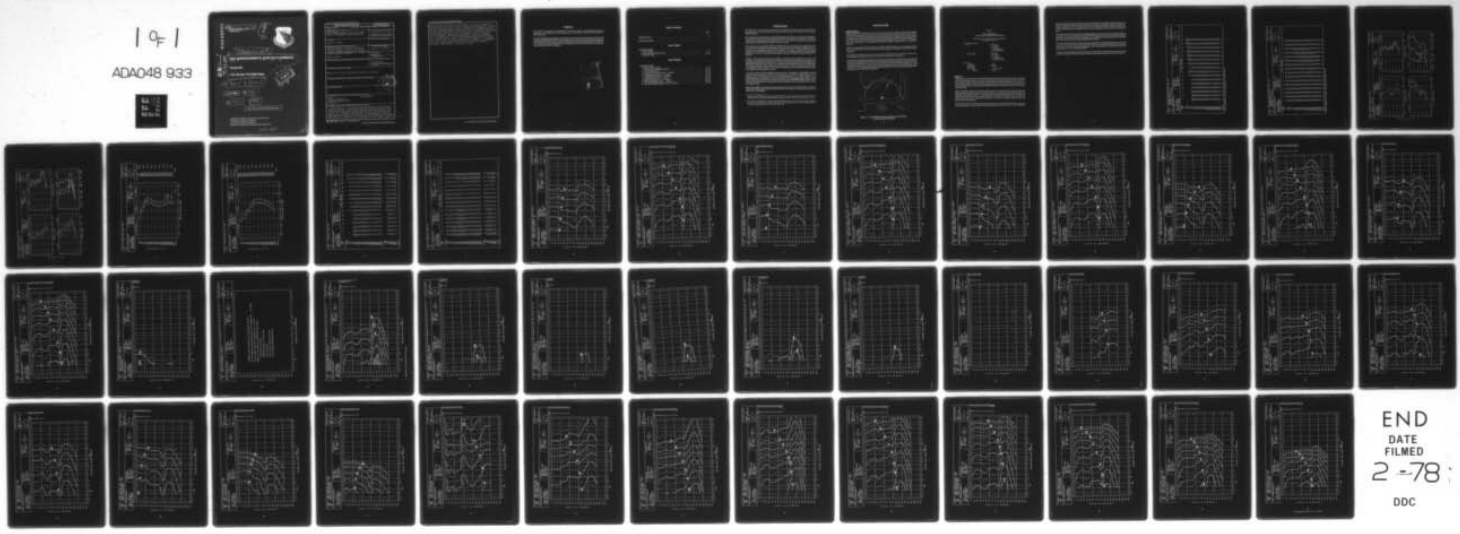
AD-A048 933 AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OHIO F/G 20/1
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 89. T-2C AIRC--ETC(U)
JUN 77 R G POWELL
UNCLASSIFIED AMRL-TR-75-50-VOL-89 NL

1 OF 1
ADA048 933



END
DATE FILMED
2-78
DDC

(14) AMRL-TR-75-50-VOL-89
Volume 89

(2) NW

(9) Technical rept.,

(6)

USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK.

Volume 89.

T-2C Aircraft, Far-Field Noise.

(10) Robert G. Powell

(11) JUN 77 (12) 54 p.

(16) 7231 (17) 04

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

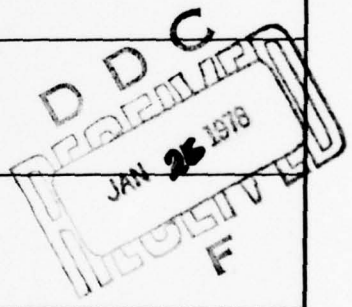
SECURITY CLASSIFICATION OF THIS PAGE *(When Data Entered)*

REPORT DOCUMENTATION PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER: AMRL-TR-75-50, Vol. 89	2. GOVT ACCESSION NO. / 3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)*: USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK: T-2C Aircraft, Far-Field Noise	5. TYPE OF REPORT & PERIOD COVERED: Volume 89 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 7231-04-33
11. CONTROLLING OFFICE NAME AND ADDRESS: Same as above	12. REPORT DATE: June 1977
	13. NUMBER OF PAGES: 54
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)*



18. SUPPLEMENTARY NOTES

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

Noise
Noise Environments
Bioenvironmental Noise
Aircraft
T-2C Aircraft

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

The USN T-2C is a trainer aircraft powered by two J85-GE-4A turbojet engines. This report provides far-field measured and extrapolated data defining both physical and psychoacoustic measures of the bioacoustic environments produced by this aircraft operating on a ground runup pad for two engine/power conditions. Far-field data measured at 16 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

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

derive sets of equal-value contours as a function of angle and distance from the source. These contours are measures of: overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

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

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

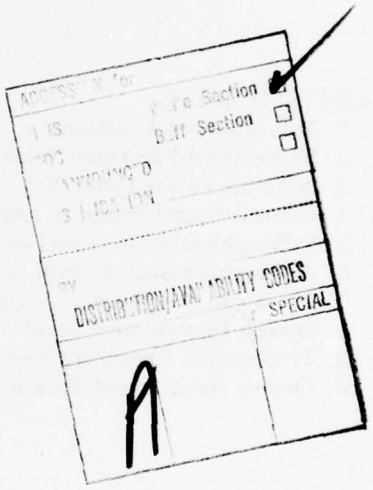


Table of Contents

List of Tables

List of Figures

INTRODUCTION

The USN T-2C is a trainer aircraft powered by two J85-GE-4A turbojet engines. The aircraft was manufactured by the Columbus Division of Rockwell International and the engines by the General Electric Company.

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 T-2C aircraft.

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

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

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

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

---

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

2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired the far-field data during a 1-hour test period, thus keeping similar meteorological conditions throughout the test. Figure 1 shows the ground runup area (taxiway), ground cover, aircraft orientation and microphone measurement sites on the semicircle. The center of the 75 meter radius semicircle used in surveying the J85-GE-4A engines was on the ground directly below the intersection of the aircraft's centerline and the plane passing through both engines, exhaust-nozzle exits. The ground runup area did not have a blast deflector; therefore, the engines' exhausts were in a "free-flow" condition.

Table 1 provides cockpit readouts of engine characteristics (RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

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

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

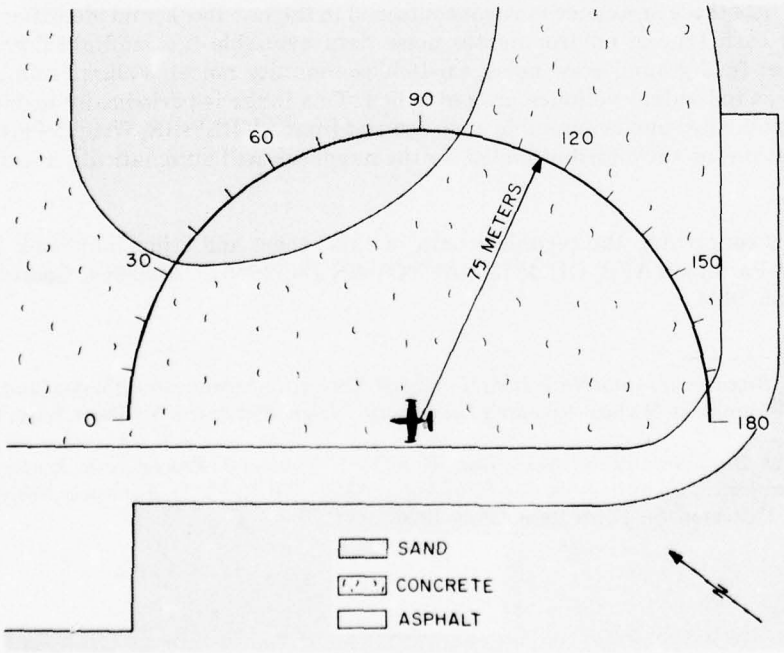


Figure 1. Far-Field Measurement Locations on the Taxiway at ALF, San Clemente Island

TABLE 1

TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

T-2C Aircraft, Ground Runups, ALF, San Clemente Island
Tail #158888, 19 May 1973

Aircraft Engine Operation	
Idle	Both Engines 50 % RPM 31.5 Inches Hg, Engine Pressure 640 LBS/HR, Fuel Flow
Military Power	Both Engines 100 % RPM 65.6 Inches Hg, Engine Pressure 2675 LBS/HR, Fuel Flow
Meteorology	
Temperature	15.6 C
Bar Pressure	0.762 M Hg
Rel Humidity	87 %
Wind — Speed	3.1 M/Sec (6 KTS)
— Direction	240 Deg

RESULTS

Table 2 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 2 which provides a compact summary of the far-field noise characteristics of the T-2C aircraft in a standard format.

Figure 3 and Table 3 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.

Estimates of the noise levels for intermediate power settings (e.g., 85% RPM) and/or different number of engines operating (e.g., single engine) can be determined as explained in Volume 1 of this handbook.

Figures 4 through 10 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 160/170/180 locations for either power setting because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA beow the level measured at the preceding microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 2, idle power).

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

TABLE: 2

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 2

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 16 C
BAR PRESS = .762 M HG
REL HUMID = 87 %

FREQ (HZ)	ANGLE (DEGREES) 0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25																			
31.5															64<	64<			
40											64<	63<	66<	67<	70<	68<			
50							61<	63<	62<	64<	65<	66<	68<	69<	69<	70<			
63								65<		67<	67<	70<	72<	73<	74<	72<			
80	62<	63<	64<	66	66	68	68	68	68	71	70	72	74	75	75	74			
100	66<	66<	67	72	73	76	74	72	75	76	76	80	82	81	83	79			
125	65	65	68	70	69	71	70	70	72	73	74	77	78	80	79	75			
160	69	71	72	71	69	73	72	73	73	74	75	78	79	79	77	71			
200	67	68	70	71	67	71	70	71	71	72	77	78	78	78	75	69			
250	67	69	68	69	69	69	69	68	70	70	75	77	78	78	74	66			
315	68	68	69	68	68	67	68	67	70	69	74	75	76	75	72	65			
400	66	66	69	68	67	65	69	67	70	68	74	75	76	74	68	62			
500	67	66	68	68	66	65	68	68	70	66	73	75	76	72	67	61			
630	66	66	68	69	67	65	68	68	70	68	74	76	77	76	68	64			
800	66	66	66	69	66	65	68	67	67	63	71	75	75	73	68	63			
1000	69	69	69	71	68	66	68	68	69	65	72	74	74	69	66	59			
1250	70	70	70	72	69	67	69	69	69	66	73	75	74	69	65	58			
1600	77	75	75	75	73	70	72	71	69	64	72	74	73	68	63	57			
2000	76	76	74	75	74	72	71	71	69	65	72	73	72	67	62	57			
2500	73	74	72	75	73	71	72	71	68	64	72	73	72	67	61	57			
3150	74	74	73	75	72	71	73	71	69	64	72	72	71	66	62	58			
4000	89	90	90	88	86	82	81	79	71	68	73	73	72	68	65	59			
5000	79	80	80	80	78	75	75	73	67	63	70	70	70	65	61	56			
6300	74	77	75	76	75	72	72	70	66	61	69	68	67	62	59	55			
8000	83	86	83	84	83	80	78	77	71	65	74	72	71	66	63	59			
10000	71	73	71	72	72	69	68	67	63	56	65	64	64	58	55	50<			
OVERALL	91	92	92	91	89	87	86	85	83	83	87	88	89	88	87	83			

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: 2

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

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 16 C
BAR PRESS = .762 M HG
REL HUMID = 87 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 2

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

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

2

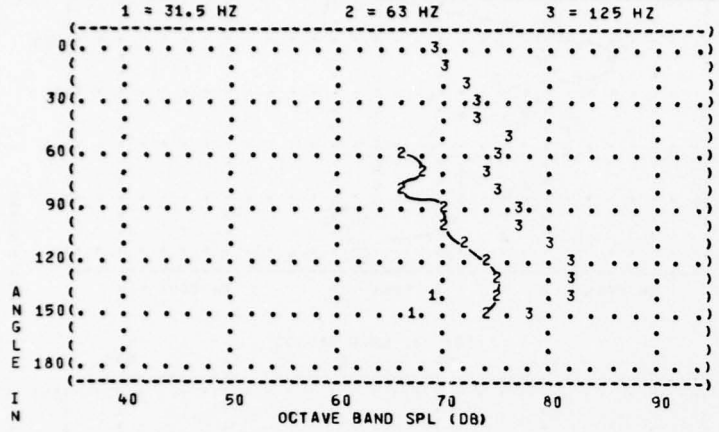
DISTANCE = 100 METERS

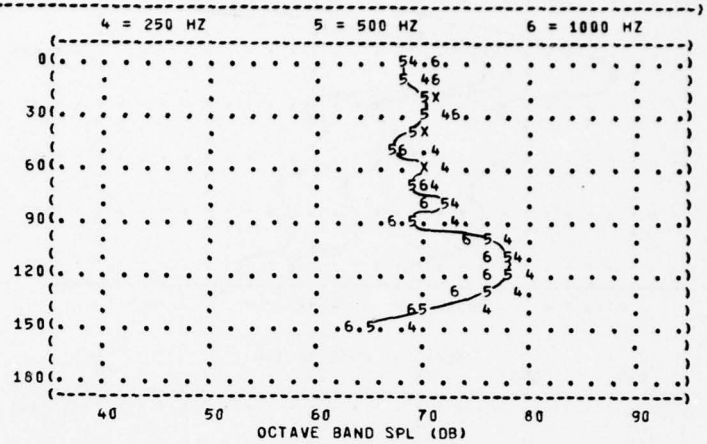
NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

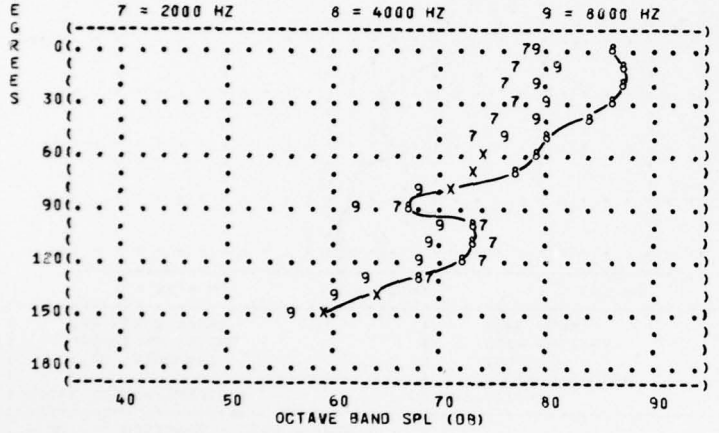
OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 6







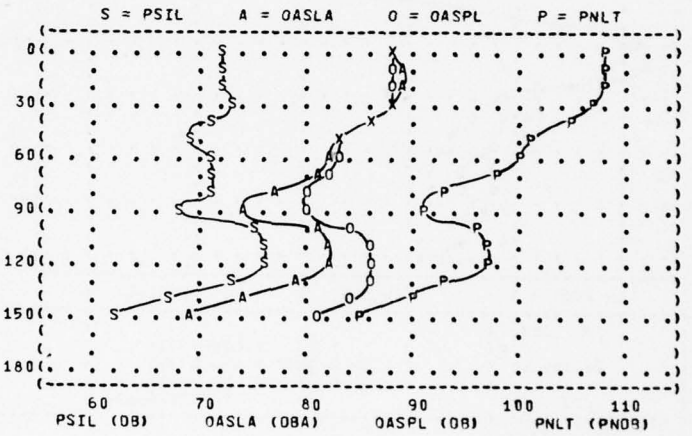


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02

09 MAY 75

PAGE 6

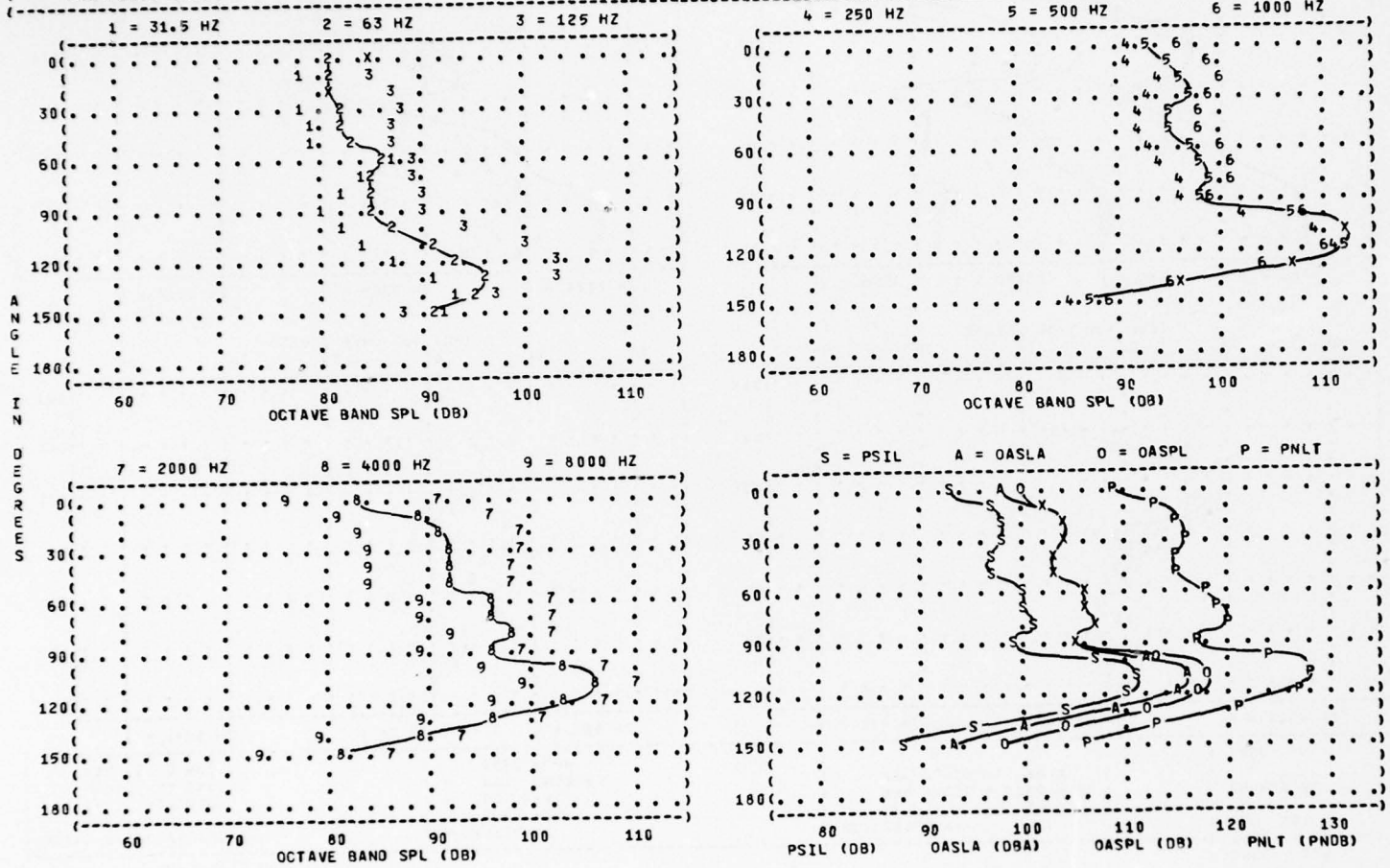


FIGURE: ACOUSTIC POWER LEVEL (PWL)

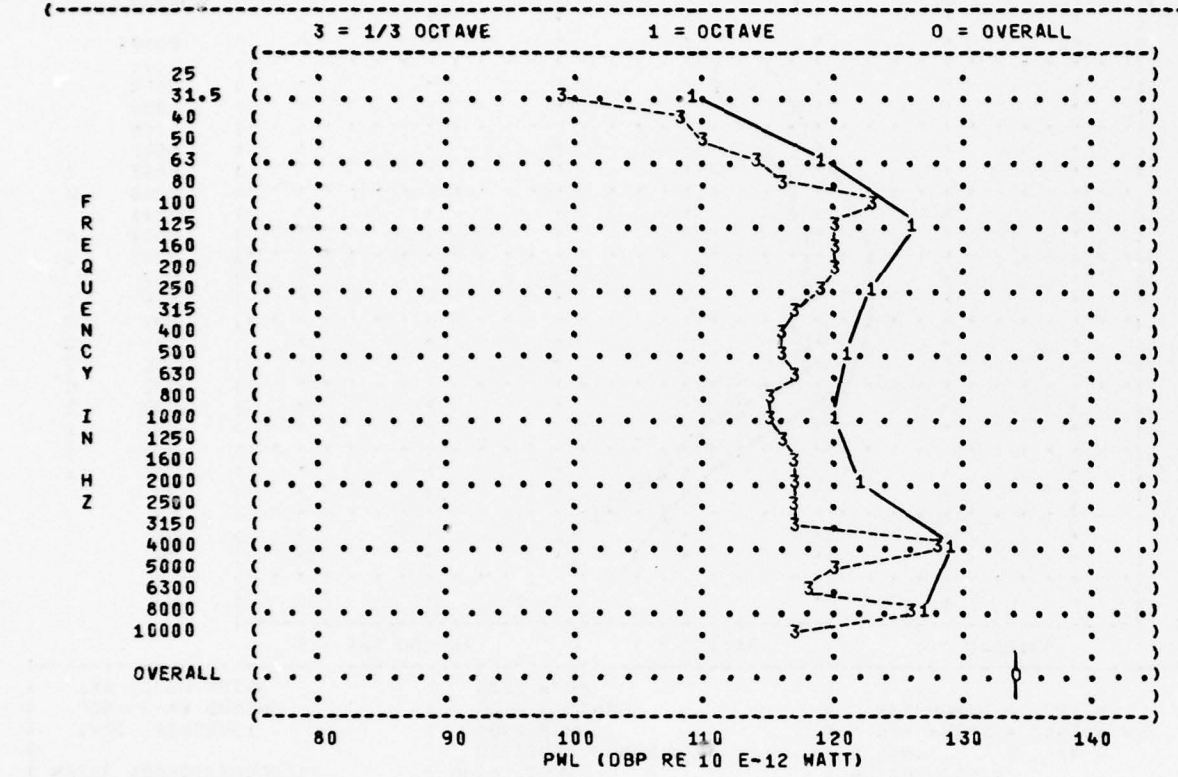
3

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 16 C
BAR PRESS = .762 M HG
REL HUMID = 87 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 3



