

AD-A044 647

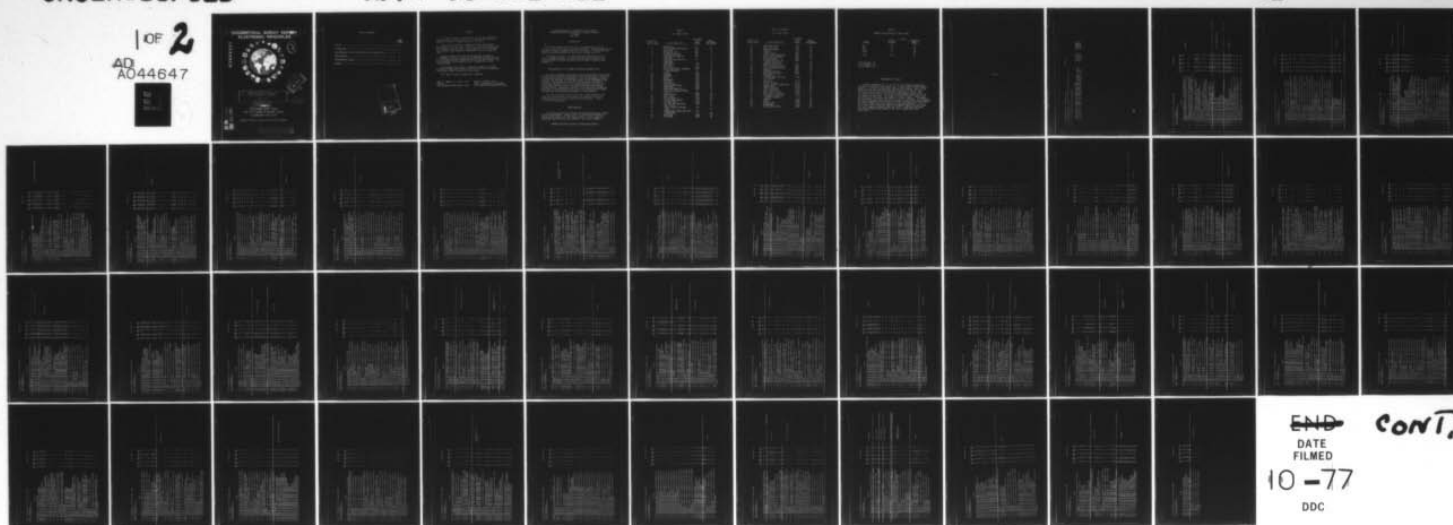
AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9  
AIRBORNE METEOROLOGICAL/ATMOSPHERIC RESEARCH EQUIPMENT REPAIRMA--ETC(U)  
SEP 77

UNCLASSIFIED

AFPT-90-302-222

NL

1 OF 2  
AD  
A044647



~~END~~ CONT.  
DATE  
FILMED  
10-77  
DDC

9 OCCUPATIONAL SURVEY REPORT,  
ELECTRONIC PRINCIPLES

AD A 044647



6 AIRBORNE METEOROLOGICAL/ATMOSPHERIC  
RESEARCH EQUIPMENT REPAIRMAN,

AFSC 30251 ,

14 AFPT 90-302-222 /

11 15 Sept 1977

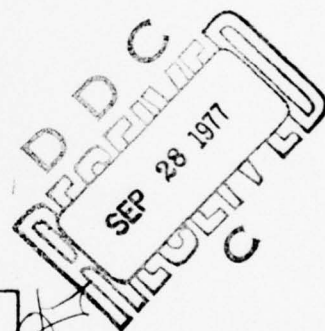
OCCUPATIONAL SURVEY BRANCH  
USAF OCCUPATIONAL MEASUREMENT CENTER  
LACKLAND AFB TEXAS 78236

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

AD No. —  
DDC FILE COPY,

COPY AVAILABLE TO DDC DOES NOT  
PERMIT FULLY LEGIBLE PRODUCTION

408 889



# TABLE OF CONTENTS

|                                                                | PAGE<br>NUMBER |
|----------------------------------------------------------------|----------------|
| PREFACE -----                                                  | 2              |
| INTRODUCTION -----                                             | 3              |
| DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI) ----- | 3              |
| ADMINISTRATION -----                                           | 3              |
| PRESENTATION OF RESULTS -----                                  | 6              |
| APPENDIX -----                                                 | 7              |

|                                                   |    |
|---------------------------------------------------|----|
| APPENDIX D                                        |    |
| B. II Section <input checked="" type="checkbox"/> |    |
| B. II Section <input type="checkbox"/>            |    |
| B. II Section <input type="checkbox"/>            |    |
| PY DISTRIBUTION/AVAILABILITY CODES                |    |
| SPECIAL                                           |    |
| A                                                 | 23 |
| 072                                               |    |

## PREFACE

This report presents a summary of the results of a detailed Air Force Electronic Principles Survey of the Airborne Meteorological/Atmospheric Research Equipment Repairman, AFSC 30251.

The Electronic Principles Inventory (EPI) was developed by Major Thomas J. O'Connor and Mr. Hendrick W. Ruck and the survey data were analyzed by Mr. Guy Cole. All are members of the Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas.

Computer programs for analyzing the data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Distribution of this report is made upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Colonel, USAF  
Commander  
USAF Occupational Measurement Center

WALTER E. DRISKILL, Ph.D.  
Chief, Occupational Survey Branch  
USAF Occupational Measurement Center

ELECTRONIC PRINCIPLES OCCUPATIONAL SURVEY REPORT  
AIRBORNE METEOROLOGICAL/ATMOSPHERIC RESEARCH EQUIPMENT  
REPAIRMAN  
AFSC 30251

INTRODUCTION

↓ This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Airborne Meteorological/Atmospheric Research Equipment Repairman (AFSC 30251). The data for this report were collected during the period April through June 1977.

This report describes: (1) development and administration of the survey instrument; and (2) electronic principles used by DAFSC 5-skill level personnel both CONUS and overseas and assigned to selected major commands. ↑

DEVELOPMENT OF THE ELECTRONIC PRINCIPLES INVENTORY (EPI)

The EPI was developed by personnel from the Occupational Survey Branch who were well qualified in theoretical physics and electronics, as well as in task analysis and survey development. Over 300 maintenance personnel from SAC, TAC, ADC, MAC, and AFCS participated in the development of the inventory. Representing the five ATC training centers, electronics experts who averaged 12 years of maintenance experience and four years of electronic principles instruction experience spent several weeks refining the EPI. In addition, personnel at the Electrical Engineering Department of the USAF Academy and the Air Force Human Resources Laboratory were consulted during the development of the inventory.

The final version of the EPI used in this survey contained 1,257 items in 62 subject matter areas covering all electronic principles training given at the five ATC technical training centers. Table 1 lists the 62 subject areas.

ADMINISTRATION

The Electronic Principles Inventory was administered by mail to AFSC 30251 airmen worldwide. Responses from 10 individuals represented 40 percent of the total of all AFSC 30251 personnel. Table 2 shows the percentage distribution by major command of the survey incumbents.

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

TABLE 1  
EPI SUBJECT AREAS

| <u>SEQUENCE OF<br/>SUBJECT AREAS</u> | <u>SUBJECT AREA TITLE</u>                         | <u>BEGINNING<br/>ITEM<br/>NUMBER</u> | <u>GPSUM<br/>PAGE NUMBER</u> |
|--------------------------------------|---------------------------------------------------|--------------------------------------|------------------------------|
| 1                                    | MATHEMATICS                                       | A1                                   | 2                            |
| 2                                    | DIRECT CURRENT AND VOLTAGE                        | A15                                  | 2                            |
| 3                                    | RESISTANCE                                        | A24                                  | 2                            |
| 4                                    | MULTIMETER USES                                   | B52                                  | 3                            |
| 5                                    | ALTERNATING CURRENT                               | B61                                  | 4                            |
| 6                                    | INDUCTORS AND INDUCTIVE<br>REACTANCE              | B67                                  | 4                            |
| 7                                    | CAPACITORS AND CAPACITIVE<br>REACTANCE            | C92                                  | 5                            |
| 8                                    | TRANSFORMERS                                      | C128                                 | 6                            |
| 9                                    | MAGNETISM                                         | C171                                 | 7                            |
| 10                                   | RCL CIRCUITS                                      | D185                                 | 8                            |
| 11                                   | SERIES AND PARALLEL RESONANCE<br>(TIME CONSTANTS) | D229                                 | 10                           |
| 12                                   | FILTERS                                           | D239                                 | 10                           |
| 13                                   | COUPLING                                          | E261                                 | 11                           |
| 14                                   | SOLDERING                                         | E273                                 | 11                           |
| 15                                   | RELAYS                                            | E295                                 | 12                           |
| 16                                   | MICROPHONES                                       | F314                                 | 12                           |
| 17                                   | SPEAKERS                                          | F327                                 | 13                           |
| 18                                   | OSCILLOSCOPES                                     | F342                                 | 13                           |
| 19                                   | SEMICONDUCTOR DIODES                              | G354                                 | 13                           |
| 20                                   | TRANSISTORS                                       | G404                                 | 15                           |
| 21                                   | TRANSISTOR AMPLIFIERS                             | G428                                 | 16                           |
| 22                                   | SOLID-STATE SPECIAL PURPOSE<br>DEVICES            | H477                                 | 19                           |
| 23                                   | POWER SUPPLIES                                    | H483                                 | 19                           |
| 24                                   | OSCILLATORS                                       | H512                                 | 19                           |
| 25                                   | MULTIVIBRATORS                                    | I539                                 | 20                           |
| 26                                   | LIMITERS AND CLAMPERS                             | I555                                 | 21                           |
| 27                                   | ELECTRON TUBES                                    | I565                                 | 21                           |
| 28                                   | ELECTRON TUBE AMPLIFIERS<br>AND CIRCUITS          | J609                                 | 22                           |
| 29                                   | SPECIAL PURPOSE ELECTRON<br>TUBES                 | J616                                 | 23                           |
| 30                                   | HETERODYNING, MODULATION, AND<br>DEMODULATION     | J632                                 | 23                           |
| 31                                   | AM SYSTEMS                                        | K638                                 | 23                           |
| 32                                   | FM SYSTEMS                                        | K666                                 | 24                           |

TABLE 1 (CONTINUED)

## EPI SUBJECT AREAS

| <u>SEQUENCE OF<br/>SUBJECT AREAS</u> | <u>SUBJECT AREA TITLE</u>                     | <u>BEGINNING<br/>ITEM<br/>NUMBER</u> | <u>GPSUM<br/>PAGE NUMBER</u> |
|--------------------------------------|-----------------------------------------------|--------------------------------------|------------------------------|
| 33                                   | NUMBERING SYSTEMS                             | K685                                 | 25                           |
| 34                                   | LOGIC FUNCTIONS                               | L695                                 | 25                           |
| 35                                   | BOOLEAN EQUATIONS                             | L708                                 | 26                           |
| 36                                   | COUNTERS                                      | L733                                 | 27                           |
| 37                                   | TIMING CIRCUITS                               | M757                                 | 27                           |
| 38                                   | USE OF SIGNAL GENERATORS                      | M769                                 | 28                           |
| 39                                   | MOTORS AND GENERATORS                         | M779                                 | 28                           |
| 40                                   | METER MOVEMENTS                               | N808                                 | 29                           |
| 41                                   | SATURABLE REACTORS AND<br>MAGNETIC AMPLIFIERS | N818                                 | 29                           |
| 42                                   | WAVESHAPING CIRCUITS                          | N834                                 | 30                           |
| 43                                   | SINGLE SIDEBAND SYSTEMS                       | O845                                 | 30                           |
| 44                                   | PULSE MODULATION SYSTEMS                      | O875                                 | 31                           |
| 45                                   | ANTENNAS                                      | O914                                 | 32                           |
| 46                                   | TRANSMISSION LINES                            | P953                                 | 34                           |
| 47                                   | WAVEGUIDES AND CAVITY<br>RESONATORS           | P984                                 | 35                           |
| 48                                   | MICROWAVE AMPLIFIERS AND<br>OSCILLATORS       | P1034                                | 37                           |
| 49                                   | REGISTERS                                     | Q1110                                | 39                           |
| 50                                   | STORAGE DEVICES                               | Q1117                                | 40                           |
| 51                                   | DIGITAL TO ANALOG CONVERTERS                  | Q1126                                | 40                           |
| 52                                   | PHANTASTRONS                                  | Q1140                                | 41                           |
| 53                                   | SCHMITT TRIGGERS                              | R1141                                | 41                           |
| 54                                   | CABLE FABRICATION                             | R1144                                | 41                           |
| 55                                   | INPUT/OUTPUT DEVICES                          | S1146                                | 41                           |
| 56                                   | PHOTO SENSITIVE DEVICES                       | S1149                                | 41                           |
| 57                                   | SYNCHRONOUS VIBRATIONS<br>(CHOPPER CIRCUITS)  | S1150                                | 41                           |
| 58                                   | INFRARED                                      | T1159                                | 41                           |
| 59                                   | LASERS                                        | T1186                                | 42                           |
| 60                                   | DISPLAY TUBES                                 | T1220                                | 43                           |
| 61                                   | PROGRAMMING                                   | U1234                                | 43                           |
| 62                                   | DB AND POWER RATIOS                           | U1255                                | 44                           |

TABLE 2  
COMMAND REPRESENTATION OF SURVEY SAMPLE

| <u>COMMAND</u> | 30251                       |                              |
|----------------|-----------------------------|------------------------------|
|                | <u>PERCENT<br/>ASSIGNED</u> | <u>PERCENT OF<br/>SAMPLE</u> |
| MAC            | 60                          | 20                           |
| ATC            | 24                          | 10                           |
| AFSC           | 12                          | 60                           |
| OTHER          | <u>4</u>                    | <u>10</u>                    |
| TOTAL          | 100                         | 100                          |

Total Assigned - 25  
Total Sampled - 10  
Percent Sampled 40%

#### PRESENTATION OF RESULTS

Personnel responded "yes" or "no" to the 1,257 electronic principles questions as related to their present job. A Group Summary (GPSUM) computer printout is provided in the Appendix portion of this report. Page 1 of the GPSUM lists the five selected groups identified for this report. Pages 2-44 show the percentage of the incumbents responding to the EPI items. The computer program results display the percent members answering "yes" to the subject area questions. The reader can locate a specific subject area by referring to the Appendix page number as listed in Table 1. For example, the Transformers area results are given on page 6 of the GPSUM. The percentage of survey respondents indicating use of specific electronic principles ranged from high in areas such as Resistance (pp. 3-4) and Soldering (p. 12) to low in areas such as Saturable Reactors and Magnetic Amplifiers (pp. 29-30) and Single Sideband Sideband Systems (pp. 30-31). Additional AFSC 302X1 data can be obtained upon request to the Chief, Occupational Survey Branch (OMY).

APPENDIX

PLI MEMS RESPONDING YES BY SELECTED GMPs

GPSUM2 PAGE 1

TABULATION OF ELECTRONIC PRINCIPLES UTILIZATION DATA FOR SELECTED GROUPS  
IN THE 30241 CAREER FIELD

REPORTS ON THE FOLLOWING GROUPS WERE REQUESTED

|                  |        |                                           |            |            |
|------------------|--------|-------------------------------------------|------------|------------|
| GROUP IDENTITY = | SPC026 | ALL AIRMEN DAFSC 30251                    | CONTAINING | 10 MEMBERS |
| GROUP IDENTITY = | SPC027 | ALL AIRMEN DAFSC 30251                    | CONTAINING | 8 MEMBERS  |
| GROUP IDENTITY = | SPC028 | ALL AIRMEN DAFSC 30251 STATIONED IN CONUS | CONTAINING | 2 MEMBERS  |
| GROUP IDENTITY = | SPC029 | ALL AIRMEN DAFSC 30251 STATIONED OVERSEAS | CONTAINING | 1 MEMBERS  |
| GROUP IDENTITY = | SPC031 | ALL AIRMEN DAFSC 30251 ASSIGNED TO ATC    | CONTAINING | 6 MEMBERS  |
| GROUP IDENTITY = | SPC031 | ALL AIRMEN DAFSC 30251 ASSIGNED TO AFSC   | CONTAINING | 6 MEMBERS  |

# PCT HUNS RESPONDING 'YES' BY SELECTED GNPS

GPSUM4 PAGE 2

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DY-TSA

SPC SPC SPC SPC SPC  
026 027 028 029 031

A 1 A1-01 DO YOU USE INSTRUMENTS, SUCH AS METERS OR OSCILLOSCOPES, IN WHICH IT IS NECESSARY TO AMPLIFY OR ATTENUATE VOLTAGE, RESISTANCE, ETC., BY POWERS OF 10.

A 2 A1-02 DO YOU USE PUBLICATIONS, SUCH AS A TECHNICAL ORDERS OR MAINTENANCE MANUALS, IN WHICH IT IS NECESSARY FOR YOU TO MULTIPLY OR DIVIDE BY A POWER OF 10 BEFORE YOU CAN APPLY THE INFORMATION FROM THE PUBLICATION IN A USEFUL WAY ON THE JOB.

A 3 A1-03 DO YOU REARRANGE AND SOLVE FORMULAS OR EQUATIONS.

A 4 A1-04 DO YOU CALCULATE THE SQUARE ROOT OF A QUANTITY.

A 5 A1-05 DO YOU SOLVE FOR UNKNOWN QUANTITIES.

A 6 A1-06 DO YOU CONVERT NUMBERS TO LOGARITHMS.

A 7 A1-07 DO YOU USE LOGARITHM TABLES IN ANY TYPE OF CALCULATIONS.

A 8 A1-08 DO YOU SOLVE QUADRATIC EQUATIONS.

A 9 A1-09 DO YOU USE THE NATURAL SYSTEM OF LOGARITHMS.

A 10 A1-10 DO YOU PERFORM CALCULATIONS ON VECTOR QUANTITIES.

A 11 A1-11 DO YOU WORK WITH TRIGONOMETRIC FUNCTIONS SUCH AS SINE, COSINE, OR TANGENT.

A 12 A1-12 DO YOU DETERMINE AREAS OF PLANE FIGURES.

A 13 A1-13 DO YOU SOLVE OR USE SIMULTANEOUS EQUATIONS.

A 14 A1-14 DO YOU SOLVE OR USE PROPORTIONS.

A 15 A2-01 DO YOU USE THE TERM VOLTAGE OR VOLT (V).

A 16 A2-02 DO YOU USE THE TERM ELECTROMOTIVE FORCE (EMF).

A 17 A2-03 DO YOU USE THE TERM OHM.

A 18 A2-04 DO YOU USE THE TERM ION.

A 19 A2-05 DO YOU USE THE TERM DYNE.

A 20 A2-06 DO YOU USE THE TERM AMPERE.

A 21 A2-07 DO YOU USE THE TERM NEUTRON.

A 22 A2-08 DO YOU USE THE TERM COULOMB.

A 23 A2-09 DO YOU USE THE TERM PROTON.

A 24 A3-01 DO YOU WORK WITH RESISTORS IN YOUR PRESENT JOB.

A 25 A3-02 DO YOU INSPECT RESISTORS.

A 26 A3-03 DO YOU CLEAN RESISTORS.

A 27 A3-04 DO YOU ADJUST RESISTORS.

A 28 A3-05 DO YOU CHECK OHMIC VALUE OR RESISTORS.

A 29 A3-06 DO YOU REMOVE OR REPLACE RESISTORS.

A 30 A3-07 DO YOU USE OR REFER TO TEMPERATURE COEFFICIENTS FOR RESISTORS ON ANY TASKS YOU PERFORM.

A 31 A3-08 DO YOU USE OR REFER TO RESISTOR SYMBOLS SUCH AS FIXED

RESISTOR SYMBOLS OR TAPPED RESISTOR SYMBOLS.

A 32 A3-09 DO YOU IDENTIFY OR CLASSIFY THE RESISTORS YOU WORK

WITH AS CARBON, FIXED WIRE, SLIDE TAP, MEOSTAT, OR

POTENTIOMETER.

A 33 A3-10 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE OHMIC

VALUE OF RESISTANCE.

MATHEMATICS

DIRECT CURRENT AND VOLTAGE

RESISTANCE

# PLANS RESPONDING YES BY SELECTED GMS

UPSUMZ PAGE 3

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

0Y-TSA

|                                                                                                                                                  | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|--------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| A 34 A3-11 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE TOLERANCE.                                                                             | 100        | 100        | 100        | 100        | 100        |
| A 35 A3-12 DO YOU USE RESISTOR COLOR CODES WHICH INDICATE FAILURE RATE.                                                                          | 40         | 25         | 100        | 0          | 17         |
| A 36 A3-13 DO YOU MAKE DECISIONS IN WHICH YOU MUST DETERMINE HOW TWO OR MORE BATTERIES MUST BE CONNECTED TOGETHER TO ACHIEVE A SPECIFIC VOLTAGE. | 100        | 100        | 100        | 100        | 100        |
| A 37 A3-14 DO YOU USE OR REFER TO THE SCHEMATIC SYMBOLS WHICH REPRESENT BATTERIES, FUSES, CONDUCTORS, LAMPS, OR SWITCHES                         | 80         | 88         | 50         | 0          | 100        |
| A 38 A3-15 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES RESISTIVE CIRCUITS.                                                                      | 80         | 88         | 50         | 0          | 100        |
| A 39 A3-16 DO YOU CALCULATE TOTAL CURRENT FOR SERIES RESISTIVE CIRCUITS.                                                                         | 90         | 100        | 50         | 100        | 100        |
| A 40 A3-17 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES RESISTIVE CIRCUITS.                                                              | 80         | 88         | 50         | 100        | 83         |
| A 41 A3-18 DO YOU CALCULATE POWER DISSIPATION FOR SERIES RESISTIVE CIRCUITS.                                                                     | 80         | 88         | 50         | 0          | 100        |
| A 42 A3-19 DO YOU CALCULATE TOTAL RESISTANCE FOR SERIES PARALLEL RESISTIVE CIRCUITS.                                                             | 70         | 75         | 50         | 0          | 83         |
| A 43 A3-20 DO YOU CALCULATE TOTAL CURRENT FOR SERIES PARALLEL RESISTIVE CIRCUITS.                                                                | 90         | 100        | 50         | 100        | 100        |
| A 44 A3-21 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR SERIES PARALLEL RESISTIVE CIRCUITS.                                                     | 80         | 88         | 50         | 0          | 100        |
| A 45 A3-22 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR SERIES PARALLEL RESISTIVE CIRCUITS.                                                   | 80         | 88         | 50         | 100        | 83         |
| A 46 A3-23 DO YOU CALCULATE POWER DISSIPATION FOR SERIES PARALLEL RESISTIVE CIRCUITS.                                                            | 70         | 88         | 0          | 0          | 100        |
| A 47 A3-24 DO YOU CALCULATE TOTAL RESISTANCE FOR PARALLEL RESISTIVE CIRCUITS.                                                                    | 60         | 75         | 0          | 0          | 83         |
| A 48 A3-25 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RESISTIVE CIRCUITS.                                                                       | 90         | 88         | 100        | 0          | 100        |
| A 49 A3-26 DO YOU CALCULATE INDIVIDUAL VOLTAGE DROPS FOR PARALLEL RESISTIVE CIRCUITS.                                                            | 70         | 88         | 0          | 0          | 100        |
| A 50 A3-27 DO YOU CALCULATE INDIVIDUAL BRANCH CURRENTS FOR PARALLEL RESISTIVE CIRCUITS.                                                          | 90         | 88         | 100        | 100        | 83         |
| A 51 A3-28 DO YOU CALCULATE POWER DISSIPATION FOR PARALLEL RESISTIVE CIRCUITS.                                                                   | 100        | 100        | 100        | 100        | 100        |
| B 52 B1-01 DO YOU MEASURE RESISTANCE.                                                                                                            | 0          | 0          | 0          | 0          | 0          |
| B 53 B1-02 DO YOU REPAIR OHMMETERS.                                                                                                              | 100        | 100        | 100        | 100        | 100        |
| B 54 B1-03 DO YOU MEASURE VOLTAGE.                                                                                                               | 0          | 0          | 0          | 0          | 0          |
| B 55 B1-04 DO YOU REPAIR VOLTMETERS.                                                                                                             | 0          | 0          | 0          | 0          | 0          |
| B 56 B1-05 DO YOU REPAIR AMMETERS.                                                                                                               | 100        | 100        | 100        | 100        | 100        |
| B 57 B1-06 DO YOU MEASURE CURRENT.                                                                                                               | 100        | 100        | 100        | 100        | 100        |
| B 58 B1-07 DO YOU USE MULTIMETERS.                                                                                                               | 0          | 0          | 0          | 0          | 0          |
| B 59 B1-08 DO YOU DIRECTLY USE A QUANTITY OF CHARGE CALLED A CULOMB.                                                                             | 100        | 100        | 100        | 100        | 100        |
| B 60 B1-09 DO YOU READ SCHEMATICS.                                                                                                               | 100        | 100        | 100        | 100        | 100        |

MULTIMETER USES

# PCT MINS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPSUM/ PAGE 4

07-TSK

|                                                                                                                                                     | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|---------------------|
| B 61 B2-01 DO YOU USE OR REFER TO THE TERM EFFECTIVE VOLTAGE (RMS)?                                                                                 | 90         | 88         | 100        | 100        | 83         | ALTERNATING CURRENT |
| B 62 B2-02 DO YOU USE OR REFER TO THE TERM PEAK TO PEAK VOLTAGE?                                                                                    | 100        | 100        | 100        | 100        | 100        |                     |
| B 63 B2-03 DO YOU USE OR REFER TO THE TERM AVERAGE VOLTAGE (DC)?                                                                                    | 100        | 100        | 100        | 100        | 100        |                     |
| B 64 B2-04 DO YOU USE OR REFER TO THE TERM WAVE LENGTH?                                                                                             | 90         | 88         | 100        | 100        | 83         |                     |
| B 65 B2-05 DO YOU USE OR REFER TO THE TERM FREQUENCY?                                                                                               | 100        | 100        | 100        | 100        | 100        |                     |
| B 66 B2-06 DO YOU USE OR REFER TO THE TERM INSTANTANEOUS VALUE?                                                                                     | 30         | 13         | 100        | 100        | 0          |                     |
| B 67 B3-01 DO YOU WORK WITH INDUCTORS OR CIRCUITS CONTAINING INDUCTORS, CHOKES, OR CHOKER COILS IN YOUR PRESENT JOB?                                | 40         | 50         | 0          | 100        | 33         |                     |
| B 68 B3-02 DO YOU INSPECT INDUCTORS?                                                                                                                | 50         | 63         | 0          | 100        | 50         |                     |
| B 69 B3-03 DO YOU CLEAN INDUCTORS?                                                                                                                  | 40         | 50         | 0          | 100        | 33         |                     |
| B 70 B3-04 DO YOU ADJUST INDUCTORS?                                                                                                                 | 50         | 63         | 0          | 100        | 50         |                     |
| B 71 B3-05 DO YOU REMOVE OR REPLACE INDUCTORS?                                                                                                      | 50         | 63         | 0          | 100        | 50         |                     |
| B 72 B3-06 DO YOU USE OR REFER TO INDUCTANCE?                                                                                                       | 50         | 63         | 0          | 100        | 50         |                     |
| B 73 B3-07 DO YOU USE OR REFER TO HENRILS?                                                                                                          | 50         | 63         | 0          | 100        | 50         |                     |
| B 74 B3-08 DO YOU USE OR REFER TO INDUCTIVE REACTANCE?                                                                                              | 30         | 38         | 0          | 100        | 17         |                     |
| B 75 B3-09 DO YOU USE OR REFER TO COPPER LOSS IN INDUCTORS?                                                                                         | 0          | 0          | 0          | 0          | 0          |                     |
| B 76 B3-10 DO YOU USE OR REFER TO HYSTERESIS LOSS IN INDUCTORS?                                                                                     | 10         | 13         | 0          | 0          | 0          |                     |
| B 77 B3-11 DO YOU USE OR REFER TO EDUY CUMMENT LOSS IN INDUCTORS                                                                                    | 10         | 13         | 0          | 0          | 0          |                     |
| B 78 B3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTANCE IS PROPORTIONAL TO THE SQUARE OF THE NUMBER OF TURNS OF THE COIL?                | 0          | 0          | 0          | 0          | 0          |                     |
| B 79 B3-13 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE CROSS SECTIONAL AREA OF THE CORE?  | 0          | 0          | 0          | 0          | 0          |                     |
| B 80 B3-14 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS INVERSELY PROPORTIONAL TO ITS LENGTH?                           | 0          | 0          | 0          | 0          | 0          |                     |
| B 81 B3-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE INDUCTANCE OF A COIL IS DIRECTLY PROPORTIONAL TO THE PERMEABILITY OF THE CORE MATERIAL? | 0          | 0          | 0          | 0          | 0          |                     |
| B 82 B3-16 DO YOU CALCULATE INDUCTANCE FOR PARTICULAR INDUCTORS USING FORMULAS?                                                                     | 10         | 13         | 0          | 100        | 0          |                     |
| B 83 B3-17 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTANCE IN SERIES?                                                                          | 0          | 0          | 0          | 0          | 0          |                     |
| B 84 B3-18 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN PARALLEL?                                                                         | 0          | 0          | 0          | 0          | 0          |                     |
| B 85 B3-19 DO YOU CALCULATE THE TOTAL INDUCTANCE FOR INDUCTORS IN SERIES-PARALLEL CIRCUITS?                                                         | 0          | 0          | 0          | 0          | 0          |                     |
| B 86 B3-20 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LAGS VOLTAGE IN AC INDUCTOR CIRCUITS?                                               | 0          | 0          | 0          | 0          | 0          |                     |
| B 87 B3-21 DO YOU CALCULATE INDUCTIVE REACTANCE?                                                                                                    | 0          | 0          | 0          | 0          | 0          |                     |
| B 88 B3-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT INDUCTIVE REACTANCE IS DIRECTLY PROPORTIONAL TO FREQUENCY?                                  | 10         | 13         | 0          | 100        | 0          |                     |
| B 89 B3-23 DO YOU WORK WITH POWER INDUCTORS?                                                                                                        | 30         | 38         | 0          | 100        | 17         |                     |
| B 90 B3-24 DO YOU WORK WITH AUDIO FREQUENCY INDUCTORS?                                                                                              | 50         | 63         | 0          | 100        | 50         |                     |
| B 91 B3-25 DO YOU WORK WITH RADIO FREQUENCY INDUCTORS?                                                                                              | 50         | 63         | 0          | 100        | 50         |                     |

