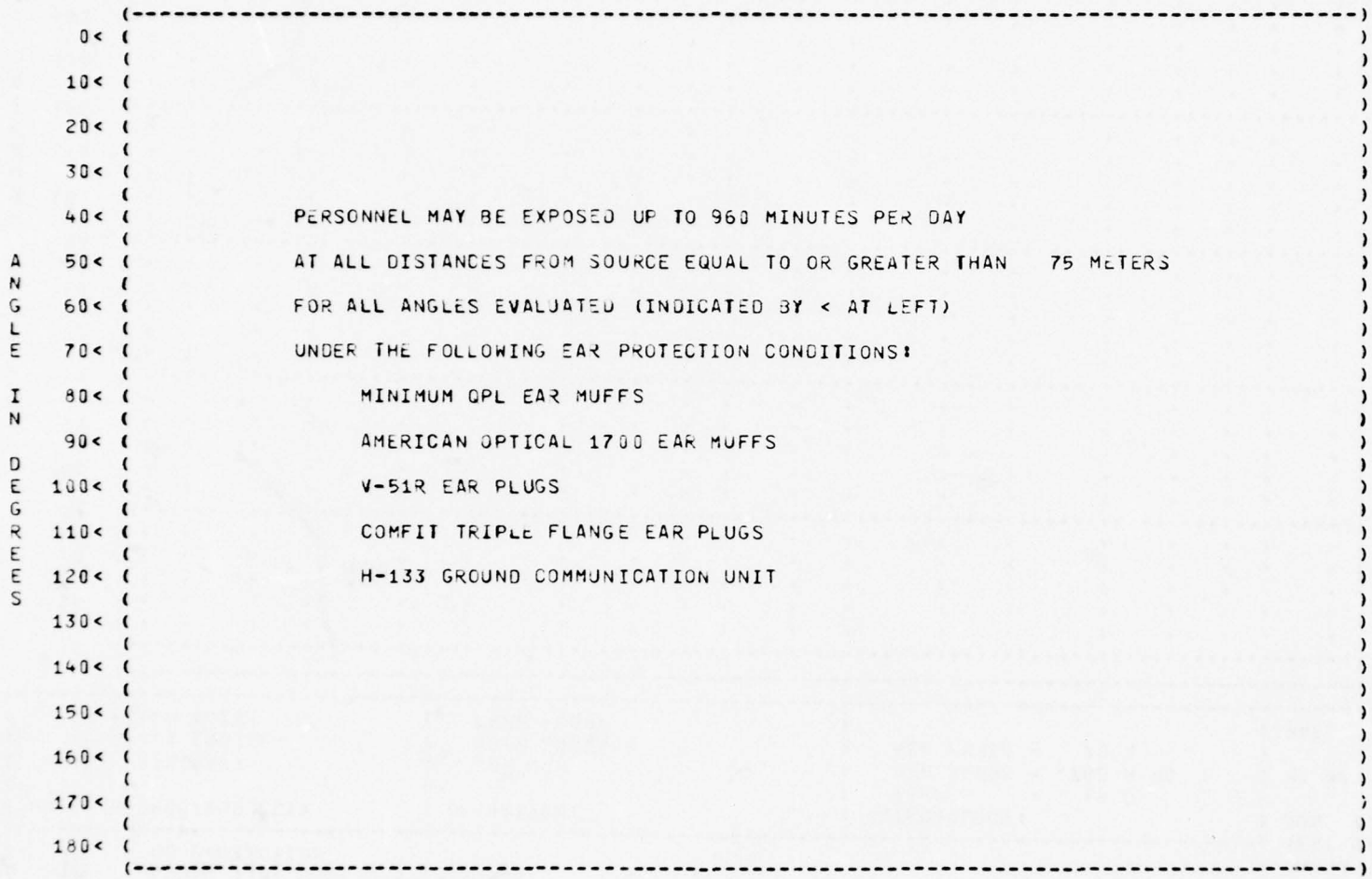


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

POINT	MIN
A	960
B	480
C	240

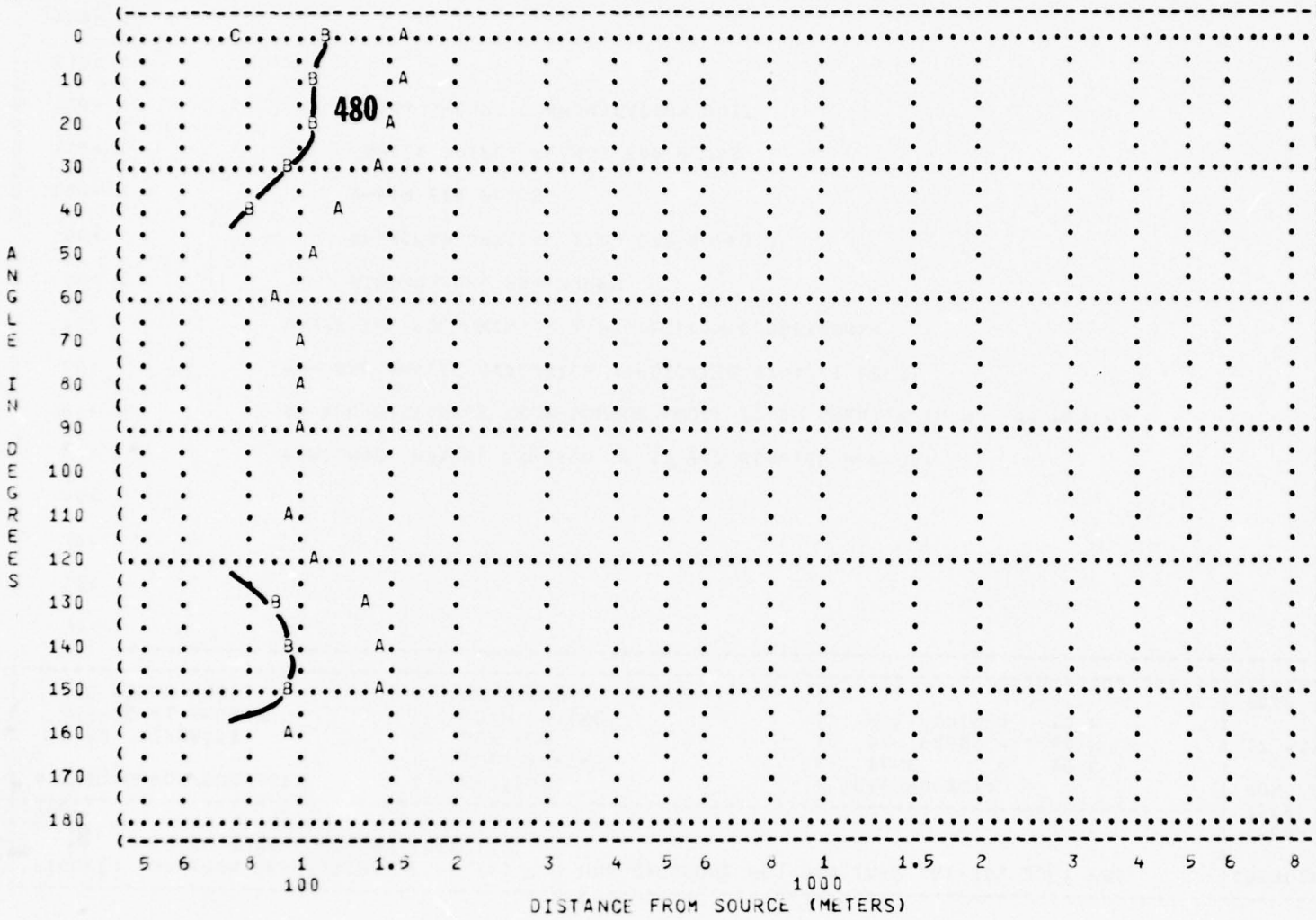


FIGURE: 10 MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

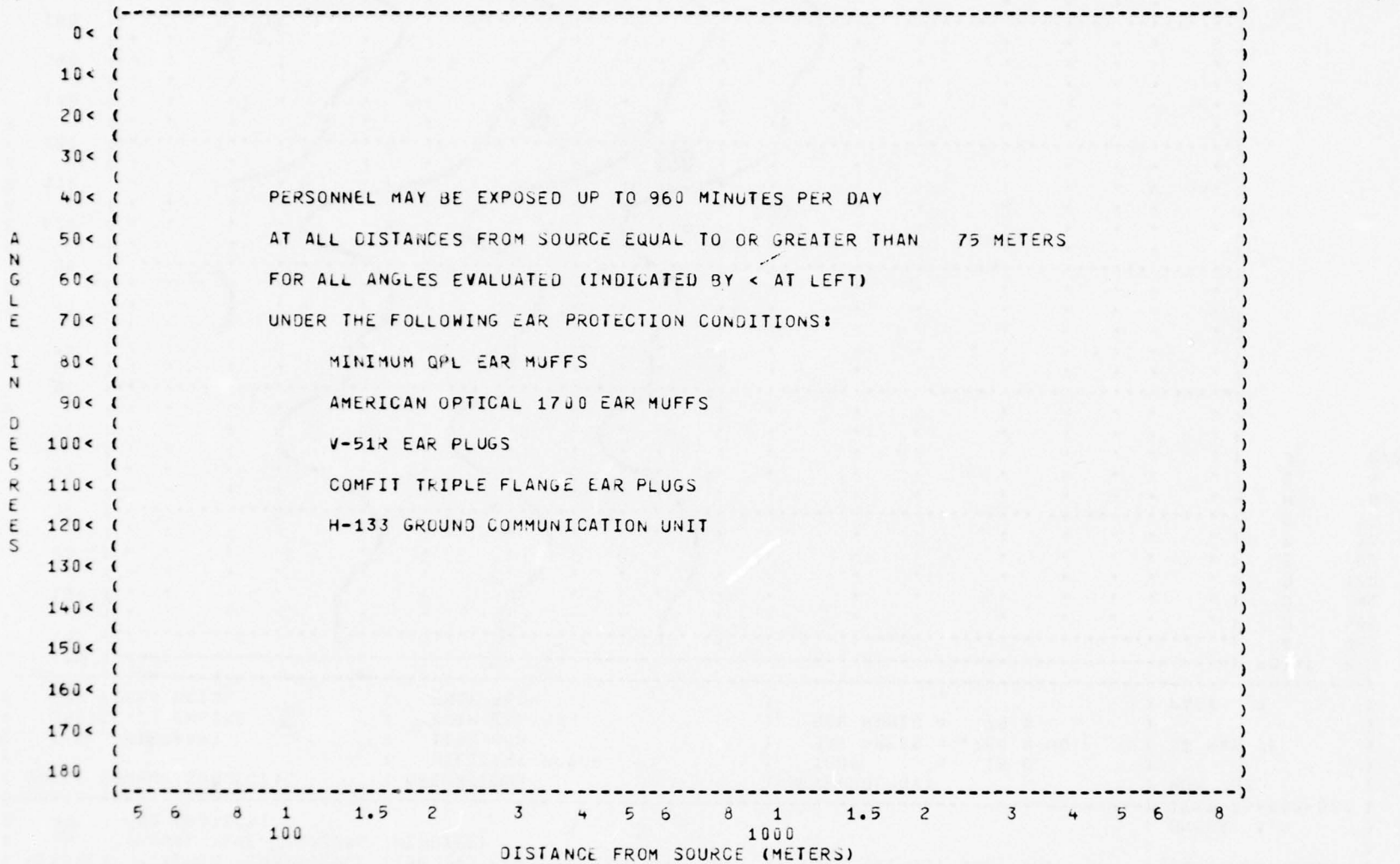


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

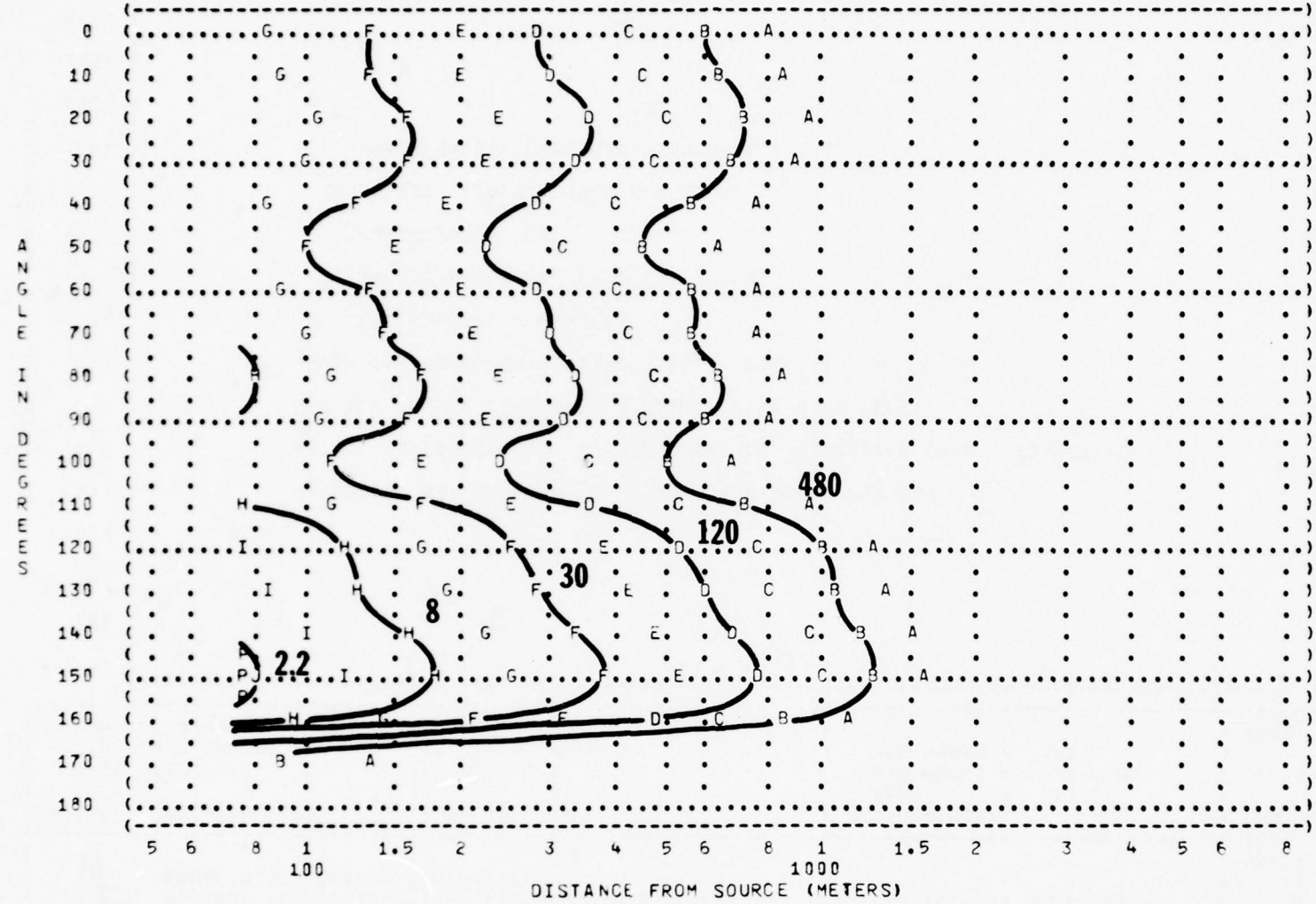
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 7