FREQUENCY (HZ)	PWL 1/3 OCTAVE	PWL OCTAVE
25		
31.5	99.1	108.5
40	108.0	
50	110.2	
63	113.5	118.6
80	116.0	
100	122.9	
125	120.0	126.0
160	120.1	
200	119.6	
250	118.6	123.3
315	117.0	
400	116.3	
500	116.1	121.4
630	117.4	
800	115.4	
1000	115.2	120.3
1250	115.9	
1600	116.9	
2000	117.1	121.7
2500	116.9	
3150	117.0	
4000	128.0	129.0
5000	120.4	
6300	117.7	
8000	126.1	127.2
10000	117.1	
OVERALL		133.8

FIGURE: ACOUSTIC POWER LEVEL (PWL)

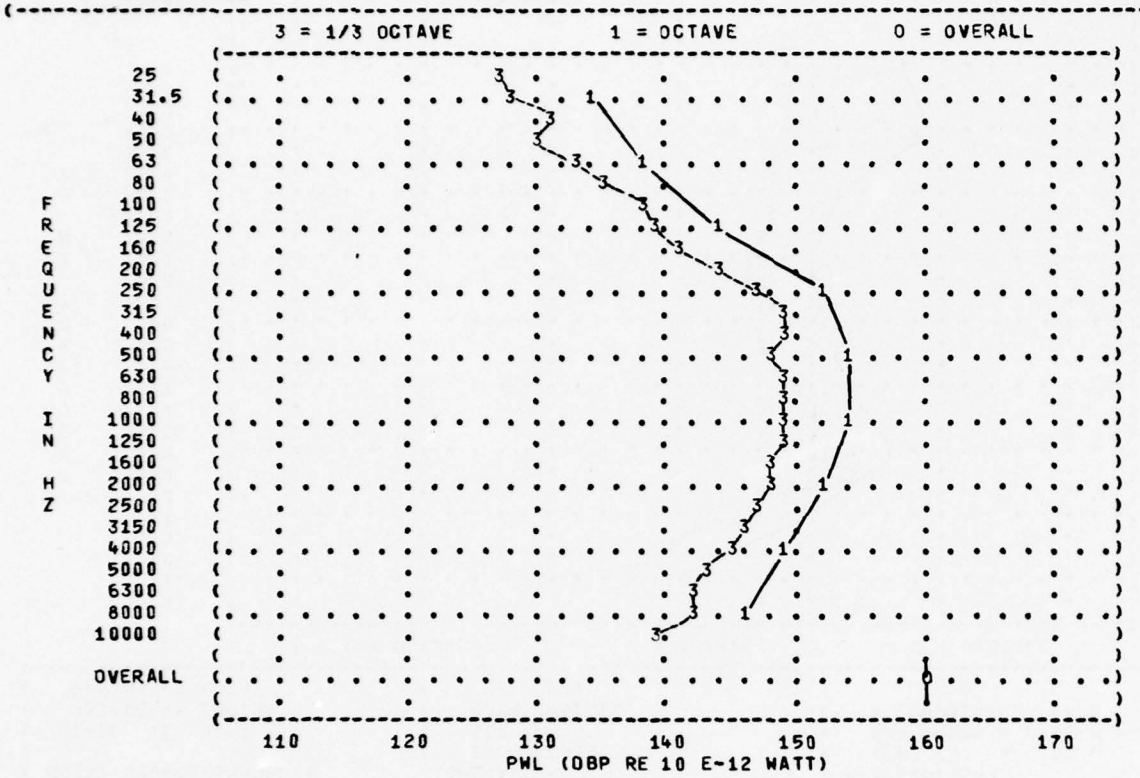
3

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 16 C
BAR PRESS = .762 M HG
REL HUMID = 87 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 3



	PWL	
	1/3 OCTAVE	OCTAVE
25	127.4	
31.5	128.0	133.9
40	131.1	
50	130.1	
63	133.0	137.7
80	134.6	
100	137.6	
125	139.2	144.3
160	141.0	
200	143.5	
250	146.8	151.6
315	148.6	
400	149.3	
500	148.3	153.7
630	149.1	
800	148.6	
1000	149.0	153.5
1250	148.6	
1600	148.1	
2000	147.8	152.3
2500	146.6	
3150	145.6	
4000	144.7	149.2
5000	142.6	
6300	141.6	
8000	141.8	145.8
10000	139.4	
OVERALL		159.7

FREQUENCY

TABLE: DIRECTIVITY INDEX (DB)

3

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

OPERATION:
IDLE POWER
50% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 16 C
BAR PRESS = .762 M HG
REL HUMID = 87 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 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																			
31.5															10	10			
40											1	1	3	4	7	5			
50							-4	-2	-3	-0	-0	1	3	4	4	5			
63								-3		-1	-1	2	4	5	6	4			
80	-9	-8	-6	-5	-4	-2	-3	-3	-3	-0	-1	1	3	4	4	3			
100	-12	-12	-11	-6	-5	-2	-3	-6	-3	-2	-1	2	4	4	5	1			
125	-10	-9	-7	-4	-5	-4	-5	-5	-3	-2	-0	2	4	5	5	0			
160	-6	-4	-3	-4	-6	-2	-3	-2	-2	-1	-0	3	4	4	2	-4			
200	-8	-7	-4	-4	-7	-4	-4	-3	-3	-3	3	4	4	4	0	-6			
250	-7	-5	-5	-4	-4	-4	-4	-5	-3	-3	1	3	5	5	0	-8			
315	-4	-4	-3	-4	-4	-4	-3	-5	-2	-3	3	3	4	3	-0	-7			
400	-5	-5	-2	-3	-4	-6	-2	-4	-1	-3	3	4	5	3	-3	-9			
500	-4	-5	-3	-3	-5	-6	-3	-3	-1	-5	2	5	5	2	-4	-10			
630	-6	-6	-4	-3	-5	-7	-4	-4	-2	-4	2	4	5	4	-4	-8			
800	-4	-4	-4	-1	-4	-5	-2	-3	-3	-7	1	5	5	3	-2	-7			
1000	-1	-0	-0	1	-2	-4	-2	-2	-1	-5	2	4	4	-1	-3	-11			
1250	-0	-1	-0	2	-2	-4	-1	-1	-1	-4	2	4	4	-1	-5	-13			
1600	6	4	4	4	1	-1	1	0	-2	-7	1	2	1	-4	-8	-15			
2000	4	5	3	4	3	1	0	-0	-3	-6	1	2	1	-4	-9	-14			
2500	3	4	2	4	2	1	1	1	-3	-7	2	2	1	-4	-10	-14			
3150	3	3	2	5	2	1	2	1	-2	-6	2	1	1	-5	-9	-13			
4000	8	8	9	7	5	1	-0	-3	-10	-13	-8	-8	-9	-14	-17	-22			
5000	5	7	7	6	5	2	2	-1	-6	-11	-3	-3	-4	-8	-13	-17			
6300	4	7	5	6	5	2	2	-0	-4	-9	-1	-2	-3	-8	-11	-15			
8000	5	8	5	7	6	2	1	-0	-6	-12	-4	-5	-6	-11	-14	-18			
10000	5	7	5	6	5	2	2	0	-4	-11	-1	-3	-3	-8	-12	-16			
OCTAVE																			
31.5															8	6			
63							-5	-3	-4	-1	-1	1	3	4	5	3			
125	-9	-8	-7	-5	-5	-2	-4	-5	-3	-2	-1	2	4	4	4	0			
250	-6	-5	-4	-4	-5	-4	-4	-4	-3	-3	2	4	4	4	0	-6			
500	-5	-5	-3	-3	-5	-6	-3	-4	-2	-4	2	4	5	3	-4	-9			
1000	-1	-1	-1	1	-2	-4	-2	-2	-2	-5	2	4	4	1	-3	-9			
2000	5	4	3	4	2	0	1	0	-2	-7	1	2	1	-4	-9	-14			
4000	8	8	8	7	5	1	0	-2	-8	-12	-5	-6	-6	-11	-15	-20			
8000	5	8	5	6	5	2	1	-0	-5	-12	-3	-4	-5	-10	-14	-17			
OVERALL	4	5	5	4	2	-1	-1	-2	-4	-5	-1	1	2	1	-0	-4			

TABLE: DIRECTIVITY INDEX (DB)

3

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

OPERATION:
MILITARY POWER
100% RPM
BOTH ENGINES
FREE FLOW

METEOROLOGY:
TEMP = 16 C
BAR PRESS = .762 M HG
REL HUMID = 87 %

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 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	1	-10	-5	-9	-8	-9	3	-2	-6	-7	-3	-2	-1	4	5	7			
31.5	-0	-7	-5	-7	-5	-6	1	-2	-5	-5	-5	-1	1	3	6	5			
40	-5	-9	-6	-8	-8	-7	-0	-2	-4	-6	-4	-3	1	5	7	5			
50	-7	-7	-8	-7	-6	-6	-2	-3	-3	-5	-2	-1	2	5	6	5			
63	-8	-8	-8	-7	-8	-6	-4	-4	-4	-5	-4	0	3	6	6	2			
80	-11	-10	-10	-9	-8	-8	-5	-5	-6	-6	-3	2	4	7	5	-0			
100	-10	-11	-10	-9	-9	-9	-7	-6	-6	-7	-3	2	5	7	4	-4			
125	-12	-11	-10	-8	-9	-9	-8	-7	-7	-7	-2	3	7	6	1	-9			
160	-11	-11	-9	-9	-9	-9	-8	-8	-6	-6	-3	4	7	7	-5	-14			
200	-14	-13	-11	-10	-12	-10	-10	-8	-7	-7	-3	4	8	5	-12	-17			
250	-13	-12	-10	-10	-12	-12	-11	-9	-8	-9	-2	6	8	4	-10	-17			
315	-13	-12	-10	-10	-12	-11	-10	-10	-8	-8	-1	5	8	3	-5	-20			
400	-13	-11	-10	-9	-12	-11	-10	-9	-8	-8	0	6	7	2	-7	-20			
500	-13	-11	-10	-9	-11	-9	-8	-8	-7	-7	2	7	6	1	-11	-18			
630	-13	-10	-10	-9	-10	-10	-7	-7	-7	-7	1	7	6	1	-13	-17			
800	-12	-8	-9	-8	-9	-8	-6	-5	-5	-7	2	7	5	-0	-12	-17			
1000	-8	-6	-5	-6	-7	-8	-5	-4	-5	-6	3	7	5	-1	-11	-15			
1250	-9	-6	-4	-5	-6	-6	-4	-4	-3	-6	3	7	4	-2	-9	-17			
1600	-10	-6	-3	-3	-4	-5	-2	-2	-2	-5	3	6	4	-2	-9	-18			
2000	-14	-8	-6	-5	-6	-6	-2	-2	-1	-4	3	6	4	-3	-11	-17			
2500	-14	-8	-6	-6	-6	-5	-2	-2	-0	-4	3	6	3	-3	-11	-17			
3150	-16	-11	-8	-8	-8	-8	-4	-3	-2	-3	3	7	4	-3	-11	-17			
4000	-16	-10	-8	-7	-7	-7	-3	-2	-1	-4	3	6	4	-3	-9	-18			
5000	-15	-9	-7	-6	-7	-6	-2	-2	0	-3	3	6	3	-4	-10	-19			
6300	-16	-11	-9	-8	-8	-8	-3	-2	-0	-4	3	7	4	-4	-13	-19			
8000	-16	-11	-10	-9	-9	-9	-5	-4	-2	-4	3	7	4	-3	-13	-19			
10000	-18	-12	-10	-9	-9	-8	-5	-4	-1	-5	1	8	3	-4	-15	-20			
OCTAVE																			
31.5	-2	-9	-5	-8	-7	-7	1	-2	-4	-6	-4	-2	0	4	6	5			
63	-9	-9	-9	-8	-7	-7	-4	-4	-5	-5	-3	1	3	6	6	2			
125	-11	-11	-10	-9	-9	-9	-8	-7	-6	-7	-3	3	6	7	0	-8			
250	-13	-12	-10	-10	-12	-11	-10	-9	-8	-8	-2	5	8	3	-7	-18			
500	-13	-11	-10	-9	-11	-10	-8	-8	-7	-7	1	7	7	1	-9	-18			
1000	-10	-6	-6	-6	-7	-7	-5	-5	-4	-6	2	7	5	-1	-11	-16			
2000	-12	-7	-5	-4	-5	-5	-2	-2	-1	-4	3	6	4	-3	-10	-17			
4000	-16	-10	-8	-7	-7	-7	-3	-3	-1	-3	3	7	4	-3	-10	-18			
8000	-16	-11	-9	-8	-8	-8	-4	-3	-1	-4	3	7	4	-4	-13	-19			
OVERALL	-12	-9	-7	-7	-8	-8	-5	-5	-4	-6	2	6	6	1	-7	-14			

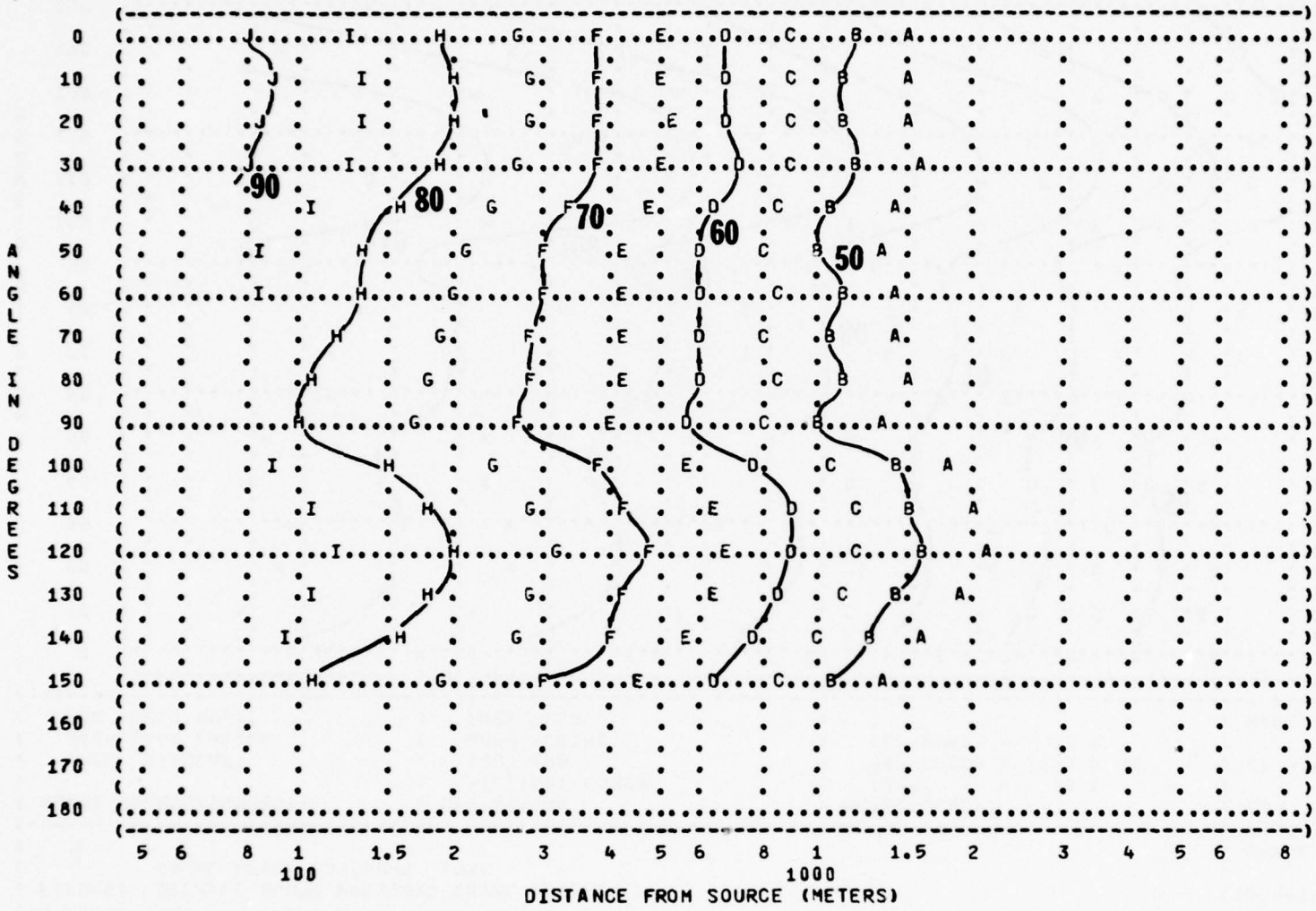
FIGURE: 4 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 MAY 75
PAGE 13



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

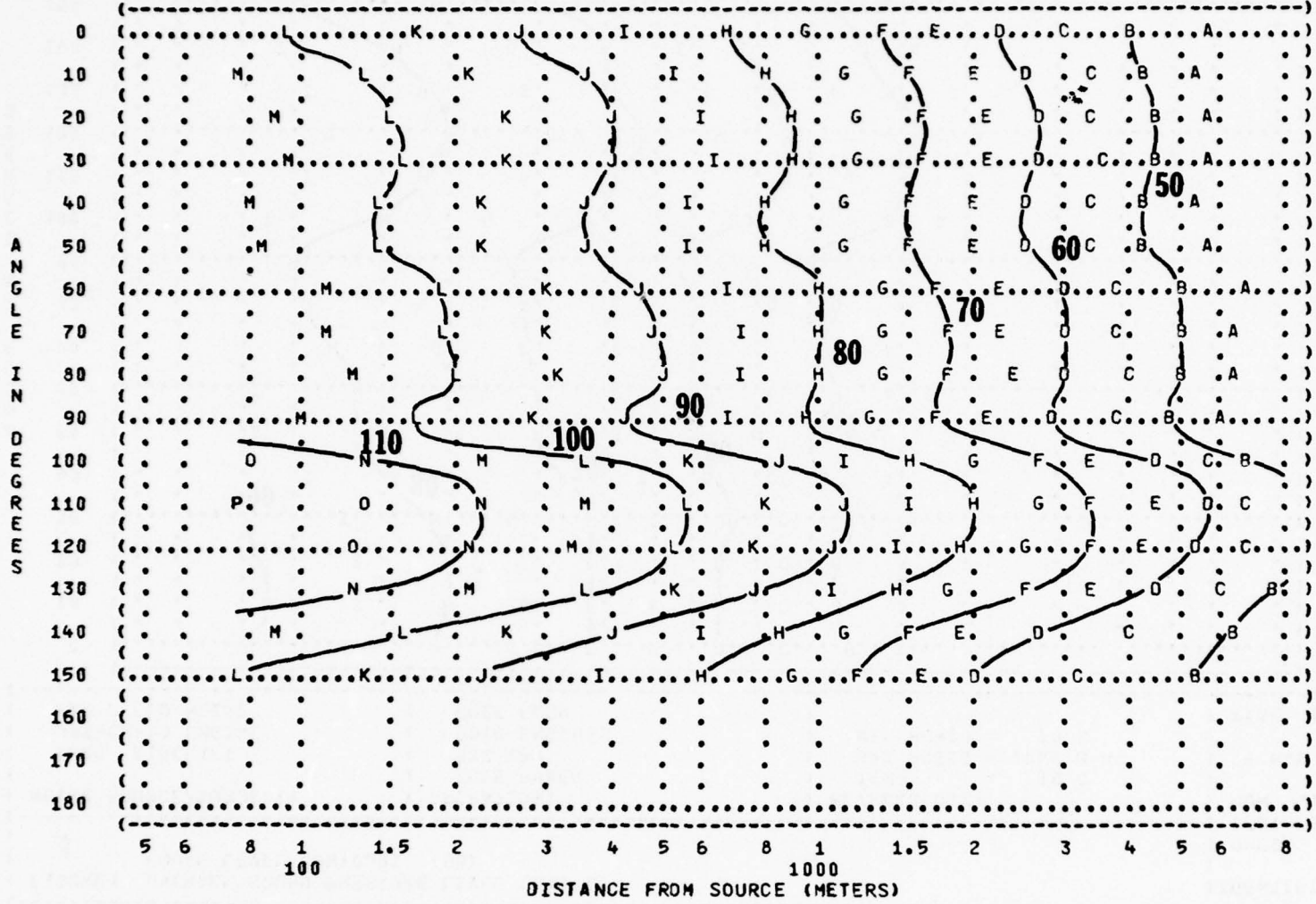
FIGURE 4 OVERALL SOUND PRESSURE LEVEL (OASPL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 13



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

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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	DBC
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90