INDUCTORS AND INDUCTIVE REACTANCE

TASK GROUP SUMMARY  
PRINCIPAL MEMBERS PERFORMANCE

0Y-TSK

CAPACITORS AND CAPACITIVE REACTANCE

SPC SPC SPC SPC SPC  
026 027 028 029 031

- C 92 C1-01 DO YOU WORK WITH CAPACITORS OR CIRCUITS CONTAINING CAPACITORS IN YOUR PRESENT JOB.
- C 93 C1-02 DO YOU INSPECT CAPACITORS.
- C 94 C1-03 DO YOU CLEAN CAPACITORS.
- C 95 C1-04 DO YOU ADJUST CAPACITORS.
- C 96 C1-05 DO YOU TEST CAPACITORS.
- C 97 C1-06 DO YOU DISCHARGE CAPACITORS.
- C 98 C1-07 DO YOU REMOVE OR REPLACE CAPACITORS.
- C 99 C1-08 DO YOU USE OR REFER TO DISTRIBUTED CAPACITANCE.
- C 100 C1-09 DO YOU USE OR REFER TO CRITICAL STRESS OF ELECTRONS IN A DIELECTRIC.
- C 101 C1-10 DO YOU USE OR REFER TO FARADS, MICROFARADS, OR PICOFARADS.
- C 102 C1-11 DO YOU USE OR REFER TO CAPACITANCE.
- C 103 C1-12 DO YOU USE OR REFER TO DIELECTRIC CONSTANT
- C 104 C1-13 DO YOU USE OR REFER TO WORKING VOLTAGE RATING OF CAPACITORS.
- C 105 C1-14 DO YOU USE OR REFER TO CAPACITIVE REACTANCE
- C 106 C1-15 DO YOU USE OR REFER TO CAPACITOR COLOR CODES
- C 107 C1-16 DO YOU WORK WITH CAPACITORS IN DC CIRCUITS
- C 108 C1-17 DO YOU WORK WITH CAPACITORS IN AC CIRCUITS
- C 109 C1-18 DO YOU WORK WITH CAPACITORS IN CIRCUITS WITH BOTH DC AND AC
- C 110 C1-19 DO YOU WORK WITH CAPACITORS IN DON'T REMEMBER WHICH CIRCUITS
- C 111 C1-20 DO YOU CALCULATE CAPACITANCE FOR PARTICULAR CAPACITORS USING FORMULAS
- C 112 C1-21 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS DIRECTLY PROPORTIONAL TO THE DIELECTRIC CONSTANT
- C 113 C1-22 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITANCE OF A CAPACITOR IS INVERSELY PROPORTIONAL TO THE DIELECTRIC THICKNESS
- C 114 C1-23 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES
- C 115 C1-24 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN PARALLEL
- C 116 C1-25 DO YOU CALCULATE THE TOTAL CAPACITANCE OF CAPACITORS IN SERIES-PARALLEL CIRCUITS
- C 117 C1-26 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT DOES NOT FLOW THROUGH CAPACITORS. IT ONLY APPEARS TO DO SO
- C 118 C1-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT LEADS VOLTAGE IN AC CAPACITOR CIRCUITS
- C 119 C1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT CAPACITIVE REACTANCE IS INVERSELY PROPORTIONAL TO FREQUENCY
- C 120 C1-29 DO YOU CALCULATE CAPACITIVE REACTANCE

90 88 100 100 83

100 100 100 100 100

80 88 50 100 83

50 63 0 100 50

80 100 0 100 100

90 100 50 100 100

100 100 100 100 100

30 38 0 100 17

0 0 0 0 0

100 100 100 100 100

90 88 100 100 83

20 25 0 0 17

100 100 100 100 100

50 63 0 100 50

80 75 100 100 83

100 100 100 100 100

90 88 100 100 83

100 100 100 100 100

0 0 0 0 0

0 0 0 0 0

30 38 0 0 33

30 38 0 0 33

20 25 0 0 17

20 13 50 0 17

30 25 50 0 33

20 25 0 100 17

20 25 0 100 17

20 25 0 100 17

# PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 6

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

OV-TSK

SPC SPC SPC SPC  
026 027 028 029 031

C 121 C1-30 DO YOU WORK WITH MOTOR-STATOR (VARIABLE) CAPACITORS  
C 122 C1-31 DO YOU WORK WITH COMPRESSION (TRIMMER) CAPACITORS  
C 123 C1-32 DO YOU WORK WITH ELECTROLYTIC (FIXED) CAPACITORS  
C 124 C1-33 DO YOU WORK WITH PAPER (FIXED) CAPACITORS  
C 125 C1-34 DO YOU WORK WITH MICA (FIXED) CAPACITORS  
C 126 C1-35 DO YOU WORK WITH CERAMIC (FIXED) CAPACITORS  
C 127 C1-36 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF CAPACITORS

C 128 C2-01 DO YOU WORK WITH TRANSFORMERS IN YOUR PRESENT JOB  
C 129 C2-02 DO YOU INSPECT TRANSFORMERS  
C 130 C2-03 DO YOU CLEAN TRANSFORMERS  
C 131 C2-04 DO YOU ADJUST TRANSFORMERS  
C 132 C2-05 DO YOU TROUBLESHOOT TRANSFORMERS  
C 133 C2-06 DO YOU REMOVE OR REPLACE COMPLETE TRANSFORMERS  
C 134 C2-07 DO YOU REMOVE OR REPLACE TRANSFORMER PARTS, SUCH AS THE PRIMARY WINDING  
C 135 C2-08 DO YOU MAKE A DISTINCTION BETWEEN MUTUAL INDUCTANCE AND MUTUAL INDUCTANCE (M)  
C 136 C2-09 DO YOU USE THE SYMBOL FOR MUTUAL INDUCTANCE, M  
C 137 C2-10 DO YOU REFER TO OR USE THE COEFFICIENT OF COUPLING WHEN WORKING WITH TRANSFORMERS  
C 138 C2-11 DO YOU CALCULATE TURNS RATIOS FOR TRANSFORMERS USING CURRENT OR VOLTAGE RATIOS  
C 139 C2-12 DO YOU REFER TO REFLECTED IMPEDANCE WHEN WORKING WITH TRANSFORMERS  
C 140 C2-13 DO YOU CALCULATE IMPEDANCE INTERACTIONS FOR TRANSFORMERS  
C 141 C2-14 DO YOU WORK WITH AUTOTRANSFORMERS  
C 142 C2-15 DO YOU WORK WITH POWER TRANSFORMERS  
C 143 C2-16 DO YOU WORK WITH AUDIO TRANSFORMERS  
C 144 C2-17 DO YOU WORK WITH RADIO FREQUENCY TRANSFORMERS  
C 145 C2-18 DO YOU WORK WITH DON'T REMEMBER WHAT TYPE OF TRANSFORMERS  
C 146 C2-19 DO YOU CHECK TRANSFORMERS FOR OPEN WINDINGS BY MEASURING RESISTANCE  
C 147 C2-20 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING RESISTANCE  
C 148 C2-21 DO YOU CHECK TRANSFORMERS FOR SHORTED WINDINGS BY MEASURING OUTPUT VOLTAGES  
C 149 C2-22 DO YOU MEASURE RESISTANCE OF TRANSFORMER WINDINGS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO  
C 150 C2-23 DO YOU MEASURE OUTPUT VOLTAGE OF TRANSFORMERS TO DETERMINE WHETHER A TRANSFORMER HAS A STEP-UP OR STEP-DOWN TURNS RATIO  
C 151 C2-24 DO YOU REFER TO BASIC TRANSFORMER SCHEMATIC SYMBOLS FOR TRANSFORMERS

TRANSFORMERS

# PCT MEMS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GRPSUM2 PAGE 7

DT-75K

|                                                                                                                                 | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|---------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| C 152 C2-25 DO YOU REFER TO MULTIPLE SECONDARY-WINDINGS SCHEMATIC SYMBOLS FOR TRANSFORMERS                                      | 80         | 75         | 100        | 100        | 83         |
| C 153 C2-26 DO YOU REFER TO MULTIPLE TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS                                                     | 80         | 75         | 100        | 100        | 83         |
| C 154 C2-27 DO YOU REFER TO CENTER TAP SCHEMATIC SYMBOLS FOR TRANSFORMERS                                                       | 80         | 75         | 100        | 100        | 83         |
| C 155 C2-28 DO YOU REFER TO AIR CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS                                                         | 40         | 38         | 50         | 100        | 33         |
| C 156 C2-29 DO YOU REFER TO IRON CORE SCHEMATIC SYMBOLS FOR TRANSFORMERS                                                        | 60         | 63         | 50         | 100        | 67         |
| C 157 C2-30 DO YOU REFER TO COMBINATIONS OF THE ABOVE SCHEMATIC SYMBOLS FOR TRANSFORMERS                                        | 60         | 50         | 100        | 100        | 50         |
| C 158 C2-31 DO YOU DETERMINE PHASE RELATIONSHIPS BETWEEN SECONDARY AND PRIMARY VOLTAGES OF TRANSFORMERS USING SCHEMATIC SYMBOLS | 50         | 38         | 100        | 100        | 33         |
| C 159 C2-32 DO YOU DETERMINE OR REFER TO THE TYPE OF CORE IN TRANSFORMERS YOU WORK WITH                                         | 20         | 25         | 0          | 100        | 17         |
| C 160 C2-33 DO YOU REFER TO OR USE THE GENERAL RULE THAT THE TURNS RATIO OF A TRANSFORMER IS EQUAL TO THE VOLTAGE RATIO         | 0          | 0          | 0          | 0          | 0          |
| C 161 C2-34 DO YOU USE OR REFER TO STEP-UP OR STEP-DOWN RATIOS FOR TRANSFORMERS                                                 | 40         | 50         | 0          | 100        | 50         |
| C 162 C2-35 DO YOU CALCULATE VOLTAGE RATIOS FOR TRANSFORMERS USING TURNS RATIOS                                                 | 0          | 0          | 0          | 0          | 0          |
| C 163 C2-36 DO YOU CALCULATE CURRENT RATIOS FOR TRANSFORMERS USING TURNS RATIOS                                                 | 0          | 0          | 0          | 0          | 0          |
| C 164 C2-37 DOES YOUR JOB INVOLVE ANY TASKS DEALING WITH THREE PHASE TRANSFORMERS                                               | 50         | 38         | 100        | 100        | 33         |
| C 165 C2-38 DO YOU INSPECT THREE PHASE TRANSFORMERS                                                                             | 50         | 38         | 100        | 100        | 33         |
| C 166 C2-39 DO YOU CLEAN OR LUBRICATE THREE PHASE TRANSFORMERS                                                                  | 30         | 13         | 100        | 0          | 17         |
| C 167 C2-40 DO YOU ADJUST THREE PHASE TRANSFORMERS                                                                              | 20         | 0          | 100        | 0          | 0          |
| C 168 C2-41 DO YOU TROUBLESHOOT THREE PHASE TRANSFORMERS                                                                        | 50         | 38         | 100        | 100        | 33         |
| C 169 C2-42 DO YOU REMOVE OR REPLACE COMPLETE THREE PHASE TRANSFORMERS                                                          | 50         | 38         | 100        | 100        | 33         |
| C 170 C2-43 DO YOU REMOVE OR REPLACE THREE PHASE TRANSFORMER PARTS SUCH AS WINDINGS                                             | 0          | 0          | 0          | 0          | 0          |
| C 171 C3-01 DO YOU USE OR REFER TO PERMANENT MAGNETS                                                                            | 60         | 50         | 100        | 100        | 50         |
| C 172 C3-02 DO YOU USE OR REFER TO TEMPORARY MAGNETS                                                                            | 10         | 13         | 0          | 0          | 17         |
| C 173 C3-03 DO YOU USE OR REFER TO RETENTIVITY OF MAGNETIC MATERIALS                                                            | 0          | 0          | 0          | 0          | 0          |
| C 174 C3-04 DO YOU USE OR REFER TO RELUCTANCE OF MAGNETIC MATERIALS                                                             | 0          | 0          | 0          | 0          | 0          |
| C 175 C3-05 DO YOU USE OR REFER TO PERMEABILITY OF MAGNETIC MATERIALS                                                           | 0          | 0          | 0          | 0          | 0          |
| C 176 C3-06 DO YOU USE OR REFER TO RESIDUAL MAGNETISM                                                                           | 0          | 0          | 0          | 0          | 0          |
| C 177 C3-07 DO YOU USE OR REFER TO MAGNETIC LINES OF FORCE OR FLUX                                                              | 10         | 13         | 0          | 0          | 17         |
| C 178 C3-08 DO YOU USE OR REFER TO WEBER'S THEORY OF MAGNETISM                                                                  | 0          | 0          | 0          | 0          | 0          |

MAGNETISM

# PCT MHS RESPONDING 'YES' BY SELECTED GRPS

GPSUMZ PAGE 8

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC  
026 027 028 029 031

C 179 C3-09 DO YOU USE OR REFER TO DUMAIN THEORY OF MAGNETISM  
C 180 C3-10 DO YOU USE OR REFER TO MAGNETIC INDUCTION  
C 181 C3-11 DO YOU USE OR REFER TO FLUX DENSITY  
C 182 C3-12 DO YOU USE OR REFER TO THE GENERAL RULE THAT FOR  
MAGNETIC POLES, LIKE POLES REPEL AND UNLIKE POLES ATTRACT  
C 183 C3-13 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE  
DIRECTION OF MAGNETIC FIELDS ABOUT STRAIGHT WIRES  
C 184 C3-14 DO YOU USE THE LEFT HAND THUMB RULE TO FIND THE NORTH  
POLE OF A CURRENT CARRYING COIL

U 185 D1-01 DO YOU WORK WITH RCL MCL CIRCUITS IN YOUR

PRESENT JOB

U 186 D1-02 DO YOU USE OR REFER TO VECTORS WHEN WORKING WITH RCL  
CIRCUITS

U 187 D1-03 DO YOU USE OR REFER TO PYTHAGOREAN THEOREM WHEN  
WORKING WITH RCL CIRCUITS

U 188 D1-04 DO YOU USE OR REFER TO SINE WHEN WORKING WITH RCL  
CIRCUITS

U 189 D1-05 DO YOU USE OR REFER TO COSINE WHEN WORKING WITH RCL  
CIRCUITS

U 190 D1-06 DO YOU USE OR REFER TO TANGENT WHEN WORKING WITH RCL  
CIRCUITS

U 191 D1-07 DO YOU USE OR REFER TO WATTS WHEN WORKING WITH RCL  
CIRCUITS

U 192 D1-08 DO YOU USE OR REFER TO TRUE POWER (PT) WHEN WORKING  
WITH RCL CIRCUITS

U 193 D1-09 DO YOU USE OR REFER TO MAXIMUM POWER (PM) WHEN  
WORKING WITH RCL CIRCUITS

U 194 D1-10 DO YOU USE OR REFER TO AVERAGE POWER (PAVE) WHEN  
WORKING WITH RCL CIRCUITS

U 195 D1-11 DO YOU USE OR REFER TO APPARENT POWER (PA) WHEN  
WORKING WITH RCL CIRCUITS

U 196 D1-12 DO YOU USE OR REFER TO POWER FACTOR (PF) WHEN WORKING  
WITH RCL CIRCUITS

U 197 D1-13 DO YOU USE OR REFER TO RESONANT CIRCUITS WHEN  
WORKING WITH RCL CIRCUITS

U 198 D1-14 DO YOU USE OR REFER TO BANDWIDTH WHEN WORKING WITH  
RCL CIRCUITS

U 199 D1-15 DO YOU USE OR REFER TO SELECTIVITY WHEN WORKING WITH  
RCL CIRCUITS

U 200 D1-16 DO YOU USE OR REFER TO RESONANT FREQUENCY WHEN  
WORKING WITH RCL CIRCUITS

U 201 D1-17 DO YOU USE OR REFER TO HALF POWER POINTS WHEN  
WORKING WITH RCL CIRCUITS

U 202 D1-18 DO YOU USE OR REFER TO BANDPASS REGION WHEN WORKING  
WITH RCL CIRCUITS

U 203 D1-19 DO YOU USE OR REFER TO CIRCUIT Q WHEN WORKING WITH  
RCL CIRCUITS

RCL CIRCUITS

70 63 100 100 67

10 13 0 0 17

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

0 0 0 0 0

30 38 0 100 33

30 38 0 100 33

40 38 50 100 33

40 25 100 100 17

10 13 0 100 0

10 13 0 0 17

30 38 0 100 33

30 38 0 100 33

30 38 0 100 33

30 38 0 100 33

20 25 0 100 17

30 38 0 100 33

20 25 0 100 17

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

## DY-TSK

|                                                                                                                                                          | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| U 204 01-20 DO YOU USE OR REFER TO TASK CIRCUITS WHEN WORKING WITH RCL CIRCUITS                                                                          | 30         | 38         | 0          | 100        | 33         |
| U 205 01-21 DO YOU DETERMINE VALUES OF TRIGONOMETRIC FUNCTIONS USING FORMULAS                                                                            | 10         | 13         | 0          | 0          | 17         |
| U 206 01-22 DO YOU DRAW VOLTAGE, CURRENT, OR IMPEDANCE VECTOR DIAGRAMS FOR CIRCUITS                                                                      | 10         | 13         | 0          | 0          | 17         |
| U 207 01-23 DO YOU CALCULATE TOTAL IMPEDANCE FOR CAPACITIVE CIRCUITS                                                                                     | 10         | 13         | 0          | 0          | 17         |
| U 208 01-24 DO YOU CALCULATE PHASE ANGLES BETWEEN IMPEDANCE AND RESISTANCE IN CAPACITIVE CIRCUITS                                                        | 0          | 0          | 0          | 0          | 0          |
| U 209 01-25 DO YOU CALCULATE TOTAL IMPEDANCE FOR SERIES RCL CIRCUITS                                                                                     | 0          | 0          | 0          | 0          | 0          |
| U 210 01-26 DO YOU CALCULATE IMPEDANCE ANGLES FOR SERIES RCL CIRCUITS                                                                                    | 0          | 0          | 0          | 0          | 0          |
| U 211 01-27 DO YOU CALCULATE APPARENT POWER (PA) FOR SERIES RCL CIRCUITS                                                                                 | 0          | 0          | 0          | 0          | 0          |
| U 212 01-28 DO YOU CALCULATE TRUE POWER (PT) FOR SERIES RCL CIRCUITS                                                                                     | 0          | 0          | 0          | 0          | 0          |
| U 213 01-29 DO YOU CALCULATE POWER FACTORS (PF) FOR SERIES RCL CIRCUITS                                                                                  | 0          | 0          | 0          | 0          | 0          |
| U 214 01-30 DO YOU CALCULATE TOTAL CURRENT FOR PARALLEL RCL CIRCUITS                                                                                     | 10         | 13         | 0          | 0          | 17         |
| U 215 01-31 DO YOU CALCULATE IMPEDANCE ANGLES FOR PARALLEL RCL CIRCUITS                                                                                  | 0          | 0          | 0          | 0          | 0          |
| U 216 01-32 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING THE ASSUMED VOLTAGE METHOD                                                  | 0          | 0          | 0          | 0          | 0          |
| U 217 01-33 DO YOU CALCULATE TOTAL IMPEDANCE FOR PARALLEL RCL CIRCUITS USING OHM'S LAW                                                                   | 10         | 13         | 0          | 0          | 17         |
| U 218 01-34 DO YOU CHECK CAPACITORS USING OHMMETERS                                                                                                      | 60         | 63         | 50         | 100        | 67         |
| U 219 01-35 DO YOU CHECK CAPACITORS USING SUBSTITUTION                                                                                                   | 40         | 50         | 0          | 0          | 67         |
| U 220 01-36 DO YOU CHECK INDUCTORS USING OHMMETERS                                                                                                       | 50         | 38         | 100        | 100        | 33         |
| U 221 01-37 DO YOU CHECK INDUCTORS USING SUBSTITUTION                                                                                                    | 20         | 25         | 0          | 0          | 33         |
| U 222 01-38 DO YOU USE OR REFER TO THE GENERAL RULE THAT $\text{THETA} = \text{U} \cdot \text{PF} = 1$ AND $\text{PA} = \text{PT}$ FOR RESONANT CIRCUITS | 0          | 0          | 0          | 0          | 0          |
| U 223 01-39 DO YOU CALCULATE RESONANT FREQUENCIES FOR RCL CIRCUITS                                                                                       | 10         | 13         | 0          | 100        | 0          |
| U 224 01-40 DO YOU USE OR REFER TO THE GENERAL RULE THAT IMPEDANCE IS MINIMUM AND CURRENT MAXIMUM AT THE RESONANT FREQUENCY FOR SERIES RCL CIRCUITS      | 10         | 13         | 0          | 100        | 0          |
| U 225 01-41 DO YOU USE OR REFER TO THE GENERAL RULE THAT LINE CURRENT IS MINIMUM AND IMPEDANCE MAXIMUM AT RESONANT FREQUENCY FOR PARALLEL RCL CIRCUITS   | 0          | 0          | 0          | 0          | 0          |
| U 226 01-42 DO YOU USE OR REFER TO THE GENERAL RULE THAT HALF POWER POINTS ARE AT 70.7 PERCENT OF THE PEAK CURRENT VALUE                                 | 30         | 25         | 50         | 100        | 17         |
| U 227 01-43 DO YOU USE OR REFER TO THE GENERAL RULE THAT BANDWIDTH IS INVERSELY PROPORTIONAL TO Q                                                        | 10         | 13         | 0          | 100        | 0          |
| U 228 01-44 DO YOU DETERMINE HOW CHANGES IN FREQUENCY, RESISTANCE, CAPACITANCE, OR INDUCTANCE WILL AFFECT CURRENT OR PHASE ANGLES FOR RCL CIRCUITS       | 10         | 13         | 0          | 100        | 0          |

PCT MEMBERS RESPONDING "YES" BY SELECTED GRPS

UPSUM: PAGE 10

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

UY-TSK

SERIES AND PARALLEL RESONANCE  
(TIME CONSTANTS)

SPC 026 SPC 027 SPC 028 SPC 029 SPC 031

0 229 02-01 IN YOUR PRESENT JOB, DO YOU WORK WITH, USE, OR REFER  
TO SERIES OR PARALLEL RESONANT CIRCUITS OR TIME CONSTANTS  
0 230 02-02 DO YOU WORK WITH, USE, OR REFER TO TIME CONSTANTS  
0 231 02-03 DO YOU WORK WITH, USE, OR REFER TO AVAILABLE VOLTAGE  
0 232 02-04 DO YOU WORK WITH, USE, OR REFER TO TRANSIENT  
INTERVALS  
0 233 02-05 DO YOU USE OR REFER TO THE GENERAL RULE THAT A  
CAPACITOR IS FULLY CHARGED (OR DISCHARGED) AFTER FIVE (5)  
TIME CONSTANTS (TC)  
0 234 02-06 DO YOU USE OR REFER TO UNIVERSAL TIME CONSTANT CHARTS  
0 235 02-07 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE  
CIRCUIT CURRENT OR COMPONENT VOLTAGES AFTER A SPECIFIC  
TIME FOR RC OR LR CIRCUITS  
0 236 02-08 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE THE  
TIME REQUIRED FOR CIRCUIT CURRENT OR COMPONENT VOLTAGES TO  
REACH SPECIFIC VALUES FOR RC OR LR CIRCUITS  
0 237 02-09 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE  
COMPONENT VALUES REQUIRED FOR CIRCUIT CURRENT AND  
VOLTAGES TO REACH SPECIFIC VALUES IN SPECIFIC  
TIMES  
0 238 02-10 DO YOU USE OR REFER TO THE GENERAL RULE THAT CURRENT  
IN LR CIRCUITS REACHES ITS MINIMUM VALUE (OR ZERO) AFTER  
FIVE (5) TIME CONSTANTS  
0 239 03-01 DO YOU WORK WITH CIRCUITS USED AS FILTERS IN YOUR  
PRESENT JOB  
0 240 03-02 DO YOU INSPECT FILTER CIRCUITS  
0 241 03-03 DO YOU CLEAN FILTER CIRCUITS  
0 242 03-04 DO YOU ALIGN OR ADJUST FILTER CIRCUITS  
0 243 03-05 DO YOU TROUBLESHOOT TO THE FILTER CIRCUIT LEVEL  
0 244 03-06 DO YOU TROUBLESHOOT TO COMPONENT PARTS  
0 245 03-07 DO YOU REMOVE OR REPLACE THE COMPLETE FILTER CIRCUIT  
0 246 03-08 DO YOU REMOVE OR REPLACE FILTER CIRCUIT COMPONENT  
PARTS  
0 247 03-09 DO YOU WORK WITH LOW PASS FILTERS  
0 248 03-10 DO YOU WORK WITH HIGH PASS FILTERS  
0 249 03-11 DO YOU WORK WITH BANDPASS FILTERS  
0 250 03-12 DO YOU WORK WITH HAND-REJECT FILTERS  
0 251 03-13 DON'T REMEMBER WHICH TYPE OF FILTER YOU WORK WITH  
0 252 03-14 DO YOU WORK WITH L-SECTION FILTER CONFIGURATION  
0 253 03-15 DO YOU WORK WITH T-SECTION FILTER CONFIGURATION  
0 254 03-16 DO YOU WORK WITH PI-SECTION FILTER CONFIGURATION  
0 255 03-17 DON'T REMEMBER WHICH TYPE FILTER CONFIGURATION  
0 256 03-18 DO THE FILTERS YOU WORK WITH USE PARALLEL RESONANT  
CIRCUITS  
0 257 03-19 DO THE FILTERS YOU WORK WITH USE SERIES-PARALLEL  
CIRCUITS  
0 258 03-20 DO THE FILTERS YOU WORK WITH USE SERIES RESONANT  
CIRCUITS