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 8

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

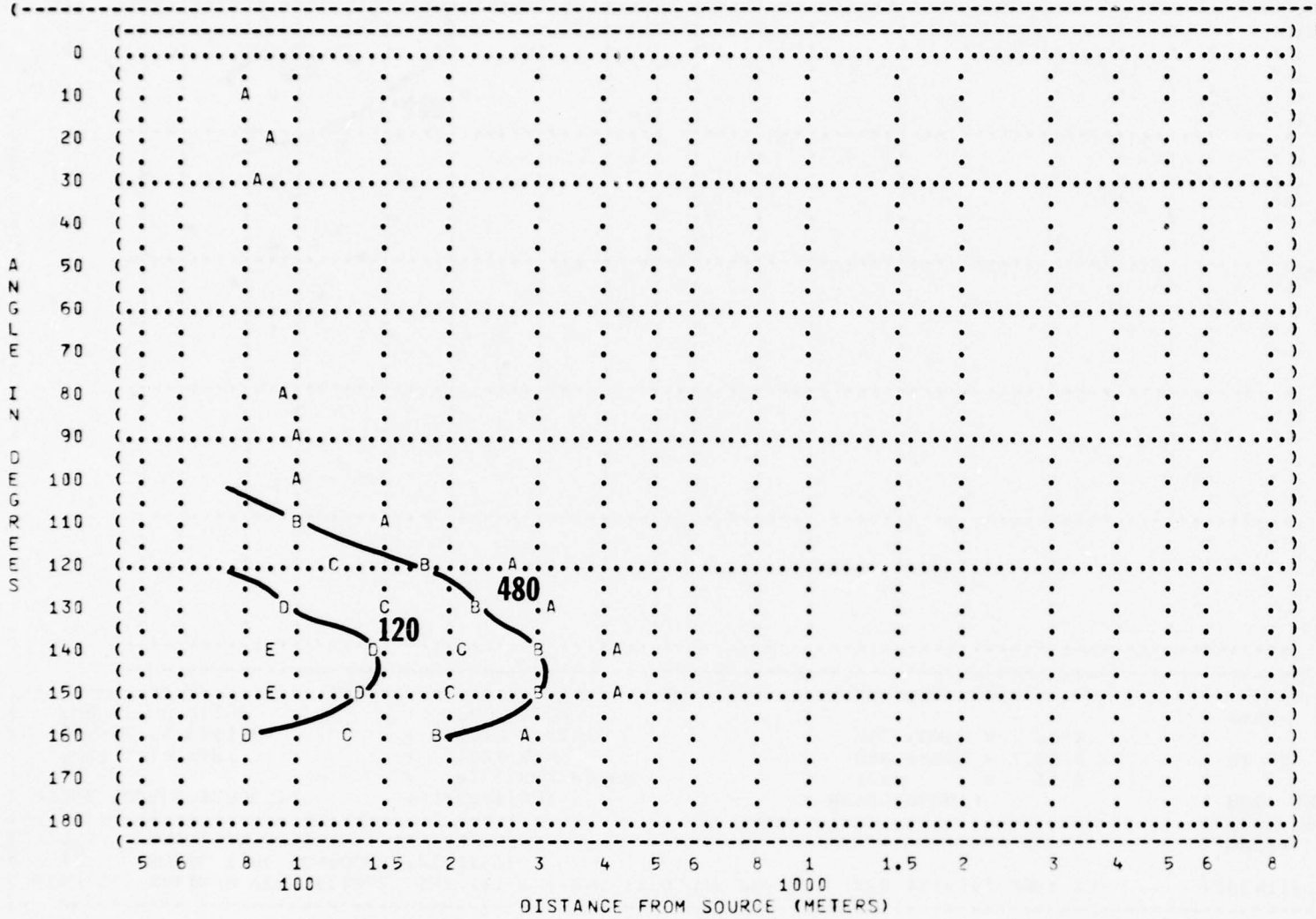


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 9

POINT	MIN
A	960
B	480
C	240
D	120

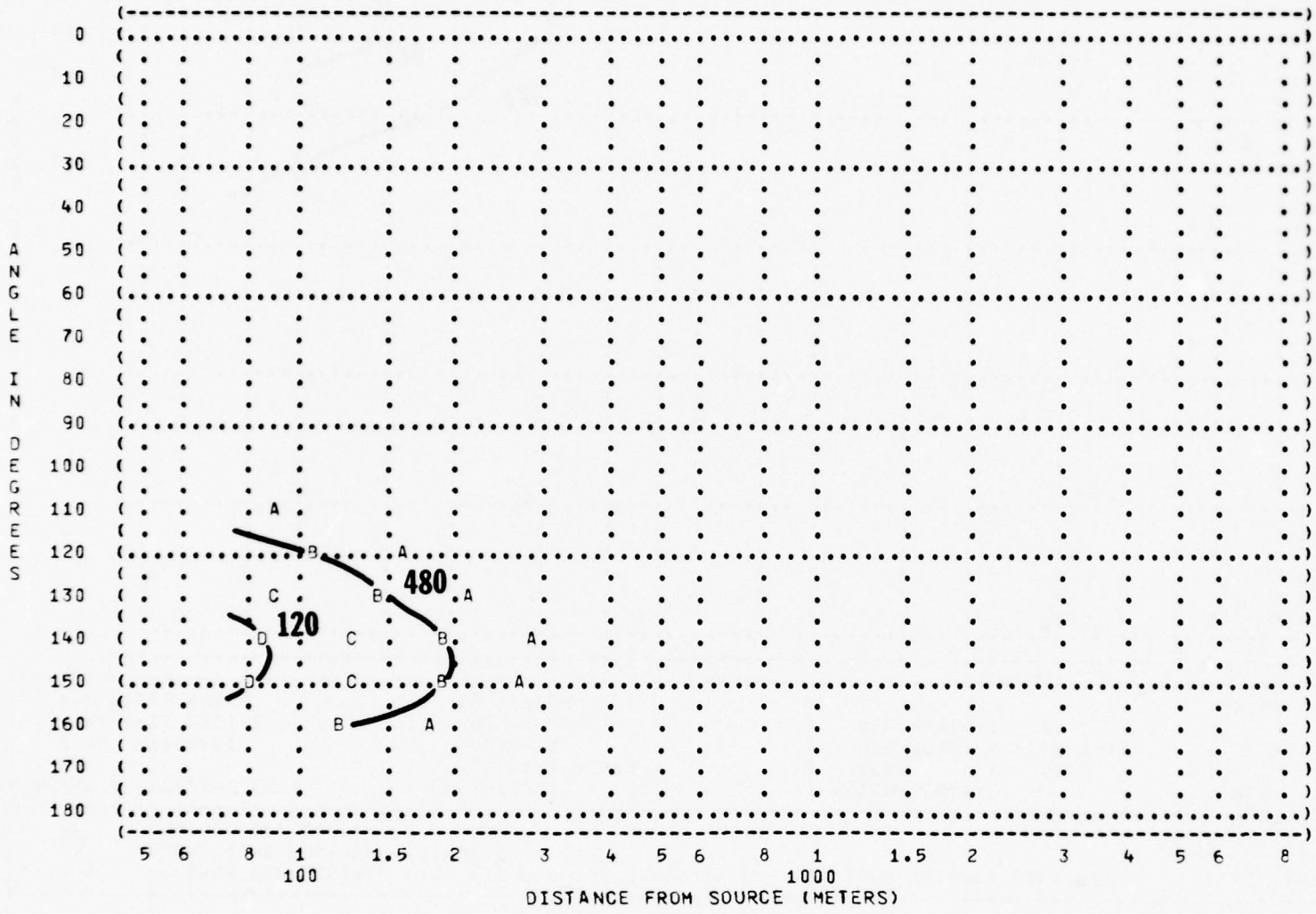


FIGURE: 10

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 10

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

POINT	MIN
A	960
B	480
C	240
D	120

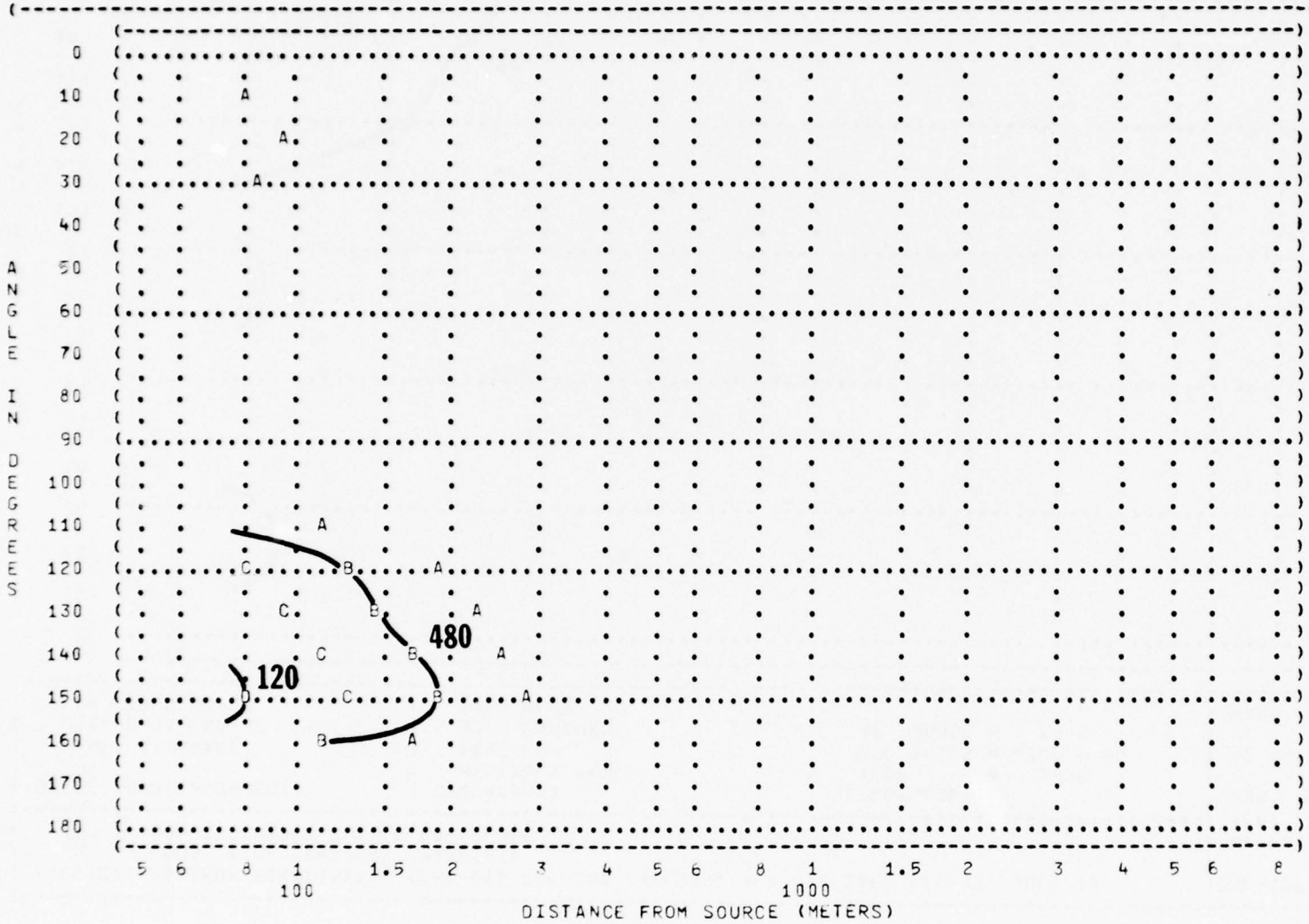


FIGURE: 10

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

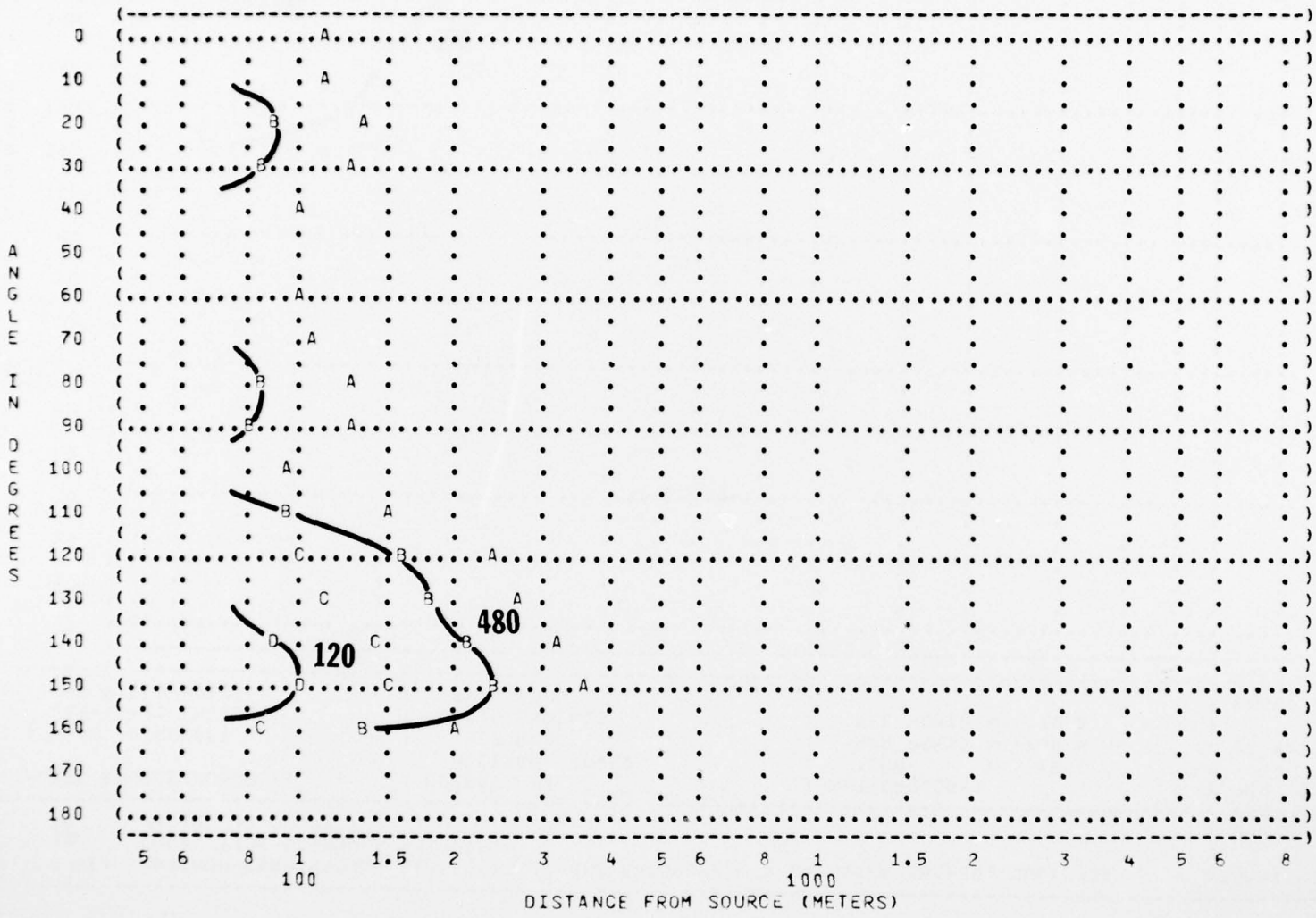
NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 11

POINT	MIN
A	960
B	480
C	240
D	120



NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

TEST 75-002-027
RUN 03
07 MAY 75
PAGE 12

POINT	MIN
A	960
B	480
C	240

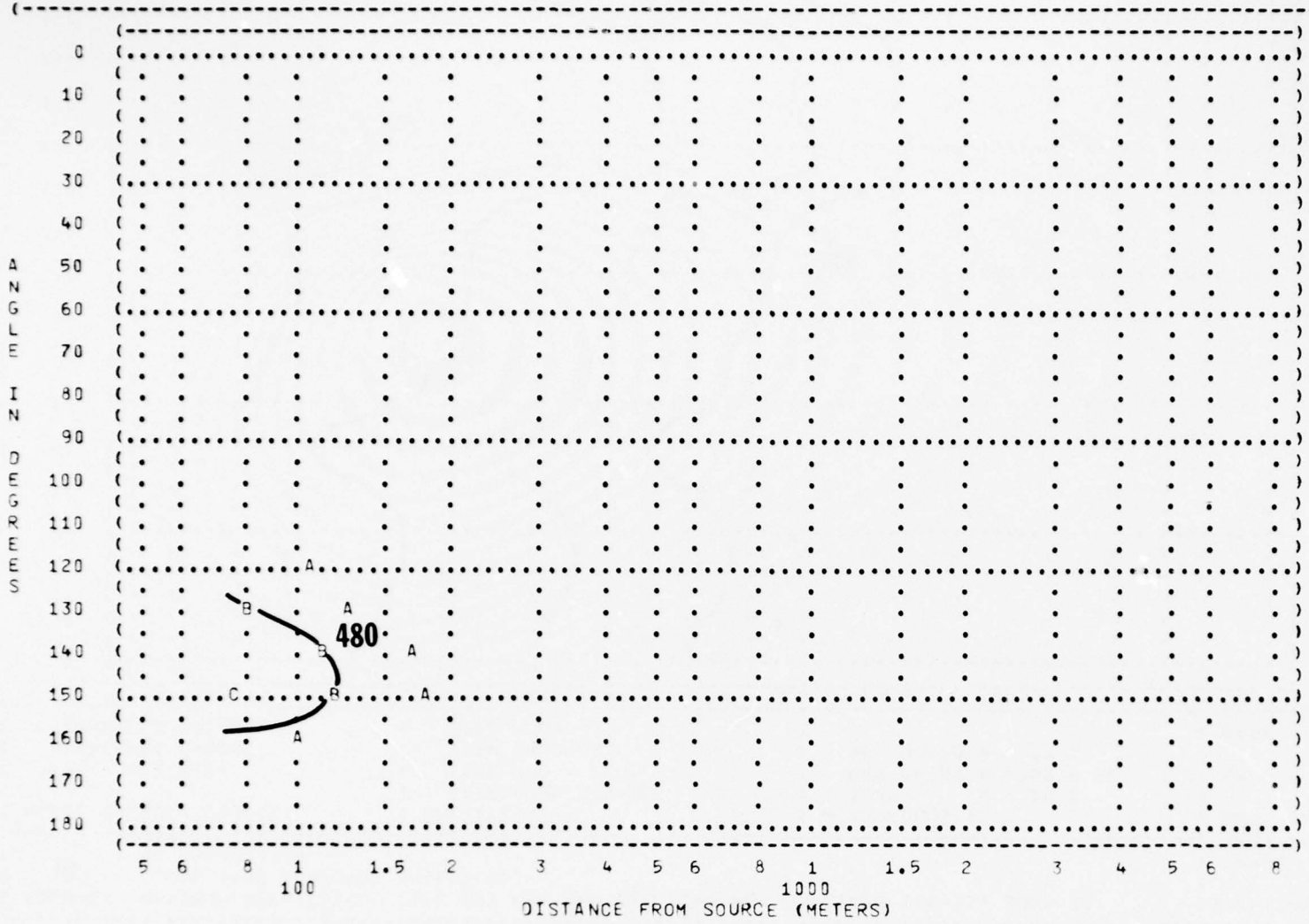


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

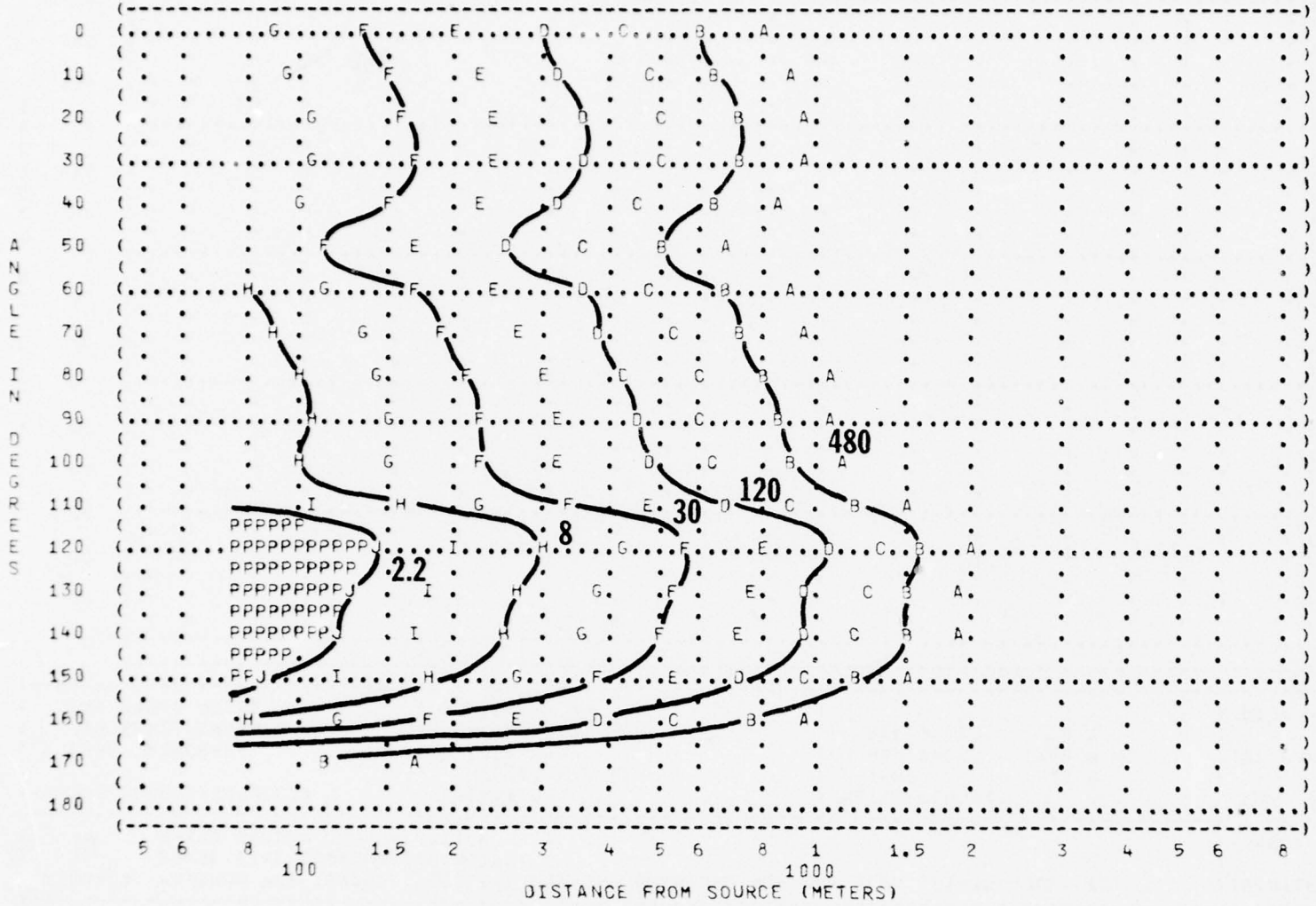
NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 7

POINT	MIN
A	960
B	480
C	240
D	120
E	60
F	30
G	15
H	8
I	4
J	2.2



P ADDITIONAL EAR PROTECTION REQUIRED.

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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 8

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

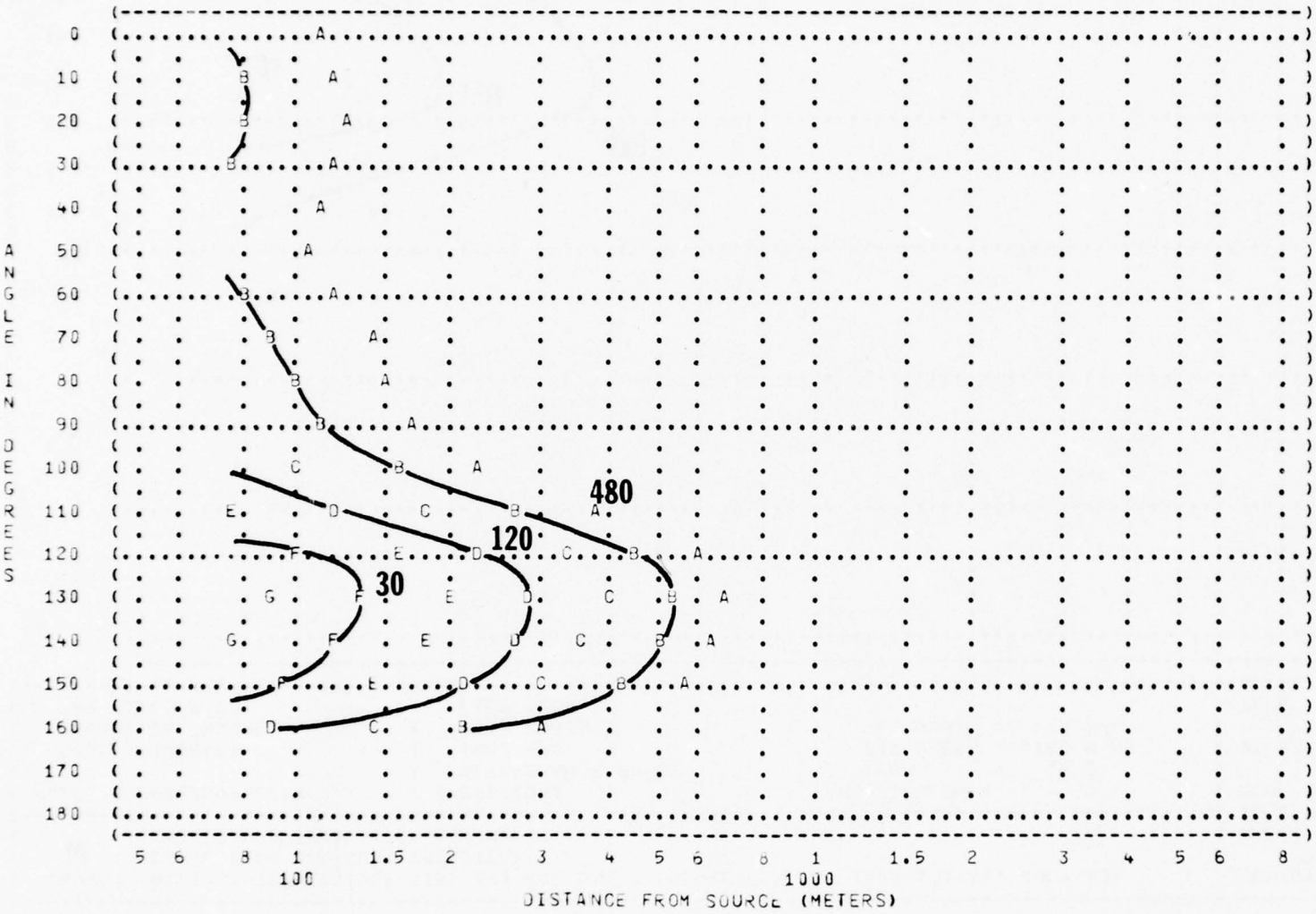


FIGURE: 10

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:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04

07 MAY 75

PAGE 9

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

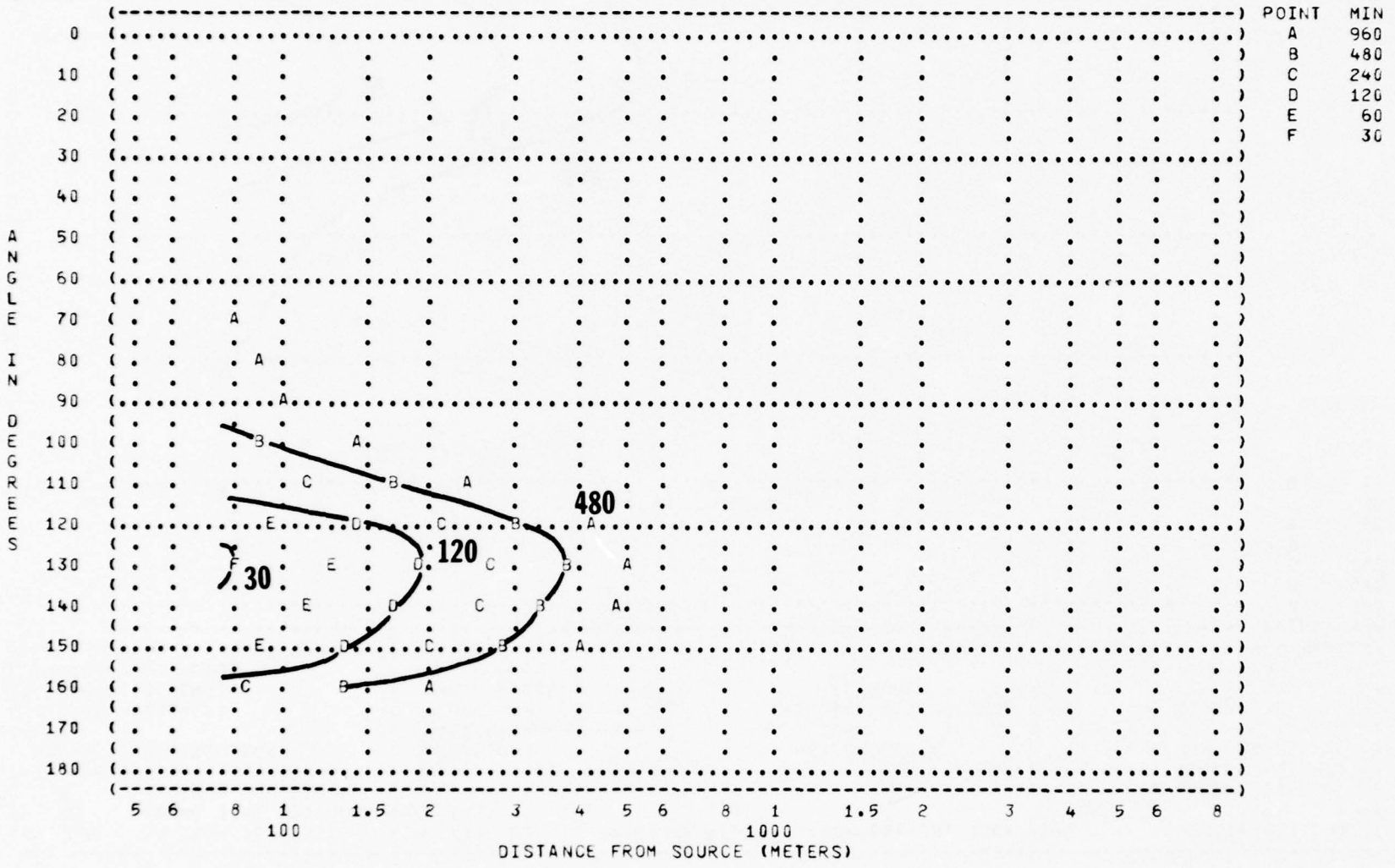


FIGURE: 10

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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 10

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

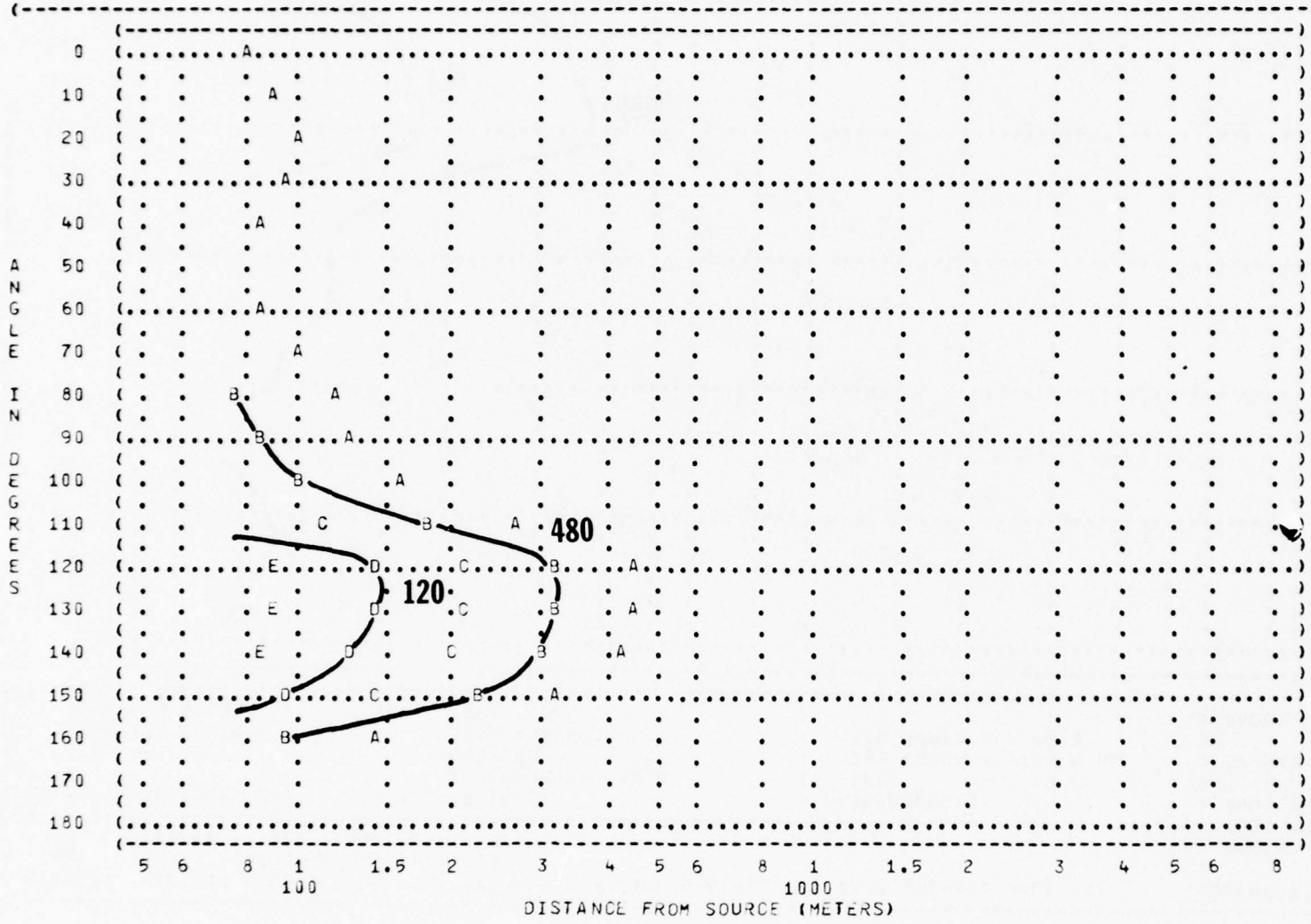


FIGURE: 10

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 75-002-027
RUN 04
07 MAY 75
PAGE 11