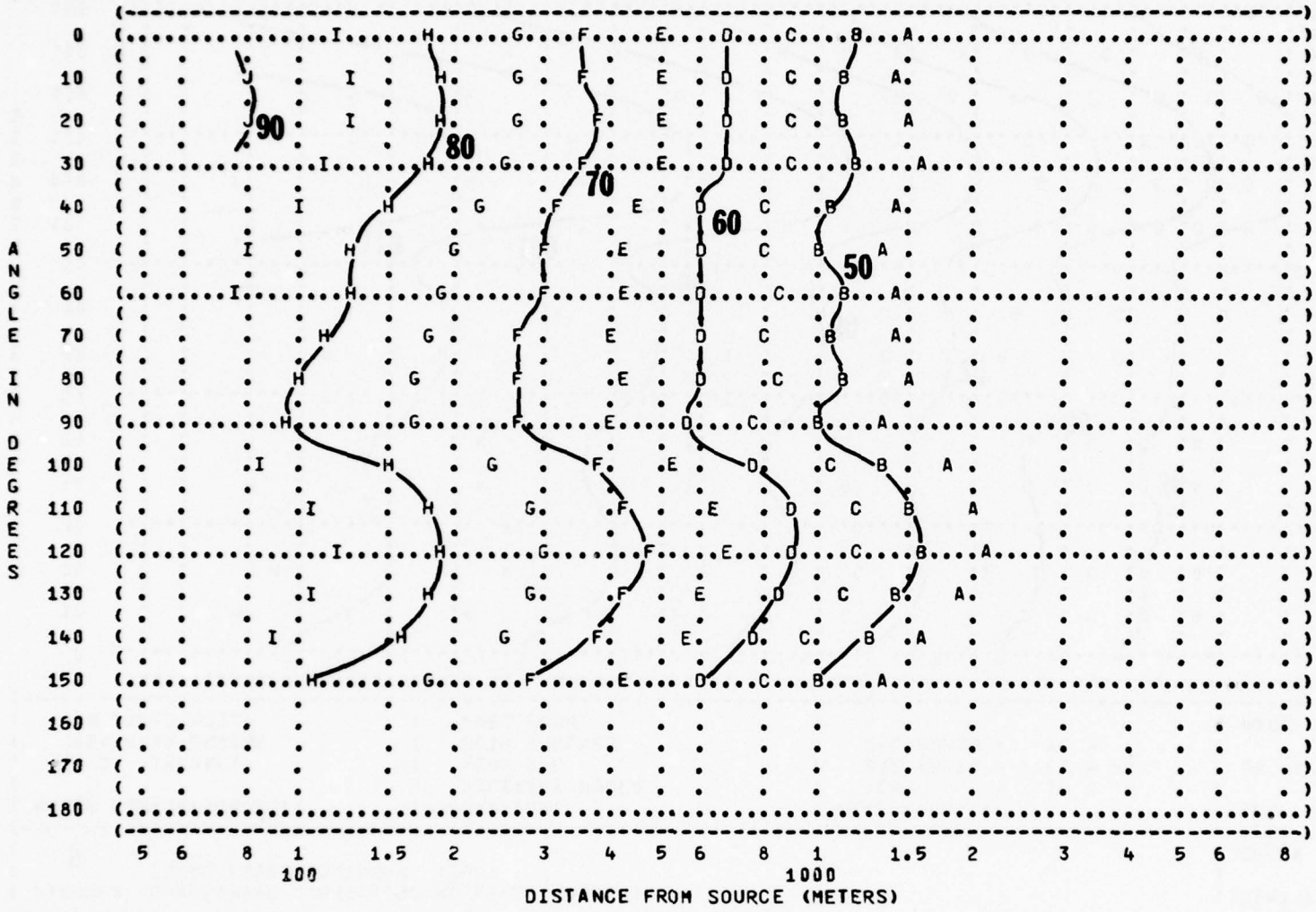


FIGURE 5 C-WEIGHTED OVERALL SOUND LEVEL (OASLC) EQUAL LEVEL CONTOURS (DBC)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 14

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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

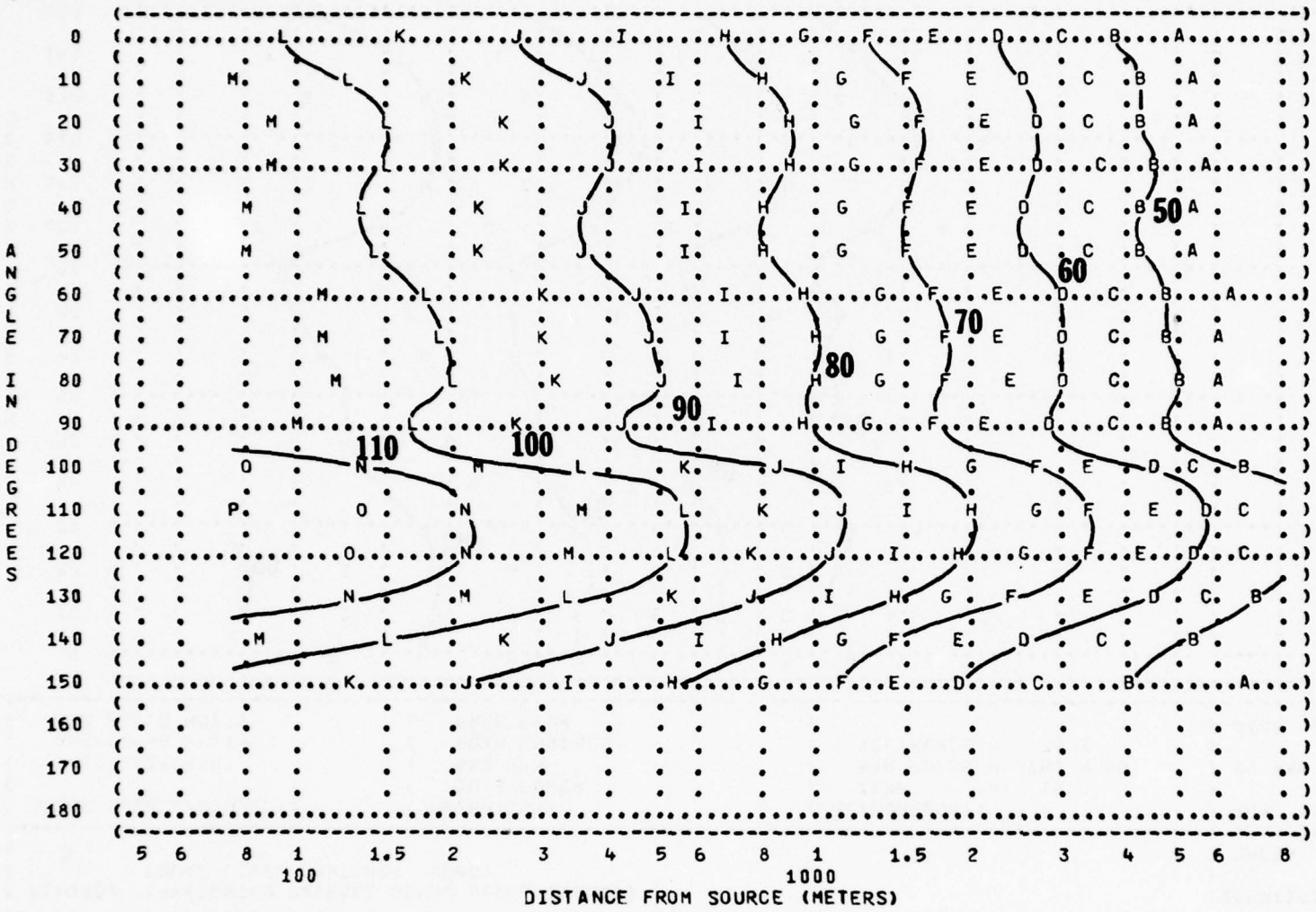


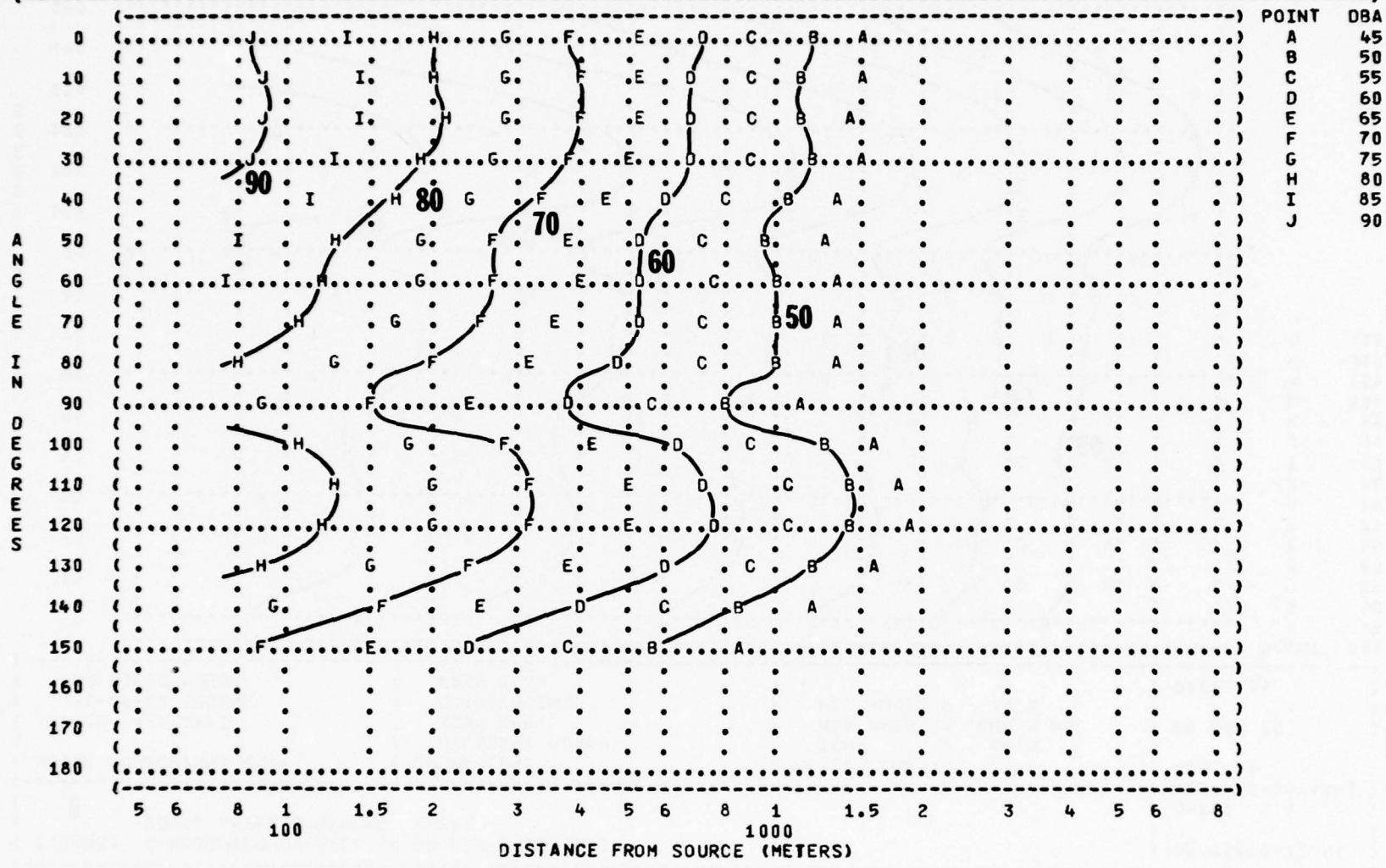
FIGURE: 6 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 15

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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	DBA
A	45
B	50
C	55
D	60
E	65
F	70
G	75
H	80
I	85
J	90

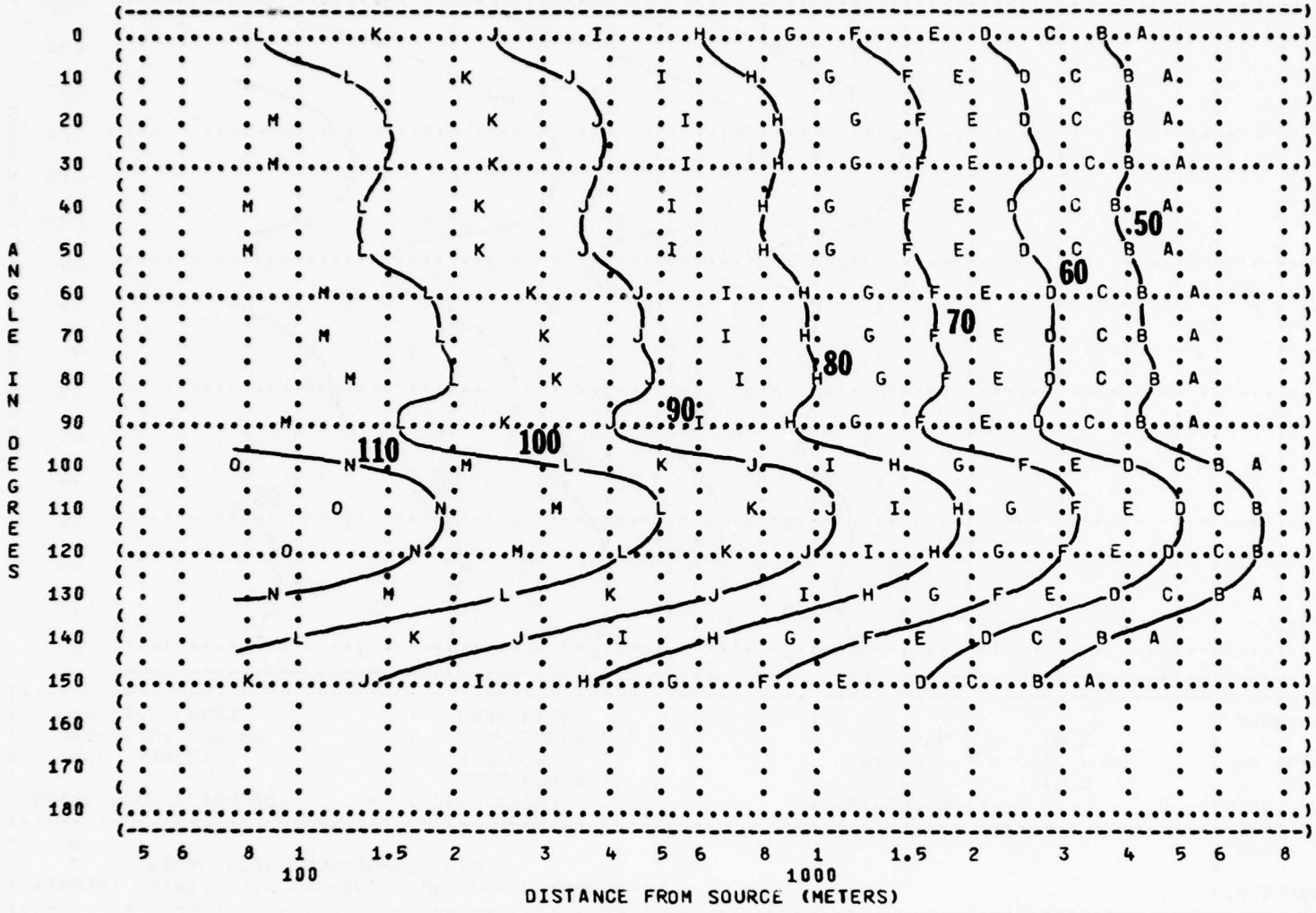
FIGURE: 6 A-WEIGHTED OVERALL SOUND LEVEL (OASLA) EQUAL LEVEL CONTOURS (DBA)

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 15



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

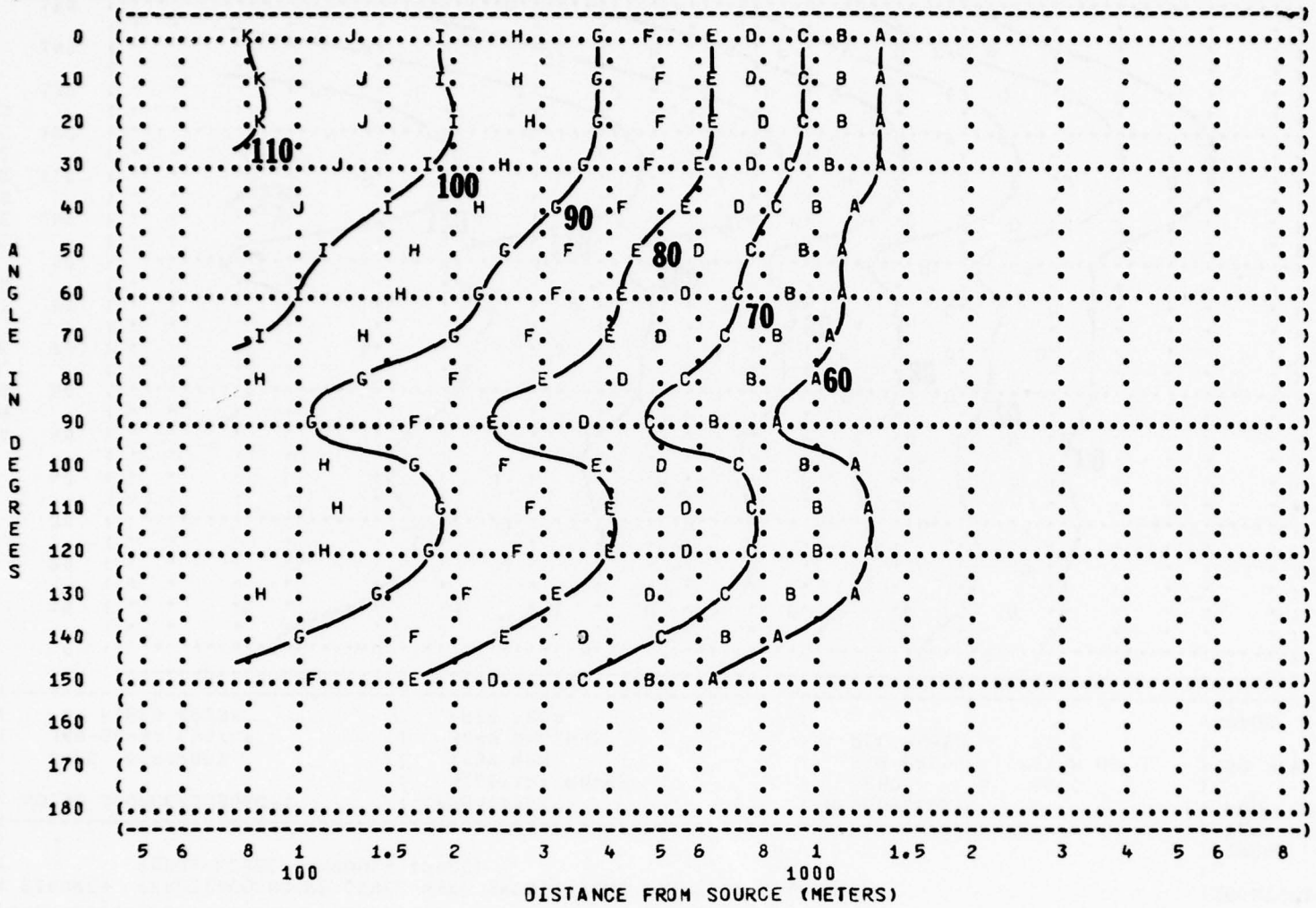
FIGURE: 7 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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
I	100
J	105
K	110

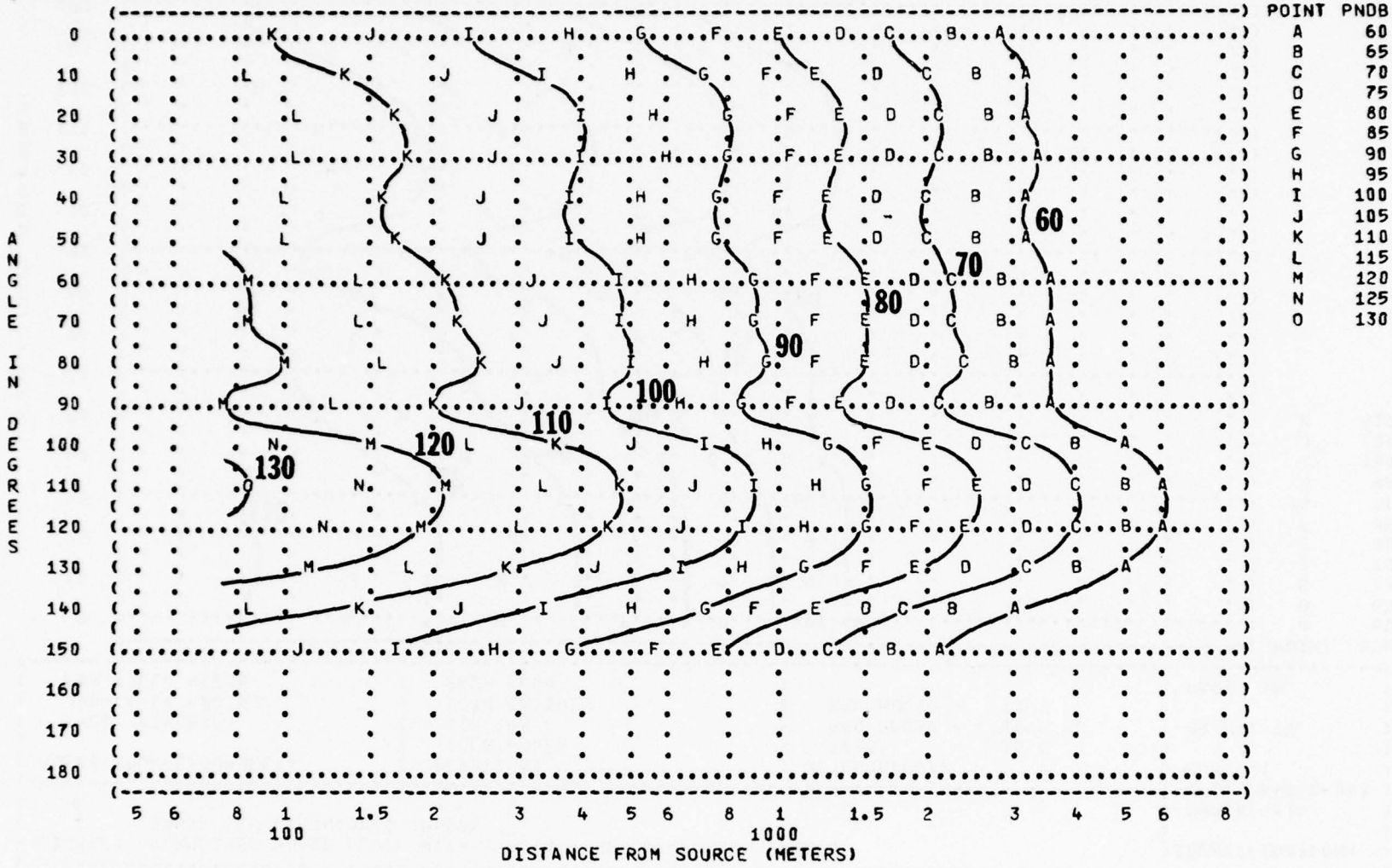
FIGURE: 7 PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)
EQUAL LEVEL CONTOURS (PNDB)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 16

