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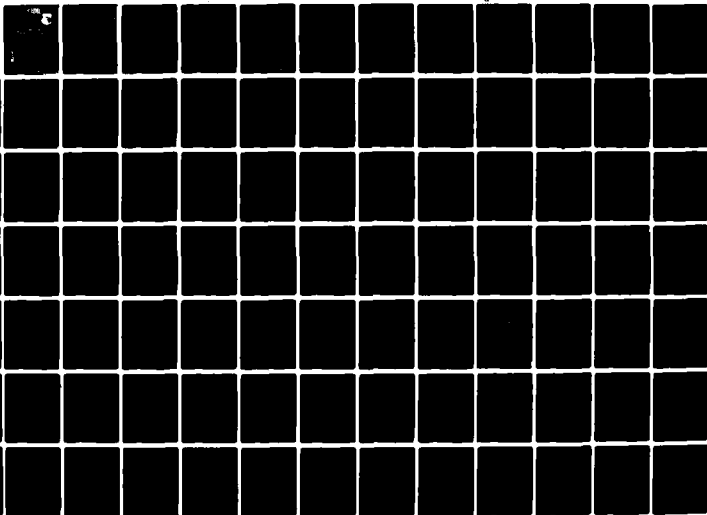
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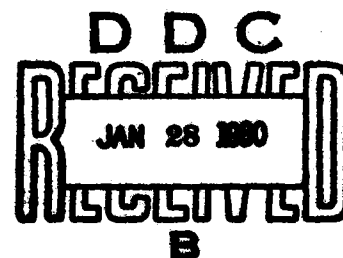
ADRL-TR-75-50  
Volume 121



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**USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK**  
**Volume 121**  
**F-4C Aircraft, Near and Far-Field Noise**

APRIL 1979



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

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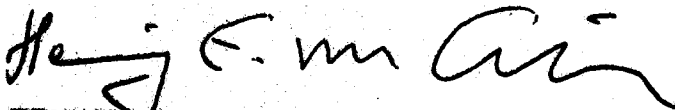
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This technical report has been reviewed and is approved for publication.

FOR THE COMMANDER



HENNING E. VON GIERKE

Director

Biodynamics and Bioengineering Division  
Aerospace Medical Research Laboratory

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| Noise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Aircraft                                                    | B                                                                                  |                                                            |
| Noise Environments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | F-4C Aircraft                                               |                                                                                    |                                                            |
| Bioenvironmental Noise                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                             |                                                                                    |                                                            |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                             |                                                                                    |                                                            |
| <p>→ The USAF F-4C is an all-weather, supersonic, fighter-bomber aircraft powered by two J79-GE-15 turbojet engines. This report provides measured and extrapolated data defining the bioacoustic environments produced by this aircraft operating on a concrete runup pad for six engine/power configurations. Near-field data are reported for six locations in a wide variety of physical and psychoacoustic measures: overall and band sound pressure levels, C-weighted and A-weighted sound</p> |                                                             |                                                                                    |                                                            |

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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. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-8000 meters to derive sets of equal-value contours for these same seven acoustic measures as functions of angle and distances from the source. Refer to Volume 1 of this handbook, "USAF Bio-environmental 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.

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## PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory, under Project/Task 723107. Technology To Define And Assess Environmental Quality of Noise From AF Operations and 723108, Crew Safety in Operational Noise Environments.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Col Justus Rose and Mr. Robert England for their assistance in acquiring the raw data at Eglin AFB, Mr. Robert Lee for data acquired at Nellis AFB, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Peggy Massie for assistance in typing and preparation of the graphics.

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## INTRODUCTION

The USAF F-4C is an all-weather, supersonic, fighter-bomber aircraft powered by two J79-GE-15 turbojet engines. The aircraft was manufactured by the McDonnell Douglas Corporation 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 F-4C aircraft.

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

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meters Hg barometric pressure), to derive comparable data for other meteorological conditions. *Refer to Volumes 1 and 2 (references 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.

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1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.
  2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

## NEAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired near-field noise data on the F-4C aircraft during ground runup operations of its turbojet engines. For these tests the aircraft was located on a concrete pad at Eglin AFB and Nellis AFB with no significant reflecting surfaces in the vicinity except the ground plane. Table 1 gives the surface meteorological conditions and the ten engine/power conditions. The ground-crew chief selected power conditions and near-field locations generally used during routine maintenance or engine runup for preflight checks.

At each near-field location a test engineer randomly moved a hand-held microphone in and around each location, probing all areas where a crew member's head would normally be located. He recorded all the noise samples on magnetic tape. During analysis of each sample, he determined the octave band root-mean-square sound pressure using a 4- or 8-second integration time to derive a power-averaged level for each location. Figure 1 shows the four near-field locations where ground crews are usually located for maintenance and/or preflight checkout operations. Estimates of noise levels at other locations are difficult in the near-field since the noise source is spatially distributed, i.e., not a point source. The noise levels at near-field locations can vary widely depending upon relative distances from each noise source (intake noise, exhaust noise, panel resonances, internal engine noise through the engine wall, etc).

Table 1 lists the numeric/alphabetic designators used on the data pages in this report to identify the measurement locations and test conditions. For example, the designator 1/A means ground crew location 1 and test condition A.

### RESULTS

The measured data presented in Table 2 define the sound pressure levels (SPL) produced by the F-4C aircraft at the six 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-4C Aircraft, Ground Runup  
Eglin AFB FL 22 Jul 1971 Tail #40930  
Eglin AFB FL 4 Aug 1971 Tail #40817  
Nellis AFB NV 9 Sep 1977 Tail #0647

*Ground Crew Location*

|   |                     |
|---|---------------------|
| 1 | MA-1A Operator      |
| 2 | Bay Check           |
| 3 | A/M 32A-60 Operator |
| 4 | Chock Pull          |
| 5 | Leak Check          |
|   | Observer            |

*Aircraft Engine and Ground Support Equipment Operation*

|   |                                                          |
|---|----------------------------------------------------------|
| A | Engines Off, MD-3M, MA-1A (Unloaded)                     |
| B | Engine #1 Idle, MD-3M, MA-1A (Loaded)                    |
| C | Ground Support Equipment Off Engine #1 85% RPM           |
| D | Engine #2 Idle A/M 32A-60 (Air Supply Off)               |
| E | Engines #1 and #2 Idle A/M 32A-60 (Air Supply Off)       |
| F | Engines Off A/M 32A-60 (Air Supply Off)                  |
| G | Ground Support Equipment Off Engines #1 and #2 Idle      |
| H | Ground Support Equipment Off Engine #1 Idle              |
| I | Ground Support Equipment Off Engine #1 Military Power    |
| J | Ground Support Equipment Off Engine #1 Afterburner Power |

*Meteorology*

**Eglin AFB, 4 Aug 1971, Location 1 and 2**

|              |                |
|--------------|----------------|
| Temperature  | 31.1 C         |
| Bar Pressure | 0.760 M Hg     |
| Rel Humidity | 55 %           |
| Wind — Speed | 1 M/Sec (2 Kt) |
| — Direction  | 360 Deg        |

**Eglin AFB, 22 July 71, Location 3 and 4**

|              |                |
|--------------|----------------|
| Temperature  | 24 C           |
| Bar Pressure | 0.760 M Hg     |
| Rel Humidity | 88 %           |
| Wind — Speed | 1 M/Sec (2 kt) |
| — Direction  | 320 Deg        |

**Nellis AFB, Location 5 and 6**

|              |            |
|--------------|------------|
| Temperature  | 37.8 C     |
| Bar Pressure | 0.709 M Hg |
| Rel Humidity | 18 %       |
| Wind         | Calm       |

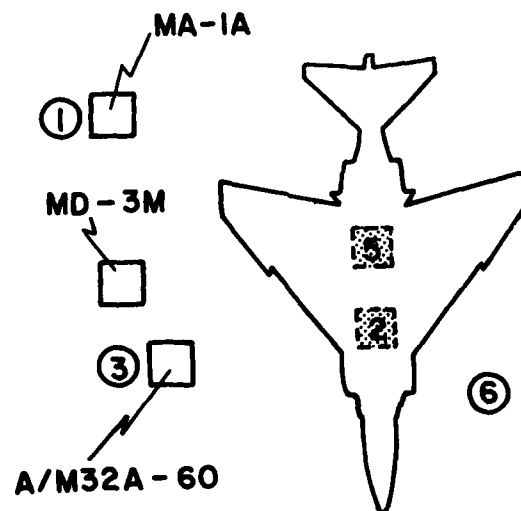
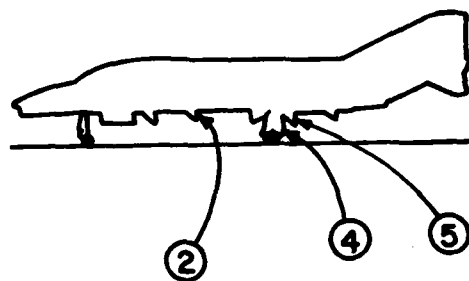


Figure 1. Near-Field Measurement Locations at Trim Pad Eglin AFB FL

## FAR-FIELD NOISE

### MEASUREMENTS

AMRL acquired far-field data during two 1-hour test periods at Eglin AFB. Figure 2 shows the ground runup pads, ground cover, aircraft orientation and the microphone measurement sites on each semicircle. The centers of the 50 and 75 meter radius semicircles used in surveying the J79-GE-15 engines were on the ground directly below the intersection of the aircraft's centerline and the plane passing through the exhaust-nozzles' exits.

The ground runup pad (Hot Cargo Pad) used for all engine/power configurations except afterburner power did not have a blast deflector, therefore, the jet exhaust was in a "free-flow" condition. However the trim pad used for the afterburner power measurements did have a blast deflector installed as part of the facility. In this case the aircraft was placed on a long tie-down cable so that the distance between the exhaust nozzles and the deflector was 52 meters. At this distance there was minimal interaction between the noise source and the blast deflector so that noise measurements acquired at 50 meters were essentially in a "free-flow" condition and should be used as such.

Table 4 provides cockpit readouts of the engine's RPM for each setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

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

Test personnel acquired far-field noise data at Eglin AFB by using a handheld microphone (1.7 meters/5-1/2 feet above the ground plane and pointed at the noise source, 0° incidence) and sequentially recording 5-10 seconds of data at each far-field location on a portable microphone/tape recorder system. The samples were then time-integrated to derive a root-mean-square sound pressure level.

### RESULTS

Table 5 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15°C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 3 which provides a compact summary of the far-field noise characteristics of the F-4C aircraft in a standard format.

Figure 4 and Table 6 present two basic acoustic measures, the acoustic power levels and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of noise levels for intermediate power conditions (e.g., 88% engine RPM), and/or different number of engines operating) can be determined as explained in Volume 1 of this handbook.

Figures 5 through 11 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are, respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

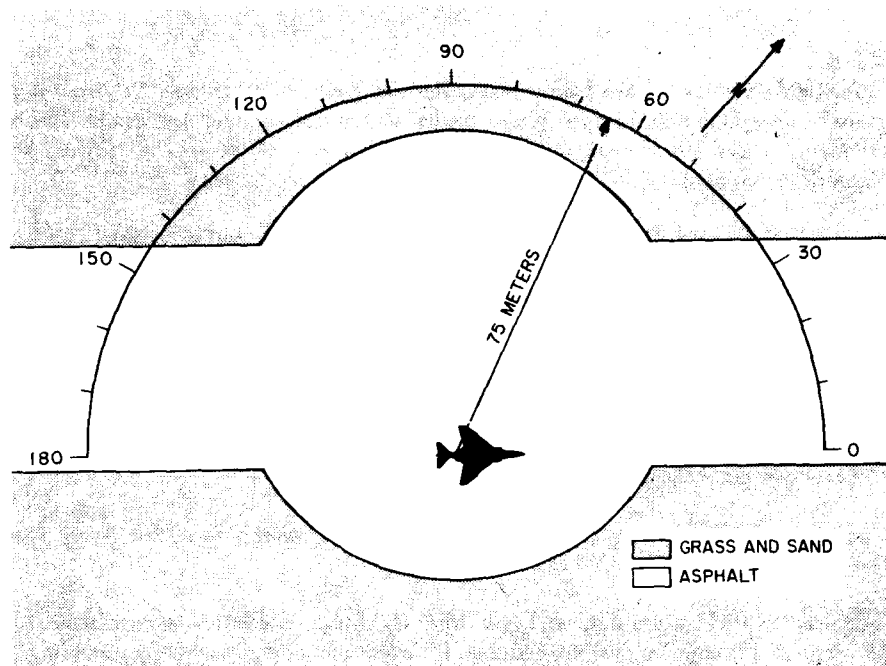


Figure 2(a). Far-Field Measurement Locations at the Hot Cargo Pad, Eglin AFB FL

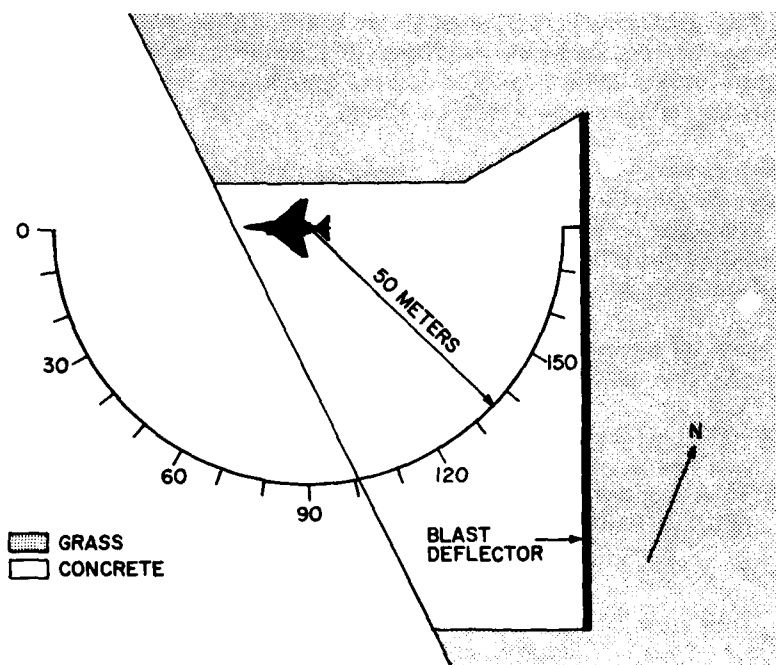


Figure 2(b). Far-Field Measurement Locations at the Trim Pad Eglin AFB FL

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 military and two-engine 85% RPM power settings nor at the 160, 170, and 180 degree locations for the afterburner power setting because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below the level measured at the preceding microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 5 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: MEASURED SOUND PRESSURE LEVEL (DB)<br>1/3 OCTAVE BAND |     |     |     |     |     |     |     |     |     |     |     |     |     | IDENTIFICATION: |     |
|--------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|
| 2                                                            |     |     |     |     |     |     |     |     |     |     |     |     |     | OMEGA 3-2       |     |
|                                                              |     |     |     |     |     |     |     |     |     |     |     |     |     | TEST 71-019-200 |     |
|                                                              |     |     |     |     |     |     |     |     |     |     |     |     |     | RUN 01          |     |
|                                                              |     |     |     |     |     |     |     |     |     |     |     |     |     | 24 APR 79       |     |
|                                                              |     |     |     |     |     |     |     |     |     |     |     |     |     | PAGE F1         |     |
| NOISE SOURCE/SUBJECT: ( OPERATION: )                         |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
| F-4C AIRCRAFT                                                |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
| GROUND CREW                                                  |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
| NEAR FIELD NOISE LEVELS ( )                                  |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
|                                                              |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
| LOCATION/CONDITION                                           |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
|                                                              | 1/A | 1/B | 2/H | 3/D | 3/E | 3/F | 4/G | 5/H | 5/C | 5/I | 5/J | 6/H | 6/C | 6/I             | 6/J |
| FREQ (HZ)                                                    |     |     |     |     |     |     |     |     |     |     |     |     |     |                 |     |
| 25                                                           | 83  | 87  | 98  | 88  | 94  | 79  | 102 | 99  | 104 | 101 | 108 | 79  | 80  | 86              | 99  |
| 31.5                                                         | 84  | 91  | 111 | 98  | 102 | 84  | 110 | 106 | 104 | 102 | 110 | 89  | 81  | 86              | 100 |
| 40                                                           | 86  | 94  | 110 | 99  | 106 | 85  | 116 | 110 | 107 | 106 | 117 | 94  | 85  | 90              | 102 |
| 50                                                           | 94  | 96  | 99  | 92  | 110 | 89  | 124 | 98  | 105 | 107 | 116 | 84  | 87  | 92              | 103 |
| 63                                                           | 92  | 94  | 95  | 92  | 93  | 91  | 102 | 90  | 104 | 106 | 115 | 82  | 91  | 95              | 105 |
| 80                                                           | 89  | 93  | 97  | 92  | 92  | 92  | 97  | 94  | 103 | 105 | 113 | 82  | 92  | 98              | 107 |
| 100                                                          | 106 | 107 | 100 | 92  | 93  | 90  | 98  | 90  | 108 | 114 | 117 | 82  | 95  | 101             | 110 |
| 125                                                          | 103 | 105 | 98  | 92  | 93  | 97  | 98  | 91  | 110 | 118 | 120 | 82  | 96  | 103             | 111 |
| 160                                                          | 98  | 102 | 98  | 96  | 97  | 99  | 93  | 90  | 109 | 117 | 123 | 80  | 97  | 104             | 110 |
| 200                                                          | 94  | 97  | 92  | 94  | 95  | 97  | 88  | 88  | 110 | 119 | 123 | 79  | 99  | 109             | 114 |
| 250                                                          | 97  | 95  | 95  | 100 | 99  | 97  | 88  | 86  | 108 | 116 | 122 | 79  | 96  | 106             | 113 |
| 315                                                          | 96  | 98  | 93  | 95  | 93  | 95  | 88  | 89  | 115 | 120 | 123 | 82  | 104 | 108             | 112 |
| 400                                                          | 94  | 100 | 92  | 89  | 93  | 94  | 91  | 94  | 110 | 119 | 124 | 84  | 97  | 106             | 114 |
| 500                                                          | 92  | 97  | 91  | 86  | 88  | 91  | 90  | 89  | 111 | 120 | 126 | 86  | 98  | 109             | 115 |
| 630                                                          | 94  | 98  | 91  | 82  | 88  | 90  | 90  | 88  | 110 | 120 | 126 | 85  | 97  | 107             | 113 |
| 800                                                          | 90  | 94  | 91  | 83  | 89  | 89  | 91  | 90  | 111 | 121 | 127 | 88  | 98  | 109             | 114 |
| 1000                                                         | 88  | 90  | 89  | 84  | 88  | 85  | 91  | 90  | 109 | 121 | 127 | 89  | 101 | 110             | 115 |
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| 2000                                                         | 93  | 94  | 96  | 84  | 88  | 87  | 95  | 97  | 108 | 119 | 126 | 98  | 107 | 107             | 113 |
| 2500                                                         | 94  | 95  | 95  | 81  | 85  | 81  | 93  | 93  | 109 | 117 | 124 | 95  | 110 | 106             | 111 |
| 3150                                                         | 94  | 95  | 95  | 82  | 84  | 83  | 91  | 92  | 108 | 116 | 123 | 93  | 105 | 105             | 110 |
| 4000                                                         | 97  | 96  | 94  | 85  | 90  | 92  | 94  | 93  | 108 | 116 | 122 | 94  | 103 | 105             | 110 |
| 5000                                                         | 98  | 95  | 94  | 82  | 83  | 84  | 92  | 90  | 103 | 112 | 120 | 90  | 104 | 103             | 107 |
| 6300                                                         | 102 | 100 | 95  | 83  | 83  | 87  | 91  | 88  | 100 | 111 | 118 | 89  | 102 | 103             | 106 |
| 8000                                                         | 121 | 115 | 99  | 87  | 86  | 91  | 91  | 87  | 100 | 109 | 115 | 87  | 100 | 102             | 104 |
| 10000                                                        | 122 | 117 | 100 | 88  | 87  | 93  | 90  | 86  | 97  | 106 | 113 | 85  | 99  | 101             | 103 |
| OVERALL                                                      | 125 | 120 | 115 | 106 | 112 | 106 | 124 | 113 | 123 | 131 | 137 | 105 | 115 | 120             | 125 |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB)              |     |     |     |     |     |     |     |     |     |     |     |     |         |
|--------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| OCTAVE BAND                                            |     |     |     |     |     |     |     |     |     |     |     |     |         |
| 2                                                      |     |     |     |     |     |     |     |     |     |     |     |     |         |
| NOISE SOURCE/SUBJECT: ( OPERATION: ) IDENTIFICATION: ) |     |     |     |     |     |     |     |     |     |     |     |     |         |
| F-4C AIRCRAFT ( ) OMEGA 3.2                            |     |     |     |     |     |     |     |     |     |     |     |     |         |
| GROUND CREW ( ) TEST 71-019-200                        |     |     |     |     |     |     |     |     |     |     |     |     |         |
| NEAR FIELD NOISE LEVELS ( ) RUN 01                     |     |     |     |     |     |     |     |     |     |     |     |     |         |
| ( ) 24 APR 79                                          |     |     |     |     |     |     |     |     |     |     |     |     |         |
| ( ) PAGE J1                                            |     |     |     |     |     |     |     |     |     |     |     |     |         |
| LOCATION/CONDITION                                     |     |     |     |     |     |     |     |     |     |     |     |     |         |
| FREQ (HZ)                                              |     |     |     |     |     |     |     |     |     |     |     |     |         |
| 1/A                                                    | 1/B | 2/H | 3/D | 3/E | 3/F | 4/G | 5/H | 5/C | 5/I | 5/J | 6/H | 6/C | 6/I 6/J |
| 31.5                                                   | 89  | 96  | 113 | 102 | 107 | 88  | 117 | 112 | 110 | 108 | 95  | 87  | 93 105  |
| 63                                                     | 97  | 99  | 102 | 97  | 110 | 95  | 124 | 100 | 109 | 111 | 87  | 95  | 100 110 |
| 125                                                    | 108 | 110 | 103 | 98  | 99  | 101 | 102 | 95  | 114 | 121 | 86  | 101 | 108 115 |
| 250                                                    | 100 | 102 | 98  | 102 | 101 | 101 | 93  | 94  | 117 | 123 | 85  | 106 | 112 118 |
| 500                                                    | 98  | 103 | 96  | 91  | 95  | 97  | 95  | 96  | 115 | 124 | 90  | 102 | 112 119 |
| 1000                                                   | 95  | 97  | 95  | 87  | 92  | 91  | 95  | 95  | 114 | 126 | 93  | 104 | 115 119 |
| 2000                                                   | 98  | 98  | 101 | 86  | 92  | 88  | 99  | 101 | 113 | 123 | 103 | 112 | 112 117 |
| 4000                                                   | 101 | 100 | 99  | 88  | 91  | 93  | 97  | 96  | 111 | 119 | 97  | 109 | 109 114 |
| 8000                                                   | 124 | 119 | 103 | 91  | 96  | 96  | 95  | 92  | 104 | 114 | 92  | 105 | 107 109 |
| OVERALL                                                | 125 | 120 | 115 | 106 | 112 | 106 | 124 | 113 | 123 | 131 | 105 | 115 | 120 125 |

| TABLE: MEASURES OF HUMAN NOISE EXPOSURE                                                |     |     |     |     |     |     |      |     |     |     |     |     |     |     | IDENTIFICATION: |  |
|----------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----------------|--|
| 3                                                                                      |     |     |     |     |     |     |      |     |     |     |     |     |     |     | OMEGA 3.2       |  |
| NOISE SOURCE/SUBJECT: ( OPERATION: )                                                   |     |     |     |     |     |     |      |     |     |     |     |     |     |     | TEST 71-019-200 |  |
| F-4C AIRCRAFT ( )                                                                      |     |     |     |     |     |     |      |     |     |     |     |     |     |     | RUN 01          |  |
| GROUND CREW ( )                                                                        |     |     |     |     |     |     |      |     |     |     |     |     |     |     | 24 APR 79       |  |
| NEAR FIELD NOISE LEVELS ( )                                                            |     |     |     |     |     |     |      |     |     |     |     |     |     |     | PAGE H1         |  |
| LOCATION/CONDITION                                                                     |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| 1/A                                                                                    | 1/B | 2/H | 3/D | 3/E | 3/F | 4/G | 5/H  | 5/C | 5/I | 5/J | 6/H | 6/C | 6/I | 6/J |                 |  |
| HAZARD/PROTECTION                                                                      |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| C-WEIGHTED OVERALL SOUND LEVEL (OASLC IN DB) AT EAR                                    |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| A-WEIGHTED OVERALL SOUND LEVEL (OASLA IN DB) AT EAR                                    |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| MAXIMUM PERMISSIBLE TIME (T IN MINUTES) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| NO PROTECTION                                                                          |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| OASLC                                                                                  | 121 | 117 | 113 | 106 | 111 | 106 | 123  | 111 | 122 | 131 | 137 | 105 | 115 | 120 | 125             |  |
| OASLA                                                                                  | 123 | 118 | 106 | 98  | 100 | 101 | 104  | 104 | 120 | 130 | 136 | 106 | 116 | 119 | 124             |  |
| T                                                                                      | P   | P   | 11  | 42  | 30  | 25  | 15   | 15  | P   | P   | P   | 11  | P   | P   | P               |  |
| MINIMUM QPL EAR MUFFS                                                                  |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| OASLA*                                                                                 | 100 | 96  | 86  | 82  | 84  | 83  | 94   | 82  | 98  | 106 | 111 | 77  | 89  | 94  | 100             |  |
| T                                                                                      | 30  | 60  | 339 | 679 | 489 | 571 | 85   | 679 | 42  | 11  | 4.5 | 960 | 202 | 85  | 30              |  |
| AMERICAN OPTICAL 1700 EAR MUFFS                                                        |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| OASLA*                                                                                 | 98  | 93  | 82  | 78  | 82  | 79  | 94   | 79  | 93  | 101 | 106 | 71  | 84  | 89  | 95              |  |
| T                                                                                      | 42  | 101 | 679 | 960 | 679 | 960 | 85   | 960 | 101 | 25  | 11  | 960 | 480 | 202 | 71              |  |
| V-51R EAR PLUGS                                                                        |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| OASLA*                                                                                 | 94  | 89  | 79  | 75  | 77  | 77  | 85   | 77  | 95  | 105 | 110 | 76  | 86  | 93  | 98              |  |
| T                                                                                      | 85  | 202 | 960 | 960 | 960 | 960 | 304< | 960 | 71  | 13  | 5   | 960 | 339 | 101 | 42              |  |
| AMERICAN OPTICAL 1700 EAR MUFFS PLUS V-51R EAR PLUGS                                   |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| OASLA*                                                                                 | 84  | 80  | 68  | 61  | 66  | 62  | 77   | 66  | 80  | 91  | 96  | 62  | 73  | 79  | 84              |  |
| T                                                                                      | 480 | 960 | 960 | 960 | 960 | 960 | 304< | 960 | 960 | 143 | 60  | 960 | 960 | 960 | 480             |  |
| H-133 GROUND COMMUNICATION UNIT                                                        |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| OASLA*                                                                                 | 94  | 89  | 81  | 72  | 77  | 73  | 89   | 79  | 92  | 102 | 108 | 78  | 89  | 91  | 96              |  |
| T                                                                                      | 85  | 202 | 807 | 960 | 960 | 960 | 202  | 960 | 120 | 21  | 8   | 960 | 202 | 143 | 60              |  |
| COMMUNICATION                                                                          |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| PREFERRED SPEECH INTERFERENCE LEVEL (PSIL IN DB)                                       |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| PSIL                                                                                   | 97  | 99  | 97  | 88  | 93  | 92  | 96   | 97  | 114 | 124 | 130 | 95  | 106 | 113 | 118             |  |
| ANNOUNCE                                                                               |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| PERCEIVED NOISE LEVEL, TONE CORRECTED (PNLT IN PN08)                                   |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| TONE CORRECTION (C IN DB)                                                              |     |     |     |     |     |     |      |     |     |     |     |     |     |     |                 |  |
| PNLT                                                                                   | 135 | 131 | 122 | 114 | 117 | 119 | 122  | 119 | 134 | 142 | 149 | 120 | 131 | 132 | 136             |  |
| C                                                                                      | 2   | 1   | 2   | 1   | 2   | 2   | 0    | 1   | 1   | 0   | 0   | 2   | 1   | 1   | 0               |  |

\* BASED ON CALCULATED SPL SPECTRUM UNDER PROTECTIVE DEVICE.

P ADDITIONAL EAR PROTECTION REQUIRED.

< TIME LIMIT SET TO AVOID WHOLE BODY EFFECTS (WHOLE BODY LIMITS EXTRAPOLATED AT -4 DB PER DOUBLE TIME).

**TABLE 4**  
**TEST CONDITIONS**  
**FOR FAR-FIELD NOISE MEASUREMENTS**

F-4C Aircraft, Ground Runups, Eglin AFB FL  
22 July 1971, Tail #40930  
4 August 1971, Tail #40817

*Aircraft Engine Operation*

|             |                                      |
|-------------|--------------------------------------|
| Idle        | Single Engine<br>65% RPM, Core Speed |
| 85% Runup   | Single Engine<br>85% RPM, NC         |
| Military    | Single Engine<br>100% RPM, NC        |
| Idle        | Two Engines<br>65% RPM, NC           |
| 85% Runup   | Two Engines<br>85% RPM, NC           |
| Afterburner | Single Engine<br>100% RPM, NC        |

*Meteorology*

22 July 1971 (Idle, 85% and Military)

|              |                 |
|--------------|-----------------|
| Temperature  | 25.6 C          |
| Bar Pressure | 0.761 M Hg      |
| Rel Humidity | 65 %            |
| Wind — Speed | 2 M/Sec (4 kts) |
| — Direction  | 020 Deg         |

4 August 1971 (Afterburner)

|              |                 |
|--------------|-----------------|
| Temperature  | 31.1 C          |
| Bar Pressure | 0.761 M Hg      |
| Rel Humidity | 55 %            |
| Wind — Speed | 1 M/Sec (2 kts) |
| — Direction  | 360 Deg         |

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | IDENTIFICATION:       |     |     |
|-------------------------------------------|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------|-----|-----|
| 1/3 OCTAVE BAND                           |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |     |     |
| DISTANCE = 75 METERS                      |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | OMEGA 1.4             |     |     |
| NOISE SOURCE/SUBJECT:                     |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | TEST 75-002-026       |     |     |
| ( OPERATION: )                            |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | RUN 01                |     |     |
| ( IDLE POWER )                            |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |     |     |
| ( 65% RPM )                               |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 26 C                  |     |     |
| ( SINGLE ENGINE )                         |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | BAR PRESS = .761 M HG |     |     |
| ( FREE FLOW )                             |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | REL HUMID = 65 %      |     |     |
| F-4C AIRCRAFT                             |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 02 AUG 76             |     |     |
| J79-GE-15/A ENGINE                        |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |     |     |
| GROUND RUNUP NOISE                        |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | PAGE 2                |     |     |
| FREQ                                      | ANGLE (DEGREES) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |     |     |
| (HZ)                                      | 0               | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140 | 150 | 160                   | 170 | 180 |
| 25                                        | 67<             | 66< | 68< | 74< | 68< | 69< | 71< | 72< | 74< | 74< | 71< | 73< | 72< | 72< | 74< | 71< | 74<                   | 73< | 72< |
| 31.5                                      | 76<             | 78  | 79  | 80  | 79  | 80  | 83  | 83  | 83  | 83  | 81  | 80  | 79  | 82  | 80  | 80  | 82                    | 79  | 79  |
| 40                                        | 81              | 83  | 82  | 84  | 83  | 85  | 84  | 86  | 87  | 85  | 84  | 84  | 85  | 85  | 85  | 85  | 83                    | 83  | 82  |
| 50                                        | 72<             | 72< | 71< | 76  | 75  | 75  | 75  | 75  | 76  | 76  | 76  | 76  | 77  | 78  | 77  | 75  | 75                    | 74  | 73< |
| 63                                        | 69<             | 67< | 70< | 75< | 72< | 70< | 69< | 72< | 72< | 72< | 74< | 73< | 75< | 77  | 76< | 76< | 78                    | 73< | 70< |
| 80                                        | 65<             | 66< | 68< | 74  | 69< | 69< | 69< | 70< | 74  | 75  | 73  | 72< | 74  | 77  | 76  | 76  | 76                    | 73< | 66< |
| 100                                       | 65<             | 68< | 70< | 74< | 68< | 70< | 71< | 74< | 76  | 76  | 74< | 74< | 76  | 76  | 78  | 77  | 76                    | 71< | 65< |
| 125                                       | 67<             | 70< | 74  | 75  | 73  | 73< | 74  | 76  | 78  | 78  | 80  | 81  | 81  | 81  | 79  | 79  | 77                    | 71< | 65< |
| 160                                       | 65<             | 69< | 72  | 74  | 74  | 71< | 75  | 77  | 78  | 79  | 78  | 78  | 81  | 82  | 81  | 80  | 76                    | 68< | 64< |
| 200                                       | 64<             | 67< | 68< | 69< | 66< | 64< | 63< | 64< | 65< | 67< | 70< | 72< | 73< | 74  | 76  | 77  | 74                    | 70< | 63< |
| 250                                       | 64<             | 66< | 67< | 69< | 63< | 64< | 63< | 64< | 65< | 67< | 68< | 72  | 74  | 74  | 75  | 71  | 66<                   | 63< |     |
| 315                                       | 66              | 70  | 69  | 69  | 66  | 66  | 65  | 68  | 68  | 69  | 69  | 69  | 74  | 75  | 73  | 72  | 65                    | 64< | 59< |
| 400                                       | 70              | 73  | 73  | 70  | 70  | 68  | 68  | 74  | 73  | 73  | 74  | 75  | 75  | 75  | 74  | 72  | 69                    | 65  | 59< |
| 500                                       | 75              | 78  | 75  | 71  | 71  | 67  | 72  | 73  | 73  | 72  | 69  | 70  | 74  | 75  | 72  | 69  | 68                    | 63  | 53< |
| 630                                       | 71              | 72  | 70  | 72  | 71  | 69  | 69  | 70  | 69  | 68  | 67  | 68  | 71  | 71  | 67  | 63  | 61                    | 61  | 49< |
| 800                                       | 74              | 73  | 71  | 71  | 71  | 67  | 70  | 71  | 71  | 70  | 67  | 68  | 71  | 71  | 67  | 65  | 63                    | 59  | 46< |
| 1000                                      | 74              | 73  | 74  | 72  | 72  | 68  | 68  | 67  | 68  | 66  | 65  | 67  | 67  | 67  | 63  | 61  | 61                    | 62  | 47< |
| 1250                                      | 76              | 75  | 75  | 74  | 72  | 70  | 67  | 67  | 68  | 66  | 65  | 68  | 69  | 66  | 63  | 62  | 62                    | 61  | 46< |
| 1600                                      | 87              | 86  | 83  | 84  | 79  | 78  | 77  | 77  | 74  | 68  | 68  | 67  | 69  | 67  | 67  | 65  | 63                    | 63  | 48< |
| 2000                                      | 84              | 86  | 83  | 82  | 77  | 76  | 75  | 75  | 72  | 68  | 67  | 68  | 68  | 68  | 67  | 64  | 64                    | 64  | 49  |
| 2500                                      | 80              | 86  | 82  | 81  | 77  | 75  | 72  | 72  | 70  | 67  | 66  | 66  | 66  | 66  | 66  | 63  | 63                    | 63  | 47  |
| 3150                                      | 75              | 76  | 75  | 76  | 71  | 69  | 67  | 67  | 66  | 63  | 63  | 63  | 64  | 63  | 62  | 59  | 57                    | 57  | 42< |
| 4000                                      | 77              | 79  | 77  | 77  | 72  | 72  | 69  | 68  | 68  | 64  | 65  | 65  | 65  | 65  | 64  | 61  | 58                    | 57  | 42< |
| 5000                                      | 74              | 76  | 74  | 75  | 70  | 70  | 67  | 66  | 65  | 62  | 65  | 66  | 66  | 65  | 63  | 61  | 56                    | 55  | 40< |
| 6300                                      | 71              | 73  | 72  | 72  | 67  | 67  | 63  | 63  | 64  | 61  | 67  | 67  | 67  | 66  | 65  | 62  | 58                    | 56  | 40< |
| 8000                                      | 70              | 72  | 71  | 70  | 66  | 66  | 62  | 61  | 62  | 59  | 65  | 64  | 65  | 64  | 64  | 61  | 57                    | 54  | 38< |
| 10000                                     | 65              | 68  | 67  | 66  | 62  | 62  | 58  | 57  | 57  | 55  | 60  | 59  | 60  | 59  | 59  | 57  | 52                    | 49  |     |
| OVERALL                                   | 91              | 92  | 91  | 91  | 88  | 89  | 89  | 90  | 90  | 90  | 89  | 89  | 90  | 91  | 90  | 89  | 88                    | 86  | 85  |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) |  | IDENTIFICATION: |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------------|--|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1/3 OCTAVE BAND                           |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| DISTANCE = 75 METERS                      |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| NOISE SOURCE/SUBJECT:                     |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( OPERATION:                              |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( ( 85% RPM                               |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( ( SINGLE ENGINE                         |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( ( FREE FLOW                             |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| GROUND RUNUP NOISE                        |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| F-4C AIRCRAFT                             |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| J79-GE-15/A ENGINE                        |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| METEOROLOGY:                              |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( TEMP = 26 C                             |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( BAR PRESS = .761 M HG                   |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( REL HUMID = 65 %                        |  |                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 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                                        |  | 68<             | 68< | 66< | 68< | 71< | 79  | 75< | 74< | 75< | 76< | 79  | 80  | 81  | 85  | 86  | 89  | 91  | 90  | 88  |
| 31.5                                      |  | 70<             | 70< | 71< | 72< | 73< | 79  | 76< | 76< | 77  | 79  | 79  | 80  | 82  | 86  | 88  | 91  | 93  | 92  | 88  |
| 40                                        |  | 72<             | 71< | 73< | 74< | 76  | 80  | 78  | 80  | 81  | 81  | 82  | 84  | 84  | 89  | 93  | 95  | 95  | 93  | 87  |
| 50                                        |  | 74              | 74  | 75  | 76  | 78  | 80  | 81  | 82  | 82  | 83  | 85  | 86  | 87  | 92  | 96  | 97  | 97  | 94  | 81  |
| 63                                        |  | 76<             | 76< | 77  | 79  | 82  | 82  | 83  | 85  | 86  | 85  | 87  | 88  | 92  | 95  | 99  | 102 | 100 | 96  | 78  |
| 80                                        |  | 78              | 78  | 79  | 81  | 83  | 83  | 85  | 85  | 85  | 86  | 88  | 90  | 93  | 98  | 101 | 103 | 102 | 96  | 72< |
| 100                                       |  | 81              | 80  | 83  | 86  | 85  | 85  | 86  | 88  | 88  | 91  | 93  | 93  | 94  | 101 | 106 | 106 | 104 | 98  | 72< |
| 125                                       |  | 81              | 82  | 84  | 87  | 87  | 88  | 88  | 90  | 91  | 92  | 93  | 96  | 97  | 102 | 108 | 108 | 105 | 98  | 75  |
| 160                                       |  | 83              | 84  | 87  | 87  | 89  | 88  | 91  | 91  | 93  | 93  | 95  | 97  | 99  | 103 | 109 | 110 | 107 | 98  | 76  |
| 200                                       |  | 81              | 84  | 87  | 86  | 86  | 87  | 89  | 90  | 89  | 91  | 94  | 95  | 97  | 102 | 105 | 107 | 105 | 95  | 72< |
| 250                                       |  | 80              | 82  | 84  | 84  | 85  | 85  | 86  | 88  | 88  | 90  | 92  | 93  | 96  | 99  | 102 | 104 | 102 | 93  | 69< |
| 315                                       |  | 81              | 85  | 87  | 87  | 88  | 88  | 91  | 92  | 94  | 93  | 95  | 95  | 98  | 102 | 102 | 103 | 105 | 93  | 70  |
| 400                                       |  | 83              | 86  | 90  | 91  | 93  | 92  | 95  | 96  | 97  | 97  | 98  | 99  | 100 | 103 | 103 | 102 | 104 | 93  | 69  |
| 500                                       |  | 81              | 84  | 88  | 89  | 93  | 91  | 94  | 95  | 95  | 97  | 98  | 99  | 100 | 102 | 100 | 98  | 97  | 84  | 66  |
| 630                                       |  | 84              | 89  | 88  | 90  | 90  | 91  | 95  | 95  | 97  | 94  | 96  | 99  | 100 | 102 | 100 | 99  | 98  | 84  | 65  |
| 800                                       |  | 89              | 99  | 91  | 96  | 97  | 99  | 103 | 101 | 103 | 99  | 99  | 109 | 110 | 110 | 105 | 107 | 103 | 90  | 71  |
| 1000                                      |  | 79              | 82  | 83  | 85  | 86  | 86  | 89  | 91  | 92  | 92  | 92  | 93  | 94  | 95  | 98  | 96  | 93  | 80  | 63  |
| 1250                                      |  | 80              | 82  | 83  | 86  | 87  | 86  | 89  | 92  | 92  | 92  | 92  | 94  | 94  | 96  | 96  | 93  | 89  | 77  | 61  |
| 1600                                      |  | 83              | 84  | 84  | 87  | 87  | 85  | 89  | 91  | 91  | 93  | 92  | 93  | 96  | 96  | 94  | 90  | 89  | 76  | 63  |
| 2000                                      |  | 97              | 96  | 92  | 95  | 93  | 88  | 90  | 90  | 90  | 91  | 90  | 92  | 94  | 95  | 93  | 90  | 86  | 76  | 60  |
| 2500                                      |  | 97              | 97  | 94  | 95  | 95  | 92  | 93  | 91  | 89  | 90  | 89  | 90  | 93  | 94  | 91  | 88  | 83  | 76  | 59  |
| 3150                                      |  | 86              | 86  | 84  | 86  | 86  | 82  | 85  | 85  | 86  | 87  | 86  | 87  | 86  | 89  | 90  | 89  | 84  | 79  | 56  |
| 4000                                      |  | 90              | 88  | 85  | 87  | 88  | 82  | 85  | 85  | 86  | 87  | 86  | 86  | 89  | 90  | 89  | 84  | 78  | 72  | 56  |
| 5000                                      |  | 87              | 87  | 84  | 86  | 88  | 82  | 85  | 83  | 84  | 84  | 83  | 83  | 85  | 88  | 85  | 80  | 75  | 69  | 52  |
| 6300                                      |  | 84              | 83  | 79  | 83  | 84  | 79  | 82  | 81  | 82  | 81  | 81  | 81  | 83  | 86  | 84  | 79  | 74  | 68  | 49  |
| 8000                                      |  | 81              | 82  | 79  | 81  | 83  | 77  | 81  | 79  | 80  | 78  | 80  | 79  | 81  | 83  | 81  | 77  | 73  | 68  | 46< |
| 10000                                     |  | 77              | 77  | 75  | 77  | 77  | 74  | 76  | 75  | 76  | 74  | 77  | 75  | 77  | 79  | 76  | 74  | 69  | 64  | 42< |
| OVERALL                                   |  | 102             | 103 | 100 | 103 | 103 | 103 | 106 | 106 | 107 | 106 | 107 | 111 | 113 | 114 | 115 | 116 | 114 | 106 | 93  |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|-------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1/3 OCTAVE BAND                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| DISTANCE = 75 METERS                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| NOISE SOURCE/SUBJECT:                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( OPERATION: )                            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( MILITARY POWER )                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( 100% RPM )                              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( SINGLE ENGINE )                         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ( FREE FLOW )                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| METEOROLOGY:                              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TEMP = 26 C                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| BAR PRESS = .761 M HG                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| REL HUMID = 65 %                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| IDENTIFICATION:                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| OMEGA 1.4                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TEST 75-002-026                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| RUN 03                                    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 02 AUG 76                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| PAGE 2                                    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| FREQ (HZ)                                 | 0   | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| 25                                        | 76< | 77  | 77< | 78  | 78  | 81  | 80  | 81  | 82  | 84  | 85  | 86  | 88  | 93  | 96  | 100 | 100 | 97  |     |
| 31.5                                      | 77  | 77  | 78  | 80  | 80  | 80  | 81  | 82  | 83  | 85  | 87  | 88  | 91  | 95  | 98  | 102 | 102 | 98  |     |
| 40                                        | 79  | 79  | 81  | 81  | 82  | 84  | 84  | 86  | 88  | 87  | 89  | 89  | 93  | 99  | 103 | 106 | 105 | 100 |     |
| 50                                        | 81  | 81  | 81  | 82  | 84  | 83  | 85  | 87  | 88  | 88  | 89  | 91  | 94  | 100 | 106 | 107 | 105 | 100 |     |
| 63                                        | 83  | 82  | 83  | 85  | 88  | 85  | 87  | 89  | 92  | 91  | 92  | 93  | 98  | 104 | 108 | 110 | 107 | 99  |     |
| 80                                        | 84  | 84  | 87  | 87  | 87  | 88  | 89  | 89  | 91  | 93  | 95  | 97  | 102 | 108 | 111 | 112 | 108 | 99  |     |
| 100                                       | 87  | 88  | 89  | 91  | 91  | 92  | 92  | 95  | 95  | 97  | 98  | 100 | 106 | 113 | 117 | 115 | 111 | 100 |     |
| 125                                       | 89  | 89  | 92  | 92  | 92  | 95  | 94  | 97  | 98  | 99  | 101 | 102 | 107 | 116 | 119 | 118 | 112 | 100 |     |
| 160                                       | 91  | 92  | 95  | 95  | 95  | 96  | 97  | 98  | 99  | 100 | 103 | 104 | 109 | 118 | 121 | 119 | 114 | 100 |     |
| 200                                       | 91  | 93  | 94  | 94  | 93  | 96  | 96  | 96  | 98  | 99  | 103 | 104 | 107 | 116 | 119 | 118 | 113 | 96  |     |
| 250                                       | 89  | 93  | 92  | 93  | 94  | 95  | 93  | 96  | 96  | 98  | 100 | 103 | 107 | 113 | 117 | 117 | 111 | 93  |     |
| 315                                       | 91  | 92  | 96  | 95  | 95  | 96  | 96  | 97  | 97  | 100 | 103 | 106 | 110 | 117 | 118 | 118 | 114 | 93  |     |
| 400                                       | 93  | 96  | 98  | 96  | 97  | 99  | 99  | 101 | 100 | 102 | 105 | 109 | 111 | 117 | 121 | 119 | 115 | 91  |     |
| 500                                       | 92  | 94  | 96  | 97  | 100 | 99  | 101 | 102 | 100 | 103 | 106 | 109 | 110 | 115 | 117 | 116 | 113 | 87  |     |
| 630                                       | 91  | 94  | 96  | 96  | 98  | 98  | 99  | 99  | 99  | 100 | 103 | 107 | 109 | 113 | 116 | 113 | 111 | 85  |     |
| 800                                       | 94  | 95  | 97  | 99  | 101 | 101 | 101 | 102 | 100 | 103 | 106 | 108 | 109 | 113 | 115 | 113 | 109 | 83  |     |
| 1000                                      | 90  | 92  | 94  | 96  | 98  | 98  | 99  | 99  | 99  | 100 | 102 | 105 | 106 | 109 | 113 | 110 | 108 | 82  |     |
| 1250                                      | 89  | 91  | 93  | 96  | 97  | 96  | 98  | 101 | 99  | 101 | 104 | 107 | 106 | 109 | 111 | 110 | 107 | 81  |     |
| 1600                                      | 87  | 90  | 93  | 95  | 94  | 95  | 98  | 100 | 99  | 101 | 104 | 108 | 107 | 108 | 111 | 109 | 105 | 80  |     |
| 2000                                      | 84  | 87  | 90  | 92  | 93  | 94  | 95  | 97  | 98  | 98  | 102 | 107 | 104 | 107 | 109 | 107 | 103 | 78  |     |
| 2500                                      | 84  | 86  | 90  | 92  | 94  | 94  | 95  | 97  | 98  | 97  | 99  | 107 | 104 | 106 | 108 | 106 | 102 | 76  |     |
| 3150                                      | 82  | 84  | 87  | 88  | 90  | 90  | 92  | 94  | 95  | 94  | 96  | 104 | 101 | 103 | 105 | 103 | 98  | 73  |     |
| 4000                                      | 82  | 83  | 86  | 88  | 88  | 88  | 91  | 93  | 95  | 94  | 95  | 104 | 101 | 103 | 105 | 102 | 97  | 72  |     |
| 5000                                      | 80  | 80  | 84  | 84  | 86  | 86  | 88  | 90  | 92  | 90  | 92  | 101 | 98  | 101 | 102 | 99  | 93  | 68  |     |
| 6300                                      | 78  | 79  | 82  | 83  | 84  | 83  | 86  | 88  | 91  | 88  | 90  | 99  | 96  | 98  | 101 | 97  | 92  | 66  |     |
| 8000                                      | 76  | 77  | 80  | 81  | 83  | 82  | 84  | 85  | 90  | 86  | 89  | 98  | 95  | 97  | 100 | 95  | 90  | 64  |     |
| 10000                                     | 72  | 73  | 76  | 77  | 78  | 77  | 80  | 81  | 87  | 82  | 85  | 94  | 92  | 94  | 98  | 91  | 87  | 60  |     |
| OVERALL                                   | 102 | 104 | 106 | 107 | 108 | 109 | 110 | 111 | 111 | 112 | 115 | 118 | 120 | 126 | 129 | 128 | 123 | 109 |     |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

|                                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
|-------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 1/3 OCTAVE BAND                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| DISTANCE = 75 METERS                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| NOISE SOURCE/SUBJECT:                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| ( OPERATION: )                            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| ( IDLE POWER )                            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| ( 65% RPM )                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| ( BOTH ENGINES )                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| ( FREE FLOW )                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| F-4C AIRCRAFT                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| J79-GE-15/A ENGINE                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| GROUND RUNUP NOISE                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| TEMP = 26 C                               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| BAR PRESS = .761 M HG                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| REL HUMID = 65 %                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| PAGE 2                                    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| IDENTIFICATION:                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| OMEGA 1.4                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| TEST 75-002-026                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| RUN 04                                    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 02 AUG 76                                 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| ANGLE (DEGREES)                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| FREQ                                      | 0   | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |    |
| (HZ)                                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |
| 25                                        | 69< | 72< | 69< | 71< | 70< | 72< | 73< | 72< | 72< | 73< | 75< | 73< | 74< | 75< | 75< | 75< | 77  | 75< | 73< |    |
| 31.5                                      | 78  | 79  | 82  | 81  | 84  | 85  | 83  | 83  | 87  | 84  | 85  | 83  | 83  | 82  | 83  | 83  | 83  | 82  | 79  |    |
| 40                                        | 83  | 85  | 86  | 87  | 88  | 89  | 87  | 87  | 87  | 88  | 88  | 87  | 85  | 86  | 86  | 85  | 85  | 84  | 80  |    |
| 50                                        | 89  | 79  | 77  | 79  | 78  | 78  | 77  | 76  | 77  | 77  | 77  | 77  | 80  | 79  | 78  | 76  | 77  | 74  | 69< |    |
| 63                                        | 76< | 71< | 72< | 73< | 75< | 72< | 74< | 72< | 74< | 75< | 77< | 77< | 78  | 77  | 78  | 77  | 78  | 75< |     |    |
| 80                                        | 75  | 70< | 71< | 73< | 71< | 70< | 72< | 71< | 74  | 75  | 75  | 75  | 76  | 77  | 78  | 77  | 76  | 70< |     |    |
| 100                                       | 79  | 71< | 72< | 73< | 70< | 71< | 72< | 75< | 76  | 76  | 77  | 76  | 77  | 77  | 78  | 79  | 77  | 76  | 70< |    |
| 125                                       | 79  | 74  | 75  | 75  | 76  | 75  | 75  | 79  | 77  | 78  | 81  | 82  | 81  | 83  | 83  | 80  | 76  | 71< |     |    |
| 160                                       | 80  | 73  | 75  | 75  | 74  | 73  | 76  | 78  | 78  | 80  | 79  | 81  | 83  | 84  | 84  | 82  | 74  | 68< | 61< |    |
| 200                                       | 79  | 69< | 71< | 69< | 67< | 66< | 68< | 70< | 72< | 72< | 75  | 74  | 76  | 78  | 78  | 77  | 68< |     |     |    |
| 250                                       | 77  | 69< | 69< | 67< | 65< | 66< | 65< | 66< | 68< | 68< | 71  | 74  | 75  | 73  | 76  | 73  | 67< | 63< |     |    |
| 315                                       | 74  | 73  | 70  | 69  | 68  | 69  | 66  | 68  | 68  | 69  | 71  | 73  | 75  | 77  | 73  | 75  | 68  | 64< |     |    |
| 400                                       | 74  | 75  | 74  | 73  | 71  | 71  | 69  | 73  | 72  | 72  | 75  | 75  | 76  | 77  | 77  | 74  | 71  | 63  | 53< |    |
| 500                                       | 80  | 79  | 77  | 72  | 71  | 69  | 73  | 73  | 71  | 70  | 71  | 72  | 75  | 76  | 74  | 69  | 67  | 62  | 48< |    |
| 630                                       | 77  | 75  | 71  | 71  | 71  | 71  | 70  | 70  | 67  | 67  | 68  | 71  | 71  | 72  | 68  | 66  | 65  | 59  |     |    |
| 800                                       | 78  | 75  | 74  | 72  | 72  | 70  | 71  | 70  | 69  | 69  | 69  | 70  | 71  | 71  | 68  | 66  | 64  | 57  | 43< |    |
| 1000                                      | 77  | 74  | 73  | 71  | 71  | 71  | 70  | 67  | 67  | 65  | 67  | 68  | 67  | 67  | 64  | 63  | 63  | 58  | 43< |    |
| 1250                                      | 76  | 74  | 73  | 72  | 70  | 70  | 67  | 66  | 65  | 64  | 67  | 68  | 71  | 66  | 65  | 63  | 63  | 59  | 42< |    |
| 1600                                      | 85  | 83  | 83  | 83  | 79  | 79  | 75  | 72  | 70  | 67  | 68  | 68  | 70  | 68  | 67  | 65  | 64  | 60  | 45< |    |
| 2000                                      | 83  | 82  | 82  | 80  | 77  | 77  | 74  | 72  | 69  | 68  | 68  | 68  | 70  | 69  | 67  | 64  | 65  | 63  | 46< |    |
| 2500                                      | 81  | 82  | 80  | 77  | 77  | 77  | 70  | 68  | 65  | 63  | 66  | 66  | 68  | 66  | 65  | 62  | 63  | 63  | 44< |    |
| 3150                                      | 78  | 77  | 74  | 72  | 70  | 70  | 65  | 64  | 62  | 62  | 62  | 63  | 67  | 64  | 63  | 59  | 58  | 54  | 41< |    |
| 4000                                      | 80  | 80  | 76  | 75  | 72  | 72  | 68  | 64  | 63  | 63  | 63  | 64  | 69  | 65  | 64  | 61  | 59  | 55  | 41< |    |
| 5000                                      | 76  | 75  | 74  | 73  | 69  | 70  | 66  | 63  | 61  | 62  | 63  | 64  | 70  | 66  | 64  | 60  | 57  | 52  | 39< |    |
| 6300                                      | 72  | 73  | 70  | 69  | 66  | 67  | 63  | 60  | 61  | 65  | 65  | 64  | 73  | 67  | 66  | 61  | 58  | 52  | 40< |    |
| 8000                                      | 72  | 72  | 70  | 69  | 65  | 65  | 61  | 59  | 60  | 62  | 63  | 62  | 70  | 66  | 65  | 61  | 58  | 50  | 38< |    |
| 10000                                     | 68  | 68  | 66  | 64  | 62  | 61  | 58  | 56  | 56  | 59  | 59  | 59  | 65  | 61  | 61  | 56  | 54  | 46  |     |    |
| OVERALL                                   | 94  | 92  | 92  | 91  | 91  | 92  | 90  | 90  | 90  | 91  | 92  | 91  | 91  | 92  | 92  | 92  | 90  | 89  | 87  | 83 |