80 100 0 100 100

70 88 0 100 63

40 50 0 0 50

50 63 0 100 50

60 75 0 100 67

60 75 0 100 67

70 88 0 100 83

60 75 0 100 67

50 63 0 100 50

50 63 0 100 50

30 38 0 100 17

30 38 0 0 50

40 50 0 100 33

40 50 0 100 33

10 13 0 0 17

30 38 0 100 17

40 50 0 100 33

30 38 0 100 17

FILTERS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

0Y-TSK

D 459 D3-21 DON'T REMEMBER WHICH TYPE OF BASIC CIRCUIT  
D 460 D3-22 DO YOU USE EQUATIONS OR FORMULAS TO DETERMINE  
CAPACITANCE OR INDUCTANCE VALUES REQUIRED FOR SPECIFIC  
FILTERS

SPC SPC SPC SPC SPC  
U26 U27 U28 U29 U31

30 38 0 0 50  
20 25 0 0 17

E 261 E1-01 DO YOU WORK WITH COUPLING DEVICES IN YOUR PRESENT JOB  
E 262 E1-02 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO  
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH AC  
COUPLING

30 38 0 100 33  
40 50 0 100 50

COUPLING

E 263 E1-03 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO  
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH  
IMPEDANCE COUPLING

40 50 0 100 50

E 264 E1-04 DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO  
THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH  
TRANSFORMER COUPLING

30 38 0 100 33

E 265 E1-05 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS  
WHICH PERFORM AC COUPLING

40 50 0 100 50

E 266 E1-06 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS  
WHICH PERFORM IMPEDANCE COUPLING

40 50 0 100 50

E 267 E1-07 DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS  
WHICH PERFORM TRANSFORMER COUPLING

30 36 0 100 33

E 268 E1-08 DO YOU WORK WITH DIRECTLY COUPLED CIRCUITS  
E 269 E1-09 DO YOU WORK WITH CAPACITIVE-RESISTIVE COUPLED  
CIRCUITS

40 50 0 100 50  
40 50 0 100 50

E 270 E1-10 DO YOU WORK WITH CAPACITIVE-INDUCTIVE COUPLED  
CIRCUITS

30 34 0 100 33

E 271 E1-11 DO YOU WORK WITH TRANSFORMER COUPLED CIRCUITS  
E 272 E1-12 DON'T REMEMBER WHICH TYPE OF COUPLING CIRCUITS

30 34 0 100 33  
0 0 0 0 0

E 273 E2-01 IN YOUR PRESENT JOB, DO YOU PERFORM SOLDERING  
TECHNIQUES OR INSPECT OR EVALUATE SOLDERED CONNECTIONS

100 100 100 100 100

E 274 E2-02 DO YOU SELECT TYPE OF SOLDER TO USE  
E 275 E2-03 DO YOU ADD FLUX TO CONNECTIONS

100 100 100 100 100  
100 100 100 100 100

E 276 E2-04 DO YOU CLEAN CONNECTIONS USING SOLVENTS  
E 277 E2-05 DO YOU STRIP INSULATION FROM WIRES

100 100 100 100 100  
100 100 100 100 100

E 278 E2-06 DO YOU CONNECT OR DISCONNECT HEAT SINKS  
E 279 E2-07 DO YOU BEND OR SHAPE WIRES OR LEADS

100 100 100 100 100  
100 100 100 100 100

E 280 E2-08 DO YOU CUT WIRES  
E 281 E2-09 DO YOU FILE OR SHAPE SOLDERING IRON TIPS

100 100 100 100 100  
100 100 100 100 100

SOLDERING

E 282 E2-10 DO YOU TIN SOLDERING IRON TIPS  
E 283 E2-11 DO YOU CLEAN SOLDERING IRON TIPS

100 100 100 100 100  
100 100 100 100 100

E 284 E2-12 DO YOU CLEAN ELECTRICAL SURFACES USING EMASERS  
E 285 E2-13 DO YOU TIN OR PRE-TIN CO-DUCTORS

90 88 100 100 83  
100 100 100 100 100

E 286 E2-14 DO YOU INSPECT SOLDERED CONNECTIONS  
E 287 E2-15 DO YOU DESOLDER CONNECTIONS BY WICKING

100 100 100 100 100  
90 88 100 0 100

E 288 E2-16 DO YOU DESOLDER CONNECTIONS USING VACUUM DESOLDERING  
TOOLS

90 100 0 100 100

E 289 E2-17 DO YOU CUT COMPONENT LEADS TO REMOVE COMPONENTS  
E 290 E2-18 DO YOU CRUSH COMPONENTS FOR REMOVAL

80 75 100 0 83  
40 50 0 100 50

PCT HHS RESPONDING \*YES\* BY SELECTED GNPS

UPSOM2 PAGE 12

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DT-TSK

|                                                                                                                                    | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| E 291 E2-19 DO YOU MAKE HANDWIRE CONNECTIONS                                                                                       | 100        | 100        | 100        | 100        | 100        |
| E 292 E2-20 DO YOU MAKE PRINTED CIRCUIT BOARD CONNECTIONS                                                                          | 100        | 100        | 100        | 100        | 100        |
| E 293 E2-21 DO YOU SOLDER PASSIVE COMPONENTS SUCH AS RESISTORS ON CAPACITORS ON PRINTED CIRCUIT BOARDS                             | 100        | 100        | 100        | 100        | 100        |
| E 294 E2-22 DO YOU SOLDER ACTIVE COMPONENTS SUCH AS SOLID-STATE DIODES OR TRANSISTORS ON PRINTED CIRCUIT BOARDS                    | 100        | 100        | 100        | 100        | 100        |
| E 295 E3-01 DO YOU WORK WITH RELAYS ON YOUR PRESENT JOB                                                                            | 100        | 100        | 100        | 100        | 100        |
| E 296 E3-02 DO YOU ADJUST RELAYS                                                                                                   | 30         | 38         | 0          | 0          | 50         |
| E 297 E3-03 DO YOU CLEAN RELAYS                                                                                                    | 40         | 38         | 50         | 0          | 50         |
| E 298 E3-04 DO YOU INSPECT RELAYS                                                                                                  | 40         | 88         | 50         | 100        | 100        |
| E 299 E3-05 DO YOU REMOVE OR REPLACE COMPLETE RELAYS                                                                               | 100        | 100        | 100        | 100        | 100        |
| E 300 E3-06 DO YOU REMOVE OR REPLACE PARTS OF RELAYS                                                                               | 0          | 0          | 0          | 0          | 0          |
| E 301 E3-07 DO YOU TROUBLESHOOT RELAYS                                                                                             | 90         | 88         | 100        | 100        | 100        |
| E 302 E3-08 DO YOU STRAIGHTEN RELAY CONTACTS                                                                                       | 40         | 25         | 100        | 0          | 33         |
| E 303 E3-09 DO YOU PERFORM TASKS ON RELAY CONTACTS                                                                                 | 50         | 50         | 50         | 0          | 50         |
| E 304 E3-10 DO YOU PERFORM TASKS ON RELAY COILS                                                                                    | 0          | 0          | 0          | 0          | 0          |
| E 305 E3-11 DO YOU PERFORM TASKS ON RELAY COILS                                                                                    | 0          | 0          | 0          | 0          | 0          |
| E 306 E3-12 DO YOU PERFORM TASKS ON RELAY ARMATURES                                                                                | 0          | 0          | 0          | 0          | 0          |
| E 307 E3-13 DO YOU PERFORM TASKS ON RELAY SPRINGS                                                                                  | 0          | 0          | 0          | 0          | 0          |
| E 308 E3-14 DO YOU USE OR REFER TO SINGLE POLE SINGLE THROW (SPST), NORMALLY OPEN (NO) SCHEMATIC SYMBOLS FOR RELAYS                | 80         | 75         | 100        | 100        | 67         |
| E 309 E3-15 DO YOU USE OR REFER TO SINGLE POLE SINGLE THROW (SPST), NORMALLY CLOSED (NC) SCHEMATIC SYMBOLS FOR RELAYS              | 80         | 75         | 100        | 100        | 67         |
| E 310 E3-16 DO YOU USE OR REFER TO SINGLE POLE DOUBLE THROW (SPDT) SCHEMATIC SYMBOLS FOR RELAYS                                    | 80         | 75         | 100        | 100        | 67         |
| E 311 E3-17 DO YOU USE OR REFER TO DOUBLE POLE DOUBLE THROW (DPDT) SCHEMATIC SYMBOLS FOR RELAYS                                    | 100        | 100        | 100        | 100        | 100        |
| E 312 E3-18 DO YOU USE OR REFER TO OTHER RELAY SYMBOLS SCHEMATIC SYMBOLS FOR RELAYS                                                | 90         | 88         | 100        | 100        | 83         |
| E 313 E3-19 DO YOU CHECK ELECTRICAL CONTINUITY OF COILS BY MEASURING RESISTANCE                                                    | 90         | 88         | 100        | 100        | 83         |
| F 314 F1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS DEALING WITH MICROPHONES                                                 | 10         | 13         | 0          | 0          | 17         |
| F 315 F1-02 DO YOU INSPECT MICROPHONES                                                                                             | 10         | 13         | 0          | 0          | 17         |
| F 316 F1-03 DO YOU CLEAN MICROPHONES                                                                                               | 10         | 13         | 0          | 0          | 17         |
| F 317 F1-04 DO YOU OPERATE MICROPHONES                                                                                             | 10         | 13         | 0          | 0          | 17         |
| F 318 F1-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS ON MICROPHONES | 0          | 0          | 0          | 0          | 0          |
| F 319 F1-06 DO YOU TROUBLESHOOT DOWN TO MICROPHONE PARTS                                                                           | 10         | 13         | 0          | 0          | 17         |
| F 320 F1-07 DO YOU REMOVE OR REPLACE COMPLETE MICROPHONES                                                                          | 10         | 13         | 0          | 0          | 17         |
| F 321 F1-08 DO YOU REMOVE OR REPLACE MICROPHONE PARTS                                                                              | 10         | 13         | 0          | 0          | 17         |
| F 322 F1-09 DO YOU PERFORM TASKS ON CARBON MICROPHONES                                                                             | 0          | 0          | 0          | 0          | 0          |
| F 323 F1-10 DO YOU PERFORM TASKS ON CAPACITOR MICROPHONES                                                                          | 0          | 0          | 0          | 0          | 0          |
| F 324 F1-11 DO YOU PERFORM TASKS ON CRYSTAL MICROPHONES                                                                            | 0          | 0          | 0          | 0          | 0          |
| F 325 F1-12 DO YOU PERFORM TASKS ON DYNAMIC MICROPHONES                                                                            | 10         | 13         | 0          | 0          | 17         |
| F 326 F1-13 DO YOU PERFORM TASKS ON VELOCITY RIBBON MICROPHONES                                                                    | 0          | 0          | 0          | 0          | 0          |

RELAYS

MICROPHONES

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

| DY-TSK |                                                                                                                                                                   | SPC<br>U26 | SPC<br>U27 | SPC<br>U28 | SPC<br>U29 | SPC<br>U31 |                      |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|----------------------|
| F 327  | F2-01 IN YOUR PRESENT JOB: DO YOU PERFORM ANY TASKS DEALING WITH SPEAKERS                                                                                         | 20         | 25         | 0          | 0          | 33         | SPEAKERS             |
| F 328  | F2-02 DO YOU INSPECT SPEAKERS                                                                                                                                     | 20         | 25         | 0          | 0          | 33         |                      |
| F 329  | F2-03 DO YOU CLEAN SPEAKERS                                                                                                                                       | 20         | 25         | 0          | 0          | 33         |                      |
| F 330  | F2-04 DO YOU UPDATE SPEAKERS                                                                                                                                      | 20         | 25         | 0          | 0          | 33         |                      |
| F 331  | F2-05 DO YOU TROUBLESHOOT AS FAR AS CHECKING WIRE CONNECTIONS BUT DO NOT TROUBLESHOOT DOWN TO COMPONENT PARTS OF SPEAKERS                                         | 10         | 13         | 0          | 0          | 17         |                      |
| F 332  | F2-06 DO YOU TROUBLESHOOT DOWN TO SPEAKER PARTS                                                                                                                   | 10         | 13         | 0          | 0          | 17         | OSCILLOSCOPES        |
| F 333  | F2-07 DO YOU REMOVE OR REPLACE COMPLETE SPEAKERS                                                                                                                  | 20         | 25         | 0          | 0          | 33         |                      |
| F 334  | F2-08 DO YOU REMOVE OR REPLACE SPEAKER PARTS                                                                                                                      | 10         | 13         | 0          | 0          | 17         |                      |
| F 335  | F2-09 DO YOU PERFORM ANY TASKS ON SPEAKER CONES                                                                                                                   | 0          | 0          | 0          | 0          | 0          |                      |
| F 336  | F2-10 DO YOU PERFORM ANY TASKS ON SPEAKER SPIDERS                                                                                                                 | 0          | 0          | 0          | 0          | 0          |                      |
| F 337  | F2-11 DO YOU PERFORM ANY TASKS ON SPEAKER FIELD COILS                                                                                                             | 10         | 13         | 0          | 0          | 17         |                      |
| F 338  | F2-12 DO YOU PERFORM ANY TASKS ON SPEAKER VOICE COILS                                                                                                             | 10         | 13         | 0          | 0          | 17         |                      |
| F 339  | F2-13 DO YOU PERFORM ANY TASKS ON SPEAKER PERMANENT MAGNETS                                                                                                       | 0          | 0          | 0          | 0          | 0          |                      |
| F 340  | F2-14 DO YOU PERFORM ANY TASKS ON SPEAKER ELECTROMAGNETS                                                                                                          | 0          | 0          | 0          | 0          | 0          |                      |
| F 341  | F2-15 DO YOU PERFORM ANY TASKS ON SPEAKER SOFT IRON CONES                                                                                                         | 0          | 0          | 0          | 0          | 0          |                      |
| F 342  | F3-01 DO YOU USE OSCILLOSCOPES IN YOUR PRESENT JOB                                                                                                                | 100        | 100        | 100        | 100        | 100        |                      |
| F 343  | F3-02 DO YOU USE OSCILLOSCOPES TO PERFORM OPERATIONAL CHECKS                                                                                                      | 100        | 100        | 100        | 100        | 100        |                      |
| F 344  | F3-03 DO YOU USE OSCILLOSCOPES TO PERFORM ALIGNMENTS OR ADJUSTMENTS                                                                                               | 100        | 100        | 100        | 100        | 100        |                      |
| F 345  | F3-04 DO YOU USE OSCILLOSCOPES TO TROUBLESHOOT ELECTRONIC CIRCUITS                                                                                                | 100        | 100        | 100        | 100        | 100        |                      |
| F 346  | F3-05 DO YOU USE OSCILLOSCOPES TO MEASURE FREQUENCY                                                                                                               | 100        | 100        | 100        | 100        | 100        |                      |
| F 347  | F3-06 DO YOU USE OSCILLOSCOPES TO MEASURE TIME                                                                                                                    | 100        | 100        | 100        | 100        | 100        |                      |
| F 348  | F3-07 DO YOU USE OSCILLOSCOPES TO OBSERVE LISAJOUS PATTERNS                                                                                                       | 30         | 38         | 0          | 100        | 17         |                      |
| F 349  | F3-08 DO YOU USE OSCILLOSCOPES TO OBSERVE SIGNALS WHILE UTILIZING ATTENUATOR PROBES                                                                               | 90         | 88         | 100        | 100        | 83         |                      |
| F 350  | F3-09 DO YOU USE OSCILLOSCOPES TO MAKE FREQUENCY OR TIME MEASUREMENTS USING DELAY TIME MULTIPLIERS                                                                | 80         | 75         | 100        | 100        | 67         |                      |
| F 351  | F3-10 DO YOU USE OSCILLOSCOPES TO MEASURE AC VOLTAGE                                                                                                              | 90         | 86         | 100        | 100        | 83         |                      |
| F 352  | F3-11 DO YOU USE OSCILLOSCOPES TO MEASURE OR OBSERVE SIGNALS AFTER FIRST ADJUSTING THE GAIN AND DC BAL CONTROLS                                                   | 70         | 63         | 100        | 100        | 50         |                      |
| F 353  | F3-12 DO YOU USE OSCILLOSCOPES TO MEASURE DC VOLTAGE                                                                                                              | 100        | 100        | 100        | 100        | 100        |                      |
| G 354  | G1-01 DO YOU WORK WITH SEMICONDUCTOR DIODES IN YOUR PRESENT JOB                                                                                                   | 100        | 100        | 100        | 100        | 100        | SEMICONDUCTOR DIODES |
| G 355  | G1-02 DO YOU INSPECT DIODES                                                                                                                                       | 90         | 88         | 100        | 100        | 100        |                      |
| G 356  | G1-03 DO YOU REMOVE OR REPLACE DIODES                                                                                                                             | 100        | 100        | 100        | 100        | 100        |                      |
| G 357  | G1-04 DO YOU CHECK DIODES USING AN INSTRUMENT                                                                                                                     | 90         | 100        | 50         | 100        | 100        |                      |
| G 358  | G1-05 DO YOU USE ENERGY LEVEL DIAGRAMS IN YOUR WORK WITH DIODES                                                                                                   | 0          | 0          | 0          | 0          | 0          |                      |
| G 359  | G1-06 DO YOU USE PN JUNCTION DIODE CHARACTERISTIC CURVES, TOGETHER WITH VALUES OF FORWARD AND REVERSE BIAS VOLTAGE, TO COMPUTE FORWARD OR REVERSE LIAS RESISTANCE | 10         | 13         | 0          | 0          | 17         | SEMICONDUCTOR DIODES |
| G 360  | G1-07 DO YOU COMPUTE FORWARD OR REVERSE BIAS RESISTANCE FOR DIODES                                                                                                | 10         | 13         | 0          | 0          | 17         |                      |

# PCT MEMS RESPONDING +YES+ BY SELECTED GRPS

WPSUMZ PAGE 14

## TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

0Y-TSK

|                                                                                                                                                                                                                   | SPC<br>02% | SPC<br>U27 | SPC<br>U28 | SPC<br>U29 | SPC<br>U31 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| 6 361 G1-08 DO YOU USE OR REFER TO THE GENERAL RULE THAT TEMPERATURE CAN AFFECT THE OPERATION OF DIODES                                                                                                           | 50         | 50         | 50         | 0          | 50         |
| 6 362 G1-09 DO YOU IDENTIFY SEMICONDUCTOR DIODES AS OPPOSED TO OTHER ELECTRONIC COMPONENTS, SUCH AS RESISTORS, BASED ON THEIR PHYSICAL APPEARANCE                                                                 | 100        | 100        | 100        | 100        | 100        |
| 6 363 G1-10 DO YOU REFER TO OR DO YOU DETERMINE THE GENERAL EFFECTS OF DOPING ON CURRENT FLOW                                                                                                                     | 0          | 0          | 0          | 0          | 0          |
| 6 364 G1-11 DO YOU USE OR REFER TO MEASUREMENTS OF FORWARD BIAS RESISTANCE                                                                                                                                        | 60         | 75         | 0          | 100        | 83         |
| 6 365 G1-12 DO YOU USE OR REFER TO DIODE COLOR CODING                                                                                                                                                             | 40         | 50         | 0          | 100        | 50         |
| 6 366 G1-13 DO YOU USE OR REFER TO CENTRIFUGAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS                                                                                                                     | 0          | 0          | 0          | 0          | 0          |
| 6 367 G1-14 DO YOU USE OR REFER TO CENTRIPETAL FORCE OF AN ELECTRON IN ORBIT AROUND A NUCLEUS                                                                                                                     | 0          | 0          | 0          | 0          | 0          |
| 6 368 G1-15 DO YOU USE OR REFER TO DIODE NUMBERING SYSTEM, SUCH AS IN 538                                                                                                                                         | 90         | 100        | 50         | 100        | 100        |
| 6 369 G1-16 DO YOU USE OR REFER TO KINETIC ENERGY OF AN ELECTRON MOVING IN ORBIT                                                                                                                                  | 0          | 0          | 0          | 0          | 0          |
| 6 370 G1-17 DO YOU USE OR REFER TO POTENTIAL ENERGY OF AN ELECTRON MOVING IN ORBIT                                                                                                                                | 0          | 0          | 0          | 0          | 0          |
| 6 371 G1-18 DO YOU USE OR REFER TO MEASUREMENTS OF REVERSE BIAS RESISTANCE                                                                                                                                        | 60         | 75         | 0          | 0          | 100        |
| 6 372 G1-19 DO YOU USE OR REFER TO NUMBER OF ELECTRONS IN A PARTICULAR SHELL OR ORBIT                                                                                                                             | 0          | 0          | 0          | 0          | 0          |
| 6 373 G1-20 DO YOU USE OR REFER TO PERMISSIBLE ENERGY LEVELS OF AN ORBITING ELECTRON                                                                                                                              | 0          | 0          | 0          | 0          | 0          |
| 6 374 G1-21 DO YOU USE OR REFER TO FORBIDDEN ENERGY LEVELS OF AN ORBITING ELECTRON                                                                                                                                | 0          | 0          | 0          | 0          | 0          |
| 6 375 G1-22 DO YOU USE OR REFER TO VALENCE ELECTRONS (THOSE IN THE OUTERMOST SHELL)                                                                                                                               | 0          | 0          | 0          | 0          | 0          |
| 6 376 G1-23 DO YOU USE OR REFER TO ATOMIC NUMBER (TOTAL NUMBER OF ELECTRONS IN ATOM)                                                                                                                              | 0          | 0          | 0          | 0          | 0          |
| 6 377 G1-24 DO YOU USE OR REFER TO SYMBOLS ON THE DIODE WHICH INDICATE THE CATHODE END                                                                                                                            | 100        | 100        | 100        | 100        | 100        |
| 6 378 G1-25 DO YOU NEED TO KNOW WHICH MATERIALS ARE USED IN THE CONSTRUCTION OF DIODES SUCH AS GERMANIUM OR SILICON                                                                                               | 10         | 13         | 0          | 0          | 17         |
| 6 379 G1-26 DO YOU NEED TO KNOW THAT SEMICONDUCTORS HAVE NEGATIVE TEMPERATURE COEFFICIENTS OF RESISTANCE (AS TEMPERATURE INCREASES RESISTANCE DECREASES)                                                          | 40         | 50         | 0          | 100        | 50         |
| 6 380 G1-27 DO YOU USE OR REFER TO PN JUNCTION DIODE CHARACTERISTIC CURVES, SUCH AS VOLTAGE - CURRENT CHARACTERISTIC CURVES (PERHAPS YOU DO THIS TO IDENTIFY POINTS OF STRUCTURAL BREAKDOWN OR OPERATING REGIONS) | 20         | 25         | 0          | 0          | 33         |
| 6 381 G1-28 DO YOU DETERMINE WHETHER PN JUNCTION DIODES ARE FORWARD BIASED OR REVERSE BIASED WHEN YOU READ OR INTERPRET CIRCUIT DIAGRAMS                                                                          | 40         | 50         | 0          | 0          | 67         |
| 6 382 G1-29 DO YOU USE OR REFER TO VALENCE BAND IN SEMICONDUCTOR MATERIALS                                                                                                                                        | 0          | 0          | 0          | 0          | 0          |

# WCT HANS ALBIONBERG, PRES. OF SELECTED GNPS

WPSUM2 PAUL 15

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMANCE

DT-TSK

| SPC<br>U26                                                                                           | SPC<br>U27 | SPC<br>U28 | SPC<br>U29 | SPC<br>U31 |
|------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|
| 6 383 61-30 DO YOU USE OR REFER TO FORBIDDEN BAND IN SEMICONDUCTOR MATERIALS                         | 0          | 0          | 0          | 0          |
| 6 384 61-31 DO YOU USE OR REFER TO CONDUCTION BAND IN SEMICONDUCTOR MATERIALS                        | 0          | 0          | 0          | 0          |
| 6 385 61-32 DO YOU USE OR REFER TO COVALENT BONDING IN SEMICONDUCTOR MATERIALS                       | 0          | 0          | 0          | 0          |
| 6 386 61-33 DO YOU USE OR REFER TO ELECTRON-HOLE PAIR CREATED IN SEMICONDUCTORS                      | 0          | 0          | 0          | 0          |
| 6 387 61-34 DO YOU USE OR REFER TO ELECTRON FLOW OR HOLE FLOW IN SEMICONDUCTORS                      | 0          | 0          | 0          | 0          |
| 6 388 61-35 DO YOU USE OR REFER TO DONOR IMPURITY IN SEMICONDUCTORS                                  | 0          | 0          | 0          | 0          |
| 6 389 61-36 DO YOU USE OR REFER TO ACCEPTOR IMPURITY IN SEMICONDUCTORS                               | 0          | 0          | 0          | 0          |
| 6 390 61-37 DO YOU USE OR REFER TO P-TYPE SEMICONDUCTOR MATERIAL                                     | 20         | 25         | 0          | 100        |
| 6 391 61-38 DO YOU USE OR REFER TO N-TYPE SEMICONDUCTOR MATERIAL                                     | 20         | 25         | 0          | 100        |
| 6 392 61-39 DO YOU USE OR REFER TO MAJORITY CARRIERS IN SEMICONDUCTORS                               | 0          | 0          | 0          | 0          |
| 6 393 61-40 DO YOU USE OR REFER TO MINORITY CARRIERS IN SEMICONDUCTORS                               | 0          | 0          | 0          | 0          |
| 6 394 61-41 DO YOU USE OR REFER TO JUNCTION RECOMBINATION IN SEMICONDUCTORS                          | 0          | 0          | 0          | 0          |
| 6 395 61-42 DO YOU USE OR REFER TO DEPLETION REGION IN SEMICONDUCTORS                                | 10         | 13         | 0          | 0          |
| 6 396 61-43 DO YOU USE OR REFER TO RELATIONSHIP BETWEEN BARRIER HEIGHT AND DIFFERENCE OF POTENTIAL   | 10         | 13         | 0          | 0          |
| 6 397 61-44 DO YOU USE OR REFER TO THE 10:1 BACK TO FRONT RESISTANCE RATIO FOR DIODES                | 60         | 63         | 50         | 100        |
| 6 398 61-45 DO YOU USE OR REFER TO BARRIER HEIGHT IN SEMICONDUCTORS                                  | 10         | 13         | 0          | 0          |
| 6 399 61-46 DO YOU USE OR REFER TO DIODE SUBSTITUTION INFORMATION                                    | 80         | 100        | 0          | 100        |
| 6 400 61-47 DO YOU USE OR REFER TO MAXIMUM AVERAGE FORWARD CURRENT DIODE RATINGS                     | 40         | 50         | 0          | 0          |
| 6 401 61-48 DO YOU USE OR REFER TO PEAK RECURRENT FORWARD CURRENT DIODE RATINGS                      | 40         | 50         | 0          | 0          |
| 6 402 61-49 DO YOU USE OR REFER TO MAXIMUM SURGE CURRENT DIODE RATINGS                               | 50         | 63         | 0          | 0          |
| 6 403 61-50 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE DIODE RATINGS                      | 50         | 63         | 0          | 0          |
| 6 404 62-01 DO YOU WORK WITH TRANSISTORS IN YOUR PRESENT JOB?                                        | 100        | 100        | 100        | 100        |
| 6 405 62-02 DO YOU INSPECT TRANSISTORS                                                               | 90         | 88         | 100        | 100        |
| 6 406 62-03 DO YOU REMOVE OR REPLACE TRANSISTORS                                                     | 100        | 100        | 100        | 100        |
| 6 407 62-04 DO YOU CHECK TRANSISTORS USING AN INSTRUMENT                                             | 90         | 100        | 50         | 100        |
| 6 408 62-05 DO YOU USE OR REFER TO EMITTER - BASE (EB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS   | 90         | 100        | 50         | 100        |
| 6 409 62-06 DO YOU USE OR REFER TO COLLECTOR - BASE (CB) FORWARD AND REVERSE RESISTANCE MEASUREMENTS | 90         | 100        | 50         | 100        |