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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
O	130

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

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 MAY 75
PAGE 17

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

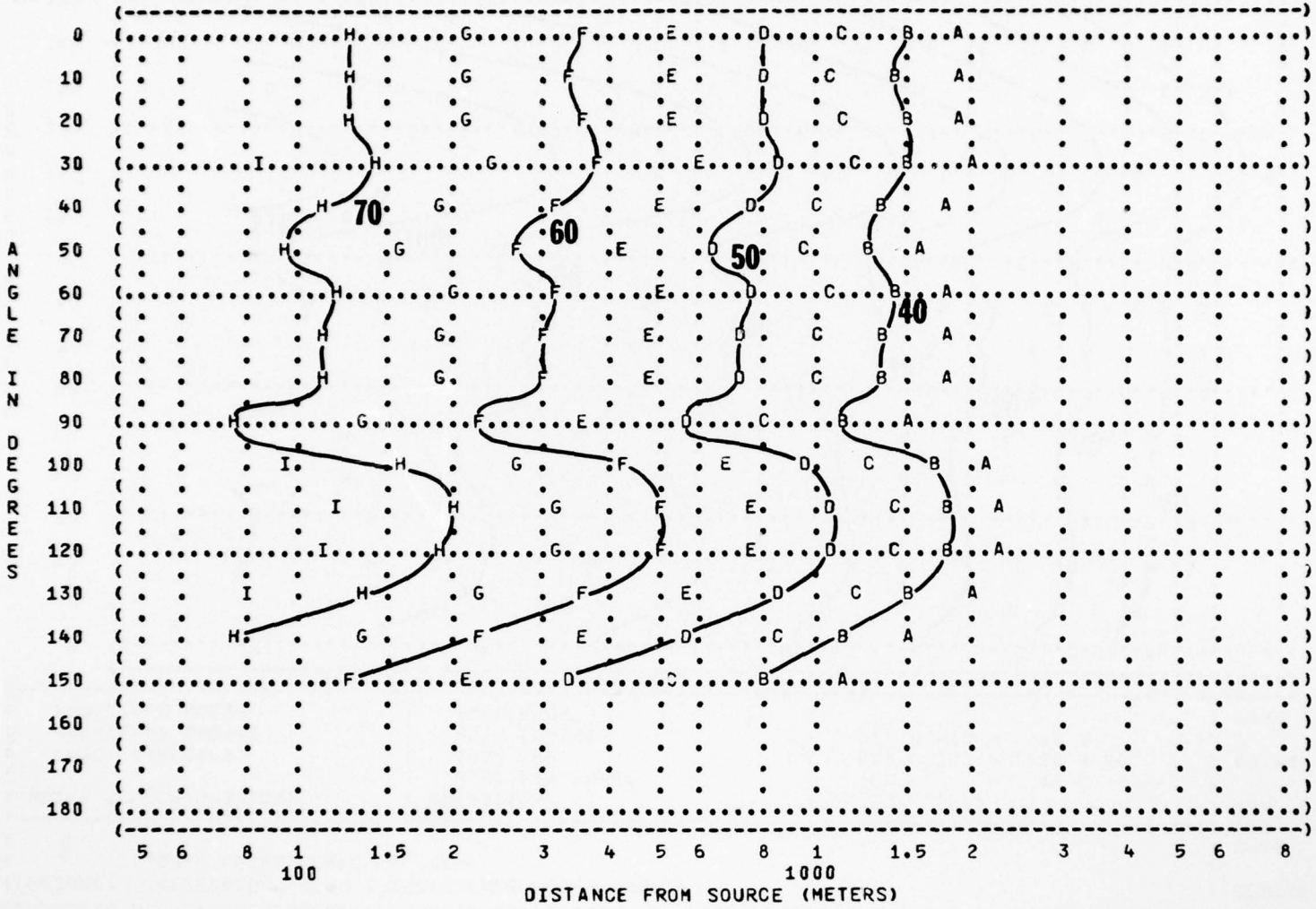


FIGURE 8 PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 17

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

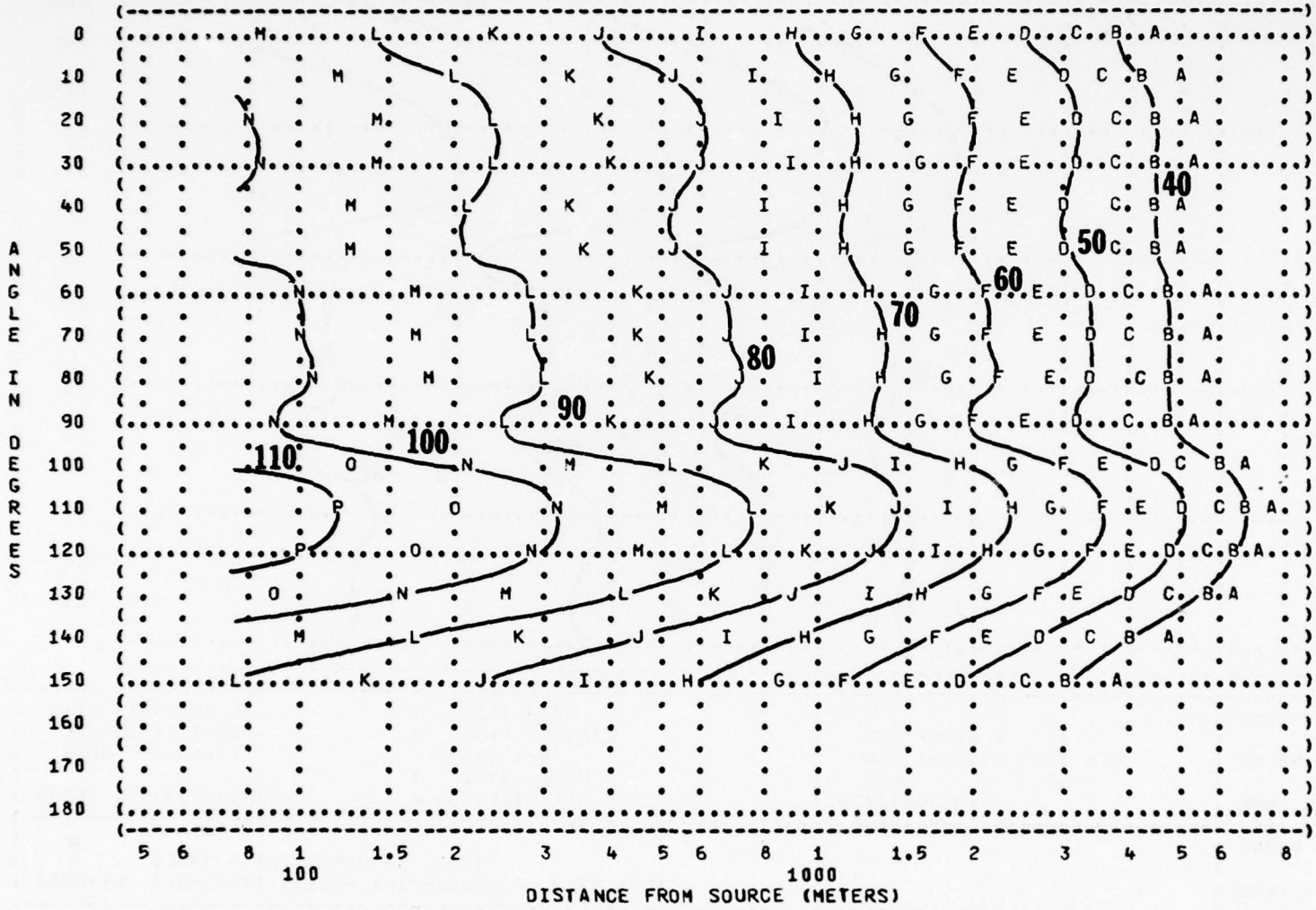


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01

09 MAY 75

PAGE 7

POINT	MIN
A	960
B	480
C	240
D	120

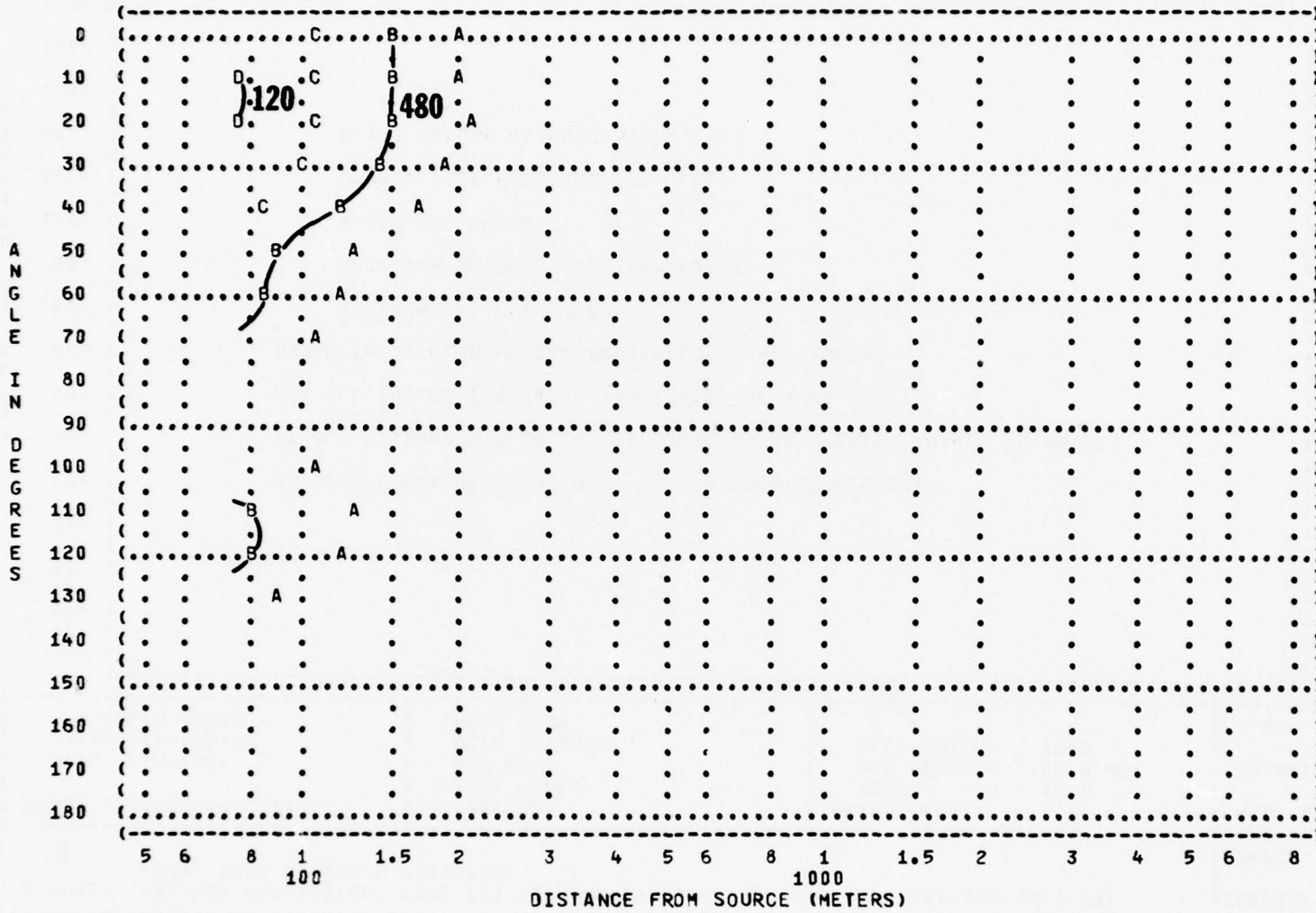


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 8

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 %

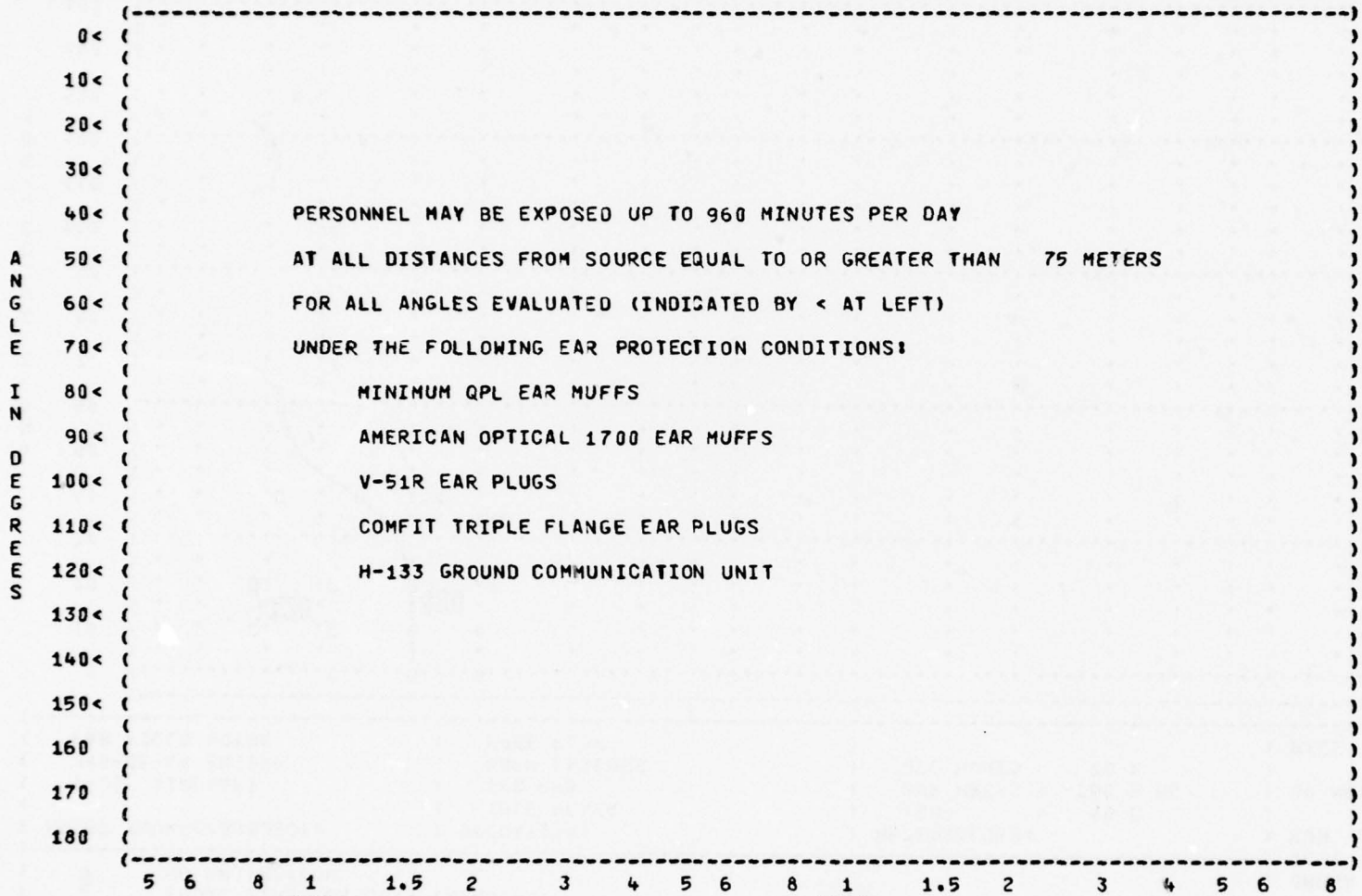


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
NO PROTECTION

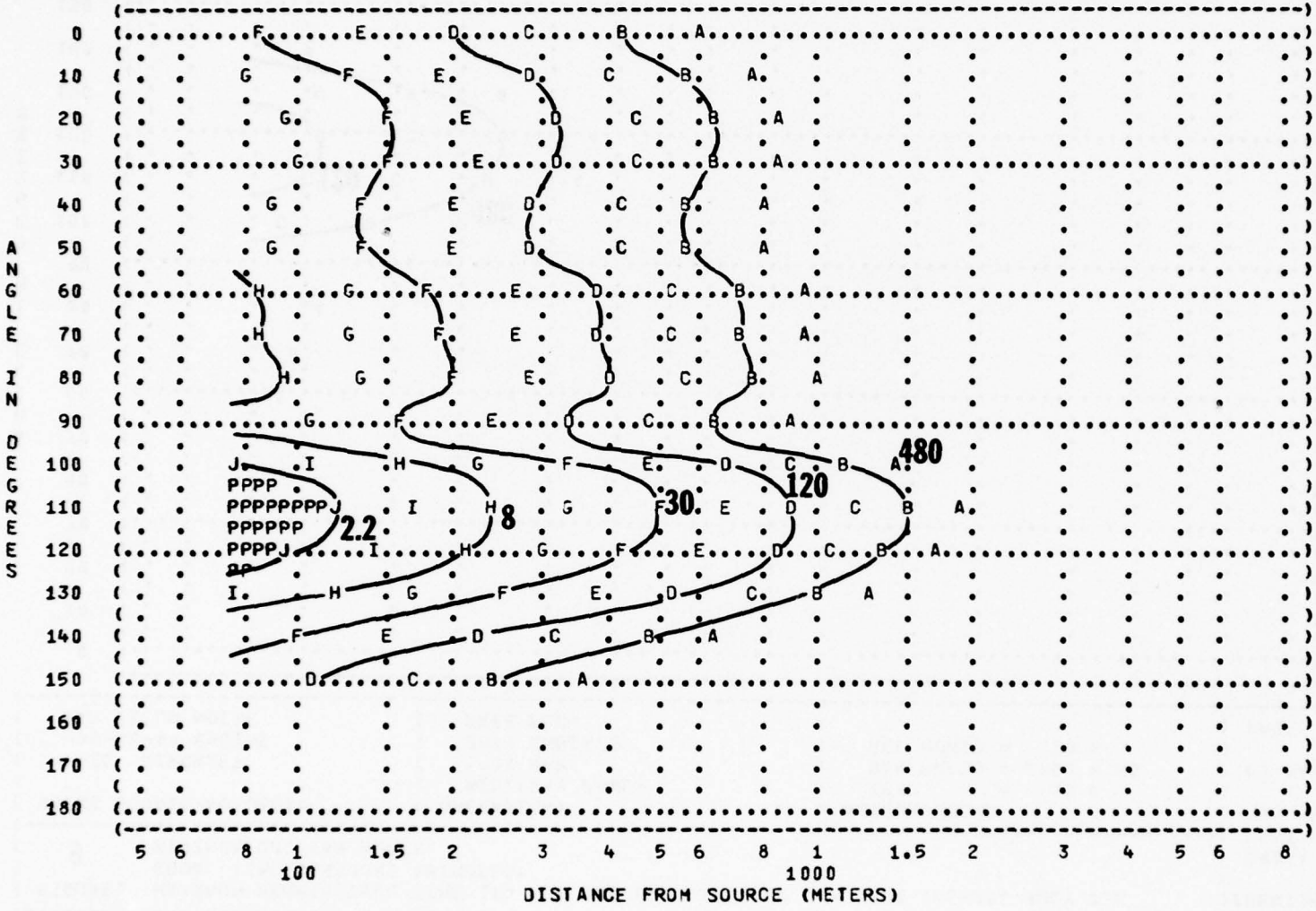
NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A ENGINE
FAR FIELD NOISE

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 75-002-043
RUN 02
09 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 9: 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:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 8