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.



| TABLE: MEASURED SOUND PRESSURE LEVEL (DB) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | IDENTIFICATION:       |  |
|-------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------|--|
| 1/3 OCTAVE BAND                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |  |
| 5                                         |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | OMEGA 1.4             |  |
| DISTANCE = 50 METERS                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | TEST 75-002-059       |  |
| NOISE SOURCE/SUBJECT:                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | RUN 03                |  |
| ( OPERATION:                              |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |  |
| ( AFTERBURNER POWER                       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | TEMP = 31 C           |  |
| ( 100% RPM                                |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | BAR PRESS = .761 M HG |  |
| ( SINGLE ENGINE                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 09 AUG 76             |  |
| ( DEFLECTED FLOW                          |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | REL HUMID = 55 %      |  |
| F-4C AIRCRAFT                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | PAGE 2                |  |
| J79-GE-15/A ENGINE                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |  |
| FAR FIELD NOISE                           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |  |
| FREQ                                      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |                       |  |
| ( HZ)                                     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | ANGLE (DEGREES)       |  |
|                                           | 0   | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180                   |  |
| 25                                        | 89  | 90  | 89  | 91  | 91  | 93  | 93  | 95  | 94  | 96  | 100 | 98  | 101 | 106 | 109 | 108 |     |     |                       |  |
| 31.5                                      | 94  | 92  | 92  | 93  | 93  | 94  | 95  | 97  | 97  | 97  | 104 | 102 | 108 | 111 | 113 | 111 |     |     |                       |  |
| 40                                        | 94  | 95  | 95  | 95  | 97  | 98  | 99  | 99  | 99  | 100 | 108 | 107 | 113 | 114 | 116 | 112 |     |     |                       |  |
| 50                                        | 93  | 94  | 95  | 97  | 98  | 97  | 99  | 100 | 100 | 103 | 108 | 108 | 113 | 117 | 117 | 112 |     |     |                       |  |
| 63                                        | 97  | 96  | 97  | 99  | 99  | 100 | 100 | 101 | 102 | 103 | 108 | 110 | 116 | 121 | 120 | 112 |     |     |                       |  |
| 80                                        | 99  | 98  | 99  | 100 | 100 | 100 | 102 | 102 | 103 | 105 | 112 | 114 | 121 | 123 | 120 | 111 |     |     |                       |  |
| 100                                       | 101 | 101 | 103 | 104 | 104 | 104 | 105 | 106 | 106 | 109 | 116 | 119 | 124 | 127 | 124 | 112 |     |     |                       |  |
| 125                                       | 103 | 102 | 104 | 105 | 106 | 106 | 107 | 108 | 109 | 111 | 119 | 122 | 127 | 129 | 127 | 112 |     |     |                       |  |
| 160                                       | 104 | 105 | 107 | 107 | 108 | 108 | 109 | 110 | 111 | 112 | 121 | 124 | 131 | 130 | 129 | 111 |     |     |                       |  |
| 200                                       | 102 | 104 | 105 | 105 | 105 | 107 | 107 | 108 | 110 | 111 | 120 | 123 | 127 | 127 | 127 | 108 |     |     |                       |  |
| 250                                       | 103 | 104 | 107 | 106 | 108 | 107 | 107 | 110 | 112 | 114 | 122 | 124 | 128 | 128 | 128 | 105 |     |     |                       |  |
| 315                                       | 106 | 105 | 107 | 109 | 110 | 110 | 112 | 112 | 114 | 116 | 126 | 127 | 129 | 131 | 132 | 106 |     |     |                       |  |
| 400                                       | 104 | 103 | 106 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 124 | 126 | 127 | 129 | 130 | 108 |     |     |                       |  |
| 500                                       | 102 | 104 | 106 | 107 | 108 | 108 | 109 | 112 | 115 | 116 | 124 | 125 | 125 | 126 | 125 | 104 |     |     |                       |  |
| 630                                       | 105 | 106 | 107 | 109 | 111 | 111 | 113 | 115 | 115 | 117 | 126 | 126 | 128 | 129 | 127 | 106 |     |     |                       |  |
| 800                                       | 100 | 102 | 104 | 106 | 108 | 108 | 110 | 111 | 114 | 115 | 123 | 123 | 124 | 124 | 122 | 104 |     |     |                       |  |
| 1000                                      | 100 | 102 | 103 | 105 | 107 | 107 | 109 | 111 | 112 | 114 | 123 | 122 | 123 | 123 | 121 | 102 |     |     |                       |  |
| 1250                                      | 98  | 101 | 101 | 103 | 106 | 106 | 109 | 110 | 112 | 113 | 121 | 121 | 121 | 122 | 120 | 102 |     |     |                       |  |
| 1600                                      | 98  | 101 | 102 | 103 | 106 | 106 | 109 | 111 | 112 | 114 | 122 | 121 | 122 | 123 | 120 | 102 |     |     |                       |  |
| 2000                                      | 97  | 100 | 101 | 102 | 105 | 105 | 108 | 110 | 110 | 113 | 121 | 120 | 120 | 122 | 118 | 101 |     |     |                       |  |
| 2500                                      | 95  | 98  | 99  | 100 | 103 | 102 | 105 | 109 | 108 | 110 | 119 | 117 | 118 | 120 | 115 | 98  |     |     |                       |  |
| 3150                                      | 94  | 96  | 98  | 99  | 101 | 101 | 105 | 108 | 108 | 110 | 117 | 116 | 117 | 118 | 115 | 97  |     |     |                       |  |
| 4000                                      | 93  | 94  | 95  | 97  | 100 | 100 | 102 | 106 | 107 | 108 | 116 | 115 | 115 | 116 | 112 | 97  |     |     |                       |  |
| 5000                                      | 90  | 91  | 93  | 94  | 98  | 98  | 100 | 105 | 104 | 106 | 113 | 112 | 113 | 114 | 111 | 94  |     |     |                       |  |
| 6300                                      | 89  | 91  | 92  | 94  | 97  | 97  | 100 | 104 | 104 | 106 | 113 | 112 | 113 | 115 | 110 | 93  |     |     |                       |  |
| 8000                                      | 86  | 88  | 89  | 91  | 94  | 94  | 97  | 102 | 101 | 103 | 111 | 111 | 111 | 112 | 109 | 91  |     |     |                       |  |
| 10000                                     | 84  | 87  | 89  | 90  | 93  | 94  | 96  | 102 | 101 | 103 | 111 | 111 | 112 | 113 | 109 | 90  |     |     |                       |  |
| OVERALL                                   | 114 | 115 | 117 | 118 | 119 | 120 | 121 | 123 | 124 | 126 | 134 | 135 | 138 | 139 | 138 | 122 |     |     |                       |  |

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE: NORMALIZED FARFIELD NOISE LEVELS

3 DISTANCE = 100 METERS

IDENTIFICATION:

OMEGA 1.4

TEST 75-002-026

RUN 01

02 AUG 76

PAGE 6

NOISE SOURCE/SUBJECT:

OPERATIONS:

IDLE POWER

65% RPM

SINGLE ENGINE

FREE FLOW

METEORLOGY:

TEMP = 15 C

BAR PRESS = 760 MM HG

REL HUMID = 70 %

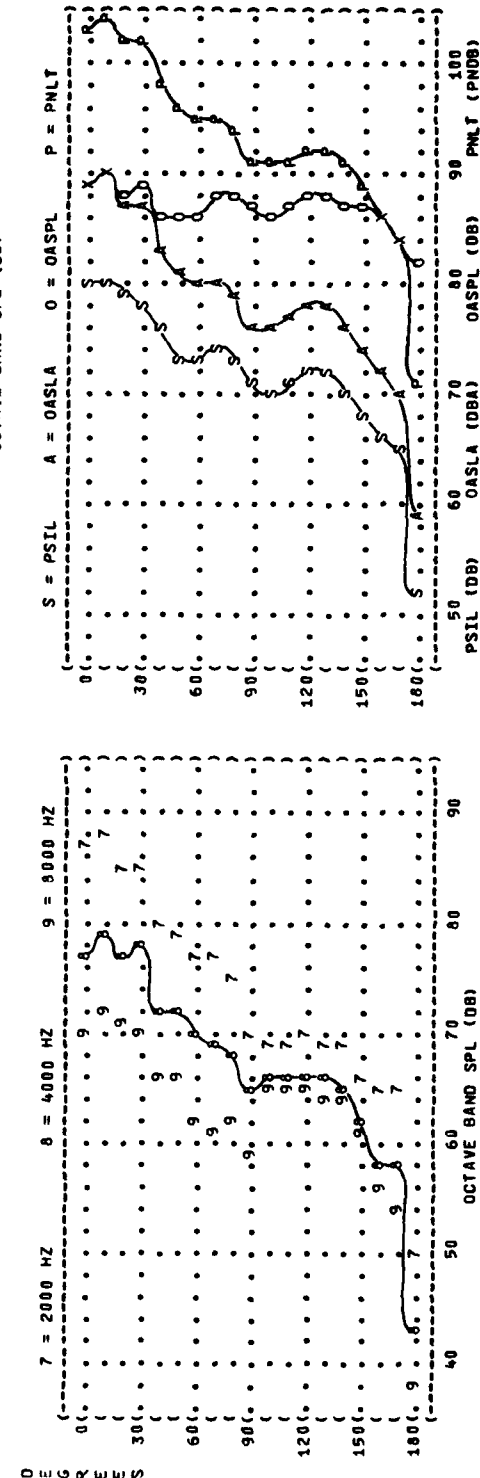
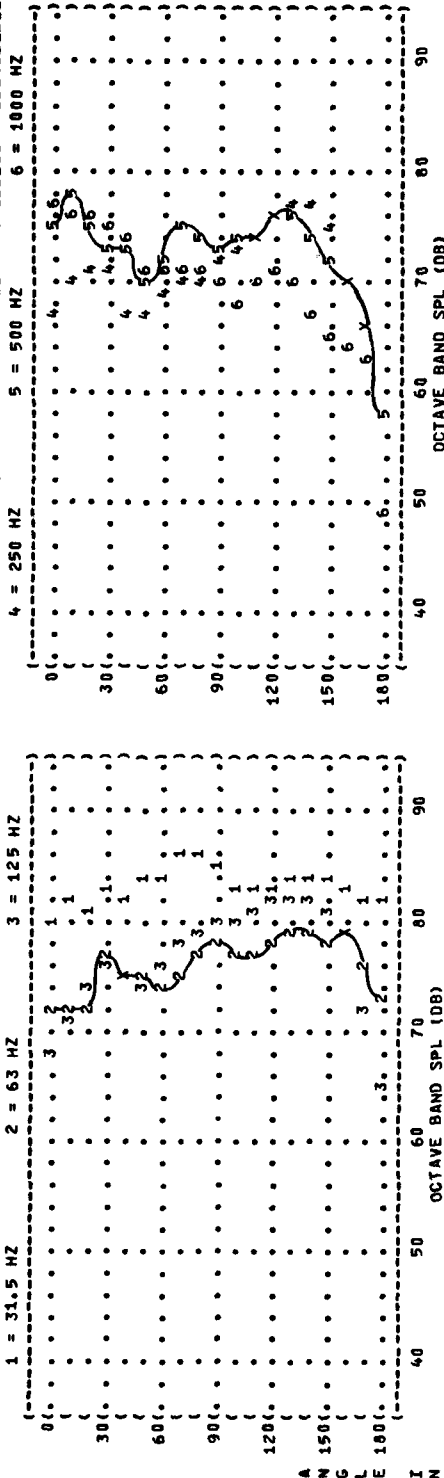




FIGURE 3 NORMALIZED FARFIELD NOISE LEVELS

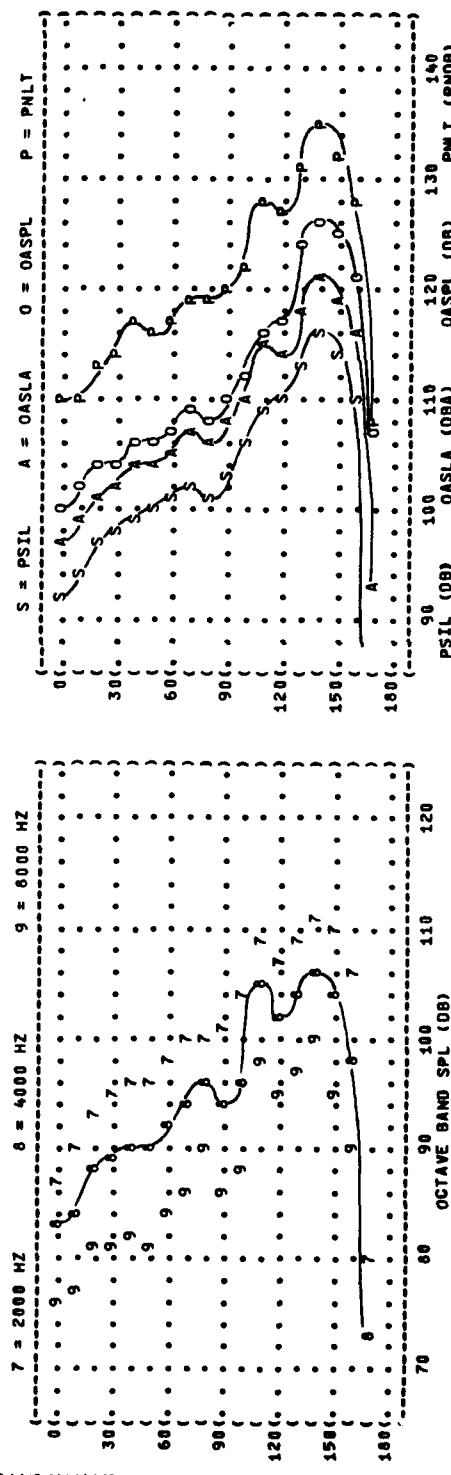
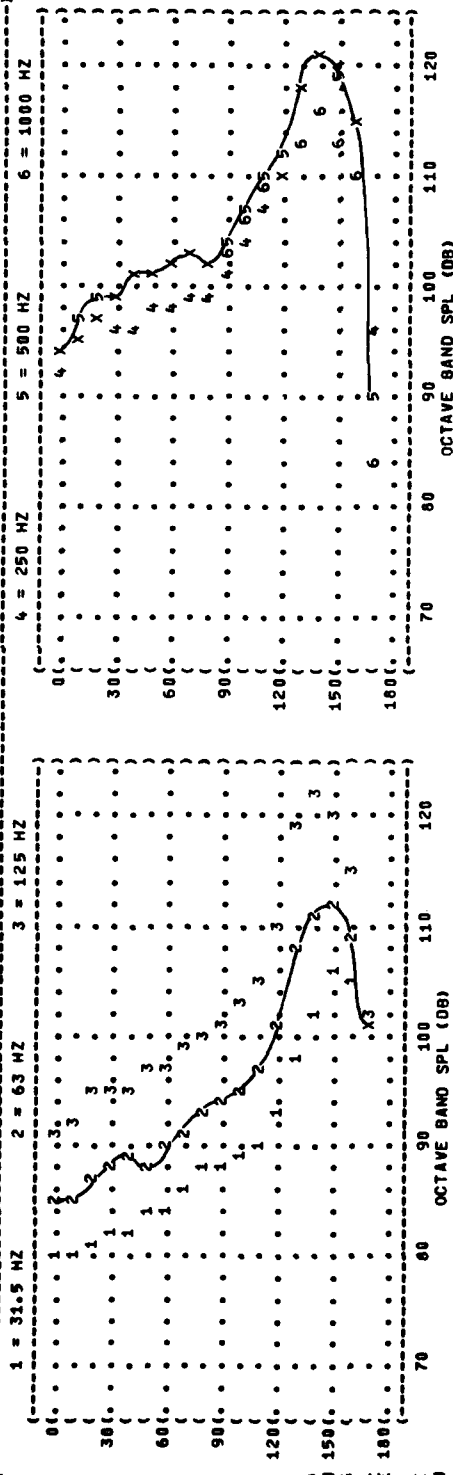
3 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT: F-4C AIRCRAFT  
J79-GE-15/A ENGINE  
GROUND RUNUP NOISE

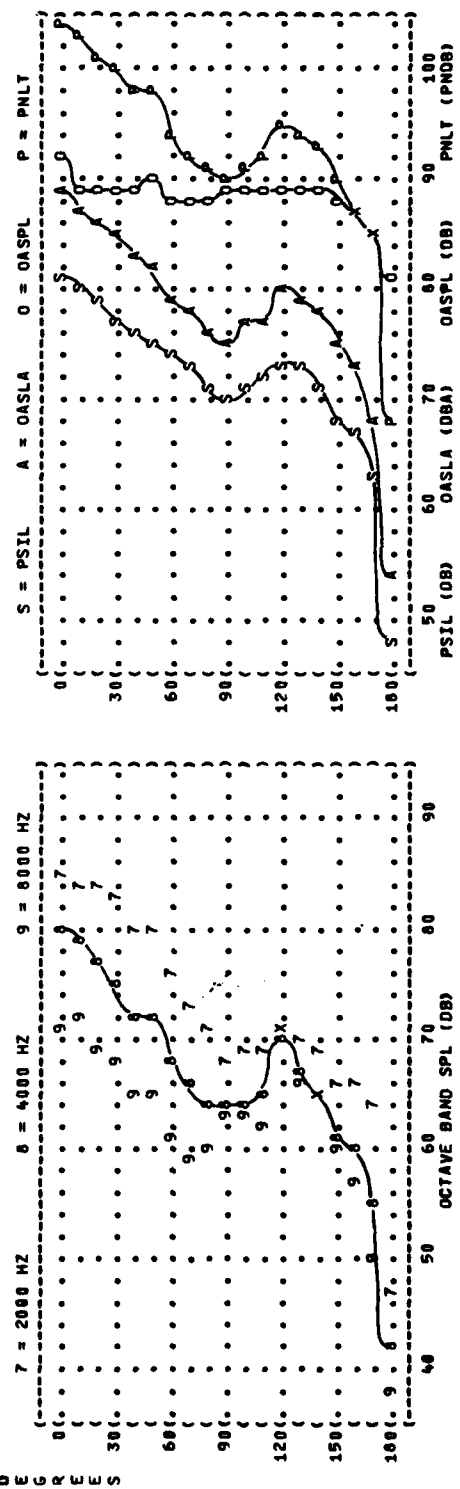
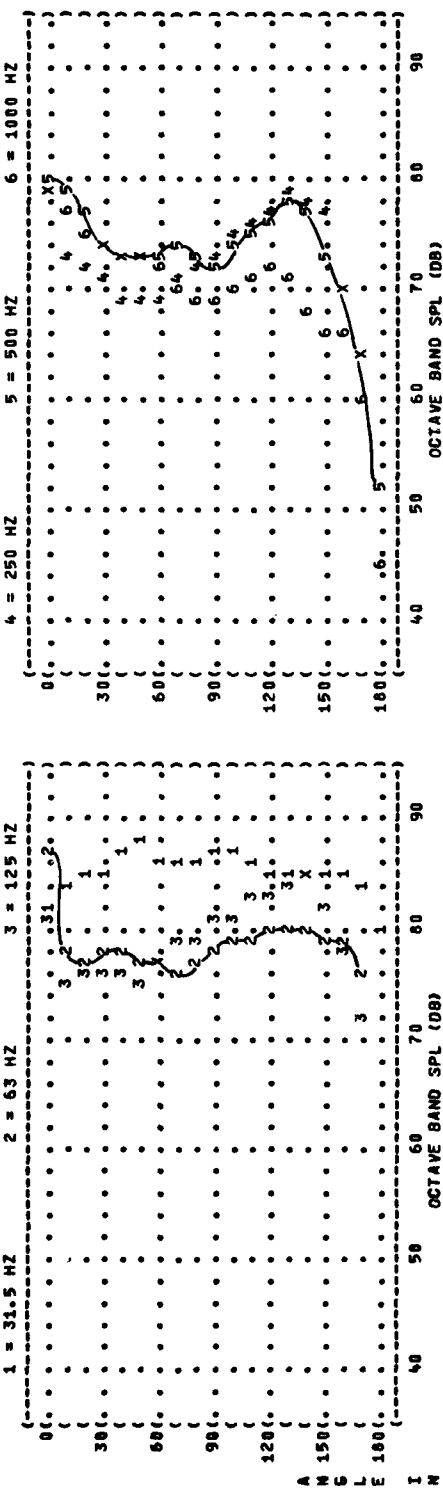
OPERATION: MILITARY POWER  
100% RPM  
SINGLE ENGINE  
FREE FLOW

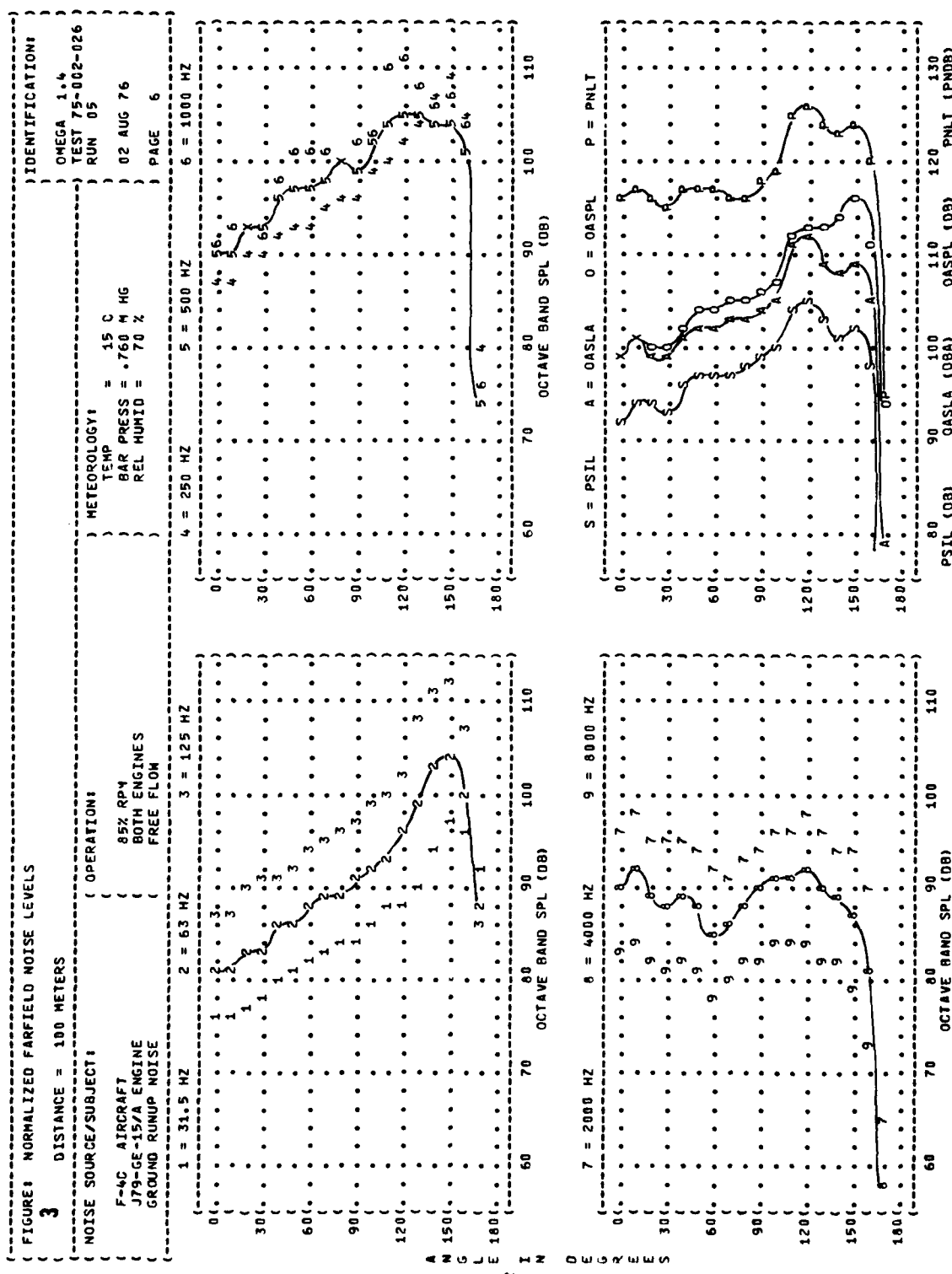
METEOROLOGY: TEMP = 15 C  
BAR PRESS = 760 MM HG  
REL HUMID = 70 %

IDENTIFICATION: OMEGA 1.4  
TEST 75-002-026  
RUN 03  
02 AUG 76  
PAGE 6



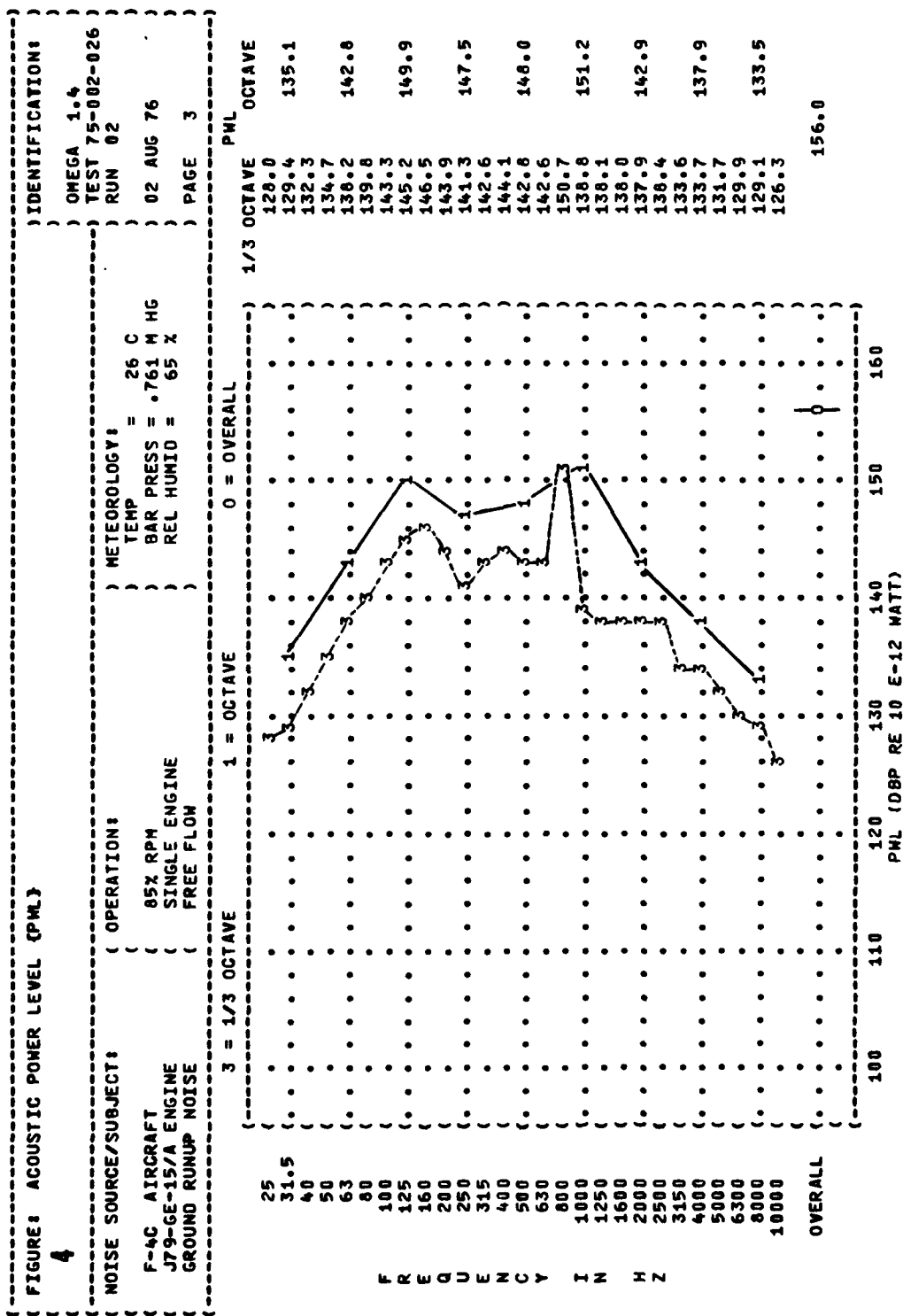
( FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS  
 ( 3 DISTANCE = 100 METERS  
 ( NOISE SOURCE/SUBJECTS  
 ( F-4C AIRCRAFT  
 ( J79-GE-15/A ENGINE  
 ( GROUND RUNUP NOISE  
 ( IDENTIFICATION:  
 ( OMEGA 1-4  
 ( TEST 75-002-026  
 ( RUN 04  
 ( METEOROLOGY1  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( PAGE 5



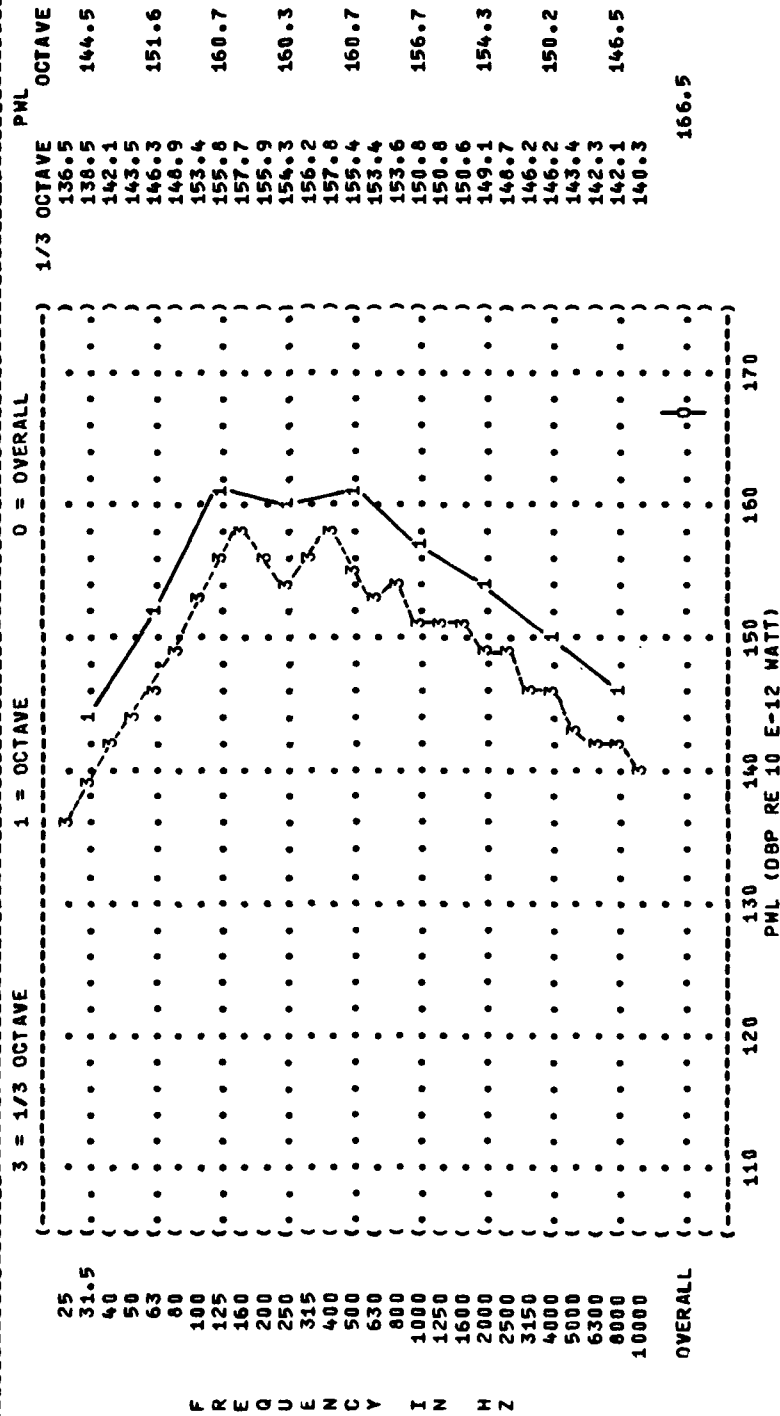








( FIGURE: ACOUSTIC POWER LEVEL (PWL) )  
 ( 4 )  
 ( NOISE SOURCE/SUBJECT: )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )  
 ( OPERATION: )  
 ( MILITARY POWER )  
 ( 100% RPM )  
 ( SINGLE ENGINE )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 26 C )  
 ( BAR PRESS = .761 M HG )  
 ( REL HUMID = 65 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-026 )  
 ( RUN 03 )  
 ( 02 AUG 76 )  
 ( PAGE 3 )









| TABLE: DIRECTIVITY INDEX (DB) |     | IDENTIFICATIONS:      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
|-------------------------------|-----|-----------------------|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| 6                             |     |                       |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| NOISE SOURCE/SUBJECT:         |     | METEOROLOGICAL        |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| F-4C AIRCRAFT                 |     | TEMP = 26 C           |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| J79-GE-15/A ENGINE            |     | BAR PRESS = .761 M HG |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| GROUND RUNUP NOISE            |     | REL HUMID = 65 %      |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
|                               |     | PAGE 4                |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| FREQ (HZ)                     | 0   | 10                    | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |  |
| 1/3 OCTAVE                    |     |                       |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| 25                            | -5  | -6                    | -5 | 2  | -5 | -3 | -1 | -0 | 2  | 2  | -1  | 0   | -1  | -0  | 2   | -1  | 2   | 1   | 0   |  |
| 31.5                          | -5  | -3                    | -3 | -1 | -3 | -1 | 1  | 2  | 2  | 2  | -1  | -1  | -2  | 0   | -2  | -1  | 0   | -2  | -2  |  |
| 40                            | -4  | -2                    | -3 | -0 | -0 | -0 | -0 | 1  | 1  | 1  | 0   | 0   | 0   | 0   | 0   | 0   | -1  | -2  | -2  |  |
| 50                            | -4  | -3                    | -4 | -0 | -1 | -1 | -1 | -1 | 0  | 0  | -0  | 0   | 1   | 2   | 1   | -1  | -1  | -2  | -3  |  |
| 63                            | -5  | -7                    | -4 | 0  | -2 | -4 | -5 | -2 | -2 | -0 | -1  | 1   | 3   | 2   | 2   | 2   | 3   | -1  | -4  |  |
| 80                            | -8  | -7                    | -5 | 1  | -4 | -4 | -4 | -4 | 0  | 2  | -0  | -2  | 1   | 3   | 3   | 2   | 3   | -1  | -7  |  |
| 100                           | -10 | -7                    | -4 | -1 | -6 | -4 | -4 | -1 | 1  | 1  | -0  | -0  | 1   | 1   | 3   | 2   | 1   | -4  |     |  |
| 125                           | -11 | -8                    | -5 | -4 | -5 | -5 | -4 | -2 | -0 | 0  | 1   | 2   | 3   | 3   | 1   | 1   | -1  | -8  | -13 |  |
| 160                           | -13 | -9                    | -6 | -4 | -4 | -7 | -3 | -3 | -1 | 0  | 1   | 0   | 3   | 4   | 3   | 2   | -2  | -10 | -14 |  |
| 200                           | -8  | -5                    | -4 | -3 | -6 | -8 | -3 | -3 | -2 | 0  | 1   | 1   | 2   | 4   | 5   | 2   | -2  | -9  |     |  |
| 250                           | -6  | -4                    | -3 | -1 | -7 | -6 | -7 | -6 | -5 | -3 | -1  | 2   | 4   | 4   | 5   | 1   | -4  | -7  |     |  |
| 315                           | -4  | -1                    | -1 | -1 | -4 | -4 | -5 | -3 | -2 | -1 | -1  | -1  | 3   | 5   | 3   | 2   | -5  | -6  | -11 |  |
| 400                           | -3  | 0                     | -0 | -1 | -3 | -5 | -5 | 1  | 0  | -0 | 1   | 2   | 2   | 2   | 1   | -1  | -4  | -8  | -14 |  |
| 500                           | 3   | 6                     | 3  | -1 | -1 | -5 | -0 | 1  | 1  | -0 | -3  | 2   | 2   | 3   | 0   | -3  | -4  | -9  | -19 |  |
| 630                           | 2   | 3                     | 3  | 1  | 2  | -0 | 0  | 1  | -0 | -1 | -2  | -1  | 2   | 2   | -2  | -6  | -8  | -6  | -20 |  |
| 800                           | 5   | 3                     | 2  | 4  | 4  | 2  | 0  | 1  | 0  | 0  | -1  | -1  | 1   | 1   | -5  | -7  | -7  | -11 | -23 |  |
| 1000                          | 6   | 5                     | 6  | 6  | 5  | 3  | 1  | -2 | -1 | 0  | -2  | -1  | -1  | -3  | -5  | -7  | -7  | -6  | -21 |  |
| 1250                          | 7   | 6                     | 6  | 7  | 7  | 3  | 1  | -2 | -1 | -1 | -3  | -1  | 1   | -3  | -5  | -7  | -7  | -7  | -22 |  |
| 1600                          | 11  | 9                     | 7  | 7  | 7  | 3  | 1  | 0  | -2 | -8 | -9  | -10 | -8  | -9  | -10 | -12 | -14 | -14 | -28 |  |
| 2000                          | 9   | 10                    | 8  | 7  | 7  | 2  | 1  | -0 | -3 | -7 | -8  | -7  | -7  | -8  | -9  | -12 | -11 | -11 | -27 |  |
| 2500                          | 6   | 11                    | 8  | 7  | 7  | 3  | 1  | -3 | -4 | -8 | -9  | -8  | -8  | -8  | -9  | -12 | -12 | -12 | -27 |  |
| 3150                          | 6   | 8                     | 7  | 8  | 2  | 1  | -1 | -1 | -2 | -5 | -6  | -5  | -5  | -6  | -7  | -10 | -12 | -12 | -26 |  |
| 4000                          | 7   | 9                     | 7  | 7  | 2  | 2  | 1  | -2 | -2 | -6 | -5  | -5  | -5  | -5  | -6  | -9  | -12 | -13 | -28 |  |
| 5000                          | 6   | 8                     | 6  | 7  | 2  | 2  | -1 | -2 | -3 | -6 | -3  | -2  | -2  | -3  | -5  | -7  | -12 | -13 | -28 |  |
| 6300                          | 5   | 5                     | 5  | 1  | 1  | 1  | -3 | -4 | -3 | -5 | 1   | 1   | 0   | 0   | -1  | -4  | -9  | -11 | -27 |  |
| 8000                          | 5   | 7                     | 6  | 5  | 5  | 1  | -3 | -4 | -3 | -6 | -0  | -1  | -0  | -1  | -1  | -4  | -8  | -11 | -26 |  |
| 10000                         | 5   | 7                     | 7  | 5  | 1  | 1  | -3 | -3 | -3 | -5 | -0  | -1  | -0  | -1  | -1  | -4  | -8  | -11 | -26 |  |
| OCTAVE                        |     |                       |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| 31.5                          | -4  | -2                    | -3 | -1 | -2 | -0 | 0  | 2  | 2  | 1  | -1  | -1  | -1  | 0   | -0  | -0  | -1  | -2  | -2  |  |
| 63                            | -5  | -5                    | -5 | 0  | -2 | -2 | -2 | -4 | -1 | 0  | 1   | 0   | 2   | 2   | 2   | 1   | 2   | -1  | -2  |  |
| 125                           | -11 | -8                    | -5 | -3 | -5 | -6 | -4 | -1 | -0 | 1  | 1   | 3   | 3   | 3   | 2   | 1   | -1  | -1  | -4  |  |
| 250                           | -6  | -3                    | -2 | -2 | -6 | -5 | -4 | -4 | -3 | -1 | -0  | 1   | 3   | 4   | 4   | 2   | -3  | -7  | -14 |  |
| 500                           | 1   | 4                     | 1  | -1 | -1 | -4 | -2 | -2 | 1  | 0  | 0   | 0   | 2   | 2   | 0   | -2  | -4  | -8  | -16 |  |
| 1000                          | 6   | 5                     | 5  | 4  | 3  | 0  | -0 | -0 | 0  | -2 | -3  | -1  | 0   | -1  | -4  | -6  | -7  | -8  | -22 |  |
| 2000                          | 9   | 10                    | 7  | 7  | 3  | 1  | -0 | -1 | -3 | -8 | -8  | -6  | -8  | -9  | -9  | -12 | -12 | -12 | -27 |  |
| 4000                          | 6   | 8                     | 7  | 7  | 2  | 2  | -1 | -2 | -2 | -6 | -4  | -4  | -4  | -6  | -6  | -8  | -12 | -13 | -27 |  |
| 8000                          | 5   | 7                     | 6  | 5  | 1  | 1  | -3 | -4 | -3 | -5 | 0   | 0   | -0  | -1  | -1  | -4  | -8  | -11 | -27 |  |
| OVERALL                       |     |                       |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |  |
| 2                             | 3   | 1                     | 2  | -1 | -1 | -1 | -1 | 0  | 1  | 0  | -1  | -1  | 0   | 1   | 0   | -0  | -1  | -4  | -5  |  |