TRANSISTORS

PCT MEMS RESPONDING 'YES' BY SELECTED GNPS

GPSUM2 PAGE 16

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DT-TSK

| SPC 026 | SPC 027 | SPC 028 | SPC 029 | SPC 031 |
|---------|---------|---------|---------|---------|
| 90      | 100     | 50      | 100     | 100     |
| 0       | 0       | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       |
| 50      | 63      | 0       | 0       | 67      |
| 40      | 50      | 0       | 0       | 50      |
| 100     | 100     | 100     | 100     | 100     |
| 100     | 100     | 100     | 100     | 100     |
| 80      | 100     | 0       | 100     | 100     |
| 20      | 25      | 0       | 0       | 17      |
| 30      | 38      | 0       | 0       | 33      |
| 20      | 25      | 0       | 0       | 17      |
| 30      | 38      | 0       | 0       | 33      |
| 20      | 13      | 50      | 0       | 0       |
| 20      | 13      | 50      | 0       | 0       |
| 10      | 13      | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       |
| 0       | 0       | 0       | 0       | 0       |
| 60      | 84      | 50      | 100     | 83      |
| 90      | 88      | 100     | 100     | 100     |
| 100     | 100     | 100     | 100     | 100     |
| 100     | 100     | 100     | 100     | 100     |
| 100     | 100     | 100     | 100     | 100     |
| 80      | 75      | 100     | 100     | 67      |
| 100     | 100     | 100     | 100     | 100     |
| 40      | 50      | 0       | 100     | 50      |
| 20      | 25      | 0       | 100     | 17      |

TRANSISTOR AMPLIFIERS

G 410 G2-07 DO YOU USE OR REFER TO EMITTER - COLLECTOR (EC) RESISTANCE MEASUREMENTS  
 G 411 G2-08 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE EMITTER - BASE JUNCTION  
 G 412 G2-09 DO YOU USE OR REFER TO HOW BIASING AFFECTS THE PHYSICAL BARRIER WIDTH OF THE COLLECTOR - BASE JUNCTION  
 G 413 G2-10 DO YOU USE OR REFER TO THE PHYSICAL SIZE OF THE TRANSISTOR STRUCTURE (COLLECTOR, BASE AND EMITTER)  
 G 414 G2-11 DO YOU USE OR REFER TO LEAKAGE CURRENT (ICBO) IN A TRANSISTOR  
 G 415 G2-12 DO YOU USE OR REFER TO TRANSISTOR SCHEMATIC SYMBOLS  
 G 416 G2-13 DO YOU USE OR REFER TO TRANSISTOR NOTATION SUCH AS Q1, Q2, Q3, ETC  
 G 417 G2-14 DO YOU USE OR REFER TO TRANSISTOR SUBSTITUTION INFORMATION  
 G 418 G2-15 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE TRANSISTOR BASE CURRENT IS NORMALLY SIGNIFICANTLY SMALLER THAN THE EMITTER CURRENT IE (USUALLY IB BEING 2 TO 8 PERCENT OF IE)  
 G 419 G2-16 DO YOU USE THE INFORMATION THAT THE EFFECT OF EMITTER BASE VOLTAGE ON BASE CURRENT IS THE CONTROLLING FACTOR FOR TRANSISTORS  
 G 420 G2-17 DO YOU USE THE GENERAL RULE THAT LEAKAGE CURRENT INCREASES AS TEMPERATURE INCREASES  
 G 421 G2-18 DO YOU USE OR REFER TO TRANSISTOR CHARACTERISTIC CURVES  
 G 422 G2-19 DO YOU USE OR REFER TO BETA TRANSISTOR GAINS  
 G 423 G2-20 DO YOU USE OR REFER TO ALPHA TRANSISTOR GAINS  
 G 424 G2-21 DO YOU USE OR REFER TO GAMMA TRANSISTOR GAINS  
 G 425 G2-22 DO YOU CALCULATE BETA TRANSISTOR GAINS  
 G 426 G2-23 DO YOU CALCULATE ALPHA TRANSISTOR GAINS  
 G 427 G2-24 DO YOU CALCULATE GAMMA TRANSISTOR GAINS  
 G 428 G2-25 DO YOU WORK WITH TRANSISTOR AMPLIFIERS IN YOUR PRESENT JOB  
 G 429 G3-02 DO YOU INSPECT TRANSISTOR AMPLIFIERS  
 G 430 G3-03 DO YOU ALIGN OR ADJUST TRANSISTOR AMPLIFIERS  
 G 431 G3-04 DO YOU TROUBLESHOOT TO THE AMPLIFIER CIRCUIT LEVEL  
 G 432 G3-05 DO YOU TROUBLESHOOT TO AMPLIFIER COMPONENTS  
 G 433 G3-06 DO YOU REMOVE OR REPLACE THE COMPLETE AMPLIFIER  
 G 434 G3-07 DO YOU REMOVE OR REPLACE AMPLIFIER COMPONENTS  
 G 435 G3-08 DO YOU USE OR REFER TO (COMMON EMITTER) THE CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A CHANGE IN BASE CURRENT  
 G 436 G3-09 DO YOU USE OR REFER TO (COMMON EMITTER) THE CALCULATIONS NECESSARY TO MEASURE THE SPECIFIC CHANGE IN COLLECTOR CURRENT WHICH RESULTS FROM A SPECIFIC CHANGE IN BASE CURRENT



# PCT MEMS RESPONDING "YES" BY SELECTED GMPs

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPSUM2 PAGE 18

0Y-TSK

|      |       |                                                                                                                                                                   |    |    |     |     |    |
|------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|-----|-----|----|
| 6754 | 63-27 | DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH THERMISTOR STABILIZATION                                  | 30 | 38 | 0   | 100 | 17 |
| 6755 | 63-28 | DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH FORWARD BIAS DIODE STABILIZATION                          | 30 | 38 | 0   | 100 | 17 |
| 6756 | 63-29 | DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH REVERSE BIAS DIODE STABILIZATION                          | 30 | 38 | 0   | 100 | 17 |
| 6757 | 63-30 | DO YOU IDENTIFY ON SCHEMATIC DIAGRAMS AND RELATE TO THE ACTUAL CIRCUITRY THE COMPONENTS ASSOCIATED WITH DOUBLE DIODE STABILIZATION                                | 30 | 34 | 0   | 100 | 17 |
| 6758 | 63-31 | DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM EMITTER (SWAMPING) RESISTOR STABILIZATION                                                        | 40 | 50 | 0   | 100 | 33 |
| 6759 | 63-32 | DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM SELF-BIAS STABILIZATION                                                                          | 40 | 50 | 0   | 100 | 33 |
| 6760 | 63-33 | DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM THERMISTOR STABILIZATION                                                                         | 40 | 50 | 0   | 100 | 33 |
| 6761 | 63-34 | DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM FORWARD BIAS DIODE STABILIZATION                                                                 | 40 | 50 | 0   | 100 | 33 |
| 6762 | 63-35 | DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM REVERSE BIAS DIODE STABILIZATION                                                                 | 40 | 50 | 0   | 100 | 33 |
| 6763 | 63-36 | DO YOU TROUBLESHOOT CIRCUITS WHICH HAVE COMPONENTS WHICH PERFORM DOUBLE DIODE STABILIZATION                                                                       | 40 | 50 | 0   | 100 | 33 |
| 6764 | 63-37 | DO YOU IDENTIFY AMPLITUDE DISTORTION FOR TRANSISTOR CIRCUITS                                                                                                      | 30 | 38 | 0   | 100 | 33 |
| 6765 | 63-38 | DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF AMPLITUDE DISTORTION                                                                                | 50 | 63 | 0   | 100 | 67 |
| 6766 | 63-39 | DO YOU IDENTIFY FREQUENCY DISTORTION FOR TRANSISTOR CIRCUITS                                                                                                      | 40 | 50 | 0   | 100 | 50 |
| 6767 | 63-40 | DO YOU IDENTIFY PHASE DISTORTION FOR TRANSISTOR CIRCUITS                                                                                                          | 10 | 13 | 0   | 100 | 0  |
| 6768 | 63-41 | DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF PHASE DISTORTION                                                                                    | 10 | 13 | 0   | 100 | 0  |
| 6769 | 63-42 | DO YOU TROUBLESHOOT TRANSISTOR CIRCUITS TO FIND THE CAUSES OF FREQUENCY DISTORTION                                                                                | 30 | 38 | 0   | 100 | 33 |
| 6770 | 63-43 | DO YOU NEED TO KNOW THE DEGENERATIVE EFFECTS ON THE CIRCUIT CAUSED BY CHANGING EMITTER RESISTANCE FOR TRANSISTOR AMPLIFIERS IN THE COMMON COLLECTOR CONFIGURATION | 10 | 13 | 0   | 100 | 0  |
| 6771 | 63-44 | DO YOU DETERMINE THE CLASS OF OPERATION FOR AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER CIRCUITS                                                                | 30 | 38 | 0   | 100 | 33 |
| 6772 | 63-45 | DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS                                                                                                                | 30 | 38 | 0   | 100 | 17 |
| 6773 | 63-46 | DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS                                                                                                                | 70 | 63 | 100 | 0   | 67 |
| 6774 | 63-47 | DO YOU TROUBLESHOOT OR REPAIR COMPLEMENTARY SYMMETRY CIRCUITS                                                                                                     | 30 | 38 | 0   | 100 | 17 |
| 6775 | 63-48 | DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS                                                                                                       | 30 | 34 | 0   | 100 | 17 |

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

0Y-TSK

SPC SPC SPC SPC SPC  
026 027 028 029 031

| G 476 G3-49 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS                          |  | 50  | 63  | 0   | 100 | 50  |
|-------------------------------------------------------------------------------------------------|--|-----|-----|-----|-----|-----|
| M 477 H1-01 DO YOU USE OR REFER TO VARIATORS                                                    |  | 10  | 13  | 0   | 0   | 17  |
| M 478 H1-02 DO YOU USE OR REFER TO TUNNEL DIODES                                                |  | 20  | 25  | 0   | 0   | 33  |
| M 479 H1-03 DO YOU USE OR REFER TO FIELD EFFECT TRANSISTORS (FET)                               |  | 50  | 63  | 0   | 100 | 50  |
| M 480 H1-04 DO YOU USE OR REFER TO UNIJUNCTION TRANSISTORS                                      |  | 40  | 50  | 0   | 0   | 50  |
| M 481 H1-05 DO YOU USE OR REFER TO ZENER DIODES                                                 |  | 80  | 88  | 50  | 100 | 83  |
| M 482 H1-06 DO YOU USE OR REFER TO INTEGRATED CIRCUITS                                          |  | 40  | 88  | 50  | 0   | 100 |
| M 483 H2-01 IN YOUR PRESENT JOB DO YOU WORK WITH POWER SUPPLIES                                 |  | 100 | 100 | 100 | 100 | 100 |
| M 484 H2-02 DO YOU INSPECT POWER SUPPLIES                                                       |  | 90  | 88  | 100 | 100 | 100 |
| M 485 H2-03 DO YOU CLEAN POWER SUPPLIES                                                         |  | 90  | 88  | 100 | 100 | 100 |
| M 486 H2-04 DO YOU ALIGN OR ADJUST POWER SUPPLIES                                               |  | 100 | 100 | 100 | 100 | 100 |
| M 487 H2-05 DO YOU TROUBLESHOOT TO POWER SUPPLY CIRCUIT LEVEL                                   |  | 100 | 100 | 100 | 100 | 100 |
| M 488 H2-06 DO YOU TROUBLESHOOT TO POWER SUPPLY COMPONENTS                                      |  | 100 | 100 | 100 | 100 | 100 |
| M 489 H2-07 DO YOU REMOVE OR REPLACE COMPLETE POWER SUPPLIES                                    |  | 100 | 100 | 100 | 100 | 100 |
| M 490 H2-08 DO YOU REMOVE OR REPLACE POWER SUPPLY COMPONENTS                                    |  | 100 | 100 | 100 | 100 | 100 |
| M 491 H2-09 DO YOU WORK WITH HALF-WAVE RECTIFIERS                                               |  | 100 | 100 | 100 | 100 | 100 |
| M 492 H2-10 DO YOU WORK WITH FULL-WAVE RECTIFIERS OTHER THAN BRIDGE RECTIFIERS                  |  | 100 | 100 | 100 | 100 | 100 |
| M 493 H2-11 DO YOU WORK WITH BRIDGE RECTIFIERS                                                  |  | 70  | 63  | 100 | 100 | 50  |
| M 494 H2-12 DO YOU WORK WITH THREE-PHASE RECTIFIERS                                             |  | 50  | 38  | 100 | 100 | 17  |
| M 495 H2-13 DO YOU USE OR REFER TO INPUT VOLTAGE                                                |  | 100 | 100 | 100 | 100 | 100 |
| M 496 H2-14 DO YOU USE OR REFER TO INPUT FREQUENCY                                              |  | 80  | 75  | 100 | 100 | 67  |
| M 497 H2-15 DO YOU USE OR REFER TO PEAK OUTPUT VOLTAGE                                          |  | 90  | 88  | 100 | 100 | 83  |
| M 498 H2-16 DO YOU USE OR REFER TO AVERAGE OUTPUT VOLTAGE                                       |  | 70  | 63  | 100 | 100 | 50  |
| M 499 H2-17 DO YOU USE OR REFER TO RIPPLE AMPLITUDE                                             |  | 60  | 63  | 50  | 100 | 50  |
| M 500 H2-18 DO YOU USE OR REFER TO RIPPLE FREQUENCY                                             |  | 50  | 50  | 50  | 100 | 33  |
| M 501 H2-19 DO YOU USE OR REFER TO PEAK REVERSE (INVERSE) VOLTAGE                               |  | 40  | 38  | 50  | 0   | 33  |
| M 502 H2-20 DO YOU USE OR REFER TO SHAPE OF OUTPUT WAVEFORMS                                    |  | 70  | 63  | 100 | 100 | 50  |
| M 503 H2-21 DO YOU USE OR REFER TO EFFECTIVE OUTPUT VOLTAGE                                     |  | 100 | 100 | 100 | 100 | 100 |
| M 504 H2-22 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE FILTERS                           |  | 70  | 88  | 0   | 100 | 83  |
| M 505 H2-23 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE FILTERS                            |  | 50  | 63  | 0   | 100 | 50  |
| M 506 H2-24 DO YOU WORK WITH CIRCUITS WHICH EMPLOY CAPACITIVE INPUT L-TYPE FILTERS              |  | 50  | 63  | 0   | 100 | 50  |
| M 507 H2-25 DO YOU WORK WITH CIRCUITS WHICH EMPLOY INDUCTIVE INPUT L-TYPE FILTERS               |  | 50  | 63  | 0   | 100 | 50  |
| M 508 H2-26 DO YOU WORK WITH CIRCUITS WHICH EMPLOY LC PI-TYPE FILTERS                           |  | 40  | 50  | 0   | 100 | 33  |
| M 509 H2-27 DO YOU WORK WITH CIRCUITS WHICH EMPLOY RC PI-TYPE FILTERS                           |  | 40  | 50  | 0   | 100 | 33  |
| M 510 H2-28 DO YOU WORK WITH CIRCUITS WHICH EMPLOY DON'T REMEMBER WHICH TYPE OF FILTER          |  | 30  | 13  | 100 | 0   | 17  |
| M 511 H2-29 DO YOU HAVE THE OPTION OF REPLACING ONE TYPE OF FILTER WITH A DIFFERENT TYPE FILTER |  | 0   | 0   | 0   | 0   | 0   |
| M 512 H3-01 DO YOU WORK WITH OSCILLATORS IN YOUR PRESENT JOB                                    |  | 30  | 25  | 50  | 100 | 17  |

SOLID-STATE SPECIAL PURPOSE DEVICES

POWER SUPPLIES

OSCILLATORS

# PCI HAND RESPONDING \*YES\* BY SELECTED GMPs

GPSUM4 PAGE 20

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

|                                                                   |  | DY-TSK |  | SPC |  | SPC |  | SPC |  | SPC |  | SPC |  |
|-------------------------------------------------------------------|--|--------|--|-----|--|-----|--|-----|--|-----|--|-----|--|
|                                                                   |  |        |  | 026 |  | 027 |  | 028 |  | 029 |  | 031 |  |
| M 513 M3-02 DO YOU INSPECT OSCILLATORS                            |  |        |  | 50  |  | 50  |  | 50  |  | 100 |  | 50  |  |
| M 514 M3-03 DO YOU ALIGN OR ADJUST OSCILLATORS                    |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 515 M3-04 DO YOU REMOVE OR REPLACE COMPLETE OSCILLATORS         |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 516 M3-05 DO YOU REMOVE OR REPLACE OSCILLATOR COMPONENTS        |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 517 M3-06 DO YOU TROUBLESHOOT TO OSCILLATOR CIRCUIT LEVEL       |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 518 M3-07 DO YOU TROUBLESHOOT TO OSCILLATOR COMPONENTS          |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 519 M3-08 DO YOU USE OR REFER TO FEEDBACK                       |  |        |  | 30  |  | 38  |  | 0   |  | 100 |  | 33  |  |
| M 520 M3-09 DO YOU USE OR REFER TO FREQUENCY DETERMINING DEVICES  |  |        |  | 30  |  | 38  |  | 0   |  | 100 |  | 33  |  |
| M 521 M3-10 DO YOU USE OR REFER TO AMPLITUDE STABILITY            |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 522 M3-11 DO YOU USE OR REFER TO FREQUENCY STABILITY            |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 523 M3-12 DO YOU USE OR REFER TO DAMPING                        |  |        |  | 30  |  | 38  |  | 0   |  | 100 |  | 33  |  |
| M 524 M3-13 DO YOU USE OR REFER TO REGENERATIVE FEEDBACK          |  |        |  | 20  |  | 25  |  | 0   |  | 100 |  | 17  |  |
| M 525 M3-14 DO YOU USE OR REFER TO PIEZOELECTRIC EFFECT           |  |        |  | 10  |  | 13  |  | 0   |  | 0   |  | 17  |  |
| M 526 M3-15 DO YOU USE OR REFER TO CRITICAL DAMPING               |  |        |  | 0   |  | 0   |  | 0   |  | 0   |  | 0   |  |
| M 527 M3-16 DO YOU USE OR REFER TO UNDER DAMPING                  |  |        |  | 30  |  | 38  |  | 0   |  | 100 |  | 33  |  |
| M 528 M3-17 DO YOU USE OR REFER TO OVER DAMPING                   |  |        |  | 30  |  | 38  |  | 0   |  | 100 |  | 33  |  |
| M 529 M3-18 DO YOU WORK WITH OSCILLATORS WHICH USE LC TANK        |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 530 M3-19 DO YOU WORK WITH OSCILLATORS WHICH USE RC NETWORKS AS |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 531 M3-20 DO YOU WORK WITH OSCILLATORS WHICH USE CRYSTALS AS    |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 532 M3-21 DO YOU WORK WITH OSCILLATORS WHICH USE DON'T REMEMBER |  |        |  | 20  |  | 13  |  | 50  |  | 0   |  | 17  |  |
| M 533 M3-22 DO YOU WORK WITH SERIES HARTLEY SINUSOIDAL            |  |        |  | 10  |  | 13  |  | 0   |  | 0   |  | 17  |  |
| M 534 M3-23 DO YOU WORK WITH SHUNT HARTLEY SINUSOIDAL OSCILLATORS |  |        |  | 0   |  | 0   |  | 0   |  | 0   |  | 0   |  |
| M 535 M3-24 DO YOU WORK WITH COLPITTS SINUSOIDAL OSCILLATORS      |  |        |  | 10  |  | 13  |  | 0   |  | 0   |  | 17  |  |
| M 536 M3-25 DO YOU WORK WITH CLAPP SINUSOIDAL OSCILLATORS         |  |        |  | 0   |  | 0   |  | 0   |  | 0   |  | 0   |  |
| M 537 M3-26 DO YOU WORK WITH BUTLER SINUSOIDAL OSCILLATORS        |  |        |  | 0   |  | 0   |  | 0   |  | 0   |  | 0   |  |
| M 538 M3-27 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE OF         |  |        |  | 30  |  | 25  |  | 50  |  | 100 |  | 17  |  |
| M 539 M3-28 DO YOU WORK WITH MULTIVIBRATORS IN YOUR PRESENT JOB   |  |        |  | 40  |  | 39  |  | 50  |  | 100 |  | 33  |  |
| M 540 M3-29 DO YOU INSPECT WAVE GENERATING OR SHAPING CIRCUITS    |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 541 M3-30 DO YOU ALIGN OR ADJUST WAVE GENERATING OR SHAPING     |  |        |  | 30  |  | 34  |  | 0   |  | 0   |  | 50  |  |
| M 542 M3-31 DO YOU CALIBRATE WAVE GENERATING OR SHAPING CIRCUITS  |  |        |  | 30  |  | 38  |  | 0   |  | 0   |  | 50  |  |
| M 543 M3-32 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING     |  |        |  | 50  |  | 63  |  | 0   |  | 100 |  | 67  |  |
| M 544 M3-33 DO YOU TROUBLESHOOT TO WAVE GENERATING OR SHAPING     |  |        |  | 50  |  | 63  |  | 0   |  | 100 |  | 67  |  |
| M 545 M3-34 DO YOU REMOVE OR REPLACE COMPLETE WAVE GENERATING OR  |  |        |  | 50  |  | 63  |  | 0   |  | 100 |  | 67  |  |
| M 546 M3-35 DO YOU REMOVE OR REPLACE WAVE GENERATING OR SHAPING   |  |        |  | 40  |  | 50  |  | 0   |  | 100 |  | 50  |  |
| M 547 M3-36 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN LC TANK |  |        |  | 20  |  | 25  |  | 0   |  | 0   |  | 33  |  |

MULTIVIBRATORS

PCT MANS RESPONDING "YES" BY SELECTED GRPS

GPSUMZ PAGE 21

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

0Y-TSK

SPC SPC SPC SPC SPC  
U26 U27 U28 U29 U31

1 548 11-10 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN MC  
NETWORKS  
1 549 11-11 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN  
CRYSTALS  
1 550 11-12 DO YOU WORK WITH MULTIVIBRATORS WHICH CONTAIN DON'T  
REMEMBER WHICH TYPE OF FDO  
1 551 11-13 DO YOU WORK WITH ASTABLE MULTIVIBRATORS  
1 552 11-14 DO YOU WORK WITH MONOSTABLE MULTIVIBRATORS  
1 553 11-15 DO YOU WORK WITH BISTABLE MULTIVIBRATORS  
1 554 11-16 DO YOU WORK WITH DON'T REMEMBER WHICH TYPE  
MULTIVIBRATORS  
1 555 12-01 DO YOU WORK WITH LIMITERS OR CLAMPERS IN YOUR  
PRESENT JOB  
1 556 12-02 DO YOU WORK WITH SERIES DIODE LIMITERS  
1 557 12-03 DO YOU WORK WITH SHUNT DIODE LIMITERS  
1 558 12-04 DO YOU WORK WITH LIMITERS WITH BIAS  
1 559 12-05 DO YOU WORK WITH ZENER DIODE LIMITERS  
1 560 12-06 DO YOU WORK WITH TRANSISTOR LIMITERS  
1 561 12-07 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF LIMITERS  
1 562 12-08 DO YOU WORK WITH BASIC DIODE CLAMPING CIRCUITS  
1 563 12-09 DO YOU WORK WITH DIODE CLAMPING CIRCUITS WITH BIAS  
1 564 12-10 DO YOU WORK WITH DON'T KNOW WHICH TYPE OF CLAMPING  
CIRCUIT

LIMITERS AND CLAMPERS

1 565 13-01 IN YOUR PRESENT JOB, DO YOU WORK ON EQUIPMENT WHICH  
CONTAINS ELECTRON TUBES

1 566 13-02 DO YOU CHECK ELECTRON TUBES TO SEE IF THEY ARE GOOD  
1 567 13-03 DO YOU USE TUBE TESTERS TO CHECK ELECTRON TUBES  
1 568 13-04 DO YOU USE MULTIMETERS TO CHECK ELECTRON TUBES  
1 569 13-05 DO YOU USE SCOPES TO CHECK ELECTRON TUBES  
1 570 13-06 DO YOU USE SUBSTITUTION TO CHECK ELECTRON TUBES  
1 571 13-07 DO YOU USE OR REFER TO CUTOFF  
1 572 13-08 DO YOU USE OR REFER TO PEAK INVERSE VOLTAGE RATING  
1 573 13-09 DO YOU USE OR REFER TO PEAK CURRENT RATING  
1 574 13-10 DO YOU USE OR REFER TO TRANSIT TIME  
1 575 13-11 DO YOU USE OR REFER TO PLATE DISSIPATION RATING  
1 576 13-12 DO YOU USE OR REFER TO SATURATION  
1 577 13-13 DO YOU USE OR REFER TO DC PLATE RESISTANCE  
1 578 13-14 DO YOU COMPUTE ACTUAL VALUES OF THE DC PLATE  
RESISTANCE FOR ELECTRON TUBES  
1 579 13-15 DO YOU USE OR REFER TO PLATE VOLTAGE  
1 580 13-16 DO YOU USE OR REFER TO PLATE CURRENT  
1 581 13-17 DO YOU USE OR REFER TO GRID VOLTAGE  
1 582 13-18 DO YOU USE OR REFER TO GRID CURRENT  
1 583 13-19 DO YOU USE OR REFER TO CATHODE VOLTAGE  
1 584 13-20 DO YOU USE OR REFER TO CATHODE CURRENT  
1 585 13-21 DO YOU USE OR REFER TO THE TRIODE AMPLIFICATION  
FACTOR (THE AMPLIFICATION FACTOR FOR TRIODES IS DEFINED AS  
THE RATIO OF CHANGE IN PLATE VOLTAGE TO A CHANGE IN GRID  
VOLTAGE)