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
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

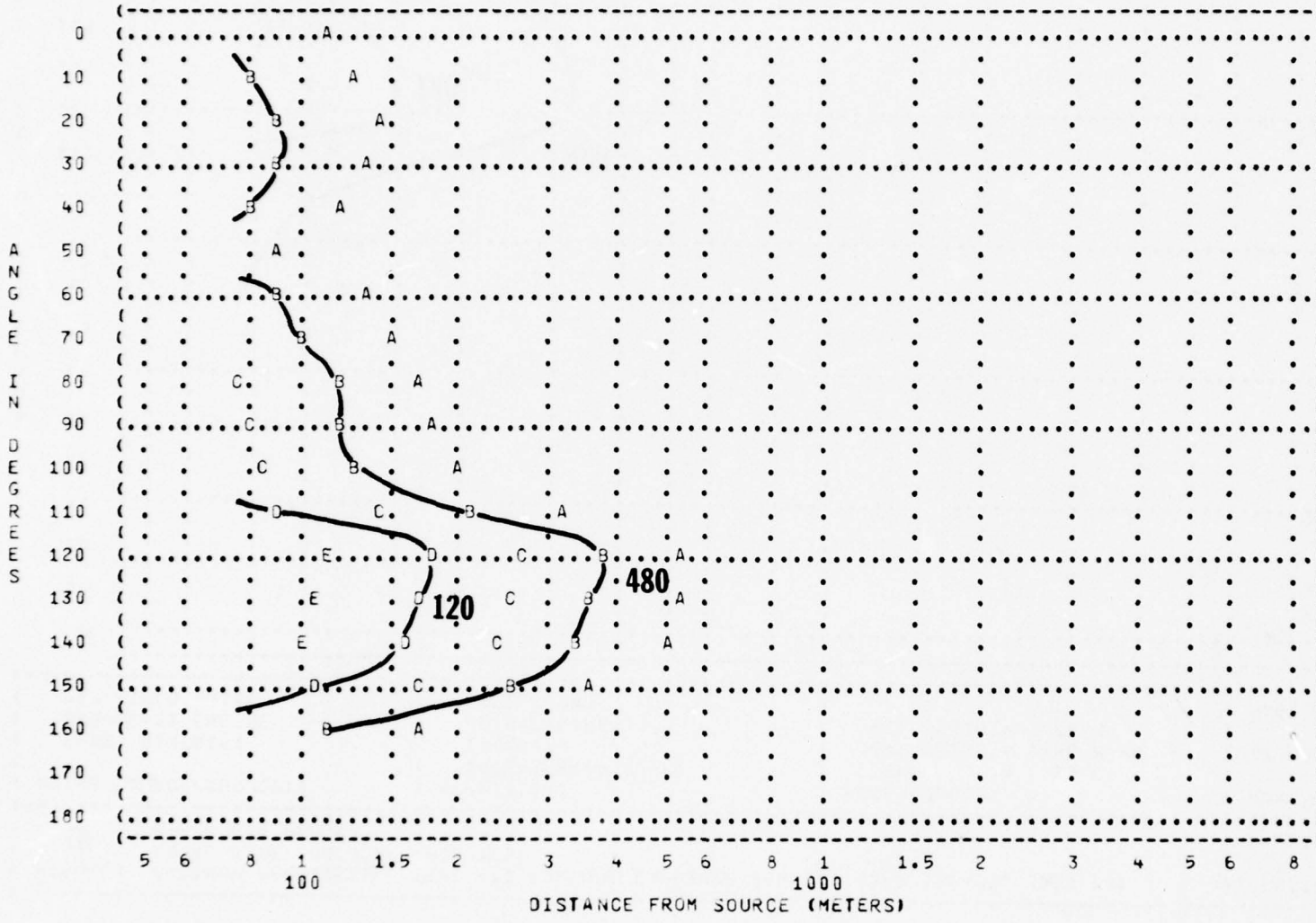


FIGURE 10: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
H-133 GROUND COMMUNICATION UNIT

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 12

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
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

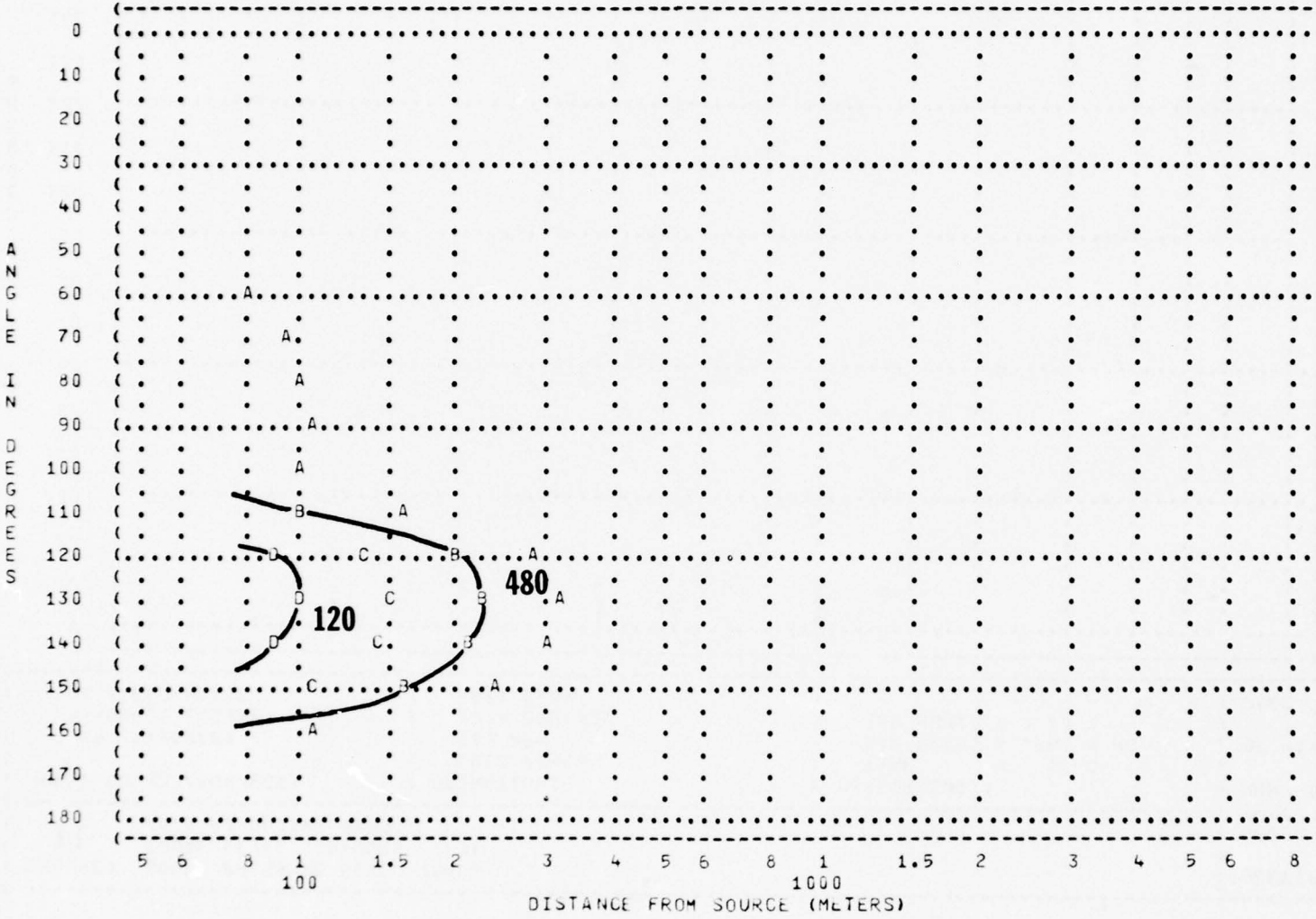


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 18

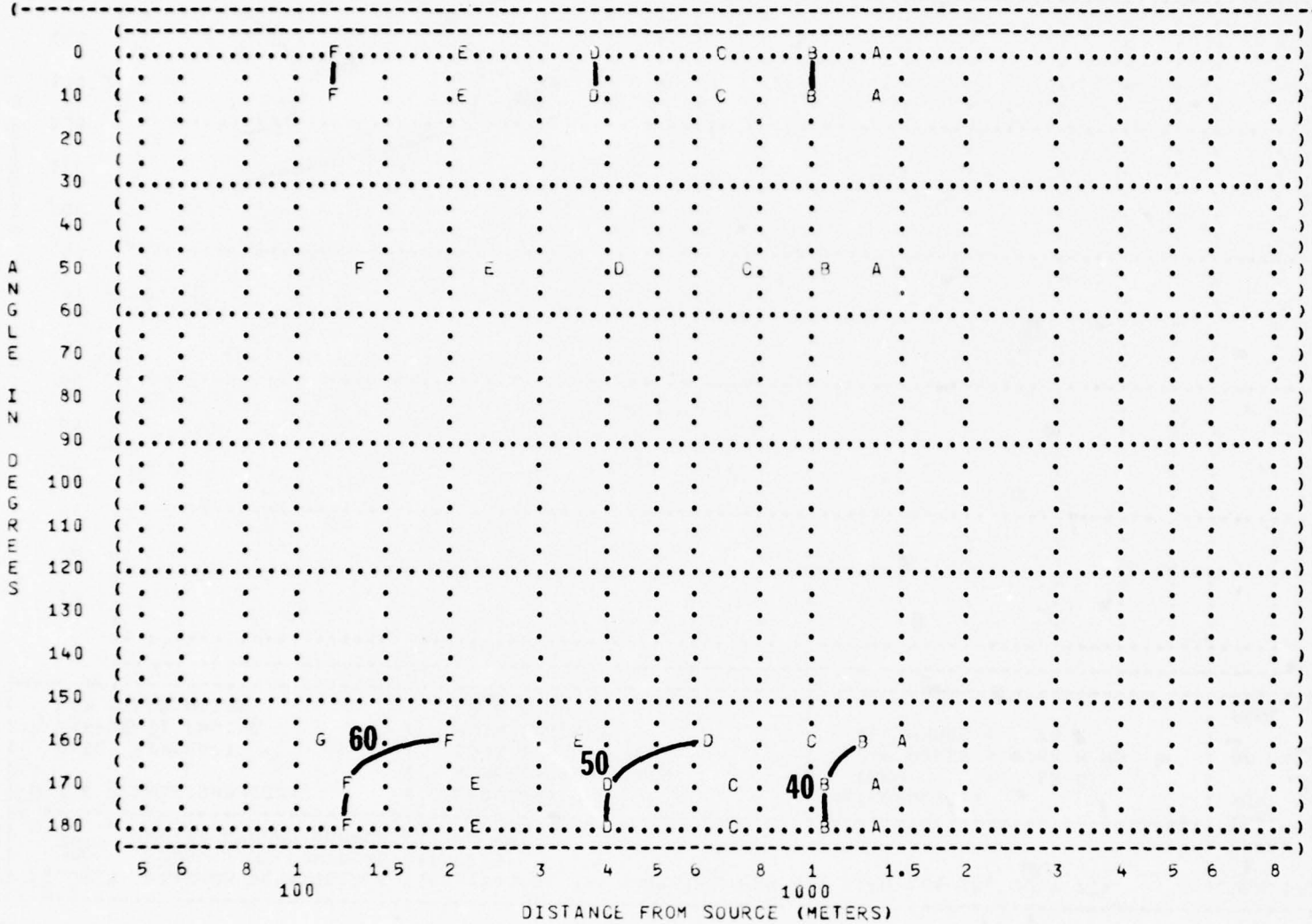


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 19

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

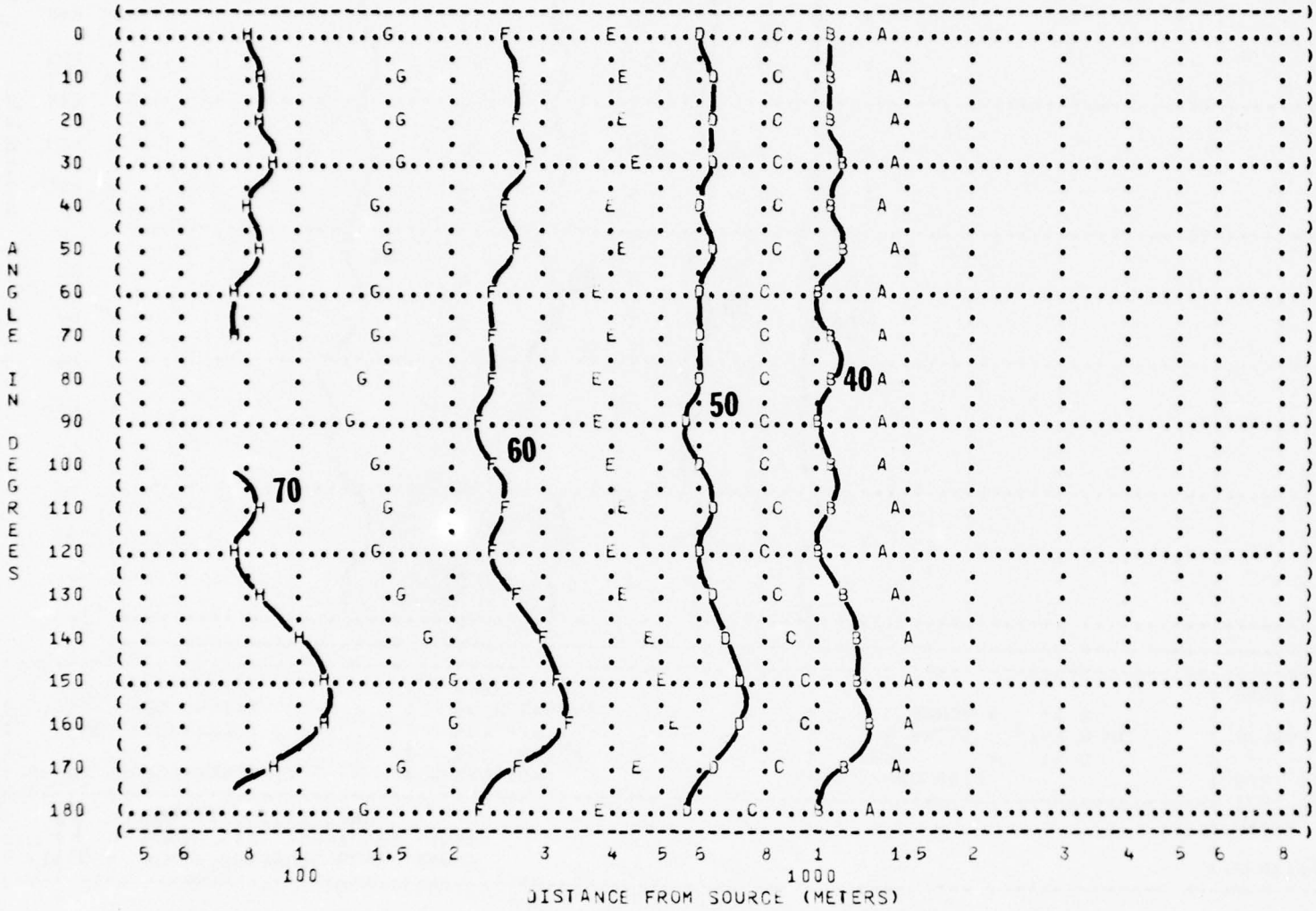


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 20

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

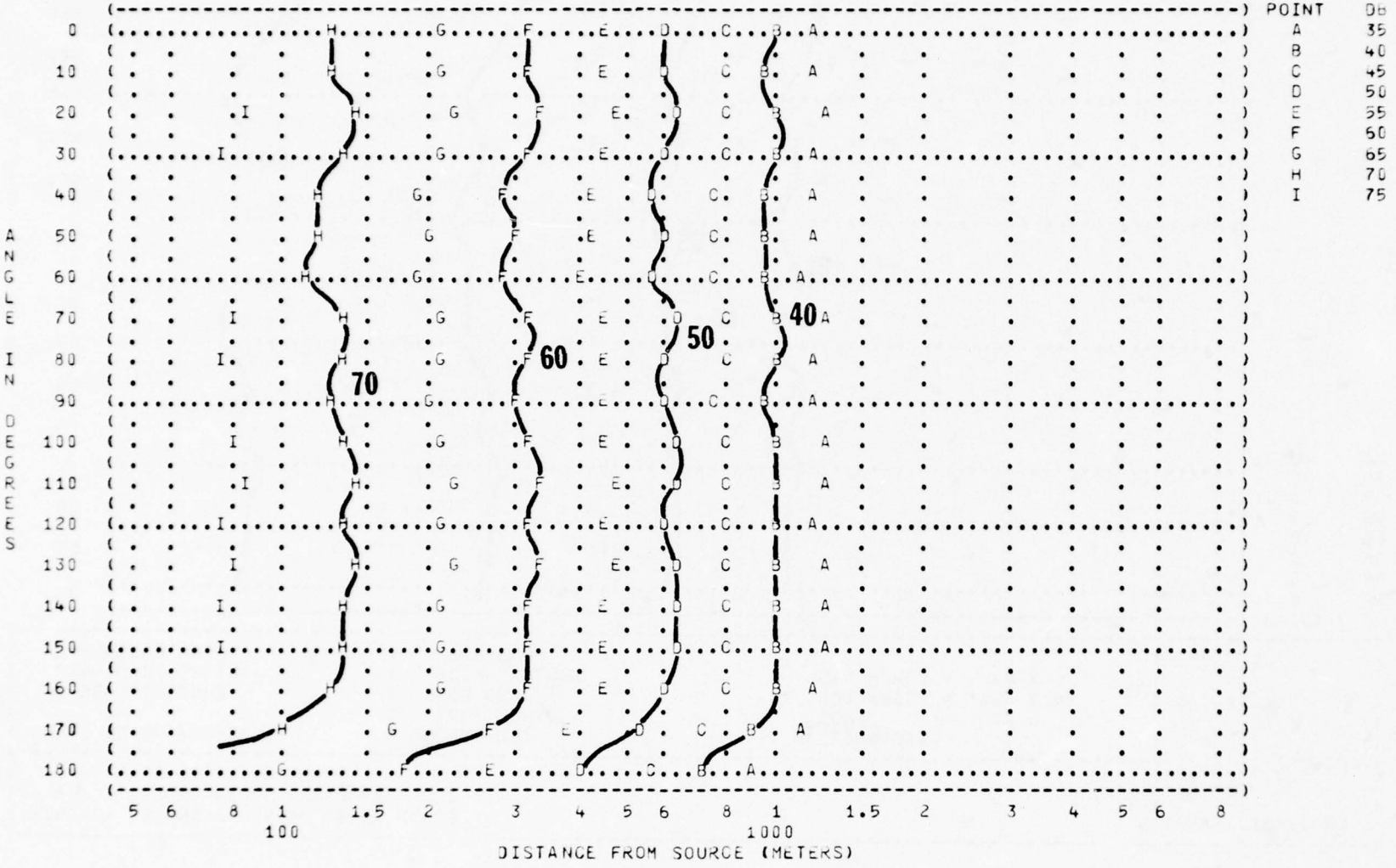


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 21

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

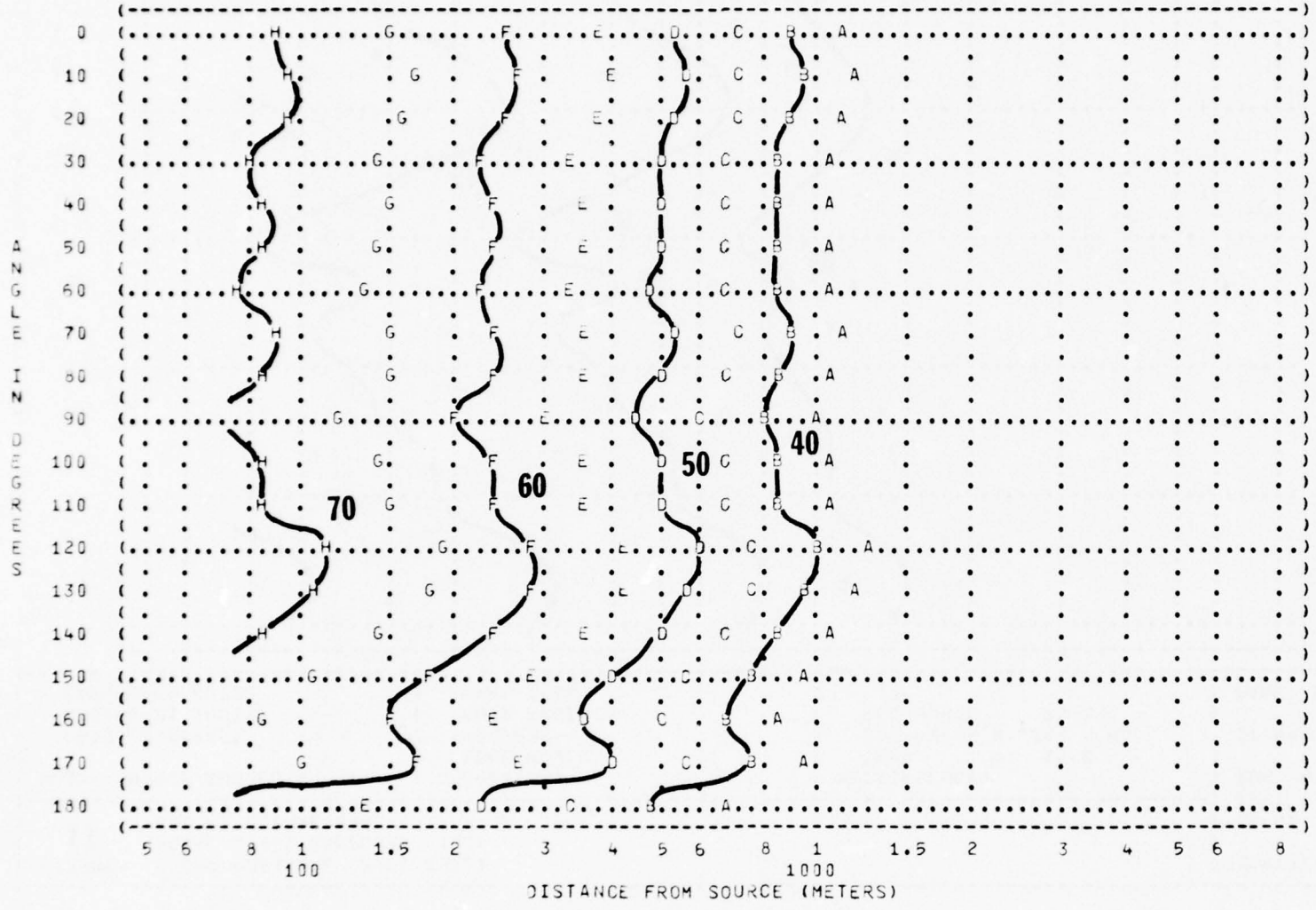


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
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