| TABLE: DIRECTIVITY INDEX (DB)        |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | IDENTIFICATION:       |  |
|--------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------------|--|
| 6                                    |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | OMEGA 1.4             |  |
| NOISE SOURCE/SUBJECT:                |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | TEST 75-002-026       |  |
| ( OPERATION:                         |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | RUN 02                |  |
| F-4C AIRCRAFT ( 85X RPM )            |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | TEMP = 26 C           |  |
| J79-GE-15/A ENGINE ( SINGLE ENGINE ) |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | BAR PRESS = .761 M HG |  |
| GROUND RUNUP NOISE ( FREE FLOW )     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     | REL HUMID = 65 %      |  |
| PAGE 4                               |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     |                       |  |
| FREQ                                 | 0   | 10  | 20  | 30  | 40  | 50  | 60  | 70  | 80  | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |                       |  |
| ( HZ )                               |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     |                       |  |
| ANGLE (DEGREES)                      |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     |                       |  |
| 1/3 OCTAVE                           |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     |                       |  |
| 25                                   | -14 | -15 | -16 | -14 | -12 | -12 | -3  | -8  | -8  | -6 | -4  | -3  | -2  | 2   | 5   | 7   | 8   | 7   | 5   |                       |  |
| 31.5                                 | -14 | -14 | -14 | -12 | -11 | -6  | -9  | -8  | -7  | -5 | -5  | -4  | -2  | 2   | 4   | 7   | 9   | 8   | 3   |                       |  |
| 40                                   | -15 | -16 | -14 | -13 | -11 | -7  | -9  | -7  | -6  | -6 | -5  | -3  | -3  | 2   | 6   | 8   | 8   | 6   | -0  |                       |  |
| 50                                   | -16 | -16 | -15 | -13 | -11 | -9  | -8  | -7  | -7  | -6 | -4  | -4  | -2  | 2   | 6   | 7   | 7   | 5   | -8  |                       |  |
| 63                                   | -17 | -17 | -16 | -14 | -11 | -11 | -10 | -8  | -7  | -8 | -6  | -5  | -1  | 2   | 6   | 9   | 7   | 3   | -15 |                       |  |
| 80                                   | -16 | -17 | -15 | -13 | -12 | -12 | -9  | -10 | -10 | -8 | -6  | -5  | -2  | 4   | 6   | 8   | 7   | 2   | -22 |                       |  |
| 100                                  | -17 | -18 | -15 | -12 | -13 | -13 | -12 | -10 | -9  | -8 | -7  | -5  | -4  | 3   | 8   | 8   | 6   | 0   | -26 |                       |  |
| 125                                  | -19 | -18 | -16 | -13 | -13 | -12 | -12 | -10 | -9  | -8 | -7  | -4  | -3  | 2   | 8   | 8   | 5   | -2  | -25 |                       |  |
| 160                                  | -18 | -17 | -14 | -14 | -13 | -13 | -11 | -10 | -9  | -9 | -6  | -4  | -2  | 2   | 7   | 8   | 6   | -3  | -25 |                       |  |
| 200                                  | -17 | -14 | -12 | -12 | -12 | -12 | -10 | -9  | -8  | -8 | -5  | -3  | -1  | 3   | 7   | 9   | 6   | -4  | -27 |                       |  |
| 250                                  | -16 | -14 | -12 | -12 | -11 | -10 | -10 | -8  | -8  | -6 | -4  | -3  | -0  | 3   | 6   | 8   | 6   | -3  | -27 |                       |  |
| 315                                  | -16 | -13 | -10 | -10 | -9  | -9  | -6  | -5  | -4  | -4 | -2  | -2  | 1   | 4   | 4   | 6   | 7   | -4  | -20 |                       |  |
| 400                                  | -15 | -13 | -9  | -8  | -6  | -7  | -4  | -3  | -2  | -2 | -0  | -0  | 1   | 4   | 4   | 3   | 5   | -6  | -30 |                       |  |
| 500                                  | -16 | -13 | -9  | -8  | -4  | -6  | -3  | -2  | -2  | 0  | 1   | 1   | 3   | 3   | 3   | 1   | -0  | -13 | -32 |                       |  |
| 630                                  | -13 | -8  | -9  | -7  | -7  | -6  | -2  | -2  | -2  | -3 | -1  | 2   | 3   | 5   | 5   | 2   | 2   | -2  | -13 |                       |  |
| 800                                  | -16 | -6  | -14 | -9  | -8  | -6  | -2  | -4  | -2  | -6 | -6  | 4   | 5   | 5   | -0  | 2   | 2   | -2  | -15 |                       |  |
| 1000                                 | -14 | -11 | -10 | -8  | -7  | -7  | -4  | -2  | -1  | -1 | -0  | 1   | 2   | 2   | 5   | 3   | 0   | -3  | -30 |                       |  |
| 1250                                 | -12 | -10 | -9  | -7  | -5  | -7  | -3  | 0   | -0  | 0  | 0   | 2   | 4   | 4   | 4   | 1   | -3  | -15 | -31 |                       |  |
| 1600                                 | -9  | -8  | -8  | -5  | -5  | -6  | -3  | -1  | -1  | 1  | -0  | 1   | 4   | 4   | 2   | -2  | -3  | -16 | -29 |                       |  |
| 2000                                 | 5   | 4   | -0  | 3   | 1   | -3  | -2  | -2  | -2  | -1 | -2  | 0   | 2   | 3   | 1   | -2  | -6  | -16 | -32 |                       |  |
| 2500                                 | 5   | 5   | 2   | 3   | 3   | 0   | -1  | -1  | -1  | -2 | -3  | -2  | 1   | 2   | -1  | -4  | -9  | -16 | -33 |                       |  |
| 3150                                 | -1  | -1  | -3  | -1  | -1  | -5  | -2  | -2  | -1  | -0 | -1  | 0   | 3   | 4   | 2   | -3  | -8  | -16 | -31 |                       |  |
| 4000                                 | 3   | 2   | -2  | 0   | 1   | -4  | -1  | -1  | -1  | 0  | -1  | -1  | 2   | 4   | 2   | -3  | -8  | -15 | -31 |                       |  |
| 5000                                 | 3   | 3   | -1  | 2   | 3   | -3  | 1   | -1  | -1  | -1 | -2  | -2  | 0   | 4   | 1   | -4  | -9  | -15 | -32 |                       |  |
| 6300                                 | 2   | 1   | -3  | 1   | 2   | -3  | -0  | -1  | -1  | -1 | -1  | -1  | 1   | 4   | 2   | -3  | -8  | -14 | -33 |                       |  |
| 8000                                 | 1   | 2   | -1  | 1   | 3   | -3  | 1   | -1  | -1  | -2 | 0   | -1  | 1   | 3   | 1   | -3  | -7  | -12 | -34 |                       |  |
| 10000                                | 1   | 1   | -1  | 1   | 1   | -2  | -0  | -1  | 0   | -2 | 1   | -1  | 1   | 3   | 0   | -2  | -7  | -12 | -33 |                       |  |
| OCTAVE                               |     |     |     |     |     |     |     |     |     |    |     |     |     |     |     |     |     |     |     |                       |  |
| 31.5                                 | -14 | -15 | -14 | -13 | -11 | -6  | -9  | -7  | -7  | -6 | -5  | -4  | -2  | 2   | 5   | 7   | 8   | 7   | 2   |                       |  |
| 63                                   | -16 | -17 | -15 | -13 | -11 | -11 | -9  | -9  | -8  | -8 | -6  | -5  | -2  | 3   | 6   | 8   | 7   | 3   | -14 |                       |  |
| 125                                  | -18 | -17 | -15 | -13 | -13 | -11 | -11 | -10 | -9  | -8 | -6  | -4  | -3  | 2   | 8   | 8   | 6   | -2  | -25 |                       |  |
| 250                                  | -17 | -14 | -11 | -11 | -11 | -10 | -8  | -7  | -6  | -6 | -4  | -3  | -0  | 4   | 6   | 8   | 7   | -4  | -27 |                       |  |
| 500                                  | -15 | -11 | -9  | -8  | -6  | -6  | -3  | -2  | -1  | -2 | -0  | 1   | 2   | 4   | 4   | 2   | 3   | -9  | -31 |                       |  |
| 1000                                 | -16 | -7  | -14 | -9  | -8  | -6  | -2  | -3  | -2  | -5 | -5  | 4   | 5   | 5   | 0   | 2   | -2  | -15 | -33 |                       |  |
| 2000                                 | 3   | 3   | -1  | 2   | 1   | -2  | -1  | -2  | -1  | -2 | 0   | 2   | 3   | 1   | 1   | -3  | -5  | -16 | -31 |                       |  |
| 4000                                 | 2   | 1   | -2  | 0   | 1   | -4  | -1  | -2  | -1  | -0 | -1  | -0  | 2   | 4   | 2   | -3  | -8  | -15 | -31 |                       |  |
| 6000                                 | 1   | 1   | -2  | 1   | 2   | -3  | 0   | -1  | -0  | -1 | -0  | -1  | 1   | 3   | 1   | -3  | -8  | -13 | -33 |                       |  |
| OVERALL                              | -9  | -7  | -10 | -8  | -7  | -7  | -4  | -5  | -4  | -5 | -4  | 1   | 2   | 4   | 5   | 6   | 4   | -4  | -17 |                       |  |

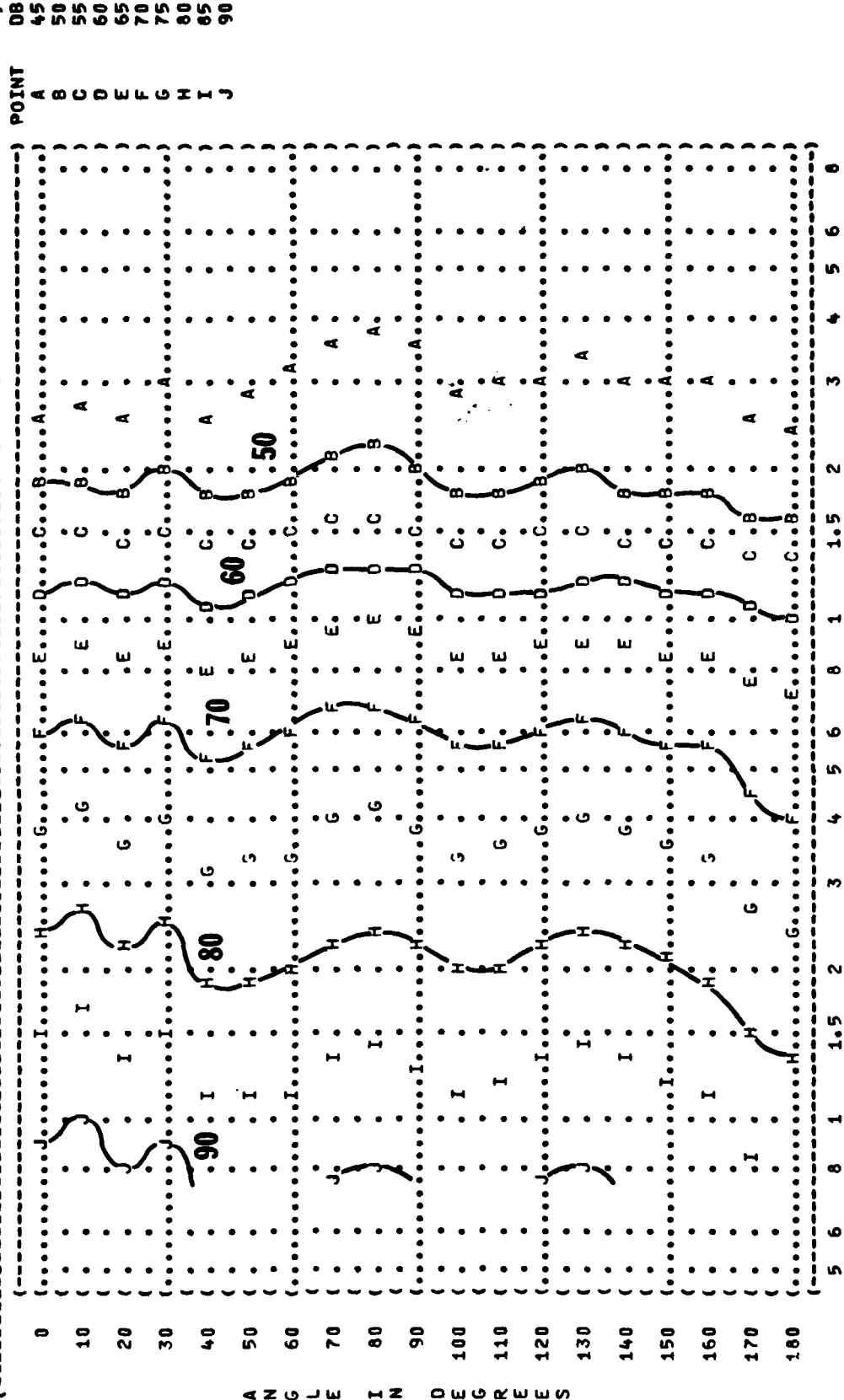
| TABLE: DIRECTIVITY INDEX (DB) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 6                             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NOISE SOURCE/SUBJECT:         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ( OPERATION:                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ( MILITARY POWER              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ( 100X RPM                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ( SINGLE ENGINE               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ( FREE FLOW                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| F-4C AIRCRAFT                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| J79-GE-15/A ENGINE            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| GROUND RUNUP NOISE            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| FREQ                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ( HZ)                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ANGLE (DEGREES)               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1/3 OCTAVE                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 25                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31.5                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 40                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 50                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 63                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 80                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 100                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 125                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 160                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 200                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 250                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 315                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 400                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 500                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 630                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 800                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1250                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1600                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2500                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3150                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 5000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6300                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 10000                         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OCTAVE                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 31.5                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 63                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 125                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 250                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 500                           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 8000                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OVERALL                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| IDENTIFICATION:               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| OMEGA 1.4                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TEST 75-002-026               |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RUN 03                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| TEMP = 26 C                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BAR PRESS = .761 H MG         |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| REL HUMID = 65 %              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| PAGE 4                        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

| TABLE: DIRECTIVITY INDEX (DB) |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     | IDENTIFICATION: |     |
|-------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----------------|-----|
| 6                             |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     | OMEGA 1.4       |     |
|                               |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     | TEST 75-002-026 |     |
| NOISE SOURCE/SUBJECT:         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     | RUN 04          |     |
| F-4C AIRCRAFT                 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     | 02 AUG 76       |     |
| J79-GE-15/A ENGINE            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     | PAGE 4          |     |
| GROUND RUNUP NOISE            |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |                 |     |
| FREQ                          |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |                 |     |
| ( HZ)                         |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |                 |     |
| 1/3 OCTAVE                    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |                 |     |
| 25                            | -4 | -1 | -4 | -3 | -4 | -1 | -1 | -1 | -0 | 1  | -1 | 0  | 1  | 1  | 1   | 4   | 2               | -0  |
| 31.5                          | -5 | -4 | -2 | -2 | 1  | 2  | -0 | -0 | 1  | 2  | -0 | -1 | -1 | -1 | -0  | -1  | -1              | -4  |
| 40                            | -4 | -2 | -1 | -0 | 1  | 2  | 0  | 0  | 1  | 1  | -0 | -2 | -1 | -1 | -2  | -2  | -3              | -7  |
| 50                            | 11 | 1  | -1 | 1  | 0  | 0  | -1 | -2 | -1 | -0 | -0 | 2  | 1  | 1  | 1   | -0  | -4              | -9  |
| 63                            | 1  | -4 | -3 | -2 | -0 | -4 | -1 | -3 | -2 | 1  | 1  | 2  | 2  | 2  | 2   | 2   | -1              |     |
| 80                            | 1  | -4 | -3 | -2 | -3 | -4 | -2 | -3 | -1 | 0  | 0  | 1  | 2  | 3  | 3   | 1   | -4              |     |
| 100                           | 3  | -4 | -4 | -3 | -5 | -4 | -4 | -1 | -0 | 1  | 1  | 2  | 2  | 3  | 2   | 1   | -6              |     |
| 125                           | -1 | -6 | -4 | -5 | -4 | -5 | -5 | -1 | -2 | 1  | 1  | 3  | 2  | 3  | 3   | 1   | -8              |     |
| 160                           | -0 | -7 | -5 | -5 | -6 | -7 | -4 | -2 | -0 | -1 | 1  | 1  | 3  | 4  | 4   | 2   | -6              | -11 |
| 200                           | 5  | -4 | -3 | -5 | -6 | -8 | -5 | -4 | -2 | -1 | 1  | 2  | 4  | 5  | 5   | 3   | -5              | -8  |
| 250                           | 6  | -2 | -2 | -4 | -6 | -5 | -6 | -5 | -3 | -0 | 1  | 3  | 4  | 5  | 5   | 2   | -4              | -8  |
| 315                           | 2  | 1  | -2 | -2 | -3 | -3 | -6 | -3 | -2 | -1 | 1  | 1  | 4  | 5  | 3   | 3   | -4              | -8  |
| 400                           | 0  | 1  | -0 | -1 | -3 | -3 | -5 | -1 | -2 | -1 | 1  | 2  | 3  | 3  | 3   | -0  | -3              | -11 |
| 500                           | 7  | 6  | 4  | 1  | -1 | -4 | 1  | -0 | -1 | -1 | -1 | 2  | 3  | 3  | 1   | -4  | -6              | -11 |
| 630                           | 7  | 6  | 3  | 2  | 1  | 1  | 1  | -0 | -3 | -2 | 1  | 1  | 2  | 2  | -2  | -4  | -5              | -11 |
| 800                           | 8  | 5  | 3  | 2  | 2  | 0  | 1  | -0 | -2 | -0 | -0 | 1  | 1  | 1  | -2  | -7  | -13             | -27 |
| 1000                          | 9  | 6  | 4  | 3  | 3  | 2  | 1  | -1 | -3 | -2 | -0 | 2  | -2 | -5 | -6  | -5  | -11             | -26 |
| 1250                          | 8  | 5  | 5  | 4  | 1  | 2  | -2 | -2 | -3 | -5 | -1 | 0  | 2  | -4 | -5  | -5  | -10             | -26 |
| 1600                          | 9  | 7  | 8  | 7  | 4  | 4  | -0 | -3 | -5 | -9 | -7 | -8 | -5 | -8 | -11 | -12 | -16             | -30 |
| 2000                          | 9  | 8  | 8  | 6  | 3  | 3  | 0  | -2 | -5 | -6 | -6 | -4 | -5 | -7 | -10 | -9  | -11             | -28 |
| 2500                          | 9  | 10 | 7  | 5  | 5  | 4  | -2 | -4 | -8 | -9 | -6 | -5 | -6 | -8 | -10 | -10 | -14             | -27 |
| 3150                          | 11 | 9  | 7  | 5  | 3  | 3  | -2 | -5 | -5 | -5 | -4 | -1 | -4 | -5 | -9  | -10 | -15             | -28 |
| 4000                          | 11 | 10 | 7  | 5  | 3  | 3  | -2 | -5 | -6 | -7 | -6 | -1 | -4 | -6 | -9  | -10 | -15             | -28 |
| 5000                          | 9  | 8  | 6  | 5  | 2  | 3  | -2 | -4 | -7 | -5 | -4 | 3  | -2 | -4 | -8  | -10 | -15             | -27 |
| 6300                          | 5  | 7  | 3  | 3  | 0  | 0  | -4 | -6 | -5 | -2 | -3 | 6  | 1  | -1 | -5  | -8  | -15             | -27 |
| 8000                          | 7  | 7  | 4  | 4  | 0  | 0  | -4 | -6 | -6 | -3 | -3 | 5  | 1  | -0 | -5  | -8  | -15             | -27 |
| 10000                         | 7  | 7  | 5  | 3  | 1  | 0  | -3 | -5 | -2 | -2 | -2 | 4  | -0 | -0 | -5  | -7  | -15             |     |
| OCTAVE                        |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |                 |     |
| 31.5                          | -4 | -3 | -1 | -1 | 1  | 2  | 0  | -0 | 0  | 1  | -0 | -1 | -1 | -1 | -1  | -1  | -2              | -6  |
| 63                            | 9  | -1 | -2 | -0 | -0 | -1 | -1 | -3 | -1 | -0 | 0  | 2  | 2  | 2  | 2   | 1   | 1               | -3  |
| 125                           | 0  | -6 | -5 | -5 | -5 | -5 | -4 | -1 | -1 | -0 | 0  | 2  | 3  | 4  | 4   | 1   | -3              | -9  |
| 250                           | 5  | -1 | -2 | -4 | -5 | -5 | -6 | -4 | -3 | -2 | -0 | 2  | 3  | 4  | 3   | -4  | -11             |     |
| 500                           | 5  | 4  | 2  | -0 | -1 | -2 | -1 | -0 | -2 | -0 | 0  | 2  | 3  | 4  | 2   | -2  | -4              | -11 |
| 1000                          | 8  | 5  | 4  | 3  | 2  | 1  | 0  | -1 | -2 | -3 | -1 | 0  | 1  | -0 | -3  | -5  | -6              | -11 |
| 2000                          | 9  | 8  | 6  | 6  | 4  | 4  | -0 | -3 | -6 | -8 | -7 | -5 | -6 | -8 | -10 | -10 | -12             | -29 |
| 4000                          | 10 | 9  | 7  | 5  | 3  | 3  | -2 | -4 | -6 | -6 | -5 | -5 | -5 | -7 | -8  | -8  | -10             | -28 |
| 8000                          | 6  | 7  | 4  | 3  | -0 | 0  | -4 | -6 | -5 | -2 | -3 | 5  | 1  | -0 | -5  | -8  | -15             | -27 |
| OVERALL                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |                 |     |
| 3                             | 1  | 1  | 1  | 0  | 0  | 1  | -1 | -1 | -1 | -0 | 1  | 0  | 1  | 1  | -1  | -2  | -4              | -8  |

| TABLE: DIRECTIVITY INDEX (DB)                          |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
|--------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| IDENTIFICATION:                                        |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| 6                                                      |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: 26 C |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| F-4C AIRCRAFT ( 85% RPM ) BAR PRESS = .761 M HG        |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| J79-GE-15/A ENGINE ( BOTH ENGINES ) REL HUMID = 65 %   |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| GROUND RUNUP NOISE ( FREE FLOW )                       |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| FREQ                                                   | 0   | 10  | 20  | 30  | 40  | 50  | 60  | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | 170 | 180 |
| (HZ)                                                   |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| 1/3 OCTAVE                                             |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| 25                                                     | -14 | -12 | -13 | -10 | -11 | -9  | -7  | -6 | -3 | -4 | -2  | -1  | -2  | 2   | 5   | 7   | 7   | 5   |     |
| 31.5                                                   | -13 | -13 | -11 | -11 | -9  | -8  | -7  | -6 | -5 | -5 | -3  | -2  | 0   | 1   | 4   | 6   | 8   | 4   |     |
| 40                                                     | -13 | -13 | -11 | -11 | -9  | -8  | -6  | -6 | -5 | -4 | -3  | -1  | -1  | 1   | 6   | 8   | 6   | 1   |     |
| 50                                                     | -15 | -14 | -12 | -13 | -9  | -8  | -6  | -6 | -5 | -5 | -2  | -2  | 0   | 3   | 6   | 8   | 5   | -5  |     |
| 63                                                     | -15 | -16 | -14 | -13 | -8  | -10 | -8  | -8 | -7 | -5 | -4  | -2  | 1   | 2   | 7   | 8   | 4   | -8  |     |
| 80                                                     | -15 | -15 | -13 | -12 | -11 | -10 | -8  | -8 | -7 | -6 | -5  | -4  | 0   | 4   | 7   | 8   | 5   | -11 |     |
| 100                                                    | -16 | -17 | -13 | -12 | -11 | -9  | -8  | -7 | -5 | -5 | -5  | -3  | -2  | 4   | 8   | 8   | 4   | -15 |     |
| 125                                                    | -17 | -17 | -15 | -12 | -12 | -11 | -10 | -8 | -7 | -7 | -5  | -3  | -1  | 4   | 7   | 8   | 4   | -17 |     |
| 160                                                    | -16 | -17 | -14 | -14 | -13 | -13 | -10 | -9 | -8 | -8 | -5  | -4  | -2  | 4   | 8   | 9   | 3   | -19 |     |
| 200                                                    | -16 | -15 | -12 | -12 | -12 | -11 | -10 | -9 | -8 | -7 | -5  | -3  | -1  | 3   | 7   | 9   | 3   | -20 |     |
| 250                                                    | -14 | -14 | -12 | -12 | -10 | -7  | -9  | -7 | -5 | -5 | -3  | -2  | 1   | 3   | 5   | 8   | 4   | -21 |     |
| 315                                                    | -12 | -12 | -9  | -9  | -7  | -6  | -6  | -4 | -2 | -3 | 0   | 1   | 2   | 4   | 4   | 6   | 3   | -25 |     |
| 400                                                    | -12 | -12 | -9  | -9  | -6  | -5  | -5  | -3 | -2 | -2 | 1   | 1   | 2   | 4   | 4   | 4   | 2   | -27 |     |
| 500                                                    | -12 | -11 | -9  | -9  | -5  | -5  | -2  | -4 | -2 | -2 | 0   | 1   | 4   | 4   | 3   | 2   | 2   | -28 |     |
| 630                                                    | -10 | -10 | -9  | -9  | -6  | -5  | -5  | -2 | -2 | -3 | 0   | 4   | 4   | 3   | 0   | 1   | 1   | -29 |     |
| 800                                                    | -15 | -13 | -13 | -14 | -8  | -5  | -4  | -4 | -6 | -4 | -4  | 5   | 6   | 3   | 0   | 2   | 2   | -30 |     |
| 1000                                                   | -11 | -13 | -10 | -8  | -7  | -6  | -6  | -3 | -1 | -1 | 1   | 3   | 2   | 4   | 2   | 3   | 3   | -28 |     |
| 1250                                                   | -10 | -11 | -9  | -8  | -5  | -4  | -5  | -3 | -1 | -1 | 1   | 4   | 4   | 3   | 1   | 1   | 0   | -30 |     |
| 1600                                                   | -8  | -8  | -6  | -6  | -4  | -2  | -4  | -3 | -2 | -0 | 1   | 3   | 5   | 2   | 0   | 0   | -3  | -29 |     |
| 2000                                                   | 2   | 5   | 0   | 1   | -1  | -1  | -4  | -3 | -1 | -1 | 1   | 1   | 2   | 2   | 0   | -1  | -5  | -30 |     |
| 2500                                                   | 4   | 5   | 4   | 3   | 3   | 1   | -1  | -3 | -2 | -1 | 0   | 2   | 2   | 0   | -2  | -2  | -8  | -32 |     |
| 3150                                                   | -1  | 1   | -1  | -2  | -2  | -2  | -5  | -3 | -1 | 0  | 2   | 2   | 4   | 2   | 0   | -1  | -7  | -30 |     |
| 4000                                                   | 2   | 3   | -0  | -1  | -0  | -1  | -5  | -3 | -1 | 1  | 2   | 2   | 3   | 1   | 0   | -2  | -9  | -31 |     |
| 5000                                                   | 3   | 4   | 1   | 1   | 0   | 0   | -3  | -3 | -1 | 0  | 1   | 1   | 2   | -0  | -1  | -3  | -10 | -32 |     |
| 6300                                                   | 1   | 2   | -0  | -1  | -1  | -1  | -5  | -2 | -0 | 1  | 2   | 2   | 2   | -1  | 0   | -3  | -10 | -32 |     |
| 8000                                                   | 1   | 3   | 0   | -1  | 0   | -0  | -4  | -2 | 0  | 0  | 2   | 2   | 2   | 0   | 0   | -3  | -9  | -32 |     |
| 10000                                                  | 1   | 2   | 0   | -2  | 0   | -0  | -4  | -2 | -0 | 0  | 2   | 2   | 3   | 0   | 0   | -3  | -8  | -31 |     |
| OCTAVE                                                 |     |     |     |     |     |     |     |    |    |    |     |     |     |     |     |     |     |     |     |
| 31.5                                                   | -13 | -13 | -12 | -11 | -9  | -8  | -7  | -6 | -5 | -4 | -3  | -1  | -1  | 1   | 5   | 8   | 7   | 3   |     |
| 63                                                     | -15 | -15 | -13 | -13 | -10 | -10 | -8  | -7 | -7 | -5 | -4  | -3  | 0   | 3   | 7   | 8   | 4   | -8  |     |
| 125                                                    | -17 | -17 | -14 | -13 | -13 | -12 | -10 | -9 | -8 | -7 | -5  | -4  | -2  | 4   | 7   | 8   | 3   | -18 |     |
| 250                                                    | -14 | -14 | -11 | -11 | -9  | -8  | -7  | -5 | -5 | -5 | -2  | -1  | 1   | 3   | 6   | 8   | 3   | -21 |     |
| 500                                                    | -11 | -11 | -9  | -9  | -6  | -5  | -4  | -3 | -2 | -2 | 0   | 3   | 6   | 4   | 3   | 3   | 0   | -28 |     |
| 1000                                                   | -15 | -13 | -13 | -13 | -7  | -5  | -4  | -4 | -5 | -3 | -3  | 5   | 6   | 3   | 0   | 2   | -2  | -30 |     |
| 2000                                                   | 1   | 3   | 0   | 0   | -0  | -1  | -3  | -4 | -2 | -1 | 1   | 1   | 3   | 2   | -1  | -1  | -5  | -30 |     |
| 4000                                                   | 1   | 3   | -0  | -2  | -0  | -1  | -5  | -3 | -1 | 0  | 2   | 2   | 3   | 1   | 0   | -2  | -8  | -31 |     |
| 8000                                                   | 1   | 2   | 0   | -1  | -0  | -1  | -4  | -2 | -0 | 0  | 2   | 2   | 2   | 0   | 0   | -3  | -9  | -32 |     |
| OVERALL                                                | -10 | -9  | -10 | -10 | -7  | -6  | -6  | -5 | -5 | -4 | -2  | 2   | 3   | 3   | 5   | 6   | 1   | -16 |     |

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| TABLE: DIRECTIVITY INDEX (DB) |  |  |  |  |  |  |  |  |  |  |  |  |  | IDENTIFICATION:       |  |
| 6                             |  |  |  |  |  |  |  |  |  |  |  |  |  | OMEGA 1.4             |  |
|                               |  |  |  |  |  |  |  |  |  |  |  |  |  | TEST 75-002-059       |  |
|                               |  |  |  |  |  |  |  |  |  |  |  |  |  | RUN 03                |  |
| NOISE SOURCE/SUBJECT:         |  |  |  |  |  |  |  |  |  |  |  |  |  | METEOROLOGY:          |  |
| ( OPERATION:                  |  |  |  |  |  |  |  |  |  |  |  |  |  | TEMP = 31 C           |  |
| ( AFTERBURNER POWER           |  |  |  |  |  |  |  |  |  |  |  |  |  | BAR PRESS = .761 M HG |  |
| ( 100% RPM                    |  |  |  |  |  |  |  |  |  |  |  |  |  | REL HUMID = 55 %      |  |
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| ( SINGLE ENGINE               |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |
| ( DEFLECTED FLOW              |  |  |  |  |  |  |  |  |  |  |  |  |  | PAGE 4                |  |
| FREQ                          |  |  |  |  |  |  |  |  |  |  |  |  |  |                       |  |
| ( HZ)                         |  |  |  |  |  |  |  |  |  |  |  |  |  | ANGLE (DEGREES)       |  |
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FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL}  
 5  
 IDENTIFICATION:  
 NOISE SOURCE/SUBJECT: F-4C AIRCRAFT  
 F-4C AIRCRAFT  
 J79-GE-15/A ENGINE  
 GROUND RUNUP NOISE  
 OPERATION:  
 IDLE POWER  
 65% RPM  
 SINGLE ENGINE  
 FREE FLOW  
 METEOROLOGY:  
 TEMP = 15 C  
 BAR PRESS = .760 M HG  
 REL HUMID = 70 %  
 RUN 01  
 02 AUG 76  
 PAGE 13  
 TEST 75-002-026  
 OMEGA 1.4



DISTANCE FROM SOURCE (METERS)

**IDENTIFICATION:**

**OMEGA 1.4**

RUN 02  
02 AUG 76  
PAGE 13

02 AUG 76

| POINT | 08  |
|-------|-----|
| 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 |

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DISTANCE FROM SOURCE (METERS)

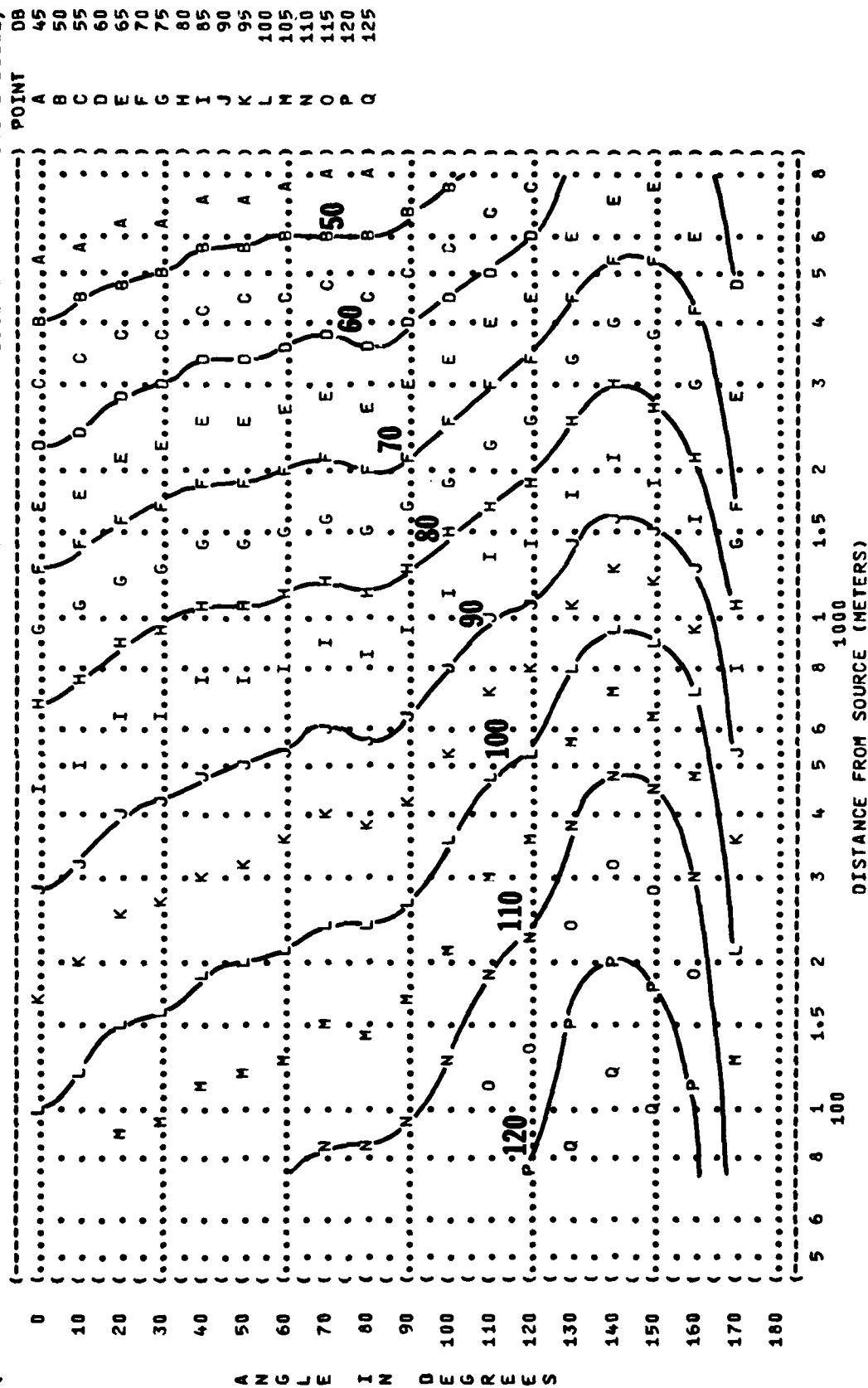
5

IDENTIFICATION:  
OMEGA 1.4  
TEST 75-002-020

## METEOROLOGY:

OPERATION:  
MILITARY POWER  
100% RPM  
SINGLE ENGINE  
FREE FLOW

ISE SOURCE/SUBJECT:  
F-4C AIRCRAFT  
J79-GE-15/A ENGINE  
GROUND RUNUP NOISE



DISTANCE FROM SOURCE (METERS)

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

**FIGURE: OVERALL SOUND PRESSURE LEVEL {OASPL}**

**5**

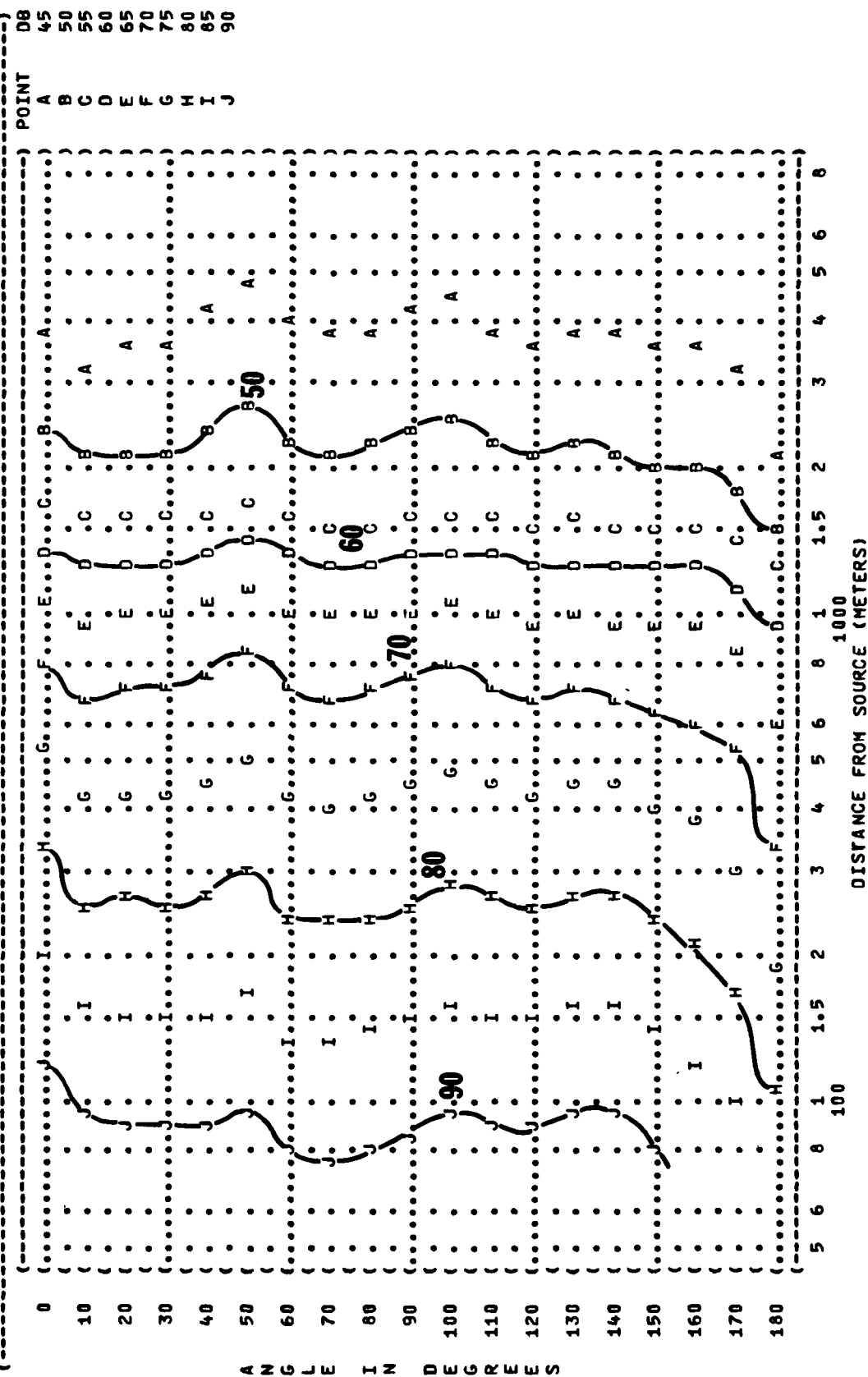
**EQUAL LEVEL CONTOURS (DB)**

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**NOISE SOURCE/SUBJECT:**      (**OPERATION:**)  
F-4C AIRCRAFT            ( IDLE POWER  
J79-GE-15/A ENGINE       ( 65% RPM  
GROUND RUNUP NOISE       ( BOTH ENGINES  
                           ( FREE FLOW

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

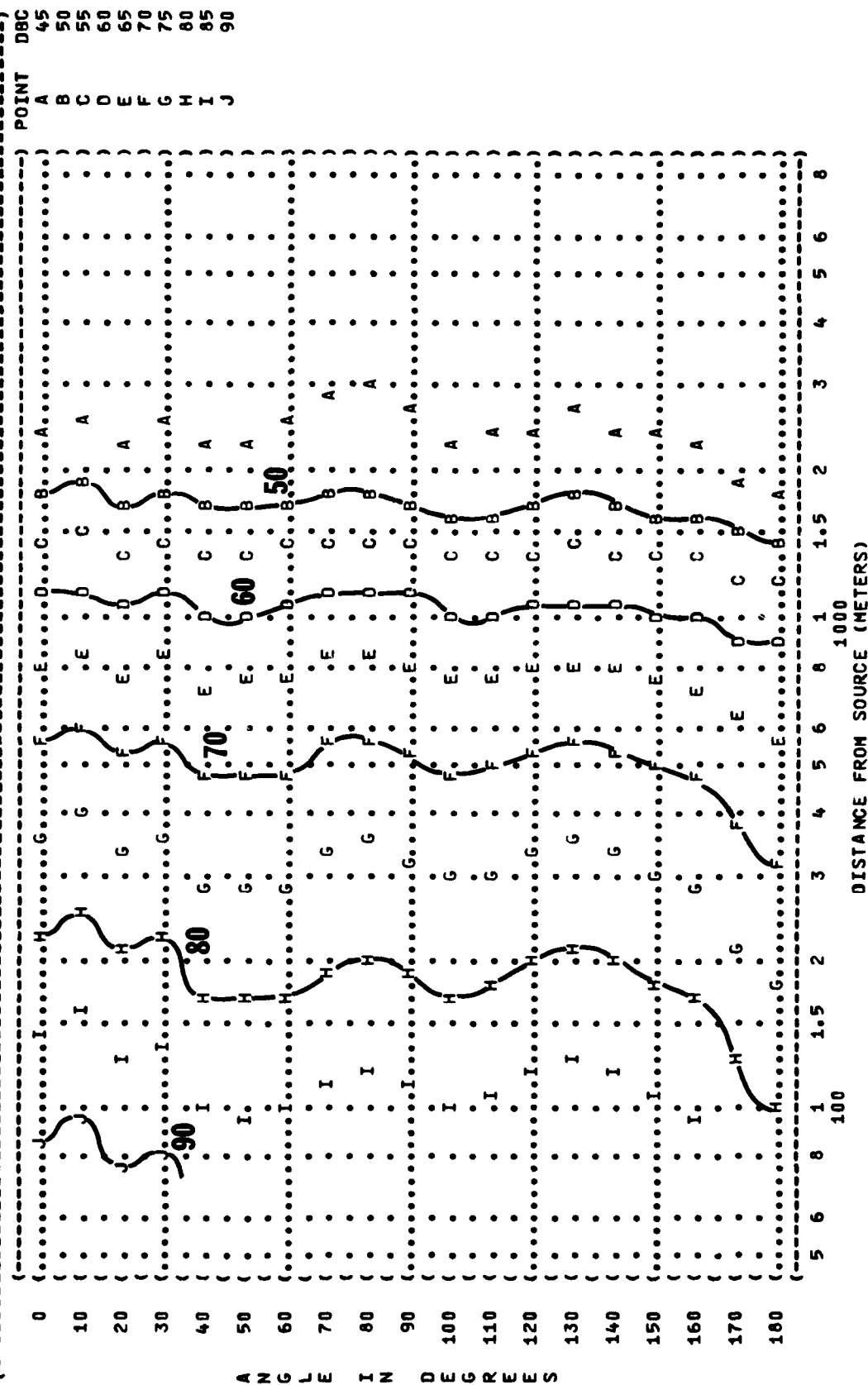
( IDENTIFICATION: )  
( )  
( OMEGA 1.4 )  
( TEST 75-002-026 )  
( RUN 04 )  
( )  
( 02 AUG 76 )  
( )  
( PAGE 13 )







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(-----)
( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC) )
(      6      EQUAL LEVEL CONTOURS (DBC) )
(-----)
( NOISE SOURCE/SUBJECT: )
( F-4C AIRCRAFT )
( J79-GE-15/A ENGINE )
( GROUND RUNUP NOISE )
( OPERATION: )
( IDLE POWER )
( 65% RPM )
( SINGLE ENGINE )
( FREE FLOW )
( METEOROLOGY: )
( TEMP = 15 C )
( BAR PRESS = .760 M HG )
( REL HUMID = 70 % )
( IDENTIFICATION: )
( OMEGA 1.4 )
( TEST 75-002-026 )
( RUN 01 )
( 02 AUG 76 )
( PAGE 14 )
(-----)
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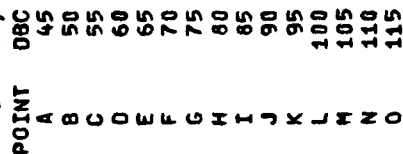


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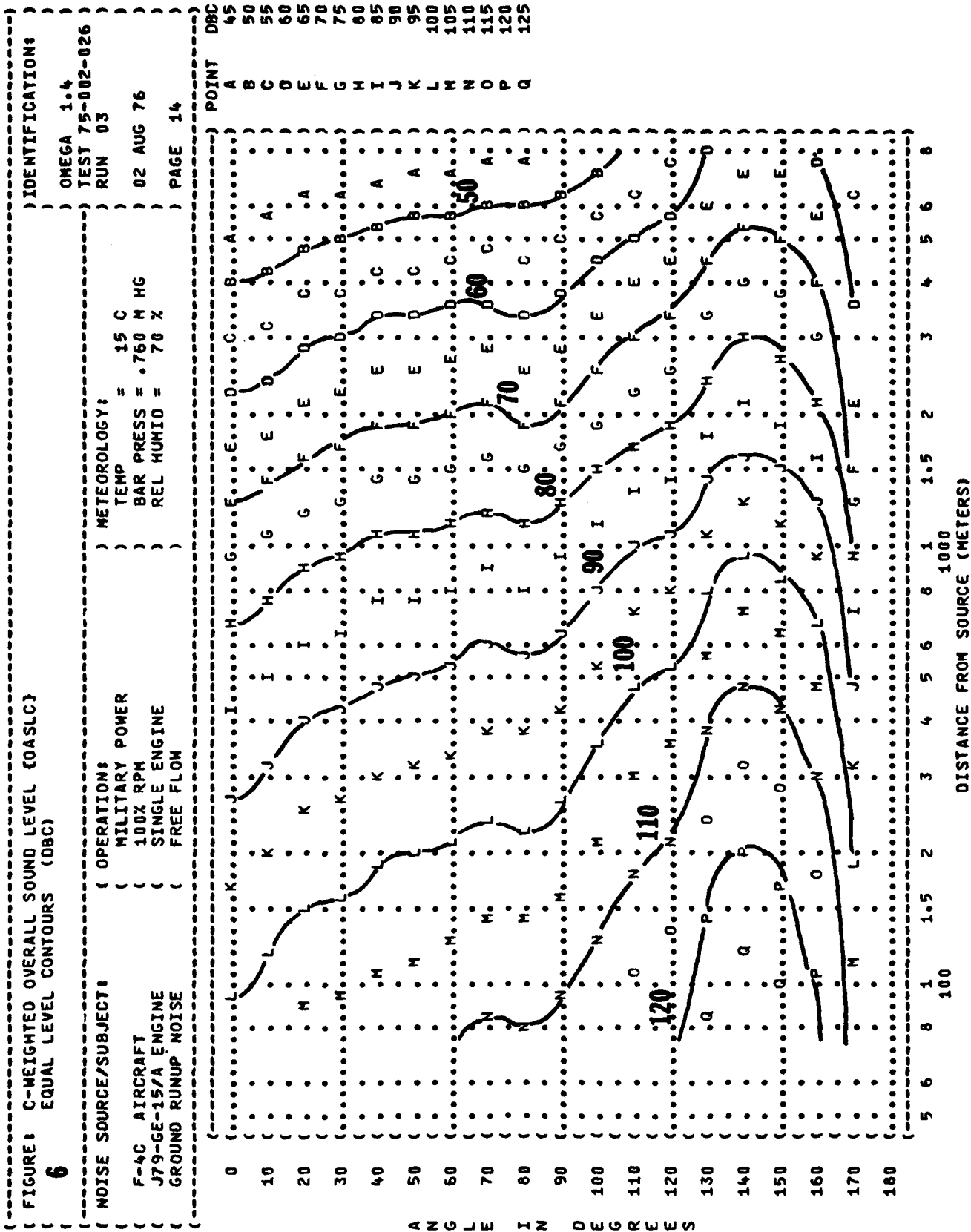
## OMEGA 1.4