ELECTRON TUBES

PCT MEMS RESPONDING 'YES' BY SELECTED GMPs

GPSUM2 PAGE 22

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DY-TSK

SPC SPC SPC SPC SPC  
026 027 028 029 031

|                                                                                                                                                      |    |    |     |     |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|-----|-----|----|
| 1 506 13-22 DO YOU CALCULATE ACTUAL VALUES OF TRIODE<br>AMPLIFICATION FACTORS                                                                        | 0  | 0  | 0   | 0   | 0  |
| 1 507 13-23 DO YOU USE ON REFER TO MULTIMETER (TETRODE, PENTODE,<br>ETC) AMPLIFICATION FACTORS                                                       | 0  | 0  | 0   | 0   | 0  |
| 1 508 13-24 DO YOU USE ON REFER TO ELECTRON TUBE TRANSDUCTANCE<br>(G) WHICH IS MEASURED IN MMOS)                                                     | 0  | 0  | 0   | 0   | 0  |
| 1 509 13-25 DO YOU CALCULATE ACTUAL VALUES OF ELECTRON TUBE<br>TRANSDUCTANCES                                                                        | 0  | 0  | 0   | 0   | 0  |
| 1 510 13-26 DO YOU USE ON REFER TO THE ELECTRON TUBE PARAMETER<br>CALLED AC PLATE RESISTANCE                                                         | 0  | 0  | 0   | 0   | 0  |
| 1 511 13-27 DO YOU CALCULATE ACTUAL VALUES OF AC PLATE<br>RESISTANCE                                                                                 | 0  | 0  | 0   | 0   | 0  |
| 1 512 13-28 DO YOU USE ON REFER TO ELECTRON TUBE INTERELECTRODE<br>CAPACITANCE                                                                       | 0  | 0  | 0   | 0   | 0  |
| 1 513 13-29 DO YOU USE ON REFER TO CHARACTERISTIC CURVES IN YOUR<br>WORK WITH ELECTRON TUBES                                                         | 0  | 0  | 0   | 0   | 0  |
| 1 514 13-30 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE<br>VOLTAGE FOR A SPECIFIED BIAS                                                         | 0  | 0  | 0   | 0   | 0  |
| 1 515 13-31 DO YOU USE CHARACTERISTIC CURVES TO SELECT PLATE<br>CURRENT FOR A SPECIFIED BIAS                                                         | 0  | 0  | 0   | 0   | 0  |
| 1 516 13-32 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS<br>REQUIRED FOR CUTOFF                                                                   | 0  | 0  | 0   | 0   | 0  |
| 1 517 13-33 DO YOU USE CHARACTERISTIC CURVES TO SELECT BIAS<br>REQUIRED FOR SATURATION                                                               | 0  | 0  | 0   | 0   | 0  |
| 1 518 13-34 DO YOU USE ON REFER TO ELECTRON TUBE AMPLIFIER GAIN                                                                                      | 10 | 13 | 0   | 100 | 0  |
| 1 519 13-35 DO YOU USE ON REFER TO ELECTRON TUBE AMPLIFIER<br>EFFICIENCY                                                                             | 10 | 13 | 0   | 100 | 0  |
| 1 600 13-36 DO YOU USE TEST TUBE CHECKERS TO DETERMINE ELECTRON<br>TUBE AMPLIFIER GAIN                                                               | 0  | 0  | 0   | 0   | 0  |
| 1 601 13-37 DO YOU USE MULTIMETERS TO DETERMINE ELECTRON TUBE<br>AMPLIFIER GAIN                                                                      | 0  | 0  | 0   | 0   | 0  |
| 1 602 13-38 DO YOU USE OSCILLOSCOPES TO DETERMINE ELECTRON TUBE<br>AMPLIFIER GAIN                                                                    | 20 | 25 | 0   | 100 | 17 |
| 1 603 13-39 DO YOU USE CHARACTERISTIC CURVES TO DETERMINE<br>ELECTRON TUBE AMPLIFIER GAIN                                                            | 0  | 0  | 0   | 0   | 0  |
| 1 604 13-40 DO YOU CALCULATE ANY ELECTRON TUBE CAPACITANCES SUCH<br>AS INPUT CAPACITANCE                                                             | 0  | 0  | 0   | 0   | 0  |
| 1 605 13-41 DO YOU USE ON REFER TO TUBE SOCKET NOTATION                                                                                              | 40 | 25 | 100 | 100 | 17 |
| 1 606 13-42 DO YOU USE ON REFER TO PIN NUMBERING SYSTEMS                                                                                             | 30 | 25 | 50  | 100 | 17 |
| 1 607 13-43 DO YOU USE ON REFER TO THE TYPE OF MATERIAL OR THE<br>OPERATING TEMPERATURE OF THE EMITTING SURFACE IN THE<br>ELECTRON TUBES YOU WORK ON | 0  | 0  | 0   | 0   | 0  |
| 1 608 13-44 DO YOU USE ON REFER TO TUBE SUBSTITUTION MATERIAL<br>SUCH AS MANUALS OR CHARTS                                                           | 20 | 13 | 50  | 0   | 17 |
| 1 609 13-45 DO YOU WORK WITH ELECTRON TUBE AMPLIFIERS OR CIRCUITS<br>IN YOUR PRESENT JOB                                                             | 10 | 13 | 0   | 0   | 17 |
| 1 610 13-46 DO YOU DETERMINE THE CLASS OF OPERATION FOR ELECTRON<br>TUBE AMPLIFIERS IN ORDER TO TROUBLESHOOT AMPLIFIER<br>CIRCUITS                   | 0  | 0  | 0   | 0   | 0  |

ELECTRON TUBE AMPLIFIERS  
AND CIRCUITS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

## DY-TSK

|                                                                                                                                 | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|---------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| J 611 J1-03 DO YOU TROUBLESHOOT OR REPAIR PARAPHASE AMPLIFIERS                                                                  | 0          | 0          | 0          | 0          | 0          |
| J 612 J1-04 DO YOU TROUBLESHOOT OR REPAIR PUSH-PULL AMPLIFIERS                                                                  | 0          | 0          | 0          | 0          | 0          |
| J 613 J1-05 DO YOU TROUBLESHOOT OR REPAIR COMPOUND-CONNECTED AMPLIFIERS                                                         | 0          | 0          | 0          | 0          | 0          |
| J 614 J1-06 DO YOU TROUBLESHOOT OR REPAIR CASCADE-CONNECTED AMPLIFIERS                                                          | 0          | 0          | 0          | 0          | 0          |
| J 615 J1-07 DO YOU TROUBLESHOOT OR REPAIR DON'T KNOW WHICH TYPE OF AMPLIFIER                                                    | 0          | 0          | 0          | 0          | 0          |
| J 616 J2-01 DO YOU WORK WITH GAS TUBES (HOT CATHODE OR COLD CATHODE)                                                            | 0          | 0          | 0          | 0          | 0          |
| J 617 J2-02 DO YOU WORK WITH CATHODE-RAY TUBES                                                                                  | 10         | 13         | 0          | 0          | 17         |
| J 618 J2-03 DO YOU USE OR REFER TO THE CHARACTERISTICS OF BEAM POWER TUBES                                                      | 0          | 0          | 0          | 0          | 0          |
| J 619 J2-04 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH BEAM POWER TUBES ARE USED                                           | 10         | 13         | 0          | 0          | 17         |
| J 620 J2-05 DO YOU USE OR REFER TO THE CHARACTERISTICS OF THYATRONS                                                             | 0          | 0          | 0          | 0          | 0          |
| J 621 J2-06 DO YOU TROUBLESHOOT OR REPAIR CIRCUITS IN WHICH THYATRONS ARE USED                                                  | 0          | 0          | 0          | 0          | 0          |
| J 622 J2-07 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTRON GUNS OF CATHODE-RAY TUBES (CRT)                      | 20         | 25         | 0          | 0          | 33         |
| J 623 J2-08 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROMAGNETIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT) | 20         | 25         | 0          | 0          | 33         |
| J 624 J2-09 DO YOU USE OR REFER TO THE PRINCIPLES OF OPERATION OF ELECTROSTATIC DEFLECTION SYSTEMS OF CATHODE-RAY TUBES (CRT)   | 20         | 25         | 0          | 0          | 33         |
| J 625 J2-10 DO YOU USE OR REFER TO PHOSPHOR SCREENS                                                                             | 20         | 25         | 0          | 0          | 33         |
| J 626 J2-11 DO YOU USE OR REFER TO AQUADAG COATINGS                                                                             | 0          | 0          | 0          | 0          | 0          |
| J 627 J2-12 DO YOU USE OR REFER TO ELECTRON OPTICS                                                                              | 0          | 0          | 0          | 0          | 0          |
| J 628 J2-13 DO YOU USE OR REFER TO PERSISTENCE                                                                                  | 10         | 13         | 0          | 0          | 17         |
| J 629 J2-14 DO YOU USE OR REFER TO DECAY TIMES                                                                                  | 10         | 13         | 0          | 0          | 17         |
| J 630 J2-15 DO YOU USE OR REFER TO FLUORESCENCE                                                                                 | 0          | 0          | 0          | 0          | 0          |
| J 631 J2-16 DO YOU USE OR REFER TO PHOSPHORESCENCE                                                                              | 20         | 25         | 0          | 0          | 33         |
| J 632 J2-01 DO YOU WORK ON TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB                                                      | 30         | 25         | 50         | 100        | 17         |
| J 633 J3-02 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS                                                                        | 30         | 25         | 50         | 100        | 17         |
| J 634 J3-03 DO YOU PERFORM TASKS ON FREQUENCY MIXERS                                                                            | 10         | 13         | 0          | 100        | 0          |
| J 635 J3-04 DO YOU USE OR REFER TO THE HETERODYNING OF SIGNALS IN YOUR WORK WITH TRANSMIT OR RECEIVE SYSTEMS                    | 20         | 25         | 0          | 100        | 17         |
| J 636 J3-05 DO YOU PERFORM TASKS ON REACTANCE MODULATORS                                                                        | 10         | 13         | 0          | 0          | 17         |
| J 637 J3-06 DO YOU PERFORM TASKS ON MODULATED OSCILLATORS                                                                       | 20         | 25         | 0          | 100        | 17         |
| K 638 K1-01 DO YOU WORK ON AM TRANSMIT OR RECEIVE SYSTEMS IN YOUR PRESENT JOB                                                   | 10         | 13         | 0          | 0          | 17         |
| K 639 K1-02 DO YOU INSPECT AM TRANSMIT OR RECEIVE SYSTEMS                                                                       | 10         | 13         | 0          | 0          | 17         |
| K 640 K1-03 DO YOU CLEAN AM TRANSMIT OR RECEIVE SYSTEMS                                                                         | 10         | 13         | 0          | 0          | 17         |
| K 641 K1-04 DO YOU ALIGN OR ADJUST AM TRANSMIT OR RECEIVE SYSTEMS                                                               | 10         | 13         | 0          | 0          | 17         |

SPECIAL PURPOSE ELECTRON TUBES

HETERODYNING, MODULATION, AND DEMODULATION

AM SYSTEMS

# PCT MEMS RESPONDING 'YES' BY SELECTED GPRS

GPSUMZ PAGE 24

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

| DY-TSK                                                            |  | SPC U26 | SPC U27 | SPC U28 | SPC U29 | SPC Q31 |
|-------------------------------------------------------------------|--|---------|---------|---------|---------|---------|
| SYSTEMS                                                           |  |         |         |         |         |         |
| COMPONENTS                                                        |  |         |         |         |         |         |
| K 642 K1-05 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE SYSTEMS |  | 10      | 13      | 0       | 0       | 17      |
| K 643 K1-06 DO YOU TROUBLESHOOT TO AM TRANSMIT OR RECEIVE         |  | 10      | 13      | 0       | 0       | 17      |
| SYSTEMS                                                           |  |         |         |         |         |         |
| K 644 K1-07 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE       |  | 10      | 13      | 0       | 0       | 17      |
| COMPONENTS                                                        |  |         |         |         |         |         |
| K 645 K1-08 DO YOU REMOVE OR REPLACE AM TRANSMIT OR RECEIVE       |  | 10      | 13      | 0       | 0       | 17      |
| COMPONENTS                                                        |  |         |         |         |         |         |
| K 646 K1-09 DO YOU PERFORM TASKS ON HF OSCILLATORS                |  | 10      | 13      | 0       | 0       | 17      |
| K 647 K1-10 DO YOU PERFORM TASKS ON HF AMPLIFIERS                 |  | 10      | 13      | 0       | 0       | 17      |
| K 648 K1-11 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS              |  | 10      | 13      | 0       | 0       | 17      |
| K 649 K1-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS              |  | 10      | 13      | 0       | 0       | 17      |
| K 650 K1-13 DO YOU PERFORM TASKS ON LOCAL OSCILLATORS             |  | 10      | 13      | 0       | 0       | 17      |
| K 651 K1-14 DO YOU PERFORM TASKS ON IF AMPLIFIERS                 |  | 10      | 13      | 0       | 0       | 17      |
| K 652 K1-15 DO YOU PERFORM TASKS ON DETECTORS                     |  | 10      | 13      | 0       | 0       | 17      |
| K 653 K1-16 DO YOU PERFORM TASKS ON DON'T REMEMBER WHICH AM STAGE |  | 0       | 0       | 0       | 0       | 0       |
| K 654 K1-17 DO YOU USE OR REFER TO AMPLITUDE STABILIZATION IN     |  | 0       | 0       | 0       | 0       | 0       |
| TRANSMITTERS                                                      |  |         |         |         |         |         |
| K 655 K1-18 DO YOU USE OR REFER TO FREQUENCY STABILIZATION IN     |  | 10      | 13      | 0       | 0       | 17      |
| TRANSMITTERS                                                      |  |         |         |         |         |         |
| K 656 K1-19 DO YOU USE OR REFER TO SENSITIVITY OF RECEIVERS       |  | 10      | 13      | 0       | 0       | 17      |
| K 657 K1-20 DO YOU USE OR REFER TO SELECTIVITY OF RECEIVERS       |  | 10      | 13      | 0       | 0       | 17      |
| K 658 K1-21 DO YOU USE OR REFER TO 2ND HARMONIC DISTORTION        |  | 0       | 0       | 0       | 0       | 0       |
| K 659 K1-22 DO YOU USE OR REFER TO BANDPASS DISTORTION            |  | 10      | 13      | 0       | 0       | 17      |
| K 660 K1-23 DO YOU USE OR REFER TO SQUARE LAW DISTORTION          |  | 0       | 0       | 0       | 0       | 0       |
| K 661 K1-24 DO YOU USE OR REFER TO CO-CHANNEL INTERFERENCE        |  | 0       | 0       | 0       | 0       | 0       |
| K 662 K1-25 DO YOU USE OR REFER TO IMAGE FREQUENCIES IN RECEIVERS |  | 0       | 0       | 0       | 0       | 0       |
| K 663 K1-26 DO YOU USE OR REFER TO SIGNAL TO IMAGE RATIOS OR      |  | 0       | 0       | 0       | 0       | 0       |
| IMAGE REJECTION RATIOS                                            |  |         |         |         |         |         |
| K 664 K1-27 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM      |  | 10      | 13      | 0       | 0       | 17      |
| TRANSMITTER SCHEMATIC DIAGRAMS                                    |  |         |         |         |         |         |
| K 665 K1-28 DO YOU TRACE SIGNALS OR CURRENT PATHS THROUGH AM      |  | 10      | 13      | 0       | 0       | 17      |
| RECEIVER SCHEMATIC DIAGRAMS                                       |  |         |         |         |         |         |
| K 666 K2-01 DO YOU WORK WITH FM TRANSMIT OR RECEIVE SYSTEMS IN    |  | 20      | 25      | 0       | 100     | 17      |
| YOUR PRESENT JOB                                                  |  |         |         |         |         |         |
| K 667 K2-02 DO YOU INSPECT FM TRANSMIT OR RECEIVE SYSTEMS         |  | 20      | 25      | 0       | 100     | 17      |
| K 668 K2-03 DO YOU CLEAN FM TRANSMIT OR RECEIVE SYSTEMS           |  | 20      | 25      | 0       | 100     | 17      |
| K 669 K2-04 DO YOU ALIGN FM TRANSMIT OR RECEIVE SYSTEMS           |  | 20      | 25      | 0       | 100     | 17      |
| K 670 K2-05 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE         |  | 20      | 25      | 0       | 100     | 17      |
| SYSTEMS                                                           |  |         |         |         |         |         |
| K 671 K2-06 DO YOU TROUBLESHOOT TO FM TRANSMIT OR RECEIVE         |  | 20      | 25      | 0       | 100     | 17      |
| COMPONENTS                                                        |  |         |         |         |         |         |
| K 672 K2-07 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE       |  | 20      | 25      | 0       | 100     | 17      |
| SYSTEMS                                                           |  |         |         |         |         |         |
| K 673 K2-08 DO YOU REMOVE OR REPLACE FM TRANSMIT OR RECEIVE       |  | 20      | 25      | 0       | 100     | 17      |
| COMPONENTS                                                        |  |         |         |         |         |         |
| K 674 K2-09 DO YOU PERFORM TASKS ON AUDIO AMPLIFIERS              |  | 10      | 13      | 0       | 0       | 17      |
| K 675 K2-10 DO YOU PERFORM TASKS ON FREQUENCY MULTIPLIERS         |  | 20      | 25      | 0       | 100     | 17      |

FM SYSTEMS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

0Y-75K

| DY-TSK |                                                                                             | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|--------|---------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| K 674  | K2-11 DO YOU PERFORM TASKS ON UNIVERS (INTERMEDIATE AMPLIFIERS)                             | 20         | 25         | 0          | 100        | 17         |
| K 677  | K2-12 DO YOU PERFORM TASKS ON POWER AMPLIFIERS                                              | 20         | 25         | 0          | 100        | 17         |
| K 678  | K2-13 DO YOU PERFORM TASKS ON RF AMPLIFIERS                                                 | 20         | 25         | 0          | 100        | 17         |
| K 679  | K2-14 DO YOU PERFORM TASKS ON FREQUENCY CONVERTERS                                          | 20         | 25         | 0          | 100        | 17         |
| K 680  | K2-15 DO YOU PERFORM TASKS ON IF AMPLIFIERS                                                 | 20         | 25         | 0          | 100        | 17         |
| K 681  | K2-16 DO YOU PERFORM TASKS ON LIMITERS                                                      | 20         | 25         | 0          | 100        | 17         |
| K 682  | K2-17 DO YOU PERFORM TASKS ON FREQUENCY DISCRIMINATIONS                                     | 20         | 25         | 0          | 100        | 17         |
| K 683  | K2-18 DO YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM TRANSMITTERS   | 20         | 25         | 0          | 100        | 17         |
| K 684  | K2-19 DO YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SCHEMATIC DIAGRAMS OF FM RECEIVERS      | 20         | 25         | 0          | 100        | 17         |
| K 685  | K3-01 DO YOU CONVERT DECIMAL (BASE 10) NUMBERS TO OCTAL (BASE 8) NUMBERS                    | 40         | 50         | 0          | 100        | 50         |
| K 686  | K3-02 DO YOU CONVERT DECIMAL NUMBERS TO BINARY (BASE 2) NUMBERS                             | 50         | 38         | 100        | 0          | 50         |
| K 687  | K3-03 DO YOU CONVERT OCTAL NUMBERS TO DECIMAL NUMBERS                                       | 30         | 38         | 0          | 0          | 50         |
| K 688  | K3-04 DO YOU CONVERT OCTAL NUMBERS TO BINARY NUMBERS                                        | 20         | 25         | 0          | 0          | 33         |
| K 689  | K3-05 DO YOU CONVERT BINARY NUMBERS TO DECIMAL NUMBERS                                      | 50         | 38         | 100        | 0          | 50         |
| K 690  | K3-06 DO YOU CONVERT BINARY NUMBERS TO OCTAL NUMBERS                                        | 30         | 38         | 0          | 0          | 50         |
| K 691  | K3-07 DO YOU ADD BINARY NUMBERS TO GET A SUM                                                | 30         | 25         | 50         | 0          | 33         |
| K 692  | K3-08 DO YOU SUBTRACT BINARY NUMBERS USING THE END-AROUND-CARRY METHOD                      | 30         | 25         | 50         | 0          | 33         |
| K 693  | K3-09 DO YOU SUBTRACT BINARY NUMBERS USING THE DIRECT SUBTRACTION METHOD                    | 20         | 13         | 50         | 0          | 17         |
| K 694  | K3-10 DO YOU ADD OCTAL NUMBERS TO GET A SUM                                                 | 10         | 13         | 0          | 0          | 17         |
| L 695  | L1-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO LOGIC FUNCTIONS             | 50         | 38         | 100        | 0          | 50         |
| L 696  | L1-02 DO YOU CONSTRUCT TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES                          | 30         | 13         | 100        | 0          | 17         |
| L 697  | L1-03 DO YOU CONSTRUCT TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES                           | 30         | 13         | 100        | 0          | 17         |
| L 698  | L1-04 DO YOU CONSTRUCT TRUTH TABLES FOR AND OR LOGIC SYMBOLS WITH STATE INDICATORS          | 30         | 13         | 100        | 0          | 17         |
| L 699  | L1-05 DO YOU CONSTRUCT TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS OR GATES                 | 30         | 13         | 100        | 0          | 17         |
| L 700  | L1-06 DO YOU USE OR REFER TO TRUTH TABLES FOR AND LOGIC SYMBOLS OR GATES                    | 50         | 38         | 100        | 0          | 50         |
| L 701  | L1-07 DO YOU USE OR REFER TO TRUTH TABLES FOR OR LOGIC SYMBOLS OR GATES                     | 50         | 38         | 100        | 0          | 50         |
| L 702  | L1-08 DO YOU USE OR REFER TO TRUTH TABLES FOR AND OR OR LOGIC SYMBOLS WITH STATE INDICATORS | 40         | 25         | 100        | 0          | 33         |
| L 703  | L1-09 DO YOU USE OR REFER TO TRUTH TABLES FOR EXCLUSIVE OR LOGIC SYMBOLS                    | 50         | 38         | 100        | 0          | 50         |
| L 704  | L1-10 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR AND GATES                                    | 50         | 38         | 100        | 0          | 50         |
| L 705  | L1-11 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR OR GATES                                     | 50         | 38         | 100        | 0          | 50         |
| L 706  | L1-12 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR NAND OR NOR GATES                            | 50         | 38         | 100        | 0          | 50         |

# PCT MEMS RESPONDING 'YES' BY SELECTED GMPs

GPSUM2 PAGE 20

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

0Y-TSK

|                                                                                                                            | SPC<br>026 | SPC<br>027 | SPC<br>U28 | SPC<br>029 | SPC<br>031 |
|----------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| L 707 L1-13 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR EXCLUSIVE OR GATES                                                    | 50         | 38         | 100        | 0          | 50         |
| L 708 L2-01 IN YOUR PRESENT JOB, DO YOU PERFORM ANY TASKS RELATING TO BOOLEAN EQUATIONS, LOGIC DIAGRAMS, OR LOGIC CIRCUITS | 30         | 38         | 0          | 0          | 50         |
| L 709 L2-02 DO YOU DRAW LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUITS                                  | 20         | 25         | 0          | 0          | 33         |
| L 710 L2-03 DO YOU CONSTRUCT TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS                                            | 0          | 0          | 0          | 0          | 0          |
| L 711 L2-04 DO YOU DRAW LOGIC DIAGRAMS FROM GIVEN BOOLEAN EQUATIONS                                                        | 0          | 0          | 0          | 0          | 0          |
| L 712 L2-05 DO YOU MEASURE INPUTS OR OUTPUTS OF LOGIC GATES                                                                | 30         | 38         | 0          | 0          | 50         |
| L 713 L2-06 DO YOU DEVELOP OR ANALYZE BOOLEAN EQUATIONS IN THE PROCESS OF TROUBLESHOOTING DIGITAL CIRCUITS                 | 0          | 0          | 0          | 0          | 0          |
| L 714 L2-07 DO YOU ANALYZE LOGIC CIRCUITS BY USING BOOLEAN ALGEBRA                                                         | 0          | 0          | 0          | 0          | 0          |
| L 715 L2-08 DO YOU USE OR REFER TO LOGIC SYMBOLS FOR DIRECT COUPLED TRANSISTOR LOGIC (DCTL) CIRCUIT GATES                  | 20         | 25         | 0          | 0          | 33         |
| L 716 L2-09 DO YOU USE OR REFER TO TRUTH TABLES FOR CURRENT MODE LOGIC (CML) CIRCUITS                                      | 0          | 0          | 0          | 0          | 0          |
| L 717 L2-10 DO YOU USE OR REFER TO LOGIC DIAGRAMS CONSISTING OF MORE THAN ONE GATE                                         | 30         | 38         | 0          | 0          | 50         |
| L 718 L2-11 DO YOU COMPUTE SUM AND CARRY EXPRESSIONS FOR SERIAL HALF OR FULL ADDER LOGIC DIAGRAMS                          | 10         | 13         | 0          | 0          | 17         |
| L 719 L2-12 DO YOU TRACE DATA FLOW THROUGH PARALLEL FULL ADDER LOGIC DIAGRAMS                                              | 10         | 13         | 0          | 0          | 17         |
| L 720 L2-13 DO YOU WORK WITH ASTABLE (FREE RUNNING) MULTIVIBRATORS                                                         | 30         | 38         | 0          | 0          | 50         |
| L 721 L2-14 DO YOU WORK WITH BISTABLE (FLIP-FLOP) MULTIVIBRATORS                                                           | 30         | 38         | 0          | 0          | 50         |
| L 722 L2-15 DO YOU WORK WITH MONOSTABLE (ONE-SHOT) MULTIVIBRATORS                                                          | 30         | 38         | 0          | 0          | 50         |
| L 723 L2-16 DO YOU USE OR REFER TO FLIP-FLOP MULTIVIBRATOR SYMBOLS                                                         | 30         | 38         | 0          | 0          | 50         |
| L 724 L2-17 DO YOU USE OR REFER TO SINGLE-SHOT MULTIVIBRATOR SYMBOLS                                                       | 30         | 38         | 0          | 0          | 50         |
| L 725 L2-18 DO YOU USE OR REFER TO FLIP-FLOP CIRCUIT DIAGRAMS                                                              | 30         | 38         | 0          | 0          | 50         |
| L 726 L2-19 DO YOU USE OR REFER TO FLIP-FLOP TRUTH TABLES                                                                  | 30         | 38         | 0          | 0          | 50         |
| L 727 L2-20 DO YOU USE OR REFER TO COMPLEMENTED FLIP-FLOP LOGIC SYMBOLS                                                    | 20         | 25         | 0          | 0          | 33         |
| L 728 L2-21 DO YOU USE OR REFER TO COMPLEMENTING FLIP-FLOP LOGIC SYMBOLS                                                   | 20         | 25         | 0          | 0          | 33         |
| L 729 L2-22 DO YOU MEASURE OUTPUT WAVESHAPES OF LOGIC CIRCUITS                                                             | 30         | 38         | 0          | 0          | 50         |
| L 730 L2-23 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTED FLIP-FLOP SCHEMATIC DIAGRAMS                                       | 20         | 25         | 0          | 0          | 33         |
| L 731 L2-24 DO YOU TRACE DATA FLOW THROUGH COMPLEMENTING FLIP-FLOP SCHEMATIC DIAGRAMS                                      | 20         | 25         | 0          | 0          | 33         |
| L 732 L2-25 DO YOU CONSTRUCT TRUTH TABLES FOR J-K FLIP-FLOP LOGIC SYMBOLS                                                  | 10         | 13         | 0          | 0          | 17         |

BOOLEAN EQUATIONS

TASK GROUP SUMMARY  
PLC/INT MEMBERS PERFORMING

0Y-TS\*

SPC SPC SPC SPC SPC  
U26 U27 U28 U29 U31

L 733 L3-01 DO YOU WORK WITH DIGITAL COUNTERS IN YOUR PRESENT JOB  
L 734 L3-02 DO YOU USE OR REFER TO UP-COUNTERS  
L 735 L3-03 DO YOU USE OR REFER TO DOWN-COUNTERS  
L 736 L3-04 DO YOU USE OR REFER TO SERIAL COUNTERS  
L 737 L3-05 DO YOU USE OR REFER TO PARALLEL COUNTERS  
L 738 L3-06 DO YOU USE OR REFER TO RING COUNTERS  
L 739 L3-07 DO YOU USE OR REFER TO DECADE COUNTERS  
L 740 L3-08 DO YOU USE OR REFER TO COUNT DETECT CIRCUITS  
L 741 L3-09 DO YOU USE OR REFER TO DOWN CLOCKS  
L 742 L3-10 DO YOU USE OR REFER TO UP CLOCKS  
L 743 L3-11 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS  
L 744 L3-12 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENTING FLIP-  
FLOPS  
L 745 L3-13 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
DECADE COUNTERS  
L 746 L3-14 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
RING COUNTERS  
L 747 L3-15 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE REGISTER  
L 748 L3-16 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
SHIFT REGISTERS  
L 749 L3-17 DO YOU TRACE DATA FLOW THROUGH LOGIC DIAGRAMS OF  
OTHER TYPE OF COUNTERS  
L 750 L3-18 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT  
PULSES FOR UP-COUNTERS HAVING COMPLEMENTED FLIP-FLOPS  
L 751 L3-19 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT  
PULSES FOR SERIAL UP- OR DOWN-COUNTERS HAVING COMPLEMENT-  
ING FLIP-FLOPS  
L 752 L3-20 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT  
PULSES FOR SERIAL UP-COUNTERS FEEDING A PARALLEL STORAGE  
REGISTERS  
L 753 L3-21 DO YOU COMPUTE THE BINARY COUNT AFTER SPECIFIC INPUT  
PULSES FOR OTHER TYPES OF COUNTERS  
L 754 L3-22 DO YOU CONSTRUCT TRUTH TABLES FROM LOGIC DIAGRAMS OF  
DECADE COUNTERS  
L 755 L3-23 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP IN RING  
COUNTERS FOR SPECIFIC INPUT PULSES  
L 756 L3-24 DO YOU DETERMINE THE APPROPRIATE AND GATE NECESSARY  
IN COUNT DETECT CIRCUITS TO INDICATE A REQUIRED COUNT  
M 757 M1-01 DO YOU WORK WITH SAWTOOTH WAVE GENERATORS  
M 758 M1-02 DO YOU WORK WITH TRAPEZOIDAL WAVE GENERATORS  
M 759 M1-03 DO YOU WORK WITH PULSED OSCILLATORS WITH REGENERATIVE  
FEEDBACK  
M 760 M1-04 DO YOU WORK WITH PULSED OSCILLATORS WITHOUT  
REGENERATIVE FEEDBACK