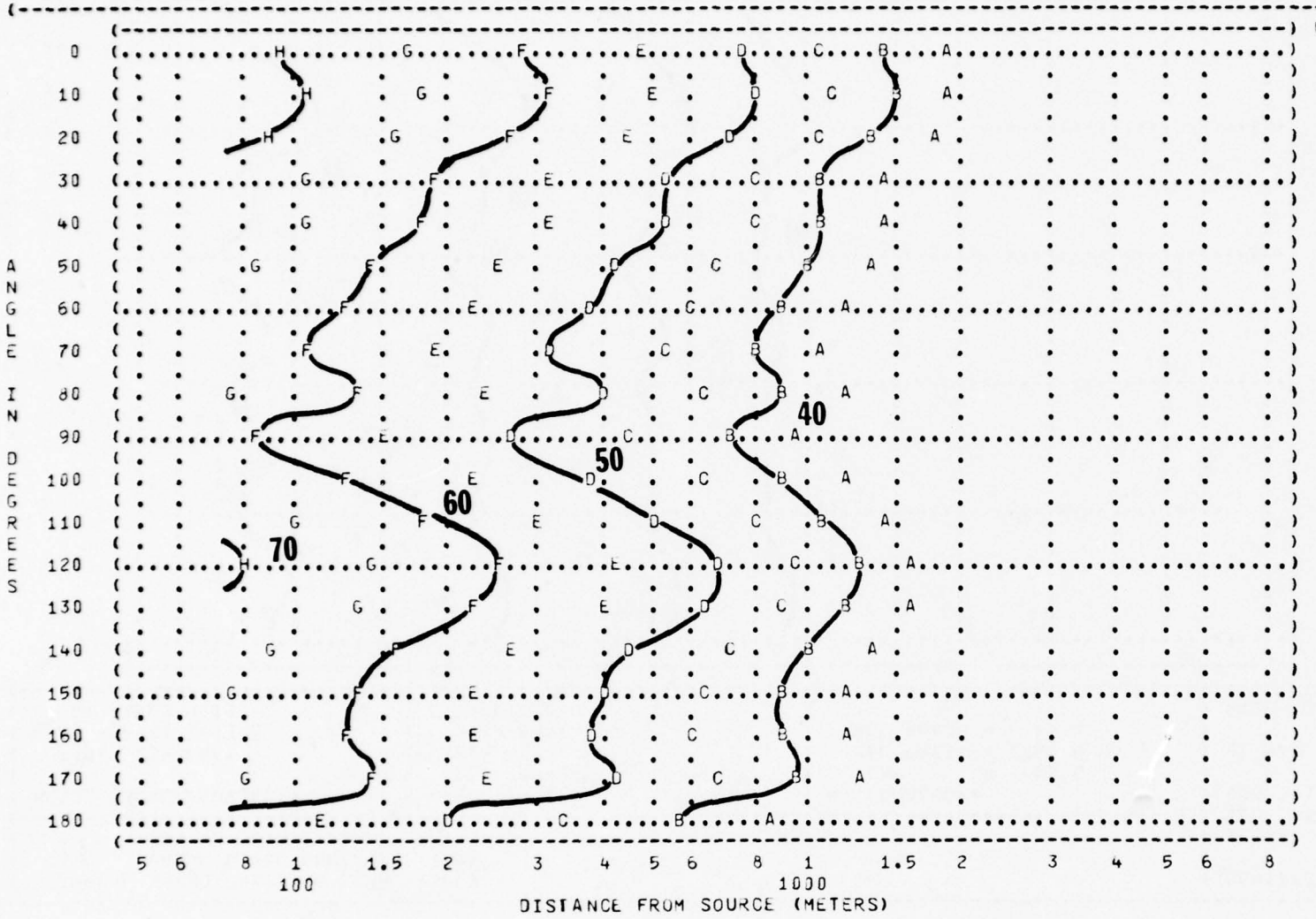


FIGURE: 11

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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 23

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

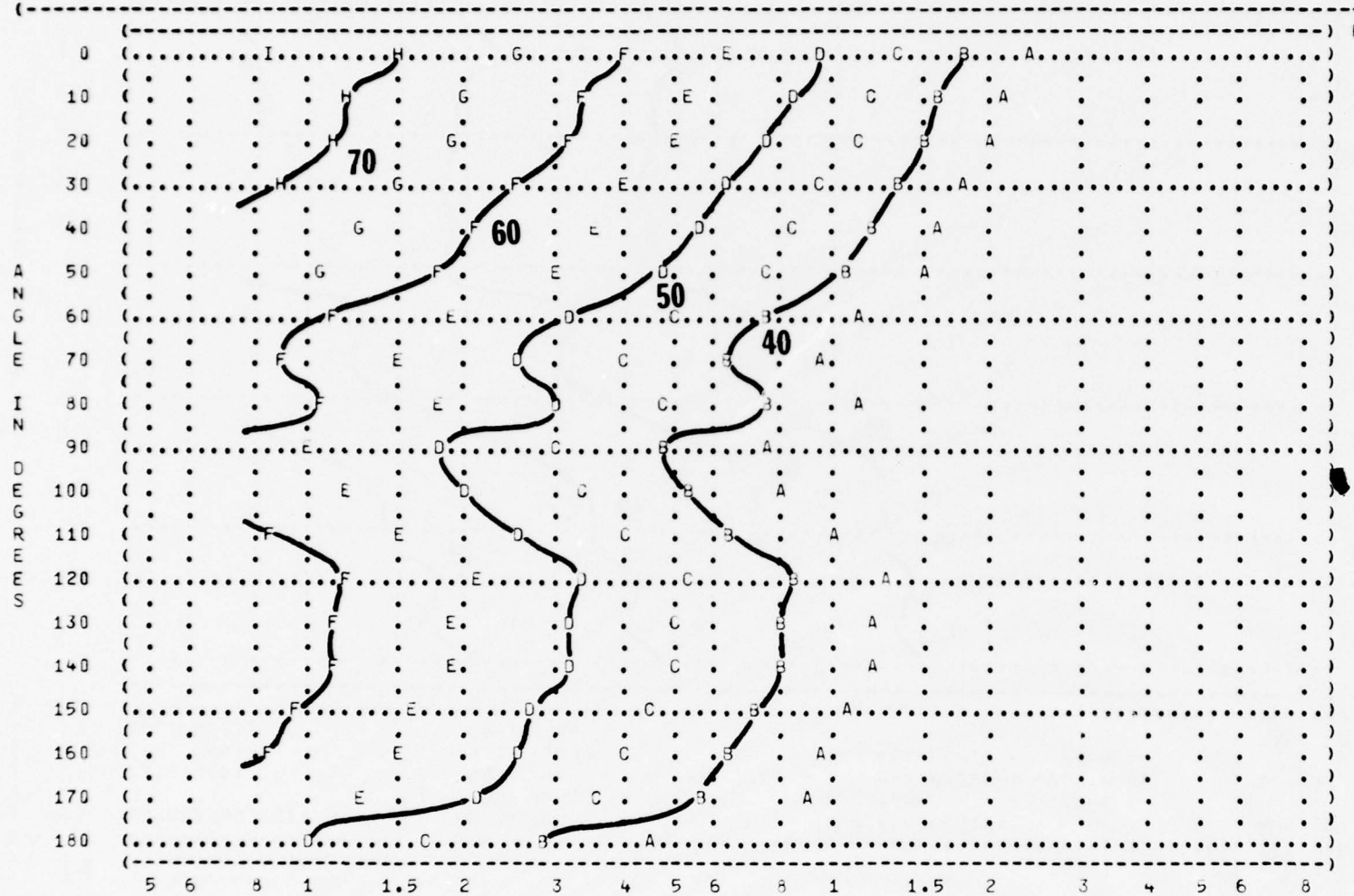


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

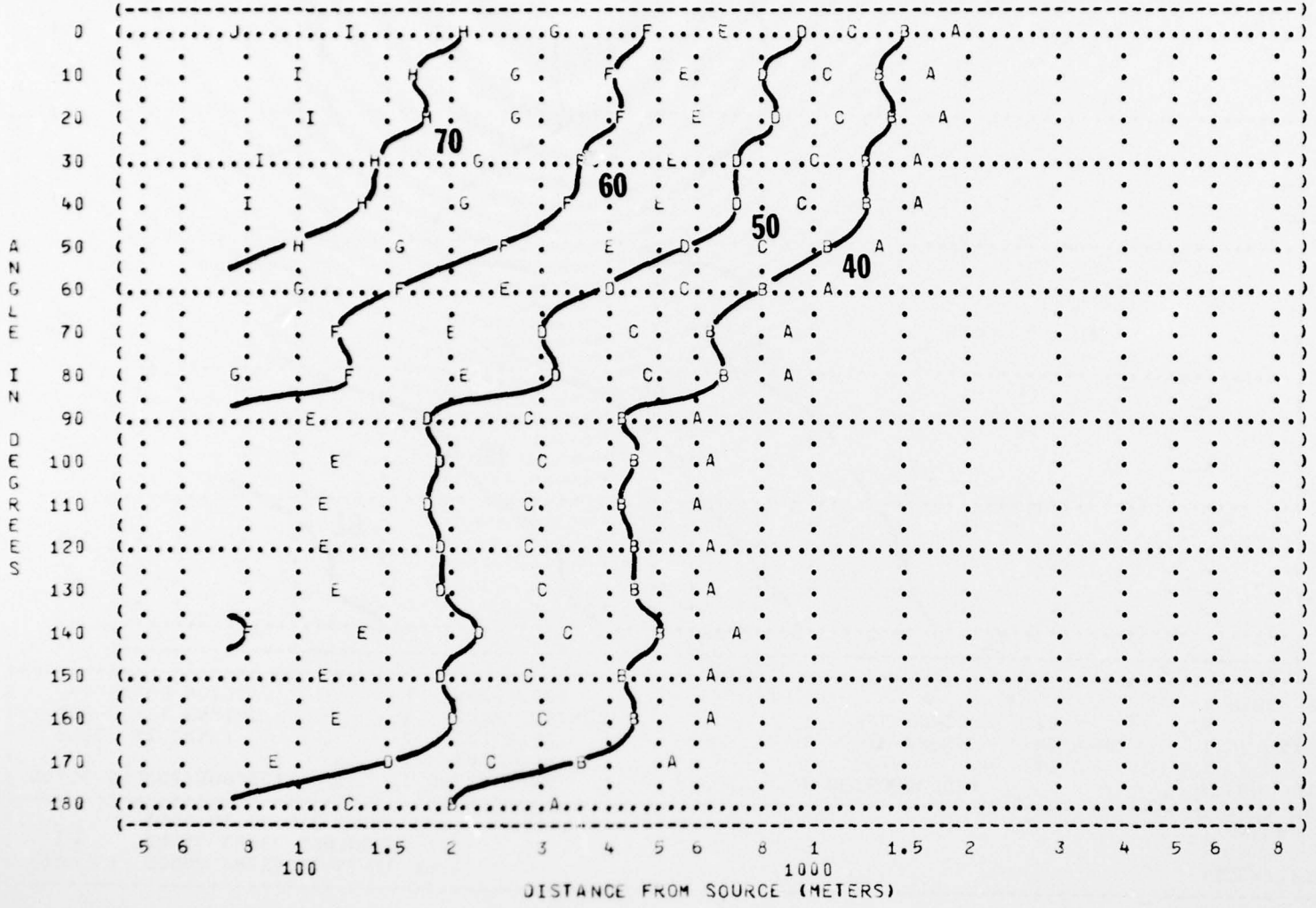
NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 24

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



F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

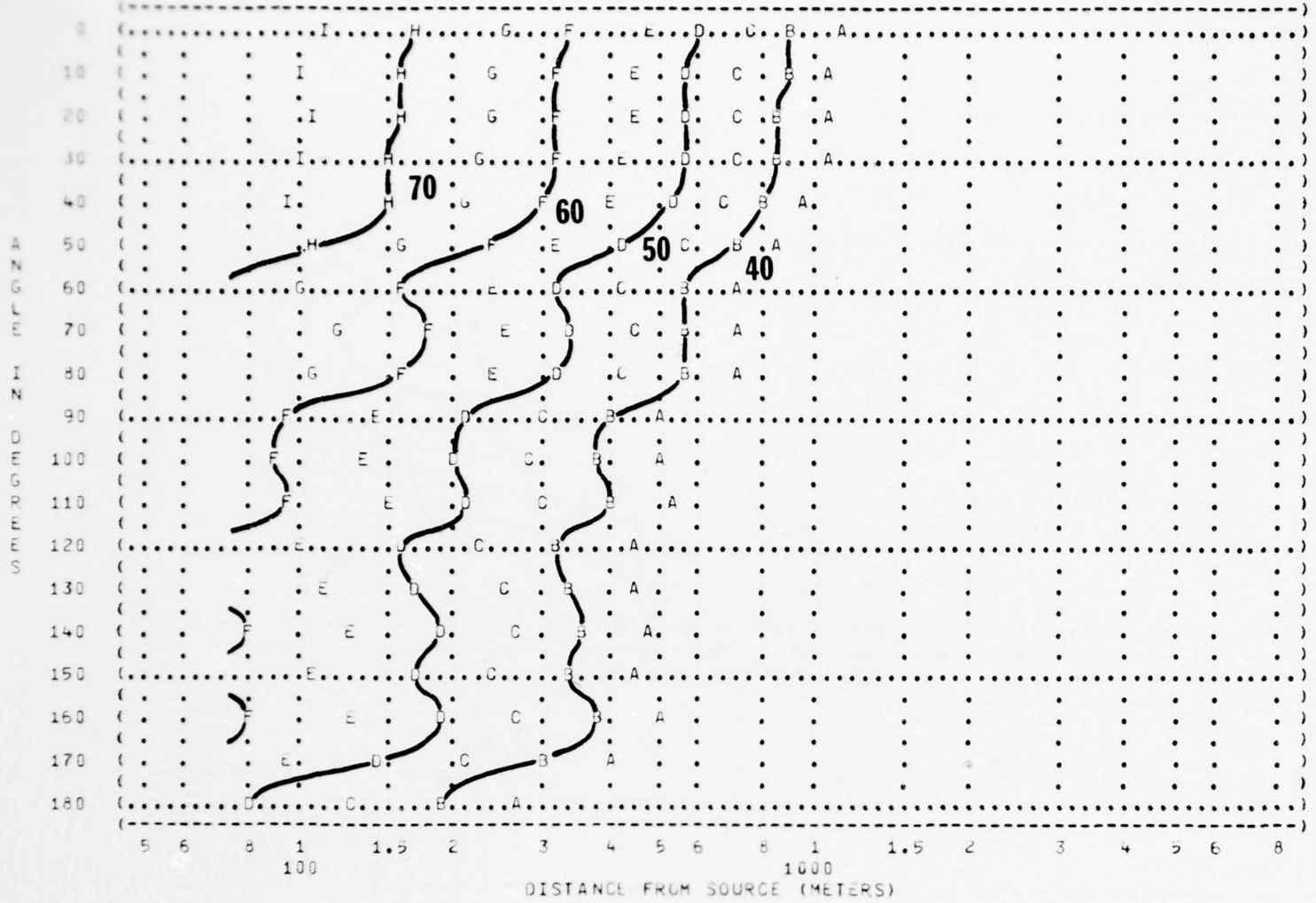
OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

RUN 01

07 MAY 75

PAGE 25



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

FIGURE: 11

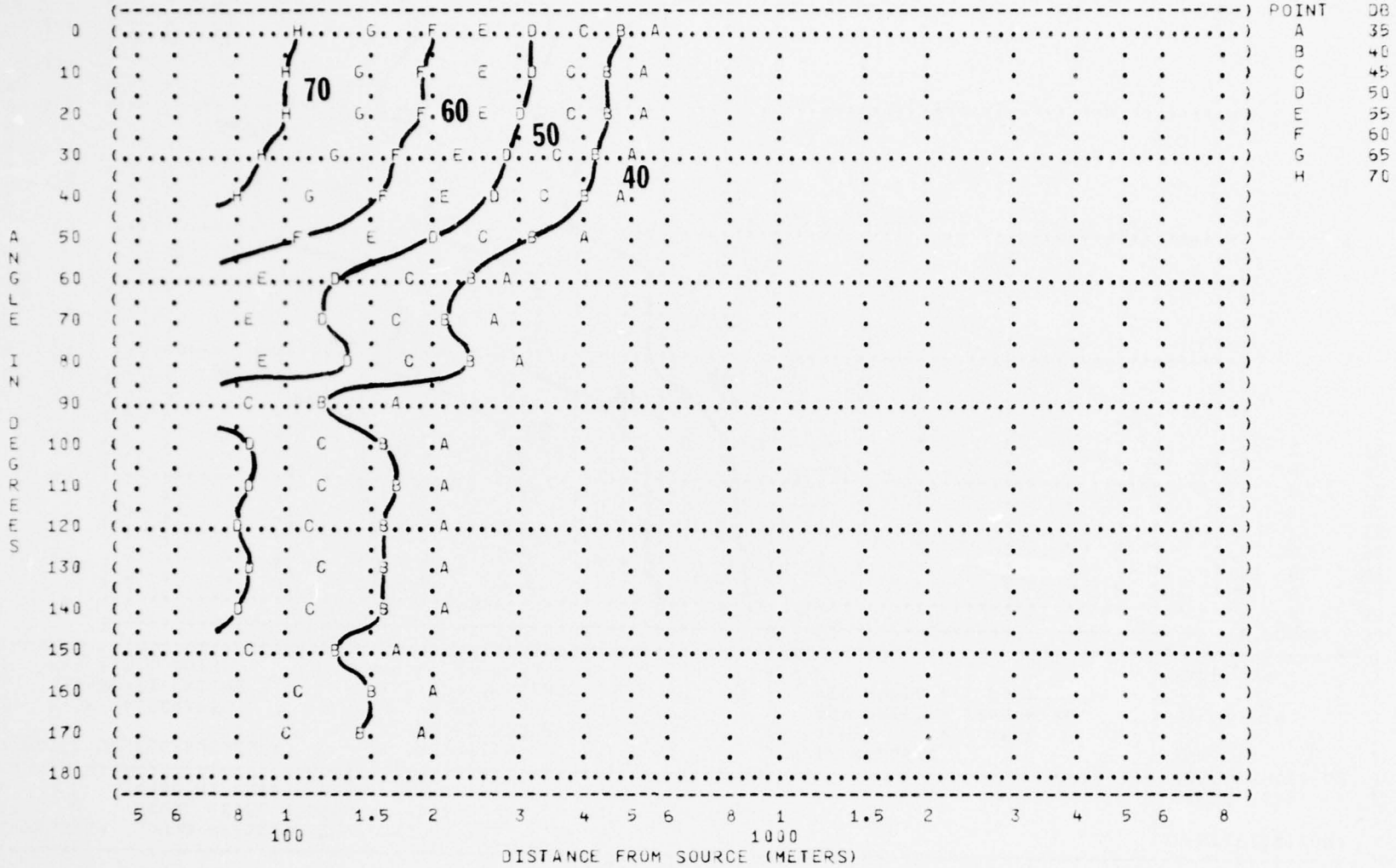
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 01
07 MAY 75
PAGE 26



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

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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 18