POINT	MIN
A	960
B	480
C	240
D	120

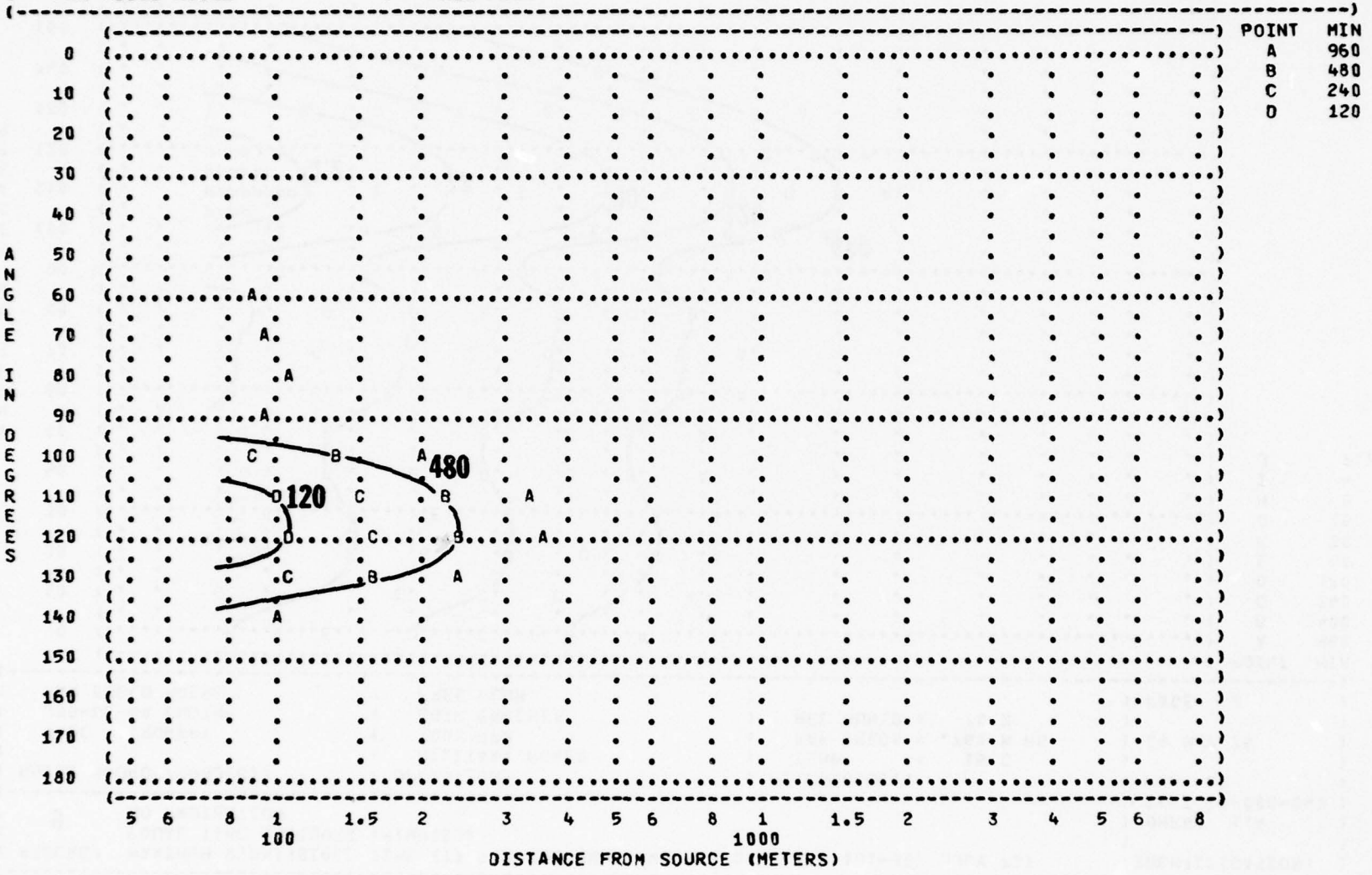


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
AMERICAN OPTICAL 1700 EAR MUFFS

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 9

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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

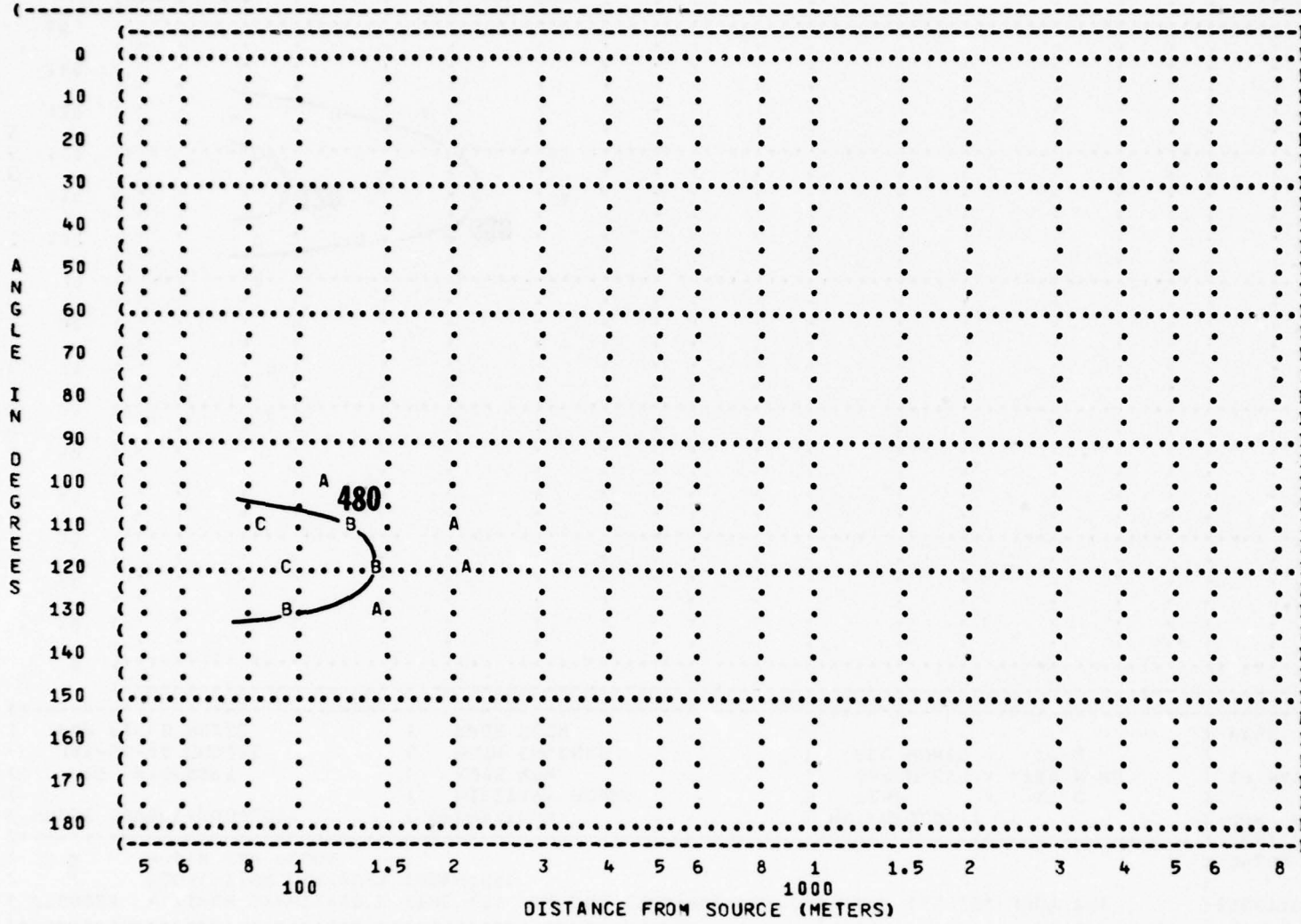


FIGURE 9: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
EQUAL TIME CONTOURS (MINUTES)
V-51R EAR PLUGS

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 10

POINT	MIN
A	960
B	480
C	240
D	120

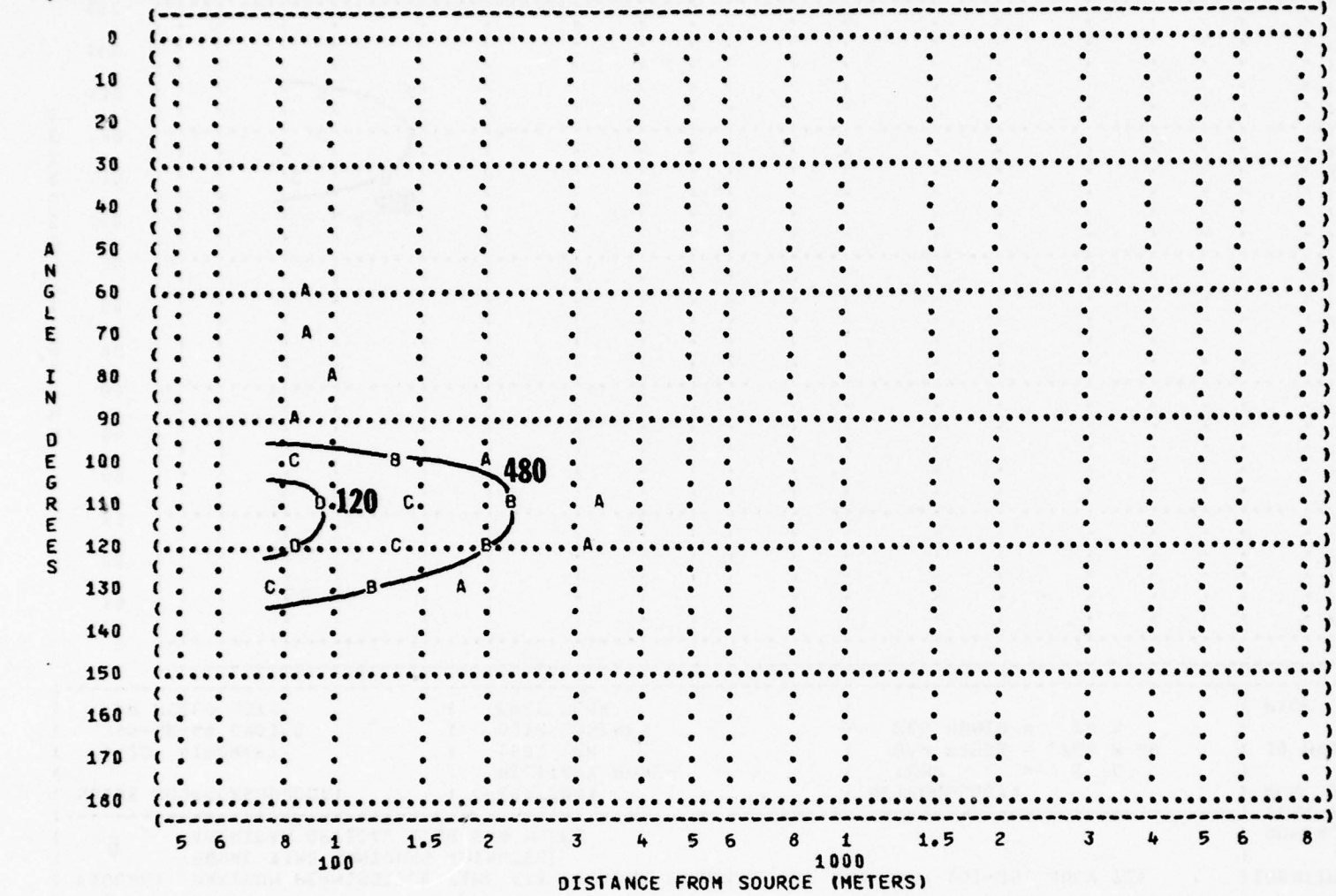


FIGURE: 9

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:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 11

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

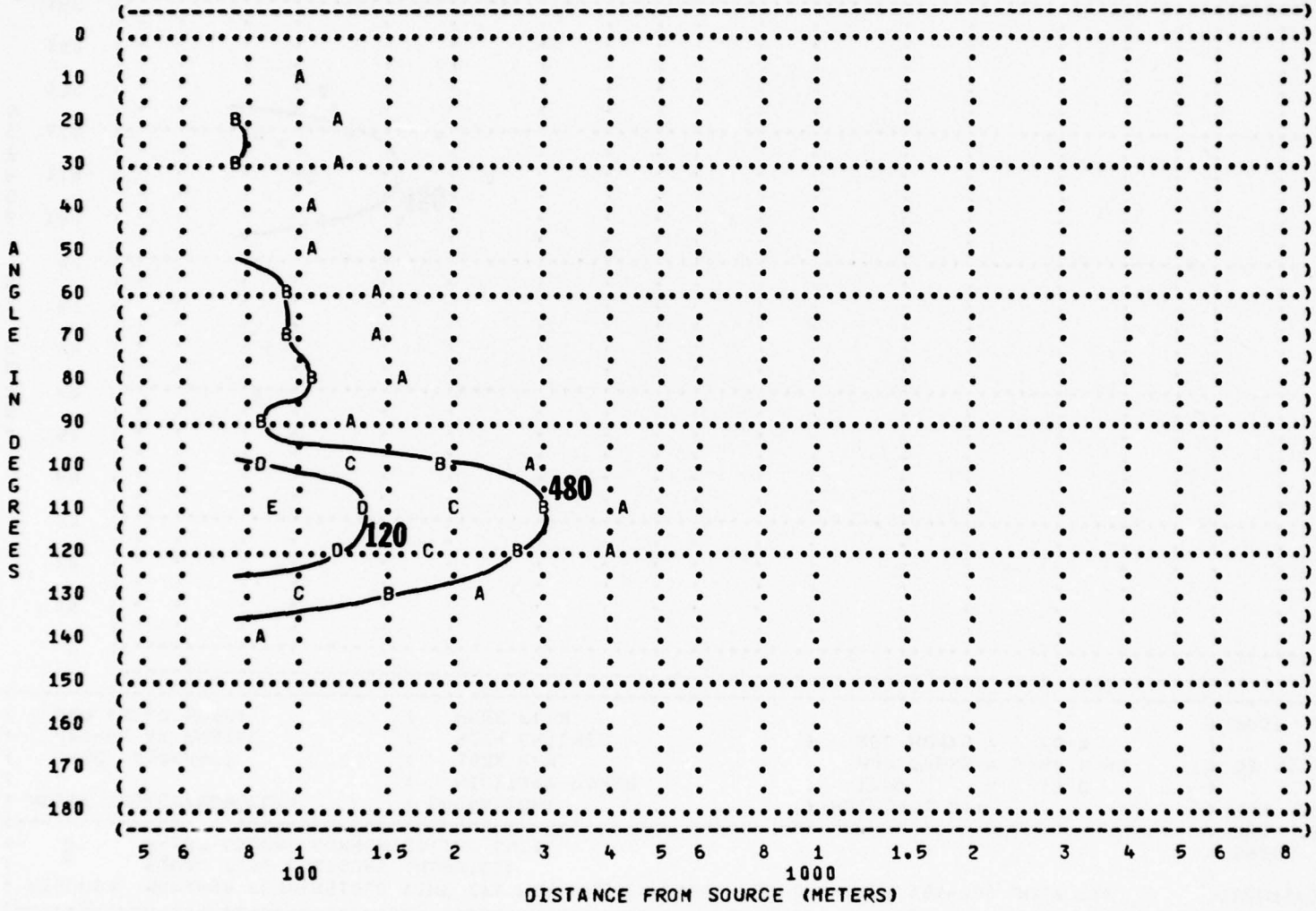


FIGURE: 9

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 75-002-043
RUN 02
09 MAY 75
PAGE 12

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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

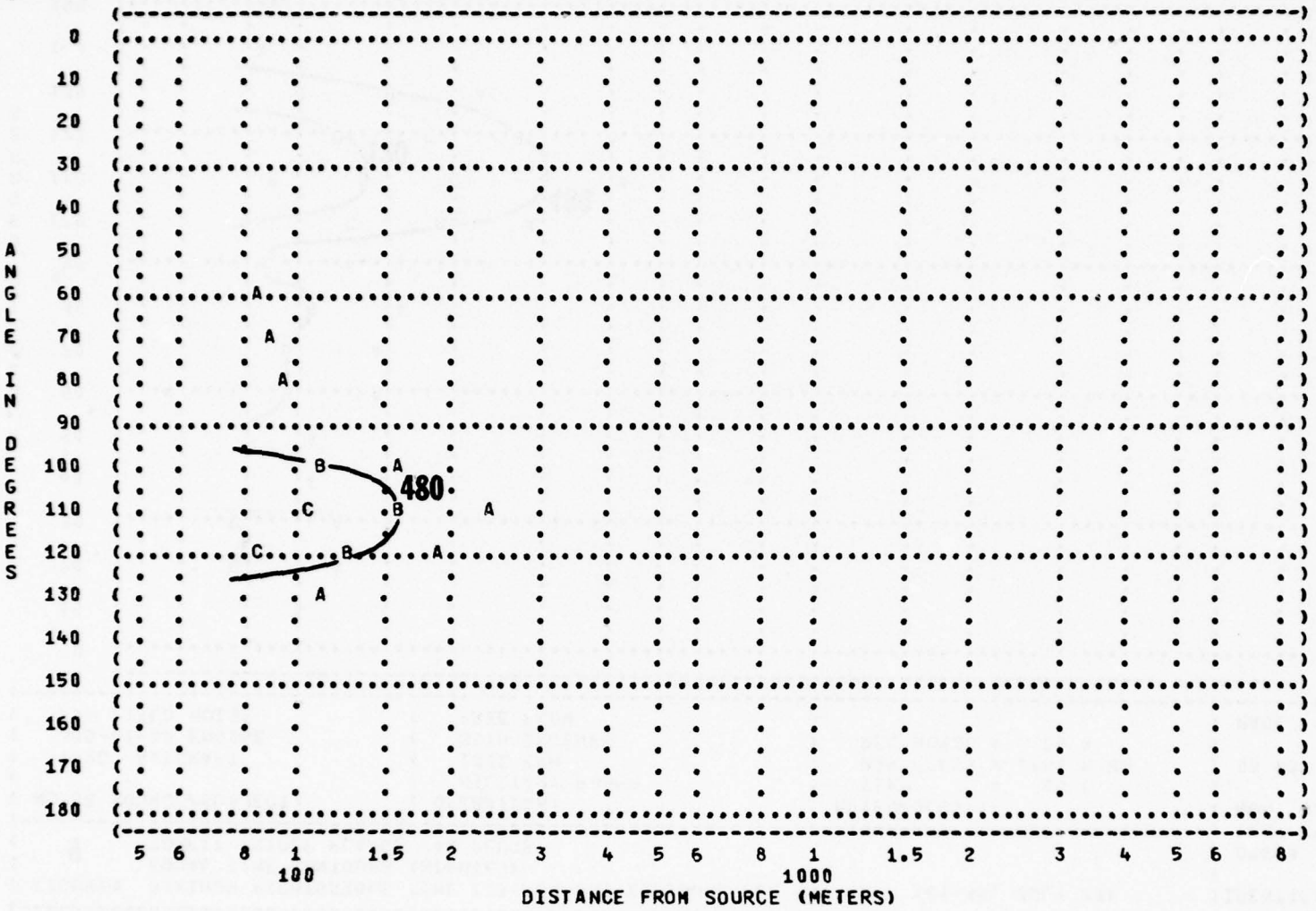


FIGURE: 10

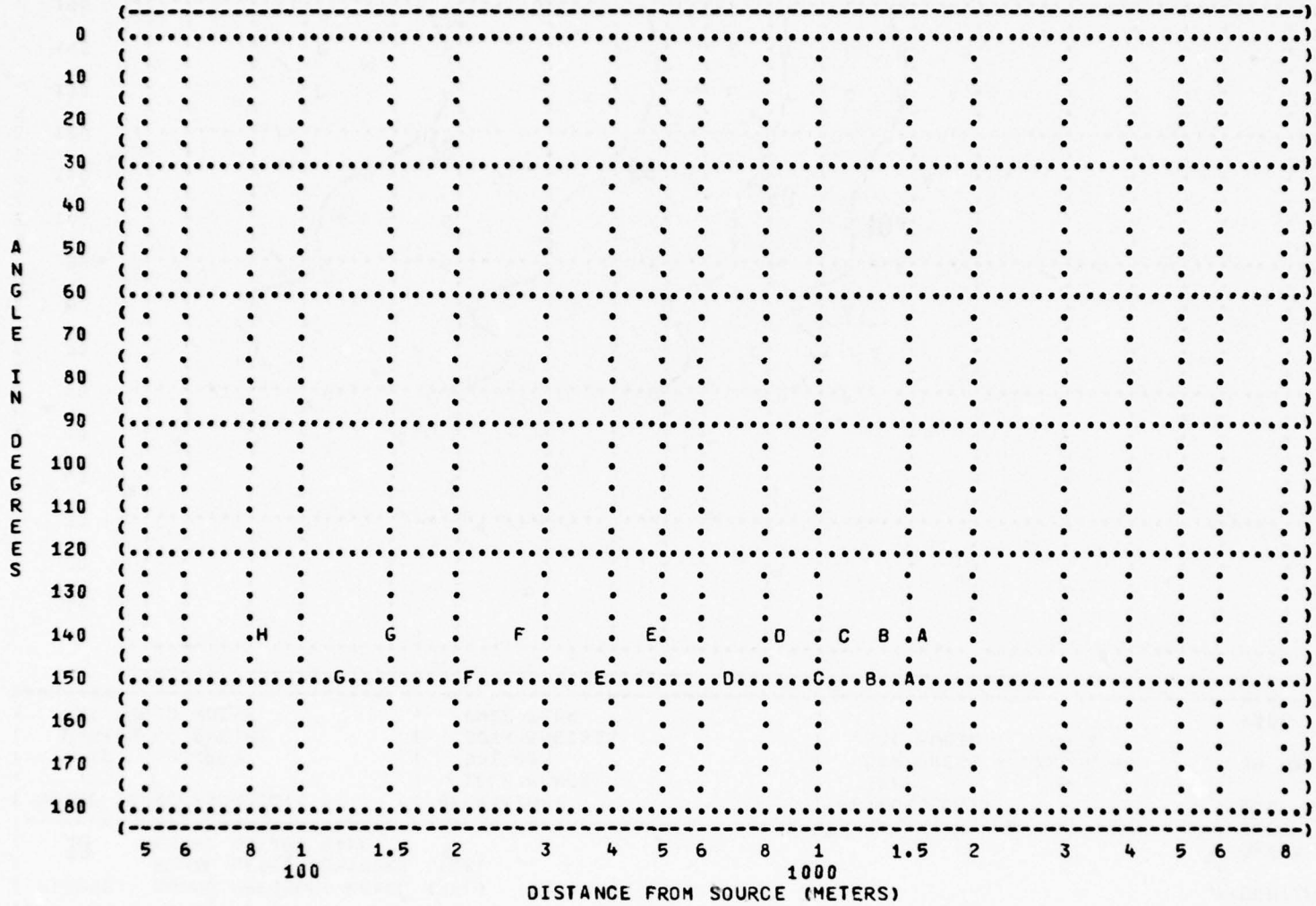
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
31.5 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 MAY 75
PAGE 18