COUNTERS

TIMING CIRCUITS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DT-TSK

|                                                                                                                                        | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|----------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| M 761 M1-05 DO YOU WORK WITH BLOCKING OSCILLATORS                                                                                      | 10         | 13         | 0          | 0          | 17         |
| M 762 M1-06 DO YOU USE ON REFER TO RISE TIME                                                                                           | 50         | 50         | 50         | 100        | 50         |
| M 763 M1-07 DO YOU USE OR REFER TO FALL ON FLYBACK TIME                                                                                | 30         | 38         | 0          | 0          | 50         |
| M 764 M1-08 DO YOU USE OR REFER TO SLEEP TIME                                                                                          | 50         | 50         | 50         | 100        | 50         |
| M 765 M1-09 DO YOU USE OR REFER TO ELECTRICAL LENGTH OF SAWTOOTH<br>WAVEFORMS                                                          | 30         | 25         | 50         | 100        | 17         |
| M 766 M1-10 DO YOU USE OR REFER TO PHYSICAL LENGTH OF SAWTOOTH<br>WAVEFORMS                                                            | 20         | 25         | 0          | 100        | 17         |
| M 767 M1-11 DO YOU USE OR REFER TO LINEAR SLOPE OF SAWTOOTH<br>WAVEFORMS                                                               | 30         | 38         | 0          | 100        | 33         |
| M 768 M1-12 DO YOU USE OR REFER TO GATE LENGTH OF SAWTOOTH<br>WAVEFORMS                                                                | 40         | 50         | 0          | 100        | 50         |
| M 769 M2-01 DO YOU USE SIGNAL GENERATORS IN YOUR PRESENT JOB                                                                           | 90         | 88         | 100        | 100        | 100        |
| M 770 M2-02 DO YOU PERFORM OPERATIONAL CHECKS WHILE USING SIGNAL<br>GENERATORS                                                         | 90         | 88         | 100        | 100        | 100        |
| M 771 M2-03 DO YOU PERFORM PERIODIC MAINTENANCE SUCH AS<br>ADJUSTING, ALIGNING, OR CALIBRATING WHILE USING SIGNAL<br>GENERATORS        | 80         | 75         | 100        | 0          | 100        |
| M 772 M2-04 DO YOU TROUBLESHOOT TO AN ASSEMBLY OR SUBASSEMBLY<br>WHILE USING SIGNAL GENERATORS                                         | 80         | 75         | 100        | 0          | 100        |
| M 773 M2-05 DO YOU TROUBLESHOOT TO THE SMALLEST REPLACEABLE<br>COMPONENT WHILE USING SIGNAL GENERATORS                                 | 80         | 75         | 100        | 0          | 100        |
| M 774 M2-06 DO YOU USE AUDIO SINE-WAVE GENERATORS                                                                                      | 30         | 38         | 0          | 100        | 33         |
| M 775 M2-07 DO YOU USE AUDIO NON-SINUSOIDAL WAVE GENERATORS SUCH<br>AS SQUARE WAVE, TRIANGLE, PULSE, OR SPIRE                          | 90         | 88         | 100        | 100        | 100        |
| M 776 M2-08 DO YOU USE RF GENERATORS LESS THAN 1,000 MH                                                                                | 30         | 38         | 0          | 100        | 33         |
| M 777 M2-09 DO YOU USE RF GENERATORS GREATER THAN 1,000 MH                                                                             | 30         | 38         | 0          | 100        | 33         |
| M 778 M2-10 DO YOU USE OTHER SPECIAL PURPOSE OR MULTI-FUNCTION<br>GENERATORS                                                           | 40         | 38         | 50         | 0          | 50         |
| M 779 M3-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS DEALING<br>WITH ALTERNATING CURRENT OR DIRECT CURRENT MOTORS OR<br>GENERATORS | 80         | 75         | 100        | 0          | 100        |
| M 780 M3-02 DO YOU INSPECT MOTORS                                                                                                      | 70         | 63         | 100        | 0          | 83         |
| M 781 M3-03 DO YOU CLEAN OR LUBRICATE MOTORS                                                                                           | 60         | 50         | 100        | 0          | 67         |
| M 782 M3-04 DO YOU OPERATE MOTORS                                                                                                      | 80         | 75         | 100        | 0          | 100        |
| M 783 M3-05 DO YOU REMOVE OR REPLACE COMPLETE MOTORS                                                                                   | 80         | 75         | 100        | 0          | 100        |
| M 784 M3-06 DO YOU REMOVE OR REPLACE MOTOR PARTS                                                                                       | 40         | 50         | 0          | 0          | 67         |
| M 785 M3-07 DO YOU TROUBLESHOOT AS F.R. AS CHECKING WIRE<br>CONNECTIONS OF MOTORS                                                      | 70         | 75         | 50         | 0          | 100        |
| M 786 M3-08 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF MOTORS                                                                      | 40         | 50         | 0          | 0          | 67         |
| M 787 M3-09 DO YOU PERFORM ANY TASKS ON FIELD COILS                                                                                    | 20         | 25         | 0          | 0          | 33         |
| M 788 M3-10 DO YOU PERFORM ANY TASKS ON ARMATURES                                                                                      | 40         | 50         | 0          | 0          | 67         |
| M 789 M3-11 DO YOU PERFORM ANY TASKS ON MOTORS                                                                                         | 20         | 25         | 0          | 0          | 33         |
| M 790 M3-12 DO YOU PERFORM ANY TASKS ON BRUSHES                                                                                        | 50         | 63         | 0          | 0          | 83         |
| M 791 M3-13 DO YOU PERFORM ANY TASKS ON SLIP RINGS                                                                                     | 10         | 13         | 0          | 0          | 17         |
| M 792 M3-14 DO YOU PERFORM ANY TASKS ON COMMUTATORS                                                                                    | 40         | 50         | 0          | 0          | 67         |
| M 793 M3-15 DO YOU PERFORM ANY TASKS ON POLE PIECES                                                                                    | 10         | 13         | 0          | 0          | 17         |

USE OF SIGNAL GENERATORS

MOTORS AND GENERATORS

TASK GROUP SUMMARY  
PERCENT MEMBERS PARTICIPATING

DY-75K

|                                                                                                            | SPC<br>U26 | SPC<br>027 | SPC<br>U28 | SPC<br>U29 | SPC<br>U31 |
|------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| N 794 N3-16 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OF THE FORCE OR TORQUE CREATED BY A MOTOR            | 0          | 0          | 0          | 0          | 0          |
| N 795 N3-17 DO YOU DETERMINE OR MEASURE THE DIRECTION OF THE MECHANICAL FORCE OR TORQUE CREATED BY A MOTOR | 40         | 50         | 0          | 0          | 67         |
| N 796 N3-18 DO YOU DETERMINE OR MEASURE THE MAGNITUDE OR DIRECTION OF THE INDUCED VOLTAGE IN MOTORS        | 0          | 0          | 0          | 0          | 0          |
| N 797 N3-19 DO YOU WORK WITH SYNCHRONOUS MOTORS                                                            | 50         | 63         | 0          | 0          | 83         |
| N 798 N3-20 DO YOU WORK WITH INDUCTION MOTORS                                                              | 20         | 25         | 0          | 0          | 33         |
| N 799 N3-21 DO YOU WORK WITH SPLIT-PHASE MOTORS                                                            | 40         | 50         | 0          | 0          | 67         |
| N 800 N3-22 DO YOU WORK WITH SOME COMBINATION OF THE ABOVE MOTORS                                          | 50         | 38         | 100        | 0          | 83         |
| N 801 N3-23 DO YOU INSPECT GENERATORS?                                                                     | 30         | 13         | 100        | 0          | 17         |
| N 802 N3-24 DO YOU CLEAN OR LUBRICATE GENERATORS                                                           | 20         | 13         | 50         | 0          | 17         |
| N 803 N3-25 DO YOU OPERATE GENERATORS                                                                      | 20         | 13         | 50         | 0          | 33         |
| N 804 N3-26 DO YOU REMOVE OR REPLACE COMPLETE GENERATORS                                                   | 10         | 13         | 0          | 0          | 17         |
| N 805 N3-27 DO YOU REMOVE OR REPLACE GENERATOR PARTS                                                       | 10         | 13         | 0          | 0          | 17         |
| N 806 N3-28 DO YOU TROUBLESHOOT AS F.A.M. AS CHECKING WIRE CONNECTIONS OF GENERATORS                       | 20         | 13         | 50         | 0          | 17         |
| N 807 N3-29 DO YOU TROUBLESHOOT DOWN TO COMPONENT PARTS OF GENERATORS                                      | 0          | 0          | 0          | 0          | 0          |
| N 808 N1-01 DO YOU WORK WITH METERS IN YOUR PRESENT JOB                                                    | 80         | 75         | 100        | 0          | 100        |
| N 809 N1-02 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF PERMANENT MAGNETS                            | 40         | 38         | 50         | 0          | 50         |
| N 810 N1-03 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF MOVING COILS                                 | 30         | 38         | 0          | 0          | 50         |
| N 811 N1-04 DO YOU CONCEPTUALIZE OR CONSIDER THE FUNCTIONS OF SPIRAL SPRINGS                               | 30         | 38         | 0          | 0          | 50         |
| N 812 N1-05 DO YOU READ METER SCALES                                                                       | 70         | 63         | 100        | 0          | 83         |
| N 813 N1-06 DO YOU EXTEND THE RANGE OF AMMETERS                                                            | 20         | 25         | 0          | 0          | 33         |
| N 814 N1-07 DO YOU ZERO OHMMETERS                                                                          | 80         | 75         | 100        | 0          | 100        |
| N 815 N1-08 DO YOU ZERO AMMETERS                                                                           | 20         | 25         | 0          | 0          | 33         |
| N 816 N1-09 DO YOU EXTEND THE RANGE OF VOLTMETERS                                                          | 20         | 25         | 0          | 0          | 33         |
| N 817 N1-10 DO YOU USE OR REFER TO VOLTMETER SENSITIVITY (EXPRESSED IN UNITS OF OHMS PER VOLT)             | 50         | 63         | 0          | 0          | 83         |
| N 818 N2-01 DO YOU WORK WITH SATURABLE REACTORS OR MAGNETIC AMPLIFIERS IN YOUR PRESENT JOB                 | 0          | 0          | 0          | 0          | 0          |
| N 819 N2-02 DO YOU INSPECT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS                                       | 0          | 0          | 0          | 0          | 0          |
| N 820 N2-03 DO YOU CLEAN MAGNETIC AMPLIFIERS OR SATURABLE REACTORS                                         | 0          | 0          | 0          | 0          | 0          |
| N 821 N2-04 DO YOU ADJUST MAGNETIC AMPLIFIERS OR SATURABLE REACTORS                                        | 0          | 0          | 0          | 0          | 0          |
| N 822 N2-05 DO YOU TROUBLESHOOT MAGNETIC AMPLIFIERS OR SATURABLE REACTORS                                  | 0          | 0          | 0          | 0          | 0          |
| N 823 N2-06 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIERS OR SATURABLE REACTORS                             | 0          | 0          | 0          | 0          | 0          |
| N 824 N2-07 DO YOU REMOVE OR REPLACE MAGNETIC AMPLIFIER OR SATURABLE REACTOR COMPONENTS                    | 0          | 0          | 0          | 0          | 0          |

# PCT MARS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPSUMZ PAGE 30

DY-TSK

SPC SPC SPC SPC SPC  
026 027 028 029 031

|       |                                                             |    |    |    |     |    |
|-------|-------------------------------------------------------------|----|----|----|-----|----|
| N 825 | N2-08 DO YOU USE OR REFER TO HYSTERESIS CURVES OR LOOPS     | 0  | 0  | 0  | 0   | 0  |
| N 826 | N2-09 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT | 0  | 0  | 0  | 0   | 0  |
|       | WAVEFORMS ACROSS REACTOR WINDINGS ON LOAD RESISTORS OF      |    |    |    |     |    |
|       | SINGLE WINDING SATURABLE REACTORS                           |    |    |    |     |    |
| N 827 | N2-10 DO YOU MEASURE OUTPUT WAVEFORMS ACROSS REACTOR        | 0  | 0  | 0  | 0   | 0  |
|       | WINDINGS ON LOAD RESISTORS OF SINGLE WINDING SATURABLE      |    |    |    |     |    |
|       | REACTORS                                                    |    |    |    |     |    |
| N 828 | N2-11 DO YOU INTERPRET SCHEMATIC DRAWINGS TO DEVELOP OUTPUT | 0  | 0  | 0  | 0   | 0  |
|       | WAVEFORMS FOR MAGNETIC AMPLIFIERS                           |    |    |    |     |    |
| N 829 | N2-12 DO YOU USE OR REFER TO COERCIVE FORCE IN SATURABLE    | 0  | 0  | 0  | 0   | 0  |
|       | REACTORS                                                    |    |    |    |     |    |
| N 830 | N2-13 DO YOU USE OR REFER TO RESIDUAL MAGNETISM IN          | 0  | 0  | 0  | 0   | 0  |
|       | SATURABLE REACTORS                                          |    |    |    |     |    |
| N 831 | N2-14 DO YOU USE OR REFER TO FLUX DENSITY IN SATURABLE      | 0  | 0  | 0  | 0   | 0  |
|       | REACTORS                                                    |    |    |    |     |    |
| N 832 | N2-15 DO YOU USE OR REFER TO POINT OF SATURATION IN         | 0  | 0  | 0  | 0   | 0  |
|       | SATURABLE REACTORS                                          |    |    |    |     |    |
| N 833 | N2-16 DO YOU USE OR REFER TO SATURABLE REACTOR SCHEMATIC    | 0  | 0  | 0  | 0   | 0  |
|       | SYMBOLS                                                     |    |    |    |     |    |
| N 834 | N3-01 DO YOU WORK WITH WAVESHAPING CIRCUITS IN YOUR PRESENT | 60 | 63 | 50 | 100 | 67 |
|       | JOB                                                         |    |    |    |     |    |
| N 835 | N3-02 DO YOU USE OR REFER TO TRANSIENT INTERVALS            | 20 | 25 | 0  | 0   | 33 |
| N 836 | N3-03 DO YOU USE OR REFER TO PULSE WIDTH (PW)               | 70 | 75 | 50 | 100 | 83 |
| N 837 | N3-04 DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)    | 50 | 50 | 50 | 100 | 50 |
| N 838 | N3-05 DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY     | 50 | 50 | 50 | 100 | 50 |
|       | (PRF)                                                       |    |    |    |     |    |
| N 839 | N3-06 DO YOU USE OR REFER TO DIFFERENTIATING CIRCUITS       | 40 | 50 | 0  | 0   | 67 |
| N 840 | N3-07 DO YOU USE OR REFER TO INTEGRATING CIRCUITS           | 40 | 50 | 0  | 0   | 67 |
| N 841 | N3-08 DO YOU USE OR REFER TO THE CLASSIFICATION OF TIME     | 50 | 63 | 0  | 100 | 67 |
|       | CONSTANTS (TC) AS LONG, MEDIUM, OR SHORT                    |    |    |    |     |    |
| N 842 | N3-09 DO YOU DETERMINE WHETHER AN LR OR RC CIRCUIT IS       | 0  | 0  | 0  | 0   | 0  |
|       | DIFFERENTIATING OR INTEGRATING, BASED ON THE TIME CONSTANT  |    |    |    |     |    |
|       | AND OUTPUT CONFIGURATION                                    |    |    |    |     |    |
| N 843 | N3-10 DO YOU WORK WITH SQUARE WAVE GENERATORS               | 50 | 50 | 50 | 100 | 50 |
| N 844 | N3-11 DO YOU WORK WITH RECTANGULAR WAVE GENERATORS          | 50 | 50 | 50 | 100 | 50 |
| N 845 | N3-01 DO YOU WORK ON SINGLE SIDEBAND SYSTEMS IN YOUR        | 0  | 0  | 0  | 0   | 0  |
|       | PRESENT JOB                                                 |    |    |    |     |    |
| N 846 | N1-02 DO YOU INSPECT SSB TRANSMIT OR RECEIVE SYSTEMS        | 0  | 0  | 0  | 0   | 0  |
| N 847 | N1-03 DO YOU CLEAN SSB TRANSMIT OR RECEIVE SYSTEMS          | 0  | 0  | 0  | 0   | 0  |
| N 848 | N1-04 DO YOU ALIGN SSB TRANSMIT OR RECEIVE SYSTEMS          | 0  | 0  | 0  | 0   | 0  |
| N 849 | N1-05 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE        | 0  | 0  | 0  | 0   | 0  |
|       | SYSTEMS                                                     |    |    |    |     |    |
| N 850 | N1-06 DO YOU TROUBLESHOOT TO SSB TRANSMIT OR RECEIVE        | 0  | 0  | 0  | 0   | 0  |
|       | COMPONENTS                                                  |    |    |    |     |    |
| N 851 | N1-07 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE      | 0  | 0  | 0  | 0   | 0  |
|       | SYSTEMS                                                     |    |    |    |     |    |
| N 852 | N1-08 DO YOU REMOVE OR REPLACE SSB TRANSMIT OR RECEIVE      | 0  | 0  | 0  | 0   | 0  |
|       | COMPONENTS                                                  |    |    |    |     |    |

WAVESHAPING CIRCUITS

SINGLE SIDEBAND SYSTEMS

# PCT MEMS RESPONDING TESTS BY SELECTED GRPS

SPS002 PAGE 31

## TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

01-15K

SPC SPC SPC SPC SPC  
026 027 028 029 031

|                                                                   |    |    |    |     |    |
|-------------------------------------------------------------------|----|----|----|-----|----|
| 0 053 01-09 00 YOU PERFORM TASKS ON SSB AUDIO AMPLIFIERS          | 0  | 0  | 0  | 0   | 0  |
| 0 054 01-10 00 YOU PERFORM TASKS ON SSB BALANCED MODULATORS       | 0  | 0  | 0  | 0   | 0  |
| 0 055 01-11 00 YOU PERFORM TASKS ON SSB CARRIER OSCILLATORS       | 0  | 0  | 0  | 0   | 0  |
| 0 056 01-12 00 YOU PERFORM TASKS ON SSB LC FILTERS                | 0  | 0  | 0  | 0   | 0  |
| 0 057 01-13 00 YOU PERFORM TASKS ON SSB CRYSTAL FILTERS           | 0  | 0  | 0  | 0   | 0  |
| 0 058 01-14 00 YOU PERFORM TASKS ON SSB MECHANICAL FILTERS        | 0  | 0  | 0  | 0   | 0  |
| 0 059 01-15 00 YOU PERFORM TASKS ON SSB OSCILLATORS               | 0  | 0  | 0  | 0   | 0  |
| 0 060 01-16 00 YOU PERFORM TASKS ON SSB MIXERS                    | 0  | 0  | 0  | 0   | 0  |
| 0 061 01-17 00 YOU PERFORM TASKS ON SSB DRIVERS                   | 0  | 0  | 0  | 0   | 0  |
| 0 062 01-18 00 YOU PERFORM TASKS ON SSB POWER AMPLIFIERS          | 0  | 0  | 0  | 0   | 0  |
| 0 063 01-19 00 YOU PERFORM TASKS ON SSB RF AMPLIFIERS             | 0  | 0  | 0  | 0   | 0  |
| 0 064 01-20 00 YOU PERFORM TASKS ON SSB FREQUENCY CONVERTERS      | 0  | 0  | 0  | 0   | 0  |
| 0 065 01-21 00 YOU PERFORM TASKS ON SSB IF AMPLIFIERS             | 0  | 0  | 0  | 0   | 0  |
| 0 066 01-22 00 YOU PERFORM TASKS ON SSB DEMODULATORS              | 0  | 0  | 0  | 0   | 0  |
| 0 067 01-23 00 YOU PERFORM TASKS ON SSB DON'T REMEMBER WHICH SSB  | 0  | 0  | 0  | 0   | 0  |
| SYSTEM STAGES                                                     |    |    |    |     |    |
| 0 068 01-24 00 YOU USE ON REFER TO SELECTIVE FADING               | 0  | 0  | 0  | 0   | 0  |
| 0 069 01-25 00 YOU USE ON REFER TO PEAK POWER                     | 0  | 0  | 0  | 0   | 0  |
| 0 070 01-26 00 YOU USE ON REFER TO FREQUENCY STABILITY            | 0  | 0  | 0  | 0   | 0  |
| 0 071 01-27 00 YOU USE ON REFER TO RESPONSE CURVES FOR            | 0  | 0  | 0  | 0   | 0  |
| BANDWIDTH FILTERS                                                 |    |    |    |     |    |
| 0 072 01-28 00 YOU CALCULATE PEAK POWER OR EFFECTIVE POWER OF SSB | 0  | 0  | 0  | 0   | 0  |
| TRANSMITTERS                                                      |    |    |    |     |    |
| 0 073 01-29 00 YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SSB     | 0  | 0  | 0  | 0   | 0  |
| 0 074 01-30 00 YOU TRACE SIGNALS ON CURRENT PATHS THROUGH SSB     | 0  | 0  | 0  | 0   | 0  |
| RECEIVER SCHEMATIC DIAGRAMS                                       |    |    |    |     |    |
| 0 075 02-01 00 YOU WORK ON PULSE MODULATION SYSTEMS IN YOUR       | 30 | 25 | 50 | 100 | 17 |
| PRESENT JOB                                                       |    |    |    |     |    |
| 0 076 02-02 00 YOU INSPECT PULSE MODULATION SYSTEMS               | 30 | 25 | 50 | 100 | 17 |
| 0 077 02-03 00 YOU CLEAN PULSE MODULATION SYSTEMS                 | 20 | 13 | 50 | 100 | 0  |
| 0 078 02-04 00 YOU ALIGN PULSE MODULATION SYSTEMS                 | 30 | 25 | 50 | 100 | 17 |
| 0 079 02-05 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEMS       | 30 | 25 | 50 | 100 | 17 |
| 0 080 02-06 00 YOU TROUBLESHOOT TO PULSE MODULATION SYSTEM        | 20 | 25 | 0  | 100 | 17 |
| COMPONENTS                                                        |    |    |    |     |    |
| 0 081 02-07 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEMS     | 20 | 25 | 0  | 100 | 17 |
| 0 082 02-08 00 YOU REMOVE OR REPLACE PULSE MODULATION SYSTEM      | 20 | 25 | 0  | 100 | 17 |
| COMPONENTS                                                        |    |    |    |     |    |
| 0 083 02-09 00 YOU WORK ON PULSE-AMPLITUDE MODULATION (PAM)       | 10 | 13 | 0  | 100 | 0  |
| SYSTEMS                                                           |    |    |    |     |    |
| 0 084 02-10 00 YOU WORK ON PULSE-DURATION MODULATION (PDM)        | 10 | 13 | 0  | 100 | 0  |
| SYSTEMS                                                           |    |    |    |     |    |
| 0 085 02-11 00 YOU WORK ON PULSE-POSITION MODULATION (PPM)        | 10 | 13 | 0  | 100 | 0  |
| SYSTEMS                                                           |    |    |    |     |    |
| 0 086 02-12 00 YOU WORK ON PULSE-CODE MODULATION (PCM) SYSTEMS    | 10 | 13 | 0  | 100 | 0  |
| 0 087 02-13 00 YOU WORK ON LINE PULSING MODULATION SYSTEMS        | 10 | 13 | 0  | 100 | 0  |
| 0 088 02-14 00 YOU WORK ON DON'T REMEMBER WHICH TYPE OF           | 10 | 0  | 50 | 0   | 0  |
| MODULATION SYSTEM                                                 |    |    |    |     |    |

PULSE MODULATION SYSTEMS

PCT MEMS RESPONDING YES BY SELECTED GRPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

|       |       | DY-TSK                                                                                            |  | SPC 026 |    | SPC 027 |     | SPC 028 |  | SPC 029 |  | SPC 031 |  |
|-------|-------|---------------------------------------------------------------------------------------------------|--|---------|----|---------|-----|---------|--|---------|--|---------|--|
| 0 889 | 02-15 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER SUPPLIES                                    |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 890 | 02-16 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM CHARGING CHORES AND CHARGING DIODES               |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 891 | 02-17 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE FORMING NETWORKS                            |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 892 | 02-18 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TIMERS                                            |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 893 | 02-19 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM SWITCHES SUCH AS GAS THYRISTORS                   |  | 0       | 0  | 0       | 0   | 0       |  |         |  |         |  |
| 0 894 | 02-20 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM PULSE TRANSFORMERS                                |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 895 | 02-21 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM TRANSMITTER TUNES                                 |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 896 | 02-22 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM RF AMPLIFIERS                                     |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 897 | 02-23 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM FREQUENCY CONVERTERS                              |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 898 | 02-24 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM IF AMPLIFIERS                                     |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 899 | 02-25 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM ULTRECTORS                                        |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 900 | 02-26 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM VIDEO AMPLIFIERS                                  |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 901 | 02-27 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM POWER VIDEO AMPLIFIERS                            |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 902 | 02-28 | DO YOU PERFORM TASKS ON PULSE MODULATION SYSTEM DUNAT REGENER MICH PULSE MODULATION SYSTEM STAGES |  | 10      | 0  | 50      | 0   | 0       |  |         |  |         |  |
| 0 903 | 02-29 | DO YOU USE OR REFER TO PULSE RECURRENCE FREQUENCY (PRF)                                           |  | 20      | 25 | 0       | 100 | 17      |  |         |  |         |  |
| 0 904 | 02-30 | DO YOU USE OR REFER TO PULSE RECURRENCE TIME (PRT)                                                |  | 20      | 25 | 0       | 100 | 17      |  |         |  |         |  |
| 0 905 | 02-31 | DO YOU USE OR REFER TO PULSE WIDTH (PW)                                                           |  | 30      | 25 | 50      | 100 | 17      |  |         |  |         |  |
| 0 906 | 02-32 | DO YOU USE OR REFER TO PULSE SHAPE                                                                |  | 30      | 25 | 50      | 100 | 17      |  |         |  |         |  |
| 0 907 | 02-33 | DO YOU USE OR REFER TO PEAK POWER                                                                 |  | 30      | 25 | 50      | 100 | 17      |  |         |  |         |  |
| 0 908 | 02-34 | DO YOU USE OR REFER TO AVERAGE POWER                                                              |  | 30      | 25 | 50      | 100 | 17      |  |         |  |         |  |
| 0 909 | 02-35 | DO YOU CALCULATE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)                  |  | 0       | 0  | 0       | 0   | 0       |  |         |  |         |  |
| 0 910 | 02-36 | DO YOU MEASURE PULSE RECURRENCE TIME (PRT) OR PULSE RECURRENCE FREQUENCY (PRF)                    |  | 10      | 13 | 0       | 100 | 0       |  |         |  |         |  |
| 0 911 | 02-37 | DO YOU USE FORMULAS TO CALCULATE AVERAGE POWER OR PEAK POWER OF PULSE MODULATION TRANSMIT SYSTEMS |  | 0       | 0  | 0       | 0   | 0       |  |         |  |         |  |
| 0 912 | 02-38 | DO YOU TRACE SIGNALS ON CURRENT PATHS THROUGH PULSE MODULATION TRANSMITTER SCHEMATIC DIAGRAMS     |  | 30      | 25 | 50      | 100 | 17      |  |         |  |         |  |
| 0 913 | 02-39 | DO YOU TRACE SIGNALS ON CURRENT PATHS THROUGH PULSE MODULATION RECEIVER SCHEMATIC DIAGRAMS        |  | 30      | 25 | 50      | 100 | 17      |  |         |  |         |  |
| 0 914 | 03-01 | DO YOU WORK WITH ANTENNAS IN YOUR PRESENT JOB                                                     |  | 40      | 34 | 50      | 100 | 33      |  |         |  |         |  |
| 0 915 | 03-02 | DO YOU INSPECT ANTENNAS                                                                           |  | 40      | 34 | 50      | 100 | 33      |  |         |  |         |  |