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

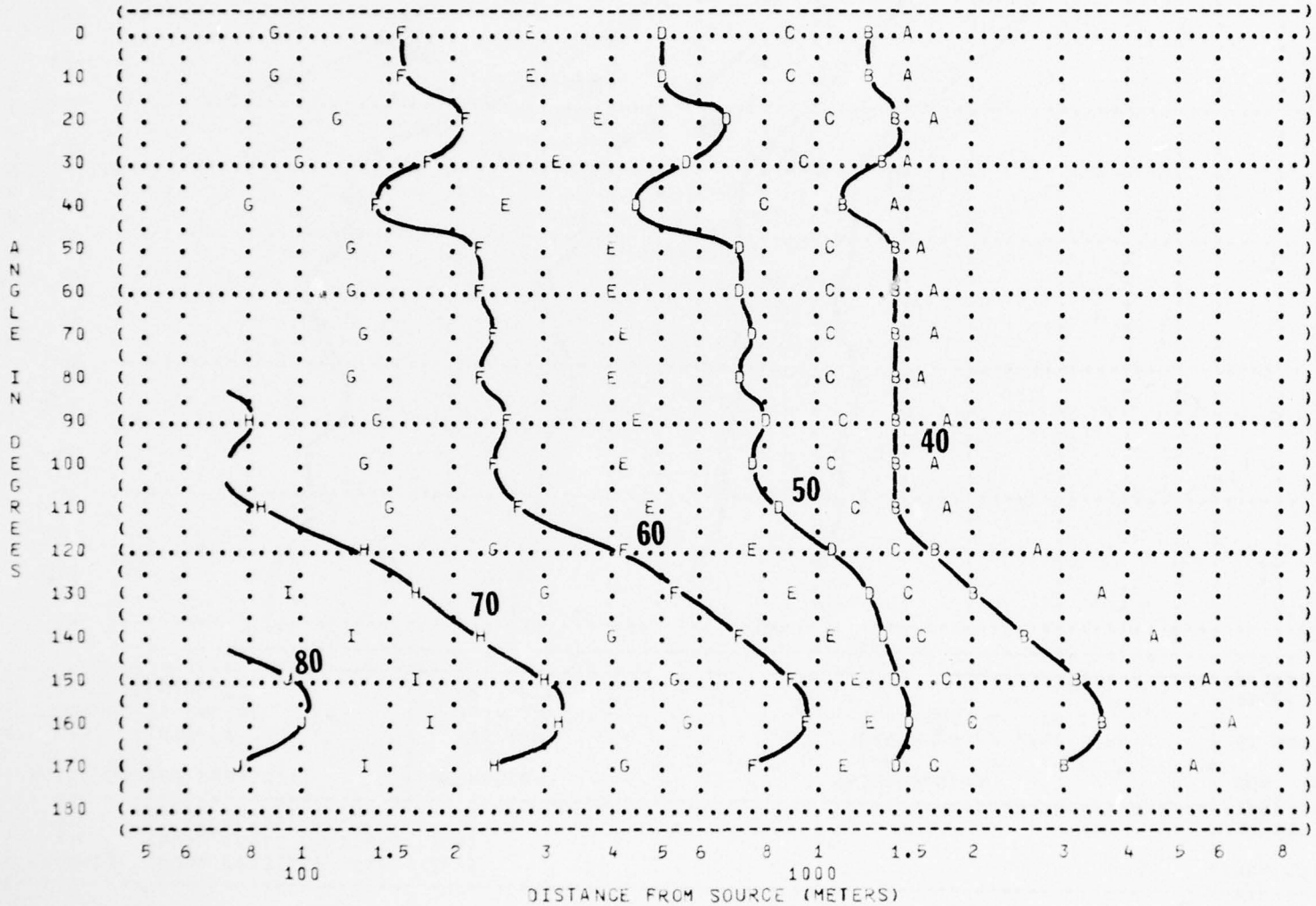


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 19

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

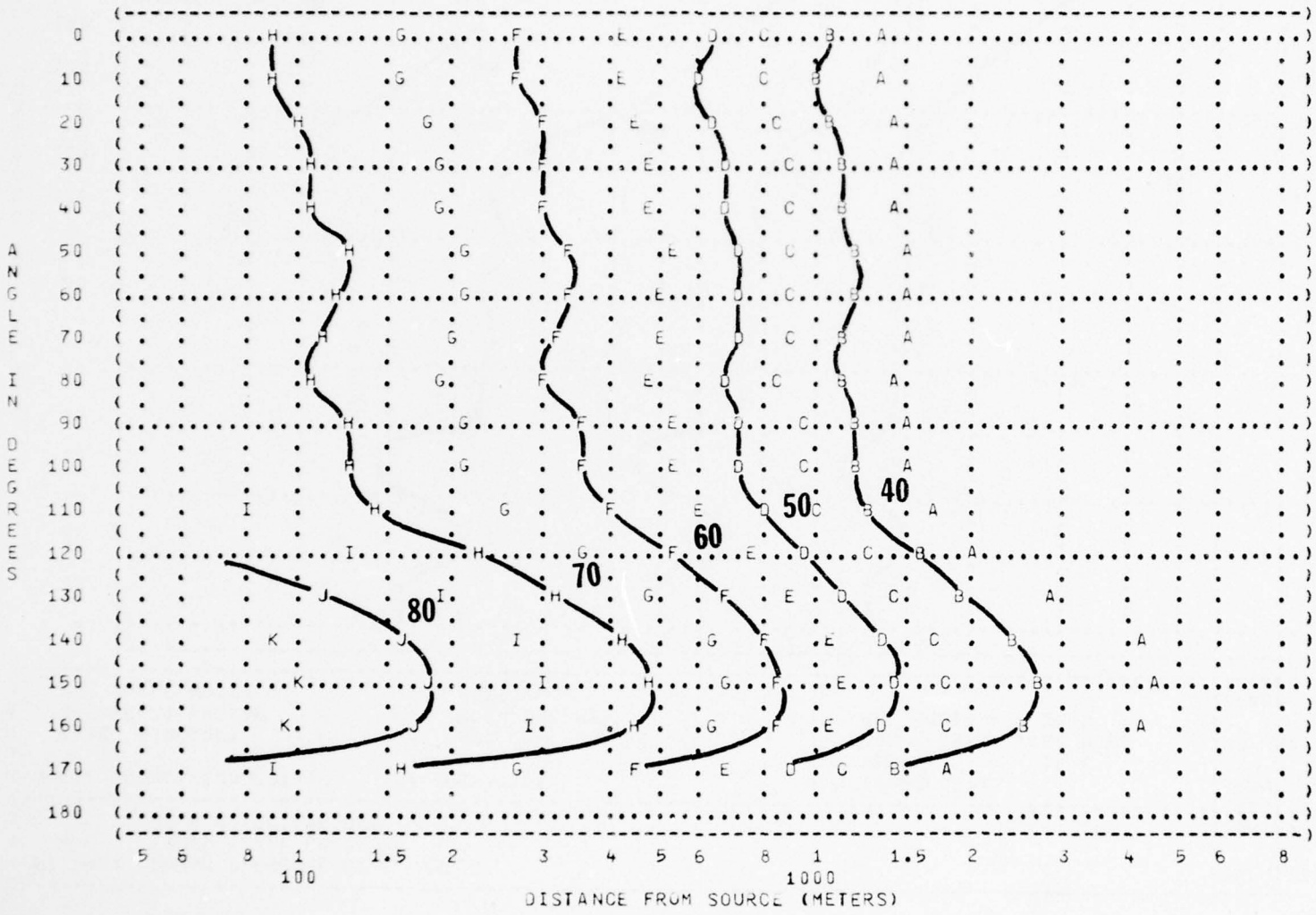


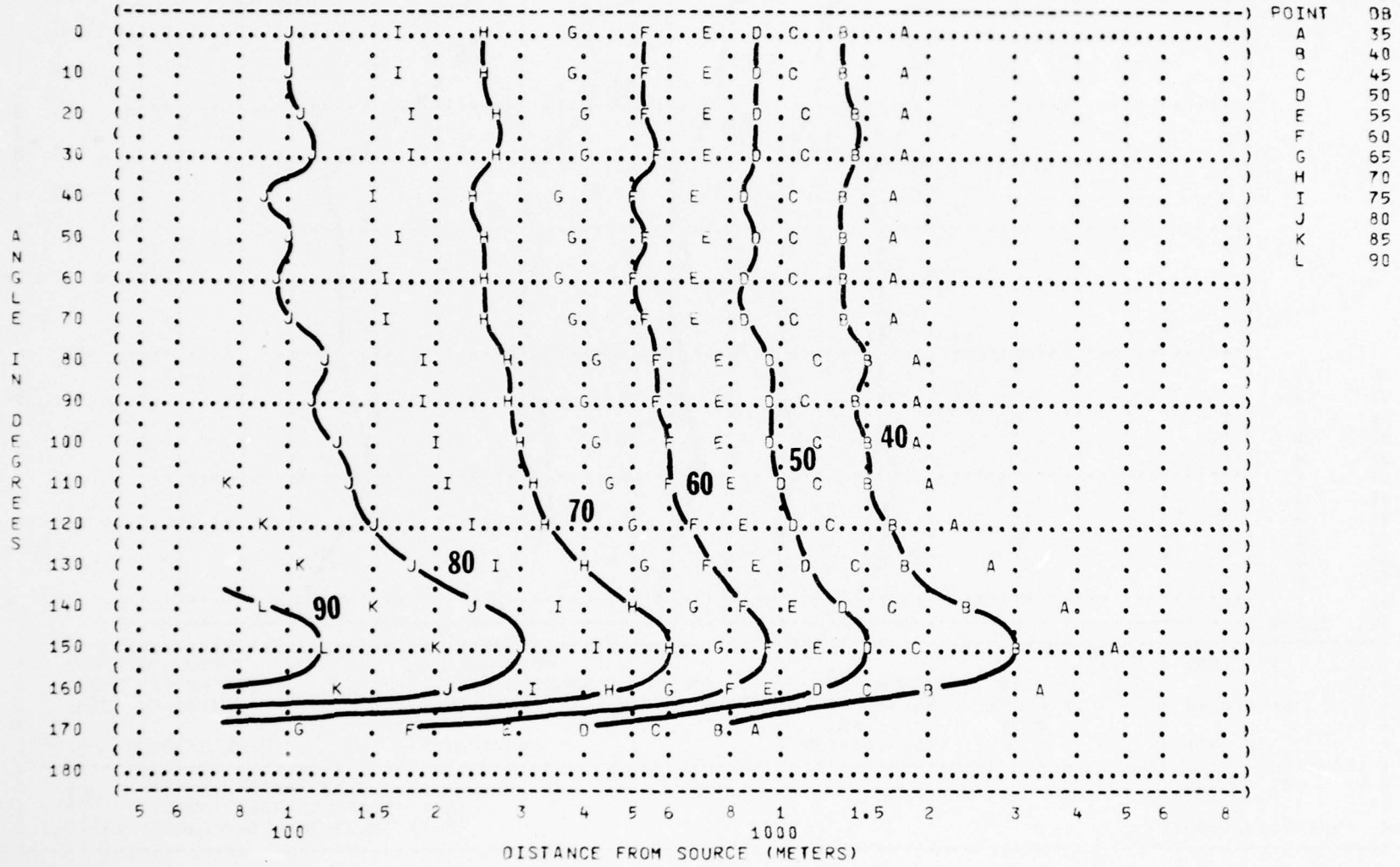
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 20

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
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

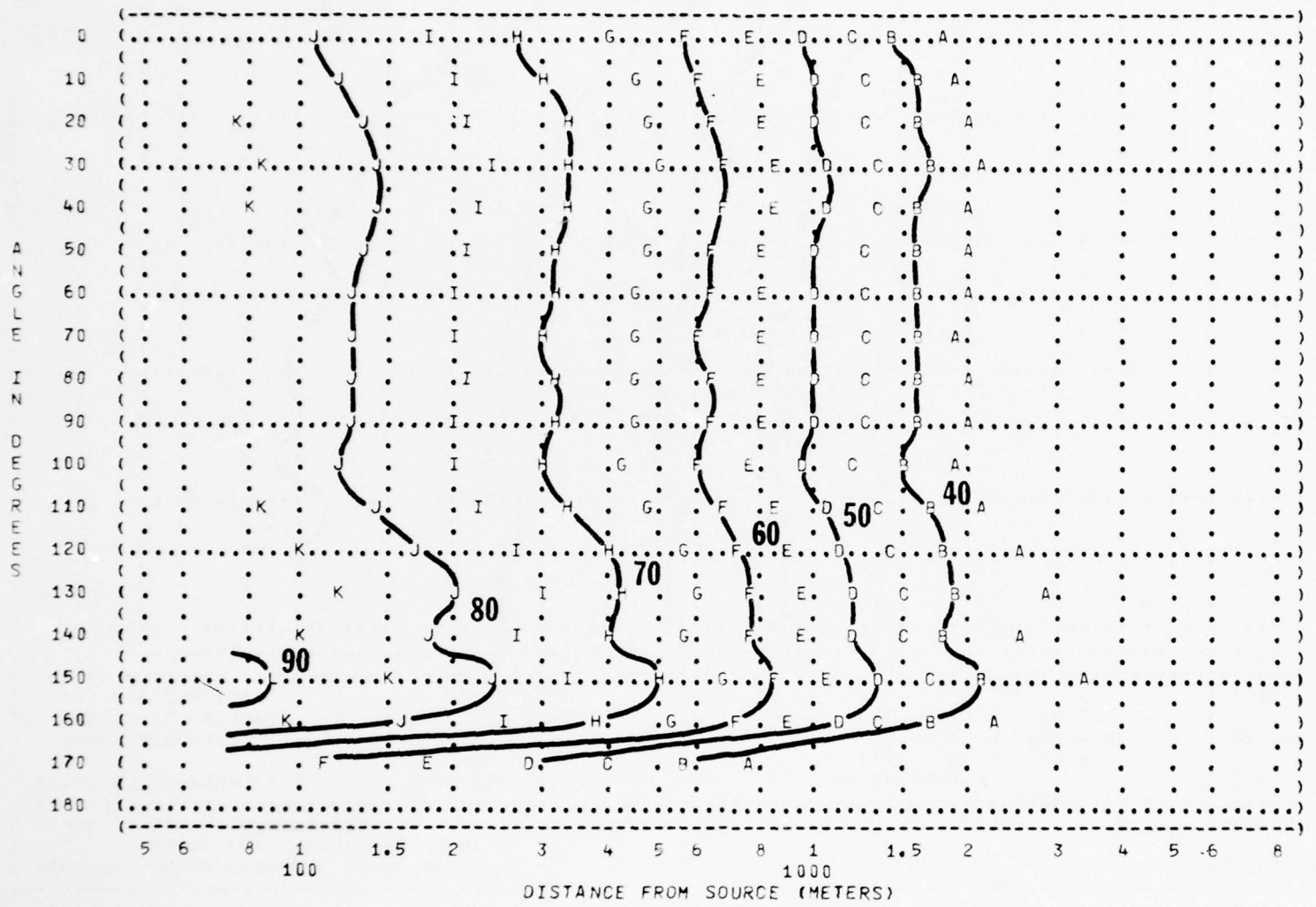
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-027 RUN 02 07 MAY 75 PAGE 21

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
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

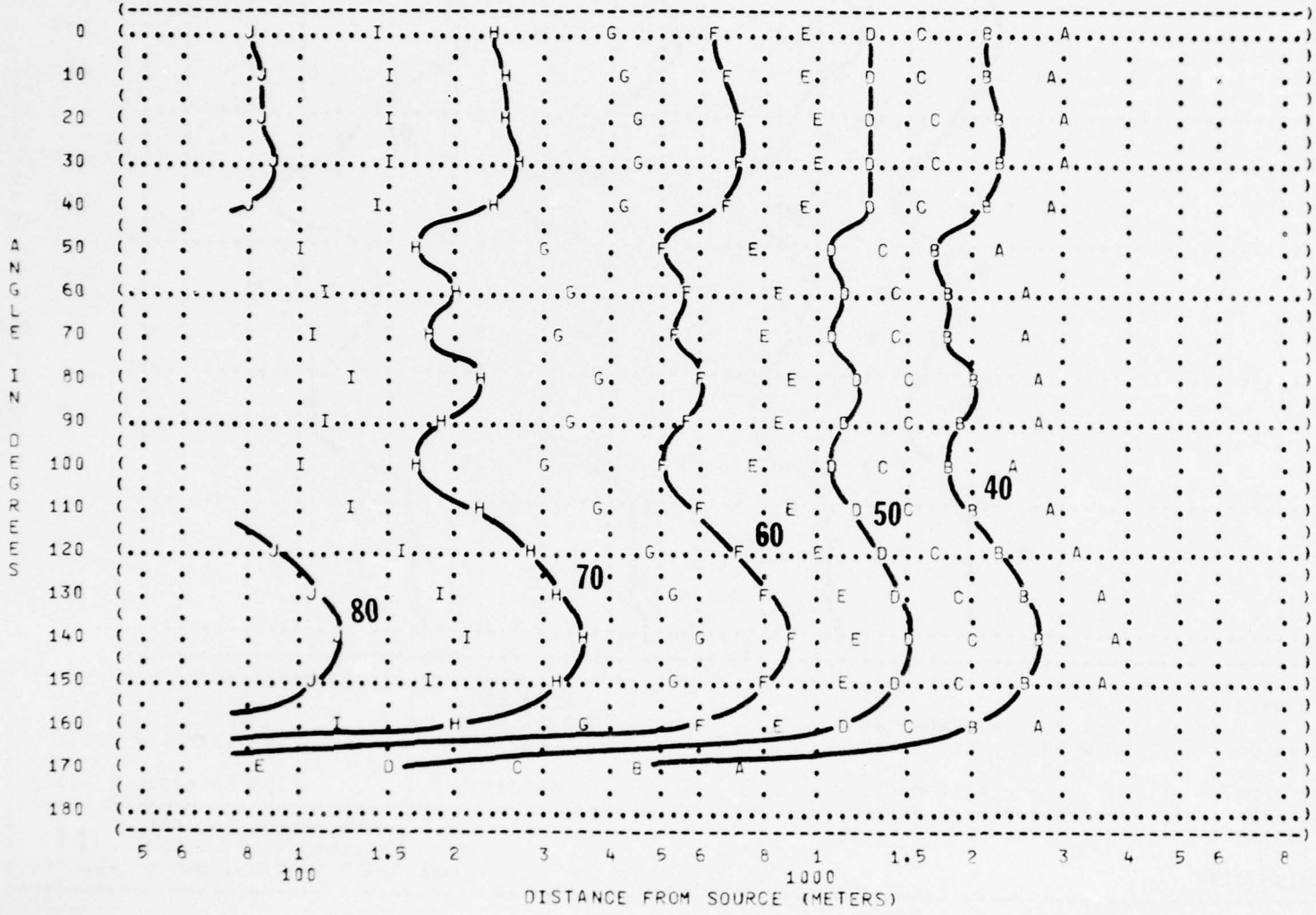
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 22



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

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
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

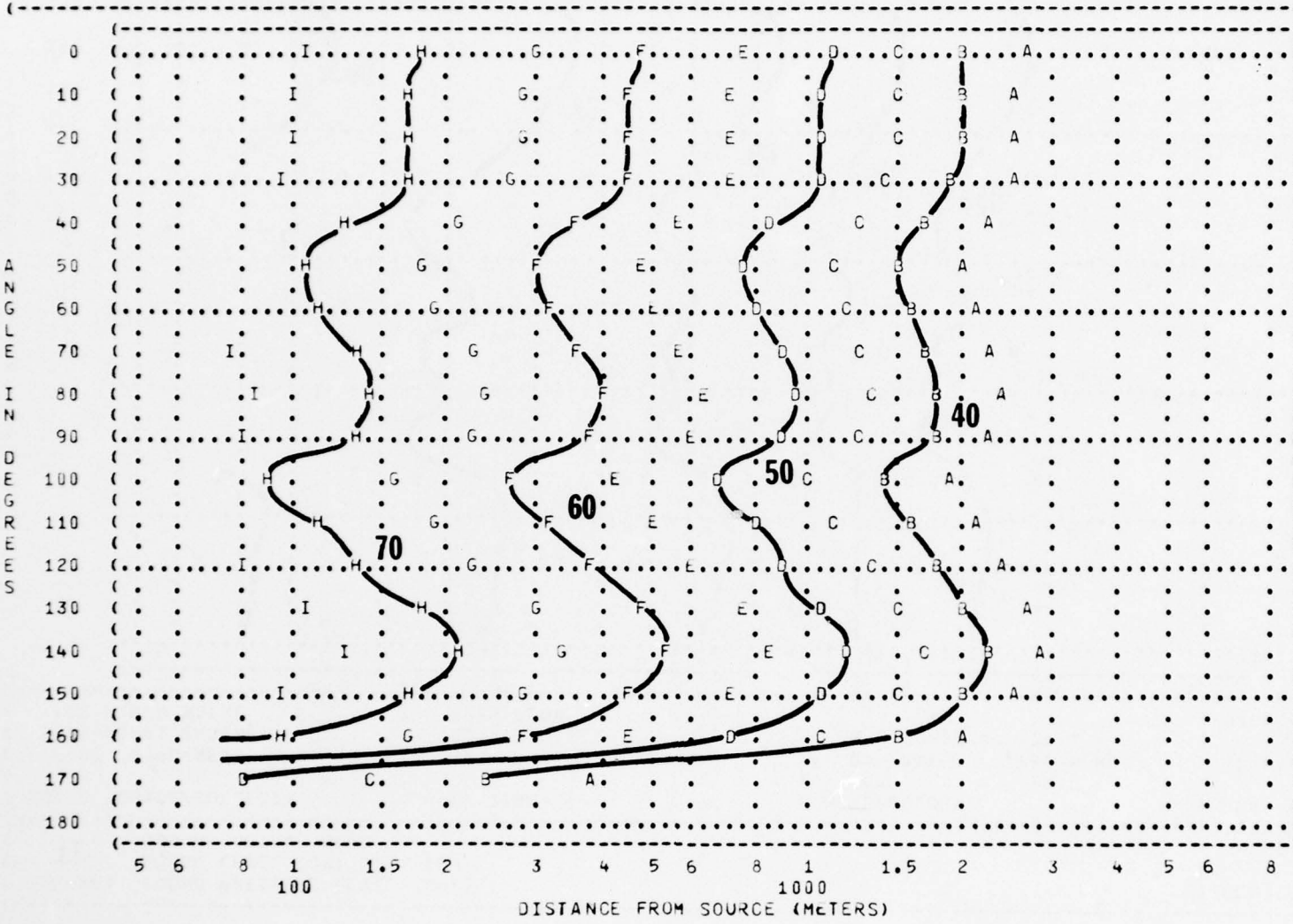


FIGURE: 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 24

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

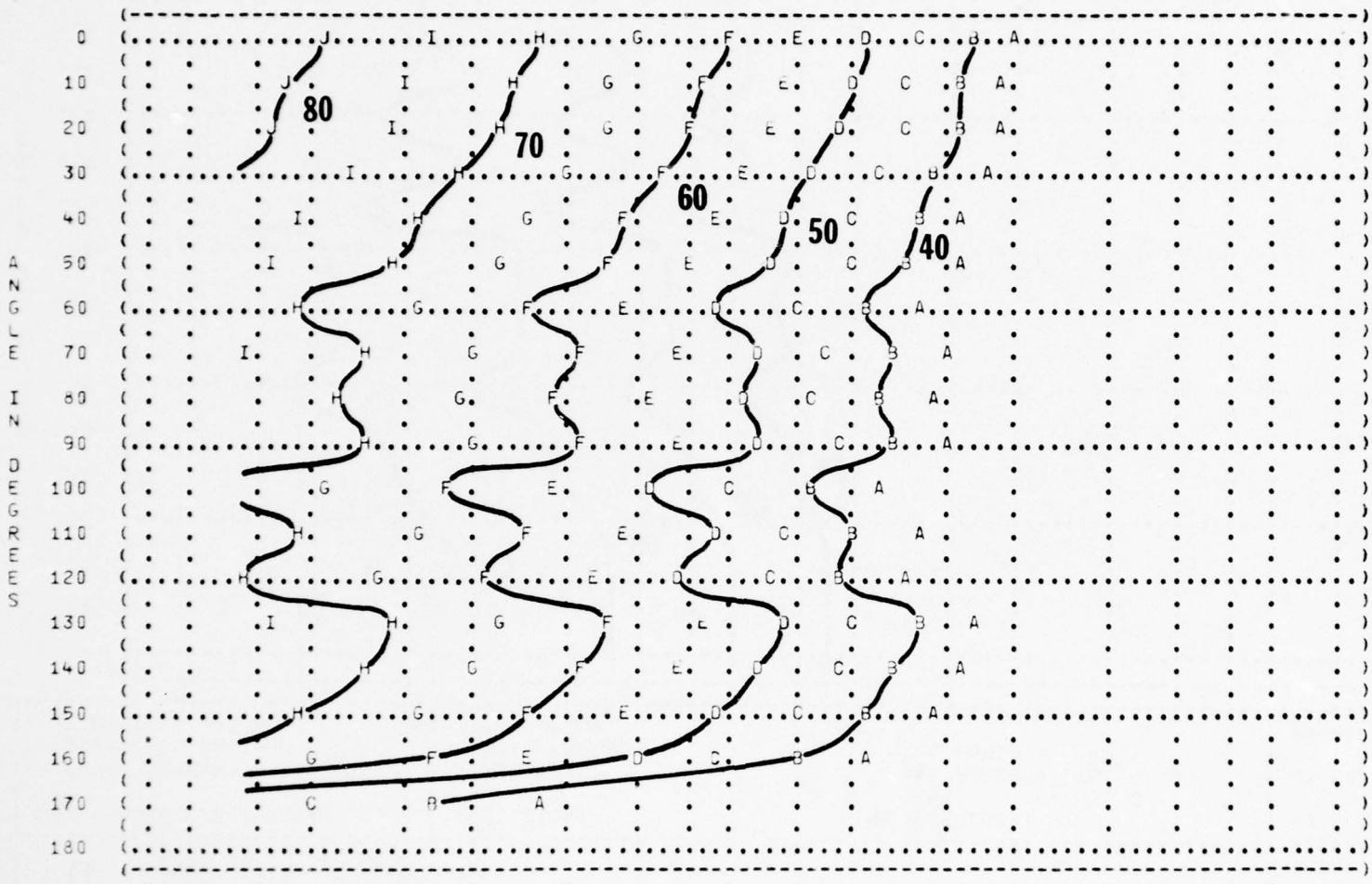


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 25

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

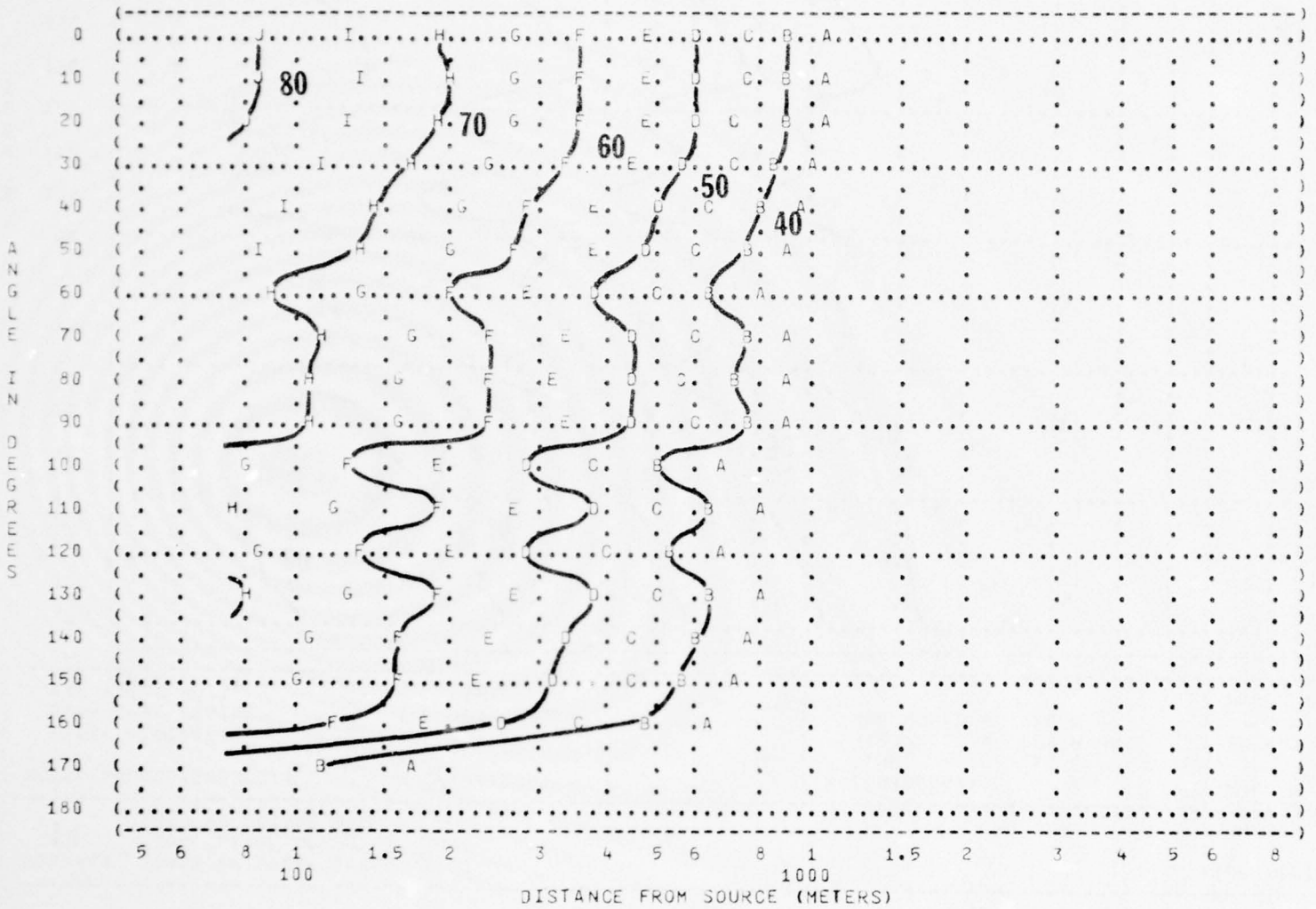


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
80% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 02
07 MAY 75
PAGE 26