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

FIGURE: 10

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 19

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 %

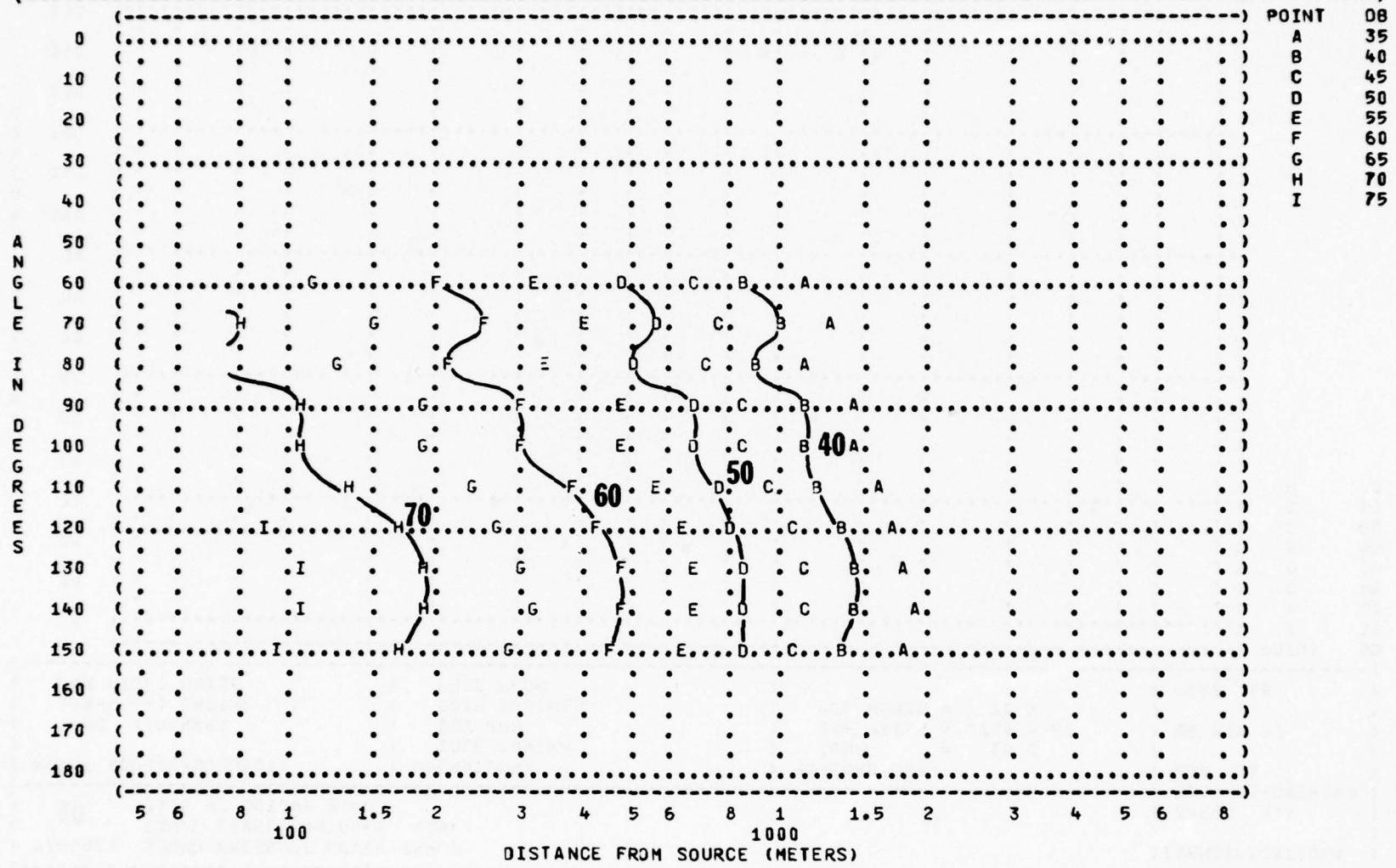


FIGURE 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 MAY 75
PAGE 20

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

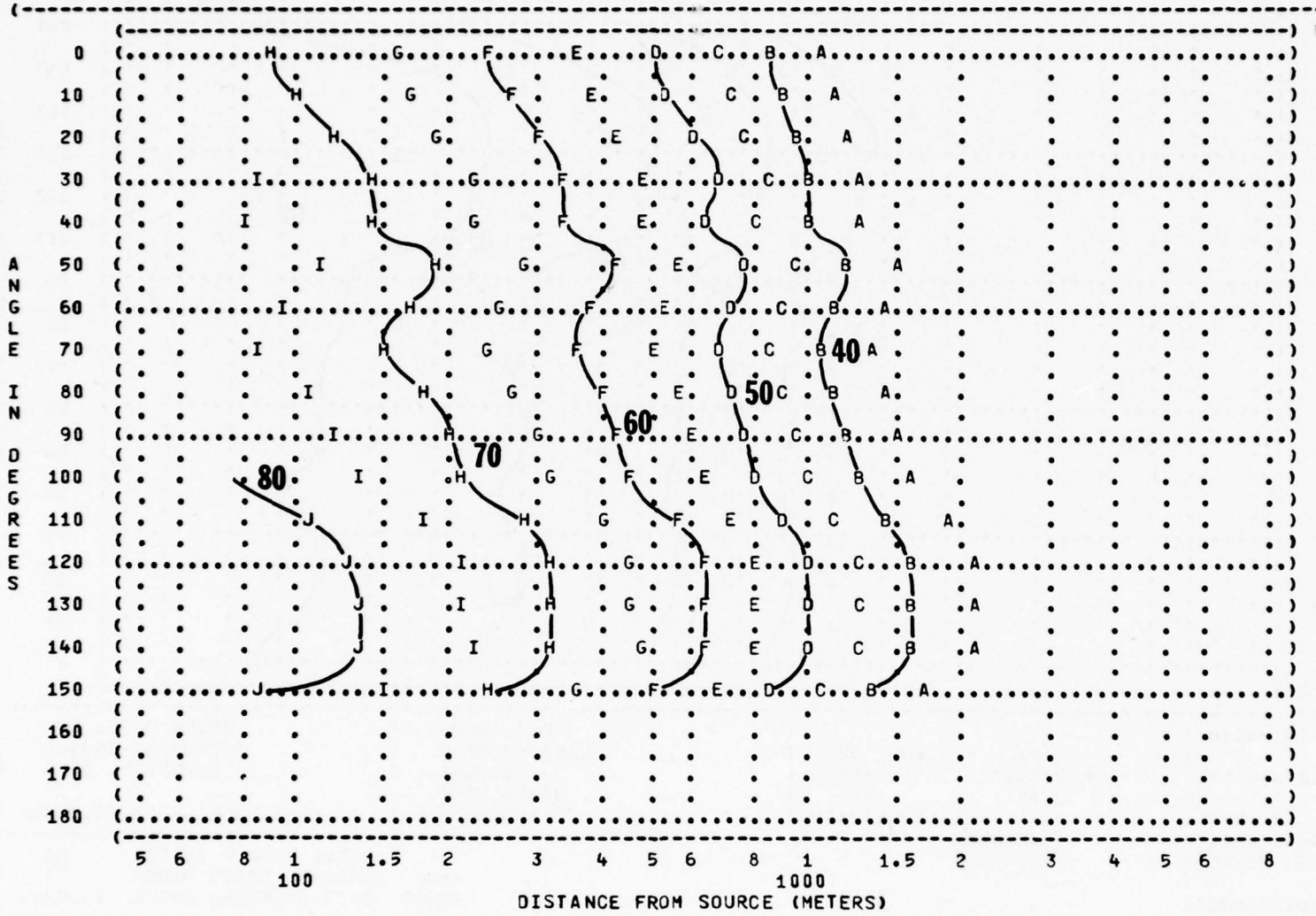


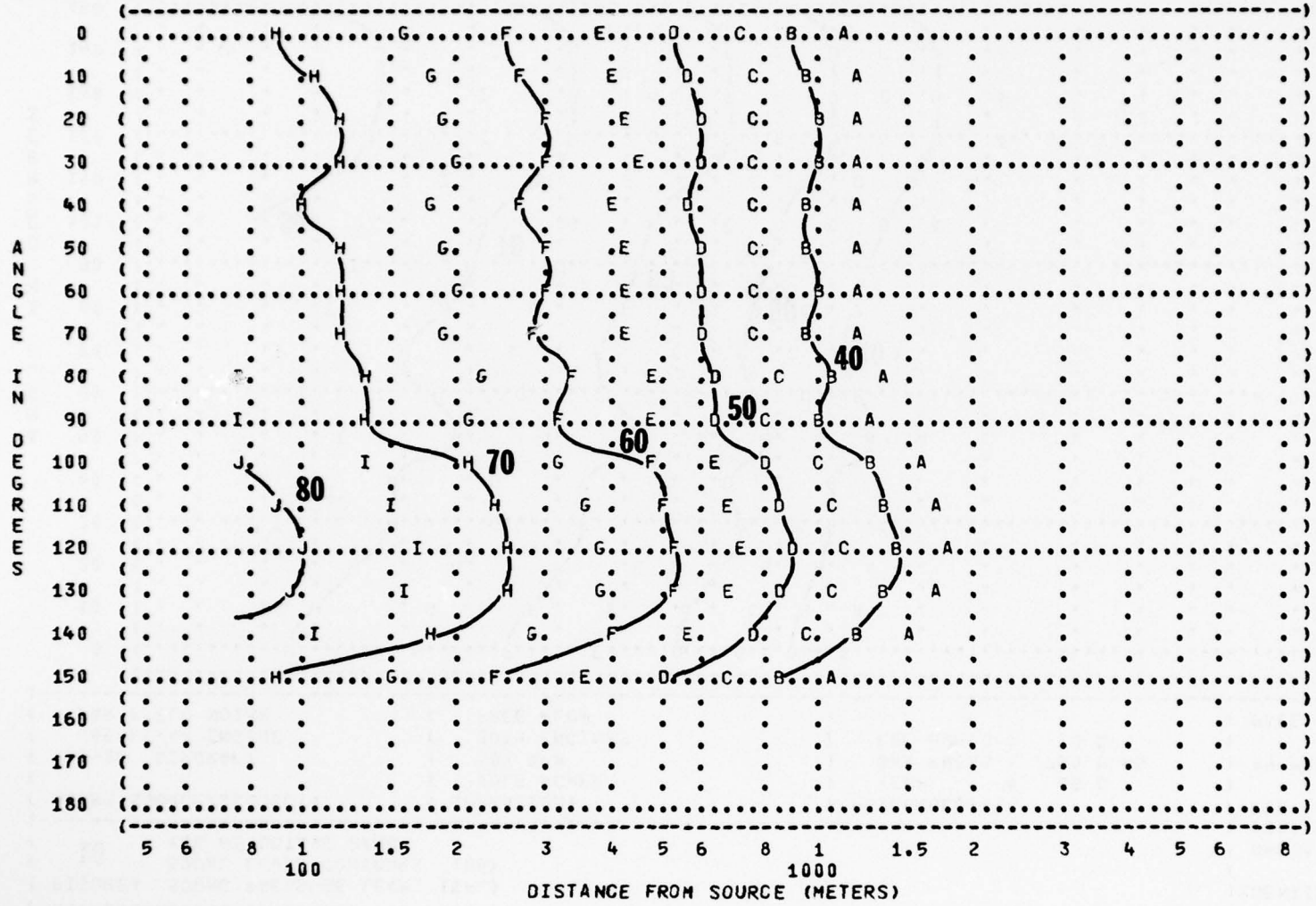
FIGURE: 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 21

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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
J	80

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

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 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

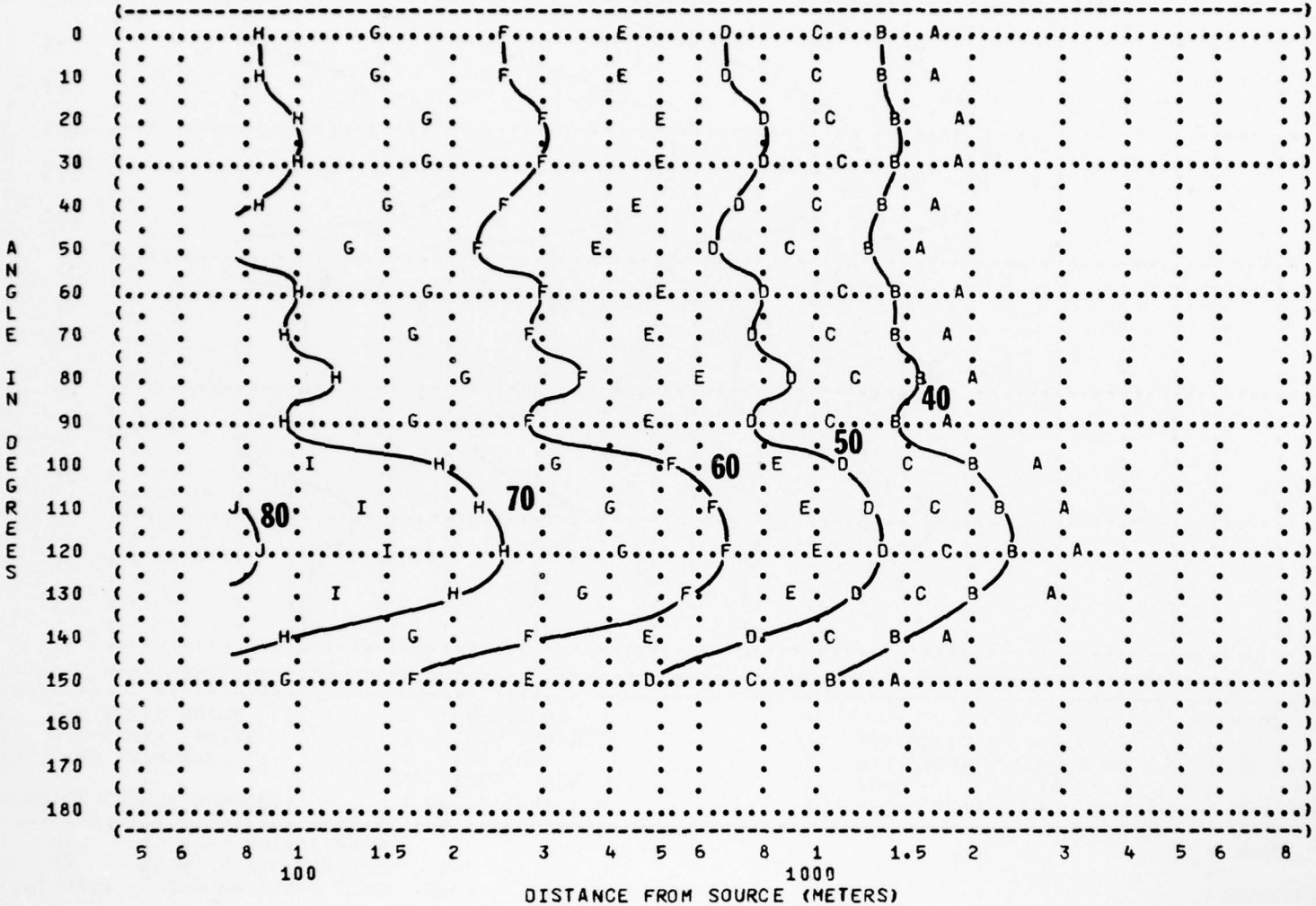


FIGURE: 10

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

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 01
09 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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

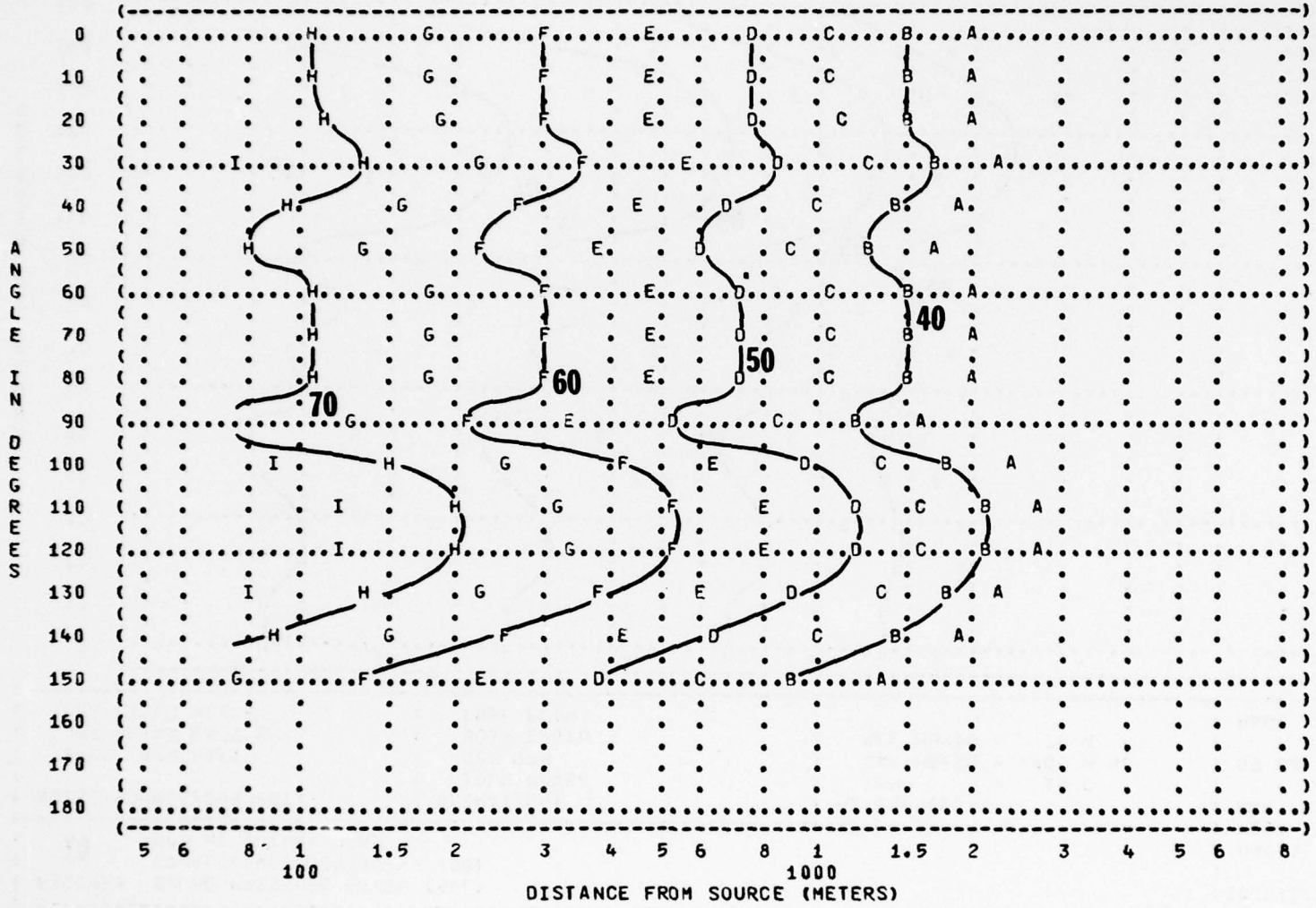


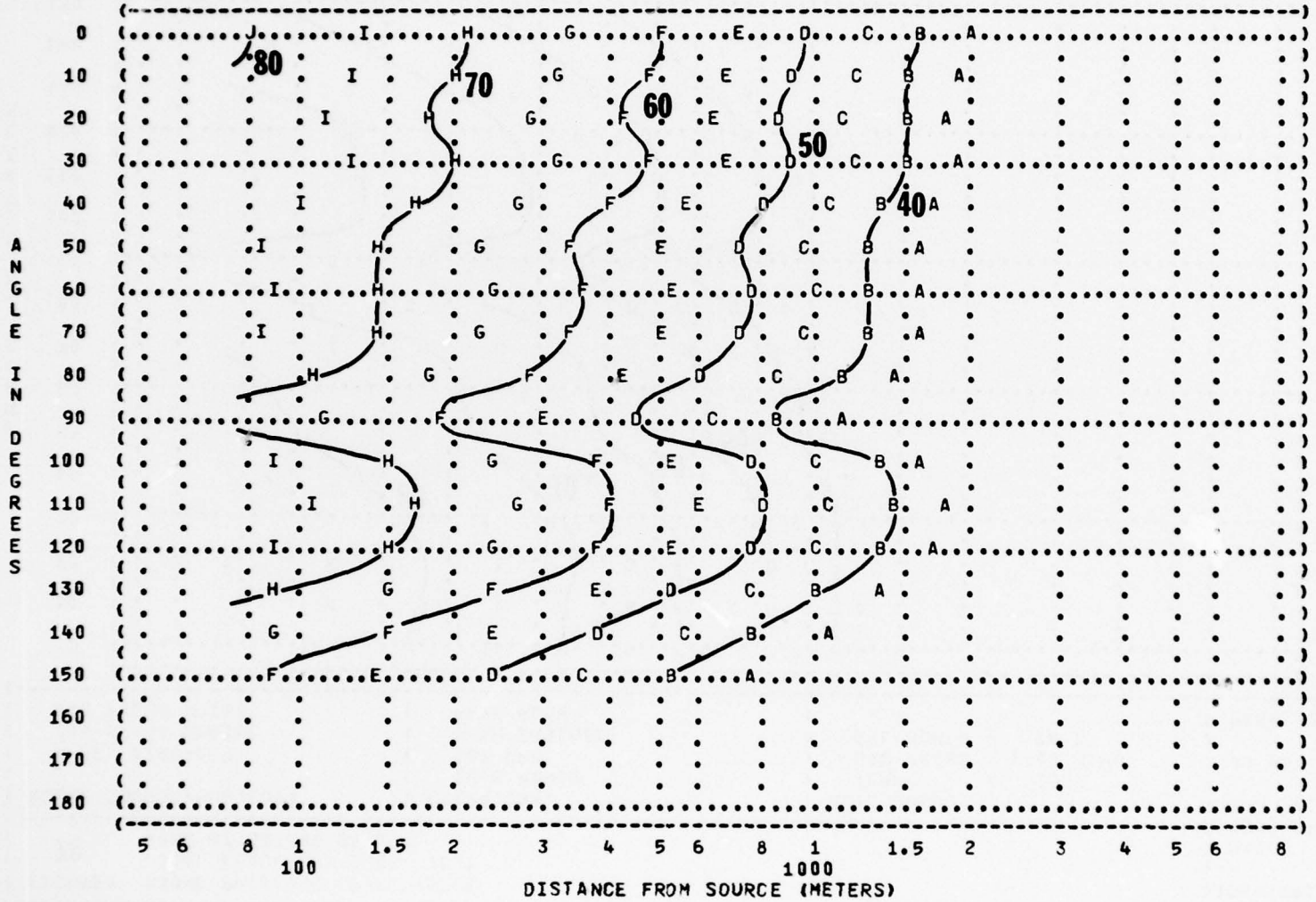
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 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