00 METEOROLOGY :  
00 TEMP :  
00 BAR PRESS :  
00 REL HUMID :  
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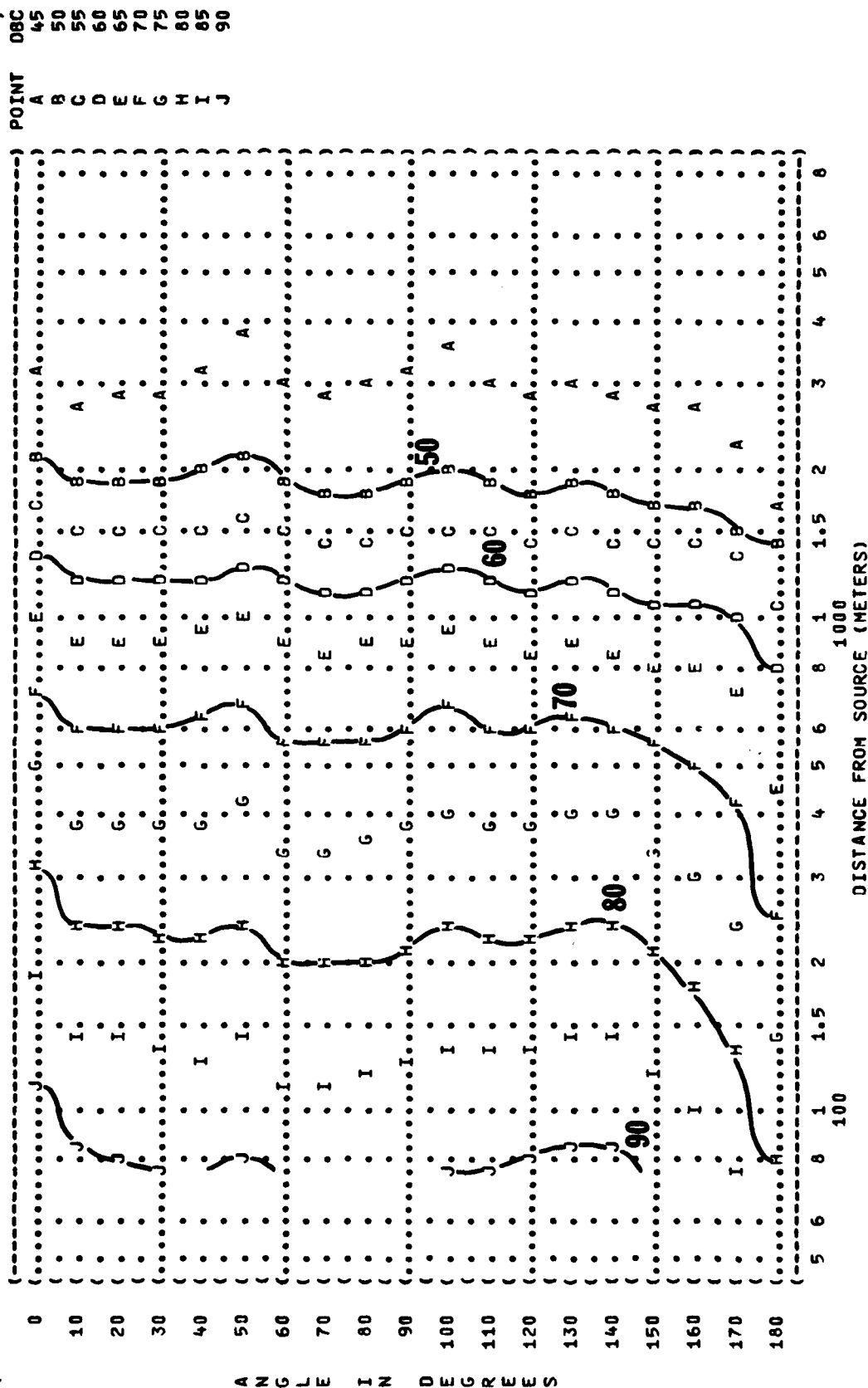
02 AUG 76  
PAGE 14



DISTANCE FROM SOURCE (METERS)



( FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC) )  
 ( 6 EQUAL LEVEL CONTOURS (DBC) )  
 ( ) IDENTIFICATION: )  
 ( ) OMEGA 1.4 )  
 ( ) TEST 75-002-026 )  
 ( ) RUN 04 )  
 ( ) METEOROLOGY: )  
 ( ) TEMP = 15 C )  
 ( ) BAR PRESS = .760 M HG )  
 ( ) REL HUMID = 70 % )  
 ( ) 02 AUG 76 )  
 ( ) PAGE 14 )  
 ( ) )  
 ( NOISE SOURCE/SUBJECT: )  
 ( ) OPERATION: )  
 ( ) IDLE POWER )  
 ( ) 65% RPM )  
 ( ) BOTH ENGINES )  
 ( ) FREE FLOW )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )



A N G L E I N D E G R E E S





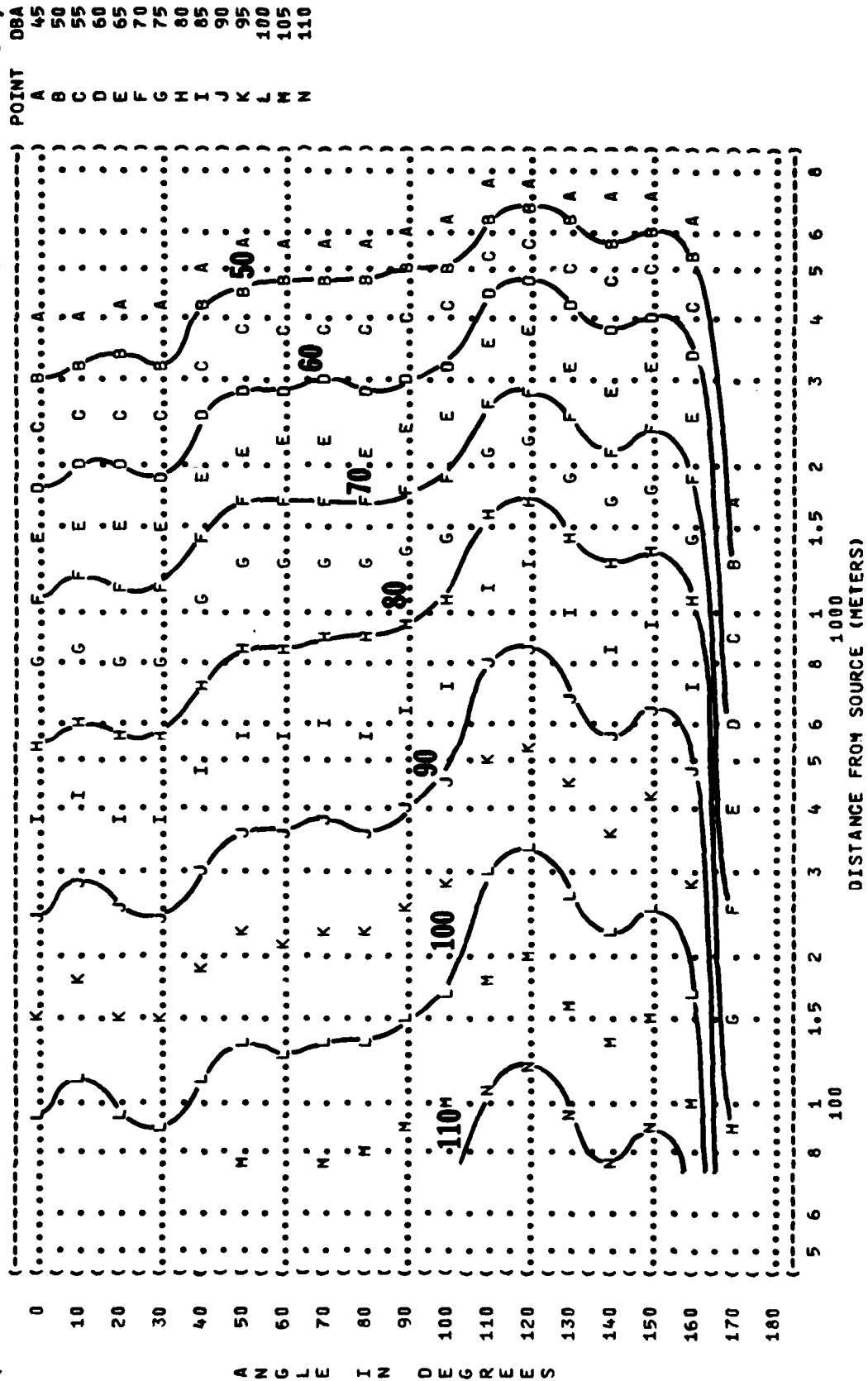








( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)  
 ( 7 EQUAL LEVEL CONTOURS (DBA)  
 ( ) IDENTIFICATION:  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-026  
 ( ) RUN 05  
 ( ) METEOROLOGY:  
 ( ) TEMP = 15 C  
 ( ) BAR PRESS = .760 M HG  
 ( ) REL HUMID = 70 %  
 ( ) OPERATION:  
 ( ) F-4C AIRCRAFT  
 ( ) 85% RPM  
 ( ) BOTH ENGINES  
 ( ) GROUND RUNUP NOISE  
 ( ) FREE FLOW  
 ( ) PAGE 15



A N G L E I N D E G R E E S

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(-----)
( FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA) )
(      7      EQUAL LEVEL CONTOURS (DBA) )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) IDENTIFICATION: )
( F-4C AIRCRAFT ) TEMP = 15 C ) OMEGA 1.4 )
( J79-G2-15/A ENGINE ) BAR PRESS = .760 M HG ) TEST 75-002-059 )
( FAR FIELD NOISE ) REL HUMID = 70 % ) RUN 03 )
( OPERATION: ) PAGE 15 )
( AFTERBURNER POWER )
( 100% RPM )
( SINGLE ENGINE )
( DEFLECTED FLOW )
(-----)
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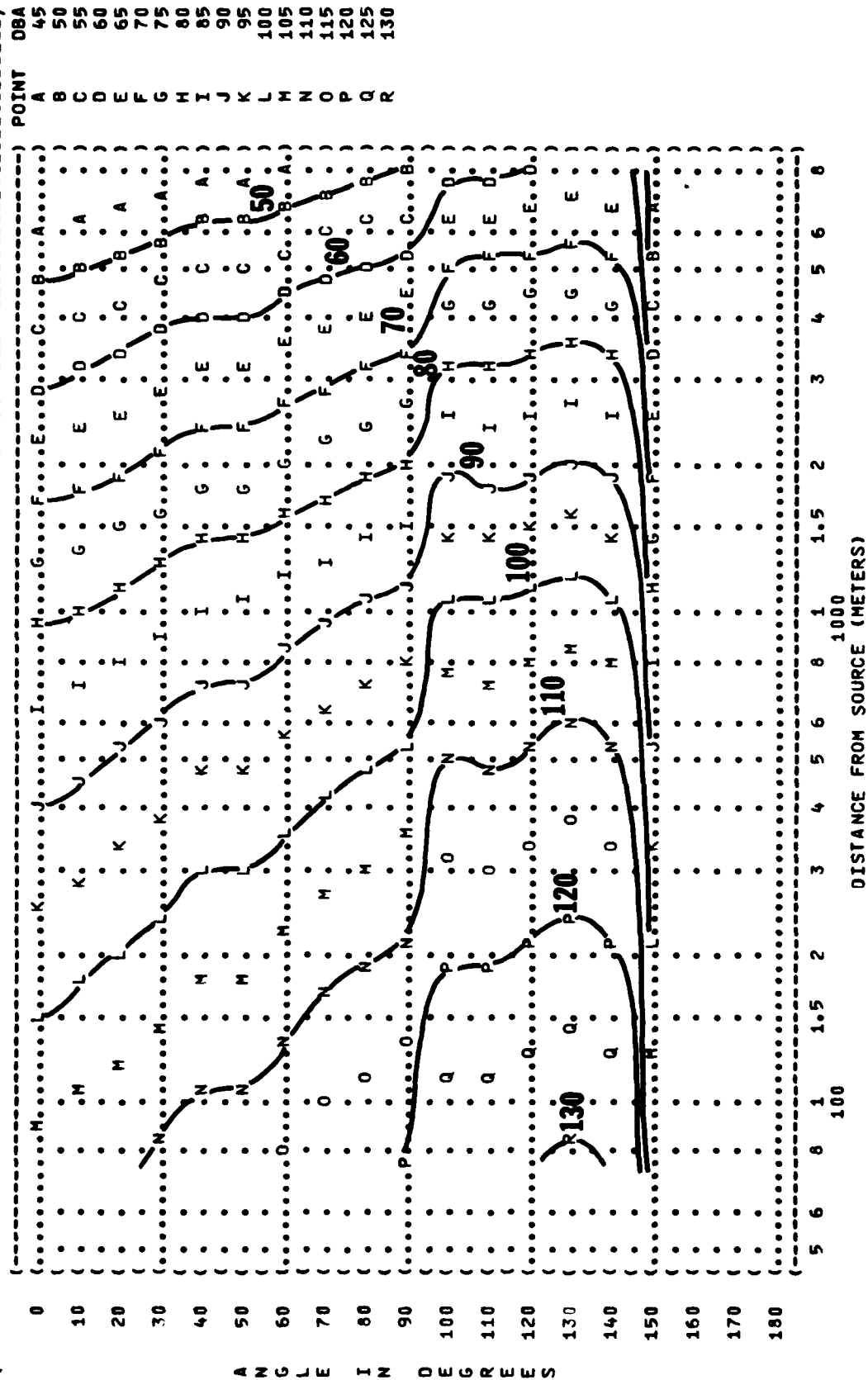
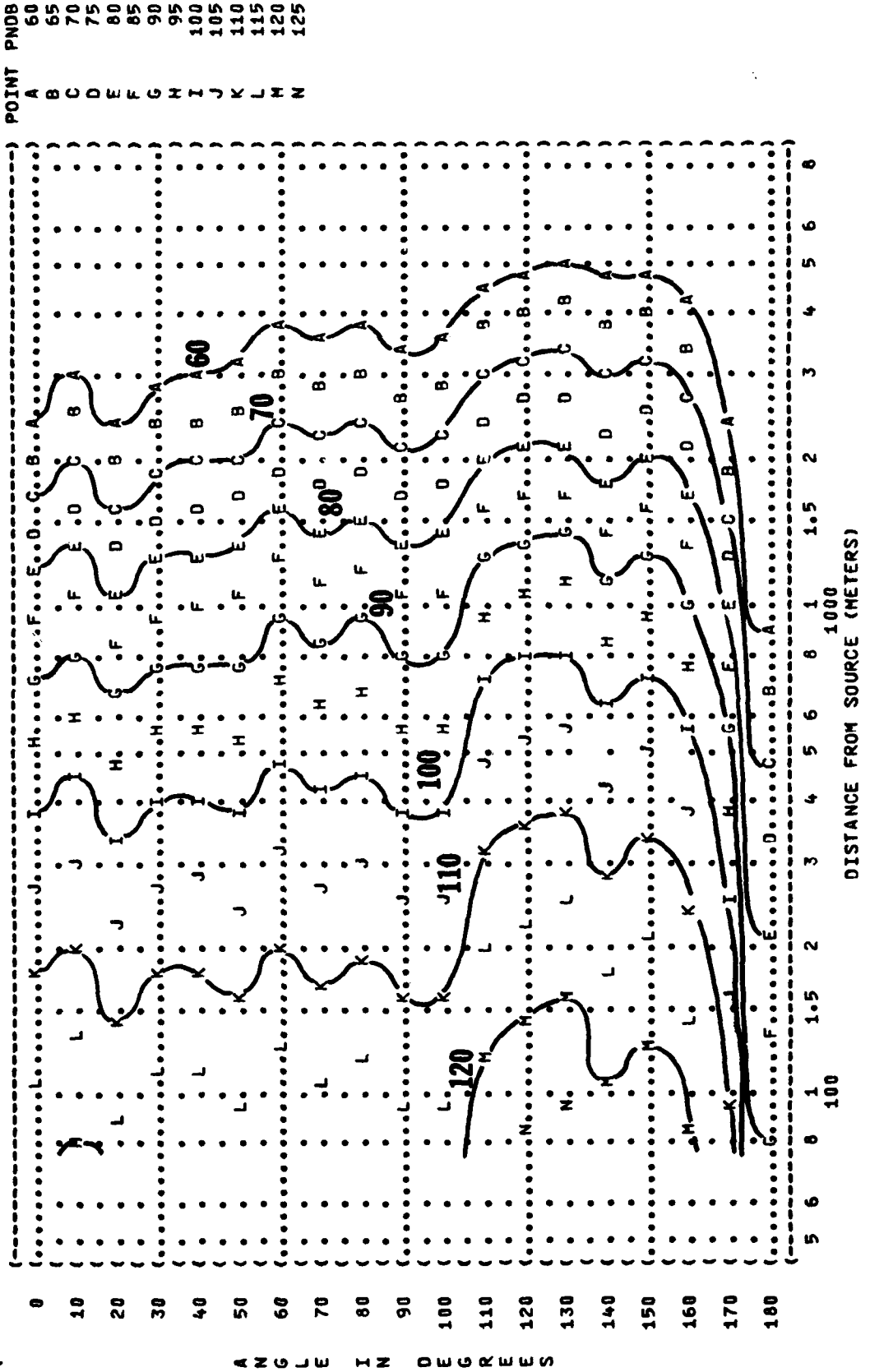
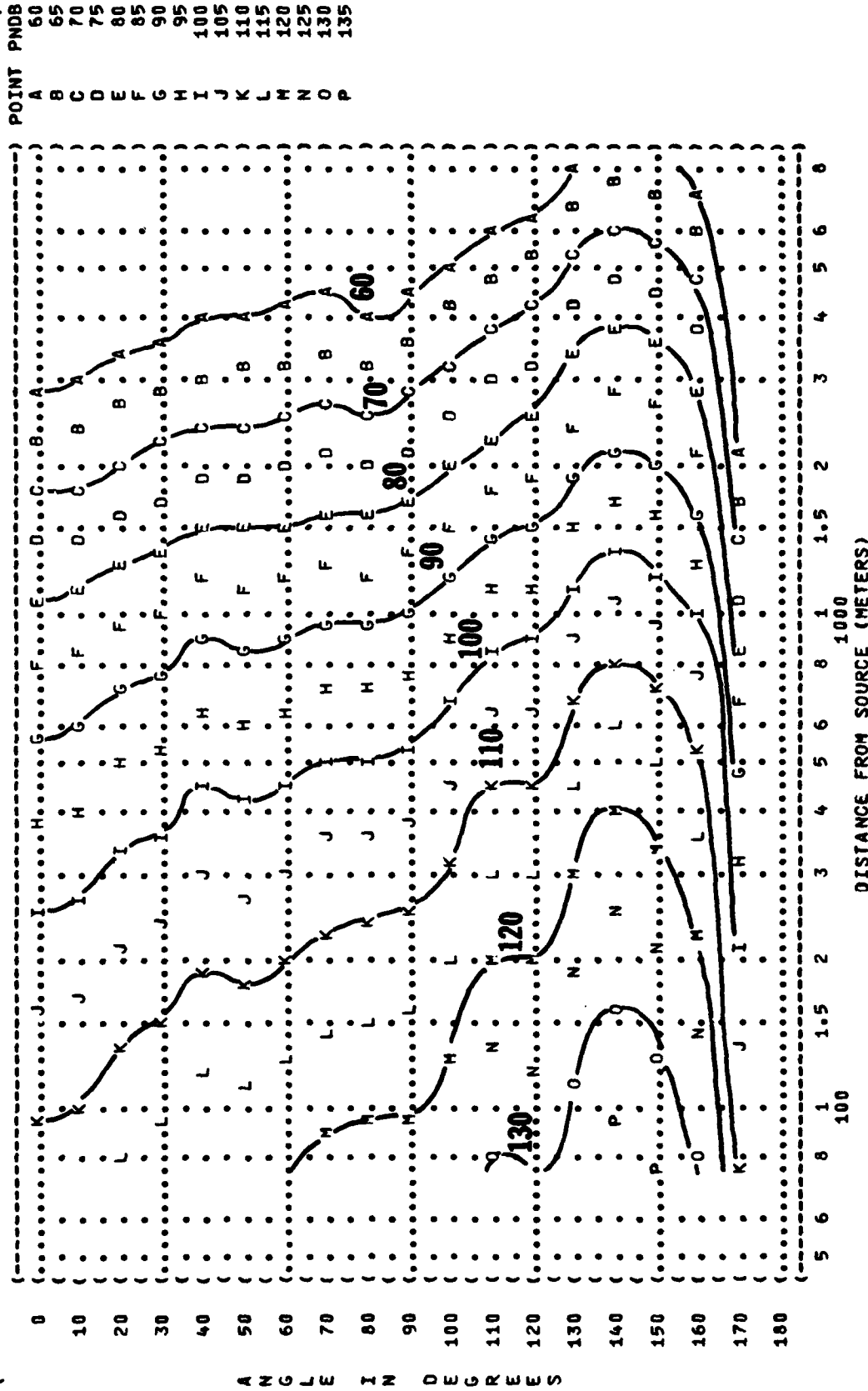




FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)  
 8 EQUAL LEVEL CONTOURS (PNDB)  
 IDENTIFICATION:  
 OMEGA 1.4  
 TEST 75-002-026  
 RUN 02  
 NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:  
 F-4C AIRCRAFT ( 85% RPM ) TEMP = 15 C  
 J79-GE-15/A ENGINE ( SINGLE ENGINE ) BAR PRESS = .760 M HG  
 GROUND RUNUP NOISE ( FREE FLOW ) REL HUMID = 70 %  
 PAGE 16



( FIGURE: 8 )  
 ( PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) )  
 ( EQUAL LEVEL CONTOURS (PNDB) )  
 ( NOISE SOURCE/SUBJECT: )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )  
 ( OPERATION: )  
 ( MILITARY POWER )  
 ( 100% RPM )  
 ( SINGLE ENGINE )  
 ( FREE FLOW )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-026 )  
 ( RUN 03 )  
 ( 02 AUG 76 )  
 ( PAGE 16 )



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(-----)
( FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION {PNLT} ) IDENTIFICATION: )
(      ) ) )
(      ) ) )
(      ) ) OMEGA 1.4 )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
(      ) ) TEMP = 15 C )
( F-4C AIRCRAFT ) IDLE POWER ) BAR PRESS = .760 M HG )
( J79-GE-15/A ENGINE ) 65% RPM ) REL HUMID = 70 % )
( GROUND RUNUP NOISE ) BOTH ENGINES ) )
(      ) FREE FLOW ) )
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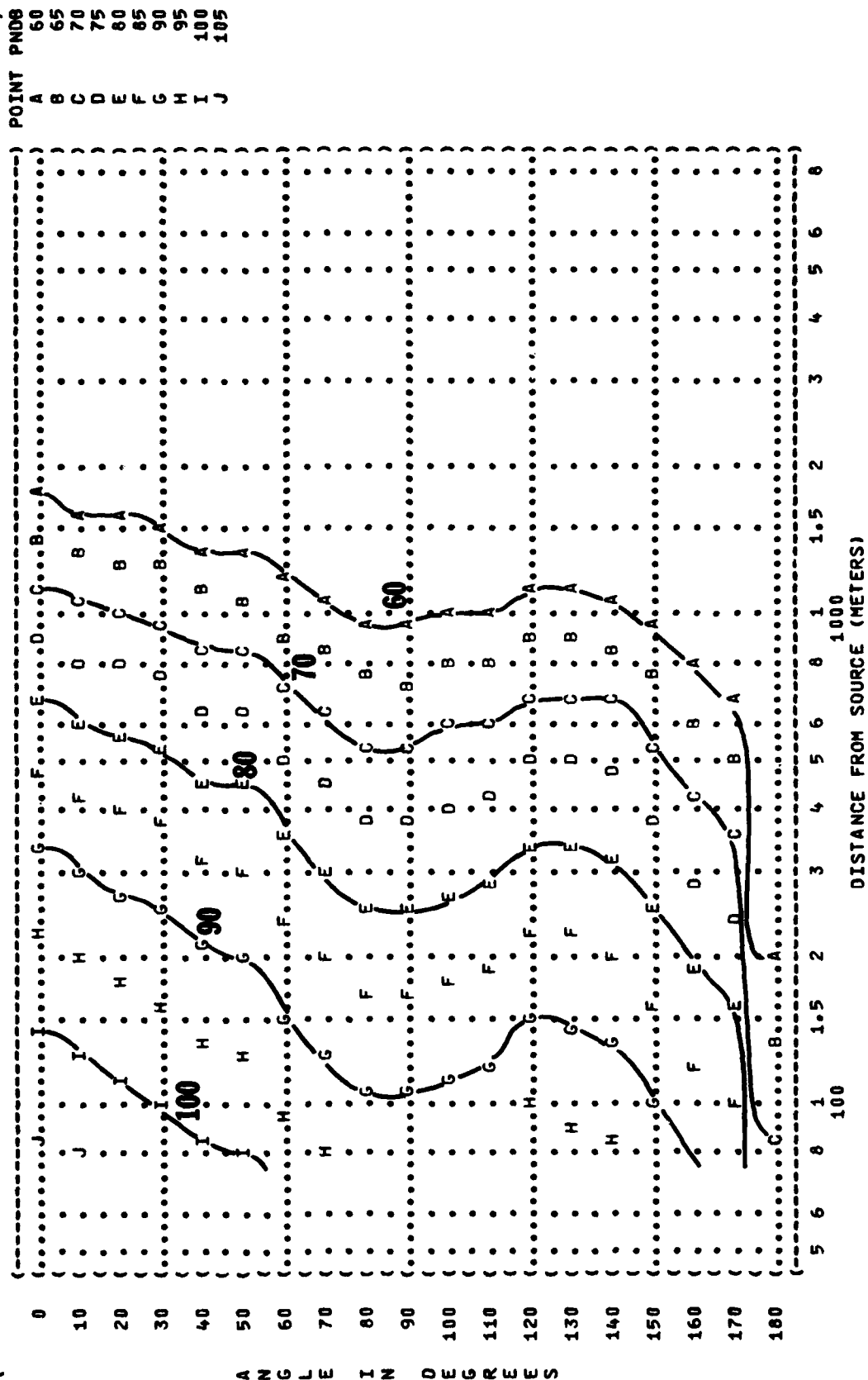




FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)  
 8  
 EQUAL LEVEL CONTOURS (PNDB)

NOISE SOURCE/SUBJECT:  
 F-4C AIRCRAFT  
 J79-GE-15/A ENGINE  
 FAR FIELD NOISE

OPERATION:  
 AFTERBURNER POWER  
 100% RPM  
 SINGLE ENGINE  
 DEFLECTED FLOW

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

IDENTIFICATION:  
 OMEGA 1.4  
 TEST 75-002-059  
 RUN 03  
 09 AUG 76  
 PAGE 16

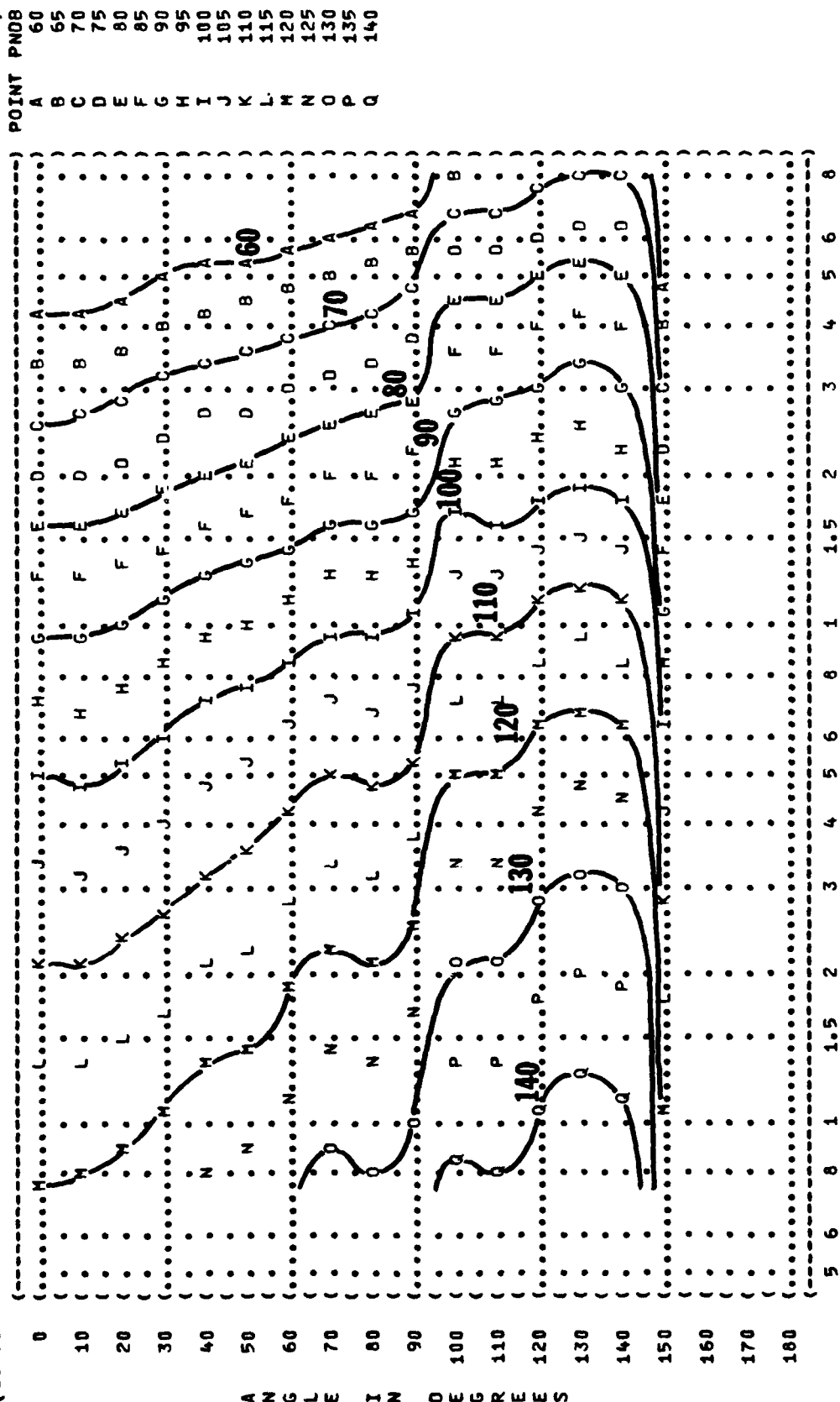






FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL {PSIL}  
EQUAL LEVEL CONTOURS (DB)  
9

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NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
( MILITARY POWER ) TEMP = 15 C )  
( 100% RPM ) BAR PRESS = .760 M HG )  
( SINGLE ENGINE ) REL HUMID = 70 % )  
( FREE FLOW ) )

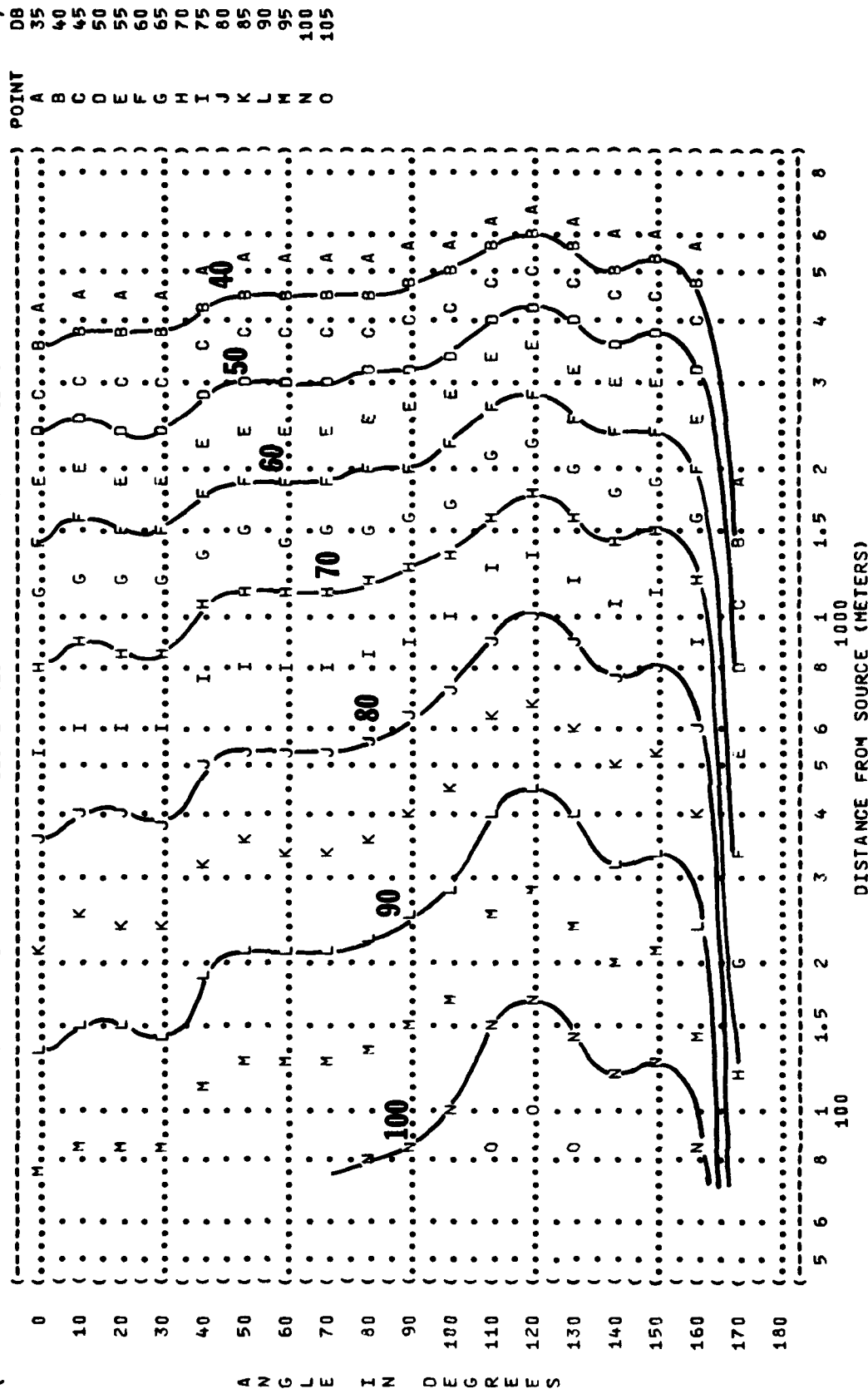
F-4C AIRCRAFT  
J79-GE-15/A ENGINE  
GROUND RUNUP NOISE

IDENTIFICATION: )  
)  
) OMEGA 1.4 )  
) TEST 75-002-026 )  
) RUN 03 )  
) 02 AUG 76 )  
) )  
) PAGE 17 )





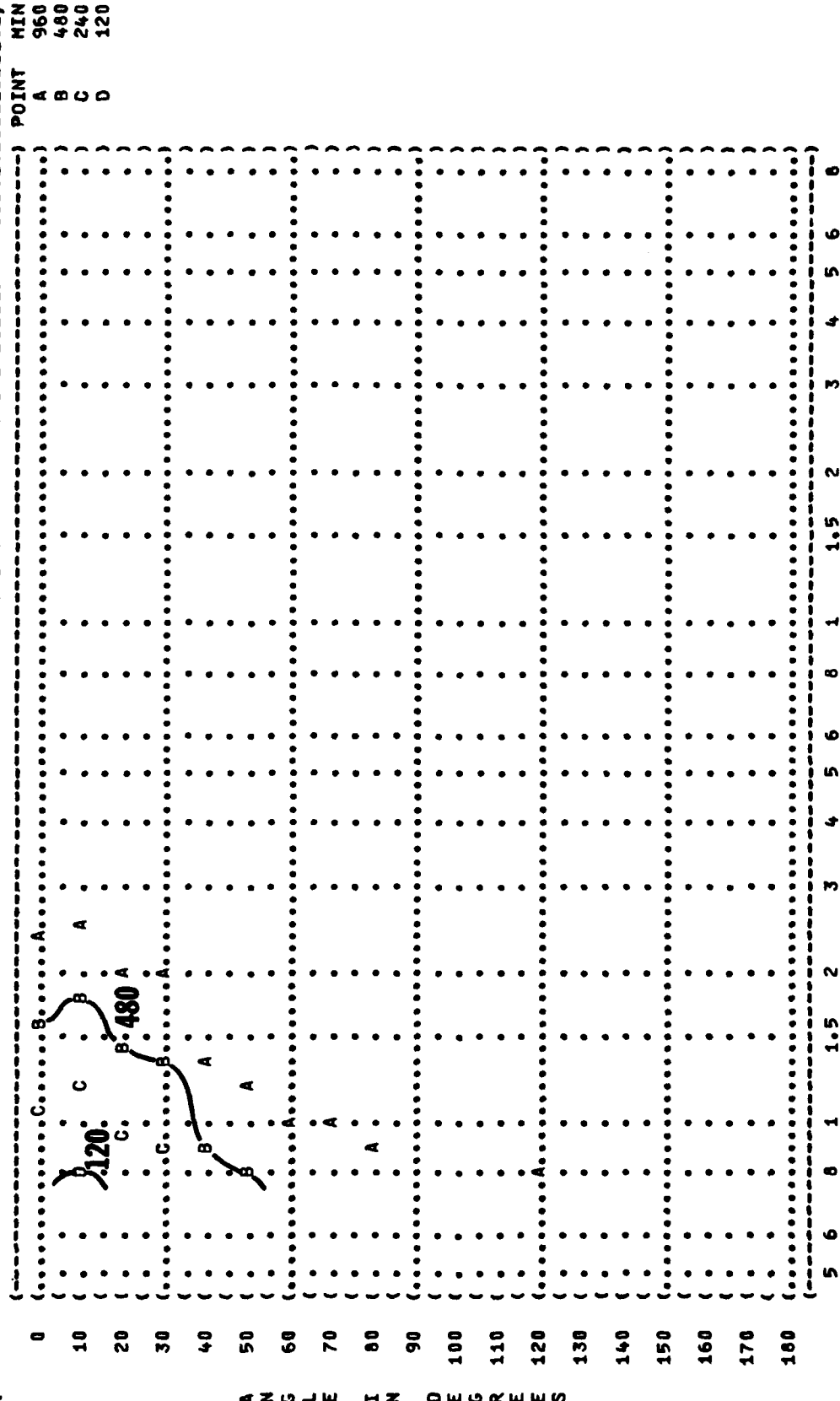
( FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)  
 ( 9 EQUAL LEVEL CONTOURS (DB)  
 ( ) IDENTIFICATION:  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-026  
 ( ) RUN 05  
 ( ) NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( ) F-4C AIRCRAFT ( 85% RPM  
 ( ) J79-GE-15/A ENGINE ( BOTH ENGINES  
 ( ) GROUND RUNUP NOISE ( FREE FLOW  
 ( ) METEOROLOGY: ( TEMP = 15 C  
 ( ) BAR PRESS = .760 M HG  
 ( ) REL HUMID = 70 %  
 ( ) 02 AUG 76  
 ( ) PAGE 17



A N G L E I N D E G R E E S



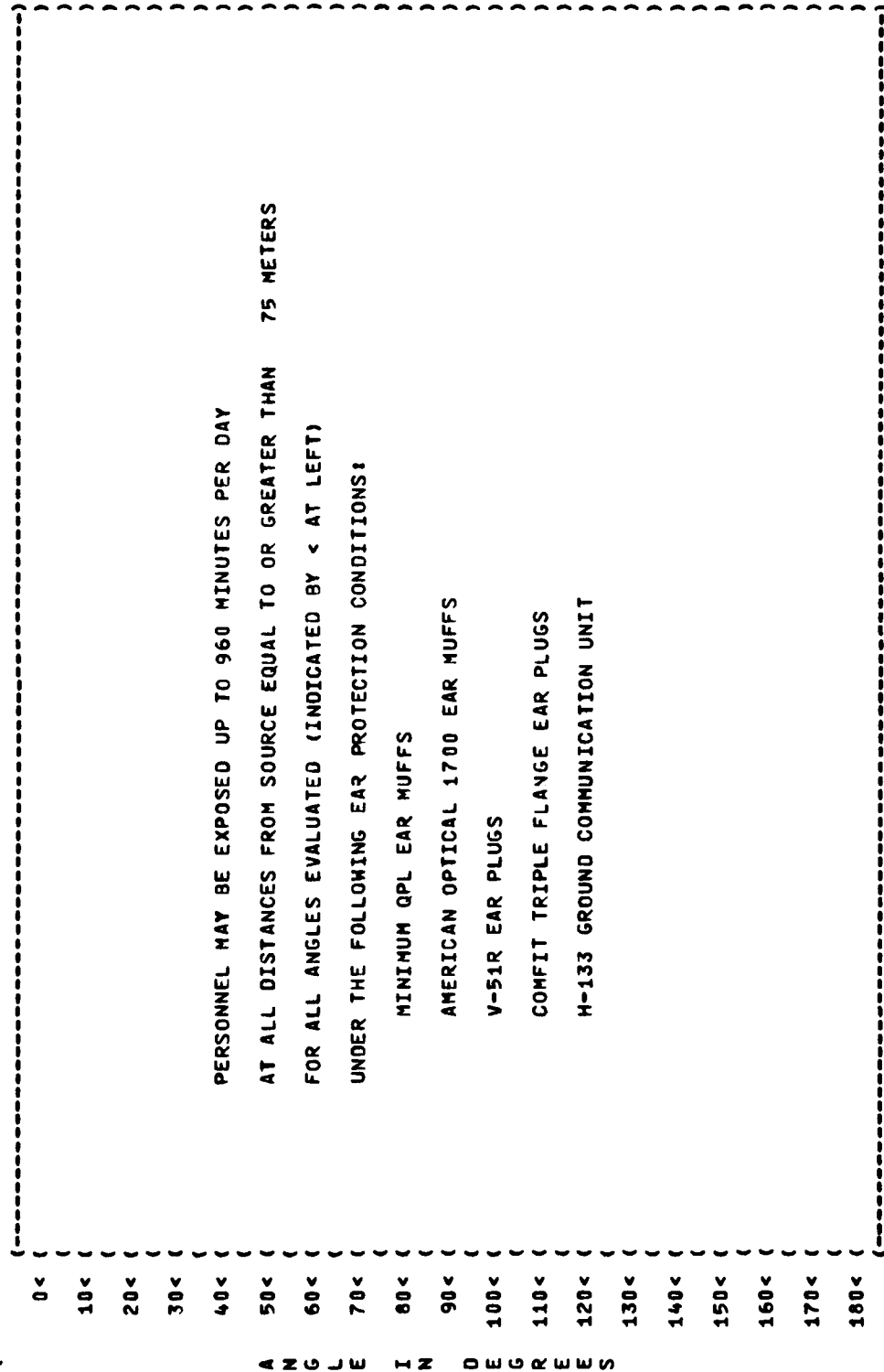
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( 10 EQUAL TIME CONTOURS (MINUTES) ) )  
 ( NO PROTECTION ) )  
 ( NOISE SOURCE/SUBJECT: ) )  
 ( F-4C AIRCRAFT ) )  
 ( J79-GE-15/A ENGINE ) )  
 ( GROUND RUNUP NOISE ) )  
 ( OPERATION: ) )  
 ( IDLE POWER ) )  
 ( 65% RPM ) )  
 ( SINGLE ENGINE ) )  
 ( FREE FLOW ) )  
 ( METEOROLOGY: ) )  
 ( TEMP = 15 C ) )  
 ( BAR PRESS = .760 M HG ) )  
 ( REL HUMID = 70 % ) )  
 ( PAGE 7 ) )  
 ( OMEGA 1.4 ) )  
 ( TEST 75-002-026 ) )  
 ( RUN 01 ) )



A N G L E I N D E G R E E S

DISTANCE FROM SOURCE (METERS)

( ( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( ( 10 EQUAL TIME CONTOURS (MINUTES) ) )  
 ( ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) OMEGA 1.4  
 ( ( F-4C AIRCRAFT ) IDLE POWER ) TEMP = 15 C ) TEST 75-002-026  
 ( ( J79-GE-15/A ENGINE ) 65% RPM ) BAR PRESS = .760 M HG ) RUN 01  
 ( ( GROUND RUNUP NOISE ) SINGLE ENGINE ) REL HUMID = 70 % ) 02 AUG 76  
 ( ( ) FREE FLOW ) ) PAGE 8 )



5 6 8 1 1.5 2 3 4 5 6 8  
 100 1000  
 DISTANCE FROM SOURCE (METERS)

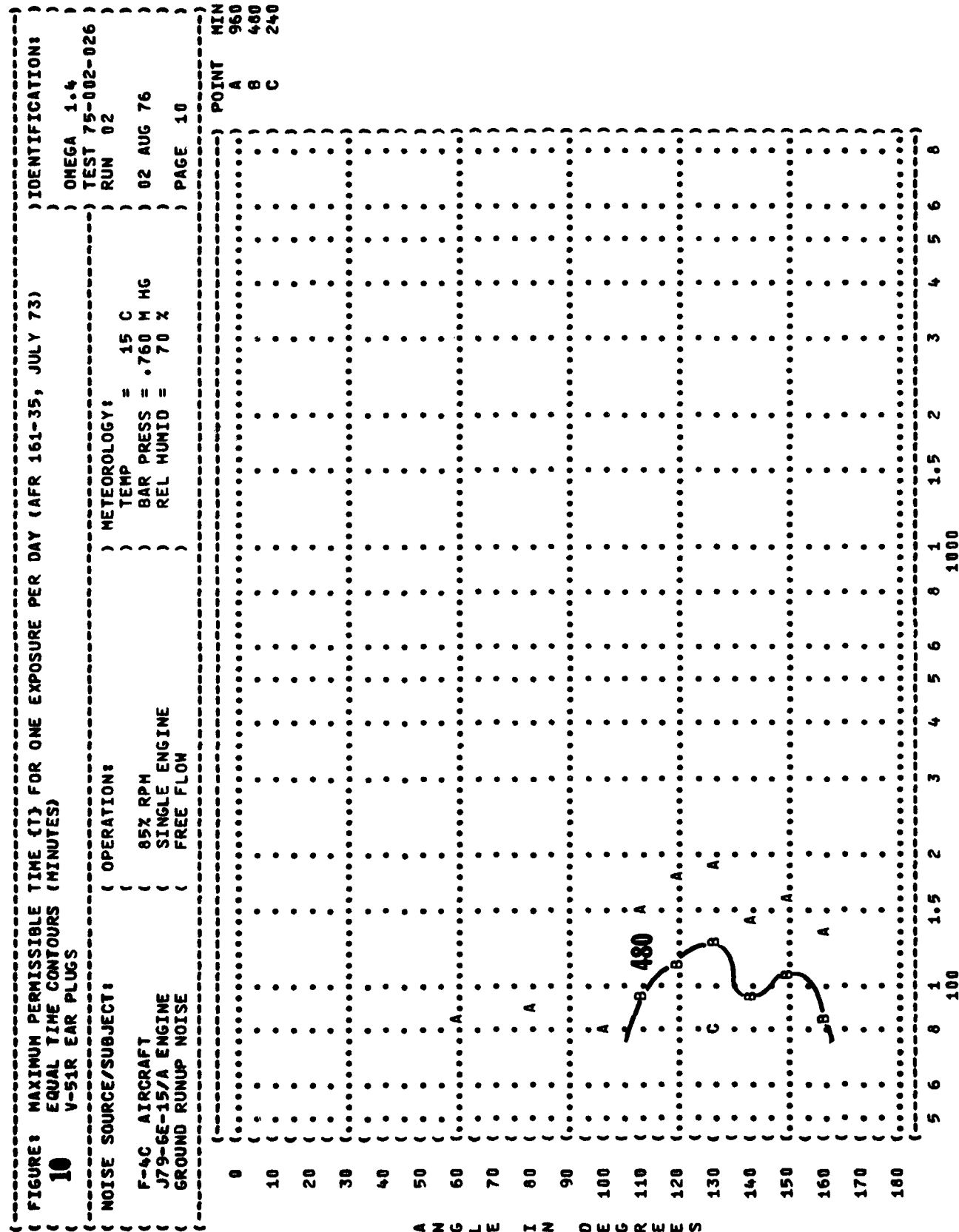


| POINT | MIN |
|-------|-----|
| A     | 960 |
| B     | 480 |
| C     | 240 |
| D     | 120 |

| 3                             | 4 | 5 | 6 | 8 | 1 | 1.5 | 2 | 3 | 4 | 5 | 6 | 8 |
|-------------------------------|---|---|---|---|---|-----|---|---|---|---|---|---|
| DISTANCE FROM SOURCE (METERS) |   |   |   |   |   |     |   |   |   |   |   |   |
| 1000                          |   |   |   |   |   |     |   |   |   |   |   |   |