ANTENNAS



# PCT HARS RESPONDING 'YES' BY SELECTED GMPs

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPSUM2 PAGE 34

DT-TSK

|                                                                                                                                                                                                                                                                   | SPC<br>U26 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>U31 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| 0 945 03-32 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS                                                                                                                                                                                        | 10         | 13         | 0          | 100        | 0          |
| 0 946 03-33 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS DIRECTORS                                                                                                                                                                   | 10         | 13         | 0          | 100        | 0          |
| 0 947 03-34 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN PARASITIC ELEMENTS SERVING AS REFLECTORS                                                                                                                                                                  | 10         | 13         | 0          | 100        | 0          |
| 0 948 03-35 DO THE ANTENNA ARRAYS YOU WORK WITH CONTAIN DON'T REMEMBER WHAT KIND OF ELEMENTS                                                                                                                                                                      | 20         | 13         | 50         | 0          | 17         |
| 0 949 03-36 DO YOU WORK ON UNIDIRECTIONAL ANTENNAS                                                                                                                                                                                                                | 20         | 25         | 0          | 100        | 17         |
| 0 950 03-37 DO YOU WORK ON BIDIRECTIONAL ANTENNAS                                                                                                                                                                                                                 | 10         | 13         | 0          | 100        | 0          |
| 0 951 03-38 DO YOU WORK ON DON'T REMEMBER THE DIRECTIONALITY                                                                                                                                                                                                      | 20         | 13         | 50         | 0          | 17         |
| 0 952 03-39 DO YOU WORK WITH ROTAR ANTENNA ARRAYS                                                                                                                                                                                                                 | 0          | 0          | 0          | 0          | 0          |
| P 953 PT-01 IN YOUR PRESENT JOB DO YOU WORK WITH TRANSMISSION LINES (TRANSMISSION LINES ARE DEFINED TO INCLUDE LEADS BETWEEN RECEIVERS AND ANTENNAS, TELEPHONE LEADS, AS WELL AS HIGH VOLTAGE POWER LINES, ETC. DO NOT CONSIDER WAVEGUIDES AS TRANSMISSION LINES) | 10         | 13         | 0          | 0          | 17         |
| P 954 PT-02 DO YOU REFER TO OR USE COUPLEN LOSS OR I2R LOSS IN TRANSMISSION LINES                                                                                                                                                                                 | 0          | 0          | 0          | 0          | 0          |
| P 955 PT-03 DO YOU REFER TO OR USE SKIN EFFECTS OF HIGH FREQUENCY CURRENTS IN TRANSMISSION LINES                                                                                                                                                                  | 0          | 0          | 0          | 0          | 0          |
| P 956 PT-04 DO YOU REFER TO OR USE RADIATION LOSS IN TRANSMISSION LINES                                                                                                                                                                                           | 0          | 0          | 0          | 0          | 0          |
| P 957 PT-05 DO YOU USE OR REFER TO DIELECTRIC LOSS IN TRANSMISSION LINES                                                                                                                                                                                          | 0          | 0          | 0          | 0          | 0          |
| P 958 PT-06 DO YOU USE OR REFER TO LEAKAGE LOSSES IN TRANSMISSION LINES                                                                                                                                                                                           | 10         | 13         | 0          | 0          | 17         |
| P 959 PT-07 DO YOU WORK WITH TWISTED PAIR TRANSMISSION LINES                                                                                                                                                                                                      | 10         | 13         | 0          | 0          | 17         |
| P 960 PT-08 DO YOU WORK WITH TWIN LEAD TRANSMISSION LINES                                                                                                                                                                                                         | 0          | 0          | 0          | 0          | 0          |
| P 961 PT-09 DO YOU WORK WITH OPEN TWO-WIRE TRANSMISSION LINES                                                                                                                                                                                                     | 0          | 0          | 0          | 0          | 0          |
| P 962 PT-10 DO YOU WORK WITH FLEXIBLE COAXIAL CABLE TRANSMISSION LINES                                                                                                                                                                                            | 10         | 13         | 0          | 0          | 17         |
| P 963 PT-11 DO YOU WORK WITH RIGID COAXIAL CABLE TRANSMISSION LINES                                                                                                                                                                                               | 0          | 0          | 0          | 0          | 0          |
| P 964 PT-12 DO YOU TROUBLESHOOT TRANSMISSION LINES                                                                                                                                                                                                                | 10         | 13         | 0          | 0          | 17         |
| P 965 PT-13 DO YOU ANALYZE VOLTAGE OR CURRENT WAVEFORMS IN TRANSMISSION LINES TO DETERMINE THE TYPE OF TERMINATION (OPEN, SHORTED, CAPACITIVE, INDUCTIVE)                                                                                                         | 10         | 13         | 0          | 0          | 17         |
| P 966 PT-14 DO YOU SELECT APPROPRIATE TRANSMISSION LINES TERMINATIONS TO ACHIEVE DESIRED WAVEFORMS                                                                                                                                                                | 10         | 13         | 0          | 0          | 17         |
| P 967 PT-15 DO YOU USE OR REFER TO SCHEMATIC SYMBOLS FOR LINE TERMINATIONS IN TERMS OF CIRCUIT TERMINATIONS                                                                                                                                                       | 10         | 13         | 0          | 0          | 17         |
| P 968 PT-16 DO YOU MEASURE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES                                                                                                                                                                                       | 0          | 0          | 0          | 0          | 0          |
| P 969 PT-17 DO YOU CALCULATE STANDING WAVE RATIOS (SWR) OF TRANSMISSION LINES                                                                                                                                                                                     | 0          | 0          | 0          | 0          | 0          |
| P 970 PT-18 DO YOU PERFORM THE CALCULATIONS NECESSARY TO DETERMINE THE IMPEDANCE AND LENGTH OF QUARTER - WAVELENGTH MATCHING TRANSFORMERS TO MATCH TRANSMISSION LINES TO LOADS                                                                                    | 0          | 0          | 0          | 0          | 0          |

TRANSMISSION LINES

# PLT MEMS RESPONDING YES BY SELECTED GMPs

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPMUMZ PAGE 35

DT-TSK

|                                                                                                                                                                                    | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| P 971 P1-19 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING MATCHING TRANSFORMERS                                                                             | 10         | 13         | 0          | 0          | 17         |
| P 972 P1-20 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING DELTA MATCHING                                                                                    | 10         | 13         | 0          | 0          | 17         |
| P 973 P1-21 DO YOU SELECT THE TYPE OF TRANSMISSION LINE NEEDED FOR PARTICULAR JOBS WITHOUT REFERRING TO TECHNICAL DATA                                                             | 0          | 0          | 0          | 0          | 0          |
| P 974 P1-22 DO YOU USE OR REFER TO THE TERM CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES                                                                                    | 10         | 13         | 0          | 0          | 17         |
| P 975 P1-23 DO YOU CALCULATE THE CHARACTERISTIC IMPEDANCE (Z0) OF TRANSMISSION LINES                                                                                               | 0          | 0          | 0          | 0          | 0          |
| P 976 P1-24 DO YOU USE OR REFER TO THE TERM CUTOFF FREQUENCY OF TRANSMISSION LINES                                                                                                 | 0          | 0          | 0          | 0          | 0          |
| P 977 P1-25 DO YOU USE OR REFER TO THE TERM VELOCITY FACTOR (K) OF TRANSMISSION LINES                                                                                              | 0          | 0          | 0          | 0          | 0          |
| P 978 P1-26 DO YOU COMPUTE THE ELECTRICAL LENGTH OF TRANSMISSION LINES FOR PARTICULAR FREQUENCIES                                                                                  | 0          | 0          | 0          | 0          | 0          |
| P 979 P1-27 DO YOU CONSTRUCT TRANSMISSION LINES OF PARTICULAR ELECTRICAL LENGTH FOR GIVEN FREQUENCIES                                                                              | 0          | 0          | 0          | 0          | 0          |
| P 980 P1-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT AS THE FREQUENCY INCREASES AND THE PHYSICAL LENGTH OF TRANSMISSION LINES REMAIN CONSTANT, THE ELECTRICAL LENGTH INCREASES | 0          | 0          | 0          | 0          | 0          |
| P 981 P1-29 DO YOU WORK WITH NONRESONANT (FLAT) TRANSMISSION LINES                                                                                                                 | 0          | 0          | 0          | 0          | 0          |
| P 982 P1-30 DO YOU WORK WITH RESONANT TRANSMISSION LINES                                                                                                                           | 0          | 0          | 0          | 0          | 0          |
| P 983 P1-31 DO YOU WORK WITH TRANSMISSION LINES WHICH ARE MATCHED TO LOADS USING STUB MATCHING                                                                                     | 0          | 0          | 0          | 0          | 0          |
| P 984 P2-01 DO YOU WORK WITH WAVEGUIDES OR CAVITY RESONATORS IN YOUR PRESENT JOB                                                                                                   | 0          | 0          | 0          | 0          | 0          |
| P 985 P2-02 DO YOU INSPECT WAVEGUIDES OR CAVITY RESONATORS                                                                                                                         | 0          | 0          | 0          | 0          | 0          |
| P 986 P2-03 DO YOU CLEAN WAVEGUIDES OR CAVITY RESONATORS                                                                                                                           | 0          | 0          | 0          | 0          | 0          |
| P 987 P2-04 DO YOU BEND WAVEGUIDES OR CAVITY RESONATORS                                                                                                                            | 0          | 0          | 0          | 0          | 0          |
| P 988 P2-05 DO YOU THIST WAVEGUIDES OR CAVITY RESONATORS                                                                                                                           | 0          | 0          | 0          | 0          | 0          |
| P 989 P2-06 DO YOU PRESSURIZE WAVEGUIDES OR CAVITY RESONATORS                                                                                                                      | 0          | 0          | 0          | 0          | 0          |
| P 990 P2-07 DO YOU PURGE WAVEGUIDES OR CAVITY RESONATORS                                                                                                                           | 0          | 0          | 0          | 0          | 0          |
| P 991 P2-08 DO YOU TROUBLESHOOT WAVEGUIDES OR CAVITY RESONATORS                                                                                                                    | 0          | 0          | 0          | 0          | 0          |
| P 992 P2-09 DO YOU REMOVE OR INSTALL COMPLETE WAVEGUIDES                                                                                                                           | 0          | 0          | 0          | 0          | 0          |
| P 993 P2-10 DO YOU REMOVE OR INSTALL WAVEGUIDE SECTIONS                                                                                                                            | 0          | 0          | 0          | 0          | 0          |
| P 994 P2-11 DO YOU REMOVE OR INSTALL DUMMY LOADS                                                                                                                                   | 0          | 0          | 0          | 0          | 0          |
| P 995 P2-12 DO YOU REMOVE OR INSTALL E BENDS                                                                                                                                       | 0          | 0          | 0          | 0          | 0          |
| P 996 P2-13 DO YOU REMOVE OR INSTALL H BENDS                                                                                                                                       | 0          | 0          | 0          | 0          | 0          |
| P 997 P2-14 DO YOU REMOVE OR INSTALL OTHER BENDS                                                                                                                                   | 0          | 0          | 0          | 0          | 0          |
| P 998 P2-15 DO YOU REMOVE OR INSTALL CHORE JOINTS                                                                                                                                  | 0          | 0          | 0          | 0          | 0          |
| P 999 P2-16 DO YOU REMOVE OR INSTALL ROTATING JOINTS                                                                                                                               | 0          | 0          | 0          | 0          | 0          |
| P1000 P2-17 DO YOU REMOVE OR INSTALL DIRECTIONAL COUPLERS                                                                                                                          | 0          | 0          | 0          | 0          | 0          |
| P1001 P2-18 DO YOU REMOVE OR INSTALL BIDIRECTIONAL COUPLERS                                                                                                                        | 0          | 0          | 0          | 0          | 0          |
| P1002 P2-19 DO YOU USE OR REFER TO "A" WALL OF WAVEGUIDES                                                                                                                          | 0          | 0          | 0          | 0          | 0          |

WAVEGUIDES AND CAVITY RESONATORS

# PERCENT MEMBERS RESPONDING "YES" BY SELECTED GROUPS

GPSUM2 PAGE 36

## TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

|                                                                                                                                                       | DY-TSK |  |  |  | SPC |     |     |     | SPC |     |     |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--|--|--|-----|-----|-----|-----|-----|-----|-----|-----|
|                                                                                                                                                       |        |  |  |  | U26 | U27 | U28 | U29 | U30 | U31 | U32 | U33 |
| P1003 P2-20 DO YOU USE OR REFER TO "H" WALL OF WAVEGUIDES                                                                                             |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1004 P2-21 DO YOU USE OR REFER TO CUTOFF FREQUENCY OF WAVEGUIDES                                                                                     |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1005 P2-22 DO YOU USE OR REFER TO FREQUENCY-DETERMINING WALL OF WAVEGUIDES                                                                           |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1006 P2-23 DO YOU USE OR REFER TO POWER-DETERMINING WALL OF WAVEGUIDES                                                                               |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1007 P2-24 DO YOU USE OR REFER TO ELECTRIC FIELD BOUNDARY CONDITIONS                                                                                 |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1008 P2-25 DO YOU USE OR REFER TO MAGNETIC FIELD BOUNDARY CONDITIONS                                                                                 |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1009 P2-26 DO YOU USE OR REFER TO DUPLEXER FIELD BOUNDARY CONDITIONS                                                                                 |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1010 P2-27 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST WAVEGUIDES ARE MADE WITH A "B" WALL SIZE OF .7 WAVELENGTHS OF THE OPERATING FREQUENCY   |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1011 P2-28 DO YOU USE OR REFER TO THE GENERAL RULE THAT MOST "A" WALLS RANGE FROM .2 TO .5 WAVELENGTHS IN SIZE, WITH .35 USED AS AN AVERAGE          |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1012 P2-29 ARE YOU CONCERNED WITH THE MATERIAL (SUCH AS BRASS) WHICH WAVEGUIDES ARE MADE OF                                                          |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1013 P2-30 DO YOU COMPUTE THE LENGTH OF A WAVEGUIDE FOR SPECIFIC INSTALLATION                                                                        |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1014 P2-31 DO YOU USE THE RIGHT HAND RULE TO DETERMINE THE DIRECTION OF PROPAGATION, DIRECTION OF "E" FIELD, OR DIRECTION OF "H" FIELD IN WAVEGUIDES |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1015 P2-32 DO YOU USE OR REFER TO THE TIME PHASE OF PEAK "E" OR "H" LINES IN WAVEGUIDES                                                              |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1016 P2-33 DO YOU MEASURE THE TIME PHASE OF "E" OR "H" LINES IN WAVEGUIDES                                                                           |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1017 P2-34 DO YOU USE OR REFER TO THE SPACE QUALITATIVE OF "E" OR "H" LINES IN WAVEGUIDES                                                            |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1018 P2-35 ARE HIGH POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH                                                               |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1019 P2-36 ARE LOW POWER PROBES USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH                                                                |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1020 P2-37 ARE LOOPS USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH                                                                           |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1021 P2-38 ARE APERTURES (WINDOWS OR PINHOLE) USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH                                                  |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1022 P2-39 ARE YOU REMEMBER THE KIND OF ENERGY COUPLING USED ON WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH                                        |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1023 P2-40 DO YOU DETERMINE WHERE PROBES SHOULD BE MOUNTED IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA                    |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |
| P1024 P2-41 DO YOU DETERMINE THE POSITIONING OF LOOPS IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO TECHNICAL DATA                          |        |  |  |  | 0   | 0   | 0   | 0   | 0   | 0   |     |     |

# PCT PLANS RESPONDING 'TILS' BY SELECTED GMPs

GPSUM4 PAGE 37

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

SPC SPC SPC SPC SPC  
026 027 028 029 031

0Y-TSA

PI024 P2-47 DO YOU DETERMINE THE POSITIONING OR SIZE OF APERTURES  
IN WAVEGUIDES OR CAVITY RESONATORS WITHOUT REFERRING TO  
TECHNICAL DATA

PI024 P2-47 ARE CHOKE JOINTS USED IN WAVEGUIDES OR CAVITY

RESONATORS YOU WORK WITH

PI027 P2-44 ARE ROTATING JOINTS USED IN WAVEGUIDES OR CAVITY

RESONATORS YOU WORK WITH

PI028 P2-45 ARE DON'T REMEMBER THE KIND OF JOINTS USED IN

WAVEGUIDES OR CAVITY RESONATORS YOU WORK WITH

PI029 P2-46 DO YOU TUNE CAVITY RESONATORS USING CAPACITIVE TUNING

PI030 P2-47 DO YOU TUNE CAVITY RESONATORS USING INDUCTIVE TUNING

PI031 P2-48 DO YOU TUNE CAVITY RESONATORS USING VOLUME TUNING

PI032 P2-49 DO YOU TUNE CAVITY RESONATORS USING DON'T REMEMBER

THE METHOD OF TUNING

PI033 P2-50 DO YOU MEASURE THE FREQUENCY OF SIGNALS IN CAVITY

RESONATORS

PI034 P3-01 IN YOUR PRESENT JOB DO YOU WORK WITH KLYSTRONS,

TRAVELING WAVE TUBES (TWT), PARAMETRIC AMPLIFIERS, OR

MAGNETRONS

PI035 P3-02 DO YOU USE OR REFER TO INTERELECTRODE CAPACITANCE

PI036 P3-03 DO YOU USE OR REFER TO ELECTRON TRANSIT TIME

PI037 P3-04 DO YOU USE OR REFER TO LEAD INDUCTANCE

PI038 P3-05 DO YOU USE OR REFER TO RF LOSSES IN EXTERNAL

CIRCUITS

PI039 P3-06 DO YOU USE OR REFER TO PRINCIPLE OF ELECTRON VELOCITY

MODULATION

PI040 P3-07 DO YOU USE OR REFER TO ELECTRON BUNCHING

PI041 P3-08 DO YOU WORK WITH TWO-CAVITY KLYSTRONS

PI042 P3-09 DO YOU WORK WITH THREE-CAVITY KLYSTRONS

PI043 P3-10 DO YOU WORK WITH REFLEX KLYSTRONS

PI044 P3-11 DO YOU WORK WITH TRAVELING-WAVE TUBES (TWT)

PI045 P3-12 DO YOU WORK WITH NONDEGENERATIVE PARAMETRIC

AMPLIFIERS

PI046 P3-13 DO YOU WORK WITH UP-CONVERTER PARAMETRIC AMPLIFIERS

PI047 P3-14 DO YOU WORK WITH MAGNETRONS

PI048 P3-15 DO YOU INSPECT KLYSTRONS OR TWT

PI049 P3-16 DO YOU CLEAN KLYSTRONS OR TWT

PI050 P3-17 DO YOU TUNE KLYSTRONS OR TWT ELECTRICALLY

PI051 P3-18 DO YOU TUNE KLYSTRONS OR TWT MECHANICALLY

PI052 P3-19 DO YOU PERFORM OPERATIONAL CHECKS OF KLYSTRONS OR

TWT

PI053 P3-20 DO YOU TROUBLESHOOT KLYSTRONS OR TWT

PI054 P3-21 DO YOU REMOVE OR REPLACE COMPLETE KLYSTRON OR TWT

PI055 P3-22 DO YOU REMOVE OR REPLACE KLYSTRON OR TWT COMPONENTS

PI056 P3-23 DO YOU INSPECT PARAMETRIC AMPLIFIERS

PI057 P3-24 DO YOU CLEAN PARAMETRIC AMPLIFIERS

PI058 P3-25 DO YOU ADJUST PARAMETRIC AMPLIFIERS

MICROWAVE AMPLIFIERS AND  
OSCILLATORS

# PCT MANS RESPONDING 'YES' BY SELECTED GRPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

GPSUM2 PAGE 38

DT-TSK

|                                                                                                          | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|----------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| PI059 P3-26 DO YOU TUNE PARAMETRIC AMPLIFIERS                                                            | U          | U          | U          | U          | U          |
| PI060 P3-27 DO YOU PERFORM OPERATIONAL CHECKS OF PARAMETRIC AMPLIFIERS                                   | U          | U          | U          | U          | U          |
| PI061 P3-28 DO YOU TROUBLESHOOT PARAMETRIC AMPLIFIERS                                                    | U          | U          | U          | U          | U          |
| PI062 P3-29 DO YOU REMOVE OR REPLACE COMPLETE PARAMETRIC AMPLIFIER                                       | U          | U          | U          | U          | U          |
| PI063 P3-30 DO YOU REMOVE OR REPLACE PARAMETRIC AMPLIFIER COMPONENTS                                     | U          | U          | U          | U          | U          |
| PI064 P3-31 DO YOU INSPECT MAGNETRONS                                                                    | U          | U          | U          | U          | U          |
| PI065 P3-32 DO YOU CLEAN MAGNETRONS                                                                      | U          | U          | U          | U          | U          |
| PI066 P3-33 DO YOU ADJUST MAGNETRONS                                                                     | U          | U          | U          | U          | U          |
| PI067 P3-34 DO YOU TUNE MAGNETRONS                                                                       | U          | U          | U          | U          | U          |
| PI068 P3-35 DO YOU PERFORM OPERATIONAL CHECKS OF MAGNETRONS                                              | U          | U          | U          | U          | U          |
| PI069 P3-36 DO YOU TROUBLESHOOT MAGNETRONS                                                               | U          | U          | U          | U          | U          |
| PI070 P3-37 DO YOU REMOVE OR REPLACE COMPLETE MAGNETRON                                                  | U          | U          | U          | U          | U          |
| PI071 P3-38 DO YOU REMOVE OR REPLACE MAGNETRON COMPONENTS                                                | U          | U          | U          | U          | U          |
| PI072 P3-39 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS COLLECTOR PLATES     | U          | U          | U          | U          | U          |
| PI073 P3-40 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER CAVITIES     | U          | U          | U          | U          | U          |
| PI074 P3-41 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATCHER GRIDS        | U          | U          | U          | U          | U          |
| PI075 P3-42 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS FEEDBACK LOOPS       | U          | U          | U          | U          | U          |
| PI076 P3-43 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS SHIFT SPACES         | U          | U          | U          | U          | U          |
| PI077 P3-44 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS HUNCHER GRIDS        | U          | U          | U          | U          | U          |
| PI078 P3-45 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS HUNCHER CAVITIES     | U          | U          | U          | U          | U          |
| PI079 P3-46 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CONTROL GRIDS        | U          | U          | U          | U          | U          |
| PI080 P3-47 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TWO-CAVITY KLYSTRONS CATHODES             | U          | U          | U          | U          | U          |
| PI081 P3-48 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON REPELLEN INDUCTORI PLATES | U          | U          | U          | U          | U          |
| PI082 P3-49 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRIDS                     | U          | U          | U          | U          | U          |
| PI083 P3-50 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON GRID CAVITY GAPS          | U          | U          | U          | U          | U          |
| PI084 P3-51 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON RESONANT CAVITIES         | U          | U          | U          | U          | U          |
| PI085 P3-52 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON MAGNETIC COUPLING LOOPS   | U          | U          | U          | U          | U          |
| PI086 P3-53 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON FILAMENTS                 | U          | U          | U          | U          | U          |
| PI087 P3-54 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON CATHODES                  | U          | U          | U          | U          | U          |

PLT MANS RESPONDING 'YES' BY SELECTED UMPS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

|                                                                                                     | SPC<br>U26 | SPC<br>U27 | SPC<br>U28 | SPC<br>Q29 | SPC<br>Q31 |
|-----------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| PI093 P3-55 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF REFLEX KLYSTRON OUTPUT LEADS         | 0          | 0          | 0          | 0          | 0          |
| PI094 P3-56 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES FILAMENTS       | 0          | 0          | 0          | 0          | 0          |
| PI095 P3-57 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES CATHODES        | 0          | 0          | 0          | 0          | 0          |
| PI096 P3-58 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MODULATOR GRIDS | 0          | 0          | 0          | 0          | 0          |
| PI097 P3-59 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ANODES          | 0          | 0          | 0          | 0          | 0          |
| PI098 P3-60 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MELIXES         | 0          | 0          | 0          | 0          | 0          |
| PI099 P3-61 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES COLLECTORS      | 0          | 0          | 0          | 0          | 0          |
| PI100 P3-62 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES MAGNETS         | 0          | 0          | 0          | 0          | 0          |
| PI101 P3-63 DO YOU USE OR REFER TO THE OPERATING PRINCIPLES OF TRAVELING-WAVE TUBES ATTENUATORS     | 0          | 0          | 0          | 0          | 0          |
| PI102 P3-64 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE CIRCULATORS                        | 0          | 0          | 0          | 0          | 0          |
| PI103 P3-65 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER SIGNAL CAVITIES                            | 0          | 0          | 0          | 0          | 0          |
| PI104 P3-66 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER ISOLER CAVITIES                            | 0          | 0          | 0          | 0          | 0          |
| PI105 P3-67 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER VARACTOR DIODES                            | 0          | 0          | 0          | 0          | 0          |
| PI106 P3-68 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER FERRITE ISOLATORS                          | 0          | 0          | 0          | 0          | 0          |
| PI107 P3-69 DO YOU PERFORM TASKS ON PARAMETRIC AMPLIFIER REVERSE-BIAS BATTERIES                     | 0          | 0          | 0          | 0          | 0          |
| PI108 P3-70 DO YOU PERFORM TASKS ON ANODES                                                          | 0          | 0          | 0          | 0          | 0          |
| PI109 P3-71 DO YOU PERFORM TASKS ON ANODE COOLING PINS                                              | 0          | 0          | 0          | 0          | 0          |
| PI110 P3-72 DO YOU PERFORM TASKS ON COUPLING LOOPS                                                  | 0          | 0          | 0          | 0          | 0          |
| PI111 P3-73 DO YOU PERFORM TASKS ON HEATER LEADS                                                    | 0          | 0          | 0          | 0          | 0          |
| PI112 P3-74 DO YOU PERFORM TASKS ON RESONANT CAVITIES                                               | 0          | 0          | 0          | 0          | 0          |
| PI113 P3-75 DO YOU PERFORM TASKS ON CATHODES                                                        | 0          | 0          | 0          | 0          | 0          |
| PI114 P3-76 DO YOU PERFORM TASKS ON MAGNETS                                                         | 0          | 0          | 0          | 0          | 0          |
| WI101 Q1-01 DO YOU USE OR REFER TO STORAGE REGISTERS                                                | 20         | 25         | 0          | 0          | 33         |
| WI102 Q1-02 DO YOU USE OR REFER TO SHIFT REGISTERS                                                  | 40         | 38         | 50         | 0          | 50         |
| WI103 Q1-03 DO YOU USE OR REFER TO LOGIC SYMBOLS OF SHIFT REGISTERS                                 | 40         | 38         | 50         | 0          | 50         |
| WI104 Q1-04 DO YOU USE OR REFER TO LOGIC SYMBOLS OF STORAGE REGISTERS                               | 30         | 25         | 50         | 0          | 33         |
| WI105 Q1-05 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF SHIFT REGISTERS                    | 40         | 38         | 50         | 0          | 50         |
| WI106 Q1-06 DO YOU TRACE THE DATA FLOW THROUGH LOGIC DIAGRAMS OF OTHER TYPE OF REGISTERS            | 40         | 38         | 50         | 100        | 33         |