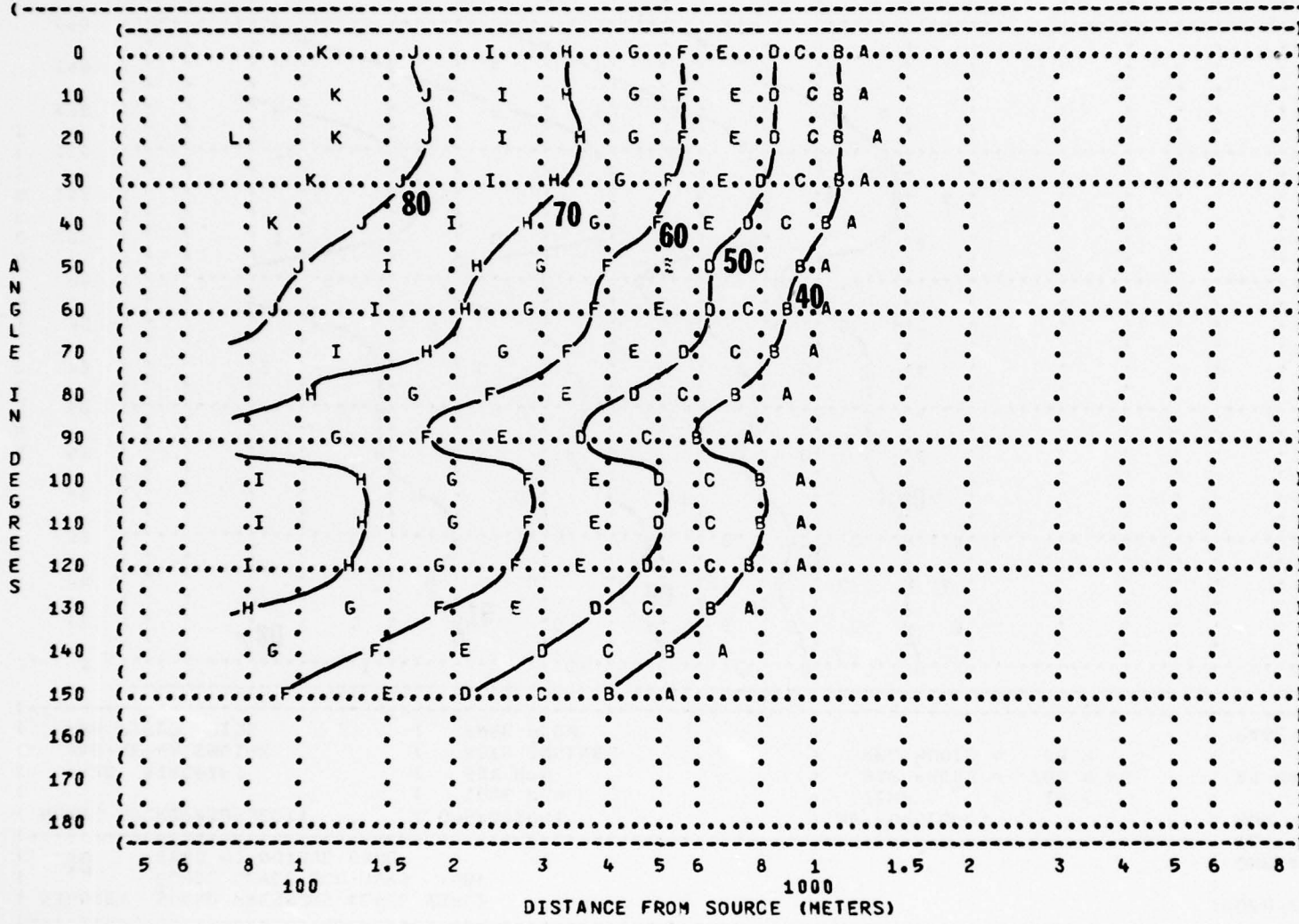
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 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

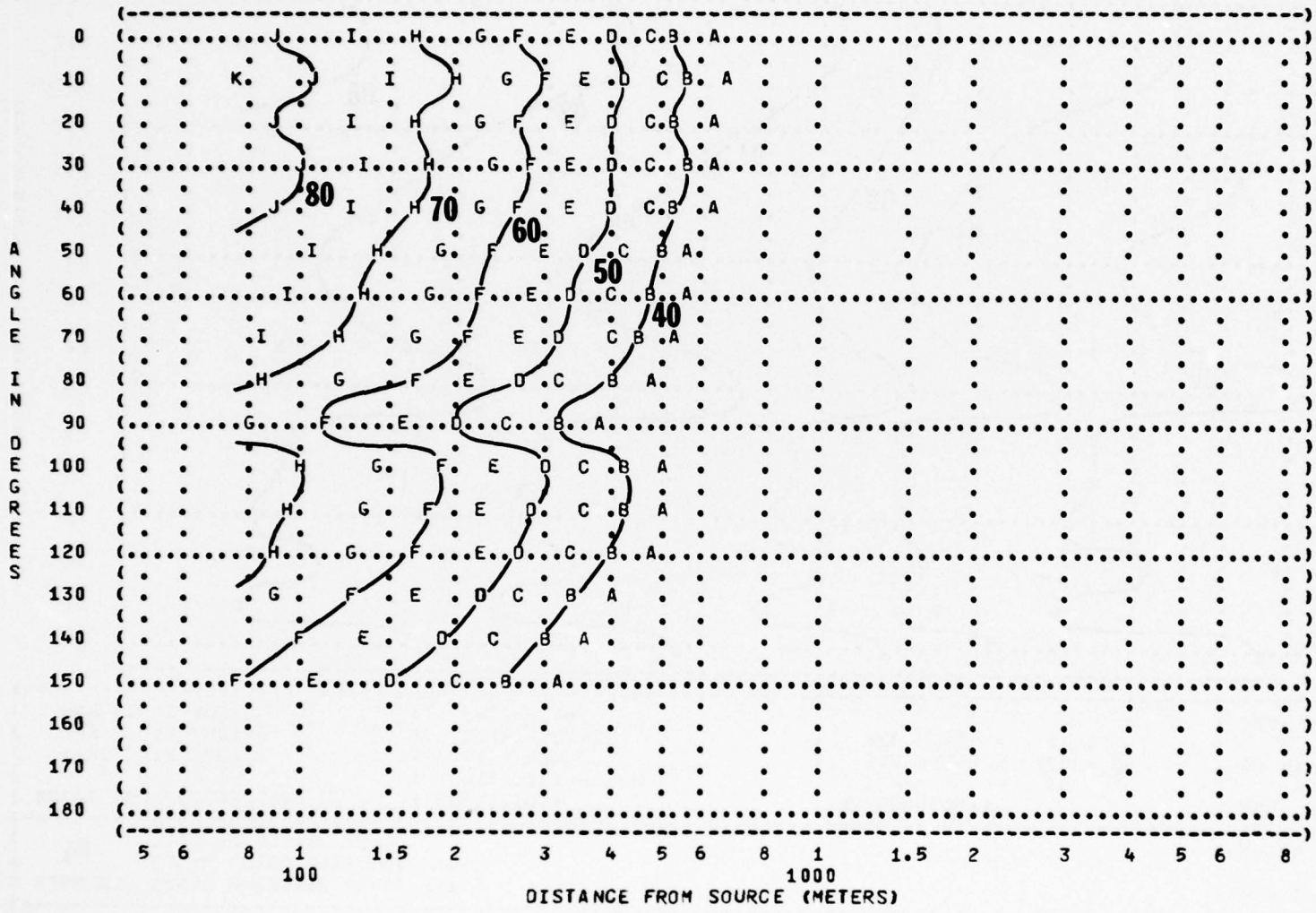
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 01
09 MAY 75
PAGE 26



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

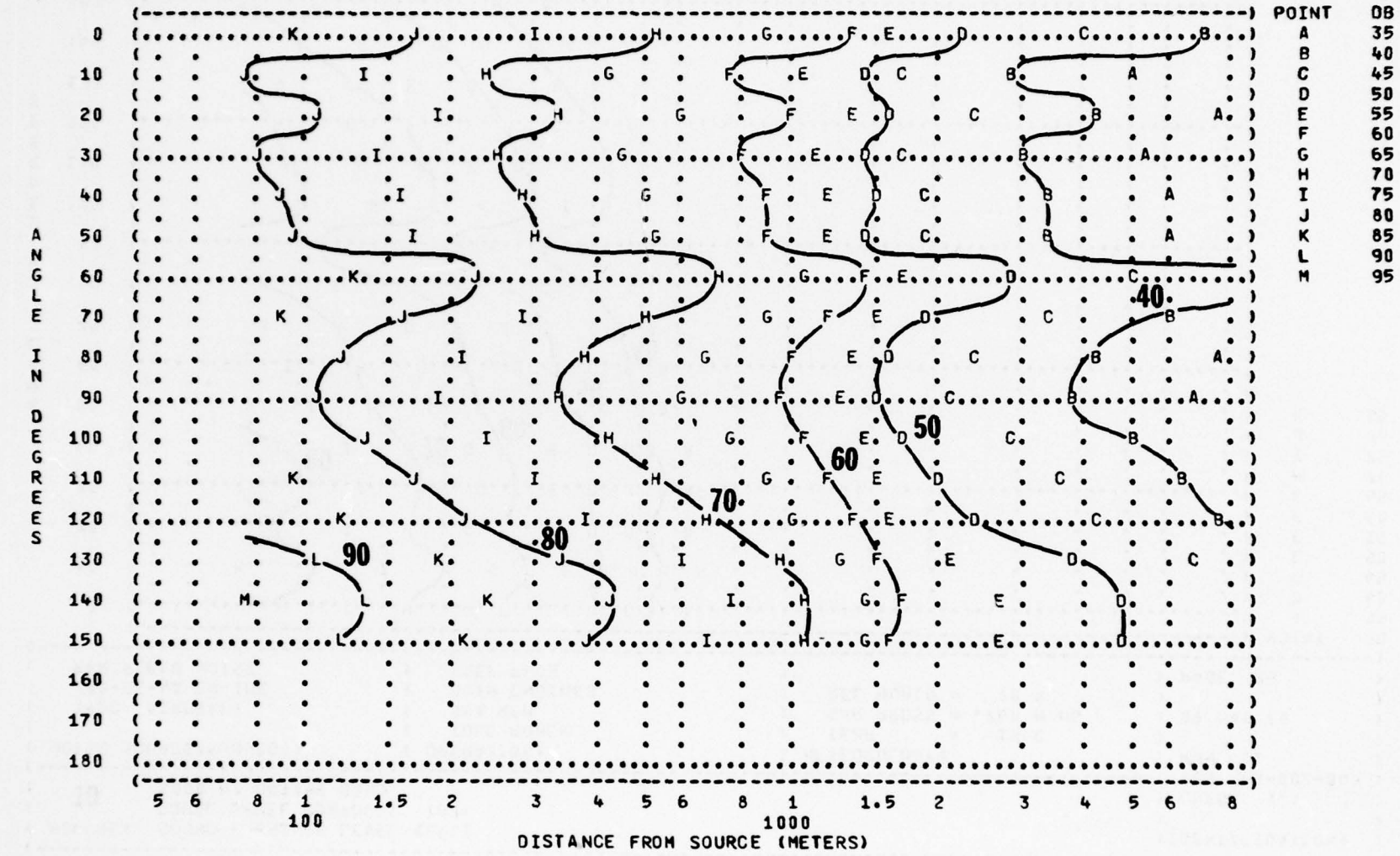
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 31.5 HZ OCTAVE BAND

IDENTIFICATION: OMEGA 1.4 TEST 75-002-043 RUN 02 09 MAY 75 PAGE 18

NOISE SOURCE/SUBJECT: T-2C AIRCRAFT; J85-GE-4A 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: 10

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

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 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

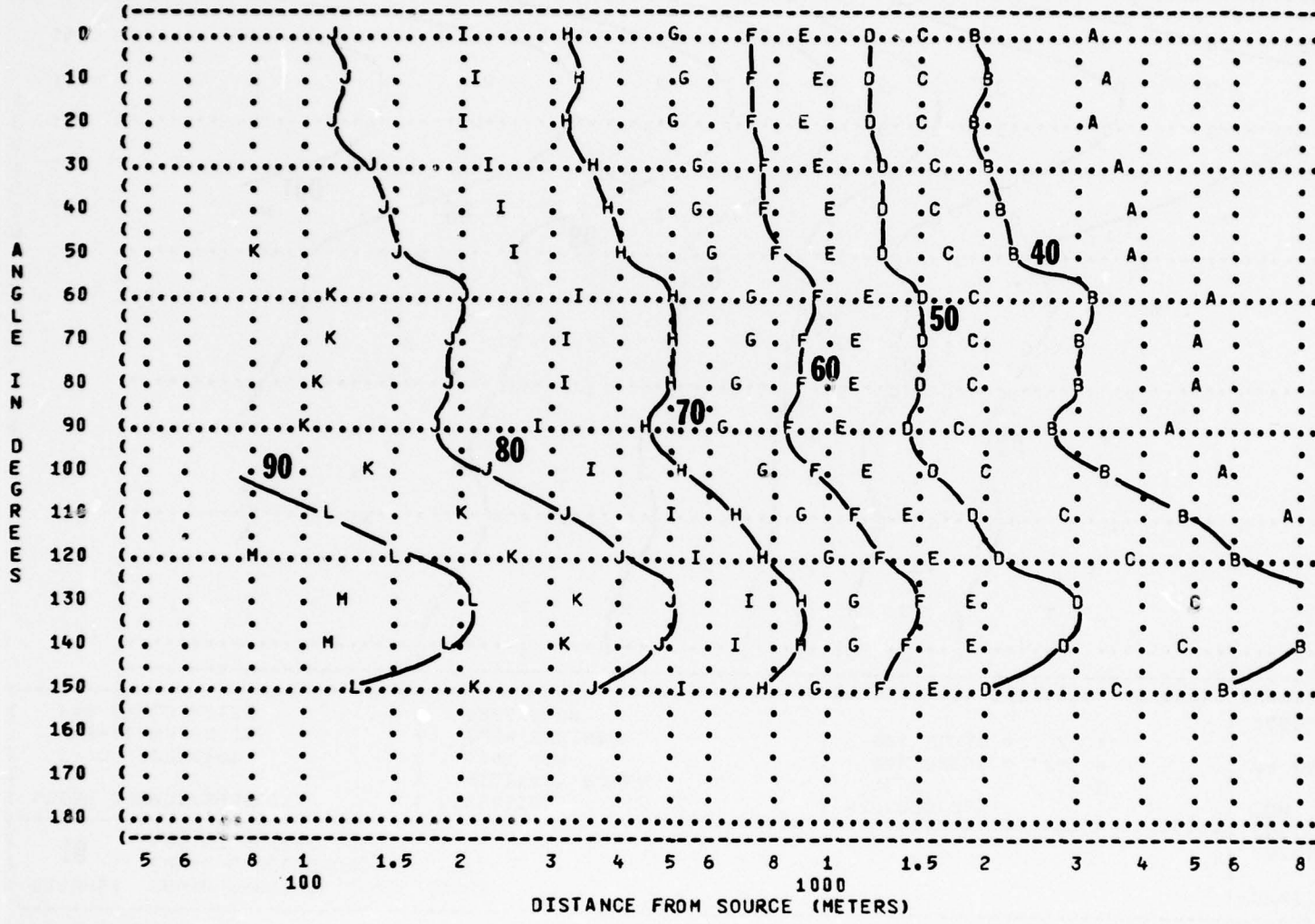


FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 125 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 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

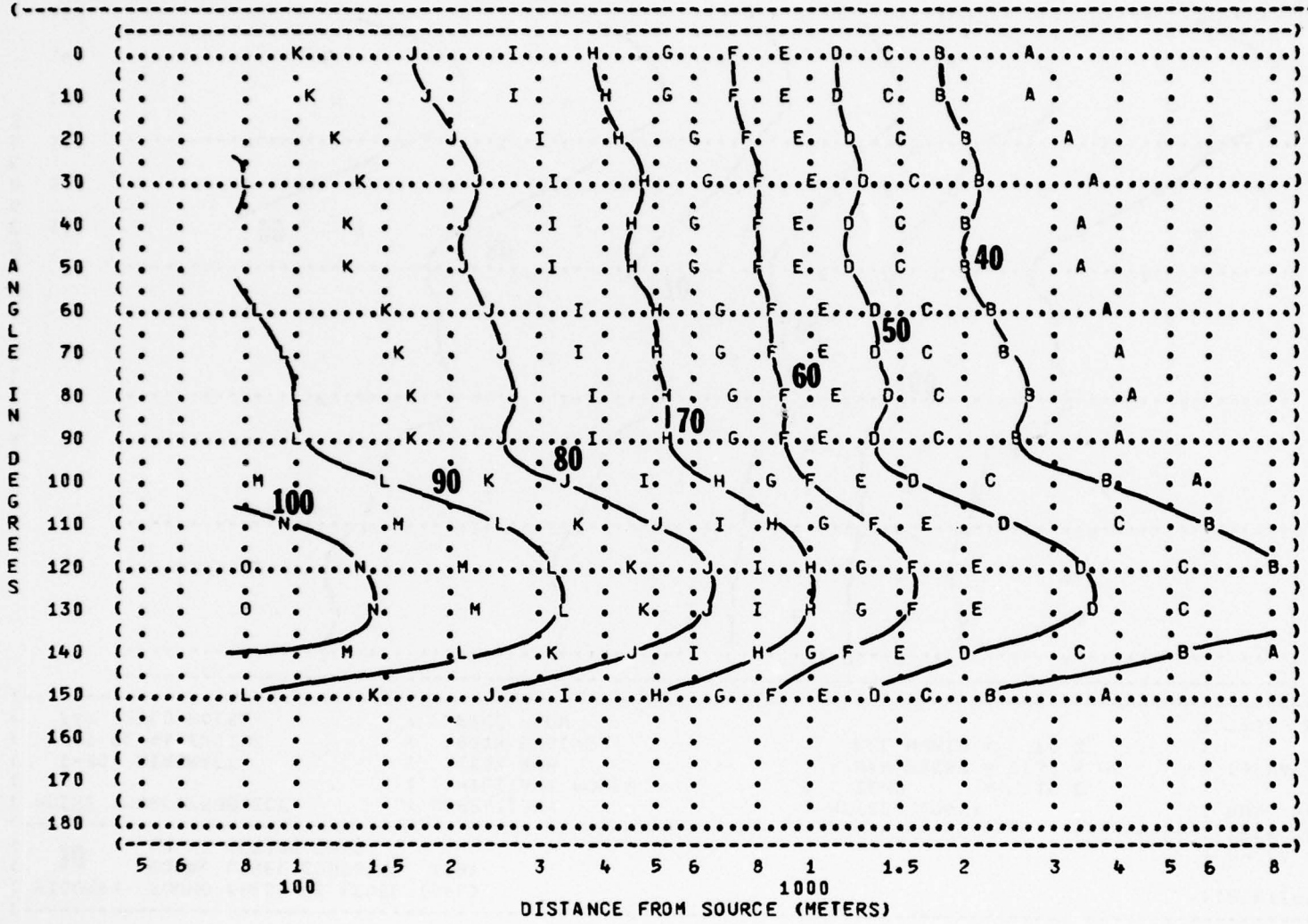


FIGURE: 10

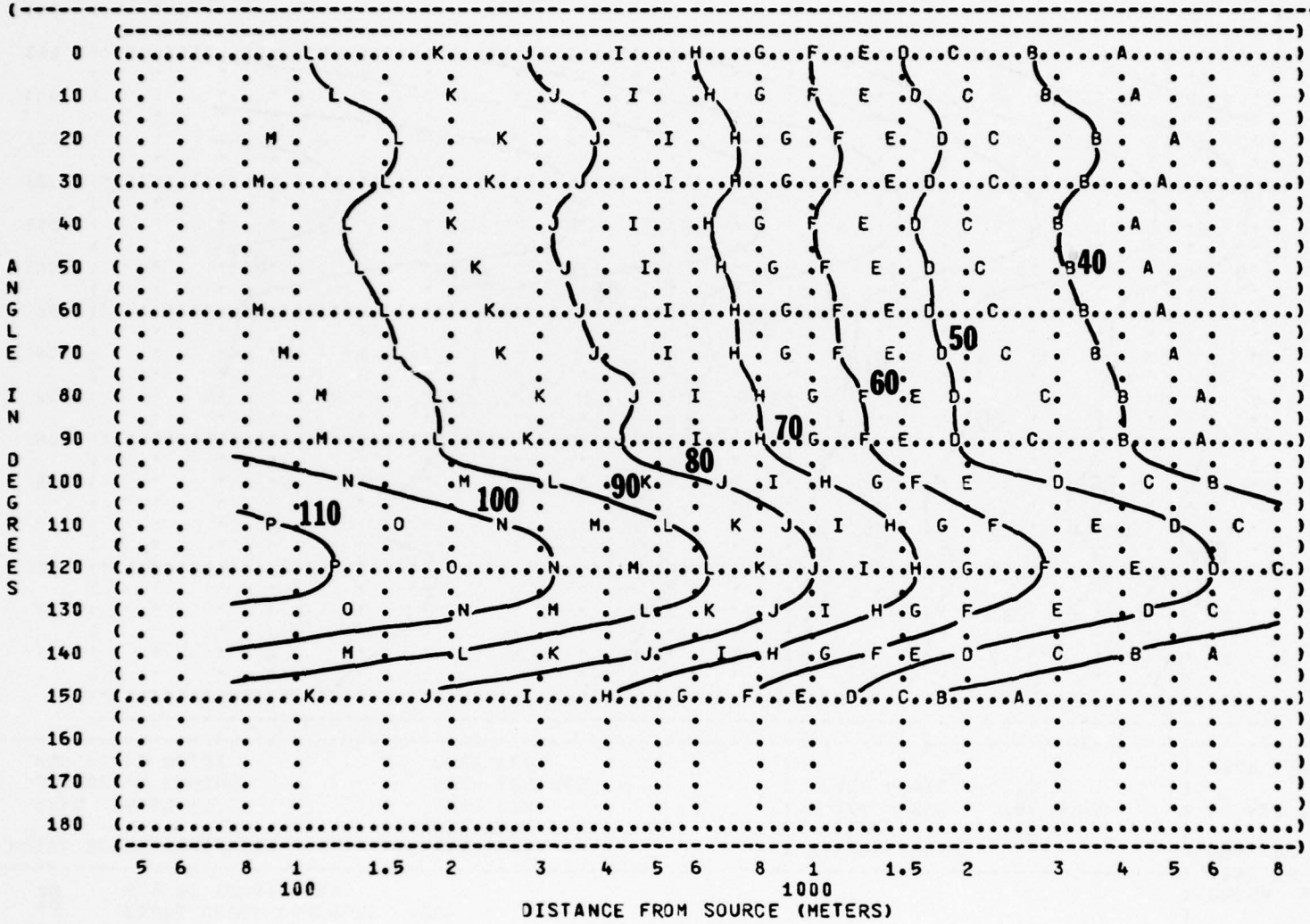
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
250 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 21