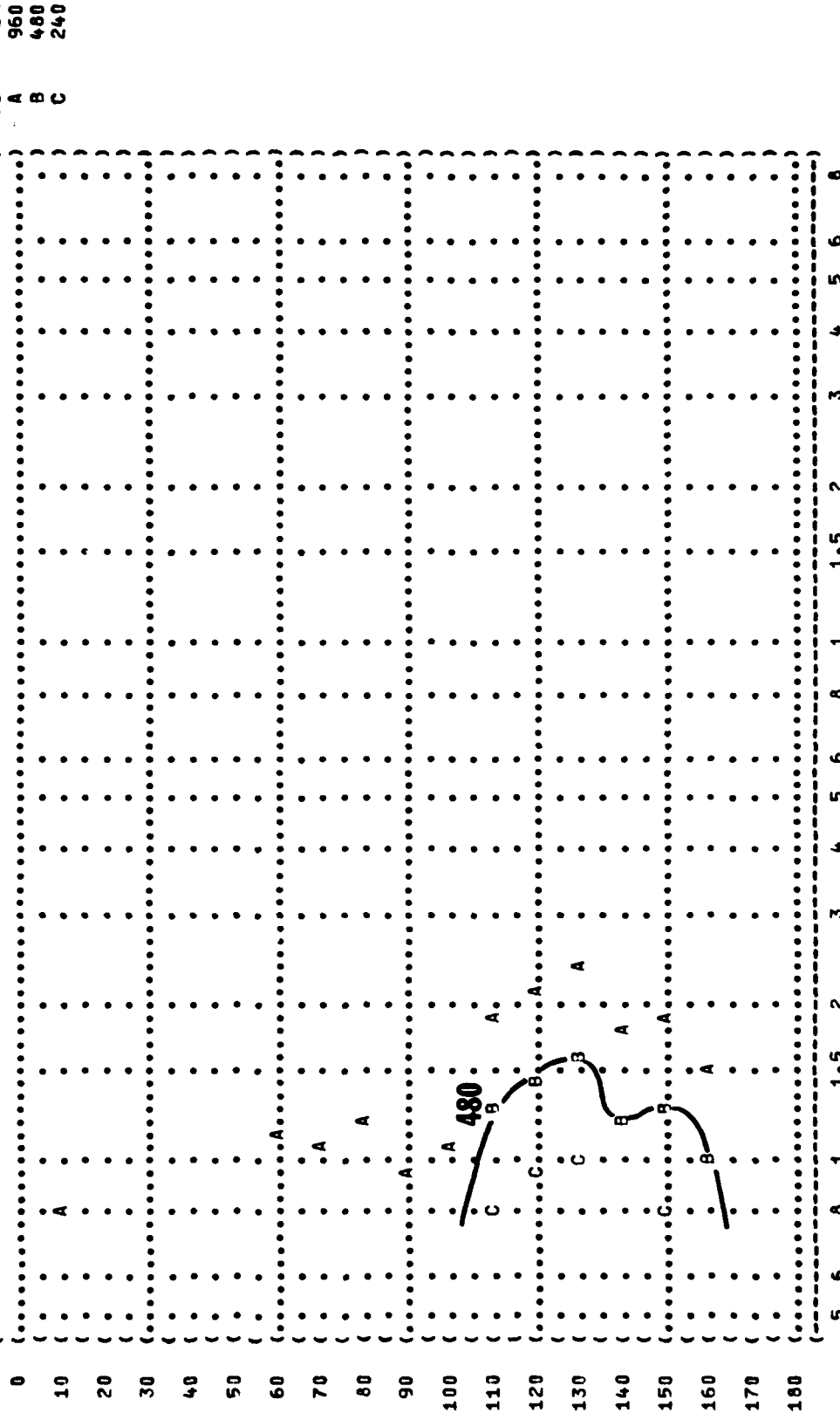
420 JE HZ 05045515





(-----) IDENTIFICATION: (-----)  
 ( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) )  
 ( 10 EQUAL TIME CONTOURS (MINUTES) )  
 ( COMFIT TRIPLE FLANGE EAR PLUGS )  
 (-----) NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: (-----)  
 ( F-4C AIRCRAFT ( 85% RPM ) TEMP = 15 C )  
 ( J79-GE-15/A ENGINE ( SINGLE ENGINE ) BAR PRESS = .760 M HG )  
 ( GROUND RUNUP NOISE ( FREE FLOW ) REL HUMID = 70 % )  
 (-----) POINT MIN  
 (-----) A 960  
 (-----) B 480  
 (-----) C 240

A N G L E I N D E G R E E S



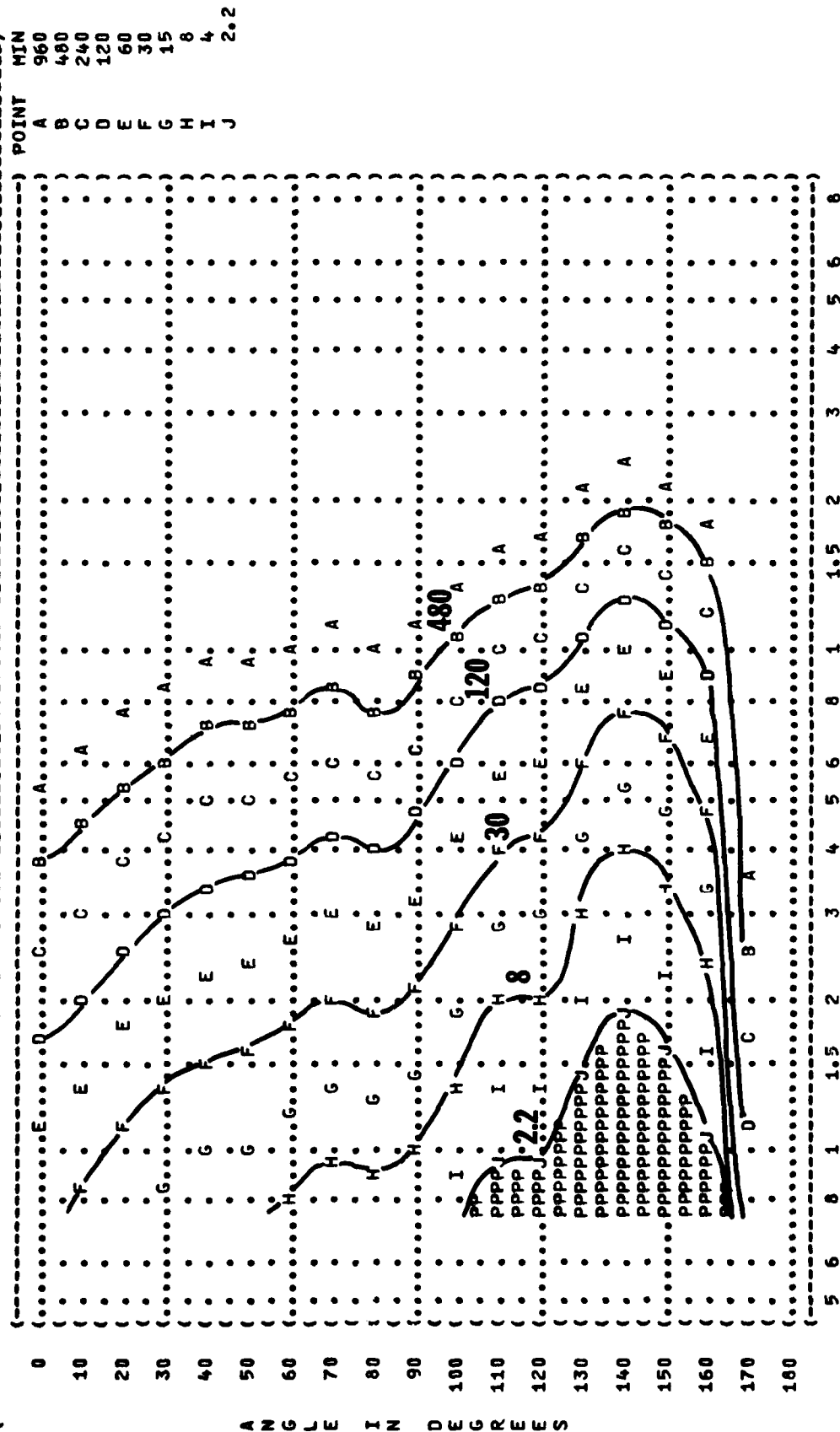
DISTANCE FROM SOURCE (METERS)

|                                                                                                                                                                                                                                                                     |   |   |   |   |   |   |   |   |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|
| ( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )<br>( EQUAL TIME CONTOURS (MINUTES) )<br>( H-133 GROUND COMMUNICATION UNIT )                                                                               |   |   |   |   |   |   |   |   |   |
| ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) OMEGA 1.4 )<br>( F-4C AIRCRAFT ) ) TEMP = 15 C ) TEST 75-002-026 )<br>( J79-GE-15/A ENGINE ) ) BAR PRESS = .760 M HG ) RUN 02 )<br>( GROUND RUNUP NOISE ) ) REL HUMID = 70 % ) 02 AUG 76 )<br>( ) ) PAGE 12 ) |   |   |   |   |   |   |   |   |   |
| ( ) POINT MIN )<br>( ) A 960 )                                                                                                                                                                                                                                      |   |   |   |   |   |   |   |   |   |
| 0                                                                                                                                                                                                                                                                   | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 10                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 20                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 30                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 40                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 50                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 60                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 70                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 80                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 90                                                                                                                                                                                                                                                                  | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 100                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 110                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 120                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 130                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 140                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 150                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 160                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 170                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |
| 180                                                                                                                                                                                                                                                                 | ( | ( | ( | ( | ( | ( | ( | ( | ( |

ANGLE IN DEGREES

DISTANCE FROM SOURCE (METERS)

```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
(    EQUAL TIME CONTOURS (MINUTES) ) )
(      NO PROTECTION ) ) OMEGA 1.4 )
( ) ) )
( ) ) )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) TEST 75-002-026 )
( ) ) ) ) RUN 03 )
( ) ) ) ) )
( F-4C AIRCRAFT ) TEMP = 15 C ) )
( J79-GE-15/A ENGINE ) BAR PRESS = .760 M HG ) 02 AUG 76 )
( GROUND RUNUP NOISE ) SINGLE ENGINE ) )
( ) FREE FLOW ) ) PAGE 7 )
(-----)
```

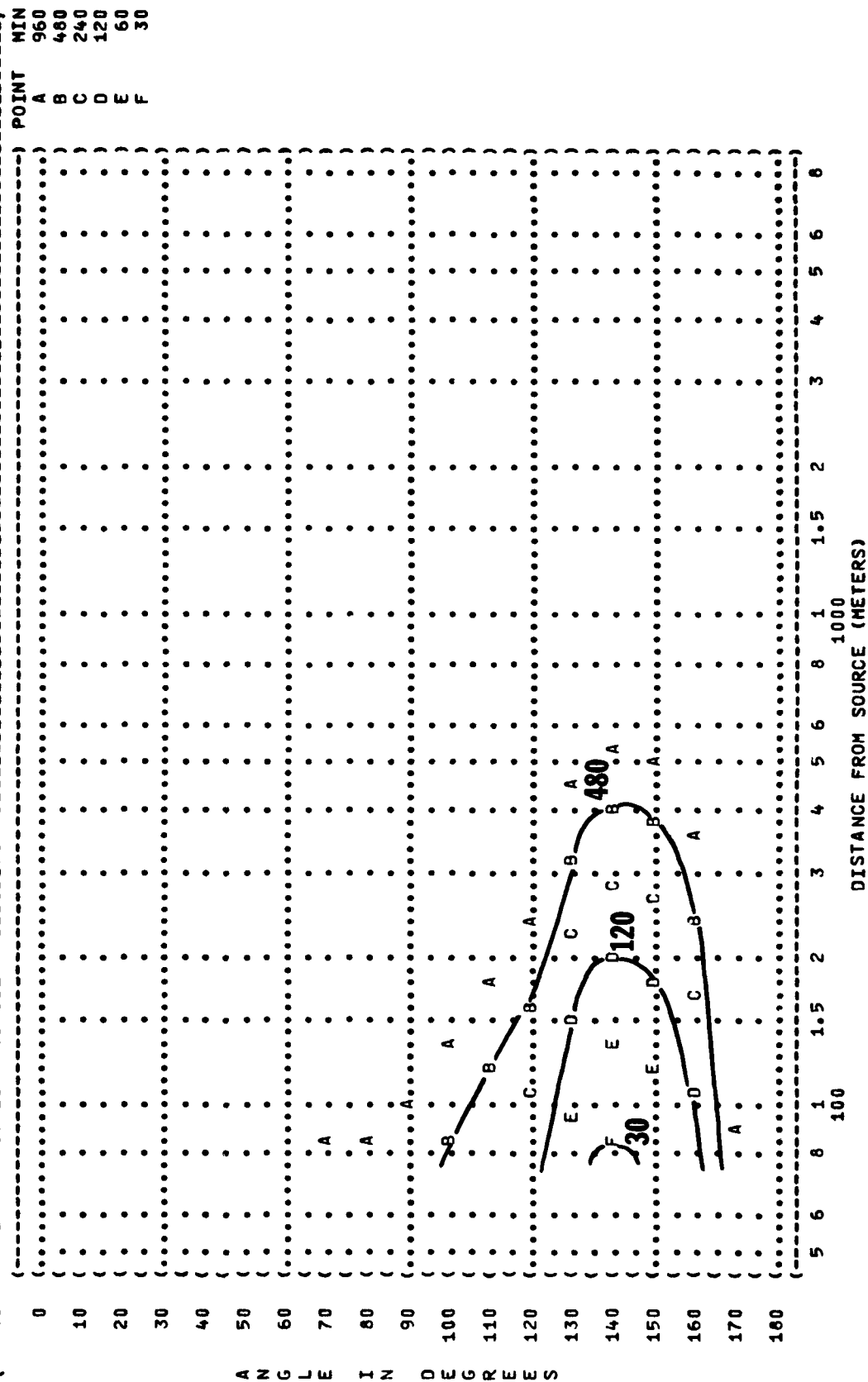


**P ADDITIONAL EAR PROTECTION REQUIRED.**

**PAGE 8**

1000

( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-75, JULY 73) ) IDENTIFICATION: )  
 ( ) EQUAL TIME CONTOURS (MINUTES) )  
 ( 10 AMERICAN OPTICAL 1700 EAR MUFFS ) OMEGA 1.4  
 ( ) NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) TEST 75-002-026 )  
 ( ) F-4C AIRCRAFT ) MILITARY POWER ) TEMP = 15 C ) RUN 03 )  
 ( ) J79-GE-15/A ENGINE ) 100% RPM ) BAR PRESS = .760 M HG ) 02 AUG 76 )  
 ( ) GROUND RUNUP NOISE ) SINGLE ENGINE ) REL HUMID = 70 % ) )  
 ( ) ) FREE FLOW ) ) PAGE 9 )

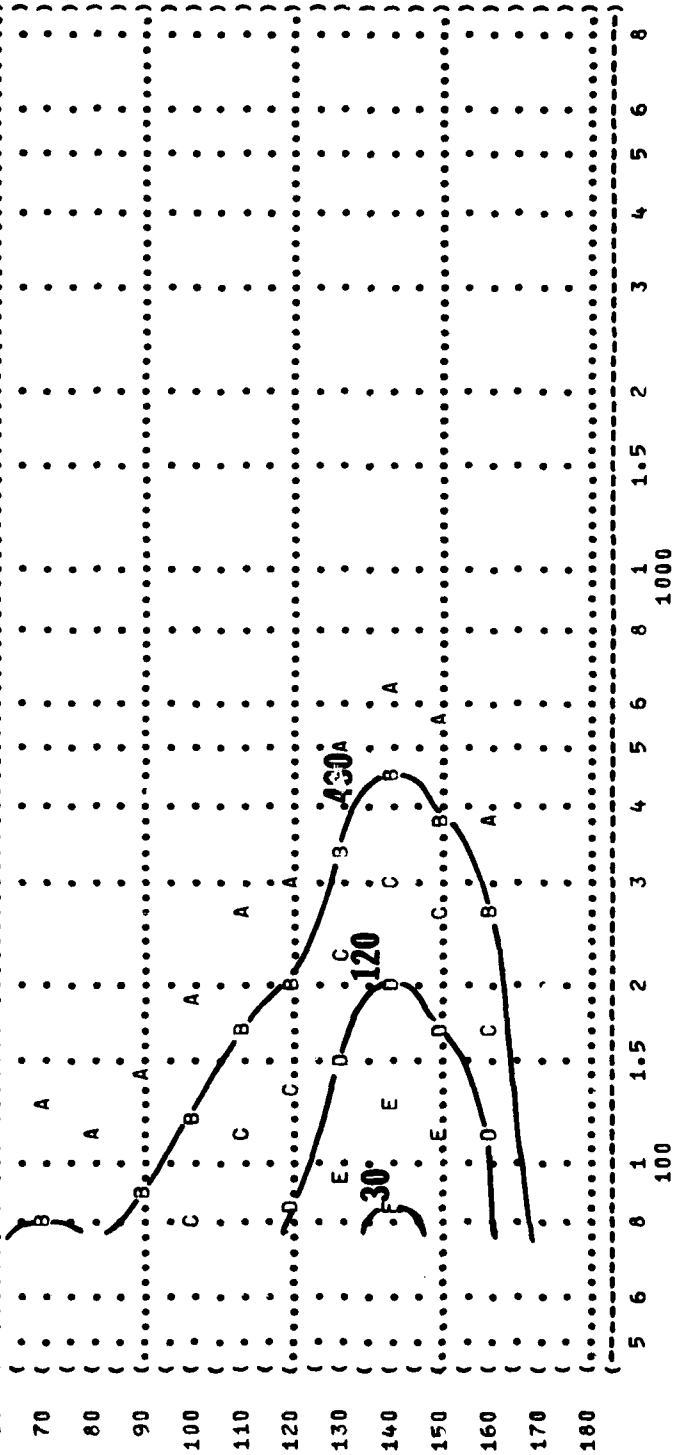


MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)  
 EQUAL TIME CONTOURS (MINUTES)  
 V-SIR EAR PLUGS

SOURCE/SUBJECT: ( ) OPERATION: ( ) METEOROLOGY: ( )  
 ( ) MILITARY POWER ( ) TEMP = 15 C  
 ( ) 100% RPM ( ) BAR PRESS = .760 M HG  
 ( ) SINGLE ENGINE ( ) REL HUMID = 70 %  
 ( ) FREE FLOW ( ) PAGE 10

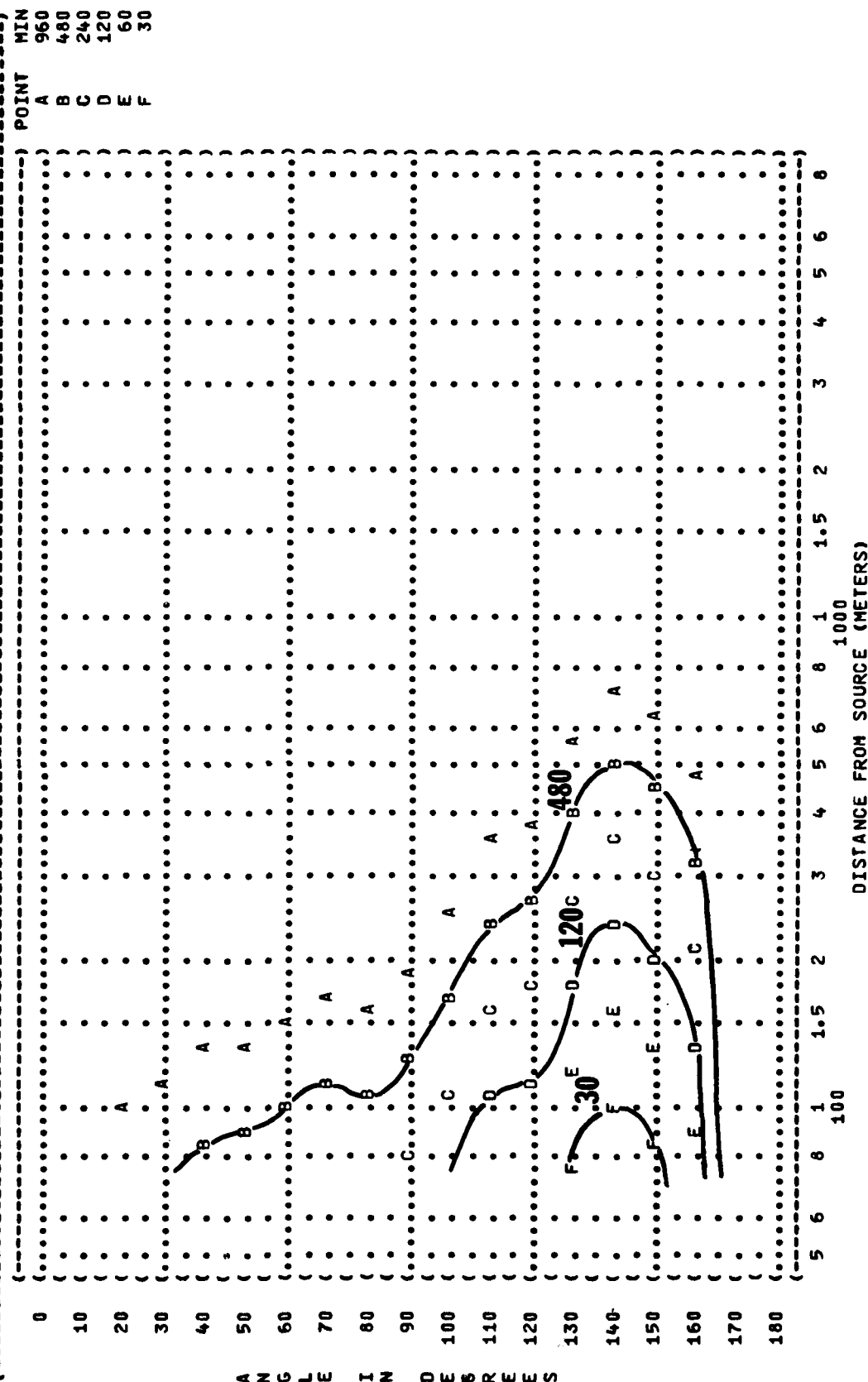
IDENTIFICATION: ( )  
 OMEGA 1.4  
 TEST 75-002-026  
 RUN 03  
 02 AUG 76  
 POINT MIN  
 A 960  
 B 480  
 C 240  
 D 120  
 E 60  
 F 30

A N G L E I N D E G R E E S



DISTANCE FROM SOURCE (METERS)

```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( EQUAL TIME CONTOURS (MINUTES) ) )
(    10 COMFIT TRIPLE FLANGE EAR PLUGS ) OMEGA 1.4 )
(-----)
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) TEST 75-002-026 )
( F-4C AIRCRAFT ) MILITARY POWER ) TEMP = 15 C ) RUN 03 )
( J79-GE-15/A ENGINE ) 100% RPM ) BAR PRESS = .760 M HG ) 02 AUG 76 )
( GROUND RUNUP NOISE ) SINGLE ENGINE ) REL HUMID = 70 % ) )
( FREE FLOW ) ) PAGE 11 )
(-----)
```







```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
(      10 EQUAL TIME CONTOURS (MINUTES) ) )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) TEST 75-002-026 )
( ( OPERATION: ) TEMP = 15 C ) RUN 04 )
( ( IDLE POWER ) ) )
( ( 65% RPM ) BAR PRESS = .760 M HG )
( ( BOTH ENGINES ) REL HUMID = 70 % )
( ( FREE FLOW ) ) PAGE 8 )
(-----)
```

0<  
10<  
20<  
30<  
40<  
50<  
60<  
70<  
80<  
90<  
100<  
110<  
120<  
130<  
140<  
150<  
160<  
170<  
180<

PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY  
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS  
FOR ALL ANGLES EVALUATED (INDICATED BY < AT LEFT)  
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:

MINIMUM QPL EAR MUFFS

AMERICAN OPTICAL 1700 EAR MUFFS

## V-51R EAR PLUGS

**COMFIT TRIPLE FLANGE EAR PLUGS**

H-133 GROUND COMMUNICATION UNIT

5 6 8 1 1.5 2 3 4 5 6 8 1000  
DISTANCE FROM SOURCE (METERS)

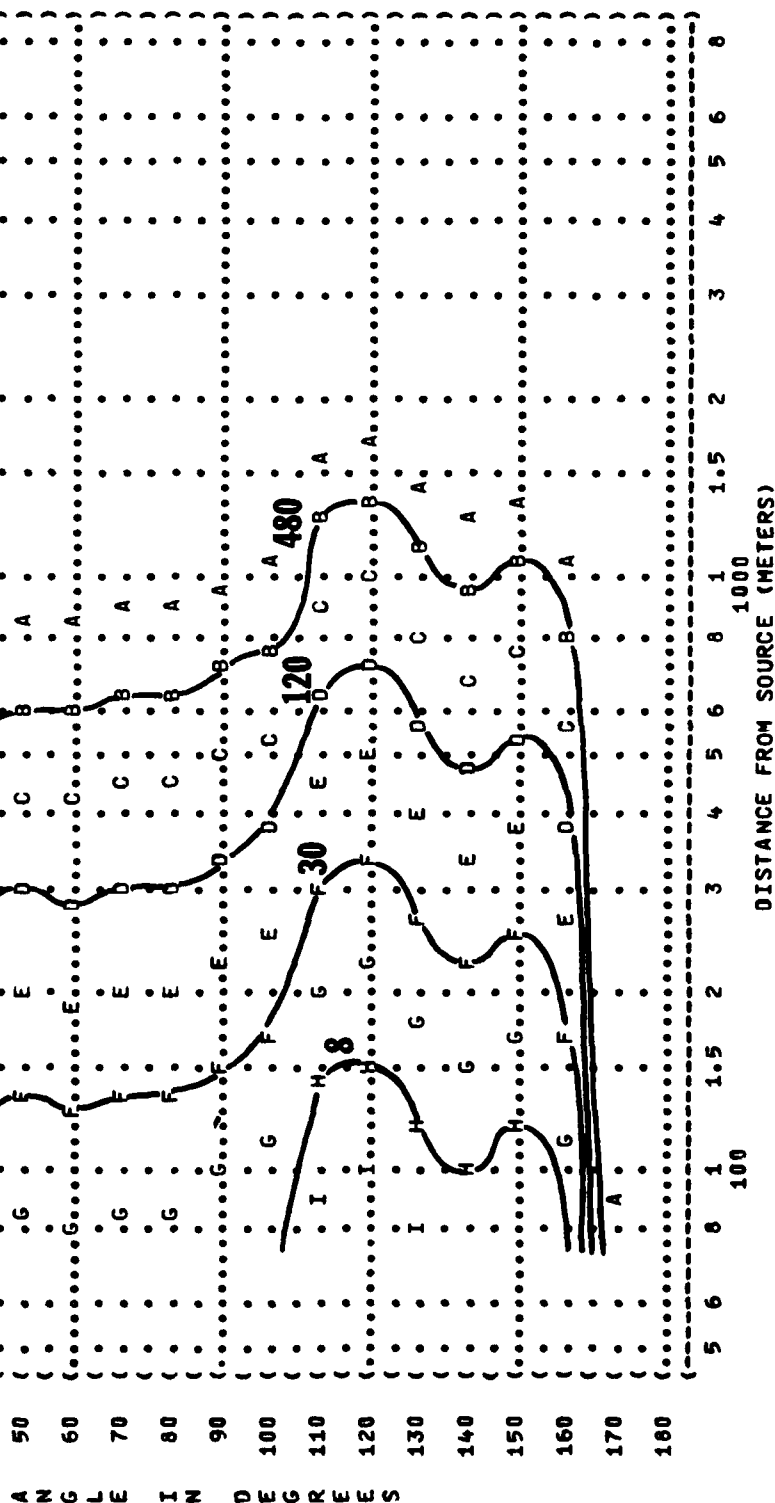
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( ) FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ) EQUAL TIME CONTOURS (MINUTES) ) )
( ) NO PROTECTION ) ) OMEGA 1.4 )
( ) ) ) TEST 75-002-026 )
( ) NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) RUN 05 )
( ) F-4C AIRCRAFT ) ) TEMP = 15 C ) )
( ) J79-GE-15/A ENGINE ) 85% RPM ) BAR PRESS = .760 M HG ) )
( ) GROUND RUNUP NOISE ) BOTH ENGINES ) REL HUMID = 70 % ) )
( ) ) FREE FLOW ) ) PAGE 7 )

```

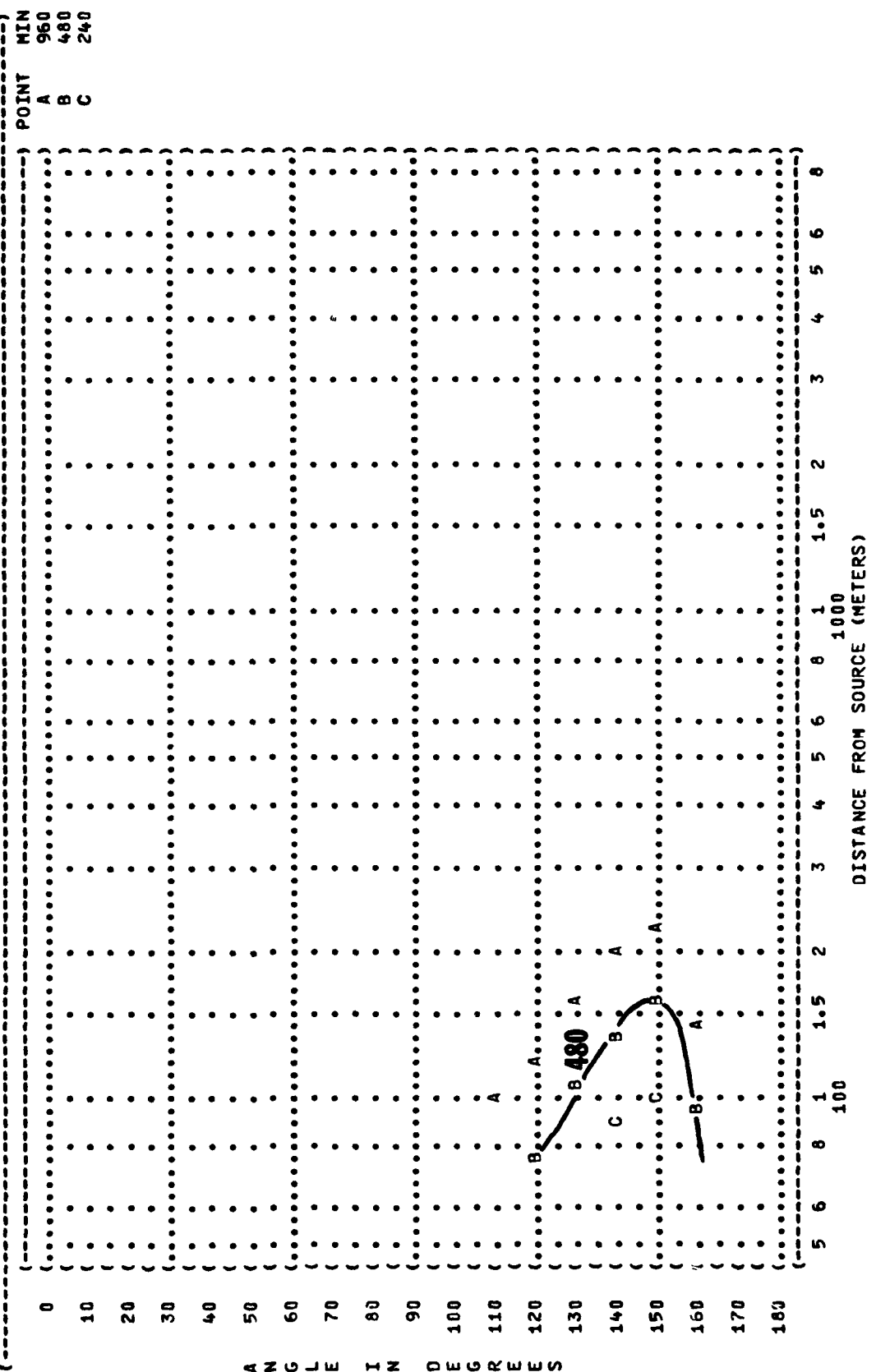
Figure 1 is a line graph showing the relationship between the number of points (0 to 40) and the minimum number of points (MIN) for different points (A, B, C, D, E, F, G, H, I). The graph shows three distinct curves: one for points A, B, C, D, E, F, G, H, I; one for points C, D, E, F, G, H, I; and one for points E, F, G, H, I. The curves generally show an increase in MIN as the number of points increases, with some fluctuations.

| Number of Points | MIN (A, B, C, D, E, F, G, H, I) | MIN (C, D, E, F, G, H, I) | MIN (E, F, G, H, I) |
|------------------|---------------------------------|---------------------------|---------------------|
| 0                | 960                             | 480                       | 240                 |
| 10               | 960                             | 480                       | 240                 |
| 20               | 960                             | 480                       | 240                 |
| 30               | 960                             | 480                       | 240                 |
| 40               | 960                             | 480                       | 240                 |





( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )  
 ( EQUAL TIME CONTOURS (MINUTES) ) )  
 ( AMERICAN OPTICAL 1700 EAR MUFFS ) )  
 ( NOISE SOURCE/SUBJECT: ) OPERATION: )  
 ( F-4C AIRCRAFT ) ( 85% RPM ) ) METEOROLOGY: )  
 ( J79-GE-15/A ENGINE ) ( BOTH ENGINES ) ) TEMP = 15 C )  
 ( GROUND RUNUP NOISE ) ( FREE FLOW ) ) BAR PRESS = .760 M HG )  
 ( ) ( ) ) REL HUMID = 70 % )  
 ( ) ( ) ) PAGE 9 )  
 ( ) ( ) ) TEST 75-002-026 )  
 ( ) ( ) ) RUN 05 )  
 ( ) ( ) ) OMEGA 1.4 )



A N G L E I N D E G R E E S









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

**10**

) IDENTIFICATION:  
)  
) OMEGA 1.4  
MINIMUM QPL EAR MUFFS

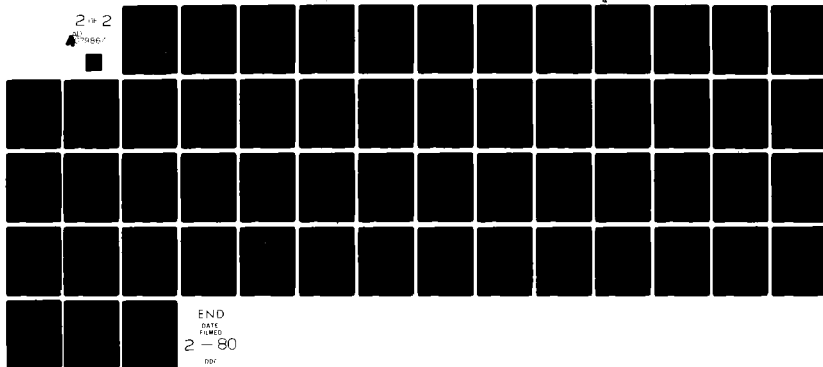


AD-A079 867

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OH F/S 1/3  
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK, VOLUME 121. F-4C AIR--ETC(U)  
APR 79 R G POWELL  
UNCLASSIFIED AMRL-TR-75-50-VOL-121 NL

2 2

4 19867



END

DATE

FILED

2 - 80

npv



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(-----)
( FIGURE# MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
( EQUAL TIME CONTOURS (MINUTES) ) )
(      10      ) )
( COMFIT TRIPLE FLANGE EAR PLUGS ) OMEGA 1.4
( ) TEST 75-002-059
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY:
( ( AFTERBURNER POWER ) TEMP = 15 C )
( ( 100% RPM ) BAR PRESS = .760 M HG )
( ( SINGLE ENGINE ) REL HUMID = 70 % )
( ( DEFLECTED FLOW ) ) PAGE 11
(-----)
```

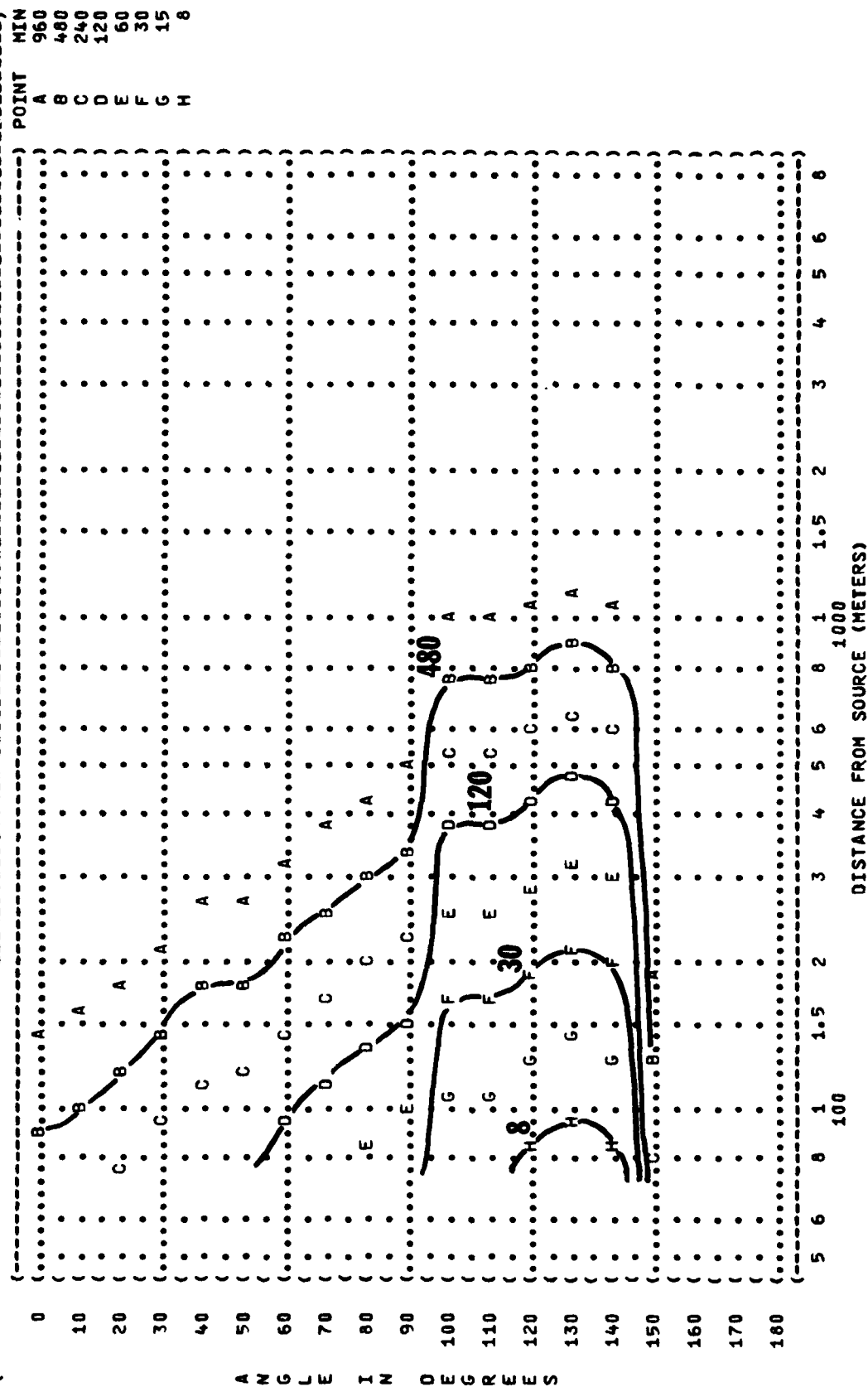
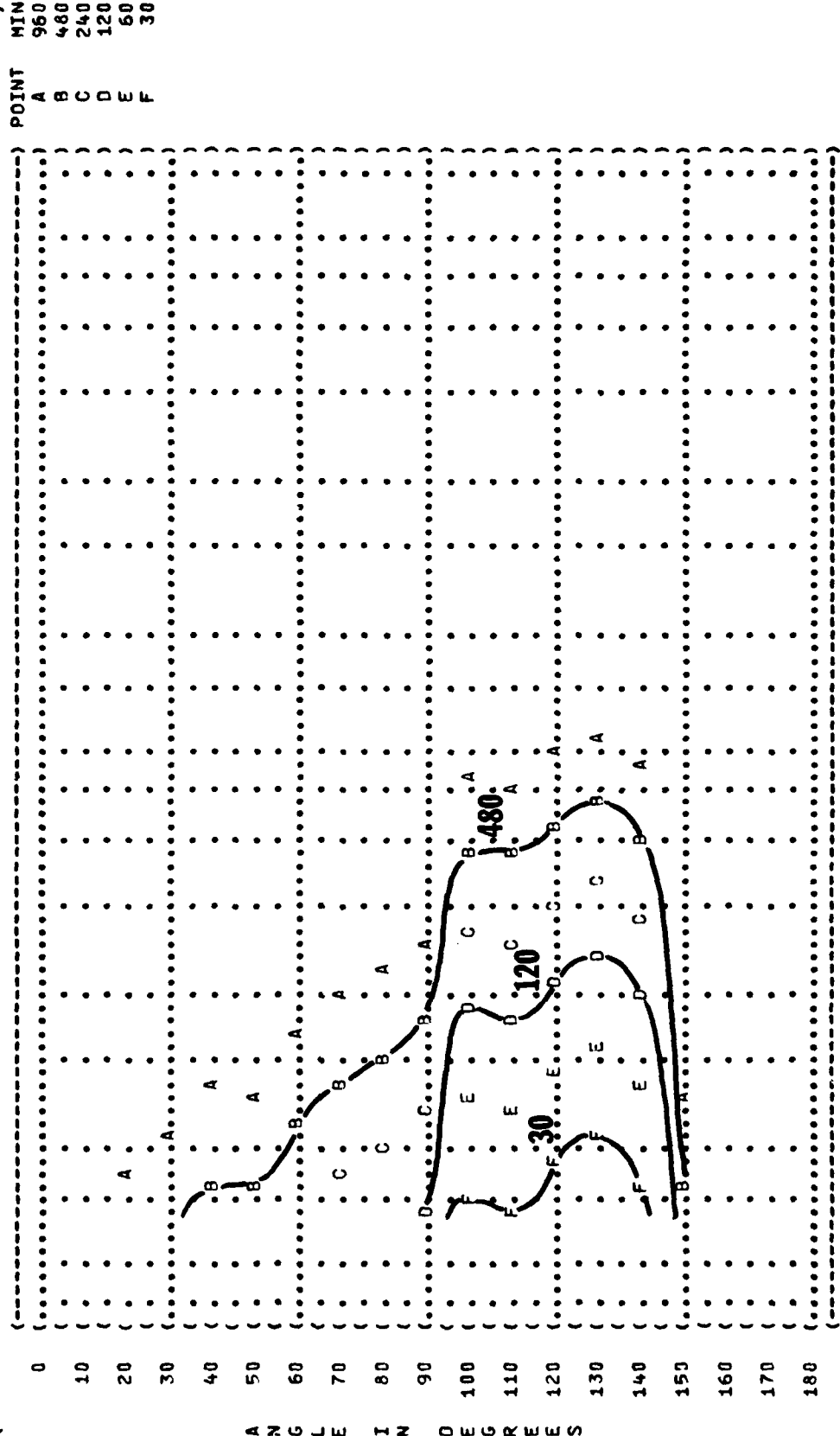


FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)  
 IDENTIFICATION:  
 10  
 EQUAL TIME CONTOURS (MINUTES)  
 H-133 GROUND COMMUNICATION UNIT  
 NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY:  
 ( AFTERBURNER POWER ) TEMP = 15 C  
 ( F-4C AIRCRAFT ) 100.. RPM BAR PRESS = .760 M HG  
 ( J79-GE-15/A ENGINE ) SINGLE ENGINE REL HUMID = 70 %  
 ( FAR FIELD NOISE ) DEFLECTED FLOW ) PAGE 12



ANGLES

( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 31.5 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( ( IDLE POWER  
 ( F-4C AIRCRAFT ( 65% RPM  
 ( J79-GE-15/A ENGINE ( SINGLE ENGINE  
 ( GROUND RUNUP NOISE ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 01  
 ( 02 AUG 76  
 ( PAGE 13

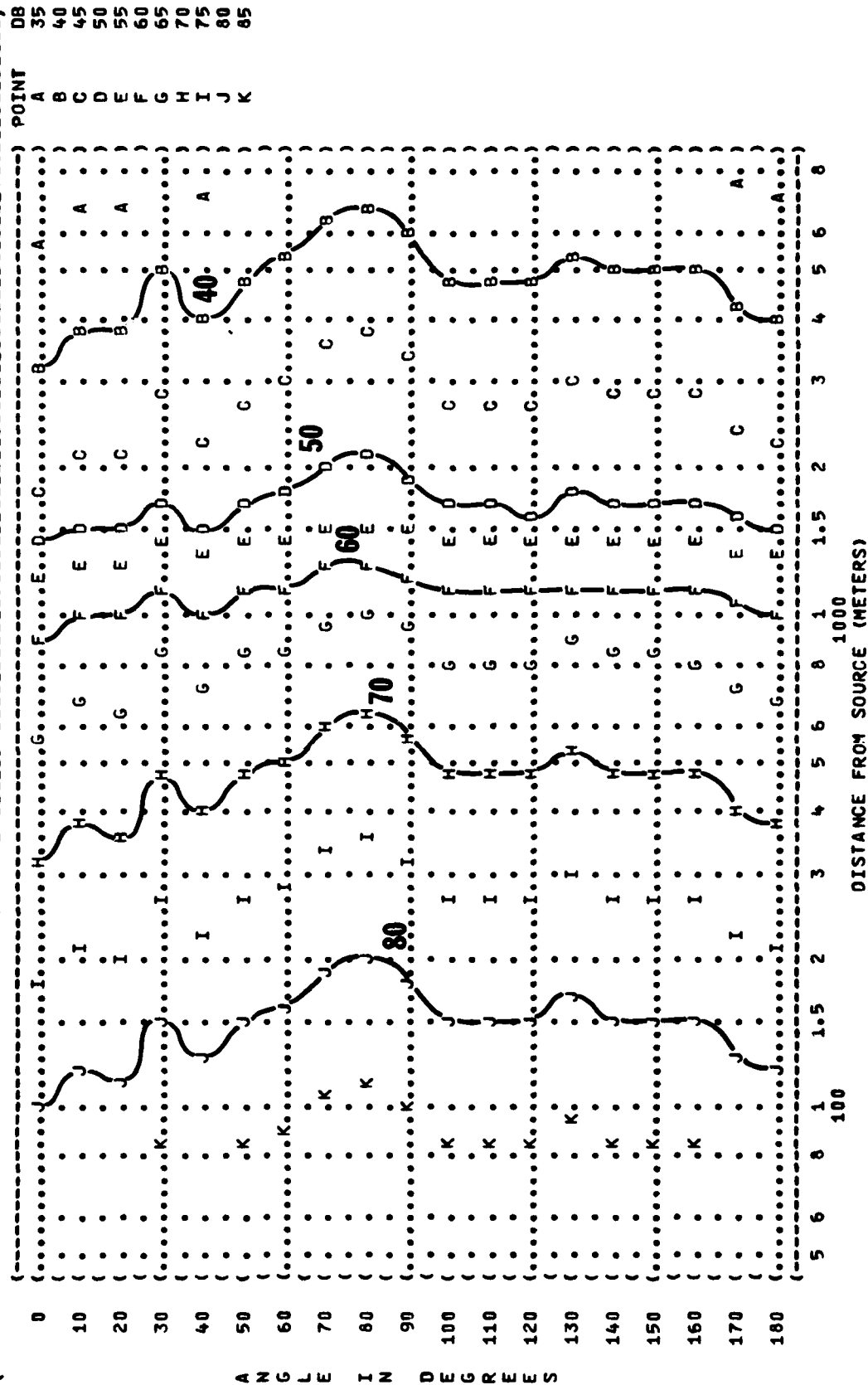


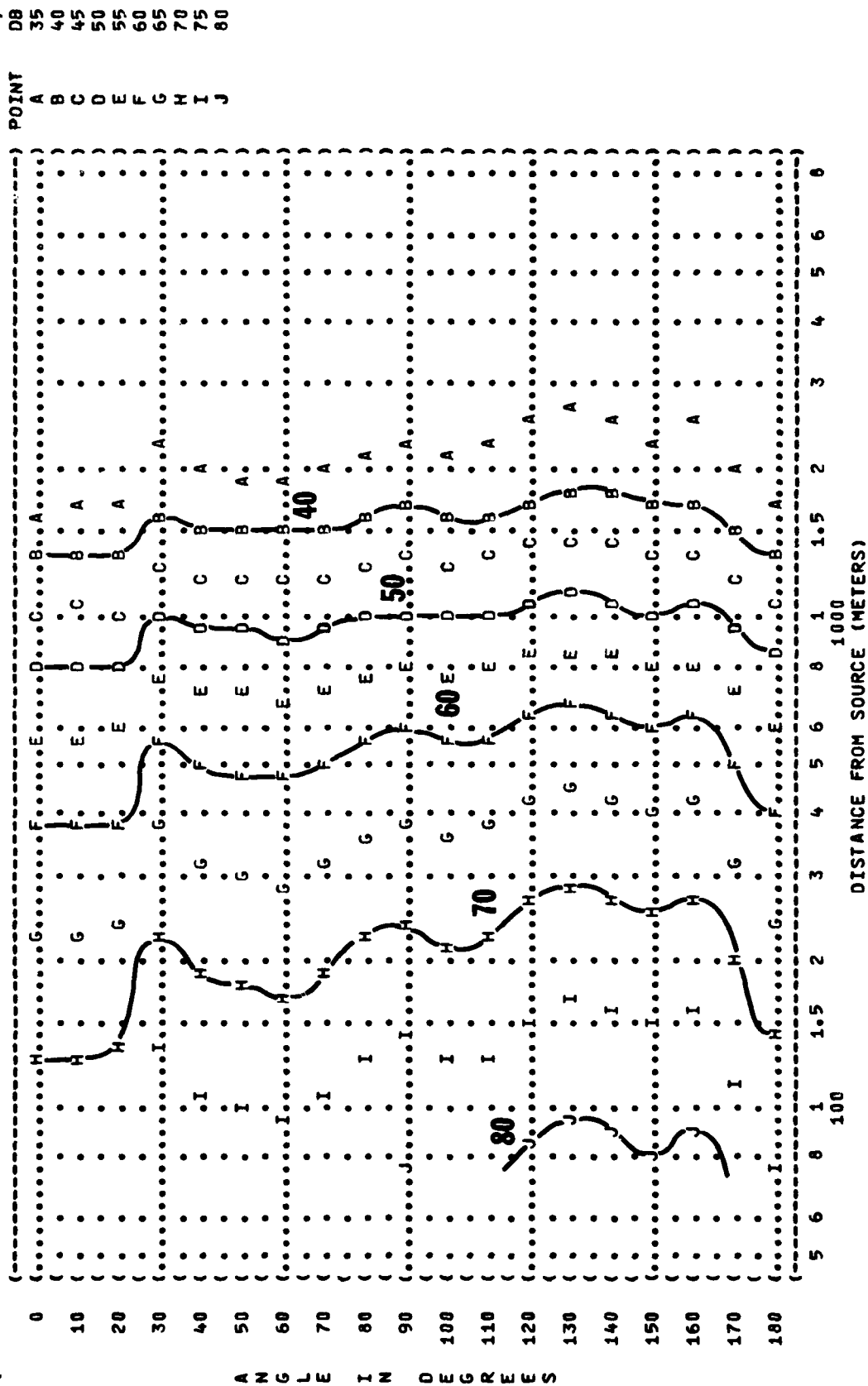
**FIGURE 11** SOUND PRESSURE LEVEL {SPL} EQUAL LEVEL CONTOURS (DB) 63 HZ OCTAVE BAND