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

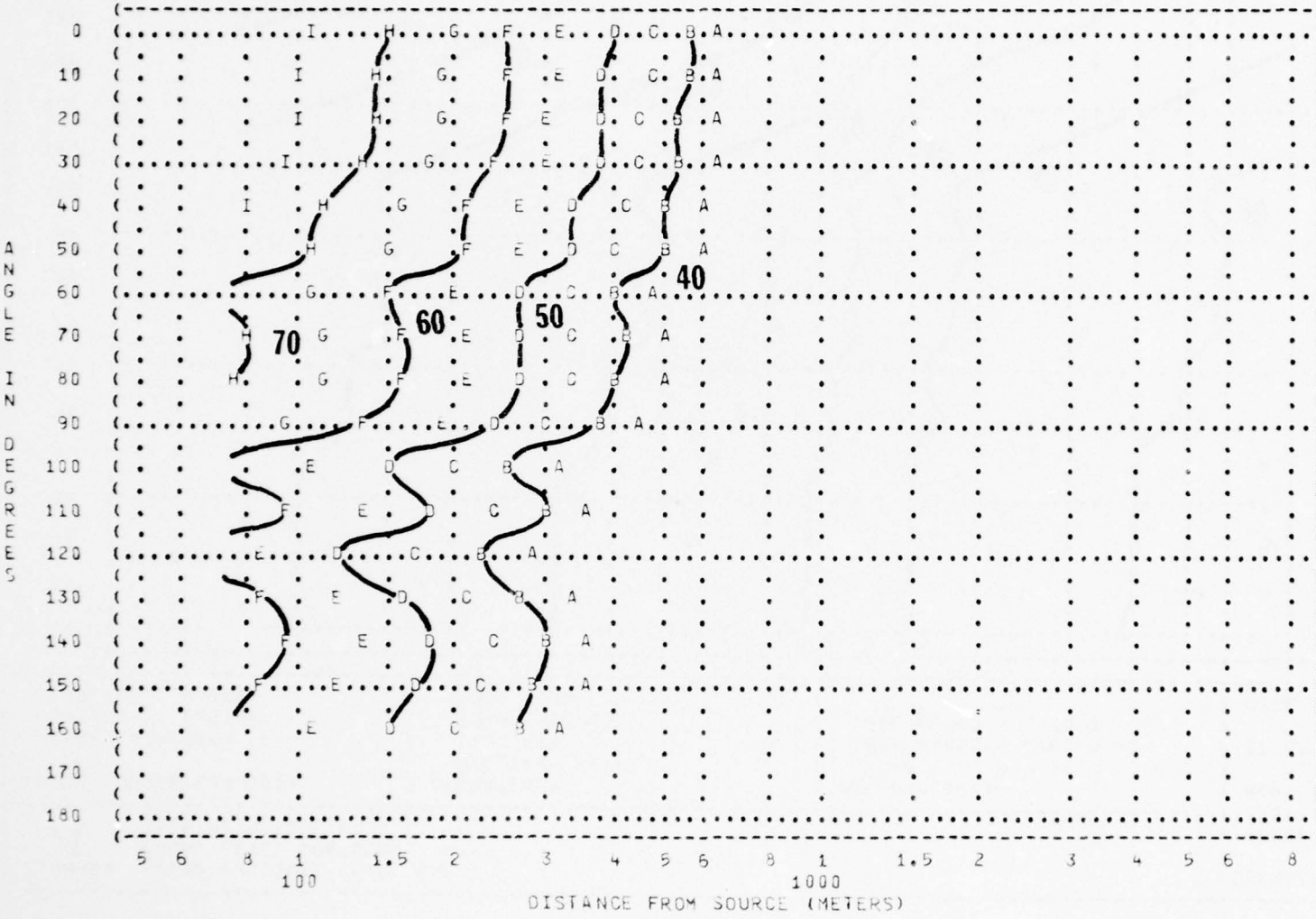


FIGURE: 11

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 18

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

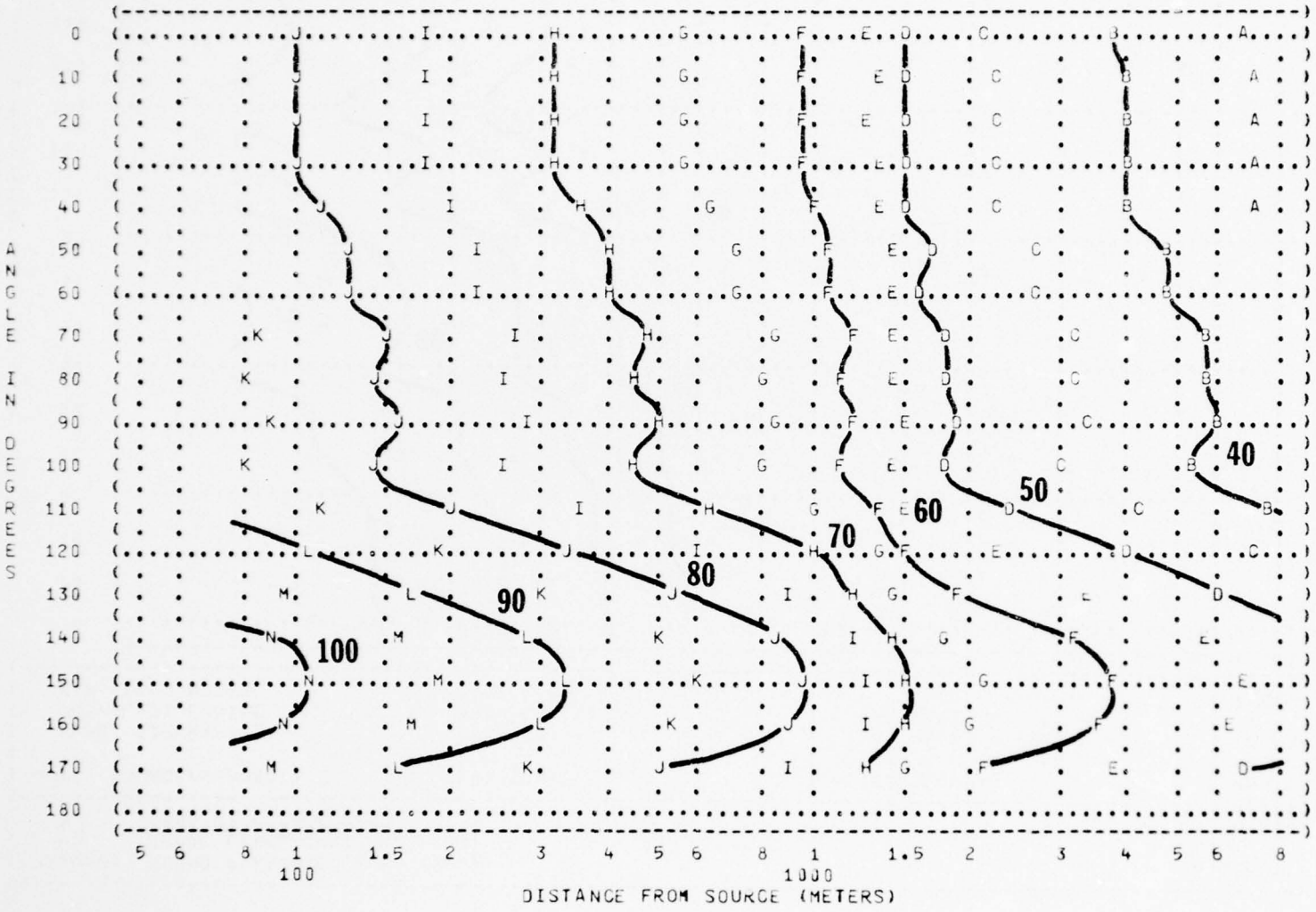


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 19

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

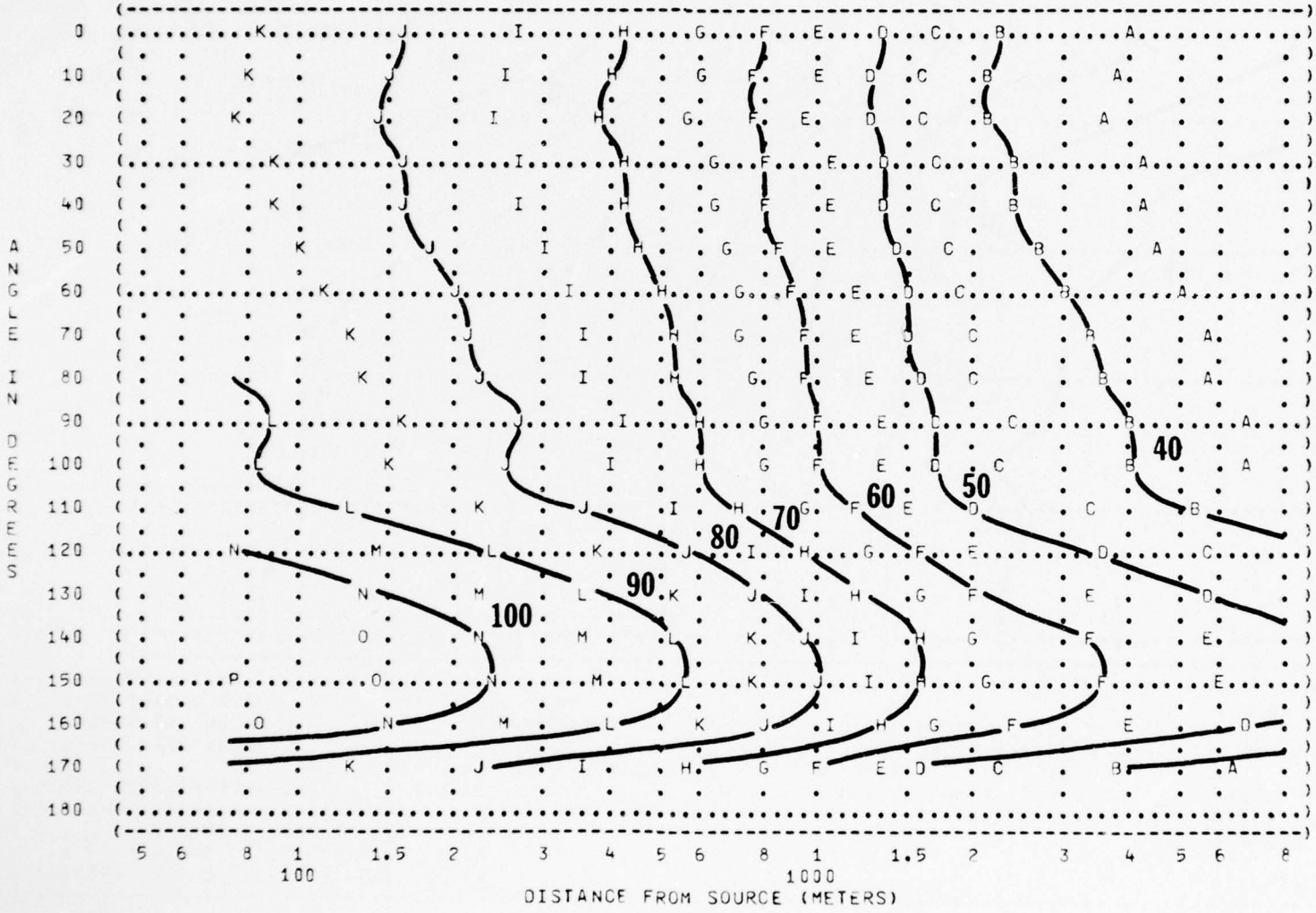


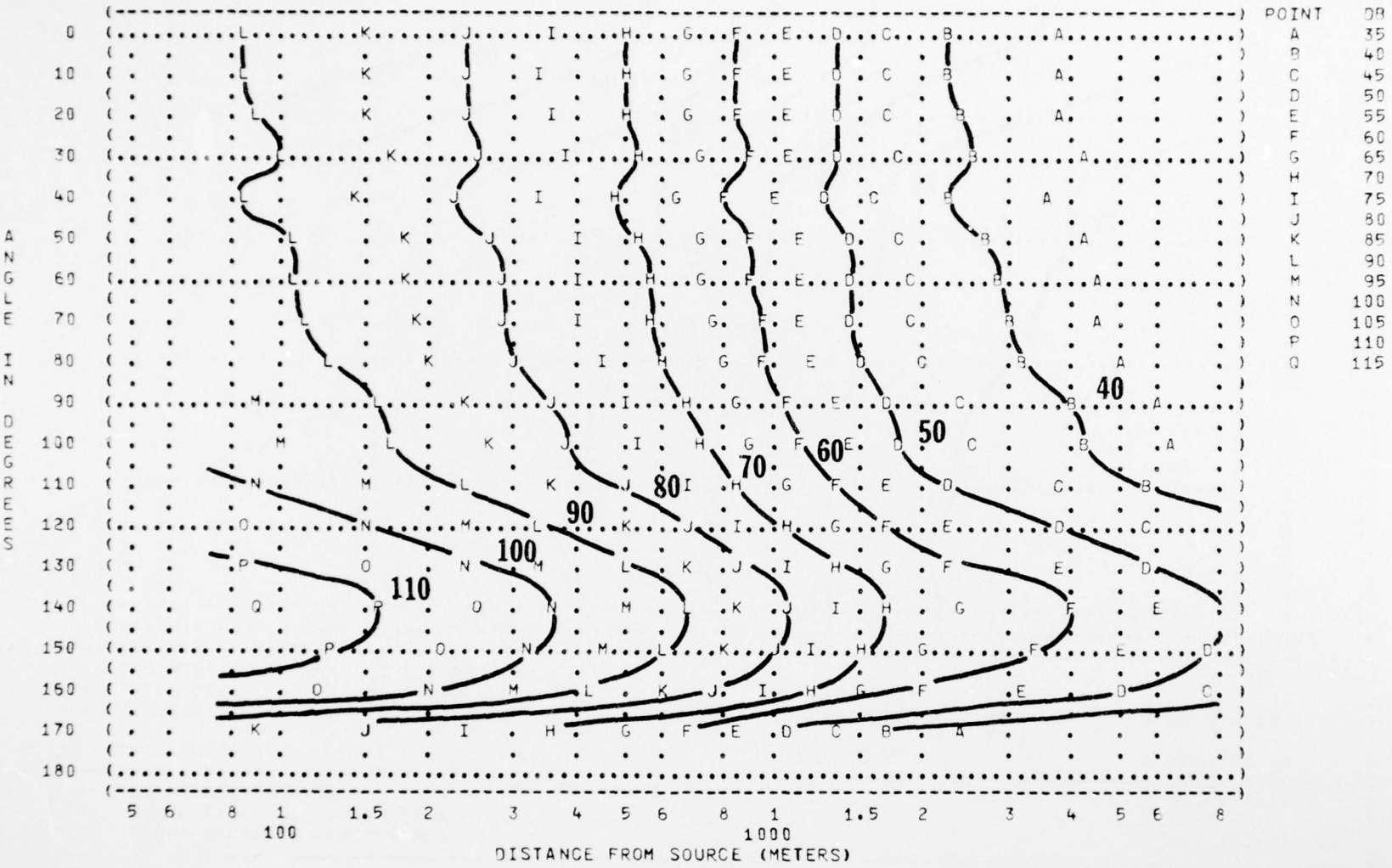
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 20

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

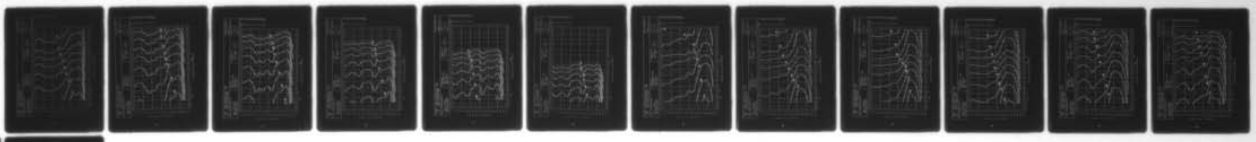


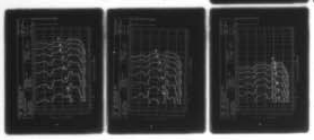
POINT	DB
A	35
B	40
C	45
D	50
E	55
F	60
G	65
H	70
I	75
J	80
K	85
L	90
M	95
N	100
O	105
P	110
Q	115

AD-A040 786 AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 69. F-5E AIRC--ETC(U)
NOV 75 R G POWELL

UNCLASSIFIED AMRL-TR-75-50-VOL-69 NL

2 OF 3
ADA040786





~~END~~ CONT.