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

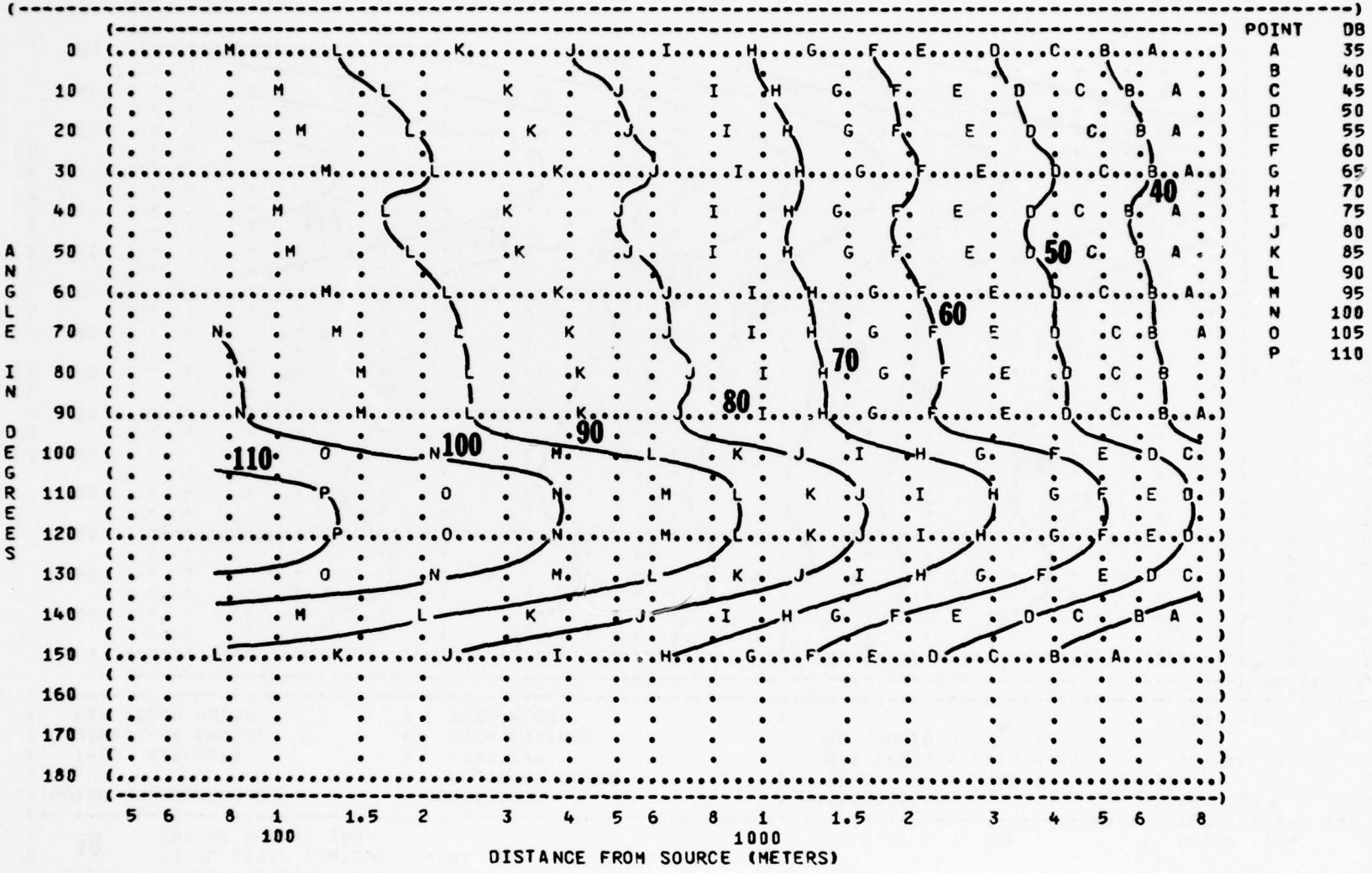
FIGURE: 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 500 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 22

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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

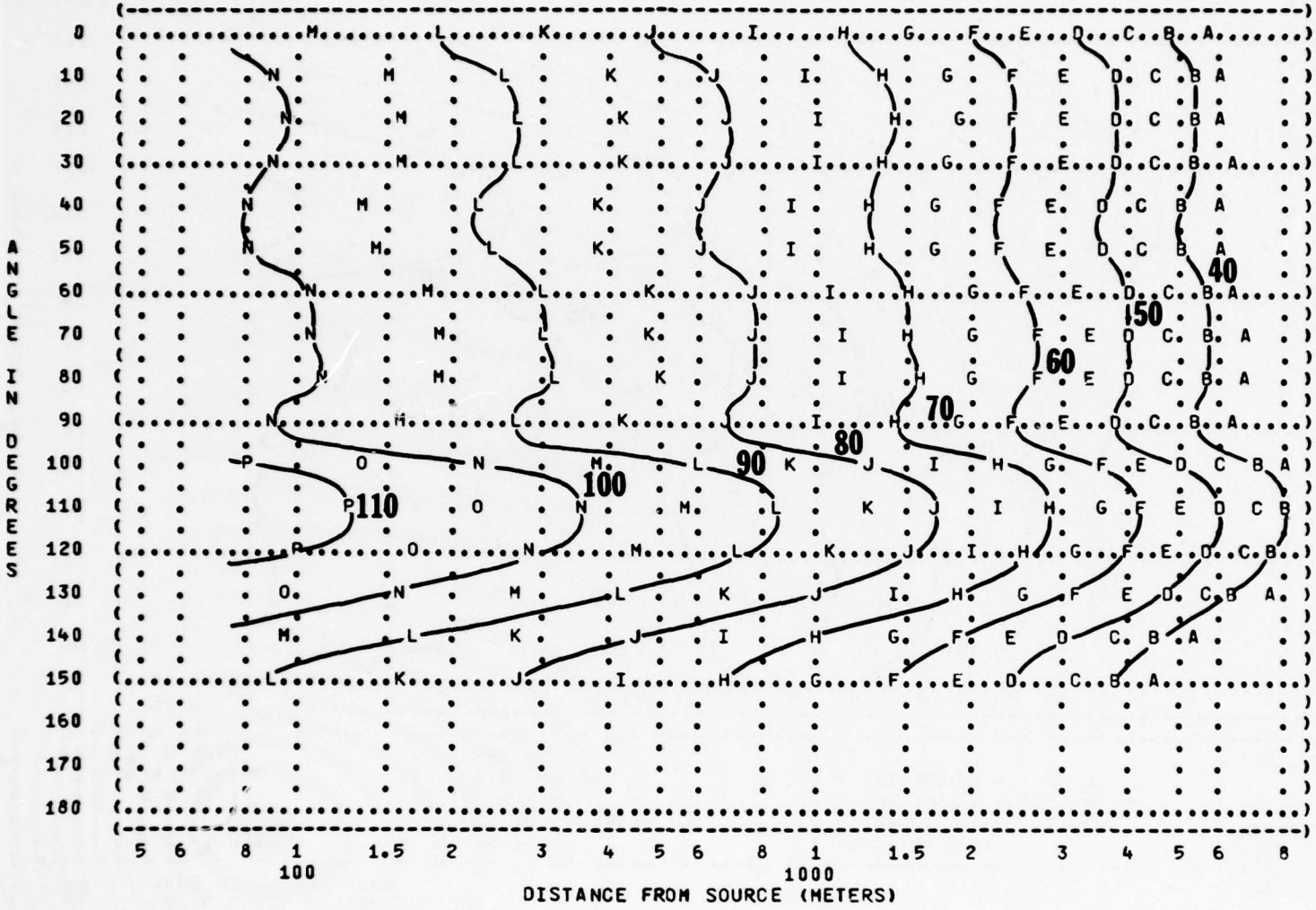
FIGURE: 10 SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 1000 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST 75-002-043
RUN 02
09 MAY 75
PAGE 23

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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

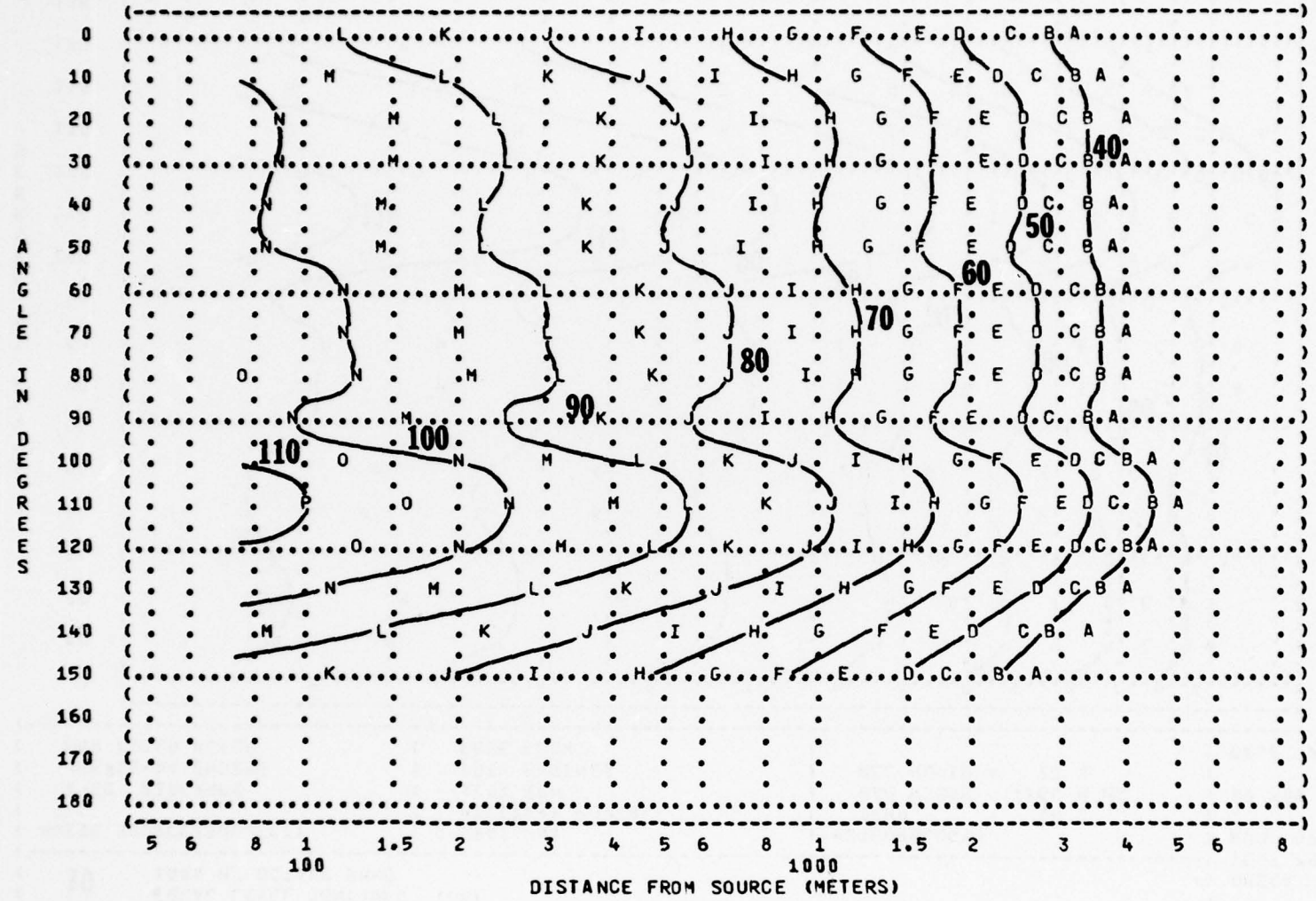
FIGURE 10: SOUND PRESSURE LEVEL (SPL) EQUAL LEVEL CONTOURS (DB) 2000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 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: 10

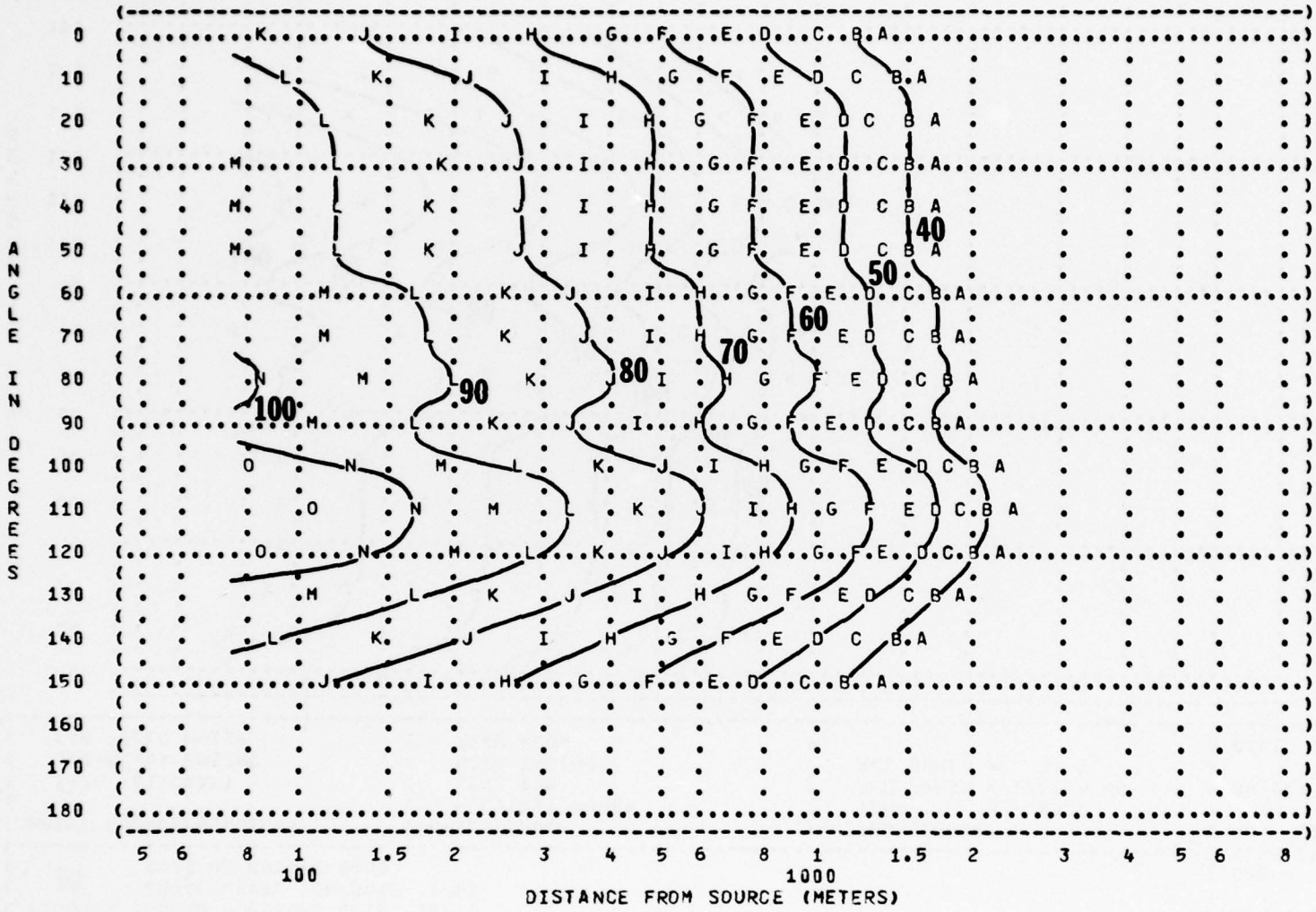
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 25



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

FIGURE: 10

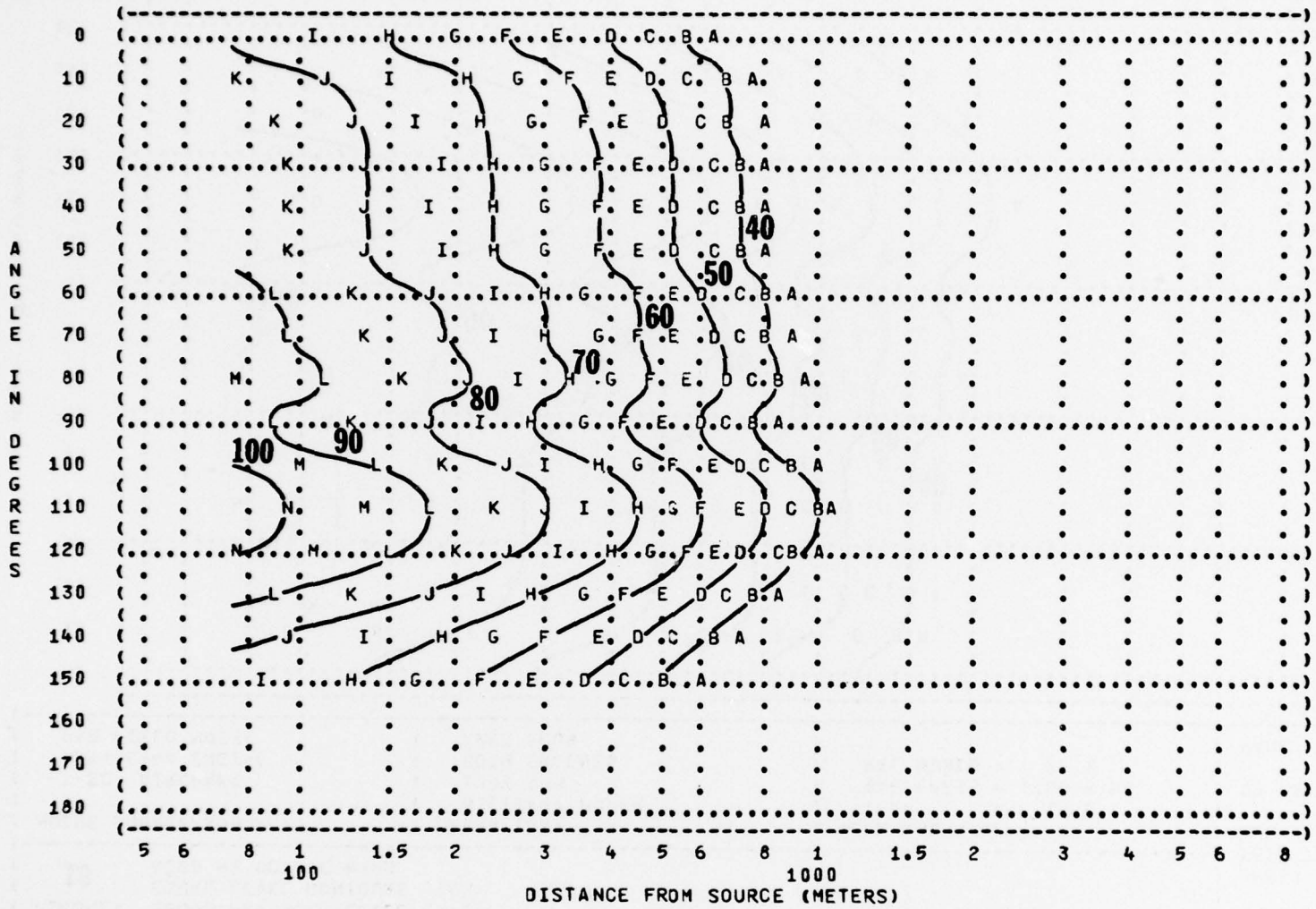
SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
8000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT:
T-2C AIRCRAFT
J85-GE-4A 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 75-002-043
RUN 02
09 MAY 75
PAGE 26



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

☆U.S.Government Printing Office: 1977 — 757-080/246