11

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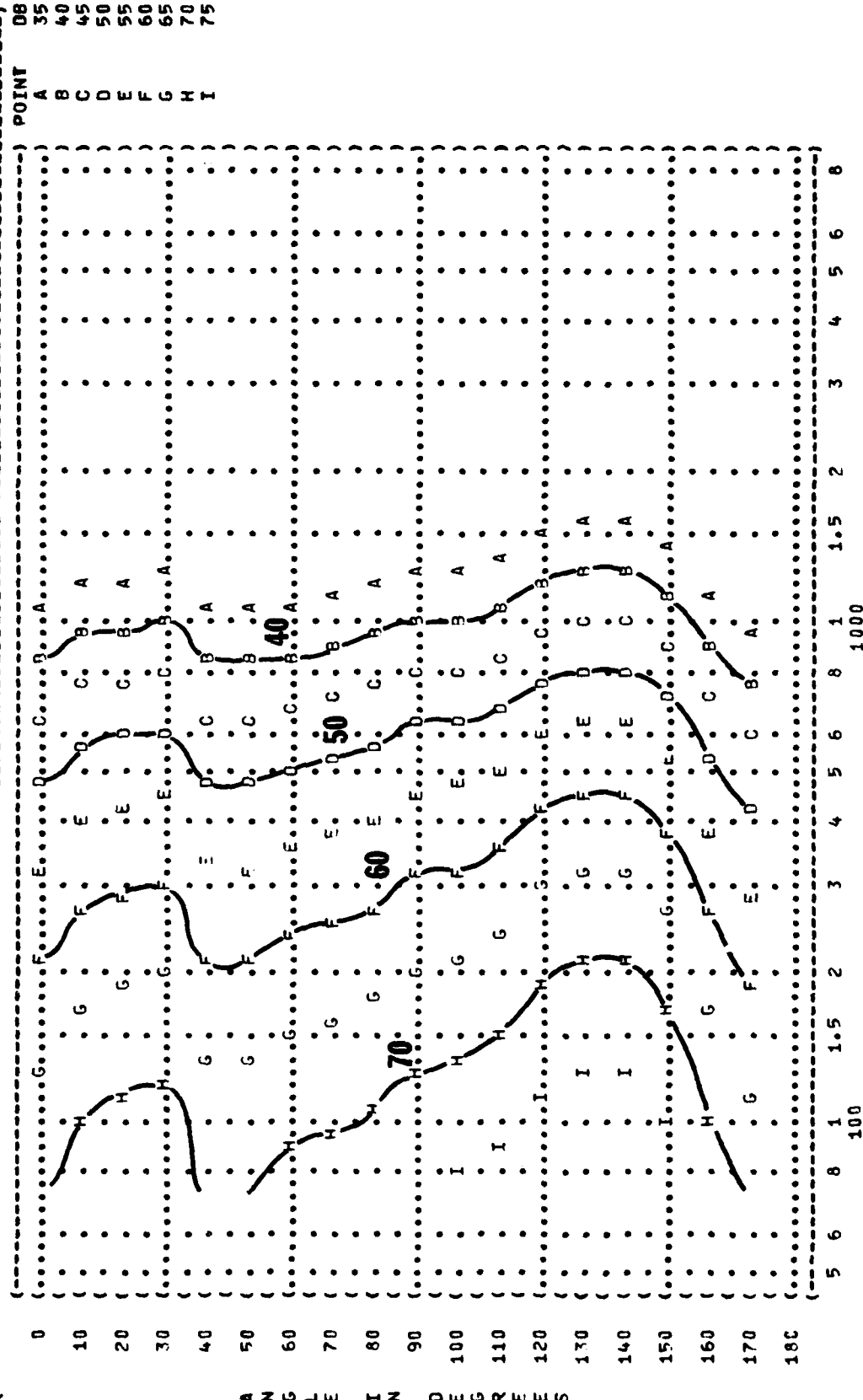
FIGURE: SOUND PRESSURE LEVEL {SPL}
EQUAL LEVEL CONTOURS (DB)
11 63 HZ OCTAVE BAND
NOISE SOURCE/SUBJECT:
( OPERATION:
( IDLE POWER
( 65% RPM
( SINGLE ENGINE
( FREE FLOW
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 M HG
) REL HUMID = 70 %
)
) IDENTIFICATION:
) OMEGA 1.4
) TEST 75-002-026
) RUN 01
) 02 AUG 76
) PAGE 19

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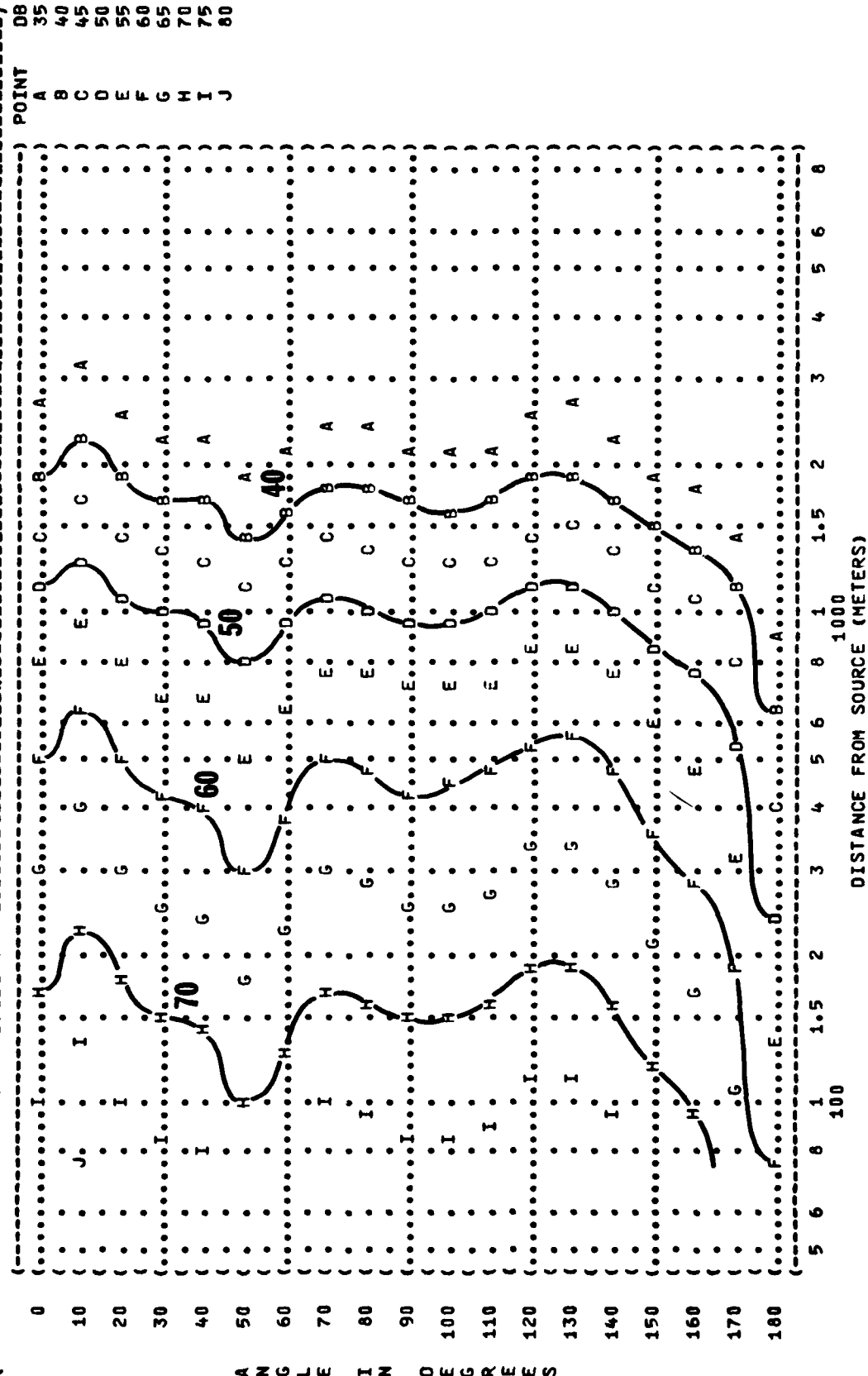




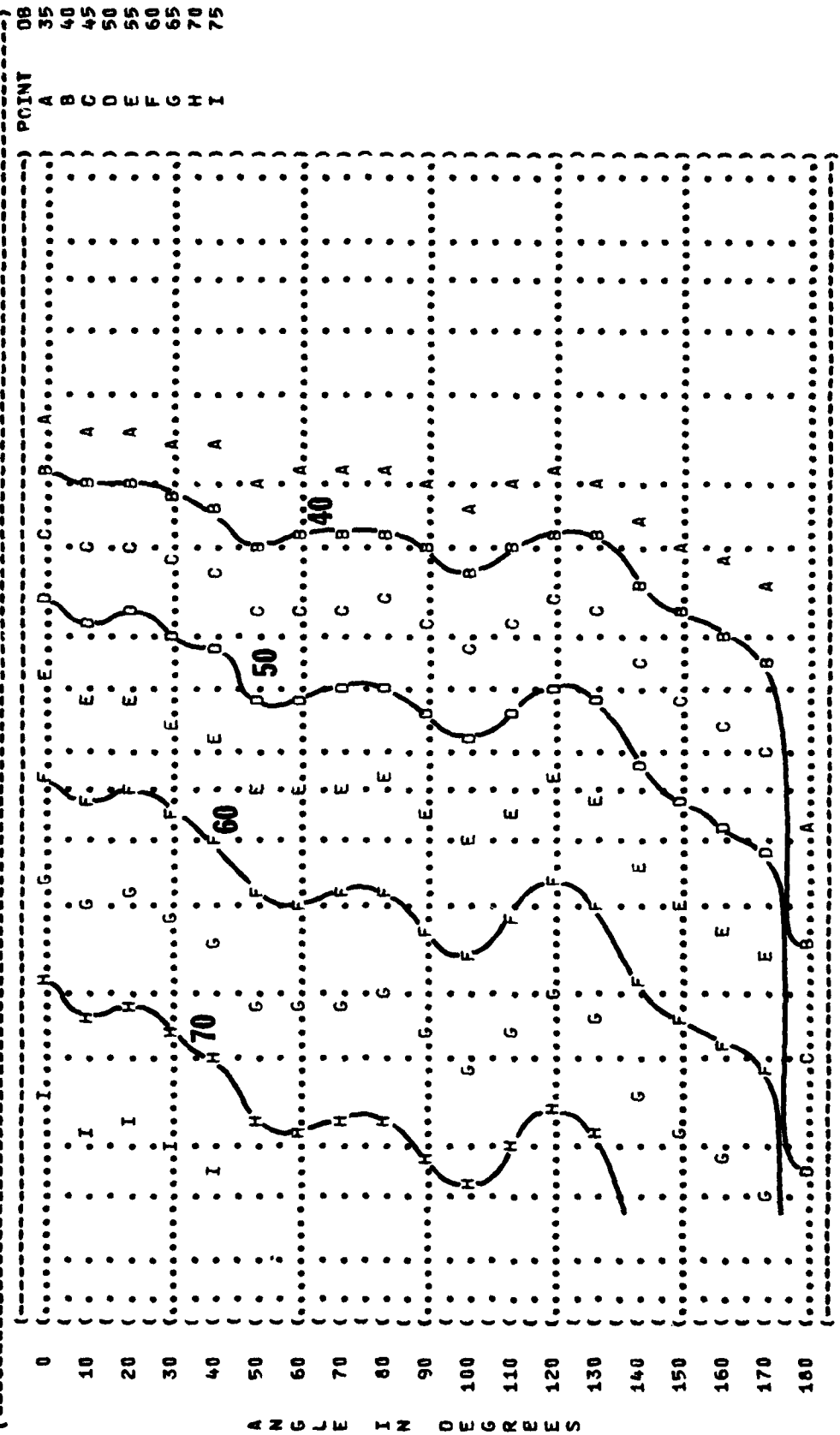
( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 250 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( IDLE POWER  
 ( J79-GE-15/A ENGINE ( 65% RPM  
 ( GROUND RUNUP NOISE ( SINGLE ENGINE  
 ( ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION: ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 01  
 ( 02 AUG 76  
 ( PAGE 21



( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 500 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( OPERATION: )  
 ( IDLE POWER )  
 ( 65% RPM )  
 ( SINGLE ENGINE )  
 ( FREE FLOW )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-026 )  
 ( RUN 01 )  
 ( 02 AUG 76 )  
 ( PAGE 22 )



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 1000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: ( IDENTIFICATION: ( )  
 ( F-4C AIRCRAFT ( IDLE POWER ( TEMP = 15 C ( OMEGA 1.4  
 ( J79-GE-15/A ENGINE ( 65% RPM ( BAR PRESS = .760 M HG ( TEST 75-002-026 )  
 ( GROUND RUNUP NOISE ( SINGLE ENGINE ( REL HUMID = 70 % ( RUN 01 )  
 ( ( ( ( ( PAGE 23 )



A N G L E I N D E G R E E S

DB POINT

0 A B C D E F G H I J K L

10 A B C D E F G H I J K L

20 A B C D E F G H I J K L

30 A B C D E F G H I J K L

40 A B C D E F G H I J K L

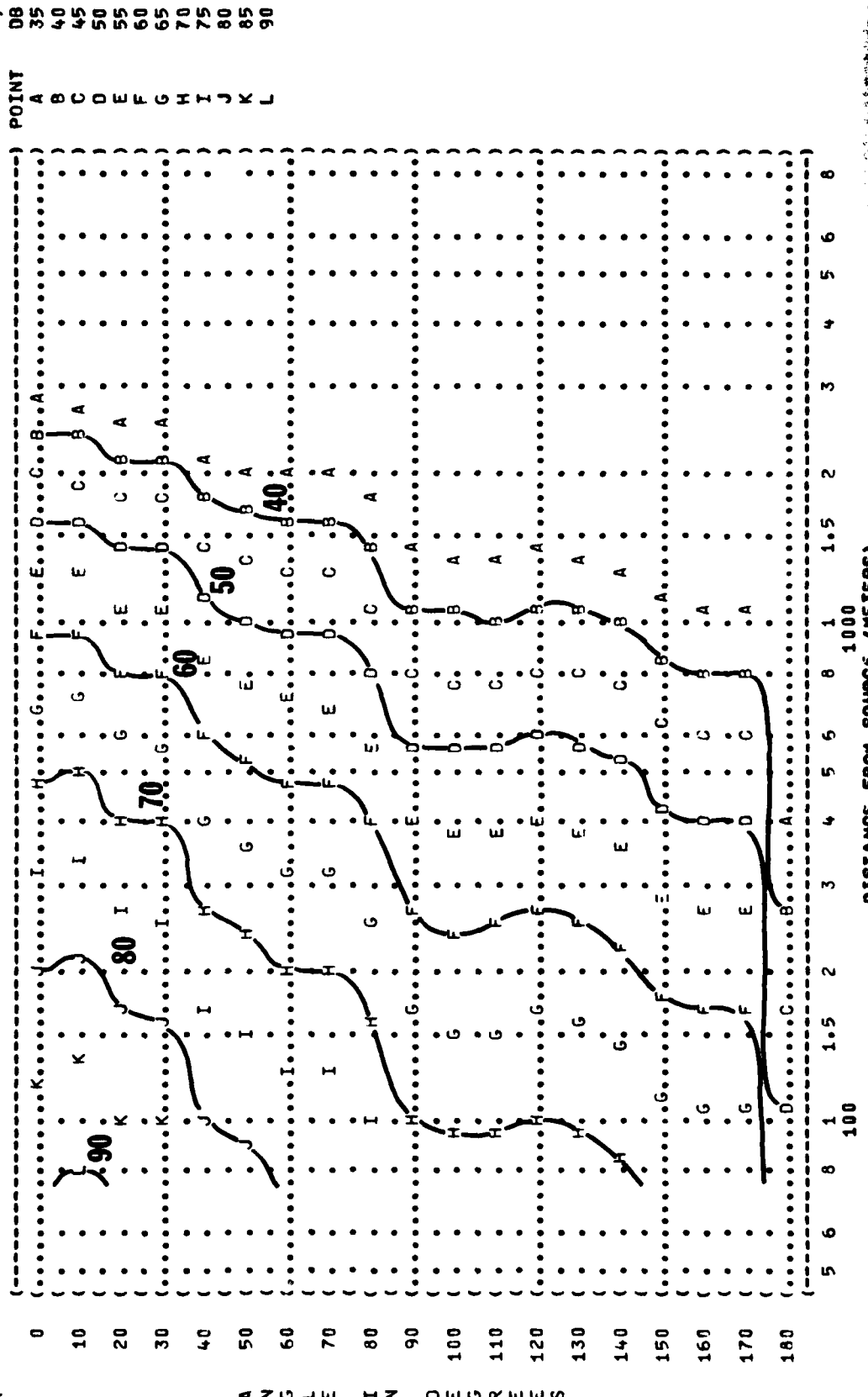
50 A B C D E F G H I J K L

60 A B C D E F G H I J K L

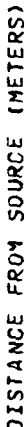
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80 A B C D E F G H I J K L

90 A B C D E F G H I J K L

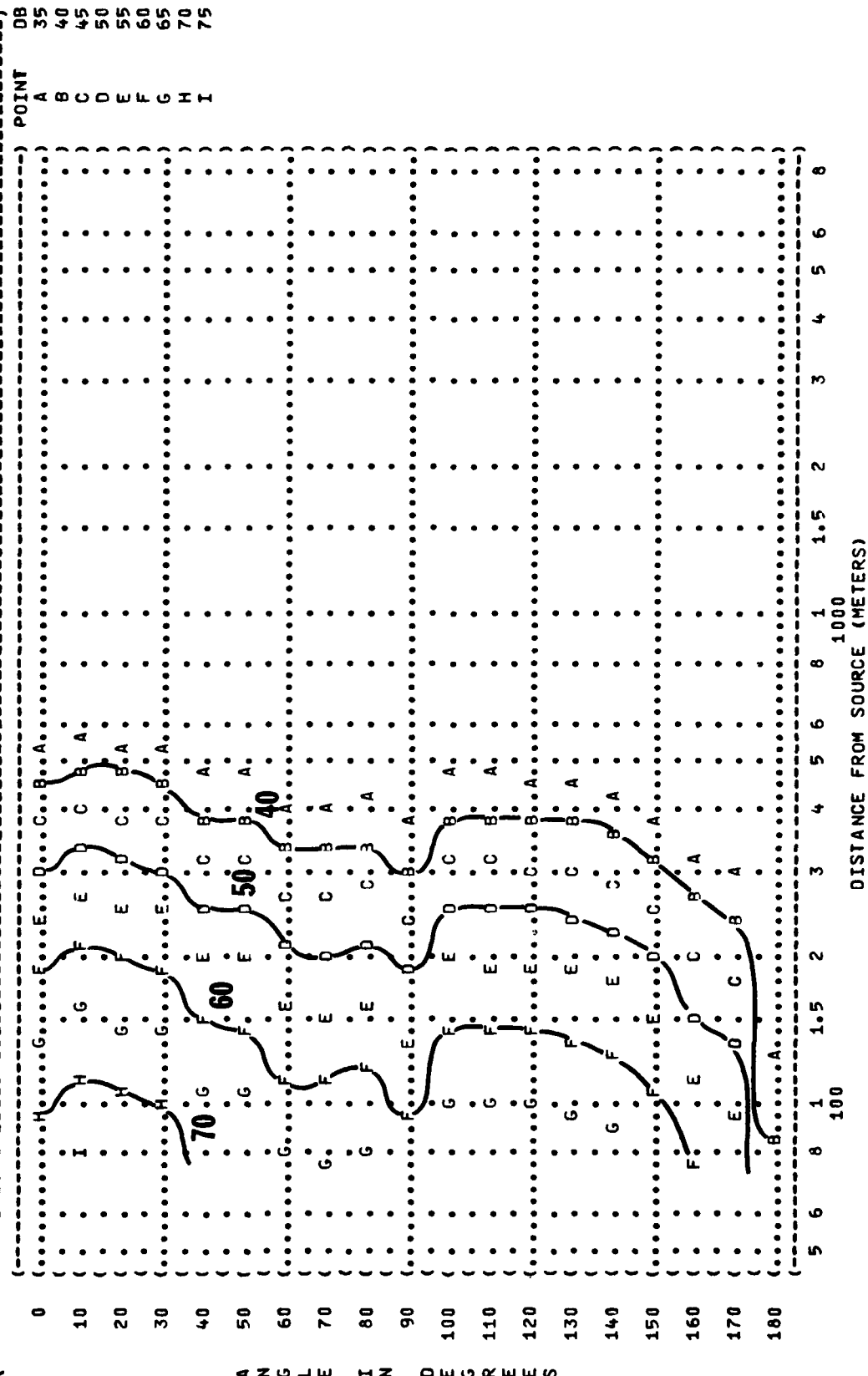


**PAGE 25**

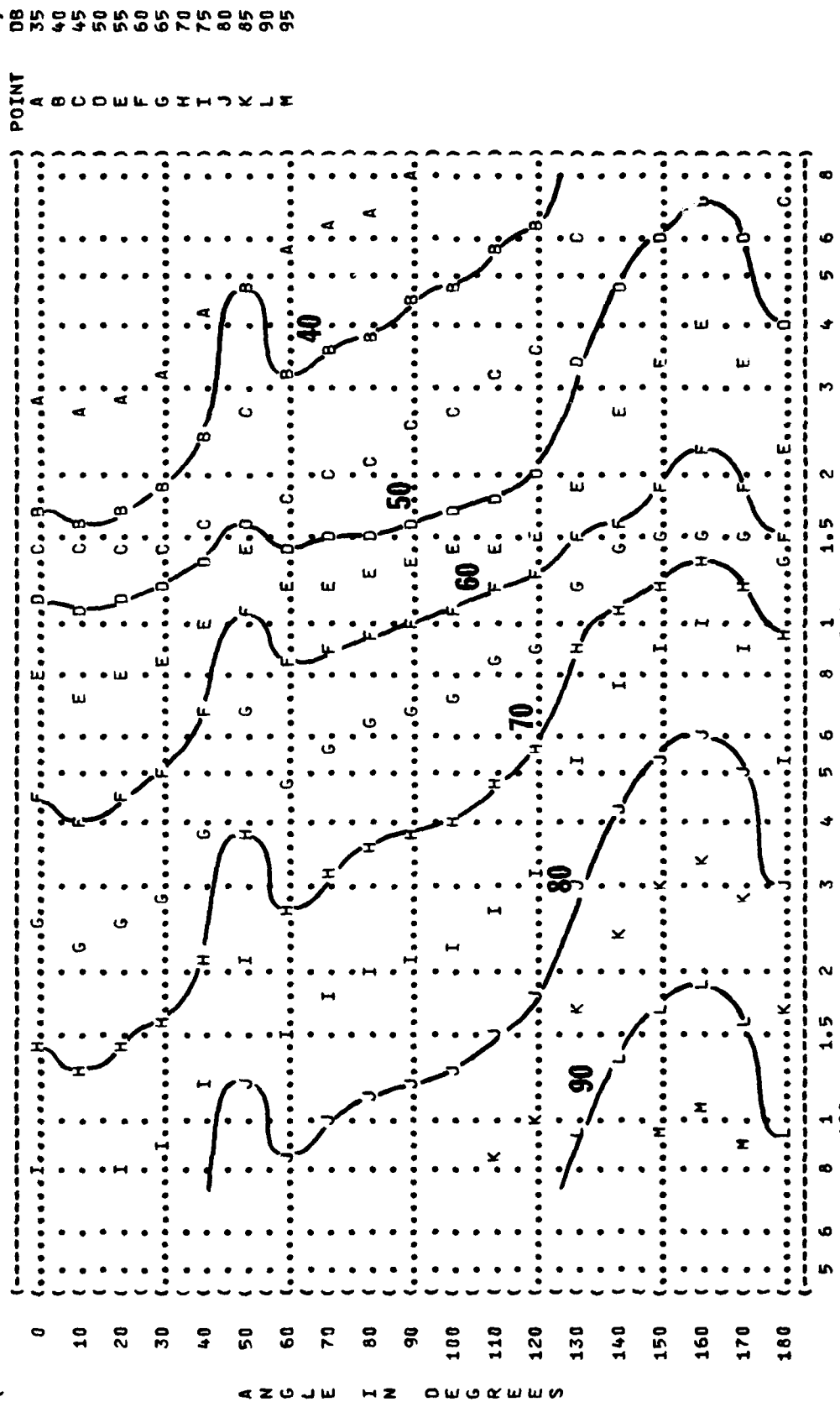


103

( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 8000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( F-4C AIRCRAFT ( IDLE POWER ) TEMP = 15 C  
 ( J79-GE-15/A ENGINE ( 65% RPM ) BAR PRESS = .760 M HG  
 ( GROUND RUNUP NOISE ( SINGLE ENGINE ) REL HUMID = 70 %  
 ( ( FREE FLOW ) )  
 ( )  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-026  
 ( ) RUN 01  
 ( ) 02 AUG 76  
 ( ) PAGE 26  
 ( )



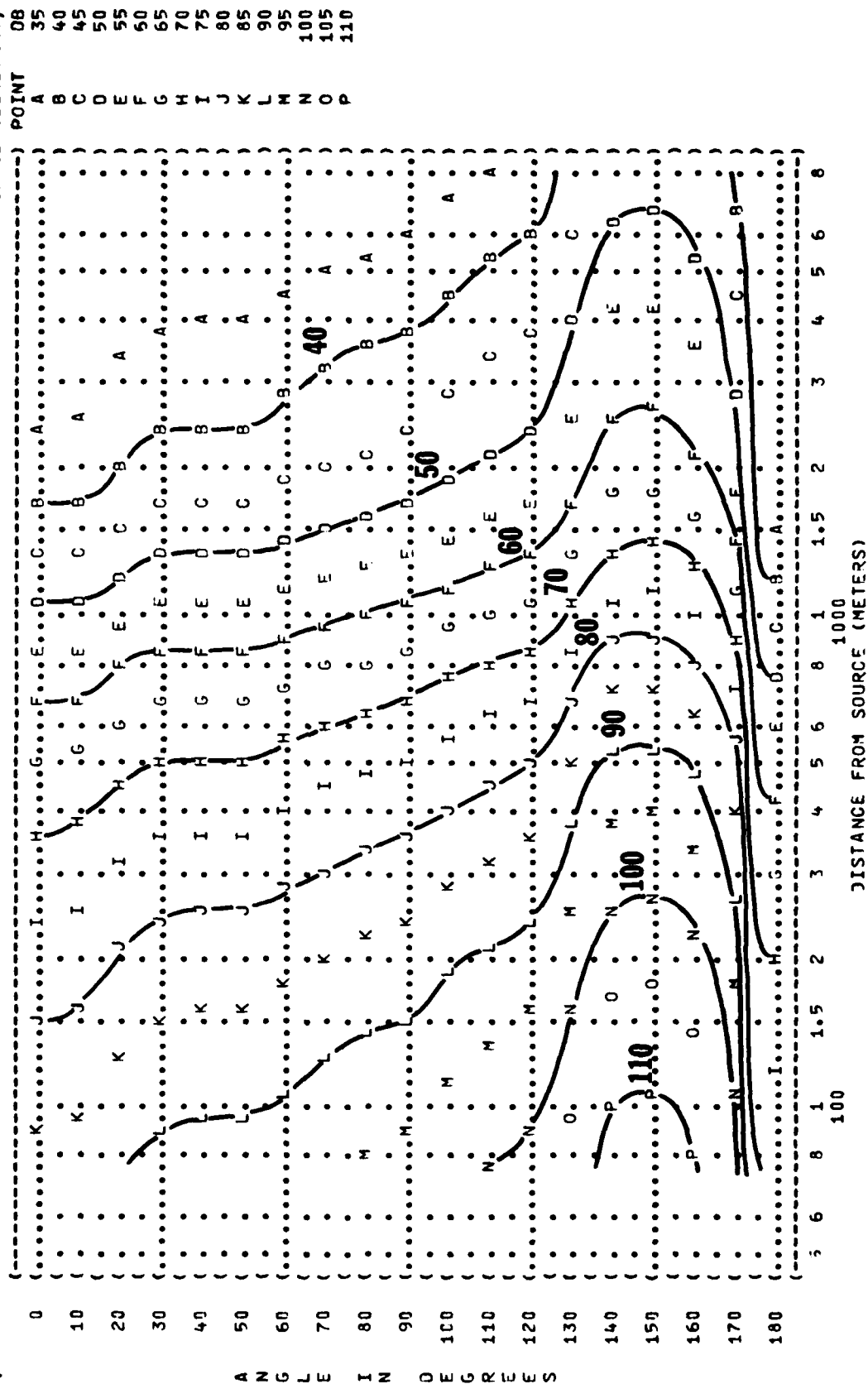
( ( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( ( EQUAL LEVEL CONTOURS (DB)  
 ( ( **11** 31.5 HZ OCTAVE BAND  
 ( ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( ( F-4C AIRCRAFT ( 85% RPM  
 ( ( J79-GE-15/A ENGINE ( SINGLE ENGINE  
 ( ( GROUND RUNUP NOISE ( FREE FLOW  
 ( ( METEOROLOGY: ( TEMP = 15 C  
 ( ( BAR PRESS = .760 M HG  
 ( ( REL HUMID = 70 %  
 ( ( IDENTIFICATION: ( OMEGA 1.4  
 ( ( TEST 75-002-026  
 ( ( RUN 02  
 ( ( 02 AUG 76  
 ( ( PAGE 18



DISTANCE FROM SOURCE (METERS)



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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 11 ) OMEGA 1.4 )
( 125 HZ OCTAVE BAND ) TEST 75-002-026 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 02 )
( ) TEMP = 15 C ) )
( F-4C AIRCRAFT ) BAR PRESS = .760 M HG ) )
( J79-GE-15/A ENGINE ) SINGLE ENGINE ) )
( GROUND RUNUP NOISE ) FREE FLOW ) PAGE 20 )
(-----)
```



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 250 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( 85% RPM  
 ( J79-GE-15/A ENGINE ( SINGLE ENGINE  
 ( GROUND RUNUP NOISE ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( PAGE 21  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 02

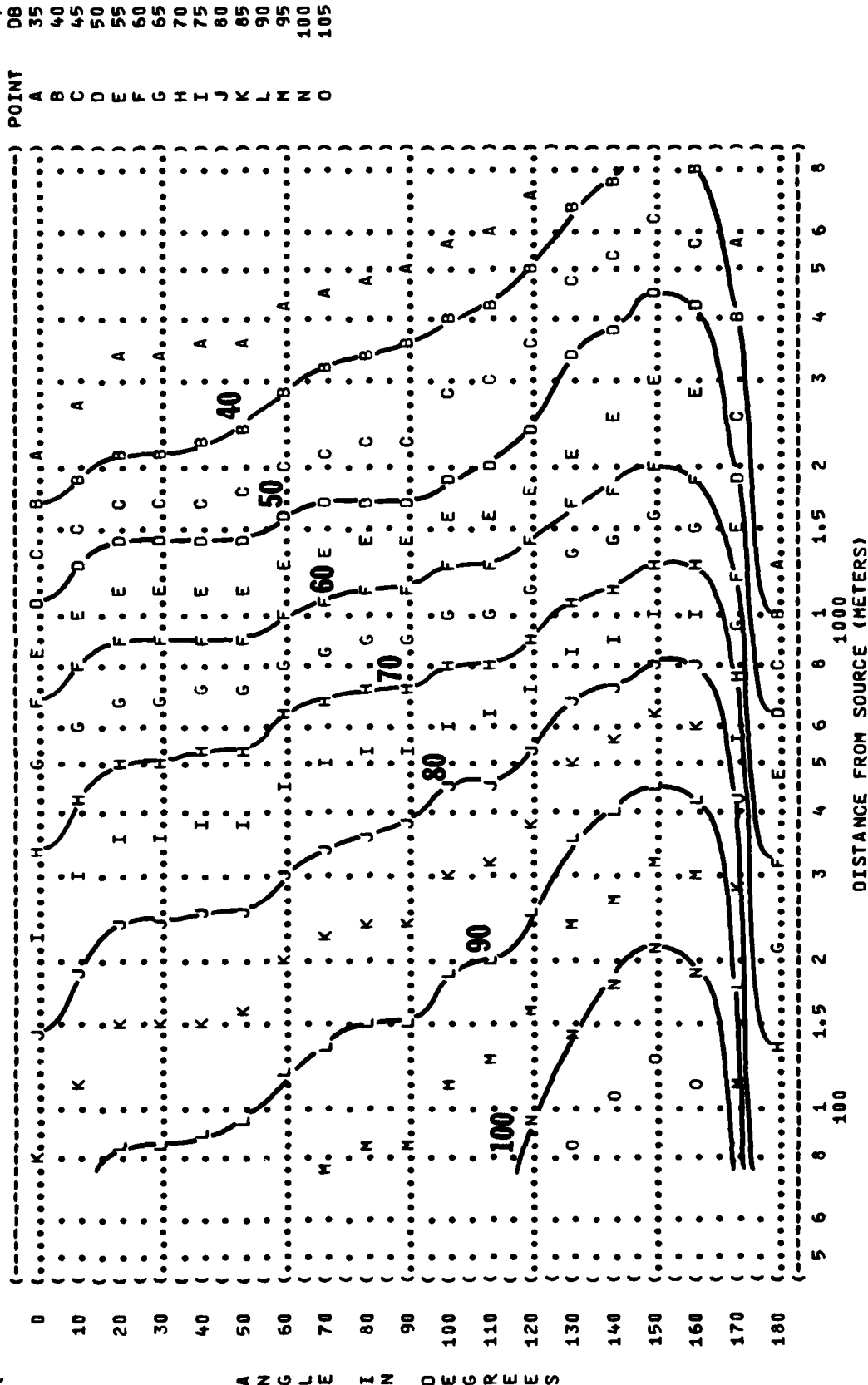




FIGURE: SOUND PRESSURE LEVEL (SPL)  
EQUAL LEVEL CONTOURS (03)  
1000 HZ OCTAVE BAND

11

IDENTIFICATION:  
OMEGA 1.4  
TEST 75-002-026  
RUN 02

METEOROLOGY:

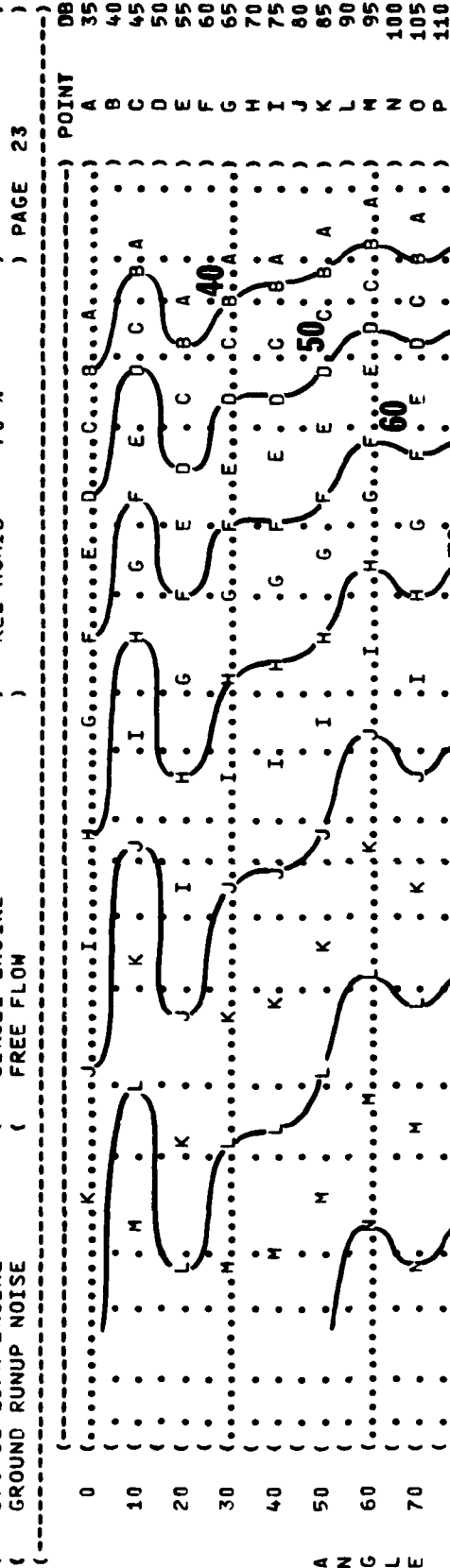
TEMP = 15 C  
BAR PRESS = .760 M HG  
REL HUMID = 70 %

OPERATION:

85% RPM  
SINGLE ENGINE  
FREE FLOW

NOISE SOURCE/SUBJECT:

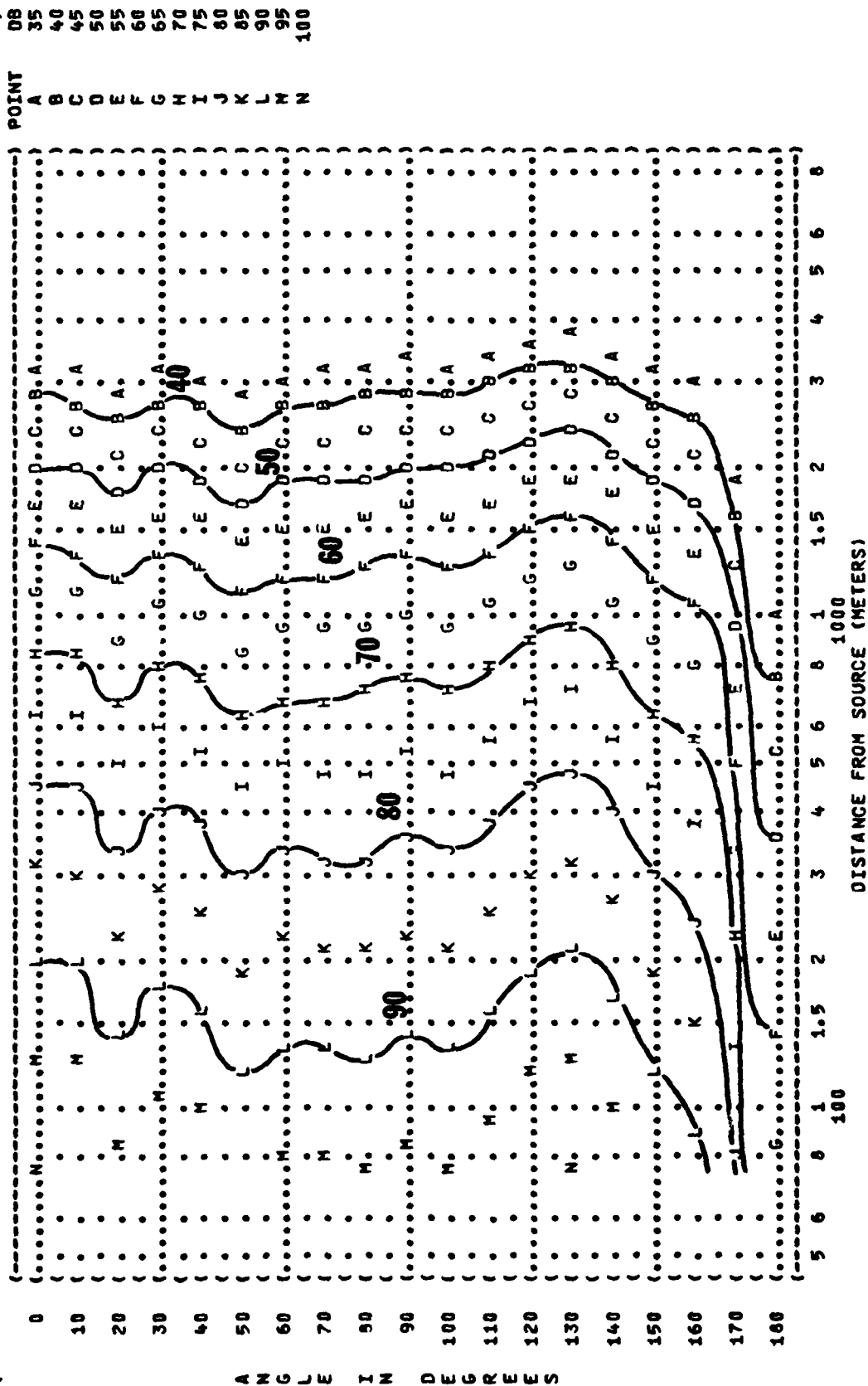
F-4C AIRCRAFT  
J79-GE-15/A ENGINE  
GROUND RUNUP NOISE



```

(-----)
( ( FIGURE: SOUND PRESSURE LEVEL {SPL} ) ) IDENTIFICATION: )
( ( EQUAL LEVEL CONTOURS (DB) ) ) )
( ( 11 2000 HZ OCTAVE BAND ) ) OMEGA 1.4 )
(-----)
( ( NOISE SOURCE/SUBJECT: ) ) ) TEST 75-002-026 )
( ( ) ) ) RUN 02 )
( ( ) ) ) )
( ( ) ) ) )
( ( F-4C AIRCRAFT ) ) TEMP = 15 C )
( ( J79-GE-15/A ENGINE ) ) BAR PRESS = .760 M HG )
( ( GROUND RUNUP NOISE ) ) REL HUMID = 70 % )
( ( ) ) ) )
( ( ) ) ) )
(-----)

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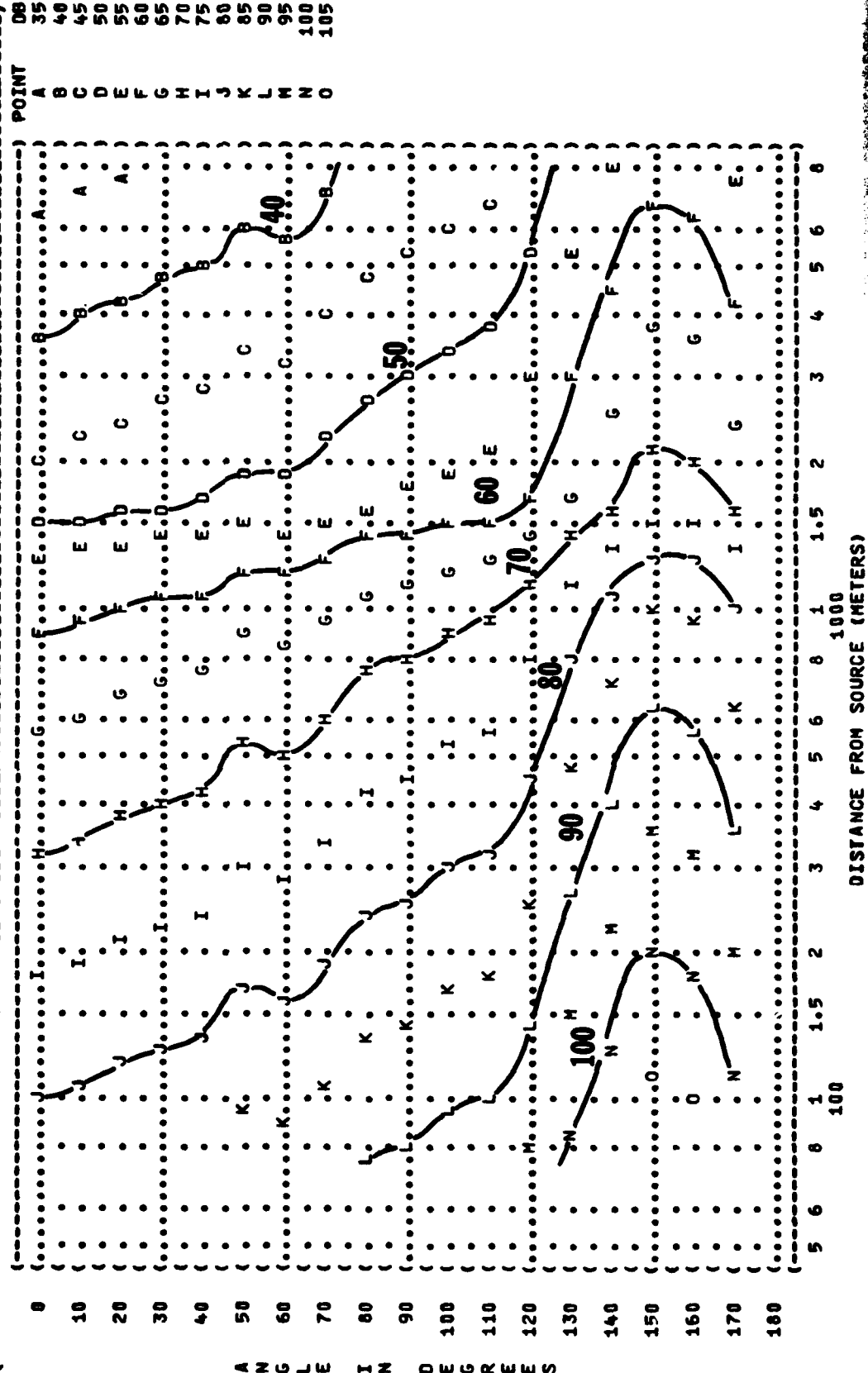