DATE
FILMED
7-77

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

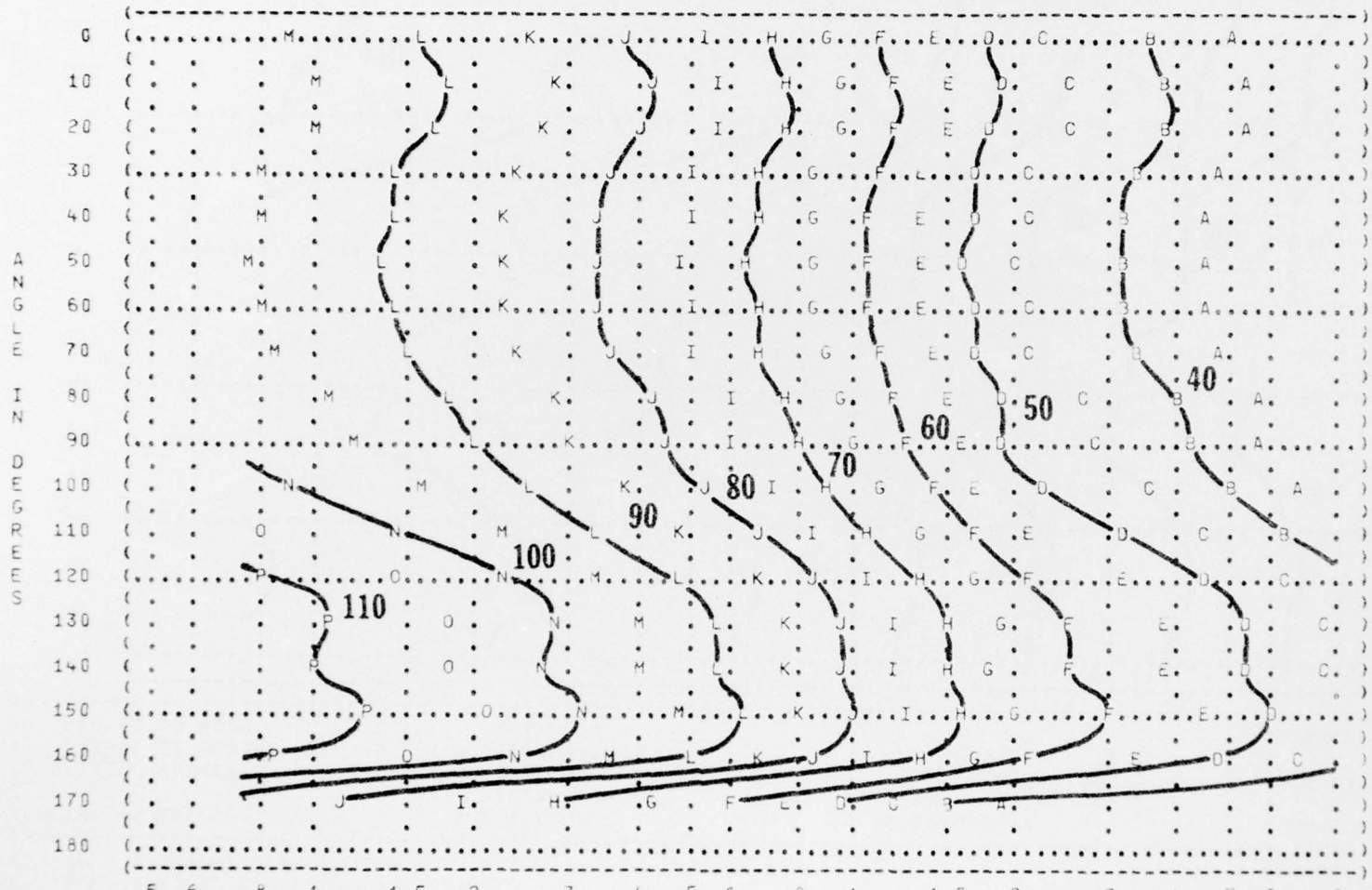


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

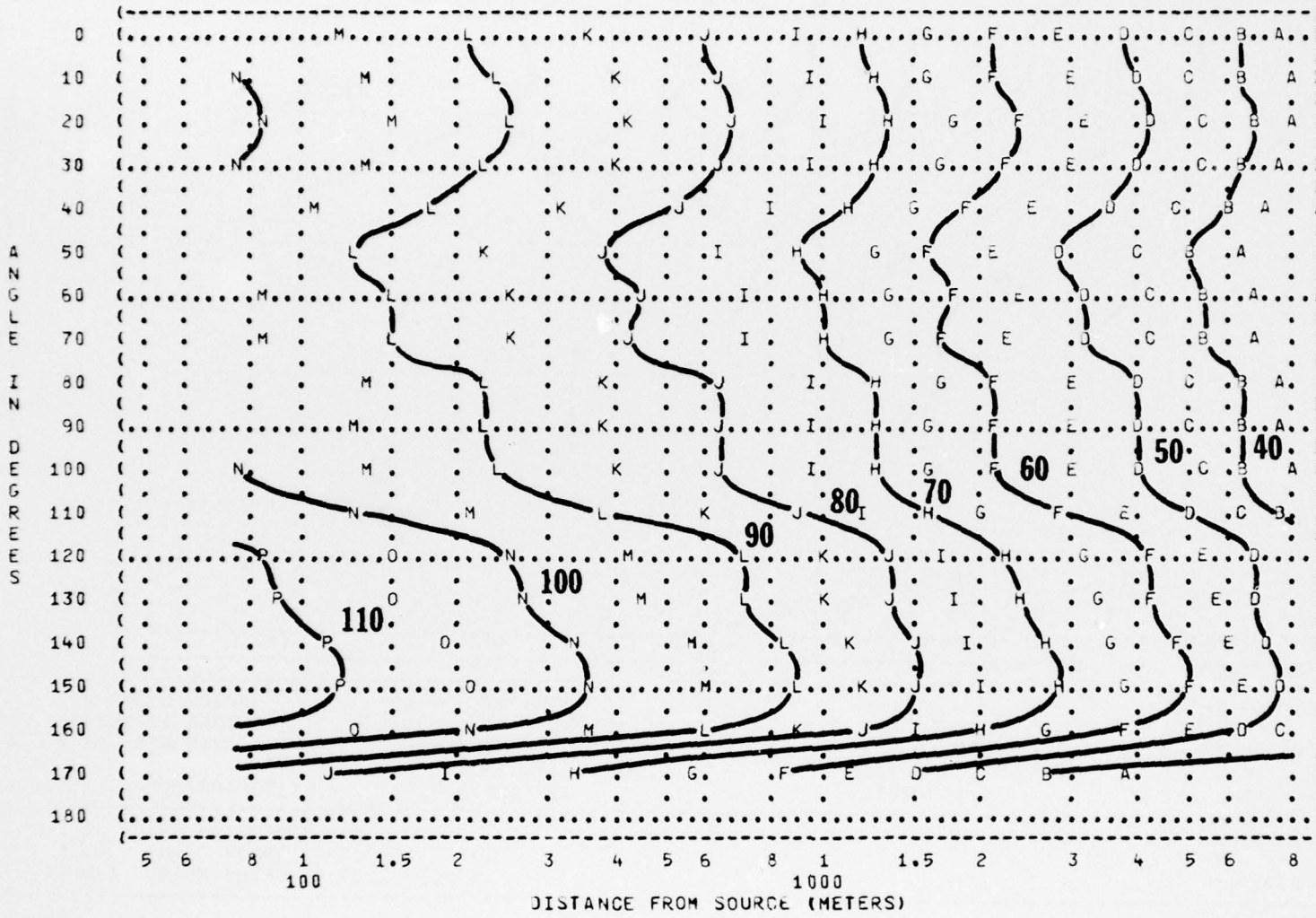


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 23

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

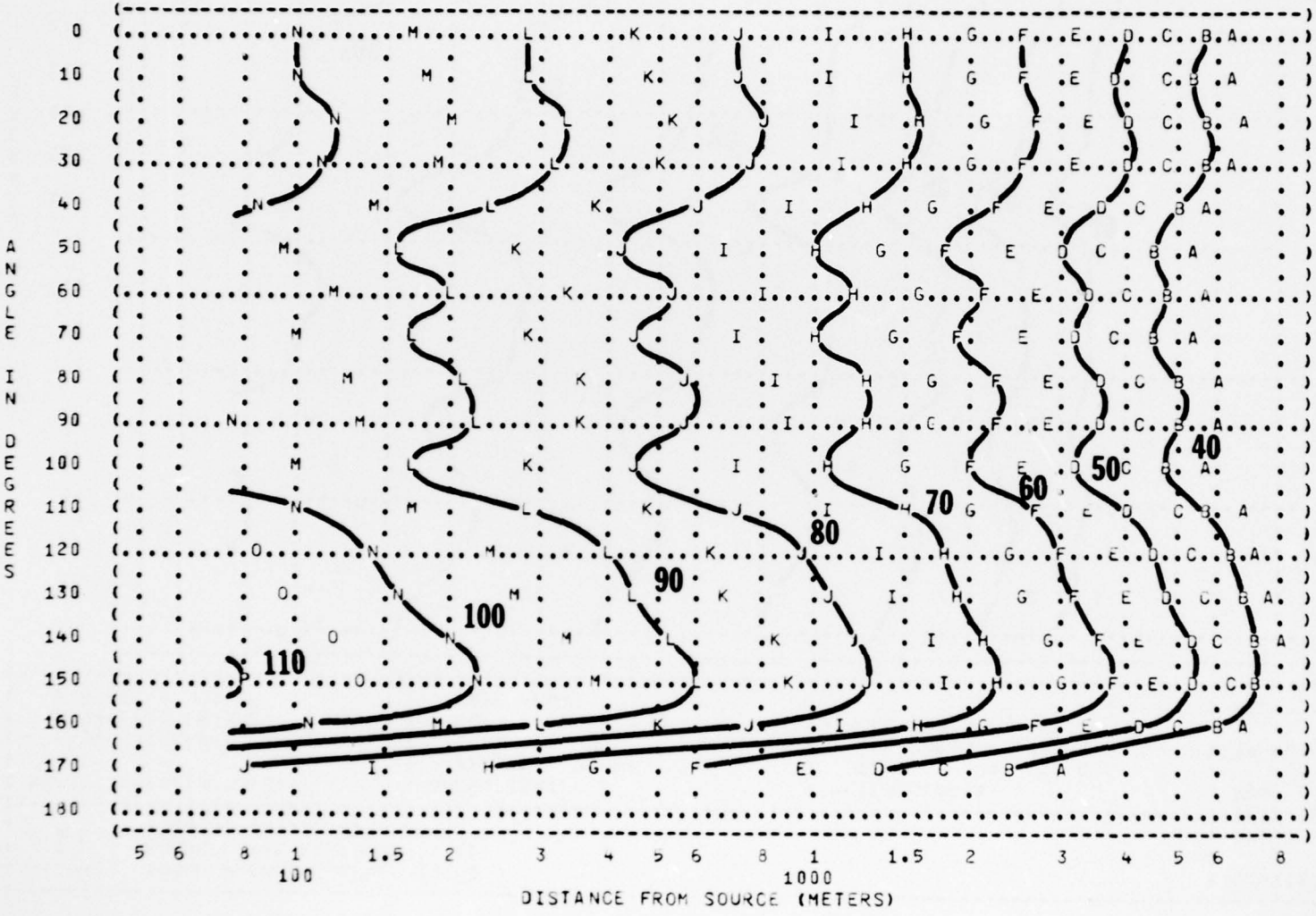


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 24

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

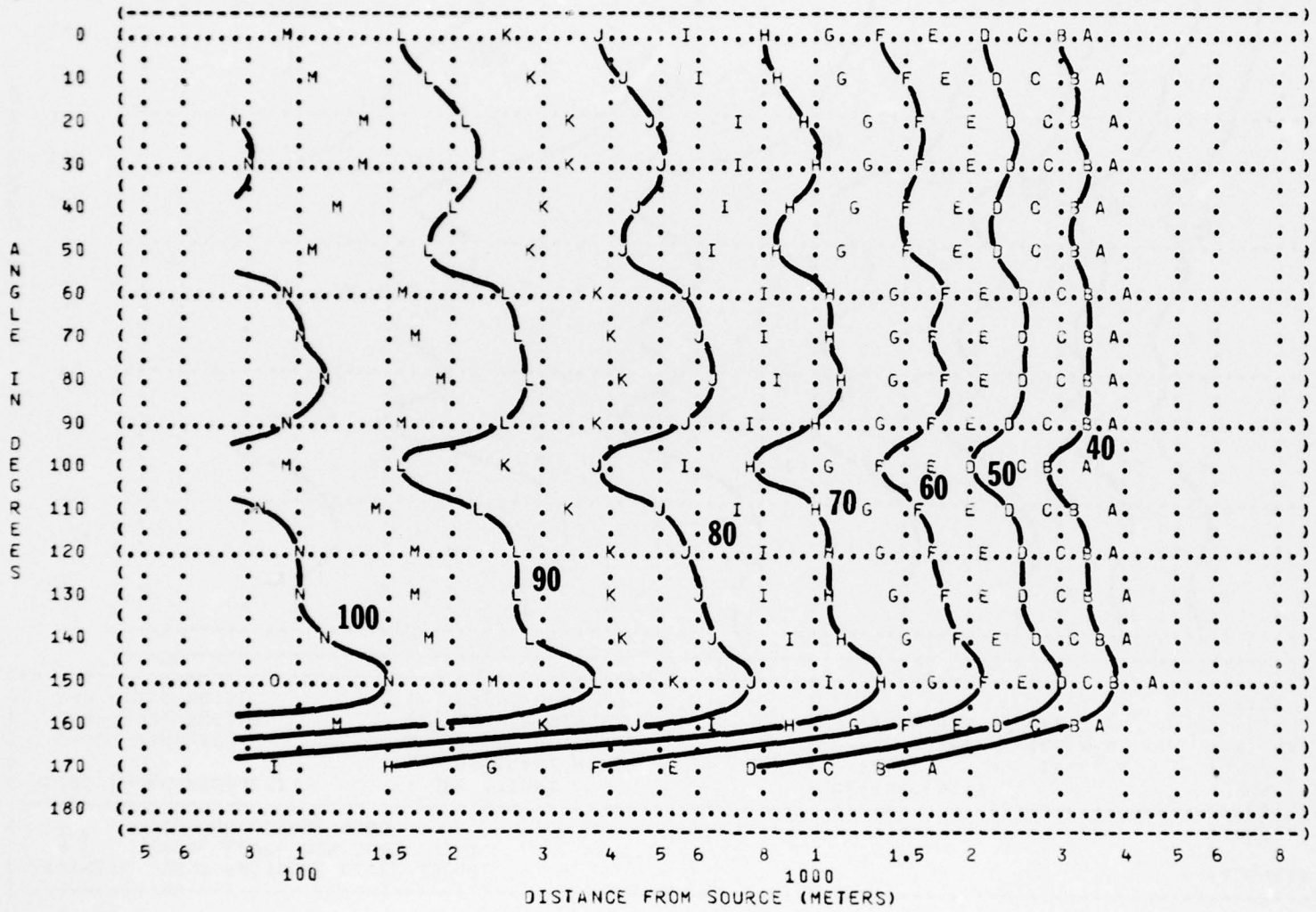


FIGURE: 11

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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 25

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

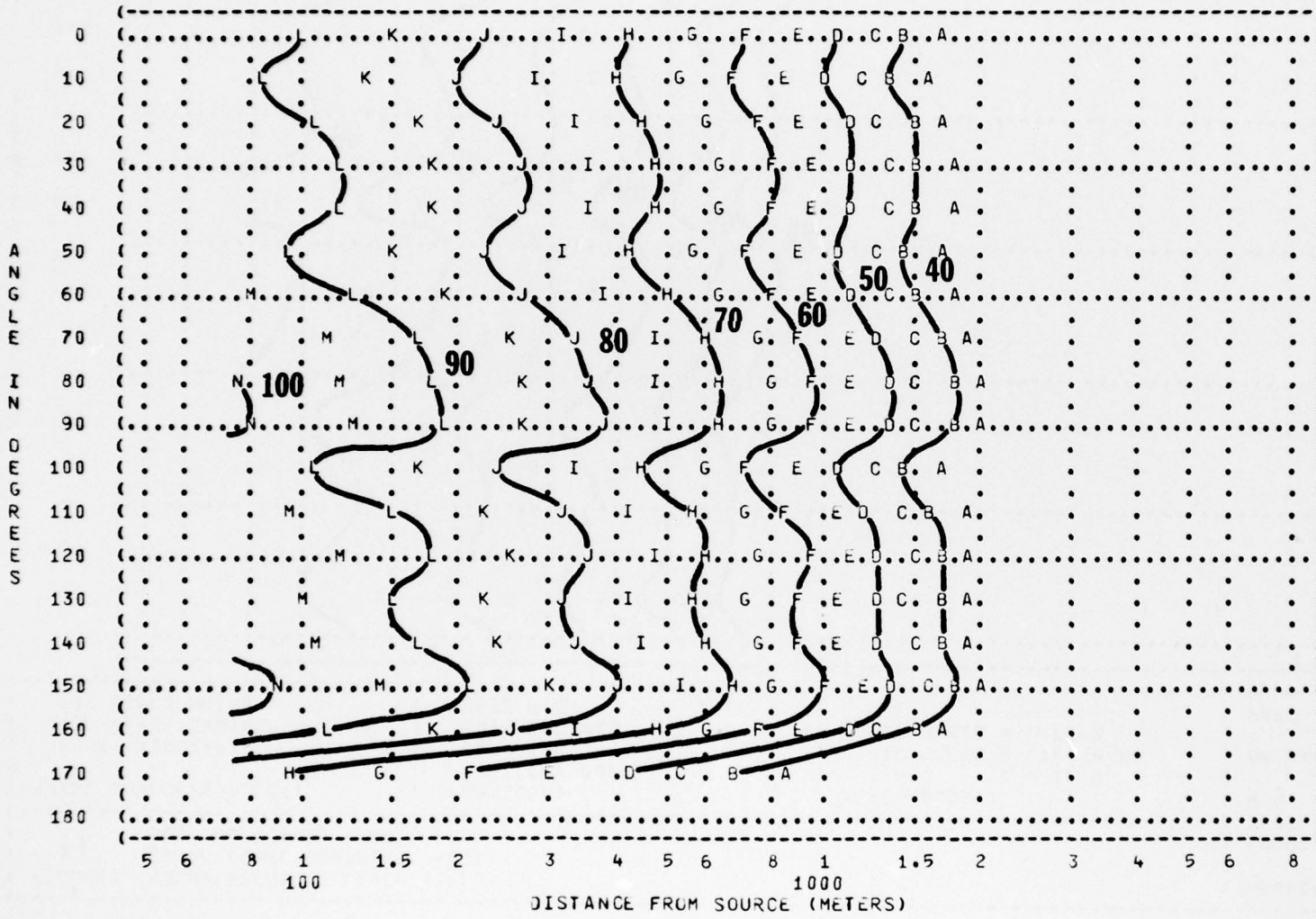


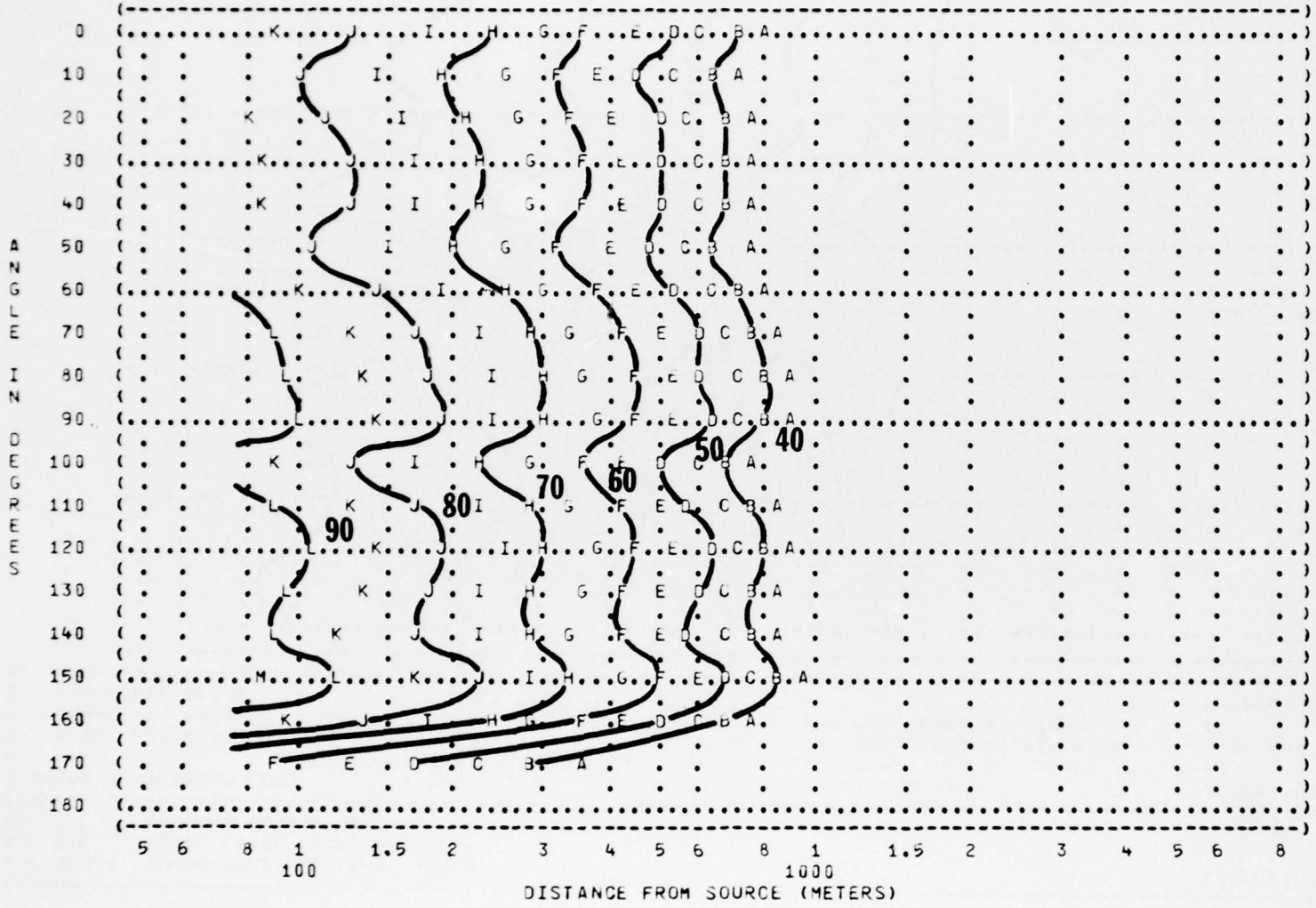
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 03
07 MAY 75
PAGE 26

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
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

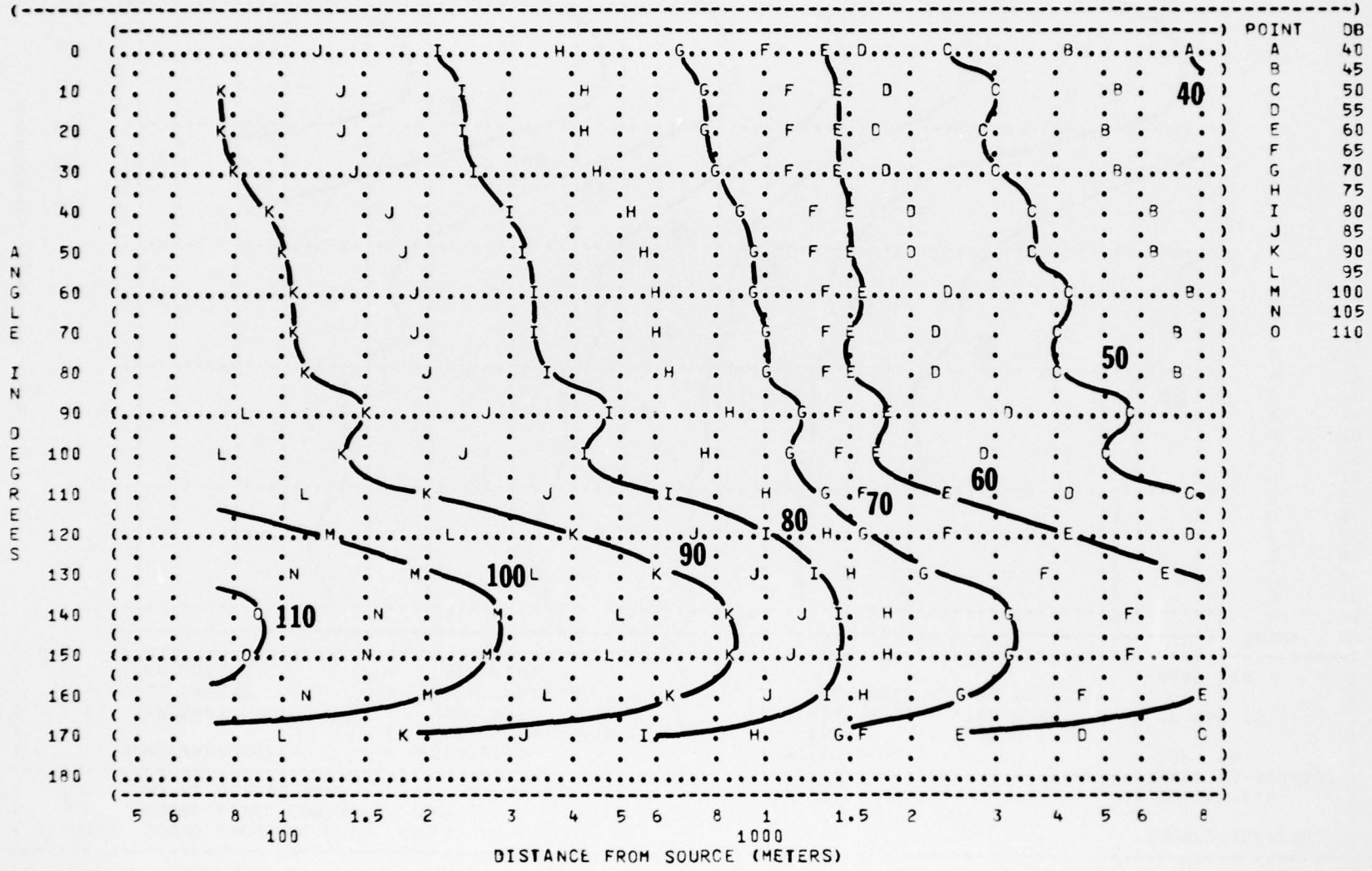
FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 18



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

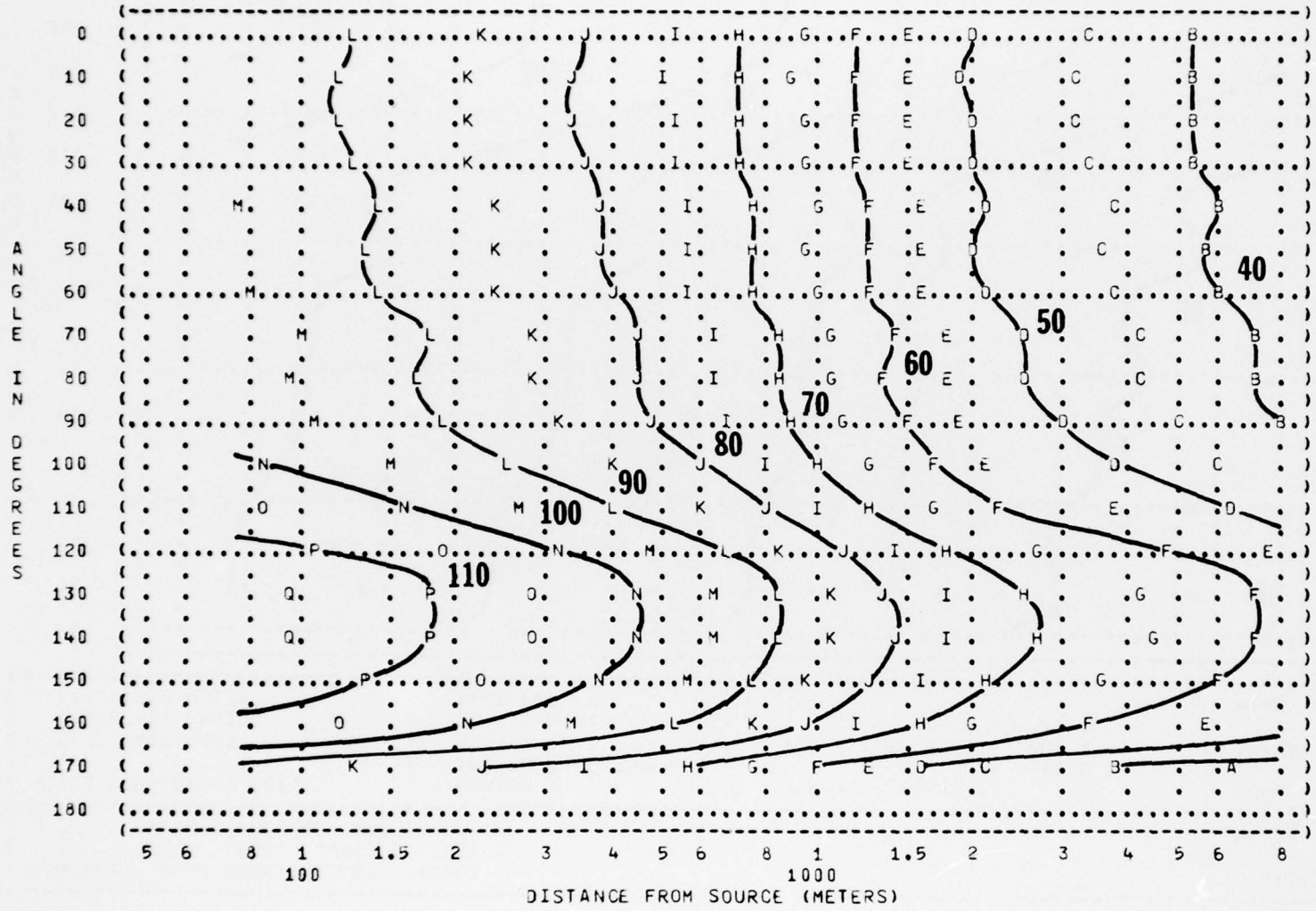
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 19



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

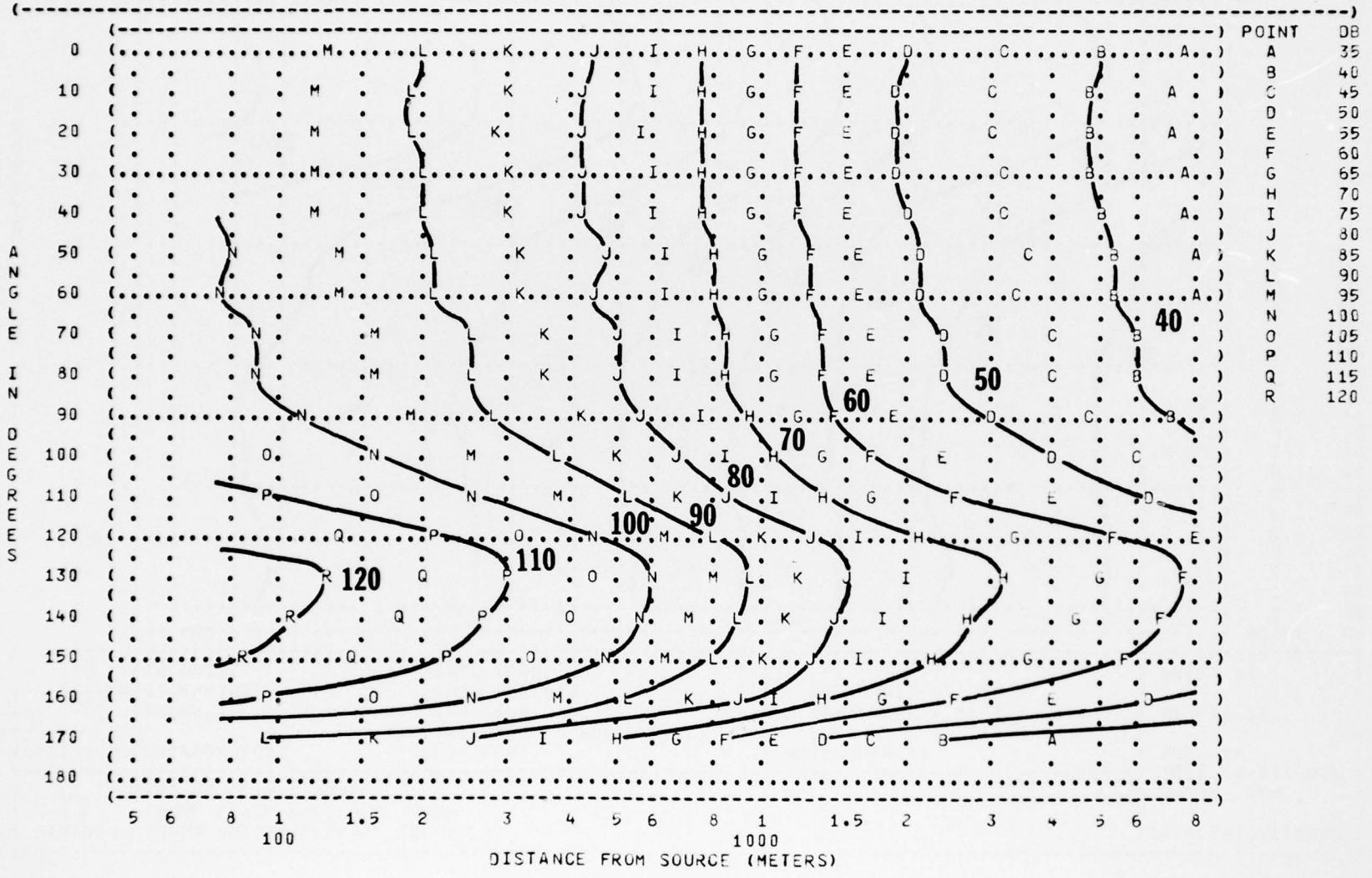
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 20