REGISTERS

# PCT MEMS RESPONDING 'YES' BY SELECTED GRPS

GPSUM2 PAGE 40

## TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

DT-15A

Q110 Q1-07 DO YOU DETERMINE THE STATE OF EACH FLIP-FLOP OF A SHIFT REGISTER AFTER A SPECIFIED NUMBER OF SHIFT PULSES HAVE PASSED

SPC 026 027 028 029 030 031  
30 25 50 0 33

Q117 Q2-01 DO YOU WORK WITH DIGITAL COUNTERS, REGISTERS, OR STORAGE DEVICES IN YOUR PRESENT JOB

60 50 100 100 50

Q118 Q2-02 DO YOU USE OR REFER TO DELAY LINES

40 38 50 100 33

Q119 Q2-03 DO YOU USE OR REFER TO MAGNETIC CORES

20 25 0 100 17

Q120 Q2-04 DO YOU USE OR REFER TO MAGNETIC DRUMS

10 13 0 100 0

Q121 Q2-05 DO YOU USE OR REFER TO MAGNETIC TAPES

60 50 100 100 50

Q122 Q2-06 DO YOU USE OR REFER TO ACCESS TIME OR SPEED ON MEMORY SYSTEMS

30 38 0 100 33

Q123 Q2-07 DO YOU USE OR REFER TO WORD CAPACITY OF MEMORY SYSTEMS

40 50 0 100 50

Q124 Q2-08 DO YOU USE OR REFER TO VOLATILITY OF MEMORY SYSTEMS

20 25 0 100 17

Q125 Q2-09 DO YOU USE OR REFER TO LOGIC SYMBOL OF DELAY LINES

30 38 0 100 33

Q126 Q3-01 IN YOUR PRESENT JOB, DO YOU WORK WITH DIGITAL-TO-ANALOG (D/A) CONVERTERS, ANALOG-TO-DIGITAL (A/D) CONVERTERS, OR BINARY-TO-DECIMAL HEADOUT CONVERTERS

50 38 100 100 33

Q127 Q3-02 DO YOU COMPUTE OUTPUT VOLTAGES FOR ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS FOR GIVEN INPUT VOLTAGES

20 13 50 0 17

Q128 Q3-03 DO YOU USE OR REFER TO THE GENERAL RULE THAT THE COUNT IN ELECTROMECHANICAL DIGITAL-TO-ANALOG (D/A) CONVERTERS IS DETERMINED BY ADDING THE DENOMINATORS OF THE RESISTORS

10 13 0 0 17

Q129 Q3-04 DO YOU COMPUTE ANALOG VOLTAGES FOR GIVEN BINARY COUNTS IN ELECTRONIC DIGITAL-TO-ANALOG (D/A) CONVERTERS

20 25 0 0 33

Q130 Q3-05 DO YOU PERFORM SAMPLE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

20 25 0 100 17

Q131 Q3-06 DO YOU PERFORM HOLD FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

20 25 0 100 17

Q132 Q3-07 DO YOU PERFORM COMPARE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

20 25 0 100 17

Q133 Q3-08 DO YOU PERFORM DIGITIZE FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

20 25 0 100 17

Q134 Q3-09 DO YOU PERFORM DON'T REMEMBER WHICH FUNCTION TASKS ON VARIABLE TIME ANALOG-TO-DIGITAL (A/D) CONVERTER CIRCUITS

0 0 0 0 0

Q135 Q3-10 DO YOU USE OR REFER TO SAMPLE FUNCTION OF A/D CONVERTERS

20 25 0 100 17

Q136 Q3-11 DO YOU USE OR REFER TO HOLD FUNCTION OF A/D CONVERTERS

20 25 0 100 17

Q137 Q3-12 DO YOU USE OR REFER TO COMPARE FUNCTION OF A/D CONVERTERS

20 25 0 100 17

Q138 Q3-13 DO YOU USE OR REFER TO DIGITAL FUNCTION OF A/D CONVERTERS

20 25 0 100 17

Q139 Q3-14 DO YOU PERFORM ANY TASKS ON MECHANICAL ANALOG-TO-DIGITAL (A/D) CONVERTERS

20 25 0 100 17

STORAGE DEVICES

DIGITAL TO ANALOG CONVERTERS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

DY-TSA

|                                                                                           | SPC<br>U2A | SPC<br>U27 | SPC<br>U28 | SPC<br>U29 | SPC<br>U31 |                                           |
|-------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|-------------------------------------------|
|                                                                                           |            |            |            |            |            |                                           |
| N1140 N1-U1 DO YOU WORK WITH PHANTASTRON CIRCUITRY IN YOUR PRESENT JOB                    | 0          | 0          | 0          | 0          | 0          | PHANTASTRONS                              |
| N1141 N2-U1 IN YOUR PRESENT JOB DO YOU WORK WITH SCHMITT TRIGGER CIRCUITS                 | 40         | 38         | 50         | 0          | 50         |                                           |
| N1142 N2-U2 DO YOU TRACE DATA FLOW THROUGH SCHMITT TRIGGER SCHEMATIC DIAGRAMS             | 40         | 38         | 50         | 0          | 50         | SCHMITT TRIGGERS                          |
| N1143 N2-U3 DO YOU USE OR REFER TO SCHMITT TRIGGER LOGIC SYMBOLS                          | 40         | 38         | 50         | 0          | 50         |                                           |
| N1144 N3-U1 IN YOUR PRESENT JOB DO YOU FABRICATE MULTICONDUCTOR CABLES                    | 70         | 75         | 50         | 0          | 83         | CABLE FABRICATION                         |
| N1145 N3-U2 DO YOU FABRICATE COAXIAL CABLES                                               | 70         | 75         | 50         | 0          | 83         |                                           |
| N1146 N1-U1 IN YOUR PRESENT JOB DO YOU PERFORM ANY TASKS ON VISUAL READOUT SYSTEMS        | 60         | 50         | 100        | 100        | 50         | INPUT/OUTPUT DEVICES                      |
| N1147 N1-U2 DO YOU PERFORM ANY TASKS ON NIATE LIGHTS OR NIATE LIGHT DECODER SYSTEMS       | 50         | 50         | 50         | 100        | 50         |                                           |
| N1148 N1-U3 DO YOU ANALYZE NIATE LIGHT DECODER SYSTEMS USING BOOLEAN ALGEBRA              | 10         | 13         | 0          | 0          | 17         |                                           |
| N1149 N2-U1 DO YOU WORK WITH PHOTO TUBES IN YOUR PRESENT JOB                              | 40         | 50         | 0          | 100        | 50         | PHOTO SENSITIVE DEVICES                   |
| N1150 N3-U1 IN YOUR PRESENT JOB DO YOU WORK WITH CHOPPER CIRCUITS                         | 0          | 0          | 0          | 0          | 0          |                                           |
| N1151 N3-U2 DO YOU MEASURE EXCITATION FREQUENCIES                                         | 0          | 0          | 0          | 0          | 0          |                                           |
| N1152 N3-U3 DO YOU MEASURE VOLTAGE-CURRENT PHASE RELATIONSHIPS                            | 0          | 0          | 0          | 0          | 0          |                                           |
| N1153 N3-U4 DO YOU USE OR REFER TO EXCITATION FREQUENCIES                                 | 0          | 0          | 0          | 0          | 0          |                                           |
| N1154 N3-U5 DO YOU USE OR REFER TO VOLTAGE-CURRENT PHASE RELATIONSHIPS                    | 0          | 0          | 0          | 0          | 0          | SYNCHRONOUS VIBRATIONS (CHOPPER CIRCUITS) |
| N1155 N3-U6 DO YOU USE SERVOS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION               | 0          | 0          | 0          | 0          | 0          |                                           |
| N1156 N3-U7 DO YOU USE DETECTORS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION            | 0          | 0          | 0          | 0          | 0          |                                           |
| N1157 N3-U8 DO YOU USE ERROR SIGNAL DEVICES IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION | 0          | 0          | 0          | 0          | 0          |                                           |
| N1158 N3-U9 DO YOU USE COMPARISON CIRCUITS IN CONJUNCTION WITH CHOPPER CIRCUIT OPERATION  | 0          | 0          | 0          | 0          | 0          |                                           |
| N1159 N1-U1 DOES YOUR PRESENT JOB INVOLVE ANY TASKS DEALING WITH INFRARED SYSTEMS         | 10         | 13         | 0          | 100        | 0          |                                           |
| T1160 T1-U2 DO YOU INSPECT INFRARED SYSTEMS                                               | 10         | 13         | 0          | 100        | 0          |                                           |
| T1161 T1-U3 DO YOU CLEAN INFRARED SYSTEMS                                                 | 10         | 13         | 0          | 100        | 0          |                                           |
| T1162 T1-U4 DO YOU ADJUST OR CALIBRATE INFRARED SYSTEMS                                   | 10         | 13         | 0          | 100        | 0          | INFRARED                                  |
| T1163 T1-U5 DO YOU OPERATE INFRARED SYSTEMS                                               | 10         | 13         | 0          | 100        | 0          |                                           |
| T1164 T1-U6 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF INFRARED SYSTEMS                      | 10         | 13         | 0          | 100        | 0          |                                           |
| T1165 T1-U7 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF INFRARED SYSTEMS                      | 10         | 13         | 0          | 100        | 0          |                                           |
| T1166 T1-U8 DO YOU TROUBLESHOOT DOWN TO INFRARED SYSTEM COMPONENT PARTS                   | 10         | 13         | 0          | 100        | 0          |                                           |
| T1167 T1-U9 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF INFRARED SYSTEMS                 | 10         | 13         | 0          | 100        | 0          |                                           |
| T1168 T1-U10 DO YOU REMOVE OR REPLACE INFRARED SYSTEM COMPONENT PARTS                     | 10         | 13         | 0          | 100        | 0          |                                           |

PCT MLRS RESPONDING 'YES' BY SELECTED GMPs

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

## DY-TSK

|                                                                        | SPC<br>U26 | SPC<br>U27 | SPC<br>U28 | SPC<br>U29 | SPC<br>U31 |
|------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| TL169 TL-11 DO YOU USE OR REFER TO FAR REGION                          | 10         | 13         | 0          | 100        | 0          |
| TL170 TL-12 DO YOU USE OR REFER TO INTERMEDIATE REGION                 | 0          | 0          | 0          | 0          | 0          |
| TL171 TL-13 DO YOU USE OR REFER TO NEAR REGION                         | 0          | 0          | 0          | 0          | 0          |
| TL172 TL-14 DO YOU USE OR REFER TO MICRON                              | 10         | 13         | 0          | 100        | 0          |
| TL173 TL-15 DO YOU USE OR REFER TO GRAY BODIES                         | 0          | 0          | 0          | 0          | 0          |
| TL174 TL-16 DO YOU USE OR REFER TO BLACK BODIES                        | 0          | 0          | 0          | 0          | 0          |
| TL175 TL-17 DO YOU USE OR REFER TO ASSUMPTION                          | 10         | 13         | 0          | 100        | 0          |
| TL176 TL-18 DO YOU USE OR REFER TO SCATTERING                          | 0          | 0          | 0          | 0          | 0          |
| TL177 TL-19 DO YOU USE OR REFER TO ABSOLUTE ZERO                       | 10         | 13         | 0          | 100        | 0          |
| TL178 TL-20 DO YOU PERFORM TASKS ON FLITZ                              | 0          | 0          | 0          | 0          | 0          |
| TL179 TL-21 DO YOU PERFORM TASKS ON TARGET BUTTONS                     | 0          | 0          | 0          | 0          | 0          |
| TL180 TL-22 DO YOU PERFORM TASKS ON SPECTOR LENSES                     | 0          | 0          | 0          | 0          | 0          |
| TL181 TL-23 DO YOU PERFORM TASKS ON OCULAR LENSES                      | 0          | 0          | 0          | 0          | 0          |
| TL182 TL-24 DO YOU PERFORM TASKS ON CORRECTION LENSES                  | 0          | 0          | 0          | 0          | 0          |
| TL183 TL-25 DO YOU PERFORM TASKS ON FILTERS                            | 10         | 13         | 0          | 100        | 0          |
| TL184 TL-26 DO YOU PERFORM TASKS ON SPHERICAL MIRRORS                  | 0          | 0          | 0          | 0          | 0          |
| TL185 TL-27 DO YOU PERFORM TASKS ON PLANE MIRRORS                      | 10         | 13         | 0          | 100        | 0          |
| TL186 TL-28 DO YOU PERFORM TASKS ON PLANE MIRRORS                      | 30         | 38         | 0          | 0          | 50         |
| TL187 TL-29 DO YOU INSPECT LASER SYSTEMS                               | 30         | 38         | 0          | 0          | 50         |
| TL188 TL-30 DO YOU CLEAN LASER SYSTEMS                                 | 30         | 38         | 0          | 0          | 50         |
| TL189 TL-31 DO YOU OPERATE LASER SYSTEMS                               | 30         | 38         | 0          | 0          | 50         |
| TL190 TL-32 DO YOU OPERATE LASER SYSTEMS                               | 30         | 38         | 0          | 0          | 50         |
| TL191 TL-33 DO YOU TROUBLESHOOT WIRE CONNECTIONS OF LASER SYSTEMS      | 30         | 38         | 0          | 0          | 50         |
| TL192 TL-34 DO YOU TROUBLESHOOT MAJOR ASSEMBLIES OF LASER SYSTEMS      | 30         | 38         | 0          | 0          | 50         |
| TL193 TL-35 DO YOU TROUBLESHOOT TO COMPONENT PARTS OF LASER SYSTEMS    | 20         | 25         | 0          | 0          | 33         |
| TL194 TL-36 DO YOU REMOVE OR REPLACE MAJOR ASSEMBLIES OF LASER SYSTEMS | 30         | 38         | 0          | 0          | 50         |
| TL195 TL-37 DO YOU REMOVE OR REPLACE COMPONENT PARTS OF LASER SYSTEMS  | 20         | 25         | 0          | 0          | 33         |
| TL196 TL-38 DO YOU USE OR REFER TO ALIGNMENTS (A)                      | 10         | 13         | 0          | 0          | 17         |
| TL197 TL-39 DO YOU USE OR REFER TO ELECTRON ENERGY LEVELS              | 10         | 13         | 0          | 0          | 17         |
| TL198 TL-40 DO YOU USE OR REFER TO GROUND STATE                        | 0          | 0          | 0          | 0          | 0          |
| TL199 TL-41 DO YOU USE OR REFER TO EXCITED STATE                       | 0          | 0          | 0          | 0          | 0          |
| TL200 TL-42 DO YOU USE OR REFER TO PACKET OF RADIATION                 | 0          | 0          | 0          | 0          | 0          |
| TL201 TL-43 DO YOU USE OR REFER TO PHOTONS                             | 0          | 0          | 0          | 0          | 0          |
| TL202 TL-44 DO YOU USE OR REFER TO SPONTANEOUS EMISSION                | 0          | 0          | 0          | 0          | 0          |
| TL203 TL-45 DO YOU USE OR REFER TO STIMULATED EMISSION                 | 0          | 0          | 0          | 0          | 0          |
| TL204 TL-46 DO YOU USE OR REFER TO COMPLETION OR INCOMPLETION          | 10         | 13         | 0          | 0          | 17         |
| TL205 TL-47 DO YOU USE OR REFER TO INVERSION LEVEL                     | 0          | 0          | 0          | 0          | 0          |
| TL206 TL-48 DO YOU USE OR REFER TO MONOCHROMATIC                       | 0          | 0          | 0          | 0          | 0          |
| TL207 TL-49 DO YOU WORK WITH ACTIVE MATERIALS                          | 0          | 0          | 0          | 0          | 0          |
| TL208 TL-50 DO YOU WORK WITH PUMPING SOURCES                           | 0          | 0          | 0          | 0          | 0          |
| TL209 TL-51 DO YOU WORK WITH FULL SILVERED (100% REFLECTIVE) MIRRORS   | 30         | 38         | 0          | 0          | 50         |

LASERS

TASK GROUP SUMMARY  
PERCENT MEMBERS PERFORMING

## DY-TSK

|                                                                                                                                          | SPC<br>02A | SPC<br>027 | SPC<br>U28 | SPC<br>029 | SPC<br>U31 |
|------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| 11210 12-25 DO YOU WORK WITH HALF SILVERED (928 REFLECTIVE) MIRRORS                                                                      | 10         | 13         | 0          | 0          | 17         |
| 11211 12-26 DO YOU WORK WITH MELICAL FLASHTUBES                                                                                          | 10         | 13         | 0          | 0          | 17         |
| 11212 12-27 DO YOU WORK WITH RUBY                                                                                                        | 0          | 0          | 0          | 0          | 0          |
| 11213 12-28 DO YOU WORK WITH MELIUM-NEON                                                                                                 | 30         | 38         | 0          | 0          | 50         |
| 11214 12-29 DO YOU WORK WITH MELIUM-NEON                                                                                                 | 0          | 0          | 0          | 0          | 0          |
| 11215 12-30 DO YOU WORK WITH XENON                                                                                                       | 0          | 0          | 0          | 0          | 0          |
| 11216 12-31 DO YOU WORK WITH CESIUM-HELIUM                                                                                               | 0          | 0          | 0          | 0          | 0          |
| 11217 12-32 DO YOU WORK WITH ARGON                                                                                                       | 0          | 0          | 0          | 0          | 0          |
| 11218 12-33 DO YOU WORK WITH NEODYMIUM IN GLASS                                                                                          | 0          | 0          | 0          | 0          | 0          |
| 11219 12-34 DO YOU WORK WITH GALLIUM ARSENIDE                                                                                            | 0          | 0          | 0          | 0          | 0          |
| 11220 13-01 IN YOUR PRESENT JOB DO YOU WORK WITH DISPLAY TUBES, SUCH AS DIRECT VIEW STORAGE (DVST) OR MULTIPLE MODE STORAGE TUBES (MMST) | 10         | 13         | 0          | 0          | 17         |
| 11221 13-02 DO YOU INSPECT DVST OR MMST                                                                                                  | 10         | 13         | 0          | 0          | 17         |
| 11222 13-03 DO YOU CLEAN DVST OR MMST                                                                                                    | 10         | 13         | 0          | 0          | 17         |
| 11223 13-04 DO YOU ADJUST OR CALIBRATE DVST OR MMST                                                                                      | 10         | 13         | 0          | 0          | 17         |
| 11224 13-05 DO YOU OPERATE SYSTEMS THAT CONTAIN DVST OR MMST                                                                             | 10         | 13         | 0          | 0          | 17         |
| 11225 13-06 DO YOU TROUBLESHOOT DVST OR MMST CIRCUITS                                                                                    | 10         | 13         | 0          | 0          | 17         |
| 11226 13-07 DO YOU REMOVE OR REPLACE DVST OR MMST TUBES FROM MAJOR ASSEMBLIES OR UNITS                                                   | 10         | 13         | 0          | 0          | 17         |
| 11227 13-08 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF DVST                                             | 0          | 0          | 0          | 0          | 0          |
| 11228 13-09 DO YOU PERFORM TASKS THAT MAKE IT NECESSARY TO NAME THE VARIOUS ELEMENTS OF MMST                                             | 0          | 0          | 0          | 0          | 0          |
| 11229 13-10 DO YOU PERFORM TASKS ON FLOOD GUNS                                                                                           | 0          | 0          | 0          | 0          | 0          |
| 11230 13-11 DO YOU PERFORM TASKS ON ARTE GUNS                                                                                            | 0          | 0          | 0          | 0          | 0          |
| 11231 13-12 DO YOU PERFORM TASKS ON ATTACK GUNS                                                                                          | 0          | 0          | 0          | 0          | 0          |
| 11232 13-13 DO YOU PERFORM TASKS ON ERASE GUNS                                                                                           | 0          | 0          | 0          | 0          | 0          |
| 11233 13-14 DO YOU PERFORM TASKS ON STORAGE GRIDS                                                                                        | 0          | 0          | 0          | 0          | 0          |
| 11234 13-01 IN YOUR PRESENT JOB DO YOU PERFORM ANY PROGRAMMING TASKS                                                                     | 20         | 25         | 0          | 100        | 17         |
| U1235 01-02 DO YOU USE OR REFER TO DECIMAL SYSTEMS                                                                                       | 30         | 38         | 0          | 0          | 50         |
| U1236 01-03 DO YOU USE OR REFER TO PROGRAMS                                                                                              | 30         | 38         | 0          | 100        | 33         |
| U1237 01-04 DO YOU USE OR REFER TO HEXIDECIMAL SYSTEMS                                                                                   | 30         | 38         | 0          | 100        | 33         |
| U1238 01-05 DO YOU USE OR REFER TO 8-4-2-1 SYSTEMS                                                                                       | 20         | 25         | 0          | 0          | 33         |
| U1239 01-06 DO YOU USE OR REFER TO FOUR SYSTEMS                                                                                          | 10         | 13         | 0          | 0          | 17         |
| U1240 01-07 DO YOU USE OR REFER TO BINARY SYSTEMS                                                                                        | 20         | 25         | 0          | 0          | 33         |
| U1241 01-08 DO YOU USE OR REFER TO TIME-SHARING                                                                                          | 20         | 25         | 0          | 100        | 17         |
| U1242 01-09 DO YOU USE OR REFER TO DATA WORDS                                                                                            | 20         | 25         | 0          | 0          | 33         |
| U1243 01-10 DO YOU USE OR REFER TO ADDRESS WORDS                                                                                         | 30         | 38         | 0          | 100        | 33         |
| U1244 01-11 DO YOU USE OR REFER TO ADDRESS/SUBADDRESS                                                                                    | 30         | 38         | 0          | 100        | 33         |
| U1245 01-12 DO YOU USE OR REFER TO STEERING/INFORMATION                                                                                  | 20         | 25         | 0          | 100        | 17         |
| U1246 01-13 DO YOU USE OR REFER TO INFORMATION WORDS                                                                                     | 20         | 25         | 0          | 0          | 33         |
| U1247 01-14 DO YOU PERFORM TASKS ON SINGLE LEVEL PROGRAMMING                                                                             | 30         | 38         | 0          | 100        | 33         |
| U1248 01-15 DO YOU PERFORM TASKS ON MULTI-LEVEL PROGRAMMING                                                                              | 0          | 0          | 0          | 0          | 0          |

DISPLAY TUBES

PROGRAMMING

# PCT MEMS RESPONDING YES BY SELECTED GRPS

GPSUM2 PAGE 44

## TASK GROUP SUMMARY PERCENT MEMBERS PERFORMING

### DT-TSK

|                                                                          | SPC<br>026 | SPC<br>027 | SPC<br>028 | SPC<br>029 | SPC<br>031 |
|--------------------------------------------------------------------------|------------|------------|------------|------------|------------|
| U1249 U1-16 DO YOU PERFORM TASKS ON INPUT DEVICES                        | 30         | 38         | 0          | 100        | 33         |
| U1250 U1-17 DO YOU PERFORM TASKS ON STORAGE DEVICES                      | 30         | 38         | 0          | 100        | 33         |
| U1251 U1-18 DO YOU PERFORM TASKS ON ARITHMETIC SECTIONS                  | 0          | 0          | 0          | 0          | 0          |
| U1252 U1-19 DO YOU PERFORM TASKS ON CONTROL SECTIONS                     | 30         | 38         | 0          | 100        | 33         |
| U1253 U1-20 DO YOU PERFORM TASKS ON OUTPUT DEVICES                       | 30         | 38         | 0          | 100        | 33         |
| U1254 U1-21 DO YOU PERFORM TASKS ON POWER SUPPLIES                       | 30         | 38         | 0          | 100        | 33         |
| U1255 U2-01 DO YOU USE DECIBELS TO EXPRESS AMPLIFICATION AND ATTENUATION | 20         | 25         | 0          | 100        | 17         |
| U1256 U2-02 DO YOU USE LOGARITHMS TO COMPUTE OUTPUT POWER IN DECIBELS    | 0          | 0          | 0          | 0          | 0          |
| U1257 U2-03 DO YOU USE LOGARITHMS TO COMPUTE ATTENUATION IN DECIBELS     | 0          | 0          | 0          | 0          | 0          |
| U1258 U2-04 DUMMY TASK TO IDENTIFY INCUMBENTS WHO PERFORMED NO TASKS     | 0          | 0          | 0          | 0          | 0          |

DB AND POWER RATIOS

AD-A044 647

AIR FORCE OCCUPATIONAL MEASUREMENT CENTER LACKLAND A--ETC F/G 5/9  
AIRBORNE METEOROLOGICAL/ATMOSPHERIC RESEARCH EQUIPMENT REPAIRMA--ETC(U)  
SEP 77 T J O'CONNOR, G COLE

UNCLASSIFIED

NL

2 OF 2  
ADA  
044647



END  
DATE  
FILMED

1-79  
DDC

**SUPPLEMENTARY**

**INFORMATION**

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

*Corrected*

| REPORT DOCUMENTATION PAGE                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                        | READ INSTRUCTIONS<br>BEFORE COMPLETING FORM                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------|
| 1. REPORT NUMBER<br>AFPT 90-302-222                                                                                                                                                                                                                                                                                                                                                                                                                          | 2. GOVT ACCESSION NO.<br>ADA044647/654 | 3. RECIPIENT'S CATALOG NUMBER                                         |
| 4. TITLE (and Subtitle)<br>Airborne Meteorological/Atmospheric Research<br>Equipment Repairman<br>AFSC 30251                                                                                                                                                                                                                                                                                                                                                 |                                        | 5. TYPE OF REPORT & PERIOD COVERED<br>FINAL<br>April 77 - Jun 77      |
| 7. AUTHOR(s)<br>Thomas J. O'Connor<br>Guy Cole                                                                                                                                                                                                                                                                                                                                                                                                               |                                        | 6. PERFORMING ORG. REPORT NUMBER                                      |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS<br>Occupational Survey Branch<br>USAF Occupational Measurement Center<br>Lackland AFB TX 78236                                                                                                                                                                                                                                                                                                                   |                                        | 8. CONTRACT OR GRANT NUMBER(s)                                        |
| 11. CONTROLLING OFFICE NAME AND ADDRESS<br>SAME AS ITEM 9                                                                                                                                                                                                                                                                                                                                                                                                    |                                        | 10. PROGRAM ELEMENT, PROJECT, TASK<br>AREA & WORK UNIT NUMBERS<br>N/A |
| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)                                                                                                                                                                                                                                                                                                                                                                                  |                                        | 12. REPORT DATE<br>15 September 1977                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | 13. NUMBER OF PAGES<br>4                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | 15. SECURITY CLASS. (of this report)<br>UNCLASSIFIED                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                        | 15a. DECLASSIFICATION/DOWNGRADING<br>SCHEDULE                         |
| 16. DISTRIBUTION STATEMENT (of this Report)<br><br>Approved for public release; distribution unlimited                                                                                                                                                                                                                                                                                                                                                       |                                        |                                                                       |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)                                                                                                                                                                                                                                                                                                                                                                   |                                        |                                                                       |
| 18. SUPPLEMENTARY NOTES                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                        |                                                                       |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number)<br>Electronic principles      Electronics<br>Basic electronics      Air Force Training<br>Avionics      Teaching Methods<br>Electronic equipment      Training<br><u>Electronic technicians</u>                                                                                                                                                                           |                                        |                                                                       |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br>This report summarizes the results of the administration of the Electronic Principles Inventory to airmen assigned as Airborne Meteorological/Atmospheric Research Equipment Repairman (AFSC 30251). The report gives a detailed listing of the technical tasks and knowledge needed to perform the jobs within the specialty or career ladder.<br><br><i>CONTINUED</i> |                                        |                                                                       |

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

This specialty has the following functions:

Installs, maintains, and repairs meteorological and atmospheric research equipment and associated data processing analog and digital computers. Performs preventive maintenance on airborne meteorological and atmospheric research equipment. Installs airborne meteorological and atmospheric research equipment. Repairs airborne meteorological and atmospheric research equipment. Supervises airborne meteorological/atmospheric research equipment repair personnel.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)