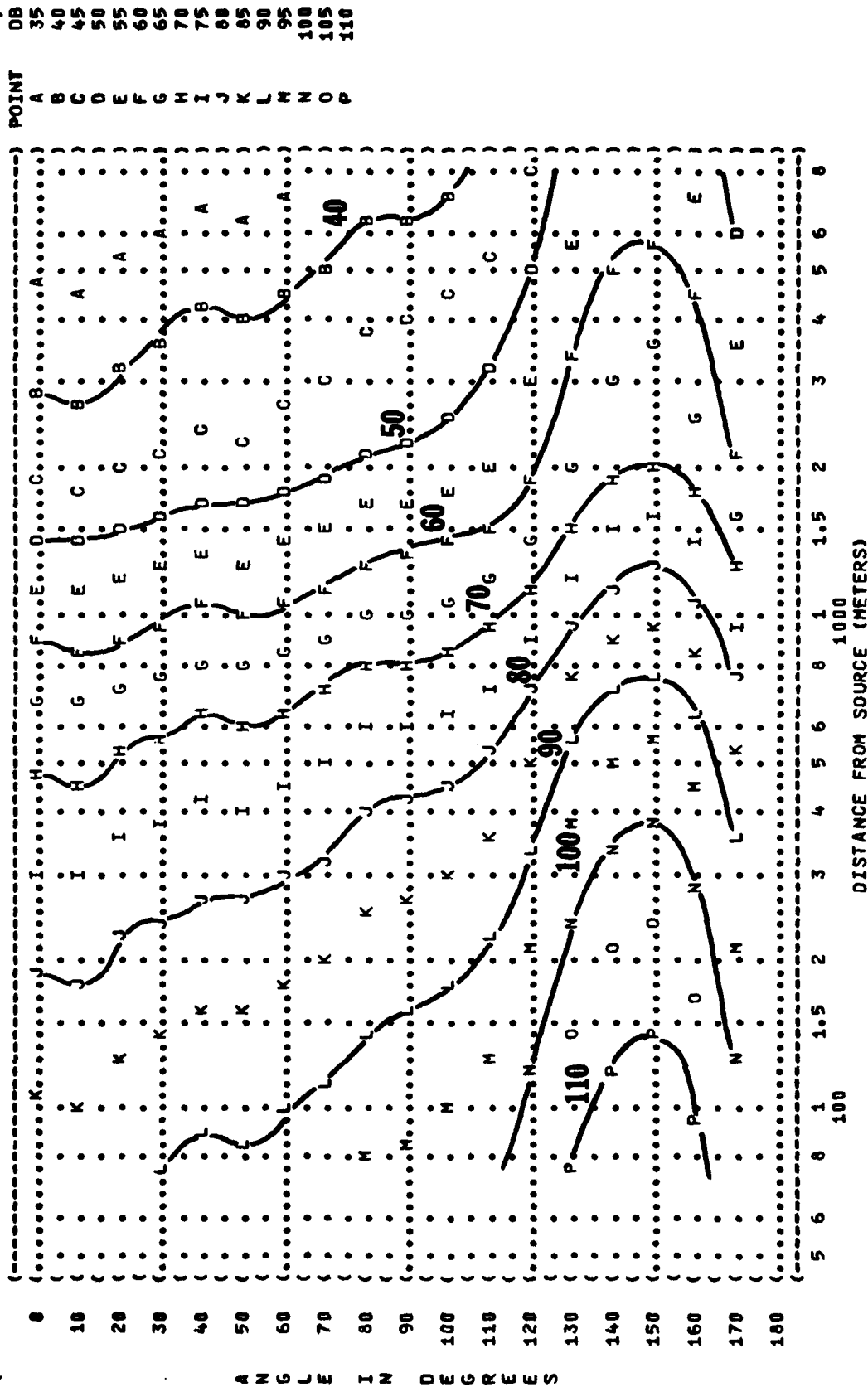
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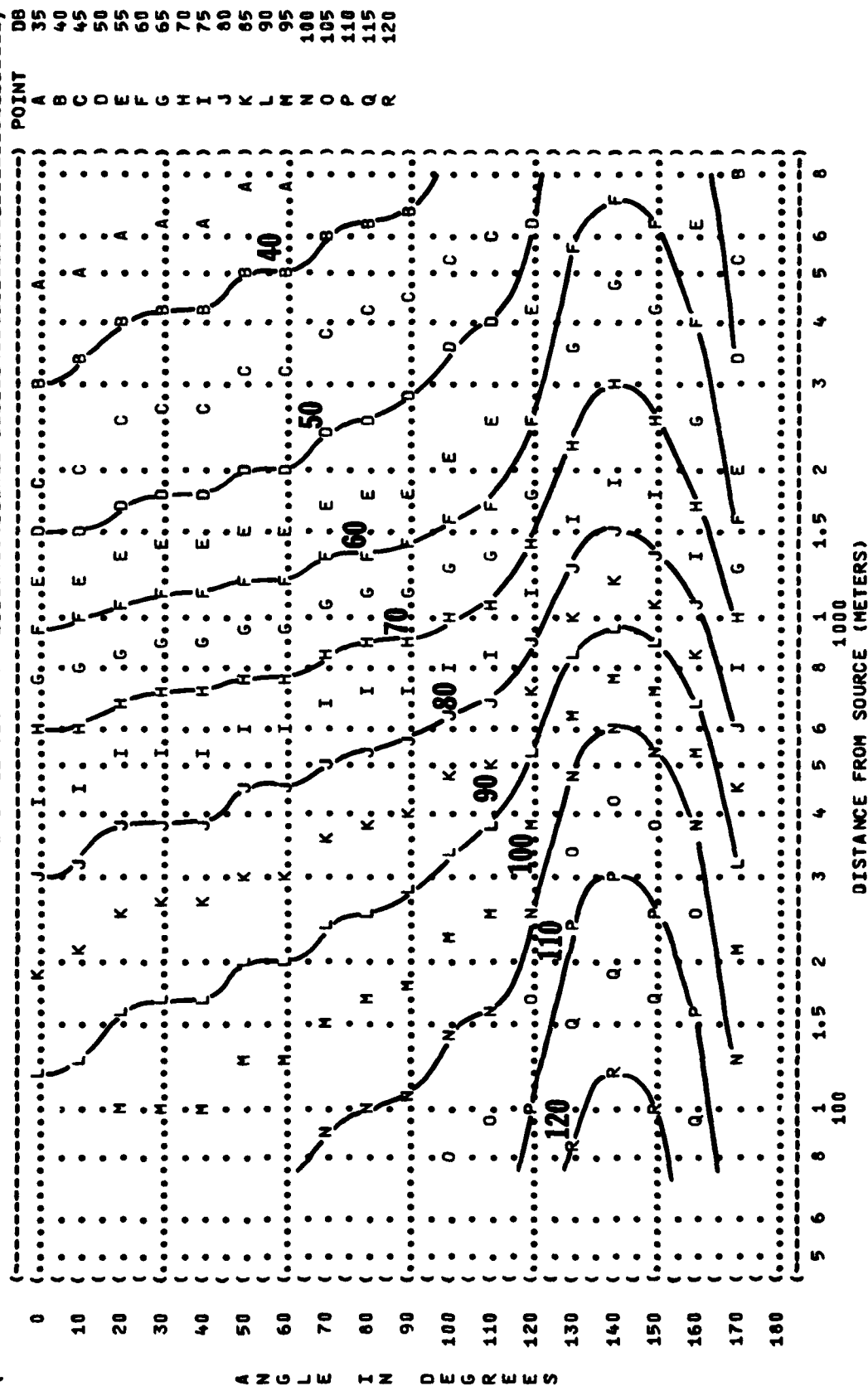
( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 31.5 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( OPERATION: )  
 ( MILITARY POWER )  
 ( 100% RPM )  
 ( SINGLE ENGINE )  
 ( FREE FLOW )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-026 )  
 ( RUN 03 )  
 ( 02 AUG 76 )  
 ( PAGE 18 )



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 63 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT:  
 ( OPERATION:  
 ( MILITARY POWER  
 ( 100% RPM  
 ( SINGLE ENGINE  
 ( FREE FLOW  
 ( F-4C AIRCRAFT  
 ( J79-GE-15/A ENGINE  
 ( GROUND RUNUP NOISE  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 03  
 ( 02 AUG 76  
 ( PAGE 19



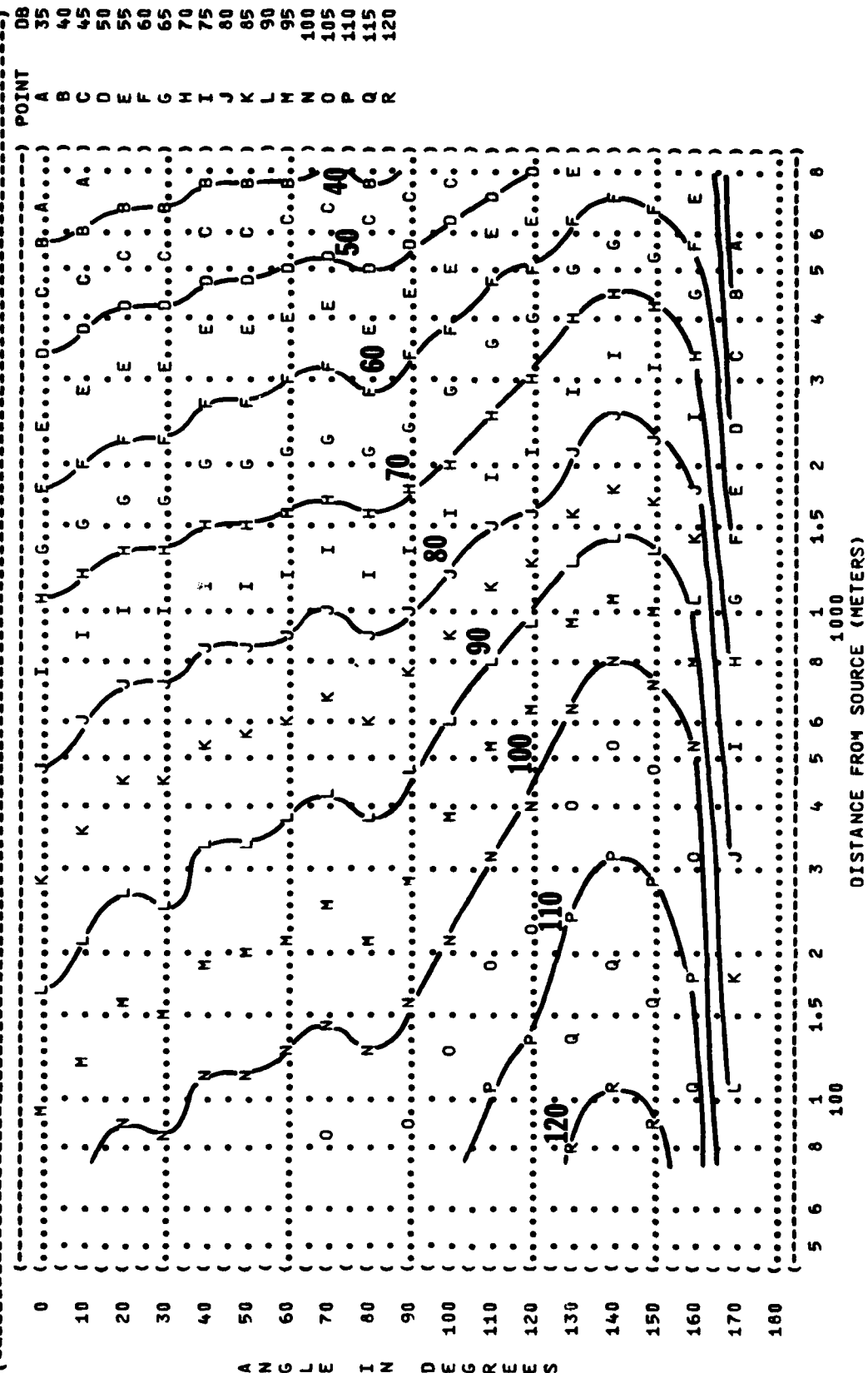
( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 125 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATIONS:  
 ( F-4C AIRCRAFT ( MILITARY POWER  
 ( J79-GE-15/A ENGINE ( 100% RPM  
 ( GROUND RUNUP NOISE ( SINGLE ENGINE  
 ( ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 03  
 ( 02 AUG 76  
 ( PAGE 20



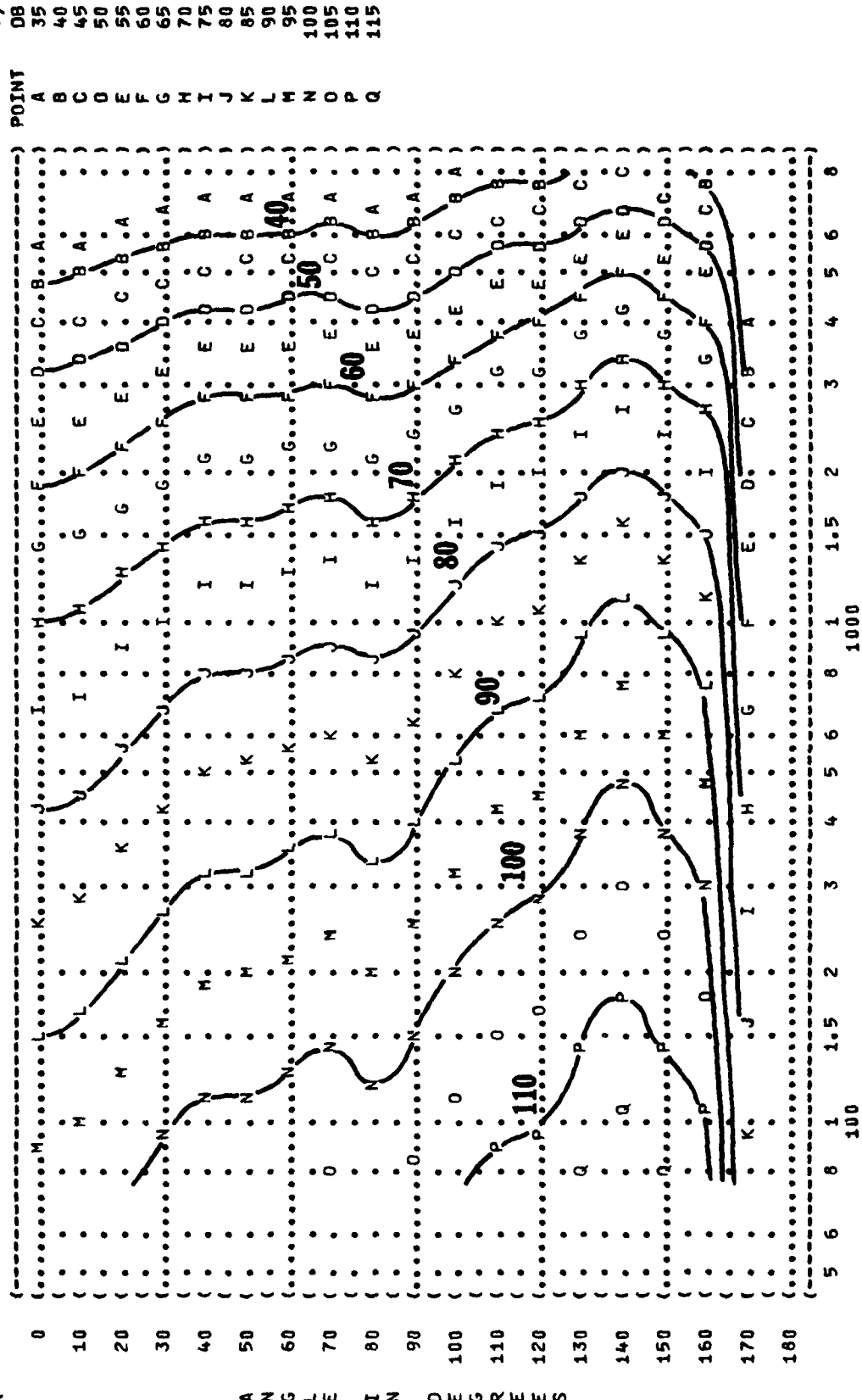


### Scientific Method

( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 500 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( MILITARY POWER  
 ( J79-GE-15/A ENGINE ( 100% RPM  
 ( GROUND RUNUP NOISE ( SINGLE ENGINE  
 ( ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 03  
 ( 02 AUG 76  
 ( PAGE 22

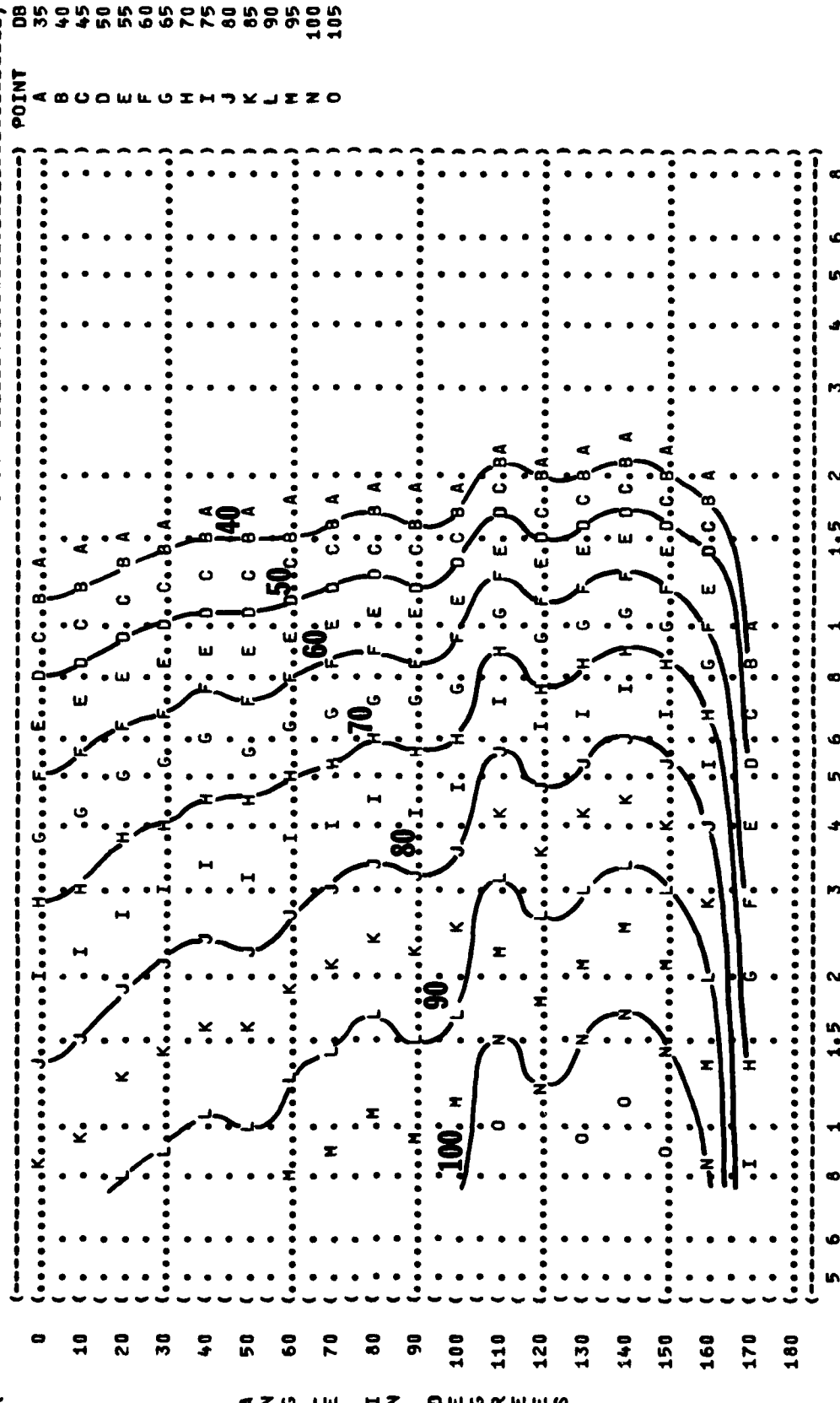


( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 1000 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( OPERATIONS: )  
 ( MILITARY POWER )  
 ( 100% RPM )  
 ( SINGLE ENGINE )  
 ( FREE FLOW )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-026 )  
 ( RUN 03 )  
 ( 02 AUG 76 )  
 ( PAGE 23 )

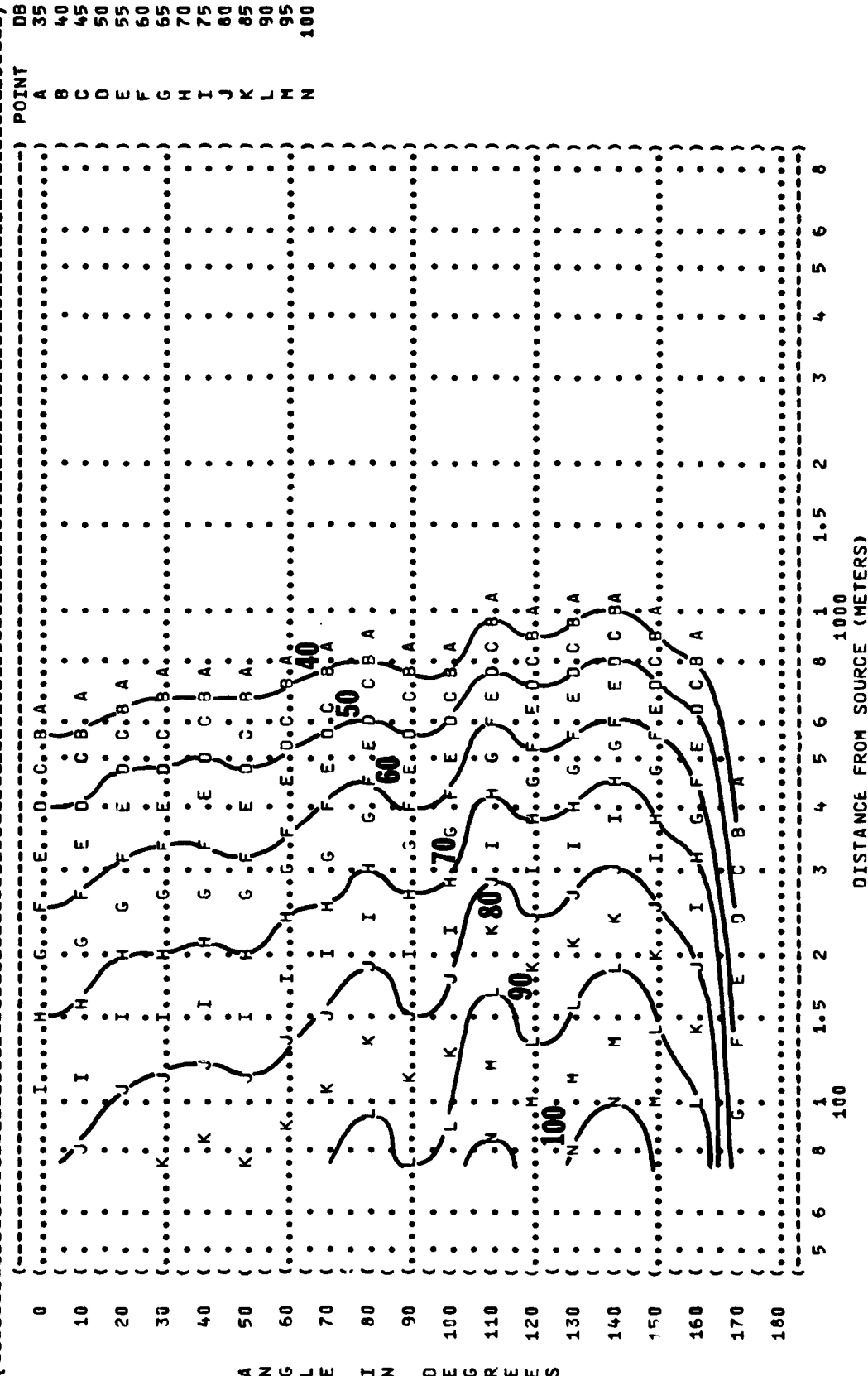




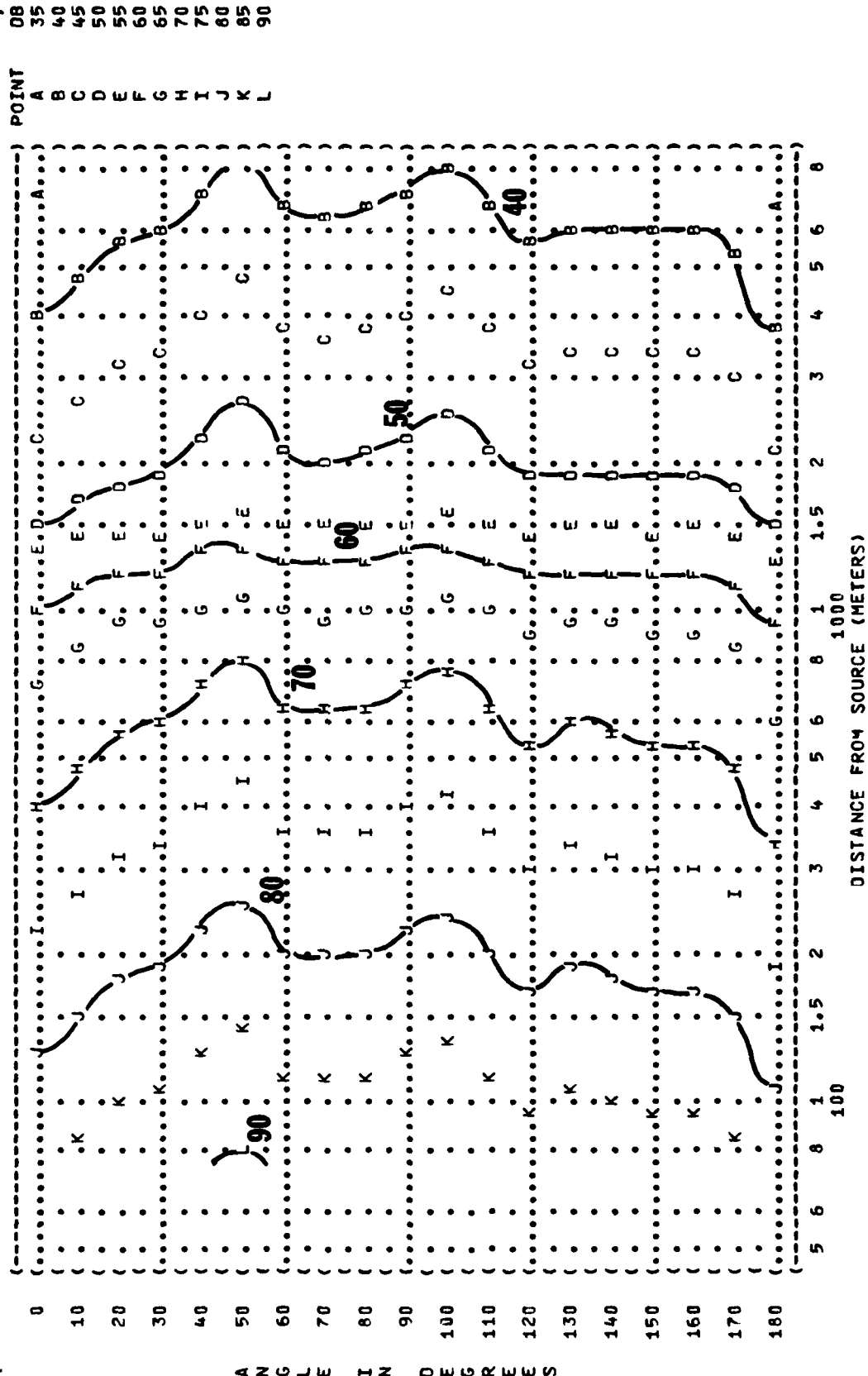
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 ( 11 EQUAL LEVEL CONTOURS (DB) ) OMEGA 1.4 )  
 ( 4000 HZ OCTAVE BAND ) TEST 75-002-026 )  
 ( NOISE SOURCE/SUBJECT: ) RUN 03 )  
 ( OPERATIONS: ) METEOROLOGY: )  
 ( MILITARY POWER ) TEMP = 15 C )  
 ( 100% RPM ) BAR PRESS = .760 M HG )  
 ( SINGLE ENGINE ) REL HUMID = 70 % )  
 ( FREE FLOW ) )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE ) PAGE 25 )



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 8000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( ' MILITARY POWER  
 ( J79-GE-15/A ENGINE ( 100% RPM  
 ( GROUND RUNUP NOISE ( SINGLE ENGINE  
 ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 03  
 ( 02 AUG 76  
 ( PAGE 26



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 31.5 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT:  
 ( F-4C AIRCRAFT  
 ( J79-GE-15/A ENGINE  
 ( GROUND RUNUP NOISE  
 ( OPERATIONS:  
 ( IDLE POWER  
 ( 65% RPM  
 ( BOTH ENGINES  
 ( FREE FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 04  
 ( 02 AUG 76  
 ( PAGE 1A



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 63 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT:  
 ( OPERATION:  
 ( IDLE POWER  
 ( 65% RPM  
 ( BOTH ENGINES  
 ( FREE FLOW  
 ( F-4C AIRCRAFT  
 ( J79-GE-15/A ENGINE  
 ( GROUND RUNUP NOISE  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 04  
 ( 02 AUG 76  
 ( PAGE 19

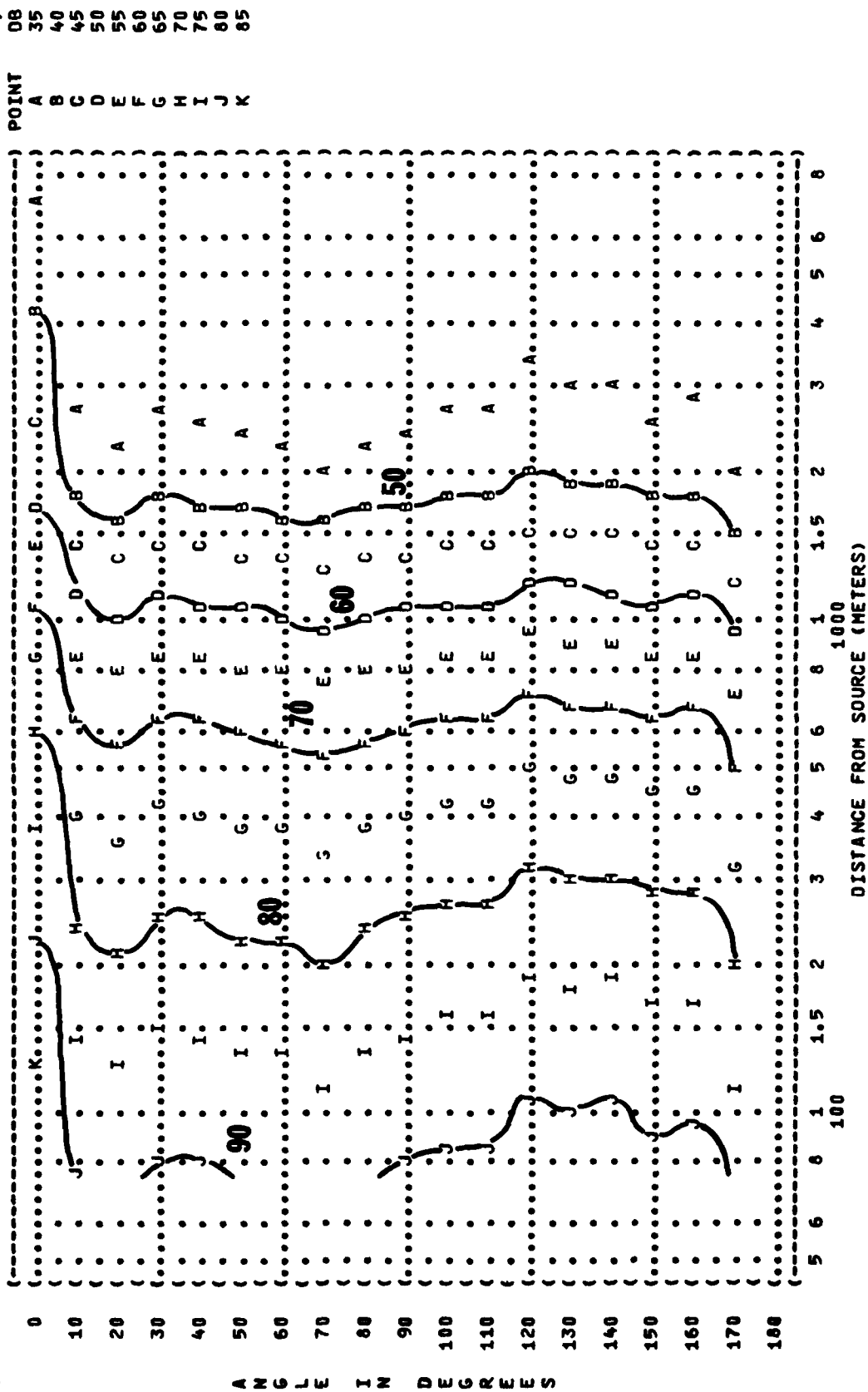






FIGURE: SOUND PRESSURE LEVEL (SPL)  
 11 EQUAL LEVEL CONTOURS (DB)  
 500 HZ OCTAVE BAND

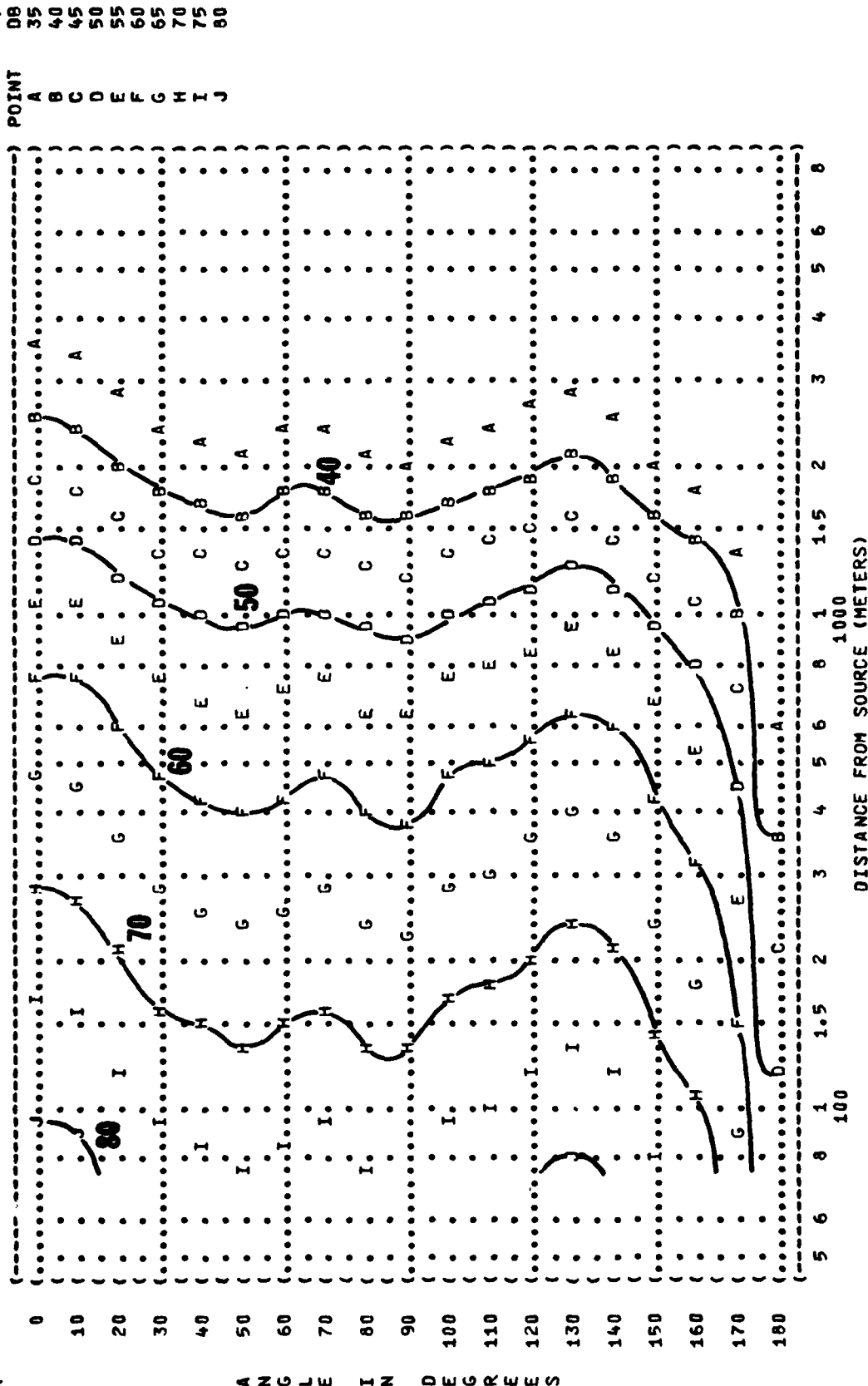
NOISE SOURCE/SUBJECT: ( ) IDENTIFICATION:  
 ( )  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-026  
 ( ) RUN 04

OPERATION: ( ) METEOROLOGY:  
 ( ) IDLE POWER  
 ( ) 65% RPM  
 ( ) 90TH ENGINES  
 ( ) FREE FLOW

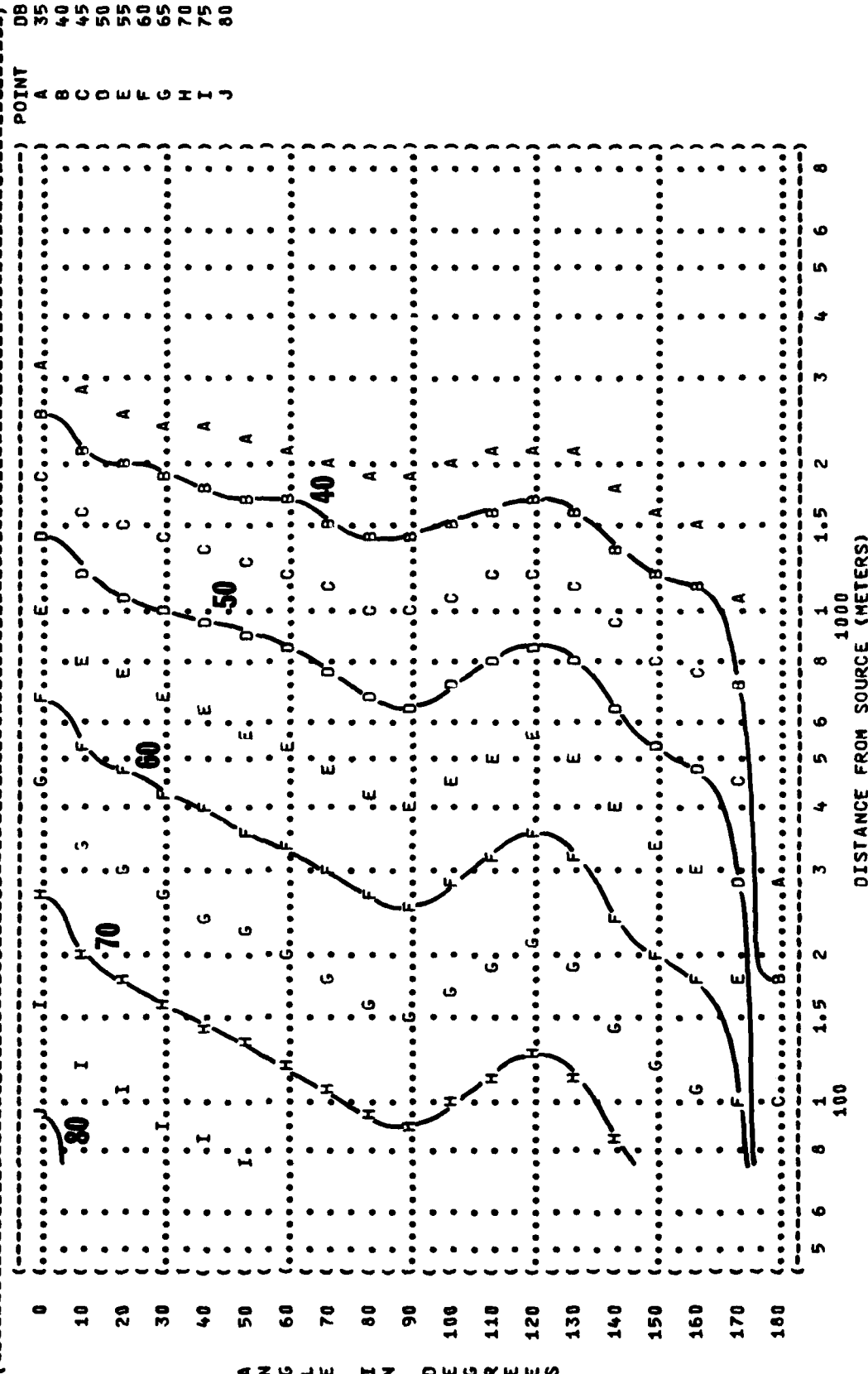
F-4C AIRCRAFT  
 J79-GE-15/A ENGINE  
 GROUND RUNUP NOISE

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

PAGE 22

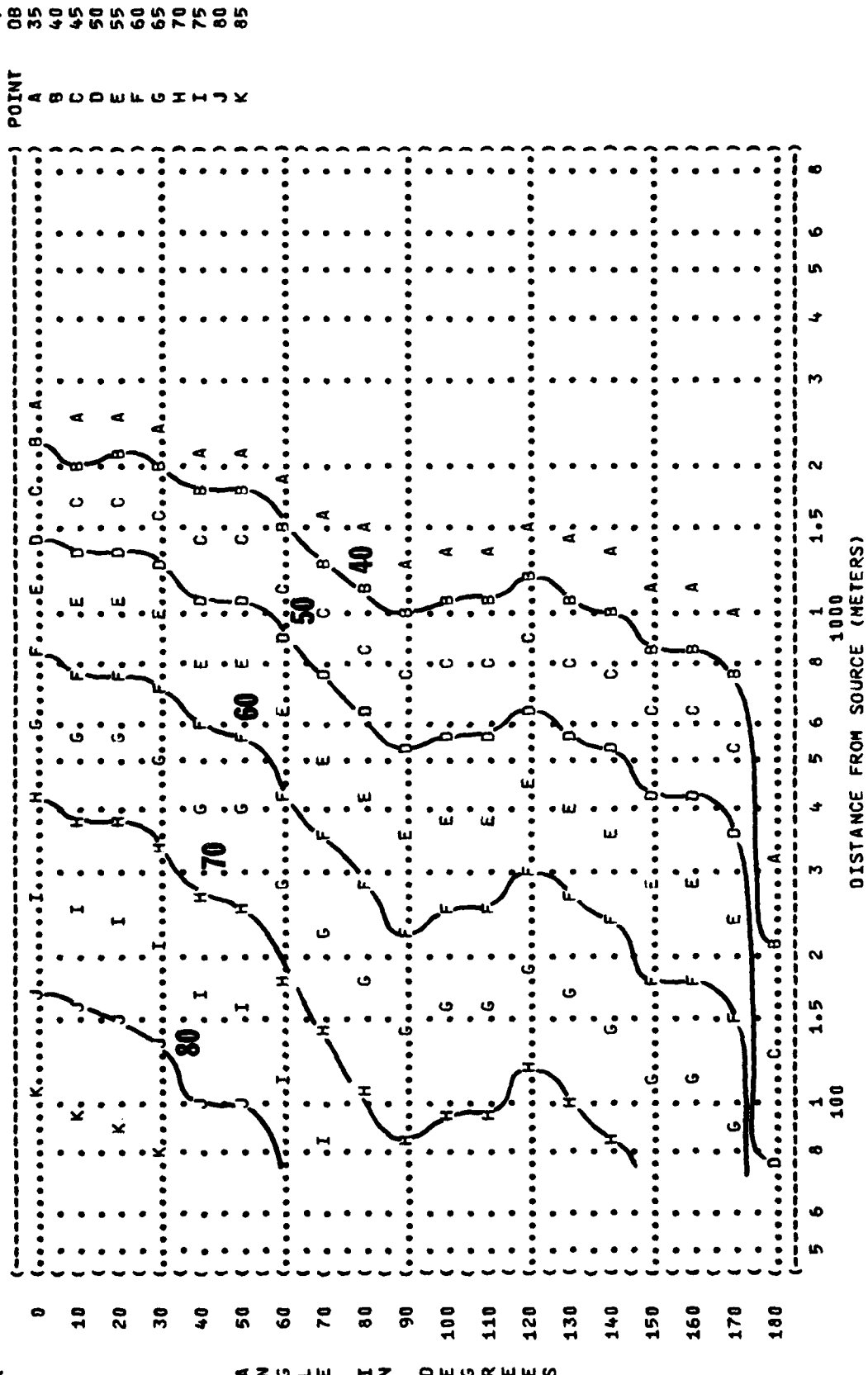


( ( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( ( 1000 HZ OCTAVE BAND  
 ( ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( ( F-4C AIRCRAFT ( IDLE POWER  
 ( ( J79-GE-15/A ENGINE ( 65% RPM  
 ( ( GROUND RUNUP NOISE ( BOTH ENGINES  
 ( ( ( FREE FLOW  
 ( ( METEOROLOGY: ( TEMP = 15 C  
 ( ( BAR PRESS = .760 M HG  
 ( ( REL HUMID = 70 %  
 ( ( IDENTIFICATION: ( OMEGA 1.4  
 ( ( TEST 75-002-026  
 ( ( RUN 04  
 ( ( PAGE 23

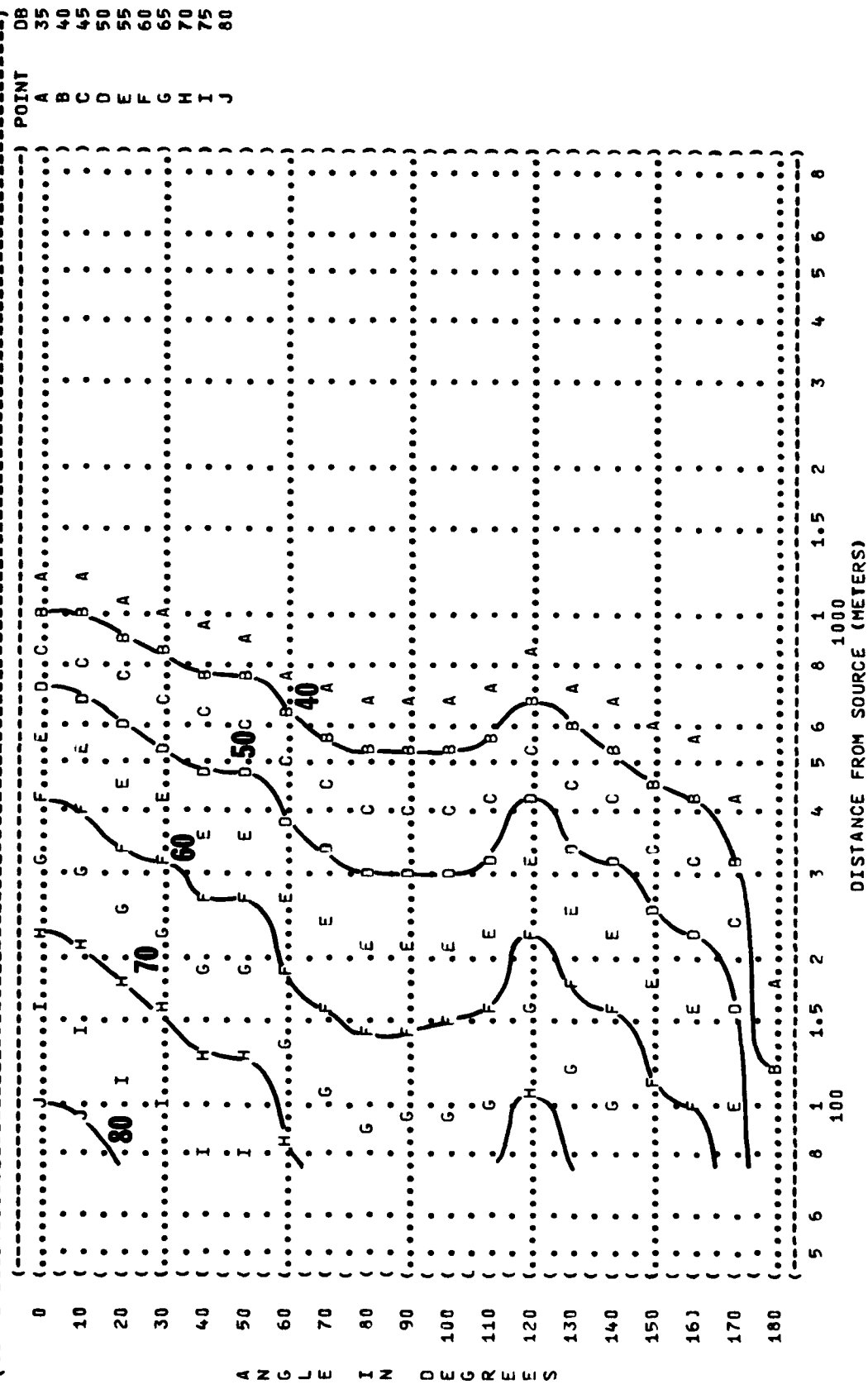


A N G L E I N D E G R E E S

( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 11 EQUAL LEVEL CONTOURS (DB) ) OMEGA 1.4 )  
 ( 2000 HZ OCTAVE BAND ) TEST 75-002-026 )  
 ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )  
 ( ) IDLE POWER ) TEMP = 15 C )  
 ( F-4C AIRCRAFT ) 65% RPM ) BAR PRESS = .760 M HG )  
 ( J79-GE-15/A ENGINE ) BOTH ENGINES ) REL HUMID = 70 % )  
 ( GROUND RUNUP NOISE ) FREE FLOW ) PAGE 24 )



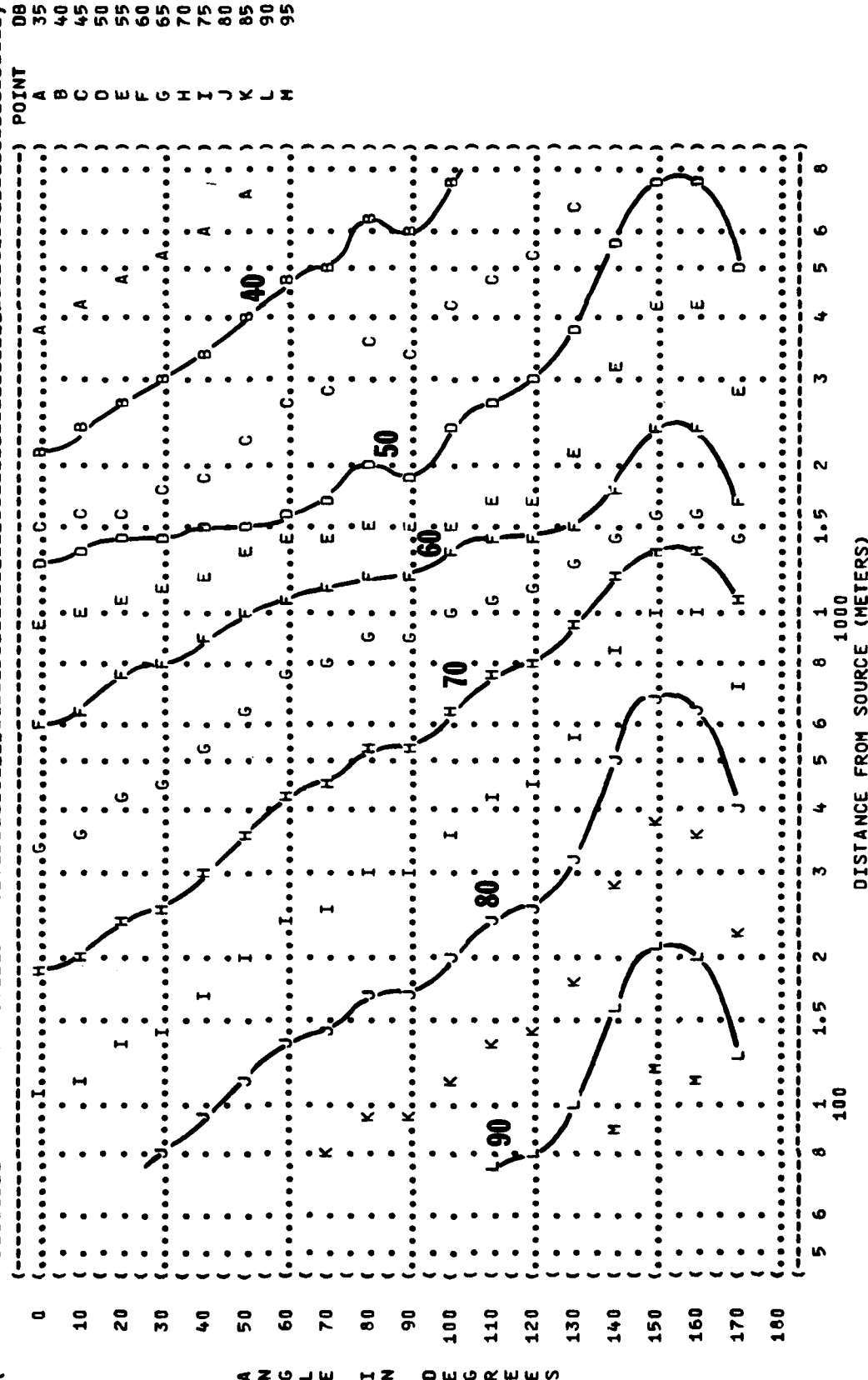
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 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 4000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ) METEOROLOGY: )  
 ( F-4C AIRCRAFT ( IDLE POWER ) TEMP = 15 C  
 ( J79-GE-15/A ENGINE ( 65% RPM ) BAR PRESS = .760 M HG  
 ( GROUND RUNUP NOISE ( BOTH ENGINES ) REL HUMID = 70 %  
 ( ( FREE FLOW )  
 ( ) PAGE 25  
 ( IDENTIFICATION: )  
 ( ) OMEGA 1.4  
 ( ) TEST 75-002-026  
 ( ) RUN 04