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

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

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 21

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

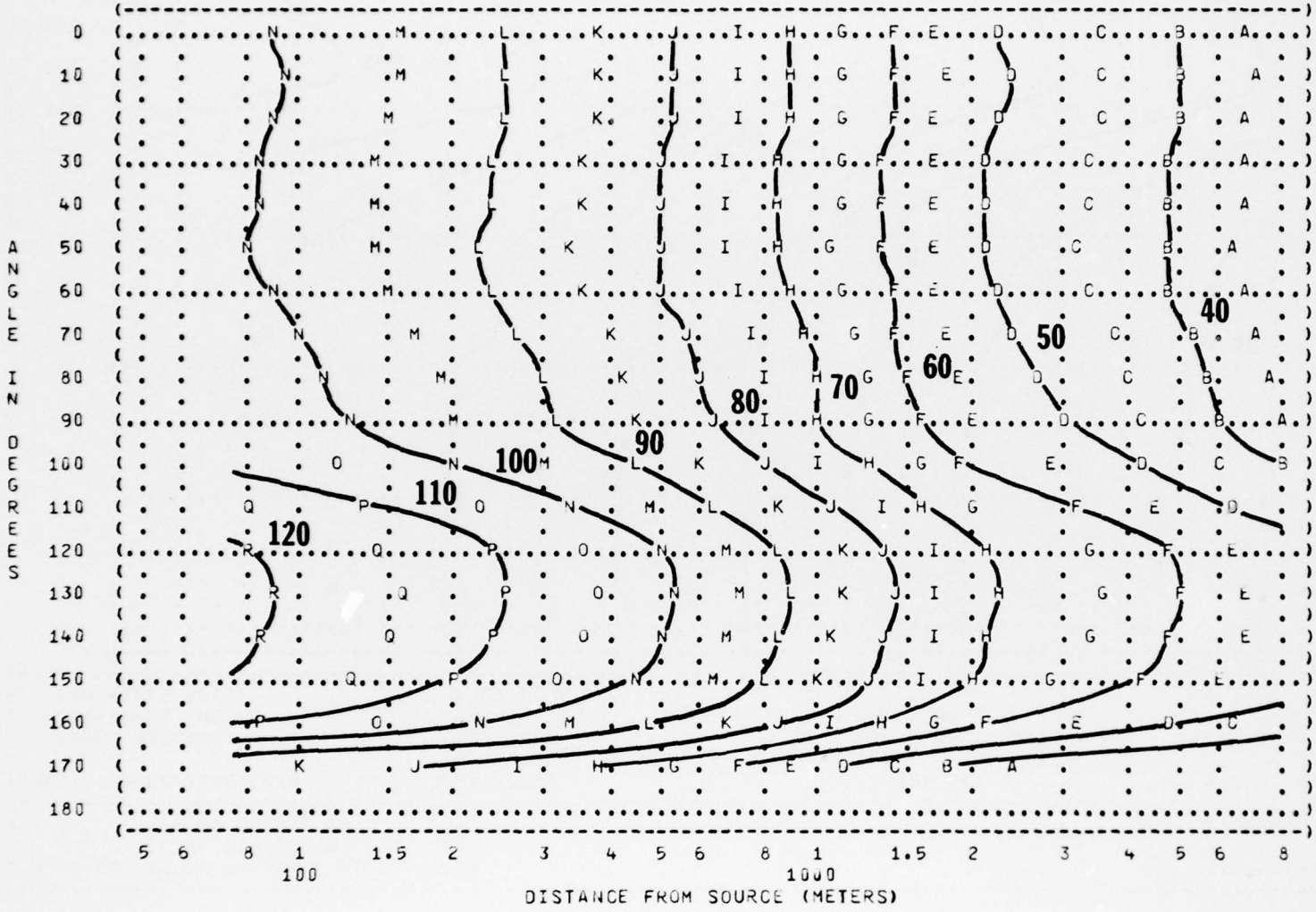


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 22

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

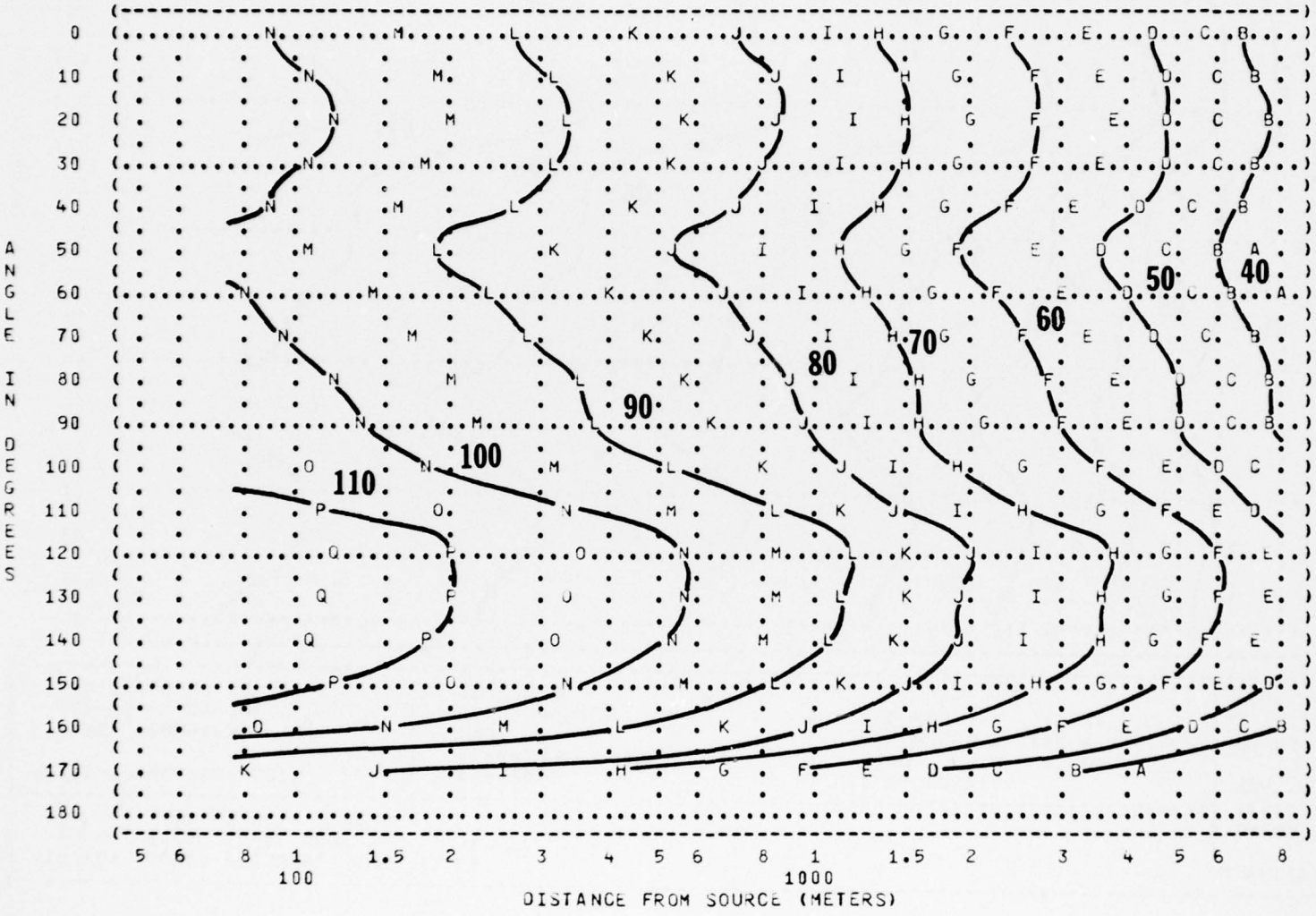


FIGURE 11 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
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

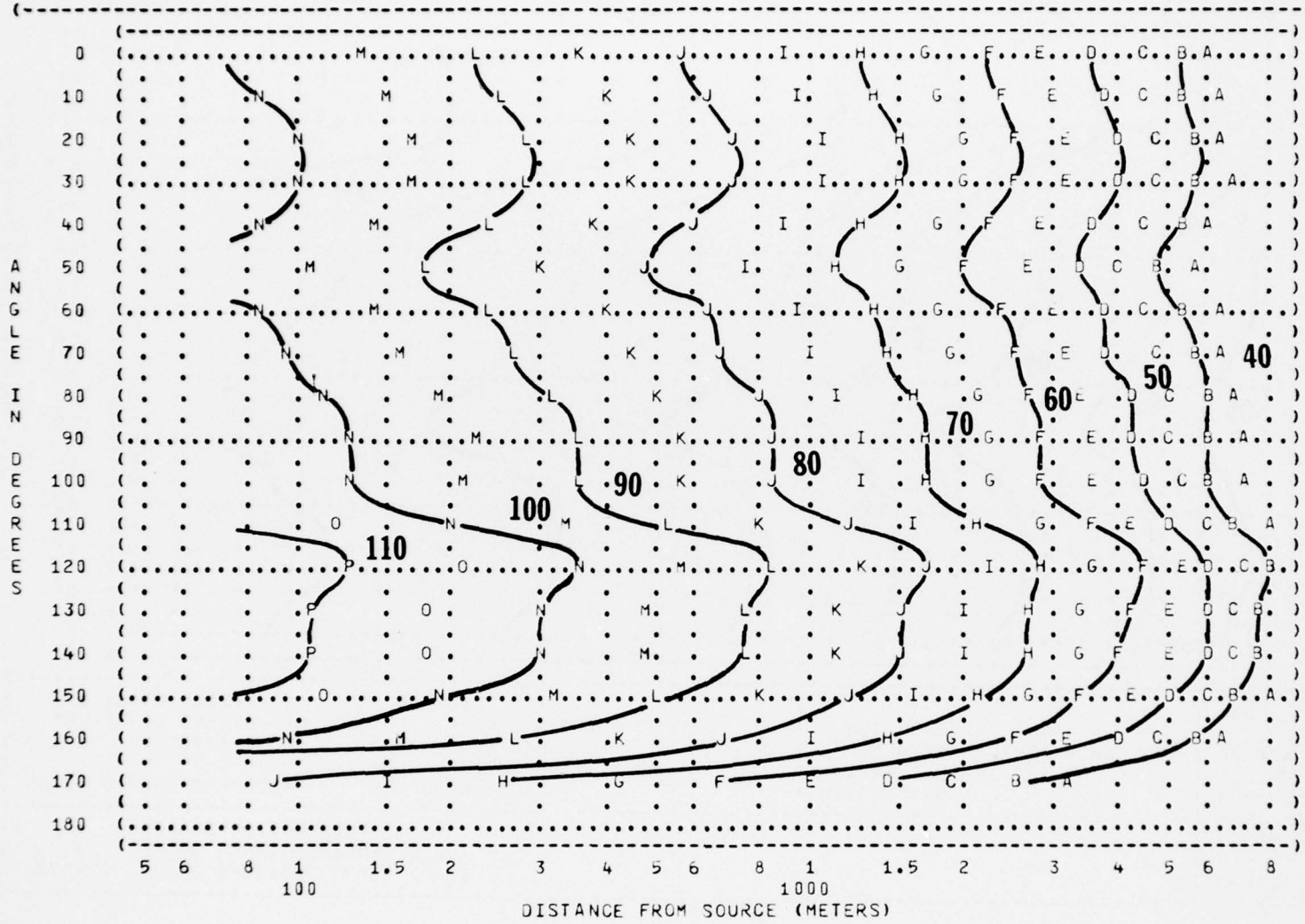


FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 24

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

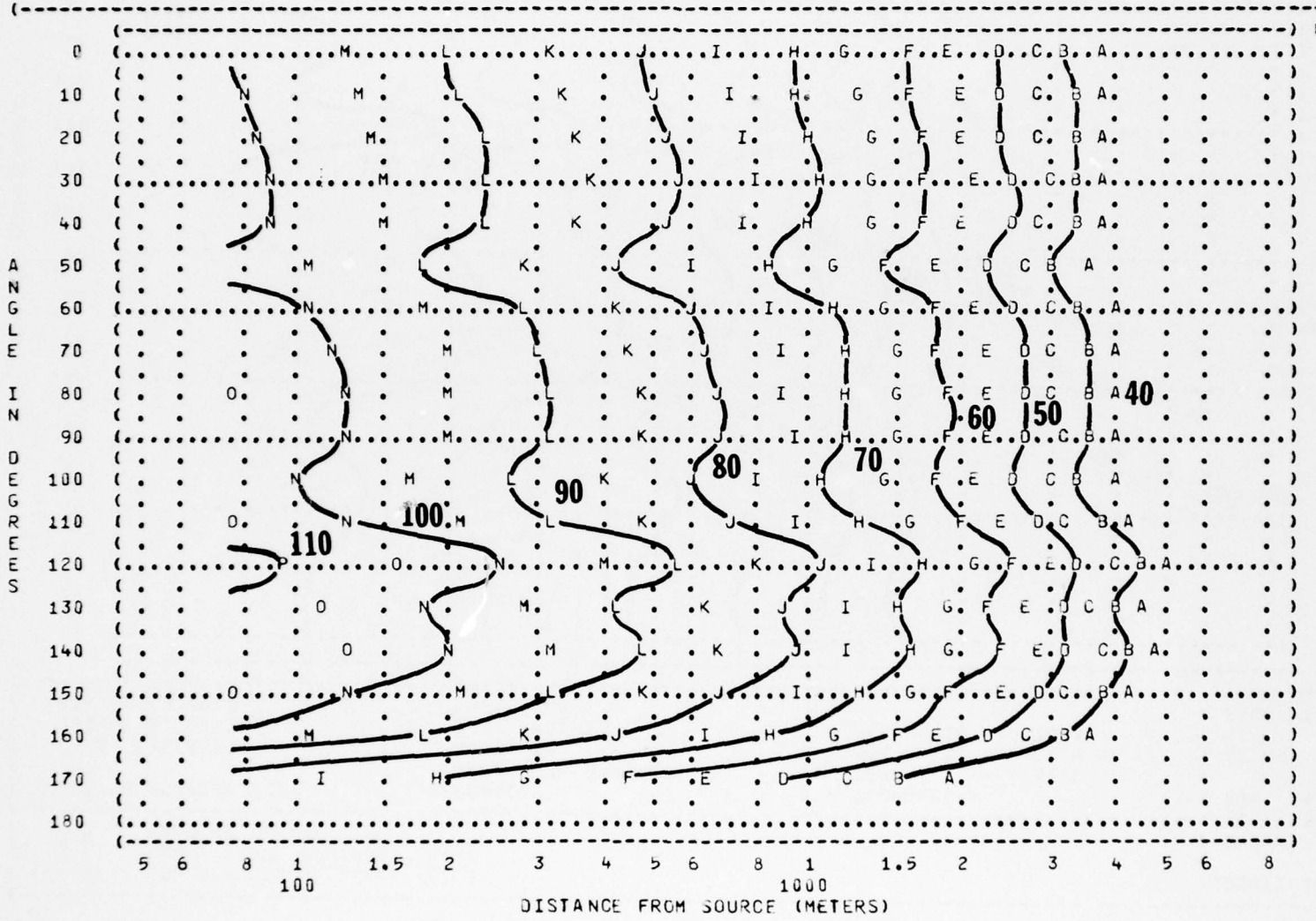


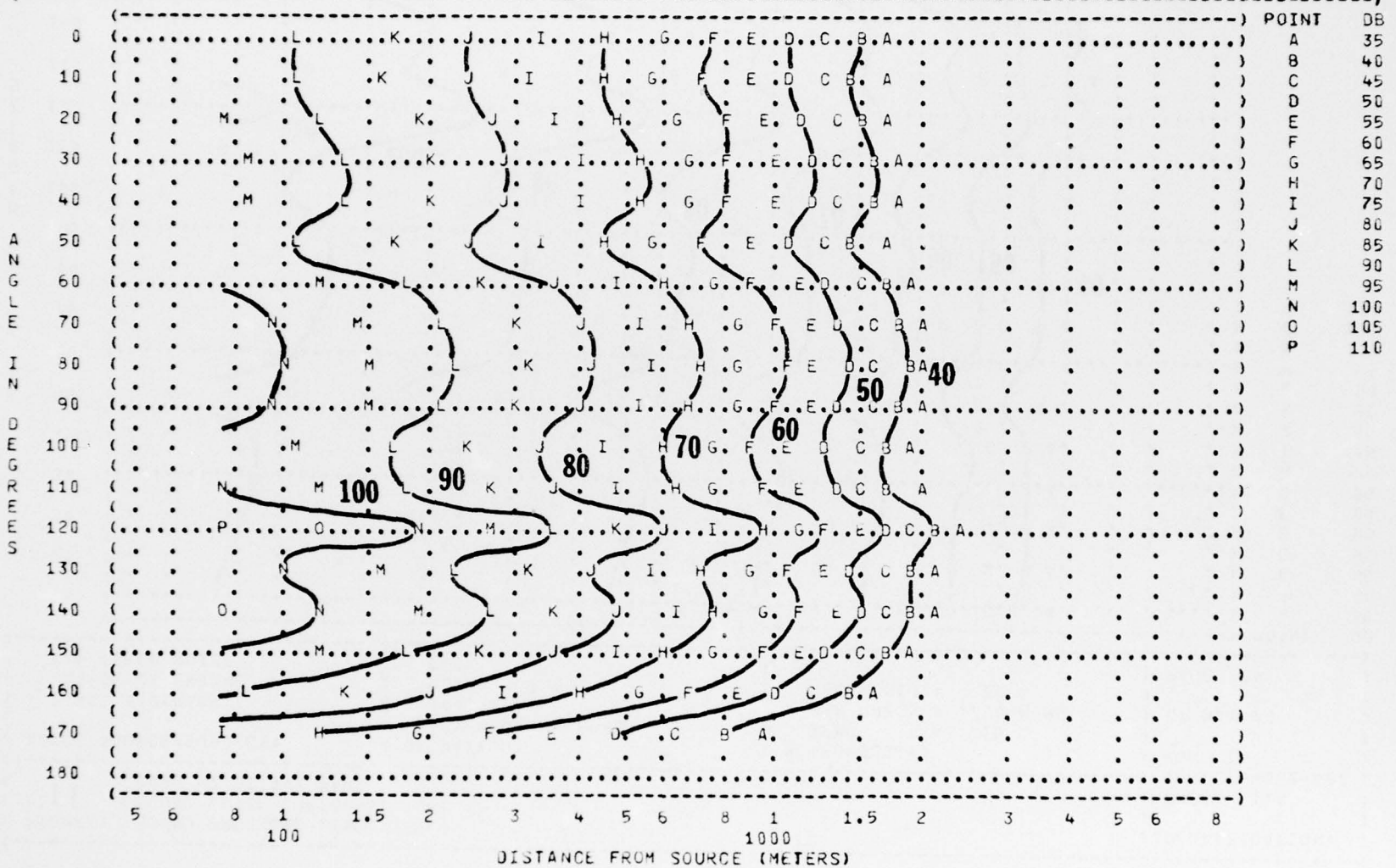
FIGURE 11: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 25



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

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

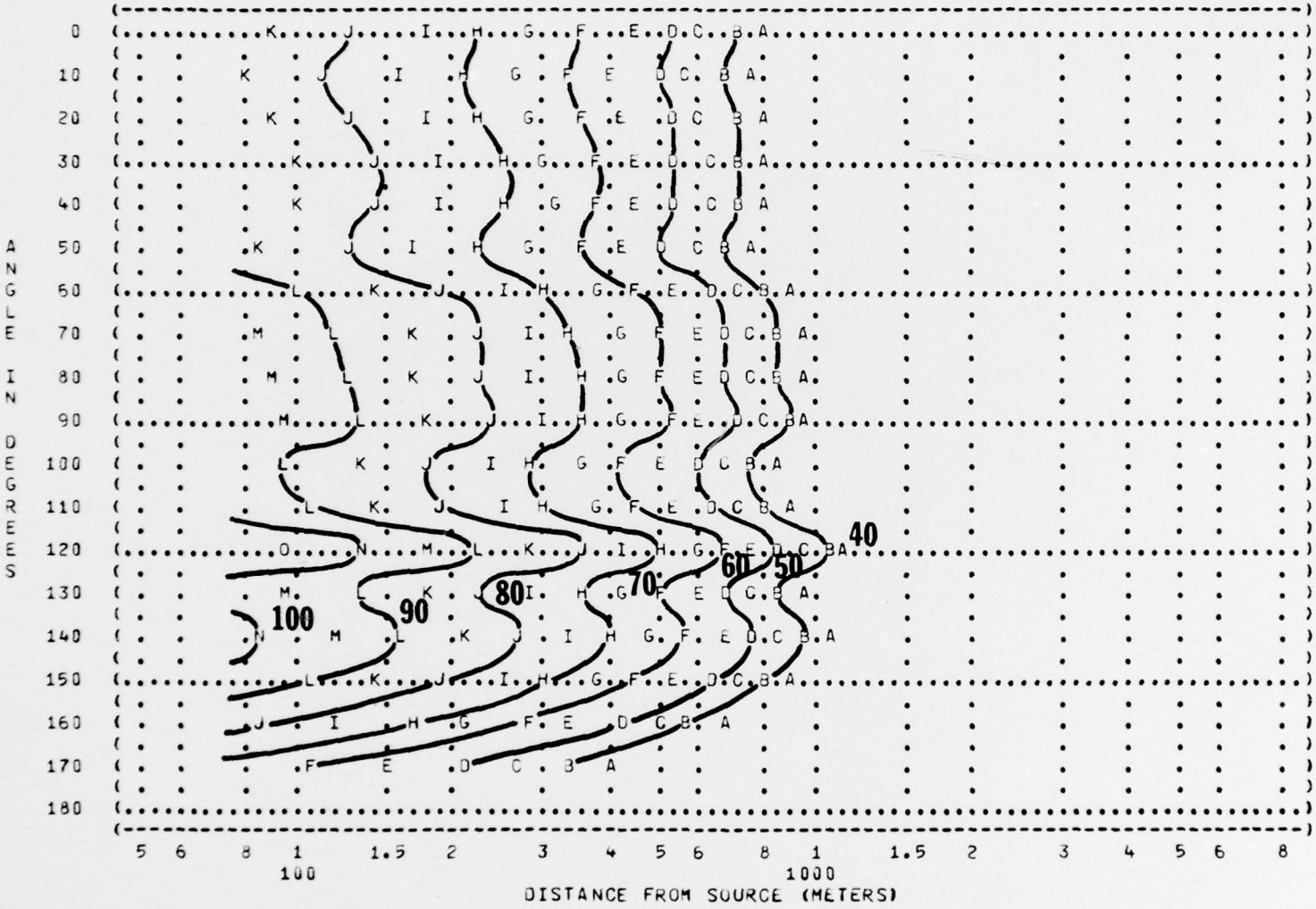
IDENTIFICATION:
OMEGA 1.4
TEST 75-002-027
RUN 04
07 MAY 75
PAGE 26

NOISE SOURCE/SUBJECT:
F-5E AIRCRAFT
J85-GE-21 ENGINE
FAR FIELD NOISE

OPERATION:
AFTERBURNER POWER
100% RPM
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



AD-A040 786 AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: VOLUME 69. F-5E AIRC--ETC(U)
NOV 75 R G POWELL
UNCLASSIFIED AMRL-TR-75-50-VOL-69 NL

3 OF 3
ADA
040786

END
DATE
FILMED
12-78
DDC

SUPPLEMENTARY

INFORMATION

ERRATA

AMRL-TR-75-50
Volume 69

A040786

Attached is a replacement for Table 1, "Measurement Locations and Test Conditions For Near-Field Noise Measurements", page 5.

TABLE 1

MEASUREMENT LOCATIONS AND TEST CONDITIONS FOR NEAR-FIELD NOISE MEASUREMENTS

F-5E Aircraft, Ground Runup, Edwards AFB, CA
28 January 1974
Tail #11421

Ground Crew Location

1	MD-3 Operator
2	MA-1A Operator
3	Marshall
4	
5	Noise Gear Chock Pull
6	Ground Intercom Connector
8	Main Loading Gear Chock Pull and Armament Check
9	Power Unit Hook-up
10	Ground Power Carts
11	Nozzle Observer
12	Engine Trim Panel

Aircraft Engine (and AGE) Operation

A	Both Engines Idle Power
B	Both Engines 80% RPM Power
C	Both Engines Military Power
D	Both Engines A/B
E	Engine #1 91% RPM and Engine #2 Idle Power
F	MD-3 Operating
G	MD-3 and MA-1A, Operating (unloaded)
H	MD-3 and MA-1A Operating (loaded)

Meteorology

Temperature	5.6 C
Bar Pressure	0.706 M Hg
Rel Humidity	53 %
Wind — Speed	<1 M/Sec (<2 Kts)
— Direction	340 Deg