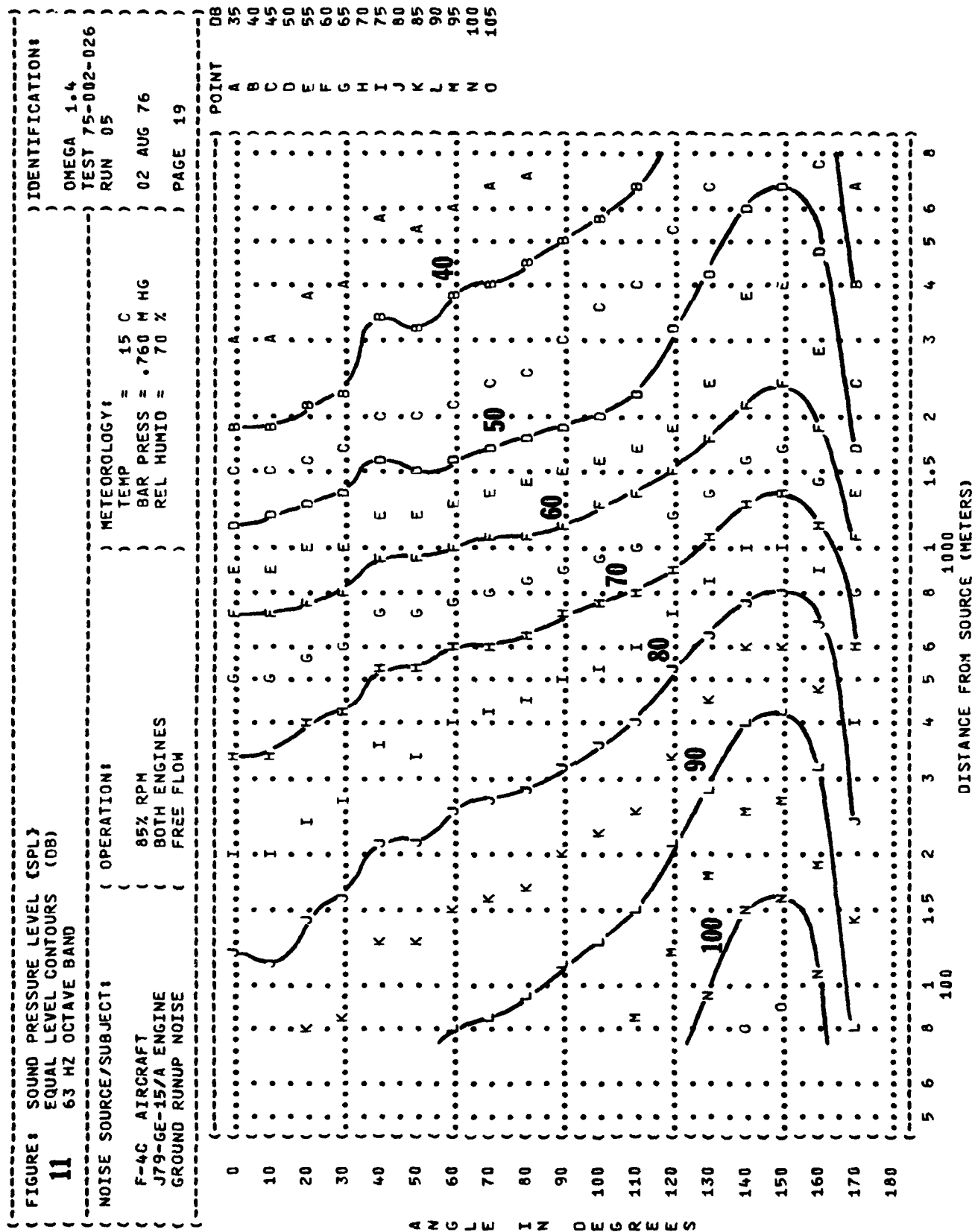


A N G L E I N D E G R E E S

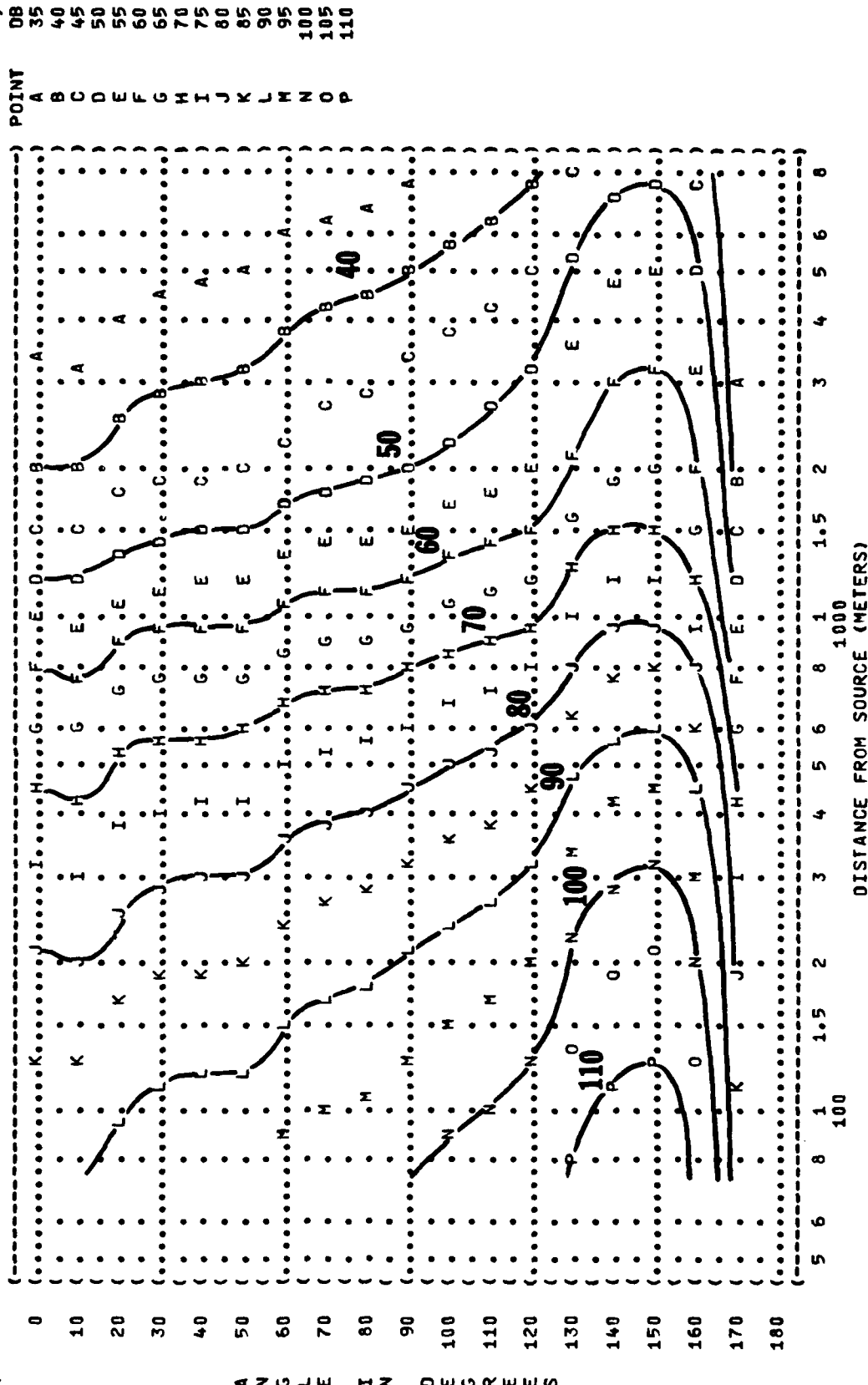


( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION: )  
 ( 11 EQUAL LEVEL CONTOURS (DB) ) OMEGA 1.4 )  
 ( 31.5 HZ OCTAVE BAND ) TEST 75-002-026 )  
 ( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: )  
 ( F-4C AIRCRAFT ) ) TEMP = 15 C )  
 ( J79-GE-15/A ENGINE ) ) BAR PRESS = .760 M HG )  
 ( GROUND RUNUP NOISE ) ) REL HUMID = 70 % )  
 ( ) ) PAGE 18 )

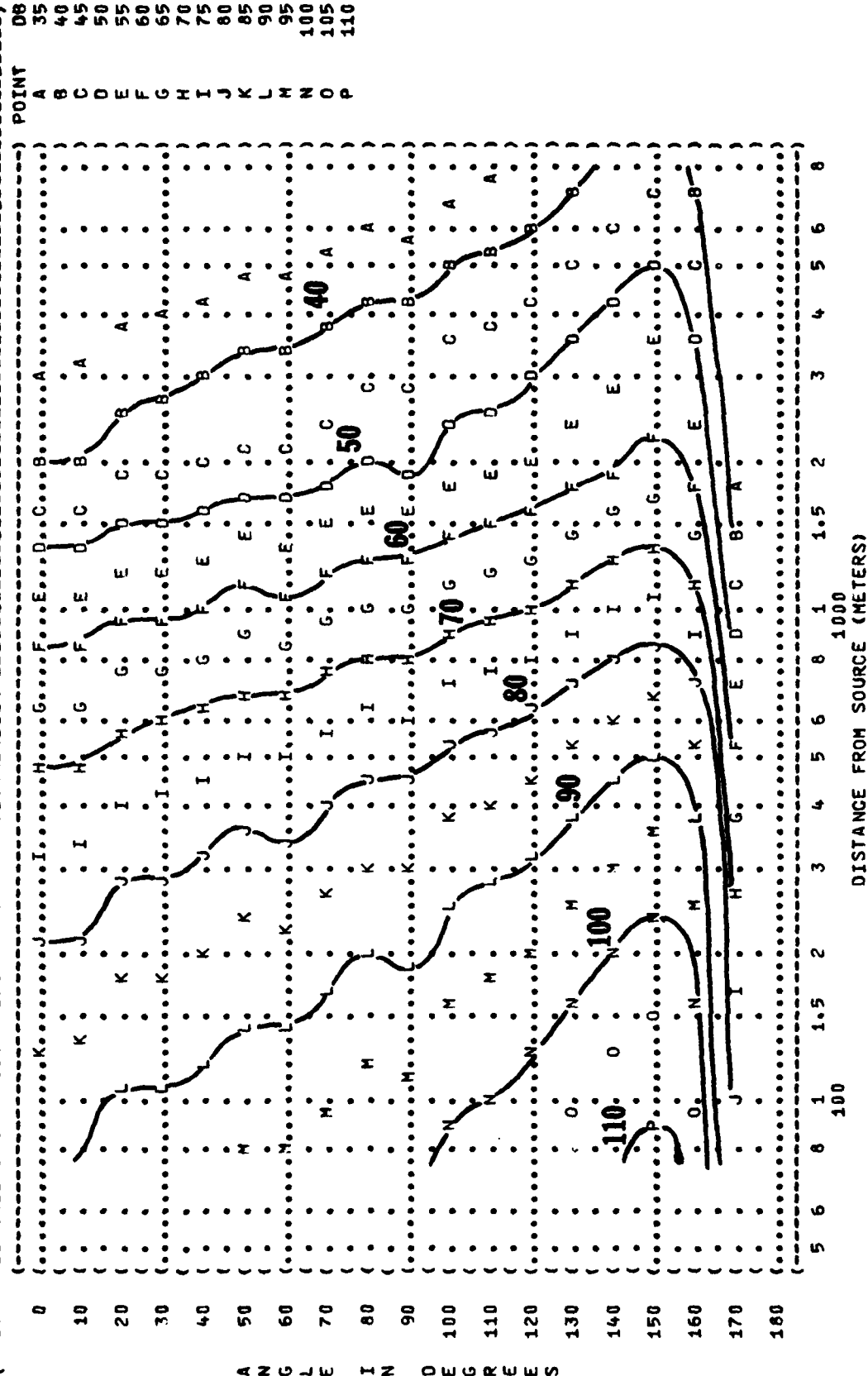




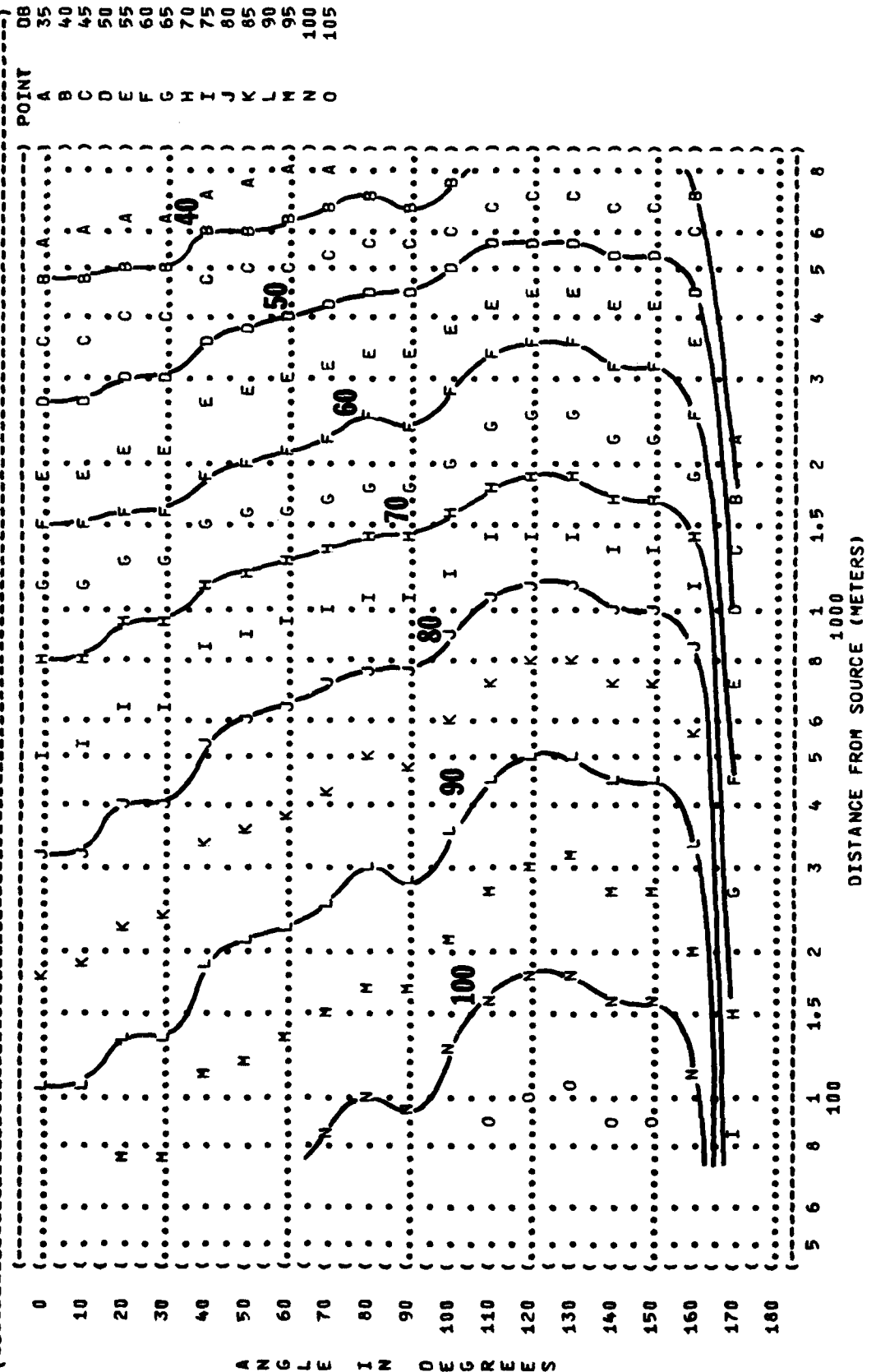
( FIGURE: SOUND PRESSURE LEVEL (SPL) )  
 ( 11 EQUAL LEVEL CONTOURS (DB) )  
 ( 125 HZ OCTAVE BAND )  
 ( NOISE SOURCE/SUBJECT: )  
 ( OPERATION: )  
 ( F-4C AIRCRAFT )  
 ( J79-GE-15/A ENGINE )  
 ( GROUND RUNUP NOISE )  
 ( METEOROLOGY: )  
 ( TEMP = 15 C )  
 ( BAR PRESS = .760 M HG )  
 ( REL HUMID = 70 % )  
 ( IDENTIFICATION: )  
 ( OMEGA 1.4 )  
 ( TEST 75-002-026 )  
 ( RUN 05 )  
 ( 02 AUG 76 )  
 ( PAGE 20 )



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 250 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( 85% RPM  
 ( J79-GE-15/A ENGINE ( BOTH ENGINES  
 ( GROUND RUNUP NOISE ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION: ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 05  
 ( 02 AUG 76  
 ( PAGE 21

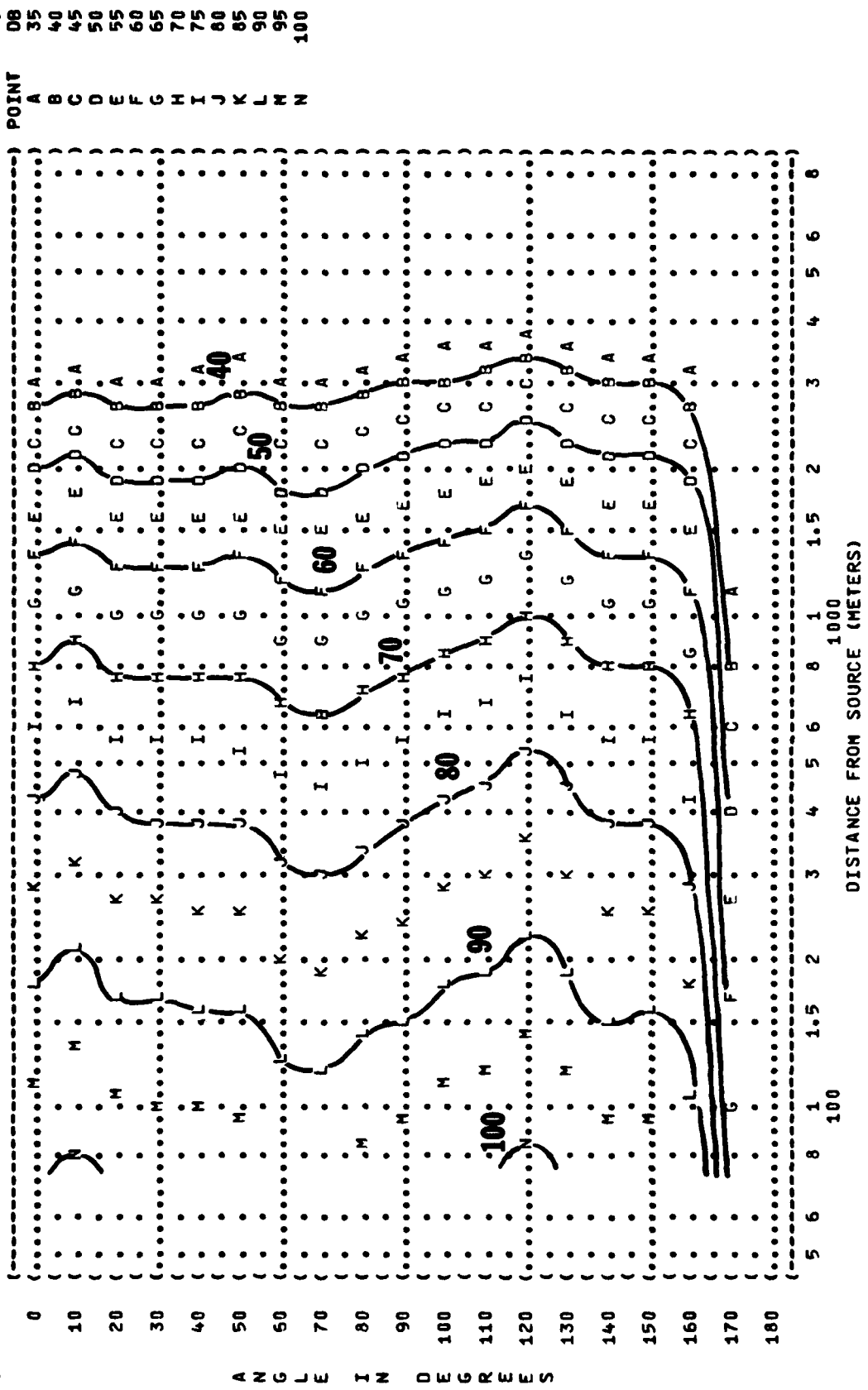


( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 500 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( 85% RPM  
 ( J79-GE-15/A ENGINE ( BOTH ENGINES  
 ( GROUND RUNUP NOISE ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( PAGE 22  
 ( IDENTIFICATION: ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 05





( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 2000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( 85% RPM  
 ( J79-GE-15/A ENGINE ( BOTH ENGINES  
 ( GROUND RUNUP NOISE ( FREE FLOW  
 ( METEOROLOGY: ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION: ( OMEGA 1.4  
 ( TEST 75-002-026  
 ( RUN 05  
 ( 02 AUG 76  
 ( PAGE 24





```

IDENTIFICATION:
) )
) )
) OMEGA 1.4
) )
) TEST 75-002-026
) )
) RUN 05
) )
) )
) 02 AUG 76
) )
) )
) PAGE 26

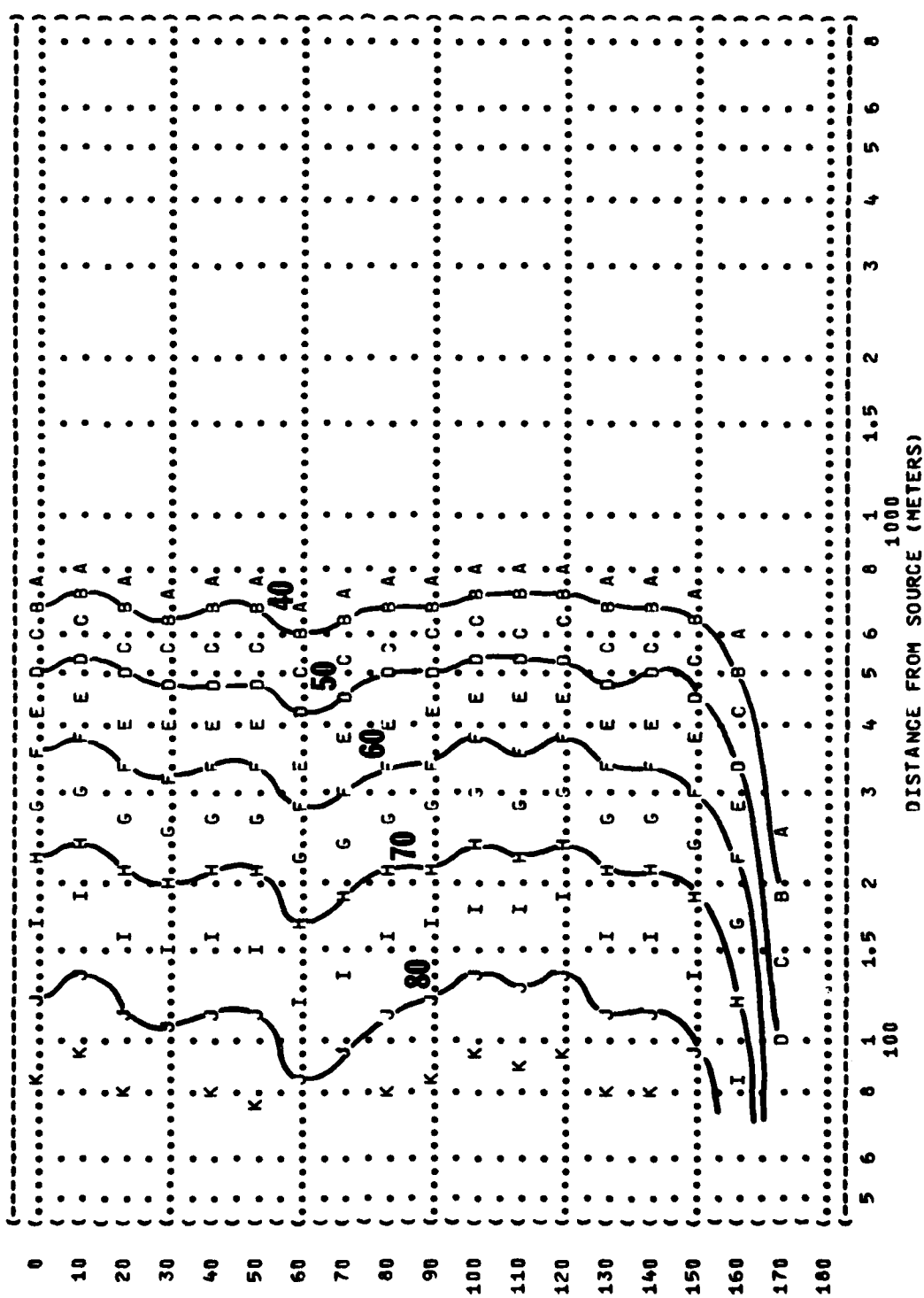
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) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 H HG
) REL HUMID = 70 %
)

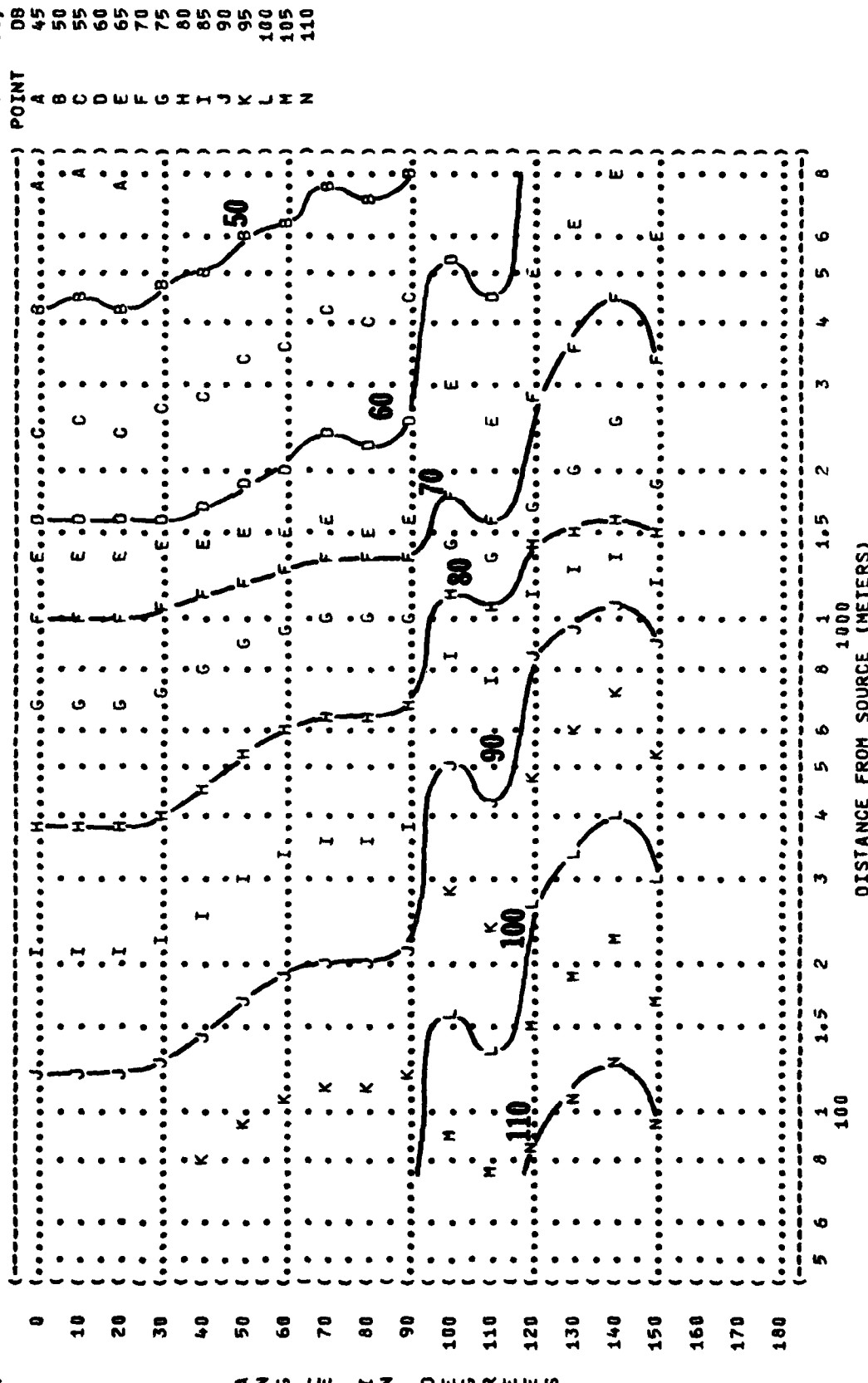
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|              |          |          |          |          |          |          |          |          |          |          |          |    |
|--------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----|
| <b>POINT</b> | <b>A</b> | <b>B</b> | <b>C</b> | <b>D</b> | <b>E</b> | <b>F</b> | <b>G</b> | <b>H</b> | <b>I</b> | <b>J</b> | <b>K</b> |    |
|              | 08       | 35       | 40       | 45       | 50       | 55       | 60       | 65       | 70       | 75       | 80       | 85 |



420 JW HZ 0504555

( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 31.5 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( AFTERBURNER POWER  
 ( J79-GE-15/A ENGINE ( 100% RPM  
 ( FAR FIELD NOISE ( SINGLE ENGINE  
 ( DEFLECTED FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-059  
 ( RUN 03  
 ( 09 AUG 76  
 ( PAGE 18



A N G L E I N D E G R E E S





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

11

NOISE SOURCE/SUBJECT:

F-4C AIRCRAFT  
J79-GE-15/A ENGINE  
FAR FIELD NOISE

OPERATION:

AFTERBURNER POWER  
100% RPM  
SINGLE ENGINE  
DEFLECTED FLOW

METEOROLOGY:

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

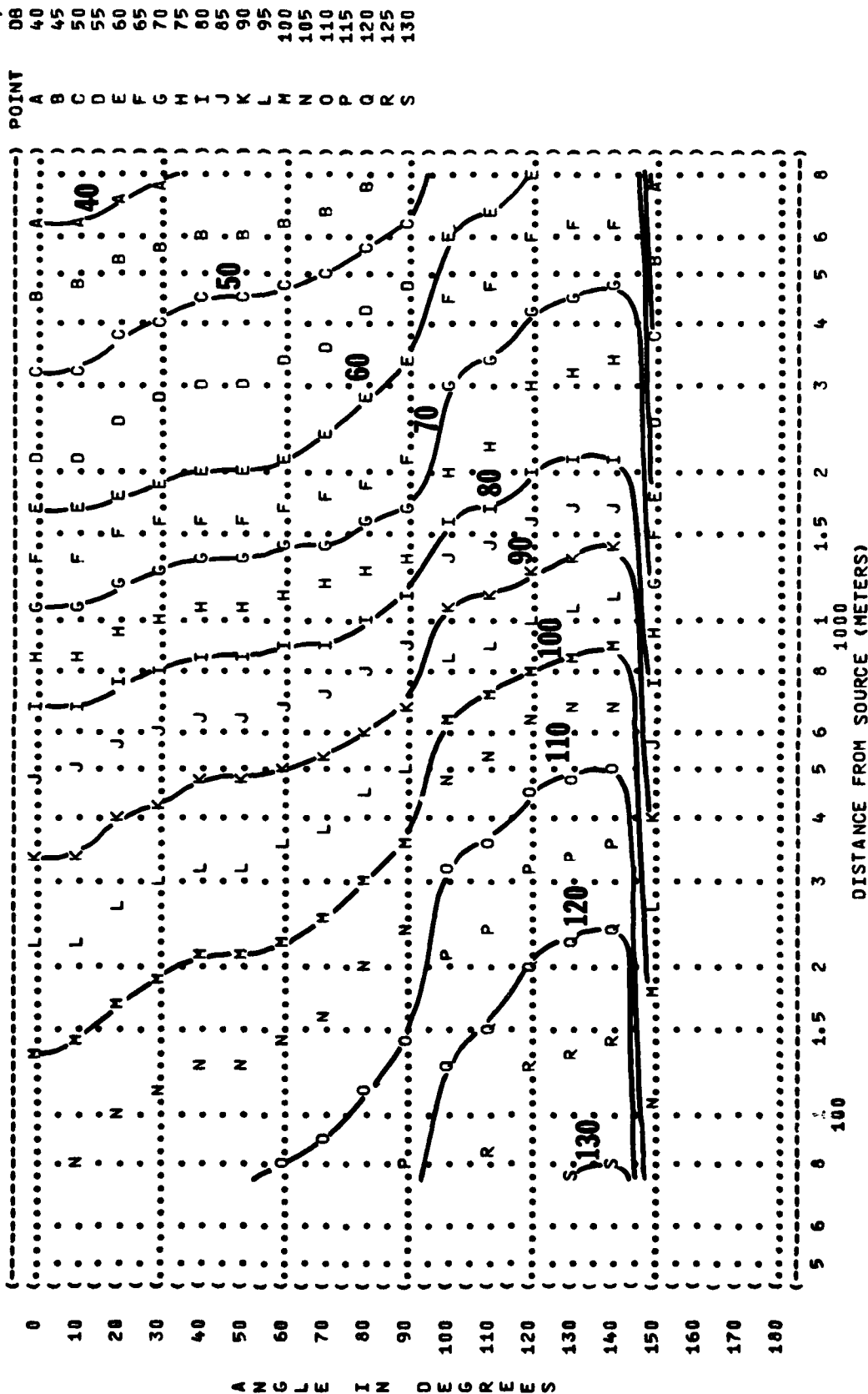
IDENTIFICATION:

OMEGA 1.4

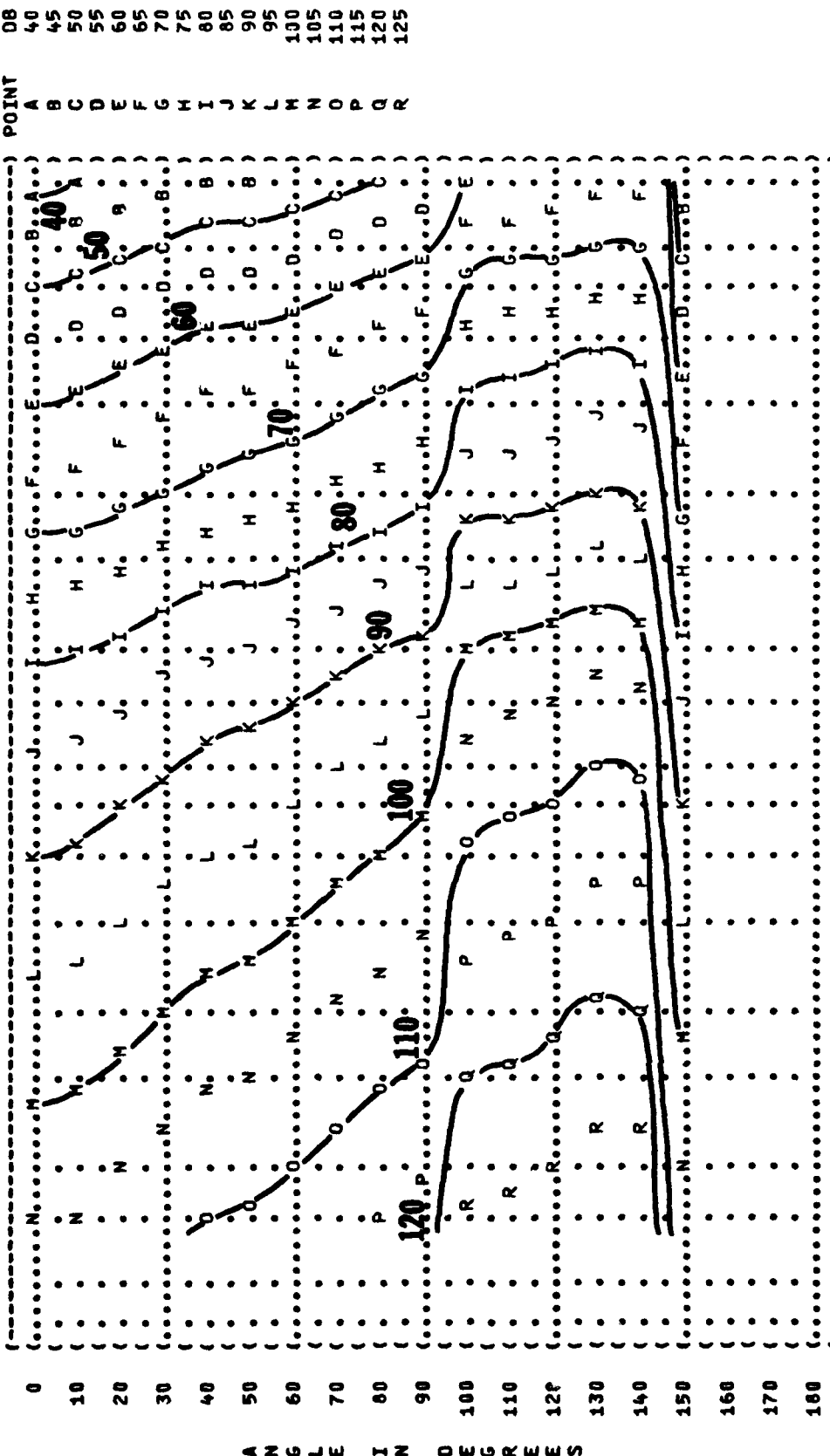
TEST 75-002-059

RUN 03

PAGE 21

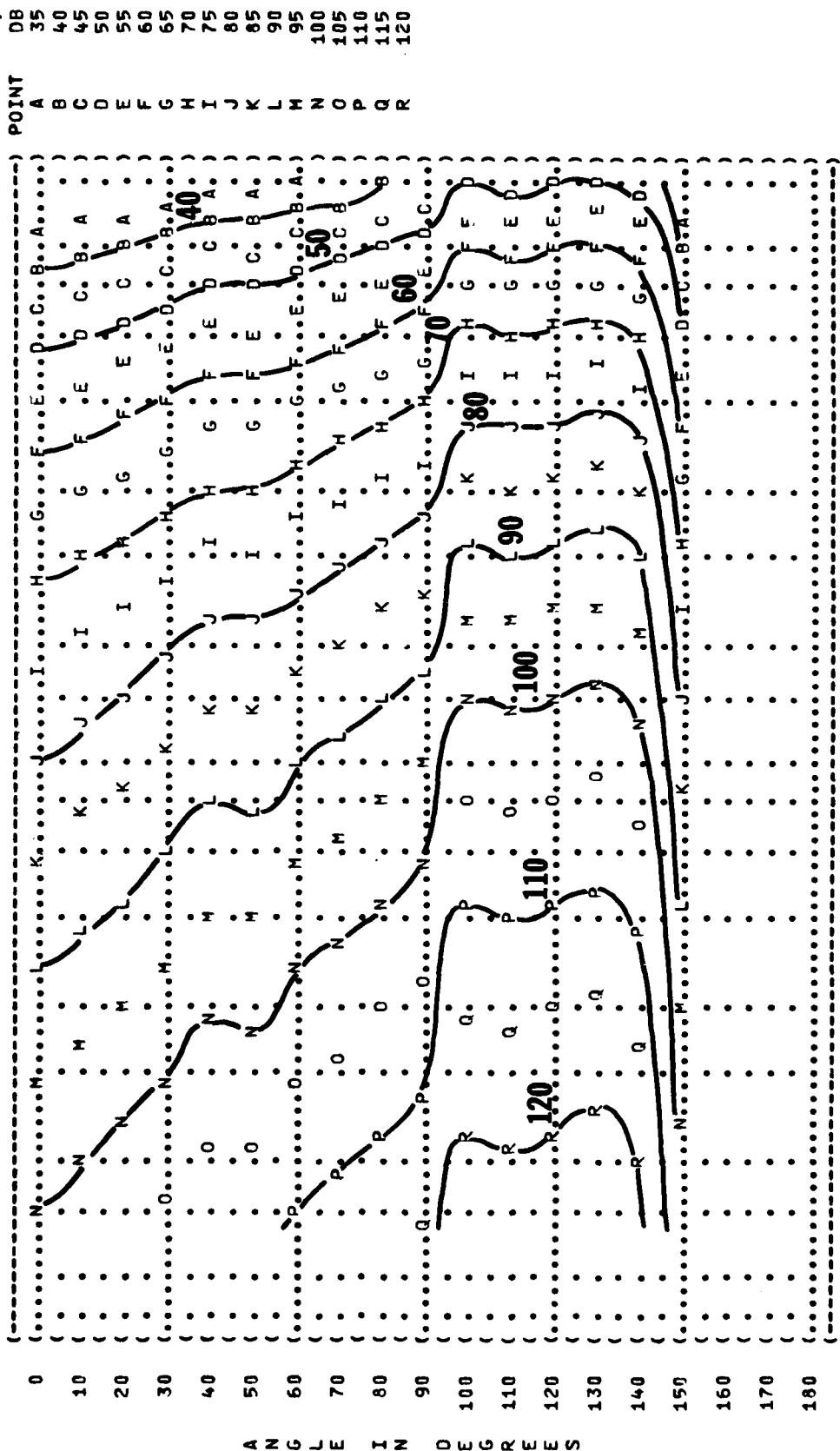


( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( 11 EQUAL LEVEL CONTOURS (DB)  
 ( 500 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATIONS:  
 ( F-4C AIRCRAFT ( AFTERBURNER POWER  
 ( J79-GE-15/A ENGINE ( 100% RPM  
 ( FAR FIELD NOISE ( SINGLE ENGINE  
 ( DEFLECTED FLOW  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-059  
 ( RUN 03  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( PAGE 22



0 10 20 30 40 50 60 70 80 90 100 110 120 125  
 A B C D E F G H I J K L M N O P Q R  
 5 6 8 1 1.5 2 3 4 5 6 8  
 100 1000  
 DISTANCE FROM SOURCE (METERS)

( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 1000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION: ( METEOROLOGY: ( POINT DB  
 ( F-4C AIRCRAFT ( AFTERBURNER POWER ( TEMP = 15 C  
 ( J79-GE-15/A ENGINE ( 100% RPM ( BAR PRESS = .760 M HG  
 ( FAR FIELD NOISE ( SINGLE ENGINE ( REL HUMID = 70 %  
 ( DEFLECTED FLOW ( ) PAGE 23 )



DISTANCE FROM SOURCE (METERS)

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

11

**IDENTIFICATION:**

**OMEGA 1.4**

TEST 75-002-059

03  
RUN

## METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG ) 09 AUG 76

REL HUMID = 70 %

**PAGE 24**

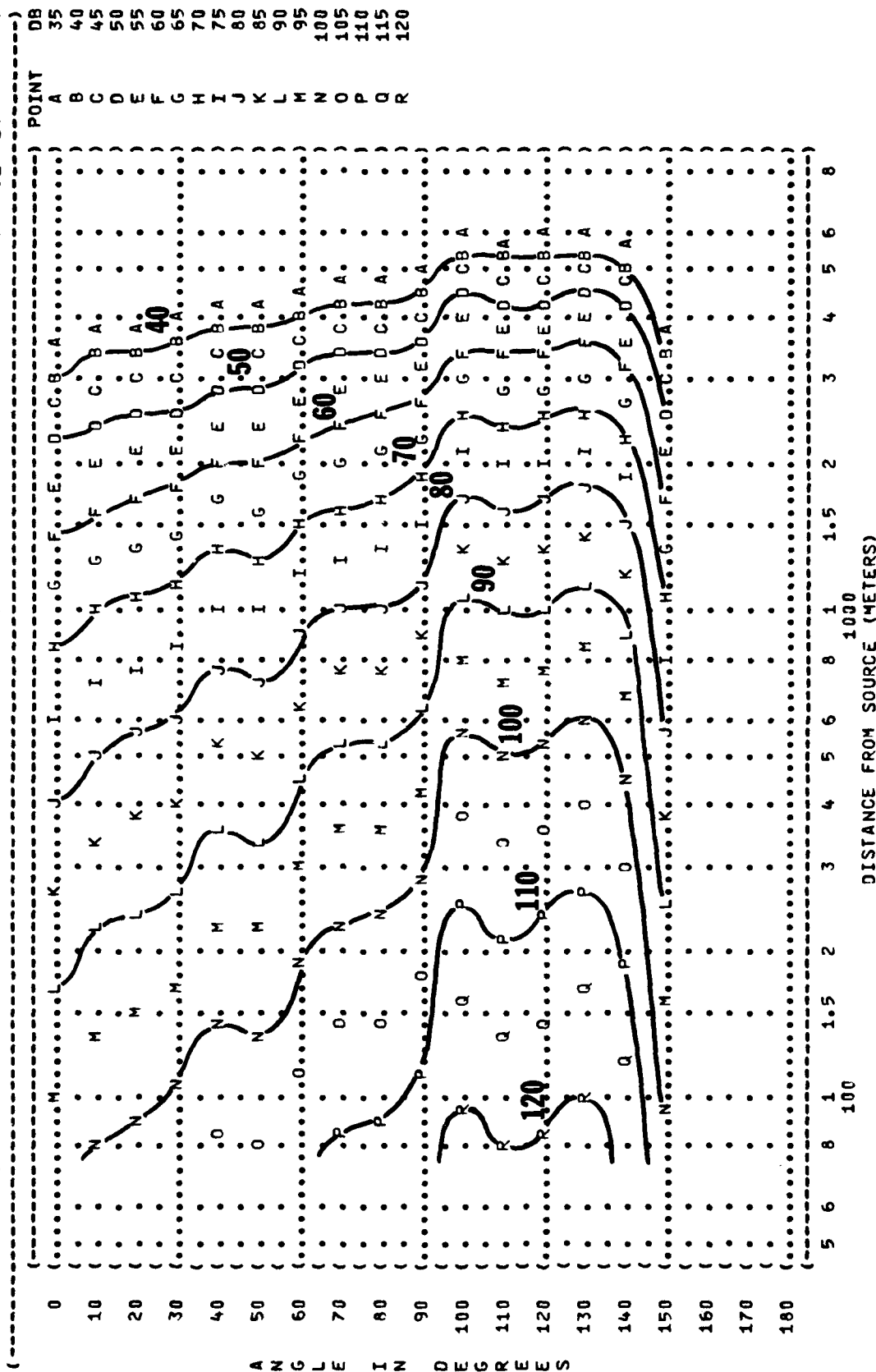
## OPERATION:

## AFTERBURNER POWER

100% RPM

**SINGLE ENGINE**

DEFLECTED FLOW



( FIGURE: SOUND PRESSURE LEVEL (SPL)  
 ( EQUAL LEVEL CONTOURS (DB)  
 ( 11 4000 HZ OCTAVE BAND  
 ( NOISE SOURCE/SUBJECT: ( OPERATION:  
 ( F-4C AIRCRAFT ( AFTERBURNER POWER  
 ( J79-GE-15/A ENGINE ( 100% RPM  
 ( FAR FIELD NOISE ( SINGLE ENGINE  
 ( DEFLECTED FLOW  
 ( METEOROLOGY:  
 ( TEMP = 15 C  
 ( BAR PRESS = .760 M HG  
 ( REL HUMID = 70 %  
 ( IDENTIFICATION:  
 ( OMEGA 1.4  
 ( TEST 75-002-059  
 ( RUN 03  
 ( PAGE 25

